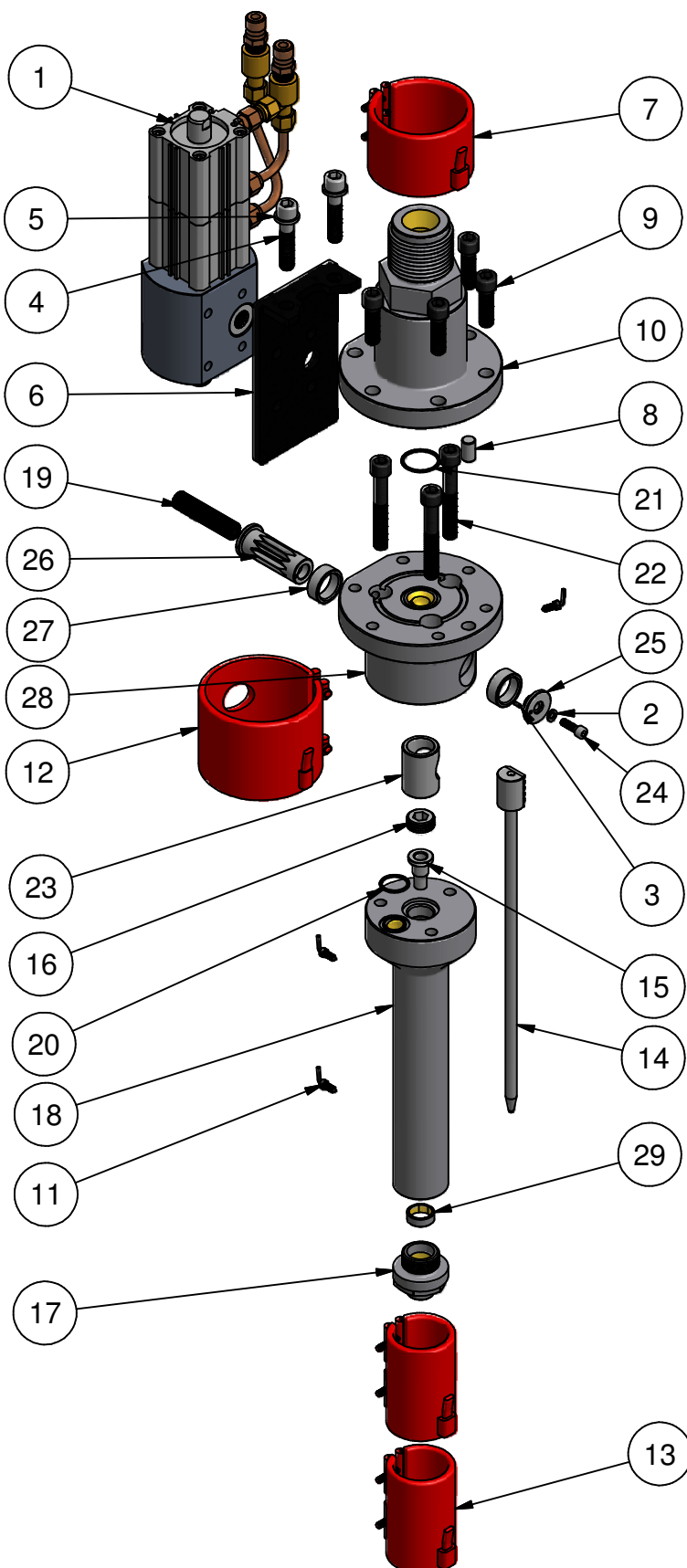


MSO - ASSEMBLY & DISASSEMBLY - Pg. 1

ITEM	MSO PARTS LIST
1	CYLINDER ASSEMBLY
2	CROSS GEAR RETAINER LOCK WASHER - #10
3	CROSS GEAR - SPRING PIN
4	CYLINDER MOUNTING SCREW - 3/8-16 - S.H.C.S.
5	CYLINDER MOUNTING LOCK WASHER - 3/8" I.D.
6	CYLINDER MOUNTING ANGLE BRACKET
7	FRONT ADAPTER HEATER
8	NOZZLE ALIGNMENT DOWEL
9	FRONT ADAPTER MOUNTING SCREWS - 3/8-16 - S.H.C.S.
10	NOZZLE FRONT ADAPTER
11	THERMOCOUPLE
12	NOZZLE MIDDLE BODY HEATER
13	REAR ADAPTER HEATER
14	VALVE PIN
15	VALVE PIN GUIDE
16	VALVE PIN GUIDE RETAINER
17	NOZZLE TIP
18	NOZZLE REAR ADAPTER
19	ACTUATING ROD
20	SEAL RING - MIDDLE TO REAR ADAPTER
21	SEAL RING - MIDDLE TO FRONT ADAPTER
22	FRONT TO MIDDLE NOZZLE BODY SCREWS - 3/8-16 - S.H.C.S.
23	NOZZLE MIDDLE BODY BUSHING
24	CROSS GEAR RETAINING SCREWS - #10-24 - S.H.C.S.
25	CROSS GEAR RETAINER
26	CROSS GEAR
27	CROSS GEAR BEARING
28	NOZZLE MIDDLE BODY
29	VALVE PIN GUIDE

