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## IDENTIFYING CWP WATER SYSTEM MAIN RO PUMP REPLACEMENT PARTS

The purpose of this Technical Update is to understand and identify the various parts required to replace the Main RO pump on the CWP water system.

There are approximately six different versions and sets of options for replacing the Main RO Pump. The part numbers required are primarily dependent on the manufacturer's production dates but are also dependent on what modifications and upgrades have been implemented over the life of the CWP water system.

The following versions are defined based on approximate manufacturing date.

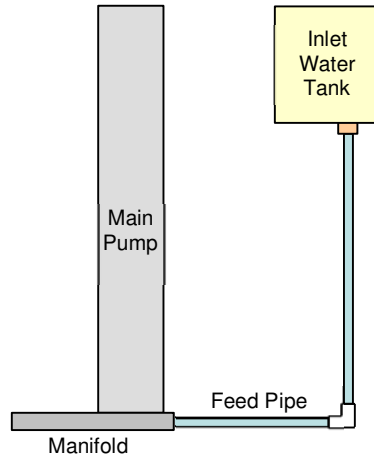
- |              |                         |   |
|--------------|-------------------------|---|
| ▪ Version 1: | Up to mid-2001          | S/N: up to about 1475                     |
| ▪ Version 2: | Mid-2001 to early 2005  | S/N: about 1475 to about 3000             |
| ▪ Version 3: | Early 2005 to late 2008 | S/N: about 3000 up to 1000291             |
| ▪ Version 4: | Late 2008 to mid-2012   | S/N: from 1000292 <sup>1</sup> to 1299918 |
| ▪ Version 5: | Mid-2012 to mid-2015    | S/N: from 1299919 to 1335007              |
| ▪ Version 6: | Mid-2015 to present     | S/N: from 1335008 to present              |

**Important:** Due to possible overlap in the manufacturer release changes and the serial numbers that they apply to (as well as any upgrades already installed), it is essential to evaluate your system and determine which group or groups of components apply to your situation and are appropriate for your CWP water system. Please read and understand this entire document before ordering.

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<sup>1</sup> Note: S/N <1000292, the previous used motor had a wider voltage range.

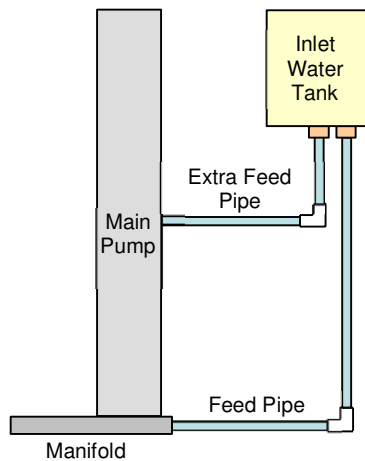
Version 1:



Basic Details:

- Dual outlet water tank
- Steep threads in unions
- Dual feed to the pump
  - One feed via the lower manifold
  - An additional feed pipe to the RO pump mid-section

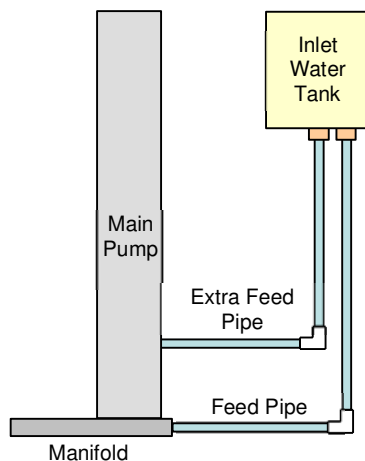
Version 2:



Basic Details:

- Dual outlet water tank
- Steep threads in unions
- Dual feed to the pump
  - One feed via the lower manifold
  - Second feed pipe moved to a lower point in the RO pump housing

Version 3:

