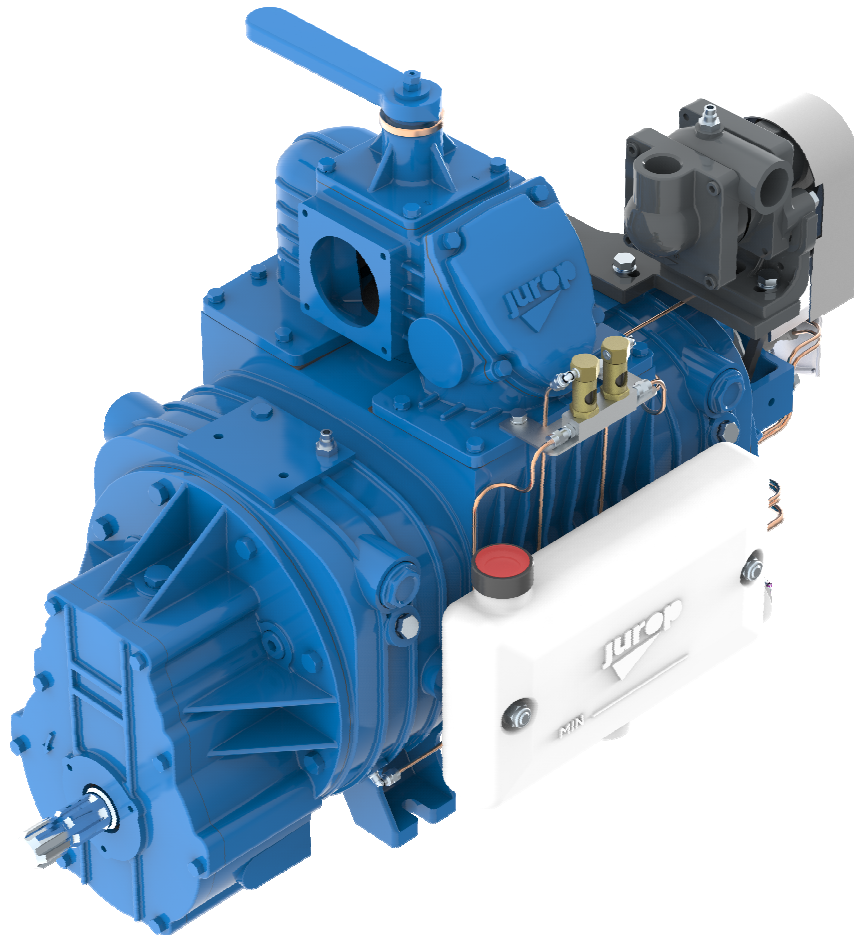


EN

LC 300 - 420 - 580



ORIGINAL INSTRUCTIONS



INSTALLATION, USE AND
MAINTENANCE MANUAL

Jurop

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

Rev. 10
30-01-2018

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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.
- 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.

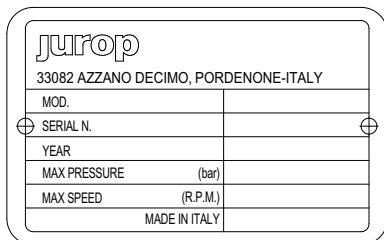


Suggestions for an environment friendly use of the pump.



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.
- 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:

ESEMPIO:

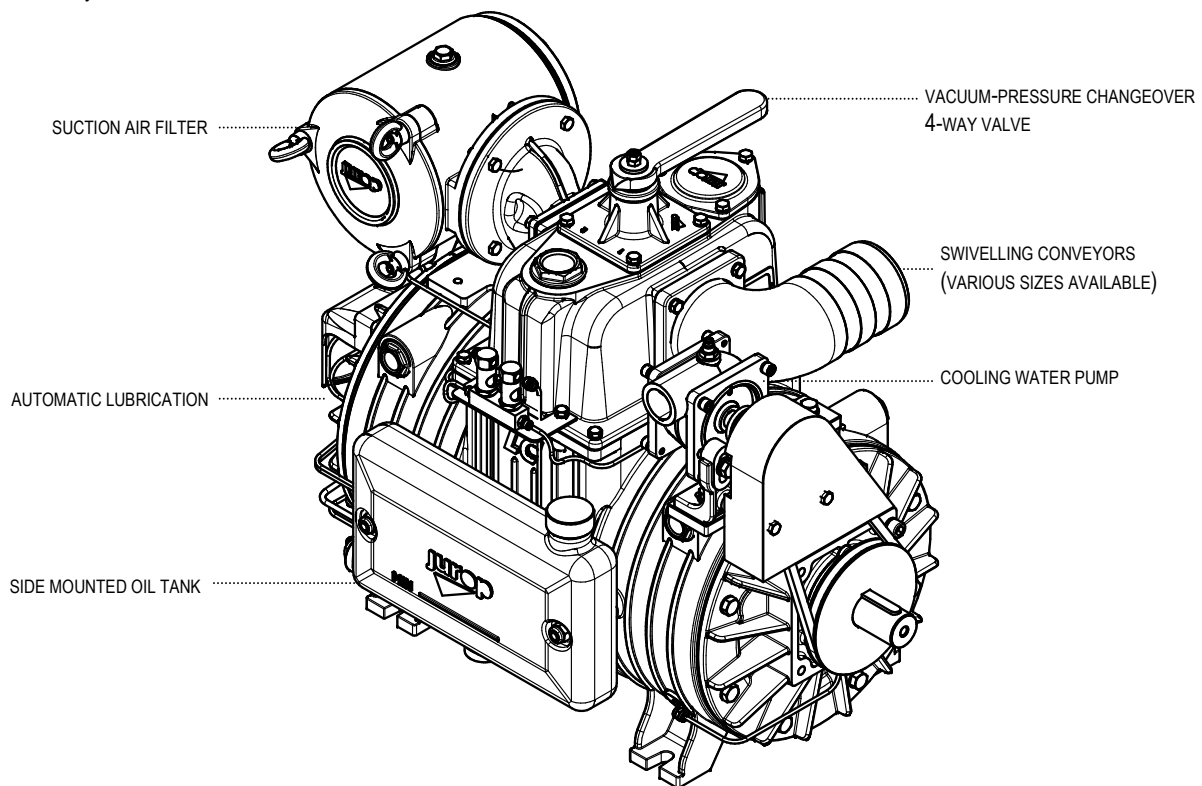
- | | |
|--|--------------|
| a) The model of the pump (see pump tag): | LC580 |
| b) The serial number of the pump (see pump tag): | K80001 |
| c) A description of the parts (see parts list): | VANE |
| d) The quantity (see parts list): | n°5 pz |
| e) The code number of the part (see parts list): | 16016 BXN B0 |

1.3. Warranty terms and conditions

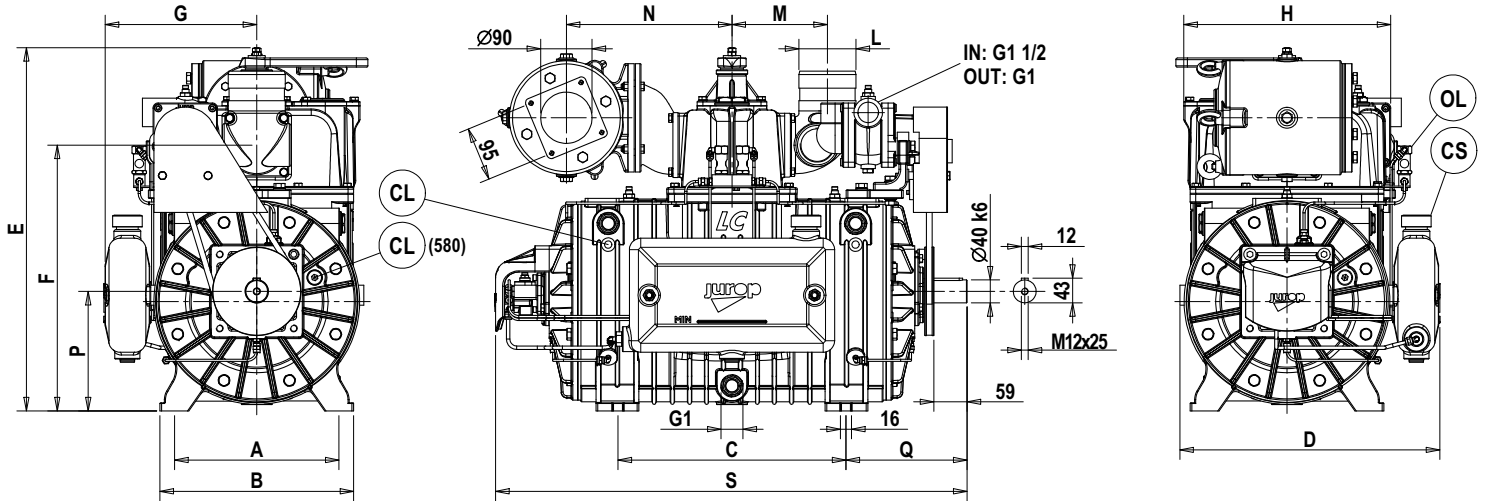
- Compliance with the installation, use and maintenance instructions provided by this manual **is crucial for the recognition of warranty** against defective parts.

2. Technical data

- Four-vane rotary pump with liquid cooled housing, suitable even for major duty operating conditions with high volumetric efficiency and low noise. It has two inlet liquid points on the lower part of its body and four outlet points on the upper part. They do not interfere with the side mounted oil tank.
- Automatic lubricating pump, accessible from the outside for an easy and quick adjusting. Copper oil piping, complete with sight glass drip oilers for a continuous check of the lubrication system.
- Side mounted oil tank with level spy hole. The oil tank can be mounted either on the right or left side of the pump to grant an easy oil checking and filling up. The outside mounting of the oil tank grants a better cooling of the oil itself.
- Heavy duty vanes (asbestos free), radially disposed on the rotor: reduced wear for a long-lasting lifetime. Vanes wear checking ports on the pump body: they do not interfere with the side mounted oil tank.
- Built-in vacuum-pressure changeover 4-way valve, manually operated: on request, hydraulic or pneumatic operated actuators available.
- Non return valve (rubber ball) integrated in the pump manifold (LC300). Non return valve (clapet) integrated in the pump manifold (LC420-580).
- Swivelling conveyors, made of aluminium alloy: various sizes available.
- Cooling water temperature: a mechanic thermometer can be inserted into one of the outlet holes. A metal capillary operates the pointer that can be mounted on a visible point near the pump. Delivered on request.
- Exhaust air temperature: the manifold is equipped with a housing for the safety thermostat (intervention temperature: 150° C). Delivered on request.
- Built-in suction air filter. It can be mounted horizontally whereas the suction hole can be swivelled either towards the right or the left side, for an easy pump installation and the following cleaning operations and maintenances. The space required to remove the inner cartridge of the suction filter do not exceed the overall dimensions of the pump. Cleansing agents suction points for the internal wash-up of the pump (recommended in case sewage has been sucked).
- Drive system:
 - Direct with smooth shaft;
 - With gear box (SAE 1 3/8) 540 rpm o 1000 rpm, left rotation;
 - With hydraulic motor.



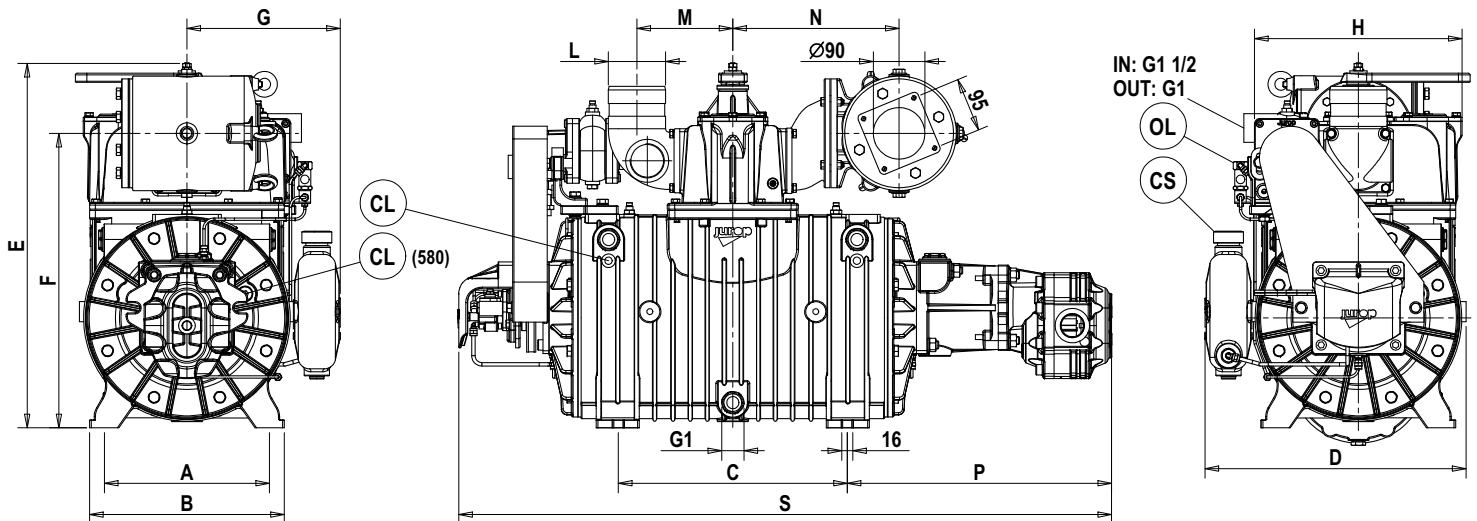
Weight	LC 300	LC 420	LC 580
Direct with smooth shaft	195 kg	210 kg	232 kg
With gear box 540 rpm o 1000 rpm	200 kg	215 kg	252 kg
With hydraulic motor	205 kg	220 kg	247 kg

2.1. Dimensions LC300-420-580
Versions with smooth shaft


PUMP LUBRICATION
 CS: tank filling point OL: oilers

HOUSING
 CL: vanes wear checking

Mod.	A	B	C	D	E	F	G	H	L (IN)	L (OUT)	M	N	P	Q	S
LC 300 D	250	290	290	420	605	435	242	350	76-80	76	136	266	205	182	659
LC 420 D	250	290	290	442	638	469	279	350	80-100	80-100	166	290	205	249	794
LC 580 D	300	340	400	456	638	469	283	354	80-100	80-100	166	290	210	213	827

