



## HPS III-MH hot runner nozzle for direct side gating Assembly and exchange of tip inserts



### Important safety instruction



During assembly or disassembly of the HPS III-MH nozzle high temperatures arise.



**Risk of burns!**  
Personal protective equipment (gloves, protective goggles) must be worn during all work steps.

### General assembly notes / Required tools

1. **ATTENTION:** Please remove the tip inserts from nozzle body before assembling or disassembling the HPS III-MH nozzle in the mould!
2. The maximum nozzle temperature is 350 °C (662 °F)
3. **Required tools:**

#### HPS III-MHL nozzle, linear version:

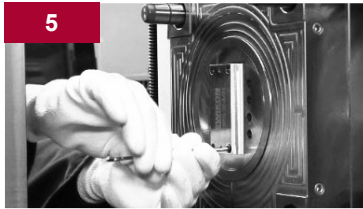
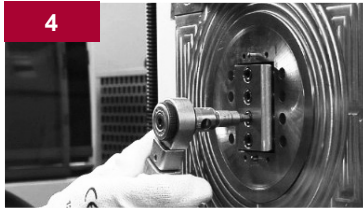
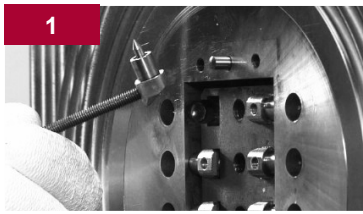
- Allen key, wrench size 5 AF
- Torque wrench, adjustment range 16 Nm (11.8 ft·lb) with insert for wrench size 5 AF
- Threaded screw or threaded rod M4

#### HPS III-MHR nozzle, radial version

- Allen key, wrench size 3 and 5 AF
- Torque wrench, adjustment range 2 and 11 Nm (1.5 and 8.1 ft·lb) with insert for wrench size 3 and 5 AF
- Threaded screw or threaded rod M4

### Assembly of the nozzle body

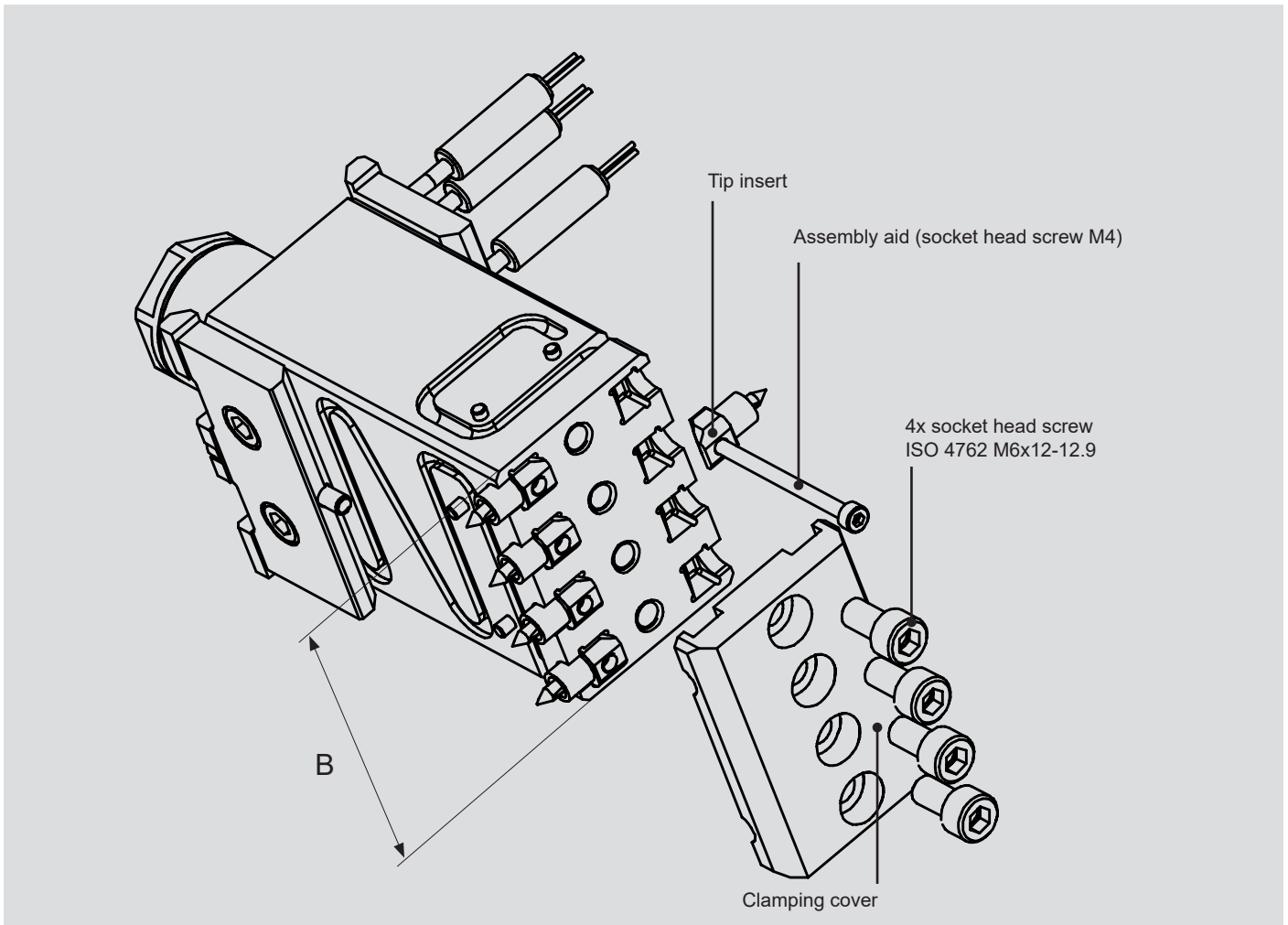
1. The nozzle is installed into the mould without tip inserts.
2. Please install the tip inserts according to the "Tip insert assembly" instructions on the following pages

