

BV25061 | PN16 EN 1092-2

Cast Iron EN-JL 1040

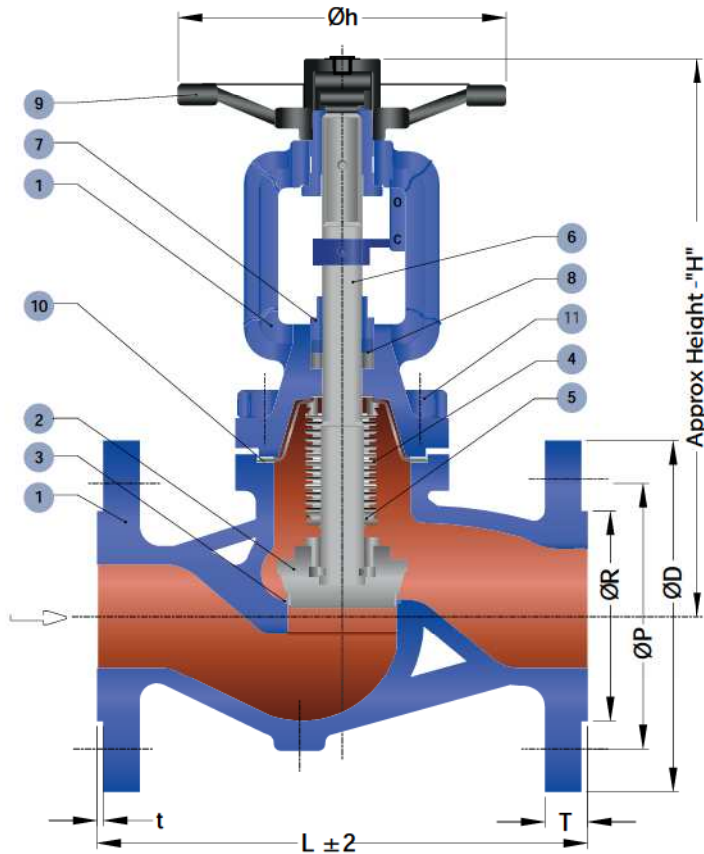
Temperature min. -10°C

Temperature max. +300°C



Testing pressure in bar

Hydro	Body	24
	Seat	18
Air	Seat	07



N°	COMPONENT	MATERIALS
1	Body & Bonnet	EN-JL 1040 Cast Iron
2	Plug	St. Steel 1.4021 + Hard Faced 13% Cr
3	Seat	ASTM - A105 + Hard Faced 13% Cr
4	Bellow	St. Steel 1.4541 / AISI-321
5	Bellow collar	St. Steel 1.4541
6	Stem	St. Steel 1.4006
7	Gland	St. Steel 1.4021
8	Packing	Pure Graphite
9	Hand Wheel	EN-GJS-400-18-LT Nodular
10	Bonnet Gasket	Graphite + Stainless steel
11	Bolt & Nuts	Carbon Steel Gr.10.9

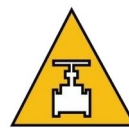
ZERO LEAKAGE
DIN: Rate A acc.EN12266-1

Face to face dimensions acc. to EN558-1
Flanges acc. to EN 1092-2 form B

DN	PN	ØD (outer flange diameter)	ØP (Bolt circle)	ØR	T (FGL,THK)	t	NO.OF HOLE / Ø	L (Face to face)	Øh	STROKE	H (closed)	Weight (Kg)
15	16	95	65	46	14	2	4/Ø14	130	150	4	215	4,80
20	16	105	75	56	16	2	4/Ø14	150	150	5	220	5,16
25	16	115	85	65	16	3	4/Ø14	160	150	6.5	230	5,98
32	16	140	100	76	18	3	4/Ø19	180	150	8	235	7,80
40	16	150	110	84	18	3	4/Ø19	200	200	10	255	11,20
50	16	165	125	99	20	3	4/Ø19	230	200	13	265	13,60
65	16	185	145	118	20	3	4/Ø19	290	250	16,5	325	22,90
80	16	200	160	132	22	3	8/Ø19	310	250	20	335	27,40
100	16	220	180	156	24	3	8/Ø19	350	300	25	385	40,30
125	16	250	210	184	26	3	8/Ø19	400	350	32	425	67,20
150	16	285	240	211	26	3	8/Ø23	480	400	38	485	89,20
200	16	340	295	266	30	3	12/Ø23	600	450	51	615	143,50
250	16	405	355	319	32	3	12/Ø28	730	500	63	780	241,00
300	16	460	410	370	32	4	12/Ø28	850	600	75	970	435,00

