



INSTRUCTION MANUAL

**FLUID SECTION, model 4 VALVES
113 cc**

for P85 proportioning system

**# 105 397 0001
105 397 0101**

Manual : 574.241.112 - 0803

Date : 04/03/08 - Supersede : 10/11/06

Modif. : Update

IMPORTANT : Read and understand all instructions before storing, installing and operating concerned equipment (professional use only).

PICTURES AND DRAWINGS ARE NOT CONTRACTUAL. THE MATERIAL MAY BE CHANGED WITHOUT PRIOR NOTICE

**KREMLIN REXSON – Site de Stains : 150, avenue de Stalingrad
93 245 - STAINS CEDEX - FRANCE
Téléphone : 33 (0)1 49 40 25 25 - Fax : 33 (0)1 48 26 07 16**



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FLUID SECTION, model 4 VALVES

CONTENTS

01. EC DECLARATION OF CONFORMITY	2
02. WARRANTY	2
03. SAFETY INSTRUCTIONS	3
04. TECHNICAL FEATURES	6
05. START UP.....	6
06. DISASSEMBLY / ASSEMBLY	6
07. TROUBLESHOOTING	9
08. MAINTENANCE	10
09. EXPLODED VIEW & PARTS' LIST.....	11

Dear Customer,

You are the owner of our new equipment and we would like to take this opportunity to thank you.

To make sure your investment will provide full satisfaction, special care has been taken by KREMLIN REXSON during all designing and manufacturing processes. To obtain the best result, safe and efficient operation of your equipment, we advise you to read and make yourself familiar with this instruction and service manual. Indeed, the non-compliance with instructions and precautions stated in this manual could reduce the equipment working life, result in operating trouble and create unsafe conditions.

01. EC DECLARATION OF CONFORMITY

The manufacturer : **KREMLIN REXSON** with assets of 6 720 000 Euros

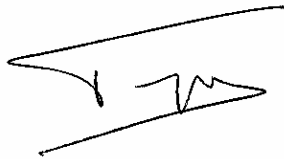
Head office : 150, avenue de Stalingrad 93 245 - STAINS CEDEX - FRANCE

Tel. 33 (0)1 49 40 25 25 - Fax : 33 (0)1 48 26 07 16

Herewith declares that : Fluid section, model 4 valves is in conformity with the provisions of :

EC - Machinery Directive (Directive 98/37/EEC) as amended and with national implementing legislation.

Established in Stains, on March 1st 2003,



Daniel TRAGUS
President

02. WARRANTY

We reserve the right to make changes; these changes may be carried out after the receipt of our order. No claim will be accepted as a consequence of any change carried out in the instruction manuals or in the selection guides.

Our equipment is checked and tested prior to shipment. In the case of a problem arising with the equipment, this must be in writing, within ten days from the delivery date.

KREMLIN REXSON warrants all equipment manufactured bearing its name, to be free from defect in material or workmanship for a period of 12 months (one shift per day or 1800 hours - 1 term reached) from the date of delivery. Work life is based on single shift working - 8 hours per day. Warranty claims for defective items will only be accepted in writing and will be verified and confirmed by us.

The warranty does not cover fair wear tear, damage or wear caused by misuse, improper maintenance or non-observance of our recommendations.

KREMLIN REXSON will repair or replace parts (carriage paid to our plant and accepted as defective by us). We shall not be liable for any losses, resulting from a production breakdown. Upon request, we can carry out service work at your premises; all expenses (travelling and accommodation) for KREMLIN REXSON technicians will be chargeable.

In the event that it is found that equipment has been tampered with, this will invalidate the warranty. Equipment that is bought in will be subject to the supplier's warranty.

03. SAFETY INSTRUCTIONS

GENERAL SAFETY INSTRUCTIONS



CAUTION : The equipment can be dangerous if you do not use it according to the rules mentioned in this instruction manual. Read carefully all the instructions hereafter before operating your equipment.

Only trained operators can use the equipment. (To acquire an essential training, please contact the "KREMLIN REXSON University" training center - Stains).

The foreman must ensure that the operator has perfectly taken in the safety instructions of this equipment as well as the instructions in the manuals of the different parts and accessories.

Read carefully all instruction manuals, label markings before operating the equipment.

Incorrect use may result in injury. This equipment is for professional use only. It must be used only for what it has been designed for. Never modify the equipment. The parts and accessories supplied must be regularly inspected. Defective or worn parts must be replaced.

Never exceed the equipment components' maximum working pressure.

Comply with regulations concerning safety, fire risks, electricity in force in the country of final destination of the material. Use only products or solvent compatible with the parts in contact with the material (refer to data sheet of the material manufacturer).

