4 BALL PUMP

570 cm3

Pump REX 4B0570

User Manual 582182110

2024-03-18

Index C

Translation of the original instructions

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SAMES KREMLIN

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SAMES KREMLIN

Evolution table of the document

Recording revisions				
Editor	**Object**	**Revision**	**Date**	**Modified by**
SEGUIN	4 Ball fluid section 570 cm^3 REXSON 4B570	A	02/09/2021	
SEGUIN	4 Ball fluid section 570 cm^3 REXSON 4B570	B	10/27/2021	
SEGUIN	4 Ball fluid section 570 cm^3 REXSON 4B570	C	03/18/2024	

Dear customer, you have just purchased your new equipment and we thank you for it.

We have taken the utmost care, from design to manufacture, so that this equipment gives you complete satisfaction.

For a good use and an optimal availability, we invite you to read this manual carefully before using your equipment.

Additional Documentations

	Documentation Reference
Air Motor 7200	582144110
Air Motor 9200	582145110

IMPORTANT: **Before assembly and start-up, please read and clearly understand all the documents relating to this equipment (professional use only).**

Guarantee

We reserve the right to make any changes or improvements even after receipt of an order without being able to attribute a non-compliance to the descriptions contained in the instruction manuals and selection guides.

Our equipment is checked and tested in our workshops before shipment.

To be valid, any complaint concerning a material will have to be formulated to us in writing within 10 days of the delivery.

SAMES KREMLIN equipment, equipped with its original identification plates, has a one-year warranty or 1800H of operation (in the first term reaches) from the date of ex-factory against any defect of material or defect of it is up to us to see and appreciate.

The warranty excludes wear parts, deterioration or wear resulting from abnormal or unscheduled use by **SAMES KREMLIN**, failure to observe instructions for proper operation or lack of maintenance.

The warranty is limited to the repair or exchange of parts returned to our factory and recognized as defective by us and does not cover the listed wear parts.

Any costs resulting from the operation cannot be charged to us. The costs of return to our workshops are the responsibility of the customer.

An intervention can be carried out on site at the customer's request.

In this case, the transportation and accommodation costs of the technician (s) will remain the responsibility of the applicant.

Any changes made to our equipment without our consent will void the warranty.

Our guarantee is limited to that of the suppliers of materials which enter in the composition of our sets.

1 Declaration of Conformity

Refer to the existing declaration delivered with the product.

2 Safety instructions

2.1 Personal safety

Overview

Read all operating instructions and device labels carefully before putting the equipment into service.

Personnel using this equipment must have been trained in its use.

The workshop manager must ensure that the operators have fully understood all the instructions and safety rules of this equipment and other elements and accessories of the installation.

Misuse or operation can cause serious injury. This material is for professional use only. It must be used only for the purpose for which it was intended.

Do not modify or transform the material. Parts and accessories must only be supplied or approved by **SAMES KREMLIN**.

The equipment must be checked periodically. Defective or worn parts must be replaced.

Never exceed the maximum working pressures of the equipment components.

Always respect the laws in force regarding security, fire, electricity of the destination country of the equipment.

Only use products or solvents that are compatible with the parts in contact with the product (see product manufacturer's technical data sheet).

Meaning of the pictograms

 Danger: pinching, crushing	 Danger: moving parts	 Danger: high pressure	 Risks of product emanation
 Danger: hot parts or surfaces	 Danger: flammability risks	 Danger: electricity	 Risk of explosion
 Danger (user)	 Warning Danger	 Gloves required	 Grounding
 Protective helmet	 Hearing protection	 Mandatory respiratory protection	 Safety shoes
 Protective clothing	 Protective visor	 Safety glasses is mandatory	 Refer to the manual/instruction leaflet

Security devices

Attention

- ✓ Guards (motor cover, coupling guard, housings, ...) are set up for safe use of the equipment.
- ✓ The manufacturer cannot be held responsible for any bodily injury as well as failures and / or damage to the equipment resulting from the destruction, the occultation or the total or partial removal of the protectors.
- ✓ Never exceed the maximum working pressures of the equipment components.

Danger of Pressure

Safety requires that a pressure relieve shutoff valve be mounted on the pump motor supply circuit to allow trapped air to escape when the air supply is shut off.

Without this precaution, the residual air from the engine may cause the motor pump to operate and cause a serious accident.

Similarly, a **material bleed valve** must be installed on the material circuit so that material pressure can be relieved (after shutting off air motor and decompressing it) before any intervention on the equipment. These valves should remain closed for air and open for the material during the procedure.

Injection hazards

"HIGH PRESSURE" technology requires the utmost care.

Operation can cause dangerous leaks. There is a risk of product injection into exposed parts of the body, which can lead to serious injury and the risk of amputation:

- ✓ An injection of product into the skin or other parts of the body (eyes, fingers ...) must be treated urgently by appropriate medical care.
- ✓ Do not look at the gun nozzle when it is under pressure.
- ✓ Never point the gun nozzle at another person.
- ✓ Never attempt to stop the jet with the body (hands, fingers ...) or with rags or similar.

Fire hazards, explosion, electric arc, static electricity

Improper grounding, insufficient ventilation, open flames or sparks can cause an explosion or fire which could result in serious injury.

To avoid these risks, especially when using pumps, it is imperative:

- ✓ Before operating the Pump supply system make sure that all Pump equipment and material containers are grounded,
- ✓ To ensure good ventilation,
- ✓ Keep the work area clean and free of rags, papers, solvents,
- ✓ Do not operate electrical switches in the presence of vapors or during removal,
- ✓ Immediately stop the application in the presence of arcs,
- ✓ Store all liquids outside the work areas.
- ✓ Use products whose flash point is as high as possible to avoid any risk of formation of flammable gases and vapors (consult the product safety data sheets).
- ✓ To equip the drums with a lid to reduce the diffusion of gases and vapors in the cabin.
- ✓ It is forbidden to pump explosive materials

Toxic products hazards

Toxic products or vapors can cause serious injury through contact with the body, in the eyes, under the skin, but also by ingestion or inhalation. It is imperative:

- ✓ To know the type of product used and the dangers it represents,
- ✓ Store the products to be used in appropriate areas,
- ✓ Contain the product used in the application in a container designed for that purpose,
- ✓ Treat product waste with the legislation of the country where the equipment is used,
- ✓ To wear protective clothing designed for that purpose,
- ✓ Wearing goggles, hearing protectors, gloves, shoes, coveralls and masks for the respiratory tract.

Attention

The use of halogenated hydrocarbon solvents and products containing these solvents in the presence of aluminum or zinc is prohibited.

Failure to follow these instructions exposes the user to the risk of explosion resulting in serious injury or death.

2.2 Integrity of the material

Material recommendations


Protectors are put in place for safe use of the equipment.

The manufacturer cannot be held responsible in case of:

- ✓ Bodily injury.
- ✓ As well as breakdowns and / or damage to the equipment resulting from the destruction, the misuse or the total or partial withdrawal of the protectors.

Pump

It is imperative to be aware of the compatibility of the motors and pumps before coupling them together as well as the special safety instructions. These instructions can be found in the instruction manuals of the pumps.

The air motor is intended to be coupled to a pump. Never modify the coupling system. Keep hands away from moving parts. The moving parts must be kept clean. Before commissioning or using the motor pump, read carefully the DECOMPRESSURIZATION PROCEDURE. Check the proper operation of the pressure relief and bleed air valves.

Tubing

Recommendations

- ✓ Keep hoses away from traffic areas, moving parts and hot areas.
- ✓ Never subject hoses being produced to temperatures above 80°C or below 0°C.
- ✓ Do not use hoses to pull or move equipment.
- ✓ Tighten all connections and hoses and couplings before operating equipment.
- ✓ Check hoses regularly and replace if damaged.
- ✓ Never exceed the maximum working pressure (MWP) stated on the hose.
- ✓ When fitting the hoses and the gun: PPE must be worn.
- ✓ Tighten to full stop (hoses + gun).

