

Product Bulletin

SEB LCM and Product Reliability



Attn: All Service Personnel

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Date: 2004-11-17
2013-05-30 Rev 1

Subject: Hydro Moris to Maxton Valve
Conversion Kit Instructions

Hydro Moris to Maxton Valve Conversion Kit Instructions

Product Affected

Any Hydro Moris unit containing a Hydro Moris valve (US53878001, US53878002, US53878003 and US53878004) that needs to be replaced.

Issue

Hydro Moris no longer provides US application support. In order to ensure continuous field support of Hydro Moris equipment, and availability of spare parts, SEB LCM has developed 4 valve conversion kits that enable Hydro Moris valves to be replaced by a Maxton valve. These kits are available from KONE Spares, and should be ordered with a standard SAP parts order in IW32. The application and selection information is detailed in this bulletin.

Corrective Action

If there is a need to replace the Hydro Moris valve, a Maxton valve may be used as a replacement. This bulletin defines the parts needed and gives instruction for replacing the valve. The Maxton valve conversion kit includes a tank extension assembly that is mounted on the existing tank to extend the height. This allows the Maxton valve to be mounted inside the tank, and the existing tank lid to be reused. Hydro Moris used 3 different tank sizes. This conversion kit may be ordered for the tank size on the job, and the existing tank dimensions (Length and Width) must be known before the Maxton Valve kit can be ordered.

Contact Person

For KONE Spares ordering information refer to the selection criteria in this bulletin, and for installation support, call Technical Support in Moline.

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Installation Instructions

TOOLS REQUIRED

- 3 Vise Grips
- 1- 16" channel lock
- 1- 18" crescent wrench
- 1- 18" chain wrench
- Standard mechanic's tools
- Teflon tape

STEP 1 – Complete SURVEY INFO – Required to order Valve Kit

There are 3 Hydromoris tank sizes. The job must be surveyed first to determine the tank and valve size.

Tank Dimensions Length =

Width =

Flow Rate Nameplate = _____ Liters/Min. Hydromoris tank nameplate shows flow in liters per minute.
Divide liters per minute by 3.8 for gallons/minute, to be used to select proper Maxton valve.



Flow Rate on
Tank Nameplate

Photo 1 – Nameplate Information

Control Type: Miprom HS – 115VAC Valve Coils ♂ KCM831 – 230VAC Valve Coils ♂

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Dimension from tank end to end of valve support shelf =

