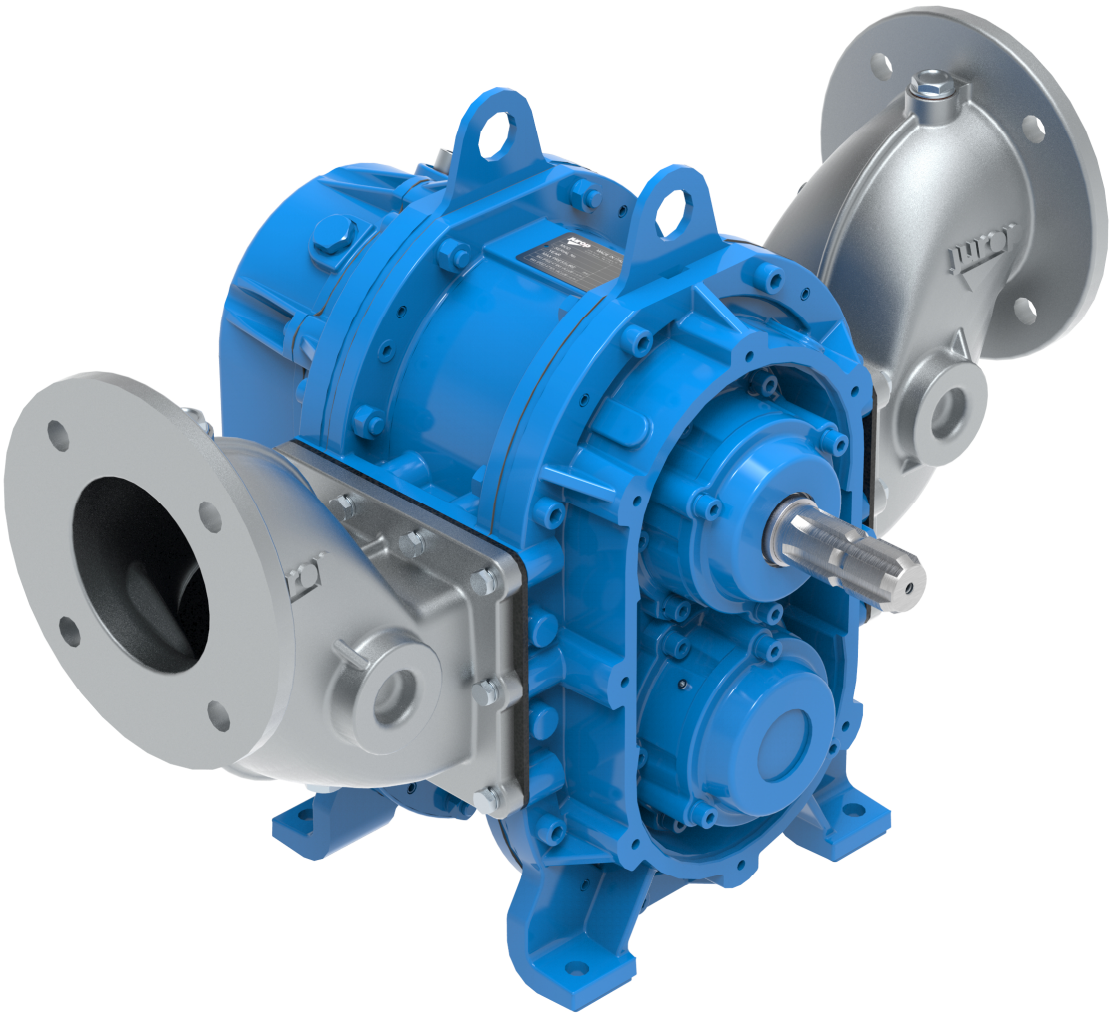
EN

VL 7-40

ORIGINAL INSTRUCTIONS



INSTALLATION, USE AND MAINTENANCE MANUAL

jurop

COMPANY WITH QUALITY SYSTEM CERTIFIED BY DNV GL = ISO 9001 =

Rev. 06
07-01-2021

Contents

1. General warnings

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.

• Following the instructions below contributes to limiting pump repair expenses by extending its duration, as well as preventing hazardous situations, thereby increasing its reliability.

• If the pump is driven by an hydraulic motor please refer to manufacturer's specific manual.

• It is recommended to:

– Read, understand and apply carefully the instructions before running the pump.

– Keep the booklet at hand and have it known to all operators.

• Below is a brief description of the symbols used in this manual.

If these safety rules are not respected, operators can be injured and the pump or oilers damaged remarkably.

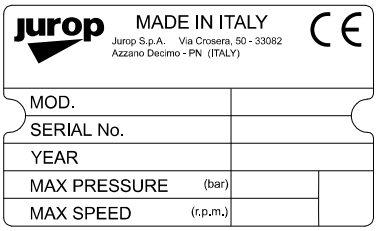
If these safety rules are not respected, the pump or system can be damaged.

Suggestions for an environment friendly use of the pump.

Useful information for an easy usage and maintenance of the pump.

• The graphic representations and photographs contained in this manual are there to illustrate the product in the parts that make it up and in specific operating phases. Though the model shown in the manual may differ from the one purchased, the operating principle at the base of the illustrated operating phase is the same.

• Every VL pump has to be fitted with its own tag reporting the following data: Model, Serial number, Year, Max speed, Max pressure.



Pic. 1.1

1.2. Spare part request

• Use only **genuine spare parts** for maintenance and repairs. To order spare parts, provide the following details:

EXAMPLE:

a) The model of the pump (see pump tag):	VL 14
b) The serial number of the pump (see pump tag):	J90001
c) A description of the parts (see parts list):	END LOBE
d) The quantity (see parts list):	4
e) The code number of the part (see parts list):	15036 014 00

1.3. Warranty terms and conditions

• Compliance with the installation, use and maintenance instructions provided by this manual **is crucial for the recognition of warranty** against defective parts.

2 Technical data

• Positive displacement rotary lobe selfpriming pumpe. Flow rate varies proportionally to the rotation speed.

• Two counter rotating lobes transfer from the inlet to the outlet the pumped media drawn into the pockets formed between the lobes and the pump housing.

• Lobes may be available in NBR, EPDM, FKM, Polyurethane and XNBR.

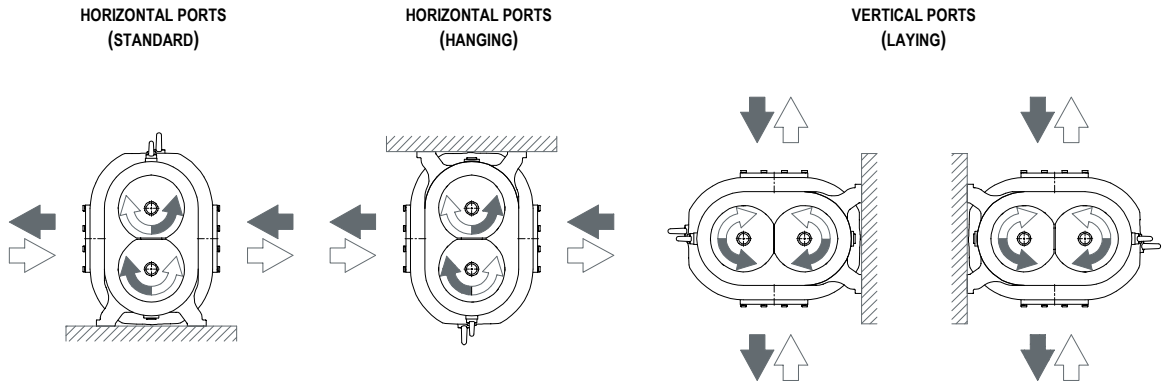
• The flow of the media can be reversed simply by changing the direction of the rotation.

• For activities where the media is viscous, pasty (liquid manure, slurry, oil, paint, pastes, mud, storm water, sludges). Suitable for the suction of liquids containing solid parts with dimensions up to 30 mm. Self-priming down to 5 m depth (with water).

• The main fields of use are civil and industrial purification plants and agricultural one.

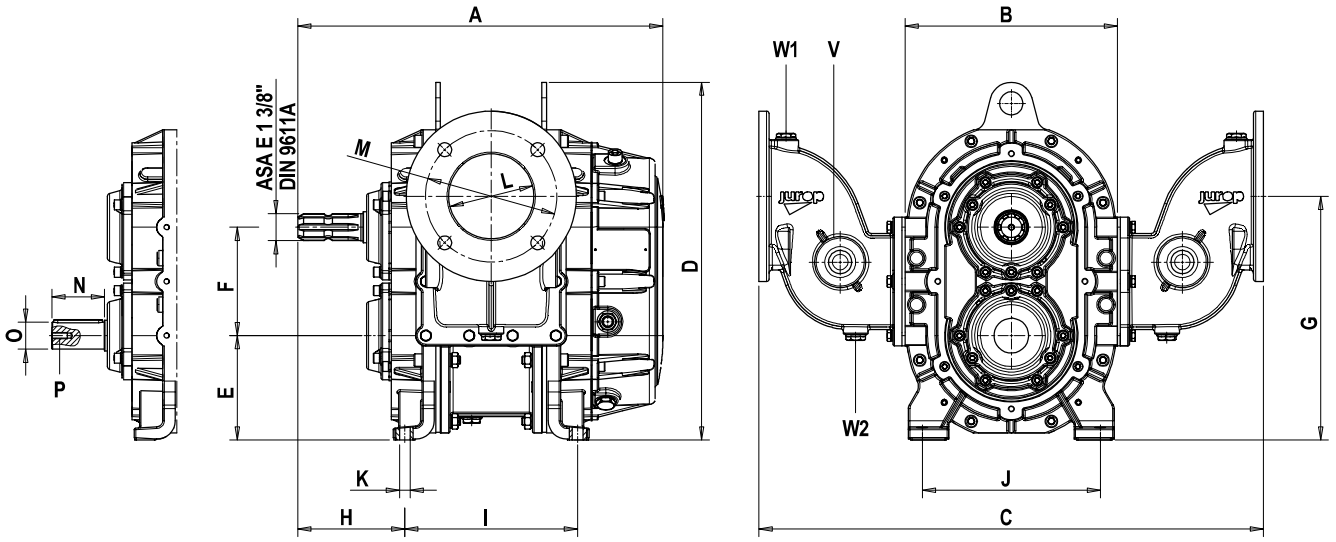
STANDARD EQUIPMENT	AVAILABLE ON REQUEST
• Coated lobes volumetric pumps. • Drive with splined shaft (lower / upper side). • Clockwise or counter clockwise rotation. • Vents with solder flanges.	• Single power take-off (upper or lower) with broached axis. • Syphon manifolds. • Pulley for the belt drive (VL7-14-20). • Horizontal ports (hanging) • Vertical ports (laying)

2.1. Arrangement



In the inverted configuration, pay attention to the position of the level-oil indicator (tank) and the drain hole (body): they must both remain on the lower side. In both cases, the vent-oil must remain at the top of the tank.

2.2. Dimensions

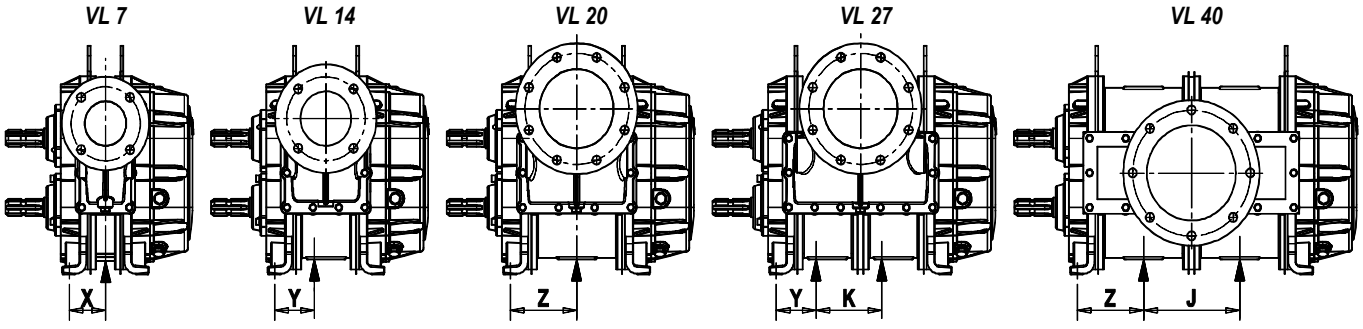


	A	B	C	D	E	F	G	H	I	J	K
VL 7	410	274	630	462.5	135	140	305	135	158	230	14
VL 14	470	274	652	462.5	135	140	315	135	223	230	14
VL 20	534	274	662	462.5	135	140	335	135	289	230	14
VL 27	613	274	662	462.5	135	140	335	135	366	230	14
VL 40	747	274	832	462.5	135	140	135	135	497	230	14

	L	M		N	O		P	V	W1	W2	WEIGHT
VL 7	Ø 90	150	DN80 PN6 UNI EN 1092-1	68	35 g6	-0.009 -0.025	M 8	G 1 ½"	G ½"	G ½"	97
VL 14	Ø 110	170	DN100 PN6 UNI EN 1092-1	68	35 g6	-0.009 -0.025	M 8	G 1 ½"	G ½"	G ½"	105
VL 20	Ø 160.5	225	DN150 PN6 UNI EN 1092-1	68	35 g6	-0.010 -0.029	M 8	G 2"	G ½"	G ½"	119
VL 27	Ø 160.5	225	DN150 PN6 UNI EN 1092-1	-	-		-	G 2"	G ½"	G ½"	146
VL 40	Ø 195	255	DN175 PN6 UNI EN 1092-1	-	-		-	-	G ½"	-	170

The image shows the VL14 model with siphon manifolds supplied on request. The weight refers to the volumetric pump alone, without siphon manifolds. Dimensions stated in mm if not specified.