Products implemented

Given the diversity of the products implemented by the users and the impossibility of listing all the characteristics of the chemical substances, their interactions and their evolution over time **SAMES KREMLIN** can not be held responsible:

- ✓ The poor compatibility of materials in contact.
- ✓ inherent risks to staff and the environment.
- ✓ Wear and tear, maladjustment, malfunction of equipment or machines and the quality of the finished product.

The user will have to identify and prevent the potential dangers inherent to the implemented products such as:

- ✓ Toxic vapors.
- ✓ Fire.
- ✓ Explosions.

It will determine the risks of immediate reactions or due to repeated exposures to the staff.

SAMES KREMLIN declines any responsibility, in case of:

- ✓ Bodily or psychic injuries.
- ✓ Direct or indirect material damage due to the use of chemical substances.

3 Environment

The equipment must be installed on a horizontal, stable and flat ground (eg concrete slab).

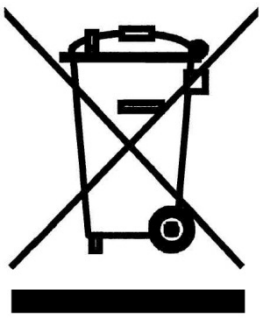
Non-moving equipment must be fixed to the ground by suitable fasteners (spit, screws, bolts, ...) to ensure their stability during use.

To avoid risks due to static electricity, the equipment and its components must be grounded.

- ✓ **In combination with a pneumatic motor, the hydraulics will be earthed with the earth cable of this motor.** This earth cable must be connected to a safe earth.
- ✓ Have the earth continuity checked by a qualified electrician. If earth continuity is not assured, check terminal, wire and grounding point. Never operate the equipment without solving this problem.

- ✓ **Do not store** more flammable products than necessary inside the work area.
- ✓ These products must be stored in **approved containers** and grounded.
- ✓ Use only grounded **metal buckets** for the use of rinse solvents.
- ✓ **Cartons and papers are to be banned**. Indeed they are very bad conductors, even insulators.

Material marking



Each device is equipped with an identification plate with the name of the manufacturer, the reference of the device, important information for the use of the device (pressure, power, ...) and sometimes against the pictogram shown below.

The equipment is designed and manufactured with high quality materials and components that can be recycled and reused.

European Directive 2012/19 / EU applies to all devices marked with this logo (crossed out bin). Find out about the collection systems available for electrical and electronic devices.

Comply with the rules in your area and **do not dispose of old appliances with household waste.** Proper disposal of this old device will help prevent adverse effects on the environment and human health.

4 Available Configurations

4.1 Rexson parts number of High Viscosity Pumps

Presentation of the pump REXSON 4B570

A very versatile pump, the REXSON 4B570 hydraulic is used for airless applications as well as for the extrusion of thick products (<50000 cP*).

Different configurations are available.

** 1 cP = 1 mPa.s*

Significant designation

R E X	4B	0570	-	☐	-	☐	-	☐	-	☐

Ex : R E X 4B 0570 - 72 - CS - G1 - 06

Product Family

High Viscosity Pump : **REX**

Technology

Ball pump **4B**

Cycle volume

4 digits in cm^3

Air Motor

None : **XX**
Motor 7200 : **72**
Motor 9200 : **92**

Refer table 1

Material of construction

CS : Mixed materials
SS : Stainless steel

Refer table 2

Pump foot

G1: GAZ 1" Female

Refer table 2

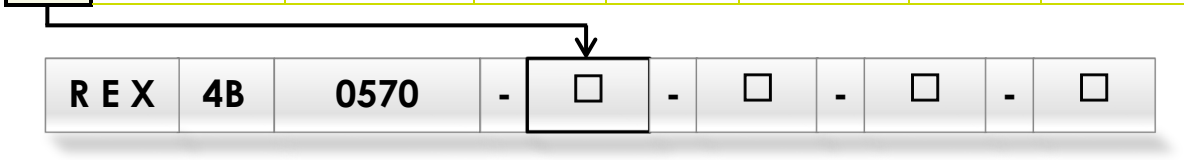
Seal pack

PU : **06**
PEEK: **07**

Refer table 3

4.2 Table 1 Fluid Section-Air Motor Selection

Available Motors		Pressure Ratio	Maximum Air Inlet Pressure		Maximum Outlet Fluid Pressure		Documentation reference
			bar	psi	bar	psi	
XX	NONE	-	-		-		-
72	MOTOR 7200	33 : 1	6	100	200	2900	582144110
92	MOTOR 9200	53 : 1	6	100	320	4600	582145110



4.3 Table 2 Fluid Section – Pump Foot & Material Selection

Available foot pump		Available material	
		CS	SS
		Mixed materials	Stainless steel
G1	1'' F BSPP	✓	✓

4.4 Table 3 Seals Pack Selection

Available Seals Packing		Static seals "O"-rings	Upper seals packing	Piston seals packing
06	PU	FKM	PU and PE	PE and PTFEV
07	PEEK	FKM	PEEK and PTFEG	PEEK and PTFEG

PTFE=Polytetrafluorothylene (Teflon like properties) / PTFEG=PTFE + Graphite (impregnated)
PE-Polyethene (UHMWPE) / FKM=Flouroelastomer (Viton like properties)
PU=Polyurethane / PTFEV=PTFE + Glass (impregnated)
FEP=Encapsulated O-Ring (Teflon like properties over Viton or Silicone)

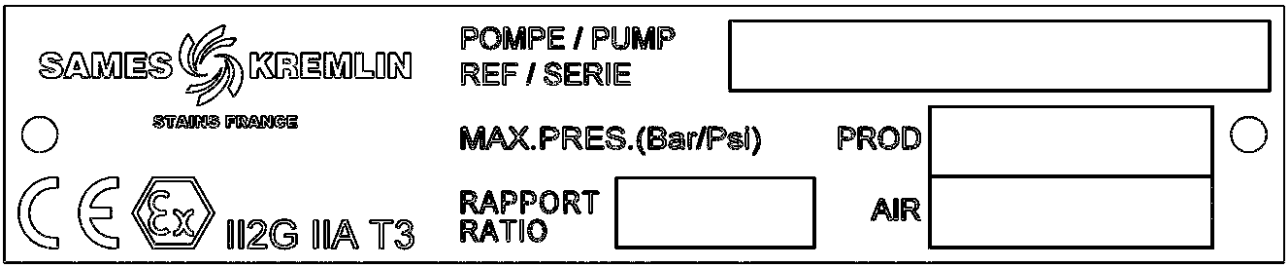
5 Identification

5.1 Description of the marking of the plate

Principles

This equipment complies with the following provisions:

- ✓ Machinery Directive (2006/42 / EC),
- ✓ Safety of machinery - Basic terms, general implementation guidelines DIN EN ISO 12100 T1/T2
- ✓ ATEX Directive (2014/34 / EU: II 2 G - Group II, Category 2, Gas).



