

DOCUMENTATION

VOLUREX PROPORTIONING GUN
PARVEX MOTOR - HARTING PLUG

Manual : 582.121.110-UK - 1908

Date: 02/08/19

Supersede :

Modif.:

TRANSLATION FROM THE ORIGINAL MANUAL

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

THE PICTURES AND DRAWINGS ARE NON CONTRACTUAL. WE RESERVE THE RIGHT TO MAKE CHANGES WITHOUT PRIOR NOTICE..

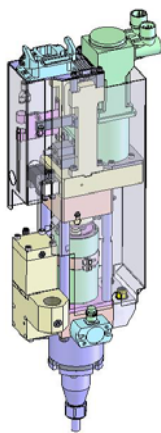
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INSTRUCTION MANUAL

VOLUREX PROPORTIONING GUN PARKER MOTOR - HARTING PLUG

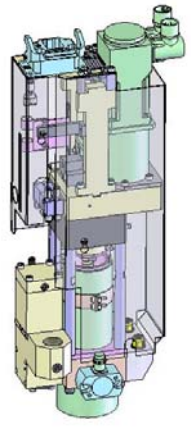
Proportioning system with outlet valve

25 cc # 105 824 0408
50 cc # 105 435 0408
100 cc # 105 145 0408
150 cc # 104 115 0408



Proportioning system with outlet flange

25 cc # 105 824 0208
50 cc # 105 435 0208
100 cc # 105 145 0208
150 cc # 104 115 0208



Manual : 574.331.112 - 1703

Date : 15/03/17 - Supersede : 03/10/12

Modif.: Update § 5

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**INSTRUCTION MANUAL
VOLUREX PROPORTIONING GUN**

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ADDITIONAL DOCUMENTATIONS :

Volurex proportioning system - Spare parts	Doc. 574.331.120
Inlet valve	Doc. 574.059.110
Proportioning part	Doc. 574.045.110
Outlet valve	Doc. 574.159.110

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 during all designing and manufacturing processes.

To obtain the best result, safe and efficient operation of your equipment, we advice 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. 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.

SAMES KREMLIN 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.

SAMES KREMLIN 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 SAMES KREMLIN 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.

02. 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.

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.

**Guards (air motor cover, coupling shields, housings,...) have been designed for a safe use of the equipment.
The manufacturer will not be held responsible for bodily injury or failure and / or damage to property due to removal or partial removal of the guards.**

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

A	D	F	E	C	G
NIP HAZARD	WARNING MOVING ELEVATOR	WARNING MOVING PARTS	WARNING MOVING SHOVEL	DO NOT EXCEED THIS PRESSURE	HIGH PRESSURE HAZARD
H	J	L	K	M	O
RELIEF OR DRAIN VALVE	WARNING HOSE UNDER PRESSURE	WEAR GLASSES OBLIGATORY	WEAR OF GLOVES IS OBLIGATORY	PRODUCT VAPOR HAZARDS	WARNING HOT PARTS OR AREAS
N	P	R	I	B	S
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 shutdown 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 SAMES KREMLIN 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 though 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 o 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, hearing protective earplug, gloves, foot wear, protective masks and possible breathing equipment should be worn to comply with the regulations

(Refer to chapter "Safety equipment of SAMES 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

Guards (air motor cover, coupling shields, housings,...) have been designed for a safe use of the equipment.
The manufacturer will not be held responsible for bodily injury or failure and / or damage to property due to removal or partial removal of the guards.

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 / 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 maximum working pressure (MWP) 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, SAMES KREMLIN can not be considered as liable for :

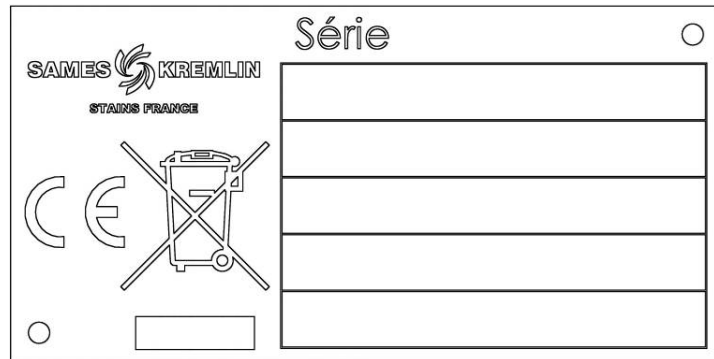
- the bad compatibility of wetted parts,
- risks for staff and surroundings,
- for worn or out of order parts, for wrong working of equipments or units, as well as for the qualities of final product.

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.

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

ENVIRONMENT

Label marking on the Volurex proportioning system



This equipment consists of a label plate with the name of the manufacturer, the equipment part number, the interesting informations to use correctly the equipment (pressure, voltage...) and the above pictogram.

The equipment is designed with and consists of high quality materials and components which can be re-used.

The 2012/19/UE European Directive covers all equipments with a crossed-out bin pictogram. Please inform yourself about the collection systems for electric and electronic equipments.

Please according to local rules and **do not throw the old equipments with household wastes**. A correct disposal of the old equipment will help prevent negative consequences for the environment and health.

03. DESCRIPTION

The VOLUREX system consists of a Volurex proportioning gun and a control bay. It is designed for dispensing materials beads (silicone, adhesive, mastic...) for cold and hot extrusion.

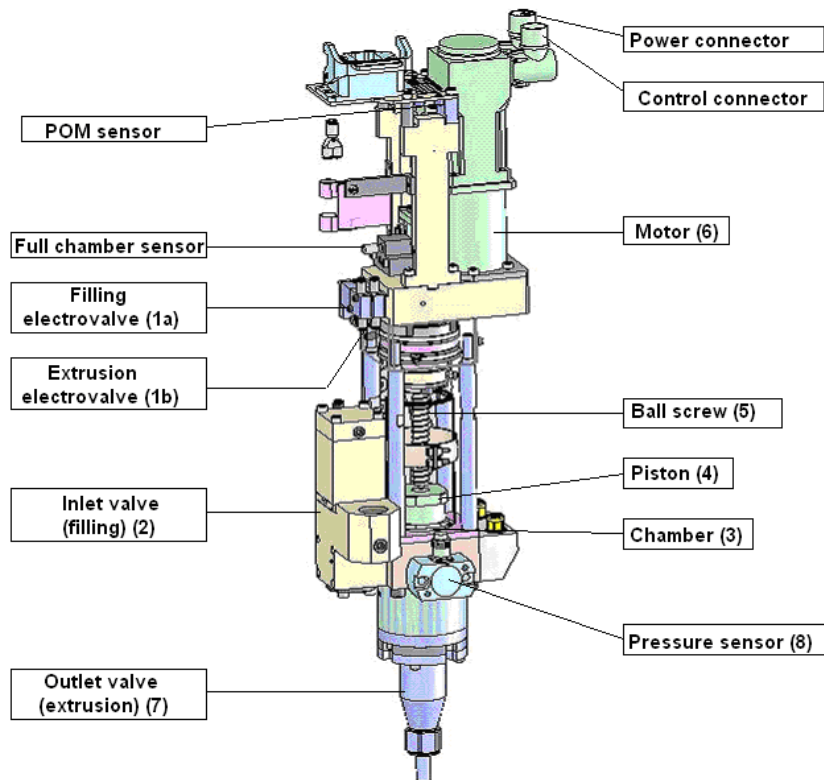
The VOLUREX assembly is linked to a robot that ensures the displacement of the proportioning system (or of the part). The robot sends a signal to the control bay, thus providing the flow rate required to dispense the bead.

The flow rate as well as the dosing are programmable and electronically controlled thanks to the control bay.

Depending upon the external informations (robot, manipulator, proportioning system), the bay drives the system. It controls some safety devices that protect the proportioning system and its environment.

04. OPERATING PRINCIPLE

The proportioning system consists of :



The dispensing system consists of 3 actuators :

- The motor (6) of the proportioning system gives a translation motion to the piston (4) via the ball screw (5)
- The electrovalve (1a) enables the material coming from the fluid inlet (2) to enter into the chamber.
- The electrovalve (1b) enables the material from the chamber (3) to be extruded via the fluid outlet (7).

■ OPERATING

First position :

- The piston (4) is downwards and the ball screw (5) upwards.

Filling :

- The filling electrovalve (1a) opens to let the material enter in via the fluid inlet (2).
- The fluid enters in the chamber (3) via the shutting group (not represented).
- The piston (4) goes up because of the fluid pressure until coming into contact with the ball screw (5).

Pressurization :

- Thanks to the pressure sensor (8), the piston (4) goes down to put the fluid to the required pressure.

Extrusion :

- The extrusion electrovalve (1b) opens to let the material enter in via the fluid outlet (7).
- The piston (4) goes down in the chamber (3) with a speed that fits in with the output selected by the robot.
- The volume applicated is calculated thanks to the stroke carried out by the piston (4).

Drain :

The drain consists in :

- carry out an extrusion (empty the gun chamber) during a long duration shutdown of the proportioning system or during a request of the operator.
- then carry out a filling operation (fill the gun chamber with material).

05. TECHNICAL FEATURES

■ FEATURES

The VOLUREX can apply materials which have viscosities from 2 000 up to 1 000 000 Cps.

Features	VOLUREX			
	25 cc	50 cc	100 cc	150 cc
Capacity (cm ³)	25	50	100	150
Maxi fluid output (cm ³ /mn)	195	362	726	1090
Fluid application	Hot extrusion			
Maximum fluid filling pressure	187 / 2712 psi		100 / 1450 psi	
Maximum fluid dispensing pressure	187 bar / 2712 psi	170 bar / 2465.5 psi	85 bar / 1233 psi	60 bar / 870 psi
Air pressure (valve)	5 bar / 72.5 psi			
Motorization version	Parker			
Pressure sensor	0-200 bar / 0 - 2900 psi 4-20 mA			
Maximum fluid temperature	80°C / 176° F			
Weight (kg)	12 kg / 26.4 lbs		13 kg / 28.6 lbs	
Fluid connections				
Fluid inlet (inlet valve)	3/4" Rp			
Fluid outlet	Refer to 'Specific features of the proportioning system'			
Electric features				
Voltage (V)	230			
Power (W)	515	515	555	575
Intensity (A)	1,11			
Frequency (Hz)	50			
Electric connectors				
Connectors	Harting			
Electric resistances	3 resistances of 125W - 230V (1 → inlet valve, 1 → outlet valve / outlet flange, 1 → proportioning system body)			
Heated collar (proportioning part)	140 W		160 W	
Temperature drill	PT 100 (located in the proportioning system body)			

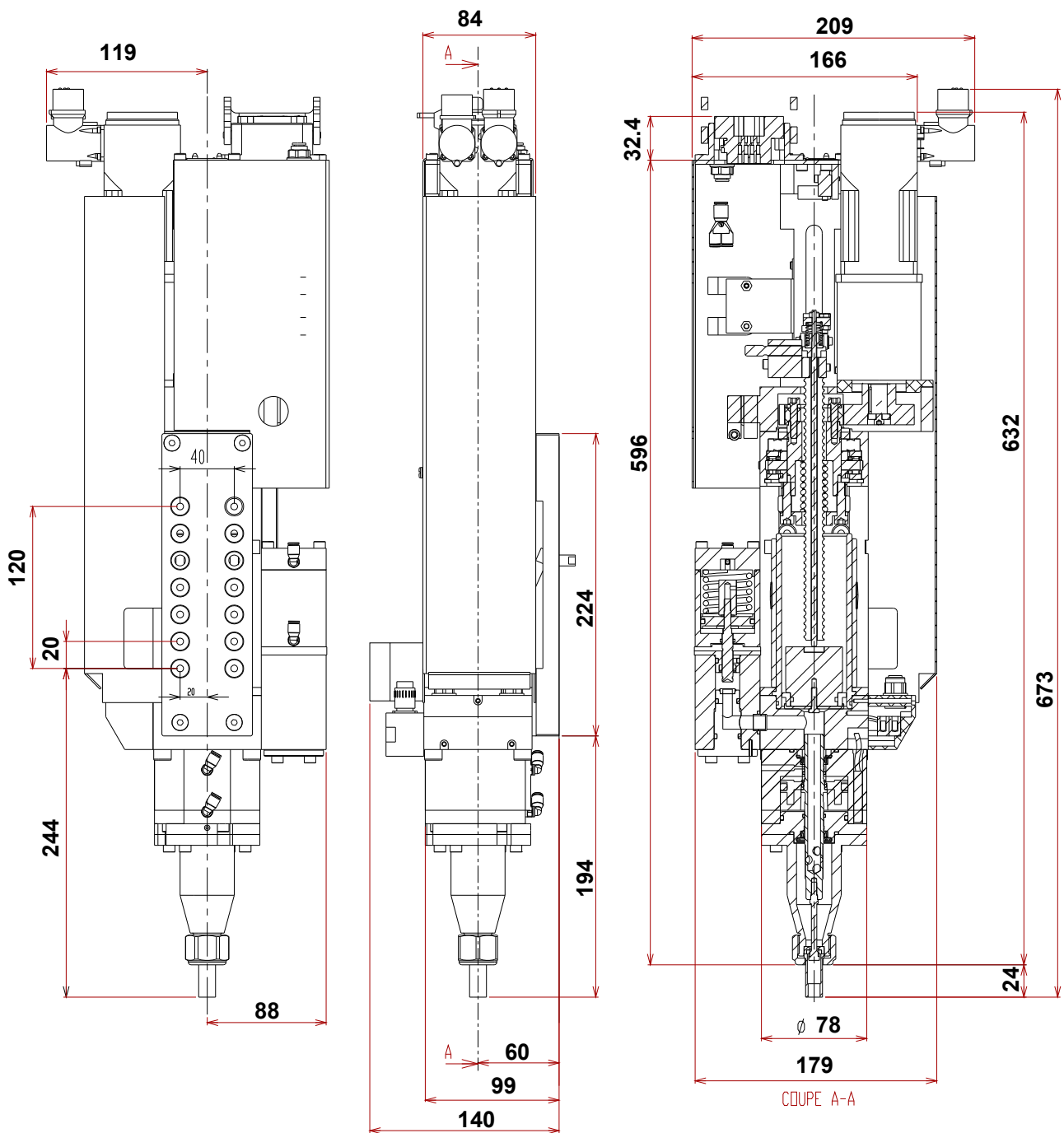
Specific features of the proportioning system with outlet valve

