GENERAL PUMP

TR26/30/32/36-SR26/30/32/36

Owner's Manual

- *Installation*
- *Use*
- *Maintenance*

Pratissoli

General Pump
is a member of
the Interpump Group

Ref 310054 Rev.A
07-17

INDEX

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1. INTRODUCTION

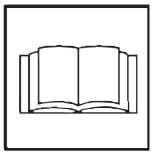
This manual describes the use and maintenance instructions of the TR/SR Series pump, and should be carefully read and understood before using the pump.

Correct use and adequate maintenance will guarantee the pumps trouble-free operation for a long time. General Pump declines any responsibility for damage caused by misuse or the non-observance of the instructions indicated in this manual.

Upon receiving the pump, check that it is complete and in perfect condition. Should anything be found out of order, please contact us before installing and starting the pump.

2. SYMBOL DESCRIPTIONS

Warning
Potential Danger



Read carefully and understand the manual before operating the pump

Danger
High Voltage

Danger
Wear protective mask

Danger
Wear goggles

Danger
Wear protective gloves

Danger
Wear protective boots

Danger
Protect against explosion

3. SAFETY

3.1 General Safety Indications

Improper use of pumps and high pressure systems, and the non-compliance with installation and maintenance instructions may cause severe injury to people and/or damage to property. Anyone assembling or using high pressure systems must possess the necessary competence to do so, should be aware of the characteristics of the components assembled/used, and must take all precautions necessary to ensure maximum safety in any operating condition. In the interest of safety, both for the Installer and the Operator, no reasonably applicable precaution should be omitted.

3.2 High pressure unit safety requirements

1. The pressure line must always be equipped with a safety valve.
2. High pressure system components, in particular for those units working outside, must be adequately protected against rain, frost and heat.
3. The electrical control system must be adequately protected from water spray, and must comply with the specific regulations in force.
4. High pressure hoses must be properly sized for maximum operating pressure of the system and always and only used within the operating pressure range specified by the hose manufacturer. The same rules should be observed for all other auxiliary systems affected by high pressure.
5. The ends of high pressure hoses must be sheathed and secured to a solid structure to prevent dangerous whiplash in case of bursting or broken connections.
6. Appropriate safety guards must be provided for the pump transmission systems (couplings, pulleys and belts, auxiliary drives).

3.3 Safety During Operation

The working area of a high pressure system must be clearly marked. Access must be prohibited to un-authorized personnel and, wherever possible, the area should restricted or fenced. The personnel authorized to access this area should first be trained, and informed about the risks that may arise from failures or malfunctions of the high pressure unit.

Before starting the unit, the operator must check:
1. That the high pressure system is properly powered (see paragraph 9.4).
2. That pump intake filters are perfectly clean; we advise the use of a device that indicates the filters clogging level.
3. Electrical parts are adequately protected and in perfect condition.
4. The high pressure hoses do not show apparent signs of abrasion, and that fittings are in perfect shape.

Any fault or reasonable doubt that may arise before or during operation should be promptly reported and verified by competent personnel. In these cases, pressure should immediately be released and the high pressure system stopped.

3.4 General Procedures For Using Nozzles/Lances

1. The Operator must always place his own and other worker's safety before any other interest; his and should always be governed by good sense and responsibility.
2. The Operator must always wear a helmet with a protective visor, waterproof clothing, and appropriate boots capable of guaranteeing grip on wet pavement.

Note: appropriate clothing will effectively protect against water spray, but it may not offer adequate protection against the direct impact of water jets or sprays from a close distance. Some circumstances may require further protection.

3. It is generally best to organize personnel into teams of at least two people capable of giving mutual and immediate assistance in case of necessity and of taking turns during long and demanding operation.
4. Access to the work area that is within the water jets' range must be absolutely prohibited to and free from objects that, inadvertently under a pressure jet, can be damaged and or create dangerous situations.
5. The water jet must only and always be directed in the direction of the work area, including during testing or preliminary tests or checks..
6. The Operator must always pay attention to the trajectory of the debris removed by the water jet. If necessary, suitable guards must be provided by the Operator to protect anything that may be accidentally exposed.
7. The Operator should not be distracted for any reason during operation. Workers needing to access the operating area must wait for the Operator to stop work, and then immediately make their presence known.
8. For safety reasons, it is important that each member of the team is fully aware of the intentions and actions of other team members in order to avoid dangerous misunderstandings.
9. The high pressure system must not be started up and run under pressure without all team members in position and without the Operator having already directed his/her lance toward the work area.

3.5 Safety During System Maintenance

1. The pressure system maintenance must be carried out in the time intervals set by the manufacturer who is responsible for the whole group according to law.
2. Maintenance should always be carried out by trained and authorized personnel.
3. Assembly and disassembly of the pump and its various components must be performed exclusively by authorized personnel, using appropriate equipment in order to avoid damage to components and connections.
4. Always use original spare parts to ensure total reliability and safety.

4. PUMP IDENTIFICATION

Each pump has a specific label which contains:

Pump model and version
Serial Number
Flow Rate - GPM
Pressure - PSI
Power - Hp-kW
Maximum RPM

Pump model, version and serial number must always be specified when ordering spare parts.

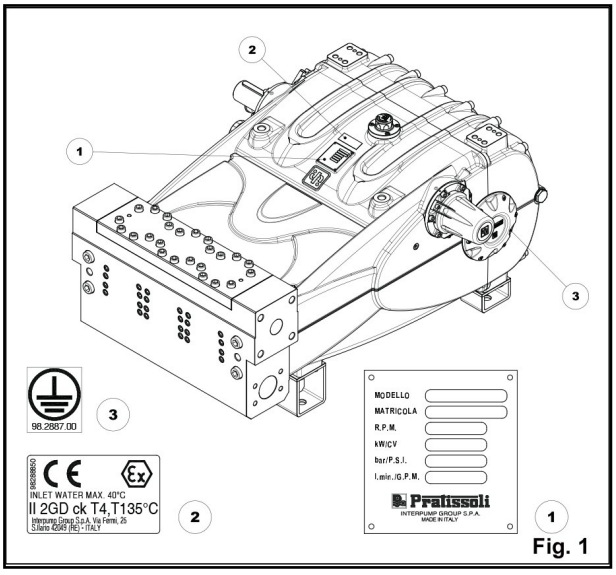


Fig. 1

5. TECHNICAL FEATURES @ 520 RPM

MODEL	RPM	FLOW RATE		PRESSURE		POWER	
		GPM	l/min	PSI	Bar	Hp	kW
SR26	1500	20	74.5	21,750	1,500	290	213
	1800						
	2200						
SR30	1500	26	99	17,400	1,200	309	227
	1800						
	2200						
SR32	1500	30	113	14,500	1,000	293.5	216
	1800						
	2200						
SR36	1500	38	143	11,600	800	297	218
	1800						
	2200						

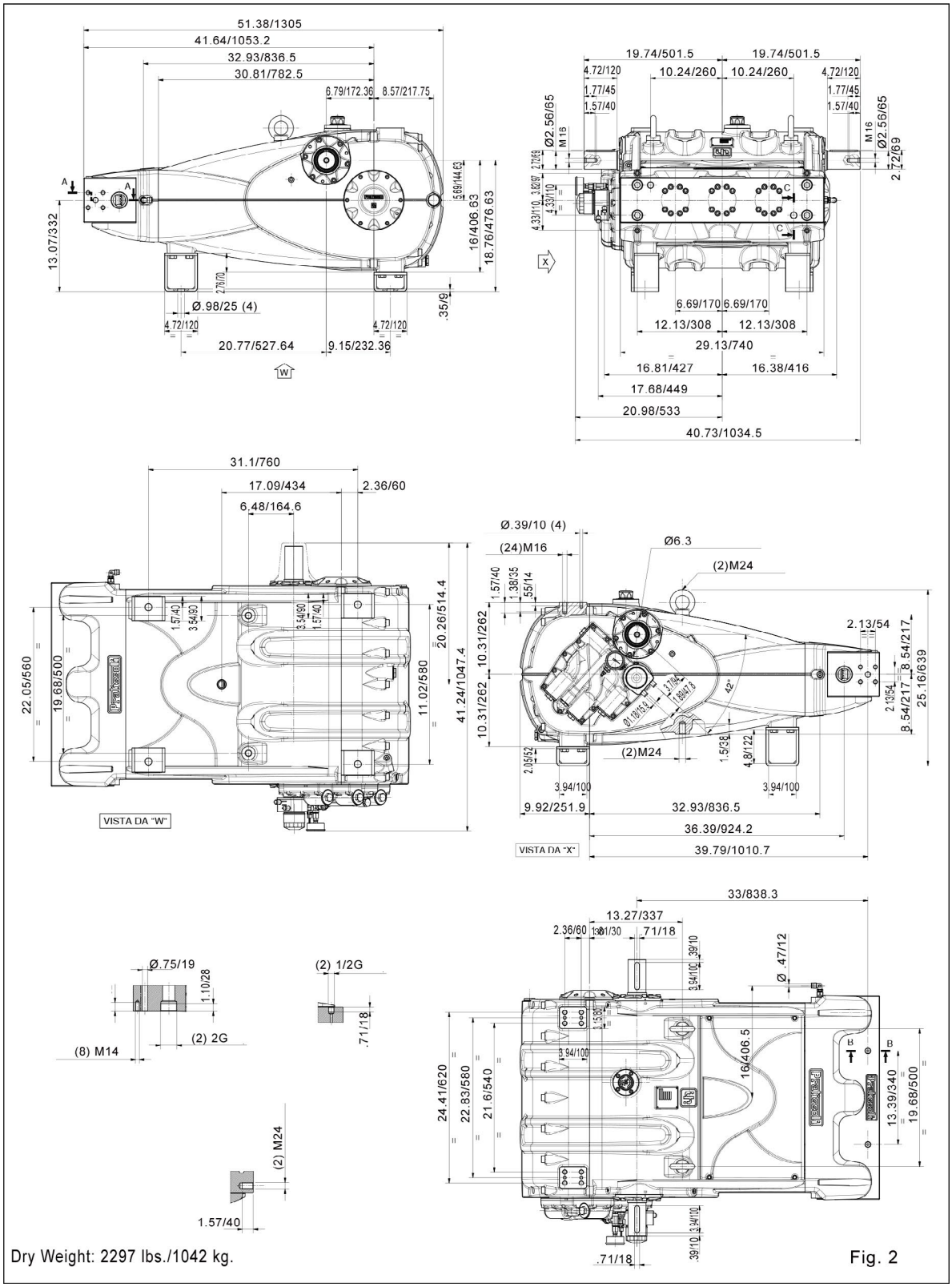
MODEL	RPM	FLOW RATE		PRESSURE		POWER	
		GPM	l/min	PSI	Bar	Hp	kW
TR26	1500	29	108	21,750	1,500	427	309
	1800						
	2200						
TR30	1500	38	143	17,400	1,200	446	328
	1800						
	2200						
TR32	1500	43	163	14,500	1,000	426	311
	1800						
	2200						
TR36	1500	54	206	11,600	800	428	315
	1800						
	2200						

5.1

Pump Moments of Inertia Reduced at the PTO		
Pump Series	RPM	J(kg mm^2)
SR	1500	231300
	1800	182100
	2200	140600
TR	1500	240800
	1800	188800
	2200	145000

6. DIMENSIONS AND WEIGHT

For dimensions and weight of SR Series HORIZONTAL, please refer to fig. 2.

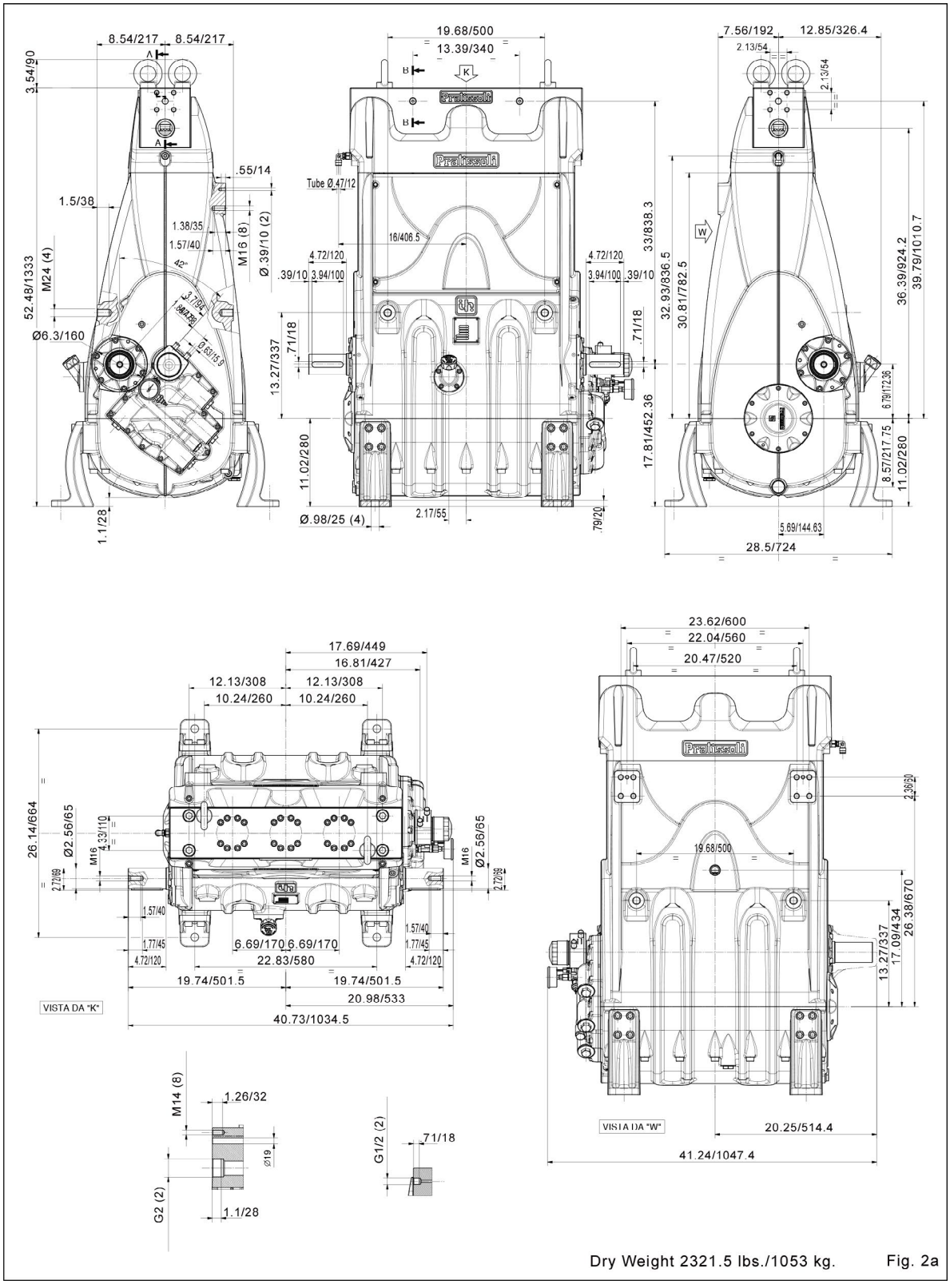


Dry Weight: 2297 lbs./1042 kg.

Fig. 2

6. DIMENSIONS AND WEIGHT

For dimensions and weight of SR Series VERTICAL, please refer to fig. 2a.



Dry Weight 2321.5 lbs./1053 kg. Fig. 2a

6. DIMENSIONS AND WEIGHT

For dimensions and weight of TR Series HORIZONTAL, please refer to fig. 3.