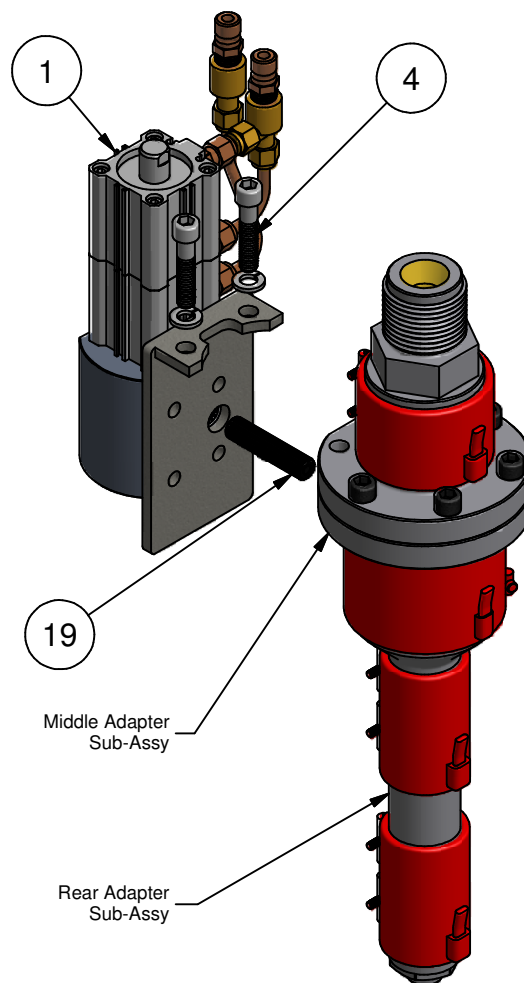
TOOLS REQUIRED		
1	5/32" HEX. KEY	CROSS GEAR RETAINER
2	1/4" HEX. KEY	HEAD SCREWS
3	7/64" HEX. KEY	NOZZLE HEATER SCREWS
4	1/2" HEX. SOCKET	PIN BUSHING RETAINER
5	1/4" OPEN END	THERMOCOUPLE
6	1-5/16" HEX. SOCKET	NOZZLE TIP
7	FLAT BLADE SCREW DRIVER	HEAD HEATER SCREWS
8**	OSCO EXTRACTOR	BEARINGS AND PIN BUSHING

** CUSTOM TOOL MADE BY OSCO



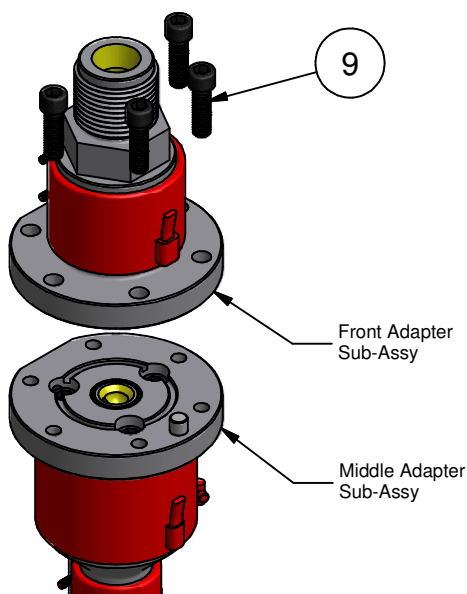
Disassembly Procedure

1. MSO Complete Nozzle Assembly [FIG. 1]
 - a. Remove (2) Cylinder Mounting Screws [Item 4].
 - b. Remove Cylinder Assembly [Item 1].
 - c. Remove Actuating Rod [Item 19].



