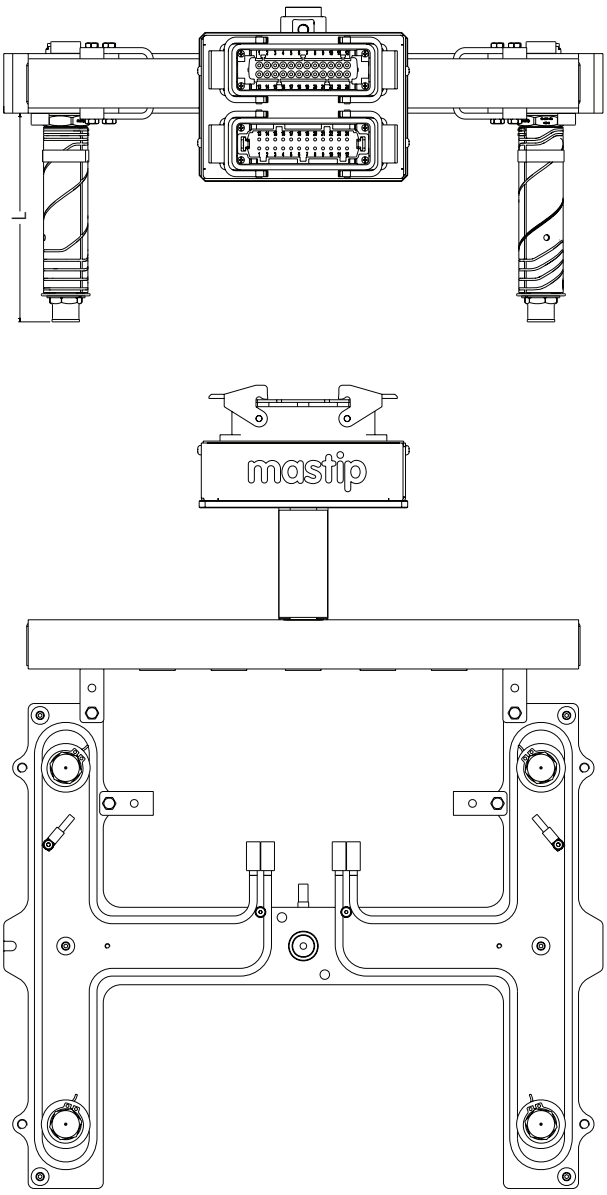
mastip™
hot runner solutions

Nexus™ Pre-Wired Hot Runner System

www.mastip.com

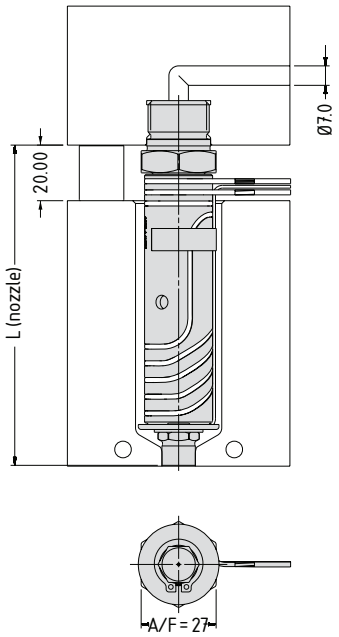
Assembly Overview



Key Features

- Fast and simple installation out of the box
- Incorporates advanced heating technology for superior thermal performance
- Fully customisable to suit your application requirements
- Able to process commodity and abrasive engineering grade polymers
- Available in 16,19 and 27 Series FlowLoc™ nozzles

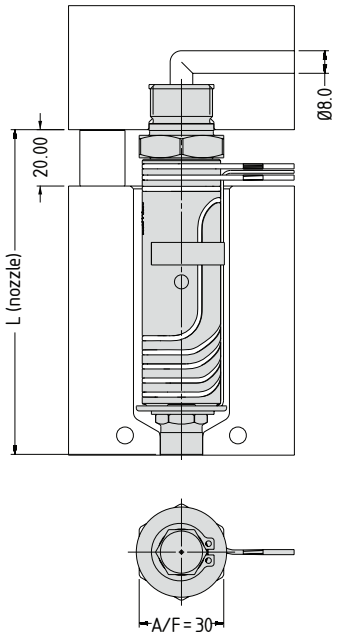
FlowLoc™ Range Series and Lengths



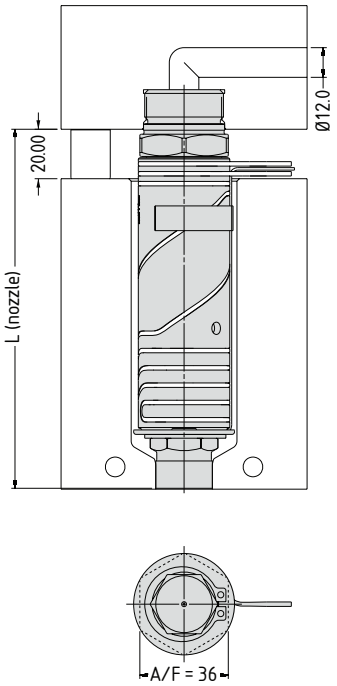
TX16

FlowLoc™ Standard Lengths							
Series	L (nozzle)*						
16 Series	95	115	130	145	175	____	____
19 Series	95	115	130	145	175	____	____
27 Series	95	115	130	145	175	225	275

