



## Rebuildable, Rechargeable Pulsation Dampeners

Models **701501**  
thru **701543**

### FEATURES

- Poppet reinforced bladder for durability.
- Nitrogen precharged to eliminate moisture and bladder deterioration.
- Sealed charging valve for positive pressure lock.
- Optional bladder materials for fluid compatibility.
- 316 stainless steel construction for strength and fluid compatibility.
- Convenient rebuildable style for greater economy.

### SPECIFICATIONS

<b>MODEL 701506</b>	U.S. Measure	Metric Measure
Maximum Flow .....	15 GPM	(57 L/M)
Maximum Working Pressure.....	8500 PSI	(590 BAR)
Maximum Temperature.....	160°F	(71°C)
Volume .....	6 cu. in.	(0.10 L)
Safety Factor .....	4/1	(4/1)
Bladder Construction .....	<b>NBR</b>	<b>(NBR)</b>
Port Size .....	1/2" NPT	(1/2" NPT)
Diameter.....	3.0"	(76.2 mm)
Length .....	6.92"	(175.8 mm)
Weight.....	10.56 lbs.	(4.8 kg)

<b>MODEL 701501</b>	U.S. Measure	Metric Measure
Maximum Flow .....	15 GPM	(57 L/M)
Maximum Working Pressure .....	4300 PSI	(296 BAR)
Maximum Temperature.....	160°F	(71°C)
Volume.....	6 cu. in.	(0.10 L)
Safety Factor .....	4/1	(4/1)
Bladder Construction .....	<b>NBR</b>	<b>(NBR)</b>
Port Size .....	1/2" NPT	(1/2" NPT)
Diameter.....	2.5"	(63.5 mm)
Length .....	6.57"	(166.9 mm)
Weight.....	5.34 lbs.	(2.4 kg)

<b>MODEL 701502</b>	U.S. Measure	Metric Measure
Maximum Flow .....	25 GPM	(95 L/M)
Maximum Working Pressure .....	3800 PSI	(265 BAR)
Maximum Temperature.....	160°F	(71°C)
Volume.....	15 cu. in.	(0.25 L)
Safety Factor .....	4/1	(4/1)
Bladder Construction .....	<b>NBR</b>	<b>(NBR)</b>
Port Size .....	1/2" NPT	(1/2" NPT)
Diameter.....	3.0"	(76.2 mm)
Length .....	7.79"	(197.9 mm)
Weight.....	8.34 lbs	(3.7 kg)

<b>MODEL 701503</b>	U.S. Measure	Metric Measure
Maximum Flow .....	70 GPM	(265 L/M)
Maximum Working Pressure .....	3000 PSI	(210 BAR)
Maximum Temperature.....	160°F	(71°C)
Volume.....	30 cu. in.	(0.50 L)
Safety Factor .....	4/1	(4/1)
Bladder Construction .....	<b>NBR</b>	<b>(NBR)</b>
Port Size .....	1" NPT	(1" NPT)
Diameter.....	3.51"	(89.2 mm)
Length .....	9.69"	(246 mm)
Weight.....	12.56 lbs.	(5.7 kg)

NOTE: All models must be precharged before operation. When ordering add .800 to model number and specify required precharge.