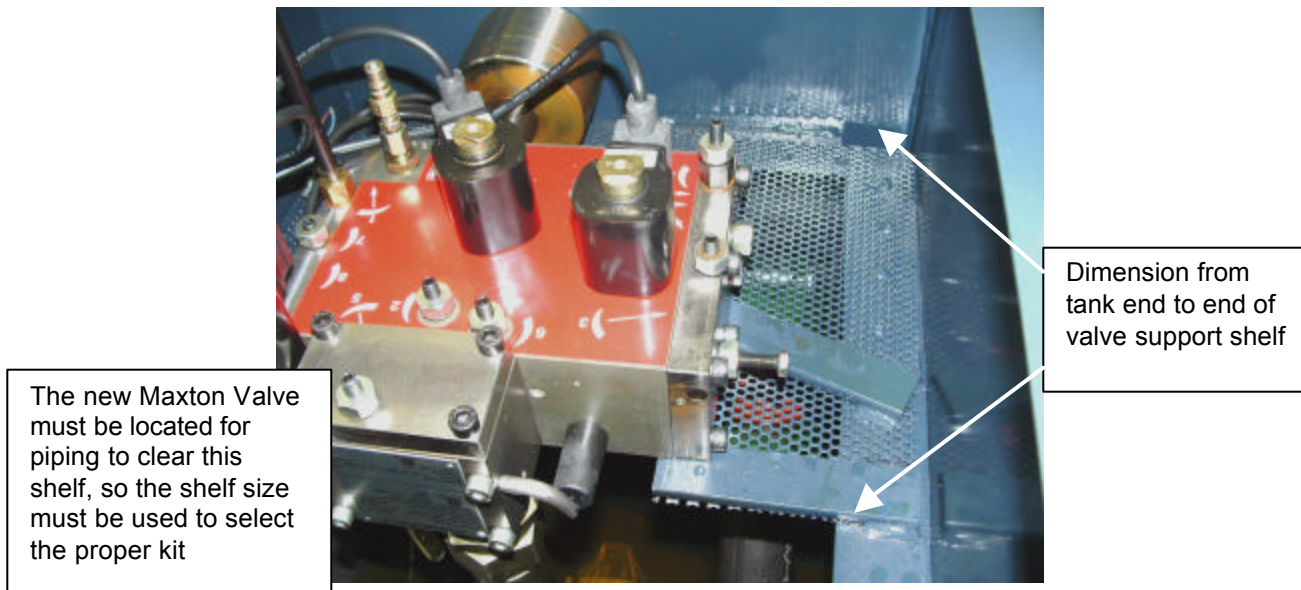


Photo 2 – Surveying Existing Unit

- Hose size (pump to valve) --
- Ø 1-1/4" (Nut 1-31/32" across flats) valve end
 - Ø 1-1/2" (Nut 2-3/16" across flats) valve end
 - Ø Other dimension – call Technical Support

Step 2 – Select Tank Conversion Kit, Valve and Hose Adapter

The complete valve conversion requires 3 parts, which must be ordered through KONE Spares. These parts are (i) the Pump Unit Tank Conversion Kit, (ii) the Valve to Hose Adaptor, and (iii) the Valve.

- (i) The following Tank Conversion Kits are available and must be selected by measuring the tank:
1. **US521028001** HM CA Pump Unit 22" W x 41 -1/2"L with short valve support shelf
 2. **US521028002** HM CA Pump Unit 22" W x 41 -1/2"L with long valve support shelf
 3. **US521028003** HM CM Pump Unit 17 -5/8"W x 33-1/2"L with short valve support shelf
 4. **US521028004** HM CAA Pump Unit 22"W x 54 -5/8"L with long valve support shelf
- Review Tank dimensions from survey data to determine which pump unit you are dealing with. CA, CM or CAA tank sizes are given above and this information is required to select the proper kit. There is also a shelf in each unit which holds the HM valve, and the size of this shelf must be known to select the proper CA Pump Unit Kit. CM and CAA Pump Unit Kits are selected by tank size only.
 - Review the survey data for the "Dimension from tank end to end of valve support shelf" (photo 2). For the CA Pump unit kit, select US521028001 if the measured dimension is less than 13" (short shelf). Otherwise select US521028002 which is for a wider shelf that could be up to 18". If the dimension exceeds 18" for the width of the valve support shelf, modifications to the support shelf might be necessary due to interference with the new valve piping.

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(ii) Select the Valve to Hose Adapter

The high pressure hose that connects the pump to the valve does not use standard pipe thread, and must use a proper adapter which can connect to a threaded pipe nipple on the valve end. The size of this hose must be determined to select the proper Valve to Hose adapter. Review the size of the pump to valve hose measured in the survey. If the hose is a 1 -1/4" size order the 1-1/4" Hose Adaptor, part number **US521018001**. If the hose size is 1-1/2" order the 1-1/2" Hose Adaptor, part number **US521018002**. If the survey data you have does not match up with the hose sizes, call Technical Support to review what parts to order.

(iii) Select the Maxton Valve

Review Pump Flowrate data and controller type from survey to determine valve size, and coil voltage. Divide the nameplate flowrate information by 3.8 to determine flowrate in g.p.m. (See Photo 1)

- Example – Nameplate gives 250 lpm (this converts to 65.8 g.p.m.)
- Controller is surveyed to be KCM831, so valve coil voltage is 230VAC
- Small Valve size is 30 – 110 g.p.m. **Maxton UC-4MB44 E2 (US52373-001, 002)**
- Large Valve size is 50 – 175 g.p.m. **Maxton UC-4MB44 STD (US52374-001, 002)**
- Always choose the smallest flow rate valve which will fit the job survey flowrate.
- In this example choose the Small Valve size to finalize selection of the valve for the kit.
- Select proper Valve coil voltage, based on the controller type. For each valve number the – 001 suffix indicates a 115VAC coil voltage, and the –002 suffix indicates a 230VAC coil. In this example the Small Valve part number will be US52373002 for a 230VAC coil for KCM831

Call Technical Support in Moline for any additional help you may require in making the proper parts determination for the conversion.

For your convenience, and understanding of the content of each kit, the lists of kit parts are given at the end of this bulletin. Drawings for parts are available through Technical Support, and are also on EDMS.

1. Preparation for making the conversion

- Secure the car and take it out of service. Post appropriate "Out of Service" signs.
- Land car on springs.
- Lock out main line power.
- Close machine room line valve, if present.
- Relieve line pressure via manual lowering.

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2. Disassembling

- Disconnect pump to valve hose at the valve (Photo 3).
- Remove socket cap screw from underside of valve to release from tank support.

