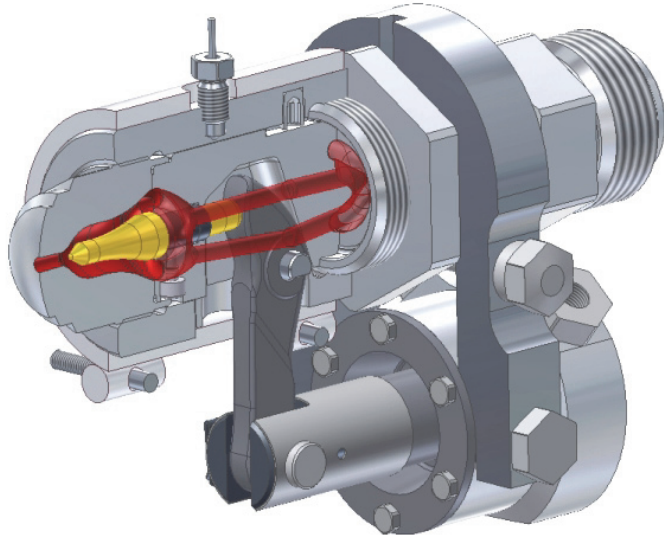


Machine needle shut-off nozzle type H

pneumatically or hydraulically controlled



Applications:

Thermoplastics (not applicable for PVC)

Shut-off mechanism:

Needle shut-off with integrated 2-way actuator
pneumatically or hydraulically operated

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Safety instructions



This symbol indicates explanations about important matters.
Failure to read these or false handling could result in injury or damage.

Please pay attention to the following safety instructions and precautions



Handling

- Installation and servicing to be only carried out by suitable personnel according to the installation and service instructions.
- Nozzle can become extremely hot. Full face protection and heat resistant gloves must be worn.



Damage precaution

- Do not drop the nozzle or exert it to unnecessary forces.
- Take care that no foreign bodies enter the working parts of the nozzle.
- No adjustment or manipulation when nozzle is in operation.
- Never heat steel parts over **520°C**.
- The actuator is designed for temperatures up to **180°C**.
- Nozzle is only to be used for injection molding purposes.



Operational notes

- Maximum injection rate / temperature: **2500 bar at 400°C**.
- Torques on screws and threaded parts must be adhered to.
- Noise emissions from the nozzle do not exceed 70 dB(A).



Explosion danger

- Some plastics produce gases if they stay for a longer time in a heated environment. There is a risk that the gas may escape explosively through the nozzle orifice.

Keep this manual in a convenient place for future reference.

Installation instructions



Read safety instructions!

Legend:



with Hand



smear with high temperature lubricant



tool



inspection



temperature equalisation

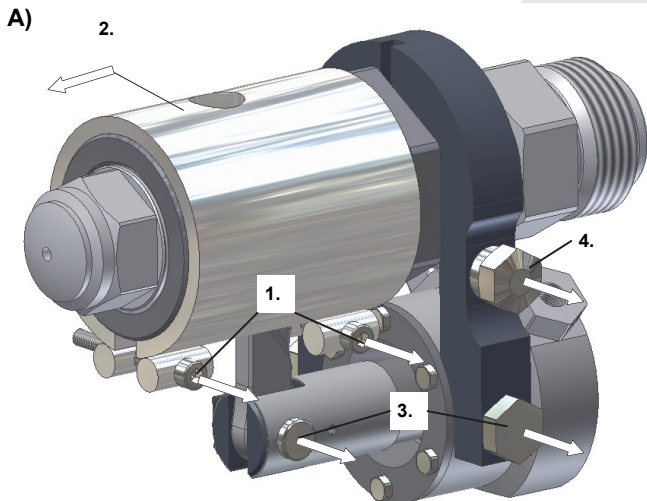
Note:

Nozzle is delivered pre-assembled. The following instructions are for installation on the machine. For easier handling remove the actuator.

