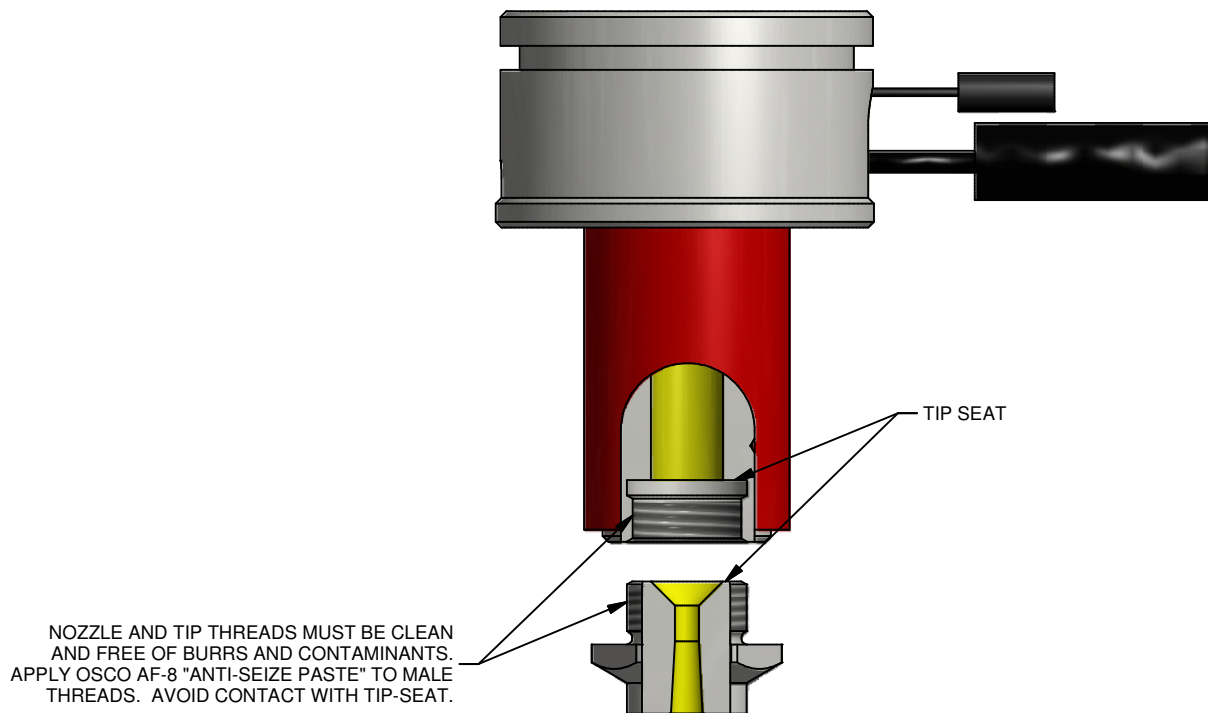


1. Clean nozzle threads and seat area of all plastic.
2. Seat area must be smooth and free of all burrs.
3. Apply OSCO # AF-8 "Anti-Seize" Paste to male threads on tip.
4. Tighten to the appropriate torque setting. [See Chart below].

20 Series	16.6 ft. / lbs.	(200 in / lbs.)
50 Series	30 ft. / lbs.	
100 Series	55 - 60 ft. / lbs.	
200 Series	90 - 100 ft. / lbs.	