	Description
SAMES KREMLIN **STAINS FRANCE**	Manufacturer's mark
POMPE / PUMP **REF / SERIE**	Pump reference and serial number. The first two digits indicate the year of manufacture.
MAX. PRES. (Bar/Psi) **PROD**	Maximum product pressure (Bar/Psi)
AIR	Maximum air pressure (Bar/Psi)
RAPPORT / RATIO	Pump pressure ratio
CE	**EC:** European conformity
II2G	**:** Use in explosive area **II** : group II **2** : category 2 Surface material intended for an environment in which explosive atmospheres due to gases, vapors, mists are likely to occasionally occur during normal operation. **G** : gas
IIA T3	**IIA** : Reference gas for equipment qualification **T3** : Maximum surface temperature 200 ° C / 392°F

5.2 Correspondence table New part numbers / Significant designations

New Part Number		Significant Designation
63 MO 0570 M S F 000	⟷	**REX4B0570-MO-MA-FO-SE**
	Options	
MO	**Motor**	**MO**
55	MOT7200	72
56	MOT9200	92
M	**Material**	**MA**
1	Mixed Steels	CS
2	Stainless Steel	SS
S	**Seal**	**SE**
6	PU	06
7	PEEK	07
F	**Foot**	**FO**
1	1'' F BSPP	G1

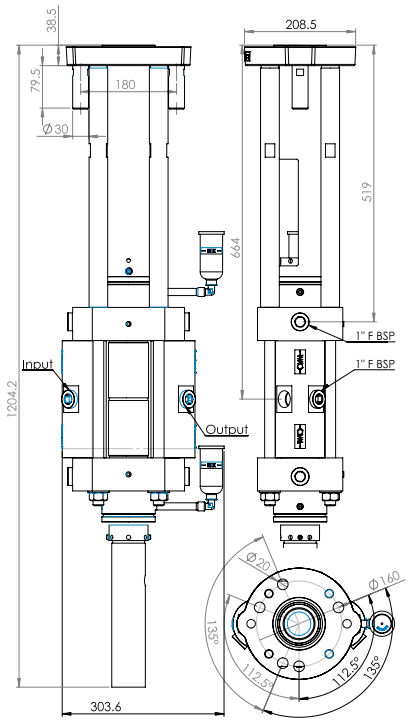
	Documentation Reference
Air Motor 7200	582144110
Air Motor 9200	582145110

5.3 Correspondence table Existant part numbers / Significant designations

Existant part number	Significant designation	Motor	Material	Foot	Seal
104 135 00 01	REX4B0570-XX-CS-G1-06	None	CS Mixed Steels	G1 1'' F BSPP	06 PU
47 224 135	REX4B0570-72-CS-G1-06	MOT7200 33 : 1	CS Mixed Steels	G1 1'' F BSPP	06 PU
49 224 135	REX4B0570-92-CS-G1-06	MOT9200 53 : 1	CS Mixed Steels	G1 1'' F BSPP	06 PU
998 910 800	REX4B0570-H1-CS-G1-06	Hydraulic motor 200 mm	CS Mixed Steels	G1 1'' F BSPP	06 PU
104 135 00 08	REX4B0570-XX -CS-G1-07	None	CS Mixed Steels	G1 1'' F BSPP	07 PEEK
49 225 743	REX4B0570-92-SS-G1-06	MOT9200 53 : 1	SS Stainless steel	G1 1'' F BSPP	06 PU

6 Technical characteristics

6.1 General characteristics



Technical characteristics	
Volume per cycle	570 cm³ / 19,27 oz
Stroke	200 mm / 7,87 in
Fluid outlet connection	1"F BSPP
Weight	83kg / 183 lb
Maximum fluid temperature	80°C / 176°F
Wetted parts	Depending on Materials of construction and seal kit
Packings	Depending on seal kit

Available Motors		Motor selection		
		XX	72	92
		NONE	MOTOR 7200	MOTOR 9200
Pressure Ratio		-	33 : 1	53 : 1
Maximum Air Inlet Pressure	bar	-	6	6
	psi	-	100	100
Maximum Outlet Fluid Pressure	bar	-	200	320
	psi	-	2900	4600
Minimum Outlet Fluid Pressure	bar	-	50	80
	psi	-	718	1153
Complete Pump Weight	Kg	-	111	120
	Lbs	-	244.8	264.8
Air consumption 15 Cycles/min @ 4 bar	NL.min-1	-	1129	1813
	scfm	-	39,9	64
Air inlet fitting	Female BSPP	-	3/4"	3/4"

scfm= Standard cubic feet of gas per minute

(General characteristics - continued)

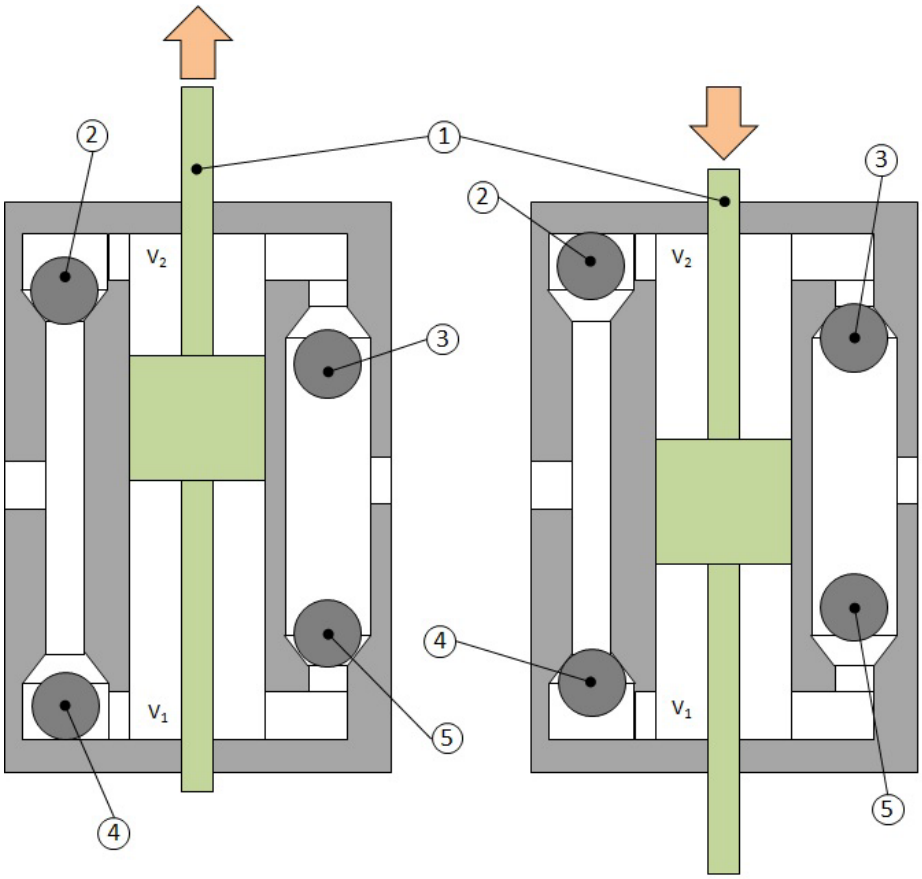
Materials of construction		CS	SS
		Mixed materials	Stainless steel
Pump body	Wet Cup	Carbon steel + Zinc treatment	Stainless steel
	Upper body	Carbon steel + Zinc treatment	Stainless steel
	Cylinder	Carbon steel + Chromium treatment	Stainless steel chromed
Piston	Rod	Stainless steel chromed	Stainless steel chromed
	Nut	Carbon steel + Zinc treatment	Stainless steel
	Ball	Carbon steel	Stainless steel
	Seat	Carbon steel	Stainless steel

6.2 Principle of operation

Expected use

These pumps coupled to air or hydraulic motors are intended for transferring or spraying different liquid or pasty products with a desired flow rate and output pressure.

Functional description



When the piston (1) rises, check-valves 2 and 5 close, while check-valves 3 and 4 open. The piston (1) expels the product from the upper chamber (V2) to the outside and sucks the product to fill the lower chamber (V1).

When the piston (1) is lowered, check-valves 2 and 5 open, while check-valves 3 and 4 close. The piston (1) sucks in the product to fill the upper chamber (V2) and expels the product from the lower chamber (V1) outwards.

ATTENTION!

The friction generated by the movement of the product inside the pump and its accessories, as well as that caused by the seals, creates static electricity that can cause fire or explosion. Therefore, the fluid section system must be earthed via the motor ground cable (see the motor instruction manual for its ground connection).