Fluid connections	
Fluid outlet (outlet valve)	Threading, model F10x100
Nozzle (option)	Ø 0.8 to 8

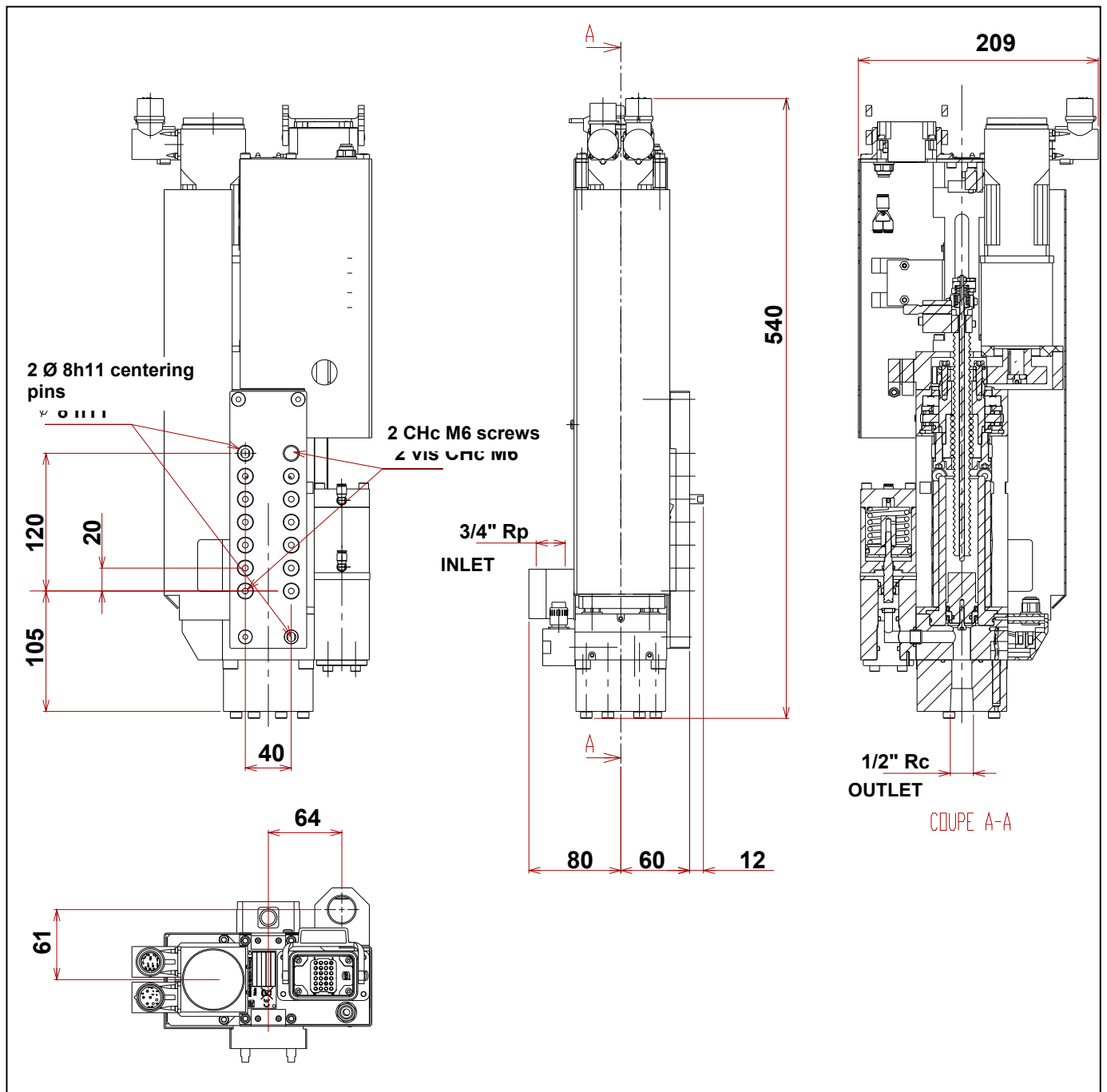
Specific features of the proportioning system with outlet flange

Fluid connections	
Fluid outlet (outlet valve)	1/2" Rc

■ DIMENSIONS OF THE VOLUREX WITH OUTLET VALVE



■ DIMENSIONS OF THE VOLUREX WITH OUTLET FLANGE



06. INSTALLATION

■ PNEUMATIC CONNECTIONS

Install a HP fluid hose between the mastic regulator fluid outlet and the VOLUREX proportioning system inlet valve. The hose can be a heated one to make easier the fluid flow.

Install an air hose (\varnothing 4x6) to supply with compressed air the proportioning system. Connect it to the compressed air network by means of a regulator.

■ ELECTRIC CONNECTIONS

Connect the electric cables between the control bay and the proportioning system.

Connect the interface electric cables between the control bay and the robot control box.

Connect the control bay to the network.

07. MAINTENANCE

Guards (air motor cover, coupling shields, housings,...) have been designed for a safe use of the equipment.
The manufacturer will not be held responsible for bodily injury or failure and / or damage to property due to removal or partial removal of the guards.

■ DAILY PREVENTIVE MAINTENANCE

Be certain the hoses are in good condition and that there is no leakage.

Drain the proportioning gun after a long duration shutdown.

Check the nozzle is clean and correctly tightened. Clean it or change it (clogging or bead fault).

■ MONTHLY PREVENTIVE MAINTENANCE

Check if there is air or fluid leakage at the inlet and outlet valves' level (fluid leakage detector).



Lubricate the ball screw (every 300 hours)

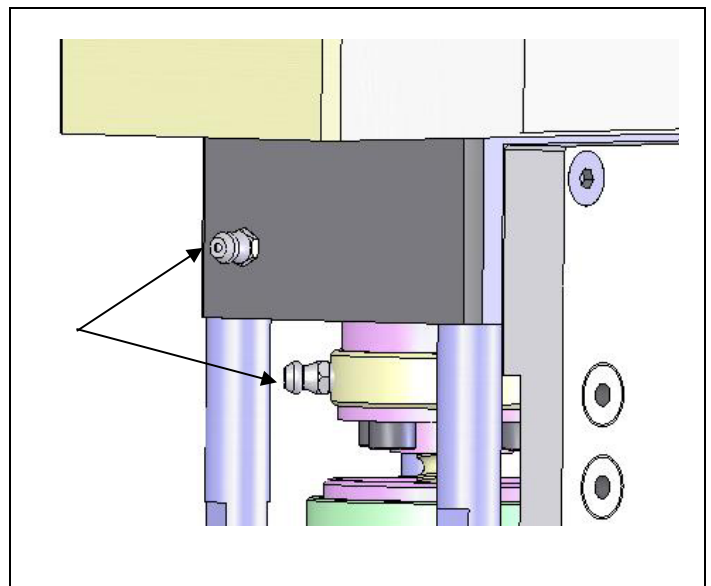
(KLUBER grease - P.N°. STABUTHERM GH 461)
(ball screw duration life : 500 000 cycles)

➤ **NEVER TAKE OFF THE BALL SCREW FROM THE NUT.**

Lubricate the needle stop

(KLUBER grease - P.N°. STABUTHERM GH 461)

2 lubricators (one located on the nut of the ball screw, the other one located on the gear box) enable to grease the ball screw as well as the needle stop. Take off the carter to carry out the lubrication.



■ BIMONTHLY PREVENTIVE MAINTENANCE

Check the tightening :

- of the inlet valve on the body,
- of the outlet valve or flange on the body.

Check there is no fluid leak coming from the piston of the proportioning part.

■ YEARLY PREVENTIVE MAINTENANCE

Remove, clean the inlet valve. Change the seals.

Remove, clean the outlet valve. Change the seals.

Remove, clean the proportioning part. Change the seals.

Check the piston.

Check the ball screw and the bearings.



When reassembling :

- Lubricate the ball screw, the needle stop, the slides and the bearings (KLUBER grease - STABUTHERM GH 461)
- Lubricate the seals, the piston, the cylinder, the needle with PTFE MAGNALUBE grease.

Nota : if using intensively the equipment, the maintenance frequency could be modified.

08. TROUBLESHOOTINGS

If a trouble occurs during the operating of the VOLUREX proportioning system, the fault will be displayed on the bay display unit (refer to bay instruction manual).

09. DISASSEMBLY - ASSEMBLY

Guards (air motor cover, coupling shields, housings,...) have been designed for a safe use of the equipment.
The manufacturer will not be held responsible for bodily injury or failure and / or damage to property due to removal or partial removal of the guards.

■ DISASSEMBLY / ASSEMBLY OF THE COMPLETE PROPORTIONING SYSTEM

Disassembly :

Empty completely the proportioning system,
Shut off the air supply of the pump into operation,
Switch the 'AUTO-MANU' control box switch on 'MANU',
Drain the proportioning system,
Open the drain valve (pump or collector),
Switch off the proportioning system,
Disconnect the beads of the electric connection,
Remove the VOLUREX proportioning gun.

Assembly :

Install the new proportioning system,
Connect the fluid supply hose on the inlet valve,
Connect all the electric connectors,
Switch on the heat area,
Close the drain valve (pump or collector),
Install air on the pump motor,
Drain the circuit (pump, hose, proportioning system) until there is no more air,
Switch the 'AUTO MANU' control box switch on 'AUTO'.

To remove a component from the proportioning system, you must :

- Stop the installation (depressurize, drain),
- Shut off the electric and pneumatic supply,
- Take off the 2 carters.

■ CHANGING THE INLET VALVE

Remove the hose located upwards the inlet valve,
Disconnect the 2 air hoses (red and blue),
Unscrew the 4 screws that hold the inlet valve on the proportioning system (BTR wrench n° 5).
Take off the inlet valve.
On the new valve, lubricate the seal in contact with the body of the proportioning system,
Install the new valve, slide it on the heated resistance, then tighten the 4 screws.
Install the fluid supply hose and the air hoses.
Red hose → top fitting (closing of the valve)
Blue hose → low fitting (opening of the valve)
Place the installation into operation.

🔄 **To disassemble / assemble the valve, refer to 'INLET VALVE' documentation.**

■ CHANGING OF THE OUTLET VALVE

Disconnect the 2 air hoses (red and blue).

Unscrew the 4 screws that hold the outlet valve on the proportioning system (BTR wrench n° 5).

Remove the outlet valve.

On the new valve, lubricate the seals in contact with the proportioning system.

Install the new valve, make the heated resistance slide on the hole expected (shoulder hole, model Ø 5 mm / 0.2"), then tighten the 4 screws.

Connect the air hoses.

Red hose → low fitting (closing of the valve)

Blue hose → top fitting (opening of the valve)

Place the installation into operation.

