



VINCKE  
HYDRAULIC  
MOTORS



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## Distribution Type Motors

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## Usage Guide

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

1. Oil temperature :normal 20 ~60 upper limit 90 (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 10~30 $\mu$ m 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 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 12MPa,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 VNKSPLUS VNKT and VNKV 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 400 hours salt spray.

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           | 32                     |
|                    | 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 Motor

| Distribution type | Model    | Displacement (cm <sup>3</sup> /rev.) | Max. operating pressure (MPa) | Speed range (rpm) | Max. output power (kW) |
|-------------------|----------|--------------------------------------|-------------------------------|-------------------|------------------------|
| Disc distribution | VNKSPLUS | 80~475                               | 22.5                          | 8~800             | 24                     |
|                   | VNKT     | 160~800                              | 24                            | 30~705            | 35                     |
|                   | VNKV     | 315~800                              | 28                            | 10~446            | 43                     |





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.

### Main Specification

| Type                                           |       | VNKM<br>8 | VNKM<br>12.5 | VNKM<br>20 | VNKM<br>32 | VNKM<br>40 | VNKM<br>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.



VNKM8 [8.2 cm³/rev.]

|              |    | Pressure (MPa) |      |      |      |      |      | Max. cont. |  | Max. int. |  |
|--------------|----|----------------|------|------|------|------|------|------------|--|-----------|--|
|              |    | 3.5            | 5    | 7    | 10   | 12   | 14   |            |  |           |  |
| Flow (L/min) | 2  | 3              | 5    | 8    | 10   | 12   | 14   |            |  |           |  |
|              | 4  | 228            | 218  | 206  | 156  | 111  | 58   |            |  |           |  |
|              | 8  | 3              | 5    | 7    | 11   | 13   | 15   |            |  |           |  |
|              | 12 | 474            | 471  | 463  | 426  | 391  | 331  |            |  |           |  |
|              | 15 | 3              | 5    | 7    | 11   | 13   | 15   |            |  |           |  |
|              | 20 | 953            | 946  | 926  | 884  | 855  | 816  |            |  |           |  |
| Max. cont.   | 12 | 2              | 5    | 7    | 10   | 13   | 15   |            |  |           |  |
|              | 15 | 1444           | 1426 | 1402 | 1360 | 1324 | 1288 |            |  |           |  |
| Max. int.    | 15 |                | 4    | 7    | 10   | 12   | 14   |            |  |           |  |
|              | 20 |                | 1912 | 1900 | 1861 | 1833 | 1780 |            |  |           |  |
| Max. int.    | 20 |                |      | 6    | 10   | 11   | 14   |            |  |           |  |
|              | 25 |                |      | 2395 | 2350 | 2328 | 2281 |            |  |           |  |

VNKM12.5 [12.9 cm³/rev.]

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

VNKM20 [19.9 cm³/rev.]

|              |    | Pressure (MPa) |      |      |      |      |      |      | Max. cont. |  | Max. int. |  |
|--------------|----|----------------|------|------|------|------|------|------|------------|--|-----------|--|
|              |    | 1.7            | 3.5  | 5    | 7    | 10   | 12   | 14   |            |  |           |  |
| Flow (L/min) | 2  | 3              | 9    | 14   | 19   | 26   | 30   |      |            |  |           |  |
|              | 4  | 99             | 96   | 89   | 74   | 42   | 21   |      |            |  |           |  |
|              | 8  | 4              | 9    | 14   | 19   | 26   | 31   | 36   |            |  |           |  |
|              | 12 | 197            | 191  | 182  | 178  | 134  | 112  | 74   |            |  |           |  |
|              | 15 | 4              | 9    | 13   | 19   | 27   | 31   | 36   |            |  |           |  |
|              | 20 | 398            | 395  | 391  | 377  | 340  | 319  | 288  |            |  |           |  |
| Max. cont.   | 12 | 3              | 8    | 13   | 18   | 26   | 31   | 37   |            |  |           |  |
|              | 15 | 596            | 594  | 588  | 579  | 545  | 523  | 493  |            |  |           |  |
| Max. int.    | 15 | 3              | 8    | 12   | 17   | 25   | 30   | 36   |            |  |           |  |
|              | 20 | 745            | 741  | 738  | 728  | 695  | 684  | 660  |            |  |           |  |
| Max. int.    | 20 | 1              | 6    | 11   | 19   | 24   | 29   | 35   |            |  |           |  |
|              | 25 | 998            | 995  | 991  | 985  | 962  | 916  | 885  |            |  |           |  |
| Max. int.    | 25 |                | 4    | 9    | 14   | 23   | 28   | 33   |            |  |           |  |
|              | 25 |                | 1247 | 1245 | 1242 | 1189 | 1180 | 1176 |            |  |           |  |

VNKM32 [31.6 cc/rev.]

|              |    | Pressure (MPa) |     |     |     |     |     |     | Max. cont. |  | Max. int. |  |
|--------------|----|----------------|-----|-----|-----|-----|-----|-----|------------|--|-----------|--|
|              |    | 2              | 3.5 | 5   | 7   | 10  | 12  | 14  |            |  |           |  |
| Flow (L/min) | 2  | 7              | 15  | 21  | 28  | 40  |     |     |            |  |           |  |
|              | 4  | 61             | 57  | 52  | 47  | 16  |     |     |            |  |           |  |
|              | 8  | 7              | 15  | 21  | 29  | 41  | 48  | 57  |            |  |           |  |
|              | 12 | 126            | 121 | 114 | 106 | 82  | 67  | 49  |            |  |           |  |
|              | 15 | 7              | 15  | 21  | 29  | 41  | 49  | 58  |            |  |           |  |
|              | 20 | 250            | 244 | 239 | 231 | 207 | 194 | 167 |            |  |           |  |
| Max. cont.   | 12 | 6              | 13  | 20  | 28  | 40  | 48  | 58  |            |  |           |  |
|              | 15 | 378            | 374 | 369 | 362 | 338 | 322 | 297 |            |  |           |  |
| Max. int.    | 15 | 4              | 12  | 18  | 27  | 39  | 47  | 57  |            |  |           |  |
|              | 20 | 476            | 472 | 468 | 462 | 441 | 429 | 406 |            |  |           |  |
| Max. int.    | 20 | 3              | 10  | 17  | 25  | 37  | 46  | 55  |            |  |           |  |
|              | 25 | 633            | 630 | 627 | 619 | 601 | 585 | 566 |            |  |           |  |
| Max. int.    | 25 | 1              | 8   | 15  | 23  | 35  | 43  | 52  |            |  |           |  |
|              | 25 | 791            | 789 | 787 | 783 | 766 | 753 | 732 |            |  |           |  |

VNKM40 [39.8 cm³/rev.]

|              |    | Pressure (MPa) |     |     |     |     |     | Max. cont. |  | Max. int. |  |
|--------------|----|----------------|-----|-----|-----|-----|-----|------------|--|-----------|--|
|              |    | 3              | 5   | 7   | 8.5 | 10  | 12  |            |  |           |  |
| Flow (L/min) | 2  | 16             | 27  | 36  | 44  | 51  |     |            |  |           |  |
|              | 4  | 45             | 40  | 34  | 28  | 17  |     |            |  |           |  |
|              | 8  | 16             | 27  | 37  | 44  | 52  | 62  |            |  |           |  |
|              | 12 | 96             | 93  | 85  | 79  | 65  | 52  |            |  |           |  |
|              | 15 | 15             | 26  | 36  | 44  | 52  | 63  |            |  |           |  |
|              | 20 | 197            | 195 | 182 | 176 | 166 | 154 |            |  |           |  |
| Max. cont.   | 12 | 14             | 25  | 35  | 43  | 51  | 62  |            |  |           |  |
|              | 15 | 293            | 287 | 282 | 277 | 268 | 257 |            |  |           |  |
| Max. int.    | 15 | 13             | 24  | 34  | 42  | 50  | 62  |            |  |           |  |
|              | 20 | 371            | 365 | 360 | 355 | 347 | 338 |            |  |           |  |
| Max. int.    | 20 | 10             | 21  | 31  | 39  | 48  | 59  |            |  |           |  |
|              | 25 | 497            | 492 | 487 | 480 | 472 | 463 |            |  |           |  |
| Max. int.    | 25 | 7              | 19  | 29  | 37  | 44  | 56  |            |  |           |  |
|              | 25 | 622            | 617 | 612 | 607 | 600 | 591 |            |  |           |  |

VNKM50 [50.3 cm³/rev.]

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

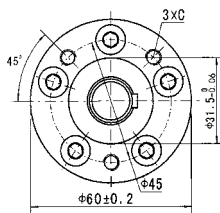
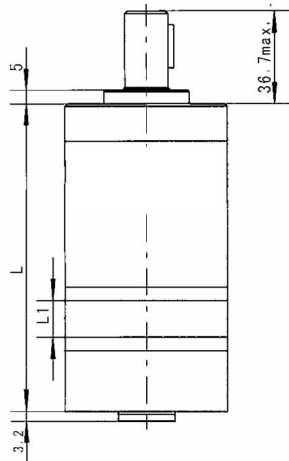
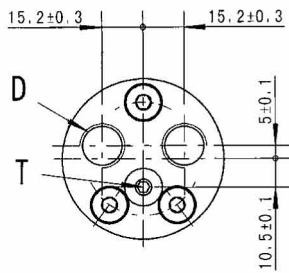
Torque (N·m) 37  
Speed (rpm) 607

cont.  
int.

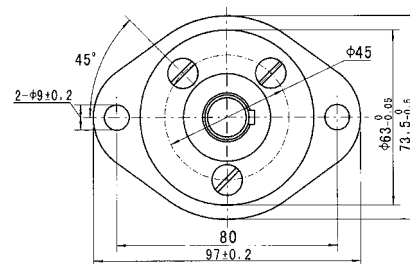
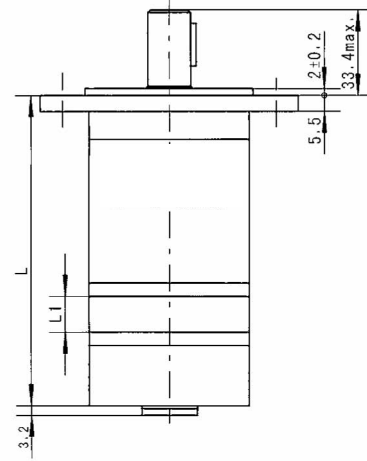
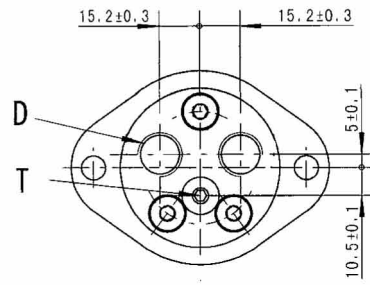


MOUNTING

Flange M, U



Flange F



| Model    | M, U Flange |     | F Flange |     |
|----------|-------------|-----|----------|-----|
|          | L           | L1  | L        | L1  |
| VNKM8    | 104         | 35  | 1.075    | 35  |
| VNKM12.5 | 106         | 55  | 1.095    | 55  |
| VNKM20   | 109         | 85  | 1.125    | 85  |
| VNKM32   | 114         | 135 | 1.175    | 135 |
| VNKM40   | 1.175       | 17  | 121      | 17  |
| VNKM50   | 122         | 215 | 1.255    | 215 |

| Code<br>Mounting | M, U Flange |                    | F Flange   |                |
|------------------|-------------|--------------------|------------|----------------|
|                  | 1E (depth)  | 1U (depth)         | 1E (depth) | 1U (depth)     |
| C                | 3-M6 (10)   | 3-1/4-28UNF-2B(10) | --         | --             |
| 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)   |





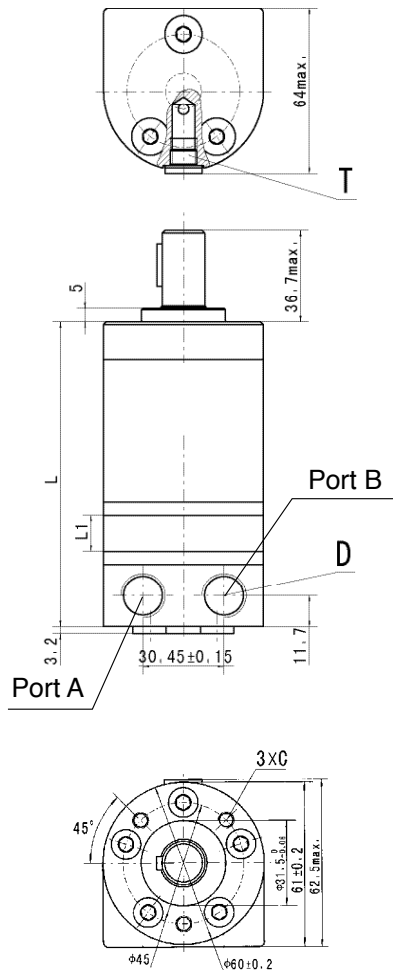
## HYDRAULIC MOTORS

### VNKM SIDE PORT DIMENSIONS AND MOUNTING DATA

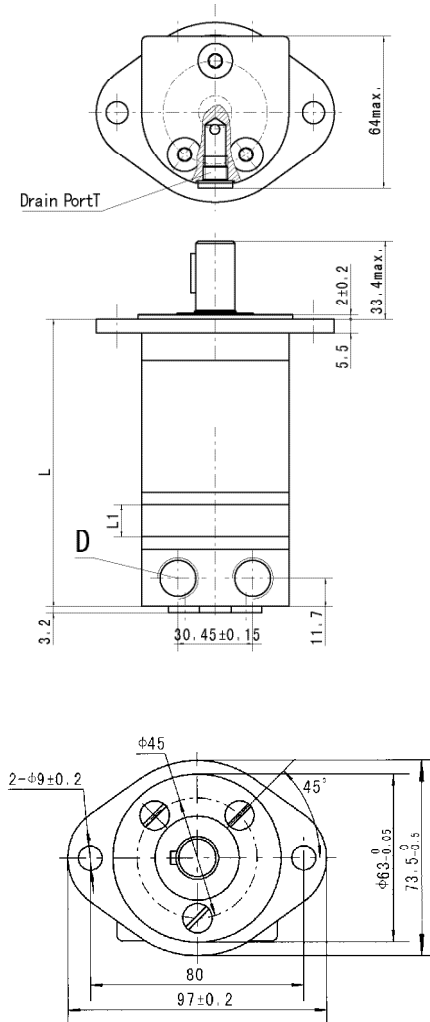
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#### MOUNTING

Flange M,U



Flange F

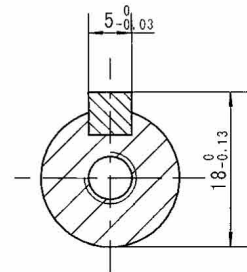
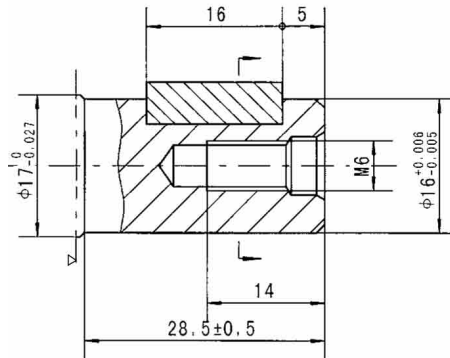


| Model    | M, U Flange |     | F Flange |     |
|----------|-------------|-----|----------|-----|
|          | L           | L1  | L        | L1  |
| VNKM8    | 105         | 35  | 1.085    | 35  |
| VNKM12.5 | 107         | 55  | 1.105    | 55  |
| VNKM20   | 110         | 85  | 1.135    | 85  |
| VNKM32   | 115         | 135 | 1.185    | 135 |
| VNKM40   | 1.185       | 17  | 122      | 17  |
| VNKM50   | 123         | 215 | 1.265    | 215 |

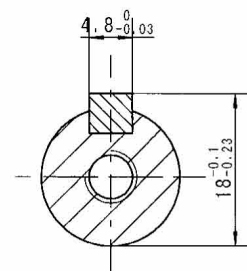
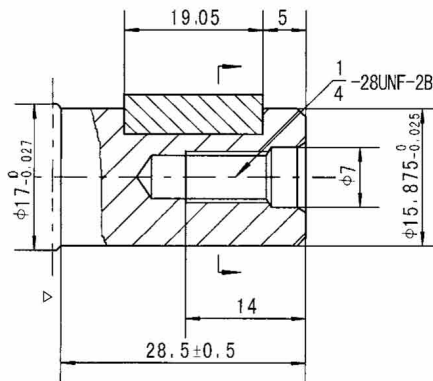
| Code | M, U Flange |                    | F Flange  |                |
|------|-------------|--------------------|-----------|----------------|
|      | E (depth)   | U (depth)          | E (depth) | U (depth)      |
| C    | 3-M6 (10)   | 3-1/4-28UNF-2B(10) | --        | --             |
| D    | 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)   |



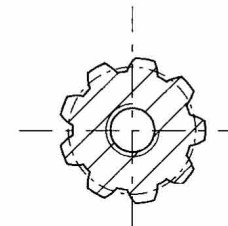
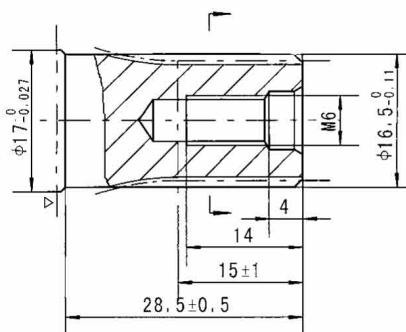
Shaft A: Cylindrical shaft  $\varnothing 16$   
Parallel key 5x5x16



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



Shaft C: Involute splind shaft  
B17x14 DIN5482



Motor Mounting Surface →

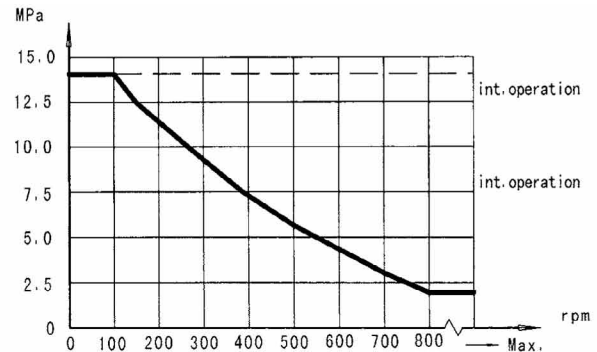
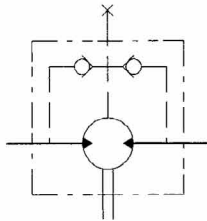


## HYDRAULIC MOTORS

### VNKM SERIES HYDRAULIC MOTOR

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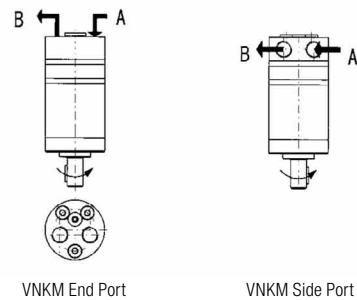
#### Permissible shaft seal pressure



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.

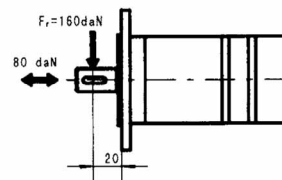
#### Direction of shaft rotation: Standard

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



#### Status of the shaft's radial force

$$F_r = \frac{13040}{61.5 + L} \text{ daN}$$



$F_r$  = Radial Force (daN)  
 $L$  = Distance (mm)  
 $n$  = Speed (rpm)  
 Max. force load  
 Rhomb-flange  $L=15\text{mm}$   
 Square-flange  $L=20\text{mm}$



## VNKM 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<br>12.5<br>20<br>32<br>40<br>50 | M 3-1/6 Circle-flange, pilot Ø31.5×5<br>U 3-1/4-28UNF Circle flange, pilot Ø31.5×5<br>F 2-Ø9 Rhomb-flange, pilot Ø63×2 | A Shaft Ø16, parallel key 5×5×16<br>B Shaft Ø15.875, parallel key 4.8×4.8×19.05<br>C Shaft Ø16.5, involute B17×14, DIN5482 | E G3/8, G1/8<br>U 9/16-18UNF, 3/8-24UNF<br>1E End port G3/8, G1/8<br>1U End port 9/16-18UNF, 3/8-24UNF | Omit<br>R          | 00<br>Omit<br>Blue<br>Black<br>Silver grey | Omit<br>O          | Standard<br>No case 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. |                                   |                                                                                                                        |                                                                                                                            |                                                                                                        |                    |                                            |                    |                           |   |



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 use low pressure of start-up, provide smooth, reliable operation and high efficiency.
- 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.
- Advanced construction design, high power and low weight.
- The output shaft runs in **needle bearing** capable of absorbing static and dynamic axial and radial loads.
- Supporting +300 hours of salt spray.

#### 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>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<br>(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<br>(N•m)                                                              | cont. | 55                           | 100                          | 146                          | 182                           | 236                           | 302                           | 360                           | 380                           | 375                           | 360                           | 385                           |
|                                                                                   | int.  | 76                           | 128                          | 186                          | 227                           | 290                           | 370                           | 440                           | 460                           | 555                           | 525                           | 560                           |
|                                                                                   | peak  | 96                           | 148                          | 218                          | 264                           | 360                           | 434                           | 540                           | 550                           | 650                           | 680                           | 680                           |
| Max. output<br>(kW)                                                               | cont. | 8,0                          | 10,0                         | 10,0                         | 11,0                          | 10,0                          | 10,0                          | 10,0                          | 8,5                           | 7,0                           | 6,0                           | 5,0                           |
|                                                                                   | int.  | 11,5                         | 12,0                         | 12,0                         | 13,0                          | 12,0                          | 12,0                          | 12,0                          | 10,5                          | 8,5                           | 7,0                           | 6,0                           |
| Max. pressure<br>drop<br>(MPa)                                                    | cont. | 12,5                         | 14                           | 14                           | 14                            | 14                            | 14                            | 14                            | 11                            | 9                             | 7                             | 6                             |
|                                                                                   | int.  | 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                          | 18                            | 16                            | 14                            | 12                            |
| 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                             |

- 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

Technical data for VNKP with 31.75 and 32 shaft

| Type                                           |       | VNKP<br>VNKPH<br>36 | VNKP<br>VNKPH<br>50 | VNKP<br>VNKPH<br>80 | VNKP<br>VNKPH<br>100 | VNKP<br>VNKPH<br>125 | VNKP<br>VNKPH<br>160 | VNKP<br>VNKPH<br>200 | VNKP<br>VNKPH<br>250 | VNKP<br>VNKPH<br>315 | VNKP<br>VNKPH<br>400 | VNKP<br>VNKPH<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. | 80                  | 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.
- Peak pressure:Max. value of operating motor in 0.6 second per minute.



VNKP 36 [36cm³/rev.]

Pressure (MPa)

|            | 3    | 6    | 7    | 8    | 10   | 11   | 12.5 | Max. cont. | Max. int. |
|------------|------|------|------|------|------|------|------|------------|-----------|
|            |      |      |      |      |      |      |      |            | 16.5      |
| 8          | 13   | 25   | 29   | 34   | 43   | 48   |      |            |           |
|            | 214  | 205  | 200  | 194  | 187  | 179  |      |            |           |
| 15         | 13   | 25   | 29   | 34   | 43   | 48   | 56   | 75         |           |
|            | 406  | 398  | 391  | 383  | 374  | 366  | 353  | 324        |           |
| 20         | 13   | 24   | 29   | 34   | 43   | 48   | 56   | 76         |           |
|            | 541  | 534  | 528  | 521  | 513  | 500  | 486  | 458        |           |
| 30         | 12   | 24   | 29   | 34   | 43   | 48   | 56   | 76         |           |
|            | 814  | 804  | 792  | 778  | 763  | 749  | 726  | 701        |           |
| 35         | 12   | 23   | 28   | 34   | 43   | 48   | 56   | 76         |           |
|            | 952  | 944  | 930  | 913  | 897  | 879  | 858  | 833        |           |
| 40         | 12   | 23   | 28   | 32   | 41   | 47   | 55   | 75         |           |
|            | 1090 | 1078 | 1064 | 1048 | 1024 | 998  | 977  | 943        |           |
| 45         | 11   | 22   | 26   | 32   | 41   | 46   | 54   | 74         |           |
|            | 1232 | 1218 | 1196 | 1175 | 1149 | 1118 | 1080 | 1044       |           |
| Max. cont. | 6    | 15   | 22   | 28   | 37   | 44   | 52   | 71         |           |
|            | 1505 | 1494 | 1480 | 1466 | 1438 | 1406 | 1367 | 1309       |           |
| Max. int.  | 3    | 11   | 18   | 20   | 30   | 38   | 49   | 67         |           |
|            | 1650 | 1640 | 1626 | 1603 | 1571 | 1536 | 1502 | 1446       |           |

VNKP 50 [51.7cm³/rev.]

Pressure (MPa)

|            | 3    | 6    | 8    | 10   | 12.5 | 14   | 16   | 17.5 | Max. cont. | Max. int. |
|------------|------|------|------|------|------|------|------|------|------------|-----------|
|            |      |      |      |      |      |      |      |      |            |           |
| 8          | 20   | 41   | 56   | 69   | 89   | 95   |      |      |            |           |
|            | 151  | 134  | 115  | 90   | 56   | 42   |      |      |            |           |
| 15         | 19   | 40   | 56   | 71   | 91   | 100  | 112  | 120  |            |           |
|            | 286  | 274  | 261  | 243  | 204  | 182  | 139  | 102  |            |           |
| 20         | 18   | 39   | 55   | 71   | 92   | 101  | 117  | 128  |            |           |
|            | 382  | 373  | 361  | 348  | 318  | 309  | 287  | 251  |            |           |
| 30         | 17   | 38   | 55   | 71   | 91   | 98   | 116  | 124  |            |           |
|            | 573  | 568  | 558  | 535  | 503  | 488  | 462  | 440  |            |           |
| 35         | 17   | 38   | 54   | 69   | 89   | 98   | 117  | 124  |            |           |
|            | 670  | 661  | 652  | 640  | 606  | 589  | 562  | 548  |            |           |
| 45         | 14   | 36   | 53   | 67   | 88   | 98   | 114  | 123  |            |           |
|            | 863  | 858  | 849  | 837  | 807  | 788  | 764  | 746  |            |           |
| 55         | 12   | 33   | 50   | 65   | 85   | 96   | 111  | 121  |            |           |
|            | 1055 | 1042 | 1028 | 1010 | 979  | 963  | 947  | 920  |            |           |
| Max. cont. | 10   | 32   | 47   | 64   | 83   | 94   | 108  | 119  |            |           |
|            | 1150 | 1143 | 1126 | 1111 | 1079 | 1065 | 1043 | 1015 |            |           |
| Max. int.  | 6    | 25   | 42   | 56   | 76   | 87   | 101  | 112  |            |           |
|            | 1440 | 1430 | 1416 | 1395 | 1367 | 1351 | 1335 | 1312 |            |           |

VNKP 80 [77.7cm³/rev.]

Pressure (MPa)

|            | 3   | 6   | 8   | 10  | 12.5 | 14  | 16  | 17.5 | Max. cont. | Max. int. |
|------------|-----|-----|-----|-----|------|-----|-----|------|------------|-----------|
|            |     |     |     |     |      |     |     |      |            |           |
| 8          | 32  | 62  | 85  | 104 | 129  | 144 |     |      |            |           |
|            | 97  | 87  | 74  | 55  | 33   | 22  |     |      |            |           |
| 15         | 32  | 63  | 84  | 107 | 126  | 144 | 165 |      |            |           |
|            | 186 | 181 | 170 | 154 | 132  | 118 | 86  |      |            |           |
| 20         | 31  | 63  | 84  | 107 | 132  | 146 | 168 | 185  |            |           |
|            | 251 | 243 | 236 | 225 | 207  | 196 | 178 | 155  |            |           |
| 30         | 31  | 62  | 83  | 106 | 131  | 146 | 168 | 186  |            |           |
|            | 381 | 379 | 368 | 355 | 332  | 316 | 285 | 263  |            |           |
| 35         | 30  | 59  | 81  | 102 | 130  | 144 | 167 | 185  |            |           |
|            | 443 | 435 | 426 | 415 | 397  | 383 | 361 | 342  |            |           |
| 45         | 25  | 58  | 79  | 100 | 126  | 142 | 165 | 182  |            |           |
|            | 570 | 564 | 554 | 543 | 526  | 509 | 483 | 458  |            |           |
| 55         | 23  | 57  | 78  | 97  | 124  | 140 | 161 | 179  |            |           |
|            | 696 | 685 | 672 | 656 | 643  | 630 | 602 | 579  |            |           |
| Max. cont. | 20  | 53  | 75  | 94  | 120  | 137 | 160 | 177  |            |           |
|            | 761 | 753 | 744 | 736 | 720  | 706 | 681 | 660  |            |           |
| Max. int.  | 14  | 44  | 67  | 87  | 112  | 151 | 169 | 169  |            |           |
|            | 948 | 940 | 931 | 920 | 906  | 890 | 871 | 854  |            |           |

VNKP 100 [96.2cm³/rev.]

Pressure (MPa)

|            | 3   | 6   | 8   | 10  | 12.5 | 14  | 16  | 17.5 | Max. cont. | Max. int. |
|------------|-----|-----|-----|-----|------|-----|-----|------|------------|-----------|
|            |     |     |     |     |      |     |     |      |            |           |
| 8          | 40  | 77  | 105 | 130 | 161  | 180 |     |      |            |           |
|            | 81  | 75  | 69  | 57  | 36   | 24  |     |      |            |           |
| 15         | 39  | 77  | 106 | 130 | 160  | 180 | 208 |      |            |           |
|            | 152 | 149 | 145 | 140 | 122  | 103 | 81  |      |            |           |
| 20         | 36  | 74  | 104 | 128 | 161  | 179 | 205 | 227  |            |           |
|            | 204 | 200 | 195 | 190 | 177  | 166 | 148 | 133  |            |           |
| 30         | 33  | 72  | 103 | 125 | 160  | 177 | 203 | 225  |            |           |
|            | 308 | 304 | 298 | 290 | 280  | 268 | 255 | 231  |            |           |
| 35         | 30  | 70  | 98  | 122 | 159  | 176 | 202 | 224  |            |           |
|            | 360 | 352 | 343 | 331 | 320  | 306 | 294 | 275  |            |           |
| 45         | 29  | 67  | 95  | 118 | 155  | 174 | 200 | 220  |            |           |
|            | 462 | 458 | 451 | 443 | 433  | 419 | 402 | 383  |            |           |
| 55         | 25  | 64  | 93  | 116 | 152  | 170 | 198 | 217  |            |           |
|            | 566 | 558 | 549 | 540 | 529  | 515 | 498 | 478  |            |           |
| Max. cont. | 22  | 60  | 91  | 114 | 149  | 167 | 194 | 213  |            |           |
|            | 618 | 611 | 601 | 589 | 580  | 570 | 558 | 540  |            |           |
| Max. int.  | 15  | 54  | 83  | 106 | 141  | 160 | 186 | 205  |            |           |
|            | 771 | 763 | 755 | 744 | 735  | 724 | 708 | 693  |            |           |

Torque (N·m) 87  
Speed (rpm) 920

cont.

int.



VNKP 125 [120.2cm³/rev.]

|              |          | Pressure (MPa) |     |     |     |      |     |     |      |  |
|--------------|----------|----------------|-----|-----|-----|------|-----|-----|------|--|
|              |          | 3              | 6   | 8   | 10  | 12.5 | 14  | 16  | 17.5 |  |
| Flow (L/min) | 8        | 51             | 98  | 137 | 168 | 208  | 236 |     |      |  |
|              |          | 63             | 60  | 55  | 47  | 28   | 15  |     |      |  |
|              | 15       | 51             | 101 | 138 | 168 | 209  | 236 | 267 |      |  |
|              |          | 121            | 116 | 110 | 102 | 89   | 73  | 48  |      |  |
|              | 20       | 48             | 98  | 135 | 167 | 211  | 237 | 269 | 290  |  |
|              |          | 162            | 158 | 153 | 148 | 137  | 128 | 109 | 94   |  |
|              | 30       | 46             | 96  | 132 | 164 | 209  | 232 | 264 | 287  |  |
|              |          | 243            | 239 | 234 | 227 | 216  | 202 | 189 | 176  |  |
|              | 35       | 42             | 92  | 130 | 160 | 206  | 229 | 260 | 284  |  |
|              |          | 284            | 279 | 274 | 269 | 259  | 247 | 231 | 222  |  |
| Max.cont.    | 45       | 37             | 89  | 125 | 157 | 201  | 224 | 261 | 281  |  |
|              |          | 370            | 362 | 355 | 348 | 340  | 327 | 310 | 296  |  |
|              | 55       | 33             | 84  | 122 | 152 | 196  | 218 | 252 | 275  |  |
|              |          | 452            | 446 | 438 | 431 | 420  | 412 | 402 | 384  |  |
|              | 60       | 29             | 78  | 117 | 146 | 191  | 215 | 248 | 272  |  |
|              |          | 490            | 482 | 475 | 468 | 459  | 448 | 439 | 427  |  |
|              | Max.int. | 18             | 66  | 107 | 133 | 179  | 202 | 236 | 260  |  |
|              |          | 615            | 606 | 598 | 586 | 575  | 563 | 549 | 528  |  |
|              | 75       |                |     |     |     |      |     |     |      |  |
|              |          |                |     |     |     |      |     |     |      |  |

VNKP 160 [157.2cm³/rev.]

|              |          | Pressure (MPa) |     |     |     |      |     |     |      |  |
|--------------|----------|----------------|-----|-----|-----|------|-----|-----|------|--|
|              |          | 3              | 6   | 8   | 10  | 12.5 | 14  | 16  | 17.5 |  |
| Flow (L/min) | 8        | 62             | 120 | 170 | 212 | 263  | 290 |     |      |  |
|              |          | 49             | 48  | 46  | 42  | 26   | 14  |     |      |  |
|              | 15       | 60             | 122 | 172 | 215 | 264  | 294 | 340 |      |  |
|              |          | 93             | 91  | 88  | 85  | 76   | 68  | 48  |      |  |
|              | 20       | 57             | 120 | 170 | 214 | 262  | 290 | 340 | 371  |  |
|              |          | 125            | 123 | 120 | 117 | 110  | 106 | 92  | 81   |  |
|              | 30       | 53             | 115 | 164 | 206 | 259  | 288 | 335 | 368  |  |
|              |          | 187            | 184 | 181 | 178 | 175  | 168 | 155 | 139  |  |
|              | 35       | 49             | 110 | 160 | 202 | 255  | 284 | 328 | 362  |  |
|              |          | 220            | 216 | 213 | 209 | 205  | 202 | 192 | 176  |  |
| Max.cont.    | 45       | 44             | 102 | 154 | 196 | 248  | 278 | 321 | 358  |  |
|              |          | 283            | 280 | 276 | 272 | 267  | 260 | 250 | 238  |  |
|              | 55       | 40             | 99  | 148 | 191 | 243  | 272 | 316 | 351  |  |
|              |          | 345            | 342 | 340 | 336 | 331  | 328 | 320 | 303  |  |
|              | 60       | 33             | 94  | 144 | 188 | 236  | 267 | 308 | 345  |  |
|              |          | 377            | 374 | 371 | 367 | 363  | 359 | 353 | 342  |  |
|              | Max.int. | 19             | 80  | 124 | 170 | 216  | 252 | 296 | 325  |  |
|              |          | 473            | 469 | 465 | 459 | 453  | 447 | 440 | 424  |  |
|              | 75       |                |     |     |     |      |     |     |      |  |
|              |          |                |     |     |     |      |     |     |      |  |

VNKP 200 [194.5cm³/rev.]

|              |          | Pressure (MPa) |     |     |     |      |     |     |      |  |
|--------------|----------|----------------|-----|-----|-----|------|-----|-----|------|--|
|              |          | 3              | 6   | 8   | 10  | 12.5 | 14  | 16  | 17.5 |  |
| Flow (L/min) | 8        | 79             | 164 | 207 | 250 | 320  | 360 |     |      |  |
|              |          | 40             | 39  | 38  | 35  | 28   | 22  |     |      |  |
|              | 15       | 78             | 162 | 205 | 250 | 322  | 361 | 410 |      |  |
|              |          | 76             | 75  | 74  | 71  | 66   | 61  | 51  |      |  |
|              | 20       | 76             | 158 | 203 | 247 | 320  | 358 | 403 | 422  |  |
|              |          | 100            | 98  | 97  | 95  | 92   | 89  | 73  | 57   |  |
|              | 30       | 70             | 153 | 200 | 245 | 315  | 350 | 398 | 417  |  |
|              |          | 151            | 149 | 147 | 145 | 142  | 139 | 131 | 120  |  |
|              | 35       | 66             | 149 | 194 | 232 | 297  | 343 | 386 | 415  |  |
|              |          | 177            | 175 | 173 | 171 | 168  | 166 | 160 | 149  |  |
| Max.cont.    | 45       | 63             | 146 | 190 | 230 | 294  | 340 | 383 | 410  |  |
|              |          | 228            | 226 | 224 | 221 | 218  | 215 | 210 | 198  |  |
|              | 55       | 54             | 140 | 181 | 224 | 286  | 334 | 371 | 400  |  |
|              |          | 280            | 278 | 276 | 274 | 271  | 269 | 263 | 250  |  |
|              | 60       | 38             | 127 | 164 | 212 | 270  | 325 | 356 | 395  |  |
|              |          | 304            | 302 | 300 | 297 | 294  | 291 | 286 | 272  |  |
|              | Max.int. | 22             | 96  | 145 | 192 | 235  | 293 | 321 | 367  |  |
|              |          | 382            | 378 | 374 | 371 | 368  | 364 | 360 | 350  |  |
|              | 75       |                |     |     |     |      |     |     |      |  |
|              |          |                |     |     |     |      |     |     |      |  |

VNKP 250 [240.3cm³/rev.]

|              |          | Pressure (MPa) |     |     |     |      |     |     |      |  |
|--------------|----------|----------------|-----|-----|-----|------|-----|-----|------|--|
|              |          | 3              | 6   | 8   | 10  | 12.5 | 14  | 16  | 17.5 |  |
| Flow (L/min) | 8        | 96             | 190 | 268 | 326 | 403  |     |     |      |  |
|              |          | 30             | 28  | 24  | 21  | 11   |     |     |      |  |
|              | 15       | 98             | 194 | 270 | 327 | 405  | 450 | 510 |      |  |
|              |          | 60             | 58  | 54  | 50  | 40   | 30  | 12  |      |  |
|              | 20       | 92             | 188 | 267 | 325 | 405  | 456 | 514 | 565  |  |
|              |          | 82             | 80  | 77  | 76  | 69   | 64  | 52  | 38   |  |
|              | 30       | 85             | 180 | 259 | 320 | 400  | 448 | 513 | 561  |  |
|              |          | 123            | 120 | 118 | 114 | 106  | 98  | 87  | 76   |  |
|              | 35       | 77             | 176 | 252 | 311 | 389  | 436 | 504 | 557  |  |
|              |          | 143            | 141 | 139 | 135 | 128  | 122 | 112 | 101  |  |
| Max.cont.    | 45       | 70             | 168 | 243 | 300 | 377  | 428 | 495 | 543  |  |
|              |          | 185            | 182 | 178 | 174 | 168  | 161 | 152 | 139  |  |
|              | 55       | 63             | 159 | 237 | 290 | 369  | 417 | 483 | 531  |  |
|              |          | 226            | 223 | 218 | 213 | 209  | 202 | 193 | 185  |  |
|              | 60       | 60             | 150 | 228 | 280 | 358  | 407 | 473 | 520  |  |
|              |          | 248            | 246 | 243 | 239 | 233  | 226 | 215 | 207  |  |
|              | Max.int. | 34             | 128 | 202 | 264 | 342  | 387 | 448 | 488  |  |
|              |          | 309            | 306 | 302 | 297 | 292  | 286 | 278 | 264  |  |
|              | 75       |                |     |     |     |      |     |     |      |  |
|              |          |                |     |     |     |      |     |     |      |  |

Torque (N·m) 128  
Speed (rpm) 306

cont.

int.



