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## INSTALLATION INSTRUCTIONS

### RPI PART #AMP212 - PM PACK (EXHAUST MANIFOLD)

#### • PM PACK INCLUDES:

- S3: (1) RPI PART #AMK183 - SOLENOID VALVE REPAIR KIT  
TR1: (1) RPI PART #AMK188 - STEAM TRAP REPAIR KIT  
S37: (1) RPI PART #AMK221 - SOLENOID VALVE REPAIR KIT  
S40: (1) RPI PART #AMK223 - SOLENOID VALVE REPAIR KIT  
CK4, CK6 & FC2: (1) RPI PART #AMK225 - CHECK VALVE & FLOW CONTROL KIT  
CK8: (1) RPI PART #AMK227 - CHECK VALVE REPAIR KIT

#### • ALSO AVAILABLE:

RPI PART #AMK216 - SEAT KIT (EXHAUST)



**WARNING:** Turn off electrical power, bleed pressure from the manifold assembly and safely vent fluid prior to servicing the valve manifold assembly! When maintenance is complete, verify that the valve manifold assembly is operating properly before returning to service. Failure to do so could result in property damage, serious injury, or death!

**CAUTION:** Take care to not damage sealing surfaces, leakage may result.

### RPI PART #AMK183

#### SOLENOID VALVE REPAIR KIT (Shown in Green in Figure 1 on next page)

##### REBUILD INSTRUCTIONS FOR S3 VALVE

- Disassemble the solenoid coil.
- Remove the solenoid bonnet from the bonnet manifold.
- Remove the plunger spring from top of the plunger assembly.
- Remove the bonnet manifold, bonnet o-ring, plunger/diaphragm assembly and manifold o-ring. *Note: If replacing the valve seat (.750 orifice), use a 1" deep socket wrench for seat removal. Clean the manifold cavity and lubricate the seat o-ring with High Temp Lubricant (RPI Part #RPL090) or equivalent. Reinstall and torque to 15 ft/lbs (175 +/- 25 in/lbs).*
- Clean the manifold and manifold cavities and use High Temp Lubricant (RPI Part #RPL090) or equivalent to lubricate the bonnet o-ring and the manifold o-ring. Install the manifold o-ring into manifold cavity.
- Install the plunger/diaphragm assembly (*note the location of the bleed hole when installing diaphragm*) and plunger spring (*use the individually packaged spring labeled for this exhaust manifold use only*) into the manifold cavity.
- Reinstall the bonnet manifold and thread the mounting screws hand tight. In a criss-cross pattern, torque to 8 ft/lbs (95 +/- 10 in/lbs).
- Install the bonnet o-ring and the solenoid bonnet into the bonnet manifold. Torque to 15 ft/lbs (175 +/- 25 in/lbs).
- Reassemble the solenoid coil.

### RPI PART #AMK188

#### STEAM TRAP REPAIR KIT (Shown in Red in Figure 1 on next page)

##### REBUILD INSTRUCTIONS FOR TR1 STEAM TRAP

- Using a 1-1/8" socket or open end wrench, loosen and remove the steam trap cap. Remove the bellows assembly.
- Remove the copper/fiber steam trap gasket from the manifold.
- Using a 3/4" deep socket wrench, remove the steam trap seat (.312" orifice) from the manifold.
- Clean the manifold cavity.
- If possible, clamp 1-1/8" hex on cap in a vice. Apply a small amount of Loctite® 620 retaining compound or equivalent to the bellows mounting threads. Install and torque to 7 ft/lbs (80-90 in/lbs).
- CAUTION:** Take care to avoid damaging (scratches or nicks) the steam trap seat. The bellows hex fitting "bullet nose" and the steam trap seat are a matched set. Apply a small amount of Never-seez® Compound to the steam trap seat threads. Torque to 25-30 ft/lbs.
- Before installing the new copper/fiber steam trap gasket into the manifold, soak it in water for approximately 30 seconds and apply a small amount of the Never-seez® Compound to both sides of the gasket. Install the gasket with the solid copper side down (towards the manifold).
- With the bellows assembly installed into the steam trap cap, apply a small amount of Never-seez® Compound to the threads of the cap. Install and torque to 50-55 ft/lbs.

### RPI PART #AMK221

#### SOLENOID VALVE REPAIR KIT (Shown in Magenta in Figure 1 on next page)

##### REBUILD INSTRUCTIONS FOR S37 VALVE

- Disassemble the solenoid coil.
- Remove the solenoid bonnet, plunger assembly and bonnet o-ring from the manifold. *Note: If replacing the valve seat, use a 7/16" deep socket wrench for seat removal. Clean the manifold cavity and lightly coat the threads of the valve seat with Pipe Sealant® 567 (RPI Part #RPA459) or equivalent thread sealer. Verify the orifice size per the number on the manifold (.218" for S38). Install and torque to 6 ft/lbs (75 +/- 10 in/lbs).*
- Apply High Temp Lubricant (RPI Part #RPL090) or equivalent to the bonnet o-ring.
- Clean the manifold and all manifold cavities.
- Install the bonnet o-ring, plunger assembly and the solenoid bonnet. Torque to 15 ft/lbs (175 +/- 25 in/lbs).
- Reassemble the solenoid coil.

