

DATA SHEET

BYPASS HOSE ASSEMBLIES/THERMAL VALVES



Brass Bypass Hose Assembly Models: 7090, 7091, 7092, 7093

Stainless Steel Bypass Hose Assembly Models: 7094, 7098

Brass Thermal Valve Models: 7090.40, 7091.41, 7092.40, 7093.42

RTP Thermal Valve Models: 7090.35, 7091.36, 7092.37, 7093.37, 7094.36, 7097.37
RTP=Reinforced Composite



SELECTION

The bypass hose assembly connects the bypass of the unloader directly to the inlet of the pump through the special bypass port on the underside of the inlet manifold on the 2SF and 4SF pumps or standard inlet port on 3CP, 5CP, 5PFR and 7PFR pumps.

Note: Maximum recommended velocity is 4 feet per second for inlet lines.
 Formula: Maximum Flow = $10L^2$ (L = Hose inside diameter in inches)

FEATURES

- Flexible hose reduces pulsation in the bypass line.
- Absorbs pressure spikes from the regulating device while in bypass.
- Helps prolong the life of the pump seals and pump liquid end.
- Designed for easy, compact installation.
- Optional assemblies are available with 145° F Thermal Valve for added protection.

BYPASS HOSE ASSEMBLIES

Manifold Fitting	Type	Material	Unloader Fitting	Type	Material	Hose ID	Maximum PSI	Hose Material	Part Number
1/4" NPT(M)	Elbow	BB	3/8" NPT(M)	Elbow	BB	3/8"	300	RBR	7090
3/8" NPT(M)	Elbow	BB	3/8" NPT(M)	Elbow	BB	1/2"	200	RBR	7091
1/4" Hose	Hose Barb	BB	1/4" Hose	Hose Barb	BB	1/4"	200	RBR	7092
1/2" NPT(M)	Hex Nipple	BB	1/2" NPT(M)	Elbow	BB	1/2"	200	RBR	7093
3/8" NPT(M)	Hex Nipple	SS	3/8" NPT(M)	Elbow	SS	3/8"	300	RBR	7094
1/2" NPT(M)	Hex Nipple	SS	1/2" NPT(M)	Elbow	SS	1/2"	300	RBR	7098

Material Codes: BB=Brass RBR= Synthetic Rubber SS=316 Stainless Steel STL=Steel

INSTALLATION

Match the hose size to the pump's inlet and unloader bypass port sizes. Do not undersize the hose. Do not use a regulator or unloader without a check valve. Thread the male elbow into the pump's inlet manifold port. Then, thread the other male elbow into the unloader bypass port. Next, thread the hose into the female elbow on the inlet manifold. Connect the swivel end of the hose to the elbow plumbed to the unloader's bypass.

As an added safety precaution, install a Thermal Valve to protect the pump in case the unit is accidentally left in bypass for an excessive period. For the Thermal Valve, the unloader elbow is replaced by a tee and nipple.

OPERATION

Exercise caution when routing the bypass liquid back to the pump's inlet, especially if using a high-temperature fluid, because it will shorten the time needed to heat the recirculating water above the pump's maximum rated temperature. High-temperature applications should use a Thermal Valve plumbed into the bypass line or route the bypass to a baffled reservoir.

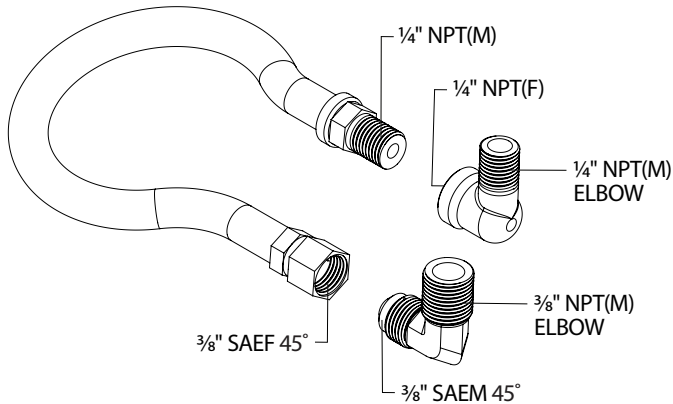
CAUTION The bypass hose assembly is designed for cold or ambient temperature fluids. High temperatures will cause premature wear or damage to the pump and void the warranty.

MAINTENANCE

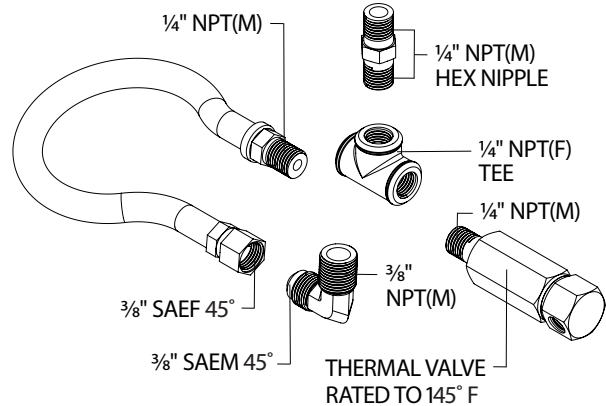
If the hose develops leaks, bulges, or cracks, replace it with a new hose immediately.