Lower drain plug position



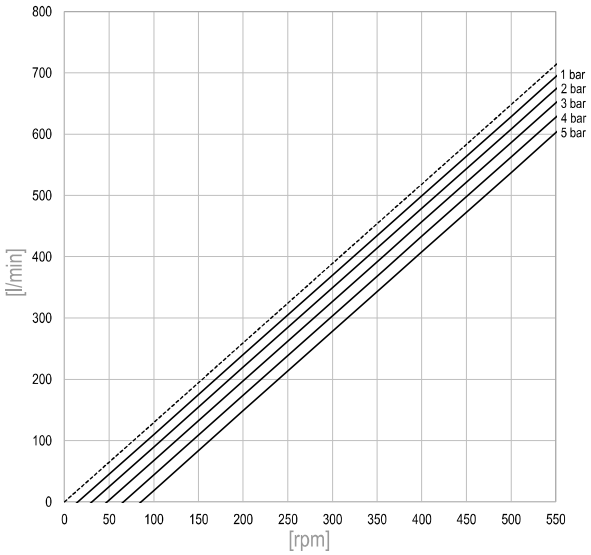
	X	Y	Z	K	J
VL 7	79				
VL 14		86			
VL 20			144		
VL 27		86		143	
VL 40			144		209

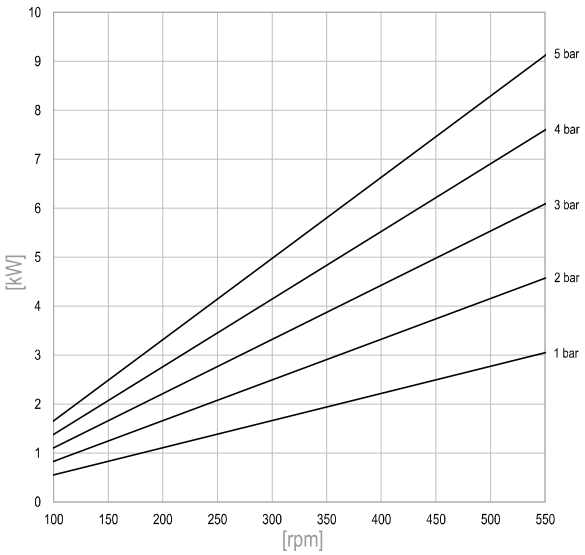
VL pumps are complete of one or two drain holes. Usually the holes are plugged

2.3. VL Performances

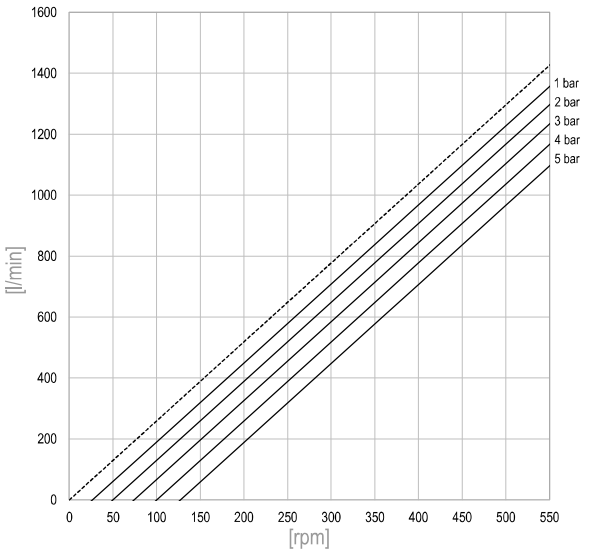
RPM - FLOW **RPM - POWER**

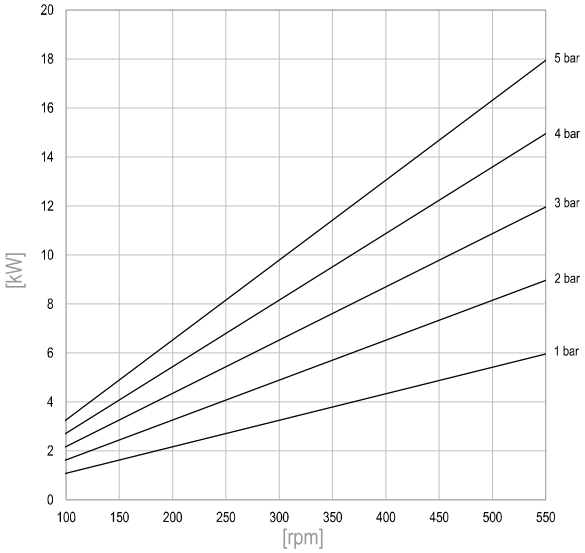
VL 7



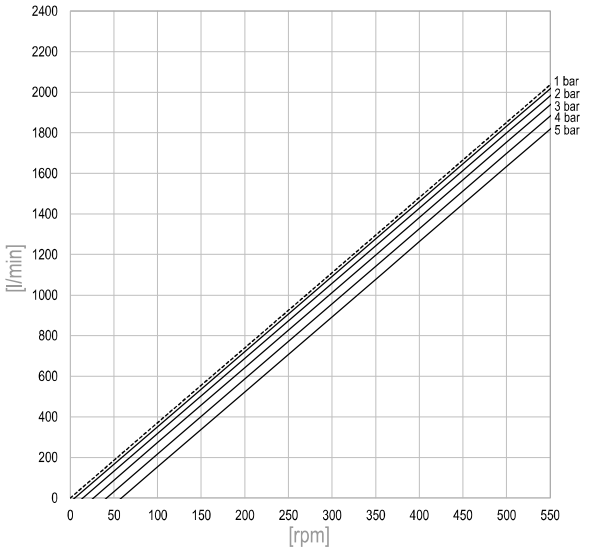


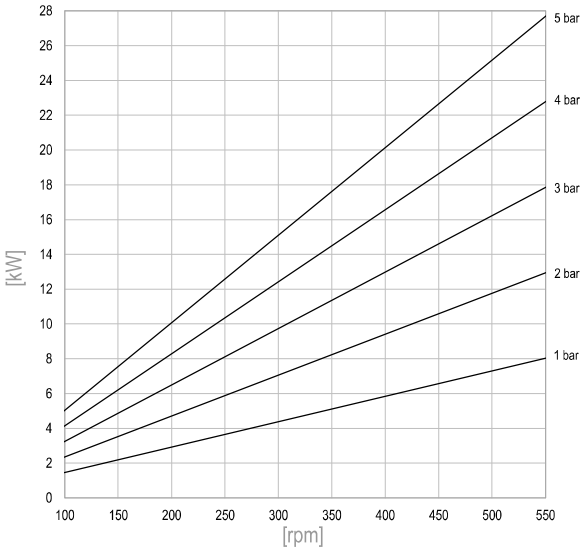
VL 14



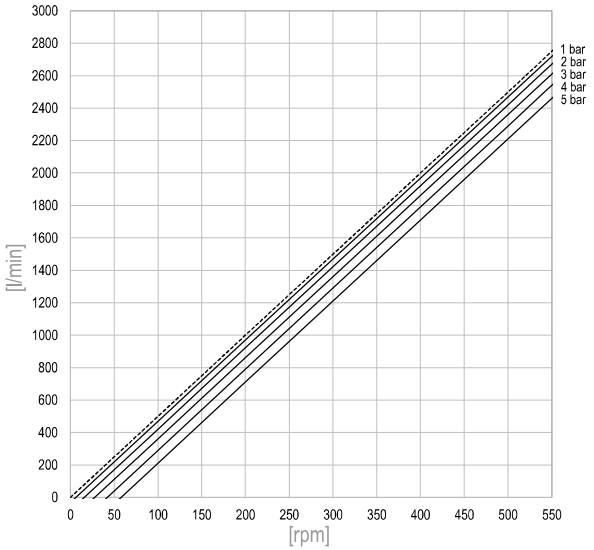


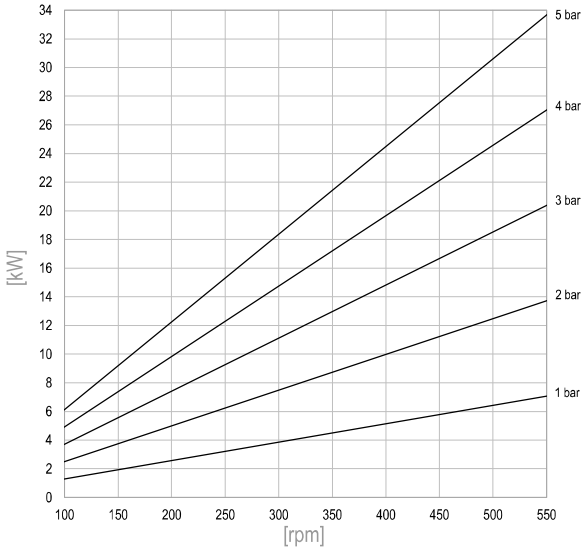
VL 20



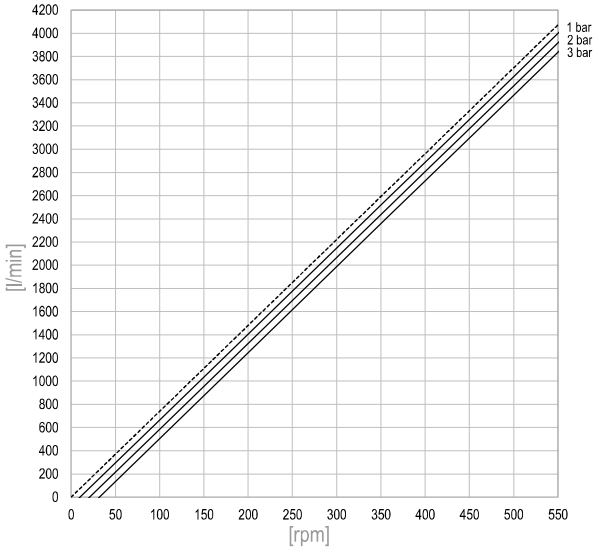


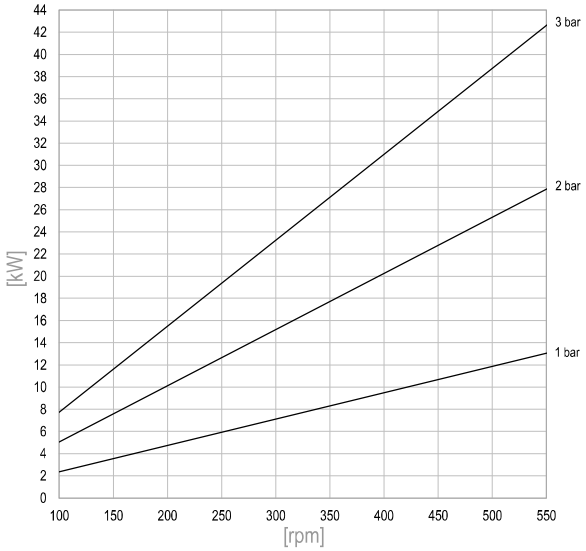
VL 27





VL 40





Conditions: Water, Density 1000 kg/m3 - Viscosity 1cSt. Actual performance may vary of 5%.

TECHNICAL DATA (USAGE LIMITATIONS)		VL 7	VL 14	VL 20	VL 27	VL 40
Max speed	rpm	540	540	540	540	540
Max flow at Max speed	**l/min**	**700**	**1400**	**2000**	**2700**	**4000**
	m³/h	42	84	120	162	240
Max relative pressure	bar g	5	5	5	5	3
Max power continuous requirement at Max speed	kW	8	17	25	34	42

2.4. Sound pressure level

SOUND PRESSURE ***operating conditions*** Nominal speed of the single pump, 1 m distance in open field

Lp (A)				
VL 7	VL 14	VL 20	VL 27	VL 40
71	71	71	72	72

• During normal pump operation, the sound pressure value Lp (A) in work stations is lower than 80 dB (A). Due to particular local conditions in the place where the pump is used, higher sound pressure level may occur. In this case, the operator is required to provide the operating personnel with the respective protection device.

2.5. Lobes type

• Pump lobes can be available in the following versions: NBR, FKM, EPDM, Polyurethane and XNBR.

• Check the chemical compatibility of the matter to be conveyed with the lobes' inner lining, according to what is indicated in the following table. If the matter to be conveyed is not indicated in the table, please contact our customer service office.

	NBR	FKM	EPDM	Poliuretano	XNBR
Good resistance to	Mineral, animal, vegetable, silicon, hydraulic oils and greases; water (max 80 ° C); salt solutions; fatty acids; diluted acids and bases; organic solvents; aliphatic hydrocarbons; non-polar solvents.	Silicon, vegetable mineral oils; aliphatic, aromatic, chlorinated hydrocarbons; petrol; ozone; fuels; chemical agents.	Weather (Oxygen, Ozone, UV radiations); animal and vegetable oil; oxidizing chemicals; ketones.	Mineral oils; fuels; aliphatic and aromatic hydrocarbons; many nitriles, ozone; UV radiation; water; detergents; saline solutions; petroleum products.	Hydrocarbons; vegetable oil; water; steam; gas; diluite acids and bases.
Poor resistance to	Atmospheric agents (oxygen, ozone, UV radiation and oxidizing agents).	Ketones, low molecular esters, nitro products.	Mineral oil; solvents.	Ketones; fuels; boiling water.	Inorganic acids; Alkalies concentrated; aromatic hydrocarbons; fuels; solvents.
Not suitable for	Aromatic, chlorinated hydrocarbons; fuels with a high aromatic content; polar solvents; brake fluids based on glycol; hydraulic fluids.	Brake fluids based on glycol; ammonia gas; amines; alkalis; overheated steam; low molecular weight organic acids.	Aliphatic and aromatic hydrocarbons.	Acids; phenols; toluene; aldehydes; chlorinated hydrocarbons.	Organic acids; brake fluids; amines; solvents; alkyl phosphate; aryl phosphate; halogenated hydrocarbons; ketones.
Operating T°	-20 °C ÷ +100 °C	-10 °C ÷ +100 °C	-15 °C ÷ +80 °C	-20 °C ÷ +90 °C	-20 °C ÷ +130 °C
Features	Good mechanical properties; good resistance to abrasion; low gas permeability; excellent resistance in the presence of gas (methane, LPG, butane, propane). Poor resistance to aging.	Good resistance to high temperatures and low resistance to low temperatures; low gas permeability.	Low-temperature flexibility; good resistance to heat; good resistance to aging.	High resistance to abrasion and tearing; good mechanical properties; low heat build-up.	Good laceration and abrasion resistance; high tensile strength.

2.6. Lubrication

• Recommended mineral gear oil: BLASIA ISO VG 220. In case this oil is not available, it is possible to refill the level with the following lubricants. Oil tank capacity: approximately 1l.

Recommended lubricant								
	ENI	**ESSO**	**SHELL**	**TOTAL**	**MOBIL**	**BP**	**TEXACO HAV.**	**Q8**
ISO VG 320 (oil)	BLASIA 320	SPARTAN EP 320	OMALA S2 GX 320	CARTER EP 320	MOBILGEAR 632	ENERGOL GR XP 320	MEROPA 320	GOYA 320
Room Temperature: – 5 ÷ + 40 °C								
	ENI	**ESSO**	**SHELL**	**TOTAL**	**MOBIL**	**BP**	**TEXACO HAV.**	**Q8**
NLGI 2 (grease)	GR MU EP2	GP GREASE NLGI 2	ALVANIA GR. EP2	MULTIS EP2	MOBILUX EP2	GREASE LTX EP2	MULTIFAK EP 2	REMBRANDT EP 2
Room Temperature: – 20 ÷ + 40 °C								

3. Safety and accident prevention

Warning: Carefully apply these prescriptions.

3.1. General recommendations

• When transporting the compressor use proper slinging. Store the compressor in stable places.