## HYDRAULIC MOTORS

### PERFORMANCE DATA

16

VNKP 315 [314.5cm³/rev.]

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

VNKP 400 [389.5cm³/rev.]

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

Torque (N·m) 234  
Speed (rpm) 185

VNKP500 [486.5cm³/rev.]

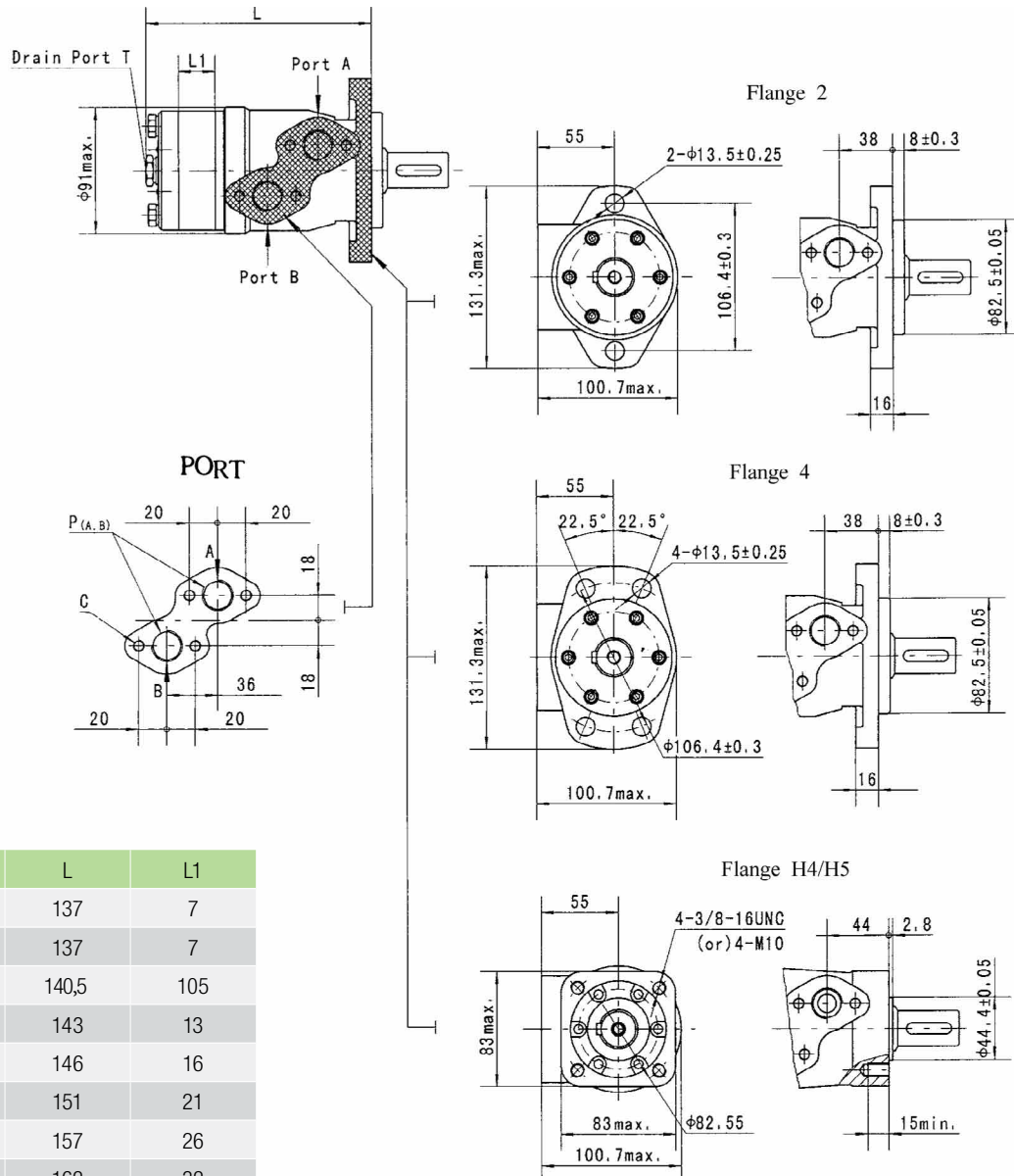
| Pressure (MPa) |          |     |     |     |     |     |     | Max.cont | Max.int |
|----------------|----------|-----|-----|-----|-----|-----|-----|----------|---------|
|                |          | 1.5 | 3   | 4.5 | 6   | 7   | 8   | 9        |         |
| Flow (L/min)   | 4        | 96  | 194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

Torque (N·m) 389  
Speed (rpm) 147

cont.  
int.



MOUNTING

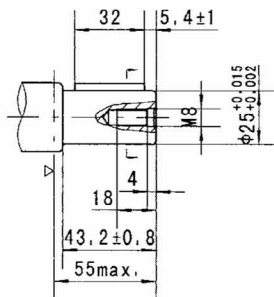


| Model   | L     | L1  |
|---------|-------|-----|
| VNKP36  | 137   | 7   |
| VNKP50  | 137   | 7   |
| VNKP80  | 140,5 | 105 |
| VNKP100 | 143   | 13  |
| VNKP125 | 146   | 16  |
| VNKP160 | 151   | 21  |
| VNKP200 | 157   | 26  |
| VNKP250 | 162   | 32  |
| VNKP315 | 172   | 42  |
| VNKP400 | 182   | 52  |
| VNKP500 | 195   | 65  |

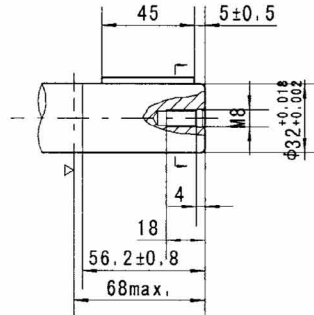
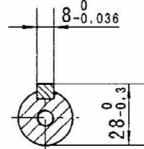
| Code   | D (depth) | M (depth)      | S (depth)          | P (depth)        | R (depth)       |
|--------|-----------|----------------|--------------------|------------------|-----------------|
| P(A,B) | G1/2 (15) | M22 x 1.5 (15) | 7/8-14 O-ring (17) | 1/2-14NPTF (15)  | PT(RC)1/2 (15)  |
| C      | 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) |

| Code<br>Mounting | 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)   |

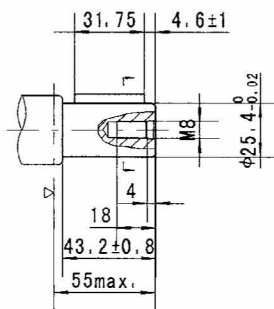
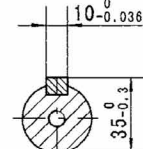




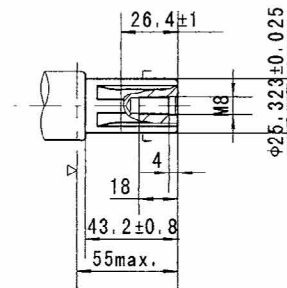
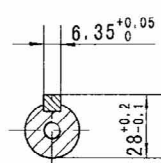
Shaft A: Cylindrical shaft ø25  
Parallel key 8x7x32



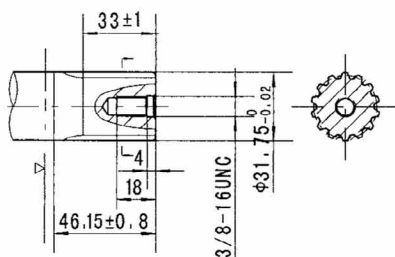
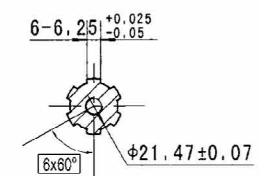
Shaft B: Cylindrical shaft ø32  
Parallel key 10x8x45



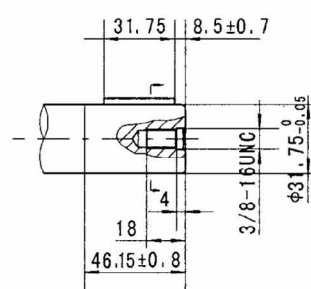
Shaft C: Cylindrical shaft ø25.4  
Parallel key 6.35x6.35x31.75



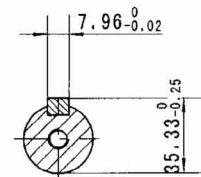
Shaft E: Splined SAE 6B



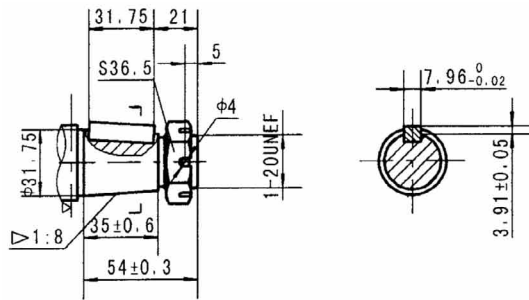
Shaft F: Splined  
14-DP12/24



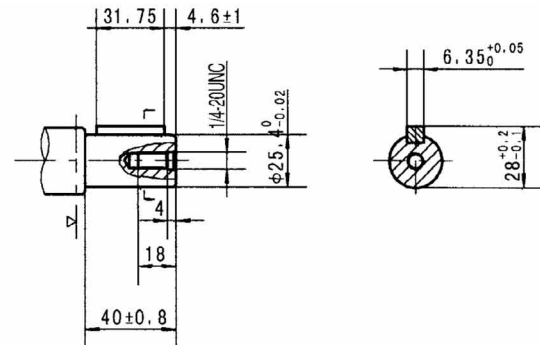
Shaft G: Cylindrical shaft ø31.75  
Parallel key 7.96x7.96x31.75



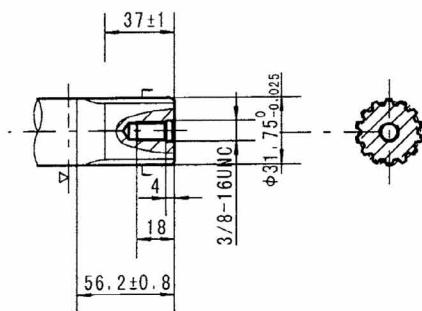
Motor Mounting Surface →



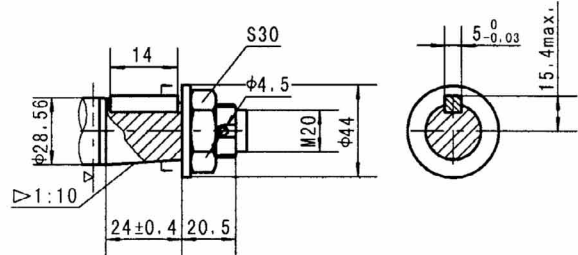
Shaft T3: Cone-shaft  $\phi 31.75$   
Parallel key 7.96x7.96x31.75  
Tightening torque: 200±10Nm



Shaft R: Cylindrical shaft  $\phi 25.4$   
Parallel key 6.35x6.35x31.75

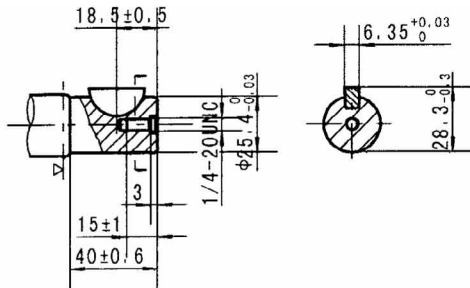


Shaft FD: Splined  
14-DP12/24

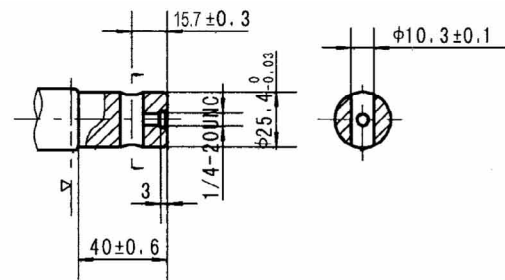


Shaft T: Cone-shaft  $\phi 28.56$   
Parallel key B5x5x14  
Tightening torque: 100±10Nm

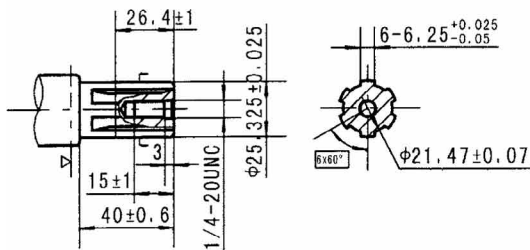
Motor Mounting Surface →



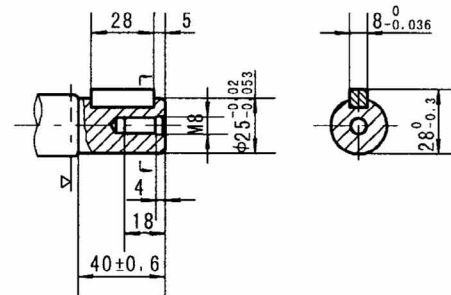
Shaft K: Cylindrical shaft  $\phi 25.4$   
Woodruff key  $\phi 25.4 \times 6.35$



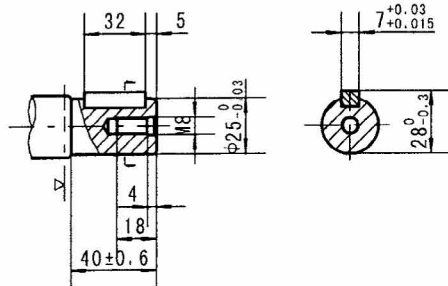
Shaft H: Cylindrical shaft  $\phi 25.4$   
Pin hole  $\phi 10.3$



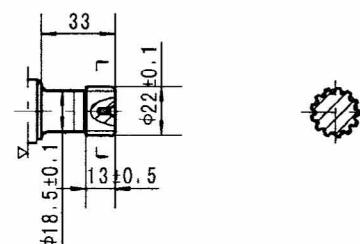
Shaft S: Splined SAE 6B



Shaft P: Cylindrical shaft  $\phi 25$   
Parallel key  $8 \times 7 \times 28$

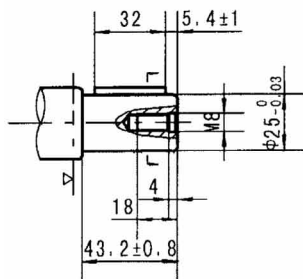


Shaft J: Cylindrical shaft  $\phi 25$   
Parallel key  $7 \times 7 \times 32$

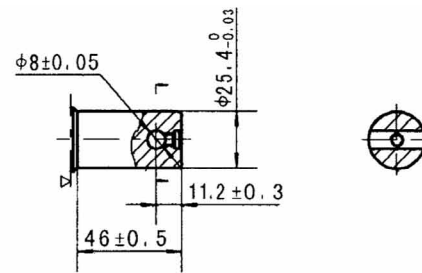


Shaft I: Splined 13-DP16/32

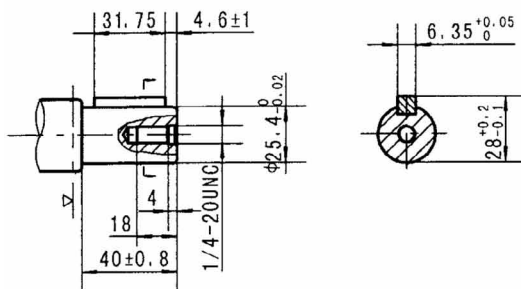
Motor Mounting Surface →



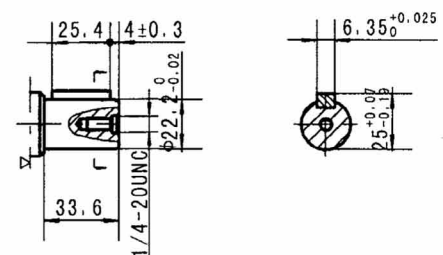
Shaft A: Cylindrical shaft  $\varnothing 25$   
Parallel key 8x7x32



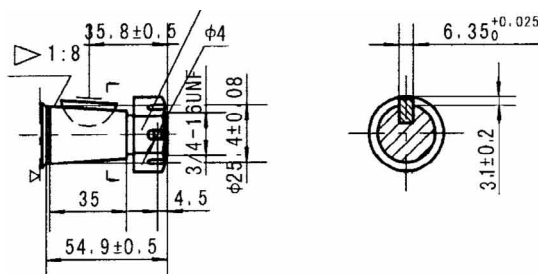
Shaft H1: Cylindrical shaft  $\varnothing 25.4$   
Pin hole  $\varnothing 8$



Shaft R: Cylindrical shaft  $\varnothing 25.4$   
Parallel key 6.35x6.35x31.75



Shaft D: Cylindrical shaft  $\varnothing 22.22$   
Parallel key 6.35x6.35x25.4

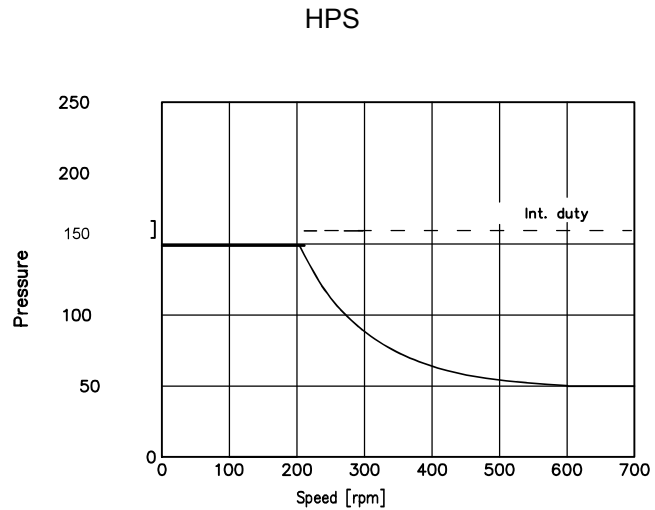
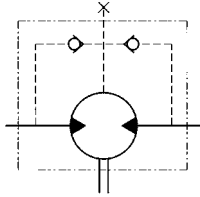


Shaft T2: Cone-shaft  $\varnothing 25.4$   
Parallel key  $\varnothing 25.4 \times 6.35$   
Tightening torque:  $200 \pm 10 \text{ Nm}$

Motor Mounting Surface →



### Permissible shaft seal pressure



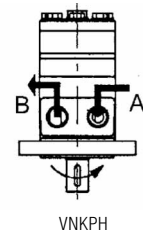
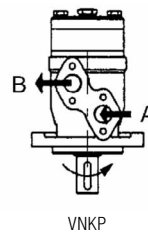
Vincke are made as standard with HPS seal version.

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.

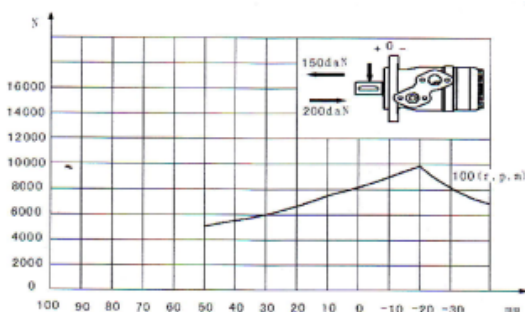
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

### Direction of shaft rotation: Standard

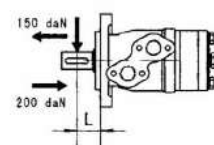
When facing shaft end of motor, shaft to rotate:  
Clockwise when port "A" is pressurized.  
Counter-clockwise port "B" is pressurized.



### Status of the shaft's radial force with needle bearing



$$F_r = \frac{800 \cdot 25000}{n \cdot 95 + L} \text{ daN}$$



$F_r$  = Radial Force (daN)  
 $L$  = Distance (mm)  
 $n$  = Speed (rpm)  
Rhomb-flange  $L=30\text{mm}$   
Square-flange  $L=24\text{mm}$

The output Shaft on VNKP-N series is supplied with needle bearing and the recessed mounting allow a higher permissible radial load in comparison with VNK series motors. The curves apply to a B10 needle roller bearing life of 2000 hours.

### Relationship between output shaft bearing load and multiplication coefficient

|                |      |     |      |      |      |      |      |      |      |
|----------------|------|-----|------|------|------|------|------|------|------|
| Rotating speed | 50   | 100 | 200  | 300  | 400  | 500  | 600  | 700  | 800  |
| coefficient    | 1.23 | 1   | 0.81 | 0.72 | 0.66 | 0.62 | 0.58 | 0.56 | 0.54 |

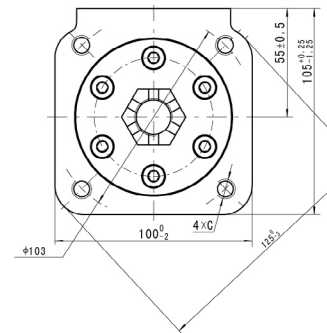
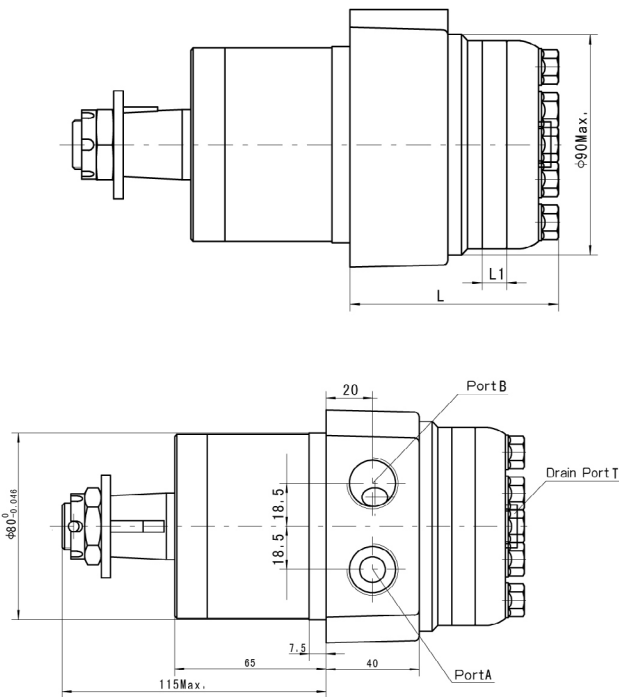


| VNKP  | 1     | 2                                                                                                                                                                          | 3                                             | 4                                               | 5                  | 6                                                                                                                                                                                                                | 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               |              |
| VNKP  | 36    | 2-Ø13.5 Rhomb-flange ,<br>pilot Ø82.5x8<br>4-Ø13.5 Rhomb-flange ,<br>pilot Ø82.5x8<br>4-3/8-16 Square-flange ,<br>pilot Ø44.4x2.8<br>4-M10 Square-flange , pilot Ø44.4x2.8 | A                                             | Shaft 025,parallel key 8x7x32                   | D                  | G1/2 Manifold Mount 4xM8, G1/4 M22x1.5 Manifold Mount 4xM8, M14x1.5<br>7/8-14 O-ring manifold 4x5/16-18UNC, 7/16-20UNF<br>1/2-14 NPTF<br>Manifold 4x5/16-18UNC, 7/16-20UNF<br>PT(Rc)1/2 Manifold 4xM8, PT(Rc)1/4 | Standard<br>HPS Big radial force |              |
|       | 50    |                                                                                                                                                                            | C                                             | Shaft 025.4,parallel key 6.35x6.35x31.75        | M                  |                                                                                                                                                                                                                  |                                  |              |
|       | 80    |                                                                                                                                                                            | E                                             | Shaft 025.4, splined tooth SEA 6B               |                    |                                                                                                                                                                                                                  |                                  |              |
|       | 100   |                                                                                                                                                                            | R                                             | Short shaft 025.4, parallel key 6.35x6.35x31.75 | S                  |                                                                                                                                                                                                                  |                                  |              |
|       | 125   |                                                                                                                                                                            |                                               |                                                 |                    |                                                                                                                                                                                                                  |                                  |              |
|       | 160   |                                                                                                                                                                            | B                                             | Shaft 032,parallel key 10x8x45                  |                    | Omit                                                                                                                                                                                                             | 00                               |              |
|       | 200   | H4                                                                                                                                                                         | F                                             | Shaft 031.75, splined tooth 14-DP12/24 Long     | P                  | R                                                                                                                                                                                                                | Omit                             | No paint     |
|       | 250   |                                                                                                                                                                            | FD                                            | shaft 031.75, splined tooth14-DP12/24 Shaft     |                    |                                                                                                                                                                                                                  | Blue Black                       | 0            |
|       | 315   | H5                                                                                                                                                                         | G                                             | 031.75, parallel key 7.96x7.96x31.75 Cone       |                    |                                                                                                                                                                                                                  | Silver grey                      | F            |
|       | 400   |                                                                                                                                                                            | T                                             | shaft 028.56,parallel key B5x5x14               | R                  |                                                                                                                                                                                                                  |                                  | LS           |
| 500   |       | T3                                                                                                                                                                         | Cone shaft 031.75,parallel key 7.96x7.96x25.4 |                                                 |                    |                                                                                                                                                                                                                  | SK                               | Low Speed    |
|       |       |                                                                                                                                                                            |                                               |                                                 |                    |                                                                                                                                                                                                                  |                                  | Speed sensor |

| VNKP  | 1     | 2                                               | 3            | 4                                               | 5                         | 6     | 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                |                                          |         |   |
| VNKP  | 36    | H2<br>2-Ø13.5 Rhomb-flange ,<br>pilot Ø82.5×2.8 | K            | G                                               | G1/2, G1/4                | 00    | Omit<br>N<br>HPS Big radial force |                                          |         |   |
|       | 50    |                                                 | S            | S                                               | 7/8-14 O-ring, 7/16-20UNF |       |                                   | No paint<br>Blue<br>Black<br>Silver grey |         |   |
|       | 80    |                                                 | A            | P                                               | 1/2-14 NPTF, 7/16-20UNF   |       |                                   |                                          | B<br>LS |   |
|       | 100   |                                                 | R            | T                                               | 3/4-16 O-ring, 7/16-20UNF |       |                                   |                                          |         | S |
|       | 125   |                                                 | H            | R                                               | PT(Rc)1/2, PT(Rc)1/4      |       |                                   |                                          |         |   |
|       | 160   | H1                                              | B4           | Ø10 O-ring manifold<br>4x5/16-18UNC, 7/16-20UNF | SK                        |       |                                   |                                          |         |   |
|       | 200   | H4                                              | D            | Ø10 O-ring manifold 4xM8,<br>7/16-20UNF         |                           |       |                                   |                                          |         |   |
|       | 250   | H5<br>4-M10 Square-flange ,<br>pilot Ø44.4×2.8  | I            |                                                 |                           |       |                                   |                                          |         |   |
|       | 315   |                                                 | T2           |                                                 |                           |       |                                   |                                          |         |   |
|       | 400   |                                                 | P            |                                                 |                           |       |                                   |                                          |         |   |
| 500   | J     |                                                 |              |                                                 |                           |       |                                   |                                          |         |   |

Note: When the table is used, please fill the code of left rows in dash area and give us, which the code information 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.





| Code<br>Mounting | 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)    | M14×1.5 (12) |
| C                | 4×M10(20) | 4×3/8-16UNC(20)    | 4×M10(20)    |

| 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   |

## ORDER INFORMATION

| VNKPW | 1   | 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                                       |   |
|       | 50  |                            |                                                                                                                                                                     |                                                                   |                             |                                              |                                                          |   |
|       | 80  |                            |                                                                                                                                                                     |                                                                   |                             |                                              |                                                          |   |
|       | 100 |                            |                                                                                                                                                                     |                                                                   |                             |                                              |                                                          |   |
|       | 125 |                            |                                                                                                                                                                     |                                                                   |                             |                                              |                                                          |   |
|       | 160 |                            |                                                                                                                                                                     |                                                                   |                             |                                              |                                                          |   |
|       | 200 |                            |                                                                                                                                                                     |                                                                   |                             |                                              |                                                          |   |
|       | 250 |                            |                                                                                                                                                                     |                                                                   |                             |                                              |                                                          |   |
|       | 315 |                            |                                                                                                                                                                     |                                                                   |                             |                                              |                                                          |   |
|       | 400 |                            |                                                                                                                                                                     |                                                                   |                             |                                              |                                                          |   |
|       | 500 |                            |                                                                                                                                                                     |                                                                   |                             |                                              |                                                          |   |
| VNKPW |     | Wheel-flange pilot Ø80×7.5 | A Shaft Ø25k6, Parallel key 8×7×32<br>C Shaft Ø25.4, Parallel key 6.35×6.35×31.75<br>E Shaft Ø25.4, Splined key SAE 6B<br>T Cone shaft Ø28-56, Parallel key B5×5×14 | G G1/2, G1/4<br>S 7/8-14 O-ring, 7/16-20UNF<br>M M22×1.5, M14×1.5 | Omit R<br>Standard Opposite | 00 Omit B<br>No paint Blue Black Silver grey | Omit N<br>Standard HPS Big radial force<br>No case 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 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.

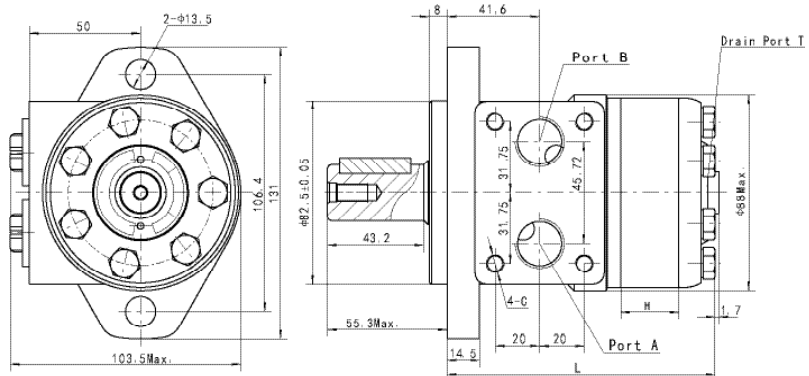
Main Specification

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

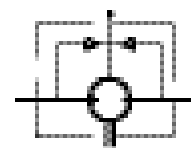
| Code      | Displacement<br>[cm <sup>3</sup> /rev] | Max.Speed<br>[rpm] | Max.Torque [Nm] |      | Max.output [kW] |      | Max.pressure [MPa] |      | Max.Oil<br>Flow[L/min] |
|-----------|----------------------------------------|--------------------|-----------------|------|-----------------|------|--------------------|------|------------------------|
|           |                                        | cont.              | cont.           | int. | cont.           | int. | cont.              | int. | cont.                  |
| VNKPK 36  | 37                                     | 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 | 117,9                                  | 339                | 162             | 218  | 5,2             | 8,6  | 10,5               | 14   | 40                     |
| VNKPK 160 | 155,5                                  | 257                | 216             | 288  | 5,2             | 8,6  | 10,5               | 14   | 40                     |
| VNKPK 200 | 189,9                                  | 211                | 264             | 351  | 5,2             | 8,6  | 10,5               | 14   | 40                     |
| VNKPK 250 | 231                                    | 173                | 281             | 351  | 4,6             | 7    | 9                  | 11,5 | 40                     |
| VNKPK 315 | 311,7                                  | 128                | 312             | 433  | 3,4             | 5,8  | 7                  | 10,5 | 40                     |
| VNKPK 400 | 386,2                                  | 104                | 392             | 582  | 3,4             | 5,8  | 7                  | 10,5 | 40                     |

VNKPK DIMENSIONS AND MOUNTING DATA

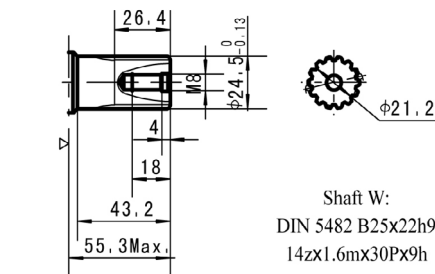
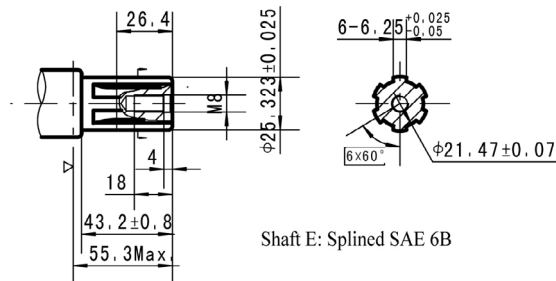
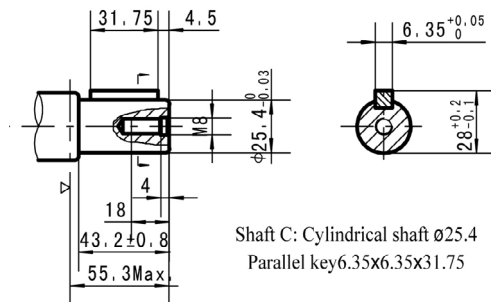
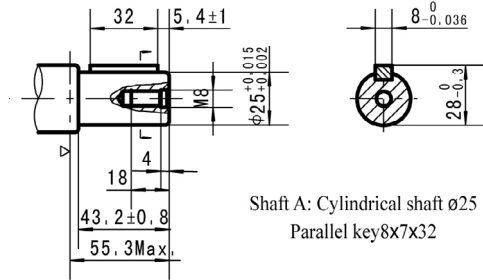
| Type     | H   | L     |
|----------|-----|-------|
| VNKPK36  | 7   | 101   |
| VNKPK50  | 7   | 101   |
| VNKPK80  | 105 | 104,5 |
| VNKPK100 | 13  | 107   |
| VNKPK125 | 16  | 110   |
| VNKPK160 | 21  | 115   |
| VNKPK200 | 26  | 120   |
| VNKPK250 | 32  | 126   |
| VNKPK315 | 42  | 136   |
| VNKPK400 | 52  | 146   |



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



## ORDER INFORMATION

| VNKPK |       | 1                                       | 2            | 3                                          | 4                    | 5                                  | 6                       | 7    | 8        |   |
|-------|-------|-----------------------------------------|--------------|--------------------------------------------|----------------------|------------------------------------|-------------------------|------|----------|---|
| Pos.1 | 2     | 3                                       | 4            | 5                                          | 6                    | 7                                  | 8                       |      |          |   |
| Code  | Disp. | Flange                                  | Output Shaft |                                            | Ports and Drain Port | Rotation Direction                 |                         |      |          |   |
| Omit  | 36    | 2-Ø13.5 Rhomb-flange ,<br>pilot Ø82.5x8 | A            | Shaft Ø25 , parallel key 8x7x32            | D                    | G1/2                               | Manifold 4xM8, G1/4     | Omit | 00       |   |
|       | 50    |                                         | C            | Shaft Ø25.4 , parallel key 6.35x6.35x31.75 | M                    | M22x1.5                            | Manifold64xM8,M14x1.5   |      | Omit     |   |
|       | 80    |                                         | E            | Shaft Ø25.4, splined key SEA 6B            | S                    | 7/8-14                             | 0-ring manifold         |      | Standard |   |
|       | 100   |                                         | W            | Shaft Ø25.4, splined B25X22                | P                    | 4x5/16-18UNC,7/16-20UNF            | 1/2-14NPTF manifold     |      | R        |   |
|       | 125   |                                         | T            | Cone shaft Ø28.56, parallel key B5x5x14    | R                    | PT(Rc)1/2 manifold 4xM8, PT(Rc)1/4 | 4x5/16-18UNC,7/16-20UNF |      | Opposite |   |
| Omit  | 160   |                                         |              |                                            |                      |                                    |                         |      |          | S |
|       | 200   |                                         |              |                                            |                      |                                    |                         |      |          |   |
|       | 250   |                                         |              |                                            |                      |                                    |                         |      |          |   |
|       | 315   |                                         |              |                                            |                      |                                    |                         |      |          |   |
|       | 400   |                                         |              |                                            |                      |                                    |                         |      |          |   |



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. Advanced construction design, high power and low weight.
- The output shaft runs in **needle bearing** capable of absorbing static and dynamic axial and radial loads.
- Supporting +300 hours of salt spray.