all dimensions in mm.

WORKING CONDITIONS					
Temperature °C	-10/120	150	200	250	300
Pressure Bar	16	14,4	12,8	11,2	9,6



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BV25063 | PN25 EN 1092-2

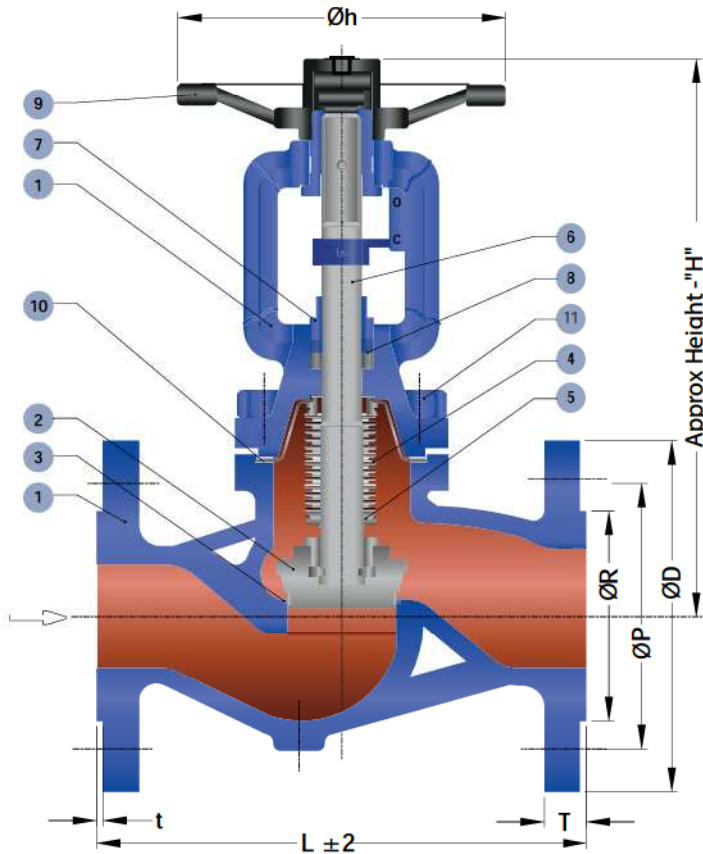
Nodular Cast Iron EN-GJS-400-18-LT

Temperature min. -10°C

Temperature max. +350°C

Testing pressure in bar

Hydro	Body	37,5
	Seat	27,5
Air	Seat	07



Nº	COMPONENT	MATERIALS
1	Body & Bonnet	EN-GJS-400-18-LT Nodular Cast Iron
2	Plug	St. Steel 1.4021 + Hard Faced 13% Cr
3	Seat	ASTM - A105 + Hard Faced 13% Cr
4	Bellow	St. Steel 1.4541 / AISI-321
5	Bellow collar	St. Steel 1.4541
6	Stem	St. Steel 1.4006
7	Gland	St. Steel 1.4021
8	Packing	Pure Graphite
9	Hand Wheel	EN-GJS-400-18-LT Nodular
10	Bonnet Gasket	Graphite + Stainless steel
11	Bolt & Nuts	Carbon Steel Gr.10.9