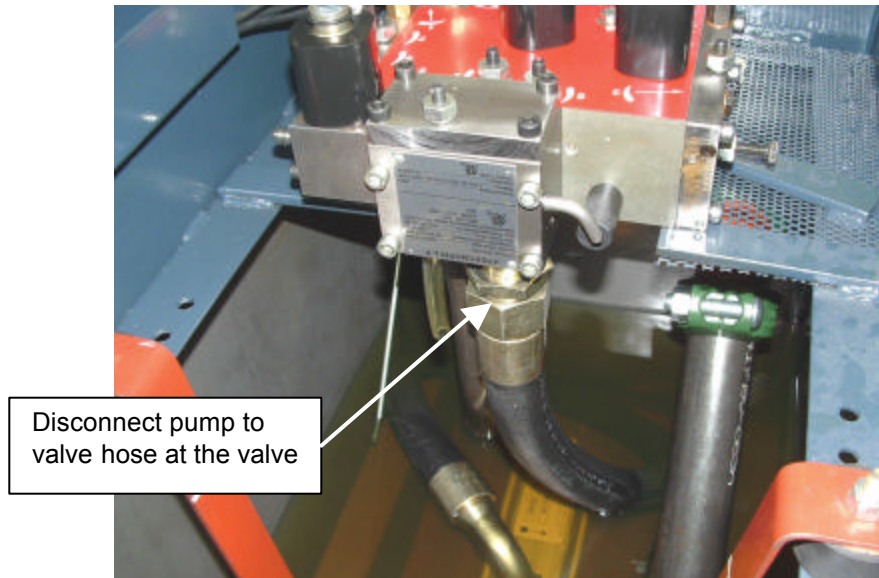


Photo 3 – Removing valve connections

- Loosen allen head set screw in jack pipe flange connection through tank wall (Photo 4).
- Remove 2" victaulic elbow to tank connection in jack line to open line from pump to jack.

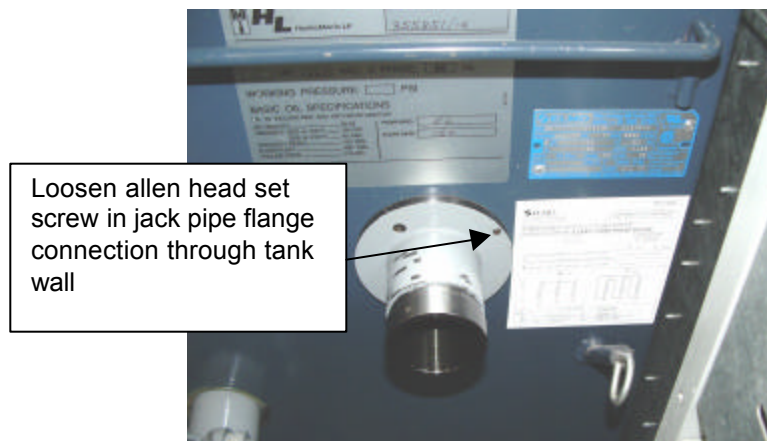


Photo 4 – disconnecting valve to jack line

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- Disconnect valve coil wiring between valve and controller.
- Remove Hydromoris valve by rotating flange connector to unthread jack pipe adaptor from valve.
- Cap 32 mm jack pipe with plastic cap 1-1/4" inside diameter (this pipe will not be reused).