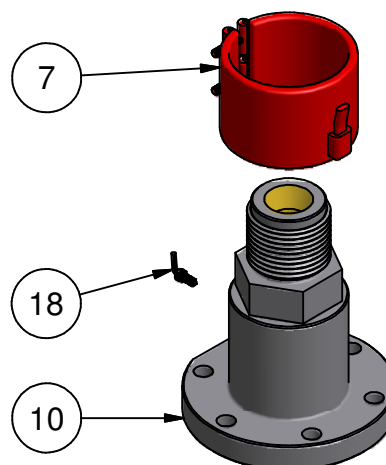
[FIG. 1]

2. Separate Front Adapter Sub-Assy from Middle Adapter Sub-Assy [FIG. 2]
 - a. Remove the (4) Head Screws [Item 9].



[FIG. 2]

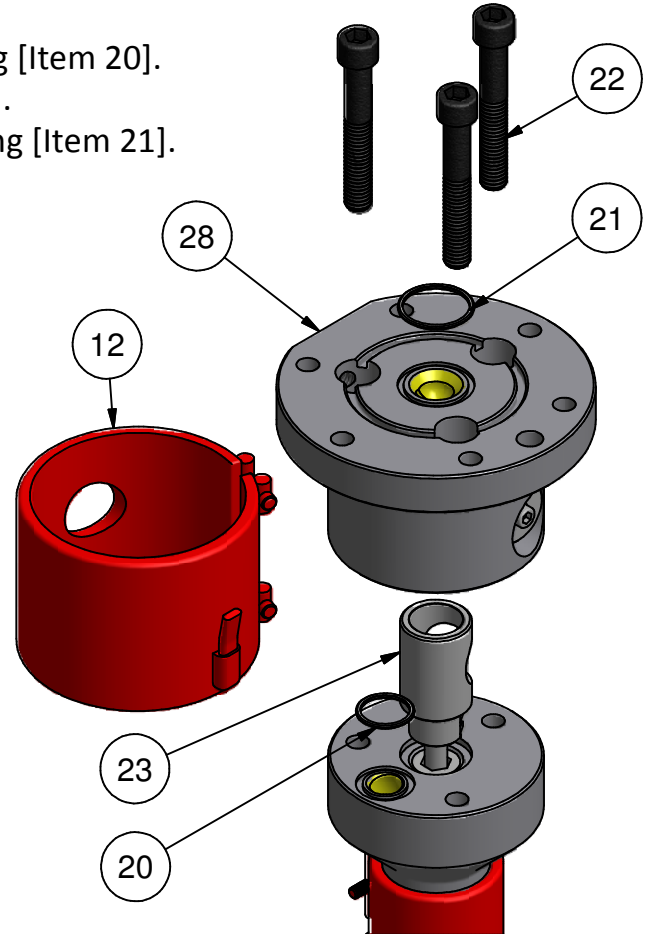
3. Front Adapter Sub-Assy [FIG. 3]
 - a. Remove Nozzle Heater [Item 7].
 - b. Remove Thermocouple [Item 18].



[FIG. 3]

4. Separate Middle Adapter Sub-Assy from Front Adapter Sub-Assy. [FIG. 4]

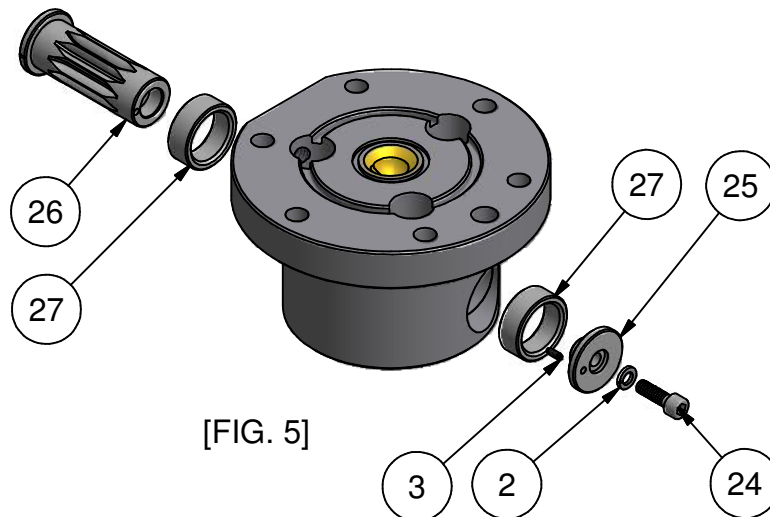
- Remove (3) Middle to Front Adapter Screws [Item 22].
- Remove Middle Adapter Heater [Item 12].
- Remove Rear Adapter to Middle Adapter Seal Ring [Item 20].
- Remove Middle Nozzle Adapter Bushing [Item 23].
- Remove Middle Adapter to Front Adapter Seal Ring [Item 21].



