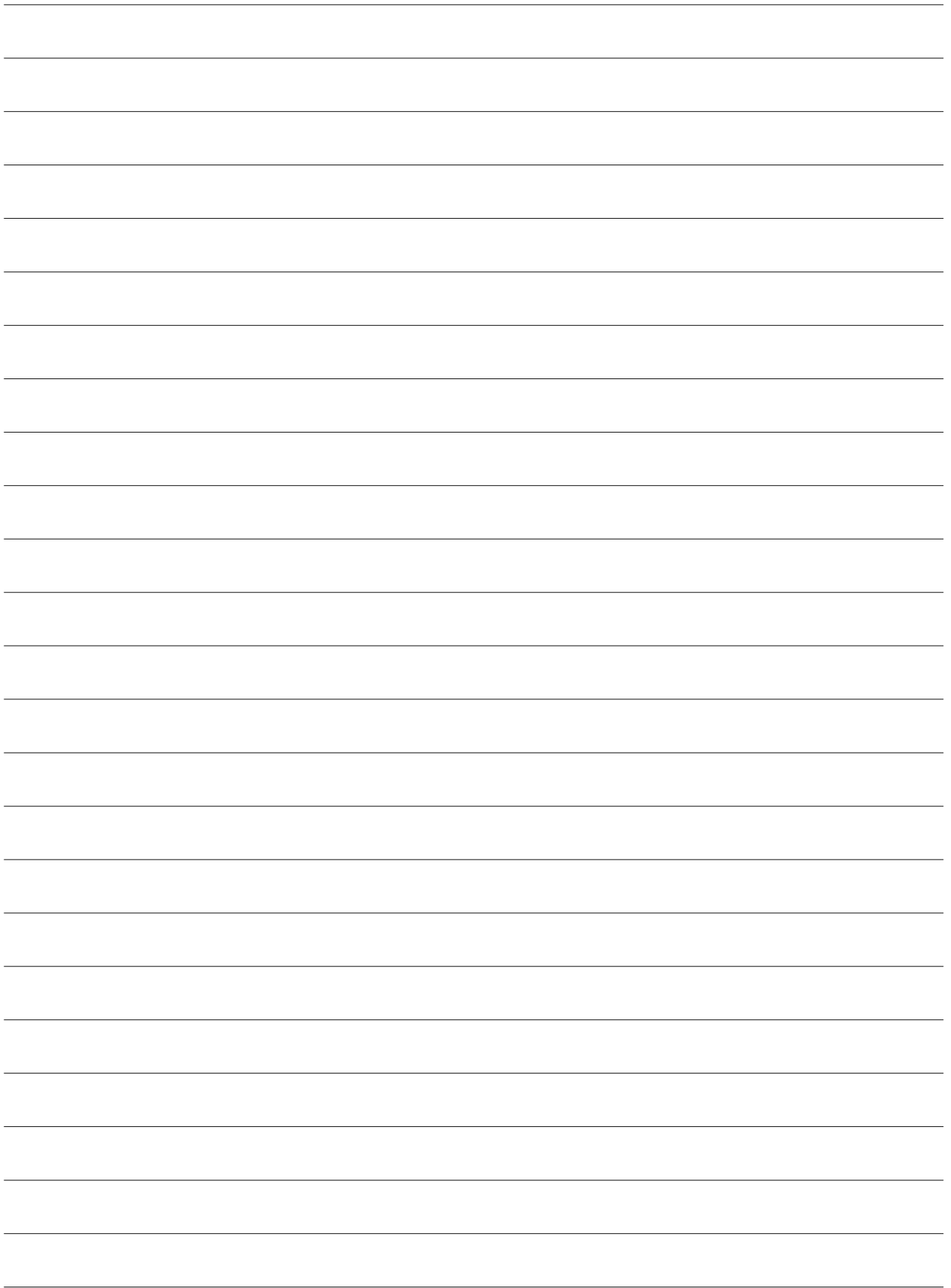


ORIGINAL INSTRUCTIONS



**INSTALLATION, USE AND
MAINTENANCE MANUAL**





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1. General advices

1.1. Introduction

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

The knowledge of the following pages will grant a long and trouble free operation of the pump.

It is recommended to:

- Understand 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

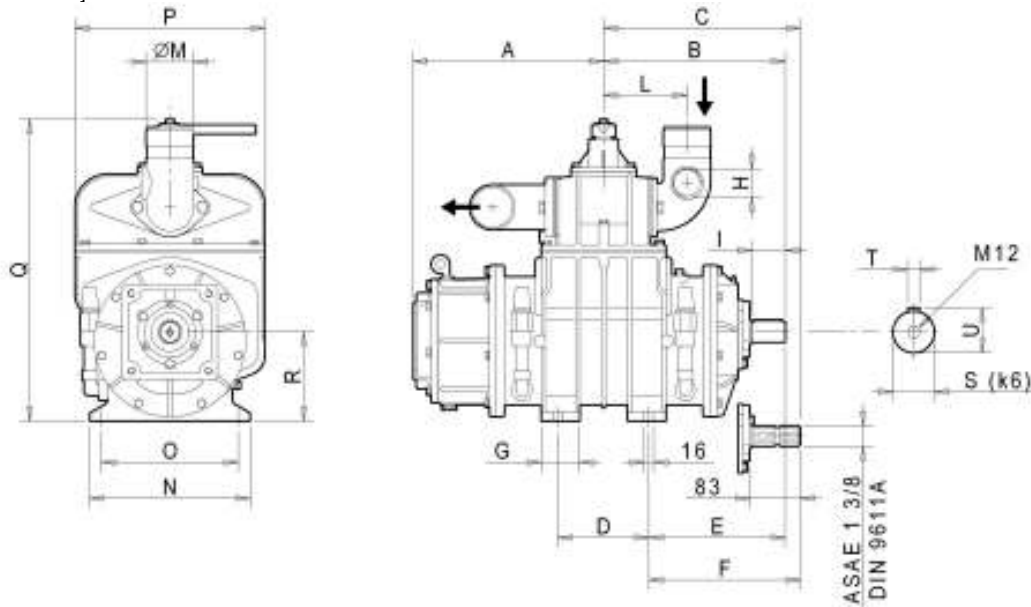
To avoid mistakes when ordering the spare parts make sure you indicate:

- (i.e.)
- a) Pump Model (see pump tag):..... PNR142
 b) Pump serial number:..... X70012
 c) Description of the part (see part list):..... Lamella rotore
 d) Quantity:..... n° 4 pz
 e) Code of the part:..... 16016.052.00

2. Technical specification

2.1. Dimensions

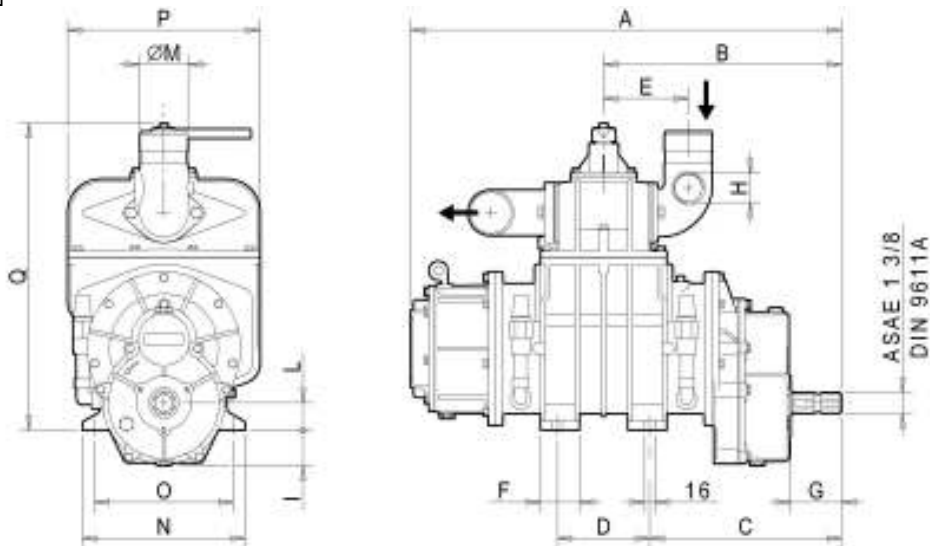
PN... D [direct drive]



Mod.	A	B	C	D	E	F	G	H	I	L	M		N	O	P	Q	R	S	T	U
											ASP.	SC.								
PN...72 D	298	284	309	153	207	232	65	G1 ½	57	140	76-80	76	270	230	320	508	150	35	10	38
PN...82 D	320	306	331	153	230	255	65	G1 ½	57	140	76-80	76	270	230	320	508	150	35	10	38
PN...102 D	320	313	329	153	237	253	72	(G2)*	64	185	80-100	100	285	255	345	550	168	40	12	43
PN...122 D	353	346	362	153	269	285	72	(G2)*	64	185	80-100	100	285	255	345	550	168	40	12	43
PNR 142 D	350	338	355	300	188	205	105	(G2)*	64	186	80-100	100	320	270	431	575	190	40	12	43

*: only if foreseen with additional conveyor Ref. no. 1627102500.

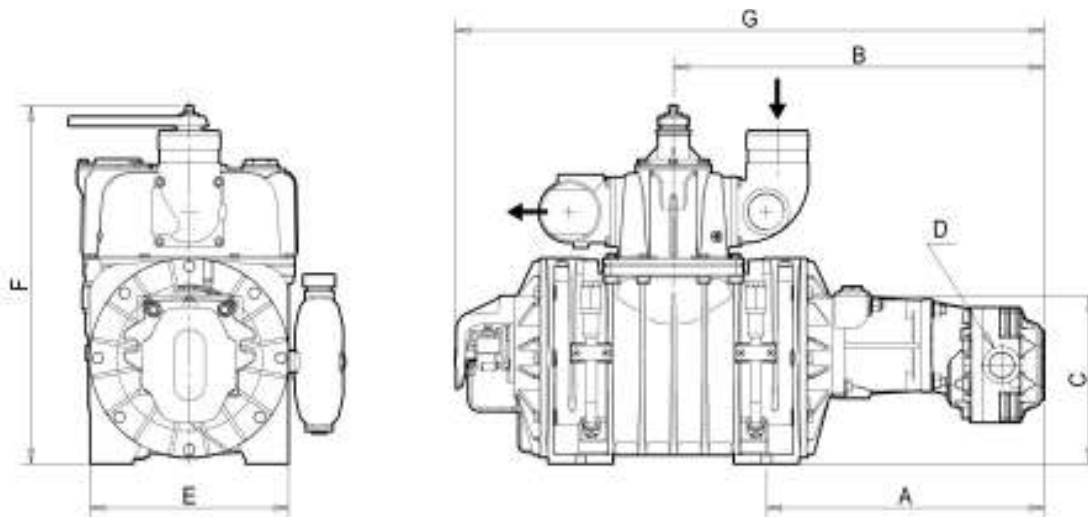
PN... M [gearbox]



Mod.	A	B	C	D	E	F	G	H	I	L	M		N	O	P	Q
											ASP.	SC.				
PN...72 M (540rpm)	670	372	296	153	140	65	84	G1 ½	59	45	76-80	76	270	230	320	508
PN...82 M (540rpm)	715	395	318	153	140	65	84	G1 ½	59	45	76-80	76	270	230	320	508
PN...102 M (540rpm)	726	406	329	153	185	72	85	(G2)*	64	50	80-100	100	285	255	345	550
PN...122 M (540rpm)	791	438	362	153	185	72	85	(G2)*	64	50	80-100	100	285	255	345	550
PNR 142 M (540rpm)	785	434	284	300	186	105	85	(G2)*	42	68	80-100	100	320	270	431	575
PNR 142 M (1000rpm)	872	434	284	300	186	105	85	(G2)*	46	73	80-100	100	320	270	431	575

*: only if foreseen with additional conveyor Ref. no 1627102500.

PN... HDR [with hydraulic motor]



Mod.	Hydraulic motor / system characteristics			Dimensions (mm)								
	Q (l/min)	P (bar)	n (min ⁻¹)	A	B	C	D		E	F	G	
PN...72 HDR	65	120	1350	472	549	235	G1	G1 ¼	270	508	847	
PN...82 HDR	65	140	1350	495	571	235	G1	G1 ¼	270	508	892	
PN...102 HDR	90	130	1300	510	587	253	G1 ¼	G1 ½	285	550	907	
PN...122 HDR	105	130	1300	523	599	253	G¾	G1	285	550	952	
PNR 142 HDR	115	130	1200	446	596	275	G1	G1 ¼	320	562	941	

2.2. Technical data

Jurop sliding-vanes, air cooled vacuum pumps PNR and PNE are standardly delivered with:

- Asbestos-free tangential vanes.
- Automatic lubrication by means of a volumetric pump and an oil tank.
- Change-over valve (4-way valve) for pressure and vacuum.
- Single piece, guided check valve.
- Suction and discharge connections made of alluminium alloy.
- Gearbox transmission with hardened, single piece splined drive shaft ASAE 1 3/8",
- Direct trasmission with a.m. drive shaft or smooth shaft.
- Counterclockwise rotation.
- PNR: cooled by air injection.

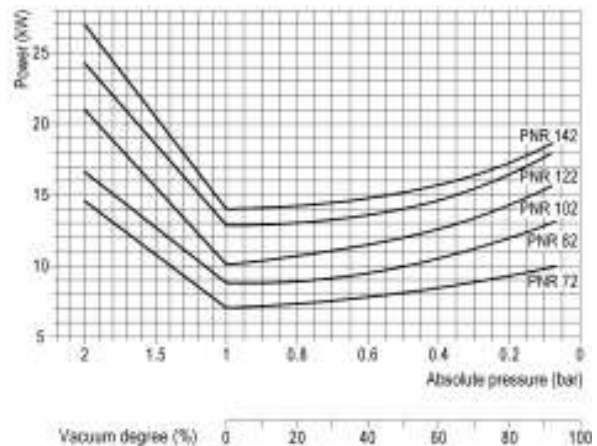
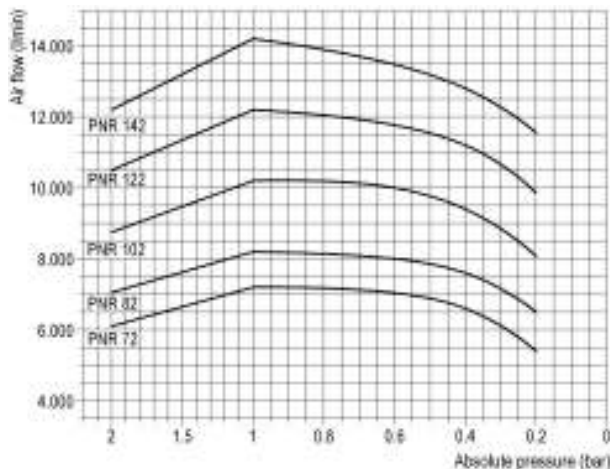
Upon request:

- Clockwise rotation.
- Drive by means of internal combustion engine, hydraulic motor or mechanical drive from Power Take Off.
- Pneumatic or hydraulic actuator on the change over valve for pressure and vacuum.

NOTE Automatic lubrication: *The volumetric pump with variable flow injects the lubricating oil directly inside the vacuum pump, therefore eliminating a manual adjustement of the oil flow. It results in a lower lubricating oil consumption and makes un-necessary a periodical lubrication checking and/or adjustment.*

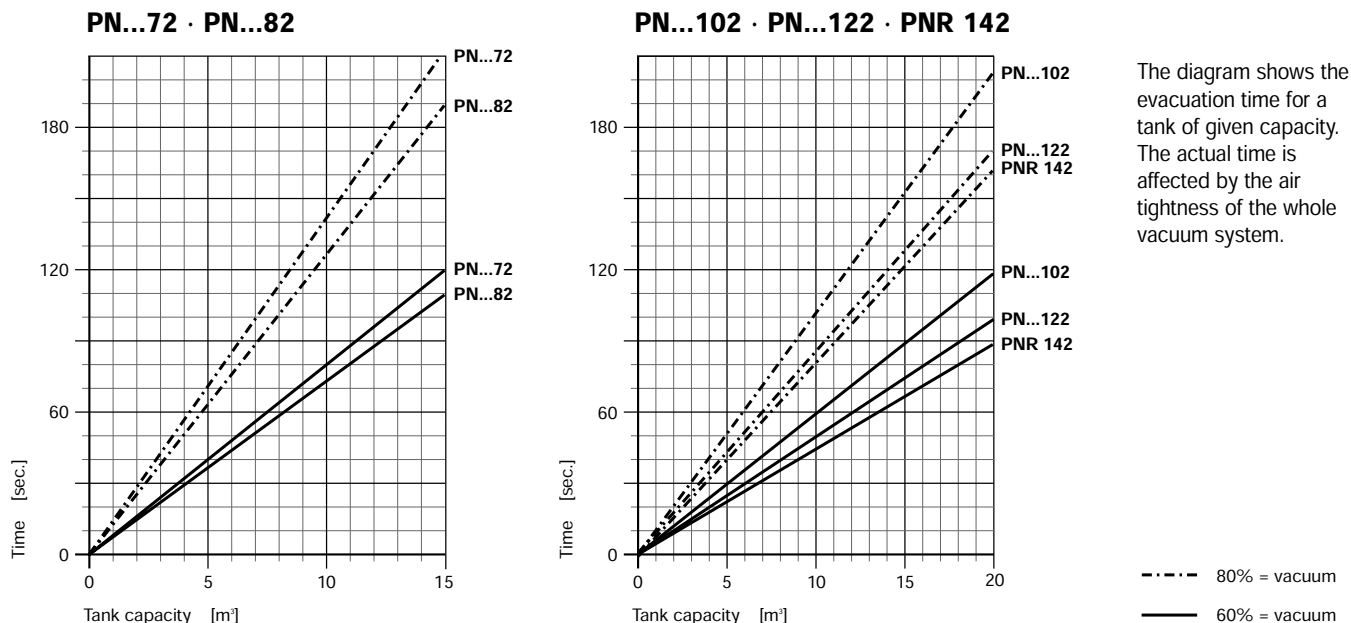
2.3. Performances

Model		PN... 72	PN... 82	PN... 102	PN... 122	PNR 142	
Maximum speed	PN... D	min ⁻¹	1350	1350	1300	1300	1200
	PN... M(540rpm)	min ⁻¹	540	540	540	540	540
	PN... M(1000rpm)	min ⁻¹	-	-	-	-	1000
Minimum speed	PN... D	min ⁻¹	700	700	700	700	700
	PN... M(540rpm)	min ⁻¹	300	300	300	300	300
	PN... M(1000rpm)	min ⁻¹	-	-	-	-	600
Air flow at free air condition		l/min	7200	8200	10200	12200	14200
Air flow at 60% vacuum rate		l/min	6600	7600	9400	11200	12800
Maximum vacuum		%	93	93	92	92	95
Maximum vacuum at continuos duty		%	60	60	60	60	70
Power required at (1,5 abs)		kW	11	12,5	16	19	20,5
Max operating rel. pressure (abs.)		bar	1 (2)	1 (2)	1 (2)	1 (2)	1,5 (2,5)
Max operating rel. pressure (abs.) at continuos duty		bar	1 (2)	1 (2)	1 (2)	1 (2)	1 (2)
Noise level: 60% vacuum, 7m c/w silencer	PNE	dB(A)	75	75	75	75	75
	PNR	dB(A)	78	78	78	78	78
Weight	PN... D	kg	124	130	160	177	210
	PN... M(540rpm)	kg	136	142	173	190	225
	PN... M(1000rpm)	kg	-	-	-	-	230
Oil consumption		g/h	110-130	110-130	130-150	130-150	160-170
Oil tank capacity		l	2,2	2,2	3,2	3,2	4
Moment of inertia		Kgm ²	0,20	0,23	0,35	0,40	0,58



Graph are referred to the performances at the maximum speed for each PNR/PNE model.