PICTOGRAMS

NIP HAZARD	WARNING MOVING ELEVATOR	WARNING MOVING PARTS	WARNING MOVING SHOVEL	DO NOT EXCEED THIS PRESSURE	HIGH PRESSURE HAZARD
RELIEF OR DRAIN VALVE	WARNING HOSE UNDER PRESSURE	WEAR GLASSES OBLIGATORY	WEAR OF GLOVE IS OBLIGATORY	PRODUCT VAPOR HAZARDS	WARNING HOT PARTS OR AREAS
ELECTRICAL HAZARD	WARNING FIRE HAZARDS	EXPLOSION HAZARDS	GROUNDING	WARNING (USER)	WARNING SERIOUS INJURIES

PRESSURE HAZARDS



Current legislation requires that an **air relief** shut off valve is mounted on the supply circuit of the pump motor to let air off when closing the supply circuit. Without this precaution, the motor residual air of the motor may let the pump beat and cause a serious injury.

Please ensure that, a **material drain valve** is mounted on the material circuit to drain it (after shutting down air to the motor and the pressure relief) before any servicing on the equipment. These valves must be closed for air and opened for product when processing.

HIGH PRESSURE INJECTION HAZARDS



When working with high pressure equipment, special care is required. Fluid leaks can occur. Then there are injection risks in exposed parts of body that may cause severe injuries or amputations :

- Medical care must be handled immediately if product is injected under the skin or in other parts of the body (eyes, fingers).
- Never point the spray gun at any one. Never try to stop the spray with your hands or fingers nor with rags or similars.
- **Follow the shut down procedure and always depressurize air and fluid circuits** before carrying out any servicing on the gun (cleaning, checking, maintenance of the material or cleaning of the gun nozzles).

For the guns equipped with a safety device, always lock the trigger when you do not start the gun.

FIRE - EXPLOSION - SPARKS - STATIC ELECTRICITY HAZARDS



A poor earth connection, inadequate ventilation, sparks or static electricity can cause an explosion or fire. to avoid these risks when using or servicing KREMLIN REXSON equipment, the following safety procedures must be followed :

- ensure a good earth connection and ground the parts to be handled i.e. solvents, materials, components and equipment,
- ensure adequate ventilation,
- keep working area clean and free from waste solvents, chemicals, or solid waste i.e. rags, paper and empty chemicals drums,
- never use electrical switches / power if in an atmosphere of volatile solvent vapour,
- stop working immediately in case of electrical arcs,
- never store chemicals and solvents in the working area.

TOXIC PRODUCT HAZARDS



Toxic products or vapours can cause severe injury not only through contact with the body, but also if the products are ingested or inhaled. It is imperative :

- to know the material products and their risks,
- notified or hazardous materials must be stored in accordance with the regulations,
- the material must be stored in an appropriate container, never place materials in a container where there is a risk of spillage or leakage,
- a procedure must be applied for the safe disposal of waste material. It must comply with all prevailing regulations and legislations of the country where the equipment is to be used,
- protective clothing should always be worn in compliance with the material manufacturers' recommendations,
- depending on the application and chemical safety instructions, safety glasses, gloves, foot wear, protective masks and possible breathing equipment should be worn to comply with the regulations

(Refer to chapter "Safety equipment of KREMLIN selection guide).



CAUTION!

It is forbidden using any solvent or with halogenated hydrocarbon base and also products with these solvents facing **aluminium** or **zinc**. The non-compliance with the instructions may cause explosion hazards causing serious or fatal injuries.

EQUIPMENT REQUIREMENTS

PUMP

Before carrying out any work, it is imperative to get used with the compatibilities of motors with pumps before coupling. The operator shall understand the equipment and the safety instructions. These instructions are available in the manuals of the pumps.



The air motor is designed to be mounted with a pump. Never modify any components or couplings. Where operating, please keep hands away from moving parts. Before starting up the equipment, please read the PRESSURE RELIEF instructions. Please ensure that any relief or drain valves fitted are in good working order.

HOSES

- Keep hoses out of circulation areas, moving parts or hot surfaces,
- Never expose product hoses to temperature higher than + 60°C / 870° F or lower than 0°C / 0° F,
- Never pull or use the hoses to move the equipment,
- Tighten all fittings as well as the hoses before operating the equipment,
- Check the hoses regularly; change them if they are damaged,
- Never exceed the working pressure (WP) indicated on the hose.

USED PRODUCTS

Considering the variety of products that may be used by the users and the impossibility to check off all chemical data, of possible reactions of chemicals to each other and their long term evolution, KREMLIN REXSON can not be considered as liable for :

- the bad compatibility of wetted parts,
- risks for staff and surroundings,
- for worn or out of order parts, for wrong working of equipments or units, as well as for the qualities of final product.

The user must know and prevent the possible risks as toxic vapours, fires or explosions due to used products. He shall determine the risks of immediate reactions or pursuant to repeated exposures of the staff.

