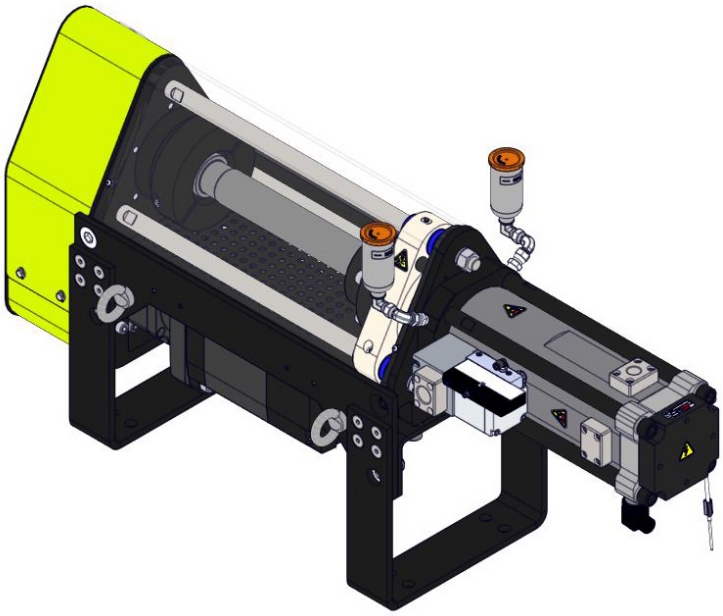

E-DISPENSE L1K

Equipment reference

155.800.000
155.800.010

User Manual 582111110

2021-12-23

Index H

Translation of the original instructions

SAMES KREMLIN SAS

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Contents

SAMES KREMLIN

Evolution table of the document

Recording revisions				
Editor	**Object**	**Revision**	**Date**	**Aimed by**
F SEGUIN	E-DISPENSE L1K Shotmeter	B – Draft - beta test	Week 45/2019	B Batllo
F SEGUIN	E-DISPENSE L1K Shotmeter	C – beta test	Week 08/2020	B Batllo
F SEGUIN	E-DISPENSE L1K Shotmeter	D – beta test	Week 24/2020	B Batllo
F SEGUIN	E-DISPENSE L1K Shotmeter	E –	Week 39/2020	B Batllo
F SEGUIN	E-DISPENSE L1K Shotmeter	F –	Week 14/2021	B Batllo
F SEGUIN	E-DISPENSE L1K Shotmeter	G –	Week 21/2021	B Batllo
F SEGUIN	E-DISPENSE L1K Shotmeter	H –	Week 39/2021	B Batllo

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

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

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

Supplementary notice		
	Designation	**Reference**
	Product valve	582112110-EN

Note: Consult the additional manuals of the product inlet valve and heating block separately before using the system.

1 Safety instructions

1.1 Personal safety

Overview

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

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

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

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

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

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

Never exceed the maximum working pressures of the equipment components.

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

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

Meaning of the pictograms

 Danger: pinching, crushing	 Danger: moving parts	 Danger: high pressure	 Risks of product emanation
 Danger: hot parts or surfaces	 Danger: flammability hazard	 Danger: electricity	 Risk of explosion
 Danger (user)	 Glasses required	 Gloves required	 Grounding
 Protective helmet	 Safety shoes	 Protective clothing	 Refer to the manual/instruction leaflet

Security devices

Attention

Guards (cover, housings, ...) are installed for safe use of the equipment.

The manufacturer can not be held responsible for any bodily injury as well as failures and / or damage to the equipment resulting from the destruction, the occultation or the total or partial removal of the protectors.

Never exceed the maximum working pressures of the equipment components.

Pressure hazards

Safety requires a decompression air shutoff valve to be mounted on the shotmeter supply circuit to allow trapped air to escape when power is turned off.

Without this precaution, residual air can cause a serious accident.

Similarly, a **product purge valve** must be installed on the product circuit at the outlet of the shotmeter in order to be able to purge it before any intervention on the equipment. These valves should remain closed for air and open for the product during the procedure.

Injection hazards

"HIGH PRESSURE" technology requires the utmost care.

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

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

Fire hazards, explosion, electric arc, static electricity

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

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

- ✓ to connect the equipment, the parts to be treated, the cans of products and cleaners to the ground,
- ✓ to ensure good ventilation,
- ✓ keep the work area clean and free of rags, papers, solvents,
- ✓ do not operate electrical switches in the presence of vapors or during removal,
- ✓ immediately stop the application in the presence of arcs,
- ✓ store all liquids outside the work areas.
- ✓ use products whose flash point is as high as possible to avoid any risk of formation of flammable gases and vapors (consult the product safety data sheets).
- ✓ to equip the drums with a lid to reduce the diffusion of gases and vapors in the cabin.
- ✓ It is forbidden to pump explosive materials.

Hazards toxic products

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

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

Attention

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

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

1.2 Integrity of the material

Recommendations equipment

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

Examples:

- ✓ Central hood.
- ✓ Transmission cover.
- ✓ Transmission housing.

The manufacturer can not be held responsible in case of:

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

Shotmeter

Recommendations for the shotmeter.

- ✓ Keep hands clear of moving parts.
- ✓ The parts constituting this movement must be kept clean.
- ✓ Before starting up or using the shotmeter, carefully read the DECOMPRESSION PROCEDURE.
- ✓ Check that the decompression and purge air valves are working properly.

Shotmeter

- ✓ It is forbidden to operate the shotmeter without its protective covers - risk of crushing.
- ✓ Only use genuine **SAMES KREMLIN** accessories and spare parts, designed to withstand the shotmeter operating pressures.
- ✓ Mandatory PPE (glasses + gloves + safety shoes).

Mass cable

- ✓ It is mandatory to connect the shotmeter to the ground.

Products implemented

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

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

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

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

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

SAMES KREMLIN declines any responsibility, in case of:

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

2 Environment

The equipment may be fixed on a support which must be specially designed to ensure the stability of the equipment and the safety of users.

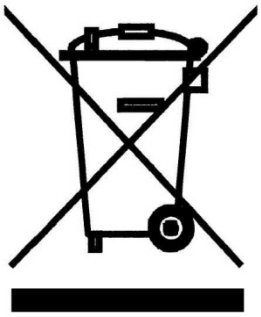
Non-moving equipment must be fixed to the ground by suitable fasteners (spit, screws, bolts, ...) to ensure their stability during use.

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

- ✓ **For dosing equipment** (pumps, shotmeter, elevators, chassis, etc.), a ground connector is available. Use this connector to connect the equipment to the general "earth".
- ✓ Have the earth continuity checked by a qualified electrician. If earth continuity is not assured, check terminal, wire and grounding point. Never operate the equipment without solving this problem.

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

Material marking



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

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

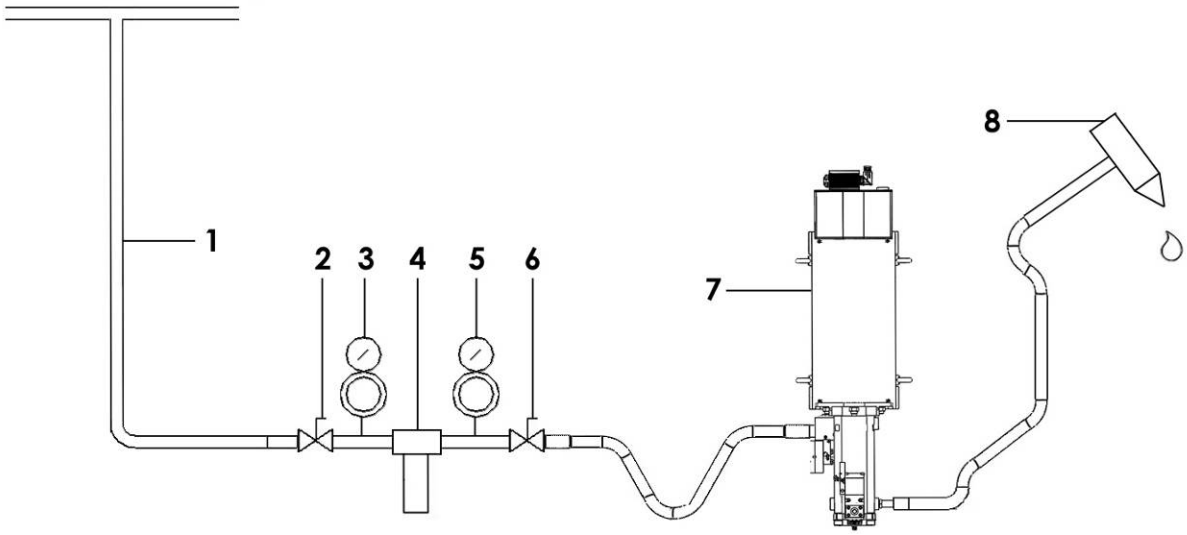
European Directive 2012/19 / EU applies to all devices marked with this logo (crossed out bin). Find out about the collection systems available for electrical and electronic devices.

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

3 Presentation of the material

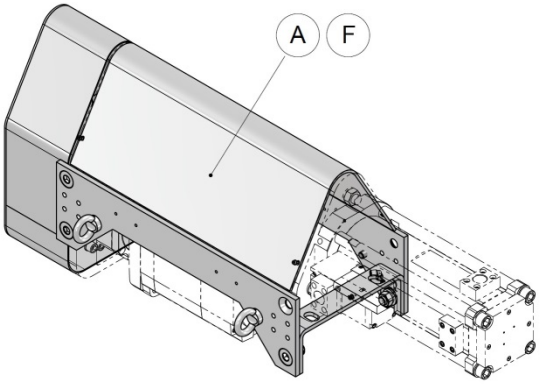
3.1 Complete system

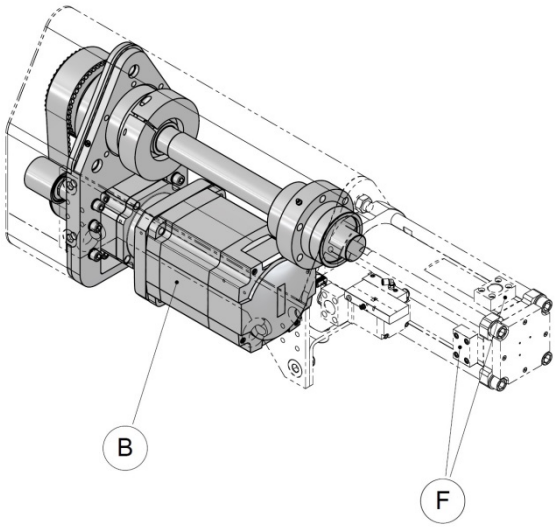
3.1.1 Classic layout diagram

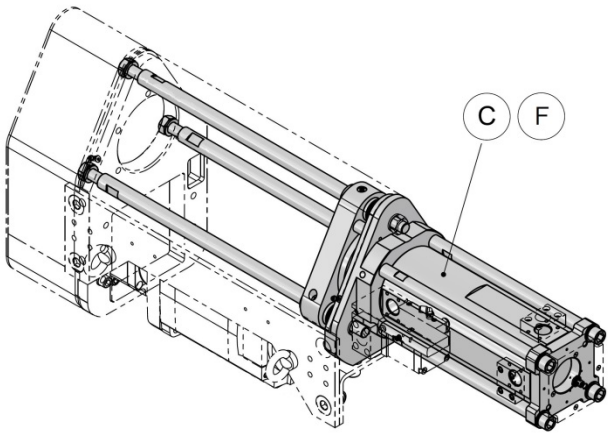


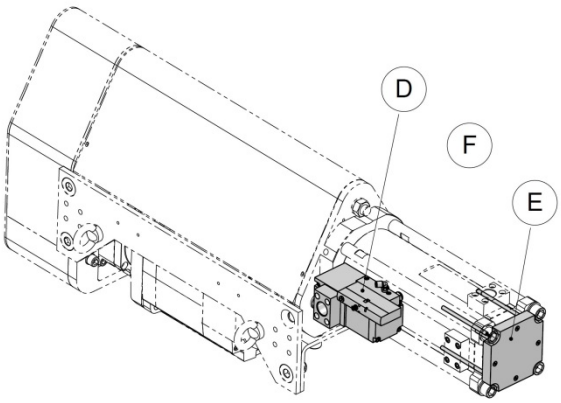
Description	
1	Hose product
2	Valve
3	manometer
4	Filtered
5	manometer
6	Valve
7	e-Dispense L1K shotmeter
8	Remote gun

3.1.2 Presentation of the components of the L1K shotmeter E-dispense









NOTE: Refer to the specific instructions for the valve (D) separately.

Description	
A	**Housing / Frame**
B	**Kinematic set**
C	**Dosing chamber**
D	**Valve**
E	**Heating block**
F	**Accessories and options**

Context of use

The E-Dispense L1K shotmeter is designed to meet the performance and lifetime requirements required in the context of automotive construction:

The environment of the equipment is most often in the factory at room temperature.

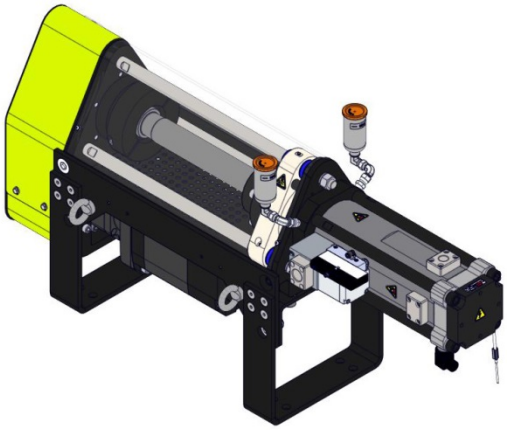
The E-Dispense L1K shotmeter is used for dosing thick substances such as extrudable products (silicone, glue, putty ...) hot or cold.

It is forbidden to use the E-Dispense L1K shotmeter to operate different components than those supplied with the L1K E-shotmeter.

If the E-Dispense L1K shotmeter is used counter-appropriately, the fasteners, supports and parts of the installation are subject to the risk of failure or failure of these elements.

3.2 Description of the main elements of the system

E-Dispense L1K



Description

The E-Dispense L1K shotmeter is a component integrated in an extrudable product delivery system (silicone, glue, mastic ...) hot or cold. It intervenes in the chain of production to guarantee the flow, the pressure and / or the volume of deposited product.

In general, the shotmeter is supervised by a control bay. It is supplied with product by a distribution circuit. It is connected to an application gun via a hose.

The control panel receives a signal from either a robot or a PLC indicating the flow rate to be supplied and the volume to be respected or the predefined recipe to follow.

Flow and dosing are electronically programmable and controlled by the control panel.

The shotmeter and the rack can not work separately. The bay manages a set of securities, protecting the shotmeter and its environment.

Principle of operation

The removal system consists of 3 actuators:

- The gear motor of the shotmeter gives a translational movement to the piston via the screw to rolls.

- A pilot valve allows product from the product inlet to enter the dosing chamber.

- A pilot operated valve allows the material in the chamber to be extruded through the material outlet. Optional: not required if the dispenser is connected to a remote application gun.

Cramming:

- The pilot operated feed valve opens to allow product to flow through the product inlet.

- The product is pushed through a distribution circuit or a pumping unit (not shown) into the dosing chamber.

- The pressure in the chamber is regulated to a lower pressure than the feed pressure, which causes the piston to rise.

- Once the desired volume is present in the shotmeter, the inlet valve is closed.

Pressurized or prestressing:

- The piston goes down to bring the product to the desired pressure thanks to the pressure sensor.

Extrusion:

- The extrusion solenoid valve opens to let the product to be deposited through the product outlet.

- The piston goes down into the chamber at the speed corresponding to the flow selected by the robot.

- The volume deposited is calculated thanks to the stroke made by the piston.

The purge:

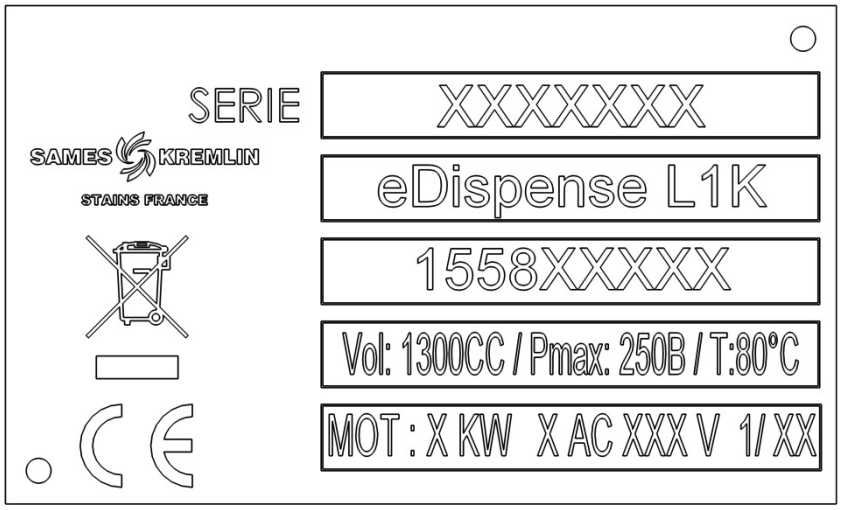
This task consists of:

- to carry out an extrusion (emptying of the dosing chamber) during a prolonged stop of the dosing machine or at the request of the operator,

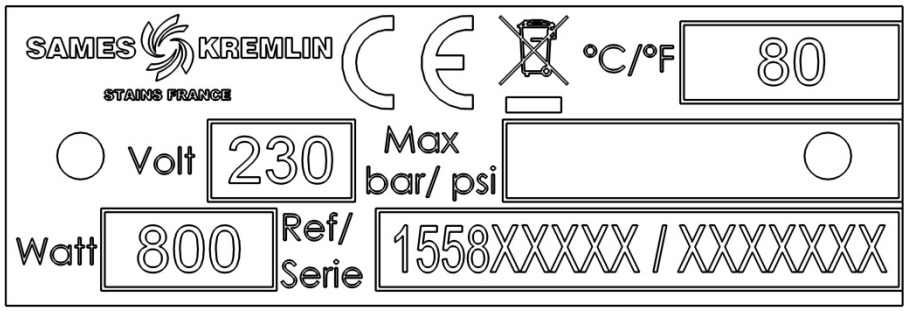
- then to make a feeding operation (filling of the dosing chamber).

4 Identification

4.1 Description of the label marking



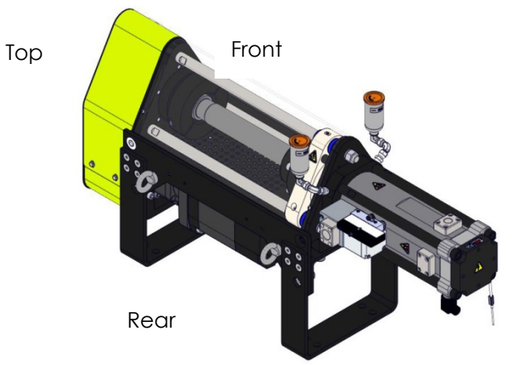
Description	
Sigle **SAMES KREMLIN**	Manufacturer's mark
CE	**EC:** European conformity
SERIE	Number given by **SAMES KREMLIN.** The first 2 digits indicate the year of manufacture
eDispense L1K	Type of material
1558XXXXX	Material reference
Vol: 1300cc/ Pmax:250B/T:80°c	Characteristics of the shotmeter Vol : Dosing cylinder capacity / Pmax : Maximum pressure / T : Maximum temperature
MOT : 5KW 3AC400V 1/20	XKW : motor power xACXXV : motor voltage 1/XX : gear ratio

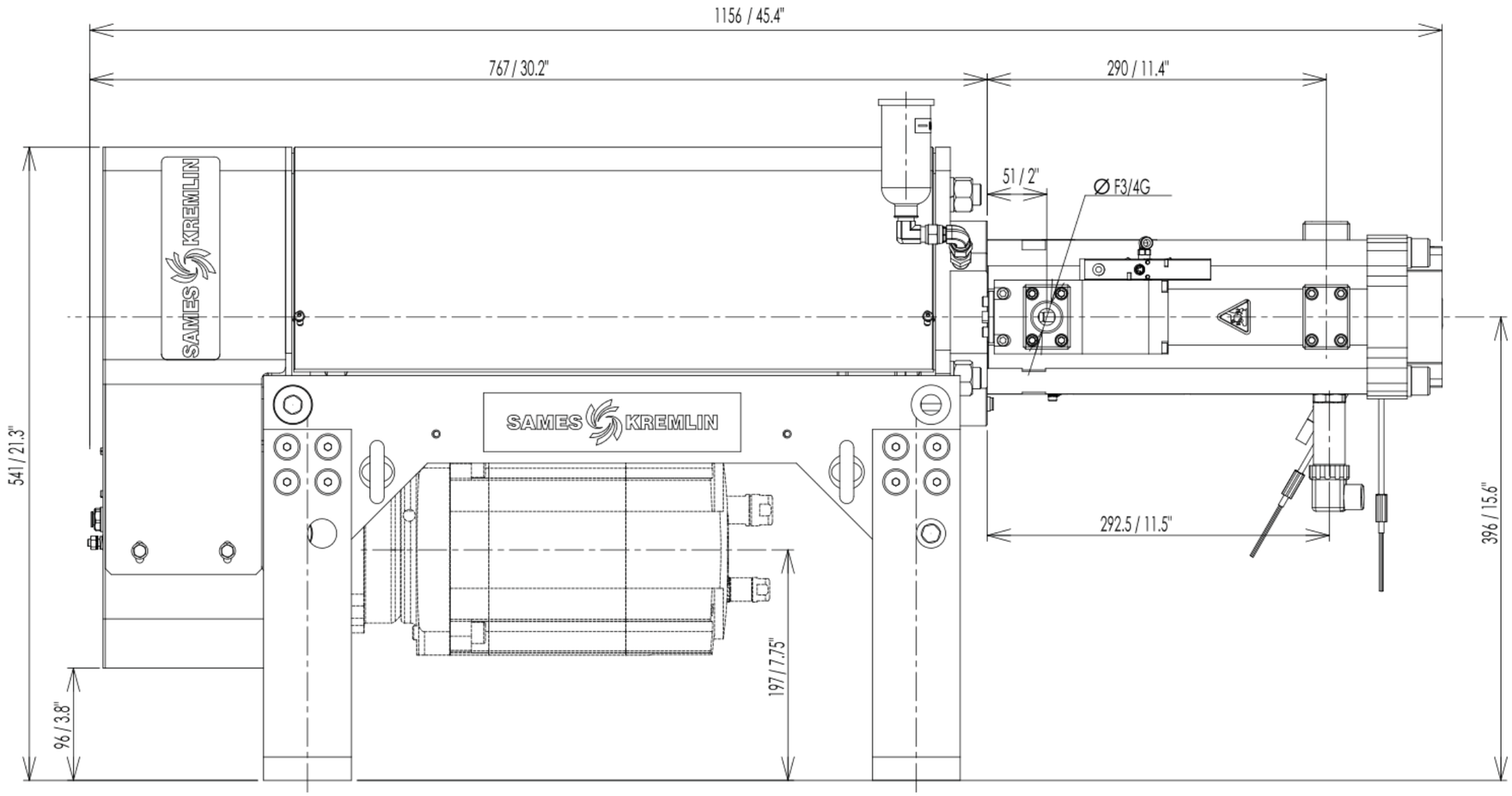


Description	
Sigle **SAMES KREMLIN**	Manufacturer's mark
CE	**EC:** European conformity
°C /°F	Maximum temperature
Volt	Voltage
Max bar / psi	-
Watt	Heating power
Ref / Serie	Material reference

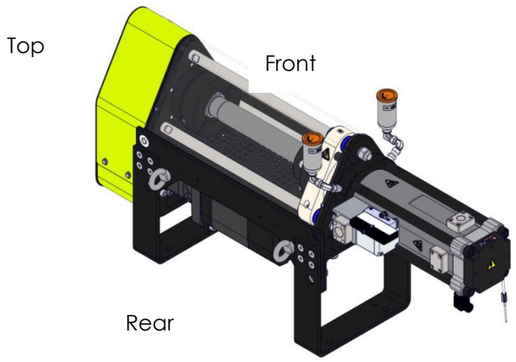
4.2 Equipment dimensions

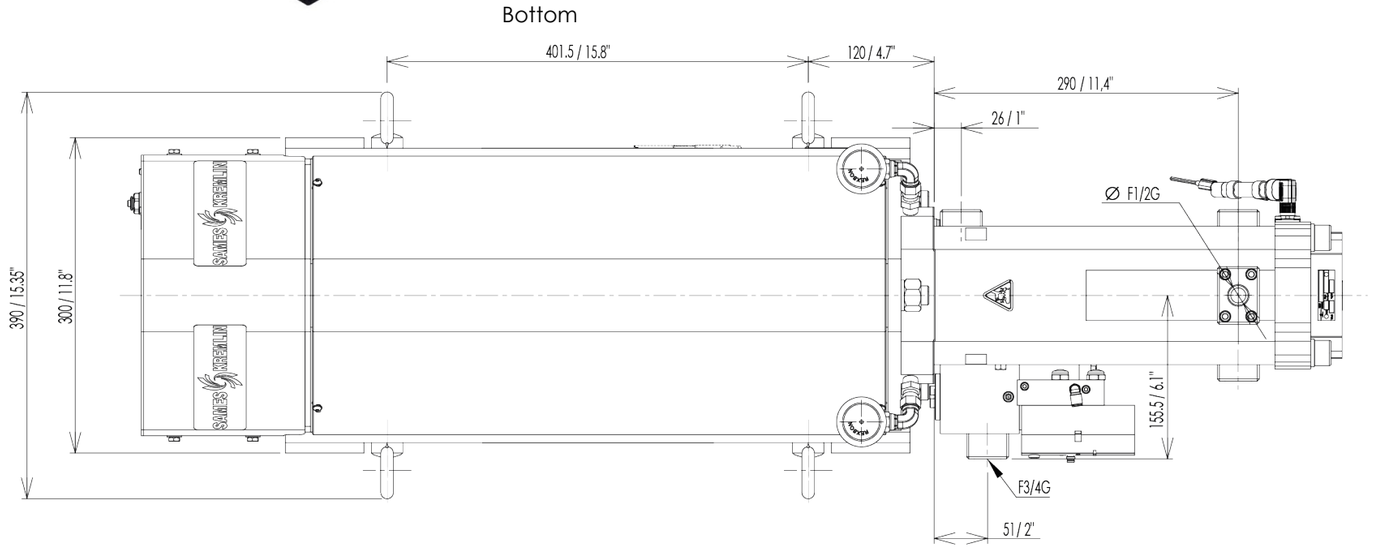
E1 dispense L1K (left view)

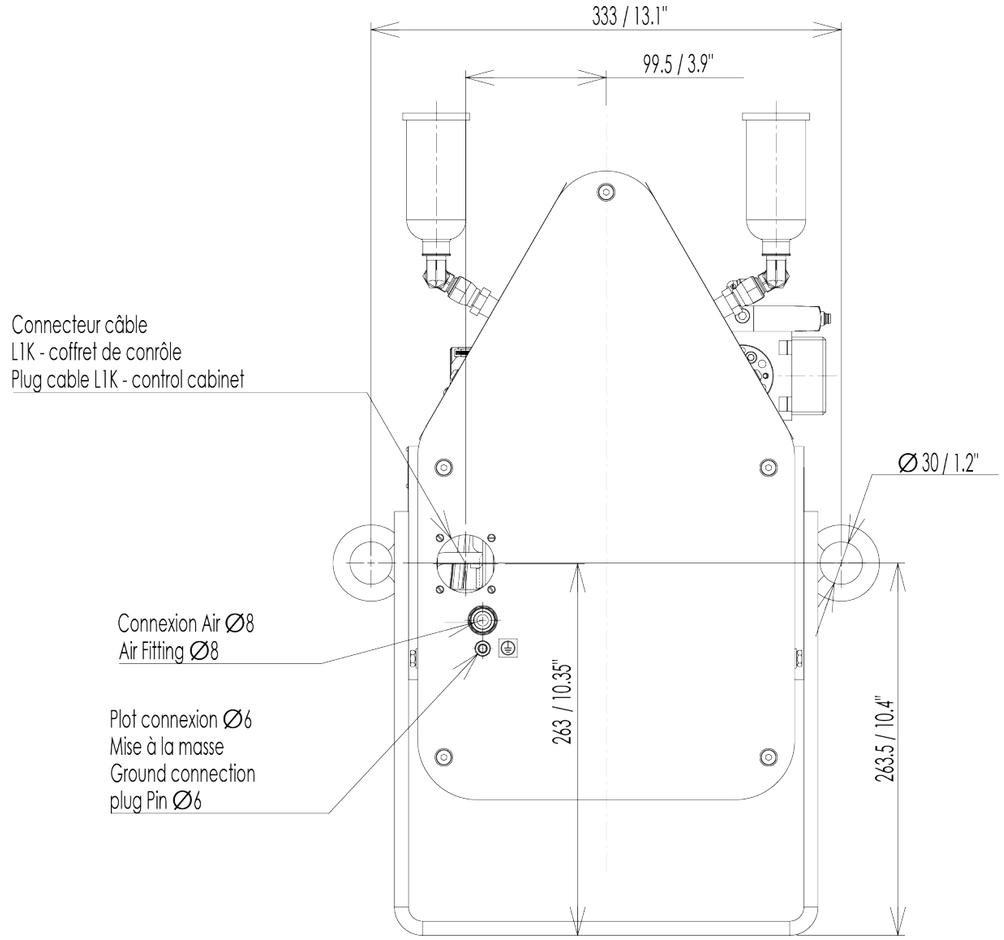




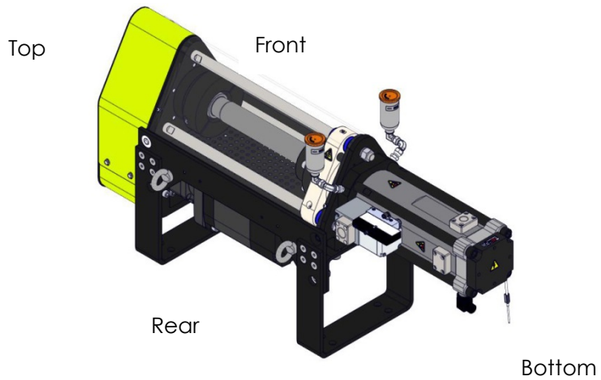
E1 dispense L1K (Front and top view)

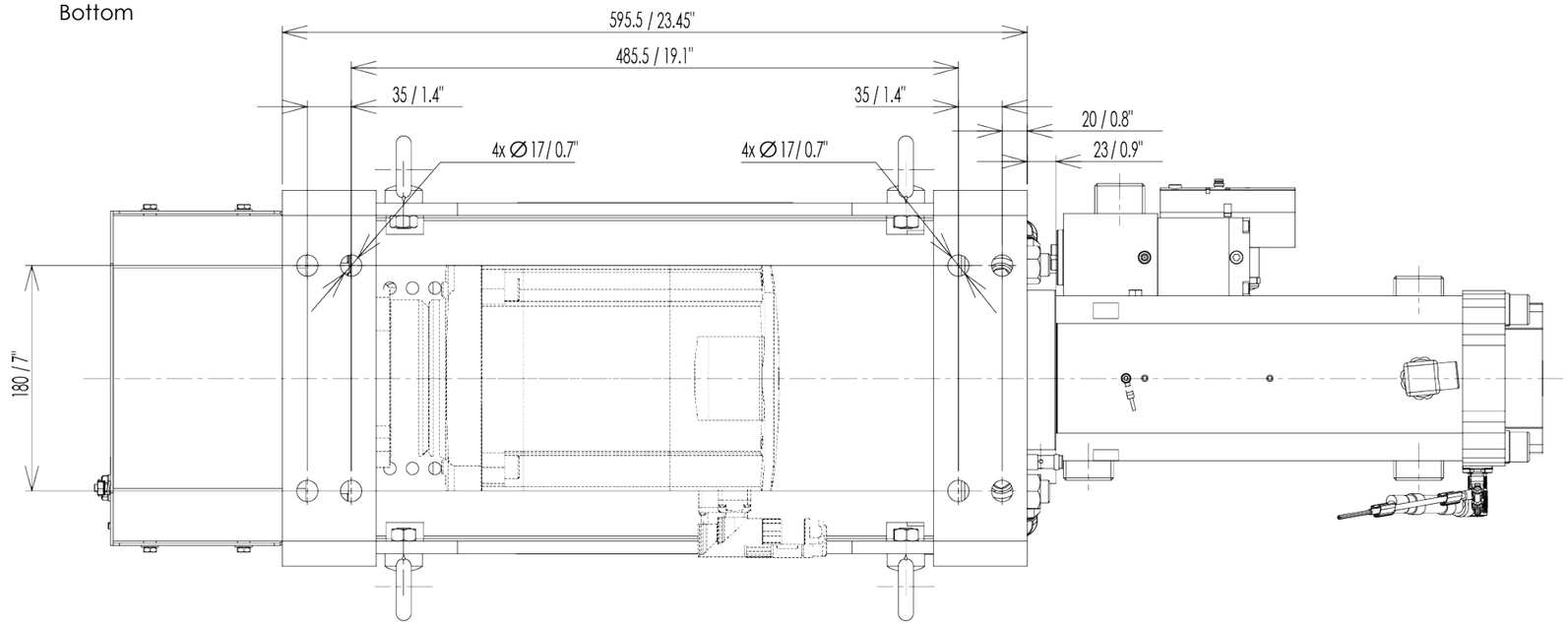






E1 dispense L1K (Rear view)





5 Technical characteristics and performances

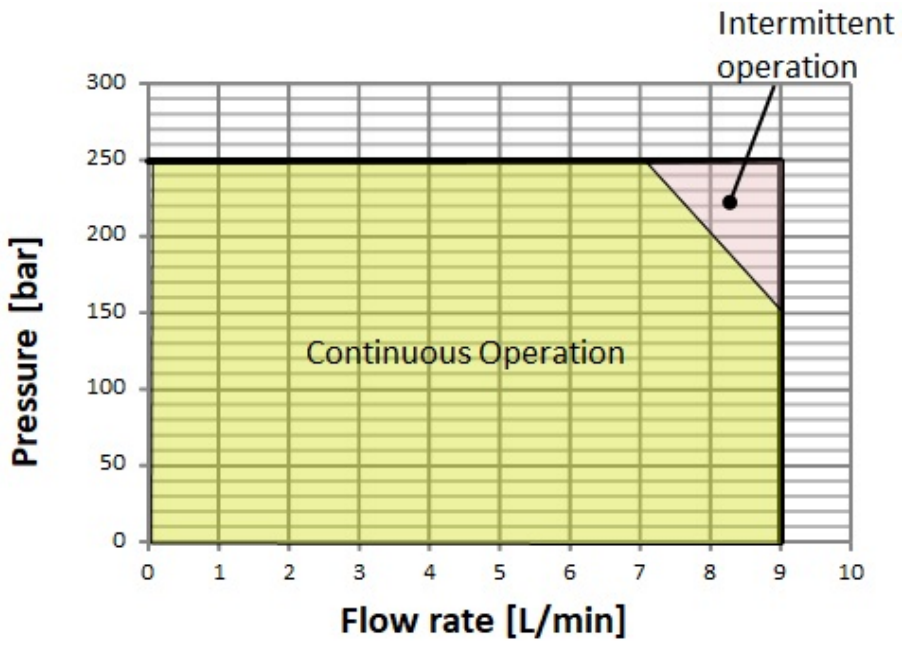
5.1 Technical characteristics

E Dispense L1K

		L1K		
Characteristics		**1300 cc**		
Displacement (cm3)		1300		
Max flow (cm3/mn)		**9000**		
Product application		Hot / cold		
Max product input pressure (bar)		**250 bar / 3626 psi**		
Max product output pressure (bar)		**250 bar / 3626 psi**		
Air pressure (valve) (bar)		6 bar / 87 psi		
Pressure sensor		0-400 bar / 0-5801 psi Signal 4-20 mA		
Product temperature (max)		80°C / 176°F		
Weight		200 kg / 441 lbs		
Product connections				
Product input (inlet valve)		F 3/4" G		
Product output		F 1/2" G (option F 3/4" G)		
Electrical Specifications	**Heated**	**Gear motor**		**EVs**
		L1K 155 800 000	**L1K 155 800 010**	
		Siemens	**Yaskawa**	
Tension (V)	1 AC 230	3AC 400	3AC 400	24 DC
Power (W)	800	5000	2900	2,4
Intensity (A)	3,5	12,6	12	0,1
Frequency (Hz)	50	-		-
Weight		44,5 kg / 98.1 lbs	34,3 kg / 75.6 lbs	

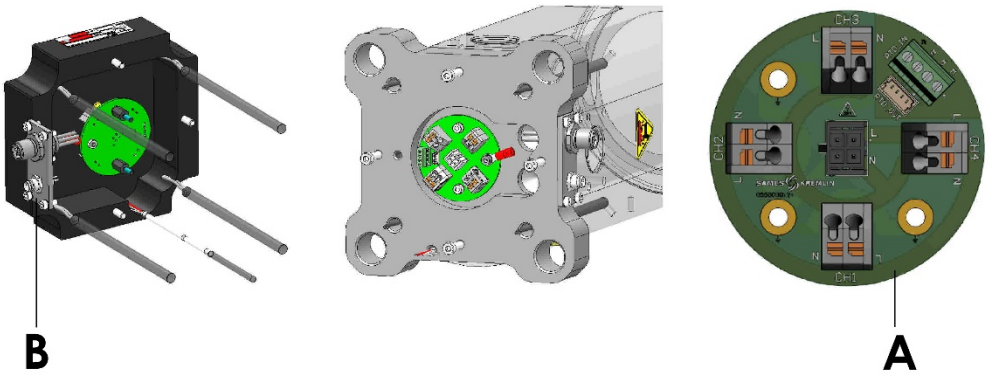
Electrical connections	
Connectors	Circular Hybrid 16 pins
Electric resistors	4 resistors de 200W 1 AC 230V
resistors Temperature probe	PT 100 class A 100 ohms Temperature range -40°C / -40°F to + 200°C / 392°F

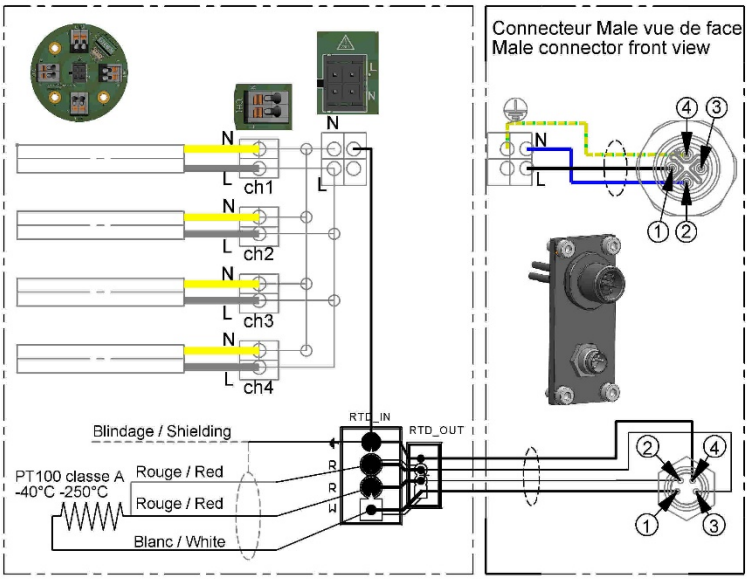
Product flow



E Dispense L1K

The dosing unit's heating block assembly includes a card (A) on which the heating cartridges are connected, the temperature sensor, as well as a connectors kit (B) for power supply (230V AC), temperature feedback and grounding of the heating block.





Power	Voltage	Drill
800W	230V single-phase	PT 100 3 wire classe A 100 ohms Temperature range -40°C / -40°F à + 200°C / 392°F

6 Installation

Shotmeter

PNEUMATIC AND MATERIAL CONNECTIONS

- Fit an HP fluid hose between the fluid shotmeter or the pump and the fluid inlet of the L1K shotmeter inlet valve. This pipe can be heated to facilitate the flow of the product.
- Fit an air hose (∅ 6x8) to supply the metering unit with compressed air. Connect it to the compressed air network via a pressure regulator.

ELECTRICAL CONNECTIONS

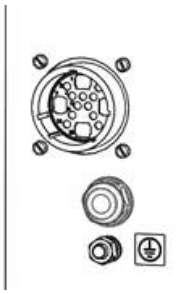
Connect the electrical cables between the control bay and the shotmeter:

✓ Measuring cable

✓ Motor power cable

✓ Motor encoder cable

✓ Cable grounding lug 6 cable section 6 mm²

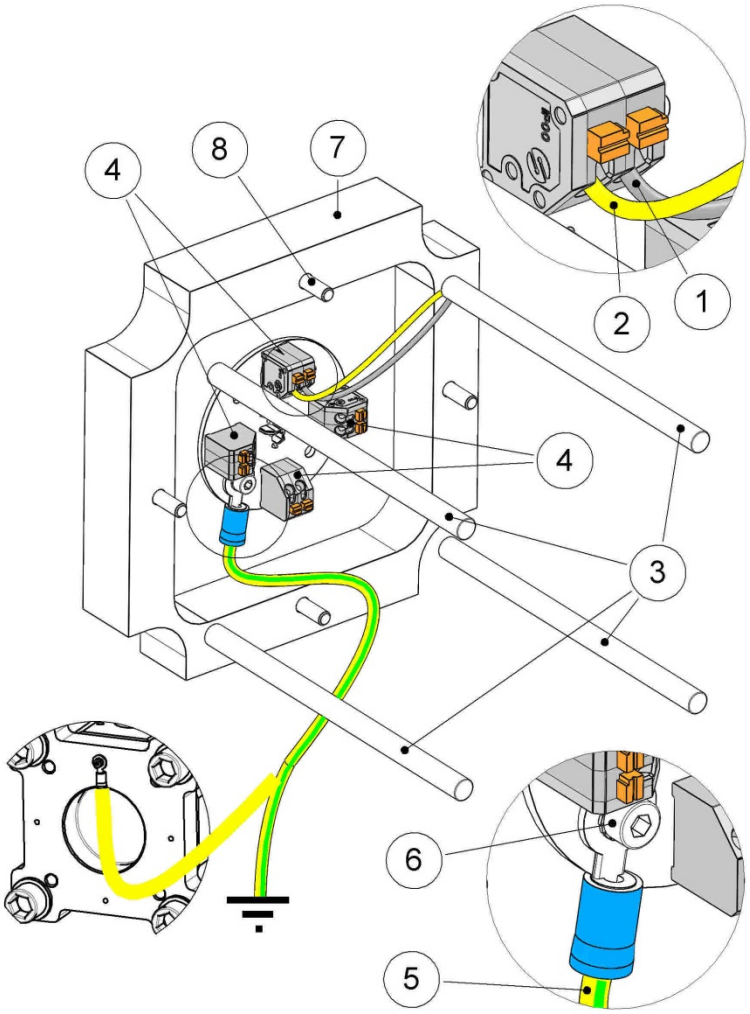


Note: some motor models use only one cable for power and encoder.

- Connect the control bay to the mains.

Shotmeter

The continuity of the grounding is realized between the card (1) and the shotmeter.

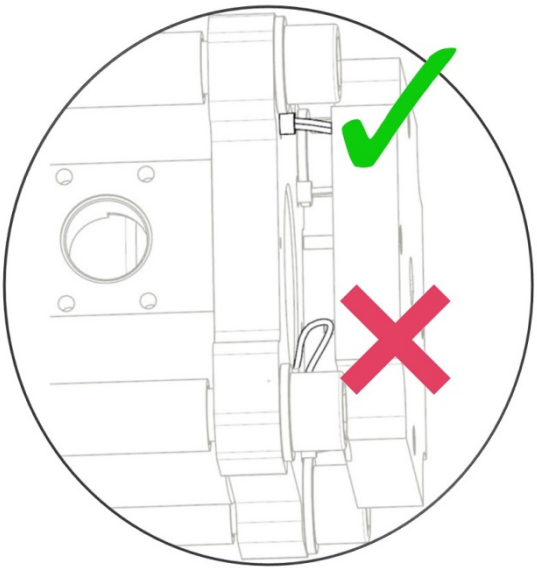


- ✓ Connect the wires (1) and (2) of a heating cartridge (3) to a terminal block (4) on the board.
- ✓ Repeat the previous operation for each cartridge.
- ✓ Connect the drill to the RTD IN screw connector.
- ✓ Insert the RTD OUT and 230V single-phase connectors between the board and the connector kit
- ✓ Connect the grounding cable lug (5) to the screw (6) on the card.

The ground wire (5) will be connected at its other end to the metering device (at the flange cylinder), itself grounded.

Be careful not to pinch the cables when installing.

- ✓ Insert the cover (7).
- ✓ Tight it with the 4 screws (8). Use a 3 mm Allen wrench



Tools needed

3

6.1 Mounting positions

Be sure to leave a free flow of air.

Make sure that the lubricant reservoir (if available) is always pointing upwards, so that the material ram is always lubricated.

6.2 Connections

- ✓ Make sure that all the connections of the E-Dispense L1K dosing components - cables, hoses and hoses - are installed so as to avoid causing a fall of people.
- ✓ Make sure that the order of connection of cables, hoses and pipes is in accordance with the connection diagram.
- ✓ Ensure that all cable connectors, hose connectors and hoses are properly in place.
- ✓ Remember that loose or incorrectly connected cables, hoses and pipes can lead to malfunctions that endanger the safety of the operating personnel.

6.2.1 Product supply connection

- ✓ If the supply pressure is higher than the maximum pressure, it is necessary to install a product pressure regulator between the hose and the shotmeter as close as possible to the latter.
- ✓ Ensure that a short product hose reduces pressure fluctuations and pressure drops.
- ✓ Ensure that the fluid supply is provided through a fitting on the E-Dispense L1K shotmeter. The nominal size of the fitting depends on the nominal size of the fluid hose

6.2.2 Air supply connection

- ✓ Ensure that a short air duct reduces pressure fluctuations and pressure drops.

6.2.3 Power supply connection

- ✓ Ensure that work on electrical equipment is carried out only by qualified electrical personnel.
- ✓ Ensure that the E-Dispense L1K shotmeter is connected to the prescribed voltage.
- ✓ Observe the electrical installation diagram during the electrical installation.

- ✓ Make sure that the actuator is connected exclusively to the servo amplifier according to the manufacturer's recommendations.
- ✓ Remember that incorrectly connected servo motors can cause malfunctions and / or fires.

6.2.4 Recommendation dosing / dimmer cables

Variable speed drive cables to the gearmotor (not supplied with the L1K dosing unit)

Shotmeter L1K	Motor gearbox typer	Servodriver Drive * Generic manufacturer's reference	Cables		
			Lenght (M) / (Ft)	Power supply reference **SAMES KREMLIN**	Encoder reference **SAMES KREMLIN**
155 800 000	Siemens 1FL6094 reference **SAMES KREMLIN** 155803602	*6SL3210 - 5FE15-0 U	5 / 16.4	130 001 936	130 001 937
			10 / 32.8	110 002 738	110 002 739
			15 / 49.2	110 002 754	110 002 755
			20 / 65.6	110 002 740	110 002 741
155 800 010	Yaskawa SGM7G-30D reference **SAMES KREMLIN** 917480425	*SGM7G - 120 D	5 / 16.4	*	*
			10 / 32.8	*	*
			15 / 49.2	*	*
			20 / 65.6	-	*

* contact the manufacturer for more information

Connecting cables between control cabinet and L1K dosing unit not supplied with the L1K dosing unit.

Shotmeter L1K	Lenght (M) / (Ft)	Reference Sames-Kremlin
155 800 000 / 155 800 010	5 / 16.4	110 002 882
	10 / 32.8	110 002 883
	15 / 49.2	110 002 884
	20 / 65.6	110 002 885

See chapter wiring diagram

6.3 Storage

Shotmeter

Storage before installation :

- ✓ Place the equipment away from moisture.
- ✓ Close the various air inlets and other openings with plugs.
- ✓ Storage ambient temperature: 0 / +50°C / + 32 / +122 °F.
- ✓ Protect the unit against dust, water runoff, moisture and shocks.

Storage after installation:

- ✓ Operating temperature: +15 / +80°C / +59 / +176°F.
- ✓ Protect the unit against dust, water runoff, moisture and shocks.

Belts

It is important to store belts correctly (temperature, storage method, etc.) to maintain their life, performance and size.

Belts should not be stored on nails or hooks.

Avoid the presence of solvents or other chemicals in the atmosphere.

Belts should be stored in a cool, dry place without direct light, especially out of direct sunlight.

The belts can be stored flat, rolled up on themselves or hung on large diameter tubular supports.

6.4 Handling

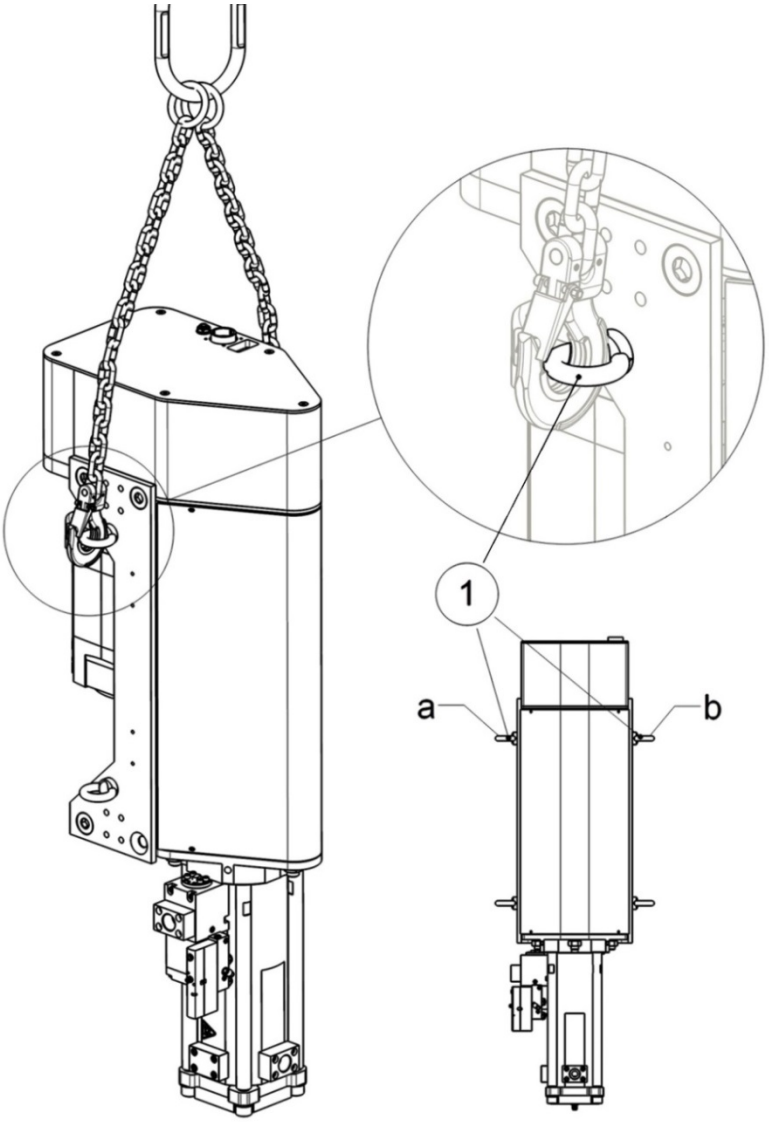
Shotmeter

The shotmeter is heavy and bulky and must be handled with appropriate means..

Use lifting means such as bridge or stem.

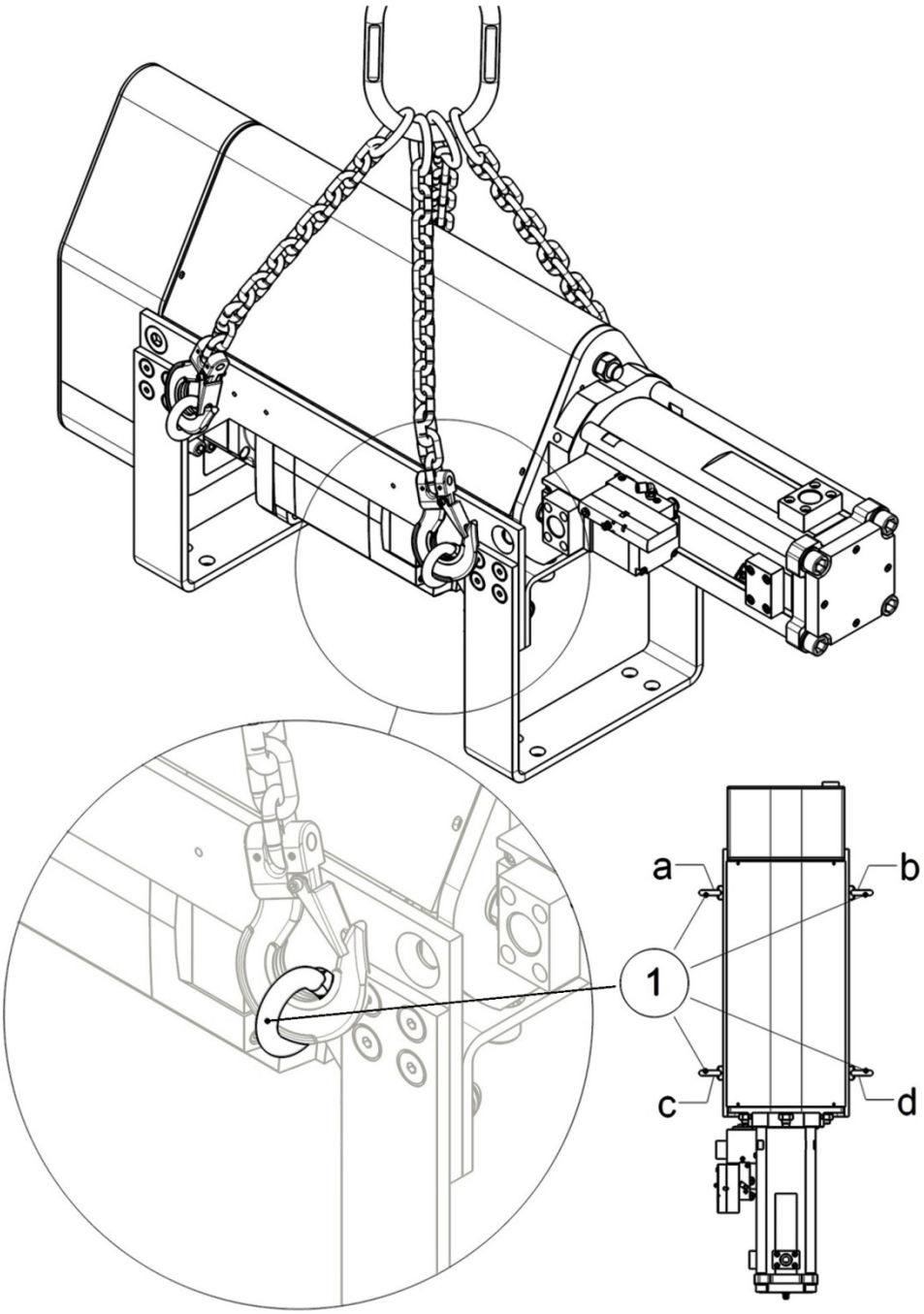
Wear suitable PPE.

Vertical slinging



Use the lifting rings (1) at the upper positions (a, b).

Horizontal slinging



Use the lifting rings (1) at the locations (a, b, c, d).

7 Commissioning

The feeders are tested in our workshops with petroleum jelly before shipping.

Before final commissioning, it is necessary to purge the shotmeter.

7.1 Prerequisite for commissioning

The E-Dispense L1K shotmeter works as a component of a product application system.

Ensure that the following preliminary functions are fulfilled to ensure proper operation:

- ✓ The entire product application system is completely assembled and ready for operation.
- ✓ The complete product application system is ventilated.
- ✓ The external control and the control bay of the E-Dispense L1K shotmeter are in operation.
- ✓ Power and pneumatic supply are in use.
- ✓ The pump has a product supply at a sufficient boost pressure.
- ✓ Check that the roller screw and the 3 guide shafts have been correctly greased (see maintenance chapter).

7.2 Filling the shotmeter

The following points must be observed before commissioning:

- ✓ If the supply pressure is higher than the maximum operating pressure, a fluid pressure regulator must be installed between the hose and the shotmeter as close as possible to the shotmeter
- ✓ The maximum filling pressure (see chapter Technical data) must not exceed the maximum operating pressure.
- ✓ The inside diameter of the supply pipe must be dimensioned so that the required volumetric flow rate is reached with as little pressure as possible when filling the E-Dispense L1K. The pressure must be less than 350 bar.

8 Using the product

8.1 User Settings

Shotmeter

If the lubrication option has been selected, fill the tanks with lubricant "T".

8.2 Safety in production

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

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

8.3 Diagnostic help / Troubleshooting guide

Malfunctions

If a problem occurs in the operation of the shotmeter, the fault is indicated on the display of the bay (see manual of the bay).

In order to avoid the risk of personal injury, product injections, injuries caused by moving parts or arcing, it is essential to follow the following procedure before any intervention during system shutdown, assembly, cleaning or changing the nozzle.

- ✓ Lock the guns (valve, valve, etc.) to OFF or OFF.
- ✓ Shut off the air supply to the system through the pressure relief valve to remove residual air.
- ✓ Unlock the gun (valve, valve ...).
- ✓ Bring the gun (valve, tap ...) to a metal bucket to collect the product. Hold it against the wall of this bucket to avoid interrupting the continuity of the earthing (use the wire with stirrup to put the metal bucket to earth).
- ✓ Open the gun (valve, valve) to purge the circuit.
- ✓ Lock the gun (valve, valve) to OFF or OFF.
- ✓ Open the pump bleed valve and collect the product in a well-grounded metal bucket.
- ✓ Leave this purge valve open during the whole period of the operation.

Check the conformity of the wiring before intervention.