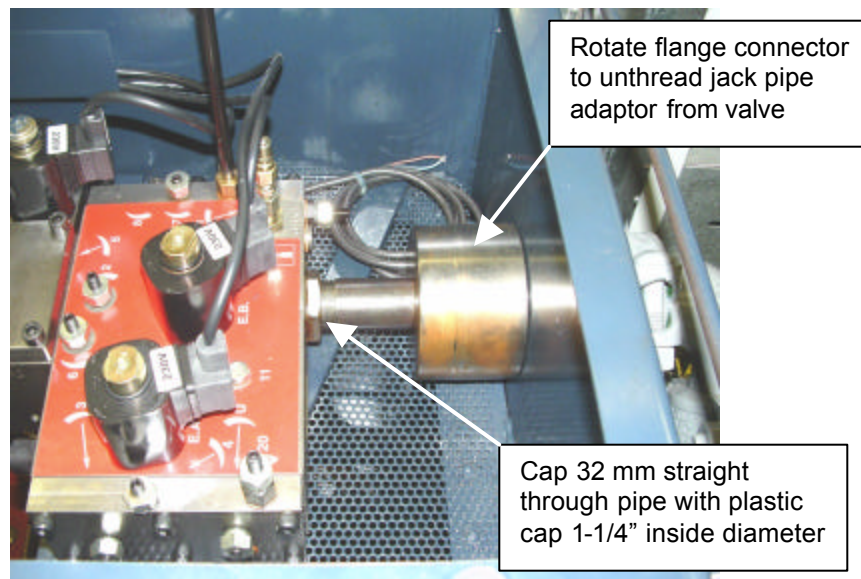
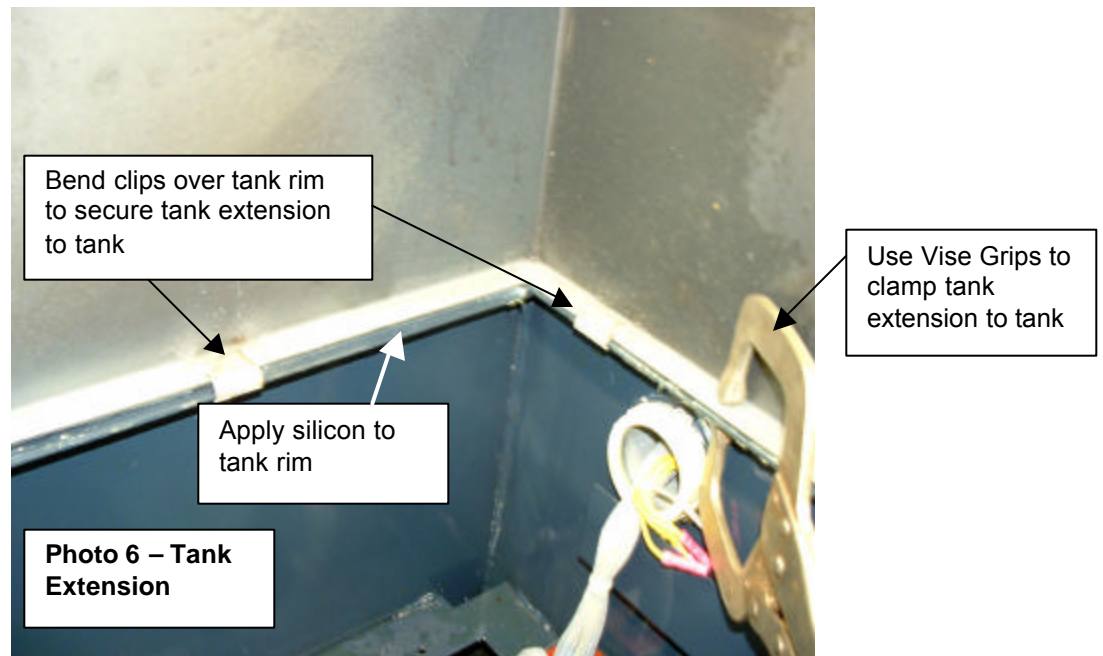


Photo 5 – Removing Valve to Jack Line

3. Installing Maxton Kit

1. Remove rubber bumpers from top of tank rim.
2. Insert rubber bumpers in holes top of tank extension.
3. Apply ¼" bead of silicone (RTV) to top tank rim.
4. Carefully position tank extension on top of tank.
5. Clamp tank extension to tank with vise grips (Photo 6).
6. Bend (6) six 1/16" X 1" clips over tank rim and crimp with vise grips or channel lock.

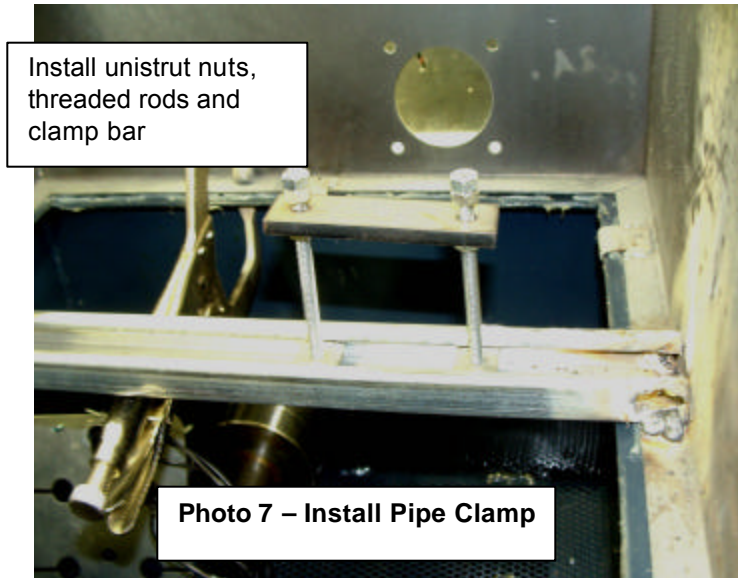


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7. Locate the Unistrut bar in the tank extension box and install (2) two ¼" unistrut nuts, ¼ -20 X 4" threaded rods, nuts and clamp plate in line with the Flanged Jack Pipe exit hole in the box end (Photo 7).



