

## 94640 Pilot Operated Relief Valve (Diaphragm Pilot)

The Shand & Jurs 94640 Pilot Operated Relief Valve is designed to meet very specific pressure needs. The high accuracy of the valve allows the pressure to be set between .11 psig to 15 psig using sensitive springs for discrete ranges. The valve operates as follows.

As the internal tank pressure reaches the valves set point, the upward force on the sensing and boost diaphragms overcome the downward spring force causing the pilot to fully open. This causes a large pressure reduction on the upper side of the main valve diaphragm which results in a full lift of the main valve seat. When the pressure reduces to the point its resulting upward force is less than the spring force, the pilot seat begins to close. This, in turn, builds up pressure on the upper side of the main valve diaphragm which closes the main valve seat. The pressures are again returned to their normal operating levels.

The valve's set point and blowdown can both be adjusted externally. The blowdown adjustment allows the valve to be operated in a snap action mode or a modulating mode. The snap action mode provides full opening at set point while the modulating mode provides a proportional opening with respect to over pressure.

### Applications

Meeting emissions standards for process and storage tanks requiring pressure relief

Hot hydrocarbon vapors or liquids, corrosive liquids, gas, cryogenics

Tanker ships, vessels, petroleum, chemical, oil, gas, marine, environmental plants, sanitary and cryogenic industries. Tank applications operating very close to set pressure

Low pressure safety-relief valve for vessel applications, from general product tank storage to transportation vessels



### Features

- Set pressure between .11 psig to 15 psig
- Valve sizes 2" x 3", 3" x 4", 4" x 6", 6" x 8", 8" x 10" and 10" x 12"
- Adjustment of the valve can be made externally
- Seat is Bubble tight to set pressure
- Snap action or modulating mode
- Fully open at set pressure in snap action mode
- Minimize VOC's and odor emissions
- Main Body Diaphragm FEP Teflon Film
- Accessories: Backflow/Vacuum Preventer, Field Test Connection, Sense Line Filter (Single or Dual), Pilot Vent Pipped to Flange Outlet, Remote Sense Line

# 94640

## Pilot Operated Relief Valve (Diaphragm Pilot)



### Specifications:

#### Pressure Setting:

.11 psig to 15 psig available in discrete ranges

#### Standard Blowdown:

5% - 20% (adjustable)

#### Temperature Range:

Body and Seal Options for Process Temperature Ranges of -300°F to 400°F Consult Factory.

#### Body Construction:

Aluminum, Steel, or Stainless Steel

#### \*Diaphragm & Seat Seal:

FEP Teflon Film (Standard)

\*Other Materials available (specify temperature range & product)

#### Flow Capacities (SCFM @ 10% Over Pressure)

Inlet Size	2"	3"	4"	6"	8"	10"
Set Pressure						
.11 psig	98	208	338	726	1352	1878
.18 psig	126	269	437	938	1747	2427
.36 psig	178	382	619	1331	2479	3444
.54 psig	219	470	730	1635	3045	4230
1 psig	300	643	1042	2238	4167	5789
5 psig	709	1519	2460	5285	9841	13670
10 psig	1056	2260	3662	7867	14649	20348
15 psig	1346	2881	4666	10025	18667	25929

#### Flange Connection:

150 lb ANSI

Other Flange Types Available

#### Vacuum:

See Model 94645

#### Accessories:

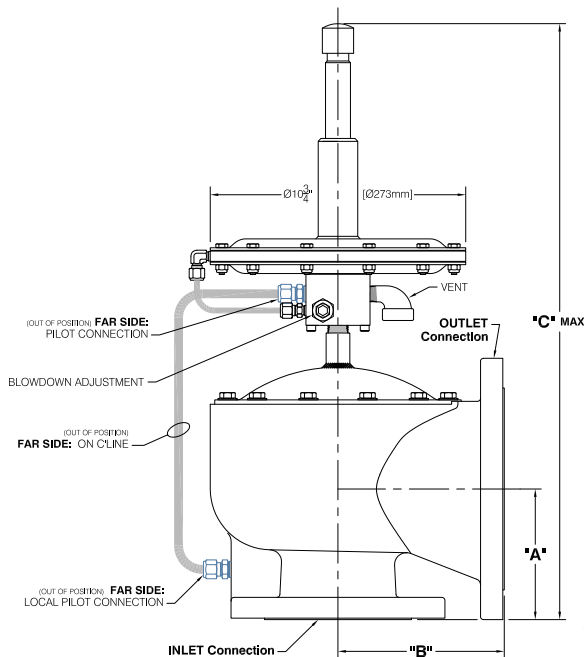
Backflow/Vacuum Preventer, Field Test Connection, Sense Line Filter (Single or Dual), Pilot Vent Pipped to Flange Outlet, Remote Sense Line

