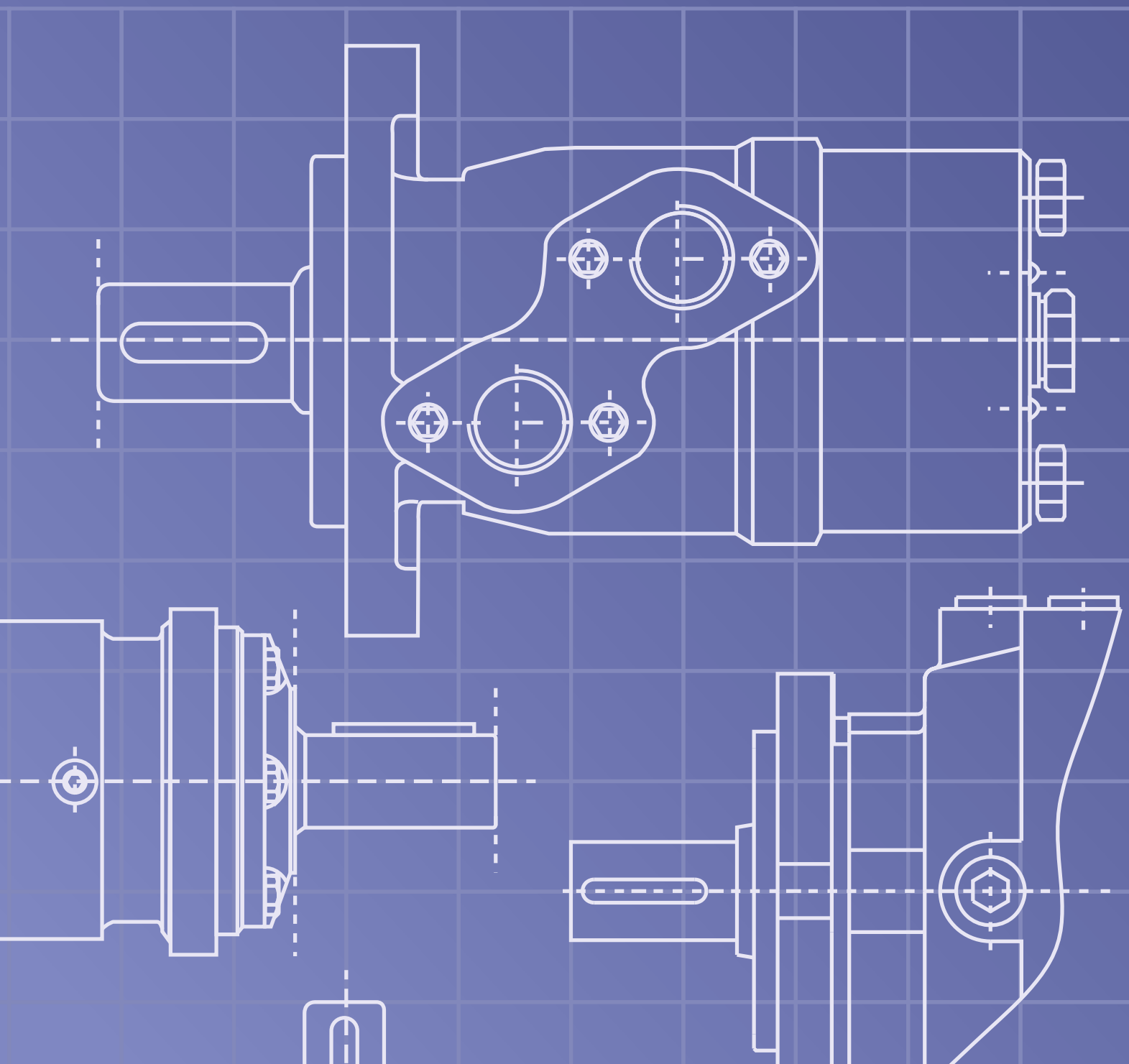


# VINCKE

## HYDRAULIC MOTORS



# USAGE GUIDE Hydraulic Motors



In order to make the motors working in optimal situation, we recommend the following:

**1. Oil temperature:** normal 20°C-60°C upper limit 90°C (no more than one hour).

**2. Filtering and oil cleanliness:** a return filter should be installed in the system with a fineness in the range of 10-30µm and a piece of magnet should be installed at the bottom of the tank to prevent grits into the system.

The max solid contamination grade of the oil is no more than 19/16.

**3. Viscosity:** 42-74 mm<sup>2</sup>/s at 40°C of oil temperature, according to the condition to choose an applicable hydraulic oil.

**4. The motors** can be operated in parallel or in series.

When the pressure of the back exceeds 2MPa, it is necessary to install an external drain line to the tank.

**5.1. For VNKM and VNKP and VNKR series motors**, the type of output shaft may be chosen in demand.

**5.1.1 The output shaft** permits a radial force with the radial bearing.

**5.1.2 The output shaft** doesn't permit the radial force without the radial bearing. When the radial force acts on the shaft, the force must be discharged.

**5.2. For VNKB, VNKS, VNKT, VNKV and VNKC series motors**, the output shaft permit high axial and radial forces.

**6. The optimal operation situation** should be at the 1/3-2/3 of the rated operation situation.

**7. In order to obtain a longer life of operating motor** should operate motors at first for one hour under 30% of rated pressure.

In any case, be sure to fill up with hydraulic oil inside motor before increasing load.

**8. All our production of motors have a surface treatment support >300 hours salt spray. RAL9005.**

## SPECIFICATION Data of Hydraulic Motors

| Distribution type  | Model | Displacement (cm <sup>3</sup> /rev.) | Max. operating pressure (MPa) | Speed range (rpm) | Max. output power (kW) |
|--------------------|-------|--------------------------------------|-------------------------------|-------------------|------------------------|
| Axial distribution | VNKM  | 8-50                                 | 14                            | 30-1950           | 3.2                    |
|                    | VNKP  | 36-400                               | 16.5                          | 30-879            | 10                     |
|                    | VNKR  | 36-375                               | 20                            | 30-970            | 15                     |
|                    | VNKH  | 200-500                              | 20                            | 30-430            | 17                     |

## SPECIFICATION Data of Hydraulic Motors

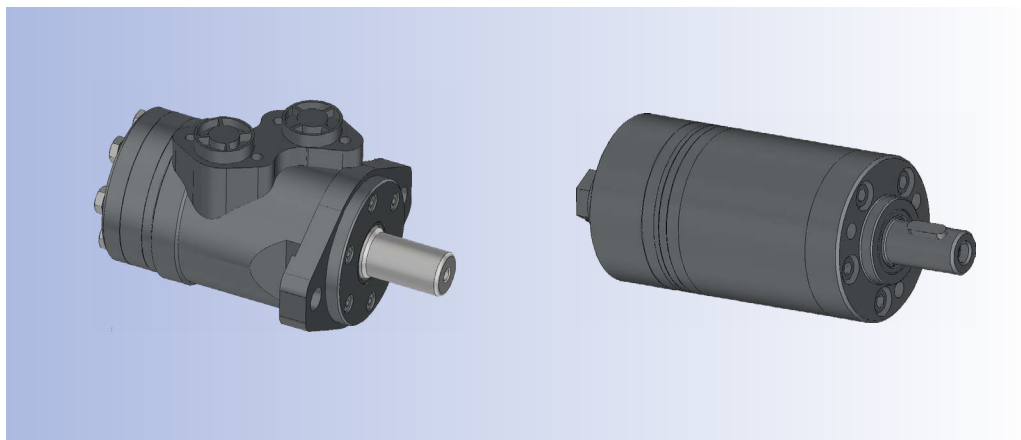
| Distribution type | Model | Displacement (cm <sup>3</sup> /rev.) | Max. operating pressure (MPa) | Speed range (rpm) | Max. output power (kW) |
|-------------------|-------|--------------------------------------|-------------------------------|-------------------|------------------------|
| Disc distribution | VNKS  | 80-475                               | 22.5                          | 8-800             | 24                     |
|                   | VNKT  | 160-800                              | 24                            | 10-705            | 35                     |
|                   | VNKV  | 315-800                              | 28                            | 10-446            | 43                     |

# INDEX

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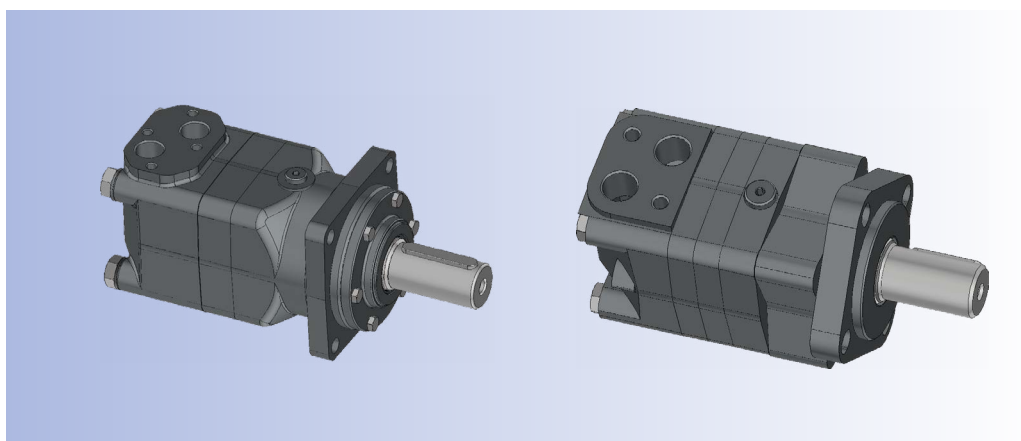
01

Axial Distribution  
Type Motors



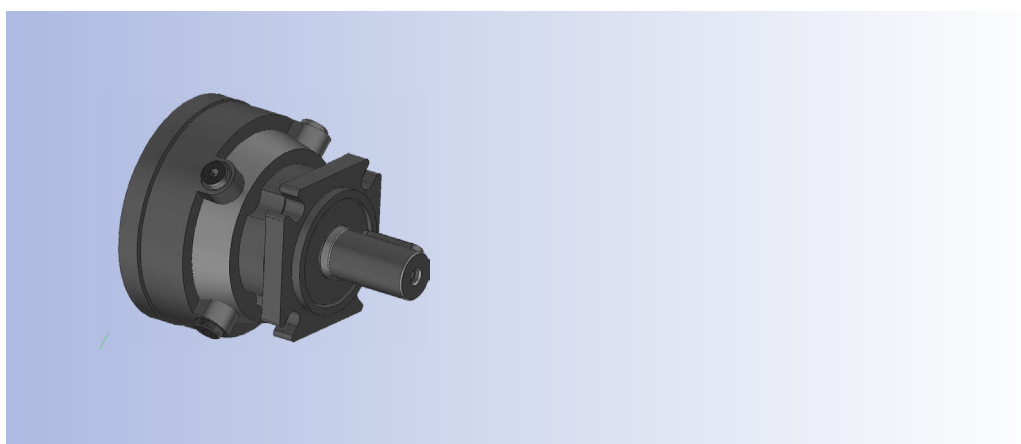
02

Disc Distribution  
Type Motors



03

Brake And Gearbox  
And Vavle



# Axial Distribution Type Motors

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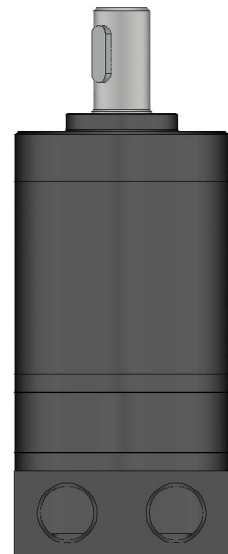
# VNKM Series Hydraulic Motor

## INTRODUCTION

VNKM series motor are small volume, economical type, which is designed with shaft distribution flow, which adapt the Gerotor gear set design and provide compact volume, high power and low weight.

## CHARACTERISTIC FEATURES

- \* **Advanced manufacturing devices** for the Gerotor gear set, which provide small volume, high efficiency and long life.
- \* **Shaft seal** can bear high pressure of motor of which can be used in parallel or in series.
- \* **Advanced construction design**, high power and low weight.



## SPECIFICATION Main Specification

| Type                                           |       | VNKM 8 | VNKM 12.5 | VNKM 20 | VNKM 32 | VNKM 40 | VNKM 50 |
|------------------------------------------------|-------|--------|-----------|---------|---------|---------|---------|
| Geometric displacement (cm <sup>3</sup> /rev.) |       | 8.2    | 12.9      | 19.9    | 31.6    | 39.8    | 50.3    |
| Max. speed (rpm)                               | cont. | 1950   | 1550      | 1000    | 630     | 500     | 400     |
|                                                | int.  | 2450   | 1940      | 1250    | 800     | 630     | 500     |
| Max. torque (N·m)                              | cont. | 11     | 16        | 25      | 40      | 45      | 46      |
|                                                | int.  | 15     | 23        | 35      | 57      | 70      | 88      |
|                                                | peak  | 21     | 33        | 51      | 64      | 82      | 100     |
| Max. output (kW)                               | cont. | 1.8    | 2.4       | 2.4     | 2.4     | 2.2     | 1.8     |
|                                                | int.  | 2.6    | 3.2       | 3.2     | 3.2     | 3.2     | 3.2     |
| Max. pressure drop (MPa)                       | cont. | 10     | 10        | 10      | 10      | 9       | 7       |
|                                                | int.  | 14     | 14        | 14      | 14      | 14      | 14      |
|                                                | peak  | 20     | 20        | 20      | 16      | 16      | 16      |
| Max. flow (L/min)                              | cont. | 16     | 20        | 20      | 20      | 20      | 20      |
|                                                | int.  | 20     | 25        | 25      | 25      | 25      | 25      |
| Weight (kg)                                    |       | 1.9    | 2         | 2.1     | 2.2     | 2.3     | 2.4     |

| Type           |       | Max.inlet pressure |
|----------------|-------|--------------------|
| VNKM8-50 (MPa) | cont. | 17.5               |
|                | int.  | 22.5               |

- \* **Continuous pressure:** Max. value of operating motor continuously.
- \* **Intermittent pressure:** Max. value of operating motor in 6 seconds per minute.
- \* **Peak pressure:** Max. value of operating motor in 0.6 second per minute.



# Performance Data

VNKM8 [8.2 cm3/rev.]

|              |    | Max. cont |           |           |            | Max. int   |            |
|--------------|----|-----------|-----------|-----------|------------|------------|------------|
|              |    | 3.5       | 5         | 7         | 10         | 12         | 14         |
| Flow (L/min) | 2  | 3<br>228  | 5<br>218  | 8<br>206  | 10<br>156  | 12<br>111  | 14<br>58   |
|              | 4  | 3<br>474  | 5<br>471  | 7<br>463  | 11<br>426  | 13<br>391  | 15<br>331  |
|              | 8  | 3<br>953  | 5<br>946  | 7<br>926  | 11<br>884  | 13<br>855  | 15<br>816  |
|              | 12 | 2<br>1444 | 5<br>1426 | 7<br>1402 | 10<br>1360 | 13<br>1324 | 15<br>1288 |
|              | 15 | 4<br>1912 |           | 7<br>1900 | 10<br>1861 | 12<br>1833 | 14<br>1780 |
|              | 20 |           |           | 6<br>2395 | 10<br>2350 | 11<br>2328 | 14<br>2281 |
| Max. cont    |    |           |           |           |            |            |            |
| Max. int     |    |           |           |           |            |            |            |

VNKM12.5 [12.9 cm3/rev.]

|              |    | Max. cont |           |            |            | Max. int   |            |
|--------------|----|-----------|-----------|------------|------------|------------|------------|
|              |    | 3.5       | 5         | 7          | 10         | 12         | 14         |
| Flow (L/min) | 2  | 6<br>140  | 8<br>136  | 11<br>119  | 16<br>68   | 19<br>35   |            |
|              | 4  | 6<br>296  | 8<br>289  | 12<br>274  | 17<br>229  | 19<br>200  | 23<br>145  |
|              | 8  | 5<br>605  | 8<br>596  | 12<br>583  | 17<br>543  | 20<br>514  | 24<br>469  |
|              | 12 | 5<br>912  | 8<br>905  | 11<br>895  | 16<br>859  | 20<br>834  | 24<br>784  |
|              | 15 | 5<br>1152 | 7<br>1144 | 11<br>1136 | 16<br>1102 | 19<br>1078 | 23<br>1036 |
|              | 20 | 3<br>1542 | 7<br>1532 | 10<br>1521 | 15<br>1500 | 19<br>1482 | 22<br>1437 |
| Max. cont    |    |           |           |            |            |            |            |
| Max. int     |    |           |           |            |            |            |            |
| Flow (L/min) | 25 | 2<br>1910 | 6<br>1891 | 9<br>1878  | 14<br>1848 | 18<br>1828 | 22<br>1788 |
|              |    |           |           |            |            |            |            |

VNKM20 [19.9 cm3/rev.]

|              |    | Max. cont |           |            |            | Max. int   |            |
|--------------|----|-----------|-----------|------------|------------|------------|------------|
|              |    | 1,7       | 3,5       | 5          | 7          | 10         | 12         |
| Flow (L/min) | 2  | 3<br>99   | 9<br>96   | 14<br>89   | 19<br>74   | 26<br>42   | 30<br>21   |
|              | 4  | 4<br>197  | 9<br>191  | 14<br>182  | 19<br>178  | 26<br>134  | 31<br>112  |
|              | 8  | 4<br>398  | 9<br>395  | 13<br>391  | 19<br>377  | 27<br>340  | 31<br>319  |
|              | 12 | 3<br>596  | 8<br>594  | 13<br>588  | 18<br>579  | 26<br>545  | 31<br>523  |
|              | 15 | 3<br>745  | 8<br>741  | 12<br>738  | 17<br>728  | 25<br>695  | 30<br>684  |
|              | 20 | 1<br>998  | 6<br>995  | 11<br>991  | 19<br>985  | 24<br>962  | 29<br>916  |
| Max. cont    |    |           |           |            |            |            |            |
| Max. int     |    |           |           |            |            |            |            |
| Flow (L/min) | 25 | 4<br>1247 | 9<br>1245 | 14<br>1242 | 23<br>1189 | 28<br>1180 | 33<br>1176 |
|              |    |           |           |            |            |            |            |

VNKM32 [31.6 cc/rev.]

|              |    | Max. cont |           |           |           | Max. int  |           |
|--------------|----|-----------|-----------|-----------|-----------|-----------|-----------|
|              |    | 2         | 3,5       | 5         | 7         | 10        | 12        |
| Flow (L/min) | 2  | 7<br>61   | 15<br>57  | 21<br>52  | 28<br>47  | 40<br>16  |           |
|              | 4  | 7<br>126  | 15<br>121 | 21<br>114 | 29<br>106 | 41<br>82  | 48<br>67  |
|              | 8  | 7<br>250  | 15<br>244 | 21<br>239 | 29<br>231 | 41<br>207 | 49<br>194 |
|              | 12 | 6<br>378  | 13<br>374 | 20<br>369 | 28<br>362 | 40<br>338 | 48<br>322 |
|              | 15 | 4<br>476  | 12<br>472 | 18<br>468 | 27<br>462 | 39<br>441 | 47<br>429 |
|              | 20 | 3<br>633  | 10<br>630 | 17<br>627 | 25<br>619 | 37<br>601 | 46<br>585 |
| Max. cont    |    |           |           |           |           |           |           |
| Max. int     |    |           |           |           |           |           |           |
| Flow (L/min) | 25 | 1<br>791  | 8<br>789  | 15<br>787 | 23<br>783 | 35<br>766 | 43<br>753 |
|              |    |           |           |           |           |           |           |

VNKM40 [39.8 cm3/rev.]

|              |    | Max. cont |           |           |           | Max. int  |           |
|--------------|----|-----------|-----------|-----------|-----------|-----------|-----------|
|              |    | 3         | 5         | 7         | 8,5       | 10        | 12        |
| Flow (L/min) | 2  | 16<br>45  | 27<br>40  | 36<br>34  | 44<br>28  | 51<br>17  |           |
|              | 4  | 16<br>96  | 27<br>93  | 37<br>85  | 44<br>79  | 52<br>65  | 62<br>52  |
|              | 8  | 15<br>197 | 26<br>195 | 36<br>182 | 44<br>176 | 52<br>166 | 63<br>154 |
|              | 12 | 14<br>293 | 25<br>287 | 35<br>282 | 43<br>277 | 51<br>268 | 62<br>257 |
|              | 15 | 13<br>371 | 24<br>365 | 34<br>360 | 42<br>355 | 50<br>347 | 62<br>338 |
|              | 20 | 10<br>497 | 21<br>492 | 31<br>487 | 39<br>480 | 48<br>472 | 59<br>463 |
| Max. cont    |    |           |           |           |           |           |           |
| Max. int     |    |           |           |           |           |           |           |
| Flow (L/min) | 25 | 7<br>622  | 19<br>617 | 29<br>612 | 37<br>607 | 44<br>600 | 56<br>591 |
|              |    |           |           |           |           |           |           |

VNKM50 [50.3 cm3/rev.]

|              |    | Max. cont |           |           |           | Max. int  |  |
|--------------|----|-----------|-----------|-----------|-----------|-----------|--|
|              |    | 1.5       | 3         | 5         | 7         | 10        |  |
| Flow (L/min) | 2  | 11<br>37  | 23<br>33  | 36<br>27  | 50<br>22  |           |  |
|              | 4  | 11<br>76  | 22<br>73  | 36<br>68  | 50<br>63  | 70<br>55  |  |
|              | 8  | 11<br>157 | 21<br>154 | 35<br>149 | 50<br>145 | 71<br>137 |  |
|              | 12 | 11<br>237 | 20<br>234 | 33<br>231 | 49<br>226 | 71<br>218 |  |
|              | 15 | 10<br>296 | 18<br>295 | 32<br>294 | 47<br>288 | 69<br>282 |  |
|              | 20 | 8<br>395  | 14<br>395 | 29<br>393 | 44<br>390 | 64<br>381 |  |
| Max. cont    |    |           |           |           |           |           |  |
| Max. int     |    |           |           |           |           |           |  |
| Flow (L/min) | 25 | 4<br>498  | 10<br>496 | 25<br>494 | 40<br>490 | 59<br>484 |  |
|              |    |           |           |           |           |           |  |

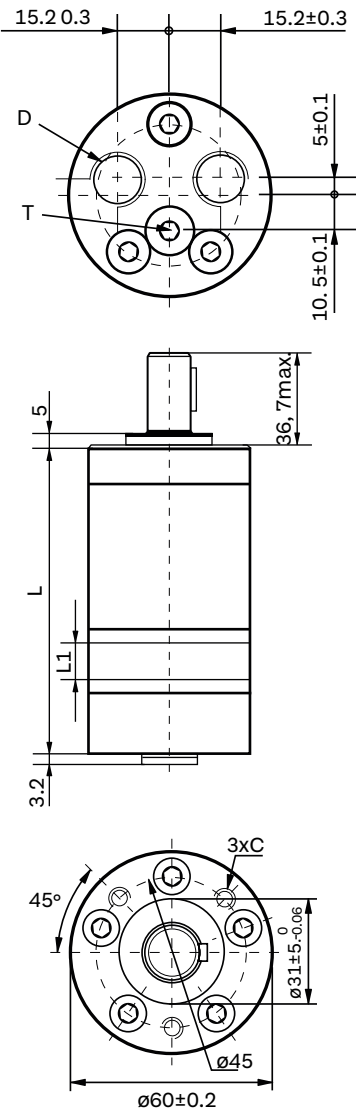
Torque (N·m) 37  
Speed (rpm) 607



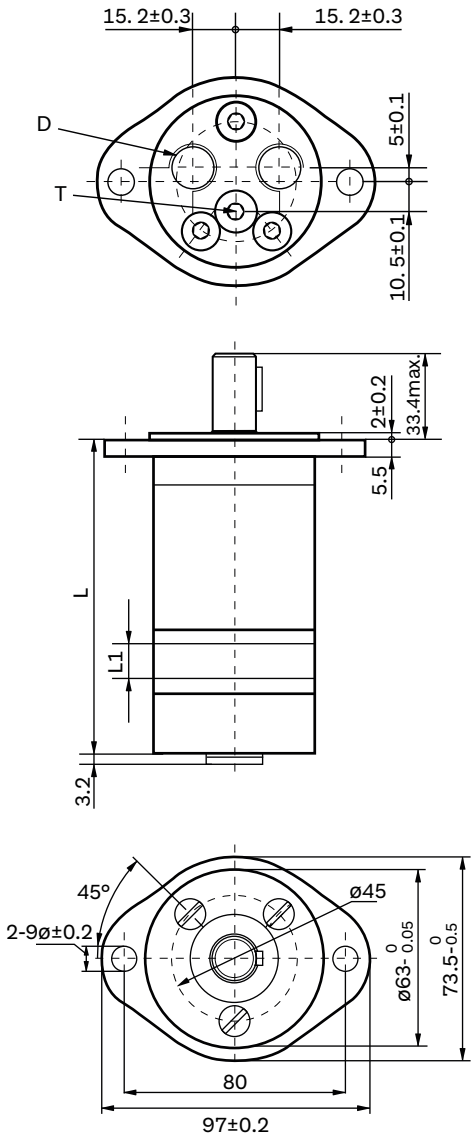
# VNKM End Port Dimensions and Mounting Data

## MOUNTING

Flange M, U



Flange F



| Model    | M, U Flange |      | F Flange |      |
|----------|-------------|------|----------|------|
|          | L           | L1   | L        | L1   |
| VNKM8    | 104         | 3.5  | 107.5    | 3.5  |
| VNKM12.5 | 106         | 5.5  | 109.5    | 5.5  |
| VNKM20   | 109         | 8.5  | 112.5    | 8.5  |
| VNKM32   | 114         | 13.5 | 117.5    | 13.5 |
| VNKM40   | 117.5       | 17   | 121      | 17   |
| VNKM50   | 122         | 21.5 | 125.5    | 21.5 |

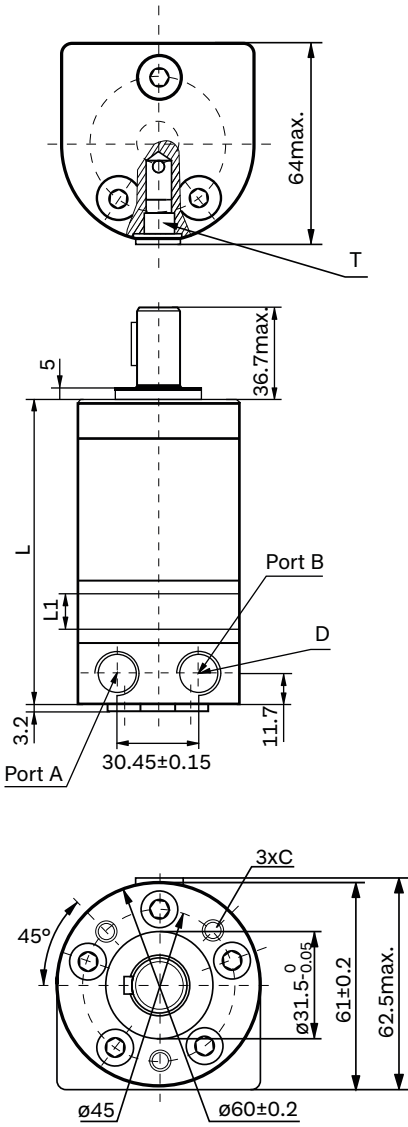
| Code Mounting | M, U Flange  |                       | F Flange   |                |
|---------------|--------------|-----------------------|------------|----------------|
|               | 1E (depth)   | 1U (depth)            | 1E (depth) | 1U (depth)     |
| C             | [M]3-M6 (10) | [U]3-1/4-28UNF-2B(10) | [M]--      | [U]--          |
| D             | G3/8 (12)    | 9/16-18UNF(12)        | G3/8 (12)  | 9/16-18UNF(12) |
| T             | G1/8 (8)     | 3/8-24UNF(8)          | G1/8 (8)   | 3/8-24UNF(8)   |



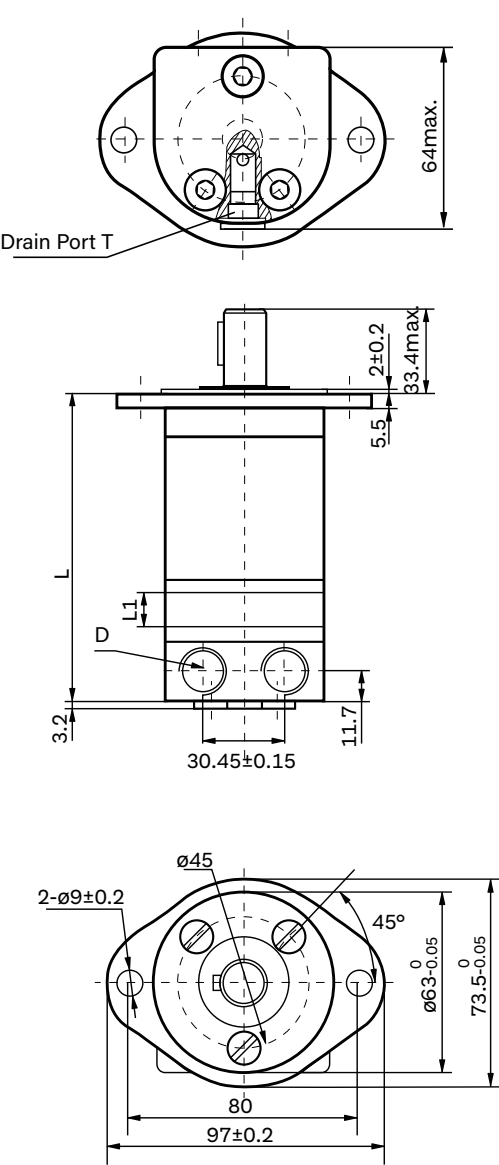
# VNKM Side Port Dimensions and Mounting Data

## MOUNTING

Flange M, U



Flange F

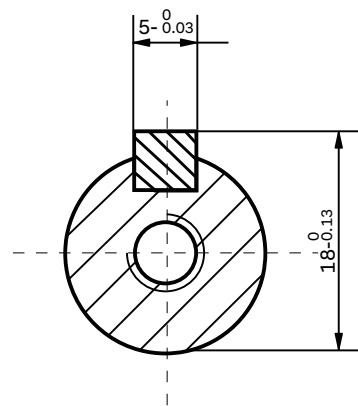
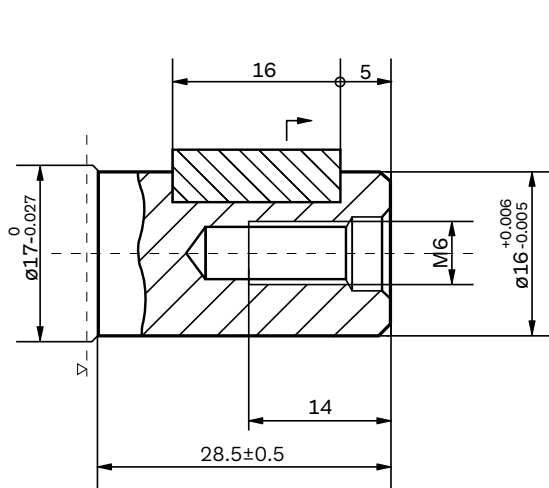


| Model    | M, U Flange |      | F Flange |      |
|----------|-------------|------|----------|------|
|          | L           | L1   | L        | L1   |
| VNKM8    | 105         | 3.5  | 108.5    | 3.5  |
| VNKM12.5 | 107         | 5.5  | 110.5    | 5.5  |
| VNKM20   | 110         | 8.5  | 113.5    | 8.5  |
| VNKM32   | 115         | 13.5 | 118.5    | 13.5 |
| VNKM40   | 118.5       | 17   | 122      | 17   |
| VNKM50   | 123         | 21.5 | 126.5    | 21.5 |

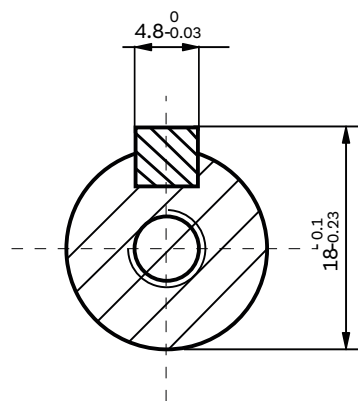
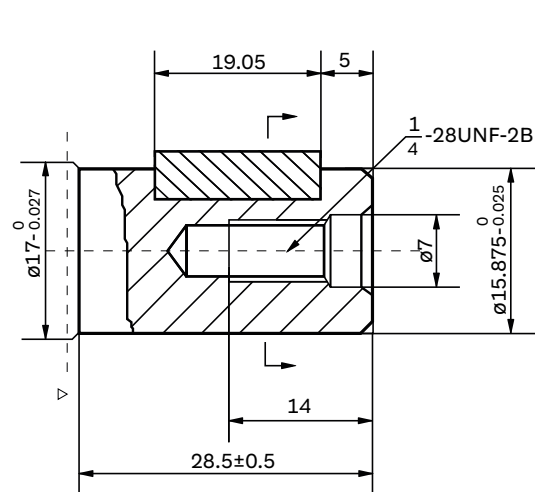
| Code Mounting | M, U Flange  |                       | F Flange  |                |
|---------------|--------------|-----------------------|-----------|----------------|
|               | E (depth)    | U (depth)             | E (depth) | U (depth)      |
| C             | [M]3-M6 (10) | [U]3-1/4-28UNF-2B(10) | [M]--     | [U]--          |
| D             | G3/8 (12)    | 9/16-18UNF(12)        | G3/8 (12) | 9/16-18UNF(12) |
| T             | G1/8 (8)     | 3/8-24UNF(8)          | G1/8 (8)  | 3/8-24UNF(8)   |



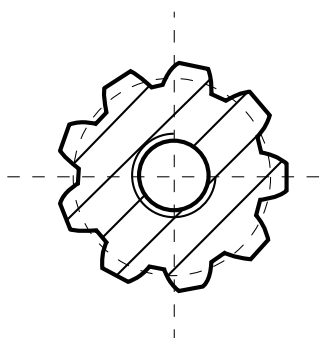
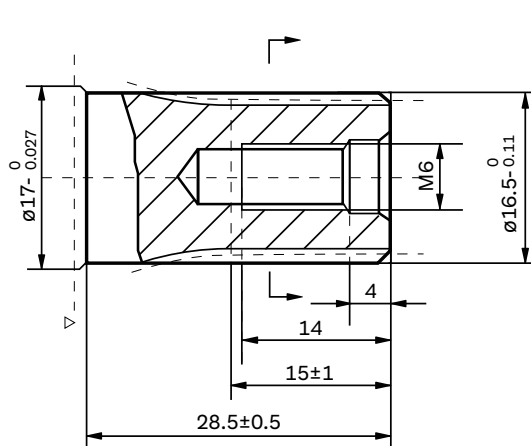
# VNKM Shaft Extensions for BMM Motors



**Shaft A:**  
Cylindrical shaft  $\varnothing 16$   
Parallel key 5x5x16



**Shaft B:**  
Cylindrical shaft  $\varnothing 15.875$   
Parallel key 4.8x4.8x19.05



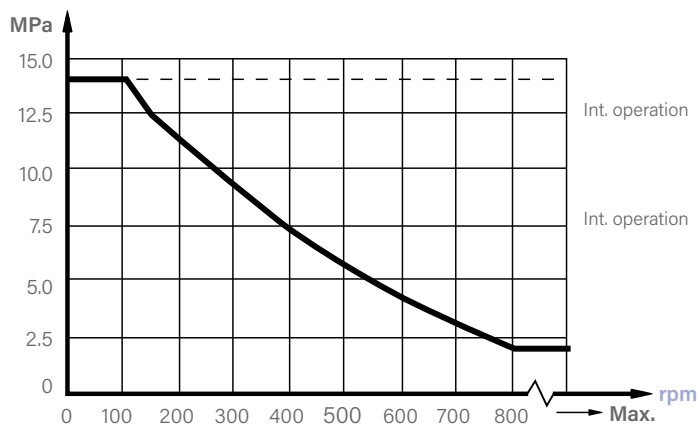
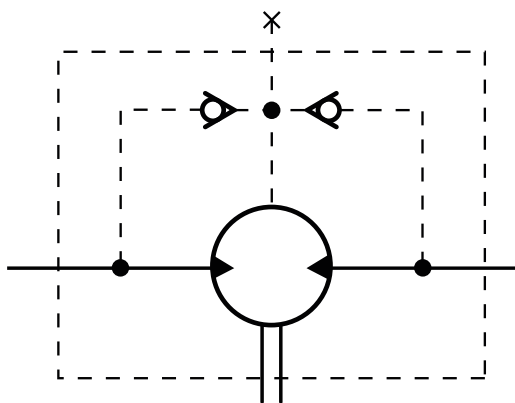
**Shaft C:**  
Involute splind shaft B17x14  
DIN5482

▷ Motor Mounting  
Surface

# VNKM Series Hydraulic Motor



## PERMISSIBLE SHAFT SEAL PRESSURE



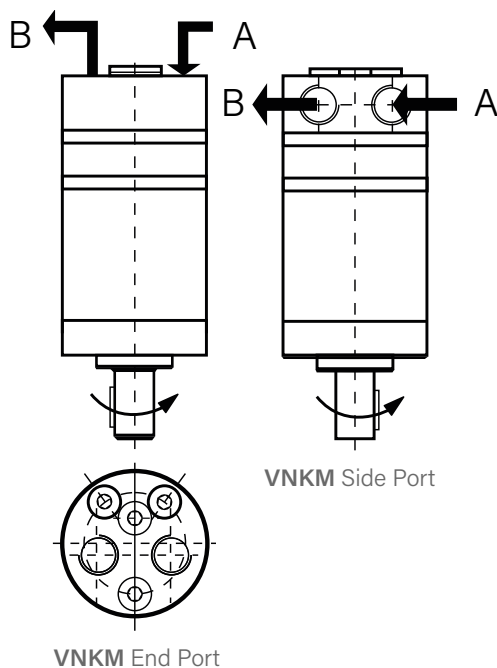
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

## DIRECTION OF SHAFT ROTATION: Standard

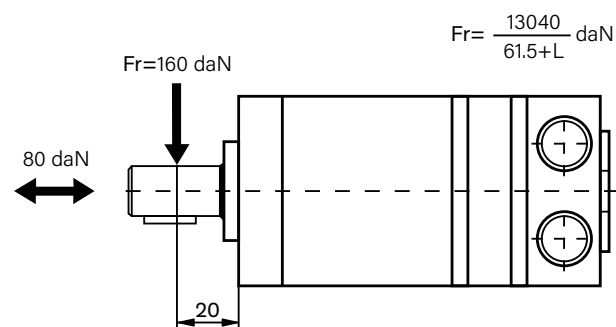
When facing shaft end of motor, shaft to rotate:

Clockwise when port "A" is pressurized.

Counter-clockwise port "B" is pressurized.



## STATUS OF THE SHAFT'S RADIAL FORCE



Fr= Radial Force (daN)  
 L= Distance (mm)  
 n= Speed (rpm)  
 Max. force load  
 Rhomb-flange L= 15 mm  
 Square-flange L= 20mm



# Order Information

|       |              |        |                                   |              |                                |                      |            |                    |       |                    |      |          |   |                                          |                       |          |      |   |               |   |                     |          |       |    |
|-------|--------------|--------|-----------------------------------|--------------|--------------------------------|----------------------|------------|--------------------|-------|--------------------|------|----------|---|------------------------------------------|-----------------------|----------|------|---|---------------|---|---------------------|----------|-------|----|
| VNKM  |              | 1      | 2                                 | 3            | 4                              | 5                    | 6          | 7                  | 8     |                    |      |          |   |                                          |                       |          |      |   |               |   |                     |          |       |    |
|       |              |        |                                   |              |                                |                      |            |                    |       |                    |      |          |   |                                          |                       |          |      |   |               |   |                     |          |       |    |
| Pos.1 | 2            | 3      | 4                                 | 5            | 6                              | 7                    | 8          |                    |       |                    |      |          |   |                                          |                       |          |      |   |               |   |                     |          |       |    |
| Code  | Displacement | Flange |                                   | Output shaft |                                | Ports and drain port |            | Rotation direction | Paint | Unusually function |      |          |   |                                          |                       |          |      |   |               |   |                     |          |       |    |
| Omit  | 8            | M      | 3-M6 Circle-flange, pilot Ø31.5x5 | A            | Shaft Ø16, parallel key 5x5x16 | E                    | G3/8, G1/8 | Omit               | 00    | No paint           | Omit | Standard |   |                                          |                       |          |      |   |               |   |                     |          |       |    |
|       | 12.5         |        |                                   |              |                                |                      |            |                    |       |                    |      |          |   |                                          |                       |          |      |   |               |   |                     |          |       |    |
|       | 20           |        |                                   |              |                                |                      |            |                    |       |                    |      |          | U | 3-1/4-28UNF Circle flange, pilot Ø31.5x5 | 9/16-18UNF, 3/8-24UNF | Standard | Blue | 0 | No case drain |   |                     |          |       |    |
|       | 32           |        |                                   |              |                                |                      |            |                    |       |                    |      |          |   |                                          |                       |          |      |   |               | B | End port G3/8, G1/8 | Opposite | Black | SD |
|       | 40           |        |                                   |              |                                |                      |            |                    |       |                    |      |          |   |                                          |                       |          |      |   |               |   |                     |          |       |    |
| 50    |              |        |                                   |              |                                |                      |            |                    |       |                    |      |          |   |                                          |                       |          |      |   |               |   |                     |          |       |    |

**Note:** When the table is used, please fill the code of left rows in the table and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports. If the specification is not in the table or you have specific requirements, please contact us.

# VNKP Series Hydraulic Motor

## INTRODUCTION

VNKP series motor are small volume, economical type, which is designed with shaft distribution flow, which adapt the Gerotor gear set design and provide compact volume, high power and low weight.

## CHARACTERISTIC FEATURES

- \* **Advanced manufacturing devices** for the Gerotor gear set, which provide small volume, high efficiency and long life.
- \* **Shaft seal** can bear high pressure of motor of which can be used in parallel or in series.
- \* **Advanced construction design**, high power and low weight.
- \* **HPS Shaft seal** can bear high pressure ( 150bar ) of motor of which can be used in parallel or in series.
- \* **The output shaft** runs in needle bearing capable of absorbing static and dynamic axial and radial loads.



## SPECIFICATION Main Specification

Technical data for VNKP with 25 and 1 in and 1 in splined and 28.56 tapered shaft

| Type                                           |       | VNKP<br>VNKPH<br>VNKPW<br>27 | VNKP<br>VNKPH<br>VNKPW<br>36 | VNKP<br>VNKPH<br>VNKPW<br>50 | VNKP<br>VNKPH<br>VNKPW<br>80 | VNKP<br>VNKPH<br>VNKPW<br>100 | VNKP<br>VNKPH<br>VNKPW<br>125 | VNKP<br>VNKPH<br>VNKPW<br>160 | VNKP<br>VNKPH<br>VNKPW<br>200 | VNKP<br>VNKPH<br>VNKPW<br>250 | VNKP<br>VNKPH<br>VNKPW<br>315 | VNKP<br>VNKPH<br>VNKPW<br>400 | VNKP<br>VNKPH<br>VNKPW<br>500 |
|------------------------------------------------|-------|------------------------------|------------------------------|------------------------------|------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Geometric displacement (cm <sup>3</sup> /rev.) |       | 26.6                         | 36                           | 51.7                         | 77.7                         | 96.2                          | 120.2                         | 157.2                         | 194.5                         | 240.3                         | 314.5                         | 389.5                         | 486.5                         |
| Max. speed (rpm)                               | cont. | 1465                         | 1500                         | 1150                         | 770                          | 615                           | 490                           | 383                           | 310                           | 250                           | 192                           | 155                           | 120                           |
|                                                | int.  | 1655                         | 1650                         | 1450                         | 960                          | 770                           | 615                           | 475                           | 385                           | 310                           | 240                           | 190                           | 150                           |
| Max. torque (N·m)                              | cont. | 35                           | 55                           | 100                          | 146                          | 182                           | 236                           | 302                           | 360                           | 380                           | 375                           | 360                           | 385                           |
|                                                | int.  | 50                           | 76                           | 128                          | 186                          | 227                           | 290                           | 370                           | 440                           | 460                           | 555                           | 525                           | 560                           |
|                                                | peak  | 70                           | 96                           | 148                          | 218                          | 264                           | 360                           | 434                           | 540                           | 550                           | 650                           | 680                           | 680                           |
| Max. output (kW)                               | cont. | 6                            | 8.0                          | 10.0                         | 10.0                         | 11.0                          | 10.0                          | 10.0                          | 10.0                          | 8.5                           | 7.0                           | 6.0                           | 5.0                           |
|                                                | int.  | 8                            | 11.5                         | 12.0                         | 12.0                         | 13.0                          | 12.0                          | 12.0                          | 12.0                          | 10.5                          | 8.5                           | 7.0                           | 6.0                           |
| Max. pressure drop (MPa)                       | cont. | 10                           | 12.5                         | 14                           | 14                           | 14                            | 14                            | 14                            | 14                            | 11                            | 9                             | 7                             | 6                             |
|                                                | int.  | 14                           | 16.5                         | 17.5                         | 17.5                         | 17.5                          | 17.5                          | 17.5                          | 17.5                          | 14                            | 14                            | 10.5                          | 9                             |
|                                                | peak  | 22.5                         | 22.5                         | 22.5                         | 22.5                         | 22.5                          | 22.5                          | 22.5                          | 22.5                          | 18                            | 16                            | 14                            | 12                            |
| Max. flow (L/min)                              | cont. | 40                           | 55                           | 60                           | 60                           | 60                            | 60                            | 60                            | 60                            | 60                            | 60                            | 60                            | 60                            |
|                                                | int.  | 45                           | 60                           | 75                           | 75                           | 75                            | 75                            | 75                            | 75                            | 75                            | 75                            | 75                            | 75                            |
| Weight (kg)                                    |       | 5.1                          | 5.6                          | 5.6                          | 5.7                          | 5.9                           | 6.0                           | 6.2                           | 6.4                           | 6.7                           | 6.9                           | 7.4                           | 8                             |

\*Continuous pressure: Max. value of operating motor continuously.

\*Intermittent pressure: Max. value of operating motor in 6 seconds per minute.

\*Peak pressure: Max. value of operating motor in 0.6 second per minute.





# Main Specification

## SPECIFICATION Main Specification

Technical data for VNKP with 31.75 and 32 shaft

| Type                                           |       | VNKP<br>36 | VNKP<br>50 | VNKP<br>80 | VNKP<br>100 | VNKP<br>125 | VNKP<br>160 | VNKP<br>200 | VNKP<br>250 | VNKP<br>315 | VNKP<br>400 | VNKP<br>500 |
|------------------------------------------------|-------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Geometric displacement (cm <sup>3</sup> /rev.) |       | 36         | 51.7       | 77.7       | 96.2        | 120.2       | 157.2       | 194.5       | 240.3       | 314.5       | 389.5       | 486.5       |
| Max. speed (rpm)                               | cont. | 1500       | 1150       | 770        | 615         | 490         | 383         | 310         | 250         | 192         | 155         | 120         |
|                                                | int.  | 1650       | 1450       | 960        | 770         | 615         | 475         | 385         | 310         | 240         | 190         | 150         |
| Max. torque (N·m)                              | cont. | 55         | 100        | 146        | 182         | 236         | 302         | 360         | 460         | 475         | 490         | 430         |
|                                                | int.  | 76         | 128        | 186        | 227         | 290         | 370         | 440         | 570         | 555         | 580         | 560         |
|                                                | peak  | 96         | 148        | 218        | 264         | 360         | 434         | 540         | 670         | 840         | 840         | 780         |
| Max. output (kW)                               | cont. | 8.0        | 10.0       | 10.0       | 11.0        | 10.0        | 10.0        | 10.0        | 8.5         | 7.0         | 6.0         | 6.0         |
|                                                | int.  | 11.5       | 12.0       | 12.0       | 13.0        | 12.0        | 12.0        | 12.0        | 10.5        | 8.5         | 7.0         | 7.0         |
| Max. pressure drop (MPa)                       | cont. | 12.5       | 14         | 14         | 14          | 14          | 14          | 14          | 14          | 12          | 9.5         | 7           |
|                                                | int.  | 16.5       | 17.5       | 17.5       | 17.5        | 17.5        | 17.5        | 17.5        | 17.5        | 14          | 11.5        | 9           |
|                                                | peak  | 22.5       | 22.5       | 22.5       | 22.5        | 22.5        | 22.5        | 22.5        | 22.5        | 22.5        | 18          | 13          |
| Max. flow (L/min)                              | cont. | 55         | 60         | 60         | 60          | 60          | 60          | 60          | 60          | 60          | 60          | 60          |
|                                                | int.  | 60         | 75         | 75         | 75          | 75          | 75          | 75          | 75          | 75          | 75          | 75          |
| Weight (kg)                                    |       | 5.6        | 5.6        | 5.7        | 5.9         | 6.0         | 6.2         | 6.4         | 6.7         | 6.9         | 7.4         | 8.0         |

\*Continuous pressure: Max.value of operating motor continuously.

\*Intermittent pressure: Max.value of operating motor in 6 seconds per minute .

\*vPeak pressure: Max.value of operating motor in 0.6 second per minute.



# Performance Data

VNKP 27 [26,6 cm3/rev.]

Pressure (MPa)

Max. cont

Max. int

|              |    | 3          | 6          | 8          | 10         | 12         | 14         |
|--------------|----|------------|------------|------------|------------|------------|------------|
| Flow (L/min) | 5  | 11<br>155  | 20<br>122  | 26<br>90   |            |            |            |
|              | 10 | 12<br>340  | 22<br>315  | 29<br>285  | 35<br>240  | 42<br>180  | 48<br>140  |
|              | 15 | 12<br>530  | 23<br>500  | 30<br>465  | 35<br>420  | 43<br>375  | 50<br>320  |
|              | 20 | 11<br>720  | 22<br>670  | 30<br>640  | 35<br>595  | 44<br>545  | 51<br>490  |
|              | 25 | 11<br>900  | 21<br>875  | 29<br>840  | 35<br>800  | 43<br>755  | 51<br>700  |
|              | 35 | 10<br>1265 | 20<br>1235 | 27<br>1200 | 34<br>1170 | 42<br>1140 | 50<br>1100 |
|              | 40 | 8<br>1465  | 19<br>1430 | 26<br>1400 | 33<br>1370 | 41<br>1335 | 49<br>1280 |
|              | 45 | 8<br>1655  | 19<br>1610 | 26<br>1565 | 33<br>1510 | 41<br>1460 | 49<br>1405 |

Torque (N·m) 19  
Speed (rpm) 1610

VNKP 36 [36 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|                    |    | 3          | 6          | 7          | 8          | 10         | 11         | 12,5       | 16,5       |
|--------------------|----|------------|------------|------------|------------|------------|------------|------------|------------|
| Flow (L/min)       | 8  | 13<br>214  | 25<br>205  | 29<br>200  | 34<br>194  | 43<br>187  | 48<br>179  |            |            |
|                    | 15 | 13<br>406  | 25<br>398  | 29<br>391  | 34<br>383  | 43<br>374  | 48<br>366  | 56<br>353  | 75<br>324  |
|                    | 20 | 13<br>541  | 24<br>534  | 29<br>528  | 34<br>521  | 43<br>513  | 48<br>500  | 56<br>486  | 76<br>458  |
|                    | 30 | 12<br>814  | 24<br>804  | 29<br>792  | 34<br>778  | 43<br>763  | 48<br>749  | 56<br>726  | 76<br>701  |
|                    | 35 | 12<br>952  | 23<br>944  | 28<br>930  | 34<br>913  | 43<br>897  | 48<br>879  | 56<br>858  | 76<br>833  |
|                    | 40 | 12<br>1090 | 23<br>1078 | 28<br>1064 | 32<br>1048 | 41<br>1024 | 47<br>998  | 55<br>977  | 75<br>943  |
|                    | 45 | 11<br>1232 | 22<br>1218 | 26<br>1196 | 32<br>1175 | 41<br>1149 | 46<br>1118 | 54<br>1080 | 74<br>1044 |
|                    | 55 | 6<br>1505  | 15<br>1494 | 22<br>1480 | 28<br>1466 | 37<br>1438 | 44<br>1406 | 52<br>1367 | 71<br>1309 |
| Max. int Max. cont | 60 | 3<br>1650  | 11<br>1640 | 18<br>1626 | 20<br>1603 | 30<br>1571 | 38<br>1536 | 49<br>1502 | 67<br>1446 |

VNKP 50 [51.7 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|                    |    | 3          | 6          | 8          | 10         | 12,5       | 14         | 16          | 17,5        |
|--------------------|----|------------|------------|------------|------------|------------|------------|-------------|-------------|
| Flow (L/min)       | 8  | 20<br>151  | 41<br>134  | 56<br>115  | 69<br>90   | 89<br>56   | 95<br>42   |             |             |
|                    | 15 | 19<br>286  | 40<br>274  | 56<br>261  | 71<br>243  | 91<br>204  | 100<br>182 | 112<br>139  | 120<br>102  |
|                    | 20 | 18<br>382  | 39<br>373  | 55<br>361  | 71<br>348  | 92<br>318  | 101<br>309 | 117<br>287  | 128<br>251  |
|                    | 30 | 17<br>573  | 38<br>568  | 55<br>558  | 71<br>535  | 91<br>503  | 98<br>488  | 116<br>462  | 124<br>440  |
|                    | 35 | 17<br>670  | 38<br>661  | 54<br>652  | 69<br>640  | 89<br>606  | 98<br>589  | 117<br>562  | 124<br>548  |
|                    | 45 | 14<br>863  | 36<br>858  | 53<br>849  | 67<br>837  | 88<br>807  | 98<br>788  | 114<br>764  | 123<br>746  |
|                    | 55 | 12<br>1055 | 33<br>1042 | 50<br>1028 | 65<br>1010 | 85<br>979  | 96<br>963  | 111<br>947  | 121<br>920  |
|                    | 60 | 10<br>1150 | 32<br>1143 | 47<br>1126 | 64<br>1111 | 83<br>1079 | 94<br>1065 | 108<br>1043 | 119<br>1015 |
| Max. int Max. cont | 75 | 6<br>1440  | 25<br>1430 | 42<br>1416 | 56<br>1395 | 76<br>1367 | 87<br>1351 | 101<br>1335 | 112<br>1312 |

VNKP 80 [77.7 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|                    |    | 3         | 6         | 8         | 10         | 12,5       | 14         | 16         | 17,5       |
|--------------------|----|-----------|-----------|-----------|------------|------------|------------|------------|------------|
| Flow (L/min)       | 8  | 32<br>97  | 62<br>87  | 85<br>74  | 104<br>55  | 129<br>33  | 144<br>22  |            |            |
|                    | 15 | 32<br>186 | 63<br>181 | 84<br>170 | 107<br>154 | 126<br>132 | 144<br>118 | 165<br>86  |            |
|                    | 20 | 31<br>251 | 63<br>243 | 84<br>236 | 107<br>225 | 132<br>207 | 146<br>196 | 168<br>178 | 185<br>155 |
|                    | 30 | 31<br>381 | 62<br>379 | 83<br>368 | 106<br>355 | 131<br>332 | 146<br>316 | 168<br>285 | 186<br>263 |
|                    | 35 | 30<br>443 | 59<br>435 | 81<br>426 | 102<br>415 | 130<br>397 | 144<br>383 | 167<br>361 | 185<br>342 |
|                    | 45 | 25<br>570 | 58<br>564 | 79<br>554 | 100<br>543 | 126<br>526 | 142<br>509 | 165<br>483 | 182<br>458 |
|                    | 55 | 23<br>696 | 57<br>685 | 78<br>672 | 97<br>656  | 124<br>643 | 140<br>630 | 161<br>602 | 179<br>579 |
|                    | 60 | 20<br>761 | 53<br>753 | 75<br>744 | 94<br>736  | 120<br>720 | 137<br>706 | 160<br>681 | 177<br>660 |
| Max. int Max. cont | 75 | 14<br>948 | 44<br>940 | 67<br>931 | 87<br>920  | 112<br>906 | 151<br>890 | 169<br>871 | 169<br>854 |

Torque (N·m) 87  
Speed (rpm) 920

Cont. Int.



# Performance Data

VNKP 100 [96.2 cm3/rev.]

|                    |    | Pressure (MPa) |           |            |            |            |            |            |            |           |          |
|--------------------|----|----------------|-----------|------------|------------|------------|------------|------------|------------|-----------|----------|
|                    |    | 3              | 6         | 8          | 10         | 12.5       | 14         | 16         | 17,5       | Max. cont | Max. int |
| Flow (L/min)       | 8  | 40<br>81       | 77<br>75  | 105<br>69  | 130<br>57  | 161<br>36  | 180<br>24  |            |            |           |          |
|                    | 15 | 39<br>152      | 77<br>149 | 106<br>145 | 130<br>140 | 160<br>122 | 180<br>103 | 208<br>81  |            |           |          |
|                    | 20 | 36<br>204      | 74<br>200 | 104<br>195 | 128<br>190 | 161<br>177 | 179<br>166 | 205<br>148 | 227<br>133 |           |          |
|                    | 30 | 33<br>308      | 72<br>304 | 103<br>298 | 125<br>290 | 160<br>280 | 177<br>268 | 203<br>255 | 225<br>231 |           |          |
|                    | 35 | 30<br>360      | 70<br>352 | 98<br>343  | 122<br>331 | 159<br>320 | 176<br>306 | 202<br>294 | 224<br>275 |           |          |
| Max. int Max. cont | 45 | 29<br>462      | 67<br>458 | 95<br>451  | 118<br>443 | 155<br>433 | 174<br>419 | 200<br>402 | 220<br>383 |           |          |
|                    | 55 | 25<br>566      | 64<br>558 | 93<br>549  | 116<br>540 | 152<br>529 | 170<br>515 | 198<br>498 | 217<br>478 |           |          |
|                    | 60 | 22<br>618      | 60<br>611 | 91<br>601  | 114<br>589 | 149<br>580 | 167<br>570 | 194<br>558 | 213<br>540 |           |          |
|                    | 75 | 15<br>771      | 54<br>763 | 83<br>755  | 106<br>744 | 141<br>735 | 160<br>724 | 186<br>708 | 205<br>693 |           |          |

VNKP 125 [120.2 cm3/rev.]

|                    |    | Pressure (MPa) |            |            |            |            |            |            |            |           |          |
|--------------------|----|----------------|------------|------------|------------|------------|------------|------------|------------|-----------|----------|
|                    |    | 3              | 6          | 8          | 10         | 12.5       | 14         | 16         | 17,5       | Max. cont | Max. int |
| Flow (L/min)       | 8  | 51<br>63       | 98<br>60   | 137<br>55  | 168<br>47  | 208<br>28  | 236<br>15  |            |            |           |          |
|                    | 15 | 51<br>121      | 101<br>116 | 138<br>110 | 168<br>102 | 209<br>89  | 236<br>73  | 267<br>48  |            |           |          |
|                    | 20 | 48<br>162      | 98<br>158  | 135<br>153 | 167<br>148 | 211<br>137 | 237<br>128 | 269<br>109 | 290<br>94  |           |          |
|                    | 30 | 46<br>243      | 96<br>239  | 132<br>234 | 164<br>227 | 209<br>216 | 232<br>202 | 264<br>189 | 287<br>176 |           |          |
|                    | 35 | 42<br>284      | 92<br>279  | 130<br>274 | 160<br>269 | 206<br>259 | 229<br>247 | 260<br>231 | 284<br>222 |           |          |
| Max. int Max. cont | 45 | 37<br>370      | 89<br>362  | 125<br>355 | 157<br>348 | 201<br>340 | 224<br>327 | 261<br>310 | 281<br>296 |           |          |
|                    | 55 | 33<br>452      | 84<br>446  | 122<br>438 | 152<br>431 | 196<br>420 | 218<br>412 | 252<br>402 | 275<br>384 |           |          |
|                    | 60 | 29<br>490      | 78<br>482  | 117<br>475 | 146<br>468 | 191<br>459 | 215<br>448 | 248<br>439 | 272<br>427 |           |          |
|                    | 75 | 18<br>615      | 66<br>606  | 107<br>598 | 133<br>586 | 179<br>575 | 202<br>563 | 236<br>549 | 260<br>528 |           |          |

VNKP 160 [157.2 cm3/rev.]

|                    |    | Pressure (MPa) |            |            |            |            |            |            |            |           |          |
|--------------------|----|----------------|------------|------------|------------|------------|------------|------------|------------|-----------|----------|
|                    |    | 3              | 6          | 8          | 10         | 12.5       | 14         | 16         | 17,5       | Max. cont | Max. int |
| Flow (L/min)       | 8  | 62<br>49       | 120<br>48  | 170<br>46  | 212<br>42  | 263<br>26  | 290<br>14  |            |            |           |          |
|                    | 15 | 60<br>93       | 122<br>91  | 172<br>88  | 215<br>85  | 264<br>76  | 294<br>68  | 340<br>48  |            |           |          |
|                    | 20 | 57<br>125      | 120<br>123 | 170<br>120 | 214<br>117 | 262<br>110 | 290<br>106 | 340<br>92  | 371<br>81  |           |          |
|                    | 30 | 53<br>187      | 115<br>184 | 164<br>181 | 206<br>178 | 259<br>175 | 288<br>168 | 335<br>155 | 368<br>139 |           |          |
|                    | 35 | 49<br>220      | 110<br>216 | 160<br>213 | 202<br>209 | 255<br>205 | 284<br>202 | 328<br>192 | 362<br>176 |           |          |
| Max. int Max. cont | 45 | 44<br>283      | 102<br>280 | 154<br>276 | 196<br>272 | 248<br>267 | 278<br>260 | 321<br>250 | 358<br>238 |           |          |
|                    | 55 | 40<br>345      | 99<br>342  | 148<br>340 | 191<br>336 | 243<br>331 | 272<br>328 | 316<br>320 | 351<br>303 |           |          |
|                    | 60 | 33<br>377      | 94<br>374  | 144<br>371 | 188<br>367 | 236<br>363 | 267<br>359 | 308<br>353 | 345<br>342 |           |          |
|                    | 75 | 19<br>473      | 80<br>469  | 124<br>465 | 170<br>459 | 216<br>453 | 252<br>447 | 296<br>440 | 325<br>424 |           |          |

VNKP 200 [194.5 cm3/rev.]

|                    |    | Pressure (MPa) |            |            |            |            |            |            |            |           |          |
|--------------------|----|----------------|------------|------------|------------|------------|------------|------------|------------|-----------|----------|
|                    |    | 3              | 6          | 8          | 10         | 12.5       | 14         | 16         | 17,5       | Max. cont | Max. int |
| Flow (L/min)       | 8  | 79<br>40       | 164<br>39  | 207<br>38  | 250<br>35  | 320<br>28  | 360<br>22  |            |            |           |          |
|                    | 15 | 78<br>76       | 162<br>75  | 205<br>74  | 250<br>71  | 322<br>66  | 361<br>61  | 410<br>51  |            |           |          |
|                    | 20 | 76<br>100      | 158<br>98  | 203<br>97  | 247<br>95  | 320<br>92  | 358<br>89  | 403<br>73  | 422<br>57  |           |          |
|                    | 30 | 70<br>151      | 153<br>149 | 200<br>147 | 245<br>145 | 315<br>142 | 350<br>139 | 398<br>131 | 417<br>120 |           |          |
|                    | 35 | 66<br>177      | 149<br>175 | 194<br>173 | 232<br>171 | 297<br>168 | 343<br>166 | 386<br>160 | 415<br>149 |           |          |
| Max. int Max. cont | 45 | 63<br>228      | 146<br>226 | 190<br>224 | 230<br>221 | 294<br>218 | 340<br>215 | 383<br>210 | 410<br>198 |           |          |
|                    | 55 | 54<br>280      | 140<br>278 | 181<br>276 | 224<br>274 | 286<br>271 | 334<br>269 | 371<br>263 | 400<br>250 |           |          |
|                    | 60 | 38<br>304      | 127<br>302 | 164<br>300 | 212<br>297 | 270<br>294 | 325<br>291 | 356<br>286 | 395<br>272 |           |          |
|                    | 75 | 22<br>382      | 96<br>378  | 145<br>374 | 192<br>371 | 235<br>368 | 293<br>364 | 321<br>360 | 367<br>350 |           |          |



# Performance Data

VNKP 250 [240.3 cm3/rev.]

|                    |    | Pressure (MPa) |            |            |            |            |            |            |            |  |
|--------------------|----|----------------|------------|------------|------------|------------|------------|------------|------------|--|
|                    |    | Max. cont      |            |            |            |            | Max. int   |            |            |  |
|                    |    | 3              | 6          | 8          | 10         | 12.5       | 14         | 16         | 17,5       |  |
| Flow (L/min)       | 8  | 96<br>30       | 190<br>28  | 268<br>24  | 326<br>21  | 403<br>11  |            |            |            |  |
|                    | 15 | 98<br>60       | 194<br>58  | 270<br>54  | 327<br>50  | 405<br>40  | 450<br>30  | 510<br>12  |            |  |
|                    | 20 | 92<br>82       | 188<br>80  | 267<br>77  | 325<br>76  | 405<br>69  | 456<br>64  | 514<br>52  | 565<br>38  |  |
|                    | 30 | 85<br>123      | 180<br>120 | 259<br>118 | 320<br>114 | 400<br>106 | 448<br>98  | 513<br>87  | 561<br>76  |  |
|                    | 35 | 77<br>143      | 176<br>141 | 252<br>139 | 311<br>135 | 389<br>128 | 436<br>122 | 504<br>112 | 557<br>101 |  |
|                    | 45 | 70<br>185      | 168<br>182 | 243<br>178 | 300<br>174 | 377<br>168 | 428<br>161 | 495<br>152 | 543<br>139 |  |
|                    | 55 | 63<br>226      | 159<br>223 | 237<br>218 | 290<br>213 | 369<br>209 | 417<br>202 | 483<br>193 | 531<br>185 |  |
| Max. int Max. cont | 60 | 60<br>248      | 150<br>246 | 228<br>243 | 280<br>239 | 358<br>233 | 407<br>226 | 473<br>215 | 520<br>207 |  |
|                    | 75 | 34<br>309      | 128<br>306 | 202<br>302 | 264<br>297 | 342<br>292 | 387<br>286 | 448<br>278 | 488<br>264 |  |

Torque (N·m) 128  
Speed (rpm) 306

VNKP 315 [314.5 cm3/rev.]

|              |    | Pressure (MPa) |            |            |            |            |            |            |
|--------------|----|----------------|------------|------------|------------|------------|------------|------------|
|              |    | Max. cont      |            |            |            | Max. int   |            |            |
|              |    | 3              | 5          | 7          | 9          | 10         | 12.5       | 14         |
| Flow (L/min) | 8  | 123<br>25      | 215<br>23  | 292<br>21  | 368<br>17  | 405<br>11  |            |            |
|              | 15 | 118<br>47      | 211<br>46  | 287<br>44  | 367<br>40  | 404<br>28  | 495<br>21  | 568<br>10  |
|              | 20 | 110<br>62      | 205<br>61  | 278<br>60  | 360<br>57  | 395<br>46  | 494<br>40  | 566<br>36  |
|              | 30 | 101<br>94      | 196<br>93  | 271<br>91  | 349<br>88  | 388<br>76  | 490<br>68  | 565<br>65  |
|              | 35 | 96<br>109      | 188<br>107 | 264<br>106 | 341<br>104 | 382<br>96  | 478<br>89  | 557<br>84  |
| Max. cont    | 45 | 89<br>141      | 180<br>140 | 254<br>138 | 337<br>135 | 372<br>127 | 468<br>120 | 553<br>115 |
|              | 55 | 76<br>173      | 166<br>172 | 239<br>170 | 325<br>167 | 362<br>160 | 457<br>152 | 548<br>143 |
|              | 60 | 65<br>188      | 154<br>186 | 227<br>184 | 308<br>182 | 348<br>178 | 443<br>172 | 529<br>163 |
|              | 75 | 40<br>236      | 120<br>234 | 201<br>232 | 279<br>228 | 323<br>226 | 418<br>223 | 497<br>214 |
|              |    |                |            |            |            |            |            |            |

Max. int

VNKP 400 [389.5 cm3/rev.]

|              |    | Pressure (MPa) |            |            |            |            |            |            |
|--------------|----|----------------|------------|------------|------------|------------|------------|------------|
|              |    | Max. cont      |            |            |            | Max. int   |            |            |
|              |    | 3              | 4.5        | 5.5        | 6.5        | 8          | 10         | 12.5       |
| Flow (L/min) | 8  | 166<br>20      | 232<br>19  | 287<br>18  | 340<br>16  | 418<br>12  |            |            |
|              | 15 | 165<br>38      | 228<br>36  | 277<br>35  | 337<br>33  | 417<br>31  | 496<br>27  | 612<br>21  |
|              | 20 | 162<br>50      | 223<br>49  | 273<br>49  | 331<br>48  | 413<br>45  | 495<br>41  | 608<br>35  |
|              | 30 | 154<br>76      | 216<br>75  | 266<br>74  | 318<br>73  | 405<br>71  | 486<br>67  | 600<br>60  |
|              | 35 | 146<br>88      | 210<br>87  | 256<br>87  | 312<br>86  | 395<br>83  | 480<br>80  | 588<br>75  |
| Max. cont    | 45 | 132<br>114     | 197<br>113 | 243<br>112 | 300<br>110 | 383<br>108 | 464<br>106 | 576<br>99  |
|              | 55 | 117<br>139     | 184<br>137 | 227<br>136 | 283<br>135 | 363<br>135 | 450<br>132 | 552<br>123 |
|              | 60 | 102<br>153     | 163<br>152 | 215<br>150 | 272<br>148 | 347<br>146 | 436<br>143 | 532<br>138 |
|              | 75 | 53<br>191      | 128<br>189 | 182<br>187 | 234<br>185 | 318<br>183 | 391<br>180 | 484<br>176 |
|              |    |                |            |            |            |            |            |            |

Torque (N·m) 234  
Speed (rpm) 185

VNKP 500 [486.5 cm3/rev.]

|              |    | Pressure (MPa) |            |            |            |            |            |            |
|--------------|----|----------------|------------|------------|------------|------------|------------|------------|
|              |    | Max. cont      |            |            |            | Max. int   |            |            |
|              |    | 1.5            | 3          | 4.5        | 6          | 7          | 8          | 9          |
| Flow (L/min) | 4  | 96<br>7        | 194<br>6   | 285<br>4   |            |            |            |            |
|              | 8  | 98<br>15       | 201<br>15  | 304<br>14  | 391<br>14  | 443<br>12  | 512<br>9   | 574<br>7   |
|              | 15 | 96<br>30       | 192<br>30  | 284<br>29  | 380<br>28  | 421<br>26  | 496<br>23  | 550<br>22  |
|              | 20 | 96<br>40       | 191<br>40  | 280<br>40  | 372<br>39  | 418<br>37  | 493<br>33  | 546<br>31  |
|              | 30 | 91<br>61       | 185<br>60  | 272<br>60  | 360<br>58  | 412<br>56  | 486<br>53  | 541<br>50  |
| Max. cont    | 40 | 86<br>81       | 172<br>80  | 261<br>80  | 343<br>79  | 408<br>76  | 480<br>73  | 538<br>70  |
|              | 50 | 78<br>102      | 160<br>101 | 241<br>100 | 332<br>98  | 391<br>96  | 466<br>93  | 528<br>90  |
|              | 60 | 66<br>122      | 134<br>121 | 213<br>120 | 305<br>119 | 371<br>117 | 438<br>114 | 496<br>110 |
|              | 70 | 52<br>143      | 111<br>142 | 189<br>141 | 292<br>139 | 344<br>137 | 418<br>135 | 475<br>131 |
|              | 75 | 35<br>153      | 83<br>152  | 154<br>151 | 241<br>150 | 312<br>149 | 389<br>147 | 448<br>144 |

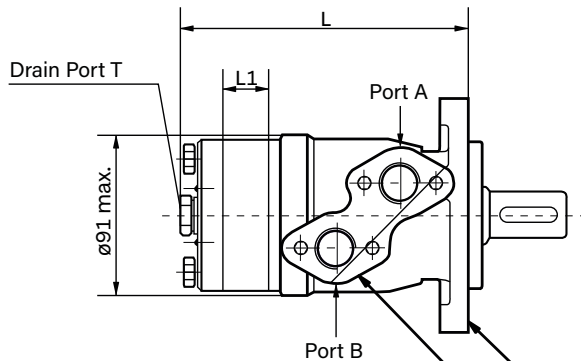
Max. int

Torque (N·m) 389  
Speed (rpm) 147

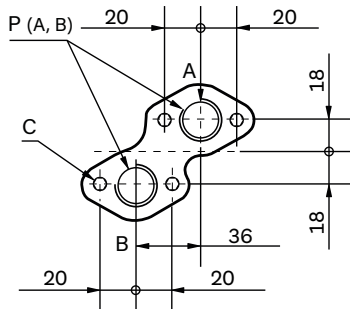
# VNKP Dimensions and Mounting Data



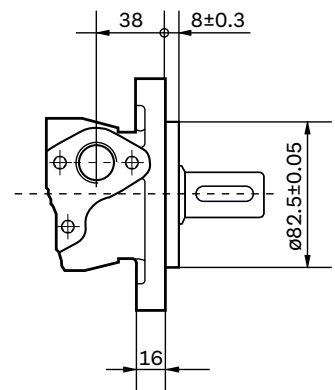
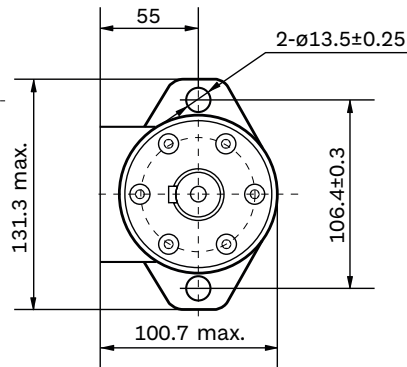
## MOUNTING



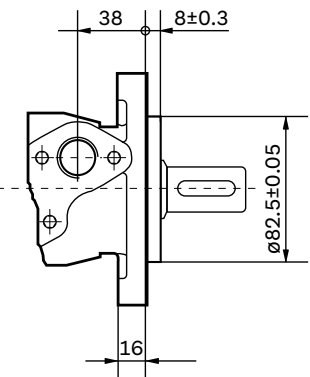
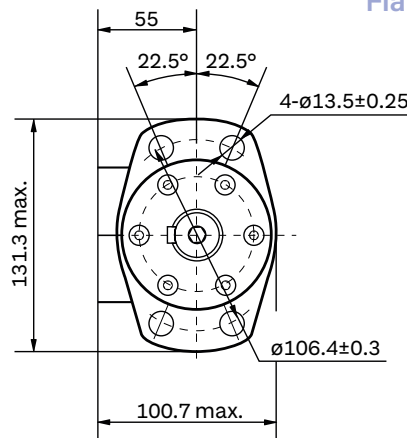
### Port



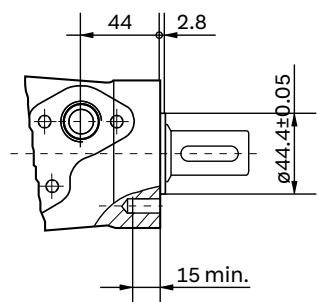
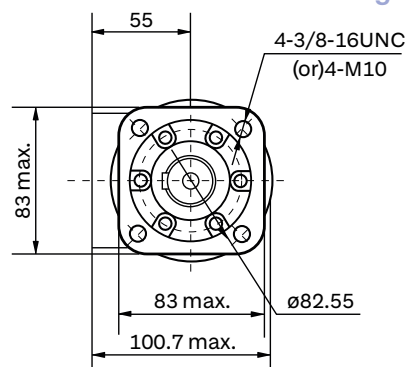
### Flange 2



### Flange 4



### Flange H4/H5

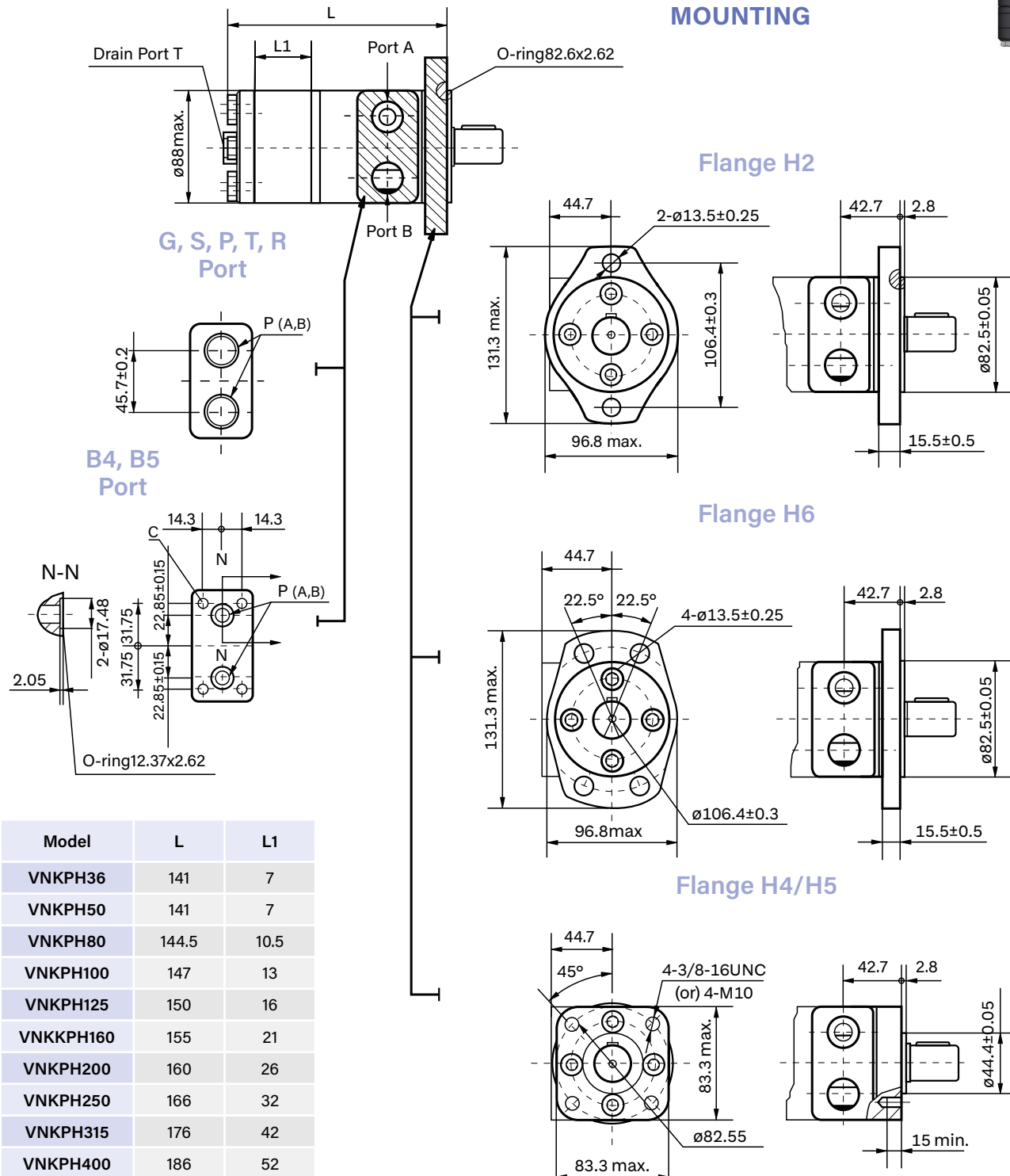


| Model   | L     | L1   |
|---------|-------|------|
| VNKP27  | 137   | 7    |
| VNKP36  | 137   | 7    |
| VNKP50  | 137   | 7    |
| VNKP80  | 140.5 | 10.5 |
| VNKP100 | 143   | 13   |
| VNKP125 | 146   | 16   |
| VNKP160 | 151   | 21   |
| VNKP200 | 157   | 26   |
| VNKP250 | 162   | 32   |
| VNKP315 | 172   | 42   |
| VNKP400 | 182   | 52   |
| VNKP500 | 195   | 65   |

| Mounting Code | D (depth) | M (depth)      | S (depth)          | P (depth)        | R (depth)       |
|---------------|-----------|----------------|--------------------|------------------|-----------------|
| P (A,B)       | G1/2 (15) | M22 x 1.5 (15) | 7/8-14 O-ring (17) | 1/2-14NPTF (15)  | PT(RC)1/2 (15)  |
| C             | 4-M8 (13) | 4-M8 (13)      | 4-5/16-18UNC(13)   | 4-5/16-18UNC(13) | 4-M8 (13)       |
| T             | G1/4 (12) | M14 x 1.5 (12) | 7/16-20UNF (12)    | 7/16-20UNF (12)  | PT(RC)1/4 (9.7) |



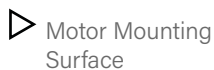
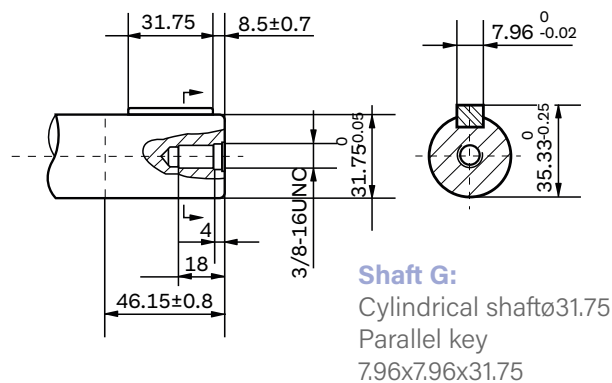
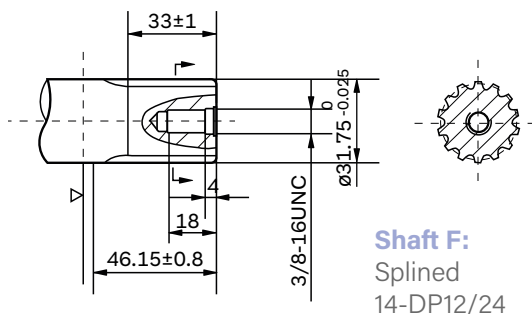
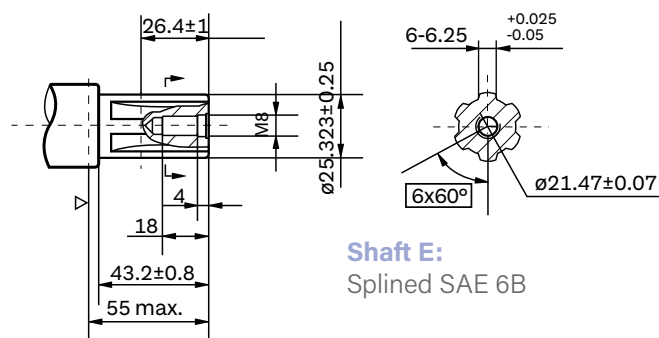
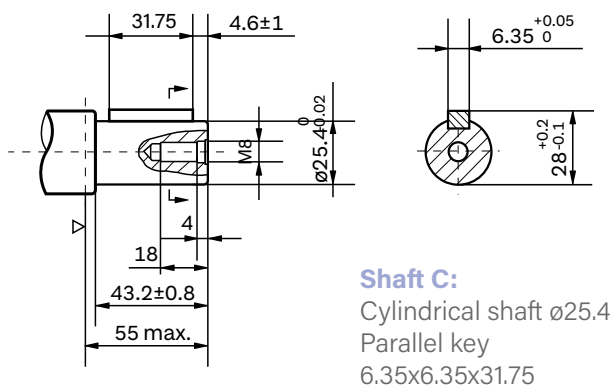
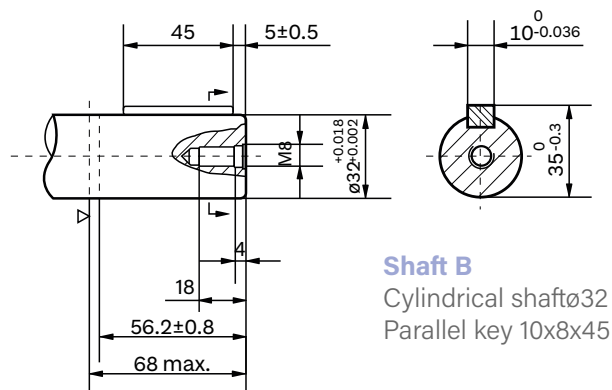
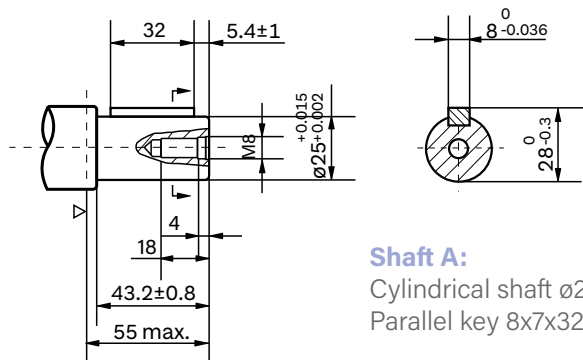
## MOUNTING



| Mounting Code | G (depth) | S (depth)          | P (depth)       | T (depth)          | R (depth)       | B4 (depth)       | B5 (depth) |
|---------------|-----------|--------------------|-----------------|--------------------|-----------------|------------------|------------|
| P (A,B)       | G1/2 (15) | 7/8-14 O-ring (17) | 1/2-14NPTF (15) | 3/4-16 O-ring (15) | PT(RC)1/2 (15)  | ø10              | ø10        |
| T             | G1/4 (12) | 7/16-20UNF (12)    | 7/16-20UNF (12) | 7/16-20UNF(12)     | PT(RC)1/4 (9.7) | 7/16-20UNF(12)   | G1/4(12)   |
| C             | -         | -                  | -               | -                  | -               | 4-5/16-18UNC(13) | 4-M8(13)   |