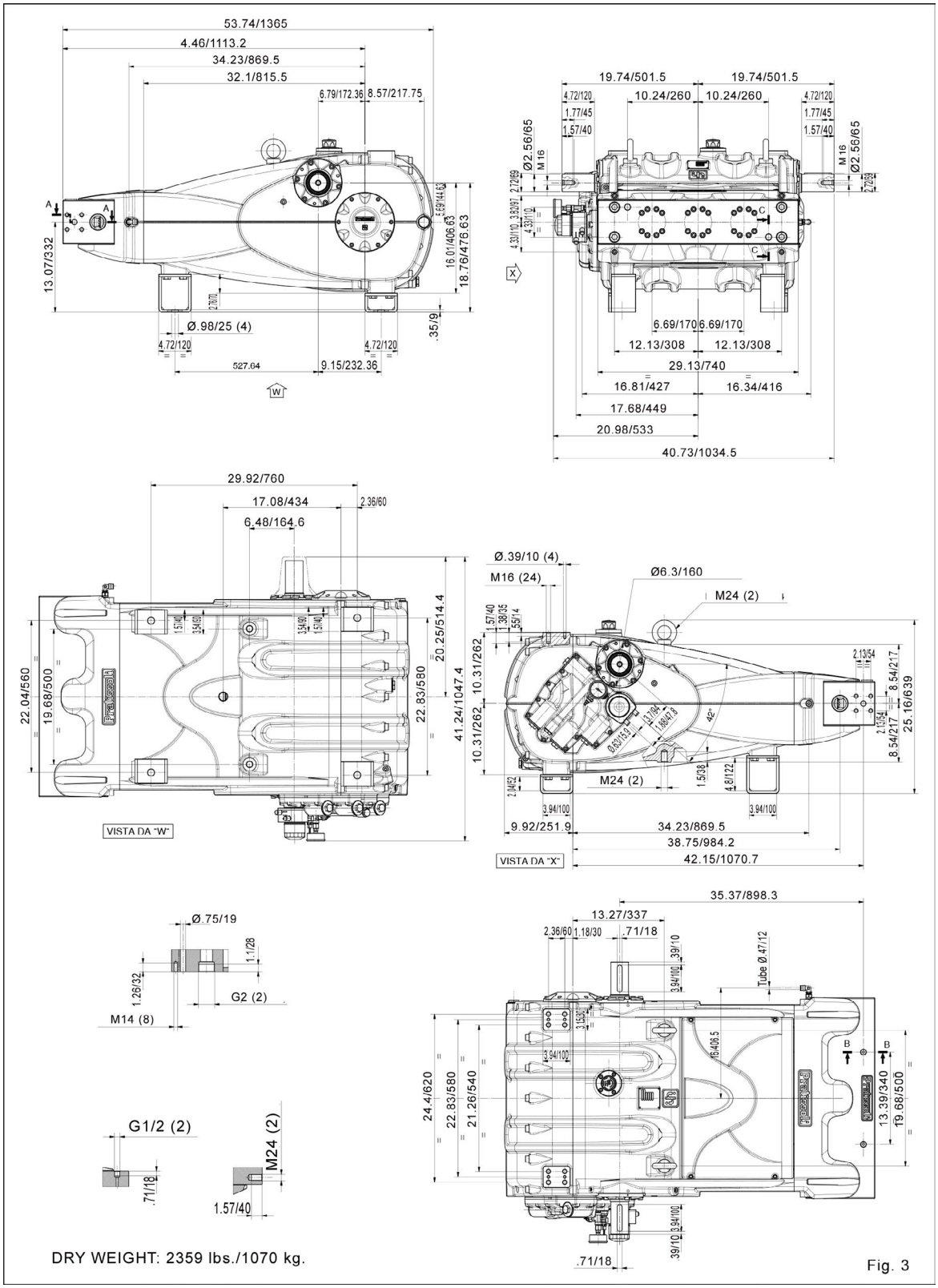
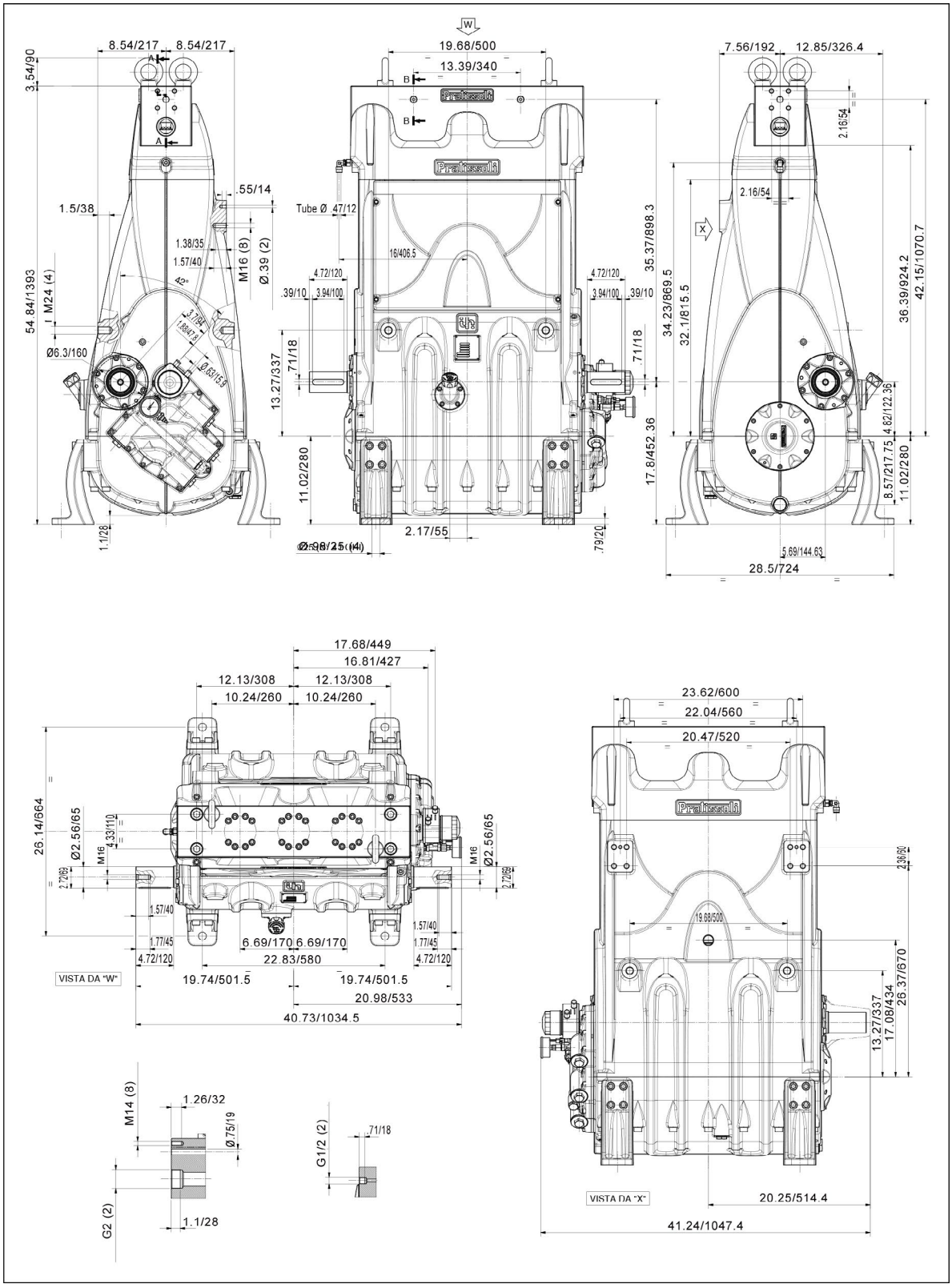


Fig. 3

6. DIMENSIONS AND WEIGHT

For dimensions and weight of TR Series VERTICAL, please refer to fig. 3a.



7. OPERATING INSTRUCTIONS

The TR/SR pumps are designed to operate with filtered water (see paragraph 9.7), in environments that are not potentially explosive.

Other fluids may be used only upon the approval of The Customer Service Department .

7.1 Water Temperature

The max water temperature is 86^0 F (30^0 C).

7.2 Max Flow Rate and Pressure Values

The performance values indicated in the catalog refer to the maximum performance of the pump. Regardless of the power used, pressure and maximum RPM values indicated on the plate may not be exceeded unless expressly authorized by the **Customer Service Department**.

7.3 Lowest RPM

The minimum speed allowed for these pumps is 250 RPM at the crankshaft. Any RPM value different from what is indicated in the performance table (see chapter 5) must be expressly authorized by the **Customer Service Department**.

7.4 Recommended Lubricant Oil Types & Manufacturers

The pump is delivered with lubricant oil compliant with room temperatures ranging between 14^0 and 104^0 F (-10^0 and 40^0C). Some recommended lubricant types are indicated in the table below; these lubricants are treated with additives in order to increase corrosion protection and resistance to fatigue. As an alternative, Automotive SAE 85W-90 gearing lubricants may also be used.

BRAND	TYPE
GENERAL PUMP	**SERIES 220**
ARAL	Aral Degol BG220
BP	ENERGOL HLP 220
CASTROL	Hyspin VG 220, Magna 220
ELF	POLYTELIS 220
ESSO	NUTO 220
FINA	Cirkan 220
FUCHS	RENOLIN 220
MOBIL	DTE OIL BB
SHELL	TELLUS C 220
TEXACO	RANDO HD 220
TOTAL	CORTIS 220

In any case, oil must be changed at least once a year since it may deteriorate by oxidation.

Used oil must be disposed of properly.

Check the oil level by using the oil level dipstick (1), fig. 4. Refill if necessary to top off level. Correct oil level inspection is done with the pump at room temperature; oil is changed with the pump at working temperature, by removing the plug (2), fig. 4. Use the plug (2a) for the vertical position.
Checking and changing oil is to be carried out as indicated in the table in fig. 14, Chapter 11. The amount required is 13.7 gallons (52 liters) for horizontal versions, and 9.7 gallons (37 liters) for vertical versions.

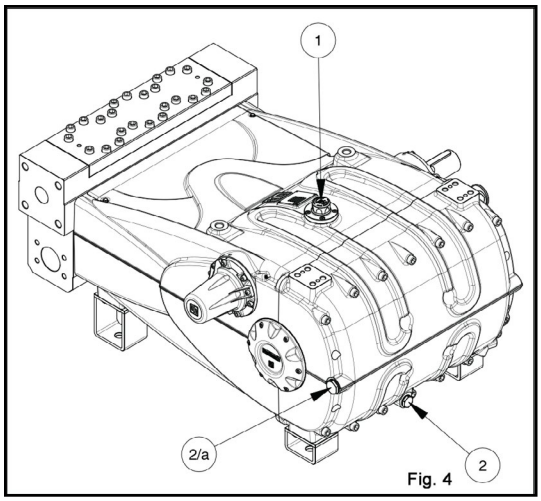


Fig. 4

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8. PORTS AND CONNECTIONS

SR-TR Series pumps are equipped with (see fig. 5 and fig. 6):

1. 2 inlet ports “IN”, SAE G2”
   Line connection to any of the two ports is indifferent for proper pump functioning. The unused ports must be sealed off.

2. 2 Ø75”/19mm outlet ports “OUT”, Outlet flanges

3. 2 service ports 1/2” Gas, can be used for the pressure gauge and the safety valve

4. 2 interchangeable ports of which one supplies closed and the other with an adjustable 90º rapid fitting for hoses. This line is used to recover the fluid drained from the packing cooling circuit, and must be connected to the drain port being careful to avoid counter-pressure.

5. 1 drain port, with G1” hole in the bottom of the cover to monitor any leakage of water due to preassure seals wear. If you find evidence of leaks, refer to the repair manual. **The port must always remain open and may be connected to a detection system if required.**

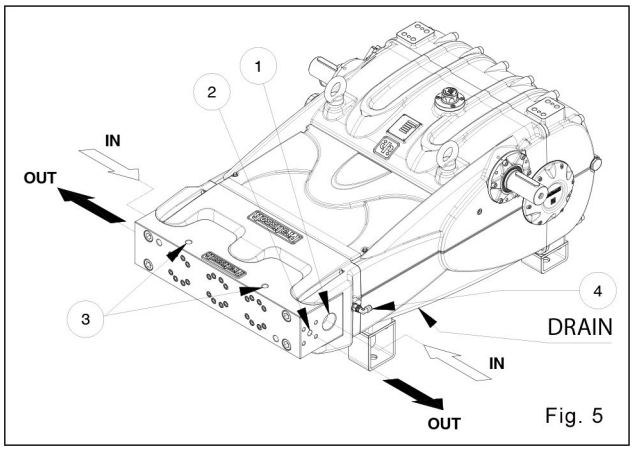


Fig. 5

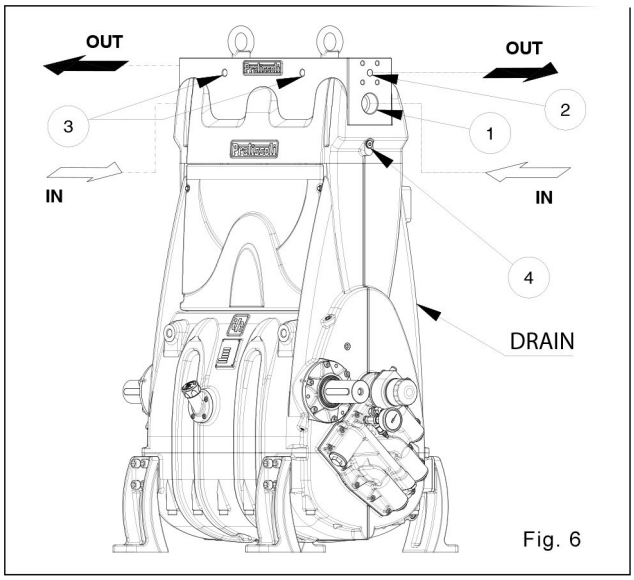


Fig. 6

8.1 **Conical sealing pads.**

SR-TR pumps are equipped with 4 conical steel pads to be used in correspondence with the pump’s outlet ports (see fig. 7) or in the optional fitting flanges. The function of the pads is to guarantee pressure-tightness of the connection. The seat of the pump’s outlet port is already machined in order to hold the conical pad; if it is necessary to make the connection for the outlet fitting or the closing plug, the connections must be specially machined as shown in fig. 8.

At each disassembly, the conic pads must be replaced.