8.4 Possible symptoms of faults / Causes of faults / Remedies to apply - rapid operation

Metering remedies

Defaults	Possible causes	remedies
The shotmeter does not fill	Inadequate feeding pressure	Check the connection to the pump or distribution network.
		Check the presence of product
		Check that the hoses, hoses and booster valve are not clogged.
		Increase the force-feeding pressure
	Mechanical failure of the kinematic chain:	Identify faulty parts and replace them.
	Rubbing seal cartridge	Change or clean cartridge
	Malfunction of the roller screw	Check lubricants
		Change the screw
	Malfunction of the belt	Retension / change belt
	High friction in the metering cylinder glands	Replace the cable gland if necessary.
	The inlet valve did not open	Check the inlet valve, reassemble it or replace it if necessary. Refer to the procedures for the Inlet Valve and Outlet Valve in the "Repair" section.
	Problem with the order	Reset the controller program, check the filling / removal routine
		Check the wiring
The shotmeter fills too slowly	Pump product pressure too low	Increase product pressure
	Fluid hose, valve or filter clogged	Check and replace hoses
Filling shotmeter correctly filled but no outlet pressure	Part product clogged	Release the product cylinder
	Disconnected control bay	Connect the control bay
	Command bay error code	Check and replace the control bay
	Notched timing belt defective	Replace the timing belt
	Defective roller screw	Replace the roller screw
	Defective servomotor	Replace the servomotor

Defaults	Possible causes	Remedies
Low product flow	Control bay command error	Check the control bay
	Product not sufficiently heated	Connect the heater
		Replace the heating resistor
		Replace the pressure sensor
	Product supply to the insufficient gun	Clean the nozzle
		Check the hose
Lack of product at the application	The product contains hardened parts	Check the hose
	Presence of air	Drain the application system
	Control bay command error	Check / replace the control bay
Air or product leak	Non-sealed product part	Replace the sealing cartridge
Leakage through the leakage indicator of the inlet / outlet valve	Used seal cartridge	Replace the seal cartridge. Refer to the procedures the Inlet or outlet Valve in the Repair section
Problem of pressurization of the dosing unit	Leak in the output circuit of the dosing unit	Check the tightness of the components at the outlet of the shotmeter and the application gun.
The electric motor does not respond	Electrical connection problem	Test the electrical continuity. In case of discontinuance, change the power cable concerned.
	Problem with the order	Reset the controller program, check the filling / removal routine. Consult the controller manual for more information.
Material flow does not stop quickly when switching input / output valves	Slow operation of the inlet and outlet valves	Replace the relevant valve. Refer to the procedures for the Inlet Valve and Outlet Valve in the "Repair" section.
Unstable temperature control	Heating cartridge or faulty temperature probe	Check the heating cartridge and the temperature sensor. Replace the parts if necessary.
	Incorrectly adjusted control parameter	Consult the controller's manual to set the heating control parameters

Belts remedies

Defaults	Possible causes	Remedies
Cracks may appear on the base of the belt	Excess heat	Check the temperature of the room and the temperature of the shotmeter during operation. Change the belt
	Action of chemical vapours	Determine and eliminate the source of the chemical vapours Change the belt
	wear and tear	Change the belt
	Oil or grease on belts or pulleys. Remove the source of the oil or grease	Clean with a cloth soaked in a non-flammable, non-toxic degreasing agent or any detergent and water. Attention to the storage condition
Wear on the side	It may be due to a chip or partial breakage of one of the pulley teeth s	Check the pulleys and change them if necessary Change the belt
Cut belt	Probably due to a bad alignment or a violent jolt.	Check the alignment of the pulleys and the absence of foreign objects. Change the belt
Elongation beyond the possibilities of catching up	Unequal elongation Approximately equal elongation	Check the alignment of the pulleys and the absence of foreign objects Change the belt Insufficient adjustment, change the belt
Noise	Slack belt A foreign element in the belt grooves	Check the tension, adjust if possible. Change the belt if necessary. Check the absence of foreign element Change the belt and/or pulleys if necessary s

9 Maintenance

Attention

Only qualified SAMES KREMLIN personnel are authorized to carry out maintenance work.

Attention

It is imperative to carry out disassembly operations for 2 persons, the weight and size of the shotmeter being important.

Attention

When stopping for a long time, first put the piston in the down position (bleed if necessary).

Attention

Before any intervention, it is imperative to follow the decompression procedure and the safety instructions.

9.1 Preventive Maintenance Plan

Attention

Before any intervention, it is imperative to follow the decompression procedure and the safety instructions.

During a prolonged stop, stop the shotmeter when the piston is in the down position.

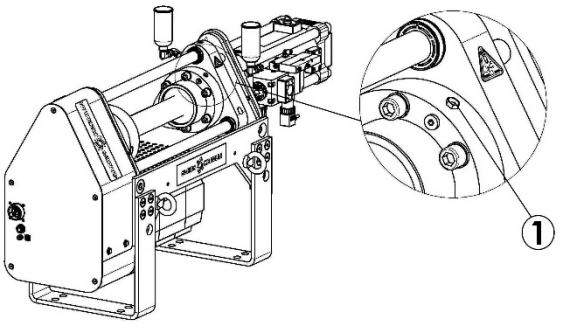
Sub-assembly	Element	Operation to be performed	Expected load (hh:mm:ss)	Periodicity	Machine state	tools	Quantity and designation / ref. provider	Maintenance range	Specialty
Easy-Dispense L1K	condition	check the general state of cleanliness, clean the external parts with Xylene check the absence of leaks and the correct fixing of the equipment	00:00:30	monthly (Sx4)	On Run In Production	visual control			installation driver
		• cleaning with cloth • no storage of parts • diagram in a suitable support		monthly (Sx4)	On Run In Production				installation driver
	pipes, fittings	check the condition of the pipes detect leaks at connections	00.01.00	weekly (Sx1)	Off Off	visual control			mechanic
	belt	check for proper drive (no slippage, vibration, flutter, etc.)		daily	On Run In Production	visual control			installation driver
		check the condition of the belts (temperature, absence of cracks, wear of the sidewalls, breakage of the teeth if the belt has teeth)		monthly (Sx4)	Off Off	visual control			mechanic
		check the tension of the belts, and measure their elongation		quarterly (Sx12)	Off Off	frequency meter			mechanic
	pulleys	check the absence of wear of the grooves, and the absence of breakage		quarterly (Sx12)	Off Off	visual control			mechanic
	training	check the alignment of the pulleys		annually (Sx52)	Off Off				mechanic

Sub-assembly	Element	Operation to be performed	Expected load (hh:mm:ss)	Periodicity	Machine state	tools	Quantity and designation / ref. provider	Maintenance range	Specialty
Easy-Dispense L1K	shotmeter	purge the dosing gun after a prolonged stop		weekly (Sx1)	On Run In Production				installation driver
	product inlet valve	• check the tightness of the valve • leakage control product • air leakage control		bimonthly (Sx2)	On Run In Production	controls auditory and visual			mechanic
		disassemble, clean, grease and change the seals, check the condition of the valve		annually (Sx52)	Off Off		MAGNALUBE grease PTFE	see instructions - ref.582112110	mechanic
	roller screw and bearings	lubrication		bimonthly (720h)	Off Off		KLUBER - STABUTHERM GH 461 grease	NEVER REMOVE NUT SCREW • Quantity, 10 injections of 2 cc	mechanic
		check the condition of the roller screw and bearings		annually (Sx52)	Off Off				mechanic

Sub-assembly	Element	Operation to be performed	Expected load (hh:mm:ss)	Periodicity	Machine state	tools	Quantity and designation / ref. provider	Maintenance range	Specialty
Easy-Dispense L1K	dosing part	disassemble, clean, grease and change the seals, check the condition of the piston		annually (Sx52)	Off Off		MAGNALUBE grease PTFE	see instructions - ref.	mechanic
	sockets and guide pins	check the condition of the bushings and guide pins		quarterly (2160h)	Off Off	Pump with nipple for bowl lubricator	Graisse KLUBER - STABUTHERM GH 461	Quantity, 1 injection of 2.6 cc	mechanic
	piston of the dosing part	check for product leakage	00.01.00	bimonthly (Sx8)	Off Off			see instructions - ref.	mechanic
		check the condition of the piston		annually (Sx52)	Off Off				mechanic
	connectors	• absence of vibrations: power on locating presence		monthly (Sx4)	On Run In Production				electromechanical
		• fixation • resistant elements • insulation • connections • clamping • supports • contacts Notes: • cleaning with cloth and vacuum cleaner • no storage of parts		annually (Sx52)	Off Off				electromechanical

Grease the roller screw:

The screw and the nut are greased in factory (40cc of grease), except maintenance part. After 55 hours of operation, grease 27cc, then 10 injections of 2cc every 720 hours. Check the presence of grease on the whole length of the screw.

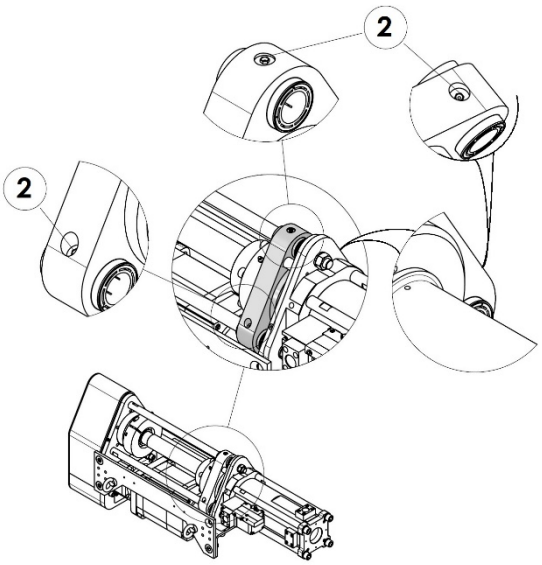


Use a grease gun with a pointed or spiked tip for the cup grease nipple (item 2) located on the nut (item 1). Inject **the KLUBER - STABUTHERM GH 461** grease in several injections, rotate the nut on the shaft (several round trips of the metering piston) between two injections of grease in order to distribute it evenly between the rollers and the length of the nut.
Rotating the shaft also prevents a roller from blocking the grease inlet.

Grease guide bushes and pins:

The ball bushings and guide pins are greased in the factory.

Use a grease gun with a pointed or spiked tip for the cup grease nipples **(item 2)** located on the piston body.



Check the lubrication of each guide bush and pin every 3 months, if necessary grease with **KLUBER - STABUTHERM GH 461** in several times. Move the assembly along the length of the guide shafts back and forth, and check for a visible film of lubricant on the shafts. Volume of guide bush: 2,6ccc of grease.

When reassembling

- ✓ Grease the roller screw, bushes and guide pins with KLUBER - STABUTHERM GH 461.
- ✓ Grease all seals, piston, cylinder, needle with MAGNALUB PTFE grease.

Instruction	Description	Reference
Anaerobic Glue PTFE Waterproof Tube	Loctite 5772 (50 ml / 0.013 US gal)	554.180.015
Anaerobic adhesive low thread	Loctite 222 (50 ml / 0.013 US gal)	554.180.010
PTFE Grease	"MAGNALUB" PTFE Grease (box 450gr / 1 lb)	560.440.001
Tightening torque	80 N.m.	

This maintenance consists of replacing parts with cuts or wear and cleaning organs with compatible products without using abrasive materials that could damage them.

Always use the recommended greases or adhesives.

The O-rings are mounted with a "special pneumatic" grease such as "MAGNALUB" PTFE grease.

Make sure that none of the seals deteriorate during installation, as cutting one of them could cause the dosing unit to malfunction.

9.2 Curative Maintenance

It is recommended to schedule a routine maintenance after a set number of hours of operation.

This is defined by the user's maintenance department and is based on the product, the work rate and the usual pressure.

Be aware of the disassembly / reassembly of the pump and spare parts.

10 Disassembly / reassembly operations

Attention

Only qualified SAMES KREMLIN personnel are authorized to carry out maintenance work.

Attention

Before any intervention, it is imperative to follow the decompression procedure and the safety instructions.

Attention

Be sure to carry out disassembly operations for 2 persons, the weight and size of the shotmeter being important.

10.1 Disassembly of roller screw

Attention

Only qualified SAMES KREMLIN personnel are authorized to carry out maintenance work.

Attention

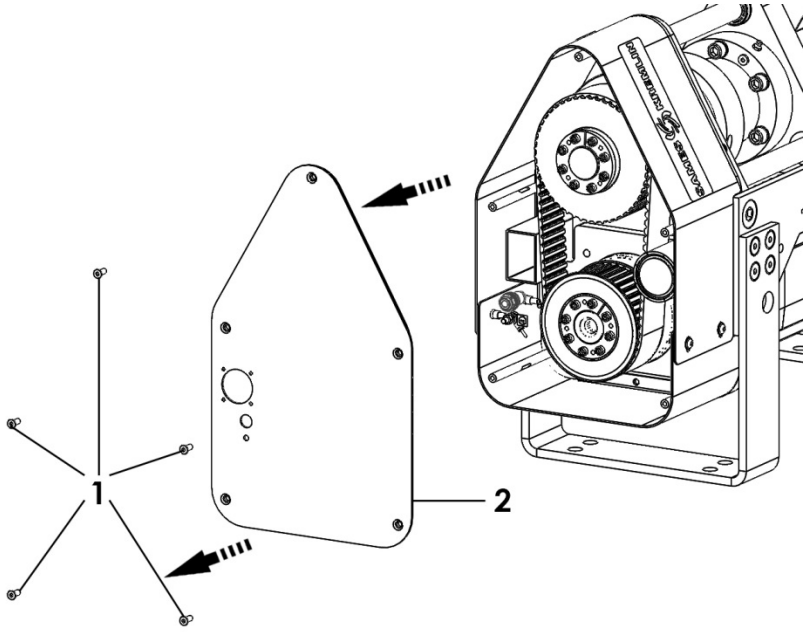
Before any intervention, it is imperative to follow the decompression procedure and the safety instructions.

Attention

Be sure to carry out disassembly operations for 2 persons, the weight and size of the shotmeter being important.

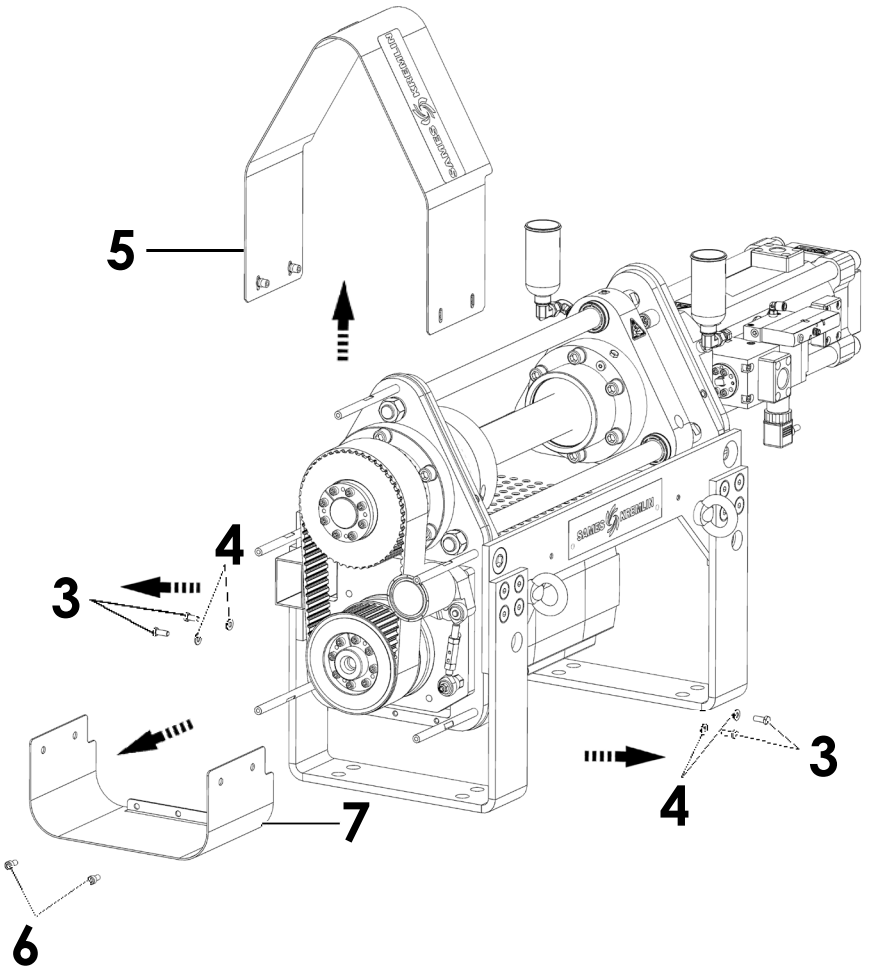
Prerequisite

- ✓ Unscrew the 4 screws with a 5 mm Allen wrench.
- ✓ Remove the 4 screws and the transparent cover.



- ✓ Remove the power, sensor, pressure sensor, inductive position sensor and solenoid valve connectors electro-valve.
- ✓ Unscrew the 5 screws (1) with a 5 mm Allen wrench.
- ✓ Remove the 5 screws and the cover (2).

Tools needed

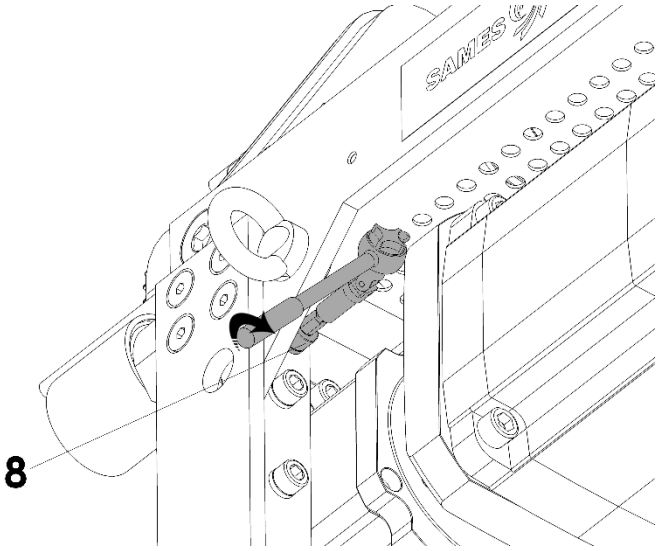


- ✓ Unscrew the 4 screws (3) using a 10 mm flat wrench.
- ✓ Remove the screws (3) and washers (4).
- ✓ Remove the upper casing (5).
- ✓ Unscrew the 2 screws (6) with a 5 mm Allen wrench.
- ✓ Remove the lower casing (7).

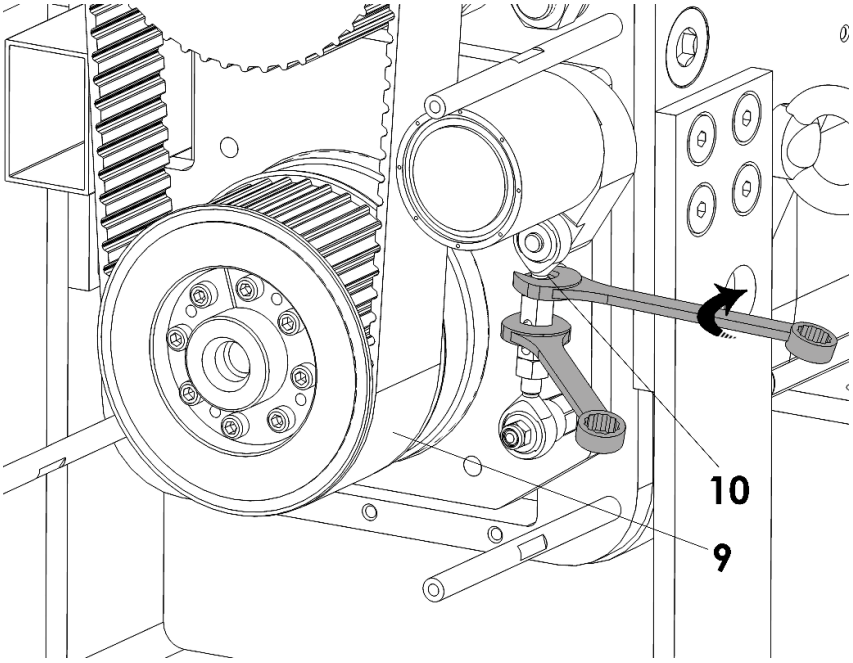
Tools needed

5 

10 

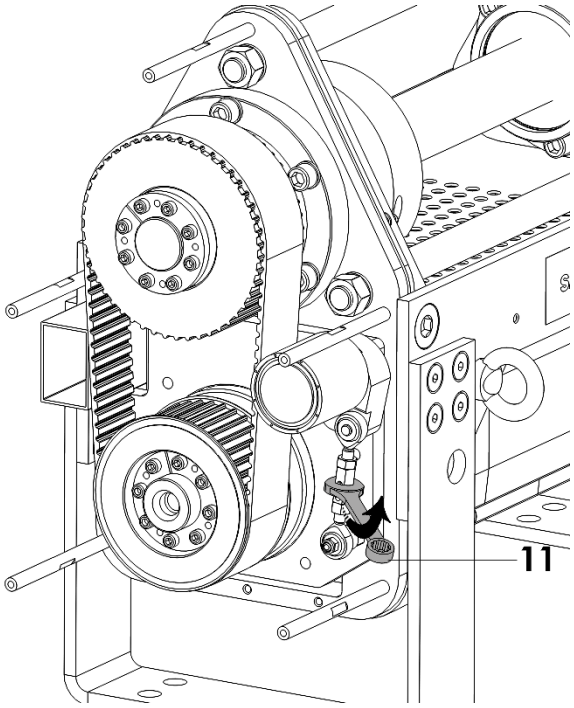


✓ Loosen the screw (8) with an 8 mm ratchet wrench.



✓ Loosen the belt (9) by loosening the lock nut (10) using two 13 mm flat wrenches.

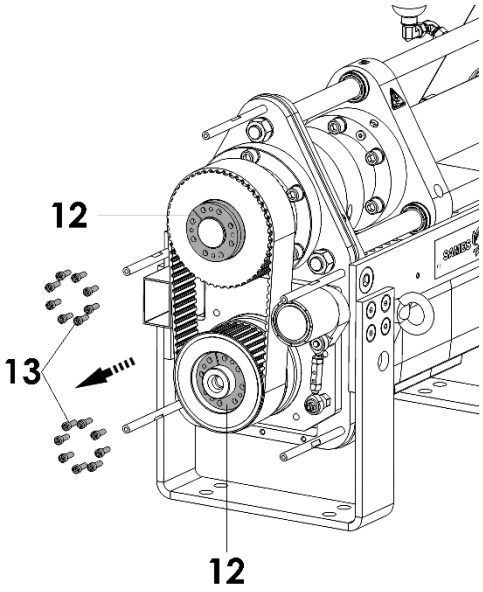
Tools needed **13x2**  **8** 

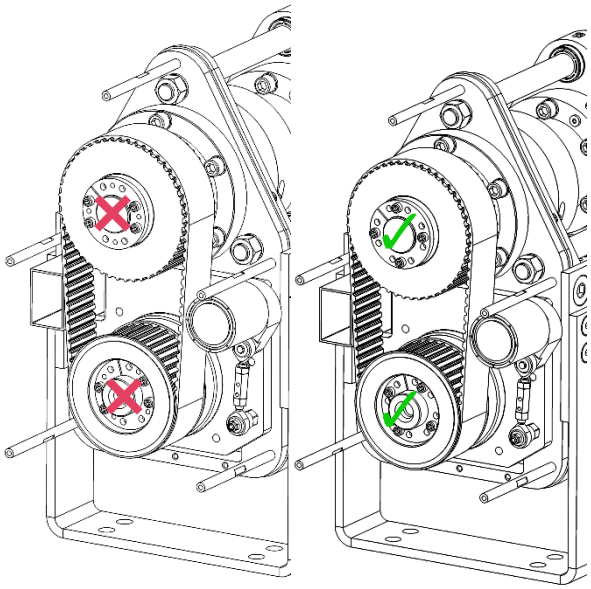


✓ Tighten the tensioning nut (11) with a 13 mm flat wrench. The roller moves away from the belt.

Tools needed

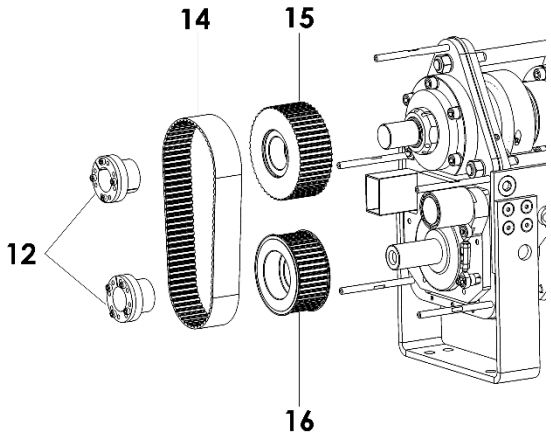
13



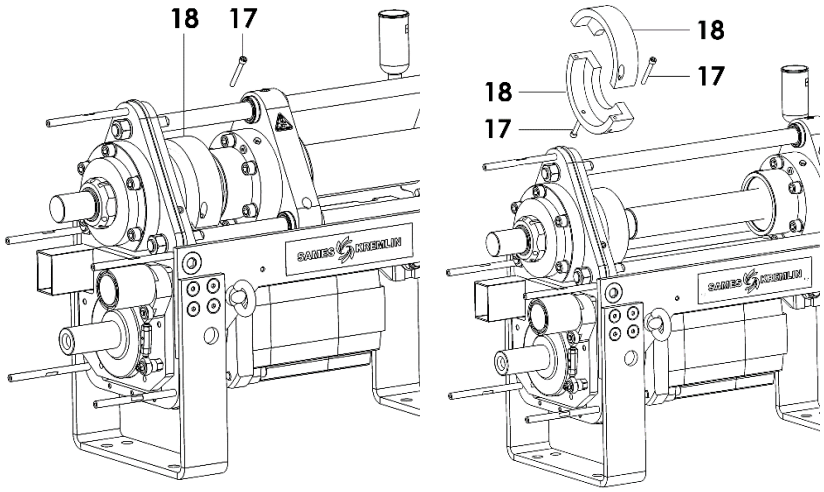


- ✓ Unscrew the 16 screws (13) with a 5 mm Allen wrench and remove the removable hubs (12).
- ✓ Take 4 screws (13) and screw them into the 4 tapped holes of the hubs (12).

Tools needed

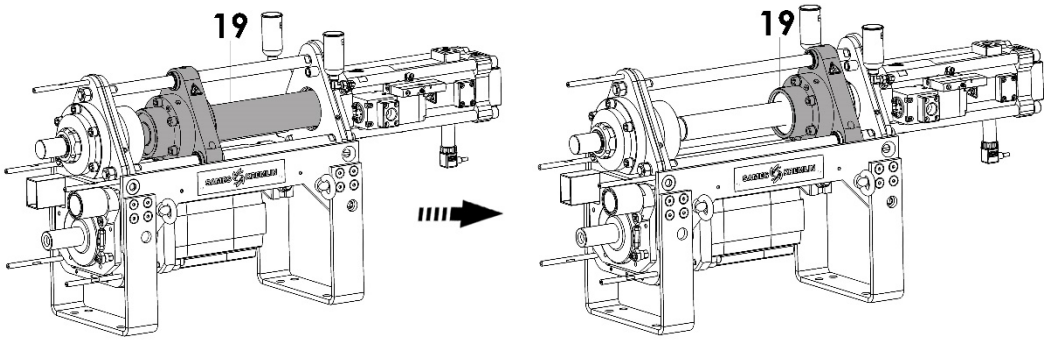


- ✓ Remove the belt (14).
- ✓ Remove the hubs (12).
- ✓ Remove the pulleys (15) and (16).

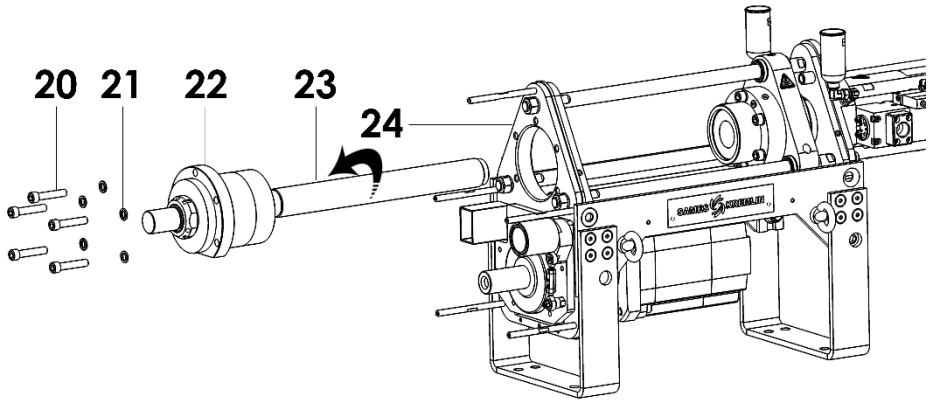


- ✓ Unscrew the 2 screws (17) with a 5 mm Allen wrech and remove the stop (18).

Tools needed



✓ Move the piston (19) to the lower position.

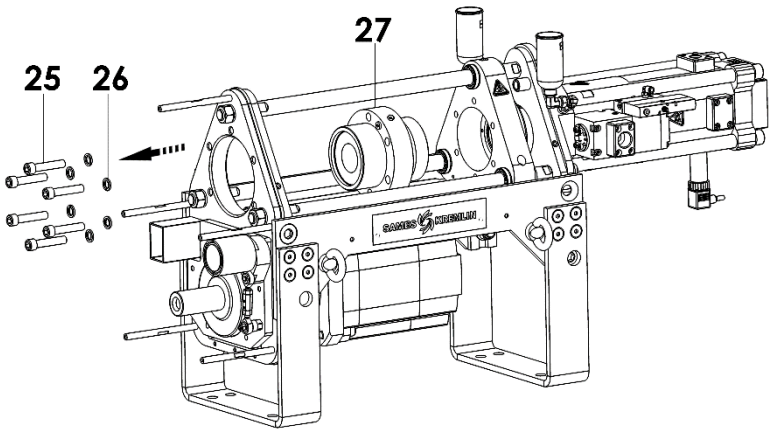


✓ Unscrew the 5 screws (20) using a 10 mm Allen wrench, remove the screws (20) and washers (21) from the bearing (22) of the roller screw assembly (23).

✓ Unscrew the roller screw (23) from the nut and remove the roller screw assembly with the bearing from the plate (24).

Tools needed

10

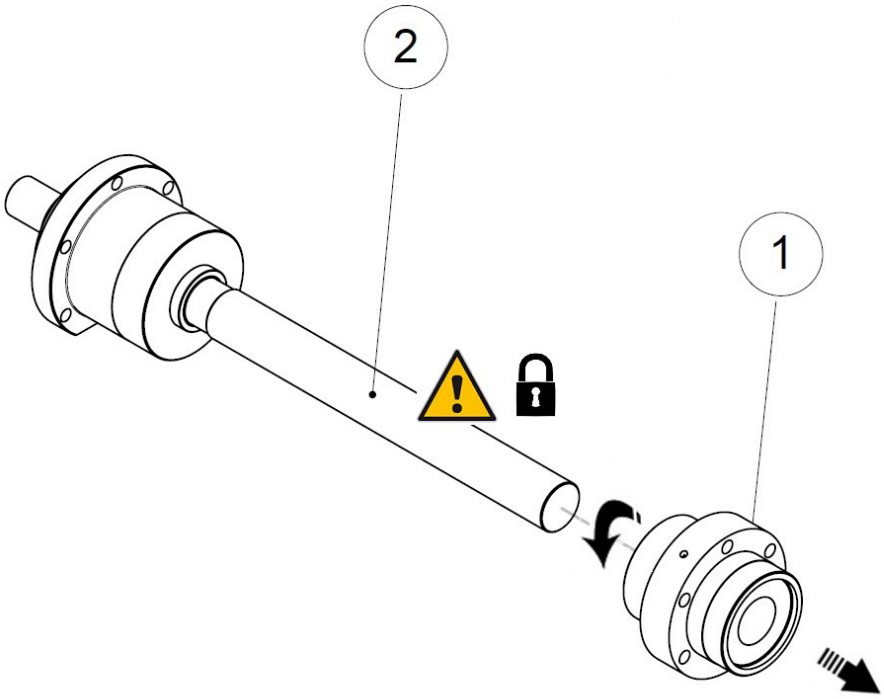


- ✓ Unscrew the 6 screws (25) using a 10 mm Allen wrench,
- ✓ Remove the screws (25) and washers (26)
- ✓ Remove the nut from the roller screw (27) and remove the nut from the upper piston body.

Tools needed

10

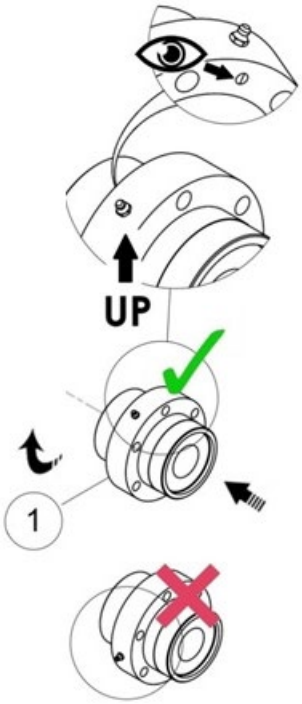
10.2 Reassembly of roller screw

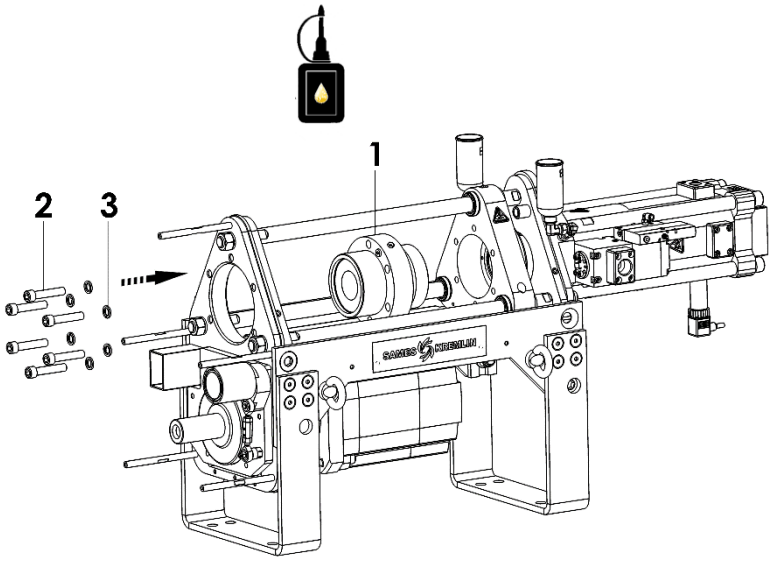


✓ Carefully unscrew the nut (1) from the roller screw assembly, while the second operator holds the screw (2).

Carry out this operation with two people.

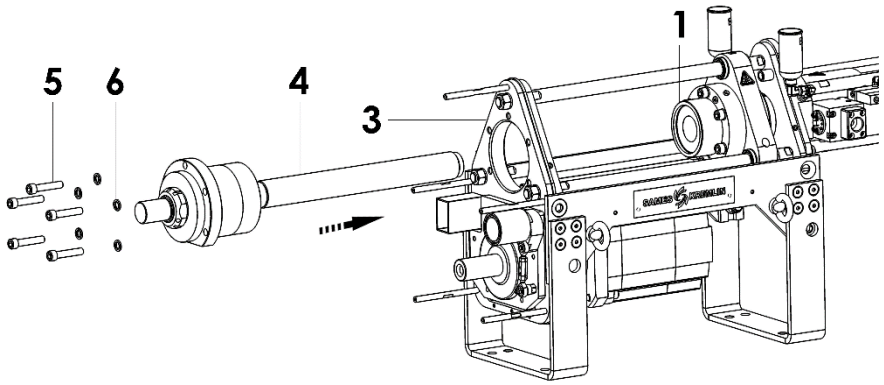
- ✓ Grease the end of the screw and the nut of the roller screw evenly.
- ✓ Grease the inner housing of the upper piston body.





- ✓ Insert the nut (1) of the roller screw into the upper body of the piston.
- ✓ Insert the washers (3) and fix loosely with the 6 screws (2).

Tools needed



- ✓ Insert the roller screw bearing assembly (4) into the plate (3) and screw the roller screw back into the nut (1).

Be careful to tighten the screw and the nut of the roller screw without hard point.

- ✓ Using a 10 mm Allen wrench, fix the bearing/roller screw assembly (4) to the upper transmission plate (3) with the 5 screws (5) and the 5 washers (6).
- ✓ Tighten all the screws (5) in a star pattern to a torque of 80 N.m.

Tools needed

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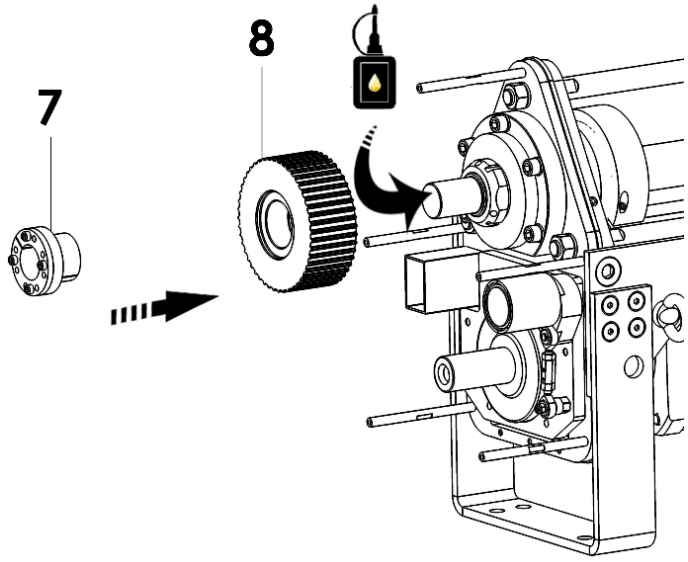
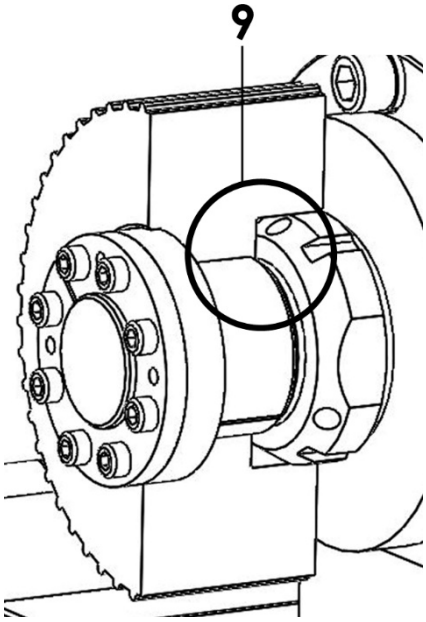
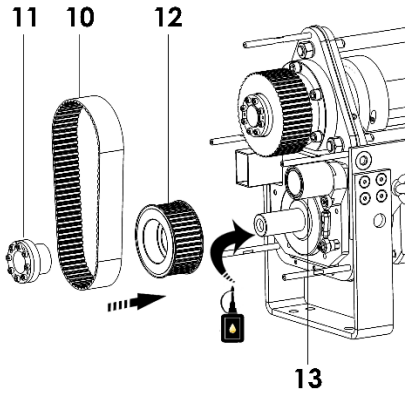
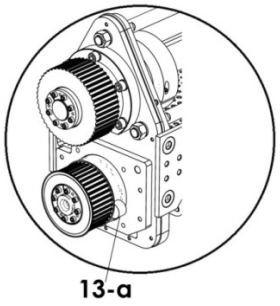




✓ Grease the end of the smooth shaft of the roller screw and place the pulley (8) and the removable hub (7) on the smooth shaft and against the flat of the roller screw (9).

Tools needed





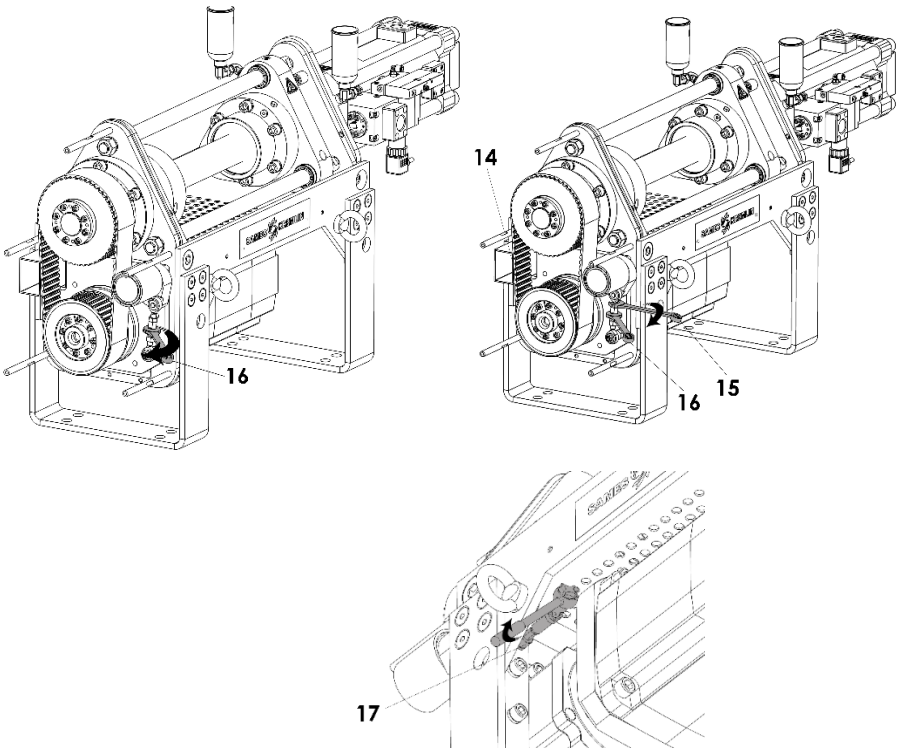
- ✓ Grease the end of the gearmotor shaft and place the belt (10), pulley (12) and removable hub (11) assembly on the gearmotor shaft (13).
- ✓ Place a shim (13-a) in position and tighten the hub screws in a star pattern using a 5 mm Allen wrench.
- ✓ Tighten the hub to a torque of 17 N.m.

Remove the positioning wedge after tightening.

- ✓ Check the greasing of the roller screw assembly. If necessary, top up with grease.

Shim thickness (mm / ")	Shotmeter reference
19.5 / 0.77	151.800.000
31.5 / 1,24	151.800.010

Tools needed

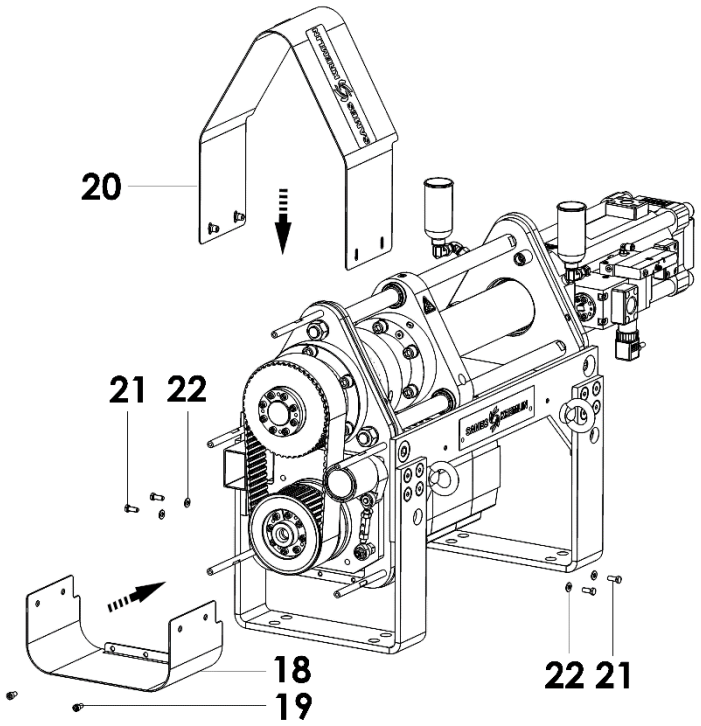


- ✓ Adjust the belt tension using a frequency meter and follow the procedure below:
  - *Loosen the tensioning nut with a 13 mm flat wrench (16), the roller will approach the belt until the correct belt tension is achieved.*
  - *Check the belt tension by vibrating the slack side (item 14) with a non-contact tool. The measuring device gives the resonance frequency.*
  - *Tighten the lock nut with a 13 mm flat wrench (15) on the tensioning nut, holding it with the other 13 mm flat wrench (16).*
  - *Tighten with the 8 mm torque wrench (17) to a torque of 80 N.m.*

Attention: do not exceed the desired tension level because the belt takes some time to retension.

Belt tension (N.m.)	*1000*
Harmonic (Hz)	*150*

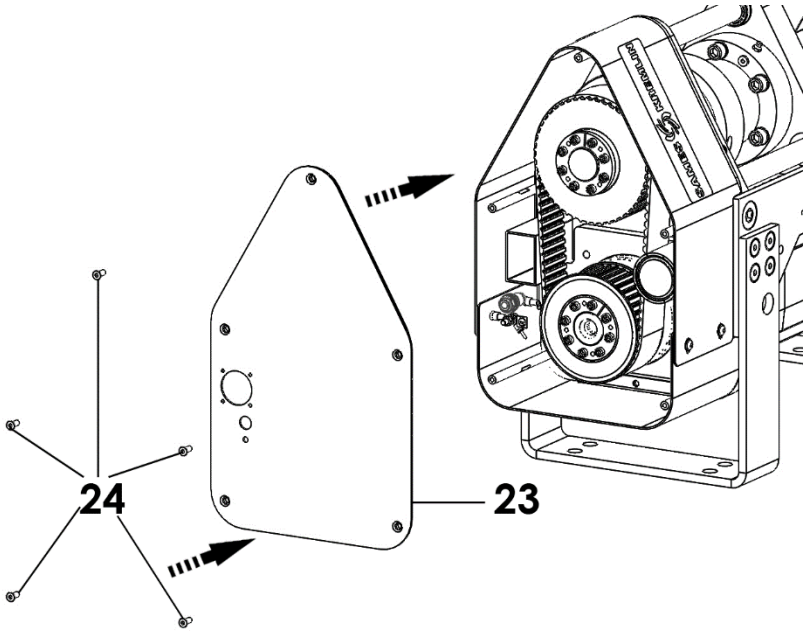
Tools needed **13x2**  **8** 



- ✓ Reposition the lower casing (18) and screw in the 2 screws (19) using a 5 mm Allen wrench.
- ✓ Reposition the upper housing (20). Place the washers (22) and screw in the 4 screws (21) using a 10 mm flat wrench.

Tools needed

5  10 



- ✓ Reposition the cover (23) and screw in the 5 screws (24) using a 4 mm Allen wrench.
- ✓ Reposition the transparent cover by screwing in the 4 screws using a 2.5 mm Allen wrench.

Outillage nécessaire

10.3 Disassembly of belt

Attention

Only qualified SAMES KREMLIN personnel are authorized to carry out maintenance work.

Attention

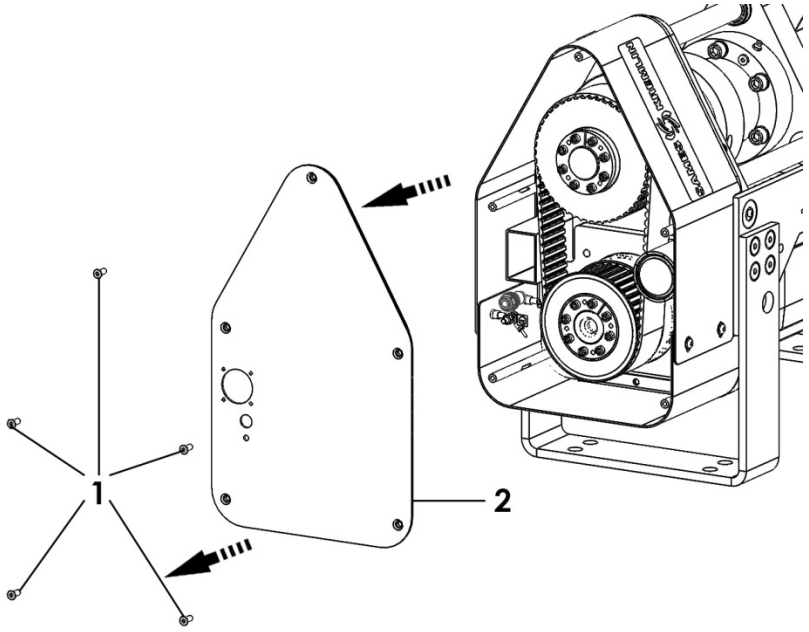
Before any intervention, it is imperative to follow the decompression procedure and the safety instructions.

Attention

Be sure to carry out disassembly operations for 2 persons, the weight and size of the shotmeter being important.

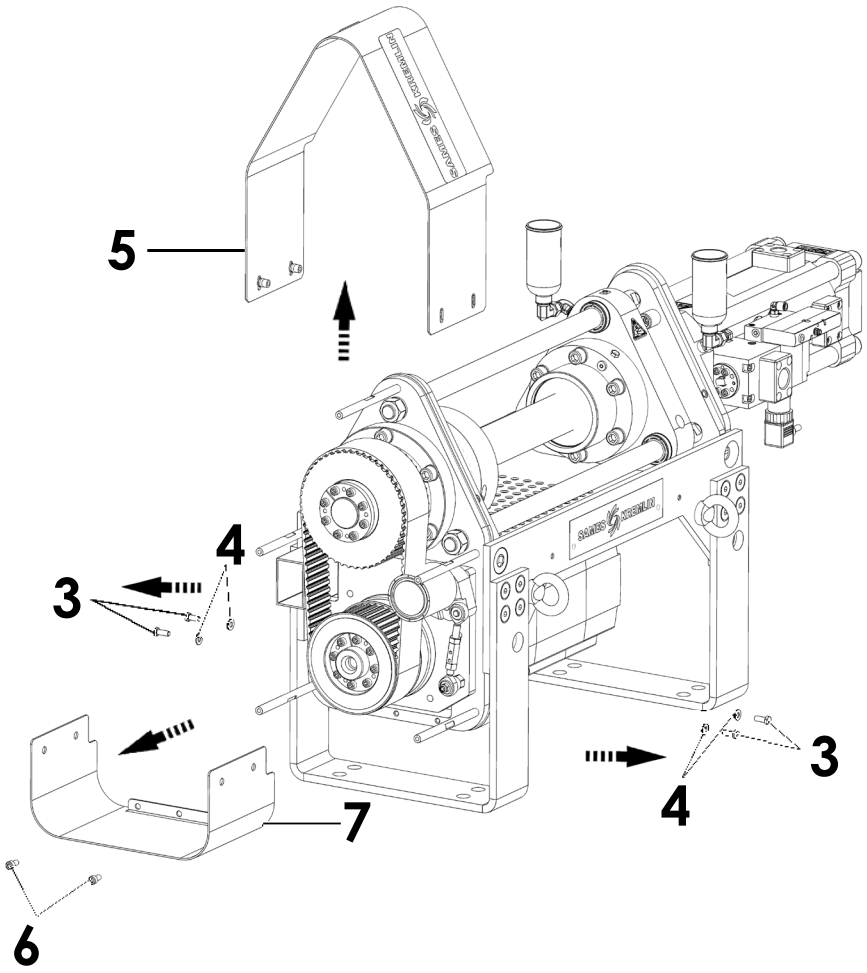
Prerequisite

- ✓ Unscrew the 4 screws with a 5 mm Allen wrench.
- ✓ Remove the 4 screws and the transparent cover.



- ✓ Remove the power, sensor, pressure sensor, inductive position sensor and solenoid valve connectors electro-valve.
- ✓ Unscrew the 5 screws (1) with a 5 mm Allen wrench.
- ✓ Remove the 5 screws and the cover (2).

Tools needed

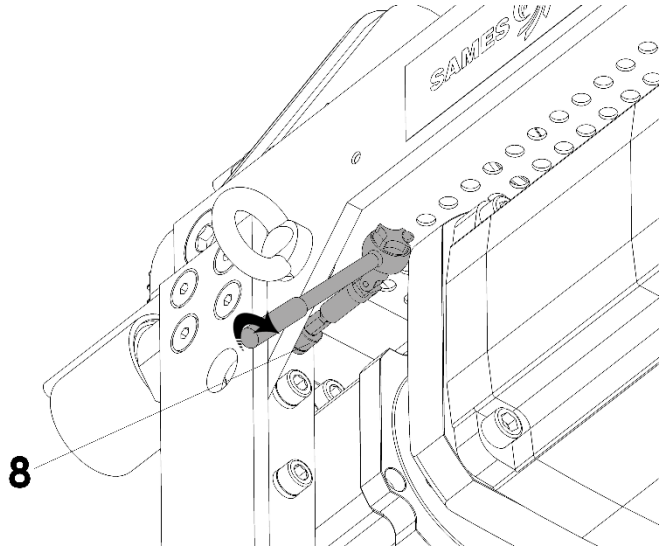


- ✓ Unscrew the 4 screws (3) using a 10 mm flat wrench.
- ✓ Remove the screws (3) and washers (4).
- ✓ Remove the upper casing (5).
- ✓ Unscrew the 2 screws (6) with a 5 mm Allen wrench.
- ✓ Remove the lower casing (7).

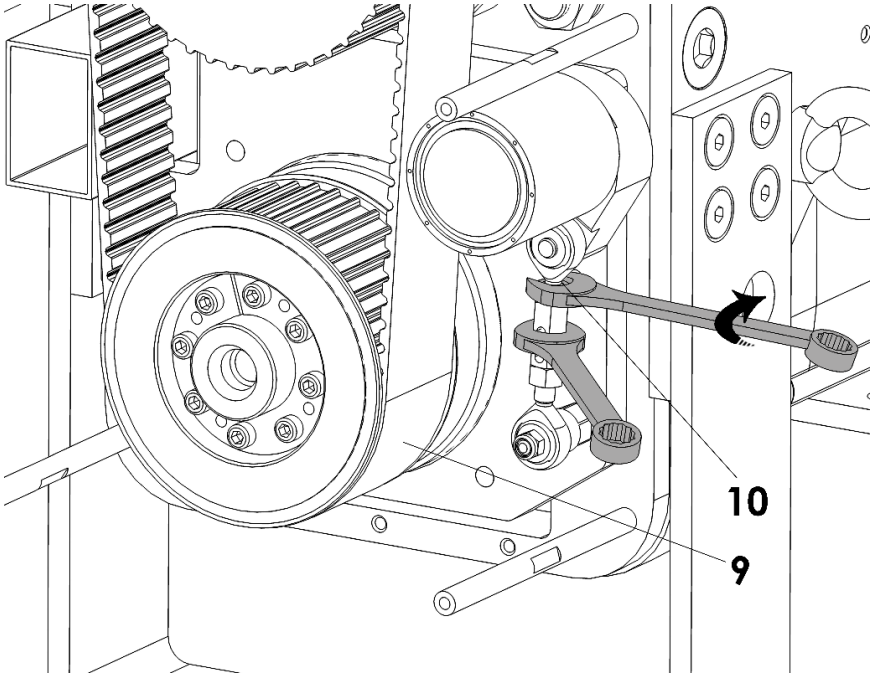
Tools needed

5 

10 



✓ Loosen the screw (8) with an 8 mm ratchet wrench.

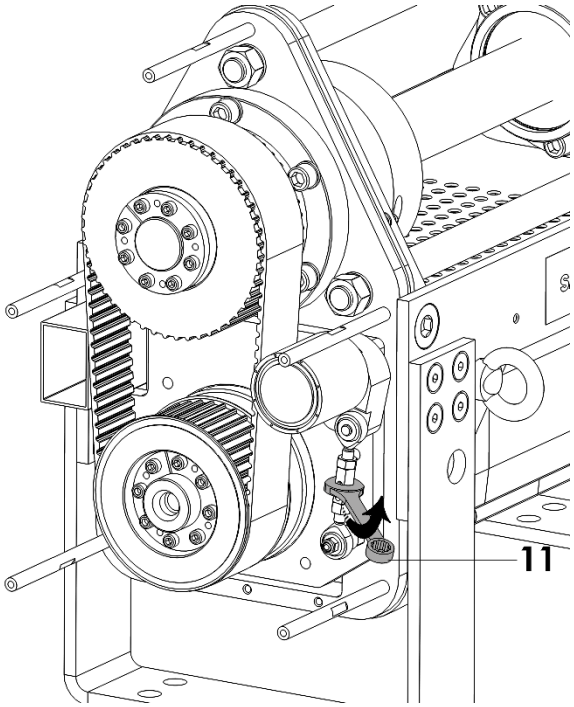


✓ Loosen the belt (9) by loosening the lock nut (10) using two 13 mm flat wrenches.

Tools needed

13x2 

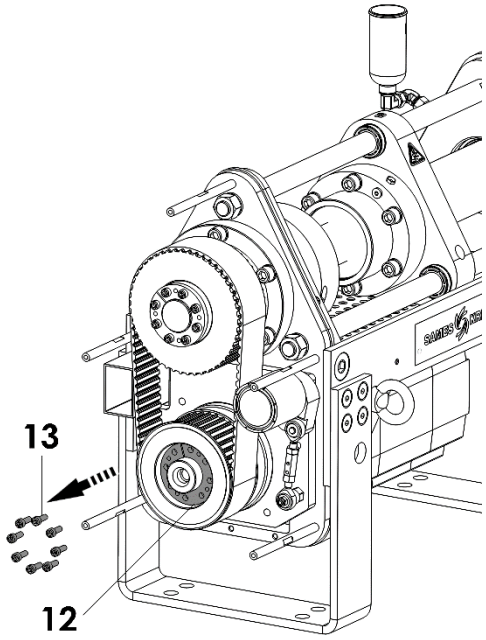
8 

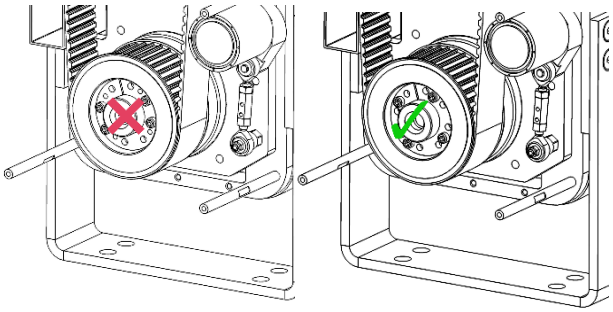


✓ Tighten the tensioning nut (11) with a 13 mm flat wrench. The roller moves away from the belt.

Tools needed

13

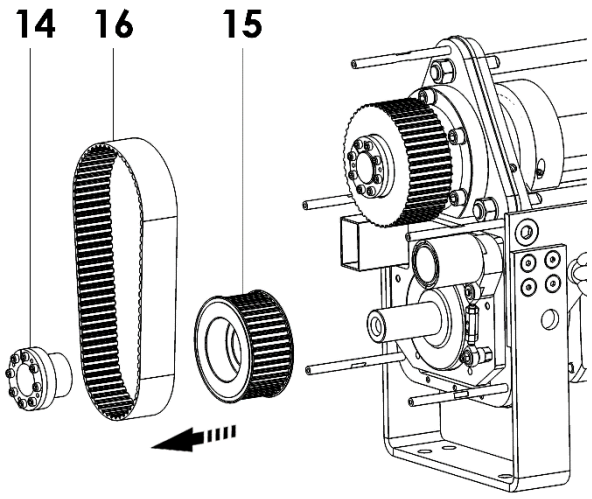




- ✓ Unscrew the 8 screws (13) with a 5 mm Allen wrench and remove the removable hubs (12).
- ✓ Take 4 screws (13) and screw them into the 4 tapped holes of the hubs (12).