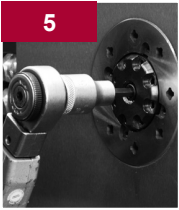
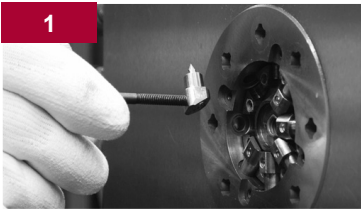


## Tip insert assembly for the HPS III-MHL nozzle, linear version

1. Install the tip inserts. Please ensure that they are positioned correctly and that the sealing surfaces between tip insert and nozzle are clean. A screw M4 or a threaded rod can be screwed into the tip insert as an assembly aid.
2. Attach clamping cover and fix it with the socket head screws M6x12, with the socket head screws M6x12 being screwed from the centre outwards. Use half of the defined torque (please see chart).
3. Heat up nozzle to processing temperature (maximum nozzle temperature 350 °C / 662 °F) and warm up the mould until the mould temperature is reached. Keep the resulting  $\Delta T$  (difference between processing and mould temperature) for at least 10 minutes before finally retightening the screws with the matching torque. Not adhering to this procedure can result in damaged sealing sleeves and leakage.
4. Retighten socket head screws M6x12 with the defined torque (please see chart) from the centre outwards.
5. Install heat protective cover.

Versions of HPS III-MHL linear nozzle				
Nozzle	Width B [mm]	No. of tips	No. of screws	Torque (unlubricated)
MHL 93/95 MHL100	42	4	2	11 Nm (8.1 ft·lb)
	62	8	4	11 Nm (8.1 ft·lb)
	62	4	4	8 Nm (5.9 ft·lb)
	62	4	2	11 Nm (8.1 ft·lb)
MHL200	62	4	2	16 Nm (11.8 ft·lb)