Evacuating time



2.4. Pump's lubrication

Recommended oils and greases for the lubrication of the housing and the rotor.

Brand	ENI	ESSO	SHELL	TOTAL	MOBIL	BP	
Oil	ISO VG 150	Radula 150	Nuto 150	Morlina Oil 150	Drosera MS 105	Nuto H 150	Bartran HV 150

Recommended oil and greases for the lubrication of the gearbox and the ball bearings

Brand	ENI	ESSO	SHELL	TOTAL	MOBIL	BP	
Oil	ISO VG 220	Blasia 220	Spartan EP 220	Omala Oil 220	Carter EP 220	Mobilgear 630	Energol GR XP 220
Grease	NLGI 2	GR MU EP2	GP Grease NLGI2	Alvania EP2	Multis EP2	Mobilux EP2	Grease LTX2-EP2

3. Safe operating instructions



ATTENTION: STRICTLY COMPLY WITH THESE PRESCRIPTIONS!

3.1. General suggestions

- Installation and maintenance have to be done with the machine totally disengaged from its drive system and must be performed by skilled personell. Disregarding of said safety prescription could result in serious injury to the operator from moving machinery parts.
- Operating personell must wear adequate clothing and protection.
- When running the pump adequate protection for moving parts must be used. If such protections are damaged they must be re-placed.
- Be aware that during heavy duty working conditions the pump's housing can reach temperatures of over 60° centigrade. Use adequate means in order to avoid direct contacts with over-heated parts.
- Take care when managing pumps that may have been in contact with dangerous media.
- To lift/move around the pump use an adequate belt or chain inserted through the eyebolts on top of the pump. Rest the pump on safe pedestals in order to avoid accidents.

3.2. Normal use

- Vacuum pumps of the PNR/PNE series are commonly used on stationary or mobile equipment for suction and transfer by means of vacuum or so-called pneumatic-transportation of liquid and solid wastes.
- They are air-cooled and consequently foreseen for a non-continuous duty. The mod. PNE and the mod. PNR, the latter supplied with air injection system (fig. 1) and meant for heavy duty works, do not accept operating temperatures over 150 °C (300 °F), checked at not more than 150 mm from the discharge connections.



Minimum and maximum speed and operating pressures must be kept within given limits: overcharging the pump will mean excess of wear, or worse, the breakdown of internal parts. (See par. 2.3)

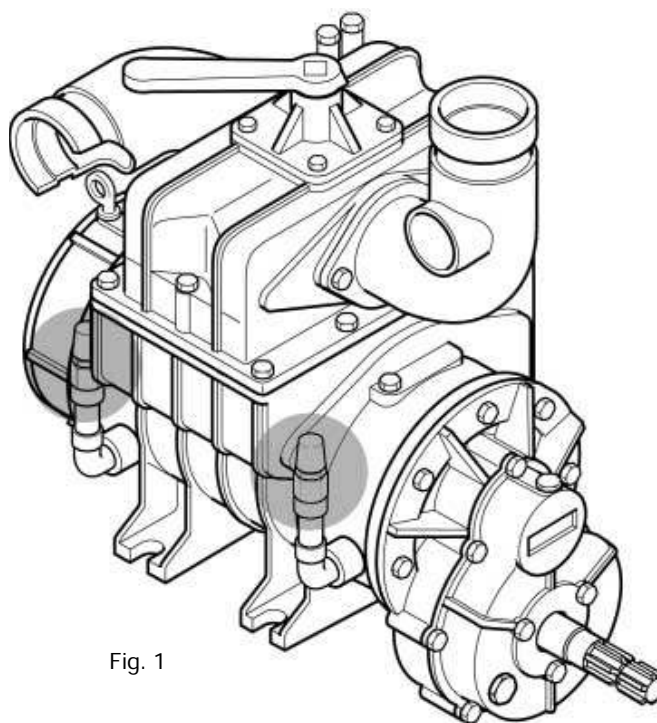


Fig. 1

4. Installation

4.1. Checking at arrival of the goods

Upon receipt check that the pump and accessories are not visibly damaged.

4.2. Pump mounting-drive connection

The pump must be installed so that it is easily accessible for inspection and maintenance. It has also to be fixed on a rigid pedestal or stand, horizontal or slightly inclined, correctly dimensioned in order to avoid vibrations or deformations.

ATTENTION: do foresee the necessary room for maintenance. To change the vanes it is necessary to dismantle the oil tank on the rear of the pump.

Necessary components for each of the described drive systems are available upon specific request.



For all the different drive systems make sure that the rotation direction corresponds to the one shown by the arrow placed on the front of the pump.

- Drive by belts and pulleys: the pulley has to be mounted on the «smooth shaft» of a direct drive pump model (Models PNR-PNE ... D) Proceed as indications of fig. 2.

ATTENTION: the pulley has to rest against the end-step of the smooth drive shaft. Always use belts SPB or SPBX type.

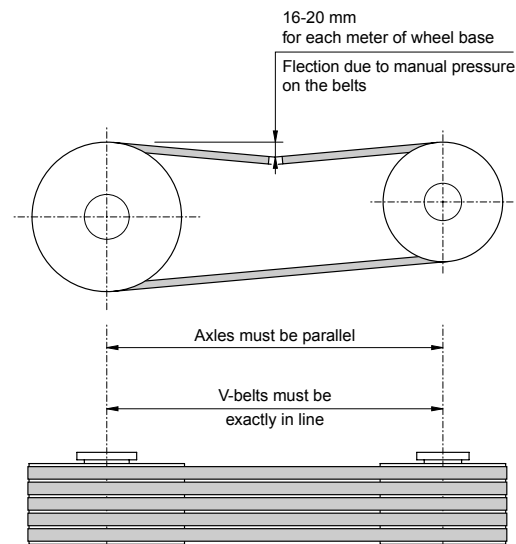


Fig. 2

Pulleys with tapered bushing are requested:

Model	PN...72D	PN...82D	PN...102D	PN...122D	PNR142D
Grooves no.	3 SPB	3 SPB	3 SPB	3 SPB	4 SPB
Dp	150-200	150-200	200	200	200
Dp min. trasm.	150	150	200	200	200

ATTENTION: The transmission's smaller pulley 'Dp min' diameter has to be at least as per above chart in order to avoid excessive axial pull on ball bearings and drive shaft.

- **Mechanical transmission:** for stationary equipment it is suggested to use adequate telescopic cardan propeller shaft. To obtain a smooth rotation of the cardan shaft pay particular care to the angle of the joints. It is recommended not to overstep 15° angle for stationery application.

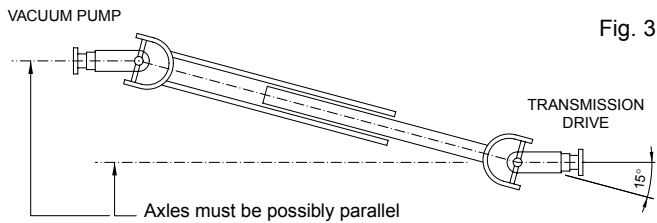


Fig. 3

General rules for operating with agriculture pull type machinery: Check the length of the transmission with the minimum and maximum shaft length. The overlap of the two members of the cardan shaft must be at least of 1/3 of the total length of the whole shaft when operating.

Operate with reduced joint angles (approximately 30°) and possibly the same for both joints.

Disengage the power take off when joint angle increases greatly (tight turns or lifting operation).

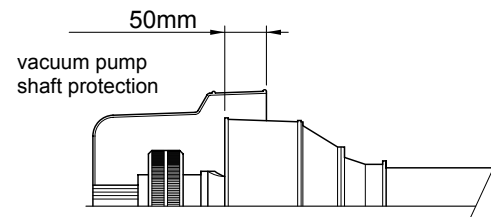
It is suggested to operate with a torque limit device in order to protect the transmission and the pump.

When selecting a cardan shaft for stationery or mobile machinery,

when doing maintenance or operating the shaft in any case keep to the manufacturer's instructions in case that they are more tight than the above.

All PNE/PNR models are delivered with cardanshaft protection supplied separately (see Spare Parts List, pos. 21, 22, 23: Drive shaft protection). When mounting it use M8x12 screws with flat washers supplied with the pump.

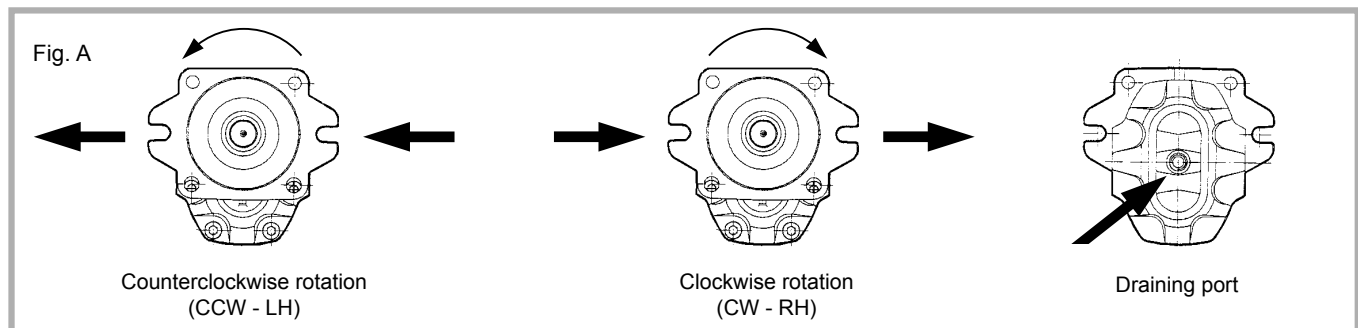
Do not step on the shaft protection. The torque limit device is allowed on the drive side of the shaft. In any case the protection must overlap the cardan shaft for at least 50 mm.



Safe operating rules

The protection of the drive rotating parts and on the whole equipment where the vacuum pump has been mounted, have to be in compliance with the rules of the Directive: 98/37/CE .

Do not operate the equipment with damaged or tampered protections.



- **Hydraulic drive:** the hydraulic motor is connected to the vacuum pump through a joint fitted on a specific transmission gearbox which grants a correct aligning of the shafts. All components are available upon request, for fitting on the vacuum pump, direct drive model, with smooth shaft.

4.2.1. Indications for the installation of the hydraulic drive (fig. 4)

- **Motor:** make sure that the rotation direction is according to the circuit connections shown in diagram "fig. A" by identifying inlet and outlet port. Connect the draining port of the motor to the oil tank, using a pressureless draining line, discharging above the oil level in the tank itself. All the supplied motors can run in both directions instead the vacuum pump has CW or CCW rotation.

Hydraulic motors running parameters: see part 2.1.

- **Piping:** nominal diameter of all hoses must not be less than the one of the hydraulic motor's connecting port or flanges.

The outlet line between the oil motor and the oil tank must always be a bigger diameter than the inlet line between the hydr control valve and the motor even if outlet port of the oil motor housing is smaller than the inlet port. Connecting line between motor and the hydraulic control valve (which is also used as a Start/Stop control)

should be kept as short as possible. It is also necessary to fit in between a length of flexible hose to absorb the vibrations. All components have to be kept absolutely clean.

- **Hydraulic control valve:** nominal oil flow and pressure must be adequately calculated for the chosed hydraulic motor. Said control valve has also to be fitted with an adjustable over-pressure control device.

- **Filtration of the oil:** for the whole oil flow must be of 60 µm. Filter has to be fitted on the discharge side of the circuit.

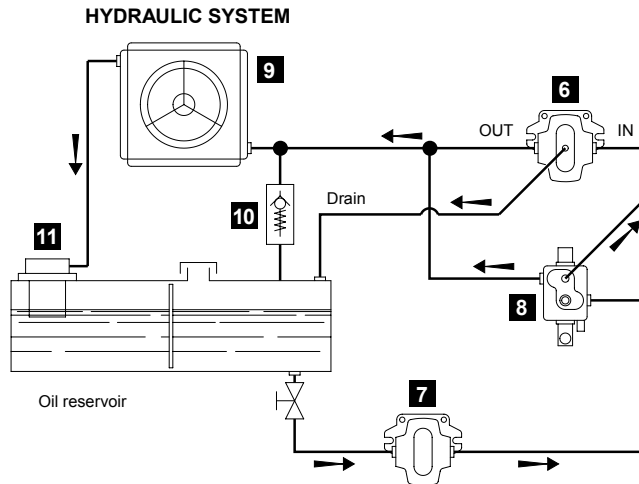
- **Oil tank:** minimum capacity of about 2 times the oil flow of the whole system (in lit/min). Feeding and discharge ports have to be separated by a baffle wall. If necessary an heat exchanger for cooling the oil has to be fitted in the hydraulic plant.

- **Hydraulic pump:** has to be chosed according to the available Power Take Off and its characteristics and in any case must be suitable to drive the hydraulic motor fitted on the vacuum pump.

- **Running of the hydraulic plant:** check that the whole plant is thoroughly clean before filling up the tank with hydraulic oil through an adequate filter. After this do not forget to vent the circuit.

Adjust the safety relief valve at a pressure that guarantees the correct performances of the vacuum pump. Check the oil level in the tank.

Fig. 4



Vacuum line components and mechanical transmission

- 1 Primary shutoff
- 2 Secondary shutoff
- 3 Suction filter
- 4 Silencer - oil separator
- 5 Pulley with tapered bush
- 12 Overheating limiter

4.3. Connection to the vacuum tank

The hoses connecting the suction and exhaust ports of the vacuum pump must be of adequate diameter (suggested not less than 3") and of oil and corrosion resistant materials and before connecting them, make sure that they are perfectly clean in the inside. Installation diagram as per: fig. 4.

Connect the pump to the tank through the suction manifold (fig. 5, pos. D), which has a threaded port for fitting the over-pressure valve.

Protection of the suction port

To avoid that foreign liquids will enter the vacuum pump it is necessary to mount on the suction line an over-flow valve of 'floating-ball' type (pos. 1). The flow section of this valve (in cm²) must be equivalent to the suction hose's one.

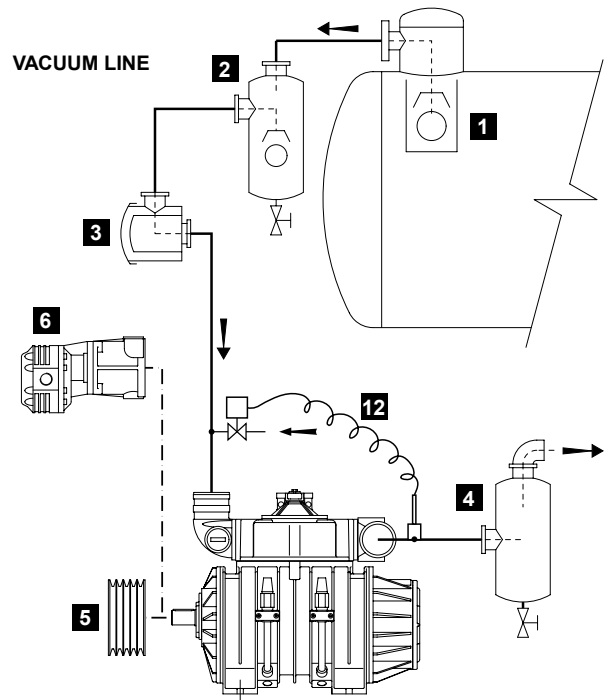
It is also necessary to have on the line a *suitable air filter* for preventing solids to be sucked inside the vacuum pump. It is also recommended to mount a 'secondary shutoff' of floating-ball type (pos. 2) between vacuum pump and over-flow (primary shutoff), along with the previously mentioned air filter (pos. 3).