➡ To disassemble / assemble the valve, refer to 'OUTLET VALVE' documentation.

■ DISASSEMBLY / ASSEMBLY OF THE PROPORTIONING PART

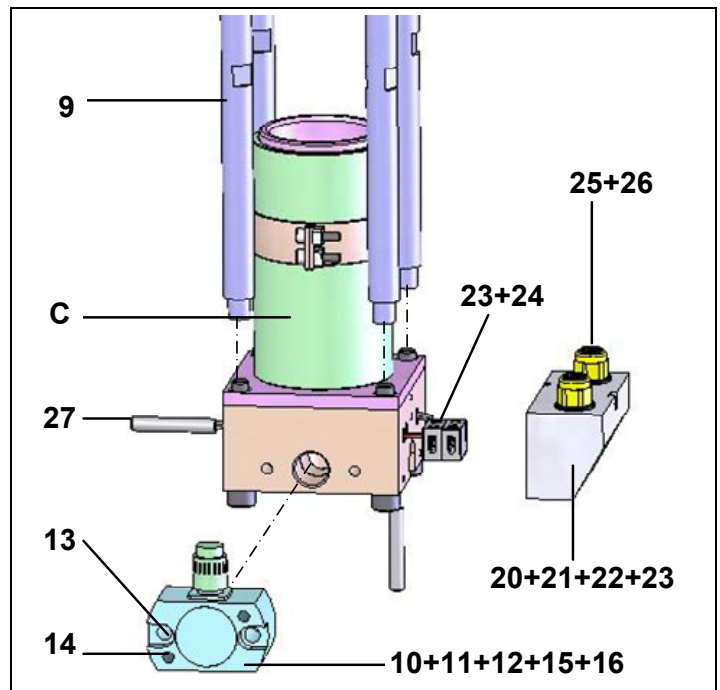
Remove the inlet valve and the outlet valve of the proportioning system or the outlet flange.

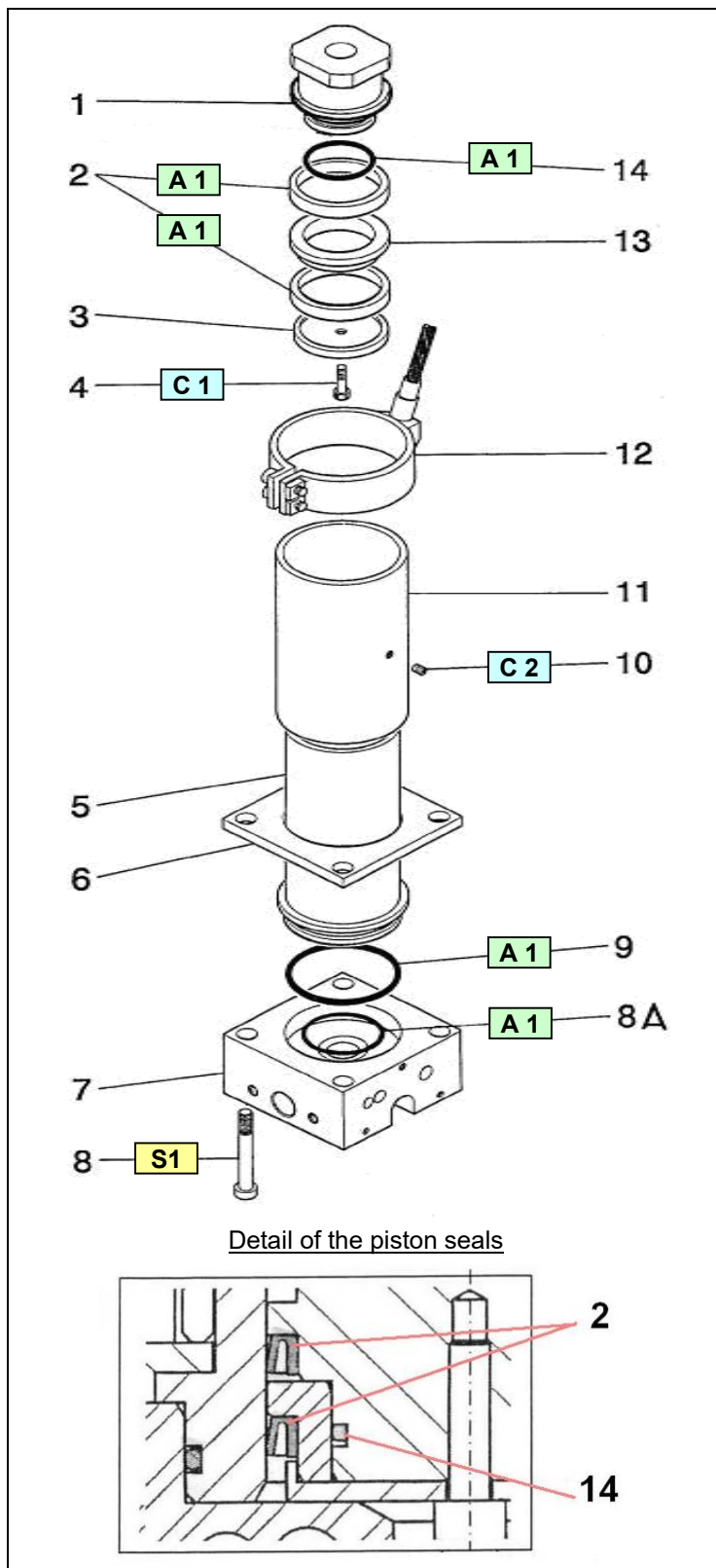
Disconnect the pressure sensor (10).
Unscrew the screws (13) (BTR wrench n° 5) and **screw** the 2 extractions screws (14) (BTR wrench n° 3).

Remove the electric box (20).

Take off the resistances (27) and the temperature drill (23) located on the proportioning body unscrewing the screw of the thimble rope (BTR wrench n° 3).

Unscrew the 2 screws (8) that hold the fixing plate (6) and the proportioning body (C) (BTR wrench n° 4).





On the proportioning part :

Unscrew the little screw (10) located on the middle of the heated collar (12).

Take off the 4 screws (8) that hold the proportioning part.

Make the body (7), the cylinder (5), the piston assembly slide downwards.

Leave the sleeve (11) and the heated collar (12).

Take off the piston and change the seals (2, 14).

Assembly :

Lubricate the seals (2, 9, 14) and the seal (8A) for the 25 cc Volurex proportioning system.

On the piston (1), locate the seal (14), a seal (2), the ring (13), the second seal (2), the stop washer (3) - refer to drawing above.

Applicate Loctite 577 glue on the threading of the screw (4) and tighten the whole with that screw.

Grease the inside of the cylinder (5) and install the piston assembly into that cylinder.

Important : Make it slide from downwards to upwards to prevent from damaging the seals of the piston.

Install the counter plate (6).

Caution when mounting the plate (5) → shoulder downwards.

Install the seals (9 and 8A) at the bottom of the cylinder (5).

Slide the whole in the sleeve (11).

Applicate Loctite 222 glue on the screw (10).

Fix the whole (11 & 12) on the cylinders (5) with the screw (10).

Reinstall the body (7) at the bottom of the cylinder (5).

(Locate the 2 holes of the body in front of the 2 holes of the fixing plate (33)).

Tighten (16 Nm / 11.802 Ft/Lbs) the screws (8) in the 4 tie-rods (ind. 18 of the fixing part).

Connect the heated collar.

Reinstall the different components : the junction box, the pressure sensor, the inlet valve and the outlet valve.

Place the installation into operation.

■ CHANGING THE MOTOR

Stop the installation (Depressurize, drain, disconnect).

Disconnect the 2 cables connected to the motor (power and control).

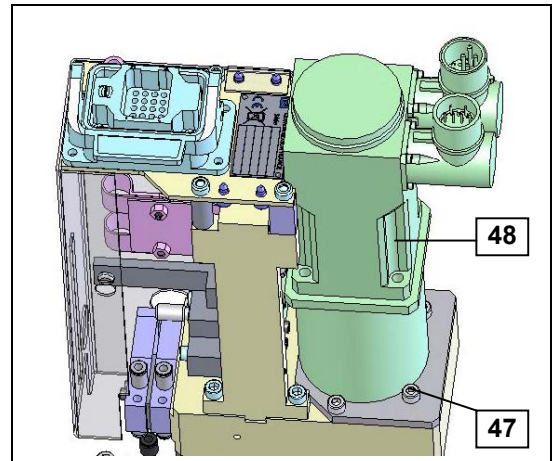
Unscrew the 4 screws (47) that hold the motor (48) (BTR wrench n° 4).

Take off the motor.

Remove the motor pinion (39) taking off the screw (41) (BTR wrench n° 3) and the plate (40) on which it is fixed.

Install a new motor and connect the 2 cables.

Place the installation into operation.



■ CHANGING THE BALL SCREW (32)

Remove the inlet valve, the outlet valve or outlet flange, the proportioning part (do not remove the sleeve and the heated collar).

Unscrew the 2 screws (77) (BTR wrench n° 2.5) installed on the strap (84).

Unscrew the 4 screws (31) (BTR wrench n° 5) installed on the stop (30).

Hold the assembly to prevent it from rotating.

Take off the ball screw downwards.

When disassembling, check if there is a play in the bearings.

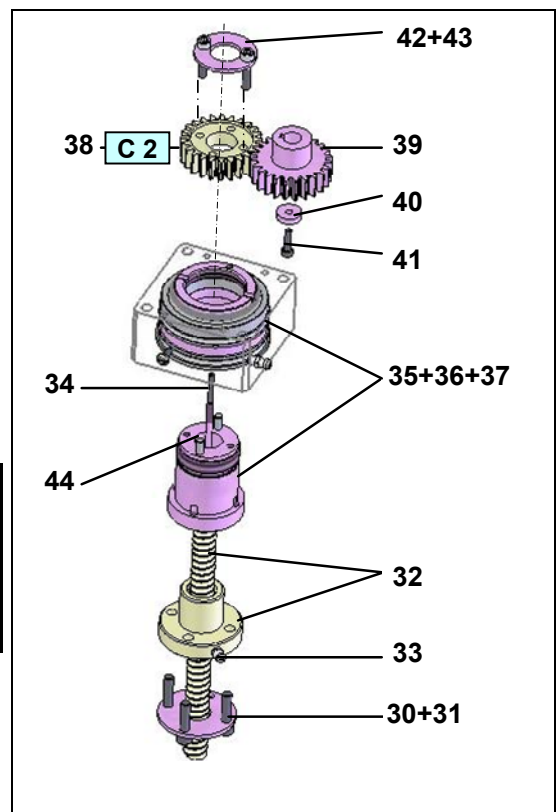


Lubricate the ball screw
(KLUBER grease - STABUTHERM GH 461)

NEVER TAKE OFF THE BALL SCREW FROM THE NUT.

Install the new ball screw, the stop (30). Tighten them with the screws (77 and 31).

Reinstall the proportioning part, the outlet valve or the outlet flange and the inlet valve.



■ CHANGING THE STOP ASSEMBLY, THE BALL BEARINGS (35)

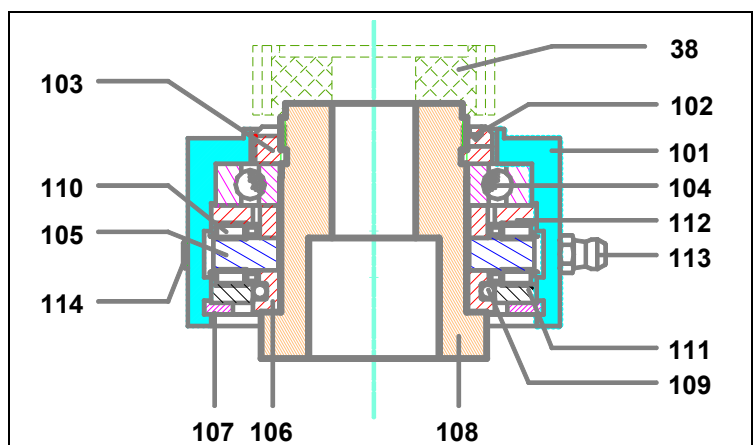
Take off the 4 tie-rods (9).

Take off the screws (8) that hold the bearing box (101) on the fixing plate (6).

Change the assembly (35).

The assembly (35) consists of the bearing box, the ball bearing (104), the needle stop (110), the spacers (106, 112), the washers (105, 111), the gear shaft (108), the circlips (107).

Nota : the pinion (38) does not belong to the assembly (35).



Disassemble the receptor pinion (38) from the bearing box.

