



## INSTRUCTIONS LOW FLOW KIT R479

Kit R479 is a collection of parts and tools required to adapt a standard FMI stainless steel pump head to the requirements of low flow (less than 50 ml per minute) pumping applications where reduction of system dead volume and rapid fluid transit time are important and the use of small bore tubing is indicated. The kit serves to adapt from the 1/4" NPT internal threads of the standard stainless steel cylinder case to the 1/4-28 internal machine threads required by most commercial small bore tube fittings.

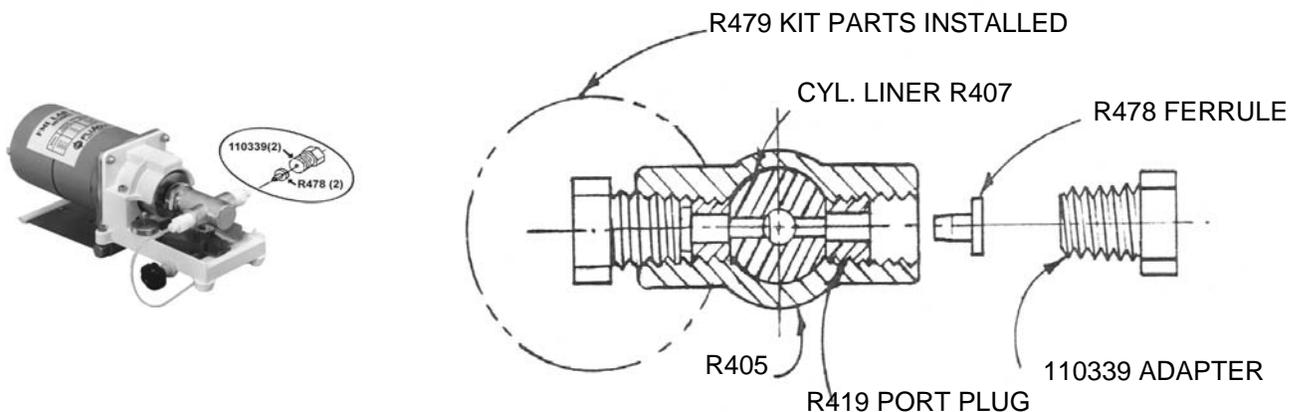
Kit R479 consists of four ferrules R478 (one for each port of the pump head and two spares), two adapters #110339 (one for each port), one ferrule removal tool (screw) and one ferrule assembly press tool (dowel).

### A. To Install Low Flow Components:

1. Remove tube adapter R412 from standard head assembly; flush away Teflon tape shreds and other residue that may remain in the port threads of the pump head.
2. Press one ferrule R478 into the small center hole of each side port, using press tool (dowel) to seat each firmly and squarely on the slotted outer surface of port plug R419.
3. With piston assembly R423 bottomed in the cylinder and piston pin #110301 at 6 o'clock position, screw adapter #110339 into each port, hand tight against the ferrule plus 1/8 turn wrench tight. Do not over tighten these fittings as excessive pressure on cylinder liner R407 may cause it to bind on the piston R423.
4. Connect tubing using 1/4-28 commercial fittings (supply house item) and operate pump to pump fluid against 5 to 10 psig head resistance for several minutes. Check for leaks. If fluid shows around the threads of the adapter #110339 that is operating under pressure, tighten it 1/16 to 1/8 turn more. If the leak persists, remove kit parts and start over, using greater care in axially aligning ferrule R478 in the center hole of port plug R419. Reverse the fluid flow direction and test the other port under pressure.

### B. To Remove Ferrule #R478:

Screw the removal tool (sheet metal screw) into the center hole of the ferrule by hand until the ferrule can be pulled out with the screw.



CROSS-SECTION VIEW OF STANDARD STAINLESS- STEEL CYLINDER CASE ASSEMBLY AS ADAPTED FOR LOW FLOW, LOW DEAD VOLUME APPLICATIONS