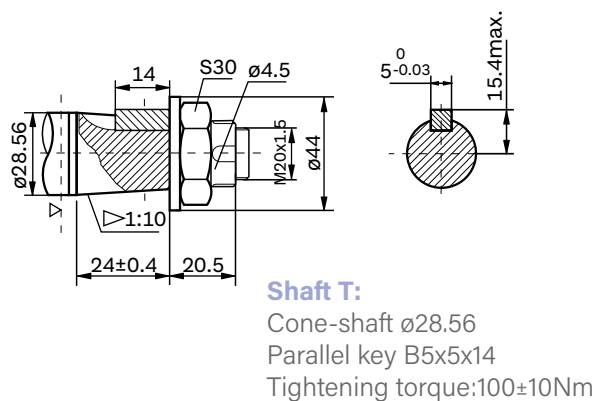
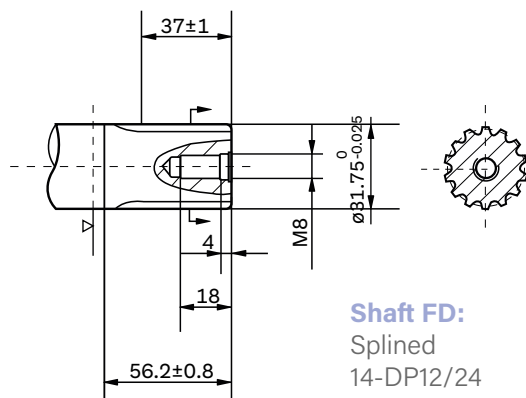
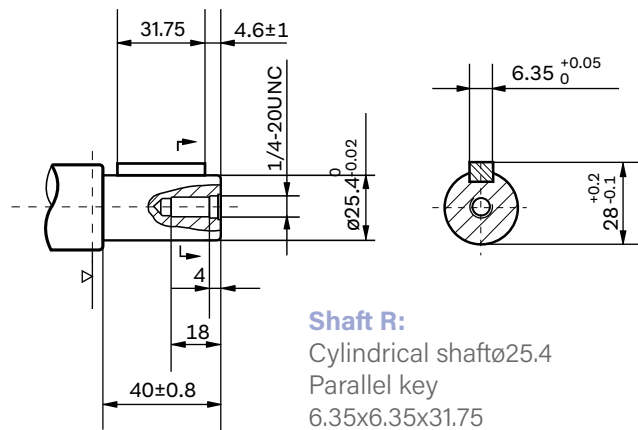
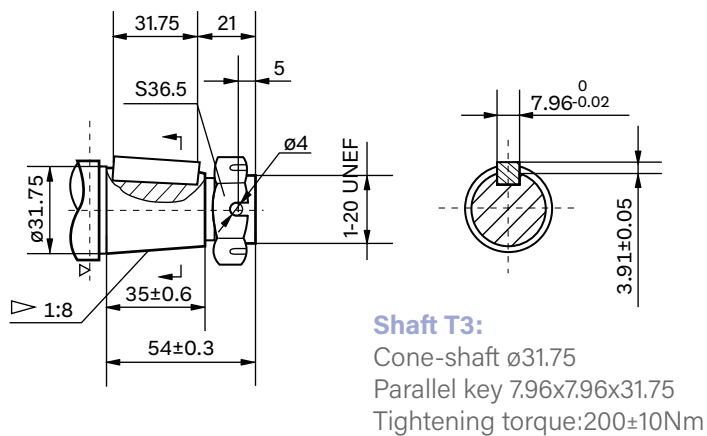
# VNKP Shaft Extensions

## Dimensions Data



# VNKP Shaft Extensions

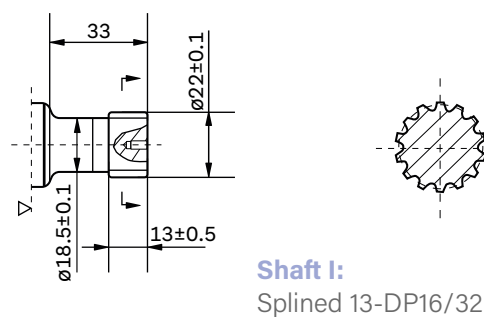
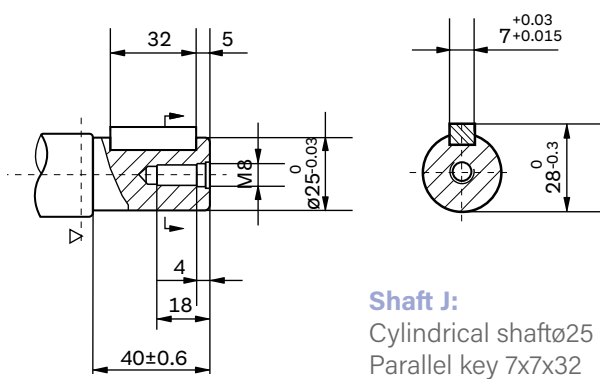
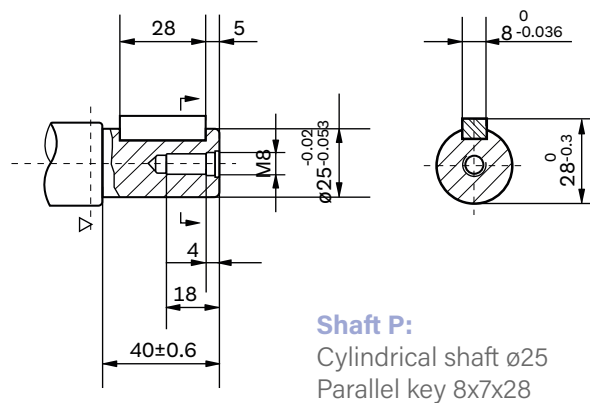
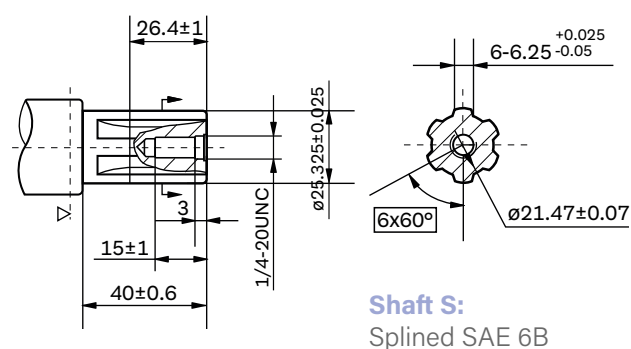
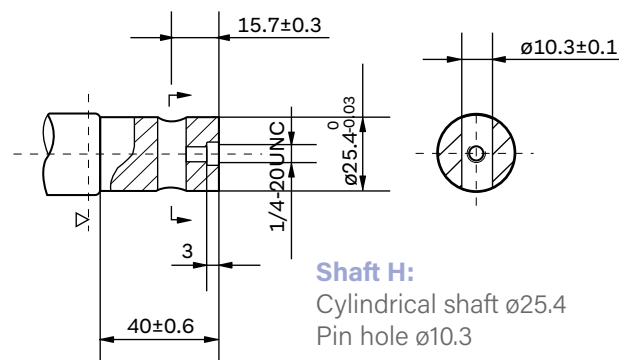
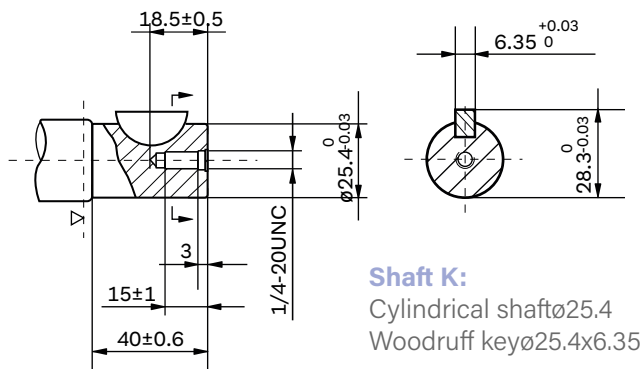
## Dimensions Data





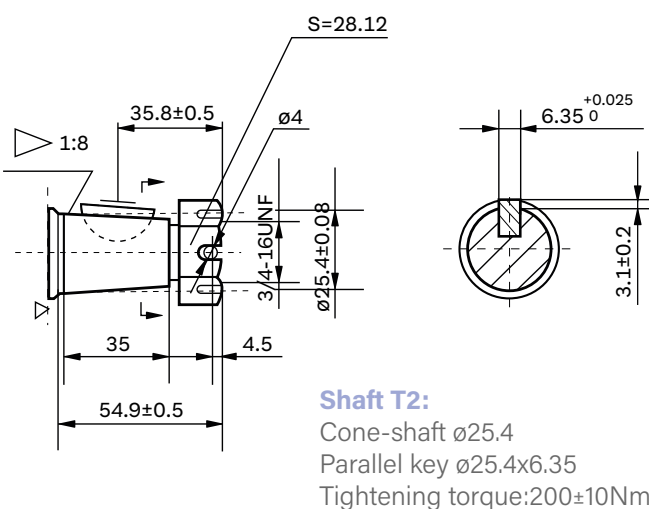
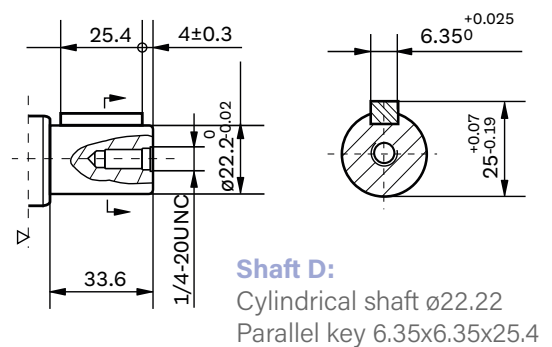
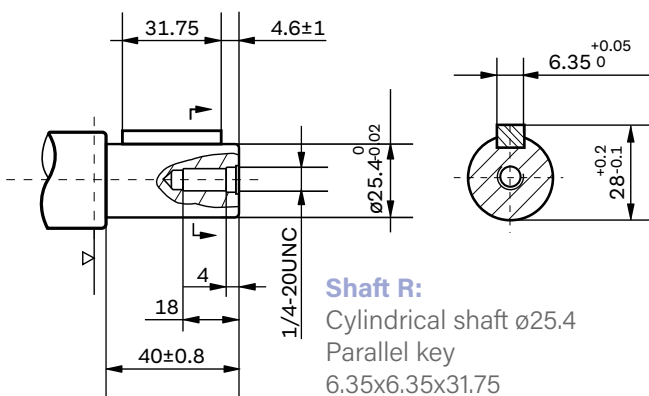
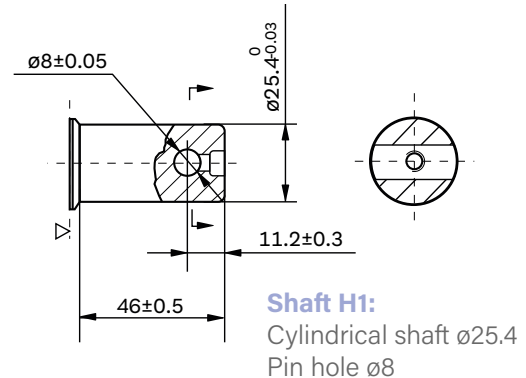
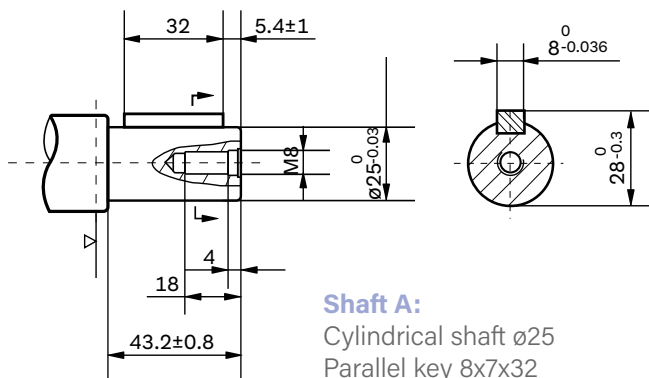
# VNKP Shaft Extensions

## Dimensions Data



# VNKP<sub>H</sub> Shaft Extensions

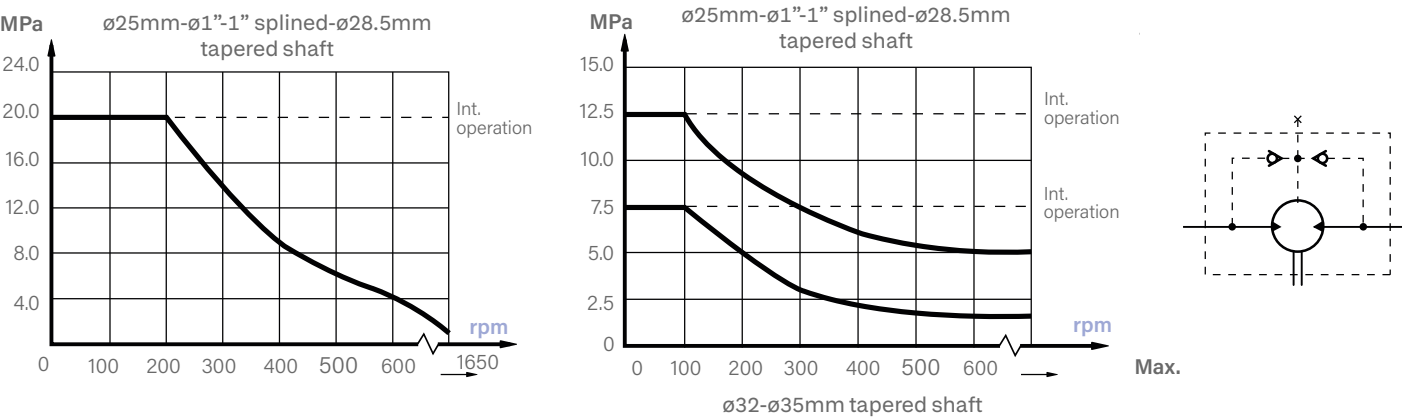
## Dimensions Data



# VNKP, VNKPH Series Hydraulic Motor



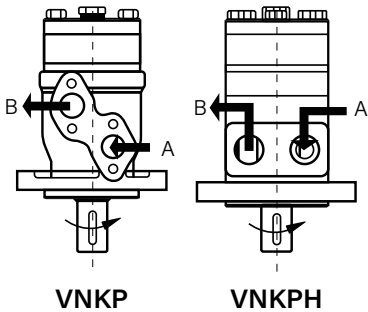
## PERMISSIBLE SHAFT SEAL PRESSURE



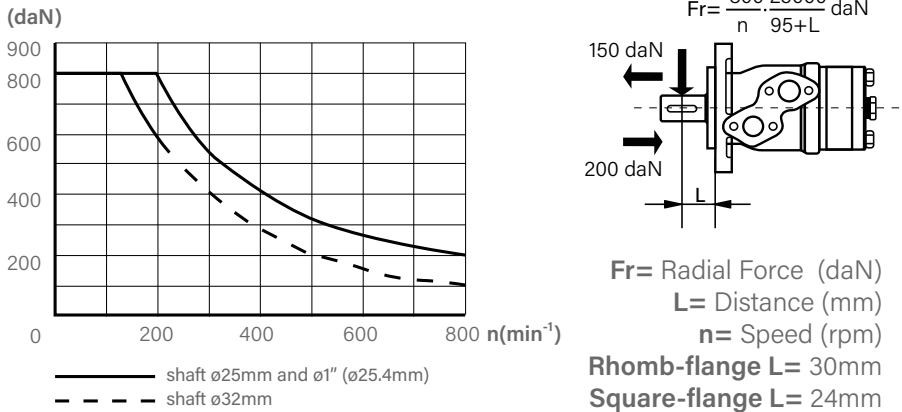
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

## DIRECTION OF SHAFT ROTATION: Standard

When facing shaft end of motor, shaft to rotate:  
Clockwise when port "A" is pressurized.  
Counter-clockwise port "B" is pressurized.



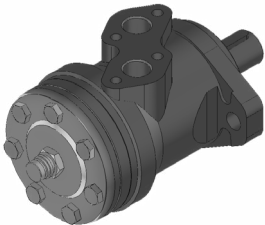
## STATUS OF THE SHAFT'S RADIAL FORCE



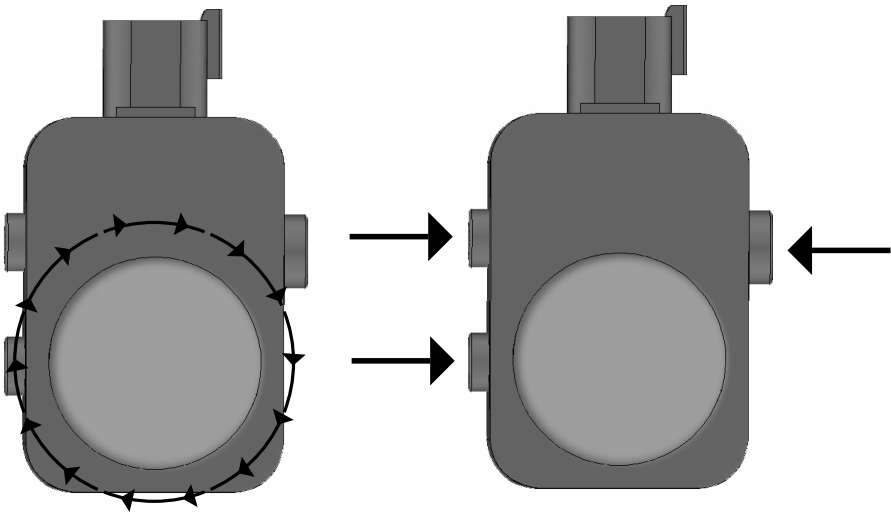
## OIL FLOW in drain line

The table shows the Max. oil flow in the drain line at a return pressure less than 0.5-1MPa.

| Pressure drop (PmPa) | Viscosity (mm²/s) | Oil flow in the drain line (L/min) |
|----------------------|-------------------|------------------------------------|
| 10                   | 20                | 2.5                                |
|                      | 35                | 1.8                                |
| 14                   | 20                | 3.5                                |
|                      | 35                | 2.8                                |



# VMD Speedsensor



## INSTALLATION GUIDE

Turn the sensor to the desired position and mount the sensor on the plug.

It is possible to mount the sensor in 36 positions.

To lock the sensor, push the clip into the sensor as shown.

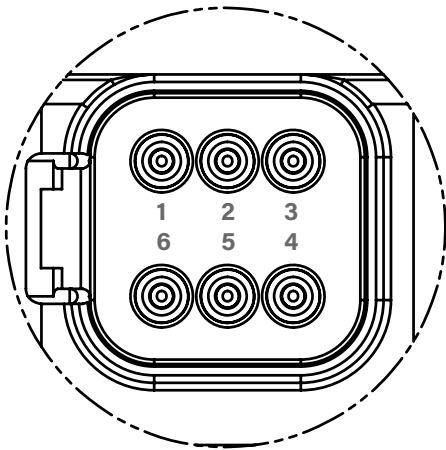
### Sensor Pinout

| Pin | Controller function       |
|-----|---------------------------|
| 1   | Power supply 9-36 V dc    |
| 2   | Power ground -            |
| 3   | D 1 (configurable output) |
| 4   | CAN L                     |
| 5   | CAN H                     |
| 6   | D 2 (configurable output) |

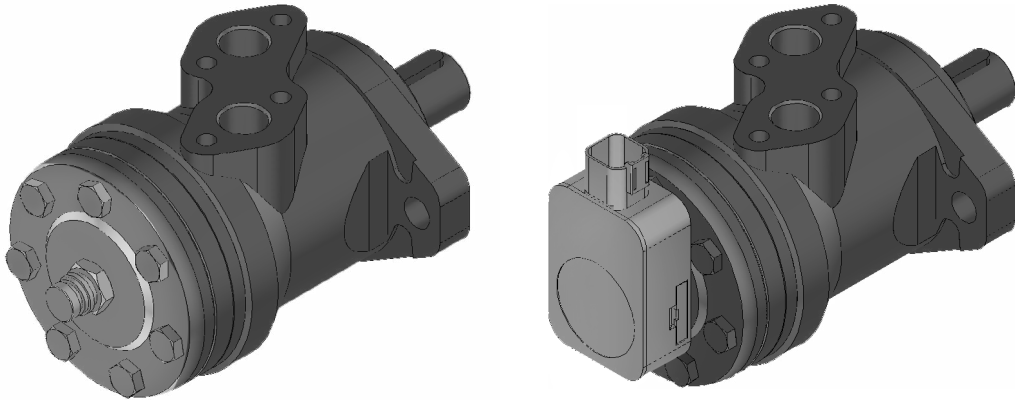
Deutsch DT connector 6 pin mating connector assembly:  
(Not offered by Danfoss)

|         |                |                | Color    |
|---------|----------------|----------------|----------|
| 1       | Plug           | DT06-6S-PO12   | (black)  |
| 1       | Wedgelock      | W6S-PO12       | (green)  |
| 6       | Solid Contacts | 0462-209-16141 | (nickel) |
| Options |                |                |          |
| 1       | Boot           | DT6S-BT-BK     | (black)  |

### Deutsch DT connector - 6 pin



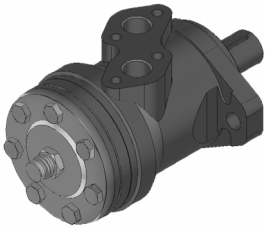
# VMD Speedsensor



## SPECIFICATION Main Specification

| Output signal                |                 |                                                                                                    | D1                  | D2                  |
|------------------------------|-----------------|----------------------------------------------------------------------------------------------------|---------------------|---------------------|
|                              | Pulse mode      | mode Push-pull output. Direction = CCW: high, CW: low<br>Confi gurable up to 180 pulse/revolutions | Square Wave         | Direction           |
|                              | Quadrature mode | 2 channels with 90° phaseshift each with 90 pulses/revolution Push-pull output                     | Square Wave Phase A | Square Wave Phase B |
|                              | CAN mode        | Supports CAN 2.0B with SAE J1939 Message Protocol with Proprietary Messages                        |                     |                     |
|                              |                 | Baudrate: 250 kbaud (fi xed)                                                                       |                     |                     |
|                              |                 | Shaft velocity: ± 2500 rpm                                                                         |                     |                     |
| Speed range                  |                 | 0 - 2500 rpm                                                                                       |                     |                     |
| Supply voltage               |                 | 9 - 36 Vdc                                                                                         |                     |                     |
| Maximum power                |                 | 0.8 W                                                                                              |                     |                     |
| Temperature range (amibient) |                 | -30 °C to 60 °C                                                                                    |                     |                     |
| EMC-Immunity (EMI):          |                 | 100 V/m ISO 13766                                                                                  |                     |                     |
| Grade of enclosure**         |                 | IP 69 K                                                                                            |                     |                     |
| Vibration                    |                 | 30 G (294 m/s2)                                                                                    |                     |                     |
| Shock                        |                 | 50 G (490 m/s2)                                                                                    |                     |                     |

\* Confi gurable with PLUS+1® Service Tool - Please contact Danfoss for further information. T301 082  
\*\* According to IEC 529.

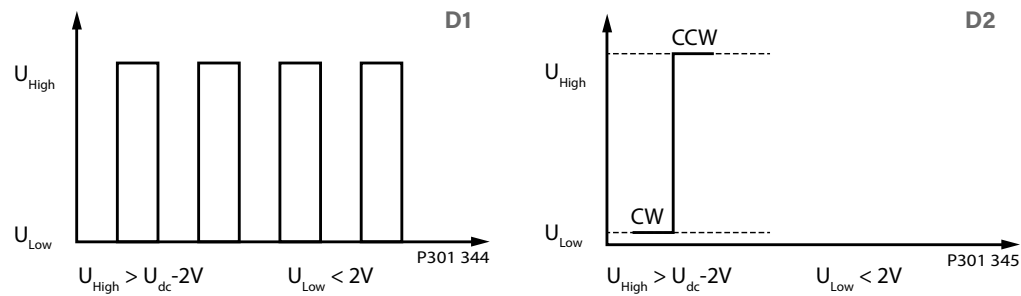


# VMD Speedsensor

## SPECIFICATION Main Specification

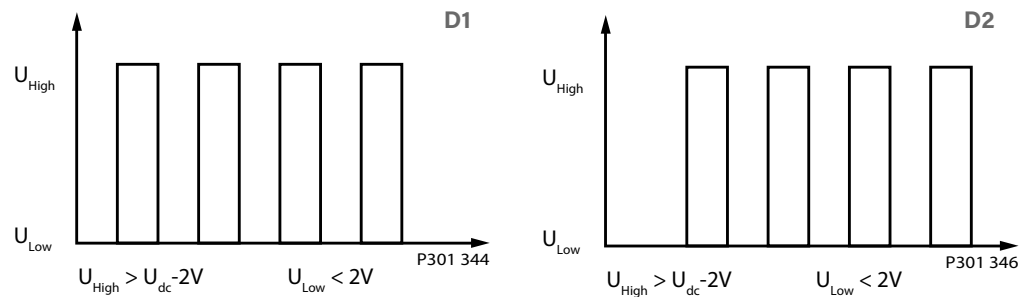
### Pulse mode

The sensor generates a speed dependent pulse on D1 and a direction signal on D2.

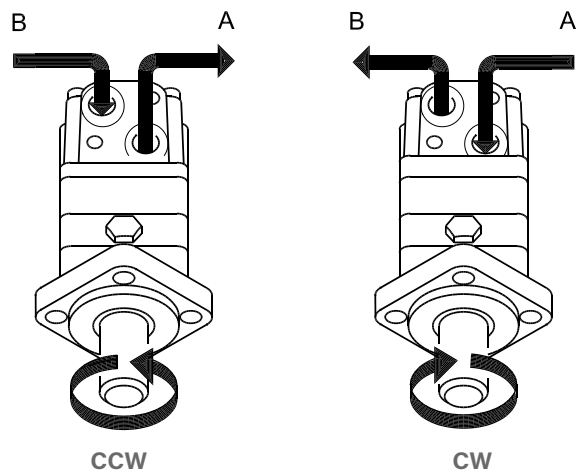


### Quadrature mode

The sensor generates a speed dependent pulse on D1 and D2 with a 90 degree phaseshift.



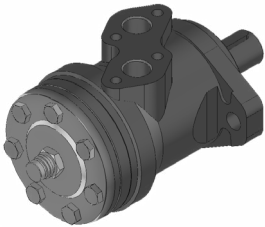
### Direction of shaft rotation



\*Please note that the **VMD** speed sensor may fail. Output signals may not represent correct rotation speed or direction.

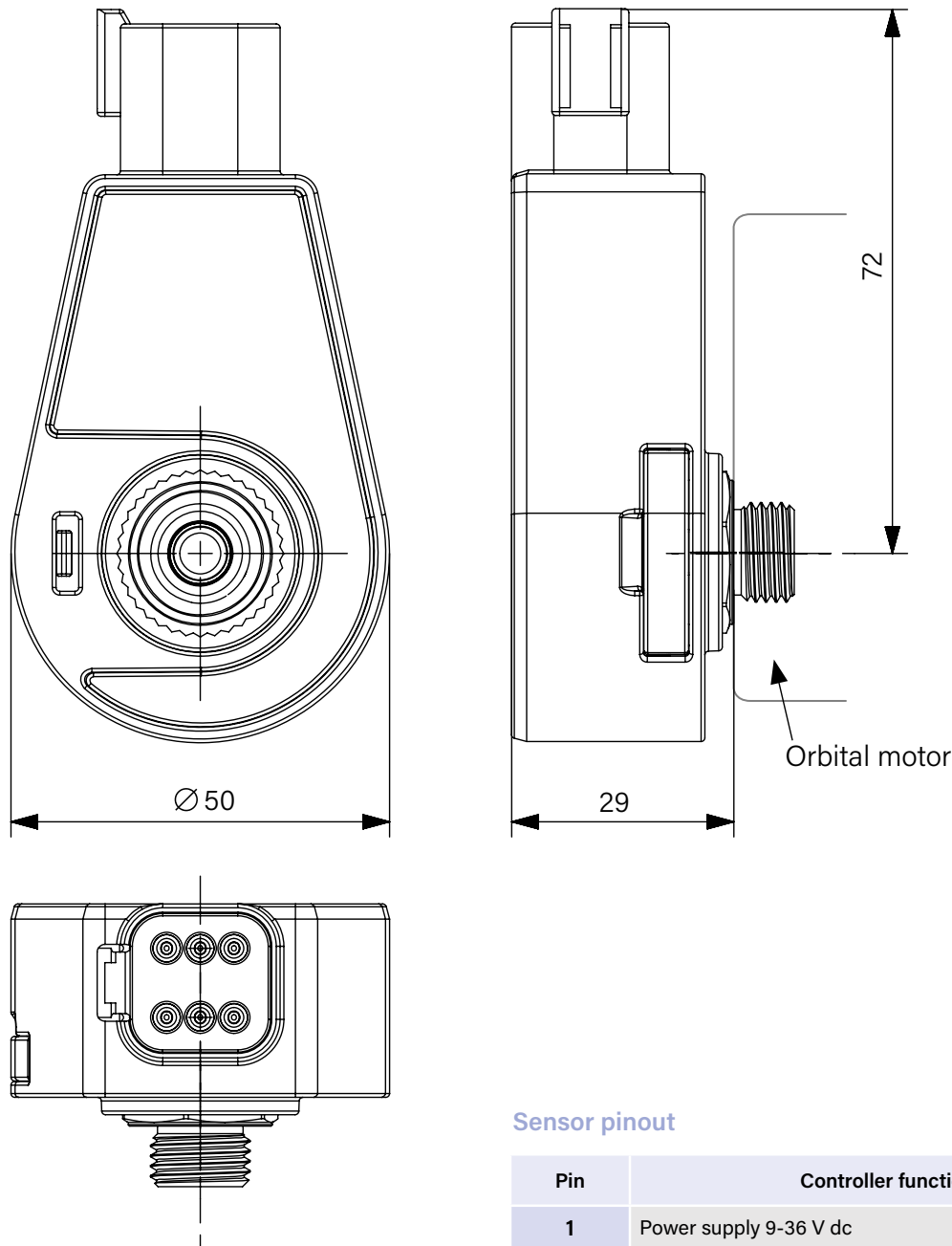
\*Any application of the **VMD** speed sensor should be subjected to appropriate hazard and risk assessment, according to relevant safety standards for the application.

\*Reliability data MTTF for the **VMD** speed sensor are available on request from your Danfoss representative.



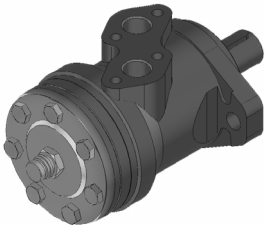
# VMD Speedsensor

## PRODUCT OVERVIEW



### Sensor pinout

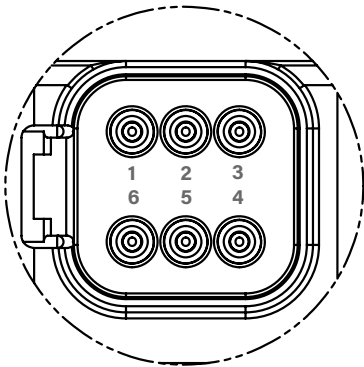
| Pin | Controller function       |
|-----|---------------------------|
| 1   | Power supply 9-36 V dc    |
| 2   | Power ground -            |
| 3   | D 1 (configurable output) |
| 4   | CAN L                     |
| 5   | CAN H                     |
| 6   | D 2 (configurable output) |



# VMD Speedsensor

## PRODUCT OVERVIEW

### Sensor pinout



### Mating connector

Deutsch DT connector 6 pin Mating connector assembly:  
(Not offered by Danfoss)

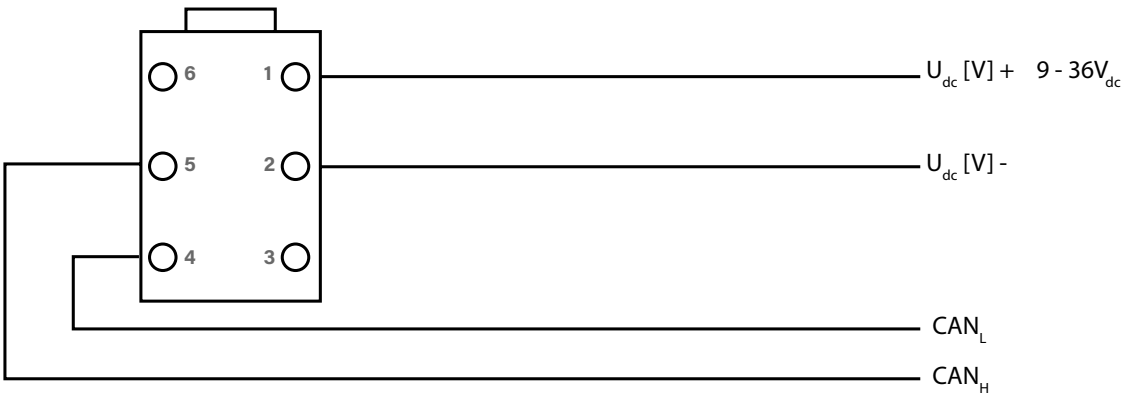
| Pcs     | Description    | Deutch part no. | Color    |
|---------|----------------|-----------------|----------|
| 1       | Plug           | DT06-6S-PO12    | (black)  |
| 1       | Wedgelock      | W6S-PO12        | (green)  |
| 6       | Solid Contacts | 0462-209-16141  | (nickel) |
| Options |                |                 |          |
| 1       | Boot compl.    | DT6S-BT-BK      | (black)  |

### Wiring diagram

Wiring diagram: Pulse and quadrature mode



Wiring diagram: CAN mode







# Order Information

| 1     | 2     | 3                                       | 4                                                | 5                                                 | 6                  | 7            | 8                  |
|-------|-------|-----------------------------------------|--------------------------------------------------|---------------------------------------------------|--------------------|--------------|--------------------|
| VNKP  |       |                                         |                                                  |                                                   |                    |              |                    |
| Pos.1 | 2     | 3                                       | 4                                                | 5                                                 | 6                  | 7            | 8                  |
| Code  | Disp. | Flange                                  | Output shaft                                     | Ports and drain port                              | Rotation direction | Paint        | Unusually Function |
| VNKP  | 27    | 2-Ø13.5 Rhomb-flange, pilot Ø82.5x8     | A Shaft Ø25,parallel key 8x7x32                  | D G1/2 Manifold Mount 4xM8, G1/4                  | Omit               | 00 No paint  | Omit               |
|       | 36    |                                         | C Shaft Ø25.4,parallel key 6.35x6.35x31.75       |                                                   |                    |              |                    |
|       | 50    |                                         | E Shaft Ø25.4,splined tooth SEA 6B               |                                                   |                    |              |                    |
|       | 80    |                                         | R Short shaft Ø25.4,parallel key6.35x6.35x31.75  | M M22x1.5 Manifold Mount 4xM8, M14x1.5            |                    |              |                    |
|       | 100   |                                         | T Cone shaft Ø28.56,parallel key B5x5x14         | S 7/8-14 O-ring manifold 4x5/16-18UNC; 7/16-20UNF |                    |              |                    |
|       | 125   | 4-Ø13.5 Rhomb-flange, pilot Ø82.5x8     |                                                  |                                                   |                    |              |                    |
|       | 160   | 4-3/8-16 Square-flange, pilot Ø44.4x2.8 | B Shaft Ø32,parallel key 10x8x45                 | P 1/2-14 NPTF Manifold 4x5/16-18UNC; 7/16-20UNF   | R Opposite         | B Black      | F Free Running     |
|       | 200   |                                         | F Shaft Ø31.75,splined tooth 14-DP12/24          |                                                   |                    |              |                    |
|       | 250   |                                         | FD Long shaft Ø31.75,splined tooth14-DP12/24     |                                                   |                    |              |                    |
|       | 315   |                                         | G Shaft Ø31.75, parallel key 7.96x7.96x31.75     |                                                   |                    |              |                    |
|       | 400   |                                         |                                                  |                                                   |                    |              |                    |
|       | 500   |                                         | T3 Cone shaft Ø31.75,parallel key 7.96x7.96x25.4 | R PT(Rc)1/2 Manifold 4xM8, PT(Rc)1/4              |                    |              |                    |
|       |       | H4                                      |                                                  |                                                   | S Silver grey      | LS Low Speed | SD Speed Sensor    |
|       |       | H5                                      |                                                  |                                                   |                    |              |                    |

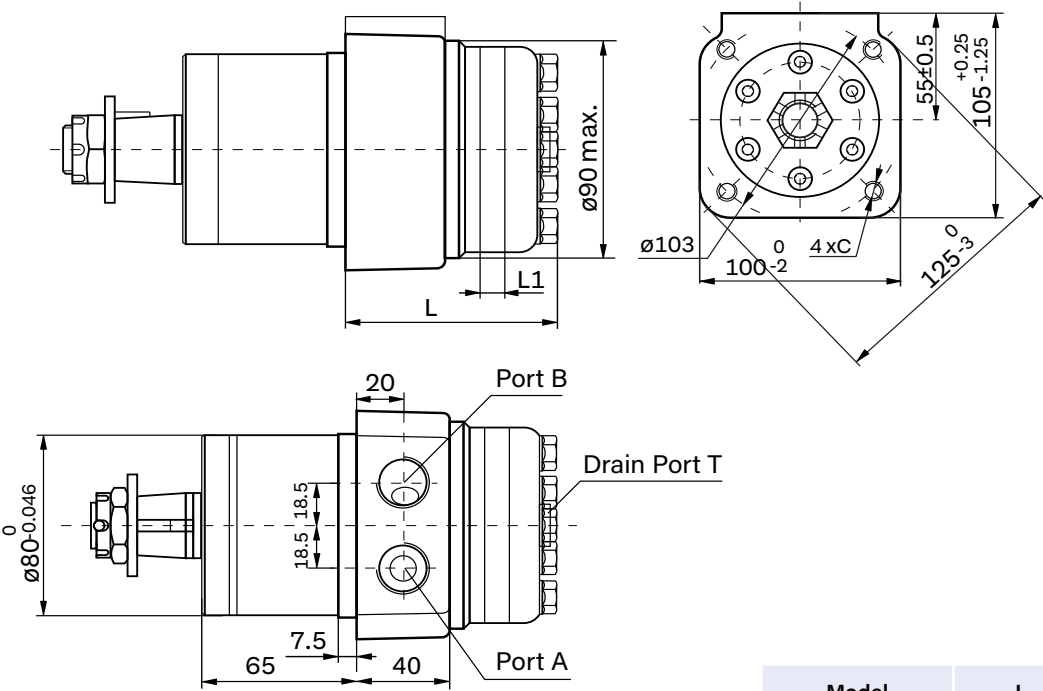
**Note:** The shafts of B\F\FD\G\T1\T3 are only suitable for flanges of 2 and 4.

## Order Information



**Note:** When the table is used, please fill the code of left rows in dash area and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports. If the specification is not in the table or you have specific requirements, please contact us.

# VNKPW Dimensions and Mounting Data



| Model    | L    | L1   |
|----------|------|------|
| VNKPW50  | 81   | 7    |
| VNKPW80  | 84.5 | 10.5 |
| VNKPW100 | 87   | 13   |
| VNKPW125 | 90   | 16   |
| VNKPW160 | 95   | 21   |
| VNKPW200 | 100  | 26   |
| VNKPW250 | 106  | 32   |
| VNKPW315 | 116  | 42   |
| VNKPW400 | 126  | 52   |
| VNKPW500 | 139  | 65   |

| Mounting Code | G (depth) | S (depth)          | M (depth)    |
|---------------|-----------|--------------------|--------------|
| P (A,B)       | G1/2 (15) | 7/8-14 O-ring (17) | M22x1.5 (15) |
| T             | G1/4 (12) | 7/16-20UNF (12)    | M14x1.5 (12) |
| C             | 4xM10(20) | 4x3/8-16UNC(20)    | 4xM10(20)    |



# Order Information

|       | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-------|---|---|---|---|---|---|---|---|
| VNKPW | — |   | — | — | — | — | — | — |

| Pos.1 | 2      | 3                                             | 4                                            | 5                            | 6                   | 7        | 8                  |                 |                |                 |
|-------|--------|-----------------------------------------------|----------------------------------------------|------------------------------|---------------------|----------|--------------------|-----------------|----------------|-----------------|
| Code  | Flange |                                               | Output shaft                                 | Ports and drain port         | Rotation direction  | Paint    | Unusually Function |                 |                |                 |
| VNKPW | 50     | Wheel-flange<br>flange<br>plat<br>Ø80×7.5     | A                                            | G                            | Omit                | 00       | Omit               |                 |                |                 |
|       | 80     |                                               | Shaft Ø25k6 ,Parallel<br>key 8×7×32          | G1/2, G1/4                   |                     | No paint | Standard           |                 |                |                 |
|       | 100    |                                               |                                              |                              | C                   |          |                    | S               | Blue           | N1              |
|       | 125    |                                               | Shaft Ø25.4 ,Parallel<br>key 6.35×6.35×31.75 | 7/8-14 O-ring,<br>7/16-20UNF | Standard            | Black    | No case<br>drain   |                 |                |                 |
|       | 160    | E                                             |                                              |                              |                     |          |                    | M               | Silver<br>grey | 0               |
|       | 200    | Cone shaft Ø28.56<br>,Parallel key<br>B5×5×14 |                                              |                              |                     |          |                    | M22×1.5,M14×1.5 | Opposite       | Speed<br>sensor |
|       | 250    |                                               |                                              |                              |                     |          |                    |                 |                |                 |
|       | 315    |                                               | Omit                                         | No paint                     | Big radial<br>force |          |                    |                 |                |                 |
| 400   | Blue   |                                               |                                              |                              |                     | N1       |                    |                 |                |                 |
| 500   |        | Black                                         | No case<br>drain                             |                              |                     |          |                    |                 |                |                 |

**Note:** When the table is used, please fill the code of left rows in the table and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports.

If the specification is not in the table or you have specific requirements, please contact us.

# VNKPK Series Hydraulic Motor

## INTRODUCTION

**VNKPK series motor** are small volume, economical type, which is designed with shaft distribution flow, which adapt the Gerotor gear set design and provide compact volume, high power and low weight.

## CHARACTERISTIC FEATURES

- \* **Advanced manufacturing devices** for the Gerotor gear set, which provide small volume, high efficiency and long life.
- \* **Shaft seal** can bear high pressure of motor of which can be used in parallel or in series.
- \* **Advanced construction design**, high power and low weight.



## SPECIFICATION Main Specification

Technical data for VNKPK with 25 and 1 in and 1 in splined and 28.56 tapered shaft

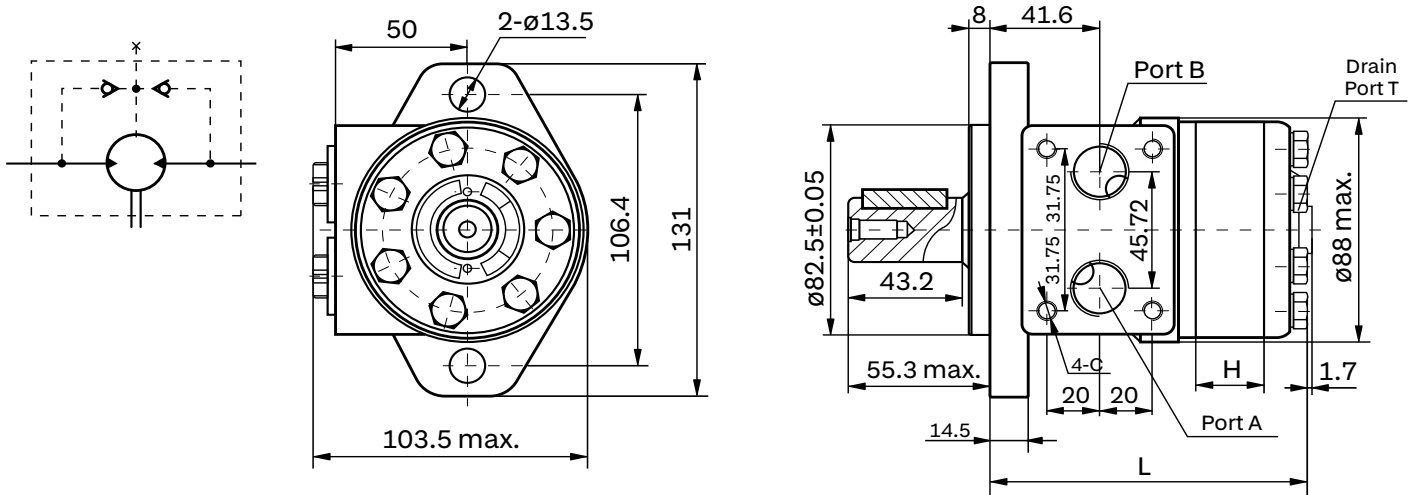
| Code      | Displacement<br>[cm/rev] | Max.Speed<br>[rpm] | Max.Torque<br>[Nm] |      | Max.output<br>[kW] |      | Max.pressure<br>[MPa] |      | Max. Oil<br>Flow [L/min] |
|-----------|--------------------------|--------------------|--------------------|------|--------------------|------|-----------------------|------|--------------------------|
|           |                          | cont.              | cont.              | int. | cont.              | int. | cont.                 | int. | cont.                    |
| VNKPK 36  | 36                       | 1081               | 51                 | 68   | 5.2                | 8.6  | 10.5                  | 14   | 40                       |
| VNKPK 50  | 51.7                     | 774                | 73                 | 96   | 5.2                | 8.6  | 10.5                  | 14   | 40                       |
| VNKPK 80  | 77.7                     | 515                | 106                | 143  | 5.2                | 8.6  | 10.5                  | 14   | 40                       |
| VNKPK 100 | 96.2                     | 416                | 140                | 178  | 5.2                | 8.6  | 10.5                  | 14   | 40                       |
| VNKPK 125 | 120.2                    | 339                | 162                | 218  | 5.2                | 8.6  | 10.5                  | 14   | 40                       |
| VNKPK 160 | 157.2                    | 257                | 216                | 288  | 5.2                | 8.6  | 10.5                  | 14   | 40                       |
| VNKPK 200 | 194.5                    | 211                | 264                | 351  | 5.2                | 8.6  | 10.5                  | 14   | 40                       |
| VNKPK 250 | 240.3                    | 173                | 281                | 351  | 4.6                | 7    | 9                     | 11.5 | 40                       |
| VNKPK 315 | 314.5                    | 128                | 312                | 433  | 3.4                | 5.8  | 7                     | 10.5 | 40                       |
| VNKPK 400 | 389.5                    | 104                | 392                | 582  | 3.4                | 5.8  | 7                     | 10.5 | 40                       |

\***Intermittent operation:** the permissible values may occur for max.10% of every minute



# VNKP Dimensions and Mounting Data

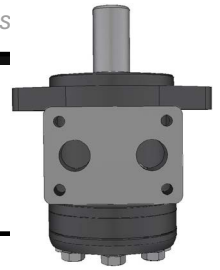
## VNKP Dimensions and Mounting Data



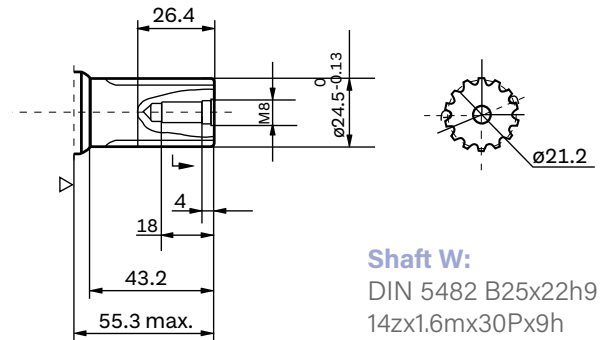
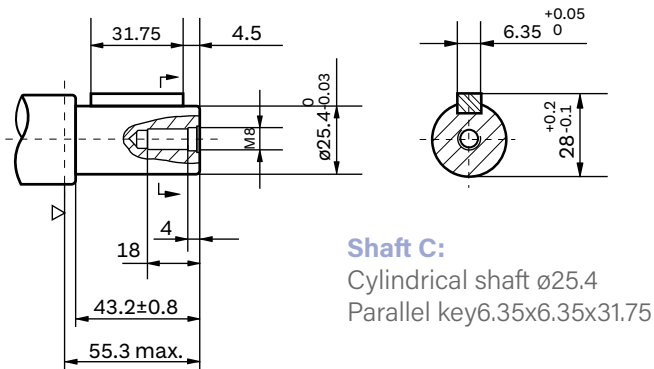
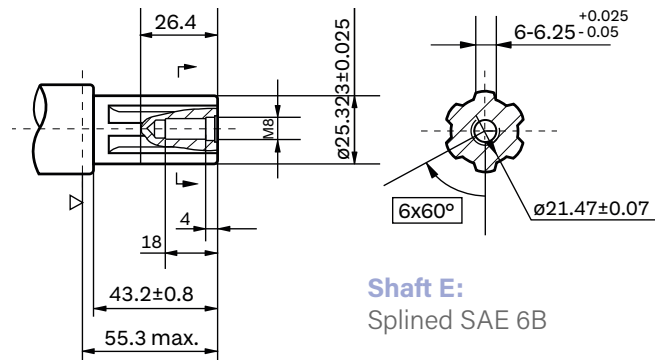
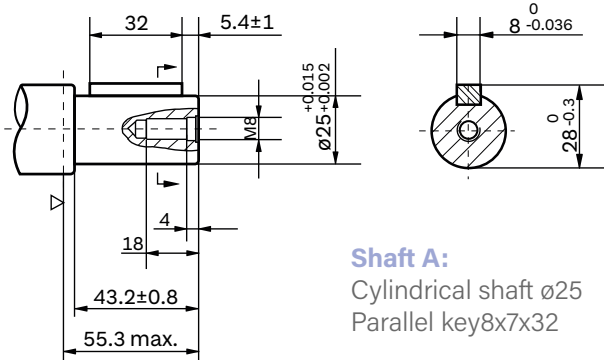
| Type    | H    | L     |
|---------|------|-------|
| VNKP36  | 7    | 101   |
| VNKP50  | 7    | 101   |
| VNKP80  | 10.5 | 104.5 |
| VNKP100 | 13   | 107   |
| VNKP125 | 16   | 110   |
| VNKP160 | 21   | 115   |
| VNKP200 | 26   | 120   |
| VNKP250 | 32   | 126   |
| VNKP315 | 42   | 136   |
| VNKP400 | 52   | 146   |

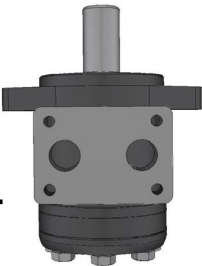
| Mounting Code | D (depth) | M (depth)      | S (depth)            | P (depth)        | R (depth)       |
|---------------|-----------|----------------|----------------------|------------------|-----------------|
| P(A,B)        | G1/2 (15) | M22 x 1.5 (15) | 7/8-14 O-ring (16.7) | 1/2-14NPTF (15)  | PT(RC)1/2 (15)  |
| C             | 4-M8 (13) | 4-M8 (13)      | 4-5/16-18UNC(13)     | 4-5/16-18UNC(13) | 4-M8 (13)       |
| T             | G1/4 (12) | M14 x 1.5 (12) | 7/16-20UNF (12)      | 7/16-20UNF (12)  | PT(RC)1/4 (9.7) |

**Direction of shaft rotation:** Standard **When facing shaft end of motor, shaft to rotate:** Clockwise when port "A" is pressurized. Counter-clockwise when port "B" is pressurized.



# VNKP K Shaft Extensions





# Order Information



| Pos.1 | 2     | 3                                  | 4                                            | 5                                                | 6                  | 7           | 8                  |
|-------|-------|------------------------------------|----------------------------------------------|--------------------------------------------------|--------------------|-------------|--------------------|
| Code  | Disp. | Flange                             | Output shaft                                 | Ports and drain port                             | Rotation direction | Paint       | Unusually Function |
| Omit  | 36    | 2Ø13.5 Rhomb-flange, pilot Ø82.5x8 | A Shaft Ø25 , parallel key 8x7x32            | D G1/2 Manifold 4xM8, G1/4                       | Omit               | 00          | Omit               |
|       | 50    |                                    | C Shaft Ø25.4 , parallel key 6.35x6.35x31.75 | M M22x1.5 Manifold 4xM8,M14x1.5                  |                    |             |                    |
|       | 80    |                                    | E Shaft Ø25.4, splined key SEA 6B            | S 7/8-14 O-ring manifold 4x5/16-18UNC;7/16-20UNF | R                  | B           | 0                  |
|       | 125   |                                    | w Shaft Ø24.5, splined B25x22                | P 1/2-14NPTF manifold 4x5/16-18UNC;7/16-20UNF    |                    |             |                    |
|       | 160   |                                    | T Cone shaft Ø28.56, parallel key B5x5x14    | R PT(Rc)1/2 manifold 4xM8, PT(Rc)1/4             |                    |             |                    |
|       | 200   |                                    |                                              |                                                  | Standard           | No paint    | Standard           |
|       | 250   |                                    |                                              |                                                  | Opposite           | Blue        | Free Running       |
|       | 315   |                                    |                                              |                                                  |                    | Black       | No case drain      |
|       | 400   |                                    |                                              |                                                  |                    | Silver grey | Speed sensor       |



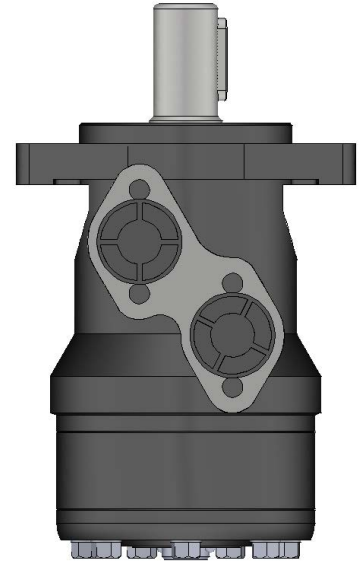
# VNKR Series Hydraulic Motor

## INTRODUCTION

VNKR series motor adapt the advanced Geroler gear set design with shaft distribution flow, which can automatically compensate in operating with high pressure, provide reliable and smooth operation, high efficiency and long life.

## CHARACTERISTIC FEATURES

- \* **Advanced manufacturing devices** for the Geroler gear set, which use low pressure of start-up, provide smooth, reliable operation and high efficiency.
- \* **Shaft seal** can bear high pressure of back and the motor can be used in parallel or in series.
- \* **Special design** in the driver-linker and prolong operating life.
- \* **Special design** for distribution system can meet the requirement of low noise of unit.
- \* **Compact volume** and easy installation.
- \* **HPS Shaft seal** can bear high pressure (150bar) of motor of which can be used in parallel or in series.
- \* **The output shaft** runs in needle bearing capable of absorbing static and dynamic axial and radial loads.



## SPECIFICATION Main Specification

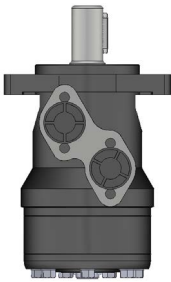
Technical data for VNKR with 25 and 1 in and 1 in splined and 28.56 tapered shaft

| Type                                                |       | VNKR<br>VNKRS<br>36 | VNKR<br>VNKRS<br>50 | VNKR<br>VNKRS<br>80 | VNKR<br>VNKRS<br>100 | VNKR<br>VNKRS<br>125 | VNKR<br>VNKRS<br>160 | VNKR<br>VNKRS<br>200 | VNKR<br>VNKRS<br>250 | VNKR<br>VNKRS<br>315 | VNKR<br>VNKRS<br>400 |
|-----------------------------------------------------|-------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <b>Geometric displacement (cm<sup>3</sup>/rev.)</b> |       | 36                  | 51.7                | 81.5                | 102                  | 127.2                | 157.2                | 194.5                | 253.3                | 317.5                | 381.4                |
| <b>Max. speed (rpm)</b>                             | cont. | 1085                | 960                 | 750                 | 600                  | 475                  | 378                  | 310                  | 240                  | 190                  | 155                  |
|                                                     | int.  | 1220                | 1150                | 940                 | 750                  | 600                  | 475                  | 385                  | 300                  | 240                  | 190                  |
| <b>Max. torque (N·m)</b>                            | cont. | 72                  | 100                 | 195                 | 240                  | 300                  | 360                  | 360                  | 390                  | 390                  | 365                  |
|                                                     | int.  | 83                  | 126                 | 220                 | 280                  | 340                  | 430                  | 440                  | 490                  | 535                  | 495                  |
|                                                     | peak  | 105                 | 165                 | 270                 | 320                  | 370                  | 460                  | 560                  | 640                  | 650                  | 680                  |
| <b>Max. output (kW)</b>                             | cont. | 8.5                 | 9.5                 | 12.5                | 13.0                 | 12.5                 | 12.5                 | 10.0                 | 7.0                  | 6.0                  | 5.0                  |
|                                                     | int.  | 9.8                 | 11.2                | 15.0                | 15.0                 | 14.5                 | 14.0                 | 13.0                 | 9.5                  | 9.0                  | 8.0                  |
| <b>Max. pressure drop (MPa)</b>                     | cont. | 14.0                | 14                  | 17.5                | 17.5                 | 17.5                 | 16.5                 | 13                   | 11                   | 9                    | 7                    |
|                                                     | int.  | 16.5                | 17.5                | 20                  | 20                   | 20                   | 20                   | 17.5                 | 15                   | 13                   | 10                   |
|                                                     | peak  | 22.5                | 22.5                | 22.5                | 22.5                 | 22.5                 | 22.5                 | 22.5                 | 20                   | 17.5                 | 15                   |
| <b>Max. flow (L/min)</b>                            | cont. | 40                  | 50                  | 60                  | 60                   | 60                   | 60                   | 60                   | 60                   | 60                   | 60                   |
|                                                     | int.  | 45                  | 60                  | 75                  | 75                   | 75                   | 75                   | 75                   | 75                   | 75                   | 75                   |
| <b>Weight (kg)</b>                                  |       | 6.5                 | 6.7                 | 6.9                 | 7                    | 7.3                  | 7.6                  | 8.0                  | 8.5                  | 9.0                  | 9.5                  |

\* **Continuous pressure:** Max. value of operating motor continuously.

\* **Intermittent pressure:** Max. value of operating motor in 6 seconds per minute.

\* **Peak pressure:** Max. value of operating motor in 0.6 second per minute.



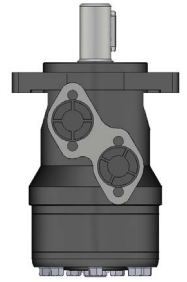
# Main Specification

## SPECIFICATION Main Specification

Technical data for VNKR with 31.75 and 32 shaft

| Type                              |       | VNKR 36 | VNKR 50 | VNKR 80 | VNKR 100 | VNKR 125 | VNKR 160 | VNKR 200 | VNKR 250 | VNKR 315 | VNKR 400 |
|-----------------------------------|-------|---------|---------|---------|----------|----------|----------|----------|----------|----------|----------|
| Geometric displacement (cm3/rev.) |       | 36      | 51.7    | 81.5    | 102      | 127.2    | 157.2    | 194.5    | 253.3    | 317.5    | 381.4    |
| Max. speed (rpm)                  | cont. | 1085    | 960     | 750     | 600      | 475      | 378      | 310      | 240      | 190      | 155      |
|                                   | int.  | 1220    | 1150    | 940     | 750      | 600      | 475      | 385      | 300      | 240      | 190      |
| Max. torque (N·m)                 | cont. | 72      | 100     | 195     | 240      | 300      | 360      | 360      | 390      | 390      | 365      |
|                                   | int.  | 83      | 126     | 220     | 280      | 340      | 430      | 440      | 490      | 535      | 495      |
|                                   | peak  | 105     | 165     | 270     | 320      | 370      | 460      | 560      | 640      | 650      | 680      |
| Max. output (kW)                  | cont. | 8.5     | 9.5     | 12.5    | 13.0     | 12.5     | 12.5     | 10.0     | 7.0      | 6.0      | 5.0      |
|                                   | int.  | 9.8     | 11.2    | 15.0    | 15.0     | 14.5     | 14.0     | 13.0     | 9.5      | 9.0      | 8.0      |
| Max. pressure drop (MPa)          | cont. | 14.0    | 14      | 17.5    | 17.5     | 17.5     | 16.5     | 13       | 11       | 9        | 7        |
|                                   | int.  | 16.5    | 17.5    | 20      | 20       | 20       | 20       | 17.5     | 15       | 13       | 10       |
|                                   | peak  | 22.5    | 22.5    | 22.5    | 22.5     | 22.5     | 22.5     | 22.5     | 20       | 17.5     | 15       |
| Max. flow (L/min)                 | cont. | 40      | 50      | 60      | 60       | 60       | 60       | 60       | 60       | 60       | 60       |
|                                   | int.  | 45      | 60      | 75      | 75       | 75       | 75       | 75       | 75       | 75       | 75       |
| Weight (kg)                       |       | 6.5     | 6.7     | 6.9     | 7        | 7.3      | 7.6      | 8.0      | 8.5      | 9.0      | 9.5      |

\* Continuous pressure: Max. value of operating motor continuously.  
\* Intermittent pressure: Max. value of operating motor in 6 seconds per minute.  
\* Peak pressure: Max. value of operating motor in 0.6 second per minute.



**VNKR 36** [36 cm<sup>3</sup>/rev.]

Max. cont Max. int

|                    |    | 2         | 3          | 5          | 7          | 9          | 10         | 12.5       | 14.0       | 16.5       |
|--------------------|----|-----------|------------|------------|------------|------------|------------|------------|------------|------------|
| Flow (L/min)       | 4  | 10<br>105 | 16<br>100  | 25<br>92   | 37<br>80   | 46<br>71   | 50<br>58   |            |            |            |
|                    | 8  | 9<br>208  | 15<br>200  | 25<br>188  | 37<br>175  | 47<br>158  | 50<br>149  | 63<br>134  | 71<br>120  | 83<br>108  |
|                    | 15 | 8<br>403  | 14<br>392  | 23<br>380  | 36<br>365  | 45<br>348  | 51<br>326  | 64<br>318  | 72<br>302  | 82<br>274  |
|                    | 20 | 6<br>540  | 13<br>531  | 22<br>518  | 35<br>500  | 44<br>483  | 50<br>462  | 64<br>450  | 72<br>435  | 82<br>412  |
|                    | 30 | 6<br>810  | 12<br>798  | 21<br>780  | 32<br>763  | 42<br>742  | 47<br>722  | 63<br>705  | 70<br>694  | 80<br>668  |
|                    | 40 | 5<br>1092 | 11<br>1080 | 19<br>1069 | 30<br>1056 | 41<br>1042 | 45<br>1028 | 61<br>1011 | 68<br>984  | 79<br>957  |
|                    | 45 | 4<br>1230 | 10<br>1215 | 17<br>1194 | 29<br>1170 | 40<br>1150 | 44<br>1128 | 59<br>1100 | 66<br>1070 | 77<br>1020 |
| Max. int Max. cont |    |           |            |            |            |            |            |            |            |            |

**VNKR 50** [51.7 cm<sup>3</sup>/rev.]

Max. cont

Max. int

|                    |    | 5           | 7          | 9          | 10         | 12         | 14         | 16         | 17,5       |
|--------------------|----|-------------|------------|------------|------------|------------|------------|------------|------------|
| Flow (L/min)       | 5  | 35<br>93    | 45<br>84   | 61<br>76   | 67<br>73   | 77<br>69   | 88<br>46   |            |            |
|                    | 10 | 36<br>186   | 46<br>178  | 62<br>166  | 69<br>162  | 80<br>153  | 95<br>136  | 108<br>118 | 120<br>97  |
|                    | 15 | 35<br>283   | 49<br>277  | 63<br>269  | 73<br>261  | 88<br>250  | 100<br>230 | 109<br>211 | 123<br>185 |
|                    | 20 | 34.5<br>377 | 47<br>375  | 61<br>365  | 69<br>361  | 83<br>346  | 96<br>330  | 109<br>302 | 126<br>270 |
|                    | 30 | 33<br>576   | 44<br>569  | 60<br>561  | 67<br>554  | 80<br>542  | 95<br>531  | 108<br>500 | 126<br>465 |
|                    | 40 | 30<br>760   | 41<br>758  | 58<br>753  | 66<br>750  | 79<br>738  | 92<br>724  | 106<br>700 | 122<br>670 |
| Max. int Max. cont | 45 | 29.5<br>856 | 40<br>853  | 57<br>849  | 65<br>845  | 78<br>835  | 90<br>815  | 105<br>796 | 121<br>770 |
|                    | 50 | 26<br>950   | 37<br>940  | 53<br>925  | 60<br>906  | 73<br>880  | 85<br>852  | 99<br>832  | 114<br>801 |
|                    | 60 | 20<br>1138  | 33<br>1124 | 48<br>1100 | 56<br>1075 | 69<br>1056 | 81<br>1028 | 95<br>1006 | 109<br>970 |

Max. cont

Max. int

|              |    | 5         | 7           | 9          | 10         | 12         | 14         | 16         | 17.5       | 20         |
|--------------|----|-----------|-------------|------------|------------|------------|------------|------------|------------|------------|
| Flow (L/min) | 5  | 50<br>59  | 64<br>56    | 88<br>50   | 108<br>44  | 133<br>38  |            |            |            |            |
|              | 10 | 54<br>118 | 77<br>113   | 99<br>106  | 108<br>97  | 129<br>86  | 150<br>79  | 173<br>56  |            |            |
|              | 20 | 57<br>238 | 78.0<br>234 | 102<br>227 | 111<br>216 | 134<br>203 | 155<br>190 | 177<br>178 | 196<br>154 | 225<br>135 |
|              | 30 | 54<br>360 | 75<br>352   | 100<br>340 | 108<br>332 | 131<br>316 | 152<br>302 | 176<br>290 | 195<br>274 | 223<br>250 |
|              | 40 | 48<br>480 | 73<br>470   | 96<br>458  | 105<br>445 | 127<br>430 | 148<br>418 | 172<br>403 | 190<br>388 | 220<br>359 |
| Max. cont    | 50 | 42<br>604 | 70<br>595   | 93<br>582  | 102<br>570 | 124<br>556 | 147<br>540 | 170<br>521 | 188<br>504 | 218<br>487 |
|              | 60 | 37<br>726 | 66<br>715   | 89<br>704  | 98<br>692  | 121<br>678 | 144<br>663 | 166<br>647 | 184<br>622 | 213<br>594 |
|              | 70 | 32<br>845 | 60<br>834   | 83<br>820  | 95<br>802  | 116<br>789 | 140<br>767 | 160<br>754 | 177<br>730 | 208<br>705 |
| Max. int     | 75 | 21<br>910 | 50<br>895   | 78<br>881  | 90<br>867  | 111<br>852 | 135<br>830 | 154<br>806 | 171<br>787 | 200<br>756 |

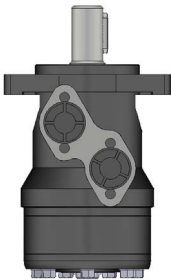
Torque (N·m) 135  
Speed (rpm) 830

Max. cont

Max. int

|              |           | 5         | 7           | 9          | 10         | 12         | 14         | 16         | 17,5       | 20         |            |
|--------------|-----------|-----------|-------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Flow (L/min) | 5         | 66<br>45  | 92<br>42    | 120<br>38  | 135<br>34  | 156<br>27  |            |            |            |            |            |
|              | 10        | 68<br>93  | 96<br>90    | 125<br>86  | 138<br>81  | 159<br>74  | 188<br>57  | 212<br>42  |            |            |            |
|              | 20        | 65<br>189 | 94.0<br>185 | 123<br>180 | 137<br>173 | 155<br>165 | 186<br>158 | 210<br>150 | 238<br>139 | 274<br>118 |            |
|              | 30        | 63<br>286 | 92<br>281   | 120<br>275 | 133<br>266 | 153<br>257 | 185<br>246 | 209<br>237 | 235<br>225 | 270<br>207 |            |
|              | 40        | 57<br>385 | 88<br>378   | 117<br>365 | 130<br>355 | 152<br>345 | 185<br>332 | 208<br>320 | 233<br>314 | 267<br>297 |            |
|              | 50        | 48<br>482 | 79<br>477   | 110<br>470 | 123<br>460 | 150<br>448 | 183<br>435 | 204<br>420 | 228<br>405 | 260<br>389 |            |
|              | 60        | 38<br>580 | 70<br>572   | 105<br>560 | 120<br>548 | 144<br>535 | 178<br>523 | 200<br>510 | 220<br>500 | 252<br>478 |            |
| Max. int     | Max. cont | 70        | 32<br>678   | 65<br>670  | 100<br>660 | 118<br>648 | 141<br>638 | 176<br>626 | 197<br>615 | 215<br>606 | 246<br>580 |
|              |           | 75        | 23<br>728   | 59<br>720  | 93<br>710  | 111<br>695 | 136<br>681 | 170<br>667 | 192<br>650 | 210<br>634 | 240<br>618 |

Int.



# Performance Data

VNKR 125 [127.2 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |    | 5         | 7          | 9          | 10         | 12         | 14         | 16         | 17.5       | 20         |
|--------------|----|-----------|------------|------------|------------|------------|------------|------------|------------|------------|
| Flow (L/min) | 5  | 76<br>36  | 110<br>31  | 145<br>25  | 167<br>19  | 189<br>13  |            |            |            |            |
|              | 10 | 84<br>73  | 118<br>70  | 155<br>60  | 176<br>48  | 202<br>36  | 228<br>25  | 253<br>19  |            |            |
|              | 20 | 82<br>153 | 117<br>151 | 153<br>148 | 174<br>144 | 200<br>138 | 230<br>128 | 259<br>117 | 294<br>104 | 332<br>73  |
|              | 30 | 79<br>231 | 116<br>228 | 151<br>224 | 171<br>218 | 198<br>210 | 228<br>201 | 257<br>183 | 292<br>168 | 329<br>137 |
|              | 40 | 72<br>309 | 114<br>307 | 148<br>303 | 168<br>298 | 196<br>292 | 226<br>280 | 256<br>270 | 290<br>252 | 327<br>218 |
|              | 50 | 62<br>389 | 105<br>386 | 143<br>382 | 165<br>378 | 195<br>370 | 223<br>360 | 254<br>344 | 287<br>328 | 323<br>292 |
|              | 60 | 52<br>467 | 98<br>463  | 136<br>459 | 160<br>456 | 191<br>448 | 220<br>427 | 250<br>410 | 282<br>399 | 319<br>352 |
|              | 70 | 41<br>545 | 90<br>542  | 130<br>538 | 156<br>534 | 187<br>529 | 215<br>520 | 242<br>508 | 278<br>486 | 313<br>430 |
|              | 75 | 32<br>586 | 79<br>583  | 126<br>578 | 148<br>570 | 180<br>560 | 208<br>546 | 234<br>532 | 262<br>520 | 300<br>480 |

VNKR 160 [157.2 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |    | 5          | 7          | 9          | 10         | 12         | 14         | 16         | 17.5       | 20         |
|--------------|----|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Flow (L/min) | 5  | 104<br>26  | 146<br>23  | 190<br>20  | 210<br>16  | 245<br>10  |            |            |            |            |
|              | 10 | 107<br>59  | 150<br>56  | 195<br>50  | 216<br>45  | 250<br>37  | 290<br>30  | 335<br>22  |            |            |
|              | 20 | 102<br>121 | 151<br>118 | 198<br>115 | 220<br>113 | 257<br>108 | 298<br>102 | 342<br>97  | 370<br>90  | 420<br>78  |
|              | 30 | 97<br>184  | 146<br>178 | 190<br>173 | 217<br>170 | 256<br>164 | 295<br>155 | 340<br>143 | 368<br>128 | 416<br>103 |
|              | 40 | 89<br>246  | 140<br>241 | 185<br>235 | 210<br>228 | 252<br>220 | 290<br>210 | 335<br>194 | 363<br>177 | 412<br>150 |
|              | 50 | 72<br>310  | 128<br>307 | 179<br>300 | 202<br>295 | 244<br>287 | 284<br>278 | 327<br>262 | 358<br>247 | 409<br>210 |
|              | 60 | 60<br>374  | 116<br>367 | 170<br>359 | 198<br>354 | 240<br>346 | 279<br>338 | 321<br>323 | 352<br>306 | 400<br>265 |
|              | 70 | 49<br>437  | 107<br>430 | 164<br>421 | 193<br>415 | 233<br>403 | 271<br>393 | 309<br>381 | 344<br>365 | 390<br>318 |
|              | 75 | 36<br>472  | 98<br>463  | 152<br>450 | 185<br>441 | 226<br>431 | 265<br>420 | 300<br>405 | 334<br>389 | 379<br>365 |

VNKR 200 [194.5 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |    | 5          | 7          | 9          | 10         | 12         | 14         | 16         | 17.5       | 20         |
|--------------|----|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Flow (L/min) | 5  | 132<br>24  | 181<br>22  | 238<br>18  | 262<br>13  | 310<br>10  |            |            |            |            |
|              | 10 | 135<br>49  | 186<br>47  | 240<br>45  | 264<br>43  | 315<br>38  | 356<br>33  | 403<br>24  |            |            |
|              | 20 | 131<br>99  | 183<br>97  | 238<br>94  | 260<br>92  | 314<br>88  | 358<br>83  | 404<br>74  | 438<br>64  | 498<br>56  |
|              | 30 | 126<br>149 | 178<br>147 | 233<br>144 | 254<br>141 | 311<br>135 | 355<br>126 | 402<br>113 | 431<br>105 | 486<br>91  |
|              | 40 | 112<br>200 | 169<br>197 | 228<br>194 | 250<br>191 | 307<br>185 | 352<br>174 | 400<br>160 | 426<br>151 | 477<br>127 |
|              | 50 | 95<br>252  | 156<br>249 | 221<br>246 | 246<br>243 | 300<br>238 | 350<br>228 | 398<br>212 | 421<br>194 | 470<br>161 |
|              | 60 | 78<br>304  | 145<br>301 | 213<br>298 | 238<br>294 | 289<br>286 | 342<br>276 | 386<br>262 | 412<br>243 | 459<br>218 |
|              | 70 | 67<br>355  | 135<br>353 | 206<br>349 | 228<br>340 | 277<br>329 | 336<br>316 | 375<br>300 | 408<br>288 | 453<br>257 |
|              | 75 | 58<br>382  | 125<br>379 | 197<br>373 | 220<br>362 | 270<br>350 | 321<br>337 | 360<br>322 | 398<br>312 | 442<br>278 |

VNKR 250 [253.5 cm3/rev.]

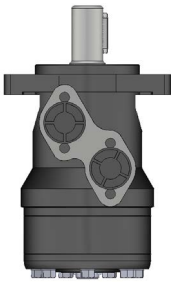
Pressure (MPa)

Max. cont Max. int

|              |    | 5          | 7          | 9          | 10         | 12         | 14         | 16         | 17.5       | 20         |
|--------------|----|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Flow (L/min) | 5  | 175<br>17  | 243<br>16  | 304<br>14  | 342<br>12  | 407<br>10  |            |            |            |            |
|              | 10 | 178<br>37  | 246<br>35  | 310<br>31  | 344<br>28  | 409<br>23  | 465<br>18  | 525<br>11  |            |            |
|              | 20 | 175<br>75  | 244<br>73  | 308<br>72  | 340<br>70  | 408<br>66  | 463<br>58  | 520<br>53  | 558<br>50  | 636<br>42  |
|              | 30 | 162<br>114 | 235<br>111 | 304<br>108 | 332<br>106 | 400<br>100 | 455<br>92  | 516<br>83  | 550<br>77  | 621<br>65  |
|              | 40 | 143<br>154 | 223<br>152 | 300<br>150 | 329<br>147 | 396<br>143 | 447<br>132 | 512<br>120 | 546<br>110 | 617<br>90  |
|              | 50 | 124<br>193 | 208<br>190 | 289<br>187 | 323<br>174 | 384<br>168 | 440<br>160 | 503<br>149 | 535<br>140 | 600<br>116 |
|              | 60 | 103<br>233 | 192<br>230 | 280<br>227 | 314<br>224 | 371<br>218 | 426<br>205 | 489<br>190 | 514<br>181 | 578<br>155 |
|              | 70 | 88<br>273  | 178<br>270 | 264<br>267 | 301<br>263 | 356<br>252 | 418<br>242 | 479<br>226 | 498<br>209 | 560<br>173 |
|              | 75 | 62<br>294  | 165<br>291 | 256<br>287 | 288<br>283 | 347<br>274 | 412<br>263 | 474<br>249 | 486<br>236 | 542<br>211 |

Torque (N·m) 256  
Speed (rpm) 287

Cont. Int.