*“Customer confidence is our greatest asset”*

## SPECIFICATIONS

	U.S. Measure	Metric Measure		U.S. Measure	Metric Measure
<b>MODEL 701521</b>			<b>MODEL 701541</b>		
Maximum Flow .....	15 GPM	(57 L/M)	Maximum Flow .....	15 GPM	(57 L/M)
Maximum Working Pressure .....	4300 PSI	(296 BAR)	Maximum Working Pressure .....	4300 PSI	(296 BAR)
Maximum Temperature.....	160°F	(71°C)	Maximum Temperature.....	160°F	(71°C)
Volume .....	6 cu. in.	(0.10 L)	Volume.....	6 cu. in.	(0.10 L)
Safety Factor .....	4/1	(4/1)	Safety Factor .....	4/1	(4/1)
Bladder Construction .....	<b>EPDM</b>	<b>(EPDM)</b>	Bladder Construction .....	<b>FPM</b>	<b>(FPM)</b>
Port Size .....	1/2" NPT	(1/2" NPT)	Port Size .....	1/2" NPT	(1/2" NPT)
Diameter.....	2.5"	(63.5 mm)	Diameter.....	2.5"	(63.5 mm)
Length .....	6.57"	(166.9 mm)	Length .....	6.57"	(166.9 mm)
Weight.....	5.34 lbs.	(2.4 kg)	Weight.....	5.34 lbs.	(2.4 kg)
<b>MODEL 701522</b>			<b>MODEL 701542</b>		
Maximum Flow .....	25 GPM	(95 L/M)	Maximum Flow .....	25 GPM	(95 L/M)
Maximum Working Pressure .....	3800 PSI	(265 BAR)	Maximum Working Pressure .....	3800 PSI	(265 BAR)
Maximum Temperature.....	160°F	(71°C)	Maximum Temperature.....	160°F	(71°C)
Volume .....	15 cu. in.	(0.25 L)	Volume.....	15 cu. in.	(0.25 L)
Safety Factor .....	4/1	(4/1)	Safety Factor .....	4/1	(4/1)
Bladder Construction .....	<b>EPDM</b>	<b>(EPDM)</b>	Bladder Construction .....	<b>FPM</b>	<b>(FPM)</b>
Port Size .....	1/2" NPT	(1/2" NPT)	Port Size .....	1/2" NPT	(1/2" NPT)
Diameter.....	3.0"	(76.2 mm)	Diameter.....	3.0"	(76.2 mm)
Length .....	7.79"	(197.9 mm)	Length .....	7.79"	(197.9 mm)
Weight.....	8.34 lbs.	(3.7 kg)	Weight.....	8.34 lbs.	(3.7 kg)
<b>MODEL 701523</b>			<b>MODEL 701543</b>		
Maximum Flow .....	70 GPM	(265 L/M)	Maximum Flow .....	70 GPM	(265 L/M)
Maximum Working Pressure .....	3000 PSI	(210 BAR)	Maximum Working Pressure .....	3000 PSI	(210 BAR)
Maximum Temperature.....	160°F	(71°C)	Maximum Temperature.....	160°F	(71°C)
Volume.....	30 cu. in.	(0.50 L)	Volume.....	30 cu. in.	(0.50 L)
Safety Factor .....	4/1	(4/1)	Safety Factor .....	4/1	(4/1)
Bladder Construction .....	<b>EPDM</b>	<b>(EPDM)</b>	Bladder Construction .....	<b>FPM</b>	<b>(FPM)</b>
Port Size .....	1" NPT	(1" NPT)	Port Size .....	1" NPT	(1" NPT)
Diameter.....	3.51"	(89.2 mm)	Diameter.....	3.51"	(89.2 mm)
Length .....	9.69"	(246 mm)	Length .....	9.69"	(246 mm)
Weight.....	12.56 lbs.	(5.7 kg)	Weight.....	12.56 lbs.	(5.7 kg)

NOTE: All models must be precharged before operation. When ordering add .800 to model number and specify required precharge.

MATERIAL CODES (Not Part of Part Number)

EPDM=Ethylene Propylene Diene Monomer FPM=Fluorocarbon (Viton) NBR=Medium Nitrile (Buna-N)

### SELECTION:

The Pulsation Dampener should be selected to match the flow and pressure requirements of the system and satisfy the fluid compatibility.

### INSTALLATION:

The Pulsation Dampener should be mounted in a vertical position and directly onto the pump discharge manifold for optimum pulsation dampening and to avoid system vibration damage.

### OPERATION:

The Pulsation Dampener should be precharged with **NITROGEN ONLY** before operation. Be certain the charging valve cap at the top of the accumulator is securely tightened to assure no loss of pressure during operation.

#### CAUTION

Never use oxygen or air. This could cause an explosion.

At standard 70°F (20°C), optimum pulsation dampener performance is obtained with a precharge of 40% to 80% of the operating pressure.

#### NOTE

When operating at lower temperatures, precharge should be 15% higher. When operating at higher temperatures, precharge should be 15% lower.