### RPI PART #AMK223

#### SOLENOID VALVE REPAIR KIT (Shown in Dark Blue in Figure 1 on next page)

##### REBUILD INSTRUCTIONS FOR S40 VALVE

- Disassemble solenoid coil.
- Remove the solenoid bonnet, bonnet washer, plunger, piston assembly, piston o-ring and bonnet o-ring from the adapter.
- Remove the adapter from the manifold. Remove the disc holder assembly, disc holder spring and the adapter o-ring. *Note: If replacing the valve seat, use a 7/16" deep socket wrench for seat removal. Clean the manifold cavity and coat the threads of the valve seat (.093" orifice) with Pipe Sealant 567 (RPI Part #RPA459) or equivalent thread sealer. Torque to 6 ft/lbs (75 +/- 10 in/lbs).*
- Clean the manifold and all manifold cavities.
- Lubricate the adaptor o-ring using High Temp Lubricant (RPI Part #RPL090) or equivalent. Install the adapter o-ring, disc holder spring, disc holder assembly and the adapter into the manifold until finger tight.

Torque to 15 ft/lbs (175 +/- 25 in/lbs).

- Lubricate the bonnet o-ring using High Temp Lubricant (RPI Part #RPL090) or equivalent and assemble the bonnet o-ring, piston assembly and piston o-ring into the adapter.
- Replace the bonnet washer onto the solenoid bonnet.
- Install the smaller end of the plunger into the solenoid bonnet. Position this assembly over the piston assembly and thread the solenoid bonnet assembly into the adapter. Torque to 15 ft/lbs (175 +/- 25 in/lbs).
- Reassemble the solenoid coil.

### RPI PART #AMK225

#### CHECK VALVE & FLOW CONTROL KIT (Shown in Purple in Figure 1 on next page)

##### REBUILD INSTRUCTIONS FOR CK4 AND CK6 CHECK VALVES

- Unscrew the end cap and remove the disc assembly from the manifold. *Note: If replacing the valve seats, use a 7/16" deep socket wrench for seat removal. Verify orifice sizes per the numbers on the manifold (.218" for CK4 and .109" for CK6). Clean the manifold cavity and coat the threads of the valve seats with Pipe Sealant 567 (RPI Part #RPA459) or equivalent thread sealer. Install and torque to 6 ft/lbs (75 +/- 10 in/lbs).*
- Clean the manifold and all manifold cavities.
- Lubricate the end cap o-ring with High Temp Lubricant (RPI Part #RPL090) or equivalent. Install the end cap o-ring, disc assembly and end cap back into the manifold. Torque to 15 ft/lbs (175 +/- 25 in/lbs).

##### REBUILD INSTRUCTIONS FOR FC2 METERING ASSEMBLY

- Unscrew the metering body assembly (metering body, metering stem, metering seat o-ring and locknut) from the manifold.
- The new rebuild kit is supplied with a #10-32 machine screw as a tool to remove the metering seat. Thread into the metering seat and pull out of the manifold. *See Flow Control Service Tip in Figure 1 on next page.*
- Clean the manifold cavity and install the new metering seat observing that the threaded end goes in first.
- Lubricate the metering seat o-ring and metering stem with High Temp Lubricant (RPI Part #RPL090) or equivalent.
- Loosen the locknut on the metering stem.
- Install the metering body, metering stem, and locknut as a complete assembly. Torque to 6 ft/lbs (75 +/- 10 in/lbs).
- METERING STEM ADJUSTMENT:** Turn clockwise to decrease flow and counterclockwise to increase flow. After adjustment, tighten and secure stem locknut against metering body.

### RPI PART #AMK227

#### CHECK VALVE REPAIR KIT (Shown in Blue in Figure 1 on next page)

##### REBUILD INSTRUCTIONS FOR CK8 CHECK VALVE

- Remove the hinge plate and manifold o-ring.
- Remove the pin and disc assembly from the hinge plate. *Note: If replacing the valve seat (.750" orifice), use a 1" deep socket wrench for valve seat removal. Clean the manifold cavity and lubricate the valve seat o-ring with High Temp Lubricant (RPI Part #RPL090) or equivalent. Install and torque to 15 ft/lbs (175 +/- 25 in/lbs).*
- Clean the manifold cavity and hinge plate, lubricate the manifold o-ring using High Temp Lubricant (RPI Part #RPL090) and install into the manifold.
- Take notice of the off-set hole in the hinge plate and assemble the new disc assembly and pin onto the hinge plate accordingly.
- Reinstall the hinge plate/disc assembly finger tight. Tighten in a criss-cross pattern and final torque to 8 ft/lbs (95 +/- 10 in/lbs).

