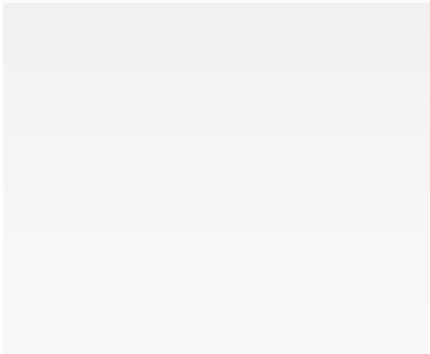




ORIGINAL INSTRUCTIONS



**INSTALLATION, USE AND
MAINTENANCE MANUAL**



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1. General advises

1.1 Introduction

This booklet contains the necessary instructions for a correct installation, running test, normal use and maintenance of the pump as well as practical suggestions for safe operating.

The knowledge of the following will give trouble free operation for a long time.

It is recommended to:

- read and apply closely the instructions before running the pump.
- keep the booklet at hand and have it known to all operators.

1.2 Request of spare parts

To avoid mistakes when ordering the spare parts make sure you indicate:

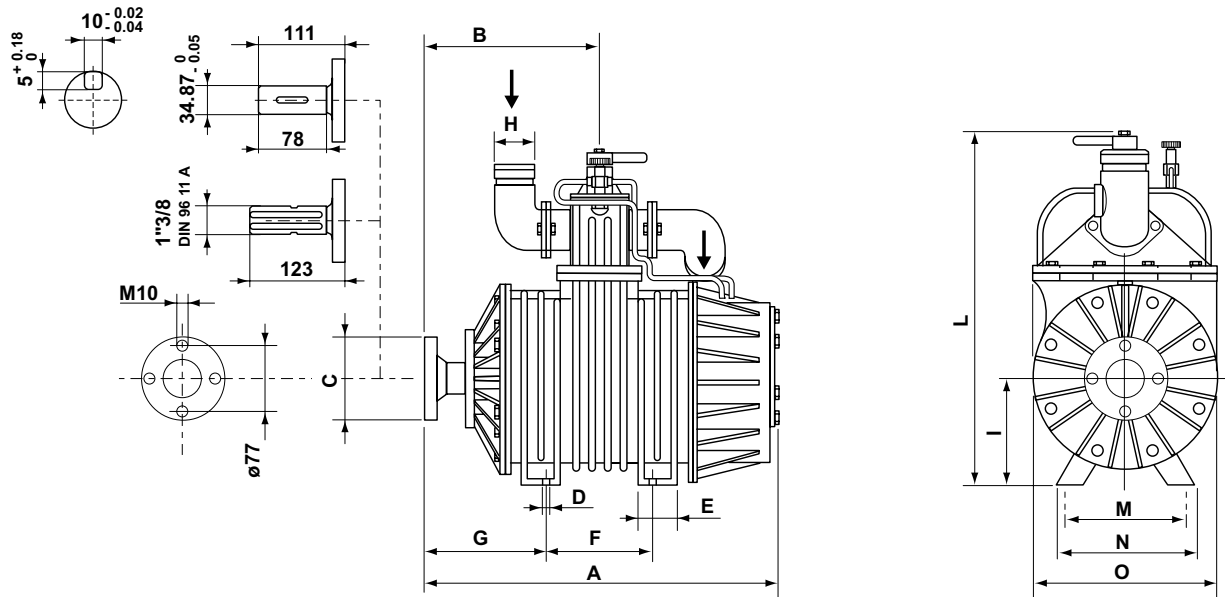
- | | | |
|----------------------------------|---|----------------------|
| a) the model of the pump | } | See pump label |
| b) the serial number of the pump | | |
| c) the denomination of the part | } | See spare parts list |
| d) the number of the pieces | | |
| e) the code of the part | | |

Example:

- a) PN 106 M
- b) X50012
- c) Rotor vane
- d) N° 4 pieces
- e) 16016.010.00

2. Technical specifications

2.1 Technical data / Overall dimensions mod. PN...D



AIR COOLED VACUUM PUMPS-PN SERIES

Performances at 1300 R.P.M.-max. speed

| Model | | PN 23D | PN 33D | PN 45D | PN 58D | PN 84D | PN106D |
|---|------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Air flow - l./min. | Free air | 2600 | 3600 | 5300 | 6500 | 9000 | 11000 |
| | 60% vacuum | 2100 | 2900 | 4500 | 5800 | 8100 | 10000 |
| Max vacuum - % | | 90 | 90 | 92 | 92 | 92 | 92 |
| Max operating rel. pressure (abs.) - bar | | 0,5 (1,5) | 0,5 (1,5) | 0,5 (1,5) | 0,5 (1,5) | 0,5 (1,5) | 0,5 (1,5) |
| Power required at 0,5 bar rel. (1,5 abs.) - kW | | 3,3 | 4,5 | 5,8 | 6,6 | 11,2 | 13,6 |
| Weight - Kg. | | 53 | 63 | 90 | 102 | 115 | 143 |
| Oil consumption g/h-drops/min total | | 65/40 | 80/45 | 90/50 | 90/50 | 115/65 | 135/80 |
| Oil tank capacity - l. | | 1,2 | 1,2 | 2,3 | 2,3 | 2,3 | 2,3 |
| Sound level at 60% vac. 7 m. dist. - dB (A) - with silencer | | 77 | 74 | 76 | 77 | 81 | 84 |

Dimensions in mm.

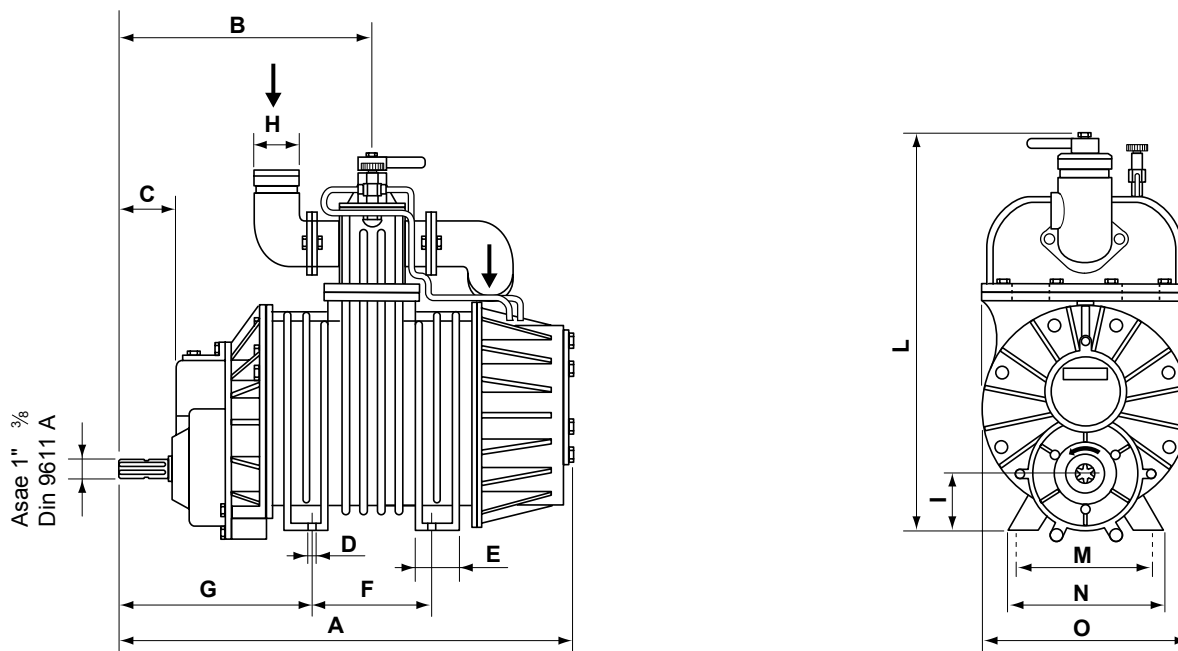
| Model | A | B | C | D | E | F | G | H | I | L | M | N | O |
|---------|-----|-----|----|----|----|-----|-----|----------|-----|-----|-----|-----|-----|
| PN 23D | 466 | 276 | 98 | 16 | 60 | 92 | 226 | 60 | 135 | 408 | 170 | 195 | 215 |
| PN 33D | 546 | 306 | 98 | 16 | 60 | 160 | 226 | 60 | 135 | 415 | 170 | 195 | 215 |
| PN 45D | 426 | 206 | 98 | 16 | 50 | 140 | 131 | 60/76/80 | 150 | 508 | 240 | 270 | 275 |
| PN 58D | 486 | 226 | 98 | 16 | 80 | 190 | 136 | 60/76/80 | 175 | 538 | 240 | 270 | 275 |
| PN 84D | 586 | 276 | 98 | 16 | 80 | 190 | 186 | 60/76/80 | 150 | 518 | 240 | 270 | 275 |
| PN 106D | 676 | 321 | 98 | 16 | 70 | 290 | 181 | 60/76/80 | 175 | 538 | 250 | 285 | 290 |

LIST OF RECOMMENDED OILS

Pump housing lubrication

| Brand/Type | Environment temperature 5°+30° C ISO 46 | Environment temperature > 40° C ISO 150 |
|------------|--|--|
| ENI | Radula 46 | Radula 150 |
| ESSO | Nuto 46 | Nuto 150 |
| SHELL | Morlina Oil 46 | Morlina Oil 150 |
| TOTAL | Drosera MS 46 | Drosera MS 150 |
| MOBIL | Nuto H 46 | Nuto H 150 |
| BP | Bartran HV 46 | Bartran HV 150 |

2.2 Technical data / Overall dimensions mod. PN...M



AIR COOLED VACUUM PUMPS-PN SERIES

Performances at 540 R.P.M.-max. speed

| Model | | PN 23M | PN 33M | PN 45M | PN 58M | PN 84M | PN106M |
|---|------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Air flow - l./min. | Free air | 2600 | 3600 | 5300 | 6500 | 9000 | 11000 |
| | 60% vacuum | 2100 | 2900 | 4500 | 5800 | 8100 | 10000 |
| Max vacuum - % | | 90 | 90 | 92 | 92 | 92 | 92 |
| Max operating rel. pressure (abs.) - bar | | 0,5 (1,5) | 0,5 (1,5) | 0,5 (1,5) | 0,5 (1,5) | 0,5 (1,5) | 0,5 (1,5) |
| Power required at 0,5 bar rel. (1,5 abs.) - kW | | 3,3 | 4,5 | 5,8 | 6,6 | 11,2 | 13,6 |
| Weight - Kg. | | 55 | 65 | 90 | 102 | 115 | 143 |
| Oil consumption g/h-drops/min total | | 65/40 | 80/45 | 90/50 | 90/50 | 115/65 | 135/80 |
| Oil tank capacity - l. | | 1,2 | 1,2 | 2,3 | 2,3 | 2,3 | 2,3 |
| Sound level at 60% vac. 7 m. dist. - dB (A) - with silencer | | 77 | 74 | 76 | 77 | 81 | 84 |

Dimensions in mm.

| Model | A | B | C | D | E | F | G | H | I | L | M | N | O |
|---------|-----|-----|----|----|----|-----|-----|----------|----|-----|-----|-----|-----|
| PN 23M | 475 | 280 | 87 | 16 | 60 | 92 | 235 | 60 | 58 | 408 | 170 | 195 | 215 |
| PN 33M | 555 | 320 | 87 | 16 | 60 | 160 | 235 | 60 | 58 | 415 | 170 | 195 | 215 |
| PN 45M | 535 | 310 | 87 | 16 | 50 | 140 | 240 | 60/76/80 | 50 | 508 | 240 | 270 | 275 |
| PN 58M | 595 | 340 | 87 | 16 | 80 | 190 | 245 | 60/76/80 | 72 | 538 | 240 | 270 | 275 |
| PN 84M | 695 | 390 | 87 | 16 | 80 | 190 | 295 | 60/76/80 | 50 | 518 | 240 | 270 | 275 |
| PN 106M | 785 | 435 | 87 | 16 | 70 | 290 | 290 | 60/76/80 | 72 | 538 | 250 | 285 | 290 |

LIST OF RECOMMENDED OILS

Pump housing lubrication

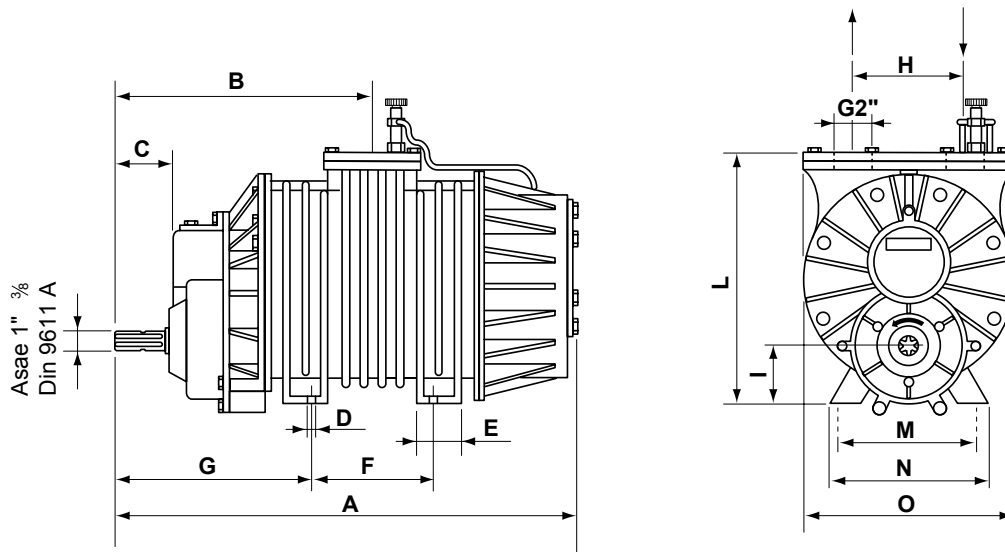
| Brand/Type | Environment temperature 5°±30° C ISO 46 | Environment temperature > 40° C ISO 150 |
|------------|--|--|
| ENI | Radula 46 | Radula 150 |
| ESSO | Nuto 46 | Nuto 150 |
| SHELL | Morlina Oil 46 | Morlina Oil 150 |
| TOTAL | Drosera MS 46 | Drosera MS 150 |
| MOBIL | Nuto H 46 | Nuto H 150 |
| BP | Bartran HV 46 | Bartran HV 150 |