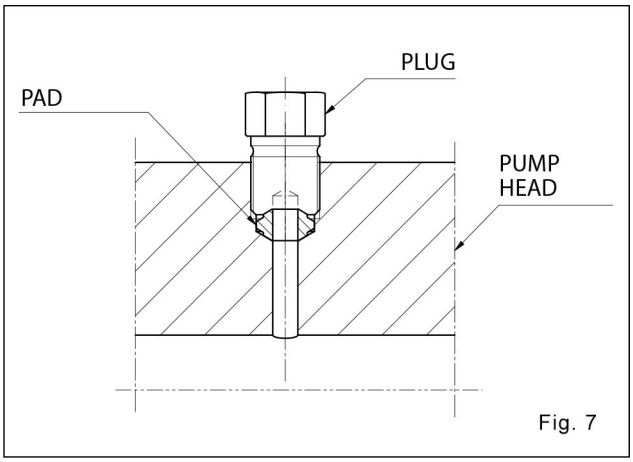


Fig. 7

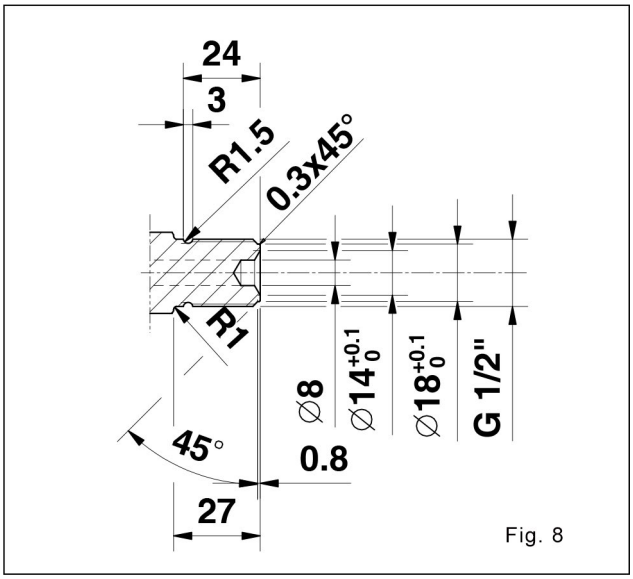
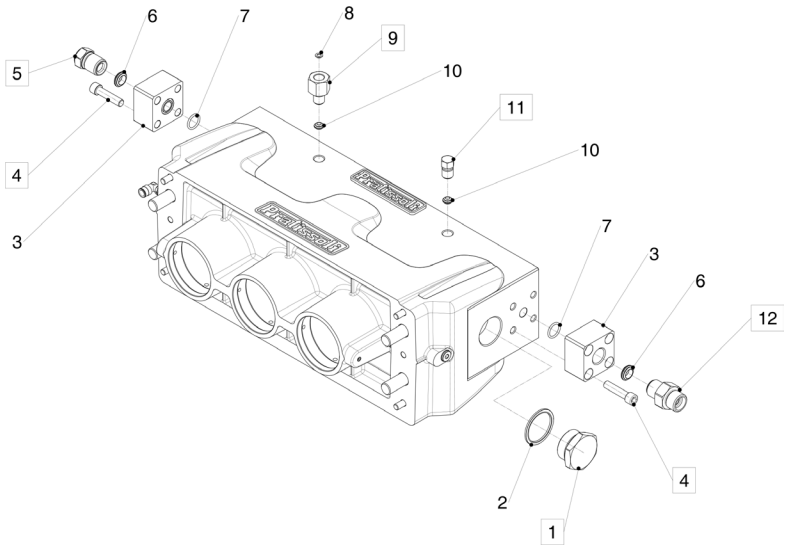


Fig. 8

8.1 Inlet and Outlet Layout Diagram

Pos	P/N	Description	QTY
1	F98244600	Plug, G 2x25, Inox	1
2	F93197700		1
3	F65214566	Flange, G1”	2
4	F99486200	Screw, TCEI M14x60	8
5	F36023256	Plug, G1”	1
6	F36274866		2
7	F90404500	O-ring, Ø24.99x3.53	2
8	680081		1
9	680038		1
10	F93174000		2
11	680089	Plug, G1/2”	1
12	F36023166	Nipple, M-M, G1-M24x1.5	1
	F36023066	Nipple, M-M, G1-M36x2	1



TORQUE SPECS		
POS.	**FT. LBS**	**NM**
1	73.8	100
4	154.9	210
5	280.3	380
9	88.5	120
11	88.5	120
12	280.3	380

9. PUMP INSTALLATION

9.1 Installation

The fixing hole on the feet are approx. 1” (25 mm) in diameter. The base must be perfectly flat and rigid enough as not to allow bending or misalignment on the pump coupling axis/transmission due to torque transmitted during operation. There are 4 M24 holes on the pump to accept lifting eyebolts to facilitate installation of the unit, as shown in the figures below.

The eyebolts are sized for lifting the pump only and must never be used to handle additional loads.

Remove the oil filler plug located on the cover and replace it with the oil level dipstick. The dipstick must always be accessible.

The pump’s shaft (PTO) must not be rigidly connected to the motor unit.
The following transmission types are suggested:
- Flexible coupling
- Universal joint (comply with the maximum working angles recommended by the manufacturer).

9.2 Direction of rotation

The rotation direction can be clockwise or counter-clockwise either on the left or right side (see fig. 8).

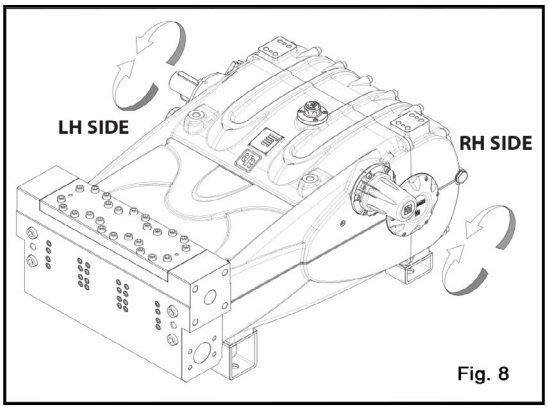


Fig. 8

Drive can be connected to the pump on either side; on the **LEFT SIDE** pay attention to the protrusion of the lube pump. The end cover must be fitted over the unused PTO.

9.3 Hydraulic Connections

In order to isolate the circuit from the vibrations produced by the pump the first section of the hose adjoining the pump (both inlet and outlet) must be flexible. The inlet hose must be sufficiently rigid to prevent deformation due to pressure exerted by the action of the pump.

9.4 Pump Supply

SR-TR pumps must always be installed with a pressure supply delivered by a booster pump. The booster pump must have at least twice the flow rate of the rated flow rate of the plunger pump and minimum pressure of 72.5 PSI (5 bar). These supply conditions must be observed at all operating speeds.

The booster pump must always be started before the plunger pump. It is advisable to install a pressure switch on the supply line downstream of the filters protecting the pump.

9.5 Suction Line

For the pump's correct operation, the suction line must have the following characteristics:

1. Minimum internal diameter as indicated in the diagram in paragraph 9.8, and in any case equal or greater than the pump head's value. Along the duct, avoid localized diameter reductions that may cause pressure drops with subsequent cavitation. **Absolutely avoid 90⁰ elbows**, connections with other hoses, bottlenecks, counter-slopes, upside down "U" shaped curves, "T" connections.
2. With a layout that is set in such a way to prevent cavitation.
3. It should be perfectly airtight, and built in a way that guarantees perfect sealing over time.
4. Avoid pump emptying when stopping (even partial emptying).
5. Do not use hydraulic fittings, 3 or 4 way fittings, adapters, etc., since they may hinder the pump's performance.
6. Do not install Venturi tubes or injectors for detergent intake.
7. Avoid the use of standing valves, check valves, or any other type of one-way valves.
8. Do not connect the by-pass line from the valve directly to the pump suction line.
9. Provide appropriate baffle plates inside the tank in order to avoid water flows coming from both the by-pass and feeding which lines may create turbulence near the tank's outlet port.
10. Make sure that the suction line is perfectly clean inside before connecting it to the pump.
11. Install the pressure gauge for checking the booster pressure near the plunger pump suction port and always downstream from the filters.

9.6 Filtering

Three filters must be installed on the pump suction line, positioned as indicated in Fig. 11 and 11a.

With the manual adjustment valve:

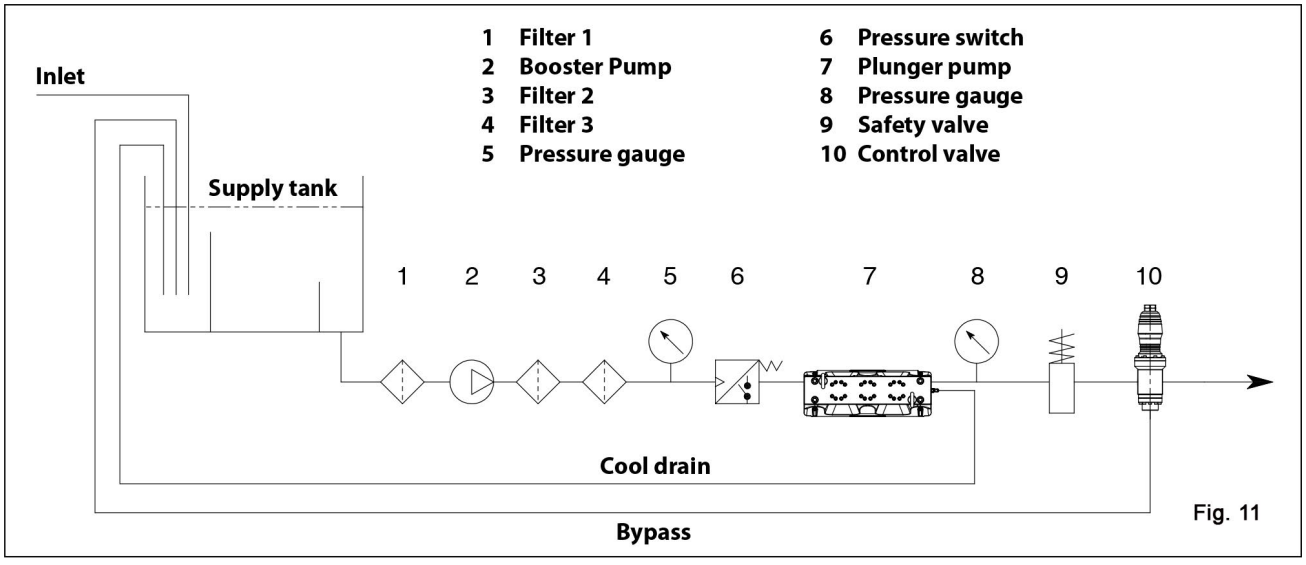


Fig. 11

With pneumatic control valve

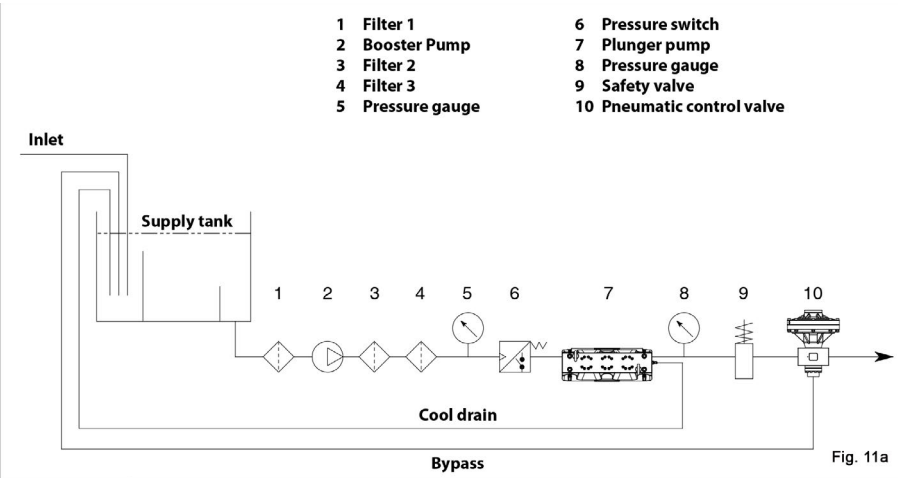


Fig. 11a

The filter must be installed as close as possible to the pump, should allow easy inspection and have the following characteristics:

1. Minimum capacity 3 times greater than the pump's rated flow value.
2. Filter port diameters must not be smaller than the pump inlet ports.
3. Filtration degree ranging between 200 and 360 µm.

In order to guarantee correct pump operation, it is important to plan periodical cleaning of the filter depending on actual pump usage, water quality and actual clogging conditions.

9.7 Outlet Line

To obtain a correct delivery line, please comply with the following installation instructions:

1. The internal diameter of the hose must allow to guarantee correct fluid speed; see digram in paragraph 9.9
2. The first section of the hose connected to the pump must be flexible in order to isolate pump vibrations from the rest of the system.
3. Use high pressure hoses and fittings that guarantee wide safety margins in any working condition.
4. Install a safety valve on the delivery line.
5. Use pressure switches suitable for the pulsating loads typical of plunger pumps.
6. In the design phase, take into proper account the pressure drop along the line, since this causes a reduction in usage pressure with respect to the value measured at the pump.
7. If the pump pulsations are harmful for particular applications, install an appropriately sized pulsation dampener on the outlet line.

9.8 Internal Hose Diameters

The following table show the internal diameter values for the suction and outlet hoses.

SR PUMPS		
MODEL	**SUCTION**	**OUTLET**
SR26	G2"	G1" M24x1.5 M26x2
SR30		
SR32		
SR26		

TR PUMPS		
MODEL	**SUCTION**	**OUTLET**
TR26	G2"	G1" M24x1.5 M26x2
TR30		
TR32		
TR36		

9.9 Water/Oil Heat Exchanger Connection

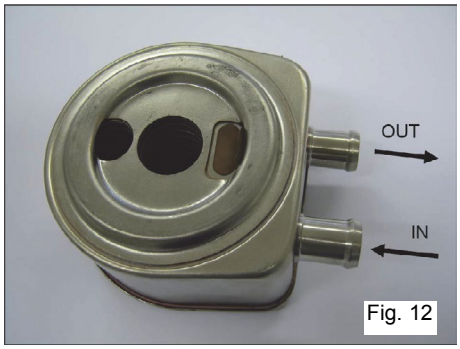


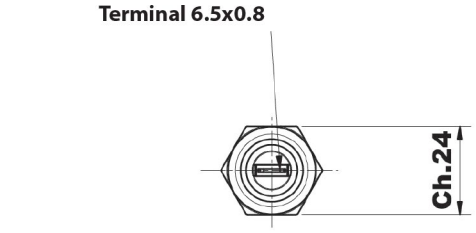
Fig. 12

For optimal performance connect the exchanger in the reverse flow direction (see fig. 10).
Water flow rate:
a) Maximum efficiency 6.6 GPM (25 LPM)
b) Medium efficiency 5.3 GPM (20 LPM)
c) Minimum efficiency 3.2 GPM (12 LPM)

If the pump operates in ambient temperatures below 41° F (5° C) the heat exchanger is not essential. Refer to Section 11 for maintenance information

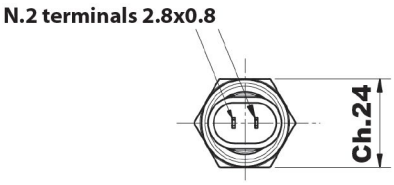
9.10 Lube Pump Assembly

1) Oil filter cartridge - to be hand-tightened. Refer to chapter 11 for maintenance information.
2) 0 - 232 PSI pressure gauge for periodic lube oil pressure checks
3) Pressure switch: NORMALLY OPEN (normally closed on request); 12V. For stationary units it is good practice to connect the pressure switch via a protection system.
4) Oil thermostat: NORMALLY CLOSED; 12V.



PRESSURE SWITCH CONNECTION

TRIP PRESSURE: 4.4 PSI



TEMPERATURE INDICATOR SWITCH CONNECTIONS

TRIP TEMPERATURE: 221° F

10. START-UP AND OPERATION

10.1 Preliminary Inspections

Before Start-up Be sure that:

The suction line is connected and up to pressure (see Chapter 9) the pump must never run dry.

1. The suction line must be perfectly airtight.
2. All the On-Off valves between the pump and the feeding source are completely open. The delivery line must discharge freely in order to allow the air in the pump to be expulsed easily, thus facilitating pump priming.
3. All suction/delivery connections and fittings must be correctly tightened.
4. Coupling tolerances on the pump/transmission axis (half-joint misalignment, angle of universal joint, etc.) must remain within the limits indicated by the transmission Manufacturer.
5. The pump's oil level must be verified using the correct dipsticks (position 1, fig 11 and 11a) on the top of the crankcase.

