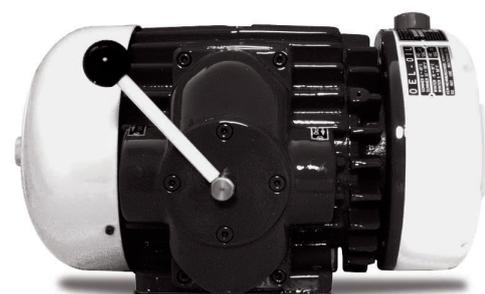
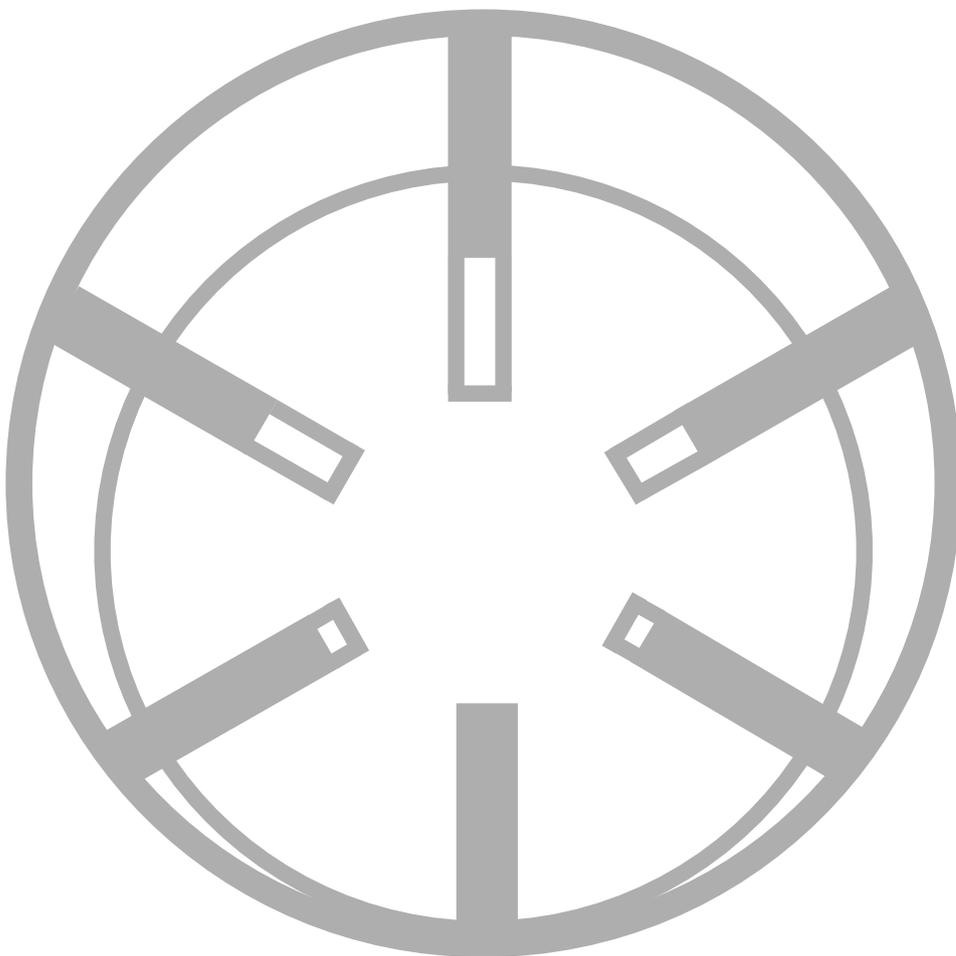


Operating Manual and Spare Parts List

(Original Instructions)

WITTIG

SLS 34-54



T-BA/ET-1250-0-GB
September 2013

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1.0 Technical data

Rotary compressor

Parameters	Unit	Type SLS 34	Type SLS 54
Quantity of air with clear throughput	m ³ /h	200	325
Volumetric flow rate at an operating pressure of 2 bar gauge	m ³ /h	180	300
Intake temperature	°C	20	20
Intake pressure	bar a (absolute)	1	1
Maximum operating pressure	bar g (gauge)	2	2
Permissible Speed Range	rpm (min ⁻¹)	1000 - 1500	1000 - 1500
Power requirement at the shaft at 2 bar gauge	kW	9,5	15,5
Motor power required	kW	11	18
Oil consumption	l/h	0,07	0,09
Mass moment of inertia	kgm ²	0,05	0,07
Weight with check valve	kg	62	81
Weight with foundation plate, without motor	kg	160	200
Sound pressure level at a distance of 7 metres at 2 bar gauge	dB(A)	79	81
Capacity of the oil tank	l	2,6	2,6

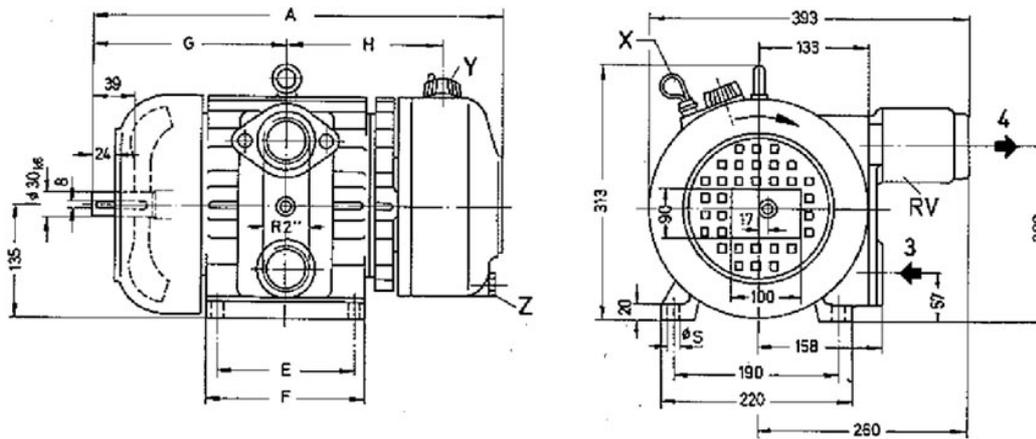


DIAGRAM 1. Dimensions of rotary compressor

Dimensions (mm)	SLS 34	SLS 54
A	420	510
E	100	165
F	130	195
G	198	243
H	150	195
Ø S	M10	M14

3 = Intake side
4 = Delivery side
X = Dip stick

Y = Oil filler inlet
Z = Oil drain
RV = Check valve

1.0 Technical data

Compressor vacuum pump

Parameters	Unit	Type SLS 34 DV	Type SLS 54 DV
Quantity of air with clear throughput	m ³ /h	200	325
Volumetric flow rate with residual pressure 400 mbar / 60 % vacuum	m ³ /h	185	310
Maximum Operating Pressure with 4-way valve	bar g (gauge)	1,5	1,5
Maximum Operating Pressure	bar g (gauge)	2	2
Permissible Speed Range	rpm (min ⁻¹)	1000-1500	1000-1500
Power requirement at the shaft at 0.5 bar (absolute)	kW	5,7	10
Oil consumption	l/h	0,06	0,08
Mass moment of inertia	kgm ²	0,05	0,07
Operating vacuum during continuous operation (where suitably designed)	mbar/%	200/80	200/80
Sound pressure level at a distance of 7 m at 400 mbar/0.5 bar excess pressure	dB(A)	70/74	70/74
Capacity of the oil tank	l	2,6	2,6
Weight with check valve	kg	62	81