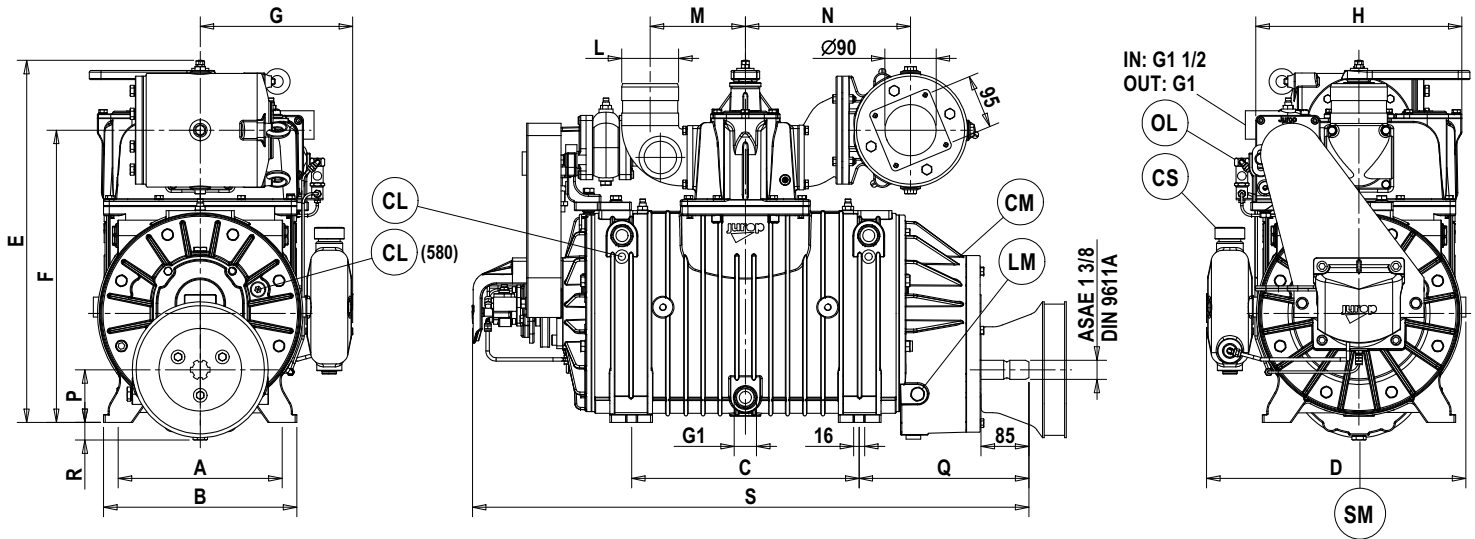
Versions HDR


PUMP LUBRICATION
 CS: tank filling point OL: oilers

HOUSING
 CL: vanes wear checking

Mod.	A	B	C	D	E	F	G	H	L (IN)	L (OUT)	M	N	P	S
LC 300 HDR	250	290	290	420	605	435	242	350	76-80	76	136	266	428	970
LC 420 HDR	250	290	290	442	638	469	279	350	80-100	80-100	166	290	496	1105
LC 580 HDR	300	340	400	456	638	469	283	354	80-100	80-100	166	290	462	1141

Versions with gear box (540 -1000 rpm)



PUMP LUBRICATION
CS: tank filling point **OL:** oilers
 HOUSING
CL: vanes wear checking **LM:** oil level
 GEARBOX
SM: outlet plug **CM:** inlet plug

Mod.	A	B	C	D	E	F	G	H	L (IN)	L (OUT)	M	N	P	Q	R	S
LC 300 M	250	290	290	420	605	435	242	350	76-80	76	136	266	83	262	37	805
LC 420 M	250	290	290	442	638	469	279	350	80-100	80-100	166	290	83	330	37	940
LC 580 M	300	340	400	456	638	469	283	354	80-100	80-100	166	290	93	299	31	979

2.2. Performances

Performances referred to vacuum pump operating at max. speed.

Performances	LC300	LC420	LC580
Air flow under free air condition	8500 l/min - 510 m³/h	12000 l/min - 720 m³/h	16330 / 18000[*] l/min - 980 / 1080[*] m³/h
Air flow 60% vacuum rate	6415 l/min - 385 m³/h	9000 l/min - 540 m³/h	14500 / 15950[*] l/min - 870 / 957[*] m³/h
Air flow 80% vacuum rate	3450 l/min - 207 m³/h	4833 l/min - 290 m³/h	12180 / 13220[*] l/min - 731 / 793[*] m³/h
Max. vacuum at continuous duty [**]	80%	80%	80%
Max. vacuum	92%	92%	95%
Power required at max. vacuum	14 kW	18 kW	17 - 19,5[*] kW
Power required at 0.5 relative bar (1.5 abs.)	12 kW	16 kW	29 - 33[*] kW
Power required at 1.0 relative bar (2.0 abs.)	17 kW	24 kW	35 - 39[*] kW
Max. relative pressure (abs.)	1,0 bar (2,0 bar abs)	1,0 bar (2,0 bar abs)	1,0 bar (2,0 bar abs)
Air flow at 0.5 relative bar (1.5 abs.)	7500 l/min - 454 m³/h	10830 l/min - 650 m³/h	15500 / 17040[*] l/min - 930 / 1022[*] m³/h
Air flow at 1.0 relative bar (2.0 abs.)	7000 l/min - 420 m³/h	9830 l/min - 590 m³/h	14400 / 16110[*] l/min - 864 / 967[*] m³/h
Oil consumption	200 g/h	220 g/h	240 g/h
Oil tank capacity	4 litri	4 litri	4 litri
Circulating pump speed	2700 rpm	2700 rpm	2700 rpm
Circulating flow rate	55 l/min	55 l/min	55 l/min
Heat exchange rate	6000 kcal/h	8000 kcal/h	9500 kcal/h
Mass moment of inertia	0,15 kgm²	0,21 kgm²	0,37 kgm²

[*] : conditions not foreseen for continuous duty.

[**] : at nominal speed.

REFERENCE CONDITIONS

Conveyed gas: air
 Reference temperature: 20°C

Functioning in free air
 Vacuum functioning: free outlet

Reference abs. pressure: 1.013 mbar
 Pressure functioning: free inlet

Flow - power

Model	Free port	Vacuum						Pressure (abs)			
		20%	40%	60%	70%	80%	90%	1,5 bar	1,8 bar	2,0 bar	
LC 300	m ³ /h	510	480	444	385	285	207	10	454	435	420
	l/min	8500	8000	7400	6420	4760	3450	190	7500	7250	7000
	kW	8	9	10	11	12	13	14	12	15	17
LC 420	m ³ /h	720	670	620	540	400	290	16	650	610	590
	l/min	12000	11170	10330	9000	6670	4833	270	10830	10170	9830
	kW	11	12	14	15	16	16,5	17	16	21	24
LC 580	m ³ /h	980	956	921	870	828	731	350	930	888	864
	l/min	16330	15930	15350	14500	13800	12180	5830	15500	14800	14400
	kW	25	22,5	21	20	19	18	17,5	29	33	35

Note: data at nominal speed.

2.3. Sound pressure level

Sound pressure level	LC300	LC420	LC580
Max. speed, 60% vacuum rate*	70 dB(A)	73 dB(A)	72 dB(A)
Max. speed, 90% vacuum rate*	73 dB(A)	75 dB(A)	74 dB(A)

* : noise of pump with exhaust silencer cod. 15470 D2C B0. Distance: 7m in open field.

2.4. Usage limitations

Pump	Max. Speed – Operating speed (RPM)			P ₂ (bar ABS)	T ₂ (°C)	T ₂ - T ₁ (°C)
	M - 540	M - 1000	D - HDR			
LC300-LC420	540 – 460 rpm	1000 – 850 rpm	1300 – 1100 rpm	2,0 bar	150°C	130°C
LC580	540 – 460 rpm 600[*] rpm	1000 – 850 rpm 1100[*] rpm	1200 – 1000 rpm 1325[*] rpm	2,0 bar*	150°C	130°C

P1: absolute pressure during suction
 P2: absolute pressure during delivery

T1: temperature during suction
 T2: temperature during delivery

[*] : conditions not foreseen for continuous duty.

Note: * for pump LC580 with belt drive: P₂ = 1,5 bar abs.

2.5. Lubrication

Recommended lubricants: SIDE MOUNTED OIL TANK LEVEL

Room Tem.	Viscosity	Type	ENI	ESSO	SHELL	TOTAL	MOBIL	BP	TEXACO HAVOLINE
Under 10°C	ISO VG 46	Olio minerale	Acer 46	Nuto 46	Morlina oil 46	Drosera MS 46	Nuto H 46	Bartran HV 46	Rando HD 46
Over 10°C	ISO VG 150	Olio minerale	Acer 150	Nuto 150	Morlina oil 150	Drosera MS 150	Nuto H 150	Bartran HV 150	Rando HD 150

Note: use SAE 15W-40 mineral oil as an alternative to the lubricants written above.

Recommended lubricants: GEAR BOX OIL

Viscosity	Type	ENI	ESSO	SHELL	TOTAL	MOBIL	BP	TEXACO HAVOLINE
ISO VG 220	Olio minerale EP	Blasia 220	Spartan EP 220	Omala oil 220	Carter EP 220	Mobilgear 630	Energol GR XP 220	Meropa 220

Note: use SAE 80W-90 mineral oil as an alternative to the lubricants written above.

3. Safety and accident prevention

Attention:
Carefully apply these prescriptions.

3.1. General recommendations

- Installation and maintenance must be carried out with the unit totally disengaged from its drive system and must be performed by qualified personnel.
- Use adequate clothing (avoid ties, loose sleeves, necklaces and so on) and suitable protection equipments (gloves, protection glasses, boots...).
- When transporting the pump, use proper slinging. Store the pump in stable places.
- Make sure that all the parts of the unit are idle and cool, before performing any maintenance operation.
- Before each maintenance operation, stop the pump and restore the atmospheric pressure.
- When the pump is running, some parts may reach very high temperatures (above 100°C). Use all necessary precautions to avoid contact.
- Operators working nearby must avoid prolonged exposure to the noise emitted by the aspirator, if not equipped with the proper ear-protection devices.
- Avoid accidental suction of solids: solids may be projected at high speed through the exhaust manifold and cause injuries.

- Do not start the machine if the protection devices provided for transmissions are removed. Replace damaged parts.
- Pressure relief valve: point the air flux away from the operators.
- Do not use the aspirator over its designed limits: the machine may be damage and the operator may be injured.

Do not exceed the power supply parameters indicated in the technical tables (see par. 2.3).

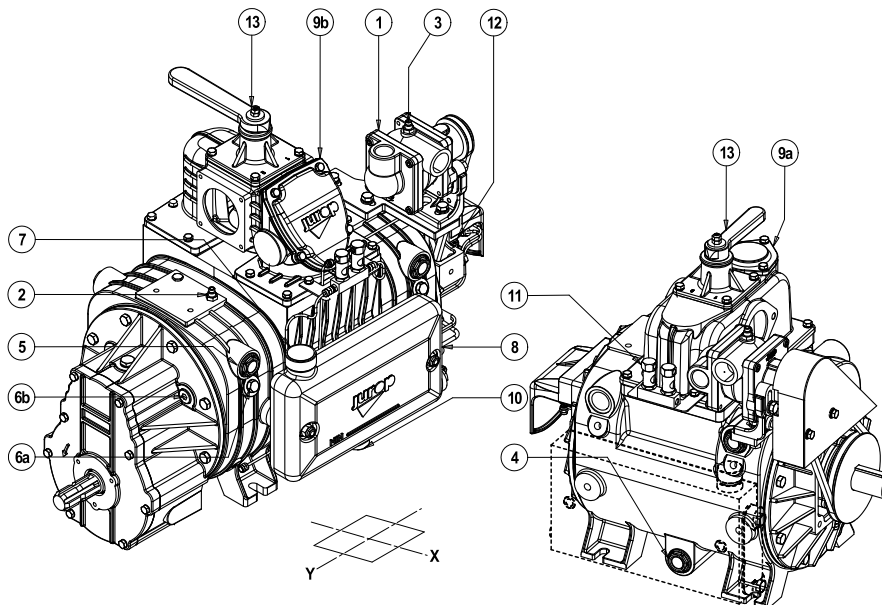
3.2. Intended use

- The vacuum pumps LC are designed to convey filtered air into systems for the vacuum production or for the suction of powders or liquid wastes. Any other usage shall be considered improper.
- Do not sack toxic substances and inflammable or explosive gasses, since the internal components of the pump may reach high temperatures.
- Liquids or solids infiltrations can seriously damage the pump.
- Do not run the pump over its designed operating limits (see par. 2.3): it may break and transmission can be damaged.

4. Installation

Legend of main components

- | | | |
|--|--|---|
| 1. Water recycle pump | 6a. Vanes check-port | 9b. Non return valve (clapet valve) LC420-580 |
| 2. Venting valve on pump housing | 6b. Vanes check-port LC580 | 10. Oil tank emptying port |
| 3. Venting valve on water recycle pump | 7. Oil filling port | 11. Oilers |
| 4. Cooling water inlet | 8. Lubricating oil tank | 12. Self-lubricating pump |
| 5. Cooling water outlet | 9a. Non return valve (rubber ball) LC300 | 13. Vacuum – pressure change valve |



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.
- Make sure the vacuum pump has its identification plate affixed on the front cover. 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. 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 compressor 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.

