



## 1½" GRN Internal Eccentric Gear Pump



### Performance:

|             |                       |
|-------------|-----------------------|
| Flow rate   | 6.7 m <sup>3</sup> /h |
| Pressure    | 1 - 14 bar            |
| Temperature | 0 - 200 °C            |
| Speed       | 1400 d/d              |
| Viscosity   | 100 - 250000 SSU      |

### Technical Features:

- ✓ Internal eccentric gear pump
- ✓ 1½" threaded ports
- ✓ Compact design
- ✓ Reliable construction thanks to only two moving parts
- ✓ Various material options
- ✓ Available with external bypass, jacketed and blind cover
- ✓ 230v, three phase 50/60hz motors available
- ✓ Motor, gearbox and belt pulley drive available
- ✓ Manufactured according to CE regulations

### Applications:

- ✓ Fuel oil, diesel fuel and gas oil transfer
- ✓ Small scale thermal oil applications including Marlotherm, Duratherm, Paratherm, Multitherm, Mobiltherm and Dowtherm
- ✓ Lubrication applications
- ✓ Coolant transfer
- ✓ Any transfer of low to medium viscosity fluids with lubricating properties
- ✓ Not suitable for fluids containing abrasive particles

### Material Options:

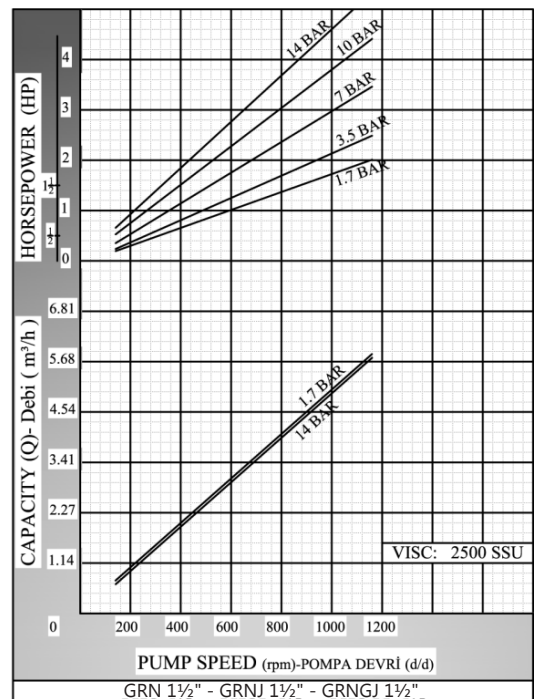
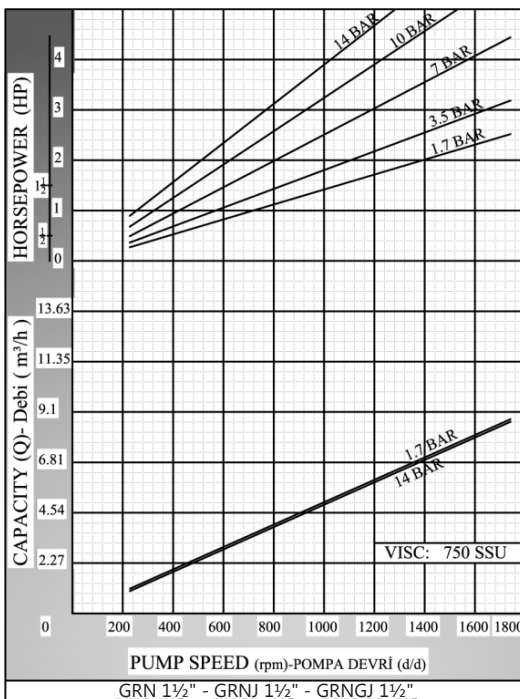
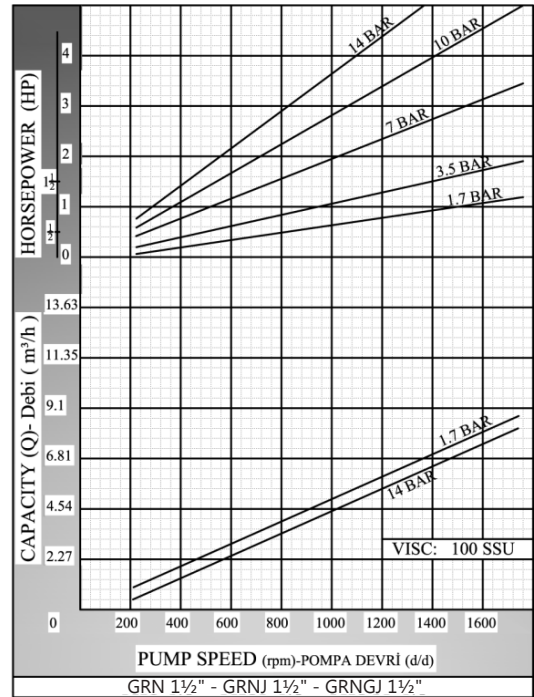
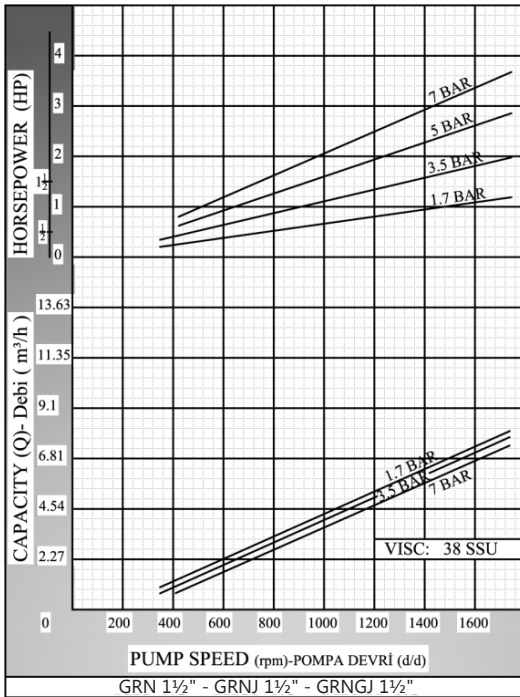
- ✓ Pump body, covers: Pig cast iron, Spheroidal cast iron, cast steel, AISI 304/316 CrNi Stainless Steel
- ✓ Gears: Spheroidal cast iron, cast steel, AISI 304/316 CrNi Stainless Steel
- ✓ Bearings: Snbz 12 bronze, carbon graphite, silicon carbide, hard metal coated steel, bearing
- ✓ Sealing: Soft seal or packing gland, Rotatherm seal, lip seal, mechanical seal, cartridge type mechanical seal

