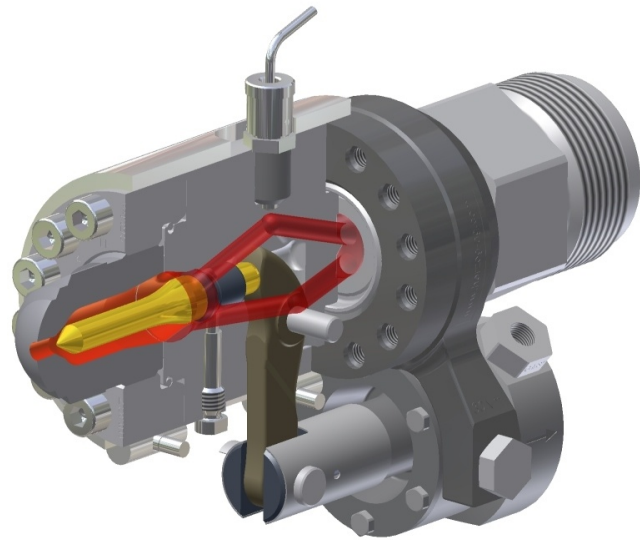


Machine needle shut-off nozzle type HP

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

Index of contents

Chapter	Page
Safety instructions	2
Installation instructions	3
- Installation steps	3
Initial operation	5
Service instructions.....	6
- Disassembly.....	6
- Recommended disassembly tool	7
- Cleaning instructions.....	7
Assembly	8
Parts subject to wear / ordering spare parts.....	9

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: **3000 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:

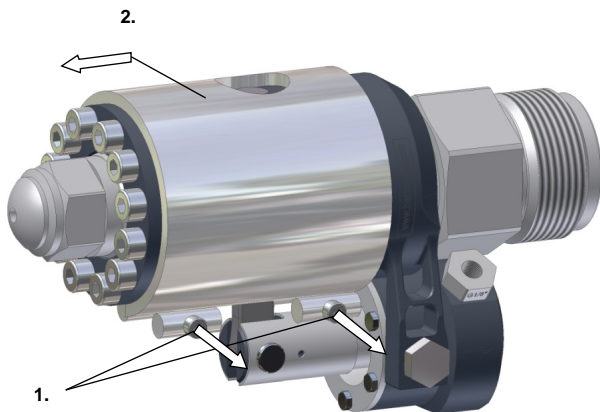
Nozzle is delivered pre-assembled. The following instructions are for installation on the machine. For easier handling remove the actuator.

Tools required:

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

Installation steps A) - G)

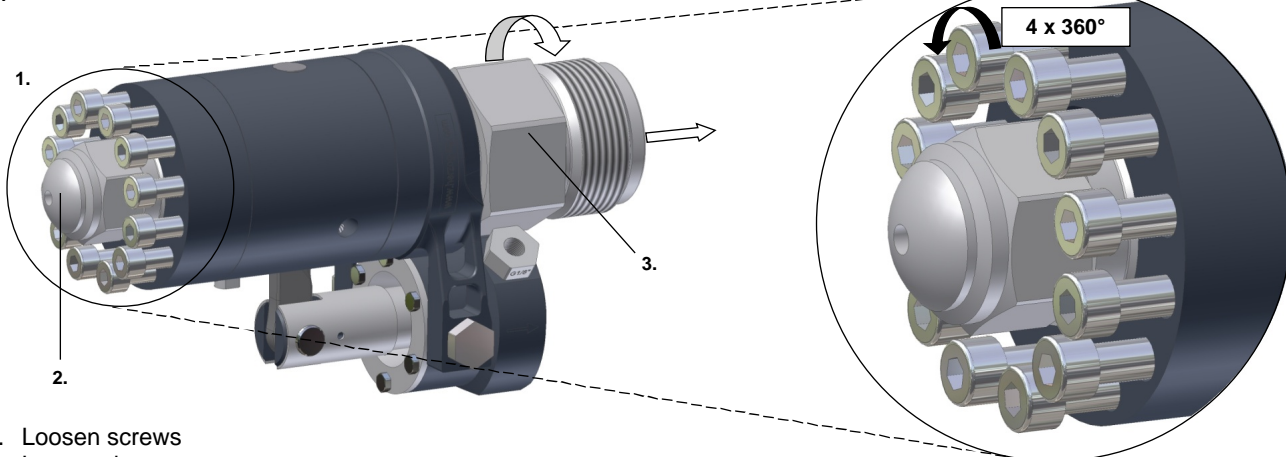
A)