Check the precharge every 12 months for normal operation and more frequently for continuous-duty operation.

#### NOTE

Up to 50 PSI precharge pressure can be lost during the checking of your precharge.

#### CAUTION

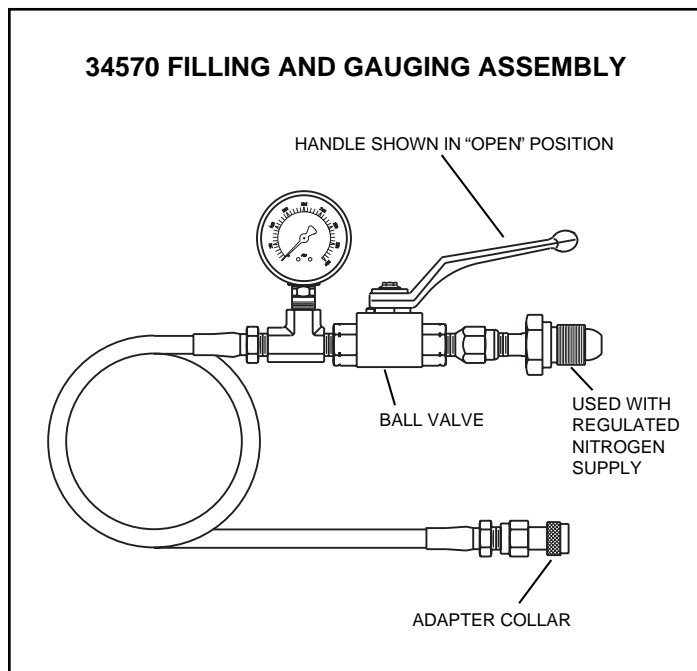
A gas regulator must be mounted between the nitrogen tank and the hose connection from the Filling and Gauging Assembly to enable you to regulate the precharge and to prevent excessive pressure being transmitted directly to the Pulsation Dampener. This over pressurization will void the warranty.

## TO ADD PRECHARGE:

1. Mount Filling and Gauging Assembly preferably onto a regulated nitrogen supply.
2. Open ball valve (handle inline with valve).
3. Twist adapter collar onto top of Pulsation Dampener.
4. Open main valve on nitrogen supply.
5. Slowly increase pressure from the regulator and into Pulsation Dampener
6. When desired precharge is reached, close ball valve and regulated supply.
7. Remove adapter collar from Pulsation Dampener (a small amount of nitrogen will escape from hose as collar is removed).
8. Replace charging valve cap and tighten securely.
9. Slowly open ball valve to purge all fittings of nitrogen before removing Filling and Gauging Assembly.

## TO REMOVE NITROGEN:

1. Do not mount Filling and Gauging Assembly to a nitrogen supply.
2. Remove the dust cover.
3. Remove charging valve cap from top of Pulsation Dampener.
4. Close ball valve (handle perpendicular to valve).
5. Twist adapter collar onto top of Pulsation Dampener.
6. Slowly open ball valve and release the nitrogen from the Pulsation Dampener.
7. When desired precharge pressure is reached, close the ball valve.
8. Remove the adapter collar from the Pulsation Dampener (a small amount of nitrogen will escape from the hose).
9. Replace the charging valve cap and tighten securely.



## REPLACING THE BLADDER

### Disassembly

1. Remove the dust cover at the top of the Pulsation Dampener.
2. Remove the charging valve cap.

#### NOTE

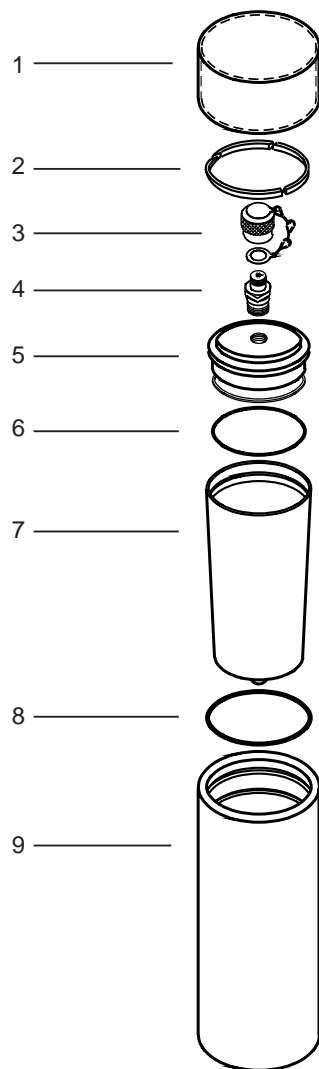
If the gas cap will not press down after the precharge has been released, the charging valve may be plugged. Remove the charging valve to ensure all gas has been released. Then replace valve.

