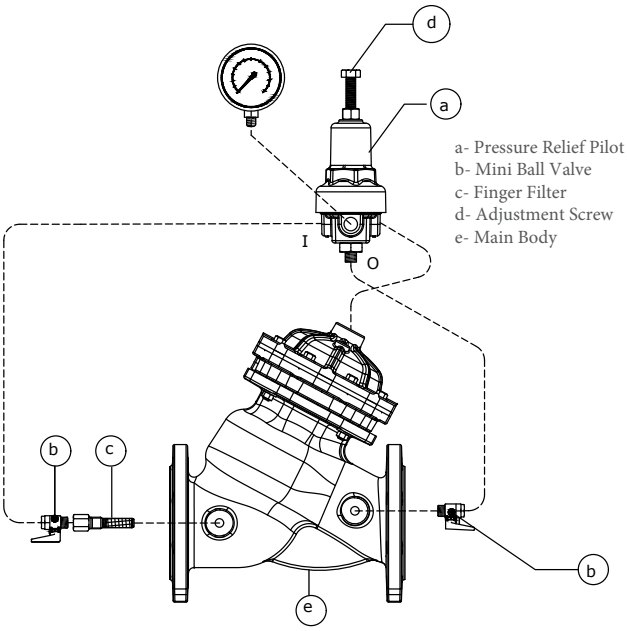
Pressure Relief Control Valve

Technical Drawing



a- Pressure Relief Pilot
b- Mini Ball Valve
c- Finger Filter
d- Adjustment Screw
e- Main Body

Product Description

BKV 116 Series pressure relief control valves are designed to protect water systems experiencing excessive pressure increases by rapidly releasing the high-pressure surge with a sudden opening action. The inlet pressure is adjusted to the desired pressure via the pilot on the valve. If, for any reason, the inlet pressure in the system exceeds the set value, the valve opens quickly, releasing the excess pressure and protecting the system. Despite its sudden opening, its hydraulic operation ensures a slow closing without creating a surge. It provides a completely leak-proof closure. It can be used alone at critical points in water systems, or, depending on the situation, as a safety and warning valve in the outlet lines of pressure reducing control valves.

Production Standards

DN40 ⟹ DN500	
Pressure Range	1 bar ⟹ 16 bar
Connection	Flanged EN1092-2
Paint	Electrostatic Powder Coating
Temperature	-10 °C +80 °C

Features

- Easy operation and maintenance with its simple structure
- Low cost
- Operation over a wide pressure range
- Flawless modulation even at low flow rates
- Impact-free opening and closing with flexible diaphragm
- Complete sealing with reinforced diaphragm and internal spring
- Epoxy coated paint
- Very wide control application area with the use of different pilot valves
- Ability to operate in horizontal and vertical positions in application areas
- Low cavitation risk.

Application Areas

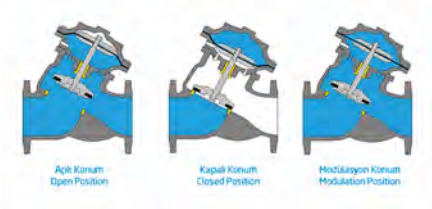
- Agricultural irrigation
- Fire extinguishing
- Industrial applications
- Irrigation and drinking water systems

Adjustment

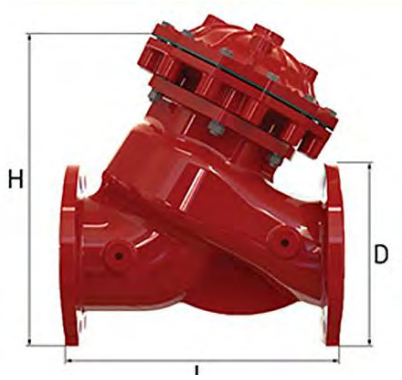
- Start the pump or open the main valve on the network to supply water to the system.
- Wait a few seconds for water to reach the valve's control chamber.
- Turning the adjustment screw "d" clockwise will increase the set pressure value, and turning it counterclockwise will decrease it.
- After setting the desired inlet pressure value, tighten the lock nut located under the adjustment screw.
- Drain the water from the actuator and pilot valves of valves not used during the winter season.

Working Principle

- Closed position: The valve is closed by applying pressure to the diaphragm with fluid pressure.
- Open position: Internal line pressure moves the diaphragm upwards, allowing flow.
- Modulation position: The diaphragm remains in a fixed position by balancing the internal and external line pressures.