EXPLODED VIEWS

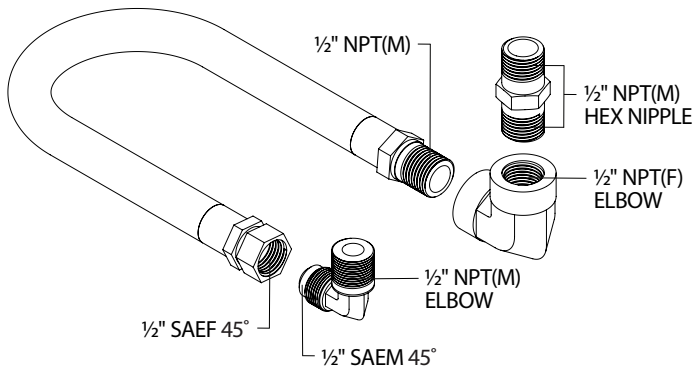
7090 – 15" BYPASS HOSE BRASS ASSEMBLY



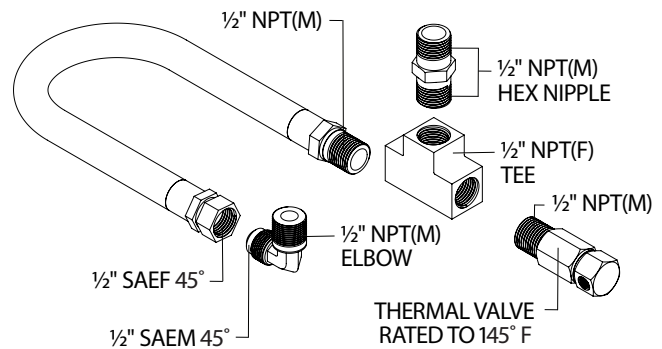
7090.35, 7090.40 – BYPASS HOSE AND THERMAL VALVE RTP AND BRASS ASSEMBLIES



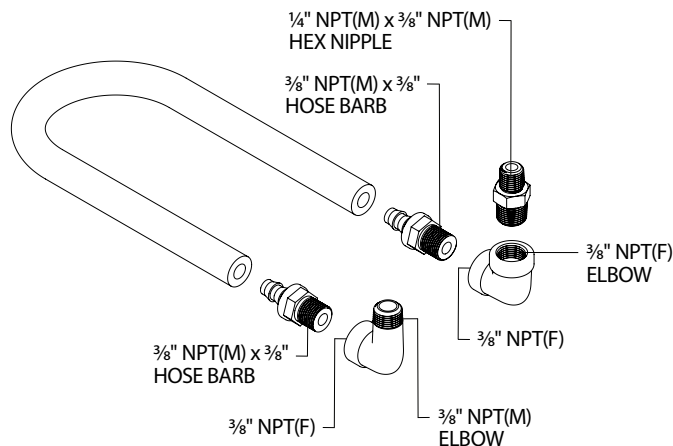
7093 – 24" BYPASS HOSE BRASS ASSEMBLY



7093.37, 7093.42 – BYPASS HOSE AND THERMAL VALVE RTP AND BRASS ASSEMBLIES

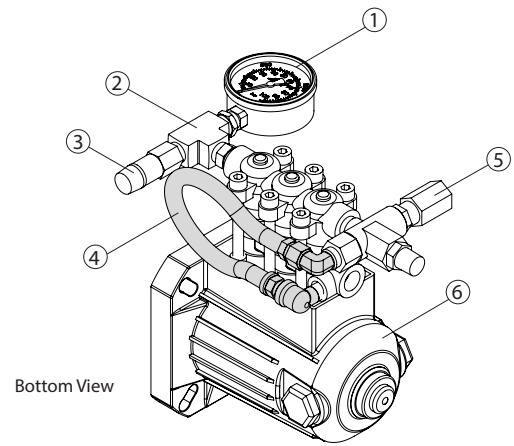


7094 – 24" BYPASS HOSE STAINLESS STEEL ASSEMBLY



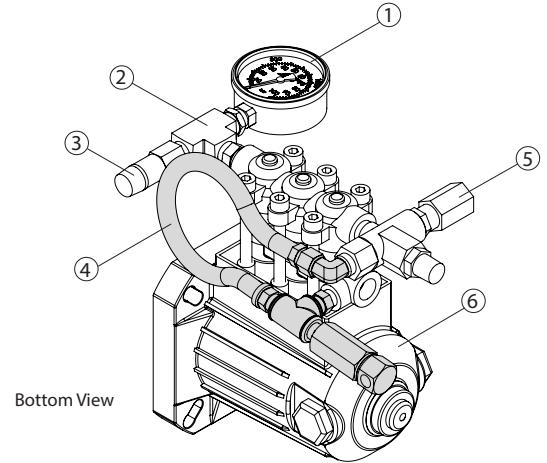
7090 BYPASS HOSE 2SF SERIES INSTALLATION