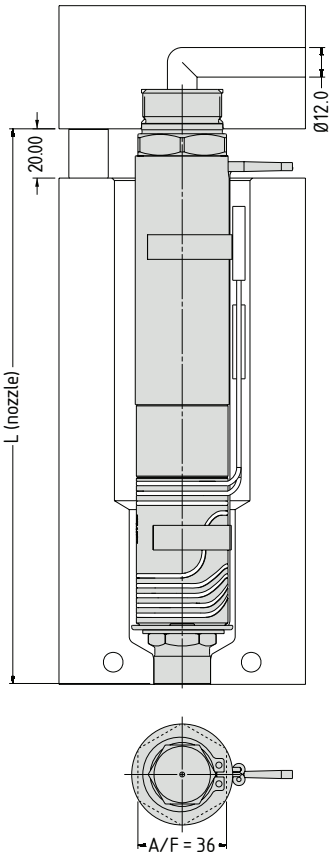
* Custom lengths available on request



TX19



TX27095 – TX27175

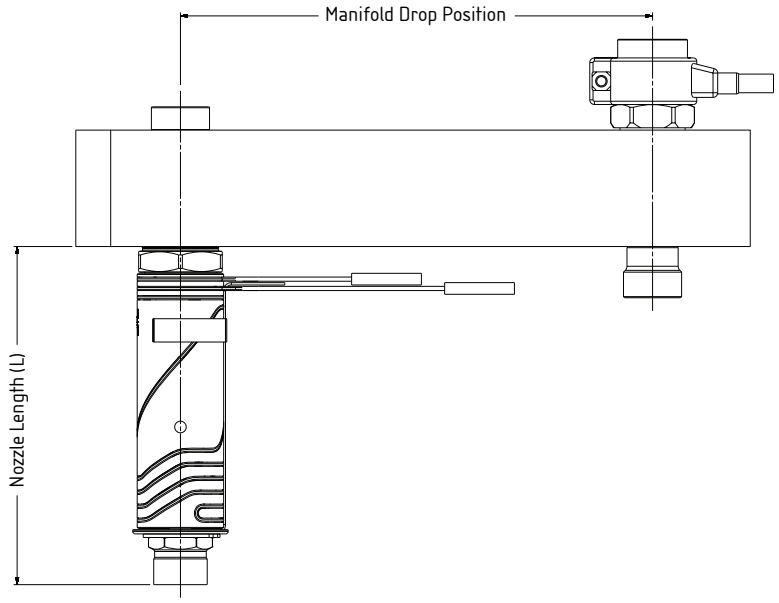


TX27225 – TX27275

Design Consideration

The threaded connection between nozzle and manifold results in a bending force over the length of the nozzle body during thermal expansion of the manifold. This bending force across the nozzle body must remain within an acceptable ratio to ensure good service life of the nozzle body.

Please refer to the graph below for Mastip's recommended ratios for manifold drop position to nozzle length when considering your mould design.