7 Installation

7.1 Handling

Fluid sections of great weight and size must be handled with suitable lifting equipment.

7.2 Connections subsets

- ✓ These fluid sections are intended to be coupled to motors (pneumatic or hydraulic) with compatible stroke.
- ✓ It is imperative to comply with an air motor/fluid section combination provided by **SAMES KREMLIN**
- ✓ Make sure that all connections of the pump and fluid section components - cables, hoses and pipes - are installed in such a way that they do not cause people to fall.
- ✓ Make sure that the order in which the cables, hoses and pipes are connected is in accordance with the connection diagram.
- ✓ Make sure that all cable connectors, hose and pipe connections are correctly fitted.
- ✓ Remember that unconnected or incorrectly connected cables, hoses and pipes can lead to malfunctions that endanger the safety of operating personnel.

7.2.1 Fluid supply connection

- ✓ If the supply pressure is higher than the max. pressure, it is necessary to install a fluid pressure regulator the closest possible of the equipment.
- ✓ Ensure that a short product hose. It reduces pressure fluctuations and pressure drops.
- ✓ Make sure that the fluid supply is properly made. The nominal size of the fitting to be used depends on the nominal size of the fluid hose.

7.2.2 Air supply connection

- ✓ Ensure that inbound air supply and hose are of correct size to reduce pressure fluctuations and pressure drops.

7.3 Storage

Pump

Place the equipment away from moisture after closing the various air inlets and various openings (plugs).

Storage before installation:

- ✓ Storage ambient temperature: 0 / +50 ° C.
- ✓ Protect the unit against dust, water runoff, moisture and shocks.

Storage after installation:

- ✓ Protect the unit against dust, water runoff, moisture and shocks.

8 Commissioning

The fluid sections are integrated in a system, if necessary refer to any additional instructions for further information on commissioning.

Pump

Pumps are tested for operation at the factory using a light weight oil lubricant.

Before commissioning, this lubricant must be removed by flushing with a suitable solvent.

At the end of the day, flush with a suitable solvent.

It is advisable to stop the fluid section in the "low" position in order to prevent the product from taking hold of the piston rod.

Motor

The Air motors are tested before their shipment. Nevertheless:

- ✓ Before coupling the Air motor to a fluid section pump, it is recommended to run the air motor at a low air pressure (1 bar / 14.5 psi max) for a few minutes.
- ✓ Couple the motor with the recommended pump fluid section.

9 Use of the product

9.1 User settings

Cup

Before commissioning, half fill the cup as well as the 2 tanks with lubricant "T".

The cup nut must be tightened moderately. Overtightening quickly damages the gland packing. A wrench is supplied to allow proper tightening.

Tightening of the Wet Cup

- ✓ Verify cup is filled with lubricant T,
- ✓ Run the pump, then tighten the cup after 10 minutes, again after 1 hour, then after 1 day of operation,
- ✓ In the event of a leak, the cup must be tightened.

Tightening procedure

- ✓ Depressurize the Air motor (see depressurization procedure),
- ✓ Depressure the product circuit (see depressurization procedure),
- ✓ Tighten the cup, clean it and fill it with lubricant T,
- ✓ Close the pump purge circuits,
- ✓ Open the Air motor air valve.

9.2 Safety in production

ATTENTION

Guards (motor cover, coupling guard, housings, ...) are set up for safe use of the equipment.

The manufacturer can not be held responsible in case of bodily injury as well as breakdowns and / or damage of the material resulting from the destruction, the occultation or the total or partial removal of the protectors.

9.3 Start up

Pumps are tested for operation at the factory using a light weight oil lubricant.

Before commissioning, this lubricant must be removed by flushing with a suitable solvent.

At the end of the day, flush with a suitable solvent.

It is advisable to stop the fluid section in the "low" position in order to prevent the product from taking hold of the piston rod.

9.4 Shutdown procedure

Pump

To avoid the risk of personal injury, material injections, injuries caused by moving parts or electric arcs, it is imperative that the following procedure be followed before any work is carried out when shutting down the system, assembling, cleaning or changing the nozzle.

- ✓ Lock the guns (valve, tap...) on OFF.
- ✓ Shut off the air supply through the shut off valve to remove residual air from the motor.
- ✓ Unlock the gun (valve, tap...).
- ✓ Bring the gun (valve, tap...) close to a metal bucket in order to recover the product. Hold it against the wall of the bucket to avoid interrupting the grounding continuity (if necessary, use the wire with clamp to ground the metal bucket).
- ✓ Open the gun (valve, tap) in order to drain the circuit.
- ✓ Lock the gun (valve, tap) on OFF position.
- ✓ Open the pump drain valve and collect the fluid in a properly grounded metal pail.
- ✓ Leave the bleed valve open during the entire operation.

Check the conformity of the wiring before intervention.

9.5 Diagnostic help / Troubleshooting guide

Possible symptoms of faults / Causes of faults / Remedies to apply

Defaults	Possible causes	Remedies
One lubricant gets colored and its level increases	Insufficient tightening of the packing nut	Tighten the cup.
	Incorrect assembly of seals	Check the assembly.
	Damaged or worn seals	Replace them.
	Incorrect selection of the material of the seals	Check compatibility.
The cup seals get rapidly damaged	No lubricant in one of the lubricant tank (pumped product drying on the piston rod).	Clean, replace parts if necessary. When stopping for a long time, stop the pump with the piston in the low position. Fill the lubricant tank.
	Product compatibility / seals	Check.
The pump is stopped	The fluid is polymerized, hardened, dried in the pump.	Clean the pump, change the parts if necessary.
	One of the packing nut is too tightened.	Loosen the packing nut..
	Broken part(s) in the pump.	Remove, check, replace.
The motor seems to operate but the pump does not deliver product	Internal parts of the motor failing	Check the operating of the motor.
	Defective coupling.	Check coupling.
The pump operates but irregular flow	One check Valve clogged on the seat, incorrectly mounted or worn.	Check mounting, state of the parts, tightening of parts and seals.
	Air inlet in the suction circuit.	
At stop, pump piston continues to move	Head piston seals or One check Valve worn or incorrectly mounted	Check and replace parts.

Defaults	Possible causes	Remedies
Pump cycles up and down at different speeds	One check Valve, head piston seals or cylinder worn.	Replace parts.
	Seals incorrectly mounted or damaged	Check the mounting; change if necessary.
The pump does not deliver enough pressure	Insufficient air pressure to the motor (valve insufficiently open, air leak,…)	Check; adjust.
	Insufficient air inlet on the motor or outlet clogged.(hose not adapted)	Check filter, mounting, hose not adapted.
	Packing nut or head piston seals too tightened.	Check mounting or loosen Packing nut
Abnormal operating after racing or to elevated temperature.	Head piston or Packing nut too tightened, damaged.	Check mounting; reduce pumping rhythm. Replace parts if necessary.
	Product drum empty.	Fill the drum; check the suction circuit and possible air leakage.

10 Maintenance

ATTENTION

Before any pump maintenance or service work performed, it is imperative to follow the depressurization procedure and the safety instructions.

Only qualified personnel should be allowed to carry out the following interventions. Observe the safety instructions given in this and all other documentation.

These procedures cover only the most common problems. If the information given here does not solve the problem you are experiencing, please contact your local SAMES KREMLIN representative for assistance.

During prolonged shutdown, stop the pump when the piston is in the low position.

Guards (motor cover, coupling guard, housings, ...) are set up for safe use of the equipment.

The manufacturer can not be held responsible in case of bodily injury as well as breakdowns and / or damage of the material resulting from the destruction, the occultation or the total or partial removal of the protectors.

10.1 Preventive Maintenance Plan

ATTENTION

Before any pump maintenance or service work performed, it is imperative to follow the depressurization procedure and the safety instructions.

Routine maintenance after a certain number of operating hours is recommended.

This is defined by the service department of the user and depends on the product, the working cycle and the usual pressure.