Change-over pressure-vacuum valve

Called also 4-way valve, normally is manually operated but it can be at any time transformed in pneumatically operated upon request of the appropriate 'kit'.

Silencer and oil separator (oil trap)

During normal running of the pump the resulting noise should be re-



Hydraulic system components

- 6 Motor
- 7 Pump
- 8 Distributor c/w max press. reg.
- 9 Oil-air heat exchanger
- 10 Pressure relief valve
- 11 Oil filter

duced by means of a suitable silencer (pos. 4) mounted as close as possible to the pump itself. It has to be dimensioned for the air flow produced by the pump model. The oil used for the pump's inside lubrication has to be separated from the exhausted air by means of an adequate oil-separator, placed directly inside the silencer. The silencer is fitted also with a draining tap for the collected oil and condensed liquids.

Safety valves

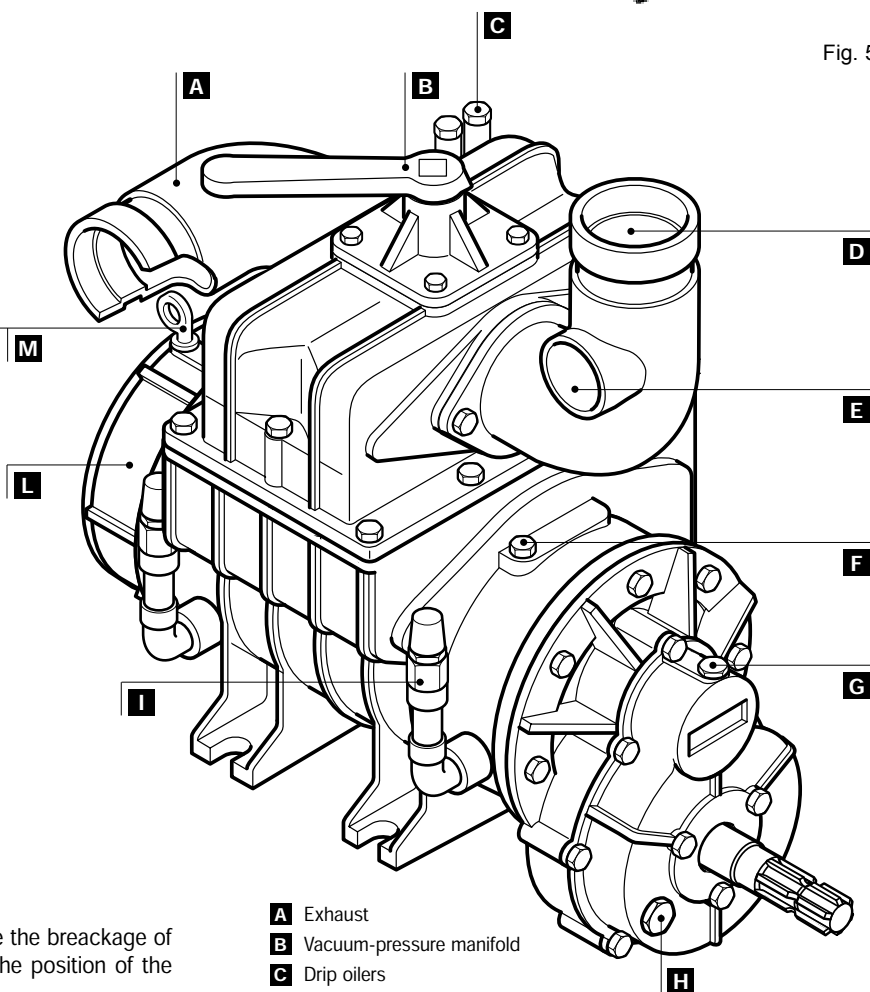
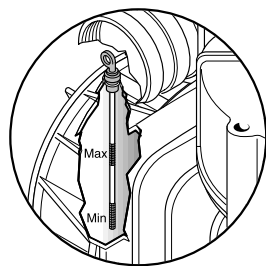
Over-pressure safety valve: between the vacuum pump and vacuum tank there must be mounted the above mentioned valve, (fig. 5, pos. E) capable to 'discharge' the whole air-flow produced by the pump. Pressure adjustment on this valve has not to exceed 10% of the work-pressure of the vacuum pump (1,0 bar relative) and in any case not exceed the work-pressure designed for the vacuum tank.

Vacuum check valve: called also 'depressure valve' has to be fitted on the suction line of the equipment. The vacuum check valve, adjusted at a suggested pressure of 0,2 bar (80% vacuum) and anyhow at a value compatible with the job at hand and with the whole equipment, is necessary but not sufficient by itself to avoid damages to the vacuum pump, reducing also the wear-off of most parts.

Overheating limiter: for pumps that reach, during normal operating, discharge air temperature close to 150 °C (300°F) - (checked at not more than 150 mm from the discharge connection) it is necessary to use a device that will not allow to exceed such temperature (contact our Technical Department).

5. Starting-up instructions

Fig. 5



5.1. Oil level checking

Before starting the equipment check the lubricating oil level of the pump by means of the proper dip stick. Check also the oil level in the gearbox (models M).

5.2. Starting-up of the pump

- Open all the valves on the vacuum line.
- Start slowly, and for a short time, the vacuum pump. Check that the rotation direction is correct.

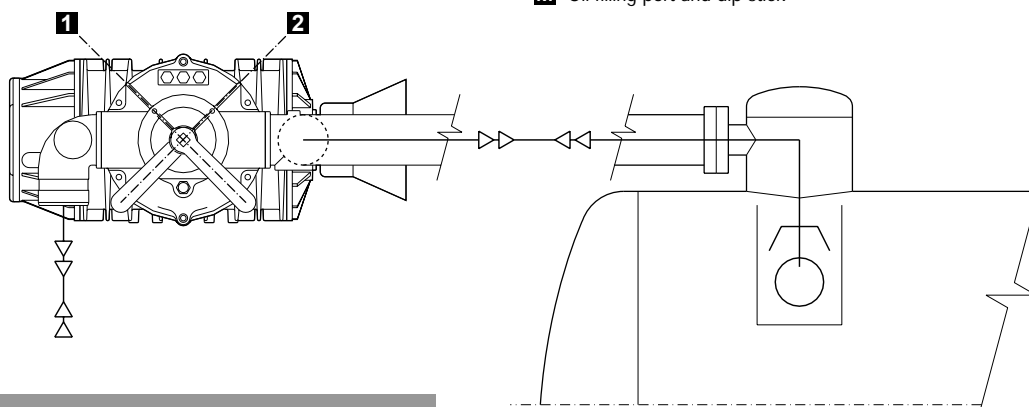
ATTENTION: a wrong rotation direction will cause the breackage of the vanes! Check also the correct working and the position of the 4-way valve!

Transmission	Handle position	Running with
Direct drive LH	1	Pressure
Gearbox dr. RH	2	Vacuum
Direct drive RH	1	Vacuum
Gearbox dr. LH	2	Pressure

Lefthand rot. means counterclockwise and righthand rot. clockwise, looking at the drive shaft of the pump.

- A** Exhaust
- B** Vacuum-pressure manifold
- C** Drip oilers
- D** Suction
- E** Pressure relief valve port.
(Available for PNR-PNE 102-122-142 only if foreseen with additional conveyor Ref. no.1627102500)
- F** Vanes inspection port
- G** Gear box oil filling plug
- H** Gear box oil level plug
- I** Air injection valves (PNR version)
- L** Oil tank
- M** Oil filling port and dip stick

Fig. 6



Normally the conveyor/manifold with the threaded connection for the over-pressure valve is fitted on the front of the pump. It can however be moved, if needed, towards the rear. In this case the function vacuum-pressure will be opposite of the described one.

- Check the lubrication of the pump: oil drops have to fall regularly and constantly inside the oilers. The automatic lubrication pump is correctly adjusted before delivery of the vacuum pump and, normally, does not require any further adjustment. See part 7.1.3.(Lubrication adjustment) if a changement has to be done.

6. Running of the pump

Starting-up: it is recommended a smooth starting without any sudden acceleration in order to avoid damages to the pump and its drive.

Stopping: when the pump is driven by an auxiliary engine disengage the transmission before stopping it.

Take care :

- Do not obstruct or tamper with the safety valves.
- Do not sprinkle water or other liquids on the pump while running.
- Do not exceed temperature of 150 °C (300 °F) measured at the air discharge connection.
- Work speed: once that the wanted vacuum rated has been attained it is recommendable to decrease the RPM. This usefull procedure, that will not increase the time requested to fill up the tank, will hoever result in a lesser wear of the vanes. It is suggested to reduce the speed also when operating with pressure.
- Anyway, always run the pump at the indicated (see also on the pump's tag) RPM possibly without going under the minimum speed, in order to avoid abnormal wear of the pump housing.
- In the eventuality that the suction - exhaust line has some kind of obstruction, stop immediately the pump and remove the obstruction and/or its cause.
- The air flow and the vacuum rate inside the tank has to be adjusted by means of the vacuum pump RPM only (not by any other means like valves etc).

- After long stillstanding periods or after working in rather dusty environment and in the eventuality that foreign liquids have been sucked inside the pump, the insides of the pump have to be washed. This operation to be carried out when the pump has cooled down: by running the pump very slowly, introduce through the suction port, about 1,5 litres of diesel fuel. This liquid has to be removed from the insides once that the washing operation has been completed. Plenty of oil (see point 2.4) must be introduced in order to lubricate again the pump.
- With temperature below 5 °C (40 °F) and long periods of inactivity, introduce some quantity of oil through the suction connection before starting off the pump.
- The air injection cooling system grants the use of the vacuum pump at high vacuum rates. Anyway it has to be remembered that the pump has been designed for non-continuous work. This cooling system allows to dissipate part of the accumulated heat still at satisfactory lubrication conditions. Continuous, heavy-duty work, or prolonged work periods will cause an over-heating of the pump, consequently reducing performances and durability.
- With the PNR models it is quite normal that the vacuum rate in the tank will fall down at about 50%, if and when the pump is stopped for sufficient time. This because atmosferic air will flow back in the tank through the injection valves, which are adjusted at approximately 0,5 bar. Vent the tank and take it to atmosferic pressure when stopping the pump in order to avoid back rotation of the pump.

7. Maintenance

7.1. Ordinary maintenance

Suggested periodical checking in order to maintain a good efficiency of the pump

7.1.1. Periodical checking

- Check the regular dropping of the oil inside the oilers. Prescribed oil quantity as per part. 2.3.
- Clean regularly the filters on the air injection ports (see fig. 5) and the filter placed on the oil block (see fig. B).
- Check the drive elements, according to the manufacturer prescriptions.
- Check the oil level in the gearbox (-M- models).
- Drain the oil from the silencer. Do not use it again on the vacuum pump.

Furthermore check this, with the following frequency:

Unit	Daily	Weekly	Quarterly
Lubricating oil level	•		
Pressure and vacuum	•		
Safety valves		•	
Air filter cleaning		•	
Vanes wear			•

- The oil level has to stay above the minimum mark of the dip stick otherwise the pump will not suck any oil. This will cause quick wear of the vacuum pump and seize the oil pump. Periodically clean also the oil pump filter and the oil tank.
- Decreasing performances (vacuum rate and maximum pressure) indicate clearly a wear-off of some components. Therefore check the vanes without further delay.
- In any case the vanes have to be checked at least every three months.

NOTE For particular heavy duty working conditions (high vacuum rates, dusty environment, long working times) do the checkings more frequently than indicated in the maintenance chart.

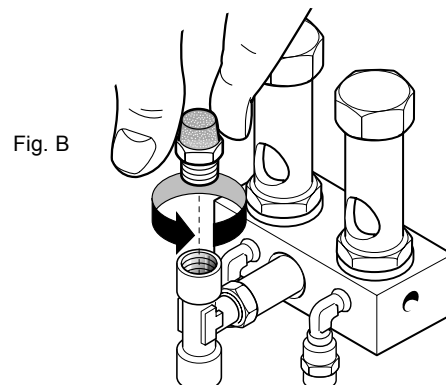
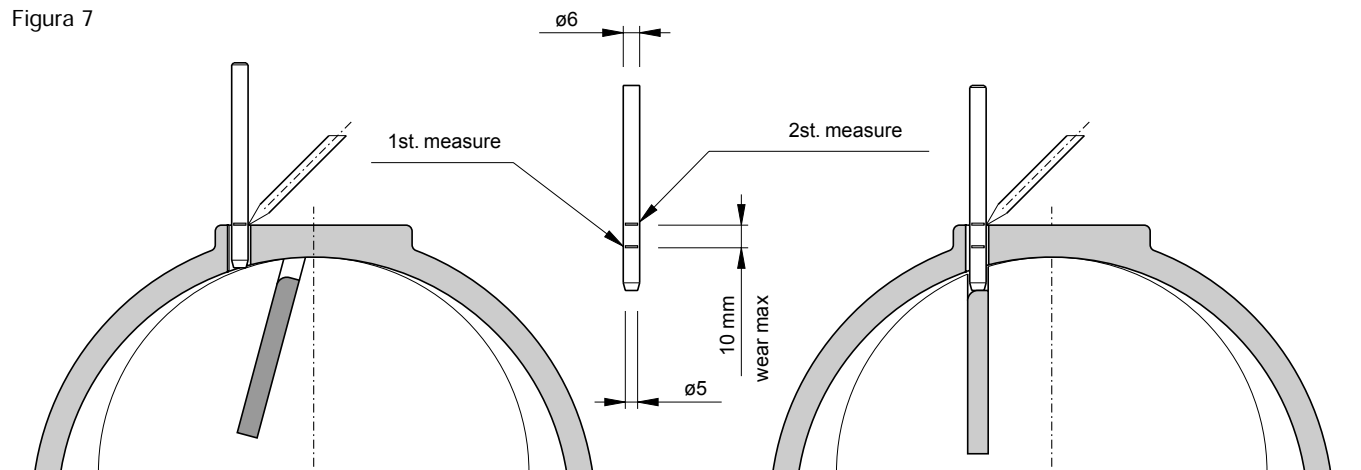


Figura 7



7.1.2. Checking of the vanes wear-off

To check the vanes, just remove the manifold above the proper port (fig. 5). Remove the plug and insert a metal rod $\varnothing 6$ with a tapered end (see fig. 7). Rest first the rod against the rotor and mark the spot. Afterwards turn slowly the drive shaft until the rod connects with the vane (inserted in its slot) and mark also this spot. If the distance between the two spots is more than 10 mm the vanes have to be changed. At the end of this checking do not forget to replace the plug on the port.

ATTENTION: an excessive wear of the vanes most likely will result in the breakage of the vane itself because the guiding function of the rotor's slot will not be sufficient anymore with a reduced width of the vanes. Vanes breakage may cause serious damages on the inside parts of the pump!

7.1.3. Lubrication adjustment

A faulty or not sufficient lubrication can affect performances and durability of the vacuum pump

The oil pump performance is adjusted during final testing of the vacuum pump. In case that a different oil flow is needed or if the flow needs to be adjusted, before changing the oil flow itself, check the number of oil drops through the sight glass of the oiler, with the vacuum pump at normal work-temperature: **approximately 40 drops per minute (minimum 30) at maximum suggested speed.**

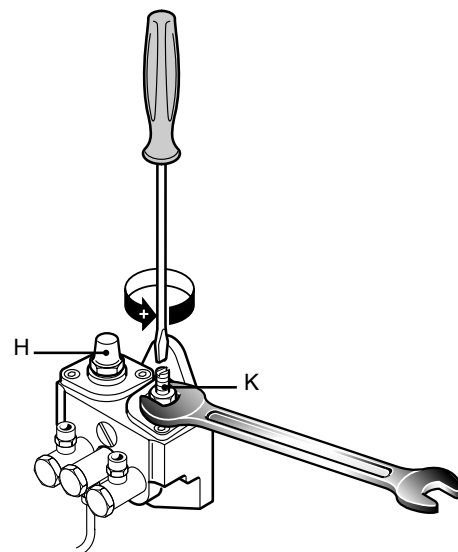
ATTENTION: 1/2 turn of the oil pump adjusting screw will vary the oil flow of approximately 40 g/h.

- Drain the oil tank
- Remove the tank's cover
- Unscrew the protection caps (H).
- To adjust the oil flow use a short screwdriver and a 10 mm wrench (K).
- For this operation, feed the lubrication pump with oil from an extra can, with known capacity or graduated glass, start the pump and check the oil flow reached after the adjustment.
- Reassemble the removed parts.

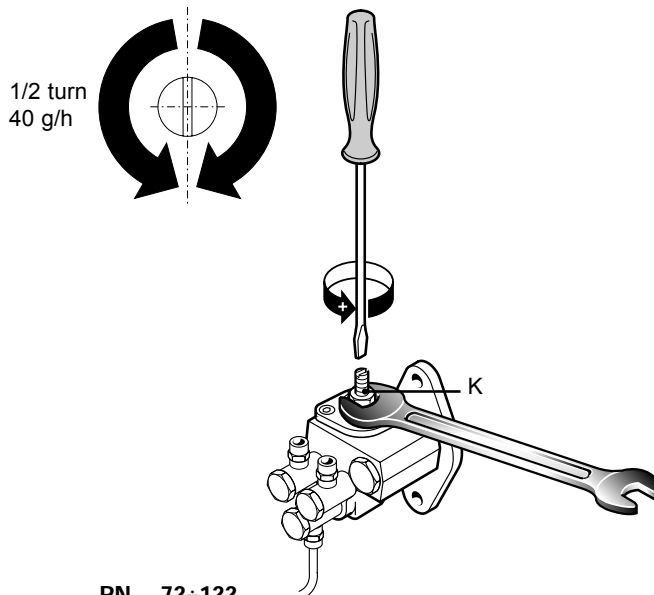
During normal operation of the vacuum pump, both with vacuum or pressure, never reduce the lubrication below the values mentioned in part. 2.3.