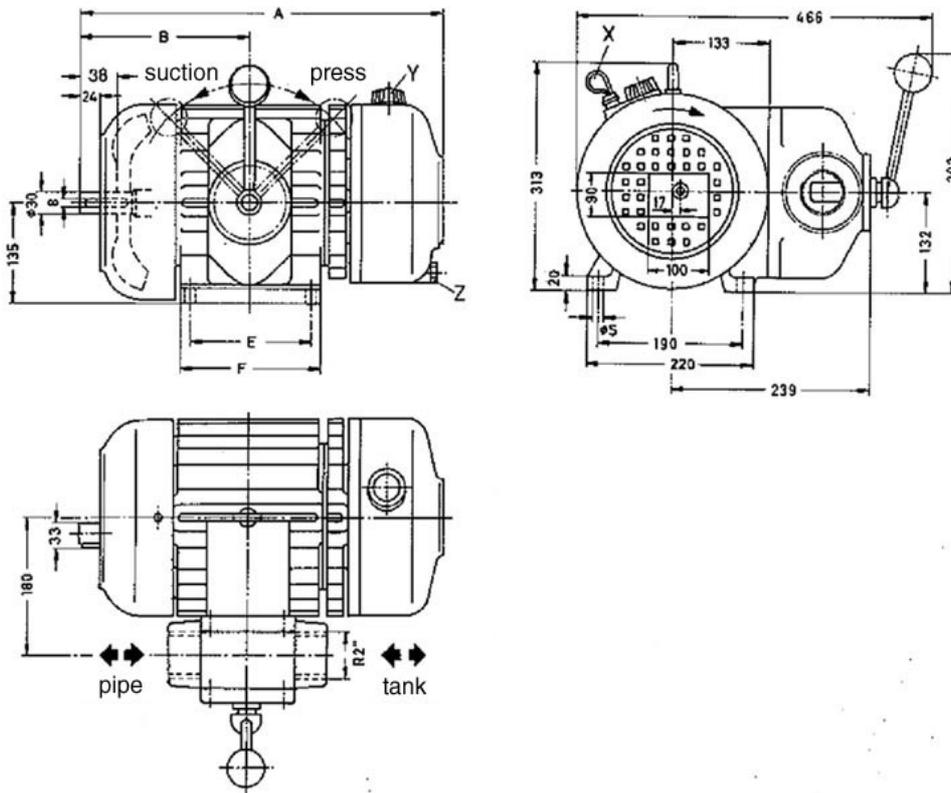


DIAGRAM 2. Compressor vacuum pump dimensions

Dimensions (mm)	SLS 34 DV	SLS 54 DV
A	420	510
E	100	165
F	130	195
G	198	243
H	150	195
Ø S	M10	M14

X = Dip stick
 Y = Oil filler inlet
 Z = Oil drain

The check valve is fitted in the four-way cock.

Dimensions in mm

2.0 Safety

2.1 Proper use

The rotary compressor, respectively the compressor pump, is exclusively intended for the compression, respectively the extraction of filtered air. Any other type of use is deemed to be improper.

Proper use also includes compliance with the operating data and the maintenance specified in the operating manual.

2.2 Acceptance and monitoring

The machine as such is not subject to any general acceptance and monitoring requirement.

Where special regulations apply at the place of use of the rotary compressor/compressor vacuum pumps, the operator is responsible for complying with these regulations.

The safety at work regulations of the local health and safety executive must be observed in any event.

2.3 Hazard symbols and signs

The following hazard symbols and signs can be used in the operating manual:



Hazards for people! In line with the safety at work requirements, such references must be precisely observed. All users must be aware of the safety notes!



ATTENTION! is used for reference to those directives and regulations that prevent damage to the machine.



Important information!



Note environmental protection regulations!

2.4 Pictographs used

The following pictographs can be used on the machine:



Danger!



Attention Electricity!



Read the operating manual carefully!



Wear hearing protection!



Hot surfaces; risk of burns!



No access without authorization!



Noise absorbing cover ventilation automatically switches ON/OFF.

2.5 Safety at work



The rotary compressor/compressor vacuum pump is designed according to the latest state-of-the-art and the acknowledged safety regulations. Nevertheless, hazards may arise through their use for the life and limb of the user or of a third party, respectively damage may occur to the machine or other property.

- The machine may only be used when it is in a technically perfect condition in accordance with the intend use and in line with the safety requirements. Any defects of relevance where safety is concerned must be rectified immediately.

2.0 Safety

- Alterations, attachments or conversions to the rotary compressor/compressor vacuum pump, which may affect safety, are not permitted without consulting the manufacturer.
- All warnings on the machine must be observed and must be kept in a fully legible condition.
- Fire alarm and firefighting possibilities must be observed.
- Work on electrical equipment must only be carried out by a qualified electrician.



Before carrying out any work, the staff instructed to work on the machine must have read the chapter in the operating manual entitled "Safety Regulations".

Doing so once work has started is too late!

- Work may only be carried out on the machine when it is at a standstill.
- Before starting work, secure the machine to prevent restarting.
- The system must not be pressurized or contain a vacuum when work is being carried out on the machine.
- Vehicle side: Close shutoff valve. Vent, respectively aerate delivery pipe between system and shut-off valve.
- Use the safety valve so as to manually release excess pressure, respectively vent the machine by means of the ventilation valve.
- Note pressure gauge reading!
- Only remove the safety devices from the drive when the machine is at a standstill.
- The shock-hazard protection may only be removed when the machine and the delivery pipe has cooled down.
- Before starting the machine, ensure that all protective fixtures have been reattached.



Environmental safety requires the collection and safe disposal of all fluids that may escape during maintenance work, e.g. lube oil.

3.0 Transport

Symbols on the packaging:



Top!



Fragile!



Store in a dry place!

3.1 Transport



During transportation avoid force and careless loading and unloading. The machine may only be suspended on firmly screwed in eyebolts (arrow).

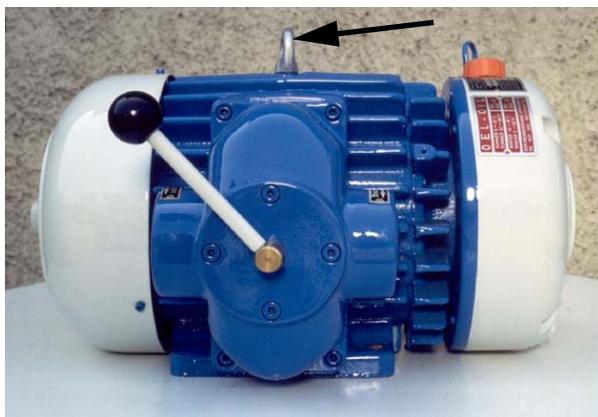


DIAGRAM 3. Compressor with transport eyebolt

Possibly attached transportation safeguards must be removed.

3.2 Storage

Prior to fitment, the machine must be stored in a dry, heated room. Prior to final assembly, leave the covers in place on the delivery socket.



The preservation of the bright parts lasts for about 1 year. For prolonged storage, this must be reapplied.

3.3 Scope of supply



The content of the shipment is listed on the delivery note. Check immediately to ensure that the shipment is complete. Damage during shipment as well as errors can only be acknowledged provided written notification is given without delay.

4.0 Installation

4.1 General

The air-cooled rotary compressor (SLS 34 / SLS 54) and vacuum pumps (SLS 34 DV / SLS 54 DV) generate pressure or vacuum. For constant duty they are designed for a maximum pressure of 2 bar or a vacuum of 100 mbar (90 %).

A ventilator fastened on the end of the drive shaft cools the compressor. The automatic lubricating device is driven by the rotor shaft. For V-belt propulsion, the pulley wheel can be placed directly on the end of the compressor shaft, provided the radial load does not exceed 105 kg.

4.2 Assembly

4.2.1 Stationary operation

Assemble the compressor bolted on the foundation panel in a vibration-free manner. A concrete foundation is not required. Using bolts, fasten the foundation panel on the surface.

Drive

When driven by an electric motor, the compressor must be precisely aligned with the motor. Ensure correct spacing of the wobbler (about 3-5 mm). Switch motor on briefly and check direction of rotation (see arrow on fan cowl of the compressor).

Coupling

The coupling must be of a resilient design and must not transmit any axial thrust from the motor to the compressor.

4.2.2 Installation in vehicles

The installation site for the compressor must be easily accessible and protected against falling objects. The compressor must be firmly bolted on the chassis. Sufficient space must be provided for connection of the delivery and intake pipes.