KREMLIN REXSON shall not be liable for psychic injuries, direct or indirect material damages further to the use of chemicals.

04. TECHNICAL FEATURES

Version	Double effect exhaust is carried out in the 2 translations stages.
Capacity	56.5 cc
Delivery per cycle	113 cc
Fluid inlet and outlet plugs	Ø 3/4" G F
Maximum stroke	132 mm / 5"
Nominal stroke	120 mm / 4.7"
Material of the plunger	Hard chrome
Material of the cylinder	Hard chrome (thickness = 0.06 mm / 0.0024")
Material of the valves with seat	HRc60 treated steel
Material of the cup seals	PTFE G
Material of the piston seals	PTFE G
Weight	28 Kg / 61.7 lb

05. START UP

The pumps are tested in our workshop with lubricant.

Before starting up, you must flush the pump with the appropriate solvent.

NOTA : Before operating the equipment, refer to motor instruction manual.

06. DISASSEMBLY / ASSEMBLY

First, flush the pump, then remove the suction and pump outlet systems as well as the different equipments near the pump.



Before any intervention on the pump, please carry out the release pressure and drain general instructions.

To prevent from injuries, material injections, injuries due to moving parts or sparks during the stopping of the system, the assembly, the cleaning or changing of the nozzle, **you must follow the stages hereafter** before intervening :

- Close the guns,
- Shut off the air inlet using the pressure release to evacuate the residual air.
- Move the gun near to a metallic drum to get back the fluid. Keep it against the drum to maintain the grounding (if necessary use a wire to ground the metallic drum).
- Open the gun to drain the circuit.
- Open the drain valve of the pump and get back the fluid in a metallic drum correctly grounded.
- Let the drain valve open during the intervention.

Check the conformity of cabling before intervening.

Fluid section / motor disassembly

- Stop the pump if possible in high position and shut off motor air supply,
- Carry out a release pressure instructions,
- Take off the pump,
- Remove the elastic ring,
- Lift up the closing ring,
- Take off the two half bushes and remove the closing ring,
- Unscrew the 4 fastening screws from the motor and take off the fluid section.

Transfer block & inlet valves

- Unscrew the screws (25),
- Take off the transfer block (24),
- Take off, check and change if necessary the O-Rings (19),
- Unscrew and take off the tightening bushes (6),
- Remove the inlet spacer (7),
- Take off, check and change if necessary the valves (5),
- Take off, check and change if necessary the copper seals (13).

Reinstall the parts in the reverse order of the disassembly sequence.

NOTA : Check the seat of each valve. If the seat is damaged, change it.

Transfer block & outlet valves

- Unscrew the screws (25),
- Take off the transfer block (24),
- Take off, check and change if necessary the O-Rings (19),
- Unscrew and take off the tightening bushes (6),
- Take off, check and change if necessary the valves (5),
- Take off, check and change if necessary the copper seals (13).
- Remove the outlet spacer (12),
- Take off, check and change if necessary the seals,
- Unscrew the safety valve (15).

Reinstall the parts in the reverse order of the disassembly sequence.

NOTA : Check the seat of each valve. If the seat is damaged, change it.

Lower flange & cup

- Drain then remove the lubrication assembly which consists on :
 - the tank plug (20)
 - the tank (18)
 - the elbow (17)
 - the sleeve (16)
- Unscrew the screw (10) then remove the protective tube (11),
- Untighten the lower cup nut (2),
- Unscrew the nuts (29),
- Take off the washers (28) and the tie-rods (23),
- Remove the lower valve assembly,
- Unscrew the cup nut (2),

- Take off, check and change if necessary the O-Rings (31 & 30),
- Take off, check and change if necessary in the following order :
 - the first 'M' washer (36),
 - the first seal (34),
 - the 'F' washer (35),
 - the 8 last seals (34),
 - the second 'M' washer (36).

Reinstall the parts in the reverse order of the disassembly sequence.

NOTA : if the piston has scratches, change it as well as the seals (34).

Upper flange & cup

- - Drain then remove the lubrication assembly which consists on :
 - the tank plug (20)
 - the tank (18)
 - the elbow (17)
 - the sleeve (16)
- Unscrew the connecting axis (33),
- Take off the cylinder (3),
- Take off, check and change if necessary the O-Rings (22),
- Untighten the cup nut (2),
- Take off, check and change if necessary the O-Rings (31 & 30) and the seal (32),
- Remove the piston assembly downwards,
- Take off the upper flange assembly,
- Untighten the lower cup nut (2),
- Take off, check and change if necessary in the following order :
 - the first 'M' washer (36),
 - the first seal (34),
 - the 'F' washer (35),
 - the 8 last seals (34),
 - the second 'M' washer (36).