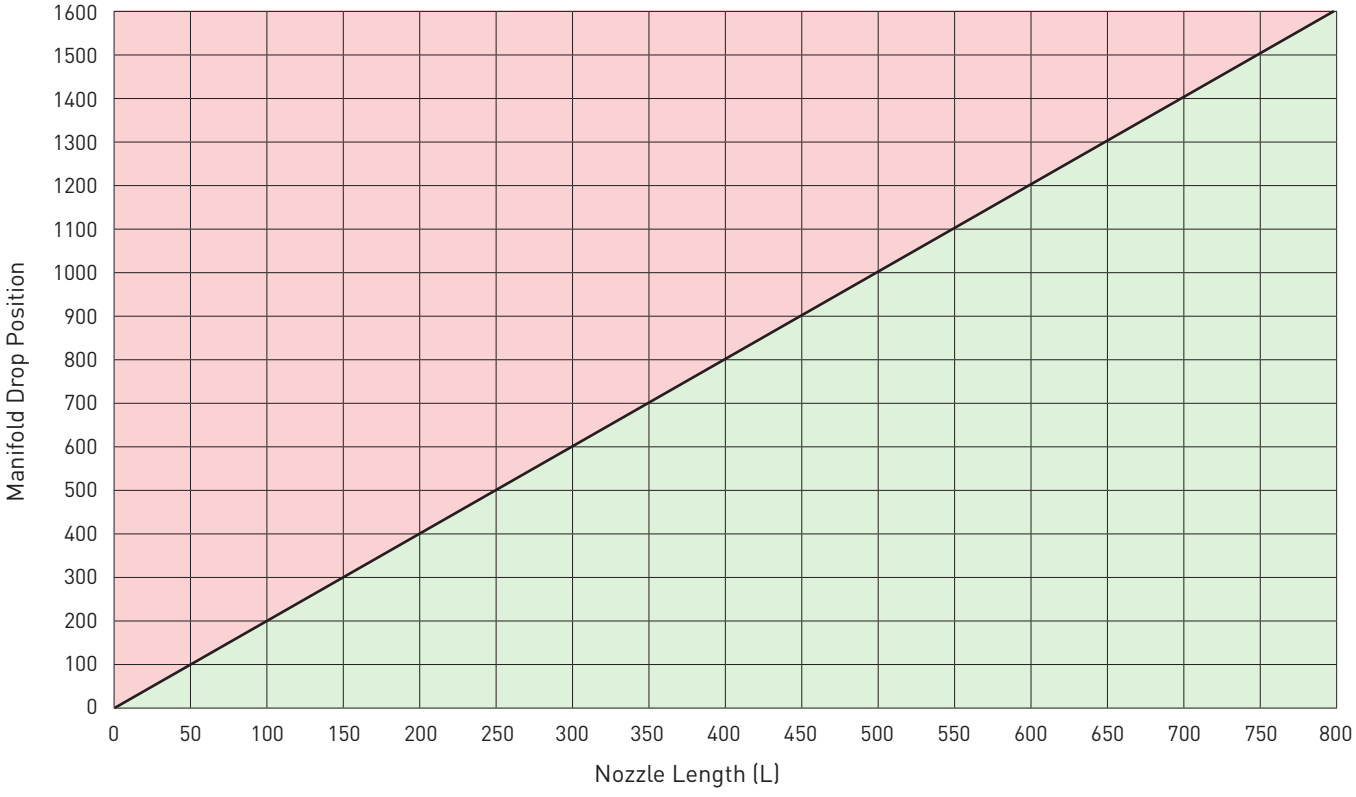


Acceptable Ratio

Manifold Drop Position = 200mm
Nozzle Length (L) = 100mm

Unacceptable Ratio

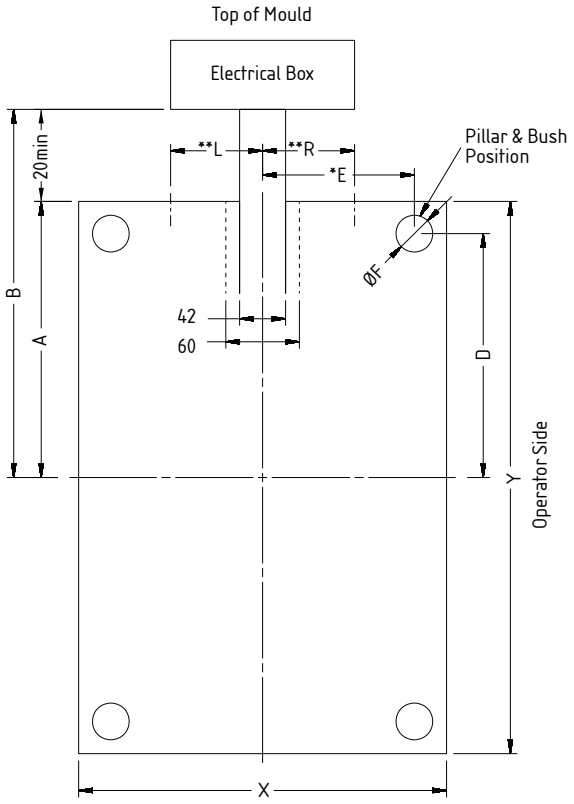
Manifold Drop Position = 400mm
Nozzle Length (L) = 100mm



Nexus™ System Ordering Information

Note: To ensure that Mastip are able to supply system approval drawings in a timely and accurate manner, please complete the required Nexus™ System Ordering Information and supply to Mastip along with the mould design in CAD format.

Depending on the manifold configuration your preferred electrical box position may not be possible.



Nexus™ System Ordering Information		
A	Centre of mould to top	_ _ mm
B	Gap greater than 20mm	_ _ mm
D	Pillar position from centre of mould	_ _ mm
E	Pillar position from centre of mould	_ _ mm
F	Max. diameter of Pillar	_ _ mm
X	Mould width	_ _ mm
Y	Mould length	_ _ mm
Electrical Box Position – choose L, C or R		
L	Left	L +_ _ mm
C	Central	C
R	Right	R + _ _ mm

Note

* If pillar and bush has an unsymmetrical position provide the closest to center line.

** If the lifting strap extends over the cavity plate and onto the manifold plate, this may interfere with the channel. Ensure the channel is R of L with correct offset to avoid lifting strap.

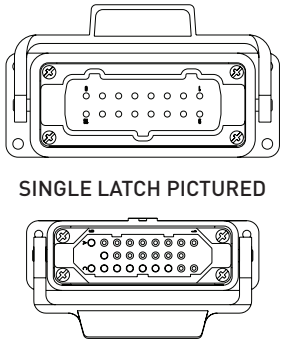
Nexus™ System Electrical Combinations

Electrical Specifications Ordering Information

- When ordering a Nexus™ System please specify the mould side plug combination and wiring sequences.
- Below are Mastip's default options. Please tick preferences then scan and return to Mastip.
- If your preference falls outside of Mastip's default options please specify your mould side plug combination and wiring sequence with a detailed description showing zone, thermocouple and power sequence.