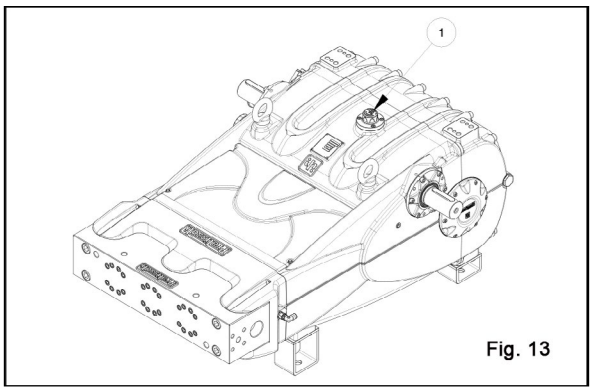


Fig. 13

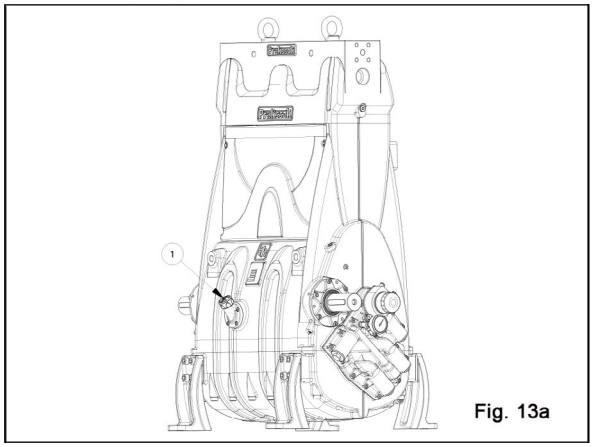


Fig. 13a

In case the pump has not run for a long period of time, make sure the suction and outlet valves are functioning correctly.

10.2 Start-up

1. The pump must be started off-load.
2. Verify correct feeding pressure.
3. During operation, check that the rotating speed does not exceed the rated value.
4. Before putting the pump under pressure let it run for at least 3 minutes.
5. Before stopping the pump, release the pressure using the control valve or any pressure relieving device and reduce to a minimum RPM.

10.3 Start-up

During operation, a certain amount of water coming from the seal packing cooling unit is discharged from the Port 1 (fig. 14). The draining of this circuit must be sent back to the suction line before the booster pump (fig. 14), or to a tank for collection.

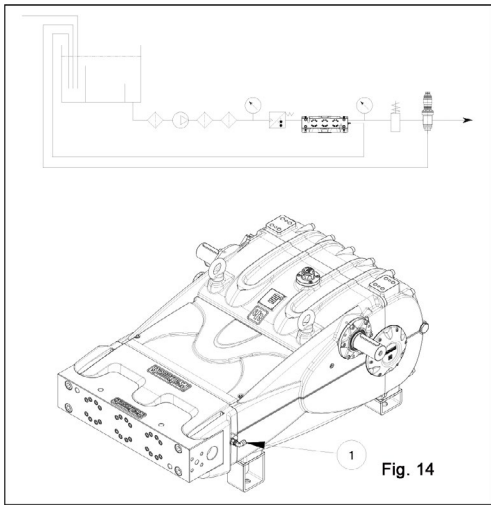


Fig. 14

11. PREVENTIVE MAINTENANCE

To guarantee pump reliability and efficiency, comply with the maintenance intervals as indicated in the table below.

PREVENTIVE MAINTENANCE		
EVERY 1000 HOURS	**EVERY 1500 HOURS**	**EVERY 3000 HOURS**
Check oil level		
	Check / Replace:* • Valves • Valve seats • Valve springs • Valve guides	Oil and oil filter change Bellows Replacement (vertical versions)
	Check / Replace: • H.P packings • L.P. packings	

* For replacement follow instructions contained in the repair manual.

11.1 Bellows (SR-TR vertical versions)
Check that the bellows fastening clamps are properly tightened after the first **1,000** hours of operation. **Replace the bellows every 3,000 hours of operation.** To replace, follow the instructions given in the **repair manual**.

11.2 Water/oil heat exchanger
The heat exchanger cleaning intervals must be established on the basis of the water hardness of the application. It is good practice to clean the exchanger every **2,000 hours if water hardness is ≤ 30° f; every 1,000 hours for hardness > 30° f and ≤ 40° f. Above 40° f water hardness the exchanger should be cleaned every 500 hours.** Flush the exchanger using commercial antiscale products; it is not necessary to dismantle the unit. NOTE: the heat exchanger is constructed of **Stainless Steel**.

12. PUMP STORAGE

12.1 Long-term Inactivity
If the pump is started for the first time after a long period from the date of shipment, before operation, check the oil level, inspect the valves as specified in Chapter 10, then follow described star-up procedures.

12.1 Filling the Pump With An Anti-Corrosion Emulsion or Anti-freeze By Using An External Diaphragm Pump As In The Layout Shown in Paragraph 9.7.
- In place of the service tank, use a suitable container containing the solution to be pumped.
- Close the filter drainage, if open.
- Make sure that the hoses to be used are clean inside and spread grease on their connections.
- Connect the high pressure exhaust hose to the pump
- Connect the suction hose to the diaphragm pump
- Connect the suction hose between the pump head and the diaphragm pump.
- Fill the service container with solution.
- Insert the free ends of the suction hose and the high pressure exhaust hose inside the container.
- Switch on the diaphragm pump.
- Pump the solution until it exits from the high pressure hose.
- Continue pumping for at least another minute.
- Stop the pump and remove the previously connected hoses.
- Clean, grease and plug the connections on the pump head.

12.2 Hoses
a) Before greasing and protecting hoses according to previously described procedure, dry connections with compressed air.
b) Cover with polyethylene
c) Do not wrap too tightly; ensure that there are no folds.

13. PRECAUTIONS AGAINST FREEZING

In areas and periods of the year where there is risk of freezing, follow the instructions indicated in Chapter 12.

In the presence of ice, in no case must the pump be started until the entire circuit has been completely thawed out; not complying with this indication may cause serious damage to the pump.

14. WARRANTY TERMS

The pump is guaranteed for a period of 5 years from the delivery date, with the exception of parts subject to wear. In any case, please refer to the contract terms for other warranty conditions. The warranty is void if:
a) The pump has been used for purposes that differ from that agreed.
b) The pump has been fit with an electric or diesel engine with performance greater than that indicated in the table.
c) The required safety devices were un-adjusted or disconnected.
d) The pump was used with accessories or spare parts not supplied by General Pump.
e) Damage was caused by:
   1) improper use
   2) the non-observance of maintenance instructions
   3) use not compliant with operating instructions
   4) insufficient flow rate
   5) faulty installation
   6) incorrect positioning or sizing of the hoses
   7) non-authorized design changes
   8) cavitation

15. TROUBLESHOOTING

The pump does not produce any noise at start-up:
- The pump is not primed and is running dry
- There is no water in the inlet line
- The valves are blocked
- The delivery line is closed and does not allow the air in the pump to be discharged

The pump pulses irregularly (knocking):
- Air suction
- Insufficient feeding
- Bends, elbows, fittings along the suction line obstruct the fluid's passage
- The inlet filter is dirty or too small
- The booster pump, where provided, supplies insufficient pressure or flow rate
- The pump is not primed due to insufficient head or the delivery line is closed during priming
- The pump is not primed due to valve seizing
- Worn valves
- Worn pressure packings
- Incorrect operation of the pressure adjustment valve
- Transmission problems

The pump does not deliver the rated flow / is noisy:
- Insufficient feeding (see the causes listed above)
- RPM are less than the rated flow
- Excessive amount of water by-passed by the pressure adjustment valve
- Worn valves
- Leakage from the pressure packings
- Cavitation due to:
  1) Wrong sizing of the suction hose/ undersized diameters
  2) Insufficient flow rate
  3) High water temperature

Insufficient pump pressure:
- The nozzle (or has become)too large
- Insufficient RPM
- Leakage from the pressure packings
- Incorrect operation of the pressure adjustment valve
- Worn valves

Overheated pump:
- The pump is overloaded (pressure or RPM exceed the rated values)
- Oil level is too low, or the oil is not of a suitable type, indicated in Chapter 7 (see paragraph 7.4)
- Incorrect alignment of the joint or pulleys
- Excessive inclination of the pump during operation

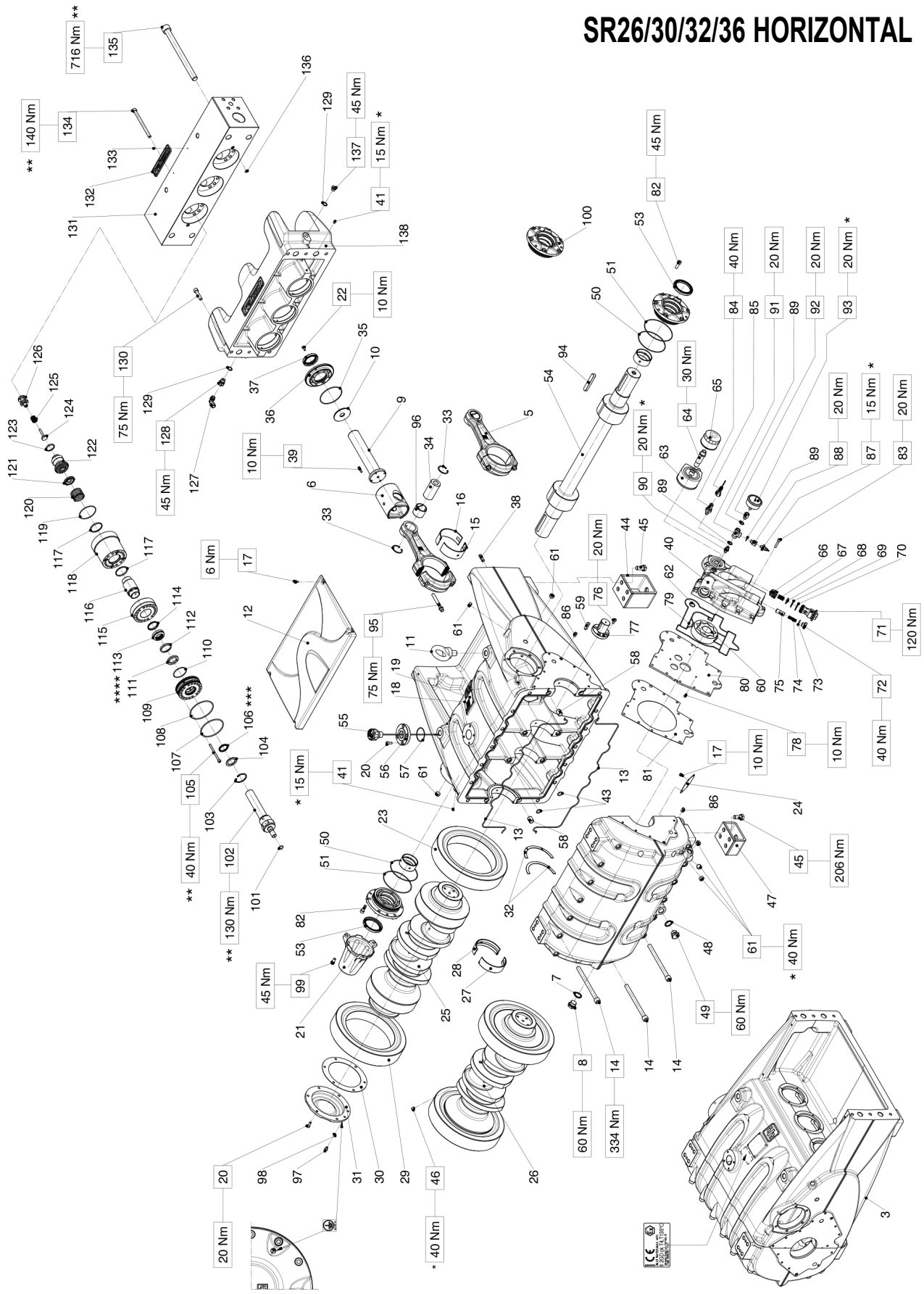
Pump vibrations or knocking:
- Air suction
- Incorrect operation of the pressure adjustment valve
- Valve malfunction
- Irregular drive transmission motion

15. TROUBLESHOOTING (cont.)

FAULT	POSSIBLE CAUSE	CORRECTIVE ACTION
No noise from pump at start-up	No water at inlet. Valves jammed. Outline is closed and thus prevents the release of air trapped in the pump manifold.	Check booster pump operation and flow rate. Check operation of the valves. Check for possible problems on the outlet line.
Insufficient pressure	Leaks from pressure control valve or incorrect pressure setting. Defective set of valve seats. Suction or discharge valves damaged. Leaks from manifold.	Identify leaks and repair. Repair leaks or restore pressure setting Fit new seals Renew suction and discharge valves. Check condition of valve springs. Check manifold seals and replace if necessary; fit new manifold
Excess pump running noise	Worn valves. Undersized suction hoses and/or filters. Insufficient flow rate, high water temperature, clogged filter.	Check installation and components on suction line; measure water temperature.
Irregular hammering of hoses.	Air suction and/or insufficient water supply. Bends, elbows, and fittings on the suction line are choking the passage of liquid. Supply filter is clogged or undersized. Booster pump supplies insufficient pressure and/or flow rate.	Check installation and components on suction line. Check booster pump operation and flow rate. Clean or replace supply filter.
Water leak from gaskets supports	Low pressure gasket defective/worn.	Replace low pressure gasket.
Pump overheats	Pump pressure and/or speed are higher than rated pressure/speed. Low oil level in pump crankcase or oil not recommended type. Coupling or driveline not aligned.	Restore correct pressure and/or speed. Top up oil level; change oil if necessary. Check transmission.
Oil leaks from pump crankcase	Piston guide rod oil seal defective/worn. Various crankcase gaskets defective/worn. For vertical versions check condition of bellows.	Replace oil seal, bellows and gaskets.
Emulsified oil ejected from breather. Oil dipstick shows signs of emulsion.	Lube oil contaminated with pumped liquid.	Check correct operation of piston guide oil seals (or of bellows) and change lube oil

16.1 EXPLODED VIEW AND PARTS LIST

SR26/30/32/36 HORIZONTAL



Item	Part #	Description	QTY.
3	F65010801	Crankcase	1
5	F65030601	Connecting Rod	3
6	F79050043	Piston Guide	3
	F79050243	Piston Guide, ± 1.0	
7	F93198000	Washer, Seal, Ø 3/4"	1
8	F98226500	Plug, G 3/4" x16	1
9	F65050566	Piston Guide Stem	3
10	F65210566	Splashguard	3
11	F93108000	Eyebolt	3
12	F65150853	Upper Crankcase Cover	1
13	F65214082	Seal, Ø 3.53x530	2
14	F99522400	Screw, M16x200	22
15	F90932300	Upper Babbitt	3
	F90932400	Upper babbitt, +0.25	
	F90932500	Upper babbitt, +0.50	
16	F90932000	Lower Babbitt	3
	F90932100	Lower Babbitt, +0.25	
	F90932200	Lower Babbitt, +0.50	
17	F99182000	Screw, M6x12	8
18	F91570000	Rivet, Ø 2.5x5	4
19	F97826800	Pump Plate	1
20	F99305900	Screw, M8x20	10
21	F65150920	Crankshaft End Cover	1
22	F99185300	Screw, M6x16	6
23	F10081555	Gear, SX Z81 R 2.90, Helical	1
	F10081755	Gear, SX Z83 R 3.46, Helical	
	F10081955	Gear, SX Z89 R 4.23, Helical	
24	F65210874	Oil Filter	1
25	F65020555	Crankshaft Elbow	1
26	F65020701	Bearing, C: 90, R: 2.90	1
	F65020801	Bearing, C: 90, R:3.46	
	F65020901	Bearing, C: 90, R:4.23	
27	F90935000	Upper Bushing	4
	F90935100	Upper Bushing, +0.254	
	F90935200	Upper Bushing, +0.5.8	
28	F90934700	Lower Bushing	4
	F90934800	Lower Bushing, +0.254	
	F90934900	Lower Bushing, +0.508	
29	F10081455	Gear, DX Z81 R 2.90, Helical	1
	F10081655	Gear, DX Z83 R. 3.43, Helical	
	F10081855	Gear, DX Z89 R. 4.23, Helical	
30	F65210984	Front Cover Seal	1
31	F65150620	Crankshaft Cover	1
32	F90935300	Half ring	2
33	F90075500	Ring, Seeger, Ø 45	6
34	F97747000	Pin, Ø 45x86	3
35	F90392000	O-ring, Pin, Ø 101.27x2.62	3
36	F79210022	Piston Guide Seal Cover	3
37	F90171500	Ring, Rad, Ø 50x70x10/11.5	3
38	F97630000	Pin, Ø 12x40	2
39	F99189700	Screw, M6x24	12
40	F79212420	Pump Oil Body	1
41	F98193000	Plug, Conical, M8x1	2
43	F90384500	O-ring, Ø 18.72x2.62	4
44	F65200602	Front Pump Feet	2
45	F99513300	Screw, M16x35	16
46	F99425000	Screw, M12x12	2
47	F65200502	Rear Pump Feet	2
48	F93198000	Washer, 3/4"	1
49	F98226500	Plug, 3/4"x16	1
50	F90392650	O-ring, Ø 126.67x2.62	2
51	F90380500	O-ring, Ø 132.00x2.50	2
53	F90190000	Ring, Rad. Ø 70x90x10	2
54	F10081155	Pinion, Z28 R. 2.90, Helicol	1
	F10081255	Pinion, Z24 R. 3.46, Helicol	
	F10081355	Pinion, Z21 R. 4.23, Helicol	
55	F98234050	Oil Dipstick, 1"x343	1
56	F65211254	Oil Dipstick Support	1
57	F90389800	O-ring, Ø 56.82x2.62	1
58	F79211689	Bushing	4
59	F91499500	Key, 12x8x40	1
60	F79211907	Oil Pump Rotor	1
61	F98215500	Plug, Conical, M20x1.5	6
62	F90385200	O-ring, Ø 22.22x2.62	6
63	F65213700	Exchanger, Water-Oil	1