## Main Specification

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

| Type                                              |       | VNKR<br>VNKRH<br>36 | VNKR<br>VNKRH<br>50 | VNKR<br>VNKRH<br>80 | VNKR<br>VNKRH<br>100 | VNKR<br>VNKRH<br>125 | VNKR<br>VNKRH<br>160 | VNKR<br>VNKRH<br>200 | VNKR<br>VNKRH<br>250 | VNKR<br>VNKRH<br>315 | VNKR<br>VNKRH<br>375 |
|---------------------------------------------------|-------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Geometric displacement<br>(cm <sup>3</sup> /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                    | 8,5                  | 9                    | 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

Technical data for VNKR with 31.75 and 32 shaft

| Type                                           |       | VNKR<br>VNKRH<br>36 | VNKR<br>VNKRH<br>50 | VNKR<br>VNKRH<br>80 | VNKR<br>VNKRH<br>100 | VNKR<br>VNKRH<br>125 | VNKR<br>VNKRH<br>160 | VNKR<br>VNKRH<br>200 | VNKR<br>VNKRH<br>250 | VNKR<br>VNKRH<br>315 | VNKR<br>VNKRH<br>375 |
|------------------------------------------------|-------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Geometric displacement (cm <sup>3</sup> /rev.) |       | 36                  | 51,7                | 81,5                | 10,2                 | 127,2                | 157,2                | 194,5                | 253,3                | 317,5                | 381,4                |
| Max. speed (rpm)                               | cont. | 1250                | 960                 | 750                 | 600                  | 475                  | 378                  | 310                  | 240                  | 190                  | 155                  |
|                                                | int.  | 1520                | 1150                | 940                 | 750                  | 600                  | 475                  | 385                  | 300                  | 240                  | 190                  |
| Max. torque (N•m)                              | cont. | 72                  | 100                 | 195                 | 240                  | 300                  | 380                  | 450                  | 540                  | 550                  | 580                  |
|                                                | int.  | 83                  | 126                 | 220                 | 280                  | 340                  | 430                  | 500                  | 610                  | 690                  | 690                  |
|                                                | peak  | 105                 | 165                 | 270                 | 320                  | 370                  | 460                  | 560                  | 710                  | 840                  | 830                  |
| Max. output (kW)                               | cont. | 8,5                 | 9,5                 | 12,5                | 13,0                 | 12,5                 | 12,5                 | 11,0                 | 10,0                 | 9,0                  | 7,5                  |
|                                                | int.  | 9,8                 | 11,2                | 15,0                | 15,0                 | 14,5                 | 14,0                 | 13,0                 | 12,0                 | 10,0                 | 9,0                  |
| Max. pressure drop (MPa)                       | cont. | 14,0                | 14                  | 17,5                | 17,5                 | 17,5                 | 17,5                 | 17,5                 | 17,5                 | 13,5                 | 11,5                 |
|                                                | int.  | 16,5                | 17,5                | 20                  | 20                   | 20                   | 20                   | 20                   | 20                   | 17,5                 | 15                   |
|                                                | peak  | 22,5                | 22,5                | 22,5                | 22,5                 | 22,5                 | 22,5                 | 22,5                 | 22,5                 | 21                   | 17,5                 |
| Max. flow (L/min)                              | cont. | 45                  | 50                  | 60                  | 60                   | 60                   | 60                   | 60                   | 60                   | 60                   | 60                   |
|                                                | int.  | 55                  | 60                  | 75                  | 75                   | 75                   | 75                   | 75                   | 75                   | 75                   | 75                   |
| Weight (kg)                                    |       | 6,5                 | 6,7                 | 6,9                 | 7                    | 7,3                  | 7,6                  | 8                    | 8,5                  | 9                    | 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 [36cm³/rev.]

|              |           | Pressure (MPa) |     |     |     |     |     | Max. cont. |      | Max. int. |  |
|--------------|-----------|----------------|-----|-----|-----|-----|-----|------------|------|-----------|--|
|              |           | 2              | 3   | 5   | 7   | 9   | 10  | 12.5       | 14.0 | 16.5      |  |
| Flow (L/min) | 4         | 10             | 16  | 25  | 37  | 46  | 50  |            |      |           |  |
|              | 8         | 105            | 100 | 92  | 80  | 71  | 58  |            |      |           |  |
|              | 15        | 9              | 15  | 25  | 37  | 47  | 50  | 63         | 71   | 83        |  |
|              | 20        | 208            | 200 | 188 | 175 | 158 | 149 | 134        | 120  | 108       |  |
|              | 30        | 8              | 14  | 23  | 36  | 45  | 51  | 64         | 72   | 82        |  |
|              | 40        | 403            | 392 | 380 | 365 | 348 | 326 | 318        | 302  | 274       |  |
|              | 45        | 6              | 13  | 22  | 35  | 44  | 50  | 64         | 72   | 82        |  |
|              | Max.cont. | 540            | 531 | 518 | 500 | 483 | 462 | 450        | 435  | 412       |  |
|              | Max.int.  | 6              | 12  | 21  | 32  | 42  | 47  | 63         | 70   | 80        |  |
|              | 45        | 810            | 798 | 780 | 763 | 742 | 722 | 705        | 694  | 668       |  |

VNKR 50 [51.7cm³/rev.]

|              |           | Pressure (MPa) |     |     |     |     |     | Max. cont. |      | Max. int. |  |
|--------------|-----------|----------------|-----|-----|-----|-----|-----|------------|------|-----------|--|
|              |           | 5              | 7   | 9   | 10  | 12  | 14  | 16         | 17.5 |           |  |
| Flow (L/min) | 5         | 35             | 45  | 61  | 67  | 77  | 88  |            |      |           |  |
|              | 10        | 93             | 84  | 76  | 73  | 69  | 46  |            |      |           |  |
|              | 15        | 36             | 46  | 62  | 69  | 80  | 95  | 108        | 120  |           |  |
|              | 20        | 186            | 178 | 166 | 162 | 153 | 136 | 118        | 97   |           |  |
|              | 30        | 35             | 49  | 63  | 73  | 88  | 100 | 109        | 123  |           |  |
|              | 40        | 283            | 277 | 269 | 261 | 250 | 230 | 211        | 185  |           |  |
|              | 45        | 34.5           | 47  | 61  | 69  | 83  | 96  | 109        | 126  |           |  |
|              | Max.cont. | 377            | 375 | 365 | 361 | 346 | 330 | 302        | 270  |           |  |
|              | Max.int.  | 33             | 44  | 60  | 67  | 80  | 95  | 108        | 126  |           |  |
|              | 60        | 576            | 569 | 561 | 554 | 542 | 531 | 500        | 465  |           |  |

VNKR 80 [81.5cm³/rev.]

|              |           | Pressure (MPa) |      |     |     |     |     | Max. cont. |      | Max. int. |  |
|--------------|-----------|----------------|------|-----|-----|-----|-----|------------|------|-----------|--|
|              |           | 5              | 7    | 9   | 10  | 12  | 14  | 16         | 17.5 | 20        |  |
| Flow (L/min) | 5         | 50             | 64   | 88  | 108 | 133 |     |            |      |           |  |
|              | 10        | 59             | 56   | 50  | 44  | 38  |     |            |      |           |  |
|              | 15        | 54             | 77   | 99  | 108 | 129 | 150 | 173        |      |           |  |
|              | 20        | 118            | 113  | 106 | 97  | 86  | 79  | 56         |      |           |  |
|              | 30        | 57             | 78.0 | 102 | 111 | 134 | 155 | 177        | 196  | 225       |  |
|              | 40        | 238            | 234  | 227 | 216 | 203 | 190 | 178        | 154  | 135       |  |
|              | 50        | 54             | 75   | 100 | 108 | 131 | 152 | 176        | 195  | 223       |  |
|              | Max.cont. | 360            | 352  | 340 | 332 | 316 | 302 | 290        | 274  | 250       |  |
|              | Max.int.  | 48             | 73   | 96  | 105 | 127 | 148 | 172        | 190  | 220       |  |
|              | 75        | 480            | 470  | 458 | 445 | 430 | 418 | 403        | 388  | 359       |  |

VNKR 100 [102cm³/rev.]

|              |           | Pressure (MPa) |      |     |     |     |     | Max. cont. |      | Max. int. |  |
|--------------|-----------|----------------|------|-----|-----|-----|-----|------------|------|-----------|--|
|              |           | 5              | 7    | 9   | 10  | 12  | 14  | 16         | 17.5 | 20        |  |
| Flow (L/min) | 5         | 66             | 92   | 120 | 135 | 156 |     |            |      |           |  |
|              | 10        | 45             | 42   | 38  | 34  | 27  |     |            |      |           |  |
|              | 15        | 68             | 96   | 125 | 138 | 159 | 188 | 212        |      |           |  |
|              | 20        | 93             | 90   | 86  | 81  | 74  | 57  | 42         |      |           |  |
|              | 30        | 65             | 94.0 | 123 | 137 | 155 | 186 | 210        | 238  | 274       |  |
|              | 40        | 189            | 185  | 180 | 173 | 165 | 158 | 150        | 139  | 118       |  |
|              | 50        | 63             | 92   | 120 | 133 | 153 | 185 | 209        | 235  | 270       |  |
|              | Max.cont. | 286            | 281  | 275 | 266 | 257 | 246 | 237        | 225  | 207       |  |
|              | Max.int.  | 57             | 88   | 117 | 130 | 152 | 185 | 208        | 233  | 267       |  |
|              | 75        | 385            | 378  | 365 | 355 | 345 | 332 | 320        | 314  | 297       |  |

Torque (N·m) 135  
Speed (rpm) 830

cont.  
int.



VNKR 125 [127.2cm³/rev.]

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

VNKR 160 [157.2cm³/rev.]

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

VNKR 200 [194.5cm³/rev.]

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

VNKR 250 [253.5cm³/rev.]

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

Torque (N·m) 256  
Speed (rpm) 287

cont.

int.





VNKR 315 [317.5cm³/rev.]

Pressure (MPa)

Max. cont. Max. int.

|              |    | 5   | 7   | 9   | 10  | 12  | 14  | 16  | 17.5 |
|--------------|----|-----|-----|-----|-----|-----|-----|-----|------|
| Flow (L/min) | 5  | 215 | 302 |     |     |     |     |     |      |
|              |    | 13  | 11  |     |     |     |     |     |      |
|              | 10 | 218 | 305 | 383 | 422 | 488 | 551 | 622 |      |
|              |    | 28  | 27  | 25  | 24  | 21  | 18  | 13  |      |
|              | 20 | 215 | 303 | 380 | 418 | 485 | 549 | 620 | 660  |
|              |    | 60  | 59  | 57  | 55  | 52  | 49  | 45  | 42   |
|              | 30 | 204 | 296 | 375 | 413 | 480 | 542 | 613 | 654  |
|              |    | 91  | 89  | 86  | 84  | 81  | 78  | 72  | 67   |
|              | 40 | 196 | 287 | 368 | 410 | 477 | 539 | 609 | 650  |
|              |    | 122 | 120 | 117 | 112 | 106 | 100 | 94  | 85   |
| Max. cont.   | 50 | 176 | 270 | 356 | 393 | 461 | 526 | 597 | 645  |
|              |    | 154 | 151 | 147 | 140 | 131 | 120 | 109 | 100  |
| Max. int.    | 60 | 162 | 246 | 339 | 374 | 446 | 511 | 586 | 628  |
|              |    | 185 | 182 | 177 | 172 | 163 | 152 | 140 | 134  |
|              | 70 | 143 | 235 | 324 | 358 | 430 | 493 | 562 | 614  |
|              |    | 217 | 213 | 208 | 201 | 190 | 178 | 166 | 158  |
| Max. int.    | 75 | 125 | 212 | 303 | 339 | 417 | 481 | 543 | 582  |
|              |    | 232 | 228 | 222 | 216 | 208 | 200 | 183 | 171  |

Torque (N·m) 481  
Speed (rpm) 200

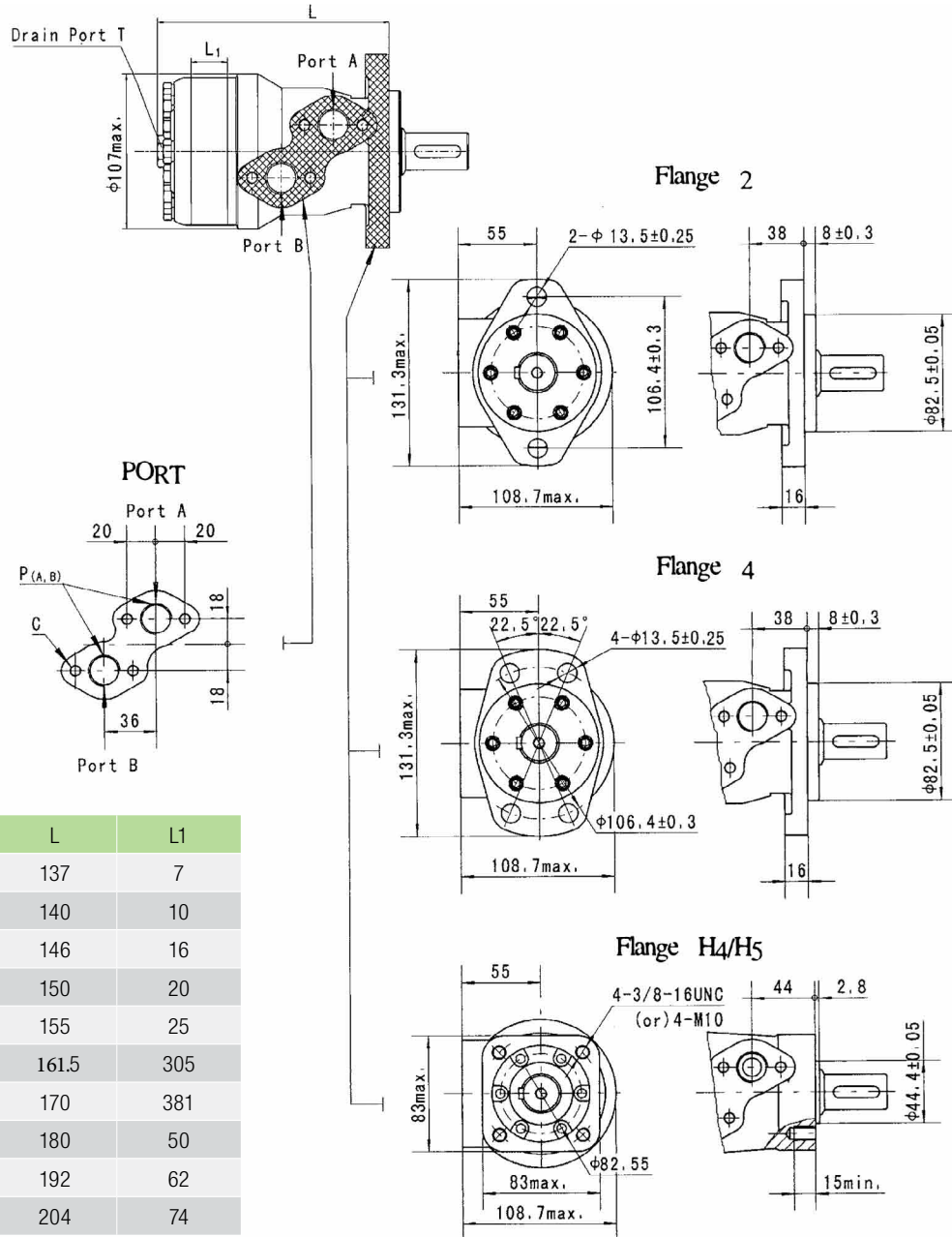
VNKR 375 [381.4cm³/rev.]

Pressure (MPa)

Max. cont. Max. int.

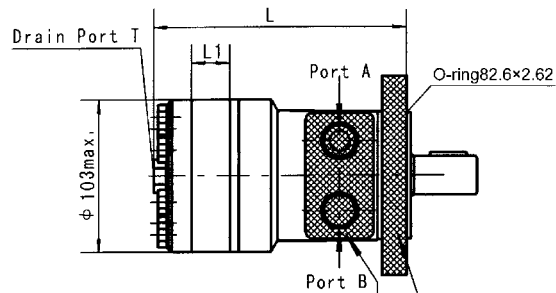
|              |    | 3   | 4.5 | 5.5 | 6.5 | 8   | 10  | 12.5 | 14  |
|--------------|----|-----|-----|-----|-----|-----|-----|------|-----|
| Flow (L/min) | 5  | 153 | 232 |     |     |     |     |      |     |
|              |    | 12  | 10  |     |     |     |     |      |     |
|              | 10 | 157 | 236 | 284 | 337 | 406 | 497 | 612  | 668 |
|              |    | 24  | 23  | 22  | 21  | 19  | 17  | 15   | 12  |
|              | 20 | 150 | 232 | 280 | 332 | 401 | 490 | 606  | 660 |
|              |    | 49  | 48  | 47  | 46  | 44  | 41  | 38   | 32  |
|              | 30 | 142 | 215 | 274 | 327 | 398 | 483 | 603  | 652 |
|              |    | 76  | 75  | 74  | 73  | 71  | 67  | 63   | 50  |
|              | 40 | 126 | 212 | 268 | 320 | 393 | 477 | 593  | 635 |
|              |    | 103 | 101 | 99  | 97  | 95  | 92  | 88   | 70  |
| Max. cont.   | 50 | 105 | 187 | 242 | 302 | 376 | 455 | 583  | 608 |
|              |    | 128 | 126 | 124 | 121 | 118 | 115 | 111  | 96  |
| Max. int.    | 60 | 90  | 167 | 229 | 281 | 362 | 444 | 566  | 600 |
|              |    | 154 | 152 | 150 | 148 | 145 | 138 | 130  | 121 |
|              | 70 | 90  | 149 | 200 | 258 | 341 | 425 | 546  | 580 |
|              |    | 180 | 179 | 178 | 176 | 173 | 168 | 160  | 148 |
| Max. int.    | 75 | 56  | 125 | 182 | 241 | 320 | 408 | 524  | 565 |
|              |    | 195 | 194 | 193 | 191 | 189 | 185 | 178  | 170 |

cont.  
int.

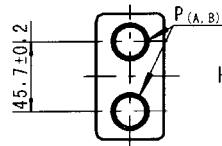


| Model   | L     | L1   |
|---------|-------|------|
| VNKR36  | 137   | 7    |
| VNKR50  | 140   | 10   |
| VNKR80  | 146   | 16   |
| VNKR100 | 150   | 20   |
| VNKR125 | 155   | 25   |
| VNKR160 | 161.5 | 30.5 |
| VNKR200 | 170   | 38.1 |
| VNKR250 | 180   | 50   |
| VNKR315 | 192   | 62   |
| VNKR375 | 204   | 74   |

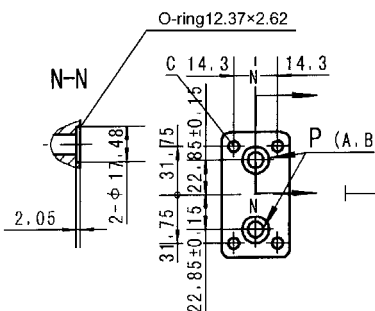
| Code     | D (depth) | M (depth)      | S (depth)          | P (depth)        | R (depth)       |
|----------|-----------|----------------|--------------------|------------------|-----------------|
| Mounting |           |                |                    |                  |                 |
| 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**


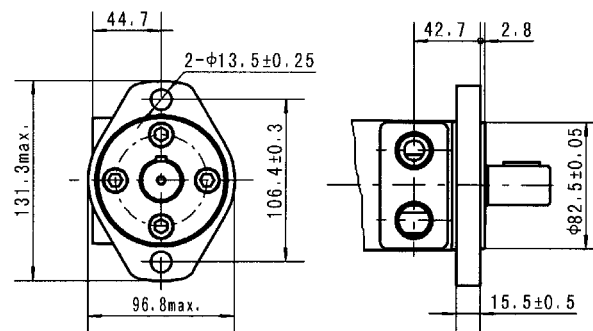
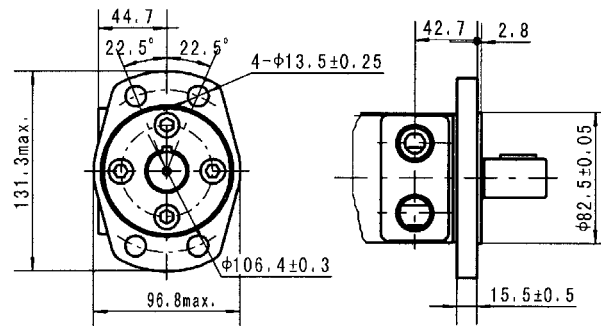
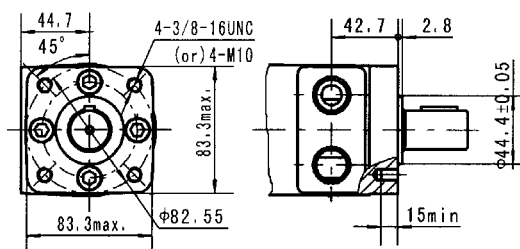
PORT: G S P R M1 M2 M3



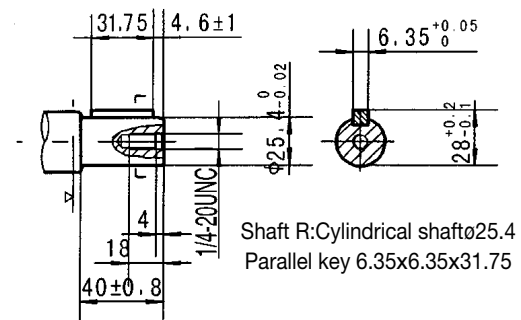
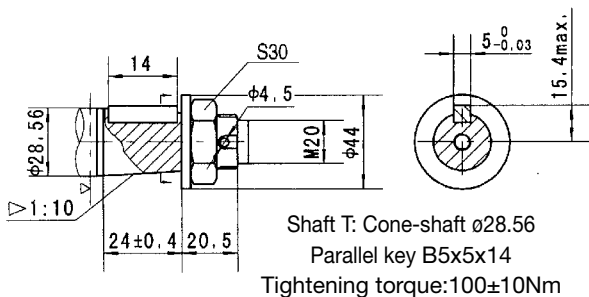
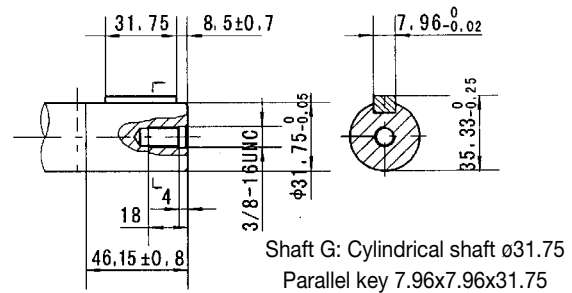
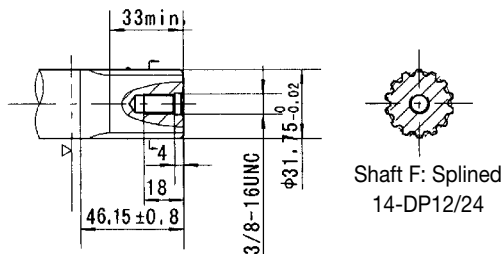
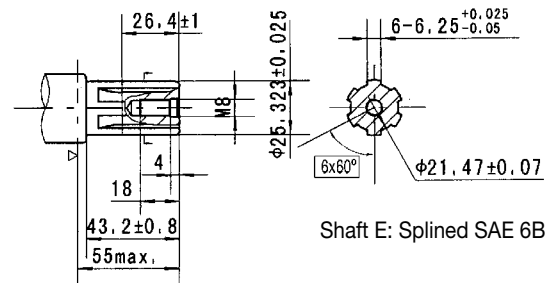
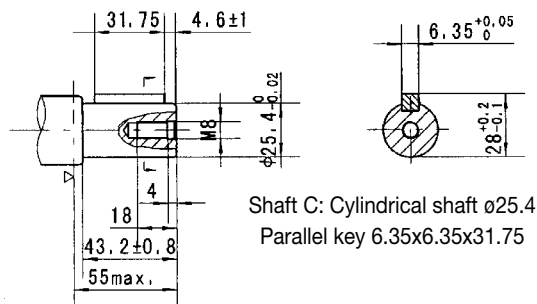
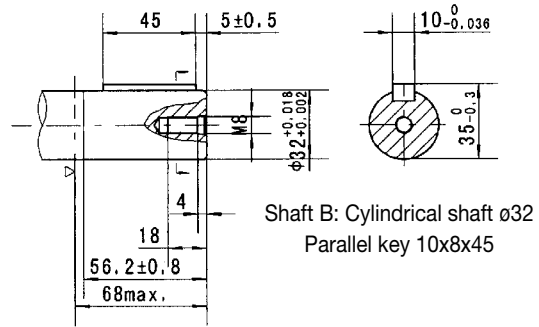
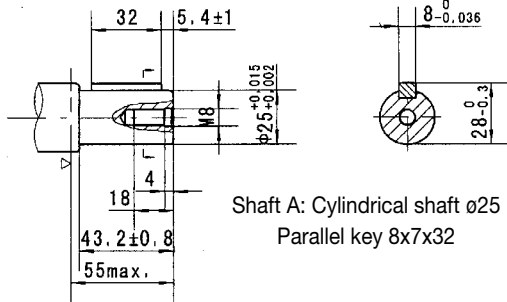
PORT: B4 B5



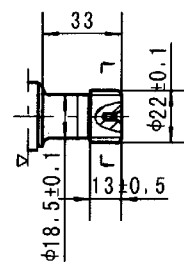
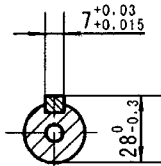
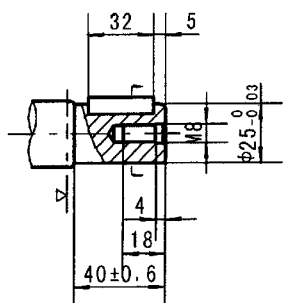
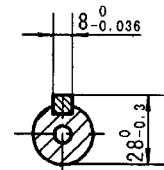
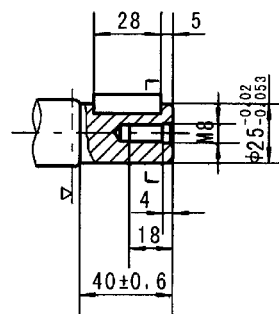
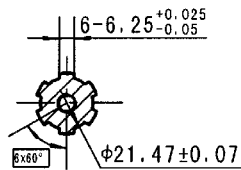
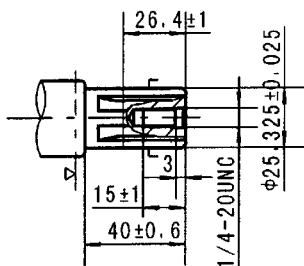
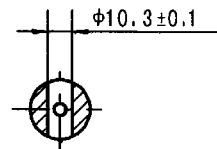
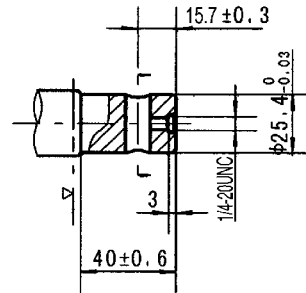
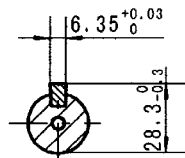
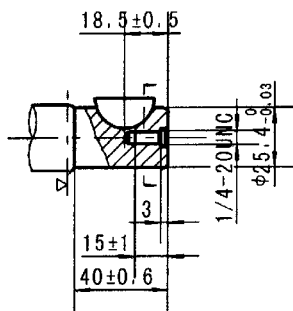
| Model    | L     | L1   |
|----------|-------|------|
| VNKRH36  | 141   | 7    |
| VNKRH50  | 144   | 10   |
| VNKRH80  | 150   | 16   |
| VNKRH100 | 154   | 20   |
| VNKRH125 | 159   | 25   |
| VNKRH160 | 165.5 | 30.5 |
| VNKRH200 | 174   | 38.1 |
| VNKRH250 | 184   | 50   |
| VNKRH315 | 196   | 62   |
| VNKRH375 | 208   | 74   |

**Flange H2**

**Flange H6**

**Flange H4/H5**


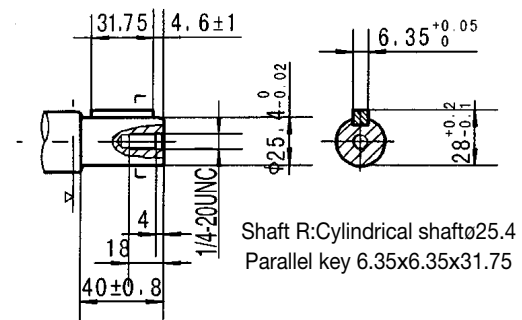
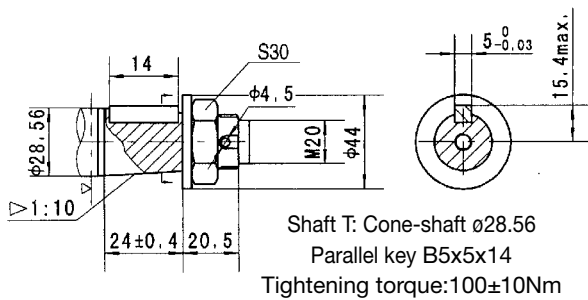
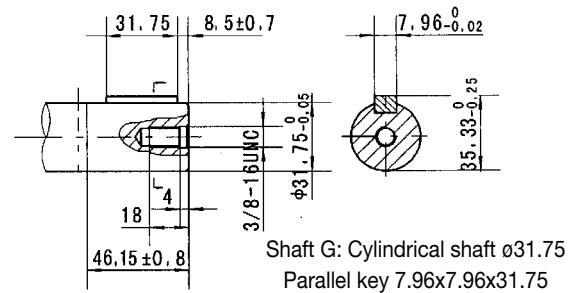
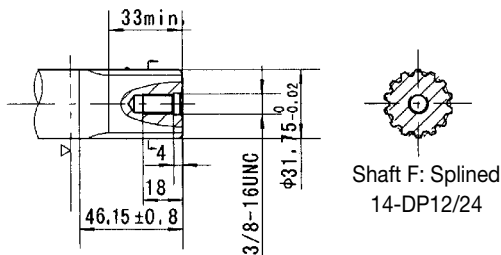
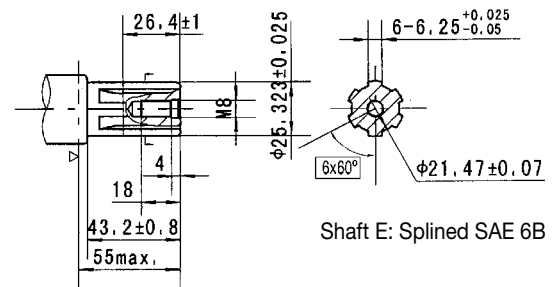
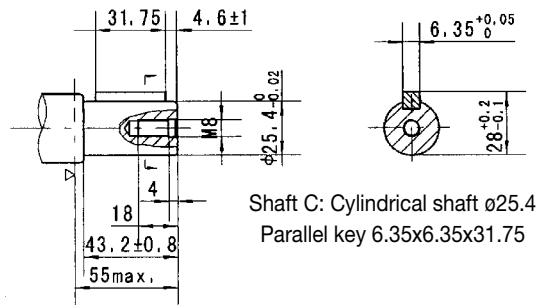
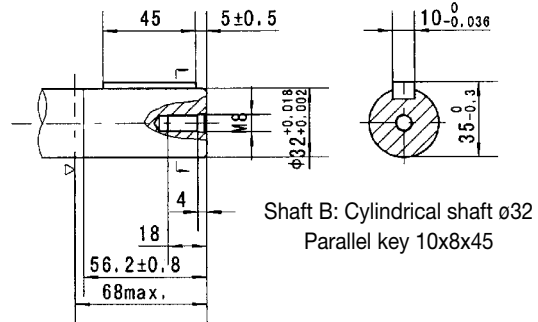
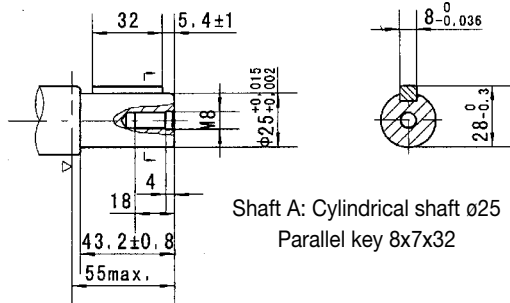
| Code     | G (depth) | S (depth)          | P (depth)       | R(depth)        | M1 (depth)     | M2 (depth)     | M3 (depth)     | B4 (depth)       | B5 (depth) |
|----------|-----------|--------------------|-----------------|-----------------|----------------|----------------|----------------|------------------|------------|
| Mounting |           |                    |                 |                 |                |                |                |                  |            |
| P(A,B)   | G1/2 (15) | 7/8-14 O-ring (17) | 1/2-14NPTF (15) | PT(RC)1/2 (15)  | M18 x 1.5 (15) | M20 x 1.5 (15) | M22 x 1.5 (15) | ø10              | ø10        |
| C        | G1/4 (12) | 7/16-20UNF (12)    | 7/16-20UNF (12) | PT(RC)1/4 (9.7) | M10 x 1 (12)   | M10 x 1 (12)   | M10 x 1 (12)   | 7/16-20UNF(12)   | G1/4(12)   |
| T        | —         | —                  | —               | —               | —              | —              | —              | 4-5/16-18UNC(13) | 4-M8(13)   |



Motor Mounting Surface →



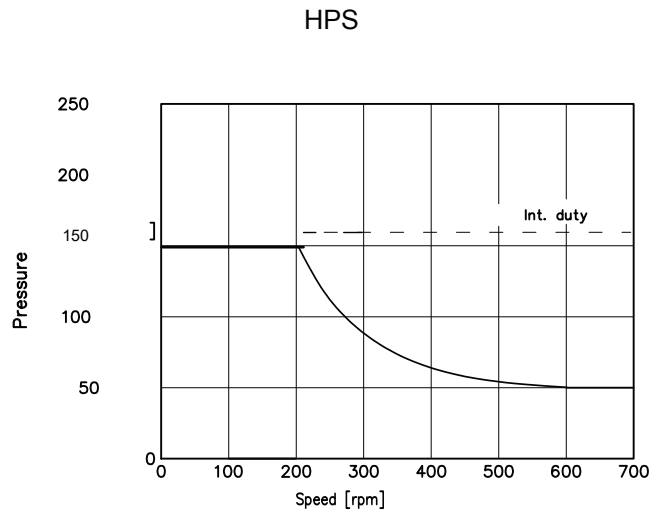
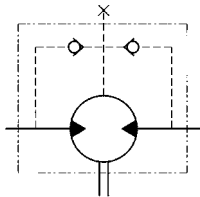
Motor Mounting Surface →



Motor Mounting Surface →



### Permissible shaft seal pressure

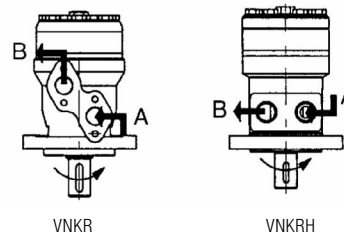


Vincke are made as standard with HPS seal version.

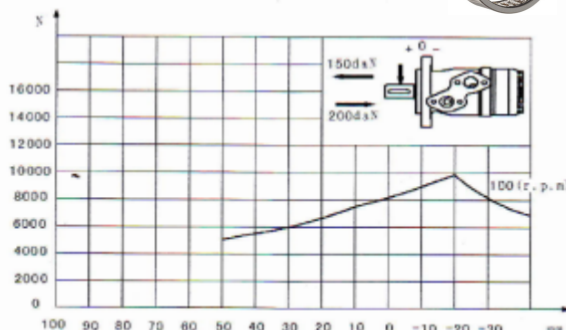
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line.  
When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

### Direction of shaft rotation : Standard

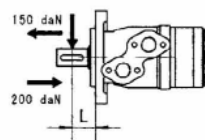
When facing shaft end of motor, shaft to rotate:  
Clockwise when port "A" is pressurized.  
Counter-clockwise when port "B" is pressurized.



### Status of the shaft's radial force with needle bearing



$$F_r = \frac{800 \cdot 25000}{n \cdot 95 + L} \text{ daN}$$



$F_r$  =Radial Force (daN)  
 $L$  =Distance (mm)  
 $n$  =Speed (rpm)  
Rhomb-flange  $L=30\text{mm}$   
Square-flange  $L=24\text{mm}$

The output Shaft on VNKP-N series is supplied with needle bearing and the recessed mounting allow a higher permissible radial load in comparasion with VNK series motors. The curves apply to a B10 needle roaller bearing life of 2000 hours.

### Relationship between output shaft bearing load and multiplication coefficient

|                |      |     |      |      |      |      |      |      |      |
|----------------|------|-----|------|------|------|------|------|------|------|
| Rotating speed | 50   | 100 | 200  | 300  | 400  | 500  | 600  | 700  | 800  |
| coefficient    | 1.23 | 1   | 0.81 | 0.72 | 0.66 | 0.62 | 0.58 | 0.56 | 0.54 |





| VNKR  | 1     | 2                                       | 3                                                 | 4                                                 | 5                  | 6     | 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 |   |
| VNKR  | 36    | 2-Ø13.5Rhomb-flange, pilot Ø82.5x8      | A Shaft Ø25,parallel Key 8x7x32                   | D G1/2 Manifold Mount 4-M8, G1/4                  | Omit               | 00    | Standard           |   |
|       | 50    |                                         | C Shaft Ø25.4,parallel Key 6.35x6.35x31.75        |                                                   |                    |       |                    |   |
|       | 80    | 4-Ø13.5Rhomb-flange, pilot Ø82.5x8      | E Shaft Ø25.4, splined tooth SAE 6B               | M M22x1.5 Manifold Mount 4-M8, M14x1.5            | R                  | B     | N1                 |   |
|       | 100   |                                         | R Short shaft Ø25.4,parallel key 6.35x6.35x31.75  |                                                   |                    |       |                    |   |
|       | 125   | 4-3/8-16 Square-flange, pilot Ø44.4x2.8 | B Shaft Ø32,parallel Key 10x8x45                  | S 7/8-14 O-ring manifold 4-5/16-18UNC, 7/16-20UNF | Omit               | S     | Speed sensor       |   |
|       | 160   |                                         | F Shaft Ø31.75,splined tooth 14-DP12/24           |                                                   |                    |       |                    |   |
|       | 200   | 4-M10 Square-flange, pilot Ø44.4x2.8    | FD Long shaft Ø31.75,splined tooth 14-DP12/24     | P Manifold 4-5/16-18UNC, 7/16-20UNF               | R                  | S     | Speed sensor       |   |
|       | 250   |                                         | G Shaft Ø31.75,parallel Key 7.96x7.96x31.75 Cone- |                                                   |                    |       |                    |   |
|       | 315   | 4-M10 Square-flange, pilot Ø44.4x2.8    | T Shaft Ø28.56,parallel Key B5x14                 | R PT(Rc)1/2 Manifold 4-M8, PT(Rc)1/4              | Omit               | S     | Speed sensor       |   |
|       | 375   |                                         |                                                   |                                                   |                    |       |                    |   |

| VNKRH | 1     | 2                                          | 3                                                             | 4                    | 5                                              | 6     | 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 |                                   |          |   |      |   |       |   |
| VNKRH | 36    | 2-Ø13.5Rhomb-flange, pilot Ø82.5×2.8       | K Shaft Ø25.4,Woodruff Key Ø25.4×6.35                         | G                    | G1/2, G1/4                                     | 00    | Omit               | Standard<br>HPS-heavy shaft loads |          |   |      |   |       |   |
|       | 50    |                                            | S Sub-shaft Ø25.4,splined tooth SAE 6B                        | S                    | 7/8-14 O-ring 7/16-20UNF (G1/4)                |       |                    |                                   | No paint | N |      |   |       |   |
|       | 80    |                                            | A Shaft Ø25 , parallel key 8×7×32                             | P                    | 1/2-14 NPTF, 7/16-20UNF (G1/4)                 |       |                    |                                   |          |   | Blue | O |       |   |
|       | 100   |                                            | R Shaft Ø25.4 , parallel key 6.35×6.35×31.75                  | T                    | 3/4-16 O-ring, 7/16-20UNF PT(Rc)1/2, PT(Rc)1/4 |       |                    |                                   |          |   |      |   | Black | F |
|       | 125   |                                            | H Sub-shaft Ø25.4,Pin hole Ø10.3 Shaft Ø25.4, pin hole Ø8     | R                    | Ø10 O-ring manifold                            |       |                    |                                   |          |   |      |   |       |   |
|       | 160   | H4 4-3/8-16 Square-flange, pilot Ø44.4×2.8 | D Shaft Ø22.22, parallel key 6.35×6.35×25.4                   | B4                   | 4x5/16-18, 7/16-20UNF                          | S     | N1                 |                                   |          |   |      |   |       |   |
|       | 200   | 4-M10 Square-flange, pilot Ø44.4×2.8       | I Shaft Ø22.22, splined tooth 13-DP16/32                      | B5                   | Ø10 O-ring manifold 4xM8, G1/4                 |       |                    | Silver grey                       | SK       |   |      |   |       |   |
|       | 250   |                                            | T2 Cone shaft Ø25.4 , wood-ruff key Ø25.4×6.35                | M1                   | M18×1.5, M10×1                                 |       |                    |                                   |          |   |      |   |       |   |
|       | 315   |                                            | P Shaft Ø25,parallel key 8×7×28 Shaft Ø25,parallel Key 7×7×32 | M2                   | M20×1.5, M10×1                                 |       |                    |                                   |          |   |      |   |       |   |
|       | 375   | J                                          | M3                                                            | M22×1.5, M10×1       |                                                |       |                    |                                   |          |   |      |   |       |   |



VNKRK 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.