# Performance Data

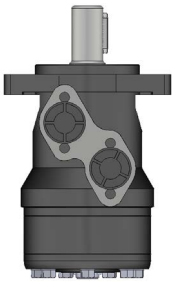
VNKR 315 [317.5 cm3/rev.]

|              |    | Pressure (MPa) |            |            |            |            |            |            |            |
|--------------|----|----------------|------------|------------|------------|------------|------------|------------|------------|
|              |    | Max. cont      |            |            |            | Max. int   |            |            |            |
|              |    | 5              | 7          | 9          | 10         | 12         | 14         | 16         | 17,5       |
| Flow (L/min) | 5  | 215<br>13      | 302<br>11  |            |            |            |            |            |            |
|              | 10 | 218<br>28      | 305<br>27  | 383<br>25  | 422<br>24  | 488<br>21  | 551<br>18  | 622<br>13  |            |
|              | 20 | 215<br>60      | 303<br>59  | 380<br>57  | 418<br>55  | 485<br>52  | 549<br>49  | 620<br>45  | 660<br>42  |
|              | 30 | 204<br>91      | 296<br>89  | 375<br>86  | 413<br>84  | 480<br>81  | 542<br>78  | 613<br>72  | 654<br>67  |
|              | 40 | 196<br>122     | 287<br>120 | 368<br>117 | 410<br>112 | 477<br>106 | 539<br>100 | 609<br>94  | 650<br>85  |
|              | 50 | 176<br>154     | 270<br>151 | 356<br>147 | 393<br>140 | 461<br>131 | 526<br>120 | 597<br>109 | 645<br>100 |
|              | 60 | 162<br>185     | 246<br>182 | 339<br>177 | 374<br>172 | 446<br>163 | 511<br>152 | 586<br>140 | 628<br>134 |
|              | 70 | 143<br>217     | 235<br>213 | 324<br>208 | 358<br>201 | 430<br>190 | 493<br>178 | 562<br>166 | 614<br>158 |
| Max. int     | 75 | 125<br>232     | 212<br>228 | 303<br>222 | 339<br>216 | 417<br>208 | 481<br>200 | 543<br>183 | 582<br>171 |

Torque (N•m) 481  
Speed (rpm) 200

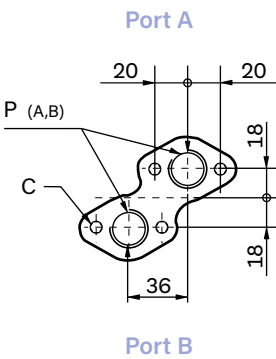
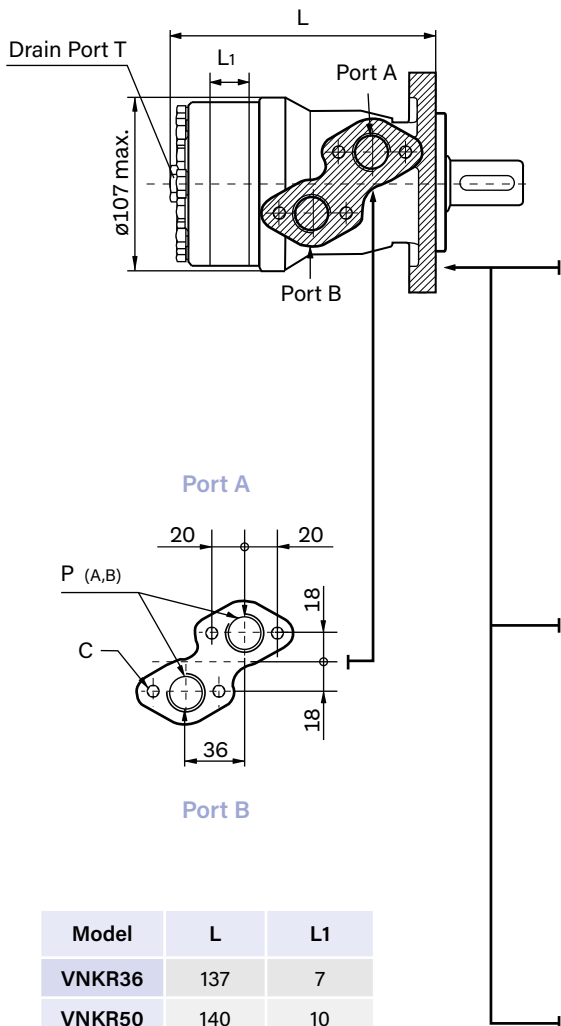
VNKR 400 [381.4 cm3/rev.]

|              |    | Pressure (MPa) |            |            |            |            |            |            |            |
|--------------|----|----------------|------------|------------|------------|------------|------------|------------|------------|
|              |    | Max. cont      |            |            |            | Max. int   |            |            |            |
|              |    | 3              | 4,5        | 5,5        | 6,5        | 8          | 10         | 12,5       | 14         |
| Flow (L/min) | 5  | 153<br>12      | 232<br>10  |            |            |            |            |            |            |
|              | 10 | 157<br>24      | 236<br>23  | 284<br>22  | 337<br>21  | 406<br>19  | 497<br>17  | 612<br>15  | 668<br>12  |
|              | 20 | 150<br>49      | 232<br>48  | 280<br>47  | 332<br>46  | 401<br>44  | 490<br>41  | 606<br>38  | 660<br>32  |
|              | 30 | 142<br>76      | 215<br>75  | 274<br>74  | 327<br>73  | 398<br>71  | 483<br>67  | 603<br>63  | 652<br>50  |
|              | 40 | 126<br>103     | 212<br>101 | 268<br>99  | 320<br>97  | 393<br>95  | 477<br>92  | 593<br>88  | 635<br>70  |
|              | 50 | 105<br>128     | 187<br>126 | 242<br>124 | 302<br>121 | 376<br>118 | 455<br>115 | 583<br>111 | 608<br>96  |
|              | 60 | 90<br>154      | 167<br>152 | 229<br>150 | 281<br>148 | 362<br>145 | 444<br>138 | 566<br>130 | 600<br>121 |
|              | 70 | 90<br>180      | 149<br>179 | 200<br>178 | 258<br>176 | 341<br>173 | 425<br>168 | 546<br>160 | 580<br>148 |
| Max. int     | 75 | 56<br>195      | 125<br>194 | 182<br>193 | 241<br>191 | 320<br>189 | 408<br>185 | 524<br>178 | 565<br>170 |



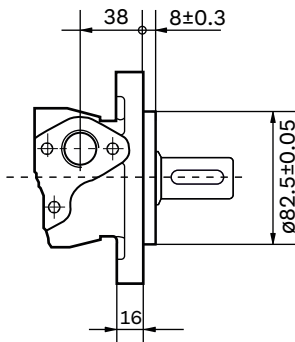
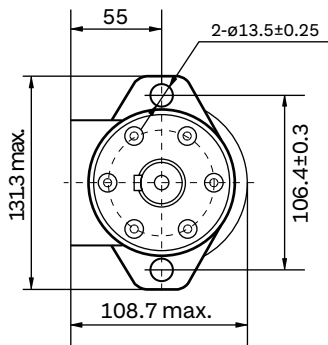
# VNKR Dimensions and Mounting Data

## MOUNTING

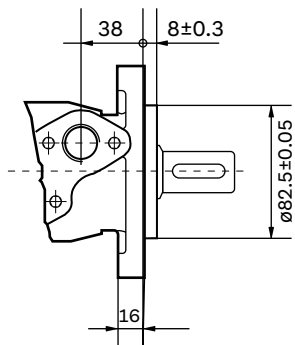
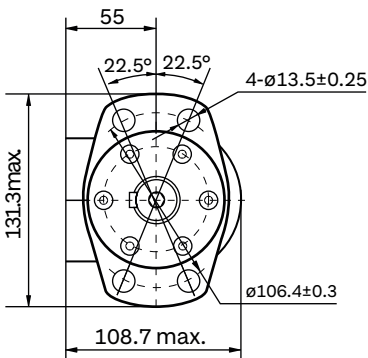


| Model   | L     | L1   |
|---------|-------|------|
| VNKR36  | 137   | 7    |
| VNKR50  | 140   | 10   |
| VNKR80  | 146   | 16   |
| VNKR100 | 150   | 20   |
| VNKR125 | 155   | 25   |
| VNKR160 | 160.5 | 30.5 |
| VNKR200 | 168   | 38.1 |
| VNKR250 | 180   | 50   |
| VNKR315 | 192   | 62   |
| VNKR400 | 204   | 74   |

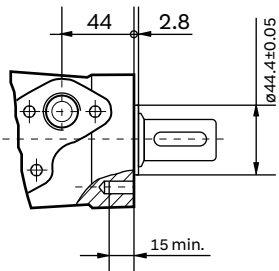
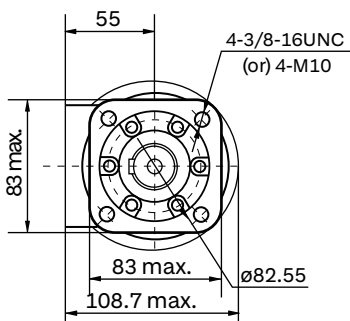
Flange 2



Flange 4

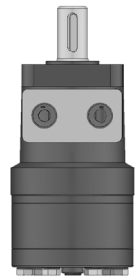


Flange H4/H5

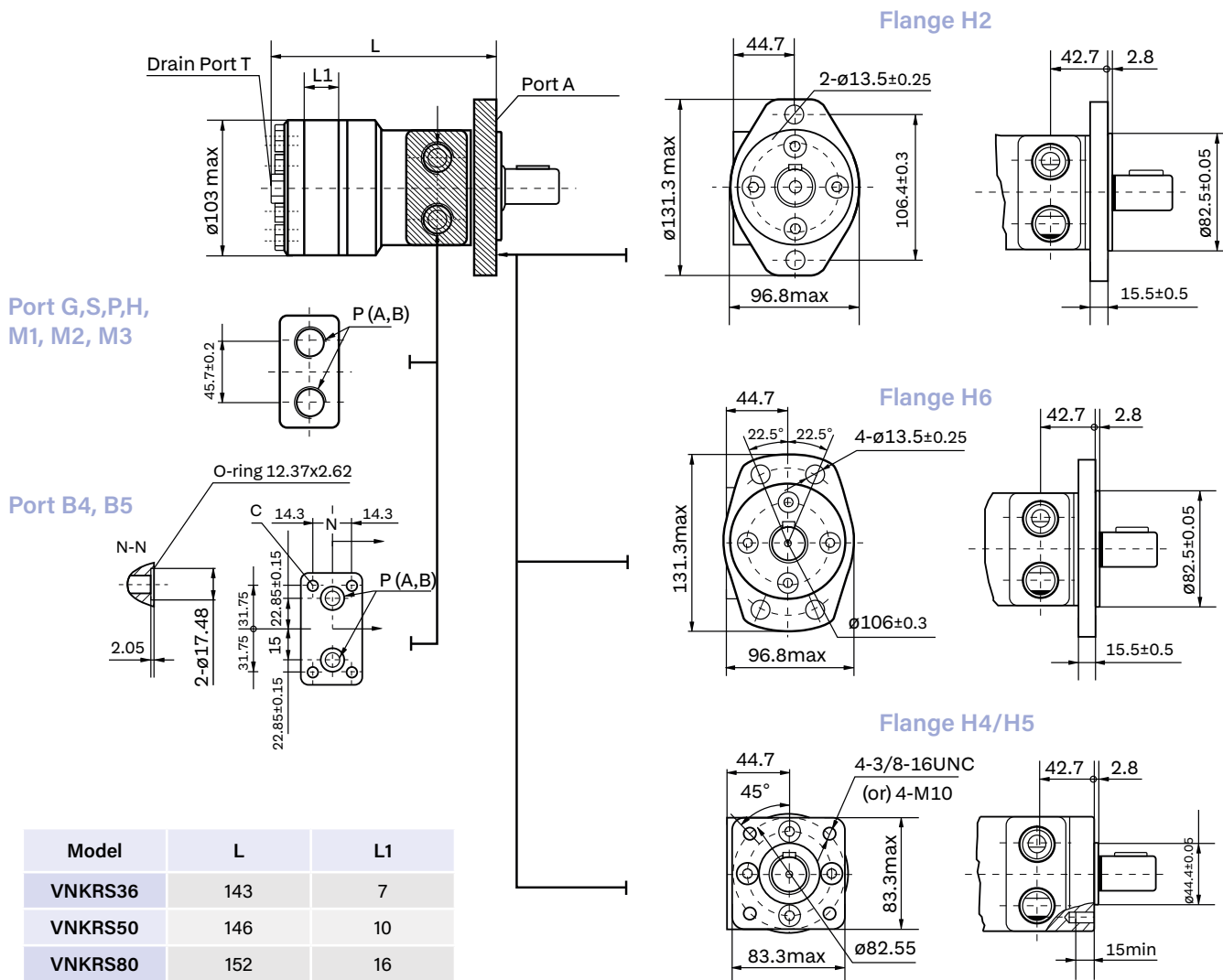


| Mounting Code | D (depth) | M (depth)      | S (depth)          | P (depth)        | R (depth)       |
|---------------|-----------|----------------|--------------------|------------------|-----------------|
| P(A,B)        | G1/2 (15) | M22 x 1.5 (15) | 7/8-14 O-ring (17) | 1/2-14NPTF (15)  | PT(RC)1/2 (15)  |
| C             | 4-M8 (13) | 4-M8 (13)      | 4-5/16-18UNC(13)   | 4-5/16-18UNC(13) | 4-M8 (13)       |
| T             | G1/4 (12) | M14 x 1.5 (12) | 7/16-20UNF (12)    | 7/16-20UNF (12)  | PT(RC)1/4 (9.7) |

# VNKRS Dimensions and Mounting Data

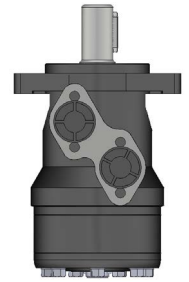


## MOUNTING



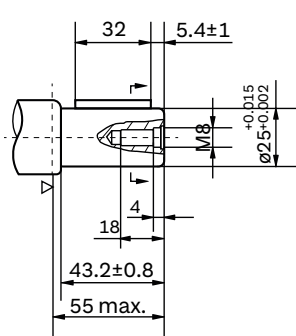
**Note:** The size L of the VNKRS N1 should be increased by 2mm.

| Mounting Code | G (depth) | S (depth)      | P (depth)          | R (depth)        | M1 (depth)     | M2 (depth)     | M3 (depth)     | B4 (depth)       | B5 (depth) |
|---------------|-----------|----------------|--------------------|------------------|----------------|----------------|----------------|------------------|------------|
| P(A,B)        | G1/2 (15) | M22 x 1.5 (15) | 7/8-14 O-ring (17) | 1/2-14NPTF (15)  | M18 x 1.5 (15) | M20 x 1.5 (15) | M22 x 1.5 (15) | ø10              | ø10        |
| T             | 4-M8 (13) | 4-M8 (13)      | 4-5/16-18UNC(13)   | 4-5/16-18UNC(13) | M10 x 1 (12)   | M10 x 1 (12)   | M10 x 1 (12)   | 7/16-20UNF(12)   | G1/4(12)   |
| C             | G1/4 (12) | M14 x 1.5 (12) | 7/16-20UNF (12)    | 7/16-20UNF (12)  | -              | -              | -              | 4-5/16-18UNC(13) | 4-M8(13)   |

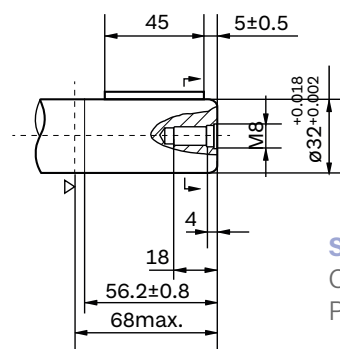


# VNKR Shaft Extensions

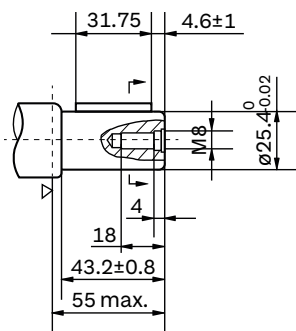
## Dimensions Data



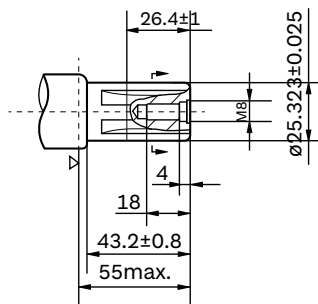
**Shaft A:**  
Cylindrical shaft ø25  
Parallel key 8x7x32



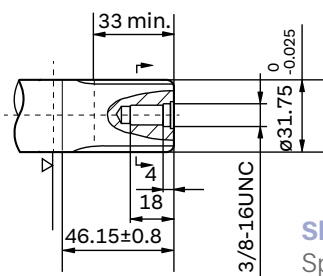
**Shaft B:**  
Cylindrical shaft ø32  
Parallel key 10x8x45



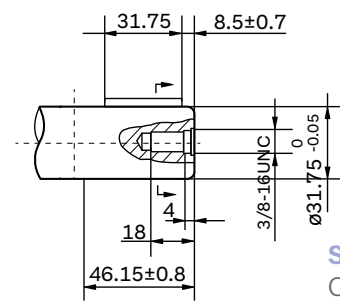
**Shaft C:**  
Cylindrical shaft ø25.4  
Parallel key  
6.35x6.35x31.75



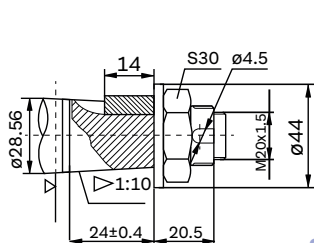
**Shaft E:**  
Splined SAE 6B



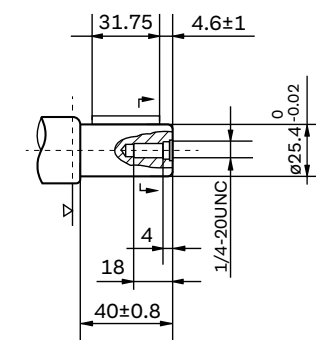
**Shaft F:**  
Splined  
14-DP12/24



**Shaft G:**  
Cylindrical shaft ø31.75  
Parallel key  
7.96x7.96x31.75



**Shaft T:**  
Cone-shaft ø28.56  
Parallel key B5x5x14  
Tightening torque: 100±10Nm

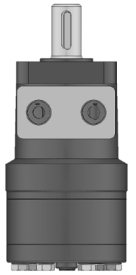


**Shaft:**  
Cylindrical shaft ø25.4  
Parallel key  
6.35x6.35x31.75

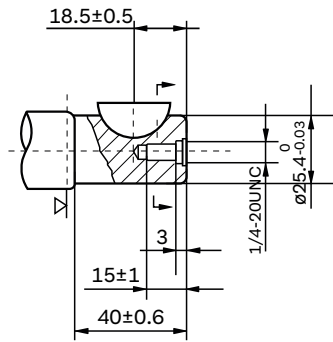


Motor Mounting  
Surface

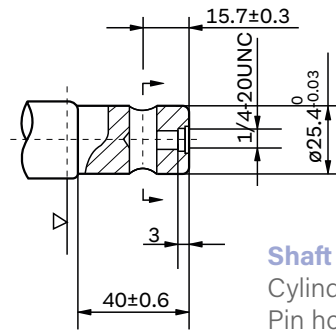
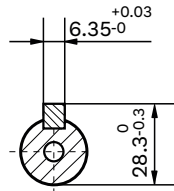




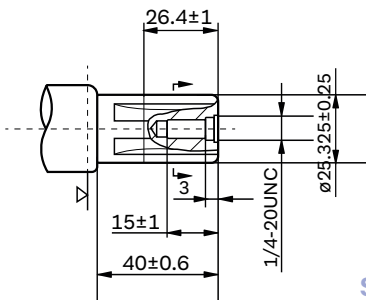
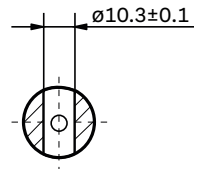
# VNKRS Shaft Extensions Dimensions Data



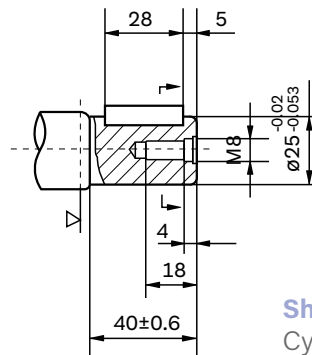
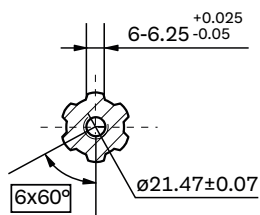
**Shaft K:**  
Cylindrical shaft  $\varnothing 25.4$   
Woodruff key  $\varnothing 25.4 \times 6.35$



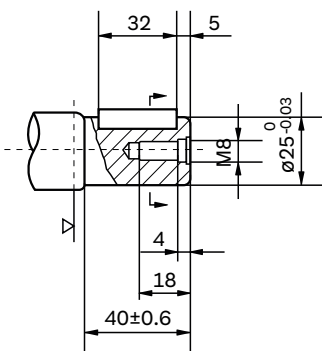
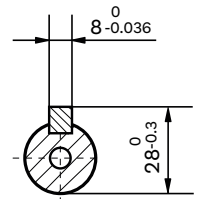
**Shaft H:**  
Cylindrical shaft  $\varnothing 25.4$   
Pin hole  $\varnothing 10.3$



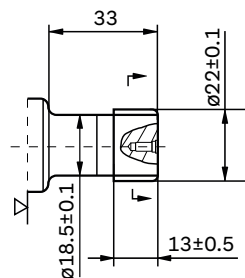
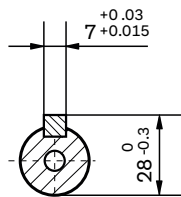
**Shaft S:**  
Splined SAE 6B



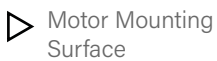
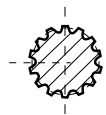
**Shaft P:**  
Cylindrical shaft  $\varnothing 25$   
Parallel key 8x7x28



**Shaft J:**  
Cylindrical shaft  $\varnothing 25$   
Parallel key 7x7x32

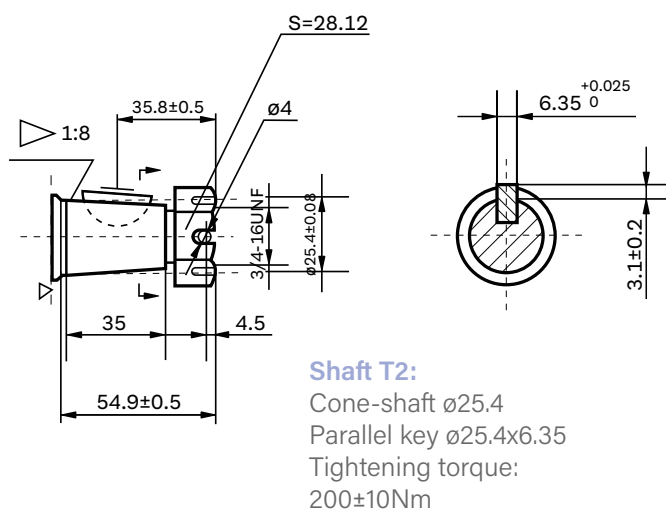
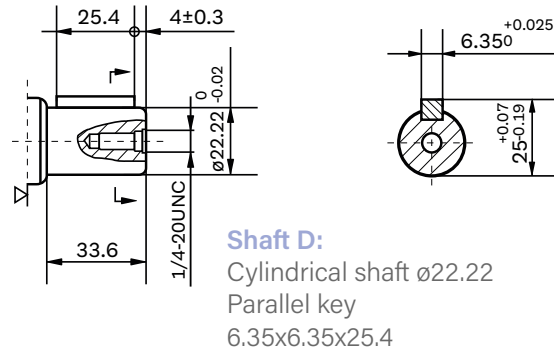
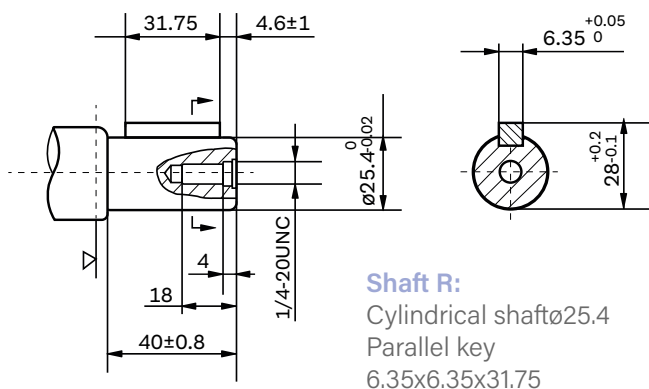
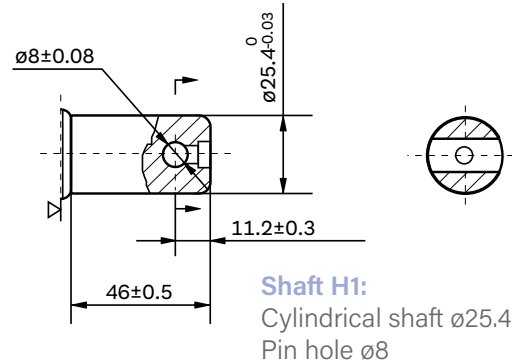
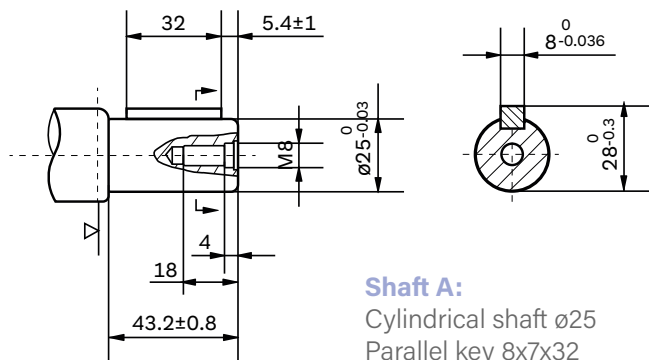
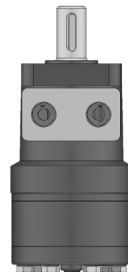


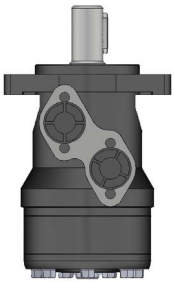
**Shaft I:**  
Splined 13-DP16/32



# VNKRS Shaft Extensions

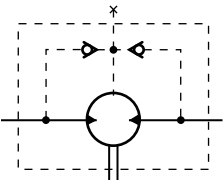
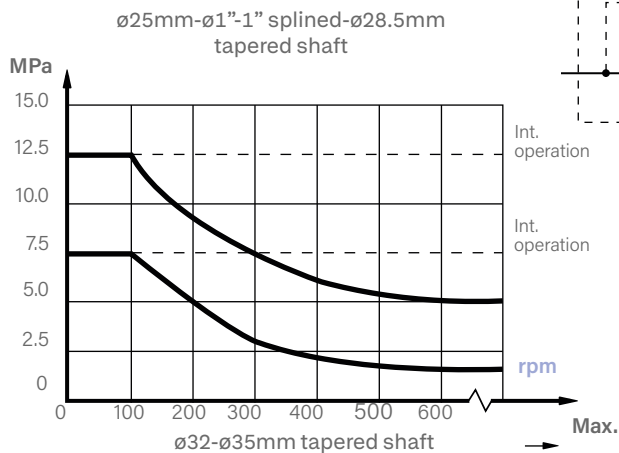
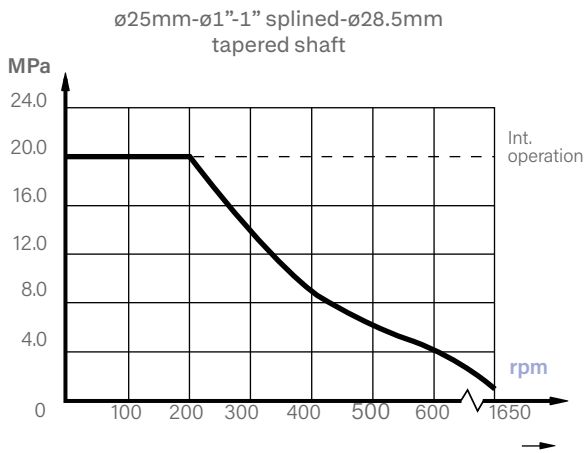
## Dimensions Data





# VNKR, VNKR Series Hydraulic Motor

## PERMISSIBLE SHAFT SEAL PRESSURE



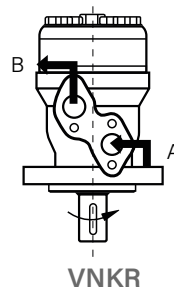
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

## DIRECTION OF SHAFT ROTATION: Standard

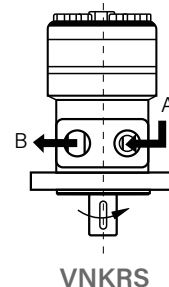
When facing shaft end of motor, shaft to rotate:

Clockwise when port "A" is pressurized.

Counter-clockwise port "B" is pressurized.

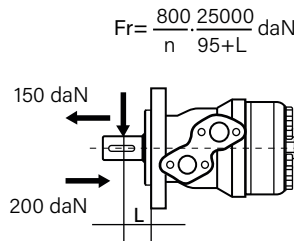
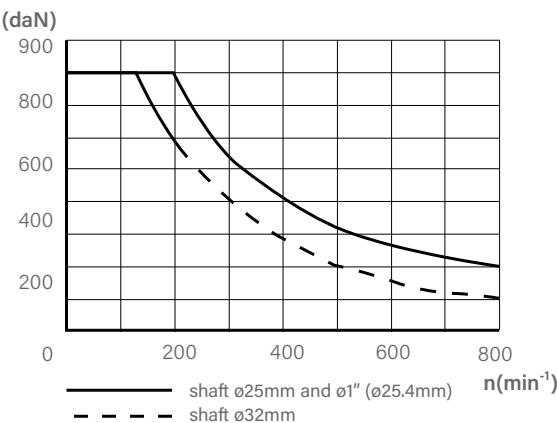


VNKR



VNKR

## STATUS OF THE SHAFT'S RADIAL FORCE

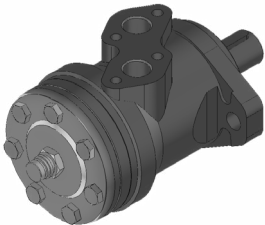


Fr= Radial Force (daN)  
L= Distance (mm)  
n= Speed (rpm)  
Rhomb-flange L= 30mm  
Square-flange L= 24mm

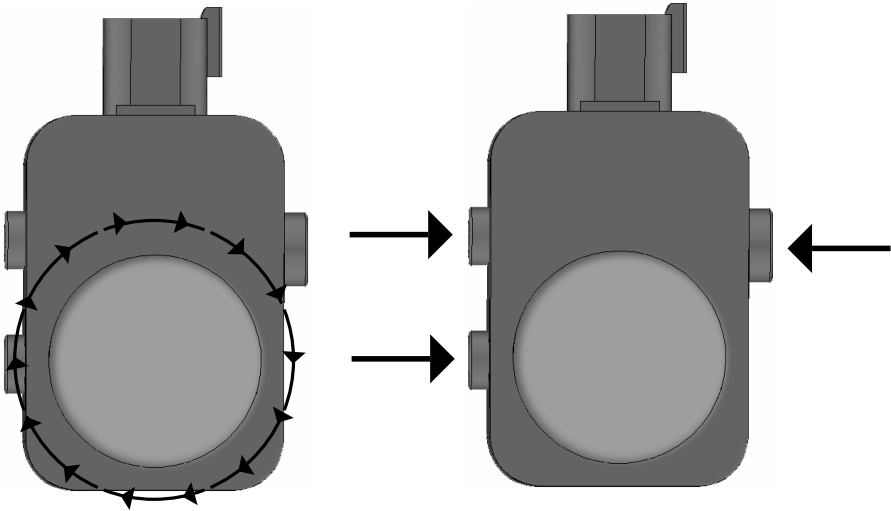
## OIL FLOW in drain line

The table shows the Max. oil flow in the drain line at a return pressure less than 0.5-1MPa.

| Pressure drop (PmPa) | Viscosity (mm <sup>2</sup> /s) | Oil flow in the drain line (L/min) |
|----------------------|--------------------------------|------------------------------------|
| 10                   | 20                             | 2.5                                |
|                      | 35                             | 1.8                                |
| 14                   | 20                             | 3.5                                |
|                      | 35                             | 2.8                                |



# VMD Speedsensor



## INSTALLATION GUIDE

Turn the sensor to the desired position and mount the sensor on the plug.

It is possible to mount the sensor in 36 positions.

To lock the sensor, push the clip into the sensor as shown.

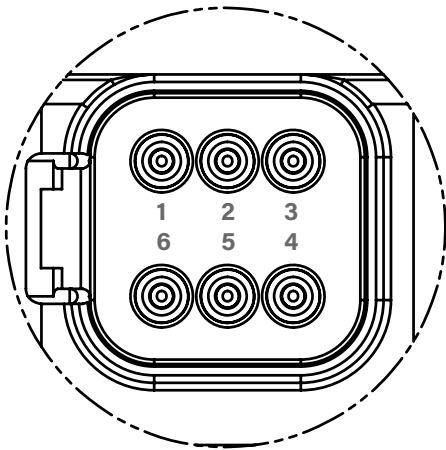
### Sensor Pinout

| Pin | Controller function       |
|-----|---------------------------|
| 1   | Power supply 9-36 V dc    |
| 2   | Power ground -            |
| 3   | D 1 (configurable output) |
| 4   | CAN L                     |
| 5   | CAN H                     |
| 6   | D 2 (configurable output) |

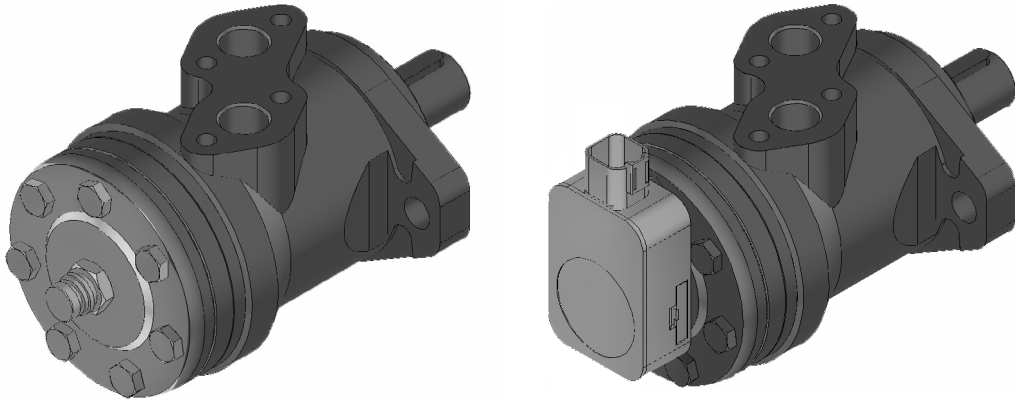
Deutsch DT connector 6 pin mating connector assembly:  
(Not offered by Danfoss)

|         |                |                | Color    |
|---------|----------------|----------------|----------|
| 1       | Plug           | DT06-6S-PO12   | (black)  |
| 1       | Wedgelock      | W6S-PO12       | (green)  |
| 6       | Solid Contacts | 0462-209-16141 | (nickel) |
| Options |                |                |          |
| 1       | Boot           | DT6S-BT-BK     | (black)  |

### Deutsch DT connector - 6 pin



# VMD Speedsensor

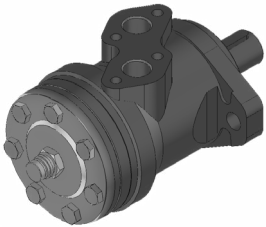


## SPECIFICATION Main Specification

| Output signal                |                 |                                                                                                    | D1                  | D2                  |
|------------------------------|-----------------|----------------------------------------------------------------------------------------------------|---------------------|---------------------|
|                              | Pulse mode      | mode Push-pull output. Direction = CCW: high, CW: low<br>Confi gurable up to 180 pulse/revolutions | Square Wave         | Direction           |
|                              | Quadrature mode | 2 channels with 90° phaseshift each with 90 pulses/revolution Push-pull output                     | Square Wave Phase A | Square Wave Phase B |
|                              | CAN mode        | Supports CAN 2.0B with SAE J1939 Message Protocol with Proprietary Messages                        |                     |                     |
|                              |                 | Baudrate: 250 kbaud (fi xed)                                                                       |                     |                     |
| Shaft velocity: ± 2500 rpm   |                 |                                                                                                    |                     |                     |
| Speed range                  |                 | 0 - 2500 rpm                                                                                       |                     |                     |
| Supply voltage               |                 | 9 - 36 Vdc                                                                                         |                     |                     |
| Maximum power                |                 | 0.8 W                                                                                              |                     |                     |
| Temperature range (amibient) |                 | -30 °C to 60 °C                                                                                    |                     |                     |
| EMC-Immunity (EMI):          |                 | 100 V/m ISO 13766                                                                                  |                     |                     |
| Grade of enclosure**         |                 | IP 69 K                                                                                            |                     |                     |
| Vibration                    |                 | 30 G (294 m/s2)                                                                                    |                     |                     |
| Shock                        |                 | 50 G (490 m/s2)                                                                                    |                     |                     |

\* Confi gurable with PLUS+1® Service Tool - Please contact Danfoss for further information. T301 082

\*\* According to IEC 529.

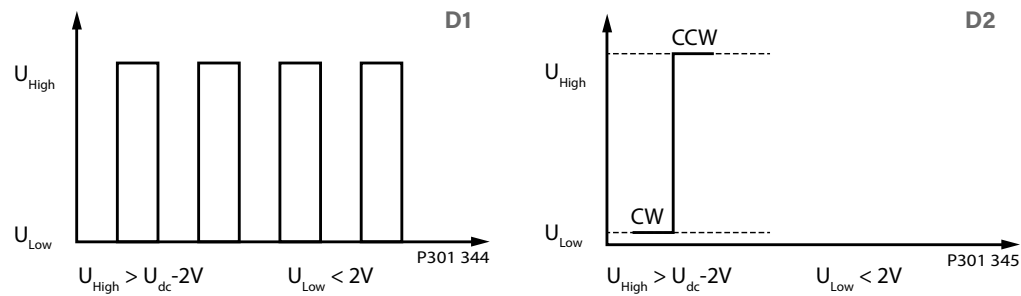


# VMD Speedsensor

## SPECIFICATION Main Specification

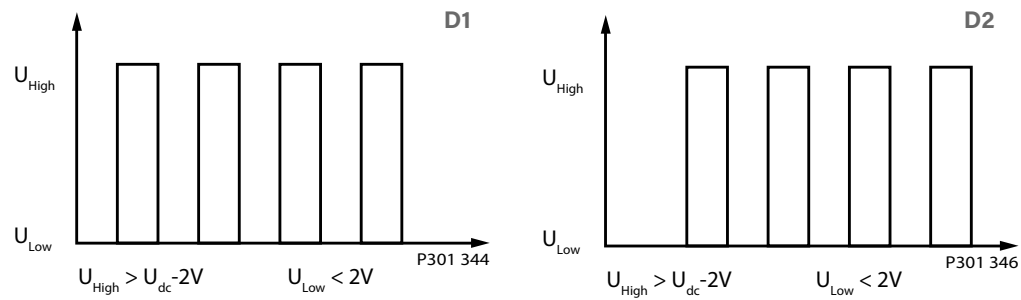
### Pulse mode

The sensor generates a speed dependent pulse on D1 and a direction signal on D2.

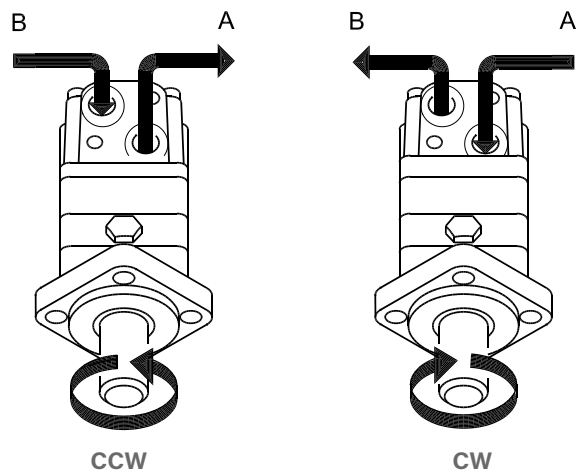


### Quadrature mode

The sensor generates a speed dependent pulse on D1 and D2 with a 90 degree phaseshift.

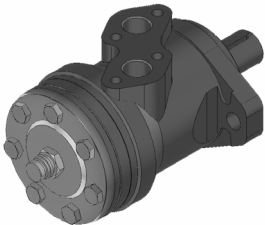


### Direction of shaft rotation

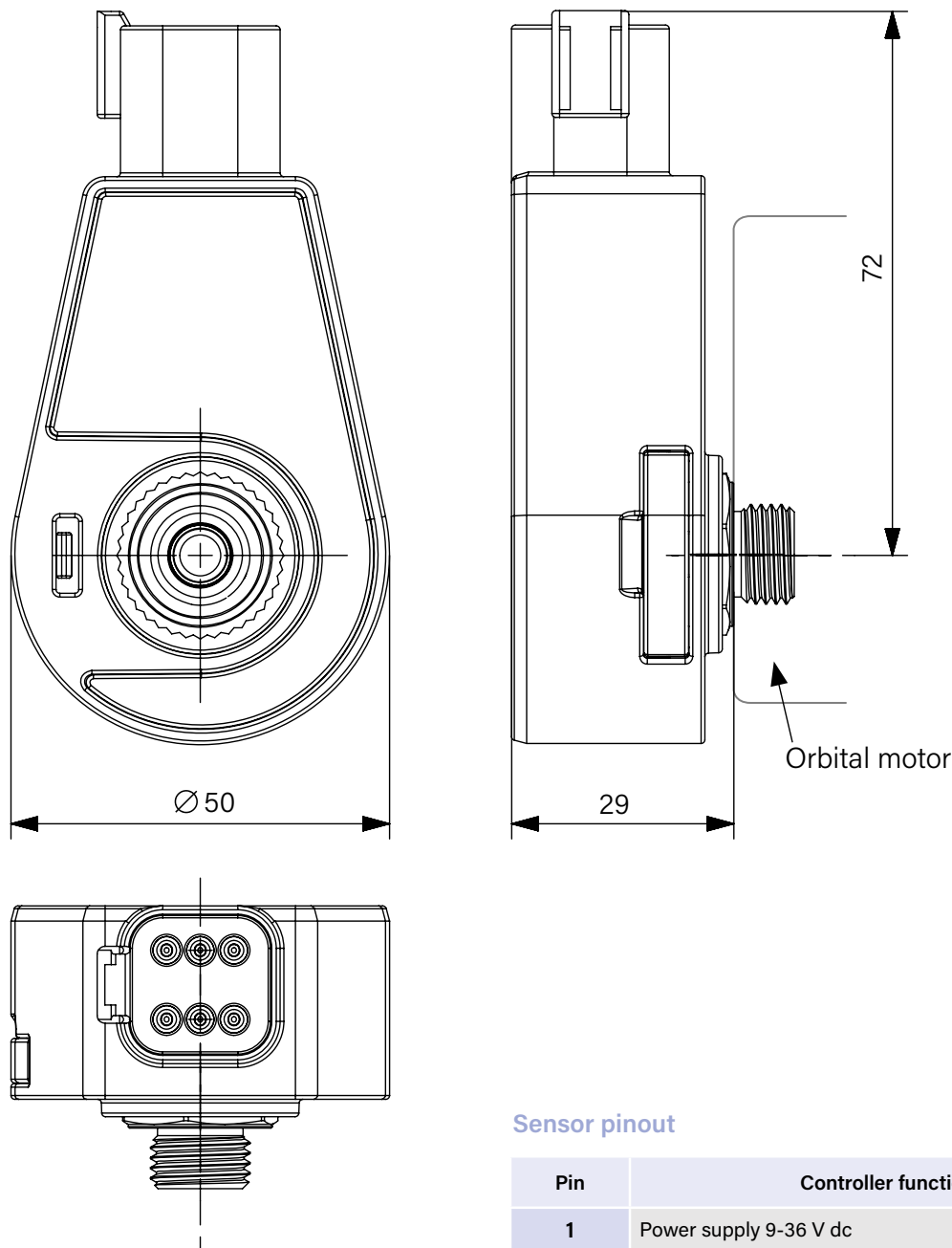


\*Please note that the VMD speed sensor may fail. Output signals may not represent correct rotation speed or direction.  
\*Any application of the VMD speed sensor should be subjected to appropriate hazard and risk assessment, according to relevant safety standards for the application.  
\*Reliability data MTTF for the VMD speed sensor are available on request from your Danfoss representative.

# VMD Speedsensor



## PRODUCT OVERVIEW



### Sensor pinout

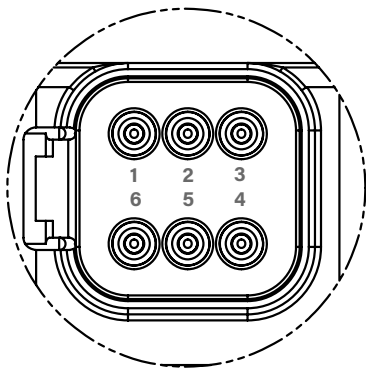
| Pin | Controller function       |
|-----|---------------------------|
| 1   | Power supply 9-36 V dc    |
| 2   | Power ground -            |
| 3   | D 1 (configurable output) |
| 4   | CAN L                     |
| 5   | CAN H                     |
| 6   | D 2 (configurable output) |



# VMD Speedsensor

## PRODUCT OVERVIEW

### Sensor pinout



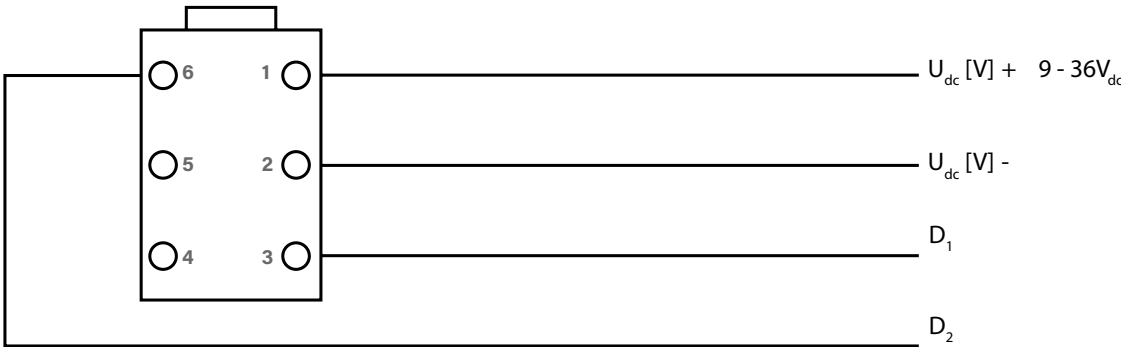
### Mating connector

Deutsch DT connector 6 pin Mating connector assembly:  
(Not offered by Danfoss)

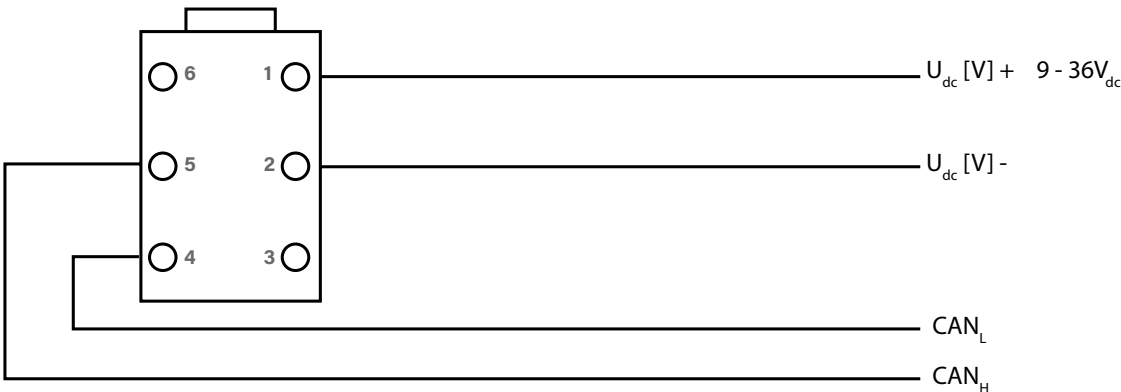
| Pcs     | Description    | Deutch part no. | Color    |
|---------|----------------|-----------------|----------|
| 1       | Plug           | DT06-6S-PO12    | (black)  |
| 1       | Wedgelock      | W6S-PO12        | (green)  |
| 6       | Solid Contacts | 0462-209-16141  | (nickel) |
| Options |                |                 |          |
| 1       | Boot compl.    | DT6S-BT-BK      | (black)  |

### Wiring diagram

Wiring diagram: Pulse and quadrature mode

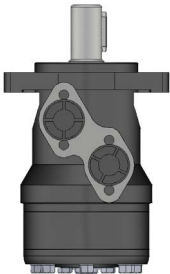


Wiring diagram: CAN mode





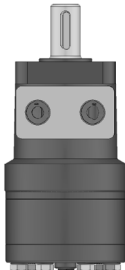
# Order Information



|       |       |                                         |              |                      |                                                 |       |                    |
|-------|-------|-----------------------------------------|--------------|----------------------|-------------------------------------------------|-------|--------------------|
| 1     | 2     | 3                                       | 4            | 5                    | 6                                               | 7     | 8                  |
| VNKR  |       |                                         |              |                      |                                                 |       |                    |
| Pos.1 | 2     | 3                                       | 4            | 5                    | 6                                               | 7     | 8                  |
| Code  | Disp. | Flange                                  | Output shaft | Ports and drain port | Rotation direction                              | Paint | Unusually Function |
| VNKR  | 36    | 2-Ø13.5Rhomb-flange, pilot Ø82.5x8      | A            | D                    | GI/2 Manifold Mount 4-M8, GI/4                  | 00    | Standard           |
|       | 50    |                                         | C            |                      |                                                 |       |                    |
|       | 80    |                                         | E            |                      |                                                 |       |                    |
|       | 100   |                                         | R            |                      |                                                 |       |                    |
|       | 125   |                                         | T            |                      |                                                 |       |                    |
|       | 160   | 4-Ø13.5Rhomb-flange, pilot Ø82.5x8      | B            | M                    | M22x1.5 Manifold Mount 4-M8, M14x1.5            | Omit  | Big radial force   |
|       | 200   |                                         |              |                      |                                                 |       |                    |
|       | 250   |                                         |              |                      |                                                 |       |                    |
|       | 315   |                                         |              |                      |                                                 |       |                    |
|       | 400   |                                         |              |                      |                                                 |       |                    |
|       |       | 4-3/8-16 Square-flange, pilot Ø44.4x2.8 | F            | S                    | 7/8-14 O-ring manifold 4-5/16-18UNC, 7/16-20UNF | B     | No case drain      |
|       |       |                                         |              |                      |                                                 |       |                    |
|       |       |                                         |              |                      |                                                 |       |                    |
|       |       |                                         |              |                      |                                                 |       |                    |
|       |       |                                         |              |                      |                                                 |       |                    |
|       |       | 4-M10 Square-flange, pilot Ø44.4x2.8    | FD           | P                    | 1/2-14 NPTF Manifold 4-5/16-18UNC, 7/16-20UNF   | S     | Free Running       |
|       |       |                                         |              |                      |                                                 |       |                    |
|       |       |                                         |              |                      |                                                 |       |                    |
|       |       |                                         |              |                      |                                                 |       |                    |
|       |       |                                         |              |                      |                                                 |       |                    |
|       |       | 4-M10 Square-flange, pilot Ø44.4x2.8    | G            | R                    | PT(Rc)1/2 Manifold 4-M8, PT(Rc)1/4              | LS    | Low Speed          |
|       |       |                                         |              |                      |                                                 |       |                    |
|       |       |                                         |              |                      |                                                 |       |                    |
|       |       |                                         |              |                      |                                                 |       |                    |
|       |       |                                         |              |                      |                                                 |       |                    |
|       |       | 4-M10 Square-flange, pilot Ø44.4x2.8    |              |                      |                                                 |       | Speed Sensor       |
|       |       |                                         |              |                      |                                                 |       |                    |
|       |       |                                         |              |                      |                                                 |       |                    |
|       |       |                                         |              |                      |                                                 |       |                    |
|       |       |                                         |              |                      |                                                 |       |                    |

Note: The shafts of B\F\FD\G\T1\T3 are only suitable for flanges of 2 and 4.

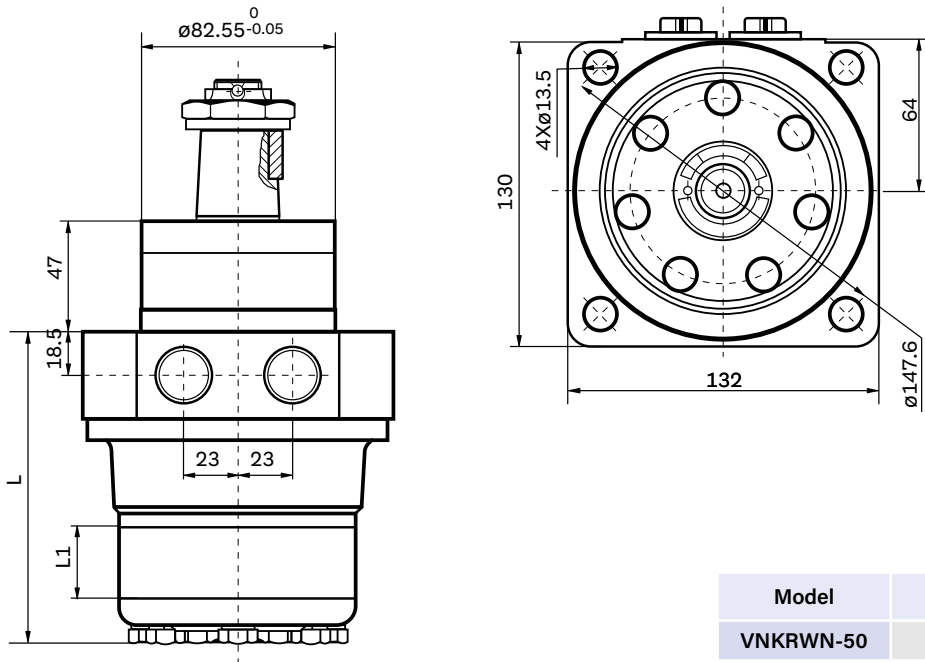
# Order Information



|       |       |                                         |              |                      |                    |                |                    |
|-------|-------|-----------------------------------------|--------------|----------------------|--------------------|----------------|--------------------|
| 1     | 2     | 3                                       | 4            | 5                    | 6                  | 7              | 8                  |
| VNKRS |       |                                         |              |                      |                    |                |                    |
| Pos.1 | 2     | 3                                       | 4            | 5                    | 6                  | 7              | 8                  |
| Code  | Disp. | Flange                                  | Output shaft | Ports and drain port | Rotation direction | Paint          | Unusually Function |
| VNKRS | 36    | 2-Ø13.5Rhomb-flange, pilot Ø82.5x2.8    | K            | G                    | Standard           | Omit           | Omit               |
|       | 50    |                                         | S            | S                    |                    |                | N1                 |
|       | 80    | 4-Ø13.5Rhomb-flange, pilot Ø82.5x2.8    | A            | P                    | R                  | B              | 0                  |
|       | 100   |                                         | R            | T                    |                    |                | F                  |
|       | 125   | 4-3/8-16 Square-flange, pilot Ø44.4x2.8 | H            | R                    | Opposite           | S              | LS                 |
|       | 160   |                                         | H1           | B4                   |                    |                |                    |
|       | 200   | 4-M10 Square-flange, pilot Ø44.4x2.8    | D            | B5                   | M18x1.5, M10x1     | M20x1.5, M10x1 | SD                 |
|       | 250   |                                         | I            | M1                   |                    |                |                    |
|       | 315   |                                         | T2           | M2                   |                    |                |                    |
|       | 400   |                                         | P            | M3                   |                    |                |                    |
|       |       |                                         | J            |                      |                    |                |                    |

**Note:** When the table is used, please fill the code of left rows in dash area and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports. If the specification is not in the table or you have specific requirements, please contact us.

# VNKRWN Dimensions Mounting Data and Order Information



| Mounting Code | G (depth) | M (depth)   | S (depth)        | P (depth)      |
|---------------|-----------|-------------|------------------|----------------|
| P(A,B)        | G1/2(15)  | M22x1.5(15) | 7/8-14O-ring(17) | 1/2-14NPTF(15) |
| C             | G1/4(12)  | M14x1.5(12) | 7/16-20UNF(12)   | 7/16-20UNF(12) |

| Model      | L     | L1   |
|------------|-------|------|
| VNKRWN-50  | 113   | 10   |
| VNKRWN-80  | 119   | 16   |
| VNKRWN-100 | 123   | 20   |
| VNKRWN-125 | 128   | 25   |
| VNKRWN-160 | 133.5 | 30.5 |
| VNKRWN-200 | 141   | 38.1 |
| VNKRWN-250 | 153   | 50   |
| VNKRWN-315 | 165   | 62   |
| VNKRWN-400 | 177   | 74   |

# Order Information



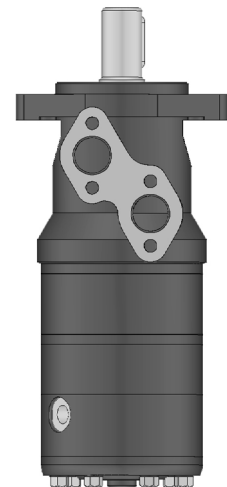
| Pos.1  | 2      | 3                                       | 4            | 5                    | 6                            | 7     | 8                  |             |
|--------|--------|-----------------------------------------|--------------|----------------------|------------------------------|-------|--------------------|-------------|
| Code   | Flange |                                         | Output shaft | Ports and drain port | Rotation direction           | Paint | Unusually Function |             |
| VNKRWN | 50     | 4-Ø13.5<br>Wheel<br>Mount,<br>Ø82.5x9.4 | T1           | D                    | G1/2, G1/4                   | 00    | Standard           |             |
|        | 80     |                                         | B            | M                    | M22x1.5,M14x1.5              | Omit  |                    | Blue        |
|        | 100    |                                         | F            | S                    | 7/8-14 O-ring,<br>7/16-20UNF | R     |                    | Black       |
|        | 125    |                                         | FD           | P                    | 1/2-14NPTF 7/16-<br>20UNF    | S     |                    | Silver grey |
|        | 160    |                                         | G            |                      |                              |       |                    |             |
|        | 200    | Omit                                    |              |                      |                              |       | Speed<br>sensor    |             |
|        | 250    |                                         |              |                      |                              |       |                    |             |
|        | 315    |                                         |              |                      |                              |       |                    |             |
|        | 400    |                                         |              |                      |                              |       |                    |             |
|        |        |                                         |              |                      |                              |       |                    |             |

**Note:** The table is used , please fill the code of right rows in the table and give us , which the code information is consists of construction , displacement , mounting flange output shaft and ports . If the specification is not in the table or you have specific requirements , please contact us.

# VNKR-VNK3 Series Hydraulic Motor

## INTRODUCTION

**VNKR-VNK3** is a type of shaft flow distribution brake motor with a friction pair direct brake linkage shaft, reliable braking, need external brake oil circuit, multiple sets of spring braking force, compact structure, flexible adjustment, assembly, parameter adjustment and disassembly maintenance and other convenience.



## SPECIFICATION Main Specification

Technical data for **VNKR-VNK3** with  $\varnothing 25$  and  $\varnothing 25.4$  and  $\varnothing 25.4$  splined SAE 6B and  $\varnothing 28.56$  tapered shaft.

| Type                                           |       | VNKR<br>-VNK3<br>65 | VNKR<br>-VNK3<br>80 | VNKR<br>-VNK3<br>100 | VNKR<br>-VNK3<br>125 | VNKR<br>-VNK3<br>160 | VNKR<br>-VNK3<br>200 | VNKR<br>-VNK3<br>250 | VNKR<br>-VNK3<br>315 | VNKR<br>-VNK3<br>400 |
|------------------------------------------------|-------|---------------------|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Geometric displacement (cm <sup>3</sup> /rev.) |       | 66.8                | 81.5                | 102                  | 127.2                | 157.2                | 194.5                | 253.3                | 311                  | 384                  |
| Max. speed (rpm)                               | cont. | 800                 | 750                 | 600                  | 475                  | 378                  | 310                  | 240                  | 190                  | 155                  |
|                                                | int.  | 950                 | 940                 | 750                  | 600                  | 475                  | 385                  | 300                  | 240                  | 190                  |
| Max. torque (N·m)                              | cont. | 165                 | 195                 | 240                  | 300                  | 360                  | 360                  | 410                  | 490                  | 500                  |
|                                                | int.  | 195                 | 220                 | 280                  | 340                  | 430                  | 440                  | 490                  | 550                  | 620                  |
|                                                | peak  | 220                 | 270                 | 320                  | 370                  | 460                  | 560                  | 640                  | 650                  | 680                  |
| Max. output (kW)                               | cont. | 11                  | 12.5                | 13                   | 12.5                 | 12.5                 | 10                   | 7                    | 9                    | 7.5                  |
|                                                | int.  | 13                  | 15                  | 15                   | 14.5                 | 14                   | 13                   | 9.5                  | 10                   | 9                    |
| Max. pressure drop (MPa)                       | cont. | 17.5                | 17.5                | 17.5                 | 17.5                 | 16.5                 | 13                   | 12                   | 12                   | 10                   |
|                                                | int.  | 20                  | 20                  | 20                   | 20                   | 20                   | 17.5                 | 15                   | 14                   | 12.5                 |
|                                                | peak  | 22.5                | 22.5                | 22.5                 | 22.5                 | 22.5                 | 22.5                 | 20                   | 17.5                 | 15                   |
| Max. flow (L/min)                              | cont. | 55                  | 60                  | 60                   | 60                   | 60                   | 60                   | 60                   | 60                   | 60                   |
|                                                | int.  | 65                  | 75                  | 75                   | 75                   | 75                   | 75                   | 75                   | 75                   | 75                   |
| Item Code                                      |       | VNKR-VNK3A          |                     |                      |                      |                      | VNKR-VNK3B           |                      |                      |                      |
| Static Torque (N·m)                            |       | 360~440             |                     |                      |                      |                      | 460~540              |                      |                      |                      |
| Brake release press (MPa)                      |       | 1.4~1.9             |                     |                      |                      |                      | 1.7~2.3              |                      |                      |                      |
| Max. release press (MPa)                       |       | 20                  |                     |                      |                      |                      | 20                   |                      |                      |                      |
| Weight (Kg)                                    |       | 11.4                | 11.7                | 11.9                 | 12.1                 | 12.4                 | 12.9                 | 13.5                 | 13.8                 | 13.8                 |

\* **Continuous pressure:** Max. value of operating motor continuously.

\* **Intermittent pressure:** Max. value of operating motor in 6 seconds per minute.

\* **Peak pressure:** Max. value of operating motor in 0.6 second per minute.

1. The ture pressure difference between inlet port and outlet port.

2. Normal oil temperature 20°C~60°C upper limit 90°C (no more than 1 hour).

3. **Filtering and oil cleanliness:** A return filter should be installed in the system with fineness in the rang of 10~30μm and a piece of magnet should be installed at the bottom of the tank to prevent grits into the system. The max. solid contamination grade of the oil is no more than 19/16.

4. **Viscosity:** 42~74mm<sup>2</sup>/s at 40°C of oil temperature, according to the condition to choose an applicable hydraulic oil.

5. **The optimal operation situation should be** at the 1/3~2/3 of the max. cont. operation situation.

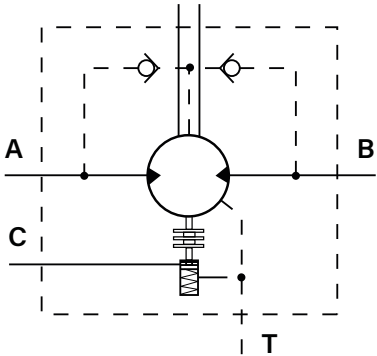
6. **To assure best motor life,** run motor for approximately 1 hour at 30% of the max. cont. pressure before application to full load.

Besure motor is fulled with fluid prie to any load applications.

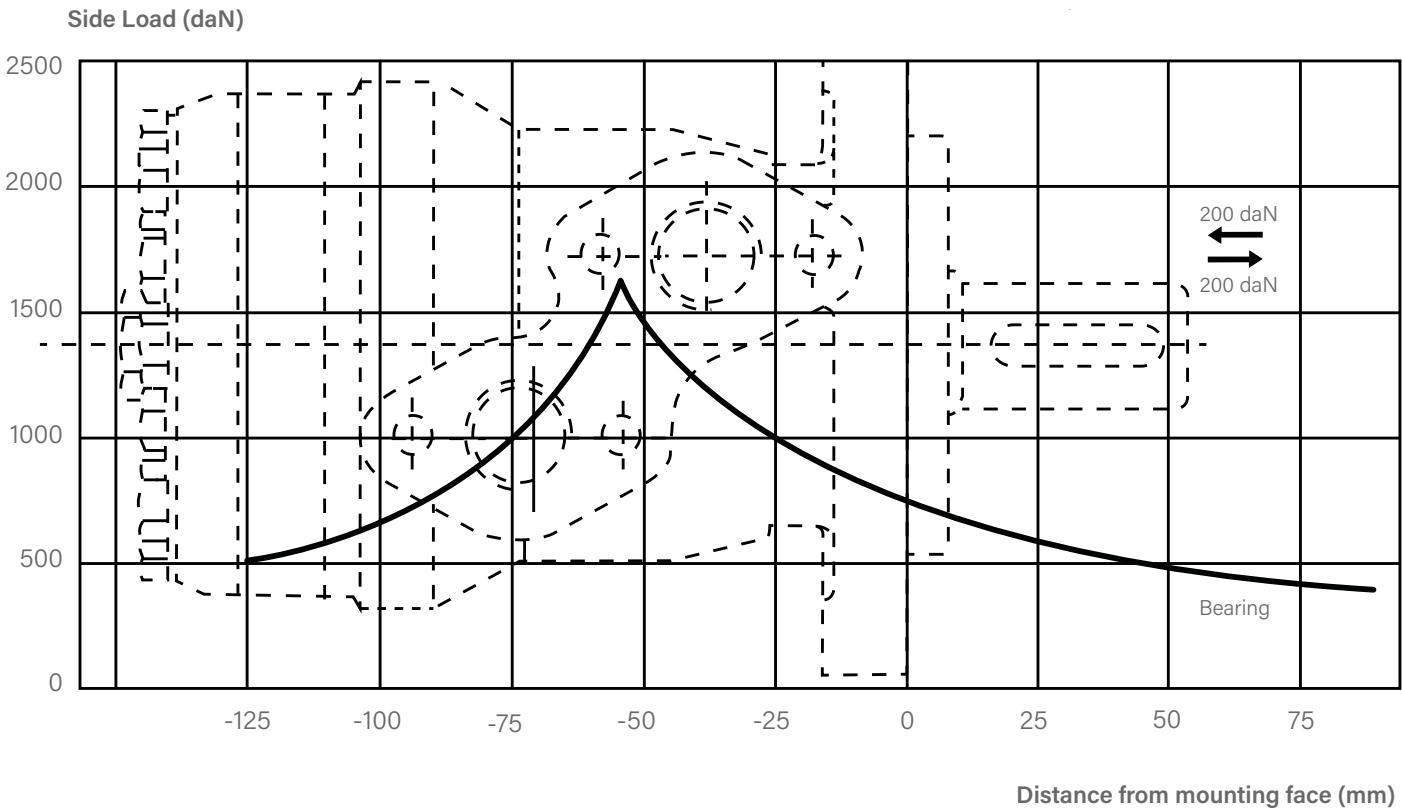


# VNKR-VNK3 Hydraulic Systems

The **brake motor** must always have a drain line.  
The brake release pressure is the difference between the pressure in the brake release line and the pressure in the drain line.



## VNKR-VNK3 N1 Mounting Flange Radial Forceting

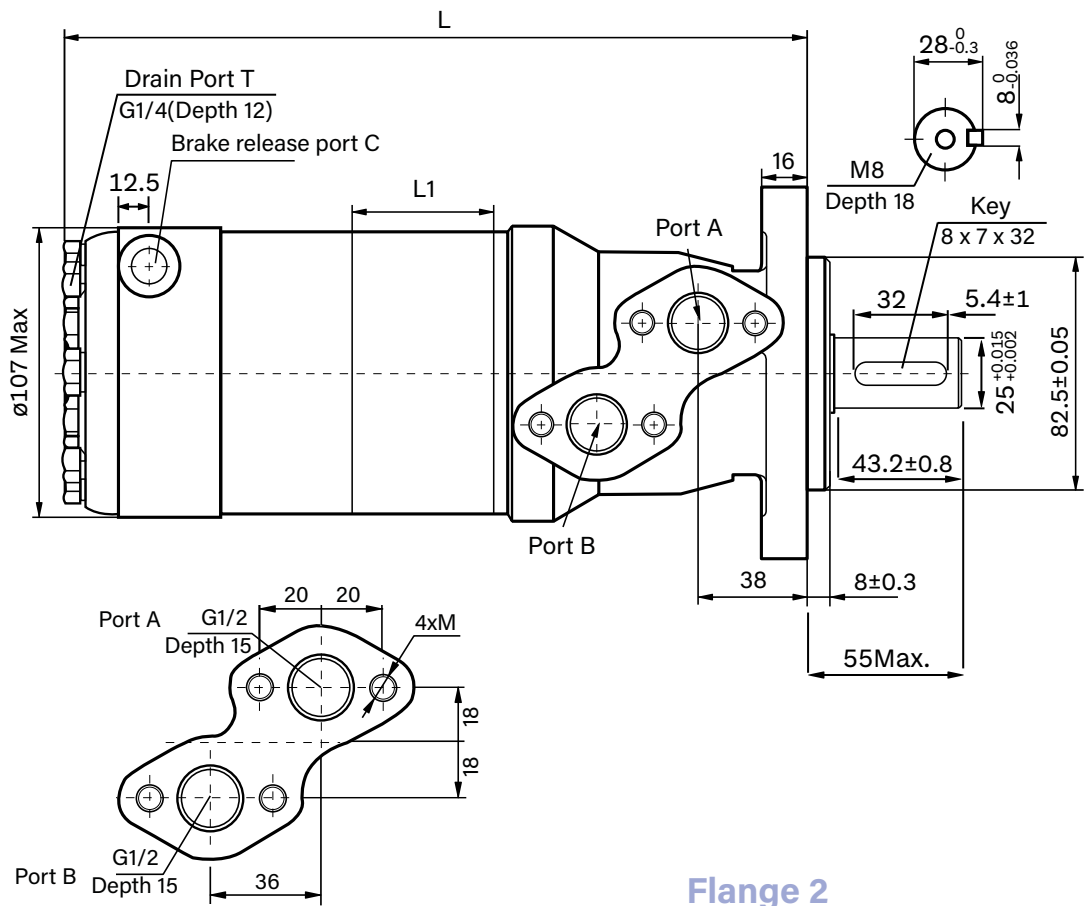


The **bearing curve** represents allowable bearing loads for an  $L_{10}$  bearing life at  $12 \times 10^6$  revolutions. Or 2000 hours at 100 rpm.

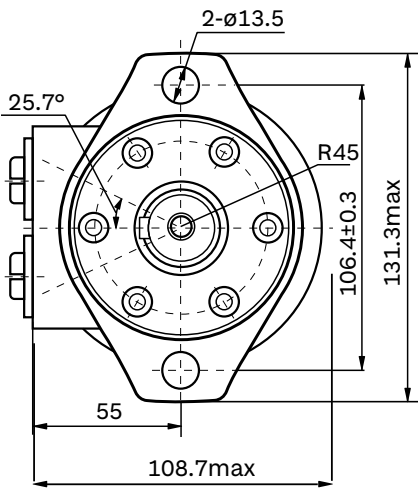
| Bearing load multiplication factor table |      |     |      |      |      |      |      |      |      |
|------------------------------------------|------|-----|------|------|------|------|------|------|------|
| RPM                                      | 50   | 100 | 200  | 300  | 400  | 500  | 600  | 700  | 800  |
| FACTOR                                   | 1.23 | 1   | 0.81 | 0.72 | 0.66 | 0.62 | 0.58 | 0.56 | 0.54 |



# VNKR-VNK3 Dimensions and Mounting Data



Flange 2



| Model         | L     | L1   |
|---------------|-------|------|
| VNKR-ZD10-36  | 214   | 7    |
| VNKR-ZD10-50  | 217   | 10   |
| VNKR-ZD10-80  | 223   | 16   |
| VNKR-ZD10-100 | 227   | 20   |
| VNKR-ZD10-125 | 232   | 25   |
| VNKR-ZD10-160 | 237.5 | 30.5 |
| VNKR-ZD10-200 | 245   | 38.1 |
| VNKR-ZD10-250 | 257   | 50   |
| VNKR-ZD10-310 | 269   | 62   |
| VNKR-ZD10-400 | 281   | 74   |

| Content Mounting | Code      |             |                  |                  |               |
|------------------|-----------|-------------|------------------|------------------|---------------|
|                  | D (Depth) | M (Depth)   | S (Depth)        | P (Depth)        | R (Depth)     |
| P(A,B)           | G1/2(15)  | M22x1.5(15) | 7/8-14UNF(17)    | 1/2-14NPTF(15)   | PT(RC)1/2(15) |
| T                | G1/4(12)  | M14x1.5(12) | 7/16-20UNF(12)   | 7/16-20UNF(12)   | PT(RC)1/4(12) |
| M                | 4xM10(13) | 4xM8(13)    | 4x5/16-18UNC(13) | 4x5/16-18UNC(13) | 4xM8(13)      |

# Order Information



| 1          | 2     | 3                | 4                                       | 5                                   | 6                                         | 7                                      | 8                                  | 9                                                   |                    |            |                  |
|------------|-------|------------------|-----------------------------------------|-------------------------------------|-------------------------------------------|----------------------------------------|------------------------------------|-----------------------------------------------------|--------------------|------------|------------------|
| VNKR-VNK3  |       |                  |                                         |                                     |                                           |                                        |                                    |                                                     |                    |            |                  |
| Pos.1      | 2     | 3                | 4                                       | 5                                   |                                           | 6                                      | 7                                  | 8                                                   | 9                  |            |                  |
| Code       | Disp. | Flange and Pilot |                                         | Output shaft                        |                                           | Ports and drain port                   |                                    | Brake release Port                                  | Rotation Direction | Paint      | Usually Function |
| VNKR-ZD10A | 65    | 2                | 2xØ13.5 Oval flange, pilot Ø82.5x8      | A                                   | Shaft Ø25,parallel Key 8x7x32             |                                        | D                                  | G1/2 Manifold Mount 4xM8, G1/4                      |                    | 00         | No paint         |
|            | 80    |                  |                                         | C                                   | Shaft Ø25.4, parallel Key 6.35x6.35x31.75 |                                        | M                                  | M22x1.5 Manifold Mount 4xM8, M14x1.5                |                    |            |                  |
|            | 100   | 4                | 4xØ13.5 Oval flange, pilot Ø82.5x8      | E                                   | Shaft Ø25.4,splined tooth SAE 6B          |                                        | S                                  | 7/8-14UNF Manifold Mount 4x5/16-18UNC, 7/16-20UNF   |                    | Omit       | Standard         |
|            | 125   |                  |                                         | JP                                  | Shaft Ø25,parallel Key 8x7x32             |                                        | P                                  | 1/2-14 NPTF Manifold Mount 4x5/16-18UNC, 7/16-20UNF |                    |            |                  |
|            | 160   |                  | K                                       | Shaft Ø25.4,Woodruff Key Ø25.4x6.35 |                                           | R                                      | PT(Rc)1/2 Manifold 4xM8, PT(Rc)1/4 |                                                     | G                  | 7/16-20UNF | SD               |
| VNKR-ZD10B | 200   | H4               | 4x3/8x16 Square-flange, pilot Ø44.4x2.8 |                                     |                                           |                                        |                                    | S                                                   | Opposite           | Black      |                  |
|            | 250   | H5               | 4xM10 Square-flange, pilot Ø44.4x2.8    |                                     |                                           |                                        |                                    |                                                     |                    |            | Silver grey      |
|            | 315   |                  |                                         |                                     | T                                         | Cone-Shaft Ø28.56,parallel Key B5x5x14 |                                    |                                                     |                    |            |                  |
| 400        |       |                  |                                         |                                     |                                           |                                        |                                    |                                                     |                    |            |                  |

**Note:** When the table is used , please fill the code of left rows in dash area and give us , which the code information is consists of construction , displacement, mounting flange ,output shaft and ports . If the specification is not in the table or you have specific requirements , please contact us.



# VNKRK Series Hydraulic Motor

## INTRODUCTION

**VNKRK series motor** adapt the advanced Geroler gear set design with shaft distribution flow, which can automatically compensate in operating with high pressure, provide reliable and smooth operation, high efficiency and long life.



## CHARACTERISTIC FEATURES

- \* **Advanced manufacturing** devices for the Geroler gear set, which use low pressure of start-up, provide smooth, reliable operation and high efficiency.
- \* **Shaft seal** can bear high pressure of back and the motor can be used in parallel or in series.
- \* **Special design** in the driver-linker and prolong operating life
- \* **Special design** for distribution system can meet the requirement of low noise of unit.
- \* **Compact volume and easy installation**

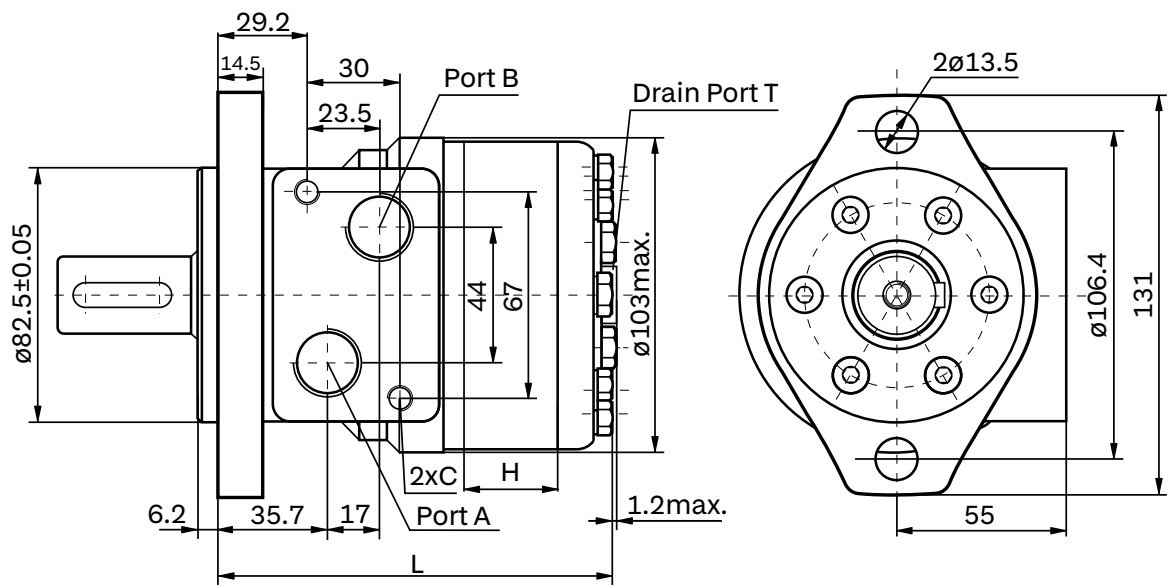
## SPECIFICATION Main Specification

Technical data for VNKRK with 25 and 1 in and 1 in splined and 28.56 tapered shaft.

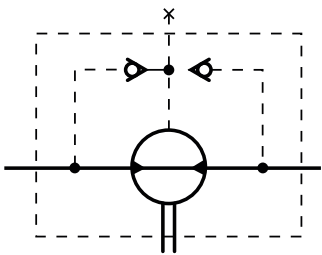
| Code      | Displacement<br>[cm/rev] | Max.Speed<br>[rpm] | Max.Torque<br>[Nm] |      | Max.output<br>[kW] |      | Max.pressure<br>[MPa] |      | Max.Oil<br>Flow [L/min] |
|-----------|--------------------------|--------------------|--------------------|------|--------------------|------|-----------------------|------|-------------------------|
|           |                          | cont.              | cont.              | int. | cont.              | int. | cont.                 | int. | cont.                   |
| VNKRK 36  | 36                       | 1111               | 66                 | 83   | 9                  | 10.4 | 14                    | 17.5 | 40                      |
| VNKRK 50  | 51.7                     | 780                | 100                | 129  | 9                  | 10.4 | 14                    | 17.5 | 40                      |
| VNKRK 80  | 81.5                     | 744                | 158                | 196  | 10.4               | 12.6 | 14                    | 17.5 | 60                      |
| VNKRK 100 | 102                      | 595                | 200                | 242  | 10.8               | 12.8 | 14                    | 17.5 | 60                      |
| VNKRK 125 | 127.2                    | 480                | 248                | 298  | 10.8               | 12.5 | 14                    | 17.5 | 60                      |
| VNKRK 160 | 157.2                    | 382                | 315                | 384  | 10.4               | 11.5 | 14                    | 17.5 | 60                      |
| VNKRK 200 | 194.5                    | 301                | 339                | 419  | 8.8                | 10.2 | 12.5                  | 15.5 | 60                      |
| VNKRK 250 | 253.3                    | 238                | 403                | 474  | 8.1                | 9.4  | 11                    | 14   | 60                      |
| VNKRK 315 | 317.5                    | 191                | 398                | 498  | 7.4                | 7.8  | 9                     | 12.5 | 60                      |
| VNKRK 400 | 381.4                    | 162                | 373                | 466  | 6.2                | 7.1  | 7.5                   | 9    | 60                      |

\***Intermittent operation:** the permissible values may occur for max.10% of every minute.

# VNKRK Series Hydraulic Motor



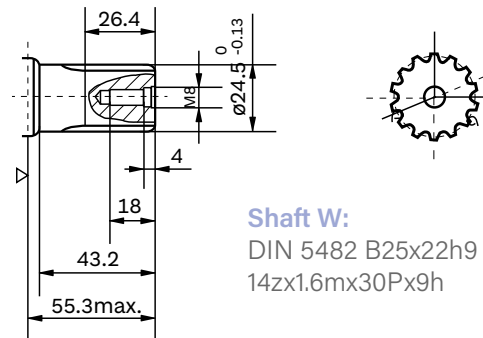
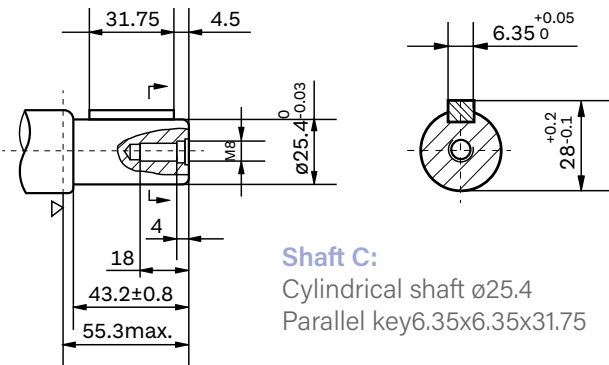
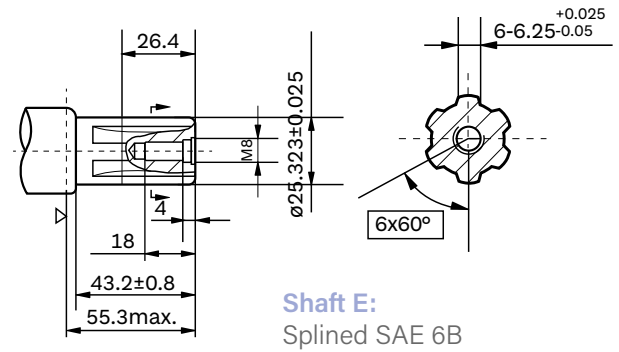
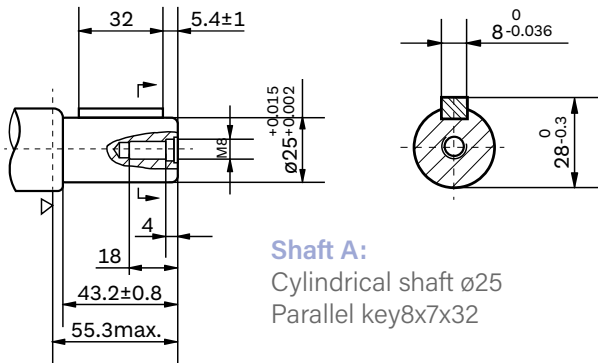
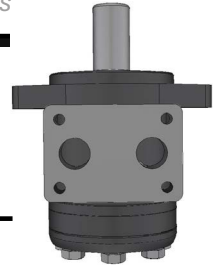
Direction of shaft rotation: Standard  
When facing shaft end of motor, shaft to rotate: Clockwise when port "A" is pressurized.  
Counter-clockwise when port "B" is pressurized.

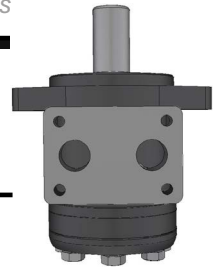


| Type     | H    | L     |
|----------|------|-------|
| VNKRK36  | 7    | 105   |
| VNKRK50  | 10   | 108   |
| VNKRK80  | 16   | 114   |
| VNKRK100 | 20   | 118   |
| VNKRK125 | 25   | 123   |
| VNKRK160 | 30.5 | 128.5 |
| VNKRK200 | 38.1 | 136   |
| VNKRK250 | 50   | 148   |
| VNKRK315 | 62   | 160   |
| VNKRK400 | 74   | 172   |

| Code     | D         | M              | S                    | P                | R               |
|----------|-----------|----------------|----------------------|------------------|-----------------|
| Mounting | (Depth)   | (Depth)        | (Depth)              | (Depth)          | (Depth)         |
| P(A,B)   | G1/2 (15) | M22 x 1.5 (15) | 7/8-14 O-ring (16.7) | 1/2-14NPTF (15)  | PT(RC)1/2 (15)  |
| T        | 4-M8 (13) | 4-M8 (13)      | 4-5/16-18UNC(13)     | 4-5/16-18UNC(13) | 4-M8 (13)       |
| M        | G1/4 (12) | M14 x 1.5 (12) | 7/16-20UNF (12)      | 7/16-20UNF (12)  | PT(RC)1/4 (9.7) |

# VNKRK Shaft Extensions





# VNKH Series Hydraulic Motor

## INTRODUCTION

VNKH series motor adapt the advanced Geroler gear set design with shaft distribution flow, which can automatically compensate in operating with high pressure, provide reliable and smooth operation, high efficiency and long life.

## CHARACTERISTIC FEATURES

- \* **Advanced manufacturing** devices for the Geroler gear set, which use low pressure of start-up, provide smooth, reliable operation and high efficiency.
- \* **Shaft seal** can bear high pressure of back and the motor can be used in parallel or in series.
- \* **Special design** in the driver-linker and prolong operating life.
- \* **Special design** for distribution system can meet the requirement of low noise of unit.
- \* **Compact volume and easy installation.**



## SPECIFICATION Main Specification

| Type                                           |       | VNKH 200 | VNKH 250 | VNKH 315 | VNKH 400 | VNKH 500 |
|------------------------------------------------|-------|----------|----------|----------|----------|----------|
| Geometric displacement (cm <sup>3</sup> /rev.) |       | 203.2    | 255.9    | 316.1    | 406.4    | 489.2    |
| Max. speed (rpm)                               | cont. | 366      | 290      | 236      | 183      | 155      |
|                                                | int.  | 439      | 348      | 282      | 220      | 184      |
| Max. torque (N·m)                              | cont. | 510      | 621      | 740      | 850      | 830      |
|                                                | int.  | 579      | 702      | 827      | 990      | 1040     |
|                                                | peak  | 651      | 790      | 980      | 1092     | 1170     |
| Max. output (kW)                               | cont. | 16       | 16       | 14       | 12.5     | 11       |
|                                                | int.  | 18.5     | 18.5     | 15.5     | 15       | 14       |
| Max. pressure drop (MPa)                       | cont. | 17.5     | 17.5     | 17.5     | 15.5     | 12.5     |
|                                                | int.  | 20       | 20       | 20       | 19       | 16       |
|                                                | peak  | 22.5     | 22.5     | 22.5     | 21       | 18       |
| Max. flow (L/min)                              | cont. | 75       | 75       | 75       | 75       | 75       |
|                                                | int.  | 90       | 90       | 90       | 90       | 90       |
| Weight (Kg)                                    |       | 10.5     | 11       | 11.5     | 12.3     | 13       |

| Type              |       | Max.inlet pressure | Max.return pressure with drain line |
|-------------------|-------|--------------------|-------------------------------------|
| VNKH200-500 (MPa) | cont. | 20                 | 17.5                                |
|                   | int.  | 22.5               | 20                                  |
|                   | peak  | 25                 | 22.5                                |

- \* **Continuous pressure:** Max. value of operating motor continuously.
- \* **Intermittent pressure:** Max. value of operating motor in 6 seconds per minute.
- \* **Peak pressure:** Max. value of operating motor in 0.6 second per minute.
- \* **Technical data** VNKH with 35mm cylindrical, 1 1/4 in splined and 35mm tapered shaft.



# Performance Data

VNKH 200 [203.2 cm3/rev.]

|              |    | Pressure (MPa) |            |            |            |            |            |           |          |
|--------------|----|----------------|------------|------------|------------|------------|------------|-----------|----------|
|              |    | 3.5            | 7          | 10.5       | 14         | 17.5       | 20         | Max. cont | Max. int |
| Flow (L/min) | 5  | 98<br>25       | 194<br>25  | 284<br>22  |            |            |            |           |          |
|              | 10 | 101<br>43      | 204<br>41  | 301<br>36  | 391<br>29  | 482<br>14  |            |           |          |
|              | 20 | 99<br>100      | 201<br>97  | 304<br>93  | 402<br>85  | 509<br>69  | 567<br>56  |           |          |
|              | 30 | 97<br>145      | 197<br>143 | 300<br>139 | 402<br>130 | 510<br>114 | 579<br>101 |           |          |
|              | 40 | 90<br>200      | 190<br>200 | 292<br>200 | 399<br>188 | 507<br>168 | 578<br>153 |           |          |
|              | 50 | 82<br>248      | 183<br>246 | 284<br>244 | 392<br>235 | 500<br>213 | 571<br>199 |           |          |
|              | 60 | 73<br>292      | 174<br>290 | 274<br>287 | 384<br>279 | 493<br>260 | 563<br>244 |           |          |
|              | 70 | 63<br>352      | 163<br>350 | 264<br>349 | 374<br>338 | 481<br>318 | 554<br>301 |           |          |
|              | 75 | 59<br>366      | 157<br>365 | 259<br>363 | 366<br>355 | 475<br>335 | 547<br>319 |           |          |
|              | 80 | 53<br>381      | 150<br>381 | 253<br>380 | 358<br>371 | 466<br>352 | 538<br>338 |           |          |
| Max. int     | 90 | 39<br>439      | 140<br>437 | 241<br>434 | 348<br>426 | 456<br>407 | 526<br>392 |           |          |

VNKH 250 [255.9 cm3/rev.]

|              |    | Pressure (MPa) |            |            |            |            |            |            |           |          |
|--------------|----|----------------|------------|------------|------------|------------|------------|------------|-----------|----------|
|              |    | 3.5            | 7          | 9          | 12         | 14.5       | 17.5       | 20         | Max. cont | Max. int |
| Flow (L/min) | 5  | 121<br>19      | 246<br>19  | 318<br>18  | 398<br>14  |            |            |            |           |          |
|              | 10 | 130<br>34      | 258<br>33  | 331<br>31  | 425<br>29  | 515<br>23  | 595<br>12  |            |           |          |
|              | 20 | 130<br>78      | 258<br>77  | 332<br>76  | 432<br>73  | 520<br>65  | 621<br>53  | 702<br>42  |           |          |
|              | 30 | 122<br>115     | 251<br>113 | 327<br>111 | 429<br>105 | 520<br>96  | 621<br>84  | 700<br>75  |           |          |
|              | 40 | 115<br>157     | 240<br>157 | 323<br>156 | 422<br>150 | 513<br>139 | 616<br>127 | 698<br>114 |           |          |
|              | 50 | 105<br>196     | 232<br>195 | 314<br>192 | 411<br>185 | 505<br>173 | 606<br>159 | 687<br>147 |           |          |
|              | 60 | 94<br>232      | 220<br>230 | 302<br>226 | 401<br>218 | 496<br>206 | 596<br>192 | 676<br>180 |           |          |
|              | 70 | 81.4<br>274    | 209<br>274 | 288<br>274 | 389<br>266 | 484<br>252 | 582<br>238 | 666<br>222 |           |          |
|              | 75 | 72<br>290      | 203<br>289 | 280<br>287 | 381<br>279 | 475<br>266 | 574<br>251 | 659<br>236 |           |          |
|              | 80 | 66<br>303      | 194<br>302 | 273<br>298 | 371<br>290 | 467<br>279 | 566<br>264 | 651<br>249 |           |          |
| Max. int     | 90 | 49<br>348      | 178<br>347 | 256<br>345 | 355<br>337 | 453<br>325 | 552<br>309 | 634<br>292 |           |          |

VNKH 315 [316.1 cm3/rev.]

|              |    | Pressure (MPa) |            |            |            |            |            |            |           |          |
|--------------|----|----------------|------------|------------|------------|------------|------------|------------|-----------|----------|
|              |    | 3.5            | 7.5        | 10         | 13.5       | 15.5       | 17.5       | 20         | Max. cont | Max. int |
| Flow (L/min) | 5  | 155<br>16      | 325<br>13  |            |            |            |            |            |           |          |
|              | 10 | 163<br>27      | 342<br>24  | 454<br>18  | 556<br>14  |            |            |            |           |          |
|              | 20 | 169<br>63      | 349<br>61  | 469<br>55  | 582<br>48  | 664<br>40  | 733<br>32  | 809<br>19  |           |          |
|              | 30 | 165<br>93      | 344<br>89  | 470<br>82  | 580<br>77  | 669<br>67  | 740<br>59  | 824<br>46  |           |          |
|              | 40 | 154<br>126     | 337<br>126 | 465<br>119 | 577<br>111 | 663<br>99  | 737<br>88  | 827<br>73  |           |          |
|              | 50 | 141<br>159     | 325<br>155 | 455<br>148 | 568<br>139 | 656<br>126 | 728<br>115 | 824<br>98  |           |          |
|              | 60 | 121<br>187     | 312<br>186 | 440<br>179 | 555<br>169 | 643<br>154 | 715<br>143 | 812<br>124 |           |          |
|              | 70 | 103<br>222     | 298<br>222 | 425<br>215 | 541<br>205 | 631<br>187 | 703<br>176 | 800<br>157 |           |          |
|              | 75 | 94<br>236      | 287<br>233 | 417<br>224 | 529<br>215 | 623<br>196 | 696<br>184 | 792<br>166 |           |          |
|              | 80 | 82<br>246      | 277<br>244 | 406<br>236 | 518<br>228 | 611<br>210 | 688<br>197 | 784<br>174 |           |          |
| Max. int     | 90 | 62<br>282      | 256<br>280 | 386<br>275 | 496<br>266 | 593<br>248 | 669<br>234 | 767<br>209 |           |          |

Torque (N·m) 593  
Speed (rpm) 248

VNKH 400 [406.4 cm3/rev.]

|              |    | Pressure (MPa) |            |            |            |            |            |           |          |
|--------------|----|----------------|------------|------------|------------|------------|------------|-----------|----------|
|              |    | 3.5            | 6          | 10.5       | 12.5       | 15.5       | 19         | Max. cont | Max. int |
| Flow (L/min) | 5  | 196<br>13      | 348<br>13  | 516<br>10  |            |            |            |           |          |
|              | 10 | 205<br>22      | 363<br>21  | 546<br>21  | 702<br>17  | 859<br>11  |            |           |          |
|              | 20 | 209<br>50      | 366<br>49  | 543<br>46  | 708<br>41  | 874<br>36  | 988<br>31  |           |          |
|              | 30 | 201<br>73      | 357<br>72  | 542<br>70  | 706<br>63  | 864<br>56  | 984<br>51  |           |          |
|              | 40 | 195<br>99      | 346<br>98  | 532<br>96  | 701<br>86  | 858<br>77  | 973<br>71  |           |          |
|              | 50 | 173<br>123     | 332<br>122 | 518<br>118 | 687<br>107 | 848<br>97  | 958<br>90  |           |          |
|              | 60 | 154<br>146     | 319<br>144 | 501<br>141 | 668<br>128 | 833<br>115 | 944<br>106 |           |          |
|              | 70 | 138<br>174     | 305<br>173 | 480<br>169 | 649<br>156 | 814<br>141 | 925<br>130 |           |          |
|              | 75 | 128<br>183     | 294<br>181 | 466<br>177 | 637<br>163 | 802<br>149 | 911<br>138 |           |          |
|              | 80 | 113<br>192     | 277<br>191 | 451<br>188 | 621<br>174 | 786<br>158 | 899<br>144 |           |          |
| Max. int     | 90 | 90<br>220      | 256<br>220 | 433<br>215 | 595<br>202 | 767<br>183 | 881<br>165 |           |          |



# Performance Data

VNKH 500 [489.2 cm3/rev.]