ZERO LEAKAGE
DIN: Rate A acc.EN12266-1

Face to face dimensions acc. to EN558-1
Flanges acc. to EN 1092-2 form B

DN	PN	ØD [outer flange diameter]	ØP [Bolt circle]	ØR	T [FGL,THK]	t	NO.OF HOLE / Ø	L [Face to face]	Øh	STROKE	H [closed]	Weight [Kg]
15	25	95	65	46	16	2	4/Ø14	130	150	4	215	5,00
20	25	105	75	56	18	2	4/Ø14	150	150	5	220	5,50
25	25	115	85	65	19	3	4/Ø14	160	150	6.5	230	6,40
32	25	140	100	76	19	3	4/Ø19	180	150	8	235	8,30
40	25	150	110	84	19	3	4/Ø19	200	200	10	265	14,20
50	25	165	125	99	20	3	4/Ø19	230	200	13	275	14,14
65	25	185	145	118	22	3	8/Ø19	290	250	16,5	325	24,80
80	25	200	160	132	24	3	8/Ø19	310	250	20	355	27,90
100	25	235	190	156	24	3	8/Ø23	350	300	25	410	42,20
125	25	270	220	184	26	3	8/Ø28	400	350	32	450	67,00
150	25	300	250	211	28	3	8/Ø28	480	400	38	525	91,00
200	25	360	310	274	34	3	12/Ø28	600	450	51	640	147,00

all dimensions in mm.

WORKING CONDITIONS

Temperature °C	-10/120	150	200	250	300	350
Pressure Bar	25	24,3	23	21,8	20	17,5

Features of high quality bellows sealed valves

BVALVE Bellows Sealed Globe Valves include flanges designed according to EN 1092, face to face distance as per EN 558-1, ACME threaded stem screws and grounded shafts. Moreover, our stainless steel multilayer bellows are designed for a long life service as they display a minimum life cycle as per MSS SP-117. Further premium characteristics include metal back seat, safety stuffing box packing made of pure graphite, and graphite-stainless steel gasket, housed in tongue and grooved flanges. Besides, our hard faced stainless steel plugs show a conical shape while being able to rotate 360°.

Free rotating conical plug: Our 360° free rotation plugs improve the cleaning of dirt or impurities fluids may carry allowing a tighter closure while avoiding vibrations from being transmitted to the valve stem.

Multi-layer bellow: Depending on their sizes, our valves contain double, triple and quadruple bellows which are welded to the stems and not to the plug, preventing them from transmitting vibrations to the bellows and therefore extending their lives.

Non ejectable stems: Stem includes mechanical stop which at the same time perform the function of locking metal to metal in the opened positions and hence prevent stems from being ejected due to process pressures. Meanwhile, mechanical stop adds robustness when valves are opened. Furthermore, our valves are equipped with pure graphite safety packings.



Features of high quality bellows sealed valves

BVALVE Bellows Sealed Globe Valves have flanges acc. to EN 1092-2, face to face as per EN 558-1 and ACME stem screw thread and grounded shaft. Some of Bvalve's premium features are multiply layer bellows with long service life made of stainless steel, minimum life cycle of bellows as per MSS SP-117, metal back seat, safety stuffing box packing made of pure graphite, graphite + stainless steel gasket housed in a tongue and grooved flange, seat ring hard faced, conical disc and 360° rotating plug made of stainless steel + HARD FACED.

High quality bellow
Made in Germany

Standard 360° free rotation
and conical plug (A)

ZERO
LEACKAGE!

No ejectable
stem (B)

Tongued and grooved
body and bonnet (C)

Plug and seat
hardfaced (D)





Competitor advantages of BVALVE bellows sealed valves

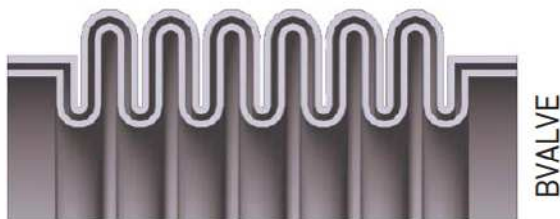
DIN bellows sealed valves have become highly popular in steam and thermal oil markets due to the mass consumption the industry demand has generated.