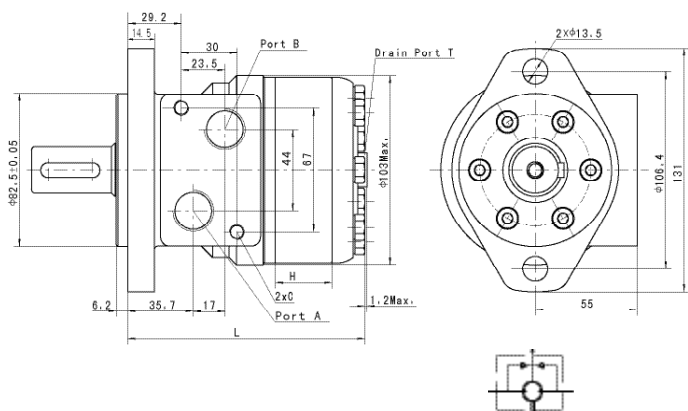
### Main Specification

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

| Code      | Displacement [cm <sup>3</sup> /rev] | Max.Speed [rpm] | Max.Torque [Nm] |      | Max.output [kW] |      | Max.pressure [MPa] |      | Max.Oil 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 375 | 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

| Type     | H   | L     |
|----------|-----|-------|
| VNKRK36  | 7   | 105   |
| VNKRK50  | 10  | 108   |
| VNKRK80  | 16  | 114   |
| VNKRK100 | 20  | 118   |
| VNKRK125 | 25  | 123   |
| VNKRK160 | 305 | 128.5 |
| VNKRK200 | 381 | 136   |
| VNKRK250 | 50  | 148   |
| VNKRK315 | 62  | 160   |
| VNKRK375 | 74  | 172   |



| Code Mounting | 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) |

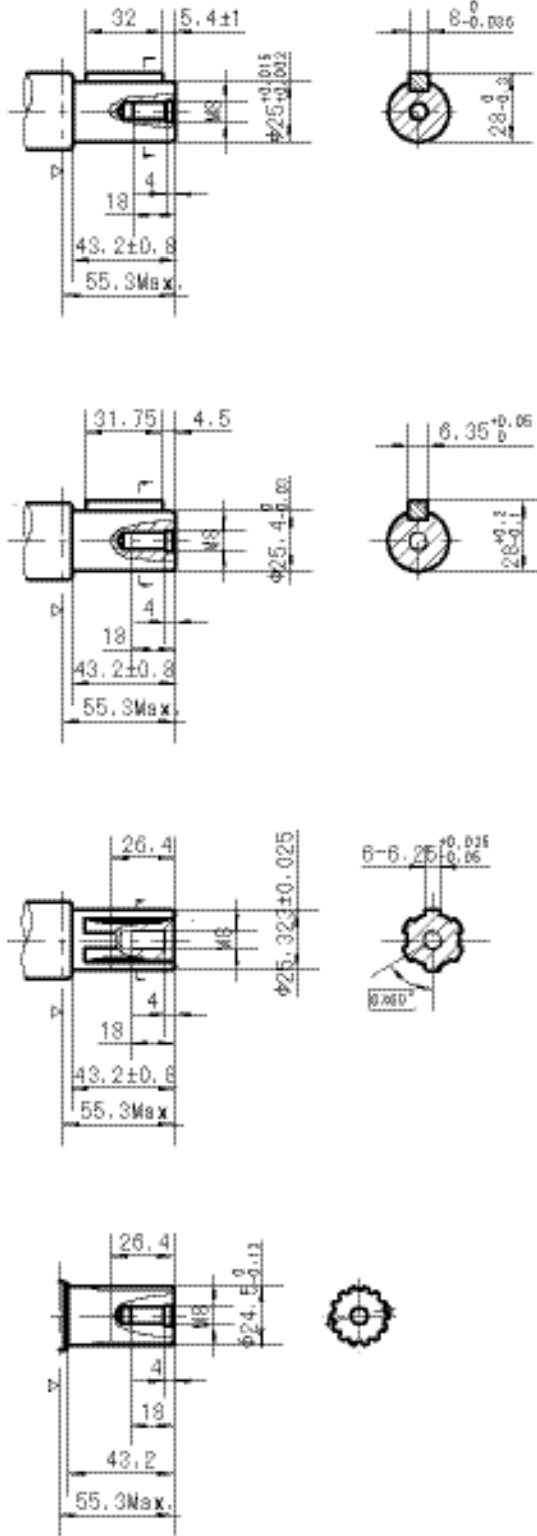
Direction of shaft rotation: Standard  
When facing shaft end of motor, shaft to rotate:  
Clockwise when port "A" is pressurized.  
Counter-clockwise when port "B" is pressurized.



## HYDRAULIC MOTORS

### SHAFT EXTENSIONS FOR VNKRK MOTORS

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Motor Mounting Surface →

| VNKRK | 1                                                               | 2     | 3                                         | 4                                                                                                                                                                                                    | 5                                                                                                                                                                                                                   | 6                  | 7                                        | 8                                         |
|-------|-----------------------------------------------------------------|-------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------------------------|-------------------------------------------|
| Pos.1 | Code                                                            | Disp. | Flange                                    | Output Shaft                                                                                                                                                                                         | Ports and Drain Port                                                                                                                                                                                                | Rotation Direction | Paint                                    | Unusually Function                        |
| Omit  | 36<br>50<br>80<br>100<br>125<br>160<br>200<br>250<br>315<br>375 | 2     | 2-Ø13.5 Rhomb-flange ,<br>pilot Ø82.5×6.2 | A Shaft Ø25 , parallel key 8×7×32<br>C Shaft Ø25.4 , parallel key 6.35×6.35×31.75<br>E Shaft Ø25.4, splined key SEA 6B<br>W Shaft Ø24.5, splined B25X22<br>T Cone shaft Ø28.56, parallel key B5×5×14 | D G1/2 Manifold 4×M8, G1/4<br>M M22×1.5 Manifold 4×M8, M14×1.5<br>S 7/8-14 O-ring manifold<br>P 4×5/16-18UNC, 7/16-20UNF<br>R 1/2-14NPTF manifold<br>4×5/16-18UNC, 7/16-20UNF<br>PT(Rc)1/2 manifold 4×M8, PT(Rc)1/4 | Omit<br>R          | 00<br>Omit<br>B<br>S                     | Omit<br>F<br>0                            |
|       |                                                                 |       |                                           |                                                                                                                                                                                                      |                                                                                                                                                                                                                     |                    | No paint<br>Blue<br>Black<br>Silver grey | Standard<br>Free Running<br>No case drain |



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 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.

## 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                                         |       | 10,5     | 11       | 11,5     | 12,3     | 13       |

| Type                | Max.inlet pressure | Max.return pressure with drain line |
|---------------------|--------------------|-------------------------------------|
| VNKH20,0-50,0 (MPa) | cont.              | 17,5                                |
|                     | int.               | 20,0                                |
|                     | peak               | 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<sup>1</sup>/<sub>4</sub> in splined and 35mm tapered shaft.



VNKH 200 [203.2cm³/rev.]

|              |    | Pressure (MPa) |     |      |     |      |     | Max. cont. | Max. int. |
|--------------|----|----------------|-----|------|-----|------|-----|------------|-----------|
|              |    | 3.5            | 7   | 10.5 | 14  | 17.5 | 20  |            |           |
| Flow (L/min) | 5  | 98             | 194 | 284  |     |      |     |            |           |
|              |    | 25             | 25  | 22   |     |      |     |            |           |
|              | 10 | 101            | 204 | 301  | 391 | 482  |     |            |           |
|              |    | 43             | 41  | 36   | 29  | 14   |     |            |           |
|              | 20 | 99             | 201 | 304  | 402 | 509  | 576 |            |           |
|              |    | 100            | 97  | 93   | 85  | 69   | 56  |            |           |
|              | 30 | 97             | 197 | 300  | 402 | 510  | 579 |            |           |
|              |    | 145            | 143 | 139  | 130 | 114  | 101 |            |           |
|              | 40 | 90             | 190 | 292  | 399 | 507  | 578 |            |           |
|              |    | 200            | 200 | 200  | 188 | 168  | 153 |            |           |
| Max. cont.   | 50 | 82             | 183 | 284  | 392 | 500  | 571 |            |           |
|              |    | 248            | 246 | 244  | 235 | 213  | 199 |            |           |
|              | 60 | 73             | 174 | 274  | 384 | 493  | 563 |            |           |
|              |    | 292            | 290 | 287  | 279 | 260  | 244 |            |           |
|              | 70 | 63             | 163 | 264  | 374 | 481  | 554 |            |           |
|              |    | 352            | 350 | 349  | 338 | 318  | 301 |            |           |
|              | 75 | 59             | 157 | 259  | 366 | 475  | 547 |            |           |
|              |    | 366            | 365 | 363  | 355 | 335  | 319 |            |           |
|              | 80 | 53             | 150 | 253  | 358 | 466  | 538 |            |           |
|              |    | 381            | 381 | 380  | 371 | 352  | 338 |            |           |
| Max. int.    | 90 | 39             | 140 | 241  | 348 | 456  | 526 |            |           |
|              |    | 443            | 437 | 434  | 426 | 407  | 392 |            |           |

VNKH 250 [255.9cm³/rev.]

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

VNKH 315 [316.1cm³/rev.]

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

VNKH 400 [406.4cm³/rev.]

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

Torque (N·m) 593  
Speed (rpm) 248

cont.  
int.



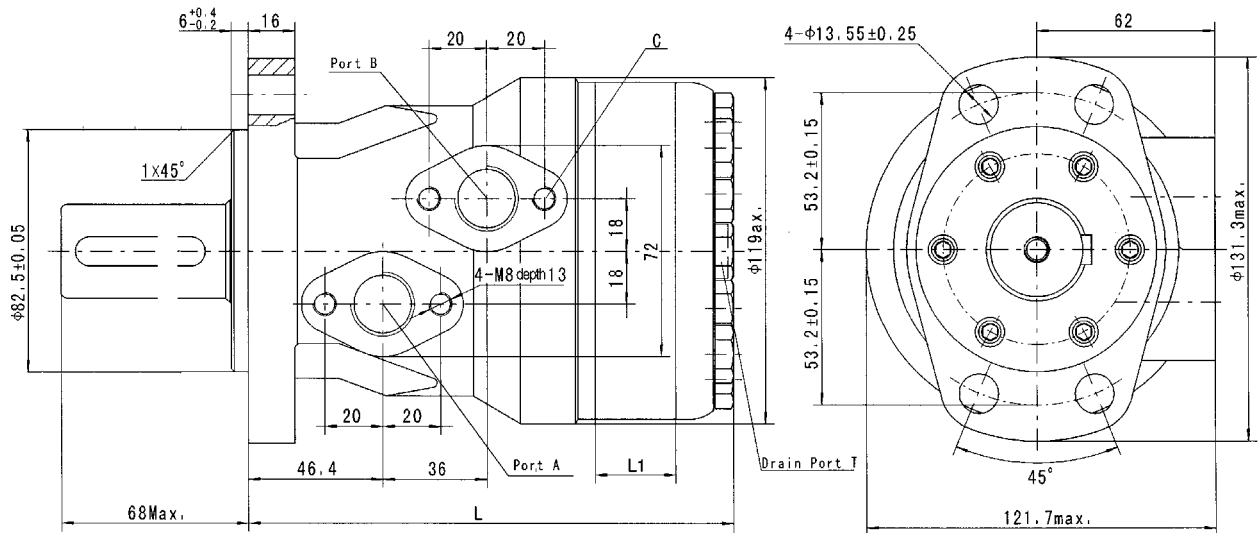
VNKH 500 [489.2cm<sup>3</sup>/rev.]

Pressure (MPa)

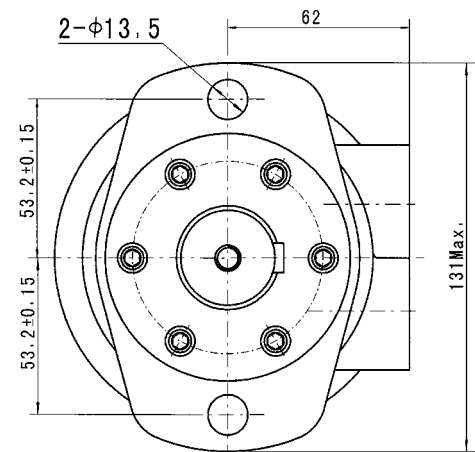
|              |    | Max. cont. |     |     |     |      |     | Max. int. |
|--------------|----|------------|-----|-----|-----|------|-----|-----------|
|              |    | 2.5        | 5   | 8.5 | 10  | 12.5 | 16  |           |
| Flow (L/min) | 5  | 165        | 317 | 516 |     |      |     |           |
|              |    | 11         | 11  | 8   |     |      |     |           |
|              | 10 | 178        | 335 | 555 | 669 | 791  | 969 |           |
|              |    | 20         | 19  | 17  | 15  | 13   | 9   |           |
|              | 20 | 177        | 331 | 559 | 673 | 799  | 988 |           |
|              |    | 42         | 42  | 41  | 38  | 36   | 29  |           |
|              | 30 | 172        | 320 | 553 | 663 | 792  | 983 |           |
|              |    | 64         | 63  | 61  | 57  | 53   | 47  |           |
|              | 40 | 163        | 309 | 541 | 654 | 783  | 971 |           |
|              |    | 85         | 85  | 83  | 79  | 75   | 67  |           |
| Max. cont.   | 50 | 146        | 296 | 523 | 635 | 768  | 954 |           |
|              |    | 103        | 103 | 103 | 97  | 93   | 85  |           |
|              | 60 | 121        | 275 | 502 | 614 | 747  | 934 |           |
|              |    | 124        | 124 | 123 | 117 | 113  | 103 |           |
|              | 70 | 97         | 256 | 482 | 597 | 729  | 917 |           |
| Max. int.    |    | 148        | 148 | 148 | 140 | 134  | 122 |           |
|              | 75 | 79         | 240 | 469 | 582 | 714  | 902 |           |
|              |    | 155        | 155 | 155 | 152 | 144  | 130 |           |
|              | 80 | 60         | 226 | 453 | 570 | 701  | 884 |           |
|              |    | 166        | 166 | 166 | 159 | 153  | 139 |           |
| Max. int.    | 90 | 34         | 201 | 421 | 550 | 673  | 869 |           |
|              |    | 184        | 183 | 182 | 177 | 166  | 155 |           |

cont.  
int.

Torque (N·m) 673  
Speed (rpm) 166



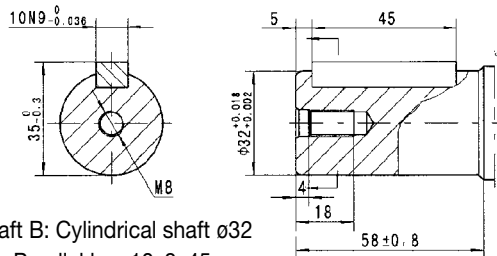
Flange 2



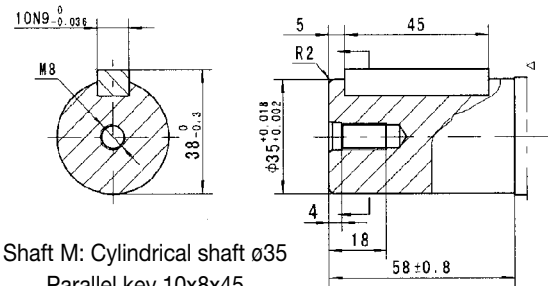
| Model    | L   | L1 |
|----------|-----|----|
| VNKH-160 | 162 | 21 |
| VNKH-200 | 168 | 27 |
| VNKH-250 | 175 | 34 |
| VNKH-315 | 184 | 42 |
| VNKH-400 | 195 | 54 |
| VNKH-500 | 206 | 65 |

| Code<br>Mounting | 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  |

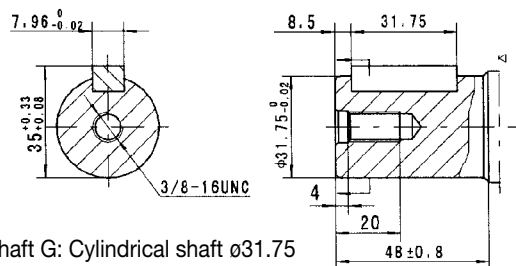




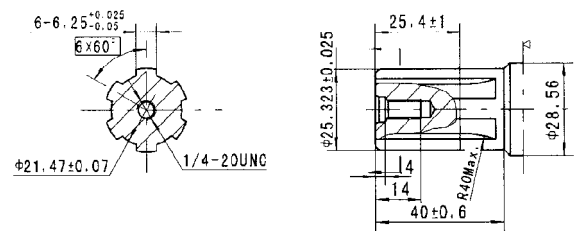
Shaft B: Cylindrical shaft ø32  
Parallel key 10x8x45



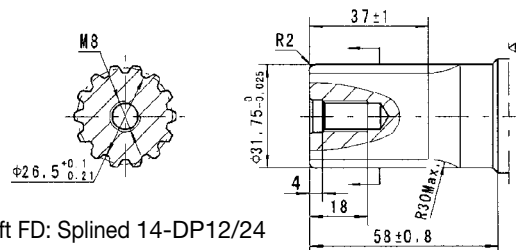
Shaft M: Cylindrical shaft ø35  
Parallel key 10x8x45



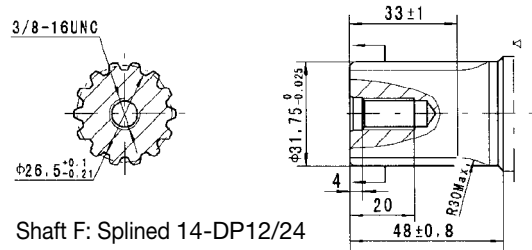
Shaft G: Cylindrical shaft ø31.75  
Parallel key 7.96x7.96x31.75



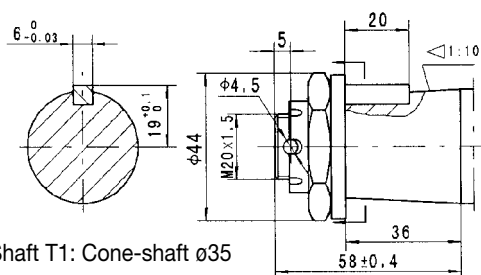
Shaft S: Splined SAE 6B



Shaft FD: Splined 14-DP12/24



Shaft F: Splined 14-DP12/24

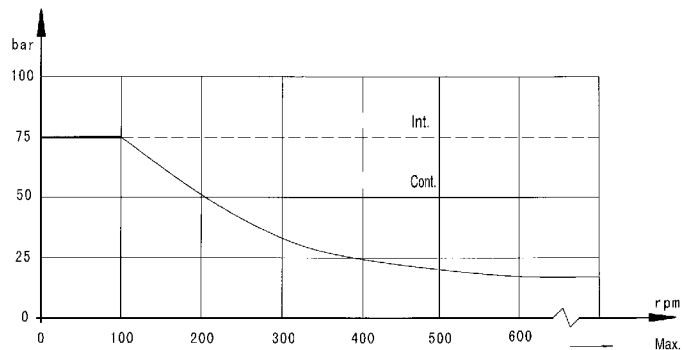
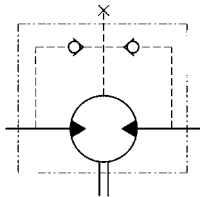


Shaft T1: Cone-shaft ø35  
Parallel key B6x6x20  
Tightening torque: 200 ± 10 Nm



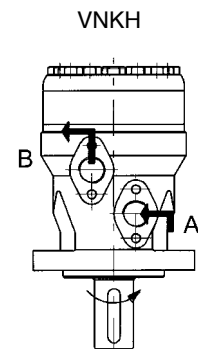
### Permissible shaft seal pressure

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

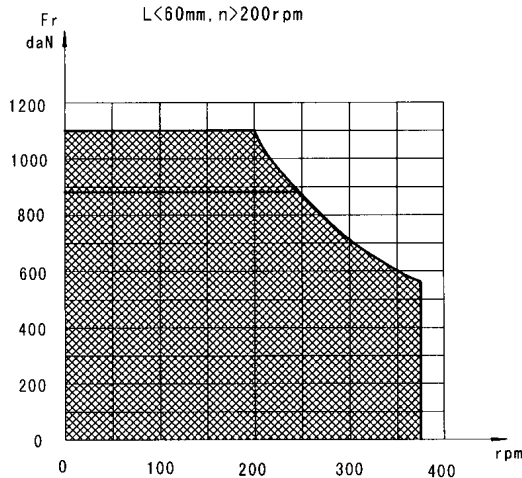
When facing shaft end of motor, shaft to rotate:  
Clockwise when port "A" is pressurized.  
Counter-clockwise when port "B" is pressurized.



Status of the shaft's radial force

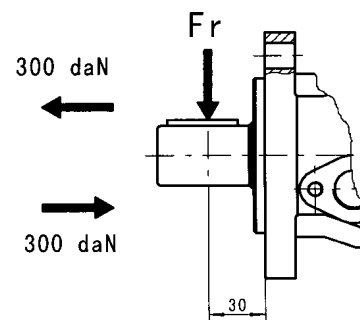
$$F_r = \frac{1100}{n} \times \frac{25000}{103.5 + L} \text{ daN}$$

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



— shaft #1" (#25.4mm) and shaft SAE 6B

The drawing is the Possible load when L=30mm.



$F_r$  =Radial Force (daN)

$L$  =Distance (mm)

$n$  =Speed (rpm)

## VNKH ORDER INFORMATION

| VNKH | 1 | 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<br>200<br>250<br>315<br>400<br>500 | 4<br>4×Ø13.5 Rhomb×flange<br>Pilot Ø82.5×6 | B<br>Shaft Ø32 , parallel key 10×8×45           | D<br>G1/2 Manifold mount 4×M8, G1/4                        | Omit<br>R          | No paint<br>Blue<br>Black<br>Silver grey | Standard<br>No drain<br>Free Running<br>Low Speed |
|       |                                        |                                            | M<br>Shaft Ø35, parallel key 10×8×45            | M<br>M22×1.5 Manifold mount 4×M8, M14×1.5                  |                    |                                          |                                                   |
|       |                                        |                                            | F<br>Shaft Ø31.75, splined key 14-DP12/24       | S<br>7/8-14 O×ring Manifold mount 4×5/16-18UNC, 7/16-20UNF |                    |                                          |                                                   |
|       |                                        |                                            | FD<br>Long Shaft Ø31.75, splined key 14-DP12/24 | P<br>1/2-14 NPTF Manifold mount 4×5/16-18UNC, 7/16-20UNF   |                    |                                          |                                                   |
|       |                                        | 2<br>2×Ø13.5 Rhomb×flange<br>Pilot Ø82.5×6 | G<br>Shaft Ø32 , parallel key 7.96×7.96×31.75   | R<br>PT(Rc) 1/2 Manifold mount 4×M8, PT(Rc)1/4             |                    |                                          |                                                   |
|       |                                        |                                            | T1<br>Cone shaft Ø35, parallel key B6×6×20      |                                                            |                    |                                          |                                                   |
|       |                                        | S<br>Shaft Ø25.4 , parallel key SAE 6B     |                                                 |                                                            |                    |                                          |                                                   |

Note: When the table is used, please fill the code of left rows in dash area and give us, which the code information 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.



VNKSPUS 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:

- \* The motor has the same dimensions and mounting data as the hydraulic motors type VNK.
- \* The motor is described with 15-20% higher technical data (Max. torque and Max. pressure drop), thereby higher power. The new motor is suitable for vehicles with greater loads and pressure drop.

## Main Specification

| Type                                  |         | VNKSPUS<br>80 | VNKSPUS<br>100 | VNKSPUS<br>125 | VNKSPUS<br>160 | VNKSPUS<br>200 | VNKSPUS<br>250 | VNKSPUS<br>315 | VNKSPUS<br>400 | VNKSPUS<br>475 |      |
|---------------------------------------|---------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------|
| Geometric displacement (cm3/<br>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.          | 250            | 320            | 400            | 540            | 645            | 806            | 960            | 960            | 960  |
| 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. pres-<br>sure drop               | (MPa)   | cont.         | 20.5           | 20.5           | 20.5           | 21             | 21             | 20             | 20             | 16             | 14   |
|                                       |         | int.          | 22.5           | 22.5           | 22.5           | 22.5           | 22.5           | 22.5           | 22.5           | 17.5           | 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<br>pressure                | (MPa)   | cont.         | 25             | 25             | 25             | 25             | 25             | 25             | 25             | 25             | 25   |
|                                       |         | int.          | 30             | 30             | 30             | 30             | 30             | 30             | 30             | 30             | 30   |
| Weight                                |         | 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.



VNKSPLUS80 [80.6cm³/rev.]

|              |    | Pressure (MPa) |     |      |     |      |                  |                 |
|--------------|----|----------------|-----|------|-----|------|------------------|-----------------|
|              |    | 3.5            | 7   | 10.5 | 14  | 17.5 | Max.cont<br>20.5 | Max.int<br>22.5 |
| Flow (L/min) | 15 | 35             | 80  | 120  | 158 | 195  | 228              | 249             |
|              |    | 180            | 174 | 168  | 164 | 158  | 151              | 143             |
|              | 30 | 35             | 80  | 120  | 158 | 195  | 232              | 260             |
|              |    | 362            | 352 | 346  | 338 | 330  | 322              | 310             |
|              | 40 | 35             | 79  | 119  | 155 | 193  | 227              | 250             |
|              |    | 487            | 480 | 468  | 457 | 446  | 438              | 425             |
|              | 50 | 30             | 77  | 117  | 153 | 192  | 224              | 248             |
|              |    | 612            | 603 | 592  | 581 | 572  | 558              | 542             |
|              | 60 | 28             | 77  | 117  | 153 | 192  | 224              | 243             |
|              |    | 735            | 726 | 718  | 703 | 687  | 673              | 646             |
| Max.cont.    | 65 | 26             | 75  | 116  | 151 | 188  | 217              | 236             |
|              |    | 794            | 786 | 773  | 760 | 744  | 722              | 706             |
| Max.int.     | 80 | 24             | 72  | 109  | 142 | 176  | 206              | 227             |
|              |    | 981            | 968 | 955  | 925 | 893  | 870              | 832             |

VNKSPLUS100 [100.8cm³/rev.]

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

VNKSPLUS125 [125cm³/rev.]

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

VNKSPLUS160 [154cm³/rev.]

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

TORQUE(N·m) 301  
SPEED (r/min) 646

cont.  
int.



V NK SPLUS200 [194cm³/rev.]

| Pressure (MPa) |     | Max.cont |     |      |     |      |     | Max.int |
|----------------|-----|----------|-----|------|-----|------|-----|---------|
|                |     | 3.5      | 7   | 10.5 | 14  | 17.5 | 21  | 22.5    |
| Flow (L/min)   | 15  | 87       | 179 | 273  | 371 | 471  | 562 | 610     |
|                | 30  | 74       | 73  | 71   | 68  | 64   | 60  | 48      |
|                | 40  | 91       | 190 | 288  | 386 | 489  | 572 | 618     |
|                | 50  | 150      | 148 | 143  | 140 | 134  | 128 | 119     |
|                | 60  | 94       | 193 | 296  | 394 | 498  | 584 | 645     |
|                | 75  | 198      | 195 | 192  | 188 | 183  | 178 | 167     |
| Max.int.       | 90  | 90       | 191 | 292  | 389 | 493  | 580 | 634     |
|                | 100 | 248      | 246 | 241  | 236 | 230  | 223 | 212     |
|                | 120 | 85       | 185 | 279  | 382 | 483  | 575 | 622     |
| Max.cont.      | 150 | 300      | 295 | 288  | 281 | 273  | 263 | 251     |
|                | 180 | 78       | 176 | 271  | 370 | 472  | 561 | 610     |
| Max.int.       | 200 | 374      | 370 | 364  | 360 | 352  | 340 | 331     |
|                | 220 | 68       | 163 | 265  | 361 | 456  | 545 | 599     |
| Max.int.       | 240 | 443      | 440 | 435  | 428 | 424  | 413 | 400     |

V NK SPLUS250 [243cm³/rev.]

| Pressure (MPa) |     | Max.cont |     |      |     |      |     | Max.int |
|----------------|-----|----------|-----|------|-----|------|-----|---------|
|                |     | 3.5      | 7   | 10.5 | 14  | 17.5 | 20  | 22.5    |
| Flow (L/min)   | 15  | 110      | 231 | 351  | 462 | 585  | 681 | 778     |
|                | 30  | 59       | 58  | 56   | 53  | 50   | 46  | 35      |
|                | 40  | 116      | 236 | 359  | 475 | 597  | 700 | 790     |
|                | 50  | 119      | 117 | 114  | 108 | 102  | 92  | 80      |
|                | 60  | 118      | 241 | 363  | 480 | 599  | 706 | 796     |
|                | 75  | 162      | 159 | 156  | 150 | 143  | 134 | 121     |
| Max.int.       | 90  | 111      | 234 | 352  | 472 | 591  | 693 | 788     |
|                | 100 | 203      | 201 | 197  | 191 | 182  | 173 | 158     |
|                | 120 | 106      | 224 | 345  | 462 | 582  | 685 | 772     |
| Max.cont.      | 150 | 244      | 242 | 237  | 230 | 220  | 208 | 194     |
|                | 180 | 101      | 214 | 340  | 454 | 570  | 670 | 760     |
| Max.int.       | 200 | 303      | 299 | 294  | 285 | 272  | 260 | 244     |
|                | 220 | 93       | 209 | 335  | 447 | 559  | 657 | 749     |
| Max.int.       | 240 | 363      | 359 | 354  | 348 | 340  | 328 | 303     |

V NK SPLUS315 [311cm³/rev.]

| Pressure (MPa) |     | Max.cont |     |      |     |      |     | Max.int |
|----------------|-----|----------|-----|------|-----|------|-----|---------|
|                |     | 3.5      | 7   | 10.5 | 14  | 17.5 | 20  | 22.5    |
| Flow (L/min)   | 15  | 148      | 304 | 456  | 613 | 762  | 879 | 978     |
|                | 30  | 48       | 47  | 45   | 43  | 41   | 39  | 27      |
|                | 40  | 155      | 314 | 465  | 635 | 778  | 884 | 988     |
|                | 50  | 95       | 93  | 91   | 89  | 86   | 82  | 67      |
|                | 60  | 160      | 321 | 479  | 650 | 796  | 906 | 997     |
|                | 75  | 127      | 125 | 121  | 117 | 115  | 109 | 91      |
| Max.int.       | 90  | 155      | 314 | 465  | 638 | 780  | 886 | 988     |
|                | 100 | 159      | 157 | 153  | 149 | 145  | 142 | 128     |
|                | 120 | 151      | 306 | 453  | 620 | 765  | 886 | 976     |
| Max.cont.      | 150 | 187      | 185 | 181  | 176 | 169  | 157 | 143     |
|                | 180 | 146      | 300 | 445  | 613 | 755  | 875 | 966     |
| Max.int.       | 200 | 238      | 236 | 232  | 227 | 224  | 220 | 196     |
|                | 220 | 135      | 284 | 436  | 601 | 740  | 863 | 952     |
| Max.int.       | 240 | 286      | 283 | 278  | 272 | 265  | 257 | 232     |

V NK SPLUS400 [394cm³/rev.]

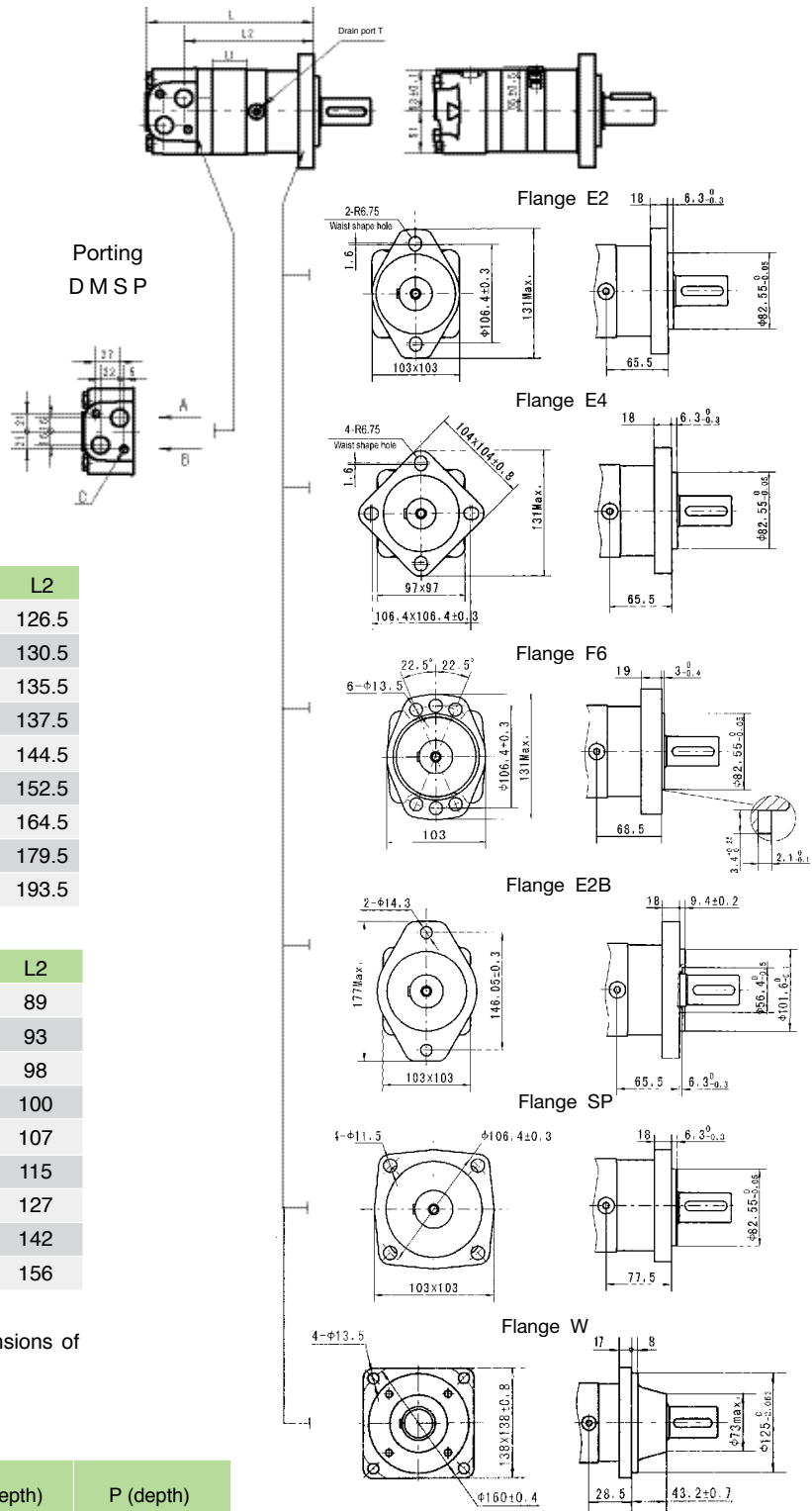
| Pressure (MPa) |     | Max.cont |     |      |     |     |      | Max.int |
|----------------|-----|----------|-----|------|-----|-----|------|---------|
|                |     | 3.5      | 7   | 10.5 | 14  | 16  | 17.5 |         |
| Flow (L/min)   | 15  | 186      | 379 | 578  | 779 | 896 | 986  |         |
|                | 30  | 37       | 36  | 35   | 33  | 31  | 29   |         |
|                | 40  | 190      | 388 | 590  | 791 | 905 | 991  |         |
|                | 50  | 75       | 73  | 71   | 68  | 65  | 61   |         |
|                | 60  | 195      | 394 | 596  | 797 | 912 | 998  |         |
|                | 75  | 99       | 97  | 95   | 93  | 90  | 85   |         |
| Max.int.       | 90  | 191      | 388 | 587  | 785 | 904 | 983  |         |
|                | 100 | 125      | 123 | 118  | 114 | 109 | 102  |         |
|                | 120 | 186      | 388 | 587  | 785 | 904 | 983  |         |
| Max.cont.      | 150 | 149      | 146 | 142  | 137 | 131 | 122  |         |
|                | 180 | 181      | 372 | 576  | 770 | 891 | 973  |         |
| Max.int.       | 200 | 187      | 183 | 177  | 171 | 164 | 153  |         |
|                | 220 | 176      | 367 | 571  | 766 | 883 | 965  |         |
| Max.int.       | 240 | 226      | 221 | 214  | 208 | 199 | 183  |         |

V NK SPLUS475 [475cm³/rev.]

| Pressure (MPa) |     | Max.cont |     |      |     |      |  | Max.int |
|----------------|-----|----------|-----|------|-----|------|--|---------|
|                |     | 3.5      | 7   | 10.5 | 14  | 15   |  |         |
| Flow (L/min)   | 15  | 218      | 439 | 661  | 892 | 995  |  |         |
|                | 30  | 30       | 29  | 28   | 27  | 25   |  |         |
|                | 40  | 223      | 450 | 676  | 910 | 1002 |  |         |
|                | 50  | 61       | 60  | 58   | 56  | 53   |  |         |
|                | 60  | 228      | 461 | 689  | 927 | 1017 |  |         |
|                | 75  | 82       | 80  | 77   | 74  | 68   |  |         |
| Max.int.       | 90  | 224      | 456 | 682  | 920 | 1008 |  |         |
|                | 100 | 103      | 101 | 97   | 92  | 86   |  |         |
|                | 120 | 220      | 451 | 677  | 913 | 998  |  |         |
| Max.cont.      | 150 | 123      | 121 | 118  | 112 | 105  |  |         |
|                | 180 | 212      | 443 | 664  | 901 | 980  |  |         |
| Max.int.       | 200 | 155      | 153 | 147  | 140 | 132  |  |         |
|                | 220 | 196      | 421 | 643  | 877 | 959  |  |         |
| Max.int.       | 240 | 186      | 184 | 178  | 170 | 157  |  |         |

TORQUE (N·m) 766  
SPEED (rpm) 208

cont.  
int.