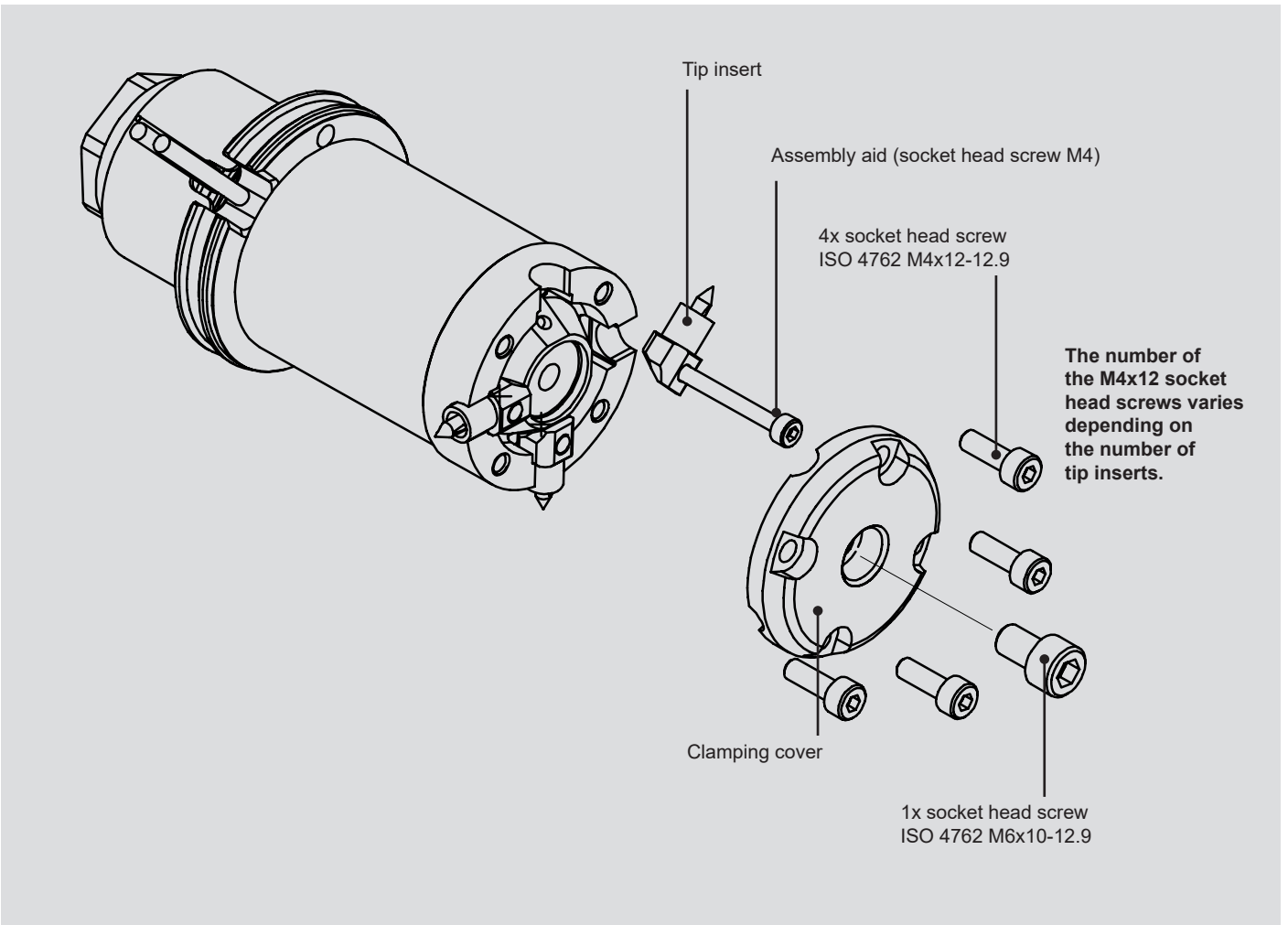




## Tip insert assembly for the HPS III-MHR nozzle, radial version

1. Install the tip inserts. Please ensure that they are positioned correctly and that the sealing surfaces between tip insert and nozzle are clean. A screw M4 or a threaded rod can be screwed into the tip insert as an assembly aid.
2. Attach clamping cover and fix it with central socket head screw M6x10. Use half of the defined torque (please see chart).
3. Screw in socket head screws M4x12 crosswise. Use half of the defined torque (please see chart).
4. Heat up nozzle to processing temperature (maximum nozzle temperature 350 °C / 662 °F) and warm up the mould until the mould temperature is reached. Keep the resulting  $\Delta T$  (difference between processing and mould temperature) for at least 10 minutes before finally retightening the screws with the matching torque. Not adhering to this procedure can result in damaged sealing sleeves and leakage.
5. Retighten central socket head screw M6x10 with defined torque (see table).
6. Retighten socket head screws M4x12 crosswise with defined torque (see table).
7. Install heat protective cover.