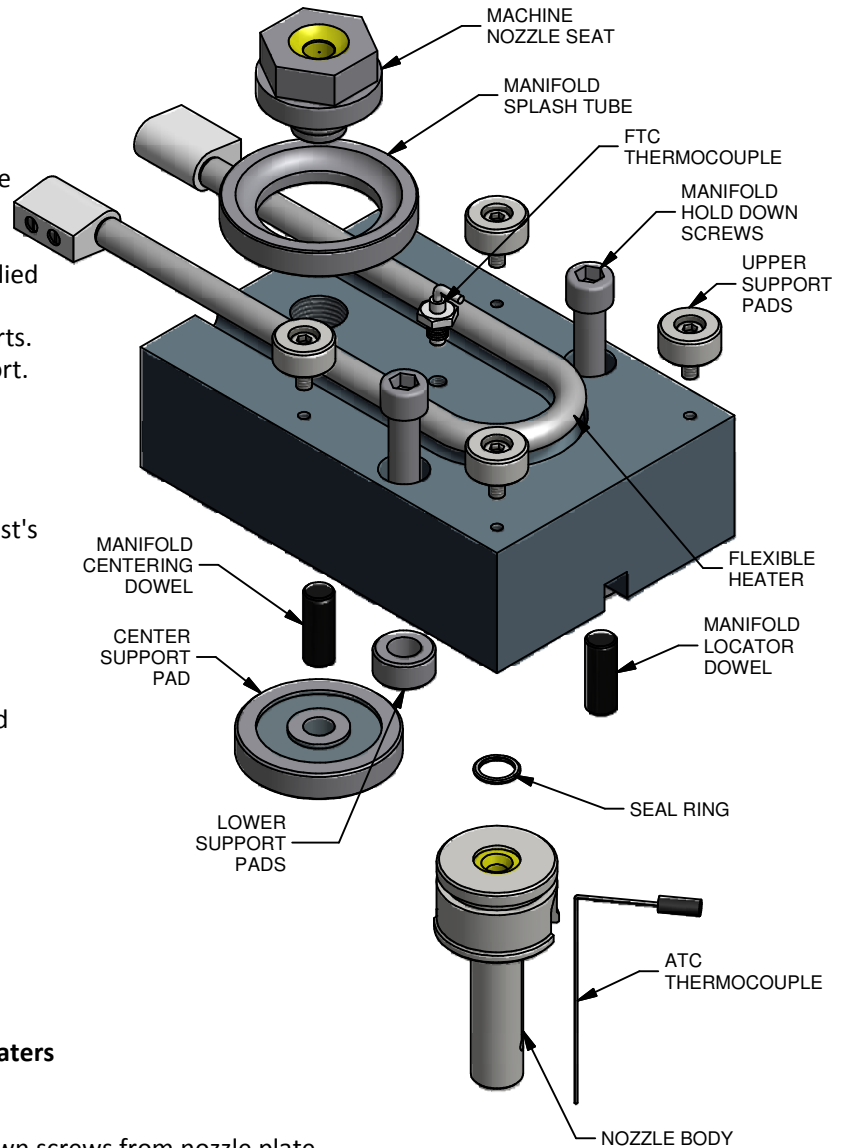
5. Heat nozzles to 300° F and re-tighten.



# CVT - ASSEMBLY & DISASSEMBLY

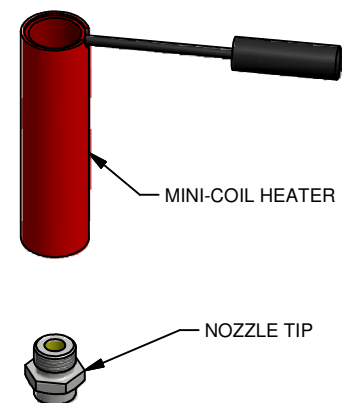
## CVT Manifold System Assembly in Plates.

1. Fit nozzles into nozzle plate. Install seal rings.
2. Number and route wires for nozzles.
3. Locate lower manifold supports above threaded holes in the nozzle plate.
4. Locate the manifold center support in the nozzle plate.
5. Install the alignment dowel in the nozzle plate. (OSCO supplied in the Hot Half and QuickSet systems.)
6. Assemble manifold on the nozzles, center and lower supports. Remember to locate the alignment dowel and center support.
7. Ensure manifold is flat on center support and nozzles, and located correctly.
8. Number, route, and clear wires for manifold.
9. Insert and tighten manifold hold down screws through the lower supports into the nozzle plate. (Torque is per machinist's handbook for bolt size.)
10. Connect all wiring per tool design.
11. Install splash tube around manifold inlet.
12. Assemble top clamp plate and any side rails to the tool per design and tighten bolts.
13. Test system on the bench to ensure all wiring is correct and system heats up accordingly.



## CVT Manifold Disassembly in Plates / Replacing Manifold Heaters

1. Heat system to loosen plastic.
2. Once plastic is loosened by heat, remove manifold hold down screws from nozzle plate.
3. Lift manifold from nozzles. Be careful not to lose the lower supports and alignment dowels under the manifold.
4. Turn system off and disconnect wiring from electrical connectors.
5. Once the manifold is cooled, take out the small, flat hold down screws on the manifold heaters near the connection point. (Skip this step if not replacing manifold heaters.)
6. Pull out the manifold heaters. (Skip this step if not replacing manifold heaters.)
7. Install new heaters using the OSCO manifold heater installation instructions. (Skip this step if not replacing manifold heaters.)
8. Remove all seal rings on nozzles. Replace w/new during reassembly.
9. Reassemble system, ensuring nozzles are flat in their counter bores.
10. Locate lower supports to nozzle plate at threaded hole locations.
11. Reassemble manifold on the nozzles, center and lower supports. Remember to locate the timing dowel and center support.
12. Install manifold hold down screws. Torque specs are to machinist's handbook.
13. Rewire electrical connectors and reassemble plates.