Unfortunately, this increase in demand has led to a massive manufacturing of these valves at very low prices. This situation has caused a drastic reduction in quality performance and therefore missing this valve's main target, being a maintenance free stop valve.

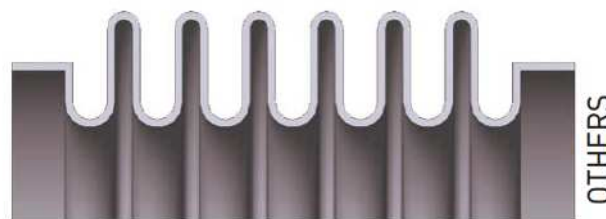
BVALVE however has avoided reducing our quality standards while maintaining our bellow sealed valves at highly competitive prices.

FEATURES	BVALVE	OTHERS
Non ejectable stem	YES	NO
Metal back seated tightness in opened position	YES	NO
360° free rotation disc	YES	On request
Bearings on the wheel for easy valve operation	YES	NO
Stroke limiter	YES	On request
Wide thread stem that prevents the valve from blocking	YES	NO
Tongued body and bonnet	YES	NO

Multi Layer Bellows



BVALVE



OTHERS

- Double, triple and quadruple layer bellows depending on the size of the valve.
- Bellows designed to support 10,000 operation cycles.
- Bellows are welded to the stem and not to the disc, preventing the transmission of vibrations to the bellows, and therefore extending the life of the bellows.

- Just one bellow layer, which means a lower resistance to breakage.
- Bellows designed to support less than 10,000 operation cycles.
- Bellows are welded to the disc, which transmits the vibrations to the bellows, decreasing their lives.

Stem dimensions

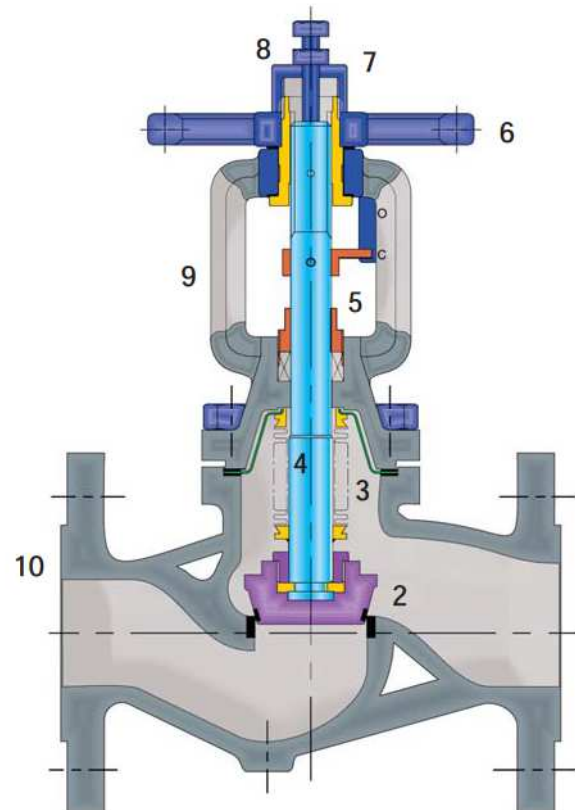


DN	H (mm) BVALVE	H (mm) Competitors
15	210	205
20	210	205
25	225	210
32	225	210
40	250	225
50	260	230
65	300	245
80	330	265
100	390	365
125	400	395
150	485	425
200	590	550
250	750	720

Why BVALVE Bellows sealed valves are the best in the market?

BVALVE launches its own bellows sealed valves, having improved all elements design, and therefore making this valve the best choice in the market.