Pressure (MPa)

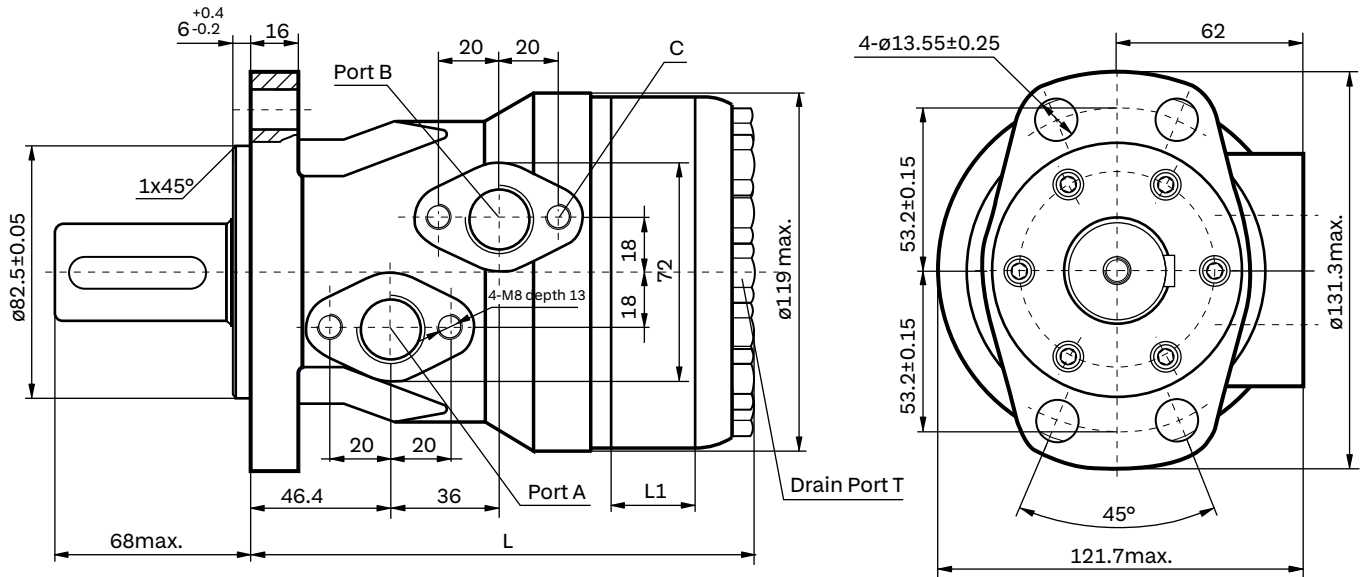
Max. cont Max. int

|              |    | 2.5        | 5          | 8.5        | 10         | 12.5       | 16          |
|--------------|----|------------|------------|------------|------------|------------|-------------|
| Flow (L/min) | 5  | 165<br>11  | 317<br>11  | 516<br>8   |            |            |             |
|              | 10 | 178<br>20  | 335<br>19  | 555<br>17  | 669<br>15  | 791<br>13  | 969<br>9    |
|              | 20 | 177<br>42  | 331<br>42  | 559<br>41  | 673<br>38  | 799<br>36  | 988<br>29   |
|              | 30 | 172<br>64  | 320<br>63  | 553<br>61  | 663<br>57  | 792<br>53  | 983<br>47   |
|              | 40 | 163<br>85  | 309<br>85  | 541<br>83  | 654<br>79  | 783<br>75  | 971<br>67   |
|              | 50 | 146<br>103 | 296<br>103 | 523<br>103 | 635<br>97  | 768<br>93  | 954<br>85   |
|              | 60 | 121<br>124 | 275<br>124 | 502<br>123 | 614<br>117 | 747<br>113 | 934<br>103  |
|              | 70 | 97<br>148  | 256<br>148 | 482<br>148 | 597<br>140 | 729<br>134 | 917<br>122  |
|              | 75 | 79<br>155  | 240<br>155 | 469<br>155 | 582<br>152 | 714<br>144 | 902<br>130  |
|              | 80 | 60<br>166  | 226<br>166 | 453<br>166 | 570<br>159 | 701<br>153 | 884<br>1399 |
| Max. int     | 90 | 34<br>184  | 201<br>183 | 421<br>182 | 550<br>177 | 673<br>166 | 869<br>155  |

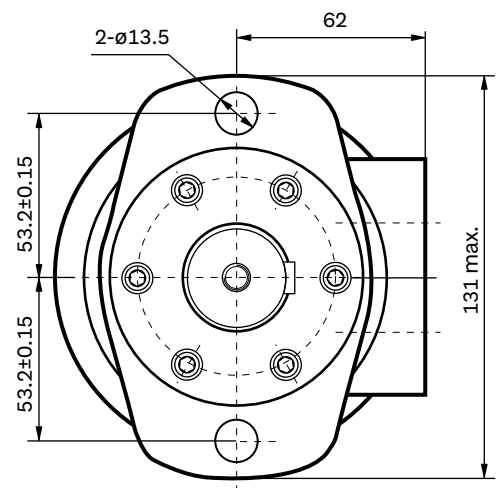
Torque (N•m) 673  
Speed (rpm) 166



## Flange 4



## Flange 2



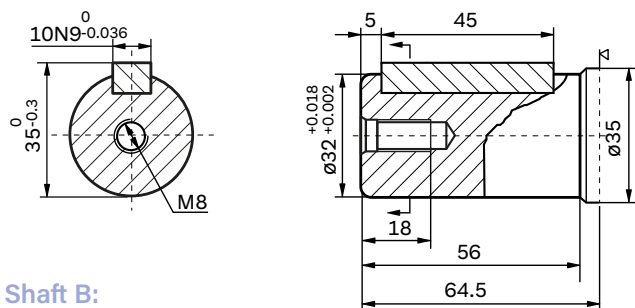
| Model    | L   | L1 |
|----------|-----|----|
| VNKH-160 | 162 | 21 |
| VNKH-200 | 168 | 27 |
| VNKH-250 | 175 | 34 |
| VNKH-315 | 183 | 42 |
| VNKH-400 | 195 | 54 |
| VNKH-500 | 206 | 65 |

| Mounting Code | D (depth) | M (depth)      | S (depth)          | P (depth)        | R (depth)      |
|---------------|-----------|----------------|--------------------|------------------|----------------|
| P(A,B)        | G1/2 (15) | M22 x 1.5 (15) | 7/8-14 O-ring (15) | 1/2-14NPTF (15)  | PT(RC)1/2 (15) |
| C             | 4-M8 (13) | 4-M8 (13)      | 4-5/16-18UNC(13)   | 4-5/16-18UNC(13) | 4-M8 (13)      |
| T             | G1/4 (12) | M14 x 1.5 (12) | 7/16-20UNF(12)     | 7/16-20UNF (12)  | PT(RC)1/4 1/4  |

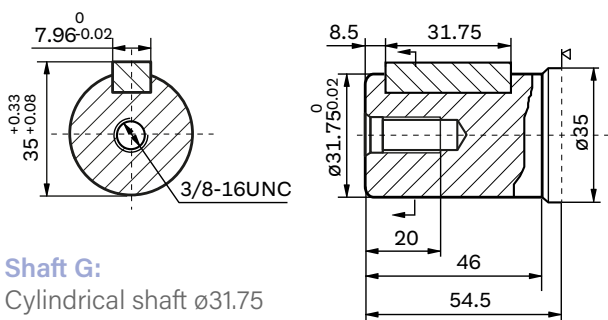


# VNKH Shaft Extensions

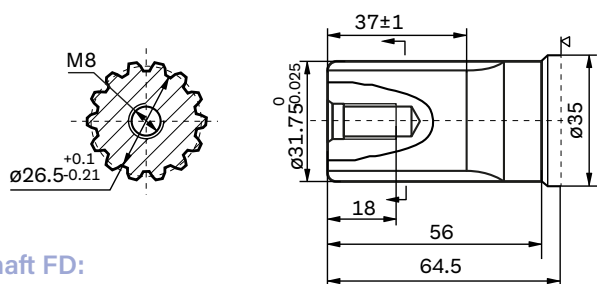
## Dimensions Data

**Shaft B:**

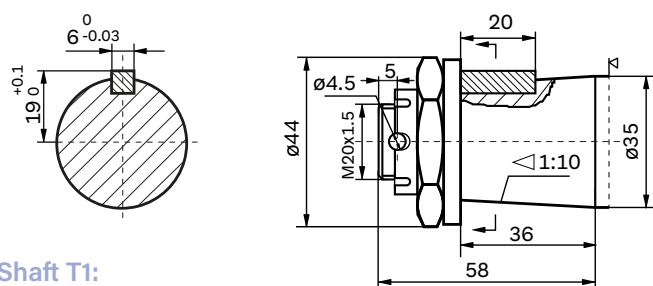
Cylindrical shaft  $\varnothing 32$   
Parallel key 10x8x45

**Shaft G:**

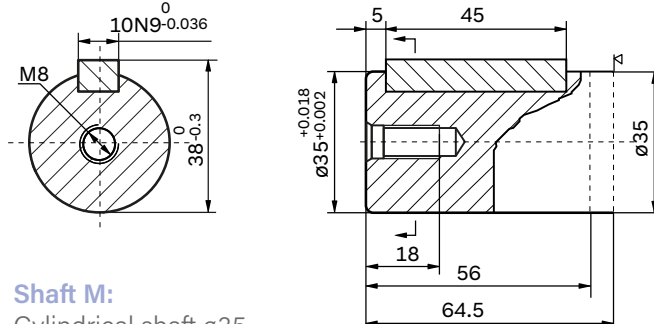
Cylindrical shaft  $\varnothing 31.75$   
Parallel key  
7.96x7.96x31.75

**Shaft FD:**

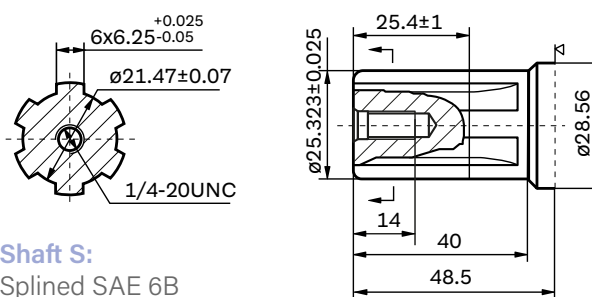
Splined 14-DP12/24

**Shaft T1:**

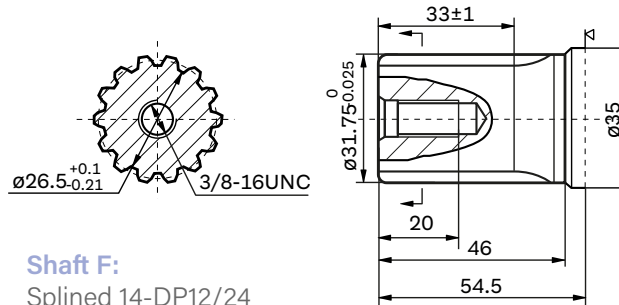
Cone-shaft  $\varnothing 35$   
Parallel key 6x6x20  
Tightening torque:  
200±10Nm

**Shaft M:**

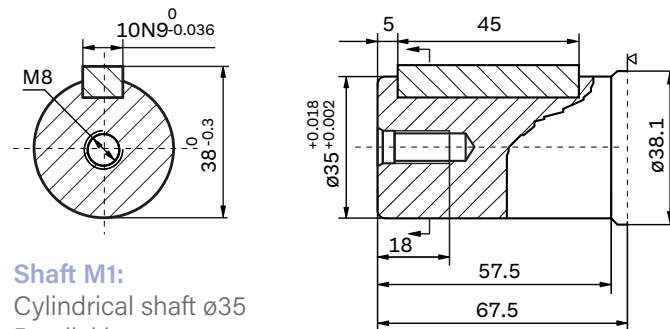
Cylindrical shaft  $\varnothing 35$   
Parallel key 10x8x45

**Shaft S:**

Splined SAE 6B

**Shaft F:**

Splined 14-DP12/24

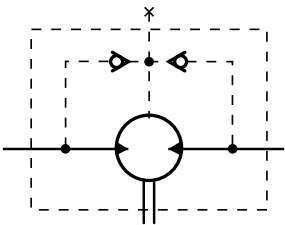
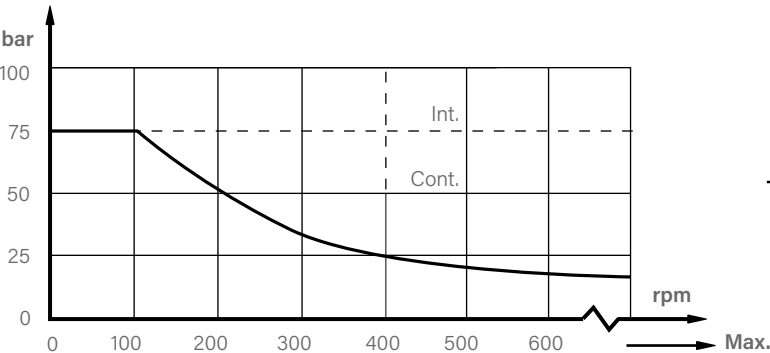
**Shaft M1:**

Cylindrical shaft  $\varnothing 35$   
Parallel key 10x8x45

# VNKH Series Hydraulic Motor



## PERMISSIBLE SHAFT SEAL PRESSURE

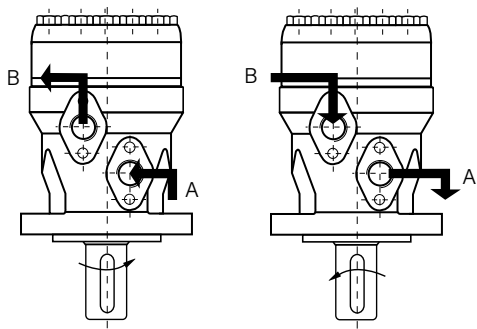


In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

## DIRECTION OF SHAFT ROTATION: Standard

When facing shaft end of motor, shaft to rotate:  
Clockwise when port "A" is pressurized.  
Counter-clockwise port "B" is pressurized.

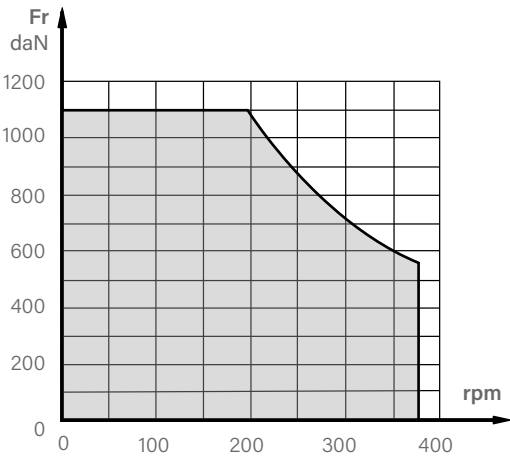
VNKH



## OIL FLOW in drain line

The table shows the Max. oil flow in the drain line at a return pressure less than 0.5-1MPa.

| Pressure drop (PmPa) | Viscosity (mm²/s) | Oil flow in the drain line (L/min) |
|----------------------|-------------------|------------------------------------|
| 10                   | 20                | 2.5                                |
|                      | 35                | 1.8                                |
| 14                   | 20                | 3.5                                |
|                      | 35                | 2.8                                |

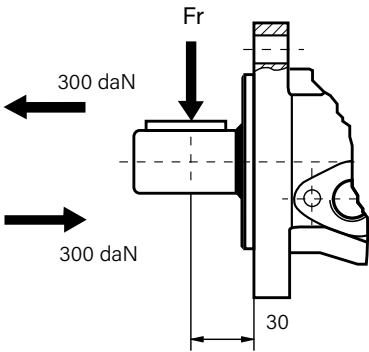


shaft  $\varnothing 1"$  ( $\varnothing 25.4\text{mm}$ ) and shaft SAE 6B  
The drawing is the Possible load when  $L=30\text{ mm}$

Status of the shaft's radial force

$$Fr = \frac{1100}{n} \cdot \frac{25000}{103.5 + L} \text{ daN}$$

$L < 60\text{mm}$ ,  $n > 200\text{rpm}$



$Fr$  = Radial Force (daN)  
 $L$  = Distance (mm)  
 $n$  = Speed (rpm)



# Order Information

1

VNKH

2

3

4

5

6

7

8

| Pos.1 | 2   | 3                                      | 4            | 5                    | 6                                 | 7     | 8                  |    |
|-------|-----|----------------------------------------|--------------|----------------------|-----------------------------------|-------|--------------------|----|
| Code  |     | Flange                                 | Output shaft | Ports and drain port | Rotation Direction                | Paint | Unusually Function |    |
| Omit  | 160 | 4xØ13.5 Rhombx<br>flange Pilot Ø82.5x6 | B            | D                    | G1/2 Manifold mount 4xM8,<br>G1/4 | 00    | Omit               |    |
|       | 200 |                                        | M1           | M                    |                                   |       | 0                  |    |
|       | 250 |                                        | F            | FD                   |                                   |       | F                  |    |
|       | 315 |                                        |              |                      |                                   |       |                    |    |
|       | 400 | 2xØ13.5 Rhombx<br>flangePilot Ø82.5x6  | G            | S                    | Omit                              | B     | LS                 |    |
|       | 470 |                                        | T1           | P                    |                                   |       | R                  | N1 |
|       | 500 |                                        | S            | R                    |                                   |       | SD                 |    |
|       |     |                                        | M            |                      |                                   |       |                    |    |

**Note:** When the table is used, please fill the code of left rows in dash area and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports. If the specification is not in the table or you have specific requirements, please contact us.

# 02 Disc Distribution Type Motors

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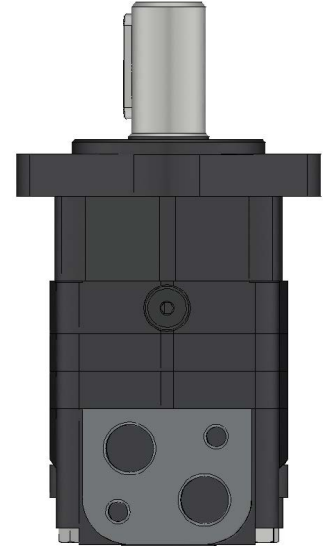
# VNKS Series Hydraulic Motor

## INTRODUCTION

**VNKS series motor** adapt the advanced Geroler gear set designed with disc distribution flow and high pressure. The unit can be supplied the individual variant in operating multifunction in accordance with requirement of applications.

## CHARACTERISTIC FEATURES

- \* **Advanced manufacturing** devices for the Geroler gear set, which use low pressure of start-up, provide smooth and reliable operation and high efficiency.
- \* **The output shaft** adapts in tapered roller bearings that permit high axial and radial forces. The case can offers capacities of high pressure and high torque in the wide of applications.
- \* **Advanced design in disc distribution flow**, which can automatically compensate in operating with high volume efficiency and long life, provide smooth and reliable operation.
- \* **The new series motor** is suitable for vehicles with greater loads and pressure drop.



## SPECIFICATION Main Specification

| Type                                           |       | VNKS<br>VNKSS<br>80 | VNKS<br>VNKSS<br>100 | VNKS<br>VNKSS<br>125 | VNKS<br>VNKSS<br>160 | VNKS<br>VNKSS<br>200 | VNKS<br>VNKSS<br>250 | VNKS<br>VNKSS<br>315 | VNKS<br>VNKSS<br>400 | VNKS<br>VNKSS<br>475 |
|------------------------------------------------|-------|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Geometric displacement (cm <sup>3</sup> /rev.) |       | 80.6                | 100.8                | 125                  | 154                  | 194                  | 243                  | 311                  | 394                  | 475                  |
| Max. speed (rpm)                               | cont. | 800                 | 748                  | 600                  | 470                  | 375                  | 300                  | 240                  | 185                  | 155                  |
|                                                | int.  | 988                 | 900                  | 720                  | 560                  | 450                  | 360                  | 280                  | 225                  | 185                  |
| Max. torque (N·m)                              | cont. | 225                 | 290                  | 365                  | 485                  | 586                  | 708                  | 880                  | 880                  | 910                  |
|                                                | int.  | 305                 | 390                  | 480                  | 590                  | 705                  | 860                  | 1000                 | 980                  | 990                  |
| Max. output (kW)                               | cont. | 16                  | 18                   | 18                   | 18.1                 | 18.1                 | 18                   | 17                   | 11                   | 9                    |
|                                                | int.  | 20                  | 22                   | 23                   | 25                   | 24                   | 23.8                 | 20.2                 | 12                   | 11                   |
| Max. pressure drop (MPa)                       | cont. | 20.5                | 20.5                 | 20.5                 | 21                   | 21                   | 20                   | 20                   | 16                   | 14                   |
|                                                | int.  | 27.5                | 27.5                 | 27.5                 | 26                   | 25                   | 25                   | 24                   | 19                   | 15                   |
|                                                | peak  | 29.5                | 29.5                 | 29.5                 | 28                   | 27                   | 27                   | 26                   | 21                   | 17.5                 |
| Max. flow (L/min)                              | cont. | 65                  | 75                   | 75                   | 75                   | 75                   | 75                   | 75                   | 75                   | 75                   |
|                                                | int.  | 80                  | 90                   | 90                   | 90                   | 90                   | 90                   | 90                   | 90                   | 90                   |
| Max. inlet pressure (MPa)                      | cont. | 25                  | 25                   | 25                   | 25                   | 25                   | 25                   | 25                   | 25                   | 25                   |
|                                                | int.  | 30                  | 30                   | 30                   | 30                   | 30                   | 30                   | 30                   | 30                   | 30                   |
| Weight (Kg)                                    |       | 9.8                 | 10                   | 10.3                 | 10.7                 | 11.1                 | 11.6                 | 12.3                 | 13.2                 | 14.3                 |

\* **Continuous pressure:** Max. value of operating motor continuously.

\* **Intermittent pressure:** Max. value of operating motor in 6 seconds per minute.

\* **Peak pressure:** Max. value of operating motor in 0.6 second per minute.



# Performance Data

VNKS 80 [80.6 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |    | 3.5       | 7         | 10.5       | 14         | 17.5       | 20.5       | 22.5       |
|--------------|----|-----------|-----------|------------|------------|------------|------------|------------|
| Flow (L/min) | 15 | 35<br>180 | 80<br>174 | 120<br>168 | 158<br>164 | 195<br>158 | 228<br>151 | 249<br>143 |
|              | 30 | 35<br>362 | 80<br>352 | 120<br>346 | 158<br>338 | 195<br>330 | 232<br>322 | 260<br>310 |
|              | 40 | 35<br>487 | 79<br>480 | 119<br>468 | 155<br>457 | 193<br>446 | 227<br>438 | 250<br>425 |
|              | 50 | 30<br>612 | 77<br>603 | 117<br>592 | 153<br>581 | 192<br>572 | 224<br>558 | 248<br>542 |
|              | 60 | 28<br>735 | 77<br>726 | 117<br>718 | 153<br>703 | 192<br>687 | 224<br>673 | 243<br>649 |
|              | 65 | 26<br>794 | 75<br>786 | 116<br>773 | 151<br>760 | 188<br>744 | 217<br>722 | 236<br>706 |
|              | 80 | 24<br>981 | 72<br>968 | 109<br>955 | 142<br>925 | 176<br>893 | 206<br>870 | 227<br>832 |
| Max. cont    |    |           |           |            |            |            |            |            |
| Max. int     |    |           |           |            |            |            |            |            |

VNKS 100 [100.8 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |    | 3.5       | 7         | 10.5       | 14         | 17.5       | 20.5       | 22.5       |
|--------------|----|-----------|-----------|------------|------------|------------|------------|------------|
| Flow (L/min) | 15 | 48<br>146 | 95<br>144 | 150<br>139 | 200<br>135 | 250<br>130 | 282<br>120 | 310<br>105 |
|              | 30 | 45<br>291 | 94<br>289 | 146<br>278 | 198<br>274 | 250<br>269 | 290<br>258 | 317<br>242 |
|              | 40 | 43<br>387 | 89<br>384 | 142<br>374 | 196<br>359 | 248<br>350 | 288<br>335 | 316<br>320 |
|              | 50 | 40<br>486 | 88<br>483 | 135<br>473 | 194<br>462 | 247<br>450 | 286<br>430 | 315<br>420 |
|              | 60 | 37<br>588 | 88<br>584 | 132<br>574 | 185<br>562 | 244<br>550 | 283<br>538 | 312<br>520 |
|              | 75 | 35<br>740 | 80<br>735 | 130<br>720 | 180<br>705 | 240<br>696 | 279<br>676 | 310<br>653 |
|              | 90 | 30<br>850 | 75<br>840 | 124<br>810 | 170<br>787 | 236<br>770 | 271<br>750 | 303<br>747 |
| Max. cont    |    |           |           |            |            |            |            |            |
| Max. int     |    |           |           |            |            |            |            |            |

VNKS 125 [125 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |    | 3.5       | 7          | 10.5       | 14         | 17.5       | 20.5       | 22.5       |
|--------------|----|-----------|------------|------------|------------|------------|------------|------------|
| Flow (L/min) | 15 | 55<br>115 | 120<br>113 | 176<br>110 | 245<br>104 | 309<br>98  | 345<br>90  | 375<br>84  |
|              | 30 | 55<br>231 | 120<br>228 | 175<br>223 | 250<br>214 | 315<br>202 | 364<br>188 | 404<br>172 |
|              | 40 | 53<br>312 | 118<br>309 | 178<br>290 | 250<br>289 | 315<br>278 | 364<br>262 | 403<br>235 |
|              | 50 | 50<br>391 | 115<br>386 | 176<br>378 | 248<br>365 | 315<br>352 | 362<br>339 | 397<br>308 |
|              | 60 | 45<br>469 | 113<br>461 | 171<br>450 | 241<br>437 | 308<br>425 | 358<br>400 | 397<br>372 |
|              | 75 | 45<br>588 | 110<br>574 | 167<br>560 | 240<br>544 | 306<br>526 | 352<br>505 | 389<br>481 |
|              | 90 | 40<br>710 | 105<br>696 | 162<br>680 | 237<br>661 | 301<br>646 | 343<br>628 | 378<br>610 |
| Max. cont    |    |           |            |            |            |            |            |            |
| Max. int     |    |           |            |            |            |            |            |            |

VNKS 160 [154 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |    | 3.5       | 7          | 10.5       | 14         | 17.5       | 21         | 22.5       |
|--------------|----|-----------|------------|------------|------------|------------|------------|------------|
| Flow (L/min) | 15 | 70<br>93  | 142<br>91  | 215<br>89  | 298<br>85  | 372<br>80  | 435<br>76  | 476<br>58  |
|              | 30 | 73<br>189 | 151<br>187 | 225<br>181 | 312<br>176 | 382<br>170 | 456<br>162 | 492<br>153 |
|              | 40 | 75<br>252 | 152<br>250 | 228<br>246 | 314<br>239 | 383<br>234 | 454<br>228 | 488<br>212 |
|              | 50 | 70<br>313 | 148<br>310 | 225<br>306 | 305<br>298 | 372<br>293 | 445<br>285 | 480<br>272 |
|              | 60 | 68<br>378 | 143<br>376 | 218<br>370 | 296<br>362 | 370<br>353 | 442<br>346 | 480<br>332 |
|              | 75 | 62<br>475 | 140<br>469 | 211<br>461 | 291<br>450 | 365<br>441 | 439<br>432 | 475<br>414 |
|              | 90 | 59<br>567 | 131<br>561 | 202<br>554 | 286<br>543 | 357<br>532 | 425<br>520 | 460<br>509 |
| Max. cont    |    |           |            |            |            |            |            |            |
| Max. int     |    |           |            |            |            |            |            |            |

Torque (N·m) 301  
Speed (rpm) 646



# Performance Data

VNKS 200 [194 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |    | 3.5       | 7          | 10.5       | 14         | 17.5       | 21         | 22.5       |
|--------------|----|-----------|------------|------------|------------|------------|------------|------------|
| Flow (L/min) | 15 | 87<br>74  | 179<br>73  | 273<br>71  | 371<br>68  | 471<br>64  | 562<br>60  | 610<br>48  |
|              | 30 | 91<br>150 | 190<br>148 | 288<br>143 | 386<br>140 | 489<br>134 | 572<br>128 | 618<br>119 |
|              | 40 | 94<br>198 | 193<br>195 | 296<br>192 | 394<br>188 | 498<br>134 | 584<br>178 | 645<br>167 |
|              | 50 | 90<br>248 | 191<br>246 | 292<br>241 | 389<br>236 | 493<br>230 | 580<br>223 | 634<br>212 |
|              | 60 | 85<br>300 | 185<br>295 | 279<br>288 | 382<br>281 | 483<br>273 | 575<br>263 | 622<br>251 |
|              | 75 | 78<br>374 | 176<br>370 | 271<br>364 | 370<br>360 | 472<br>352 | 561<br>340 | 610<br>331 |
|              | 90 | 68<br>443 | 163<br>440 | 265<br>435 | 361<br>428 | 456<br>424 | 545<br>413 | 599<br>400 |
| Max. cont    |    |           |            |            |            |            |            |            |
| Max. int     |    |           |            |            |            |            |            |            |

VNKS 250 [243 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |    | 3.5        | 7          | 10.5       | 14         | 17.5       | 20         | 22.5       |
|--------------|----|------------|------------|------------|------------|------------|------------|------------|
| Flow (L/min) | 15 | 110<br>59  | 231<br>58  | 351<br>56  | 462<br>53  | 585<br>50  | 681<br>46  | 778<br>35  |
|              | 30 | 116<br>119 | 236<br>117 | 359<br>114 | 475<br>108 | 597<br>102 | 700<br>92  | 790<br>80  |
|              | 40 | 118<br>162 | 241<br>159 | 363<br>156 | 480<br>150 | 599<br>143 | 706<br>134 | 796<br>121 |
|              | 50 | 111<br>203 | 234<br>201 | 352<br>197 | 472<br>191 | 591<br>182 | 693<br>173 | 788<br>158 |
|              | 60 | 106<br>244 | 224<br>242 | 345<br>237 | 462<br>230 | 582<br>220 | 685<br>208 | 772<br>194 |
|              | 75 | 101<br>303 | 214<br>299 | 340<br>294 | 454<br>285 | 570<br>272 | 670<br>260 | 760<br>244 |
|              | 90 | 93<br>363  | 209<br>359 | 335<br>354 | 447<br>348 | 559<br>340 | 657<br>328 | 749<br>303 |
| Max. cont    |    |            |            |            |            |            |            |            |
| Max. int     |    |            |            |            |            |            |            |            |

VNKS 315 [311 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |    | 3.5        | 7          | 10.5       | 14         | 17.5       | 20         | 22.5       |
|--------------|----|------------|------------|------------|------------|------------|------------|------------|
| Flow (L/min) | 15 | 148<br>48  | 304<br>47  | 456<br>45  | 613<br>43  | 762<br>41  | 879<br>39  | 978<br>27  |
|              | 30 | 155<br>95  | 314<br>93  | 465<br>91  | 635<br>89  | 778<br>86  | 884<br>82  | 988<br>67  |
|              | 40 | 160<br>127 | 321<br>125 | 479<br>121 | 650<br>117 | 796<br>115 | 906<br>109 | 997<br>91  |
|              | 50 | 155<br>159 | 314<br>157 | 465<br>153 | 638<br>149 | 780<br>145 | 886<br>142 | 988<br>128 |
|              | 60 | 151<br>187 | 306<br>185 | 453<br>181 | 620<br>176 | 765<br>169 | 886<br>157 | 976<br>143 |
|              | 75 | 146<br>238 | 300<br>236 | 445<br>232 | 613<br>227 | 755<br>224 | 875<br>220 | 966<br>196 |
|              | 90 | 135<br>286 | 284<br>283 | 436<br>278 | 601<br>272 | 740<br>265 | 863<br>257 | 952<br>232 |
| Max. cont    |    |            |            |            |            |            |            |            |
| Max. int     |    |            |            |            |            |            |            |            |

VNKS 400 [394 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |    | 3.5        | 7          | 10.5       | 14         | 16         | 17.5       |
|--------------|----|------------|------------|------------|------------|------------|------------|
| Flow (L/min) | 15 | 186<br>37  | 379<br>36  | 578<br>35  | 779<br>33  | 896<br>31  | 986<br>29  |
|              | 30 | 190<br>75  | 388<br>73  | 590<br>71  | 791<br>68  | 905<br>65  | 991<br>61  |
|              | 40 | 195<br>99  | 394<br>97  | 596<br>95  | 797<br>93  | 912<br>90  | 998<br>85  |
|              | 50 | 191<br>125 | 388<br>123 | 587<br>118 | 785<br>114 | 904<br>109 | 983<br>102 |
|              | 60 | 186<br>149 | 388<br>146 | 587<br>142 | 785<br>137 | 904<br>131 | 983<br>122 |
|              | 75 | 181<br>187 | 372<br>183 | 576<br>177 | 770<br>171 | 891<br>164 | 973<br>153 |
|              | 90 | 176<br>226 | 367<br>221 | 571<br>214 | 766<br>208 | 883<br>199 | 965<br>183 |
| Max. cont    |    |            |            |            |            |            |            |
| Max. int     |    |            |            |            |            |            |            |

Torque (N·m) 766  
Speed (rpm) 208

VNKS 475 [475 cm3/rev.]

Pressure (MPa)

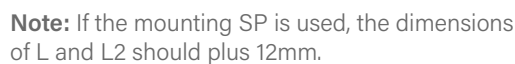
Max. cont Max. int

|              |    | 3.5        | 7          | 10.5       | 14         | 15         |
|--------------|----|------------|------------|------------|------------|------------|
| Flow (L/min) | 15 | 218<br>30  | 439<br>29  | 661<br>28  | 892<br>27  | 995<br>25  |
|              | 30 | 223<br>61  | 450<br>60  | 676<br>58  | 910<br>56  | 1002<br>53 |
|              | 40 | 228<br>82  | 461<br>80  | 689<br>77  | 927<br>74  | 1017<br>68 |
|              | 50 | 224<br>103 | 456<br>101 | 682<br>97  | 920<br>92  | 1008<br>86 |
|              | 60 | 220<br>123 | 451<br>121 | 677<br>118 | 913<br>112 | 998<br>105 |
|              | 75 | 212<br>155 | 443<br>153 | 664<br>147 | 901<br>140 | 980<br>132 |
|              | 90 | 196<br>186 | 421<br>184 | 643<br>178 | 877<br>170 | 959<br>157 |
| Max. cont    |    |            |            |            |            |            |
| Max. int     |    |            |            |            |            |            |

Cont. Int.



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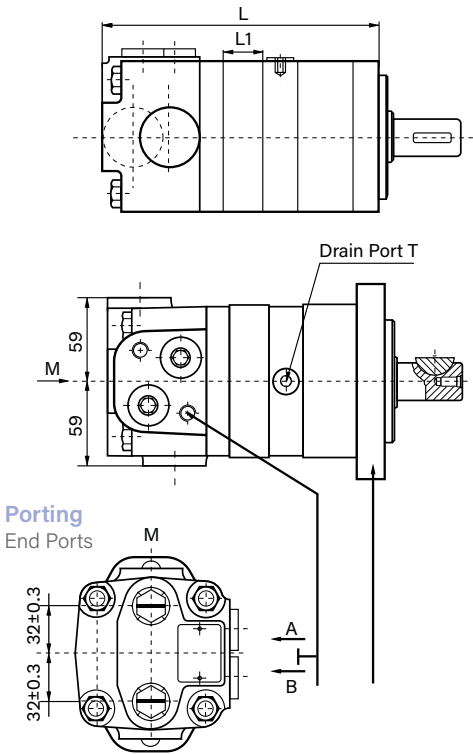


| Mounting Code | D (depth) | M (depth)   | S (depth)          | P (depth)        |
|---------------|-----------|-------------|--------------------|------------------|
| P(A,B)        | G1/2(15)  | M22x1.5(15) | 7/8-14 O-ring (17) | 1/2-14NPTF (15)  |
| T             | G1/4(12)  | M14x1.5(12) | 7/16-20UNF(12)     | 7/16-20UNF(12)   |
| C             | 2-M10(13) | 2-M10 (13)  | 2-3/8-16UNC (13)   | 2-3/8-16UNC (13) |





# VNKS Dimensions and Mounting Data

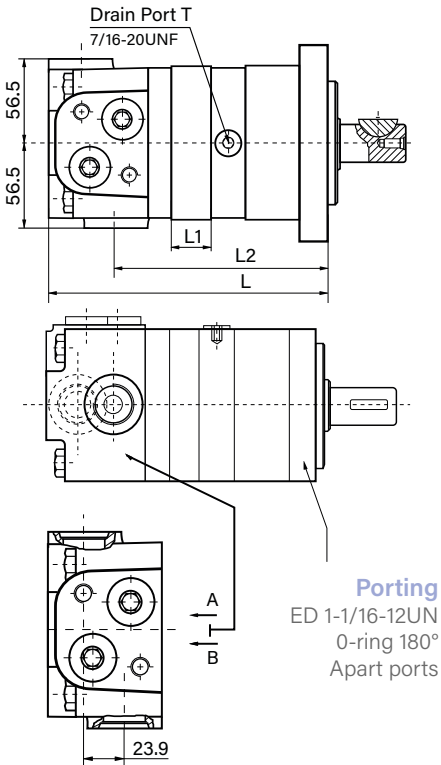


End Ports P(A/B)

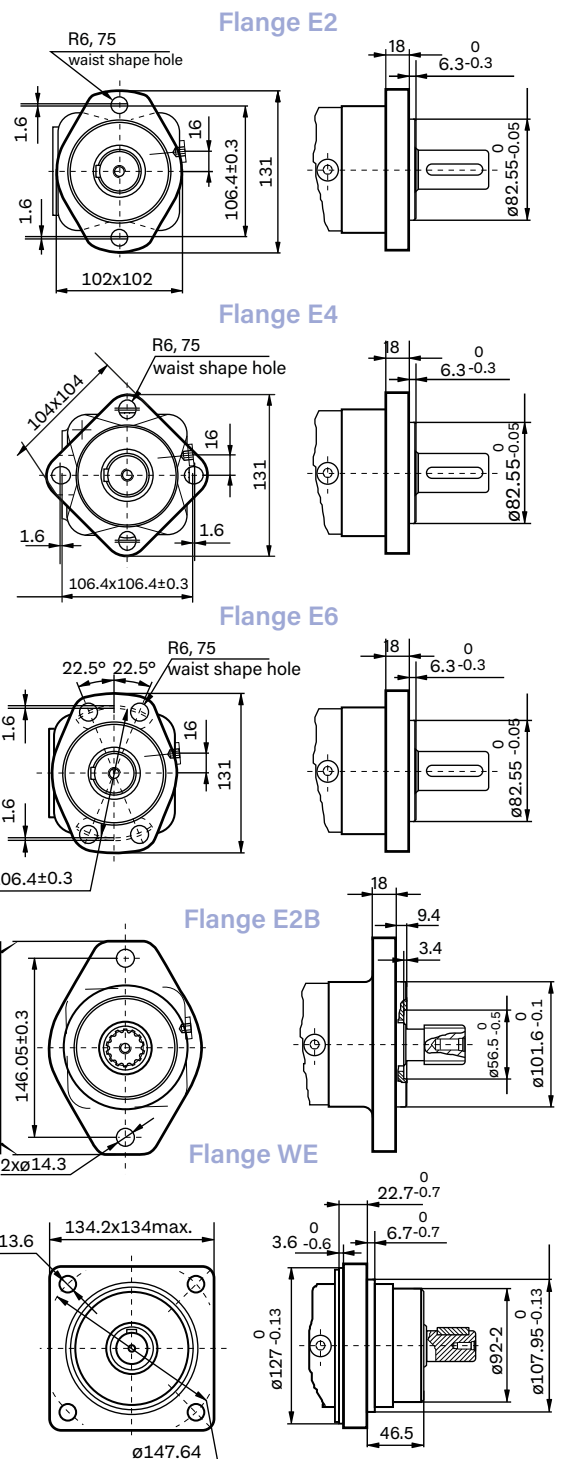
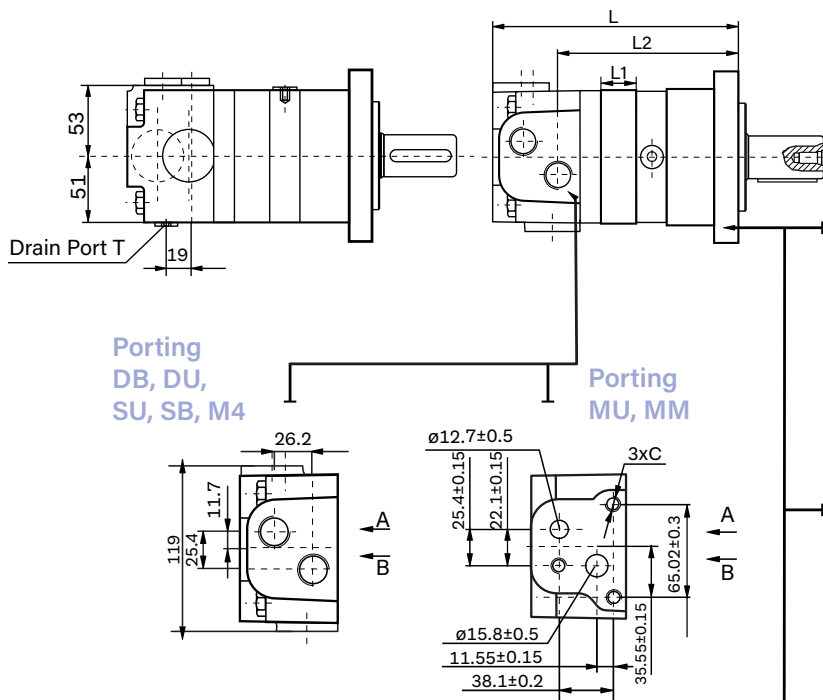
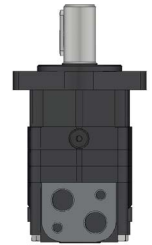
| Mounting Code    | EE-D (depth) |     | EE-M2 (depth)  | EE-S2 (depth)      |     |    |
|------------------|--------------|-----|----------------|--------------------|-----|----|
| P(A,B)           | G1/2 (15)    |     | M22 x 1.5 (15) | 7/8-14 O-ring (17) |     |    |
| T                | G1/4 (12)    |     | M14 x 1.5 (12) | 7/16-20UNF(12)     |     |    |
| <div>Model</div> | L            | L1  | Model          | L                  | L1  |    |
|                  | VNKS-80      | 176 | 16             | VNKS-80-WE         | 148 | 16 |
|                  | VNKS-100     | 180 | 20             | VNKS-100-WE        | 152 | 20 |
|                  | VNKS-125     | 185 | 25             | VNKS-125-WE        | 157 | 25 |
|                  | VNKS-160     | 187 | 27             | VNKS-160-WE        | 159 | 27 |
|                  | VNKS-200     | 194 | 34             | VNKS-200-WE        | 166 | 34 |
|                  | VNKS-250     | 202 | 42             | VNKS-250-WE        | 174 | 42 |
|                  | VNKS-315     | 214 | 54             | VNKS-315-WE        | 186 | 54 |
|                  | VNKS-400     | 229 | 69             | VNKS-400-WE        | 201 | 69 |
|                  | VNKS-475     | 243 | 83             | VNKS-475-WE        | 215 | 83 |

| Mounting Code | ED (depth)       |
|---------------|------------------|
| P(A,B)        | 1-1/16-12UN (18) |
| T             | 7/16-20UNF (12)  |

| Model    | L   | L1 | L3  | Model       | L   | L1 | L2  |
|----------|-----|----|-----|-------------|-----|----|-----|
| VNKS-80  | 176 | 16 | 130 | VNKS-80-WE  | 148 | 16 | 102 |
| VNKS-100 | 180 | 20 | 134 | VNKS-100-WE | 152 | 20 | 106 |
| VNKS-125 | 185 | 25 | 139 | VNKS-125-WE | 157 | 25 | 111 |
| VNKS-160 | 187 | 27 | 141 | VNKS-160-WE | 159 | 27 | 113 |
| VNKS-200 | 194 | 34 | 148 | VNKS-200-WE | 166 | 34 | 119 |
| VNKS-250 | 202 | 42 | 156 | VNKS-250-WE | 174 | 42 | 127 |
| VNKS-315 | 214 | 54 | 168 | VNKS-315-WE | 186 | 54 | 139 |
| VNKS-400 | 229 | 69 | 183 | VNKS-400-WE | 201 | 69 | 154 |
| VNKS-475 | 243 | 83 | 197 | VNKS-475-WE | 215 | 83 | 168 |



# VNKS Dimensions and Mounting Data

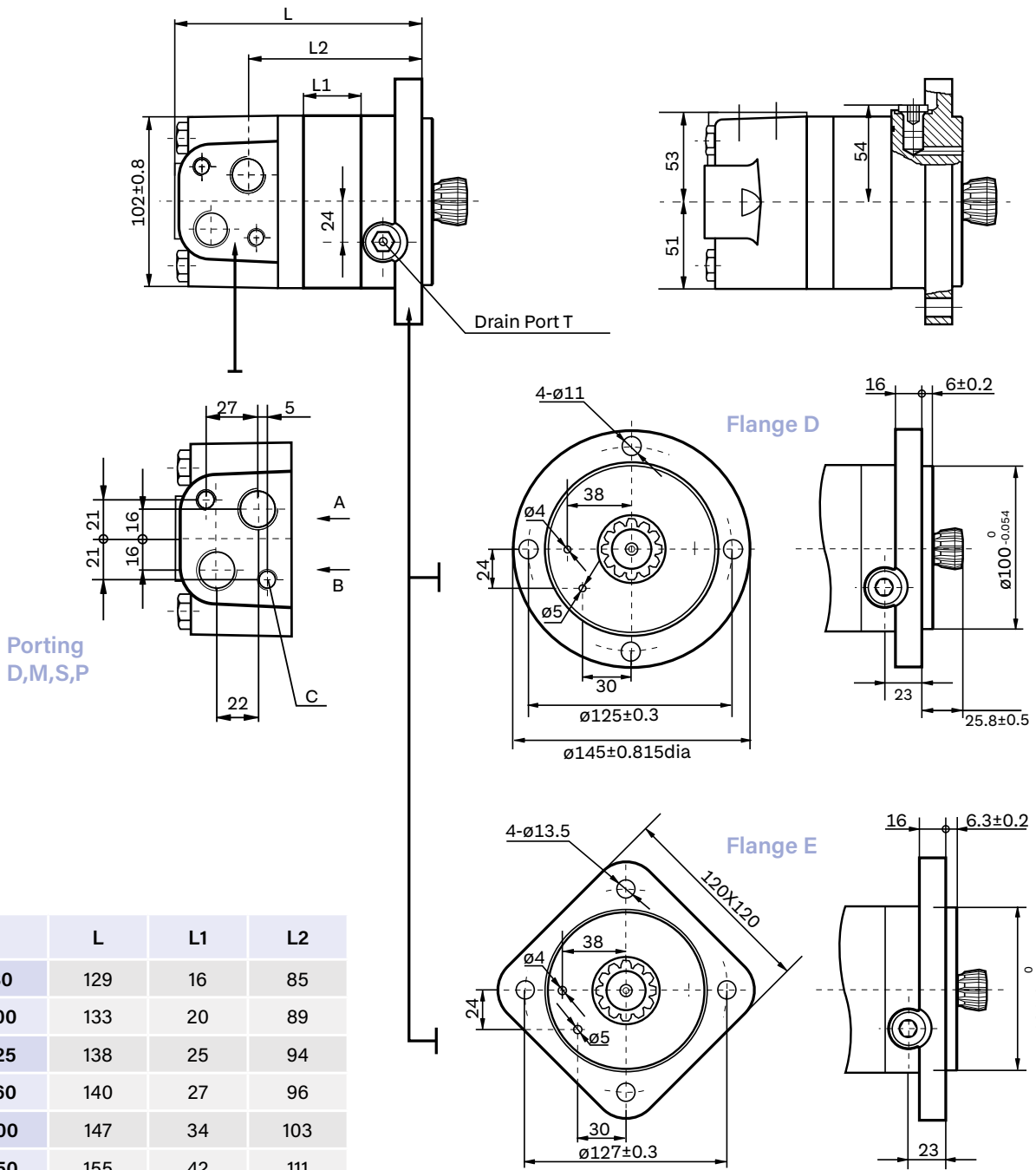
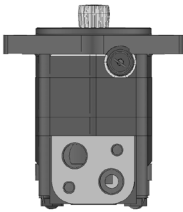


| Model       | L     | L1 | L2  |
|-------------|-------|----|-----|
| VNKS-80-WE  | 126.5 | 16 | 98  |
| VNKS-100-WE | 130.5 | 20 | 102 |
| VNKS-125-WE | 135.5 | 25 | 107 |
| VNKS-160-WE | 137.5 | 27 | 109 |
| VNKS-200-WE | 144.5 | 34 | 116 |
| VNKS-250-WE | 152.5 | 42 | 124 |
| VNKS-315-WE | 164.5 | 54 | 136 |
| VNKS-400-WE | 179.5 | 69 | 151 |
| VNKS-475-WE | 193.5 | 83 | 165 |

| Model    | L   | L1 | L2    |
|----------|-----|----|-------|
| VNKS-80  | 177 | 16 | 126.5 |
| VNKS-100 | 181 | 20 | 130.5 |
| VNKS-125 | 186 | 25 | 135.5 |
| VNKS-160 | 188 | 27 | 137.5 |
| VNKS-200 | 195 | 34 | 144.5 |
| VNKS-250 | 203 | 42 | 152.5 |
| VNKS-315 | 215 | 54 | 164.5 |
| VNKS-400 | 230 | 69 | 179.5 |
| VNKS-475 | 244 | 83 | 193.5 |

| Mounting Code | DB (depth) | DU (depth)     | SU (depth)       | SB (depth)       | M4 (depth)  | MU (depth)     | MM (depth)  |
|---------------|------------|----------------|------------------|------------------|-------------|----------------|-------------|
| P(A,B)        | G1/2 (15)  | G1/2(15)       | 7/8-14O-ring(17) | 7/8-14O-ring(17) | M22x1.5(15) | ø12.7,ø15.8    | ø12.7,ø15.8 |
| T             | G1/4 (12)  | 7/16-20UNF(12) | 7/16-20UNF(12)   | G1/4(12)         | M14x1.5(12) | 7/16-20UNF(12) | G1/4(12)    |
| C             |            |                |                  |                  |             | 3/8-16UNC      | M10         |

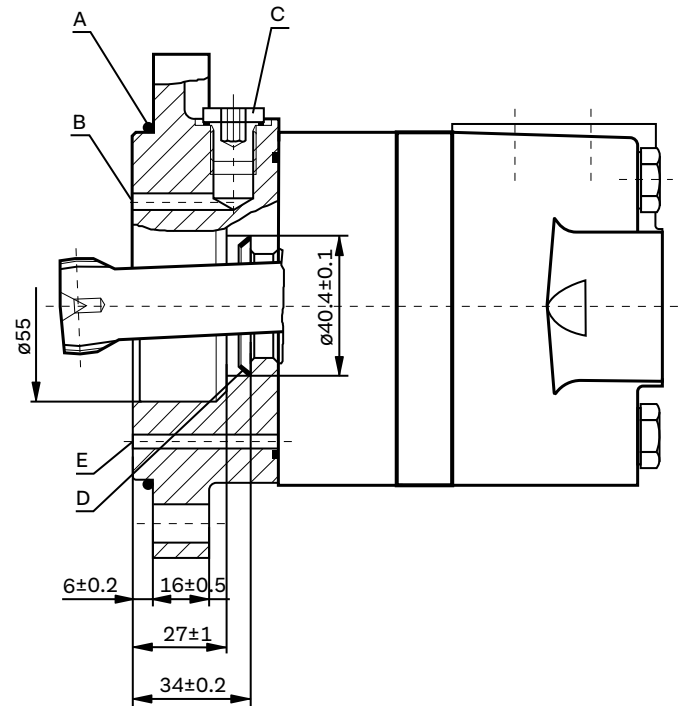
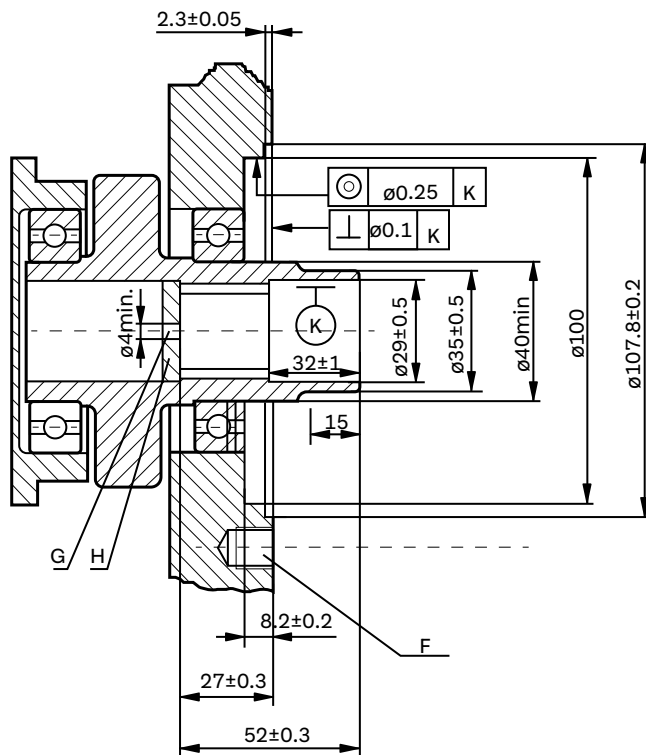
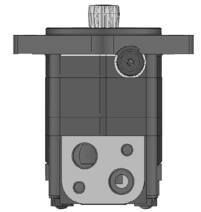
# VNKSS Dimensions and Mounting Data



| Model     | L   | L1 | L2  |
|-----------|-----|----|-----|
| VNKSS-80  | 129 | 16 | 85  |
| VNKSS-100 | 133 | 20 | 89  |
| VNKSS-125 | 138 | 25 | 94  |
| VNKSS-160 | 140 | 27 | 96  |
| VNKSS-200 | 147 | 34 | 103 |
| VNKSS-250 | 155 | 42 | 111 |
| VNKSS-315 | 167 | 54 | 123 |
| VNKSS-400 | 182 | 69 | 138 |
| VNKSS-475 | 196 | 83 | 152 |

| Mounting Code | D (depth) | M (depth)   | S (depth)        | P (depth)       |
|---------------|-----------|-------------|------------------|-----------------|
| P(A,B)        | G1/2(15)  | M22x1.5(15) | 7/8-14O-ring(17) | 1/2-14NPTF(15)  |
| T             | G1/4(12)  | M14x1.5(12) | 7/16-20UNF(12)   | 7/16-20UNF(12)  |
| C             | 2-M10(13) | 2-M10(13)   | 2-3/8-16UNC(13)  | 2-3/8-16UNC(13) |

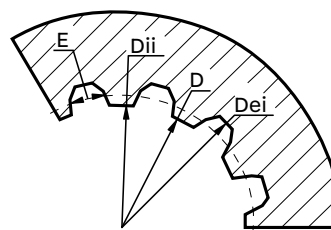
# VNKSS Dimensions and Mounting Data



- A:** O-ring;100x3  
**B:** External drain channel  
**C:** Drain connection G 1/4;12 mm deep  
**D:** Conical seal ring  
**E:** Internal drain channel  
**F:** M10;min. 15mm deep  
**G:** Oil circulation hole  
**H:** Hardened stop plate

## INTERNAL SPLINE DATA FOR THE ATTACHED COMPONENT

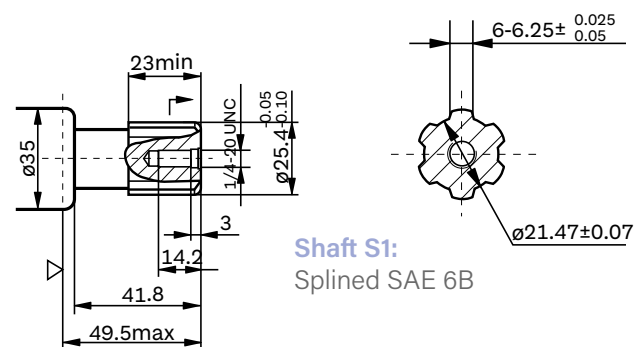
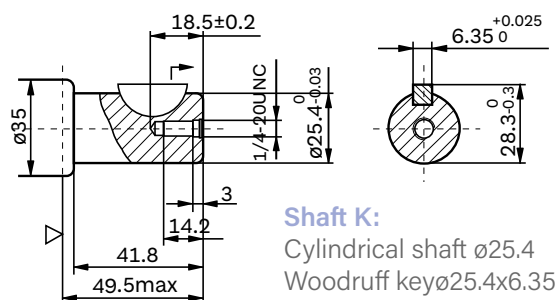
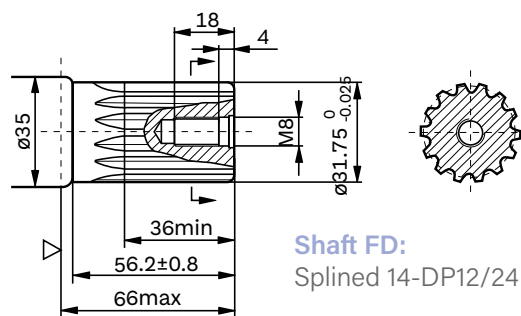
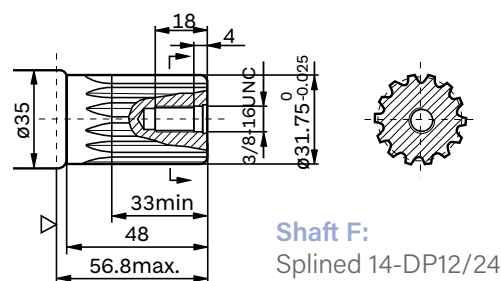
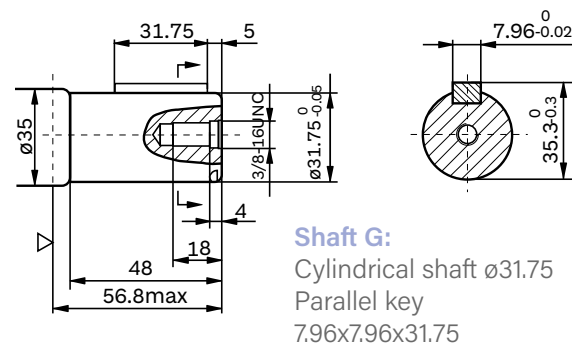
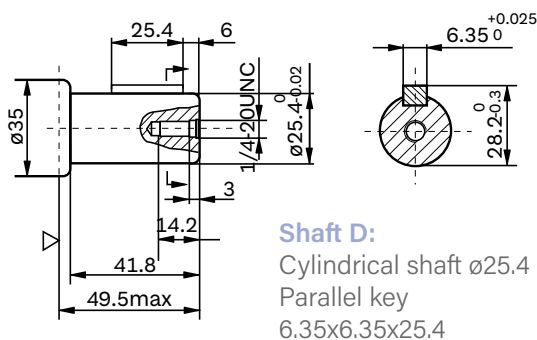
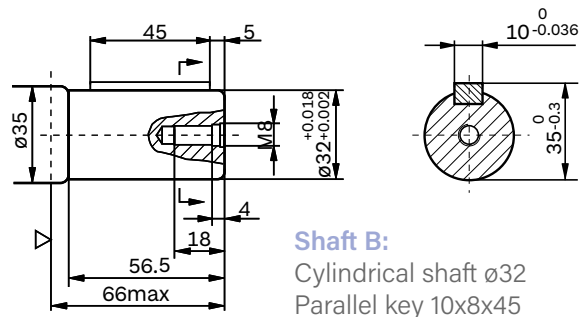
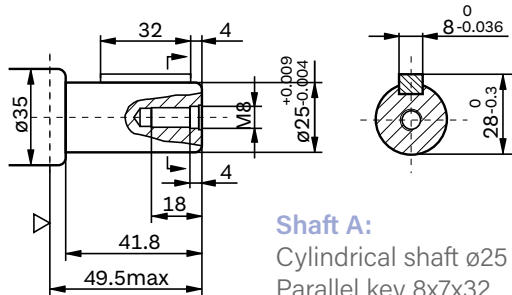
| Fillet Root Side Fit   |            | mm                               |
|------------------------|------------|----------------------------------|
| Number of Teeth        | Z          | 12                               |
| Diametral Pitch        | DP         | 12/24                            |
| Pressure Angle         | $\alpha_D$ | 30°                              |
| Pitch Dia.             | D          | $\varnothing 25.4$               |
| Major Dia.             | Dei        | $\varnothing 28^{+0.033}_{-0.1}$ |
| Minor Dia.             | Dii        | $\varnothing 23$                 |
| Space Width (Circular) | E          | $4.308 \pm 0.02$                 |



Hardening Specification: HRC 62±2  
 Effective case depth 0.7±0.2



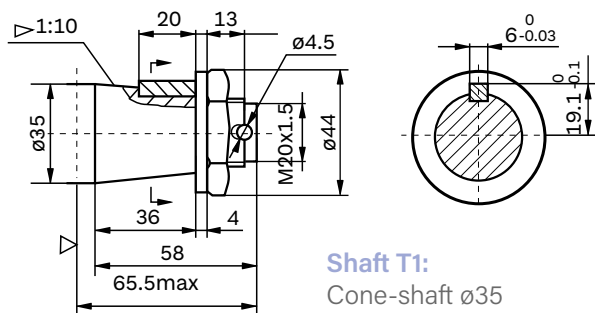
# VNKS Shaft Extensions



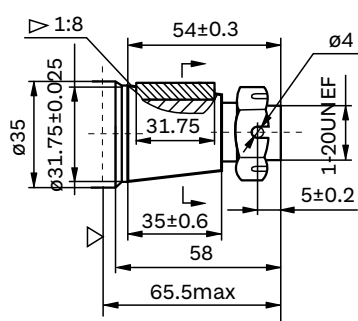
▷ Motor Mounting Surface (Dimension corresponding mounting E2, by analogy with others)



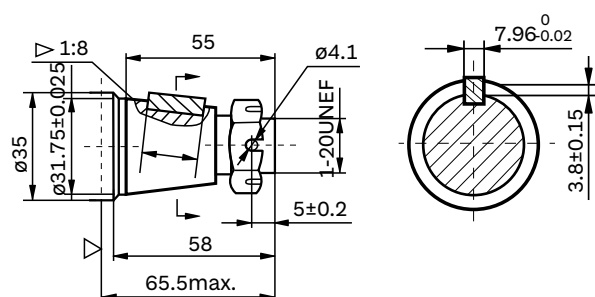
# VNKS Shaft Extensions



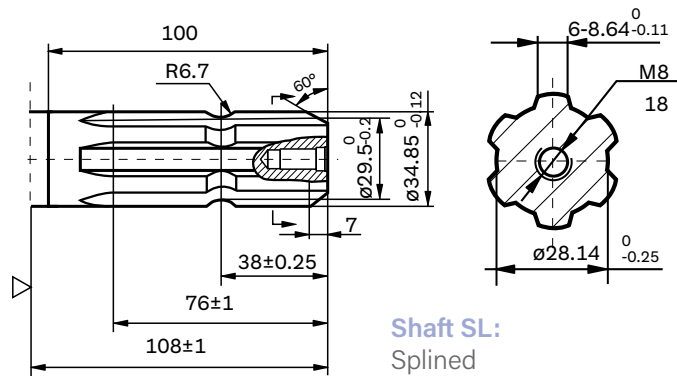
**Shaft T1:**  
Cone-shaft  $\varnothing 35$   
Parallel key B6x6x20



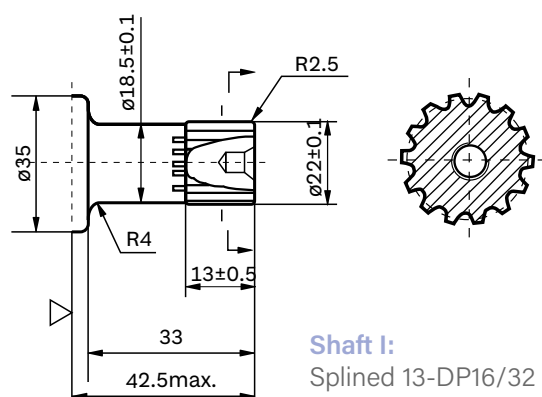
**Shaft T3:**  
Cone-shaft  $\varnothing 31.75$   
Parallel key 7.96x7.96x31.75  
**Tightening torque:**  
200±10Nm



**Shaft T4:**  
Cone-shaft  $\varnothing 31.75$   
Parallel key 7.96x7.96x25.4  
**Tightening torque:** 200±10Nm



**Shaft SL:**  
Splined  
6-34.85x28.14x8.64



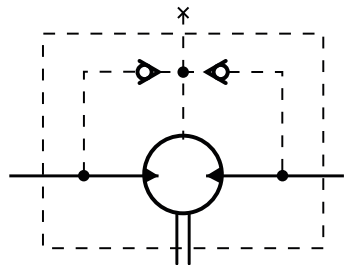
**Shaft I:**  
Splined 13-DP16/32

▷ Motor Mounting Surface (Dimension corresponding mounting E2, by analogy with others). **Note:** Mounting SP is the same with shaft modle T1, D, B, F and G.

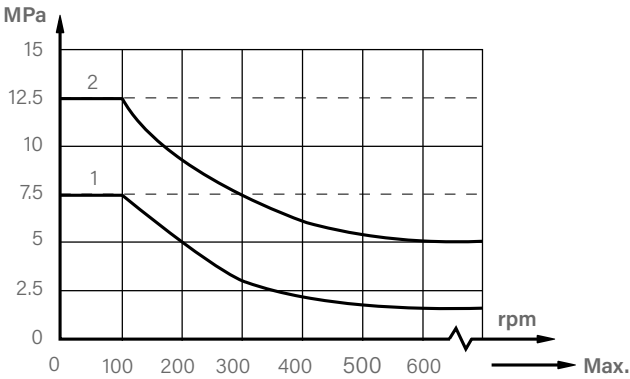


# VNKS Series Hydraulic Motor

## PERMISSIBLE SHAFT SEAL PRESSURE

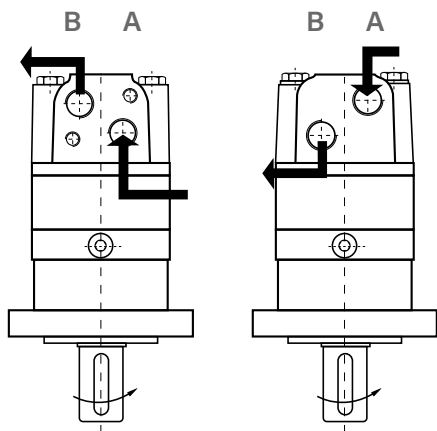


**Note 1:** Chart for standard shaft seal;  
**Note 2:** Chart for high pressure shaft seal.



## STANDARD DIRECTION OF SHAFT ROTATION: Standard

**When facing shaft end of motor, shaft to rotate:**  
Clockwise when port "A" is pressurized.  
Counter-clockwise port "B" is pressurized.



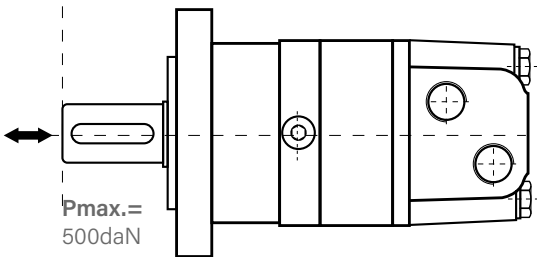
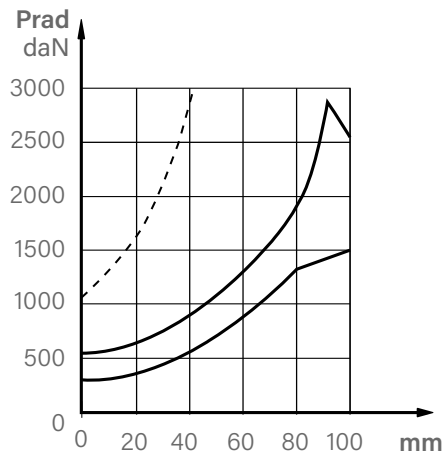
**In applications without drain line,** output shaft seal exceeds a bit of the pressure in the return line.  
When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

## OIL FLOW in drain line

**The table shows the Max.** Oil flow in the drain line at a return pressure less than 0.5-1MPa.

| Pressure drop (PmPa) | Viscosity (mm <sup>2</sup> /s) | Oil flow in the drain line (L/min) |
|----------------------|--------------------------------|------------------------------------|
| 14                   | 20                             | 1.5                                |
|                      | 35                             | 1                                  |
| 21                   | 20                             | 3                                  |
|                      | 35                             | 2                                  |

## AXIAL AND RADIAL FORCES



**The output** shaft runs in tapered bearings that permit high axial and radial forces, **Curve "A"** shows max radial shaft load, Any shaft loads exceeding the values quoted in the curve will involve a risk of breakage, The two other curves apply to a **B10** bearing life of **3000 hours at 200 RPM**.

# Order Information

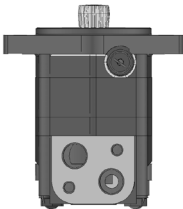


| 1     | 2                                     | 3                      | 4                     | 5                    | 6                  | 7     | 8                  |
|-------|---------------------------------------|------------------------|-----------------------|----------------------|--------------------|-------|--------------------|
| VNKS  |                                       |                        |                       |                      |                    |       |                    |
| Pos.1 | 2                                     | 3                      | 4                     | 5                    | 6                  | 7     | 8                  |
| Code  | Disp                                  | Flange                 | Output shaft          | Ports and drain port | Rotation Direction | Paint | Unusually Function |
| Omit  | 80<br>100<br>125<br>160<br>200<br>250 | E2<br><br>E4<br><br>E6 | A<br>B<br>K<br>G<br>F | EE-D                 | Omit               | 00    | Omit               |
|       |                                       |                        |                       | EE-M                 |                    |       |                    |
|       |                                       |                        |                       | EE-S2                |                    |       |                    |
|       |                                       |                        |                       | ED                   |                    |       |                    |
|       |                                       |                        |                       | DB                   |                    |       |                    |
|       |                                       |                        |                       | DU                   |                    |       |                    |
|       | 315<br>400<br>475                     | E2B<br><br>WE          | FE<br>T4<br>S1<br>I   | SB                   | Standard           | Omit  | F                  |
|       |                                       |                        |                       | SU                   |                    |       |                    |
|       |                                       |                        |                       | M4                   |                    |       |                    |
|       |                                       |                        |                       | MU                   |                    |       |                    |
|       |                                       |                        |                       | MM                   |                    |       |                    |
|       |                                       |                        |                       | G                    |                    |       |                    |
| Omit  | 80<br>100<br>125<br>160<br>200<br>250 | E2<br><br>E4<br><br>E6 | A<br>B<br>K<br>G<br>F | EE-D                 | Opposite           | B     | LS                 |
|       |                                       |                        |                       | EE-M                 |                    |       |                    |
|       |                                       |                        |                       | EE-S2                |                    |       |                    |
|       |                                       |                        |                       | ED                   |                    |       |                    |
|       |                                       |                        |                       | DB                   |                    |       |                    |
|       |                                       |                        |                       | DU                   |                    |       |                    |
|       | 315<br>400<br>475                     | E2B<br><br>WE          | FE<br>T4<br>S1<br>I   | SB                   | R                  | S     | SD                 |
|       |                                       |                        |                       | SU                   |                    |       |                    |
|       |                                       |                        |                       | M4                   |                    |       |                    |
|       |                                       |                        |                       | MU                   |                    |       |                    |
|       |                                       |                        |                       | MM                   |                    |       |                    |
|       |                                       |                        |                       | G                    |                    |       |                    |

**Note:** When the table is used, please fill the code of left rows in the table and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports. The information of mounting flange, output shaft and ports are the same as BMS series. The SP flange afflies to shafts of T1, D, B, F, G. If the specification is not in the table or you have specific requirements, please contact us.



# Order Information



1

VNKSS

2

3

4

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7

8

| Pos.1 | 2                                                          | 3      | 4                                                  | 5                    | 6                                                  | 7     | 8                  |
|-------|------------------------------------------------------------|--------|----------------------------------------------------|----------------------|----------------------------------------------------|-------|--------------------|
| Code  | Disp                                                       | Flange | Output shaft                                       | Ports and drain port | Rotation Direction                                 | Paint | Unusually Function |
| Omit  | 80<br>100<br>125<br>160<br>200<br>250<br>315<br>400<br>475 | E2     | B<br>Shaft ø32, parallel key 10x8x45               | D                    | G1/2 Manifold Mount<br>2-M10, G1/4                 | 00    | Omit               |
|       |                                                            |        | D<br>Shaft ø25.4, parallel key 6.35x6.35x25.4      |                      |                                                    |       |                    |
|       |                                                            | E4     | G<br>Shaft ø31.75, parallel key 7.96x31.75         |                      |                                                    |       |                    |
|       |                                                            |        | F<br>Shaft ø31.75, splined key 14-DP12/24          |                      |                                                    |       |                    |
|       |                                                            | F6     | FD<br>Long Shaft ø31.75, splined key 14-DP12/24    |                      |                                                    |       |                    |
|       | 100<br>125<br>160<br>200<br>250<br>315<br>400<br>475       | W      | SL<br>Shaft ø34.85, splined key 6-34.85x28.14x8.64 | M                    | M22X1.5 Manifold Mount 2-M10, M14x1.5              | Omit  | F                  |
|       |                                                            | E2B    | T1<br>Cone-shaft ø35, parallel key B6x6x20         | S                    | 7/8 -14UNF O-ring manifold 2-3/8-16UNC, 7/16-20UNF | B     | LS                 |
|       |                                                            | SP     | T3<br>Cone-shaft ø31.75, parallel key 7.96x31.75   | P                    | 1/2-14ANPTF manifold 2-3/8-16UNC, 7/16-20UNF       | S     | Speed sensor       |
|       |                                                            |        | S1<br>Shaft ø25.4, splined key SAE 6B              |                      |                                                    |       |                    |
|       |                                                            |        | I<br>Sub-shaft ø22, splined key 13-DP16/32         |                      |                                                    |       |                    |
| S     |                                                            | D      | Omit                                               |                      |                                                    |       |                    |
|       |                                                            | E      |                                                    |                      |                                                    |       |                    |

**Note:** When the table is used, please fill the code of left rows in the table and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports.The informations of mounting flange,output shaft and ports are the same as BMS series.The SP flange afflies to shafts of T1, D, B, F, G. If the specification is not in the table or you have specific requirements, please contact us.

# VNKT Series Hydraulic Motor

## INTRODUCTION

**VNKT series motor** adapt the advanced Geroler gear set designed with disc distribution flow and high pressure.

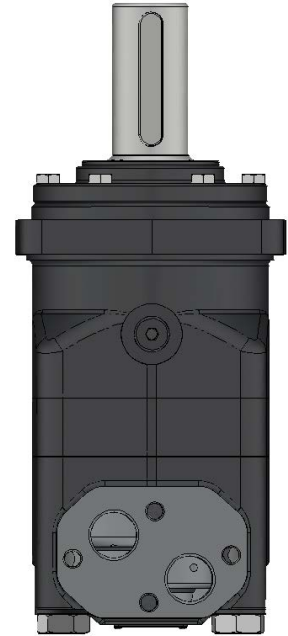
The unit can be supplied the individual variant in operating multifunction in accordance with requirement of applications.

## CHARACTERISTIC FEATURES

\* **Advanced manufacturing** devices for the Geroler gear set, which use low pressure of start-up, provide smooth and reliable operation and high efficiency.

\* **The output shaft** adapts in tapered roller bearings that permit high axial and radial forces. The case can offers capacities of high pressure and high torque in the wide of applications.

\* **Advanced design in disc distribution flow**, which can automatically compensate in operating with high volume efficiency and long life, provide smooth and reliable operation.



## SPECIFICATION Main Specification

| Type                                                |       | VNKT 160 | VNKT 200 | VNKT 230 | VNKT 250 | VNKT 315 | VNKT 400 | VNKT 500 | VNKT 630 | VNKT 800 |
|-----------------------------------------------------|-------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| <b>Geometric displacement (cm<sup>3</sup>/rev.)</b> |       | 161.1    | 201.4    | 232.5    | 251.8    | 326.3    | 410.9    | 523.6    | 629.1    | 801.8    |
| <b>Max. speed (rpm)</b>                             | cont. | 625      | 625      | 536      | 500      | 380      | 305      | 240      | 196      | 154      |
|                                                     | int.  | 780      | 750      | 643      | 600      | 460      | 365      | 285      | 233      | 185      |
| <b>Max. torque (N·m)</b>                            | cont. | 470      | 590      | 670      | 730      | 950      | 1080     | 1220     | 1318     | 1464     |
|                                                     | int.  | 560      | 710      | 821      | 880      | 1140     | 1260     | 1370     | 1498     | 1520     |
|                                                     | peak  | 669      | 838      | 958      | 1036     | 1346.3   | 1450.3   | 1643.8   | 1618.8   | 1665     |
| <b>Max. output (kW)</b>                             | cont. | 27.7     | 34.9     | 34.7     | 34.5     | 34.9     | 31.2     | 28.8     | 25.3     | 22.2     |
|                                                     | int.  | 32       | 40       | 40       | 40       | 40       | 35       | 35       | 27.5     | 26.8     |
| <b>Max. pressure drop (MPa)</b>                     | cont. | 20       | 20       | 20       | 20       | 20       | 18       | 16       | 14       | 12.5     |
|                                                     | int.  | 24       | 24       | 24       | 24       | 24       | 21       | 18       | 16       | 13       |
|                                                     | peak  | 28       | 28       | 28       | 28       | 28       | 24       | 21       | 19       | 16       |
| <b>Max. flow (L/min)</b>                            | cont. | 100      | 125      | 125      | 125      | 125      | 125      | 125      | 125      | 125      |
|                                                     | int.  | 125      | 150      | 150      | 150      | 150      | 150      | 150      | 150      | 150      |
| <b>Max. inlet pressure (MPa)</b>                    | cont. | 21       | 21       | 21       | 21       | 21       | 21       | 21       | 21       | 21       |
|                                                     | int.  | 25       | 25       | 25       | 25       | 25       | 25       | 25       | 25       | 25       |
|                                                     | peak  | 30       | 30       | 30       | 30       | 30       | 30       | 30       | 30       | 30       |
| <b>Weight (Kg)</b>                                  |       | 19.5     | 20       | 20.4     | 20.5     | 21       | 22       | 23       | 24       | 25       |

\* **Continuous pressure:** Max. value of operating motor continuously.

\* **Intermittent pressure:** Max. value of operating motor in 6 seconds per minute.

\* **Peak pressure:** Max. value of operating motor in 0.6 second per minute.



# Performance Data

VNKT 160 [161.1 cm3/rev.]

Pressure (MPa)

|              |     | Max. cont |            |            |            |            |            | Max. int   |
|--------------|-----|-----------|------------|------------|------------|------------|------------|------------|
|              |     | 4         | 8          | 10         | 12         | 16         | 20         | 24         |
| Flow (L/min) | 10  | 88<br>60  | 176<br>59  | 228<br>58  | 275<br>56  | 361<br>54  | 447<br>50  | 535<br>44  |
|              | 20  | 89<br>121 | 181<br>120 | 234<br>117 | 277<br>114 | 372<br>109 | 459<br>103 | 557<br>95  |
|              | 40  | 91<br>249 | 180<br>246 | 235<br>243 | 277<br>236 | 381<br>230 | 471<br>223 | 573<br>212 |
|              | 60  | 82<br>371 | 178<br>367 | 235<br>362 | 277<br>356 | 381<br>349 | 470<br>340 | 572<br>330 |
|              | 80  | 78<br>492 | 173<br>489 | 229<br>485 | 276<br>478 | 379<br>470 | 466<br>462 | 567<br>447 |
|              | 100 | 70<br>614 | 160<br>611 | 218<br>606 | 269<br>598 | 370<br>590 | 455<br>582 | 558<br>570 |
| Max. cont    | 125 | 58<br>770 | 148<br>764 | 211<br>758 | 261<br>750 | 359<br>741 | 448<br>731 | 552<br>715 |
| Max. int     |     |           |            |            |            |            |            |            |

VNKT 200 [201.4 cm3/rev.]

Pressure (MPa)

|              |     | Max. cont  |            |            |            |            |            | Max. int   |
|--------------|-----|------------|------------|------------|------------|------------|------------|------------|
|              |     | 4          | 8          | 10         | 12         | 16         | 20         | 24         |
| Flow (L/min) | 10  | 124<br>47  | 233<br>46  | 289<br>45  | 340<br>42  | 454<br>39  | 560<br>37  | 669<br>33  |
|              | 20  | 125<br>95  | 239<br>94  | 298<br>92  | 347<br>90  | 468<br>87  | 576<br>84  | 696<br>75  |
|              | 40  | 120<br>195 | 241<br>193 | 296<br>191 | 352<br>287 | 475<br>183 | 589<br>178 | 716<br>167 |
|              | 60  | 116<br>297 | 237<br>295 | 295<br>292 | 350<br>384 | 478<br>282 | 589<br>276 | 718<br>263 |
|              | 80  | 108<br>395 | 231<br>393 | 289<br>389 | 344<br>482 | 474<br>377 | 586<br>370 | 716<br>359 |
|              | 100 | 99<br>493  | 227<br>490 | 286<br>486 | 333<br>602 | 471<br>475 | 580<br>467 | 712<br>460 |
| Max. cont    | 125 | 84<br>615  | 208<br>611 | 276<br>607 | 333<br>602 | 459<br>595 | 566<br>588 | 697<br>572 |
| Max. int     | 150 | 70<br>743  | 194<br>740 | 260<br>735 | 324<br>727 | 447<br>717 | 554<br>706 | 682<br>682 |

VNKT 250 [251.8 cm3/rev.]

Pressure (MPa)

|              |     | Max. cont  |            |            |            |            |            | Max. int   |
|--------------|-----|------------|------------|------------|------------|------------|------------|------------|
|              |     | 4          | 8          | 10         | 12         | 16         | 20         | 24         |
| Flow (L/min) | 10  | 138<br>38  | 286<br>38  | 355<br>37  | 419<br>36  | 559<br>34  | 689<br>32  | 824<br>31  |
|              | 20  | 143<br>76  | 296<br>75  | 364<br>74  | 432<br>72  | 580<br>70  | 708<br>67  | 853<br>62  |
|              | 40  | 139<br>156 | 301<br>154 | 372<br>152 | 440<br>149 | 593<br>146 | 723<br>142 | 884<br>134 |
|              | 60  | 132<br>237 | 294<br>236 | 372<br>233 | 441<br>229 | 592<br>224 | 727<br>219 | 888<br>207 |
|              | 80  | 128<br>317 | 283<br>316 | 364<br>314 | 433<br>308 | 587<br>303 | 721<br>299 | 887<br>284 |
|              | 100 | 126<br>396 | 282<br>394 | 355<br>391 | 427<br>387 | 582<br>381 | 716<br>373 | 879<br>359 |
| Max. cont    | 125 | 116<br>495 | 260<br>492 | 340<br>488 | 414<br>483 | 568<br>476 | 703<br>469 | 864<br>454 |
| Max. int     | 150 | 88<br>592  | 242<br>589 | 320<br>585 | 397<br>580 | 552<br>572 | 686<br>565 | 847<br>545 |

VNKT 315 [326.3 cm3/rev.]

Pressure (MPa)

|              |     | Max. cont  |            |            |            |            |            | Max. int    |
|--------------|-----|------------|------------|------------|------------|------------|------------|-------------|
|              |     | 4          | 8          | 10         | 12         | 16         | 20         | 24          |
| Flow (L/min) | 10  | 184<br>30  | 363<br>29  | 453<br>28  | 545<br>27  | 734<br>26  | 891<br>25  | 1062<br>23  |
|              | 20  | 189<br>60  | 380<br>59  | 472<br>58  | 562<br>56  | 757<br>54  | 917<br>52  | 1109<br>50  |
|              | 40  | 191<br>121 | 381<br>120 | 484<br>118 | 570<br>115 | 774<br>112 | 954<br>109 | 1149<br>104 |
|              | 60  | 189<br>183 | 376<br>181 | 493<br>179 | 573<br>175 | 772<br>172 | 962<br>168 | 1154<br>158 |
|              | 80  | 179<br>244 | 369<br>242 | 479<br>239 | 565<br>236 | 768<br>231 | 954<br>227 | 1153<br>217 |
|              | 100 | 169<br>305 | 357<br>304 | 467<br>301 | 562<br>298 | 758<br>294 | 942<br>289 | 1143<br>276 |
| Max. cont    | 125 | 147<br>380 | 336<br>378 | 447<br>375 | 544<br>371 | 745<br>367 | 920<br>362 | 1127<br>349 |
| Max. int     | 150 | 119<br>458 | 318<br>456 | 432<br>453 | 526<br>449 | 713<br>444 | 894<br>431 | 1097<br>425 |

Torque (N·m) 552  
Speed (rpm) 572



# Performance Data

VNKT 400 [410.9 cm3/rev.]

Pressure (MPa)

|              |     | Max. cont  |            |            |            |            |             | Max. int    |
|--------------|-----|------------|------------|------------|------------|------------|-------------|-------------|
|              |     | 3          | 6          | 9          | 12         | 15         | 18          | 21          |
| Flow (L/min) | 10  | 176<br>24  | 367<br>23  | 560<br>22  | 715<br>21  | 885<br>20  | 1050<br>19  | 1209<br>18  |
|              | 20  | 179<br>49  | 370<br>48  | 565<br>47  | 726<br>44  | 899<br>42  | 1071<br>40  | 1236<br>38  |
|              | 40  | 176<br>96  | 370<br>95  | 567<br>93  | 733<br>90  | 919<br>87  | 1091<br>83  | 1263<br>79  |
|              | 60  | 174<br>145 | 361<br>143 | 563<br>139 | 729<br>135 | 920<br>131 | 1095<br>127 | 1269<br>121 |
|              | 80  | 166<br>193 | 353<br>191 | 553<br>188 | 719<br>184 | 912<br>180 | 1084<br>176 | 1263<br>170 |
|              | 100 | 150<br>242 | 339<br>240 | 538<br>238 | 708<br>234 | 896<br>228 | 1067<br>224 | 1252<br>218 |
|              | 125 | 135<br>302 | 309<br>300 | 524<br>298 | 688<br>294 | 873<br>289 | 1045<br>285 | 1221<br>278 |
| Max. cont    |     |            |            |            |            |            |             |             |
| Max. int     |     | 126<br>364 | 292<br>362 | 508<br>358 | 666<br>354 | 852<br>350 | 1020<br>346 | 1197<br>339 |

VNKT 500 [523.6 cm3/rev.]

Pressure (MPa)

|              |     | Max. cont  |            |            |            |             |             | Max. int    |
|--------------|-----|------------|------------|------------|------------|-------------|-------------|-------------|
|              |     | 3          | 6          | 9          | 12         | 14          | 16          | 18          |
| Flow (L/min) | 10  | 222<br>18  | 451<br>18  | 692<br>18  | 892<br>17  | 1050<br>16  | 1193<br>15  | 1340<br>13  |
|              | 20  | 231<br>37  | 464<br>36  | 714<br>35  | 918<br>34  | 1070<br>33  | 1220<br>32  | 1377<br>30  |
|              | 40  | 230<br>75  | 466<br>74  | 727<br>73  | 941<br>72  | 1094<br>70  | 1244<br>68  | 1422<br>64  |
|              | 60  | 225<br>113 | 457<br>112 | 714<br>111 | 941<br>109 | 1088<br>107 | 1245<br>105 | 1409<br>101 |
|              | 80  | 213<br>151 | 431<br>150 | 696<br>149 | 927<br>147 | 1076<br>145 | 1244<br>143 | 1401<br>138 |
|              | 100 | 194<br>189 | 420<br>188 | 680<br>187 | 901<br>185 | 1063<br>183 | 1224<br>181 | 1383<br>177 |
|              | 125 | 182<br>237 | 398<br>236 | 641<br>235 | 877<br>233 | 1024<br>231 | 1199<br>229 | 1352<br>225 |
| Max. cont    |     |            |            |            |            |             |             |             |
| Max. int     |     | 147<br>284 | 369<br>283 | 618<br>282 | 853<br>280 | 1004<br>278 | 1167<br>276 | 1325<br>272 |

VNKT 630 [629.1 cm3/rev.]