8. Apply teflon tape to pipe threads of Flanged Jack Pipe (2" pipe threaded one end grooved opposite end with 3-1/2" square bolting flange – Photo 8).

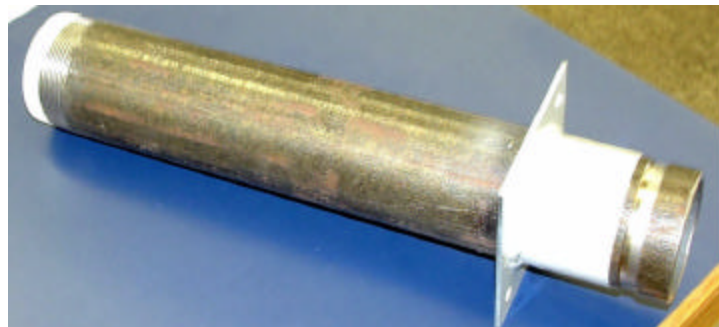


Photo 8 – Flanged Jack Pipe

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9. Insert Flanged Jack Pipe from outside of tank through the tank extension box, so the flange is on the outside of the tank (Photo 9). The threaded end of the pipe should fit between the 1/4" threaded rods and rest on unistrut (do not tighten).

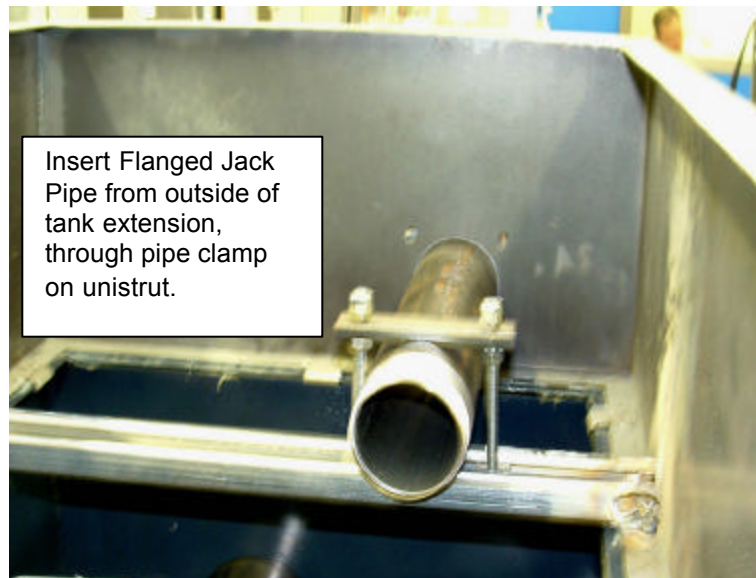


Photo 9 – Install Flanged Jack Pipe

10. Before mounting the Maxton Valve, apply teflon tape to threads on the 2" x 6" long pipe nipple, included in the conversion kit. Thread into hose adaptor (in kit) and into pump port on Maxton valve (Photo 10).