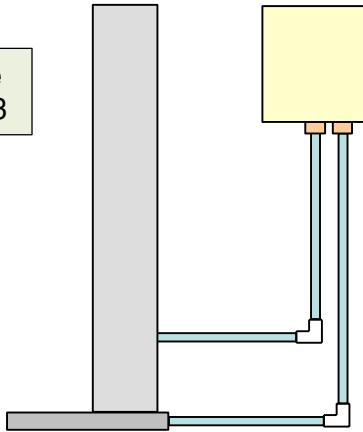


Basic Details:

- Single outlet water tank
- Coarse threads in union
- Single feed to the pump via the lower manifold

Version 4:

Same figure  
as Version 3

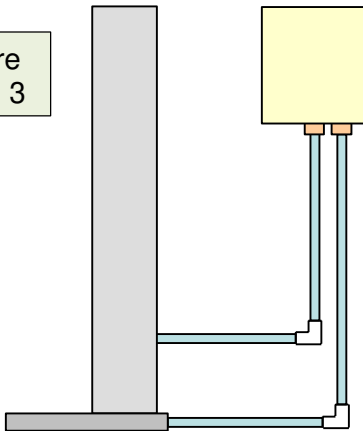


Basic Details:

- Electrical changes only

Version 5:

Same figure  
as Version 3

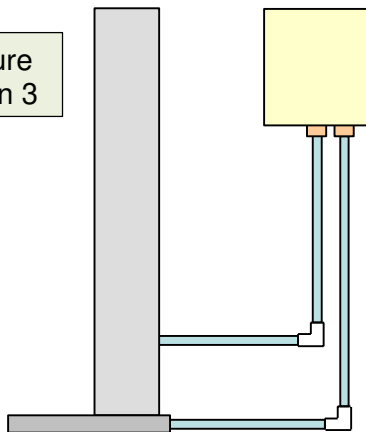


Basic Details:

- End cap and wire lead changes

Version 6:

Same figure  
as Version 3



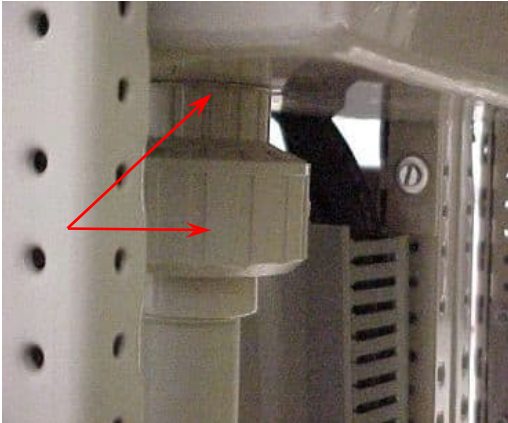
Basic Details:

- End cap, wire lead and strain relief changes
- Pump housing change
- Pump pipe change

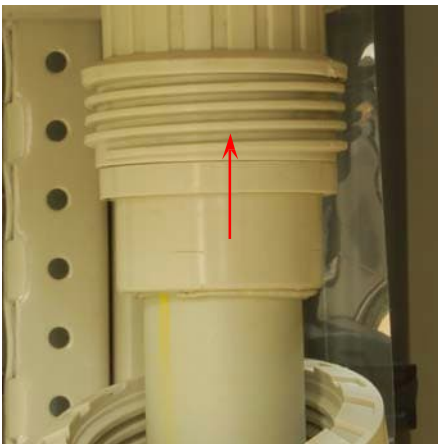
## Version 1

The earlier version of the Inlet Tank had one 25 mm pipe that fed from the bottom of the tank to the bottom of the manifold frame and then to the RO pump.

Early style tank: single outlet/union



Early style (coarse threads)



Lower manifold and inlet feed pipe



Lower manifold and pump – Front view



**Note:** When installing the current RO Pump, all upgrades must be performed.

| Part being replaced:                | Order the following:  |  |
|-------------------------------------|---|--|
| Early style Inlet Water Tank (only) | W3T579433<br>W3T578017  | Inlet Water Tank (new style)<br>Feed pipe steep thread to STD  |
| RO Pump                             | W3T579433<br>W3T578168<br>W3T577645<br>W3T577646<br>W3T577647 | Inlet Water Tank (new style)<br>Extra feed pipe kit C-PVC<br>RO Pump CWP 101 & 102, or<br>RO Pump CWP 103 & 104, or<br>RO Pump CWP 106 |
| For CWP 101-104 S/N <100292<br>add  | W3T577810<br>W3T577809<br>W2T932129                           | MCS1<br>CON1<br>AUX Contactor  |