# FIGURE 1 - Exploded View of Exhaust Manifold

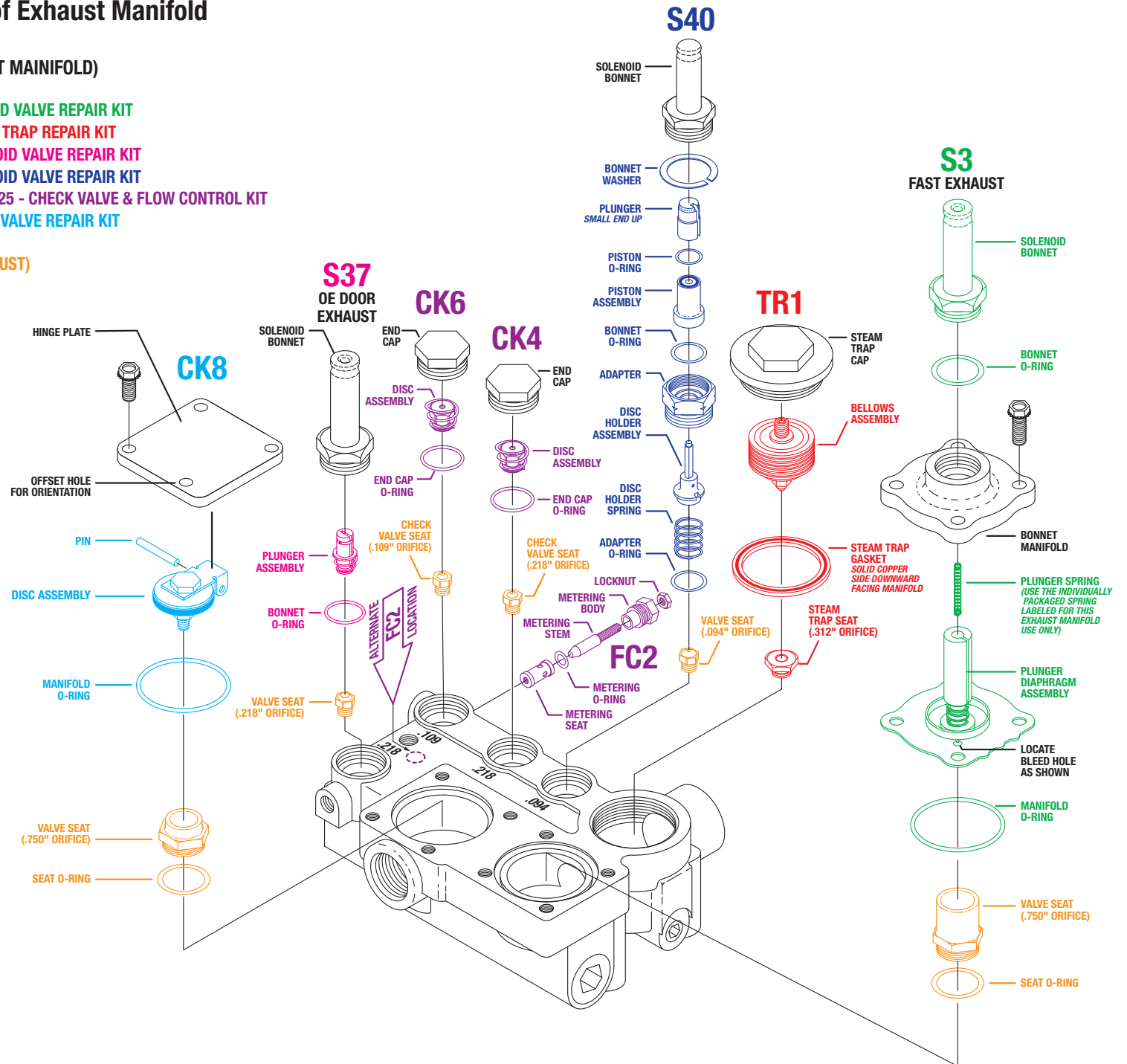
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## Flow Control Service Tip FC2

USE THE SUPPLIED #10-32 SCREW AS A TOOL TO REMOVE METERING SEAT FROM MANIFOLD. THREAD INTO THE METERING SEAT AND PULL OUT OF THE MANIFOLD.

METERING SEAT