

# RAF GENERAL PURPOSE HYDRAULIC VALVES

## Technical Information

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RAF Valves are used for general water supply and irrigation. The RAF valves are made of only three parts, each one is made of durable materials.

The inner flow passages are streamlined and coated with low-friction materials.

This provides quiet flow in both directions, low head-loss and minimal wear.

### 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.

### SPECIALLY DESIGNED



Cross section of RAF valve  
RAF valves operate with a patented reinforced diaphragm, which eliminates the need for a retaining metal spring.

The special elastic design enables gradual and precise opening or closing of the valve.

By eliminating a metal spring, the RAF is virtually maintenance free.

### Recommended Working Conditions Range

Nom. Dia.		Inlet Pressure, Bar		*Kv factor Fully opened Valve		Control Chamber Volume	
mm	inch	Min.	Max.	RAF	RAF -A	Liter	Gallon
40	1.5	0.8	16	40	—	0.06	0.016
50	2	0.7	16	70	62	0.08	0.021
65	2.5	0.7	16	100	90	0.16	0.042
80-50-80	3-2-3	0.7	16	72	62	0.08	0.021
80-65-80	3-2.5-3	0.7	16	130	100	0.16	0.042
80	3	0.6	16	170	155	0.3	0.079
100-80-100	4-3-4	0.6	16	170	155	0.3	0.079
100	4	0.4	16	290	200	0.7	0.185
125-100-125	5-4-5	0.4	16	290	200	0.7	0.185
150-100-150	6-4-6	0.4	16	300	220	0.7	0.185
150	6	0.4	16	490	470	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

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

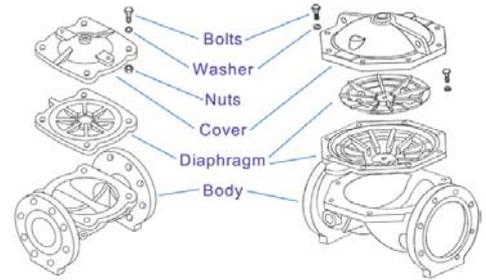
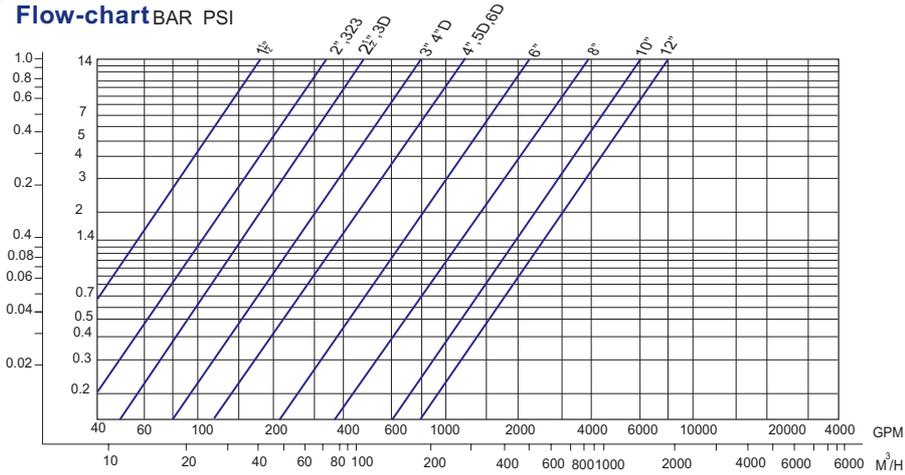
Q = Flow rate, m<sup>3</sup>/h

ΔP = Head loss across the valve, bars

Cv = 1.16Kv

## PRESSURE-LOSS CHART FOR VALVES TYPE RAF IN LINE

Flow-chart BAR PSI

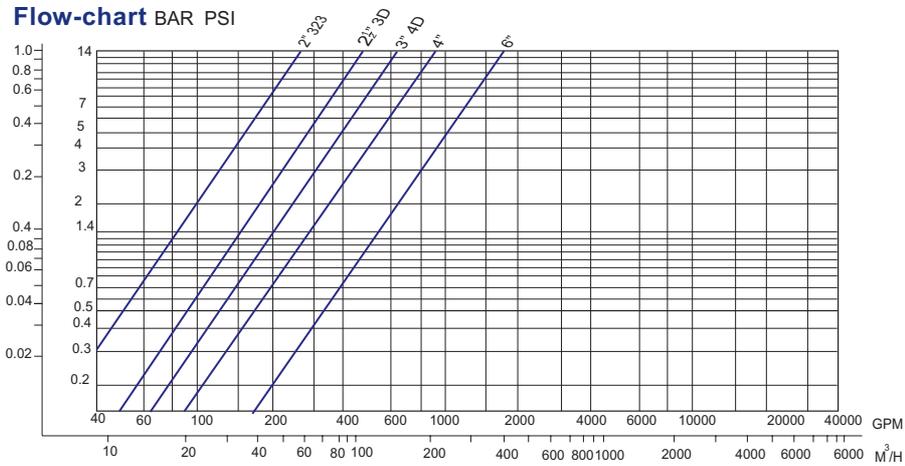


11/2" - 6"