### Version 2

The RO pump capacity was increased to accommodate higher membrane flows. This required an inlet tank with two outlet ports to meet the increased demand. A second fitting was added to the bottom of the tank to accomplish this. At the same time a new type of threaded coupling was implemented; one with what is called “steep” threads. Two 25 mm pipes now feed water to the RO Pump:

- This version required the addition of the Extra Feed Pipe Kit
- One 25 mm pipe connects between the bottom of the Inlet Tank to the bottom manifold; this is the original connection and remains the same.
- The other 25 mm pipe connects from the bottom of the Inlet Tank to the side of the pump housing, about mid-way from the bottom of the pump.

New style tank dual outlet/union



Pump with mid-side port



New union (steep threads)



Note: When installing the current RO Pump, all upgrades must be performed.

| Part being replaced                 | Order the following                              |  |
|-------------------------------------|--|--|
| Early style Inlet Water Tank (only) | W3T579433  | Inlet Water Tank (new style)   |
| RO Pump                             | W3T578168<br>W3T577645<br>W3T577646<br>W3T577647 | Extra feed pipe kit C-PVC<br>RO Pump CWP 101 & 102, or<br>RO Pump CWP 103 & 104, or<br>RO Pump CWP 106 |
| For CWP 101-104 S/N <100292 add     | W3T577810<br>W3T577809<br>W2T932129              | MCS1<br>CON1<br>AUX Contactor  |

### Version 3

As Gambro continued to improve the flow rates, they determined that they could accomplish this by relocating the pump housing second inlet port from the mid-center location to the lower section of the RO pump housing. The port was relocated to about 8" from the bottom of pump housing as shown below. This version also required the addition of the Extra Feed Pipe Kit.

Pump with low side port



Pump with low-side port



Inlet connection to low side port



**Note:** When installing the current RO Pump, all upgrades must be performed.

| Part being replaced:            | Order the following:  |   |
|---------------------------------|---|---|
| RO Pump                         | W3T578168<br>W3T579449<br>W3T577645<br>W3T577646<br>W3T577647 | Extra feed pipe kit C-PVC<br>25 mm GF PVC Union (see Note)<br>RO Pump CWP 101 & 102, or<br>RO Pump CWP 103 & 104, or<br>RO Pump CWP 106 |
| For CWP 101-104 S/N <100292 add | W3T577810<br>W3T577809<br>W2T932129                           | MCS1<br>CON1<br>AUX Contactor   |

**Note:** When replacing the pump only there may be additional considerations. Due to minor variations in the location of the lower side port, the second pipe from the Inlet Tank may not align perfectly. If the second pipe to the lower side port of the pump housing is too long, cut the pipe in half, trim the halves to a desirable length, and use the 25 mm GF PVC Union to connect them together. If it is too short and extra pipe length is needed, use the Extra Feed Pipe Kit. Note that this kit also includes 25 mm GF PVC Unions.

### Version 4

To improve reliability once again, all Main RO Pump motors were changed to a 2.2 kW model. The pump shaft for the new motor was also upgraded to a higher quality material with a smooth shaft.

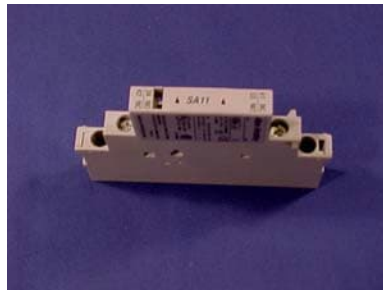
The power requirements for the CWP 106 remain the same and therefore the 106 can use the same 10-16 amp Motor Protector and Contactor it always has. However, for the CWP 101-104, since the power requirements have increased, the Main RO Motor Protector and Contactor must be upgraded.