Reinstall the parts in the reverse order of the disassembly sequence.

NOTA : if the piston has scratches, change it as well as the seals (34).

Piston & piston seals

- Unscrew the 2 lock nuts (27),
- Take off, check and change if necessary in the following order :
 - the 'M' washers (37),
 - the seals (38),
 - the washers (39),
- Take off the piston rod (1).

Reinstall the parts in the reverse order of the disassembly sequence.

NOTA : if the cylinder has scratches, change it as well as the seals (38).

Particular instructions during the assembly :

- Use Loctite 122 glue for the assembly of the tightening bushes,
- Use Loctite 222 glue for the assembly of the connecting axis (33) and the piston rod (1),
- Use Loctite 243 glue for the assembly of the lock nuts (27).
- Screwing torque of the nuts (29) : 120 N.m / 88.5 ft/lbs

07. TROUBLESHOOTING

Not enough material or pressure drop :

- There is a pressure drop or the main air supply is shut off,
- The pump is shut off,
- Incorrect operating of the motor
- There is not enough material on the drum,
- The gun nozzle is clogged,
- The filters must be clean,
- If there is a pressure drop, check the valves.

The pump still operates but the gun is closed :

- There is not enough material,
- Check seals of pump and valves are in good condition.

Simple effect working

If the pump does not exhaust systematically, it means that one of the valves does not close. Check the condition of the valve and of the seat and make sure there is no impurity that prevents the closing of the valve.

08. MAINTENANCE



WARNING!

Before any intervention, please follow the pressure release instructions and read carefully the safety instructions.

During a long duration shutdown, stop the pump when the piston is in low position.

■ PREVENTIVE MAINTENANCE

Daily care :

Check if there are leaks. Check that the hoses are in good conditions.

Keep the piston of the pumps clean to prevent from material drying.

Check the PE level inside the shell (keep the level halfway up). Fill it if necessary. The lubricant will normally be coloured by the material.

Tighten moderately if necessary the cup nut with the wrench provided.

Check the tightening of the different parts.

If the pump is fitted with a follower plate : check that the plate seal is in good condition, clean top and bottom parts of the follower plate.

Manipulate (open and close) all the valves of the installation.

Keep the spray area clean.

Bimonthly care :

If the lubricant is excessively coloured in the cup, fill the cup with new lubricant. Leave the cup clean and clean it regularly with lubricant after having drained the lubricant.

■ CURATIVE MAINTENANCE

We advice you to schedule a systematic maintenance after a given working time . The rhythm is defined by the maintenance staff of the user and is done according to the product, the rate of work and the regular using pressure.

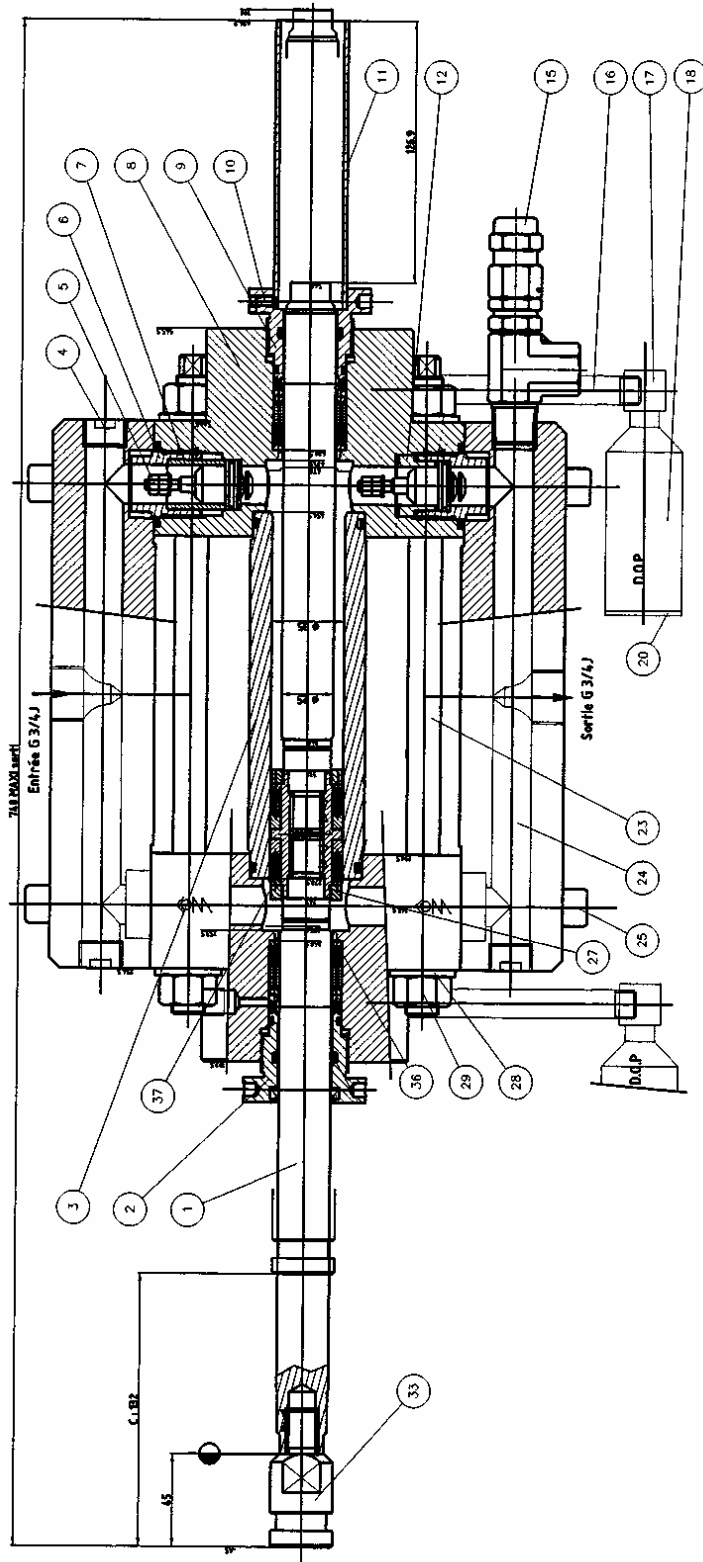
Before intervening on the equipment :