[FIG. 4]

5. Front Adapter Sub-Assembly [FIG. 5]

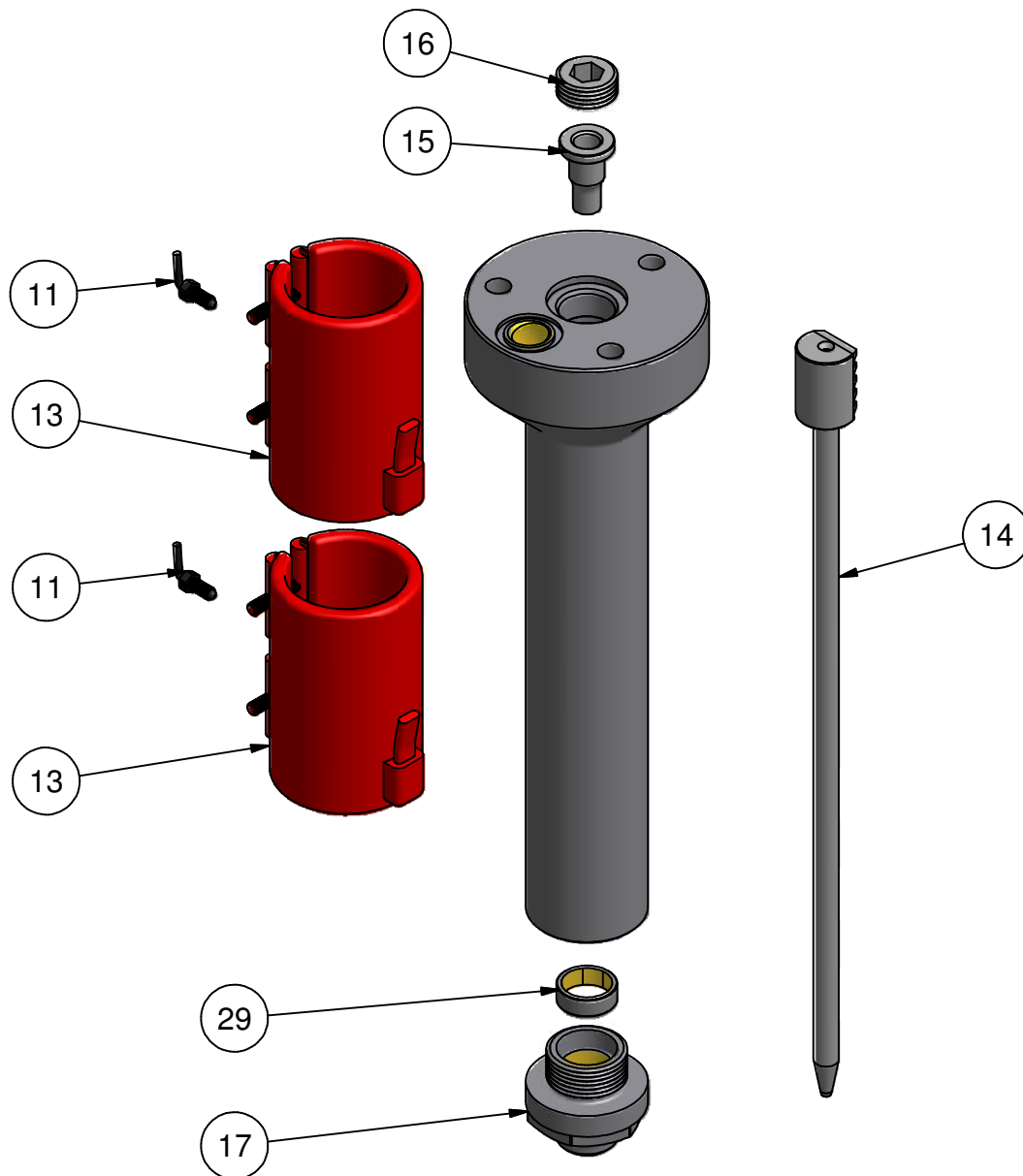
- Remove Cross Gear Retaining Screw & Washer [Item 24] & Item 2].
- Remove Cross Gear Retainer [Item 25].
- Remove Cross Gear Spring Pin [Item 3].
- Remove Cross Gear [Item 26]
- Remove (2) Cross Gear Bearings [Item 27].



[FIG. 5]

6. Rear Adapter Sub-Assy.

- a. Remove Valve Pin [Item 14].
- b. Remove (2) Thermocouples [Item 11].
- c. Remove (2) Front Adapter Heaters [Item 13].
- d. Remove Nozzle Tip & Valve Pin Guide [Item 17] & [Item 29].
- e. Remove Middle Nozzle Adapter Bushing [Item 15].



[FIG. 6]

****Re-assembly Procedure**

Reverse Steps 1 - 6