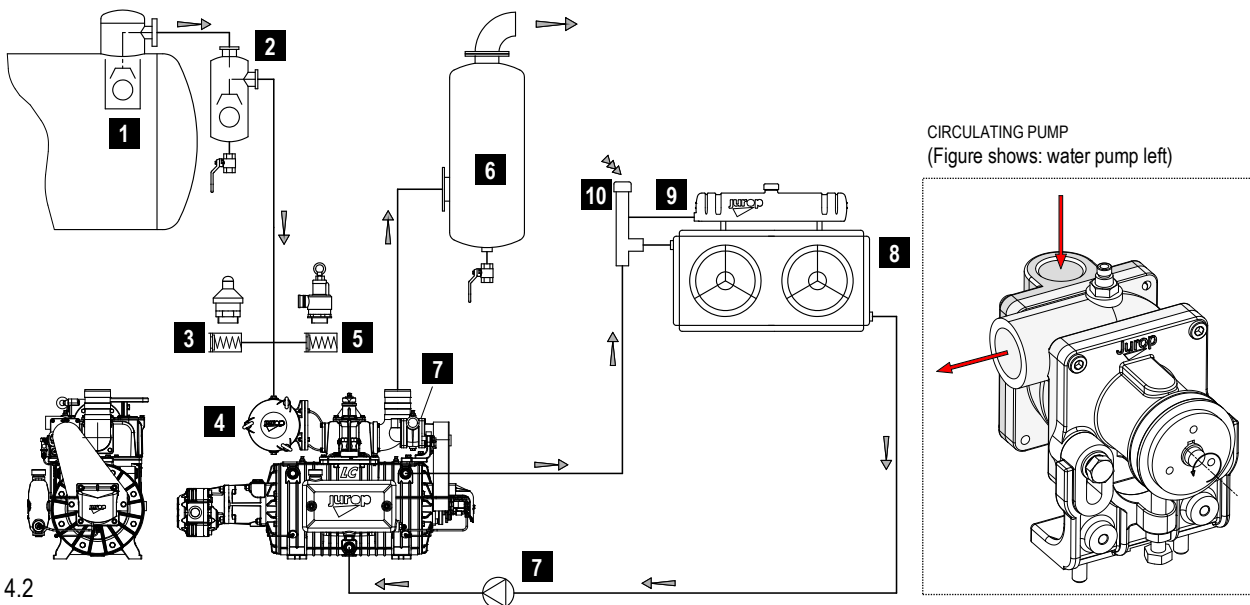
4.3. Mounting

- The mounted aspirator must be accessible for maintenance and firmly fixed on a frame or angled base with a 3° max inclination on x and y axes (see Fig. 4.1). The structure must be fit to avoid flexions or vibrations.

- Make sure that there is enough free room around the pump for a correct air cooling circulation and protect the pump from the exposure to dirt and debris.
- Prepare the necessary space for an easy access to the lubrication check-points (tank level and gear box, oilers) and to the oil tank filling port, the four-way manifold handle, and the vane wear inspection ports.

4.4. Vacuum - pressure line

- To avoid accidental suction of liquids inside the pump, install a primary (pos. 1) and a secondary flow shutoffs (pos. 2). If necessary, install also a suction filter (pos. 4) to protect from solids infiltration.
- The exhaust silencer (pos. 6) is designed to reduce the noise level and to separate the oil mist coming out from the pump outlet port. The separator must be periodically drained from oil and condensate accumulated in the separator during the normal pump functioning.
- The diameter of the vacuum/pressure line pipes must be properly dimensioned to the pump flow and, in any case, larger than the diameter of the ports.
- The pipes weight must not solicit the body of the pump. Use high temperature resistant rubber connections.
- Before mounting the vacuum line to the pump, remove the port protections. Pipes and all line components must be clean.
- Avoid restrictions and tight curves as much as possible if not strictly necessary.
- Exhaust pipes can reach high temperatures. Hence, they must be properly isolated.



Pic. 4.2

Vacuum line components

1	Primary shutoff	6	Silencer – oil separator
2	Secondary shutoff	7	Circulating pump
3	Vacuum relief valve	8	Air-water heat exchanger
4	Suction filter	9	Expansion tank
5	Overpressure safety valve	10	Exchanger inlet port

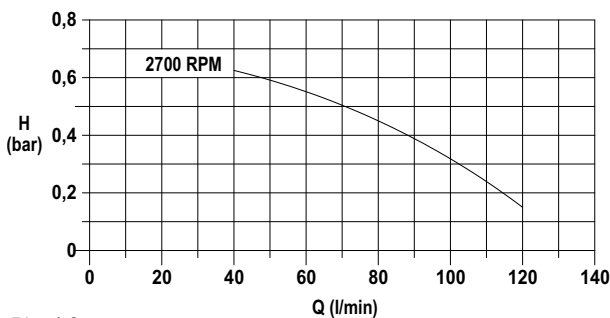
• Safety valves:

- Overpressure safety valve (pos. 5): mount it close to the pump. The valve flow must prevent the LC pump from exceeding the absolute pressure of 2.0 bars or the maximum pressure allowed by the system. Do not apply gate valves on the line;
- Vacuum control valve (pos. 6): install if necessary to limit the vacuum rate of the system.

4.5. Cooling system

• It is composed of:

- Centrifugal recycle pump;
 - Heat exchanger with electric fans operated by a thermostat;
 - Expansion tank.
- The heat exchanger must dissipate the heat power indicated in par. 2.2. The Fig. 4.3 shows the characteristic curve “Flow – Head” of the recycle pump.



Pic. 4.3

• The cooling liquid temperature must not exceed 60° C. The air flow generated by the exchanger fans must be kept free of obstacles.

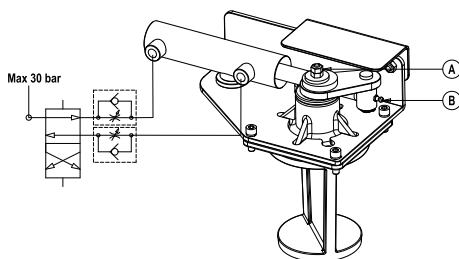
4.6. Hydraulic actuator adjustment

• Extraordinary maintenance operations can require the upper cover (and that of the actuator, either manual or pneumatic) to be removed. We recommend ensuring enough space to carry out such operations.

• If the cock blocks or it moves with friction, screw up the clearance regulation nut (A). Screw up ¼ of turn each time. Block the nut rotation with the safety nut.

• The lubrication points (B) and the clearance regulation bolt (A) must be accessible. See Fig. 4.5.

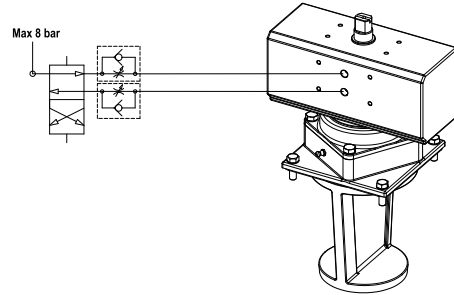
- Lubricate with grease every 1000 cycles. Grease type NLGI 2.
- It is suggested to install 2 one-way flow controller between the hydraulic switch and the hydraulic actuator. Set the flow controllers in order to prevent hard hitting through the end of stroke. Minimum commutation time: 1 second.
- Maximum feed pressure: 30 bar.
- To order spare parts see spare parts list at the end of this manual.



Pic. 4.4

4.7. Pneumatic actuator adjustment

• In the event of 4-way valves equipped with pneumatic actuator, we recommend installing two one-way flow regulators between the pneumatic “control” and the pneumatic actuator. The following figure shows a schematic view of a possible pneumatic installation.



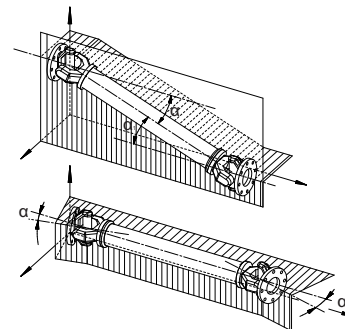
Pic. 4.5

• We recommend adjusting the two flow regulators in order for rotation to occur without knocks and with a switching time of at least one second.

4.8. Pump mounting - Drive connection

A) Cardan shaft drive

- Use telescopic cardan shafts.



Pic. 4.6

• In order to achieve a uniform motion of the driven shaft, the following requirements must be met (see Fig. 4.6):

- 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.

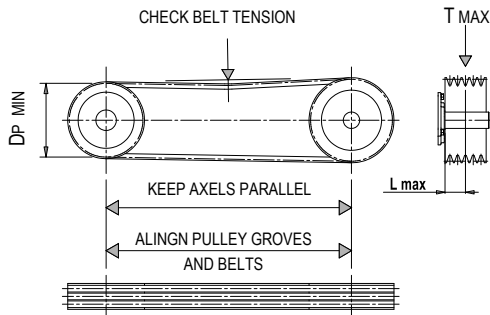
• It is also recommended working with limited articulated joint angles (max 15° at 1000 rpm and max 11° at 1300 rpm) and disengaging the transmission for those operations requiring great angles (steering or lifting).

Follow the rotation direction as indicated on the front flange. Follow the instructions of the cardan shaft's manufacturer.

- Use the protection that comes with the pump shaft.

Use the cardan protection supplied with the pump. The pump installation must fulfil the current EC injury prevention specifications.

B) Belt drive



Pic. 4.7

• Install a suitable pulley on the smooth shaft as close as possible to the pump: max 35 mm.

- Apply an adequate belt tension (see manufacturer's data). Max 3000N.
- Do not use driven or driving pulleys with a pitch diameter inferior to 180 mm. Small pulleys require a high belt tension which may cause premature wear to the bearing or transmission troubleshooting.
- A limited speed ratio allows a longer belts life while reducing stress on the shafts. When possible, prefer:
 - Pulleys with a pitch diameter bigger than the one indicated;
 - Motors or power take-offs with a speed similar to the one of the pump.

Pump	Drive min. pulley p. diam.	T. max	Belts	Max. Speed	Max. Pressure	Max. Vacuum.
LC300	180 mm	3000 N	SPB x 3	1300 rpm	2 bar abs	92%
LC420	180 mm	3000 N	SPB x 3	1300 rpm	2 bar abs	92%
LC580	180 mm	3500 N	XPB x 3	1200 rpm	1,5 bar abs	95%

C) Hydraulic drive

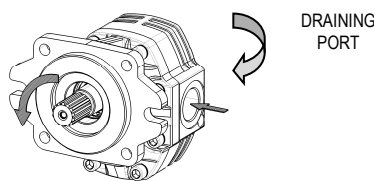
Model	Displacement	Operating pressure (max. vac.)	Operating pressure (1 rel. bar)	Flow	Max pressure draining line	Max. pressure motor exhaust	Max pressure
LC300	61 cc/rev	125 bar	150 bar	83 l/min (1300rpm)	5 bar	5 bar	200 bar
LC420	72 cc/rev	135 bar	175 bar	98 l/min (1300rpm)	5 bar	5 bar	200 bar
LC580	108 cc/rev	140 bar	190 bar	136 l/min (1200rpm)	5 bar	5 bar	220 bar

• **Fluid:** mineral oil for hydraulic systems in compliance with ISO/DIN.

Temperature	Optimum viscosity ale	Max. viscosity allowed
-20 / +80 °C	12 – 100 cSt	750 cSt

• **Filtration:** class 19/16 contamination according to ISO 4406 to be obtained with a $\beta_x = 75$ filter.

• **Check circuit connections:** they must be applied in the same rotation direction as that indicated by the arrow on the pump front flange.



Pic. 4.8

• **Draining:** connect directly to the tank above the maximum oil level. Operating without draining line may damage the motor.

• **Distributor:** open-centre distributor in central idle position (vacuum pump off). It must be equipped with an adjustable overpressure safety valve.

• **Motor pipeline:** outlet pipe must not be of a smaller diameter than that of the inlet port. Inlet pipes always have a diameter smaller than outlet pipes. Choose preferably flexible pipes to avoid vibration transmission.

• **Tank:** with suction pipe and return separated by baffles. If necessary, use a heat exchanger to avoid oil heating above 70-80°C

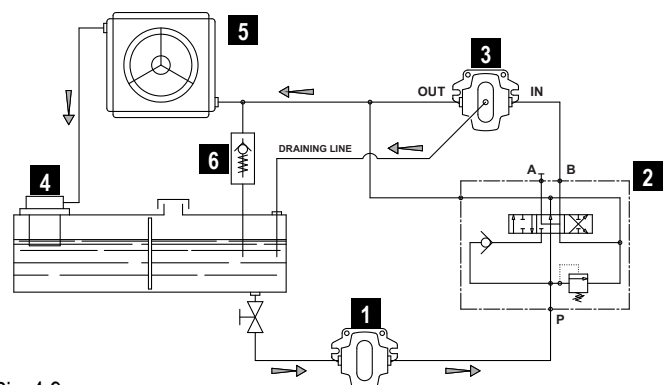
and protect it from extreme pressure with a pressure relief valve. Minimum approximate capacity: as twice as the circulation flow.

• **Starting-up:** be sure that the system is well cleaned and pour oil into the tank and into the motor housing (necessary to lubricate the internal bearings).

• Vent the circuit and adjust the overpressure safety valve to the lowest possible value.

• Check the oil tank level.

• Increase pressure and rotation speed until operating values are reached.



Pic. 4.9

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

* optional components

5. Start up

5.1. Starting-up of the pump

Lubrication

- Check oil levels in gearbox and side mounted tank.
- Check the oil level in the gear box (if the pump is provided with it).
- In order to choose the most suitable oil, see paragraph 2.5.

Cooling

- Unscrew the vent valves on the housing and recycling pump, pour the cooling fluid through the port near the exchanger.
- Screw the vent valves and start running the cooling system in order to expel the air bubbles inside it. Then, adjust the level by filling up the expansion tank on the exchanger: it must be half filled (approximately).
- The cooling system we designed has a capacity of 25-30 litres. Use a mixture of demineralised water and antifreeze liquid at a concentration suitable to room temperature (usually between 25 and 50%).



Carefully vent the cooling circuit with the recycling pump stopped.

Vacuum line

- Open all valves of the vacuum-pressure system.
- Open all gate valves and remove any possible obstacle from the line.

5.2. Precautions when starting the system

- Check oil levels in gearbox and side mounted tank.
- Check that all protection devices are correctly installed.
- Check that there are no obstacles in the vacuum line.
- Check rotation direction: open all system valves and start running slowly.



Do not rotate in the wrong direction: this may damage the vacuum pump. Follow the arrow indicated on the front flange.

- Check which position of the four-way integrated valve lever allows vacuum or pressure functioning.
- Close the valve and increase vacuum rate (or operating pressure).
- Check that the lubricating pump works properly. Oil must regularly drip into the oilers. Typically (with degree of vacuum > 50%), **35-40 drops/min** (at maximum speed).
- Check loading and operating speed for vibrations or unusual noises.



This vacuum pump is designed to work at maximum speed, but for longer operating we recommend the pump be run at working speed (see par. 2.3).

- Prepare adequately transmission.