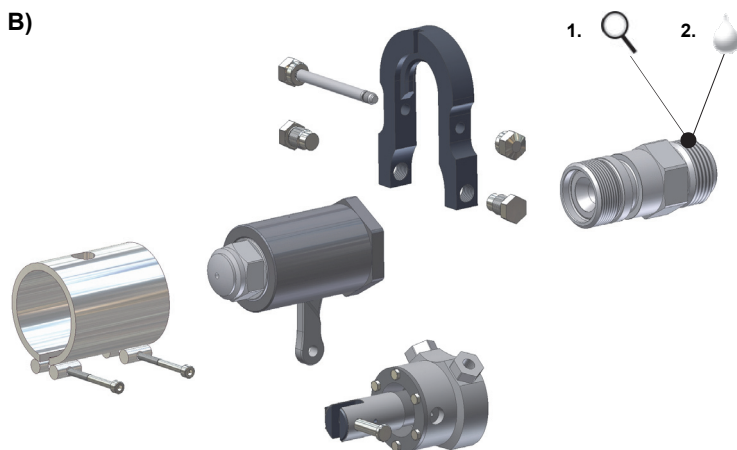
Tools required:

Hexagonal wrench, allen key, ring spanner, socket wrench, pliers, punch.
See chapter **Assembly** for tool sizes and torques.

Installation steps A) - H)

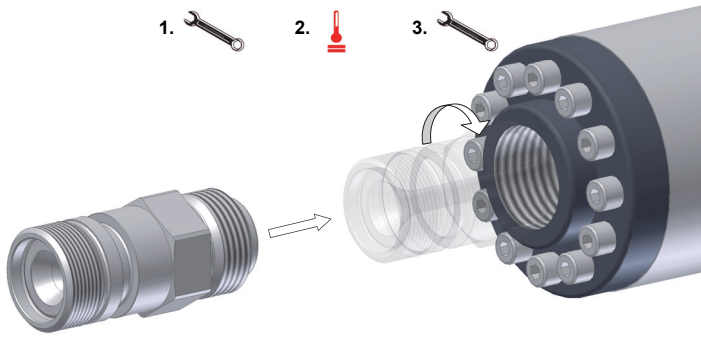


1. Loosen and respectively remove heater band screws
2. Take off heater band
3. Remove actuator
4. Remove bracket bolt and take away bracket



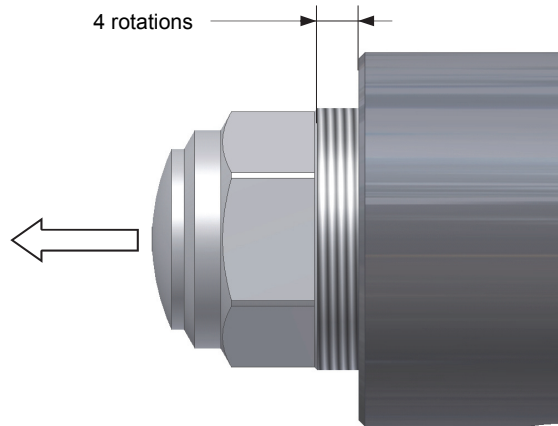
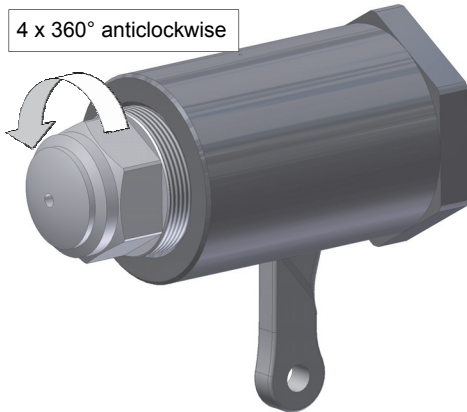
1. Check surfaces and threads
2. Smear adapter thread with high temperature lubricant

C)



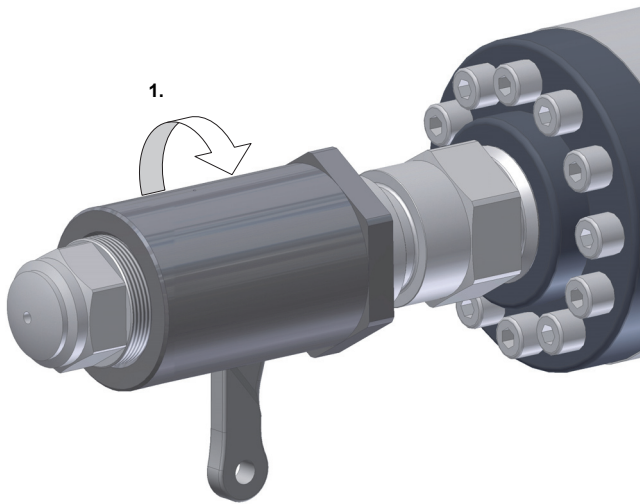
1. Mount adapter (acc. to machine handbook)
2. Await temperature equalisation
3. Tighten. Check machine handbook for required torque