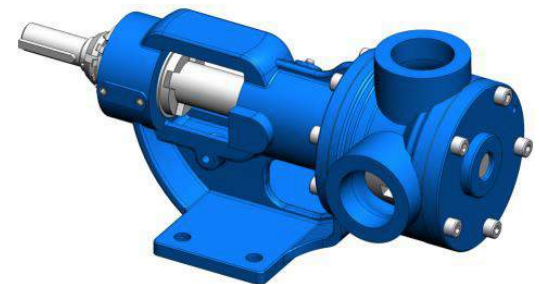
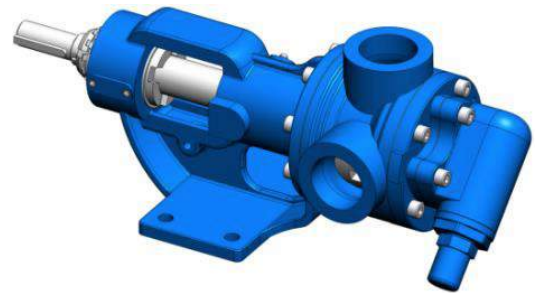
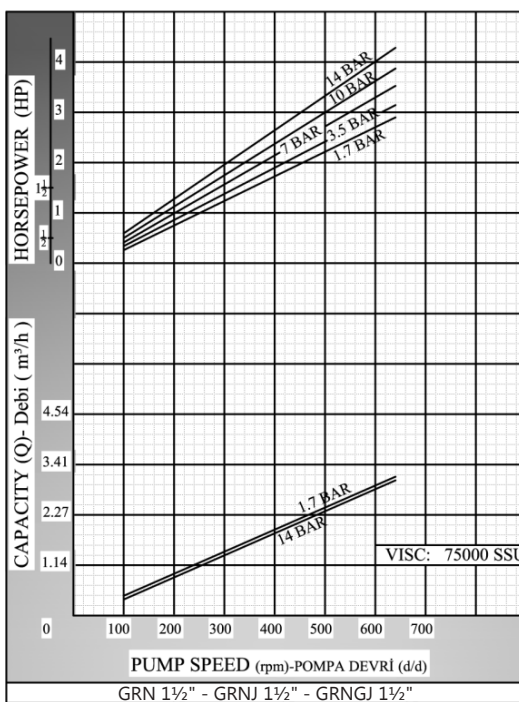
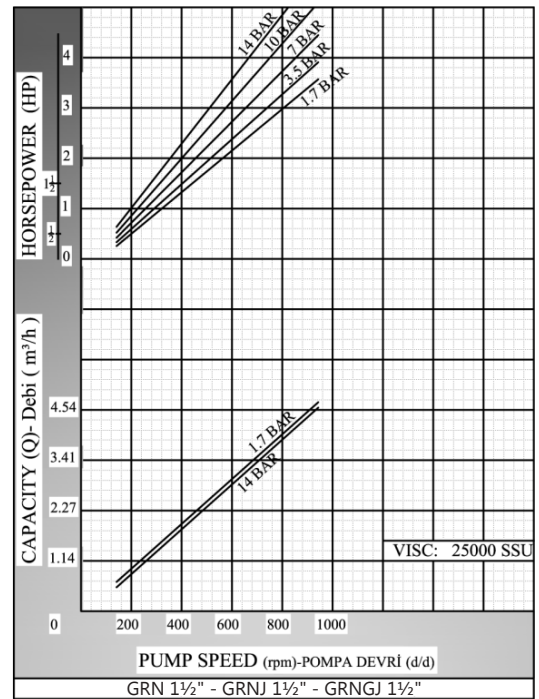
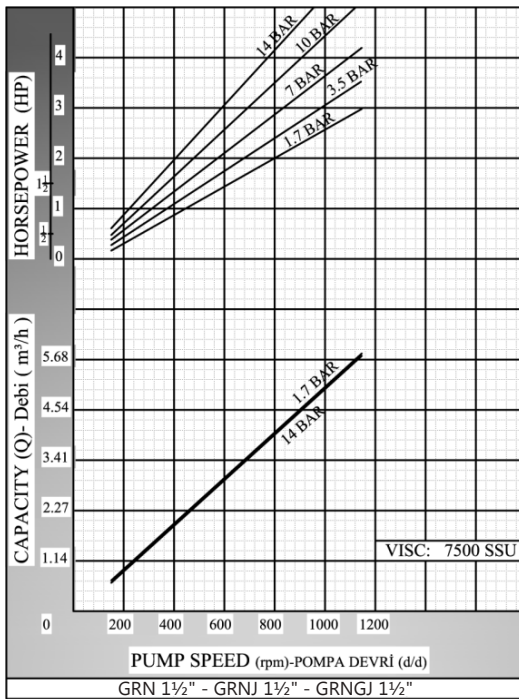
| Capacity & Power Table |             |          |         |         |         |           |
|------------------------|-------------|----------|---------|---------|---------|-----------|
| Capacity (Q)           | Speed (rpm) | Pressure |         |         |         | Viscosity |
|                        |             | 3 Bar    | 6 Bar   | 9 Bar   | 12 Bar  |           |
| 0.24                   | 60          | 0.5 HP   | 0.5 HP  | 0.75 HP | 0.75 HP | 75000 SSU |
| 0.30                   | 80          | 0.5 HP   | 0.75 HP | 1 HP    | 1 HP    | 25000 SSU |
| 0.35                   | 100         | 0.75 HP  | 1 HP    | 1 HP    | 1 HP    | 25000 SSU |
| 4.5                    | 900         | 2 HP     | 3 HP    | 3 HP    | 4 HP    | 750 SSU   |
| 6.7                    | 1400        | 2 HP     | 3 HP    | 4 HP    | 5.5 HP  | 100 SSU   |