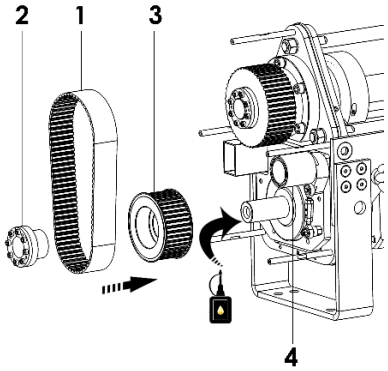
Tools needed

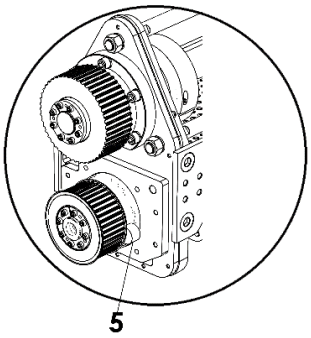
5



- ✓ Remove the hub (14).
- ✓ Remove the pulley (15) with the belt (16).

10.4 Reassembly of belt





- ✓ Grease the end of the gearmotor shaft and place the belt (1), pulley (3) and removable hub (2) assembly on the gearmotor shaft (4).
- ✓ Place a shim (5) in position and tighten the hub screws in a star pattern using a 5 mm Allen wrench.
- ✓ Tighten the screws to a torque of 17 N.m..

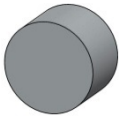
Shim thickness (mm / '')	Shotmeter reference
19.5 / 0.77	151.800.000
31.5 / 1,24	151.800.010

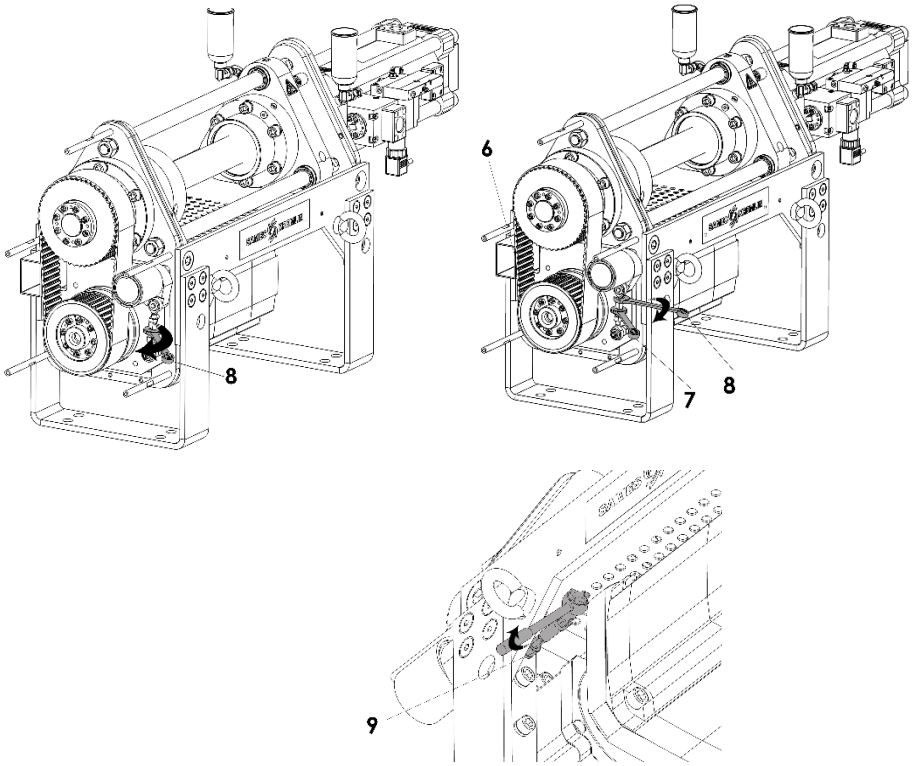
Remove the positioning shim after tightening.

Tools needed

5





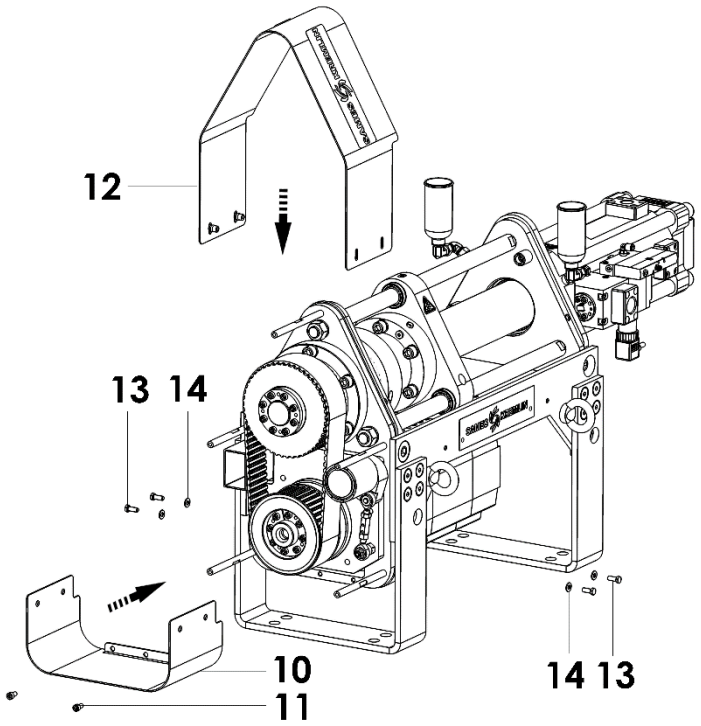



- ✓ Adjust the belt tension using a frequency meter and follow the procedure below:
  - *Unscrew the tensioning nut with a 13 mm flat wrench (7), the roller moves closer to the belt until the correct belt tension is achieved.*
  - *Check the belt tension by vibrating the slack side (item 6) with a non-contact tool. The measuring device gives the resonance frequency.*
  - *Tighten the lock nut with a 13 mm flat wrench (8) on the tensioning nut, holding it with the other 13 mm flat wrench (7).*
  - *Tighten with the 8 mm torque wrench (9) to a torque of 80 N.m.*

Attention: do not exceed the desired tension level because the belt takes some time to retension.

Belt tension (N.m.)	*1000*
Harmonic (Hz)	*150*

Tools needed **13x2**  **8** 

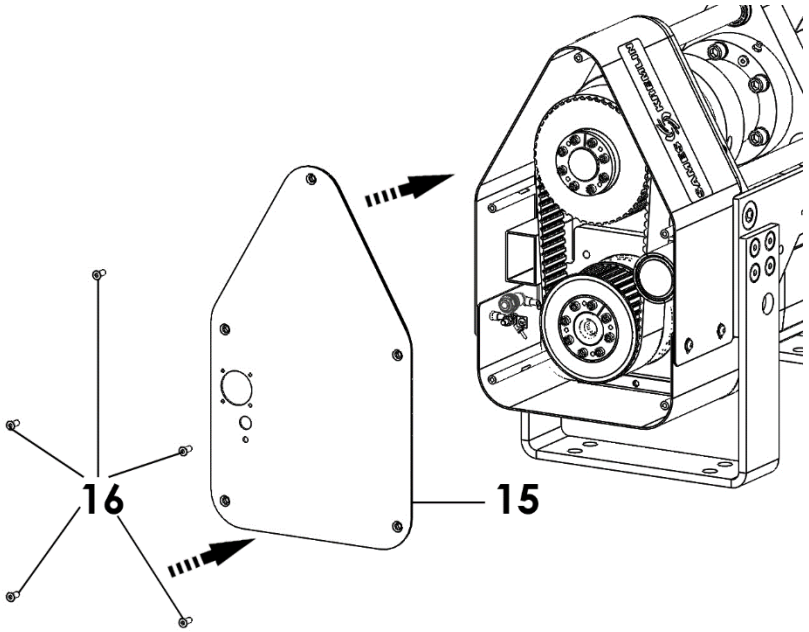


- ✓ Reposition the lower casing (10) and screw in the 2 screws (11) using a 5 mm Allen wrench.
- ✓ Reposition the upper housing (12). Place the washers (14) and screw in the 4 screws (13) using a 10 mm flat wrench.

Tools needed

5 

10 



- ✓ Reposition the cover (15) and screw in the 5 screws (16) using a 4 mm Allen wrench.
- ✓ Reposition the transparent cover by screwing in the 4 screws using a 2.5 mm Allen wrench.

Tools needed

10.5 Disassembly of pulleys

Attention

Only qualified SAMES KREMLIN personnel are authorized to carry out maintenance work.

Attention

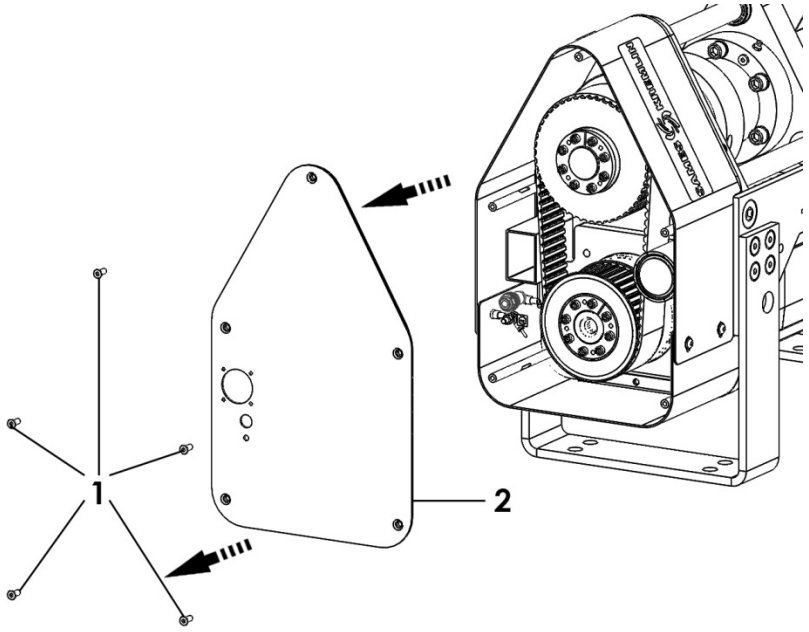
Before any intervention, it is imperative to follow the decompression procedure and the safety instructions.

Attention

Be sure to carry out disassembly operations for 2 persons, the weight and size of the shotmeter being important.

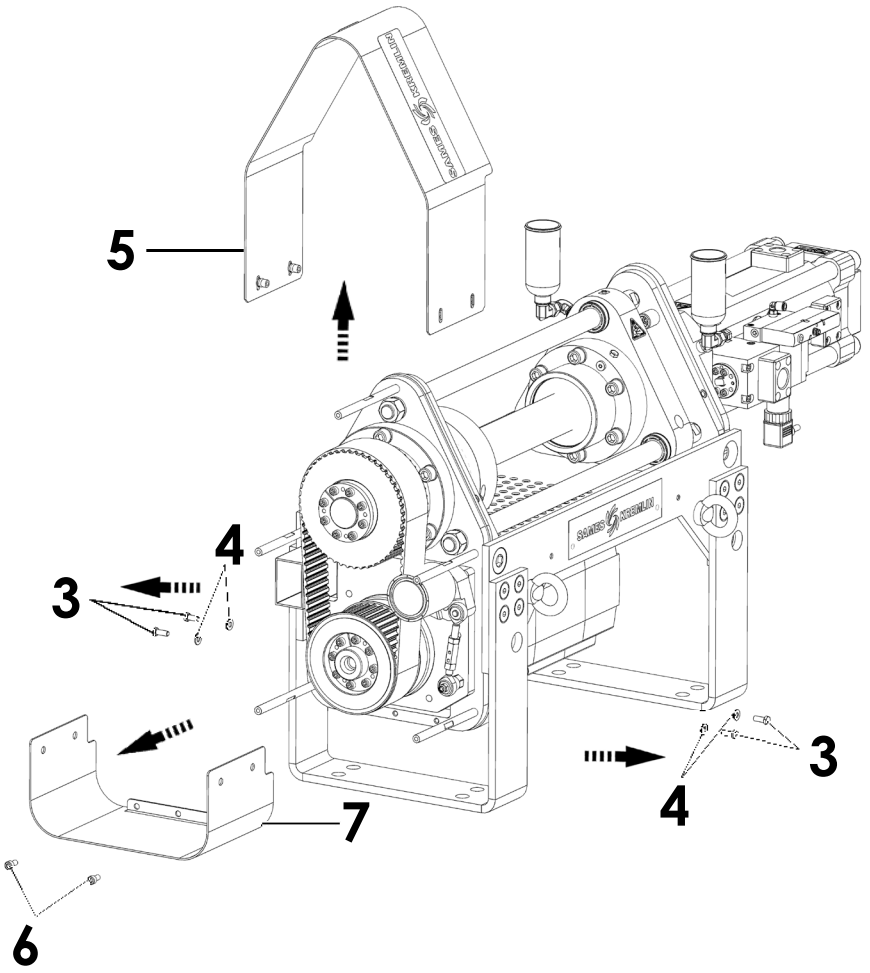
Prerequisite

- ✓ Unscrew the 4 screws with a 5 mm Allen wrench.
- ✓ Remove the 4 screws and the transparent cover.



- ✓ Remove the power, sensor, pressure sensor, inductive position sensor and solenoid valve connectors electro-valve.
- ✓ Unscrew the 5 screws (1) with a 5 mm Allen wrench.
- ✓ Remove the 5 screws and the cover (2).

Tools needed

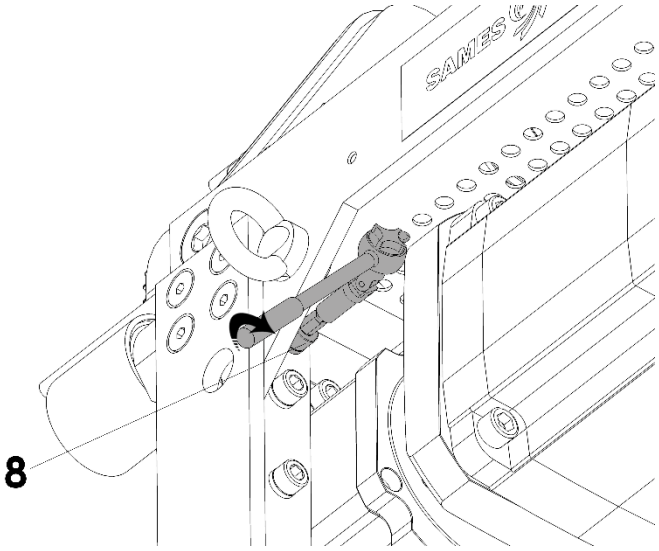


- ✓ Unscrew the 4 screws (3) using a 10 mm flat wrench.
- ✓ Remove the screws (3) and washers (4).
- ✓ Remove the upper casing (5).
- ✓ Unscrew the 2 screws (6) with a 5 mm Allen wrench.
- ✓ Remove the lower casing (7).

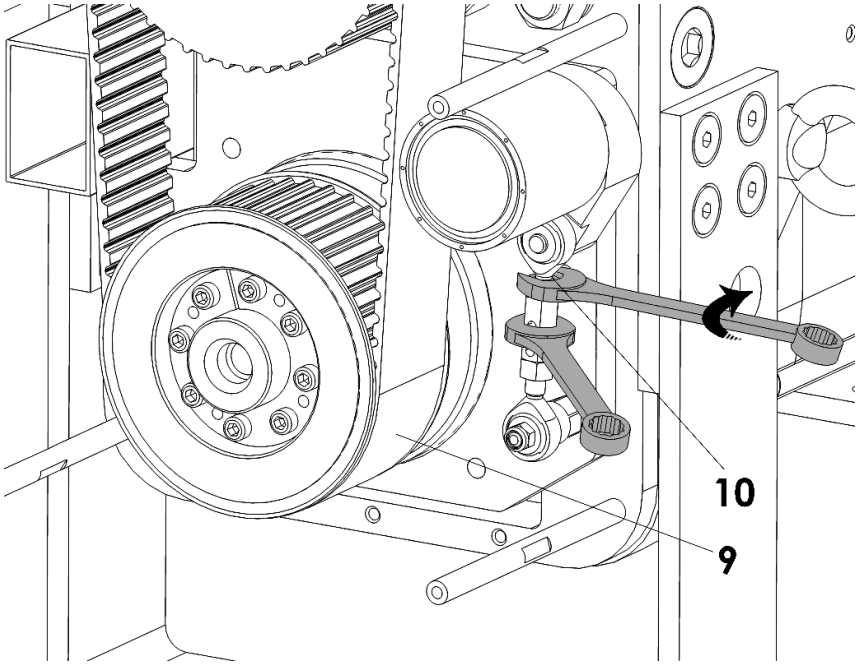
Tools needed

5 

10 



✓ Loosen the screw (8) with an 8 mm ratchet wrench.

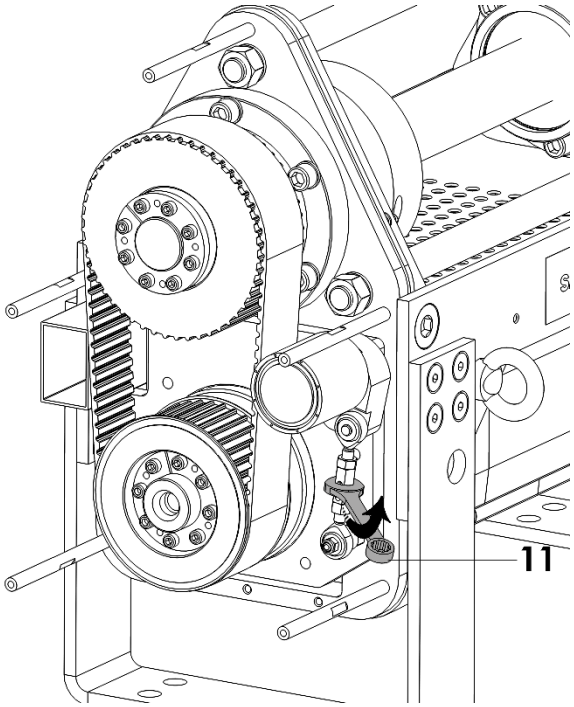


✓ Loosen the belt (9) by loosening the lock nut (10) using two 13 mm flat wrenches.

Outillage nécessaire

13x2 

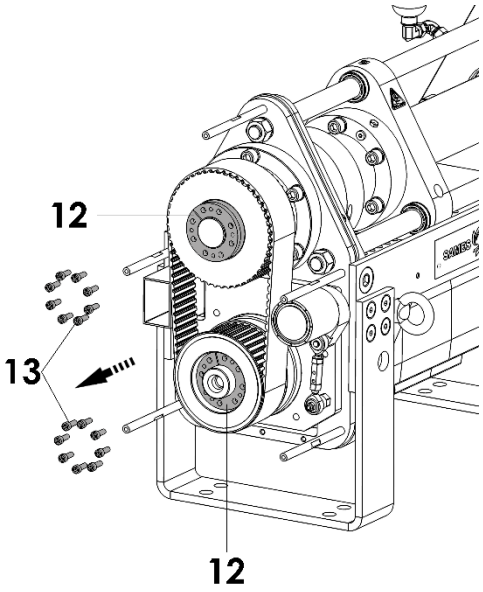
8 

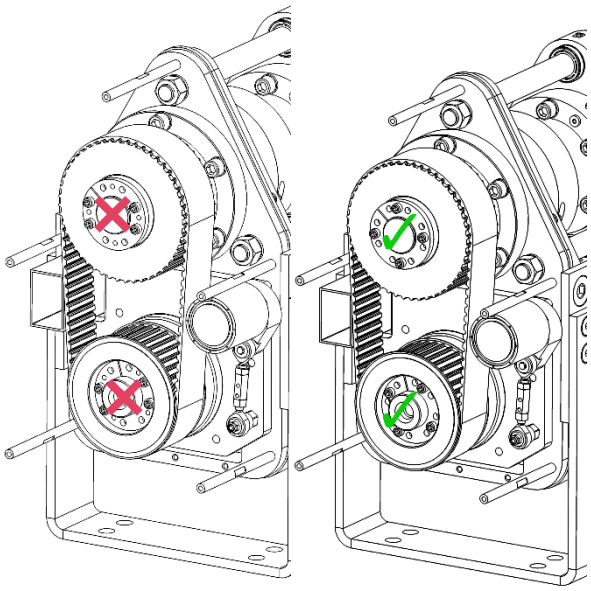


✓ Tighten the tensioning nut (11) with a 13 mm flat wrench. The roller moves away from the belt.

Tools needed

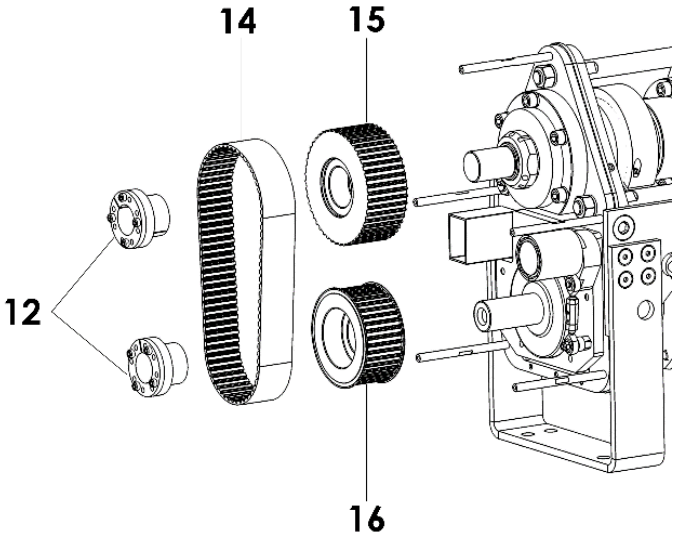
13





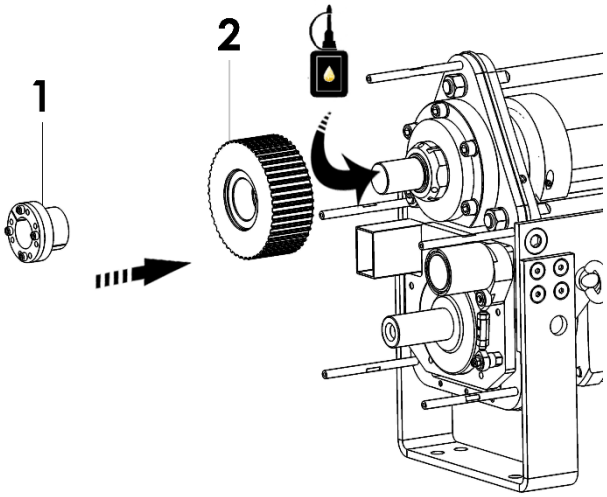
- ✓ Unscrew the 16 screws (13) with a 5 mm Allen wrench and remove the removable hubs (12).
- ✓ Take 4 screws (13) and screw them into the 4 tapped holes of the hubs (12).

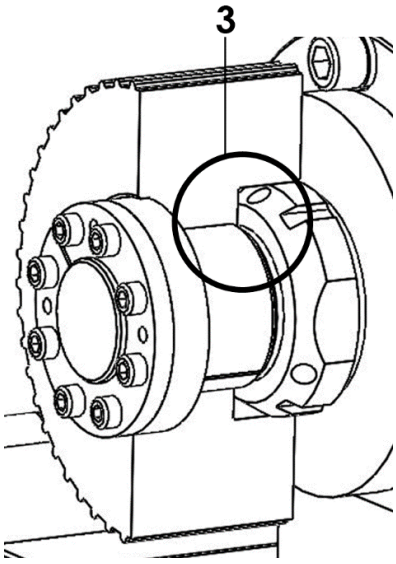
Tools needed **5**



- ✓ Remove the belt (14).
- ✓ Remove the hubs (12).
- ✓ Remove the pulleys (15) and (16).

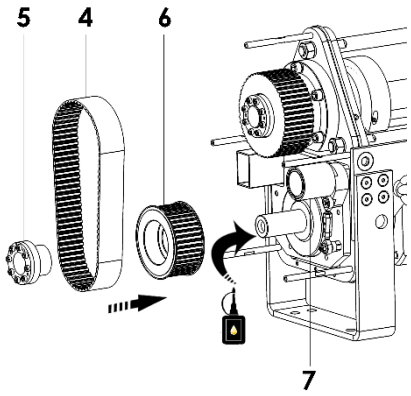
10.6 Reassembly of pulleys

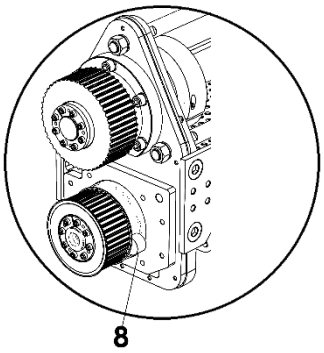




✓ Grease the end of the smooth shaft of the roller screw and place the pulley (2) and the removable hub (1) on the smooth shaft and against the flat of the roller screw (3).

Tools needed





- ✓ Grease the end of the gearmotor shaft and place the belt (4), pulley (6) and removable hub (5) assembly on the gearmotor shaft (7).
- ✓ Place a shim (8) in position and tighten the hub screws in a star pattern using a 5 mm Allen wrench.
- ✓ Tighten the screws to a torque of 17 N.m..

Remove the positioning shim after tightening.

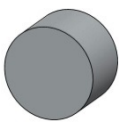
- ✓ Check the greasing of the roller screw assembly. If necessary, top up with grease.

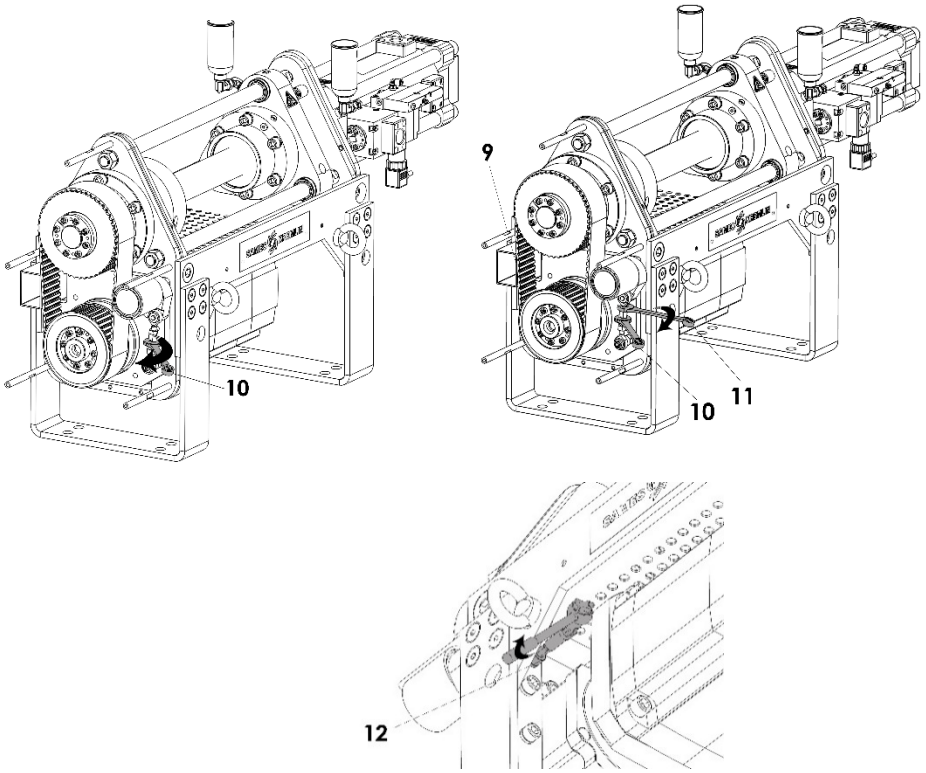
Shim thickness (mm / ")	Shotmeter reference
19.5 / 0.77	151.800.000
31.5 / 1,24	151.800.010

Tools needed

5





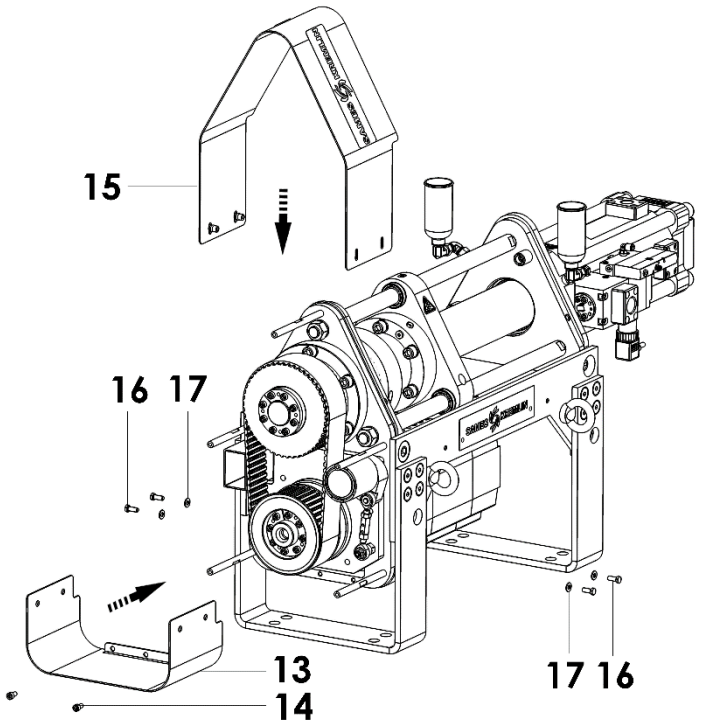
✓ Adjust the belt tension using a frequency meter and follow the procedure below:

- *Loosen the tensioning nut with a 13 mm flat wrench (10), the roller will approach the belt until the correct belt tension is achieved.*
- *Check the belt tension by vibrating the slack side (item 9) with a non-contact tool. The measuring device gives the resonance frequency.*
- *Tighten the lock nut with a 13 mm flat wrench (11) on the tensioning nut, holding it with the other 13 mm flat wrench (10).*
- *Tighten with the 8 mm torque wrench (12) to a torque of 80 N.m..*

Caution: Do not exceed the desired tension level as the belt will take some time to retension.

Belt tension (N.m.)	*1000*
Harmonic (Hz)	*150*

Tools needed **13x2**  **8** 

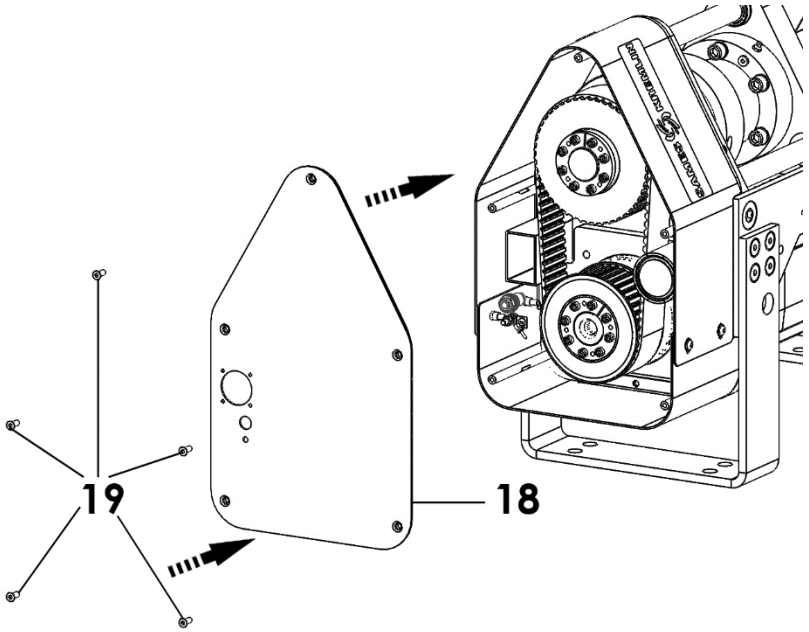


- ✓ Reposition the lower casing (13) and screw in the 2 screws (14) using a 5 mm Allen wrench.
- ✓ Reposition the upper housing (15). Place the washers (17) and screw in the 4 screws (16) using a 10 mm flat wrench.

Tools needed

5 

10 



- ✓ Reposition the cover (18) and screw in the 5 screws (19) using a 4 mm Allen wrench.
- ✓ Reposition the transparent cover by screwing in the 4 screws using a 2.5 mm Allen wrench.

Tools needed

10.7 Disassembly of seals cartridge

Attention

Only qualified SAMES KREMLIN personnel are authorized to carry out maintenance work.

Attention

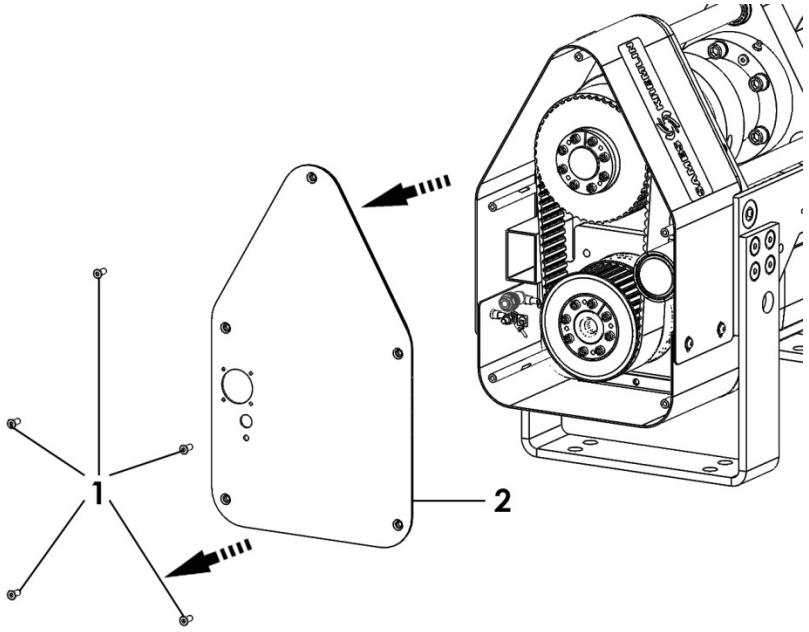
Before any intervention, it is imperative to follow the decompression procedure and the safety instructions.

Attention

Be sure to carry out disassembly operations for 2 persons, the weight and size of the shotmeter being important.

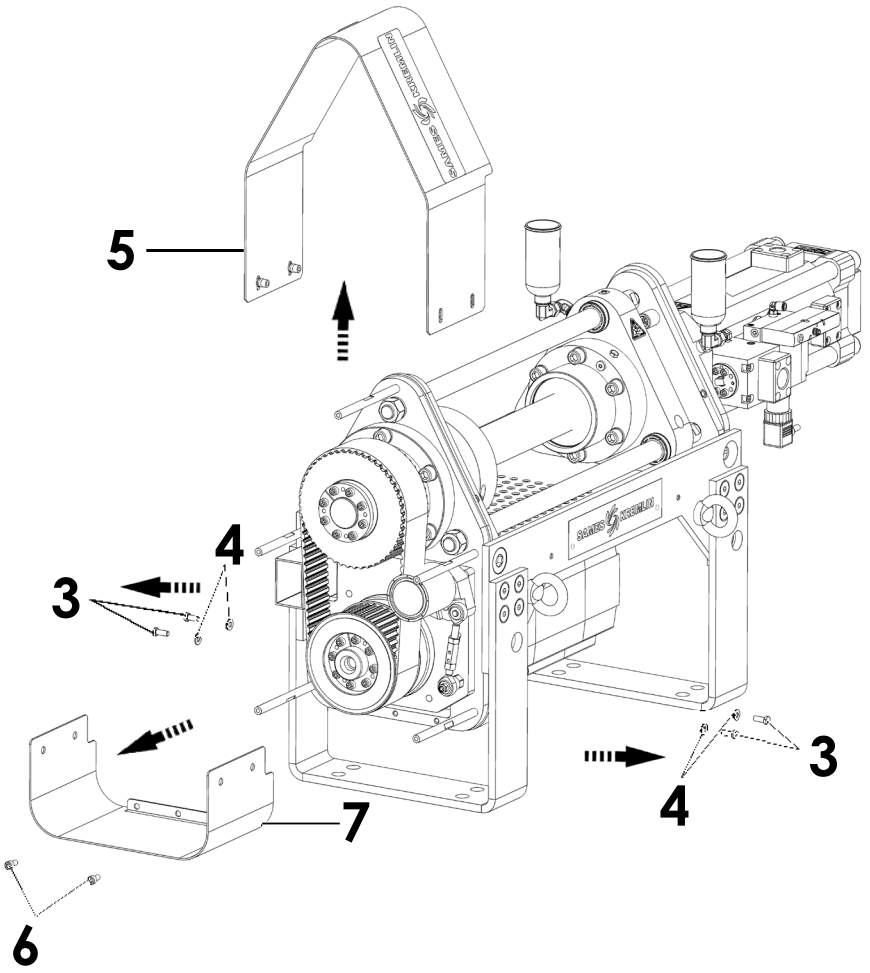
Prerequisite

- ✓ Unscrew the 4 screws with a 5 mm Allen wrench.
- ✓ Remove the 4 screws and the transparent cover.



- ✓ Remove the power, sensor, pressure sensor, inductive position sensor and solenoid valve connectors electro-valve.
- ✓ Unscrew the 5 screws (1) with a 5 mm Allen wrench.
- ✓ Remove the 5 screws and the cover (2).

Tools needed

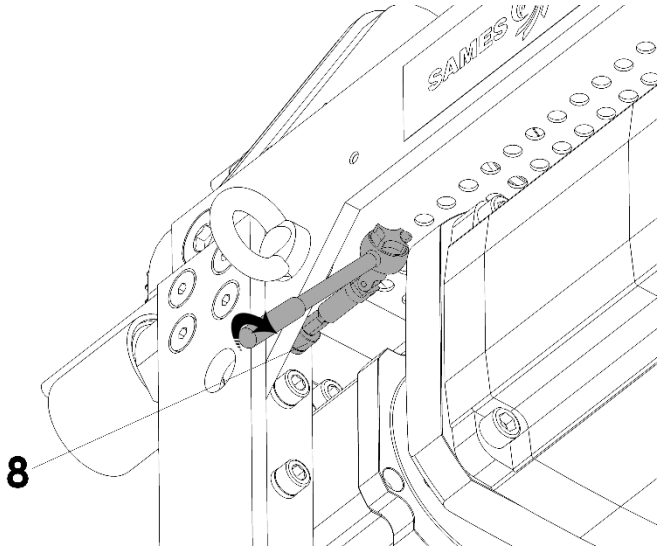


- ✓ Unscrew the 4 screws (3) using a 10 mm flat wrench.
- ✓ Remove the screws (3) and washers (4).
- ✓ Remove the upper casing (5).
- ✓ Unscrew the 2 screws (6) with a 5 mm Allen wrench.
- ✓ Remove the lower casing (7).

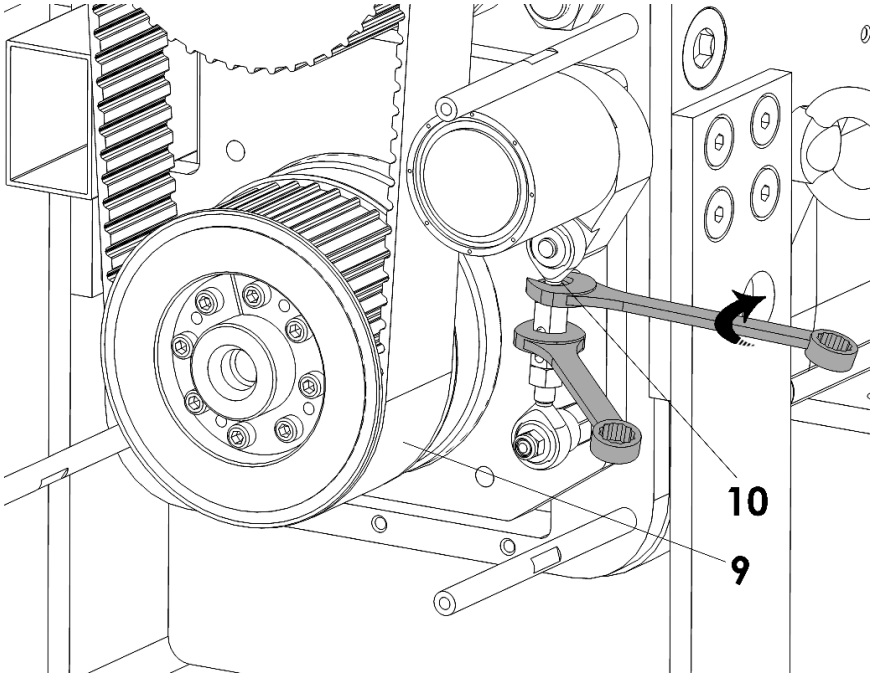
Tools needed

5 

10 



✓ Loosen the screw (8) with an 8 mm ratchet.

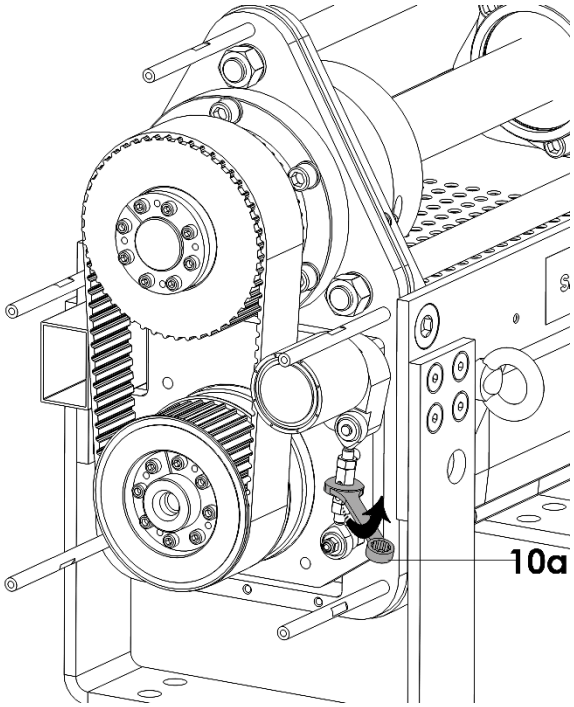


✓ Loosen the belt (9) by loosening the lock nut (10) using two 13 mm flat wrenches.

Outillage nécessaire

13x2 

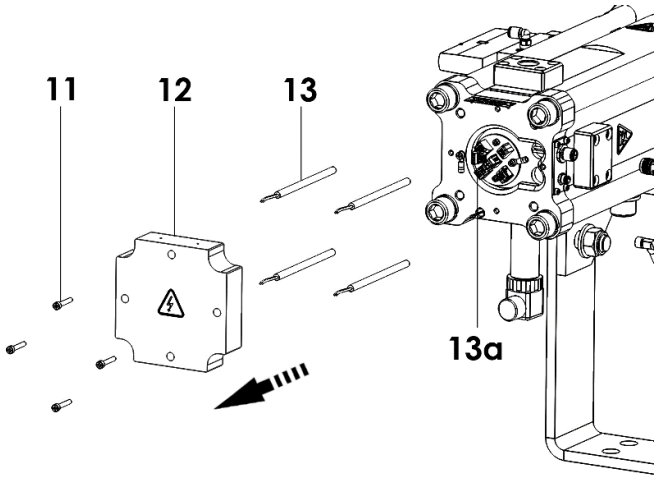
8 



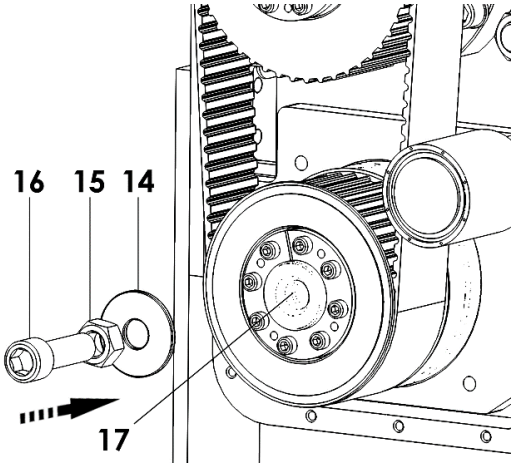
✓ Tighten the tensioning nut (10a) with a 13 mm flat wrench. The roller moves away from the belt.

Tools needed

13

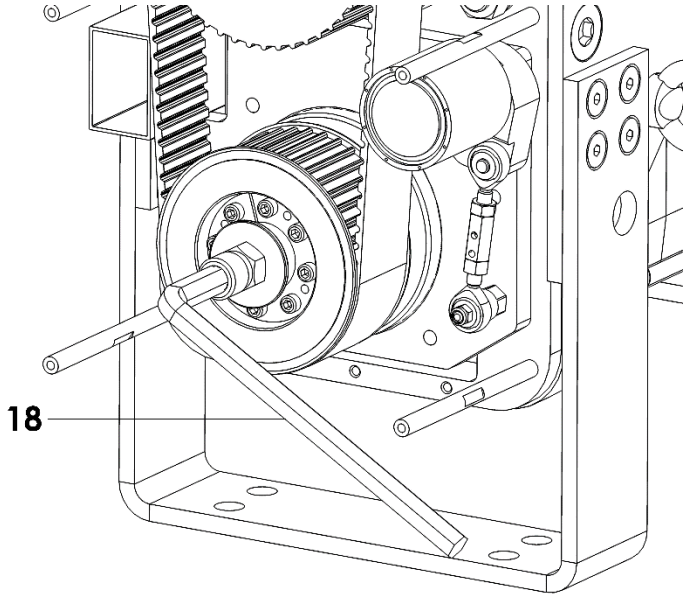


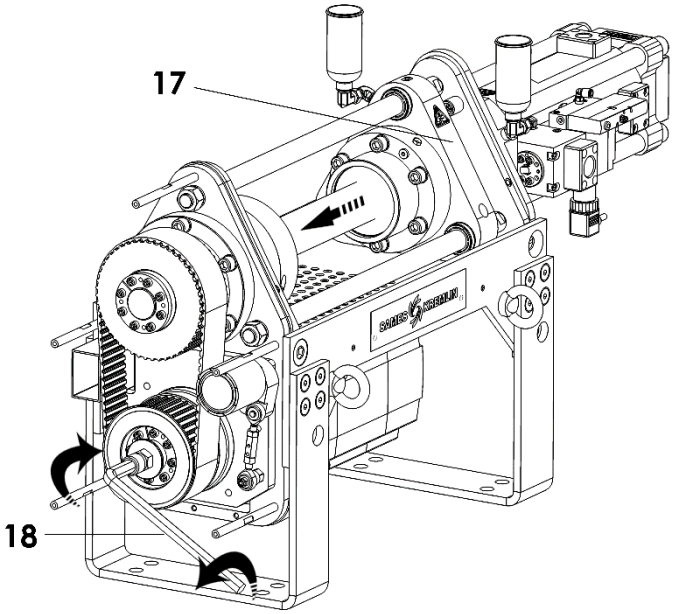
- ✓ Unscrew and remove the 4 screws (11) using a 3 mm Allen wrench. Remove the cover (12).
- ✓ Remove the 4 heating cartridges (13) and the probe (13a) from their housings.



- ✓ Insert the washer (14), nut (15) and screw (16) into the gear motor shaft (17)
- ✓ Secure the screw (16) with the nut (15) using a 14 mm Allen wrench and a 24 mm flat wrench.

Tools needed

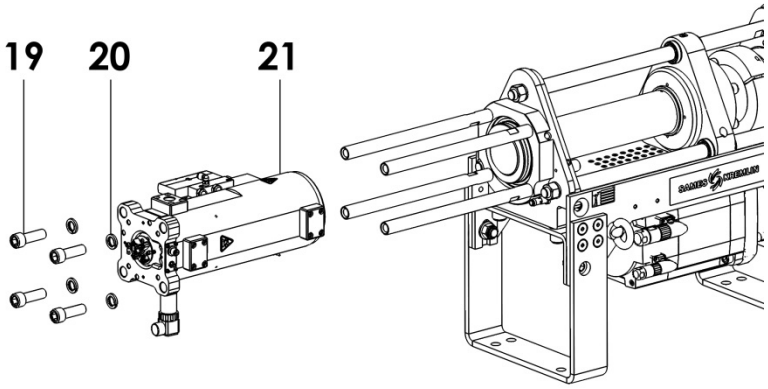




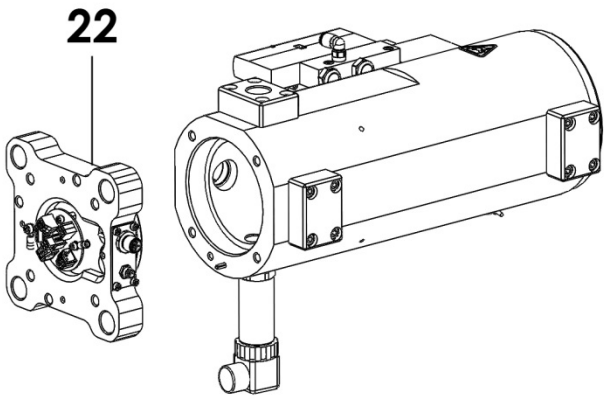
✓ Move the piston (17) to the upper position by turning the gear motor shaft clockwise with the 14 mm Allen wrench (18).

Tools needed

14 



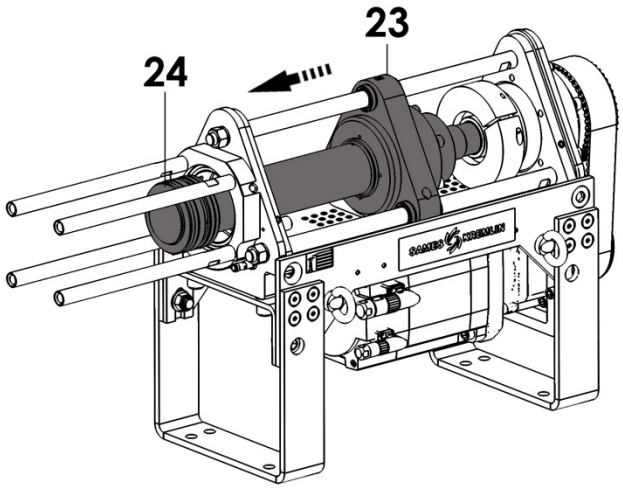
- ✓ Unscrew the 4 screws (19) using a 14 mm Allen wrench.
- ✓ Remove the screws (19) and the washers (20).
- ✓ Remove the flange, valve and cylinder assembly (21). Be careful with the weight.



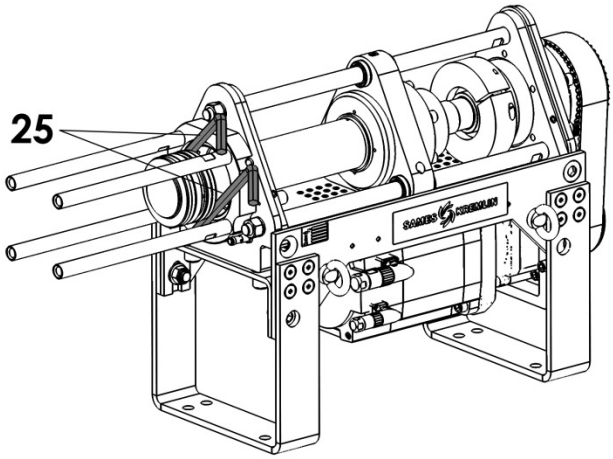
- ✓ Remove the flange (22) with a mallet.

Tools needed

14

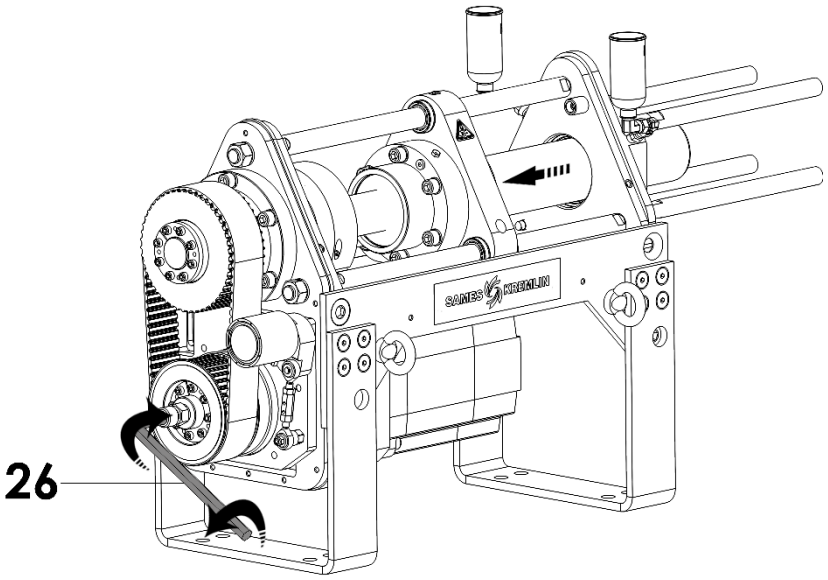


✓ Advance the piston assembly (23) with the 14 mm Allen wrench to remove the cartridge (24) from the lower piston body.

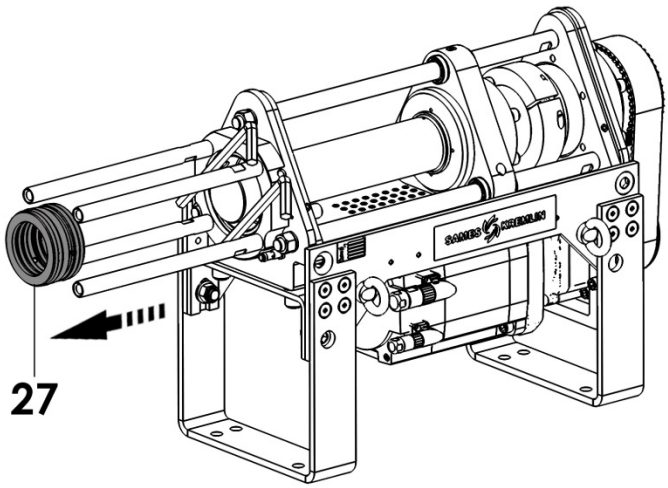


✓ Insert two shims (25) between the piston and the cartridge.

Tools needed **14** 



✓ Move the piston to the upper position by turning the gear motor shaft clockwise with a 14 mm Allen wrench (26).

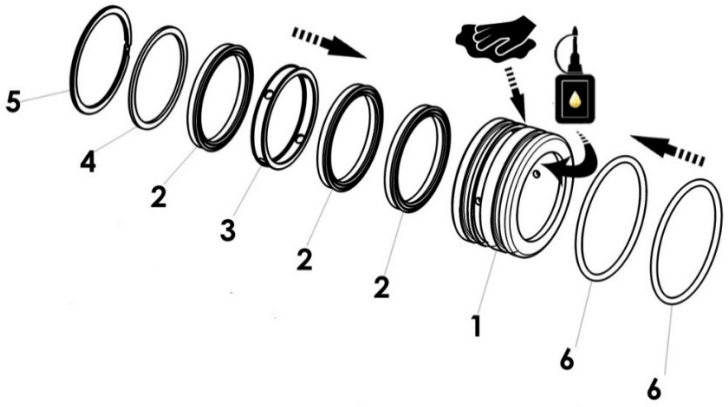


✓ The cartridge (27) is released.

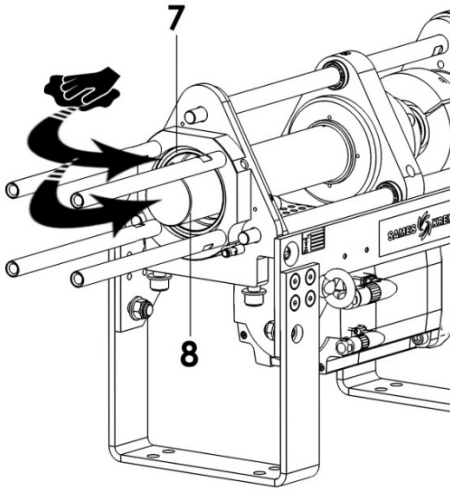
Tools needed

14

10.8 Reassembly of seals cartridge

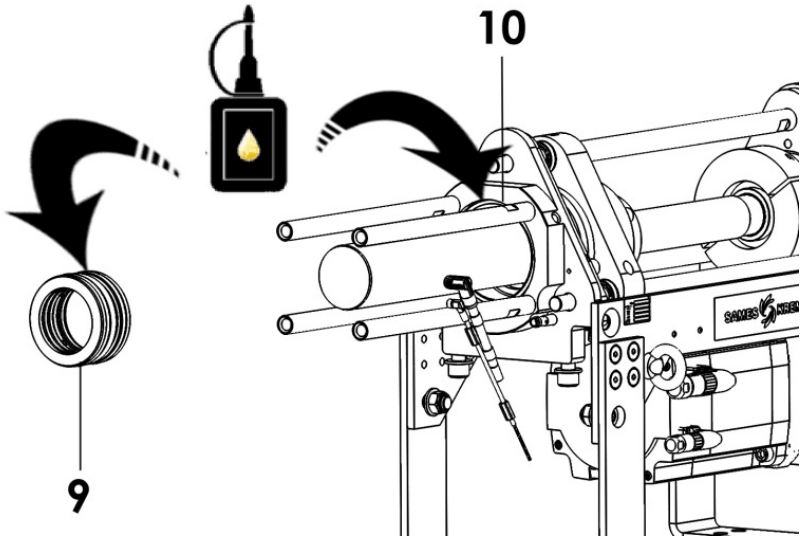


- ✓ Clean the cartridge body (1), grease the inside.
- ✓ Insert 2 gaskets (2), the spacer (3), 1 gasket (2), 1 washer (4), 1 retaining ring (5) and 2 gaskets (6), one at a time and in the right direction (see chapter on reassembling the cartridge seals).

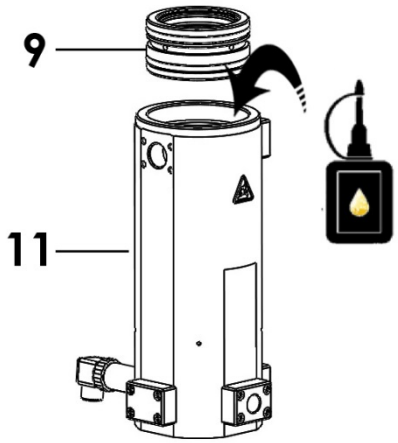


- ✓ Clean the inside of the upper dosing body (7) and the tip of the piston (8).

Tools needed



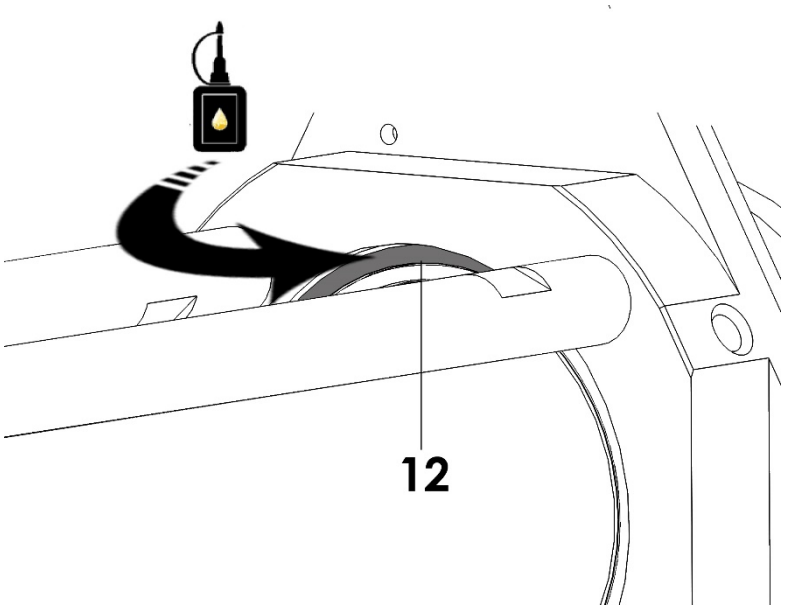
✓ Grease the outside of the cartridge (9) and the outside of the upper body of the dispenser (10).