LIST OF RECOMMENDED OILS

Lubrication of gear box

| Brand/Type | ISO 220 |
|------------|-------------------|
| ENI | Blasia 220 |
| ESSO | Spartan EP 220 |
| SHELL | Omala oil 220 |
| TOTAL | Carter EP 220 |
| MOBIL | Mobilgear 630 |
| BP | Energol GR XP 220 |

2.3 Technical data / Overall dimensions mod. PN...FL



AIR COOLED VACUUM PUMPS-PN SERIES

Performances at 540 R.P.M.-max. speed

| Mod. | | PN 45FL | PN 58FL | PN 84FL | PN 106FL |
|---|------------|-----------|-----------|-----------|-----------|
| Air flow - l./min. | Free air | 5300 | 6500 | 9000 | 11000 |
| | 60% vacuum | 4500 | 5800 | 8100 | 10000 |
| Max vacuum - % | | 92 | 92 | 92 | 92 |
| Max operating rel. pressure (abs.) - bar | | 3 (4) | 3 (4) | 3 (4) | 3 (4) |
| Max operating rel. pressure for 5 min. (abs.) - bar | | 1,5 (2,5) | 1,5 (2,5) | 1,5 (2,5) | 1,5 (2,5) |
| Power at 0,5 bar rel. (1,5 abs.) - kW | | 5,8 | 6,6 | 11,2 | 13,6 |
| Weight - Kg. | | 84 | 95 | 108 | 136 |
| Oil consumption g/h-drops/min total | | 90/50 | 90/50 | 115/65 | 135/80 |
| Oil tank capacity - l. | | 2,3 | 2,3 | 2,3 | 2,3 |
| Sound level at 60% vac. 7 m. dist. - dB (A) - with silencer | | 76 | 77 | 81 | 84 |

Dimensions in mm.

| Mod. | A | B | C | D | E | F | G | H | I | L | M | N | O |
|----------|-----|-----|----|----|----|-----|-----|-----|----|-----|-----|-----|-----|
| PN 45FL | 535 | 310 | 87 | 16 | 50 | 140 | 240 | 145 | 50 | 315 | 240 | 270 | 275 |
| PN 58FL | 595 | 340 | 87 | 16 | 80 | 190 | 245 | 145 | 72 | 345 | 240 | 270 | 275 |
| PN 84FL | 695 | 390 | 87 | 16 | 80 | 190 | 295 | 145 | 50 | 325 | 240 | 270 | 275 |
| PN 106FL | 785 | 435 | 87 | 16 | 70 | 290 | 290 | 145 | 72 | 345 | 250 | 285 | 290 |

LIST OF RECOMMENDED OILS

Pump housing lubrication

| Brand/Type | Environment temperature 5°+30° C ISO 46 | Environment temperature > 40° C ISO 150 |
|------------|--|--|
| ENI | Radula 46 | Radula 150 |
| ESSO | Nuto 46 | Nuto 150 |
| SHELL | Morlina Oil 46 | Morlina Oil 150 |
| TOTAL | Drosera MS 46 | Drosera MS 150 |
| MOBIL | Nuto H 46 | Nuto H 150 |
| BP | Bartran HV 46 | Bartran HV 150 |

LIST OF RECOMMENDED OILS

Lubrication of gear box

| Brand/Type | ISO 220 |
|------------|-------------------|
| ENI | Blasia 220 |
| ESSO | Spartan EP 220 |
| SHELL | Omala oil 220 |
| TOTAL | Carter EP 220 |
| MOBIL | Mobilgear 630 |
| BP | Energol GR XP 220 |

3. Safe operating and accident prevention

3.1 General suggestions

- Ordinary and extraordinary maintenance has to be done while the unit is stopped and the drive disconnected.
- Interventions on pneumatic plants have to be done after disconnecting pressure/vacuum from the same.
- Never start the pump if adequate/foreseen safety devices are not installed.
Damaged protections must be immediately replaced.
- Be aware that during operation the pump's body can reach temperature of over 60° centigrade.
Possibility of burnings if this warning is missacted.



Maximum speed shown in the technical specifications tables must not be exceeded.

3.2 Normal use

- Vacuum pumps of the PN-series used for the suction of liquids are foreseen for a max pressure of + 1,5 bar (2,5 for "FL" model) and a max vacuum rate of 92 %.
As cooling is given by atmospheric air, pumps are foreseen for non-continuous duty; suggested uninterrupted working-time: about 15 minutes (free air).
Overheating of the pump will cause serious damages of the same and/or blocking of the rotor.

4. Installation

4.1 Checking at arrival

- upon receipt check that the pump and related accessories are not damaged.
- Check that the rotor/shaft is not blocked.

4.2 Pump mounting / Drive connection

- The pump must be installed so that it is easily accessible for inspection and maintenance.
 - The vacuum pump must be installed on a rigid base or stand. The drive can be by cardan shaft, belts and pulley or by hydraulic motor.
 - The cardan shaft must be mounted so that it does not create any axial thrust; the inclination of the shaft must not exceed 15° (see fig. 1).
 - When using the belts and pulley, the pulley can be mounted directly on the rotor shaft.
- The alignment between the pulley of the pump and the driving pulley must be thoroughly checked. The V-belts tension must be normal, that means the belts must flex for about 2 cm. under the thumb pressure.
- With the hydraulic transmission the motor must be connected by means of a support and a flexible joint.



The transmission must be protected according to current safety standards (for Europe 2006/42 CEE standards).

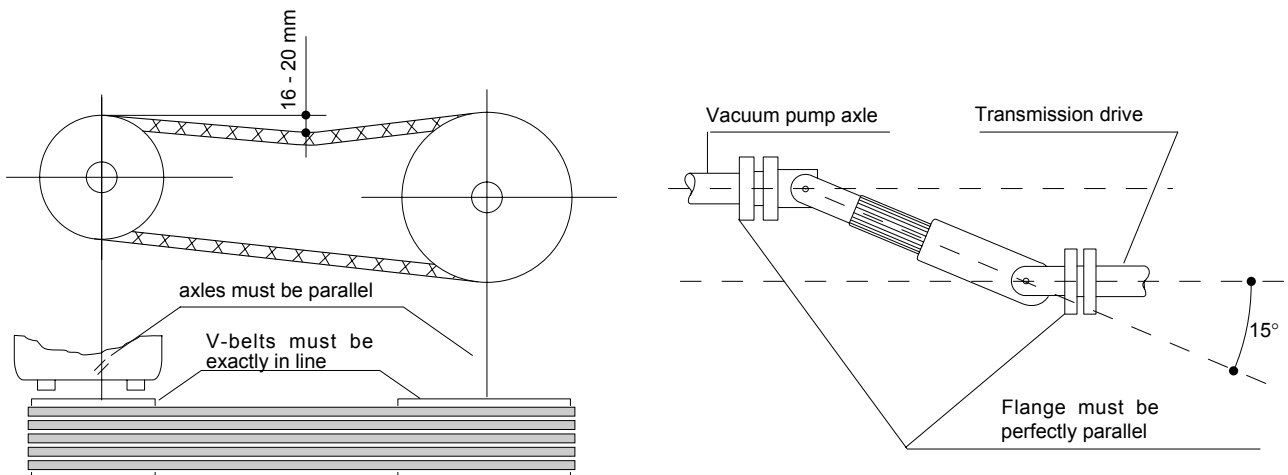


Check that the actual shaft rotation direction matches that of the arrow on the label fixed on the front of the pump.



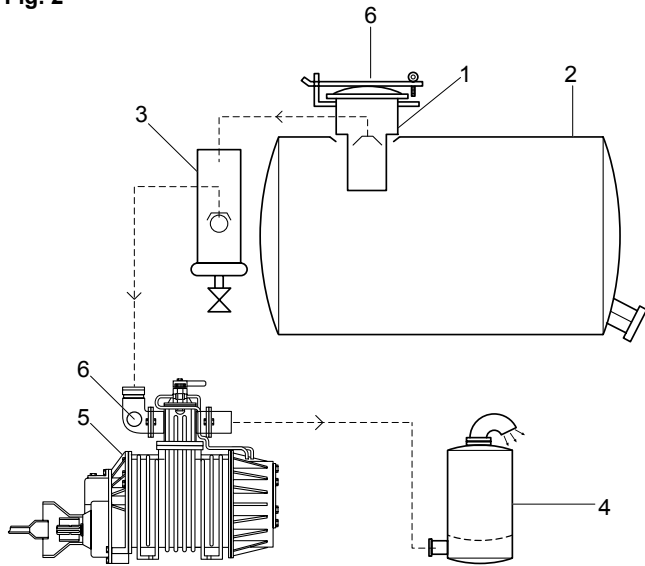
Drive by belts and pulleys: the pulley has to be mounted on the «tapered shaft». Proceed as indications of fig. 6-7.

Fig. 1



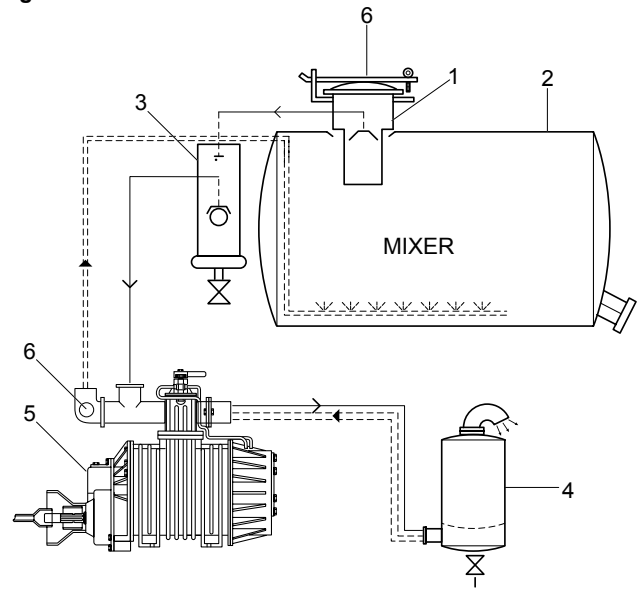
4.3 Layout of vacuum line

Fig. 2



PN PUMP WITH STANDARD MANIFOLD

Fig. 3



PN PUMP WITH MIXER MANIFOLD

Legend

- | | |
|---|---------------------|
| 1 | Primary shutoff |
| 2 | Tank |
| 3 | Secondary shutoff |
| 4 | Silencer + oil trap |
| 5 | Vacuum pump "PN" |
| 6 | Safety relief valve |

- The mounting of a secondary shutoff (pos. 3) is suggested, in-between the pump and the tank, for protecting the vacuum pump.
- A silencer (pos. 4) is suggested in order to reduce sound level.



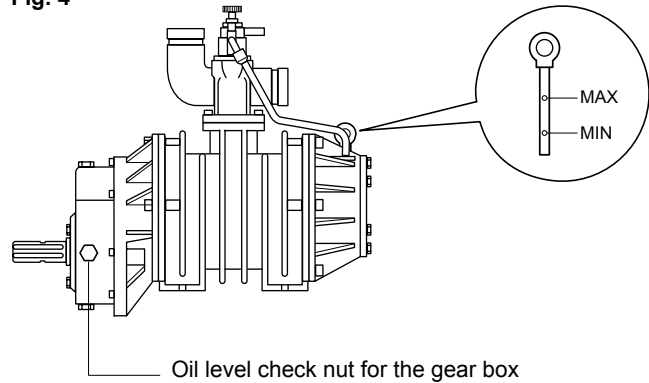
The application of a safety relief valve and a vacuum relief valve on the tank or along the suction line must be foreseen.

5. Starting-up instructions

5.1 Oil level checking

- Before starting-up the pump, check by the oil dip-stick the level of the oil (fig. 4). If refill is needed only the recommended oils must be used (see par. 2). Also the oil level in the gear box must be checked and it must reach the oil level check-nut.

Fig. 4



5.2 Lubrication checking

- When the pump is running, check the correct flow of the oil through the sight glasses of the drip oilers (oil drops must flow regularly). In case of oil adjustment, the flow will increase by turning the

adjusting pin on the drip oiler counterclockwise and will decrease by turning it clockwise). For oil consumption see paragraph 2.

5.3 Vacuum / Pressure changeover valve

- Rotating the handle of the 4 way valve (pos. 1-2 - See following figure) the pump changes over from vacuum to pressure (or viceversa).



As the pump can be connected to the vacuum tank with both the front (drive side) connection or the rear (oil tank side) connection in order to avoid mistakes see the following table "Vacuum-Pressure"

| Manifold | Drive | Handle pos. | Pump function | Connection to the tank |
|----------|---------------------------|-------------|---------------|------------------------|
| Standard | Direct drive Left | 1 | Pressure | |
| | Gear box Right | 2 | Vacuum | |
| | Direct drive Right | 1 | Vacuum | |
| | Gear box Left | 2 | Pressure | |
| Mixer | Direct drive Left | 1 | Vacuum | |
| | Gear box Right | 2 | Pressure | |
| | Direct drive Right | 1 | Pressure | |
| | Gear box Left | 2 | Vacuum | |

- JUROP pumps are normally assembled to be connected to the tank by the front connection (see fig. 2-3 page 8).

- **Left** hand drive means counterclockwise rotation and **Right** hand drive means clockwise rotation, looking at the pump from the shaft side.



In case the pump is connected to the tank with the rear connection (oil tank side) the functions "Vacuum - Pressure" will be reversed.



Be aware not to place the handle in neutral position (half way between the two end positions) otherwise the pump will be by-passed (actually runs idle)

6. Maintenance

6.1 Ordinary maintenance

- a) Re-fill periodically the lubrication oil tank.
- b) Change at least once a year the oil in the reduction-box and/or gear-box (see chart at point 2).
- c) Clean the sight-glasses of the drip-oilers.
- d) Check that the drive protections are properly fixed.
- e) On direct-drive models grease the front ball-bearing (see pos. 1 fig. 6-7-8).

6.2 Extraordinary maintenance

Changing of the sliding-vanes:

- a. Remove the front flange as shown in fig. 6-7 and 8.
- b. Lubricate the new vanes and insert them after removal of the old ones.
- c. Replace all the gaskets and seals (ask for the suitable "Gasket Kit").