## Pump Dimensions - Capacity Graphs:



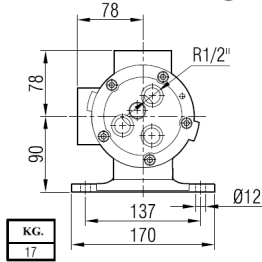




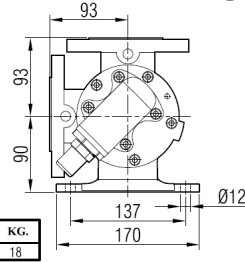


## Pump Dimensions:

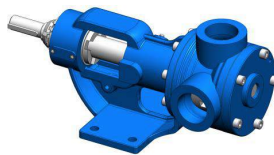
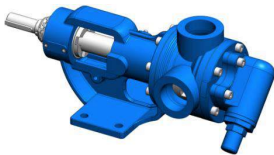
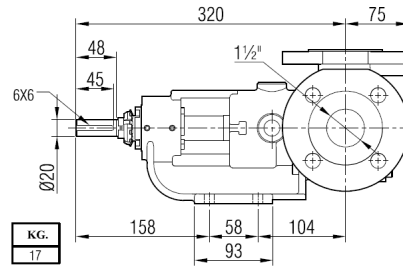
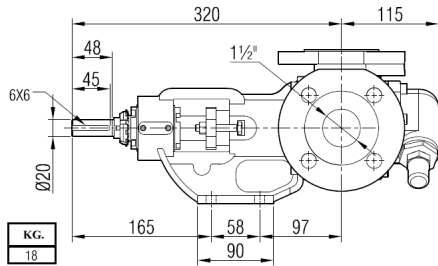
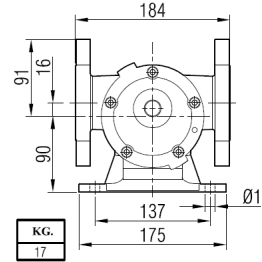
GRN1½"



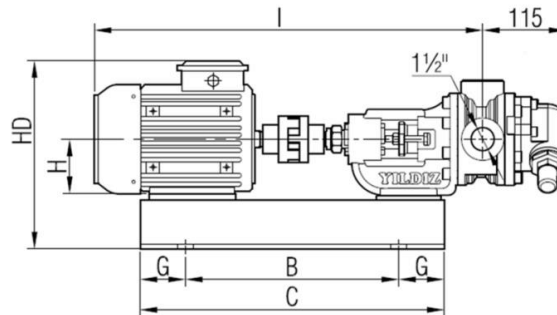
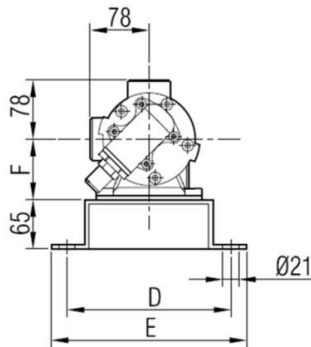
GRNJ1½"



GRNGJ 1½"