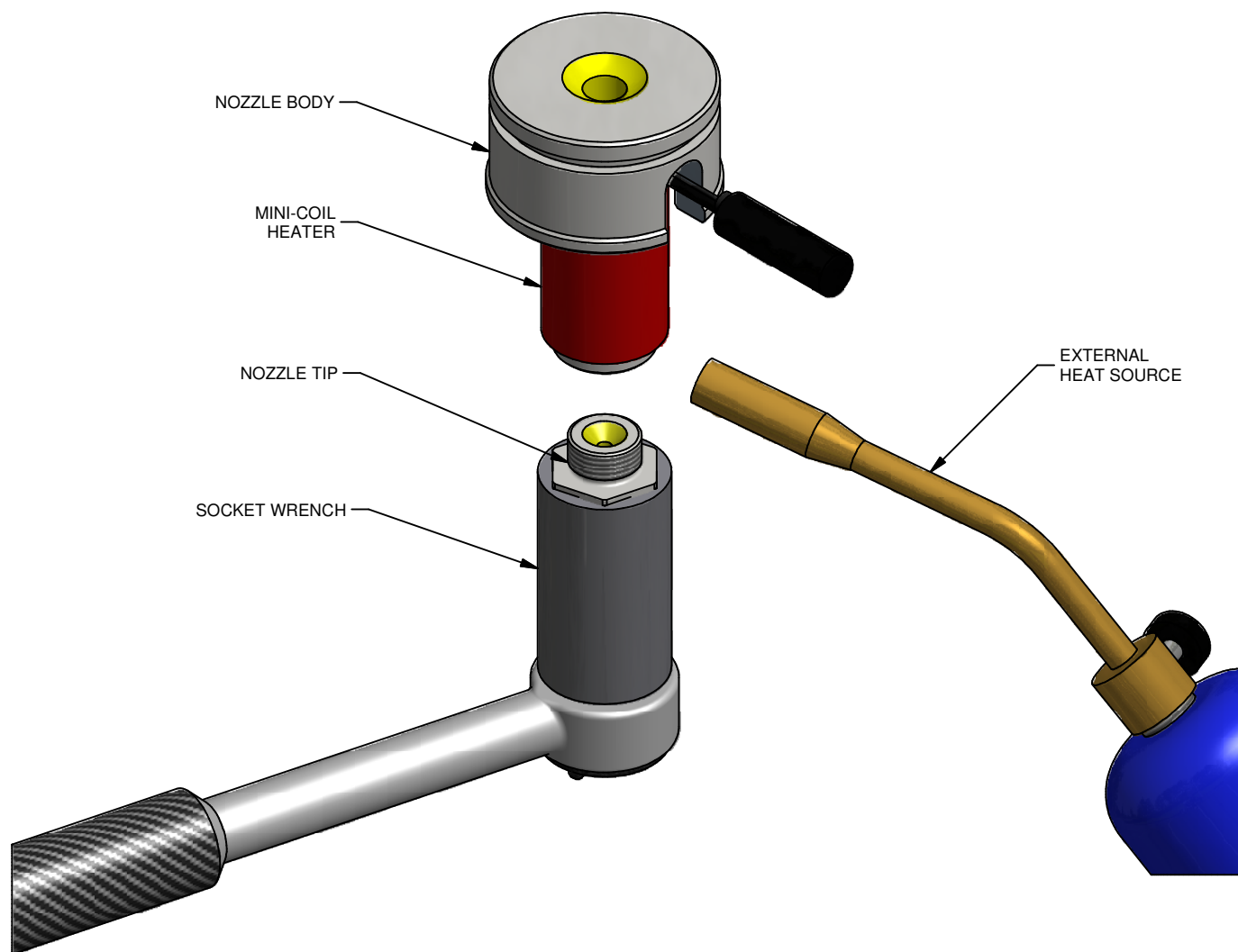
# FREQUENTLY ASKED QUESTIONS

## HOW DO I.....

Question: How do I remove a previously installed Nozzle Tip?

Answer: Over time, the Nozzle Tips can become seized into the Nozzle body. The best way to remove them is to use heat. Using an external heat source, gradually heat the lower part of the Nozzle body, particularly where the threads are located. Once the area is heated, use correct socket and wrench to loosen the tip.