Default options for Mould Side Plug Combinations

Option 1 - 16 Pin Female TC, 25 Pin Male Power



SINGLE LATCH PICTURED

Suitable for up to 8 zones

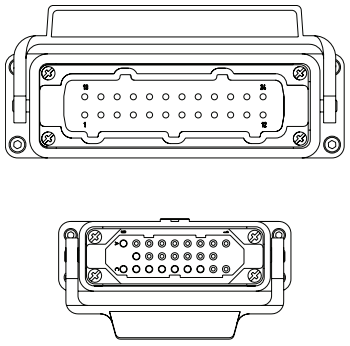
Zone #	TC Terminals	Power Terminals
1	1(+) - 9(-)	"A" 1 - 2
2	2(+) - 10(-)	"A" 3 - 4
3	3(+) - 11(-)	"A" 5 - 6
4	4(+) - 12(-)	"A" 7 - 8
5	5(+) - 13(-)	"B" 2 - 3
6	6(+) - 14(-)	"B" 4 - 5
7	7(+) - 15(-)	"B" 6 - 7
8	8(+) - 16(-)	"C" 1 - 2

Tick required option

Single Latch ☐

Dual Latch ☐

Option 2 - 24 Pin Female TC, 25 Pin Male Power



Suitable for up to 12 zones

Zone #	TC Terminals	Power Terminals
1	1(+) - 13(-)	"A" 1 - 2
2	2(+) - 14(-)	"A" 3 - 4
3	3(+) - 15(-)	"A" 5 - 6
4	4(+) - 16(-)	"A" 7 - 8
5	5(+) - 17(-)	"B" 2 - 3
6	6(+) - 18(-)	"B" 4 - 5
7	7(+) - 19(-)	"B" 6 - 7
8	8(+) - 20(-)	"C" 1 - 2
9	9(+) - 21(-)	"C" 3 - 4
10	10(+) - 22(-)	"C" 5 - 6
11	11(+) - 23(-)	"C" 7 - 8
12	12(+) - 24(-)	"A" 9 - "C" 9

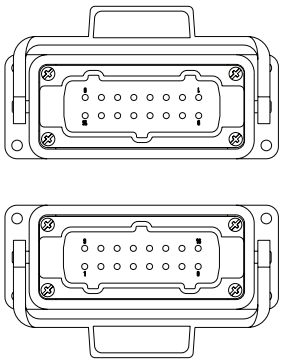
Tick required option

Single Latch ☐

Dual Latch ☐

Nexus™ System Electrical Combinations

Option 3 - 16 Pin Female TC, 16 Pin Male Power



Suitable for up to 8 zones

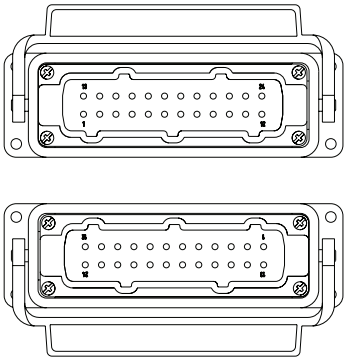
Zone #	TC Terminals	Power Terminals
1	1(+) - 9(-)	1 - 9
2	2(+) - 10(-)	2 - 10
3	3(+) - 11(-)	3 - 11
4	4(+) - 12(-)	4 - 12
5	5(+) - 13(-)	5 - 13
6	6(+) - 14(-)	6 - 14
7	7(+) - 15(-)	7 - 15
8	8(+) - 16(-)	8 - 16

Tick required option

Single Latch ☐

Dual Latch ☐

Option 4 - 24 Pin Female TC, 24 Pin Male Power



Suitable for up to 12 zones

Zone #	TC Terminals	Power Terminals
1	1(+) - 13(-)	1 - 13
2	2(+) - 14(-)	2 - 14
3	3(+) - 15(-)	3 - 15
4	4(+) - 16(-)	4 - 16
5	5(+) - 17(-)	5 - 17
6	6(+) - 18(-)	6 - 18
7	7(+) - 19(-)	7 - 19
8	8(+) - 20(-)	8 - 20
9	9(+) - 21(-)	9 - 21
10	10(+) - 22(-)	10 - 22
11	11(+) - 23(-)	11 - 23
12	12(+) - 24(-)	12 - 24