4.3 Power transmission

The power is transmitted by an articulated shaft, a V-belt or a coupling.

4.3.1 Articulated shaft drive

The articulated shaft must be designed as a

- spline shaft and must be

- balanced, as well as having the
- smallest possible angle and must be as short as possible.

The centre axes of the articulated shaft flanges must be parallel to each other.

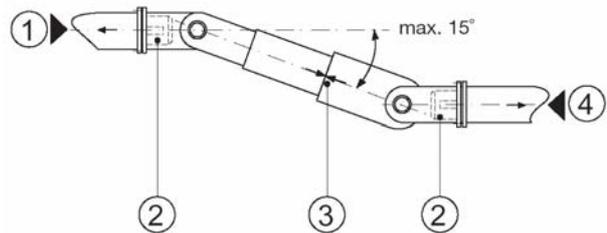
The articulated shaft attachment flange is to be pushed on the drive shaft of the rotary compressor / the vacuum pump.

The spline shaft section of the articulated shaft must be bolted on the attachment flange of the compressor shaft.

The resultant prop. shaft angle must not exceed 15° at a speed of 1500 min⁻¹.



Do not fit the drive shaft the wrong way - observe the marking!



1 Rotary compressor
2 Spline shaft

3 Marking
4 Drive

DIAGRAM 4. Drive shaft



The machine must be adequately earthed.

An earth bonding strap should be securely fastened between the machine body and a suitable point on the vehicle frame.

Ensure that the machine and all ancillaries are earthed in accordance with BS5958 Pt1: 1991; 'Control Of Undesirable Static Electricity'.

4.3.2 V-belt drive

V-belt drive is recommended where the motor speed needs to be transformed or reduced.



Note nominal speed according to „1.0 Technical data“ on page 3!

The V-belt pulleys listed in the following diagrams can be placed directly on the free end of the shaft.

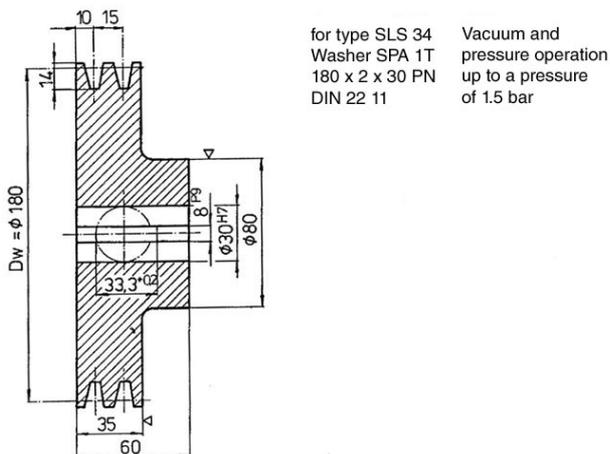


DIAGRAM 5. V-belt pulley for SLS 34

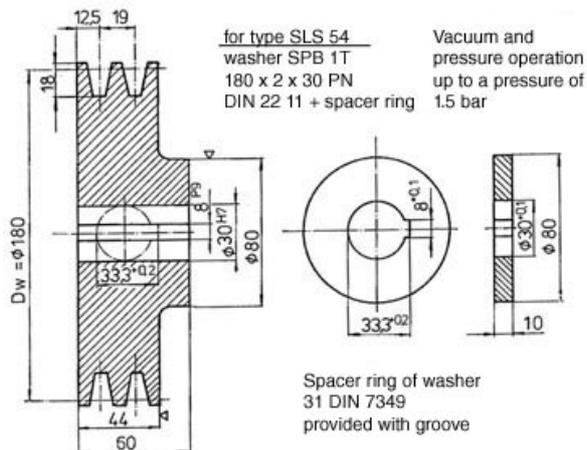


DIAGRAM 6. V-belt pulley for SLS 54

Carefully and precisely align the axes in all planes, both for the driving as well as for the driven shaft!

The grooves of the belt pulley must not be offset.

The selected length of the V-belt is decisive for uniform belt tension.

The tension setting for the V-belts must allow them to be depressed by about an inch.

4.3.3 Coupling drive

see „Stationary operation“ on page 8.

4.4 Pipelines

Remove the dummy flanges and plugs from all pipelines, in addition thoroughly clean all pipes prior to fitting.

Condensate traps with drain cocks must be fitted at the lowest point of the outlet pipes, in particular in riser pipes.

4.5 Safety and monitoring equipment

4.5.1 Check valve

For compressor and vacuum pumps, the check valve (8) is to be fitted in way of the intake fitting (7) (Diagram 7 on page 12).



On machines with a four-way cock, the check valve is fitted inside the cock!

4.5.2 Safety valve

In accordance with the applicable regulations, a non-lockable safety valve must be fitted downstream of every compressor.

The size and setting of the safety valve must be selected so that the highest permissible pressure is not exceeded by more than 10 %.

It must be able to blow-off the complete quantity supplied by the compressor.

The safety valve must be fitted with a manually operated vent.



Important installation instructions:

- Install directly downstream of the compressor and upstream of every shut-off fitting.
- The component markings by the TUV and the security seals must be present.
- Adjust in accordance with the permissible operating pressure (see „Technical data“ on page 3.).

4.0 Installation

- The safety valve must be secured so as to prevent unauthorized or mistaken manipulation.
- The safety valve must not be blocked.
- The safety valve must not be used for controlling the amount of air during compression.

4.5.3 Vent valve



The vent valve for the vacuum pump is used for controlling the system and for safeguarding the intake pipe. It must be fitted!

The size and setting of the vent valve must be selected so as to ensure that the intake pressure is restricted to the permissible minimum of 200 mbar.

4.5.4 Float valve

Where the vacuum pump is at risk of a fluid intake, an automatically closing float valve must be fitted in the intake pipe.

4.5.5 Pressure gauge/vacuum gauge

Design the pressure gauge/vacuum gauge according to the maximum achievable operating pressure/vacuum. Install immediately downstream of the delivery socket.

4.5.6 Thermometer

The thermometer for measuring the final compression temperature must be installed in the pressure pipe directly downstream of the delivery socket. It must have an adequate range for the type of use.

The constant temperature of the compressed air must not exceed 180 °C. Higher temperatures are briefly permitted during vacuum operation,

4.5.7 Touch guard

The moving and hot parts of the machine must be fitted with a touch guard.

4.5.8 Silencer

The air escaping from the vacuum pump produces a loud noise. To reduce the sound level, we recommend the fitment of our silencer.

4.5.9 Intake air filter

The air filter may only be fitted horizontally. It must not face down towards the clean air socket, since dirt might enter the clean air pipe during cartridge remo-

val, and may thus enter the compressor which would affect the dust removal by the presettling tank.



It must be ensured that the arrow in the "TOP" marking on the dust collection tank points upwards.

4.5.10 Vacuum filter

The vacuum-tight filter provides protection against mechanical impurities. Install in the intake pipe!

During installation note the following:

- Direction of flow,
- Space for changing the filter insert.



Vacuum filter SFA is not suitable for excess pressure.

Vacuum filters of series VFD are pressure surge proof up to 11 bar.

5.0 Commissioning



When commissioning the machine, the safety regulations (see „Safety“ on page 5.) and the additionally applicable accident prevention regulations must be observed.

Commissioning and all associated work may only be carried out by suitably skilled personnel.

5.1 Prior to commissioning



Read the operating manual!

Train the operating personnel!

Carry out a visual inspection of the machine!

5.2 Oil tank

Fill the storage oil tank (2) up to the lower edge of the thread on the oil tank (Diagram 7 on page 12).

Oil tank capacity = 3.4 litres /
Useful capacity = 2.9 litres



Never allow the oil level to drop below the minimum (lower notch on the oil dipstick (4) level)!

After filling firmly close the plug (1) of the oil tank.

5.3 Shut-off fittings

Open all manually operated valves and slide valves on the system.