DISASSEMBLY OF PUMPS

Fig. 6-PN 45÷106

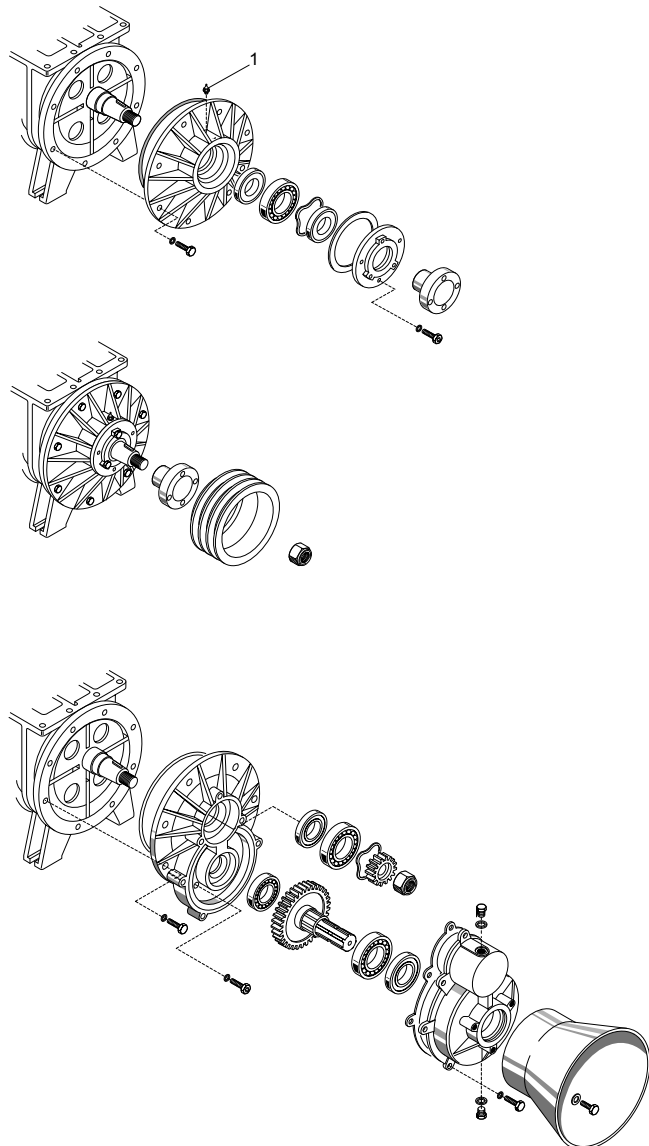
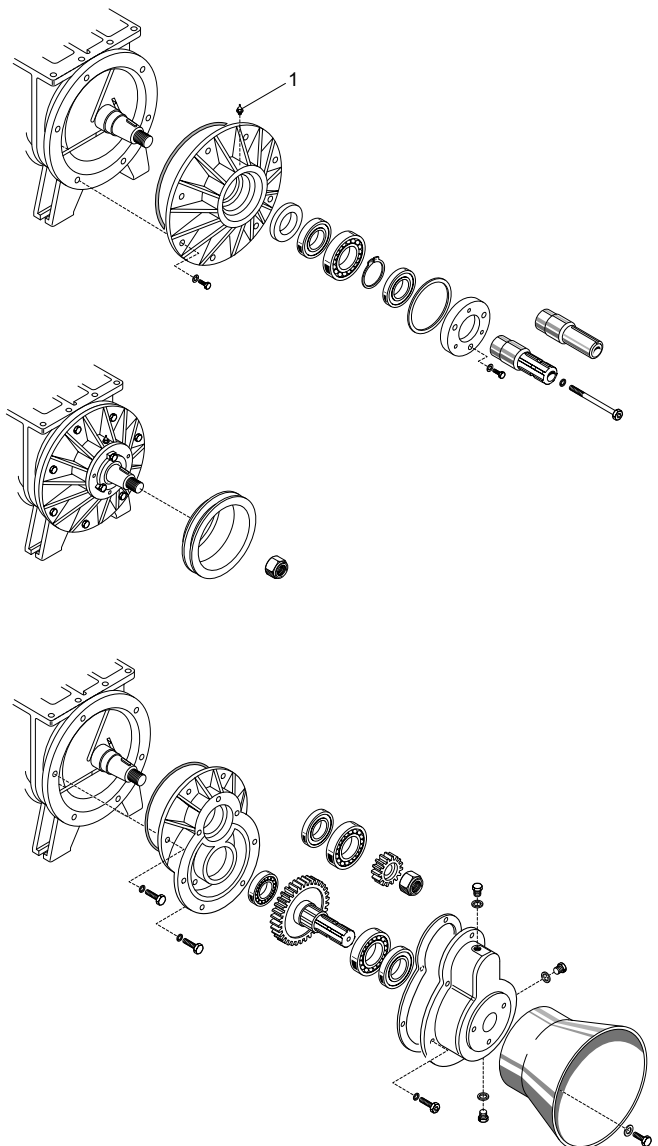


Fig. 7-PN 23÷33



6.3 Trouble-shooting

Troubles

| A - Overheating of the pump | |
|------------------------------------|--|
| CAUSE | CORRECTION |
| - Faulty lubrication | - Check the lubrication |
| - Oil missing | - Re-fill the tank |
| - Revs. to high | - Reduce revs. |
| - Operation-time to long | - Stop the pump for a while and let it cool down or operate at lower vacuum rate |

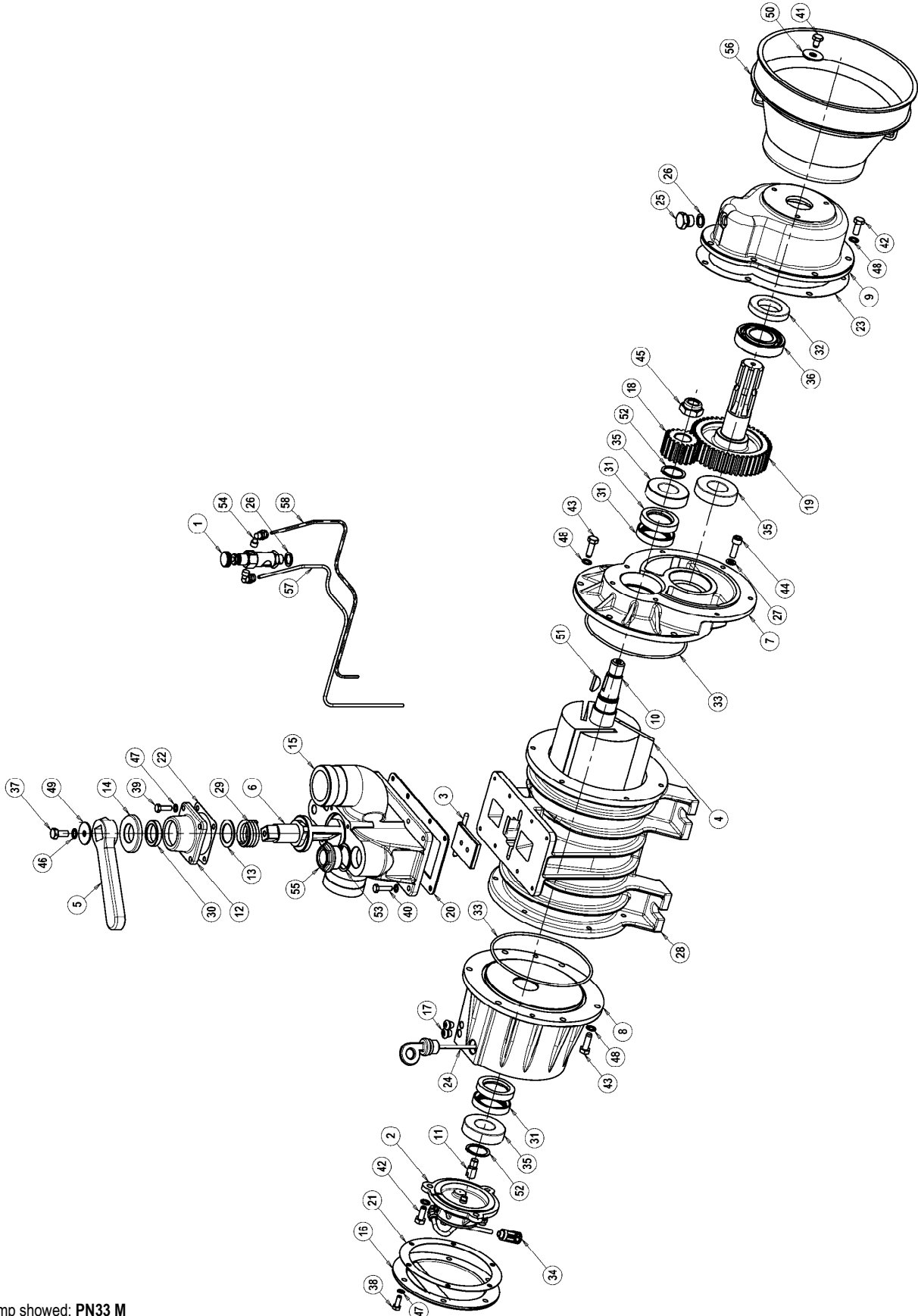
| B - Pump consumes too much oil | |
|---------------------------------------|---------------------------|
| CAUSE | CORRECTION |
| - Drip-oiler/s badly adjusted | - Adjustment as described |
| - Oiler's pin not sealing | - Clean the related seat |

| C - The pump is blocked | |
|---|---|
| CAUSE | CORRECTION |
| - Broken vanes due to suction of foreign objects or bad lubrication | - Dismount the pump and replace damaged parts. Check primary shut-off and lubrication system. |
| - Frozen pump | - Unfreeze the vacuum pump |
| - Damaged drive system | - Check and replace damaged parts |
| - Flange bolts to tight | - Loosen the bolts |

D - Little or no vacuum or pressure in the tank

| CAUSE | CORRECTION |
|--|--|
| - Change-over lever in neutral position | - Place lever in right position as shown at point 5-3. |
| - Worn sliding-vanes | - Replace the vanes |
| - Loose check-valve | - Replace the valve |
| - Worn sealing rings | - Replace the rings |
| - Blocked vacuum pump | - See previous instructions |
| - Leaking of the gate-valves on the tank | - Tighten the valves |
| - Leaking of the seals | - Repair or replace the seals |
| - Primary shut-off blocked | - Dismount and clean the parts |
| - Clogged connecting pipeline | - Clean the steel pipelines or replace the rubber ones |