8" - 12"

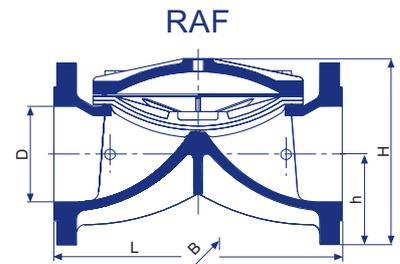
## PRESSURE-LOSS CHART FOR VALVES TYPE RAF A

Flow-chart BAR PSI

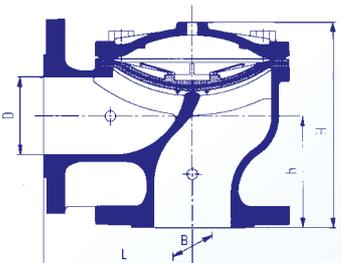


	Nom. Dia.		L	H	B	h	Weight kg.	Connections
	mm	inch						
RAF In Line	40	1 1/2	159	80	96	29	1.8	Thread / Grooved
	50	2	190	100	125	38	3.9	Thread / Grooved
	50	2	190	159	165	76	7.9	Flange
	65	2 1/2	216	110	125	46	5.0	Thread / Grooved
	65	2 1/2	216	173	185	80	10.1	Flange
	80-50-80	3-2-3	230	125	125	50	5.0	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	
RAFA Angle	50	2	90	150	125	81	4.2	Thread / Grooved
	50	2	112	159	165	77	8.1	Flange
	65	2 1/2	117	160	125	83	7.0	Thread / Grooved
	65	2 1/2	122	160	185	83	11.0	Flange
	80-50-80	3-2-3	110	146	125	72	4.9	Thread / Grooved
	80-50-80	3-2-3	140	200	200	100	12.0	Flange
	80-65-80	3-2 1/2-3	130	170	140	86	6.2	Thread / Grooved
	80-65-80	3-2 1/2-3	130	215	200	115	12.4	Flange
	80	3	148	205	200	107	12.0	Thread / Grooved
	80	3	154	210	200	115	19.0	Flange
	100-80-100	4-3-4	155	225	220	110	21.0	Flange
	100	4	150	227	230	118	15.9	Thread / Grooved
	100	4	177	230	230	113	26.5	Flange
	150	6	218	315	300	148	48.7	Flange

## Dimensions of RAF & RAF-A



RAF ( Inline )



RAF-A ( Angle )