D)

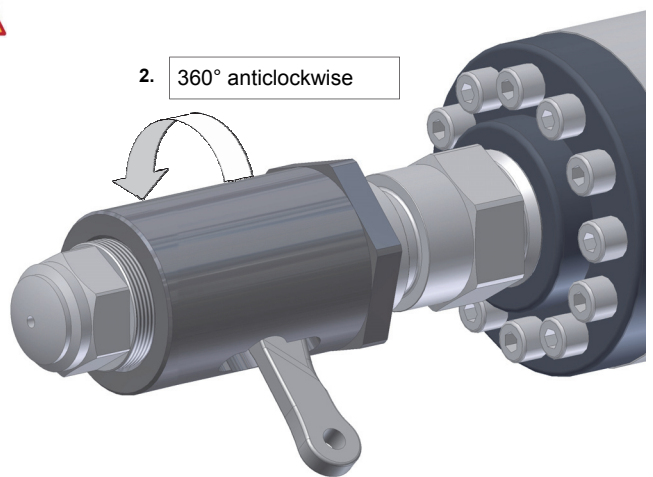


1. Loosen the tip by about 4 rotations. **Do not remove it.**

E)

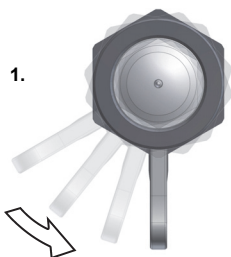


1. Screw the nozzle (clockwise) onto the adapter until stop.



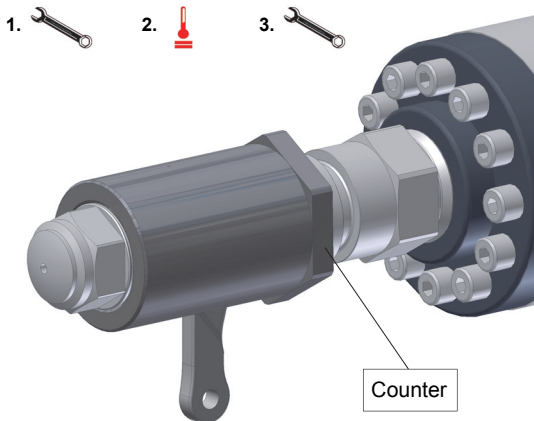
2. Unscrew the nozzle (anticlockwise) by one full rotation

F)



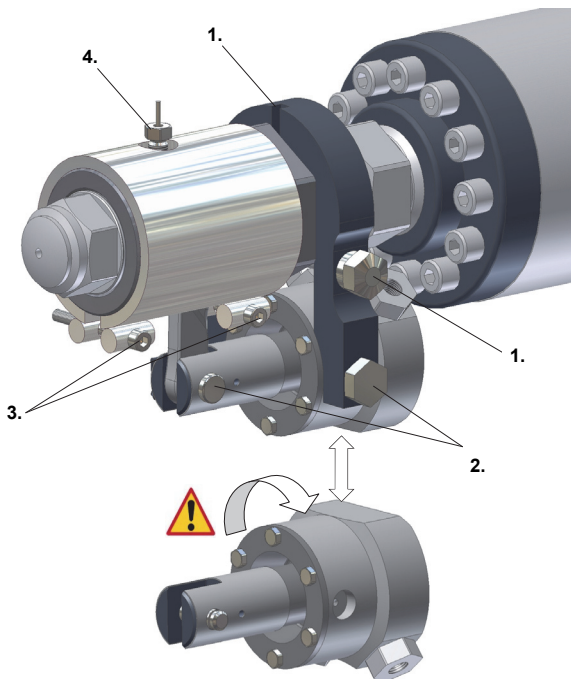
1. Align the assembly by turning **anticlockwise** only. When possible align the lever downwards.

G)



1. Tighten tip. Maintain lever position by countering the body with a hexagonal wrench
2. Await temperature equalisation
3. Re-tighten tip

H)



1. Mount bracket
2. Attach actuator and connect flexible pneumatic/hydraulic source



Note: The actuator can be rotated 180° to suit

3. Attach heater band
4. Attach temperature sensor

Installation is now complete, please see **Initial operation** below.

Initial operation



Read safety instructions!