PN 23-33 M

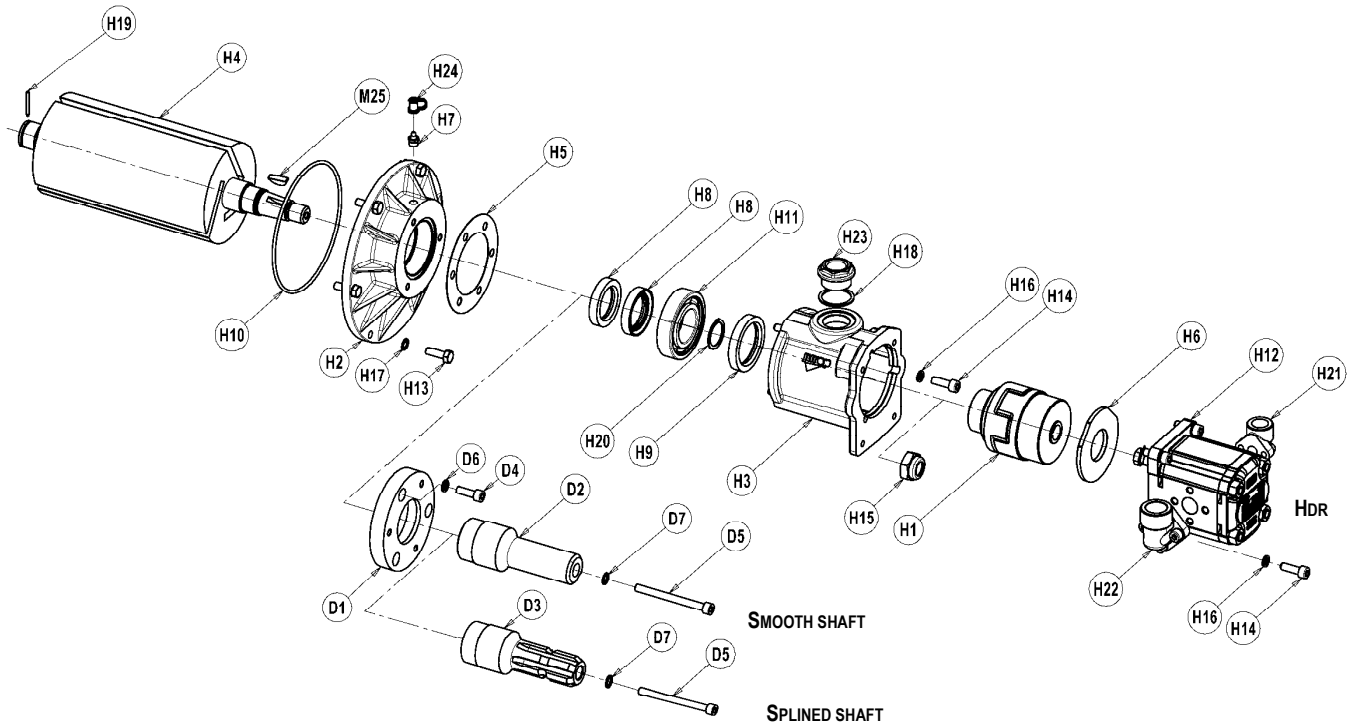


Pump showed: **PN33 M**

PN23-33 M

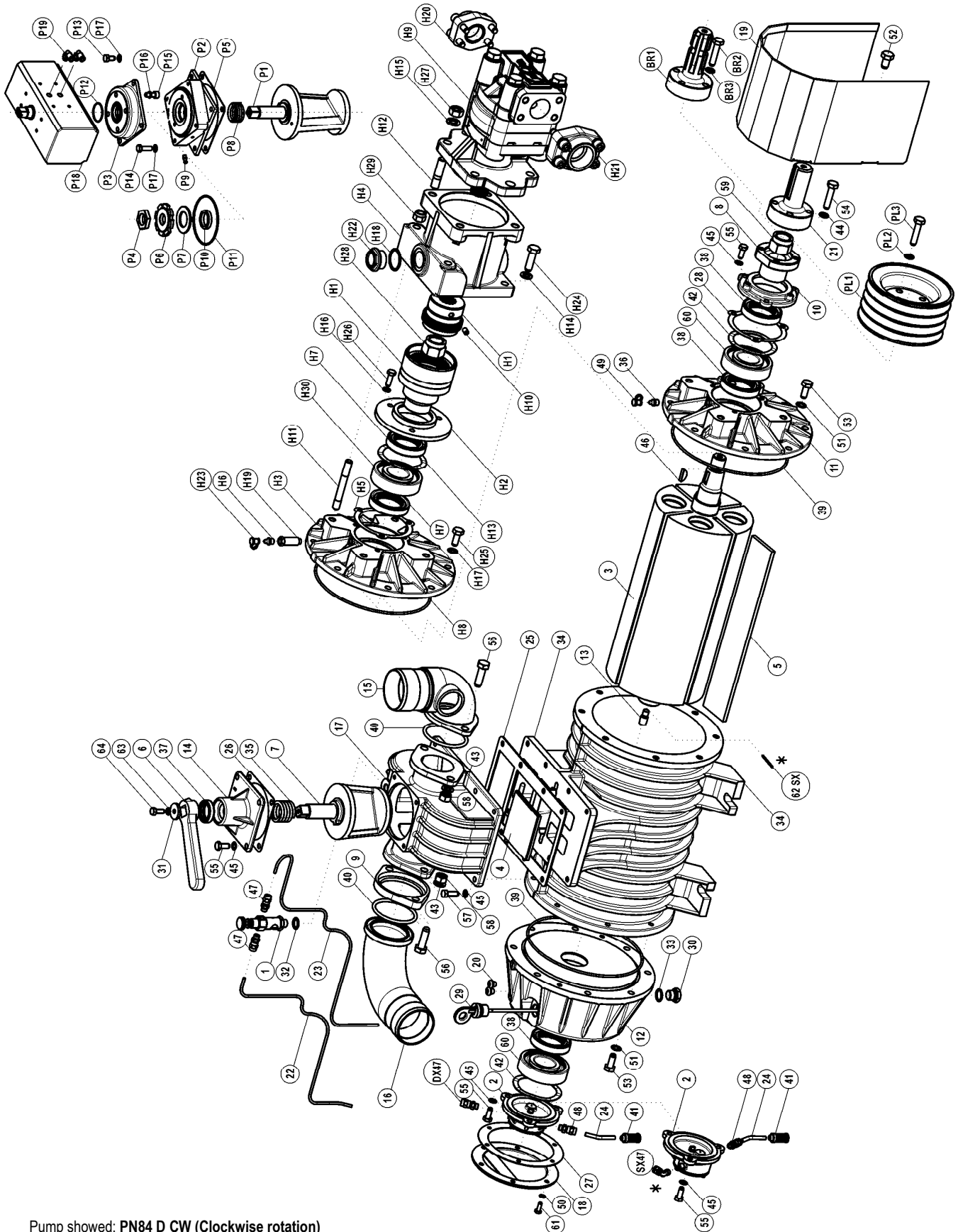
| Pos. | Code | Description | Q.ty | Pos. | Code | Description | Q.ty |
|------|------------|---------------------|------|------|------------|----------------------|------|
| 1 | 1401200400 | OILER | 1 | 29 | 1691000200 | SPRING | 1 |
| 2 | 1407202400 | OIL PUMP SX PN23-33 | 1 | 30 | 4022200005 | SEAL RING 37X27X7 | 1 |
| 3 | 1593600100 | BUTTERFLY VALVE | 1 | 31 | 4022200025 | SEAL RING 55X35X10 | 4 |
| 4 | 1601600000 | VANE PN23 BK | 3 | 32 | 4022200032 | SEAL RING 60X35X10 | 1 |
| | 1601600100 | VANE PN23 | 3 | 33 | 4022200230 | SEAL RING OR 4575 | 2 |
| | 1601600200 | VANE PN33 BK | 3 | 34 | 4022300001 | FILTER NYLON | 1 |
| | 1601600300 | VANE PN33 | 3 | 35 | 4023100110 | BEARING 6206 | 3 |
| 5 | 1605500000 | HANDLE | 1 | 36 | 4023100020 | BEARING 6207 | 1 |
| 6 | 1608501300 | SWITCH PN23-33 | 1 | 37 | 4026100408 | SCREW M8X20 | 1 |
| 7 | 1610503900 | FLANGE PN23-33 | 1 | 38 | 4026102704 | SCREW M6X16 ZINC. | 6 |
| 8 | 1612501200 | OIL BOX | 1 | 39 | 4026102706 | SCREW M6X20 ZINC. | 4 |
| 9 | 1612501300 | BOX PN23-33 | 1 | 40 | 4026102707 | SCREW M6X25 ZINC. | 8 |
| 10 | 1621501600 | ROTOR PN23 DX | 1 | 41 | 4026102802 | SCREW M8X12 ZINC. | 3 |
| | 1621501700 | ROTOR PN33 DX | 1 | 42 | 4026102806 | SCREW M8X20 ZINC. | 10 |
| 11 | 1622002600 | PIN | 1 | 43 | 4026102807 | SCREW M8X25 ZINC. | 10 |
| 12 | 1623500500 | CAP NUT PN23-33 | 1 | 44 | 4026121407 | SCREW M8X25 ZINC. | 2 |
| 13 | 162409YKB0 | DISTANCERING | 1 | 45 | 4026305612 | SELFBLOCKING M20X1,5 | 1 |
| 14 | 1624202300 | DISTANCERING | 1 | 46 | 4026350909 | TOOTH WASHER M8 | 1 |
| 15 | 1627501600 | MANIFOLD PN23-33 | 1 | 47 | 4026351504 | TOOTH WASHER M6 | 18 |
| 16 | 1640100000 | COVER | 1 | 48 | 4026351505 | TOOTH WASHER M8 | 20 |
| 17 | 1642600000 | GASKET | 2 | 49 | 4026356004 | FLAT WASHER 8X32 | 1 |
| 18 | 1651000200 | PINION PN23-33 | 1 | 50 | 4026356010 | FLAT WASHER 10X30 | 3 |
| 19 | 1651000300 | WHELL PN23-33 | 1 | 51 | 4026500018 | TAB. 6X10 | 1 |
| 20 | 1680600400 | GASKET | 1 | 52 | 4026510025 | SEAL RING SEEGER | 2 |
| 21 | 1680700300 | GASKET | 1 | 53 | 4026702706 | WASHER 1" | 1 |
| 22 | 1680700800 | GASKET | 1 | 54 | 4026706000 | FITTING 4X1/8 | 2 |
| 23 | 1680700900 | GASKET | 1 | 55 | 4026904003 | PLUG 1" | 1 |
| 24 | 1683600100 | PLUG FOR OIL LEVEL | 1 | 56 | 4029602806 | GASKET | 1 |
| 25 | 1684000000 | RELIEF PLUG 3/8 | 2 | 57 | 1663014500 | MULTIPLIER HOSE PN23 | 1 |
| 26 | 1685100000 | FLAT WASHER | 4 | | 1663014600 | MULTIPLIER HOSE PN33 | 1 |
| 27 | 1685100800 | FLAT WASHER | 2 | 58 | 1663014300 | MULTIPLIER HOSE PN23 | 1 |
| 28 | 1687502600 | PUMP HOUSING PN23 | 1 | | 1663014400 | MULTIPLIER HOSE PN33 | 1 |
| | 1687502700 | PUMP HOUSING PN33 | 1 | | | | |

PN 23-33 D - HDR



PN23-33 D - HDR

| Pos. | Code | Description | Q.ty | Pos. | Code | Description | Q.ty |
|--------------------------------|------------|--------------------|------|-------------------------------------|------------|----------------------|------|
| PN23-33 HYDRAULIC DRIVE | | | | | | | |
| H1 | 1470101600 | JOINT HDR | 1 | H15 | 4026305612 | SELFBLOCKING M20X1,5 | 1 |
| H2 | 1610504000 | FLANGE PN23-33 | 1 | H16 | 4026350505 | GROWER WASHER M8 | 7 |
| H3 | 1612504900 | BOX HDR PN23-33 | 1 | H17 | 4026351505 | TOOTH WASHER M8 | 6 |
| H4 | 1621502600 | ROTOR PN23 SX | 1 | H18 | 4026359001 | WASHER | 1 |
| | 1621501600 | ROTOR PN23 DX | 1 | H19 | 4026414614 | PLUG 3X30 | 1 |
| | 1621502700 | ROTOR PN33 SX | 1 | H20 | 4026510025 | SEAL RING SEEGER | 1 |
| | 1621501700 | ROTOR PN33 DX | 1 | H21 | 4026710013 | FITTING 1/2" | 1 |
| H5 | 1680701000 | GASKET | 1 | H22 | 4026710015 | FITTING 3/4" | 1 |
| H6 | 1684002100 | SEAL RING PN23-33 | 1 | H23 | 4026904003 | RELIEF PLUG 1" | 1 |
| H7 | 4022100010 | GREASE | 1 | H24 | 4029602700 | CAP NUT | 1 |
| H8 | 4022200025 | SEAL RING 55X35X10 | 2 | H25 | 4026500018 | TAB. 6X10 | 1 |
| | 4022200037 | SEAL RING 65X48X10 | 1 | SMOOTH SHAFT - SPLINED SHAFT | | | |
| H9 | 4022200230 | SEAL RING OR 4575 | 1 | D1 | 1610500900 | FLANGE | 1 |
| H10 | 4022200230 | SEAL RING OR 4575 | 1 | D2 | 1650000500 | SMOOTH SHAFT | 1 |
| H11 | 4023100110 | BEARING 6206 | 1 | D3 | 1650000400 | SPLINED SHAFT | 1 |
| H12 | 4024107206 | MOTOR HDR SX | 1 | D4 | 4026121407 | SCREW M8X25 | 3 |
| | 4024107206 | MOTOR HDR DX | 1 | D5 | 4026121413 | SCREW M8X90 | 1 |
| H13 | 4026102807 | SCREW M6X25 ZINC. | 6 | D6 | 4026350505 | GROWER WASHER M8 | 3 |
| H14 | 4026121407 | SCREW M8X25 ZINC. | 7 | D7 | 4026351505 | WASHER M8 | 1 |