Nominal Diameter	1 1/2" DN40	2" DN50	2 1/2" DN65	3" DN80	4" DN100	5" DN125	6" DN150	8" DN200	10" DN250	12" DN300	14" DN350	16" DN400	18" DN450	20" DN500
Product Code	YF16BTV 40	YF16BTV 50	YF16BTV 65	YF16BTV 80	YF16BTV 100	YF16BTV 125	YF16BTV 150	YF16BTV 200	YF16BTV 250	YF16BTV 300	YF16BTV 350	YF16BTV 400	YF16BTV 450	YF16BTV 500



Recommended Work Values

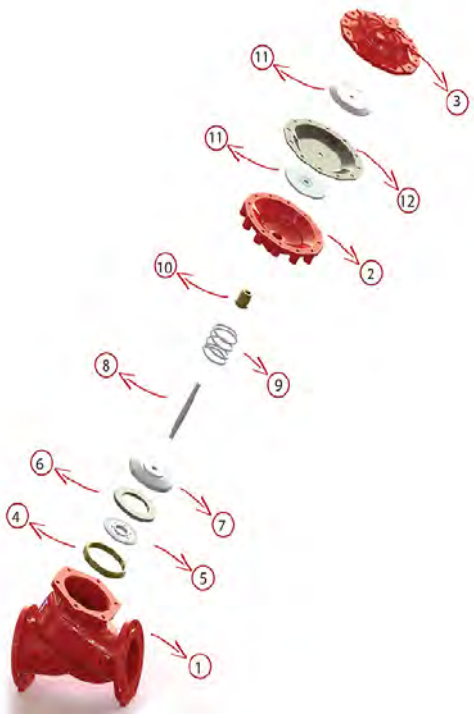
Working Pressure	Standard	1-16 bar (10-240 psi)
Temperature	Min.Operating Temperature	-10°C
	Max.Operating Temperature	+80°C
Connection	Flanged	EN 1092-2 ISO 7005-2
	Threaded	ISO (BSP) – ANSI (NPT)
Paint Coating	Standard	Polyester
	Optional	Epoxy

Y-Type Control Valve Size and Weight Chart

DN		L		D		H		WEIGHT	
inch	mm	inch	mm	inch	mm	inch	mm	lbs	kg
1 ½"	40	8,5	215	5,9	150	10,6	270	33	15
2"	50	8,7	220	6,5	165	10,6	270	35	16
2 ½"	65	8,7	220	7,3	185	11,2	285	39	18
3"	80	10,60	270	7,9	200	13,4	340	59	27
4"	100	12,80	325	8,7	220	15,4	390	85	39
5"	125	13,20	335	9,8	250	16,5	420	97	44
6"	150	16,93	430	11,2	285	20,5	520	200	91
8"	200	21,26	540	13,4	340	26,0	660	399	181
10"	250	24,60	625	15,9	405	30,5	775	590	268
12"	300	26,97	685	18,3	465	31,9	810	661	300
14"	350	34,3	870	20,5	520	41,9	1065	1569	712
16"	400	34,3	870	23,0	585	43,1	1095	1598	725
18"	450	43,9	1115	56,3	1430	53,7	1365	3042	1380
20"	500	43,9	1115	56,3	1430	53,7	1365	3086	1400

NOTE: Weight and valve height (h) do not include accessories.