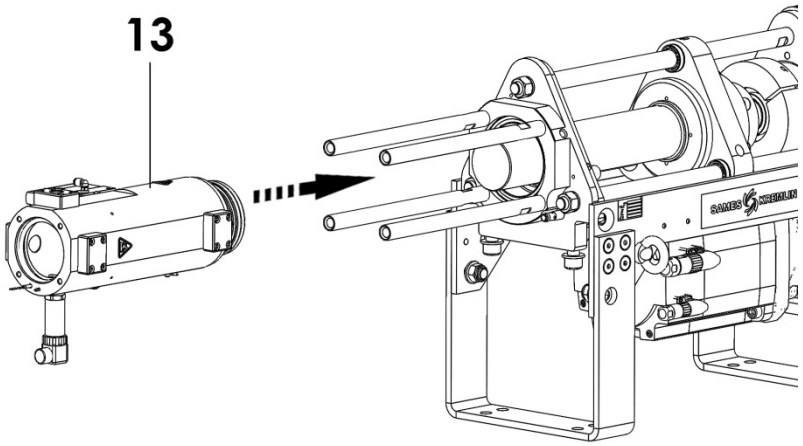
✓ Grease the inside of the cylinder.

✓ Insert the cartridge (9) into the cylinder (11), paying attention to the direction, with the retaining ring towards the outside of the cylinder.

Tools needed

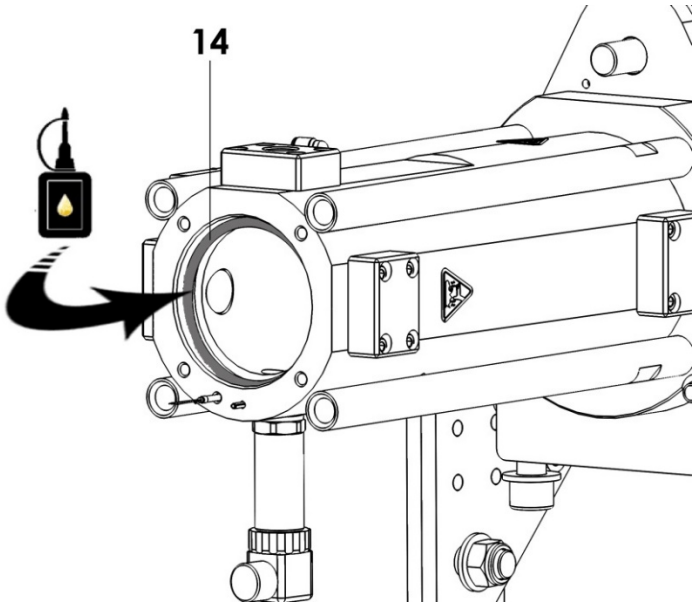


✓ Grease the seal (12).

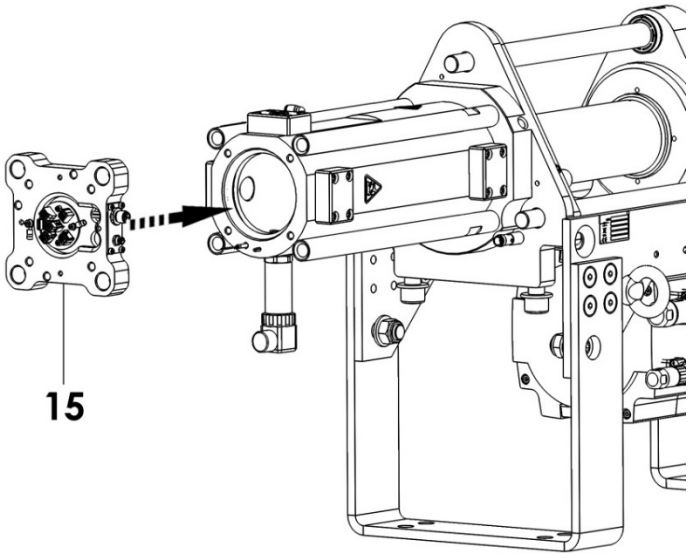


✓ Put the cylinder (13) in place.

Tools needed

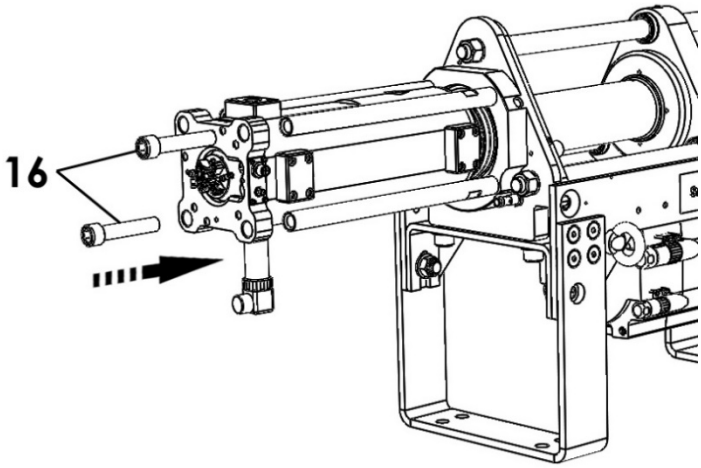


✓ Grease the seal (14).

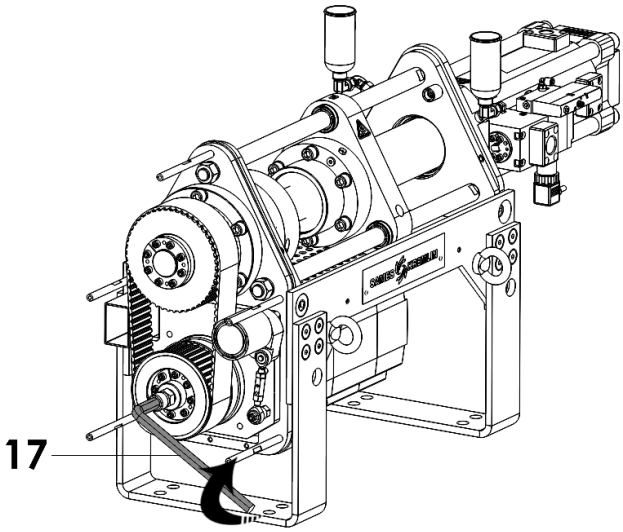


✓ Put the flange (15) in place (pay attention to the orientation).

Tools needed

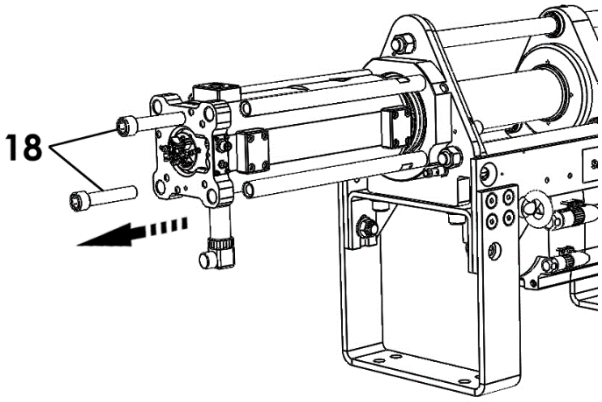


✓ Pre-tighten progressively with 2 screws M16x 90 (16) in a cross pattern to hold the cartridge-lid assembly in position.



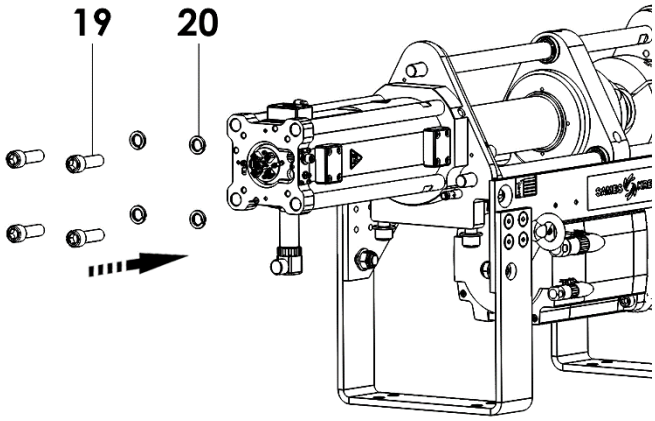
✓ Turn the piston half way by turning the gear motor shaft counterclockwise with the 14 mm Allen wrench (17).

Tools needed **14**  **M16x90** 

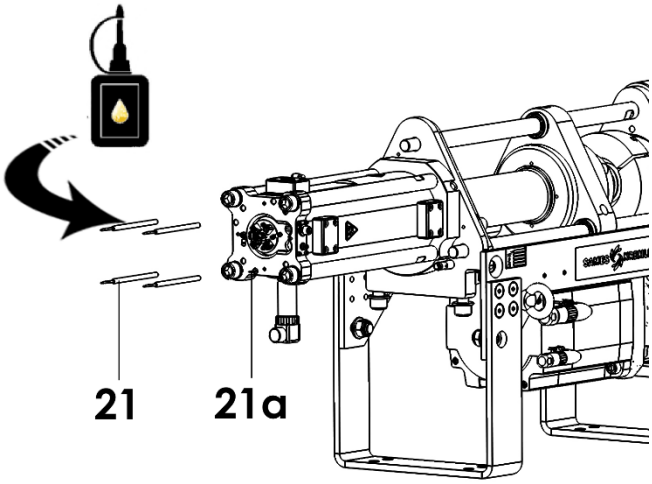


✓ Remove the 2 screws (18).

Tools needed **14**  **M16x90 X2** 



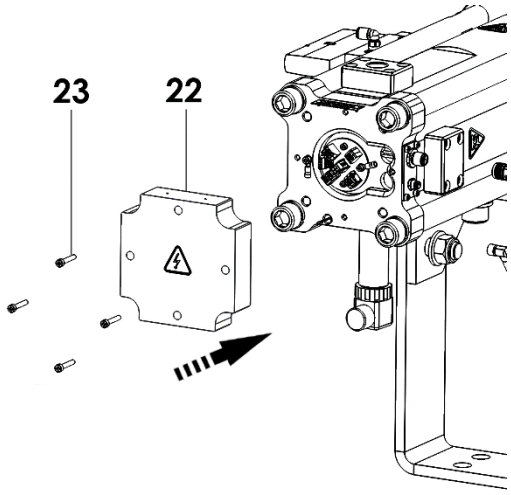
✓ Progressively screw in a star pattern the 4 M16X60 screws (19) and washers (20) with a 14 mm torque wrench, torque 130 N.m.



✓ Grease the 4 heating cartridges (21) with MI-setral-9M thermal paste.

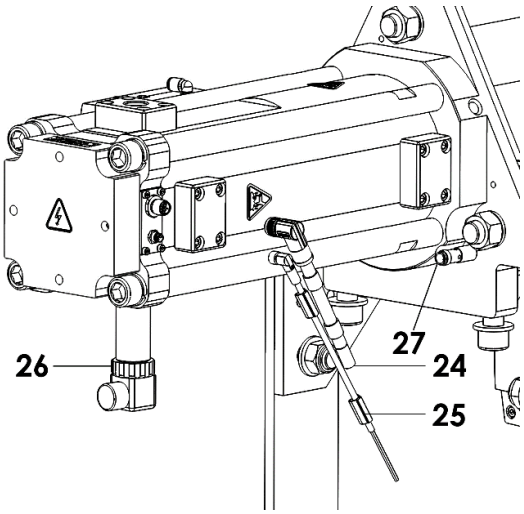
✓ Place the probe (21a) in its housing.

Tools needed

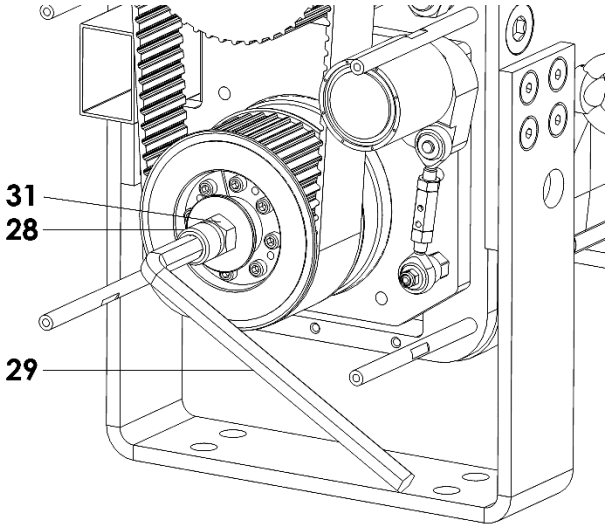


✓ Put the cover (22) in place and screw in the 4 screws (23) using a 3 mm Allen wrench.

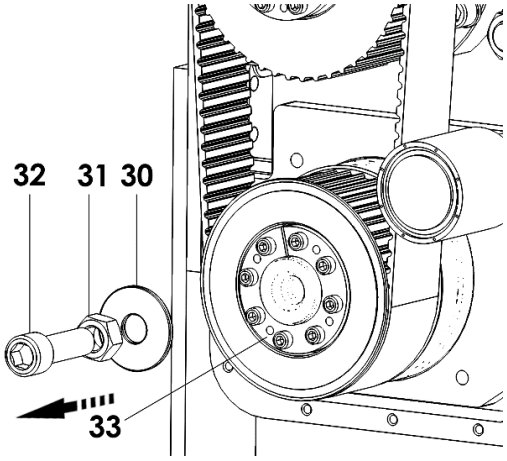
Be careful not to pinch or wedge the wires of the heating cartridges and the probe.



✓ Replace the power connectors (24), heating sensor (25), pressure sensor (26), inductive position sensor (27) and electrodistributor.



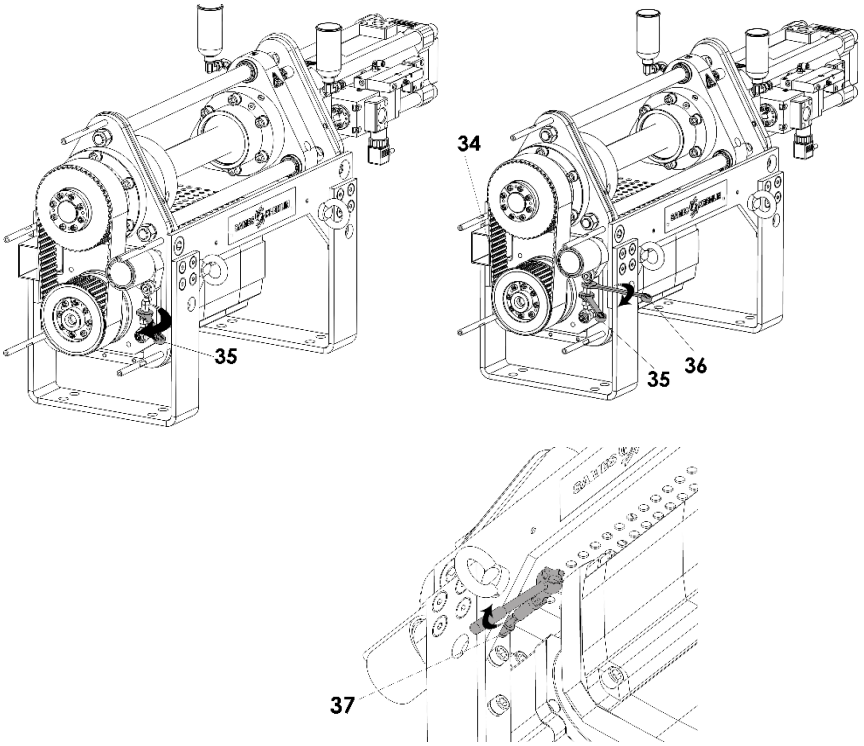
✓ Hold the screw (28) with the 14 mm Allen wrench and unscrew the nut (31) with the 24 mm wrench (29).



✓ Unscrew the screw (32) completely.

✓ Remove the screw (32), nut (31) and washer (30) from the gear motor shaft (33).

Tools needed **14** 



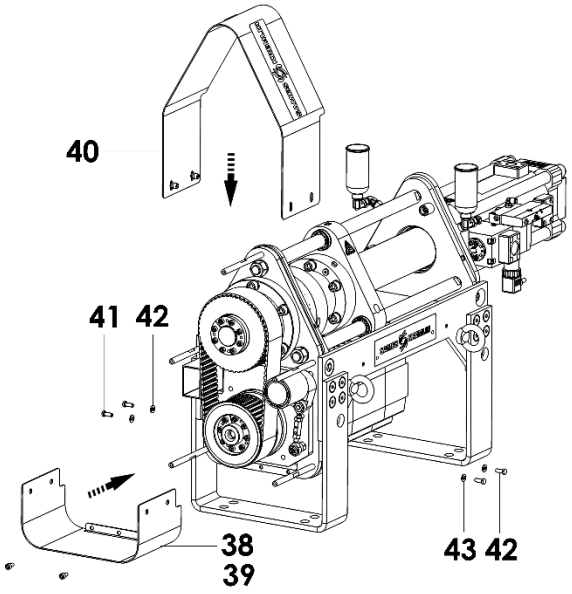
✓ Adjust the belt tension using a frequency meter and follow the procedure below:

- *Loosen the tensioning nut with a 13 mm flat wrench (35), the roller will approach the belt until the correct belt tension is achieved.*
- *Check the belt tension by vibrating the slack side (item 34) with a non-contact tool. The measuring device gives the resonance frequency.*
- *Tighten the lock nut with a 13 mm flat wrench (36) on the tensioning nut, holding it with the other 13 mm flat wrench (35).*
- *Tighten with the 8 mm torque wrench (37) to a tightening torque of 80 N.m..*

Caution: Do not exceed the desired tension level as the belt will take some time to retension.

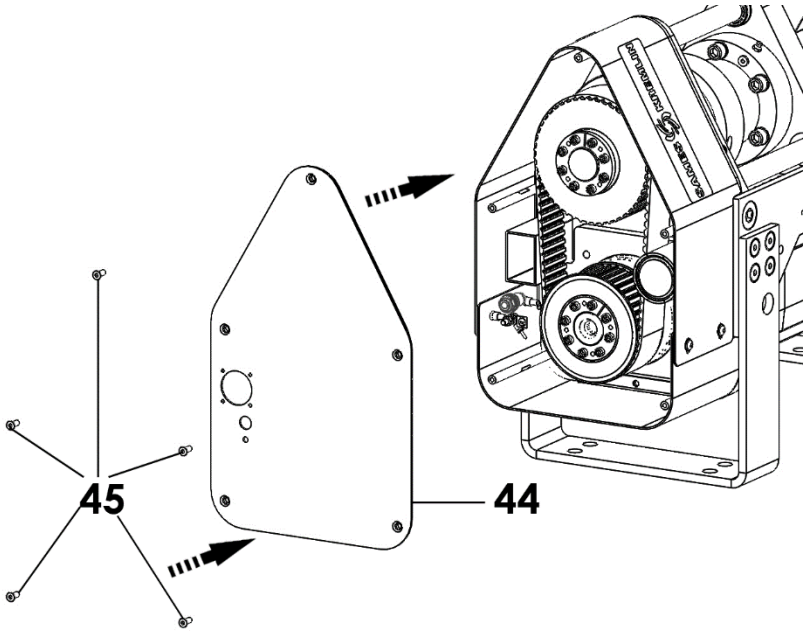
Belt tension (N.m.)	*1000*
Harmonic (Hz)	*150*

Tools needed **13x2**  **8** 



- ✓ Reposition the lower casing (38) and screw in the 2 screws (39) using a 5 mm Allen wrench.
- ✓ Reposition the upper housing (40). Place the washers (42) and screw in the 4 screws (41) using a 10 mm flat wrench.

Tools needed



- ✓ Reposition the cover (44) and screw in the 5 screws (45) using a 4 mm Allen wrench.
- ✓ Reposition the transparent cover by screwing in the 4 screws using a 2.5 mm Allen wrench.

Tools needed

10.9 Disassembly of cartridge seals

Attention

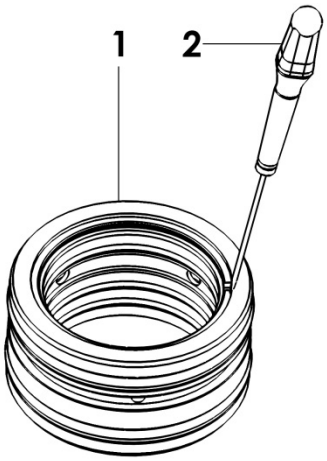
Only qualified SAMES KREMLIN personnel are authorized to carry out maintenance work.

Attention

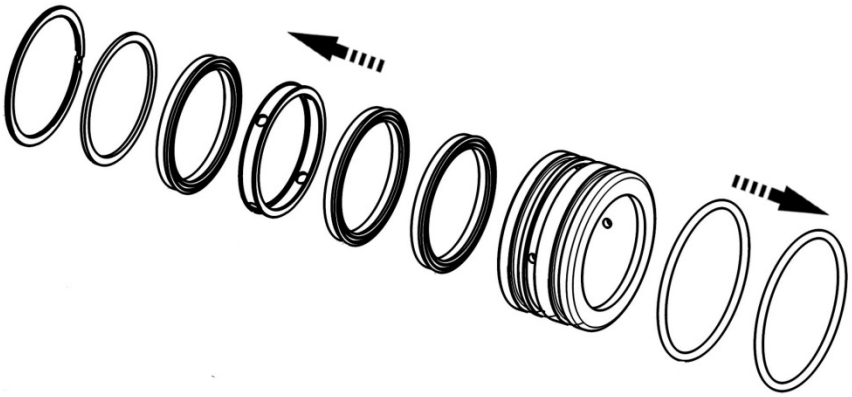
Before any intervention, it is imperative to follow the decompression procedure and the safety instructions.

Attention

Be sure to carry out disassembly operations for 2 persons, the weight and size of the shotmeter being important.



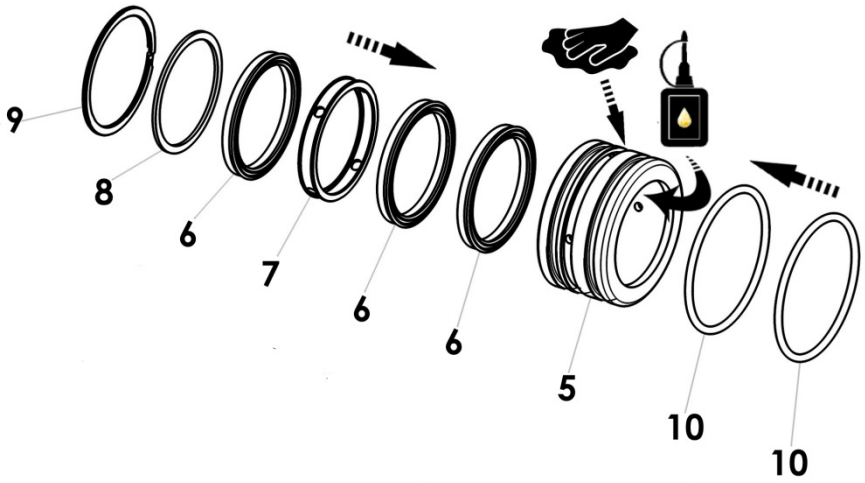
✓ Remove the retaining ring from the groove with a screwdriver and remove the washer, seals and spacer.

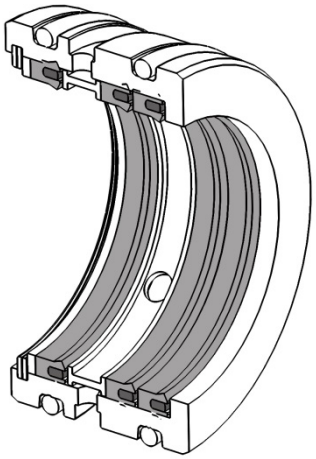


✓ Put in position in the groove.

Tools needed

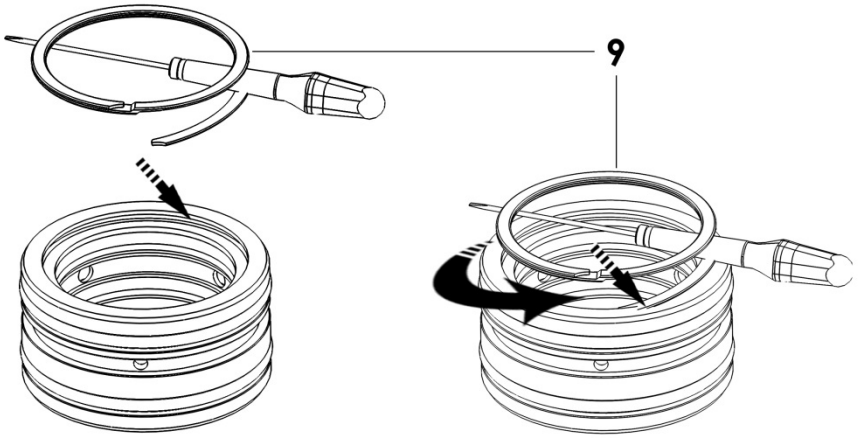
10.10 Reassembly of cartridge seals





- ✓ Clean the cartridge body (5), grease the inside.
- ✓ Insert 2 gaskets (6) in the right direction (see sectional view above), the spacer (7), 1 gasket (6) in the right direction (see sectional view above), 1 washer (8) and 2 seals (10),

Tools needed



- ✓ Spread the retaining ring (9) with a screwdriver.
- ✓ Insert the end of the retaining ring (9) into the groove.
- ✓ Rotate and press the ring (9) into position in the groove.

Tools needed

10.11 Disassembly of piston

Attention

Only qualified SAMES KREMLIN personnel are authorized to carry out maintenance work.

Attention

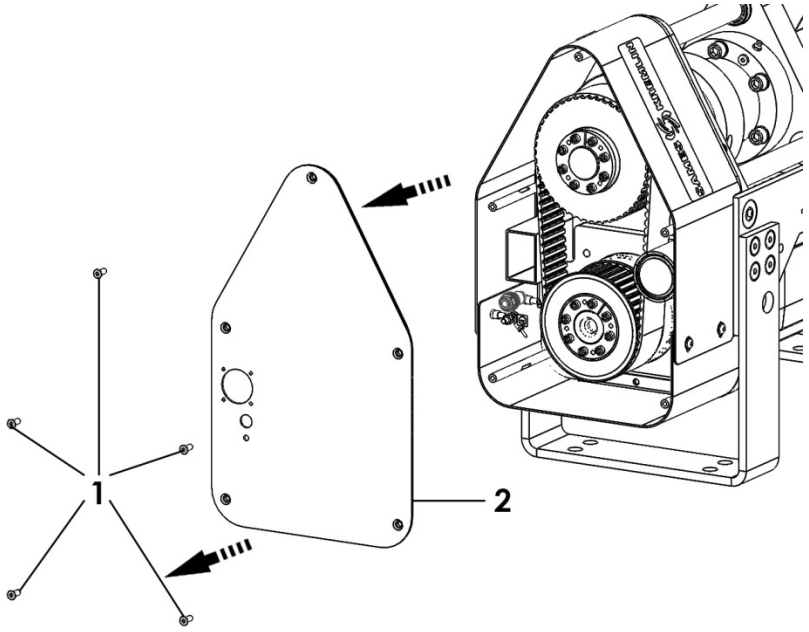
Before any intervention, it is imperative to follow the decompression procedure and the safety instructions.

Attention

Be sure to carry out disassembly operations for 2 persons, the weight and size of the shotmeter being important.

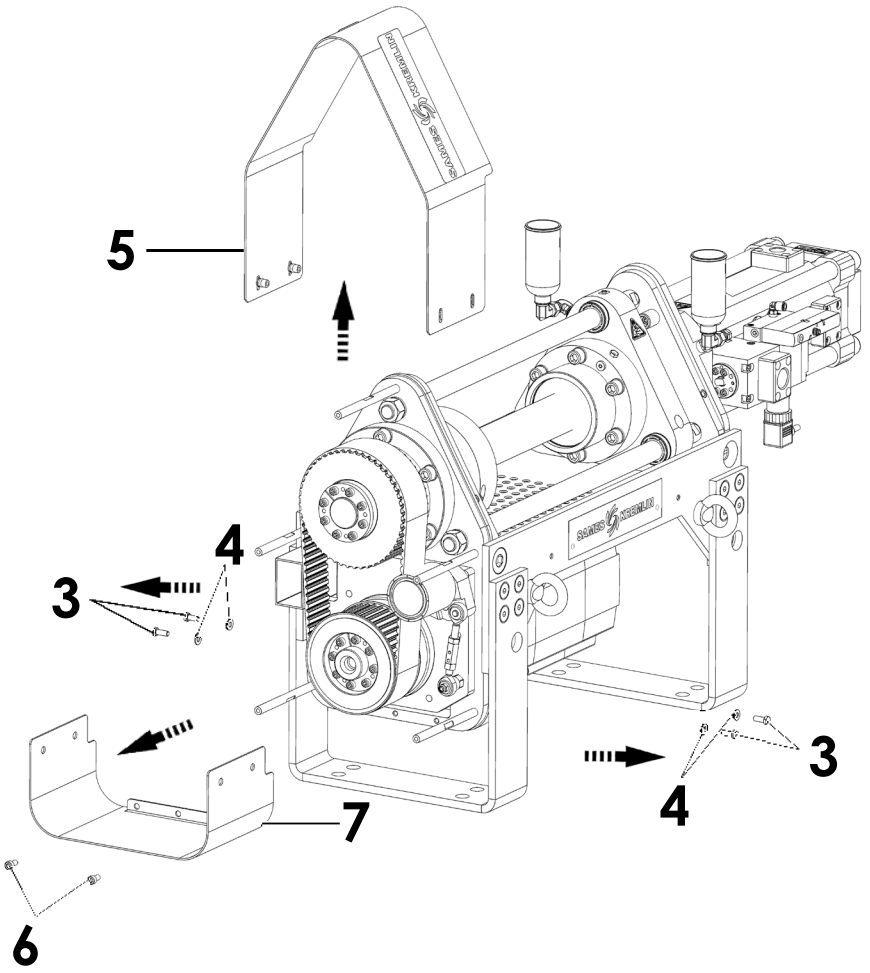
Prerequisite

- ✓ Unscrew the 4 screws with a 5 mm Allen wrench.
- ✓ Remove the 4 screws and the transparent cover.



- ✓ Remove the power, sensor, pressure sensor, inductive position sensor and solenoid valve connectors electro-valve.
- ✓ Unscrew the 5 screws (1) with a 5 mm Allen wrench.
- ✓ Remove the 5 screws and the cover (2).

Tools needed

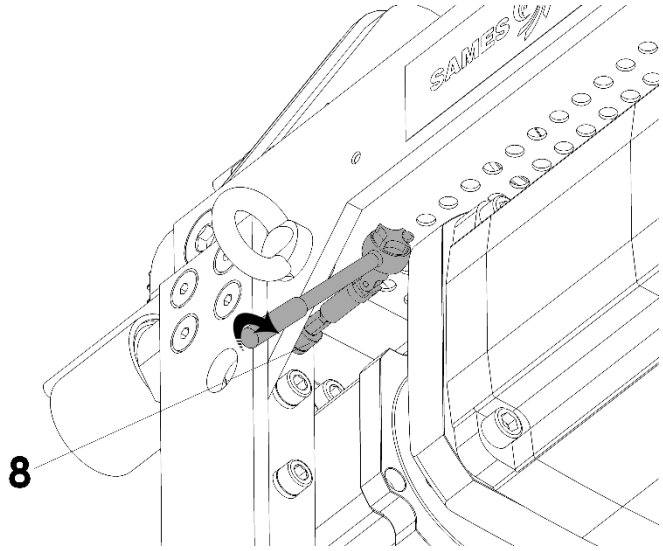


- ✓ Unscrew the 4 screws (3) using a 10 mm flat wrench.
- ✓ Remove the screws (3) and washers (4).
- ✓ Remove the upper casing (5).
- ✓ Unscrew the 2 screws (6) with a 5 mm Allen wrench.
- ✓ Remove the lower casing (7).

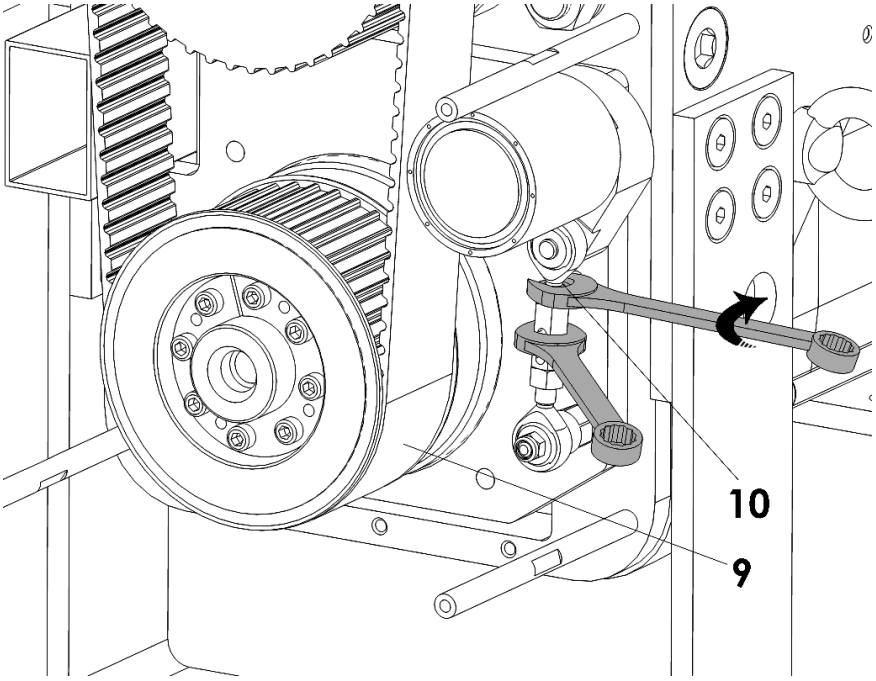
Tools needed

5 

10 

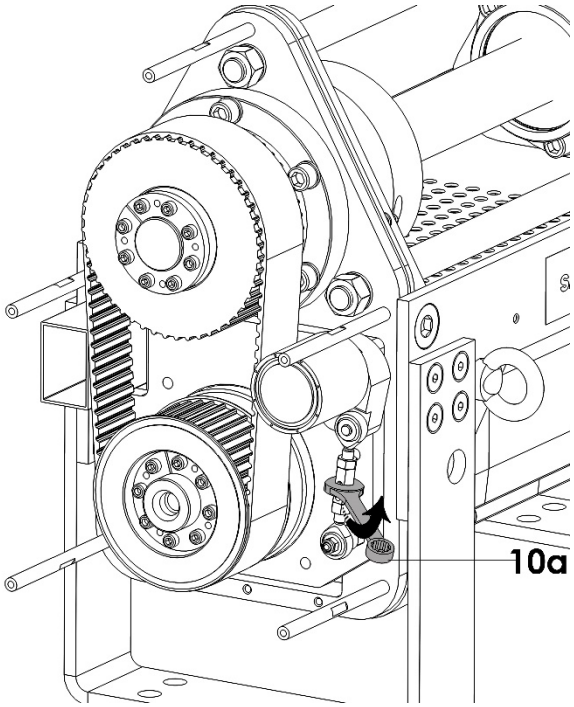


✓ Loosen the screw (8) with an 8 mm ratchet wrench.



✓ Loosen the belt (9) by loosening the lock nut (10) using two 13 mm flat wrenches.

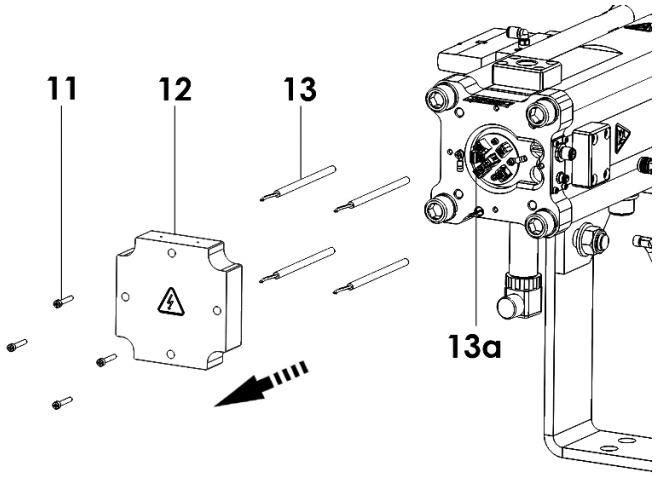
Tools needed **13x2**  **8** 



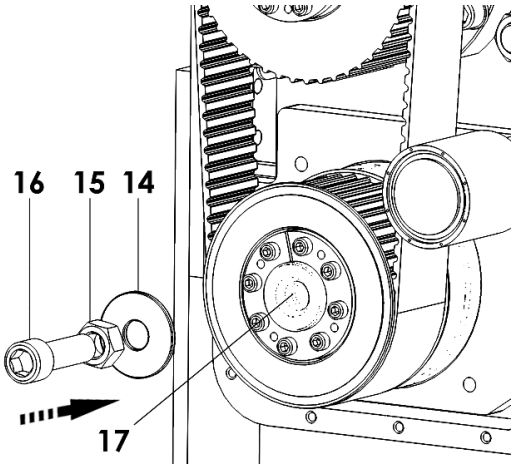
✓ Tighten the tensioning nut (10a) with a 13 mm open-end wrench. The roller moves away from the belt.

Tools needed

13

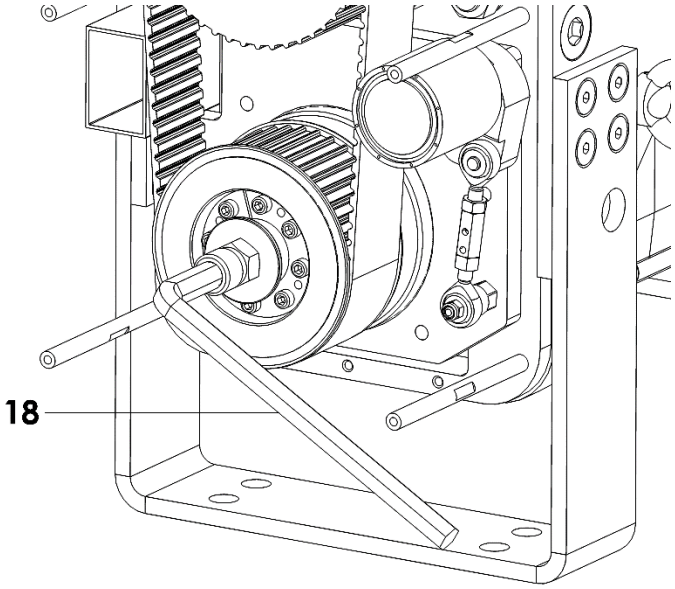


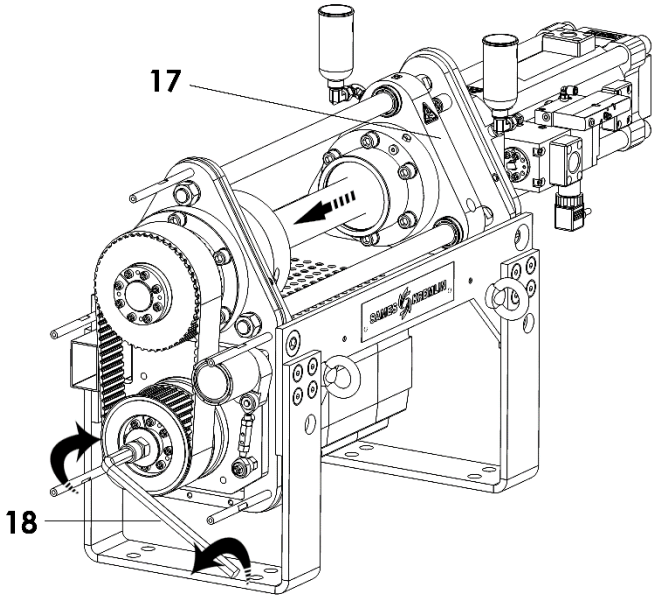
- ✓ Unscrew and remove the 4 screws (11) using a 3 mm Allen wrench. Remove the cover (12).
- ✓ Remove the 4 heating cartridges (13) and the probe (13a) from their housings.



- ✓ Insert the washer (14), nut (15) and screw (16) into the gear motor shaft (17)
- ✓ Secure the screw (16) with the nut (15) using a 14 mm Allen wrench and a 24 mm flat wrench.

Tools needed

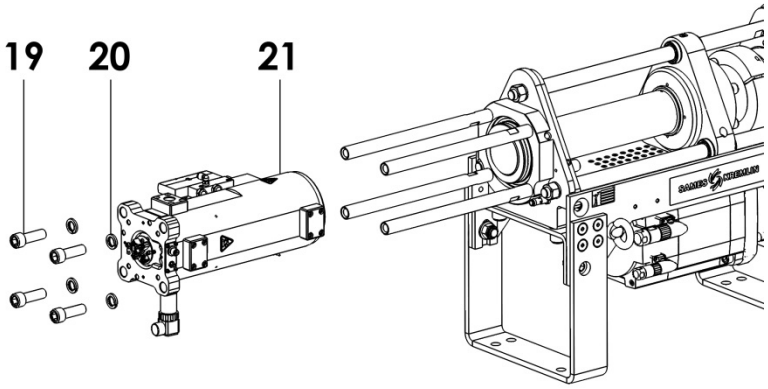




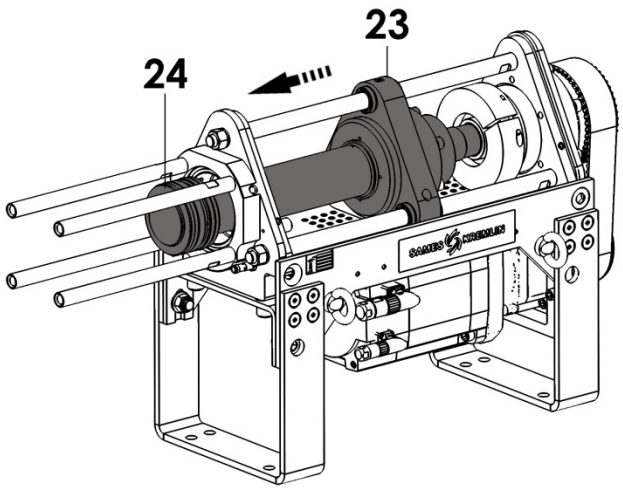
✓ Put the piston (17) in the upper position by turning the gear motor shaft clockwise with the 14 mm Allen wrench (18).

Tools needed

14 



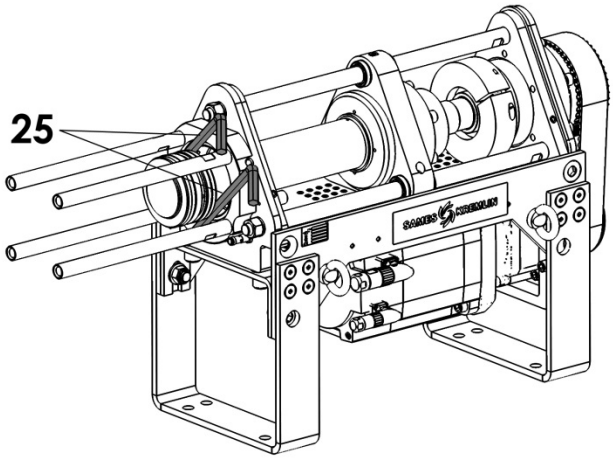
- ✓ Unscrew the 4 screws (19) using a 14 mm Allen wrench
- ✓ Remove the screws (19) and remove the washers (20)
- ✓ Remove the flange - valve - cylinder assembly (21). Be careful with the weight.



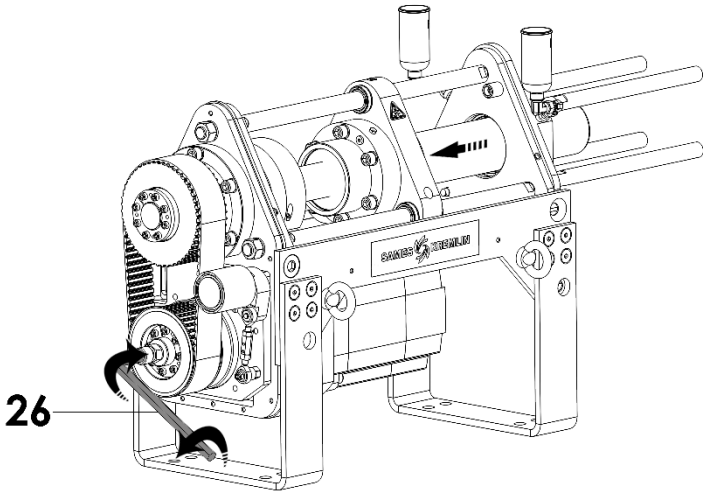
- ✓ Advance the piston assembly (23) with a 14 mm Allen wrench to remove the cartridge (24) from the body.

Tools needed

14

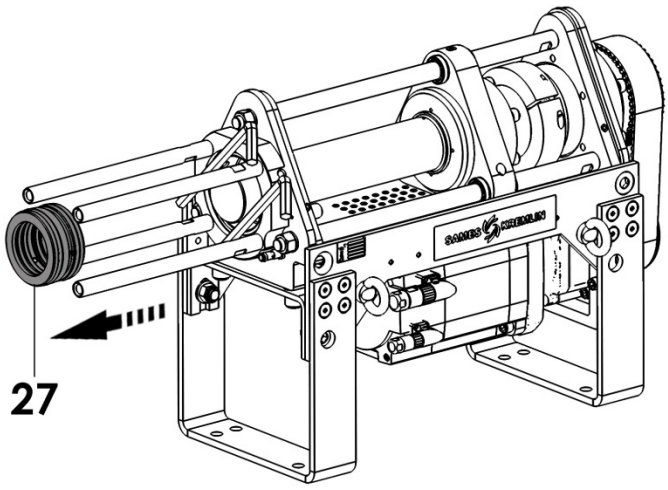


✓ Insert two shims (25) between the piston and the cartridge.

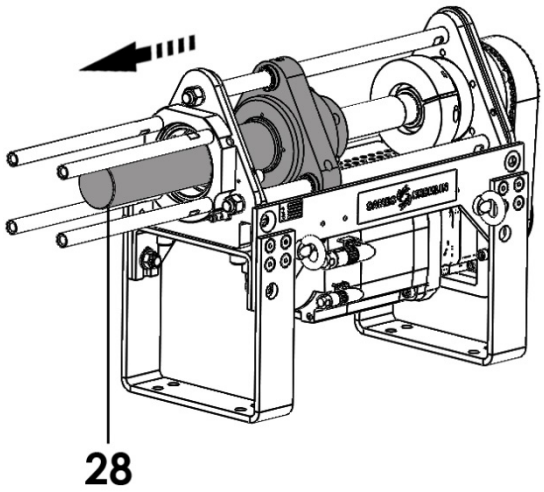


✓ Move the piston to the upper position by turning the gear motor shaft clockwise with the 14 mm Allen wrench (26).

Tools needed **14**



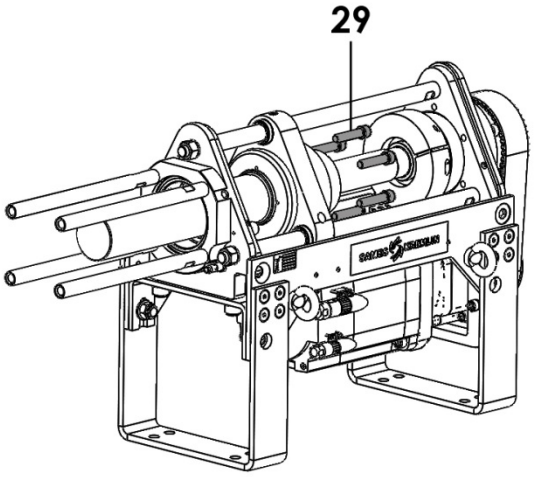
✓ The cartridge (27) is released.



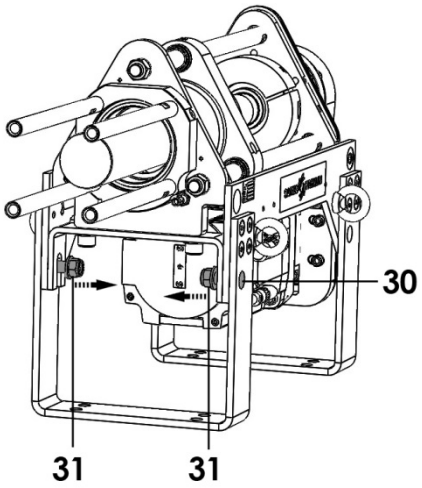
✓ Advance the piston assembly (28) with the 14 mm Allen wrench.

Tools needed

14 

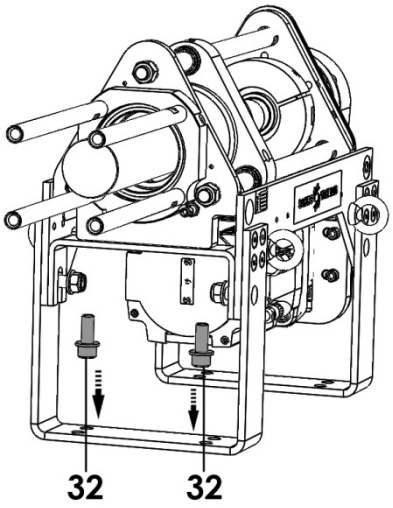


✓ Loosen the 6 screws (29) of the roller screw nut with a 10 mm Allen wrench.

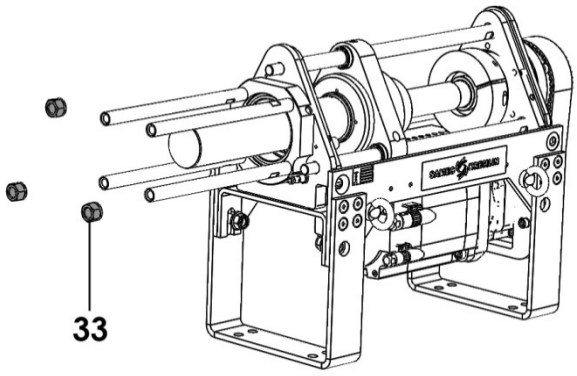


✓ Slightly loosen the 2 screws (30) with a 14 mm Allen wrench and the 2 nuts (31) with a 24 mm flat wrench.

Tools needed

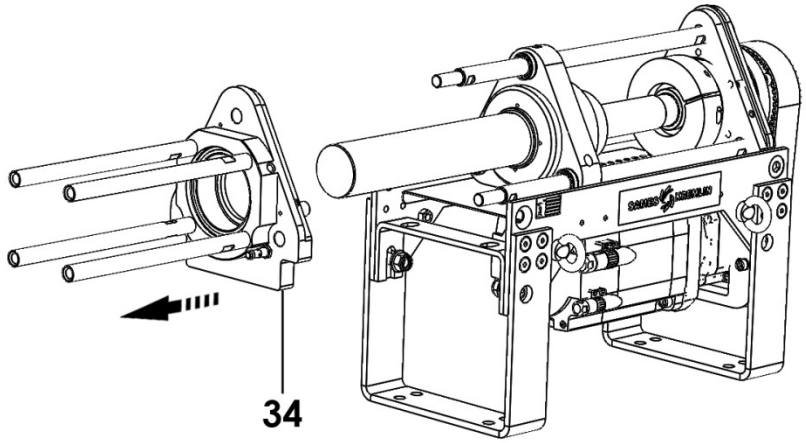


✓ Unscrew the 2 screws (32) using a 14 mm Allen wrench.

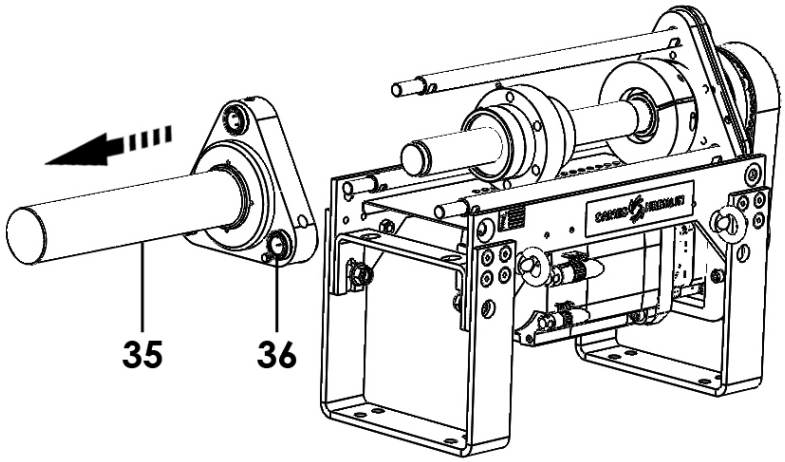


✓ Unscrew the 3 nuts (33) using a 27 mm flat wrench.

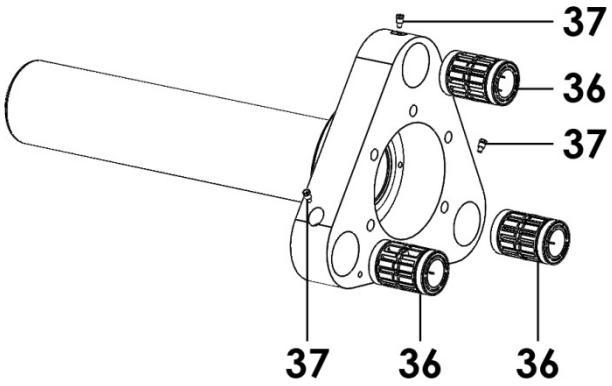
Tools needed **14**  **27** 



✓ Remove the upper dispenser body and tie rod assembly (34).



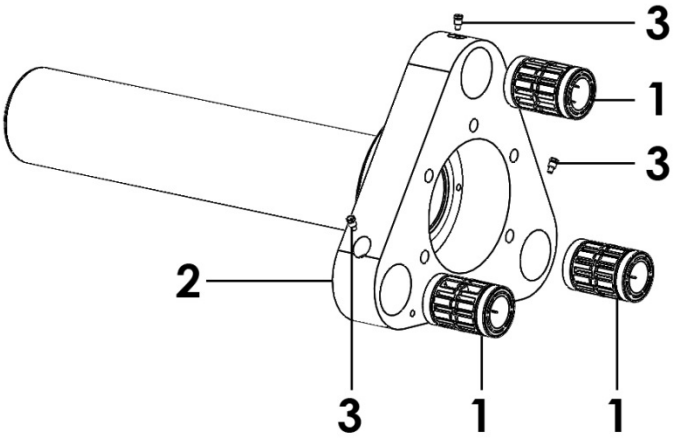
✓ Remove the piston assembly (35) equipped with the 3 guide bushes (36) from the guide pins.

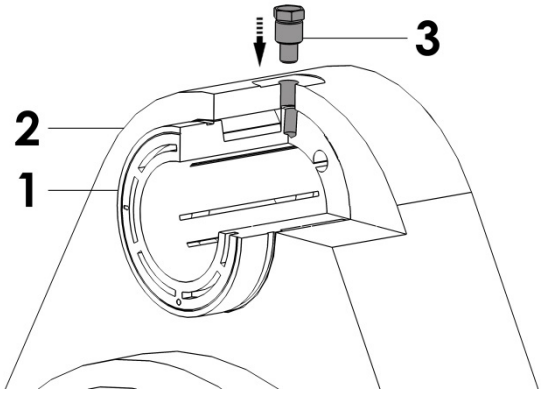


- ✓ Unscrew the grease nipples (37) with a 6 mm flat wrench and remove the guide sleeves (36).
- ✓ Clean the piston before reassembly or storage.
- ✓ Dismantle the cartridge seals according to the procedure if necessary.
- ✓ Clean all parts in contact with the product before reassembly or storage.

Tools needed **6**

10.12 Reassembly of piston



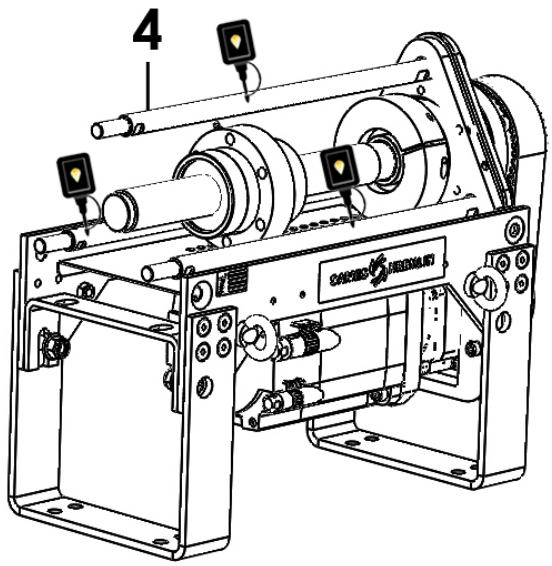


✓ Insert the sleeves (1) one by one into the recesses of the piston body (2) and screw on the grease nipples (3) using a 6 mm socket wrench. Be careful to align the hole of the bushing (1) with the grease nipple (3) in order to keep it in position and not to block it when pivoting.