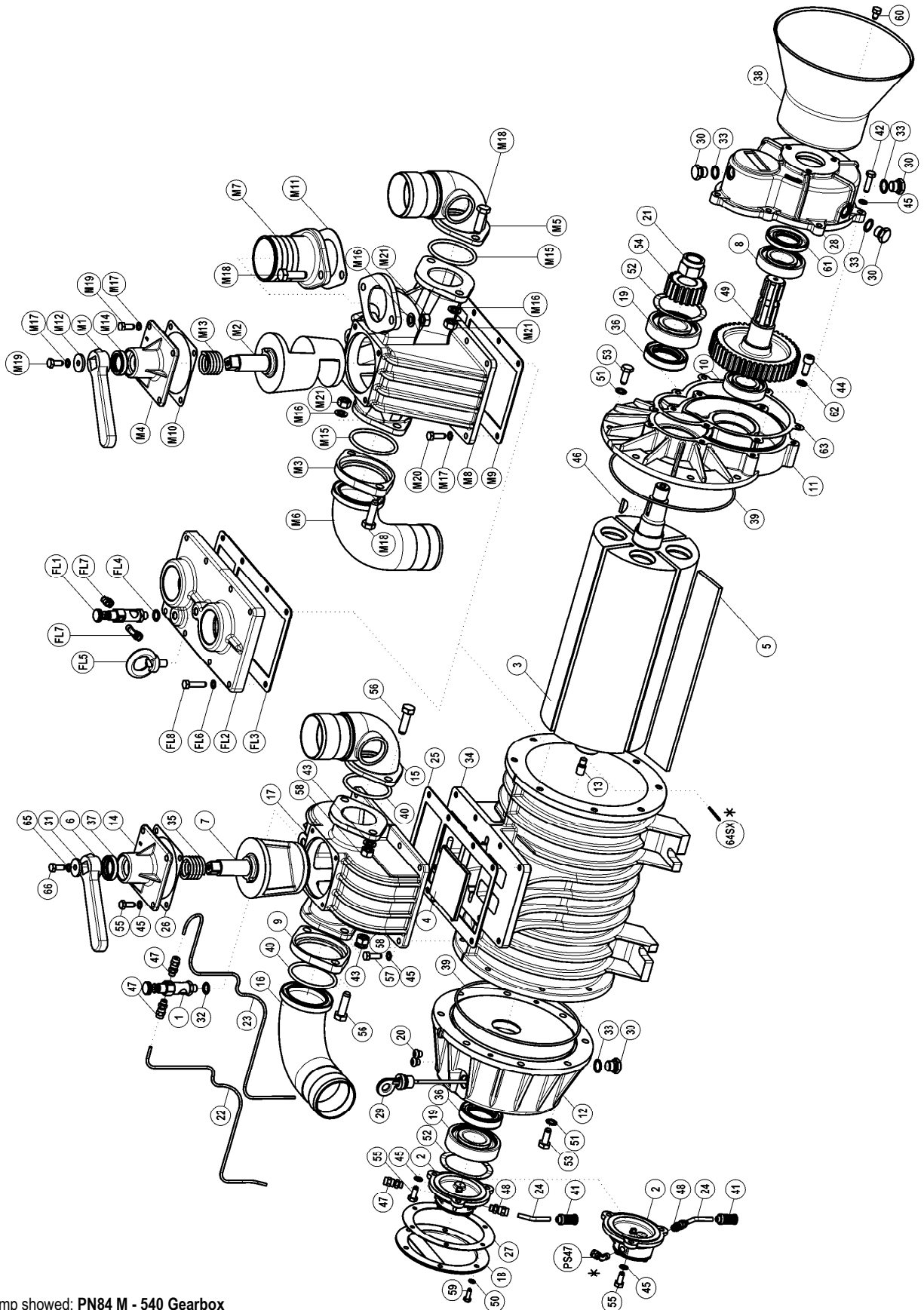
PN 45-58-84 D

 Pump showed: **PN84 D CW (Clockwise rotation)**



PN45-58-84 D

| Pos. | Code | Description | Q.ty | Pos. | Code | Description | Q.ty |
|---|------------|--|------|-----------------------------------|-------------|-----------------------------|------|
| PN45-58-84 DIRECT DRIVE - SMOOTH SHAFT | | | | | | | |
| 1 | 1401200400 | DRIP OILER – 2 CONNECTIONS | 1 | 51 | 4026351506 | WASHER M10 | 16 |
| 2 | 1407200500 | GEAR OIL PUMP DX | 1 | 52 | 4026103000 | SCREW M12X20 | 4 |
| 2A | 1407202100 | GEAR OIL PUMP SX | 1 | 53 | 4026102907 | SCREW M10X25 | 16 |
| 3 | 1521500300 | ROTOR PN 58 | 1 | 54 | 4026102911 | SCREW M10X45 | 4 |
| | 1521500200 | ROTOR PN 45 | 1 | 55 | 4026102806 | SCREW M8X20 | 10 |
| | 1521500400 | ROTOR PN 84 | 1 | 56 | 4026103004 | SCREW M12X40 | 4 |
| 4 | 1593600000 | FLAPPER VALVE | 1 | 57 | 4026102807 | SCREW M8X2 | 8 |
| 5 | 1601600600 | VANE PN 58 BK | 3 | 58 | 4026308007 | NUT M12 | 4 |
| | 1601600400 | VANE PN 45 BK | 4 | 59 | 4026305614 | SELF LOCKING NUT M24X2 | 1 |
| | 1601600800 | VANE PN 84 BK | 4 | 60 | 4023100040 | BEARING 40X90X23 6308 | 2 |
| 6 | 1605500000 | VALVE HANDLE | 1 | 61 | 4026102806 | SCREW M6X16 | 7 |
| 7 | 1608500000 | CONVEYOR | 1 | 62SX | 4026414617 | PLUG 3X40 6873 | 1 |
| 8 | 1610006600 | FLANGE FOR DIRECT DRIVE | 1 | 63 | 4026308005 | HEXAGONAL NUT M8 | 1 |
| 9 | 1610100000 | OUTLET PORT FLANGE | 1 | 64 | 4026135414 | STUD SCREW M8X45 | 1 |
| 10 | 1610500400 | END CAP | 1 | SPLINED SHAFT | | | |
| 11 | 1610500500 | DIRECT DRIVE END PLATE | 1 | BR1 | 1650004700 | SPLINED SHAFT 1" 3/8 | 1 |
| 12 | 1612500300 | OIL TANK | 1 | BR2 | 4026102911 | SCREW M10X45 | 4 |
| 13 | 1622002600 | OIL PUMP DRIVE | 1 | BR3 | 4026350708 | GROWER WASHER M10 | 4 |
| 14 | 1623100000 | END CAP | 1 | PULLEY D. 150 | | | |
| 15 | 1627100100 | SUCTION MANIFOLD D.60 | 1 | PL1 | 1653501000 | PULLEY SPB 150X4 | 1 |
| 15 | 1627100200 | SUCTION MANIFOLD D.76 | 1 | PL2 | 4026350708 | GROWER WASHER M10 | 4 |
| 16 | 1627100500 | EXHAUST MANIFOLD D.76 | 1 | PL3 | 4026102806 | SCREW M8X20 | 4 |
| 17 | 1627500000 | STANDARD MANIFOLD | 1 | PN45-58-84 HYDRAULIC DRIVE | | | |
| 18 | 1640101100 | OIL TANK COVER | 1 | H1 | 1470100400 | JOINT GA 100 | 1 |
| 19 | 1642003000 | CARDAN SHAFT PROTECTION | 1 | H2 | 1610005500 | HYD. DRIVE FLANGE | 1 |
| 20 | 1642600000 | OIL LINE RUBBER PROTECTION | 2 | H3 | 1610500500 | DIRECT DRIVE END PLATE | 1 |
| 21 | 1650004300 | SMOOTH FLANGED SHAFT | 1 | H4 | 1612501400 | HYD. DRIVE GEARBOX | 1 |
| 22 | 1663005500 | OIL LINE PN 45 – DIRECT DRIVE | 1 | H5 | 1680700400 | END CAP GASKET | 1 |
| | 1663005100 | OIL LINE PN 45 – GEARBOX | 1 | H6 | 4022100010 | GRESASER | 1 |
| | 1663005600 | OIL LINE PN 58 – DIRECT DRIVE | 1 | H7 | 4022200110 | SEAL RING 72X48X15 | 2 |
| | 1663005200 | OIL LINE PN 58 – GEARBOX | 1 | H8 | 4022200240 | O-RING OR 4825 | 1 |
| | 1663005700 | OIL LINE PN 84 – DIRECT DRIVE | 1 | H9 | 4024107009 | HYDRAULIC MOTOR | 1 |
| | 1663005300 | OIL LINE PN 84 – GEARBOX | 1 | H10 | 4026136005 | SCREW M8X12 | 1 |
| 23 | 1663011900 | OIL LINE TO LUBR. PUMP PN 45 – D.DRIVE | 1 | H11 | 4026171211 | STUD SCREW M12X80 | 2 |
| | 1663011800 | OIL LINE TO LUBR. PUMP PN 45 – G.BOX | 1 | H12 | 4026171304 | STUD SCREW M14X40 | 4 |
| | 1663012000 | OIL LINE TO LUBR. PUMP PN 58 – D.DRIVE | 1 | H13 | 4026300020 | COMPENSATION RING | 1 |
| | 1663010400 | OIL LINE TO LUBR. PUMP PN 58 – G.BOX | 1 | H14 | 4026350709 | GROWER WASHER M12 | 2 |
| | 1663012100 | OIL LINE TO LUBR. PUMP PN 84 – D.DRIVE | 1 | H15 | 4026350710 | GROWER WASHER M14 | 4 |
| | 1663010300 | OIL LINE TO LUBR. PUMP PN 84 – G.BOX | 1 | H16 | 4026351505 | WASHER M8 | 3 |
| 24 | 1663010500 | LUBR. PUMP SUCTION PIPE | 1 | H17 | 4026351506 | WASHER M10 | 8 |
| 25 | 1680600100 | VALVE HOUSING GASKET | 1 | H18 | 4026359001 | WASHER 40X33,5X1,5 | 1 |
| 26 | 1680700200 | VALVE STEAM COVER GASKET | 1 | H19 | 4026705001 | EXTENDED CONNECTION H 36 MM | 1 |
| 27 | 1680707500 | OIL TANK COVER GASKET | 1 | H20 | 4026711003 | DRIVE FLANGE AFS 104G 1"1/4 | 1 |
| 28 | 1680700400 | END CAP GASKET | 1 | H21 | 4026711004 | DRIVE FLANGE AFS 106G 1"1/2 | 1 |
| 29 | 1683600300 | 2000 MM OIL DIP STICK | 1 | H22 | 4026904003 | PLUG 1" | 1 |
| 29A | 1673004100 | DIPSTICK SLEEVE | 1 | H23 | 4029602700 | GREASERS PROTECTION CAP | 1 |
| 30 | 1684000000 | DRAIN PLUG 3/8 | 1 | H24 | 4026103004 | SCREW M12X40 | 2 |
| 31 | 1685002800 | WASHER FE 30X8,5 | 1 | H25 | 4026102907 | SCREW M10X25 | 8 |
| 32 | 1685100000 | WASHER 14X20X1,5 | 1 | H26 | 4026107110 | SCREW M8X25 | 3 |
| 33 | 1685100200 | WASHER 17X22X1,5 | 1 | H27 | 4026308008 | NUT M14 | 4 |
| 34 | 1687500300 | PUMP HOUSING PN58 | 1 | H28 | 4026305614 | SELF LOCKING NUT M24X2 | 1 |
| | 1687500200 | PUMP HOUSING PN45 | 1 | H29 | 4026305508 | SELF LOCKING NUT M12 | 2 |
| | 1687500400 | PUMP HOUSING PN84 | 1 | H30 | 4023100040 | BEARING 40X90X23 6308 | 1 |
| 35 | 1691000000 | VALVE SPRING | 1 | PNEUMATIC 4-WAY VALVE | | | |
| 36 | 4022100010 | GRESASER | 1 | P1 | 1608557Z7B0 | PNEUMATIC ACTUATOR COCK | 1 |
| 37 | 4022200030 | SEAL RING 41X27X10 GP NBR | 1 | P2 | 161258B4B0 | PNEUMATIC ACTUATOR SUPPORT | 1 |
| 37A | 1624202300 | COCK REGULATING SPACER | 1 | P3 | 1640580QB0 | PNEUMATIC ACTUATOR COVER | 1 |
| 38 | 4022200110 | SEAL RING 72X48X15 | 3 | P4 | 167007ZAB0 | PNEUMATIC ACTUATOR NUT | 1 |
| 39 | 4022200240 | O-RING OR 4825 | 2 | P5 | 1680700200 | COVER GASKET | 1 |
| 40 | 4022200250 | O-RING OR 6287 | 2 | P6 | 168409PQB0 | COCK REGULATION FERRULE | 1 |
| 41 | 4022300001 | NYLON FILTER D.6 | 1 | P7 | 168529TFB0 | COCK REGULATION SPACER | 1 |
| 42 | 4026300020 | COMPENSATION RING | 2 | P8 | 1691000200 | COCK SPRING | 1 |
| 43 | 4026350609 | GROWER WASHER M12 | 4 | P9 | 4022100100 | SPHERICAL GREASER M6X1 | 1 |
| 44 | 4026350708 | GROWER WASHER M10 | 4 | P10 | 4022200005 | SEAL 37X27X7 | 1 |
| 45 | 4026351505 | WASHER M8 | 18 | P11 | 4022200330 | OR 3375 | 1 |
| 46 | 4026500018 | TAB 6X10 | 1 | P12 | 4022200331 | OR 2137 | 1 |
| SX47 | 4026706000 | UNIV. CONNECTION 90 4X1/8 | 1 | P13 | 4026102804 | SCREWTE M8X16 | 4 |
| DX47 | 4026702000 | UNIV. CONNECTION DIR. 4X1/8 | 1 | P14 | 4026102807 | SCREWTE M8X25 | 4 |
| 47 | 4026702000 | UNIV. CONNECTION DIR. 4X1/8 | 3 | P15 | 4026121405 | SCREWTEI M8X20 | 4 |
| 48 | 4026702004 | UNIV. CONNECTION DIR. 6X1/8 | 1 | P16 | 4026350505 | WASHER GROWERM8 | 4 |
| 49 | 4029602700 | GREASERS PROTECTION CAP | 1 | P17 | 4026351505 | WASHER M8 | 8 |
| 50 | 4026351505 | WASHER M8 | 7 | P18 | 4027100405 | PNEUMATIC ACTUATOR | 1 |
| | | | | P19 | 4027421206 | CONNECTION R15 6XG1/8 | 2 |