Tick required option

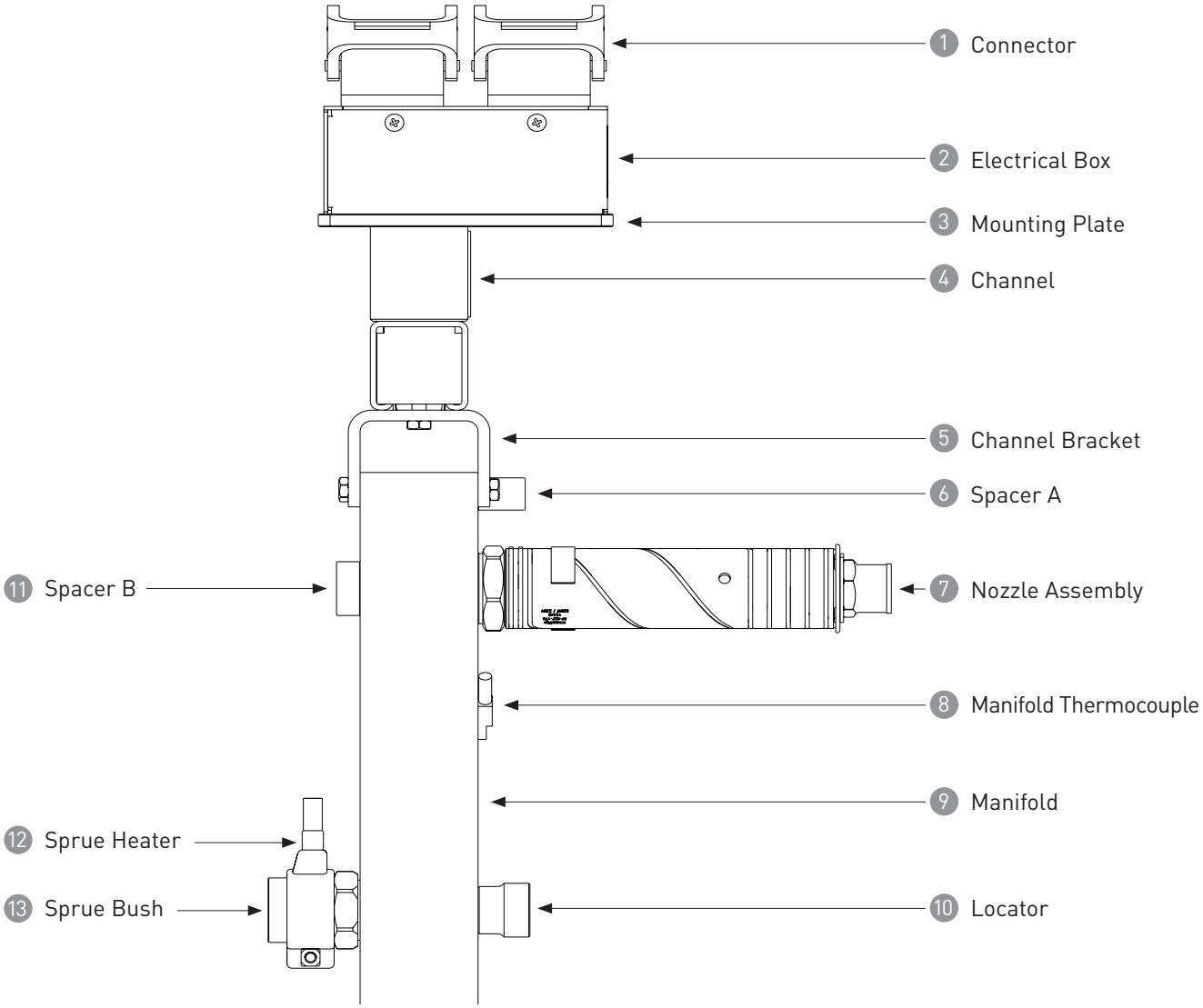
Single Latch ☐

Dual Latch ☐

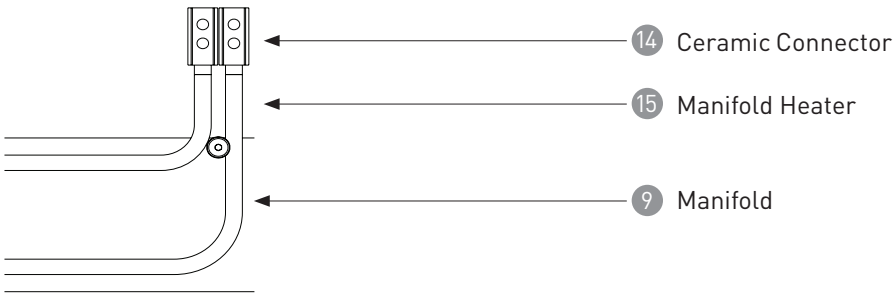
Wiring Sequence	Tick if required
Nozzles – Manifold – Sprue (Mastip Default)	☐
Sprue – Manifold – Nozzles	☐
Manifold – Nozzles – Sprues	☐