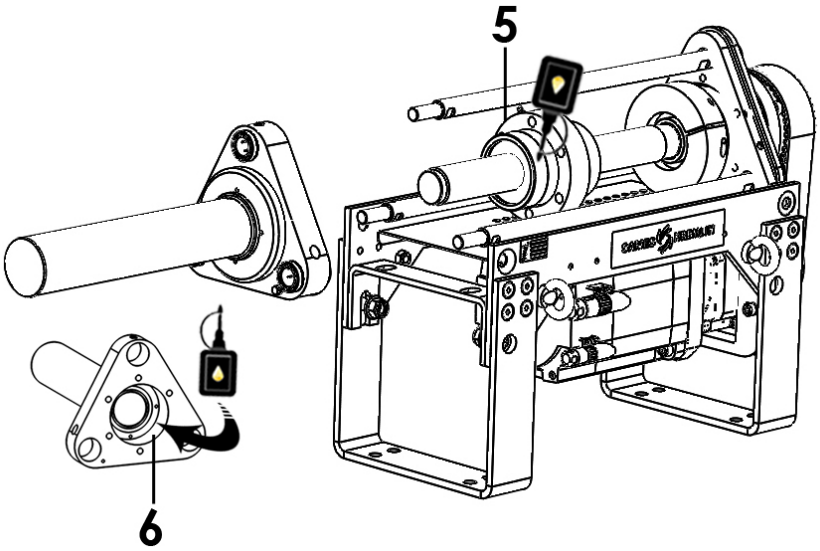
Tools needed

6 

6 



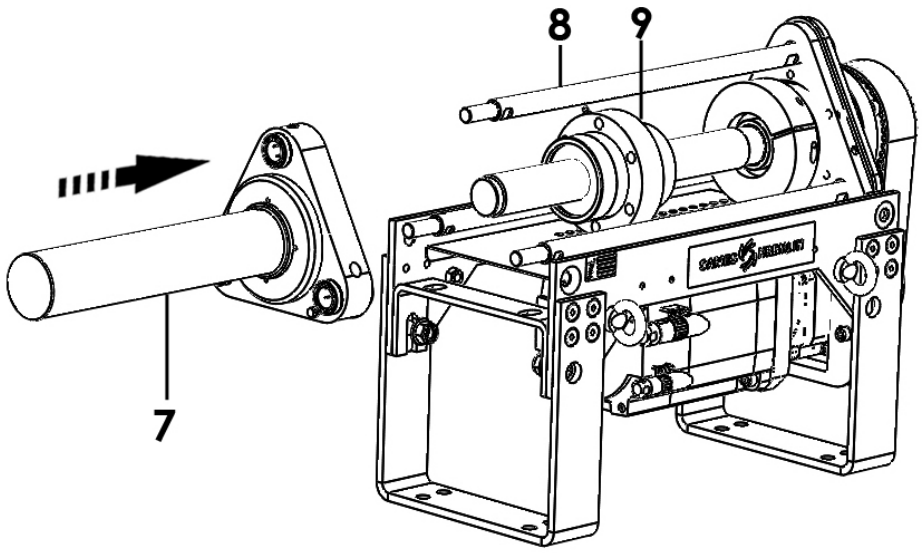
✓ Grease the guide pins (4).



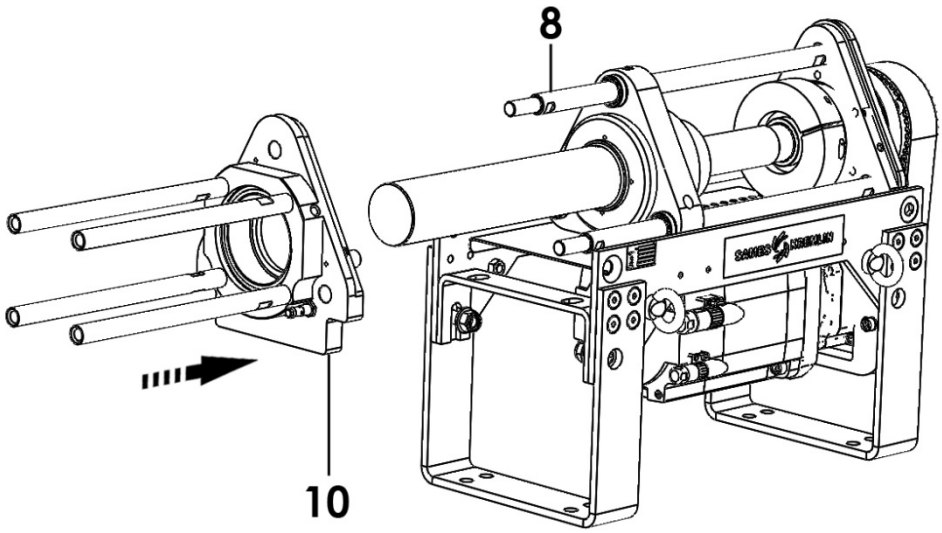
✓ Grease the nut of the roller screw (5).

✓ Grease the inside of the piston (6).

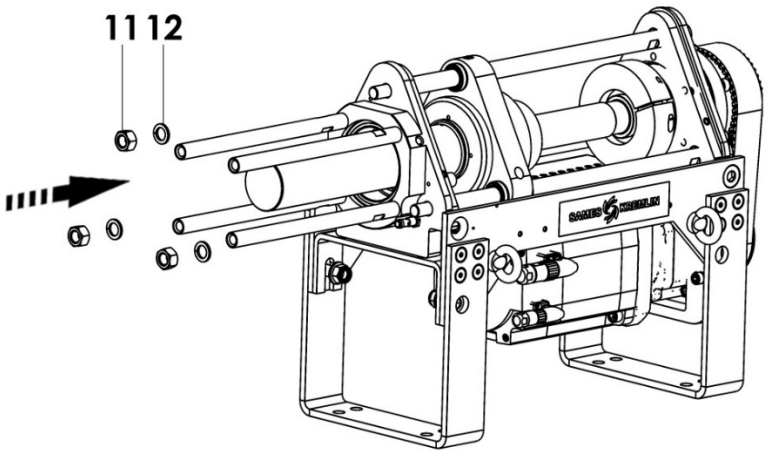
Tools needed



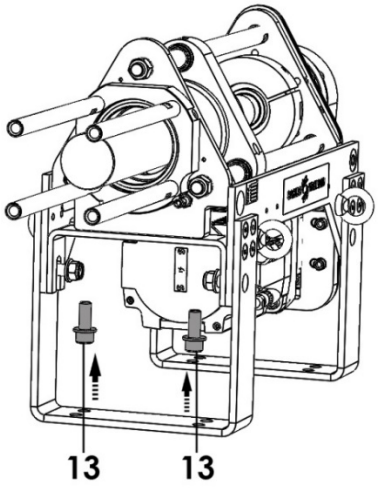
- ✓ Push the piston bushing assembly (7) onto the guide pins (8).
- ✓ Slide the piston bushing assembly (7) until the nut of the roller screw (9) is in its seat.



- ✓ Place the upper body and tie rod assembly (10) on the guide pins (8).



- ✓ Put the 3 washers (12) and the 3 nuts (11) in place.
- ✓ Gradually tighten the assembly with the nuts (11) and washers (12) in a star pattern to a torque of 190 N.m using a 27 mm torque wrench.

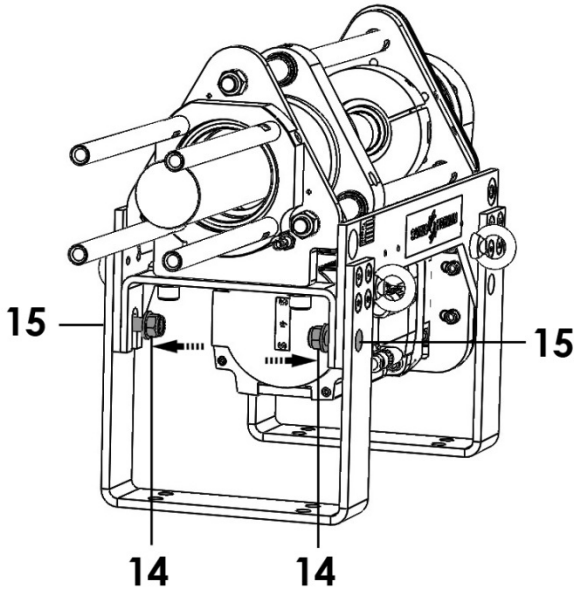


- ✓ Put the 2 washers (12) and the 2 screws (13) in place. Tighten the 2 screws (13) with a 14 mm Allen wrench to a torque of 60 N.m.

Tools needed

27

14

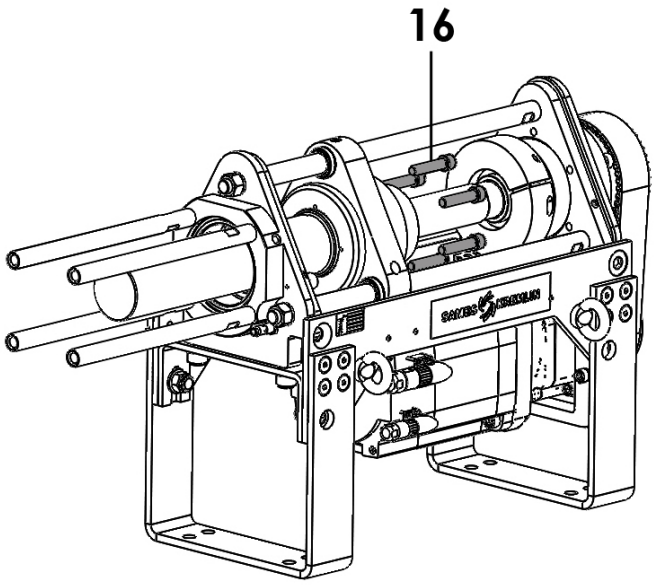


✓ Hold the nuts (14) with their washers with a 24 mm flat wrench and tighten the screws (15) with a 14 mm Allen wrench to 60 N.m.

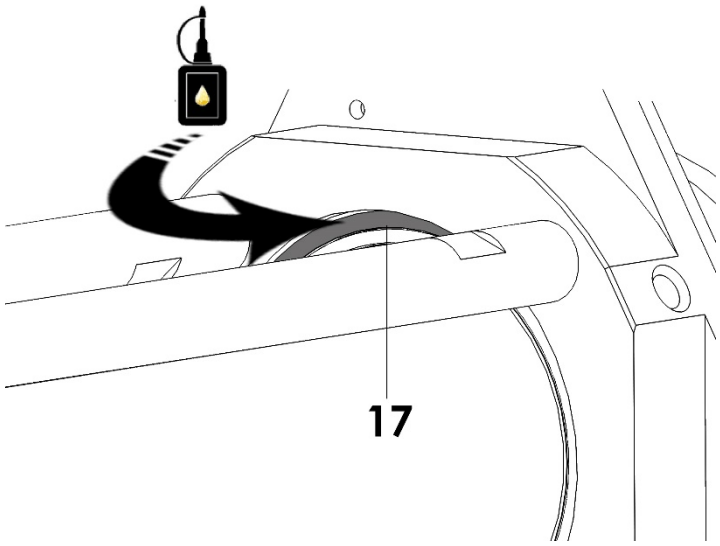
Tools needed

14 

24 



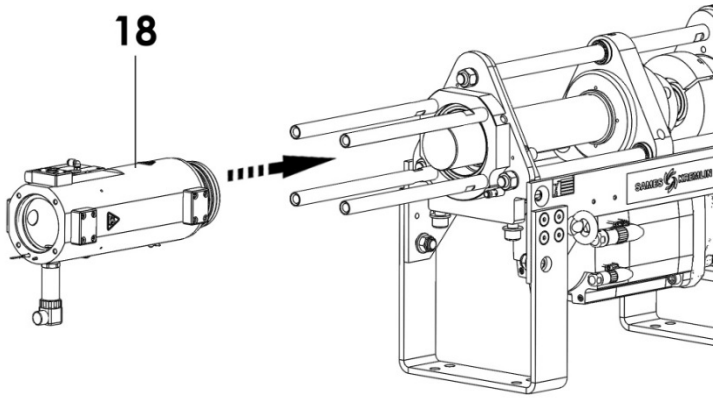
✓ Tighten the 6 screws (16) of the roller screw nut with a 10 mm Allen wrench to a torque of of 80 N.m..



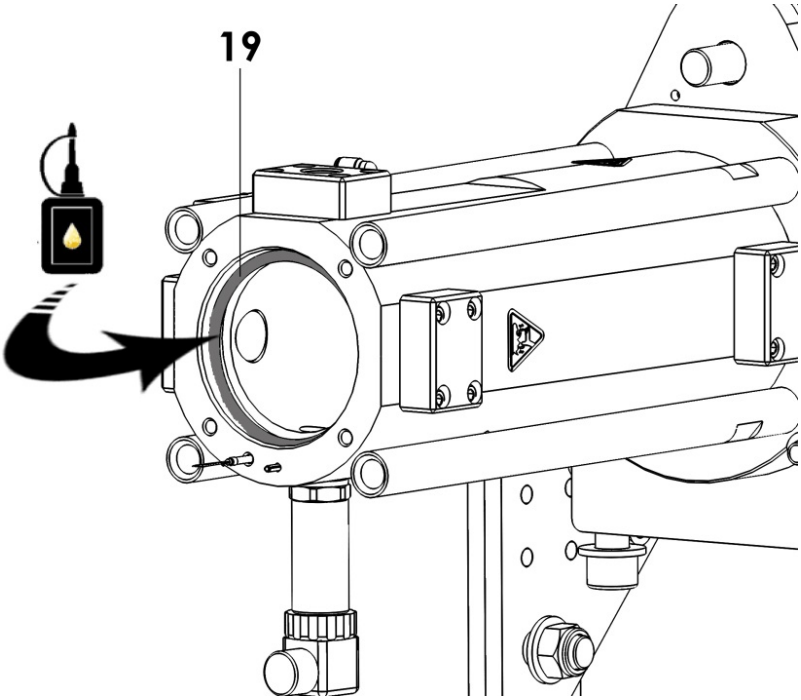
✓ Grease the seal (17).

Tools needed

10

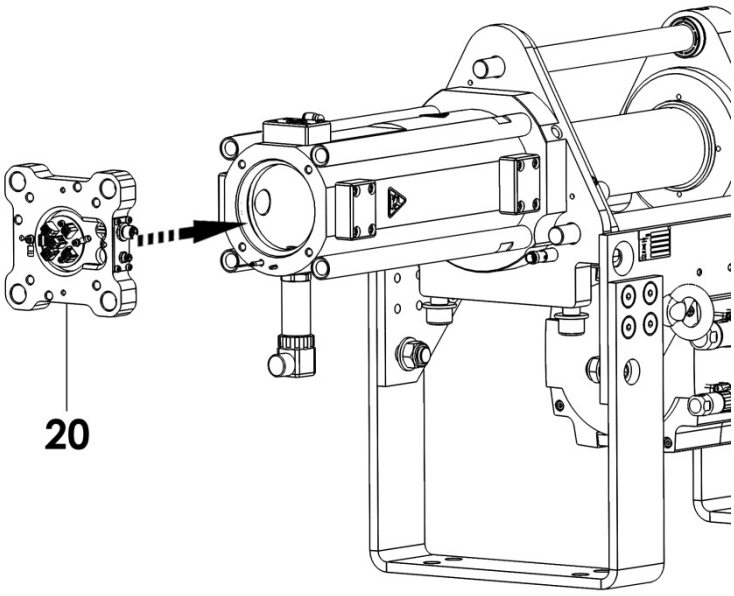


✓ Put the cylinder (18) in place.

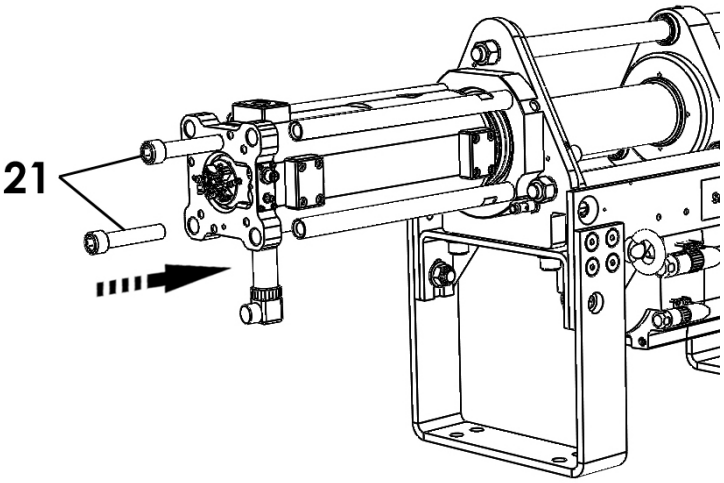


✓ Grease the seal (19).

Tools needed

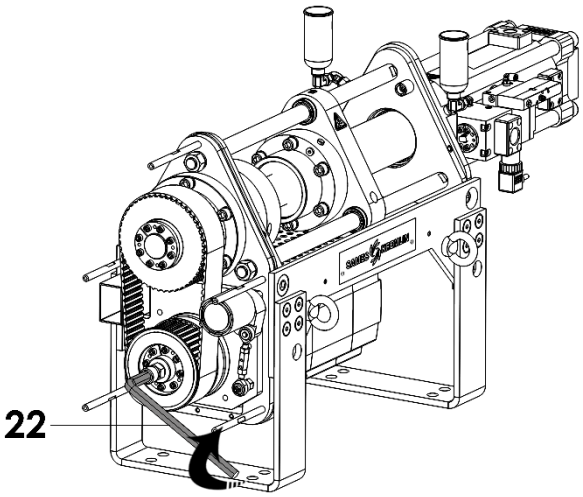


✓ Put the flange (20) in place (pay attention to the orientation).

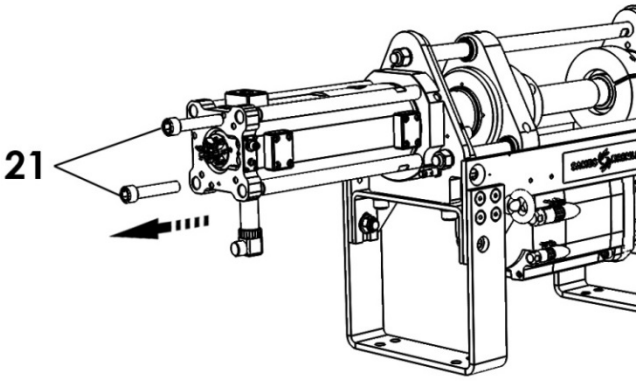


✓ Pre-tighten progressively with 2 screws M16x 90 (21crosswise to hold the flange assembly in position.

Tools needed **14**  **M16x90 X2** 



✓ Turn the piston half way by turning the gear motor shaft counterclockwise with the 14 mm Allen wrench (22).

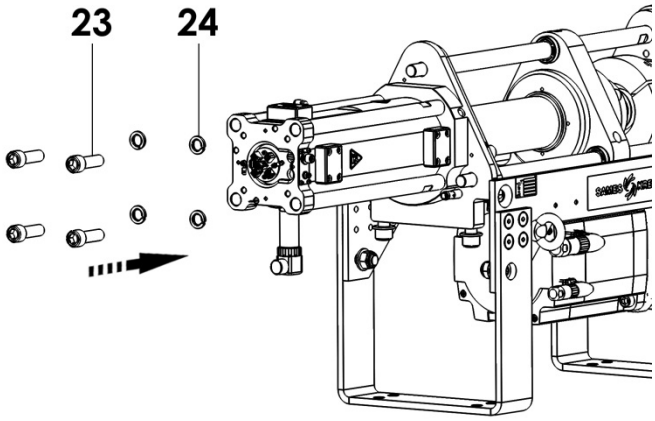


✓ Remove the 2 M16x90 screws (21).

Tools needed

14

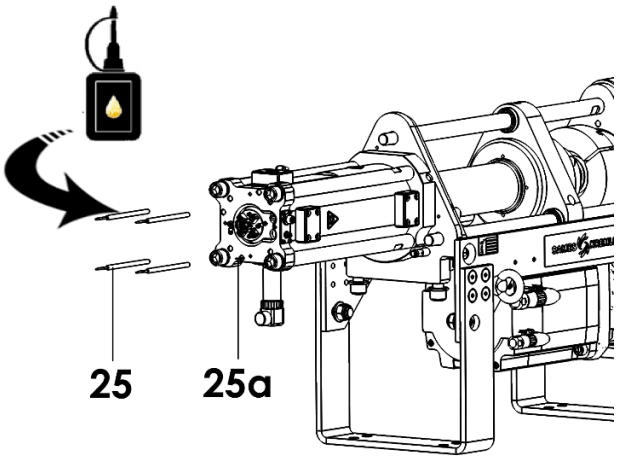
M16x90 X2



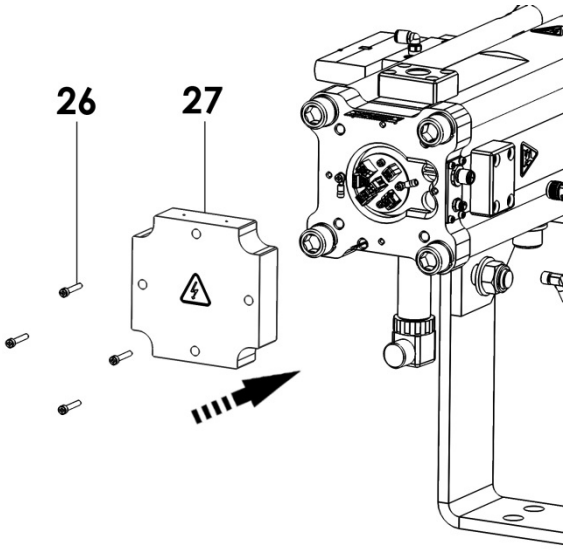
✓ Progressively screw in crosswise the set of 4 screws M16x60 (23) and washers (24) with an Allen wrench of 14 mm at a torque of 130 N.m.

Tools needed

14

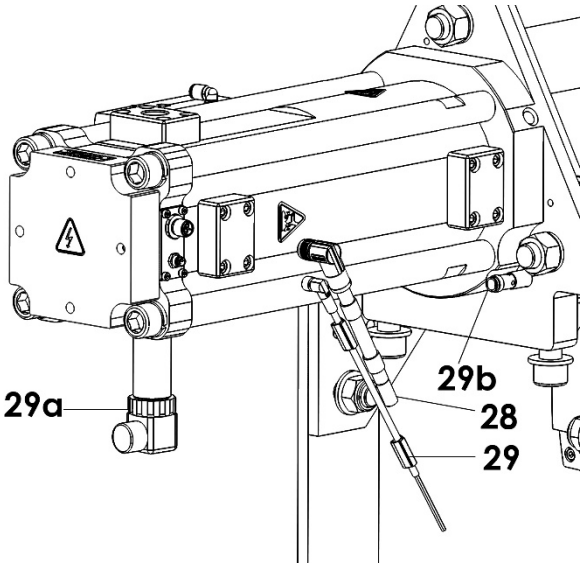


- ✓ Grease the heating cartridges (25) with thermal paste (MI-setral-9M) before putting them back into their housing.
- ✓ Replace the probe (25a) in its housing.

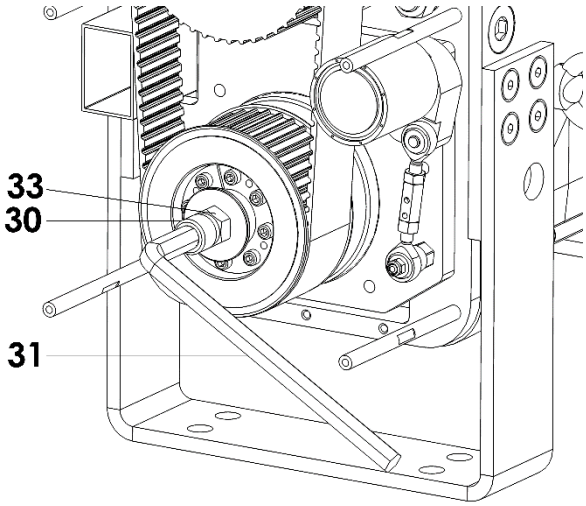


- ✓ Put the cover (26) in place and screw in the 4 screws (27) using a 3 mm Allen wrench.

Tools needed

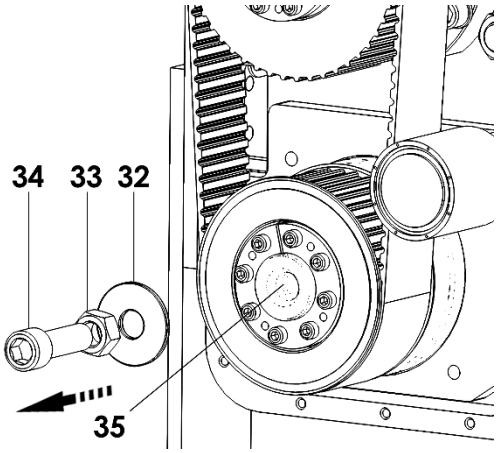


✓ Replace the power connectors (28), heating sensor (29), pressure sensor (29a), inductive position sensor (29b) and electro-distributor.

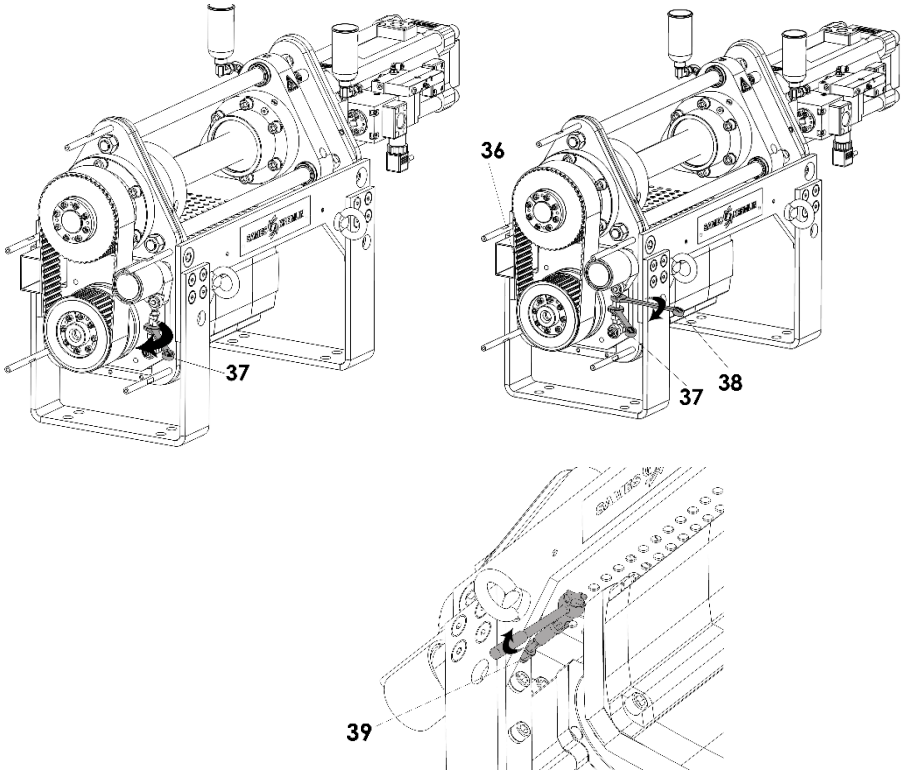


✓ Hold the screw (30) with the 14 mm Allen wrench and unscrew the nut (33) with the 24 mm flat wrench.

Tools needed **14**  **24** 



- ✓ Unscrew the screw (34) completely
- ✓ Remove the screw (34), nut (33) and washer (32) from the gear motor shaft (35).



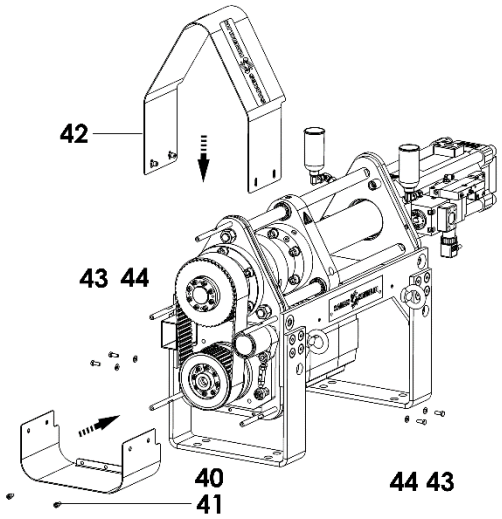
✓ Adjust the belt tension using a frequency meter and follow the procedure below:

- *Loosen the tensioning nut with a 13 mm flat wrench (37), the roller will approach the belt until the correct belt tension is achieved.*
- *Check the belt tension by vibrating the slack side (item 36) with a non-contact tool. The measuring device gives the resonance frequency.*
- *Tighten the lock nut with a 13 mm flat wrench (38) on the tensioning nut, holding it with the other 13 mm flat wrench (37).*
- *Tighten with the 8 mm torque wrench (39) to a tightening torque of 80 N.m..*

Caution: Do not exceed the desired tension level as the belt will take some time to retension.

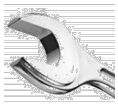
Belt tension (N.m.)	*1000*
Harmonic (Hz)	*150*

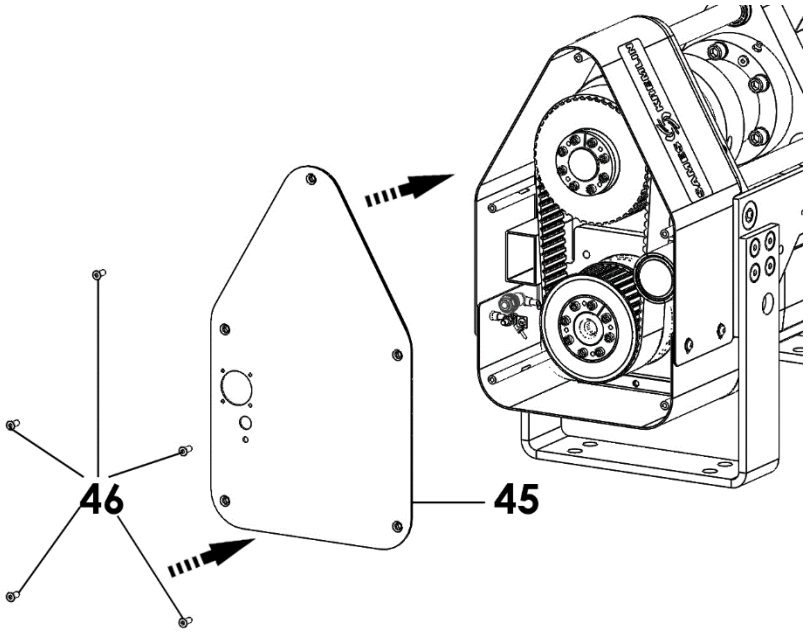
Tools needed **13x2**  **8** 



- ✓ Reposition the lower casing (40) and screw in the 2 screws (41) using a 5 mm Allen wrench.
- ✓ Reposition the upper housing (42). Place the washers (44) and screw in the 4 screws (43) using a 10 mm flat wrench.

Tools needed

5  **10** 



- ✓ Reposition the cover (45) and screw in the 5 screws (46) using a 4 mm Allen wrench.
- ✓ Reposition the transparent cover by screwing in the 4 screws using a 2.5 mm Allen wrench.

✓ **Attention**

It is essential to check the position sensor setting (see chapter on reassembling the position sensor).

Tools needed

10.13 Disassembly of guide pins

Attention

Only qualified SAMES KREMLIN personnel are authorized to carry out maintenance work.

Attention

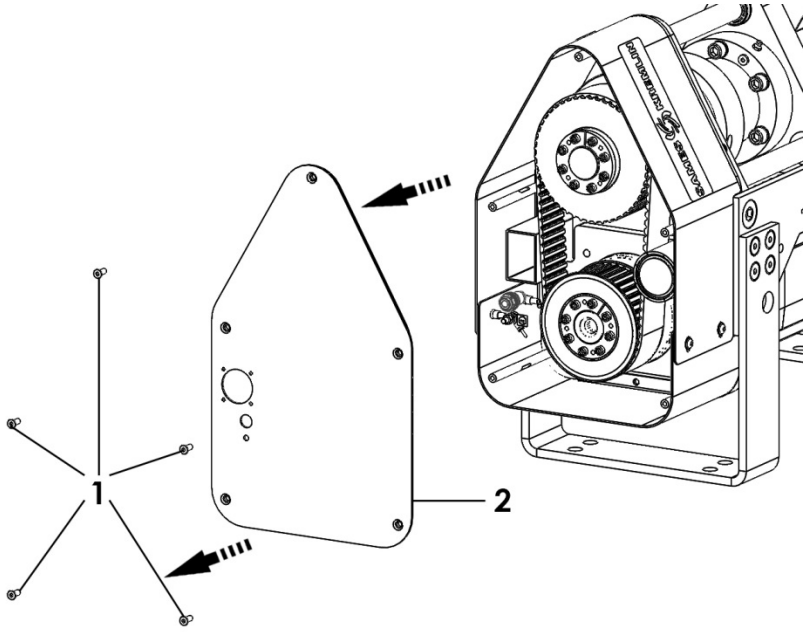
Before any intervention, it is imperative to follow the decompression procedure and the safety instructions.

Attention

Be sure to carry out disassembly operations for 2 persons, the weight and size of the shotmeter being important.

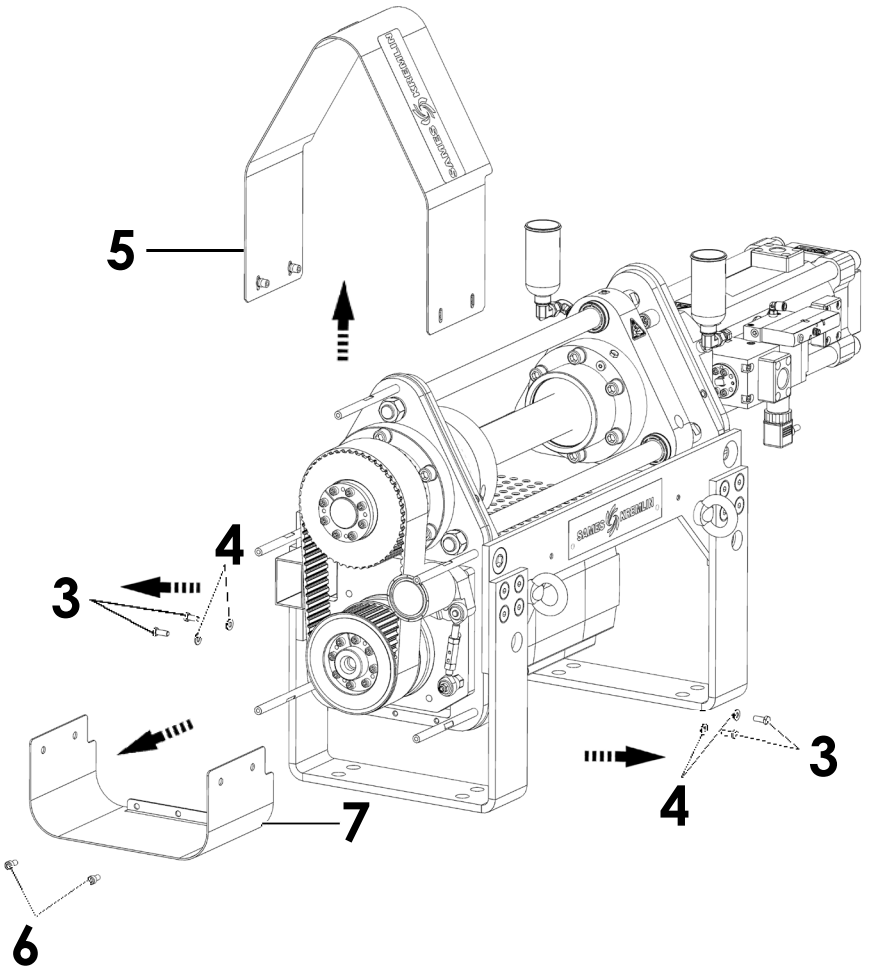
Prerequisite

- ✓ Unscrew the 4 screws with a 5 mm Allen wrench.
- ✓ Remove the 4 screws and the transparent cover.



- ✓ Remove the power, sensor, pressure sensor, inductive position sensor and solenoid valve connectors electro-valve.
- ✓ Unscrew the 5 screws (1) with a 5 mm Allen wrench.
- ✓ Remove the 5 screws and the cover (2).

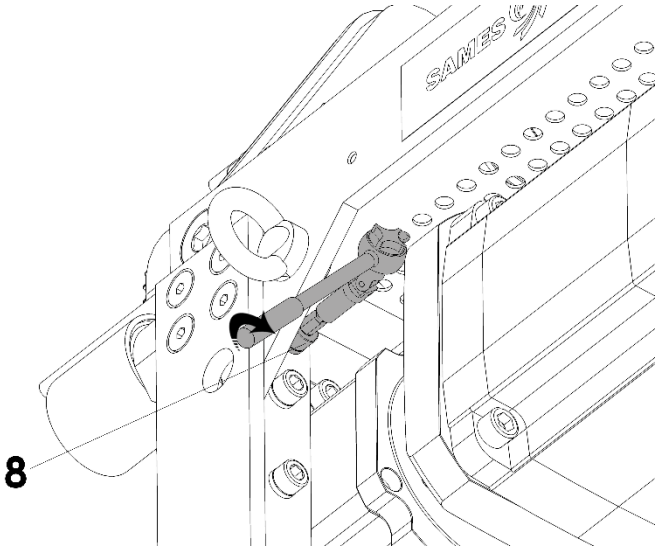
Tools needed



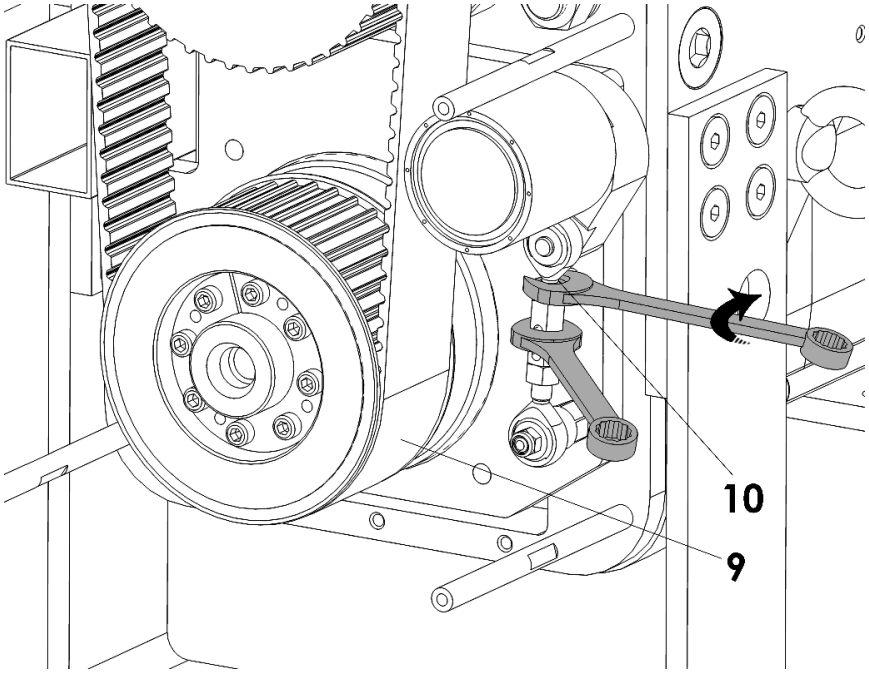
- ✓ Unscrew the 4 screws (3) using a 10 mm flat wrench.
- ✓ Remove the screws (3) and washers (4).
- ✓ Remove the upper casing (5).
- ✓ Unscrew the 2 screws (6) with a 5 mm Allen wrench.
- ✓ Remove the lower casing (7).

Tools needed

5  10 



✓ Loosen the screw (8) with an 8 mm ratchet wrench.

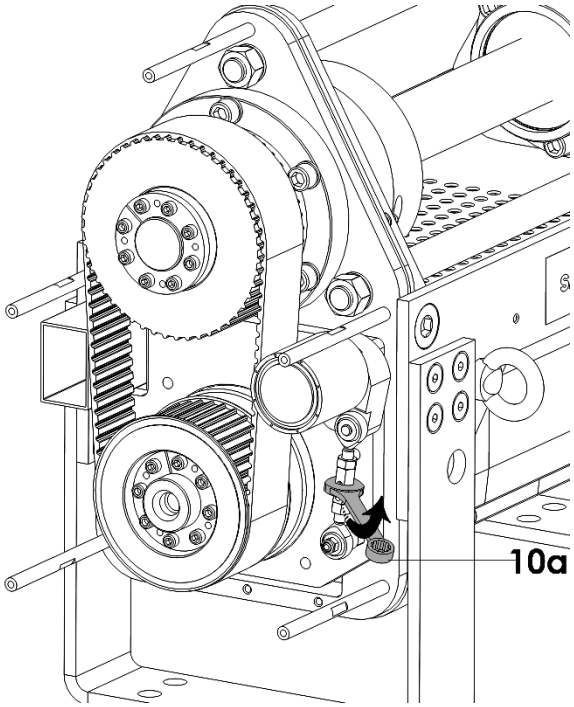


✓ Tighten the tensioning nut (10a) with a 13 mm flat wrench. The roller moves away from the belt.

Tools needed

13x2 

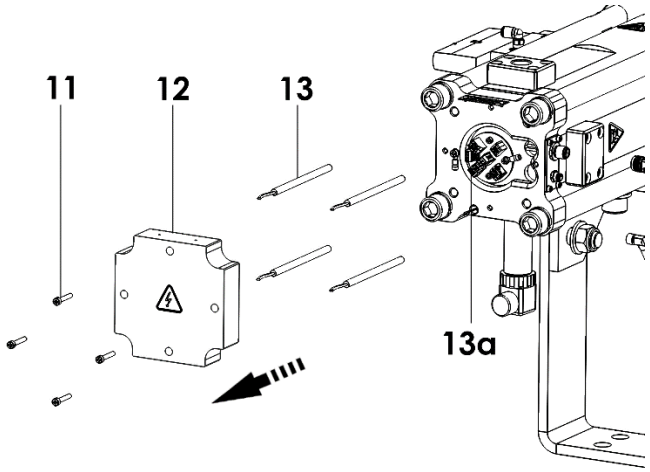
8 



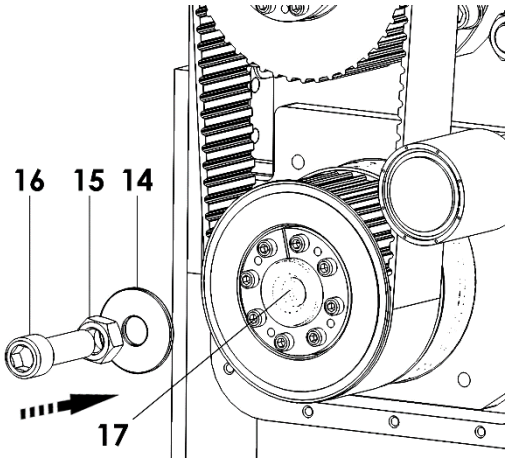
✓ Tighten the tensioning nut (10a) with a 13 mm flat wrench. The roller moves away from the belt.

Outillage nécessaire

13



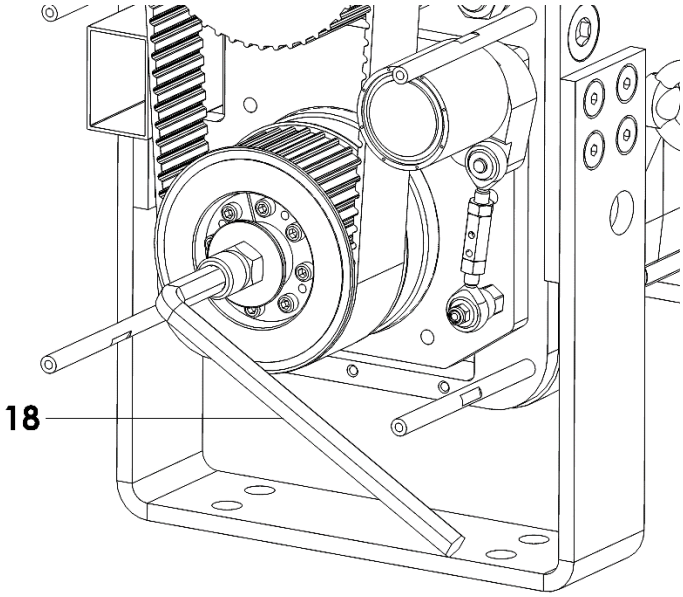
- ✓ Unscrew and remove the 4 screws (11) using a 3 mm Allen wrench. Remove the cover (12).
- ✓ Remove the 4 heating cartridges (13) and the probe (13a) from their housings.

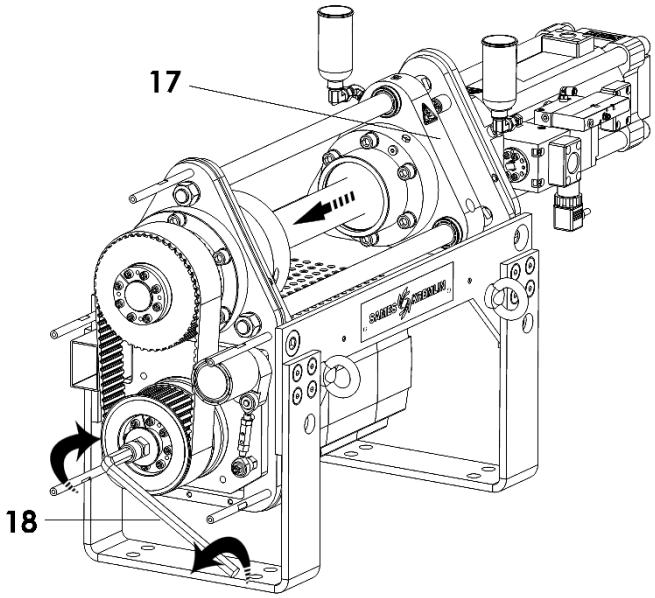


- ✓ Insert the washer (14), nut (15) and screw (16) assembly into the gearmotor shaft (17).
- ✓ Secure the screw (16) with the nut (15) using a 14 mm Allen wrench and a 24 mm open-end wrench.

Tools needed

3  **14**  **24** 

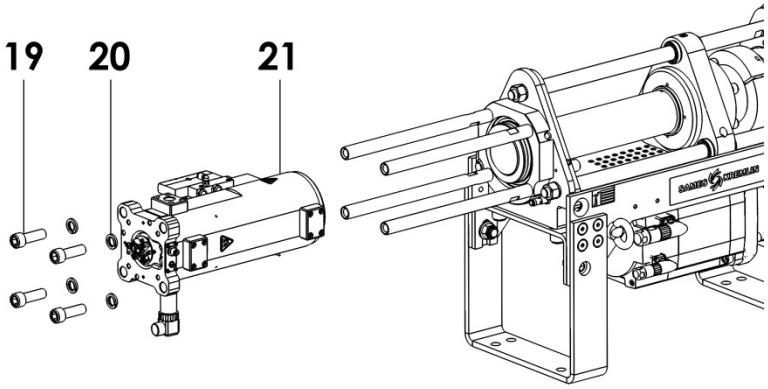




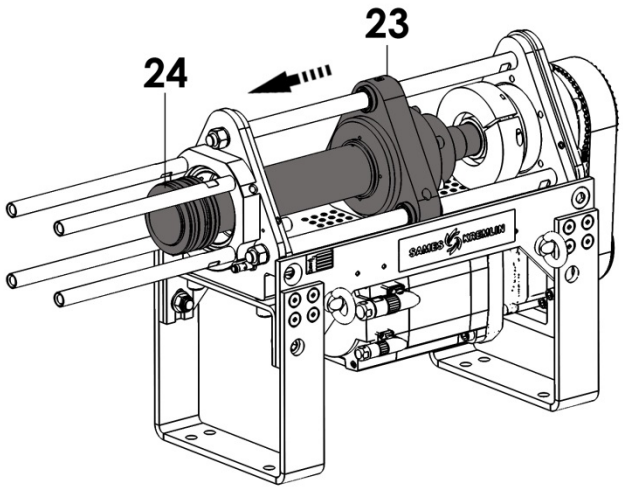
✓ Put the piston (17) in the upper position by turning the gear motor shaft clockwise with the 14 mm Allen wrench (18).

Tools needed

14 



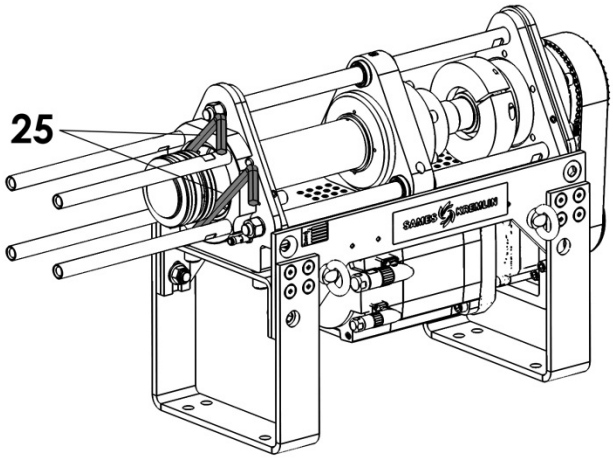
- ✓ Unscrew the 4 screws (19) using a 14 mm Allen wrench
- ✓ Remove the screws (19) and remove the washers (20)
- ✓ Remove the flange - valve - cylinder assembly (21). Be careful with the weight.



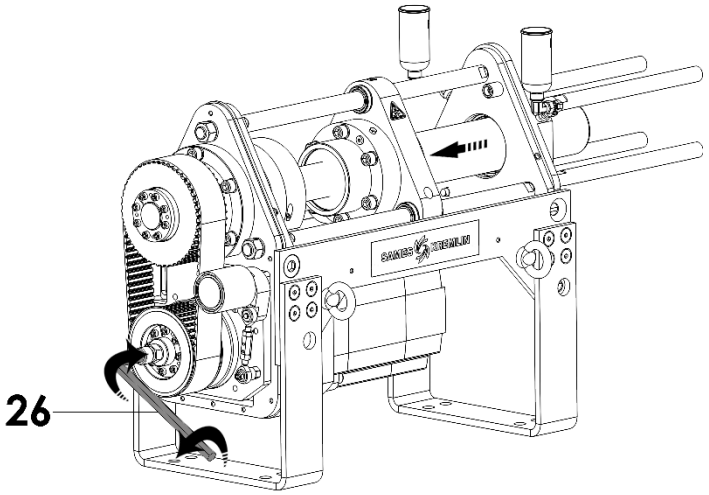
- ✓ Advance the piston assembly (23) with the 14 mm Allen wrench to remove the cartridge (24) from the body.

Tools needed

14

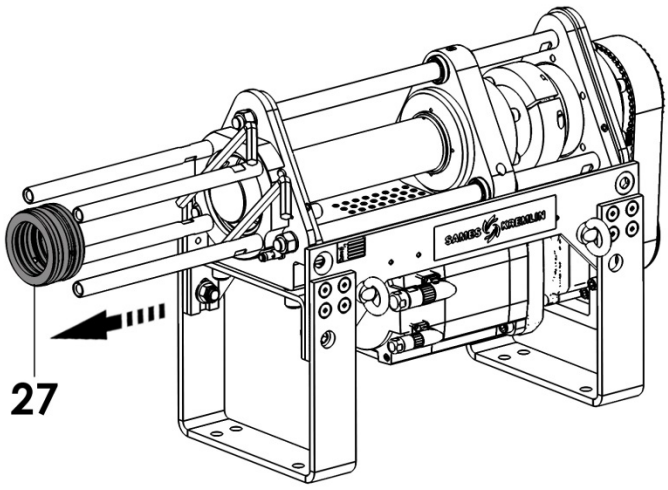


✓ Insert two shims (25) between the piston and the cartridge.

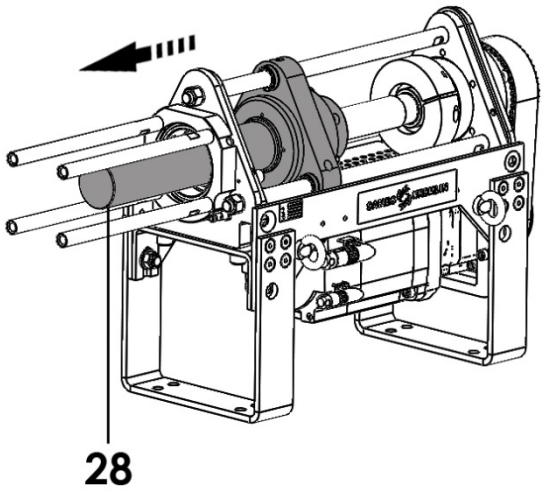


✓ Move the piston to the upper position by turning the gear motor shaft clockwise with the 14 mm Allen wrench (26).

Tools needed **14**



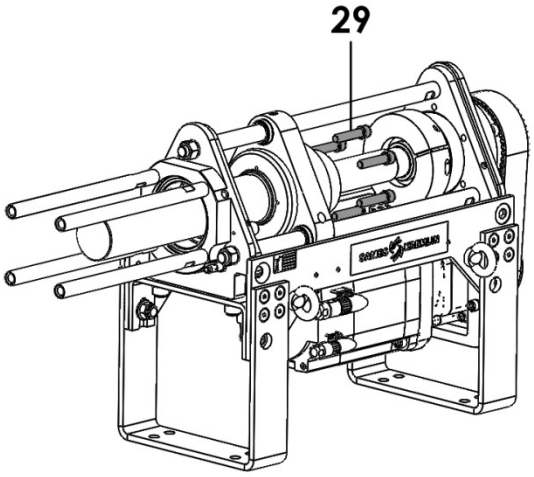
✓ The cartridge (27) is released.



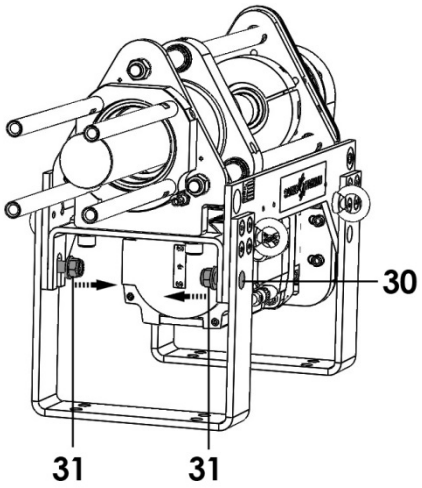
✓ Advance the piston assembly (28) with a 14 mm Allen wrench.

Tools needed

14 

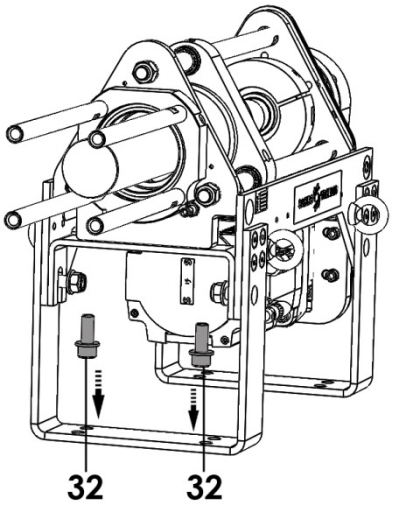


✓ Loosen the 6 screws (29) of the roller screw nut with a 10 mm Allen wrench.

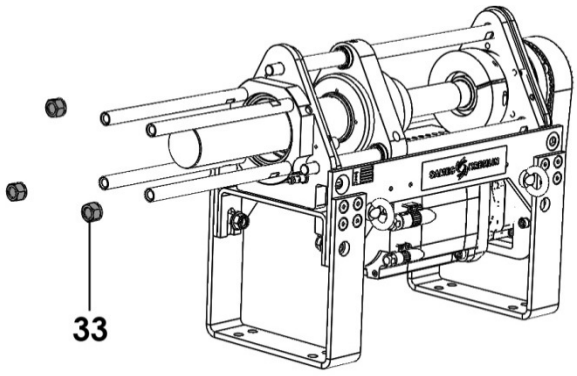


✓ Slightly loosen the 2 screws (30) with a 14 mm Allen wrench and the 2 nuts (31) with a 24 mm wrench.

Tools needed

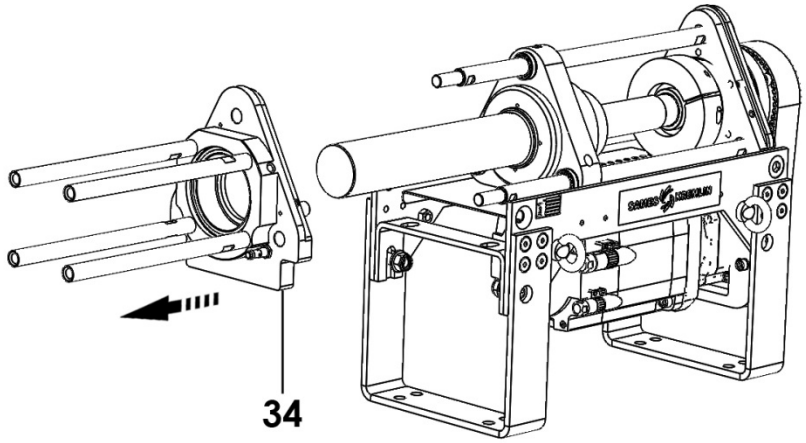


✓ Unscrew the 2 screws (32) using a 14 mm Allen wrench.

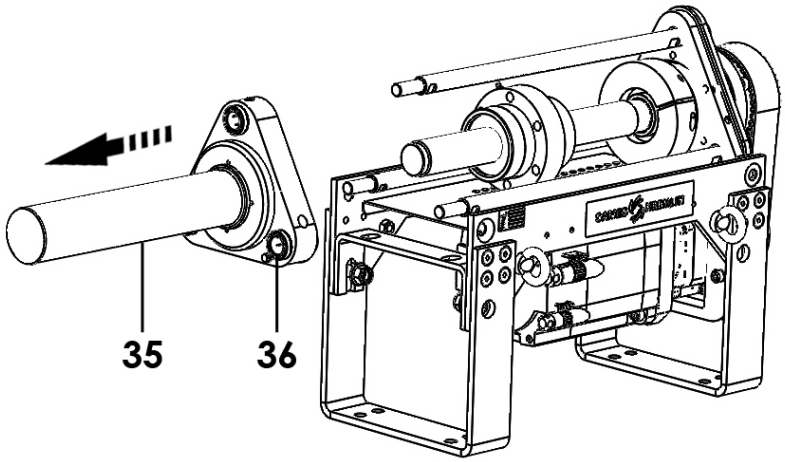


✓ Unscrew the 3 nuts (33) using a 27 mm wrench.

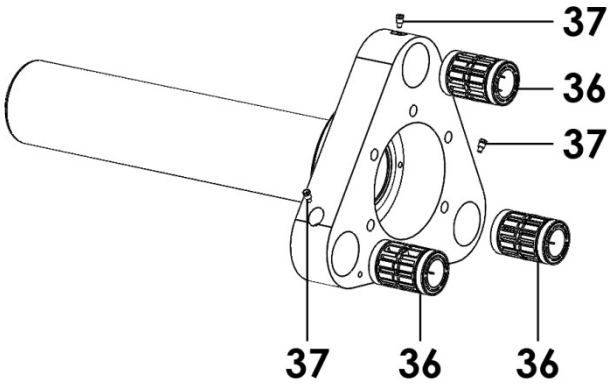
Tools needed **14**  **27** 



✓ Remove the upper dispenser body and tie rod assembly (34).