5.4 Prelubricate

To prelubricate, inject about ¼ litre of oil in the intake socket. Repeat every 15 minutes during the initial 1-2 operating hours.

5.5 Direction of rotation

Briefly switch on the drive and check the direction of rotation according to the arrow on the housing.

5.6 Drive

Switch on drive and check whether pressure/vacuum is produced.

5.7 Check operating parameters

Check pressure/vacuum, speed and temperature according to the identification plate and technical data (see „Technical data“ on page 3.)

5.8 Check safety valves

Check that the safety valves blow off!

5.9 Version with four-way cock

Link the connection (8) (R 2") on the change-over four-way cock with the tank.

Using a short pipe, an exhaust silencer can be fitted on the connection (7) (R 2"), so as to effectively dampen the exhaust noise. An agitating lance can be operated here via a flexible tube.

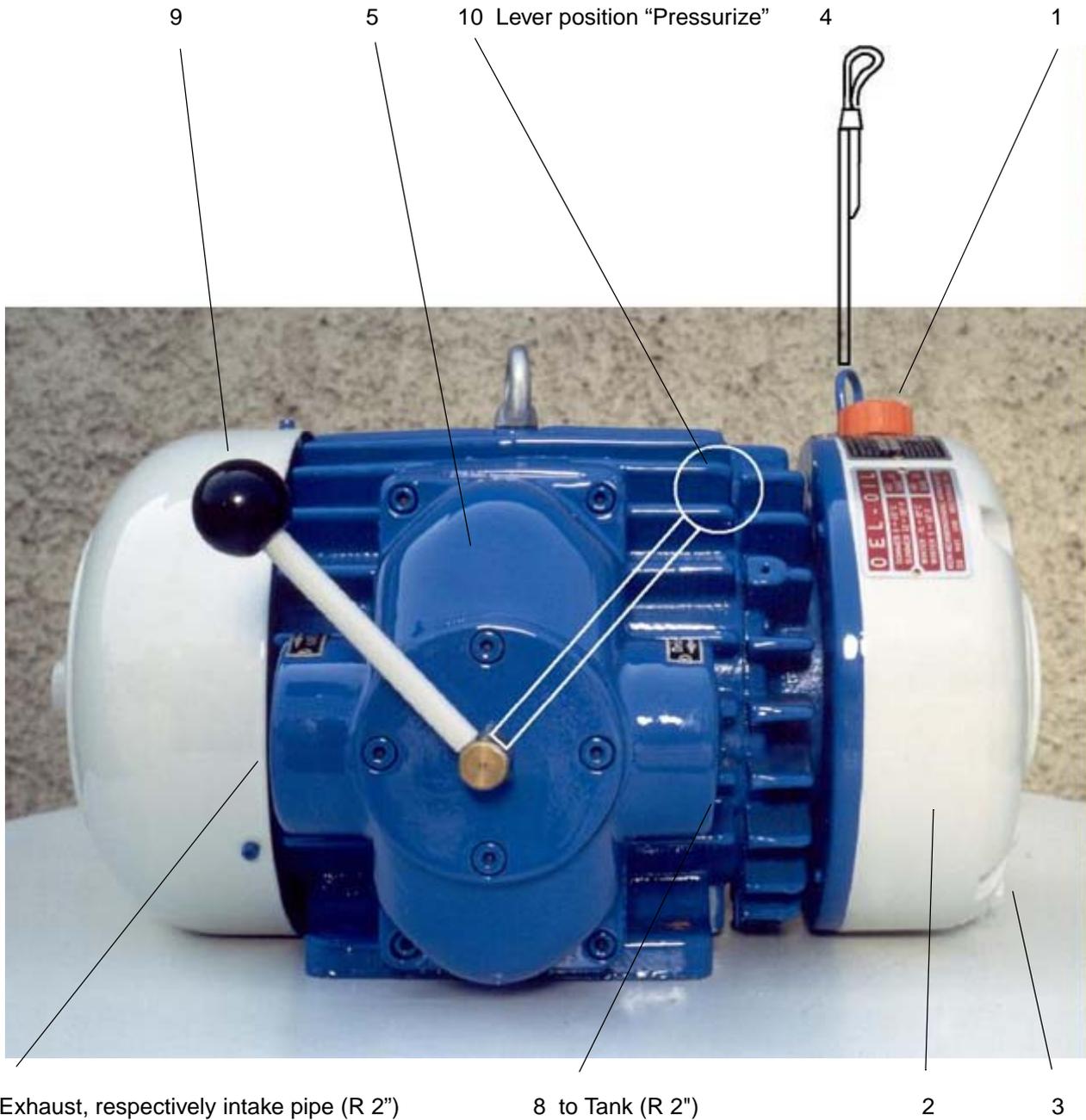
The fitted change-over four-way cock (5) has the position 9 = "Suction" and 10 = "Pressurise".



The changeover lever must always be pushed against the pertinent stop. An intermediate setting is not permitted whilst the machine is operating!

When the machine is at a standstill, the tank can be quickly aerated or vented with an intermediate position.

5.0 Commissioning



7 Exhaust, respectively intake pipe (R 2")

8 to Tank (R 2")

2

3

DIAGRAM 7. Compressor

6.0 Operation

6.1 Restarting

The rotary compressor, respectively the compressor vacuum pump is normally started as specified in Chapter 5 "Commissioning".

6.2 Regular inspections

During compression operation

Check working pressure on the pressure gauge (the permissible pressure is listed on the rating plate of the machine).

During vacuum operation

Check operating vacuum on the vacuum gauge (the permissible vacuum is listed on the rating plate of the machine).

Final compression temperature

Read off the final compression temperature



Depending on the operating condition, the compression temperature can also be well above the stated figures (up to about 200 °C)!

Drain off condensate

Drain off condensate from the condensate and safety tanks.



The system must not be pressurized when draining off the condensate.



There is a risk of freezing during the winter!

Speed

Check the operating speed.

Oil level

Read off the oil level from the inspection glass of the storage tank.

Top up with lubricating oil when the oil level reaches the red marking.

Lube oil specification (see „Recommended lubricant“ on page 22.)

6.2.1 Safety valve

In accordance with accident prevention regulations, a safety valve without a cut-off must be fitted in the pressure pipe downstream of every compressor. It must be set so as to prevent the maximum permissible operating pressure being exceeded by more than 10 %.



The valve setting must be secured to prevent unauthorized or incorrect alteration.



The safety valve must not be blocked or manipulated in any other manner.



Blowing off the complete volumetric flow via the safety valve with a closed pressure pipe must be avoided, since this may result in the occurrence of dangerous compressive oscillations.

The safety valve must not be used as a pressure control device.

Usage as a control device can cause damage to the valve!

The safety valve selected must be sufficient to permit the complete volumetric flow rate to be blown off via the valve when suitably pressurized.

Check function during commissioning and subsequently every week by actuating the manual vent when the machine is operating.

6.2.2 Vent valve

The vent valve is the controller for a vacuum system.

It opens when the set vacuum is achieved and permits the vacuum pump to take in additional atmospheric air.

Ensure function every week by testing whilst observing the vacuum gauge on the intake socket of the compressor vacuum pump.



Do not exceed the permissible vacuum of 200 mbar.

6.0 Operation

Monitoring periods

	see chapter	During operation every 10 - 20 minutes	after every use	daily	weekly
Operating speed	6.2	•			
Operating pressure, respectively vacuum	Identification plate	•			
Air outlet temperature	6.2	•			
Drain off condensate (contains oil!) Silencer oil trap Safety tank	6.2		• •		
Oil level	6.2			•	
Actuate safety valve	6.2.1				•
Actuate vent valve	6.2.1				•
Clean the machine					•
Clean air intake and outlet openings					•
Check fastening of the fan cowl and cover panels					•

6.3 Possible operating errors



Operating errors can cause machine failure.