## Coupling Dimensions - Motor drive:

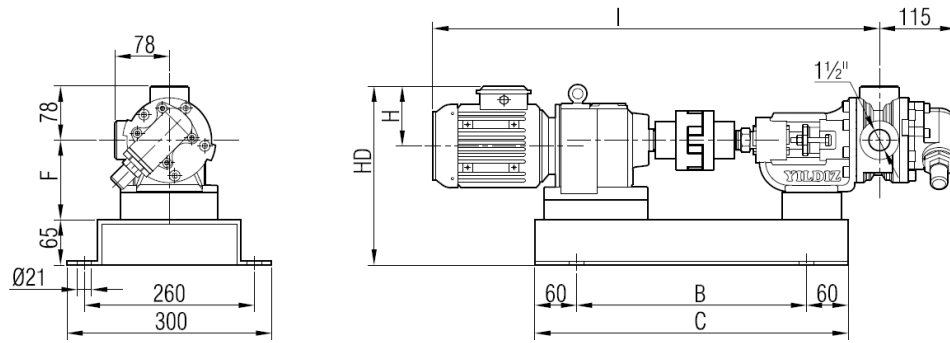


| Motor Power & Speed |                |            | I   | HD  | H   | B   | C   | D   | E   | F   | G   | Kg |
|---------------------|----------------|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| 1 hp / 0.75 kw      | 900 d/d (rpm)  | MOTOR 90S  | 648 | 281 | 90  | 380 | 500 | 260 | 300 | 90  | 60  | 42 |
| 1.5 hp / 1.1 kw     | 1400 d/d (rpm) |            |     |     |     |     |     |     |     |     |     |    |
| 1.5 hp / 1.1 kw     | 900 d/d (rpm)  | MOTOR 90L  | 700 | 300 | 100 | 430 | 550 | 310 | 350 | 100 | 100 | 45 |
| 2 hp / 1.5 kw       | 1400 d/d (rpm) |            |     |     |     |     |     |     |     |     |     |    |
| 1.5 hp / 1.1 kw     | 750 d/d (rpm)  | MOTOR 100L | 746 | 300 | 100 | 430 | 550 | 310 | 350 | 100 | 100 | 53 |
| 2 hp / 1.5 kw       | 900 d/d (rpm)  |            |     |     |     |     |     |     |     |     |     |    |
| 3-4 hp / 2.2-3 kw   | 1400 d/d (rpm) | MOTOR 112M | 761 | 323 | 112 | 420 | 620 | 310 | 350 | 112 | 100 | 65 |
| 2 hp / 1.5 kw       | 750 d/d (rpm)  |            |     |     |     |     |     |     |     |     |     |    |
| 3 hp / 2.2 kw       | 900 d/d (rpm)  |            |     |     |     |     |     |     |     |     |     |    |
| 5.5 hp / 4 kw       | 1400 d/d (rpm) |            |     |     |     |     |     |     |     |     |     |    |





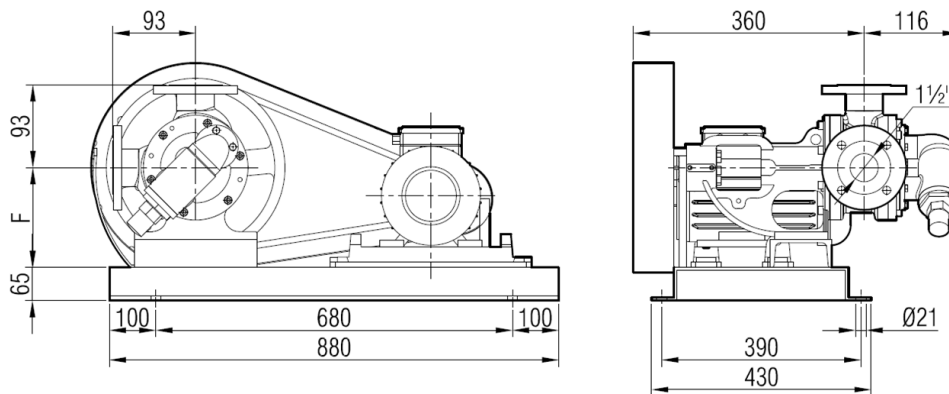
## Coupling Dimensions - Gearbox drive:



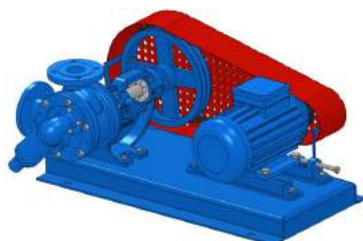
| Motor Power & Speed |                   |             | I   | HD  | H   | B   | C   | F   | Kg      |  |
|---------------------|-------------------|-------------|-----|-----|-----|-----|-----|-----|---------|--|
| 1 hp / 0.75 kw      | 90/400 d/d (rpm)  | IRAM42/80M  | 761 | 269 | 118 | 350 | 470 |     | 42      |  |
| 1.5 hp / 1.1 kw     | 200/400 d/d (rpm) | IRAM42/90S  | 780 | 283 | 132 |     |     |     | 46      |  |
| 1 hp / 0.75 kw      | 40/240 d/d (rpm)  | IRAM53/80M  | 788 | 267 | 118 | 380 | 500 | 90  | 51      |  |
| 1.5 hp / 1.1 kw     | 60/382 d/d (rpm)  | IRAM53/90S  | 806 | 282 | 132 |     |     |     | 54      |  |
| 2 hp / 1.5 kw       | 87/540 d/d (rpm)  | IRAM52/90L  | 831 | 291 | 141 |     |     |     | 55      |  |
| 3-4 hp / 2.2-3 kw   | 300/540 d/d (rpm) | IRAM52/100L | 860 |     |     |     |     |     | 59   62 |  |
| 5.5 hp / 4 kw       | 87/540 d/d (rpm)  | IRAM62/112M | 953 | 318 | 149 | 430 | 550 | 115 | 80      |  |