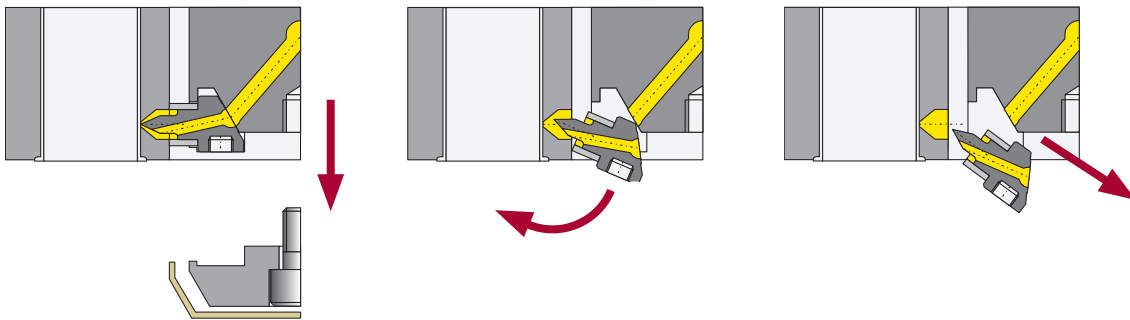
Versions of HPS III-MHR radial nozzle		
Nozzle	Torque (unlubricated)	
	M4x12 - 12.9	M6x10 - 12.9
MHR 93/95 / MHR100 / MHR111	4 Nm (3.0 ft-lb)	11 Nm (8.1 ft-lb)
MHR112 / MHR122	2.5 Nm (1.8 ft-lb)	Central socket head screw not available for this version
MHR200	4 Nm (3.0 ft-lb)	2 tips: 6 (4.4 ft-lb) 4 tips: 11 (8.1 ft-lb)





**Attention: In order to avoid damage to the tips the nozzle must be heated up to processing temperature before deinstalling the tip inserts.**

1. Heat up nozzle to processing temperature (maximum nozzle temperature 350 °C / 662 °F) and warm up the mould until the mould temperature is reached. Keep the resulting  $\Delta T$  (difference between processing and mould temperature) for at least 10 minutes to heat the gate area through. To avoid a leaking out of melted plastic from the nozzle body the temperature can be minimally decreased if necessary. At any time the plastic must be elastic enough to deinstall the tip insert without damage and increased effort. This must be checked for each individual case before deinstallation.
2. Deinstall heat protective cover (if installed).
3. Deinstall clamping cover according to the following procedure to avoid tilting:  
**HPSIII-MHL nozzles:** Unscrew the socket head screws in the following order: 1 - 3 - 4 - 2.  
**HPSIII-MHR nozzles:** Unscrew the socket head screws M4 crosswise, unscrew the central socket head screw M6 last.
4. Deinstall tip inserts according to the shown scheme. A threaded rod can be screwed into the tip insert as a deinstallation tool. Tilt tip inserts carefully to the outside and remove them.



Unscrew and remove clamping cover

Tilt tip insert out of the mould insert and remove it

5. Cool down nozzle to room temperature.
6. The nozzle can be disassembled when all tip inserts have been removed.

## Cleaning of tip inserts



For most resins the plastic cap can be removed from the tip insert directly after the tip insert has been disassembled and when it is still hot.

Should this not be possible please use a hot air blower to heat up the resin around the tip insert until the plastic cap can be removed.

**Important: To prevent the tip inserts from damaging while cleaning them never heat up the tip inserts to more than 350 °C. Therefore, it is not allowed to burn the resin around the tip inserts or to use gas flames.**

# EWIKON

EWIKON Heißkanalsysteme GmbH

Siegener Straße 35 • 35066 Frankenberg Tel: (+49) 64 51 / 50 10

Fax: (+49) 64 51 / 50 12 02 • E-mail: [info@ewikon.com](mailto:info@ewikon.com) • [www.ewikon.com](http://www.ewikon.com)

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