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THE FORD METER BOX COMPANY, INC.  
CERTIFIED TO ISO 9001:2015  
10004466

# Ford Meter Box<sup>®</sup> Recirculation System Installation and Operation Instructions



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# Materials List for Recirculation Systems

## **Provided by Ford Meter Box**

Recirculation skid

- Holding tank

- Pump with Variable Frequency Drive (VFD)

- VFD control box

- System safety disconnect

- Return pump

- Return pump relay box

- 24V Control cable for connecting return pump relay box to return pump

## **Provided by Customer**

- 480V power supply to system safety disconnect

- Water supply to holding tank

- Plumbing (2" or larger schedule 80 PVC or copper) from pump outlet (3" NPT) to bench inlet (2" NPT)

- Plumbing (flexible hose suitable for suction) from return pump inlet (1-1/2" NPT) to measuring tank outlet valve (2" NPT)

- Plumbing from return pump outlet (1-1/4" NPT) to holding tank (2" NPT or through tank opening) 120/208-320V power supply to return pump relay box

- Chlorine (optional)

# Installation Instructions for Recirculation Systems



*Figure 1 - System Disconnect*

1. Place system in desired location. Be sure to leave room for plumbing from bench outlet to pump inlet with a minimum of 12" length of straight pipe between the two.
2. Connect power (480V) to system safety disconnect [Fig. 1] per local electrical codes. Be sure to provide proper circuit protection.
3. Fill holding tank with water to taper at top of tank. Can plumb water source to 2" NPT bulkhead on top of tank or fill through tank opening [Fig. 2].
4. Plumb pump outlet (3" NPT) [Fig. 3] to bench inlet (2" NPT) with copper or schedule 80 PVC pipe of at least 2" size.



*Figure 2 - Holding Tank Water Supply*



*Figure 3 - Pump Outlet*

# Installation Instructions for Recirculation Systems



Figure 4 - Return Pump



Figure 5 - Measuring Tank Outlet Valve

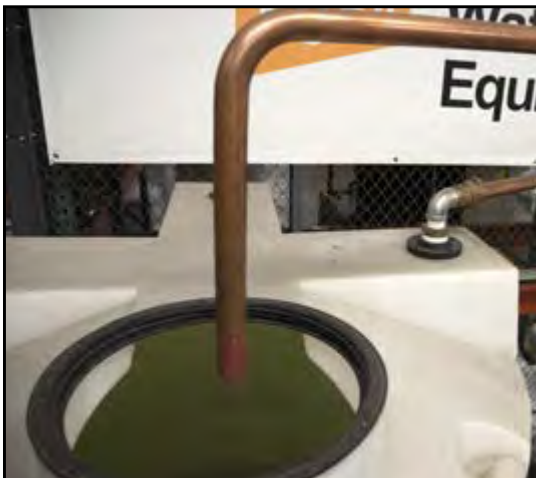


Figure 6 - Holding Tank Water Return

5. Place return pump [Fig. 4] in a location which will allow tank to gravity drain to pump. Do not place pump above tank. Be sure pump is accesable for plumbing and service if necessary.
6. Plumb return pump inlet (1-1/2" NPT) [Fig. 4] to measuring tank outlet valve (2" NPT) [Fig. 5] using flexible hose connection suitable for suction.
7. Plumb return pump outlet (1-1/4" NPT) to holding tank (2" NPT or through tank opening) [Fig 6].
8. Mount return pump relay box [Fig. 7] within 15' of bench control panel.
9. Connect power (120/208-230V) to return pump relay box [Fig. 7] per local electrical codes. Provide proper circuit protection.
10. Connect return pump relay box to return pump using provided 24V control cable.

Ford Meter Box technicians will perform all additional cable installation and routing.

**Suggestion:** Consider adding chlorine (1 part per million maximum) to holding tank water to prevent biological growth. Replace water as necessary.

**Note:** Images are for representational purposes only. Actual product may vary.



Figure 7 - Return Pump Relay Box

# Operating Instructions for Recirculation Systems



*Figure 8 - System Safety Disconnect*

1. Turn bench control panel on per AMSII Test Bench Operation Instructions.
2. Turn recirculation system safety disconnect on [Fig. 8] by rotating knob clockwise.
3. Proceed with meter testing per AMSII Test Bench Operation Instructions.

# Troubleshooting



*Figure 9 - EF3 Error Code*

If the variable frequency drive (VFD) control box displays the EF3 error code (Fig. 9), there are two possible causes.

1. Test bench control panel is turned off.
  - a. Turn test bench control panel on.
  - b. Press reset button on VFD control box to clear error [Fig. 10].
  - c. Verify error has been cleared [Fig. 11].
2. Holding tank water volume is insufficient.
  - a. Fill holding tank to taper at top of tank with water.
  - b. Press reset button on VFD control box to clear error [Fig. 10].
  - c. Verify error has been cleared [Fig. 11].
3. Refer to provided VFD manufacturer's material for additional troubleshooting.