1. Loosen and respectively remove heater band screws
2. Take off heater band

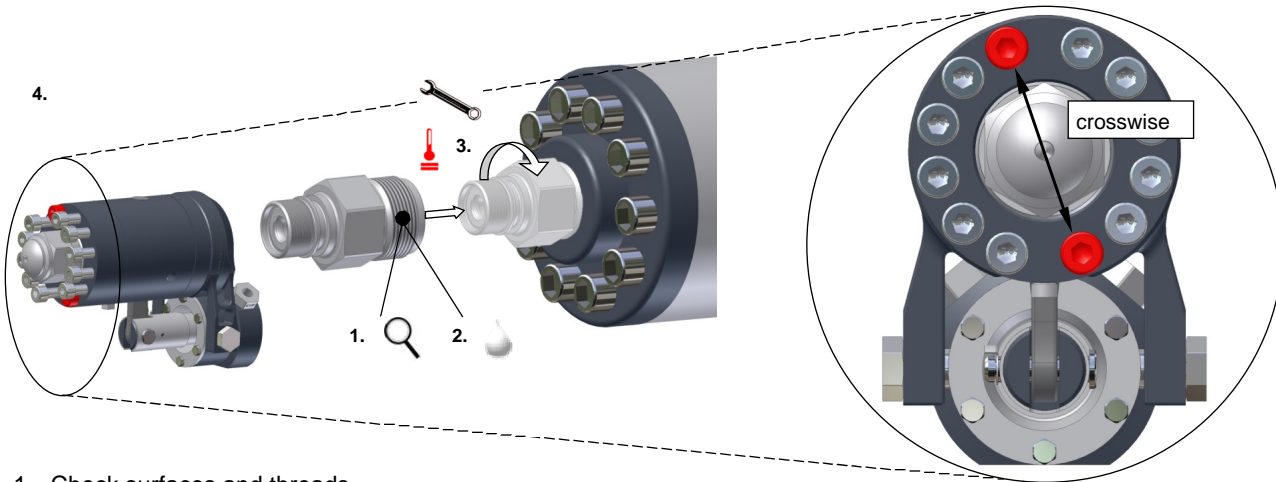
B)

Note: Loosen the screws by four rotations.



1. Loosen screws
2. Loosen tip
3. Screw the adapter out

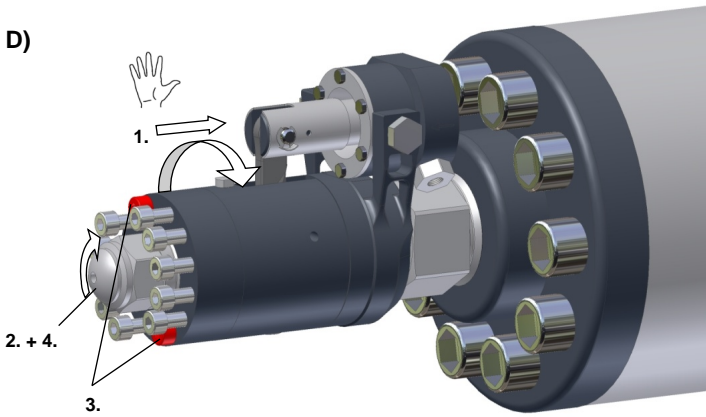
C)



1. Check surfaces and threads
2. Smear adapter thread with high temperature lubricant
3. Mount adapter; await temperature equalisation and tighten acc. to machine handbook

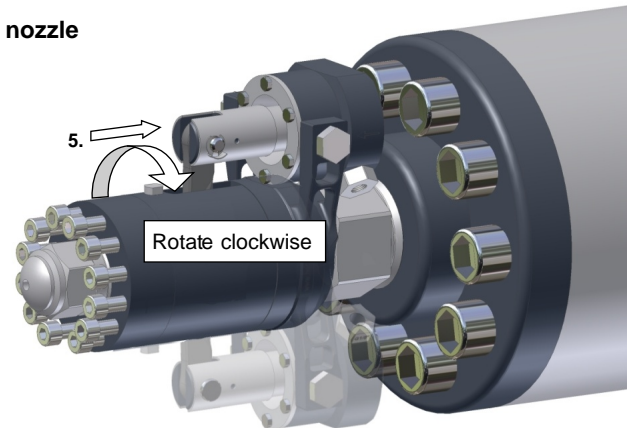
4. Tighten two screws crosswise

D)