To be avoided at all costs:

- Excessively low or high speeds
- Excessive pressure
- With the pressure pipe closed, blow off the total volumetric flow through the safety valve
- Vacuum too low
- Compressed air temperature too high (see 6.2)
- Poor cooling (affecting supply of cooling air)
- Blocked vacuum filter
- Block exhaust silencer
- Intake of fluid
- Water hammer due to failure to drain away condensate in time from the safety tanks (risk of freezing in winter)
- Lack of lube oil
- Wrong lube oil
- Do not open tank when vacuum is applied
- Empty only with pump at a standstill



In the event of damage due to operating errors, no warranty claim can be submitted to Gardner Denver.

6.4 Action for prolonged standstill

- Clean the machine thoroughly.



When cleaning with a pressure washer, there is a risk of water penetration.

- After wet cleaning, run machine for several minutes until warm so as to prevent the rotary slide valve from sticking.

Where the rotary compressor/compressor vacuum pump fitted in the vehicle is to remain unused for more than one month, we recommend operating the machine once each month for at least 15 minutes. This will ensure a fresh supply of oil to all components that are endangered by corrosion.

6.5 Flushing after excess intake

Proceed as follows after excess intake (liquid or sludge has entered the machine):

- Unscrew the plug in the intake socket (disassemble possibly attached additional lubrication pipe).
- Open vehicle tank so that the machine can be operated without producing a vacuum or pressure.

- Switch on machine and at slightly reduced speed take into the machine about ½ litre diesel-oil mixture through the bores in the intake socket.
- Switch off machine, screw in plug and pre-grease as specified in Chapter 5.4 before restarting the machine.



Intermediate settings of the change-over four-way cock are not permitted during the flushing procedure. The flushed out dirt could partly return to the intake side.

6.6 Troubleshooting

Gardner Denver rotary compressors and compressor vacuum pumps, are noted for the low rate of wear of the rotary slide valves during normal use. If a fault

should arise, the summary below provides you with the possibility of being able to determine the cause and rectify the fault.

Defect	Possible cause	Rectification
Capacity of the compressor/vacuum pump decreases	<ul style="list-style-type: none"> • Vacuum filter or combination air filter fouled • Leaky intake pipe • Leaky fittings • Speed too low • Premature wear of the rotary slide valve; fouling (water, dirt, ...) may have entered the machine (e.g. when the machine has experienced excess intake). 	<ul style="list-style-type: none"> • Clean the filter • Find and seal leaks • Replace fittings • Maintain speed range • Replace rotary slide valve or have machine overhauled in an authorized workshop
Unusual noise	<ul style="list-style-type: none"> • Machine is poorly aligned • Bearing worn out • Lack of lube oil • Unsuitable lube oil • Rotary slide valves knock due to worn width • Housing bore has grooves or undulations due to dirt intake • Wrong speed • Changed pressure • Changed vacuum 	<ul style="list-style-type: none"> • Align machine precisely • Have bearings replaced • Top up oil, clean oil tank and intake screen • Fill with oil according to lube oil table • Replace rotary slide valve • Have housing bore re-turned and honed in authorized workshop. With considerably fouled intake filter, fit microfilter. • Maintain speed limits • Maintain nominal pressure • Maintain nominal vacuum / check exhaust system and clean where necessary.

6.0 Operation

Defect	Possible cause	Rectification
Compressed air temperature too high	<ul style="list-style-type: none"> Excessive final pressure Exhaust silencer blocked Change-over four-way cock in wrong position Valve plate in check valve sticks Vacuum filter blocked Excessive vacuum 	<ul style="list-style-type: none"> Maintain nominal pressure Replace exhaust silencer Switch change-over four-way cock correctly Clean check valve Clean vacuum filter Maintain nominal vacuum
Operating pressure, respectively operating vacuum is not achieved	<ul style="list-style-type: none"> Incorrect display by pressure gauge, respectively vacuum gauge V-belt slips Change-over four-way cock in wrong position Condensate drain cock open 	<ul style="list-style-type: none"> Replace pressure gauge, respectively vacuum gauge Check belt tension, retighten where necessary Switch change-over four-way cock correctly Close condensate drain cock
Sludge or liquid has penetrated inside the machine	<ul style="list-style-type: none"> Vehicle has experienced excessive intake 	<ul style="list-style-type: none"> Flush with diesel-oil mixture at the lowest possible speed and without pressure or vacuum, subsequently fill with lube oil as shown under "Commissioning"
Excessive power requirement	<ul style="list-style-type: none"> Excessive speed Excessive final pressure Pressure gauge reading incorrect Exhaust silencer blocked 	<ul style="list-style-type: none"> Maintain speed limit Maintain nominal pressure, actuate/check safety valve Replace pressure gauge Replace exhaust silencer
Lack of lube oil despite full oil tank	<ul style="list-style-type: none"> Oil tank intake screen blocked 	<ul style="list-style-type: none"> Clean oil tank and intake screen
Safety valve blows off	<ul style="list-style-type: none"> Closed valves in pressure pipe Blockage in delivery network Blockage of the exhaust silencer 	<ul style="list-style-type: none"> Open valve Eliminate blockage Replace exhaust silencer
Vent valve actuates	<ul style="list-style-type: none"> Closed valves in intake pipe Intake filter blocked 	<ul style="list-style-type: none"> Open valve Clean intake filter, replace filter cartridge where necessary
Compressed air escapes from shaft end and oil leaks	<ul style="list-style-type: none"> Seals are damaged 	<ul style="list-style-type: none"> Have radial shaft seals in cover replaced
Smell of rubber (with V-belt drive)	<ul style="list-style-type: none"> V-belt slipping due to insufficient belt tension Excessive final pressure 	<ul style="list-style-type: none"> Check belt tension, retighten where necessary Maintain nominal pressure
V-belts shifting	<ul style="list-style-type: none"> Insufficient belt tension Worn V-belt Pulleys are not aligned Worn pulleys 	<ul style="list-style-type: none"> Check belt tension, retighten where necessary Fit new V-belt Align pulleys Replace pulleys

If it is impossible to overcome the problem with the above action, please contact our customer service department.



The machine may only be used again when the fault has been completely rectified.

7.0 Maintenance

7.1 Warranty

Please note that we accept no liability in the event of failure to comply with the installation and operating manual.

It should be noted that repairs on the rotary compressors, respectively compressor vacuum pumps may only be carried out by authorized workshops using original spare parts; failure to comply with this requirement will result in the warranty becoming void. A list of our customer service stations is separately enclosed with the order documentation.

period can be extended if the specified number of operating hours is not achieved.

Due to the different operating conditions it is impossible to predict when the check up for wear, repairs, maintenance and inspections will be required. A suitable inspection routine needs to be specified in accordance with your operating conditions.

7.2 Maintenance, maintenance schedule



Please follow the safety notes on page 5 when carrying out maintenance and inspection work.

Disturbances due to inadequate or improper maintenance can incur very high repair costs and prolonged machine downtime. Regular maintenance is thus essential.

The operating safety and service life of the machine depends primarily on proper maintenance.

The following table contains time, control and maintenance information for normal use of the machine.

The stated maintenance periods are based on a daily operating time of about 5 hours. The maintenance



Upon completing the work, the protective devices must be properly reattached.



When removing oil, grease, solvents or parts, e.g. filter cartridges, please comply with the regulations for safeguarding the environment.

7.2.1 Cooling

The cooling air requires a free passage.

Check the cooling air inlets and outlets every week and clean away the adhering dirt and dust where necessary.



For an optimum cooling effect, unrestricted circulation of the air is essential. Fouling reduces the cooling effect and can cause the machine to overheat and fail.

Maintenance schedule

Maintenance points	Type of work	see Chapter	Maintenance periods		
			1 week	1 month	3 months
Cooling air guide	check, clean	7.2.1	•		
Compressor vacuum pump	clean	7.2.2	•		
Vacuum filter	clean	7.2.3	•		
Combination air filter	check, clean	7.2.4	•		
Safety valve	check	6.2.1	•		
Vent valve	check, clean	6.2.2	•		
V-belt, belt tension	check, retighten	7.2.5	•		
Oil tank	clean	7.2.6			•
Check valve	check	7.2.7			•
Vent valve	check, clean	7.2.8			•
Rotary slide valve	Check for wear (intake flange)	7.2.9			•

7.0 Maintenance

7.2.2 Rotary compressor/Compressor vacuum pump

The machine must be cleaned every week.