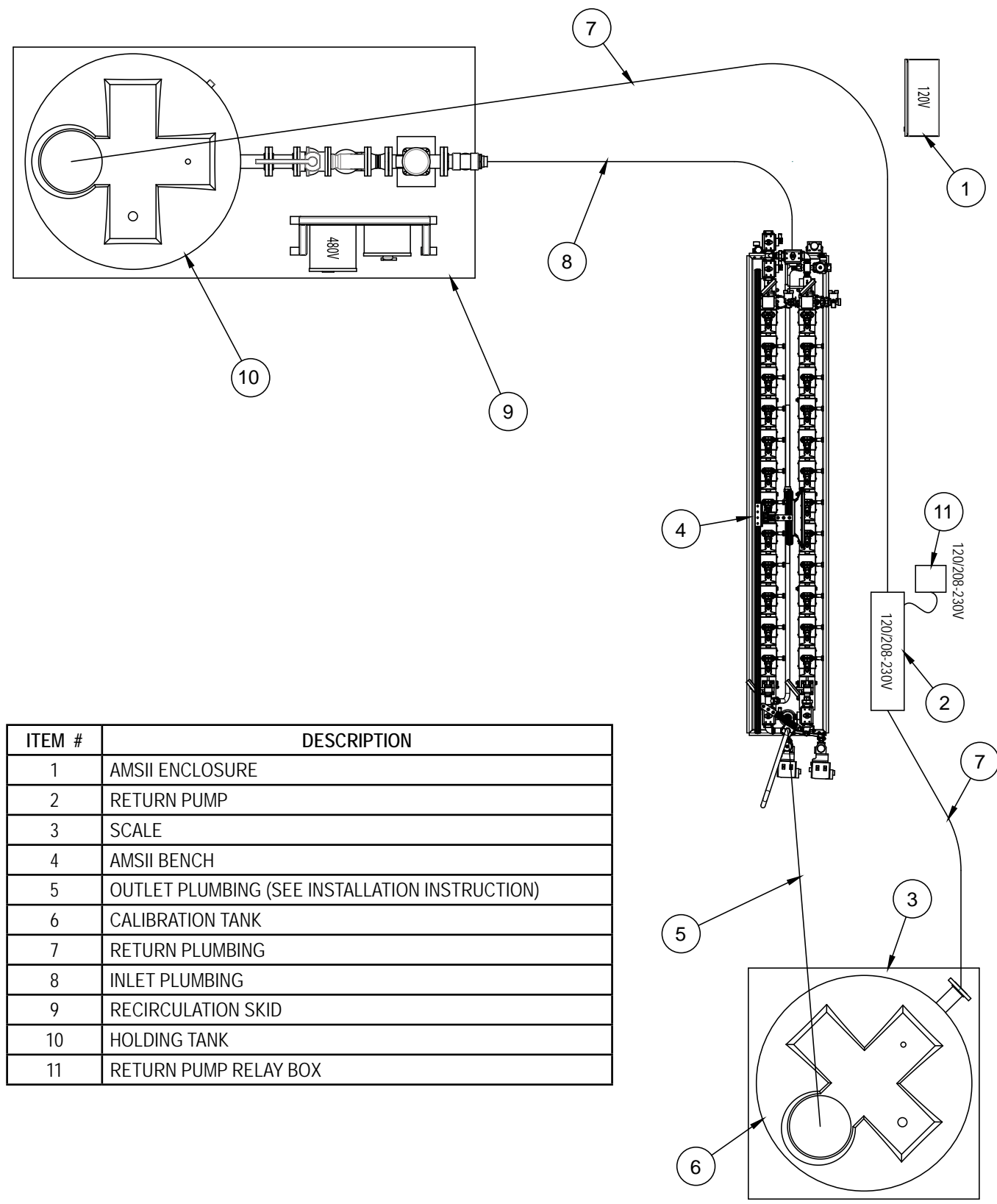


*Figure 10 - Reset Button*



*Figure 11 - Error Code Cleared*

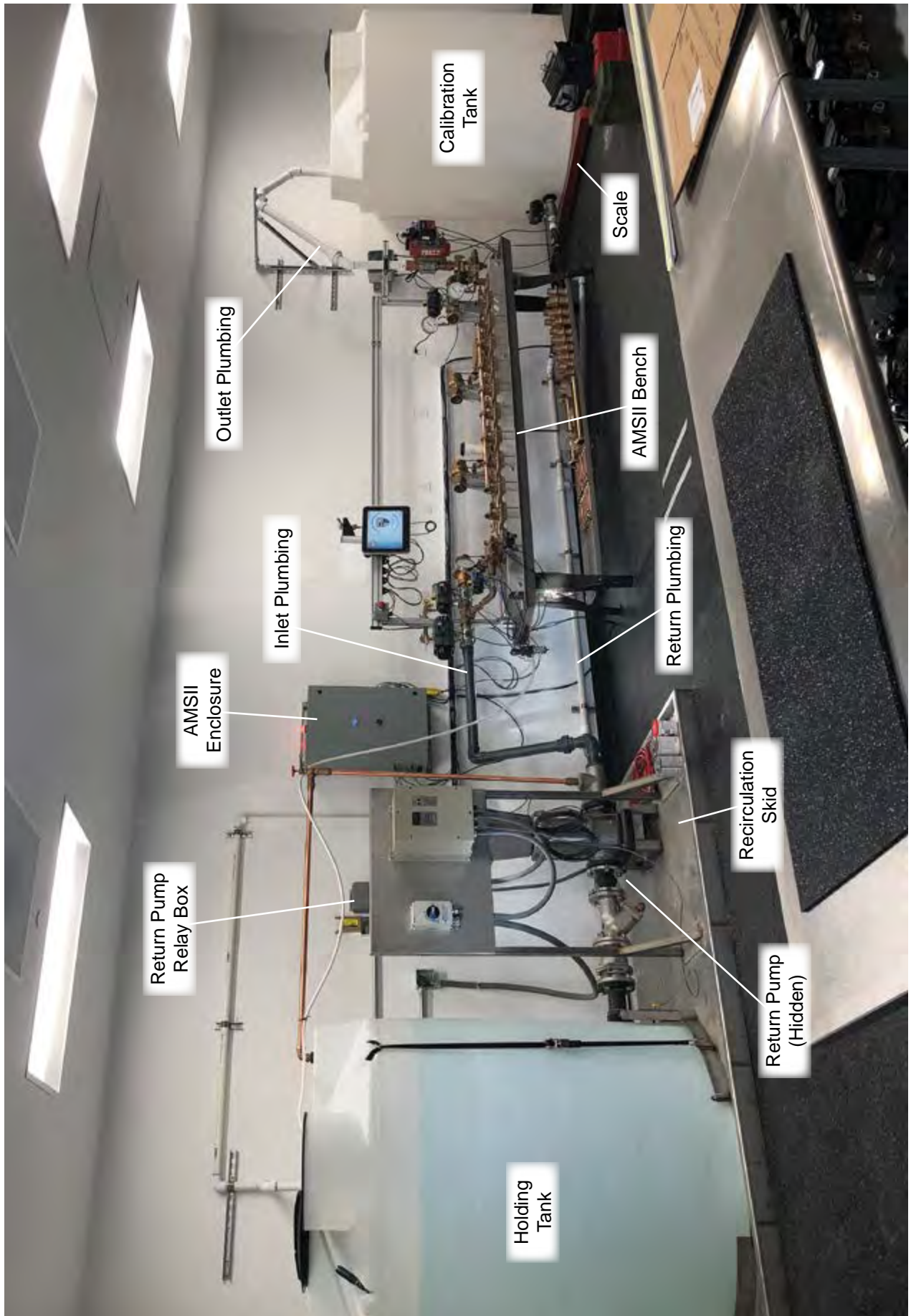
# Recirculation System Diagram



ITEM #	DESCRIPTION
1	AMSII ENCLOSURE
2	RETURN PUMP
3	SCALE
4	AMSII BENCH
5	OUTLET PLUMBING (SEE INSTALLATION INSTRUCTION)
6	CALIBRATION TANK
7	RETURN PLUMBING
8	INLET PLUMBING
9	RECIRCULATION SKID
10	HOLDING TANK
11	RETURN PUMP RELAY BOX



# Recirculation System Components



# Ford Meter Box® Recirculation System Installation and Operation Instructions

## Warranty

All merchandise is warranted to be free from defects in material and factory workmanship for one year from date of shipment from our factory. We will provide, free of charge, new products in equal quantities for any that prove defective within one year from date of shipment from our factory. Manufacturer shall not be liable for any loss, damage, or injury, direct or consequential, arising out of the use of or the inability to use the product. Before using, user shall determine the suitability of the product for user's intended use and user assumes all risk and liability whatever in connection therewith. No claims for labor or consequential damage will be allowed. The foregoing may not be changed except by agreement signed by an officer of the manufacturer.

No other warranties are applicable or may be implied, including the implied warranty of merchantability and the implied warranty of fitness for particular purpose and any warranty relating to infringement or the like, all of which are disclaimed.

### Please Note:

Consult the Ford Meter Box Company, Inc. website ([www.fordmeterbox.com](http://www.fordmeterbox.com)) for the most recent catalog information. The Ford Meter Box Company considers the information in this catalog to be correct at the time of publication. Items and option availability, including specifications, are subject to change without notice. Please verify that your product information is current.



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