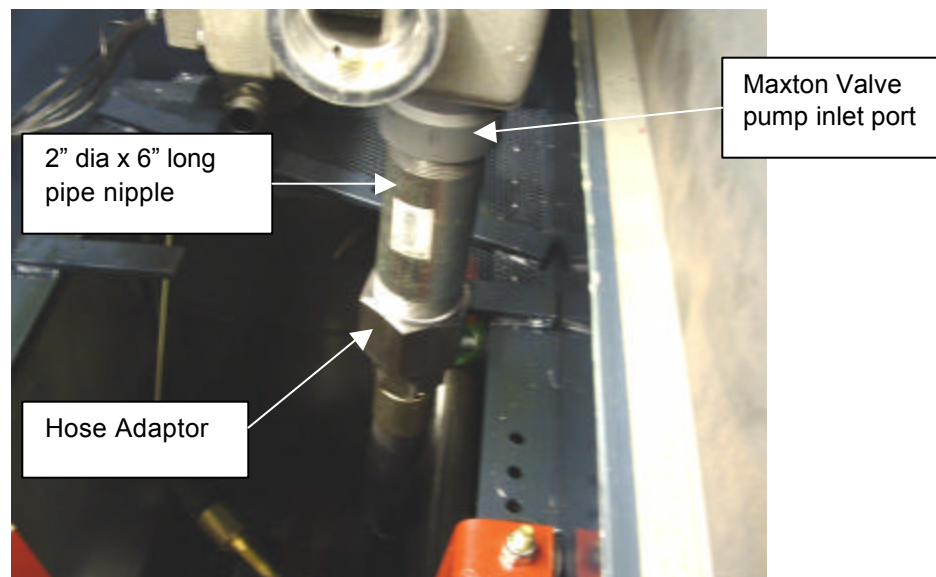


Photo 10 – Installing Valve Inlet Pipe Nipple and Hose Adaptor

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11. Hold Maxton valve inside of tank extension and screw Flanged Jack Pipe into jack port of Maxton valve (Photo 11). Tighten the pipe connection.

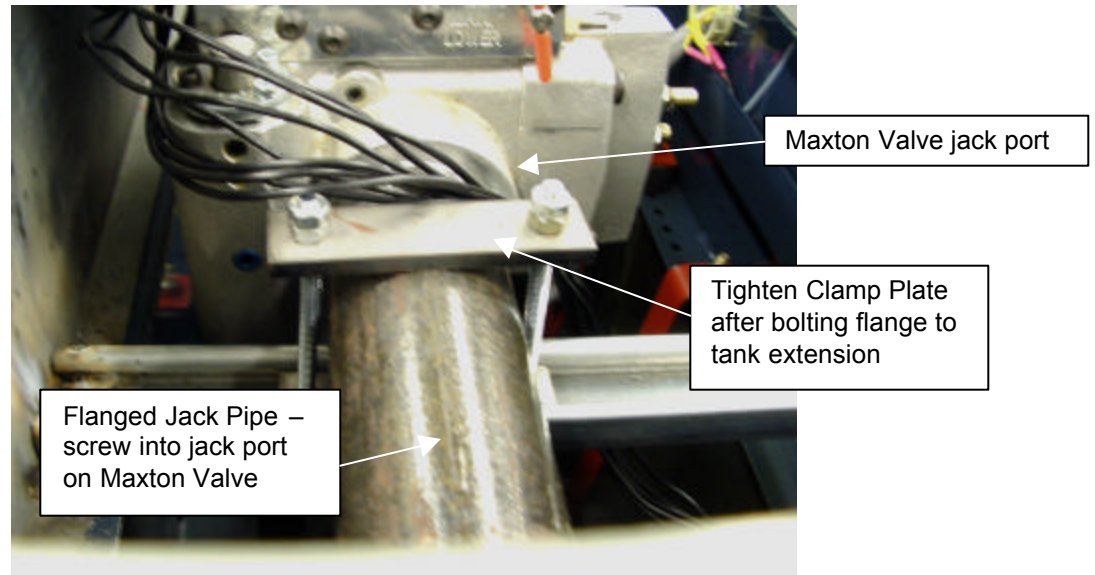


Photo 11 – Connecting Maxton Valve to Jack Pipe

12. Fasten flange on Jack Pipe to tank extension with (4) four $\frac{1}{4}$ " - 20 x $\frac{3}{4}$ " hex head cap screws (Photo 12).
13. Tighten clamp plate to hold Jack Pipe to unistrut (Photo 11).

