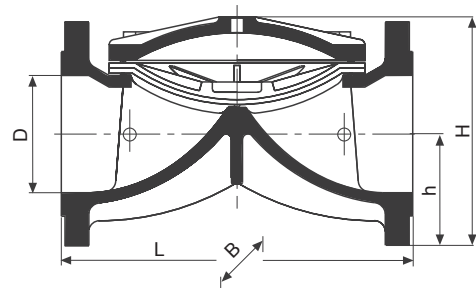


**PRESSURE SUSTAINING
RELIEF CONTROL VALVE
RAF 80**



Description

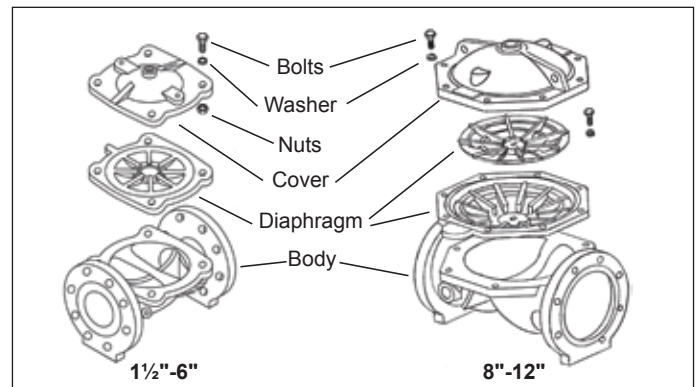
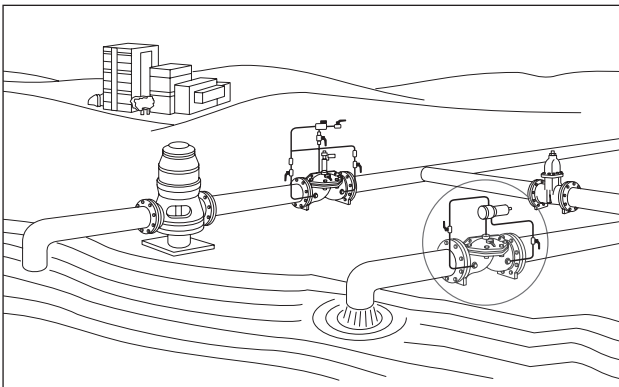
RAF 80 are piloted hydraulic valves activated by line pressure. The pilot valve has a spring-loaded membrane, which is exposed to the upstream pressure. The valve is normally closed. Only when the line pressure rises above a preset point, the RAF 80 opens to relieve the excessive pressure downstream without causing surge hazards. When the line pressure drops the RAF closes.

Dimensions

Nom. Dia.		L	H	B	h	Weight	Connections
mm	inch	mm				kg	
* 40	1 1/2	159	80	96	29	1.8	Thread/Grooved
* 50	2	190	100	125	38	3.9	Thread/Grooved
* 50	2	190	159	165	76	7.9	Flange
65	2 1/2	216	110	125	46	5.0	Thread/Grooved
65	2 1/2	216	173	185	80	10.1	Flange
80-50-80	3-2-3	230	125	125	50	5.0	Thread/Grooved
80-50-80	3-2-3	230	175	200	100	11.0	Flange
80-65-80	3-2 1/2-3	244	127	138	50	5.4	Thread/Grooved
80-65-80	3-2 1/2-3	216	192	200	92	11.4	Flange
80	3	290	138	200	50	10.4	Thread/Grooved
* 80	3	283	200	200	100	17.5	Flange
100-80-100	4-3-4	283	222	222	111	20.1	Flange
100	4	346	220	230	60	16.5	Thread/Grooved
* 100	4	305	220	230	99	25.5	Flange
125-100-125	5-4-5	305	243	250	120	29.5	Flange
150-100-150	6-4-6	325	285	285	143	35.8	Flange
* 150	6	406	295	300	142	49.5	Flange
* 200	8	470	383	354	160	71.0	Flange
250	10	635	430	464	197	109.0	Flange
300	12	749	474	480	234	140.0	Flange

* Note : Standard Stock

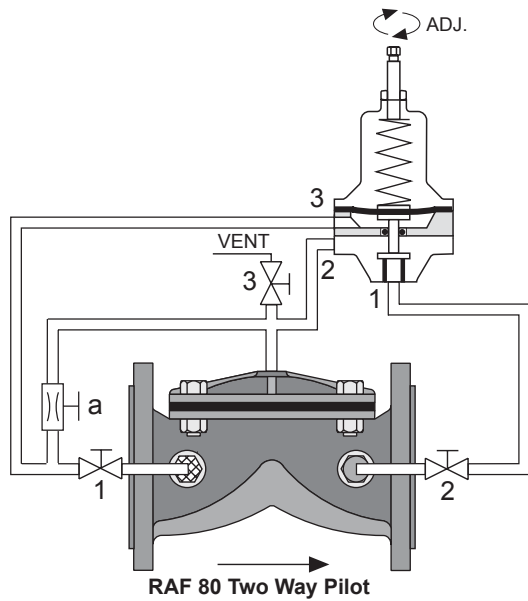
Typical Application



Use the pressure sustaining/relief valve to maintain constant upstream pressure and to avoid undesirable high pressure. This protection is required for most irrigation devices, domestic and industrial utilities. Use RAF 80 for general water supply systems with medium pressure rating.