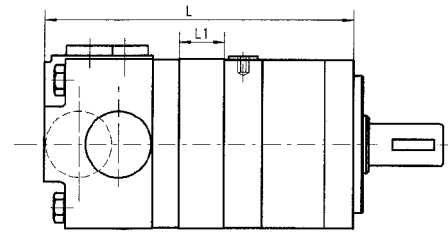
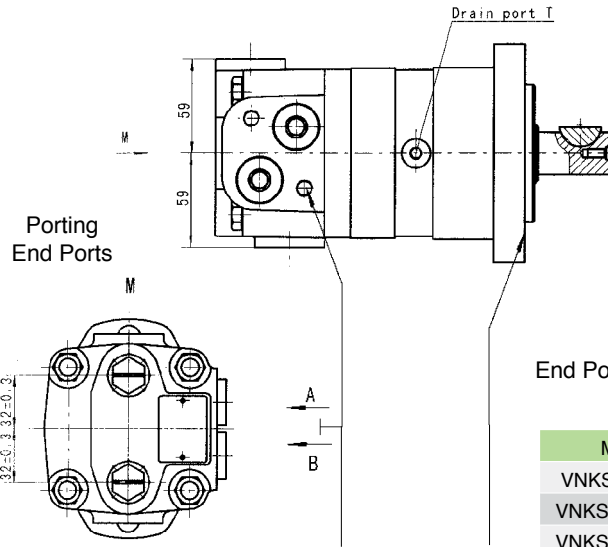
| Model        | L   | L1 | L2    |
|--------------|-----|----|-------|
| VNKSPLUS-80  | 170 | 16 | 126.5 |
| VNKSPLUS-100 | 174 | 20 | 130.5 |
| VNKSPLUS-125 | 179 | 25 | 135.5 |
| VNKSPLUS-160 | 181 | 27 | 137.5 |
| VNKSPLUS-200 | 188 | 34 | 144.5 |
| VNKSPLUS-250 | 196 | 42 | 152.5 |
| VNKSPLUS-315 | 208 | 54 | 164.5 |
| VNKSPLUS-400 | 223 | 69 | 179.5 |
| VNKSPLUS-475 | 237 | 83 | 193.5 |

| Model          | L     | L1 | L2  |
|----------------|-------|----|-----|
| VNKSPLUS-80-W  | 132.5 | 16 | 89  |
| VNKSPLUS-100-W | 136.5 | 20 | 93  |
| VNKSPLUS-125-W | 141.5 | 25 | 98  |
| VNKSPLUS-160-W | 143.5 | 27 | 100 |
| VNKSPLUS-200-W | 150.5 | 34 | 107 |
| VNKSPLUS-250-W | 158.5 | 42 | 115 |
| VNKSPLUS-315-W | 170.5 | 54 | 127 |
| VNKSPLUS-400-W | 185.5 | 69 | 142 |
| VNKSPLUS-475-W | 199.5 | 83 | 156 |

Note: If the mounting SP is used, the dimensions of L and L2 should plus 12 mm.

| Code<br>Mounting | D (depth) | M (depth)   | S (depth)          | P (depth)        |
|------------------|-----------|-------------|--------------------|------------------|
| P(A,B)           | G1/2(18)  | M22x1.5(18) | 7/8-14 O-ring (18) | 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) |

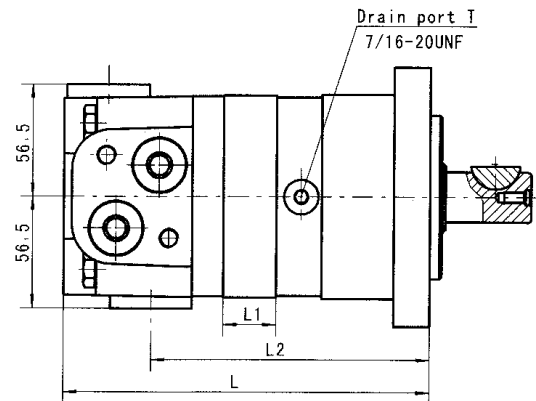
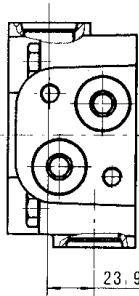




End Ports P(A\B)

| Code<br>Mounting | EE-D (depth) | EE-M2 (depth)  | EE-S2 (depth)      |
|------------------|--------------|----------------|--------------------|
| P(A,B)           | G1/2 (18)    | M22 x 1.5 (18) | 7/8-14 O-ring (18) |
| T                | G1/4 (12)    | M14 x 1.5 (12) | 7/16-20UNF(12)     |

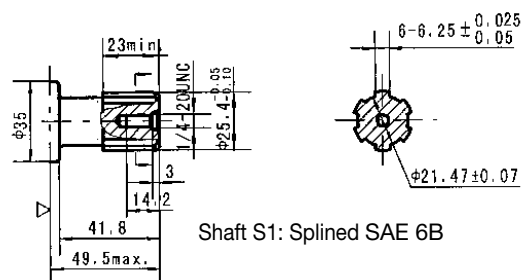
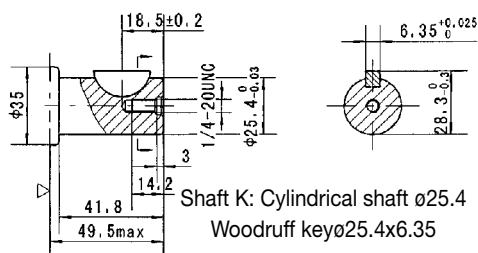
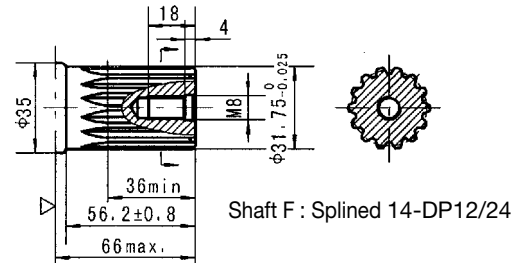
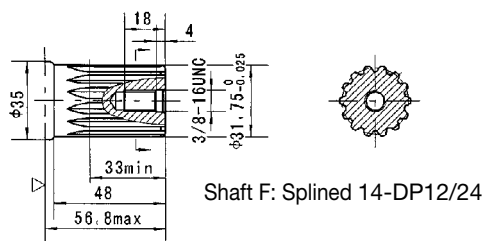
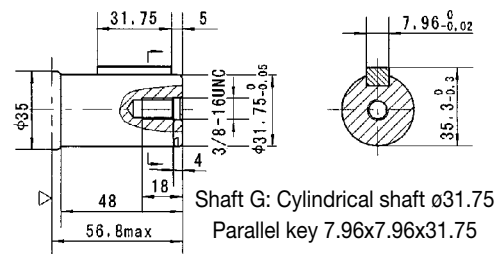
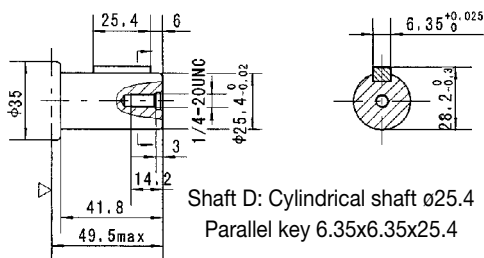
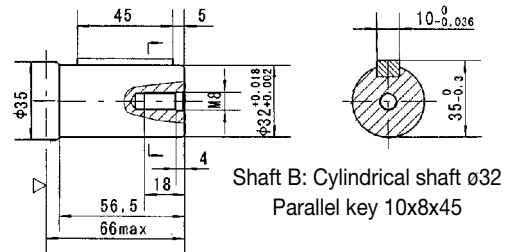
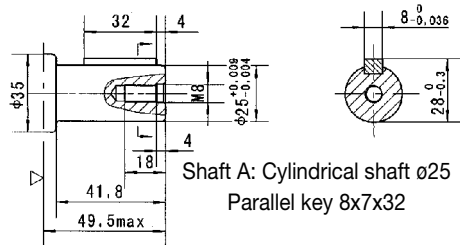
| Model        | L   | L1 | Model           | L   | L1 |
|--------------|-----|----|-----------------|-----|----|
| VNKSPLUS-80  | 176 | 16 | VNKSPLUS-80-WE  | 148 | 16 |
| VNKSPLUS-100 | 180 | 20 | VNKSPLUS-100-WE | 152 | 20 |
| VNKSPLUS-125 | 185 | 25 | VNKSPLUS-125-WE | 157 | 25 |
| VNKSPLUS-160 | 187 | 27 | VNKSPLUS-160-WE | 159 | 27 |
| VNKSPLUS-200 | 194 | 34 | VNKSPLUS-200-WE | 166 | 34 |
| VNKSPLUS-250 | 202 | 42 | VNKSPLUS-250-WE | 174 | 42 |
| VNKSPLUS-315 | 214 | 54 | VNKSPLUS-315-WE | 186 | 54 |
| VNKSPLUS-400 | 229 | 69 | VNKSPLUS-400-WE | 201 | 69 |
| VNKSPLUS-475 | 243 | 83 | VNKSPLUS-475-WE | 215 | 83 |

Porting  
ED 1-1/16-12UN O-ring  
180° Apart ports


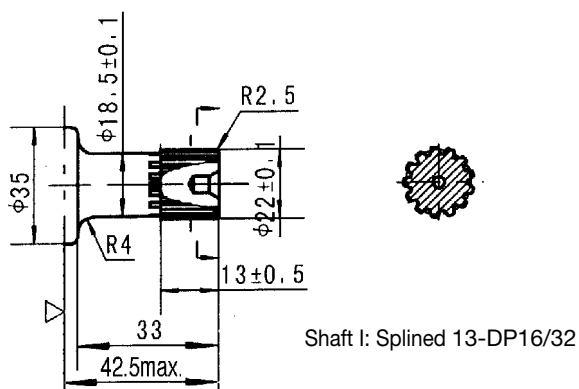
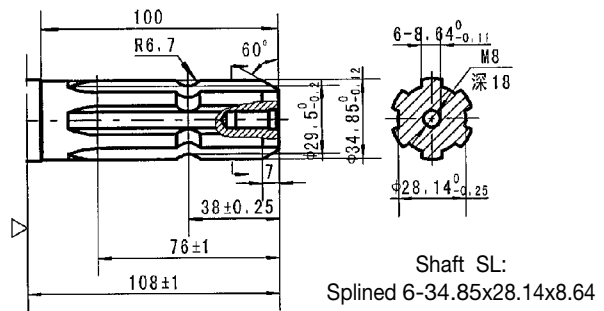
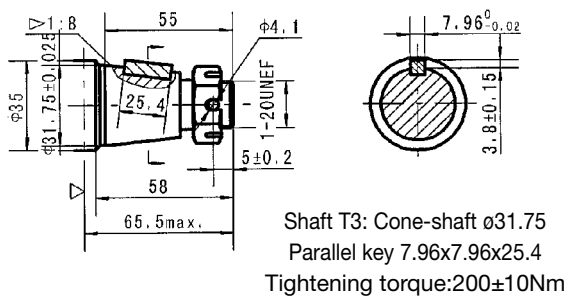
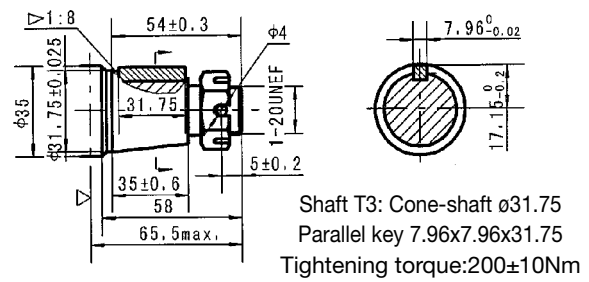
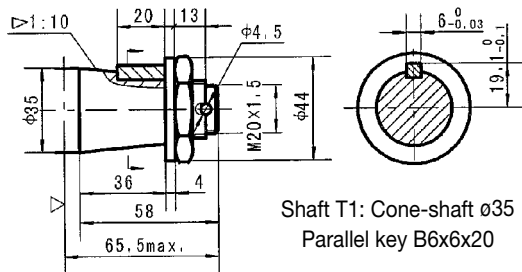
| Code<br>Mounting | ED (depth)       |
|------------------|------------------|
| P(A,B)           | 1-1/16-12UN (18) |
| T                | 7/16-20UNF (12)  |

| Model        | L   | L1 | L2  |
|--------------|-----|----|-----|
| VNKSPLUS-80  | 176 | 16 | 130 |
| VNKSPLUS-100 | 180 | 20 | 134 |
| VNKSPLUS-125 | 185 | 25 | 139 |
| VNKSPLUS-160 | 187 | 27 | 141 |
| VNKSPLUS-200 | 194 | 34 | 148 |
| VNKSPLUS-250 | 202 | 42 | 156 |
| VNKSPLUS-315 | 214 | 54 | 168 |
| VNKSPLUS-400 | 229 | 69 | 183 |
| VNKSPLUS-475 | 243 | 83 | 197 |

| Model           | L   | L1 | L2  |
|-----------------|-----|----|-----|
| VNKSPLUS-80-WE  | 148 | 16 | 102 |
| VNKSPLUS-100-WE | 152 | 20 | 106 |
| VNKSPLUS-125-WE | 157 | 25 | 111 |
| VNKSPLUS-160-WE | 159 | 27 | 113 |
| VNKSPLUS-200-WE | 166 | 34 | 119 |
| VNKSPLUS-250-WE | 178 | 42 | 127 |
| VNKSPLUS-315-WE | 190 | 54 | 139 |
| VNKSPLUS-400-WE | 205 | 69 | 154 |
| VNKSPLUS-475-WE | 219 | 83 | 168 |



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



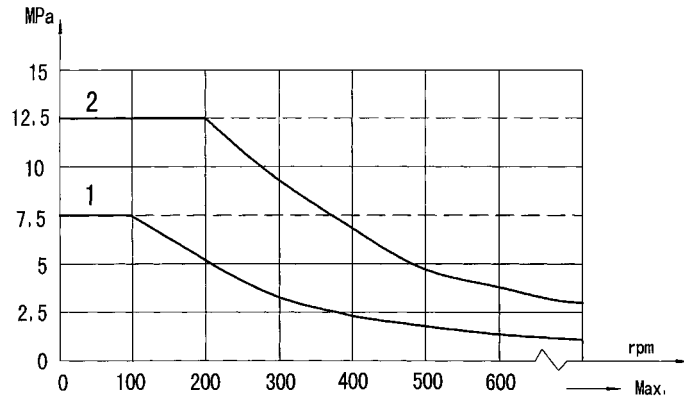
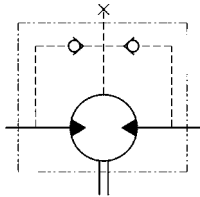
Motor Mounting Surface →

(Dimension corresponding mounting E2, by analogy with others)

Note: Mounting SP is the same with shaft modle T1, D,B, F and G.



### Permissible shaft seal pressure



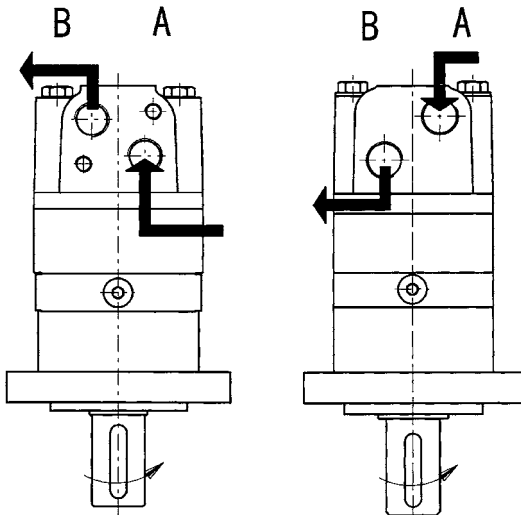
Note:1.Chart for standard shaft seal;

2.Chart for high pressure shaft seal.

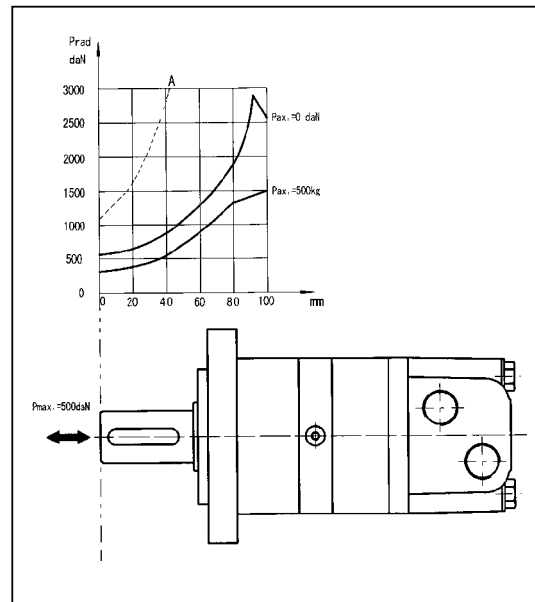
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

### Standard 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



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.



## VNKSPLUS ORDER INFORMATION

| VNKSPLUS |       | 1                   | 2                                                | 3  | 4                                                                                                              | 5     | 6                                                                          | 7                    | 8                    |   |                    |   |
|----------|-------|---------------------|--------------------------------------------------|----|----------------------------------------------------------------------------------------------------------------|-------|----------------------------------------------------------------------------|----------------------|----------------------|---|--------------------|---|
| Pos.1    | 2     | 3                   |                                                  |    | 4                                                                                                              |       |                                                                            | 5                    |                      | 6 | 7                  | 8 |
| Code     | Disp. | Flange, Pilot, Port |                                                  |    | Output Shaft                                                                                                   |       |                                                                            | Ports and Drain Port |                      |   | Rotation Direction |   |
| Omit     | 80    | E2                  | 2-Ø13.5 Rhomb-flange Ø106.4,<br>Pilot Ø82.5×6.3  | A  | Shaft Ø25,Parallel key 8×7×32<br>Shaft Ø32,Parallel key 10×8×45<br>Shaft Ø25.4,<br>Parallel key 6.35×6.35×25.4 | D     | G1/2 Manifold Mount 2-M10,G1/4<br>M22×1.5 Manifold Mount 2-M10,<br>M14×1.5 | Omit<br>R            | Standard<br>Opposite |   |                    |   |
|          | 100   | E4                  | 4-Ø13.5 Rhomb-flange Ø106.4,<br>Pilot Ø82.5×6.3  | B  | Parallel key 7.96×7.96×31.75<br>Shaft Ø31.75,Splined key 14-DP12/24                                            | M     |                                                                            |                      |                      |   |                    |   |
|          | 125   | F6                  | 6-Ø13.5 Rhomb-flange Ø106.4,<br>Pilot Ø82.5×6.3  | G  | Long Shaft Ø31.75,<br>Splined key 14-DP12/24                                                                   | S     | 7/8-14UNF O-ring manifold<br>2-3/8-16,7/16-20UNF                           |                      |                      |   |                    |   |
|          | 160   |                     |                                                  | F  | Shaft Ø34.85,<br>Splined key 6-34.85×28.14×8.64                                                                | P     | 1/2-14NPTF manifold<br>2-3/8-16UNC,7/16-20UNF                              |                      |                      |   |                    |   |
|          | 200   | W                   | Ø13.5 Wheel-flange Ø160,<br>Pilot Ø125×8         | FD |                                                                                                                | EE-D  | G1/2,G1/4(end port)                                                        |                      |                      |   |                    |   |
|          | 250   |                     |                                                  | SL | Cone-shaft Ø35,parallel key B6×6×20<br>Cone-shaft Ø31.75,<br>Parallel key 7.96×7.96×31.75                      | EE-M2 | M22×1.5,M14×1.5(end port)                                                  |                      |                      |   |                    |   |
|          | 315   | E2B                 | 2-Ø14.3 Rhomb-flangeØ146.05,<br>Pilot Ø101.6×9.4 | T1 | Sub-shaft Ø22,<br>Splined key 13-DP16/32                                                                       | EE-S2 | 7/8-14UNF O-ring,7/16-20 UNF(end port)                                     |                      |                      |   |                    |   |
|          | 400   |                     |                                                  | T3 |                                                                                                                | ED    | 1-1/16-12 UN O-ring, 7/16-20<br>UNF(180°Apart ports)                       |                      |                      |   |                    |   |
|          | 475   | SP                  | 4-Ø11.5 Square-flange Ø106.4,<br>Pilot Ø82.5×6.3 | S1 |                                                                                                                |       |                                                                            |                      |                      |   |                    |   |
|          |       |                     |                                                  | I  |                                                                                                                |       |                                                                            |                      |                      |   |                    |   |

Note: When the table is used, please fill the code of left rows in the table and give us, which the code information consists of construction, displacement, mounting flange, output shaft and ports. The informations of mounting flange, output shaft and ports are the same as VNK 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 motor adapt the advanced Geroler gear set design 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. Can offer 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.

| Type                                           |       | VNKT 160 | VNKT 200 | VNKT 230 | VNKT 250 | VNKT 315 | VNKT 400 | VNKT 500 | VNKT 630 | VNKT 800 |
|------------------------------------------------|-------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Geometric displacement (cm <sup>3</sup> /rev.) |       | 161.1    | 201.4    | 232.5    | 251.8    | 326.3    | 410.9    | 523.6    | 629.1    | 801.8    |
| Max. speed (rpm)                               | cont. | 625      | 625      | 536      | 500      | 380      | 305      | 240      | 196      | 154      |
|                                                | int.  | 780      | 750      | 643      | 600      | 460      | 365      | 285      | 233      | 185      |
| Max. torque (N•m)                              | 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     |
| Max. output (kW)                               | 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     |
| Max. pressure drop (MPa)                       | 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       |
| Max. flow (L/min)                              | cont. | 100      | 125      | 125      | 125      | 125      | 125      | 125      | 125      | 125      |
|                                                | int.  | 125      | 150      | 150      | 150      | 150      | 150      | 150      | 150      | 150      |
| Max. inlet pressure (MPa)                      | 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       |
| Weight (kg)                                    |       | 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.



VNKT 160 [161.1cm³/rev.]

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

VNKT 200 [201.4cm³/rev.]

|              |    | Pressure (MPa) |     |     |     |     |     | Max. cont. | Max. int. |
|--------------|----|----------------|-----|-----|-----|-----|-----|------------|-----------|
|              |    | 4              | 8   | 10  | 12  | 16  | 20  |            |           |
| Flow (L/min) | 10 | 124            | 233 | 289 | 340 | 454 | 560 | 669        |           |
|              |    | 47             | 46  | 45  | 42  | 39  | 37  | 33         |           |
|              | 20 | 125            | 239 | 298 | 347 | 468 | 576 | 696        |           |
|              |    | 95             | 94  | 92  | 90  | 87  | 84  | 75         |           |
|              | 40 | 120            | 241 | 296 | 352 | 475 | 589 | 716        |           |
|              |    | 195            | 193 | 191 | 187 | 183 | 178 | 167        |           |
|              | 60 | 116            | 237 | 295 | 352 | 478 | 589 | 718        |           |
|              |    | 297            | 295 | 292 | 287 | 282 | 276 | 263        |           |
|              | 80 | 108            | 231 | 289 | 350 | 474 | 586 | 716        |           |
|              |    | 395            | 393 | 389 | 384 | 377 | 370 | 359        |           |
| Max. cont.   |    | 99             | 227 | 286 | 344 | 471 | 580 | 712        |           |
|              |    | 493            | 490 | 486 | 482 | 475 | 467 | 460        |           |
| Max. int.    |    | 84             | 208 | 276 | 333 | 459 | 566 | 697        |           |
|              |    | 615            | 611 | 607 | 602 | 595 | 588 | 572        |           |
| Max. int.    |    | 70             | 194 | 260 | 324 | 447 | 554 | 682        |           |
|              |    | 743            | 740 | 735 | 727 | 717 | 706 | 682        |           |

VNKT 250 [251.8cm³/rev.]

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

VNKT 315 [326.3cm³/rev.]

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

Torque (N·m) 552  
Speed (rpm) 572

cont.  
int.



## HYDRAULIC MOTORS

### PERFORMANCE DATA

60

VNKT 400 [410.9cm³/rev.]

|              |            | Pressure (MPa) |     |     |     |     |      | Max. cont. | Max. int. |
|--------------|------------|----------------|-----|-----|-----|-----|------|------------|-----------|
|              |            | 3              | 6   | 9   | 12  | 15  | 18   |            |           |
| Flow (L/min) | 10         | 176            | 367 | 560 | 715 | 885 | 1050 | 1209       |           |
|              | 20         | 179            | 370 | 565 | 726 | 899 | 1071 | 1236       |           |
|              | 40         | 176            | 370 | 567 | 733 | 919 | 1091 | 1263       |           |
|              | 60         | 174            | 361 | 563 | 729 | 920 | 1095 | 1269       |           |
|              | 80         | 166            | 353 | 553 | 719 | 912 | 1084 | 1263       |           |
|              | 100        | 150            | 339 | 538 | 708 | 896 | 1067 | 1252       |           |
|              | 125        | 135            | 309 | 524 | 688 | 873 | 1045 | 1221       |           |
|              | 150        | 126            | 292 | 508 | 666 | 852 | 1020 | 1197       |           |
|              | Max. cont. | 302            | 300 | 298 | 294 | 289 | 285  | 278        |           |
|              | Max. int.  | 364            | 362 | 358 | 354 | 350 | 346  | 339        |           |

VNKT 500 [523.6cm³/rev.]

|              |            | Pressure (MPa) |     |     |     |      |      | Max. cont. | Max. int. |
|--------------|------------|----------------|-----|-----|-----|------|------|------------|-----------|
|              |            | 3              | 6   | 9   | 12  | 14   | 16   |            |           |
| Flow (L/min) | 10         | 222            | 451 | 692 | 892 | 1050 | 1193 | 1340       |           |
|              | 20         | 231            | 464 | 714 | 918 | 1070 | 1220 | 1377       |           |
|              | 40         | 230            | 466 | 727 | 941 | 1094 | 1244 | 1422       |           |
|              | 60         | 225            | 457 | 714 | 941 | 1088 | 1245 | 1409       |           |
|              | 80         | 213            | 431 | 696 | 927 | 1076 | 1244 | 1401       |           |
|              | 100        | 194            | 420 | 680 | 901 | 1063 | 1224 | 1383       |           |
|              | 125        | 182            | 398 | 641 | 877 | 1024 | 1199 | 1352       |           |
|              | 150        | 147            | 369 | 618 | 853 | 1004 | 1167 | 1325       |           |
|              | Max. cont. | 237            | 236 | 235 | 233 | 231  | 229  | 225        |           |
|              | Max. int.  | 284            | 283 | 282 | 280 | 278  | 276  | 272        |           |

VNKT 630 [629.1cm³/rev.]

|              |            | Pressure (MPa) |     |     |      |      |      | Max. cont. | Max. int. |
|--------------|------------|----------------|-----|-----|------|------|------|------------|-----------|
|              |            | 3              | 6   | 9   | 10.5 | 12   | 14   |            |           |
| Flow (L/min) | 10         | 233            | 520 | 795 | 902  | 1074 | 1194 | 1363       |           |
|              | 20         | 237            | 554 | 837 | 953  | 1117 | 1239 | 1407       |           |
|              | 40         | 239            | 553 | 860 | 987  | 1171 | 1308 | 1483       |           |
|              | 60         | 223            | 544 | 863 | 978  | 1172 | 1318 | 1498       |           |
|              | 80         | 220            | 537 | 854 | 965  | 1172 | 1314 | 1497       |           |
|              | 100        | 208            | 522 | 832 | 945  | 1156 | 1303 | 1488       |           |
|              | 125        | 201            | 499 | 810 | 931  | 1137 | 1292 | 1472       |           |
|              | 150        | 174            | 492 | 785 | 921  | 1121 | 1277 | 1454       |           |
|              | Max. cont. | 196            | 196 | 194 | 192  | 191  | 187  | 183        |           |
|              | Max. int.  | 233            | 232 | 231 | 230  | 227  | 223  | 217        |           |

VNKT 800 [801.8cm³/rev.]

|              |            | Pressure (MPa) |     |      |      |      |      | Max. cont. | Max. int. |
|--------------|------------|----------------|-----|------|------|------|------|------------|-----------|
|              |            | 3              | 6   | 9    | 10.5 | 12.5 | 13   |            |           |
| Flow (L/min) | 10         | 346            | 677 | 1003 | 1159 | 1365 | 1390 |            |           |
|              | 20         | 356            | 692 | 1034 | 1183 | 1404 | 1458 |            |           |
|              | 40         | 365            | 703 | 1066 | 1236 | 1459 | 1516 |            |           |
|              | 60         | 354            | 703 | 1060 | 1237 | 1464 | 1520 |            |           |
|              | 80         | 332            | 686 | 1050 | 1226 | 1464 | 1514 |            |           |
|              | 100        | 305            | 654 | 1025 | 1207 | 1445 | 1506 |            |           |
|              | 125        | 280            | 622 | 989  | 1181 | 1422 | 1487 |            |           |
|              | 150        | 247            | 590 | 953  | 1156 | 1406 | 1476 |            |           |
|              | Max. cont. | 154            | 153 | 153  | 150  | 149  | 140  |            |           |
|              | Max. int.  | 185            | 184 | 183  | 181  | 179  | 172  |            |           |

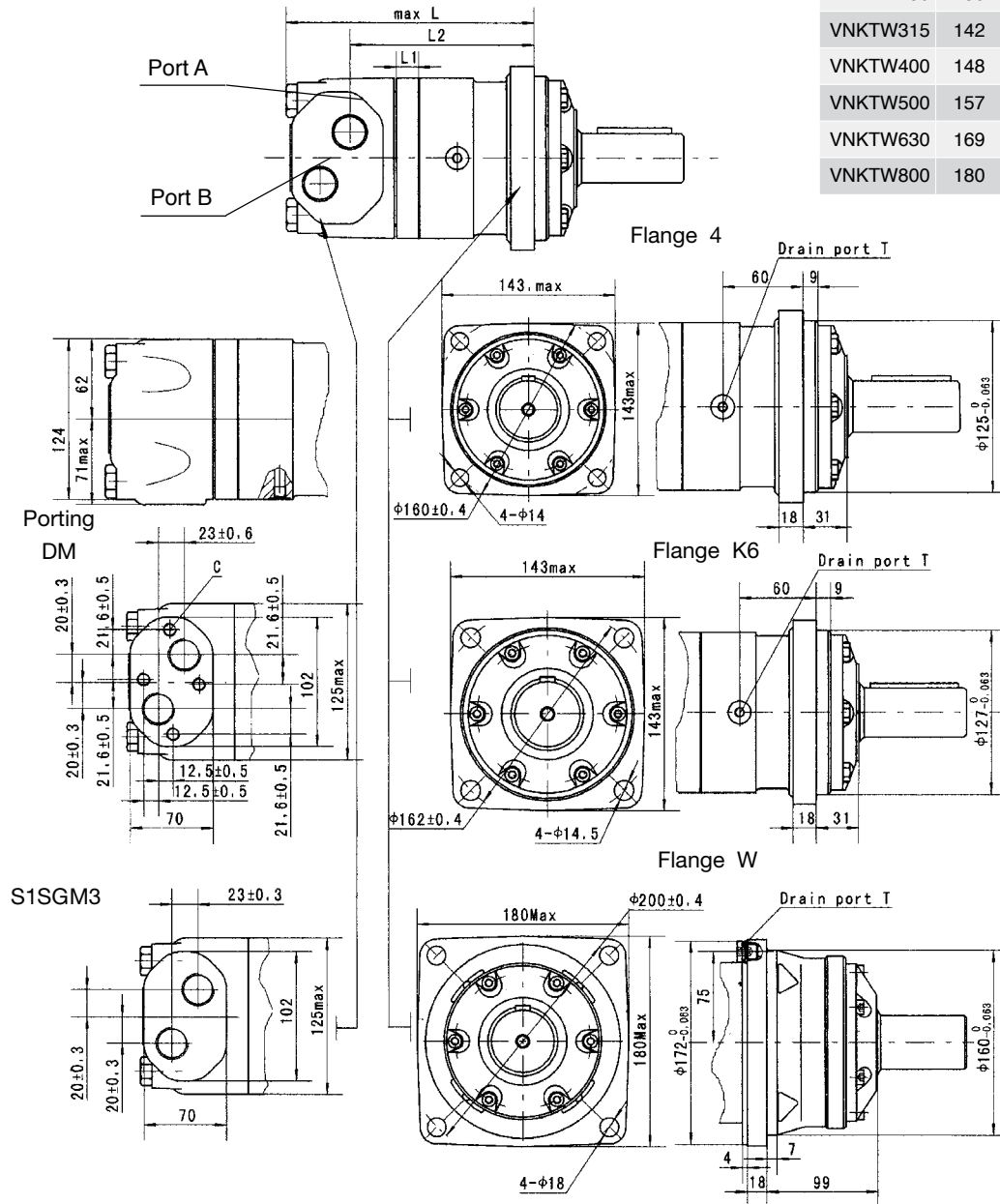
Torque (N·m) 1121  
Speed (rpm) 227

cont.  
int.





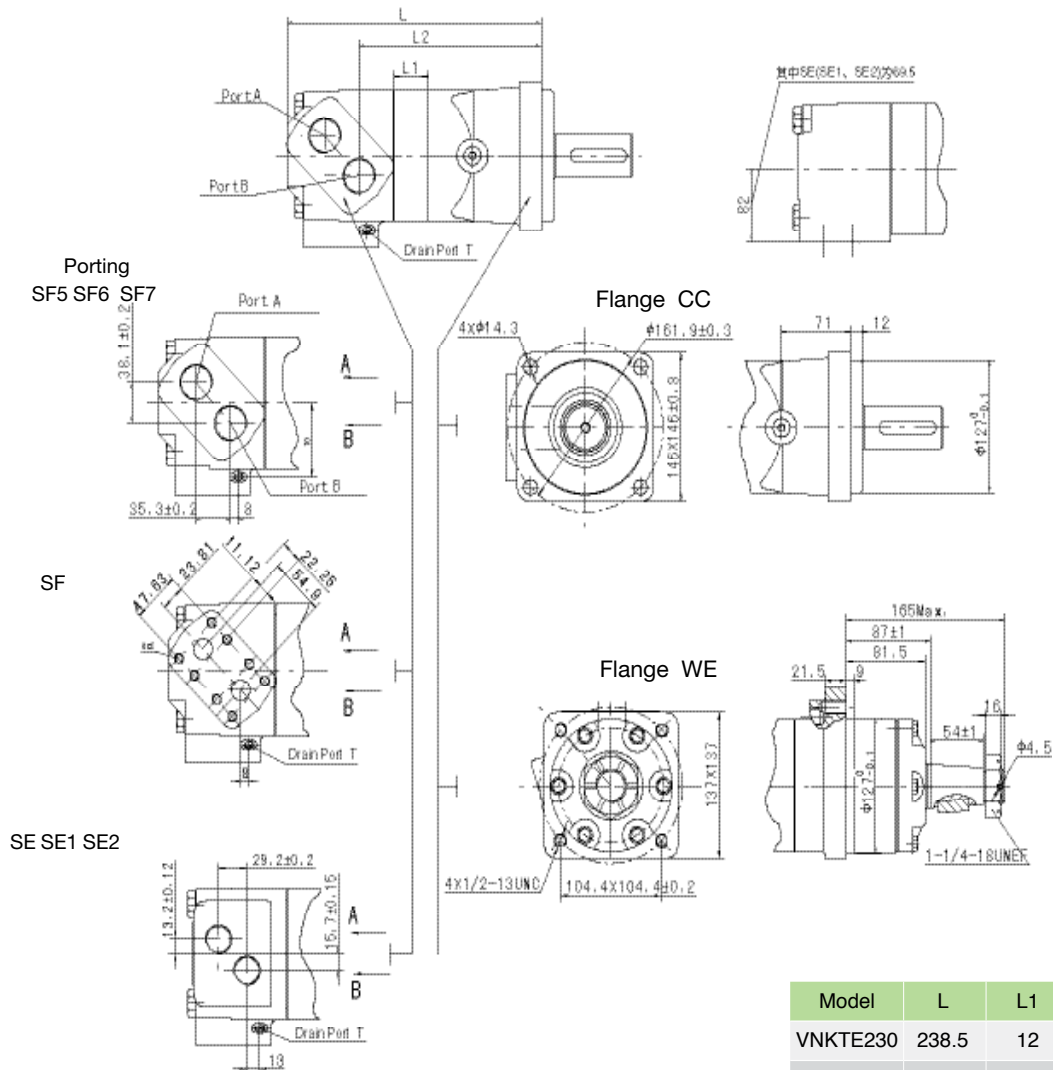
| Model    | L   | L1 | L2  |
|----------|-----|----|-----|
| VNKTW160 | 127 | 17 | 77  |
| VNKTW200 | 131 | 21 | 81  |
| VNKTW250 | 136 | 14 | 86  |
| VNKTW315 | 142 | 20 | 91  |
| VNKTW400 | 148 | 27 | 98  |
| VNKTW500 | 157 | 35 | 106 |
| VNKTW630 | 169 | 47 | 118 |
| VNKTW800 | 180 | 58 | 129 |



| Model   | L   | L1 | L2    |
|---------|-----|----|-------|
| VNKT160 | 193 | 17 | 142.5 |
| VNKT200 | 197 | 21 | 146.5 |
| VNKT250 | 204 | 14 | 152.5 |
| VNKT315 | 210 | 20 | 158.5 |
| VNKT400 | 217 | 27 | 165.5 |
| VNKT500 | 225 | 35 | 173.5 |
| VNKT630 | 237 | 47 | 185.5 |
| VNKT800 | 248 | 58 | 196.5 |

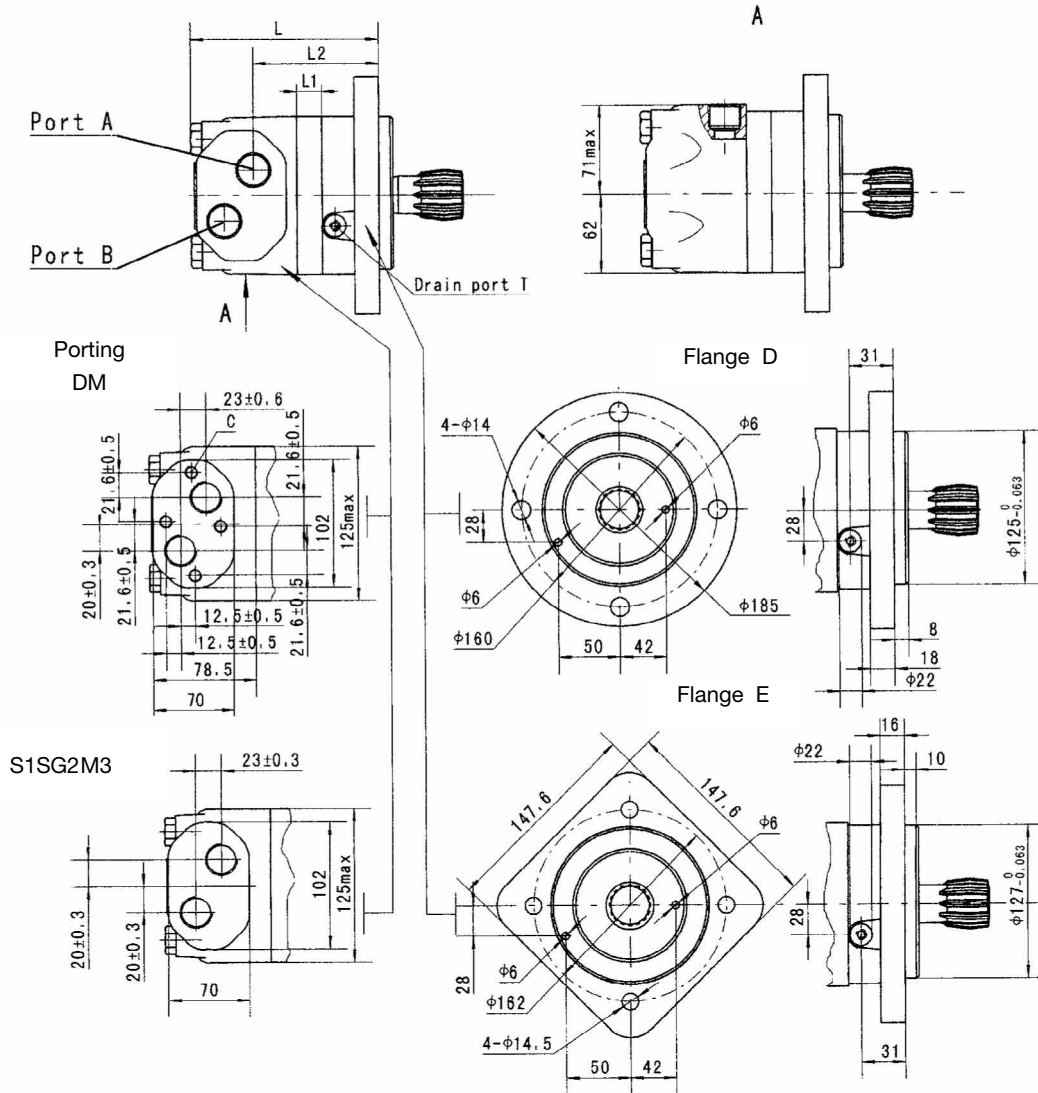
| Content  | Code      |                |                  |           |                |                  |
|----------|-----------|----------------|------------------|-----------|----------------|------------------|
| Mounting | D (depth) | M (depth)      | S (depth)        | G (depth) | M3 (depth)     | 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.


**Note:**

- 1)The data for the port of SF (SF5 and SF6and 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.