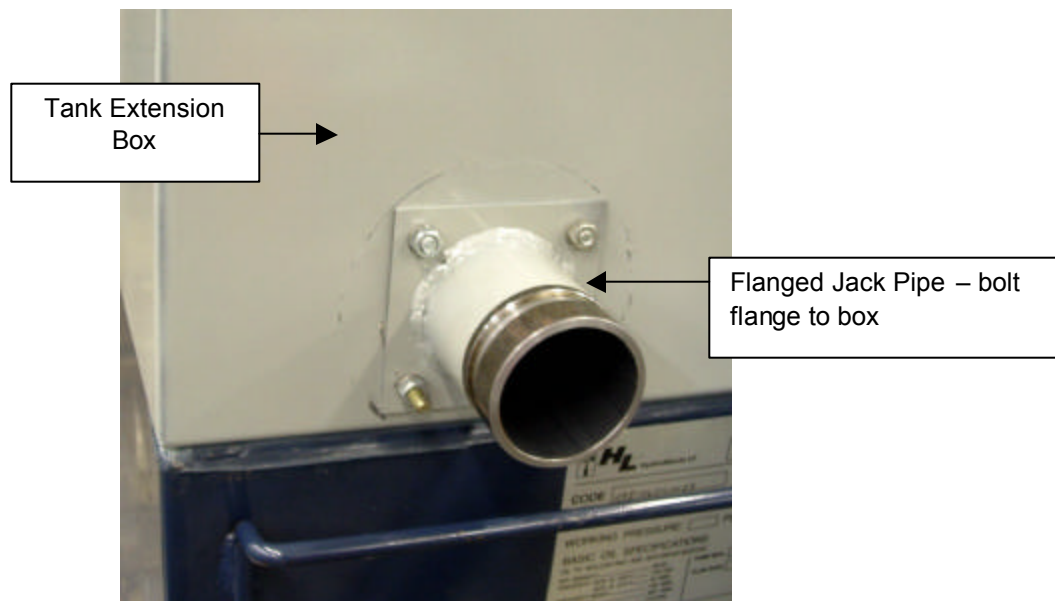


Photo 12 – Fasten Flange Plate to Tank Extension

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14. Install 2" street EL (Photo 13) in 'Tank' outlet port of valve (included in kit).
15. Install 2" x 24" long threaded pipe (Photo 13) into street EL for tank return flow.
16. Connect the high pressure hose from pump to Maxton Valve (Photo 13). The connector on the hose screws onto the hose adaptor mounted in step 10.

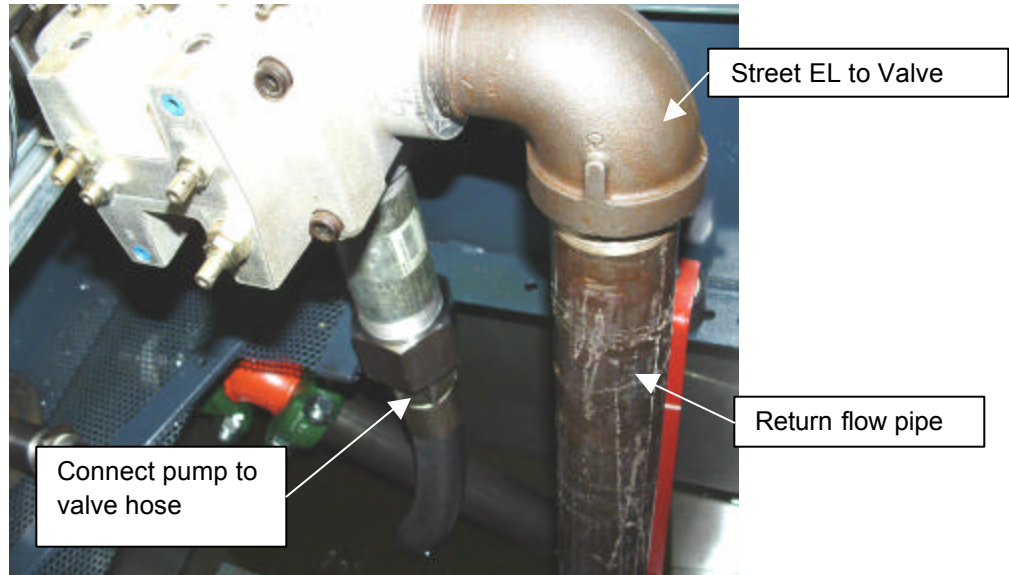


Photo 13 – Install Tank Return pipe and Pump to Valve hose

5. Electrical Connections

The valve coils must be connected to the controller before the valve can be adjusted.

- For Miprom HS controllers the valve coils operate on 115 VAC.
 - Review the wiring diagram for the job and install the proper Jumpers for the Maxton Valve set up.
 - Review the controller software set up parameters and set drive type to Maxton.
- For KCM 831 controllers the valve coils operate on 230 VAC.
 - Review the wiring diagram for the job and install for the Maxton Valve set up. See drawing number 800767E04 sheet 4 of 5 for Maxton Valve coil wiring. If the controller is not equipped for 4 valve coil operation, an additional relay will be required – 4 pole 220 VAC ice cube relay (US47477), with DIN rail mounting base (US47344).
 - Review the controller software set up parameters and set drive type to Maxton.

6. Adjusting Maxton Valve

After completing the wiring for the valve coils, adjust the Maxton Valve. Follow normal adjusting procedures for this valve.

