

FEATURES

- Reduces pulsation in by-pass line.
- Absorbs pressure spikes caused by the regulating device while in by-pass.
- Helps prolong the life of the pump seals and fluid end.
- Designed for easy, compact installation.
- Optional assembly with “Thermo Valve” for added protection.

SELECTION: The By-pass Hose Assembly connects the by-pass of the unloader directly to the inlet of the pump through the special by-pass port on the underside of the inlet manifold on the 2SF and 4SF pumps or standard inlet port on 5FR and 7FR pumps.

continued on back

2SF By-Pass Hose

Model

7090

SPECIFICATIONS

	U.S. Measure	Metric Measure
Maximum Flow	3.5 GPM	(13.2 L/M)
Hose Connection	1/4" NPTM	(1/4" NPTM)
Hose Connection (Swivel)	3/8" SAEF 45°	(3/8" SAEF 45°)
Elbow Fittings (Manifold)	1/4" NPTM x 1/4" NPTF	(1/4" NPTM x 1/4" NPTF)
Elbow Fittings (Unloader)	3/8" NPTM x 3/8" SAEM 45°	(3/8" NPTM x 3/8" SAEM 45°)
Length	15"	(381 mm)
Weight8.8 oz.	(4 kg)

7090.40 By-Pass with Brass Thermo Valve
7090.35 By-Pass with RTP Thermo Valve

4SF By-Pass Hose

Model

7091

SPECIFICATIONS

	U.S. Measure	Metric Measure
Maximum Flow	5.0 GPM	(19 L/M)
Hose Connection	3/8" NPTM	(3/8" NPTM)
Hose Connection (Swivel)	1/2" SAEF 45°	(1/2" SAEF 45°)
Elbow Fittings (Manifold)	3/8" NPTM x 3/8" NPTF	(3/8" NPTM x 3/8" NPTF)
Elbow Fittings (Unloader)	3/8" NPTM x 1/2" SAEM 45°	(3/8" NPTM x 1/2" SAEM 45°)
Length24"	(610 mm)
Weight	20.3 oz.	(9.3 kg)

7091.41 By-Pass with Brass Thermo Valve
7091.36 By-Pass with RTP Thermo Valve

5-7FR By-Pass Hose

Model

7093

SPECIFICATIONS

	U.S. Measure	Metric Measure
Maximum Flow	8.0 GPM	(30 L/M)
Hose Connection	1/2" NPTM	(1/2" NPTM)
Hose Connection (Swivel)	1/2" SAEF 45°	(1/2" SAEF 45°)
Elbow Fittings (Manifold)	1/2" NPTF x 1/2" NPTF	(1/2" NPTF x 1/2" NPTF)
Elbow Fittings (Unloader)	1/2" NPTM x 1/2" SAEM 45°	(1/2" NPTM x 1/2" SAEM 45°)
Length24"	(609 mm)
Weight	16.78 oz.	(7.6 kg)

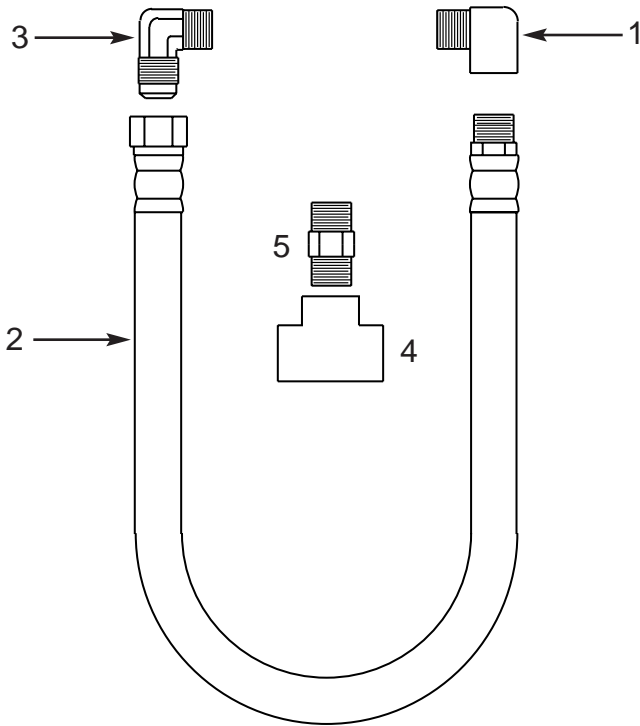
7093.42 By-Pass with Brass Thermo Valve
7093.37 By-Pass with RTP Thermo Valve

COMMON SPECIFICATIONS

	U.S. Measure	Metric Measure
Maximum Temperature	160°F	(71°C)
Hose Pressure Rating	200 PSI	(14 BAR)