For vacuum pumps operating at low speed be aware that the oil flow will be reduced proportionally to the rotation speed.

Fig. 8



PNR 142



PN... 72÷122

7.2. Extraordinary maintenance: changing of the vanes

To be done when the vanes reach the mentioned wear of 10mm
(See paragraph 7.1.3).

PN... 72-82-102-122:

- It is suggested to remove the oil tank on the rear part because generally the pump's drive components are fitted on the front flange.
- Use always the specific kit of gaskets for the pump model at hand (see also spare parts list).

Disassemble operation:

- Drain the oil tank through the proper port (pos. 1).
- Remove the tank's cap (pos. 2) and change the gasket (pos. 3); unscrew the lubrication pipe's fittings (pos. 4) connecting the oil pump to the oilers.
- Remove the oil pump (pos. 4a).
- Remove the screws fixing the oil tank (pos. 6) and carefully remove it, eventually using two screws partially winded inside the threads. Avoid that the rotor falls down inside the housing, supporting it if necessary with adequate tools.
- Change the OR (pos. 7).
- Remove the oil pump's flange (pos. 8), the compensation ring (pos. 9) and the bearing (pos. 10). This will make the reassembly of the oil tank (pos. 6) much easier.
- Lubricate the new vanes before inserting them in the rotor's slots.

ATTENTION: The new vanes have to be inserted with the rounded corner facing towards the housing (see fig.9a).

Fig. 9

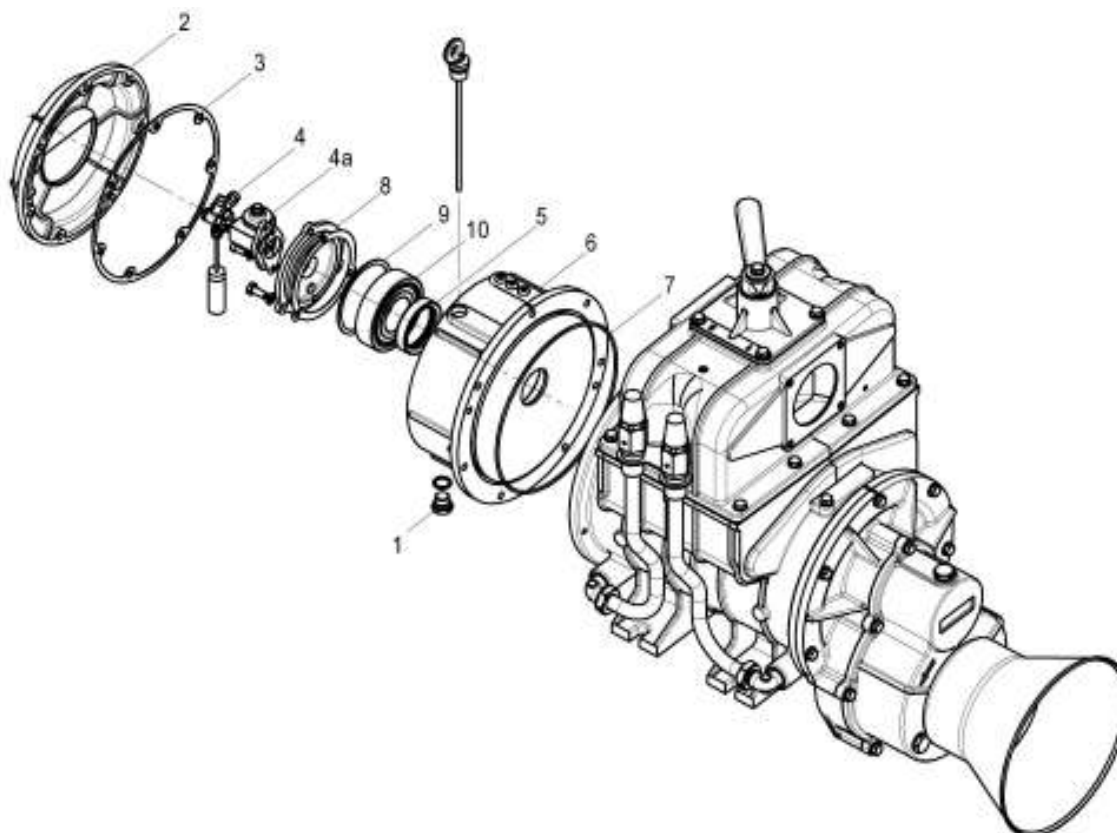
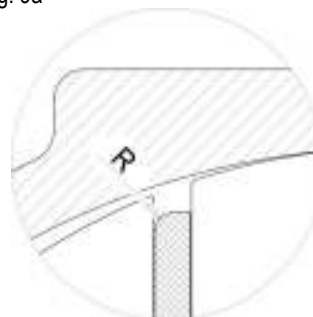


Fig. 9a



Assemble operation:

- Reassemble everything again in the right sequence, absolutely avoiding to leave foreign parts inside the pump. Always change all the gaskets and the OR (pos. 7) after having them properly lubricated and also the seal (pos. 5), if necessary. Put some grease in the space between the bearing (pos. 10) and the flange (pos. 8).
- Reassemble the oil tank (pos. 6), and the OR (pos. 7) carefully inserting the drive shaft without damaging the seal (pos. 5).
- Insert the bearing (pos. 10), the compensation ring (pos. 9) and the oil pump's flange (pos. 8).
- Insert correctly the lubrication pump (pos. 4a) in the driving slot and refit the flange.
- Reassemble the lubrication pipes and fittings (pos. 4).
- Reassemble the tank's cap (pos. 2) and the gasket (pos. 3).
- Replace the plug on the tank (pos. 1) and refill it with lubrication oil.

PNR 142:

- It is suggested to remove the oil tank on the rear part because generally the pump's drive components are fitted on the front flange.
- Use always the specific kit of gaskets for the pump model at hand (see also spare parts list).

Disassemble operation:

- Remove the rear protection (pos 1).
- Unscrew the lubrication pipe's fittings (pos .2) connecting the oil pump to the oilers.
- Remove the oil pump (pos .2a).
- Remove the screws fixing the flange (pos. 3) and carefully remove it, eventually using two screws partially winded inside the threads. Avoid that the rotor falls down inside the housing, supporting it if necessary with adequate tools.
- Change the OR (pos. 4).
- Remove the oil pump's flange (pos. 5), the compensation ring (pos. 6) and the bearing (pos. 7). This will make the reassembly of the flange (pos. 3) much easier.
- Lubricate the new vanes before inserting them in the rotor's slots.

ATTENTION: The new vanes have to be inserted with the rounded corner facing towards the housing (see fig.9a).

Fig. 9b

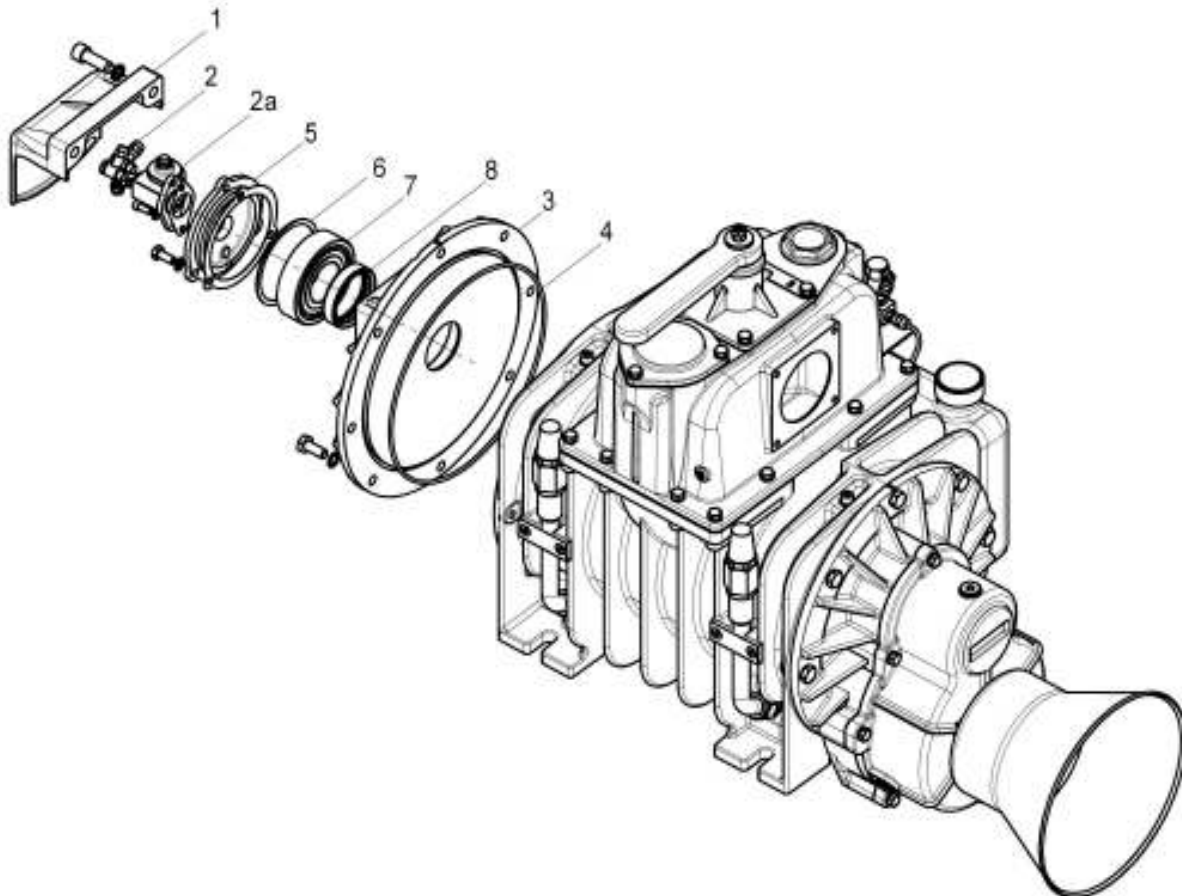
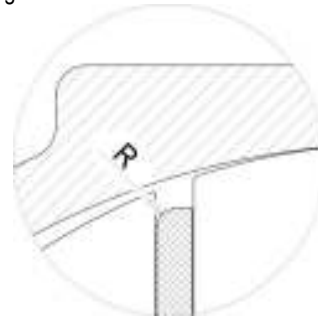


Fig. 9a



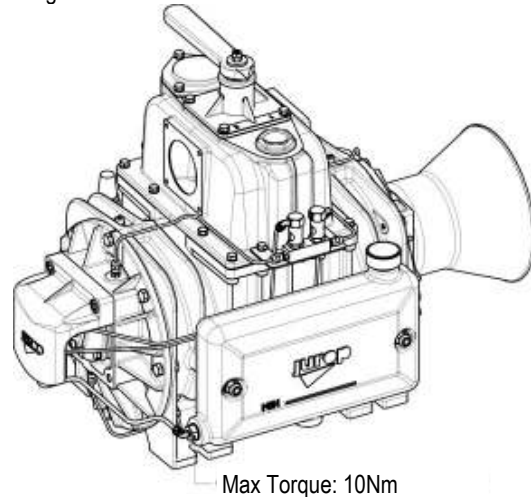
Assemble operation:

- Reassemble everything again in the right sequence, absolutely avoiding to leave foreign parts inside the pump. Always change all the gaskets and the OR (pos. 4) after having them properly lubricated and also the seal (pos. 8), if necessary. Put some grease in the space between the bearing (pos. 7) and the flange (pos. 3).
- Reassemble the flange (pos. 3), and the OR (pos. 4) carefully inserting the drive shaft without damaging the seal (pos. 8).
- Insert the bearing (pos. 7), the compensation ring (pos. 6) and the oil pump's flange (pos. 5).
- Insert correctly the lubrication pump (pos. 2a) in the driving slot and refit the flange.
- Reassemble the lubrication pipes and fittings (pos. 2).
- Reassemble the rear protection (pos 1).

ATTENZIONE:

- On direct drive models (D) normally it is not necessary to remove the front small flange. However, if this has to be done do not forget to grease the underneath bearing.
- The front bearing (on PN... 72-82-102-122 D models) has been greased during pump's assembling. Lubrication of said bearing is necessary after long working periods only (for example, normal duration of a set of vanes). It is consequently suggested to pump carefully new grease through the lubrication nipple in order to avoid damages to the seals.
- When changing the vanes do not forget to carefully clean all the components that you have dismantled. Clean the oil filter and the oil tank from the solid sediments.
The models PNR142, (Fig. 10) are provided with a side oil tank: Be careful to the maximum tight torque of the oil filter plug: Maximum torque: 10Nm.

Fig. 10



NOTA **Cleaning of the inside exhaust port of the pump housing and the 4-way manifolds.**

Frequency: at every changing of the vanes.

How to proceed: dismantle the manifold and remove possible oil-scales or other foreign parts.

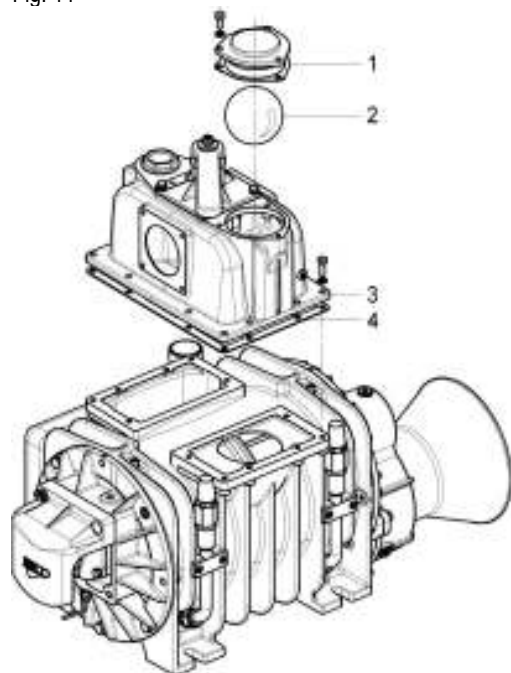
The clogging-up of this manifold and the exhaust port depends mainly from heavy duty use of the pump and causes an increase of temperature and a non perfect closing of the check valve. A careful cleaning of all components, including the insides of the housing and the non-return check valve and it's seat, is therefore strongly recommended.

In case of PNR142 check the good conditions of the rubber ball (Pos. 2) inside the manifold (The rubber ball is the check valve for this PNR142 model). (see Fig. 11).

The surface of the rubber ball must be free from scratches and scrubs that can compromise the efficiency of the check valve.

The rubber ball can be extracted removing the upper flange of the 4-way manifold. Change the gaskets if necessary (pos. 1-4).

