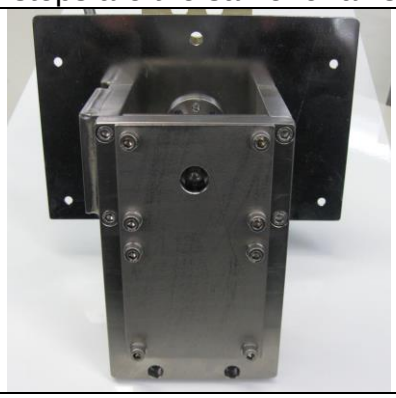
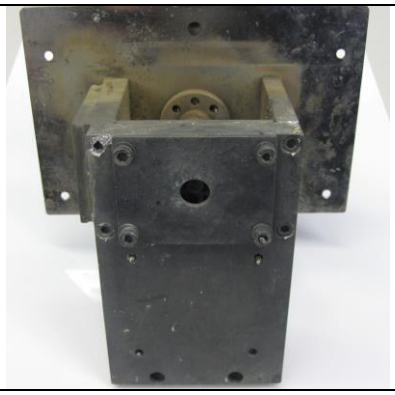
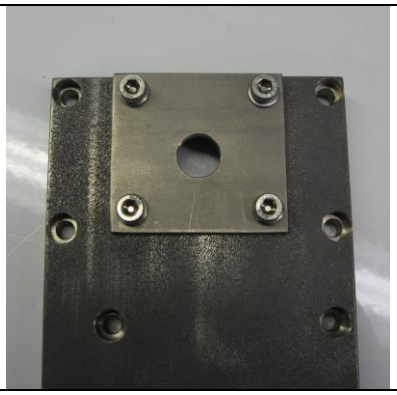
MRT-1031 (09/27/16)
"Graphite Sleeve Replacement"

Tool List:
Safety Glasses
High Temp Gloves
31/64 Drill Bit and or Arbor Press with 7/16" Punch Pin
0.501" Reamer
0.254" Reamer
Standard Allen Wrench Set
Feeler Gauge Set
Scotch-Brite
Small Flat Head Screw Driver
10-24 and 10-32 Taps
(It may be wise to have a nice set of stainless steel dental pics for pump maintenance)

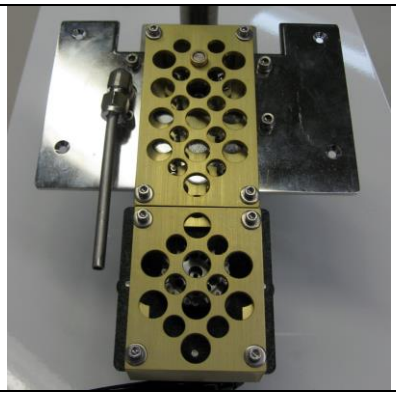
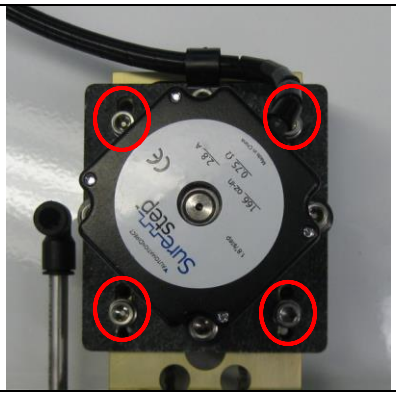
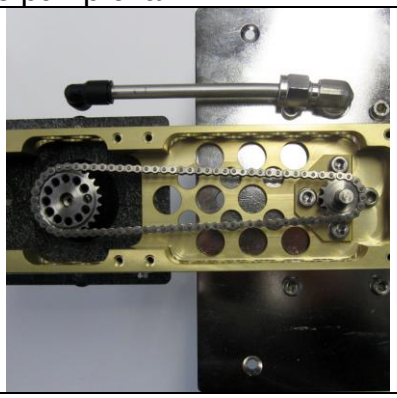
Please ask us about our KPMK-SS Pump Maintenance Kit for the above tools required.