Unscrew the 2 screws (43) (BTR wrench n° 4); you can thus remove the washer (42).

Take off the 2 pins, the pinion (38).

Change the assembly (35). Reinstall the receptor pinion (38), the 2 pins (44), the washer (42) and the 2 screws (43).

⚠ **Caution : comply with the assembly order of the pinion and washer.**

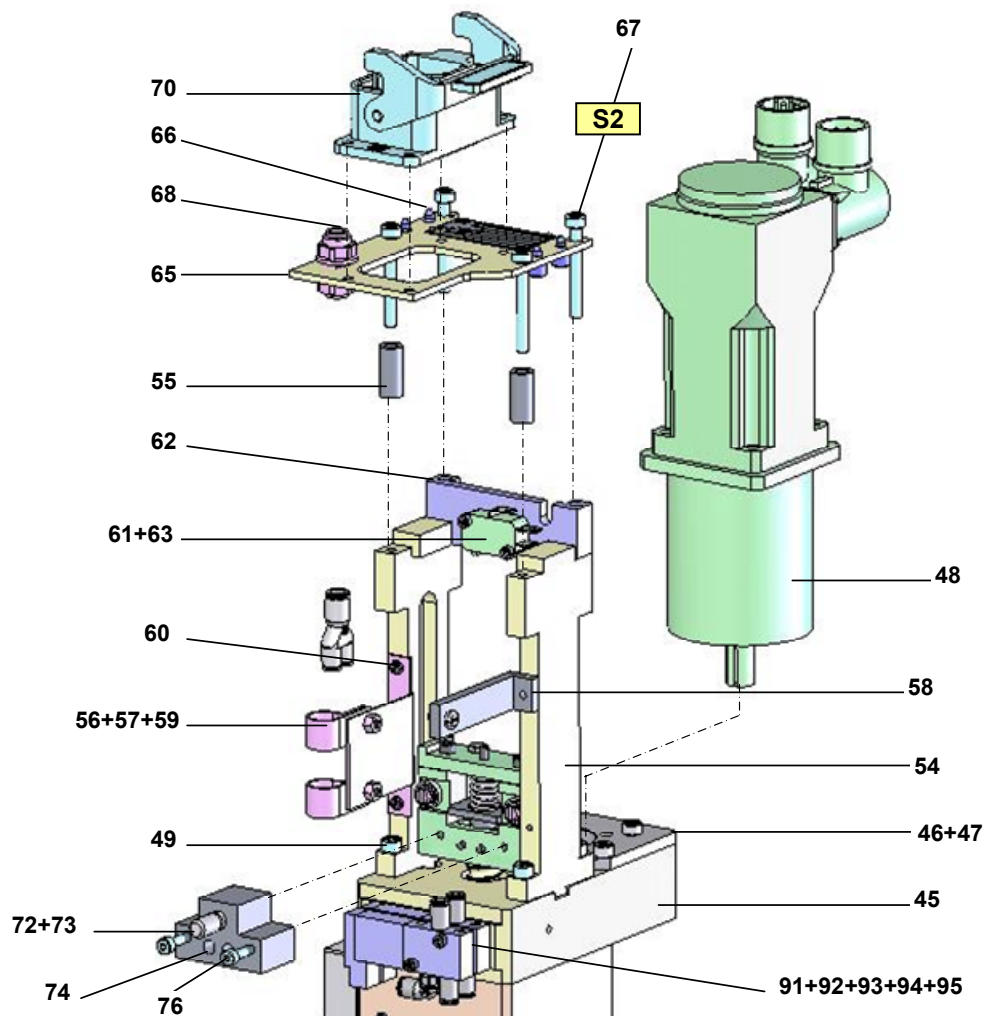


Lubricate the bearings, the needle stop by means of the lubricator (113).

Locate the new assembly on the proportioning system.

Make the assembly rotate manually before carrying on the assembly of the other components (tie-rod, ball screw...).

■ CHANGING THE POM SENSOR (61)



Remove the connection plate (65) unscrewing the screws (67)

Unscrew the screws (63) from the sensor. Remove the electric thimbles.

Take off the sensor (61).

Install a new sensor instead of it.

Connect the electric rope thimbles (terminals 1 and 2).

Replace the connection plate (65) and screw (5 Nm / 3.688 Ft/Lbs) the screws (67)

■ CHANGING THE MEASURE ROD (34)

Remove the sensor support (62)

Unscrew the screws to take off the 2 spacers (55).

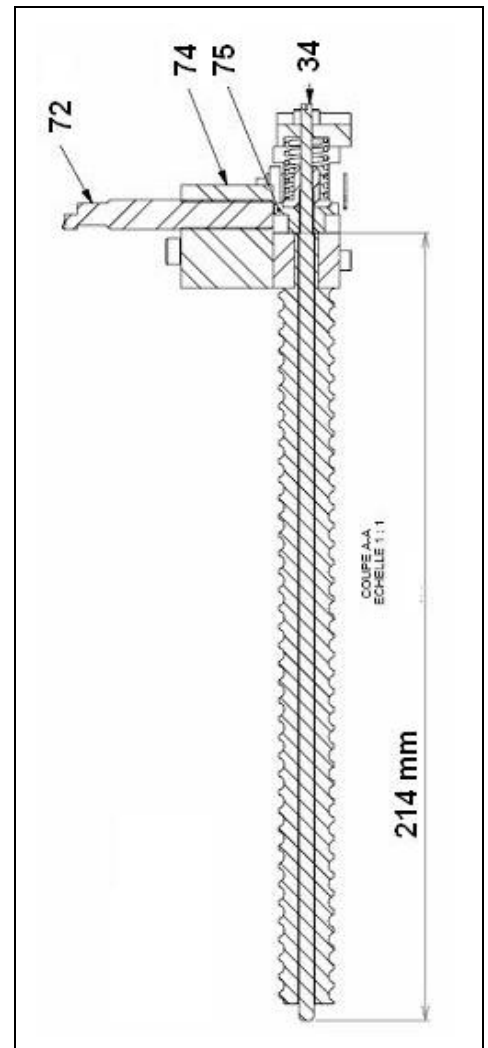
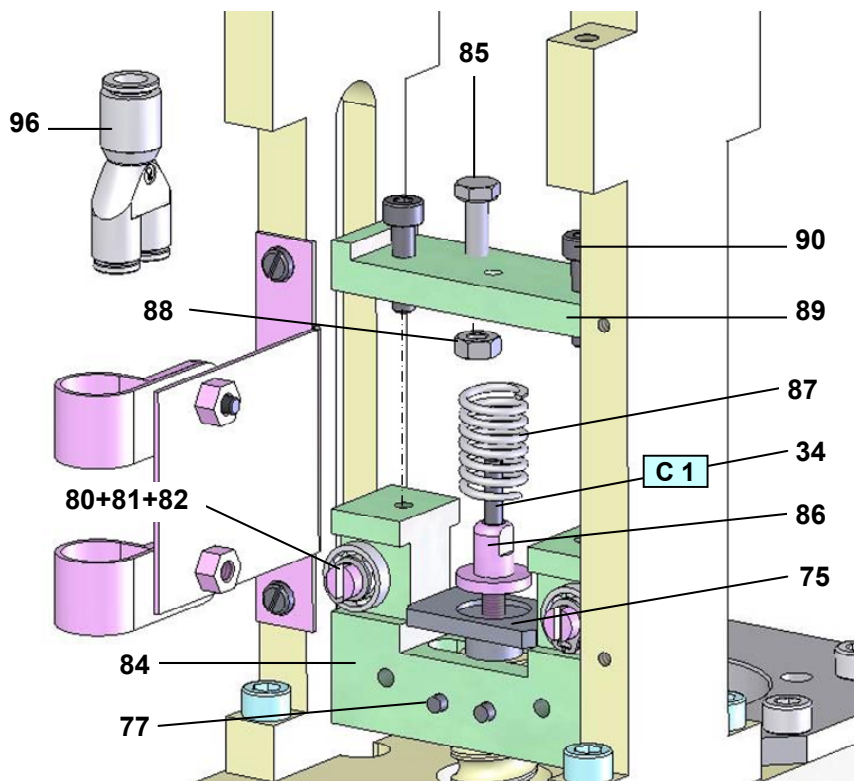
Unscrew the 2 screws (49) (BTR wrench n° 4).

☞ Take off the slide (54), opposite side from the cable support.

Take off the strap (84) and the detection rod (34).

You can change the little bearings (81) taking off the clips (82).

☞ Lubricate the bearings during the assembly.



To change the rod (34) :

Unscrew the screws (90).

Take off the plate (89), the spring (87).

Unscrew the nut (86).

The rod is screwed in the detection ring (75).



During the assembly, comply with the 214 mm / 8.4" dimension between the end of the rod (34) and the detection ring (75). (☞ refer to drawing).

Applicate glue on the threading of the rod (Loctite 577).

Reinstall the nut (86), the spring (87), the plate (89), the 2 screws (90).

Check the 5 mm / 0.2" dimension between the screw (85) and the plate (89).

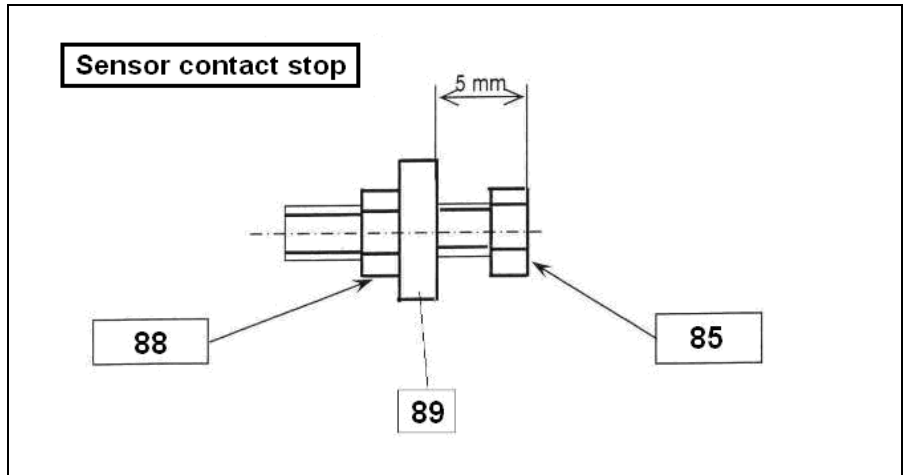
Lubricate the slides (54).

Reinstall the slides and the cart (rod with plate).

Tighten the screws manually.

Place the cart downwards and tighten the low part of the slides with a clamps.

Tighten the screws with the wrench.



Install on the top the plate (65) with the connectors.

Move the clamp to the top of the slides and tighten the upper screws.

⚠ Move the cart checking if the bearings run.

Lubricate the rod (34) and reinstall the ball screw (32).

Install it in the strap (84).

⚠ Line up the different parts.

Install the plate (30) on the lower part of the ball screw and fix it with the screws (31).

Reinstall the proportioning part, the outlet valve and the inlet valve.

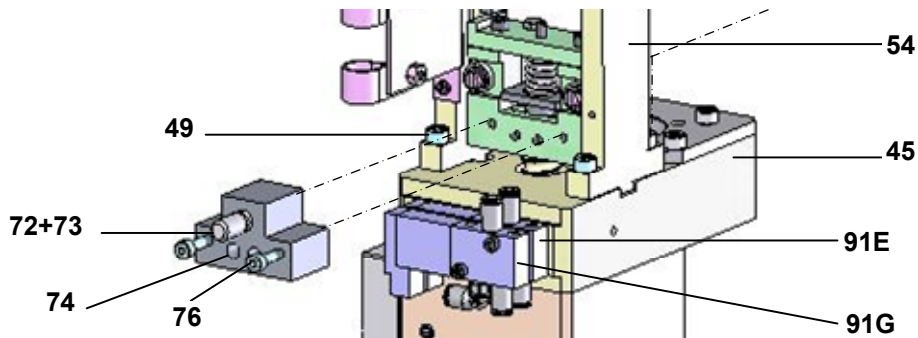
■ CHANGING THE ELECTROVALVES (91)

Disconnect the electrovalves.

Change them.