\*\*Note: In some applications, you will be able to remove the body heater. If you are able to slide the heater(s) over the tip, it is recommended that you do so.



\*\*NOTE: THIS VIEW SHOWS A NOZZLE ASSEMBLY WHERE THE HEATER IS UNABLE TO SLIDE OVER THE NOZZLE TIP.

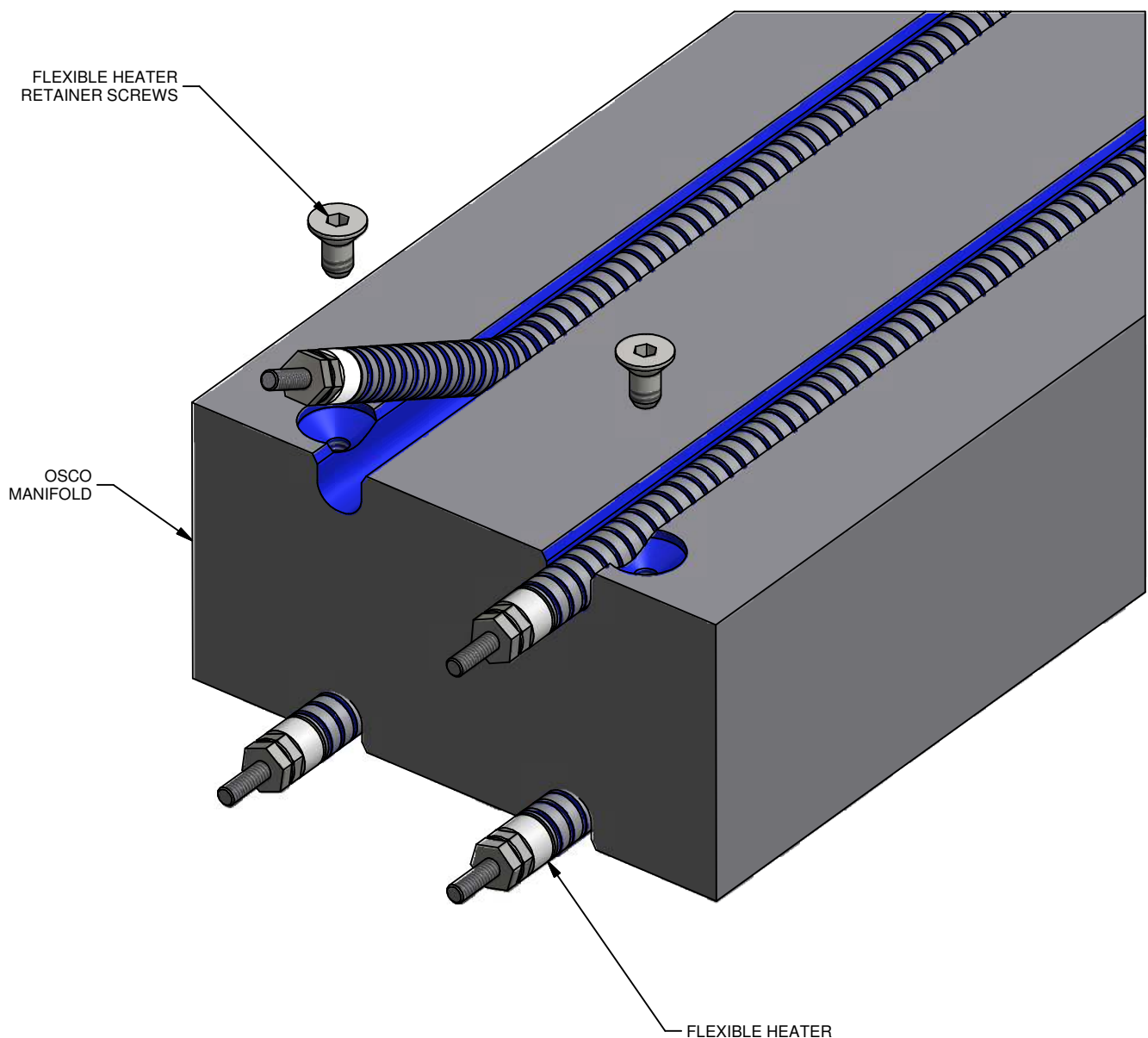
# FREQUENTLY ASKED QUESTIONS

## HOW DO I.....

Question: How do I remove a previously installed flexible manifold heaters?