• Use adequate clothing (avoid ties, loose sleeves, necklaces and so on) and suitable protection equipment (gloves, protection glasses, boots...).

• Installation and maintenance must be carried out with the unit totally disengaged from its drive system and must be performed by qualified personnel.

• Before each maintenance operation, stop the pump and restore the atmospheric pressure.

• Make sure that all the parts of the unit are idle and cool, before performing any maintenance operation.

• To prevent errors and hazardous situations, establish what each operator is responsible for in the different maintenance operations.

• Do not start the machine if the protection devices provided for transmissions are removed. Replace damaged parts.

• Final manufacturer must make the transmission inaccessible by means of a fixed guard or interlocked movable guard.

• Operators working nearby must avoid prolonged exposure to the noise emitted by the aspirator, if not equipped with the proper ear-protection devices. IPDs recommended: ear protectors.

• When the pump is running, some parts may reach very high temperatures (above 70°C). Use all necessary precautions to avoid contact.

• Avoid accidental suction of solids: solids may be projected at high speed through the exhaust manifold and cause injures. A filter must be mounted on the suction line.

• Be especially careful when handling pumps that have been in contact with toxic or acidic substances.

• Do not use the machine over its designed limits: the machine may be damage and the operator may be injured.

Do not exceed the speed and the power supply parameters indicated in the technical tables.

• Should anomalous features be noticed while the machine is running (abnormal absorption, increases in temperature, noisiness, vibrations), please inform the staff in charge of maintenance.

• Based on the final use of the pump, the insertion in the housing machine and the typology of the same, the designer of the housing machine must apply safety signals (pictograms) to warn the operator on the risk still present. These pictograms essentially refer to three categories:

- Signals prescribing the use of Individual Protection Devices (IPDs) such as, in this case, the use of gloves and ear protectors.
- Signals indicating to pay particular attention to the dangers related to the machine's components, such as: risk of dragging in the transmission equipment and contact with hot surfaces.
- Signals indicating specific parts of the machine for an easier identification, such as: greasing points, oil tanks, etc.

• In relation to the context in which it will be inserted by the final installer, it might be necessary to disassemble the protection devices present on site, during the preliminary and set-up works. In this case, there are residual risks and probable hazards that each user must be aware of.

Warning: Danger of injury to hands during the operation of the lobe pump.

• Danger of injury to hands due to possible automatic movements of the lobe pump during its operation. Before operating the lobe pump, the user must check that all the protection devices are installed and that they are properly working.

Warning: Danger of serious injury due to pumped liquid spills or gas leakage.

• Uncontrolled gas or liquid may leak on gaskets and connections. It is possible that liquid spills can escape in presence of pressure in the working chamber, especially when the rear cover (where available) or the delivery flange is removed. In this case, adopt the corresponding security measures.

3.2. Intended use

• The VL pumps are designed for transferring viscous and fibrous products, slurries, sludges, pastes and muds also containing abrasive and suspended solids with a maximum diameter of 30 mm; provided they have no cutting edges/profiles and cause no anomalous vibrations in the machine.

• The VL pumps are self-priming and, in the start-up phase, can run dry for max 1 miunte. Higher duration cause overheating, damage to the lobes and to the other components.

• Prevent pump cavitation and dry operation: this exposes the pump to wearing quickly or its inner components breaking.

• Do not reduce the inlet/outlet pipelines in respect to the manifold connections. Do not exceed the maximum pressure.

• Do not let big solids to enter the pump. They may block the pump and consequently damage the transmission.

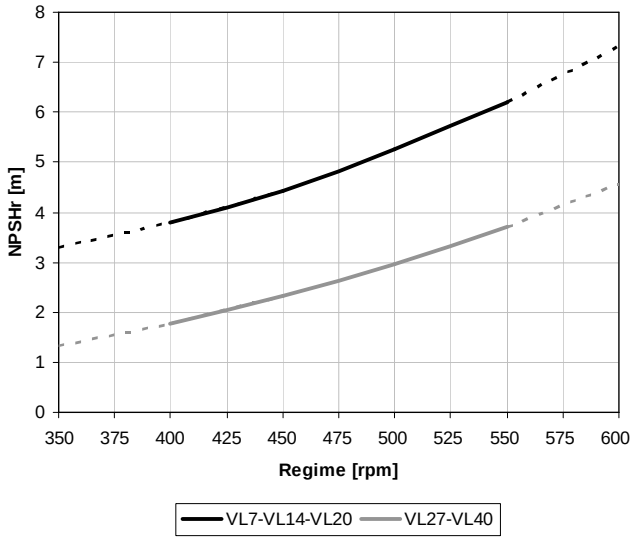
Warning: the pump is not designed for the transport of solids, or liquids containing solids oversized.

3.3. Viscosity of liquids

• The viscosity of a liquid, indicating the resistance that it opposes to its being moved, increases considerably when the temperature decreases. Because of viscosity, pressure falls shall occur in the suction line and overpressure in the discharge line.

• To prevent anomalies in running, above all when inflammable liquids are to be conveyed, keep pressure at the suction flange sufficiently high in order not to prime the cavitation phenomenon.

• Before starting to use the equipment, verify that the suction plant's NPSHa is higher than the pump's NPSHr value, which can be deduced from the chart.



• **Reported data recorded with water at a temperature of 20°C**.

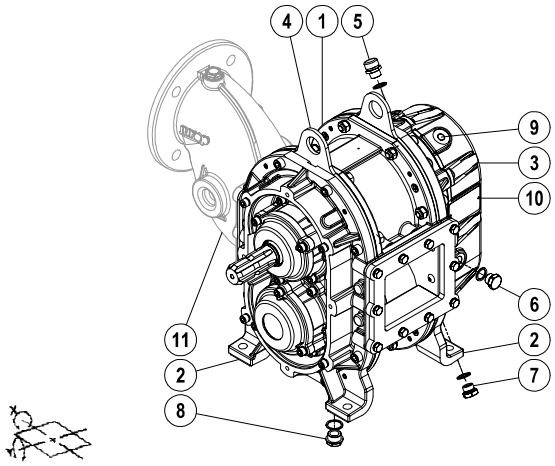
• Determine static pressure's minimum value at the suction flange, and verify that during use you do not go under this limit. In case you have any doubt, please contact our customer-service office.

• Should you be conveying highly viscous liquids, we suggest you decrease pressure losses along the lines by reducing the rotation regime, employing the suggested diameters, and short suction ducts as well. If possible, install the pump under head.

4. Installation

Main components legend

1. VL Housing
2. Front / Rear bench
3. Rear oilt tank
4. Wearproof plate (with handling hole)
5. Lubricant fill up plug / Ventil plug
6. Lubricant level control plug
7. Lubricant drain plug
8. Draining plug
9. RPM Sensor (mechanical set-up)
10. Identification plate
11. Syphon manifolds (optional)



Pic. 4.1

4.1. Checking upon receipt

• When the goods are delivered, make sure that all parts listed on the delivery note are in perfect condition and have suffered no damage during shipping.

• Remove the parts of the packaging that can be dangerous if sucked by the compressor.

• Make sure the pump has its identification plate affixed on the front gearbox. Pumps without such identification are to be considered anonymous and potentially dangerous: in such an event, they must not be used, otherwise the manufacturer will be deemed free from any liability whatsoever.

4.2. Storing in the warehouse

• If the pump will not be installed inside a short time after delivery:
- Remove the guards from the ports and spray a film of protective oil over the inner surfaces of the body, rotors and sides;
- Store in a closed and dry place. Renew the preserving oil periodically.

• To temporarily store a used pump, follow the instructions below:
- Thoroughly clean the pump.
- Equip the pump with suitable anti-corrosion protection.

4.3. Handling and installation

• Before each movement, verify that the lifting equipment has a suitable capacity (check the weight of the pump, possibly showed in this manual, in the paragraphs 2.2 and 2.3).

• Do not lift the packaging or the machine when moving more than 50 cm from the ground. Proceed with the final lifting only near the installation point.

• Harness the machine with suitable straps / chains near the main body, paying attention to the position of the mass center of gravity to ensure the load stability.

Warning: do not stand under the machine when it is lifted during the installation.

4.4. Mounting

• The pump must be assembled for an easy access for maintenance operations and secured rigidly to a frame or levelled base (max. 3° slant to the horizontal plane. See Fig. 4.1). The base must be such as to avoid vibrations, bending or deformation.

• Check the oil level with the pump stopped in horizontal position.

• It is recommended to install the pump on vibration adsorbing pads to reduce the noise and vibrations produced during its operation.

• Leave enough space around the pump to allow the free circulation of air for cooling; avoid exposure to dirt and debris.

• Provide the necessary space to reach all points of lubrication control. See Fig. 4.1.

• The oil level control and drainage plugs are mounted correctly during the final inspection in the factory. Do not change their position.

• Any changes made to rotation direction or to the assembly position must be agreed with our “Technical Assistance”.

Any changes made to rotation direction or to the assembly position must be agreed with our “Technical Assistance”.

• The inlet/outlet pipelines must be adequately supported in order to avoid stress on the pump ports. It is advised not to use pipelines of a diameter smaller than that of the manifold flanges, especially on the suction side. Anyhow the suction line must never be smaller than the discharge line.

	VL 7	VL 14	VL 20	VL 27	VL 40
Diametro	DN80 PN6	DN100 PN6	DN150 PN6	DN150 PN6	DN175 PN6

• A siphon fitted on the suction pipeline promotes the priming of the pump.

• The base unit must not hind the gearbox oil draining port.

• The pump should be installed as close as possible to the suction point, in order to avoid insufficient feeding and consequent cavitation.

• Do not embed nor cover the pump.

• The base must not lead heat towards the machine while it is running.

The suction of solid parts of excessive dimensions must be avoided: otherwise, the sudden blocking of the pump may cause the breakage of the transmission devices. In order to block parts bigger than 10 mm it is advised to use a suction filter, with a suction area of at least two times bigger than that of the pump inlet/outlet ports. The suction filter must be kept clean.

• In the event that the pump is electrically isolated, connect it to the ground or make it equipotential with the housing machine. Check that the paint does not prevent its passage.

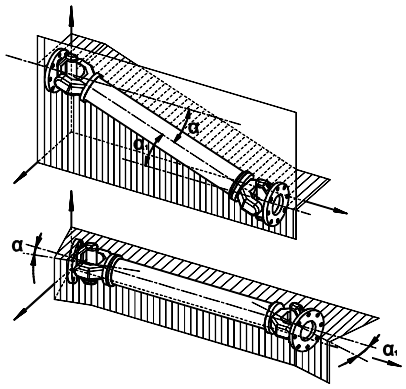
• A possible use of the machine requires that it works in an open environment. For this reason, it may be exposed to lightning risk. It is the responsibility of the final installer to equip the VL with a ground earthing device if there is the danger of exposure to lightning and / or electrical shocks effects.

4.5. Pump mounting – drive connection

• For the VL series, the only power transmissions allowed are:
- Direct transmission with splined axis (e.g.: from agricultural cardan shaft).
- Belt drive.
- Oil hydraulic transmission (HYD).

A) Cardan shaft drive

• Use telescopic cardan shafts.



Pic. 4.2

• In order to achieve a uniform motion of the driven shaft, the following requirements must be met (see Pic. 4.2):
- Equal working angle α and α_1 of both couplings;
- The internal fork joints must be coplanar;
- Both driven and driving shafts must be coplanar.

• It is also recommended working with limited articulated joint angles (max 15°) and disengaging the transmission for those operations requiring great angles (steering or lifting).

Follow the instructions of the cardan shaft's manufacturer.

• Use the cardan guard supplied with the pump, by fixing it to the pump itself.

• The protection must not be removed; in case of removal, it is the responsibility of the final installer to provide for suitable guards according to the assembly.

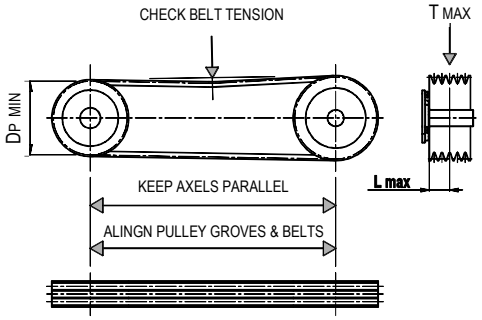
• It is the responsibility of the final installer to provide for suitable guards, in presence of transmission shafts exposed during normal operation.

Use the cardan guard supplied with the pump, by fixing it to the pump itself. In any case, the installation, by the final installer, must comply with the current EC accident prevention regulations and must be compatible with the geometry of the protection cap supplied with the machine.

B) Belt Drive

• Only for VL7, VL14 and VL20.

• Install a suitable pulley on the smooth shaft as close as possible to the pump in order to avoid excessive bending stress on the drive shaft.



Pic. 4.3

• Apply an adequate belt tension (see list below); do not exceed the maximum load on the pump shaft.

• Do not use driven or driving pulleys with a pitch diameter inferior to values reported in the box below. Small pulleys require a high belt tension which may cause premature wear to the bearing or transmission damages.

• Let the air circulate freely to cool down the pump. Provide protections, which ensure adequate ventilation.

• A limited speed ratio will extend the belts life and reduce stress on the shafts. When possible prefer:
- Pulleys with a pitch diameter bigger than the one indicated;
- Engines or power take-offs with a speed similar to the one of the vacuum pump.

Model	Max speed [rpm]	T. max [N]	L. max [mm]	Pitch Diameter[mm]	Groves nr.	Belts type
VL 7	540	2200	35	160	3	SPB / SPBX
VL 14	540	4800	60	160	6	SPB / SPBX
VL 20	540	5800	60	180	6	SPB / SPBX

Pitch Diameter. min.: Minimum drive of pulley pitch diameter.

C) Hydraulic Drive

• The hydraulic transmission on VL pumps, refers to a maximum working pressure of 5 bar for VL7-14-20-27 and of 3 bar for the VL40.

Warning: max operating pressure for VL 7-14-20-27 Hdr is 5 bar. Max working pressure for VL40 Hdr is 3 bar.

• The hydraulic transmission is not allowed for higher working pressures.

	isplacement	Speed	Working pressure	Flow
VL 7	34 cc/rev	2000 rpm	95 bar	72 l/min
VL 14	43 cc/rev	2000 rpm	150 bar	91 l/min
VL 20	61 cc/rev	2000 rpm	153 bar	129 l/min
VL 27	72 cc/rev	2000 rpm	149 bar	152 l/min
VL 40	72 cc/rev	2000 rpm	183 bar	152 l/min

• Maximum pressure at draining line: **5 bar**

• Maximum pressure of motor discharge: **5 bar**

• Between the suggested motor and the pump there shall have to be an adequate reduction gear with a **velocity ratio equal to 1:3.7**.

• **Fluid**: mineral oil for hydraulic plants according to ISO/DIN.