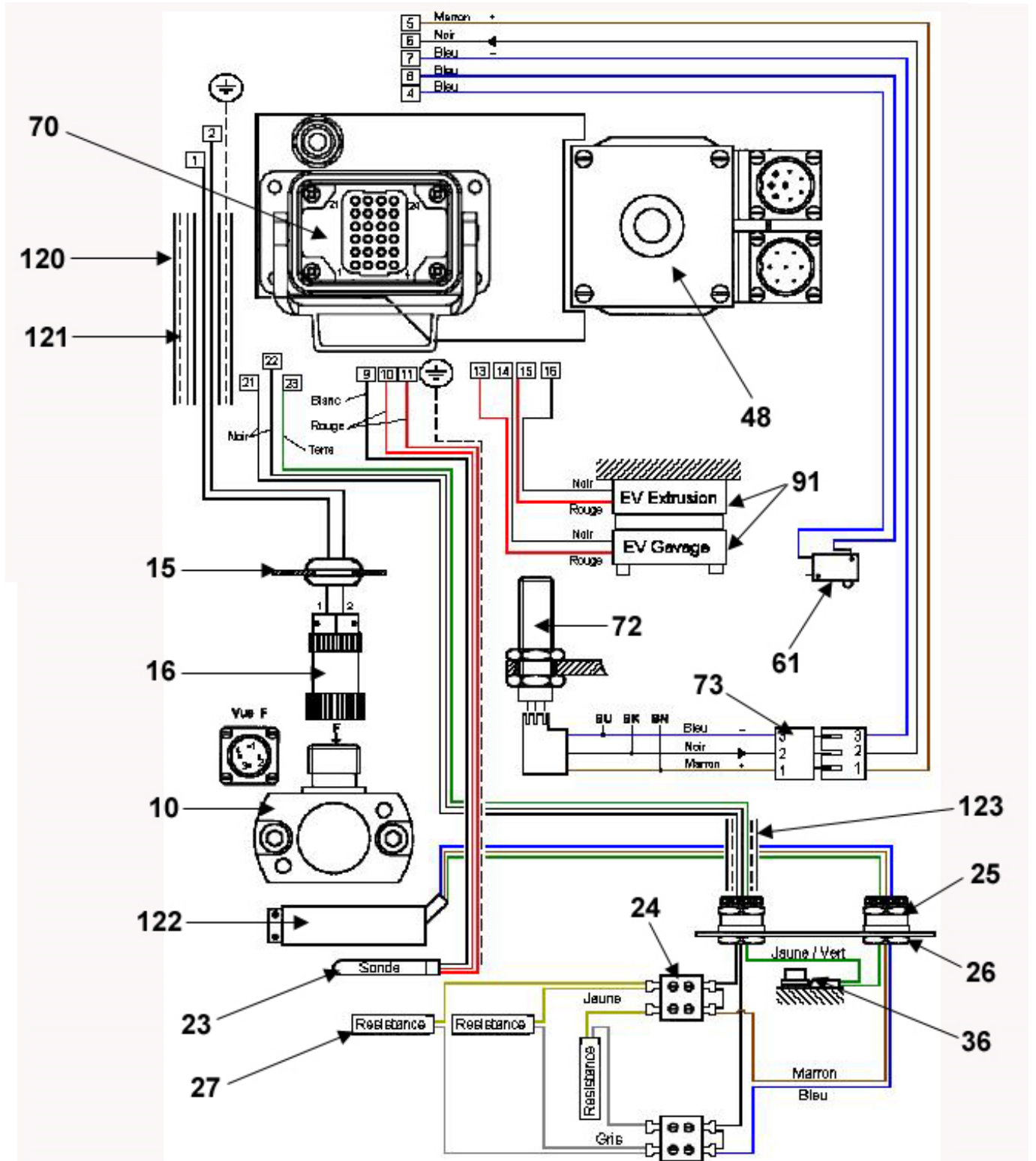
EV (91G) that controls the inlet valve is towards the outside.

EV (91E) that controls the outlet valve is towards the inside.



Index	Instructions	Description	Part number
A 1	PTFE Grease	"TECHNILUB" grease (10 ml)	560.440.101
C 1	Medium strength Aneorobic Pipe sealant	Loctite 577 (250 ml)	554.180.015
C 2	Low strength - Aneorobic Adhesive	Loctite 222 (50 ml)	554.180.010
S 1	Torque screwing : 16 Nm / 11.802 Ft/Lbs		
S 2	Torque screwing : 5 Nm / 3.688 Ft/Lbs		

10. ELECTRIC DIAGRAM



Ind.	Description	Qty
10	Pressure sensor (200 bar / 2900 psi 4-20 mA)	1
15	Grommet	1
16	Little socket (Jaeger -4pins)	1
23	Pt 100 temperature drill	1
24	Connecting block	2
25	Wetting cup	2
26	Fixing nut for wetting cup	2
27	Heated resistance (125 W - 230 V)	3
36	Red thimble	2
48	Servomotor (motor with reducer)	1

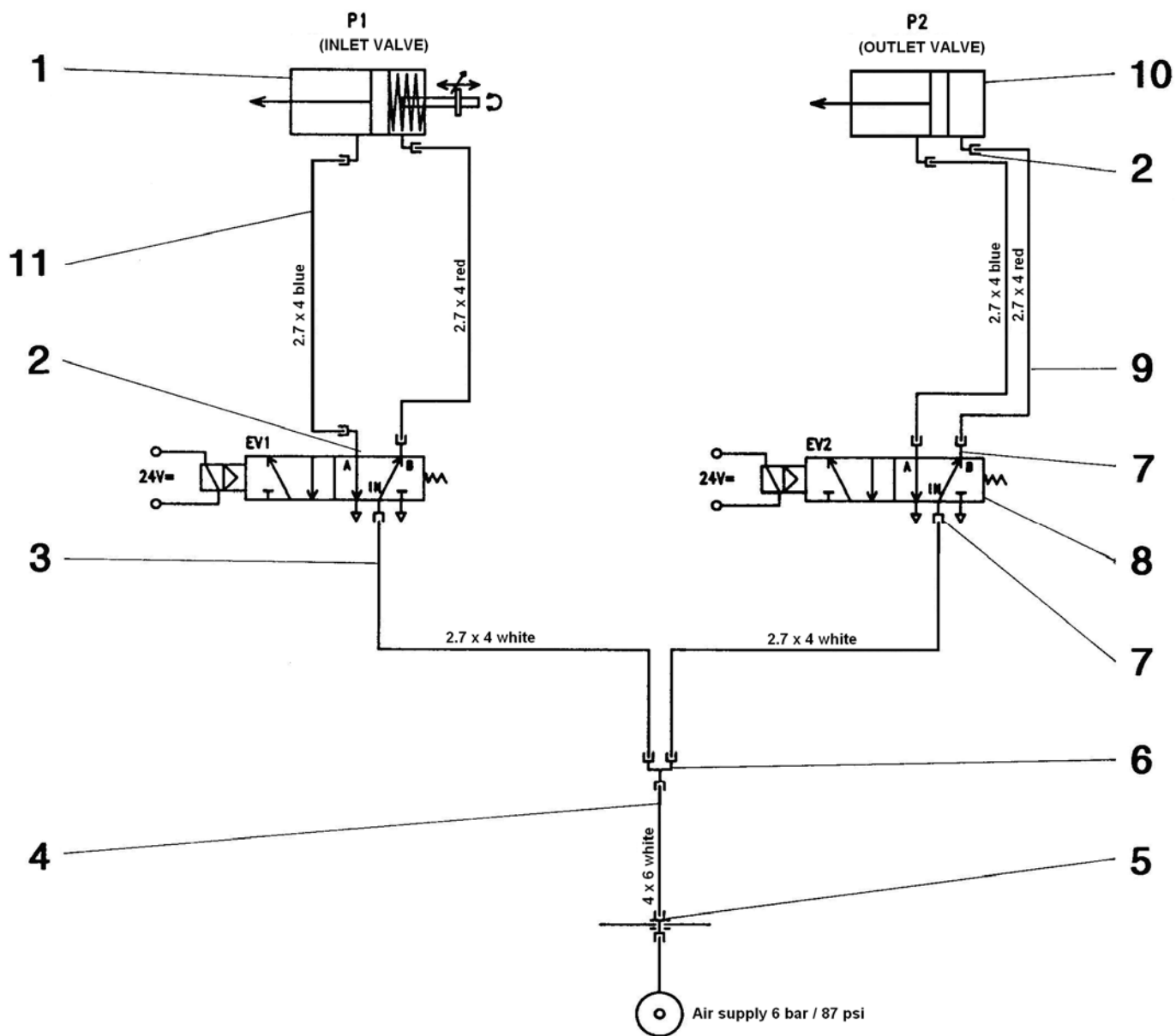
Ind.	Description	Qty
61	Microswitch	1
70	HARTING connector with 24 male pins	1
72	Proximity sensor	1
73	Connector with cable (length : 26 cm)	1
91	Electro-distributor	2
120	Black sleeve (4mm)	1
121	Electronic cable (5x0.25)	0,75m
122	Heated collar (proportioning part)	1
123	CNOMO electric cable (2x2,5 + T)	0,7m

Refer to part numbers of the components in the 'Spare parts' file.

Cabling of the HARTING plug

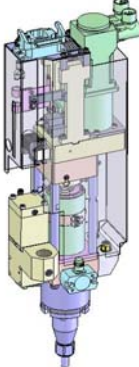
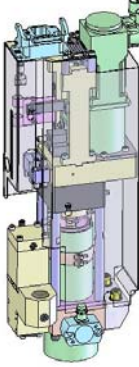
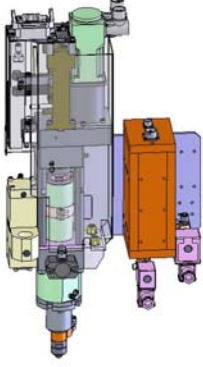
Pin n°	Wire section (mm2)	Description
1	0,14-0,37	Pressure sensor (supply +24V)
2	0,14-0,37	Pressure sensor (measure signal)
3	0,14-0,37	Pressure sensor (shield)
4	1	POM microswitch, blue wire
8	1	POM microswitch, blue wire
5	0,14-0,37	Inductive proximity sensor (+), brown wire
6	0,14-0,37	Inductive proximity sensor (info), black wire
7	0,14-0,37	Inductive proximity sensor (-), blue wire
9	0,14-0,37	PT 100 drill (+), white wire
10	0,14-0,37	PT 100 drill (-), red wire
11	0,14-0,37	PT 100 drill (-), red wire
12	0,14-0,37	PT 100 drill (shield)
13	0,5	EV filling
14	0,5	
15	0,5	EV extrusion
16	0,5	
21	2,5	Proportioning system stoking (phase)
22	2,5	Proportioning system stoking (neutral)
23	2,5	Proportioning system stoking (earth)

11. PNEUMATIC DIAGRAM



Ind.	Description
1	Inlet valve
2	Elbow air fitting
3	White air tube (Ø 2,7x4)
4	White air tube (Ø 4x6)
5	Sleeve
6	Y air tube
7	Straight air connector
8	Electro-distributor (ind.91 in ED)
9	Red air tube (Ø 2.7x4)
10	Outlet valve
11	Blue air tube (Ø 2.7x4)

NOMENCLATURE - SPARE PARTS' LIST - TEILLISTE - NOMENCLATURA VOLUREX

		
25 cc # 105 824 0408 50 cc # 105 435 0408 100 cc # 105 145 0408 150 cc # 104 115 0408	25 cc # 105 824 0208 50 cc # 105 435 0208 100 cc # 105 145 0208 150 cc # 104 115 0208	50 cc # 105 435 1108

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Date / Datum / Fecha : 30/03/17

Annule / Supersede / Ersetzt / Anula : 20/10/14

Modif. / Änderung : Mise à jour / Update / Aktualisierung / Actualización

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VOLUREX

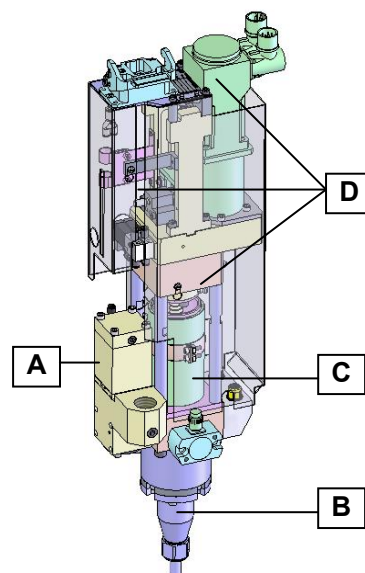
**AVEC VANNE DE SORTIE / WITH OUTLET VALVE
MIT AUSGANGSVENTIL / CON VÁLVULA DE SALIDA**