Item	Part #	Description	QTY.
64	F65213864	Fitting, Oil Filter Exchanger	1
65	F92899000	Oil Filter, M20	1
66	F36200951	Inlet Valve Guide	4
67	F94744000	Spring,15.4x26.5	4
68	F36201076	Valve, Spherical	4
69	90386500	O-ring, Ø 29.82x2.62	4
70	F90387300	O-ring, Ø 36.14x2.62	4
71	F79213964	Valve Cage	4
72	F98213780	Plug, M18x11	1
73	F96741000	Washer, Ø 18.2x24x1.5	1
74	F94739000	Spring, 10.8x37.9	1
75	F79213664	Piston Valve, H.P.	1
76	F99303900	Screw, M8x16	4
77	F79212654	Control, Oil Pump	1
78	F99185100	Screw, M6x16	3
79	F79212747	Oil Seal, Oil Pump	1
80	F79212874	Plate, Oil Pump	1
81	F79212984	Seal, Oil Pump Plate	1
82	F99368600	Screw, M10x30	12
83	F99311600	Screw, M8x40	15
84	F93510500	High Temperature Light	1
85	F93551500	Connector, High Temperature Light	1
86	F79213589	Bushing, Oil Pump	2
87	F93555500	Pressure Switch, 12V	1
88	F94513100	Connector, M-F, 1/4"-M10x1	1
89	F96723000	Washer, Ø 13.5x19x1.5	3
90	F95256000	Connector, M-M, NPT 1/4"-G1/4"	1
91	F96310000	Connector, T, F-F-F, G1/4"	1
92	F95256600	Nipple, M-F, G1/4"	1
93	F94607000	Pressure Gauge	1
94	F91505000	Key, 18x11x100	1
95	F99441000	Screw, Connecting Rod	6
96	F90918500	Bushing, Connecting Rod	3
97	F99301900	Screw, M8x10	3
98	F96701750	Washer, Ø8.4x15x0.8	1
99	F99365200	Screw, M10x20	3
100	F65700501	Cover, Pinion, PTP	2
101	F90359600	O-ring, Ø 18.77x1.78	3
102	F65041601	Plunger, complete Ø 26	3
	F65041701	Plunger, complete Ø 30	
	F65041801	Plunger, complete Ø 32	
	F65041901	Plunger, complete Ø 36	
103	F90078000	Restop Ring, SR26, 30, 32	3
	90079700	Restop Ring, SR36	
104	F78211656	Packing, Ø 26	3
	F78211856	Packing, Ø 30	
	F65217056	Packing, Ø 32	
	F65217156	Packing, Ø 36	
105	F99216100	Screw, M8x100	54
106	F90274920	Packing, Ø 26x34x8.0, LP	3
	F90276300	Packing, Ø 30x38x6.0, LP, LP	
	F90278100	Packing, Ø 32x40x6.0, LP	
	F90280100	Packing, Ø 36x44x8.0, LP	
107	F90414600	O-ring, Ø 4x3.53	3
108	F90414700	O-ring, Ø107.5x3.53	3
109	F65216656	Support Seal, Ø 26, LP	3
	F65216756	Support Seal, Ø 30, LP	
	F65216856	Support Seal, Ø 32, LP	
	F65216956	Support Seal, Ø 36, LP	
110	F90389300	O-ring, Ø53.65x2.62, SR26, 30, 32	3
	F90390000	O-ring, Ø56.42x2.62, SR36	
111	F65216060	Bushing Seal, Ø 26	3
	F78213660	Bushing Seal, Ø 30	
	F65216160	Bushing Seal, Ø 32	
	F65216260	Bushing Seal, Ø 36	
112	F65215768	Anti-extrusion Ring, Ø 26	3
	F78213068	Anti-extrusion Ring, Ø 30	
	F65215868	Anti-extrusion Ring, Ø 32	
	F65215968	Anti-extrusion Ring, Ø 30	
113	F90274930	Packing, Ø 26x40x16.5, HP	3
	F90277800	Packing, Ø 30x46x17.8, HP	
	F90278900	Packing, Ø 32x46x16.4, HP	
	F90282500	Packing, Ø 36x52x18.4, HP	

Item	Part #	Description	QTY.
114	F65215360	Head Ring, Ø 26	3
	F65215460	Head Ring, Ø 30	
	F65215560	Head Ring, Ø 32	
	F65215660	Head Ring, Ø 36	
115	F65216356	Support Seal, Ø 26, HP	3
	F65216456	Support Seal, Ø 30, 32, LP	
	F65216556	Support Seal, Ø 36, LP	
116	F65214982	Plunger Bushing, Ø 26	3
	F65215082	Plunger Bushing, Ø 30	
	F65215182	Plunger Bushing, Ø 32	
	F65218282	Plunger Bushing, Ø 30	
117	F93198760	Seal, Ø 40x45x3.95, SR26	6
	F93198950	Seal, Ø 46x51x3.95, SR30, 32	
	F93199800	Seal, Ø 52x57x3.95, SR36	
118	F65061056	Piston Sleeve, Ø 26	3
	F65061156	Piston Sleeve, Ø 30, 32	
	F65061256	Piston Sleeve, Ø 36	
119	F90391450	O-ring, Ø 75.87x2.62	3
120	F94767000	Spring, 36x51.7, SR26	3
	F94770800	Spring, 41.5x51.2, SR30, 32	
	F94772300	Spring, 47.2x61.2, SR36	
121	F36214656	Plate Valve, Ø 26	3
	F36214556	Plate Valve, Ø 30, 32	
	F26214756	Plate Valve, Ø 36	
122	F36214356	Valve Seat, Ø 26	3
	F36214256	Valve Seat, Ø 30, 32	
	F36214456	Valve Seat, Ø 36	
123	F93198730	Seal, Ø 36x41x3.95	

Item	Part #	Description	QTY.
124	F36208356	Valve Ø 20-22-24, SR26, 30, 32	3
	F36208456	Valve, Ø 26-28-30, SR36	
125	F94747600	Spring, 18.0x35, SR26, 30, 32	3
	F94748900	Spring, 18.9x35, SR36	
126	F36214160	Valve guide	3
127	F96416400	Fitting, 90°, G3/8	1
128	F78214566	Fitting, Ø 3-3/8Mx3/8F	1
129	F96738000	Washer, Ø 17.5x23x1.5	2
130	F99433500	Screw, M12x50.59	4
131	F65120756	Manifold	1
132	F97827600	Label	1
133	F91570300	Rivet, Ø 2.5x8	2
134	F99449000	Screw, M12x160	24
135	F99537100	Screw, M24x2x300	4
136	F90382101	O-ring, Ø 9.19x2.62	2
137	F98208600	Plug, G3/8x12	1
138	F65214713	Manifold spacer, HP, SR	1

REPAIR KITS

KIT NUMBER	**F2323 Plunger Packing Kit SR26**	**F2324 Plunger Packing Kit SR30**	**F2325 Plunger Packing Kit SR32**	**F2326 Plunger Packing Kit SR36**
Positions Included	106, 107, 108, 110, 111, 112, 113, 117, 119, 136	106, 107, 108, 110, 111, 112, 113, 117, 119, 136	106, 107, 108, 110, 111, 112, 113, 117, 119, 136	106, 107, 108, 110, 111, 112, 113, 117, 119, 136

KIT NUMBER	**F2327 Valve Kit SR26**	**F2335 Valve Kit SR30 & SR32**	**F2336 Valve Kit SR36**
Positions Included	117, 119, 123	117, 119, 123	117, 119, 123

KIT NUMBER	**F2328 Inlet/Outlet Valve Kit SR26**	**F2329 Inlet/Outlet Valve Kit SR30 & SR32**	**F2330 Inlet/Outlet Valve Kit SR36**
Positions Included	117, 119, 120, 121, 122, 123, 124, 125, 126	117, 119, 120, 121, 122, 123, 124, 125, 126	117, 119, 120, 121, 122, 123, 124, 125, 126

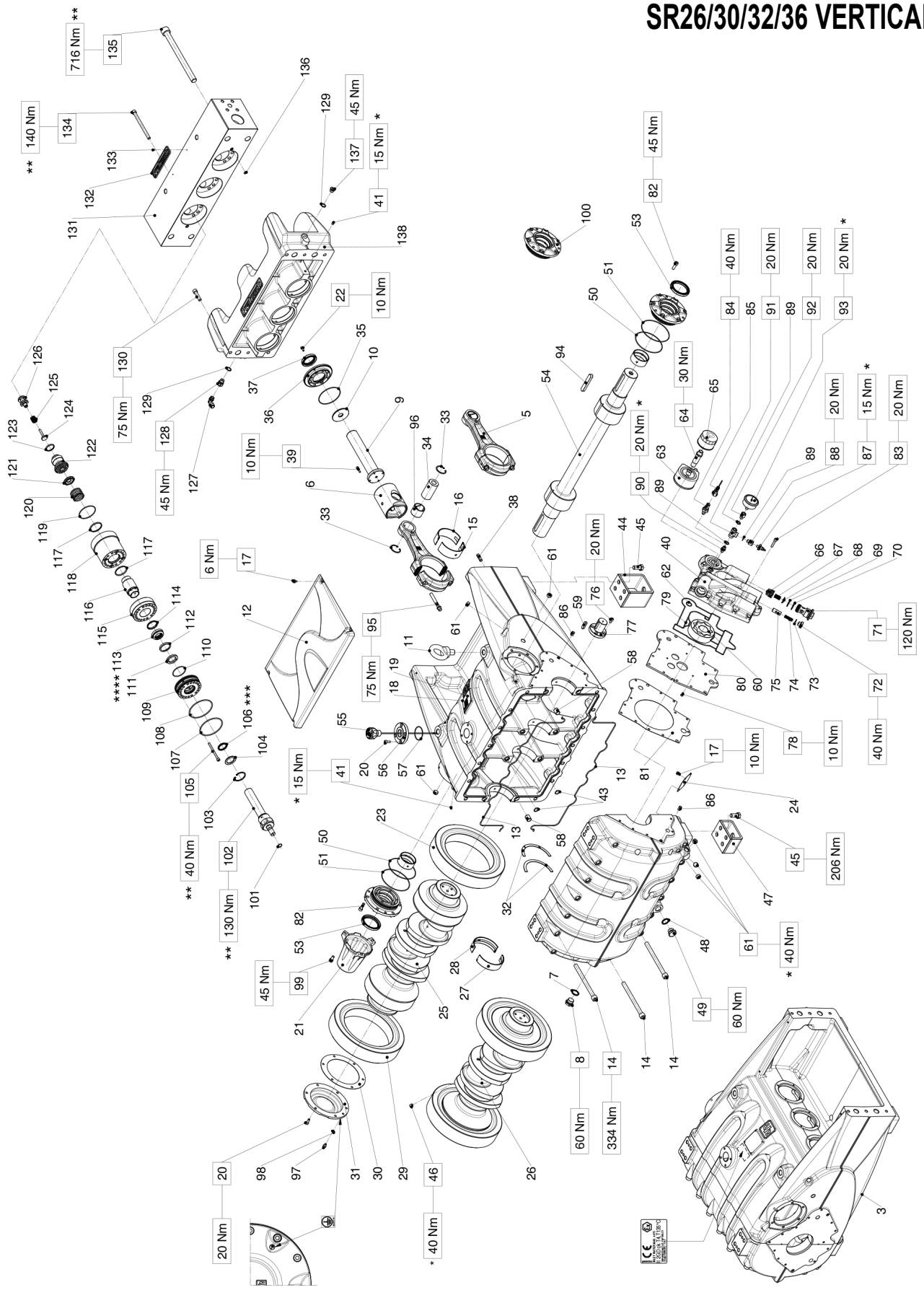
KIT NUMBER	**F2331 Complete Seals Kit SR26**	**F2332 Complete Seals Kit SR30**	**F2333 Complete Seals Kit SR32**	**F2334 Complete Seals Kit SR36**
Positions Included	13, 30, 35, 37, 41, 50, 51, 53, 57, 62, 69, 70, 79, 81, 101, 106, 107, 108, 110, 111, 112, 113, 117, 119, 123, 136	13, 30, 35, 37, 41, 50, 51, 53, 57, 62, 69, 70, 79, 81, 101, 106, 107, 108, 110, 111, 112, 113, 117, 119, 123, 136	13, 30, 35, 37, 41, 50, 51, 53, 57, 62, 69, 70, 79, 81, 101, 106, 107, 108, 110, 111, 112, 113, 117, 119, 123, 136	13, 30, 35, 37, 41, 50, 51, 53, 57, 62, 69, 70, 79, 81, 101, 106, 107, 108, 110, 111, 112, 113, 117, 119, 123, 136

KIT NUMBER	**F2265 Shaft Bushing Kit (Standard)**	**F2266 Shaft Bushing Kit (+0.25)**	**F2267 Shaft Bushing Kit (+0.50)**
Positions Included	27, 28, 32	27, 28, 32	27, 28, 32

KIT NUMBER	**F2186 Connecting Rod Bushing Kit (Standard)**	**F2187 Connecting Rod Bushing Kit (+0.25)**	**F2188 Connecting Rod Bushing Kit (+0.50)**
Positions Included	15, 16	15, 16	15, 16