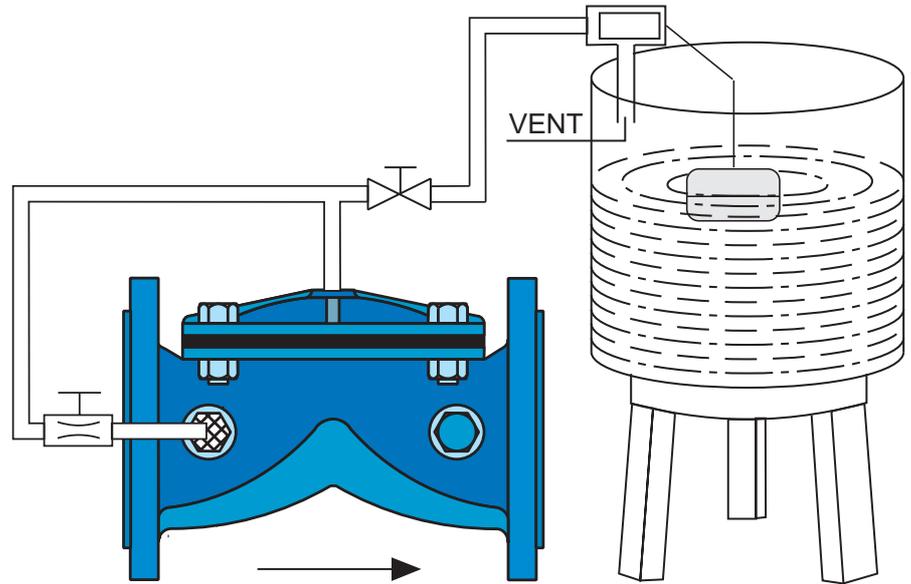
# RAF GENERAL PURPOSE HYDRAULIC VALVES

## RAF 10 Float Level Control Valve

### Description

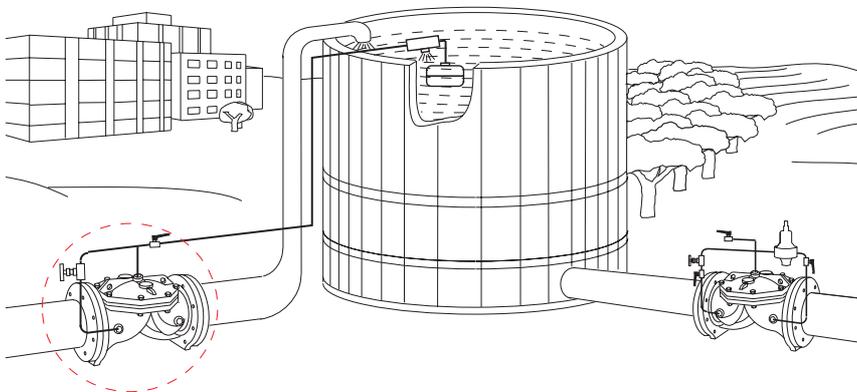
RAF 10 is used to maintain a preset water level in a reservoir or a water tank in a simple, economic manner. The RAF valve is activated by the line pressure.

The RAF10 stays open as long as the water level in the reservoir is below the preset level. As the water level rises and lifts the float, the valve gradually closes.



RAF 10 - Float Level Control Valve

### Typical Application



RAF 10 Float Level Control Valve controls the water level of a water tank. The valve can also be located above the water level.

Use RAF 10 for reservoirs and water tanks level control in any situation that maximum water level should be maintained. No need for energy other than line pressure. RAF 10 is best fit in remote sites. Due to its simple design, it is virtually maintenance free.

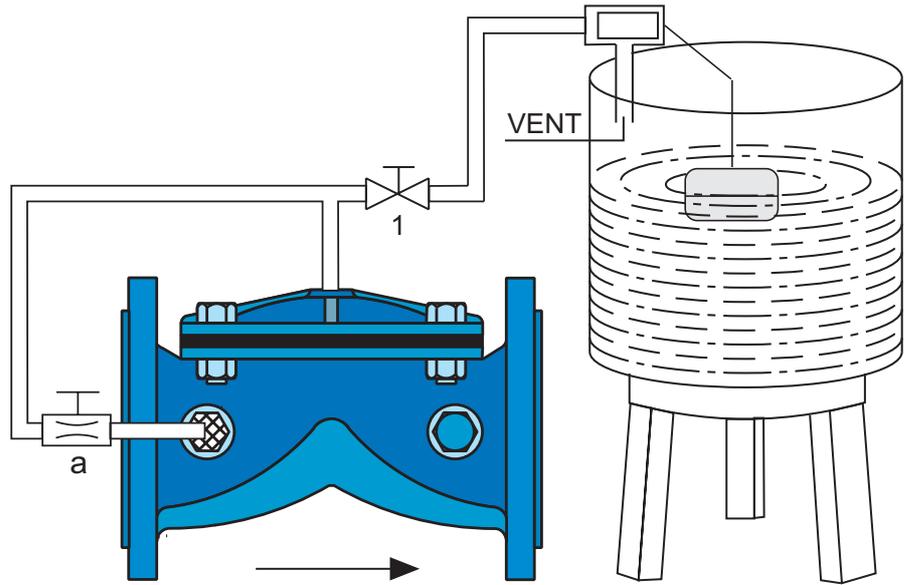
### Recommended Flow

Nominal Diameter		Flow Rate m <sup>3</sup> /h	
mm	Inch	Min.	Max.
40	1.5	3	25
50	2	5	45
65	2.5	5	70
80-50-80	3-2-3	5	50
80-65-80	3-2.5-3	5	70
80	3	5	90
100-80-100	4-3-4	5	90
100	4	10	150
125-100-125	5-4-5	10	150
150-100-150	6-4-6	10	150
150	6	15	320
200	8	40	550
250	10	80	950
300	12	100	1200

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## RAF 10 control mode

**RAF Float level control Valve** is activated by line pressure and controlled by a two-way float pilot. The pilot vent is opened or closed according to the float level. The float is located inside the reservoir as shown. The vertical water level changes are amplified by a lever and conveyed to the float. The float valve will close when water level reaches its preset.



RAF 10 - Float Level Control Valve

### Automatic Operation:

When the water level is low, the lever drops due to the float weight. The vent is open. The control chamber of the RAF is drained through the vent. The diaphragm of the RAF is forced upward by the line pressure. The RAF opens and reservoir is being filled.

As the float lever moves upward, due to the rising water level inside the water tank, the vent closes mechanically. The RAF is then closed by the line pressure, forcing its diaphragm downwards.

### Adjustment

Adjust the needle valve a to allow a sufficiently short closure time. Preset the pilot to the reservoir's desired maximum water level.

### Standard RAF 10:

Basic RAF valve Rilsan coate
Self-cleaning screen filter
Brass Pilot P-10
Brass Float arm
Stainless Steel float
Cock valve
Needle valve
Reinforced plastic tubing

### Special Features:

Enamel coating
Large capacity external filter
Stainless Steel Pilot P-10T
Stainless Steel Float arm
Copper or stainless steel tubing

### Please Specify:

- Maximum Operating Pressure (Closed valve)
- Minimum & Maximum Flow rates.
- Maximum water level