✓ Remove the piston assembly (35) equipped with the 3 guide bushes (36) from the guide pins,

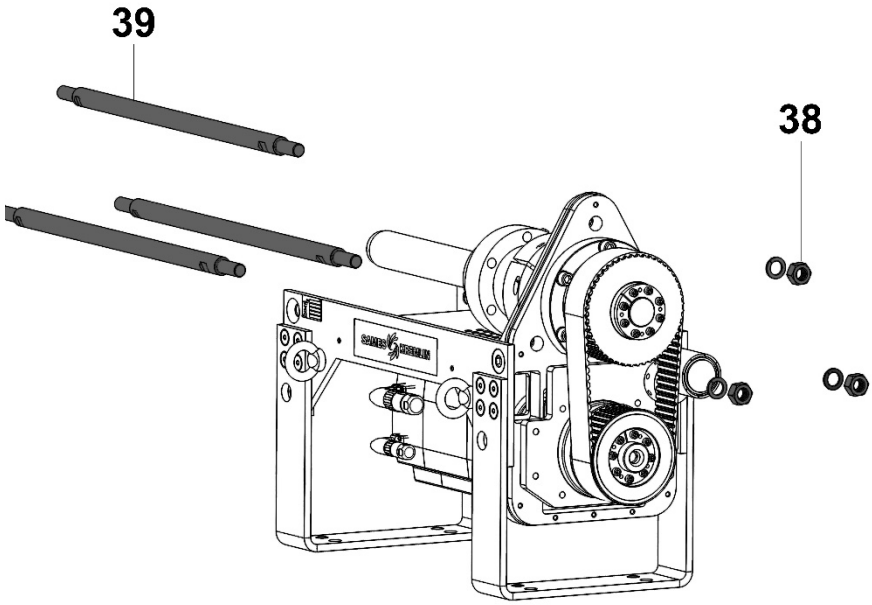


- ✓ Unscrew the grease nipples (37) with a 6 mm open-end wrench and remove the guide bushings (36).
- ✓ Clean the piston before reassembly or storage.
- ✓ Dismantle the seal cartridge as described in the procedure.
- ✓ Clean all parts in contact with the product before reassembly or storage.

Tools needed

6 

6 

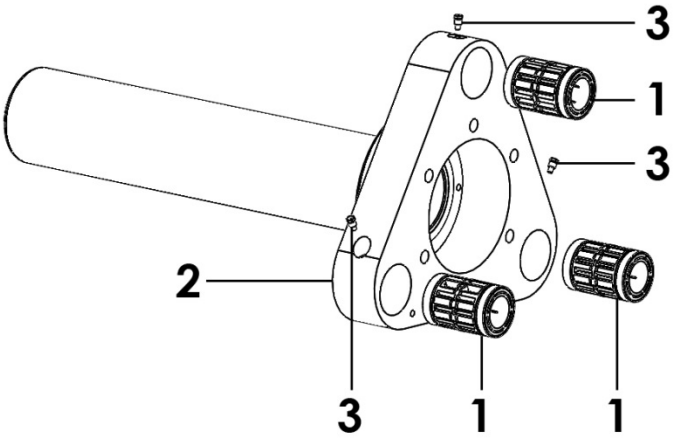


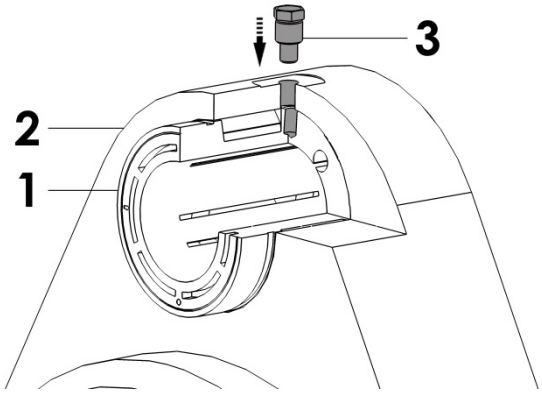
✓ Unscrew the nuts (38) with a 27 mm flat wrench and remove the guide pins (39) from the transmission plate.

Tools needed

27

10.14 Reassembly of guide pins



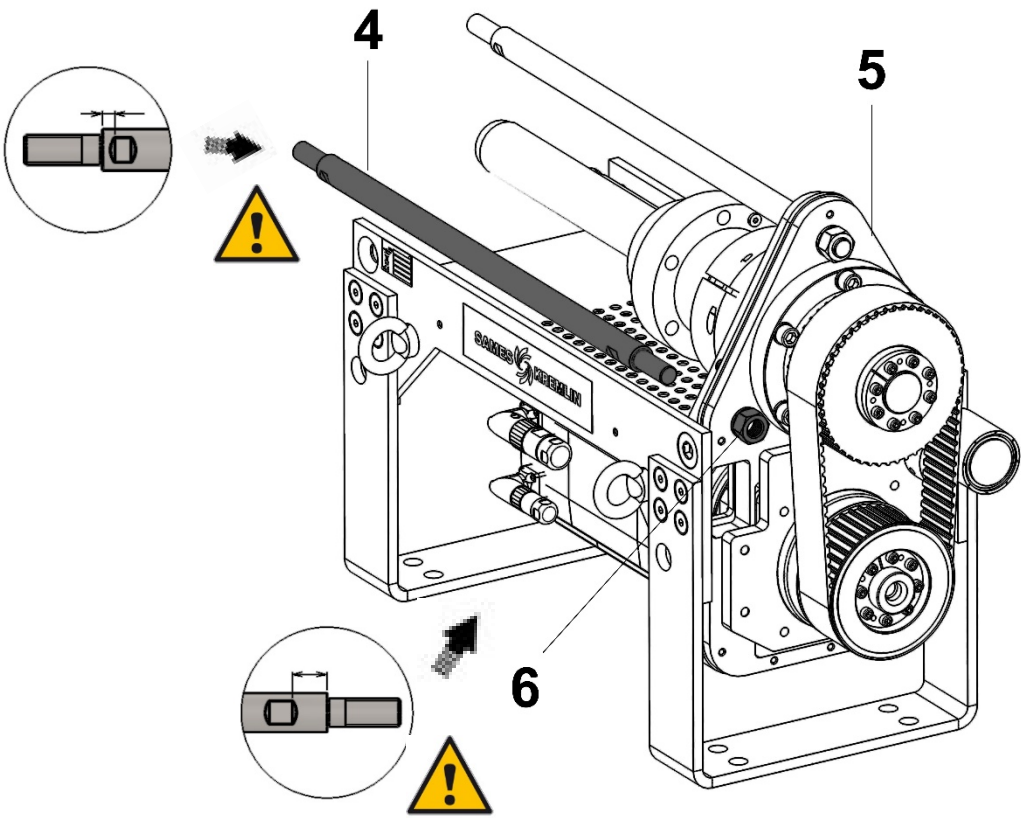


✓ Insert the sleeves (1) one by one into the recesses of the piston body (2) and screw on the grease nipples (3) using a 6 mm socket wrench. Be careful to align the hole of the bushing (1) with the grease nipple (3) in order to keep it in position and not to block it when pivoting.

Tools needed

6 

6 

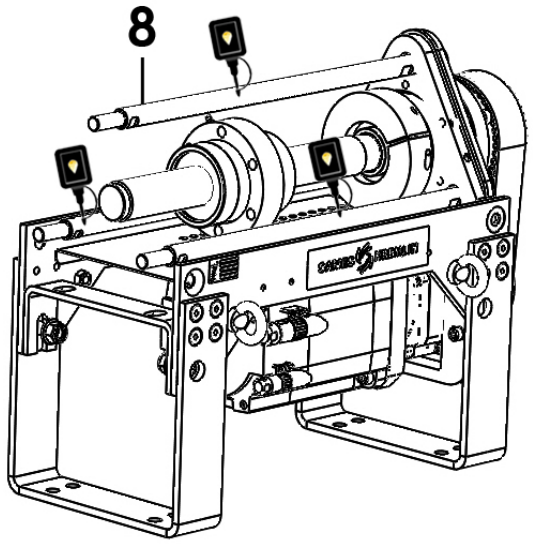


- ✓ Mount the guide pins (4) on the transmission plate (5), pre-tightening with the nut (6) and washer (7), using a 27 mm flat wrench.
- ✓ Pay attention to the mounting direction of the axes.

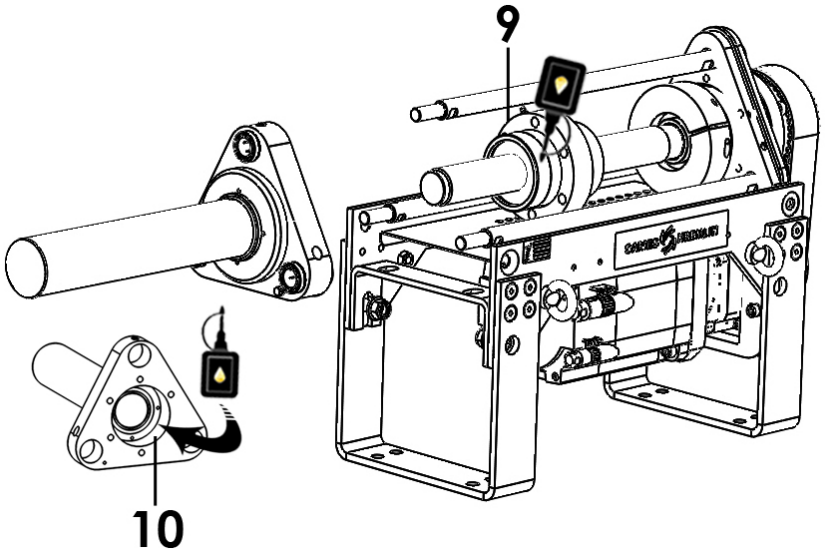
Do not torque prematurely

Tools needed

27



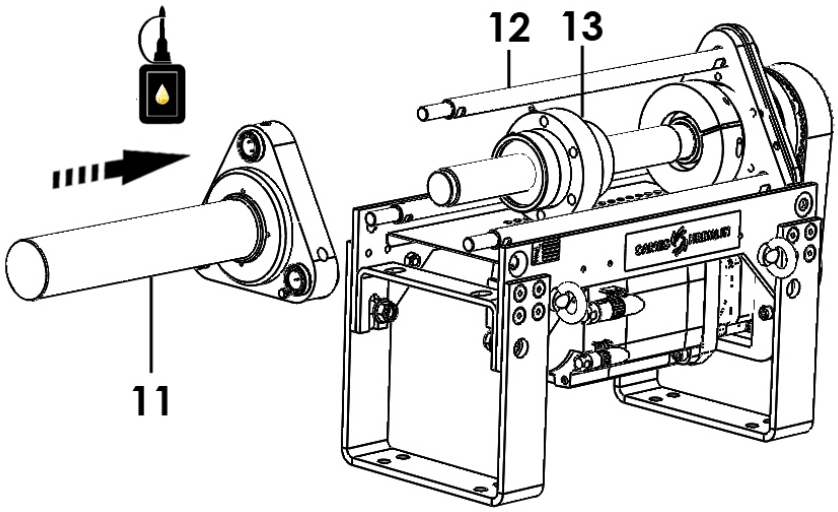
✓ Grease the guide pins (8).



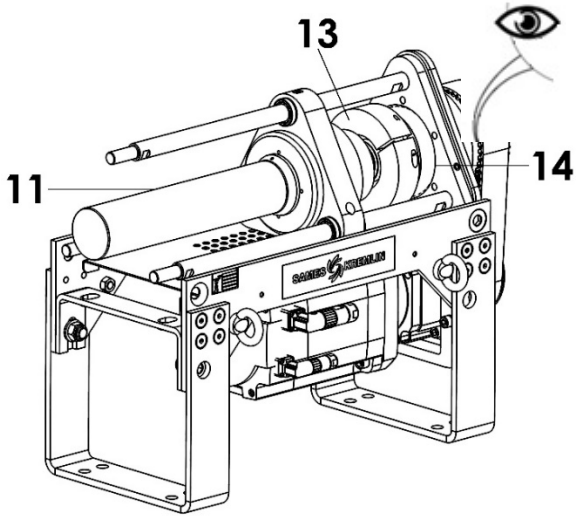
✓ Grease the nut of the roller screw (9).

✓ Grease the inside of the piston (10).

Tools needed

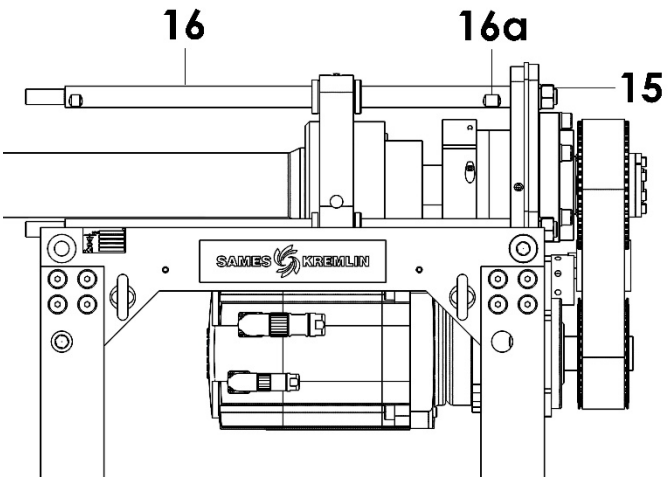


- ✓ Insert the piston bushing assembly (11) onto the guide pins (12).
- ✓ Slide the piston bushing assembly (11) until the nut of the roller screw (13) is in its seat.

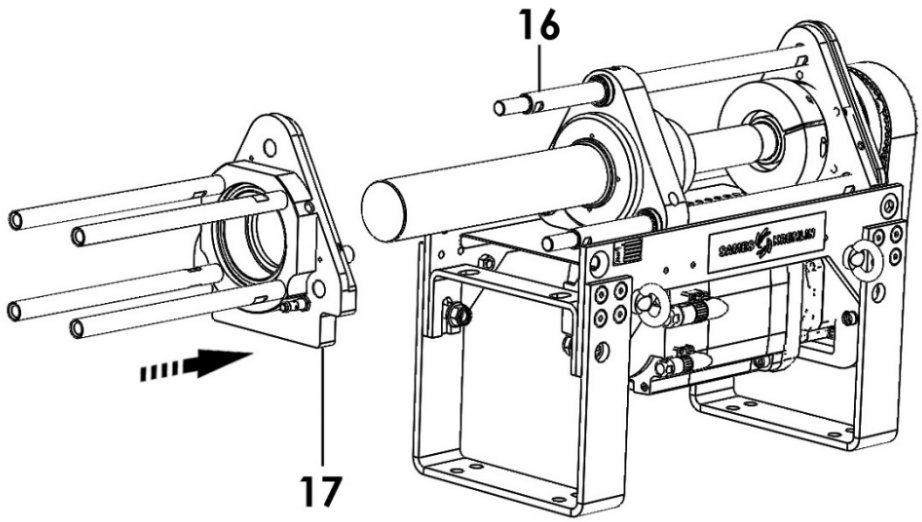


- ✓ Screw on the nut of the roller screw (13) by hand and put on the piston assembly (11). Place the nut of the roller screw (13) against the upper stop (14).

Tools needed



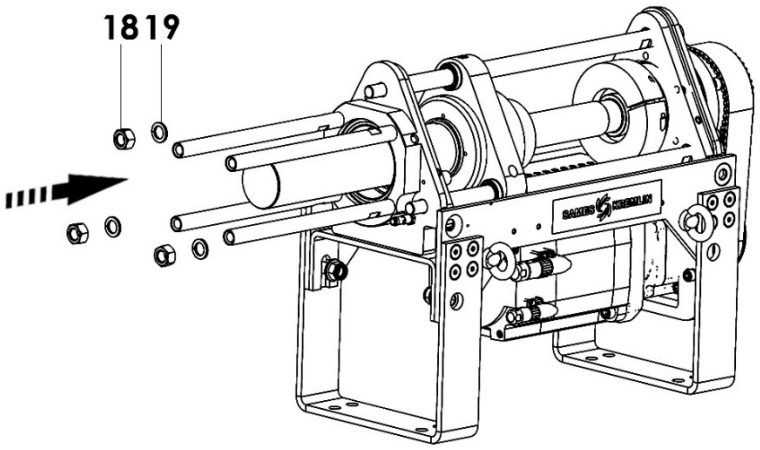
- ✓ Hold the guide pins (16) at the flats (16a) with a 27 mm flat wrench.
- ✓ Tighten the M18 nuts (15) to a torque of 190 N.m. using a 27 mm torque wrench.



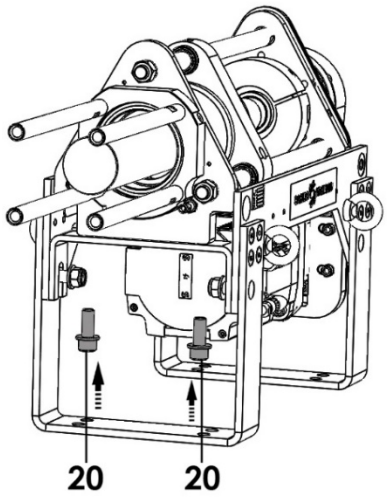
- ✓ Place the upper body and tie rod assembly (17) on the guide pins (16).

Tools needed

27



- ✓ Place the 3 washers (19) and the 3 nuts (18).
- ✓ Gradually tighten the assembly with the nuts (18) and washers (19) in a star pattern to a torque of 190 N.m using a 27 mm torque wrench.

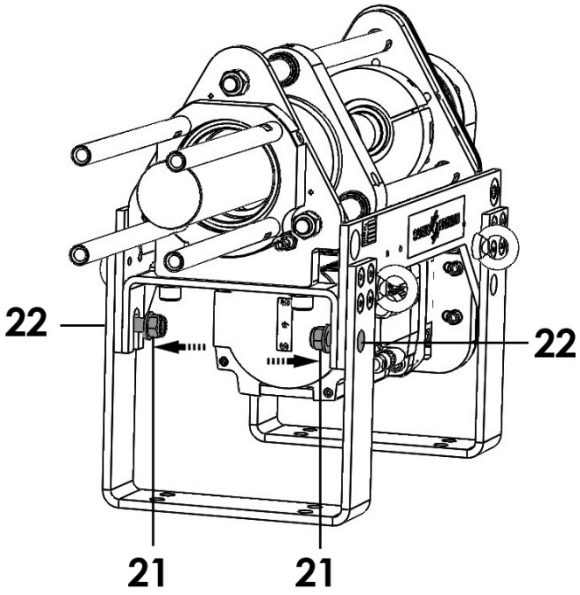


- ✓ Put the 2 washers (19) and the 2 screws (20) in place. Tighten the 2 screws (13) with a 14 mm Allen wrench to a torque of 60 N.m.

Tools needed

27

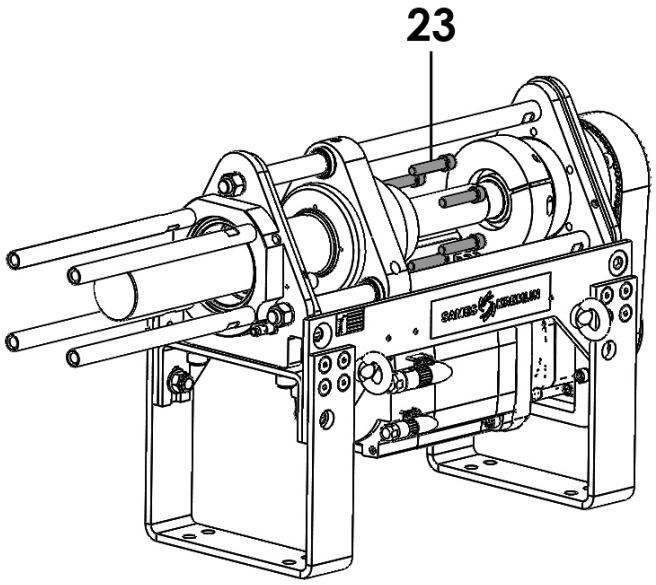
14



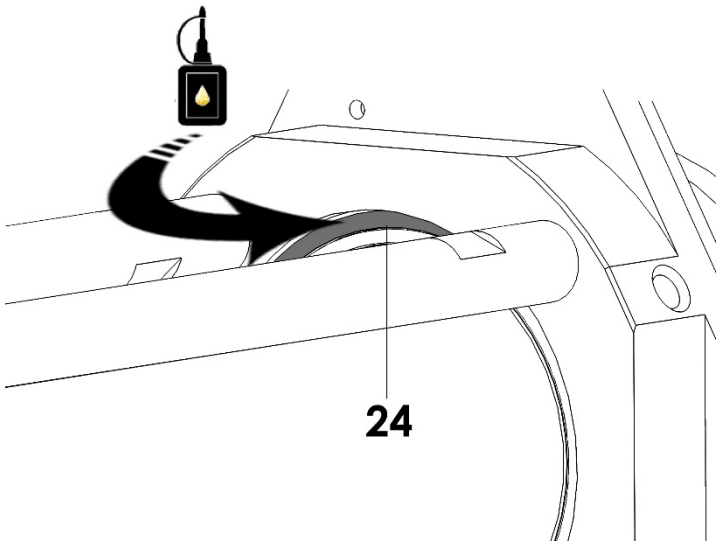
✓ Hold the nuts (21) with their washers with a 24 mm flat wrench and tighten the screws (22) with a 14 mm torque wrench to 60 N.m..

Tools needed

14  **24**  



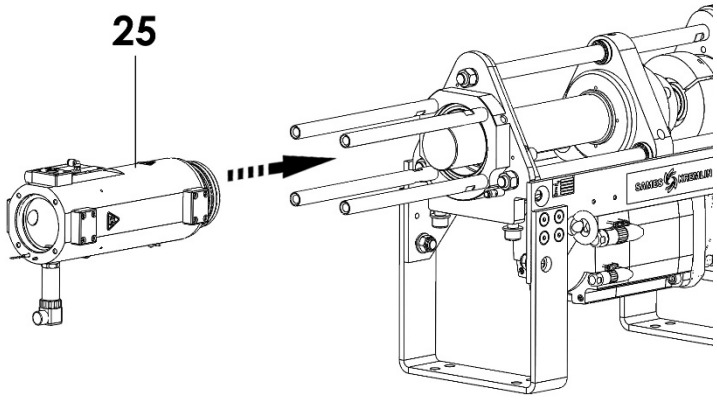
✓ Tighten the 6 screws (23) of the roller screw nut with a 10 mm Allen wrench to a torque of of 80 N.m..



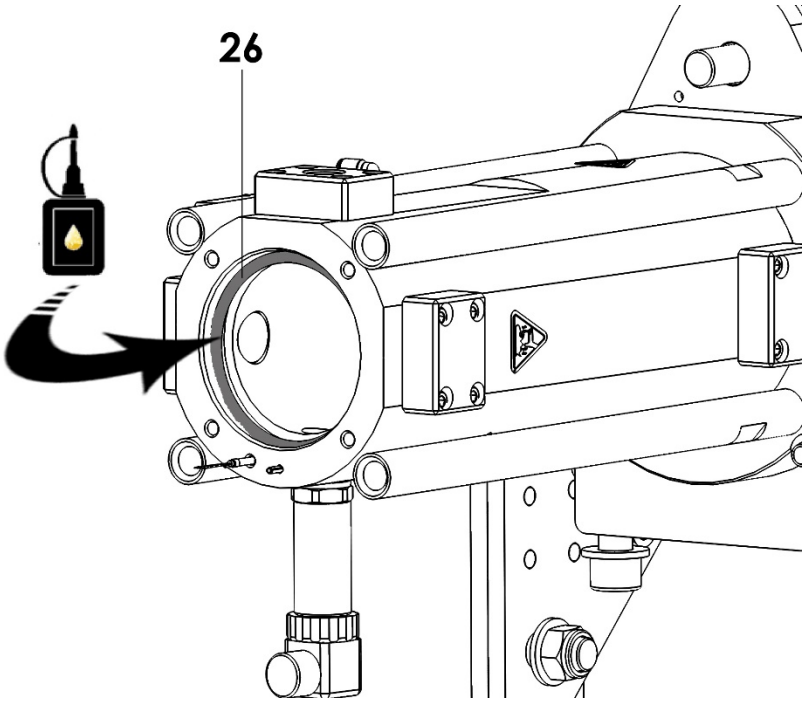
✓ Grease the seal (24).

Tools needed

10

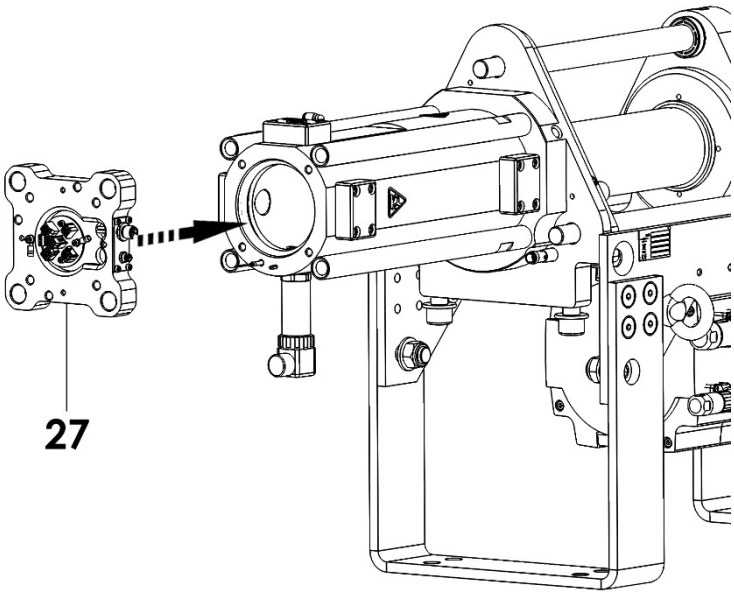


✓ Put the cylinder (25) in place.

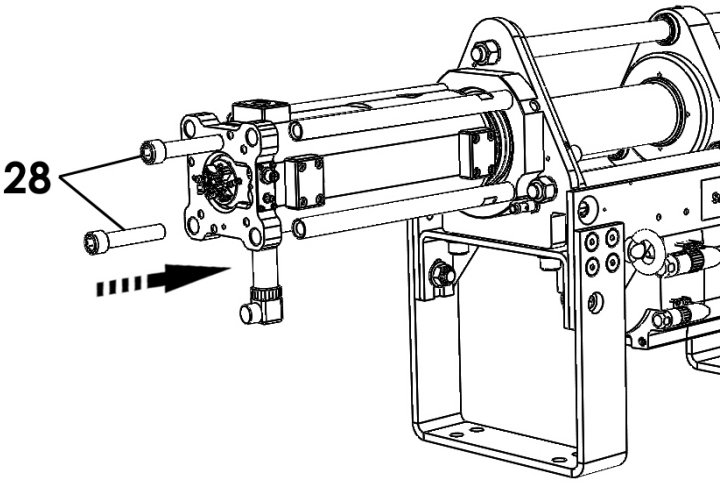


✓ Grease the seal (26).

Tools needed

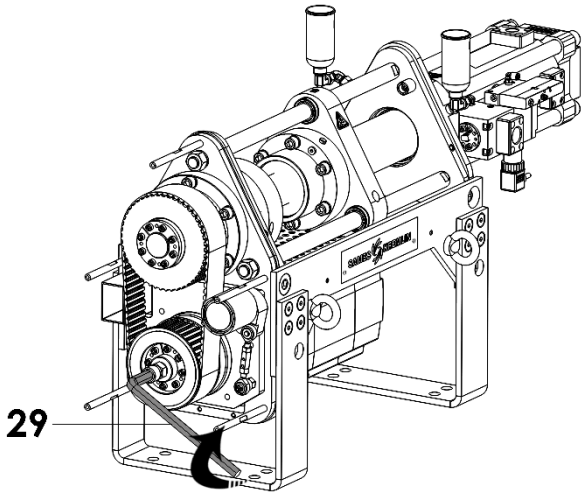


✓ Put the flange (27) in place (pay attention to the orientation).

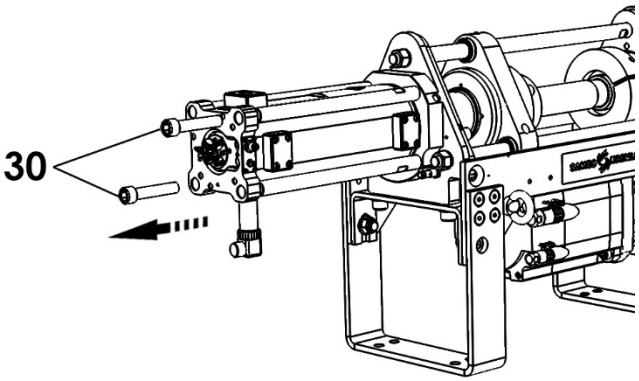


✓ Pre-tighten progressively with 2 screws M16x 90 (28) in a cross pattern to hold the cartridge-lid assembly in position.

Tools needed **14**  **M16x90 X2** 

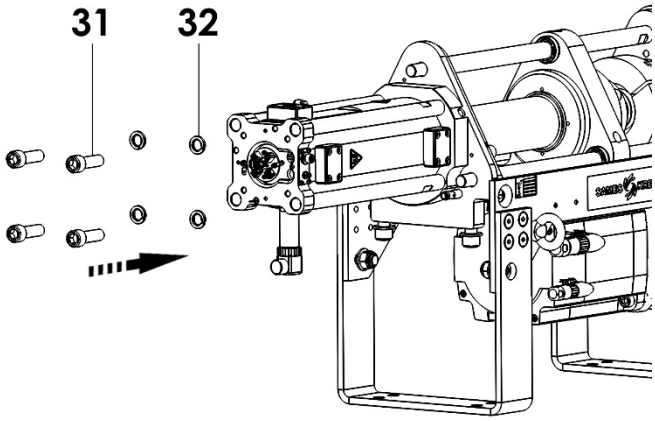


✓ Turn the piston half way by turning the gearmotor shaft counterclockwise with a 14 mm Allen wrench (29).



✓ Remove the 2 M16x90 screws (30).

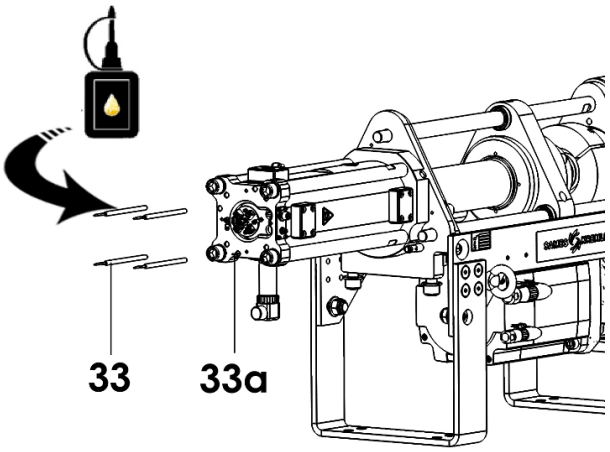
Tools needed **14**  **M16x90 X2** 



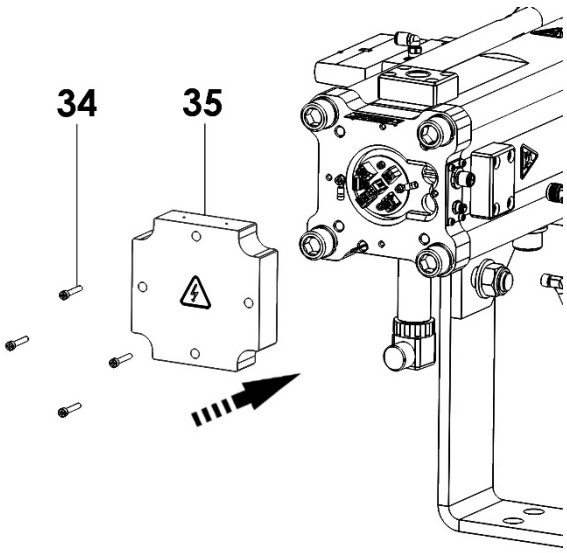
- ✓ Put in place the 4 washers (32) and the 4 M16X60 screws (31).
- ✓ Tighten progressively in a star pattern the 4 M16X60 screws (31) and washers (32) with a 14 mm Allen wrench and a torque of 130 N.m.

Tools needed

14

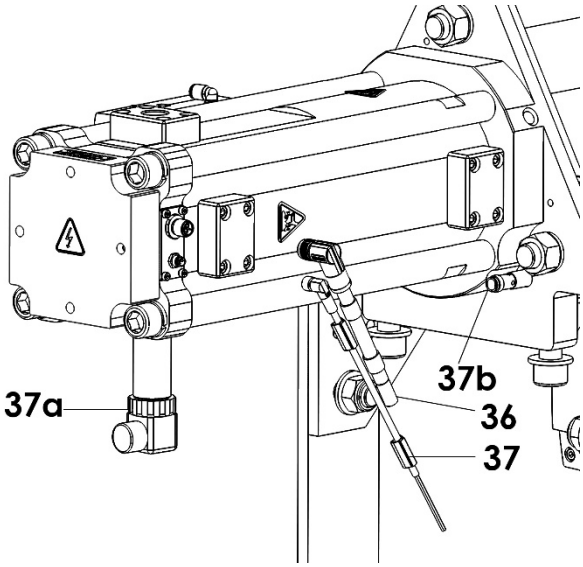


- ✓ Grease the heating cartridges (33) with thermal paste (MI-setral-9M) before putting them back in their housing.
- ✓ Replace the probe (33a) in its housing.

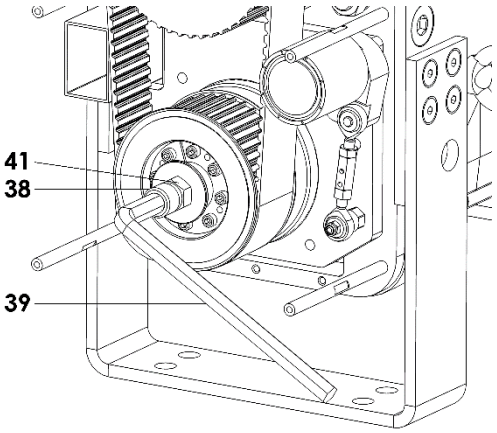


- ✓ Put the cover (34) in place and screw in the screws (35) using a 3 mm Allen wrench.

Tools needed



✓ Replace the power connectors (36), heating sensor (37), pressure sensor (37a), inductive position sensor (37b) and electro-distributor.



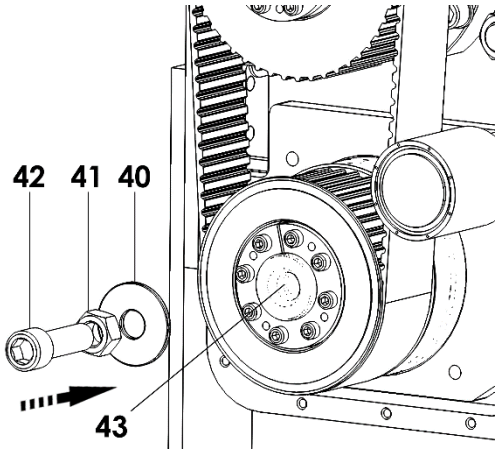
✓ Hold the screw (38) with the 14 mm Allen wrench and unscrew the nut (41) with the 24 mm wrench.

✓

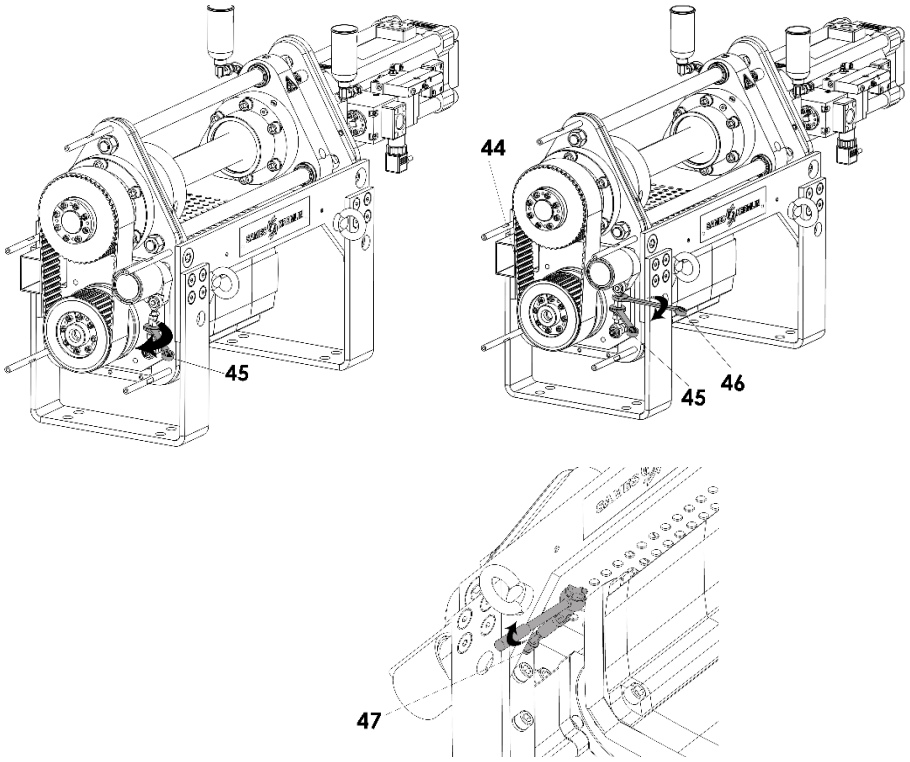
Tools needed

14 

24 



- ✓ Unscrew the screw (42) completely.
- ✓ Remove the screw (42), nut (41) and washer (40) from the gear motor shaft (33).



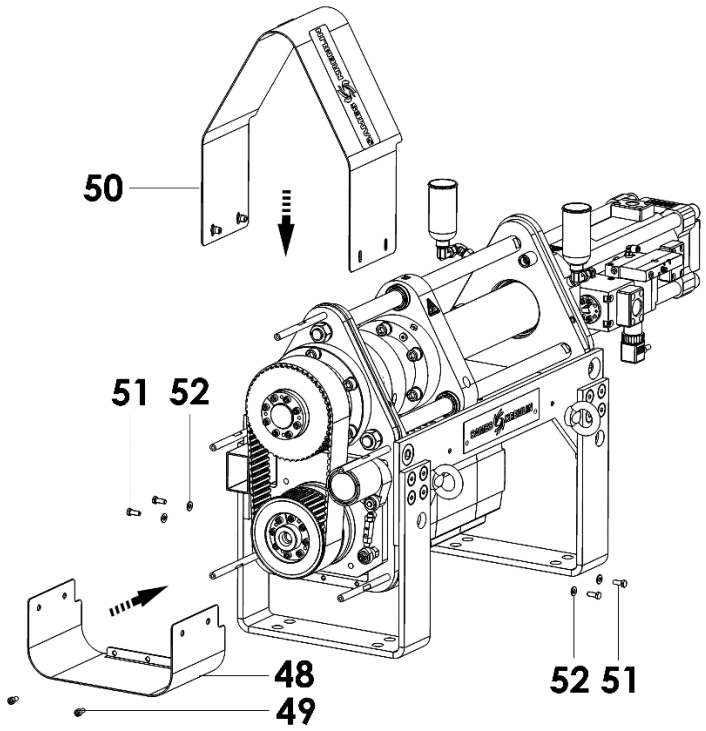
✓ Adjust the belt tension using a frequency meter and follow the procedure below:

- *Loosen the tensioning nut with a 13 mm flat wrench (45), the roller will approach the belt until the correct belt tension is achieved.*
- *Check the belt tension by vibrating the slack side (item 44) with a non-contact tool. The measuring device gives the resonance frequency.*
- *Tighten the lock nut with a 13 mm flat wrench (46) on the tensioning nut, holding it with the other 13 mm flat wrench (45).*
- *Tighten with the 8 mm torque wrench (47) to a torque of 80 N.m..*

Caution: Do not exceed the desired tension level as the belt will take some time to retension.

Belt tension (N.m.)	*1000*
Harmonic (Hz)	*150*

Tools needed **13x2**  **8** 

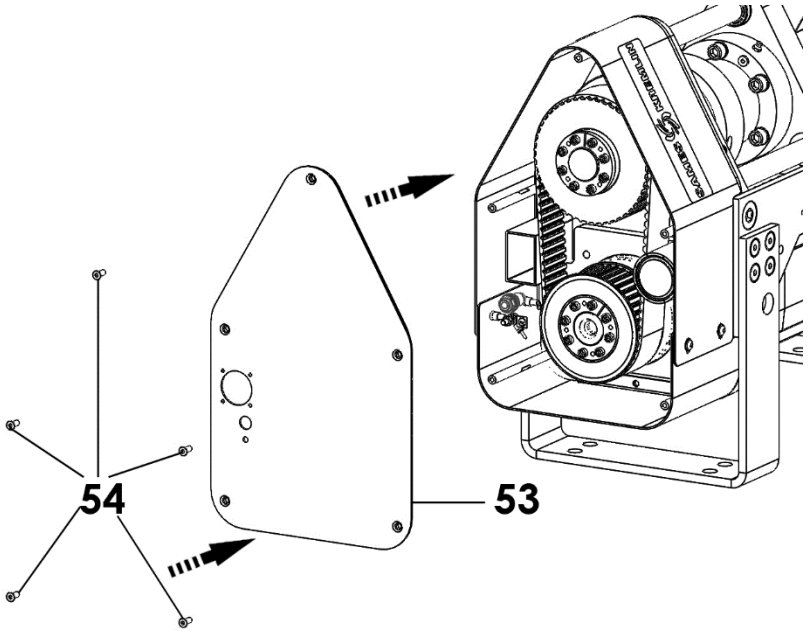


- ✓ Reposition the lower casing (48) and screw in the 2 screws (49) using a 5 mm Allen wrench.
- ✓ Reposition the upper housing (50). Place the washers (52) and screw in the 4 screws (51) using a 10 mm flat wrench.

Tools needed

5 

10 



- ✓ Reposition the cover (53) and screw in the 5 screws (54) using a 4 mm Allen wrench.
- ✓ Reposition the transparent cover by screwing in the 4 screws using a 2.5 mm Allen wrench.

✓ **Attention**

It is essential to check the position sensor setting (see chapter on reassembling the position sensor).

Tools needed

10.15 Disassembly of cylinder inlet valve

Attention

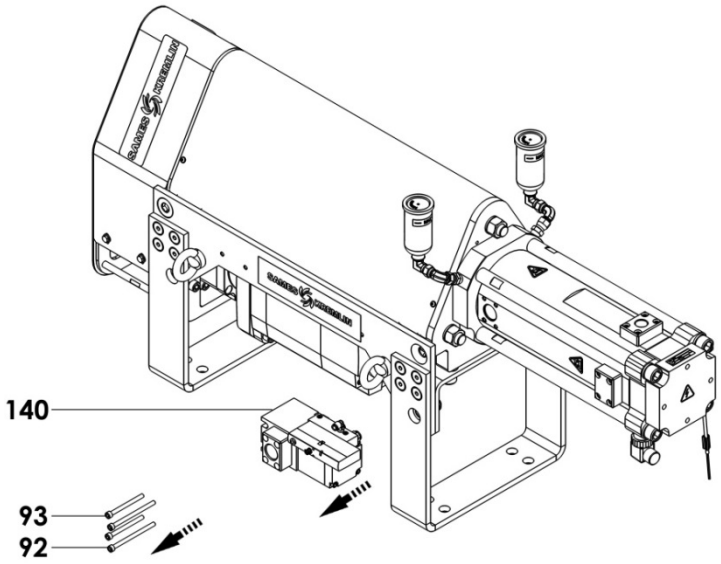
Only qualified SAMES KREMLIN personnel are authorized to carry out maintenance work.

Attention

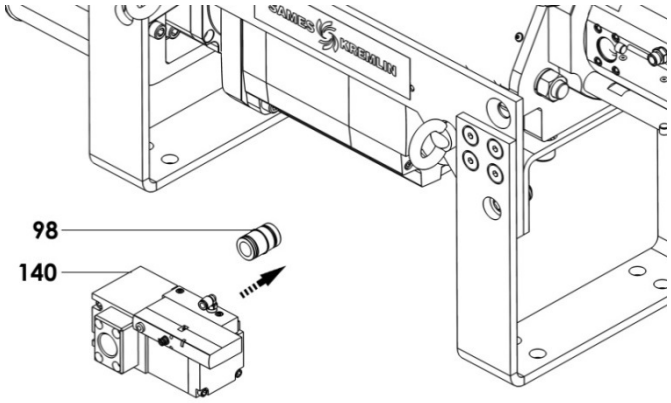
Before any intervention, it is imperative to follow the decompression procedure and the safety instructions.

Attention

Be sure to carry out disassembly operations for 2 persons, the weight and size of the shotmeter being important.



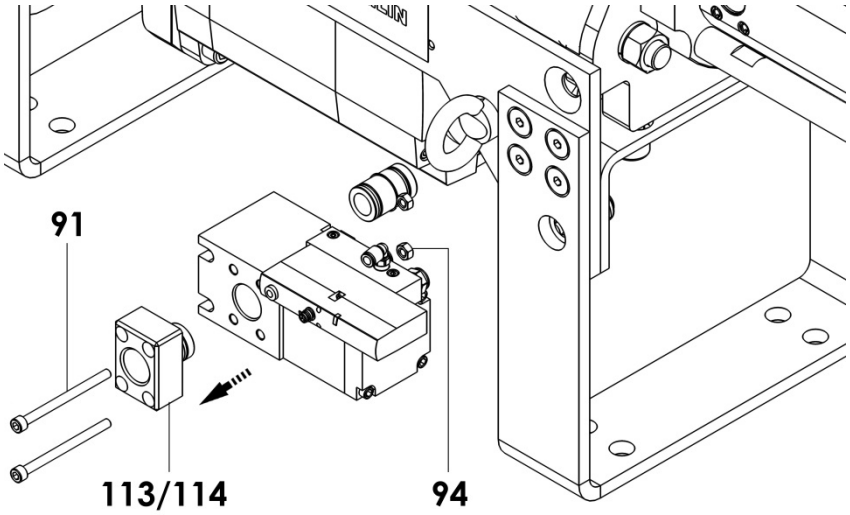
- ✓ Disconnect the M8 connector and the air supply hose from the solenoid valve.
- ✓ Unscrew the 2 M6X90 screws (92) and the 2 M6X70 screws (93) using a 5 mm Allen wrench.
- ✓ Remove the valve (140) from the dispencer.



- ✓ Remove the nozzle (98) from the cylinder or valve body.

Tools needed

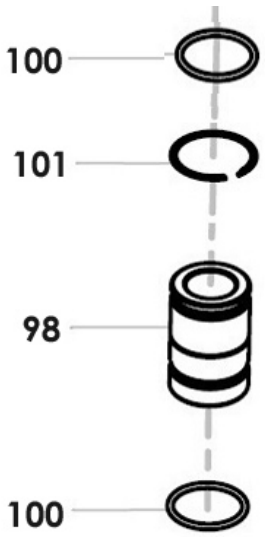
5



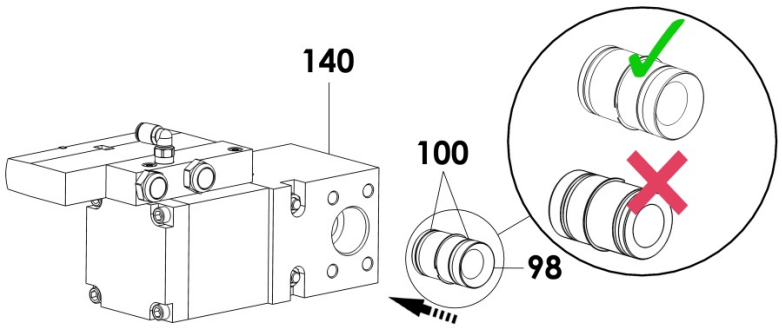
- ✓ Unscrew the 2 screws (91) M6x80 with a 5 mm Allen wrench and remove the adapter (113 or 114) from the valve body.
- ✓ Clean all parts in contact with the product before reassembly or storage. See the valve manual for repair.

Tools needed

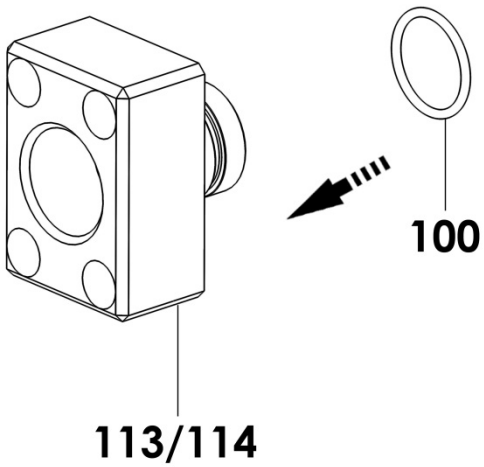
10.16 Reassembly of cylinder inlet valve



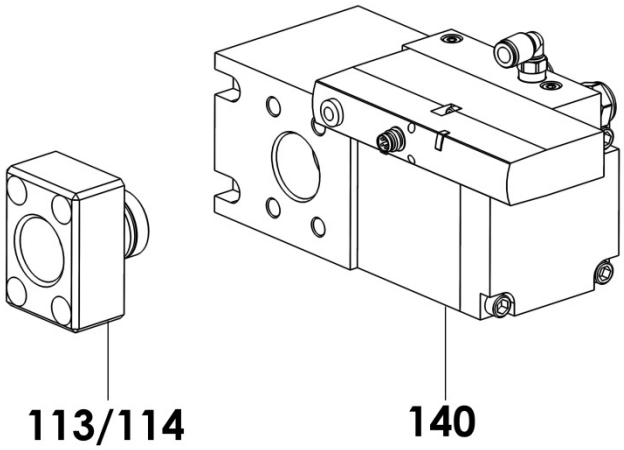
✓ If necessary, change the seals (100) and the ring (101)..



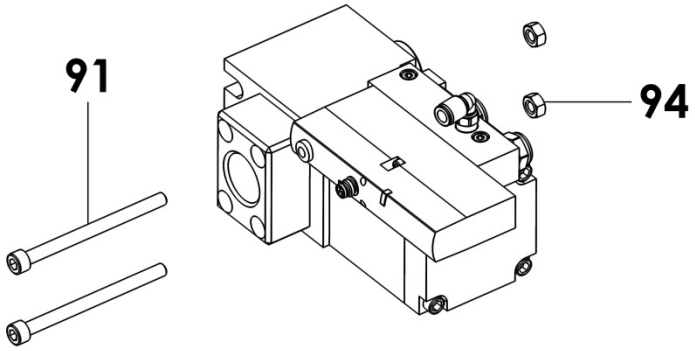
✓ Grease the seals (100) of the equipped nipple (98) and place it in the hole of the valve cylinder (140), checking the direction.



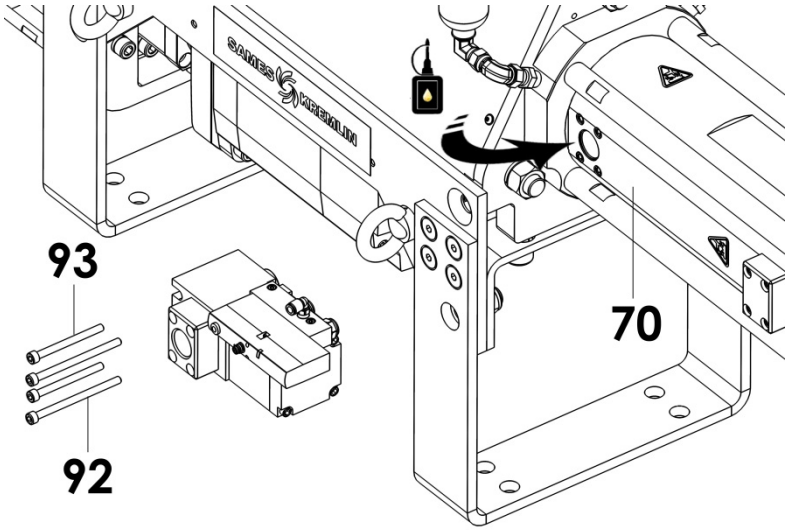
✓ Grease and change the seal (100) on the adapter (113/114) if necessary.



✓ Insert the adapter (113 or 114) into the valve body (140).



✓ Put in the 2 screws (91) M6x80 and the 2 nuts (94) and tighten them.



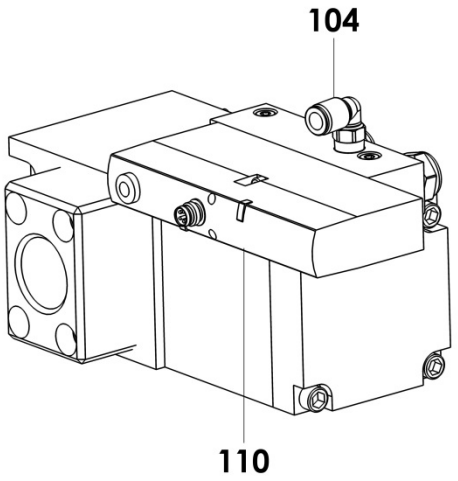
✓ Grease the cylinder hole (70).

✓ Using a 5 mm Allen wrench, screw in the screws (92) M6x90 and (93) M6x70, respecting the location and following the length.

✓ Finish tightening all the screws (91) (92) and (93) in a star pattern to a torque of 7.2 N.m. with a 5 mm torque wrench.

Tools needed

5  



✓ Reconnect the M8 harness connector to the solenoid valve (110) and the air supply hose to the fitting (104).

10.17 Disassembly-reassembly of plugs and adapters

Attention

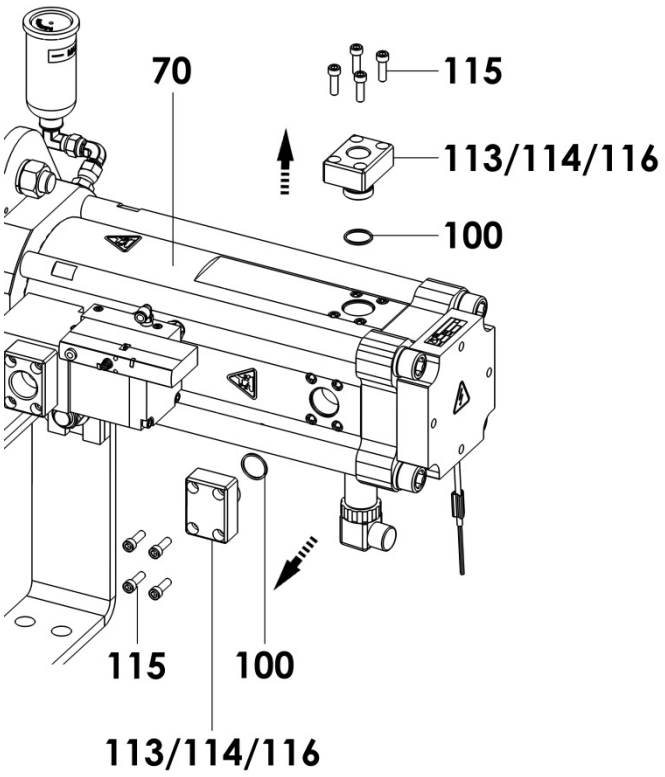
Only qualified SAMES KREMLIN personnel are authorized to carry out maintenance work.

Attention

Before any intervention, it is imperative to follow the decompression procedure and the safety instructions.

Attention

Be sure to carry out disassembly operations for 2 persons, the weight and size of the shotmeter being important.



- ✓ Unscrew the 4 screws (115) with a 5 mm wrench and remove the plug (116) or the adapter (113 or 114) as appropriate.
- ✓ Remove the seal (100).
- ✓ Grease the gasket (100).
- ✓ Position the gasket (100) in the groove of the plug (116) or adapter (113 or 114) as appropriate.
- ✓ Insert the plug (116) or adapter (113 or 114) into the hole in the cylinder (70).
- ✓ Using a torque wrench, tighten the 4 screws (115) crosswise to a torque of 7.2 N.m..

Tools needed

5

10.18 Disassembly of geared motor

Attention

Only qualified SAMES KREMLIN personnel are authorized to carry out maintenance work.

Attention

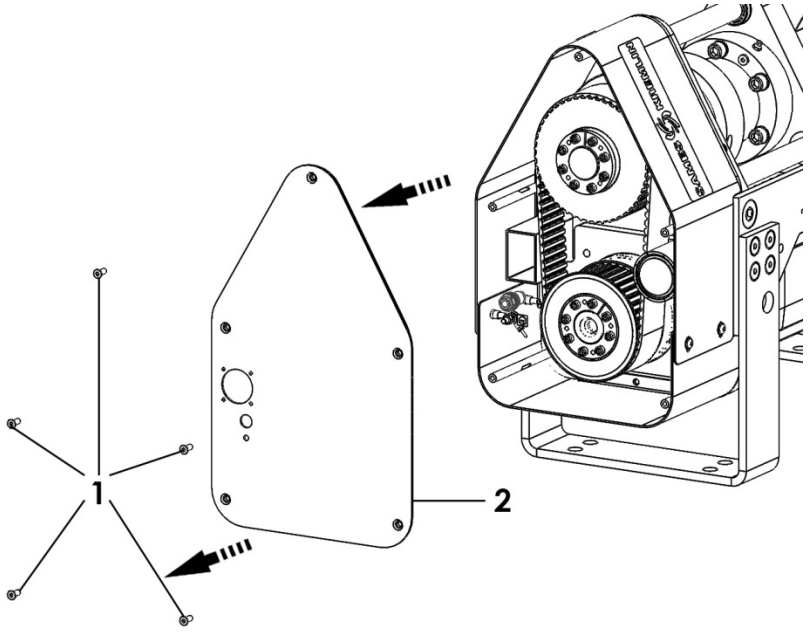
Before any intervention, it is imperative to follow the decompression procedure and the safety instructions.

Attention

Be sure to carry out disassembly operations for 2 persons, the weight and size of the shotmeter being important.

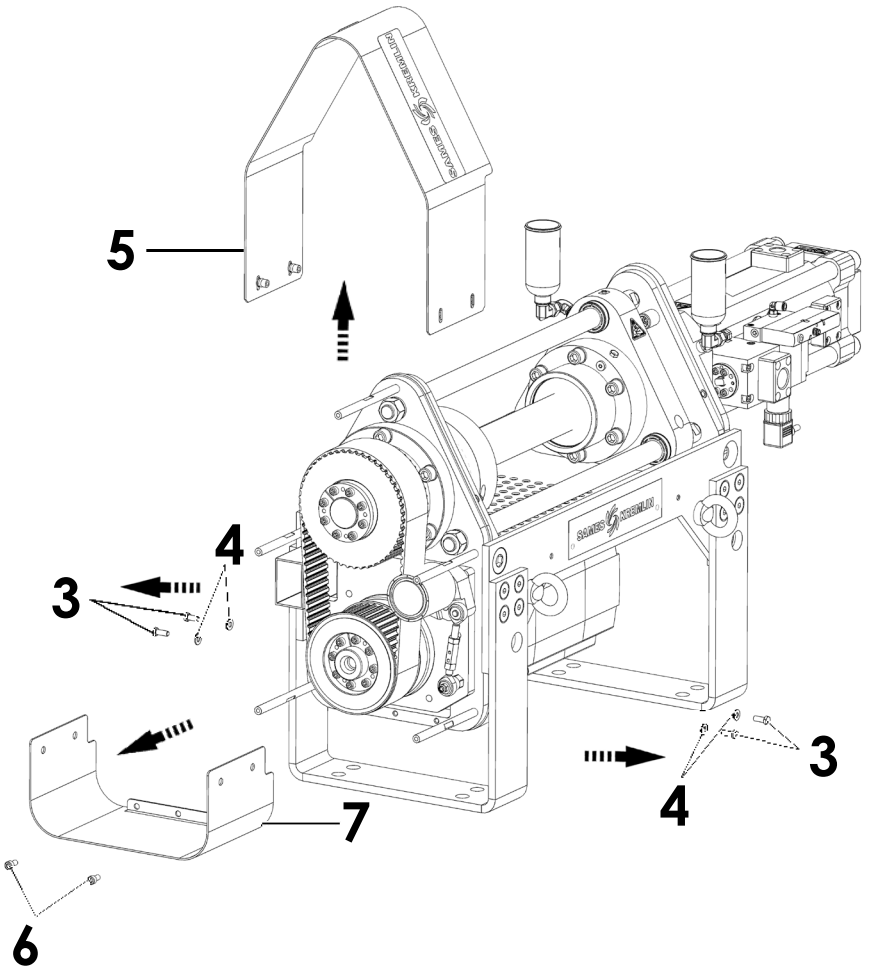
Prerequisite

- ✓ Unscrew the 4 screws with a 5 mm Allen wrench.
- ✓ Remove the 4 screws and the transparent cover.