Take note of the disassembly/reassembly of the pump and the spare parts.

Fluid section

Daily

- ✓ Detect leaks at connections.
- ✓ Check the condition of the hoses.
- ✓ Observe the piston rod of the pump. Do not let the product dry onto the piston rod.
- ✓ Check the lubricant level inside the cup (keep it at half level).
  Fill it if necessary. It is normal for this lubricant to stain.
- ✓ Tighten the packing cup moderately with the supplied wrench, if necessary.
- ✓ Check the tightness of the components.
- ✓ If the pump is equipped with a pusher plate:
  - check the condition of the plate seal,
  - clean the top and bottom of the follower plate.
- ✓ Operate all valves in the system.

✓ Clean the site and the environment.

Twice a month

- ✓ If the lubricant is strongly colored in the cup, renew it.
- ✓ Check that the cup remains clean and clean it regularly with solvent after draining the lubricant.

Yearly

- ✓ Remove the fluid section completely.
- ✓ Clean all the parts with the appropriate solvent cleaning.
- ✓ Install new seals during the assembly of the pump (refer to package of spare seals).
- ✓ Lubricate the piston and the inside of the cylinder to prevent from damaging the seals.
- ✓ Install new parts if necessary.

10.2 General preconisation maintenance

ATTENTION

Before any pump maintenance or service work performed, it is imperative to follow the depressurization procedure and the safety instructions.

Before each reassembly

- ✓ Clean the parts with the appropriate cleaning solvent.
- ✓ Fit new seals if necessary, after greasing them.
- ✓ Grease the piston and the inside of the cylinder to avoid damaging the seals.
- ✓ Fit new parts if necessary.

11 Disassembly / Reassembly Operation

ATTENTION

Before any pump maintenance or service work performed, it is imperative to follow the depressurization procedure and the safety instructions.

ATTENTION

The equipment is subject to the ATEX directive and must not be modified under any circumstances.

Failure to comply with this recommendation does not engage our responsibility.

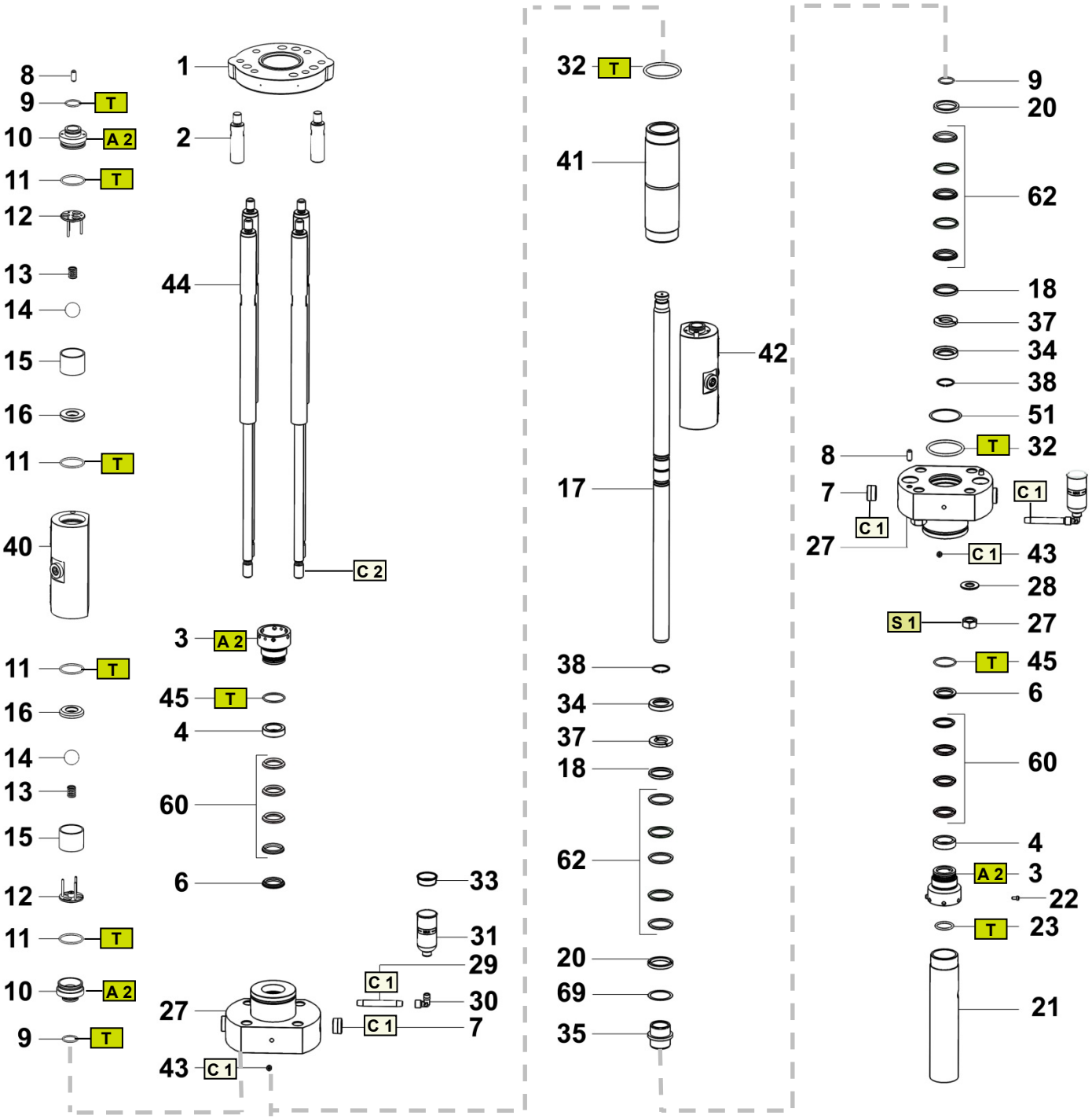
Before each reassembly:

- **Clean the parts with appropriate cleaning solvent.**
- **Fit new seals if necessary, after greasing them.**
- **Grease the piston and the inside of the cylinder to avoid damaging the seals (see table below),**
- **Fit new parts if necessary.**