Manifold Assembly and Components

MANIFOLD COMPONENTS

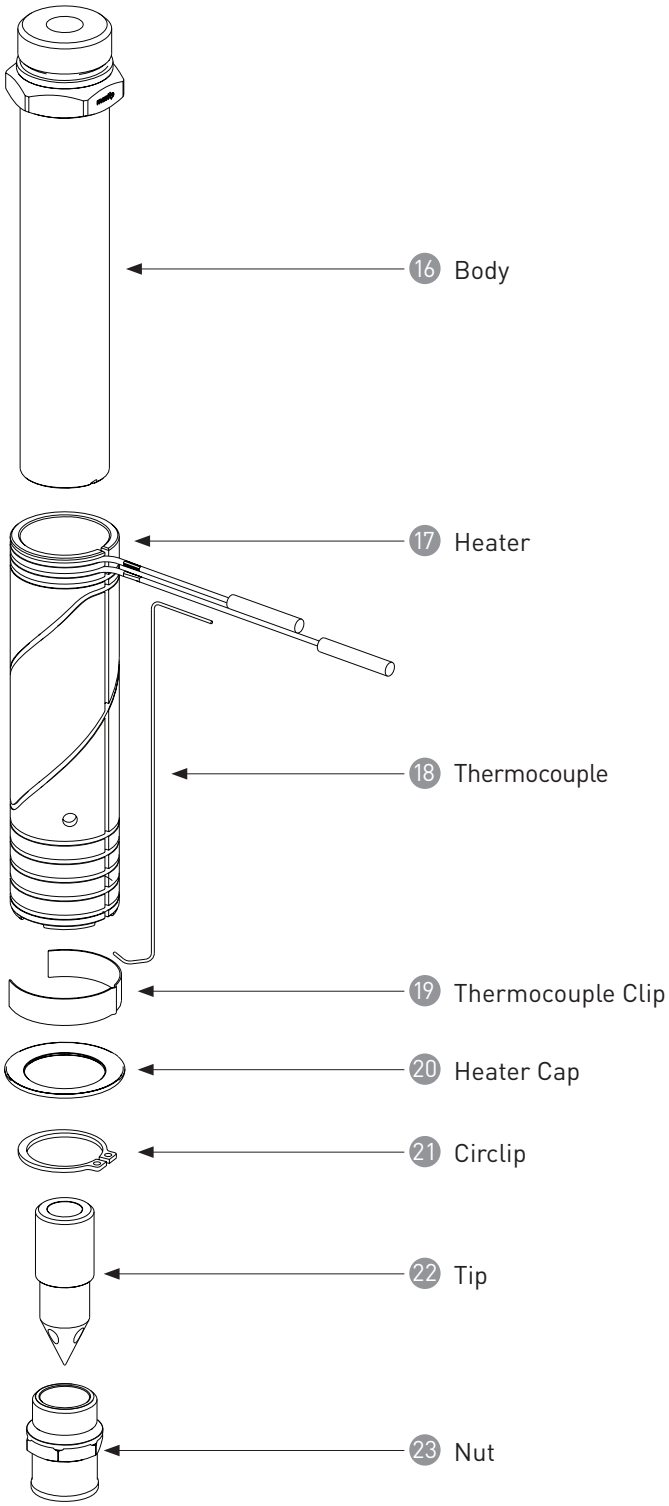


MANIFOLD HEATER



FlowLoc™ Nozzle Assembly and Components

NOZZLE COMPONENTS

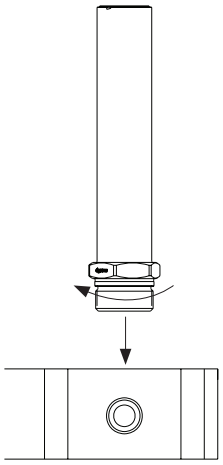


Maintenance Reassembly Procedure

- Heat resistance nickel grease (58-001-001) is supplied with all systems. Ensure all screw threads and the male threads on the **Body** 16, **Nut** 23 and **Sprue Bush** 13 are wiped with a small amount of heat resistant nickel grease.
- Ensure the gate pocket detail is machined to Mastip's recommendations and all edges are radiused with the specified dimension to aid in the installation of the system.
- Ensure fixed half plates are machined to the correct height to allow for thermal expansion. Refer to the supplied approval drawing.

INSTALLATION

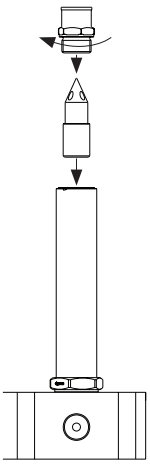
ONE



Lay the **Manifold** 9 flat on a work bench and secure. Wipe a small amount of the supplied heat resistant nickel grease on the thread of the **Body** 16. Screw the **Body** 16 into the **Manifold** 9. Tighten the **Body** 16 to the relevant torque setting according to nozzle series:

- X16 – 200 Nm
- X19 – 200 Nm
- X27 – 250 Nm

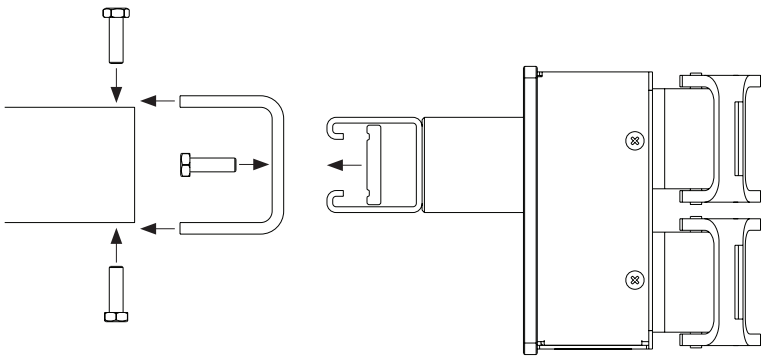
TWO



Insert the **Tip** 22 into the **Body** 16. Wipe a small amount of the supplied heat resistant nickel grease on the thread of the **Nut** 23 and place over the **Tip** 22. Tighten the **Nut** 23 to the relevant torque setting according to nozzle series:

- X16 – 20 Nm
- X19 – 25 Nm
- X27 – 30 Nm

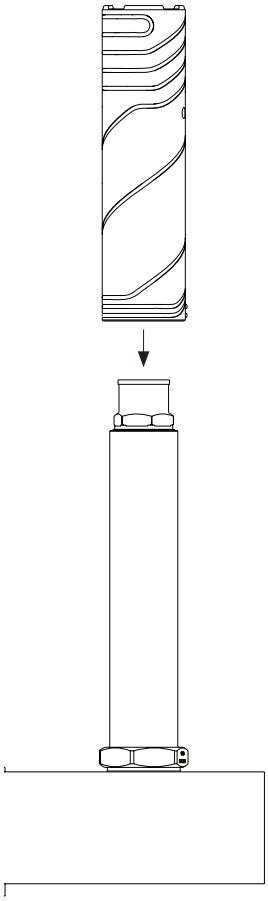
THREE



Assemble the **Channel Brackets** 5 and **Channel** 4 to the **Manifold** 9 as per the system approval drawing that was supplied at time of order.