- 1 **Free Rotating Plug.** 360° free rotation disc, allowing the cleaning of impurities that may carry the fluid. Besides, closure surface is different in every cycle and at the same time, it does not transmit the vibrations to the valve stem.
- 2 **Conical Plug.** Lower contact surface between plug and seat enhances a tighter closure.
- 3 **Multi Layer Bellows.** Double, triple and quadruple bellows wall depending on the size of the valve. It is welded to the stem and not to the disc, preventing the transmission of vibrations and extending the life of the bellows.
- 4 **Non Ejectable Stem.** Non ejectable stems: Stem includes mechanical stop which at the same time perform the function of locking metal to metal in the opened positions and hence prevent stems from being ejected due to process pressures. Meanwhile, mechanical stop adds robustness when valves are opened. Furthermore, our valves are equipped with pure graphite safety packings.
- 5 **TA-LUFT Packing**
- 6 **Robust and Ergonomic Hand Wheel**
- 7 **ACME Thick Thread stem**
- 8 **Stop screw, stroke limiter and lubricator.** Anti-friction bearings that eases the valve opening and closing.
- 9 With **robust yoke** design and opening indicator.
- 10 **Flange faces with thin machining acc. EN 1092**, high quality cast iron and nodular cast iron, EN 10204 3.1 certificate available.





Six reasons why our valve is better

BV25065

Straight type bellows sealed globe valves for demanding applications can be supplied in carbon steel 1.0619 / WCB and stainless steel 1.4408 / CF8M, both with flanged or buttweld ends.

Application (Carbon steel):

Powerstations, thermal oil processes, gas industry, processing technology, vapour facilities, recycling plants, vacuum installations, etc.

Medium (Carbon steel):

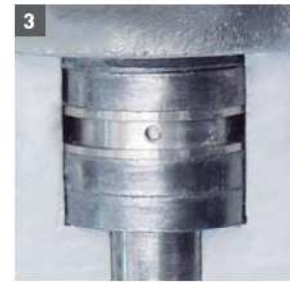
Medium and high pressure steam, superheated steam, gases, thermal oil, overheated water and gases, etc.

Application (Stainless steel):

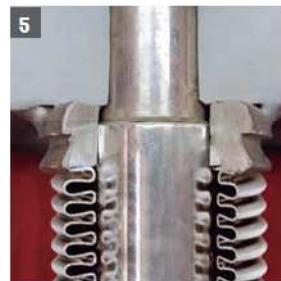
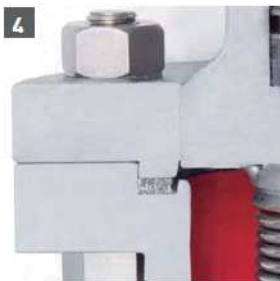
Recycling plants, chemical industry, process water installations, process with aggressive media

Medium (Stainless steel):