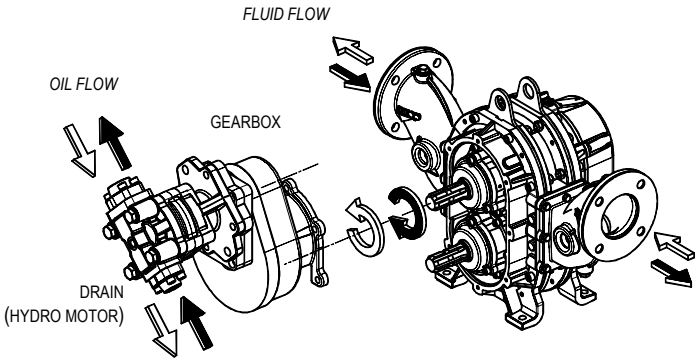
Temperature	Optimal viscosity	Max. consented viscosity
-20 / +80 °C	12 – 100 cSt	750 cSt

• **Filtering**: contamination class 19/16 according to ISO 4406 to be obtained with a ßx filter = 75.

• **Verify the circuit's connections**: they must be coherent with the pump's rotation direction with regard to the protections installed in the plant.

Warning: rotation in the wrong direction shall render the protections ineffective.

• For the gearbox assembly diagram, refer to the diagram available at the end of this manual.



Pic. 4.4

• **Draining**: connect directly to the plant's tank above the maximum oil level. Machine running without draining may damage the motor.

• **Distributor**: with open ports in the rest position. The distributor must be fitted with an adjustable over-pressure safety relief valve.

• **Motor piping**: with a nominal diameter at least equal to that of the motor ports The diameter of the motor inlet pipe is always smaller than the discharge. Prefer flexible piping to avoid conveying vibrations.

• **Tank**: with feeling and return pipes spaced and separated by partition. If necessary, use a heat exchanger to avoid overheating the oil (max 70-80°C) with a safety valve to avoid pressure peaks should the circuit be obstructed. The capacity is about twice the quantity of oil circulating.

• **Starting**: make sure the system is perfectly clean and put oil in the tank, using a filter.

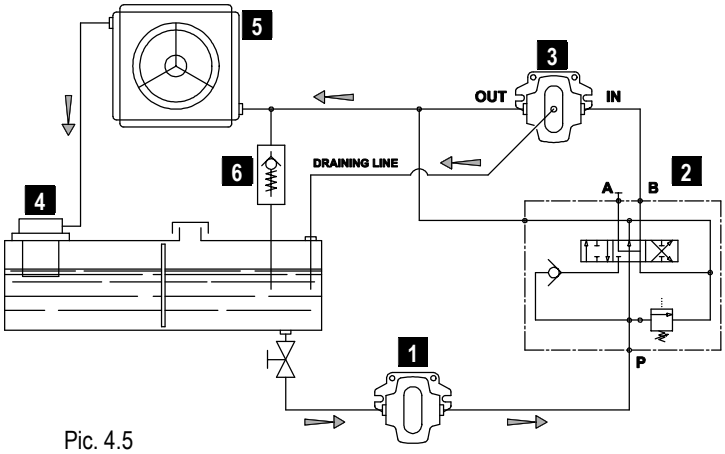
• Vent off the circuit. Adjust the pressure limiting valve to the lowest possible value.

• Check the level of the oil in the tank.

• Increase pressure and rotation until the working values are reached.

Attention: do not rotate in the opposite direction when the VL pump stops, as this could damage the hydraulic motor (cavitation).

• Disconnect the power supply before performing any operation on the motor.



Pic. 4.5

1	Hydro pump	4	Oil filter
2	Distributor	5	Heat exchanger
3	Hydro motor	6	Safety valve

• Check the rotation speed. It is possible to apply an inductive sensor on the rear gear wheel (accessory not supplied).

Model	Z (teeth n. of the inductive sensor gear)
VL	35

• The machine/system manufacturer is responsible for dimensioning the lines.

The machine/system manufacturer is responsible for dimensioning the lines.

5. Starting-up instructions

5.1. Oil level checking

• Before starting the pump check the oil level. If necessary, fill-up with the oil type indicated in the lubrication chart.

If the oil in the gearbox is less than the required amount can cause severe damage to the pump.

• Capacity of the oil tank: about 1 liters.
• Check that all protection and safety devices are correctly installed.

5.2. Starting-up of the pump

• Check that all interception valves are open and that there is no clogging in the suction and discharge line.
• Check that the suction filter is completely immersed in the liquid.
• The pump can run both ways.
• Check the rotation direction: start up slowly and control discharge pressure at the discharge flange until the nominal regime is attained. If that is not possible, verify beforehand the theoretical losses of the discharge line.
• For any technical consultation, contact our customer-service office.

5.3. Operating precautions

• The manufacturer declines all responsibility for damages caused if these installation, operating and maintenance instructions are disregarded.
• The pumps get hot during use. Do not touch them with your bare hands: danger of burns. Wear protective gloves.
• Do not make the pump overheat.
• Avoid start-ups on load: they may stress transmission and the hydraulic motor.
• Control rotation regime: it must never exceed the prescribed operating limit.
• Avoid rotation in the wrong direction: protections no longer respond.
• Should the safety valve intervene, do not keep the valve in a by-pass position too long.
• Adjust delivery by acting on the rotation regime: do not use the safety valve to discharge any excess in delivery.
• After a long period of inactivity, after using highly abrasive and viscous liquids, or ones that generate calcareous deposits, internal washing shall become necessary.
• After every use, discharge deposits by opening up the plug of the pump's housing.
• If you foresee long stops, lubricate the lobes internally, and the housing as well. If possible, lubricate before each start-up (this avoids high powers at pickup). Use a lubricant that is compatible with the materials constituting the pump and that are inert with respect to the conveyed liquid.
• Clean the safety valve at every intervention.
• If a suction filter is present, clean it periodically.
• Frost hazard: protect the pump and its connections from freezing. The ice pieces coming off the piping could cause damages if they get into the pumping chamber.

6. Maintenance

6.1. Ordinary maintenance

• Any interventions must be performed when the machine is cold, stopped and switched off.

• Installation and maintenance must be operated only by qualified personnel wearing the proper clothes and the necessary tools as well as protection devices.

• Use suitable protection equipment (gloves, protection glasses, boots...).

• While running the apparatus, watch out if unusual noises and/or anomalous vibrations commence: should there be any, stop the machine.

• In case of overheating, unusual noises or alteration of the paint, examine the rotating parts, the support of the front bearing and the seal rings.

• Check the proper functioning of the seals. The presence of liquid means damaged seals. If leakages are detected, it is necessary to replace the seals as soon as possible.

• Substitute the seal rings when you first notice an oil leak.

• Before a long period of inactivity the lobes must be greased and then turned by hand to obtain a uniform distribution of the grease all around the body.

• If the pump works at temperatures below 0° Centigrades, at the end of the operations the water must be spilled out completely, in order to avoid the damages caused by the formation of ice.

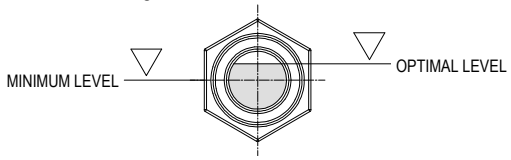
• In the following table summarizes the main controls to be performed and the frequency of intervention. The following intervals are to be considered as indicative. The intervals can be significantly reduced depending on the operating conditions.

Operating Condition	Maintenance Area	Check	8H	50H	500H	1000H
OPERATING	Transmission / Pump	Discharge pressure / Suction pressure	FREQUENTLY WHILE MACHINE IS RUNNING			
		Rotation speed	■			
		Sound pressure level (also HDR motor)	■			
STANDSTILL	Pump	Check oil level			■	
		Change oil (*)				
		Inner lubrication	■			
		Transmission check			■	
		Lobe wear check		■		
		Seal leak check	■			
		Cleaning suction filter	■			
		Safety valve check			■	
		Front seal slips		■		
		Pump's inner washing (**)				
	Overall	Greasing		■		
		Check cardan shaft drive				■

(*) The first oil change must be done inside 100 hours operation. Following changes every 5000 hours or 12 months. In order to choose the most suitable oil, see paragraph 2.6. (**) After operation in dusty environments, after accidental sucking of liquids inside the pump or before a long inoperativity period it is recommended to wash the pump inside.

Check oil level

• Check the oil level in both boxes with pump stopped and cold. Oil sight, refill and drainage are showed in Pic. 4.1.



• The oil level must not drop below minimum: internal components may rapidly wear.

Dispose of used oil in accordance with the current regulations.

• Do not run the pump with insufficient lubrication: that may cause seals and internal transmission members to wear quickly and/or the compressor to stop with possible breakdown of the drive system.

• Follow installer's instructions for the checking and servicing of drive members (hydraulic drive system, etc.) controlling and adjusting devices (revolution counters, sensors, etc.).

Follow installer's instructions for the checking and servicing of drive members controlling and adjusting devices.

6.2. Extraordinary maintenance

• Except for the cases described below, extraordinary maintenance on a VL must be carried out by specialized personnel only; otherwise the guarantee will be invalidated.

• All extraordinary maintenance interventions must be carried out when the machine is cold, stopped and switched off and follow the safety prescriptions as described in Cap. "Safety and accident prevention".

Follow the safety prescriptions as described in Cap. "Safety and accident prevention".

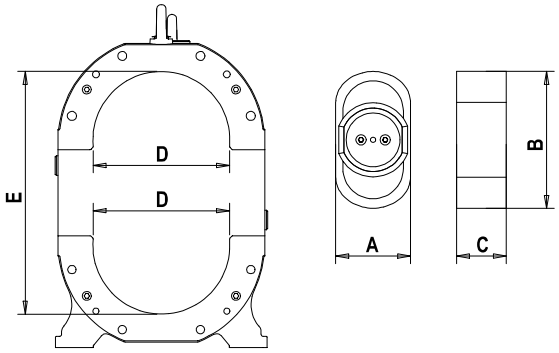
Preliminary steps (instructions common to all models)

• Refer to the spare parts catalogue of the individual pumps for correspondence.

• If the performances of the pump decrease quickly there can be wearing of the lobes, of the housing, of the wearplates or of the seals: these components must therefore be replaced.

• Substitute the lobes opportunely if you notice any wear marks, superficial deformation or if the sizes in Pic. 6.1 are changed.

• Substitute the housing opportunely if you notice any wear marks, superficial deformation or if the sizes in Pic. 6.1 are changed.



Pic. 6.1

A	B	C	D	E
98 mm	180 mm	65 mm	181,8 mm	321,8 mm

• Previous to the disassembly:
  – Take off the suction and discharge connections;
  – Wash out the housing;
  – Fix the end plate, drive side, to a rigid, plane, surface (for VL 7, VL14 e VL20). Fix the end plate, drive side, to a rigid, plane, surface (for VL27 e VL40).

Disassembly sequence

Extraction shaft

• Unscrew the filling plug (A).

• Remove the draining plug (B) and check that all the oil is drained out Dispose of the exhausted oil as provided by the regulations in force.

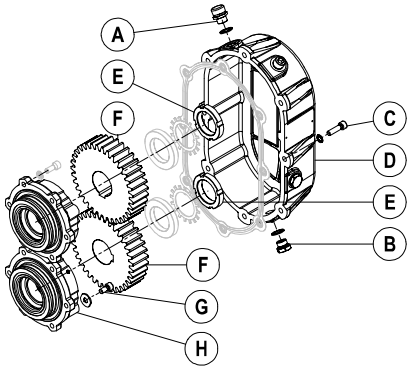
• Unscrew the n. 8 screws (C) and remove the oil tank (D).

• Unscrew the self-locking ring (E) by means of the suitable spanner UNI 6752.

• By means of a puller or with two screwdrivers pull off the two gears (F). Note: the two gears have timing marks; take care to put them in evidence before the disassembly.

• Remove the keys from the axle, unscrew the n. 3 screws (G).

• Unscrew the rear bearing flanges (H) with a puller.



Pic. 6.2

• Move over to the front of the pump and remove the n. 3 screws (A).

• Remove the front flange (B).

• Unscrew the self-locking nut (C) by means of the suitable spanner.

• Unscrew the n. 6 screws (D).

• Unscrew the two front bearing flanges (E) with the puller.

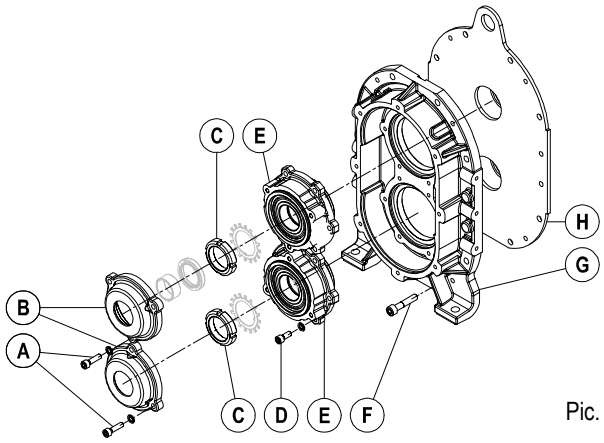
• Unscrew the n. 8 screws M10x50 (F) front side.

• By means of a hammer remove the end plate G e H front side.

• Remove the whole shaft with lobes.

• In case of VL 27: remove the pump body on the broached axis side and gears.

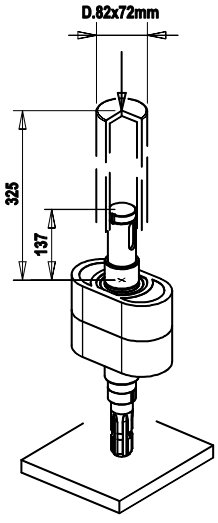
• Check the state of wear of the housings, side wear plates and lobes.



Pic. 6.3

Lobes disassembly

• Proceed as by in Pic. 6.4 with a plastic hammer on top of the suitable pipe diam. 82x72x325.



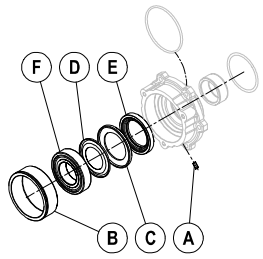
Pic. 6.4

• In case of VL 27: lift the assembly by holding it by the ends of the plate. Knock on the protective piece, using the inertia of the system. Given the weight of the assembly, we recommend two operators to carry out this operation.

Disassemble of seals and bearing housing

• The rear flange assembly (gear side) and the front flange assembly (broached axis side) are similar but not the same. Pay particular attention during the assembly stage.