Initial operation:

1. Bring nozzle to operating temperature
2. **Only by first initial operation:** tighten screws and heater band screws to the maximum recommended torque
3. Make sure that the Polymer is completely melted
4. Eject the heated material. This follows after extrusion at low speed (ca. 25 - 30s) or through injecting out at three to five times the rate of injection

Actuator:

Operational data according to engraving on cylinder

Leakage:

Between needle and guide there is a melt film which prevents the needle from blocking. The melt film will be continuously renewed and will eventually leak out of the nozzle.



At machine downtimes: nozzle temperature must be lowered.

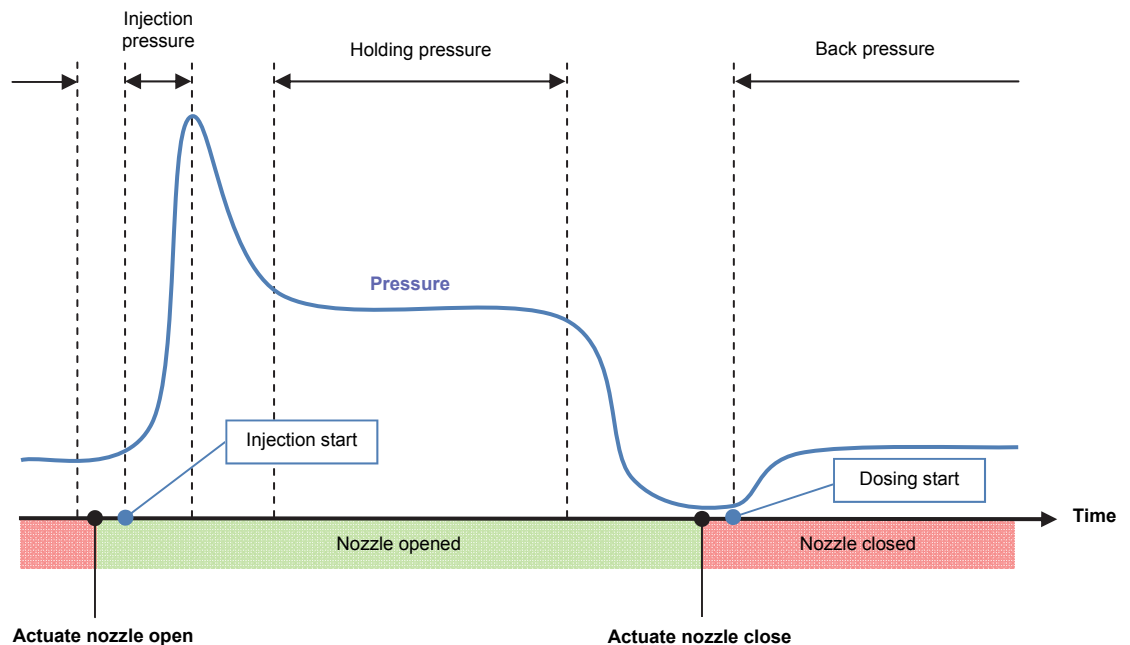
Ideal nozzle actuation stages

Actuating the nozzle at the stages indicated in the graph and generally when pressure is lowest helps increase longevity of wear parts.

Nozzle must be open before injection takes place. Injection with a closed or partially closed nozzle will reduce the lifespan of wear parts.

Closing the nozzle against high melt pressure slows the mechanism and increases wear. Measures to reduce the melt pressure should be taken if the actuator requires more than 0.5 sec. to complete the piston stroke.

Example injection pressure / time graph:



Service instructions



Read safety and cleaning instructions!