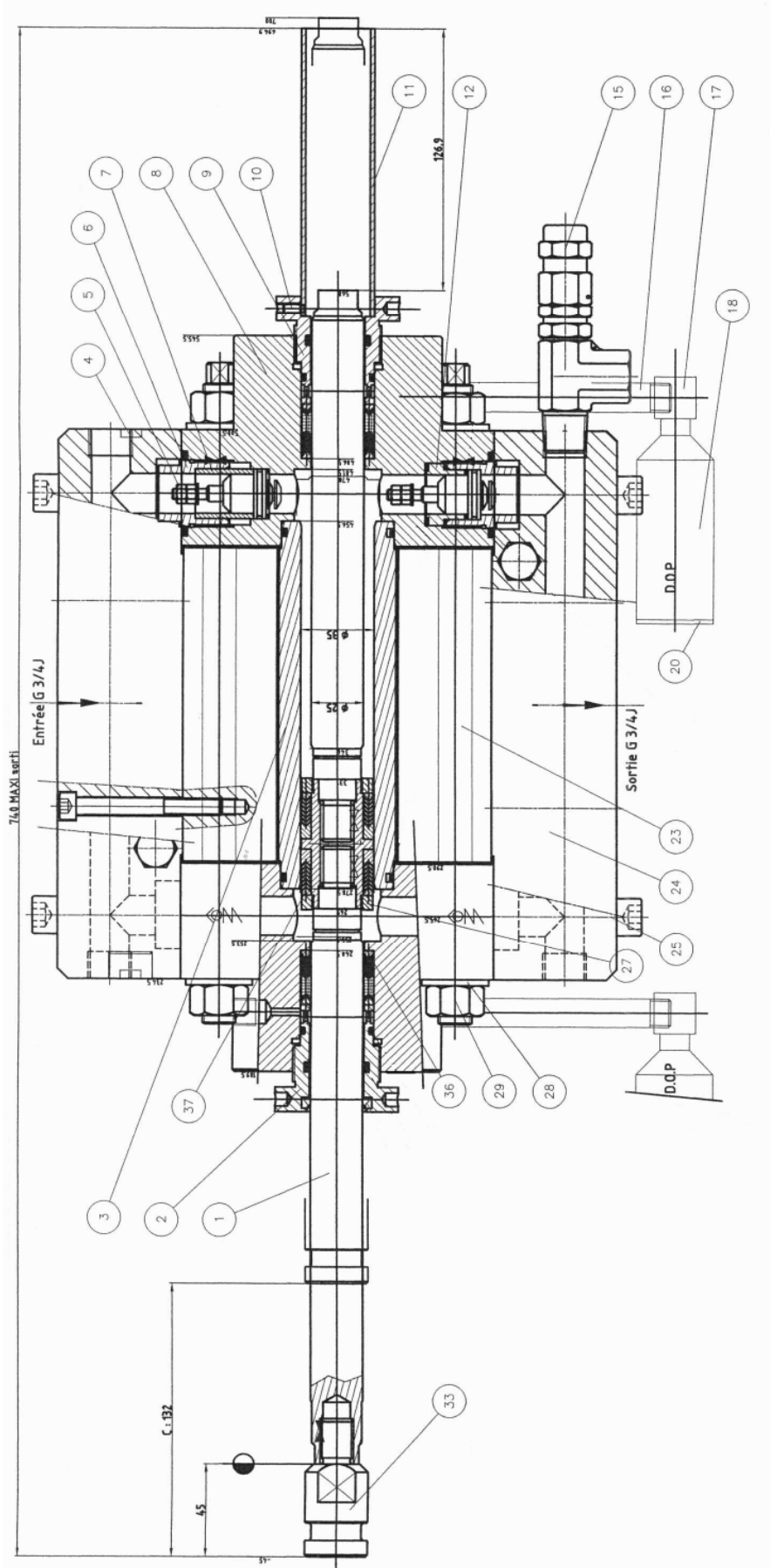
- **Clean the parts with the appropriate cleaning solvent,**
- **Install new seals if necessary after having lubricated them,**
- **Lubricate the piston and the inside of the cylinder to prevent from damaging the seals,**
- **Install new parts if necessary.**