## Dimensions - Belt pulley coupling pump:

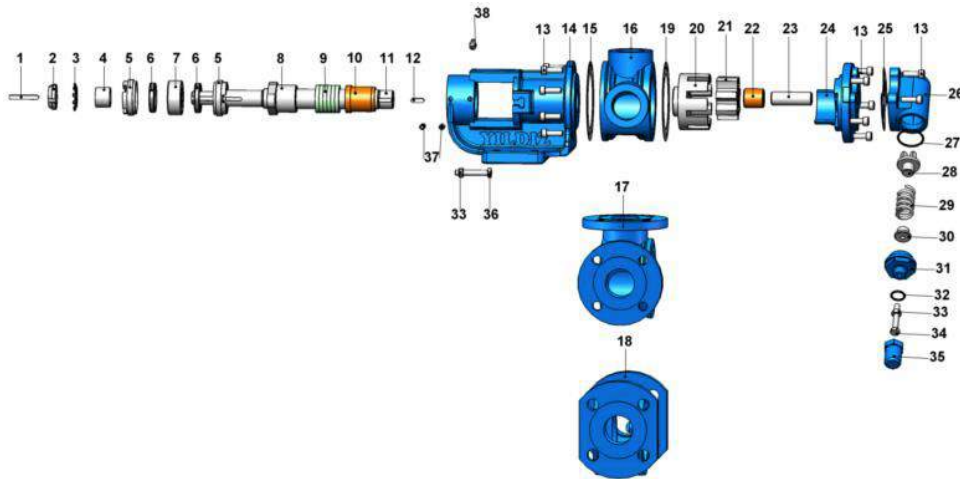


| Motor Power & Speed |            | Pump speeds |           |           |           | F(1) | F(2) | F(3) | F(4) | Kg  |
|---------------------|------------|-------------|-----------|-----------|-----------|------|------|------|------|-----|
|                     |            | n1<br>d/d   | n2<br>d/d | n3<br>d/d | n4<br>d/d |      |      |      |      |     |
| 3 hp / 2.2 kw       | MOTOR 100L | 450         | 400       | 350       | 310       | 150  | 190  | 200  | 200  | 90  |
| 4 hp / 3 kw         | MOTOR 100L |             |           |           |           |      |      |      |      | 95  |
| 5.5 hp / 4 kw       | MOTOR 112M |             |           |           |           |      |      |      |      | 105 |
| 7.5 hp / 5.5 kw     | MOTOR 132S |             |           |           |           |      |      |      |      | 115 |
| 10 hp / 7.5 kw      | MOTOR 132M |             |           |           |           |      |      |      |      | 125 |



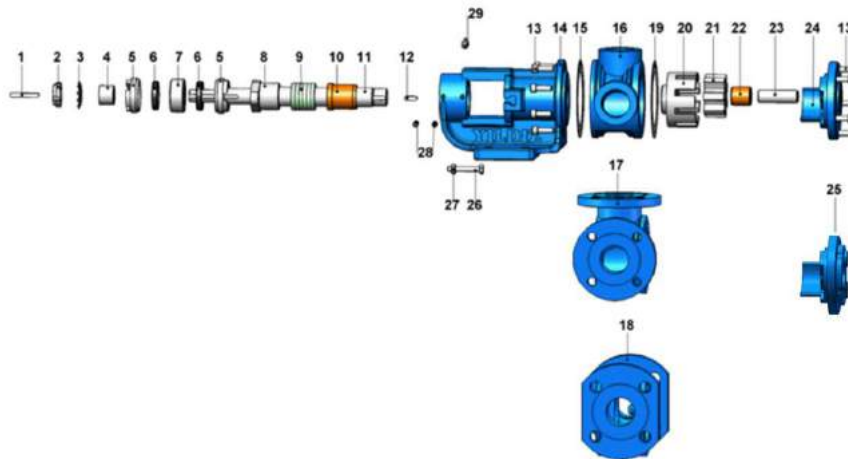


## Spare Parts List - Sealed with soft seal, and pressure relief valve on cover:



| No. | Part Name.                | Qty. | No. | Part Name.                     | Qty. | No. | Part Name.            | Qty. |
|-----|---------------------------|------|-----|--------------------------------|------|-----|-----------------------|------|
| 1   | Coupling Key 6x6x45 AB    |      | 14  | Bracket                        |      | 27  | Bypass O-Ring         |      |
| 2   | Lock Nut                  |      | 15  | Bracket Gasket                 |      | 28  | Valve                 |      |
| 3   | Lock Washer               |      | 16  | Casing (w/ 90° Threaded Ports) |      | 29  | Spring                |      |
| 4   | Spacer                    |      | 17  | Casing (w/ 90° Flanged Ports)  |      | 30  | Washer                |      |
| 5   | Adjusting Nut             |      | 18  | Casing (w/ 180° Flanged Ports) |      | 31  | Bypass Cover          |      |
| 6   |                           |      | 19  | Cover Gasket                   |      | 32  | Cap O-Ring            |      |
| 7   | Ball Bearing (3205-2RS)   |      | 20  | Rotor Gear                     |      | 33  | Nut M8                |      |
| 8   | Packing Press             |      | 21  | Idler Gear                     |      | 34  | Adjusting Screw M8x55 |      |
| 9   | Soft Seal / Packing Gland |      | 22  | Idler Bushing                  |      | 35  | Cap                   |      |
| 10  | Bracket bushing           |      | 23  | Cover Pin                      |      | 36  | Hex Bolt M8x50        |      |
| 11  | Shaft                     |      | 24  | Cover (w/ Bypass Inlets)       |      | 37  | Grub Screw M8x16      |      |
| 12  | Rotor Gear 6x6x20 A       |      | 25  | Bypass Gasket                  |      |     |                       |      |
| 13  | Inbus Bolt M8x25          |      | 26  | Pressure Relief Valve - Bypass |      |     |                       |      |

