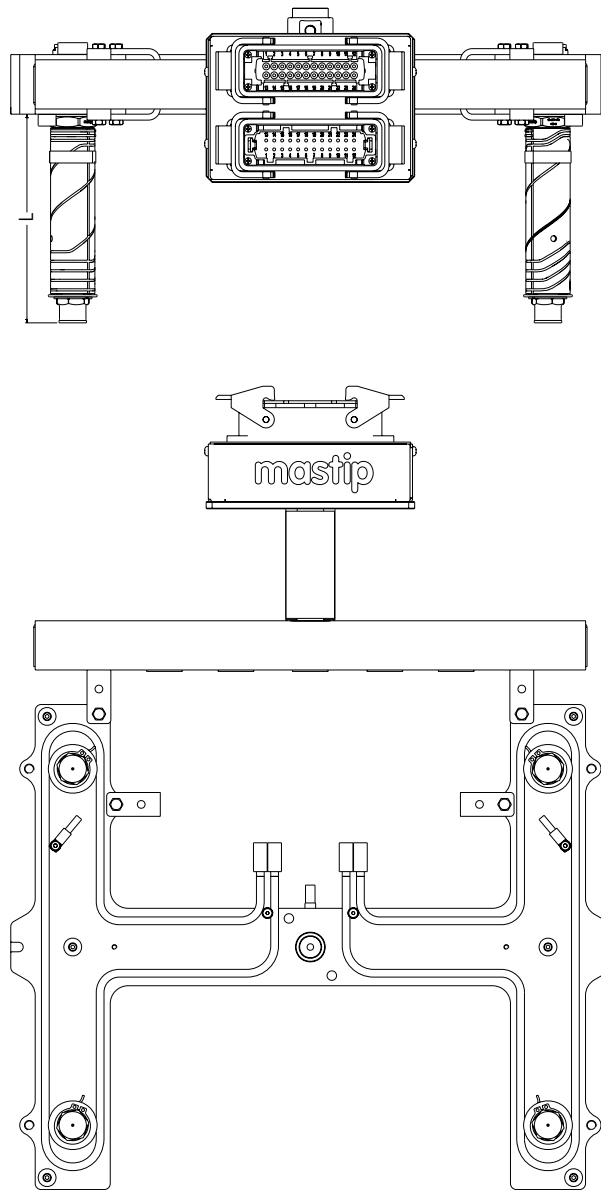


# **Nexus<sup>™</sup> Pre-Wired Hot Runner System**

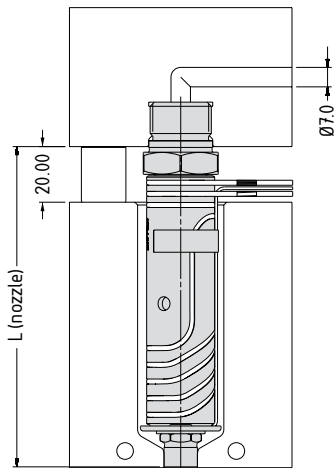
## Assembly Overview



### 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

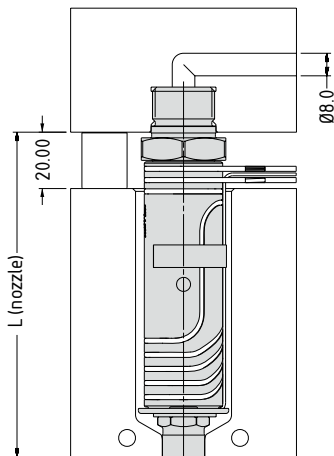
## FlowLoc™ Range Series and Lengths



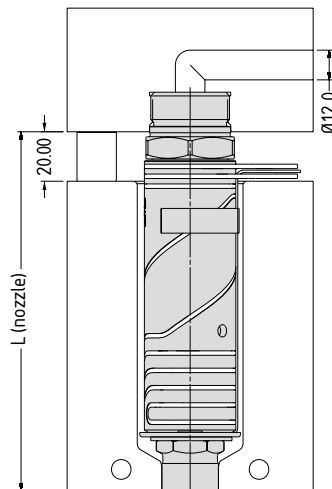
TX16

FlowLoc™ Standard Lengths																	
Series	L (nozzle)*																
16 Series	75	85	95	105	115	130	145	160	175	200	225	250					
19 Series	75	85	95	105	115	130	145	160	175	200	225	250	275	300			
27 Series	75	85	95	105	115	130	145	160	175	200	225	250	275	300	350	400	450