25 cc # 105 824 0408

50 cc # 105 435 0408

100 cc # 105 145 0408

150 cc # 104 115 0408



Ind.	#	Désignation	Description	Bezeichnung	Denominación	Qté
*A	107 139	Vanne d'entrée	Inlet valve	Eingangsventil	Válvula de entrada	1
*B	107 202	Vanne de sortie	Outlet valve	Ausgangsventil	Válvula de salida	1
*C	-	Partie dosage (voir pièces spécifiques)	Proportioning part (see specific parts)	Dosierungsteil (Siehe spezifische Teile)	Parte dosificación (ver partes específicas)	1
D	NC / NS	Partie mécanique et électrique	Electrical and mechanical part	Mechanisches Teil und elektrisches Teil	Parte mecánica y eléctrica	1
D	NC / NS (107 363)	▪ Partie mécanique fixe	▪ Fixed mechanical part	▪ Befestigtes mechanische Teil	▪ Parte mecánica fija	1
D	NC / NS (107 328)	▪ Partie mécanique mobile	▪ Movable mechanical part	▪ Bewegliches mechanische Teil	▪ Parte mecánica móvil	1
D	NC / NS (107 326)	▪ Partie électrique	▪ Electric part	▪ Elektrisches Teil	▪ Parte eléctrica	1
D	NC / NS (104 159)	▪ Partie pneumatique	▪ Pneumatic part	▪ Pneumatisches Teil	▪ Parte neumática	1

↳ Voir les documentations séparées / See separated documentations
/ Siehe die zusätzlichen Bedienungsanleitungen / Ver las documentaciones separadas (Ind. A, B, C, D)

VOLUREX

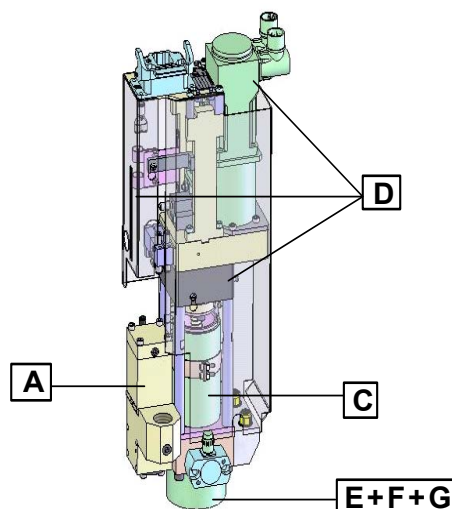
**AVEC FLASQUE / WITH OUTLET FLANGE
MIT AUSGANGSFLANSCH / CON TAPA DE SALIDA**

25 cc # 105 824 0208

50 cc # 105 435 0208

100 cc # 105 145 0208

150 cc # 104 115 0208



Ind.	#	Désignation	Description	Bezeichnung	Denominación	Qté
*A	107 139	Vanne d'entrée	Inlet valve	Eingangsventil	Válvula de entrada	1
*C	-	Partie dosage (voir pièces spécifiques)	Proportioning part (see specific parts)	Dosierungsteil (Siehe spezifische Teile)	Parte dosificación (ver partes específicas)	1
D	NC / NS	Partie mécanique et électrique	Electrical and mechanical part	Mechanik- und Elektroteil	Parte mecánica y eléctrica	1
E	208 697	Flasque de sortie	Outlet flange	Ausgangsflansch	Tapa de salida	1
*F	84 025	Joint FKM	FKM seal	FKM Dichtung	Junta FKM	1
G	88 138	Vis CHc M6x55	Screw, model CHc M6x55	Schraube, CHc M6x55	Tornillo, tipo CHc M6x55	4

Pièces spécifiques - Specific parts - Spezifische Teile - Partes específicas

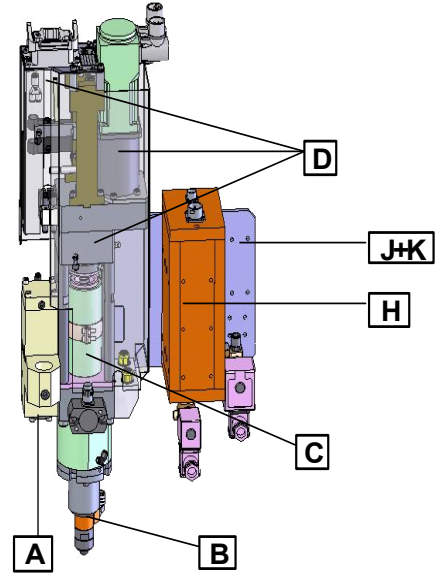
Partie dosage / Proportioning part / Dosierungsteil / Parte dosificación				
Ind.	Volurex 25	Volurex 50	Volurex 100	Volurex 150
*C	# 104 471	# 104 357	# 104 198	# 104 057

VOLUREX SPIRALISATION

Avec vanne de spiratisation en ligne
/ with line spiral valve
/ mit In-Line Wirbelstrahlventil
/ con válvula de espiralización en línea

Avec réchauffeur d'air
/ with air regulation assembly
/ mit Luftherhitzer
/ con conjunto regulación de aire

50 cc # 105 435 1108



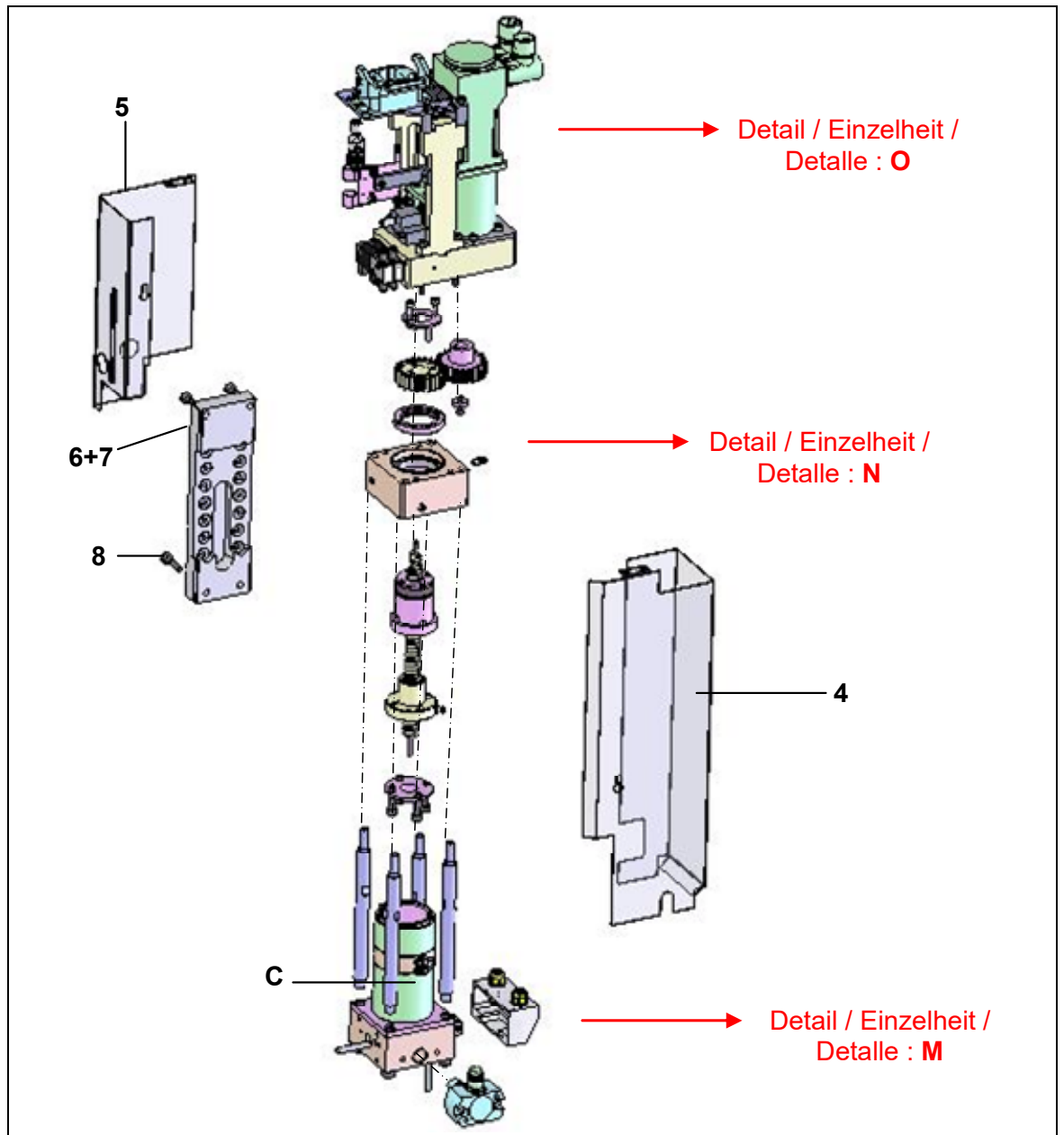
Ind.	#	Désignation	Description	Bezeichnung	Denominación	Qté
*-	105 435 1008	Volurex sans réchauffeur	Volurex without air regulation	Volurex ohne Luftherhitzer	Volurex sin regulación de aire	1
*A	107 139	▪ Vanne d'entrée	▪ Inlet valve	▪ Eingangsventil	▪ Válvula de entrada	1
*B	107 323	▪ Vanne de spiratisation	▪ Spiral valve	▪ Ventil mit Wirbelstrahl	▪ Válvula de espiralización	1
*C	104 357	▪ Partie dosage	▪ Proportioning part	▪ Dosierungsteil	▪ Parte dosificación	1
D	NC / NS	▪ Partie mécanique et électrique	▪ Electrical and mechanical part	▪ Mechanisches Teil und elektrisches Teil	▪ Parte mecánica y eléctrica	1
*H	107 329	Réchauffeur d'air	Air regulation assembly	Luftherhitzereinheit mit Luftregulierung	Conjunto regulación de aire	1
J	211 900	Plaque de fixation	Fixation plate	Befestigungsplatte	Placa de fijación	1
K	88 681	Vis FHC/90° M6x16	Screw, model FHC/90° M6x16	Schraube, FHC/90° M6x16	Tornillo, tipo FHC/90° M6x16	4

↳ Voir les documentations séparées / See separated documentations

/ Siehe die zusätzlichen Bedienungsanleitungen / Ver las documentaciones separadas (Ind. A, B, C, H)