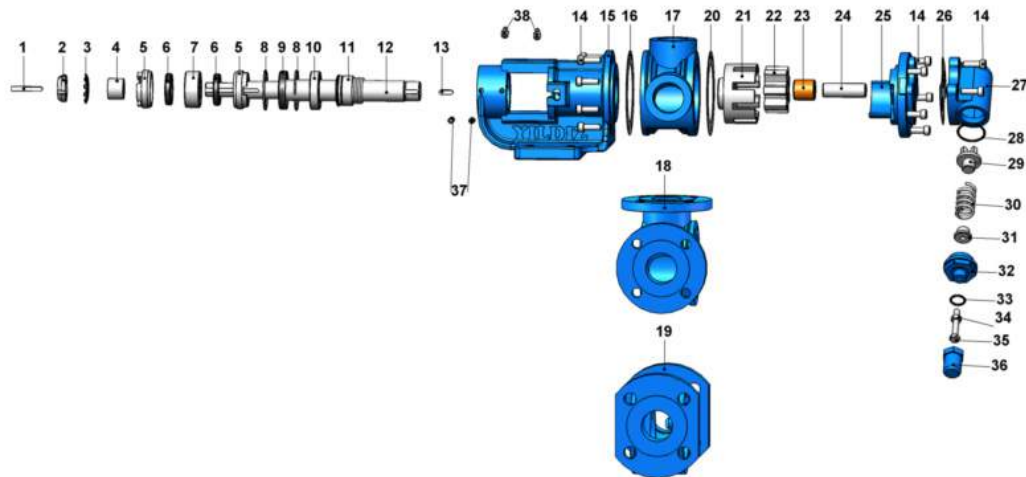
## Spare Parts List - Sealed with soft seal, jacketed, and with blind cover:



| No. | Part Name.                | Qty. | No. | Part Name.                                   | Qty. | No. | Part Name.                 | Qty. |
|-----|---------------------------|------|-----|--|------|-----|----------------------------|------|
| 1   | Coupling Key 6x6x45 AB    | 1    | 11  | Shaft  | 1    | 21  | Idler Gear                 | 1    |
| 2   | Lock Nut                  | 1    | 12  | Rotor Key 6x6x20 A                           | 1    | 22  | Idler Bushing              | 1    |
| 3   | Lock Washer               | 1    | 13  | Inbus Bolt M8x25                             | 13   | 23  | Cover Pin                  | 1    |
|     |                           |      |     | Hex Socket M8x30 For Cover w/ Heating Jacket | 5    |     |                            |      |
| 4   | Spacer                    | 1    | 14  | Bracket                                      | 1    | 24  | Blind Cover                | 1    |
| 5   | Adjusting Nut             | 2    | 15  | Bracket Gasket                               | 1    | 25  | Cover (w/ Heating Jackets) | 1    |
| 6   |                           |      | 16  | Casing (w/ 90° Threaded Ports)               | 1    | 26  | Hex Bolt M8x50             | 2    |
| 7   | Ball Bearing (3205-2RS)   | 1    | 17  | Casing (w/ 90° Flanged Ports)                | 1    | 27  | Nut M8                     | 2    |
| 8   | Packing Press             | 1    | 18  | Casing (w/ 180° Flanged Ports)               | 1    | 28  | Grub Screw M8x16           | 4    |
| 9   | Soft Seal / Packing Gland | 1 TK | 19  | Cover Gasket                                 | 1    |     |                            |      |
| 10  | Bracket Bushing           | 1    | 20  | Rotor Gear                                   | 1    |     |                            |      |

