



## **INSTRUCTION MANUAL**

# **PNEUMATIC REGULATOR**

**5.4 mm / 0.21" passage**

**# 106 975 0111 - 106 975 0121 - 106 975 0131**

**Manual : 574.125.112 - 0603**

*Date : 29/03/06 - Supersede :*

*Modif.:*

**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  
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INSTRUCTION MANUAL  
**PNEUMATIC REGULATOR**

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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

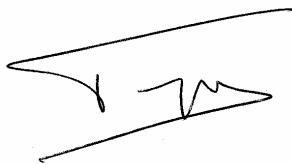
Head office : 150, avenue de Stalingrad 93 245 - STAINS CEDEX - FRANCE

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

Herewith declares that : Manual regulator, 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 1 st 2003,



Daniel TRAGUS  
President

## 02. WARRANTY

We reserve the right to make changes; these changes may be carried out after the receipt of the 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.

















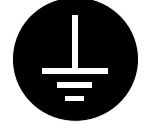


The warranty does not cover fair wear and tear, damage or wear caused by misuse, improper maintenance or non-observance of our recommendations.

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 it is bought in will be subject to the suppliers' warranty.

### 03. SAFETY INSTRUCTIONS

#### PICTOGRAMS

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

## GENERAL SAFETY INSTRUCTIONS

Before using the equipment, please ensure the operator has read and understood all instructions and warnings of this instruction manual as well as the instructions in the manuals of the different parts and accessories.

Incorrect use may result in injury. This equipment should only be used by trained operators. It must be used only for what it has been designed for. Never modify the equipment. The parts and accessories supplied must be genuine KREMLIN REXSON parts and conform with our specifications. The equipment must be regularly inspected. Defective or worn parts must be replaced.

**Never exceed the components maximum working pressure of the equipment.**

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

## 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 anyone. 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 chemical drums,
- never use electrical switches / power if in an atmosphere of volatile solvent vapour,
- stop immediately working 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 materials must be used 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 the 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 solvents or with halogenated hydrocarbon base and also products made with these solvents facing **aluminium** and **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. When 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**

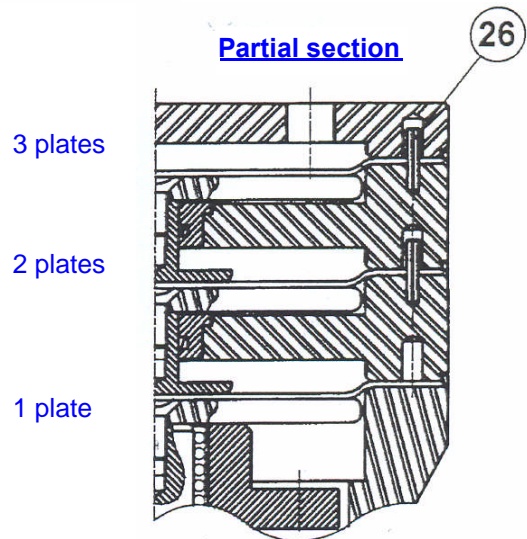
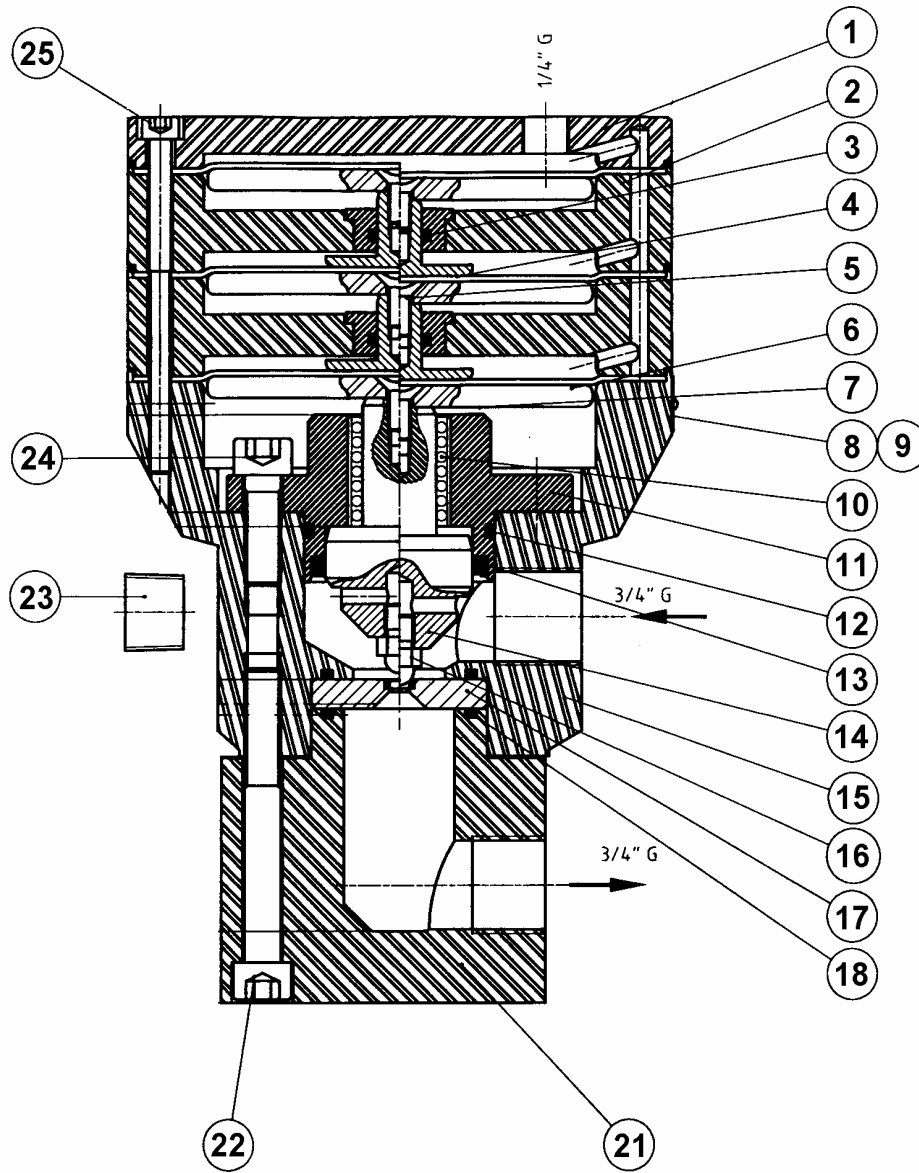
- Keep hoses out of circulation areas, moving parts or hot surfaces.
- Never expose product hoses to temperatures higher than + 60°C / 140° F or lower than 0°C / 32° F.
- Never pull or use the hoses to move the equipment.
- Tighten all fittings as well as the hoses before operating the equipment.
- Check the hoses regularly, change them if they are damaged
- Never exceed the working pressure indicated on the hose (WP).