Answer: Occasionally there may be reason for you to replace your existing Flexible Heaters. To do this, simply disconnect the heater lead wires and remove the hold-down screws. Starting at one end, pry up on the Flexible Heater with a soft metal instrument continuing to follow the heater path as you pry upward. Repeat these steps for each heater.

\*\*Note: This procedure is only applicable to Flexible Heaters.



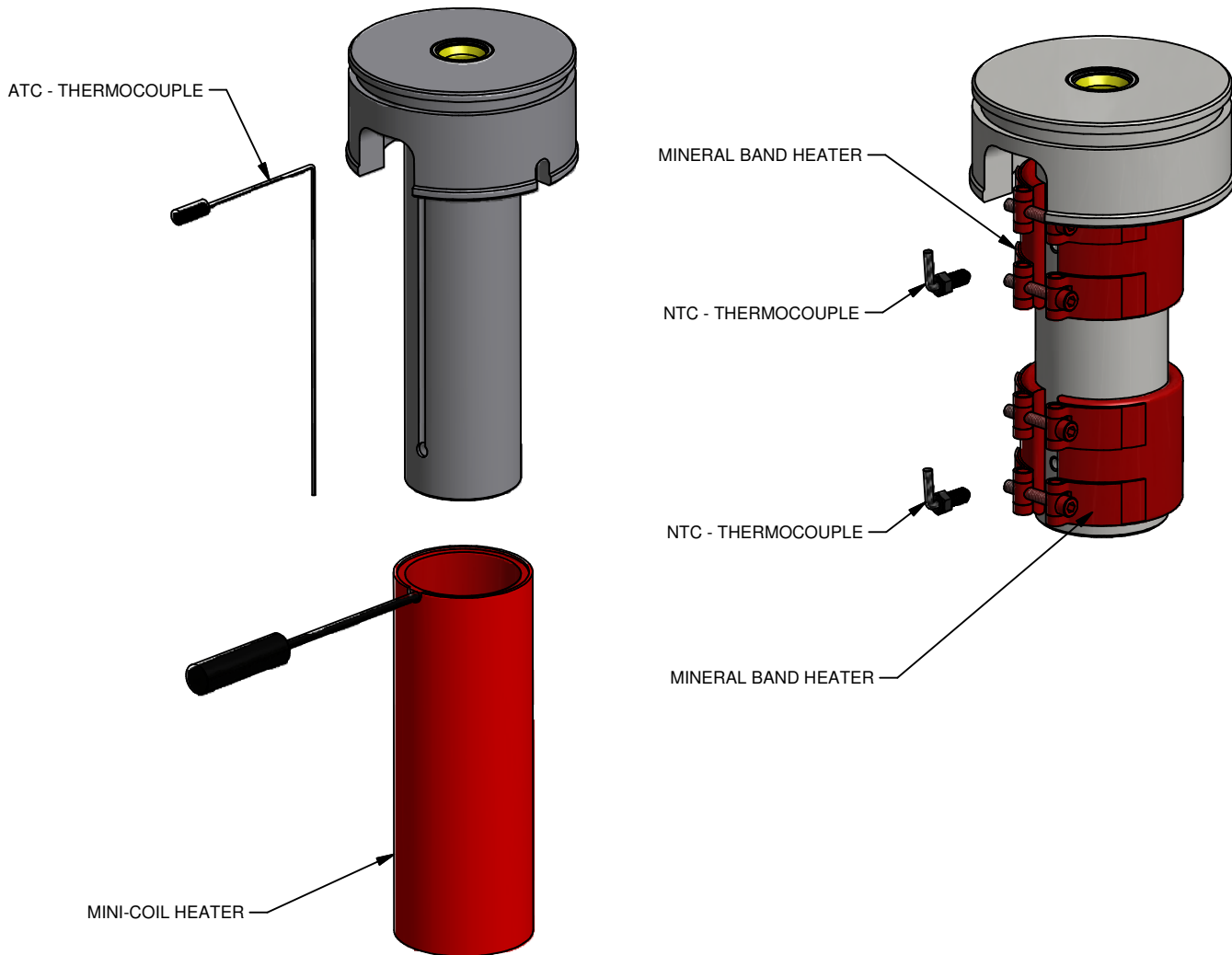
# FREQUENTLY ASKED QUESTIONS

## HOW DO I.....

Question: How do I replace a nozzle T/C (Thermocouple)?