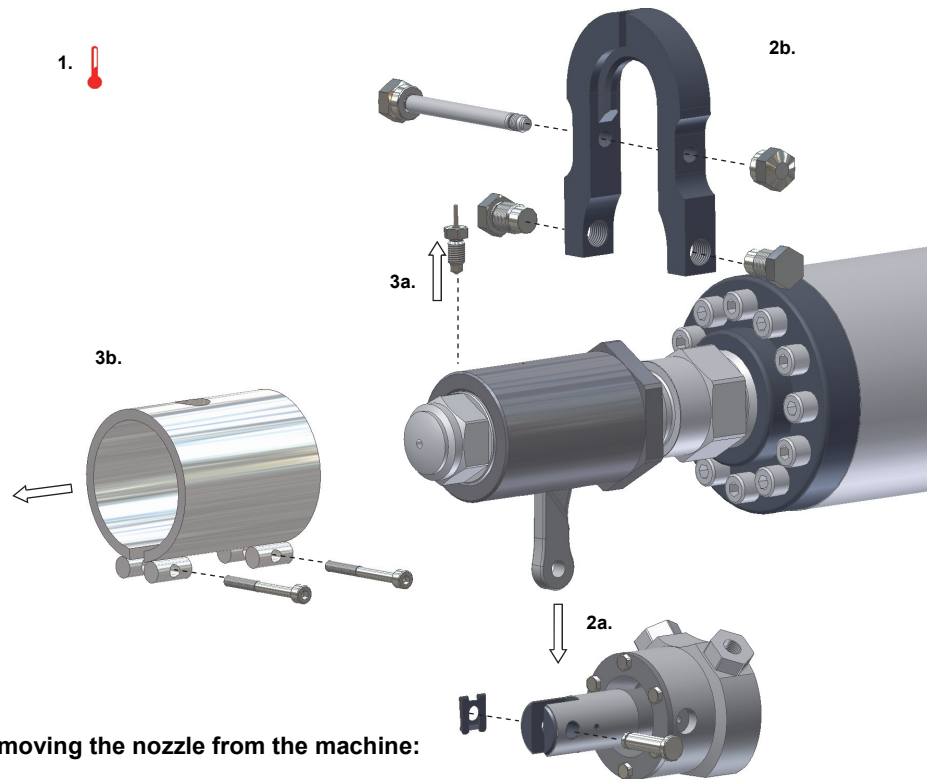
Assembly Note: Grease all threads with high temperature paste! All threads are right-hand threads.

Attention

Actuator service information available separately in documentation **Actuator**.
For more information see www.herzog-ag.com.

Disassembly A) - C)

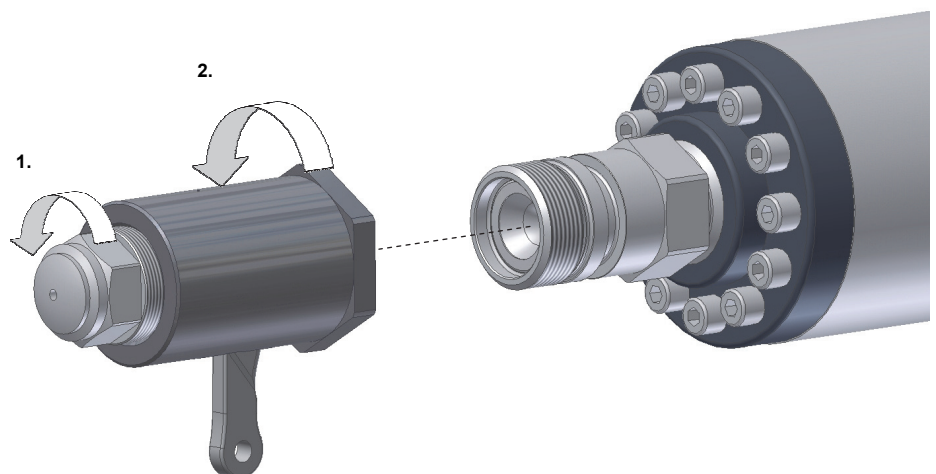
A)



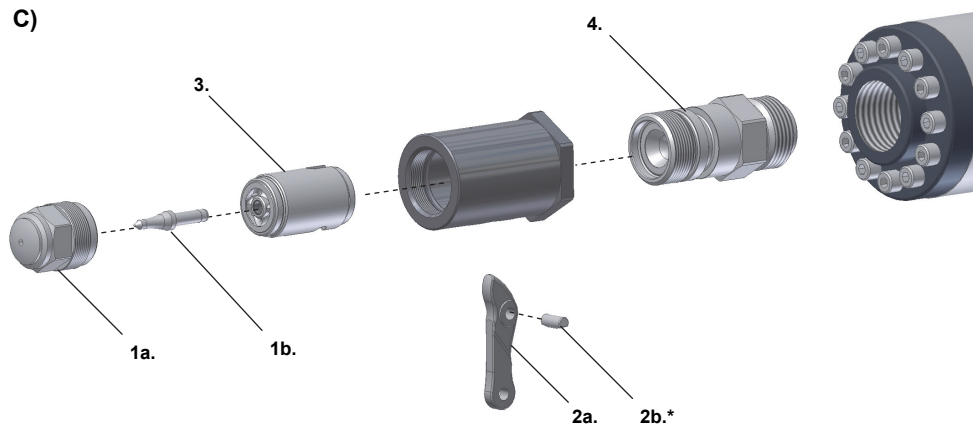
Removing the nozzle from the machine:

1. Heat nozzle to operating temperature
2. Remove actuator (2a.) and bracket (2b.)
3. Remove temperature sensor (3a.) and heater band (3b.)