“Customer confidence is our greatest asset”

EXPLODED VIEW



PARTS LIST

ITEM	P/N	MATL	DESCRIPTION	MODEL	QTY
1	30989	BB	Elbow Fitting, Inlet Manifold 1/4" NPTM to 1/4" NPTF	7090	1
	31989	BB	Elbow Fitting, Inlet Manifold 3/8" NPTM to 3/8" NPTF	7090, 7091	1
	31994	BB	Elbow Fitting, Inlet Manifold 1/2" NPTF to 1/2" NPTF	7093	1
2	30990		Hose, Flexible, Braided 200 PSI, Lo-Pressure 3/8" SAE SWIV x 1/4" NPTM x 13"	7090	1
	31990		Hose, Flexible, Braided 200 PSI, Lo-Pressure 1/2" SAEF SWIV x 3/8" NPTM x 21"	7091	1
	31992		Hose, Flexible, Braided 200 PSI, Lo-Pressure 1/2" SAEF SWIV x 1/2" NPTM x 21"	7093	1
3	30991	BB	Elbow Fitting, Unloader 3/8" NPTM to 3/8" SAEM 45°	7090	1
	31991	BB	Elbow Fitting, Unloader 3/8" NPTM to 1/2" SAEM 45°	7091	1
	31993	BB	Elbow Fitting, Unloader 1/2" NPTM to 1/2" SAEM 45°	7093	1
● 4	34600	BB	Tee - 1/4" NPTF	7090.40	1 ●
●	34176	BB	Tee - 3/8" NPTF	7091.41	1 ●
●	31996	BB	Tee - 1/2" NPTF	7093.42	1 ●
● 5	34576	BB	Nipple, Hex - 1/4" NPTM x 1/4" NPTM	7090.40	1 ●
●	34175	BB	Nipple, Hex - 3/8" NPTM x 3/8" NPTM	7091.41	1 ●
●	31995	BB	Nipple, Hex - 1/2" NPTM x 1/2" NPTM	7093	1 ●

● Industrial Discount.

Material Codes (Not Part of Part No.): BB=Brass

INSTALLATION: Match the hose size with the pump and unloader fittings. Do not under size. Do not use with Regulator or Unloader without check valve. First thread one **male elbow** into the **inlet manifold port**. Then thread the other **male elbow** into the **by-pass port of the unloader**. Next thread the **hose** into female elbow on **inlet manifold**.

Connect the **swivel-end of hose** to the elbow from **unloader by-pass**. As an added safety precaution, a **Thermo Valve®** should be installed to protect the pump in the event the unit is accidentally left in by-pass for an excessive period. For the Thermo Valve, the unloader elbow is replaced with a Tee and Nipple.

OPERATION: Caution should be exercised when routing the by-pass fluid to the inlet of the pump. The higher the initial temperature of the system fluid, the **shorter the time needed to build-up excessive temperature**. High temperature applications should use a Thermo Valve in the by-pass line or route the by-pass to a baffled reservoir.

CAUTION: By-Pass Hose Assembly is designed for **cold water or ambient temperature** operation. **DO NOT EXCEED 6 MINUTES IN BY-PASS** operation. Excessive temperatures will cause premature wear or damage to the pump and **VOID THE WARRANTY**.

MAINTENANCE: If hose develops leaks, bulges or cracks, replace with new hose immediately.

WARRANTY

90 Day Warranty

Refer to complete Cat Pump Warranty for further information.

Products described hereon are covered by one or more of the following U.S. patents 3558244, 3652188, 3809508, 3920356, 3930756 and 5035580

Dec 1998 11826

World Headquarters

CAT PUMPS

1681 - 94th Lane N.E. Minneapolis, MN 55449-4324

Phone (612) 780-5440 — FAX (612) 780-2958

e-mail: sales@catpumps.com

www.catpumps.com

International Inquiries

FAX (612) 785-4443

e-mail: intlsales@catpumps.com



The Pump with "Nine Lives"

CAT PUMPS (U.K.) LTD.

1 Fleet Business Park, Sandy Lane, Church Crookham, Fleet

Hampshire GU13 0BF, England

Phone Fleet 44 1252-622031 — Fax 44 1252-626655

N.V. CAT PUMPS INTERNATIONAL S.A.

Heiveldkens 6A, 2550 Kontich, Belgium

Phone 32-3-450.71.50 — Fax 32-3-450.71.51

e-mail: cpi@catpumps.be

CAT PUMPS DEUTSCHLAND GmbH

Buchwiese 2, D-65510 Idstein, Germany

Phone 49 6126-93030 — Fax 49 6126-930333

e-mail: catpumps@t-online.de