5.3. Operating precautions

- Run the vacuum pump at a room temperature of -20°C e +40°C.
- Do not make the vacuum pump overheat: maximum air temperature on exhaust (or delivery) side: 150°C.
- Do not operate the pump without lubrication: it may cause quick wear and possible breakdown of vanes.
- Do not start running the pump under load: this may damage the drive system or the hydraulic motor.
- Check the rotation speed: it must never exceed the operating limits indicated on the identification plate of the vacuum pump.
- Do not accidentally operate the pump in the wrong direction: it may break the vanes.
- Do not convey the exceeding delivery outlet towards the suction port, otherwise it will suck warm gas.
- Do not convey the exceeding delivery outlet towards the suction port, otherwise it will suck warm gas.
- Control the air flow by adjusting the rotation speed: do not use the pressure relief valve to discharge the exceeding flow.
- Once the needed vacuum rate has been reached, we recommend reducing the vacuum pump speed to its working speed (see par. 2.3): this allows keeping the achieved vacuum/pressure rate constant. The pump speed can also be reduced to values lower than the working speed during the tank discharging phase (with the 4-way valve in pressure mode) without increasing the draining time.
- Thus, exhaust temperature is reduced, vane durability is increased and both oil consumption and power absorption are reduced.



Once the needed vacuum rate has been reached, we recommend reducing the vacuum pump speed to its working speed.

- Internal wash-up is necessary after prolonged inactivity, after working in dusty environments or in case of accidental suction of liquids. Such operation must be carried out only on cooled pumps.
1. Disconnect the exhaust silencer, if possible;
 2. Start running the pump at low speed;
 3. Suck some water (about 1-2 litres) through the inlet port;
 4. Then suck oil (about 1 litre) to complete the wash-up and lubricate internal components.



In case the exhaust line cannot be disconnected, drain the liquids accumulated in the separator of the exhaust silencer.

- After long periods of inactivity, introduce some quantity of oil through the suction connection before starting the pump. Recommended operation in case of temperatures close or below 0°C degrees.

6. Maintenance

6.1. Ordinary maintenance

- 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...)
- In the following table summarizes the main controls to be performed and the frequency of intervention.

Operating condition	Maintenance Area	Check	8H	50H	500H	1500H
OPERATING	Transmission	Rotation speed				
	Pump	Lubrication: dripping into oilers				
		Operating pressure				
STANDSTILL	Pump	Sound pressure level				
		Drain the oil gathered in the exhaust separator				
		Check vanes wear				
		Clean filter and vacuum line shutoff				
		Check pressure relief valve condition				
		Side mounted tank oil level				
		Gear box oil level				
		Gear box oil change (*)				
		Cooling system venting				
Pump's inner washing (**)						

(*) The first oil change must be done inside 500 hours operation. Following changes every 5000 hours or 12 months. In order to choose the most suitable oil, see paragraph 2.5.

(**) 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 according to the procedure described at paragraph 5.2.

Checking the drip oilers

- Check dripping into the oilers.
- Be sure it is regular (about **40 drops/min** at max. speed, with degree of vacuum > 50%) to grant a correct lubrication of the pump. At lower speeds, the number of drops must be directly proportional.

If the pump is run without lubrication, the internal components may quickly damaged due to overheating. Stop the vacuum pump and check the oil level and the lubricating pump.

Checking the side mounted oil tank level

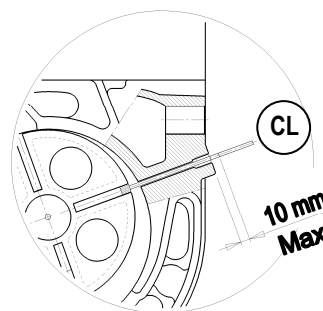
- Do not run the pump with oil level under the minimum level: that may lead to dry functioning and cause serious damages.
- Tank capacity: **4l**.
- Use pure fresh oil.

Do not re-use the exhausted oil gathered on the bottom of the exhaust silencer.

Checking the vanes wear LC300 - LC420

- Unscrew the vanes wear check-plug on the housing (pos. CL).
- Turn the shaft until you see the vane.
- The vanes should slide to the bottom of the seat due to gravity: check they really do.

- Insert a rod of 6 mm Ø with its conic end towards the pump (rod supplied with pump).
- Turn the shift manually and touch the outside diameter of the rotor with the checking rod, mark it a first time. Keep turning the shift till the rod falls inside a vane groove. Mark it again and measure the gap between the two marks.
- If this gap exceeds 10 mm, then the vanes must be replaced.
- At the end of this procedure, do not forget to replace the plug.
- Replace all vanes at the same time.

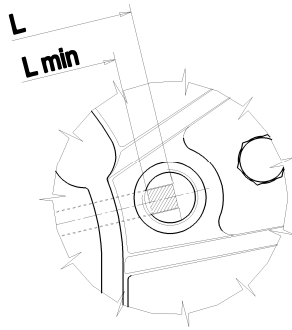


Pic. 6.1

Replace the vanes when their wear exceeds 10 m\m (L – L min): they may break. Replace all vanes at the same time.

Checking the vanes wear LC580

- Unscrew the vanes wear check-plug on the front flange (pos. CL).
- Turn the shaft until you see the vane.
- The vanes should slide to the bottom of the seat due to gravity: check they really do.
- Replace the vanes when their wear exceeds 10 m\m (L – L min): they may break.
- At the end of this procedure, do not forget to replace the plug.
- Replace all vanes at the same time.

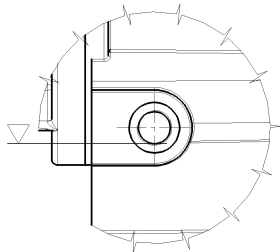


Pic. 6.2



Replace the vanes when their wear exceeds 10 mm (L – L min): they may break. Replace all vanes at the same time.

Checking the gear box oil level



- Check the level when the pump is cooled: it must almost reach the threaded port. Refill if necessary.
- For a complete replacement, 0.7 litres are required. Use mineral oil with EP additives for gears and transmissions.

• When changing the oil, also replace the outlet plug washer.



Dispose of exhausted oil as provided by current specification.

6.2. Extraordinary maintenance

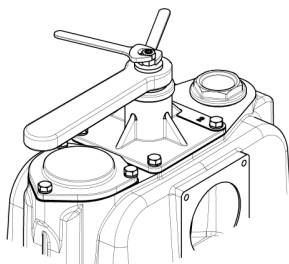
• Before starting any extraordinary maintenance operation, be sure the pump stands still and follow the safety prescriptions as described in Cap. 3.

Adjusting the 4-way valve

- For pumps equipped with handle for manual operation or hydraulic actuator.
- Adjust the screws to avoid the valve blocking in its seat (see Fig. 6.3).



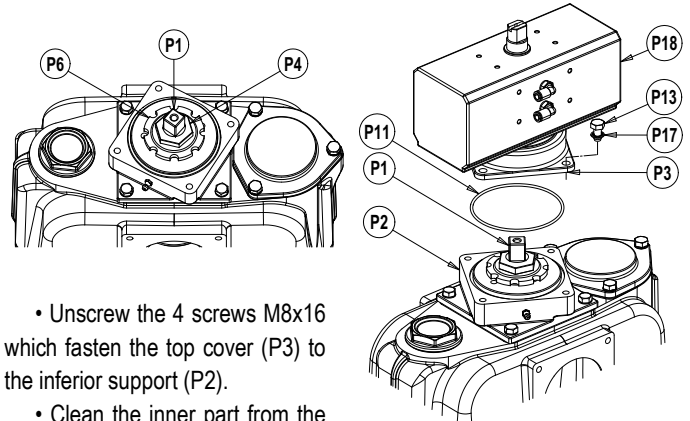
Attention: do not exceed with the adjustment: possible vacuum loss.



Pic. 6.3

Adjusting the pneumatically operated 4-way valve

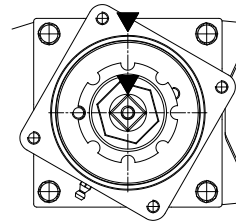
• In case of reduced performance or difficult rotation of the valve in its seat, it is necessary to adjust the operating play.



• Unscrew the 4 screws M8x16 which fasten the top cover (P3) to the inferior support (P2).

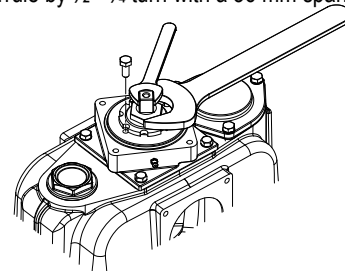
• Clean the inner part from the lubricant.

• “Mark” the initial position of the cock (P1). When mounting the cock back in place, it must be in the same position.



• Turn the valve until one of the cock regulation ferrules (P6) coincides with one of the threaded holes on the inferior flange (P2). Block temporarily the nut ferrule with a screw.

• Hold the valve in place with a 17 mm spanner and loosen the nut (P4) over the ferrule by 1/2 - 3/4 turn with a 36 mm spanner.

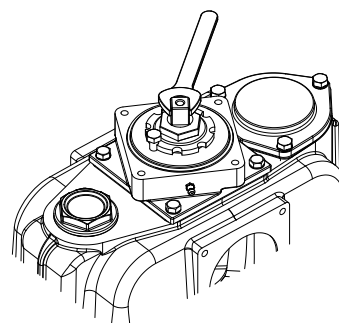


Pic. 6.4

• Valve adjustment: turn the valve clockwise by 1/8 turn (45°) in order to lower it (in case of excessive play between the valve and its seat and of reduced performance) or anticlockwise by 1/8 turn (45°) to raise it (in case of difficult rotation of the valve in its seat).

• Hold the valve in place with the spanner and fasten the nut (P4) above the ferrule.

• Remove the screw which temporarily blocks the ferrule and check for the correct rotation of the valve by adjusting the shaft frame. Repeat the valve adjustment, if necessary.

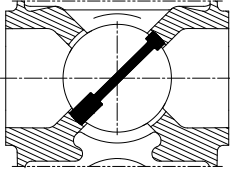


Pic. 6.5

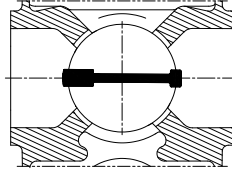


Attenzione: get the valve back into the previously "marked" position. Otherwise, the valve may work improperly.

• The valve - in both its end stroke positions - must separate the air flow sucked from the pump outlet air. The pump may be started in order to check for the proper functioning.



CORRECT POSITION



POSITION INCORRECT

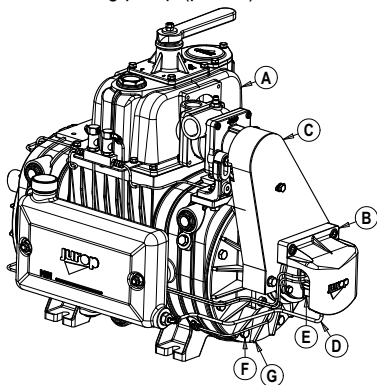
• Lubricate the areas near the ferrule in order to guarantee the lubrication of parts undergoing wear.

• Set the top cover back into place. Do not forget the OR-Ring (P11). Fasten the 4 screws.

Replacing the vanes

• Remove the vacuum pump from its bearing frame and wash it before disassembling.

- Drain the cooling liquid from the pump housing (pos. A).
- Remove the water pump cover (pos. B) and the carter (pos. C).
- Disconnect lubricating pipes (pos. D).
- Remove the lubricating pump (pos. E).



Pic. 6.6

• Remove the screws (pos. F) fixing the rear flange (pos. G) and use the two threaded holes to remove the flange – bearing – seal housing. If necessary, hold the rotor by inserting a wooden block, protecting the internal bearings from damage.

• Remove the bearing from the rear flange and replace the seal if broken.

• Lubricate with oil the new vanes before inserting those inside each groove of the rotor.

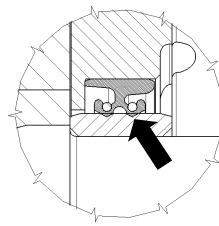
• Reinstall all the components in the following order: rear flange, seal ring (non), bearing, compensation ring, gasket and flange with lubricating pump (we recommend to fit correctly the pivot-key on the shaft groove).

• Tighten the nuts (pos. F) by means of a dynamometric wrench adjusted at 88 Nm.

• Refill the cooling system and re-install the pipeline.



Do not damage components during assembly by forcing them exceedingly.



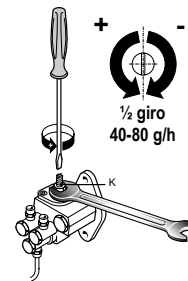
• Do not flip the seal ring during rotation of the shaft. Do not leave foreign objects inside the pump.

Adjusting the self-lubricating pump

• The automatic lubricating pump is adjusted by the manufacturer before the shipping.

• If consumption noticeably differs from the indicated value, adjust it as follows:

- Remove the upper protection cover;
- Using a screwdriver and a 10 mm wrench, adjust the adjusting screw (K). Close the nut and remount the upper protection cover;
- It is advisable to turn the screw of 1/4 of turn and verify the actual consumption.



Pic. 6.7



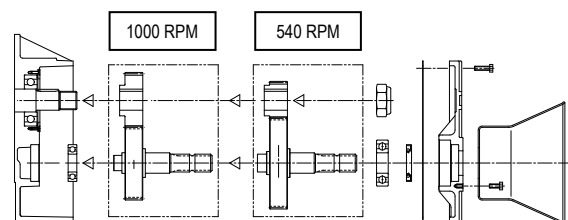
Do not reduce oil consumption below the value indicated in par. 2.2 (for functioning at speeds different from the maximum, flow is proportionate to rotating speed).

• 1/2 turn of the adjusting screw causes a variation in the flow of approximately 40 - 80 g/h, depending on using conditions.

Replacing gear box components

• The pump with a 540 rpm gear box can be transformed into a pump with a 1000 rpm gear box (and vice versa):

- Take down the gear box as illustrated. Remove also the drive shaft's pinion;
 - Install the new pinion closing the nut;
 - Mount the gear wheel including bearings and seals on the front cover, properly aligning components. This housing may now be installed in the gear box: fit the bearing in the internal housing on the flange;
 - Properly engage gears, replace the cover's gaskets to complete gear replacement. Insert the parallel pin, which maintains the correct alignment;
- See picture below.