Pressure (MPa)

|              |     | Max. cont  |            |            |            |             |             | Max. int    |
|--------------|-----|------------|------------|------------|------------|-------------|-------------|-------------|
|              |     | 3          | 6          | 9          | 10.5       | 12          | 14          | 16          |
| Flow (L/min) | 10  | 233<br>14  | 520<br>14  | 795<br>13  | 902<br>13  | 1074<br>13  | 1194<br>11  | 1363<br>11  |
|              | 20  | 237<br>28  | 554<br>27  | 837<br>27  | 953<br>26  | 1117<br>26  | 1239<br>24  | 1407<br>22  |
|              | 40  | 239<br>62  | 553<br>62  | 860<br>61  | 987<br>60  | 1171<br>59  | 1308<br>56  | 1483<br>54  |
|              | 60  | 223<br>94  | 544<br>94  | 863<br>92  | 978<br>91  | 1172<br>90  | 1318<br>86  | 1498<br>82  |
|              | 80  | 220<br>123 | 537<br>122 | 854<br>121 | 965<br>119 | 1172<br>118 | 1314<br>114 | 1497<br>110 |
|              | 100 | 208<br>156 | 522<br>155 | 832<br>153 | 945<br>152 | 1156<br>150 | 1303<br>147 | 1488<br>142 |
|              | 125 | 201<br>196 | 499<br>196 | 810<br>194 | 931<br>192 | 1137<br>191 | 1292<br>187 | 1472<br>183 |
| Max. cont    |     |            |            |            |            |             |             |             |
| Max. int     |     | 174<br>233 | 492<br>232 | 785<br>231 | 921<br>230 | 1121<br>227 | 1277<br>223 | 1454<br>217 |

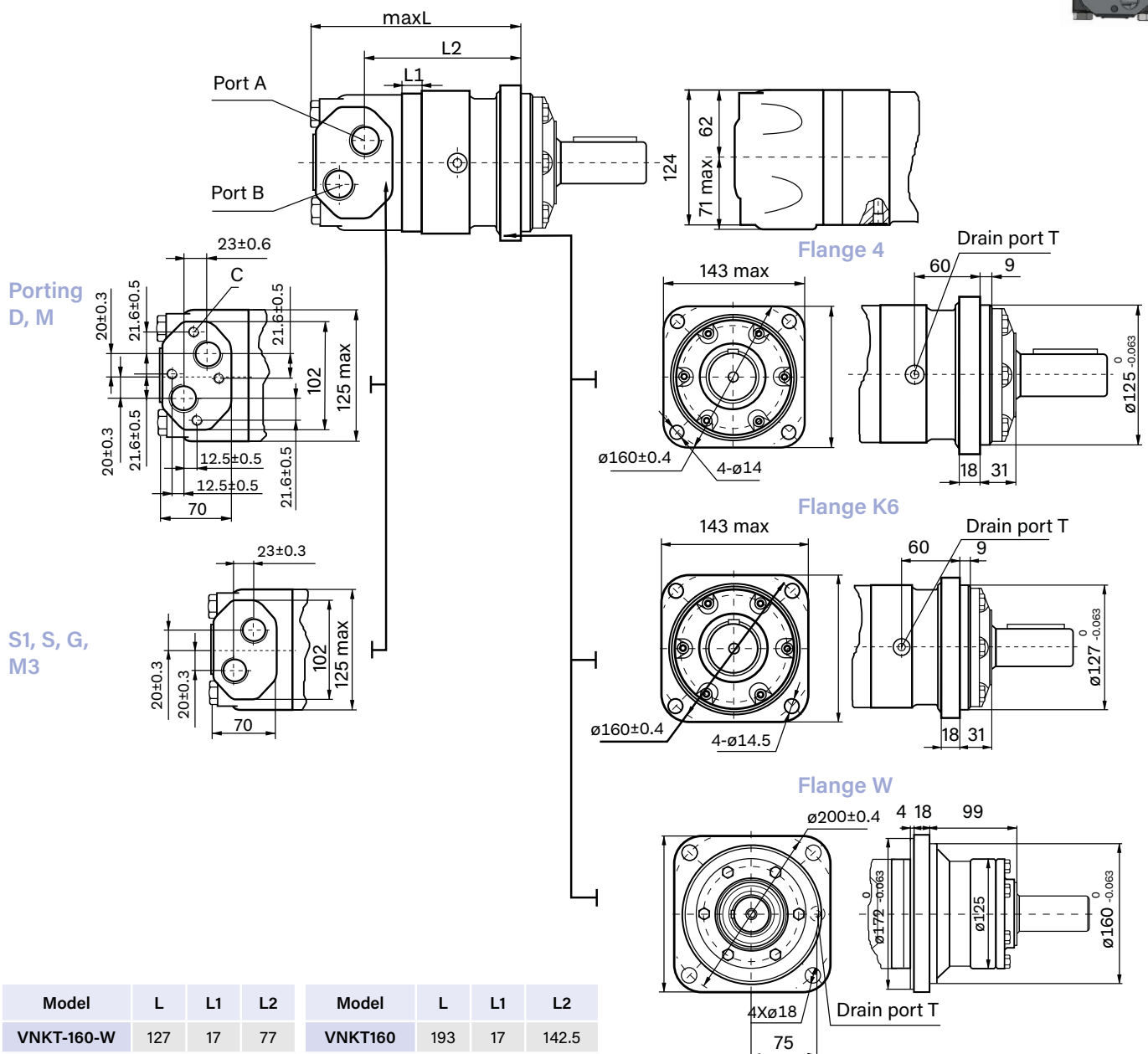
VNKT 800 [801.8 cm3/rev.]

Pressure (MPa)

|              |     | Max. cont  |            |             |             |             |             | Max. int |
|--------------|-----|------------|------------|-------------|-------------|-------------|-------------|----------|
|              |     | 3          | 6          | 9           | 10.5        | 12.5        | 13          |          |
| Flow (L/min) | 10  | 346<br>12  | 677<br>12  | 1003<br>11  | 1159<br>11  | 1365<br>11  | 1390<br>10  |          |
|              | 20  | 356<br>24  | 692<br>24  | 1034<br>24  | 1183<br>23  | 1404<br>22  | 1458<br>18  |          |
|              | 40  | 365<br>50  | 703<br>50  | 1066<br>49  | 1236<br>48  | 1459<br>46  | 1516<br>40  |          |
|              | 60  | 354<br>74  | 703<br>73  | 1060<br>71  | 1237<br>71  | 1464<br>68  | 1520<br>63  |          |
|              | 80  | 332<br>99  | 686<br>98  | 1050<br>98  | 1226<br>96  | 1464<br>93  | 1514<br>86  |          |
|              | 100 | 305<br>125 | 654<br>123 | 1025<br>123 | 1207<br>121 | 1445<br>118 | 1506<br>110 |          |
|              | 125 | 280<br>154 | 622<br>153 | 989<br>153  | 1181<br>150 | 1422<br>149 | 1487<br>140 |          |
| Max. cont    |     |            |            |             |             |             |             |          |
| Max. int     |     | 247<br>185 | 590<br>184 | 953<br>183  | 1156<br>181 | 1406<br>179 | 1476<br>172 |          |

Torque (N·m) 1121  
Speed (rpm) 227

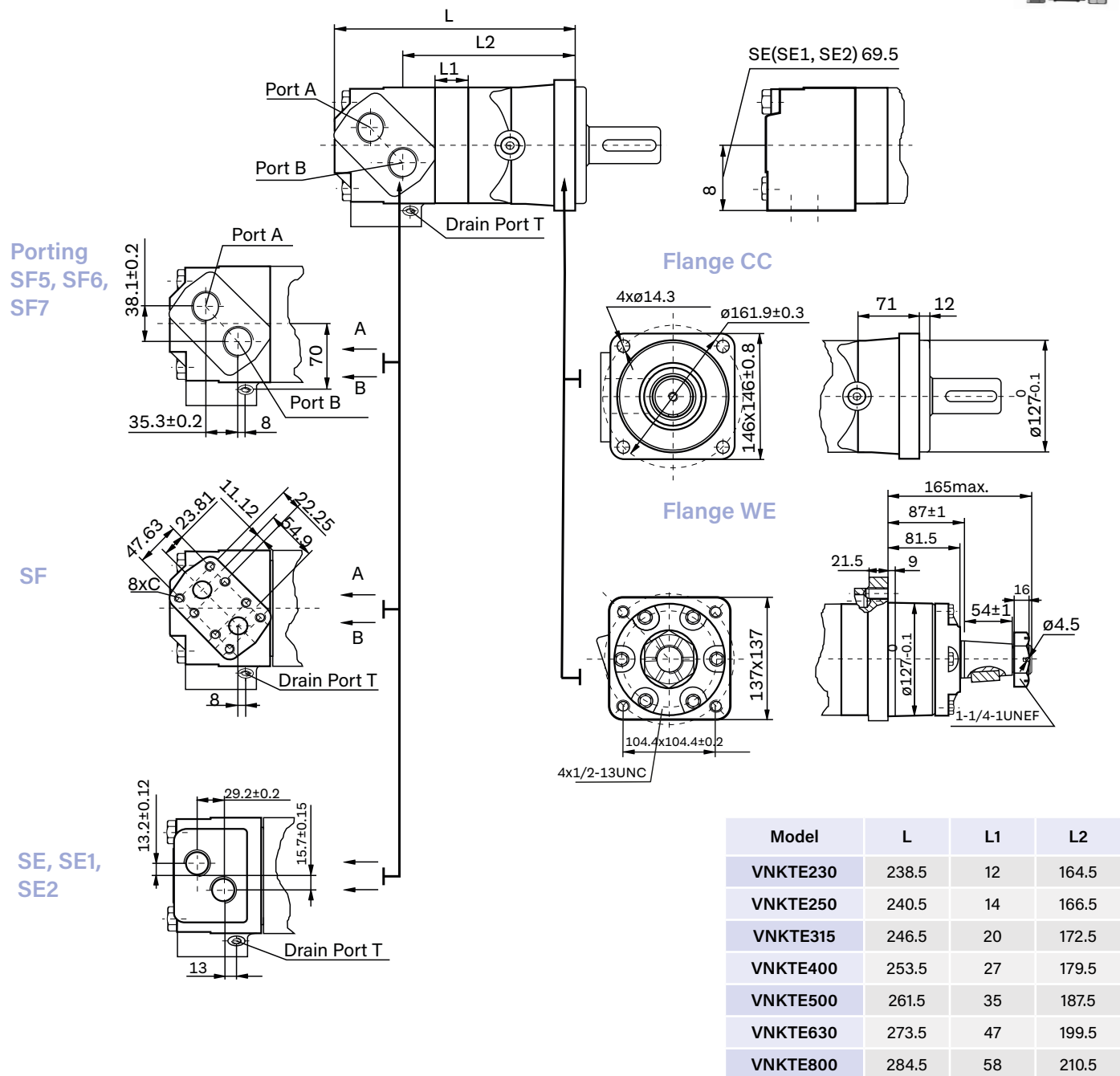
# VNKT Dimensions and Mounting Data



## Note:

- 1) The thickness of the stator and rotor for disp. from 160 to 200 is the dimension of L1 adding on 3mm.
- 2) The thickness of the stator and rotor for disp. from 250 to 800 is the dimension of L1 adding on 7mm.

# VNKTE Dimensions and Mounting Data



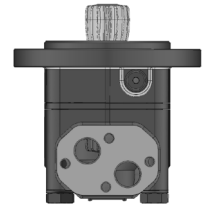
| Content Mounting | Code             |                |             |                 |                  |                  |             |
|------------------|------------------|----------------|-------------|-----------------|------------------|------------------|-------------|
|                  | SF5 (Depth)      | SF6 (Depth)    | SF7 (Depth) | SF (Depth)      | SE (Depth)       | SE1 (Depth)      | SE2 (Depth) |
| P(A,B)           | 1-5/16-12UN (18) | M33 x 2 (18)   | G1 (18)     | 3/4" (18)       | 1-1/16-12UN (18) | 1-1/16-12UN (18) | G3/4 (18)   |
| T                | 7/16-20UNF (12)  | M14 x 1.5 (12) | G1/4 (12)   | 7/16-20UNF (12) | 9/16-18UNF (12)  | 7/16-20UNF (12)  | G1/4 (12)   |
| C                | -                | -              | -           | 8 x 3/8-16UNC   | -                | -                | -           |

**Note:** 1) The data for the port of SF (SF5 and SF6 and sf7)

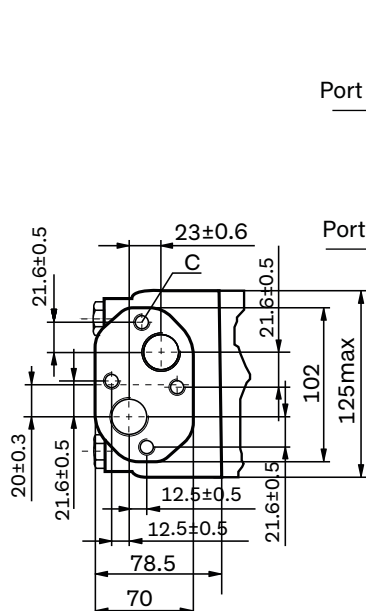
2) The data for the port of SE (SE1 and SE2) and flange WE: L-70 and L2-59.

3) The thickness of the stator and rotor for disp, from 315 to 800 is the dimension of L1 adding on 7mm.

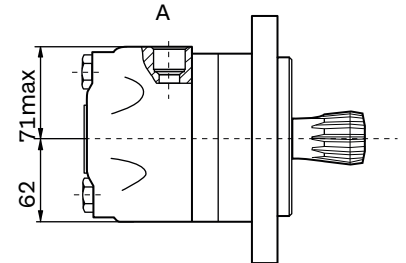
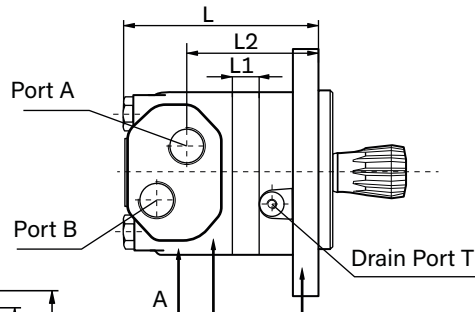
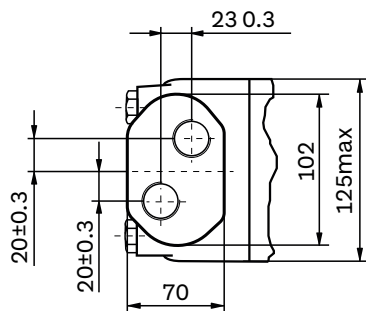
# VNKTS Dimensions and Mounting Data



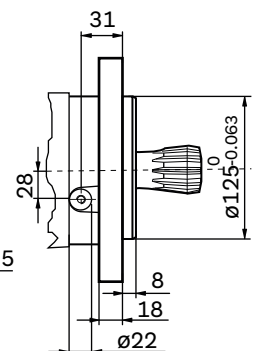
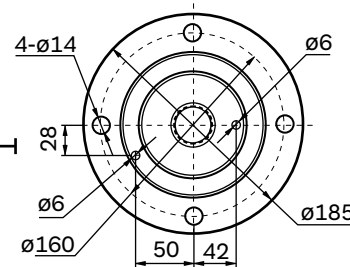
Porting  
D, M



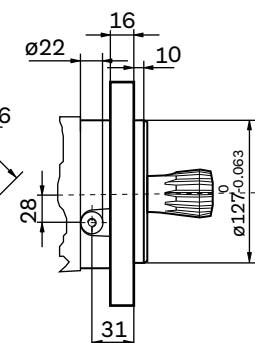
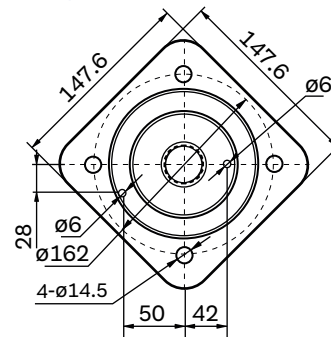
Porting  
S1, S, G2,  
M3



Flange D



Flange E



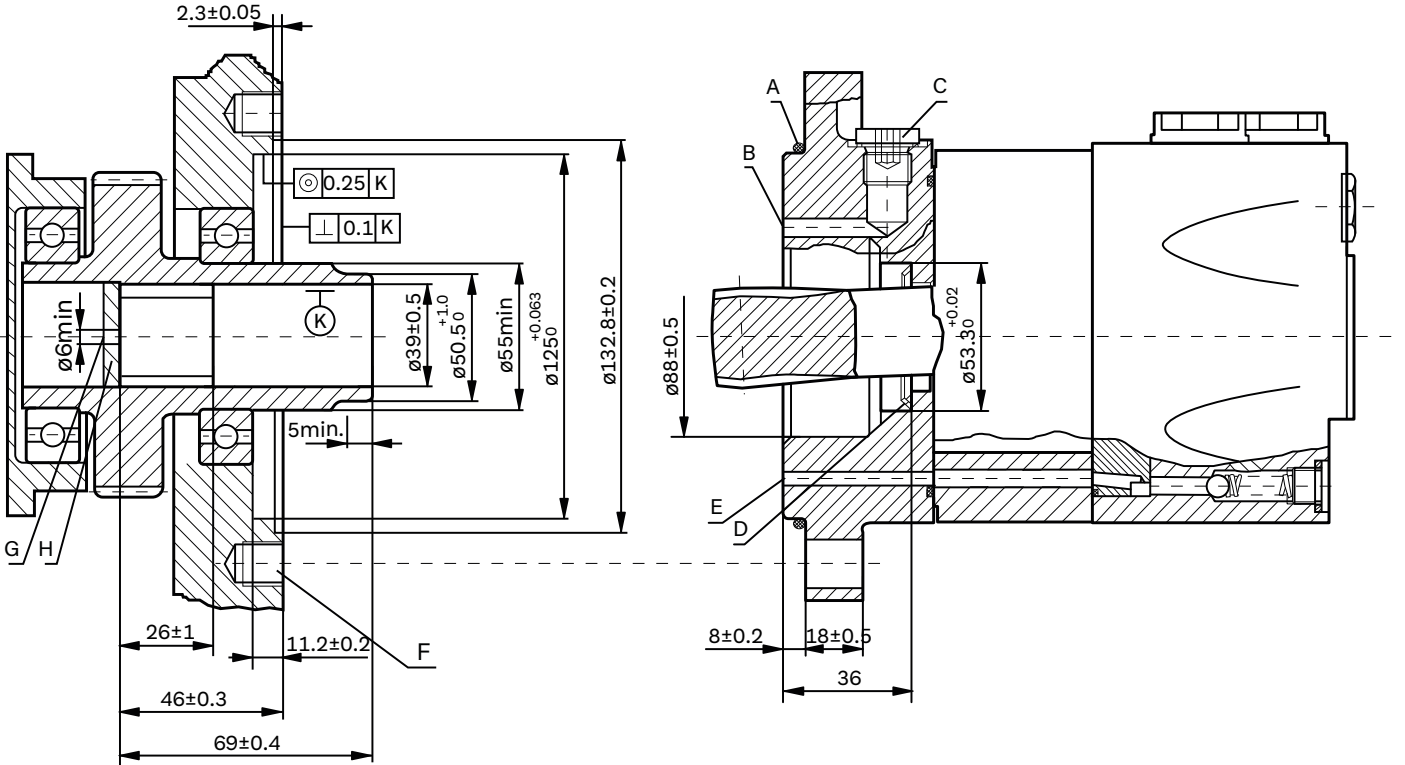
| Model    | L   | L1 | L2    |
|----------|-----|----|-------|
| VNKTS160 | 148 | 17 | 96.5  |
| VNKTS200 | 152 | 21 | 100.5 |
| VNKTS250 | 157 | 14 | 109   |
| VNKTS315 | 163 | 20 | 115   |
| VNKTS400 | 170 | 27 | 122   |
| VNKTS500 | 178 | 35 | 130   |
| VNKTS630 | 190 | 47 | 142   |
| VNKTS800 | 201 | 58 | 153   |

| Mounting Code | D (depth) | M (depth)      | S (depth)        | G (depth) | M3 (depth)     | S1 (depth)       |
|---------------|-----------|----------------|------------------|-----------|----------------|------------------|
| P(A,B)        | G3/4 (18) | M27 x 2 (18)   | 1-1/16-12UN (18) | G3/4 (18) | M27 x 2 (18)   | 1-1/16-12UN (18) |
| T             | G1/4 (12) | M14 x 1.5 (12) | 9/16-18UNF (12)  | G1/4 (12) | M14 x 1.5 (12) | 7/16-20UNF (12)  |
| C             | 4-M10(10) | 4-M10(10)      | -                | -         | -              | -                |

**Note: 1)** The thickness of the stator and rotor for disp.from 160 to 200 is the dimension of L1 adding on 3mm.

**2)** The thickness of the stator and rotor for disp.from 250 to 800 is the dimension of L1 adding on 7mm.

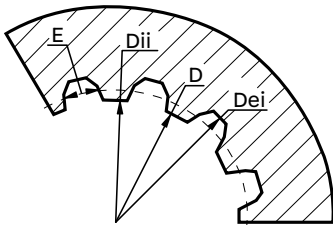
# VNKTS Dimensions and Mounting Data



- A: O-ring:125x3
- B: External drain channel
- C: Drain connection G 1/4;12 mm deep
- D: Conical seal ring
- E: Internal drain channel
- F: M12;min. 18mm deep
- G: Oil circulation hole
- H: Hardened stop plate

## INTERNAL SPLINE DATA FOR THE ATTACHED COMPONENT

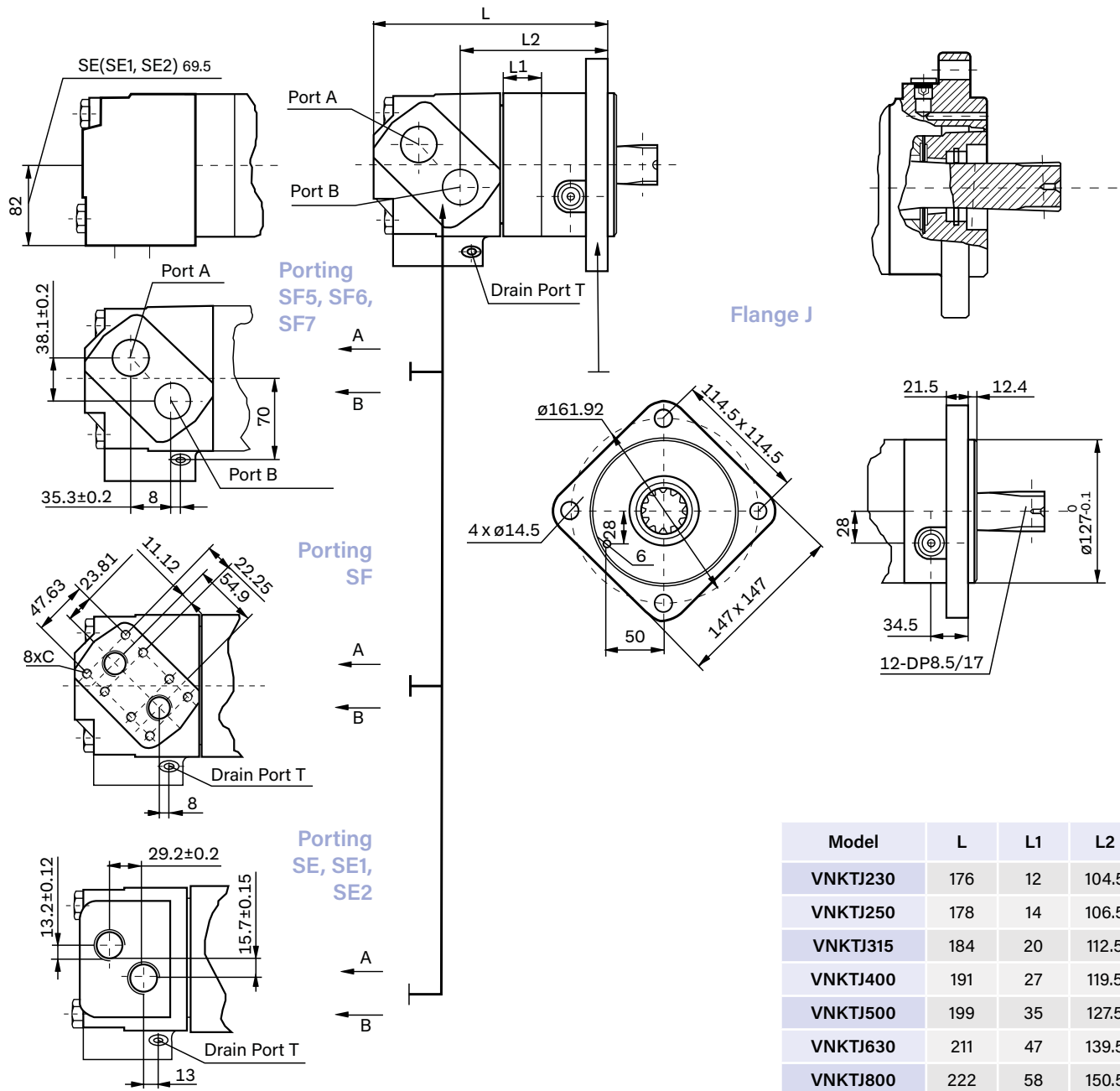
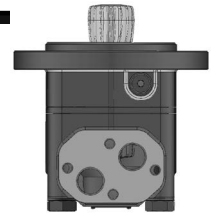
| Fillet Root Side Fit   |     | mm                                   |
|------------------------|-----|--------------------------------------|
| Number of Teeth        | Z   | 16                                   |
| Diametral Pitch        | DP  | 12/24                                |
| Pressure Angle         | αD  | 30°                                  |
| Pitch Dia.             | D   | ø33.8656                             |
| Major Dia.             | Dei | ø38.4 <sup>+0.25</sup> <sub>0</sub>  |
| Minor Dia.             | Dii | ø32.15 <sup>+0.04</sup> <sub>0</sub> |
| Space Width (Circular) | E   | 4.516±0.037                          |



Hardening Specification: HRC 62±2  
Effective case depth 0.7±0.2



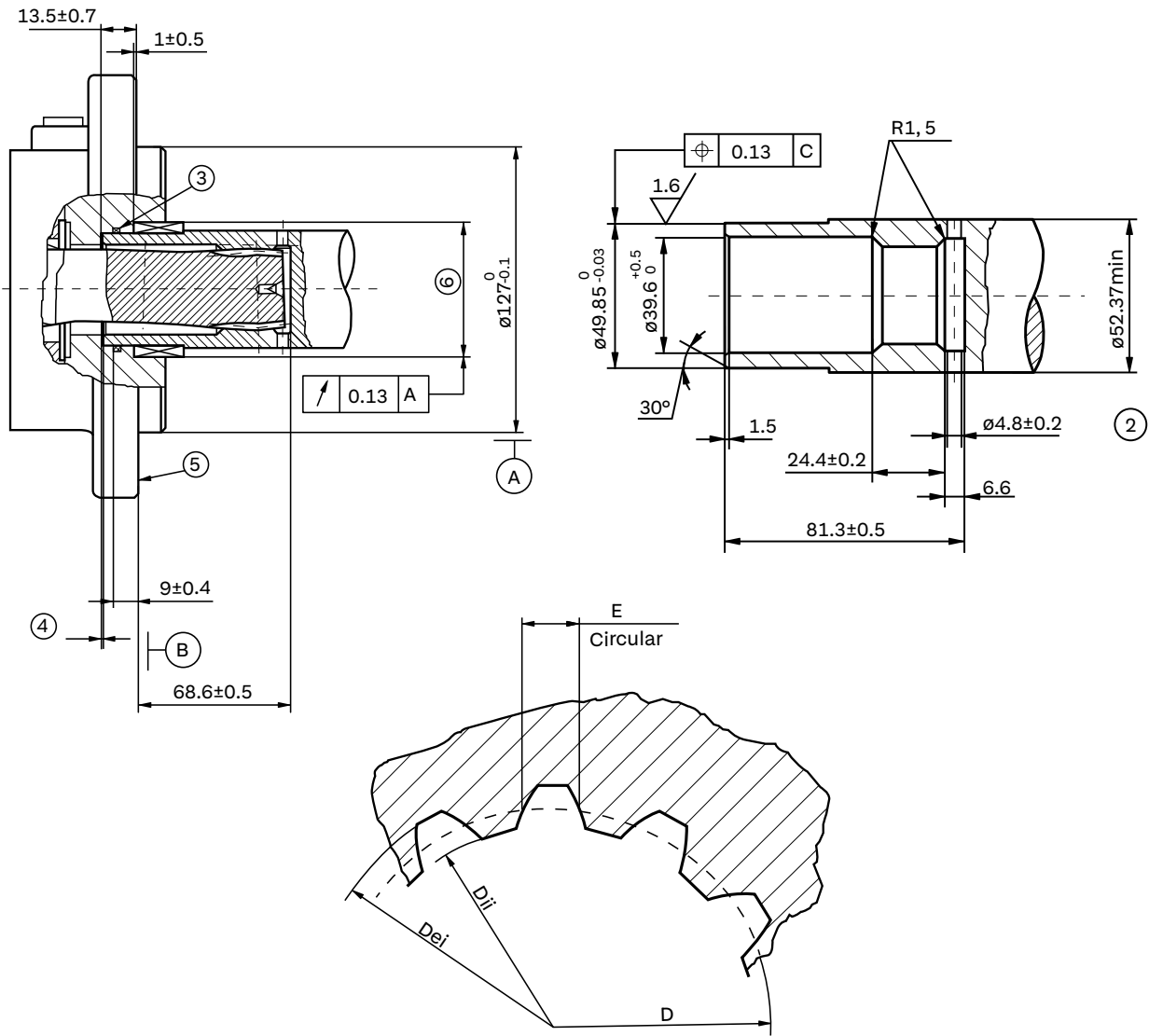
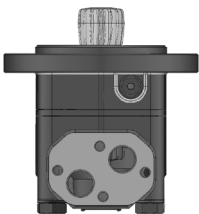
# VNKTJ Dimensions and Mounting Data



| Content Mounting | Code             |                |             |                 |                  |                  |             |
|------------------|------------------|----------------|-------------|-----------------|------------------|------------------|-------------|
|                  | SF5 (Depth)      | SF6 (Depth)    | SF7 (Depth) | SF (Depth)      | SE (Depth)       | SE1 (Depth)      | SE2 (Depth) |
| P(A,B)           | 1-5/16-12UN (18) | M33 x 2 (18)   | G1 (18)     | 3/4" (18)       | 1-1/16-12UN (18) | 1-1/16-12UN (18) | G3/4 (18)   |
| T                | 7/16-20UNF (12)  | M14 x 1.5 (12) | G1/4 (12)   | 7/16-20UNF (12) | 9/16-18UNF (12)  | 7/16-20UNF (12)  | G1/4 (12)   |
| C                | -                | -              | -           | 8 x 3/8-16UNC   | -                | -                | -           |

**Note:** 1) The data for the port of SF (SF5 and SF6 and SF7).  
 2) The data for the port of SE (SE1 and SE2) and flange WE: L-70 and L2-59.  
 3) The thickness of the stator and rotor is the dimension of L1 adding on 7mm.

# VNKTJ Dimensions and Mounting Data

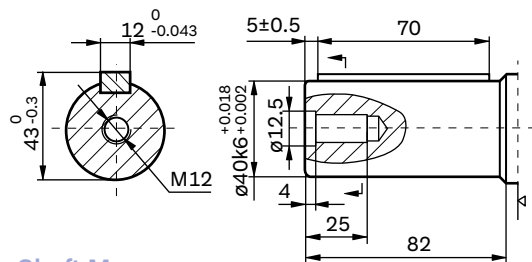


## INTERNAL SPLINE DATA FOR THE ATTACHED COMPONENT

| Fillet Root Side Fit           |     | mm                                   |
|--------------------------------|-----|--------------------------------------|
| Number of Teeth                | Z   | 12                                   |
| Diametral Pitch                | DP  | 8.5/17                               |
| Pressure Angle                 | D   | 30°                                  |
| Pitch Dia.                     | αD  | ø35.858823                           |
| Major Dia.                     | Dei | ø38.97 <sup>+0.20</sup> <sub>0</sub> |
| Minor Dia.                     | Dii | ø33.3 <sup>+0.18</sup> <sub>0</sub>  |
| Space Width (Circular)         | E   | 5.866±0.032                          |
| Dimension between two pins(ø4) | Me  | 26.929-27.084                        |

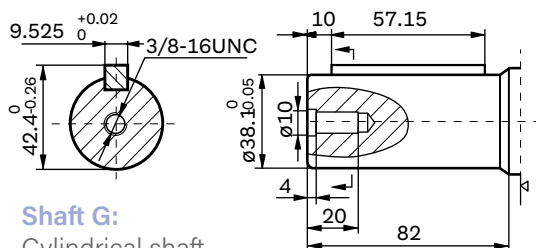
- 1. Internal spline in mating part to be as follows:** Material to be ASTM A304, 8620H. Carborize to a hardness of 60-64HRC with case depth (to 50HRC) of 0.75-1 (.030-.040) (dimensions apply after heat treat).
- 2. Mating part to have critical dimensions as shown,** Oil holes must be provided and open for proper oil circulation.
- 3** Some means of maintaining clearance between shaft and mounting flange must be provided.
- 4. Seal to be furnished with motor** for proper oil circulation thru splines.
- 5. Similar to SAE "C" Four Bolt Flange.**
- 6. Counterbore designed** to adapt to a standard sleeve bearing 50.010-50.038 (1.9689-1.9700) ID by 60.51-60.079 (2.3642-2.3653) O.D. (Oilite bronze sleeve bearing).

# VNKT(E) Shaft Extensions



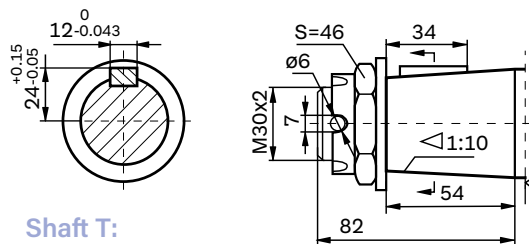
## Shaft M:

Cylindrical shaft  $\varnothing 40$   
Parallel key 12x8x70



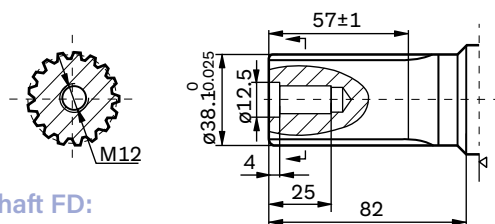
## Shaft G:

Cylindrical shaft  
 $\varnothing 38.1$  Parallel key  
9.525x9.525x57.15



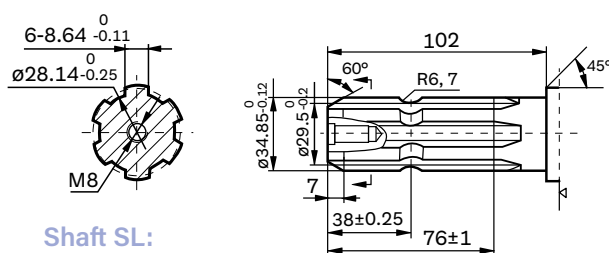
## Shaft T:

Cone-shaft  $\varnothing 45$   
Parallel key B12x8x28  
Tightening torque: 500 ±10 Nm



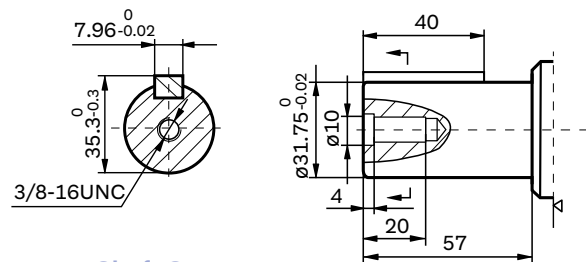
## Shaft FD:

Splined 17-DP12/24



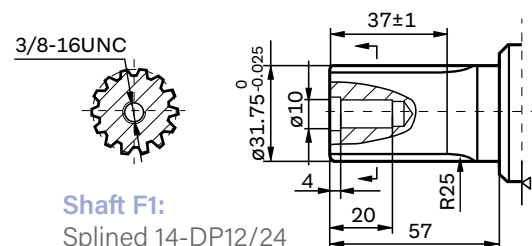
## Shaft SL:

Splined  
6-34.85x28.14x8.64



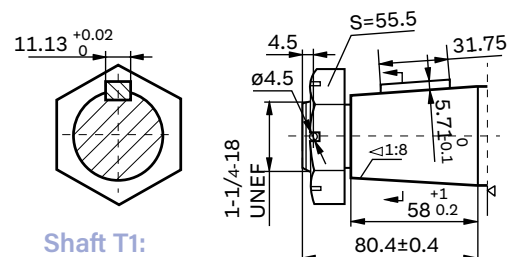
## Shaft G1:

Cylindrical shaft  $\varnothing 31.75$   
Parallel key 7.96x7.96x40



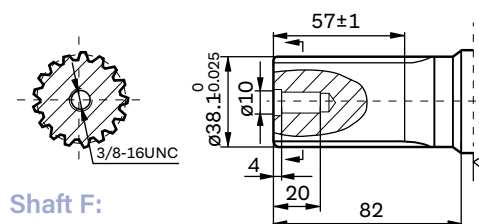
## Shaft F1:

Splined 14-DP12/24



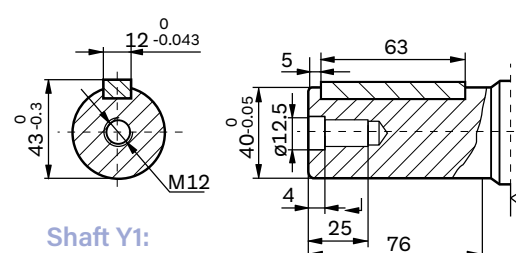
## Shaft T1:

Cone-shaft  $\varnothing 45$   
Parallel key 11.13x11.13x31.75  
Tightening torque: 500 ±10 Nm



## Shaft F:

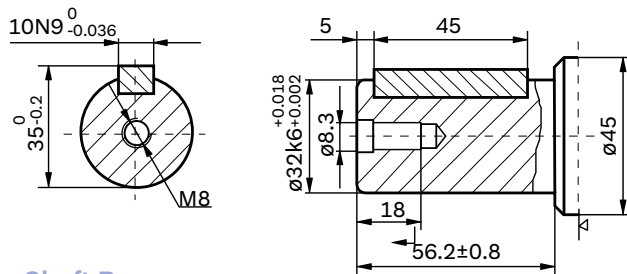
Splined 17-DP12/24



## Shaft Y1:

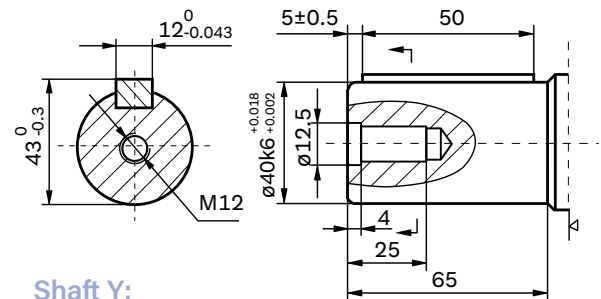
Cylindrical shaft  $\varnothing 40$   
Parallel key 12x8x63

# VNKT(E) Shaft Extensions



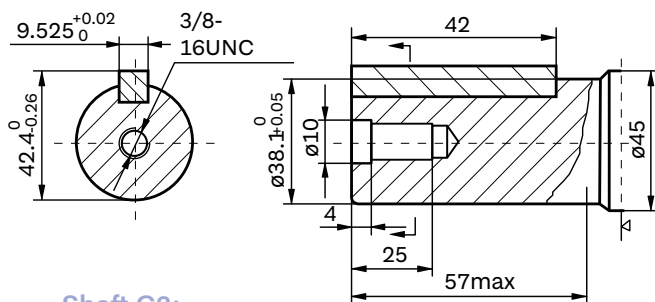
## Shaft B:

Cylindrical shaft  $\varnothing 32$   
Parallel key 10x8x45



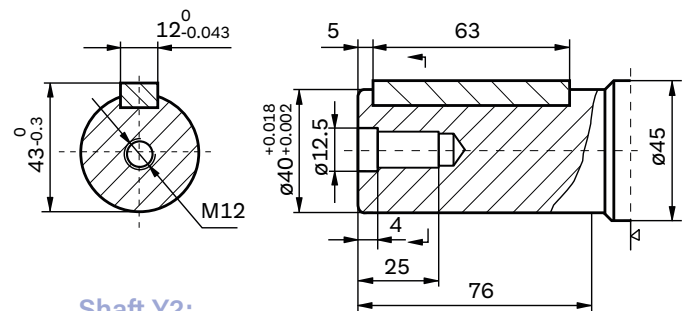
## Shaft Y:

Cylindrical shaft  $\varnothing 40$   
Parallel key 12x8x50



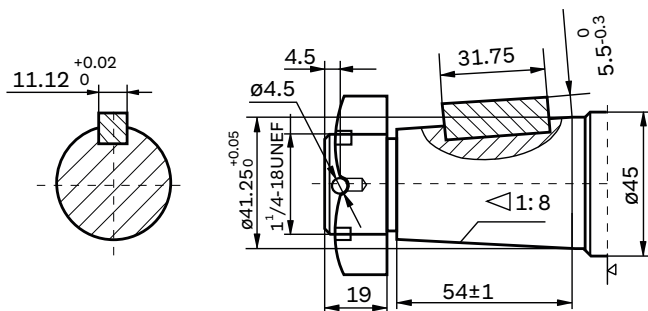
## Shaft G2:

Cylindrical shaft  $\varnothing 38.1$   
Parallel key  
9.525x9.525x42



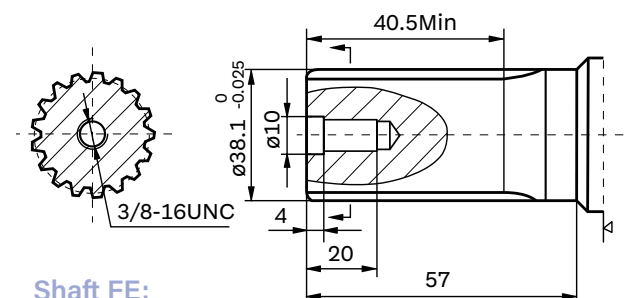
## Shaft Y2:

Cylindrical shaft  $\varnothing 40$   
Parallel key 12x8x63



## Shaft T2:

Cone-shaft  $\varnothing 41.25$   
Parallel key 11.13x11.13x31.75  
Tightening torque: 500±10Nm



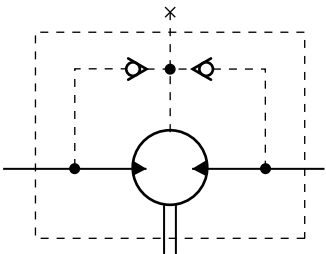
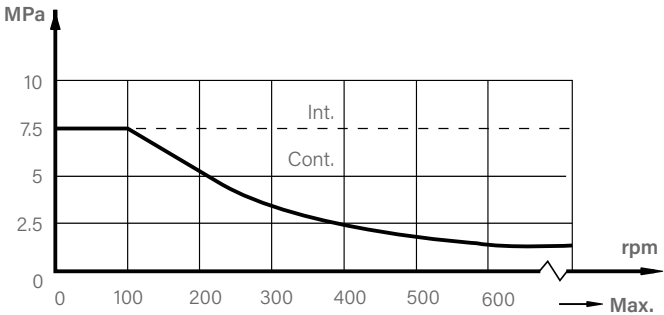
## Shaft FE:

Splined 17-DP12/24

# VNKT Series Hydraulic Motor



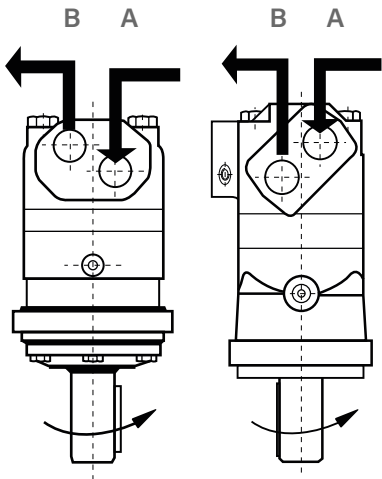
## PERMISSIBLE SHAFT SEAL PRESSURE



In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

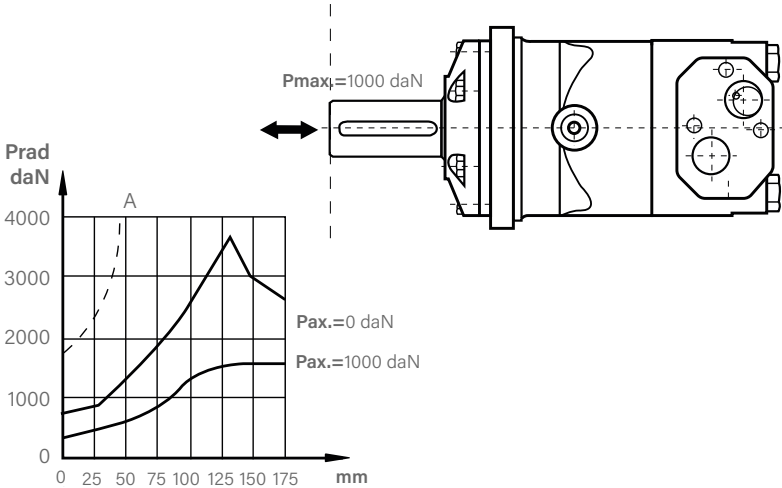
## DIRECTION OF SHAFT ROTATION: Standard

When facing shaft end of motor, shaft to rotate: Clockwise when port "A" is pressurized. Counter-clockwise port "B" is pressurized.



## AXIAL AND RADIAL FORCES

The output shaft runs in tapered bearings that permit high axial and radial forces, **Curve "A"** shows max radial shaft load. Any shaft loads exceeding the values quoted in the curve will involve a risk of breakage. The two other curves apply to a B10 bearing life of 3000 hours at 200 RPM.



## OIL FLOW in drain line

The table shows the Max. oil flow in the drain line at a return pressure less than 0.5-1MPa.

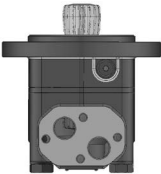
| Pressure drop (MPa) | Viscosity (mm <sup>2</sup> /s) | Oil flow in the drain line (L/min) |
|---------------------|--------------------------------|------------------------------------|
| 14                  | 20                             | 2.5                                |
|                     | 35                             | 1.5                                |
| 21                  | 20                             | 5                                  |
|                     | 35                             | 3                                  |

# Order Information



| 1     | 2                                                    | 3                    | 4            | 5                                                | 6                                                                                                                                                                                               | 7     | 8                                 |                                                                   |
|-------|------------------------------------------------------|----------------------|--------------|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------------------------------|-------------------------------------------------------------------|
| VNKT  |                                                      |                      |              |                                                  |                                                                                                                                                                                                 |       |                                   |                                                                   |
| Pos.1 | 2                                                    | 3                    | 4            | 5                                                | 6                                                                                                                                                                                               | 7     | 8                                 |                                                                   |
| Code  | Disp.                                                | Flange               | Output shaft | Ports and drain port                             | Rotation Direction                                                                                                                                                                              | Paint | Unusually Function                |                                                                   |
| VNKT  | 160<br>200<br>250<br>315<br>400<br>500<br>630<br>800 | 4<br><br>K6<br><br>W | M            | D<br><br>M<br><br>S<br><br>S1<br><br>G<br><br>M3 | G3/4 Manifold Mount, 4-M10 , G1/4<br><br>M27×2 Manifold Mount, 4-M10, M14×1.5<br><br>1-1/16-12UN O-ring, 9/16-18UNF<br><br>1-1/16-12UN O-ring, 7/16-20UNF<br><br>G3/4,G1/4<br><br>M27×2,M14×1.5 |       | Omit<br><br>F<br><br>LS<br><br>SD | Standard<br><br>Free Running<br><br>Low Speed<br><br>Speed Sensor |
|       |                                                      |                      | G            |                                                  |                                                                                                                                                                                                 |       |                                   |                                                                   |
|       |                                                      |                      | F            |                                                  |                                                                                                                                                                                                 |       |                                   |                                                                   |
|       |                                                      |                      | FD           |                                                  |                                                                                                                                                                                                 |       |                                   |                                                                   |
|       |                                                      |                      | T            |                                                  |                                                                                                                                                                                                 |       |                                   |                                                                   |
|       |                                                      |                      | T1           |                                                  |                                                                                                                                                                                                 |       |                                   |                                                                   |
|       |                                                      |                      | SL           |                                                  |                                                                                                                                                                                                 |       |                                   |                                                                   |
|       |                                                      |                      | G1           |                                                  |                                                                                                                                                                                                 |       |                                   |                                                                   |
|       |                                                      |                      | F1           |                                                  |                                                                                                                                                                                                 |       |                                   |                                                                   |
|       |                                                      |                      |              |                                                  |                                                                                                                                                                                                 |       |                                   |                                                                   |
| VNKTS |                                                      | D                    | Omit         |                                                  |                                                                                                                                                                                                 |       |                                   |                                                                   |
|       |                                                      | E                    |              |                                                  |                                                                                                                                                                                                 |       |                                   |                                                                   |

# Order Information



|       |                                                      |              |                                           |                              |                                                                                                                                                                             |                                   |                       |
|-------|------------------------------------------------------|--------------|-------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------|
| 1     | 2                                                    | 3            | 4                                         | 5                            | 6                                                                                                                                                                           | 7                                 | 8                     |
| VNKTS | -                                                    | -            | -                                         | -                            | -                                                                                                                                                                           | -                                 | -                     |
| Pos.1 | 2                                                    | 3            | 4                                         | 5                            | 6                                                                                                                                                                           | 7                                 | 8                     |
| Code  | Disp.                                                | Flange       | Output shaft                              | Ports and drain port         | Rotation Direction                                                                                                                                                          | Paint                             | Unusually Function    |
| VNKLT | 160<br>200<br>250<br>315<br>400<br>500<br>630<br>800 | 4<br>K6<br>W | M                                         | D<br>M<br>S<br>S1<br>G<br>M3 | G3/4 Manifold Mount, 4-M10 , G1/4<br>M27x2 Manifold Mount, 4-M10, M14x1.5<br>1-1/16-12UN O-ring, 9/16-18UNF<br>1-1/16-12UN O-ring, 7/16-20UNF<br>G3/4,G1/4<br>M27x2,M14x1.5 | Omit<br>Standard<br>Opposite<br>R | Omit<br>F<br>LS<br>SD |
|       |                                                      |              | G                                         |                              |                                                                                                                                                                             |                                   |                       |
|       |                                                      |              | F                                         |                              |                                                                                                                                                                             |                                   |                       |
|       |                                                      |              | FD                                        |                              |                                                                                                                                                                             |                                   |                       |
|       |                                                      |              | T                                         |                              |                                                                                                                                                                             |                                   |                       |
|       |                                                      |              | T1                                        |                              |                                                                                                                                                                             |                                   |                       |
|       |                                                      |              | SL                                        |                              |                                                                                                                                                                             |                                   |                       |
|       |                                                      |              | G1                                        |                              |                                                                                                                                                                             |                                   |                       |
|       |                                                      |              | F1                                        |                              |                                                                                                                                                                             |                                   |                       |
|       |                                                      |              | Omit                                      |                              |                                                                                                                                                                             |                                   |                       |
| VNKTS |                                                      | D            | 4-Ø14 Circle-flange Ø160, pilot Ø125x8    | Short shaft 16-DP12/24       |                                                                                                                                                                             |                                   |                       |
|       |                                                      | E            | 4-Ø14.5 Square-flange Ø162, pilot Ø127x10 |                              |                                                                                                                                                                             |                                   |                       |

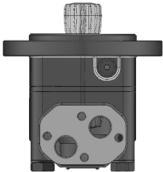
# Order Information



**Note:** When the table is used, please fill the code of left rows in the table and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports . If the specification is not in the table or you have specific requirements, please contact us .



# Order Information



|       |                                 |                                                        |              |                                              |                    |       |                    |
|-------|---------------------------------|--------------------------------------------------------|--------------|----------------------------------------------|--------------------|-------|--------------------|
| 1     | 2                               | 3                                                      | 4            | 5                                            | 6                  | 7     | 8                  |
| VNKTJ |                                 |                                                        |              |                                              |                    |       |                    |
| Pos.1 | 2                               | 3                                                      | 4            | 5                                            | 6                  | 7     | 8                  |
| Code  | Disp.                           | Flange                                                 | Output shaft | Ports and drain port                         | Rotation Direction | Paint | Unusually Function |
| VNKTE | 230<br>250<br>315<br>400<br>500 | CC<br>4-Ø14.3 Square-flange<br>Ø161.9, pilotØ127×12    | G2           | SF                                           | Omit               | 00    | Omit               |
|       |                                 |                                                        | FE           | 3/4" Manifold Mount, 8-3/8-16UNC, 7/16-20UNF |                    |       |                    |
|       |                                 |                                                        | Y1           | 1-5/16-12UN O-ring, 7/16-20 UNF              |                    |       |                    |
|       |                                 |                                                        | Y2           | M33×2, M14×1.5                               |                    |       |                    |
|       |                                 |                                                        | T2           | G1, G1/4                                     |                    |       |                    |
|       | 630<br>800                      | WE<br>4-1/2-13UNC<br>Wheel-flange Ø147.6, pilot Ø127×9 | T3           | 1-1/16-12UN O-ring, 9/16-18UNF               | R                  | B     | LS                 |
|       |                                 |                                                        |              | 1-1/16-12UN O-ring, 7/16-20 UNF              |                    |       |                    |
| VNKTJ |                                 | J                                                      | Omit         | G3/4, G1/4                                   |                    | S     | SD                 |

**Note:** When the table is used, please fill the code of left rows in the table and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports . If the specification is not in the table or you have specific requirements, please contact us .

# VNKV Series Hydraulic Motor

## INTRODUCTION

VNKV series motor adapt the advanced Geroler gear set designed with disc distribution flow and high pressure. The unit can be supplied the individual variant in operating multifunction in accordance with requirement of applications.

## CHARACTERISTIC FEATURES

- \* **Advanced manufacturing** devices for the Geroler gear set, which use low pressure of start-up, provide smooth and reliable operation and high efficiency.
- \* **The output shaft** adapts in tapered roller bearings that permit high axial and radial forces. The case can offers capacities of high pressure and high torque in the wide of applications.
- \* **Advanced design in disc distribution flow**, which can automatically compensate in operating with high volume efficiency and long life, provide smooth and reliable operation.



## SPECIFICATION Main Specification

| Type                                           |       | VNKV 315 | VNKV 400 | VNKV 500 | VNKV 630 | VNKV 800 | VNKV 1000 |
|------------------------------------------------|-------|----------|----------|----------|----------|----------|-----------|
| Geometric displacement (cm <sup>3</sup> /rev.) |       | 333      | 419      | 518      | 666      | 801      | 990       |
| Max. speed (rpm)                               | cont. | 510      | 500      | 400      | 320      | 250      | 200       |
|                                                | int.  | 630      | 600      | 480      | 380      | 300      | 240       |
| Max. torque (N·m)                              | cont. | 920      | 1180     | 1460     | 1660     | 1880     | 2015      |
|                                                | int.  | 1110     | 1410     | 1760     | 1940     | 2110     | 2280      |
|                                                | peak  | 1290     | 1640     | 2050     | 2210     | 2470     | 2400      |
| Max. output (kW)                               | cont. | 38.0     | 47.0     | 47.0     | 40.0     | 33.0     | 28.6      |
|                                                | int.  | 46.0     | 56.0     | 56.0     | 56.0     | 44.0     | 40.0      |
| Max. pressure drop (MPa)                       | cont. | 20       | 20       | 20       | 18       | 16       | 14        |
|                                                | int.  | 24       | 24       | 24       | 21       | 18       | 16        |
|                                                | peak  | 28       | 28       | 28       | 24       | 21       | 18        |
| Max. flow (L/min)                              | cont. | 160      | 200      | 200      | 200      | 200      | 200       |
|                                                | int.  | 200      | 240      | 240      | 240      | 240      | 240       |
| Weight (Kg)                                    |       | 31.8     | 32.6     | 33.5     | 34.9     | 36.5     | 38.6      |

\* **Continuous pressure:** Max. value of operating motor continuously.

\* **Intermittent pressure:** Max. value of operating motor in 6 seconds per minute.

\* **Peak pressure:** Max. value of operating motor in 0.6 second per minute.



# Performance Data

VNKV 315 [333 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |     | 3.5        | 7          | 10         | 14         | 18         | 20         | 24          |
|--------------|-----|------------|------------|------------|------------|------------|------------|-------------|
| Flow (L/min) | 10  | 140<br>26  | 294<br>24  | 440<br>23  | 610<br>22  | 742<br>20  | 845<br>17  | 1000<br>14  |
|              | 20  | 153<br>55  | 314<br>54  | 466<br>53  | 636<br>52  | 787<br>51  | 895<br>48  | 1070<br>44  |
|              | 50  | 149<br>145 | 312<br>144 | 465<br>142 | 654<br>140 | 815<br>137 | 935<br>133 | 1112<br>127 |
|              | 75  | 143<br>220 | 304<br>218 | 458<br>215 | 642<br>211 | 816<br>207 | 940<br>202 | 1119<br>195 |
|              | 100 | 136<br>294 | 297<br>292 | 452<br>290 | 636<br>287 | 810<br>283 | 936<br>278 | 1108<br>270 |
|              | 125 | 123<br>368 | 286<br>366 | 442<br>364 | 626<br>361 | 799<br>357 | 921<br>352 | 1093<br>345 |
|              | 150 | 114<br>445 | 275<br>443 | 435<br>441 | 615<br>437 | 788<br>430 | 906<br>422 | 1078<br>410 |
|              | 160 | 107<br>475 | 268<br>473 | 430<br>470 | 608<br>466 | 780<br>460 | 895<br>452 | 1070<br>439 |
|              | 200 | 82<br>596  | 249<br>594 | 412<br>590 | 593<br>584 | 758<br>576 | 871<br>565 | 1047<br>544 |
| Max. cont    |     |            |            |            |            |            |            |             |
| Max. int     |     |            |            |            |            |            |            |             |

VNKV 400 [419 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |     | 3.5        | 7          | 10         | 14         | 18          | 20          | 24          |
|--------------|-----|------------|------------|------------|------------|-------------|-------------|-------------|
| Flow (L/min) | 10  | 183<br>20  | 385<br>20  | 568<br>19  | 776<br>18  | 968<br>17   | 1101<br>16  | 1292<br>14  |
|              | 20  | 196<br>44  | 398<br>44  | 590<br>43  | 815<br>42  | 1010<br>40  | 1152<br>39  | 1346<br>37  |
|              | 50  | 200<br>114 | 402<br>113 | 603<br>113 | 842<br>112 | 1040<br>110 | 1186<br>108 | 1430<br>103 |
|              | 75  | 195<br>175 | 394<br>173 | 596<br>170 | 838<br>166 | 1043<br>163 | 1188<br>157 | 1432<br>152 |
|              | 100 | 172<br>236 | 385<br>235 | 593<br>233 | 827<br>231 | 1036<br>227 | 1184<br>223 | 1425<br>215 |
|              | 125 | 167<br>296 | 374<br>294 | 583<br>291 | 816<br>288 | 1021<br>282 | 1177<br>275 | 1413<br>268 |
|              | 150 | 158<br>355 | 361<br>354 | 559<br>352 | 801<br>349 | 1008<br>344 | 1165<br>335 | 1390<br>324 |
|              | 175 | 143<br>416 | 346<br>414 | 553<br>411 | 784<br>407 | 989<br>403  | 1145<br>396 | 1377<br>388 |
|              | 200 | 118<br>475 | 331<br>473 | 536<br>469 | 770<br>463 | 969<br>455  | 1128<br>448 | 1356<br>439 |
| Max. cont    |     |            |            |            |            |             |             |             |
| Max. int     |     |            |            |            |            |             |             |             |
|              |     | 3.5        | 7          | 10         | 14         | 18          | 20          | 24          |
| Flow (L/min) | 10  | 183<br>20  | 385<br>20  | 568<br>19  | 776<br>18  | 968<br>17   | 1101<br>16  | 1292<br>14  |
|              | 20  | 196<br>44  | 398<br>44  | 590<br>43  | 815<br>42  | 1010<br>40  | 1152<br>39  | 1346<br>37  |
|              | 50  | 200<br>114 | 402<br>113 | 603<br>113 | 842<br>112 | 1040<br>110 | 1186<br>108 | 1430<br>103 |
|              | 75  | 195<br>175 | 394<br>173 | 596<br>170 | 838<br>166 | 1043<br>163 | 1188<br>157 | 1432<br>152 |
|              | 100 | 172<br>236 | 385<br>235 | 593<br>233 | 827<br>231 | 1036<br>227 | 1184<br>223 | 1425<br>215 |
|              | 125 | 167<br>296 | 374<br>294 | 583<br>291 | 816<br>288 | 1021<br>282 | 1177<br>275 | 1413<br>268 |
|              | 150 | 158<br>355 | 361<br>354 | 559<br>352 | 801<br>349 | 1008<br>344 | 1165<br>335 | 1390<br>324 |
|              | 175 | 143<br>416 | 346<br>414 | 553<br>411 | 784<br>407 | 989<br>403  | 1145<br>396 | 1377<br>388 |
|              | 200 | 118<br>475 | 331<br>473 | 536<br>469 | 770<br>463 | 969<br>455  | 1128<br>448 | 1356<br>439 |
| Max. cont    |     |            |            |            |            |             |             |             |
| Max. int     |     |            |            |            |            |             |             |             |
|              |     | 3.5        | 7          | 10         | 14         | 18          | 20          | 24          |
| Flow (L/min) | 10  | 183<br>20  | 385<br>20  | 568<br>19  | 776<br>18  | 968<br>17   | 1101<br>16  | 1292<br>14  |
|              | 20  | 196<br>44  | 398<br>44  | 590<br>43  | 815<br>42  | 1010<br>40  | 1152<br>39  | 1346<br>37  |
|              | 50  | 200<br>114 | 402<br>113 | 603<br>113 | 842<br>112 | 1040<br>110 | 1186<br>108 | 1430<br>103 |
|              | 75  | 195<br>175 | 394<br>173 | 596<br>170 | 838<br>166 | 1043<br>163 | 1188<br>157 | 1432<br>152 |
|              | 100 | 172<br>236 | 385<br>235 | 593<br>233 | 827<br>231 | 1036<br>227 | 1184<br>223 | 1425<br>215 |
|              | 125 | 167<br>296 | 374<br>294 | 583<br>291 | 816<br>288 | 1021<br>282 | 1177<br>275 | 1413<br>268 |
|              | 150 | 158<br>355 | 361<br>354 | 559<br>352 | 801<br>349 | 1008<br>344 | 1165<br>335 | 1390<br>324 |
|              | 175 | 143<br>416 | 346<br>414 | 553<br>411 | 784<br>407 | 989<br>403  | 1145<br>396 | 1377<br>388 |
|              | 200 | 118<br>475 | 331<br>473 | 536<br>469 | 770<br>463 | 969<br>455  | 1128<br>448 | 1356<br>439 |
| Max. cont    |     |            |            |            |            |             |             |             |
| Max. int     |     |            |            |            |            |             |             |             |

VNKV 500 [518 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |     | 3.5        | 7          | 10         | 14          | 18          | 20          | 24          |
|--------------|-----|------------|------------|------------|-------------|-------------|-------------|-------------|
| Flow (L/min) | 10  | 242<br>17  | 468<br>17  | 696<br>16  | 959<br>16   | 1190<br>15  | 1353<br>13  | 1607<br>11  |
|              | 20  | 245<br>36  | 501<br>35  | 738<br>35  | 1003<br>34  | 1232<br>33  | 1394<br>32  | 1658<br>29  |
|              | 50  | 240<br>93  | 500<br>92  | 758<br>91  | 1025<br>90  | 1270<br>88  | 1449<br>85  | 1743<br>80  |
|              | 75  | 233<br>140 | 498<br>139 | 752<br>137 | 1030<br>135 | 1288<br>132 | 1475<br>127 | 1766<br>120 |
|              | 100 | 228<br>189 | 491<br>187 | 748<br>185 | 1026<br>182 | 1289<br>178 | 1472<br>173 | 1760<br>166 |
|              | 125 | 220<br>237 | 483<br>236 | 742<br>234 | 1014<br>231 | 1280<br>227 | 1460<br>223 | 1745<br>216 |
|              | 150 | 201<br>287 | 465<br>286 | 723<br>284 | 1008<br>281 | 1250<br>276 | 1429<br>270 | 1736<br>260 |
|              | 175 | 182<br>335 | 446<br>334 | 711<br>332 | 997<br>329  | 1238<br>325 | 1406<br>320 | 1715<br>310 |
|              | 200 | 161<br>384 | 423<br>383 | 676<br>381 | 974<br>378  | 1218<br>374 | 1385<br>366 | 1697<br>354 |
| Max. cont    |     |            |            |            |             |             |             |             |
| Max. int     |     |            |            |            |             |             |             |             |
|              |     | 3.5        | 7          | 10         | 14          | 18          | 20          | 24          |
| Flow (L/min) | 10  | 242<br>17  | 468<br>17  | 696<br>16  | 959<br>16   | 1190<br>15  | 1353<br>13  | 1607<br>11  |
|              | 20  | 245<br>36  | 501<br>35  | 738<br>35  | 1003<br>34  | 1232<br>33  | 1394<br>32  | 1658<br>29  |
|              | 50  | 240<br>93  | 500<br>92  | 758<br>91  | 1025<br>90  | 1270<br>88  | 1449<br>85  | 1743<br>80  |
|              | 75  | 233<br>140 | 498<br>139 | 752<br>137 | 1030<br>135 | 1288<br>132 | 1475<br>127 | 1766<br>120 |
|              | 100 | 228<br>189 | 491<br>187 | 748<br>185 | 1026<br>182 | 1289<br>178 | 1472<br>173 | 1760<br>166 |
|              | 125 | 220<br>237 | 483<br>236 | 742<br>234 | 1014<br>231 | 1280<br>227 | 1460<br>223 | 1745<br>216 |
|              | 150 | 201<br>287 | 465<br>286 | 723<br>284 | 1008<br>281 | 1250<br>276 | 1429<br>270 | 1736<br>260 |
|              | 175 | 182<br>335 | 446<br>334 | 711<br>332 | 997<br>329  | 1238<br>325 | 1406<br>320 | 1715<br>310 |
|              | 200 | 161<br>384 | 423<br>383 | 676<br>381 | 974<br>378  | 1218<br>374 | 1385<br>366 | 1697<br>354 |
| Max. cont    |     |            |            |            |             |             |             |             |
| Max. int     |     |            |            |            |             |             |             |             |
|              |     | 3.5        | 7          | 10         | 14          | 18          | 20          | 24          |
| Flow (L/min) | 10  | 242<br>17  | 468<br>17  | 696<br>16  | 959<br>16   | 1190<br>15  | 1353<br>13  | 1607<br>11  |
|              | 20  | 245<br>36  | 501<br>35  | 738<br>35  | 1003<br>34  | 1232<br>33  | 1394<br>32  | 1658<br>29  |
|              | 50  | 240<br>93  | 500<br>92  | 758<br>91  | 1025<br>90  | 1270<br>88  | 1449<br>85  | 1743<br>80  |
|              | 75  | 233<br>140 | 498<br>139 | 752<br>137 | 1030<br>135 | 1288<br>132 | 1475<br>127 | 1766<br>120 |
|              | 100 | 228<br>189 | 491<br>187 | 748<br>185 | 1026<br>182 | 1289<br>178 | 1472<br>173 | 1760<br>166 |
|              | 125 | 220<br>237 | 483<br>236 | 742<br>234 | 1014<br>231 | 1280<br>227 | 1460<br>223 | 1745<br>216 |
|              | 150 | 201<br>287 | 465<br>286 | 723<br>284 | 1008<br>281 | 1250<br>276 | 1429<br>270 | 1736<br>260 |
|              | 175 | 182<br>335 | 446<br>334 | 711<br>332 | 997<br>329  | 1238<br>325 | 1406<br>320 | 1715<br>310 |
|              | 200 | 161<br>384 | 423<br>383 | 676<br>381 | 974<br>378  | 1218<br>374 | 1385<br>366 | 1697<br>354 |
| Max. cont    |     |            |            |            |             |             |             |             |
| Max. int     |     |            |            |            |             |             |             |             |
|              |     | 3.5        | 7          | 10         | 14          | 18          | 20          | 24          |
| Flow (L/min) | 10  | 242<br>17  | 468<br>17  | 696<br>16  | 959<br>16   | 1190<br>15  | 1353<br>13  | 1607<br>11  |
|              | 20  | 245<br>36  | 501<br>35  | 738<br>35  | 1003<br>34  | 1232<br>33  | 1394<br>32  | 1658<br>29  |
|              | 50  | 240<br>93  | 500<br>92  | 758<br>91  | 1025<br>90  | 1270<br>88  | 1449<br>85  | 1743<br>80  |
|              | 75  | 233<br>140 | 498<br>139 | 752<br>137 | 1030<br>135 | 1288<br>132 | 1475<br>127 | 1766<br>120 |
|              | 100 | 228<br>189 | 491<br>187 | 748<br>185 | 1026<br>182 | 1289<br>178 | 1472<br>173 | 1760<br>166 |
|              | 125 | 220<br>237 | 483<br>236 | 742<br>234 | 1014<br>231 | 1280<br>227 | 1460<br>223 | 1745<br>216 |
|              | 150 | 201<br>287 | 465<br>286 | 723<br>284 | 1008<br>281 | 1250<br>276 | 1429<br>270 | 1736<br>260 |
|              | 175 | 182<br>335 | 446<br>334 | 711<br>332 | 997<br>329  | 1238<br>325 | 1406<br>320 | 1715<br>310 |
|              | 200 | 161<br>384 | 423<br>383 | 676<br>381 | 974<br>378  | 1218<br>374 | 1385<br>366 | 1697<br>354 |
| Max. cont    |     |            |            |            |             |             |             |             |
| Max. int     |     |            |            |            |             |             |             |             |

VNKV 630 [666 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |     | 3.5        | 6          | 9          | 12          | 15          | 18          | 21          |
|--------------|-----|------------|------------|------------|-------------|-------------|-------------|-------------|
| Flow (L/min) | 10  | 280<br>14  | 522<br>13  | 812<br>13  | 1100<br>12  | 1268<br>12  | 1549<br>11  | 1784<br>10  |
|              | 20  | 288<br>28  | 552<br>28  | 839<br>27  | 1101<br>27  | 1315<br>26  | 1607<br>24  | 1864<br>22  |
|              | 50  | 289<br>72  | 555<br>72  | 868<br>71  | 1137<br>69  | 1364<br>68  | 1682<br>66  | 1956<br>62  |
|              | 75  | 270<br>109 | 548<br>108 | 863<br>106 | 1120<br>104 | 1352<br>102 | 1680<br>99  | 1964<br>94  |
|              | 100 | 264<br>146 | 538<br>145 | 856<br>143 | 1093<br>141 | 1350<br>138 | 1674<br>135 | 1965<br>130 |
|              | 125 | 251<br>184 | 516<br>183 | 837<br>181 | 1071<br>179 | 1336<br>177 | 1659<br>173 | 1950<br>168 |
|              | 150 | 240<br>221 | 495<br>220 | 817<br>219 | 1063<br>217 | 1330<br>215 | 1650<br>212 | 1928<br>205 |
|              | 175 | 210<br>259 | 485<br>258 | 796<br>257 | 1052<br>254 | 1300<br>250 | 1636<br>246 | 1908<br>241 |
|              | 200 | 182<br>297 | 469<br>297 | 751<br>295 | 1018<br>293 | 1280<br>290 | 1611<br>284 | 1883<br>273 |
| Max. cont    |     |            |            |            |             |             |             |             |
| Max. int     |     |            |            |            |             |             |             |             |
|              |     | 3.5        | 6          | 9          | 12          | 15          | 18          | 21          |
| Flow (L/min) | 240 | 130<br>358 | 416<br>357 | 712<br>355 | 978<br>351  | 1237<br>246 | 1563<br>340 | 1835<br>332 |



# Performance Data

VNKV 800 [801 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |     | 2.5        | 5          | 8          | 10          | 13          | 16          | 18          |
|--------------|-----|------------|------------|------------|-------------|-------------|-------------|-------------|
| Flow (L/min) | 10  | 278<br>11  | 565<br>10  | 830<br>10  | 1095<br>9   | 1405<br>8   | 1712<br>8   | 1915<br>7   |
|              | 20  | 282<br>23  | 571<br>22  | 845<br>22  | 1150<br>21  | 1456<br>20  | 1783<br>18  | 1994<br>16  |
|              | 50  | 288<br>60  | 582<br>59  | 856<br>57  | 1162<br>56  | 1463<br>54  | 1790<br>52  | 2001<br>48  |
|              | 75  | 269<br>91  | 580<br>90  | 855<br>89  | 1165<br>87  | 1465<br>84  | 1786<br>81  | 1993<br>77  |
|              | 100 | 251<br>122 | 566<br>121 | 840<br>120 | 1140<br>118 | 1448<br>115 | 1767<br>111 | 1985<br>105 |
|              | 125 | 242<br>153 | 535<br>152 | 824<br>150 | 1118<br>147 | 1427<br>143 | 1739<br>139 | 1976<br>133 |
|              | 150 | 236<br>185 | 526<br>183 | 808<br>181 | 1102<br>178 | 1401<br>174 | 1714<br>169 | 1959<br>163 |
|              | 175 | 215<br>216 | 504<br>214 | 793<br>212 | 1079<br>209 | 1377<br>206 | 1698<br>203 | 1936<br>196 |
|              | 200 | 197<br>247 | 468<br>245 | 765<br>243 | 1063<br>240 | 1362<br>237 | 1681<br>232 | 1913<br>225 |
|              | 240 | 118<br>297 | 388<br>296 | 713<br>295 | 1020<br>293 | 1318<br>288 | 1637<br>283 | 1838<br>277 |
| Max. cont    |     |            |            |            |             |             |             |             |
| Max. int     |     |            |            |            |             |             |             |             |

VNKV 1000 [990 cm3/rev.]

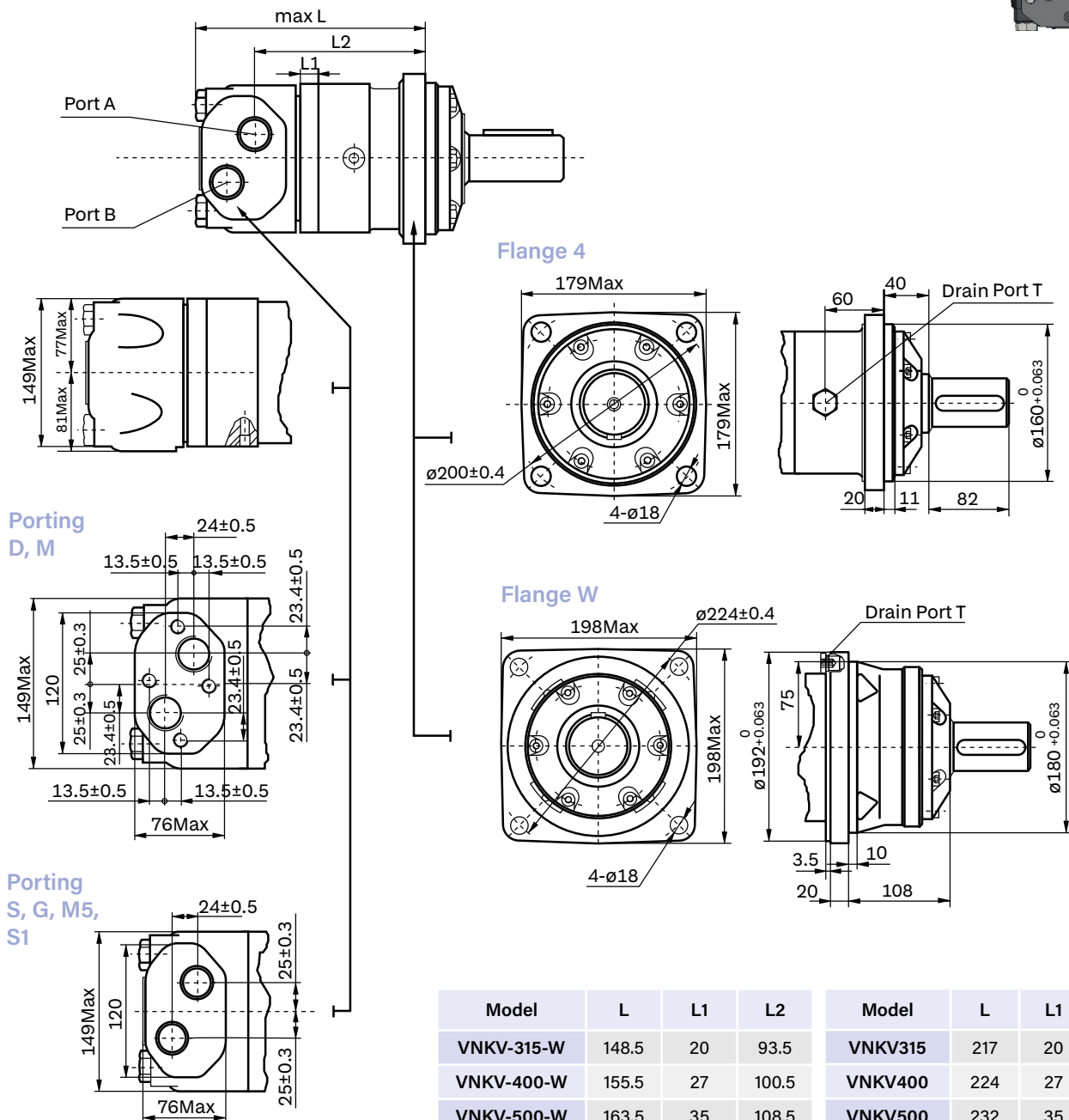
Pressure (MPa)

Max. cont Max. int

|              |     | 2.5        | 5          | 7          | 10          | 14          | 16          |
|--------------|-----|------------|------------|------------|-------------|-------------|-------------|
| Flow (L/min) | 10  | 312<br>9   | 640<br>9   | 971<br>9   | 1400<br>8   | 1978<br>7   | 2259<br>6   |
|              | 20  | 320<br>28  | 648<br>27  | 978<br>26  | 1410<br>25  | 1980<br>23  | 2270<br>21  |
|              | 50  | 326<br>47  | 655<br>46  | 992<br>45  | 1422<br>43  | 2015<br>41  | 2280<br>38  |
|              | 75  | 318<br>72  | 642<br>71  | 987<br>70  | 1425<br>68  | 2003<br>66  | 2276<br>63  |
|              | 100 | 309<br>98  | 634<br>97  | 983<br>95  | 1418<br>93  | 1994<br>90  | 2243<br>86  |
|              | 125 | 303<br>123 | 624<br>122 | 975<br>120 | 1409<br>117 | 1988<br>114 | 2224<br>110 |
|              | 150 | 278<br>149 | 602<br>148 | 961<br>146 | 1368<br>144 | 1963<br>140 | 2208<br>133 |
|              | 175 | 264<br>174 | 580<br>172 | 946<br>170 | 1338<br>166 | 1925<br>162 | 2159<br>155 |
|              | 200 | 230<br>199 | 556<br>196 | 912<br>193 | 1300<br>190 | 1891<br>185 | 2105<br>178 |
|              | 240 | 166<br>240 | 513<br>237 | 867<br>233 | 1267<br>229 | 1825<br>225 | 2034<br>218 |
| Max. cont    |     |            |            |            |             |             |             |
| Max. int     |     |            |            |            |             |             |             |

Torque (N·m) 1825  
Speed (rpm) 225

# VNKV Dimensions and Mounting Data

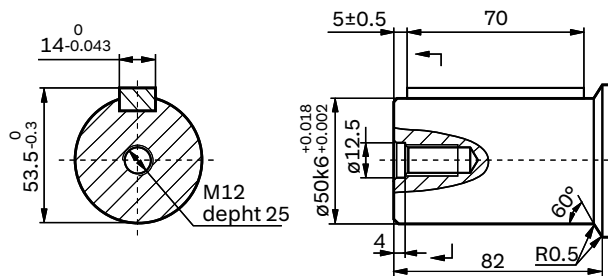


**Note:** The thickness of the stator and rotor is the dimension of L1 adding on 7mm.

| Model       | L     | L1 | L2    | Model    | L   | L1 | L2    |
|-------------|-------|----|-------|----------|-----|----|-------|
| VNKV-315-W  | 148.5 | 20 | 93.5  | VNKV315  | 217 | 20 | 161.5 |
| VNKV-400-W  | 155.5 | 27 | 100.5 | VNKV400  | 224 | 27 | 168.5 |
| VNKV-500-W  | 163.5 | 35 | 108.5 | VNKV500  | 232 | 35 | 176.5 |
| VNKV-630-W  | 175.5 | 47 | 120.5 | VNKV630  | 244 | 47 | 188.5 |
| VNKV-800-W  | 186.5 | 58 | 131.5 | VNKV800  | 255 | 58 | 199.5 |
| VNKV-1000-W | 202.5 | 74 | 147.5 | VNKV1000 | 271 | 74 | 215.5 |

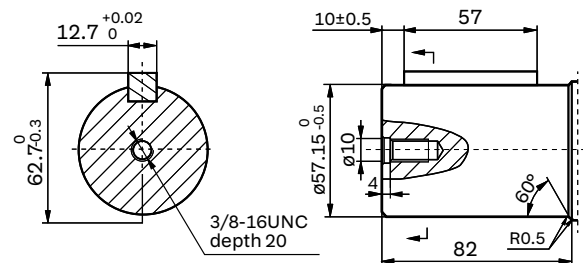
| Mounting Content | D (depth)  | M (depth)      | S (depth)       | G (depth) | M5 (depth)     | S1 (depth)      |
|------------------|------------|----------------|-----------------|-----------|----------------|-----------------|
| P(A,B)           | G1 (18)    | M33 x 2 (18)   | 1-5/16-12UN(18) | G1 (18)   | M33 x 2 (18)   | 1-5/16-12UN(18) |
| T                | G1/4 (12)  | M14 x 1.5 (12) | 9/16-18UNF(12)  | G1/4 (12) | M14 x 1.5 (12) | 7/16-20UNF(12)  |
| C                | 4-M12 (10) | 4-M12 (10)     | -               | -         | -              | -               |

# VNKV Dimensions and Mounting Data



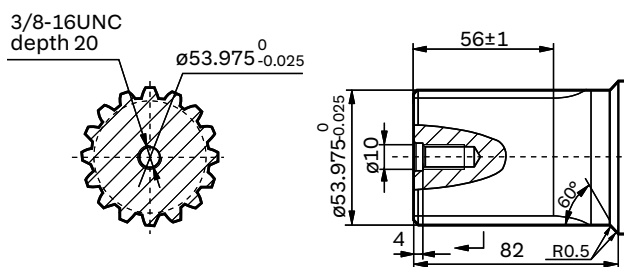
## Shaft A:

Cylindrical shaft  $\varnothing 50$   
Parallel key  $14 \times 9 \times 70$



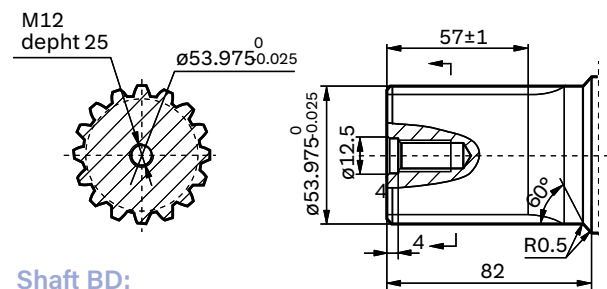
## Shaft C:

Cylindrical shaft  $\varnothing 57.15$   
Parallel key  $12.7 \times 12.7 \times 57$



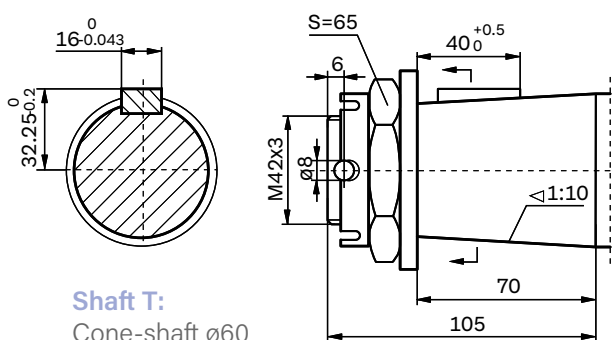
## Shaft B:

Splined key 16-DP8/16



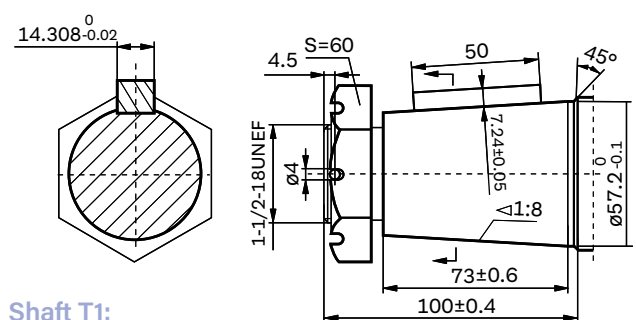
## Shaft BD:

Splined key 16-DP8/16



## Shaft T:

Cone-shaft  $\varnothing 60$   
Parallel key  $16 \times 10 \times 32$   
Tightening torque:  $750 \pm 50 Nm$



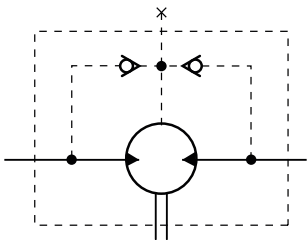
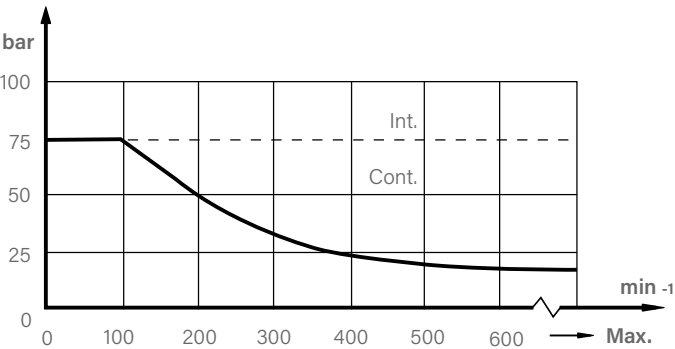
## Shaft T1:

Cone-shaft  $\varnothing 57.2$   
Parallel key  $14.308 \times 14.308 \times 50$   
Tightening torque:  $750 \pm 50 Nm$

# VNKV Series Hydraulic Motor



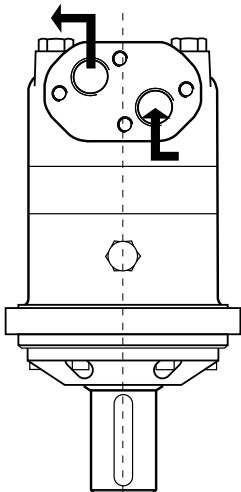
## PERMISSIBLE SHAFT SEAL PRESSURE



In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

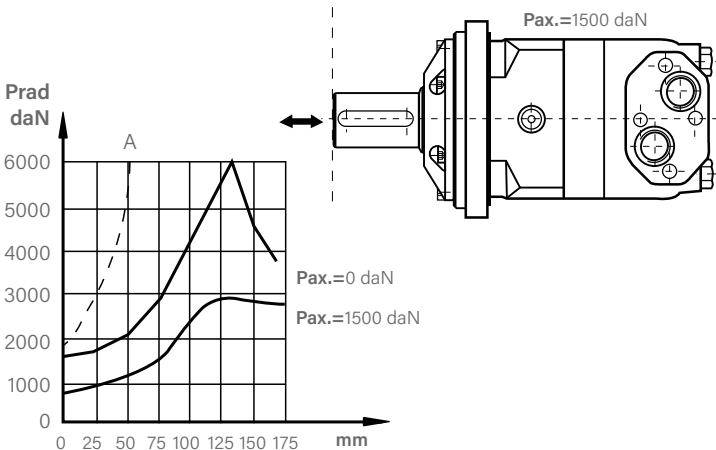
## DIRECTION OF SHAFT ROTATION: Standard

When facing shaft end of motor, shaft to rotate:  
Clockwise when port "A" is pressurized.  
Counter-clockwise port "B" is pressurized.