PN 45-58-84 M



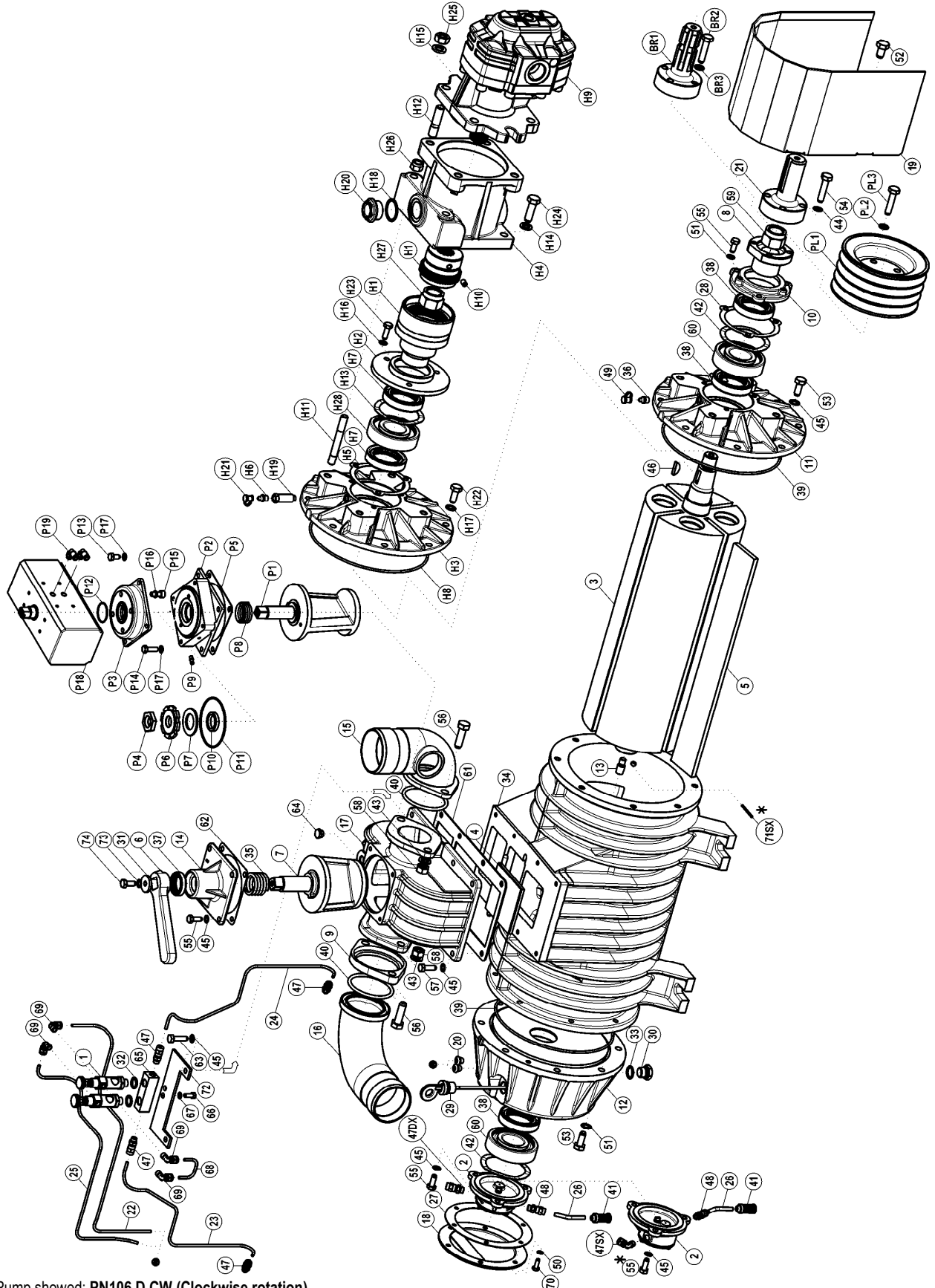
Pump showed: **PN84 M - 540 Gearbox**



PN45-58-84 M

| Pos. | Code | Description | Q.ty | Pos. | Code | Description | Q.ty |
|------------------------|------------|--------------------------------------|------|-------------------------|------------|-----------------------------------|------|
| 540 RPM GEARBOX | | | | 42 | 4026102908 | SCREW M8X30 | 7 |
| 1 | 1401200400 | DRIP OILER – 2 CONNECTIONS | 1 | 43 | 4026350709 | GROWER WASHER 12 | 4 |
| 2 | 1407200500 | GEAR OIL PUMP DX | 1 | 44 | 4026121808 | SCREW TCEI M10X25 | 2 |
| 2A | 1407202100 | GEAR OIL PUMP SX | 1 | 45 | 4026351505 | WASHER M8 | 22 |
| 3 | 1521500300 | ROTOR PN 58 | 1 | 46 | 4026500018 | TAB 6X10 | 1 |
| | 1521500200 | ROTOR PN 45 | 1 | PS47 | 4026706000 | UNIV. CONNECTION 90 4X1/8 | 1 |
| | 1521500400 | ROTOR PN 84 | 1 | 47 | 4026702000 | UNIV. CONNECTION DIR. 4X1/8 | 1 |
| 4 | 1593600000 | FLAPPER VALVE | 1 | | 4026702000 | UNIV. CONNECTION DIR. 4X1/8 | 3 |
| 5 | 1601600600 | VANE PN 58 BK | 3 | 48 | 4026702004 | UNIV. CONNECTION DIR. 6X1/8 | 1 |
| | 1601600400 | VANE PN 45 BK | 4 | 49 | 1651000000 | DRIVE GEAR Z48 | 1 |
| | 1601600800 | VANE PN 84 BK | 4 | 50 | 4026351505 | WASHER M8 | 7 |
| 6 | 1605500000 | VALVE HANDLE | 1 | 51 | 4026351506 | WASHER M10 | 14 |
| 7 | 1608500000 | CONVEYOR | 1 | 52 | 4026300020 | COMPENSATION RING | 2 |
| 8 | 4023100030 | BEARING 40X80X18 6208 | 1 | 53 | 4026102907 | SCREW M10X25 | 14 |
| 9 | 1610100000 | OUTLET PORT FLANGE | 1 | 54 | 1651000100 | PINION GEAR Z19 | 1 |
| 10 | 4023100020 | BEARING 35X72X17 6207 | 1 | 55 | 4026102806 | SCREW M8X20 | 7 |
| 11 | 1610500000 | G.BOX DRIVE END PLATE | 1 | 56 | 4026103004 | SCREW M12X40 | 4 |
| 12 | 1612500300 | OIL TANK | 1 | 57 | 4026102807 | SCREW M8X25 | 8 |
| 13 | 1622002600 | OIL PUMP DRIVE | 1 | 58 | 4026308007 | NUT M12 | 4 |
| 14 | 1623100000 | END CAP | 1 | 59 | 4026102806 | SCREW M8X20 | 7 |
| 15 | 1627100100 | SUCTION MANIFOLD D.60 | 1 | 60 | 4026102802 | SCREW M8X12 | 3 |
| 15 | 1627100200 | SUCTION MANIFOLD D.76 | 1 | 61 | 4022200040 | SEAL RING 72X40X10 | 1 |
| 16 | 1627100500 | EXHAUST MANIFOLD D.76 | 1 | 62 | 1685100100 | WASHER 10X16X1,5 | 2 |
| 17 | 1627500000 | STANDARD MANIFOLD | 1 | 63 | 1680700000 | END COVER GASKET | 1 |
| 18 | 1640101100 | OIL TANK COVER | 1 | 64SX | 4026414617 | PLUG 3X40 6873 | 1 |
| 19 | 4023100040 | BEARING 40X90X23 6308 | 2 | 65 | 4026308005 | HEXAGONAL NUT M8 | 1 |
| 20 | 1642600000 | OIL LINE RUBBER PROTECTION | 2 | 66 | 4026135414 | STUD SCREW M8X45 | 1 |
| 21 | 4026305614 | SELF LOCKING NUT M24X2 | 1 | FLANGED MANIFOLD | | | |
| 22 | 1663014700 | OIL LINE OUTLET SIDE PN45 M MIXER | 1 | FL1 | 1401200400 | DRIP OILER – 2 CONNECTIONS | 1 |
| | 1663028500 | FL OIL OUTLET PIPE | 1 | FL2 | 1610506400 | FLANGE FL | 1 |
| | 1663005100 | OIL LINE PN 45 – GEARBOX | 1 | FL3 | 1680600100 | VALVE HOUSING GASKET | 1 |
| | 1663015100 | OIL LINE OUTLET SIDE PN58 M MIXER | 1 | FL4 | 1685100000 | WASHER 14X20X1,5 | 1 |
| | 1663022400 | OIL LINE OUTLET SIDE PN84 FL | 1 | FL5 | 4026190001 | THREADED RING M12 | 1 |
| | 1663005200 | OIL LINE PN 58 – GEARBOX | 1 | FL6 | 4026351505 | WASHER M8 | 8 |
| | 1663015500 | OIL LINE OUTLET SIDE PN84 M MIXER | 1 | FL7 | 4026706000 | UNIV. CONNECTION 90 4X1/8 1020 | 2 |
| | 1663022400 | OIL LINE OUTLET SIDE PN84 FL | 1 | FL8 | 4026102801 | SCREW M8X35 | 8 |
| | 1663005300 | OIL LINE PN 84 – GEARBOX | 1 | FL9 | 1663022500 | OIL LINE INLET SIDE PN84 FL | 1 |
| 23 | 1663014800 | OIL LINE INLET SIDE PN45 M MIXER | 1 | FL10 | 1663022400 | OIL LINE OUTLET SIDE PN84 FL | 1 |
| | 1663028600 | FL OIL INLET PIPE | 1 | MIXER MANIFOLD | | | |
| | 1663011800 | OIL LINE TO LUBR. PUMP PN 45 – G.BOX | 1 | M1 | 1605500000 | VALVE HANDLE | 1 |
| | 1663015200 | OIL LINE INLET SIDE PN58 M MIXER | 1 | M2 | 1608500100 | MIXER MANIFOLD | 1 |
| | 1663022500 | OIL LINE INLET SIDE PN58 FL | 1 | M3 | 1610100000 | OUTLET PORT FLANGE | 1 |
| | 1663010400 | OIL LINE TO LUBR. PUMP PN 58 – G.BOX | 1 | M4 | 1623100000 | END CAP | 1 |
| | 1663015600 | OIL LINE INLET SIDE PN84 M MIXER | 1 | M5 | 1627100200 | SUCTION MANIFOLD D.76 | 1 |
| | 1663022500 | OIL LINE INLET SIDE PN84 FL | 1 | M6 | 1627100500 | EXHAUST MANIFOLD D.76 | 1 |
| | 1663010300 | OIL LINE TO LUBR. PUMP PN 84 – G.BOX | 1 | M7 | 1627100700 | SUCTION MANIFOLD D.60 - MIXER | 1 |
| 24 | 1663010500 | LUBR. PUMP SUCTION PIPE | 1 | M7 | 1627100900 | SUCTION MANIFOLD D.80 - MIXER | 1 |
| 25 | 1680600100 | VALVE HOUSING GASKET | 1 | M8 | 1627500100 | MIXER MANIFOLD | 1 |
| 26 | 1680700200 | VALVE STEM COVER GASKET | 1 | M9 | 1680600100 | VALVE HOUSING GASKET | 1 |
| 27 | 1680707500 | OIL TANK COVER GASKET | 1 | M10 | 1680700200 | VALVE STEM COVER GASKET | 1 |
| 28 | 1612503100 | GEARBOX | 1 | M11 | 1680700600 | MIXER CONNECTION GASKET | 1 |
| 29 | 1683600300 | 200 MM OIL DIP STICK | 1 | M12 | 1685002800 | WASHER FE 30X8,5 | 1 |
| 29A | 1673004100 | DIPSTICK SLEEVE | 1 | M13 | 1691000000 | VALVE SPRING | 1 |
| 30 | 1684000000 | DRAIN PLUG 3/8 | 4 | M14 | 4022200030 | SEAL RING 41X27X10 | 1 |
| 31 | 1685002800 | WASHER FE 30X8,5 | 1 | M15 | 4022200250 | O-RING OR 6287 | 2 |
| 32 | 1685100000 | WASHER 14X20X1,5 | 1 | M16 | 4026350709 | GROWER WASHER 12 | 6 |
| 33 | 1685100200 | WASHER 17X22X1,5 | 4 | M17 | 4026351505 | WASHER M8 | 13 |
| 34 | 1687500300 | PUMP HOUSING PN58 | 1 | M18 | 4026103004 | SCREW M12X40 | 6 |
| | 1687500200 | PUMP HOUSING PN45 | 1 | M19 | 4026102806 | SCREW M8X208 | 5 |
| | 1687500400 | PUMP HOUSING PN84 | 1 | M20 | 4026102807 | SCREW M8X25 | 8 |
| 35 | 1691000000 | VALVE SPRING | 1 | M21 | 4026308007 | NUT M12 | 6 |
| 36 | 4022200110 | SEAL RING 72X48X15 | 2 | 22 | 1663014700 | OIL LINE OUTLET SIDE PN45 M MIXER | 1 |
| 37 | 4022200030 | SEAL RING 41X27X10 GP NBR | 1 | 22 | 1663015100 | OIL LINE OUTLET SIDE PN58 M MIXER | 1 |
| 37A | 1624202300 | COCK REGULATING SPACER | 1 | 22 | 1663015500 | OIL LINE OUTLET SIDE PN84 M MIXER | 1 |
| 38 | 4029602806 | CARDAN SHAFT PROTECTION | 1 | 23 | 1663014800 | OIL LINE INLET SIDE PN45 M MIXER | 1 |
| 39 | 4022200240 | O-RING 4825 | 2 | 23 | 1663015200 | OIL LINE INLET SIDE PN58 M MIXER | 1 |
| 40 | 4022200250 | O-RING 6287 | 2 | 23 | 1663015600 | OIL LINE INLET SIDE PN84 M MIXER | 1 |
| 41 | 4022300001 | NYLON FILTER D.6 | 1 | | | | |

PN 106 D



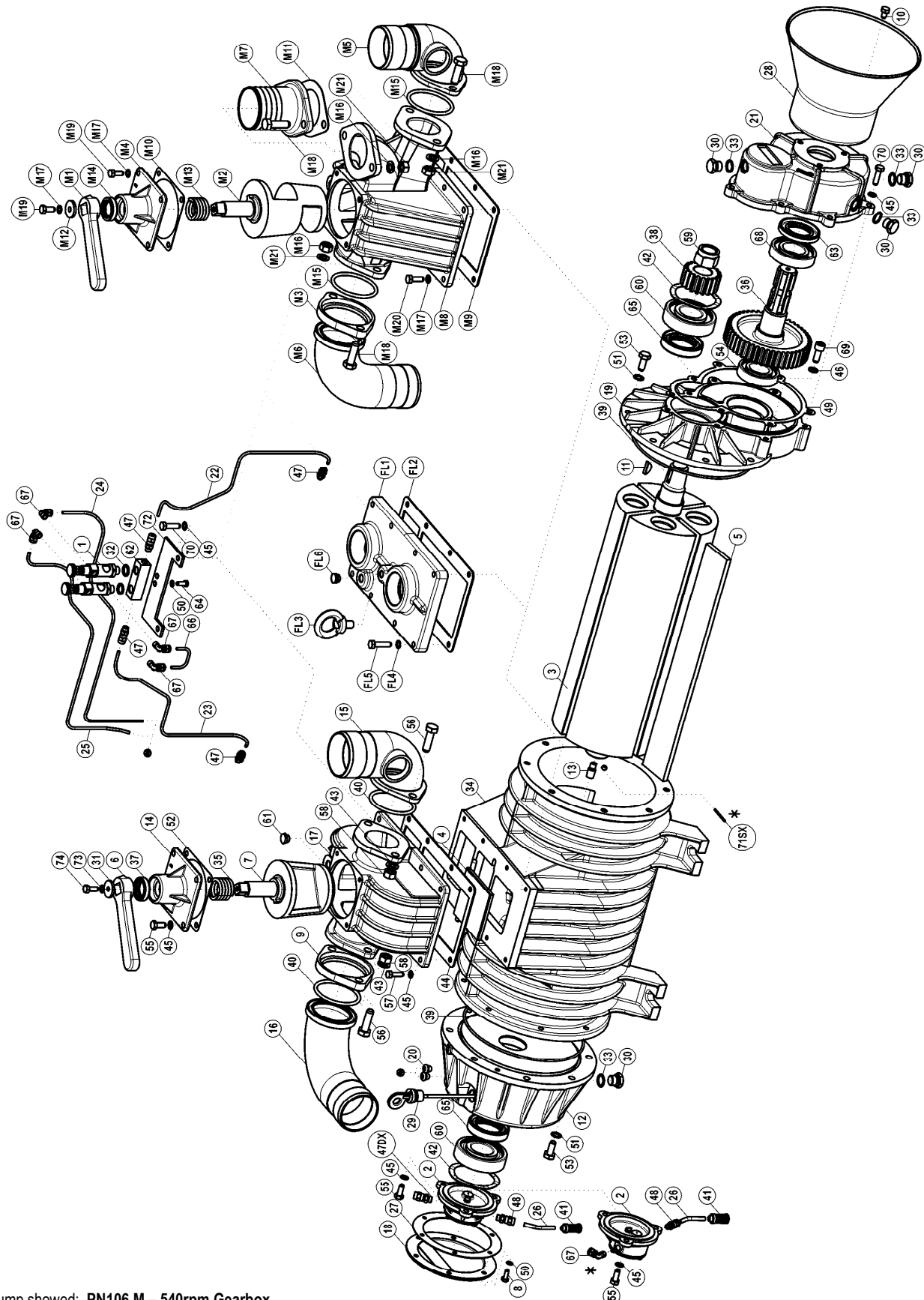
Pump showed: **PN106 D CW (Clockwise rotation)**