The auxiliary contactor is partnered with MCS1 and may be difficult to remove safely without damage. Therefore, it should be ordered as an accessory and changed when MCS1 is changed.

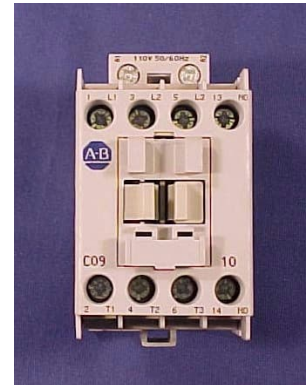
MCS1  
W3T577810



AUX Contactor  
W2T932129



CON1  
W3T577809



**Note:** The photos above are of potentially older model components and may differ slightly from the current models being delivered today. They may look different than the components you receive.

| Part being replaced:               | Order the following:                |   |
|------------------------------------|-------------------------------------|---|
| RO Pump                            | W3T577645<br>W3T577646<br>W3T577647 | RO Pump CWP 101 & 102, or<br>RO Pump CWP 103 & 104, or<br>RO Pump CWP 106 |
| For CWP 101-104 S/N <100292<br>add | W3T577810<br>W3T577809<br>W2T932129 | MCS1<br>CON1<br>AUX Contactor   |

## Version 5

Improvements were made to the CWP RO system, specifically the chemical pump system and the RO Pump. The RO pump on some of the CWP units has had end cap wire lead issues which could result in system failure.

Starting with CWP RO serial number 1299919, a new RO pump wire lead and end cap were implemented into production. As a result, various new spare parts are now available and certain legacy parts have been discontinued due to these design changes.

The new RO pump end cap and wire lead have been changed from the historic Gambro design by increasing the wire gauge from 16 to 14 and by submerging the spliced connection in water for improved cooling and safety. If any electrical failure was to happen at the crimp, it would trip the overload faster due to contact with water. The submerged splice is based on the V/Z Series RO submerged wire lead that has a 10+ years' worth of proven success.

Pump Wire Lead and End cap



| Part being replaced: | Order the following:                             |   |
|----------------------|--|---|
| RO Pump (see note)   | W3T577645<br>W3T577646<br>W3T577647<br>W3T577648 | RO Pump CWP 101 & 102, or<br>RO Pump CWP 103 & 104, or<br>RO Pump CWP 106<br>End Cap/Wire Lead Replacement (all RO's) |

**Note:** When replacing the complete RO Pump assembly there may be additional parts needed depending on age of machine. Please review the previous Versions to determine those additional parts.



### Version 6

We made product improvements to the CWP RO system. These improvements include a more robust lower frame bracket, a spacer added for the upper angle bracket and changing some components of the RO pump assembly. The changes to the RO pump assembly were based on continuous improvement and not system failures.

Starting with CWP RO serial number 1335008, a new RO pump wire lead, end cap, strain relief, pump housing and pump pipe have been implemented into production. As a result, various new spare parts are now available.

The new RO pump wire lead is rated for continuous submersion in water and contains no splices. The flat shape of the new cable required changes to the strain relief and endcap. The pump housing has the same features and dimensions as before but contains two fewer welds. The pump pipe also has the same features and dimensions as before but is a single piece rather than the previous pipe and threaded bushing.

For ordering, the replacement P/Ns below are still the same as the last version.

### New Pump Wire Lead and End cap

New Pump Pipe is Welded to Threaded Bushing



New Strain Relief (End Cap threaded hole was enlarged to accommodate)

Submerged Wire Lead With no Splices

| Part being replaced: | Order the following:                             |   |
|----------------------|--|---|
| RO Pump (see note)   | W3T577645<br>W3T577646<br>W3T577647<br>W3T577648 | RO Pump CWP 101 & 102, or<br>RO Pump CWP 103 & 104, or<br>RO Pump CWP 106<br>End Cap/Wire Lead Replacement (all RO's) |

**Note:** When replacing the complete RO Pump assembly there may be additional parts needed depending on age of machine. Please review the previous Versions to determine those additional parts.