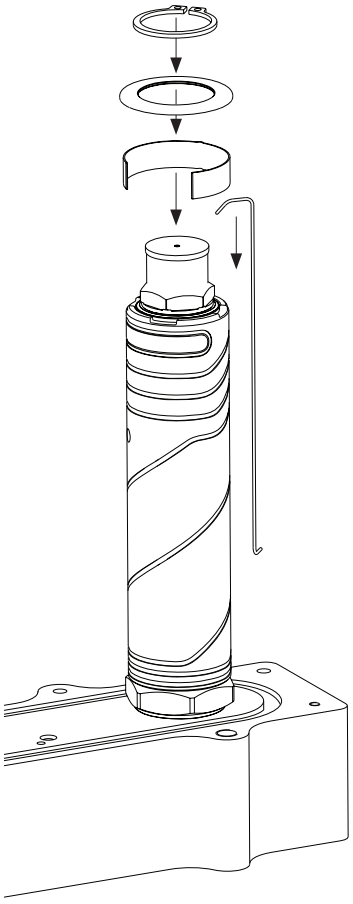
INSTALLATION CONT.....

FOUR



Slide the **Heater** 17 onto the **Body** 16 and orientate so the wiring is aligned with the **Channel Brackets** 5 and **Channel** 4.

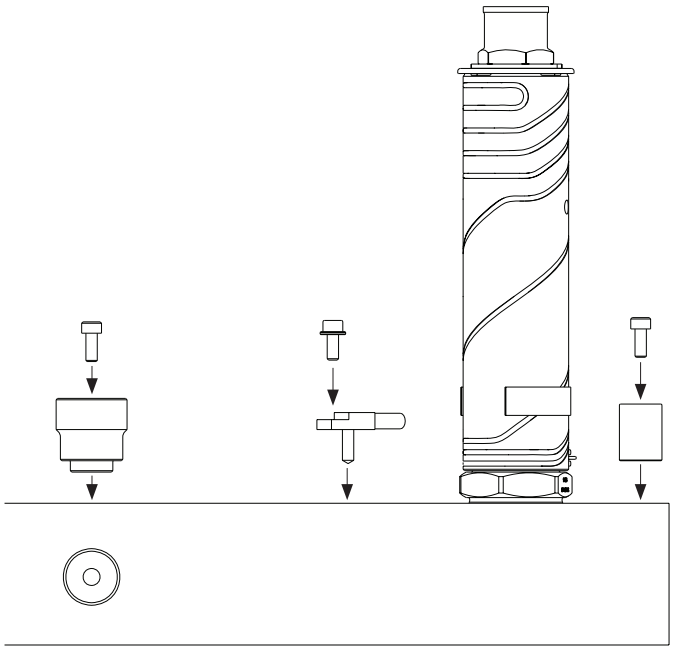
FIVE



Place the **Thermocouple** 18 into the hole at the front of the **Body** 16. Ensure the **Thermocouple** 18 has reached the bottom of the hole and then bend downwards so the thermocouple wire is against the **Heater** 17. Secure the **Thermocouple** 18 with the **Thermocouple Clip** 19. The **Heater** 17 may need to be rotated slightly to ensure the thermocouple hole in the **Body** 16 aligns with one of the four recesses in the **Heater** 17. Secure the **Thermocouple** 18 by positioning the **Heater Cap** 20 onto the step of the **Body** 16. Secure the **Heater Cap** 20 with **Circlip** 21. Align the thermocouple wiring with the nozzle heater wiring.

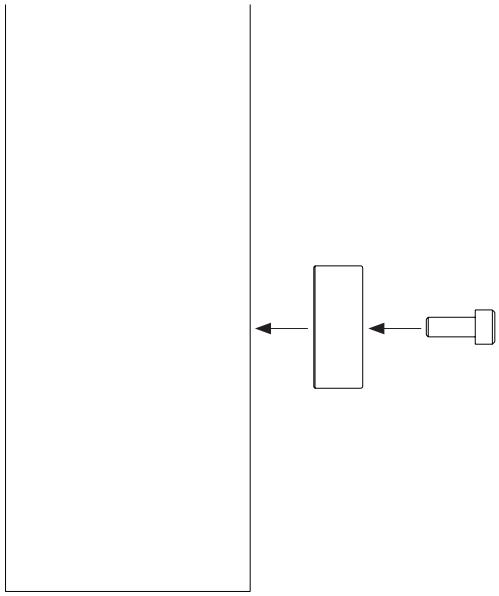
INSTALLATION CONT.....

SIX



Fasten the **Locator** 10 and **Spacer A** 6 to the **Manifold** 9. On the same side of the **Manifold** 9 fasten any supplied **Manifold Thermocouples** 8 to the **Manifold** 9 and align wiring with **Channel Brackets** 5 and **Channel** 4.