## 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 owing to toxic vapours, fires or explosions due to used products. He shall determine the risks of immediate reactions or the cumulative effects pursuant to repeated exposures of the staff.
- KREMLIN REXSON shall not be liable for expenses or claims or psychic injuries or direct or indirect material damages further to the use of chemicals.

04. EXPLODED VIEW





## 05. SPARE PARTS' LIST

COMMON PARTS						
Ind	#	Désignation	Description	Bezeichnung	Denominación	Qté
1	204 819	Couvercle	Cover	Deckel	Tapa	1
9	906 030 107	Rivet	Rivet	Niet	Roblón	2
8	203 683	Plaquette de pression	Pressure plate	Druckplatte	Placa de presión	1
10	90 025	Douille à bille	Ball bearing	Kugelbuchse	Pico a bolas	1
11	204 823	Clapet	Valve	Ventil	Válvula	1
14	210 970	Tige de clapet	Valve rod	Ventilstange	Eje de válvula	1
15	204 824	Corps	Body	Körper	Cuerpo	1
16	210 969	Clapet à bille	Ball valve	Kugelventil	Válvula con bolas	1
17	204 825	Siège	Seat	Sitz	Asiento	1
21	206 827	Bloc d'entrée	Inlet block	Eingangsspeicher	Bloque de entrada	1
22	88 176	Vis, CHc M10x80	Screw, model CHc M10x80	Schraube, CHc M10x80	Tornillo, tipo CHc M10x80	4
23	906 333 103	Bouchon, 1/2"G	Plug, model 1/2"G	Stöpsel, 1/2"G	Tapón, tipo 1/2"G	1
24	88 189	Vis, CHc M10x30	Screw, tipo CHc M10x30	Schraube, CHc M10x30	Tornillo, tipo CHc M10x30	4

SPECIFIC PARTS					
Regulator :			# 106 975 0111	# 106 975 0121	# 106 975 0131
Ind	#	Description	Qty	Qty	Qty
2	204 822	Spacer	-	1	2
* 3	NCC / NSS	NBR seal	-	1	2
4	204 821	Stop	-	1	2
5	204 915	Screw	1	2	3
* 6	NCC / NSS	Diaphragm	1	2	3
7	204 820	Plate	1	2	3
* 12	NCC / NSS	FKM seal	1	1	1
* 13	NCC / NSS	Seal	1	1	1
* 18	NCC / NSS	FKM seal	2	2	2
25	933 151 332	Screw, model CHc 6x25	8	-	-
25	88 138	Screw, model CHc M6x55	-	8	-
25	88 140	Screw, model CHc M6x80	-	-	8
26	88 427	Pin	-	1	2
*	See hereafter	Package of seals	1	1	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.

N C S : Non commercialisé seul.

N S S : Denotes parts are not serviceable separately.