7. Malfunctions: troubleshooting

PROBLEMS

The vacuum pump overheats

Cause	Solution
• Insufficient or absent lubrication	• Verify oil and rings. Check oil pump efficiency
• Low tank oil level	• Fill tank with oil
• Excessive rotation speed	• Reduce rpm to the prescribed working speed
• Prolonged functioning at max vacuum rate	• Reduce vacuum rate
• Insufficient cooling	• Check oil pump efficiency. Bleed the system with care. Check heat exchanger efficiency
• Vacuum and/or exhaust line of insufficient diameter	• Check dimensioning

The vacuum pump does not rotate

Cause	Solution
• Broken vanes: - due to infiltrated solids - due to insufficient lubrication	• Clean inner chambers, replace vanes • Check the secondary shutoff and filters of the suction line • Check the oil pump
• Power transmission breakdown	• Check and replace the damaged parts
• Ice inside the pump (during the cold season)	• Remove ice and slowly start running it. Avoid suction of water

Reduced performances

Cause	Solution
• Four way changeover valve in idle position	• Move the lever to vacuum or pressure mode end stroke
• Four way changeover valve not correctly registered	• Adjust the functioning play and lubricate
• Worn vanes	• Replace vanes
• The non-return valve leaks	• Clean or replace if necessary
• Worn seal rings	• Replace
• Tank gate valves or gaskets leak	• Replace damaged or worn parts
• Tank connection pipes leak or are obstructed	• Replace damaged pipes
• Obstructed primary shutoff or suction filter	• Remove and clean
• Encrusted exhaust port	• Remove and clean
• Vacuum line components are too small dimensioned	• Verify dimensions for pump maximum performances
• Obstructed rubber couplings	• Replace


Unusual oil consumption

Cause	Solution
• Insufficient or absent lubrication	• Check and adjust the lubricating pump

8. Scrapping

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

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



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

Material	Cast Iron	Steel	Aluminum	Copper	Bronze	Rubber	Vane	Oil	Gasket
LC 300	88,0 %	9,0 %	0,6 %	0,2 %	0,1 %	0,4 %	0,6 %	0,5 %	0,4 %
LC 420	89,0 %	8,0 %	0,6 %	0,2 %	-	0,3 %	0,8 %	0,5 %	0,4 %
LC 580	88,0 %	9,0 %	0,5 %	0,2 %	-	0,3 %	0,9 %	0,4 %	0,4 %

LC 300 D

Pos.	Code	Description	Q.ty	Pos.	Code	Description	Q.ty
1	1401200700	OIL DRIPPER	2	53	4024251000	OIL PUMP CW ROTATION (LC D DX)	1
2	1407200900	WATER PUMP SX (LC D SX)	1		4024251500	OIL PUMP CCW ROTATION (LC D SX)	1
	1407200800	WATER PUMP DX (LC D DX)	1	54	4025350019	BELTSPZ 925	1
3	1521506500	ROTOR LC300 D	1	55	4026101301	SCREW TE 8.8 M6X10 ZINC.	2
	1521506400	ROTOR LC300 D USA	1	56	4026102806	SCREW TE 8.8 M8X20 ZINC.	7
4	154201TWB0	BELT PROTECTION LC D SX	1	57	4026102807	SCREW TE 8.8 M8X25 ZINC.	16
	154201TVB0	BELT PROTECTION LC D DX	1	58	4026102819	SCREW TE 8.8 M8X90 ZINC.	2
5	1601606400	VANE LC300	4	59	4026102908	SCREW TE 8.8 M10X30 ZINC.	2
6	1605500000	HANDLE	1	60	4026103030	SCREW TE 8.8 M12X16 ZINC.	4
7	1608100000	DISTRIBUTOR	1	61	4026120301	SCREW TCEI 8,8 M6X12	4
8	1608501700	CONVEYOR	1	62	4026121305	SCREW TCEI 8,8 M6X16 ZINC.	2
9	1610051700	FLANGE	1	63	4026121405	SCREW TCEI 8.8 M8X20 ZINC.	3
10	1610508200	FLANGE	1	64	4026121710	SCREW TCEI 8.8 M12X35 ZINC.	2
11	1610510800	FLANGE	1	65	4026135414	SCREW S.TESTA 14.9 M8X45 ZINC.	1
12	1610512900	OIL PUMP FLANGE	1	66	4026135504	SCREW S.TESTA 14.9 M10X10 ZINC.	1
13	1610513500	FLANGE	2	67	4026141508	SCREW TE 10.9 M10X30 ZINC.	16
14	161201X4B0	PUMP SUPPORT	1	68	4026171211	SCREW PRIGION. 8.8 M12X80 ZINC.	2
15	1622002600	SHAFT M10	1	69	4026305508	NUT M12 SELFLOCKING	2
16	1623100000	CONVEYOR FLANGE	1	70	4026308005	NUT M8	2
17	1624027500	SPACER	1	71	4026308006	NUT M10	2
18	1624037700	SPACER	2	72	4026350503	WASHER GROWER M6 Q	6
19	1624042800	SPACER	2	73	4026350505	WASHER GROWER M8 Q	6
20	1624202300	4 WAYS SPACER	1	74	4026350508	WASHER GROWER M12 Q	2
21	1627505300	MANIFOLD	1	75	4026350706	WASHER GROWER M8 P	21
22	1642100200	REAR PROTECTION	1	76	4026350708	WASHER GROWER M10 P	4
23	165351TXB0	DRIVEN PULLEY	1	77	4026351504	TOOTHED WASHER M6	2
24	16630D5SB0	LUBRICATION LINE	1	78	4026351506	TOOTHED WASHER M10	16
25	16630D5PB0	LUBRICATION LINE	1	79	4026357005	WASHER M8	2
	16630D5IB0	LUBRICATION LINE USA	1	80	4026357006	WASHER M10	4
26	166301SZB0	LUBRICATION LINE	1	81	4026357007	WASHER M12	2
27	166301TOB0	LUBRICATION LINE	1	82	4026359001	WASHER 40X33.5X1.5 AL	6
28	16630D5TB0	LUBRICATION LINE	1	83	4026359006	WASHER 13.5X18X1.5 AL	4
29	16630D5XB0	LUBRICATION LINE	1	84	4026501008	TAB 12X8X70	1
	16630D5WB0	LUBRICATION LINE USA	1		4026500912	TAB 10X8X70 (USA)	1
30	16630D61B0	LUBRICATION LINE	1	85	4026510032	SEEGER E45	2
31	1673001000	OIL FILTER PLUG	1	86	4026702000	FITTING	6
32	1680609700	OIL PUMP GASKET	1	87	-	-	
33	1680611600	MANIFOLD GASKET	1	88	4026706000	FITTING	4
34	1680614300	MANIFOLD GASKET	1	89	4026706003	FITTING	2
35	1680707300	FLANGE GASKET	2	90	4026706101	FITTING	2
36	1680700200	FLANGE GASKET	1	91	4026904003	PLUG 1"	6
37	1680709700	GASKET	1	92	-	-	
38	1680709800	HOUSING GASKET	2	93	4026904300	VENT PLUG ¼"	2
39	16120CJ5B0	OIL DRIPPER FLANGE	1	94	4026904503	PLUG M20X1.5	1
40	1685002800	WASHER 30X8.5X4	1	95	4026905002	PLUG ¼"	2
41	1685100000	WASHER 14X20X1.5 AL	2	96	4026910103	PLUG	1
42	1685100300	WASHER D 20	2	97	4026910601	PLUG 1/8	2
43	16875BHDB0	HOUSING LC300	1	98	16630D5MB0	LUBRICATION LINE	1
44	1687600000	OIL TANK	1		16630D5IB0	LUBRICATION LINE USA	1
45	1691000000	SPRING	1	99	16630D60B0	LUBRICATION LINE	1
46	4022200030	Y-SEAL 41X27X10	1		16630D60B0	LUBRICATION LINE USA	1
47	4022200044	Y-SEAL 65X45X8	1	100	16630D5WB0	LUBRICATION LINE	1
48	4022200416	Y-SEAL 60X75X8	4		16630D5WB0	LUBRICATION LINE USA	1
49	4022300001	OIL FILTER	1				
50	4023100047	BEARING 6309 C3	1				
51	4023110051	BEARING NU 309 ECJ/C3	1				
52	4023250501	RUBER BALL D80	1				