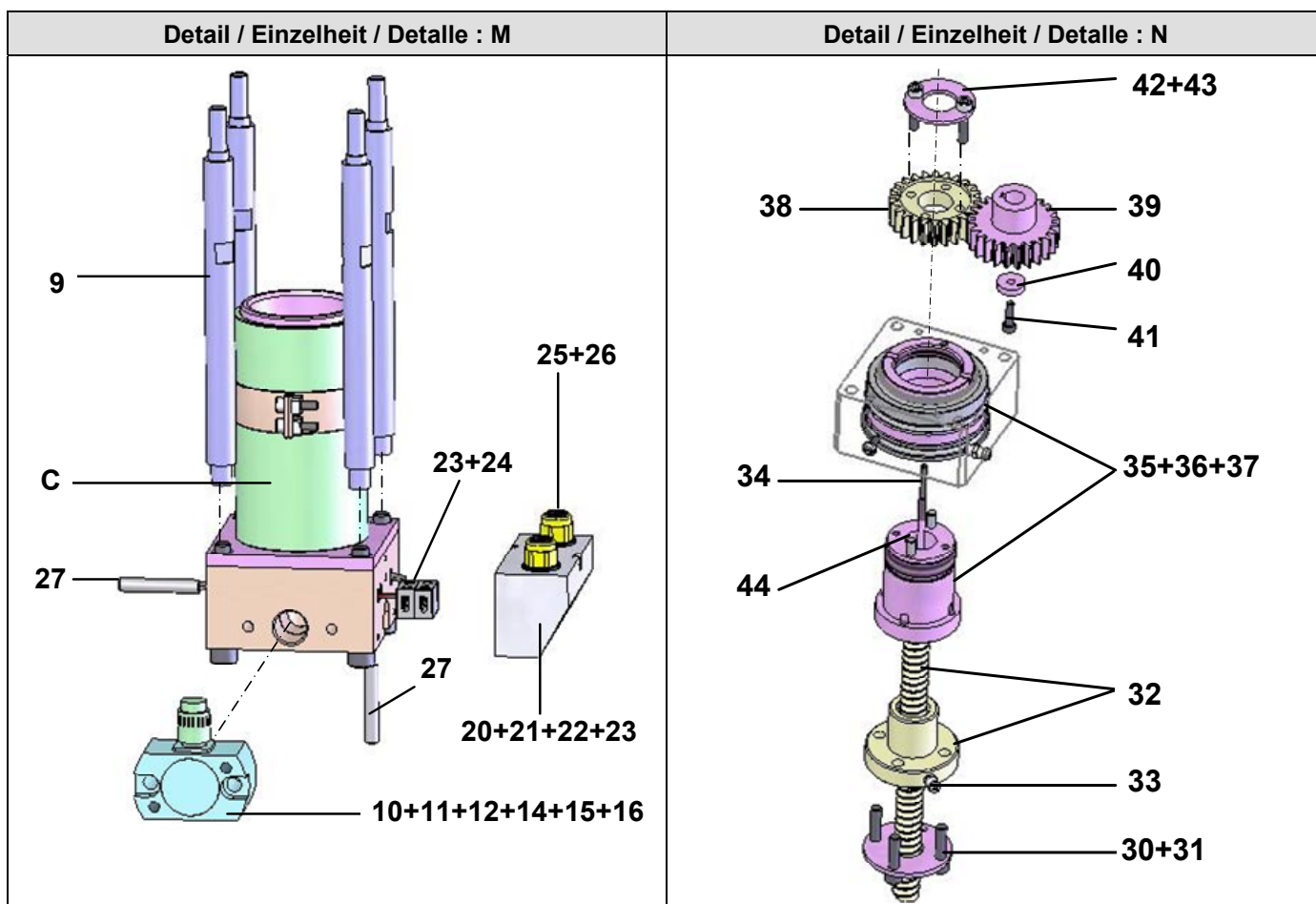
VOLUREX

Ind. D



Ind.	#	Désignation	Description	Bezeichnung	Denominación	Qté
4	208 160	Carter	Housing	Gehäuse	Cárter	1
5	208 161	Carter	Housing	Gehäuse	Cárter	1
6	208 162	Plaque de fixation	Fixation plate	Befestigungsplatte	Placa de fijación	1
7	209 941	Pion de centrage	Centering pin	Zentrierungsstück	Guía de centrado	2
8	88 687	Vis, FHC M6x30	Screw, model FHC M6x30	Schraube, FHC M6x30	Tornillo, tipo FHC M6x30	4
9	207 990	Tirant	Tie-rod	Stehbolzen	Tirante	4
*10	92 059	Capteur de pression avec joints (200 bar / 4-20 mA)	Pressure sensor with seals (200 bar / 2900 psi 4-20 mA)	Drucksensor (200 bar / 4-20 mA)	Captador de presión con juntas (200 bar / 4-20 mA)	1
11	NC / NS	▪ Joint	▪ Seal	▪ Dichtung	▪ Junta	1
12	NC / NS	▪ Joint torique	▪ O-Ring	▪ O-Ring	▪ Junta tórica	1
13	933 151 387	Vis, CHc 6x30	Screw, model CHc 6x30	Schraube, CHc 6x30	Tornillo, tipo CHc 6x30	2

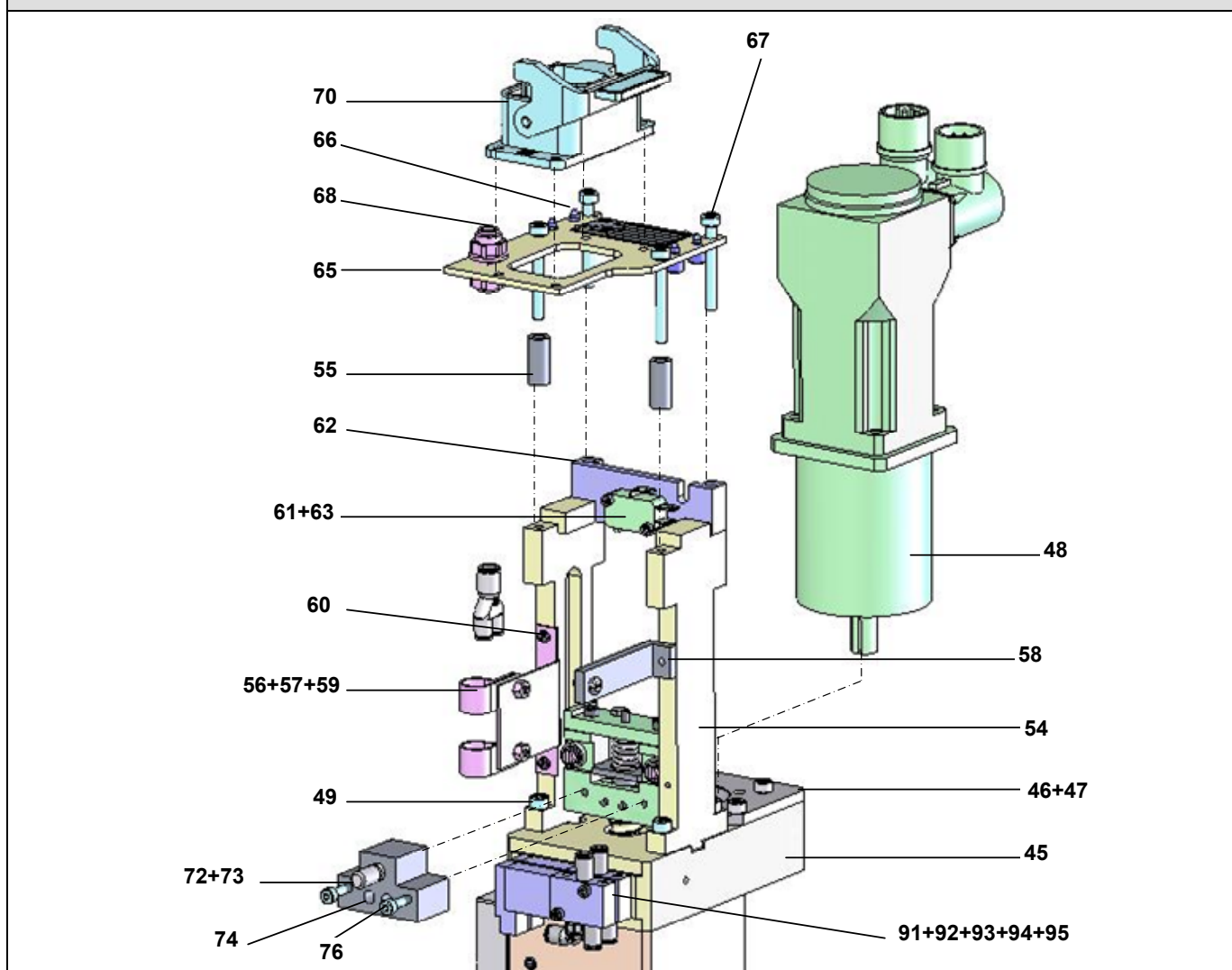
Ind.	#	Désignation	Description	Bezeichnung	Denominación	Qté
14	88 858	Vis, M6x30	Screw, model M6x30	Schraube, M6x30	Tornillo, tipo M6x30	2
15	91 330	Passe-fils	Grommet	Tülle	Pasa hilos	1
16	91 444	Fiche femelle	Socket	Steckdose	Toma hembra	1
20	208 149	Boîte de jonction	Junction box	Verbindungsgehäuse	Caja de unión	1
21	88 701	Vis, CHc M3x40	Screw, model CHc M3x40	Schraube, CHc M3x40	Tornillo, tipo CHc M3x40	1
22	932 151 326	Vis, CHc 3x25	Screw, model CHc 3x25	Schraube, CHc 3x25	Tornillo, tipo CHc 3x25	4
*23	204 295	Sonde de température	Temperature drill	Temperaturfühler	Sonda térmica	1
24	901 060 424	Bornier	Terminal strip	Klemmleiste	Bornero	2
-	901 221 060	Embout	End cap	Endkappe	Terminal	8
25	90 306	Presse-étoupe	Cup	Zugentlastung	Prensa estopa	2
26	90 309	Ecrou de presse-étoupe	Cup nut	Zugentlastungsmutter	Tuerca de prensa estopa	2
*27	204 280	Résistance chauffante	Heated resistance	Heizwiderstand	Resistencia calentanda	3



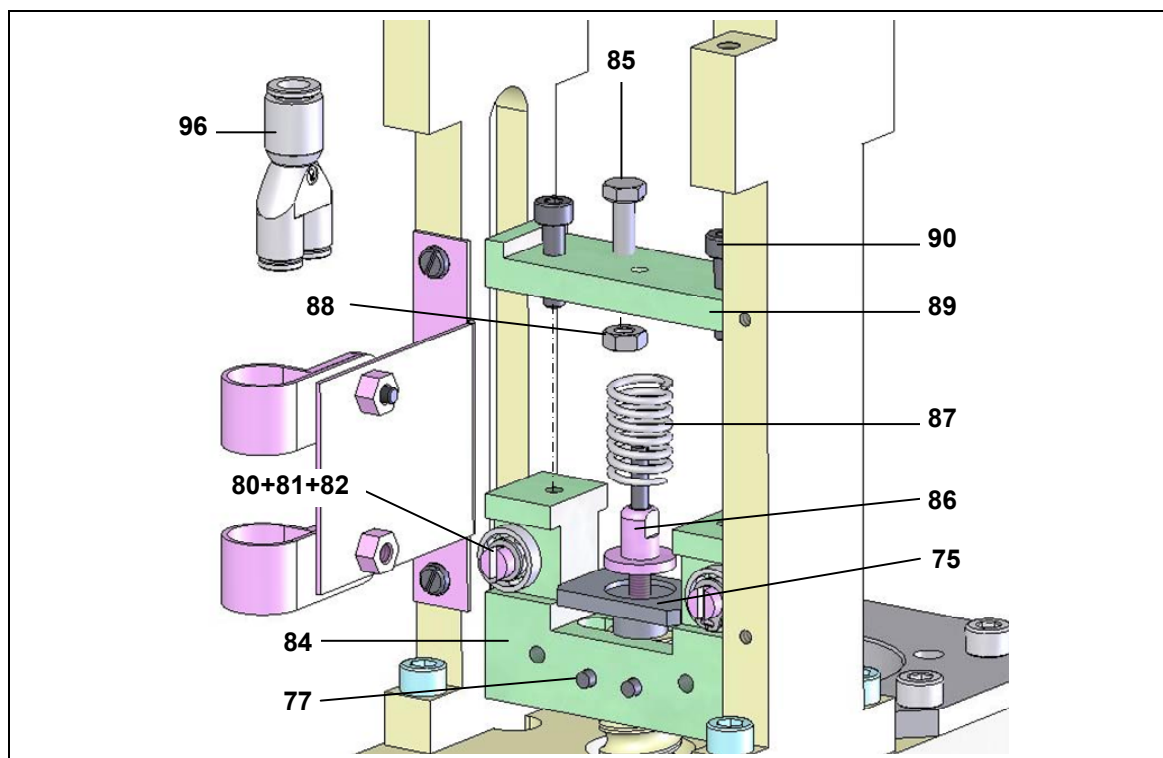
Ind.	#	Désignation	Description	Bezeichnung	Denominación	Qté
*30	207 989	Butée	Stop	Anschlag	Tope	1
31	933 151 332	Vis, CHc 6x25	Screw, model CHc 6x25	Schraube, CHc 6x25	Tornillo, tipo CHc 6x25	4
*32	208 146	Vis à bille avec écrou	Ball screw with nut	Kugelspindel mit Mutter	Tornillo de bolas con tuerca	1
*33	88 596	Graisser	Lubrication device	Schmiervorrichtung	Engrasador	1

Ind.	#	Désignation	Description	Bezeichnung	Denominación	Qté
*34	208 157	Tige de mesure	Measuring rod	Messungsstange	Eje de medida	1
*35	105 822	Ensemble butée, roulements à billes (voir détail)	Needle stop and bearing assembly (see detail)	Einheit: Nadelanschlag, Kugellager (siehe Detail)	Conjunto tope, rodamiento con bolas (consultar detalle)	1
36	901 200 404	Cosse de masse	Ground thimble	Erdungsklemme	Terminal de masa	2
37	933 151 601	Vis, CHc 8x60	Screw, model CHc 8x60	Schraube, CHc 8x60	Tornillo, tipo CHc 8x60	4
*38	209 591	Pignon récepteur	Gear	Zahnrad Abtrieb	Engranaje receptor	1
*39	208 145	Pignon moteur	Motor gear	Zahnrad Antrieb	Engranaje motor	1
40	210 177	Rondelle	Washer	Scheibe	Arandela	1
41	933 151 219	Vis, CHc M 4x16	Screw, model CHc M4x16	Schraube, CHc M 4x16	Tornillo, tipo CHc M 4x16	3
42	207 994	Rondelle	Washer	Scheibe	Arandela	1
43	88 124	Vis, CHc M 5x25	Screw, model CHc M5x25	Schraube, CHc M 5x25	Tornillo, tipo CHc M 5x25	2
*44	88 459	Goupille	Pin	Splint	Pasador	2