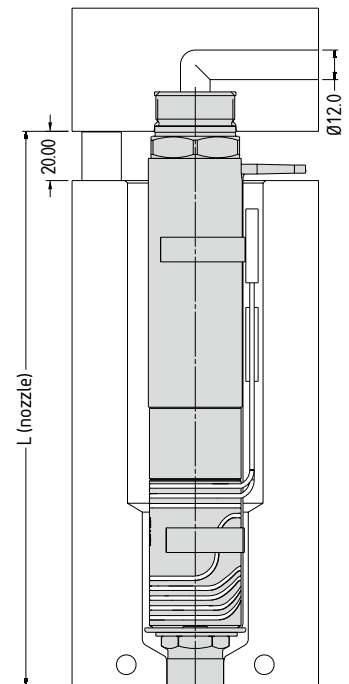
\* Custom lengths available on request



TX19



TX27075 - TX27175

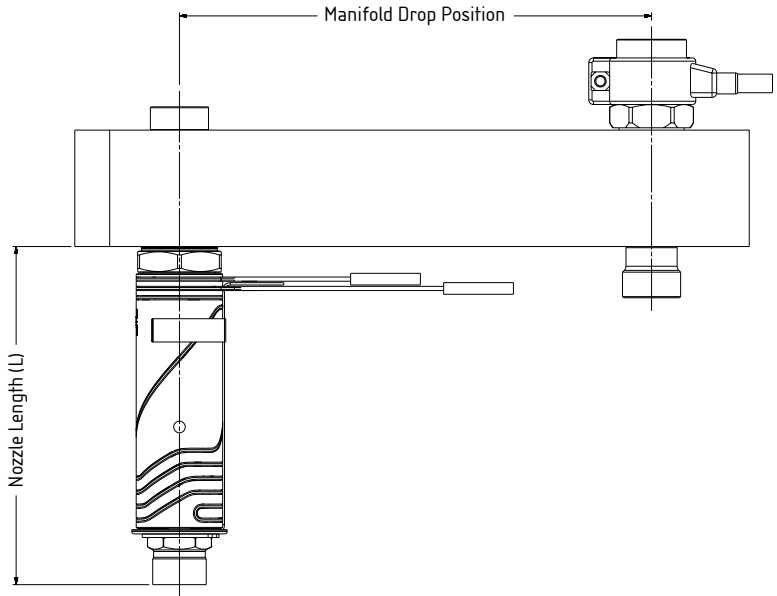


TX27225 - TX27275

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.