Fig. 11



8. Trouble-shooting : causes and remedies

TROUBLES

Overheating of the pump

Cause	Remedies
• Faulty lubrication	• Check the oil pump
• Missing oil	• Fill up the oil tank
• Revolutions too high	• Reduce the Rpm
• Operating time too long at too high vacuum rate	• Decrease the vacuum rate
• Clogged filters on the air injection system	• Clean the filters
• Exhaust port, check valve partly clogged	• Remove crusts and scales
• Insufficient diameter of vacuum and discharge line	• Check the correct dimensions of the line (minimum suggested 3")

The pump is blocked

Cause	Remedies
• Broken vanes: - due to foreign parts - due to faulty lubrication	• Dismantle the pump and change the vanes • Check/clean the filters and elements on the vacuum line • Check the lubrication pump
• Frozen up pump	• Warm-up the pump
• Damaged drive system	• Change the damaged parts

Reduced performances of the vacuum pump (max. vacuum rate, max. pressure, air flow)

Cause	Remedies
• 4-way valve handle in neutral position	• Move the handle against the resting pin
• Worn vanes	• Change the vanes
• Leaking check valve	• Clean the check valve
• Worn O-rings	• Change the seals
• Leaking gaskets and/or valves on the vacuum tank	• Change that damaged parts
• Clogged connecting pipeline	• Change the damaged hoses - pipes
• Floating ball or air filter obstructed	• Dismantle and clean
• Crusted up exhaust manifold	• Dismantle and clean
• Vacuum line components under-dimensioned	• Check the dimensioning for the pump model at hand
• Rubber connection obstructed or damaged	• Change the connections

Abnormal oil consumption

Cause	Remedies
• Insufficient lubrication	• Adjust the oil pump flow (see par. 7.1.3)
• Excessive oil consumption	• Loss of adjustment of the oil pump • Probable wear or breakage of the seal rings of the vacuum pump shaft. Replace them • Check the fittings built on the automatic oil pump and screw tight

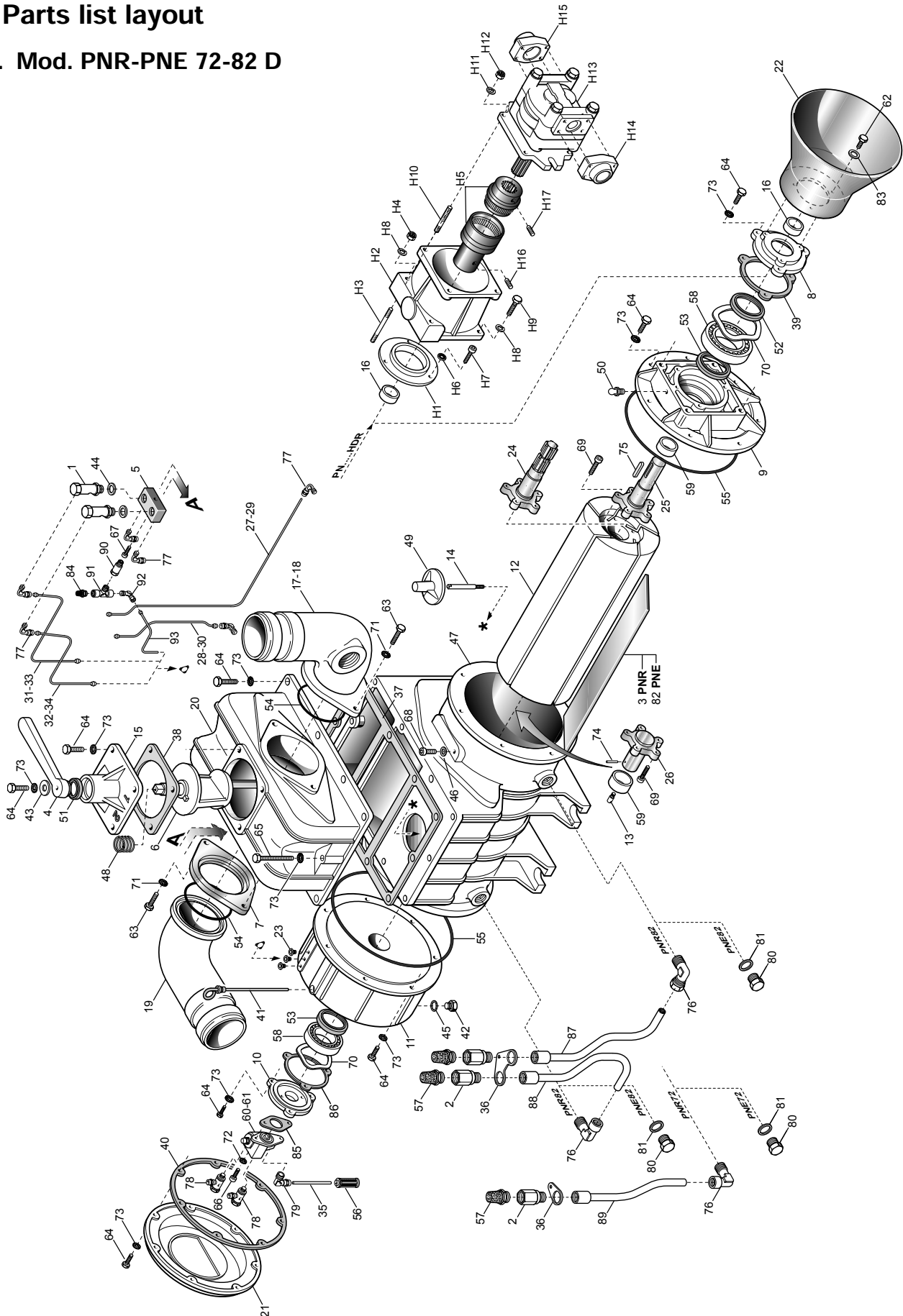
WARRANTY

A total compliance with the instructions contained in this booklet, concerning running and maintenance of the pump, is mandatory to have granted the manufacturer's warranty conditions on faulty parts.

The Seller warrants the pump against defects in workmanship or material under normal and proper use and installation, excluded the lubricants, the parts subjected to wear and the parts damaged by improper use or inadequate maintenance.

9. Parts list layout

9.1. Mod. PNR-PNE 72-82 D



Parts list PNR-PNE 72-82 D

Pos. Code	Description	Quantity
1	1401200700 Oil dripper automatic lubrication	2
2	1493300200 Air injection valve PNR 72	1
	1493300200 Air injection valve PNR 82	2
3	1601605700 Vane PNR 72	5
	1601605800 Vane PNR 82	5
4	1605500000 Handle R-PNR-PNE	1
5	1508100000 Distributor PR-PNR-PNE	1
6	1608501700 Conveyor PNR-PNE 72-82	1
7	1610100000 Turning conveyor flange	1
8	1610500400 Flange R-PNR-PNE 72-82 D	1
9	1610508400 Flange PNR-PNE 72-82 D	1
10	1610508500 Automatic lubrication pump flange R-PNR-PNE	1
11	1612503300 Oil tank PNR-PNE 72-82	1
12	1621503300 Rotor PNR-PNE 72	1
	1621503400 Rotor PNR-PNE 82	1
13	1622002600 Shaft M10	1
14	1622007800 Check valve shaft PNR-PNE 72-82-102-122	1
15	1623100000 Conveyor cap PNR-PNE 72-82	1
16	1626001300 Bushing PNR-PNE 72-82 D	1
17	1627100200 Conveyor Ø76 with safety valve connection	1
18	1627100300 Conveyor Ø80 with safety valve connection	1
19	1627100500 Turning conveyor Ø76	1
20	1627504300 Manifold PNR-PNE 72-82	1
21	1640101100 Oil tank cap PNR-PNE 72-82	1
22	4029602806 Drive shaft protection	1
23	1642600000 Pipeline protection	3
24	1650014100 Front splined shaft PNR-PNE 72-82 D	1
25	1650014200 Front smooth shaft PNR-PNE 72-82 D	1
26	1650014300 Rear shaft PNR-PNE 72-82	1
27	1663036400 Front lubricating line PNR-PNE 72 D lh/M rh	1
	1663037600 Front lubricating line PNR-PNE 82 D lh/M rh	1
28	1663036500 Rear lubricating line PNR-PNE 72 D lh/M rh	1
	1663037700 Rear lubricating line PNR-PNE 82 D lh/M rh	1
29	1663036800 Front lubricating line PNR-PNE 72 D rh/M lh	1
	1663038000 Front lubricating line PNR-PNE 82 D rh/M lh	1
30	1663036900 Rear lubricating line PNR-PNE 72 D rh/M lh	1
	1663038100 Rear lubricating line PNR-PNE 82 D rh/M lh	1
31	1663037000 External oil dripper line PNR-PNE 72 D lh/M rh	1
	1663038300 External oil dripper line PNR-PNE 82 D lh/M rh	1
32	1663037100 Internal oil dripper line PNR-PNE 72 D lh/M rh	1
	1663038200 Internal oil dripper line PNR-PNE 82 D lh/M rh	1
33	1663037200 External oil dripper line PNR-PNE 72 D rh/M lh	1
	1663038400 External oil dripper line PNR-PNE 82 D rh/M lh	1
34	1663037300 Internal oil dripper line PNR-PNE 72 D rh/M lh	1
	1663038500 Internal oil dripper line PNR-PNE 82 D rh/M lh	1
35	1663041200 Suction line for aut. lubric. pump PNR-PNE 72-82	1
36	1681007100 Air injection pipes bracket PNR 72	1
	1681007000 Air injection pipes bracket PNR 82	1
37	1680608800 Manifold gasket PNR-PNE 72-82	1
38	1680700200 Conveyor gasket PNR-PNE 72-82	1
39	1680700400 Flange gasket PNR-PNE 72-82 D	1
40	1680707500 Oil tank cap gasket PNR-PNE 72-82	1
41	1683600000 Oil stick	1
42	1684000000 Plug G3/8	1
43	1685002800 Washer 30x8,5x4	1
44	1685100000 Alu washer 14x20x1,5	2
45	1685100200 Alu washer 17x22x1,5	1
46	1685100800 Alu washer 8x14x1,5	1
47	1687505800 Housing PNR-PNE 72	1
	1687505700 Housing PNR-PNE 82	1
48	1691000000 Conveyor spring	1
49	1693500300 Check valve PNR-PNE 72-82	1
50	4022100010 Greasing nipple M10x1	1
51	4022200030 Seal 41x27x10	1
52	4022200040 Seal 72x40x10	1
53	4022200111 Seal 72x48x15	2
54	4022200307 OR 6287	2
55	4022200308 OR 4775	2
56	4022300001 Nylon filter Ø6	1
57	4022301004 Silencer-filter 3/4" PNR 72	1
	4022301004 Silencer-filter 3/4" PNR 82	2
58	4023100040 Bearing 6308	2

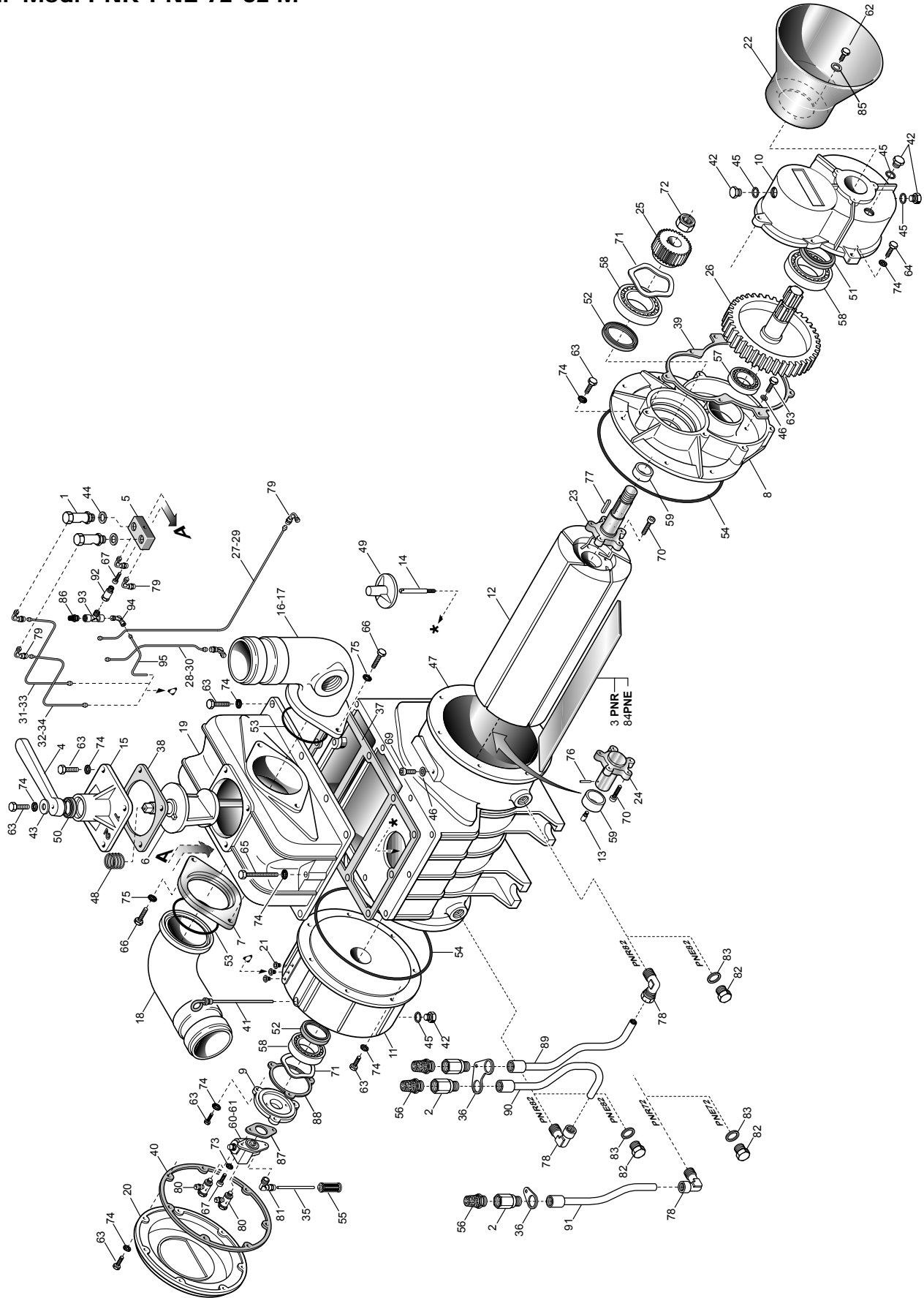
Pos. Code	Description	Quantity
59	1624007500 Bushing 48x40x22	2
60	4024251000 Automatic lubricating pump (cw rotation)	1
61	4024251500 Automatic lubricating pump (ccw rotation)	1
62	4026101404 Screw M8x12 galvanized	3
63	4026103003 Screw M12x35 galvanized	4
64	4026107110 Screw M8x25	40
65	4026107117 Screw M8x60	2
66	4026120304 Screw M6x16	2
67	4026120300 Screw M6x14	1
68	4026120400 Screw M8x12	1
69	1672001600 PNR rotor screw M10	10
70	4026300020 Compensation ring Ø90	2
71	4026350609 Grower washer M12	4
72	4026350908 Washer M6	2
73	4026350909 Washer M8	42
74	4026414617 Pin 3x40 (*)	1
75	4026500909 Tab 10x8x50	1
76	4026701310 Fitting G1/2 PNR 72	1
	4026701310 Fitting G1/2 PNR 82	2
77	4026706000 Fitting 90° Ø4-1/8	6
78	4026706101 Fitting Ø4-1/8	2
79	4026706003 Fitting 90° Ø6-1/8	1
80	4026904001 Plug G1/2 PNR-PNE 72	1
	4026904001 Plug G1/2 PNR-PNE 82	2
81	4026359003 Alu washer 21,5x26x1,5 PNR-PNE 72	1
	4026359003 Alu washer 21,5x26x1,5 PNR-PNE 82	2
82	1601605300 Vane PNE 72	5
	1601605400 Vane PNE 82	5
83	4026356002 Flat washer M8 galvanized	3
84	4022301001 Oil block filter G 1/4	1
85	1680609700 Oil pump gasket	1
86	1680609800 Oil pump flange gasket	1
87	1563008100 Air injection pipe r. PNR 82	1
88	1563008200 Air injection pipe l. PNR 82	1
89	1563008300 Air injection pipe PNR 72	1
90	4026705702 Oil drain extention	1
91	4026702502 Oil drain T fitting	1
92	4026706004 Fitting 90° G1/4 ø6	1
93	1663042900 Oil drain line PNR 72 D rh	1
	1663043000 Oil drain line PNR 72 D lh	1
	1663043100 Oil drain line PNR 82 D rh	1
	1663043200 Oil drain line PNR 82 D lh	1

(*): on models with ccw (left hand) rotation

PNR-PNE 72-82 HDR

Pos. Code	Description	Quantity
H1	1610005500 Centering flange PNR 72-82 HDR	1
H2	1612501000 Bracket PNR-PNE ... HDR	1
H3	4026171211 Stud screw M12x80	2
H4	4026305508 Nut M12	2
H5	1470102900 Coupling PNR 72-82 HDR	1
H6	4026350909 Washer M8	3
H7	4026107110 Screw M8x25	3
H8	4026350609 Grower washer M12	4
H9	4026107313 Screw M12x40	2
H10	4026171304 Stud screw M14x40	4
H11	4026350610 Grower washer M14	4
H12	4026300808 Nut M14	4
H13	4024107008 Motor PNR-PNE 72-82 HDR	1
H14	4026711002 Flange G1	1
H15	4026711003 Flange G1 1/4	1
H16	4026136004 Dowel pin M8x10	1
H17	4026136006 Dowel pin M8x14	1
	1892002500 Gaskets kit PNR-PNE 72-82 D	1