Detail / Einzelheit / Detalle : O



Ind.	#	Désignation	Description	Bezeichnung	Denominación	Qté
45	208 143	Boîtier	Box	Gehäuse	Armario	1
46	211 918	Entretoise moteur	Motor spacer	Motordistanzstück	Tirante motor	1
47	933 151 221	Vis, CHc 5x16	Screw, model CHc 5x16	Schraube, CHc 5x16	Tornillo, tipo CHc 5x16	4
*48	107 365	Ensemble motoréducteur sans entretoise	Motor-reducer kit without spacer	Servomotor mit Getriebe ohne Distanzstück	Conjunto motoreductor sin tirante	1
49	88 626	Vis, CHc M5x55	Screw, model CHc M5x55	Schraube, CHc M5x55	Tornillo, tipo CHc M5x55	4
54	208 156	Coulisse	Sliding piece	Gleitstück	Articulación	2
55	207 845	Entretoise	Spacer	Distanzstück	Tirante	2
56	91 229	Collier	Collar	Schelle	Collar	2
57	88 103	Vis, CHc M 3x10	Screw, model CHc M 3x10	Schraube, CHc M 3x10	Tornillo, tipo CHc M 3x10	1
58	208 155	Support carter	Housing support	Gehäusehalterung	Soporte de cárter	1
59	208 153	Support de câbles	Cables' support	Kabelhalterung	Soporte de cables	1
60	933 061 095	Vis, CM 3x6	Screw, model CM 3x6	Schraube, CM 3x6	Tornillo, tipo CM 3x6	2
*61	91 061	Microrupteur	Microswitch	Mikroschalter	Microinterruptor	1
62	207 848	Support microrupteur	Microswitch support	Mikroschalter Halterung	Soporte de microinterruptor	1
63	933 151 190	Vis, CHc 3x16	Screw, model CHc 3x16	Schraube, CHc 3x16	Tornillo, tipo CHc 3x16	2
65	211 802	Plaque de raccordement	Junction plate	Verbindungsplatte	Placa de unión	1
66	208 154	Rivet	Rivet	Niet	Roblón	4
67	932 151 495	Vis, CHc 5x40	Screw, model CHc M 5x40	Schraube, CHc M 5x40	Tornillo, tipo CHc M 5x40	4
68	905 121 114	Traversée de cloison	Connection part	Schottverschraubung	Pasa muros	1
70	NC / NS	Connecteur HARTING (24 contacts males)	HARTING connector (24 male pins)	HARTING Stecker (24 Kontaktstifte)	Conector HARTING (24 contactos machos)	1



Ind.	#	Désignation	Description	Bezeichnung	Denominación	Qté
*72	901 470 103	Détecteur de proximité	Proximity detector	Näherungsdetektor	Detector de proximidad	1
73	107 357	Connecteur avec câble (Lg. 26 cm)	Connector with cable (Length : 26 cm / 0.8 ft)	Stecker mit Kabel	Conector con cable (26 cm de largo)	1
74	211 809	Support détecteur	Detector support	Detektorhalterung	Soporte de detector	1
75	211 808	Bague de détection	Detection ring	Kontaktring	Anillo de detección	1
76	88 116	Vis, CHc M 4x30	Screw, model CHc M 4x30	Schraube, CHc M 4x30	Tornillo, tipo CHc M 4x30	2
77	88 101	Vis, CHc M 3x20	Screw, model CHc M 3x20	Schraube, CHc M 3x20	Tornillo, tipo CHc M 3x20	2
*80	208 152	Axe de roulement	Bearing axis	Kugellagerachse	Eje de rodamiento	6
*81	91 105	Roulement miniature	Little bearing	Miniatur Kugellager	Rodamiento pequeño	6
*82	88 658	Circlips	Circlip	Sicherungsring	Anillo truarc	6
84	208 151	Etrier	U-bolt	U-Bügel	Tirante	1
85	88 112	Vis, CHc M 4x12	Screw, model CHc M 4x12	Schraube, CHc M 4x12	Tornillo, tipo CHc M 4x12	1
86	207 790	Ecrou guide	Guiding nut	Führungsmutter	Tuerca guía	1
*87	107 019 09	Ressort	Spring	Feder	Muelle	1
88	88 330	Ecrou, MP M4	Nut, model MP M4	Mutter, MP M4	Tuerca, tipo MP M4	1
89	207 850	Plaque	Plate	Platte	Placa	1
90	933 151 219	Vis, CHC M 4x16	Screw, model CHC M 4x16	Schraube, CHc M 4x16	Tornillo, tipo CHC M 4x16	3
*91	91 070	Electrovanne	Electrovalve	Elektroventil	Electroválvula	2
92	932 151 326	Vis, CHc 3x25	Screw, model CHc 3x25	Schraube, CHc 3x25	Tornillo, tipo CHc 3x25	4
93	208 148	Entretoise	Spacer	Distanztück	Tirante	1
94	905 120 944	Raccord air droit	Straight air fitting	Gerader Luftnippel	Racor aire recto	5
95	552 260	Raccord air coudé	Air elbow	Luft Winkelnippel	Racor aire acodado	1
96	552 227	Raccord air en Y	'Y' air fitting	Y-Stück, Luft	Racor aire Y	1

* Pièces de maintenance préconisées.

* Preceding the index number denotes a suggested spare part.

* Bezeichnete Teile sind empfohlene Ersatzteile.

* Piezas de mantenimiento preventivas.

N C : Non commercialisé.

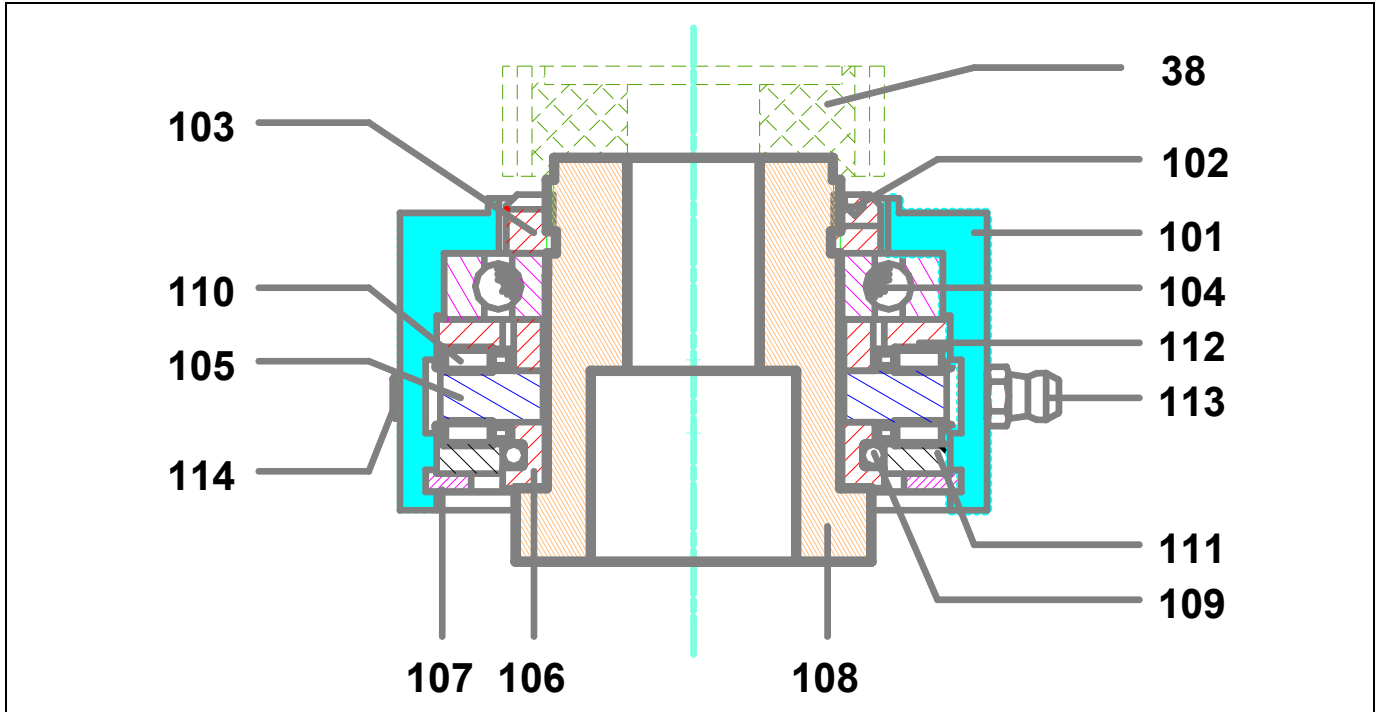
N S : Denotes parts are not serviceable.

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

N S : no suministrado.

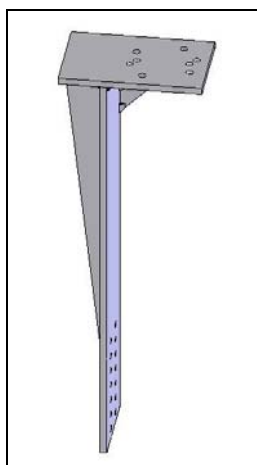
Ind. 35 (Detail / Detalle) # 105 822

Ensemble butée, roulement à billes / Needle stop and bearing assembly
 Einheit : Nadelanschlag, Kugellager / Conjunto tope, rodamiento con bolas



Ind.	#	Désignation	Description	Bezeichnung	Denominación	Qté
101	210 307	Boîte à roulements	Bearing box	Lagergehäuse	Caja de rodamiento	1
102	88 262	Vis, HC M 5x5	Screw, model HC M 5x5	Schraube, HC M 5x5	Tornillo, tipo HC M 5x5	1
103	207 995	Ecrou	Nut	Mutter	Tuerca	1
104	91 650	Roulement à billes	Ball bearing	Kugellager	Rodamiento con bolas	1
105	210 310	Rondelle intermédiaire	Intermediate washer	Mittelscheibe	Arandela intermedia	1
106	210 308	Entretoise inférieure	Lower spacer	Unteres Distanzstück	Arandela de espesor inferior	1
107	88 901	Circlips	Circlip	Sicherungsring	Anillo truarc	1
108	207 992	Arbre de roulement	Bearing shaft	Kugellagerwelle	Eje de rodamiento	1
109	84 008	Joint FKM	FKM seal	FKM Dichtung	Junta FKM	1
110	91 651	Butée à aiguille	Needle stop	Lageranschlag	Tope con agujas	2
111	91 652	Rondelle	Washer	Scheibe	Arandela	2
112	210 309	Entretoise supérieure	Upper spacer	Oberes Distanzstück	Arandela de espesor superior	1
113	88 596	Graisseur	Lubrication device	Schmiervorrichtung	Engrasador	1
114	88 267	Vis, Hc M6x10	Screw, model Hc M6x10	Schraube, Hc M6x10	Tornillo, tipo Hc M6x10	1

ACCESSOIRES - ACCESSORIES - ZUBEHÖR - ACCESORIOS



Ind.	#	Désignation	Description	Bezeichnung	Denominación	Qté
-	210 413	Support Volurex	Volurex support	Volurex Halterung	Soporte Volurex	1

OPTIONS - ON REQUEST - OPTIONEN - OPCIONES

Ind.	#	Désignation	Description	Bezeichnung	Denominación	Qté
-	107 355	Kit capteur fin de gavage (Ind. 34, 72, 73, 74, 75, 76)	Proximity detector assembly kit (Ind. 34, 72, 73, 74, 75, 76)	Näherungsdetektor Kit (Pos. 34, 72, 73, 74, 75, 76)	Bolsa detector de proximidad (Índ. 34, 72, 73, 74, 75, 76)	1
48	107 364	Ensemble motoréducteur avec entretoise (pour doseur avec n° de série < 13)	Motor-reducer kit with spacer (for proportioning gun with serial n° < 13)	Servomotor mit Getriebe mit Distanzstück (für Dosierer mit Seriennummer < 13)	Conjunto motoreductor con tirante (para dosificador con n° de serie < 13)	1
-	560 440 001	Graisse MAGNALUBE PTFE (boîte de 450g)	PTFE grease (450g)	PTFE-Fett (450 g Dose)	Grasa PTFE (450 g)	1