3. Release the nitrogen precharge using the Filling and Gauging Assembly.
4. With a soft mallet, tap threaded gas fitting to drive gas cap below snap ring.
5. Using a screw driver, carefully remove the first segment of the three piece snap ring. The other two pieces can be removed by hand.
6. Grasp the gas cap and bladder assembly by the top hex nut with a locking plier and carefully remove from the body. Keep aligned to avoid damage to the bladder.
7. Inspect the bladder for cracks, punctures or deformity.
8. If damaged or worn, first remove bladder from gas cap, then inner and outer o-rings.

### Reassembly

1. Install the new inner o-ring into the groove on the gas cap (back-up ring for model 701506).
2. Install the new bladder over the o-ring onto the gas cap.
3. Install the new outer o-ring into the groove in the body of the Pulsation Dampener.
4. Lubricate both the outer o-ring and bladder and press the bladder and gas cap assembly into the body.
5. With a soft mallet tap the gas cap into the body until the snap ring groove is exposed, then insert the three sections of snap ring. Be certain the gas cap is pulled up squarely in position and gas valve is fully exposed.
6. Precharge Pulsation Dampener as described above and reinstall the charging valve cap.
7. Replace dust cover over top of Pulsation Dampener.

## EXPLODED VIEW



## PARTS LIST

Item	Part No.	Description	Model Used	Qty
1	701771 NY	Cap, Dust (15 GPM)	701501, 06, 21, 41	1
	701772 NY	Cap, Dust (25 GPM)	701502, 22, 42	1
	701773 NY	Cap, Dust (70 GPM)	701503, 23, 43	1
2	— SS	Ring, 3-piece	All	1
3	— SS	Cap, Charging Valve	All	1
4	— SS	Valve, Charging	All	1
5	— SS	Cap, Gas	All	1
6	— NBR	O-Ring, Inner	All	1
	— EPDM	O-Ring, Inner	All	1
	— FPM	O-Ring, Inner	All	1
7	— NBR	Bladder	701501, 02, 03, 06	1
	— EPDM	Bladder	701521, 22, 23	1
	— FPM	Bladder	701541, 42, 43	1
8	— NBR	O-Ring, Outer	All	1
	— FPM	O-Ring, Outer	All	1
	— EPDM	O-Ring, Outer	All	1
9	— SS	Body	All	1
10	701501 NBR	Bladder Kit	701506	1
	701511 NBR	Bladder Kit	701501	1
	701512 NBR	Bladder Kit	701502	1
	701513 NBR	Bladder Kit	701503	1
	701531 EPDM	Bladder Kit	701521	1
	701532 EPDM	Bladder Kit	701522	1
	701533 EPDM	Bladder Kit	701523	1
	701551 FPM	Bladder Kit	701541	1
	701552 FPM	Bladder Kit	701542	1
	701553 FPM	Bladder Kit	701543	1
—	34570	Filling and Gauging Assy	All	1

Kit includes bladder and two o-rings, except for Model 701506 which has bladder, one o-ring and one back-up ring.

MATERIAL CODES (Not Part of Part Number)

EPDM=Ethylene Propylene Diene Monomer FPM=Fluorocarbon (Viton)  
NBR=Medium Nitrile (Buna-N) NY=Nylon SS=316SS

## MAINTENANCE:

Check the precharge every 12 months for normal operation and more frequently for continuous-duty operation.

If pulsation is noticed, relieve the precharge and inspect the bladder for wear. Replace as needed.

## 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

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### 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