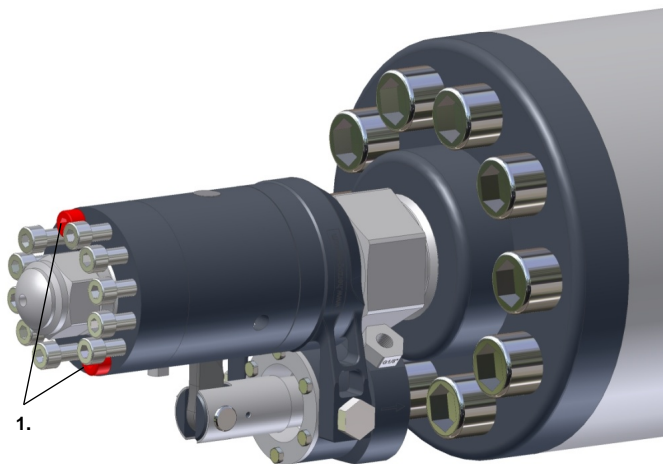
1. Screw nozzle onto the adapter until contact
2. Screw in tip further until contact
3. Loosen the two previously tightened screws by four rotations.
4. Screw in tip approx. 180° further

Align nozzle



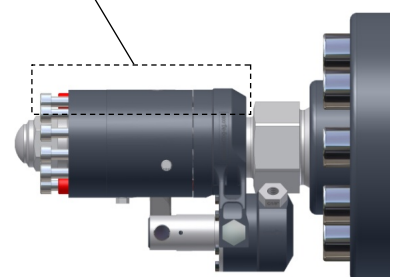
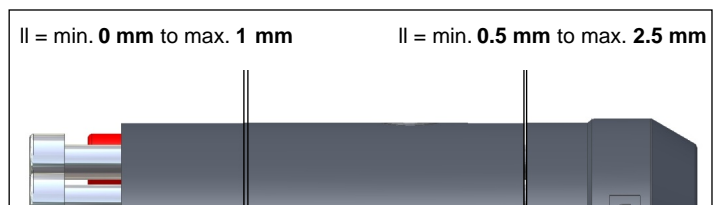
5. Align: Screw nozzle **clockwise** further onto the machine
Note: min. 1/4 rotation

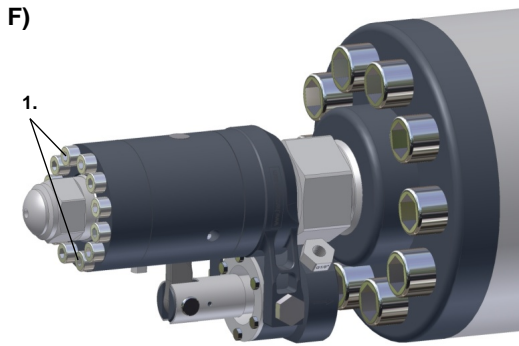
E)



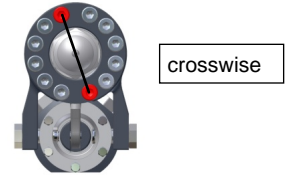
1. Tighten two crosswise screws
2. Check gap between body and adapter ring **max. 2.5 mm**

⚠ Adapter ring gap nonexistent: Loosen the two screws and screw the nozzle 360° clockwise.

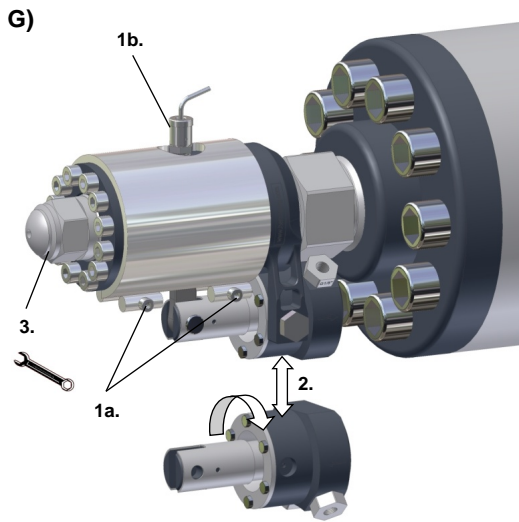




1. Tighten all screws in a crosswise fashion



Torque	HP0	HP1	HP2
1. pass	handtight	handtight	handtight
2. pass	7 Nm	15 Nm	35 Nm
3. pass	10 Nm	22 Nm	45 Nm
4. pass	12 Nm	25 Nm	50 Nm