09. EXPLODED VIEW & PARTS' LIST

SECTIONS

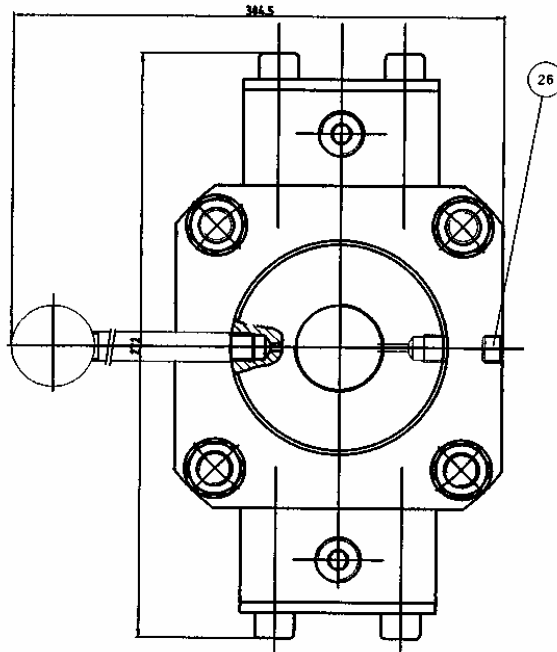
Version 105 397 0001



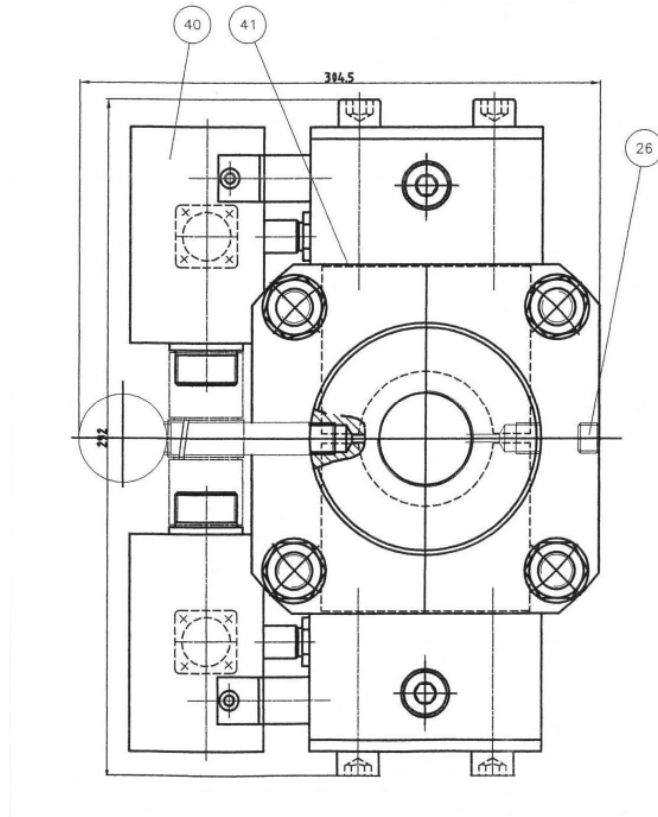


UNDERSIDE VIEWS

Version 105 397 0001



Version 105 397 0101



■ PARTS' LIST

COMMON PARTS						
Ind	#	Désignation	Description	Bezeichnung	Denominación	Qté
1	209 904	Piston	Piston	Kolben	Pistón	1
2	209 895	Ecrou de presse-étoupe supérieur	Upper cup nut	Obere Zugentlastungsmutter	Tuerca de prensa estopa superior	1
3	209 903	Cylindre	Cylinder	Zylinder	Cilindro	1
4	906 333 103	Bouchon 1/2"G	Plug, model 1/2"G	Blindstopfen 1/2"G	Tapón, tipo 1/2"G	3
5	105 792	Clapet	Valve	Ventil	Válvula	4
6	209 896	Douille de serrage	Tightening bush	Klemmenhülse	Boquilla de apriete	4
7	209 897	Entretoise d'entrée	Inlet spacer	Distanzstück des Eingangs	Tirante de entrada	2
8	209 890	Bride	Flange	Flansch	Brida	2
9	209 915	Ecrou de presse-étoupe inférieur	Lower cup nut	Untere Zugentlastungsmutter	Tuerca de prensa estopa inferior	1
10	88 251	Vis M5x10	Screw, model M5x10	Schraube, M5x10	Tornillo, tipo M5x10	1
11	209 921	Tube de protection	Protective tube	Schutzröhre	Tubo de protección	1
12	209 898	Entretoise de sortie	Outlet spacer	Distanzstück des Ausgangs	Tirante de salida	2