Note: It is best practice to have the pump hot to disassemble. Always chase all threads with appropriate tap before reassembly.
*Always wear safety glasses when repairing your pump.

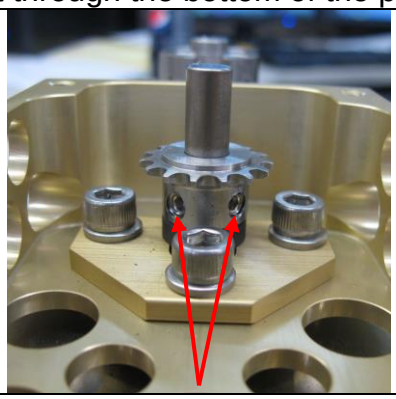
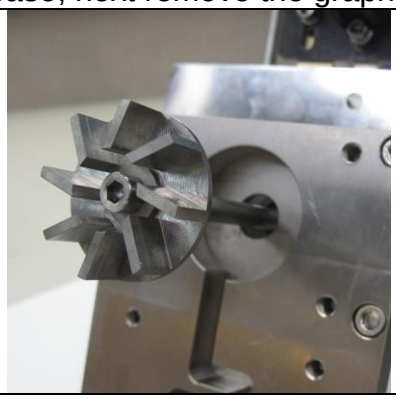
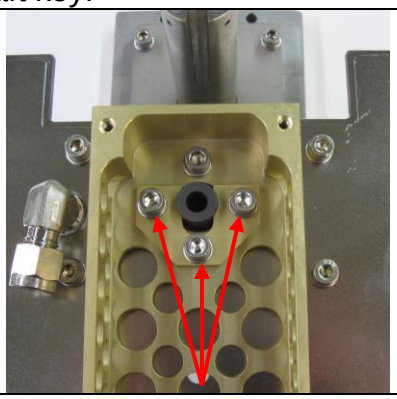
Step 1:
Remove the bottom impeller cap. There are 3 types of bottom impeller caps, but for this procedure the steps are the same for all 3.

		
Bottom Impeller Cap P/N 10000168 for Lead P/N 10000168T for Lead Free	Impeller Cap P/N 10000160 for Lead P/N 10000160T for Lead Free	Impeller Cap for 3" Wave P/N 10000119 for Lead P/N 10000119 for Lead Free

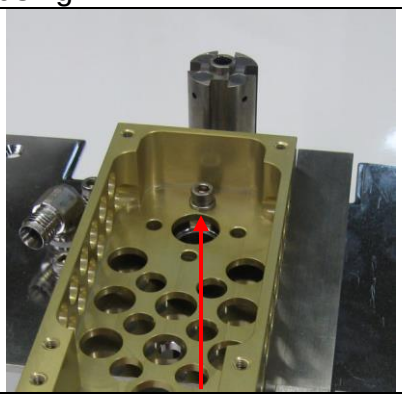
Step 2:
Remove the 2 drive covers. Loosen the 4 motor screws and remove the pump chain.

		
Remove the 6-32 x 3/8" screws. (8X) Drive Cover Right P/N 10000115 (big) Drive Cover Left P/N 10000116 (small) New solid Drive Cover P/N 10000184	Loosen the 4 motor screws in red.	Remove pump chain P/N M0021 by sliding the motor towards the impeller loosening the chain.

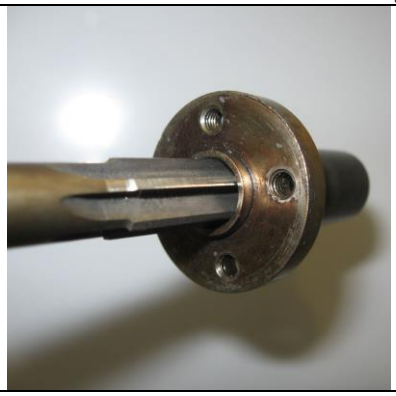
Step 3:
Now remove impeller sprocket by loosening the 2 set screws. Now push the impeller shaft assembly out through the bottom of the pump base, next remove the graphite shaft key.