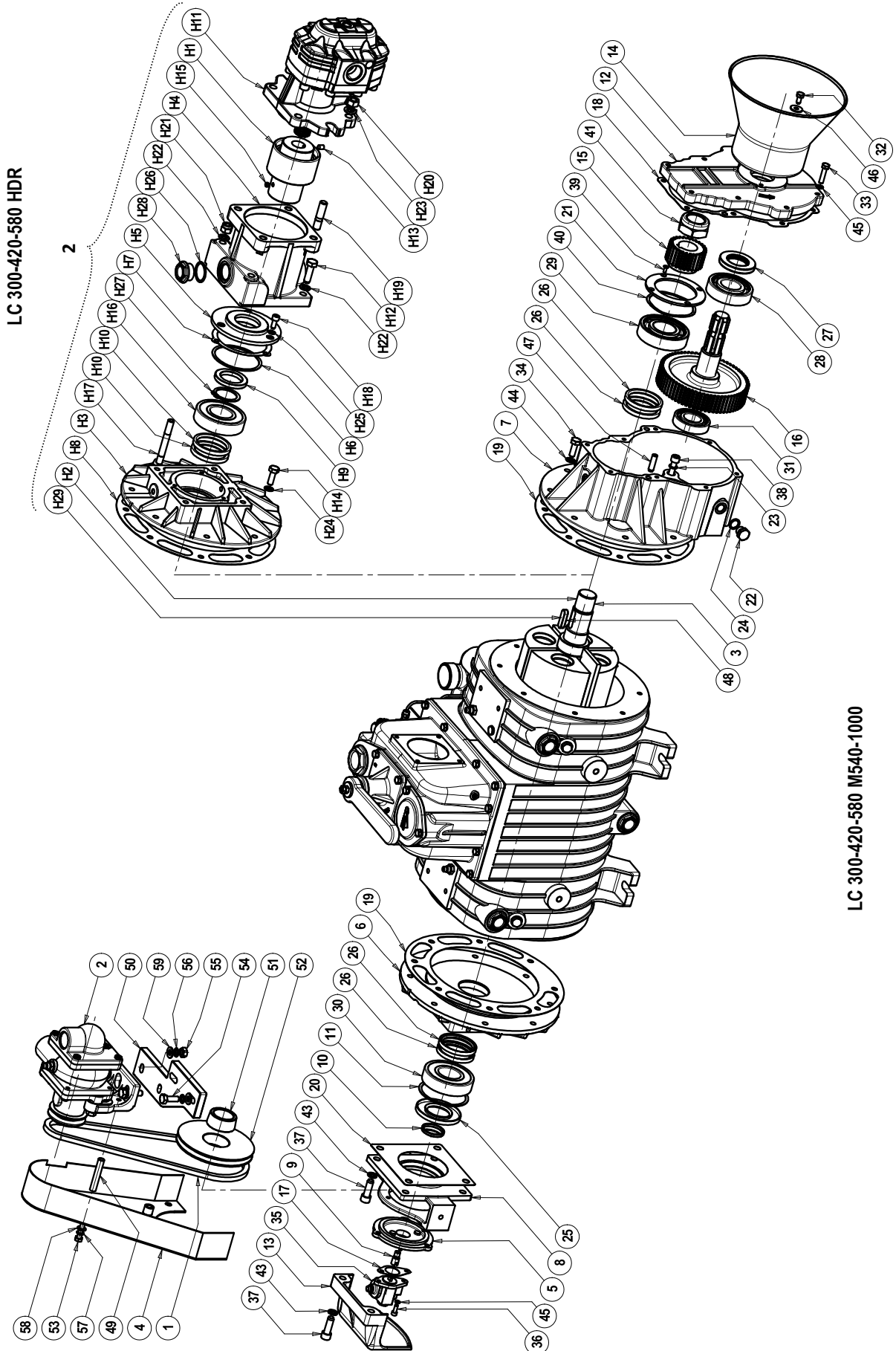
LC 420 D

Pos.	Code	Description	Q.ty	Pos.	Code	Description	Q.ty
1	1401200700	OIL DRIPPER	2	54	4025350019	BELTSPZ 925	1
2	1407200900	WATER PUMP SX (LC D SX)	1	55	4026101301	SCREW TE 8.8 M6X10 ZINC.	2
	1407200800	WATER PUMP DX (LC D DX)	1	56	-	-	
3	1521505900	ROTOR LC420 D	1	57	4026102807	SCREW TE 8.8 M8X25 ZINC.	17
	1521505700	ROTOR LC420 D USA	1	58	4026102819	SCREW TE 8.8 M8X90 ZINC.	2
4	154201TWB0	BELT PROTECTION LC D SX	1	59	4026102908	SCREW TE 8.8 M10X30 ZINC.	2
	154201TVB0	BELT PROTECTION LC D DX	1	60	4026103030	SCREW TE 8.8 M12X16 ZINC.	4
5	1601606300	VANE LC420	4	61	4026120301	SCREW TCEI 8,8 M6X12	4
6	1605500100	HANDLE	1	62	4026121305	SCREW TCEI 8,8 M6X16 ZINC.	2
7	1608100000	DISTRIBUTOR	1	63	4026121405	SCREW TCEI 8.8 M8X20 ZINC.	3
8	1608502500	CONVEYOR	1	64	4026121710	SCREW TCEI 8.8 M12X35 ZINC.	2
9	1610051700	FLANGE	1	65	4026135414	SCREW S.TESTA 14.9 M8X45 ZINC.	1
10	1610508200	FLANGE	1	66	4026135504	SCREW S.TESTA 14.9 M10X10 ZINC.	1
11	-	-		67	4026141508	SCREW TE 10.9 M10X30 ZINC.	16
12	1610512900	OIL PUMP FLANGE	1	68	4026171211	SCREW PRIGION. 8,8 M12X80 ZINC.	2
13	1610513500	FLANGE	2	69	4026305508	NUT M12 SELFLOKING	2
14	161201X4B0	PUMP SUPPORT	1	70	4026308005	NUT M8	2
15	1622002600	SHAFT M10	1	71	4026308006	NUT M10	2
16	1623100500	CONVEYOR FLANGE	1	72	4026350503	WASHER GROWER M6 Q	6
17	1624027500	SPACER	1	73	4026350505	WASHER GROWER M8 Q	6
18	1624037700	SPACER	2	74	4026350508	WASHER GROWER M12 Q	2
19	1624042800	SPACER	2	75	4026350706	WASHER GROWER M8 P	22
20	1624202300	4 WAYS SPACER	1	76	4026350708	WASHER GROWER M10 P	4
21	16275007E0	MANIFOLD	1	77	4026351504	TOOTHED WASHER M6	2
22	1642100200	REAR PROTECTION	1	78	4026351506	TOOTHED WASHER M10	16
23	165351TXB0	DRIVEN PULLEY	1	79	4026357005	WASHER M8	2
24	166301STB0	LUBRICATION LINE	1	80	4026357006	WASHER M10	4
25	166301SXB0	LUBRICATION LINE	1	81	4026357007	WASHER M12	2
	166303QXB0	LUBRICATION LINE USA	1	82	4026359001	WASHER 40X33.5X1.5 AL	6
26	166301SZB0	LUBRICATION LINE	1	83	4026359006	WASHER 13.5X18X1.5 AL	4
27	166301T0B0	LUBRICATION LINE	1	84	4026501008	TAB 12X8X70	1
28	166301T1B0	LUBRICATION LINE	1		4026500912	TAB 10X8X70 (USA)	1
29	166301T5B0	LUBRICATION LINE	1	85	4026510032	SEEGER E45	2
30	166301T8B0	LUBRICATION LINE	1	86	4026702000	FITTING	6
31	1673001000	OIL FILTER PLUG	1	87	-	-	
32	1680609700	OIL PUMP GASKET	1	88	4026706000	FITTING	4
33	-	-		89	4026706003	FITTING	2
34	1680610200	MANIFOLD GASKET	2	90	4026706101	FITTING	2
35	1680707300	FLANGE GASKET	2	91	4026904003	PLUG 1"	6
36	1680707800	FLANGE GASKET	1	92	-	-	
37	1680709700	GASKET	1	93	4026904300	VENT PLUG ¼"	2
38	1680709800	HOUSING GASKET	2	94	4026904503	PLUG M20X1.5	1
39	1681100200	OIL DRIPPER FLANGE	1	95	4026905002	PLUG ¼"	2
40	1685002800	WASHER 30X8.5X4	1	96	4026910103	PLUG	1
41	1685100000	WASHER 14X20X1.5 AL	2	97	4026910601	PLUG 1/8	2
42	1685100300	WASHER D 20	2	98	166301SWB0	LUBRICATION LINE	1
43	1687508200	HOUSING LC420	1		166303QWB0	LUBRICATION LINE USA	1
44	1687600000	OIL TANK	1	99	1663062600	LUBRICATION LINE	1
45	1691000000	SPRING	1	100	1663062700	LUBRICATION LINE	1
46	4022200030	Y-SEAL 41X27X10	1	101	16401008E0	CLAPET COVER	1
47	4022200044	Y-SEAL 65X45X8	1	102	16807011E0	GASKET COVER	1
48	4022200416	Y-SEAL 60X75X8	4	103	18930008E0	CLAPET D.110 INOX	1
49	4022300001	OIL FILTER	1				
50	4023100047	BEARING 6309 C3	1				
51	4023110051	BEARING NU 309 ECJ/C3	1				
52	-	-					
53	4024251000	OIL PUMP CW ROTATION (LC D DX)	1				
	4024251500	OIL PUMP CCW ROTATION (LC D SX)	1				

LC 580 D

Pos.	Code	Description	Q.ty	Pos.	Code	Description	Q.ty
1	1401200700	OIL DRIPPER	2	56	-	-	
2	1407200900	WATER PUMP SX (LC D SX)	1	57	4026102807	SCREW TE 8.8 M8X25 ZINC.	17
	1407200800	WATER PUMP DX (LC D DX)	1	58	4026102819	SCREW TE 8.8 M8X90 ZINC.	2
3	1521507300	ROTOR LC580 D	1	59	4026102908	SCREW TE 8.8 M10X30 ZINC.	2
4	154201TWB0	BELT PROTECTION LC D SX	1	60	-	-	
	154201TVB0	BELT PROTECTION LC D DX	1	61	4026121303	SCREW TCEI M6X12 ZINC.	4
5	16016BXNB0	VANE LC580	5	62	4026121305	SCREW TCEI 8,8 M6X16 ZINC.	2
6	1605500100	HANDLE	1	63	4026102806	SCREW TE 8.8 M8X20 ZINC.	3
7	1608100000	DISTRIBUTOR	1	64	4026121710	SCREW TCEI 8.8 M12X35 ZINC.	2
8	1608502500	CONVEYOR	1	65	4026135414	SCREW S.TESTA 14.9 M8X45 ZINC.	1
9	1610051700	FLANGE	1	66	4026135504	SCREW S.TESTA 14.9 M10X10 ZINC.	1
10	1610508200	FLANGE	1	67	4026141508	SCREW TE 10.9 M10X30 ZINC.	16
11	-	-		68	4026171211	SCREW PRIGION.8,8 M12X80 ZINC.	2
12	1610512900	OIL PUMP FLANGE	1	69	4026305508	NUT M12 SELFLOCKING	2
13	1610514300	FLANGE	2	70	4026308005	NUT M8	2
14	161201X4B0	PUMP SUPPORT	1	71	4026308006	NUT M10	2
15	1622002600	SHAFT M10	1	72	4026350503	WASHER GROWER M6 Q	6
16	1623100500	CONVEYOR FLANGE	1	73	4026351505	WASHER GROWER M8 Q	6
17	1624027500	SPACER	1	74	4026350508	WASHER GROWER M12 Q	2
18	4026300025	SPACER	2	75	4026350706	WASHER GROWER M8 P	22
19	1624042800	SPACER	2	76	4026350708	WASHER GROWER M10 P	4
20	1624202300	4 WAYS SPACER	1	77	4026351504	TOOTHED WASHER M6	2
21	16275007E0	MANIFOLD	1	78	4026351507	TOOTHED WASHER M10	16
22	1642100200	REAR PROTECTION	1	79	4026357005	WASHER M8	2
23	165351TXB0	DRIVEN PULLEY	1	80	4026357006	WASHER M10	4
24	1663069100	LUBRICATION LINE	1	81	4026357007	WASHER M12	2
25	1663069500	LUBRICATION LINE	1	82	4026359001	WASHER 40X33.5X1.5 AL	6
26	1663068900	LUBRICATION LINE	1	83	-	-	
27	1663069000	LUBRICATION LINE	1	84	4026501007	TAB 12X8X63	1
28	1663068700	LUBRICATION LINE	1	85	-	-	
29	1663069600	LUBRICATION LINE	1	86	4026702000	FITTING	6
30	1663069700	LUBRICATION LINE	1	87	-	-	
31	1673001000	OIL FILTER PLUG	1	88	4026706000	FITTING	4
32	1680609700	OIL PUMP GASKET	1	89	4026706003	FITTING	2
33	-	-		90	4026706101	FITTING	2
34	1680610200	MANIFOLD GASKET	2	91	4026904003	PLUG 1"	6
35	1680707300	FLANGE GASKET	2	92	-	-	
36	1680707800	FLANGE GASKET	1	93	4026904300	VENT PLUG ¼"	2
37	1680709700	GASKET	1	94	4026904503	PLUG M20X1.5	1
38	1680712200	HOUSING GASKET	2	95	4026904300	PLUG ¼"	2
39	1681100200	OIL DRIPPER FLANGE	1	96	4026910103	PLUG	1
40	1685002800	WASHER 30X8.5X4	1	97	4026910601	PLUG 1/8	2
41	1685100000	WASHER 14X20X1.5 AL	2	98	1663069200	LUBRICATION LINE	1
42	1685100300	WASHER D 20	2	99	1663069400	LUBRICATION LINE	1
43	1687511000	HOUSING LC580	1	100	1663069300	LUBRICATION LINE	1
44	1687600000	OIL TANK	1	101	16401008E0	CLAPET COVER	1
45	1691000000	SPRING	1	102	16807011E0	GASKET COVER	1
46	4022200030	Y-SEAL 41X27X10	1	103	18930008E0	CLAPET D.110 INOX	1
47	4022200044	Y-SEAL 65X45X8	1				
48	4022200113	Y-SEAL 70X55X15	4				
49	4022300001	OIL FILTER	1				
50	4023100047	BEARING 6309 C3	1				
51	4023115057	BEARING NJ 309 ECJ/C3	1				
52	-	-					
53	4024251000	OIL PUMP CW ROTATION (LC D DX)	1				
	4024251500	OIL PUMP CW ROTATION (LC D SX)	1				
54	4025350020	BELTSPZ 950	1				
55	4026101301	SCREW TE 8.8 M6X10 ZINC.	2				

LC 300-420-580 M540 - M1000 - HDR



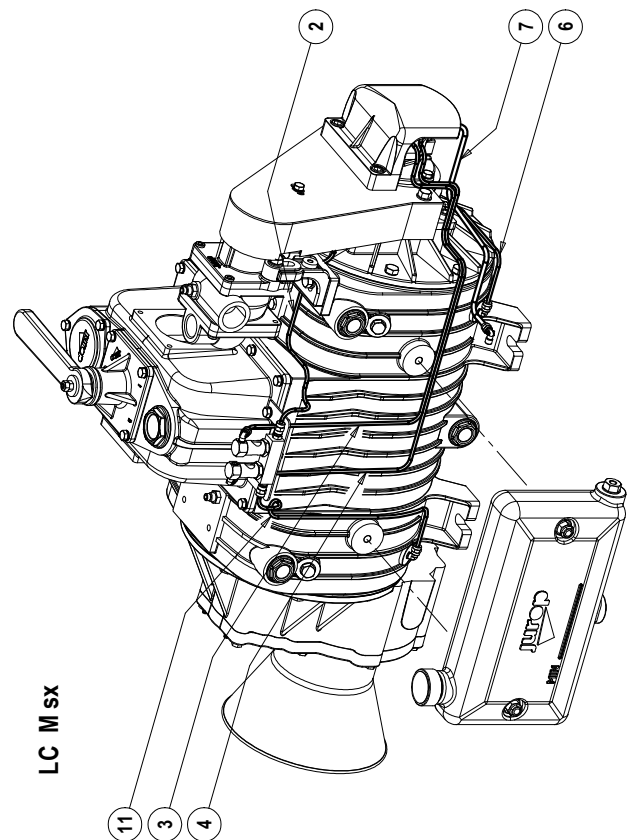
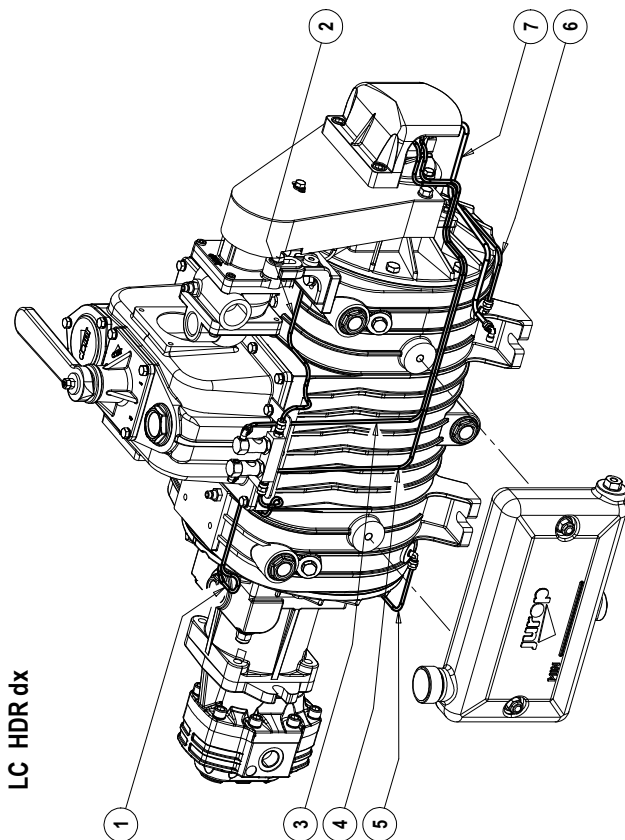
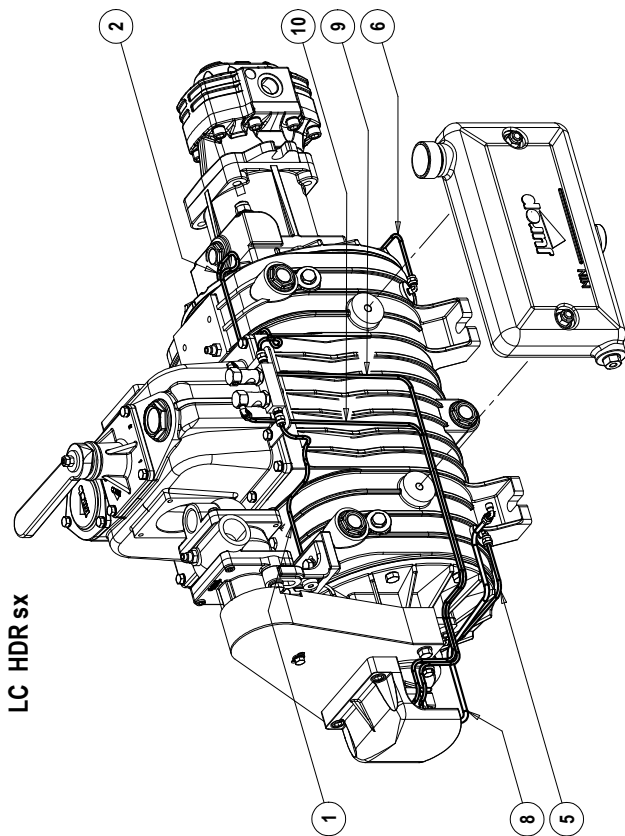
LC 300-420 M540 - M1000 - HDR