1. Mount heater band (1a) and temperature sensor (1b)
2. Attach flexible actuator pipe connections
Note: The actuator can be rotated 180° to suit
3. Tighten tip with torque according to chapter Assembly*

* Tip is already tight when mounting step E) has been correctly observed and the required gap exists between tip-ring and the nozzle body

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 torques
3. Make sure that the Polymer is completely melted
4. Eject the heated material. This follows after extrusion at low speed (time ca. 25 - 30 S) 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.

Service instructions

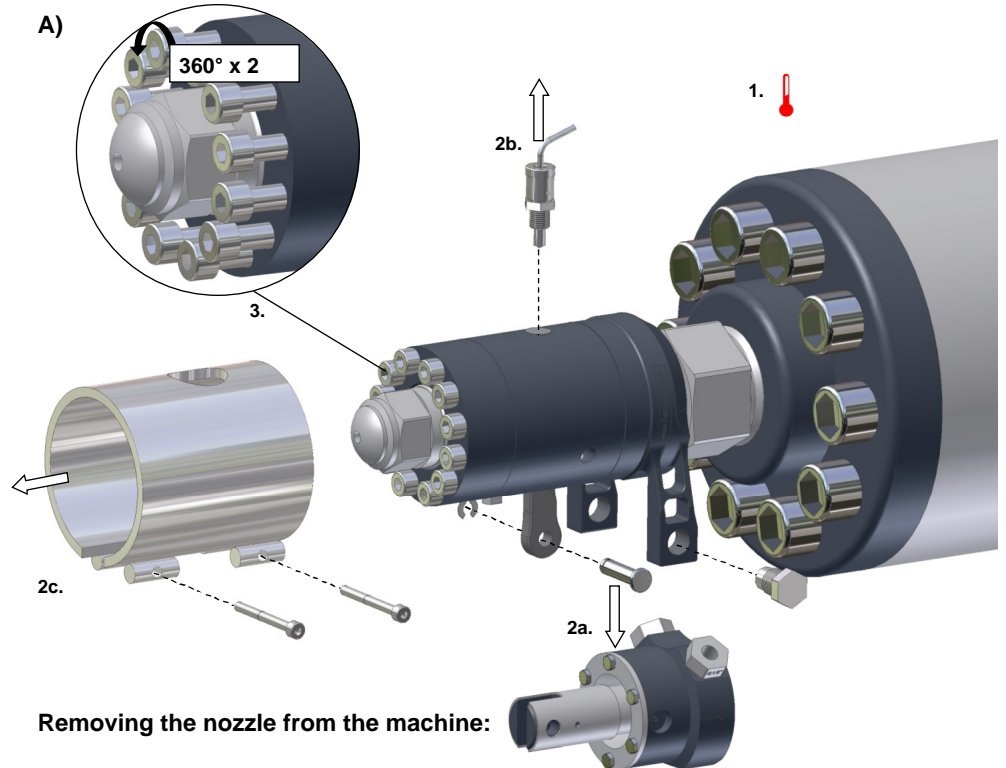


Read safety and cleaning instructions!
Assembly Note: Grease all threads with high temperature paste!

Attention

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

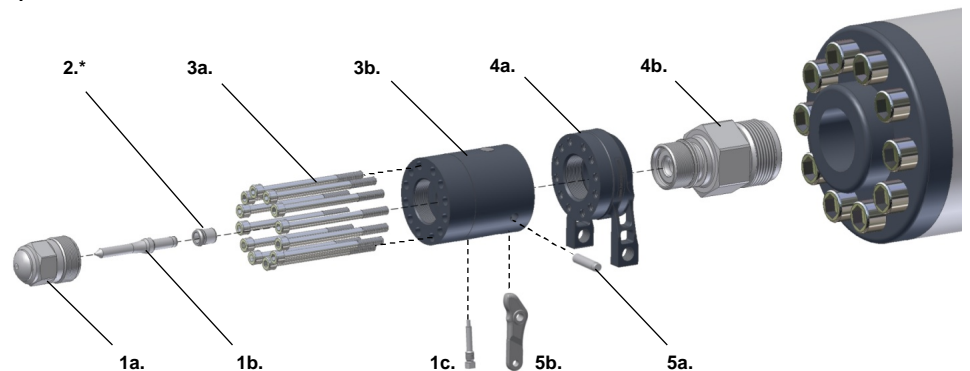
Disassembly A) - B)