## AXIAL AND RADIAL FORCES

The output shaft runs in tapered bearings that permit high axial and radial forces, **Curve "A"** shows max radial shaft load. Any shaft loads exceeding the values quoted in the curve will involve a risk of breakage. The two other curves apply to a B10 bearing life of 3000 hours at 200 RPM.



## OIL FLOW in drain line

The table shows the Max. oil flow in the drain line at a return pressure less than 0.5-1MPa.

| Pressure drop (MPa) | Viscosity (mm <sup>2</sup> /s) | Oil flow in the drain line (L/min) |
|---------------------|--------------------------------|------------------------------------|
| 14                  | 20                             | 3                                  |
|                     | 35                             | 2                                  |
| 21                  | 20                             | 6                                  |
|                     | 35                             | 4                                  |

# Order Information



| Pos.1 | 2     | 3                                                                                 | 4                                                       | 5                                  | 6                                 | 7                                        | 8                        |
|-------|-------|-----------------------------------------------------------------------------------|---------------------------------------------------------|------------------------------------|-----------------------------------|------------------------------------------|--------------------------|
| Code  | Disp. | Flange                                                                            | Output shaft                                            | Ports and drain port               | Rotation Direction                | Paint                                    | Unusually Function       |
| Omit  | 315   | 4-Ø18 Square-flange Ø200, pilot Ø160x11<br>4-Ø18 Wheel-flange Ø224, pilot Ø180x10 | A<br>Shaft Ø50 , parallel key 14x9x70                   | D<br>G1 Manifold 4xM12, G1/4       | Standard<br>Omit<br>R<br>Opposite | No paint<br>Blue<br>Black<br>Silver grey | Standard<br>Speed Sensor |
|       | 400   |                                                                                   | BD<br>Shaft Ø53.975, splined key 16-DP8/16              | M<br>M33x2 Manifold 4xM12, M14x1.5 |                                   |                                          |                          |
|       | 500   |                                                                                   | B<br>Shaft Ø53.975, splined key 16-DP8/16               | S<br>1-5/16-12UN, 9/16-18UNF       |                                   |                                          |                          |
|       | 630   |                                                                                   | C<br>Shaft Ø57.15, parallel key 12.7x12.7x57.15         | G<br>G1/G1/4                       |                                   |                                          |                          |
|       | 800   |                                                                                   | T<br>Cone shaft Ø60, parallel key 16x10x32              | M5<br>M33x2, M14x1.5               |                                   |                                          |                          |
|       | 1000  |                                                                                   | T1<br>Cone shaft Ø57.2, parallel key 14.308x14.308x50.8 | S1<br>1-5/16-12UN 7/16-20UNF       |                                   |                                          |                          |

**Note:** When the table is used, please fill the code of left rows in dash area and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports. If the specification is not in the table or you have specific requirements, please contact us.



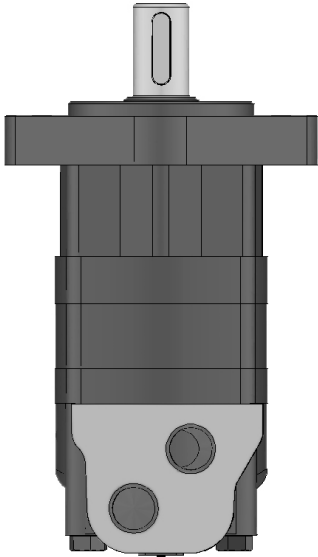
# VNKB Series Hydraulic Motor

## INTRODUCTION

VNKB new series motor adapt the advanced Geroler gear set designed with disc distribution flow and high pressure. The unit can be supplied the individual variant in operating multifunction in accordance with requirement of applications.

## CHARACTERISTIC FEATURES

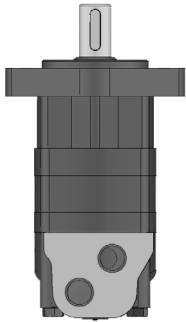
- \* **Advanced manufacturing** devices for the Geroler gear set, which use low pressure of start-up, provide smooth and reliable operation and high efficiency.
- \* **The output shaft** adapts in tapered roller bearings that permit high axial and radial forces. The case can offers capacities of high pressure and high torque in the wide of applications.
- \* **Advanced design in disc distribution flow**, which can automatically compensate in operating with high volume efficiency and long life , provide smooth and reliable operation.
- \* **The new series motor** is suitable for vehicles with greater loads and pressure drop.



## SPECIFICATION Main Specification

| Type                              |       | VNKB 65 | VNKB 80 | VNKB 100 | VNKB 125 | VNKB 160 | VNKB 200 | VNKB 250 | VNKB 315 | VNKB 400 | VNKB 475 |
|-----------------------------------|-------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|
| Geometric displacement (cm3/rev.) |       | 65      | 80      | 100.9    | 129.8    | 156.8    | 193.4    | 242.5    | 304.3    | 390.8    | 485      |
| Max. speed (rpm)                  | cont. | 835     | 800     | 742      | 576      | 477      | 385      | 308      | 246      | 191      | 153      |
|                                   | int.  | 990     | 980     | 924      | 720      | 713      | 577      | 462      | 365      | 287      | 230      |
| Max. torque (N·m)                 | cont. | 185     | 235     | 295      | 385      | 455      | 540      | 660      | 765      | 775      | 845      |
|                                   | int.  | 245     | 345     | 445      | 560      | 570      | 665      | 820      | 885      | 925      | 930      |
| Max. pressure drop (MPa)          | cont. | 20.5    | 21      | 21       | 21       | 20.5     | 20.5     | 20.5     | 20.5     | 15.5     | 12       |
|                                   | int.  | 27.5    | 31      | 31       | 31       | 26       | 26       | 26       | 31       | 17       | 14       |
|                                   | peak. | 31      | 31      | 31       | 31       | 31       | 31       | 31       | 75       | 20.5     | 17       |
| Max. flow (L/min)                 | cont. | 55      | 65      | 75       | 75       | 75       | 75       | 75       | 115      | 75       | 75       |
|                                   | int.  | 65      | 80      | 95       | 95       | 115      | 115      | 115      | 11.5     | 115      | 115      |
| Weight (Kg)                       |       | 9.2     | 9.4     | 9.7      | 10       | 10.2     | 10.5     | 11       |          | 12       | 12.4     |

# Performance Data



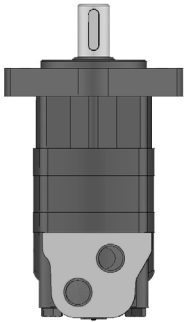
VNKB 65 [65 cm<sup>3</sup>/rev.]

|              |    | Pressure (MPa) |           |           |            |            |            |            |            |            |  |  |
|--------------|----|----------------|-----------|-----------|------------|------------|------------|------------|------------|------------|--|--|
|              |    | Max. cont      |           |           | Max. int   |            |            | Peak       |            |            |  |  |
|              |    | 3.5            | 7         | 10.5      | 14         | 17.5       | 20.5       | 24         | 27.5       | 31         |  |  |
| Flow (L/min) | 2  | 28<br>22       | 54<br>12  | 80<br>6   |            |            |            |            |            |            |  |  |
|              | 4  | 30<br>52       | 58<br>47  | 88<br>43  | 115<br>35  | 146<br>30  | 165<br>24  | 195        |            |            |  |  |
|              | 8  | 31<br>107      | 60<br>98  | 92<br>92  | 120<br>85  | 150<br>70  | 170<br>55  | 16<br>200  | 225        |            |  |  |
|              | 15 | 32<br>214      | 62<br>208 | 94<br>200 | 124<br>193 | 155<br>185 | 175<br>174 | 40<br>205  | 30<br>230  | 250        |  |  |
|              | 22 | 32<br>320      | 65<br>315 | 95<br>308 | 125<br>296 | 157<br>286 | 178<br>275 | 160<br>206 | 145<br>232 | 130<br>254 |  |  |
|              | 30 | 30<br>445      | 65<br>440 | 95<br>430 | 128<br>420 | 160<br>408 | 180<br>395 | 260<br>210 | 242<br>235 | 230<br>258 |  |  |
|              | 38 | 28<br>565      | 62<br>560 | 95<br>550 | 130<br>540 | 165<br>526 | 185<br>512 | 380<br>216 | 360<br>240 | 325<br>260 |  |  |
|              | 45 | 26<br>675      | 60<br>670 | 92<br>660 | 125<br>648 | 160<br>632 | 180<br>615 | 495<br>215 | 470<br>245 | 420<br>265 |  |  |
|              | 55 | 23<br>835      | 55<br>825 | 88<br>810 | 120<br>790 | 155<br>770 | 175<br>745 | 600<br>210 | 580<br>235 | 530<br>255 |  |  |
|              | 65 | 20<br>990      | 50<br>980 | 84<br>965 | 112<br>945 | 150<br>935 | 170<br>910 | 205<br>880 | 230<br>860 | 250<br>800 |  |  |

VNKB 80 [80 cm<sup>3</sup>/rev.]

|              |    | Pressure (MPa) |           |            |            |            |            |            |            |            |  |  |
|--------------|----|----------------|-----------|------------|------------|------------|------------|------------|------------|------------|--|--|
|              |    | Max. cont      |           |            | Max. int   |            |            | Peak       |            |            |  |  |
|              |    | 3.5            | 7         | 10.5       | 14         | 17.5       | 20.5       | 24         | 27.5       | 31         |  |  |
| Flow (L/min) | 2  | 29<br>18       | 54<br>9   | 86<br>3    |            |            |            |            |            |            |  |  |
|              | 4  | 35<br>45       | 75<br>41  | 112<br>38  | 145<br>35  | 172<br>28  | 208<br>22  | 218<br>14  | 236<br>3   |            |  |  |
|              | 8  | 35<br>90       | 75<br>85  | 114<br>80  | 148<br>76  | 175<br>72  | 212<br>64  | 230<br>55  | 260<br>46  | 280<br>40  |  |  |
|              | 15 | 38<br>180      | 78<br>175 | 116<br>170 | 152<br>166 | 184<br>160 | 215<br>153 | 245<br>140 | 275<br>126 | 300<br>115 |  |  |
|              | 22 | 36<br>265      | 75<br>260 | 114<br>255 | 150<br>250 | 185<br>242 | 220<br>234 | 250<br>220 | 285<br>205 | 315<br>185 |  |  |
|              | 30 | 35<br>363      | 75<br>355 | 115<br>350 | 150<br>342 | 185<br>334 | 225<br>322 | 260<br>302 | 295<br>280 | 325<br>260 |  |  |
|              | 38 | 34<br>460      | 72<br>452 | 112<br>442 | 155<br>430 | 190<br>418 | 230<br>405 | 265<br>385 | 300<br>360 | 335<br>335 |  |  |
|              | 45 | 32<br>545      | 70<br>535 | 110<br>528 | 150<br>515 | 190<br>505 | 230<br>495 | 265<br>465 | 305<br>440 | 340<br>410 |  |  |
|              | 55 | 30<br>670      | 68<br>660 | 110<br>650 | 150<br>635 | 190<br>620 | 230<br>605 | 270<br>575 | 305<br>540 | 335<br>510 |  |  |
|              | 65 | 25<br>800      | 65<br>790 | 105<br>778 | 145<br>755 | 180<br>740 | 225<br>728 | 260<br>690 | 295<br>650 | 325<br>610 |  |  |

# Performance Data



VNKB 100 [100.9 cm<sup>3</sup>/rev.]

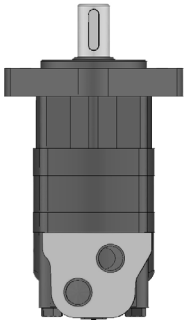
|              |    | Pressure (MPa) |           |           |            |            |            |            |            |            |            |  |  |  |
|--------------|----|----------------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|--|--|--|
|              |    | Max. cont      |           |           |            |            | Max. int   |            |            | Peak       |            |  |  |  |
|              |    | 1.75           | 3.5       | 7         | 10.5       | 14         | 17.5       | 20.5       | 24         | 27.5       | 31         |  |  |  |
| Flow (L/min) | 2  | 15<br>14       | 32<br>10  | 68<br>5   |            |            |            |            |            |            |            |  |  |  |
|              | 4  | 18<br>36       | 42<br>34  | 92<br>32  | 130<br>28  | 170<br>22  | 205<br>14  | 230<br>5   |            |            |            |  |  |  |
|              | 8  | 20<br>74       | 45<br>73  | 90<br>70  | 135<br>66  | 180<br>60  | 210<br>52  | 240<br>42  | 280<br>26  | 310<br>15  |            |  |  |  |
|              | 15 | 20<br>142      | 45<br>140 | 90<br>137 | 135<br>134 | 185<br>129 | 220<br>120 | 260<br>105 | 305<br>92  | 345<br>78  | 390<br>65  |  |  |  |
|              | 22 | 18<br>210      | 45<br>207 | 90<br>201 | 140<br>195 | 190<br>188 | 230<br>179 | 275<br>160 | 315<br>150 | 360<br>138 | 405<br>125 |  |  |  |
| Max. cont    | 30 | 16<br>290      | 42<br>288 | 88<br>282 | 142<br>276 | 195<br>268 | 240<br>258 | 285<br>242 | 330<br>230 | 375<br>212 | 425<br>195 |  |  |  |
|              | 38 | 15<br>370      | 40<br>365 | 88<br>360 | 140<br>352 | 190<br>340 | 240<br>326 | 285<br>310 | 335<br>295 | 380<br>275 | 430<br>255 |  |  |  |
|              | 45 | 15<br>440      | 40<br>435 | 86<br>430 | 140<br>422 | 190<br>410 | 240<br>395 | 285<br>380 | 340<br>465 | 385<br>345 | 440<br>320 |  |  |  |
|              | 55 | 12<br>540      | 36<br>534 | 85<br>528 | 135<br>520 | 190<br>510 | 240<br>500 | 285<br>485 | 340<br>465 | 385<br>440 | 440<br>405 |  |  |  |
|              | 65 | 10<br>640      | 35<br>635 | 80<br>630 | 130<br>622 | 185<br>605 | 235<br>590 | 280<br>575 | 335<br>550 | 380<br>525 | 440<br>500 |  |  |  |
| Max. int     | 75 | 5<br>738       | 30<br>735 | 75<br>728 | 125<br>715 | 180<br>700 | 230<br>680 | 275<br>655 | 320<br>635 | 375<br>610 |            |  |  |  |
|              | 85 | 3<br>838       | 25<br>835 | 75<br>830 | 125<br>820 | 175<br>805 | 225<br>785 | 270<br>760 | 320<br>730 | 370<br>690 |            |  |  |  |
|              | 95 |                | 23<br>925 | 70<br>918 | 120<br>905 | 170<br>890 | 220<br>870 | 260<br>840 | 310<br>810 |            |            |  |  |  |

VNKB 125 [129.8 cm<sup>3</sup>/rev.]

|              |    | Pressure (MPa) |           |            |            |            |            |            |            |            |            |  |  |  |
|--------------|----|----------------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|--|--|--|
|              |    | Max. cont      |           |            |            |            | Max. int   |            |            | Peak       |            |  |  |  |
|              |    | 1.75           | 3.5       | 7          | 10.5       | 14         | 17.5       | 20.5       | 24         | 27.5       | 31         |  |  |  |
| Flow (L/min) | 2  | 25<br>12       | 40<br>7   |            |            |            |            |            |            |            |            |  |  |  |
|              | 4  | 28<br>27       | 55<br>26  | 110<br>22  | 175<br>18  | 220<br>14  | 280<br>11  | 325<br>8   |            |            |            |  |  |  |
|              | 8  | 28<br>57       | 60<br>56  | 115<br>53  | 175<br>48  | 230<br>42  | 290<br>38  | 330<br>34  | 375<br>26  | 400<br>20  |            |  |  |  |
|              | 15 | 28<br>113      | 60<br>112 | 120<br>110 | 180<br>105 | 240<br>98  | 295<br>92  | 340<br>86  | 390<br>80  | 440<br>72  | 485<br>65  |  |  |  |
|              | 22 | 28<br>165      | 55<br>163 | 120<br>160 | 180<br>155 | 245<br>150 | 305<br>144 | 360<br>138 | 415<br>130 | 470<br>115 | 530<br>100 |  |  |  |
| Max. cont    | 30 | 25<br>228      | 52<br>224 | 120<br>222 | 185<br>210 | 245<br>212 | 310<br>206 | 365<br>198 | 425<br>188 | 480<br>178 | 545<br>165 |  |  |  |
|              | 38 | 25<br>288      | 50<br>285 | 120<br>282 | 180<br>275 | 245<br>268 | 315<br>260 | 370<br>252 | 430<br>242 | 495<br>230 | 550<br>215 |  |  |  |
|              | 45 | 22<br>345      | 50<br>343 | 120<br>338 | 180<br>332 | 245<br>325 | 315<br>315 | 370<br>305 | 430<br>292 | 490<br>280 | 550<br>265 |  |  |  |
|              | 55 | 20<br>420      | 46<br>418 | 115<br>414 | 175<br>408 | 245<br>400 | 330<br>390 | 375<br>378 | 430<br>365 | 490<br>346 |            |  |  |  |
|              | 65 | 15<br>498      | 43<br>496 | 110<br>492 | 170<br>486 | 240<br>480 | 320<br>465 | 370<br>458 | 425<br>440 | 485<br>425 |            |  |  |  |
| Max. int     | 75 | 12<br>575      | 42<br>574 | 108<br>568 | 170<br>560 | 235<br>550 | 310<br>548 | 365<br>525 | 425<br>502 |            |            |  |  |  |
|              | 85 | 8<br>653       | 40<br>652 | 105<br>645 | 165<br>636 | 230<br>625 | 310<br>616 | 360<br>600 | 420<br>578 |            |            |  |  |  |
|              | 95 |                | 40<br>722 | 100<br>715 | 160<br>702 | 225<br>690 | 290<br>680 | 355<br>670 | 415<br>655 |            |            |  |  |  |

Torque (N•m) 225  
Speed (rpm) 609

# Performance Data



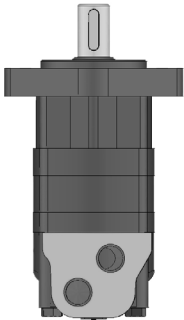
VNKB 160 [156.8 cm<sup>3</sup>/rev.]

|              |     | Pressure (MPa) |           |            |            |            |            |            |            |             |  |           |          |
|--------------|-----|----------------|-----------|------------|------------|------------|------------|------------|------------|-------------|--|-----------|----------|
|              |     | 1.75           | 3.5       | 7          | 10.5       | 14         | 17.5       | 20.5       | 24         | 26          |  | Max. cont | Max. int |
| Flow (L/min) | 2   | 28<br>9        | 55<br>7   | 110<br>5   | 175<br>3   |            |            |            |            |             |  |           |          |
|              | 4   | 32<br>22       | 63<br>21  | 125<br>19  | 190<br>17  | 250<br>13  | 315<br>8   | 370<br>3   |            |             |  |           |          |
|              | 8   | 37<br>47       | 68<br>45  | 130<br>42  | 200<br>39  | 260<br>36  | 325<br>34  | 390<br>32  | 450<br>27  | 480<br>22   |  |           |          |
|              | 15  | 35<br>93       | 68<br>92  | 135<br>89  | 210<br>85  | 275<br>80  | 370<br>76  | 420<br>70  | 500<br>60  | 530<br>45   |  |           |          |
|              | 22  | 35<br>138      | 75<br>136 | 140<br>133 | 215<br>128 | 285<br>122 | 370<br>116 | 440<br>110 | 515<br>102 | 550<br>95   |  |           |          |
|              | 30  | 35<br>190      | 75<br>187 | 145<br>184 | 220<br>178 | 290<br>172 | 370<br>167 | 440<br>164 | 520<br>154 | 560<br>5142 |  |           |          |
|              | 38  | 37<br>240      | 70<br>237 | 150<br>234 | 225<br>230 | 310<br>225 | 380<br>218 | 450<br>202 | 525<br>193 | 565<br>185  |  |           |          |
|              | 45  | 32<br>285      | 70<br>283 | 150<br>280 | 225<br>275 | 310<br>268 | 380<br>259 | 450<br>247 | 525<br>236 | 565<br>225  |  |           |          |
|              | 55  | 28<br>348      | 66<br>346 | 145<br>242 | 220<br>338 | 305<br>332 | 375<br>324 | 450<br>314 | 525<br>300 |             |  |           |          |
|              | 65  | 25<br>412      | 63<br>410 | 140<br>406 | 220<br>400 | 300<br>393 | 375<br>383 | 445<br>370 |            |             |  |           |          |
| Max. cont    | 75  | 22<br>476      | 60<br>474 | 135<br>470 | 215<br>464 | 295<br>454 | 370<br>445 | 440<br>435 |            |             |  |           |          |
|              | 85  | 18<br>540      | 55<br>536 | 130<br>532 | 210<br>524 | 290<br>514 | 365<br>502 | 435<br>485 |            |             |  |           |          |
|              | 95  | 15<br>600      | 50<br>595 | 125<br>590 | 205<br>580 | 285<br>565 | 360<br>555 | 430<br>545 |            |             |  |           |          |
|              | 115 |                | 40<br>715 | 115<br>705 | 200<br>695 | 280<br>685 | 350<br>670 | 425<br>655 |            |             |  |           |          |

VNKB 200 [193.4 cm<sup>3</sup>/rev.]

|              |     | Pressure (MPa) |           |            |            |            |            |            |            |            |  |           |          |      |
|--------------|-----|----------------|-----------|------------|------------|------------|------------|------------|------------|------------|--|-----------|----------|------|
|              |     | 1.75           | 3.5       | 7          | 10.5       | 14         | 17.5       | 20.5       | 24         | 26         |  | Max. cont | Max. int | Peak |
| Flow (L/min) | 2   | 32<br>9        | 68<br>7   | 110<br>5   | 145<br>3   |            |            |            |            |            |  |           |          |      |
|              | 4   | 40<br>18       | 75<br>16  | 150<br>14  | 195<br>11  | 300<br>7   | 360<br>4   |            |            |            |  |           |          |      |
|              | 8   | 45<br>37       | 80<br>36  | 160<br>34  | 240<br>30  | 315<br>26  | 405<br>21  | 500<br>17  | 570<br>13  | 600<br>11  |  |           |          |      |
|              | 15  | 48<br>75       | 90<br>74  | 170<br>72  | 255<br>68  | 335<br>64  | 425<br>60  | 510<br>56  | 590<br>50  | 620<br>42  |  |           |          |      |
|              | 22  | 46<br>112      | 90<br>110 | 175<br>108 | 265<br>105 | 350<br>101 | 440<br>97  | 520<br>91  | 605<br>86  | 645<br>80  |  |           |          |      |
|              | 30  | 45<br>153      | 90<br>151 | 180<br>148 | 270<br>145 | 360<br>141 | 450<br>135 | 530<br>128 | 615<br>122 | 655<br>116 |  |           |          |      |
|              | 38  | 45<br>193      | 90<br>191 | 180<br>188 | 275<br>184 | 370<br>178 | 455<br>172 | 540<br>166 | 625<br>158 |            |  |           |          |      |
|              | 45  | 40<br>230      | 85<br>228 | 180<br>226 | 275<br>222 | 370<br>218 | 460<br>210 | 545<br>202 |            |            |  |           |          |      |
|              | 55  | 38<br>280      | 82<br>278 | 180<br>275 | 275<br>270 | 375<br>264 | 465<br>255 | 550<br>248 |            |            |  |           |          |      |
|              | 65  | 35<br>332      | 80<br>330 | 175<br>328 | 270<br>322 | 370<br>315 | 465<br>306 | 545<br>295 |            |            |  |           |          |      |
| Max. cont    | 75  | 30<br>384      | 72<br>382 | 170<br>378 | 265<br>370 | 360<br>365 | 455<br>356 | 540<br>346 |            |            |  |           |          |      |
|              | 85  | 25<br>436      | 70<br>434 | 165<br>430 | 260<br>420 | 355<br>410 | 450<br>400 | 540<br>390 |            |            |  |           |          |      |
|              | 95  | 20<br>488      | 60<br>485 | 155<br>478 | 255<br>470 | 350<br>458 | 445<br>448 | 530<br>438 |            |            |  |           |          |      |
|              | 115 |                | 50<br>580 | 140<br>572 | 240<br>562 | 330<br>550 | 440<br>538 | 520<br>520 |            |            |  |           |          |      |

# Performance Data



VNKB 250 [242.5 cm<sup>3</sup>/rev.]

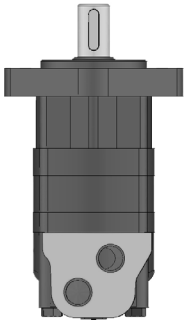
|              |     | Pressure (MPa) |            |            |            |            |            |            |            |           |           |          |
|--------------|-----|----------------|------------|------------|------------|------------|------------|------------|------------|-----------|-----------|----------|
|              |     | 1.75           | 3.5        | 7          | 10.5       | 14         | 17.5       | 20.5       | 24         | 26        | Max. cont | Max. int |
| Flow (L/min) | 2   | 45<br>4        | 95<br>2    |            |            |            |            |            |            |           |           |          |
|              | 4   | 50<br>14       | 100<br>13  | 210<br>11  | 310<br>9   | 410<br>6   | 510<br>4   | 610<br>3   |            |           |           |          |
|              | 8   | 55<br>29       | 105<br>28  | 215<br>26  | 320<br>23  | 420<br>20  | 530<br>17  | 620<br>14  | 730<br>11  | 780<br>9  |           |          |
|              | 15  | 55<br>59       | 110<br>58  | 220<br>56  | 330<br>53  | 440<br>50  | 550<br>47  | 650<br>45  | 755<br>43  | 810<br>40 |           |          |
|              | 22  | 50<br>88       | 115<br>87  | 225<br>85  | 340<br>82  | 455<br>78  | 560<br>74  | 665<br>69  | 770<br>65  |           |           |          |
|              | 30  | 50<br>122      | 115<br>121 | 230<br>118 | 350<br>113 | 465<br>109 | 570<br>104 | 680<br>100 | 785<br>92  |           |           |          |
|              | 38  | 48<br>154      | 112<br>152 | 235<br>149 | 355<br>145 | 475<br>140 | 580<br>135 | 695<br>130 | 795<br>122 |           |           |          |
|              | 45  | 45<br>183      | 110<br>182 | 230<br>180 | 350<br>176 | 475<br>170 | 590<br>165 | 700<br>158 |            |           |           |          |
|              | 55  | 42<br>224      | 105<br>223 | 230<br>221 | 345<br>218 | 470<br>212 | 580<br>205 |            |            |           |           |          |
|              | 65  | 35<br>266      | 100<br>265 | 220<br>263 | 340<br>258 | 460<br>252 | 565<br>242 |            |            |           |           |          |
| Max. cont    | 75  | 32<br>307      | 95<br>306  | 210<br>303 | 330<br>298 | 455<br>290 | 560<br>280 |            |            |           |           |          |
|              | 85  | 30<br>248      | 85<br>346  | 200<br>342 | 320<br>336 | 450<br>330 | 555<br>320 |            |            |           |           |          |
|              | 95  | 25<br>386      | 70<br>384  | 190<br>378 | 315<br>372 | 440<br>365 | 540<br>355 |            |            |           |           |          |
|              | 115 |                | 65<br>465  | 180<br>458 | 300<br>450 | 430<br>442 |            |            |            |           |           |          |

VNKB 315 [304.3 cm<sup>3</sup>/rev.]

|              |     | Pressure (MPa) |            |            |            |            |            |            |           |  | Max. cont | Max. int | Peak |
|--------------|-----|----------------|------------|------------|------------|------------|------------|------------|-----------|--|-----------|----------|------|
|              |     | 1.75           | 3.5        | 7          | 10.5       | 14         | 17.5       | 20.5       | 24        |  |           |          |      |
| Flow (L/min) | 2   | 45<br>4        | 95<br>2    |            |            |            |            |            |           |  |           |          |      |
|              | 4   | 65<br>12       | 130<br>11  | 250<br>10  | 380<br>8   | 490<br>6   |            |            |           |  |           |          |      |
|              | 8   | 70<br>24       | 135<br>23  | 260<br>22  | 390<br>20  | 510<br>18  | 630<br>15  | 760<br>10  | 875<br>6  |  |           |          |      |
|              | 15  | 75<br>48       | 140<br>48  | 275<br>47  | 410<br>45  | 535<br>42  | 670<br>38  | 800<br>34  | 920<br>30 |  |           |          |      |
|              | 22  | 70<br>71       | 140<br>70  | 285<br>69  | 425<br>66  | 555<br>62  | 685<br>56  | 810<br>50  | 940<br>42 |  |           |          |      |
|              | 30  | 70<br>97       | 145<br>97  | 290<br>96  | 430<br>93  | 565<br>88  | 695<br>80  | 820<br>70  |           |  |           |          |      |
|              | 38  | 66<br>123      | 140<br>122 | 290<br>120 | 435<br>117 | 570<br>112 | 715<br>102 | 835<br>90  |           |  |           |          |      |
|              | 45  | 62<br>147      | 135<br>146 | 290<br>144 | 435<br>142 | 575<br>135 | 720<br>125 | 840<br>118 |           |  |           |          |      |
|              | 55  | 58<br>180      | 130<br>179 | 285<br>176 | 430<br>172 | 575<br>165 | 720<br>155 |            |           |  |           |          |      |
|              | 65  | 52<br>213      | 120<br>212 | 275<br>210 | 425<br>205 | 570<br>200 | 715<br>190 |            |           |  |           |          |      |
| Max. cont    | 75  | 40<br>246      | 110<br>245 | 260<br>242 | 415<br>236 | 560<br>225 | 710<br>356 |            |           |  |           |          |      |
|              | 85  | 30<br>278      | 100<br>277 | 250<br>274 | 405<br>270 | 540<br>260 |            |            |           |  |           |          |      |
|              | 95  | 20<br>311      | 90<br>310  | 245<br>307 | 380<br>303 | 515<br>296 |            |            |           |  |           |          |      |
|              | 115 |                | 80<br>365  | 225<br>361 | 350<br>355 |            |            |            |           |  |           |          |      |

Torque (N•m) 225  
Speed (rpm) 361

# Performance Data



VNKB 400 [390.8 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |     | 1.75      | 3.5        | 7          | 10.5       | 14         | 15.5      | 17.5      | 19        |
|--------------|-----|-----------|------------|------------|------------|------------|-----------|-----------|-----------|
| Flow (L/min) | 2   | 70<br>4   | 145<br>2   |            |            |            |           |           |           |
|              | 4   | 80<br>9   | 170<br>9   | 345<br>8   | 500<br>7   | 660<br>6   | 740<br>5  |           |           |
|              | 8   | 85<br>19  | 175<br>18  | 355<br>17  | 520<br>16  | 680<br>14  | 765<br>13 | 830<br>12 | 910<br>10 |
|              | 15  | 90<br>37  | 185<br>37  | 370<br>36  | 550<br>35  | 720<br>32  | 810<br>30 | 880<br>28 |           |
|              | 22  | 95<br>55  | 190<br>55  | 380<br>54  | 565<br>52  | 750<br>48  | 830<br>46 | 900<br>44 |           |
|              | 30  | 92<br>76  | 188<br>75  | 385<br>73  | 570<br>71  | 760<br>68  | 835<br>65 | 905<br>62 |           |
|              | 38  | 90<br>96  | 185<br>94  | 385<br>92  | 575<br>90  | 765<br>86  | 840<br>84 | 930<br>80 |           |
|              | 45  | 85<br>114 | 180<br>113 | 380<br>111 | 570<br>108 | 760<br>102 |           |           |           |
|              | 55  | 80<br>140 | 175<br>139 | 380<br>137 | 570<br>133 | 760<br>127 |           |           |           |
|              | 65  | 75<br>165 | 170<br>164 | 370<br>163 | 560<br>160 | 750<br>155 |           |           |           |
| Max. cont    | 75  | 68<br>191 | 160<br>190 | 360<br>188 | 555<br>184 | 740<br>178 |           |           |           |
|              | 85  | 65<br>214 | 150<br>212 | 355<br>210 | 550<br>206 | 730<br>200 |           |           |           |
|              | 95  | 50<br>242 | 135<br>240 | 340<br>237 | 530<br>233 | 710<br>228 |           |           |           |
| Max. int     | 115 |           | 125<br>286 | 310<br>282 | 510<br>275 |            |           |           |           |

VNKB 475 [485 cm3/rev.]

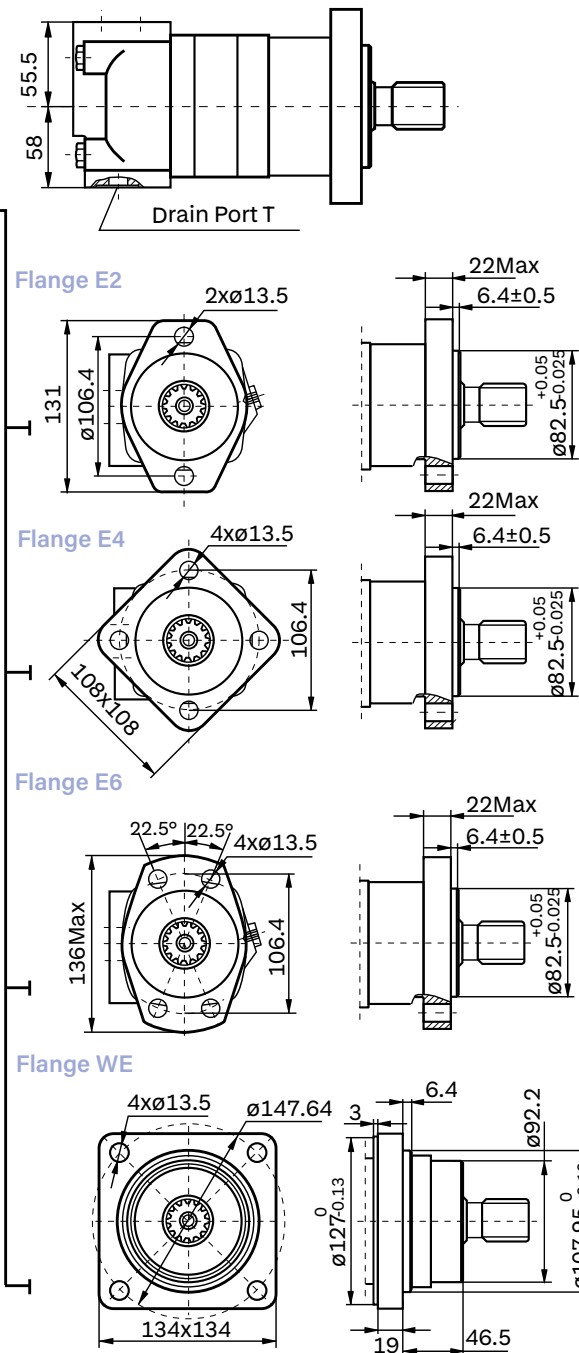
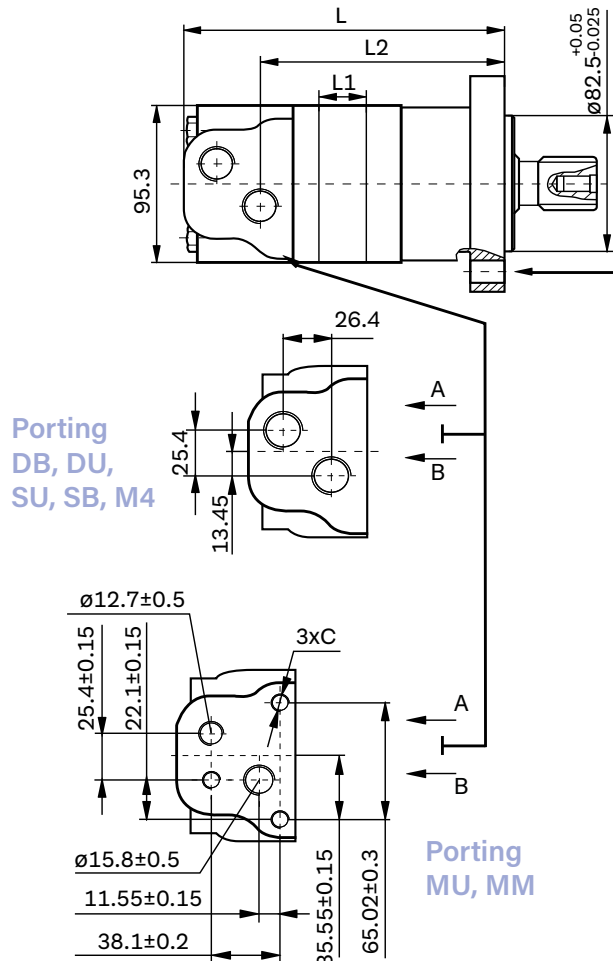
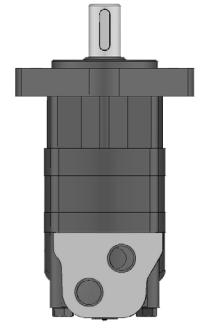
Pressure (MPa)

Max. cont Max. int

|              |     | 1.75      | 3.5        | 7          | 10.5       | 12         | 14        |
|--------------|-----|-----------|------------|------------|------------|------------|-----------|
| Flow (L/min) | 2   | 75<br>2   | 175<br>1   |            |            |            |           |
|              | 4   | 110<br>7  | 220<br>6   | 430<br>4   | 540<br>1   |            |           |
|              | 8   | 110<br>14 | 225<br>13  | 450<br>11  | 700<br>7   |            |           |
|              | 15  | 105<br>29 | 235<br>28  | 470<br>26  | 710<br>24  | 825<br>22  | 895<br>19 |
|              | 22  | 105<br>44 | 240<br>43  | 480<br>42  | 720<br>40  | 835<br>37  | 915<br>34 |
|              | 30  | 110<br>61 | 240<br>60  | 485<br>58  | 725<br>55  | 840<br>52  | 935<br>48 |
|              | 38  | 110<br>77 | 235<br>75  | 480<br>73  | 720<br>70  | 840<br>68  | 930<br>65 |
|              | 45  | 100<br>91 | 220<br>91  | 470<br>89  | 715<br>85  | 825<br>83  |           |
|              | 55  | 95<br>112 | 210<br>110 | 460<br>108 | 710<br>104 | 820<br>100 |           |
|              | 65  | 85<br>132 | 200<br>131 | 445<br>128 | 700<br>125 | 810<br>120 |           |
| Max. cont    | 75  | 70<br>153 | 185<br>152 | 440<br>149 | 690<br>145 | 800<br>140 |           |
|              | 85  | 60<br>173 | 175<br>172 | 430<br>169 | 680<br>165 | 785<br>160 |           |
|              | 95  | 40<br>195 | 150<br>193 | 405<br>190 | 655<br>185 |            |           |
| Max. int     | 115 |           | 130<br>230 | 380<br>226 | 625<br>220 |            |           |

Torque (N•m) 130  
Speed (rpm) 230

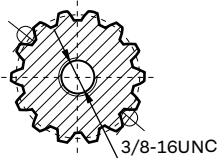
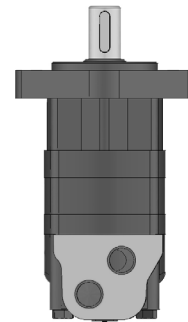
# VNKB Dimensions and Mounting Data



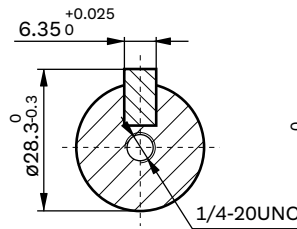
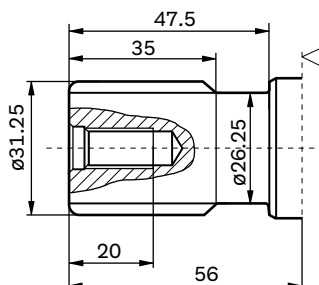
| Model       | L     | L1   | L2    | Model    | L     | L1   | L2    |
|-------------|-------|------|-------|----------|-------|------|-------|
| VNKB-65-WE  | 142   | 14.5 | 93.5  | VNKB-65  | 182   | 14.5 | 133.5 |
| VNKB-80-WE  | 145.5 | 17.8 | 97    | VNKB-80  | 185   | 17.8 | 136.5 |
| VNKB-100-WE | 150   | 22.5 | 101.5 | VNKB-100 | 189.5 | 22.5 | 141.5 |
| VNKB-125-WE | 156.5 | 28.9 | 108   | VNKB-125 | 196   | 28.9 | 148   |
| VNKB-160-WE | 156.5 | 28.9 | 108   | VNKB-160 | 196   | 28.9 | 148   |
| VNKB-200-WE | 163   | 35.6 | 114.5 | VNKB-200 | 202.5 | 35.6 | 154.5 |
| VNKB-250-WE | 172   | 44.6 | 123.5 | VNKB-250 | 211.5 | 44.6 | 163.5 |
| VNKB-315-WE | 183.5 | 56   | 135   | VNKB-315 | 223   | 56   | 175   |
| VNKB-400-WE | 199.5 | 72   | 151   | VNKB-400 | 239   | 72   | 191   |
| VNKB-475-WE | 217   | 89.3 | 168.5 | VNKB-475 | 256.5 | 89.3 | 208.5 |

| Mounting Code | DB (depth) | DU (depth)     | SU (depth)         | SB (depth)         | M4 (depth)     | MU             | MM           |
|---------------|------------|----------------|--------------------|--------------------|----------------|----------------|--------------|
| P(A,B)        | G1/2 (15)  | G1/2 (15)      | 7/8-14 O-ring (17) | 7/8-14 O-ring (17) | M22 x 1.5 (15) | ø12.7, ø15.8   | ø12.7, ø15.8 |
| T             | G1/4 (12)  | 7/16-20UNF(12) | 7/16-20UNF(12)     | G1/4 (12)          | M14 x 1.5 (12) | 7/16-20UNF(12) | G1/4 (12)    |
| C             |            |                |                    |                    |                | 3/8-16UNC(15)  | M10(15)      |

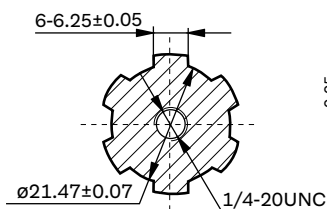
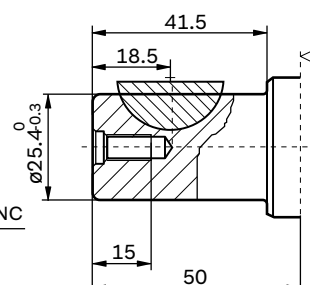
# VNKB Dimensions and Mounting Data



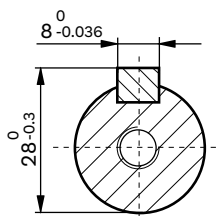
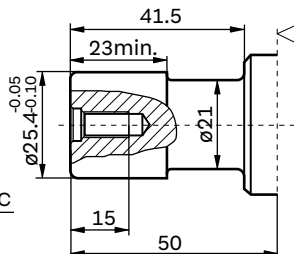
**Shaft FE:**  
1-1/4Splined  
14-DP12/24



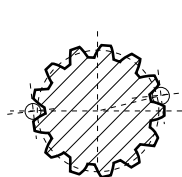
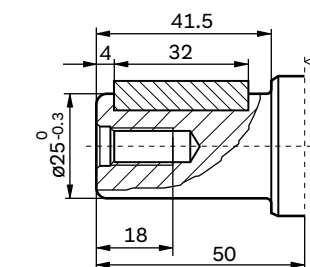
**Shaft K:**  
Cylindrical shaft  $\varnothing 25.4$   
Woodruff key  $\varnothing 25.4 \times 6.35$



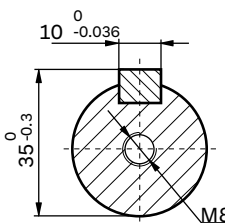
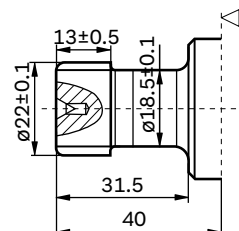
**Shaft S1:**  
Splined SAE 6B



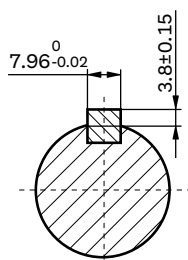
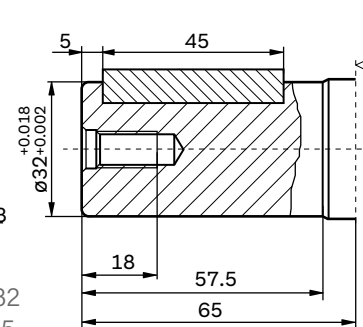
**Shaft A:**  
Cylindrical shaft  $\varnothing 25$   
Parallel key  $8 \times 7 \times 32$



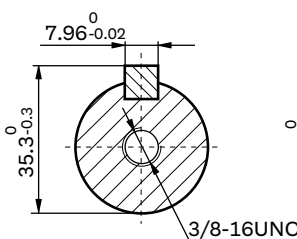
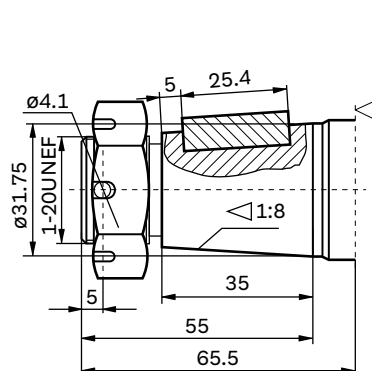
**Shaft I:**  
Splined 13-DP16/32



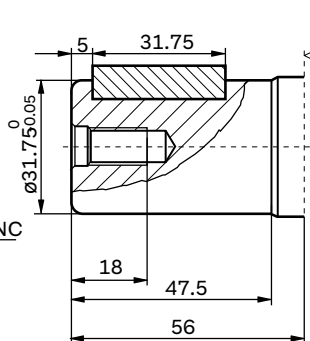
**Shaft B:**  
Cylindrical shaft  $\varnothing 32$   
Parallel key  $10 \times 8 \times 45$



**Shaft T4:**  
Cone-shaft  $\varnothing 31.75$   
Parallel key  
 $7.96 \times 7.96 \times 25.4$   
Tightening  
torque:  $200 \pm 10 \text{ Nm}$

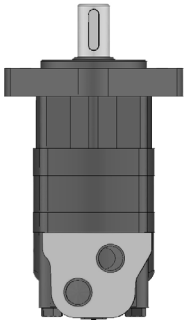


**Shaft G:**  
Cylindrical shaft  
 $\varnothing 31.75$   
Parallel key  
 $7.96 \times 7.96 \times 31.75$

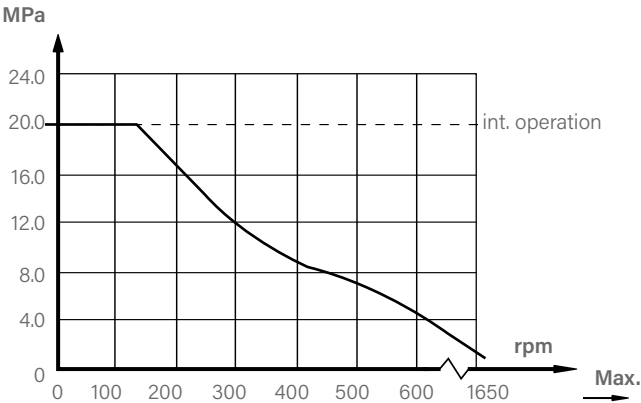




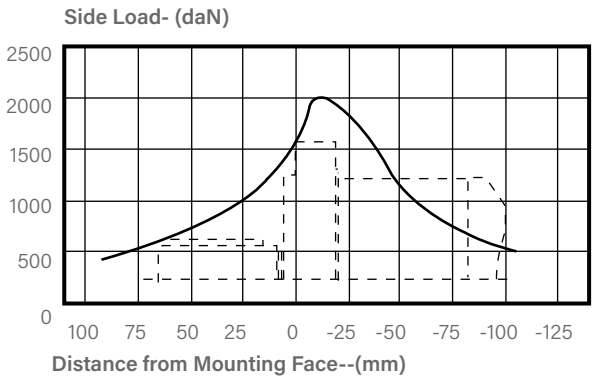
# VNKB Series Hydraulic Motor



### PERMISSIBLE SHAFT SEAL PRESSURE



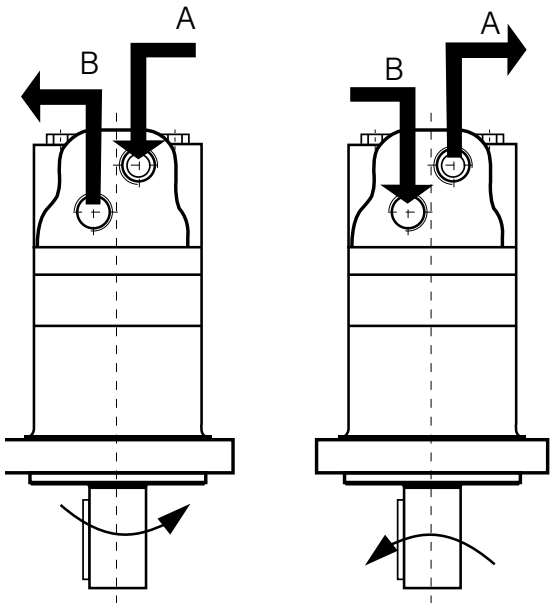
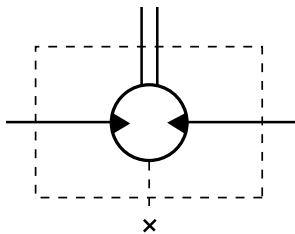
### VNKB Standard Mounting Flange [E2] Radial Forces



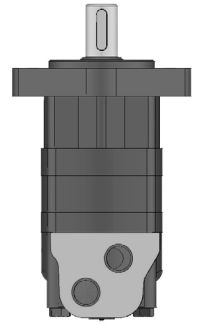
The **bear ing curve** represents allowable bearing loads for an B10bearing life (2000 hours or 12x10<sup>6</sup> revolutions at 100rpm) atrated output torque.

### DIRECTION OF SHAFT ROTATION: Standard

When facing shaft end of motor, shaft to rotate:  
Clockwise when port "A" is pressurized.  
Counter-clockwise port "B" is pressurized.



# Order Information



|      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------|---|---|---|---|---|---|---|---|
| VNKB | — |   | — | — | — | — | — | — |

| Pos.1 | 2     | 3                                                | 4            | 5                    | 6                                                        | 7           | 8                  |
|-------|-------|--------------------------------------------------|--------------|----------------------|----------------------------------------------------------|-------------|--------------------|
| Code  | Disp. | Flange                                           | Output shaft | Ports and drain port | Rotation Direction                                       | Paint       | Unusually Function |
| Omit  | 65    |                                                  | A            | DB                   | G1/2,G1/4                                                |             |                    |
|       | 80    |                                                  | B            | DU                   | G1/2,7/16-20 UNF                                         |             |                    |
|       | 100   | 2×Ø13.5 Rhomb-flange<br>Ø106.4, pilot Ø82.5×6.4  | K            | SB                   | 7/8-14UNF O-ring,G1/4                                    | No paint    |                    |
|       | 125   |                                                  | G            | SU                   | 7/8-14UNF O-ring,7/16-20 UNF                             | 00          |                    |
|       | 160   | 4×Ø13.5 Rhomb-flange<br>Ø106.4, pilot Ø82.5×6.4  | FE           | M4                   | M22×1.5,M14×1.5                                          | Omit        | Omit               |
|       | 200   |                                                  | S1           | MU                   | 1/2"5/8"Crosshole<br>Manifold 3×3/8-16UNC,<br>7/16-20UNF | Blue        | Standard           |
|       | 250   | 4×Ø13.5 Rhomb-flange<br>Ø106.4, pilot Ø82.5×6.4  | I            |                      |                                                          | Black       | Free Running       |
|       | 315   | 4×Ø13.6Wheel-flange<br>Ø147.6, pilot Ø107.95×6.4 | T4           |                      |                                                          | Silver grey |                    |
|       | 400   |                                                  |              |                      |                                                          |             |                    |
|       | 475   |                                                  |              |                      |                                                          |             |                    |

**Note:** When the table is used, please fill the code of right rows in the table and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports. If the specification is not in the table or you have specific requirements, please contact us.

# VNKC Series Hydraulic Motor

## INTRODUCTION

VNKC new series motor adapt the advanced Geroler gear set designed with disc distribution flow and high pressure.

The unit can be supplied the individual variant in operating multifunction in accordance with requirement of applications.

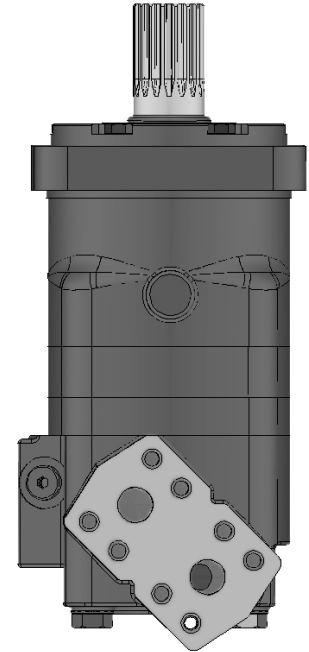
## CHARACTERISTIC FEATURES

\* **Advanced manufacturing** devices for the Geroler gear set, which use low pressure of start-up, provide smooth and reliable operation and high efficiency.

\* **Advanced design in disc distribution flow**, which can automatically compensate in operating with high volume efficiency and long life, provide smooth and reliable operation.

\* **Shaft seal** can bear high pressure of back.

\* **The output shaft** adapts in tapered roller bearings that permit high axial and radial forces. The case can offers capacities of high pressure and high torque in the wide of applications.



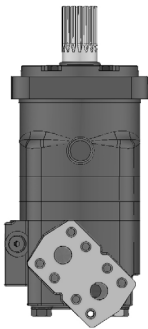
## SPECIFICATION Main Specification

| Type                                           |       | VNKC 200 | VNKC 250 | VNKC 315 | VNKC 400 | VNKC 500 | VNKC 630 | VNKC 800 | VNKC 1000 |
|------------------------------------------------|-------|----------|----------|----------|----------|----------|----------|----------|-----------|
| Geometric displacement (cm <sup>3</sup> /rev.) |       | 195.6    | 246.1    | 311.6    | 391.3    | 490.8    | 623      | 802.4    | 981.6     |
| Max. speed (rpm)                               | cont. | 765      | 610      | 480      | 382      | 304      | 240      | 186      | 152       |
|                                                | int.  | 865      | 830      | 690      | 570      | 455      | 360      | 280      | 230       |
| Max. torque (N·m)                              | cont. | 565      | 710      | 920      | 1160     | 1445     | 1480     | 1580     | 1675      |
|                                                | int.  | 840      | 1080     | 1325     | 1625     | 1880     | 1890     | 1880     | 1860      |
| Max. pressure drop (MPa)                       | cont. | 20       | 20       | 20       | 20       | 20       | 17.5     | 14       | 14        |
|                                                | int.  | 30       | 30       | 30       | 30       | 27.5     | 22.5     | 15.5     | 14        |
|                                                | peak. | 30       | 30       | 30       | 30       | 30       | 24       | 17.5     | 17        |
| Max. flow (L/min)                              | cont. | 150      | 150      | 150      | 150      | 150      | 150      | 150      | 150       |
|                                                | int.  | 170      | 205      | 225      | 225      | 225      | 225      | 225      | 225       |
| Weight (Kg)                                    |       | 26.3     | 26.8     | 27.3     | 28       | 28.8     | 29.6     | 30.5     | 32        |

\* **Continuous pressure:** Max. value of operating motor continuously.

\* **Intermittent pressure:** Max. value of operating motor in 6 seconds per minute.

\* **Peak pressure:** Max. value of operating motor in 0.6 second per minute.



# Performance Data

VNKC 200 [195 cm3/rev.]

Pressure (MPa)

Max. cont Max. int Peak

| 1.75 | 3.5 | 7 | 10.5 | 14 | 17.5 | 20 | 24 | 27.5 | 30 |
|------|-----|---|------|----|------|----|----|------|----|
|------|-----|---|------|----|------|----|----|------|----|

Flow (L/min)

|     |           |           |            |            |            |            |            |            |            |
|-----|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|
| 2   | 30<br>9   | 73<br>7   | 160<br>5   |            |            |            |            |            |            |
| 8   | 36<br>39  | 76<br>38  | 168<br>35  | 262<br>34  | 345<br>31  | 438<br>27  | 465<br>16  |            |            |
| 15  | 36<br>75  | 81<br>75  | 174<br>74  | 270<br>71  | 365<br>65  | 455<br>60  | 510<br>45  | 580<br>32  | 640<br>16  |
| 30  | 37<br>152 | 85<br>151 | 175<br>147 | 275<br>142 | 370<br>132 | 465<br>121 | 540<br>109 | 615<br>96  | 700<br>80  |
| 45  | 37<br>228 | 85<br>227 | 180<br>223 | 280<br>218 | 375<br>210 | 470<br>200 | 535<br>185 | 650<br>165 | 740<br>146 |
| 60  | 38<br>305 | 80<br>304 | 178<br>302 | 282<br>297 | 380<br>288 | 475<br>280 | 565<br>255 | 660<br>235 | 750<br>210 |
| 75  | 32<br>382 | 78<br>380 | 175<br>376 | 275<br>370 | 378<br>362 | 480<br>350 | 565<br>328 | 670<br>300 | 760<br>270 |
| 90  | 26<br>459 | 75<br>456 | 172<br>452 | 270<br>445 | 375<br>436 | 475<br>420 | 565<br>405 | 660<br>383 | 765<br>355 |
| 105 | 22<br>536 | 70<br>534 | 170<br>530 | 270<br>523 | 370<br>510 | 470<br>496 | 560<br>470 | 660<br>435 | 760<br>400 |
| 120 | 20<br>612 | 67<br>610 | 166<br>605 | 265<br>598 | 365<br>585 | 465<br>570 | 560<br>536 | 660<br>502 | 755<br>450 |
| 135 | 14<br>690 | 65<br>687 | 160<br>680 | 260<br>672 | 360<br>650 | 465<br>638 | 560<br>595 | 655<br>550 | 750<br>485 |
| 150 | 10<br>765 | 60<br>765 | 155<br>755 | 258<br>740 | 356<br>725 | 450<br>700 | 550<br>640 | 650<br>580 |            |
| 170 |           | 60<br>865 | 155<br>850 | 255<br>840 | 350<br>820 | 450<br>800 | 545<br>745 | 640<br>700 |            |

Max. int Max. cont

VNKC 250 [246.1 cm3/rev.]

Pressure (MPa)

Max. cont Max. int Peak

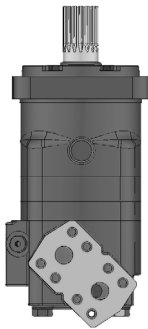
| 1.75 | 3.5 | 7 | 10.5 | 14 | 17.5 | 20 | 24 | 27.5 | 30 |
|------|-----|---|------|----|------|----|----|------|----|
|------|-----|---|------|----|------|----|----|------|----|

Flow (L/min)

|     |           |            |            |            |            |            |            |            |            |
|-----|-----------|------------|------------|------------|------------|------------|------------|------------|------------|
| 2   | 46<br>7   | 92<br>4    |            |            |            |            |            |            |            |
| 8   | 51<br>31  | 103<br>30  | 215<br>27  | 335<br>24  | 440<br>21  | 550<br>15  | 560<br>10  |            |            |
| 15  | 52<br>58  | 105<br>57  | 220<br>55  | 340<br>52  | 455<br>46  | 570<br>40  | 640<br>37  | 745<br>28  | 850<br>10  |
| 30  | 55<br>118 | 110<br>116 | 232<br>113 | 352<br>110 | 470<br>105 | 600<br>96  | 685<br>80  | 790<br>64  | 900<br>48  |
| 45  | 58<br>180 | 110<br>177 | 235<br>174 | 355<br>170 | 475<br>164 | 610<br>155 | 705<br>140 | 840<br>126 | 940<br>106 |
| 60  | 53<br>242 | 110<br>240 | 230<br>237 | 350<br>233 | 480<br>224 | 615<br>212 | 705<br>198 | 845<br>180 | 955<br>162 |
| 75  | 45<br>302 | 105<br>298 | 230<br>292 | 355<br>285 | 485<br>278 | 620<br>268 | 710<br>254 | 850<br>230 | 960<br>206 |
| 90  | 45<br>364 | 105<br>360 | 225<br>352 | 350<br>342 | 480<br>338 | 615<br>322 | 710<br>305 | 845<br>288 | 955<br>265 |
| 105 | 40<br>424 | 100<br>420 | 220<br>414 | 340<br>408 | 475<br>394 | 610<br>372 | 705<br>352 | 840<br>334 | 950<br>315 |
| 120 | 38<br>485 | 95<br>479  | 210<br>471 | 340<br>463 | 470<br>454 | 590<br>442 | 700<br>420 | 830<br>385 | 940<br>365 |
| 135 | 35<br>546 | 85<br>540  | 205<br>532 | 325<br>525 | 460<br>516 | 580<br>504 | 690<br>478 | 820<br>445 |            |
| 150 | 30<br>608 | 80<br>605  | 200<br>600 | 320<br>592 | 450<br>580 | 570<br>566 | 680<br>532 | 815<br>496 |            |
| 170 |           | 65<br>686  | 190<br>678 | 315<br>665 | 440<br>652 | 560<br>635 | 675<br>600 | 750<br>565 |            |
| 185 |           |            | 185<br>750 | 310<br>746 | 430<br>730 | 545<br>708 | 670<br>658 |            |            |
| 205 |           |            | 175<br>830 | 300<br>820 | 418<br>800 | 536<br>776 | 562<br>735 |            |            |

Max. int Max. cont

# Performance Data



VNKC 315 [311.6 cm<sup>3</sup>/rev.]

Pressure (MPa)

Max. cont Max. int Peak

| 1.75 | 3.5 | 7 | 10.5 | 14 | 17.5 | 20 | 24 | 27.5 | 30 |
|------|-----|---|------|----|------|----|----|------|----|
|------|-----|---|------|----|------|----|----|------|----|

Flow (L/min)

|           |     |           |            |            |            |            |            |            |             |             |
|-----------|-----|-----------|------------|------------|------------|------------|------------|------------|-------------|-------------|
| Max. int  | 2   | 65<br>5   | 126<br>4   |            |            |            |            |            |             |             |
|           | 8   | 68<br>24  | 135<br>23  | 280<br>22  | 410<br>20  | 540<br>16  | 650<br>13  | 750<br>9   | 880<br>3    |             |
|           | 15  | 70<br>46  | 135<br>45  | 285<br>44  | 435<br>41  | 565<br>36  | 690<br>30  | 810<br>22  | 940<br>16   | 1010<br>9   |
|           | 30  | 70<br>93  | 135<br>92  | 295<br>90  | 440<br>86  | 600<br>80  | 740<br>71  | 880<br>62  | 990<br>52   | 1100<br>43  |
|           | 45  | 70<br>142 | 140<br>140 | 300<br>138 | 460<br>132 | 610<br>127 | 750<br>120 | 900<br>118 | 1035<br>96  | 1165<br>85  |
|           | 60  | 70<br>190 | 140<br>189 | 300<br>186 | 460<br>182 | 615<br>176 | 775<br>167 | 920<br>154 | 1055<br>138 | 1200<br>124 |
|           | 75  | 65<br>238 | 135<br>237 | 295<br>235 | 455<br>231 | 615<br>225 | 780<br>214 | 920<br>200 | 1065<br>180 | 1215<br>160 |
|           | 90  | 60<br>285 | 130<br>284 | 290<br>280 | 450<br>276 | 615<br>270 | 780<br>260 | 920<br>245 | 1070<br>226 | 1220<br>210 |
|           | 105 | 50<br>335 | 125<br>333 | 280<br>330 | 445<br>324 | 605<br>316 | 770<br>302 | 915<br>290 | 1070<br>271 | 1205<br>248 |
|           | 120 | 45<br>384 | 120<br>382 | 280<br>380 | 440<br>372 | 600<br>364 | 765<br>350 | 910<br>338 | 1055<br>312 |             |
|           | 135 | 40<br>432 | 115<br>428 | 275<br>420 | 435<br>412 | 585<br>408 | 760<br>391 | 900<br>380 | 1050<br>350 |             |
|           | 150 | 35<br>480 | 110<br>475 | 270<br>462 | 420<br>458 | 570<br>450 | 755<br>435 | 880<br>420 | 1030<br>395 |             |
| Max. cont | 190 |           | 100<br>595 | 245<br>580 | 375<br>574 | 520<br>560 | 685<br>548 | 820<br>530 |             |             |
|           | 225 |           |            | 220<br>690 | 350<br>683 | 500<br>674 | 640<br>652 | 770<br>634 |             |             |

VNKC 400 [391.3 cm<sup>3</sup>/rev.]

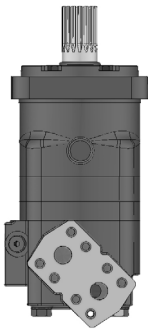
Pressure (MPa)

Max. cont Max. int Peak

| 1.75 | 3.5 | 7 | 10.5 | 14 | 17.5 | 20 | 24 | 27.5 | 30 |
|------|-----|---|------|----|------|----|----|------|----|
|------|-----|---|------|----|------|----|----|------|----|

Flow (L/min)

|     |           |            |            |            |            |            |             |             |            |            |
|-----|-----------|------------|------------|------------|------------|------------|-------------|-------------|------------|------------|
| 2   | 90<br>4   | 172<br>2   | 360<br>1   |            |            |            |             |             |            |            |
| 8   | 95<br>19  | 180<br>18  | 370<br>17  | 555<br>16  | 730<br>14  | 885<br>12  | 1025<br>9   | 1195<br>4   |            |            |
| 15  | 95<br>37  | 185<br>37  | 375<br>36  | 560<br>35  | 740<br>33  | 930<br>28  | 1070<br>22  | 1265<br>14  | 1380<br>5  | 1625<br>1  |
| 30  | 98<br>75  | 185<br>74  | 380<br>73  | 575<br>71  | 760<br>68  | 960<br>65  | 1135<br>55  | 1315<br>45  | 1455<br>31 | 1625<br>20 |
| 45  | 95<br>114 | 185<br>113 | 385<br>111 | 580<br>108 | 765<br>105 | 970<br>100 | 1145<br>90  | 1335<br>80  | 1530<br>72 |            |
| 60  | 90<br>152 | 180<br>152 | 380<br>150 | 580<br>147 | 770<br>142 | 975<br>134 | 1155<br>126 | 1345<br>112 |            |            |
| 75  | 85<br>191 | 180<br>191 | 380<br>188 | 580<br>186 | 775<br>181 | 980<br>172 | 1160<br>160 | 1355<br>148 |            |            |
| 90  | 80<br>230 | 175<br>229 | 375<br>227 | 570<br>224 | 765<br>220 | 975<br>212 | 1155<br>200 |             |            |            |
| 105 | 70<br>268 | 165<br>267 | 360<br>265 | 560<br>260 | 760<br>254 | 965<br>246 | 1150<br>232 |             |            |            |
| 120 | 65<br>306 | 160<br>305 | 355<br>303 | 550<br>298 | 745<br>290 | 950<br>278 | 1140<br>262 |             |            |            |
| 135 | 55<br>345 | 155<br>343 | 340<br>337 | 545<br>330 | 735<br>322 | 940<br>310 | 1120<br>295 |             |            |            |
| 150 | 45<br>382 | 145<br>380 | 320<br>376 | 530<br>370 | 730<br>362 | 925<br>352 |             |             |            |            |
| 190 |           | 130<br>483 | 300<br>476 | 515<br>470 | 730<br>458 | 915<br>445 |             |             |            |            |
| 225 |           |            | 285<br>570 | 500<br>560 | 710<br>550 | 895<br>535 |             |             |            |            |



# Performance Data

VNKC 500 [490.8 cm3/rev.]

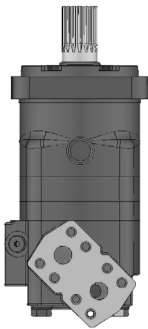
Pressure (MPa)

|              |     | Max. cont  |            |            |            |            | Max. int    |            | Peak       |            |
|--------------|-----|------------|------------|------------|------------|------------|-------------|------------|------------|------------|
|              |     | 1.75       | 3.5        | 7          | 10.5       | 14         | 17.5        | 20         | 24         | 27.5       |
| Flow (L/min) | 4   | 120<br>7   | 230<br>6   | 470<br>5   | 685<br>3   |            |             |            |            |            |
|              | 8   | 125<br>15  | 240<br>14  | 475<br>13  | 705<br>12  | 940<br>11  | 1165<br>8   | 1375<br>3  |            |            |
|              | 15  | 125<br>30  | 235<br>29  | 480<br>29  | 720<br>28  | 960<br>27  | 1190<br>25  | 1400<br>21 | 1625<br>17 | 1880<br>12 |
|              | 30  | 125<br>60  | 235<br>59  | 485<br>58  | 735<br>57  | 975<br>54  | 1215<br>50  | 1445<br>45 | 1685<br>35 |            |
|              | 45  | 125<br>91  | 235<br>90  | 485<br>89  | 735<br>87  | 975<br>84  | 1215<br>50  | 1450<br>70 |            |            |
|              | 60  | 120<br>121 | 235<br>121 | 480<br>120 | 730<br>118 | 975<br>114 | 1215<br>78  | 1460<br>98 |            |            |
|              | 75  | 110<br>152 | 225<br>151 | 470<br>149 | 725<br>146 | 970<br>142 | 1220<br>108 |            |            |            |
|              | 90  | 100<br>182 | 220<br>182 | 465<br>180 | 720<br>178 | 965<br>175 | 1220<br>135 |            |            |            |
|              | 105 | 95<br>213  | 205<br>212 | 460<br>210 | 710<br>206 | 960<br>201 | 1215<br>168 |            |            |            |
|              | 120 | 90<br>244  | 195<br>243 | 450<br>240 | 700<br>235 | 950<br>228 | 1210<br>195 |            |            |            |
| Max. int     | 135 | 85<br>274  | 175<br>273 | 435<br>270 | 680<br>265 | 935<br>258 | 1205<br>221 |            |            |            |
|              | 150 | 70<br>304  | 155<br>303 | 420<br>301 | 665<br>292 | 920<br>287 | 1170<br>250 |            |            |            |
|              | 190 |            | 130<br>385 | 360<br>382 | 580<br>373 | 865<br>365 | 1150<br>280 |            |            |            |
|              | 225 |            |            | 320<br>455 | 555<br>440 | 800<br>432 |             |            |            |            |

VNKC 630 [623 cm3/rev.]

Pressure (MPa)

|                    |     | Max. cont  |            |            |            |             | Max. int   |            | Peak       |
|--------------------|-----|------------|------------|------------|------------|-------------|------------|------------|------------|
|                    |     | 1.75       | 3.5        | 7          | 10.5       | 14          | 17.5       | 20         | 22.5       |
| Flow (L/min)       | 4   | 130<br>6   | 245<br>5   | 500<br>4   | 750<br>2   |             |            |            |            |
|                    | 8   | 135<br>12  | 265<br>12  | 540<br>11  | 805<br>10  | 1050<br>6   |            |            |            |
|                    | 15  | 140<br>24  | 280<br>23  | 585<br>22  | 865<br>21  | 1085<br>16  | 1425<br>13 |            |            |
|                    | 30  | 145<br>48  | 295<br>47  | 605<br>45  | 925<br>42  | 1270<br>38  | 1480<br>34 | 1780<br>30 | 1890<br>27 |
|                    | 45  | 145<br>72  | 295<br>71  | 610<br>70  | 920<br>68  | 1330<br>65  | 1465<br>58 | 1770<br>50 |            |
|                    | 60  | 135<br>95  | 285<br>94  | 605<br>91  | 915<br>87  | 1330<br>83  | 1465<br>78 |            |            |
|                    | 75  | 130<br>120 | 275<br>119 | 595<br>116 | 915<br>112 | 1325<br>106 |            |            |            |
|                    | 90  | 115<br>145 | 260<br>144 | 585<br>141 | 905<br>137 | 1310<br>130 |            |            |            |
|                    | 105 | 100<br>168 | 255<br>167 | 575<br>164 | 895<br>160 | 1305<br>152 |            |            |            |
|                    | 120 | 85<br>192  | 235<br>191 | 560<br>186 | 880<br>182 | 1280<br>175 |            |            |            |
| Max. int Max. cont | 135 | 75<br>216  | 220<br>215 | 540<br>212 | 855<br>207 |             |            |            |            |
|                    | 150 | 50<br>240  | 200<br>239 | 525<br>236 | 84<br>233  |             |            |            |            |
|                    | 190 |            |            | 465<br>300 | 795<br>293 |             |            |            |            |
|                    | 225 |            |            | 430<br>360 | 740<br>348 |             |            |            |            |
|                    |     |            |            |            |            |             |            |            |            |



# Performance Data

VNKC 800 [802.4 cm<sup>3</sup>/rev.]

Pressure (MPa)

Max. cont Max. int

|                    |     | 1.75       | 3.5        | 7          | 10.5       | 14         | 17.5        | 20         | 24         | 27.5       |
|--------------------|-----|------------|------------|------------|------------|------------|-------------|------------|------------|------------|
| Flow (L/min)       | 4   | 172<br>4   | 345<br>4   | 530<br>2   | 690<br>2   | 860<br>1   |             |            |            |            |
|                    | 8   | 180<br>9   | 355<br>9   | 540<br>8   | 725<br>8   | 955<br>7   | 1080<br>6   | 1275<br>5  | 1360<br>4  |            |
|                    | 15  | 185<br>18  | 370<br>18  | 565<br>17  | 758<br>17  | 980<br>16  | 1130<br>15  | 1265<br>14 | 1420<br>12 | 1655<br>10 |
|                    | 30  | 190<br>36  | 385<br>35  | 590<br>34  | 795<br>33  | 1005<br>32 | 1200<br>31  | 1330<br>29 | 1580<br>28 | 1740<br>26 |
|                    | 45  | 190<br>55  | 385<br>55  | 590<br>54  | 800<br>53  | 1015<br>52 | 1200<br>50  | 1380<br>50 | 1550<br>48 |            |
|                    | 60  | 185<br>74  | 380<br>73  | 580<br>72  | 790<br>70  | 1015<br>69 | 1200<br>67  | 1345<br>65 |            |            |
|                    | 75  | 176<br>92  | 370<br>92  | 575<br>91  | 782<br>88  | 1000<br>87 | 1185<br>85  | 1365<br>82 |            |            |
|                    | 90  | 165<br>112 | 360<br>111 | 560<br>110 | 765<br>108 | 990<br>106 | 1170<br>102 |            |            |            |
|                    | 105 | 150<br>130 | 340<br>129 | 555<br>128 | 750<br>127 | 972<br>125 | 1155<br>120 |            |            |            |
|                    | 120 | 132<br>149 | 325<br>148 | 545<br>146 | 735<br>143 | 945<br>140 | 1130<br>135 |            |            |            |
| Max. int Max. cont | 135 | 105<br>168 | 302<br>167 | 525<br>165 | 710<br>162 | 911<br>158 |             |            |            |            |
|                    | 150 | 80<br>186  | 270<br>185 | 500<br>183 | 680<br>180 | 880<br>176 |             |            |            |            |
|                    | 190 |            | 300<br>235 | 475<br>233 | 660<br>230 | 855<br>226 |             |            |            |            |
|                    | 225 |            |            | 423<br>280 | 612<br>276 | 830<br>272 |             |            |            |            |

Torque (N·m) 423  
Speed (rpm) 280

VNKC 1000 [981.6 cm<sup>3</sup>/rev.]

Pressure (MPa)

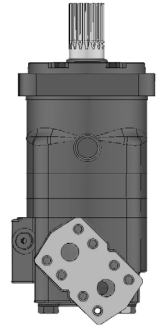
Max. cont Max. int

|                    |     | 1.75       | 3.5        | 5          | 7          | 8.5         | 10.5        | 12         | 14         |
|--------------------|-----|------------|------------|------------|------------|-------------|-------------|------------|------------|
| Flow (L/min)       | 4   | 225<br>3   | 460<br>3   | 640<br>2   | 875<br>2   | 1085<br>1   |             |            |            |
|                    | 8   | 230<br>7   | 470<br>7   | 695<br>6   | 945<br>6   | 1170<br>5   | 1415<br>4   | 1560<br>3  | 1675<br>2  |
|                    | 15  | 240<br>15  | 485<br>15  | 715<br>15  | 965<br>14  | 1200<br>14  | 1445<br>13  | 1580<br>13 | 1780<br>12 |
|                    | 30  | 240<br>30  | 495<br>30  | 720<br>30  | 995<br>29  | 1235<br>28  | 1480<br>27  | 1640<br>25 | 1860<br>23 |
|                    | 45  | 240<br>45  | 495<br>45  | 720<br>44  | 1000<br>44 | 1250<br>43  | 1490<br>42  | 1700<br>40 |            |
|                    | 60  | 235<br>60  | 490<br>60  | 715<br>60  | 990<br>59  | 1245<br>57  | 1500<br>55  |            |            |
|                    | 75  | 225<br>76  | 475<br>76  | 710<br>76  | 980<br>75  | 1230<br>73  | 1485<br>70  |            |            |
|                    | 90  | 215<br>91  | 460<br>91  | 705<br>91  | 960<br>90  | 1215<br>88  | 1465<br>85  |            |            |
|                    | 105 | 200<br>106 | 445<br>106 | 690<br>105 | 940<br>105 | 1195<br>103 | 1440<br>100 |            |            |
|                    | 120 | 185<br>122 | 420<br>122 | 665<br>121 | 920<br>119 | 1155<br>116 |             |            |            |
| Max. int Max. cont | 135 | 150<br>137 | 390<br>137 | 635<br>136 | 890<br>136 | 1120<br>134 |             |            |            |
|                    | 150 | 110<br>152 | 360<br>151 | 605<br>150 | 860<br>148 | 1080<br>145 |             |            |            |
|                    | 190 |            | 320<br>192 | 575<br>190 | 820<br>188 | 1045<br>185 |             |            |            |
|                    | 225 |            |            | 515<br>230 | 800<br>228 | 1020<br>224 |             |            |            |

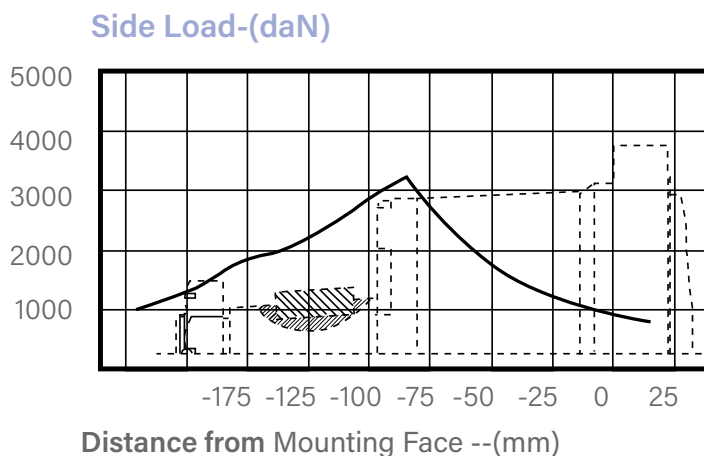
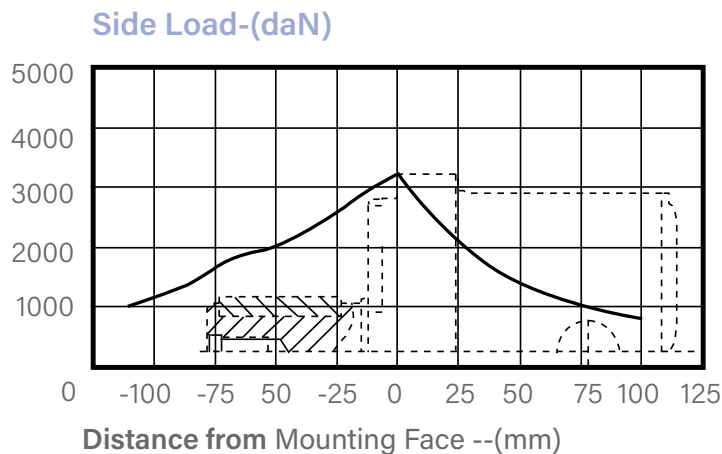
A schematic diagram of a circular hole in a plate. A vertical crack is shown on the left side of the hole, and a horizontal crack is shown on the right side of the hole. The hole is represented by a circle with a horizontal line passing through its center. A dashed rectangle is drawn around the hole, and a dashed line is drawn above it, labeled with an 'x'.

[illegible][illegible]





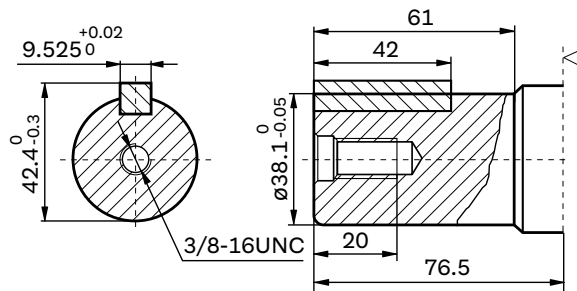
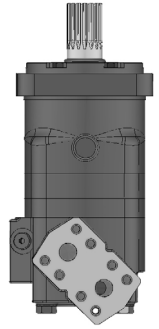
# VNKC for CC and W Mounting Radial Forces



**The bearing curve** represents allowable bearing loads for an B10 bearing life (2000 hours or 12x10<sup>6</sup> revolutions at 100rpm) at rated output torque.  
Other speed load multiply a load values.

**The maximum load curve** is defined by bearing static load capacity.  
**This curve should not** be exceeded at any time including shock loads.