Pos.	Code	Description	Q.ty	Pos.	Code	Description	Q.ty
1		GEARBOX 540 – 1000 RPM		52	4025426209	PULLEY 150X1 SPZ	1
1	4025350019	BELT SPZ 925	1	53	4026102819	SCREW TE 8.8 M8X90 ZINC.	1
2	1407200900	WATER PUMP SX (LC M SX - LC HDR DX)	1	54	4026102908	SCREW TE 8.8 M10X30 ZINC.	1
	1407200800	WATER PUMP DX (LC M DX - LC HDR SX)	1	55	4026308006	NUT M10	2
3	1521506800	ROTOR LC300 M	1	56	4026350708	WASHER GROWER M10 P	4
	1521505800	ROTOR LC420 M	1	57	4026350706	WASHER GROWER M8 P	21
4	154201TUB0	PROTECTION (LC M SX – HDR DX)	1	58	4026357005	WASHER M8	1
	154201TSB0	PROTECTION (LC M DX – HDR SX)	1	59	4026357006	WASHER M10	6
5	1610512900	OIL PUMP SUPPORT	1	2		HYDRAULIC DRIVE	
6	1610513500	FLANGE	1	H1	1470102300	JOINT	1
7	1610513600	GEARBOX M	1	H2	1521506700	ROTOR LC300 HDR	1
8	1613501400	OIL PUMP FLANGE	1		1521506000	ROTOR LC420 HDR	1
9	1622002600	SHAFT M10	1	H3	1610513500	FLANGE	2
10	1624037500	SPACER	1	H4	1612501000	BRACKET HDR	1
11	1624037700	SPACER	1	H5	1610021600	FLANGE HDR	1
12	1640501200	GEARBOX FLANGE	1	H6	1624037700	SPACER	1
13	1642100200	REAR PROTECTION	1	H7	1680707300	GASKET	1
14	4029602806	DRIVE SHAFT PROTECTION	1	H8	1680709800	GASKET	1
15	1651005500	PINION Z28 (540 RPM)	1	H9	4022200044	Y-SEAL 65X45X8	1
	1651010700	PINION Z42 (1000 RPM)	1	H10	4022200416	Y-SEAL 60X75X8	2
16	1651010500	GEAR Z70 (540 RPM)	1	H11	4024107009	MOTOR LC300	1
	1651010600	GEAR Z56 (1000 RPM)	1		4024107001	MOTOR LC420	1
17	1680609700	OIL PUMP GASKET	1	H12	4026101613	SCREW TE 4.8 M12X40 ZINC	2
18	1680614100	GEARBOX GASKET	1	H13	4026136006	SCREW S.TESTA 14.9 M8X14	1
19	1680709800	HOUSING GASKET	2	H14	4026141508	SCREW TE 10.9 M10X30 ZINC.	8
20	1680710000	GASKET	1	H15	4026136003	SCREW S.TESTA 14.9 M8X8 ZINC.	1
21	1681006500	COMP. RING FLANGE	1	H16	4023110051	BEARING NU309 ECJ/C3	2
22	1684000000	PLUG 3/8"	3	H17	4026171211	SCREW PRIGION.8,8 M 12X80 ZINC.	4
23	1685100100	WASHER 10X16X1.5 CU	2	H18	4026121405	SCREW TCEI 8.8 M8X20 ZINC.	3
24	1685100200	WASHER 17X22X1.5 AL	3	H19	4026171304	SCREW PRIGION. 8.8 M14X40	4
25	4022200008	Y-SEAL 90X45X8	1	H20	4026308008	NUT M14	4
26	4022200416	Y-SEAL 60X75X8	4	H21	4026305508	NUT M12 SELFLOCKING	4
27	4022200040	Y-SEAL 72X40X10	1	H22	4026350609	WASHER GROWER M12 P	4
28	4023100039	BEARING 6308	1	H23	4026350610	WASHER GROWER M14 P	4
29	4023100047	BEARING 6309 C3	1	H24	4026351506	WASHER M10	8
30	4023110051	BEARING NU 309 ECJ/C3	1	H25	4026351505	WASHER M8	3
31	4023100020	BEARING 6207	1	H26	4026359001	WASHER 40X33.5X1.5 AL	1
32	4026102804	SCREW TE 8.8 M8X16 ZINC.	3	H27	4026510032	SEEGER E45	1
33	4026102809	SCREW TE 8.8 M8X35 ZINC.	8	H28	4026904003	PLUG 1"	1
34	4026141508	SCREW TE 10.9 M10X30 ZINC.	16	H29	4026501004	TAB 12X8X45	1
35	4024251000	OIL PUMP DX (LC M SX - LC HDR DX)	1				
	4024251500	OIL PUMP SX (LC M DX - LC HDR SX)	1				
36	4026121305	SCREW TCEI 8,8 M6X16 ZINC.	2				
37	4026121710	SCREW TCEI 8.8 M12X35 ZINC.	6				
38	4026121813	SCREW TCEI 8.8 M10X50 ZINC.	2				
39	4026155503	SCREW TSPEI M5X12 5933 ZINC.	4				
40	4026300025	COMPENSATION RING	1				
41	4026306115	BOLT M36X3 SELFLOCKING	1				
42	4026350503	WASHER GROWER M6 Q	6				
43	4026350508	WASHER GROWER M12 Q	6				
44	4026351506	TOOTHED WASHER M10	15				
45	4026351505	TOOTHED WASHER M8	11				
46	4026356002	FLAT WASHER 8X24	3				
47	4026401806	PIN10X36	2				
48	4026501003	TAB 12X8X40	1				
49	162403N3B0	SPACER	1				
50	161201X4B0	WATER PUMP SUPPORT	1				
51	4025426003	BUSHING	1				

LC 580 M540 - M1000 - HDR

Pos.	Code	Description	Q.ty	Pos.	Code	Description	Q.ty
1		MOLTIPLICATORE 540 – 1000 RPM		53	4026102819	SCREW TE 8.8 M8X90 ZINC.	1
1	4025350020	BELT SPZ 950	1	54	4026102908	SCREW TE 8.8 M10X30 ZINC.	1
2	1407200900	WATER PUMP SX (LC M SX - LC HDR DX)	1	55	4026308006	NUT M10	2
	1407200800	WATER PUMP DX (LC M DX - LC HDR SX)	1	56	4026350708	WASHER GROWER M10 P	4
3	1521507400	ROTOR LC580 M	1	57	4026350706	WASHER GROWER M8 P	21
4	154201TUB0	PROTECTION (LC M SX – HDR DX)	1	58	4026357005	WASHER M8	1
	154201TSB0	PROTECTION (LC M DX – HDR SX)		59	4026357006	WASHER M10	6
5	1610512900	OIL PUMP SUPPORT	1	2		HYDRAULIC DRIVE	
6	1610514300	FLANGE	1	H1	14701BEBB0	JOINT	1
7	1610514400	GEARBOX M	1	H2	1521507500	ROTOR LC580 HDR	1
8	1613501400	OIL PUMP FLANGE	1	H3	1610514300	FLANGE	2
9	1622002600	SHAFT M10	1	H4	1612501000	BRACKET HDR	1
10	1624037500	SPACER	1	H5	1610021600	FLANGE HDR	1
11	4026300025	SPACER	1	H6	4026300025	SPACER	1
12	164059V5B0	GEARBOX FLANGE	1	H7	1680707300	GASKET	1
13	1642100200	REAR PROTECTION	1	H8	1680712200	GASKET	1
14	4029602806	DRIVE SHAFT PROTECTION	1	H9	4022200044	Y-SEAL 65X45X8	1
15	1651005300	PINION Z25 (540 RPM)	1	H10	4022200113	Y-SEAL 60X75X8	2
	165109KFB0	PINION Z37 (1000 RPM)	1	H11	4024107003	MOTOR HDR LC580	1
16	165109KEB0	GEAR Z53 (540 RPM)	1	H12	4026101613	SCREW TE M12X40 ZINC.	2
	165109KGB0	GEAR Z41 (1000 RPM)	1	H13	4026136005	SCREW S.TESTA 14.9 M8X12 ZINC.	1
17	1680609700	OIL PUMP GASKET	1	H14	4026103002	SCREW TE 8.8 M12X30 ZINC.	8
18	16807BCNB0	GEARBOX GASKET	1	H15	4026136005	SCREW S.TESTA 14.9 M8X12 ZINC.	1
19	1680712200	HOUSING GASKET	2	H16	4023100150	BEARING 6309	2
20	1680710000	GASKET	1	H17	4026171211	SCREW PRIGION.8,8 M12X80 ZINC	4
21	1681006500	COMP. RING FLANGE	1	H18	4026120403	SCREW TCEI 8,8 M8X20	3
22	1684000000	PLUG 3/8"	3	H19	4026171304	SCREW PRIGION. 8.8 M14X40 ZINC.	4
23	4026351507	WASHER 1/4" CU	2	H20	4026308008	NUT M14	4
24	1685100200	WASHER 17X22X1.5 AL	3	H21	4026305508	NUT M12 SELFLOCKING	4
25	4022200008	Y-SEAL 90X45X8	1	H22	4026350710	WASHER GROWER M14	4
26	4022200113	Y-SEAL 70X55X15 (N°1 PER LATO)	4	H23	4026350610	WASHER GROWER M14 P	4
27	4022200040	Y-SEAL 72X40X10	1	H24	4026351507	WASHER M12	8
28	4023100039	BEARING 6308 C3	1	H25	4026351505	WASHER M8	3
29	4023100047	BEARING 6309 C3	1	H26	4026359001	WASHER 40X33.5X1.5 AL	1
30	4023100047	BEARING 6309 C3	1	H27	-	-	
31	4023100020	BEARING 6207	1	H28	4026904003	PLUG 1"	1
32	4026102804	SCREW TE 8.8 M8X16 ZINC.	3	H29	4026501004	TAB 12X8X45	1
33	4026102810	SCREW TE 8.8 M8X40 ZINC.	8				
34	4026141508	SCREW TE 10.9 M10X30 ZINC.	16				
35	4024251000	OIL PUMP DX (LC M SX - LC HDR DX)	1				
	4024251500	OIL PUMP SX (LC M DX - LC HDR SX)	1				
36	4026121305	SCREW TCEI 8,8 M6X16 ZINC.	2				
37	4026103002	SCREW TE 8.8 M12X30 ZINC.	6				
38	4026121708	SCREW TCEI 8.8 M12X25 ZINC.	2				
39	4026155505	SCREW TSPEI M5X16 ZINC.	4				
40	4026300025	COMPENSATION RING	1				
41	4026306115	BOLT M36X3 SELFLOCKING	1				
42	4026350503	WASHER GROWER M6 Q	6				
43	4026350508	WASHER GROWER M12 Q	6				
44	4026351507	TOOTHED WASHER M12	15				
45	4026351505	TOOTHED WASHER M8	11				
46	4026356002	FLAT WASHER 8X24	3				
47	4026401806	PIN10X36	2				
48	4026501004	TAB 12X8X45	1				
49	162403N3B0	SPACER	1				
50	161201X4B0	WATER PUMP SUPPORT	1				
51	4025426003	BUSHING	1				
52	4025426209	PULLEY 150X1 SPZ	1				

LUBRICATION LINES LC 300-420-580 M - HDR



Lubrication lines LC 300 HDR - M

Pos.	Code	Description	Q.ty	Pos.	Code	Description	Q.ty
1	16630D5SB0	LUBRICATION LINE	1	7	16630D5LB0	LUBRICATION LINE	1
2	16630D5TB0	LUBRICATION LINE	1	8	16630D5JB0	LUBRICATION LINE	1
3	16630D5UB0	LUBRICATION LINE	1	9	166301T7B0	LUBRICATION LINE	1
4	16630D5YB0	LUBRICATION LINE	1	10	166301T4B0	LUBRICATION LINE	1
5	166301T0B0	LUBRICATION LINE	1	11	16630D5QB0	LUBRICATION LINE	1
6	166301SZB0	LUBRICATION LINE	1				

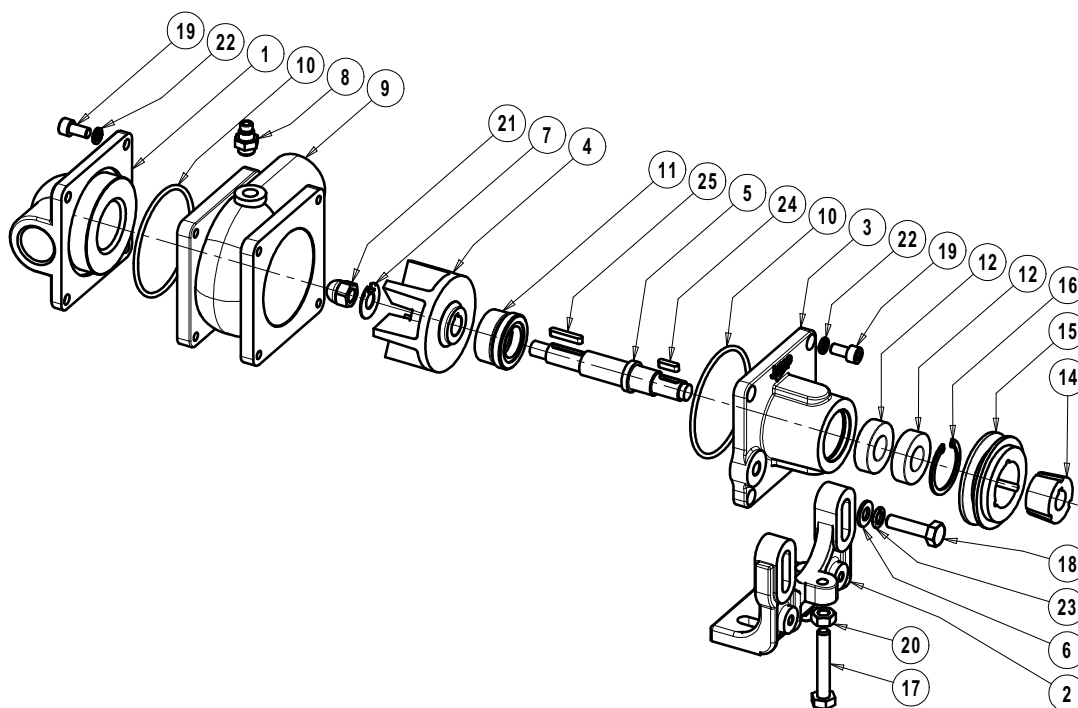
Lubrication lines LC 420 HDR - M

Pos.	Code	Description	Q.ty	Pos.	Code	Description	Q.ty
1	166301STB0	LUBRICATION LINE	1	7	166301SVB0	LUBRICATION LINE	1
2	166301T1B0	LUBRICATION LINE	1	8	166301SUB0	LUBRICATION LINE	1
3	166301T2B0	LUBRICATION LINE	1	9	16630D5ZB0	LUBRICATION LINE	1
4	166301T6B0	LUBRICATION LINE	1	10	16630D5VB0	LUBRICATION LINE	1
5	166301T0B0	LUBRICATION LINE	1	11	166301SYB0	LUBRICATION LINE	1
6	166301SZB0	LUBRICATION LINE	1				