		
Loosen the 2 set screws and remove the impeller sprocket. Impeller Sprocket P/N M0019	Push the impeller out through the bottom of the pump base. Impeller Shaft Assembly P/N KISA-T for Lead Free and KISA-SS for Lead.	Remove the 10-32 socket cap screws (3X) and remove the Graphite Shaft Key P/N 10000103

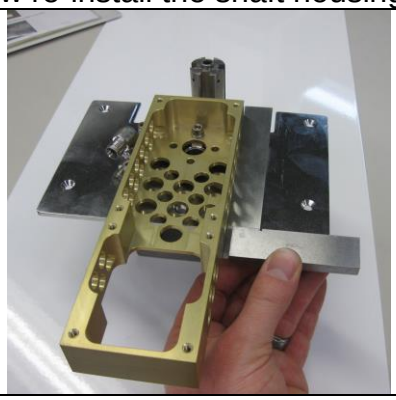
Step 4:
Now remove the drive box and shaft housing and then remove graphite sleeve from the shaft housing.

		
Now remove the last 10-32 socket cap screw and remove the Drive Box P/N 10000110 and Shaft Housing P/N 10000113 for Lead and 10000113T for Lead Free	One method of removing the graphite sleeve is to press it out with an arbor press. We use a 7/16” pin punch.	A second method of removing the graphite sleeve is to drill it out with a 31/64” Drill bit.

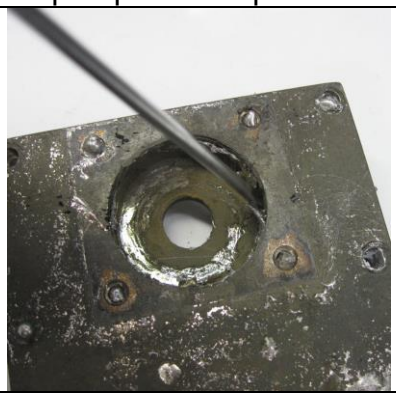
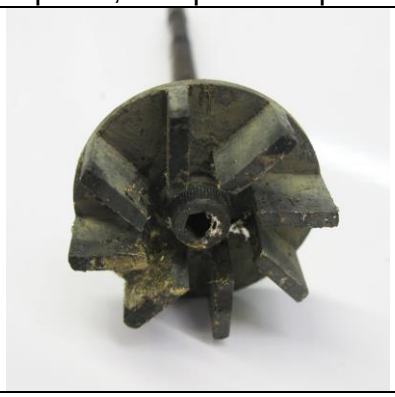
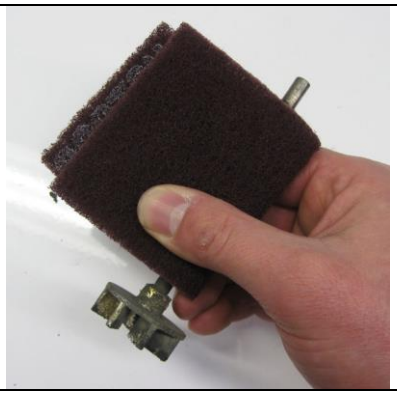
Step 5:
Now ream out the shaft housing and chase threads for 10-32. (Most other pump screws are 10-24)

		
The best way to clear out the reaming graphite is to ream it out with a .501” reamer.	An alternative method is to use scotch-brite until the graphite sleeve slips in and out freely.	Make sure you chase the threads of the shaft housing with a 10-32 tap. The shaft housing is the only part that is in solder that has 10-32 threads.