# VNKC Shaft Extensions for Dimensions Data

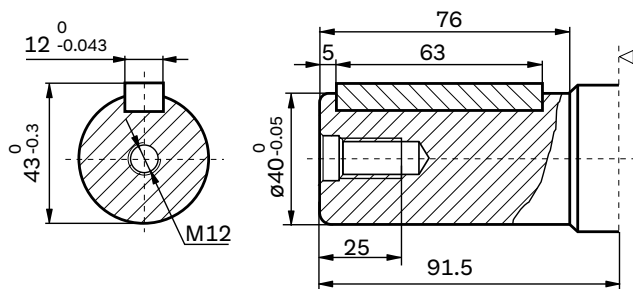


## Shaft G2:

Cylindrical shaft  $\varnothing 38.1$

Parallel key 9.525x9.525x42

Max.Torque: 1350Nm



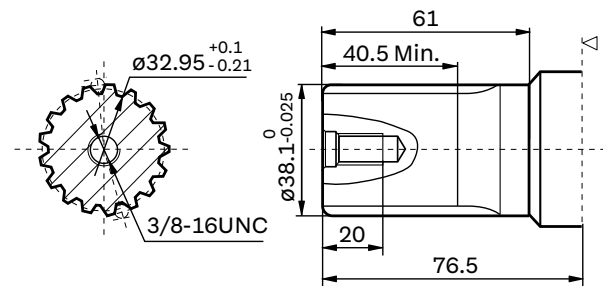
## Shaft Y1:

Cylindrical shaft  $\varnothing 40$

Parallel key 12x8x63

Max.Torque: 1400Nm

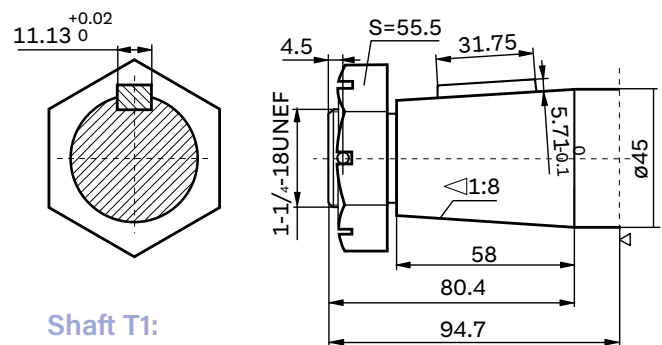
▷ Motor Mounting  
Surface



## Shaft FE:

Splined 17-DP12/24

Max.Torque: 1350Nm



## Shaft T1:

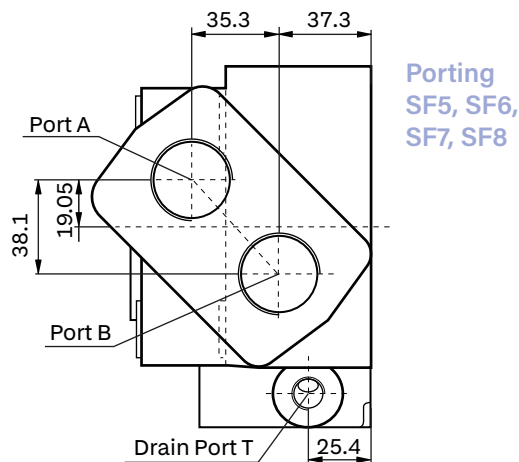
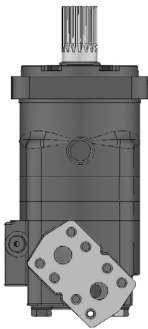
Cone-shaft  $\varnothing 45$

Parallelkey 11.13x11.13x31.75

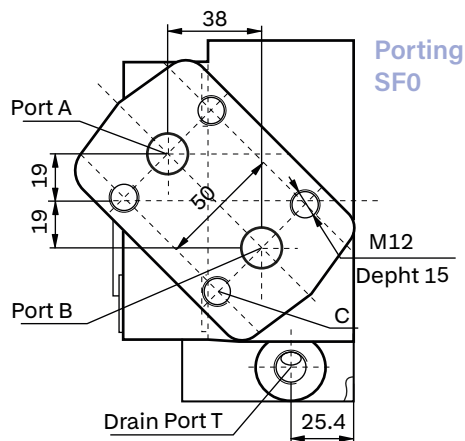
Tighteningtorque: 500±10Nm

Max. torque: 2100Nm

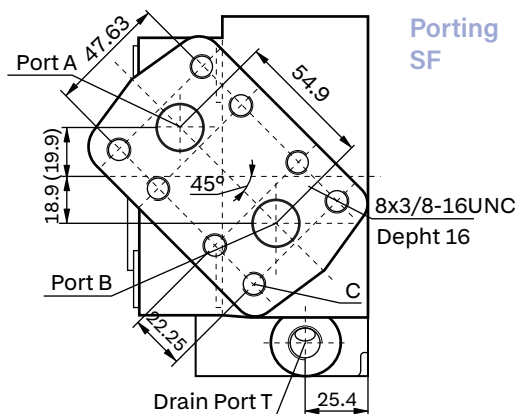
# VNKC Dimensions of Ports



Porting  
SF5, SF6,  
SF7, SF8



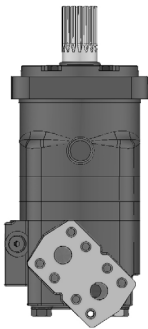
Porting  
SF0



Porting  
SF

| Mounting Content | SF5 (depth)     | SF6 (depth) | SF7 (depth) | SF8 (depth) | SF (depth)     | SF0 (depth) |
|------------------|-----------------|-------------|-------------|-------------|----------------|-------------|
| P(A,B)           | 1-5/16-12UN(18) | M33X2(18)   | G1(18)      | G3/4(18)    | ø19.05         | ø16         |
| T                | 7/16-20UNF(12)  | M14X1.5(12) | G1/4(12)    | G1/4(12)    | 7/16-20UNF(12) | M14X1.5(12) |
| C                | -               | -           | -           | -           | 8X3/8-16UNC    | 4XM12       |

# Order Information



1

VNKC

2

3

4

5

6

7

8

| Pos.1 | 2     | 3                                          | 4            | 5                   | 6                                          | 7           | 8                  |
|-------|-------|--------------------------------------------|--------------|---------------------|--------------------------------------------|-------------|--------------------|
| Code  | Disp. | Flange                                     | Output Shaft | Port and Drain Port | Rotation Direction                         | Paint       | Unusually Function |
| Omit  | 200   | 4-Ø14.2Square-flangeØ161.9, pilotØ127×12.5 | G2           | SF                  | 3/4"Manifold Moun-t8×3/8-16UNC, 7/16-20UNF | 00          | Omit               |
|       | 250   |                                            | FE           | SF0                 |                                            | No paint    |                    |
|       | 315   | 4-Ø14.2Square-flangeØ161.9, pilotØ125×12.5 | Y1           | SF5                 | Ø16Manifold Moun-t4×M12,M14×1.5            | B           | Standard           |
|       | 400   |                                            |              | T1                  |                                            | R           |                    |
|       | 500   | 4-Ø14.2 Wheel-flange Ø184.12, Pilot 139.7  | T1           | SF6                 | 1-5/16-12UN,7/16-20UNF                     | S           | Opposite           |
|       | 630   |                                            |              | SF7                 |                                            | Black       |                    |
|       | 800   |                                            |              | SF8                 |                                            | Silver grey |                    |
|       | 1000  |                                            |              | G3/4,G1/4           |                                            |             | Standard           |

**Note:** When the table is used, please fill the code of left rows in dash area and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports. If the specification is not in the table or you have specific requirements, please contact us.

# VNKD Series Hydraulic Motor

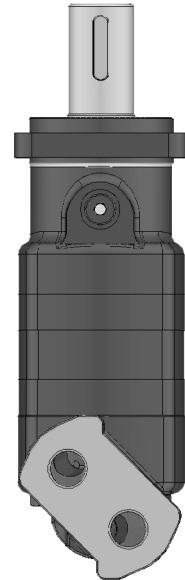
## INTRODUCTION

VNKD Series motor adapt the advanced Geroler gear set designed with disc distribution flow and pressure.

The unit can be supplied the individual variant in operating multifunction in accordance with requirement of applications.

## CHARACTERISTIC FEATURES

- \* **Advanced manufacturing** devices for the Geroler gear set, which use low pressure of start-up, provide smooth and reliable operation and high efficiency.
- \* **Advanced design** in disc distribution flow, which can automatically compensate in operating with high efficiency and long life, provide smooth and reliable operation.
- \* **Shaft seal** can bear high pressure of back.
- \* **The output shaft adapts** in cylinder roller bearings that permit high axial and radial forces. The case can offer capacities of high pressure and high torque in the wide of applications.



## SPECIFICATION Main Specification

| Type                                           |       | VNKD-350 | VNKD-480 | VNKD-665 | VNKD-940 |
|------------------------------------------------|-------|----------|----------|----------|----------|
| Geometric displacement (cm <sup>3</sup> /rev.) |       | 351      | 479      | 638      | 933      |
| Max. speed (rpm)                               | cont. | 485      | 355      | 265      | 180      |
|                                                | int.  | 755      | 555      | 410      | 280      |
| Max. torque (N·m)                              | cont. | 1025     | 1425     | 1930     | 2480     |
|                                                | int.  | 1425     | 1960     | 2520     | 3400     |
| Max. pressure drop (MPa)                       | cont. | 20       | 20       | 20       | 17.5     |
|                                                | int.  | 27.5     | 27.5     | 26.0     | 24.0     |
|                                                | peak. | 27.5     | 27.5     | 27.5     | 26.0     |
| Max. flow (L/min)                              | cont. | 170      | 170      | 170      | 170      |
|                                                | int.  | 265      | 265      | 265      | 265      |
| Weight (Kg)                                    |       | 43.4     | 45.8     | 45.8     | 47.1     |

\* **Continuous pressure:** Max. value of operating motor continuously.

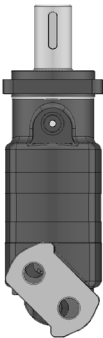
\* **Intermittent pressure:** Max. value of operating motor in 6 seconds per minute.

\* **Peak pressure:** Max. value of operating motor in 0.6 second per minute.

\* **Oil recommend:** Anti-wear hydraulic oil, viscosity 37-73cSt, cleanliness of oil as ISO 18/13, Max. operating temperature upper limit 80 C°.

\* **Special motive seal,** motor permits back pressure can reach 7-20MPa (optical), but to achieve good life cycle and overall performance, we recommend the back pressure can't over 5 MPa, if so, recommend to use drain line, to make sure inside of the motor fulfilled with oil when drain oil in use. The drain line pipe should have a certain throttle to keep the back pressure over 3.5 Bar. If the drain line in use, it is not only can keep low back pressure, but also can flash the wear pollution out, still have a function as cooling.

\* **There is a run-in period** before full load of the motor, recommend to do the run-in period for 1 hour under 30% of the Max. working pressure. The Max. output torque related to the type of shaft.



# Performance Data

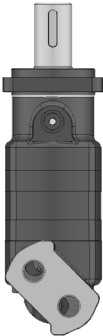
VNKD-350 [351 cm3/rev.]

|                  |     | Pressure (MPa) |            |            |            |            |            |             |             |             |           |          |
|------------------|-----|----------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-----------|----------|
|                  |     |                |            |            |            |            |            |             |             |             | Max. cont | Max. int |
|                  |     | 1.75           | 3.5        | 7          | 10.5       | 14         | 17.5       | 20          | 24          | 27.5        |           |          |
| Flow (L/min)     | 4   | 70<br>3        | 153<br>1   |            |            |            |            |             |             |             |           |          |
|                  | 8   | 87<br>22       | 177<br>20  | 357<br>16  | 538<br>11  | 718<br>8   | 898<br>4   |             |             |             |           |          |
|                  | 15  | 87<br>42       | 177<br>40  | 357<br>36  | 538<br>32  | 718<br>29  | 898<br>25  | 1027<br>21  | 1233<br>17  | 1413<br>14  |           |          |
|                  | 30  | 84<br>85       | 174<br>84  | 354<br>80  | 535<br>76  | 716<br>72  | 897<br>68  | 1025<br>64  | 1231<br>60  | 1412<br>56  |           |          |
|                  | 45  | 82<br>127      | 172<br>126 | 353<br>123 | 533<br>119 | 713<br>115 | 894<br>111 | 1023<br>107 | 1230<br>103 | 1410<br>99  |           |          |
|                  | 60  | 80<br>170      | 170<br>169 | 351<br>167 | 531<br>162 | 711<br>158 | 892<br>153 | 1021<br>150 | 1228<br>145 | 1408<br>141 |           |          |
|                  | 75  | 77<br>213      | 167<br>212 | 347<br>211 | 528<br>206 | 708<br>201 | 889<br>196 | 1019<br>192 | 1224<br>187 | 1404<br>184 |           |          |
|                  | 90  | 74<br>255      | 164<br>254 | 345<br>253 | 525<br>249 | 705<br>245 | 886<br>239 | 1015<br>235 | 1221<br>230 | 1402<br>225 |           |          |
|                  | 105 | 70<br>296      | 160<br>295 | 341<br>294 | 521<br>292 | 701<br>287 | 883<br>283 | 1012<br>278 | 1219<br>272 | 1399<br>267 |           |          |
|                  | 120 | 67<br>340      | 157<br>339 | 338<br>338 | 518<br>336 | 698<br>330 | 879<br>325 | 1009<br>320 | 1215<br>315 | 1395<br>310 |           |          |
| Max. cont        | 135 | 63<br>383      | 153<br>382 | 333<br>381 | 514<br>379 | 694<br>373 | 875<br>368 | 1005<br>362 | 1211<br>357 | 1392<br>352 |           |          |
|                  | 150 | 58<br>425      | 148<br>424 | 330<br>423 | 510<br>422 | 691<br>417 | 871<br>411 | 1001<br>405 | 1207<br>400 |             |           |          |
|                  | 170 | 54<br>482      | 143<br>481 | 323<br>480 | 503<br>479 | 683<br>475 | 863<br>470 | 992<br>463  | 1197<br>457 |             |           |          |
|                  | 225 |                | 126<br>637 | 306<br>636 | 486<br>635 | 668<br>632 | 848<br>625 | 980<br>619  |             |             |           |          |
| Max. int         | 265 |                | 112<br>752 | 293<br>750 | 473<br>747 | 654<br>746 | 835<br>739 | 966<br>731  |             |             |           |          |
| Torque (N·m) 112 |     |                |            |            |            |            |            |             |             |             |           |          |
| Speed (rpm) 752  |     |                |            |            |            |            |            |             |             |             |           |          |

VNKD-480 [479 cm3/rev.]

|              |     | Pressure (MPa) |            |            |            |            |             |             |             |             |           |          |
|--------------|-----|----------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-----------|----------|
|              |     |                |            |            |            |            |             |             |             |             | Max. cont | Max. int |
|              |     | 1.75           | 3.5        | 7          | 10.5       | 14         | 17.5        | 20          | 24          | 27.5        |           |          |
| Flow (L/min) | 4   | 87<br>6        | 176<br>5   | 357<br>4   | 531<br>2   |            |             |             |             |             |           |          |
|              | 8   | 119<br>16      | 24<br>14   | 494<br>12  | 743<br>8   | 994<br>5   | 1243<br>2   |             |             |             |           |          |
|              | 15  | 119<br>31      | 244<br>29  | 493<br>27  | 742<br>24  | 993<br>21  | 1242<br>18  | 1421<br>16  | 1706<br>13  | 1955<br>10  |           |          |
|              | 30  | 117<br>62      | 241<br>61  | 491<br>58  | 741<br>55  | 990<br>53  | 1240<br>50  | 1419<br>47  | 1704<br>44  | 1953<br>42  |           |          |
|              | 45  | 113<br>93      | 238<br>92  | 488<br>89  | 738<br>86  | 987<br>83  | 1237<br>80  | 1416<br>77  | 1700<br>74  | 1951<br>72  |           |          |
|              | 60  | 110<br>124     | 236<br>123 | 485<br>121 | 734<br>118 | 983<br>115 | 1234<br>112 | 1413<br>109 | 1697<br>106 | 1947<br>103 |           |          |
|              | 75  | 106<br>156     | 231<br>155 | 480<br>153 | 731<br>149 | 980<br>146 | 1229<br>143 | 1409<br>140 | 1694<br>137 | 1943<br>134 |           |          |
|              | 90  | 102<br>188     | 226<br>187 | 477<br>184 | 726<br>181 | 975<br>178 | 1226<br>174 | 1405<br>171 | 1689<br>168 |             |           |          |
|              | 105 | 97<br>219      | 222<br>218 | 472<br>215 | 722<br>213 | 971<br>209 | 1221<br>206 | 1401<br>202 | 1685<br>199 |             |           |          |
|              | 120 | 93<br>250      | 217<br>249 | 467<br>247 | 717<br>243 | 966<br>240 | 1216<br>236 | 1396<br>233 | 1680<br>229 |             |           |          |
| Max. cont    | 135 | 87<br>280      | 212<br>279 | 462<br>278 | 711<br>275 | 961<br>271 | 1211<br>268 | 1391<br>264 |             |             |           |          |
|              | 150 | 81<br>313      | 206<br>312 | 456<br>310 | 706<br>306 | 955<br>303 | 1205<br>299 | 1385<br>295 |             |             |           |          |
|              | 170 | 74<br>354      | 199<br>353 | 448<br>351 | 699<br>348 | 948<br>344 | 1197<br>340 | 1379<br>336 |             |             |           |          |
|              | 225 | 49<br>469      | 174<br>468 | 424<br>467 | 674<br>464 | 923<br>459 | 1173<br>455 | 1355<br>451 |             |             |           |          |
| Max. int     | 265 |                | 156<br>552 | 405<br>551 | 655<br>547 | 905<br>552 | 1155<br>537 | 1337<br>533 |             |             |           |          |

**Notice:**  
Motor can operating in all the marked torque and speed in each zone, but choose the torque and speed in white back ground, motor can acquire best life cycle.



# Performance Data

VNKD-665 [638 cm<sup>3</sup>/rev.]

|              |     | Pressure (MPa) |            |            |            |             |             |             |            |            |           |          |
|--------------|-----|----------------|------------|------------|------------|-------------|-------------|-------------|------------|------------|-----------|----------|
|              |     |                |            |            |            |             |             |             |            |            | Max. cont | Max. int |
|              |     | 1.75           | 3.5        | 7          | 10.5       | 14          | 17.5        | 20          | 24         | 26         |           |          |
| Flow (L/min) | 4   | 162<br>4       | 331<br>3   | 671<br>2   |            |             |             |             |            |            |           |          |
|              | 8   | 163<br>11      | 332<br>10  | 672<br>8   | 1011<br>7  | 1350<br>4   | 1689<br>2   |             |            |            |           |          |
|              | 15  | 162<br>23      | 331<br>22  | 671<br>20  | 1010<br>18 | 1349<br>15  | 1688<br>13  | 1931<br>11  | 2319<br>9  | 2513<br>8  |           |          |
|              | 30  | 158<br>45      | 328<br>44  | 667<br>42  | 1007<br>40 | 1347<br>38  | 1685<br>36  | 1928<br>34  | 2316<br>33 | 2509<br>32 |           |          |
|              | 45  | 154<br>45      | 324<br>68  | 664<br>66  | 1002<br>64 | 1342<br>62  | 1682<br>60  | 1924<br>58  | 2312<br>56 | 2506<br>55 |           |          |
|              | 60  | 149<br>92      | 320<br>91  | 658<br>89  | 998<br>87  | 1338<br>85  | 1677<br>83  | 1920<br>81  | 2304<br>79 |            |           |          |
|              | 75  | 144<br>116     | 314<br>115 | 653<br>113 | 993<br>111 | 1332<br>107 | 1672<br>105 | 1916<br>103 |            |            |           |          |
|              | 90  | 138<br>139     | 308<br>138 | 647<br>135 | 987<br>133 | 1327<br>131 | 1665<br>128 | 1909<br>126 |            |            |           |          |
|              | 105 | 132<br>162     | 302<br>161 | 642<br>159 | 980<br>156 | 1320<br>154 | 1660<br>152 |             |            |            |           |          |
|              | 120 | 125<br>186     | 296<br>185 | 634<br>182 | 974<br>180 | 1314<br>178 | 1653<br>175 |             |            |            |           |          |
| Max. cont    | 135 | 119<br>209     | 288<br>208 | 628<br>206 | 967<br>202 | 1306<br>200 | 1645<br>197 |             |            |            |           |          |
|              | 150 | 111<br>232     | 280<br>231 | 620<br>228 | 960<br>226 | 1298<br>223 | 1638<br>221 |             |            |            |           |          |
|              | 170 | 101<br>264     | 270<br>262 | 610<br>259 | 949<br>257 | 1288<br>254 | 1628<br>252 |             |            |            |           |          |
|              | 225 | 67<br>349      | 236<br>347 | 576<br>345 | 916<br>342 | 1255<br>339 |             |             |            |            |           |          |
| Max. int     | 265 |                | 212<br>410 | 551<br>407 | 890<br>404 | 1230<br>400 |             |             |            |            |           |          |

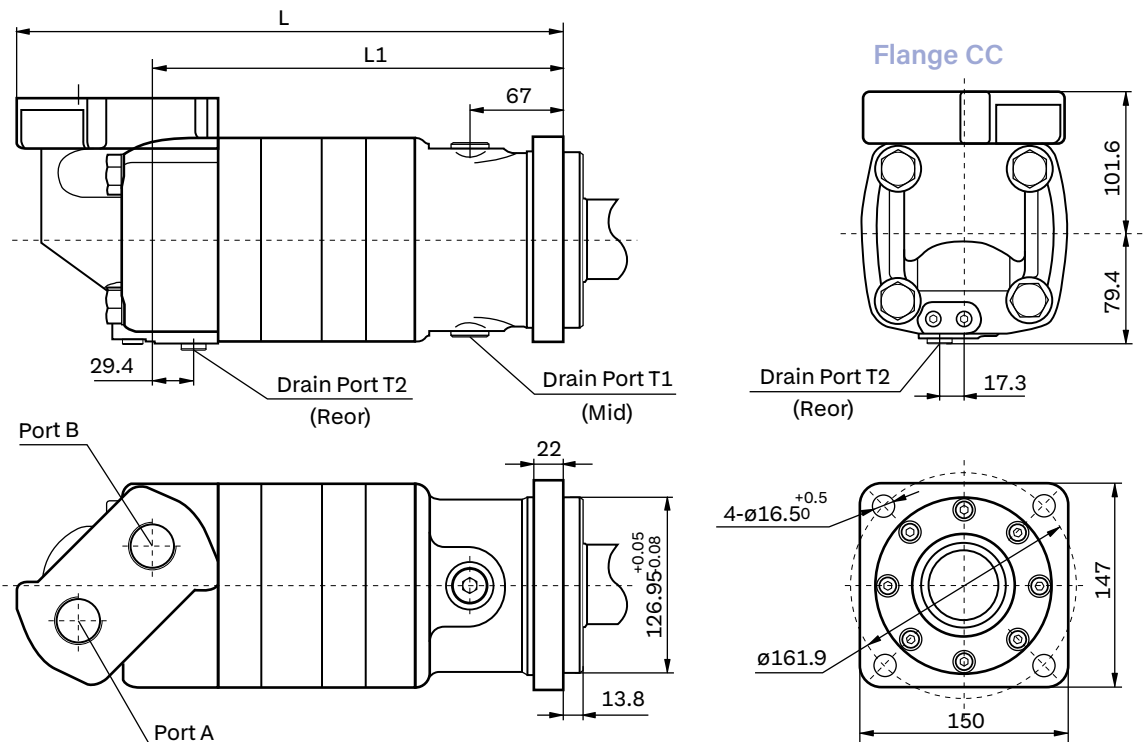
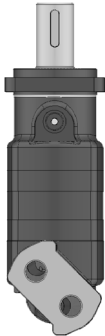
Torque (N·m) 212  
Speed (rpm) 410

VNKD-940 [933 cm<sup>3</sup>/rev.]

|              |     | Pressure (MPa) |            |            |             |             |            |           |           |  |           |          |
|--------------|-----|----------------|------------|------------|-------------|-------------|------------|-----------|-----------|--|-----------|----------|
|              |     |                |            |            |             |             |            |           |           |  | Max. cont | Max. int |
|              |     | 1.75           | 3.5        | 7          | 10.5        | 14          | 17.5       | 20        | 24        |  |           |          |
| Flow (L/min) | 4   | 236<br>3       | 484<br>2   |            |             |             |            |           |           |  |           |          |
|              | 8   | 238<br>7       | 485<br>6   | 982<br>5   | 1478<br>3   | 1975<br>1   |            |           |           |  |           |          |
|              | 15  | 236<br>15      | 484<br>14  | 980<br>13  | 1477<br>11  | 1974<br>9   | 2469<br>7  | 2824<br>6 | 3393<br>4 |  |           |          |
|              | 30  | 232<br>31      | 480<br>30  | 977<br>28  | 1472<br>27  | 1969<br>25  | 2466<br>23 |           |           |  |           |          |
|              | 45  | 226<br>47      | 474<br>46  | 971<br>44  | 1467<br>43  | 1964<br>41  | 2460<br>39 |           |           |  |           |          |
|              | 60  | 219<br>63      | 467<br>62  | 964<br>60  | 1460<br>58  | 1957<br>57  |            |           |           |  |           |          |
|              | 75  | 211<br>79      | 459<br>78  | 956<br>76  | 1452<br>74  | 1949<br>72  |            |           |           |  |           |          |
|              | 90  | 202<br>95      | 451<br>94  | 947<br>92  | 1444<br>90  | 1941<br>88  |            |           |           |  |           |          |
|              | 105 | 193<br>111     | 442<br>110 | 938<br>108 | 1435<br>106 | 1932<br>104 |            |           |           |  |           |          |
|              | 120 | 184<br>127     | 432<br>126 | 928<br>124 | 1425<br>122 |             |            |           |           |  |           |          |
| Max. cont    | 135 | 173<br>143     | 422<br>142 | 918<br>140 | 1414<br>138 |             |            |           |           |  |           |          |
|              | 150 | 161<br>159     | 410<br>158 | 906<br>156 | 1403<br>154 |             |            |           |           |  |           |          |
|              | 170 | 147<br>180     | 396<br>179 | 891<br>177 | 1388<br>175 |             |            |           |           |  |           |          |
|              | 225 | 98<br>239      | 346<br>238 | 842<br>235 | 1339<br>233 |             |            |           |           |  |           |          |
| Max. int     | 265 | 61<br>281      | 309<br>280 | 806<br>277 | 1303<br>275 |             |            |           |           |  |           |          |

**Notice:**  
**Motor** can operating in all the marked torque and speed in each zone, but choose the torque and speed in white back ground, motor can acquire best life cycle.

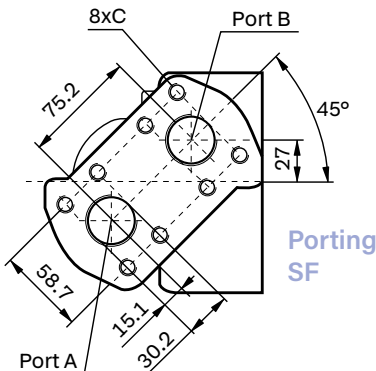
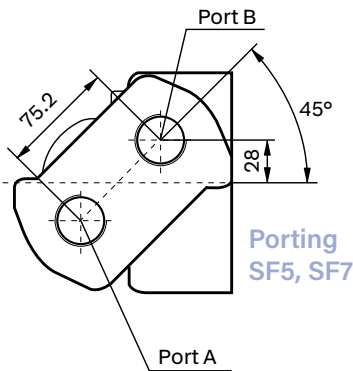
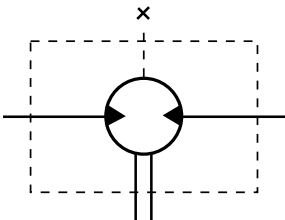
# VNKD Dimensions of Mounting and Ports Date



| Model    | L1  | L   |
|----------|-----|-----|
| VNKD-350 | 281 | 381 |
| VNKD-480 | 293 | 393 |
| VNKD-665 | 293 | 393 |
| VNKD-940 | 313 | 413 |

## DIRECTION OF SHAFT ROTATION: Standard

When facing shaft end of motor, shaft to rotate:  
Clockwise when port "A" is pressurized.  
Counter-clockwise port "B" is pressurized.

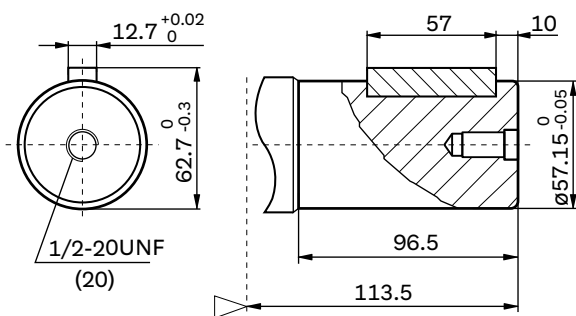
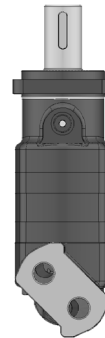


| Port | Code              |           |
|------|-------------------|-----------|
|      | SF5               | SF7       |
| A,B  | 1-5/16-12UNC (18) | G1 (18)   |
| T1   | 7/8-14UNF (16)    | G1/2 (16) |
| T2   | 9/16-18UNF (12)   | G1/4 (12) |

| Port | Code            |
|------|-----------------|
|      | SF              |
| A,B  | ø29.4           |
| T1   | 7/8-14UNF (16)  |
| T2   | 9/16-18UNF (12) |
| C    | 7/16-14UNC(25)  |



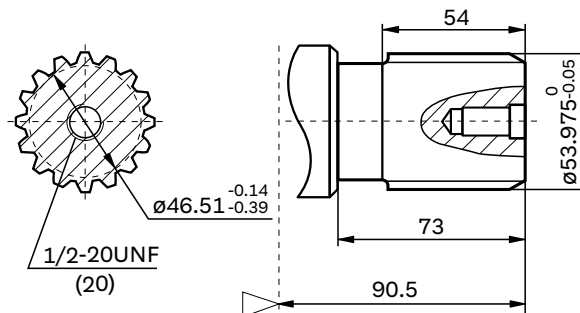
# VNKD Dimensions of Mounting and Ports Date



## Shaft C:

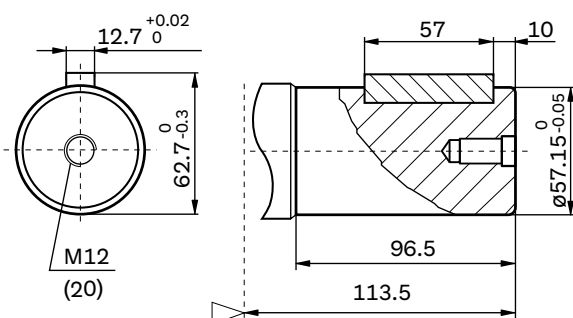
Cylindrical shaft  $\varnothing 57.15$

Key: 12.7x12.7x57



## Shaft bd:

Splined 16-DP8/16



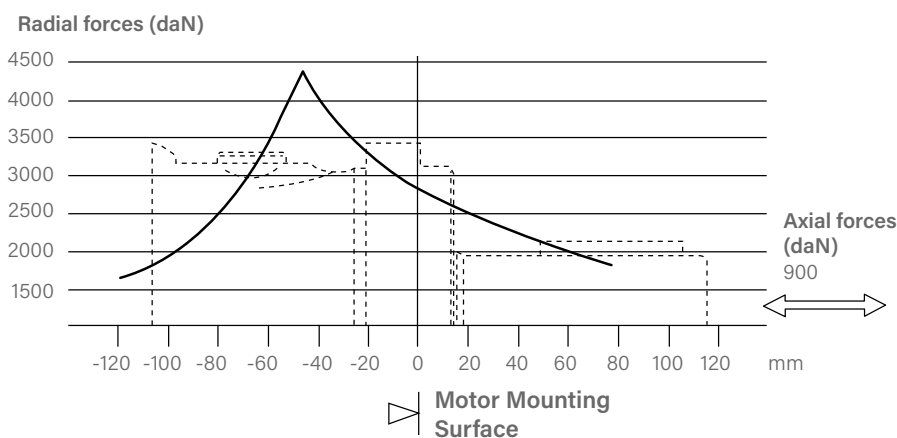
## Shaft C1:

Cylindrical shaft  $\varnothing 57.15$

Key: 12.7x12.7x57

Motor Mounting Surface  
CC Flange

## VNKD Shaft Radial&Axial Forces of CC Mounting



### Notice:

The curve on the top means the output shaft permits radial load in different position. The table as follow means the speed of motor influence the radial force.

# Order Information



1

VNKD

2

3

4

5

6

7

8

| Pos.1 | 2     | 3                                                     | 4                                                        | 5                                                                       | 6                      | 7              | 8                  |
|-------|-------|-------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------|------------------------|----------------|--------------------|
| Code  | Disp. | Flange                                                | Shaft                                                    | Port                                                                    | Rotation Direction     | Paint          | Unusually Function |
| Omit  | 350   | CC<br>4-Ø16.5 Squire flange<br>Ø161.9 Pilot Ø127*13.8 | C<br>Ø57/15 Straight Shaft Parallel key<br>12.7*12.7*57  | SF5<br>A, B: 1-5/16-12UNF<br>T1: 7/14UNF<br>T2: 9/16-18UNF              | Omit<br>Standard<br>CW | 00<br>No paint | Omit<br>Standard   |
|       | 480   |                                                       | C1<br>Ø57/15 Straight Shaft Parallel key<br>12.7*12.7*57 | A, B: G1<br>T1: G1/2<br>T2: G1/4                                        |                        |                |                    |
|       | 665   |                                                       | BD<br>Ø53.975 Splined Shaft<br>Splined 16-DP8/16         | SF<br>Manifold mount<br>8x7/16-14UNC<br>T1: 7/8-14UNF<br>T2: 9/16-18UNF | R<br>Opposite<br>CCW   | B<br>Black     |                    |
|       | 940   |                                                       |                                                          |                                                                         |                        |                |                    |

**Note:** When the table is used , please fill the code of left rows in dash area and give us, wich the code information is consists of construction, displacement, mounting flange, output shaft and ports, if the specification is not In the table or you have specific requirements, please contact us.

# VNKE Series Hydraulic Motor

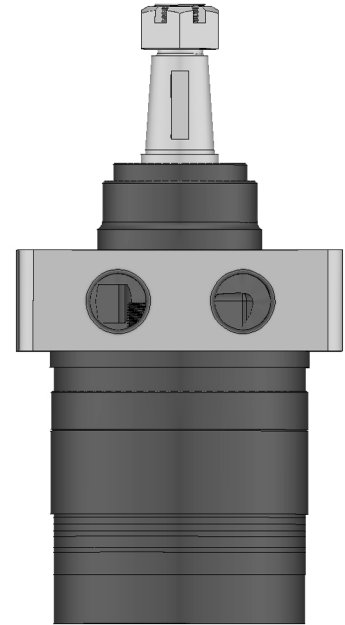
## INTRODUCTION

**VNKE** Series motor adapt the advanced Geroler gear set designed with high speed distribution flow and high pressure, and have good stability in low speed, and can keep high volume efficiency.

The unit can be supplied the individual variant in operating multifunction in accordance with requirement of applications.

## CHARACTERISTIC FEATURES

- \* **Advanced manufacturing** devices for the Geroler gear set, which use low pressure of start-up, provide smooth and reliable operation and high efficiency.
- \* **The output shaft** adapts in needle roller bearings that permit high axial and radial forces. The case can offers capacities of high pressure and high torque in the wide of applications.
- \* **Advanced design** in high speed distribution flow, wick can automatically compensate in operating with high volume efficiency and long life, provide smooth and reliable operation.
- \* **Lowest leakage rate**, most accurate timing methods, Commutator rotates 6x faster than shaft speed. It make the distribution in a highprecision reduces life-cycle cost, maintain high volume efficiencies and can run very smoothly at low speed, gear box not required.



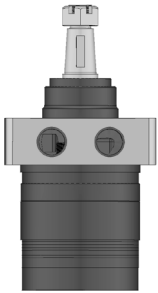
## SPECIFICATION Main Specification

| Type                                           |       | VNKE 65 | VNKE 80 | VNKE 100 | VNKE 125 | VNKE 160 | VNKE 200 | VNKE 230 | VNKE 250 | VNKE 295 | VNKE 315 | VNKE 375 |
|------------------------------------------------|-------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Geometric displacement (cm <sup>3</sup> /rev.) |       | 66.8    | 81.3    | 101.6    | 127      | 157.2    | 193.6    | 226      | 257      | 287.8    | 314.5    | 370      |
| Max. speed (rpm)                               | cont. | 667     | 543     | 439      | 350      | 283      | 229      | 247      | 216      | 196      | 178      | 152      |
|                                                | int.  | 842     | 689     | 553      | 441      | 355      | 289      | 328      | 287      | 254      | 235      | 199      |
| Max. torque (N·m)                              | cont. | 126     | 157     | 191      | 245      | 307      | 382      | 378      | 381      | 393      | 448      | 439      |
|                                                | int.  | 176     | 215     | 268      | 335      | 422      | 520      | 528      | 543      | 547      | 587      | 613      |
| Max. output (kW)                               | cont. | 8.3     | 8.8     | 7.9      | 8.9      | 8.9      | 9        | 9.9      | 9.3      | 8.7      | 8        | 7.6      |
|                                                | int.  | 13.9    | 14.4    | 13.5     | 14.1     | 15.6     | 15.7     | 17.9     | 16.5     | 15.6     | 14.3     | 14       |
| Max. pressure drop (MPa)                       | cont. | 14      | 14      | 14       | 14       | 14       | 14       | 12       | 11       | 10       | 10       | 9        |
|                                                | int.  | 19      | 19      | 19       | 19       | 19       | 19       | 165      | 15.5     | 14.5     | 13.5     | 12.5     |
|                                                | peak  | 20      | 20      | 20       | 20       | 20       | 20       | 18       | 18       | 17       | 16       | 16       |
| Max. flow (L/min)                              | cont. | 45      | 45      | 45       | 45       | 45       | 45       | 57       | 57       | 57       | 57       | 57       |
|                                                | int.  | 57      | 57      | 57       | 57       | 57       | 57       | 75       | 75       | 75       | 75       | 75       |

\* **Continuous pressure:** Max. value of operating motor continuously.

\* **Intermittent pressure:** Max. value of operating motor in 6 seconds per minute.

\* **Peak pressure:** Max. value of operating motor in 0.6 second per minute.



# Performance Data

VNKE 65 [66.8 cm3/rev.]

|              |    | Pressure (MPa) |           |           |            |            |           |          |
|--------------|----|----------------|-----------|-----------|------------|------------|-----------|----------|
|              |    | 3.5            | 7         | 10.5      | 14         | 19         | Max. cont | Max. int |
| Flow (L/min) | 2  | 26<br>22       | 54<br>16  | 83<br>4   |            |            |           |          |
|              | 5  | 27<br>69       | 56<br>62  | 87<br>53  | 118<br>42  |            |           |          |
|              | 10 | 29<br>145      | 60<br>141 | 91<br>132 | 123<br>122 | 171<br>95  |           |          |
|              | 15 | 30<br>221      | 62<br>216 | 94<br>207 | 126<br>196 | 176<br>149 |           |          |
|              | 20 | 28<br>295      | 58<br>290 | 91<br>279 | 122<br>261 | 174<br>232 |           |          |
|              | 25 | 24<br>368      | 55<br>365 | 90<br>352 | 121<br>341 | 172<br>312 |           |          |
|              | 34 | 22<br>501      | 54<br>493 | 89<br>478 | 119<br>457 | 171<br>423 |           |          |
|              | 45 | 20<br>667      | 52<br>660 | 85<br>642 | 115<br>621 | 168<br>587 |           |          |
| Max. cont    |    |                |           |           |            |            |           |          |
| Max. int     | 57 | 15<br>842      | 46<br>835 | 80<br>814 | 112<br>789 | 163<br>735 |           |          |

VNKE 80 [81.3 cm3/rev.]

|              |    | Pressure (MPa) |           |            |            |            |           |          |
|--------------|----|----------------|-----------|------------|------------|------------|-----------|----------|
|              |    | 3.5            | 7         | 10.5       | 14         | 19         | Max. cont | Max. int |
| Flow (L/min) | 2  | 33<br>18       | 70<br>14  | 106<br>4   |            |            |           |          |
|              | 5  | 35<br>55       | 72<br>51  | 111<br>44  | 150<br>25  |            |           |          |
|              | 10 | 36<br>121      | 75<br>118 | 114<br>113 | 155<br>107 | 215<br>88  |           |          |
|              | 15 | 37<br>181      | 77<br>178 | 116<br>171 | 157<br>162 | 215<br>148 |           |          |
|              | 20 | 35<br>242      | 74<br>238 | 112<br>231 | 151<br>223 | 206<br>205 |           |          |
|              | 25 | 35<br>303      | 71<br>298 | 108<br>289 | 148<br>275 | 202<br>261 |           |          |
|              | 34 | 31<br>411      | 69<br>407 | 105<br>396 | 145<br>382 | 198<br>373 |           |          |
|              | 45 | 23<br>543      | 62<br>537 | 100<br>521 | 139<br>513 | 12<br>501  |           |          |
| Max. cont    |    |                |           |            |            |            |           |          |
| Max. int     | 57 | 18<br>689      | 55<br>681 | 98<br>665  | 134<br>649 | 186<br>618 |           |          |

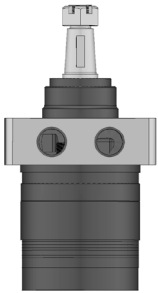
VNKE 100 [101.6 cm3/rev.]

|              |    | Pressure (MPa) |           |            |            |            |           |          |
|--------------|----|----------------|-----------|------------|------------|------------|-----------|----------|
|              |    | 3.5            | 7         | 10.5       | 14         | 19         | Max. cont | Max. int |
| Flow (L/min) | 2  | 40<br>15       | 82<br>11  | 126<br>4   |            |            |           |          |
|              | 5  | 41<br>44       | 83<br>36  | 150<br>28  | 206<br>12  |            |           |          |
|              | 10 | 42<br>97       | 91<br>95  | 138<br>94  | 177<br>81  | 230<br>54  |           |          |
|              | 15 | 42<br>147      | 91<br>144 | 138<br>137 | 185<br>124 | 257<br>93  |           |          |
|              | 20 | 38<br>195      | 88<br>192 | 136<br>182 | 180<br>169 | 244<br>138 |           |          |
|              | 25 | 39<br>244      | 89<br>241 | 142<br>230 | 191<br>221 | 268<br>194 |           |          |
|              | 34 | 31<br>331      | 79<br>328 | 131<br>323 | 179<br>308 | 250<br>273 |           |          |
|              | 45 | 21<br>439      | 70<br>436 | 119<br>433 | 168<br>419 | 241<br>383 |           |          |
| Max. cont    |    |                |           |            |            |            |           |          |
| Max. int     | 57 | 10<br>553      | 60<br>545 | 109<br>534 | 158<br>527 | 232<br>491 |           |          |

VNKE 125 [127 cm3/rev.]

|              |    | Pressure (MPa) |            |            |            |            |           |          |
|--------------|----|----------------|------------|------------|------------|------------|-----------|----------|
|              |    | 3.5            | 7          | 10.5       | 14         | 19         | Max. cont | Max. int |
| Flow (L/min) | 2  | 52<br>12       | 150<br>9   | 158<br>3   |            |            |           |          |
|              | 5  | 55<br>35       | 112<br>31  | 170<br>22  | 221<br>15  | 290<br>10  |           |          |
|              | 10 | 57<br>78       | 117<br>75  | 180<br>69  | 242<br>63  | 335<br>46  |           |          |
|              | 15 | 56<br>116      | 118<br>113 | 180<br>109 | 245<br>99  | 331<br>76  |           |          |
|              | 20 | 55<br>155      | 117<br>153 | 178<br>147 | 242<br>136 | 331<br>110 |           |          |
|              | 25 | 52<br>593      | 111<br>188 | 177<br>182 | 238<br>172 | 325<br>151 |           |          |
|              | 34 | 43<br>264      | 105<br>262 | 169<br>254 | 231<br>244 | 326<br>220 |           |          |
|              | 45 | 38<br>350      | 95<br>348  | 159<br>346 | 219<br>331 | 314<br>301 |           |          |
| Max. cont    |    |                |            |            |            |            |           |          |
| Max. int     | 57 | 21<br>441      | 176<br>439 | 141<br>431 | 280<br>417 | 302<br>384 |           |          |

Torque (N·m) 158  
Speed (rpm) 527



# Performance Data

VNKE 160 [157.2 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |    | 3.5       | 7          | 10.5       | 14         | 19         |
|--------------|----|-----------|------------|------------|------------|------------|
| Flow (L/min) | 2  | 64<br>10  | 132<br>8   | 199<br>2   |            |            |
|              | 5  | 68<br>28  | 138<br>26  | 208<br>19  | 281<br>10  |            |
|              | 10 | 71<br>62  | 147<br>60  | 221<br>56  | 303<br>53  | 419<br>38  |
|              | 15 | 72<br>93  | 148<br>91  | 255<br>87  | 307<br>79  | 426<br>61  |
|              | 20 | 71<br>126 | 148<br>123 | 223<br>118 | 305<br>110 | 422<br>95  |
|              | 25 | 62<br>157 | 140<br>155 | 218<br>152 | 296<br>141 | 415<br>129 |
|              | 34 | 56<br>214 | 134<br>211 | 211<br>206 | 287<br>197 | 408<br>181 |
|              | 45 | 47<br>283 | 127<br>281 | 205<br>275 | 281<br>266 | 391<br>241 |
|              | 57 | 36<br>355 | 97<br>352  | 182<br>346 | 260<br>336 | 370<br>311 |
| Max. cont    |    |           |            |            |            |            |
| Max. int     |    |           |            |            |            |            |

VNKE 200 [193.6 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |    | 3.5       | 7          | 10.5       | 14         | 19         |
|--------------|----|-----------|------------|------------|------------|------------|
| Flow (L/min) | 2  | 80<br>9   | 163<br>7   | 245<br>3   |            |            |
|              | 5  | 88<br>23  | 178<br>21  | 266<br>18  | 352<br>12  |            |
|              | 10 | 89<br>49  | 181<br>48  | 275<br>43  | 378<br>39  | 517<br>27  |
|              | 15 | 91<br>76  | 188<br>73  | 280<br>68  | 382<br>63  | 520<br>44  |
|              | 20 | 89<br>101 | 182<br>98  | 275<br>95  | 374<br>86  | 517<br>69  |
|              | 25 | 78<br>127 | 170<br>125 | 271<br>121 | 376<br>113 | 518<br>101 |
|              | 34 | 64<br>173 | 158<br>171 | 268<br>165 | 363<br>156 | 502<br>143 |
|              | 45 | 51<br>229 | 157<br>227 | 252<br>221 | 351<br>212 | 494<br>196 |
|              | 57 | 36<br>289 | 138<br>286 | 231<br>279 | 330<br>271 | 469<br>256 |
| Max. cont    |    |           |            |            |            |            |
| Max. int     |    |           |            |            |            |            |

VNKE 230 [226 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |    | 3.5       | 7          | 10.5       | 12         | 16.5       |
|--------------|----|-----------|------------|------------|------------|------------|
| Flow (L/min) | 2  | 97<br>7   | 191<br>4   | 280<br>2   |            |            |
|              | 5  | 101<br>18 | 199<br>14  | 301<br>8   | 348<br>4   |            |
|              | 10 | 103<br>43 | 214<br>42  | 325<br>40  | 378<br>36  | 230<br>54  |
|              | 15 | 104<br>65 | 215<br>63  | 327<br>59  | 375<br>52  | 257<br>93  |
|              | 20 | 101<br>86 | 210<br>84  | 321<br>81  | 371<br>75  | 244<br>138 |
|              | 25 | 95<br>108 | 201<br>106 | 316<br>102 | 364<br>94  | 268<br>194 |
|              | 34 | 82<br>147 | 188<br>145 | 308<br>141 | 358<br>135 | 250<br>273 |
|              | 45 | 55<br>197 | 158<br>195 | 276<br>191 | 329<br>186 | 241<br>383 |
|              | 57 | 19<br>247 | 130<br>244 | 256<br>240 | 301<br>230 | 232<br>491 |
| Max. cont    |    |           |            |            |            |            |
| Max. int     |    |           |            |            |            |            |

VNKE 250 [257 cm3/rev.]

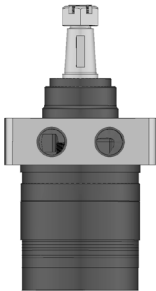
Pressure (MPa)

Max. cont Max. int

|              |    | 3.5       | 7          | 10.5       | 11         | 15.5       |
|--------------|----|-----------|------------|------------|------------|------------|
| Flow (L/min) | 2  | 112<br>6  | 207<br>3   | 309<br>1   |            |            |
|              | 5  | 115<br>18 | 218<br>14  | 320<br>8   | 348<br>4   |            |
|              | 10 | 113<br>39 | 235<br>38  | 358<br>35  | 379<br>31  | 543<br>23  |
|              | 15 | 113<br>58 | 234<br>56  | 357<br>53  | 381<br>45  | 542<br>3   |
|              | 20 | 111<br>77 | 233<br>75  | 356<br>72  | 376<br>65  | 541<br>48  |
|              | 25 | 109<br>97 | 228<br>95  | 354<br>89  | 371<br>81  | 532<br>69  |
|              | 34 | 91<br>131 | 213<br>128 | 346<br>123 | 364<br>116 | 521<br>103 |
|              | 45 | 89<br>174 | 211<br>172 | 345<br>165 | 361<br>157 | 518<br>135 |
|              | 57 | 73<br>216 | 208<br>213 | 339<br>205 | 342<br>197 | 487<br>184 |
| Max. cont    |    |           |            |            |            |            |
| Max. int     |    |           |            |            |            |            |

Torque (N·m) 250  
Speed (rpm) 311

# Performance Data



| VNKE 295 [287.8 cm3/rev.] |    |        |        |        | VNKE 315 [314.5 cm3/rev.] |    |        |        |        | VNKE 375 [370 cm3/rev.] |    |        |        |        |        |
|---------------------------|----|--------|--------|--------|---------------------------|----|--------|--------|--------|-------------------------|----|--------|--------|--------|--------|
| Pressure (MPa)            |    |        |        |        | Pressure (MPa)            |    |        |        |        | Pressure (MPa)          |    |        |        |        |        |
| Max. int                  |    |        |        |        | Max. int                  |    |        |        |        | Max. int                |    |        |        |        |        |
| 3.571114.5                |    |        |        |        | 3.571113.5                |    |        |        |        | 3.57912.5               |    |        |        |        |        |
| Flow (L/min)              | 5  | 12115  | 24314  | 36810  | 5095                      | 5  | 13611  | 2818   | 4273   |                         | 5  | 15110  | 3157   | 4123   |        |
|                           | 10 | 12533  | 25331  | 38127  | 52920                     | 10 | 13930  | 28729  | 43826  | 57420                   | 10 | 15525  | 32424  | 42721  | 60618  |
|                           | 15 | 12951  | 26150  | 39347  | 54741                     | 15 | 14147  | 29546  | 44843  | 58740                   | 15 | 16240  | 33139  | 43937  | 61332  |
|                           | 20 | 12768  | 25967  | 39063  | 54555                     | 20 | 13862  | 28761  | 44258  | 58753                   | 20 | 15853  | 32652  | 43449  | 60245  |
|                           | 25 | 12686  | 25584  | 38680  | 53969                     | 25 | 13178  | 28075  | 43171  | 56766                   | 25 | 15167  | 31665  | 42462  | 58958  |
|                           | 34 | 123116 | 248114 | 380110 | 53198                     | 34 | 117106 | 269104 | 42398  | 55791                   | 34 | 14191  | 30989  | 41785  | 58080  |
|                           | 45 | 115154 | 234153 | 368148 | 522136                    | 45 | 114141 | 253138 | 397132 | 535125                  | 45 | 138121 | 300119 | 408115 | 572107 |
|                           | 57 | 108196 | 227194 | 359187 | 514176                    | 57 | 86178  | 219173 | 383168 | 5055162                 | 57 | 118152 | 281150 | 393144 | 550136 |
|                           | 75 |        | 211254 | 349246 | 506231                    | 75 |        | 108235 | 287231 | 416219                  | 75 |        | 258199 | 369191 | 518183 |
| Torque (N·m) 506          |    |        |        |        |                           |    |        |        |        |                         |    |        |        |        |        |
| Speed (rpm) 231           |    |        |        |        |                           |    |        |        |        |                         |    |        |        |        |        |



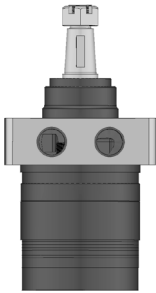
Technical drawing of a 1000 Series 1/2" component, showing a cross-section of a cylindrical body with a flange and a central threaded section.

**Code:** Port A,B  
**WS:** 7/8-14 O-ring  
**WD:** G1/2  
**WM:** M22x1.5

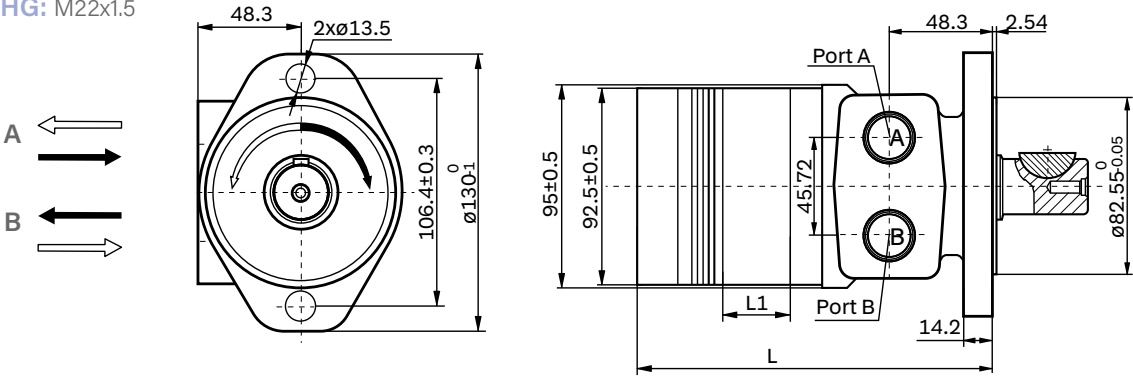
[illegible]

|                         |     |     |     |     |       |      |     |     |     |     |     |
|-------------------------|-----|-----|-----|-----|-------|------|-----|-----|-----|-----|-----|
| Displacement (cm3/rev.) | 65  | 80  | 100 | 125 | 160   | 200  | 230 | 250 | 295 | 315 | 375 |
| L1 (mm)                 | 13  | 16  | 20  | 25  | 30.5  | 38.1 | 44  | 50  | 56  | 62  | 74  |
| L (mm)                  | 149 | 152 | 156 | 161 | 166.5 | 174  | 180 | 186 | 192 | 198 | 210 |
| Weight (kg)             | 6.4 | 6.5 | 6.8 | 7   | 7.3   | 7.7  | 8.2 | 8.6 | 9   | 9.3 | 9.8 |

# VNKE Dimensions and Mounting Data

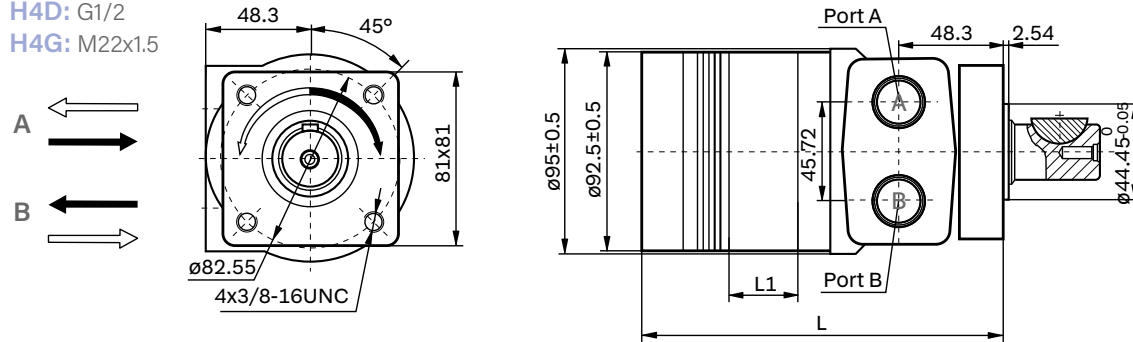


Code: Port A, B  
HS: 7/8-14 UNF  
HP: 1/2-14 NPTF  
HD: G1/2  
HG: M22x1.5



| Displacement (cm3/rev.) | 65  | 80  | 100 | 125 | 160   | 200  | 230 | 250 | 295 | 315 | 375 |
|-------------------------|-----|-----|-----|-----|-------|------|-----|-----|-----|-----|-----|
| L1 (mm)                 | 13  | 16  | 20  | 25  | 30.5  | 38.1 | 44  | 50  | 56  | 62  | 74  |
| L (mm)                  | 149 | 152 | 156 | 161 | 166.5 | 174  | 180 | 186 | 192 | 198 | 210 |
| Weight (kg)             | 6.4 | 6.5 | 6.8 | 7   | 7.3   | 7.7  | 8.2 | 8.6 | 9   | 9.3 | 9.8 |

Code: Port A, B  
H4S: 7/8-14 UNF  
H4P: 1/2-14 NPTF  
H4D: G1/2  
H4G: M22x1.5

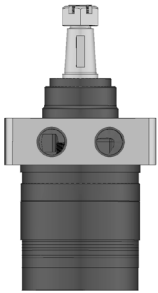


| Displacement (cm3/rev.) | 65  | 80  | 100 | 125 | 160   | 200  | 230 | 250 | 295 | 315 | 375 |
|-------------------------|-----|-----|-----|-----|-------|------|-----|-----|-----|-----|-----|
| L1 (mm)                 | 13  | 16  | 20  | 25  | 30.5  | 38.1 | 44  | 50  | 56  | 62  | 74  |
| L (mm)                  | 149 | 152 | 156 | 161 | 166.5 | 174  | 180 | 186 | 192 | 198 | 210 |
| Weight (kg)             | 6.4 | 6.5 | 6.8 | 7   | 7.3   | 7.7  | 8.2 | 8.6 | 9   | 9.3 | 9.8 |



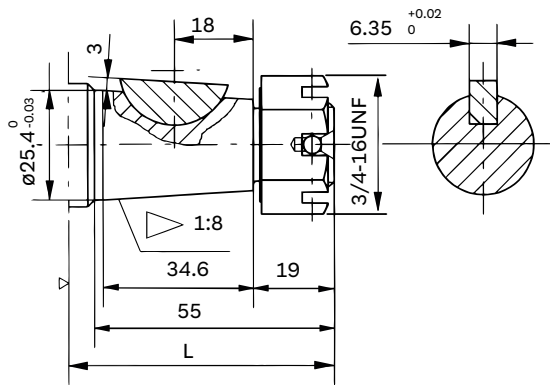
# VNKE Shaft Extensions

## Dimensions Data



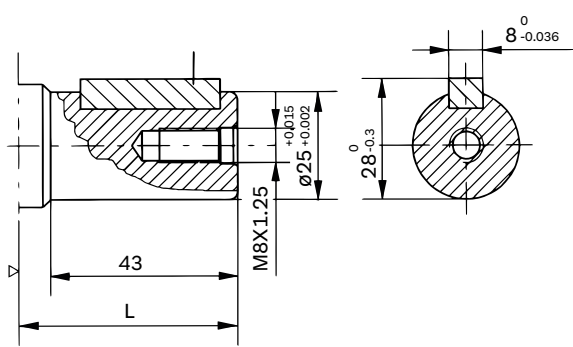
**Shaft T:**

Cone shaft Ø25.4  
Woodruff key Ø25.4x6.35



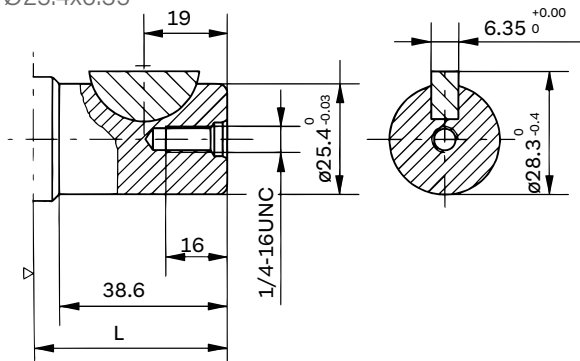
**Shaft A:**

Cylindrical shaft Ø25  
Parallel key 8x7x32



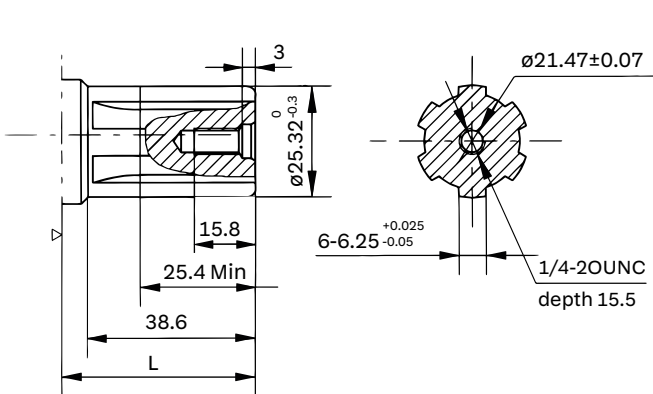
**Shaft K:**

Cylindrical shaft Ø25.4  
Woodruff key Ø25.4x6.35



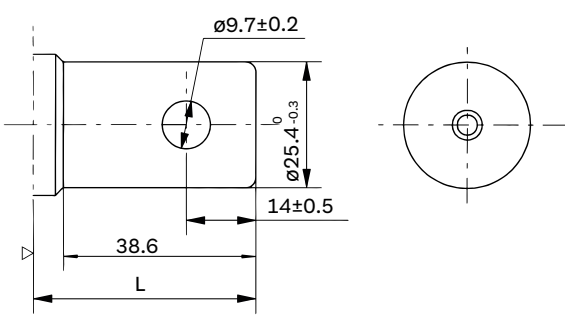
**Shaft S:**

Splined SEA 6B

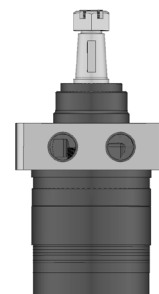


**Shaft H:**

Cylindrical shaft Ø25.4  
With hole Ø9.7



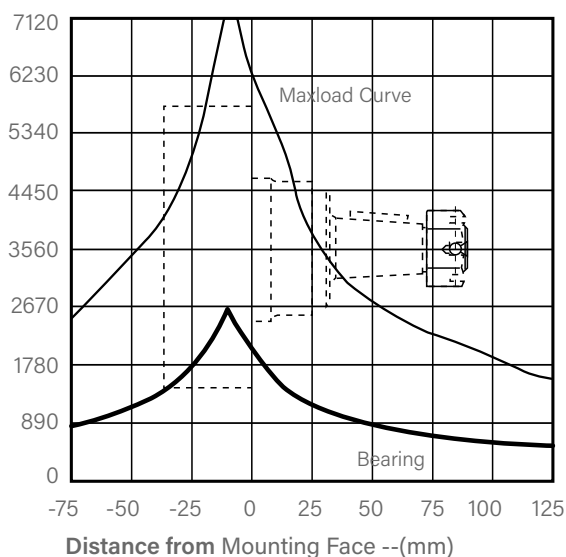
|         |          | Dimension L |      |      |      |      |
|---------|----------|-------------|------|------|------|------|
| Shaft   | Mounting | T           | A    | K    | S    | H    |
| WS      |          | 90.2        | 78.2 | 73.9 | 73.9 | 73.9 |
| HS/HP   |          |             |      |      |      |      |
| H4S/H4P |          | 61          | 49   | 44.7 | 44.7 | 44.7 |
| HM      |          |             |      |      |      |      |



# Permissible Shaft Loads

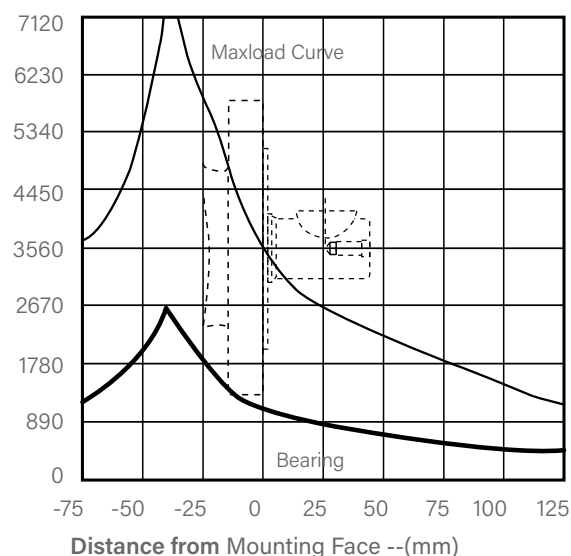
## VNKE for Wheel Mounting

Side Load-(daN)



## VNKE for Other Mounting

Side Load-(daN)

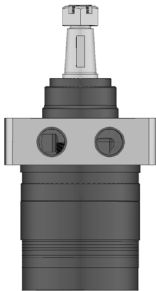


The bearing curve represents allowable bearing loads for an L10 bearing life at  $3 \times 10^6$  revolutions.

The maximum load curve is defined by bearing static load capacity.

This curve should not be exceeded at any time including shock loads.

# Order Information



|       |       |                                                                                  |                                                          |                    |                  |                    |
|-------|-------|----------------------------------------------------------------------------------|----------------------------------------------------------|--------------------|------------------|--------------------|
| 1     | 2     | 3                                                                                | 4                                                        | 5                  | 6                | 7                  |
| VNKE  |       |                                                                                  |                                                          |                    |                  |                    |
| Pos.1 | 2     | 3                                                                                | 4                                                        | 5                  | 6                | 7                  |
| Code  | Disp. | Flange, Pilot, Ports                                                             | Output Shaft                                             | Rotation Direction | Paint            | Unusually Function |
| Omit  |       | WS<br>4-Ø13.5 Wheel - flange,Pilot Ø60.3x7<br>Port 7/8-14 O-ring                 |                                                          |                    |                  |                    |
|       |       | WD<br>4-Ø13.5 Wheel -flange,Pilot<br>Ø60.3x7 Port G1/2                           |                                                          |                    |                  |                    |
|       |       | WM<br>4-Ø13.5 Wheel -flange,Pilot Ø60.3x7<br>Port M22x1.5                        |                                                          |                    |                  |                    |
|       | 65    | HM<br>2-Ø13.5 Rhomb-flange,Pilot Ø82.5x2.54<br>Port 1/2" Manifold mount 4x5/8-18 | T<br>Cone-Shaft Ø25.4,<br>Woodruff key Ø25.4x6.35        |                    |                  |                    |
|       | 80    |                                                                                  |                                                          |                    |                  |                    |
|       | 100   | HS<br>2-Ø13.5 Rhomb-flange,Pilot<br>Ø82.5x2.54 Port 7/8-14 O-ring                | A<br>Cylindrical Shaft Ø25,<br>Parallel key 8x7x32       | 00                 |                  |                    |
|       | 125   |                                                                                  |                                                          |                    |                  |                    |
|       | 160   | HP<br>2-Ø13.5 Rhomb-flange,Pilot Ø82.5x2.54<br>Port 1/2-14 NPFT Pipe             | K<br>Cylindrical Shaft Ø25.4,<br>Woodruff key Ø25.4x6.35 | Omit<br>Standard   | Omit<br>Standard | Omit<br>Standard   |
|       | 200   |                                                                                  |                                                          |                    |                  |                    |
|       | 230   | HD<br>2-Ø13.5 Rhomb-flange,Pilot<br>Ø82.5x2.54 Port G1/2                         |                                                          | R<br>Opposite      | B<br>Opposite    |                    |
|       | 250   | HG<br>2-Ø13.5 Rhomb-flange,Pilot<br>Ø82.5x2.54 Port M22x1.5                      | S<br>Shaft Ø25.4,<br>Splined key SAE 6B                  |                    | S                |                    |
|       | 295   |                                                                                  |                                                          |                    |                  |                    |
|       | 315   | H4S<br>4-3/8-16 Square- flange,Pilot<br>Ø44.4x2.54Port 7/8-14 O-ring             | H<br>Cylindrical Shaft Ø25.4,<br>Pin Hole Ø9.7           |                    |                  |                    |
|       | 375   | H4P<br>4-3/8-16 Square- flange,Pilot<br>Ø44.4x2.54 Port 1/2-14 NPFT Pipe         |                                                          |                    |                  |                    |
|       |       | H4D<br>4-3/8-16 Square- flange,Pilot<br>Ø44.4x2.54 Port G1/2                     |                                                          |                    |                  |                    |
|       |       | H4G<br>4-3/8-16 Square- flange,Pilot<br>Ø44.4x2.54Port M22x1.5                   |                                                          |                    |                  |                    |

**Note:** When the table is used, please fill the code of left rows in the table and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports. If the specification is not in the table or you have specific requirements, please contract us.

# VNKG Series Hydraulic Motor

## INTRODUCTION

VNKG series motor adapt the advanced Geroler gear set designed with high speed distribution flow and high pressure, and have good stability in low speed, and can keep high volume efficiency.

The unit can be supplied the individual variant in operating multifunction in accordance with requirement of applications.

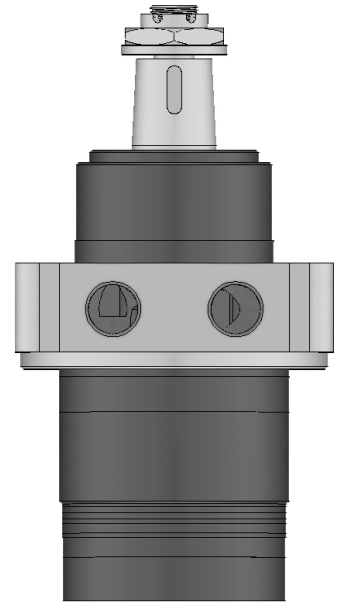
## CHARACTERISTIC FEATURES

\* **Advanced manufacturing** devices for the Geroler gear set, which use low pressure of start-up, provide smooth and reliable operation and high efficiency.

\* **The output shaft** adapts in needle roller bearings that permit high axial and radial forces. The case can offers capacities of high pressure and high torque in the wide of applications.

\* **Advanced design** in high speed distribution flow, which can automatically compensate in operating with high volume efficiency and long life, provide smooth and reliable operation.

\* **Lowest leakage rate**, most accurate timing methods. Commutator rotates 6x faster than shaft speed. It make the distribution in a high precision reduces life-cycle cost, maintain high volume efficiencies and can run very smoothly at low speed, gear box not required.



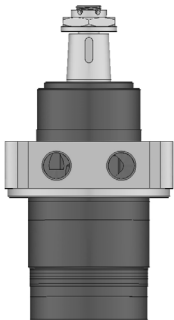
## SPECIFICATION Main Specification

| Type                                           |       | VNKG 65 | VNKG 80 | VNKG 100 | VNKG 125 | VNKG 160 | VNKG 200 | VNKG 230 | VNKG 250 | VNKG 295 | VNKG 315 | VNKG 375 |
|------------------------------------------------|-------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Geometric displacement (cm <sup>3</sup> /rev.) |       | 66.8    | 81.3    | 101.6    | 127      | 157.2    | 193.6    | 226      | 257      | 287.8    | 314.5    | 370      |
| Max. speed (rpm)                               | cont. | 667     | 543     | 439      | 350      | 283      | 229      | 247      | 216      | 196      | 178      | 152      |
|                                                | int.  | 842     | 689     | 553      | 441      | 355      | 289      | 328      | 287      | 254      | 235      | 199      |
| Max. torque (N·m)                              | cont. | 126     | 157     | 191      | 245      | 307      | 382      | 378      | 381      | 393      | 448      | 439      |
|                                                | int.  | 176     | 215     | 268      | 335      | 422      | 520      | 528      | 543      | 547      | 587      | 613      |
| Max. output (kW)                               | cont. | 8.3     | 8.8     | 7.9      | 8.9      | 8.9      | 9        | 9.9      | 9.3      | 8.7      | 8        | 7.6      |
|                                                | int.  | 13.9    | 14.4    | 13.5     | 14.1     | 15.6     | 15.7     | 17.9     | 16.5     | 15.6     | 14.3     | 14       |
| Max. pressure (MPa)                            | cont. | 14      | 14      | 14       | 14       | 14       | 14       | 12       | 11       | 10       | 10       | 9        |
|                                                | int.  | 19      | 19      | 19       | 19       | 19       | 19       | 165      | 15.5     | 14.5     | 13.5     | 12.5     |
|                                                | peak. | 20      | 20      | 20       | 20       | 20       | 20       | 18       | 18       | 17       | 16       | 16       |
| Max. flow (L/min)                              | cont. | 45      | 45      | 45       | 45       | 45       | 45       | 57       | 57       | 57       | 57       | 57       |
|                                                | int.  | 57      | 57      | 57       | 57       | 57       | 57       | 75       | 75       | 75       | 75       | 75       |

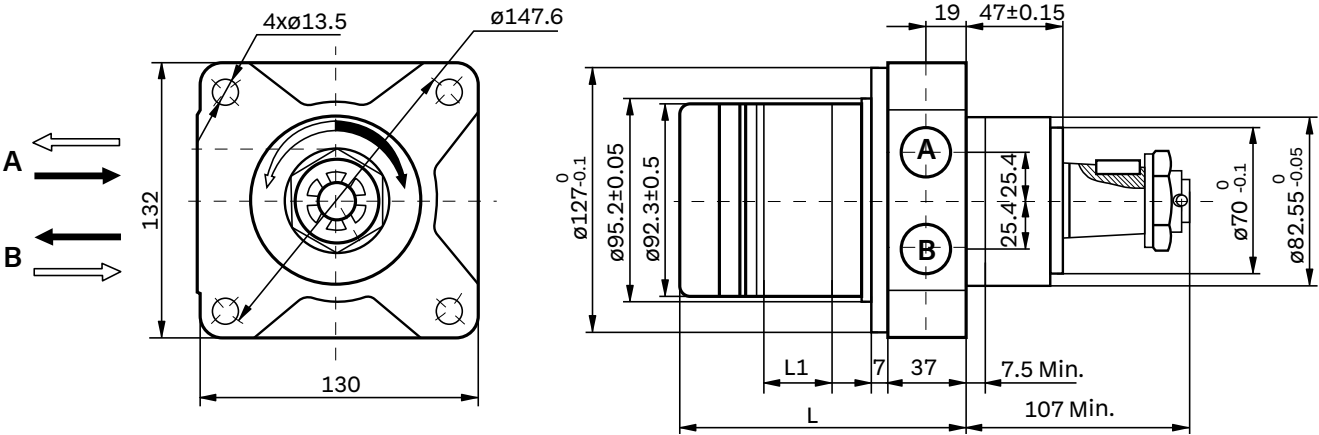
\* **Continuous pressure:** Max. value of operating motor continuously.

\* **Intermittent pressure:** Max. value of operating motor in 6 seconds per minute.

\* **Peak pressure:** Max. value of operating motor in 0.6 second per minute.



# VNKJ Dimensions and Mounting Data



### Wheel Mount

Code: WS Ports A, B 7/8-14 O-ring

Code: WD Ports A, B G1/2

Code: WM Ports A, B M22x1.5

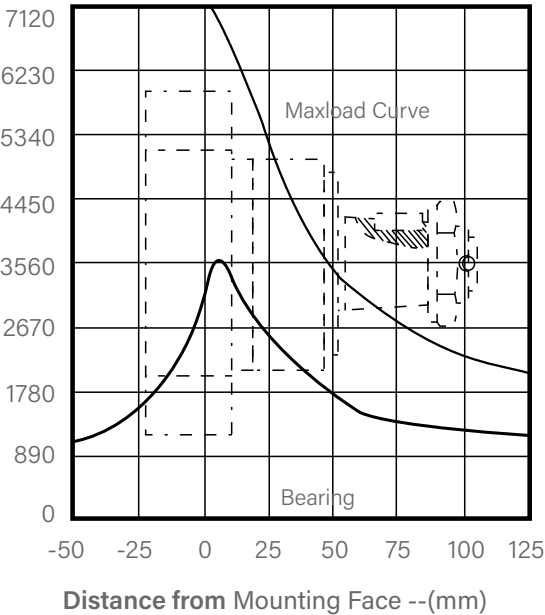
| Displacement (cm3/rev.) | 65  | 80  | 100  | 125  | 160   | 200  | 230  | 250  | 295  | 315  | 375  |
|-------------------------|-----|-----|------|------|-------|------|------|------|------|------|------|
| L1 (mm)                 | 13  | 16  | 20   | 25   | 30.5  | 38.1 | 44   | 50   | 56   | 62   | 74   |
| L (mm)                  | 115 | 118 | 122  | 127  | 132.5 | 140  | 146  | 152  | 158  | 164  | 176  |
| Weight (kg)             | 9   | 9.1 | 10.4 | 10.6 | 10.9  | 11.3 | 11.8 | 12.2 | 12.6 | 12.9 | 13.4 |

The bearing curve represents allowable bearing loads for an L10 bearing life at 3x106 revolutions.

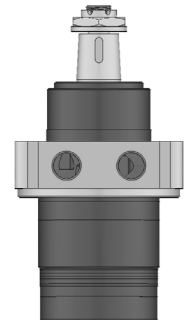
The maximum load curve is defined by bearing static load capacity.

This curve should not be exceeded at any time including shock loads.

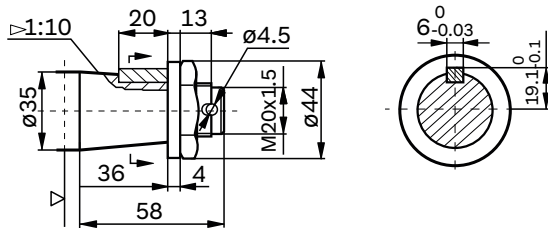
Side Load-(daN)



# VNCKJ Shaft Extensions for Dimensions Data



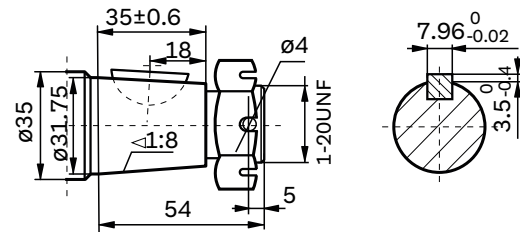
### Shaft T1



#### Shaft T1:

Cone-shaft Ø35  
Parallel key B6x6x20  
Tightening torque: 200±10Nm

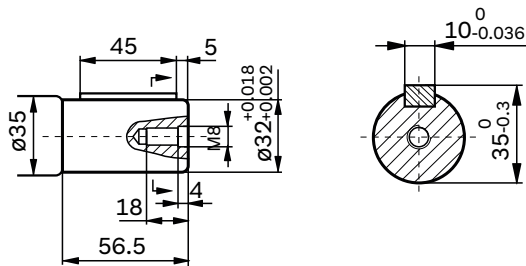
### Shaft T2



#### Shaft T2:

Cone-shaft Ø31.75  
Woodruff key Ø25.4x7.96

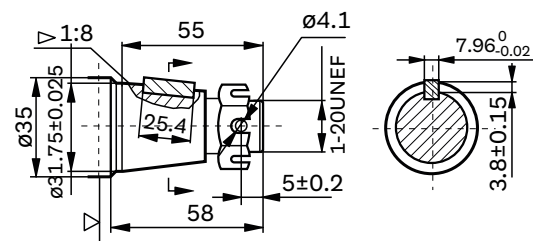
### Shaft B



#### Shaft B:

Cylindrical shaft Ø32  
Parallel key 10x8x45

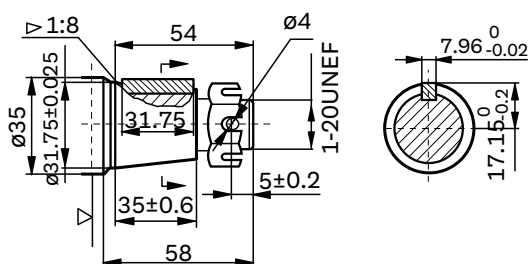
### Shaft T4



#### Shaft T4:

Cone-shaft Ø31.75  
Parallel key 7.96x7.96x25.4  
Tightening torque: 200±10Nm

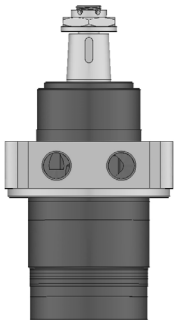
### Shaft T3



#### Shaft T3:

Cone-shaft Ø31.75  
Parallel key 7.96x7.96x31.75  
Tightening torque: 200±10Nm

# VNCKJ Shaft Extensions for Dimensions Data



| Pos.1 | 2     | 3                                                                                                                                                                             | 4            | 5                  | 6              | 7                  |
|-------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------|----------------|--------------------|
| Code  | Disp. | Flange, Pilot, Ports                                                                                                                                                          | Output Shaft | Rotation direction | Paint          | Unusually Function |
| Omit  | 65    | WS<br>4-Ø13.5 Wheel-flangeØPilot<br>Ø82.55x7, Port 7/8-14 O-ring<br>4-Ø13.5 Wheel-flangeØPilot<br>Ø82.55x7, Port G1/2<br>4-Ø13.5 Wheel-flangeØPilot<br>Ø82.55x7, Port M22x1.5 | T1           | Omit<br>Standard   | 00<br>No paint | Omit<br>Standard   |
|       | 80    |                                                                                                                                                                               | T2           |                    |                |                    |
|       | 100   |                                                                                                                                                                               | T3           |                    |                |                    |
|       | 125   |                                                                                                                                                                               | T4           |                    |                |                    |
|       | 160   |                                                                                                                                                                               | B            |                    |                |                    |
|       | 200   |                                                                                                                                                                               |              |                    |                |                    |
|       | 230   |                                                                                                                                                                               |              |                    |                |                    |
|       | 250   |                                                                                                                                                                               |              |                    |                |                    |
|       | 295   |                                                                                                                                                                               |              |                    |                |                    |
|       | 315   |                                                                                                                                                                               |              |                    |                |                    |
| 375   |       |                                                                                                                                                                               |              |                    |                |                    |

**Note:** When the table is used, please fill the code of left rows in the table and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports. If the specification is not in the table or you have specific requirements, please contact us.

# VNKG2 Series Hydraulic Motor

## INTRODUCTION

**VNKG2 series motor** adapt the advanced Geroler gear set designed with high speed distribution flow and high pressure, and have good stability in low speed , and can keep high volume efficiency.

The unit can be supplied the individual variant in operating multifunction in accordance with requirement of applications.

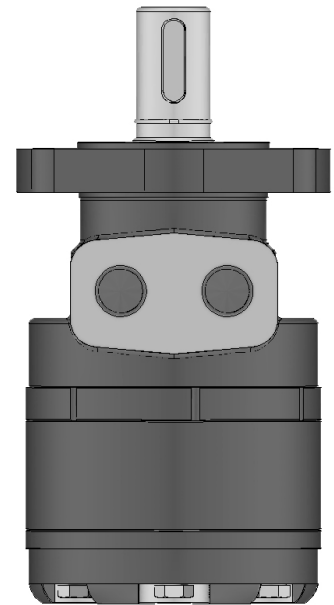
## CHARACTERISTIC FEATURES

\* **Advanced manufacturing** devices for the Geroler gear set, which use low pressure of start-up, provide smooth and reliable operation and high efficiency.

\* **The output shaft** adapts in needle roller bearings that permit high axial and radial forces. The case can offers capacities of high pressure and high torque in the wide of applications.

\* **Advanced design** in high speed distribution flow, which can automatically compensate in operating with high volume efficiency and long life , provide smooth and reliable operation.

\* **Lowest leakage rate**, most accurate timing methods. Commutator rotates 6x faster than shaft speed. It make the distribution in a high precision reduces life-cycle cost, maintain high volume efficiencies and can run very smoothly at low speed, gear box not required.



## SPECIFICATION Main Specification

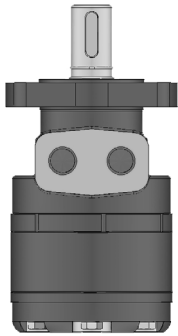
| Type                                                |       | VNKG2 125 | VNKG2 160 | VNKG2 200 | VNKG2 230 | VNKG2 250 | VNKG2 300 | VNKG2 350 | VNKG2 375 | VNKG2 400 | VNKG2 475 | VNKG2 540 | VNKG2 650 | VNKG2 750 |
|-----------------------------------------------------|-------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>Geometric displacement (cm<sup>3</sup>/rev.)</b> |       | 118       | 156       | 196       | 228       | 257       | 296       | 345       | 371       | 405       | 462       | 540       | 647       | 745       |
| <b>Max. speed (rpm)</b>                             | cont. | 360       | 375       | 330       | 290       | 290       | 250       | 220       | 200       | 185       | 160       | 140       | 115       | 100       |
|                                                     | int.  | 490       | 470       | 425       | 365       | 350       | 315       | 270       | 240       | 220       | 195       | 170       | 138       | 120       |
| <b>Max. torque (N·m)</b>                            | cont. | 325       | 450       | 530       | 625       | 700       | 810       | 905       | 990       | 1010      | 1085      | 980       | 1015      | 1050      |
|                                                     | int.  | 380       | 525       | 600       | 710       | 790       | 930       | 1035      | 1140      | 1180      | 1180      | 1240      | 1250      | 1180      |
|                                                     | peak. | 450       | 590       | 750       | 870       | 980       | 1120      | 1285      | 1360      | 1360      | 1260      | 1380      | 1380      | 1370      |
| <b>Max. output (kW)</b>                             | cont. | 12.0      | 15.0      | 15.5      | 16.0      | 17.5      | 18.0      | 17.5      | 16.5      | 15.5      | 14.5      | 11.5      | 10.0      | 8.0       |
|                                                     | int.  | 14.0      | 17.5      | 18.0      | 19.0      | 20.0      | 21.0      | 20.0      | 19.0      | 18.0      | 16.5      | 15.0      | 12.0      | 10.0      |
| <b>Max. pressure drop (MPa)</b>                     | cont. | 20.5      | 20.5      | 20.5      | 20.5      | 20.5      | 20.5      | 20.5      | 20.5      | 19        | 17.5      | 14        | 12        | 10.5      |
|                                                     | int.  | 24        | 24        | 24        | 24        | 24        | 24        | 24        | 24        | 22.5      | 19        | 17.5      | 15.5      | 12        |
|                                                     | peak. | 27.6      | 27.6      | 27.6      | 27.6      | 27.6      | 27.6      | 27.6      | 27.6      | 25        | 20.5      | 20.5      | 17.5      | 14        |
| <b>Max. flow (L/min)</b>                            | cont. | 45        | 60        | 70        | 70        | 75        | 80        | 80        | 75        | 75        | 75        | 75        | 75        | 75        |
|                                                     | int.  | 60        | 75        | 85        | 85        | 90        | 95        | 95        | 90        | 90        | 90        | 90        | 90        | 90        |

\* **Continuous pressure:** Max. value of operating motor continuously.

\* **Intermittent pressure:** Max. value of operating motor in 6 seconds per minute.

\* **Peak pressure:** Max. value of operating motor in 0.6 second per minute.