9.2. Mod. PNR-PNE 72-82 M

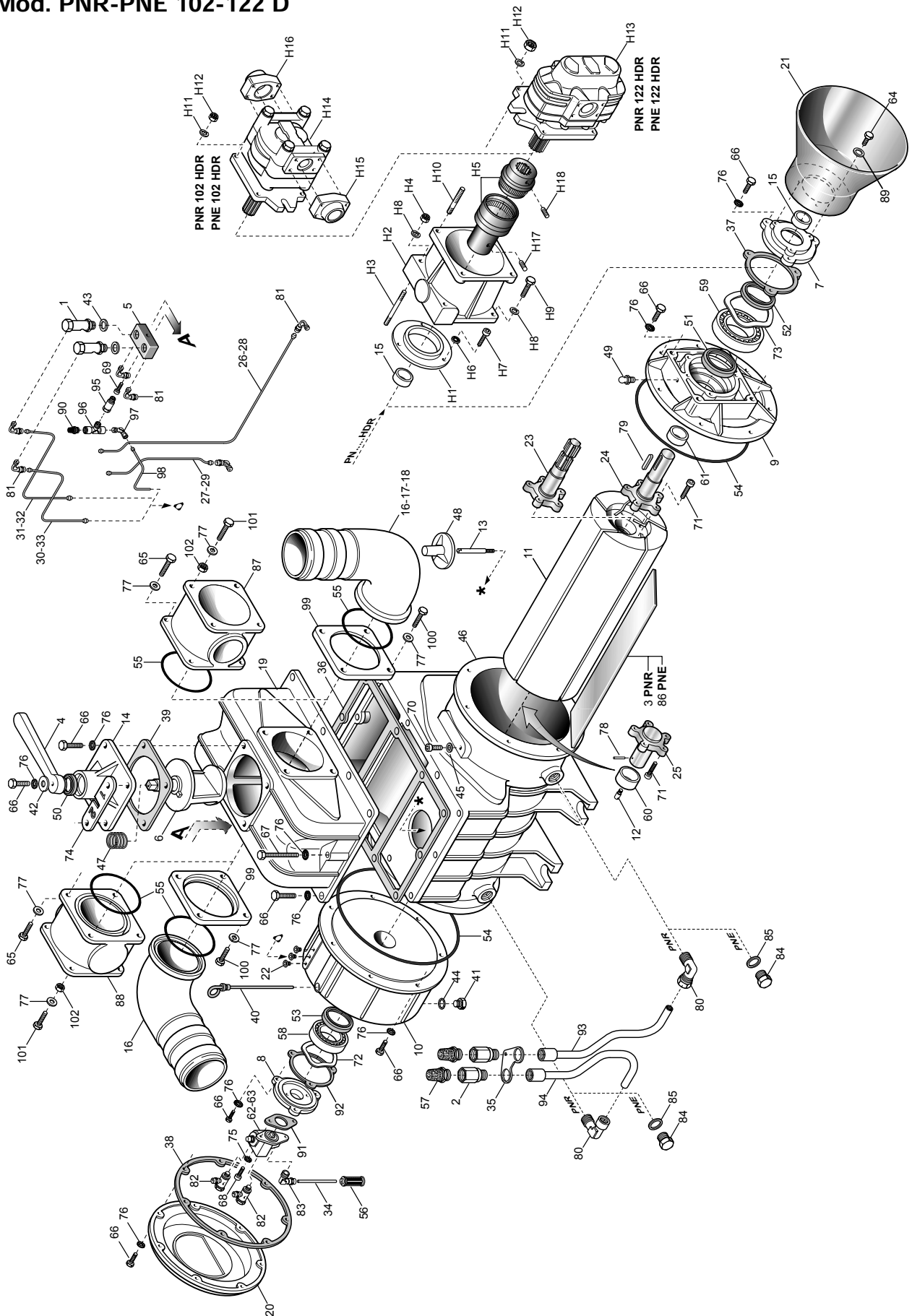


Parts list PNR-PNE 72-82 M

Pos. Code	Description	Quantity	Pos. Code	Description	Quantity		
1	1401200700	Oil dripper automatic lubrication	2	49	1693500300	Check valve PNR-PNE 72-82	1
2	1493300200	Air injection valve PNR 72	1	50	4022200030	Seal 41x27x10	1
	1493300200	Air injection valve PNR 82	2	51	4022200040	Seal 72x40x10	1
3	1601605700	Vane PNR 72	5	52	4022200111	Seal 72x48x15	2
	1601605800	Vane PNR 82	5	53	4022200307	OR 6287	2
4	1605500000	Handle R-PNR-PNE	1	54	4022200308	OR 4775	2
5	1508100000	Distributor PR-PNR-PNE	1	55	4022300001	Nylon filter Ø6	1
6	1608501700	Gearbox PNR-PNE 72-82	1	56	4022301004	Silencer-filter 3/4" PNR 72	1
7	1610100000	Turning conveyor flange	1		4022301004	Silencer-filter 3/4" PNR 82	2
8	1610508300	Flange PNR-PNE 72-82 M	1	57	4023100018	Bearing 6206	1
9	1610508500	Automatic lubrication pump flange R-PNR-PNE	1	58	4023100040	Bearing 6308	3
10	1612503200	Gearbox PNR-PNE 72-82 M	1	59	1624007500	Bushing 48x40x22	2
11	1612503300	Oil tank PNR-PNE 72-82	1	60	4024251000	Automatic lubricating pump (cw rotation)	1
12	1621503300	Rotor PNR-PNE 72	1	61	4024251500	Automatic lubricating pump (ccw rotation)	1
	1621503400	Rotor PNR-PNE 82	1	62	4026101404	Screw M8x12 galvanized	3
13	1622002600	Shaft M10	1	63	4026107110	Screw M8x25	37
14	1622007800	Check valve shaft PNR-PNE 72-82-102-122	1	64	4026107111	Screw M8x30	7
15	1623100000	Conveyor cap PN-PNR-PNE 72-82	1	65	4026107117	Screw M8x60	2
16	1627100200	Conveyor Ø76 with safety valve connection	1	66	4026103003	Screw M12x35 galvanized	4
17	1627100300	Conveyor Ø80 with safety valve connection	1	67	4026120304	Screw M6x16	2
18	1627100500	Turning conveyor Ø76	1	68	4026120300	Screw M6x14	1
19	1627504300	Manifold PNR-PNE 72-82	1	69	4026120400	Screw M8x12	1
20	1640101100	Oil tank cap PNR-PNE 72-82	1	70	1672001600	PNR rotor screw M10	10
21	1642600000	Pipeline protection	3	71	4026300020	Compensation ring Ø90	2
22	4029602806	Drive shaft protection	1	72	4026305616	Nut M30x2	1
23	1650014000	Front shaft PNR-PNE 72-82 M	1	73	4026350908	Washer M6	2
24	1650014300	Rear shaft PNR-PNE 72-82	1	74	4026350909	Washer M8	44
25	1651005400	Pinion PNR-PNE 72-82 M	1	75	4026350609	Grower washer M12	4
26	1651005600	Gear PNR-PNE 72-82 M	1	76	4026414617	Pin 3x40 (*)	1
27	1663036400	Front lubricating line PNR-PNE 72 D lh/M rh	1	77	4026500905	Tab 10x8x32	1
	1663037600	Front lubricating line PNR-PNE 82 D lh/M rh	1	78	4026701310	Fitting G1/2 PNR 72	1
28	1663036500	Rear lubrication line PNR-PNE 72 D lh/M rh	1		4026701310	Fitting G1/2 PNR 82	2
	1663037700	Rear lubricating line PNR-PNE 82 D lh/M rh	1	79	4026706000	Fitting 90° Ø4-1/8	6
29	1663036800	Front lubricating line PNR-PNE 72 D rh/M lh	1	80	4026706101	Fitting Ø4-1/8	2
	1663038000	Front lubricating line PNR-PNE 82 D rh/M lh	1	81	4026706003	Fitting 90° Ø6-1/8	1
30	1663036900	Rear lubricating line PNR-PNE 72 D rh/M lh	1	82	4026904001	Plug G1/2 PNR-PNE 72	1
	1663038100	Rear lubricating line PNR-PNE 82 D rh/M lh	1		4026904001	Plug G1/2 PNR-PNE 82	2
31	1663037000	External oil dripper line PNR-PNE 72 D lh/M rh	1	83	4026359003	Alu washer 21,5x26x1,5 PNR-PNE 72	1
	1663038300	External oil dripper line PNR-PNE 82 D lh/M rh	1		4026359003	Alu washer 21,5x26x1,5 PNR-PNE 82	2
32	1663037100	Internal oil dripper line PNR-PNE 72 D lh/M rh	1	84	1601605300	Vane PNE 72	5
	1663038200	Internal oil dripper line PNR-PNE 82 D lh/M rh	1		1601605400	Vane PNE 82	5
33	1663037200	External oil dripper line PNR-PNE 72 D rh/M lh	1	85	4026356002	Flat washer M8 galvanized	3
	1663038400	External oil dripper line PNR-PNE 82 D rh/M lh	1	86	4022301001	Oil block filter G 1/4	1
34	1663037300	Internal oil dripper line PNR-PNE 72 D rh/M lh	1	87	1680609700	Oil pump gasket	1
	1663038500	Internal oil dripper line PNR-PNE 82 D rh/M lh	1	88	1680609800	Oil pump flange gasket	1
35	1663041200	Suction line for aut. lubric. pump PNR-PNE 72-82	1	89	1563008100	Air injection pipe r. PNR 82	1
36	1681007100	Air injection pipes bracket PNR 72	1	90	1563008200	Air injection pipe l. PNR 82	1
	1681007000	Air injection pipes bracket PNR 82	1	91	1563008300	Air injection pipe PNR 72	1
37	1680608800	Manifold gasket PNR-PNE 72-82	1	92	4026705702	Oil drain extention	1
38	1680700200	Conveyor gasket PNR-PNE 72-82	1	93	4026702502	Oil drain T fitting	1
39	1680707400	Gearbox gasket PNR-PNE 72-82 M	1	94	4026706004	Fitting 90° G1/4 ø6	1
40	1680707500	Oil tank cap gasket PNR-PNE 72-82	1	95	1663042900	Oil drain line PNR 72 D rh	1
41	1683600000	Oil stick	1		1663043000	Oil drain line PNR 72 D lh	1
42	1684000000	Plug G3/8	4		1663043100	Oil drain line PNR 82 D rh	1
43	1685002800	Washer 30x8,5x4	1		1663043200	Oil drain line PNR 82 D lh	1
44	1685100000	Alu washer 14x20x1,5	2				
45	1685100200	Alu washer 17x22x1,5	4				
46	1685100800	Alu washer 8x14x1,5	3				
47	1687505800	Housing PNR-PNE 72	1				
	1687505700	Housing PNR-PNE 82	1				
48	1691000000	Conveyor spring	1				
				1892002600	Gaskets kit PNR-PNE 72-82 M	1	

(*): on models with cw (right hand) rotation

9.3. Mod. PNR-PNE 102-122 D



Parts list PNR-PNE 102-122 D

Pos. Code	Description	Quantity
1	1401200700 Oil dripper automatic lubrication	2
2	1493300200 Air injection valve PNR	2
3	1601605900 Vane PNR 102	5
	1601606000 Vane PNR 122	5
4	1605500000 Handle R-PNR-PNE	1
5	1508100000 Distributor PR-PNR-PNE	1
6	1608501800 Conveyor PNR-PNE 102-122	1
7	1610508200 Flange R-PNR-PNE 102-122-142 D	1
8	1610508500 Automatic lubrication pump flange R-PNR-PNE	1
9	1610508600 Flange PNR-PNE 102-122 D	1
10	1612503400 Oil tank PNR-PNE 102-122	1
11	1621503500 Rotor PNR-PNE 102	1
	1621503600 Rotor PNR-PNE 122	1
12	1622002600 Shaft M10	1
13	1622007800 Check valve shaft PNR-PNE 72-82-102-122	1
14	1623100500 Conveyor cap PN-PNR-PNE 102-122	1
15	1626001100 Bushing PNR-PNE 102-122 D	1
16	1627102400 Conveyor ø 100	1-2
17	1627102700 Conveyor ø 80	1
18	1627102800 Conveyor ø 76	1
19	1627504400 Manifold PNR-PNE 102-122	1
20	1640101200 Oil tank cap PNR-PNE 102-122	1
21	1642600100 Drive shaft protection	1
22	4029602806 Pipeline protection	3
23	1650014600 Front splined shaft PNR-PNE 102-122 D	1
24	1650014700 Front smooth shaft PNR-PNE 102-122 D	1
25	1650014800 Rear shaft PNR-PNE 102-122	1
26	1663038800 Front lubricating line PNR-PNE 102 D lh/M rh	1
	1663040000 Front lubricating line PNR-PNE 122 D lh/M rh	1
27	1663038900 Rear lubricating line PNR-PNE 102 D lh/M rh	1
	1663040100 Rear lubricating line PNR-PNE 122 D lh/M rh	1
28	1663039200 Front lubricating line PNR-PNE 102 D rh/M lh	1
	1663040400 Front lubricating line PNR-PNE 122 D rh/M lh	1
29	1663039300 Rear lubricating line PNR-PNE 102 D rh/M lh	1
	1663040500 Rear lubricating line PNR-PNE 122 D rh/M lh	1
30	1663039400 Internal oil dripper line PNR-PNE 102 D lh/M rh	1
	1663040600 Internal oil dripper line PNR-PNE 122 D lh/M rh	1
31	1663039500 External oil dripper line PNR-PNE 102 D lh/M rh	1
	1663040700 External oil dripper line PNR-PNE 122 D lh/M rh	1
32	1663039600 External oil dripper line PNR-PNE 102 D rh/M lh	1
	1663040800 External oil dripper line PNR-PNE 122 D rh/M lh	1
33	1663039700 Internal oil dripper line PNR-PNE 102 D rh/M lh	1
	1663040900 Internal oil dripper line PNR-PNE 122 D rh/M lh	1
34	1663041100 Suction line for aut. lubric. pump PNR-PNE 102-122	1
35	1681006900 Air injection pipes bracket PNR 122	1
	1681007000 Air injection pipes bracket PNR 102	1
36	1680608900 Manifold gasket PNR-PNE 102-122	1
37	1680707300 Flange gasket PNR-PNE 102-122-142 D	1
38	1680707700 Oil tank gasket PNR-PNE 102-122	1
39	1680707800 Conveyor gasket PNR-PNE 102-122	1
40	1683600300 Oil stick	1
41	1684000000 Plug G3/8	1
42	1685002800 Washer 30x8,5x4	1
43	1685100000 Alu washer 14x20x1,5	2
44	1685100200 Alu washer 17x22x1,5	1
45	1685100800 Alu washer 8x14x1,5	1
46	1687505900 Housing PNR-PNE 102	1
	1687506000 Housing PNR-PNE 122	1
47	1691000000 Conveyor spring	1
48	1693500400 Check valve PNR-PNE 102-122	1
49	4022100010 Greasing nipple M10x1	1
50	4022200030 Seal 41x27x10	1
51	4022200113 Seal 70x55x15	1
52	4022200044 Seal 65x45x8	1
53	4022200111 Seal 72x48x15	1
54	4022200309 OR 4875	2
55	4022200310 OR 6362	2(3)
56	4022300001 Nylon filter Ø6	1
57	4022301004 Silencer-filter 3/4"	2
58	4023100040 Bearing 6308	1
59	4023100046 Bearing 6309	1
60	1624007500 Bushing 48x40x22	1
61	4023130035 Bushing 55x45x22	1

Note: between brackets quantity referred to the conveyor with safety valve connection built.

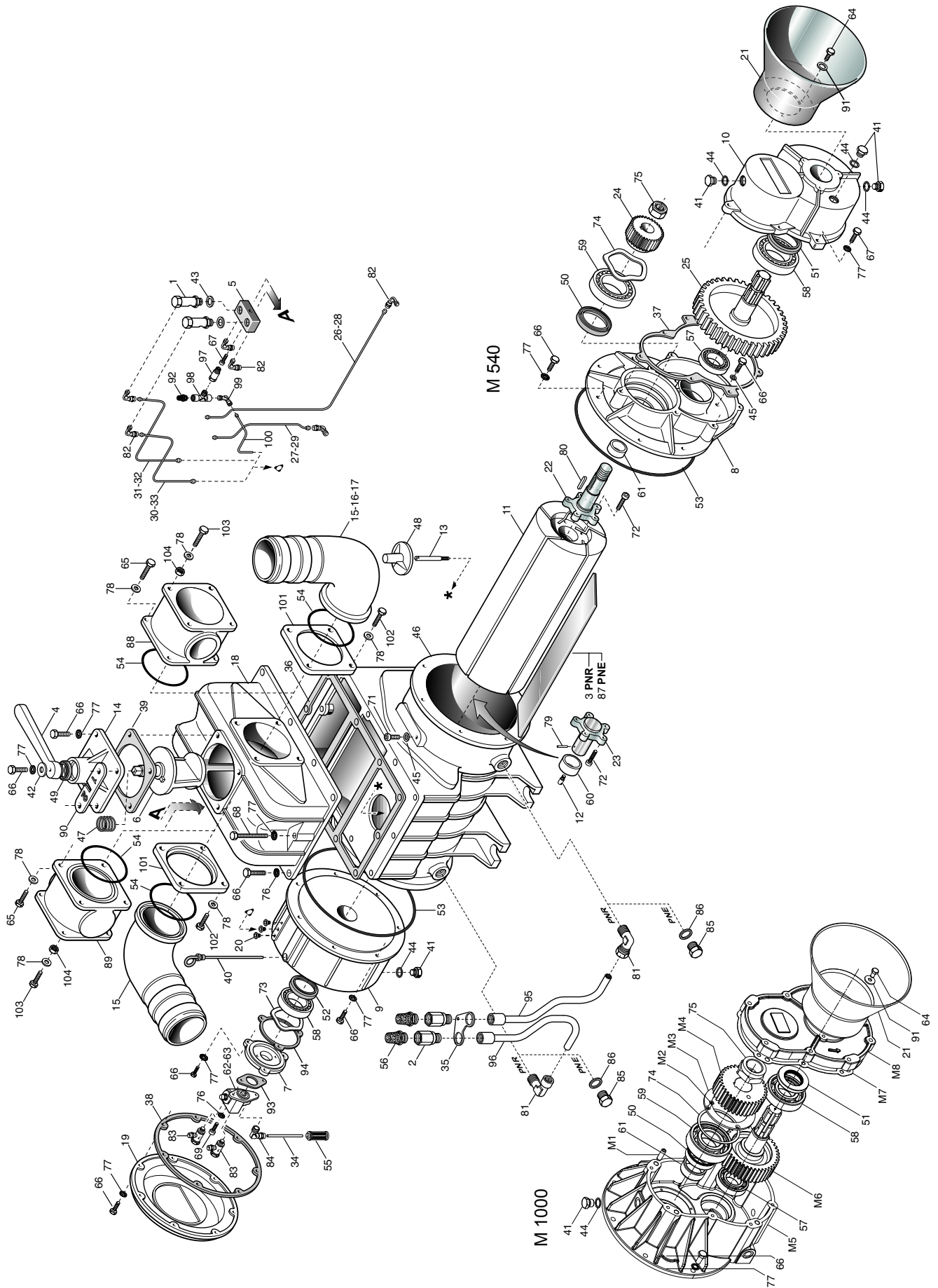
Pos. Code	Description	Quantity
62	4024251000 Automatic lubricating pump (cw rotation)	1
63	4024251500 Automatic lubricating pump (ccw rotation)	1
64	4026101404 Screw M8x12 galvanized	3
65	4026102807 Screw M8x25 galvanized	(4)
66	4026107110 Screw M8x25	40
67	4026107117 Screw M8x60	2
68	4026120304 Screw M6x16	2
69	4026120300 Screw M6x14	1
70	4026120400 Screw M8x12	1
71	1672001600 PNR rotor screw M10	10
72	4026300020 Compensation ring Ø90	1
73	4026300025 Compensation ring Ø100	1
74	1681006800 Plate vac-press PNR-PNE 102-122	1
75	4026350908 Washer M6	2
76	4026350909 Washer M8	42
77	4026350606 Grower washer M8	8(12)
78	4026414617 Pin 3x40 (*)	1
79	4026501006 Tab 12x8x56	1
80	4026701310 Fitting G1/2	2
81	4026706000 Fitting 90° Ø4-1/8	6
82	4026706101 Fitting Ø4-1/8	2
83	4026706003 Fitting 90° Ø6-1/8	1
84	4026904001 Plug G1/2	2
85	4026359003 Alu washer 21,5x26x1,5	2
86	1601605500 Vane PNE 102	5
	1601605600 Vane PNE 122	5
87	1627102500 Conveyor with safety valve connection	(1)
88	1627102600 Conveyor	(1)
89	4026356002 Flat washer M8 galvanized	3
90	4022301001 Oil block filter G 1/4	1
91	1680609700 Oil pump gasket	1
92	1680609800 Oil pump flange gasket	1
93	1563007900 Air injection pipe r.	1
94	1563008000 Air injection pipe l.	1
95	4026705702 Oil drain extension	1
96	4026702502 Oil drain T fitting	1
97	4026706004 Fitting 90° G1/4 ø6	1
98	1663043300 Oil drain line PNR 102 D rh	1
	1663043400 Oil drain line PNR 102 D lh	1
	1663043500 Oil drain line PNR 122 D rh	1
	1663043600 Oil drain line PNR 122 D lh	1
99	1610101100 Conveyor flange	2
100	4026102801 Screw TE 8.8 M8x35	8
101	4026102810 Screw TE 8.8 M8x40	(4)
102	4026308005 Nut M8	(4)