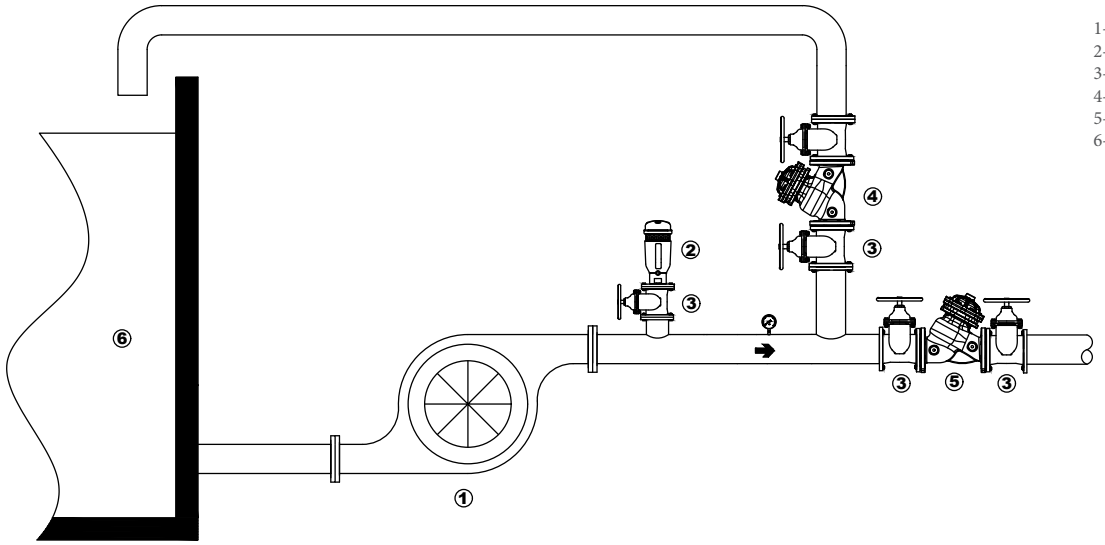
Main Parts



1	Body	GGG40 (EN-GJS 400-15) Cast iron
2	Intermediate Body	GGG40 (EN-GJS 400-15) Cast iron
3	Lid	GGG40 (EN-GJS 400-15) Cast iron
4	Leakproof	Brass/Bronze
5	Flap press	Stainless
6	Flap seal	Buna-N
7	Flap	Stainless
8	Shaft	Stainless
9	Spring	Stainless
10	Intermediate Body Shaft	Brass/Bronze
11	Diaphragm Pressure	Stainless
12	Diaphragm	Nopren (Nylon based)

Maximum Working Pressure		Leakage Test Pressure		Body Test Pressure	
BAR	PSI	BAR	PSI	BAR	PSI
10	145	11	160	15	217
16	232	17,6	255	24	348
25	363	27,5	399	37,5	544

Example Application

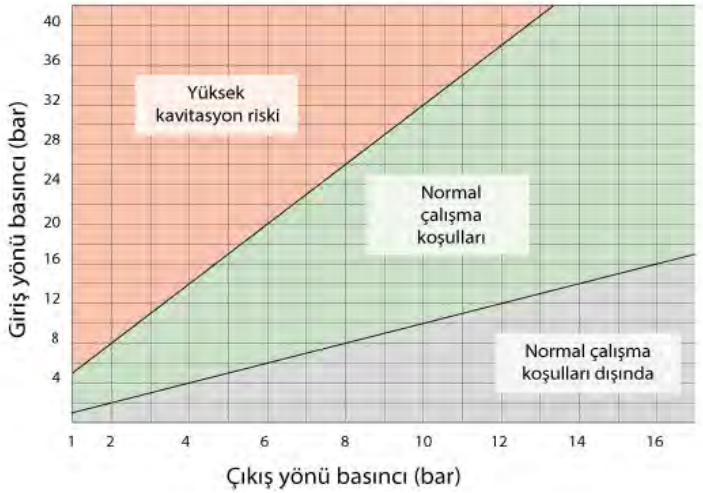
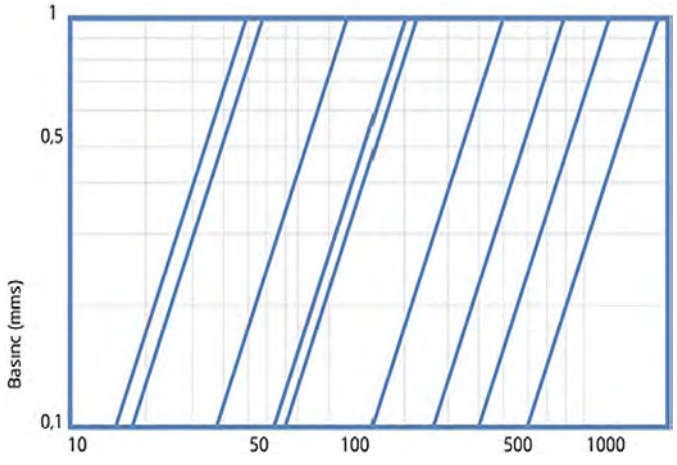


1- Pump
2- Air Vent
3- Isolation Valve
4- Pressure Relief Control Valve
5- Line Valve
6- Reservoir

Flow Analysis Table

Nominal Diameter	mm	50	65	80	100	125	150	200	250	300	350	400	450	500
	İnch	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"
kv	m³/h- 1 ar	70	73	167	215	224	503	830	1300	1800				
		44	46	96	168	171	388	685	1054	1565				

Cavitation Graph



Pressure Loss Graph