

Document Number:	903103	Revision:	B
Description:	Head Kit Installation Procedure	Date:	August 19, 2015
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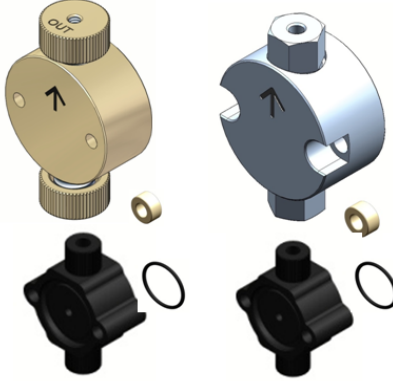
REV	CHANGE DESCRIPTION	ECO #	INITIALS	DATE
B	Update for use with cap screws on both types of heads	12029	AJC	09/09/2020

1.0 Overview

Teledyne/SSI pump heads require regular service, typically seal and check valve replacement. The spare parts and procedures for replacing individual components are covered in other documentation.

Alternatively, Teledyne/SSI also provides a complete head kit to service the pump. This procedure describes the proper installation and conditioning for head kits.

2.0 Select the Service Kit to be Installed and Go to the Next Section

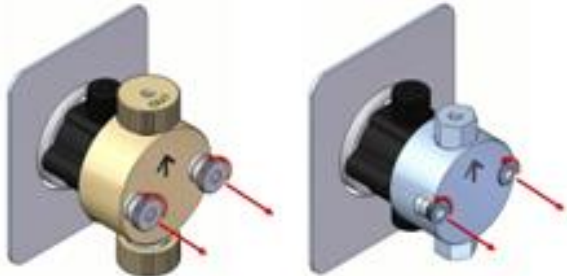
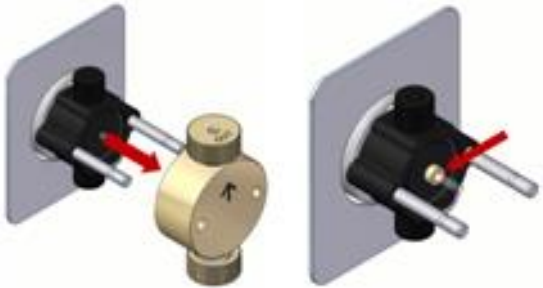
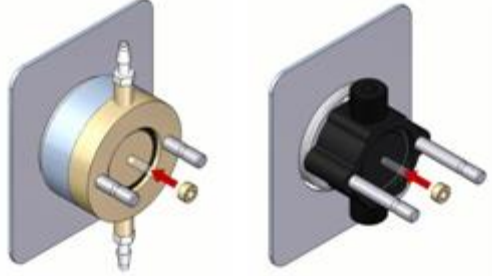
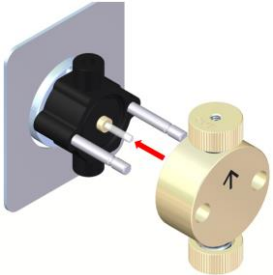
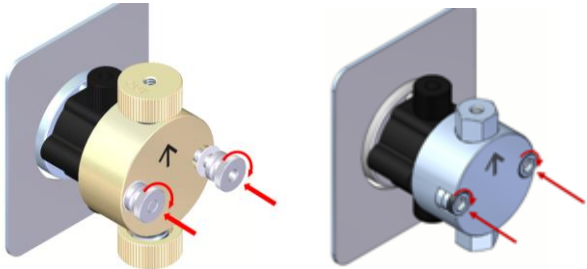
<p align="center">Head Kit ONLY PEEK or Stainless Steel for all Direct-Drive and Belt-Drive SSI Pumps Series-I, II & III, M1 Class, MX-Class LS-Class and Dual Head Pumps</p>	<p align="center">Head and Self-Flush Kit PEEK or Stainless Steel for all Belt-Drive SSI Pumps Series-II & III, LS-Class and Dual Head Pumps</p>
<p align="center">PEEK or Stainless Steel</p>  <p>Typical SSI pump heads shown. Your unit may vary.</p> <p>Pump head on left is PEEK construction with knurled thumb fasteners.</p> <p>Pump head on right is Stainless Steel construction with recessed hex fasteners.</p> <p>Note: Seal and Check Valves are pre-installed. Back-up washer packaged separately.</p> <p align="center">Go to Section 3.A</p>	<p align="center">PEEK or Stainless Steel</p>  <p>Typical SSI pump heads and wash housings shown. Your units may vary.</p> <p>Pump head on left is PEEK construction with knurled thumb fasteners.</p> <p>Pump head on right is Stainless Steel construction with recessed hex fasteners.</p> <p>Note: Seal and Check Valves are pre-installed. Back-up washer and "O"-ring for wash housing packaged separately.</p> <p align="center">Go to Section 3.B</p>

Note: As part of a corporate part number reduction effort, you may be required to replace your thumbnut pump head with a recessed hex fastener version. This will require the use of a flat washer under the thumbnuts. This will be explained in the following steps.