Greases and thread lockers designations

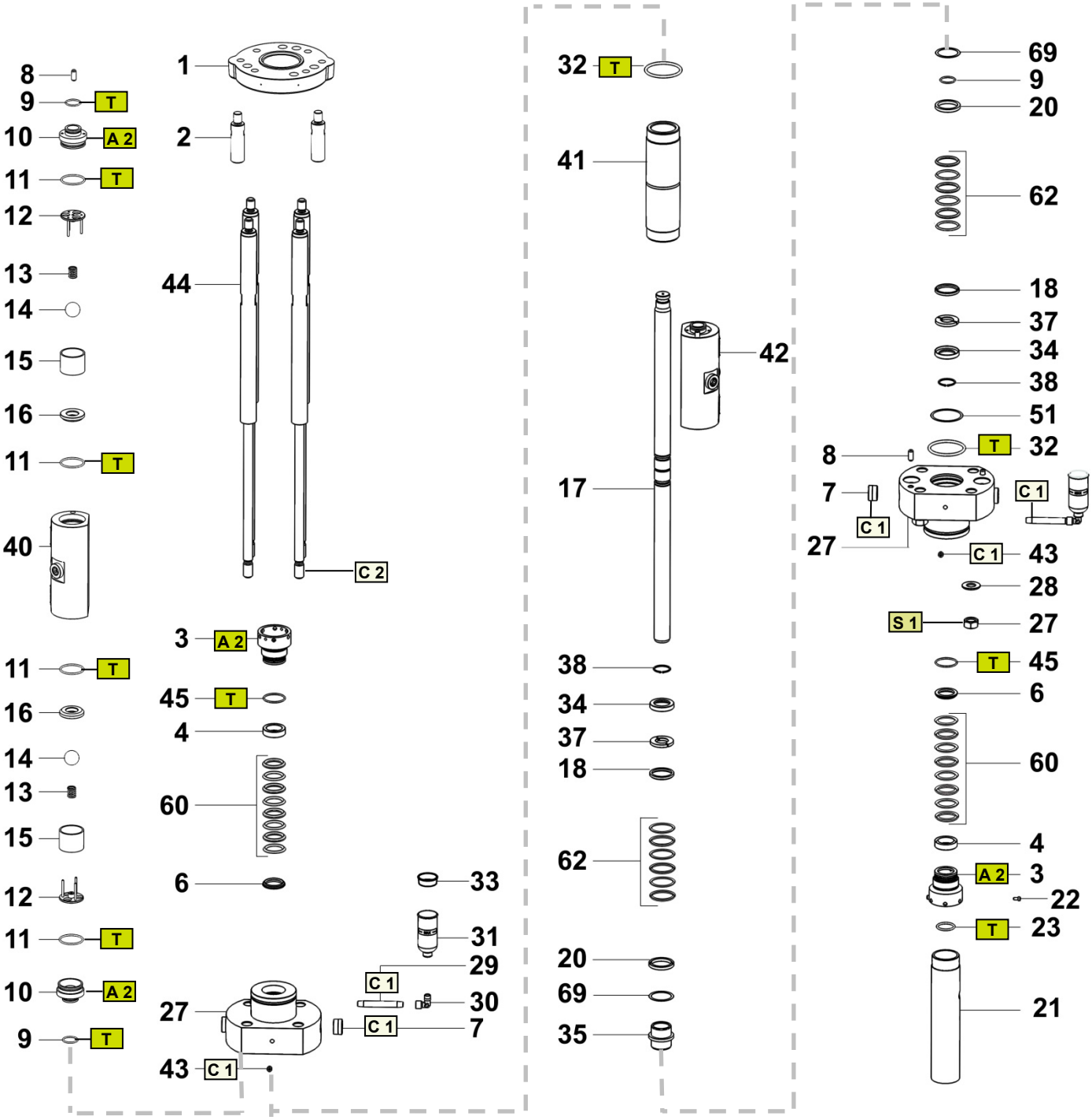
Index	Instruction	Description	Part number
A 1	Grease PTFE (Téflon)	'TECHNI LUB' grease (10 ml / 0.003 US gal))	560.440.101
A 2	Anti-seize grease	Grease box (450 g / 0.99 lb)	560.420.005
C 1	Medium strength Aneorobic Pipe sealant	Loctite 5772 (50 ml / 0.013 US gal)	554.180.015
C 2	Low strength - Aneorobic Adhesive	Loctite 222 (50 ml / 0.013 US gal)	554.180.010
S 1	Screwing torque : 250Nm / 184.4 ft/lbs		

Fluid Section PU Seals version **REX4B0570-☐-☐-☐-06**



(For a full description of spare parts, see Part 12 - Spare Parts)

Fluid Section PEEK Seals version **REX4B0570-☐-☐-☐-07**



(For a full description of spare parts, see Part 12 - Spare Parts)

Disassembly of the pump

- ✓ Flush the pump,
- ✓ Stop the pump if possible in low or intermediate position,
- ✓ Shut off the pump main air supply,
- ✓ Carry out the relief pressure instructions,
- ✓ Disconnect the outlet and inlet hoses or the outlet and inlet suction systems,
- ✓ Take off the spring ring,
- ✓ Lift up the closing ring,
- ✓ Take off the two half bushes and remove the closing ring,
- ✓ Unscrew the 3 screws from the pump bracket,
- ✓ Take off the pump.

Flange

- ✓ Unscrew the 2 screws (22),
- ✓ Take off the protective tube (21),
- ✓ Drain and dismount the lubricate assembly which consists of:
  - the tank cover (33),
  - the tank (31),
  - the elbow (30),
  - the sleeve (29).
- ✓ Unscrew the cup nuts (3),
- ✓ Unscrew the 4 nuts (27),
- ✓ Remove the washers (28),
- ✓ Take off the lower flange assembly, check and replace if necessary the O-Rings (32),
- ✓ Remove the inlet (40) and outlet (42) units' assembly,
- ✓ Take off the cylinder (41), the piston rod (17) assembly and the upper flange assembly (26), check and replace if necessary the O-Rings (32),
- ✓ Take off and check the cylinder (41) and remove the adjustment blocks (51).

- ✓ Clean the parts, check them if they are damaged or worn, change them
- ✓ Reinstall the parts in the reverse order of the disassembly sequence taking care of the following instructions:

During the assembly of the flanges, place the adjustment blocks if necessary.

During the assembly of the nuts (27), you must mount them with a maximum screwing torque of 250N.m / 184.4 ft/lbs.

Lower or upper cup seals

- ✓ Unscrew the cup nut (3),
- ✓ Take off, check and change if necessary in the following order:
  - the 'F' washer (4),
  - The seals (60 depending upon version ➔ rerfer to seal pack 06 & 07),
  - the 'M' washer (6).
- ✓ Take off, check and change if necessary the O-Rings (23 & 45),
- ✓ Clean all the parts, check them; if there are damaged or worn, change them,
- ✓ Clean and reinstall the parts in the reverse order of the disassembly sequence.

Piston

- ✓ Take off the rings (38),
- ✓ Take off the closing rings (34),
- ✓ Take off the two half bushes (37),
- ✓ Take off, check and change if necessary in the following order:
  - the 'M' washer (18),
  - the seals (60 depending upon version ➔ rerfer to seal pack 06 & 07),
  - the 'F' washer (20).
- ✓ Remove the piston (35),

- ✓ Take off, check and change if necessary the O-Ring (9) located at the middle of the piston rod (17).

Nota: If the piston is damaged, when changing it, you must change the seals indicated previously (refer to § 'lower or upper cup seals').

Clean and reinstall the parts in the following order:

- ✓ Install the 'F' washer (20) in the lower part of the piston,
- ✓ Install the seals (62 & 63 or 67 & 68 depending upon the version,
- ✓ Install the 'M' washer (18) in the lower part of the piston,
- ✓ Add an adjustment block (69) if necessary,
- ✓ Install the two stop bushes (37),
- ✓ Install the rings (38) on the piston rod (17),
- ✓ Lubricate the packing,
- ✓ Insert the lower part of the cylinder (41) in the reverse order of the Chevron seals until reaching the seals and recovering them,
- ✓ Install the other Chevron seals (upper packings) as well as the 'F' washer, the seals, the 'M' washer on the piston (35),
- ✓ Install the stop bushes (37),
- ✓ Install the rings (38),
- ✓ Make the cylinder slide upwards,
- ✓ Lubricate the cylinder (41).
- ✓ Add an adjustment block (69) if necessary.

Nota: the 'F' washers (4 & 20) are:

- plastic ones for the fluid sections # 104 134 0001 & 104 135 0001

- brass ones for the fluid sections # 104 134 0008 & 104 135 0008.

The plastic washers are in the spare parts of the package of seals of the concerned fluid sections.

Inlet unit valves

- ✓ Unscrew and take off the terminals (10),
- ✓ Take off, check and change if necessary the O-Ring (9) and the first seal (11),
- ✓ Take off, check and change if necessary in the following order:
  - the retaining grids (12),
  - the springs (13),
  - the balls (14),
  - the spacers (15),
  - the seats (16),
  - the second O-Rings (11),
- ✓ Take off the inlet block (40).

NOTA: Check the seat of each valve. If the seat is damaged, when changing it, you must change the ball.

- ✓ Clean and reinstall the parts in the reverse order of the disassembly sequence.