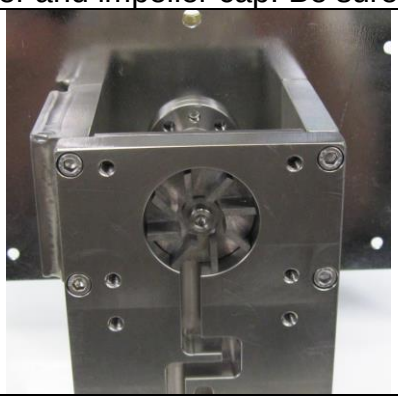
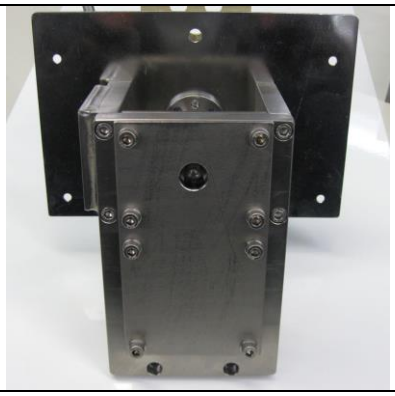
Step 6:
Now re-install the shaft housing and drive box.

		**Note:** There is a new Drive Box that allows you to adjust chain tension from the top. When you order a 10000110 you will receive this new Drive Box. It will require a new Stepper Motor Plate P/N 10001016 to mount the stepper motor to the new drive box.
Re-install the drive box and shaft housing using the one ¾" 10-32 socket cap with washer and square up the drive box with the nitrogen cover.	Now install the graphite sleeve Part# 10000109 and shaft key Part# 10000103 with 7/8" 10-32 socket cap screws and washers (2X).	

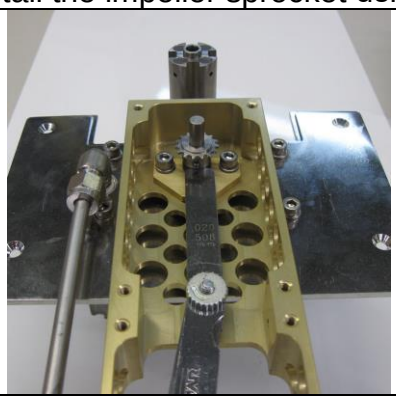
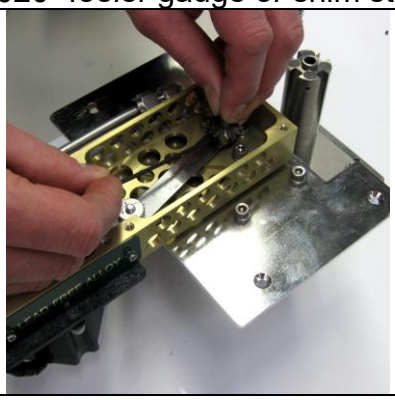
Step 7:
Clean pump base impeller chamber, impeller, and polish impeller shaft.

		
Using a small flat head screw driver, dental picks and or scotch-brite clean out the impeller chamber of all solder and dross.	Also, clean up the impeller blades the best that you can.	Polish the impeller shaft by hand with scotch-brite.

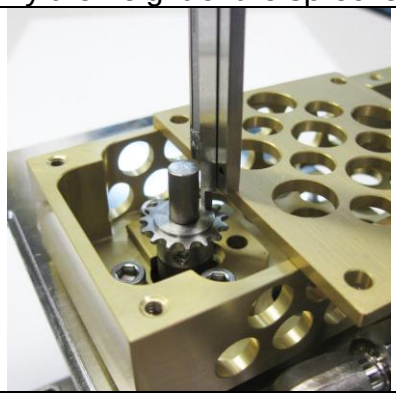
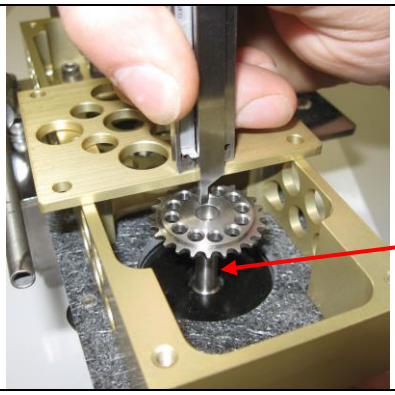
Step 8:
Re-install the impeller and impeller cap. Be sure to chase the threads with a 10-24 tap.