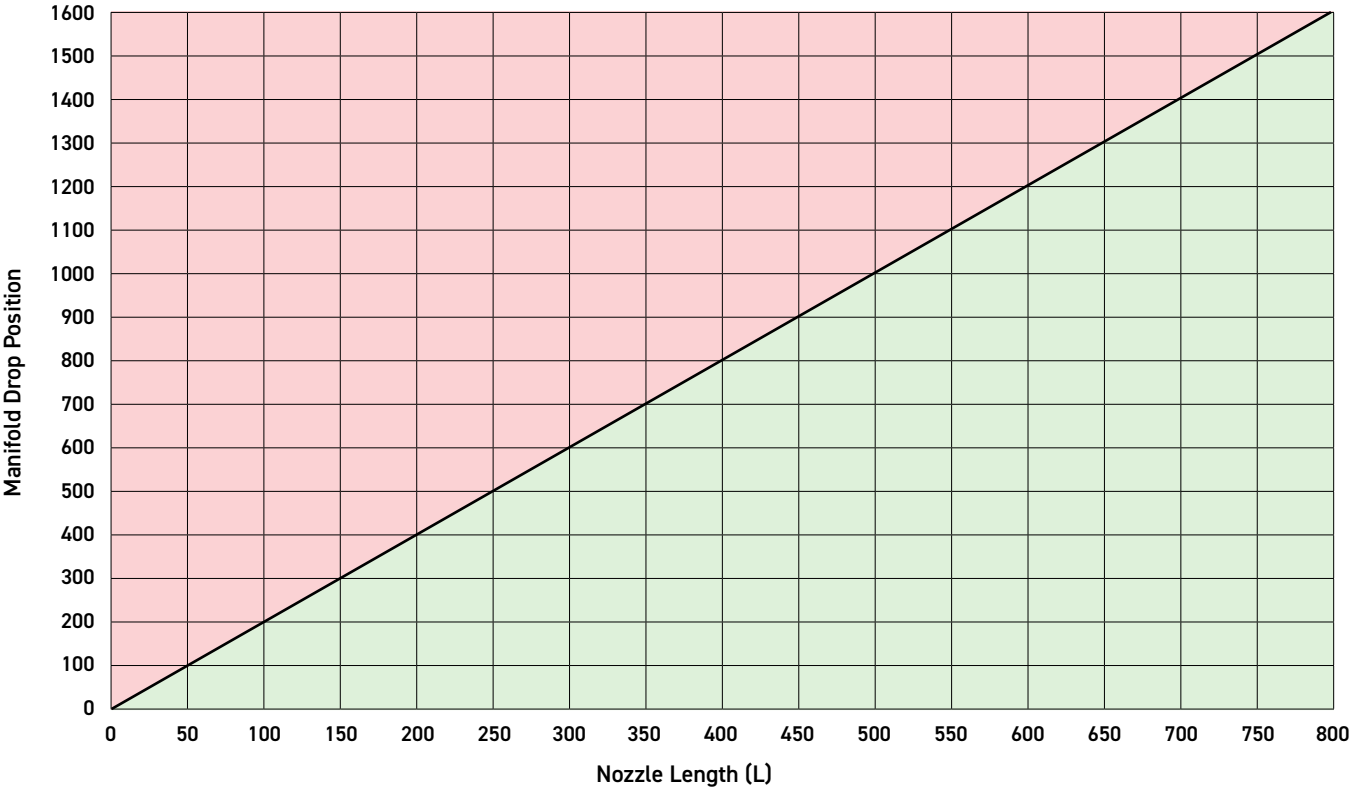


Acceptable Ratio

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

Unacceptable Ratio

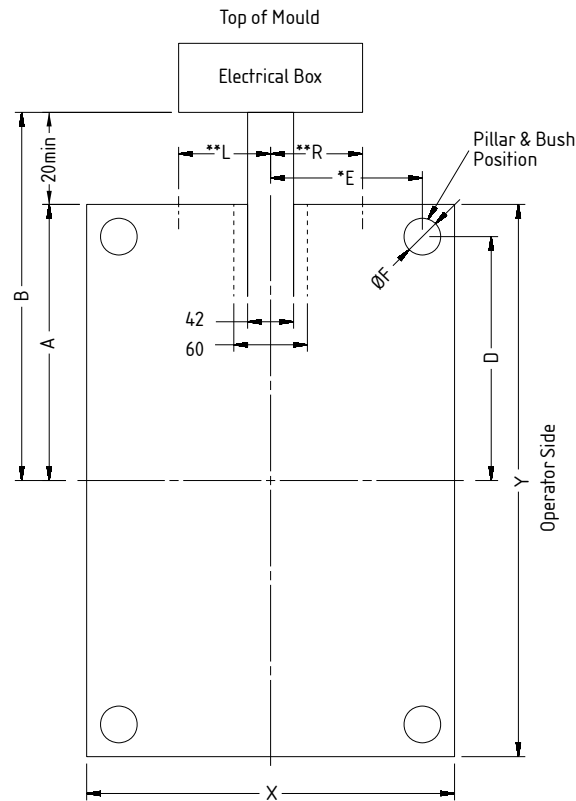
Manifold Drop Position = 400mm  
Nozzle Length (L) = 100mm