(*): on models with ccw (left hand) rotation

PNR-PNE 102-122 HDR

Pos. Code	Description	Quantity
H1	1610021600 Centering flange PNR-PNE 102-122-142 HDR	1
H2	1612501000 Bracket PNR-PNE ... HDR	1
H3	4026171211 Stud screw M12x80	2
H4	4026305508 Nut M12	2
H5	1470102300 Coupling PNR 102-122-142 HDR	1
H6	4026350909 Washer M8	3
H7	4026120403 Screw M8x20	3
H8	4026350609 Grower washer M12	4
H9	4026107313 Screw M12x40	2
H10	4026171304 Stud screw M14x40	4
H11	4026350610 Grower washer M14	4
H12	4026300808 Nut M14	4
H13	4024107001 Motor PNR-PNE 122 HDR	1
H14	4024107009 Motor PNR-PNE 102 HDR	1
H15	4026711003 Flange G1 1/4	1
H16	4026711004 Flange G1 1/2	1
H17	4026136003 Dowel pin M8x8	1
H18	4026136006 Dowel pin M8x14	1
	1892002700 Gaskets kit PNR-PNE 102-122 D	1

9.4. Mod. PNR-PNE 102-122 M



Parts list PNR-PNE 102-122 M540-M1000

Pos	Code	Description	Q.y	Pos	Code	Description	Q.y
1	1401200700	Oil dripper automatic lubrication	2	58	1691000000	Bearing 6308	2
2	1493300200	Air injection valve PNR	2	59	4022200030	Bearing 6309	1
3	1601605900	Vane PNR102	5	60	1624007500	Bushing 40x40x22	1
	1601606000	Vane PNR122	5	61	4023130035	Bushing 55x45x22	1
4	1605500000	Handle	1	62	4024251000	Automatic lubric. pump (cw rotation)	1
5	1608100000	Oil distributor	1	63	4024251500	Automatic lubric. pump (ccw rotation)	1
6	1608501800	Conveyor	1	64	4026101404	Screw M8x12	3
7	1610508500	Automatic lubrication pump flange	1	65	4026102807	Screw M8x25	(4)
8	1610508700	Flange	1	66	4026107110	Screw M8x25	37
9	1610503400	Oil tank	1	67	4026107111	Screw M8x30	7
10	1612503500	Gearbox 540rpm	1	68	4026107117	Screw M8x60	2
11	1621503500	Rotor PNR-PNE102	1	69	4026120304	Screw M6x16	2
	1621503600	Rotor PNR-PNE122	1	70	4026120300	Screw M6x14	1
12	1622002600	Shaft M10	1	71	4026120400	Screw M8x12	1
13	1622007800	Check valve shaft	1	72	1672001600	Rotor Screw M10	10
14	1623100500	Conveyor cap	1	73	4026300020	Compensation ring φ90	1
15	1627102400	Conveyor φ100	2	74	4026300025	Compensation ring φ100	1
16	1627102700	Conveyor φ80	1	75	4026306115	Nut M36x3 autobloccante	1
17	1627102800	Conveyor φ76	1	76	4026350908	Washer M6	2
18	1627504400	Manifold	1	77	4026350909	Washer M8	44
19	1640101200	Oil tank cap	1	78	4026350606	Washer grower M8	8(12)
20	1642600000	Pipeline protection	3	79	4026411617	Pin 3x40 (*)	1
21	4029602806	Drive shaft protection	1	80	4026501003	Tab 12x8x40	1
22	1650014500	Front shaft	1	81	4026701310	Gomito M/F G1/2	2
23	1650014800	Rear shaft	2	82	4026706000	Fitting 90°	6
24	1651005500	Pinion PNR-PNE102-122 M540	1	83	4026706101	Fitting	2
25	1651005700	Gear PNR-PNE102-122 M540	1	84	4026706003	Fitting 90°	1
26	1663038800	Lubrication line PNR-PNE102	1	85	4026904001	Plug G1/2	2
	1663040000	Lubrication line PNR-PNE122	1	86	4026359003	Washer Al 21.5x26x1.5	2
27	1663038900	Lubrication line PNR-PNE102	1	87	1601605500	Vane PNE102	5
	1663040100	Lubrication line PNR-PNE122	1		1601605600	Vane PNE122	5
28	1663039200	Lubrication line PNR-PNE102	1	88	1627102500	Conveyor with safety valve connection	(1)
	1663040400	Lubrication line PNR-PNE122	1	89	1627102600	Conveyor	(1)
29	1663039300	Lubrication line PNR-PNE102	1	90	1681006800	Plate vac-press	1
	1663040500	Lubrication line PNR-PNE122	1	91	4026356002	Washer M8	3
30	1663039400	External oil trippe line PNR-PNE102	1	92	4022301001	Oil block filter G1/4	1
	1663040600	External oil trippe line PNR-PNE122	1	93	1680609700	Gasket	1
31	1663039500	External oil trippe line PNR-PNE102	1	94	1680609800	Gasket	1
	1663040700	External oil trippe line PNR-PNE122	1	95	1563007900	Air inj pipe r.	1
32	1663039600	External oil trippe line PNR-PNE102	1	96	1563008000	Air inj pipe l.	1
	1663040800	External oil trippe line PNR-PNE122	1	97	4026705702	Oil drain extention	1
33	1663039700	External oil trippe line PNR-PNE102	1	98	4026702502	Oil drain T fitting	1
	1663040900	External oil trippe line PNR-PNE122	1	99	4026706004	Fitting 90°	1
34	1663041100	Suction line for aut. lub. pump	1	100	1663043300	Oil drain line PNR102 D r.	1
35	1681006900	Air inj pipes bracket. PNR122	1		1663043400	Oil drain line PNR102 D l.	1
	1681007000	Air inj pipes bracket. PNR102	1		1663043500	Oil drain line PNR122 D r.	1
36	1680608900	Manifold gasket	1		1663043600	Oil drain line PNR122 D l.	1
37	1680707600	Gasket 540	1	101	1610101100	Conveyor flange	2
38	1680707700	Gasket	1	102	4026102801	Screw M8x35	8
39	1680707800	Gasket	1	103	4026102810	Vite M8x40	(4)
40	1683600300	Oil stick	1	104	4026308005	Screw M8	(4)
41	1684000000	Plug G3/8	4				
42	1685002800	Washer 30x8.5x4	1				
43	1685100000	Washer Al 14x20x1.5	2				
44	1685100200	Washer Al 17x22x1.5	4				
45	1685100800	Washer Al 8x14x1.5	3				
46	1687505900	Housing PNR-PNE102	1				
	1687506000	Housing PNR-PNE122	1				
47	1691000000	Conveyor spring	1				
48	1693500400	Check valve	1				
49	4022200030	Y-seal 41x27x10	1				
50	4022200113	Y-seal 70x55x15	1				
51	4022200040	Y-seal 72x40x10	1				
52	4022200111	Y-seal 72x48x15	1				
53	4022200309	OR 4875	2				
54	4022200310	OR 6352	2(3)				
55	4022300001	Nylon filter	1				
56	4022301004	Silencer filter 3/4"	2				
57	4023100018	Bearing 6206	1				

PNR-PNE 102-122 M1000							
M1	4026401806	Pin 10x36	4				
M2	4026155505	Screw M5x16	4				
M3	1681006500	Plate	1				
M4	1651010700	Pinion Z42	1				
M5	1610514000	Flange M1000	1				
M6	1651010600	Gear Z56	1				
M7	1680614100	Gasket M1000	1				
M8	1640501200	Front cover M1000	1				

*: on models with cw (right hand) rotation

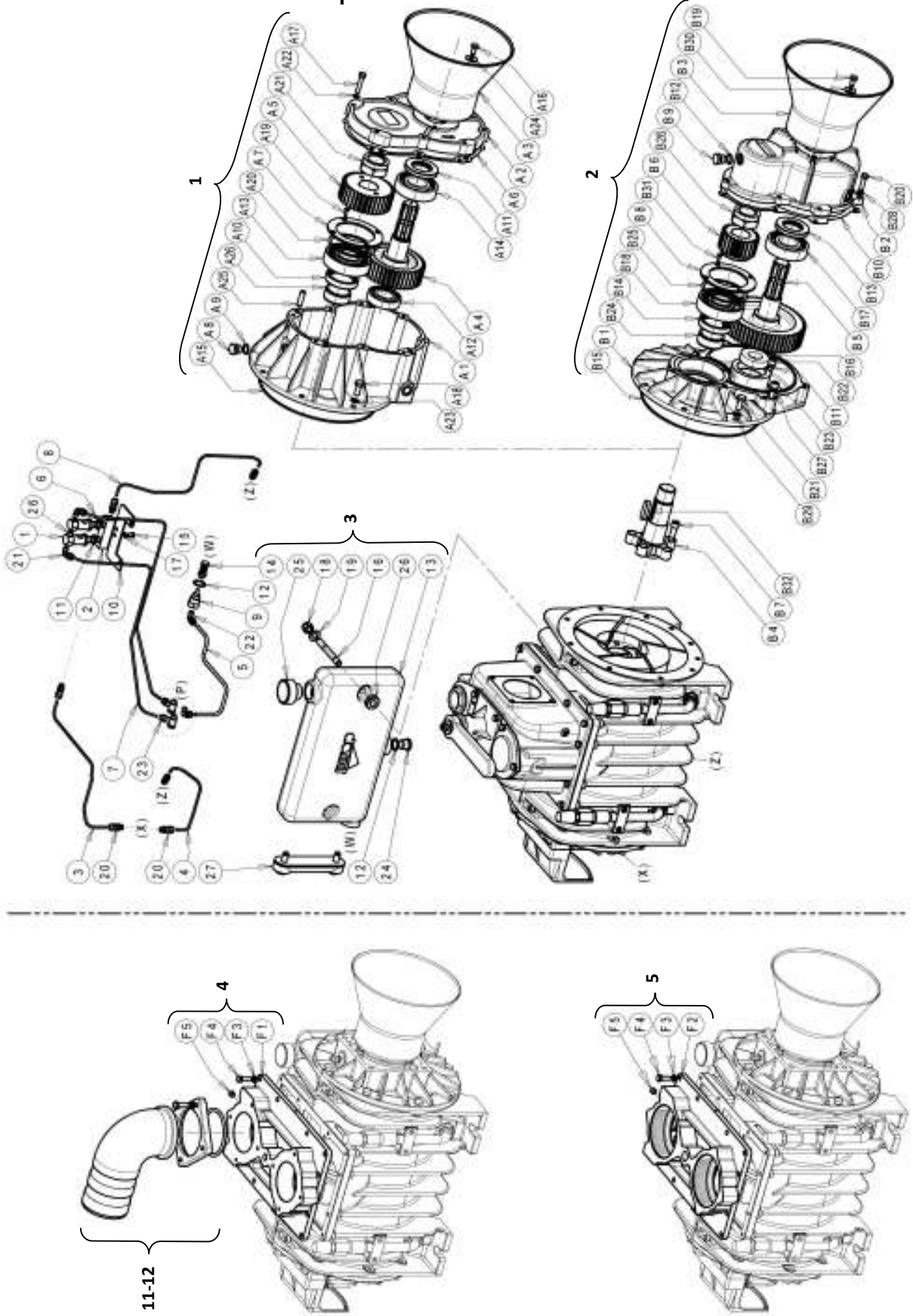
		1892002800	Gasket kit PNR-PNE M	1
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Note: between brackets quantity referred to the conveyor with safety valve connection built

Parts list PNR142SL D

Pos	Code	Description	Quantity	Pos	Code	Description	Quantity
1	1401200700	Oil dripper automatic lubrication	2	49	1691000000	Conveyor spring	1
2	1493300200	Air injection valve 1/2"	2	50	4022200030	Y-Seal 41X27X10	1
3	1601605200	Vane PNR142 SL	5	51	4022200044	Y-Seal 65X45X8	1
4	1605500100	Handle	1	52	4022200113	Y-Seal 70X55X15	2
5	1608100000	Distributor	1	53	4022200311	OR 4975	2
6	1608502500	Conveyor	1	54	4022300001	Nylon oil filter	1
7	1610508100	Flange	2	55	4022301004	Silencer filter 3/4	2
8	1610508200	Flange	1	56	4023100046	Bearing 6309	2
9	1610509800	Flange	1	57	4023130035	Bushing 55X45X2	2
10	1610512900	Oil pump flange	1	58	4023250502	Rubber ball D90	1
11	1621503200	Rotor	1	59	4024251000	Automatic lub. Pump (cw rotation)	1
12	1622002600	Shaft M10	1	60	4024251500	Automatic lub. Pump (ccw rotation)	1
13	1623100500	Conveyor flange	1	61	4026101301	Screw M6X10	2
14	1624027500	Spring spacer	1	62	4026102804	Screw M8X16	3
15	1685600200	Oil tank spacer	2	63	4026102806	Screw M8X20	7
16	1624202300	4 ways spacer	1	64	4026102807	Screw M8X25	16
17	1626001100	Bushing	1	65	4026102808	Screw M8X30	2
18	1627504600	Manifold	1	66	4026102907	Screw M10X25	17
19	1642100200	Rear protection	1	67	4026121305	Screw M6X16	2
20	4029602806	Drive shaft protection	1	68	4026121401	Screw M8X12	2
21	1650013100	Front smooth shaft	1	69	4026121710	Screw M12X35	2
	1650012900	Front splined shaft			4026135414	Screw M8X45	1
22	1650022900	Rear shaft	1	70	4026135504	Screw M10X10	1
23	1663014000	Air injection pipe	2	71	4026155605	Screw M6X16	4
24	1663065800	Lubrication line	1	72	4026171211	Screw M12X80	2
25	1663065900	Lubrication line	1	73	4026300025	Compensation ring	2
26	1663066000	Lubrication line	1	74	4026305508	Nut M12 Selflocking.	2
27	1663066100	Lubrication line	1	75	4026308005	Nut M8	2
28	1663066300	Lubrication line	1	76	4026350508	Grower washer M12	2
29	1663066400	Lubrication line	1	77	4026351504	Washer M6	4
30	1663066500	Lubrication line	1	78	4026351505	Washer M8	25
31	1672001600	Rotor Screw M10	10	79	4026351506	Washer M10	16
32	1673001000	Oil filter Plug	1	80	4026356002	Washer M8	3
33	1680609700	Oil pump gasket	1	81	4026357007	Washer M12	2
34	1680610500	Gasket	1	82	4026501006	Tab 12X8X56	1
35	1680614300	Gasket	1	83	4026701301	Brass fitting	2
36	1680707300	Flange gasket	2	84	4026702000	Fitting	8
37	1680707800	Flange gasket	1	85	4026702708	Copper washer 1"1/2	1
38	1681006600	Flange	2	86	4026706000	Fitting	2
39	1681006800	Flange	1	87	4026706003	Fitting	2
40	1681100200	Oil trippe flange	1	88	4026706101	Fitting	2
41	1684000000	Plug 3/8	2	89	4026904005	Plug 1"1/2	1
42	1685002800	Washer 30X8.5X4	1	90	4026904503	Plug M20X1.5	1
43	1685100000	Washer 14X20X1.5 AL	2	91	4026910103	Plug SFIATO 1"	1
44	1685100200	Washer 17X22X1.5 AL	2	92	4026910601	Plug CONICO 1/8	2
45	1685100300	Washer DI 20	2	93	1663065700	Lubrication line	1
46	1685100800	Washer 8X14X1.5 CU	2	94	1663065600	Lubrication line	1
47	1687509500	Housing PNR142 SL	1	95	1663066200	Lubrication line	1
48	1587009400	Oil tank	1	96	4022106001	Side oil level sight	1