#### Valve Size

Valve Size	Approximate Dimensions in Inches			Weight	
	A	B	C	Al.	SS/STL
2" x 3"	3.75	5.0	21.0	24 lbs.	81 lbs.
3" x 4"	4.5	5.8	22.5	28 lbs.	105 lbs.
4" x 6"	5.5	7.0	25.0	38 lbs.	147 lbs.
6" x 8"	6.75	9.3	28.0	63 lbs.	228 lbs.
8" x 10"	8.0	11.0	30.0	90 lbs.	315 lbs.
10" x 12"	9.5	12.5	33.0	123 lbs.	426 lbs.

\*Vacuum Operation: This relief valve may operate under vacuum conditions, unless the backflow/vacuum preventer option is selected. The 94640 may be mounted on top of a specially configured 94110 vacuum relief valve where precise vacuum control is desired. Consult Factory for specific vacuum setting requirements.

### Dimensions



All designs subject to change. Certified dimensions and specifications available upon request.



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## 94640 Ordering Guide

### Model Number Selection

The model number will consist of a base number **94640** followed by 7 digit numbers. These digits will represent 6 option tables.

**94640 - AB - CD - EF - G**

### Ordering Information

Specify:

1. Model 94640 Pilot Operated Pressure Relief Valve
2. Body Material
3. Valve and Inlet Size
4. Seal Material and Set Point
5. Accessories
6. CE for Ordinary EU Locations use Table F1
7. ATEX Certification for Group IIB, IIA EU Locations, use Table F2



**Table A - Material**

Option A	Flange Material Connection
0	Aluminum ANSI 150lb. FF
1	Cast Steel ANSI 150lb. FF
2	Cast Steel ANSI 150lb. RF
3	Stainless Steel ANSI 150lb. FF
4	Stainless Steel ANSI 150lb. RF

**Table B - Size & Inlet**

Option B	(Inlet, X Outlet)
2	2 x 3
3	3 x 4
4	4 x 6
5	6 x 8
6	8 x 10
7	10 x 12

**Table CD - Pressure Setting Ranges (PSIG)**

Option (CD)	01*	02	03	04	05	06	07	08	09	10	11	12
Range From	0.11	.25	.35	.5	.75	1.0	2.0	2.5	4.0	6.0	9.0	12.0
Range To	.25	.35	.5	.75	1.0	2.0	2.5	4.0	6.0	9.0	12.0	15.0

ATEX Models Limited to Table II Options 01-09

**Table E - Seal Material\*\***

Option E	Material*
4	Teflon
5	Viton
6	Buna-N

\*Consult Factory for Other Materials  
 \*\*Main Body Diaphragm Always Teflon

**Table F - CE or ATEX**

Option F	Description
0	Standard
1	CE
2	ATEX Certified

## 94640 Ordering Guide

**Table G - Accessories**

Option (G)	Accessories	Description
0	No Accessories	-
1	Backflow Preventer (BFP)	When vacuum exist on inlet.
2	Vacuum Preventer (VP)	When back pressure exist on outlet.
3*	Field Test Connection (FTC)	Pilot set pressure check and adjustment in a field, used with valves set above 5" W.C.
4**	Sense Line Filter	Protects pilot from contamination.
5**	Sense Line Dual Filter	When installed in close system or inside. Protects pilot from contamination. One filter is working at a time. Permits replacement/cleaning of one filter while in service.
6	Pilot Vent Pipped to Flange Outlet	When installed in close system or inside.
7	Remote Sense Line	Permits the pilot to sense system pressure at remote location to reflect actual operating condition.
8	Backflow Preventer (BFP) and Vacuum Preventer (VP)	Combine Option 1 and 2.
X	Multiple Combination	Add Above

\*FTC includes option 1.

\*\*Use either option 4 or 5.