## 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.

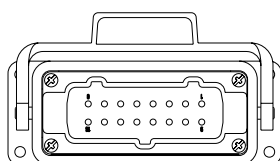
## Nexus™ System Electrical Combinations

## Electrical Specifications Ordering Information

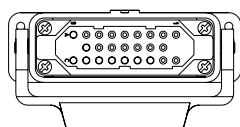
- When ordering a Nexus™ System please specify the mould side plug combination and wiring sequences.
- Below are Mastip's default options. Please tick preferences then scan and return to Mastip.
- If your preference falls outside of Mastip's default options please specify your mould side plug combination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

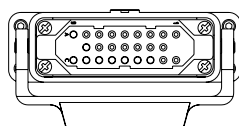
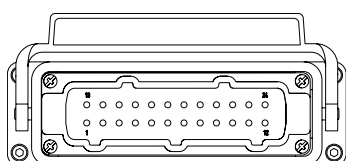
Single Latch

☐

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

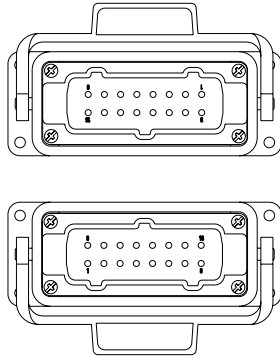
☐

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

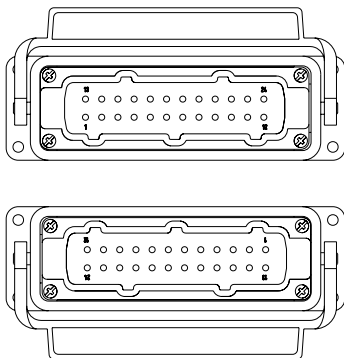
Single Latch

☐

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

Nozzles – Manifold – Sprue (Mastip Default)