16.2 EXPLODED VIEW AND PARTS LIST

SR26/30/32/36 VERTICAL



Item	Part #	Description	QTY.
3	F65010801	Crankcase	1
5	F65030601	Connecting Rod	3
6	F79050043	Piston Guide	3
	F79050243	Piston Guide, ± 1.0	
7	F93198000	Washer, Seal, Ø 3/4"	1
8	F98226500	Plug, G 3/4" x16	1
9	F65050566	Piston Guide Stem	3
10	F90392000	O-ring, Ø 101.27x2.62	3
11	F93108000	Eyebolt	3
12	F65150853	Upper Crankcase Cover	1
13	F65214082	Seal, Ø 3.53x530	2
14	F99522400	Screw, M16x200	22
15	F90932300	Upper Babbitt	3
	F90932400	Upper babbitt, +0.25	
	F90932500	Upper babbitt, +0.50	
16	F90932000	Lower Babbitt	3
	F90932100	Lower Babbitt, +0.25	
	F90932200	Lower Babbitt, +0.50	
17	F99182000	Screw, M6x12	8
18	F91570000	Rivet, Ø 2.5x5	4
19	F97826800	Pump Plate	1
20	F99305900	Screw, M8x20	10
21	F65150920	Crankshaft End Cover	1
22	F99185300	Screw, M6x16	6
23	F10081555	Gear, SX Z81 R 2.90, Helical	1
	F10081755	Gear, SX Z83 R 3.46, Helical	
	F10081955	Gear, SX Z89 R 4.23, Helical	
24	F65210874	Oil Filter	1
25	F65020555	Crankshaft Elbow	1
26	F65020701	Bearing, C: 90, R: 2.90	1
	F65020801	Bearing, C: 90, R:3.46	
	F65020901	Bearing, C: 90, R:4.23	
27	F90935000	Upper Bushing	4
	F90935100	Upper Bushing, +0.254	
	F90935200	Upper Bushing, +0.5.8	
28	F90934700	Lower Bushing	4
	F90934800	Lower Bushing, +0.254	
	F90934900	Lower Bushing, +0.508	
29	F10081455	Gear, DX Z81 R 2.90, Helical	1
	F10081655	Gear, DX Z83 R. 3.43, Helical	
	F10081855	Gear, DX Z89 R. 4.23, Helical	
30	F65210984	Front Cover Seal	1
31	F65150620	Crankshaft Cover	1
32	F90935300	Half ring	2
33	F90075500	Ring, Seeger, Ø 45	6
34	F97747000	Pin, Ø 45x86	3
35	F65210766	Flange for Bellows	3
36	F92811000	Clip, Ø 98-109	3
37	F65211047	Bellows	3
38	F97630000	Plug, Ø 12x40	3
39	F99189700	Screw, M6x24	12
40	F79212420	Pump Oil Body	1
41	F98193000	Plug, Conical, M8x1	2
43	F90384500	O-ring, Ø 18.72x2.62	4
44	F92810000	Clip, Ø 3 58-69	2
45	F99513300	Screw, M16x35	16
46	F97623000	Plug, Ø 10x24	8
47	F65200702	Rear Pump Feet	2
48	F93198000	Washer, 3/4"	1
49	F98226500	Plug, 3/4"x16	1
50	F90392650	O-ring, Ø 126.67x2.62	2
51	F90380500	O-ring, Ø 132.00x2.50	2
53	F90190000	Ring, Rad. Ø 70x90x10	2
54	F10081155	Pinion, Z28 R. 2.90, Helicol	1
	F10081255	Pinion, Z24 R. 3.46, Helicol	
	F10081355	Pinion, Z21 R. 4.23, Helicol	
55	F98233950	Oil Dipstick, 1"x275	1
56	F65211120	Oil Dipstick	1
57	F90389800	O-ring, Ø 56.82x2.62	1
58	F79211689	Bushing	4
59	F91499500	Key, 12x8x40	1
60	F79211907	Oil Pump Rotor	1
61	F98215500	Plug, Conical, M20x1.5	6
62	F90385200	O-ring, Ø 22.22x2.62	6
63	F65213700	Exchanger, Water-Oil	1

Item	Part #	Description	QTY.
64	F65213864	Fitting, Oil Filter Exchanger	1
65	F92899000	Oil Filter, M20	1
66	F36200951	Inlet Valve Guide	4
67	F94744000	Spring,15.4x26.5	4
68	F36201076	Valve, Spherical	4
69	90386500	O-ring, Ø 29.82x2.62	4
70	F90387300	O-ring, Ø 36.14x2.62	4
71	F79213964	Valve Cage	4
72	F98213780	Plug, M18x11	1
73	F96741000	Washer, Ø 18.2x24x1.5	1
74	F94739000	Spring, 10.8x37.9	1
75	F79213664	Piston Valve, H.P.	1
76	F99303900	Screw, M8x16	4
77	F79212654	Control, Oil Pump	1
78	F99185100	Screw, M6x16	3
79	F79212747	Oil Seal, Oil Pump	1
80	F79212874	Plate, Oil Pump	1
81	F79212984	Seal, Oil Pump Plate	1
82	F99368600	Screw, M10x30	12
83	F99311600	Screw, M8x40	15
84	F93510500	High Temperature Light	1
85	F93551500	Connector, High Temperature Light	1
86	F79213589	Bushing, Oil Pump	2
87	F93555500	Pressure Switch, 12V	1
88	F94513100	Connector, M-F, 1/4"-M10x1	1
89	F96723000	Washer, Ø 13.5x19x1.5	3
90	F95256000	Connector, M-M, NPT 1/4"-G1/4"	1
91	F96310000	Connector, T, F-F-F, G1/4"	1
92	F95256600	Nipple, M-F, G1/4"	1
93	F94607000	Pressure Gauge	1
94	F91505000	Key, 18x11x100	1
95	F99441000	Screw, Connecting Rod	6
96	F90918500	Bushing, Connecting Rod	3
97	F99301900	Screw, M8x10	3
98	F99301900	Screw, M8x10	1
99	F96701750	Washer, Ø8.4x15x0.8	1
100	F99365200	Screw, M10x20	3
101	F65700501	Cover, Pinion, PTP	2
102	F90359600	O-ring, Ø 18.77x1.78	3
103	F65041601	Plunger, complete Ø 26	3
	F65041701	Plunger, complete Ø 30	
	F65041801	Plunger, complete Ø 32	
	F65041901	Plunger, complete Ø 36	
104	F90078000	Restop Ring, SR26, 30, 32	3
	90079700	Restop Ring, SR36	
105	F78211656	Packing, Ø 26	3
	F78211856	Packing, Ø 30	
	F65217056	Packing, Ø 32	
	F65217156	Packing, Ø 36	
106	F99216100	Screw, M8x100	54
107	F90274920	Packing, Ø 26x34x8.0, LP	3
	F90276300	Packing, Ø 30x38x6.0, LP, LP	
	F90278100	Packing, Ø 32x40x6.0, LP	
	F90280100	Packing, Ø 36x44x8.0, LP	
108	F90414600	O-ring, Ø 4x3.53	3
109	F90414700	O-ring, Ø107.5x3.53	3
110	F65216656	Support Seal, Ø 26, LP	3
	F65216756	Support Seal, Ø 30, LP	
	F65216856	Support Seal, Ø 32, LP	
	F65216956	Support Seal, Ø 36, LP	
111	F90389300	O-ring, Ø53.65x2.62, SR26, 30, 32	3
	F90390000	O-ring, Ø56.42x2.62, SR36	
112	F65216060	Bushing Seal, Ø 26	3
	F78213660	Bushing Seal, Ø 30	
	F65216160	Bushing Seal, Ø 32	
	F65216260	Bushing Seal, Ø 36	
113	F65215768	Anti-extrusion Ring, Ø 26	3
	F78213068	Anti-extrusion Ring, Ø 30	
	F65215868	Anti-extrusion Ring, Ø 32	
	F65215968	Anti-extrusion Ring, Ø 30	
114	F90274930	Packing, Ø 26x40x16.5, HP	3
	F90277800	Packing, Ø 30x46x17.8, HP	
	F90278900	Packing, Ø 32x46x16.4, HP	
	F90282500	Packing, Ø 36x52x18.4, HP	

Item	Part #	Description	QTY.
115	F65215360	Head Ring, Ø 26	3
	F65215460	Head Ring, Ø 30	
	F65215560	Head Ring, Ø 32	
	F65215660	Head Ring, Ø 36	
116	F65216356	Support Seal, Ø 26, HP	3
	F65216456	Support Seal, Ø 30, 32, LP	
	F65216556	Support Seal, Ø 36, LP	
117	F65214982	Plunger Bushing, Ø 26	3
	F65215082	Plunger Bushing, Ø 30	
	F65215182	Plunger Bushing, Ø 32	
	F65218282	Plunger Bushing, Ø 30	
118	F93198760	Seal, Ø 40x45x3.95, SR26	6
	F93198950	Seal, Ø 46x51x3.95, SR30, 32	
	F93199800	Seal, Ø 52x57x3.95, SR36	
119	F65061056	Piston Sleeve, Ø 26	3
	F65061156	Piston Sleeve, Ø 30, 32	
	F65061256	Piston Sleeve, Ø 36	
120	F90391450	O-ring, Ø 75.87x2.62	3
121	F94767000	Spring, 36x51.7, SR26	3
	F94770800	Spring, 41.5x51.2, SR30, 32	
	F94772300	Spring, 47.2x61.2, SR36	
122	F36214556	Plate Valve, Ø 26	3
	F36214656	Plate Valve, Ø 30, 32	
	F26214756	Plate Valve, Ø 36	
123	F36214356	Valve Seat, Ø 26	3
	F36214256	Valve Seat, Ø 30, 32	
	F36214456	Valve Seat, Ø 36	
124	F93198730	Seal, Ø 36x41x3.95	

Item	Part #	Description	QTY.
125	F36208356	Valve Ø 20-22-24, SR26, 30, 32	3
	F36208456	Valve, Ø 26-28-30, SR36	
126	F94747600	Spring, 18.0x35, SR26, 30, 32	3
	F94748900	Spring, 18.9x35, SR36	
127	F36214160	Valve guide	3
128	F96416400	Fitting, 90°, G3/8	1
129	F78214566	Fitting, Ø 3-3/8Mx3/8F	1
130	F96738000	Washer, Ø 17.5x23x1.5	2
131	F99433500	Screw, M12x50.59	4
132	F65120756	Manifold	1
133	F97827600	Label	1
134	F91570300	Rivet, Ø 2.5x8	2
135	F99449000	Screw, M12x160	24
136	F99537100	Screw, M24x2x300	4
137	F90382101	O-ring, Ø 9.19x2.62	2
138	F98208600	Plug, G3/8x12	1
139	F65214713	Manifold spacer, HP, SR	1
140	F65210666	Flap for Bellows	

REPAIR KITS

KIT NUMBER	**F2323 Plunger Packing Kit SR26**	**F2324 Plunger Packing Kit SR30**	**F2325 Plunger Packing Kit SR32**	**F2326 Plunger Packing Kit SR36**
Positions Included	106, 107, 108, 110, 111, 112, 113, 117, 119, 136	106, 107, 108, 110, 111, 112, 113, 117, 119, 136	106, 107, 108, 110, 111, 112, 113, 117, 119, 136	106, 107, 108, 110, 111, 112, 113, 117, 119, 136

KIT NUMBER	**F2327 Valve Kit SR26**	**F2335 Valve Kit SR30 & SR32**	**F2336 Valve Kit SR36**
Positions Included	117, 119, 123	117, 119, 123	117, 119, 123

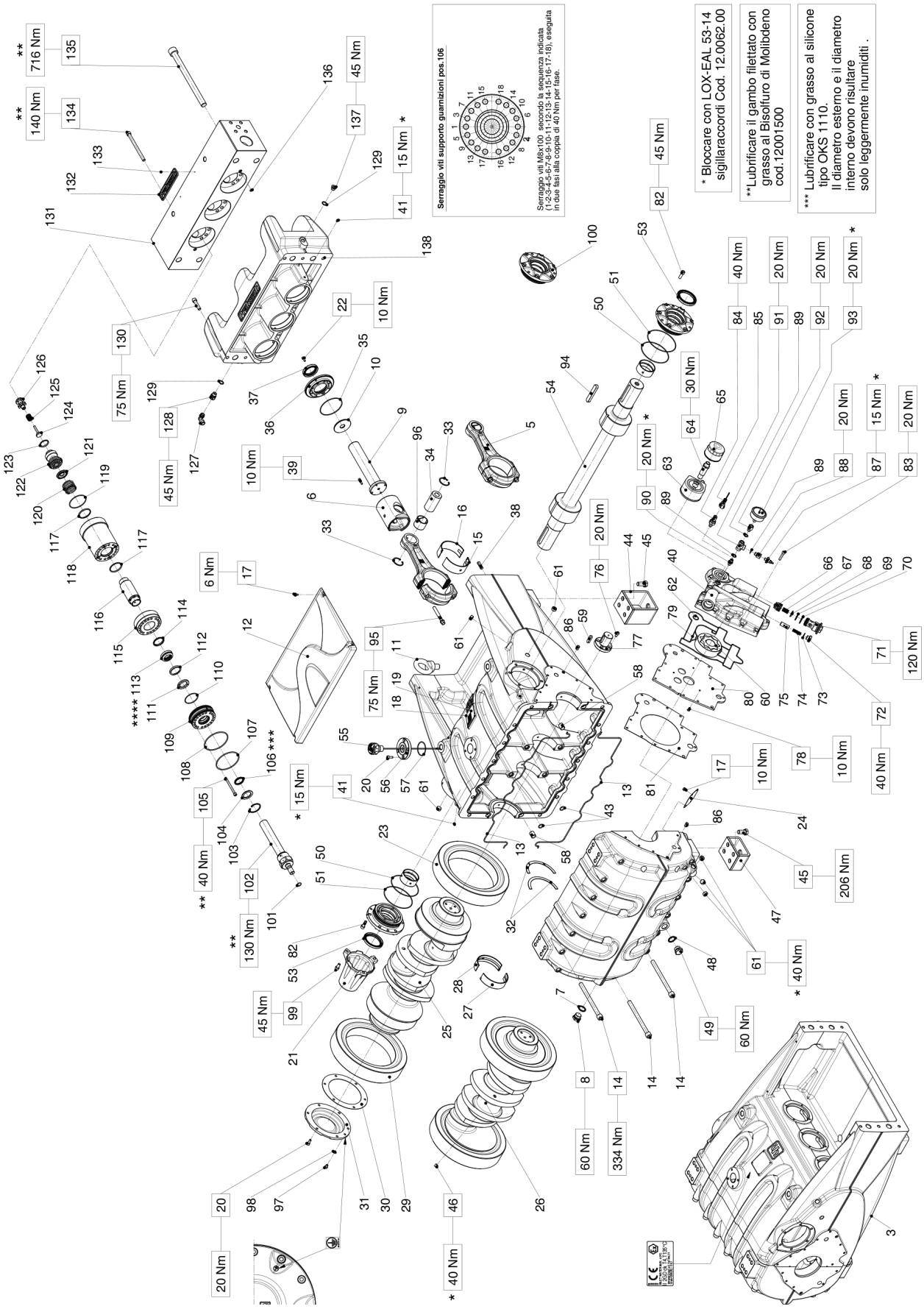
KIT NUMBER	**F2328 Inlet/Outlet Valve Kit SR26**	**F2329 Inlet/Outlet Valve Kit SR30 & SR32**	**F2330 Inlet/Outlet Valve Kit SR36**
Positions Included	117, 119, 120, 121, 122, 123, 124, 125, 126	117, 119, 120, 121, 122, 123, 124, 125, 126	117, 119, 120, 121, 122, 123, 124, 125, 126

KIT NUMBER	**F2331 Complete Seals Kit SR26**	**F2332 Complete Seals Kit SR30**	**F2333 Complete Seals Kit SR32**	**F2334 Complete Seals Kit SR36**
Positions Included	13, 30, 35, 37, 41, 50, 51, 53, 57, 62, 69, 70, 79, 81, 101, 106, 107, 108, 110, 111, 112, 113, 117, 119, 123, 136	13, 30, 35, 37, 41, 50, 51, 53, 57, 62, 69, 70, 79, 81, 101, 106, 107, 108, 110, 111, 112, 113, 117, 119, 123, 136	13, 30, 35, 37, 41, 50, 51, 53, 57, 62, 69, 70, 79, 81, 101, 106, 107, 108, 110, 111, 112, 113, 117, 119, 123, 136	13, 30, 35, 37, 41, 50, 51, 53, 57, 62, 69, 70, 79, 81, 101, 106, 107, 108, 110, 111, 112, 113, 117, 119, 123, 136