	
Re-install the impeller.	Re-install the impeller cap

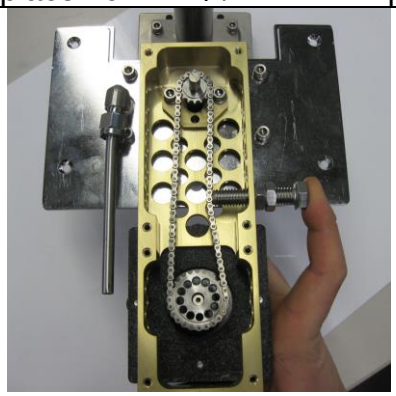
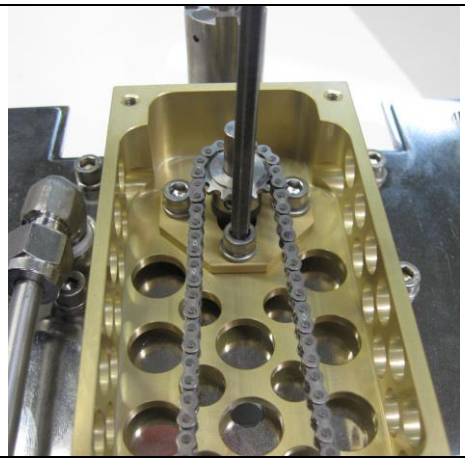
Step 9:
Install the impeller sprocket using a .020” feeler gauge or shim stalk.

		**Note:** There is about .040” clearance for the impeller inside the pump base. The idea of a .020” feeler gauge is to split the difference. This should allow the impeller to sit centered in the pump base. With everything clean and the impeller height set the impeller should spin freely. If it does not there may be an issue with the graphite sleeve or the impeller height was not set or cleaned properly. Please contact Nordson SELECT for instructions to replace a graphite sleeve if needed. Graphite sleeve P/N 10000109.
In this illustration, I am using a feeler gauge to set the impeller height.	Now to set the height you will want to pull up on the impeller shaft while pushing down on the impeller with the .020” feeler gauge between the graphite sleeve and sprocket.	

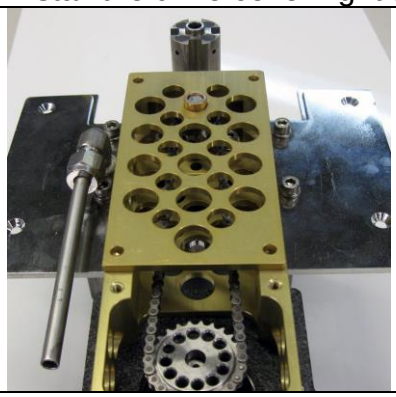
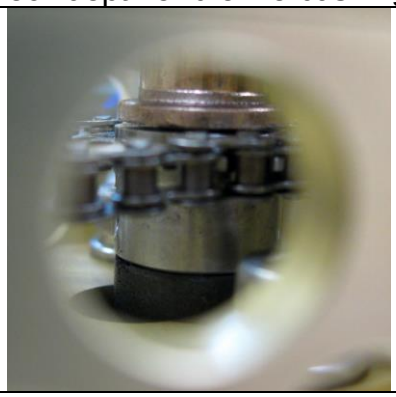
Step 10:
Verify the height of the sprockets are the same.