1. Pressure Gauge
2. Tee
3. Pop-Off Valve
4. **Bypass Hose Assembly**
5. Unloader
6. 2SF Series Pump



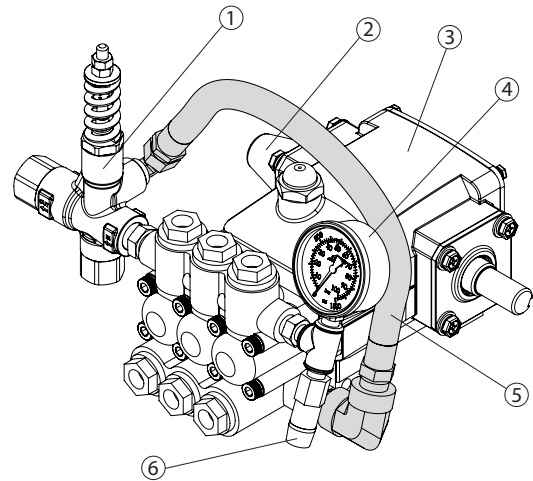
7090.40 BYPASS HOSE WITH THERMAL VALVE 2SF SERIES INSTALLATION

1. Pressure Gauge
2. Tee
3. Pop-Off Valve
4. **Bypass Hose Assembly with Thermal Valve**
5. Unloader
6. 2SF Series Pump



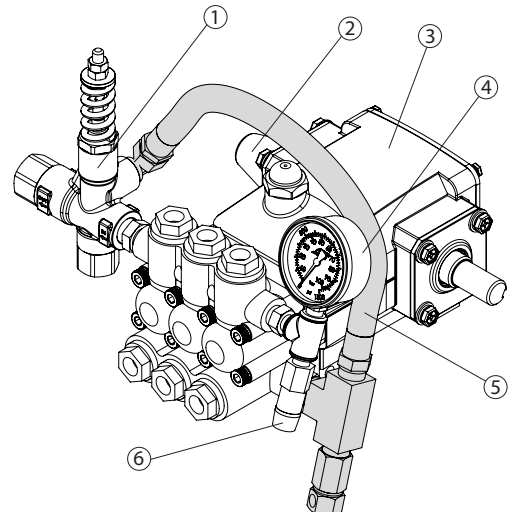
7093 BYPASS HOSE 5CP SERIES INSTALLATION

1. Unloader
2. Shaft Protector
3. 5CP Series Pump
4. Pressure Gauge
5. **Bypass Hose Assembly**
6. Pop-Off Valve



7093.42 BYPASS HOSE WITH THERMAL VALVE 5CP SERIES INSTALLATION

1. Unloader
2. Shaft Protector
3. 5CP Series Pump
4. Pressure Gauge
5. **Bypass Hose Assembly with Thermal Valve**
6. Pop-Off Valve



⚠ CAUTION

IMPROPER USE OF FITTINGS HAZARD

Do not operate the pump with improperly-connected, sized, worn or loose fittings, pipes or hoses. Operating the pump under these conditions could result in personal injury and property damage.

1. Ensure all fittings, pipes and hoses are properly rated for the maximum pressure rating and flow of the pump.
2. Check all fittings and pipes for cracks or damaged threads.
3. Check all hoses for cuts, wear, leaks, kinks or collapse before each use.
4. Ensure all connections are tight and secure.
5. Use PTFE thread tape or pipe thread sealant (sparingly) to reconnect plumbing. Do not wrap tape beyond the last thread, this will prevent loose tape from becoming lodged in the pump or accessories.
6. Apply proper sealants to assure secure fit or easy disassembly when servicing.

⚠ CAUTIONS AND WARNINGS

All high-pressure systems require a primary pressure regulating device (e.g. regulator, unloader) and a secondary pressure relief device (e.g. pop-off valve, relief valve). Failure to install such relief devices could result in personal injury or damage to pump or property. Cat Pumps does not assume any liability or responsibility for the operation of a customer's high-pressure system.

Read all CAUTIONS and WARNINGS before commencing service or operation of any high-pressure system. The CAUTIONS and WARNINGS are included in each Service Manual and with each Accessory Data sheet. CAUTIONS and WARNINGS can also be viewed online at www.catpumps.com/dynamic-literature/cautions-and-warnings or can be requested directly from Cat Pumps.

WARRANTY

View the Limited Warranty online at www.catpumps.com/literature/cat-pumps-limited-warranty