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Valve Conversion Kit Listings – Valve and Hose Adaptor to be ordered separately

Kit Part Number		
US521028001	Kit, HM to Maxton, CA Small 22" x 41-1/2"	
Ref Dwg Number	Description	Quantity
US521015001	Tank Extension, CA Small Valve	1
US521016001	Short tube with flange 13-3/4"x 2-3/8" Valve to Jack Pipe	1
US521017001	Pipe clamp plate, 3-3/4" x 1" x 1/4"	1
US52383xxx	2" NPT street El 90 deg.	1
US49220xxx	2" pipe steel 24" long threaded on one end - pump return	1
US48925xxx	1" pipe cap plug	1
US49268xxx	2" pipe nipple 6" long threaded both ends	1
US61110xxx	Hex head cap screw 1/4"-20 x 3/4 GR5	4
US48731xxx	Helical Spring lockwasher 1/4"	4
US50157xxx	Unistrut nuts 1/4"-20	2
US51480xxx	Threaded Rod 4" long 1/4"-20	3
US48873xxx	Hex Nuts 1/4"-20	10
	3 ounce tube clear RTV silicone	1

Kit Part Number		
US521028002	Kit, HM to Maxton, CA Large 22" x 41-1/2"	
Ref Dwg Number	Description	Quantity
US521015002	Tank Extension, CA Large Valve	1
US521016002	Long tube with flange 20"x 2-3/8" Valve to Jack Pipe	1
US521017001	Pipe clamp plate, 3-3/4" x 1" x 1/4"	1
US52383xxx	2" NPT street El 90 deg.	1
US49220xxx	2" pipe steel 24" long threaded on one end - pump return	1
US48925xxx	1" pipe cap plug	1
US49268xxx	2" pipe nipple 6" long threaded both ends	1
US61110xxx	Hex head cap screw 1/4"-20 x 3/4 GR5	4
US48731xxx	Helical Spring lockwasher 1/4"	4
US50157xxx	Unistrut nuts 1/4"-20	2
US51480xxx	Threaded Rod 4" long 1/4"-20	3
US48873xxx	Hex Nuts 1/4"-20	10
	3 ounce tube clear RTV silicone	1

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Valve Conversion Kit Listings – Valve and Hose Adaptor to be ordered separately

Kit Part Number		
US521028003	Kit, HM to Maxton, CM Small 17-5/8" x 33-1/2"	
Ref Dwg Number	Description	Quantity
US521015004	Tank Extension, CM Small Valve	1
US521016001	Short tube with flange 13-3/4"x 2-3/8" Valve to Jack Pipe	1
US521017001	Pipe clamp plate, 3-3/4" x 1" x 1/4"	1
US52383xxx	2" NPT street EI 90 deg.	1
US49220xxx	2" pipe steel 24" long threaded on one end - pump return	1
US48925xxx	1" pipe cap plug	1
US49268xxx	2" pipe nipple 6" long threaded both ends	1
US61110xxx	Hex head cap screw 1/4"-20 x 3/4 GR5	4
US48731xxx	Helical Spring lockwasher 1/4"	4
US50157xxx	Unistrut nuts 1/4"-20	2
US51480xxx	Threaded Rod 4" long 1/4"-20	3
US48873xxx	Hex Nuts 1/4"-20	10
	3 ounce tube clear RTV silicone	1

Kit Part Number		
US521028004	Kit, HM to Maxton, CAA Large 22" x 54-5/8"	
Ref Dwg Number	Description	Quantity
US521015003	Tank Extension, CAA Large Valve	1
US521016002	Long tube with flange 20"x 2-3/8" Valve to Jack Pipe	1
US521017001	Pipe clamp plate, 3-3/4" x 1" x 1/4"	1
US52383xxx	2" NPT street EI 90 deg.	1
US49220xxx	2" pipe steel 24" long threaded on one end - pump return	1
US48925xxx	1" pipe cap plug	1
US49268xxx	2" pipe nipple 6" long threaded both ends	1
US61110xxx	Hex head cap screw 1/4"-20 x 3/4 GR5	4
US48731xxx	Helical Spring lockwasher 1/4"	4
US50157xxx	Unistrut nuts 1/4"-20	2
US51480xxx	Threaded Rod 4" long 1/4"-20	3
US48873xxx	Hex Nuts 1/4"-20	10
	3 ounce tube clear RTV silicone	1

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Approvals & Version History

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Issue	Date	Description of Change	Ref. CR	Approved by
R0	2004-11-17	New bulletin	--	John Brill