KIT NUMBER	**F2265 Shaft Bushing Kit (Standard)**	**F2266 Shaft Bushing Kit (+0.25)**	**F2267 Shaft Bushing Kit (+0.50)**
Positions Included	27, 28, 32	27, 28, 32	27, 28, 32

KIT NUMBER	**F2186 Connecting Rod Bushing Kit (Standard)**	**F2187 Connecting Rod Bushing Kit (+0.25)**	**F2188 Connecting Rod Bushing Kit (+0.50)**
Positions Included	15, 16	15, 16	15, 16

16.3 EXPLODED VIEW AND PARTS LIST



TR26/30/32/36 HORIZONTAL

Item	Part #	Description	QTY.
3	F65010901	Crankcase	1
5	F65030601	Connecting Rod	3
6	F79050043	Piston Guide	3
	F79050243	Piston Guide, ± 1.0	
7	F93198000	Washer, Seal, Ø 3/4"	1
8	F98226500	Plug, G 3/4" x16	1
9	F65050666	Piston Guide Stem	3
10	F65210566	Splashguard	3
11	F93108000	Eyebolt	3
12	F65150753	Upper Crankcase Cover	1
13	F65214082	Seal, Ø 3.53x530	2
14	F99522400	Screw, M16x200	22
15	F90932300	Upper Babbitt	3
	F90932400	Upper babbitt, +0.25	
	F90932500	Upper babbitt, +0.50	
16	F90932000	Lower Babbitt	3
	F90932100	Lower Babbitt, +0.25	
	F90932200	Lower Babbitt, +0.50	
17	F99182000	Screw, M6x12	8
18	F91570000	Rivet, Ø 2.5x5	4
19	F97826800	Pump Plate	1
20	F99305900	Screw, M8x20	10
21	F65150920	Crankshaft End Cover	1
22	F99185300	Screw, M6x16	6
23	F10081555	Gear, SX Z81 R 2.90, Helical	1
	F10081755	Gear, SX Z83 R 3.46, Helical	
	F10081955	Gear, SX Z89 R 4.23, Helical	
24	F65210874	Oil Filter	1
25	F65020555	Crankshaft Elbow	1
26	F65021001	Bearing, C: 90, R: 2.90	1
	F65021101	Bearing, C: 90, R:3.46	
	F65021201	Bearing, C: 90, R:4.23	
27	F90935000	Upper Bushing	4
	F90935100	Upper Bushing, +0.254	
	F90935200	Upper Bushing, +0.5.8	
28	F90934700	Lower Bushing	4
	F90934800	Lower Bushing, +0.254	
	F90934900	Lower Bushing, +0.508	
29	F10081455	Gear, DX Z81 R 2.90, Helical	1
	F10081655	Gear, DX Z83 R. 3.43, Helical	
	F10081855	Gear, DX Z89 R. 4.23, Helical	
30	F65210984	Front Cover Seal	1
31	F65150620	Crankshaft Cover	1
32	F90935300	Half ring	2
33	F90075500	Ring, Seeger, Ø 45	6
34	F97747000	Pin, Ø 45x86	3
35	F90392000	O-ring, Pin, Ø 101.27x2.62	3
36	F79210022	Piston Guide Seal Cover	3
37	F90171500	Ring, Rad, Ø 50x70x10/11.5	3
38	F97630000	Pin, Ø 12x40	2
39	F99189700	Screw, M6x24	12
40	F79212420	Pump Oil Body	1
41	F98193000	Plug, Conical, M8x1	2
43	F90384500	O-ring, Ø 18.72x2.62	4
44	F65200602	Front Pump Feet	2
45	F99513300	Screw, M16x35	16
46	F99425000	Screw, M12x12	2
47	F65200502	Rear Pump Feet	2
48	F93198000	Washer, 3/4"	1
49	F98226500	Plug, 3/4"x16	1
50	F90392650	O-ring, Ø 126.67x2.62	2
51	F90380500	O-ring, Ø 132.00x2.50	2
53	F90190000	Ring, Rad. Ø 70x90x10	2
54	F10081155	Pinion, Z28 R. 2.90, Helicol	1
	F10081255	Pinion, Z24 R. 3.46, Helicol	
	F10081355	Pinion, Z21 R. 4.23, Helicol	
55	F98234050	Oil Dipstick, 1"x343	1
56	F65211254	Oil Dipstick Support	1
57	F90389800	O-ring, Ø 56.82x2.62	1
58	F79211689	Bushing	4
59	F91499500	Key, 12x8x40	1
60	F79211907	Oil Pump Rotor	1
61	F98215500	Plug, Conical, M20x1.5	6
62	F90385200	O-ring, Ø 22.22x2.62	6
63	F65213700	Exchanger, Water-Oil	1

Item	Part #	Description	QTY.
64	F65213864	Fitting, Oil Filter Exchanger	1
65	F92899000	Oil Filter, M20	1
66	F36200951	Inlet Valve Guide	4
67	F94744000	Spring,15.4x26.5	4
68	F36201076	Valve, Spherical	4
69	90386500	O-ring, Ø 29.82x2.62	4
70	F90387300	O-ring, Ø 36.14x2.62	4
71	F79213964	Valve Cage	4
72	F98213780	Plug, M18x11	1
73	F96741000	Washer, Ø 18.2x24x1.5	1
74	F94739000	Spring, 10.8x37.9	1
75	F79213664	Piston Valve, H.P.	1
76	F99303900	Screw, M8x16	4
77	F79212654	Control, Oil Pump	1
78	F99185100	Screw, M6x16	3
79	F79212747	Oil Seal, Oil Pump	1
80	F79212874	Plate, Oil Pump	1
81	F79212984	Seal, Oil Pump Plate	1
82	F99368600	Screw, M10x30	12
83	F99311600	Screw, M8x40	15
84	F93510500	High Temperature Light	1
85	F93551500	Connector, High Temperature Light	1
86	F79213589	Bushing, Oil Pump	2
87	F93555500	Pressure Switch, 12V	1
88	F94513100	Connector, M-F, 1/4"-M10x1	1
89	F96723000	Washer, Ø 13.5x19x1.5	3
90	F95256000	Connector, M-M, NPT 1/4"-G1/4"	1
91	F96310000	Connector, T, F-F-F, G1/4"	1
92	F95256600	Nipple, M-F, G1/4"	1
93	F94607000	Pressure Gauge	1
94	F91505000	Key, 18x11x100	1
95	F99441000	Screw, Connecting Rod	6
96	F90918500	Bushing, Connecting Rod	3
97	F99301900	Screw, M8x10	3
98	F96701750	Washer, Ø8.4x15x0.8	1
99	F99365200	Screw, M10x20	3
100	F65700501	Cover, Pinion, PTP	2
101	F90359600	O-ring, Ø 18.77x1.78	3
102	F65042801	Plunger, complete Ø 26	3
	F65042901	Plunger, complete Ø 30	
	F65043001	Plunger, complete Ø 32	
	F65043101	Plunger, complete Ø 36	
103	F90078000	Restop Ring, SR26, 30, 32	3
	90079700	Restop Ring, SR36	
104	F78211656	Packing, Ø 26	3
	F78211856	Packing, Ø 30	
	F65217056	Packing, Ø 32	
	F65217156	Packing, Ø 36	
105	F99216100	Screw, M8x100	54
106	F90274920	Packing, Ø 26x34x8.0, LP	3
	F90276300	Packing, Ø 30x38x6.0, LP, LP	
	F90278100	Packing, Ø 32x40x6.0, LP	
	F90280100	Packing, Ø 36x44x8.0, LP	
107	F90414600	O-ring, Ø 4x3.53	3
108	F90414700	O-ring, Ø107.5x3.53	3
109	F65216656	Support Seal, Ø 26, LP	3
	F65216756	Support Seal, Ø 30, LP	
	F65216856	Support Seal, Ø 32, LP	
	F65216956	Support Seal, Ø 36, LP	
110	F90389300	O-ring, Ø53.65x2.62, SR26, 30, 32	3
	F90390000	O-ring, Ø56.42x2.62, SR36	
111	F65216060	Bushing Seal, Ø 26	3
	F78213660	Bushing Seal, Ø 30	
	F65216160	Bushing Seal, Ø 32	
	F65216260	Bushing Seal, Ø 36	
112	F65215768	Anti-extrusion Ring, Ø 26	3
	F78213068	Anti-extrusion Ring, Ø 30	
	F65215868	Anti-extrusion Ring, Ø 32	
	F65215968	Anti-extrusion Ring, Ø 30	
113	F90274930	Packing, Ø 26x40x16.5, HP	3
	F90277800	Packing, Ø 30x46x17.8, HP	
	F90278900	Packing, Ø 32x46x16.4, HP	
	F90282500	Packing, Ø 36x52x18.4, HP	

Item	Part #	Description	QTY.
114	F65215360	Head Ring, Ø 26	3
	F65215460	Head Ring, Ø 30	
	F65215560	Head Ring, Ø 32	
	F65215660	Head Ring, Ø 36	
115	F65216356	Support Seal, Ø 26, HP	3
	F65216456	Support Seal, Ø 30, 32, LP	
	F65216556	Support Seal, Ø 36, LP	
116	F65217282	Plunger Bushing, Ø 26	3
	F65217382	Plunger Bushing, Ø 30	
	F65217482	Plunger Bushing, Ø 32	
	F65217582	Plunger Bushing, Ø 30	
117	F93198760	Seal, Ø 40x45x3.95, SR26	6
	F93198950	Seal, Ø 46x51x3.95, SR30, 32	
	F93199800	Seal, Ø 52x57x3.95, SR36	
118	F65061356	Piston Sleeve, Ø 26	3
	F65061456	Piston Sleeve, Ø 30, 32	
	F65061556	Piston Sleeve, Ø 36	
119	F90391450	O-ring, Ø 75.87x2.62	3
120	F94767000	Spring, 36x51.7, SR26	3
	F94770800	Spring, 41.5x51.2, SR30, 32	
	F94772300	Spring, 47.2x61.2, SR36	
121	F36214556	Plate Valve, Ø 26	3
	F36214656	Plate Valve, Ø 30, 32	
	F26214756	Plate Valve, Ø 36	
122	F36214356	Valve Seat, Ø 26	3
	F36214256	Valve Seat, Ø 30, 32	
	F36214456	Valve Seat, Ø 36	
123	F93198730	Seal, Ø 36x41x3.95	

Item	Part #	Description	QTY.
124	F36208356	Valve Ø 20-22-24, SR26, 30, 32	3
	F36208456	Valve, Ø 26-28-30, SR36	
125	F94747600	Spring, 18.0x35, SR26, 30, 32	3
	F94748900	Spring, 18.9x35, SR36	
126	F36214160	Valve guide	3
127	F96416400	Fitting, 90^{o}, G3/8	1
128	F78214566	Fitting, Ø 3-3/8Mx3/8F	1
129	F96738000	Washer, Ø 17.5x23x1.5	2
130	F99433500	Screw, M12x50.59	4
131	F65120756	Manifold	1
132	F97827600	Label	1
133	F91570300	Rivet, Ø 2.5x8	2
134	F99449000	Screw, M12x160	24
135	F99537200	Screw, M24x2x320	4
136	F90382101	O-ring, Ø 9.19x2.62	2
137	F98208600	Plug, G3/8x12	1
138	F65214713	Manifold spacer, HP, SR	1

REPAIR KITS

KIT NUMBER	**F2323 Plunger Packing Kit TR26**	**F2324 Plunger Packing Kit TR30**	**F2325 Plunger Packing Kit TR32**	**F2326 Plunger Packing Kit TR36**
Positions Included	106, 107, 108, 110, 111, 112, 113, 117, 119, 136	106, 107, 108, 110, 111, 112, 113, 117, 119, 136	106, 107, 108, 110, 111, 112, 113, 117, 119, 136	106, 107, 108, 110, 111, 112, 113, 117, 119, 136

KIT NUMBER	**F2327 Valve Kit TR26**	**F2335 Valve Kit TR30 & SR32**	**F2336 Valve Kit TR36**
Positions Included	117, 119, 123	117, 119, 123	117, 119, 123

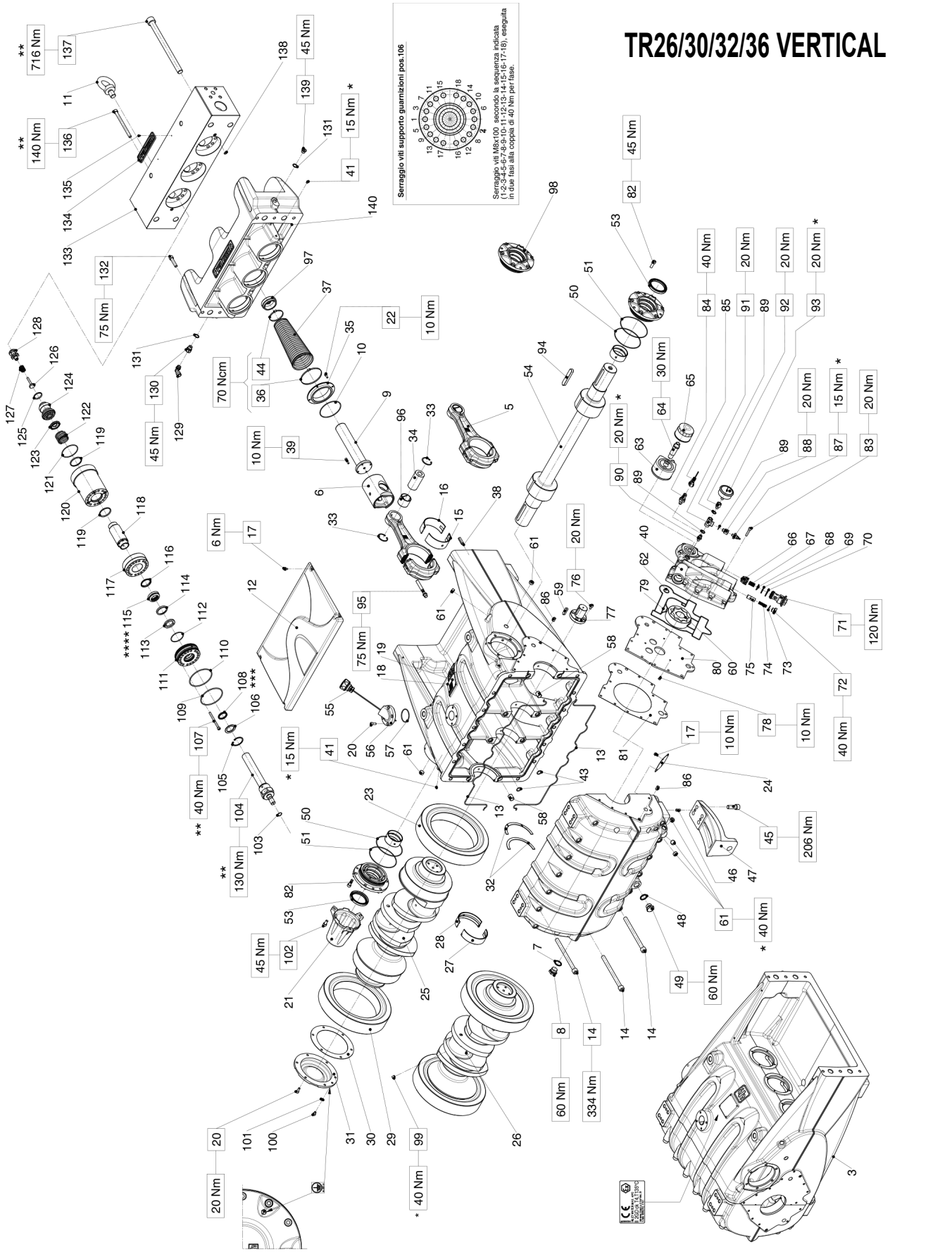
KIT NUMBER	**F2328 Inlet/Outlet Valve Kit TR26**	**F2329 Inlet/Outlet Valve Kit TR30 & SR32**	**F2330 Inlet/Outlet Valve Kit TR36**
Positions Included	117, 119, 120, 121, 122, 123, 124, 125, 126	117, 119, 120, 121, 122, 123, 124, 125, 126	117, 119, 120, 121, 122, 123, 124, 125, 126