When washing respectively cleaning with a pressure washer, there is a risk of water penetration, which can cause water hammer and thus machine failure.

Carefully clean the oil sight glass.

After wet cleaning, run machine for several minutes until warm so as to prevent the rotary slide valve from sticking.

7.2.3 Vacuum filter

Clean filter in line with the amount of fouling on a daily basis, at least, however, once weekly.



When the vent valve actuates the vacuum filter must be cleaned as a matter of principle.

The filter element consists of a high-grade steel fabric or a microfilter cartridge.

Opening the filter

Release or unscrew the tapered respectively star knob. On type SFA turn the cover about 15° counter-clockwise away from the stud bolts and then remove the cover from the housing. On type SFD the cover can be simply removed.

Cleaning the filter

- Wash the filter housing with gasoline or cold degreaser.
- High-grade steel filter inserts can be washed with gasoline or cold degreaser.
- The microfilter cartridge filter element can be cleaned by blasting inside and out with a steam cleaner. Check the microfilter cartridge for damage. A damaged cartridge must be replaced.
- Check the round seal or gasket for damage. Replace damaged sealing rings.



When cleaning the filter housing, take steps to prevent any dirt, wadding or liquids from entering the compressor/vacuum pump. These may cause valve breakage.

Assembling the filter

Insert filter cartridge.

Place gasket, respectively round seal in cover. Push washers outwards against the tapered or star knob.

Push cover into the housing (on type SFA, turn cover clockwise into the studs).

Tighten cover with tapered or star knob.

7.2.4 Combination intake air filter

Compress the dust removal valve every week to check for considerable accumulations of dust.

The service indicator provides information about the condition of the filter cartridge in the air intake filter.



The filter cartridge must be replaced when the red marking is visible on the service indicator.

Replacing the filter cartridge

1. Switch off the compressor.
2. Remove cover with dust removal valve.
3. Using a wrench, unscrew the hexagonal nut.
4. Remove fouled cartridge and throw away.
5. Using a moist rag, clean the filter housing in particular along the seal of the filter cartridge.
6. Take care to ensure that no dust can enter the clean air pipe.
7. Insert new cartridge in the filter housing.
8. Using a wrench, tighten the hexagonal nut.
9. Attach cover.

Assemble the filter in the reverse sequence. When attaching the housing cover, the dust removal valve must point downwards.

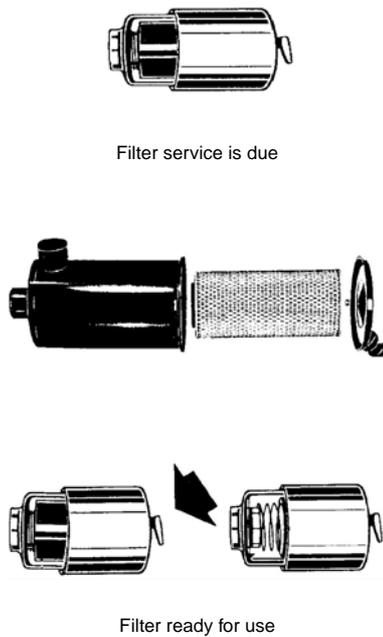


DIAGRAM 8. Combination air filter

Cleaning the filter cartridge

Cartridges can be cleaned when required. Irrespective of this, they must be replaced at the latest after 2 years.

Cleaning can consist of blowing or, alternatively knocking.

Cleaning by blowing

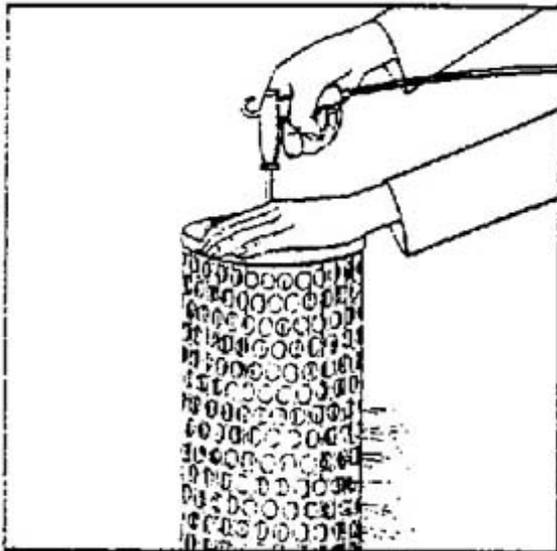


DIAGRAM 9. Blowing through the filter cartridge

Using dry compressed air at no more than 5 bar, blow at an angle from the outside through the surface of the cartridge towards the folds. Subsequently carefully blow out the interior.

Cleaning by knocking

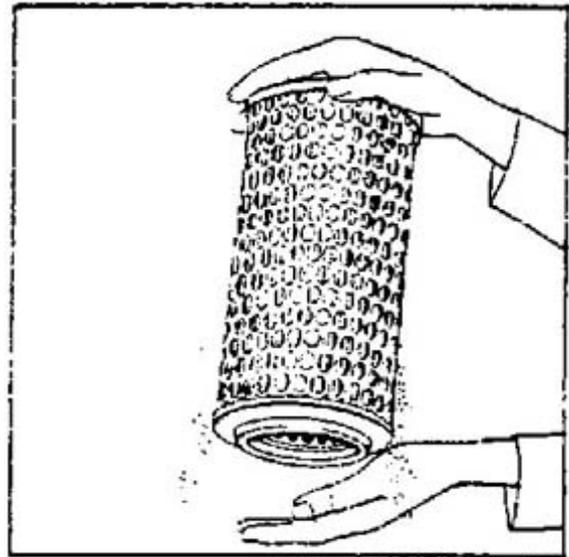


DIAGRAM 10. Knocking the filter cartridge

After cleaning, push the hook-shaped pushbutton of the service indicator inwards (colour changes from red to colourless). The service indicator is ready for use once again.



Where necessary, the filter cartridge can be cleaned once by blowing out and knocking. It must then be replaced at the next opportunity.

Gardner Denver accepts no liability for damage due to failure to replace the filter cartridge on time.

7.2.5 V-belt and belt tension



The protective devices may only be removed when the machine is at a standstill and the vehicle engine has been switched off.

The V-belt and belt tension must be checked every week and retightened or replaced, where necessary.

Damaged V-belts may only be replaced with a complete set of length sorted belts.

7.2.6 Clean the oil tank

The oil tank must be cleaned every 3 months. With the machine at a standstill, drain away the lube oil. Flush the oil tank with flushing oil.

7.0 Maintenance



Do not rinse the oil tank with solvent or degreaser.

Do not forget to pre-lubricate (see „Prelubricate“ on page 11.) before renewed use!

7.2.7 Check valve

Maintenance of the check valve is not required.

We recommend an initial inspection after 300 operating hours and then every 3 months.

Inspect the valve for oily carbon deposits and set the date for the next inspection in accordance with the appearance. The thickness of the oily carbon must not exceed 1 mm.



Sealing and sliding surfaces must be free from oily carbon deposits so as to ensure the function of the check valve.

Where cleaning is required, the valve must be removed.

7.2.8 Vent valve

Fitment of the vent valve in an unfavourable position may cause the bore for pressure compensation to become blocked due to fouling which would restrict the function of the vent valve.

To prevent this, inspect the vent valve regularly (at least every 3 months, more frequently in the event of considerable external fouling of the vent valve) and, where necessary, disassemble the vent valve, remove penetrating fouling and use compressed air so as to clear the vent for pressure compensation.

7.2.9 Rotary slide valve rate of wear

Remove the vacuum filter, respectively intake pipe, so as to be able to inspect the rate of wear of the rotary slide valve.

Push the rotary slide valve into the rotary groove and using a depth gauge measure the distance to the surface of the rotor.