PN106 D

| Pos. | Code | Description | Q.ty | Pos. | Code | Description | Q.ty |
|--|------------|-----------------------------------|------|------------------------------|-------------|--------------------------------|------|
| PN106 DIRECT DRIVE - SMOOTH SHAFT | | | | | | | |
| 1 | 1401200400 | DRIP OILER – 2 CONNECTIONS | 2 | 62 | 1680700200 | VALVE STEM COVER GASKET | 1 |
| 2 | 1407200500 | GEAR OIL PUMP DX | 1 | 63 | 4026102808 | SCREW M8X30 | 2 |
| 2A | 1407202100 | GEAR OIL PUMP SX | 1 | 64 | 4026905002 | PLUG 1/2" | 1 |
| 3 | 1521500500 | PUMP ROTOR | 1 | 65 | 1608100000 | HYD. CONTROL VALVE | 1 |
| 4 | 1593600000 | FLAPPER VALVE | 1 | 66 | 4026102704 | SCREW M6X16 | 2 |
| 5 | 1601601000 | VANE PN 106 | 4 | 67 | 4026351504 | WASHER M6 | 2 |
| 6 | 1605500000 | VALVE HANDLE | 1 | 68 | 1663011000 | OILER CONNECTION PIPE | 1 |
| 7 | 1608500000 | CONVEYOR | 1 | 69 | 4026706000 | UNIV. CONNECTION 90 4X1/8 1020 | 4 |
| 8 | 1610006600 | FLANGE FOR DIRECT DRIVE | 1 | 70 | 4026102704 | SCREW M8X20 | 7 |
| 9 | 1610100000 | OUTLET PORT FLANGE | 1 | 71SX | 4026414617 | PLUG 3X40 6873 | 1 |
| 10 | 1610500400 | END CAP | 1 | 72 | 1681100100 | OILER SUPPORT PLATE | 1 |
| 11 | 1610500500 | DIRECT DRIVE END PLATE | 1 | 73 | 4026308005 | HEXAGONAL NUT M8 | 1 |
| 12 | 1612500300 | OIL TANK | 1 | 74 | 4026135414 | STUD SCREW M8X45 | 1 |
| 13 | 1622002600 | OIL PUMP DRIVE | 1 | PN106 HYDRAULIC DRIVE | | | |
| 14 | 1623100000 | END CAP | 1 | H1 | 1470100400 | JOINT GA 100 | 1 |
| 15 | 1627100300 | SUCTION MANIFOLD D.80 | 1 | H2 | 1610005500 | HYD. DRIVE FLANGE | 1 |
| 16 | 1627100500 | EXHAUST MANIFOLD D.76 | 1 | H3 | 1610500500 | DIRECT DRIVE END PLATE | 1 |
| 17 | 1627500000 | STANDARD MANIFOLD | 1 | H4 | 1612501400 | HYD. DRIVE GEARBOX | 1 |
| 18 | 1640101100 | OIL TANK COVER | 1 | H5 | 1680700400 | END CAP GASKET | 1 |
| 19 | 1642003000 | CARDAN SHAFT PROTECTION | 1 | H6 | 4022100010 | GREASER | 1 |
| 20 | 1642600000 | OIL LINE RUBBER PROTECTION | 2 | H7 | 4022200110 | SEAL RING 72X48X15 | 2 |
| 21 | 1650004300 | SMOOTH FLANGED SHAFT | 1 | H8 | 4022200240 | O-RING OR 4825 | 1 |
| 22 | 1663025200 | OIL LINE DX | 1 | H9 | 4024107001 | HYDRAULIC MOTOR | 1 |
| 22 | 1663018700 | OIL LINE SX | 1 | H10 | 4026136005 | SCREW M8X12 | 1 |
| 23 | 1663018500 | OIL LINE DX | 1 | H11 | 4026171211 | STUD SCREW M12X80 | 2 |
| 23 | 1663018600 | OIL LINE SX | 1 | H12 | 4026171304 | STUD SCREW M14X40 | 4 |
| 24 | 1663018600 | OIL LINE DX | 1 | H13 | 4026300020 | COMPENSATION RING | 1 |
| 24 | 1663018500 | OIL LINE SX | 1 | H14 | 4026350709 | GROWER WASHER M12 | 2 |
| 25 | 1663025100 | OIL LINE DX | 1 | H15 | 4026350710 | GROWER WASHER M14 | 4 |
| 25 | 1663018400 | OIL LINE SX | 1 | H16 | 4026351505 | WASHER M8 | 3 |
| 26 | 1663010500 | LUBR. PUMP SUCTION PIPE | 1 | H17 | 4026351506 | WASHER M10 | 8 |
| 27 | 1680707500 | OIL TANK COVER GASKET | 1 | H18 | 4026359001 | WASHER 40X33.5X1.5 | 1 |
| 28 | 1680700400 | END CAP GASKET | 1 | H19 | 4026705001 | EXTENDED CONNECTION H 36 MM | 1 |
| 29 | 1683600300 | 200 MM OIL DIP STICK | 1 | H20 | 4026904003 | PLUG 1" | 1 |
| 29A | 1673004100 | DIPSTICK SLEEVE | 1 | H21 | 4029602700 | GREASERS PROTECTION CAP | 1 |
| 30 | 1684000000 | DRAIN PLUG 3/8 | 1 | H22 | 4026102907 | SCREW M10X25 | 8 |
| 31 | 1685002800 | WASHER FE 30X8,5 | 1 | H23 | 4026102807 | SCREW M8X25 | 3 |
| 32 | 1685100000 | WASHER 14X20X1.5 | 2 | H24 | 4026103004 | SCREW M12X40 | 2 |
| 33 | 1685100200 | WASHER 17X22X1,5 | 1 | H25 | 4026308008 | NUT M14 | 4 |
| 34 | 1687500500 | HOUSING PN106 | 1 | H26 | 4026305508 | SELF LOCKING NUT M12 | 2 |
| 35 | 1691000000 | VALVE SPRING | 1 | H27 | 4026305614 | SELF LOCKING NUT M24X2 | 1 |
| 36 | 4022100010 | GREASER | 1 | H28 | 4023100040 | BEARING 40X90X23 6308 | 1 |
| 37 | 4022200030 | SEAL RING 41X27X10 GP NBR | 1 | SPLINED SHAFT | | | |
| 37A | 1624202300 | COCK REGULATING SPACER | 1 | BR1 | 1650004700 | SPLINED SHAFT 1" 3/8 | 1 |
| 38 | 4022200110 | SEAL RING 72X48X15 | 3 | BR2 | 4026102911 | SCREW M10X45 | 4 |
| 39 | 4022200240 | O-RING OR 4825 | 2 | BR3 | 4026350708 | GROWER WASHER M10 | 4 |
| 40 | 4022200250 | RING OR 6287 | 2 | PULLEY D. 150 | | | |
| 41 | 4022300001 | NYLON FILTER D.6 | 1 | PL1 | 1653501000 | PULLEY SPB 150X4 | 1 |
| 42 | 4026300020 | COMPENSATION RING | 2 | PL2 | 4026350708 | GROWER WASHER M10 | 4 |
| 43 | 4026350609 | GROWER WASHER M12 | 4 | PL3 | 4026102806 | SCREW M8X20 | 4 |
| 44 | 4026350708 | GROWER WASHER M10 | 4 | PNEUMATIC 4-WAY VALVE | | | |
| 45 | 4026350909 | WASHER M8 | 18 | P1 | 160855727B0 | PNEUMATIC ACTUATOR COCK | 1 |
| 46 | 4026500018 | TAB 6X10 | 1 | P2 | 161258B4B0 | PNEUMATIC ACTUATOR SUPPORT | 1 |
| 47SX | 4026702004 | UNIV. CONNECTION. DIR. 6X1/8 1050 | 1 | P3 | 1640580QB0 | PNEUMATIC ACTUATOR COVER | 1 |
| 47DX | 4026702000 | UNIV. CONNECTION DIR. 4X1/8 1050 | 1 | P4 | 167007ZAB0 | PNEUMATIC ACTUATOR NUT | 1 |
| 47 | 4026702000 | UNIV. CONNECTION DIR. 4X1/8 1050 | 3 | P5 | 1680700200 | COVER GASKET | 1 |
| 48 | 4026702004 | UNIV. CONNECTION DIR. 6X1/8 1050 | 1 | P6 | 168409PQB0 | COCK REGULATION FERRULE | 1 |
| 49 | 4029602700 | GREASERS PROTECTION CAP | 1 | P7 | 168529TFB0 | COCK REGULATION SPACER | 1 |
| 50 | 4026351505 | WASHER M8 | 7 | P8 | 1691000200 | COCK SPRING | 1 |
| 51 | 4026351506 | WASHER M10 | 16 | P9 | 4022100100 | SPHERICAL GREASER M6X1 | 1 |
| 52 | 4026103000 | SCREW M12X20 | 4 | P10 | 4022200005 | SEAL 37X27X7 | 1 |
| 53 | 4026102907 | SCREW M10X25 | 16 | P11 | 4022200330 | OR 3375 | 1 |
| 54 | 4026102911 | SCREW M10X45 | 4 | P12 | 4022200331 | OR 2137 | 1 |
| 55 | 4026102806 | SCREW M8X20 | 10 | P13 | 4026102804 | SCREWTE M8X16 | 4 |
| 56 | 4026103004 | SCREW M12X40 | 4 | P14 | 4026102807 | SCREWTE M8X25 | 4 |
| 57 | 4026102807 | SCREW M8X25 | 6 | P15 | 4026121405 | SCREWTEI M8X20 | 4 |
| 58 | 4026308007 | NUT M12 | 4 | P16 | 4026350505 | WASHER GROWERM8 | 4 |
| 59 | 4026305614 | SELF LOCKING NUT M24X2 | 1 | P17 | 4026351505 | WASHER M8 | 8 |
| 60 | 4023100040 | BEARING 40X90X23 6308 | 2 | P18 | 4027100405 | PNEUMATIC ACTUATOR | 1 |
| 61 | 1680600100 | VALVE HOUSING GASKET | 1 | P19 | 4027421206 | CONNECTION R15 6XG1/8 | 2 |