Answer: There are (2) two types of thermocouples used in Osco Nozzle Assemblies. The ATC thermocouple is used with "MC" Mini-Coil Heaters and the NTC thermocouple is used with "MBH" Mineral Band Heaters. To remove an ATC thermocouple, you will need to remove the "MC" Heater entirely to be able to gain access to the contact point of the thermocouple. If your Nozzle Assembly contains an "MBH" Heater, you will need a 1/4" open-end wrench to remove the NTC thermocouple. You may access the NTC thermocouples without the need to remove the "MBH" Heaters.

\*\*Note: This procedure may not be applicable to a 'customer-specific' nozzle assembly.



# OSCO Torque Specifications

20 Series HSN/CVT		
Component	Thread Size	Suggested Torque
Tip	3/8" – 24	15 ft. lbs.
Manifold Hold Down Screws	5/16" – 18 or 3/8" – 16	32 ft. lbs.
MNS/MEN	5/8" – 18	55 ft. lbs.
Manifold Plug Retainers	5/8" – 18	55 ft. lbs.
Thermocouple	#8 – 32	20 inch lbs.
Thermocouple	1/4" – 28	60 inch lbs.

50 Series HSN/CVT		
Component	Thread Size	Suggested Torque
Tip	1/2" – 24	30 ft. lbs.
Manifold Hold Down Screws	3/8" – 16	32 ft. lbs.
MNS/MEN	3/4" – 16	100 ft. lbs.
Manifold Plug Retainers	3/4" – 16	100 ft. lbs.
Thermocouple	#8 – 32	20 inch lbs.
Thermocouple	1/4" – 28	60 inch lbs.

100 Series HSN/CVT		
Component	Thread Size	Suggested Torque
Tip	5/8" – 24	55 – 60 ft. lbs.
Manifold Hold Down Screws	3/8" – 16	32 ft. lbs.
MNS/MEN	3/4" – 16	100 ft. lbs.
Manifold Plug Retainers	7/8" – 14	100 ft. lbs.
Thermocouple	#8 – 32	20 inch lbs.
Thermocouple	1/4" – 28	60 inch lbs.

200 Series HSN/CVT		
Component	Thread Size	Suggested Torque
Tip	1" – 16	90 – 100 ft. lbs.
Manifold Hold Down Screws	3/8" – 16	32 ft. lbs.
MNS/MEN	1" – 12	120 ft. lbs.
Manifold Plug Retainers	1" – 14	120 ft. lbs.
Thermocouple	#8 – 32	20 inch lbs.
Thermocouple	1/4" – 28	60 inch lbs.

50 Series VGN		
Component	Thread Size	Suggested Torque
Tip	1/2" – 24	30 ft. lbs.
Manifold Hold Down Screws	3/8" – 16	32 ft. lbs.
MNS/MEN	3/4" – 16	100 ft. lbs.
Manifold Plug Retainers	3/4" – 16	100 ft. lbs.
Pin Bushing Retainer	5/8" – 11	55 – 60 ft. lbs.
Thermocouple	#8 – 32	20 inch lbs.
Thermocouple	1/4" – 28	60 inch lbs.

100 Series VGN		
Component	Thread Size	Suggested Torque
Tip	11/16" – 20	55 – 60 ft. lbs.
Manifold Hold Down Screws	3/8" – 16	32 ft. lbs.
MNS/MEN	3/4" – 16	100 ft. lbs.
Manifold Plug Retainers	7/8" – 14	100 ft. lbs.
Pin Bushing Retainer	3/4" – 16	100 ft. lbs.
Thermocouple	#8 – 32	20 inch lbs.
Thermocouple	1/4" – 28	60 inch lbs.

200 Series VGN		
Component	Thread Size	Suggested Torque
Tip	1" – 16	90 – 100 ft. lbs.
Manifold Hold Down Screws	3/8" – 16	32 ft. lbs.
MNS/MEN	1" – 12	120 ft. lbs.
Manifold Plug Retainers	1" – 14	120 ft. lbs.
Pin Bushing Retainer	1" – 14	120 ft. lbs.
Thermocouple	#8 – 32	20 inch lbs.
Thermocouple	1/4" – 28	60 inch lbs.

Miscellaneous		
Component	Thread Size	Suggested Torque
300 Series Tips	1-3/16" – 18	90 – 100 ft. lbs.
MGN Probes	9/16" – 18	40 ft. lbs.
SCV-200 Tips	1" – 16	90 – 100 ft. lbs.
SCV-400 Tips	1-1/4" – 16	100 – 110 ft. lbs.
DSV-500 Tips	1-3/8" – 18	120 – 130 ft. lbs.