Lubrication lines LC 580 HDR - M

Pos.	Code	Description	Q.ty	Pos.	Code	Description	Q.ty
1	1663069100	LUBRICATION LINE	1	7	1663068400	LUBRICATION LINE	1
2	1663068700	LUBRICATION LINE	1	8	1663069500	LUBRICATION LINE	1
3	1663068500	LUBRICATION LINE	1	9	1663069700	LUBRICATION LINE	1
4	1663068600	LUBRICATION LINE	1	10	1663069600	LUBRICATION LINE	1
5	1663069000	LUBRICATION LINE	1	11	1663068800	LUBRICATION LINE	1
6	1663068900	LUBRICATION LINE	1				

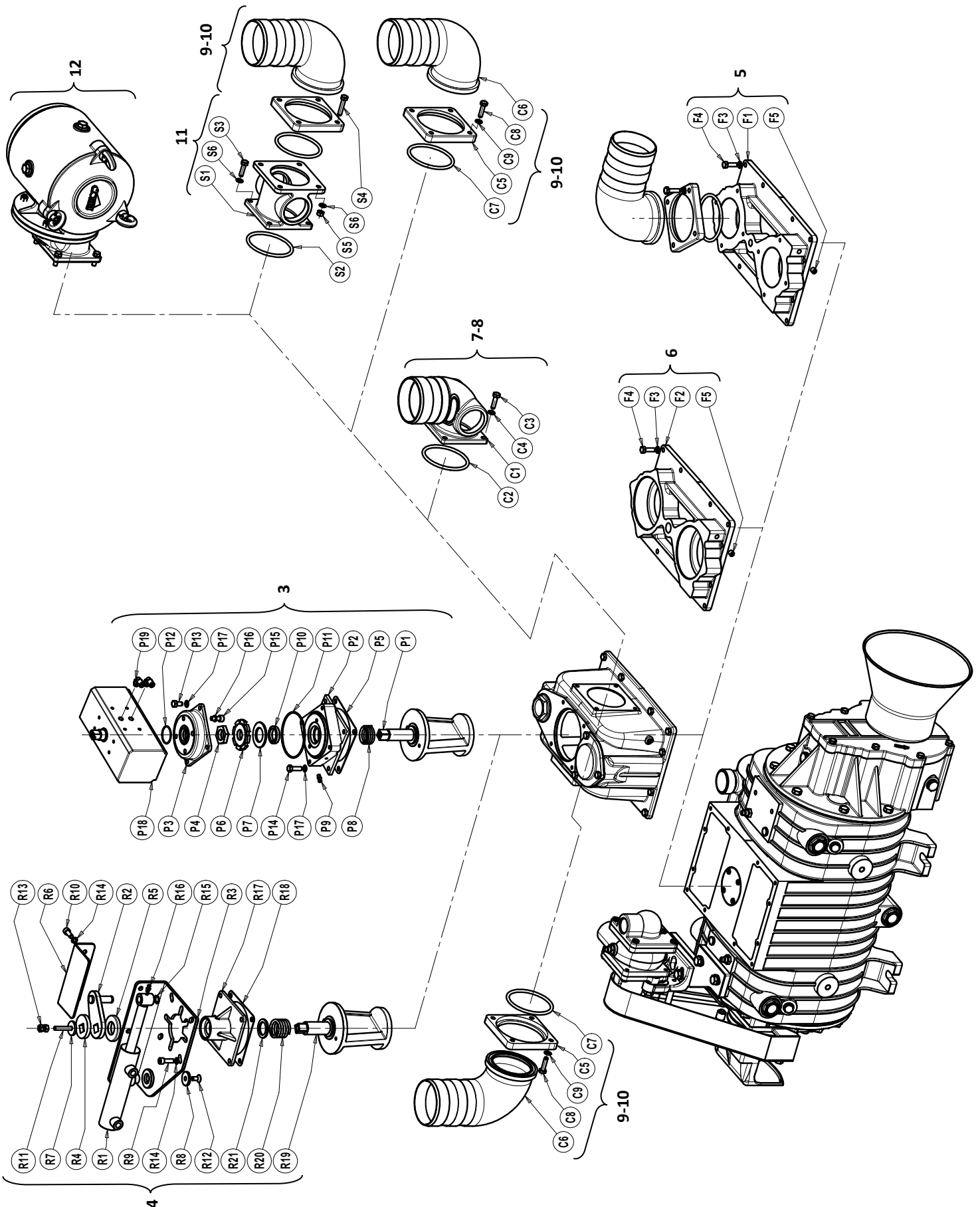
COOLING WATER PUMP LC



Cooling water pump LC

Pos.	Code	Description	Q.ty	Pos.	Code	Description	Q.ty
1	1610506500	REAR FLANGE	1	14	4025422300	BUSHING 2820 Ø 16	1
2	1613500900	LOWER SUPPORT	1	15	4025422402	PULLEY SPZ 71 X 1	1
3	1613501000	FRONT SUPPORT	1	16	4026510525	SEEGER I 42 UNI 7437	1
4	1621502800	IMPELLER	1	17	4026102914	SCREW M8 x 60	1
5	1650009700	SHAFT	1	18	4026107214	SCREW M8 x 10	4
6	4026357006	WASHER M10	6	19	4026120401	SCREW M8 x 16	10
7	1685002400	SAFETY WASHER	1	20	4026308006	NUT M 10	1
8	4026904300	VENT PLUG 1/4	1	21	4026322106	NUT M 12	1
9	1687504500	HOUSING	1	22	4026350505	WASHER GROWER M8	10
10	4022200235	OR 4325	2	23	4026350608	WASHER GROWER M10	4
11	4022216915	MECHANICAL SEAL	1	24	4026500605	TAB 5 x 5 x 18	1
12	4023100516	BEARING 6004 RS1	2	25	4026500609	TAB 5 x 5 x 28	1
13	4025350021	BELT SPZ 975	1				

ACCESSORIES LC 300-420-580



Accessories LC300

Pos.	Code	Description	Q.ty	Pos.	Code	Description	Q.ty
3	143028B7B0	PNEUMATIC OPERATED 4-WAY KIT		7	1852108600	FIXED SUCTION CONVEYOR Ø80 KIT	
P1	160858KNB0	CONVEYOR	1	C1	1627100300	CONVEYOR Ø80	1
P2	161258B4B0	ACTUATOR SUPPORT	1	C2	4022200307	OR 6287	1
P3	1640580QB0	ACTUATOR COVER	1	C3	4026103002	SCREW M12X30	2
P4	167007ZAB0	CONVEYOR NUT	1	C4	4026350709	WASHER GROWER M12	2
P5	1680700200	FALNGE GASKET	1				
P6	168409PQB0	RING NUT	1	8	1852108900	FIXED SUCTION CONVEYOR Ø76 KIT	
P7	168529TFB0	SPACER	1	C1	1627100200	CONVEYOR Ø76	1
P8	1691000200	SPRING	1	C2	4022200307	OR 6287	1
P9	4022100100	GREASING NIPPLE M6X1	1	C3	4026103002	SCREW M12X30	2
P10	4022200005	Y-SEAL 37X27X7	1	C4	4026350709	WASHER GROWER M12	2
P11	4022200330	OR 3375	1				
P12	4022200331	OR 2137	1	9	1852109000	TURNING CONVAYOR Ø76 KIT	
P13	4026102804	SCREW M8X16	4	C5	1610100000	CONVEYOR FLANGE	1
P14	4026102807	SCREW M8X25	4	C6	1627100500	CONVEYOR Ø76	1
P15	4026121405	SCREW M8X20	4	C7	4022200307	OR 6287	1
P16	4026350505	WASHER GROWER M8	4	C8	4026103002	SCREW M12X30	2
P17	4026351505	TOOTHED WASHER M8	8	C9	4026350709	WASHER GROWER M12	2
P18	4027100405	PNEUMATIC ACTUATOR	1				
P19	4027421206	FITTING R15 6XG1/8	2	12	18521CNGB0	SUCTION FILTER KIT	
					18920F3XB0	GASKETS KIT LC300 M	1
					18920F3YB0	GASKETS KIT LC300 D	1
4	143029K2B0	HYDRAULIC OPERATED 4-WAY KIT					
R1	143027T6B0	HYDRAULIC ACTUATOR	1				
R2	150206XXB0	ACTUATOR LEVER	1				
R3	151309JVB0	ACTUATOR SUPPORT	1				
R4	16240A0IB0	SPACER	1				
R5	1624202300	SPACER	1				
R6	164206XYB0	PROTECTION	1				
R7a	16850A0YB0	WASHER	1				
R7b	168509LLB0	WASHER	1				
R8	168509U0B0	WASHER	1				
R9	4026121407	SCREW M8X25	4				
R10	4026121405	SCREW M8X20	2				
R11	4026135414	SCREW M8X45	1				
R12	4026155705	SCREW M8X16	1				
R13	4026308005	NUT M8	4				
R14	4026350505	WASHER GROWER M8	6				
R15	4026510012	SEEGER E14 7435	1				
R16	4022100100	GREASING NIPPLE M6X1	1				
R17	1623100800	CONVEYOR FLANGE	1				
R18	1680700200	FLANGE GASKET	1				
R19	1608503200	CONVEYOR	1				
R20	1691000000	SPRING	1				
R21	1624027500	SPRING SPACER	1				
5		FLANGED MANIFOLD					
F1	1627505500	FLANGED MANIFOLD	1				
F3	4026350706	WASHER GROWER M8	12				
F4	4026102807	SCREW M8X25	12				
F5	4026135504	SCREW M10X10	1				
6		THREADED MANIFOLD					
F2	1627505600	THREADED MANIFOLD	1				
F3	4026350706	WASHER GROWER M8	12				
F4	4026102807	SCREW M8X25	12				
F5	4026135504	SCREW M10X10	1				

Accessories LC420 - 580

Pos.	Code	Description	Q.ty	Pos.	Code	Description	Q.ty
3	143028GZB0	PNEUMATIC OPERATED 4-WAY KIT		7	1852103400	FIXED SUCTION CONVEYOR Ø80 KIT	
P1	160858KBB0	CONVEYOR	1	C1	1627101300	CONVEYOR Ø80	1
P2	161258H0B0	ACTUATOR SUPPORT	1	C2	4022200310	OR 6362	1
P3	1640580QB0	ACTUATOR COVER	1	C3	4026102807	SCREW M8X25	4
P4	167007ZAB0	CONVEYOR NUT	1	C4	4026350706	WASHER GROWER M8	4
P5	1680707800	FALNGE GASKET	1				
P6	168409PQB0	RING NUT	1	8	1852103500	FIXED SUCTION CONVEYOR Ø100 KIT	
P7	168529TFB0	SPACER	1	C1	1627101200	CONVEYOR Ø100	1
P8	1691000200	SPRING	1	C2	4022200310	OR 6362	1
P9	4022100100	GREASING NIPPLE M6X1	1	C3	4026102807	SCREW M8X25	4
P10	4022200005	Y-SEAL 37X27X7	1	C4	4026350706	WASHER GROWER M8	4
P11	4022200330	OR 3375	1				
P12	4022200331	OR 2137	1	9	1852103900	TURNING CONVAYOR Ø80 KIT	
P13	4026102804	SCREW M8X16	4	C5	1610101100	CONVEYOR FLANGE	1
P14	4026102807	SCREW M8X25	4	C6	1627102700	CONVEYOR Ø80	1
P15	4026121405	SCREW M8X20	4	C7	4022200310	OR 6362	1
P16	4026350505	WASHER GROWER M8	4	C8	4026102808	SCREW M8X30	4
P17	4026351505	TOOTHED WASHER M8	8	C9	4026350706	WASHER GROWER M8	4
P18	4027100405	PNEUMATIC ACTUATOR	1				
P19	4027421206	FITTING R15 6XG1/8	2	10	1852104000	TURNING CONVAYOR Ø100 KIT	
				C5	1610101100	CONVEYOR FLANGE	1
4	143029KRB0	HYDRAULIC OPERATED 4-WAY KIT		C6	1627102400	CONVEYOR Ø100	1
R1	143027T6B0	HYDRAULIC ACTUATOR	1	C7	4022200310	OR 6362	1
R2	15020A10B0	ACTUATOR LEVER	1	C8	4026102808	SCREW M8X30	4
R3	151307TJB0	ACTUATOR SUPPORT	1	C9	4026350706	WASHER GROWER M8	4
R4	1624043400	SPACER	1				
R5	1624202300	SPACER	1	11	1852104100	KIT FOR SAFETY VALVE	
R6	164206XYB0	PROTECTION	1	S1	1627102500	CONVEYOR	1
R7	1685002800	WASHER 30X8.5X4	1	S2	4022200310	OR 6362	1
R8	168509U0B0	WASHER	1	S3	4026102807	SCREW M8X25	4
R9	4026121408	SCREW M8X35	4	S4	4026102810	SCREW M8X40	4
R10	4026121405	SCREW M8X20	2	S5	4026308005	NUT M8	4
R11	4026135414	SCREW M8X45	1	S6	4026350706	WASHER GROWER M8	8
R12	4026155705	SCREW M8X16	1				
R13	4026308005	NUT M8	4	12	185212L4B0	SUCTION FILTER KIT	
R14	4026350505	WASHER GROWER M8	6				
R15	4026510012	SEEGER E14 7435	1		189207X0B0	GASKETS KIT LC420 M	1
R16	4022100100	GREASING NIPPLE M6X1	1		189207X2B0	GASKETS KIT LC420 D	1
R17	1623100500	CONVEYOR FLANGE	1		1892008800	GASKETS KIT LC580 M	1
R18	1680707800	FLANGE GASKET	1		1892008900	GASKETS KIT LC580 D	1
R19	1608502500	CONVEYOR	1				
R20	1691000000	SPRING	1				
R21	1624027500	SPRING SPACER	1				
5		FLANGED MANIFOLD					
F1	1627504800	FLANGED MANIFOLD	1				
F3	4026351505	TOOTHED WASHER M8	12				
F4	4026102807	SCREW M8X25	12				
F5	4026135504	SCREW M10X10	1				
6		THREADED MANIFOLD					
F2	1627504900	THREADED MANIFOLD	1				
F3	4026351505	TOOTHED WASHER M8	12				
F4	4026102807	SCREW M8X25	12				
F5	4026135504	SCREW M10X10	1				

Model	Issue date	Revision No.	Revision date	Filled out by	Viewed by
LC 300-420-580	05-05-2008	10	30-01-2018	U.T.	A.T.

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