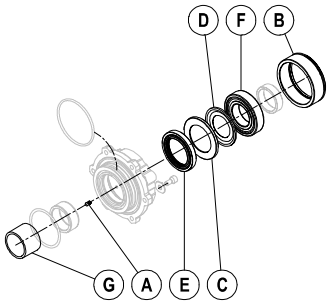
• Group of rear seal rings (see Pic. 6.5):
- Loosen the set screw (A).
- Slip off the front and rear bushing (B) by means of two screwdrivers.
- Remove the spacer (C) along with the protective screen (D).
- Use a pad (Ø 59.5 mm) to remove the sealing ring (E) and the bearing (F).



Pic. 6.5

• Group of rear seal rings (see Pic. 6.6):
- Loosen the set screw of (A).
- Slip off the front and rear bushing (B) by means of two screwdrivers.
- Remove the spacer (C) along with the protective screen (D).
- Use a pad (Ø 59.5 mm) to remove the sealing ring (E) and the bearing (F).

• The seal rings (E) must always be replaced.



Pic. 6.6

Reassemble

• All parts that are wearied off or damaged must be replaced with original spare parts.

• All seals and O-rings must always be replaced with gasket kit (see spare parts list).

• Check that lobes and seals are of the same material (eg.: NBR-NBR).

• During the reassemble all the seals and O-rings must be lubricated or greased in order to allow the contact and exact matching to the corresponding surfaces without being damaged.

• Below is the assembly sequence.

End plate- housing and wearplate group

• If necessary, substitute the wear plate (A) Pic. 6.7.

• Substitute the O-rings (B) between the end bench (C) and the wear plate (A).

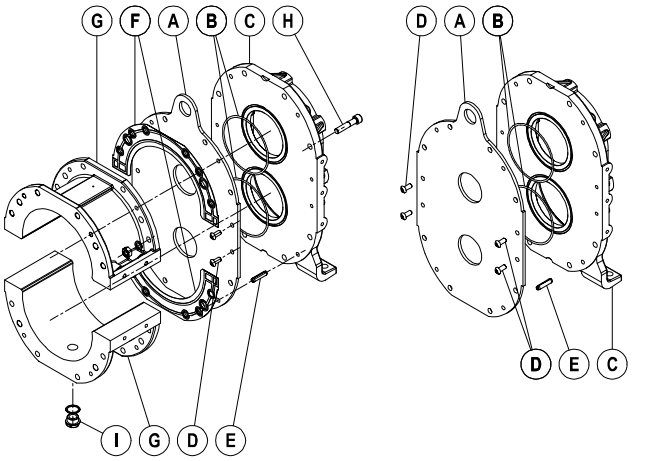
• Lock the wear plate (A) to the end bench (C) with the 4 screws (D).

• Use the pins (E) for centering, and close as a parcel.

• Add new gaskets (F) and fix the housings (G) with the 8 screws (H).

• Screw the washer and drain plug to the body with drainage hole.

Apply medium strength threadlocker on the wearproof plate screws, and sealing "Loxeal 18-10" or similar on the pins.



Pic. 6.7

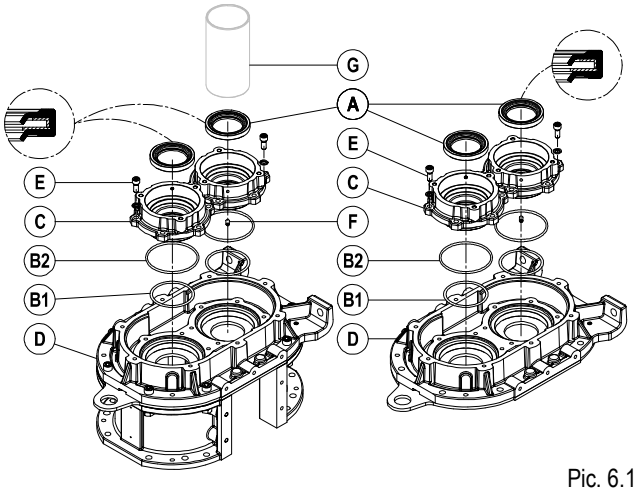
Seal / bearing group

• The seal (A) must be filled with the specified grease (multipurpose calcium sulphonate grease).

• Insert the O-rings (B1, B2) into the bearing-holder flange (C).

• Assemble the bearing-holder flange (C) on the benches (D) in their original position and secure them with the screws (E).

• After having oiled the housings of the seals, insert the seal ring (A) with the help of the indicated pad (G). Pay attention to the orientation of the lips, they must be turned as in Fig. 6.8. Otherwise there is no pressure seal.

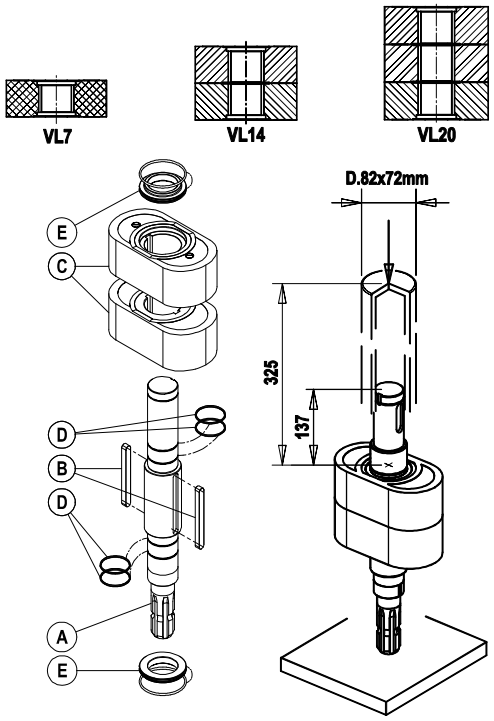


Pic. 6.10

Shaft– lobe group

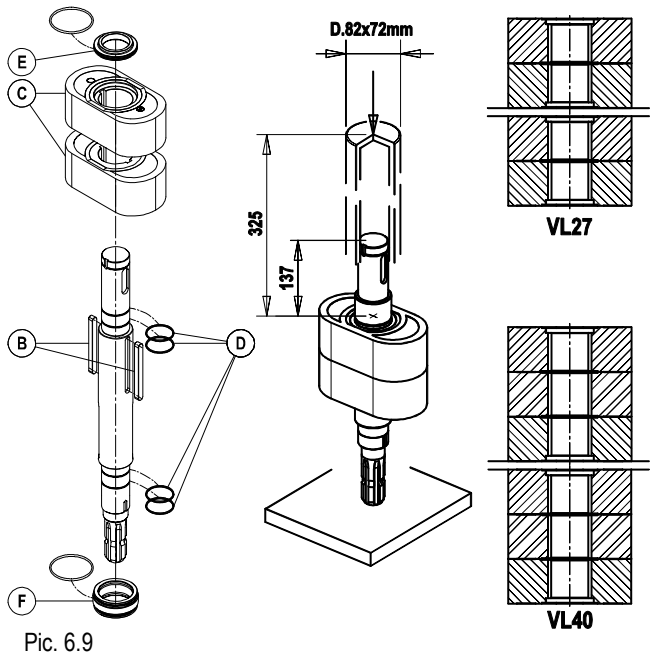
• After having lubricated the axis (A), assemble the axis-lobe units (Fig. 6.9) following the assembly sequence shown below:

- Insert the tabs (B). Remove any residues due to insertion in the appropriate seats.
- Assemble the lobes (C).
- Insert the OR rings (D) in the appropriate seats.
- Insert the OR ring (E) in the seat of the bushings (F), then bringing them into contact with the lobes (C).



Pic. 6.9

- In case of VL27-40 (Fig. 6.10): insert the OR ring in the seat of bushing (E) and the spacer for pistons (F). Then bring (E) and (F) into contact with the lobes (C).



Pic. 6.9

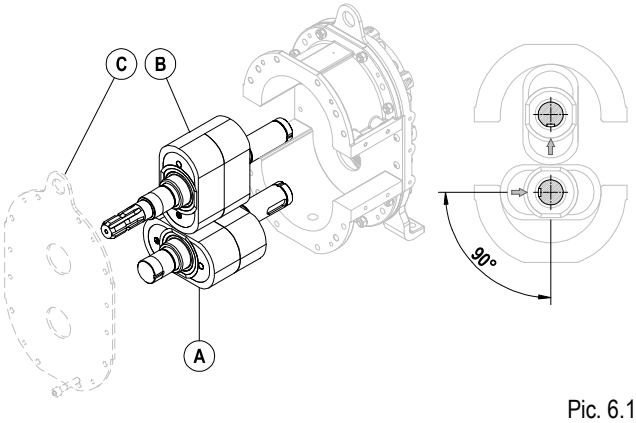
Assemble of the pump housing – lobes – end plate VL 7-14-20

• Check that the O-rings of the axle are in the correct position (Fig. 6.9).

• Fasten the rear end plate-wear plate group to a rigid bench.

• Insert the two axle-lobes groups (A) (B) as in Pic. 6.11 by placing them in the right position on the wear plate, and by centering them precisely with respect to the holes. Ensure square ness as much as possible.

To avoid the displacement of the axes during insertion of the two gears, temporarily secure the unused anti-wear flange (C) to the bench. Remove it after completing this assembly sequence.



Pic. 6.11

• Insert the bushing (A) on the axis. Lubricate the bushing internally and externally. For insertion, use a pipe (Ø 55x4 mm) of suitable length.

• Insert the spacer (B), making sure it is centred, and the protective screen (C).

• Insert the bearing (D) on the axis with the same driver used for the bushing (A). Bring the bearing to the correct position.

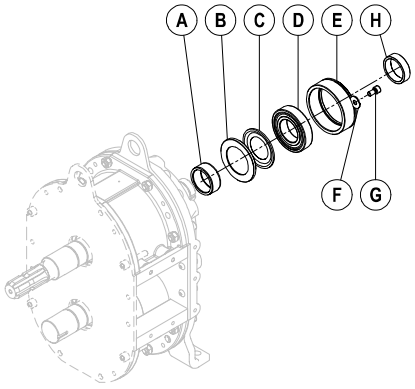
• Centre the bearing holder bushing (E) on the outer diameter of the bearing. Insert, aligning everything.

• The circular slot of the bearing holder bushing (E) must be coplanar with the outside of the bearing holder flange. The washer (F) must perfectly adhere between the bushing (E) and the bearing holder flange. Tighten the 3 screws (G), applying medium threadlocker.

• Tighten the headless screw of the bearing holder flange, applying medium threadlocker.

• Insert the spacer (H).

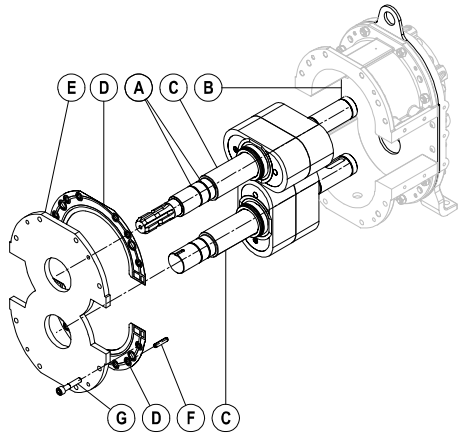
• Repeat the operations for the second axle.



Pic. 6.12

Assemble of the pump housing – lobes – end plate VL 27-40

• Check that the O-rings (A) of the axle are in the correct position.
• Secure the rear anti-wear bench-plate assembly to a rigid bench.
• Insert the two axis-lobes units (C) as per Fig. 6.13 bringing them to stop on the anti-wear plate (B) and centring them exactly with respect to the holes. Maintain orthogonality as much as possible.

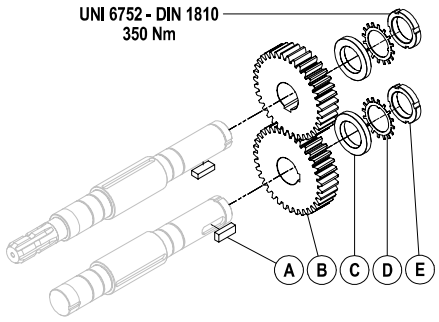


Pic. 6.13

• Place the gasket (D) between the flange (E) and the pump body. Bring the flange (E) closer and fix it to the body with the 4 pins (F). Temporarily tighten 2 screws (G) in order to facilitate assembly.
• Now repeat the operations described in paragraph: "Body – lobes – flange assembly VL 7-14-20" with reference to Fig. 6.12.

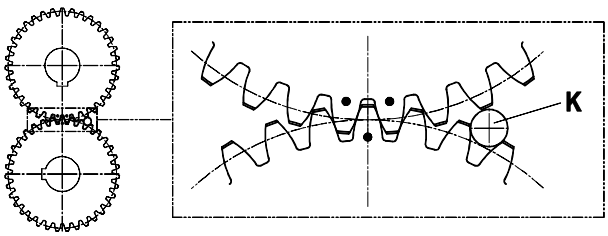
Timing and blocking of gears

• The timing of the gears is very important and the following instructions must be correctly followed (see Pic. 6.14).



Pic. 6.14

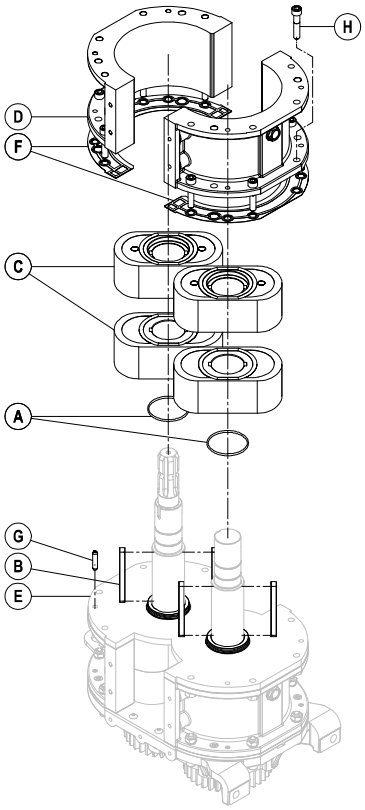
• Insert the key (A) in the axle groove.
• Insert the two gears (B) taking care that the reference marks are matching (Pic. 6.15).



Pic. 6.15

• Insert the spacer (C), safety ring (D) and ring (E).
• For fixing the self-locking ring, insert a pin in between the gears (K) as in Pic. 6.15.
• Screw on the rings M45x1,5 by means of the spanner UNI 6752 and with a blocking torque of 350 N/m (the self-locking ring can be re-used a second time).
• Bend the tab of the safety ring (D) by means of a punch in order to block the self-locking ring (E).

Assemble of the front chamber and of the lobe-housing group VL27-40



Pic. 6.16

• See picture 6.16 and place the pump with the axles in a vertical position, after fixing the blocking plane.
• Insert the O-ring (A) and the key (B).
• Insert the pistons (C) by means of the introduction pipe.
• Place gasket (F) between the body (D) and the intermediate anti-wear flange (E). Use red gasket form sealant.
• Centre the group on the n. 4 pins (G) and screw n. 8 screws for fixing the housing (H).