- ✓ Remove the power, sensor, pressure sensor, inductive position sensor and solenoid valve connectors electro-valve.
- ✓ Unscrew the 5 screws (1) with a 5 mm Allen wrench.
- ✓ Remove the 5 screws and the cover (2).

Tools needed

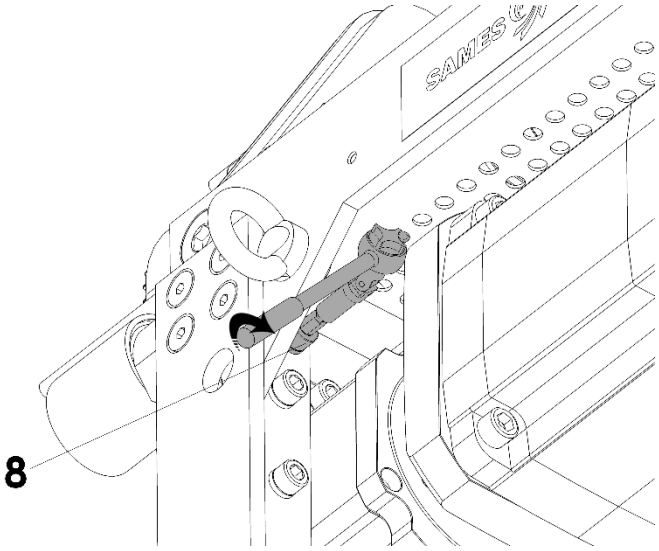


- ✓ Unscrew the 4 screws (3) using a 10 mm flat wrench.
- ✓ Remove the screws (3) and washers (4).
- ✓ Remove the upper casing (5).
- ✓ Unscrew the 2 screws (6) with a 5 mm Allen wrench.
- ✓ Remove the lower casing (7).

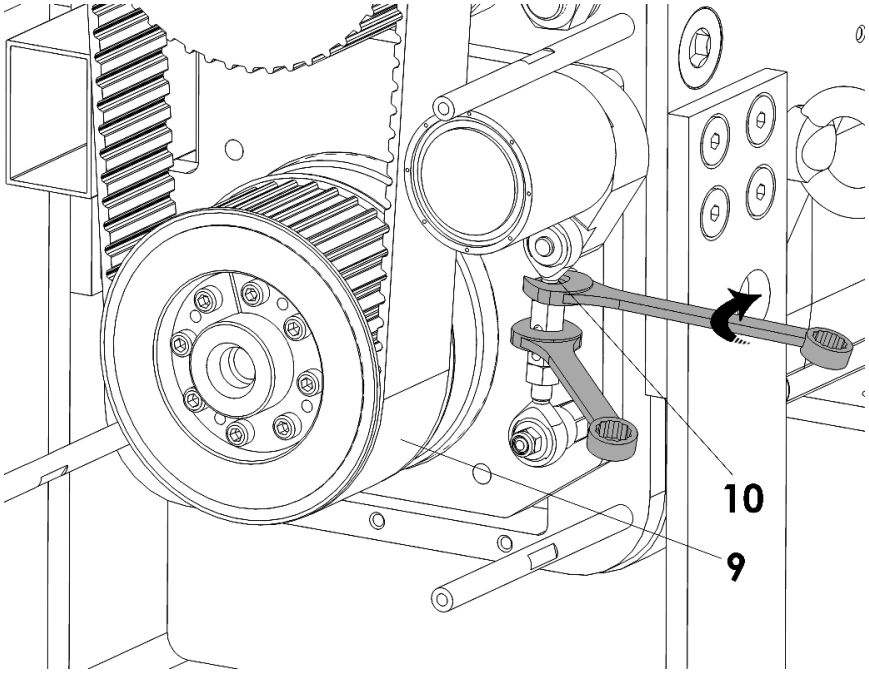
Tools needed

5 

10 



✓ Loosen the screw (8) with an 8 mm ratchet wrench.

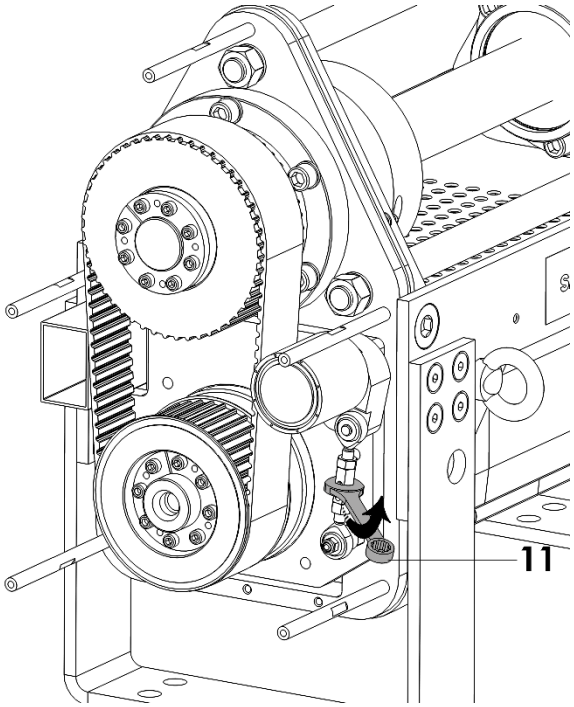


✓ Tighten the tensioning nut (10a) with a 13 mm flat wrench. The roller moves away from the belt.

Tools needed

13x2 

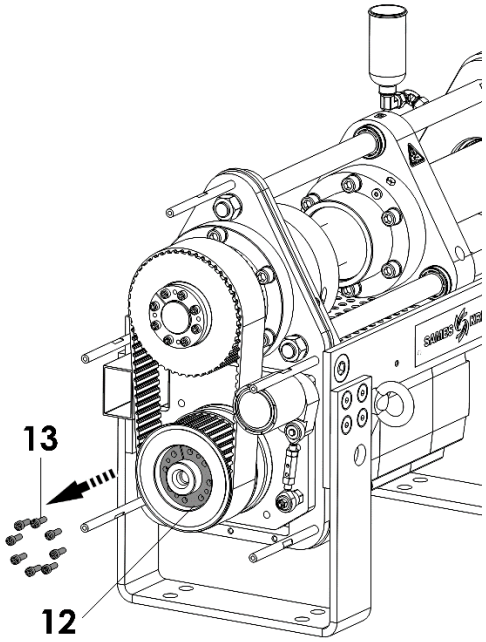
8 

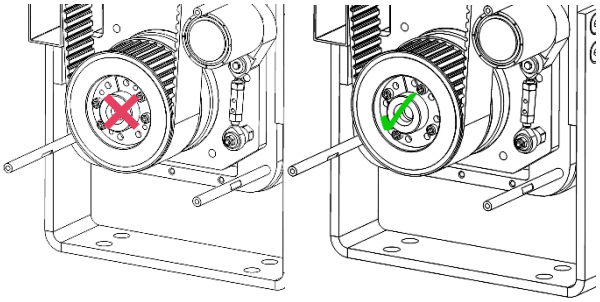


✓ Tighten the tensioning nut (11) with a 13 mm open-end wrench. The roller moves away from the belt.

Tools needed

13

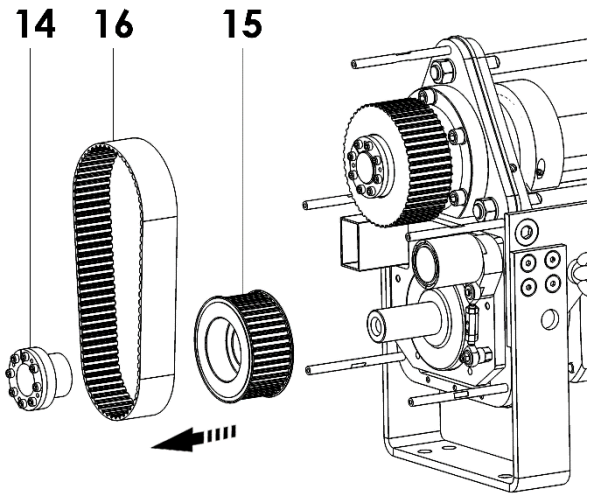




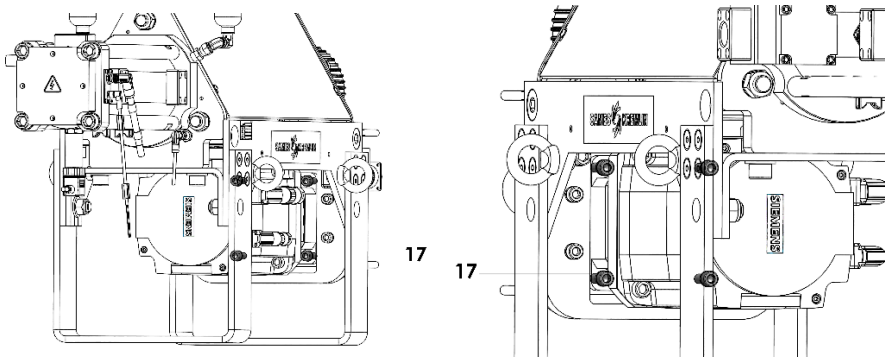
- ✓ Unscrew the 8 screws (13) with a 5 mm Allen wrench and remove the removable hub (12).
- ✓ Take 4 screws (13) and screw them into the 4 tapped holes of the hub (12).

Tools needed

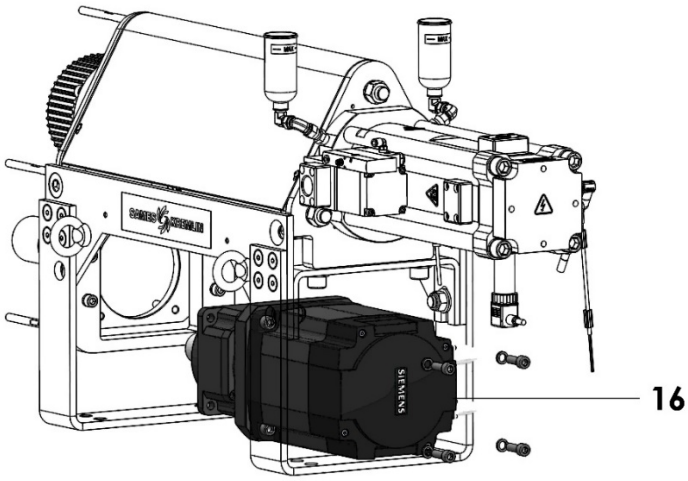
5



- ✓ Remove the hub (14).
- ✓ Remove the pulley (15) with the belt (16).



- ✓ Unscrew the 4 screws (17) using an 8 mm Allen wrench.
- ✓ Remove the screws (17) and washers,



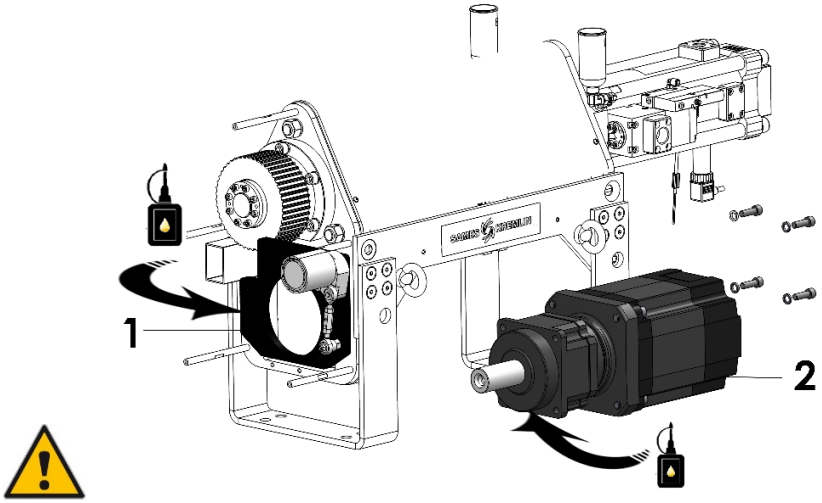
- ✓ Disengage and remove the gear motor (16).

Carry out this operation with two people.

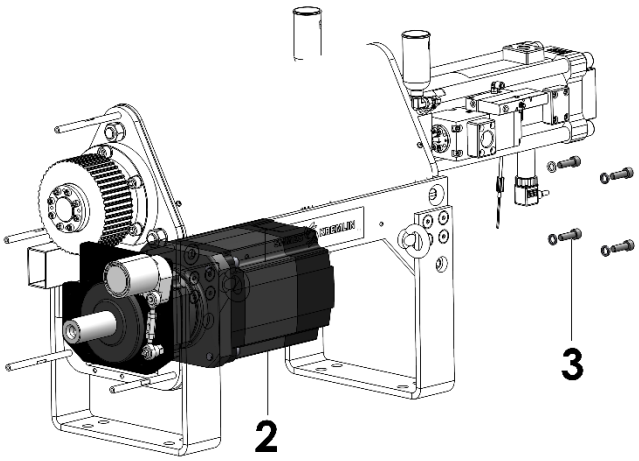
Tools needed

8

10.19 Reassembly of geared motor

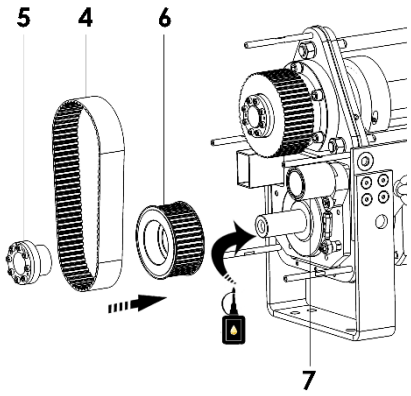


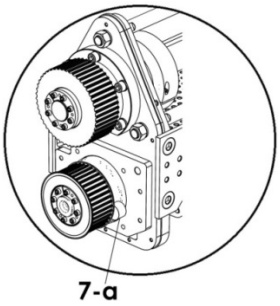
✓ Grease the support flange (1) and the centering of the geared motor (2).



✓ Engage the gearmotor (2), position the washers and tighten the 4 screws (3) to a torque of 45 N.m using an 8 mm torque wrench.

Tools needed



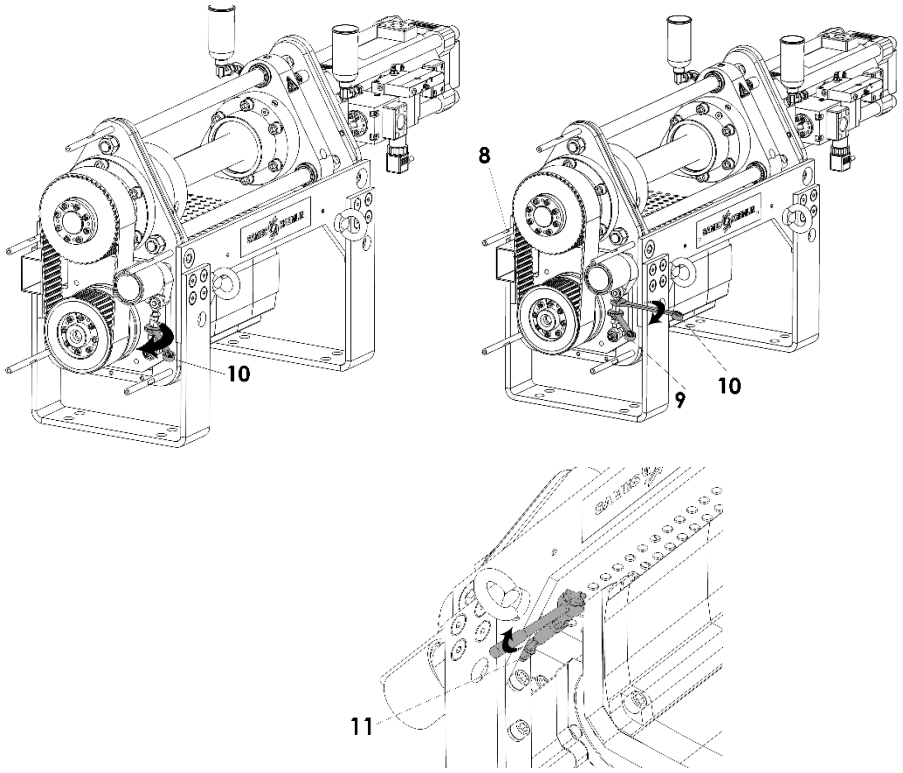


- ✓ Grease the end of the gearmotor shaft and place the belt (4), pulley (12) and removable hub (5) assembly on the gearmotor shaft (7).
- ✓ Place a shim (7-a) in position and tighten the hub screws in a star pattern using a 5 mm Allen wrench.
- ✓ Tighten the hub to a torque of 17 N.m..

Shim thickness (mm / ")	Shotmeter reference
19.5 / 0.77	151.800.000
31.5 / 1,24	151.800.010

Remove the positioning wedge after tightening.

Tools needed



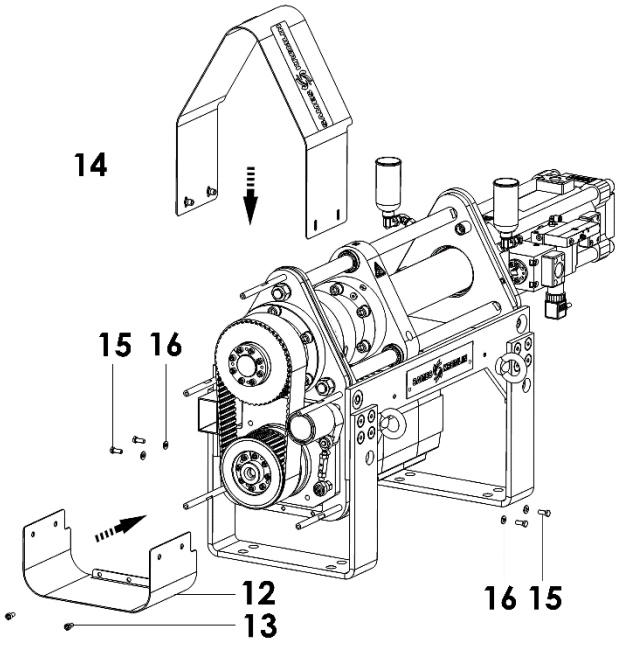
✓ Adjust the belt tension using a frequency meter and follow the procedure below:

- *Loosen the tensioning nut with a 13 mm flat wrench (9), the roller will approach the belt until the correct belt tension is achieved.*
- *Check the belt tension by vibrating the slack side (item 8) with a non-contact tool. The measuring device gives the resonance frequency.*
- *Tighten the lock nut with a 13 mm flat wrench (10) on the tensioning nut, holding it with the other 13 mm flat wrench (9).*
- *Tighten with the 8 mm torque wrench (11) to a torque of 80 N.m..*

Caution: Do not exceed the desired tension level as the belt will take some time to retension.

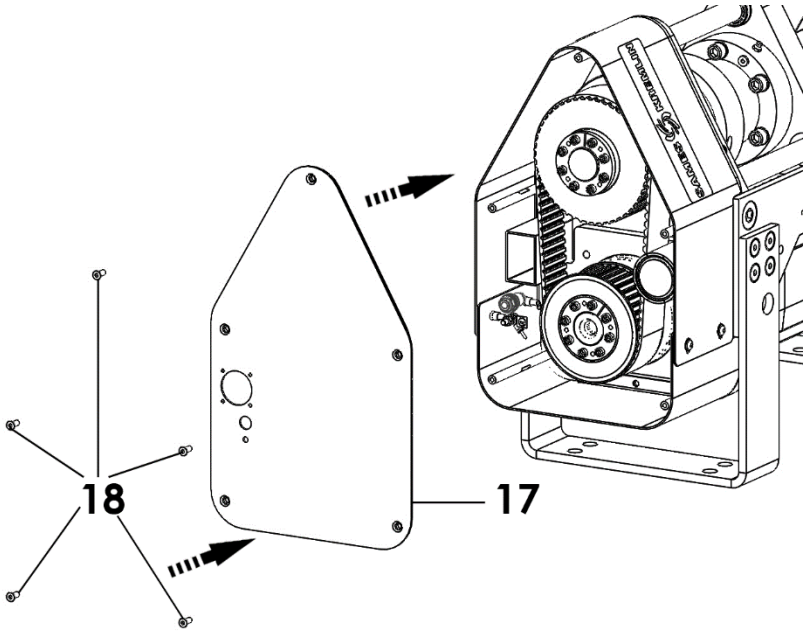
Belt tension (N.m.)	*1000*
Harmonic (Hz)	*150*

Tools needed **13x2**  **8** 



- ✓ Reposition the lower casing (12) and screw in the 2 screws (13) using a 5 mm Allen wrench.
- ✓ Reposition the upper housing (14). Place the washers (16) and screw in the 4 screws (15) using a 10 mm open-end wrench.

Tools needed



- ✓ Reposition the cover (17) and screw in the 5 screws (18) using a 4 mm Allen wrench.
- ✓ Reposition the transparent cover by screwing in the 4 screws using a 2.5 mm Allen wrench.

Tools needed

10.20 Disassembly of heating block

Attention

Only qualified SAMES KREMLIN personnel are authorized to carry out maintenance work.

Attention

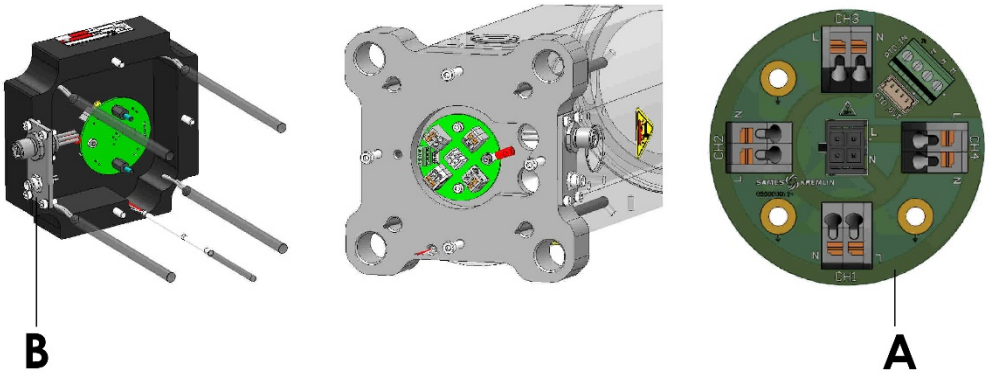
Before any intervention, it is imperative to follow the decompression procedure and the safety instructions.

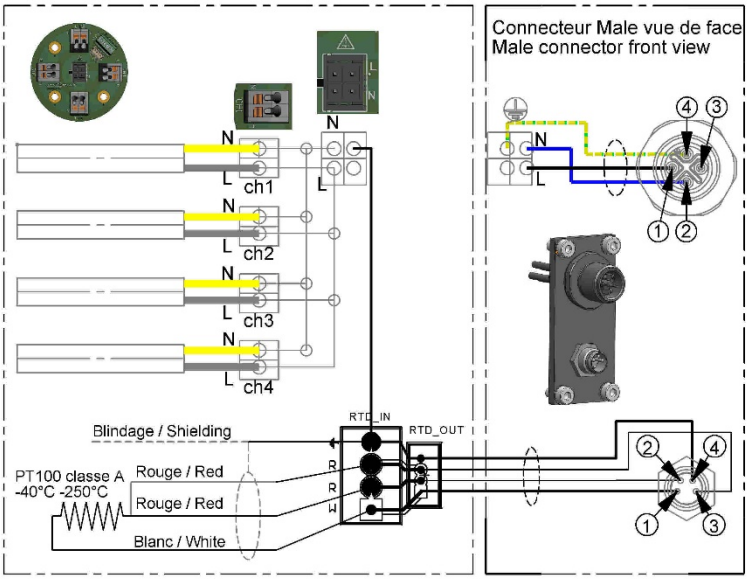
Attention

Be sure to carry out disassembly operations for 2 persons, the weight and size of the shotmeter being important.

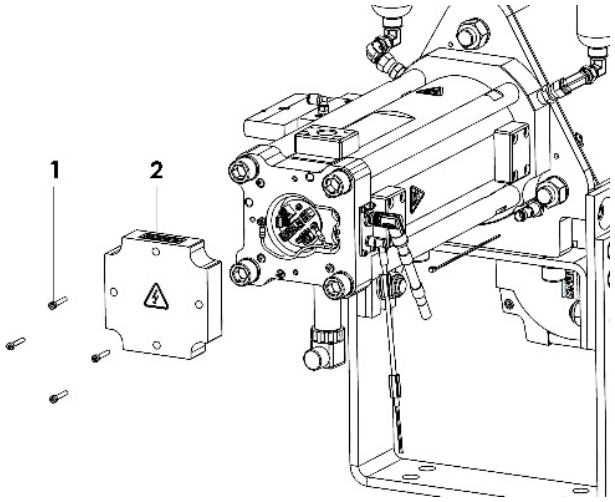
L1K E shometer Heater

The heater block assembly of the shotmeter includes a board (A) to which the **4 heating cartridges** and **the temperature sensor** are connected, as well as a connector kit (B) allowing the power supply (230V AC), a temperature feedback and the grounding of the heater block.

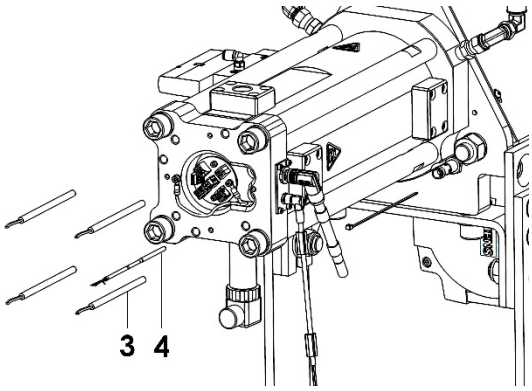


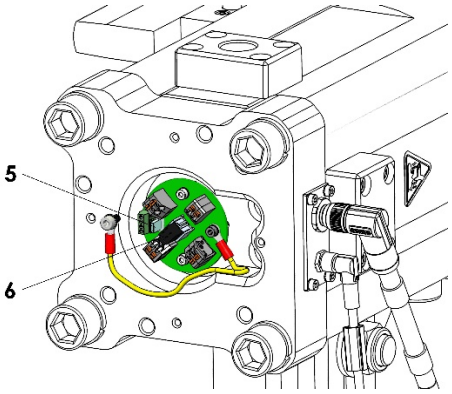


Power	Voltage	Sensor
800W	230V single phase	PT 100 3 wires class A 100 ohms Temperature range -40°C / -40°F à + 200°C / 392°F



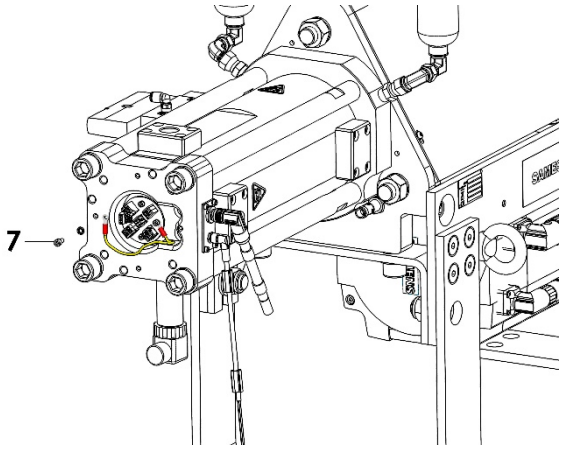
- ✓ Unscrew the 4 screws (1) using a 3 mm Allen wrench.
- ✓ Remove the cover (2).



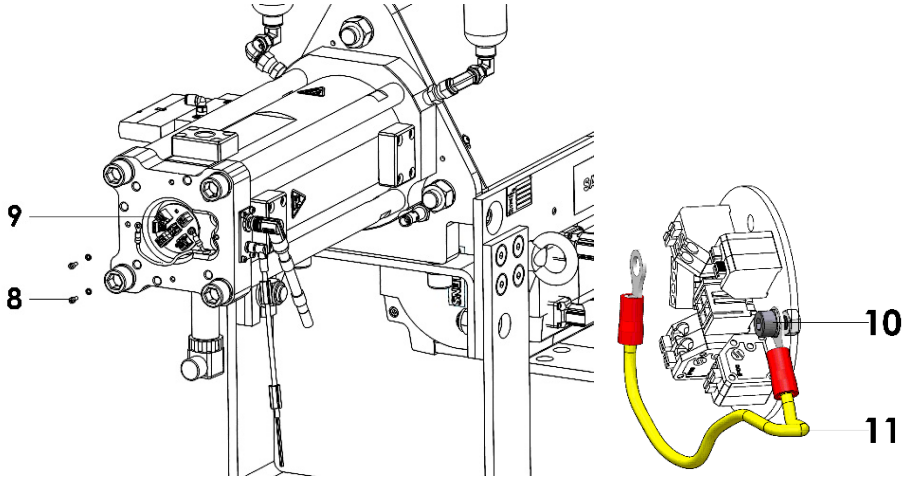


- ✓ Remove the heating cartridges (3) and the probe (4) from their housing.
- ✓ Remove the 2 connectors on the board, RTD OUT (5) and 230Vac mono (6).

Tools needed



✓ Loosen the grounding screw (7) of the flange with a 3 mm Allen wrench.



✓ Unscrew the 2 screws (8) holding the connection board (9), using a 2.5 mm Allen wrench.

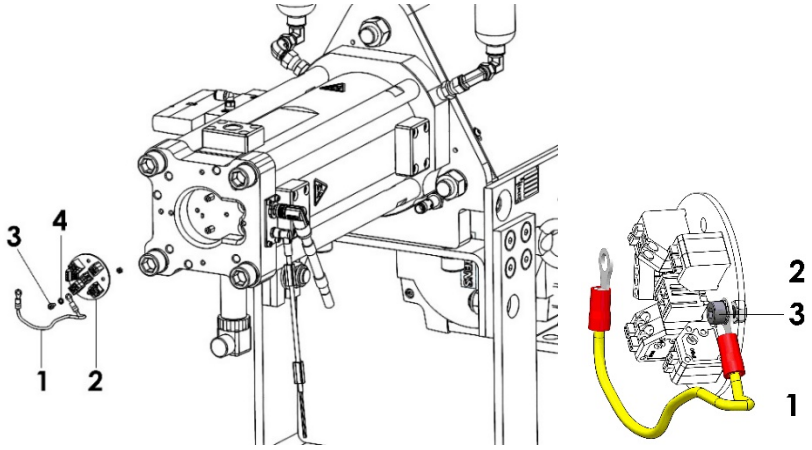
✓ Remove the screws (8), the lock washers and the board.

✓ Unscrew the screw (10) using a 2.5 mm Allen wrench.

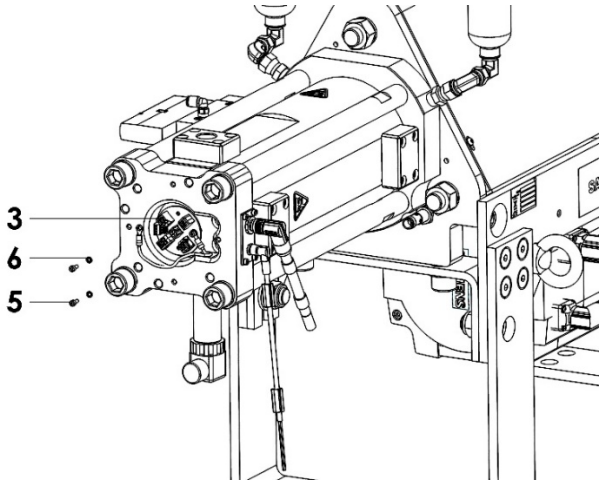
✓ Remove the ground wire (11)

Tools needed

10.21 Reassembly of heating block

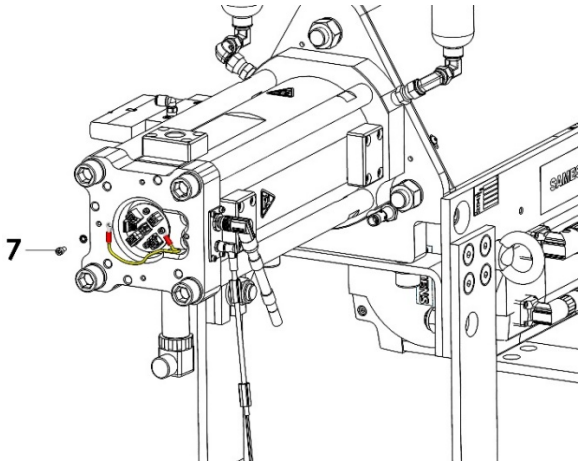


✓ Screw the ground wire (1) with a 2.5 mm Allen wrench onto the board (2) with the nut (3) and the lock washer (4).



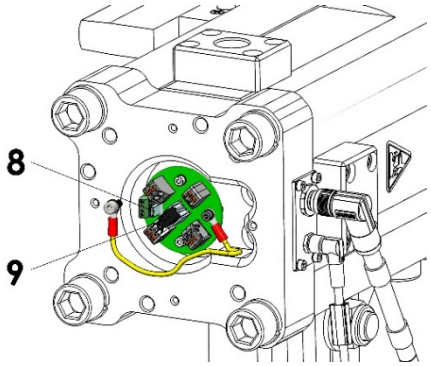
✓ Replace the board (3) in the flange housing and tighten the screws (5) using a 2.5 mm Allen wrench and lock washers (6).

Tools needed **2,5**



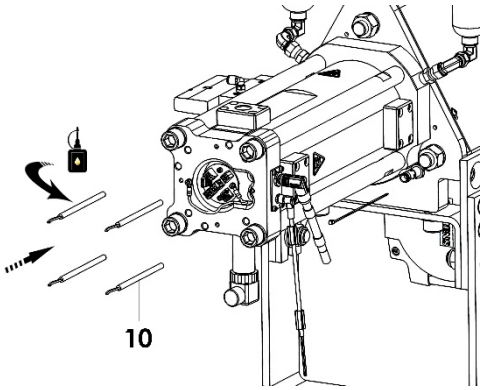
✓ Screw onto ther flange the ground (7) with a 3 mm Allen wrench.

The ground wire must be connected to its other end on the dosing unit (at the level of the cylinder flange), itself grounded by a ground wire connected to the diameter 6 terminal. See the chapter on installation and electrical connections.



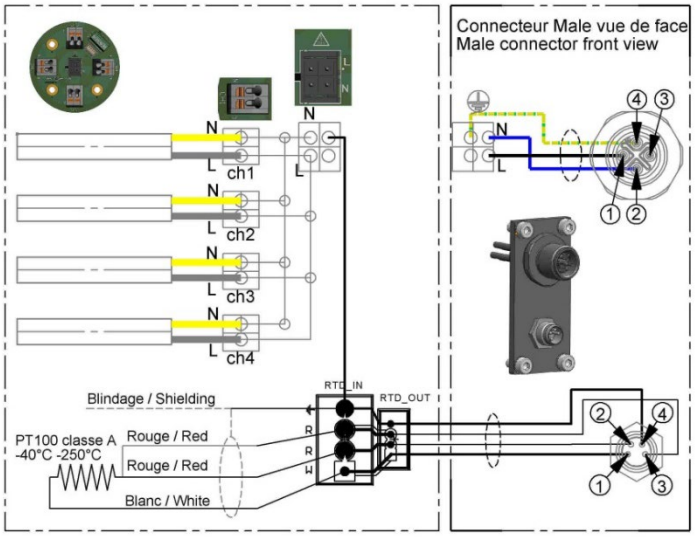
✓ Plug the 2 connectors (polarized and locked) on the board, RTD OUT (8) and 230Vac mono (9).

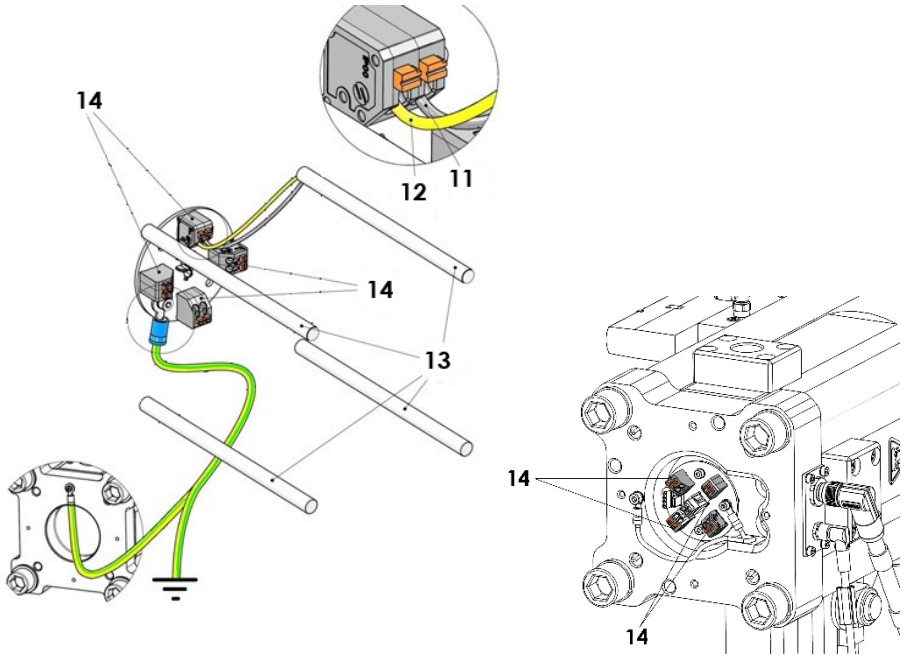
Tools needed **3**



- ✓ Grease (MI-setral-9M) the 4 heating cartridge (10).
- ✓ Put the 4 heating cartridges (10) in their housing.

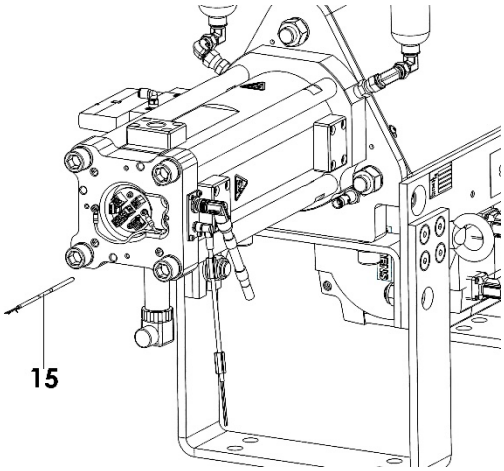
Tools needed



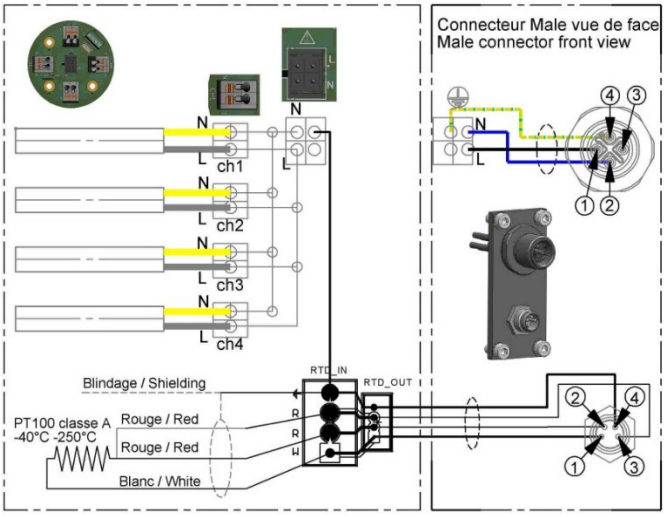


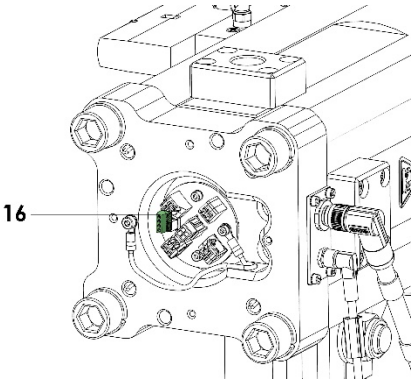
- ✓ Connect the wires (11) and (12) of a heating cartridge (13) to a terminal block (14) "ch" on the board.
- ✓ Repeat the previous operation for each cartridge, terminals "ch1, ch2, ch3 and ch4".

Tools needed



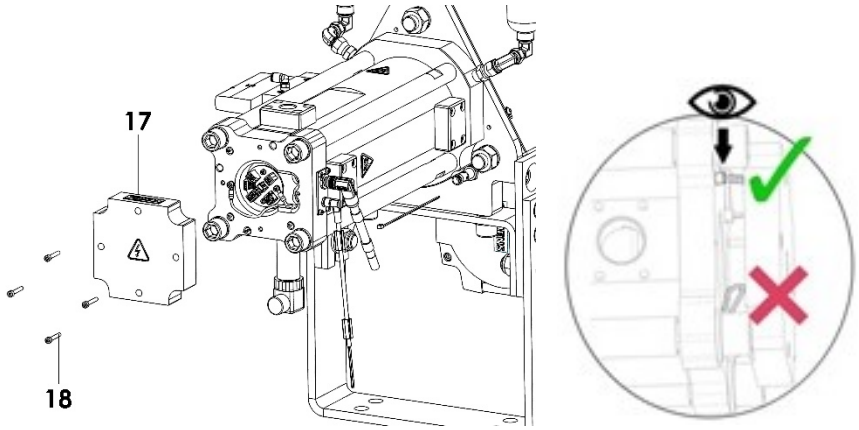
✓ Place the probe (15) in its housing.





✓ Wire the probe to the "RTD_IN" terminal block (16) using a small flat screwdriver.

Tools needed



- ✓ Put on the cover (17)
- ✓ Tighten the 4 screws (18) with a 3 mm Allen wrench.

Be careful not to trap or pinch the wires of the heating pencils.

Tools needed

3

10.22 Disassembly a heating cartridge

Attention

Only qualified SAMES KREMLIN personnel are authorized to carry out maintenance work.

Attention

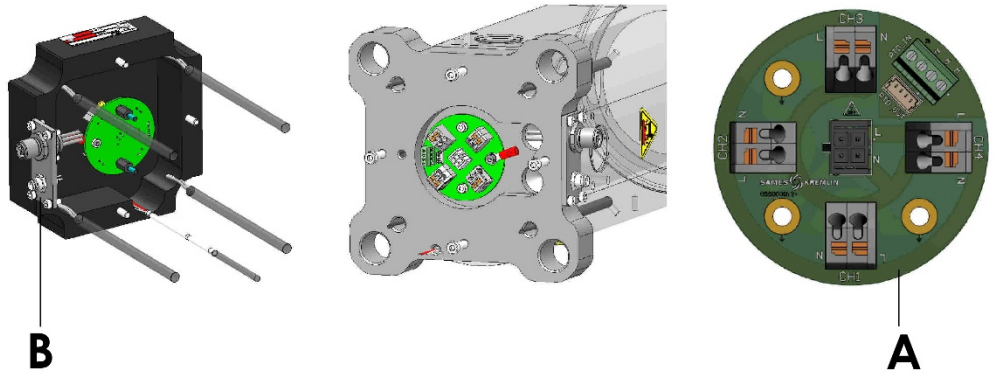
Before any intervention, it is imperative to follow the decompression procedure and the safety instructions.

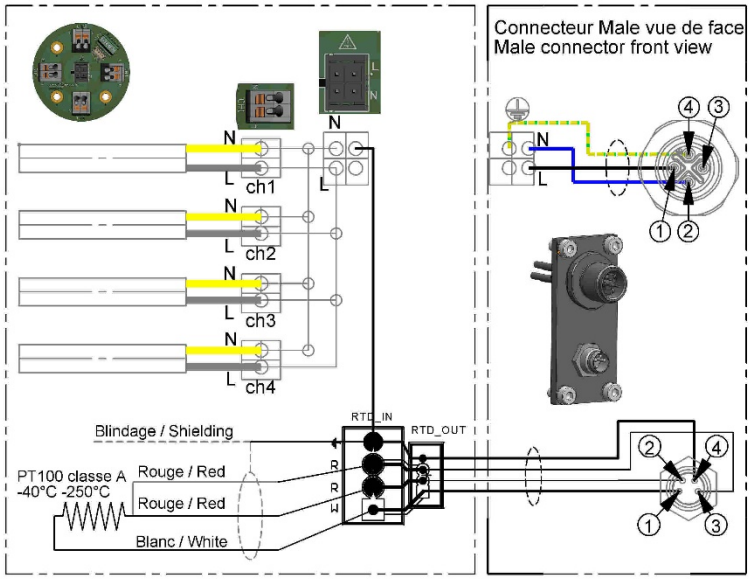
Attention

Be sure to carry out disassembly operations for 2 persons, the weight and size of the shotmeter being important.

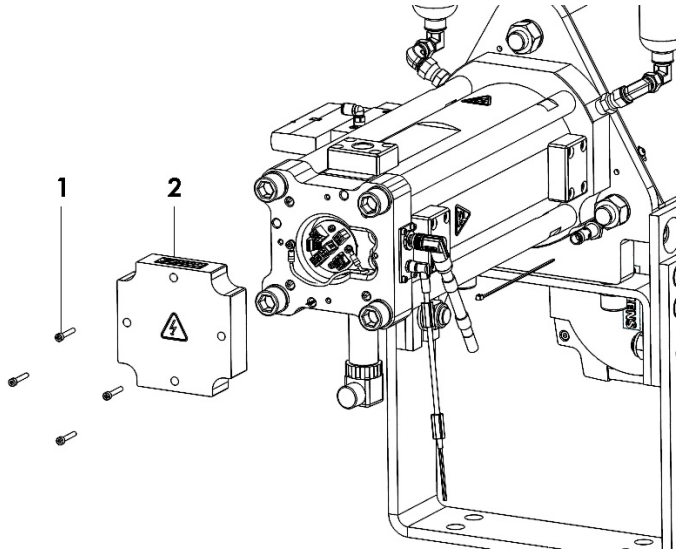
L1K E shometer Heater

The heater block assembly of the shotmeter includes a board (A) to which the **4 heating cartridges** and **the temperature sensor** are connected, as well as a connector kit (B) allowing the power supply (230V AC), a temperature feedback and the grounding of the heater block.

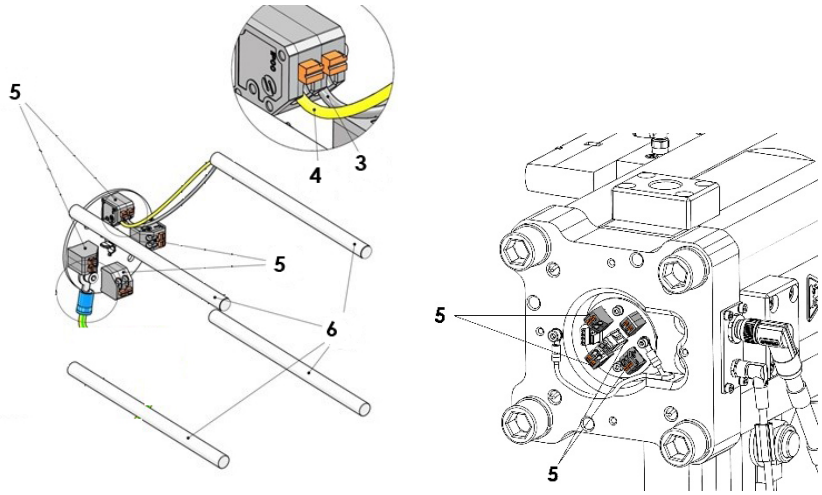




Power	Voltage	Sensor
800W	230V single phase	PT 100 3 wires class A 100 ohms Temperature range -40°C / -40°F à + 200°C / 392°F



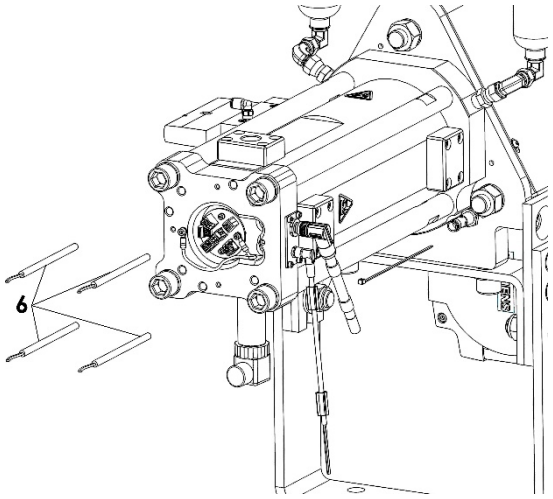
- ✓ Unscrew the 4 screws (1) using a 3 mm Allen wrench
- ✓ Remove the cover (2).



- ✓ Disconnect the wires (3) and (4) from the terminal block (5) of each heating cartridge (6).

Tools needed

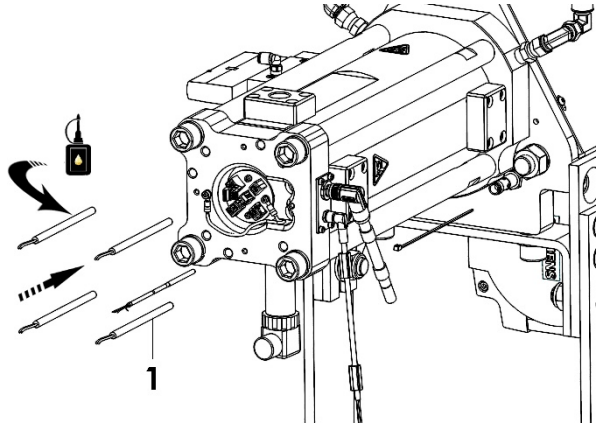
3 



- ✓ Check the 4 resistors (6) with an ohmmeter. Cartridge value: 264.5 ohms (± 10%).
- ✓ Remove the defective heating cartridge from its housing.

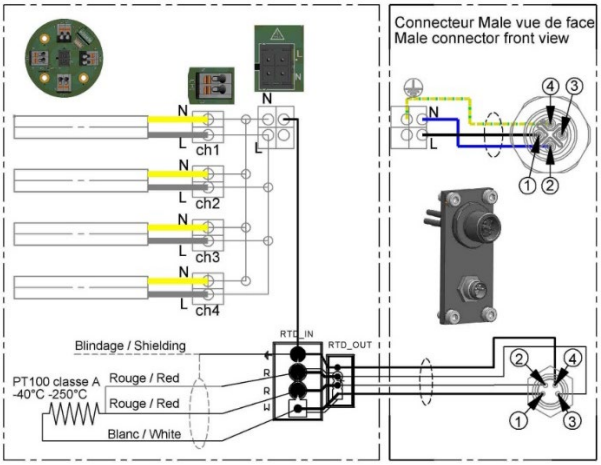
Attention Never short-circuit a resistor, the wires must not show any signs of cutting or tearing of the insulation.

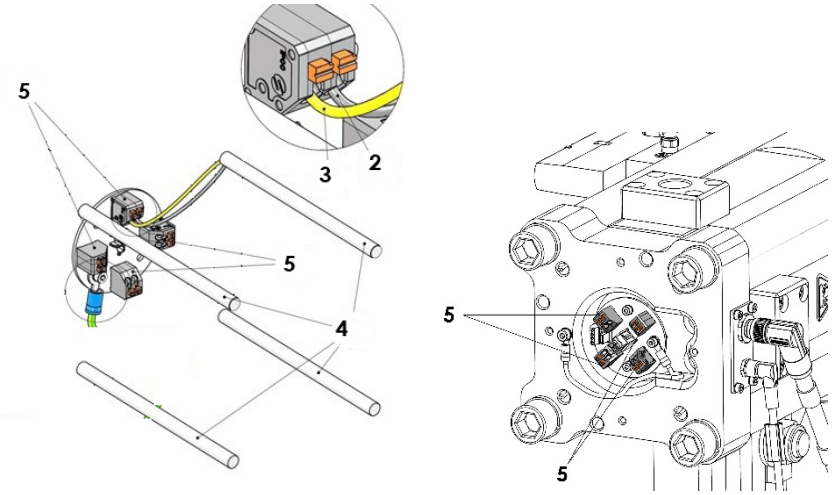
10.23 Reassembly a heating cartridge



- ✓ Grease with thermal paste (MI-setral-9M) the new heating cartridge (1).
- ✓ Put the heating cartridge in its housing.

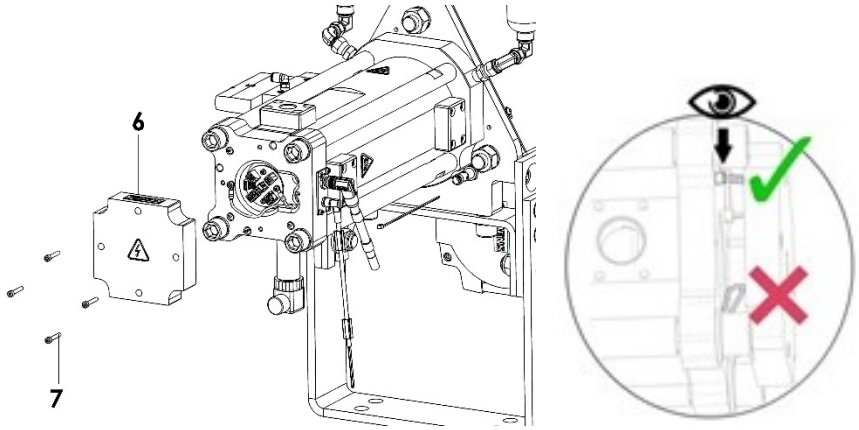
Tools needed





- ✓ Cut the wires to length (220 mm).
- ✓ Connect the wires (2) and (3) of the heating cartridge (4) to the "ch" terminal block (5) of the board.
- ✓ Repeat the previous operation if necessary for each cartridge, terminals " ch1, ch2, ch3 and ch4.

Tools needed



✓ Put on the cover (6) and screw in the 4 screws (7) with a 3 mm Allen wrench.

Be careful not to pinch the wires of the heating cartridges and the probe.

Tools needed

3

10.24 Disassembly the probe

Attention

Only qualified SAMES KREMLIN personnel are authorized to carry out maintenance work.

Attention

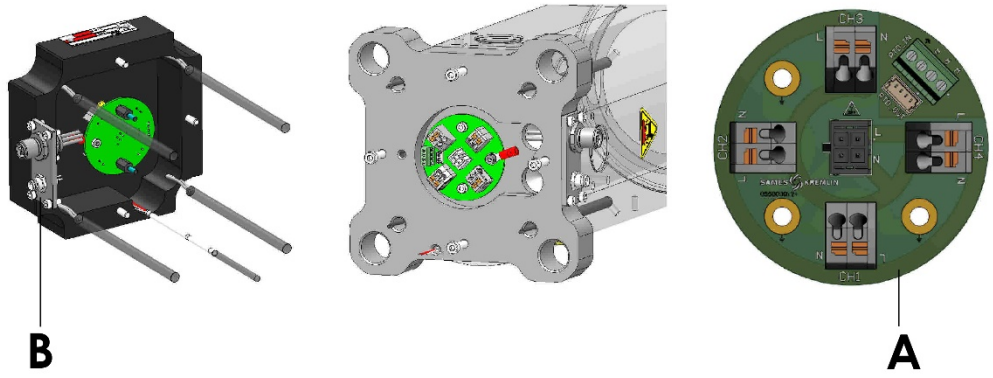
Before any intervention, it is imperative to follow the decompression procedure and the safety instructions.

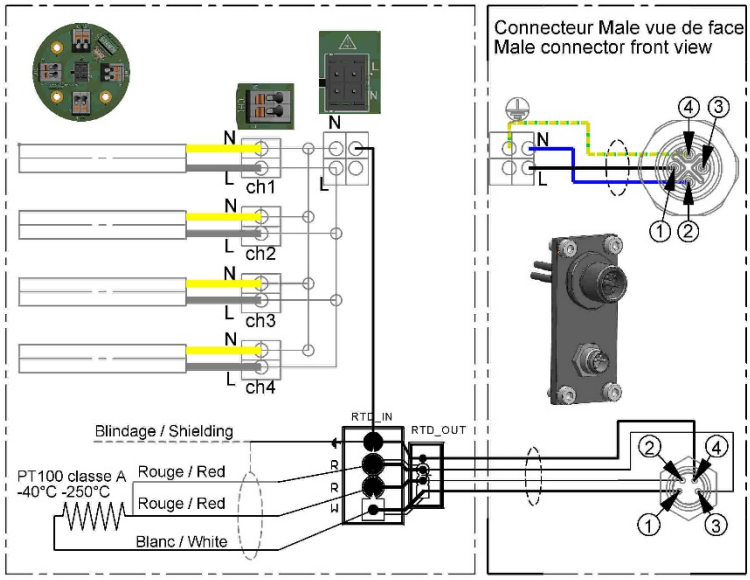
Attention

Be sure to carry out disassembly operations for 2 persons, the weight and size of the shotmeter being important.

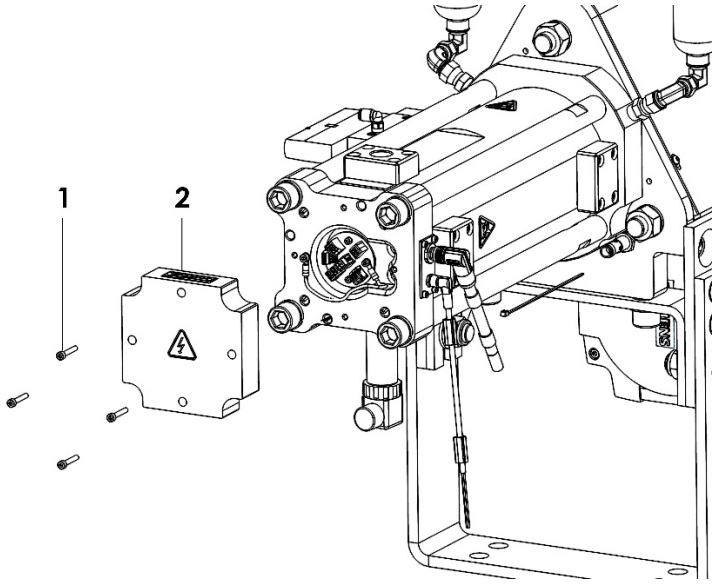
L1K E shometer Heater

The heater block assembly of the shotmeter includes a board (A) to which the **4 heating cartridges** and **the temperature sensor** are connected, as well as a connector kit (B) allowing the power supply (230V AC), a temperature feedback and the grounding of the heater block.