KIT NUMBER	**F2331 Complete Seals Kit TR26**	**F2332 Complete Seals Kit TR30**	**F2333 Complete Seals Kit TR32**	**F2334 Complete Seals Kit TR36**
Positions Included	13, 30, 35, 37, 41, 50, 51, 53, 57, 62, 69, 70, 79, 81, 101, 106, 107, 108, 110, 111, 112, 113, 117, 119, 123, 136	13, 30, 35, 37, 41, 50, 51, 53, 57, 62, 69, 70, 79, 81, 101, 106, 107, 108, 110, 111, 112, 113, 117, 119, 123, 136	13, 30, 35, 37, 41, 50, 51, 53, 57, 62, 69, 70, 79, 81, 101, 106, 107, 108, 110, 111, 112, 113, 117, 119, 123, 136	13, 30, 35, 37, 41, 50, 51, 53, 57, 62, 69, 70, 79, 81, 101, 106, 107, 108, 110, 111, 112, 113, 117, 119, 123, 136

KIT NUMBER	**F2265 Shaft Bushing Kit (Standard)**	**F2266 Shaft Bushing Kit (+0.25)**	**F2267 Shaft Bushing Kit (+0.50)**
Positions Included	27, 28, 32	27, 28, 32	27, 28, 32

KIT NUMBER	**F2186 Connecting Rod Bushing Kit (Standard)**	**F2187 Connecting Rod Bushing Kit (+0.25)**	**F2188 Connecting Rod Bushing Kit (+0.50)**
Positions Included	15, 16	15, 16	15, 16

16.4 EXPLODED VIEW AND PARTS LIST



Item	Part #	Description	QTY.
3	F65010901	Crankcase	1
5	F65030601	Connecting Rod	3
6	F79050043	Piston Guide	3
	F79050243	Piston Guide, ± 1.0	
7	F93198000	Washer, Seal, Ø 3/4"	1
8	F98226500	Plug, G 3/4" x16	1
9	F65050666	Piston Guide Stem	3
10	F90392000	O-ring, Ø 101.27x2.62	3
11	F93108000	Eyebolt	3
12	F65150753	Upper Crankcase Cover	1
13	F65214082	Seal, Ø 3.53x530	2
14	F99522400	Screw, M16x200	22
15	F90932300	Upper Babbitt	3
	F90932400	Upper babbitt, +0.25	
	F90932500	Upper babbitt, +0.50	
16	F90932000	Lower Babbitt	3
	F90932100	Lower Babbitt, +0.25	
	F90932200	Lower Babbitt, +0.50	
17	F99182000	Screw, M6x12	8
18	F91570000	Rivet, Ø 2.5x5	4
19	F97826800	Pump Plate	1
20	F99305900	Screw, M8x20	10
21	F65150920	Crankshaft End Cover	1
22	F99185300	Screw, M6x16	6
23	F10081555	Gear, SX Z81 R 2.90, Helical	1
	F10081755	Gear, SX Z83 R 3.46, Helical	
	F10081955	Gear, SX Z89 R 4.23, Helical	
24	F65210874	Oil Filter	1
25	F65020655	Crankshaft Elbow	1
26	F65021001	Bearing, C: 90, R: 2.90	1
	F65021101	Bearing, C: 90, R:3.46	
	F65021201	Bearing, C: 90, R:4.23	
27	F90935000	Upper Bushing	4
	F90935100	Upper Bushing, +0.254	
	F90935200	Upper Bushing, +0.5.8	
28	F90934700	Lower Bushing	4
	F90934800	Lower Bushing, +0.254	
	F90934900	Lower Bushing, +0.508	
29	F10081455	Gear, DX Z81 R 2.90, Helical	1
	F10081655	Gear, DX Z83 R. 3.43, Helical	
	F10081855	Gear, DX Z89 R. 4.23, Helical	
30	F65210984	Front Cover Seal	1
31	F65150620	Crankshaft Cover	1
32	F90935300	Half ring	2
33	F90075500	Ring, Seeger, Ø 45	6
34	F97747000	Pin, Ø 45x86	3
35	F65210766	Flange for Bellows	3
36	F92811000	Clip, Ø 98-109	3
37	F65211047	Bellows	3
38	F97630000	Plug, Ø 12x40	3
39	F99189700	Screw, M6x24	12
40	F79212420	Pump Oil Body	1
41	F98193000	Plug, Conical, M8x1	2
43	F90384500	O-ring, Ø 18.72x2.62	4
44	F92810000	Clip, Ø 3 58-69	2
45	F99513300	Screw, M16x35	16
46	F97623000	Plug, Ø 10x24	8
47	F65200702	Rear Pump Feet	2
48	F93198000	Washer, 3/4"	1
49	F98226500	Plug, 3/4"x16	1
50	F90392650	O-ring, Ø 126.67x2.62	2
51	F90380500	O-ring, Ø 132.00x2.50	2
53	F90190000	Ring, Rad. Ø 70x90x10	2
54	F10081155	Pinion, Z28 R. 2.90, Helicol	1
	F10081255	Pinion, Z24 R. 3.46, Helicol	
	F10081355	Pinion, Z21 R. 4.23, Helicol	
55	F98233950	Oil Dipstick, 1"x275	1
56	F65211120	Oil Dipstick	1
57	F90389800	O-ring, Ø 56.82x2.62	1
58	F79211689	Bushing	4
59	F91499500	Key, 12x8x40	1
60	F79211907	Oil Pump Rotor	1
61	F98215500	Plug, Conical, M20x1.5	6
62	F90385200	O-ring, Ø 22.22x2.62	6
63	F65213700	Exchanger, Water-Oil	1

Item	Part #	Description	QTY.
64	F65213864	Fitting, Oil Filter Exchanger	1
65	F92899000	Oil Filter, M20	1
66	F36200951	Inlet Valve Guide	4
67	F94744000	Spring,15.4x26.5	4
68	F36201076	Valve, Spherical	4
69	90386500	O-ring, Ø 29.82x2.62	4
70	F90387300	O-ring, Ø 36.14x2.62	4
71	F79213964	Valve Cage	4
72	F98213780	Plug, M18x11	1
73	F96741000	Washer, Ø 18.2x24x1.5	1
74	F94739000	Spring, 10.8x37.9	1
75	F79213664	Piston Valve, H.P.	1
76	F99303900	Screw, M8x16	4
77	F79212654	Control, Oil Pump	1
78	F99185100	Screw, M6x16	3
79	F79212747	Oil Seal, Oil Pump	1
80	F79212874	Plate, Oil Pump	1
81	F79212984	Seal, Oil Pump Plate	1
82	F99368600	Screw, M10x30	12
83	F99311600	Screw, M8x40	15
84	F93510500	High Temperature Light	1
85	F93551500	Connector, High Temperature Light	1
86	F79213589	Bushing, Oil Pump	2
87	F93555500	Pressure Switch, 12V	1
88	F94513100	Connector, M-F, 1/4"-M10x1	1
89	F96723000	Washer, Ø 13.5x19x1.5	3
90	F95256000	Connector, M-M, NPT 1/4"-G1/4"	1
91	F96310000	Connector, T, F-F-F, G1/4"	1
92	F95256600	Nipple, M-F, G1/4"	1
93	F94607000	Pressure Gauge	1
94	F91505000	Key, 18x11x100	1
95	F99441000	Screw, Connecting Rod	6
96	F90918500	Bushing, Connecting Rod	3
97	F65210666	Flap for Bellows	3
98	F65700501	Cover, Pinion, PTP	2
99	F99425000	Screw, M12x12	2
100	F99301900	Screw, M8x10	1
101	F96701750	Washer, Ø8.4x15x0.8	1
102	F99365200	Screw, M10x20	3
103	F90359600	O-ring, Ø 18.77x1.78	3
104	F65042801	Plunger, complete Ø 26	3
	F65042901	Plunger, complete Ø 30	
	F65043001	Plunger, complete Ø 32	
	F65043101	Plunger, complete Ø 36	
105	F90078000	Restop Ring, SR26, 30, 32	3
	90079700	Restop Ring, SR36	
106	F78211656	Packing, Ø 26	3
	F78211856	Packing, Ø 30	
	F65217056	Packing, Ø 32	
	F65217156	Packing, Ø 36	
107	F99326100	Screw, M8x100	54
108	F90274920	Packing, Ø 26x34x8.0, LP	3
	F90276300	Packing, Ø 30x38x6.0, LP, LP	
	F90278100	Packing, Ø 32x40x6.0, LP	
	F90280100	Packing, Ø 36x44x8.0, LP	
109	F90414600	O-ring, Ø 4x3.53	3
110	F90414700	O-ring, Ø107.5x3.53	3
111	F65216656	Support Seal, Ø 26, LP	3
	F65216756	Support Seal, Ø 30, LP	
	F65216856	Support Seal, Ø 32, LP	
	F65216956	Support Seal, Ø 36, LP	
112	F90389300	O-ring, Ø53.65x2.62, SR26, 30, 32	3
	F90390000	O-ring, Ø56.42x2.62, SR36	
113	F65216060	Bushing Seal, Ø 26	3
	F78213660	Bushing Seal, Ø 30	
	F65216160	Bushing Seal, Ø 32	
	F65216260	Bushing Seal, Ø 36	
114	F65215768	Anti-extrusion Ring, Ø 26	3
	F78213068	Anti-extrusion Ring, Ø 30	
	F65215868	Anti-extrusion Ring, Ø 32	
	F65215968	Anti-extrusion Ring, Ø 30	
115	F90274930	Packing, Ø 26x40x16.5, HP	3
	F90277800	Packing, Ø 30x46x17.8, HP	
	F90278900	Packing, Ø 32x46x16.4, HP	
	F90282500	Packing, Ø 36x52x18.4, HP	

Item	Part #	Description	QTY.
116	F65215360	Head Ring, Ø 26	3
	F65215460	Head Ring, Ø 30	
	F65215560	Head Ring, Ø 32	
	F65215660	Head Ring, Ø 36	
117	F65216356	Support Seal, Ø 26, HP	3
	F65216456	Support Seal, Ø 30, 32, LP	
	F65216556	Support Seal, Ø 36, LP	
118	F65217282	Plunger Bushing, Ø 26	3
	F65217382	Plunger Bushing, Ø 30	
	F65217482	Plunger Bushing, Ø 32	
	F65217582	Plunger Bushing, Ø 30	
119	F93198760	Seal, Ø 40x45x3.95, SR26	6
	F93198950	Seal, Ø 46x51x3.95, SR30, 32	
	F93199800	Seal, Ø 52x57x3.95, SR36	
120	F65061356	Piston Sleeve, Ø 26	3
	F65061456	Piston Sleeve, Ø 30, 32	
	F65061556	Piston Sleeve, Ø 36	
121	F90391450	O-ring, Ø 75.87x2.62	3
122	F94767000	Spring, 36x51.7, SR26	3
	F94770800	Spring, 41.5x51.2, SR30, 32	
	F94772300	Spring, 47.2x61.2, SR36	
123	F36214556	Plate Valve, Ø 26	3
	F36214656	Plate Valve, Ø 30, 32	
	F26214756	Plate Valve, Ø 36	
124	F36214356	Valve Seat, Ø 26	3
	F36214256	Valve Seat, Ø 30, 32	
	F36214456	Valve Seat, Ø 36	
125	F93198730	Seal, Ø 36x41x3.95	

Item	Part #	Description	QTY.
126	F36208356	Valve Ø 20-22-24, SR26, 30, 32	3
	F36208456	Valve, Ø 26-28-30, SR36	
127	F94747600	Spring, 18.0x35, SR26, 30, 32	3
	F94748900	Spring, 18.9x35, SR36	
128	F36214160	Valve guide	3
129	F96416400	Fitting, 90^{o}, G3/8	1
130	F78214566	Fitting, Ø 3-3/8Mx3/8F	1
131	F96738000	Washer, Ø 17.5x23x1.5	2
132	F99433500	Screw, M12x50.59	4
133	F65120756	Manifold	1
134	F97827600	Label	1
135	F91570300	Rivet, Ø 2.5x8	2
136	F99449000	Screw, M12x160	24
137	F99537200	Screw, M24x2x300	4
138	F90382101	O-ring, Ø 9.19x2.62	2
139	F98208600	Plug, G3/8x12	1
140	F65214713	Manifold spacer, HP, SR	1

REPAIR KITS

KIT NUMBER	**F2323 Plunger Packing Kit TR26**	**F2324 Plunger Packing Kit TR30**	**F2325 Plunger Packing Kit TR32**	**F2326 Plunger Packing Kit TR36**
Positions Included	106, 107, 108, 110, 111, 112, 113, 117, 119, 136	106, 107, 108, 110, 111, 112, 113, 117, 119, 136	106, 107, 108, 110, 111, 112, 113, 117, 119, 136	106, 107, 108, 110, 111, 112, 113, 117, 119, 136

KIT NUMBER	**F2327 Valve Kit TR26**	**F2335 Valve Kit TR30 & TR32**	**F2336 Valve Kit TR36**
Positions Included	117, 119, 123	117, 119, 123	117, 119, 123

KIT NUMBER	**F2328 Inlet/Outlet Valve Kit TR26**	**F2329 Inlet/Outlet Valve Kit TR30 & TR32**	**F2330 Inlet/Outlet Valve Kit TR36**
Positions Included	117, 119, 120, 121, 122, 123, 124, 125, 126	117, 119, 120, 121, 122, 123, 124, 125, 126	117, 119, 120, 121, 122, 123, 124, 125, 126

KIT NUMBER	**F2331 Complete Seals Kit TR26**	**F2332 Complete Seals Kit TR30**	**F2333 Complete Seals Kit TR32**	**F2334 Complete Seals Kit TR36**
Positions Included	13, 30, 35, 37, 41, 50, 51, 53, 57, 62, 69, 70, 79, 81, 101, 106, 107, 108, 110, 111, 112, 113, 117, 119, 123, 136	13, 30, 35, 37, 41, 50, 51, 53, 57, 62, 69, 70, 79, 81, 101, 106, 107, 108, 110, 111, 112, 113, 117, 119, 123, 136	13, 30, 35, 37, 41, 50, 51, 53, 57, 62, 69, 70, 79, 81, 101, 106, 107, 108, 110, 111, 112, 113, 117, 119, 123, 136	13, 30, 35, 37, 41, 50, 51, 53, 57, 62, 69, 70, 79, 81, 101, 106, 107, 108, 110, 111, 112, 113, 117, 119, 123, 136

KIT NUMBER	**F2265 Shaft Bushing Kit (Standard)**	**F2266 Shaft Bushing Kit (+0.25)**	**F2267 Shaft Bushing Kit (+0.50)**
Positions Included	27, 28, 32	27, 28, 32	27, 28, 32

KIT NUMBER	**F2186 Connecting Rod Bushing Kit (Standard)**	**F2187 Connecting Rod Bushing Kit (+0.25)**	**F2188 Connecting Rod Bushing Kit (+0.50)**
Positions Included	15, 16	15, 16	15, 16

18. MAINTENANCE LOG

	HOURS & DATE						
OIL CHANGE							
GREASE							
PACKING REPLACEMENT							
PLUNGER REPLACEMENT							
VALVE REPLACEMENT							

GENERAL PUMP

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