16	207 812	Manchette	Sleeve	Manschette	Manguito	2
17	552 431	Coude	Elbow	Winkelnippel	Codo	2
18	107 011 06	Réservoir	Container	Behälter	Bidón	2
20	107 011 10	Bouchon de réservoir	Container plug	Behälterstopfen	Tapón de bidón	2
23	209 902	Tirant M16	Tie rod, model M16	Stehbolzen, M16	Tirante, tipo M16	4
26	906 333 102	Bouchon	Plug	Blindstopfen	Tapón	6
27	210 465	Ecrou d'arrêt	Lock nut	Haltscheibe	Tuerca de tope	2
28	91 405	Rondelle M16	Washer, model M16	Scheibe, M16	Arandela, tipo M16	8
29	953 010 025	Ecrou HM16	Nut, model HM16	Mutter, HM16	Tuerca, tipo HM16	8
33	205 886	Axe d'attelage	Connecting axis	Verbindungsachse	Eje de enganche	1
36	209 901	Rondelle presse-joint "M"	'M' washer	"AG" Scheibe	Arandela prensa junta M	4
37	209 906	Rondelle presse-joint "M"	'M' washer	"AG" Scheibe	Arandela prensa junta M	2
-	208 613	Plaque anti-retour	Non-return plate	Rückschlagplatte	Placa anti-retorno	4
*	105 398	Pochette de joints	Seal kit	Dichtungssatz	Bolsa de juntas	1

* Pièces de maintenance préconisées tenues en stock
 * Preceding the index number denotes a suggested spare part.

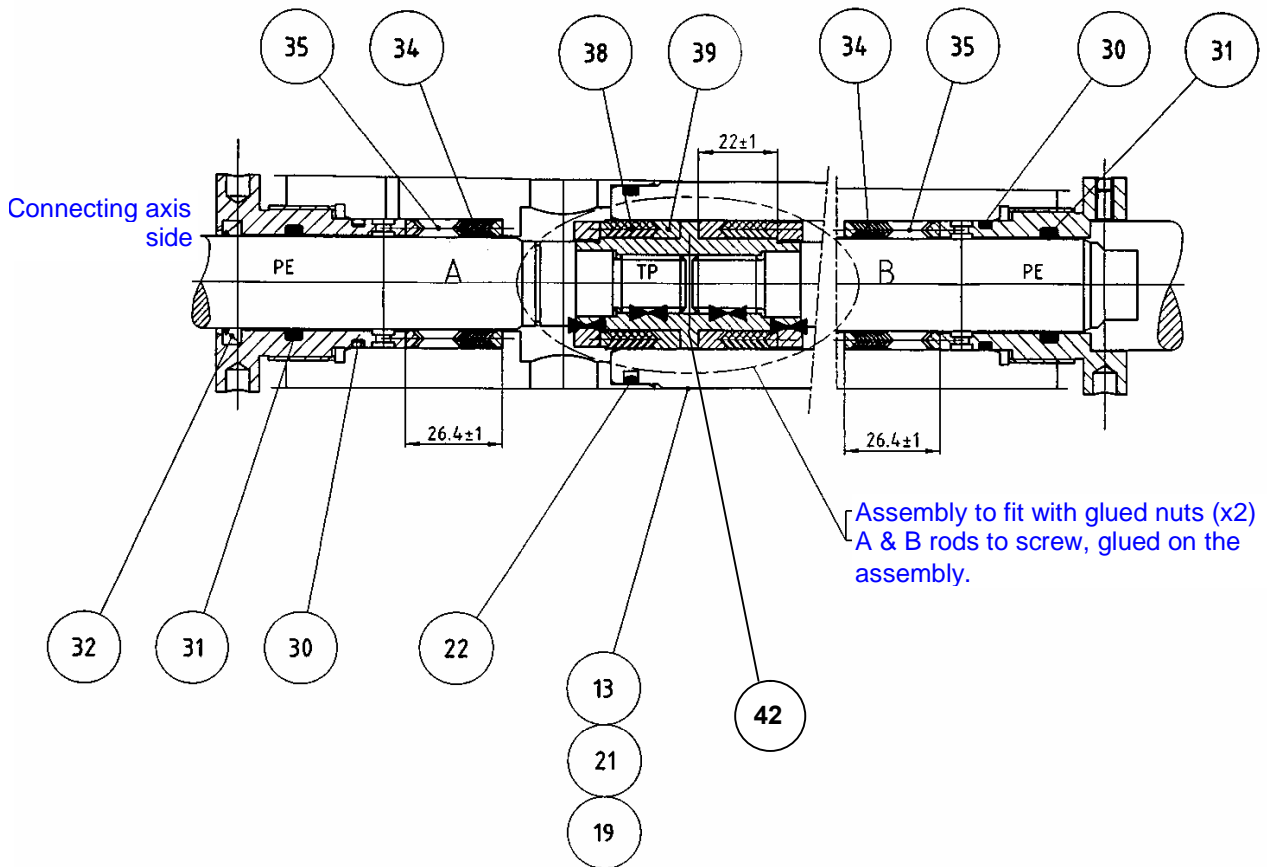
* Bezeichnete Teile sind empfohlene Ersatzteile.
 * Piezas de mantenimiento preventivo a tener en stock.