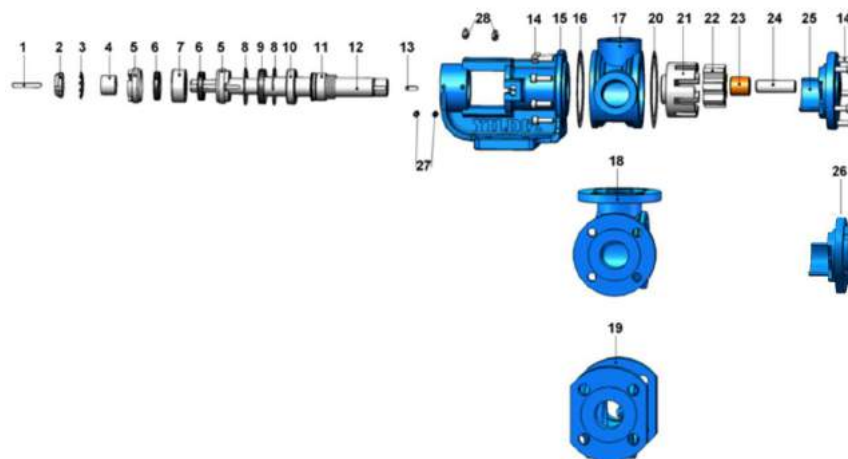


## Spare Parts List - Sealed with mechanical seal, and pressure relief valve on cover:



| No. | Part Name.              | Qty. | No. | Part Name.                     | Qty. | No. | Part Name.                     | Qty. |
|-----|-------------------------|------|-----|--------------------------------|------|-----|--------------------------------|------|
| 1   | Coupling Key 6x6x45 AB  | 1    | 14  | Inbus Bolt M8x25               | 1    | 27  | Pressure Relief Valve - Bypass | 1    |
| 2   | Lock Nut                | 1    | 15  | Bracket                        | 1    | 28  | Bypass O-Ring                  | 1    |
| 3   | Lock Washer             | 1    | 16  | Bracket Gasket                 | 1    | 29  | Valve                          | 1    |
| 4   | Spacer                  | 1    | 17  | Casing (w/ 90° Threaded Ports) | 1    | 30  | Spring                         | 1    |
| 5   | Adjusting Nut           | 2    | 18  | Casing (w/ 90° Flanged Ports)  | 1    | 31  | Washer                         | 1    |
| 6   |                         |      | 19  | Casing (w/ 180° Flanged)       | 1    | 32  | Bypass Cover                   | 1    |
| 7   | Ball Bearing (3205-2RS) | 1    | 20  | Cover Gasket                   | 1    | 33  | Cap O-Ring                     | 1    |
| 8   | Internal Circlip (ø55)  | 2    | 21  | Rotor Gear                     | 1    | 34  | Nut M8                         | 1    |
| 9   | Lip Seal ø30xø55x10     | 1    | 22  | Idler Gear                     | 1    | 35  | Adjusting Screw M8x55          | 1    |
| 10  | Ball Bearing (6006)     | 1    | 23  | Idler Bushing                  | 1    | 36  | Cap                            | 1    |
| 11  | Mechanical Seal Ø30     | 1    | 24  | Cover Pin                      | 1    | 37  | Grub Screw M8x16               | 4    |
| 12  | Shaft                   | 1    | 25  | Cover (w/ Bypass Inlets)       | 1    |     |                                |      |
| 13  | Rotor Key 6x6x20 A      | 17   | 26  | Bypass Gasket                  | 1    |     |                                |      |

## Spare Parts List - Sealed with mechanical seal, jacketed, and with blind cover:

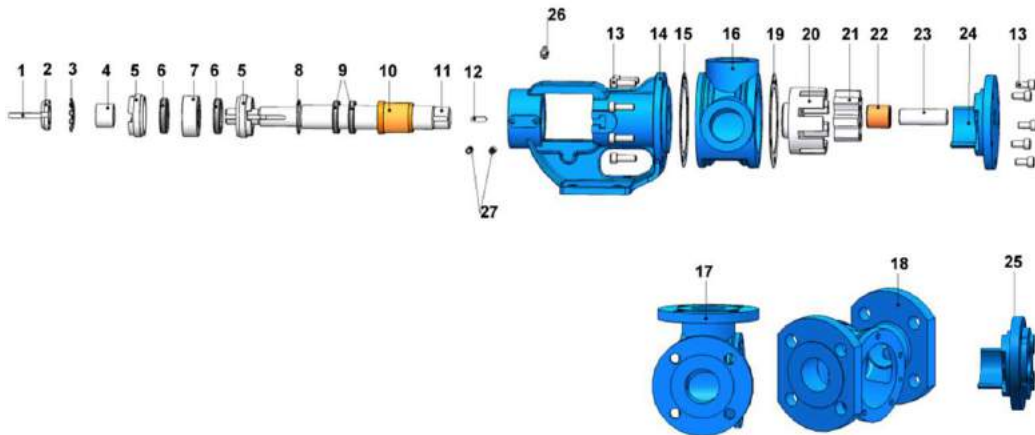


| No. | Part Name.             | Qty. | No. | Part Name.                                   | Qty. | No. | Part Name.                     | Qty. |
|-----|------------------------|------|-----|--|------|-----|--------------------------------|------|
| 1   | Coupling Key 6x6x45 AB | 1    | 10  | Ball Bearing (6006)                          | 1    | 19  | Casing (w/ 180° Flanged Ports) | 1    |
| 2   | Lock Nut               | 1    | 11  | Mechanical Seal Ø30                          | 1    | 20  | Cover Gasket                   | 1    |
| 3   | Lock Washer            | 1    | 12  | Shaft  | 1    | 21  | Rotor Gear                     | 1    |
| 4   | Spacer                 | 1    | 13  | Rotor Key 6x6x20 A                           | 1    | 22  | Idler Gear                     | 1    |
| 5   | Adjusting Nut          | 2    | 14  | Inbus Bolt M8x25                             | 13   | 23  | Idler Bushing                  | 1    |
| 6   |                        |      | 15  | Inbus Bolt M8x30 For Cover w/ Heating Jacket | 5    | 24  | Cover Pin                      | 1    |
| 7   | Bearing (3205-2RS)     | 1    | 16  | Bracket                                      | 1    | 25  | Blind Cover                    | 1    |
| 8   | Internal Circlip (ø55) | 2    | 17  | Bracket Gasket                               | 1    | 26  | Cover (w/ Heating Jacket)      | 1    |
| 9   | Lip Seal ø30xø55x10    | 1    | 18  | Casing (w/ 90° Threaded Ports)               | 1    | 27  | Grub Screw M8x16               | 4    |
|     |                        |      |     | Casing (w/ 90° Flanged Ports)                | 1    |     |                                |      |