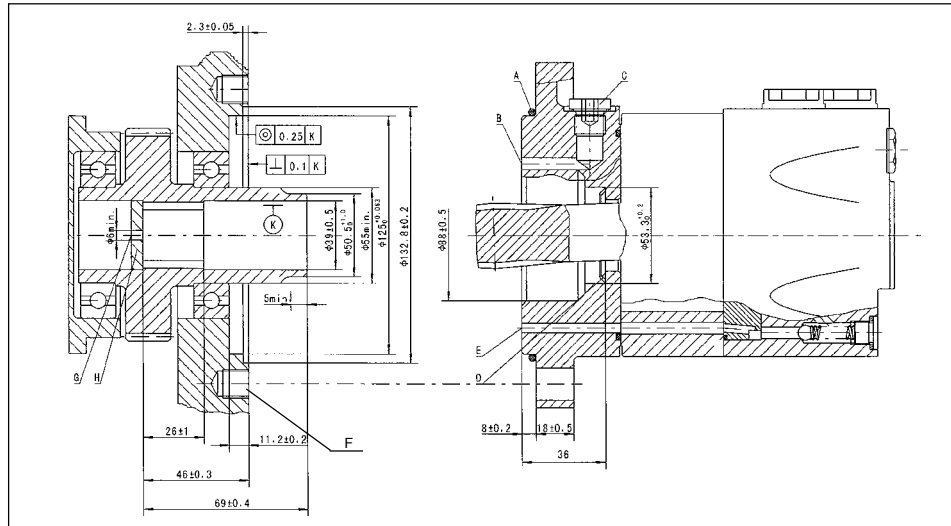
| Model    | L     | L1 | L2    |
|----------|-------|----|-------|
| VNKTE230 | 238.5 | 12 | 164.5 |
| VNKTE250 | 240.5 | 14 | 166.5 |
| VNKTE315 | 246.5 | 20 | 172.5 |
| VNKTE400 | 253.5 | 27 | 179.5 |
| VNKTE500 | 261.5 | 35 | 187.5 |
| VNKTE630 | 273.5 | 47 | 199.5 |
| VNKTE800 | 284.5 | 58 | 210.5 |



| Model   | L   | L1 | L2    |
|---------|-----|----|-------|
| VNKT160 | 148 | 17 | 96.5  |
| VNKT200 | 152 | 21 | 100.5 |
| VNKT250 | 157 | 14 | 109   |
| VNKT315 | 163 | 20 | 115   |
| VNKT400 | 170 | 27 | 122   |
| VNKT500 | 178 | 35 | 130   |
| VNKT630 | 190 | 47 | 142   |
| VNKT800 | 201 | 58 | 153   |

| Content  | Code      |                |                  |           |                |                  |
|----------|-----------|----------------|------------------|-----------|----------------|------------------|
| Mounting | 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)      | --               | --        | --             | --               |

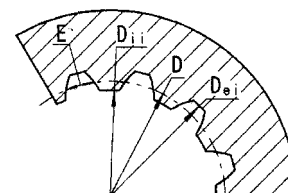
Note:1)The thickness of the stator and rotor for disp.from 160 to 200 is the dimension of L1 adding on 3mm.  
2)The thickness of the stator and rotor for disp.from 250 to 800 is the dimension of L1 adding on 7mm.



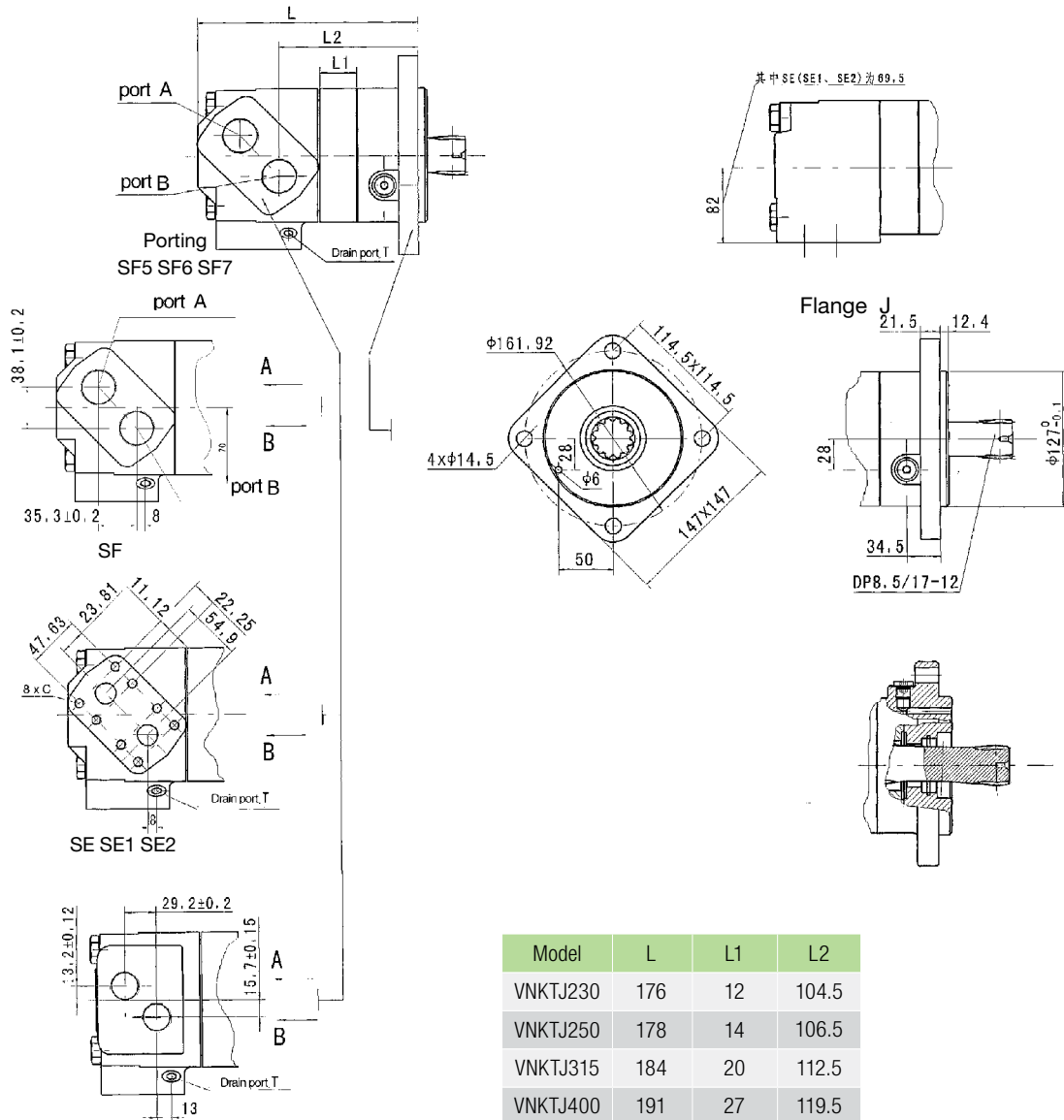
- A: O-ring:125x3
- B: External drain channel
- C: Drain connection G 1/4;12 mm deep
- D: Conical seal ring
- E: Internal drain channel
- F: M12;min. 18mm deep
- G: Oil circulation hole
- H: Hardened stop plate

#### INTERNAL SPLINE DATA FOR THE ATTACHED COMPONENT

| Fillet Root Side Fit   |            | mm                     |
|------------------------|------------|------------------------|
| © Number of Teeth      | Z          | 16                     |
| Diametral Pitch        | DP         | 12/24                  |
| Pressure Angle         | $\alpha_D$ | 30°                    |
| Pitch Dia.             | D          | $\phi 33.8636$         |
| Major Dia.             | $D_{ei}$   | $\phi 38.4^{+0.25}_0$  |
| Minor Dia.             | $D_{ii}$   | $\phi 32.15^{+0.04}_0$ |
| Space Width [Circular] | 123        | 4.516±0.037            |



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

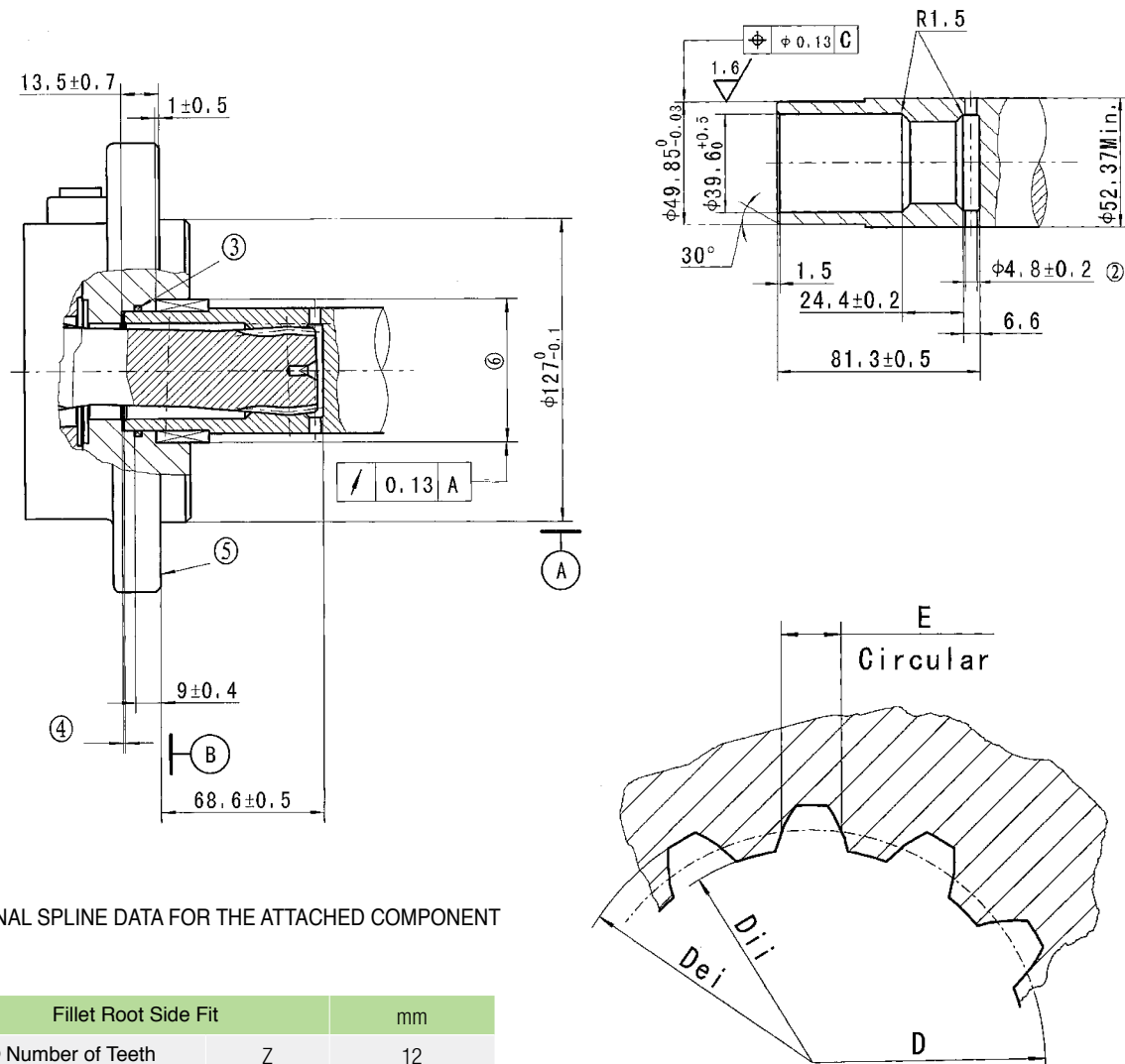


| Model    | L   | L1 | L2    |
|----------|-----|----|-------|
| VNKTJ230 | 176 | 12 | 104.5 |
| VNKTJ250 | 178 | 14 | 106.5 |
| VNKTJ315 | 184 | 20 | 112.5 |
| VNKTJ400 | 191 | 27 | 119.5 |
| VNKTJ500 | 199 | 35 | 127.5 |
| VNKTJ630 | 211 | 47 | 139.5 |
| VNKTJ800 | 222 | 58 | 150.5 |

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.

| Content  | Code             |                |             |                 |                  |                  |             |
|----------|------------------|----------------|-------------|-----------------|------------------|------------------|-------------|
| Mounting | 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   | --               | --               | --          |



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.                              | $\alpha_D$ | $\phi 35.8588^{+0.025}_{-0}$ |
| Major Dia.                              | $D_{ei}$   | $\phi 38.97^{+0.25}_{-0}$    |
| Minor Dia.                              | $D_{ii}$   | $\phi 33.33^{+0.04}_{-0}$    |
| Space Width [Circular]                  | E          | $5.866 \pm 0.032$            |
| Dimension between two pins ( $\phi 4$ ) | $M_o$      | $26.929-27.084$              |

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.

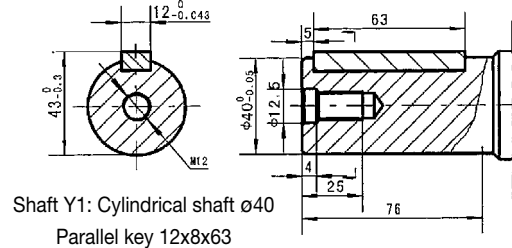
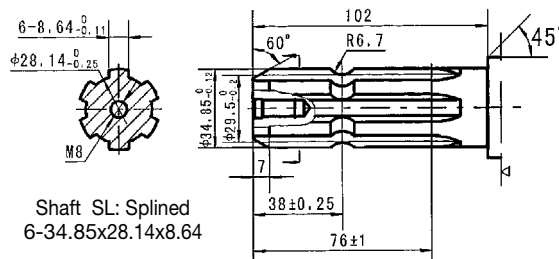
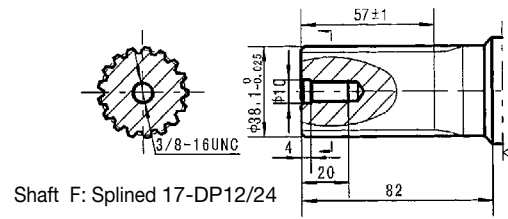
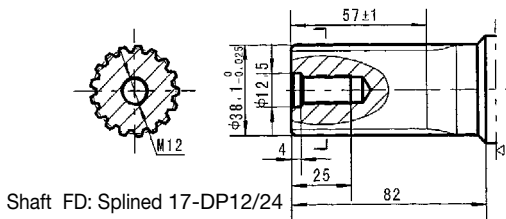
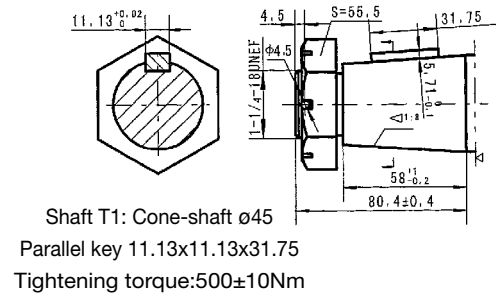
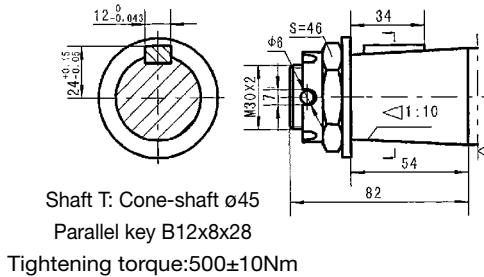
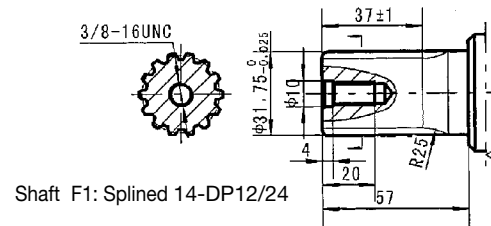
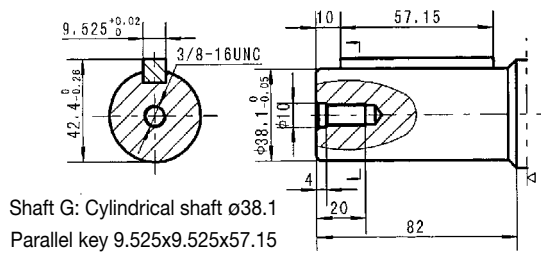
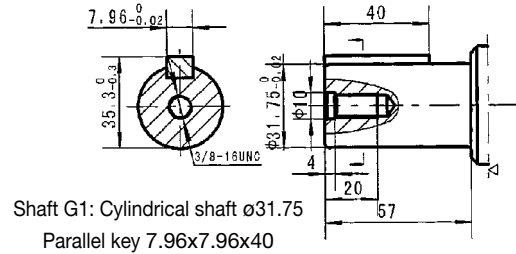
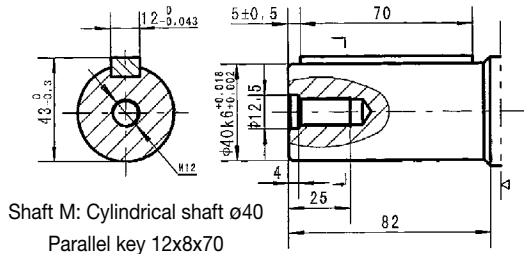
③ Some means of maintaining clearance between shaft and mounting flange must be provided.

④ Seal to be furnished with motor for proper oil circulation thru splines.

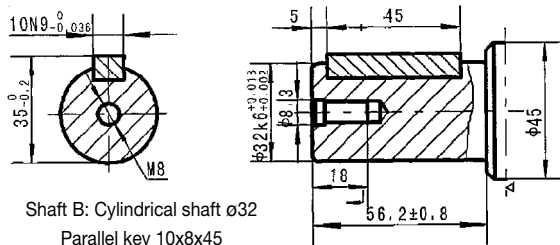
⑤ Similar to SAE "C" Four Bolt Flange

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).

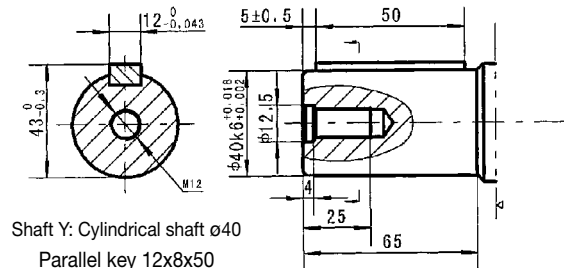
C This surface to be diameter of output shaft.



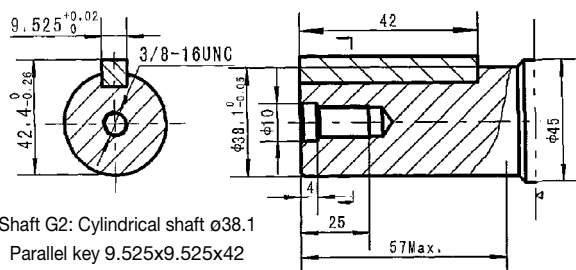
Motor Mounting Surface →



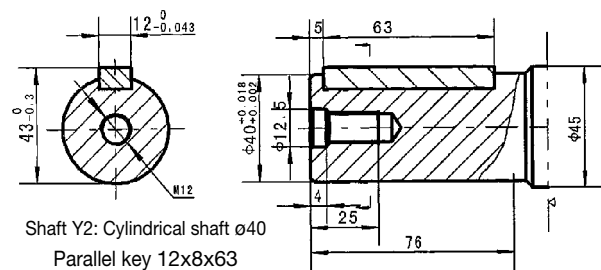
Shaft B: Cylindrical shaft ø32  
Parallel key 10x8x45



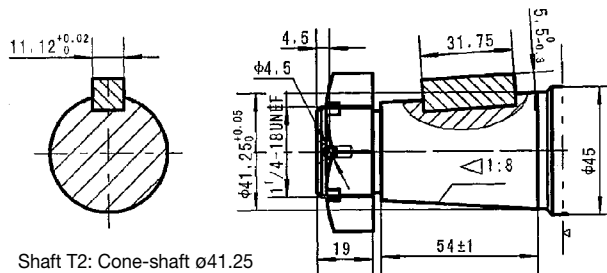
Shaft Y: Cylindrical shaft ø40  
Parallel key 12x8x50



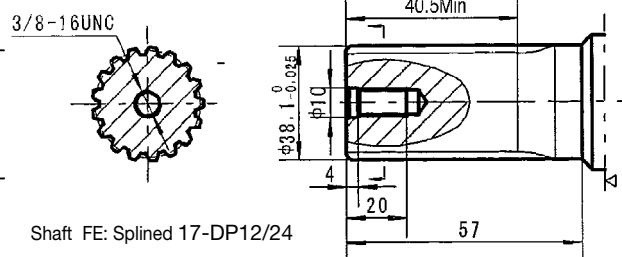
Shaft G2: Cylindrical shaft ø38.1  
Parallel key 9.525x9.525x42



Shaft Y2: Cylindrical shaft ø40  
Parallel key 12x8x63



Shaft T2: Cone-shaft ø41.25  
Parallel key 11.13x11.13x31.75  
Tightening torque: 500±10Nm



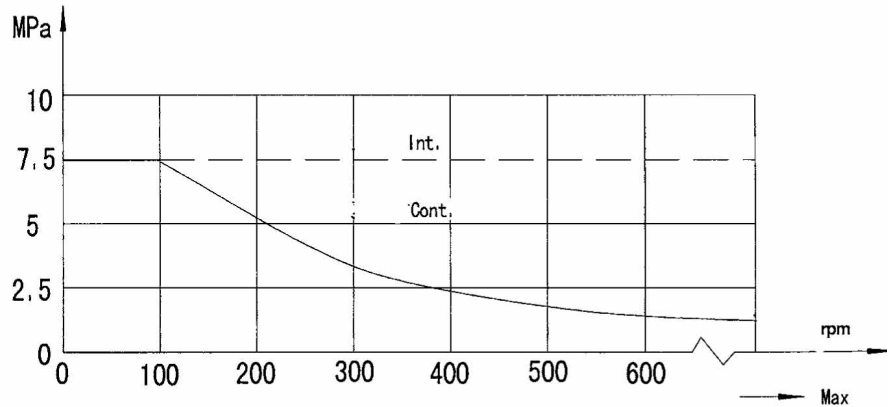
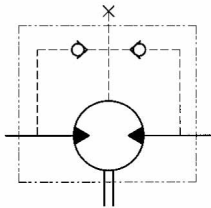
Shaft FE: Splined 17-DP12/24

Motor Mounting Surface →





Permissible shaft  
seal pressure

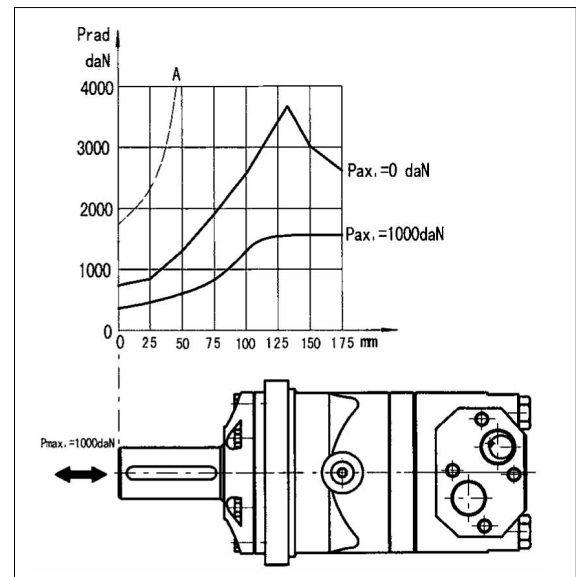
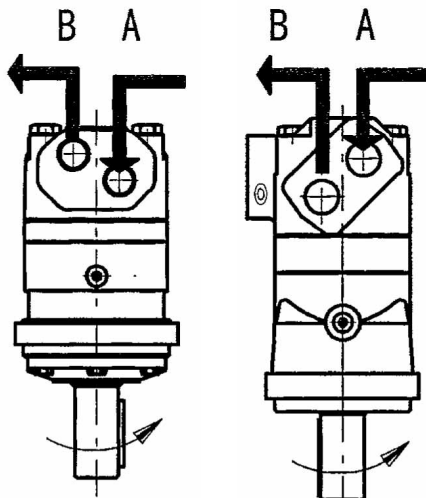


In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

Standard direction of shaft rotation: Standard

Axial and Radial forces

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



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.



## VNKT VNKTS ORDER INFORMATION

| VNKT  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-------|---|---|---|---|---|---|---|---|
| VNKTS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

| Pos.1 | 2     | 3                                           | 4                                                                                                                                                                           | 5                                      | 6                  | 7                                                    | 8                                     |
|-------|-------|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------------|------------------------------------------------------|---------------------------------------|
| Code  | Disp. | Flange, Pilot, Port                         | Output Shaft                                                                                                                                                                | Ports and Drain Port                   | Rotation Direction | Paint                                                | Unusually Function                    |
| VNKT  | 160   | 4 4-Ø14 Square-flange Ø160, pilot Ø125×9    | M Shaft Ø40 , parallel key 12×8×70<br>G Shaft Ø38.1 , parallel key 9.52×9.52×57.15<br>F Shaft Ø38.1 , splined tooth 17-DP12/24<br>FD Shaft Ø38.1 , splined tooth 17-DP12/24 | D G3/4 Manifold Mount, 4-M10 , G1/4    | Omit               | 00 No paint<br>Omit Blue<br>B Black<br>S Silver grey | Standard<br>Free Running<br>Low Speed |
|       | 200   | K6 4-Ø14.5 Square-flange Ø162, pilot Ø127×9 | T Cone-shaft 1:10 Ø45 , parallel key B12×8×28                                                                                                                               | M M27×2 Manifold Mount, 4-M10, M14×1.5 | R                  |                                                      |                                       |
|       | 250   |                                             | T1 Cone-shaft 1:8 Ø45 , parallel key 11.13×11.13×31.75                                                                                                                      |                                        |                    |                                                      |                                       |
|       | 315   |                                             | SL shaft Ø34.85, Splined key                                                                                                                                                | S 1-1/16-12UN O-ring, 9/16-18UNF       |                    |                                                      |                                       |
|       | 400   | W 4-Ø18 Wheel-flange Ø200, pilot Ø160×7     | G1 Splined key 6-34.85×28.14×8.64                                                                                                                                           | S1 1-1/16-12UN O-ring, 7/16-20UNF      |                    |                                                      |                                       |
|       | 500   |                                             | parallel key 7.96×7.96×40                                                                                                                                                   | G G3/4, G1/4                           |                    |                                                      |                                       |
|       | 630   |                                             | F1 Shaft Ø31.75, splined tooth 14-DP12/24                                                                                                                                   |                                        |                    |                                                      |                                       |
|       | 800   |                                             |                                                                                                                                                                             | M3 M27×2, M14×1.5                      |                    |                                                      |                                       |
|       |       | D 4-Ø14 Circle-flange Ø160, pilot Ø125×8    |                                                                                                                                                                             |                                        |                    |                                                      |                                       |
|       |       | E 4-Ø14.5 Square-flange Ø162, pilot Ø127×10 | Omit Short shaft 16-DP12/24                                                                                                                                                 |                                        |                    |                                                      |                                       |
| VNKTS |       |                                             |                                                                                                                                                                             |                                        |                    |                                                      |                                       |



## VNKTE VNKTJ ORDER INFORMATION

| VNKTE | 1     | 2                                                         | 3                                                               | 4                                                                                                                                                                                                                                                | 5                         | 6 | 7 | 8 |
|-------|-------|-----------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---|---|---|
| VNKTJ | 1     | 2                                                         | 3                                                               | 4                                                                                                                                                                                                                                                | 5                         | 6 | 7 | 8 |
| Pos.1 | 2     | 3                                                         | 4                                                               | 5                                                                                                                                                                                                                                                | 6                         | 7 | 8 |   |
| Code  | Disp. | Flange, Pilot, Port                                       | Output Shaft                                                    | Ports and Drain Port                                                                                                                                                                                                                             | Rotation Direc-<br>tion   |   |   |   |
| VNKTE | 230   | CC<br>4-Ø14,3 Square-flange Ø161.9,<br>pilot Ø127×12      | G2<br>Shaft Ø38.1 ,parallel key 9.52×9.52×42                    | SF<br>3/4", Manifold Mount, 8-3/8-16UNC,<br>7/16-20UNF<br>SF5<br>1-5/16-12UN O-ring, 7/16-20 UNF<br>SF6<br>M33×2,M14×1.5<br>SF7<br>G1,G1/4<br>SE<br>1-1/16-12UN O-ring, 9/16-18UNF<br>SE1<br>1-1/16-12UN O-ring, 7/16-20 UNF<br>SE2<br>G3/4,G1/4 | Standard<br>Opposite<br>R |   |   |   |
|       | 250   |                                                           | FE<br>Shaft Ø38.1 ,splined tooth 17-DP12/24                     |                                                                                                                                                                                                                                                  |                           |   |   |   |
|       | 315   |                                                           | Y1<br>Shaft Ø40,parallel key 12×8×63                            |                                                                                                                                                                                                                                                  |                           |   |   |   |
|       | 400   |                                                           | Y2<br>Shaft Ø40,parallel key 12×8×63                            |                                                                                                                                                                                                                                                  |                           |   |   |   |
|       | 500   | WE<br>4-1/2-13UNC<br>Wheel-flange Ø147.6,<br>pilot Ø127×9 | T2<br>Cone-shaft 1:8 Ø41.25 ,<br>parallel key 11.13×11.13×31.75 |                                                                                                                                                                                                                                                  |                           |   |   |   |
|       | 630   |                                                           | T3<br>Cone-shaft 1:8 Ø41.25 ,<br>parallel key 11.13×11.13×31.75 |                                                                                                                                                                                                                                                  |                           |   |   |   |
| 800   |       |                                                           |                                                                 |                                                                                                                                                                                                                                                  |                           |   |   |   |
| VNKTJ | J     | 4-Ø14.5 Square-flange Ø161.9<br>pilot Ø127×12.4           | Omit<br>Short shaft 12-DP8.5/17                                 |                                                                                                                                                                                                                                                  |                           |   |   |   |

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 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 offer 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.

| 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.



VNKV 315 [333cm³/rev.]

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

VNKV 400 [419cm³/rev.]

|              |     | Pressure (MPa) |     |     |     |      |      | Max. cont. | Max. int. |
|--------------|-----|----------------|-----|-----|-----|------|------|------------|-----------|
|              |     | 3.5            | 7   | 10  | 14  | 18   | 20   |            |           |
| Flow (L/min) | 10  | 183            | 385 | 568 | 776 | 968  | 1101 | 1292       |           |
|              |     | 20             | 20  | 19  | 18  | 17   | 16   | 14         |           |
|              | 20  | 196            | 398 | 590 | 815 | 1010 | 1152 | 1346       |           |
|              |     | 44             | 44  | 43  | 42  | 40   | 39   | 37         |           |
|              | 50  | 200            | 402 | 603 | 842 | 1040 | 1186 | 1430       |           |
|              |     | 114            | 113 | 113 | 112 | 110  | 108  | 103        |           |
|              | 75  | 195            | 394 | 596 | 838 | 1043 | 1188 | 1432       |           |
|              |     | 175            | 173 | 170 | 166 | 163  | 1579 | 152        |           |
|              | 100 | 172            | 385 | 593 | 827 | 1036 | 1184 | 1425       |           |
|              |     | 236            | 235 | 233 | 231 | 227  | 223  | 215        |           |
| Max. cont.   | 125 | 167            | 374 | 583 | 816 | 1021 | 1177 | 1413       |           |
|              |     | 296            | 294 | 291 | 288 | 282  | 275  | 268        |           |
| Max. int.    | 150 | 158            | 361 | 559 | 801 | 1008 | 1165 | 1390       |           |
|              |     | 355            | 354 | 352 | 349 | 344  | 335  | 324        |           |
|              | 175 | 143            | 346 | 553 | 784 | 989  | 1145 | 1377       |           |
|              |     | 416            | 414 | 411 | 407 | 403  | 396  | 388        |           |
|              | 200 | 118            | 331 | 536 | 770 | 969  | 1128 | 1356       |           |
|              |     | 475            | 473 | 469 | 463 | 455  | 448  | 439        |           |
|              | 240 | 82             | 301 | 506 | 740 | 943  | 1104 | 1332       |           |
|              |     | 571            | 569 | 565 | 548 | 539  | 530  | 520        |           |

VNKV 500 [518cm³/rev.]

|              |     | Pressure (MPa) |     |     |      |      |      | Max. cont. | Max. int. |
|--------------|-----|----------------|-----|-----|------|------|------|------------|-----------|
|              |     | 3.5            | 7   | 10  | 14   | 18   | 20   |            |           |
| Flow (L/min) | 10  | 242            | 468 | 696 | 959  | 1190 | 1353 | 1607       |           |
|              |     | 17             | 17  | 16  | 16   | 15   | 13   | 11         |           |
|              | 20  | 245            | 501 | 738 | 1003 | 1232 | 1394 | 1658       |           |
|              |     | 36             | 35  | 35  | 34   | 33   | 32   | 29         |           |
|              | 50  | 240            | 500 | 758 | 1025 | 1270 | 1449 | 1743       |           |
|              |     | 93             | 92  | 91  | 90   | 88   | 85   | 80         |           |
|              | 75  | 233            | 498 | 752 | 1030 | 1288 | 1475 | 1766       |           |
|              |     | 140            | 139 | 137 | 135  | 132  | 127  | 120        |           |
|              | 100 | 228            | 491 | 748 | 1026 | 1289 | 1472 | 1760       |           |
|              |     | 189            | 187 | 185 | 182  | 178  | 173  | 166        |           |
| Max. cont.   | 125 | 220            | 483 | 742 | 1014 | 1280 | 1460 | 1745       |           |
|              |     | 237            | 236 | 234 | 231  | 227  | 223  | 216        |           |
| Max. int.    | 150 | 201            | 465 | 723 | 1008 | 1250 | 1429 | 1736       |           |
|              |     | 287            | 286 | 284 | 281  | 276  | 270  | 260        |           |
|              | 175 | 182            | 446 | 711 | 997  | 1238 | 1406 | 1715       |           |
|              |     | 335            | 334 | 332 | 329  | 325  | 320  | 310        |           |
|              | 200 | 161            | 423 | 676 | 974  | 1218 | 1385 | 1697       |           |
|              |     | 384            | 383 | 381 | 378  | 374  | 366  | 354        |           |
|              | 240 | 120            | 378 | 622 | 921  | 1172 | 1340 | 1650       |           |
|              |     | 461            | 459 | 457 | 454  | 450  | 444  | 432        |           |

VNKV 630 [666cm³/rev.]

|              |     | Pressure (MPa) |     |     |      |      |      | Max. cont. | Max. int. |
|--------------|-----|----------------|-----|-----|------|------|------|------------|-----------|
|              |     | 3.5            | 6   | 9   | 12   | 15   | 18   |            |           |
| Flow (L/min) | 10  | 280            | 522 | 812 | 1100 | 1268 | 1549 | 1784       |           |
|              |     | 14             | 13  | 13  | 12   | 12   | 11   | 10         |           |
|              | 20  | 288            | 552 | 839 | 1101 | 1315 | 1607 | 1864       |           |
|              |     | 28             | 28  | 27  | 27   | 26   | 24   | 22         |           |
|              | 50  | 289            | 555 | 868 | 1137 | 1364 | 1682 | 1956       |           |
|              |     | 72             | 72  | 71  | 69   | 68   | 66   | 62         |           |
|              | 75  | 270            | 548 | 863 | 1120 | 1352 | 1680 | 1964       |           |
|              |     | 109            | 108 | 106 | 104  | 102  | 99   | 94         |           |
|              | 100 | 264            | 538 | 856 | 1093 | 1350 | 1674 | 1965       |           |
|              |     | 146            | 145 | 143 | 141  | 138  | 135  | 130        |           |
| Max. cont.   | 125 | 251            | 516 | 837 | 1071 | 1336 | 1659 | 1950       |           |
|              |     | 184            | 183 | 181 | 179  | 177  | 173  | 168        |           |
| Max. int.    | 150 | 240            | 495 | 817 | 1063 | 1330 | 1650 | 1928       |           |
|              |     | 221            | 220 | 219 | 217  | 215  | 212  | 205        |           |
|              | 175 | 210            | 485 | 796 | 1052 | 1300 | 1636 | 1908       |           |
|              |     | 259            | 258 | 257 | 254  | 250  | 246  | 241        |           |
|              | 200 | 182            | 469 | 751 | 1018 | 1280 | 1611 | 1883       |           |
|              |     | 297            | 297 | 295 | 293  | 290  | 284  | 273        |           |
|              | 240 | 130            | 416 | 712 | 978  | 1237 | 1563 | 1835       |           |
|              |     | 358            | 357 | 355 | 351  | 346  | 340  | 332        |           |

Torque (N·m) 1340  
Speed (rpm) 444

cont.  
int.



VNKV 800 [801cm³/rev.]

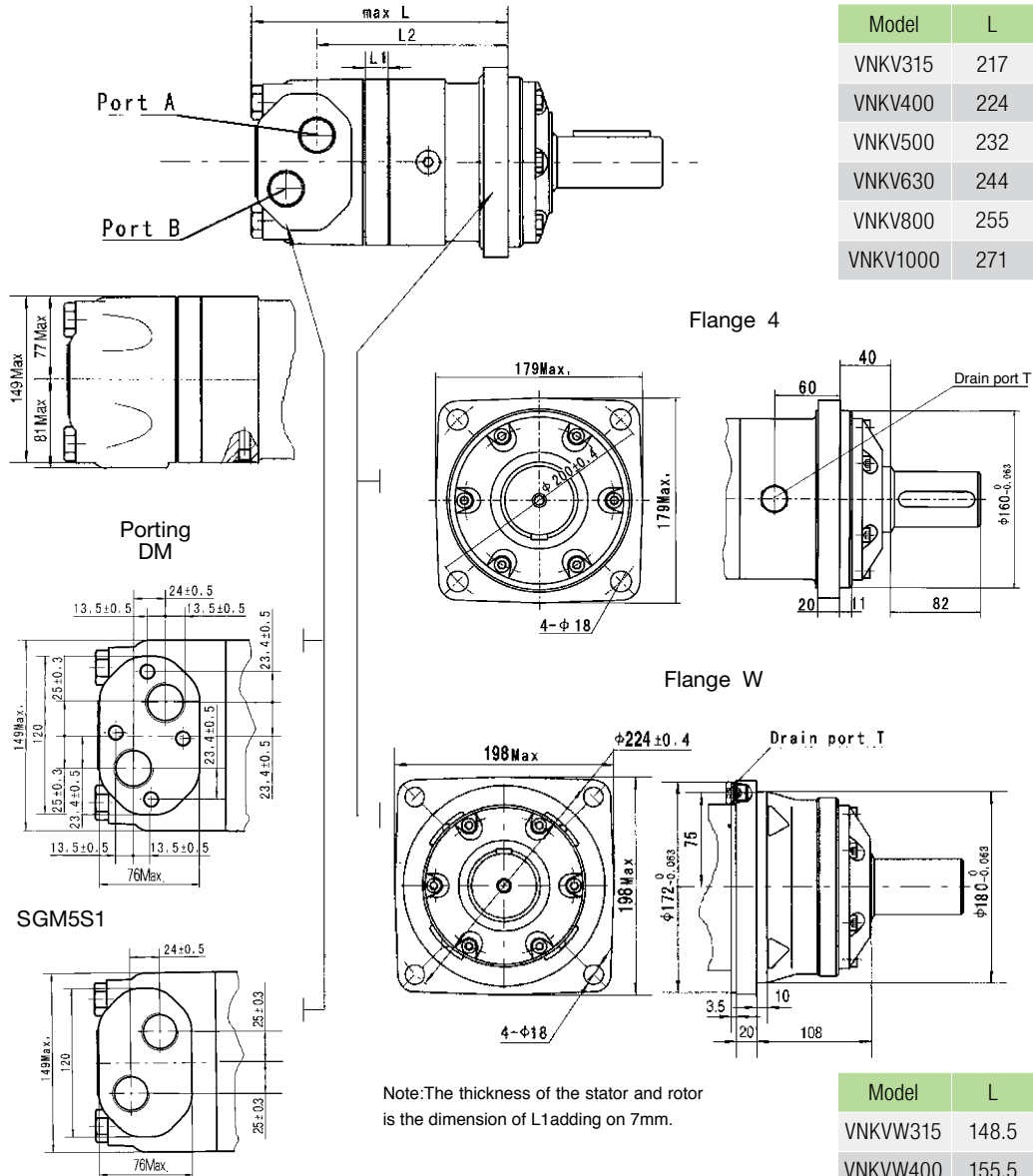
VNKV 1000 [990cm³/rev.]

|              |           | Pressure (MPa) |     |     |      |      |      |      |
|--------------|-----------|----------------|-----|-----|------|------|------|------|
|              |           | 2.5            | 5   | 8   | 10   | 13   | 16   | 18   |
| Flow (L/min) | 10        | 278            | 565 | 830 | 1095 | 1405 | 1712 | 1915 |
|              | 20        | 282            | 571 | 845 | 1150 | 1456 | 1783 | 1994 |
|              | 50        | 288            | 582 | 856 | 1162 | 1463 | 1790 | 2001 |
|              | 75        | 269            | 580 | 855 | 1165 | 1465 | 1786 | 1993 |
|              | 100       | 251            | 566 | 840 | 1140 | 1448 | 1767 | 1985 |
|              | 125       | 242            | 535 | 824 | 1118 | 1427 | 1739 | 1976 |
|              | 150       | 236            | 526 | 808 | 1102 | 1401 | 1714 | 1959 |
|              | 175       | 215            | 504 | 793 | 1079 | 1377 | 1698 | 1936 |
|              | 200       | 197            | 468 | 765 | 1063 | 1362 | 1681 | 1913 |
|              | 240       | 118            | 388 | 713 | 1020 | 1318 | 1637 | 1838 |
|              | Max.cont. | 247            | 245 | 243 | 240  | 237  | 232  | 225  |
|              | Max.int.  | 297            | 296 | 295 | 293  | 288  | 283  | 277  |

|              |           | Pressure (MPa) |     |     |      |      |      |  |
|--------------|-----------|----------------|-----|-----|------|------|------|--|
|              |           | 2.5            | 5   | 7   | 10   | 14   | 16   |  |
| Flow (L/min) | 10        | 312            | 640 | 971 | 1400 | 1978 | 2259 |  |
|              | 20        | 320            | 648 | 978 | 1410 | 1980 | 2270 |  |
|              | 50        | 326            | 655 | 992 | 1422 | 2015 | 2280 |  |
|              | 75        | 318            | 642 | 987 | 1425 | 2003 | 2276 |  |
|              | 100       | 309            | 634 | 983 | 1418 | 1994 | 2243 |  |
|              | 125       | 303            | 624 | 975 | 1409 | 1988 | 2224 |  |
|              | 150       | 278            | 602 | 961 | 1368 | 1963 | 2208 |  |
|              | 175       | 264            | 580 | 946 | 1338 | 1925 | 2159 |  |
|              | 200       | 230            | 556 | 912 | 1300 | 1891 | 2105 |  |
|              | 240       | 166            | 513 | 867 | 1267 | 1825 | 2034 |  |
|              | Max.cont. | 199            | 196 | 193 | 190  | 185  | 178  |  |
|              | Max.int.  | 240            | 237 | 233 | 229  | 225  | 218  |  |

Torque (N·m) 1825  
Speed (rpm) 225

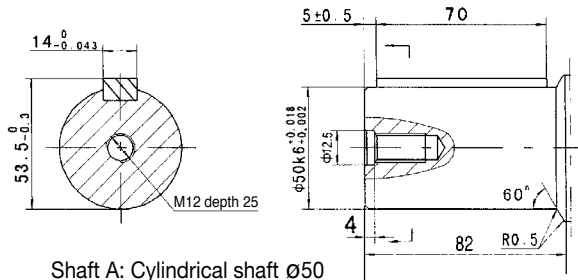
cont.  
int.