Outlet unit valves

- ✓ Unscrew and take off the terminals (10),
- ✓ Take off, check and change if necessary the O-Ring (9) and the first seal (11),
- ✓ Take off, check and change if necessary in the following order:
  - the second O-Rings (11),
  - the seats (16),
  - the balls (14),
  - the springs (13),
  - the spacers (15),
  - the retaining grids (12).
- ✓ Take off the outlet block (42).

NOTA: Check the seat of each valve. If the seat is damaged, when changing it, you must change the ball.

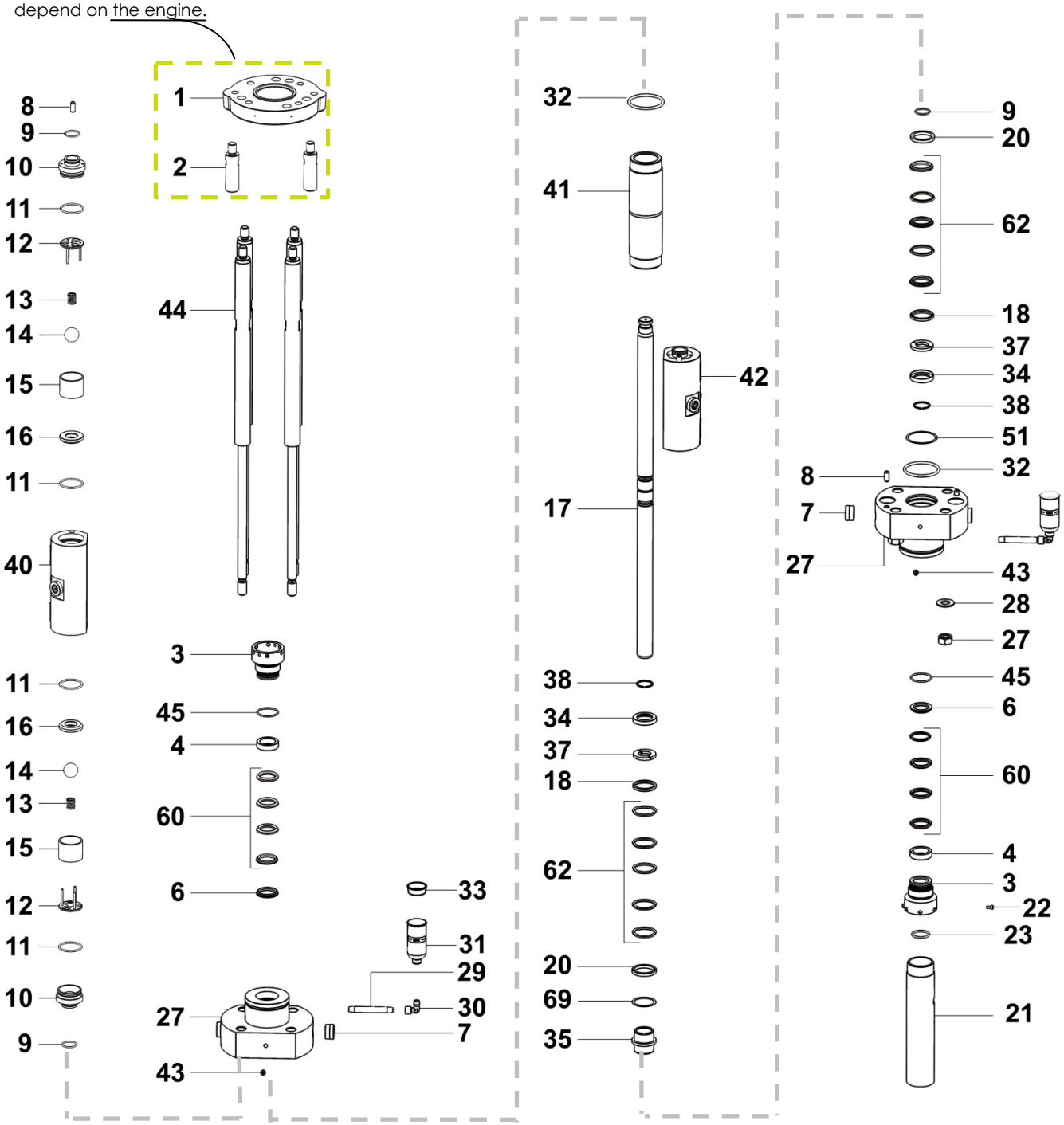
- ✓ Clean and reinstall the parts in the reverse order of the disassembly sequence.

12 Spare parts

Use only genuine SAMES KREMLIN accessories and spare parts designed to withstand the pump's operating pressures.

Fluid Section PU Seals version **REX4B0570-☐-☐-☐-06**

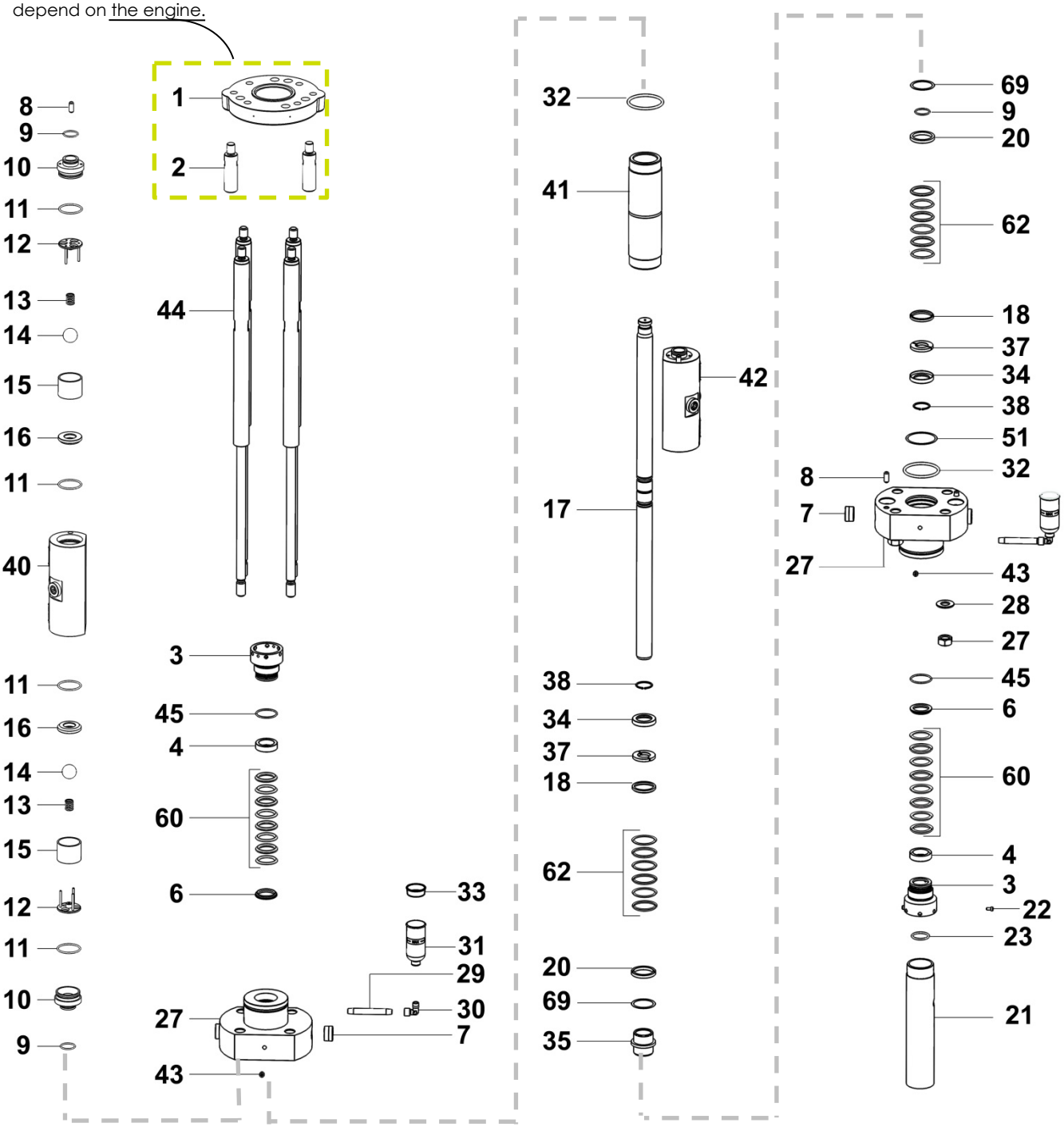
WARNING: these parts are not supplied with the fluid section alone as they depend on the engine.