This dimension must not exceed 5 mm.

When the amount of wear has reached 5 mm, the rotary slide valves must be replaced (see the separate assembly instructions!).

The initial inspections should take place after about 6 months and should subsequently be repeated every 3 months (based on a daily operating time of 3-4 hours).

8.0 List of spare parts

Keeping a stock of the most important spare parts at the place of use is a major precondition for the constant functional readiness of the compressor and vacuum pumps.

We recommend stocking the following wearing and spare parts according to the spare parts list:
Item Nos. 4 / 10 / 11 / 13 / 31 / 32 / 34 and filter cartridge

Please use the following spare parts lists when ordering the spare parts.

Item No.	Object	Quantity	Order number		Remarks
			SLS 34	SLS 54	
1	Housing	1	914450 00	914 470 00	
2	Housing cover	2	914 451 00		
3	Rotor, complete, operating clockwise	1	914 455 00	914 471 00	According to direction of rotation
	Rotor complete, running counter-clockwise	1	914 456 00	914 472 00	
4	Rotary slide valve	4	342 613 00	342 614 00	
5	Bearing cover	1	914 459 00		
6	Oil tank cover for clockwise rotation	1	914 460 00		According to direction of rotation
	Oil tank cover for counter-clockwise rotation	1	914 484 00		
7	Oil tank	1	914 461 00		
8	Fan vane	1	914 485 00		
9	Fan cover	1	914 469 00		
10	Cylinder bearing NU 407	2	411 341 00		
11	Shaft seal 40x 52x 7	2	461 038 00		for Part 5
12	Shaft sealing ring liner	1	411 790 00		for Part 3
13	O-ring 210x3	1	463 680 00		for Part 6
14	Oil filler cap	1	472 019 00		
15	Oil dipstick	1	914 879 00		
16	Seal for oil pump	1	465 635 00		between parts 6 + 35/36
17	Hexagonal plug R 3/8"	1	444 897 00		for Part 7
18	Sealing ring 17x 21	1	421 716 00		for Part 17
19	Direction of rotation plate	1	455 912 00		
20	Pipe connection with check valve	1-2-3	425 165 00		for Parts 1 and 6
21	Angled pipe connection with check valve	1	425 168 00		for Part 2
22	Angled pipe connection M8	2	425 166 00		for Part 6
23	Pipe connection M8	2	425 159 00		for Part 6
24	Oil intake pipe 6 x 1 x 100	1	062 007 00		between parts 28 + 35/36
25	Oil delivery pipe 4 x 0.5 x 100	1	062 003 00		
26	Oil delivery pipe 4 x 0.5 x 250	1-2	062 003 00		
27	Oil delivery pipe 4 x 0.5 x 150	3-4	034 003 00		in part 7
28	Suction screen	1	425 373 00		in part 24
29	Oil type plate	1	455 915 00		
30	Combined company and rating plate	1	455 893 00		
31	Housing seal	2	465 540 00		between parts 1 and 2
	Housing seal	2	465 541 00		
	Housing seal	2	465 542 00		
32	End cap seal	2	465 735 00		between parts 2 and 5/6
34	Seal	2	465 736 00		for flange suction-delivery side
35	Oil pump TDM 4	1	425 931 00	425 926 00	
37+	Connection flange	1	914 465 00		on part 1

8.0 List of spare parts

Item	Object	Quantity	Order number	Remarks
38+	Valve housing	1	914 466 00	on part 37
39+	Valve bracket	1	914 251 00	in part 38
40+	Valve cup	1	914 252 00	in part 38
41+	Flat gasket	1	464 525 00	between parts 1 and 38



Only original parts from Gardner Denver may be used. The warranty from Gardner Denver will become void if spare parts are used that are not supplied by us!



When ordering the rotor, Item No. 3, and the oil tank cover, Item No. 6, the specific direction of rotation must be noted.

Recommended lubricant

For the built-in compressor and vacuum pumps, please note the lubricant recommendations from Gardner Denver (T-SE-8000).

Change-over four-way cock

Part No.	Object	Quantity	Order number		Remarks
			SLS 34	SLS 54	
45	Changeover housing	1	914 453 00		Fitted on part 1
46	Valve cup	1	914 454 00		in part 45
47	Changeover plug	1	914 464 00		in part 45
48	Cover for changeover housing	1	914 463 00		on part 45
50	Star spring	2-3	451 639 00		for Part 47
51	O ring seal 20 x 3	1	463 520 00		in part 48
52	Shift lever shaft	1	914 477 00		for Part 47
53	Seal	1	465 738 00		between parts 45 + 48
54	"Suction" plate	1	455 907 00		on part 45
55	"Delivery" plate	1	449 842 00		on part 45
56	Spherical button with tolerance ring	1	449 842 00		for Part 52

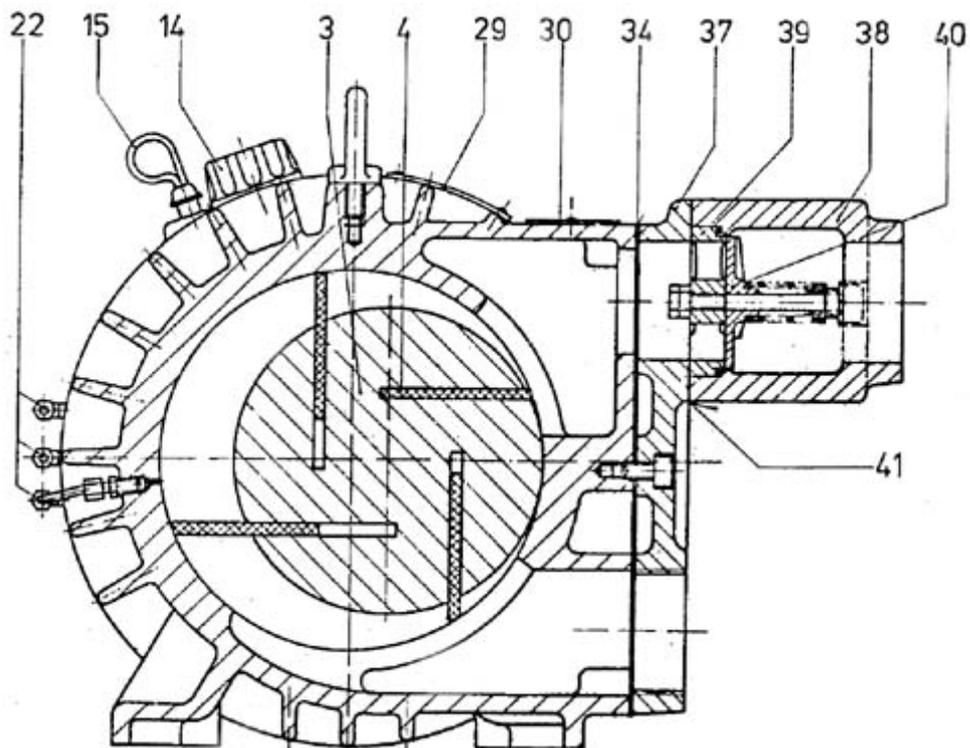
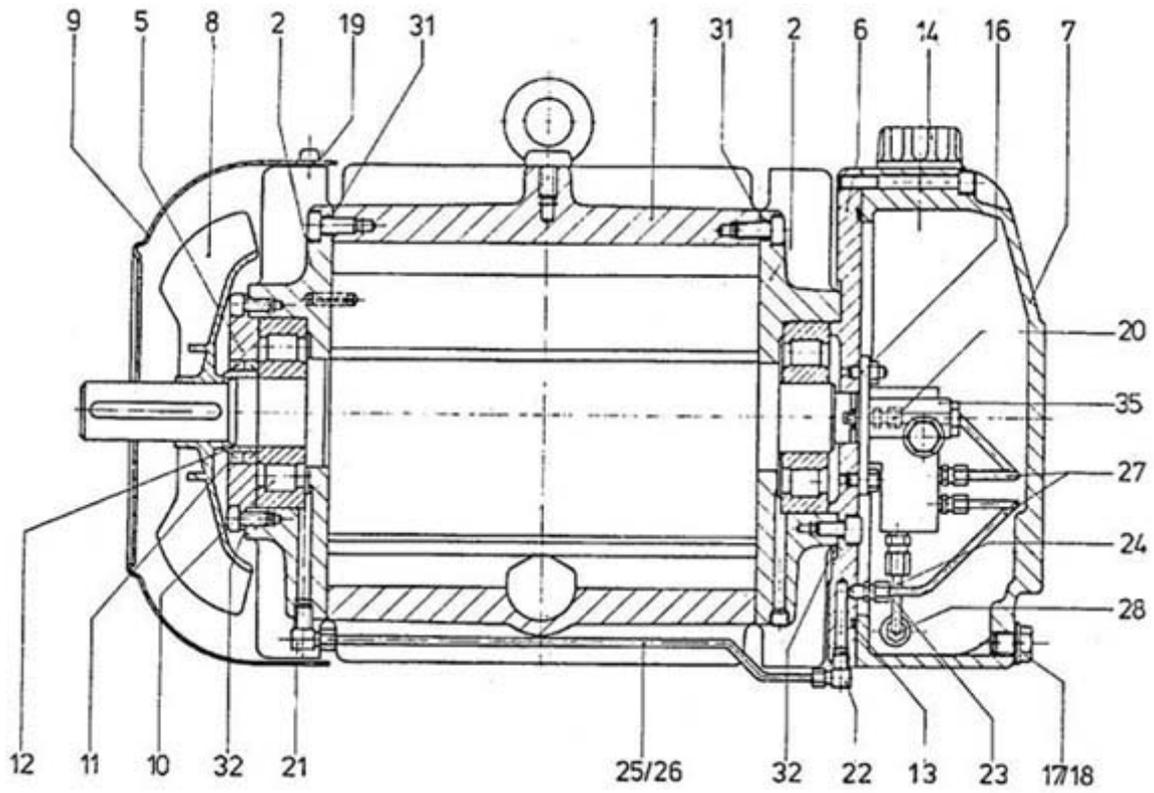