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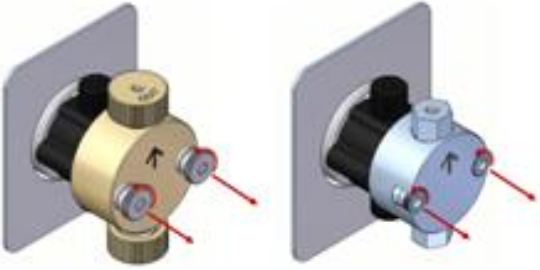

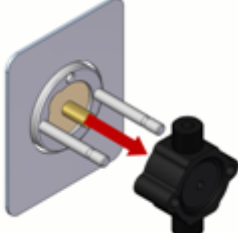

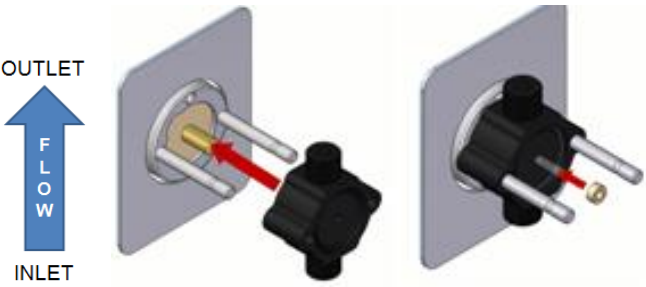
3.0 Installation Procedure

A. Head Kit Only

<p>Step 1</p>	<p>Using a suitable tool, remove the two head fasteners. Use a hex tool for recessed nuts. Use pliers (if required) for thumb nuts or remove by hand.</p>	
<p>Step 2</p>	<p>Carefully pull the pump head forward and off the guide pins. Keep the self-flush in place. Pull straight and slowly to prevent damage to the piston. <u>Note:</u> the old back-up washer may remain on the piston. Discard it.</p>	
<p>Step 3</p>	<p>The new pump head has the seal pre-installed. The back-up washer is in a separate bag. Install the back-up prior to Step 4. Carefully slide the new back-up washer on to the piston, in front of the existing wash housing.</p>	 <p style="text-align: center;">Series-I, M1 and MX-Class Series-II & III, All Dual Head and LS-Class</p>
<p>Step 4</p>	<p>Carefully slide the new pump head into place. Push onto guide pins straight and slowly to prevent damage to the piston.</p>	
<p>Step 5</p>	<p>Thumbnut style heads will require the use of supplied flat washers. Using a suitable tool, reinstall fasteners. As you tighten, alternate side-to-side until snug. For recessed nuts, turn 1 flat past snug using a hex tool. For thumb nuts, turn 1/6 rotation past snug using pliers, if required, or by hand.</p>	

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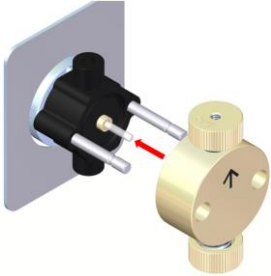
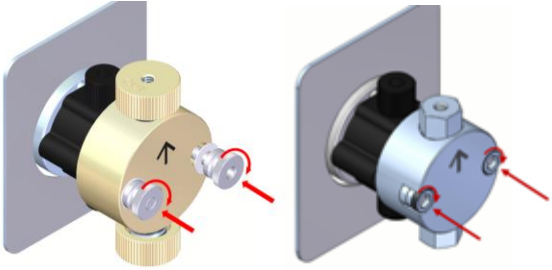
B. Head and Self Flush Kit (*Series-II & III, LS-Class and Dual Head Pumps ONLY*)

<p>Step 1</p>	<p>Using a suitable tool, remove the two head fasteners. Use a hex tool for recessed nuts. Use pliers (if required) for thumb nuts or remove by hand.</p>	
<p>Step 2</p>	<p>Carefully pull the pump head forward and off the guide pins. Keep the self-flush in place. Pull straight and slowly to prevent damage to the piston. <u>Note:</u> the old back-up washer may remain on the piston. Discard it.</p>	
<p>Step 3</p>	<p>Carefully pull the old wash housing forward and off the guide pins. Pull straight and slowly to prevent damage to the piston. Discard it.</p>	
<p>Step 4</p>	<p>Locate the new wash housing and new "O"-ring in your kit. Install the new "O"-ring into the wash housing groove.</p>	
<p>Step 5</p>	<p>Orient the new flush housing: the knurled tubing fitting marked OUTLET on top and INLET on bottom. Direction of flow is upward. Once oriented, carefully slide the new wash housing into place. Push onto guide pins straight and slowly to prevent damage to the piston.</p> <p>Then, carefully slide the new back-up washer on to the piston, in front of the existing wash housing.</p>	

(continued)

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B. Head and Self Flush Kit (continued)

Step 6	Carefully slide the new pump head into place. Push onto guide pins straight and slowly to prevent damage to the piston.	
Step 7	Thumbnut style heads will require the use of supplied flat washers. Using a suitable tool, reinstall fasteners. As you tighten, alternate side-to-side until snug. For recessed nuts, turn 1 flat past snug using a hex tool. For thumb nuts, turn 1/6 rotation past snug using pliers, if required, or by hand.	

4.0 Condition the Seal

New seals must be conditioned prior to use. Conditioning is the process of running the seals wet under controlled conditions to allow surfaces to seat and break-in for proper function of the seal.

Note: Use only pure solvents to condition new seals. Buffer solutions and salt solutions should never be used to condition new seals. Recommended solvents are HPLC-grade methanol, IPA and water, and mixtures of these liquids.

Suggested Conditioning Parameters: Using a restrictor coil or a suitable column, run the pump with a 50:50 solution of IPA/Water or Methanol/Water for 30 minutes at the back pressure and flow rate listed under PHASE 1 below, according to the pump head type. Then run the pump for another 15 minutes under conditions for PHASE 2 below, according to head type.

PHASE 1

Pump Type	Pressure	Flow Rate
5, 10, 12 or 24 ml/min pump	2,000 psi	<3 mL/min
40 ml/min or higher pump	1,000 psi	<3 ml/min

PHASE 2

Pump Type	Pressure	Flow Rate
5, 10, 12 or 24 ml/min pump	3,000 – 4,000 psi	3 - 4 mL/min
40 ml/min or higher pump	1,500 psi	<6 ml/min