

# DATA SHEET

## THERMO VALVE



**Brass Model: 7116**



SPECIFICATIONS	U.S. Measure	Metric Measure
Max. Inlet Pressure	145 psi	10 bar
Max. Temperature	145° F	60° C
Inlet Fitting	3/8" BSP(M)	3/8" BSP(M)
Barb Fitting	1/4"	1/4"
Weight	1.81 oz.	0.05 kg
Dimensions	1.42 x 0.94 x 1.31"	38 x 19 x 48 mm

### FEATURES

- Protects pump from premature failure of seals and cups by eliminating heat build-up in closed loop by-pass systems.
- Ultra-compact design for convenient and easy installation into the by-pass loop.
- Automatically seats during unloader/regulator pressure spikes to prevent liquid bleed.
- Temperature protection without interruption in flow.

### SELECTION

This valve is designed to bleed off excess high temperature liquid at 145°F. If the system is above 145° F, the valve will continually bleed liquid. Do not use with unloader valves that have by-pass pressures that exceed the limits of this valve.

### INSTALLATION

This valve should be installed in the by-pass line. Use with 7090, 7091, 7092 or 7093 by-pass hose assemblies.

### OPERATION

As the system liquid is recirculated during the by-pass cycle, the temperature will increase. Frequent or prolonged by-pass can result in extremely high temperature build up. These high temperatures cause premature failure of seals and packings. Installing the thermo valve protects the pump against these excessive temperatures. The power pill in the thermo valve detects the temperature rise in the liquid and compresses the spring, opening the bleed port and dumping a portion of the over-heated liquid.

The thermo valve is most effective when operating with ambient temperature liquids and moderate GPM. As the incoming liquid temperature increases, the quicker the by-pass liquid will reach its temperature release point, forcing the thermo valve to bleed-off.

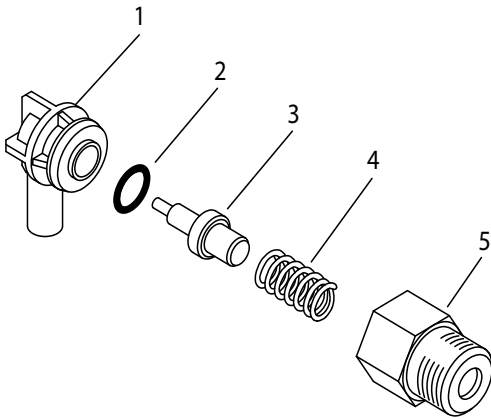
The higher the system GPM, the more heat generating energy is produced, also forcing the thermo valve to bleed-off. For example, a 25 GPM system @ 130° F will activate the thermo valve much quicker than a 5 GPM system @ 90° F.

In high flow systems, it may be necessary to install multiple thermo valves to best prevent overheating the system.

Because of the unique design of the thermo valve, it will not bleed liquid during a pressure spike from the regulator or unloader as it completely seats and shuts off the flow.

**NOTE: The Thermo Valve must be installed with a pressurized pump inlet.**

## EXPLODED VIEW



## PARTS LIST

ITEM	P/N	MATL	DESCRIPTION	QTY
1	—	NY	Bleed Port	1
2	—	NBR	O-Ring	1
3	—	CU	Power Pill, 145° F	1
4	—	S	Spring	1
5	—	BB	Body, Hex [1/4" NPT(M)]	1

MATERIAL CODES (Not Part of Part Number):  
 BB=Brass CU=Copper NBR=Medium Nitrile (Buna-N) NY=Nylon S=304SS

## TROUBLESHOOTING

Problems	Probable Cause	Solution
Leaking at low temperature or non by-pass operation through bleed port	• Foreign material trapped	• Check internal and external o-rings on cap for cuts and fit and replace if worn or damaged.
	• Damaged o-ring	• Check for deep cuts or imperfections on top lip of power pill which o-ring seats.
	• Damaged Power Pill	• Check for deep cuts or imperfections on top lip of power pill which seats up to inner cap o-ring and replace if damaged. • Check for malfunctioning power pill stem. Failure of stem to expand and retract will prevent opening and closing of valve. Replace if worn.
Leaks between body and cap	• Damaged o-ring	• Check external o-ring on cap and replace if worn or cut.

### ⚠ CAUTIONS AND WARNINGS

All High Pressure Systems require a primary pressure regulating device (i.e. regulator, unloader) and a secondary pressure relief device (i.e. 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/cautions-warnings](http://www.catpumps.com/cautions-warnings) or can be requested directly from Cat Pumps.

### WARRANTY

View the Limited Warranty on-line at [www.catpumps.com/warranty](http://www.catpumps.com/warranty).