Sprue – Manifold – Nozzles

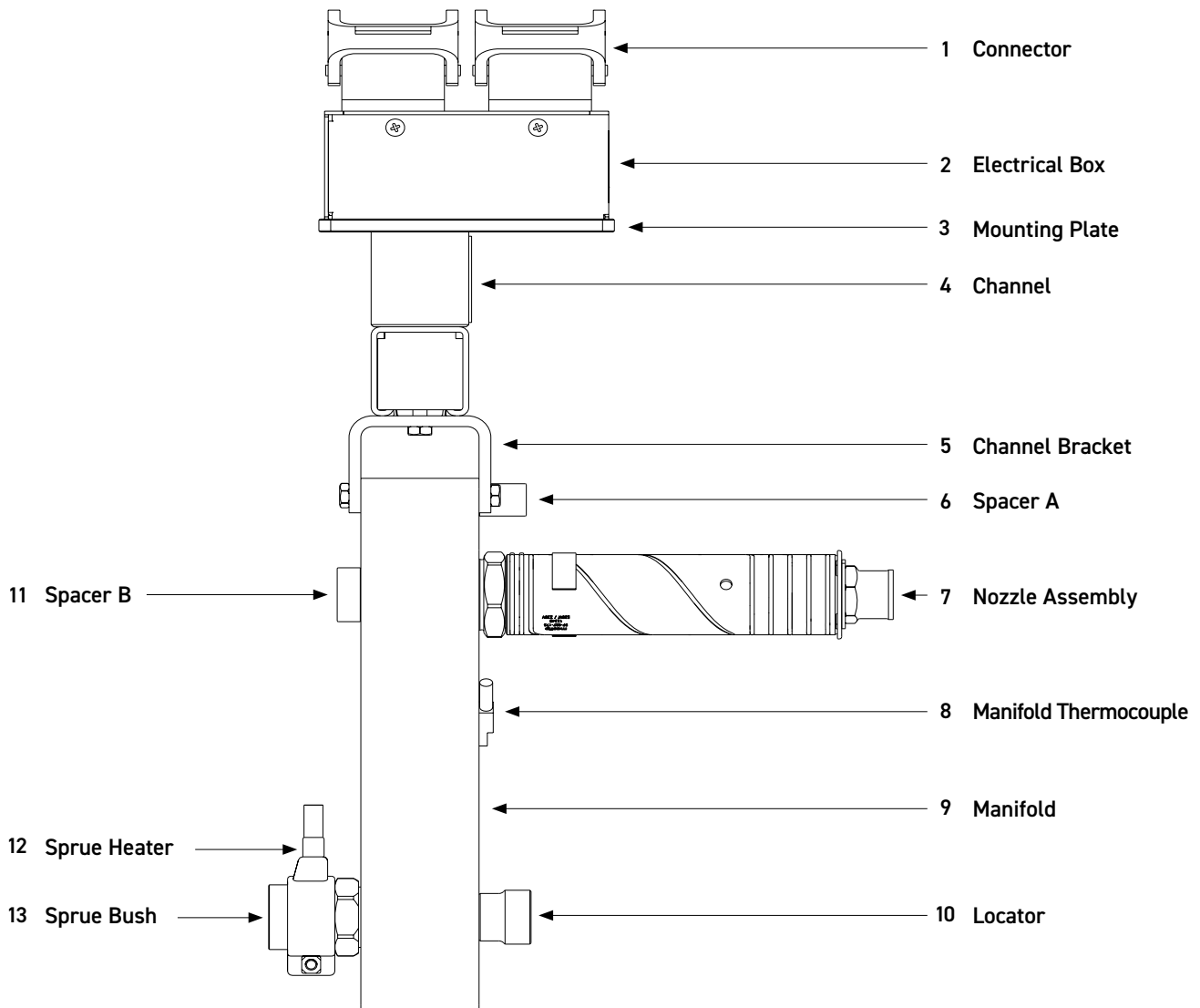
Manifold – Nozzles – Sprues

Tick if required

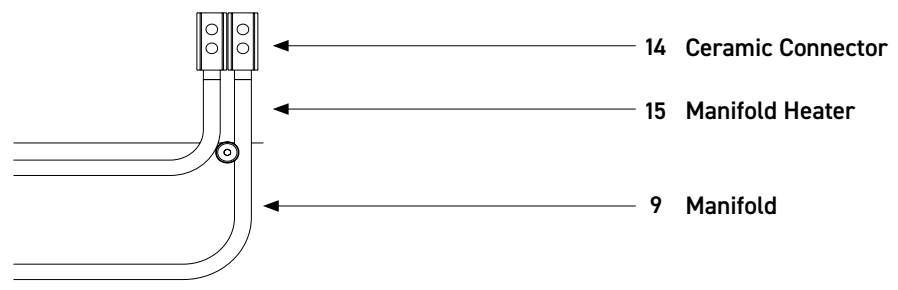
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## Manifold Assembly and Components