Assemble of the oil tank

• See picture 6.17 and place the gasket (A) exactly on the oil tank (B).
• Mount the oil tank by means of the screws (C).
• Place the drain plug (D), the oil-level plug (E) and the ventil-plug (F).
• Tighten the M12X1X20 screw (G) on the hole prepared for the rev counter sensor supplied on request.

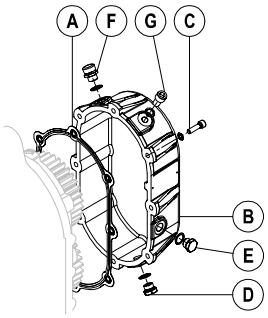


Fig. 6.17

Assemble of the front-end plate – housing

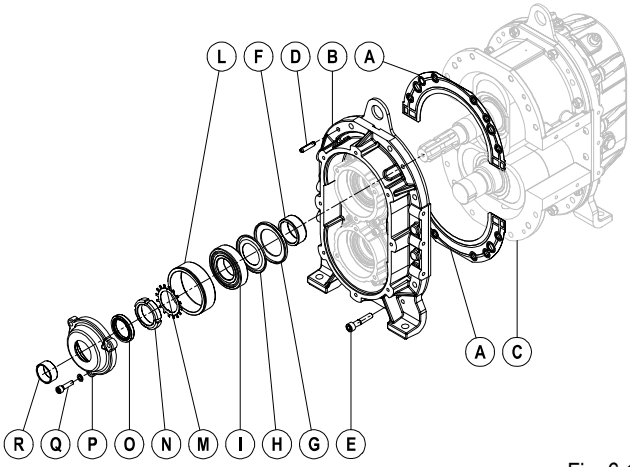


Fig. 6.18

• Place the gaskets (A) between the flange (B) and the pump body (C).

• Seal tightly with the 4 pins (D). Tighten the 8 screws (E).

• Inserire la bussola (F) sull'asse e portarla in battuta. Lubrificare la bussola internamente ed esternamente. Per l'inserimento avvalersi di un tubo (Ø 55x4 mm) di lunghezza opportuna, come introduttore.

• Inserire il distanziale (G), verificando che sia centrato, e lo schermo di protezione (H).

• Inserire il cuscinetto (I) sull'asse e, con lo stesso introduttore utilizzato in precedenza, portarlo in posizione corretta.

• Centrare la bussola porta cuscinetto (L) sul diametro esterno del cuscinetto, allineando il tutto.

• La cava circolare della bussola porta cuscinetto (L) deve essere complanare con l'esterno della flangia porta-cuscinetto.

• Insert the safety ring nut (M), applying some sealant.

• Avvitare la ghiera M45X1,5 (N) con l'apposita chiave UNI 6752 e con copia di serraggio pari a 350Nm. La ghiera può essere utilizzata due volte.

• Rivoltare l'aletta del fermo di sicurezza (M) all'interno degli incavi della ghiera, avvalendosi di un punzone. Lubrificare ulteriormente.

• Verificare la tenuta (O), se consumata sostituirla. Riempire di grasso la flangia (P) ed avvitare le 3 viti (Q).

• At this point tighten the headless screw of the bearing holder flange, applying medium threadlocker.

• Insert the bushing (U) last, so as not to damage the lip of the sealing ring.

Checking of the running

• Lubricate the lobes with oil and grease. Turn the axles by hand making sure that the group turns smoothly.

• With reference to Figure 6.17, fill the tank with oil (approx. 1 litre) level and tighten the filling vent plug (F) with the aluminium washer and tighten properly.

• Check that there are no oil leaks through the gasket and that the tank is airtight.

• Mount the inlet and outlet connections.

• Now the pump can be set at work again.

General overhauling

• In case of particularly hard formations, general overhaul of the pump is recommended: rotors wash-up, seals check, replacement of bearing and sealing ring, and lubricant replacement. The servicing operations which require the pump to be completely disassembled must be performed at a Service Centre authorised by JUROP.

The servicing operations which require the pump to be completely disassembled must be performed at a Service Centre authorised by JUROP.

7. Malfunctions: troubleshooting

PROBLEMS

THE PUMP DOES NOT DELIVER

Cause	Solution
• Excessive suction depth	• Reduce the suction depth
• Undersized intake line components	• Increase piping diameters
• Lobes with excess of wear	• Replace the lobes
• Clogged suction filter	• Clean the filter

UNSTABLE DELIVERY AND VIBRATIONS OF THE PUMP

Cause	Solution
• Air infiltration along the suction line	• Check the suction line tightness
• Clogged suction filter	• Clean the filter
• Excessive R.P.M of the pump	• Check the R.P.M and keep the speed at prescribed values
• The pressure is too high on the outlet side	• Reduce the pressure losses by reducing the r.p.m.
• The suction line diameter is too small	• Keep the diameter at the prescribed size
• Viscosity or density of the pumped media is too high	• Reduce the r.p.m.
• Pump cavitation	• Reduce intake load losses. Reduce intake height and length. Reduce speed. Increase piping diameter. Reduce the temperature of suctioned liquid
• Lobes out of time	• Check the reference marks of the gears

OVERHEATING OF THE PUMP

Cause	Solution
• Excessive pressure of the outlet side	• Reduce the pressure losses by reducing the r.p.m.
• Excessive rotation speed of the pump	• Check the r.p.m. and keep the speed at the prescribed values
• Dry operation	• See Remedies “The pump does not supply”

8. Scrapping

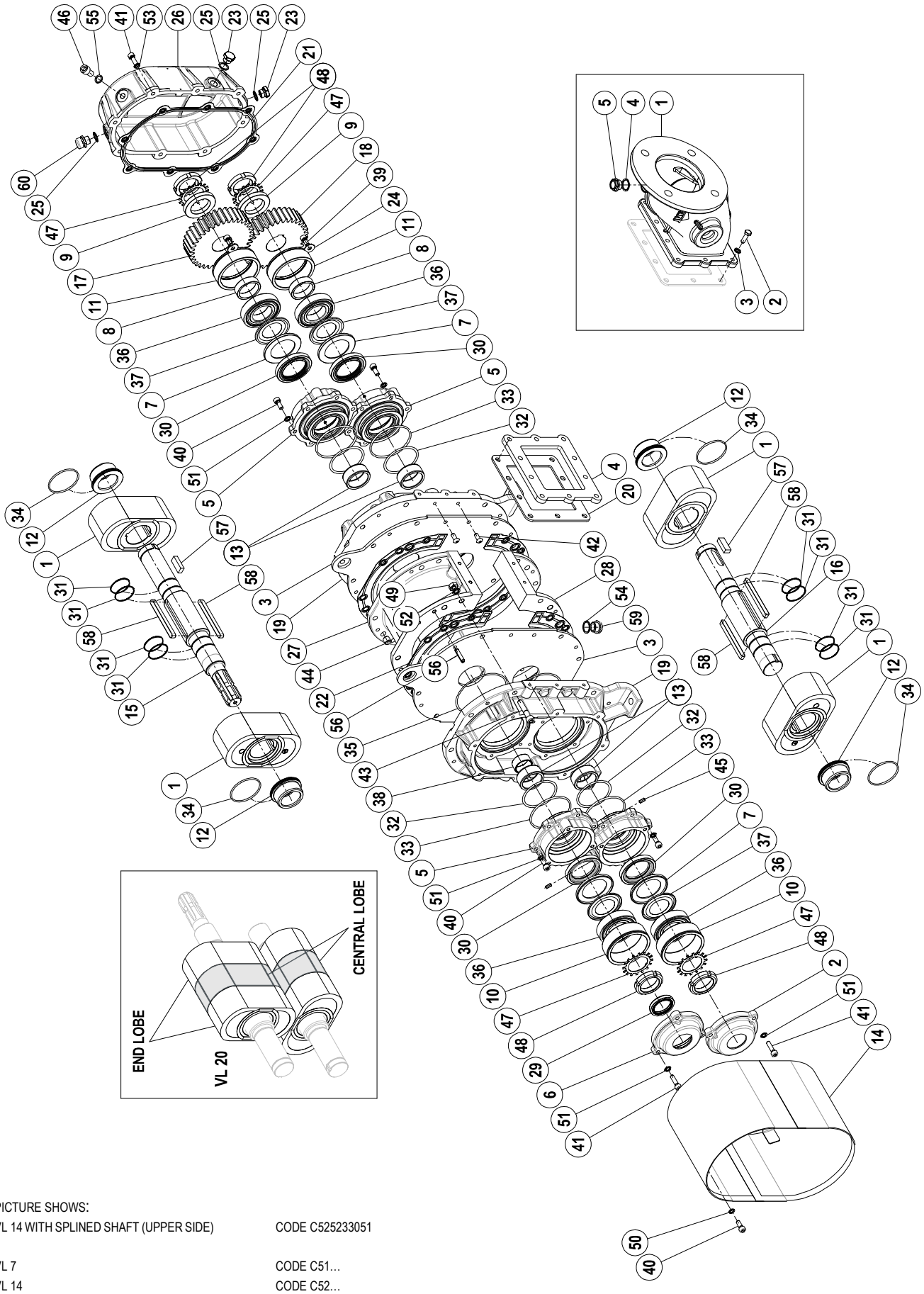
• Recycling materials allow reducing the environmental impact and respecting the environment.

Do not dispose of in the environment. Dispose of in compliance with the standards in force.

• Before scrapping the machine, the following materials need to be separated and suitably disposed of:

Material	Cast Iron	Steel	Alluminum	Rubber	Plastic	Gasket	Oil	Grease
VL 7	70 %	25 %	2 %	1 %	0.4 %	0.3 %	0.9 %	0.1 %
VL 14	70 %	25 %	1.8 %	1.8 %	0.3 %	0.2 %	0.8 %	0.1 %
VL 20	70 %	24 %	1.6 %	2.5 %	0.3 %	0.2 %	0.7 %	0.1 %
VL 27	73 %	22 %	1.3 %	2.7 %	0.2 %	0.2 %	0.6 %	0.1 %
VL 40	69 %	24 %	1.3 %	3.9 %	0.2 %	0.2 %	0.6 %	0.1 %

VL 7-14-20



PICTURE SHOWS:

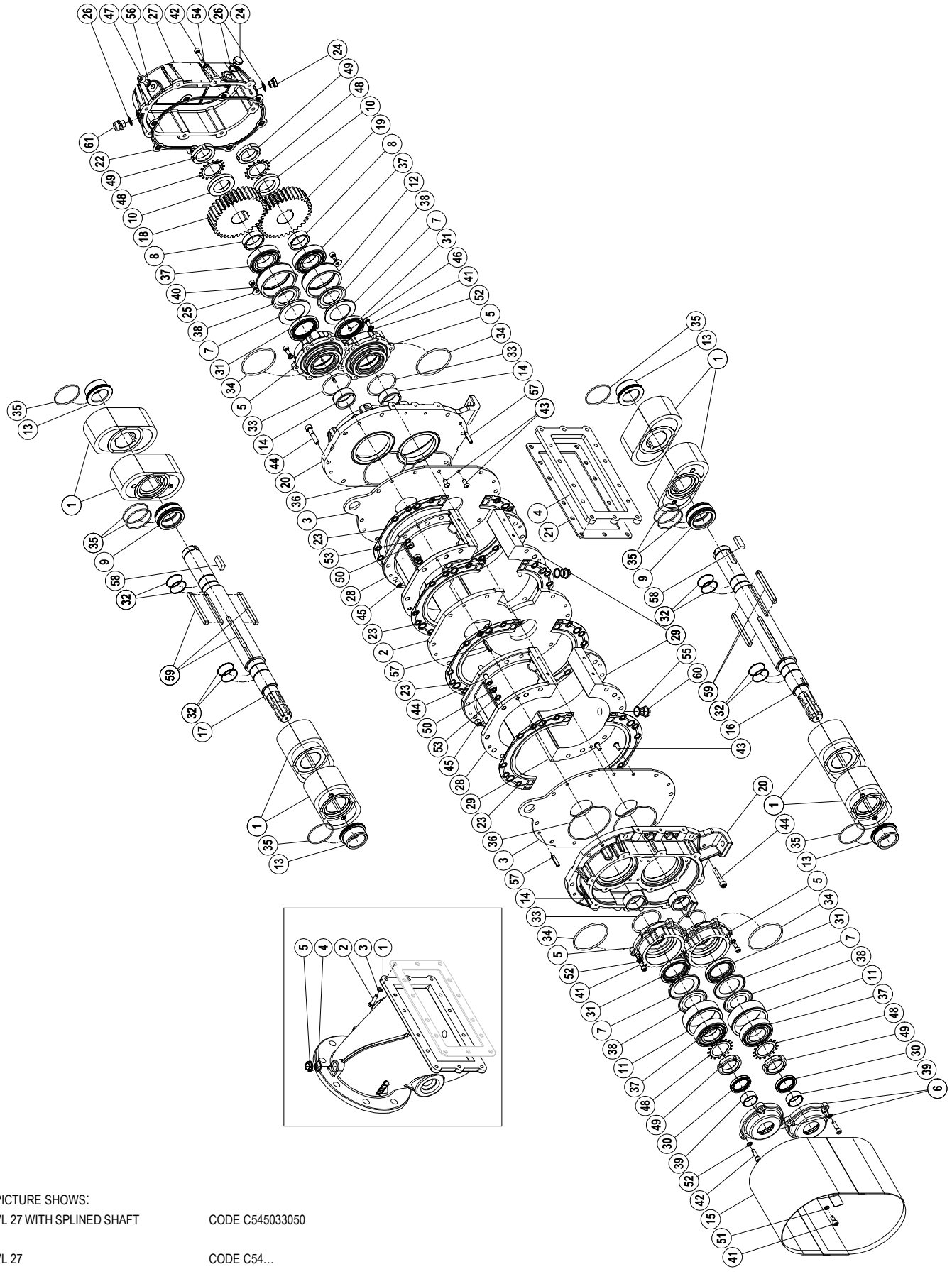
VL 14 WITH SPLINED SHAFT (UPPER SIDE)	CODE C525233051
VL 7	CODE C51...
VL 14	CODE C52...
VL 20	CODE C53...