		**Note:** Make sure the motor screws are tight so the whole motor is not sagging on the screws. This can make measuring the motor sprocket difficult. You no longer need to measure out the height of the motor sprocket if you install the M0177 bushing under it first as this will set the height of the motor sprocket.
Take a measurement from the impeller sprocket using the depth gauge on a pair of dial calipers and the drive cover left like shown.	Now verify the motor sprocket is the same height. Make adjustments as needed to the motor sprocket only. P/N M0020	

Step 11:
Replace 10-24 x ¾" Socket cap screw and re-install chain.

<table>
<tr>
<td>  </td>
<td>  </td>
<td rowspan="2">Note:
The tool being used for chain deflection is just a 3/8-16 hex head bolt set at .860" from the jam nut to the end of the bolt and it is not necessary. It is a reference used here at Nordson SELECT for a new pump. The idea of the first picture in this step is the shape of the chain when you put pressure on it. If the chain is too loose it can cause cavitations in your solder dome. If the chain is too tight it will wear out the graphite sleeve and bronze bushing prematurely.</td>
</tr>
<tr>
<td>The chain deflection should look the same once the motor is tight. So, note the shape of the chain with pressure on the right side.</td>
<td>Re-install the 10-32 x ¾" socket cap screw.</td>
</tr>
</table>

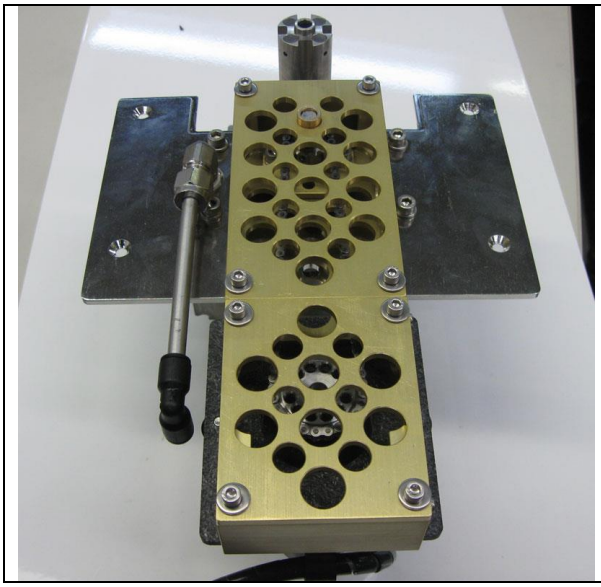
Step 12:
Re-install the drive cover right and check depth of bronze bushing.

<table>
<tr>
<td>  </td>
<td>  </td>
<td rowspan="2">Note:
If the impeller is for lead free and made of titanium it can float in the solder causing it to lift. You want the impeller sprocket to hit the bronze bushing before the impeller hits the upper impeller cap on the base.

To make adjustments, an arbor press works great but is tricky to make very fine adjustments.

If replacing the bronze bushing it is part number M0006 and will need to be reamed to a .254" after it is pressed in to the drive cover.</td>
</tr>
<tr>
<td>Set the drive cover right on the pump cage but do not install the screws.</td>
<td>Make sure there is a .010" space between the sprocket and bronze bushing. There is no real way to measure this it is more of a rough figure. Adjust if necessary.</td>
</tr>
</table>

Step 13:
Re-install drive covers and hardware but leave the screws loose.



Note:
You do not want to tighten the screws until the pump is in solder and at temp. The reason for this is that you want the pump running at normal speed so you can float in the drive cover with the bronze bushing. You want to snug up the 6-34 x 3/8” socket cap screws (4X) but not make them real tight. You may have to loosen and re-tighten a few times to make sure the solder flow from the nozzle does not change much or make an odd noise. Once the drive cover right is tight then tighten up the drive cover left. Your pumps impeller has now been set.

Customer Service
Nordson SELECT, Inc.
22425 East Appleway Ave
Suite 1
Liberty Lake, WA 99019
Office: +1.509.924.4898
Fax: +1.509.533.1299