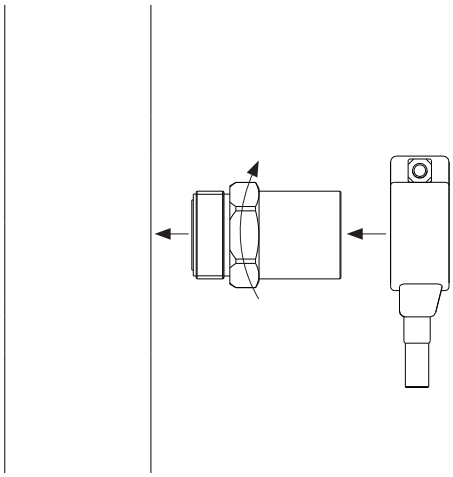
SEVEN



Raise the **Manifold** 9 up vertically. Do not place on nozzles. Ensure the **Manifold** 9 is secure before commencing remainder of assembly. Fasten **Spacer B** 11 to the **Manifold** 9.

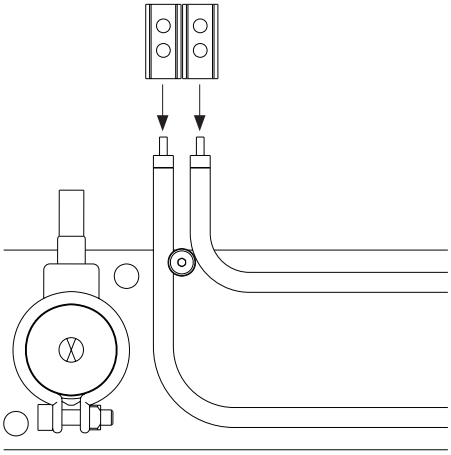
INSTALLATION CONT.....

EIGHT



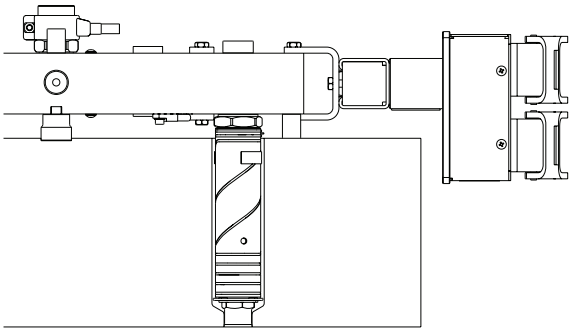
Wipe a small amount of heat resistant nickel grease onto the thread of the **Sprue Bush** 13 screw into the **Manifold** 9 and tighten to 250 Nm. Place the **Sprue Heater** 12 over the **Sprue Bush** 13 and align the wiring with the **Channel Brackets** 5 and **Channel** 4. Fasten **Sprue Heater** 12 in place.

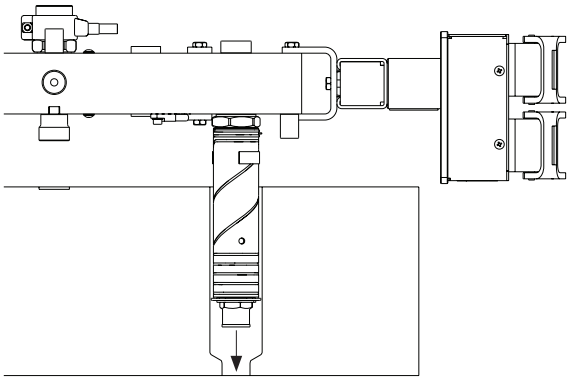
NINE



Fasten the remaining **Manifold Thermocouples** 8 to the **Manifold** 9 and align wiring with **Channel Brackets** 5 and **Channel** 4. Fasten **Ceramic Connectors** 14 to **Manifold Heaters** 15. Connect manifold heater wires to **Ceramic Connectors** 14 and align wiring with **Channel Brackets** 5 and **Channel** 4. Ensure any wiring that passes over **Manifold** 9 is protected with glass sleeve. Connect all wiring to **Connectors** 1 and wire according to supplied wiring diagram.

TEN





Lift the completed manifold assembly ensuring the nozzles are facing down. Using the lifting holes in the Manifold 9 orientate and align the nozzles with the pockets in the cavity plate. Slowly lower the manifold assembly allowing the **Heater Caps** 20 to act as a guide until the **Nuts** 23 start to locate with the sealing diameter. Ensure the **Locator** 10 is aligning with its pocket in the cavity plate. Guide the system into place ensuring **Spacer A** 6 and the **Locator** 10 are firmly down against the cavity plate.

Mastip Head Office New Zealand

Physical Address
558 Rosebank Road, Avondale
Auckland 1026, New Zealand

Postal Address
PO Box 90651, Victoria St West
Auckland 1142, New Zealand

Phone: +64 9 970 2100
Email: mastip@mastip.com

Mastip Regional Office Europe
Phone: +33 0 809 400 076
Email: europe@mastip.com

Mastip Regional Office North America
Phone: +1 262 644 9400
Email: northamerica@mastip.com

Mastip Regional Office China
Email: china@mastip.com

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