Removing the nozzle from the machine:

1. Heat nozzle to operating temperature
2. Remove actuator (2a.), temperature sensor (2b.) and heater band (2c.)
3. Loosen screws (**two rotations**)

B)



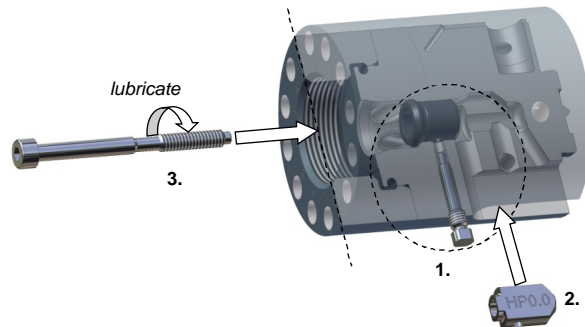
1. Remove tip (1a.), Needle (1b.) and holding pin (1c.)
2. Remove bushing. *If you have difficulty removing the bushing we recommend using our disassembly tool, see **Recommended disassembly tool**
3. Remove screws (3a.) and nozzle body (3b.)
4. Remove bracket (4a.) and adapter (4b.)
5. Strike out the lever bolt using a punch (5a.) and remove lever (5b.)

Recommended disassembly tool

Option:

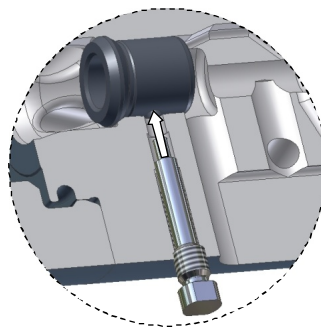
Our disassembly tool eases the needle bushing removal.

1. Holding pin must be removed or min. 5 mm screwed out
2. Position removal nut
3. Screw in removal screw until the bushing is removed



Assembly Note:

Bushing bore must be aligned with holding pin. Tighten the holding pin with moderate strenght (ca. 8Nm).



The end position of the holding pin is approx. **0.5 mm** away from the body unit.

More information at www.herzog-ag.com

Cleaning instructions

While the nozzle is still installed, clean as far as possible in a heated state and finally disassemble completely and clean individual parts.

Plastics such as; LCP or PPS burn away when the nozzle is heated in an oven for tow hours at 500°C.



Never heat steel parts above 500°C!
Clean pneumatic or hydraulic actuator separately with max. 150°C!
Avoid kinking the heater band and sensor cables!

Help tools for cleaning:

- Sand fluidized bed
- Glass bead blasting
- Cleaning oven
- Gas burner
- Wire brush
- Steel wool