B)

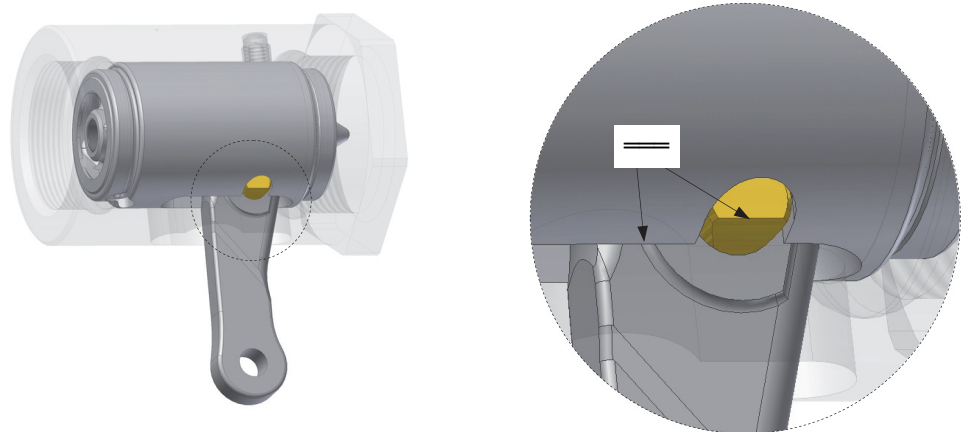


1. Loosen the tip by approx. 2 rotations (2 x 360° anticlockwise)
2. Screw the body (anticlockwise) from the adapter



1. Remove tip (1a.) and needle (1b.)
2. Remove lever (2a.) and pivot bolt (2b.) *Please refer to **Assembly note** below, when re-assembling the nozzle.
3. Remove needle guide
4. Remove adapter

Assembly note



Align the notch on the pivot bolt parallel to the needle guide opening!

Cleaning instructions

To clean the nozzle we recommend three methods:

1. Clean the nozzle (**without actuator**) in a heated state, as far as possible on the machine and disassemble according to the instructions.
2. Remove the nozzle complete from the machine and (**without actuator**) clean in a fluidized bath, ultrasonic cleaning reactor or oven. Afterwards take the nozzle apart and clean the individual parts.
3. Profit from our cleaning service. The nozzle is taken apart, checked and repaired if necessary.

Best results for nozzles used with materials like LCP, PPS or PEEK can be expected, if the nozzle is heated up to 500°C and hold it at that temperature level for about 2 hours. If you do so the material will burn.

Clean using the following:

- Propane Gas (without oxygen)
- Oil bath
- Fluidized bath
- Micro-blasting

Assembly

Note: Grease all threads with high temperature paste! See also chapter **Disassembly**.



Assemble according to the numerical order.

Pos.	Qty.	Description	Tool size (Torque)	
			Metric (Nm)	Imperial (lbs/ft)
1	1	Body	Counter - SW60	Counter - 2 3/8
2	1	Needle guide	-	-
3	1	Lever	-	-
4	1	Pivot bolt	-	-
5	1	Adapter	SW46 - 60 (see machine handbook)	1 13/16 - 2 3/8 (see machine handbook)
6	1	Bracket	-	-
7	1	Bracket bolt	-	-
8	2	Bracket nut	SW17 (30)	11/16 (22)
9	1	Actuator	-	-
10	1	Bolt	-	-
11	1	Splint	-	-
12	2	Bolt screw	SW17 (30)	11/16 (22)
13	1	Needle	-	-
14	1	Tip	SW36 (500)	1 7/16 (368)
15	1	Heater band	-	-
16	2	Heater band screws	SW4 	5/32 

Parts subject to wear / ordering spare parts

Your contact information:

Company	
Street	
City / Zip	
Contact	
Tel. / Fax	
E-Mail	

Lasered nozzle identity no.: please insert here

--

Quantity	Part (for part name, see chapter Assembly)

Send to:

herzog systems ag
CH-9230 Flawil / Switzerland

Tel. +41 (0) 71 394 19 69 / Fax +41 (0) 71 394 19 60
www.herzog-ag.com / info@herzog-ag.com