DIAGRAM 11. Longitudinal and cross-sectional diagram through the compressor vacuum pump with check valve

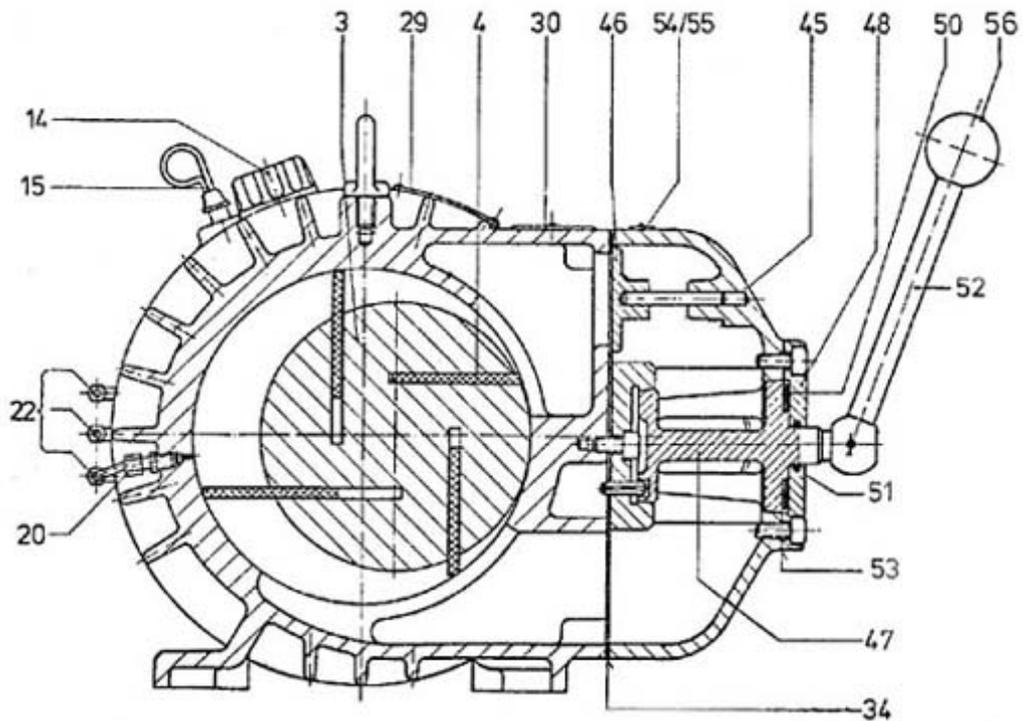
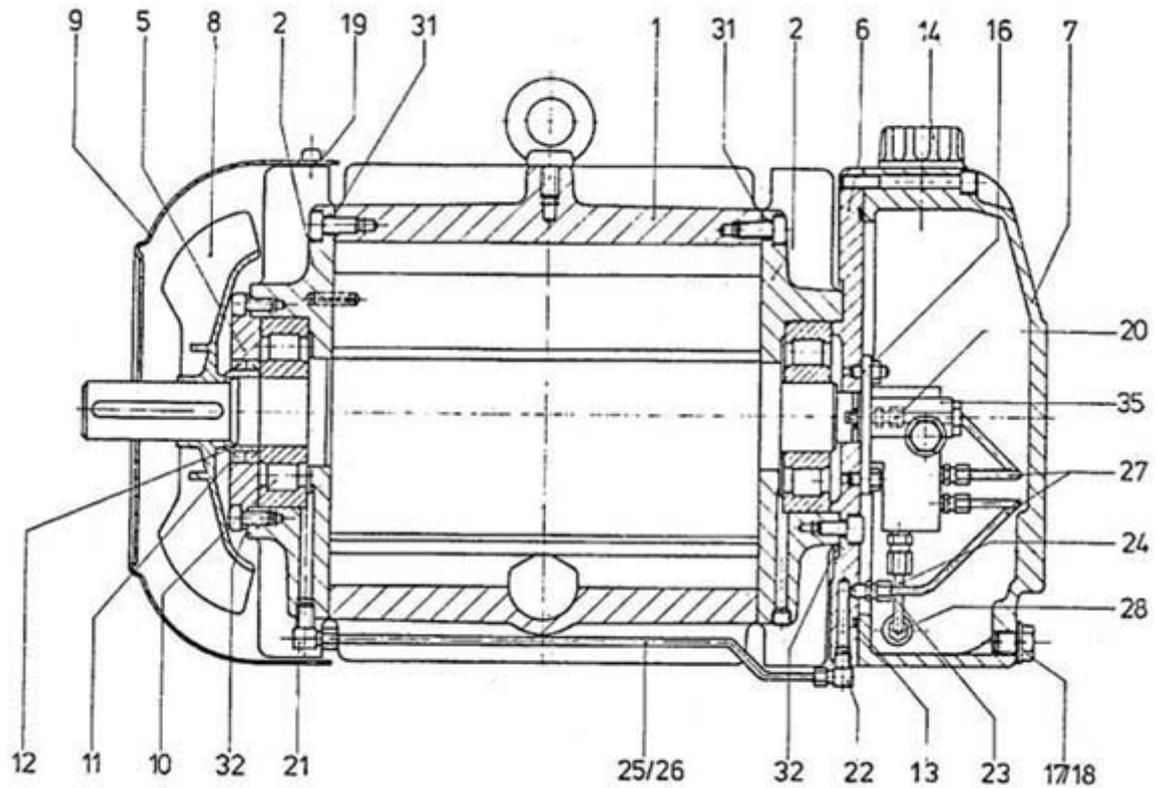


DIAGRAM12.

Longitudinal and cross-sectional diagram through the compressor vacuum pump with changeover four-way cock

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The logo for Gardner Denver, featuring the word "Gardner" in a bold, black, sans-serif font above the word "Denver" in a larger, bold, black, sans-serif font. A thick red horizontal line is positioned between the two words.

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