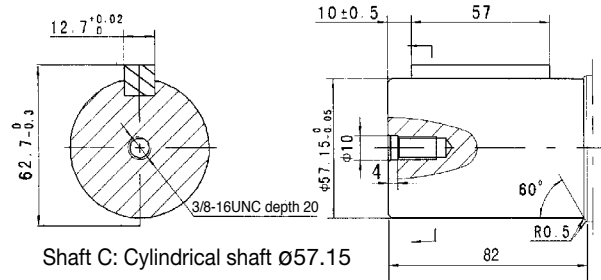
| Model    | L   | L1 | L2    |
|----------|-----|----|-------|
| VNKV315  | 217 | 20 | 161.5 |
| VNKV400  | 224 | 27 | 168.5 |
| VNKV500  | 232 | 35 | 176.5 |
| VNKV630  | 244 | 47 | 188.5 |
| VNKV800  | 255 | 58 | 199.5 |
| VNKV1000 | 271 | 74 | 215.5 |

| Model     | L     | L1 | L2    |
|-----------|-------|----|-------|
| VNKVW315  | 148.5 | 20 | 93.5  |
| VNKVW400  | 155.5 | 27 | 100.5 |
| VNKVW500  | 163.5 | 35 | 108.5 |
| VNKVW630  | 175.5 | 47 | 120.5 |
| VNKVW800  | 186.5 | 58 | 131.5 |
| VNKVW1000 | 202.5 | 74 | 147.5 |

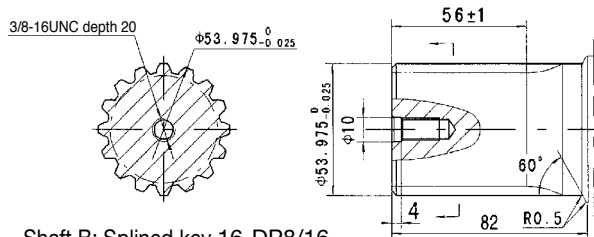
| Content  | Code       |                |                 |           |                |                 |
|----------|------------|----------------|-----------------|-----------|----------------|-----------------|
| Mounting | D (depth)  | M (depth)      | S (depth)       | G (depth) | M5 (depth)     | 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)     | --              | --        | --             | --              |



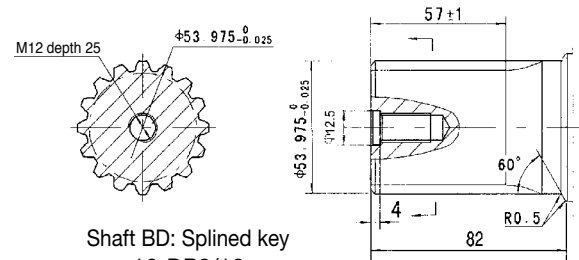
Shaft A: Cylindrical shaft Ø50  
Parallel key 14x9x70



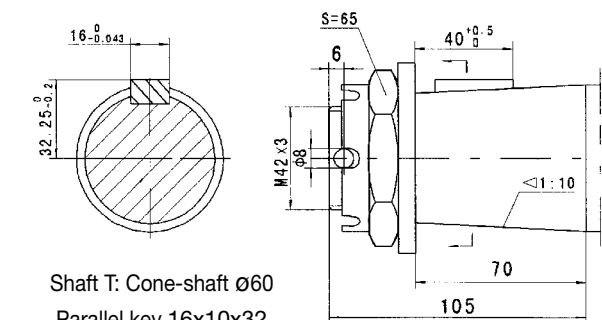
Shaft C: Cylindrical shaft Ø57.15  
Parallel key 12.7x12.7x57



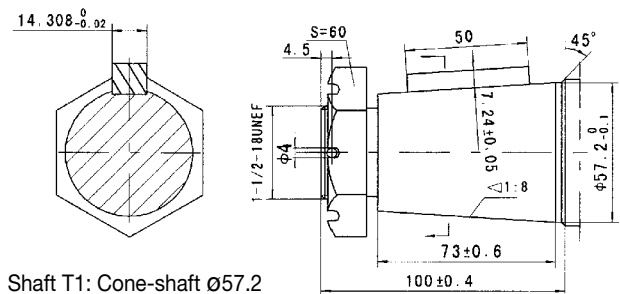
Shaft B: Splined key 16-DP8/16



Shaft BD: Splined key  
16-DP8/16



Shaft T: Cone-shaft Ø60  
Parallel key 16x10x32  
Tightening torque: 750±50Nm



Shaft T1: Cone-shaft Ø57.2  
Parallel key 14.308x14.308x50  
Tightening torque: 750±50Nm



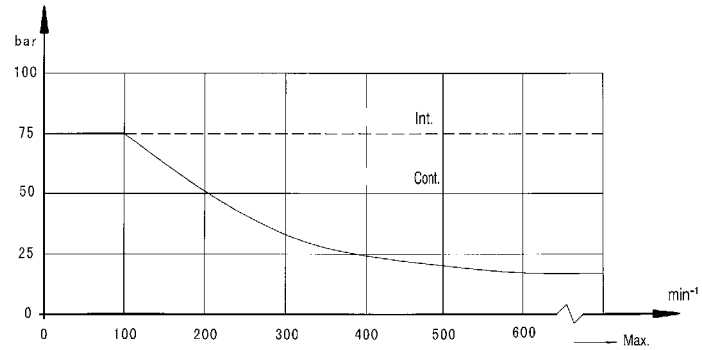
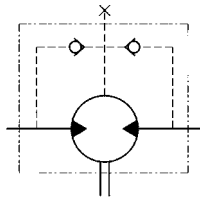


## HYDRAULIC MOTORS

### VNKV SERIES HYDRAULIC MOTOR

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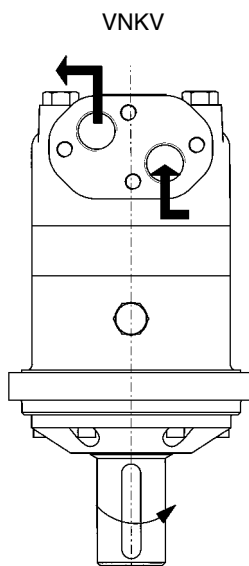
#### Permissible shaft seal pressure



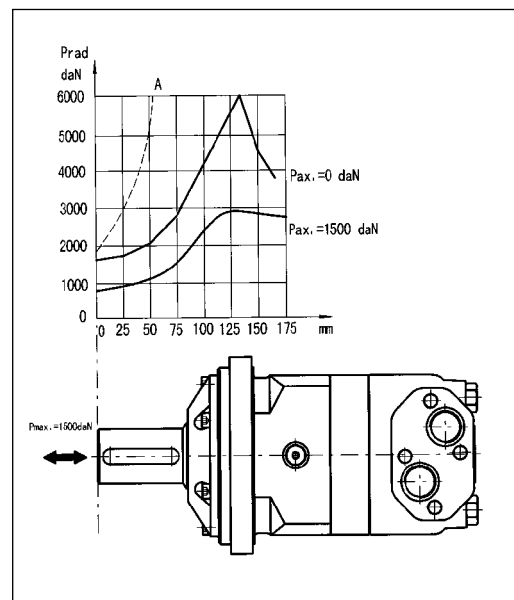
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

#### 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.



#### 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.

| VNKV  | 1     | 2                                                       | 3  | 4                                       | 5 | 6                             | 7                                     | 8                       |
|-------|-------|---------------------------------------------------------|----|-----------------------------------------|---|-------------------------------|---------------------------------------|-------------------------|
| Pos.1 | 2     | 3                                                       |    | 4                                       |   | 5                             |                                       | 6                       |
| Code  | Disp. | Flange, Pilot, Port                                     |    | Output Shaft                            |   | Ports and Drain Port          |                                       | Rotation Direc-<br>tion |
| Omit  | 315   | 4 4-Ø18 Square-flangeØ200,<br>pilot Ø160×11             |    | A Shaft Ø50 , parallel key 14×9×70      | D | G1 Manifold 4×M12, G1/4       | Omit<br><br>Standard<br>Opposite<br>R |                         |
|       | 400   |                                                         |    | BD Shaft Ø53.975, splined key 16-DP8/16 | M | M33×2 Manifold 4×M12, M14×1.5 |                                       |                         |
|       | 500   |                                                         |    | B Shaft Ø53.975, splined key 16-DP8/16  | S | 1-5/16-12UN, 9/16-18UNF       |                                       |                         |
|       | 630   | C Shaft Ø57.15, parallel key<br>12.7×12.7×57.15         | G  | G1/G1/4                                 |   |                               |                                       |                         |
|       | 800   | T Cone shaft Ø60, parallel key 16×10×32                 | M5 | M33×2, M14×1.5                          |   |                               |                                       |                         |
|       | 1000  | T1 Cone shaft Ø57.2, parallel key<br>14.308×14.308×50.8 | S1 | 1-5/16-12UN(18),<br>7/16-20UNF(12)      |   |                               |                                       |                         |

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.



VNKE2 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.

### Main Specification

| Type                                           |       | VNKE2<br>65 | VNKE2<br>80 | VNKE2<br>100 | VNKE2<br>125 | VNKE2<br>160 | VNKE2<br>200 | VNKE2<br>230 | VNKE2<br>250 | VNKE2<br>295 | VNKE2<br>315 | VNKE2<br>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           | 16.5         | 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.



## HYDRAULIC MOTORS

### PERFORMANCE DATA

80

VNKE2 65 [66,8 cm³/rev.]

|              |    | Pressure (MPa) |     |      |     | Max. cont. | Max. int. |
|--------------|----|----------------|-----|------|-----|------------|-----------|
|              |    | 3,5            | 7   | 10,5 | 14  | 19         |           |
| Flow (L/min) | 2  | 26             | 54  | 83   |     |            |           |
|              |    | 22             | 16  | 4    |     |            |           |
|              | 5  | 27             | 56  | 87   | 118 |            |           |
|              |    | 69             | 62  | 53   | 42  |            |           |
|              | 10 | 29             | 60  | 91   | 123 | 171        |           |
| Flow (L/min) |    | 145            | 141 | 132  | 122 | 95         |           |
|              | 15 | 30             | 62  | 94   | 126 | 176        |           |
|              |    | 221            | 216 | 207  | 196 | 149        |           |
|              | 20 | 28             | 58  | 91   | 122 | 174        |           |
|              |    | 295            | 290 | 279  | 261 | 232        |           |
| Flow (L/min) | 25 | 24             | 55  | 90   | 121 | 172        |           |
|              |    | 368            | 365 | 352  | 341 | 312        |           |
|              | 34 | 22             | 54  | 89   | 119 | 171        |           |
|              |    | 501            | 493 | 478  | 457 | 423        |           |
|              | 45 | 20             | 52  | 85   | 115 | 168        |           |
| Max. int.    |    | 667            | 660 | 642  | 621 | 587        |           |
|              | 57 | 15             | 46  | 80   | 112 | 163        |           |
|              |    | 842            | 835 | 814  | 789 | 735        |           |

VNKE2 80 [81,3 cm³/rev.]

|              |    | Pressure (MPa) |     |      |     | Max. cont. | Max. int. |
|--------------|----|----------------|-----|------|-----|------------|-----------|
|              |    | 3,5            | 7   | 10,5 | 14  | 19         |           |
| Flow (L/min) | 2  | 33             | 70  | 106  |     |            |           |
|              |    | 18             | 14  | 4    |     |            |           |
|              | 5  | 35             | 72  | 111  | 150 |            |           |
|              |    | 55             | 51  | 44   | 25  |            |           |
|              | 10 | 36             | 75  | 114  | 155 | 215        |           |
| Flow (L/min) |    | 121            | 118 | 113  | 107 | 88         |           |
|              | 15 | 37             | 77  | 116  | 157 | 215        |           |
|              |    | 181            | 178 | 171  | 162 | 148        |           |
|              | 20 | 35             | 74  | 112  | 151 | 206        |           |
|              |    | 242            | 238 | 231  | 223 | 205        |           |
| Flow (L/min) | 25 | 35             | 71  | 108  | 148 | 202        |           |
|              |    | 303            | 298 | 289  | 275 | 261        |           |
|              | 34 | 31             | 69  | 105  | 145 | 198        |           |
|              |    | 411            | 407 | 396  | 382 | 373        |           |
|              | 45 | 23             | 62  | 100  | 139 | 12         |           |
| Max. int.    |    | 543            | 537 | 521  | 513 | 501        |           |
|              | 57 | 18             | 55  | 98   | 134 | 186        |           |
|              |    | 689            | 681 | 665  | 649 | 618        |           |

VNKE2 100 [101,6 cm³/rev.]

|              |    | Pressure (MPa) |     |      |     | Max. cont. | Max. int. |
|--------------|----|----------------|-----|------|-----|------------|-----------|
|              |    | 3,5            | 7   | 10,5 | 14  | 19         |           |
| Flow (L/min) | 2  | 40             | 82  | 126  |     |            |           |
|              |    | 15             | 11  | 4    |     |            |           |
|              | 5  | 41             | 83  | 150  | 206 |            |           |
|              |    | 44             | 36  | 28   | 12  |            |           |
|              | 10 | 42             | 91  | 138  | 177 | 230        |           |
| Flow (L/min) |    | 97             | 95  | 94   | 81  | 54         |           |
|              | 15 | 42             | 91  | 138  | 185 | 257        |           |
|              |    | 147            | 144 | 137  | 124 | 93         |           |
|              | 20 | 38             | 88  | 136  | 180 | 244        |           |
|              |    | 195            | 192 | 182  | 169 | 138        |           |
| Flow (L/min) | 25 | 39             | 89  | 142  | 191 | 268        |           |
|              |    | 244            | 241 | 230  | 221 | 194        |           |
|              | 34 | 31             | 79  | 131  | 179 | 250        |           |
|              |    | 331            | 328 | 323  | 308 | 273        |           |
|              | 45 | 21             | 70  | 119  | 168 | 241        |           |
| Max. int.    |    | 439            | 436 | 433  | 419 | 383        |           |
|              | 57 | 10             | 60  | 109  | 158 | 232        |           |
|              |    | 553            | 545 | 534  | 527 | 491        |           |

Torque (N·m) 109  
Speed (rpm) 534

VNKE2 125 [127 cm³/rev.]

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

cont.  
int.



## HYDRAULIC MOTORS

### PERFORMANCE DATA

81

VNKE2 160 [157.2 cm<sup>3</sup>/rev.]

|              |    | Pressure (MPa) |     |      |     | Max. cont. | Max. int. |
|--------------|----|----------------|-----|------|-----|------------|-----------|
|              |    | 3.5            | 7   | 10,5 | 14  | 19         |           |
| Flow (L/min) | 2  | 64             | 132 | 199  |     |            |           |
|              |    | 10             | 8   | 2    |     |            |           |
|              | 5  | 68             | 138 | 208  | 281 |            |           |
|              |    | 28             | 26  | 19   | 10  |            |           |
|              | 10 | 71             | 147 | 221  | 303 | 419        |           |
| Flow (L/min) |    | 62             | 60  | 56   | 53  | 38         |           |
|              | 15 | 72             | 148 | 225  | 307 | 426        |           |
|              |    | 93             | 91  | 87   | 79  | 61         |           |
|              | 20 | 71             | 148 | 223  | 305 | 422        |           |
|              |    | 126            | 123 | 118  | 110 | 95         |           |
| Flow (L/min) | 25 | 62             | 140 | 218  | 296 | 415        |           |
|              |    | 157            | 155 | 152  | 141 | 129        |           |
|              | 34 | 56             | 134 | 211  | 287 | 408        |           |
|              |    | 214            | 211 | 206  | 197 | 181        |           |
|              | 45 | 47             | 127 | 205  | 281 | 391        |           |
| Max. int.    |    | 283            | 281 | 275  | 266 | 241        |           |
|              | 57 | 36             | 97  | 182  | 260 | 370        |           |
|              |    | 355            | 352 | 346  | 336 | 311        |           |

VNKE2 200 [193.6 cm<sup>3</sup>/rev.]

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

VNKE2 230 [226 cm<sup>3</sup>/rev.]

|              |    | Pressure (MPa) |     |      |     | Max. cont. | Max. int. |
|--------------|----|----------------|-----|------|-----|------------|-----------|
|              |    | 3.5            | 7   | 10,5 | 12  | 16,5       |           |
| Flow (L/min) | 2  | 97             | 191 | 280  |     |            |           |
|              |    | 7              | 4   | 2    |     |            |           |
|              | 5  | 101            | 199 | 301  | 348 |            |           |
|              |    | 18             | 14  | 8    | 4   |            |           |
|              | 10 | 103            | 214 | 325  | 378 | 527        |           |
| Flow (L/min) |    | 43             | 42  | 40   | 36  | 29         |           |
|              | 15 | 104            | 215 | 327  | 375 | 528        |           |
|              |    | 65             | 63  | 59   | 52  | 47         |           |
|              | 20 | 101            | 210 | 321  | 371 | 524        |           |
|              |    | 86             | 84  | 81   | 75  | 66         |           |
| Flow (L/min) | 25 | 95             | 201 | 316  | 364 | 511        |           |
|              |    | 108            | 106 | 102  | 94  | 87         |           |
|              | 34 | 82             | 188 | 308  | 358 | 501        |           |
|              |    | 147            | 145 | 141  | 135 | 128        |           |
|              | 45 | 55             | 158 | 276  | 329 | 485        |           |
| Max. int.    |    | 197            | 195 | 191  | 186 | 176        |           |
|              | 57 | 19             | 130 | 256  | 301 | 451        |           |
|              |    | 247            | 244 | 240  | 230 | 221        |           |
|              | 75 |                | 65  | 183  | 250 | 401        |           |
|              |    |                | 328 | 323  | 311 | 303        |           |

Torque (N·m) 65  
Speed (rpm) 328

VNKE2 250 [257 cm<sup>3</sup>/rev.]

|              |    | Pressure (MPa) |     |      |     | Max. cont. | Max. int. |
|--------------|----|----------------|-----|------|-----|------------|-----------|
|              |    | 3.5            | 7   | 10,5 | 11  | 15,5       |           |
| Flow (L/min) | 2  | 112            | 207 | 309  |     |            |           |
|              |    | 6              | 3   | 1    |     |            |           |
|              | 5  | 115            | 218 | 320  | 348 |            |           |
|              |    | 18             | 14  | 8    | 4   |            |           |
|              | 10 | 113            | 235 | 358  | 379 | 543        |           |
| Flow (L/min) |    | 39             | 38  | 35   | 31  | 23         |           |
|              | 15 | 113            | 234 | 357  | 381 | 542        |           |
|              |    | 58             | 56  | 53   | 45  | 3          |           |
|              | 20 | 111            | 233 | 356  | 376 | 541        |           |
|              |    | 77             | 75  | 72   | 65  | 48         |           |
| Flow (L/min) | 25 | 109            | 228 | 354  | 371 | 532        |           |
|              |    | 97             | 95  | 89   | 81  | 69         |           |
|              | 34 | 91             | 213 | 346  | 364 | 521        |           |
|              |    | 131            | 128 | 123  | 116 | 103        |           |
|              | 45 | 89             | 211 | 345  | 361 | 518        |           |
| Max. int.    |    | 174            | 172 | 165  | 157 | 135        |           |
|              | 57 | 73             | 208 | 339  | 342 | 487        |           |
|              |    | 216            | 213 | 205  | 197 | 184        |           |
|              | 75 |                | 74  | 198  | 301 | 441        |           |
|              |    |                | 287 | 284  | 278 | 267        |           |

cont.  
int.


VNKE2 295[287.8 cm<sup>3</sup>/rev.]

|              |    | Pressure (MPa) |     |     |      |
|--------------|----|----------------|-----|-----|------|
|              |    | 3.5            | 7   | 11  | 14,5 |
| Flow (L/min) | 5  | 21             | 243 | 368 | 509  |
|              | 10 | 15             | 14  | 10  | 5    |
|              | 15 | 125            | 253 | 381 | 529  |
|              | 20 | 33             | 31  | 27  | 20   |
|              | 25 | 129            | 261 | 393 | 547  |
|              | 30 | 51             | 50  | 47  | 41   |
|              | 35 | 127            | 259 | 390 | 545  |
|              | 40 | 68             | 67  | 63  | 55   |
|              | 45 | 126            | 255 | 386 | 539  |
|              | 50 | 86             | 84  | 80  | 69   |
| Max.cont.    | 55 | 123            | 248 | 380 | 531  |
|              | 60 | 116            | 114 | 110 | 98   |
| Max.int.     | 65 | 115            | 234 | 368 | 522  |
|              | 70 | 154            | 153 | 148 | 136  |
|              | 75 | 108            | 227 | 359 | 514  |
|              | 80 | 196            | 194 | 187 | 176  |
|              | 85 |                | 211 | 349 | 506  |
|              | 90 | 75             | 254 | 246 | 231  |

Torque (N·m) 349  
Speed (rpm) 246

VNKE2 315[314.5 cm<sup>3</sup>/rev.]

|              |    | Pressure (MPa) |     |     |      |
|--------------|----|----------------|-----|-----|------|
|              |    | 3.5            | 7   | 11  | 13,5 |
| Flow (L/min) | 5  | 136            | 281 | 427 |      |
|              | 10 | 11             | 8   | 3   |      |
|              | 15 | 139            | 287 | 438 | 574  |
|              | 20 | 30             | 29  | 26  | 20   |
|              | 25 | 141            | 295 | 448 | 587  |
|              | 30 | 47             | 46  | 43  | 40   |
|              | 35 | 138            | 287 | 442 | 587  |
|              | 40 | 62             | 61  | 58  | 53   |
|              | 45 | 131            | 280 | 431 | 567  |
|              | 50 | 78             | 75  | 71  | 66   |
| Max.cont.    | 55 | 117            | 269 | 423 | 557  |
|              | 60 | 106            | 104 | 98  | 91   |
| Max.int.     | 65 | 114            | 253 | 397 | 535  |
|              | 70 | 141            | 138 | 132 | 125  |
|              | 75 | 86             | 219 | 383 | 505  |
|              | 80 | 178            | 173 | 168 | 162  |
|              | 85 |                | 108 | 287 | 416  |
|              | 90 | 75             | 235 | 231 | 219  |

VNKE2 375[370 cm<sup>3</sup>/rev.]

|              |    | Pressure (MPa) |     |     |      |
|--------------|----|----------------|-----|-----|------|
|              |    | 3.5            | 7   | 9   | 12,5 |
| Flow (L/min) | 5  | 151            | 315 | 412 |      |
|              | 10 | 10             | 7   | 3   |      |
|              | 15 | 155            | 324 | 427 | 606  |
|              | 20 | 25             | 24  | 21  | 18   |
|              | 25 | 162            | 331 | 439 | 613  |
|              | 30 | 40             | 39  | 37  | 32   |
|              | 35 | 158            | 326 | 434 | 602  |
|              | 40 | 53             | 52  | 49  | 45   |
|              | 45 | 151            | 316 | 424 | 589  |
|              | 50 | 67             | 65  | 62  | 58   |
| Max.cont.    | 55 | 141            | 309 | 417 | 580  |
|              | 60 | 91             | 89  | 85  | 80   |
| Max.int.     | 65 | 138            | 300 | 408 | 572  |
|              | 70 | 121            | 119 | 115 | 107  |
|              | 75 | 118            | 281 | 393 | 550  |
|              | 80 | 152            | 150 | 144 | 136  |
|              | 85 |                | 258 | 369 | 518  |
|              | 90 | 75             | 199 | 191 | 183  |

cont.  
int.



## HYDRAULIC MOTORS

### VNKE2 DIMENSIONS AND MOUNTING DATA

83

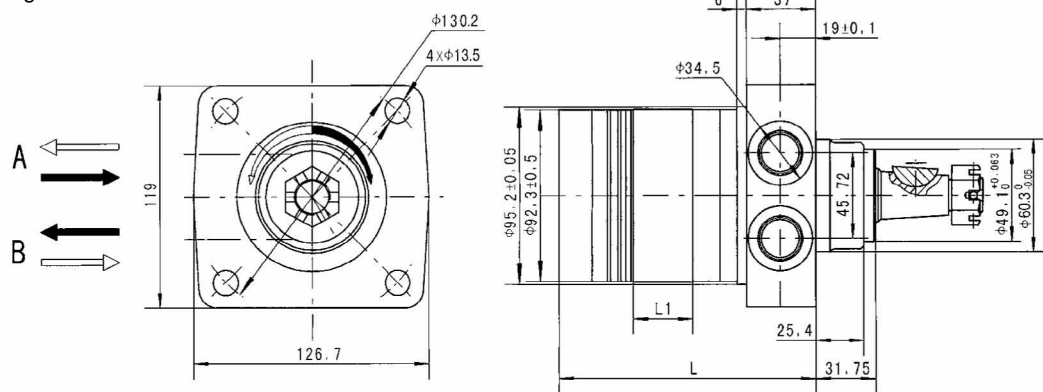
Wheel Mount

Code: Port A B

WS 7/8-14 O-ring

WD G1/2

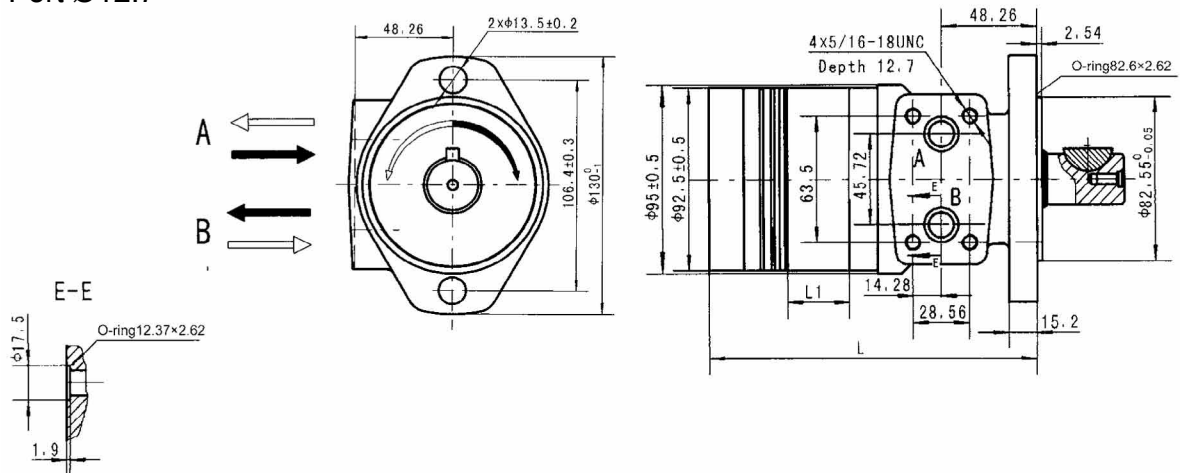
WM M22x1.5



| Displacement (cm <sup>3</sup> /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)                                | 119 | 122 | 126 | 131 | 136.5 | 144  | 150 | 156 | 162 | 168  | 180  |
| Weight(kg)                           | 7,4 | 7,5 | 7,8 | 8   | 8.3   | 8.7  | 9.2 | 9.6 | 10  | 10,3 | 10.8 |

Code:HM Manifold

A B Port  $\phi 12.7$



| Displacement (cm <sup>3</sup> /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 |

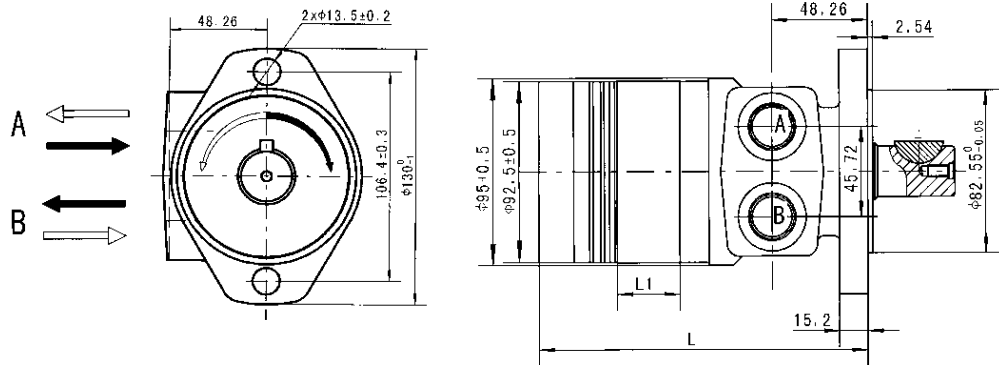


HYDRAULIC MOTORS

VNKE2 DIMENSIONS AND MOUNTING DATA

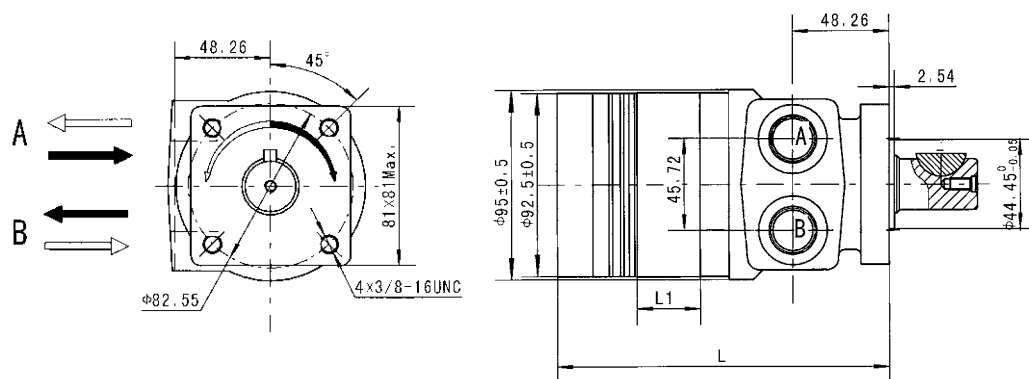
84

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



| Displacement (cm <sup>3</sup> /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 7/8-14UNF  
H4P 1/2-14NPTF  
H4D G1/2  
H4G M22x1.5

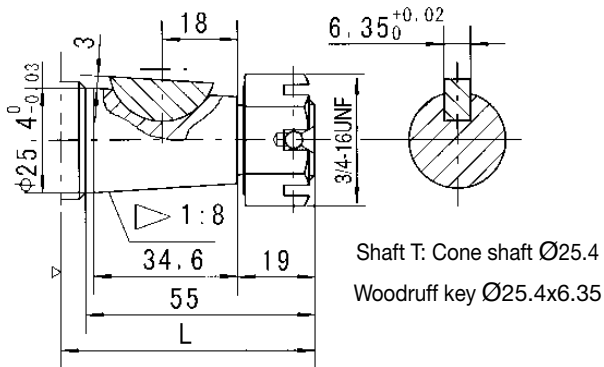


| Displacement (cm <sup>3</sup> /rev.) | 65  | 80  | 100 | 125 | 160   | 200  | 230 | 250 | 295 | 315 | 375 |
|--------------------------------------|-----|-----|-----|-----|-------|------|-----|-----|-----|-----|-----|
| L1(mm)                               | 13  | 16  | 20  | 25  | 30.5  | 38.1 | 44  | 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 |



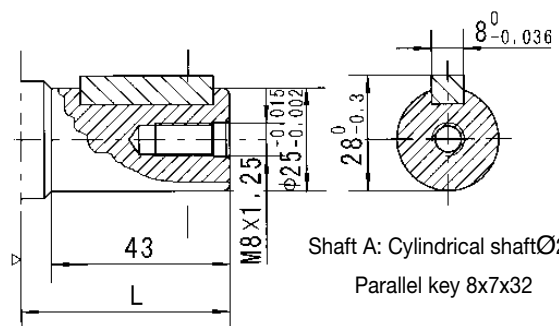


Shaft T



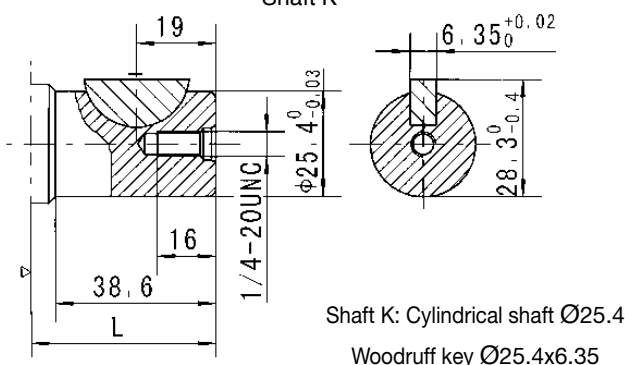
Shaft T: Cone shaft  $\phi 25.4$   
Woodruff key  $\phi 25.4 \times 6.35$

Shaft A



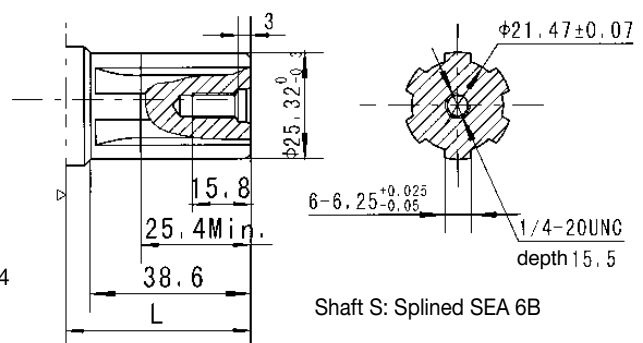
Shaft A: Cylindrical shaft  $\phi 25$   
Parallel key  $8 \times 7 \times 32$

Shaft K



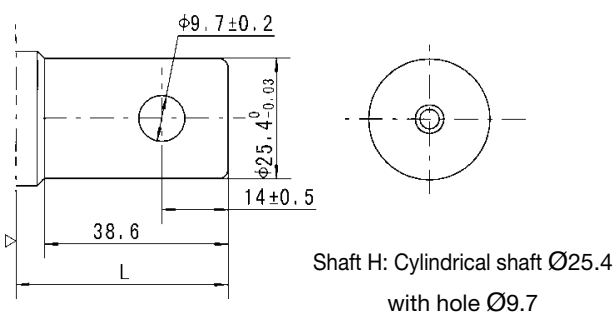
Shaft K: Cylindrical shaft  $\phi 25.4$   
Woodruff key  $\phi 25.4 \times 6.35$

Shaft S



Shaft S: Splined SEA 6B

Shaft H



Shaft H: Cylindrical shaft  $\phi 25.4$   
with hole  $\phi 9.7$

Dimension L

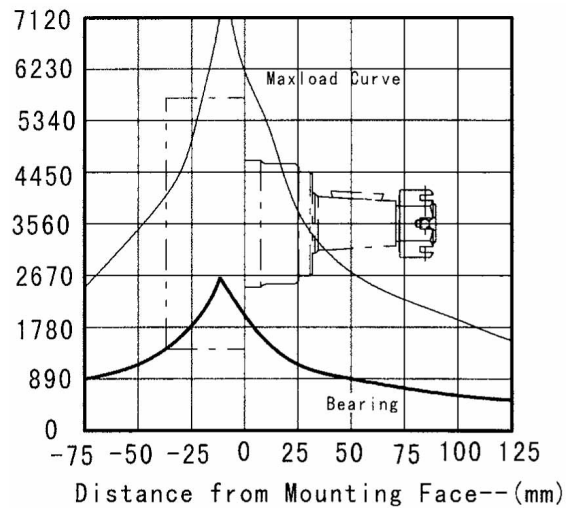
| Shaft<br>Mounting | T    | A    | K    | S    | h    |
|-------------------|------|------|------|------|------|
| WS                | 90,2 | 78,2 | 73,9 | 73,9 | 73,9 |
| HS/HP             |      |      |      |      |      |
| H4S/H4P           | 61   | 49   | 44,7 | 44,7 | 44,7 |
| HM                |      |      |      |      |      |

Motor Mounting Surface →



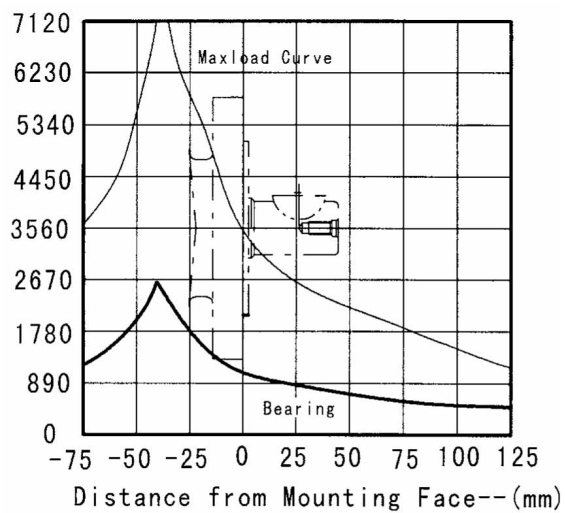
### VNKE2 for Wheel Mounting

Side Load-(daN)



### VNKE2 for Other Mounting

Side Load-(daN)



The bearing curve represents allowable bearing loads for an  $L_{10}$  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.

| VINKE2 |       | 1                                                        | 2                                                                          | 3            | 4                         | 5                                                                                                                                                                                                                      | 6 | 7 |          |
|--------|-------|----------------------------------------------------------|----------------------------------------------------------------------------|--------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|----------|
| Pos.1  | 2     |                                                          |                                                                            |              |                           |                                                                                                                                                                                                                        |   |   |          |
| Code   | Disp. | Flange, Pilot, Port                                      |                                                                            | Output Shaft |                           |                                                                                                                                                                                                                        |   |   | Rotation |
| Omit   |       | WS                                                       | 4-Ø13.5 Wheel - flange,Pilot Ø60.3×7<br>Port 7/8-14 O-ring                 |              | T<br><br>A<br>K<br>S<br>H | Cone-Shaft Ø25.4,Woodruff key Ø25.4×6.35<br>Cylindrical Shaft Ø25, Parallel key 8×7×32<br>Cylindrical Shaft Ø25.4, Woodruff key Ø25.4×6.35<br>Shaft Ø25.4, Splined key SAE 6B<br>Cylindrical Shaft Ø25.4,Pin Hole Ø9.7 |   |   |          |
|        |       | WD                                                       | 4-Ø13.5 Wheel -flange,Pilot Ø60.3×7<br>Port G1/2                           |              |                           |                                                                                                                                                                                                                        |   |   |          |
|        | 65    | WM                                                       | 4-Ø13.5 Wheel -flange,Pilot Ø60.3×7<br>Port M22×1.5                        |              |                           |                                                                                                                                                                                                                        |   |   |          |
|        | 80    | HM                                                       | 2-Ø13.5 Rhomb-flange,Pilot Ø82.5×2.54<br>Port 1/2" Manifold mount 4×5/8-18 |              |                           |                                                                                                                                                                                                                        |   |   |          |
|        | 100   | HS                                                       | 2-Ø13.5 Rhomb-flange,Pilot Ø82.5×2.54<br>Port 7/8-14 O-ring                |              |                           |                                                                                                                                                                                                                        |   |   |          |
|        | 125   | HP                                                       | 2-Ø13.5 Rhomb-flange,Pilot Ø82.5×2.54<br>Port 1/2-14 NPFT Pipe             |              |                           |                                                                                                                                                                                                                        |   |   |          |
|        | 160   | HD                                                       | 2-Ø13.5 Rhomb-flange,Pilot Ø82.5×2.54<br>Port G1/2                         |              |                           |                                                                                                                                                                                                                        |   |   |          |
|        | 200   | HG                                                       | 2-Ø13.5 Rhomb-flange,Pilot Ø82.5×2.54<br>Port M22x1.5                      |              |                           |                                                                                                                                                                                                                        |   |   |          |
|        | 230   | H4S                                                      | 4-3/8-16 Square- flange,Pilot Ø44.4×2.54<br>Port 7/8-14 O-ring             |              |                           |                                                                                                                                                                                                                        |   |   |          |
|        | 250   | H4P                                                      | 4-3/8-16 Square- flange,Pilot Ø44.4×2.54<br>Port 1/2-14 NPFT Pipe          |              |                           |                                                                                                                                                                                                                        |   |   |          |
|        | H4D   | 4-3/8-16 Square- flange,Pilot Ø44.4×2.54<br>Port G1/2    |                                                                            |              |                           |                                                                                                                                                                                                                        |   |   |          |
|        | H4G   | 4-3/8-16 Square- flange,Pilot Ø44.4×2.54<br>Port 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 contact us.