### MANIFOLD COMPONENTS

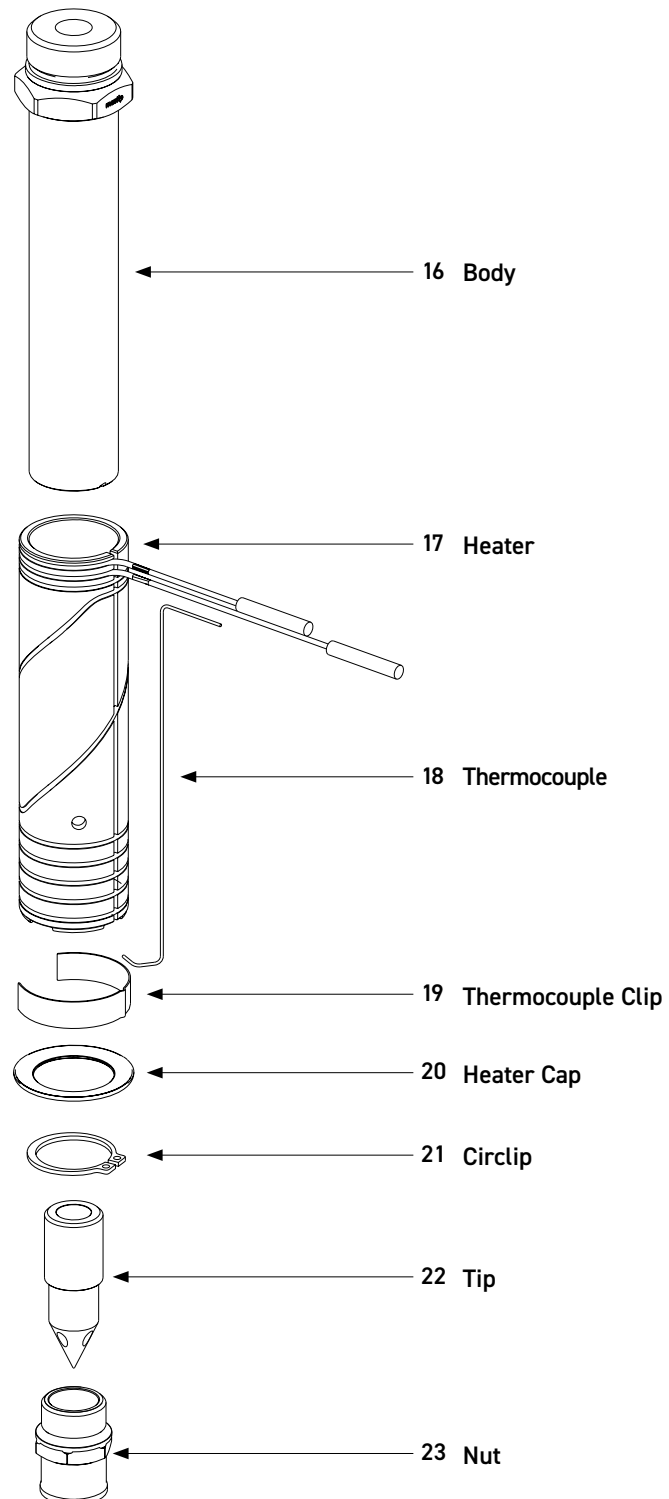


### MANIFOLD HEATER



## FlowLoc™ Nozzle Assembly and Components

## NOZZLE COMPONENTS

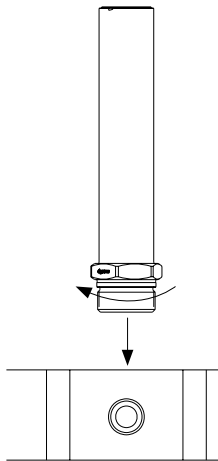


## Maintenance Reassembly Procedure

- 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

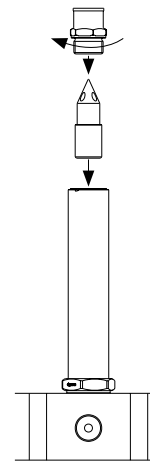
#### ONE



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

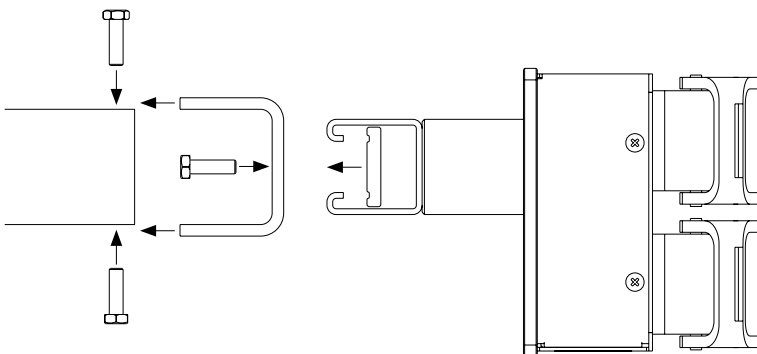