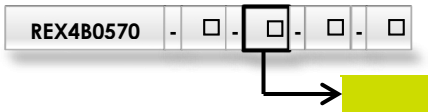


Fluid Section PEEK Seals version

REX4B0570-☐-☐-☐-07

WARNING: these parts are not supplied with the fluid section alone as they depend on the engine.





		CS	SS		
		Carbon Steel	Stainless Steel		
Ind.	**Description**	**# Ref.**		**Qty**	**Spare part level****
**1	Connection flange	See motor coupling kit table		1	
**2	Pin	See motor coupling kit table		2	
3	Cup nut	209 325	210 221	2	
*4	'F' washer	According to Seals pack composition table		2	**1**
6	'M' washer	55 581	210 204	2	**1**
7	Plug, model 1"	551 247	906 314 219	6	**2**
8	Cotter-pin	88 467		4	
9	O ring	84 479		5	**1**
10	Terminal	207 815	210 208	2	
11	O ring	84 480		8	**1**
*12	Retaining grid	207 496	210 213	4	**2**
*13	Spring	625 519	91 643	4	**2**
*14	Ball, model ∅ 32	86 032	87 332	4	**2**
15	Spacer	207 819	210 212	4	
*16	Seat	207 818	210 211	4	**2**
*17	Piston rod	207 820	210 214	1	**2**
18	'M' washer	207 832	210 224	2	**1**
*20	'F' washer	According to Seals pack composition table		1	**1**
21	Protective tube	209 307		1	
22	Screw, model CHc M 5x10	88 120		2	
23	O ring	80 025		1	**1**
25	Plug, model 1/4G	906 333 102	552 237	2	
26	Flange	207 807	210 203	2	
27	Lock nut	91 225		4	
28	Washer	91 226		4	
29	Sleeve	207 812	210 206	2	
30	Elbow, model MF	552 431		2	
*31	Tank	107 011 06		2	**3**
32	O ring	84 481		2	**1**
33	Tank plug	107 011 10		2	
34	Closing ring	207 822	210 228	2	
*35	Piston	207 830	210 223	1	**3**

*** Recommended maintenance parts.** **N S: Denotes parts are not serviceable.**
****Level 1 : Preventive maintenance** **Level 2 : Corrective maintenance** **Level 3 : Exceptional maintenance**

REX4B0570 - □ - □ - □ - □

	CS	SS
	Carbon Steel	Stainless Steel

Ind.	Description	# Ref.		Qty	Spare part level**
*37	Stop bush	207 821	210 227	2	
*38	Ring	88 497	88 902	2	
39	Terminal	207 817	210 210	2	
40	Inlet unit	207 814	210 207	1	
*41	Cylinder	207 829	210 222	1	**2**
42	Outlet unit	207 816	210 209	1	
43	Plug, model1/8"	906 333 106	552 236	2	
44	Tie-rod	207 808		4	
45	O ring	84 180		2	**1**
51	Adjustment block	208 124	-	4	
53	Wrench	207 835		1	
60	Piston Seal Pack	According to Seals pack composition table		1	**1**
62	Packing nut seal Pack	According to Seals pack composition table		2	**1**
69	Adjustment ring	According to Seals pack composition table		2	**1**

*** Recommended maintenance parts.** **N S: Denotes parts are not serviceable.**
****Level 1 : Preventive maintenance** **Level 2 : Corrective maintenance** **Level 3 : Exceptional maintenance**

Ind 42

Lower adapter flange

Ind.	Description	# Ref.	Qty	Spare part level**
-	**Lower adapter flange for motors 7200 and 9200**	**110 413 597**	**1**	**3**
-	▪Connecting flange assembly	N.S. (10 413 597)	1	
**1	▪ ▪ Connecting flange	N.S. (207 284)	1	
**-	▪ ▪ Screw CHc M18x55	N.S. (88 190)	3	
**15	▪ ▪ Pin	N.S. (209 582)	2	

*** Recommended maintenance parts.** **N S: Denotes parts are not serviceable.**
****Level 1 : Preventive maintenance** **Level 2 : Corrective maintenance** **Level 3 : Exceptional maintenance**

Recommended Seals pack

Code	Composition	Use
06	PU (+ FKM)	Mastics - PVC - Butyl
07	PEEK	Very abrasive material, hot material

Accessory

Ind.	Description	# Ref.	Qty
-	**Bottle of lubricant T (125 ml / 0,034 oz)**	**149 990 020**	**1**

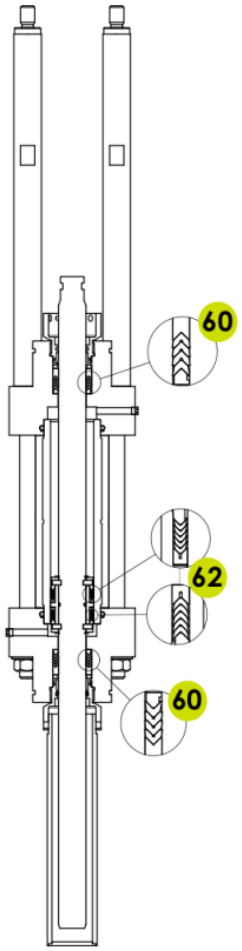
Option

Ind 70

Ind.	Description	# Ref.	Qty
70	**Protection**	**144 265 015**	**1**

Seals pack composition: 06 and 07

Seals Pack: # :		06 107 036			07 107 284		
Ind.	**Description**	**Qty**	**#**	**Material**	**Qty**	**#**	**Material**
4	Female washer	2	210 362	PA	2	211 713	-
20	Female ring	2	210 363	PA	2	211 720	-
60	Upper cup packing	3 1	84 331 210 907	PU UHMW	4 4	211 715 211 714	PTFE G PEEK
62	Piston packing	6 4	210 225 211 046	UHMW PTFE V	6 6	211 721 211 722	PEEK PTFE G
60	Lower cup packing	1 3	210 907 84 331	UHMW PU	4 4	211 714 211 715	PEEK PTFE G
69	Adjustment ring	-	-	-	2	211 723	-



⇓ ⇓

60			60		
PU	→	^	PTFE G	→	^
PU	→	^	PEEK	→	^
PU	→	^	PTFE G	→	^
UHMW	→	^	PEEK	→	^
			PTFE G	→	^
			PEEK	→	^
			PTFE G	→	^
			PEEK	→	^
62			**62**		
UHMW	→	v	PEEK	→	v
PTFE V	→	v	PTFE G	→	v
UHMW	→	v	PEEK	→	v
PTFE V	→	v	PTFE G	→	v
UHMW	→	v	PEEK	→	v
			PTFE G	→	v
UHMW	→	.	PEEK	→	v
PTFE V	→	.	PTFE G	→	v
UHMW	→	.	PEEK	→	v
PTFE V	→	.	PTFE G	→	v
UHMW	→	.	PEEK	→	v
			PTFE G	→	v
60			**60**		
UHMW	→	v	PEEK	→	v
PU	→	v	PTFE G	→	v
PU	→	v	PEEK	→	v
PU	→	v	PTFE G	→	v
			PEEK	→	v
			PTFE G	→	v
			PEEK	→	v
			PTFE G	→	v

** Quantity to be assembled as required*