PN 106 M



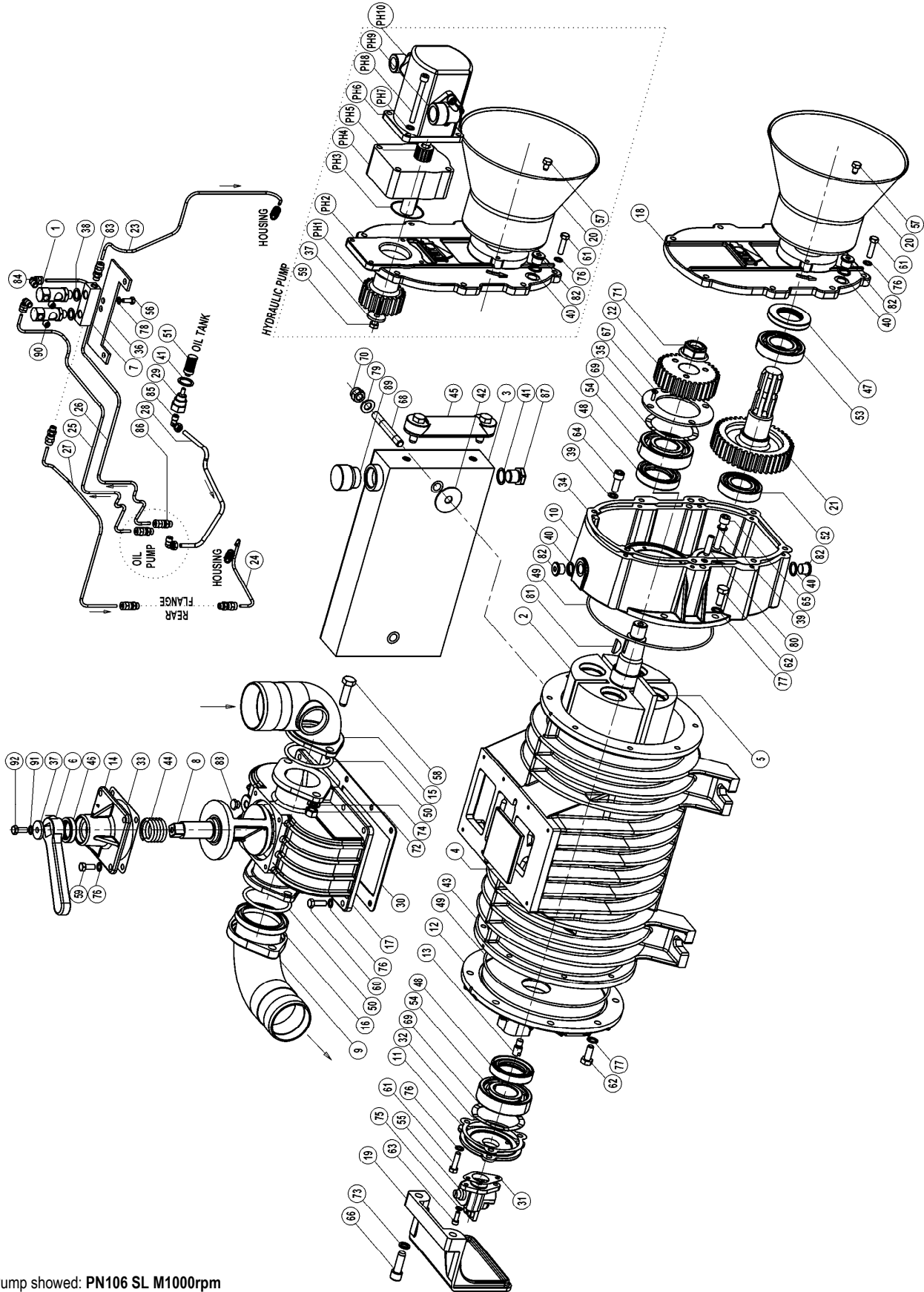
Pump showed: PN106 M – 540rpm Gearbox



PN106 M

| Pos. | Code | Description | Q.ty | Pos. | Code | Description | Q.ty |
|------------------------|------------|------------------------------|------|-------------------------|------------|----------------------------------|------|
| 540 RPM GEARBOX | | | | 48 | 4026702004 | UNIV. CONNECTION DIR. 6X1/8 1050 | 1 |
| 1 | 1401200400 | DRIP OILER – 2 CONNECTIONS | 2 | 49 | 1680700000 | END COVER GASKET | 1 |
| 2 | 1407200500 | GEAR OIL PUMP DX | 1 | 50 | 4026351505 | WASHER M8 | 7 |
| 2A | 1407202100 | GEAR OIL PUMP SX | 1 | 51 | 4026351506 | WASHER M10 | 14 |
| 3 | 1521500500 | PUMP ROTOR | 1 | 52 | 1680700200 | VALVE STEM COVER GASKET | 1 |
| 4 | 1593600000 | FLAPPER VALVE | 1 | 53 | 4026102907 | SCREW M10X25 | 14 |
| 5 | 1601601000 | VANE | 4 | 54 | 4023100020 | BEARING 35 X 72 X 17 6207 | 1 |
| 6 | 1605500000 | VALVE HANDLE | 1 | 55 | 4026102806 | SCREW M8X20 | 7 |
| 7 | 1608500000 | CONVEYOR | 1 | 56 | 4026103004 | SCREW M12X40 | 4 |
| 8 | 4026102407 | SCREW M8X20 | 7 | 57 | 4026102807 | SCREW M8X25 | 6 |
| 9 | 1610100000 | OUTLET PORT FLANGE | 1 | 58 | 4026308007 | NUT M12 | 4 |
| 10 | 4026102802 | SCREW M8X12 | 3 | 59 | 4026305614 | SELF LOCKING NUT M24X2 | 1 |
| 11 | 4026500018 | TAB 6X10 | 1 | 60 | 4023100040 | BEARING 40X90X23 6308 | 2 |
| 12 | 1612500300 | OIL TANK | 1 | 61 | 4026905002 | PLUG 1/4" | 1 |
| 13 | 1622002600 | OIL PUMP DRIVE | 1 | 62 | 1608100000 | HYD. CONTROL VALVE | 1 |
| 14 | 1623100000 | END CAP | 1 | 63 | 4022200040 | SEAL RING 72X40X10 | 1 |
| 15 | 1627100300 | SUCTION MANIFOLD D.80 | 1 | 64 | 4026102704 | SCREW M6X16 | 2 |
| 16 | 1627100500 | EXHAUST MANIFOLD D.76 | 1 | 65 | 4022200110 | SEAL RING 72X48X15 | 2 |
| 17 | 1627500000 | STANDARD MANIFOLD | 1 | 66 | 1663011000 | OILER CONNECTION PIPE | 1 |
| 18 | 1640101100 | OIL TANK COVER | 1 | 67 | 4026706000 | UNIV. CONNECTION 90 4X1/8 1020 | 5 |
| 19 | 1610500000 | G.BOX DRIVE END PLATE | 1 | 68 | 4023100030 | BEARING 40X80X18 6208 | 1 |
| 20 | 1642600000 | OIL LINE RUBBER PROTECTION | 2 | 69 | 4026120505 | SCREW TCEI M10X25 | 2 |
| 21 | 1612503100 | GEARBOX | 1 | 70 | 4026107111 | SCREW M8X30 | 9 |
| 22 | 1663018600 | OIL LINE DX | 1 | 71SX | 4026414617 | PLUG 3X40 6873 | 1 |
| | 1663018500 | OIL LINE SX | 1 | 72 | 1681100100 | OILER SUPPORT PLATE | 1 |
| 23 | 1663018500 | OIL LINE DX | 1 | 73 | 4026308005 | HEXAGONAL NUT M8 | 1 |
| | 1663018600 | OIL LINE SX | 1 | 74 | 4026135414 | STUD SCREW M8X45 | 1 |
| 24 | 1663025200 | OIL LINE DX | 1 | FLANGED MANIFOLD | | | |
| | 1663018700 | OIL LINE SX | 1 | FL1 | 1610506400 | FLANGE FL | 1 |
| 25 | 1663025100 | OIL LINE DX | 1 | FL2 | 1680600100 | VALVE HOUSING GASKET | 1 |
| | 1663018400 | OIL LINE SX | 1 | FL3 | 4026190001 | THREADED RING M12 | 1 |
| 26 | 1663010500 | LUBR. PUMP SUCTION PIPE | 1 | FL4 | 4026350909 | WASHER M8 | 8 |
| 27 | 1680700300 | OIL TANK COVER GASKET | 1 | FL5 | 4026102801 | SCREW M8X35 | 8 |
| 28 | 4029602806 | CARDAN SHAFT PROTECTION | 1 | FL6 | 4026905002 | PLUG 1/4" | 1 |
| 29 | 1683600300 | 200 MM OIL DIP STICK | 1 | PN MIX COLLECTOR | | | |
| 29A | 1673004100 | DIPSTICK SLEEVE | 1 | M1 | 1605500000 | VALVE HANDLE | 1 |
| 30 | 1684000000 | DRAIN PLUG 3/8 | 4 | M2 | 1608500100 | MIXER MANIFOLD | 1 |
| 31 | 1685002800 | WASHER 30X8,5 | 1 | M3 | 1610100000 | OUTLET PORT FLANGE | 1 |
| 32 | 1685100000 | WASHER 14X20X1,5 | 2 | M4 | 1623100000 | END CAP | 1 |
| 33 | 1685100200 | WASHER 17X22X1,5 | 4 | M5 | 1627100200 | SUCTION MANIFOLD D.76 | 1 |
| 34 | 1687500500 | HOUSING PN106 | 1 | M6 | 1627100500 | EXHAUST MANIFOLD D.76 | 1 |
| 35 | 1691000000 | VALVE SPRING | 1 | M7 | 1627100800 | SUCTION MANIFOLD DIA 80 - MIXER | 1 |
| 36 | 1651000000 | DRIVE GEAR Z48 | 1 | M8 | 1627500100 | MIXER MANIFOLD | 1 |
| 37 | 4022200030 | SEAL RING 41X27X10 GP NBR | 1 | M9 | 1680600100 | VALVE HOUSING GASKET | 1 |
| 37A | 1624202300 | COCK REGULATING SPACER | 1 | M10 | 1680700200 | VALVE STEM COVER GASKET | 1 |
| 38 | 1651000100 | PINION GEAR Z19 | 1 | M11 | 1680700600 | MIXER CONNECTION GASKET | 1 |
| 39 | 4022200240 | O-RING OR 4825 | 2 | M12 | 1685002800 | WASHER FE 30X8,5 | 1 |
| 40 | 4022200250 | RING OR 6287 | 2 | M13 | 1691000000 | VALVE SPRING | 1 |
| 41 | 4022300001 | NYLON FILTER D.6 | 1 | M14 | 4022200030 | SEAL RING 41X27X10 GP NBR | 1 |
| 42 | 4026300020 | COMPENSATION RING | 2 | M15 | 4022200250 | RING OR 6287 | 2 |
| 43 | 4026350709 | GROWER WASHER M12 | 4 | M16 | 4026350609 | GROWER WASHER M12 | 6 |
| 44 | 1680600100 | VALVE HOUSING GASKET | 1 | M17 | 4026350909 | WASHER M8 | 13 |
| 45 | 4026351505 | WASHER M8 | 22 | M18 | 4026103004 | SCREW M12X40 | 6 |
| 46 | 1685100100 | WASHER 10X16X1,5 | 2 | M19 | 4026107108 | SCREW M8X20 | 5 |
| DX47 | 4026702000 | UNIV. CONNECTION .DIR. 4X1/8 | 4 | M20 | 4026107110 | SCREW M8X25 | 6 |
| 47 | 4026702000 | UNIV. CONNECTION .DIR. 4X1/8 | 3 | M21 | 4026308007 | NUT M12 | 6 |

PN 106SL M1000 RPM



Pump showed: **PN106 SL M1000rpm**

PN106 sl M1000 rpm

| Pos. | Code | Description | Q.ty | Pos. | Code | Description | Q.ty |
|-------------------------------|-------------|----------------------------|------|---|------------|----------------------------|------|
| PN106 1000 RPM GEARBOX | | | | 52 | 4023100020 | BEARING 6207 | 1 |
| 1 | 1401200700 | DRIP OILER – 2 CONNECTIONS | 2 | 53 | 4023100030 | BEARING 6208 | 1 |
| 2 | 1521500500 | PUMP ROTOR | 1 | 54 | 4023100040 | BEARING 6308 | 2 |
| 3 | 1587009400 | OIL TANK | 1 | 55 | 4024251000 | OIL PUMP | 1 |
| 4 | 1593600000 | FLAPPER VALVE | 1 | 56 | 4026102704 | SCREW M6X16 | 2 |
| 5 | 1601601000 | VANE PN106 BK | 4 | 57 | 4026102802 | SCREW M8X12 | 3 |
| 6 | 1605500000 | VALVE HANDLE | 1 | 58 | 4026103004 | SCREW M12X40 | 4 |
| 7 | 1608100000 | HYD CONVEYOR | 1 | 59 | 4026107108 | SCREW M8X20 | 4 |
| 8 | 1608500000 | CONVEYOR | 1 | 60 | 4026107110 | SCREW M8X25 | 8 |
| 9 | 1610100000 | OUTLET PORT FLANGE | 1 | 61 | 4026107111 | SCREW M8X30 | 11 |
| 10 | 1610512500 | G.BOX DRIVE END PLATE | 1 | 62 | 4026107210 | SCREW M10X25 | 12 |
| 11 | 16105CF2B0 | OIL PUMP FLANGE | 1 | 63 | 4026120304 | SCREW M6X16 | 2 |
| 12 | 16105E5BB0 | REAR PLATE | 1 | 64 | 4026120505 | SCREW M10X25 | 2 |
| 13 | 1622002600 | OIL PUMP DRIVE | 1 | 65 | 4026120510 | SCREW M10X50 | 2 |
| 14 | 1623100000 | END CAP | 1 | 66 | 4026121710 | SCREW M12X35 | 2 |
| 15 | 1627100300 | SUCTION MANIFOLD D.80 | 1 | 67 | 4026155505 | SCREW M5X16 | 4 |
| 16 | 1627100500 | EXHAUST MANIFOLD D.76 | 1 | 68 | 4026171211 | THREADED ROD M12X80 | 2 |
| 17 | 1627500000 | STANDARD MANIFOLD | 1 | 69 | 4026300020 | COMPENSATION RING | 2 |
| 18 | 1640003900 | G.BOX FRONT FLANGE | 1 | 70 | 4026305508 | BOLT M12 SELF LOCKING | 2 |
| 19 | 1642100200 | REAR PROTECTION | 1 | 71 | 4026305614 | BOLT M24X2 SELF LOCKING | 1 |
| 20 | 4029602806 | CARDAN SHAFT PROTECTION | 1 | 72 | 4026308007 | BOLT M12 | 4 |
| 21 | 1651009600 | DRIVING GEAR | 1 | 73 | 4026350508 | WASHER GROWER M12 SQUARE | 2 |
| 22 | 1651009700 | DRIVED GEAR | 1 | 74 | 4026350609 | WASHER GROWER M12 FLAT | 4 |
| 23 | 1663018500 | OIL LINE | 1 | 75 | 4026350908 | WASHER M6 | 2 |
| 24 | 1663062900 | OIL LINE | 1 | 76 | 4026350909 | WASHER M8 | 23 |
| 25 | 16630DJL00 | OIL LINE | 1 | 77 | 4026350910 | WASHER M10 | 12 |
| 26 | 16630DJM00 | OIL LINE | 1 | 78 | 4026351504 | WASHER M6 | 2 |
| 27 | 16630DJN00 | OIL LINE | 1 | 79 | 4026357007 | WASHER M12 | 2 |
| 28 | 16630DJP00 | OIL LINE | 1 | 80 | 4026401806 | PIN 10X36 | 2 |
| 29 | 1673001000 | OIL FILTER PLUG | 1 | 81 | 4026500018 | TAB 6X10 | 1 |
| 30 | 1680600100 | VALVE HOUSING GASKET | 1 | 82 | 4026701602 | PLUG 3/8" | 3 |
| 31 | 1680609700 | OIL PUMP GASKET | 1 | 83 | 4026702000 | UNIV. CONNECTION 4X1/8 | 8 |
| 32 | 1680609800 | OIL PUMP FLANGE GASKET | 1 | 84 | 4026706000 | UNIV. CONNECTION 90° 4X1/8 | 2 |
| 33 | 1680700200 | END CAP GASKET | 1 | 85 | 4026706003 | UNIV. CONNECTION 90° 6X1/8 | 2 |
| 34 | 1680708900 | GEAR BOX GASKET | 1 | 86 | 4026706101 | UNIV. CONNECTION 4X1/8 OR. | 2 |
| 35 | 1681007900 | GEAR BOX FLANGE | 1 | 87 | 4026904503 | PLUG M20X1.5 | 1 |
| 6 | 1681100100 | DRIP OILER SUPPORT | 1 | 88 | 4026905002 | PLUG 1/4" | 1 |
| 37 | 1685002800 | WASHER 30X8.5X4 | 1 | 89 | 4026910103 | PLUG 1" | 1 |
| 38 | 1685100000 | WASHER AL 14X20X1.5 | 2 | 90 | 4026910601 | CONIC PLUG 1/8" | 2 |
| 39 | 1685100100 | WASHER AL 10X16X1.5 | 4 | 91 | 4026308005 | HEXAGONAL NUT M8 | 1 |
| 40 | 1685100200 | WASHER AL 17X22X1.5 | 3 | 92 | 4026135414 | STUD SCREW 12.9 M8X45 | 1 |
| 41 | 1685100300 | WASHER | 2 | PN106 1000 RPM GEARBOX WITH HYDRAULIC PUMP | | | |
| 42 | 1685600200 | WASHER VULKOLAN 47.5X13X2 | 2 | PH1 | 1651009800 | OIL PUMP GEAR | 1 |
| 43 | 16875E3SB0 | HOUSING | 1 | PH2 | 1640003800 | G.BOX FRONT FLANGE/HDR | 1 |
| 44 | 1691000000 | SPRING | 1 | PH3 | 4022200320 | OR 2200 VITON | 1 |
| 45 | 40221006001 | OIL SIGHT | 1 | PH4 | 4024205305 | OIL PUMP SUPPORT | 1 |
| 46 | 4022200030 | Y SEAL 41X27X10 | 1 | PH5 | 4025240108 | JOINT | 1 |
| 46A | 1624202300 | COCK REGULATING SPACER | 1 | PH6 | 4024205709 | OIL PUMP | 1 |
| 47 | 4022200040 | Y SEAL 72X40X10 | 1 | PH7 | 4026350909 | WASHER M8 | 4 |
| 48 | 4022200110 | Y SEAL 72X48X15 | 2 | PH8 | 4026120414 | SCREW M8X80 | 4 |
| 49 | 4022200240 | OR 4825 | 2 | PH9 | 4026710015 | CONNECTION 3/4" | 1 |
| 50 | 4022200250 | OR 6287 | 2 | PH10 | 4026710013 | CONNECTION 1/2" | 1 |
| 51 | 4022300001 | OIL FILTER | 1 | | | | |

| Model | Issue date | Revision No. | Revision date | Filled out by | Viewed by |
|--------------|-------------------|---------------------|----------------------|----------------------|------------------|
| PN | 01-01-2002 | 07 | 14-01-2013 | U.T. | A.T. |

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Juop SpA reserves the right to modify the products described in this manual without prior notice.