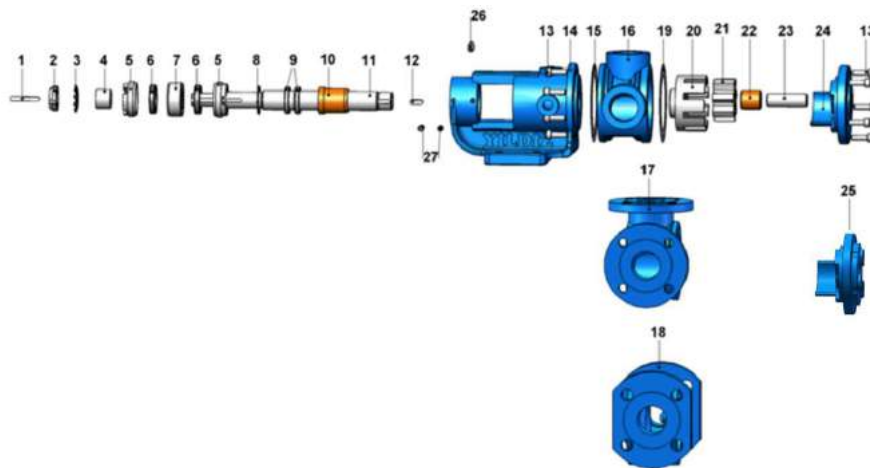


## Spare Parts List - Sealed with lip seal, jacketed and with blind cover:



| No. | Part Name.              | Qty. | No. | Part Name.                                   | Qty. | No. | Part Name.                | Qty. |
|-----|-------------------------|------|-----|--|------|-----|---------------------------|------|
| 1   | Coupling Key 6x6x45 AB  | 1    | 10  | Bracket Bushing                              | 1    | 19  | Cover Gasket              | 1    |
| 2   | Lock Nut                | 1    | 11  | Shaft  | 1    | 20  | Rotor Gear                | 1    |
| 3   | Lock Washer             | 1    | 12  | Rotor Key 6x6x20 A                           | 1    | 21  | Idler Gear                | 1    |
| 4   | Spacer                  | 1    | 13  | Inbus Bolt M8x25                             | 13   | 22  | Idler Bushing             | 1    |
|     |                         |      |     | Inbus Bolt M8x30 For Cover w/ Heating Jacket | 5    |     |                           |      |
| 5   | Adjusting Nut           | 2    | 14  | Bracket                                      | 1    | 23  | Cover Pin                 | 1    |
| 6   |                         |      | 15  | Bracket Gasket                               | 1    | 24  | Blind Cover               | 1    |
| 7   | Ball Bearing (3205-2RS) | 1    | 16  | Casing (w/ 90° Threaded Ports)               | 1    | 25  | Cover (w/ Heating Jacket) | 1    |
| 8   | Internal Circlip (ø42)  | 1    | 17  | Casing (w/ 90° Flanged Ports)                | 1    | 26  |                           |      |
| 9   | Lip Seal ø30xø42x7      | 2    | 18  | Casing (w/ 180° Flanged Ports)               | 1    | 27  | Grub Screw M8x16          | 4    |

## Spare Parts List - Double jacketed and sealed with lip seal:



| No. | Part Name.              | Qty. | No. | Part Name.                                   | Qty. | No. | Part Name.                | Qty. |
|-----|-------------------------|------|-----|--|------|-----|---------------------------|------|
| 1   | Coupling Key 6x6x45 AB  | 1    | 10  | Bracket Bushing                              | 1    | 19  | Cover Gasket              | 1    |
| 2   | Lock Nut                | 1    | 11  | Shaft  | 1    | 20  | Rotor Gear                | 1    |
| 3   | Lock Washer             | 1    | 12  | Rotor Key 6x6x20 A                           | 1    | 21  | Idler Gear                | 1    |
| 4   | Spacer                  | 1    | 13  | Inbus Bolt M8x25                             | 13   | 22  | Idler Bushing             | 1    |
|     |                         |      |     | Inbus Bolt M8x30 For Cover w/ Heating Jacket | 5    |     |                           |      |
| 5   | Adjusting Nut           | 2    | 14  | Bracket Jacketed                             | 1    | 23  | Cover Pin                 | 1    |
| 6   |                         |      | 15  | Bracket Gasket                               | 1    | 24  | Blind Cover               | 1    |
| 7   | Ball Bearing (3205-2RS) | 1    | 16  | Casing (w/ 90° Threaded Ports)               | 1    | 25  | Cover (w/ Heating Jacket) | 1    |
| 8   | Internal Circlip (ø42)  | 1    | 17  | Casing (w/ 90° Flanged Ports)                | 1    | 26  |                           |      |
| 9   | Lip Seal ø30xø42x7      | 2    | 18  | Casing (w/ 180° Flanged Ports)               | 1    | 27  | Grub Screw M8x16          | 4    |