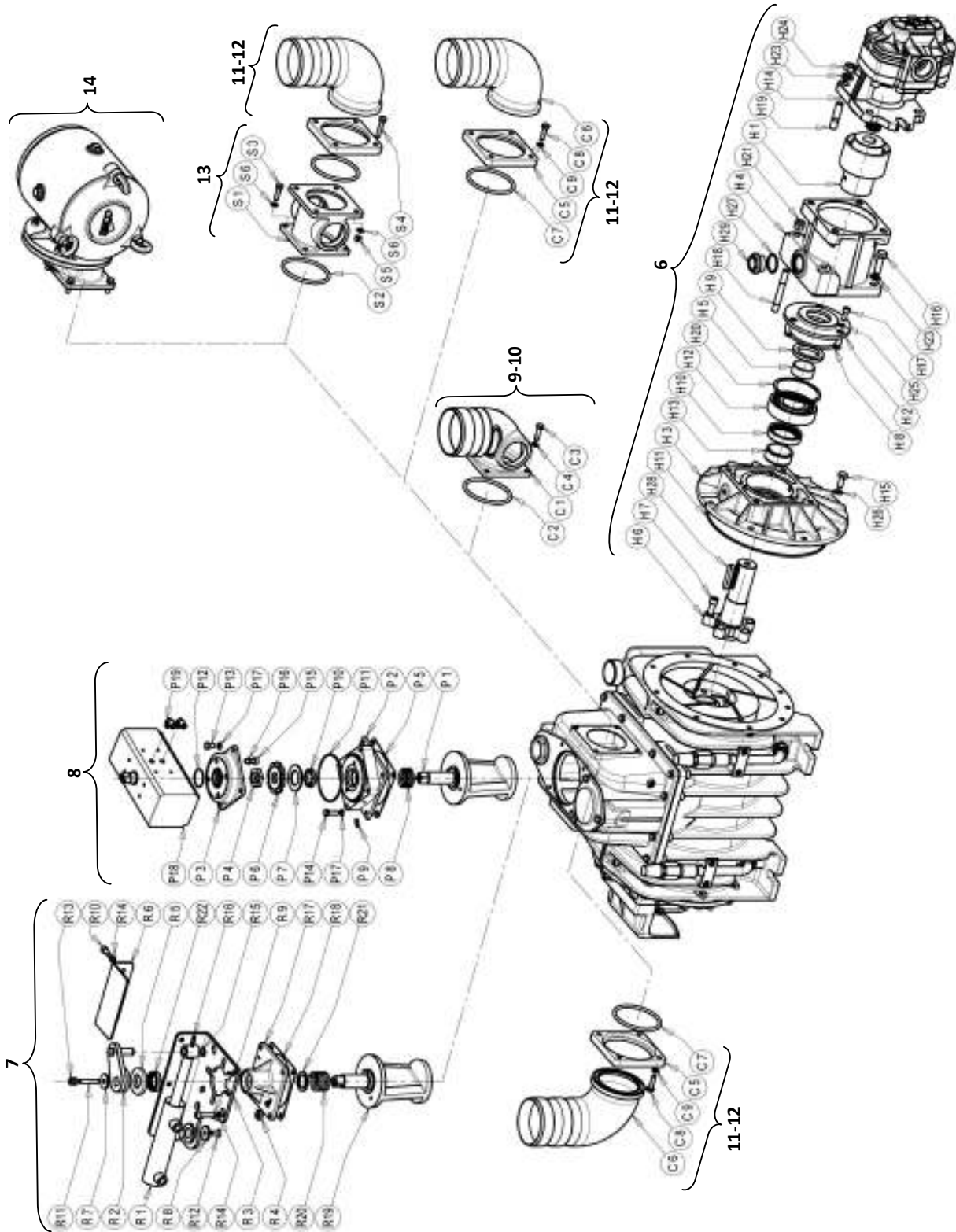
9.6. Mod. PNR142SL M540-1000rpm



Parts list PNR142SL M540-1000rpm

Pos	Code	Description	Quantity	Pos	Code	Description	Quantity
1		GEARBOX M1000 rpm		2		GEARBOX M540 rpm	
A1	1610514100	Flange M	1	B1	1610507900	Flange M	1
A2	164059V5B0	Gearbox M	1	B2	1612503000	Gearbox M	1
A3	1642600100	Drive shaft protection	1	B3	4029602806	Drive shaft protection	1
A4	165109KGB0	Gear Z41	1	B4	1650012800	Front shaft M	1
A5	165109KFBO	Pinion Z37	1	B5	1651002500	Gear Z56	1
A6	16807BCNB0	Gearbox 1000 gasket	1	B6	1651005300	Pinion Z25	1
A7	1681006500	Compensation ring flange	1	B7	1672001600	Rotor Screw M10	5
A8	1684000000	Plug 3/8	3	B8	1681006500	Compensation ring flange	1
A9	1685100200	Washer 17X22X1.5 AL	3	B9	1684000000	Plug 3/8	3
A10	4022200113	Y-Seal 70X55X15	1	B10	1680707200	Gearbox 540 gasket	1
A11	4022200040	Y-Seal 72X40X10	1	B11	1685100100	Washer 10X16X1.5 CU	1
A12	4023100120	Bearing 6207	1	B12	1685100200	Washer 17X22X1.5 AL	3
A13	4023100150	Bearing 6309	1	B13	4022200040	Y-Seal 72X40X10	1
A14	4023100140	Bearing 6308	1	B14	4022200113	Y-Seal 70X55X15	1
A15	4022200311	OR 4975	1	B15	4022200311	OR 4975	1
A16	4026102804	Screw M8X16	3	B16	4023100018	Bearing 6206	1
A17	4026102810	Screw M8X40	8	B17	4023100040	Bearing 6308	1
A18	4026102907	Screw M10X25	5	B18	4023100046	Bearing 6309	1
A19	4026155505	Screw M5X16	4	B19	4026102804	Screw M8X16	3
A20	4026300025	Compensation ring	1	B20	4026102808	Screw M8X30	7
A21	4026306115	Nut M36X3 Selflocking	1	B21	4026102907	Screw M10X25	5
A22	4026351505	Washer DENTATA M8	8	B22	4026120506	Screw M10X30	2
A23	4026351506	Washer DENTATA M10	5	B23	4026121813	Screw M10X50	2
A24	4026356002	Washer 8X24	3	B24	4023130035	Bushing 55X45X22	1
A25	4026401806	Pin 10X36	4	B25	4026300025	Compensation ring	1
3		LUBRICATION FOR M540-1000rpm		B26	4026306115	Nut M36X3 Selflocking	1
1	1401200700	Oil dripper automatic lubrication	1	B27	4026350506	Grower washer M10	2
2	1608100000	Distributor	1	B28	4026351505	Washer M8	7
3	1663065800	Lubrication line	1	B29	4026351506	Washer M10	5
4	1663066000	Lubrication line	1	B30	4026356002	Washer 8X24	3
5	1663066300	Lubrication line	1	B31	4026155505	Screw M5X16	4
6	1663066400	Lubrication line	1	B32	4026501004	Tab 12X8X45	1
7	1663066500	Lubrication line	1	4		FLANGED MANIFOLD	
8	1663066700	Lubrication line	1	F1	1627504800	Flanged manifold	1
9	1673001000	Oil filter plug	1	F3	4026351505	Washer M8	12
10	1681100200	Oil tripped flange	1	F4	4026102807	Screw M8X25	12
11	1685100000	Washer 14X20X1.5 AL	2	F5	4026135504	Screw M10X10	1
12	1685100300	Washer D120	2	5		THREADED MANIFOLD	
13	1587009400	Oil tank	1	F2	1627504900	Threaded manifold	1
14	4022300001	Nylon oil filter	1	F3	4026351505	Washer M8	12
15	4026101301	Screw M6X10	2	F4	4026102807	Screw M8X25	12
16	4026171211	Screw M12X80	2	F5	4026135504	Screw M10X10	1
17	4026351504	Washer M6	2				
18	4026305508	Nut M12 Selflocking	2				
19	4026357007	Washer M12	2				
20	4026702000	Fitting	6				
21	4026706000	Fitting	2		1892006700	Gasket kit PNR-PNE 142SL M	1
22	4026706003	Fitting	2		1892006800	Gasket kit PNR-PNE 142SL D	1
23	4026706101	Fitting	2				
24	4026904503	Plug M20X1.5	1				
25	4026910103	Ventil Plug 1"	1				
26	1685600200	Oil tank spacer	2				
27	4022106001	Side oil level sight	1				

9.7. Mod. PNR142SL – Accessories

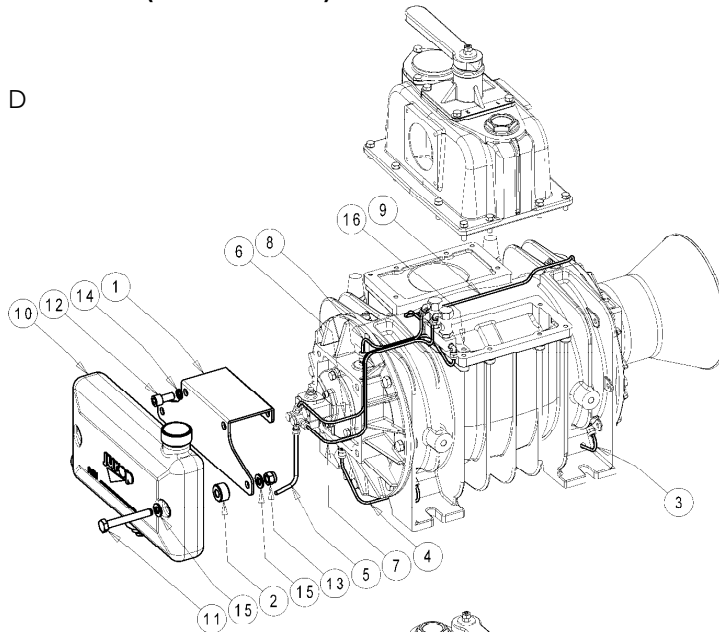


Parts list PNR142SL - Accessories

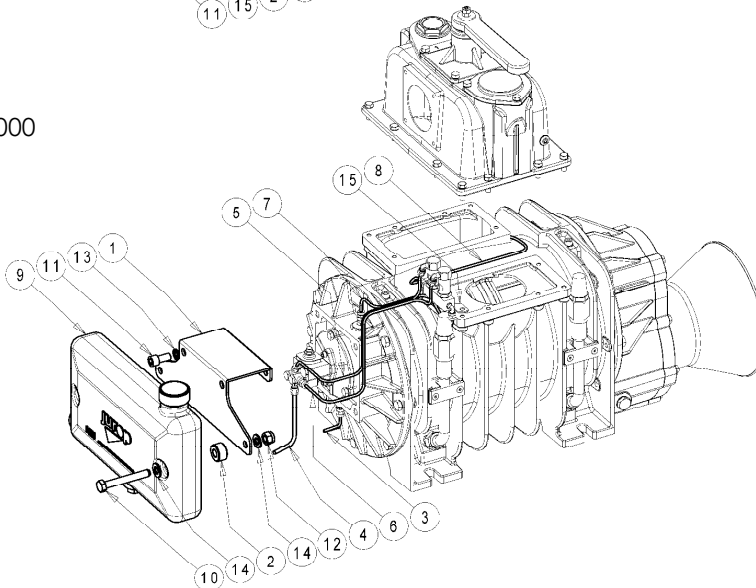
Pos	Code	Description	Quantity	Pos	Code	Description	Quantity
6		HYDRAULIC DRIVE		8	143028GZB0	PNEUMATIC OPERATED 4-WAY KIT	
H1	1470102300	Coupling PNR142 HDR	1	P1	160858KBB0	Conveyor (actuator)	1
H2	1610021600	HDR Flange	1	P2	161258H0B0	Actuator support	1
H3	1610508100	Flange	1	P3	1640580QB0	Actuator cover	1
H4	1612501000	Bracket HDR	1	P4	167007ZAB0	Conveyor NUT	1
H5	1626001100	Bushing	1	P5	1680707800	Flange gasket	1
H6	1650013100	Front smooth shaft	1	P6	168409PQB0	Ring nut	1
H7	1672001600	Rotor Screw M10	5	P7	168529TFB0	Spacer	1
H8	1680707300	Flange gasket	1	P8	1691000200	Conveyor spring	1
H9	4022200044	Y-Seal 65X45X8	1	P9	4022100100	Greasing nipple M6X1	1
H10	4022200113	Y-Seal 70X55X15	1	P10	4022200005	Y-Seal 37X27X7	1
H11	4022200311	OR 4975	1	P11	4022200330	OR 3375	1
H12	4023100150	Bearing 6309	1	P12	4022200331	OR 2137	1
H13	4023130035	Bushing 55X45X22	1	P13	4026102804	Screw M8X16	4
H14	4024107004	HDR Motor	1	P14	4026102807	Screw M8X25	4
H15	4026102907	Screw M10X25	8	P15	4026121405	Screw M8X20	4
H16	4026103004	Screw M12X40	2	P16	4026350505	Grower washer M8	4
H17	4026121405	Screw M8X20	3	P17	4026351505	Washer M8	8
H18	4026171211	Stud screw M12X80	2	P18	4027100405	Pneumatic actuator	1
H19	4026141304	Stud screw M14X40	4	P19	4027421206	Fitting R15 6XG1/8	2
H20	4026300025	Compensation ring	1				
H21	4026305508	Nut M12 Selflocking	4	9	1852103400	FIXED SUCTION CONVEYOR Ø80 KIT	
H22	4026350709	Grower washer M12	2	C1	1627101300	Conveyor Ø80	1
H23	4026350710	Grower washer M14	4	C2	4022200310	OR 6362	1
H24	4026308008	Nut M14	4	C3	4026102807	Screw M8X25	4
H25	4026350505	Grower washer M8	3	C4	4026350706	Grower washer M8	4
H26	4026351506	Washer M10	8				
H27	4026359001	Washer 40X33.5X1.5 AL	1	10	1852103500	FIXED SUCTION CONVEYOR Ø100 KIT	
H28	4026501006	Tab 12X8X56	1	C1	1627101200	Conveyor Ø100	1
H29	4026904003	Plug 1"	1	C2	4022200310	OR 6362	1
				C3	4026102807	Screw M8X25	4
7	143029KRB0	HYDRAULIC OPERATED 4-WAY KIT		C4	4026350706	Grower washer M8	4
R1	143027T6B0	Hydraulic actuator	1				
R2	15020A10B0	Actuator lever	1	11	1852103900	TURNING CONVAYOR Ø80 KIT	
R3	151307TJB0	Actuator support	1	C5	1610101100	Conveyor flange	1
R4	1624043400	Spacer	1	C6	1627102700	Conveyor Ø80	1
R5	1624202300	Spacer	1	C7	4022200310	OR 6362	1
R6	164206XYB0	Protection	1	C8	4026102808	Screw M8X30	4
R7	1685002800	Washer 30X8.5X4	1	C9	4026350706	Grower washer M8	4
R8	168509U0B0	Washer (chamfered)	1				
R9	4026121408	Screw M8X35	4	12	1852104000	TURNING CONVAYOR Ø100 KIT	
R10	4026121405	Screw M8X20	2	C5	1610101100	Conveyor flange	1
R11	4026135414	Screw M8X45	1	C6	1627102400	Conveyor Ø100	1
R12	4026155705	Screw M8X16	1	C7	4022200310	OR 6362	1
R13	4026308005	Nut M8	4	C8	4026102808	Screw M8X30	4
R14	4026350505	Washer grower M8	6	C9	4026350706	Grower washer M8	4
R15	4026510012	Seeger E14 7435	1				
R16	4022100100	Greasing nipple M6X1	1	13	1852104100	KIT FOR SAFETY VALVE	
R17	1623100500	Conveyor flange	1	S1	1627102500	Conveyor with safety valve connection	1
R18	1680707800	Conveyor gasket	1	S2	4022200310	OR 6362	1
R19	1608502500	Conveyor (actuator)	1	S3	4026102807	Screw M8X25	4
R20	1691000000	Conveyor spring	1	S4	4026102810	Screw M8X40	4
R21	1624027500	Spring spacer	1	S5	4026308005	Nut M8	4
				S6	4026350706	Washer grower M8	8
				14	185212L4B0	SUCTION FILTER KIT	

9.8 Parts list PNR142 SP (REAR TANK)

PNR142 SP D
SX



PNR142 SP
M540 - M1000
SX



Pos	Code	Description	Qty	Pos	Code	Description	Qty
LUBRICATION DIRECT DRIVE				LUBRICATION M540-M1000 SX			
1	1612034000	OIL TANK SUPPORT	1	1	1612034000	OIL TANK SUPPORT	1
2	1624042800	SPACER	2	2	1624042800	SPACER	2
3	1663066000	OIL PIPE	1	3	1663066000	OIL PIPE	1
4	1663066100	OIL PIPE	1	4	1663067100	OIL PIPE	1
5	1663067000	OIL PIPE	1	5	1663067200	OIL PIPE	1
6	1663067100	OIL PIPE	1	6	1663067300	OIL PIPE	1
7	1663067200	OIL PIPE	1	7	1663067400	OIL PIPE	1
8	1663067300	OIL PIPE	1	8	1663067500	OIL PIPE	1
9	1663067400	OIL PIPE	1	9	1687600000	OIL TANK	1
10	1687600000	OIL TANK	1	10	4026103013	SCREW M12X90	2
11	4026103013	SCREW M12X90	2	11	4026121708	SCREW M12X25	2
12	4026121708	SCREW M12X25	2	12	4026305508	NUT M12	2
13	4026305508	NUT M12	2	13	4026350508	GROWER M12	2
14	4026350508	GROWER M12	2	14	4026357007	WASHER PIANA M12	2
15	4026357007	WASHER M12	2				

Model	Issue date	Revision No.	Revision date	Filled out by	Viewed by
PNE-PNR	01-01-2002	04	17-05-2012	U.T.	A.T.

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