N S S : Bezeichnete Teile gibt es nicht einzeln, sondern nur komplett.

N C S : no suministrado por separado.

PACKAGE OF SEALS					
Regulator :			# 106 975 0111	# 106 975 0121	# 106 975 0131
Package of seals :			# 102 342	# 106 132	# 102 403
Ind	#	Description	Qty	Qty	Qty
* 3	NCC / NSS	NBR seal	-	1	2
* 6	NCC / NSS	Diaphragm	1	2	3
* 12	NCC / NSS	FKM seal	1	1	1
* 13	NCC / NSS	Seal	1	1	1
* 18	NCC / NSS	FKM seal	2	2	2

- \* 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.

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## 06. TECHNICAL FEATURES

Fluid inlet port	Ø 3/4"G
Fluid outlet port	Ø 3/4"G
Regulation air inlet port	Ø 1/4"G
Passage	5,4 mm / 0.21" (8 mm /0.3" ball)
Inlet maximum pressure	400 bar / 5801 psi
Regulated outlet minimum pressure	~ 5 bar / 72.5 psi
Regulation air pressure	6 bar / 87 psi

Regulator #	Plate (s)	Regulated outlet maximum pressure
106 975 0111	1 plate	40 bar / 580 psi
106 975 0121	2 plates	80 bar / 1160 psi
106 975 0131	3 plates	120 bar / 1740 psi

## 07. START UP

The regulators are tested in our plant with neutral oil.

Before starting the equipment, you must eliminate the oil flushing with solvent (high-flash naphtha or chloric solvent for example) if it is incompatible with the materials to be used.

## 08. DISASSEMBLY

First, **carry out the depressurization procedure** to avoid risks of serious injuries : spatters especially in eyes or injections under the skin can cause a blood poisoning when using such material. Then, unscrew the inlet and outlet fittings, disconnect the regulator air supply and put aside the regulator.

### A. CHANGING THE DIAPHRAGMS

- Unscrew the 8 screws (25),
- Take off the cover (1),
- Remove, check and change if necessary the diaphragm (6),
- Remove the first spacer assembly, then the second diaphragm, the second spacer and at least the second diaphragm.

### B. CHANGING THE STOP SEALS

- Unscrew the 8 screws (25),
- Take off the cover (1),
- Remove, check and change if necessary the diaphragm (6),
- Remove the first spacer assembly, then the second diaphragm, the second spacer and at least the second diaphragm,
- Unscrew the screws (5),
- Remove the plates (7),
- Take off the stops (4), change them if necessary,
- Remove, check and change if necessary the O Rings (3),
- Take off the pins (26),
- Remove the spacers (2).

### C. DISASSEMBLY OF THE LOWER VALVE

- Unscrew the 4 screws (22),
- Take off the inlet block (21),
- Take off the seat (17), check it and change it if necessary,
- Take off the seals (18); change them if necessary,
- Take off the valve (16).

**NOTA:** Check the seat. If it is worn, you must change the valve.

### D. CHANGING THE PUSH ROD AND THE SEALS OF THE UPPER VALVE

- Unscrew the 8 screws (25),
- Take off the plate (s) (7),
- Unscrew the 4 screws (24),
- Take off the valve,
- Take off and check the seals (12 & 13). Change them if necessary. **The seal (13) must be changed when assembling.**

## 09. MAINTENANCE

When using abrasive material, we advise you to carry out a systematic maintenance after a given working time. It is specified by the user maintenance staff and depends on the material, the working rate and the pressure.

The maintenance consists of :

- Check the seals and the tightness rings,
- Change if necessary the damaged parts,
- Lubricate the parts submitted to frictions,
- Check the parts do not have scratches,
- Clean carefully the parts without using metal parts or abrasive materials,
- Check the condition of seals.

**IMPORTANT : Make sure during the assembly that the seals are not damaged to avoid a bad operating of the regulator.**

## 10. ASSEMBLY

Carry out the assembly in the reverse order of the disassembly and comply with the instructions above.

## 11. TROUBLESHOOTING CHART

TROUBLES	CAUSES	SOLUTIONS
No regulation	Seat worn Impurity on the seat Mechanic assembly locked in low position Spring broken	Change the seat. Clean the seat. Remove, clean and check the mechanic assembly. Change the spring
No outlet pressure	No operating air Push rod broken	Change upstream the air circuit Change the push rod.
Bad regulation	Pressure or feeding flow rate too low Ball cage defective	Increase the pressure on the pump motor. Change the ball cage.
Outlet pressure too low	Operating pressure too low Diaphragm (s) in holes	Increase the operating pressure Change the diaphragm (s).
Air leakage	Diaphragm (s) in holes Spacers incorrectly tightened Stop seal (s) worn or damaged	Change the diaphragm (s). Tighten the spacers. Change the stop seal (s).
Material leakage	Valve guide seal (s) worn	Change the seal (s).