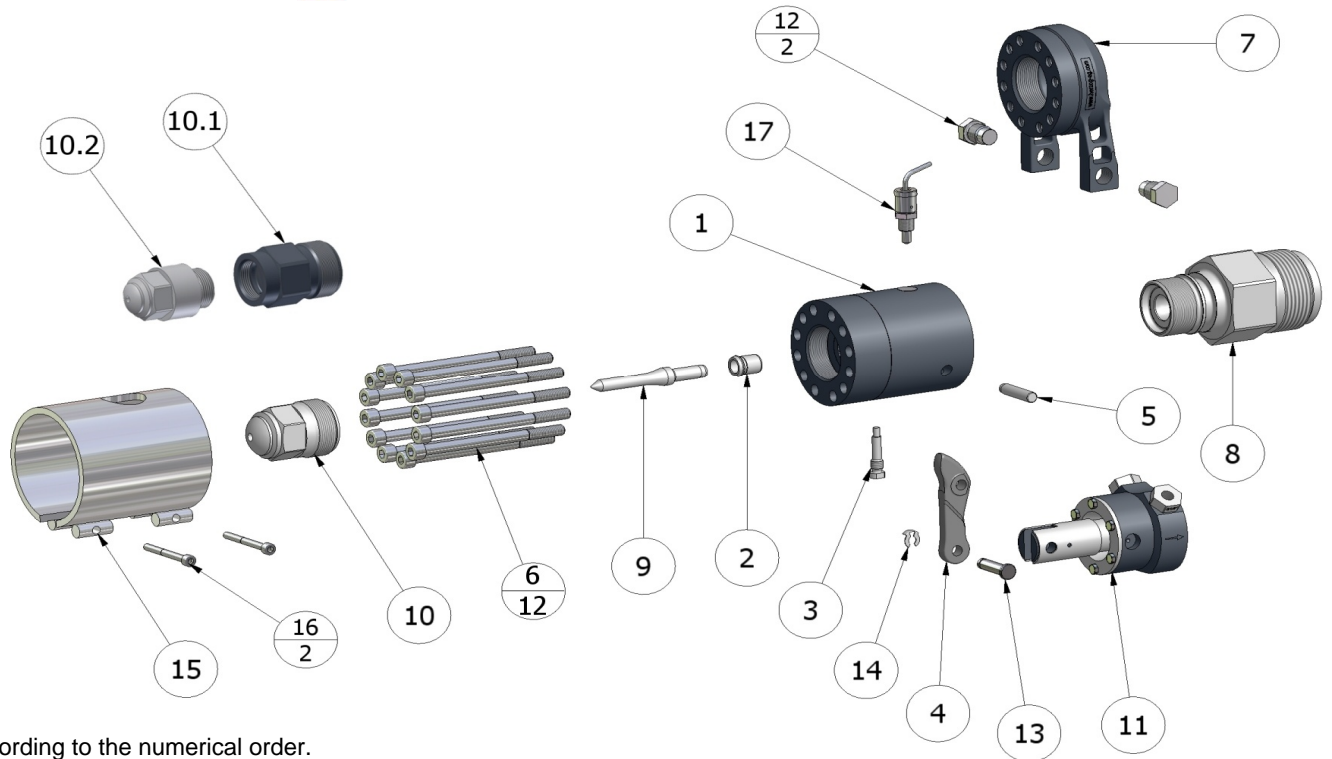
Before reassembly: check all parts for damage or wear.

Profit from our cleaning service. The nozzle is disassembled, checked and repaired if necessary after customer approval.

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)					
			HP0		HP1		HP2	
			Metric (Nm)	Imperial (lbs/ft)	Metric (Nm)	Imperial (lbs/ft)	Metric (Nm)	Imperial (lbs/ft)
1	1	Body	-	-	-	-	-	-
2	1	Needle bushing	-	-	-	-	-	-
3	1	Holding pin	SW5 (3)	3/16 (2.2)	SW5 (3)	3/16 (2.2)	SW8 (5)	5/16 (3.7)
4	1	Lever	-	-	-	-	-	-
5	1	Pivot bolt	-	-	-	-	-	-
6	12	Screws	SW5 (12)	3/16 (8.8)	SW6 (25)	1/4 (18.4)	SW10 (50)	13/32 (36.8)
7	1	Bracket / Adapter ring	-	-	-	-	-	-
8	1	Adapter (<i>torque acc. to machine handbook</i>)	SW36	1 7/16	SW46 - 60	1 13/16 - 2 3/8	SW65 - 80	2 6/16 - 3 1/8
9	1	Needle	-	-	-	-	-	-
10	1	Tip	SW27 (220)	1 1/16 (162)	SW36 (500)	1 7/16 (368)	SW55 (1200)	2 3/16 (885)
10.1	1	Base for two-piece tip	SW36 (220)	1 7/16 (220)	SW41 (500)	1 5/8 (368)	SW65 (1200)	2 9/16 (885)
10.2	1	Cap for two-piece tip	SW27 (120)	1 1/16 (88.5)	SW32 (200)	1 1/4 (147)	SW41 (600)	1 5/8 (442)
11	1	Actuator	-	-	-	-	-	-
12	2	Bolt screws	SW13 (12)	1/2 (8.8)	SW17 (30)	11/16 (22.1)	SW17 (30)	11/16 (22.1)
13	1	Bolt	-	-	-	-	-	-
14	1	Splint	-	-	-	-	-	-
15	1	Heater band	-	-	-	-	-	-
16	2	Heater band screws	SW4	5/32	SW4	5/32	SW4	5/32
17	1	Temperature sensor	SW14	9/16	SW14	9/16	SW14	9/16

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