VNKJ 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.

| Main Specificaion                              |       |         |         |          |          |          |          |          |          |          |          |          |
|------------------------------------------------|-------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Type                                           |       | VNKJ 65 | VNKJ 80 | VNKJ 100 | VNKJ 125 | VNKJ 160 | VNKJ 200 | VNKJ 230 | VNKJ 250 | VNKJ 295 | VNKJ 315 | VNKJ 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.

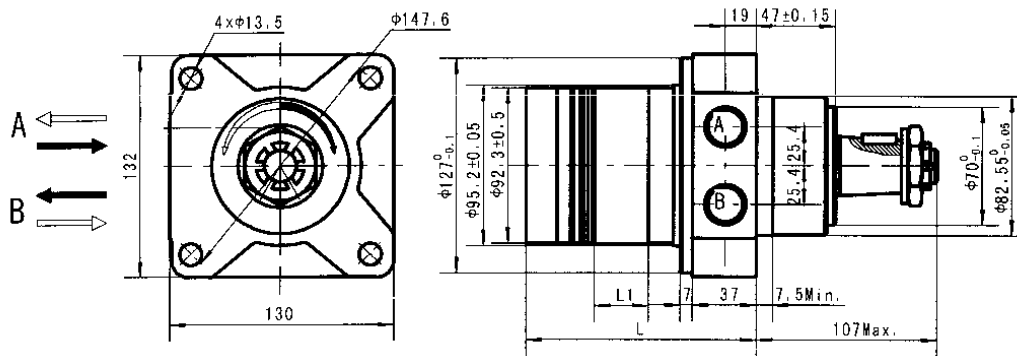
\* Peak pressure:Max. value of operating motor in 0.6 second per minute.

### Wheel Mount

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

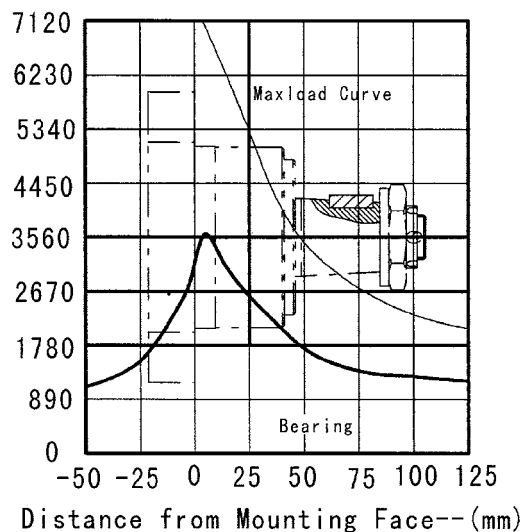
Code : WD Ports A B G1/2

Code : WM Ports A B M22x1.5



| Displacement (cm <sup>3</sup> /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 |

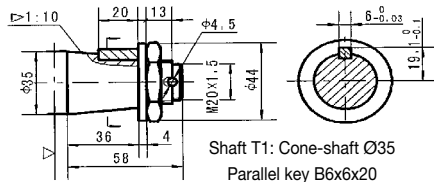
### Side Load--(daN)



The bearing curve represents allowable bearing loads for an L<sub>10</sub> bearing life at 3×10<sup>6</sup> revolutions.

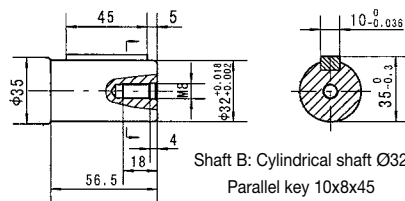
The maximum load curve is defined by bearing static load capacity, This curve should not be exceeded at any time including shock loads.

Shaft T1

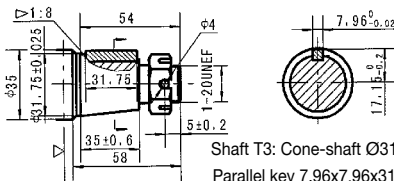


Tightening torque:200±10Nm

Shaft B

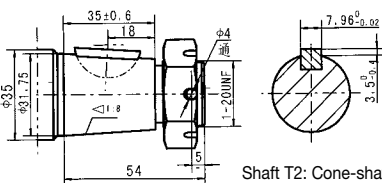


Shaft T3



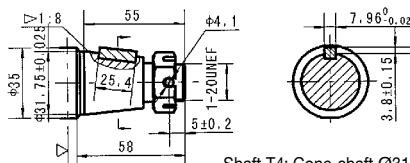
Tightening torque:200±10Nm

Shaft T2



Woodruff key Ø25.4x7.96

Shaft T4



Tightening torque:200±10Nm

Motor Mounting Surface →

| VKNKJ | 1    | 2     | 3                                   | 4                                                                                                                                                                                                                                      | 5                     | 6                                        | 7                  |
|-------|------|-------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------------------------|--------------------|
| Pos.1 | Code | Disp. | Flange, Pilot, Port                 | Output Shaft                                                                                                                                                                                                                           | Rotation Direction    | Paint                                    | Unusually Function |
| Omit  | 65   | WS    | 4-Ø13.5 Wheel-flange Pilot Ø82.55x7 | Cone-Shaft Ø35, Parallel key B6x6x20<br>Cone-Shaft Ø31.75, Woodruff key Ø25.4x7.96<br>Cone-Shaft Ø31.75, Parallel key 7.96x7.96x31.75<br>Cone-Shaft Ø31.75, Parallel key 7.96x7.96x25.4<br>Cylindrical Shaft Ø32, Parallel key 10x8x45 | Standard<br>Omit<br>R | No paint<br>Blue<br>Black<br>Silver grey | Standard           |
|       | 80   |       | Port 7/8-14 O-ring                  |                                                                                                                                                                                                                                        |                       |                                          |                    |
|       | 100  |       | 4-Ø13.5 Wheel-flange Pilot Ø82.55x7 |                                                                                                                                                                                                                                        |                       |                                          |                    |
|       | 125  | WD    | Port G1/2                           |                                                                                                                                                                                                                                        |                       |                                          |                    |
|       | 160  | WM    | 4-Ø13.5 Wheel-flange Pilot Ø82.55x7 |                                                                                                                                                                                                                                        |                       |                                          |                    |
|       | 200  |       | Port M22x1.5                        |                                                                                                                                                                                                                                        |                       |                                          |                    |
|       | 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.

VNKR-ZD01 Series hydraulic motor with brake extending VNK series motor range. This motor has an integrated holding brake.

#### 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 use 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 .
- \*Small volume and radial dimension,high holding torque,power brake,low weight and easy to install.

| Main Specificaion                              |       |                    |                    |                     |                     |                     |                     |                     |                     |                     |
|------------------------------------------------|-------|--------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Type                                           |       | VNKR<br>ZD01<br>50 | VNKR<br>ZD01<br>80 | VNKR<br>ZD01<br>100 | VNKR<br>ZD01<br>125 | VNKR<br>ZD01<br>160 | VNKR<br>ZD01<br>200 | VNKR<br>ZD01<br>250 | VNKR<br>ZD01<br>315 | VNKR<br>ZD01<br>375 |
| Geometric displacement (cm <sup>3</sup> /rev.) |       | 51.7               | 81.5               | 102                 | 128                 | 157                 | 195                 | 253                 | 318                 | 381                 |
| Max. speed (rpm)                               | rated | 490                | 479                | 478                 | 421                 | 341                 | 276                 | 212                 | 169                 | 141                 |
|                                                | cont. | 509                | 502                | 497                 | 459                 | 372                 | 301                 | 231                 | 184                 | 166                 |
|                                                | int.  | 603                | 598                | 574                 | 574                 | 465                 | 376                 | 289                 | 230                 | 192                 |
| Max. torque (N•m)                              | rated | 104                | 164                | 205                 | 256                 | 316                 | 335                 | 437                 | 456                 | 465                 |
|                                                | cont. | 103                | 203                | 254                 | 317                 | 391                 | 359                 | 437                 | 456                 | 465                 |
|                                                | int.  | 88.6               | 160                | 200                 | 250                 | 308                 | 333                 | 473                 | 502                 | 520                 |
| Max. output (KW)                               | rated | 5.3                | 8.2                | 10.3                | 11.3                | 11.3                | 9.7                 | 9.7                 | 8.1                 | 6.9                 |
|                                                | cont. | 5.5                | 10.7               | 13.2                | 15.2                | 15.2                | 11.3                | 10.6                | 8.8                 | 8.1                 |
|                                                | int.  | 5.6                | 10                 | 12                  | 15                  | 15                  | 13.1                | 14.3                | 12.1                | 10.5                |
| Max. Pressure drop (MPa)                       | rated | 14                 | 14                 | 14                  | 14                  | 14                  | 12                  | 12                  | 10                  | 8.5                 |
|                                                | cont. | 14                 | 17.5               | 17.5                | 17.5                | 17.5                | 13                  | 12                  | 10                  | 8.5                 |
|                                                | int.  | 17.5               | 20                 | 20                  | 20                  | 20                  | 17.5                | 13                  | 11                  | 9.5                 |
| Max. Flow (L/min)                              | rated | 26                 | 40                 | 50                  | 55                  | 55                  | 55                  | 55                  | 55                  | 55                  |
|                                                | cont. | 27                 | 42                 | 52                  | 60                  | 60                  | 60                  | 60                  | 60                  | 65                  |
|                                                | int.  | 32                 | 50                 | 60                  | 75                  | 75                  | 75                  | 75                  | 75                  | 75                  |
| Min. opening pressure (MPa)                    |       | 1.7—2.2            |                    |                     |                     |                     |                     |                     |                     |                     |
| Max. inlet pressure (MPa)                      |       | 25                 |                    |                     |                     |                     |                     |                     |                     |                     |
| Max. brake release port pressure (MPa)         |       | 25                 |                    |                     |                     |                     |                     |                     |                     |                     |
| Max. static torque (Nm)                        |       | 500—550            |                    |                     |                     |                     |                     |                     |                     |                     |
| Weight (kg)                                    |       | 11,7               | 11,9               | 11,9                | 12,2                | 12,5                | 13                  | 13,5                | 14                  | 14,5                |

\*Rated speed and rated torque:output value of speed and torque under rated flow and rated pressure.

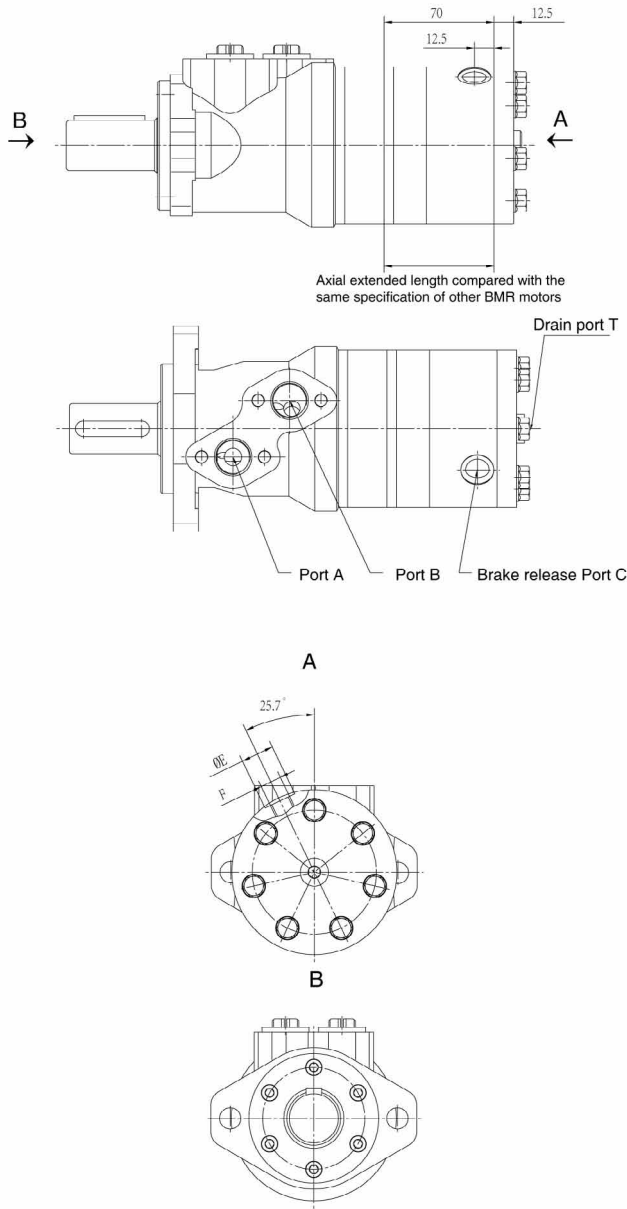
\*Continuous pressure:Max. value of operating motor continuously.

\*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.

\*Such kind of brake is only used in static paring brake.Dynamic braking in not recommenged.

When the motor integrated with brake is working, the pressure at releasing port must be more than 2.2MPa. In the status of braking, the pressure at releasing port must be less than 1.7 MPa, optimally 0 MPa. It is attention in use that the back pressure of the oil circuit is the best 0 MPa.



| Model | Port C | E            | F |
|-------|--------|--------------|---|
| G     | 22     | G1/4 Depth 9 |   |

Note: The mount data is completely referred to VNK series motor. The axial extended length reduces 70mm as picture. Port C is brake releasing port, the position is as picture.

## Order information

| VNKR-ZD01 | 1     | 2                                      | 3                                              | 4                    | 5                  | 6                  | 7           | 8                  | 9 |
|-----------|-------|----------------------------------------|------------------------------------------------|----------------------|--------------------|--------------------|-------------|--------------------|---|
| Pos.1     | 2     | 3                                      | 4                                              | 5                    | 6                  | 7                  | 8           | 9                  |   |
| Code      | Disp. | Flange                                 | Output Shaft                                   | Ports and Drain Port | Brake release Port | Rotation Direction | Paint       | Unusually Function |   |
| 50        | 2     | 2-Ø13.5Rhomb-flange, pilot Ø82.5x8     | Shaft Ø25 parallel Key 8x7x32                  | D                    | G1/4               | Standard           | No paint    | Standard           |   |
| 80        | 4     | 4-Ø13.5Rhomb-flange, pilot Ø82.5x8     | Shaft Ø25.4 parallel Key 6.35x6.35x31.75       | M                    | Depth 9            | Omit               | Blue        | Big radial force   |   |
| 100       | H4    | 4-Ø13.5Rhomb-flange, pilot Ø82.5x8     | Short shaft Ø25.4 parallel Key 6.35x6.35x31.75 | S                    | G                  | R                  | Black       | No case drain      |   |
| 125       | H5    | 4-3/8-16Square-flange, pilot Ø44.4x2.8 | Short shaft Ø25.4 parallel Key 10x8x45         | P                    | facing Ø22         | Opposite           | Silver grey |                    |   |
| 160       |       | 4-M10Square-flange, pilot Ø44.4x2.8    | Shaft Ø32 parallel Key 10x8x45                 |                      |                    |                    |             |                    |   |
| 200       |       |                                        | Shaft Ø31.75 splined tooth 14-DP12/24          |                      |                    |                    |             |                    |   |
| 250       |       |                                        | Long shaft Ø31.75 splined tooth 14-DP12/24     |                      |                    |                    |             |                    |   |
| 315       |       |                                        | Shaft Ø31.75 parallel Key 7.96x7.96x31.75      |                      |                    |                    |             |                    |   |
| 375       |       |                                        | Cone-Shaft Ø28.56 parallel Key B5x5x14         |                      |                    |                    |             |                    |   |

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.





## Introduction

ZDQ2 series brake is one kind of hydraulic wet disc brake. The brake force is caused by the spring, and hydraulic pressure releases the brake force.

Features as follows:

- \* ZDQ2 series adopts the special friction disc and high strength spring design: long life endurance, low noise, high braking reliability.
- \* with 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 series hydraulic motor.

## Application

ZDQ2 series hydraulic brake stays in braking condition since delivery out of the factory. During normal operation, there exists the braking force in the brake disc, only if the pressure of hydraulic system, that the brake links, is lower than the pressure required by the release of brake, the spring force shall keep the brake in braking condition.

ZDQ2 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, timber industries. They are also used in winches and in hydrostatic drive systems for automatization engines.

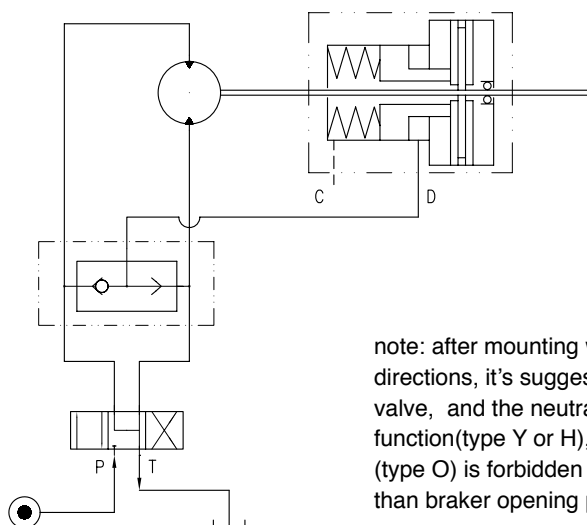
**Special Note: such kind of brake is only used in static parking brake. Dynamic braking is not recommended.**

## Inttruction Manual

In order to make the ZDQ2 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 ZDQ2 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 -90 the best optimal situation 20 -60
- 4.Viscosity range: 20 75mm<sup>2</sup>/s; the best optimal situation 42 74mm<sup>2</sup>/s at 40 .
- 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 designed to use shuttle valve, and the neutral position of the directional valve must have 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 braker opening pressure. Please check the drawing for reference.

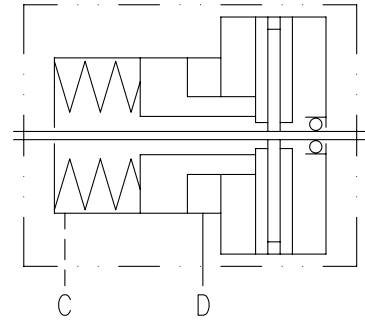
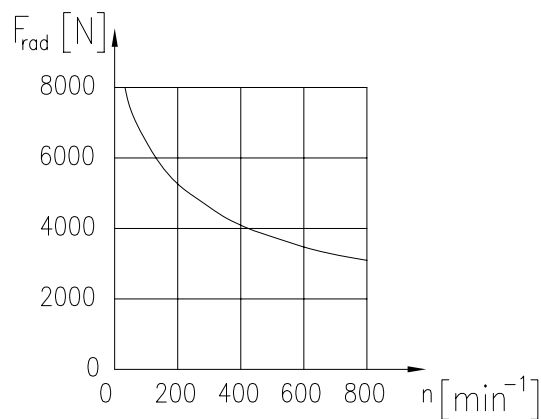


## Specification Data

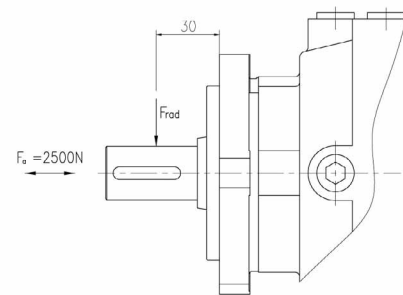
| Item                                                   | ZDQ2-1  |         | ZDQ2-2  |
|--------------------------------------------------------|---------|---------|---------|
| Min. static Torque [Nm]                                | 200~230 | 410~450 | 410~450 |
| Min. Opening Pressure [MPa]                            | 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       |         | 9,5     |

\*Static torque is obtained at working pressure 0 MPa

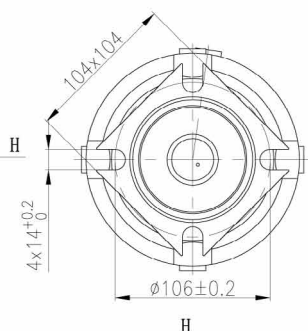
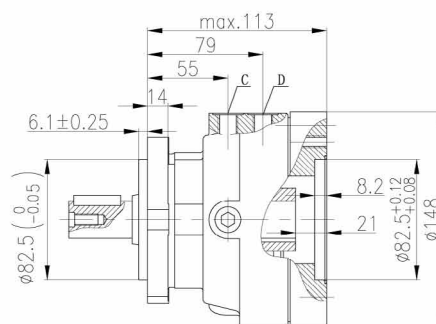
## Load Curve



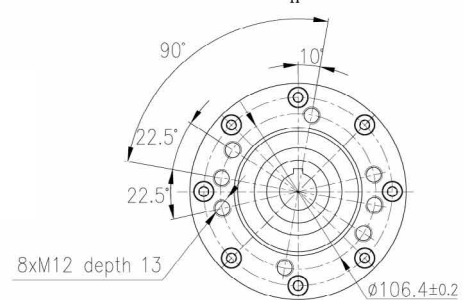
symble drawing

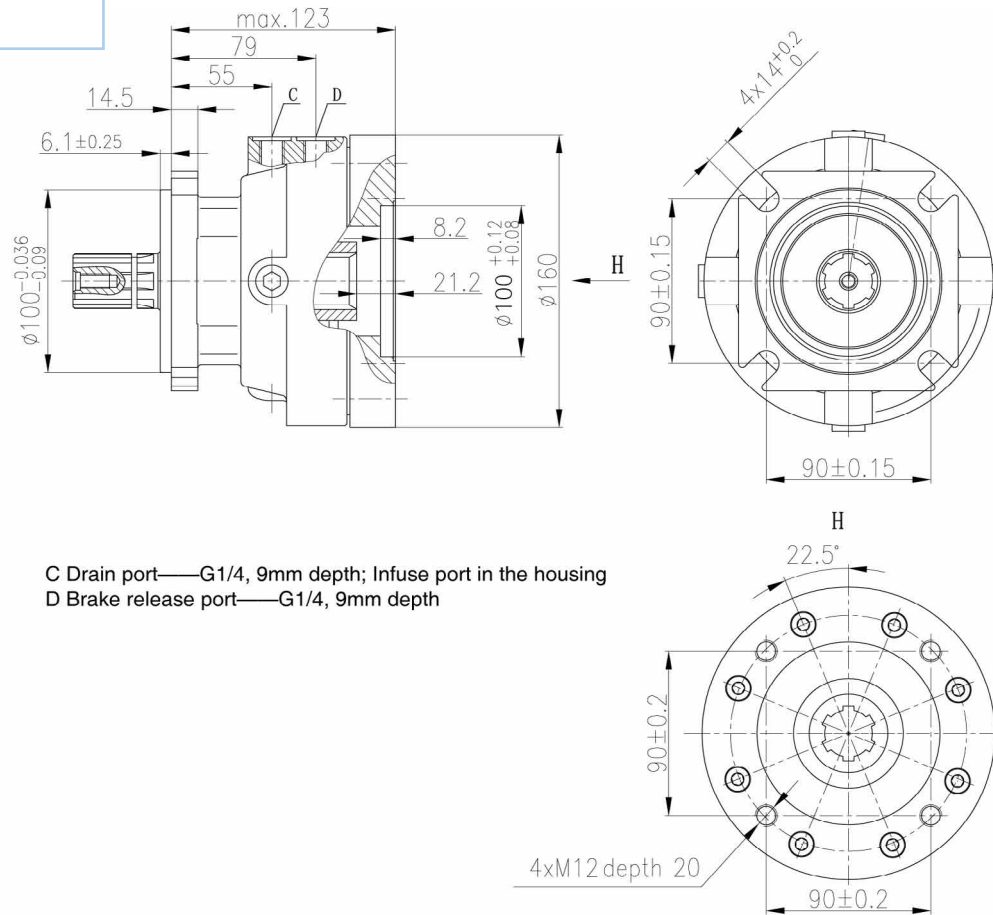


## Mounting Data Model ZDQ2-1



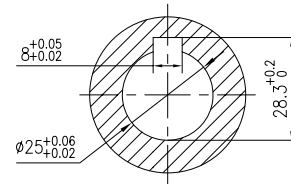
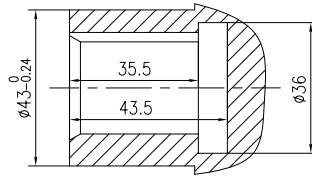
C Drain port—G1/4, 9mm depth; Infuse port in the housing  
D Brake release port—G1/4, 9mm depth



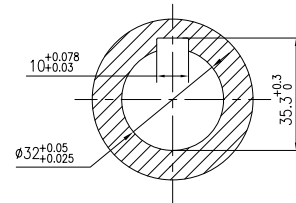
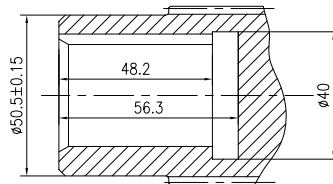


C Drain port—G1/4, 9mm depth; Infuse port in the housing  
D Brake release port—G1/4, 9mm depth

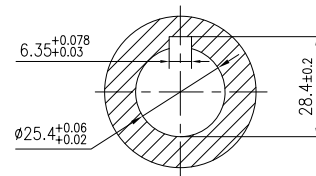
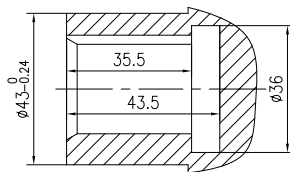
A



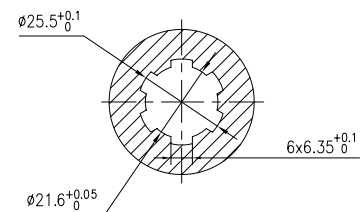
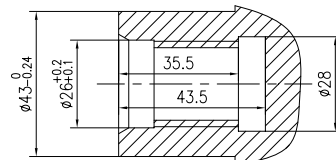
B



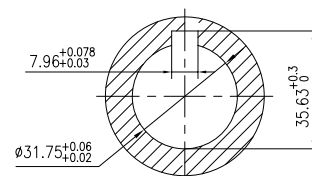
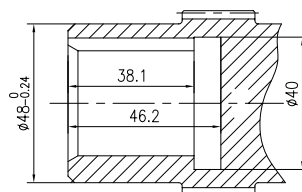
C



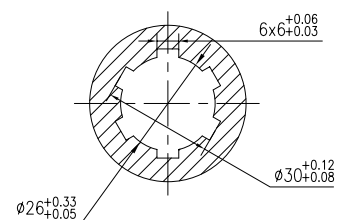
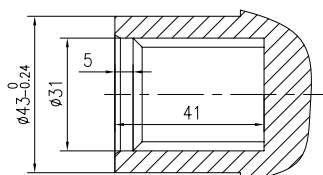
E



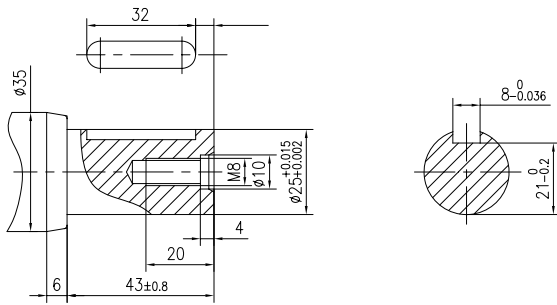
G



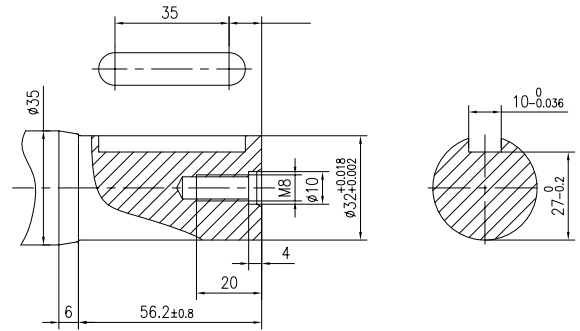
N



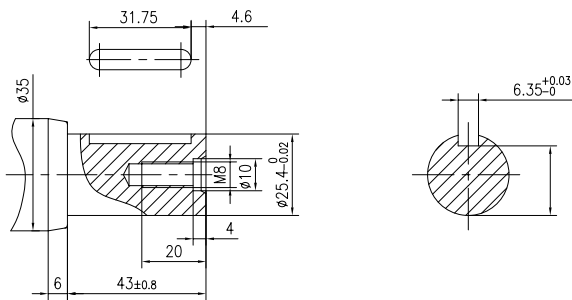
A



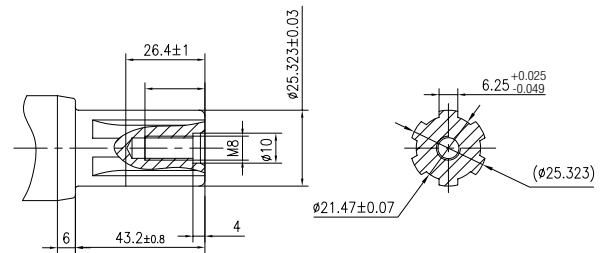
B



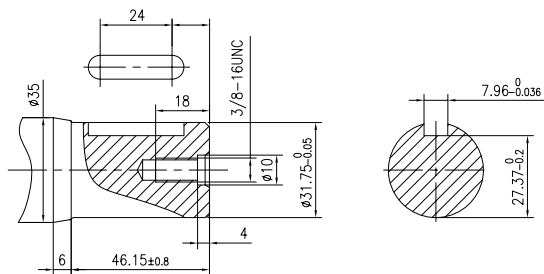
C



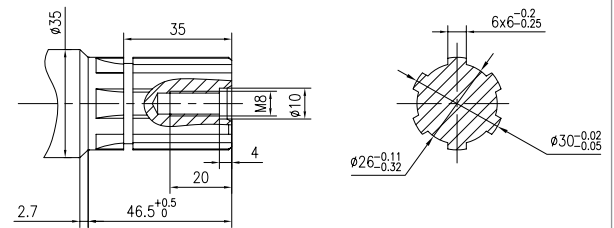
E



G



N



## ZDQ ORDER INFORMATION

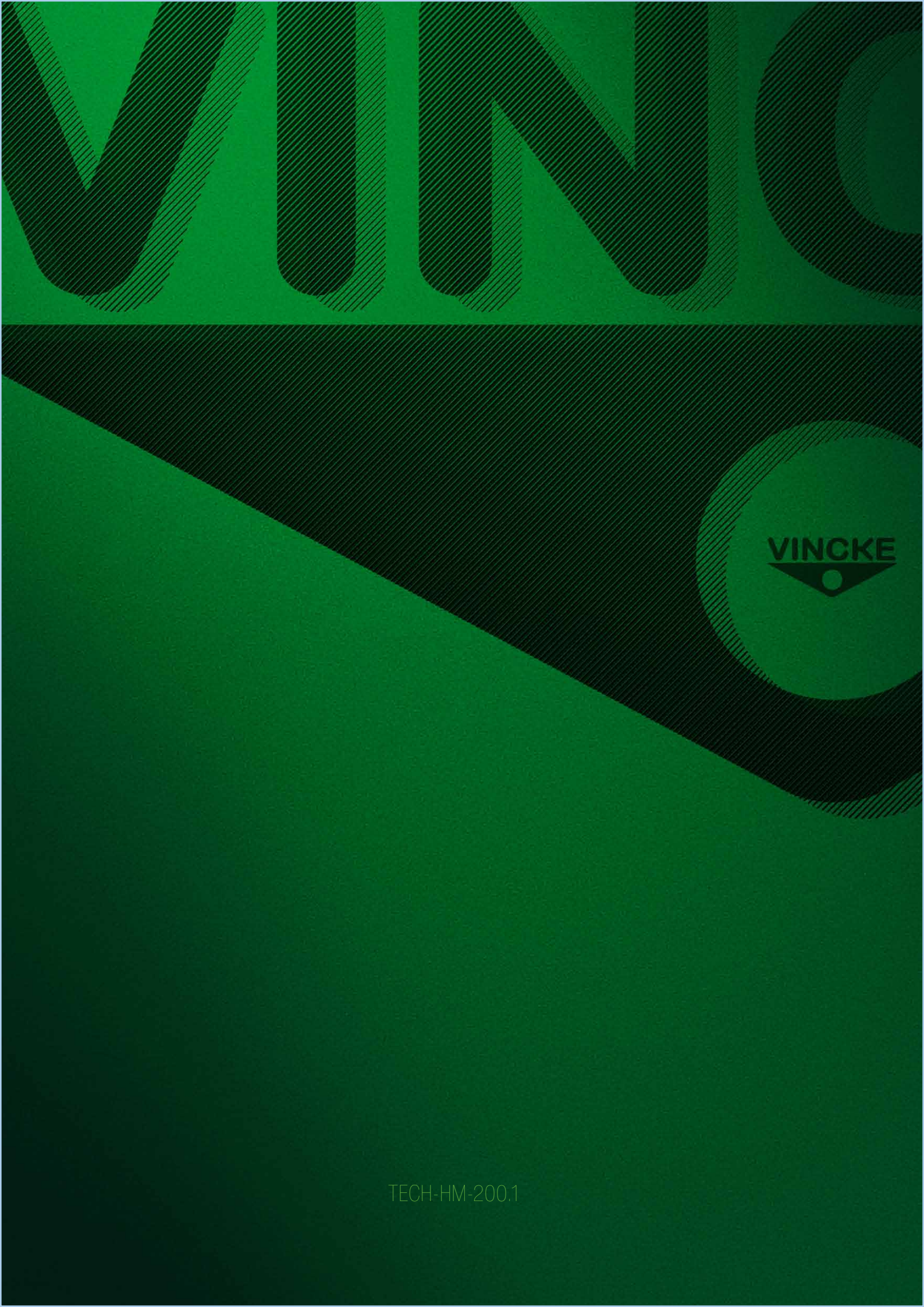
|     |   |   |   |   |   |   |   |
|-----|---|---|---|---|---|---|---|
| ZDQ | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-----|---|---|---|---|---|---|---|

| Pos.1       | 2              | 3                | 4                                                      | 5                                                 | 6     | 7                  |
|-------------|----------------|------------------|--------------------------------------------------------|---------------------------------------------------|-------|--------------------|
| Series code | Structure code | Torque           | Input Shaft holes                                      | Output shaft extensions                           | Paint | Unusually function |
| 1           | 1              | Torque200--230Nm | Shaft holes $\Phi$ 25, Parallel key 8x7x32             | A Shaft $\Phi$ 25, Parallel key 8x7x32            | A     | Standard omit      |
|             |                |                  | Shaft holes $\Phi$ 32, Parallel key 10x8x45            | B Shaft $\Phi$ 32, Parallel key 10x8x45           | B     |                    |
|             |                | Torque410--450Nm | Shaft holes $\Phi$ 25.4, Parallel key 6.35x6.35x31.75  | C Shaft $\Phi$ 25.4, Parallel Key6.35x6.35x31.75  | C     |                    |
|             |                |                  | Shaft holes $\Phi$ 25.4, splined key SAE 6B            | E Shaft $\Phi$ 25.4, splined key SAE 6B           | E     |                    |
| 2           | 2              | Torque200--230Nm | Shaft holes $\Phi$ 31.75, Parallel key 7.96x7.96x31.75 | G Shaft $\Phi$ 31.75, Parallel Key7.96x7.96x31.75 | G     | Standard omit      |
|             |                |                  | Shaft holes Splined 6-30x26x6                          | N Shaft Splined 6-30x26x6                         | N     |                    |
|             |                | Torque410--450Nm | Shaft holes Splined 6-30x26x8                          | J Shaft Splined 6-30x26x8                         | J     |                    |
|             |                |                  |                                                        |                                                   |       |                    |

Note: When the table is used, pls fill the code with right rows in the table and give us, which the code information is consist of construction, torque, input Shaft holes, output Shaft extensions, Paint .If the specification is not in the table or you have specific requirements, please contact us.







TECH-HM-200.1