#### TWO



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

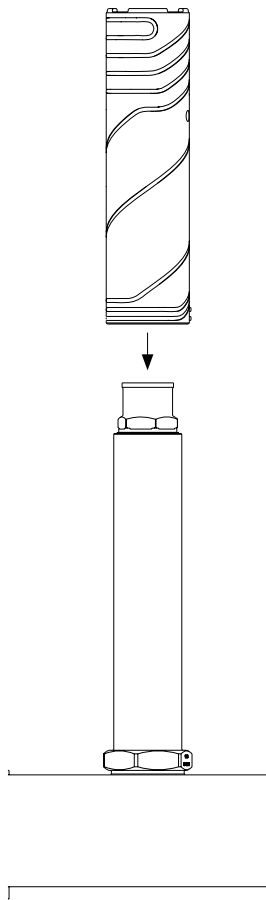
#### THREE



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.

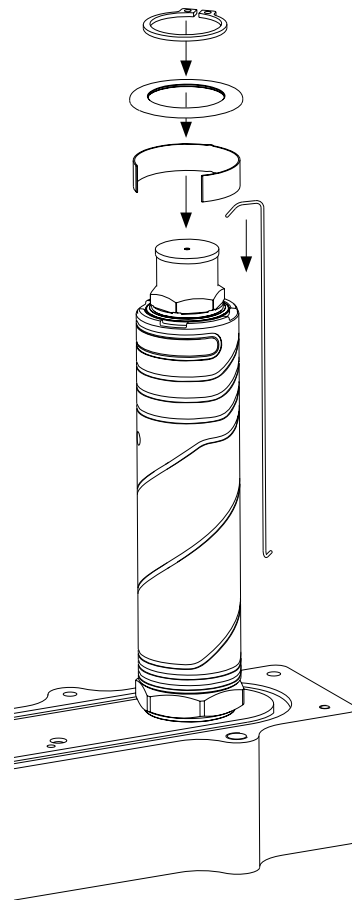
## INSTALLATION CONT.....

FOUR



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

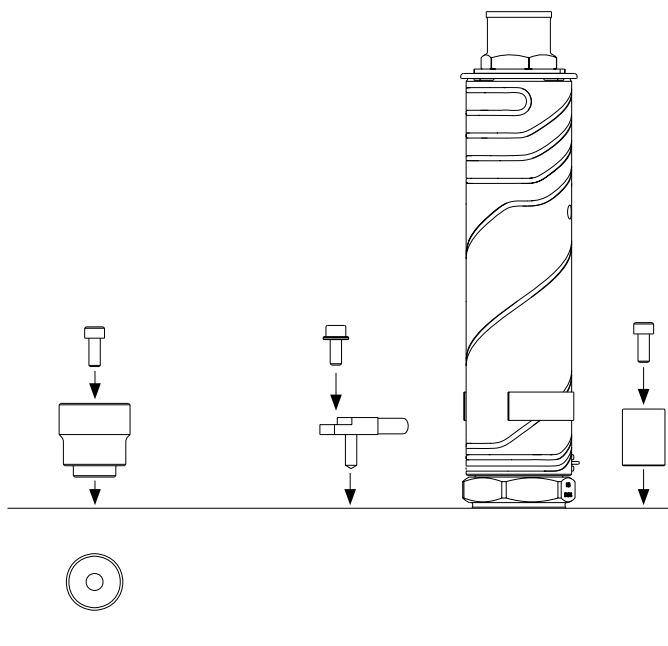
FIVE



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.

