# DATA SHEET
## STAINLESS STEEL POP-OFF VALVE

The Pumps with Nine Lives

**Standard Models:** **1" 890710, 890711, 890712, 890714**

**2" 890703, 890713, 890715, 890721**



Model 890710 Shown

**FEATURES**

- 316 Stainless Steel body.
- FPM seals and o-rings.
- Maximum temperature 300° F (149° C).

| COMMON SPECIFICATIONS | U.S. | Metric |
|---|---|---|
| Inlet Port | 1" NPT(M) | 1" NPT(M) |
| By-Pass Port | 1" NPT(F) | 1" NPT(F) |
| Weight | 6.50 lbs | 2.94 kg |
| Dimensions | 8.93x3.18" | 227x81 mm |

| COMMON SPECIFICATIONS | U.S. | Metric |
|---|---|---|
| Inlet Port | 2" NPT(M) | 2" NPT(M) |
| By-Pass Port | 2" NPT(F) | 2" NPT(F) |
| Weight | 20.50 lbs | 9.28 kg |
| Dimensions | 11.74x3.69" | 298x94 mm |

| SPECIFICATIONS | U.S. Measure | Metric Measure |
|---|---|---|
| **890710** | | |
| Flow Range | 0-100 gpm | 0-378 lpm |
| System Pressure Range | 300-1500 psi | 21-103 bar |
| Maximum Relief Setting | 1875 psi | 129 bar |
| **890711** | | |
| Flow Range | 0-50 gpm | 0-189 lpm |
| System Pressure Range | 1000-6000 psi | 69-414 bar |
| Maximum Relief Setting | 7500 psi | 517 bar |
| **890712** | | |
| Flow Range | 0-115 gpm | 0-435 lpm |
| System Pressure Range | 500-3000 psi | 35-207 bar |
| Maximum Relief Setting | 3750 psi | 258 bar |
| **890714** | | |
| Flow Range | 0-100 gpm | 0-378 lpm |
| System Pressure Range | 300-1500 psi | 21-103 bar |
| Maximum Relief Setting | 1875 psi | 129 bar |

| SPECIFICATIONS | U.S. Measure | Metric Measure |
|---|---|---|
| **890703** | | |
| Flow Range | 0-135 gpm | 0-511 lpm |
| System Pressure Range | 400-1500 psi | 28-103 bar |
| Maximum Relief Setting | 1875 psi | 129 bar |
| **890713** | | |
| Flow Range | 0-210 gpm | 0-795 lpm |
| System Pressure Range | 500-4000 psi | 34-275 bar |
| Maximum Relief Setting | 5000 psi | 345 bar |
| **890715** | | |
| Flow Range | 0-100 gpm | 0-378 lpm |
| System Pressure Range | 1000-8000 psi | 69-552 bar |
| Maximum Relief Setting | 10,000 psi | 689 bar |
| **890721** | | |
| Flow Range | 0-100 gpm | 0-378 lpm |
| System Pressure Range | 100-600 psi | 7-41 bar |
| Maximum Relief Setting | 750 psi | 52 bar |

## SELECTION
Select a pop-off valve to meet or exceed the flow and pressure requirements of the system.

## INSTALLATION
The pop-off valve should be mounted in the discharge line before any pressure regulator or unloader in the system to provide optimum protection. The inlet port and by-pass ports are marked with arrows indicating the direction of the flow. The by-pass flow from the pop-off valve should be returned to a reservoir or drain to the floor, not to the inlet of the pump.

## OPERATION
This pop-off valve provides back-up protection to the primary relief valve for complete pressure relief and maximum pump and system protection.

## PRESSURE ADJUSTMENT
Before system is brought up to pressure ensure that the the primary pressure regulating device is set at its minimum setting. Adjust the pop-off valve to the high pressure setting by turning the adjustment nut. Bring your system up to the desired pressure using the primary pressure device

**Note:** If the pop-off valve relieves water in this process increase its setting.

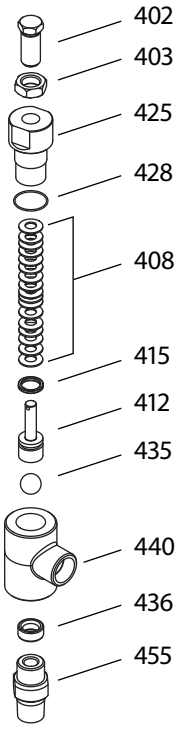
With your system operating at full pressure with the primary pressure device, slowly back the pop-off adjustment screw until a small amount of water is dripping. Immediately adjust in 1/2 turn at a time until dripping stops; (no more than [3] 1/2 turns should be required). The pop-off valve is now set at approximately 10% over system pressure.

**Note:** the pop-off valve is a secondary safety device, it does not replace a pressure regulator or unloader.

## TROUBLESHOOTING

| | |
|---|---|
| Valve cycles | • Valve is improperly set. Repeat adjustment procedure. |
| Valve continually by-passes | • Seat or retainer is worn. Replace as needed. |

## EXPLODED VIEW




| ITEM | DESCRIPTION | MATL | QTY | 890703 | 890710 | 890711 | 890712 | 890713 | 890714 | 890715 | 890721 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 402 | Screw, Adjusting | SS | 1 | 890843 | 890825 | 890825 | 890825 | 890843 | 890825 | 890843 | 890843 |
| 403 | Nut, Adjusting | SS | 1 | 890871 | 890826 | 890826 | 890826 | 890871 | 890826 | 890871 | 890871 |
| 408 | Washer, Spring | STZP | * | 890836-19 | 890813-19 | 890813-20 | 890813-22 | 890836-18 | 890813-17 | 890836-18 | 890836-19 |
| 412 | Piston | SS | 1 | 890846 | 890815 | 890815 | 890815 | 890846 | 890815 | 890846 | 890846 |
| 415 | Seal, Piston | FPM | 1 | – | – | – | – | – | – | – | – |
| 425 | Cylinder | SS | 1 | 890842 | 890812 | 890812 | 890812 | 890842 | 890812 | 890842 | 890842 |
| 428 | O-Ring, Cylinder | FPM | 1 | – | – | – | – | – | 890691 | – | – |
| 435 | Ball, Check | SS | 1 | – | – | – | – | – | – | – | – |
| 436 | Seat, Ball | SS | 1 | – | – | – | – | – | – | – | – |
| 440 | Body | SS | 1 | – | – | – | – | – | – | – | – |
| 455 | Fitting, Inlet [2"NPT(M)] | SS | 1 | 890833 | 890819 ** | 890819 ** | 890819** | 890833 | 890819** | 890833 | 890833 |
| 468 | Kit, Repair (Incldes: 415,428,435,436) | FPM | 1 | 890857 | 890857 | 890857 | 890857 | 890856 | 890856 | 890856 | 890856 |

* See individual quantity ** Fitting = 1" NPT(M)

**It is recommended to replace spring washers as a set.**

Material Codes (Not Part of Part Number): FPM = Fluorocarbon SS = 316SS STZP = Steel/Zinc Plated

## ⚠ 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 or can be requested directly from Cat Pumps.

## WARRANTY
View the Limited Warranty on-line at www.catpumps.com/warranty.


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