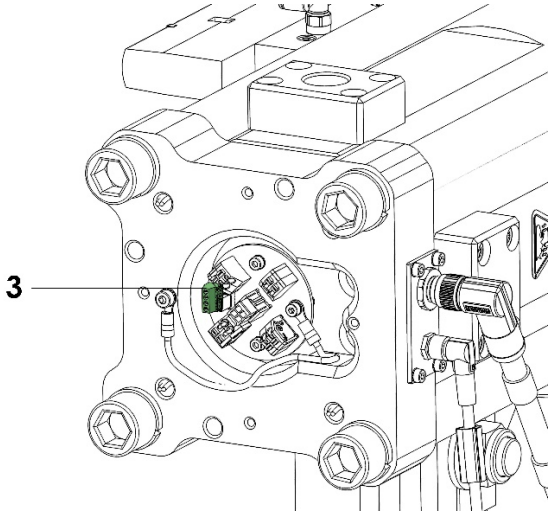




Power	Voltage	Sensor
800W	230V single phase	PT 100 3 wires class A 100 ohms Temperature range -40°C / -40°F à + 200°C / 392°F



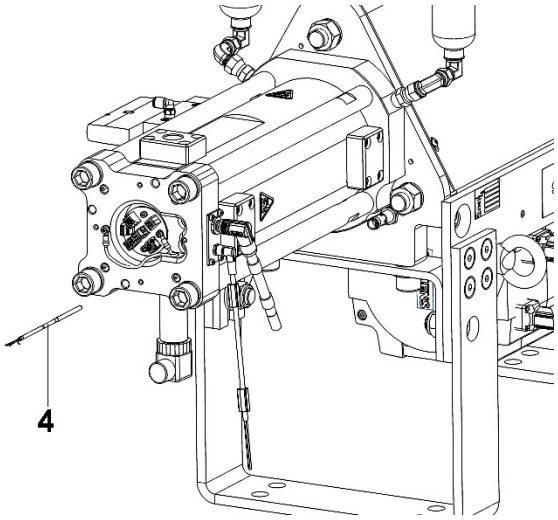
- ✓ Unscrew the 4 screws (1) using a 3 mm Allen wrench
- ✓ Remove the cover (2).



- ✓ Disconnect the sensor from the "RTD_IN" terminal block (3).

Tools needed

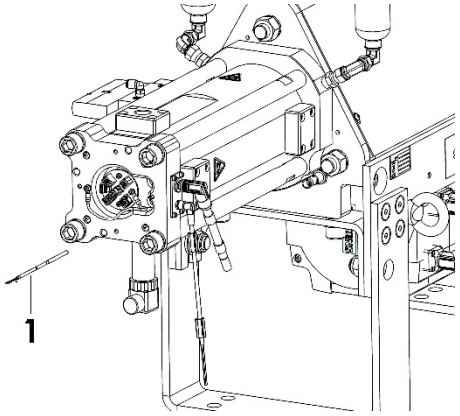
3



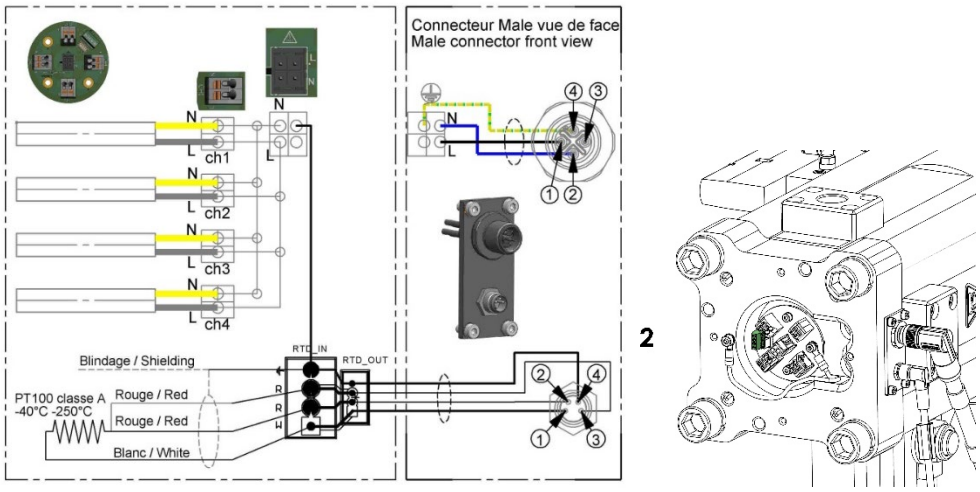
- ✓ Remove the probe (4) from its housing.
- ✓ Check its resistance with an ohmmeter. The value should be about 100 ohm between the white wire and a red wire. Check its external aspect.

Attention Never put a sensor out of service, the wires must not show any signs of cutting or tearing of the insulation.

10.25 Reassembly the probe



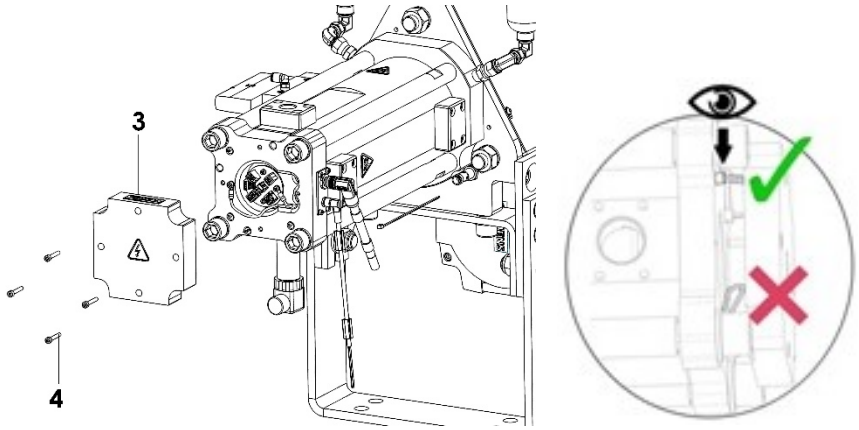
✓ Place the probe (1) in its housing.



✓ Cut the wires to length (60 mm),

✓ Wire the probe to the "RTD_IN" terminal block (2).

Tools needed



- ✓ Put on the cover (3).
- ✓ Screw in the 4 screws (4) using a 3mm Allen wrench.

Be careful not to pinch the wires of the heating cartridges and the probe.

Tools needed

10.26 Disassembly of pressure sensor

Attention

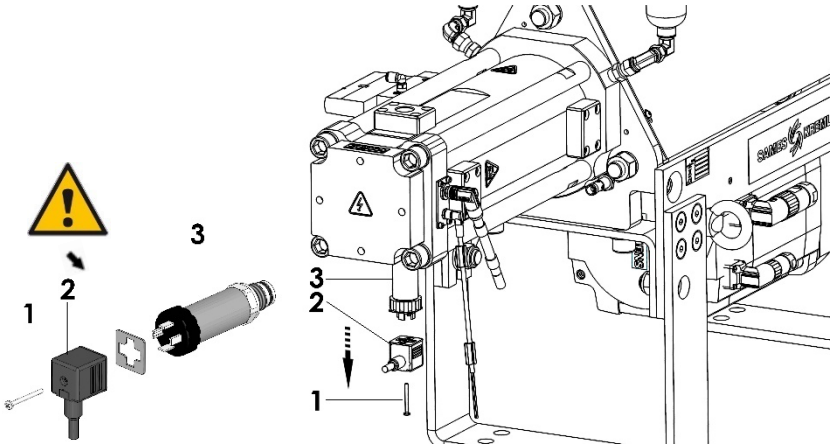
Only qualified SAMES KREMLIN personnel are authorized to carry out maintenance work.

Attention

Before any intervention, it is imperative to follow the decompression procedure and the safety instructions.

Attention

Be sure to carry out disassembly operations for 2 persons, the weight and size of the shotmeter being important.



- ✓ Unscrew the screw (1) from the connector (2) with an appropriate screwdriver
- ✓ Remove the connector (2) from the sensor (3).
- ✓ Unscrew the sensor using a 27 mm flat wrench.

Caution Never turn the black closing ring or the base with the contacts.

The diaphragm is a fragile element, avoid influences of mechanical vibrations, mechanical shocks,

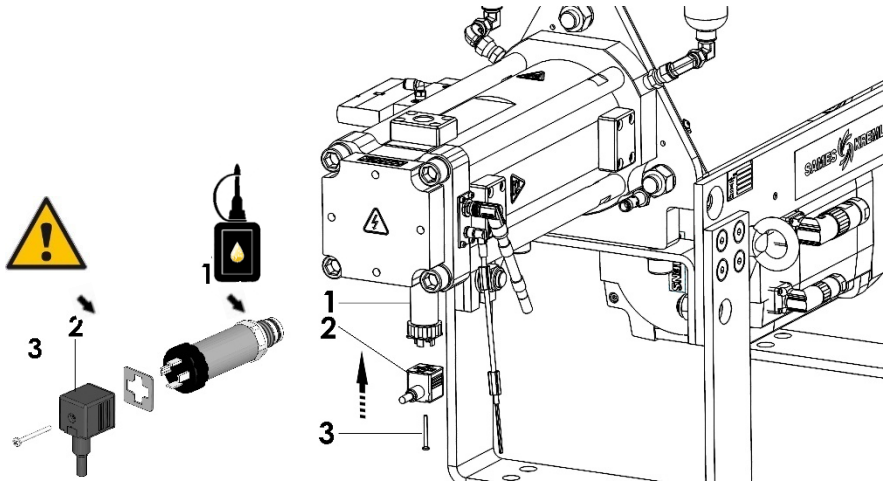
Do not decompose, repair or modify.

If the original packaging is not available, pack and store the instrument by removing all adhering fluids and protecting the membrane with a cap. Place the instrument in an insulator before storage.

Tools needed

27

10.27 Reassembly of pressure sensor



- ✓ Grease the seals of the sensor (1).
- ✓ Screw in the sensor (1) using a 27 mm flat wrench.
- ✓ Insert the connector (2).
- ✓ Tighten the screw (3) with an appropriate screwdriver.

Attention Never turn the black closing ring or the socket with the contacts.

Before commissioning, the pressure transmitter must be visually checked.

A leakage of liquid indicates damage.

Visually check that the diaphragm of the process connection is in good condition.

The pressure transmitter may only be used in a technically safe condition to ensure the safety of the dosing unit.

Tools needed

27

10.28 Disassembly of position sensor

Attention

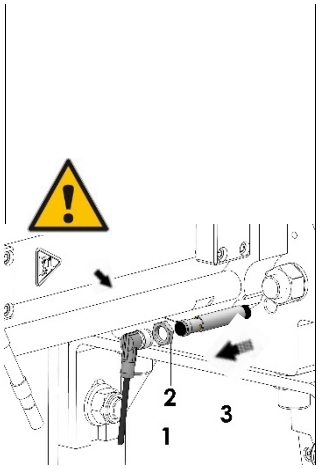
Only qualified SAMES KREMLIN personnel are authorized to carry out maintenance work.

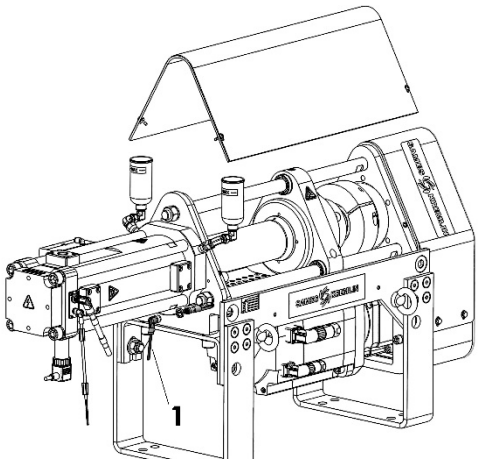
Attention

Before any intervention, it is imperative to follow the decompression procedure and the safety instructions.

Attention

Be sure to carry out disassembly operations for 2 persons, the weight and size of the shotmeter being important.





- ✓ Remove the M12 connector (1).
- ✓ Unscrew the nut (2) with a 17 mm flat wrench.
- ✓ Unscrew manually the position sensor (3).

Attention Do not turn the position sensor with the connector connected.

Avoid mechanical shocks.

Do not break down, repair or modify.

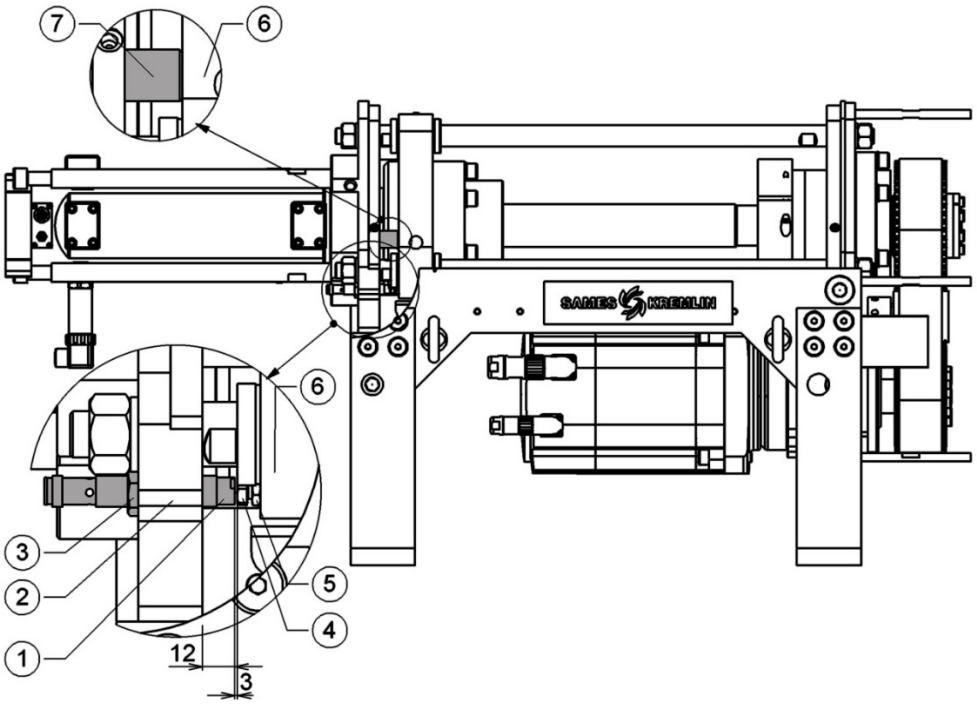
If the original packaging is not available, pack and store by removing all adhering fluid residues (do not use thinner as it may dissolve the surface of the products) and put the sensor in an insulator before storage.

Tools needed

17

10.29 Reassembly of position sensor

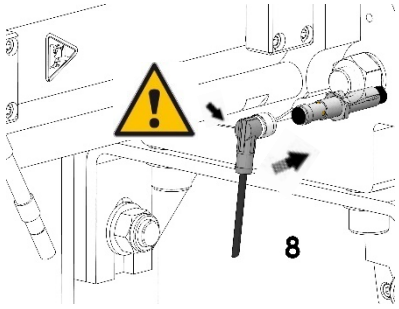
✓ Remove the protective cover.



Attention.

Before installation and commissioning, the sensor must be subjected to a visual inspection.
Check for damage.
The sensor may only be used in a technically safe condition in order to guarantee the safety of the dosing unit.

- ✓ Screw manually the inductive position sensor (1) onto the upper dosing body (2) to the 12 mm dimension.
- ✓ Pre-tighten the lock nut (3). Check the 12 mm dimension and then tighten to a torque of 7 N.m. using a 17 mm wrench.
- ✓ Check the presence of the detection screw (4) with its lock nut (5) on the piston body (6).
- ✓ Put the piston (6) in position against the stop (7).
- ✓ Check and adjust the sensor screw (4) with a 10 mm flat wrench with a 3 mm gap between the screw head and the sensor tip.
- ✓ Tighten the nut (5) with a 10 mm flat wrench while holding the screw (4) with a 10 mm flat wrench.



- ✓ Connect the M12 connector (8).

Attention do not turn the sensor with the connector connected.

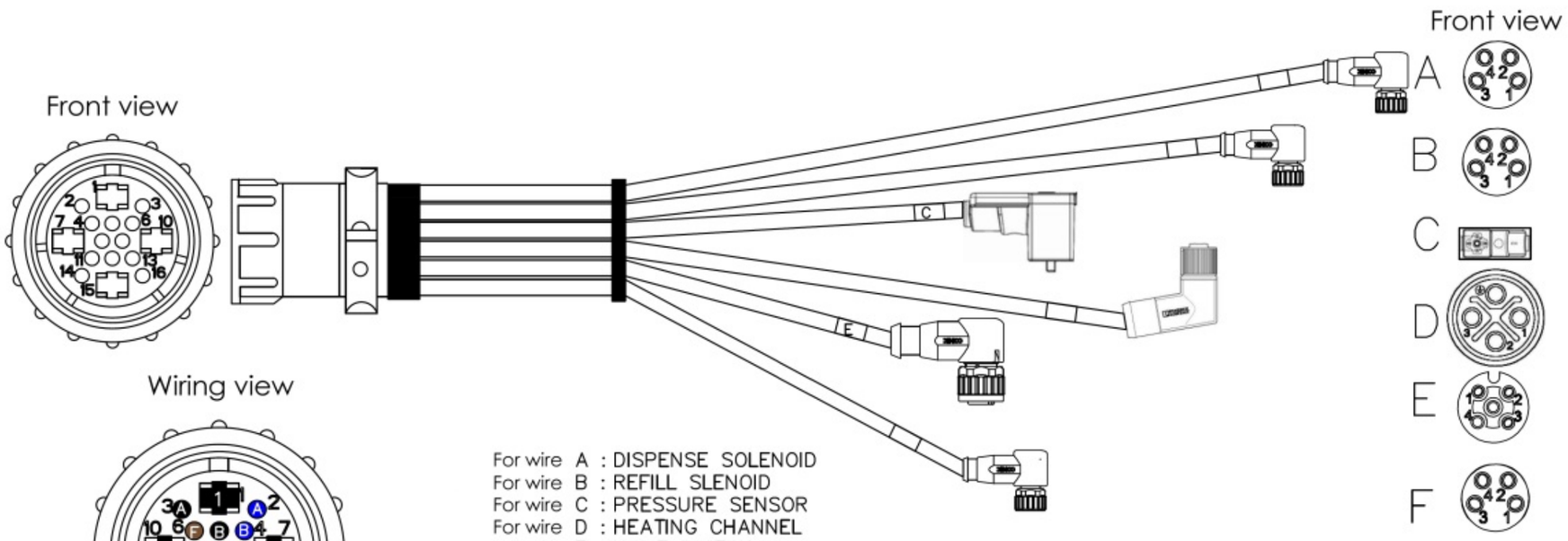
Tools needed

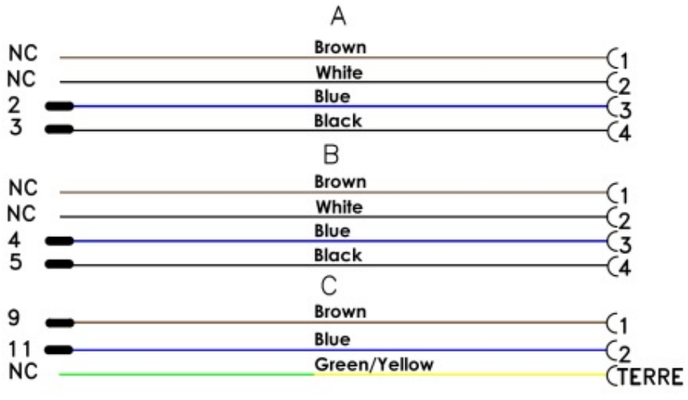
10x2 

17 

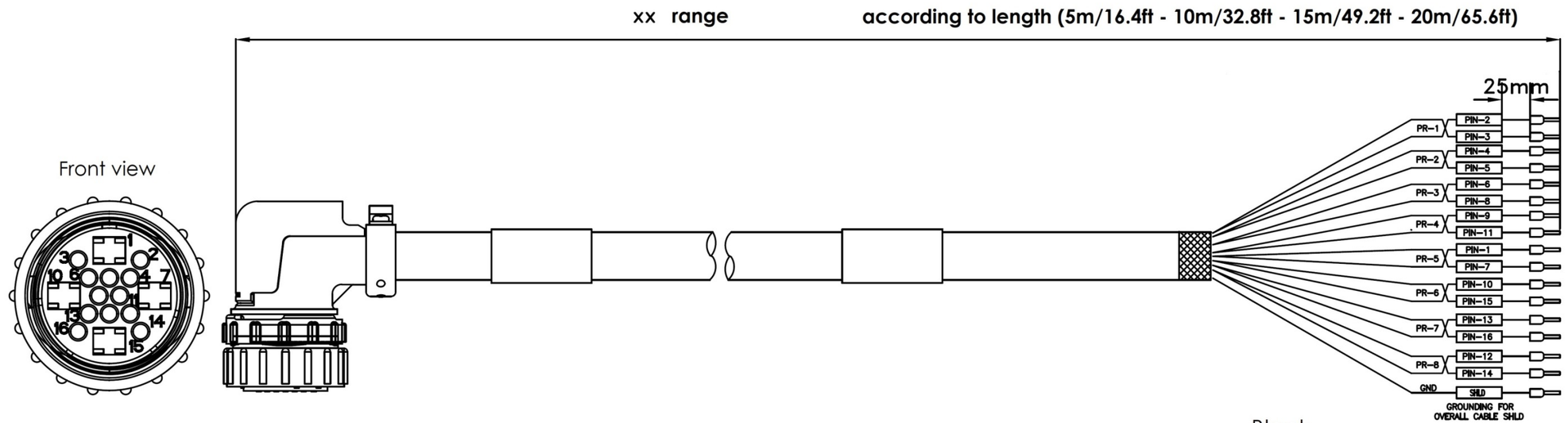
11 Wiring diagram

11.1 L1K dispensing cable

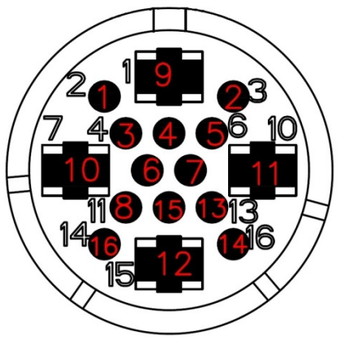


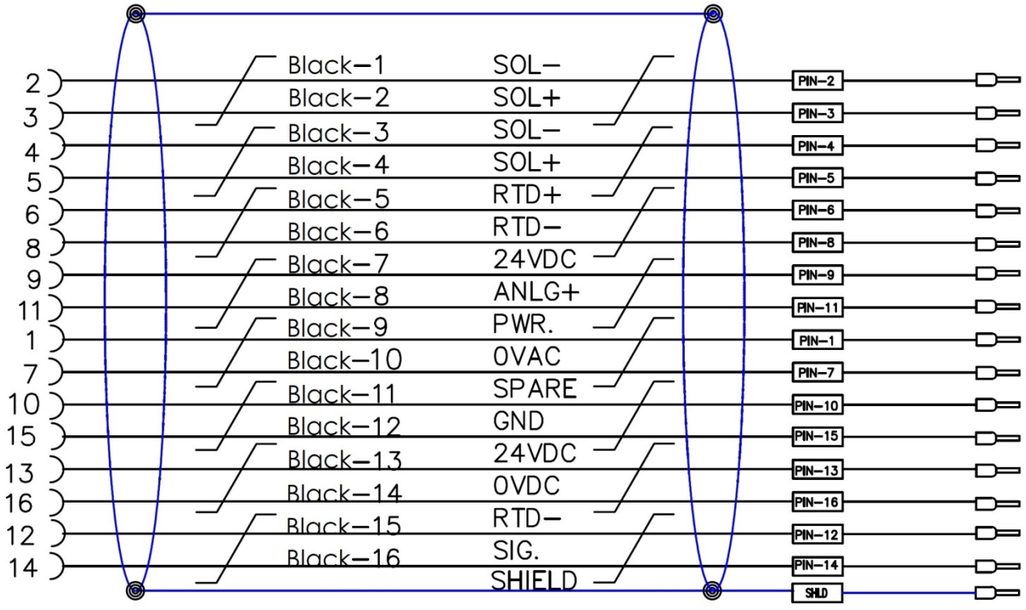


11.2 Cable connecting the control bay to the L1K dosing unit (OPTION not supplied)



Wiring view



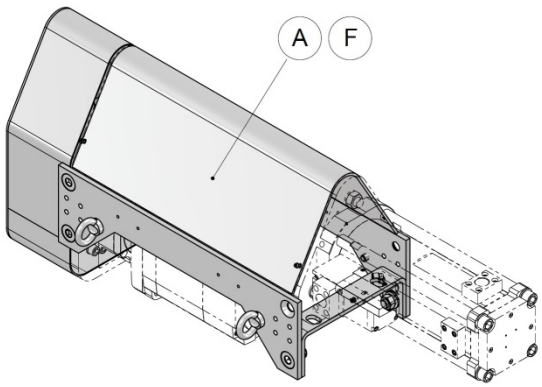


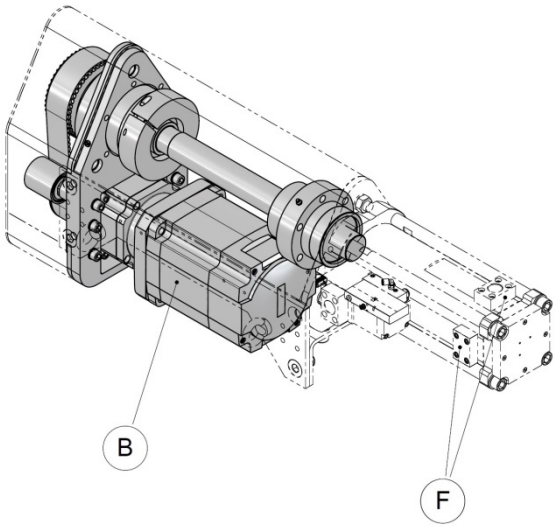
Wire	:	Eth
Black–1	:	Pin2
Black–2	:	Pin3
Black–3	:	Pin4
Black–4	:	Pin5
Black–5	:	Pin6
Black–6	:	Pin8
Black–7	:	Pin9
Black–8	:	Pin11
Black–9	:	Pin1
Black–10	:	Pin7
Black–11	:	Pin10
Black–12	:	Pin15
Black–13	:	Pin13
Black–14	:	Pin16
Black–15	:	Pin12
Black–16	:	Pin14
Shielding	:	SHLD

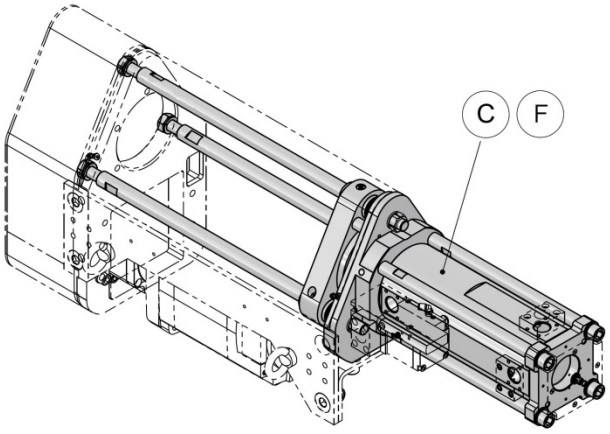
12 Spare parts

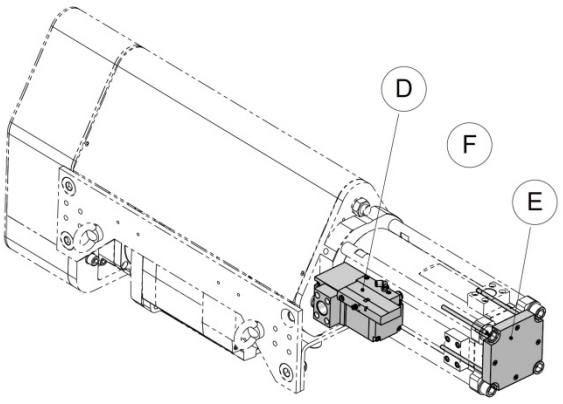
Use only genuine SAMES KREMLIN accessories and spare parts designed to withstand the pump's operating pressures.

Shotmeter E dispenses L1K





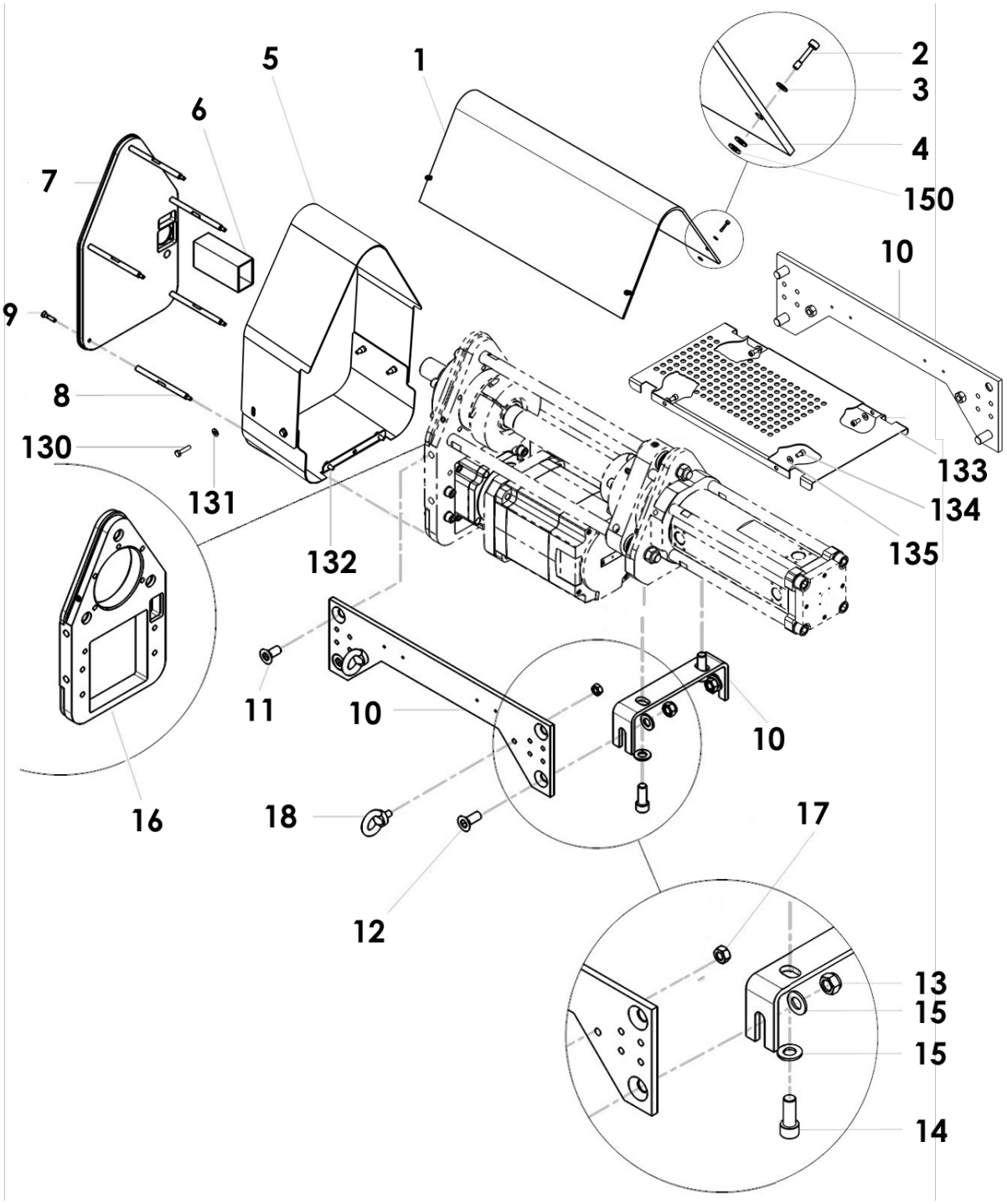




NOTE: Refer to the specific valve instructions (D) for the spare parts list for the valve.

A

Framing


5
1
2
3
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4
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150
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130
131
133
134
135
132
11
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16
18
17
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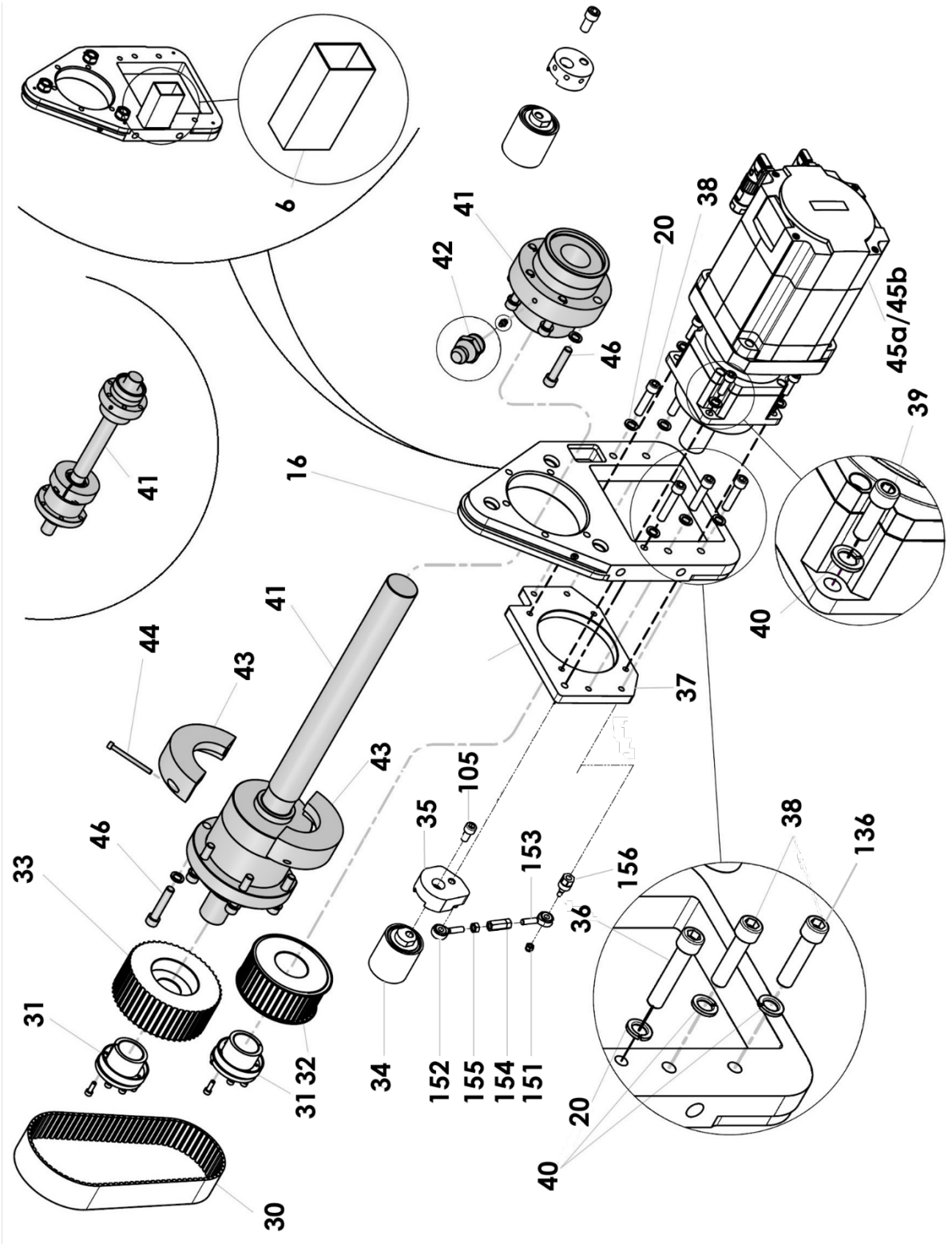
13
15
15
14

Ind	#References	Designation	Qty	Spare part level**	Torque N.m./ glue
***-**	**155 803 911**	**Kit carter**	**1**	**3**	
1	N.S.	▪ Central Carter	1		
2	N.S.	▪ Domed screw HC M4x20	4		/
3	N.S.	▪ Washer Ø 4.3 nylon	4		
4	N.S.	▪ Washer M 4	4		
150	N.S.	▪ Seal rulon	4		
***-**	**155 803 908**	**Transmission housing kit**	**1**	**3**	
5	N.S.	▪ Carter transmission	1		
6	N.S.	▪ Profile	1		Loctite 222
7	N.S.	▪ Transmission cover	1		
8	N.S.	▪ Column Lg 133 M6 Ø10	5		
9	N.S.	▪ Screw F / Hc 90 ° M 6x16 cl 8/8	5		/
130	N.S.	▪ Screw H M 6X25 cl 8/8	4		/
131	N.S.	▪ Washer M 6	4		
132	N.S.	▪ Screw CHc M 6X12 cl 8/8	3		/
***-**	**155 803 905**	**Chassis kit**	**1**	**3**	
10	N.S.	▪ framing	1		
11	N.S.	▪ Screw F/Hc 90° M 16X35 cl 8/8	4		60
12	N.S.	▪ Screw F/Hc 90° M 16X40 cl 8/8	2		60
13	N.S.	▪ Nylstop nut M16	5		/
14	N.S.	▪ Screw CHc M 16X40 cl 8/8	2		60
15	N.S.	▪ Washer MU 16	4		
16	N.S.	▪ Upper plate transmission	1		
***-**	**155 803 909**	**Lifting ring kit**	**1**	**3**	
17	N. S.	▪ Nut M 12	4		70
18	N. S.	▪ Lifting ring	1		Loctite 222
133	N.C.	Carter	1		
134	N.C.	Screw CHc M 6X12 cl 8/8	4		
135	N.C.	Washer M 6	4		

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

B Kinematic set



Ind	#References	Designation	Qty	Spare part level**	Torque N.m./ glue
***30**	**908 040 103**	**Belt**	**1**	**2**	
***-**	**155 803 913**	**Driving pulley kit**	**1**	**3**	
31	N.S.	▪ Hub	1		17
32	N.S.	▪ Geared motor pulley	1		
***-**	**155 803 914**	**Led pulley kit**	**1**	**3**	
31	N.S.	▪ Hub	1		17
33	N.S.	▪ Roller screw pulley	1		
***-**	**155 803 915**	**Tensioner roller kit**	**1**	**3**	
34	N.S.	▪ Tensioner	1		
35	N.S.	▪ Eccentric support spacer	1		
36	N.S.	▪ Screw CHc M 10X70 cl 8/8	1		80
20	N.S.	▪ Washer W 12	1		
105	N.S.	▪ Screw CHc M 12X25 cl 8/8	1		80 + loctite 222
151	N.S.	▪ Lock nut M6	1		
152	N.S.	▪ Threaded end, right-hand pitch	1		
153	N.S.	▪ Threaded end, left-hand pitch	1		
154	N.S.	▪ Tensioning nut M8	1		
155	N.S.	▪ Nut M8	1		
156	N.S.	▪ Pivot axis	1		
***-**	**155 803 916**	**Adaptation plate kit**	**1**	**3**	
37	N.S.	▪ Gearmotor adapter plate	1		
38	N.S.	▪ Screw CHc M 10X50 cl 8/8	3		45
39	N.S.	▪ Screw CHc M 10X30 cl 12/9	4		45
40	N.S.	▪ Washer W 10	8		
136	N.S.	▪ Screw CHc M 10X60 cl 8/8	1		45
***-**	**155 803 902**	**Roller and bearing screw kit**	**1**	**2**	
41	N.S.	▪ Roller screw assembly	1		
42	N.S.	▪ Greaser	1		
20	N.S.	▪ Washer W 12	11		
46	N.S.	▪ Screw CHc M 12X60 cl 8/8	11		80
***-**	**155 803 907**	**Stopper kit**	**1**	**2**	
43	N.S.	Stopper	1		
44	N.S.	Screw M 6X50 nylon	2		/

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

Ind	#References	Designation	Qty	Spare part level**	Torque N.m./ glue
***45a**	**155 803 602**	**Gearmotor Siemens (shotmeter 155 800 000)**	**1**	**2**	
***45b**	**917 480 425**	**Gearmotor Yaskawa (shotmeter 155 800 010)**	**1**	**2**	
***-**	**155 803 903**	**Cylinder top body kit**	**1**	**3**	
49	N.S.	▪ Screw CHc M 16X60 cl 10/9	4		130
50	N.S.	▪ Upper body	1		
51	N.S.	▪ pulling	4		165 + loctite 222
15	N.S.	▪ Washer W 16	4		
53	N.S.	▪ Seal NBR	1		

*** Recommended maintenance parts.** **N S: Denotes parts are not serviceable.**
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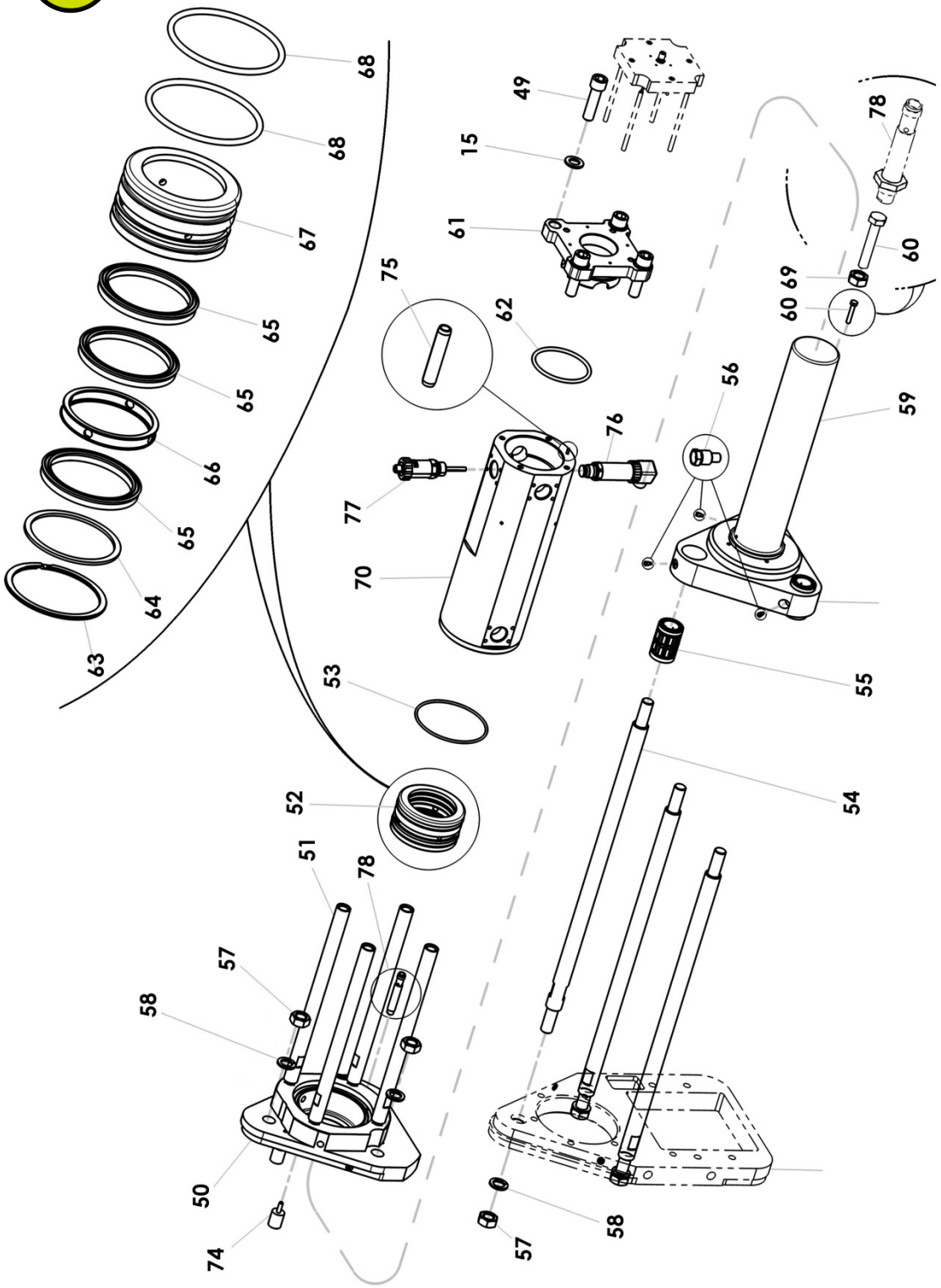
C

Dosing chamber



Ind	# References	Designation	Qty	Spare part level**	Torque N.m./ glue
***-**	**155 803 904**	**Guide Kit**	**1**	**2**	
54	N.S.	▪ Guide axis	3		
55	N.S.	▪ Guide bushing	3		
56	N.S.	▪ Grease nipple	3		
57	N.S.	▪ Nut H M 18	6		190
58	N.S.	▪ Washer WZ 18	6		
***-**	**155 803 910**	**Metering piston kit**	**1**	**2**	
59	N.S.	▪ Piston	1		
60	N.S.	▪ Screw H 6X35	1		/
69	N.C.	▪ Low nut H M 6	1		
***-**	**155 803 906**	**Bottom flange kit**	**1**	**3**	
61	N.S.	▪ Flask cylinder	1		
52	N.S.	▪ Pin	1		
62	N.S.	▪ FKM seal	1		
***52**	**155 801 500**	**Cartridge Kit**	**1**	**1**	
63	N.S.	▪ Stop segment	1		
64	N.S.	▪ Locking washer	1		
65	N.S.	▪ Seal	3		
66	N.S.	▪ Brace	1		
67	N.S.	▪ Cartridge body	1		
68	N.S.	▪ FKM seal	2		
***70**	**155 801 008**	**Dosing cylinder**	**1**	**3**	
74	**155 803 917**	**Set of 3 mechanical cylindrical stops**	**1**	**2**	
76	**10 704 936**	**Pressure sensor**	1	**2**	
***78**	**901 470 106**	**Inductive position sensor**	**1**	**2**	**7**
***-**	**155 803 900**	**L1K dosing maintenance kit + nut M8x1**	**1**	**1**	
53	N.S.	▪ Seal NBR	1		
62	N.S.	▪ Seal FKM	1		
100	N.S.	▪ Seal Viton	4		
*52	N.S.	▪ Seal cartridge	1		

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

Ind	# References	Designation	Qty	Spare part level**	Torque N.m./ glue
***-**	**155 803 901**	**L1K dosing screw kit**	**1**	**2**	
9	N.S.	▪ Screw F / Hc 90 ° M 6x16 cl 8/8	5		/
11	N.S.	▪ Screw F/Hc 90° M 16X35 cl 8/8	4		60
12	N.S.	▪ Screw F/Hc 90° M 16X40 cl 8/8	2		60
13	N.S.	▪ Nut M16 nylstop	2		/
14	N.S.	▪ Screw CHc M 16X40 cl 8/8	2		60
15	N.S.	▪ Washer MU 16	8		
17	N.C.	▪ Nut M12	4		70
19	N.S.	▪ Nut M 12 nylstop	4		
20	N.S.	▪ Washer W 12	15		
57	N.S.	▪ Nut H M 18	6		
58	N.S.	▪ Washer WZ18	6		
36	N.S.	▪ Screw CHc M 12X90 cl 8/8	1		80
44	N.S.	▪ Screw M 6X50 nylon	2		/
49	N.S.	▪ Screw CHc M 16X60 cl 10/9	4		130
60	N.S.	▪ Screw H 6X35	1		/
115	N.S.	▪ Screw CHc M 6X20 cl 12/9	20		7.2
69	N.S.	▪ Low nut H M 6	1		

*** Recommended maintenance parts.**
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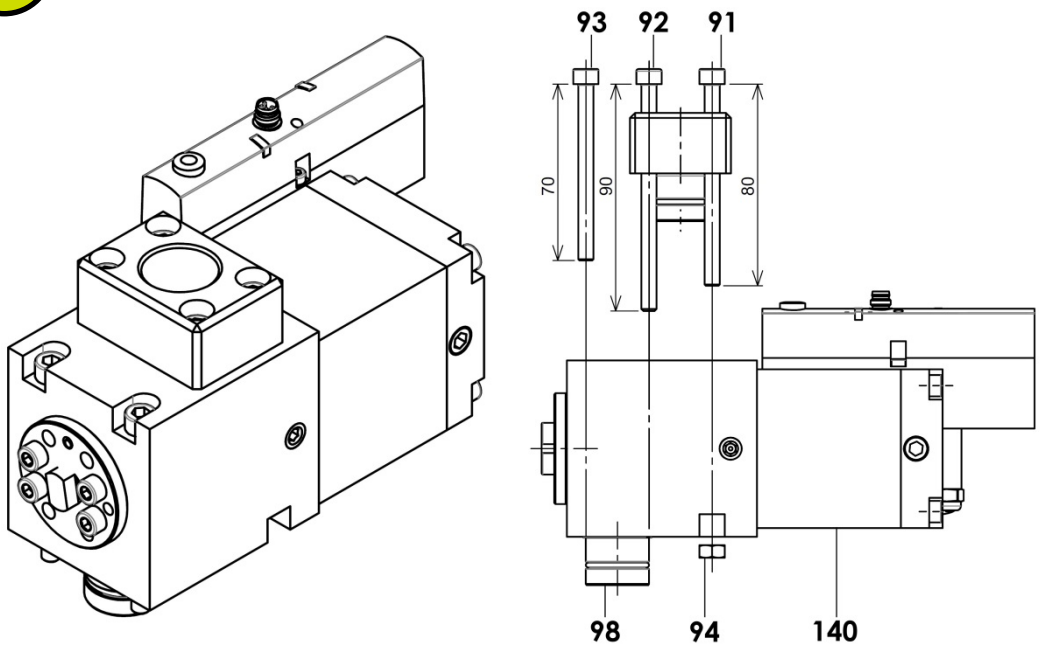
****Level 1 : Preventive maintenance**
Level 2 : Corrective maintenance
Level 3 : Exceptional maintenance

D Valve

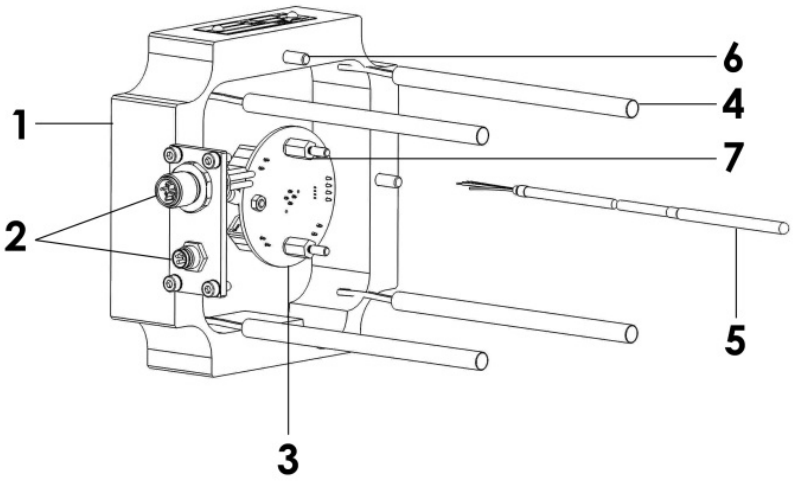


Ind	# References	Designation	Qty	Spare part level**	Torque N.m./ glue
***-**	**155 802 000**	**Valve E-Dispense L1K**	**1**	**2**	
91	N.C.	▪ Screw CHc M6x80 cl 10/9	2		7.2
92	N.C.	▪ Screw CHc M6x90 cl 10/9	2		7.2
93	N.C.	▪ Screw CHc M6x70 cl 10/9	2		7.2
94	N.C.	▪ Nut H M 6	2		
98	N.C.	▪ Nipple	1		
100	N.C.	▪ FKM seal	2		
101	N.C.	▪ Stop segment	1		

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

E

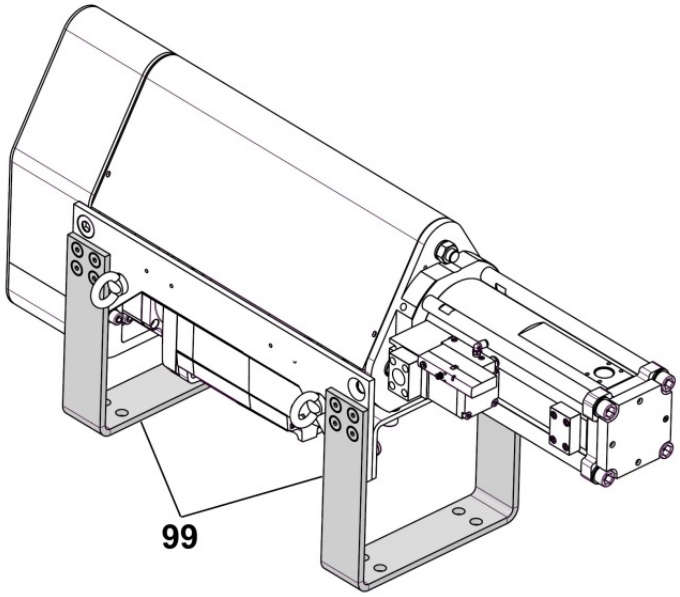
Heating block



Ind	# References	Designation	Qty	Spare part level**	Torque N.m./ glue
***-**	**155 803 010**	**Heating block 230V – 800W PT100**	**1**	**3**	
1	N.S.	Cover	1		
2	155 803 013	Connectors Kit	1		
3	N.S.	Connection Card	1		
4*	N.S.	Heating cartridge	4	2	
5*	204 292	Drill	1	2	
6	N.S.	Screw CHc 4X25 cl 8/8 steel ZG	4		/
7	N.S.	Spacer PE lg10 M3x8	3		
***-**	**101 203 322**	**Set of 4 heating cartridges**	**1**	**2**	
4*	N.S.	Heating cartridge			

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

F Accessories and options



Ind	# References	Designation	Qty	Spare part level**	Torque N.m./ glue
*-	155 803 805	Horizontal support kit	1	3	
*-	155 803 810	Vertical support kit	1	3	

* Recommended maintenance parts.
**Level 1 : Preventive maintenance
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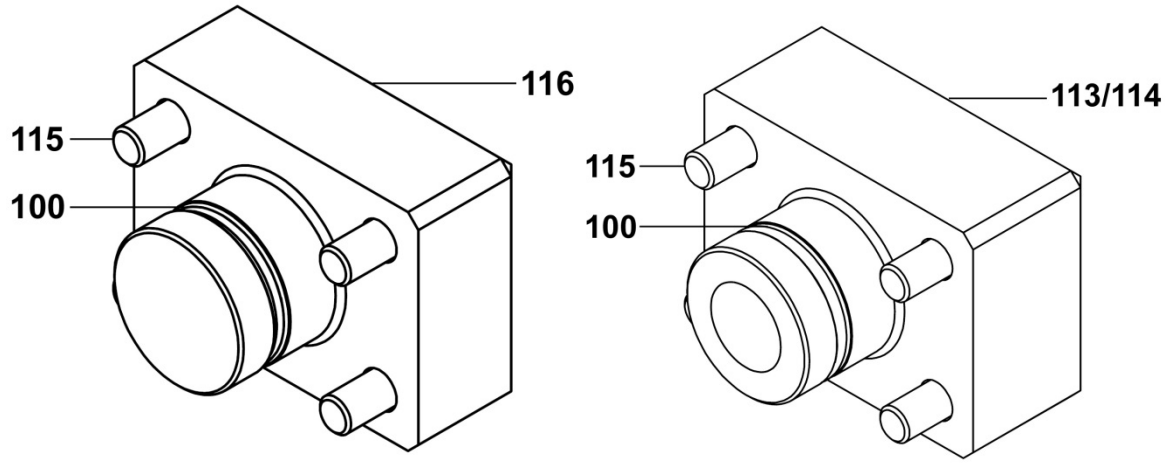
Level 3 : Exceptional maintenance



Ind	# References	Designation	Qty	Spare part level**	Torque N.m./ glue
***-**	**155 802 200**	**Stopper kit**	**1**	**3**	
116	N.S.	▪ Plug	1		
100	N.S.	▪ Seal Viton	1		
115	N.S.	▪ Screw CHc M 6X20 cl 12/9	4		7.2
***-**	**155 802 205**	**MØ25 F1 / 2"G Adapter Kit**	**1**	**3**	
114	N.S.	▪ Adapter MØ25 F1 / 2 "G	1		
100	N.S.	▪ Seal Viton	1		
115	N.S.	▪ Screw CHc M 6X20 cl 12/9	4		7.2
***-**	**155 802 210**	**MØ25 F3 / 4"G Adapter Kit**	**1**	**3**	
113	N.S.	▪ Adapter MØ25 F3 / 4"G	1		
100	N.S.	▪ Seal Viton	1		
115	N.S.	▪ Screw CHc M 6X20 cl 12/9	4		7.2
***-**	**155 802 011**	**Pack of 10 seals**	**1**	**1**	
100	N.S.	▪ Seal Viton	1		

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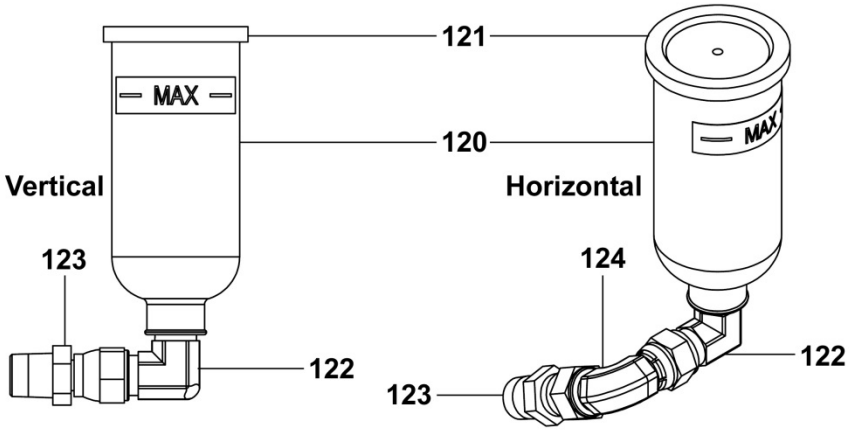
N S: Denotes parts are not serviceable.
Level 2 : Corrective maintenance
Level 3 : Exceptional maintenance



Ind	# References	Designation	Qty	Spare part level**	Torque N.m./ glue
***-**	**155 803 815**	**Passive lubrication kit**	**1**		
120	N.S.	▪ Cartridge	2		
121	N.S.	▪ Cover	2		
122	N.S.	▪ Elbow 90° M1/2 JIC F1/2 JIC	2		
123	N.S.	▪ Adapter M1/4" G F1/2 JIC	2		Loctitte 5772
124	N.S.	▪ Elbow 90° M1/2 JIC M1/4" G	2		
-	149 990 020	▪ Bottle of T lubricant (125 ml / 4,4 oz)	4	1	

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

Ind	# References	Designation	Qty	Spare part level**
*-	149 990 001	Can of T lubricant (2l / 70,4 oz)	1	