VL 7-14-20

Pos.	Code	Description	Q.ty
1	1503601800	END LOBE VL7 (NBR)	2 A
	1503601400	END LOBE VL14-20 (NBR)	4 A
	1503601500	CENTRAL LOBE VL20 (NBR)	2 A
2	1510500000	VL7-14-20 SHAFT FLANGE	1
3	1610009300	WEAR-PROOF FLANGE	2
4	1610011400	VL7 FLANGE	2
	1610011300	VL14 PORTS FLANGE	2
	1610011100	VL20 PORTS FLANGE	2
5	1610504700	BEARING FLANGE	4
6	1610504800	VL7-14-20 FRONT FLANGE	1 C
7	1624009000	SPACER	4
8	1624009100	REAR GEAR SPACER	2
9	1624009900	GEAR PLACER	2
10	1626000100	FRONT BEARING BUSHING	2
11	1626000200	REAR BEARING BUSHING	2
12	1626000300	BUSHING	4
13	1626002200	BUSHING 55X45X22	4
14	1642005700	CARDAN-SHAFT PROTECTION	1
15	1650008200	SPLINED SHAFT ASAE 1 3/8" Z6 D.55 VL7	1
	1650008300	SMOOTH SAHFT VL7 (ELETRIC MOTOR)	1 B
	1650007400	SPLINED SHAFT ASAE 1 3/8" Z6 D.55 VL14	1
	1650007500	SMOOTH SAHFT VL14 (ELETRIC MOTOR)	1 B
	1650007700	SPLINED SHAFT ASAE 1 3/8" Z6 D.55 VL20	1
	1650007800	SMOOTH SAHFT VL20 (ELETRIC MOTOR)	1 B
16	1650008400	BLIND AXLE D.55 VL7	1
	1650007600	BLIND AXLE D.55 VL14	1
	1650007900	BLIND AXLE D.55 VL20	1
17	1651002400	GEAR N. 2 (UPPER)	1
18	1651003300	GEAR N. 1 (LOWER)	1
19	16625CXSB0	BENCH	2
20	1680606200	VL 7 NBR GASKET	2
	1680605500	VL 14 NBR GASKET	2
	1680606100	VL 20 NBR GASKET	2
21	1680703500	OIL-TANK COVER GASKET	1
22	1680705000	HOUSING PUMP GASKET	4
23	1684000000	DRAINING PLUG 3/8	2
24	1685005100	WASHER	6
25	1685100200	WASHER 17X22X1.5	3
26	1687100600	OIL TANK	1
27	1687503700	VL7 PUMP HOUSING	1
	1687503200	VL14 PUMP HOUSING	1
	1687503300	VL20 PUMP HOUSING	1
28	1687510400	VL7 HOUSING WITH DRAINING HOLE	1
	1687510500	VL14 HOUSING WITH DRAINING HOLE	1
	1687510600	VL20 HOUSING WITH DRAINING HOLE	1
29	4022200027	SEAL RING 55X40X8	1 C
30	4022200106	DOMSEL SEAL 55X80X10 NBR	4 A
31	4022200212	O-RING 2162 NBR	8
32	4022200236	O-RING 4275	4
33	4022200238	O-RING 4350	4
34	4022200242	O-RING 3256 NBR	4
35	4022200286	O-RING 3450 NBR	8
36	4023100548	BEARING 6209	4
37	4023118000	NILOS RING AN 6209 ZAV	4
38	4023130009	BUSHING 35X40X17	1 C
39	4026121403	SCREW TCEI 8.8 M8X16 ZINC.	6
40	4026121405	SCREW TCEI 8.8 M8X20 ZINC.	28
41	4026121406	SCREW TCEI 8.8 M8X30 ZINC.	14
42	4026121504	SCREW TBEI 10.9 M 8 X 18 ZINC.	8
43	4026121813	SCREW TCEI 8.8 M10X50 ZINC.	16
44	4026135141	GRUB SCREW 14.9 M14X12 ZINC.	8
45	4026136205	GRUB SCREW 14.9 M6X12 ZINC.	4
46	4026186C00	SCREW TCEI 8.8 M12X1X20 ZINC.	1
47	4026306309	SAFETY RING MB9	4
48	4026306509	SELFLOCKING RING M 45X1,5	4
49	4026308006	NUT M10 ZINC.	16
50	4026350505	WASHER GROWER 8 ZINC. VL14	4
	4026350505	WASHER GROWER 8 ZINC. VL20	8
51	4026350706	WASHER GROWER 8 ZINC.	30
52	4026350708	WASHER GROWER 10 ZINC.	16
53	4026351505	WASHER M8 ZINC.	8
54	4026359003	WASHER 21.5X26X1.5	1
55	4026359006	WASHER 13.5X18X1.5	1
56	4026410013	PIN 8X36	8
57	4026501500	TAB 14X9X36	2
58	4026503500	VL7 TAB 10X9X45	4
	4026503505	VL14 TAB 10X9X110	4
	4026503509	VL20 TAB 10X9X160	4
59	4026904001	PLUG 1/2" ZINC.	1
60	4026910001	VENTIL PLUG 3/8"	1
	1880000000	GASKETS KIT VL 7-27	1
	1892000900	GASKETS KIT VL 7-27 (VITON)	1
		VL 7-14-20 SYPHON MANIFOLDS	
1	1627507400	VL7 SYPHON MANIFOLD DN80 PN6	2
	1627507700	VL7 SYPHON MANIFOLD DN80 PN6 BY-PASS	2
	1627508600	VL14 SYPHON MANIFOLD DN100 PN6	2
	1627508400	VL14 SYPHON MANIFOLD DN100 PN10	2
	1627508700	VL14 SYPH. MANIFOLD DN100 PN6 BY-PASS	2
	1627508500	VL14 SYPH. MANIFOLD DN100 PN10 BY-PASS	2
	1627507500	VL20 SYPHON MANIFOLD DN150 PN6	2
	1627507500	VL20 SYPH. MANIFOLD DN150 PN6 BY-PASS	2
2	4026102807	SCREW TE 8.8 M8X25 ZINC.	10
3	4026350706	WASHER GROWER 8 ZINC.	10
4	4026359003	WASHER 21.5X26X1.5	4
5	4026904001	PLUG 1/2" ZINC.	4

		NOTE	
A	Various codes	SPECIFY THE MATERIAL	
	1503601900	END LOBE VL7 (VITON)	2
	1503602400	END LOBE VL7 (EPDM)	2
	1503603100	END LOBE VL7 (POLYURETHANE)	2
	15036003E0	END LOBE VL7 (XNBR)	2
	1503601600	END LOBE VL14-20 (VITON)	4
	1503602300	END LOBE VL14-20 (EPDM)	4
	1503603000	END LOBE VL14-20 (POLYURETHANE)	4
	1503604400	END LOBE VL14-20 (XNBR)	4
	1503601700	CENTRAL LOBE VL20 (VITON)	2
	1503602100	CENTRAL LOBE VL20 (EPDM)	2
	1503602900	CENTRAL LOBE VL20 (POLYURETHANE)	2
	15036001E0	CENTRAL LOBE VL20 (XNBR)	2
	4022200107	DOMSEL RING 55X80X10 (VITON)	4
B	4026500911	TAB 10X8X63 (ELETRIC MOTOR)	1
C	Various codes	ADD ONE PCS IN CASE OF DOUBLE SPLINED AXIS MODEL	

VL 27



PICTURE SHOWS:

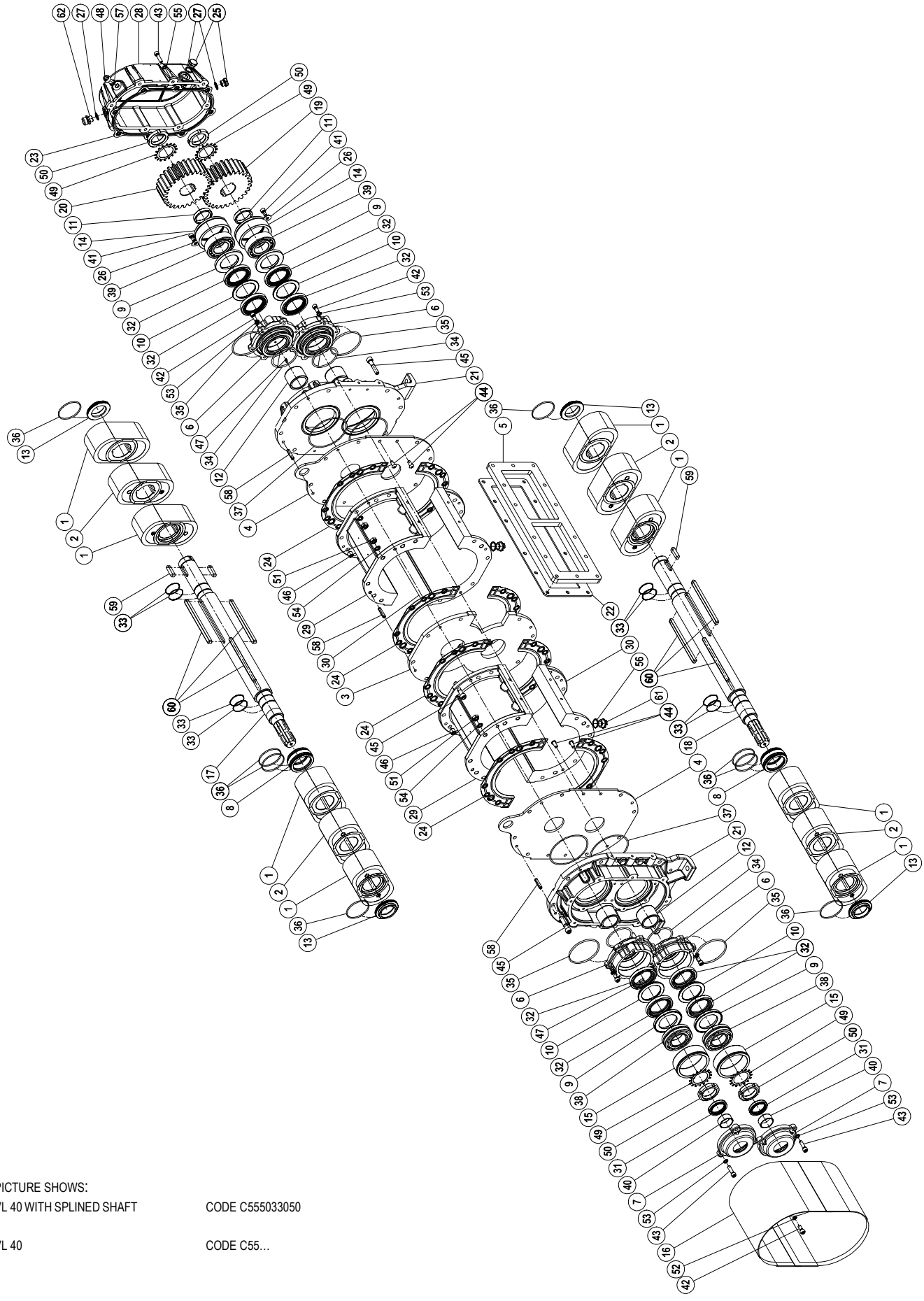
VL 27 WITH SPLINED SHAFT	CODE C545033050
VL 27	CODE C54...

VL 27

Pos.	Code	Description	Q.ty
1	1503601400	END LOBE (NBR)	8 [A]
2	1610009200	WEAR-PROOF FLANGE	1
3	1610009300	WEAR-PROOF FLANGE	2
4	1610011200	VL27 FLANGE	2
5	1610504700	BEARING FLANGE	4
6	1610504800	FRONT FLANGE	2
	1510500100	BLIND AXLE FLANGE	1 [D]
7	1624009000	SPACER	4
8	1624009100	REAR SPACER	2
9	1624009800	LOBE SPACER VL27	2
10	1624009900	GEAR PLACER	2
11	1626000100	FRONT BEARING BUSHING	2
12	1626000200	REAR BEARING BUSHING	2
13	1626000300	BUSHING VL 7...40	4
14	1626002200	BUSHING 55X45X22	4
15	1642005700	CARDAN-SHAFT PROTECTION	1
16	1650008000	SPLINED SHAFT ASAE 1 3/8" Z6 D.55	1
	1650010300	BLIND AXLE D.55 VL27	1 [D]
17	1650008100	SPLINED SHAFT ASAE 1 3/8" Z6 D.55	1
18	1651002500	GEAR 2	1
19	1651003400	GEAR 1	1
20	16625CXSB0	BENCH	2
21	1680605700	VL27 NBR GASKET	2
22	1680703500	OIL-TANK COVER GASKET	1
23	1680705000	HOUSING PUMP GASKET	8
24	1684000000	DRAINING PLUG 3/8	2
25	1685005100	WASHER	6
26	1685100200	WASHER 17X22X1.5	3
27	1687100600	OIL-TANK	1
28	1687503200	VL 14-27 PUMP HOUSING	2
29	1687510500	VL 14-27 HOUSING WITH DRAINING HOLE	2
30	4022200027	ANELLO TENUTA AS 55X40X8	2
31	4022200106	DOMSEL SEAL 55X80X10 NBR	4 [A]
32	4022200212	O-RING 2162 NBR	8
33	4022200236	O-RING 4275	4
34	4022200238	O-RING 4350	4
35	4022200242	O-RING 3256 NBR	8
36	4022200286	O-RING 3450 NBR	8
37	4023100548	BEARING 6209-2RS1	4
38	4023118000	NILOS RING AN 6209 ZAV	4
39	4023130009	BUSHING 35X40X17	2
40	4026121403	SCREW TCEI 8.8 M8X16 ZINC.	6
41	4026121405	VITE TCEI 8.8 M8X20 ZINC.	28
42	4026121406	SCREW TCEI 8.8 M8X30 ZINC.	8
43	4026121504	SCREW TBEI 10.9 M 8 X 18 ZINC.	8
44	4026121813	SCREW TCEI 8.8 M10X50 ZINC.	24
45	4026135141	GRUB SCREW 14.9 M14X12 ZINC.	16
46	4026136205	GRUB SCREW 14.9 M6X12 ZINC.	4
47	4026186C00	SCREW TCEI 8.8 M12X1X20 ZINC.	1
48	4026306309	SAFETY RING MB9	4
49	4026306509	SELFLOCKING RING M 45X1,5	4
50	4026308006	NUT M10 ZINC.	24
51	4026350505	WASHER GROWER 8 ZINC.	4
52	4026350706	WASHER GROWER 8 ZINC.	30
53	4026350708	WASHER GROWER 10 ZINC.	24
54	4026351505	WASHER M8 ZINC.	8
55	4026359003	WASHER 21.5X26X1.5	2
56	4026359006	WASHER 13.5X18X1.5	1
57	4026410013	PIN 8X36	12
58	4026501500	TAB 14X9X36	2
59	4026503505	TAB 10X9X110	8
60	4026904001	PLUG 1/2" ZINC.	1
61	4026910001	VENTIL PLUG 3/8"	1
	1880000000	GASKETS KIT VL 7-27	1
	1892000900	GASKETS KIT VL 7-27 (VITON)	1
		VL 27 SYPHON MANIFOLDS	
1	1627507600	SYPHON MANIFOLDS DN150 PN6	2
	1627507900	SYPHON MANIFOLDS DN150 PN6 BY-PASS	2
2	4026102808	SCREW TE 8.8 M8X30 ZINC.	14
3	4026350706	WASHER GROWER 8 ZINC.	14
4	4026359003	WASHER 21.5X26X1.5	4
5	4026904001	PLUG 1/2" ZINC.	4