The elaborated 2-way command with Raphael's patented diaphragm enables smooth and precise pressure control.

PRESSURE SUSTAINING RELIEF CONTROL VALVE RAF 80



RAF 80 Control mode

RAF Pressure Sustaining/Relief Valve is activated by line pressure and controlled by a pilot valve. The pilot includes a spring-loaded membrane. A sustained pressure is preset by adjusting the pilot retaining spring. The pilot is connected to line (upstream) pressure. The displacement of the pilot spring-loaded membrane due to upstream pressure defines the flow directions inside the pilot. When the upstream pressure is higher than the set point, the RAF valve is piloted to open. The excessive line pressure is relieved downstream. Otherwise the RAF remains closed, maintaining constant upstream pressure. As in two-way configurations, the RAF's control chamber drains downstream, enabling faster and gradual opening without water spill.

RAF 80 - General Application two-way Pressure sustaining/ relief valve. Pressure setup up to 16 bars.

Automatic: When the upstream pressure is lower than that of the sustained pressure set point, the RAF control chamber is connected to the line, as illustrated. The RAF is closed. When the upstream pressure rises above the set point, the pilot's membrane is forced upward. Port 1 opens, the control chamber of the RAF drains downstream and the RAF 80 opens to relieve the excessive pressure.

Manual: To open the RAF 80, close cocks 1 and 2 and open the Vent. To close the RAF open cock 1 and close cock 2 and Vent.

Recommended Working Conditions Range

Nom. Dia.		Inlet Pressure, Bar		*Kv factor Fully opened Valve	Control Chamber Volume	
mm	inch	Min.	Max.	RAF	Liter	Gallon
* 40	1.5	0.8	16	40	0.06	0.016
* 50	2	0.7	16	70	0.08	0.021
65	2.5	0.7	16	100	0.16	0.042
80-50-80	3-2-3	0.7	16	72	0.08	0.021
80-65-80	3-2.5-3	0.7	16	130	0.16	0.042
* 80	3	0.6	16	170	0.3	0.079
100-80-100	4-3-4	0.6	16	170	0.3	0.079
* 100	4	0.4	16	290	0.7	0.185
125-100-125	5-4-5	0.4	16	290	0.7	0.185
150-100-150	6-4-6	0.4	16	300	0.7	0.185
* 150	6	0.4	16	490	1.5	0.396
* 200	8	0.4	16	790	3.5	0.924
250	10	0.3	16	1400	7.6	2.006
300	12	0.3	16	1800	7.6	2.006

$Q = Kv\sqrt{\Delta P}$

Q = Flow rate, m³/h

ΔP = Head loss across the valve, bars

$Cv = 1.16Kv$

* Note : Standard Stock

Recommended Flow

Nom. Dia.		Flow Rate m ³ /h
mm	inch	Max.
40	1.5	25
50	2	45
65	2.5	70
80-50-80	3-2-3	50
80-65-80	3-2, 5-3	70
80	3	90
100-80-100	4-3-4	90
100	4	150
125-100-125	5-4-5	150
150-100-150	6-4-6	150
150	6	320
200	8	550
250	10	950
300	12	1200

Technical Specifications

- Body and Cover: Cast iron with Rilsan (Nylon 11) coating. Epoxy or enamel coating are available by request.
- Bolts, Nuts and Washers: Zinc plated Steel.
- Diaphragm: Natural Rubber reinforced with Nylon Fabric.

Working Pressure: Up to 16 bars.
Temperature Rating: -10°C to 80°C

Standard RAF 80:

- Basic RAF valve Rilsan Coated
- Self-cleaning screen filter
- 2 Way pilot P-181
- Brass needle valve
- Reinforced plastic tubing
- Pressure check point

Spring Selection (bar) RAF 80

*Green Standard	Blue	Red	Yellow
2-10	0.5-4	0.5-6	2-16

*Note: Standard Stock.

Adjustment

Use needle valve a to control the RAF 80 operational speed. Adjust the sustained pressure by the adjusting screw. See table of available springs

Special Features:

- Enamel coating
- Large capacity external filter
- Stainless steel pilot
- Stainless steel needle valve
- Copper or stainless steel tubing
- Glycerinated 60mm pressure gauge

Please Specify:

- Minimum & Maximum flow rates.
- Normal line pressure. Set point (sustain) pressure.