SPECIFIC PARTS

Ind	#	Désignation	Description	Bezeichnung	Denominación	Qté
105 397 0001						
15	106 530	Soupape de sécurité	Safety valve	Sicherheitsventil	Válvula de seguridad	1
24	209 908	Bloc de transfert	Transfer block	Übergangsblock	Bloque de traslado	2
25	88 746	Vis CHc M12x65	Screw, model CHc M12x65	Schraube, CHc M12x65	Tornillo, tipo CHc M12x65	8
105 397 0101						
14	550 549	Raccord, MM 3/8"-1/2 JIC	Fitting, model double male 3/8"-1/2 JIC	Anschluss, AG/AG 3/8"- 1/2 JIC	Racor, tipo MM 3/8"-1/2 JIC	1
15	209 909	Adaptateur pour soupape de sécurité	Adaptor for safety valve	Adapter für Sicherheitsventil	Adaptador para válvula de seguridad	1
15	101 031 11	Soupape de sécurité	Safety valve	Sicherheitsventil	Válvula de seguridad	1
15	101 031 04	Rondelle	Washer	Scheibe	Arandela	1
24	210 430	Bloc de transfert	Transfer block	Übergangsblock	Bloque de traslado	2
25	88 748	Vis CHc M12x75	Screw, model CHc M12x75	Schraube, CHc M12x75	Tornillo, tipo CHc M12x75	8
40	105 941	Ensemble de chauffage	Heating kit	Heizeinheit	Conjunto de calefactado	1
41	210 425	Bloc	Block	Block	Bloque	1
-	88 157	Vis CHc M8x70	Screw, model CHc M8x70	Schraube, CHc M8x70	Tornillo, tipo CHc M8x70	4

■ SEAL KIT COMPOSITION

01 = Seal kit # 105 398



Ind	#	Désignation	Description	Bezeichnung	Denominación	Qté
*13	84 088	Joint cuivre	Copper seal	Dichtung aus Kupfer	Junta de cobre	4
*19	80 025	Joint torique FPM	FPM O-Ring	FPM – O-Ring	Junta tórica FPM	4
*21	84 071	Joint cuivre	Copper seal	Dichtung aus Kupfer	Junta de cobre	2
*22	84 173	Joint torique FPM	FPM O-Ring	FPM – O-Ring	Junta tórica FPM	2
*30	84 025	Joint torique FPM	FPM O-Ring	FPM – O-Ring	Junta tórica FPM	2
*31	84 054	Joint torique FPM	FPM O-Ring	FPM – O-Ring	Junta tórica FPM	2
*32	84 400	Joint racleur	Scraper seal	Abgekratzte Dichtung	Junta rascador	1
*34	209 900	Joint PTFE graphité	PTFE G seal	Graphit PTFE Dichtung	Junta PTFE grafitado	18
*35	209 922	Rondelle presse-joint "F"	'F' washer	"IG" Scheibe	Arandela prensa junta H	2
*38	209 907	Joint PTFE graphité	PTFE G seal	Graphit PTFE Dichtung	Junta PTFE grafitado	12
*39	209 924	Rondelle presse-joint "F"	'F' washer	"IG" Scheibe	Arandela prensa junta H	2
*42	211 794	Rondelle de calage	Set ring	Stützscheibe	Arandela de galga	4

■ RECOMMENDED SEAL KIT

#	Composition
01	Graphited Teflon / O-Ring VITON