		NOTE	
[A]	Various codes	SPECIFY THE MATERIAL	
	1503601600	END LOBE VL27 (VITON)	8
	1503602300	END LOBE VL27 (EPDM)	8
	1503603000	END LOBE VL27 (POLYURETHANE)	8
	1503604400	END LOBE VL27 (XNBR)	8
	4022200107	DOMSEL RING 55X80X10 (VITON)	4
[D]	Various codes	VL 27 SPLINED SHAFT UPPER / LOWER	

VL 40



PICTURE SHOWS:

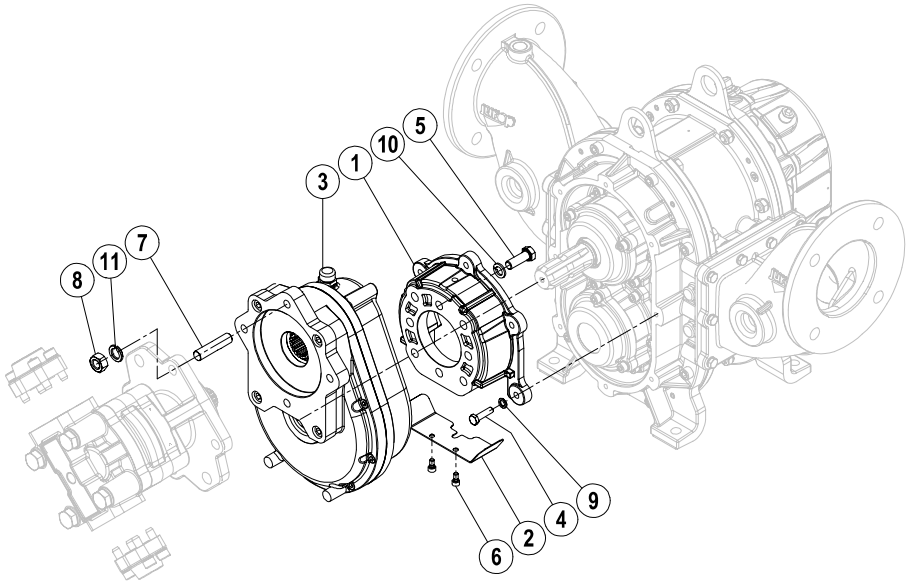
VL 40 WITH SPLINED SHAFT	CODE C555033050
VL 40	CODE C55...

VL 40

Pos.	Code	Description	Q.ty
1	1503601400	END LOBE (NBR)	8 [A]
2	1503601500	CENTRAL LOBE (NBR)	4 [A]
3	1610009200	WEAR-PROOF FLANGE	1
4	1610009300	WEAR-PROOF FLANGE	2
5	1610013100	VL40 FLANGE	2
6	1610505300	BEARING FLANGE	4
7	1610505400	FRONT FLANGE	2
8	1624009800	LOBE SPACER	2
9	1624010000	SEAL-BEARING SPACER	4
10	1624010100	GEAR PLACER	4
11	1624012400	SPACER 54X45XSP.9,5	2
12	1624012500	BUSHING	4
13	1626000400	VL40 BUSHING	4
14	1626000500	REAR BEARING BUSHING	2
15	1626000600	FRONT BEARING BUSHING	2
16	1642005700	CARDAN-SHAFT PROTECTION	1
17	1650008500	SPLINED SHAFT ASAE 1 3/8" Z6 D.55	1
18	1650008600	SPLINED SHAFT ASAE 1 3/8" Z6 D.55	1
19	1651001800	GEAR 1	1
20	1651001900	GEAR 2	2
21	16625CXSB0	BENCH	2
22	1680606500	VL40 GASKET	2
23	1680703500	OIL-TANK COVER GASKET	1
24	1680705000	HOUSING PUMP GASKET	8
25	1684000000	DRAINING PLUG 3/8	2
26	1685005100	WASHER	6
27	1685100200	WASHER 17X22X1.5	3
28	1687100600	OIL-TANK	1
29	1687503300	VL 20-40 PUMP HOUSING	2
30	1687510600	VL 20-40 HOUSING WITH DRAINING HOLE	2
31	4022200027	SEAL RING AS 55X40X8	2
32	4022200106	DOMSEL SEAL 55X80X10 NBR	4
33	4022200212	O-RING 2162 NBR	8
34	4022200236	O-RING 4275	4
35	4022200238	O-RING 4350	4
36	4022200242	O-RING 3256 NBR	8
37	4022200286	O-RING 3450 NBR	4
38	4023105010	BEARING 22209	2
39	4023110048	BEARING NUP 2209 ECP	2
40	4023130009	BUSHING 35X40X17	2
41	4026121403	SCREW TCEI 8.8 M8X16 ZINC.	6
42	4026121405	SCREW TCEI 8.8 M8X20 ZINC.	28
43	4026121406	SCREW TCEI 8.8 M8X30 ZINC.	14
44	4026121504	SCREW TBEI 10.9 M 8 X 18 ZINC.	8
45	4026121813	SCREW TCEI 8.8 M10X50 ZINC.	24
46	4026135141	GRUB SCREW 14.9 M14X12 ZINC.	16
47	4026136205	GRUB SCREW 14.9 M6X12 ZINC.	4
48	4026186C00	SCREW TCEI 8.8 M12X1X20 ZINC.	1
49	4026306309	SAFETY RING MB9	4
50	4026306509	SELFLOCKING RING M 45X1,5	4
51	4026308006	NUT M10 ZINC.	24
52	4026350505	WASHER GROWER 8 ZINC.	4
53	4026350706	WASHER GROWER 8 ZINC.	30
54	4026350708	WASHER GROWER 10 ZINC.	24
55	4026351505	WASHER M8 ZINC.	8
56	4026359003	WASHER 21.5X26X1.5	2
57	4026359006	WASHER 13.5X18X1.5	1
58	4026410013	PIN 8X36	12
59	4026500907	TAB 10X8X40	4
60	4026503510	TAB 10X9X170	8
61	4026904001	PLUG 1/2" ZINC.	1
62	4026910001	TAPPO SFIATO 3/8"	1
	1880000100	GASKETS KIT VL 40	1
	1892001100	GASKETS KIT VL 40 (VITON)	1

		NOTE	
[A]	Various codes	SPECIFY THE MATERIAL	
	1503601600	END LOBE VL40 (VITON)	8
	1503602300	END LOBE VL40 (EPDM)	8
	1503603000	END LOBE VL40 (POLYURETHANE)	8
	1503604400	END LOBE VL40 (XNBR)	8
	1503601700	CENTRAL LOBE VL40 (VITON)	4
	1503602100	CENTRAL LOBE VL40 (EPDM)	4
	1503602900	CENTRAL LOBE VL40 (POLYURETHANE)	4
	15036001E0	CENTRAL LOBE VL40 (XNBR)	4
	4022200107	DOMSEL RING 55X80X10 (VITON)	8

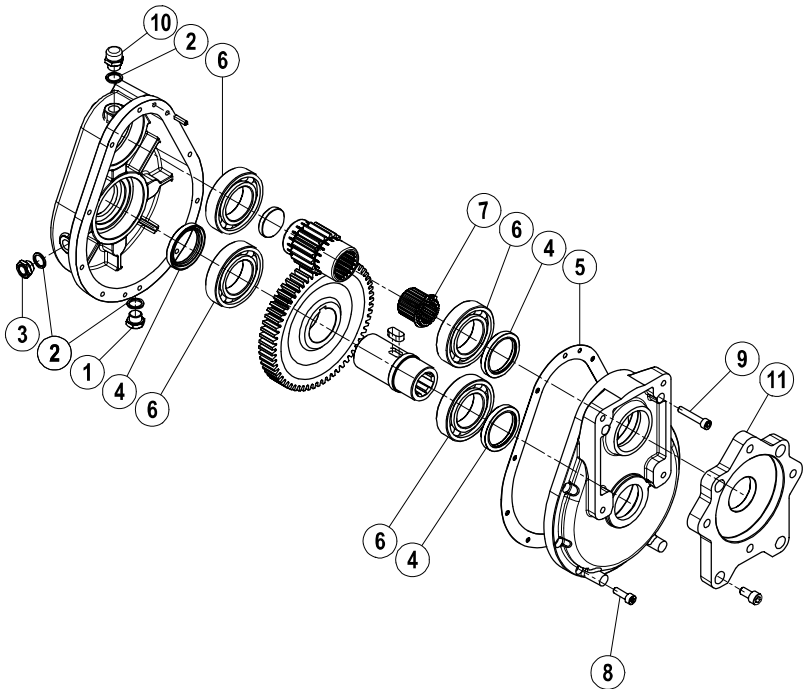
VL 7-40 HYD



Pos.	Code	Description	Q.ty
1	1612501600	HYD BOX	1
2	16420139E0	HYD BOX PROTECTION	1
3	4025800302	GEARBOX MLT 3.5 I=3.7 SEMIG+SAE C	1
	4025800400	GEARBOX MLT 3.5 I=3.1 ALBERO D.38	1
4	4026102808	SCREW TE 8.8 M8X30 ZINC.	5
5	4026103003	SCREW TE 8.8 M12X35 ZINC.	4

Pos.	Code	Description	Q.ty
6	4026121303	SCREW TCEI 8.8 M6X12 ZINC.	2
7	4026171304	STUD SCREW 8.8 M14X40 ZINC.	4
8	4026308008	NUT M14 ZINC.	4
9	4026350706	WASHER GROWER 8 ZINC.	5
10	4026350709	WASHER GROWER 12 ZINC.	4
11	4026350710	WASHER GROWER 14 ZINC.	4

4025800302 – GEARBOX

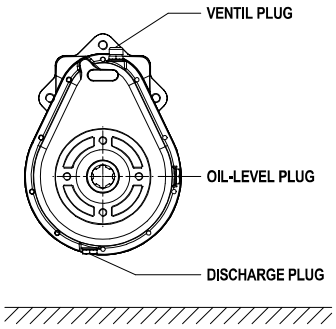


Pos.	Code	Description	Q.ty
1	1684000000	PLUG 3/8	1
2	1685100200	WASHER 17X22X1.5	3
3	4022104501	OIL-LEVEL PLUG 3/8"	1
4	4022200105	SEAL 50X65X8	3
5	40222RPB00	GASKET	1
6	4023100155	BEARING 6210	4

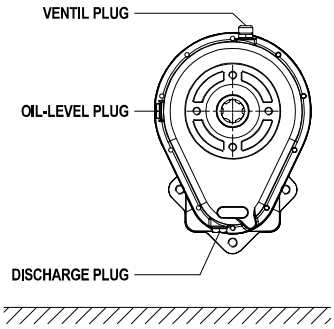
Pos.	Code	Description	Q.ty
7	4023131600	GEARBOX ADAPTER Z20-Z14	1
8	4026121407	SCREW TCEI 8.8 M8X25 ZINC.	7
9	4026121410	SCREW TCEI 8.8 M8X45 ZINC.	2
10	4026910001	VENT PLUG 3/8"	1
11	9949250048	SAE C FLANGE	1

GEARBOX ASSEMBLY INSTRUCTIONS (code 4025800302)

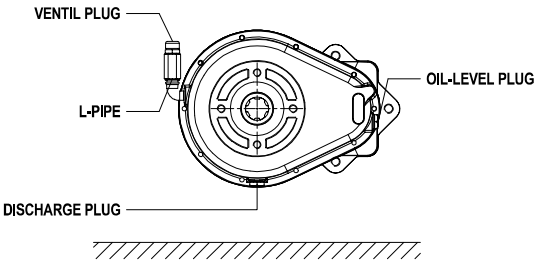
POSITION 1



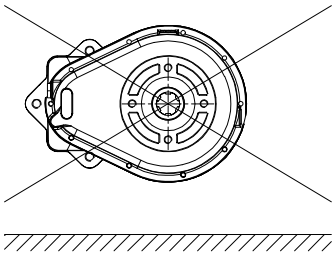
POSITION 2



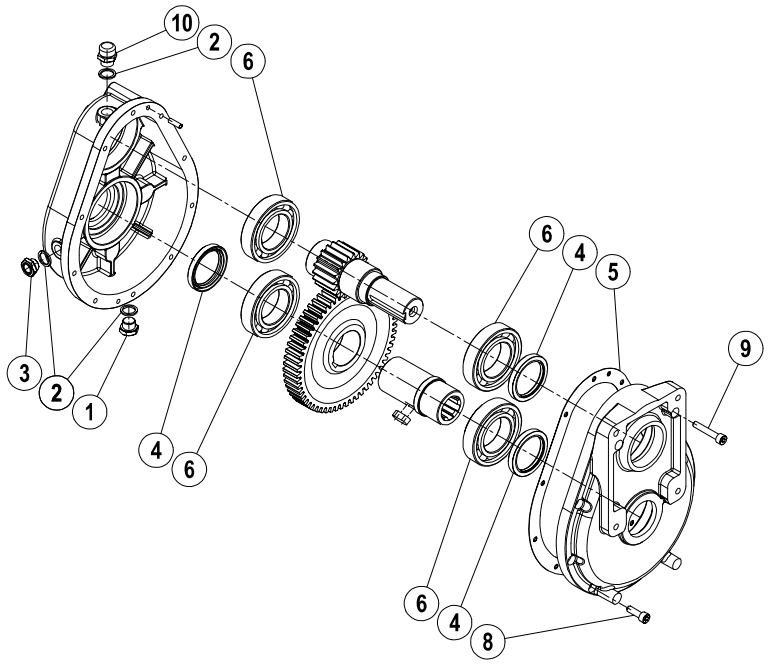
POSITION 3



POSITION 4



4025800400 – GEARBOX



Pos.	Code	Description	Q.ty	Pos.	Code	Description	Q.ty
1	1684000000	DRAINING PLUG 3/8	1	7	-	-	
2	1685100200	WASHER 17X22X1.5	3	8	4026121407	SCREW TCEI 8.8 M8X25 ZINC.	7
3	4022104501	OIL-LEVEL PLUG 3/8"	1	9	4026121410	SCREWTCEI 8.8 M8X45 ZINC.	2
4	4022200105	SEAL 50X65X8	3	10	4026910001	VENT PLUG 3/8"	1
5	40222RPB00	GASKET	1	11	-	-	
6	4023100155	BEARING 6210	4				

Note. Recommended gear oil: SAE 80W/90. Oil capacity: approximately 0,6 l.

Model	Issue date	Revision No.	Revision date	Filled out by	Viewed by
VL 7-40	01-01-2002	06	07-01-2021	U.T.	A.T.

Jurop SpA

Via Crosera, 50
33082 Azzano Decimo, PN (ITALY)

Tel. +39 0434 636811
Fax. +39 0434 636812

http://www.jurop.it
e-mail: info@jurop.it