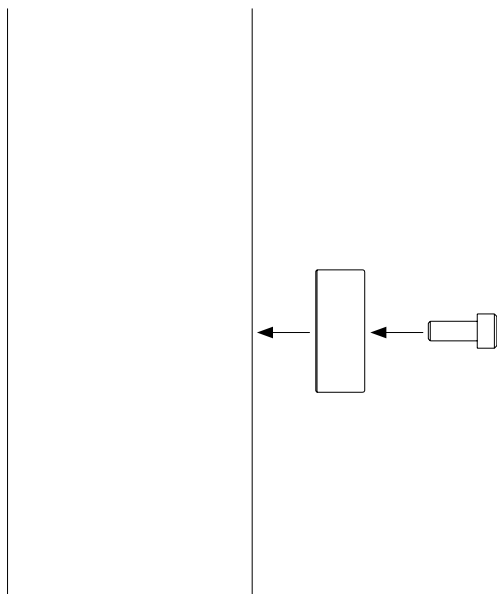
## INSTALLATION CONT.....

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** .

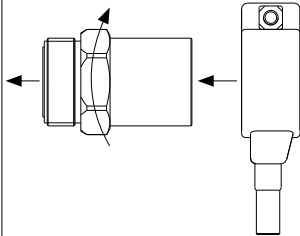
SEVEN



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** .

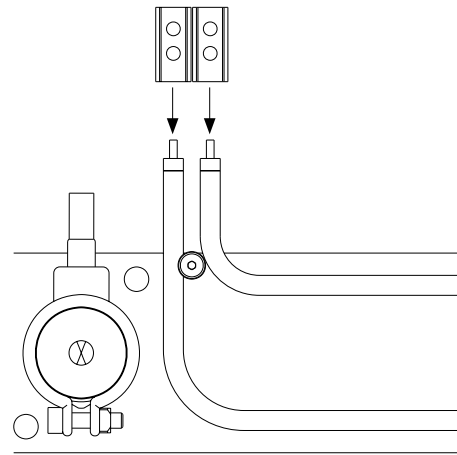
## INSTALLATION CONT.....

EIGHT



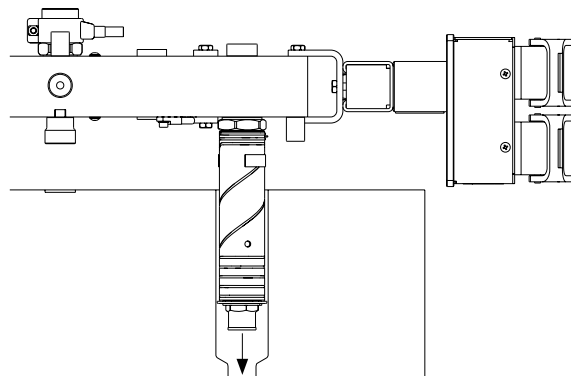
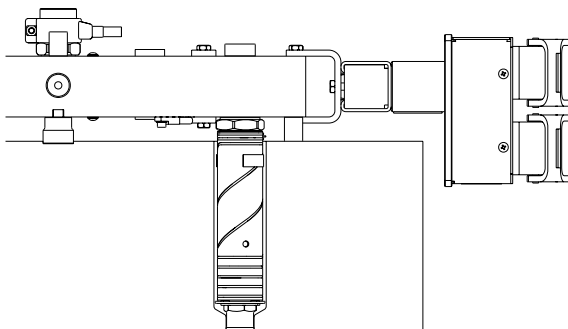
Wipe a small amount of heat resistant nickel grease onto the thread of the **Sprue Bush 13** screw into the **Manifold 9** and tighten to 250 Nm. Place the **Sprue Heater 12** over the **Sprue Bush 13** and align the wiring with the **Channel Brackets 5** and **Channel 4**. Fasten **Sprue Heater 12**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



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