# Performance Data

VNKG2 125 [118 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

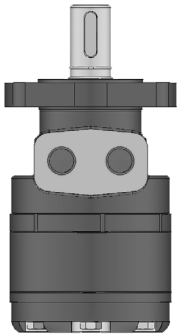
|              |          | 1.75     | 3.5       | 7          | 10.5       | 14         | 17.5       | 20.5       | 24         |
|--------------|----------|----------|-----------|------------|------------|------------|------------|------------|------------|
| Flow (L/min) | 2        | 20<br>14 | 50<br>13  | 96<br>11   | 137<br>7   |            |            |            |            |
|              | 4        | 24<br>28 | 53<br>26  | 110<br>24  | 166<br>19  | 221<br>13  |            |            |            |
|              | 8        |          | 55<br>60  | 113<br>54  | 174<br>50  | 225<br>45  | 266<br>39  | 294<br>35  | 336<br>26  |
|              | 15       |          | 53<br>115 | 114<br>110 | 180<br>100 | 234<br>96  | 275<br>90  | 326<br>84  | 348<br>76  |
|              | 25       |          | 48<br>194 | 110<br>185 | 164<br>173 | 226<br>168 | 272<br>160 | 323<br>155 | 352<br>149 |
|              | 34       |          |           | 108<br>276 | 166<br>260 | 220<br>244 | 278<br>232 | 315<br>225 | 373<br>217 |
|              | 45       |          |           | 98<br>362  | 160<br>350 | 215<br>342 | 271<br>325 | 308<br>322 | 369<br>322 |
|              | 53       |          |           | 90<br>423  | 152<br>418 | 208<br>404 | 265<br>399 | 304<br>371 |            |
|              | 60       |          |           | 82<br>488  | 141<br>472 | 205<br>455 | 260<br>442 | 300<br>421 |            |
|              | Max. int |          |           |            |            |            |            |            |            |

VNKG2 160 [156 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |          | 1.75     | 3.5       | 7          | 10.5       | 14         | 17.5       | 20.5       | 24         |
|--------------|----------|----------|-----------|------------|------------|------------|------------|------------|------------|
| Flow (L/min) | 2        | 35<br>8  | 74<br>4   | 146<br>3   | 218<br>3   | 298<br>2   |            |            |            |
|              | 4        | 29<br>22 | 78<br>19  | 157<br>18  | 235<br>16  | 316<br>14  | 370<br>13  | 424<br>8   |            |
|              | 8        | 35<br>47 | 78<br>44  | 158<br>42  | 236<br>40  | 312<br>37  | 373<br>34  | 450<br>32  | 526<br>27  |
|              | 15       | 37<br>93 | 74<br>90  | 155<br>86  | 234<br>84  | 310<br>82  | 368<br>79  | 440<br>75  | 517<br>69  |
|              | 25       |          | 68<br>155 | 152<br>151 | 227<br>147 | 308<br>142 | 364<br>137 | 436<br>131 | 499<br>124 |
|              | 34       |          | 68<br>214 | 152<br>213 | 227<br>210 | 308<br>204 | 364<br>198 | 436<br>191 | 499<br>184 |
|              | 45       |          | 64<br>282 | 143<br>280 | 218<br>275 | 296<br>268 | 360<br>263 | 425<br>256 | 481<br>245 |
|              | 53       |          |           | 135<br>330 | 216<br>327 | 293<br>322 | 357<br>315 | 421<br>306 | 476<br>296 |
|              | 60       |          |           | 122<br>379 | 207<br>376 | 284<br>368 | 350<br>362 | 416<br>356 | 467<br>345 |
|              | 68       |          |           | 109<br>423 | 196<br>419 | 273<br>414 | 345<br>406 | 396<br>394 |            |
|              | 75       |          |           | 104<br>472 | 188<br>466 | 270<br>460 | 337<br>450 | 390<br>436 |            |
|              | Max. int |          |           |            |            |            |            |            |            |



# Performance Data

VNKG2 200 [196 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |    | 1.75     | 3.5       | 7          | 10.5       | 14         | 17.5       | 20.5       | 24         |
|--------------|----|----------|-----------|------------|------------|------------|------------|------------|------------|
| Flow (L/min) | 2  | 39<br>8  | 88<br>4   | 132<br>4   | 286<br>3   | 370<br>2   |            |            |            |
|              | 4  | 42<br>16 | 85<br>14  | 188<br>13  | 270<br>11  | 361<br>10  | 427<br>9   | 506<br>6   |            |
|              | 8  | 43<br>35 | 90<br>32  | 192<br>29  | 291<br>28  | 367<br>27  | 450<br>25  | 529<br>23  | 600<br>19  |
|              | 15 | 38<br>74 | 92<br>71  | 196<br>68  | 298<br>64  | 381<br>60  | 462<br>58  | 530<br>55  | 602<br>50  |
|              | 25 |          | 82<br>124 | 188<br>121 | 283<br>117 | 377<br>113 | 456<br>108 | 528<br>103 | 605<br>92  |
|              | 34 |          | 79<br>170 | 183<br>169 | 270<br>167 | 362<br>160 | 447<br>154 | 515<br>146 | 591<br>135 |
|              | 45 |          |           | 163<br>223 | 259<br>218 | 352<br>212 | 441<br>208 | 510<br>199 | 593<br>189 |
|              | 53 |          |           | 149<br>260 | 256<br>258 | 350<br>254 | 440<br>248 | 501<br>241 | 582<br>230 |
|              | 60 |          |           | 132<br>299 | 248<br>292 | 336<br>284 | 432<br>276 | 497<br>272 | 575<br>263 |
|              | 68 |          |           | 120<br>336 | 230<br>332 | 330<br>327 | 412<br>319 | 486<br>310 | 570<br>301 |
| Max. cont    | 75 |          |           | 108<br>375 | 208<br>372 | 311<br>365 | 403<br>358 | 480<br>350 |            |
| Max. int     | 85 |          |           |            | 184<br>425 | 280<br>420 | 380<br>411 | 462<br>390 |            |

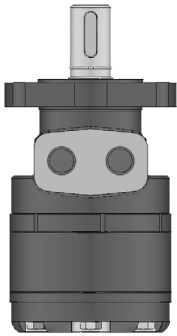
Torque (N•m) 380  
Speed (rpm) 411

VNKG2 230 [228 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |    | 1.75     | 3.5        | 7          | 10.5       | 14         | 17.5       | 20.5       | 24         |
|--------------|----|----------|------------|------------|------------|------------|------------|------------|------------|
| Flow (L/min) | 2  | 44<br>6  | 90<br>4    | 182<br>3   | 291<br>2   | 374<br>1   |            |            |            |
|              | 4  | 48<br>15 | 100<br>13  | 216<br>11  | 310<br>11  | 405<br>9   | 484<br>7   | 549<br>3   |            |
|              | 8  | 50<br>31 | 104<br>29  | 212<br>27  | 320<br>25  | 421<br>23  | 518<br>20  | 603<br>16  | 700<br>10  |
|              | 15 | 44<br>63 | 106<br>61  | 207<br>58  | 318<br>55  | 426<br>52  | 529<br>47  | 623<br>41  | 712<br>34  |
|              | 25 |          | 101<br>103 | 209<br>100 | 324<br>96  | 428<br>92  | 532<br>87  | 620<br>81  | 705<br>71  |
|              | 34 |          | 88<br>145  | 205<br>143 | 316<br>139 | 421<br>133 | 522<br>126 | 623<br>120 | 702<br>109 |
|              | 45 |          |            | 186<br>192 | 294<br>187 | 422<br>182 | 507<br>176 | 595<br>170 | 688<br>160 |
|              | 53 |          |            | 175<br>226 | 290<br>221 | 393<br>215 | 496<br>208 | 584<br>203 | 678<br>194 |
|              | 60 |          |            | 152<br>256 | 270<br>253 | 390<br>248 | 485<br>242 | 569<br>235 | 661<br>222 |
|              | 68 |          |            | 140<br>292 | 265<br>288 | 351<br>283 | 482<br>278 | 563<br>273 | 642<br>256 |
| Max. cont    | 75 |          |            | 124<br>324 | 235<br>321 | 344<br>316 | 448<br>308 | 552<br>300 |            |
| Max. int     | 85 |          |            |            | 207<br>366 | 335<br>360 | 442<br>351 | 546<br>338 |            |



# Performance Data

VNKG2 250 [257 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

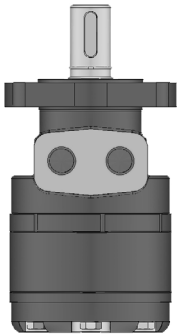
|              |    | 1.75     | 3.5       | 7          | 10.5       | 14         | 17.5       | 20.5       | 24         |
|--------------|----|----------|-----------|------------|------------|------------|------------|------------|------------|
| Flow (L/min) | 2  | 48<br>5  | 111<br>2  |            |            |            |            |            |            |
|              | 4  | 54<br>12 | 113<br>11 | 237<br>10  | 362<br>9   | 471<br>8   | 570<br>6   | 642<br>3   |            |
|              | 8  | 54<br>27 | 115<br>26 | 244<br>24  | 366<br>22  | 482<br>20  | 587<br>18  | 688<br>14  |            |
|              | 15 | 50<br>57 | 113<br>56 | 256<br>54  | 367<br>51  | 485<br>48  | 591<br>45  | 692<br>43  | 794<br>37  |
|              | 25 | 44<br>95 | 114<br>93 | 241<br>90  | 360<br>86  | 488<br>82  | 593<br>77  | 699<br>72  | 782<br>63  |
|              | 34 |          | 95<br>129 | 226<br>125 | 348<br>121 | 481<br>116 | 590<br>111 | 686<br>106 | 774<br>96  |
|              | 45 |          | 77<br>174 | 215<br>173 | 246<br>170 | 468<br>166 | 572<br>161 | 674<br>155 | 779<br>143 |
|              | 53 |          | 66<br>203 | 200<br>202 | 325<br>200 | 448<br>196 | 564<br>190 | 657<br>184 | 756<br>175 |
|              | 60 |          |           | 180<br>232 | 296<br>229 | 438<br>225 | 550<br>220 | 642<br>215 | 741<br>202 |
|              | 68 |          |           | 162<br>262 | 294<br>261 | 415<br>257 | 548<br>250 | 637<br>241 | 730<br>228 |
| Max. cont    | 75 |          |           | 137<br>290 | 274<br>289 | 388<br>285 | 520<br>280 | 618<br>273 | 726<br>260 |
| Max. int     | 85 |          |           | 130<br>328 | 261<br>326 | 370<br>322 | 509<br>316 | 604<br>307 |            |
|              | 90 |          |           | 85<br>348  | 224<br>347 | 358<br>344 | 490<br>336 |            |            |

VNKG2 300 [296 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |    | 1.75      | 3.5        | 7          | 10.5       | 14         | 17.5       | 20.5       | 24         |
|--------------|----|-----------|------------|------------|------------|------------|------------|------------|------------|
| Flow (L/min) | 2  | 50<br>3   | 93<br>1    |            |            |            |            |            |            |
|              | 4  | 62<br>11  | 141<br>10  | 294<br>9   | 429<br>8   | 502<br>7   | 618<br>4   |            |            |
|              | 8  | 63<br>22  | 147<br>21  | 298<br>20  | 432<br>19  | 565<br>16  | 667<br>13  | 761<br>9   | 819<br>5   |
|              | 15 | 66<br>48  | 144<br>47  | 305<br>45  | 427<br>43  | 568<br>39  | 671<br>33  | 810<br>28  | 894<br>20  |
|              | 25 | 59<br>82  | 138<br>81  | 289<br>80  | 420<br>76  | 552<br>71  | 676<br>64  | 791<br>56  | 932<br>44  |
|              | 34 | 48<br>113 | 130<br>112 | 297<br>110 | 393<br>107 | 562<br>102 | 689<br>96  | 805<br>86  | 926<br>73  |
|              | 45 |           | 96<br>150  | 268<br>149 | 385<br>148 | 527<br>143 | 636<br>135 | 753<br>124 | 880<br>112 |
|              | 53 |           | 76<br>177  | 242<br>176 | 383<br>175 | 524<br>173 | 631<br>165 | 758<br>152 | 900<br>138 |
|              | 60 |           | 64<br>200  | 225<br>199 | 362<br>198 | 506<br>193 | 627<br>186 | 753<br>174 | 892<br>162 |
|              | 68 |           |            | 200<br>225 | 333<br>224 | 470<br>222 | 630<br>212 | 750<br>201 | 882<br>194 |
| Max. cont    | 75 |           |            | 178<br>251 | 322<br>250 | 464<br>247 | 610<br>240 | 741<br>232 | 870<br>215 |
| Max. int     | 85 |           |            | 140<br>285 | 316<br>284 | 455<br>278 | 570<br>270 | 728<br>257 |            |
|              | 95 |           |            | 106<br>316 | 260<br>314 | 431<br>311 | 552<br>307 | 700<br>292 |            |



# Performance Data

VNKG2 350 [345 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |    | 1.75     | 3.5        | 7          | 10.5       | 14         | 17.5       | 20.5       | 24          |
|--------------|----|----------|------------|------------|------------|------------|------------|------------|-------------|
| Flow (L/min) | 2  | 63<br>4  | 133<br>4   |            |            |            |            |            |             |
|              | 4  | 64<br>10 | 135<br>9   | 290<br>8   | 440<br>7   |            |            |            |             |
|              | 8  | 68<br>21 | 146<br>20  | 310<br>20  | 458<br>19  | 589<br>18  | 735<br>16  | 847<br>12  |             |
|              | 15 | 72<br>42 | 150<br>41  | 314<br>40  | 468<br>39  | 627<br>37  | 769<br>35  | 880<br>32  | 984<br>26   |
|              | 25 | 63<br>70 | 148<br>69  | 313<br>68  | 470<br>66  | 628<br>63  | 765<br>60  | 892<br>55  | 1018<br>46  |
|              | 34 | 52<br>97 | 133<br>96  | 304<br>95  | 455<br>93  | 619<br>89  | 760<br>85  | 905<br>78  | 1034<br>68  |
|              | 45 |          | 100<br>129 | 261<br>128 | 442<br>127 | 583<br>125 | 736<br>118 | 887<br>112 | 1028<br>101 |
|              | 53 |          | 85<br>152  | 247<br>150 | 418<br>148 | 566<br>145 | 715<br>139 | 880<br>132 | 1024<br>118 |
|              | 60 |          | 65<br>171  | 233<br>170 | 410<br>169 | 550<br>167 | 712<br>162 | 842<br>155 | 996<br>143  |
|              | 68 |          |            | 218<br>195 | 387<br>194 | 543<br>190 | 696<br>185 | 825<br>175 | 976<br>162  |
| Max. cont    | 75 |          |            | 206<br>215 | 373<br>214 | 515<br>212 | 680<br>206 | 822<br>197 | 966<br>183  |
| Max. int     | 85 |          |            | 176<br>243 | 355<br>242 | 510<br>239 | 679<br>234 | 808<br>227 |             |
|              | 90 |          |            |            | 353<br>272 | 509<br>269 | 645<br>265 |            |             |

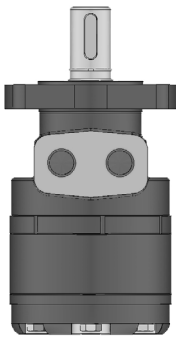
Torque (N•m) 645  
Speed (rpm) 265

VNKG2 375 [371 cm3/rev.]

Pressure (MPa)

Max. cont Max. int

|              |    | 1.75     | 3.5        | 7          | 10.5       | 14         | 17.5       | 20.5       | 24          |
|--------------|----|----------|------------|------------|------------|------------|------------|------------|-------------|
| Flow (L/min) | 2  | 75<br>3  |            |            |            |            |            |            |             |
|              | 4  | 83<br>8  | 160<br>8   | 330<br>7   | 488<br>6   | 636<br>5   | 761<br>3   |            |             |
|              | 8  | 81<br>18 | 170<br>17  | 356<br>17  | 527<br>16  | 679<br>14  | 822<br>12  | 948<br>9   | 1060<br>5   |
|              | 15 | 76<br>39 | 162<br>38  | 356<br>37  | 533<br>35  | 683<br>32  | 845<br>29  | 978<br>25  | 1102<br>18  |
|              | 25 | 68<br>65 | 156<br>64  | 350<br>62  | 524<br>59  | 680<br>55  | 857<br>48  | 994<br>44  | 1138<br>35  |
|              | 34 | 58<br>90 | 148<br>89  | 339<br>87  | 506<br>83  | 690<br>77  | 841<br>71  | 993<br>63  | 1145<br>53  |
|              | 45 |          | 121<br>120 | 302<br>119 | 478<br>117 | 650<br>113 | 813<br>108 | 972<br>100 | 1134<br>90  |
|              | 53 |          | 95<br>141  | 282<br>140 | 466<br>138 | 628<br>134 | 785<br>128 | 934<br>120 | 1103<br>105 |
|              | 60 |          | 75<br>161  | 264<br>161 | 428<br>160 | 592<br>158 | 766<br>155 | 925<br>151 | 1070<br>141 |
|              | 68 |          |            | 232<br>182 | 422<br>180 | 585<br>176 | 756<br>169 | 901<br>161 | 1066<br>148 |
| Max. cont    | 75 |          |            | 207<br>201 | 380<br>200 | 556<br>197 | 738<br>190 | 865<br>181 | 1012<br>165 |
| Max. int     | 85 |          |            | 175<br>228 | 370<br>226 | 526<br>221 | 700<br>216 | 832<br>206 |             |
|              | 90 |          |            | 148<br>242 | 316<br>240 | 500<br>237 | 654<br>226 |            |             |



# Performance Data

VNKG2 400 [405 cm3/rev.]

Pressure (MPa)

Max. cont Peak

|              |    | 1.75     | 3.5        | 7          | 10.5        | 14         | 17.5       | 19         | 22.5        |
|--------------|----|----------|------------|------------|-------------|------------|------------|------------|-------------|
| Flow (L/min) | 2  | 85<br>3  | 170<br>2   |            |             |            |            |            |             |
|              | 4  | 90<br>8  | 182<br>7   | 368<br>6   | 540<br>5    | 715<br>4   | 885<br>3   |            |             |
|              | 8  | 93<br>17 | 190<br>16  | 385<br>15  | 575<br>14.4 | 750<br>13  | 895<br>10  | 950<br>9   | 1155<br>7   |
|              | 15 | 88<br>36 | 180<br>35  | 380<br>34  | 575<br>33   | 750<br>31  | 905<br>28  | 980<br>24  | 1165<br>20  |
|              | 25 | 88<br>60 | 180<br>59  | 380<br>58  | 575<br>56   | 750<br>53  | 915<br>49  | 1010<br>44 | 1165<br>40  |
|              | 34 | 75<br>83 | 165<br>83  | 365<br>82  | 560<br>81   | 750<br>77  | 915<br>72  | 1000<br>68 | 1180<br>60  |
|              | 45 |          | 150<br>110 | 350<br>110 | 545<br>109  | 735<br>106 | 900<br>102 | 980<br>94  | 1165<br>86  |
|              | 53 |          | 125<br>130 | 330<br>129 | 525<br>128  | 720<br>125 | 885<br>120 | 960<br>112 | 1150<br>100 |
|              | 60 |          | 100<br>147 | 305<br>147 | 505<br>146  | 680<br>145 | 860<br>142 | 940<br>138 | 1125<br>130 |
|              | 68 |          |            | 275<br>167 | 480<br>167  | 660<br>164 | 845<br>158 | 925<br>150 | 1100<br>140 |
| Max. cont    | 75 |          |            | 250<br>184 | 455<br>183  | 635<br>180 | 820<br>176 | 900<br>170 | 1065<br>158 |
| Max. int     | 85 |          |            | 225<br>209 | 415<br>208  | 600<br>206 | 785<br>202 | 865<br>194 |             |
|              | 90 |          |            | 160<br>220 | 365<br>218  | 575<br>216 | 770<br>210 |            |             |

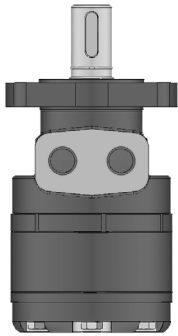
VNKG2 475 [462 cm3/rev.]

Pressure (MPa)

Max. cont Peak

|              |    | 1.75     | 3.5        | 7          | 10.5       | 14         | 17.5        | 20.5        |
|--------------|----|----------|------------|------------|------------|------------|-------------|-------------|
| Flow (L/min) | 2  | 93<br>2  | 186<br>1   |            |            |            |             |             |
|              | 4  | 98<br>7  | 202<br>6   | 405<br>5   | 608<br>5   | 805<br>4   |             |             |
|              | 8  | 98<br>15 | 206<br>14  | 430<br>13  | 352<br>13  | 844<br>12  | 1005<br>10  | 1180<br>8   |
|              | 15 | 94<br>31 | 202<br>30  | 441<br>28  | 654<br>28  | 875<br>26  | 1056<br>23  | 1238<br>20  |
|              | 25 | 94<br>52 | 202<br>51  | 441<br>48  | 354<br>45  | 875<br>43  | 1056<br>39  | 1238<br>35  |
|              | 34 | 75<br>72 | 180<br>71  | 420<br>68  | 660<br>65  | 850<br>61  | 1085<br>55  | 1266<br>44  |
|              | 45 |          | 144<br>96  | 380<br>95  | 627<br>93  | 835<br>90  | 1062<br>84  | 1261<br>73  |
|              | 53 |          | 116<br>113 | 346<br>112 | 573<br>111 | 795<br>107 | 1008<br>102 | 1212<br>90  |
|              | 60 |          | 82<br>128  | 318<br>128 | 539<br>127 | 790<br>124 | 975<br>119  | 1186<br>110 |
|              | 68 |          | 58<br>146  | 272<br>145 | 520<br>144 | 740<br>141 | 955<br>136  | 1156<br>125 |
| Max. cont    | 75 |          |            | 230<br>161 | 480<br>160 | 702<br>158 | 920<br>153  | 1116<br>140 |
| Max. int     | 85 |          |            | 200<br>182 | 454<br>180 | 662<br>177 | 876<br>168  |             |
|              | 90 |          |            | 150<br>194 | 378<br>193 | 615<br>190 | 840<br>182  |             |

# Performance Data



VNKG2 540 [540 cm3/rev.]

| Pressure (MPa) |     | Max. cont |      | Max. int |      |
|----------------|-----|-----------|------|----------|------|
| 1.75           | 3.5 | 7         | 10.5 | 14       | 17.5 |

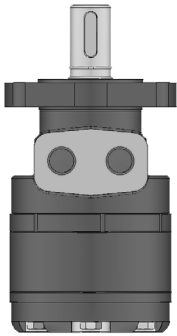
| Flow (L/min) | 2  | 105<br>2  | 198<br>2   |            |            |            |
|--------------|----|-----------|------------|------------|------------|------------|
|              | 4  | 125<br>6  | 231<br>5   | 470<br>5   | 688<br>4   | 932<br>4   |
|              | 8  | 134<br>13 | 238<br>13  | 496<br>12  | 749<br>11  | 966<br>11  |
|              | 15 | 122<br>27 | 230<br>26  | 505<br>26  | 750<br>25  | 981<br>24  |
|              | 25 | 100<br>44 | 225<br>43  | 500<br>42  | 774<br>41  | 986<br>39  |
|              | 34 | 80<br>62  | 212<br>61  | 481<br>60  | 748<br>58  | 977<br>54  |
|              | 45 |           | 173<br>82  | 437<br>82  | 714<br>81  | 936<br>79  |
|              | 53 |           | 142<br>97  | 416<br>97  | 678<br>96  | 938<br>94  |
|              | 60 |           | 106<br>110 | 380<br>110 | 664<br>109 | 896<br>108 |
|              | 68 |           | 85<br>125  | 357<br>124 | 616<br>124 | 870<br>123 |
|              | 75 |           |            | 318<br>138 | 600<br>137 | 826<br>135 |
|              | 85 |           |            | 292<br>154 | 538<br>153 | 780<br>152 |
|              | 90 |           |            | 214<br>169 | 486<br>168 | 755<br>168 |

Torque (N•m) 486  
Speed (rpm) 168

VNKG2 650 [647cm3/rev.]

| Pressure (MPa) |     | Max. cont |      | Max. int | Peak |
|----------------|-----|-----------|------|----------|------|
| 1.75           | 3.5 | 7         | 10.5 | 12       | 15.5 |

| Flow (L/min) | 2  | 119<br>2  | 230<br>1   |            |            |            |
|--------------|----|-----------|------------|------------|------------|------------|
|              | 4  | 135<br>5  | 268<br>5   | 552<br>4   | 805<br>4   | 940<br>3   |
|              | 8  | 145<br>11 | 285<br>11  | 574<br>10  | 825<br>10  | 955<br>9   |
|              | 15 | 140<br>22 | 280<br>22  | 595<br>21  | 875<br>21  | 982<br>20  |
|              | 25 | 130<br>37 | 275<br>36  | 590<br>36  | 886<br>35  | 1005<br>34 |
|              | 34 | 115<br>51 | 260<br>51  | 580<br>50  | 890<br>49  | 1015<br>47 |
|              | 45 |           | 235<br>69  | 555<br>68  | 870<br>67  | 995<br>66  |
|              | 53 |           | 200<br>80  | 520<br>80  | 850<br>79  | 975<br>78  |
|              | 60 |           | 170<br>91  | 490<br>91  | 825<br>90  | 935<br>89  |
|              | 68 |           | 145<br>104 | 430<br>103 | 775<br>102 | 880<br>101 |
|              | 75 |           |            | 420<br>114 | 730<br>113 | 855<br>112 |
|              | 83 |           |            | 380<br>130 | 660<br>129 | 795<br>128 |
|              | 90 |           |            | 290<br>138 | 585<br>137 | 730<br>136 |



# Performance Data

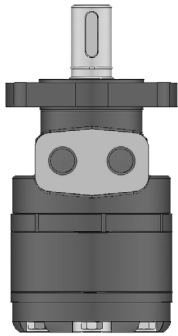
VNKG2 750 [745 cm3/rev.]

Pressure (MPa)

Max. cont    Max. int    Peak

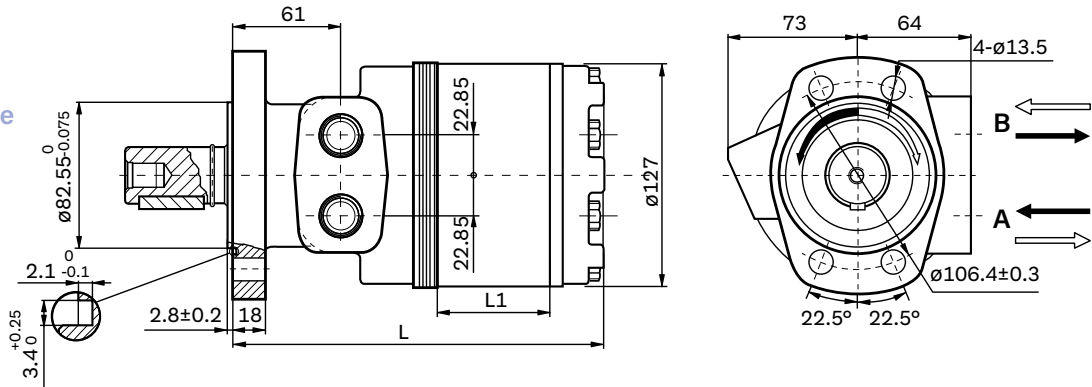
|              |    | 1.75      | 3.5       | 7          | 10.5       | 12         | 14         |
|--------------|----|-----------|-----------|------------|------------|------------|------------|
| Flow (L/min) | 2  | 145<br>2  | 280<br>1  |            |            |            |            |
|              | 4  | 160<br>4  | 321<br>4  | 654<br>4   | 960<br>3   | 1115<br>3  | 1312<br>2  |
|              | 8  | 162<br>9  | 335<br>9  | 688<br>9   | 1026<br>8  | 1159<br>8  | 1347<br>7  |
|              | 15 | 156<br>19 | 330<br>19 | 694<br>18  | 1047<br>18 | 1184<br>17 | 1376<br>16 |
|              | 25 | 142<br>32 | 320<br>31 | 688<br>30  | 1046<br>30 | 1179<br>29 | 1373<br>27 |
|              | 34 | 110<br>44 | 288<br>44 | 658<br>42  | 1021<br>41 | 1169<br>40 | 1366<br>37 |
|              | 45 | 71<br>60  | 242<br>59 | 620<br>59  | 982<br>58  | 1143<br>58 | 1345<br>55 |
|              | 53 |           | 202<br>70 | 568<br>69  | 941<br>68  | 1105<br>67 | 1308<br>66 |
|              | 60 |           | 140<br>79 | 527<br>78  | 898<br>77  | 1086<br>76 | 1286<br>74 |
|              | 68 |           | 100<br>90 | 486<br>90  | 852<br>89  | 1034<br>88 | 1251<br>87 |
| Max. cont    | 75 |           | 65<br>99  | 425<br>99  | 812<br>98  | 980<br>97  | 1178<br>96 |
| Max. int     | 83 |           |           | 395<br>110 | 745<br>109 | 906<br>128 |            |
|              | 90 |           |           | 298<br>120 | 660<br>119 | 800<br>117 |            |

# VNKG2 Dimensions and Mounting Data



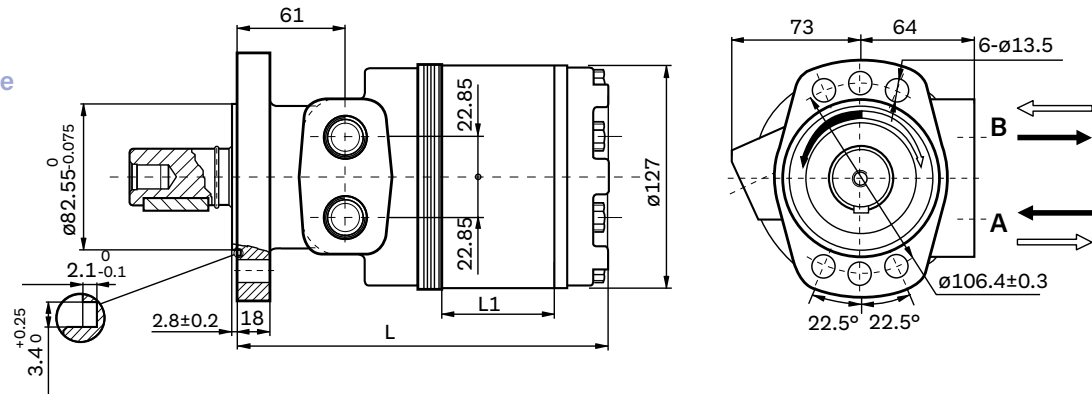
Magneto Mount 4-Hole

Code: Port A, B  
MS: 7/8-14UNF  
MP: 1/2-14NPTF  
MD: G1/2



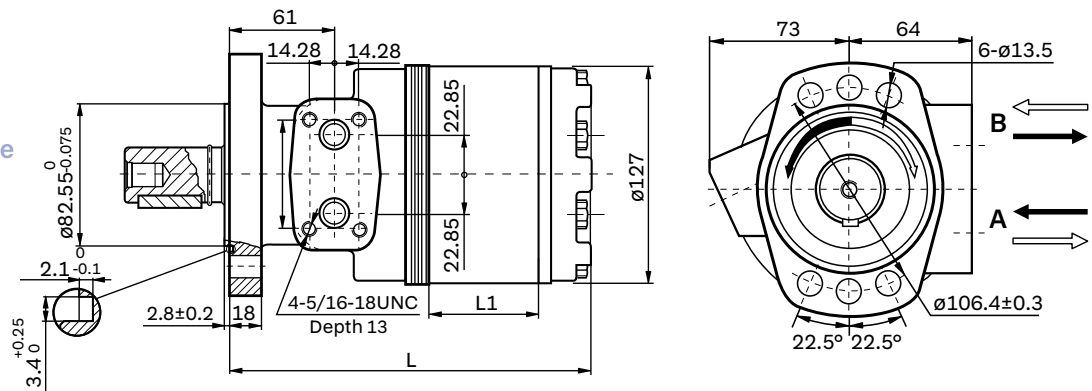
Magneto Mount 6-Hole

Code: Port A, B  
FS: 7/8-14UNF  
FP: 1/2-14NPTF  
MD: G1/2



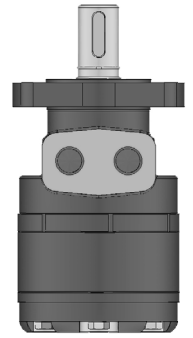
Magneto Mount 6-Hole

Code: Manifold Port A, B  
FH: ø12.7



| Displacement (cm3/rev.) | 125  | 160  | 200   | 230  | 250   | 300  | 350  | 375   | 400  | 475  | 540  | 650  | 750  |
|-------------------------|------|------|-------|------|-------|------|------|-------|------|------|------|------|------|
| L1 (mm)                 | 10.2 | 13.5 | 17    | 19.5 | 22    | 25.4 | 29.5 | 31.8  | 35.5 | 39.4 | 47.3 | 57   | 63.5 |
| L (mm)                  | 157  | 160  | 163.5 | 166  | 168.5 | 172  | 176  | 178.5 | 182  | 186  | 194  | 204  | 210  |
| Weight (kg)             | 10.6 | 10.9 | 11.2  | 11.3 | 11.4  | 11.6 | 12   | 12.5  | 12.7 | 13   | 13.5 | 14.5 | 15   |



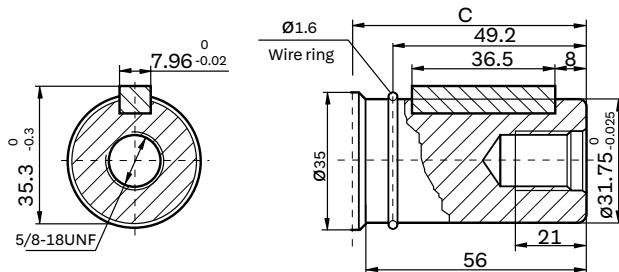
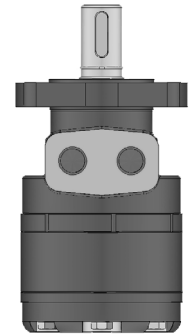


WD: G1/2

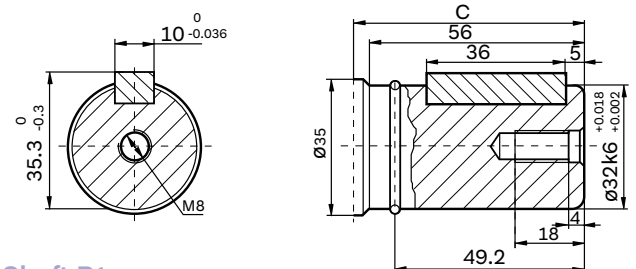
TD: G1/2

# VNKG2 Shaft Extensions

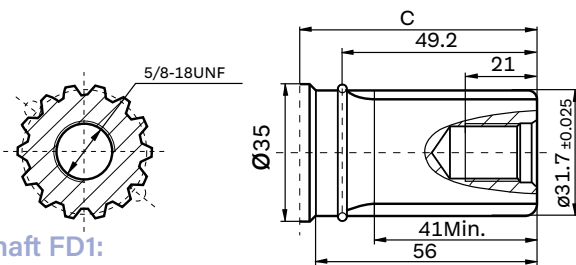
## Dimensions Data

**Shaft G2:**

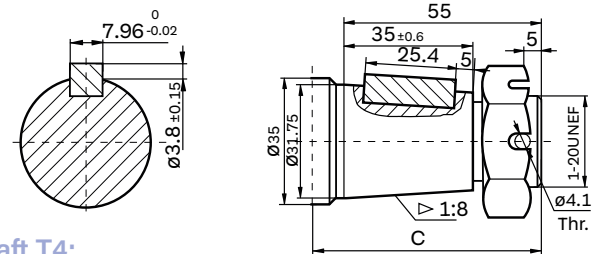
Cylindrical shaft Ø3 1.75  
Parallel key 7.96x7x36.5

**Shaft B1:**

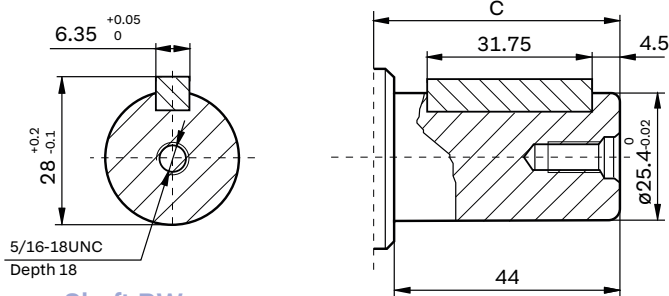
Cylindrical shaft Ø32  
Parallel key 10x8x36

**Shaft FD1:**

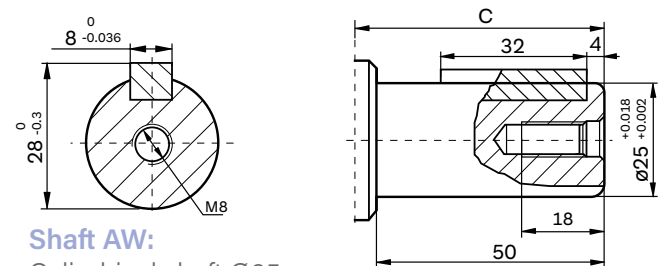
Splined 14-DP12/24  
Flat root side fit  
to fit ANSI B92.1 1996

**Shaft T4:**

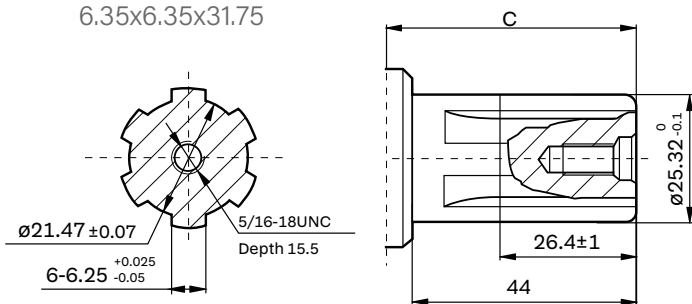
Cone-shaft Ø31.75  
Parallel key 7.96x7.96x25.4  
Tightening torque: 200±10Nm

**Shaft RW:**

Cylindrical shaft Ø25.4  
Parallel key  
6.35x6.35x31.75

**Shaft AW:**

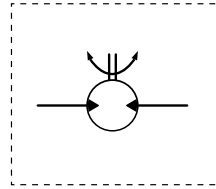
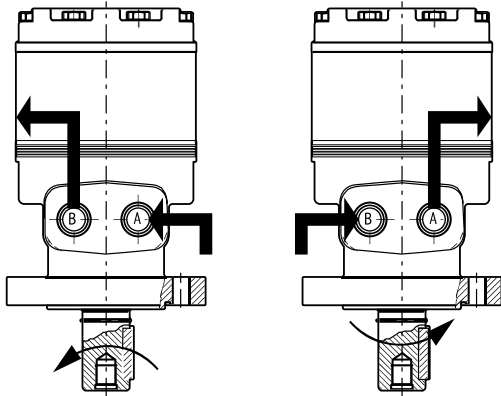
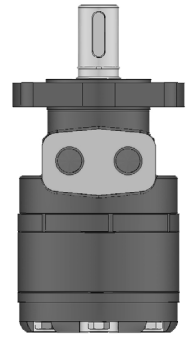
Cylindrical shaft Ø25  
Parallel key 8x7x32

**Shaft SW:**

Splined SAE 6B

| From Mounting Flange to Shaft End |                    |                  |
|-----------------------------------|--------------------|------------------|
| Dimension C                       |                    |                  |
| Shaft Code                        | Magneto Mount (mm) | Wheel Mount (mm) |
| G2                                | 61                 | 103              |
| B1                                | 61                 | 103              |
| FD1                               | 61                 | 103              |
| T4                                | 65                 | 107              |
| RW                                | 50                 | 91               |
| AW                                | 56                 | 97               |
| SW                                | 50                 | 91               |

# VNKG2 Series Hydraulic Motor



**Direction of shaft rotation:**

Reverse timed

**When facing shaft end of motor, shaft to rotate:**

Clockwise when port "B" is pressurized.

Counter-clockwise when port "A" is pressurized.

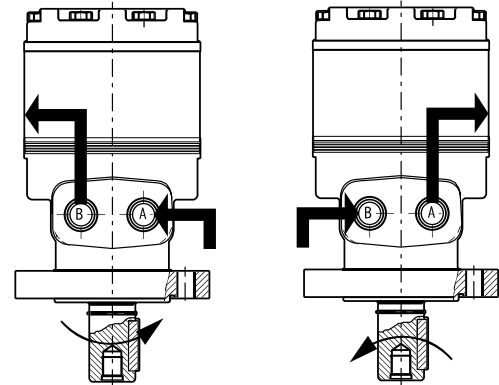
**Direction of shaft rotation:**

Standard

**When facing shaft end of motor, shaft to rotate:**

Clockwise when port "A" is pressurized.

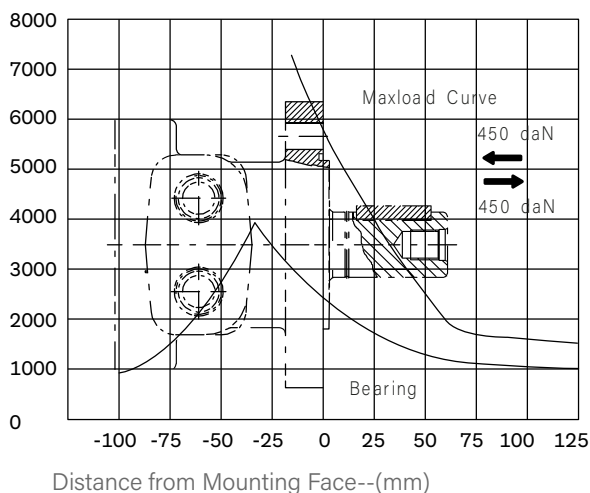
Counter-clockwise when port "B" is pressurized.



## Axial and Radial Forces

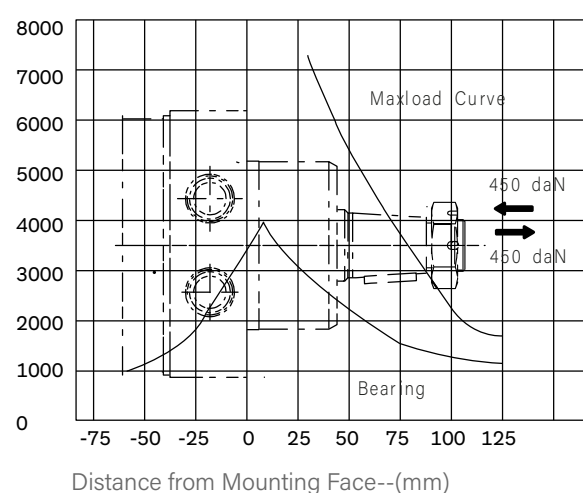
### VNKG2 or M#/F# Mounting

Side Load-(daN)



### VNKG2 for W# Mounting

Side Load-(daN)

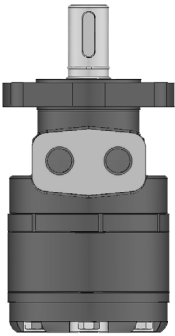


The bearing curve represents allowable bearing loads for an L10 bearing life at 12x106 revolutions.

The maximum load curve is defined by bearing static load capacity.

This curve should not be exceeded at any time including shock loads.

# Order Information

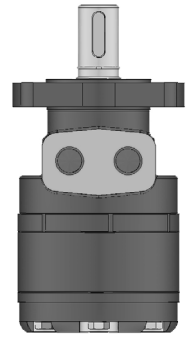


**Note:** When the table is used, please fill the code of left rows in dash area and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports. If the specification is not in the table or you have specific requirements, please contact us. VNKER-2 Motor The dimensions 44.2 is replaced by 45.7 with shaft M1 T31 G32 of Ø38.1 shaft seal in flange w# and T#.

| Pos.1 | 2     | 3                                                     | 4                                                           | 5                  | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 7                                         |                                                                  |  |
|-------|-------|-------------------------------------------------------|-------------------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|------------------------------------------------------------------|--|
| Code  | Disp. | Flange, Pilot, Ports                                  | Output Shaft                                                | Rotation Direction | Paint                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Unusually Function                        |                                                                  |  |
| 2     |       |                                                       |                                                             |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                           |                                                                  |  |
|       | 125   | MS                                                    | 4-Ø13.5 Magneto Mount,Pilot Ø82.55x2.8, Ports 7/8-14 O-ring | G2                 | Shaft Ø31.75 , parillel key 7.96x7x36.5<br>ShaftØ32, Parallel key 10x8x45<br>Shaft Ø31.75, splined key 14-DP12/24<br>Cone-Shaft Ø31.75, Parallel key 7.96x7.96x25.4<br>Shaft Ø25.4 , parillel key 6.35x6.35x31.75<br>Shaft Ø25 , parillel key 8x7x32<br>Shaft Ø25.4 ,splined key SAE 6B<br>4-Ø13.5 Wheel Mount, Pilot Ø82.55x5,<br>Ports 7/8-14 O-ring<br>4-Ø13.5 Wheel Mount, Pilot Ø82.55x5,<br>Ports 1/2-14NPTF<br>4-Ø13.5 Wheel Mount, Pilot Ø82.55x5,<br>Ports G1/2<br>4-Ø13.5 Wheel Mount,Pilot Ø82.55x5,<br>Ports 7/8-14 O-ring<br>4-Ø13.5 Wheel Mount, Pilot Ø82.55x5,<br>Ports 1/2-14NPTF<br>4-Ø13.5 Wheel Mount, Pilot Ø82.55x5,<br>Ports G1/2 | None<br>R<br>Standard<br>Reverse<br>Timed | 00<br>None<br>B<br>S<br>No paint<br>Blue<br>Black<br>Sliver Grey |  |
|       | 160   | MP                                                    | 4-Ø13.5 Magneto Mount,Pilot Ø82.55x2.8, Ports 1/2-14NPTF    | B1                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                           |                                                                  |  |
|       | 200   | MD                                                    | 4-Ø13.5 Magneto Mount,Pilot Ø82.55x2.8, Ports G1/2          | FD1                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                           |                                                                  |  |
|       | 230   | FS                                                    | 4-Ø13.5 Magneto Mount,Pilot Ø82.55x2.8, Ports G1/2          | T4                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                           |                                                                  |  |
|       | 250   | FP                                                    | 6-Ø13.5 Magneto Mount,Pilot Ø82.55x2.8, Ports 7/8-14 O-ring | RW                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                           |                                                                  |  |
|       | 300   | FD                                                    | 6-Ø13.5 Magneto Mount,Pilot Ø82.55x2.8, Ports 1/2-14NPTF    | AW                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                           |                                                                  |  |
|       | 350   | FH                                                    | 6-Ø13.5 Magneto Mount,Pilot Ø82.55x2.8, Ports G1/2          | SW                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                           |                                                                  |  |
|       | 375   | WS                                                    | 6-Ø13.5 Magneto Mount,Pilot Ø82.55x2.8, Manifold Ports 1/2  |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                           |                                                                  |  |
|       | 400   | WP                                                    | 4-Ø13.5 Wheel Mount, Pilot Ø82.55x5, Ports 7/8-14 O-ring    |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                           |                                                                  |  |
|       | 475   | WD                                                    | 4-Ø13.5 Wheel Mount, Pilot Ø82.55x5, Ports 1/2-14NPTF       |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                           |                                                                  |  |
|       | 540   | TS                                                    | 4-Ø13.5 Wheel Mount, Pilot Ø82.55x5, Ports G1/2             | M1                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                           |                                                                  |  |
|       | 650   | TP                                                    | 4-Ø13.5 Wheel Mount,Pilot Ø82.55x5, Ports 7/8-14 O-ring     | T31                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                           |                                                                  |  |
| 750   | TD    | 4-Ø13.5 Wheel Mount, Pilot Ø82.55x5, Ports 1/2-14NPTF | G32                                                         |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                           |                                                                  |  |
|       |       | 4-Ø13.5 Wheel Mount, Pilot Ø82.55x5, Ports G1/2       |                                                             |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                           |                                                                  |  |

# VNKG3 Shaft Extensions

## Dimensions Data



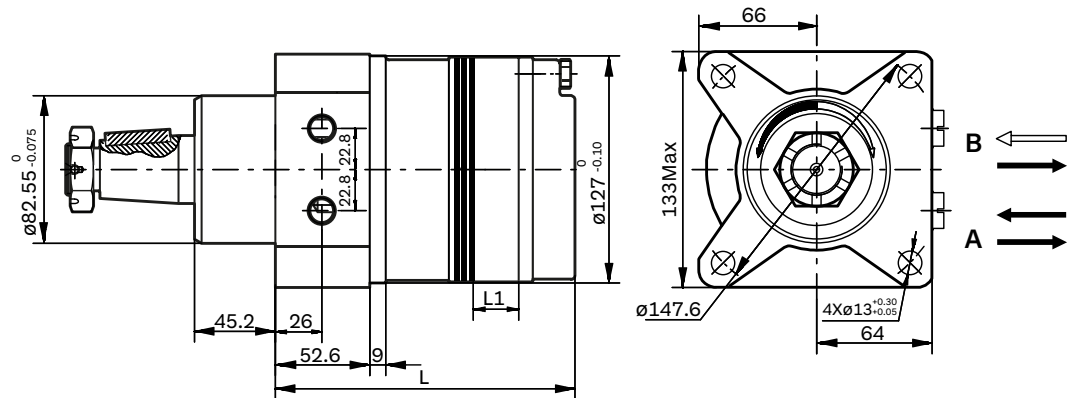
### Wheel Mount

Code: Port A,B

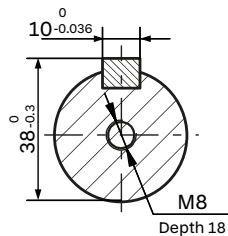
WS 7/8-14UNF

WP 1/2-14NPTF

WD G1/2

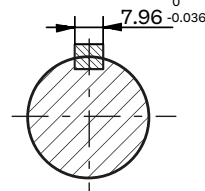
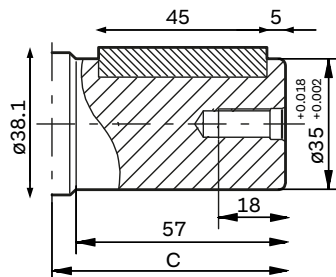


| Displacement (cm <sup>3</sup> /rev.) | 125  | 160  | 200   | 230  | 250   | 300  | 350  | 375   | 400  | 475  | 540  | 650   | 750  |
|--------------------------------------|------|------|-------|------|-------|------|------|-------|------|------|------|-------|------|
| L1 (mm)                              | 10.2 | 13.5 | 17    | 19.5 | 22    | 25.4 | 29.5 | 31.8  | 35.5 | 39.4 | 47.3 | 57    | 63.5 |
| L (mm)                               | 153  | 156  | 159.5 | 162  | 164.5 | 168  | 172  | 174.5 | 178  | 182  | 190  | 199.5 | 206  |
| Weight (kg)                          | 13.2 | 13.5 | 13.8  | 14   | 14.2  | 14.5 | 14.9 | 15.2  | 15.5 | 15.7 | 16.5 | 17.3  | 17.8 |



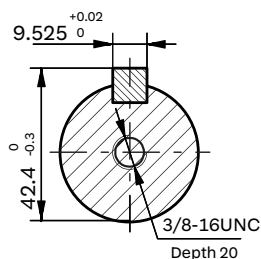
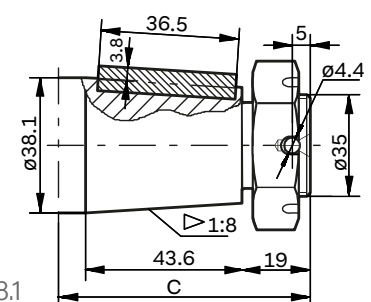
### Shaft M31:

Cylindrical shaft Ø35  
Parallel key 10x8x45



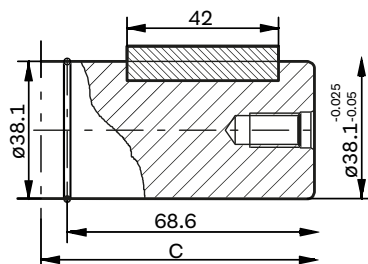
### Shaft T31:

Cylindrical shaft Ø38.1  
Parallel key 7.96x7x36.5  
Tightening torque: 410~510Nm



### Shaft G31:

Cylindrical shaft Ø38.1  
Parallel key 9.525x9.525x42

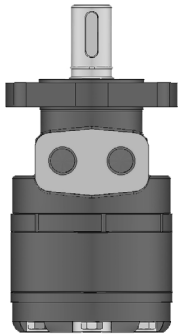


### From Mounting Flange to Shaft End

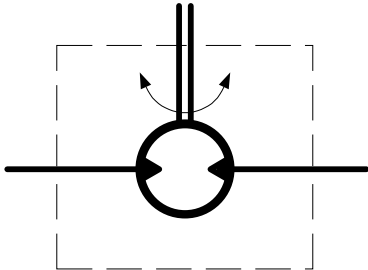
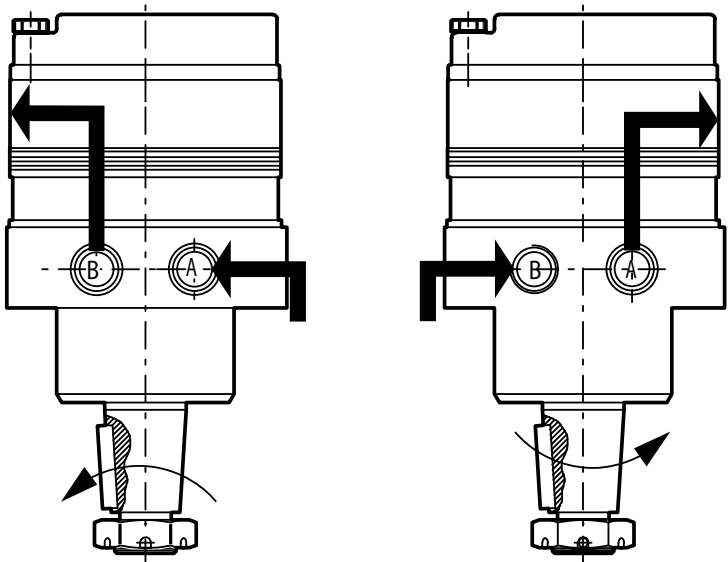
#### Dimension C

| Shaft Code | Magneto Mount (mm) | Wheel Mount (mm) |
|------------|--------------------|------------------|
| M31        | —                  | 105              |
| T31        | —                  | 117              |
| G31        | —                  | 119              |

# VNKG3 Series Hydraulic Motor



## VNKG3 Series Hydraulic Motors



**Direction of shaft rotation:**  
Reverse timed.

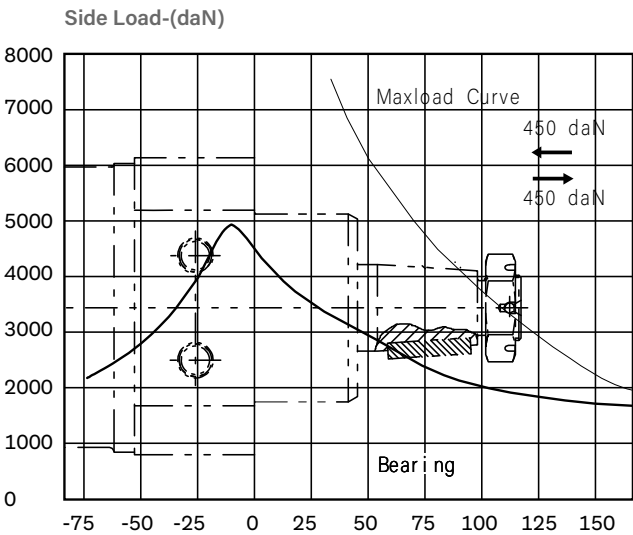
**When facing shaft end of motor, shaft to rotate:**  
Clockwise when port "B" is pressurized.  
Counter-clockwise when port "A" is pressurized.

## VNKG3 for W# Mounting

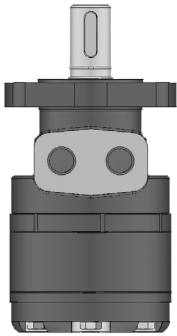
The bearing curve represents allowable bearing loads for an L10 bearing life at 12X106 revolutions.

The maximum load curve is defined by bearing static load capacity.

This curve should not be exceeded at any time including shock loads.



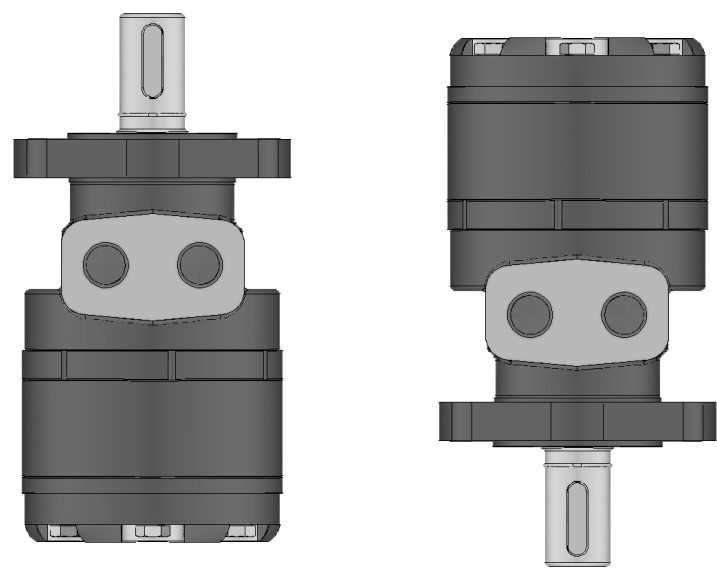
# Order Information



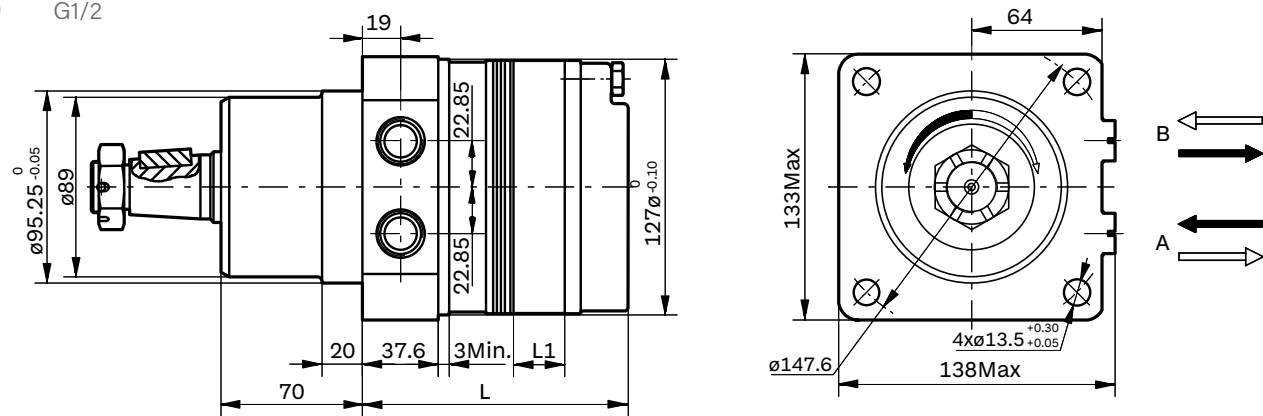
|       |       |                                                             |                                               |                    |       |                    |
|-------|-------|-------------------------------------------------------------|-----------------------------------------------|--------------------|-------|--------------------|
| 1     | 2     | 3                                                           | 4                                             | 5                  | 6     | 7                  |
| VNKG3 |       |                                                             |                                               |                    |       |                    |
| Pos.1 | 2     | 3                                                           | 4                                             | 5                  | 6     | 7                  |
| Code  | Disp. | MountFlange, Pilot, Ports                                   | Output Shaft                                  | Rotation direction | Paint | Unusually Function |
| 3     | 125   | 4-Ø13.5 Wheel Mount, Pilot<br>Ø82.55x5, Ports 7/8-14 O-ring | M31                                           | None               | 00    | No paint           |
|       | 160   |                                                             |                                               |                    |       |                    |
|       | 200   |                                                             |                                               |                    |       |                    |
|       | 230   |                                                             |                                               |                    |       |                    |
|       | 250   | WS                                                          | ShaftØ35,Parallel key 10x8x45                 | Standard           | None  | None               |
|       | 300   | 4-Ø13.5 Wheel Mount, Pilot<br>Ø82.55x5, Ports 1/2-14NPTF    | Cone-shaft Ø38.1, Parallel key<br>7.96x7x36.5 | Reverse<br>timed   |       |                    |
|       | 350   |                                                             | T31                                           | R                  |       |                    |
|       | 375   |                                                             | G31                                           |                    |       |                    |
|       | 400   | 4-Ø13.5 Wheel Mount, Pilot<br>Ø82.55x5, Ports G1/2          | Shaft Ø38.1, parallel key<br>9.525x9.525x42   |                    | S     | Silver Grey        |
|       | 475   |                                                             |                                               |                    |       |                    |
|       | 540   |                                                             |                                               |                    |       |                    |
|       | 650   |                                                             |                                               |                    |       |                    |
|       | 750   |                                                             |                                               |                    |       |                    |

**Note:** When the table is used, please fill the code of left rows in dash area and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports.  
If the specification is not in the table or you have specific requirements, please contact us.

# VNKG4 Dimensions and Mounting Data



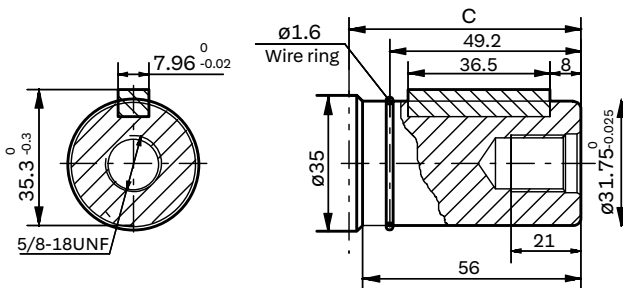
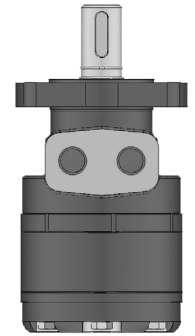
Wheel Mount:  
Code: Port A, B  
WS 7/8-14UNF  
WP 1/2-14NPTF  
WD G1/2



| Displacement (cm <sup>3</sup> /rev.) | 125  | 160  | 200   | 230  | 250   | 300   | 350  | 375   | 400   | 475  | 540  | 650   | 750  |
|--------------------------------------|------|------|-------|------|-------|-------|------|-------|-------|------|------|-------|------|
| L1 (mm)                              | 10.2 | 13.5 | 17    | 19.5 | 22    | 25.4  | 29.5 | 31.8  | 35.5  | 39.4 | 47.3 | 57    | 63.5 |
| L (mm)                               | 119  | 122  | 125.5 | 128  | 130.5 | 134.5 | 138  | 140.5 | 144.5 | 148  | 156  | 165.5 | 172  |
| Weight (kg)                          | 12.8 | 13.1 | 13.4  | 13.6 | 13.8  | 14.1  | 14.5 | 14.8  | 15.2  | 15.6 | 16.1 | 16.9  | 17.4 |

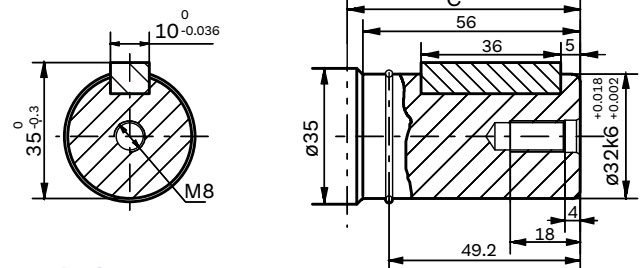


# VNKG4 Shaft Extensions



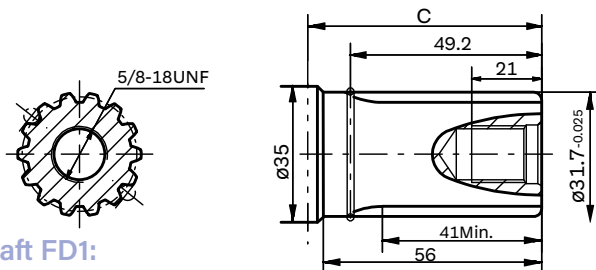
## Shaft G2:

Cylindrical shaft Ø31.75  
Parallel key 7x96x7x36x5



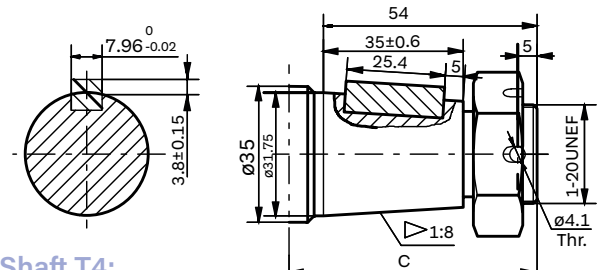
## Shaft B1:

Cylindrical shaft Ø32  
Parallel key 10x8x36



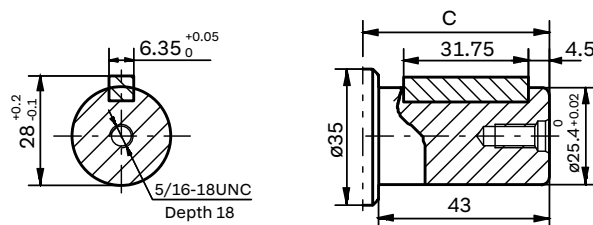
## Shaft FD1:

Splined 14-DP12/24  
Flat root side fit to fit  
ANSI B92.1 1996



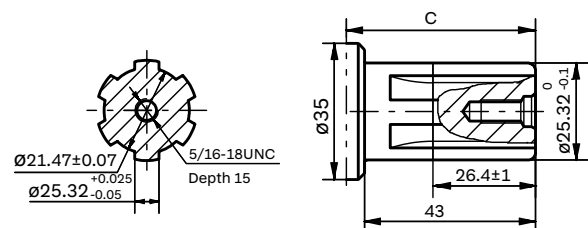
## Shaft T4:

Cone-shaft Ø31.75  
Parallel key 7.96x7.96x25.4  
Tightening torque: 200±10Nm



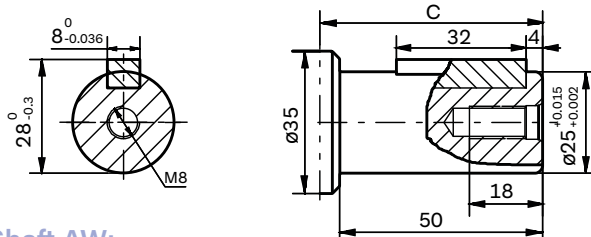
## Shaft RW:

Cylindrical shaft Ø25.4  
Parallel key 6.35x6.35x31.75



## Shaft SW:

Splined SAE 6B



## Shaft AW:

Cylindrical shaft Ø25  
Parallel key 8x7x32

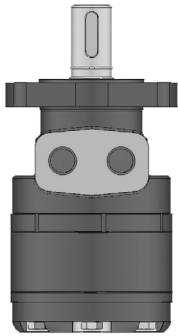
## From Mounting Flange to Shaft End

### Dimension C

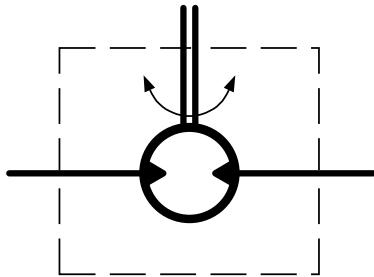
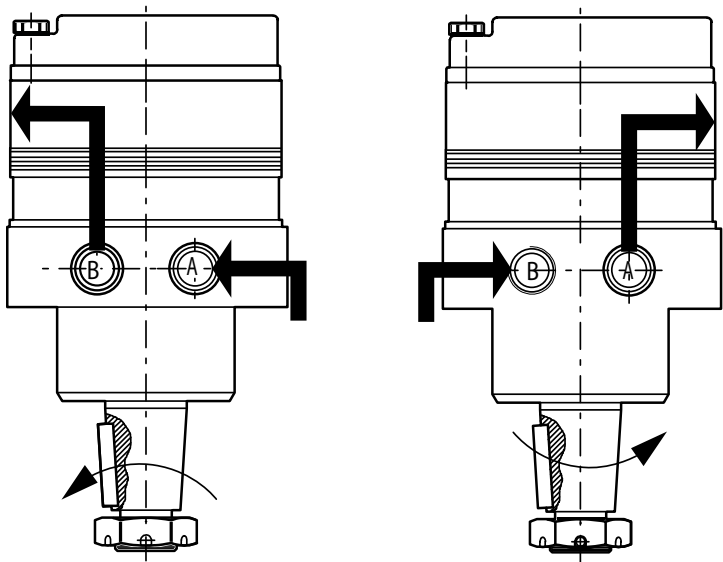
| Shaft Code | Wheel Mount (mm) |
|------------|------------------|
| G2         | 131              |
| B1         | 130              |
| FD1        | 131              |
| T4         | 135              |
| RW         | 119              |
| SW         | 119              |
| AW         | 125              |

**VNKR4** can be configured Shaft type of Ø38.1 shaft seal. Please consult the sales manager.

# VNKG4 Series Hydraulic Motor



## VNKG4 Series Hydraulic Motors



Direction of shaft rotation:  
Reverse timed.

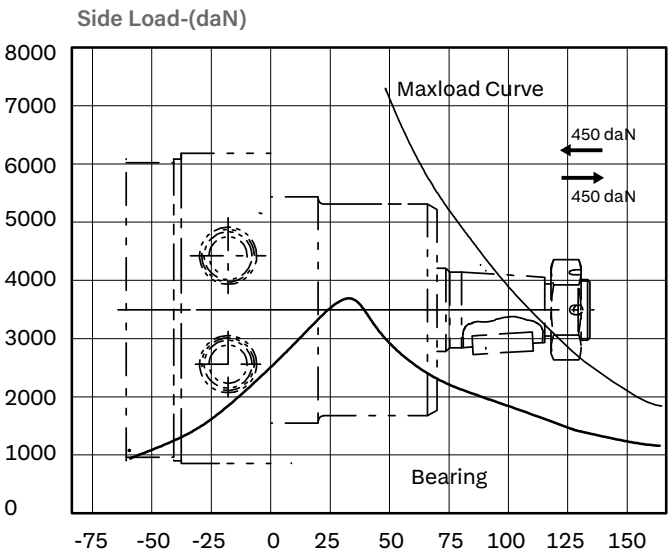
When facing shaft end of motor, shaft  
to rotate:  
Clockwise when port " B " is pressurized.  
Counter-clockwise when port " A " is  
pressurized.

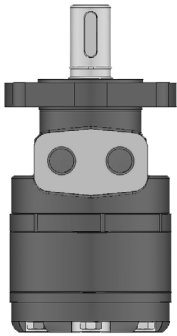
## VNKG4 for W# Mounting

The **bearing curve** represents allowable bearing loads for an L10 bearing life at 12x106 revolutions.

The **maximum load curve** is defined by bearing static load capacity.

This **curve** should not be exceeded at any time including shock loads.





# Order Information

1

VNKG4

2

3

4

5

6

7

| Pos.1 | 2                                                  | 3                                                            | 4                | 5                  | 6     | 7                  |
|-------|----------------------------------------------------|--------------------------------------------------------------|------------------|--------------------|-------|--------------------|
| Code  | Disp.                                              | MountFlange, Pilot, Ports                                    | Output Shaft     | Rotation direction | Paint | Unusually Function |
| 4     | 125                                                | 44-Ø13.5 Wheel Mount, Pilot<br>Ø82.55×5, Ports 7/8-14 O-ring | G2               | None               | 00    | No paint           |
|       | 160                                                |                                                              | B1               |                    |       |                    |
|       | 200                                                |                                                              | FD1              |                    |       |                    |
|       | 230                                                |                                                              | T4               |                    |       |                    |
|       | 250                                                |                                                              | WS               |                    |       |                    |
|       | 300                                                | 4-Ø13.5 Wheel Mount, Pilot<br>Ø82.55×5,Ports 1/2-14NPTF      | RW               | R                  | None  | Bluev              |
|       | 350                                                |                                                              | WD               |                    |       |                    |
|       | 375                                                |                                                              | SW               |                    |       |                    |
|       | 400                                                |                                                              | AW               |                    |       |                    |
|       | 475                                                |                                                              |                  |                    |       |                    |
| 540   | 4-Ø13.5 Wheel Mount, Pilot<br>Ø82.55×5, Ports G1/2 |                                                              | Reverse<br>timed | B                  | Black |                    |
| 650   |                                                    |                                                              |                  |                    |       |                    |
| 750   |                                                    |                                                              |                  |                    |       |                    |
|       |                                                    |                                                              |                  |                    | S     | Silver Grey        |
|       |                                                    |                                                              |                  |                    |       | Standard           |

**Note:** Note: When the table is used, please fill the code of left rows in dash area and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports. If the specification is not in the table or you have specific requirements, please contact us.

# 03 Brake Distribution Type Motors

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# VNKBK2 Series Hydraulic Motor

## INTRODUCTION

VNKBK2 series brake is one kind of hydraulic wet disc brake. The braking force is caused by the spring, and hydraulic pressure releases the braking force.

## CHARACTERISTIC FEATURES

- \* **The VNKBK2 series** adopts a special friction disc and high-strength spring design: long life endurance, low noise, and high braking reliability.
- \* **With a 4-drain port design**, the brake can be used in different applications.
- \* **Compact structure**, easy mounting.
- \* It can be used preferentially together with VNKP, VNKR, and VNKS series hydraulic motors.



## Application

The VNKBK2 series hydraulic brake stays in a braking condition since delivery from the factory. During normal operation, there exists a braking force in the brake disc. Only if the pressure of the hydraulic system, to which the brake links, is lower than the pressure required for the release of the brake, shall the spring force keep the brake in a braking condition.

The VNKBK2 series hydraulic brake is widely used in heavy-duty machinery, such as engineering machinery, cranes, off-highway machinery vehicles, construction machinery, material handling machinery, agricultural machinery, mining, sanitation machinery, and timber industries.

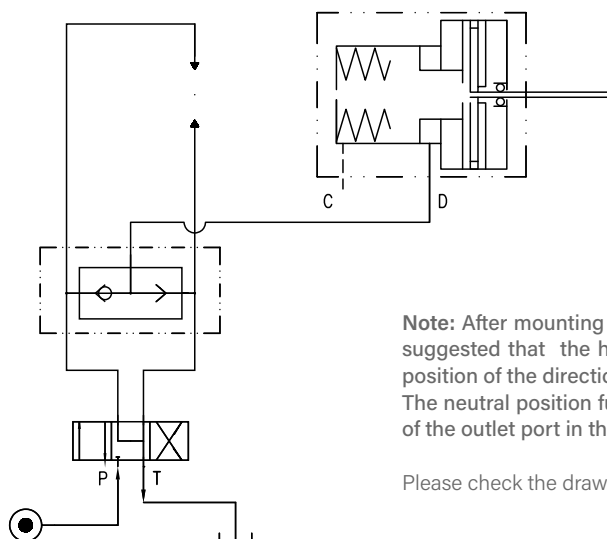
They are also used in winches and in hydrostatic drive systems for automatization engines.

**Special Note:** Such kind of brake is only used in static parking brake. Dynamic braking is not recommended.

## Instruction Manual

In order to make the VNKBK2 series brake work under the best situation, we recommend the normal requirements as follows:

- 1.Assembly:** 1st of all, we have to mount the brake VNKBK2 with hydraulic motor, and then fill the brake with lubrication oil through the drain port, and then mount with other parts.
- 2.Fluid type:** Mineral based-HM(GB/T763.2-87) (ISO6743/4) or HLP(DIN51524).
- 3.Temperature range:** Normal -20°C-90°C the best optimal situation 20°C-60°C.
- 4.Viscosity range:** 20 ~ 75mm<sup>2</sup>/s; the best optimal situation 42 ~ 74mm<sup>2</sup>/s at 40°C.
- 5.Filtration:** Nominal filtration of 25 micron, ISO code 20/16.
- 6.Maintenance:** changed after the first 50 ~ 100h; then after every 500 ~ 1000h.



## Typical Applications Drawing

**Note:** After mounting with hydraulic motor, if the motor needs both rotation directions, it's suggested that the hydraulic system is assigned to use a shuttle valve, and the neutral position of the directional valve must have an off-load function (type Y or H). The neutral position function without off-load function (type O) is forbidden or the pressure of the outlet port in the system is larger than the breaker opening pressure.

Please check the drawing for reference.

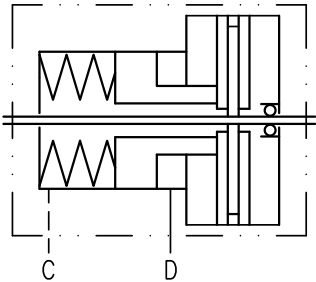
# Specification Data



## Specification Data

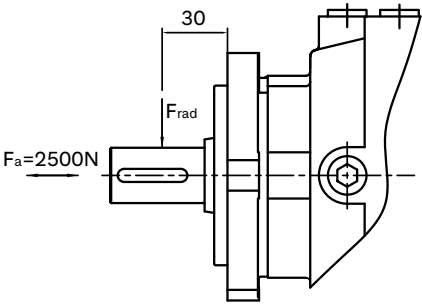
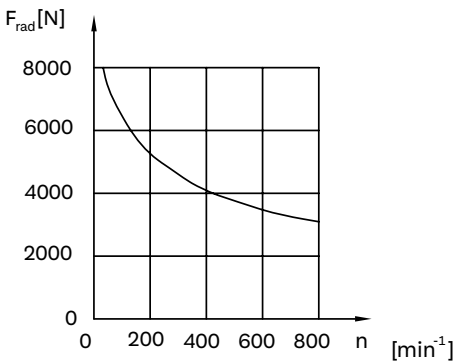
| Item                                                    | VNKBK2-1 |         |
|---------------------------------------------------------|----------|---------|
| Min. static Torque [Nm]                                 | 200~230  | 410~450 |
| Min. Opening Pressure [MPa]                             | 1.7 ~2.3 |         |
| Max. Opening Pressure [MPa]                             | 30       |         |
| Min.oil quantity for brake releasing [cm <sup>3</sup> ] | 7~8      |         |
| Oil volume [cm <sup>3</sup> ]                           | 50~120   |         |
| Max. pressure in drain space [MPa]                      | 0.05     |         |
| Weight [kg]                                             | 9        |         |

\*Static torque is obtained at working pressure 0 MPa



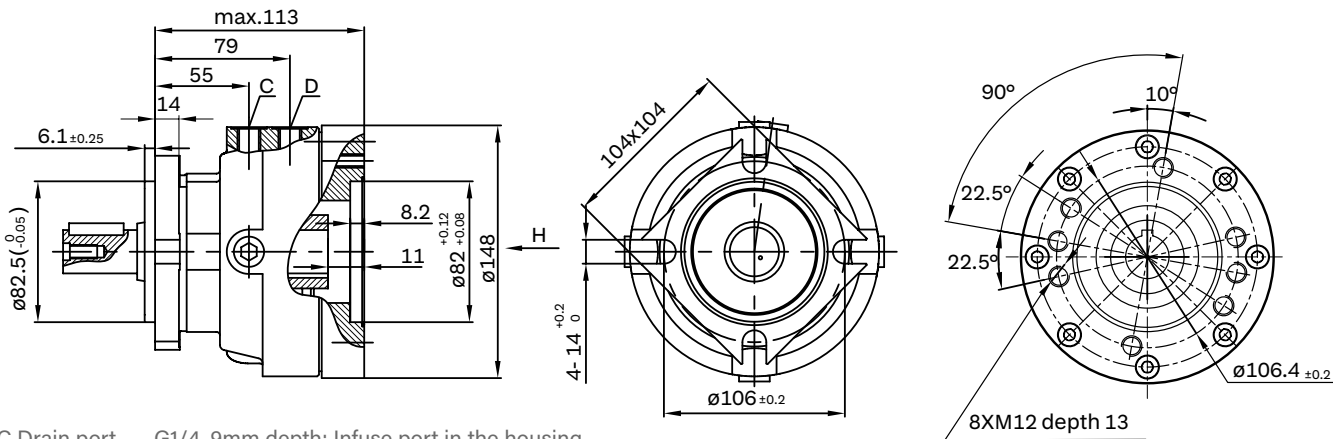
Simple drawing

## Load Curve



## Mounting Data

### Model VNKBK2-1



C Drain port—G1/4, 9mm depth; Infuse port in the housing  
D Brake release port—G1/4, 9mm depth

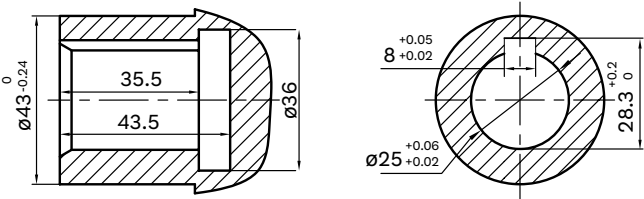
# VNKBK2 Shaft Extensions

## Dimensions Data

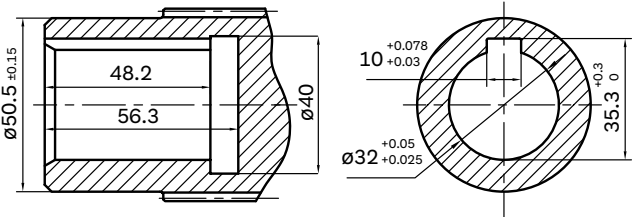


### INPUT SHAFT HOLES INPUT & OUTPUT

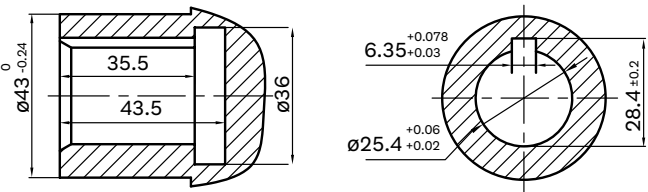
SHAFT A



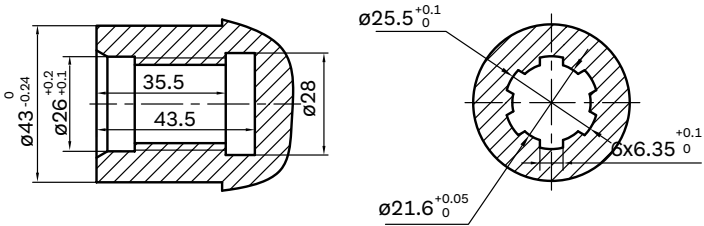
SHAFT B



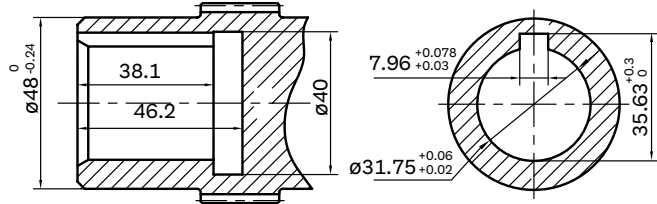
SHAFT C



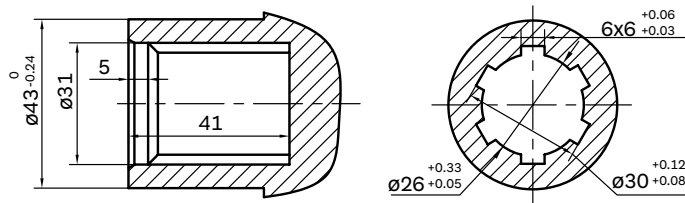
SHAFT E



SHAFT G



SHAFT N

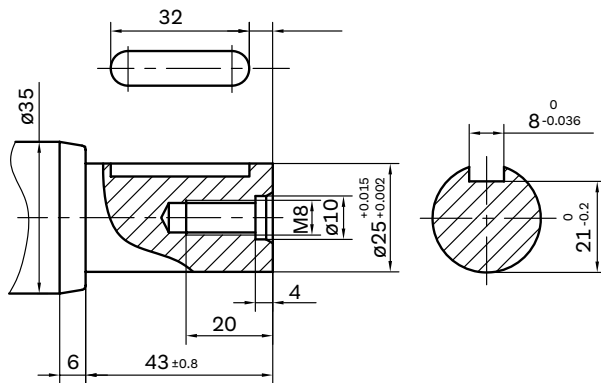


# VNKBK2 Shaft Extensions Dimensions Data

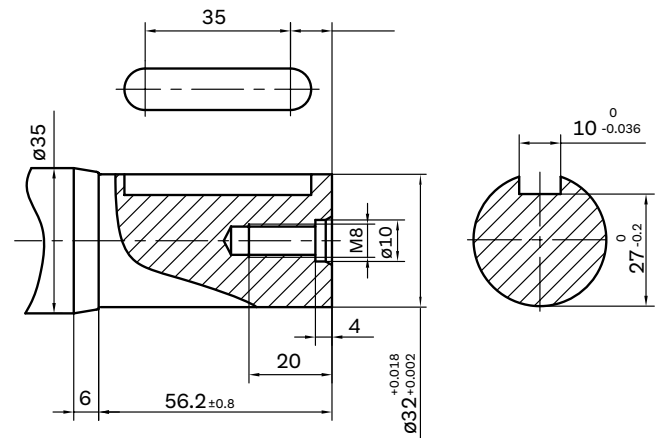


## OUTPUT SHAFT HOLES INPUT & OUTPUT

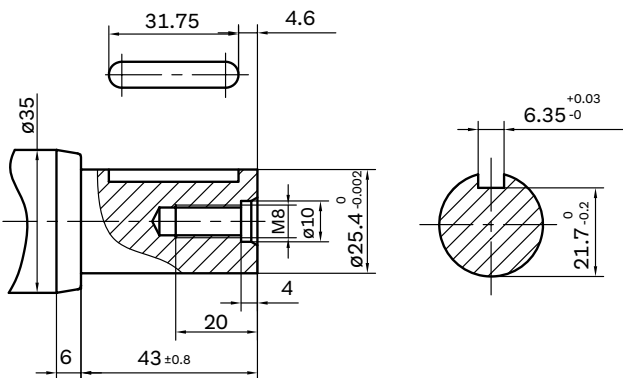
SHAFT A



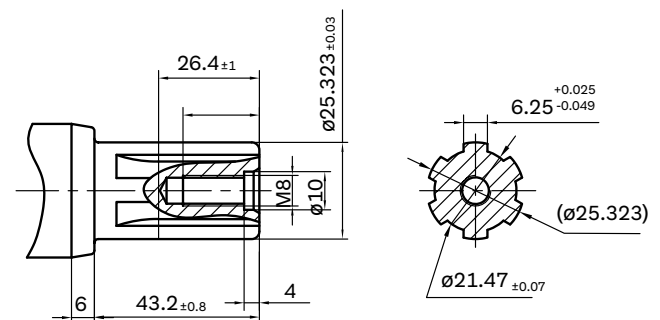
SHAFT B



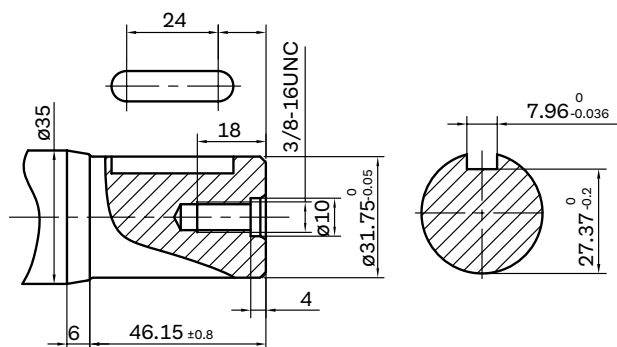
SHAFT C



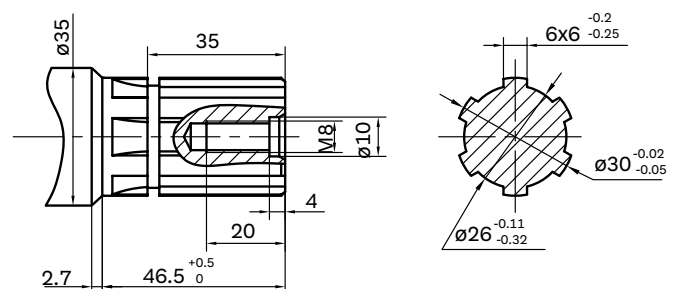
SHAFT E



SHAFT G



SHAFT N





# Order Information



| Pos.1 | 2     | 3                | 4                                                      | 5                                                 | 6        | 7                  |
|-------|-------|------------------|--------------------------------------------------------|---------------------------------------------------|----------|--------------------|
| Code  | Disp. | Torque           | Input Shaft holes                                      | Output Shaft extensions                           | Paint    | Unusually Function |
| 2     | 1     | Torque200--230Nm | Shaft holes $\phi$ 25, Parallel key 8x7x32             | A Shaft $\phi$ 25, Parallel key 8x7x32            | No Paint | Standard Omit      |
|       |       |                  | Shaft holes $\phi$ 32, Parallel key 10x8x45            | B Shaft $\phi$ 32, Parallel key 10x8x45           | Blue     |                    |
|       |       |                  | Shaft holes $\phi$ 25.4, Parallel key 6.35x6.35x31.75  | C Shaft $\phi$ 25.4, Parallel Key6.35x6.35x31.75  | Black    |                    |
|       |       |                  | Shaft holes $\phi$ 25.4, splined key SAE 6B            | E Shaft $\phi$ 25.4, splined key SAE 6B           | Sliver   |                    |
|       |       |                  | Shaft holes $\phi$ 31.75, Parallel key 7.96x7.96x31.75 | G Shaft $\phi$ 31.75, Parallel Key7.96x7.96x31.75 | Grey     |                    |
| 2     | 1     | Torque410--450Nm | 210                                                    |                                                   | 00       |                    |
|       |       |                  | 430                                                    |                                                   | OMIT     |                    |

**Note:** Note: When the table is used, please fill the code of left rows in dash area and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports. If the specification is not in the table or you have specific requirements, please contact us.



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