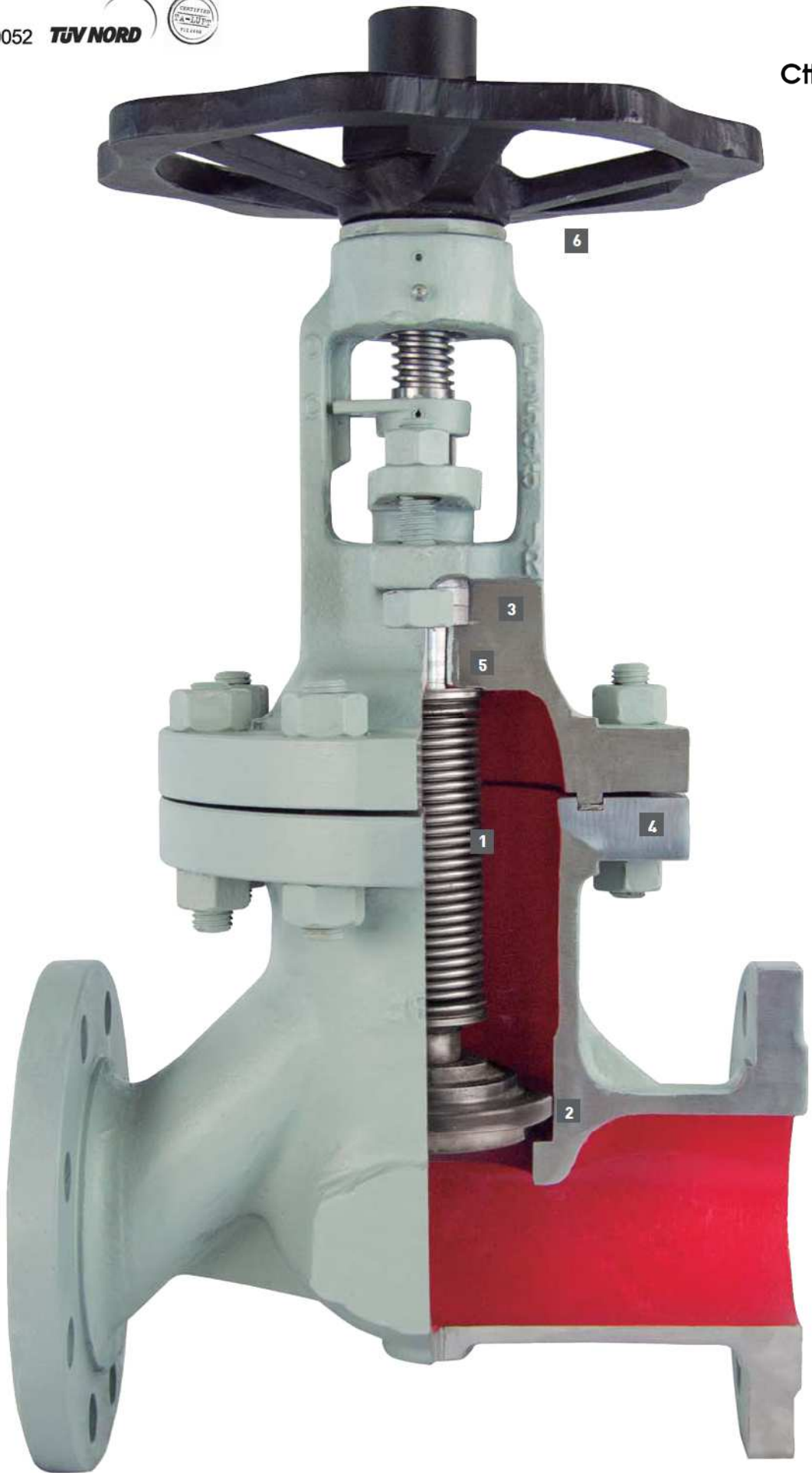
Process water, aggressive media, corrosive and toxic fluids, ethylen dioxide, H₂SO₄, etc.



1. Completely welded multiple layer stainless steel bellows are secured against torque and designed to last for 30,000 operations. These provide higher safety and avoid leakage in case of broken packing.
2. Standard 360° free rotation and conical plug provides a tighter closure while maintaining seat clean from shards. Both seat and plug are made out of hardened chromium steel 1.4021 or armored with stellite.
3. TA-LUFT certified full size safety gland packing made of pure graphite together with our bellows, provide a fully reliable 0 leakage unit. Can also be supplied in PTFE if requested for chemical applications.



4. Stainless steel cam profiled bonnet gasket coated with pure graphite, mounted in tongue and grooved bonnet flanges reinforces operating safety in case of leakage. Can also be supplied in PTFE if requested for chemical applications.
5. Metal back seat has two features: Mechanical limitation for open position while guaranteeing a zero leakage in case of broken bellows.
6. Oversized wheel for easy handling. Position Indicator allows user to know in which opening / closing stage is the valve without having to operate it.





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BV25065 | PN40 EN 1092-1

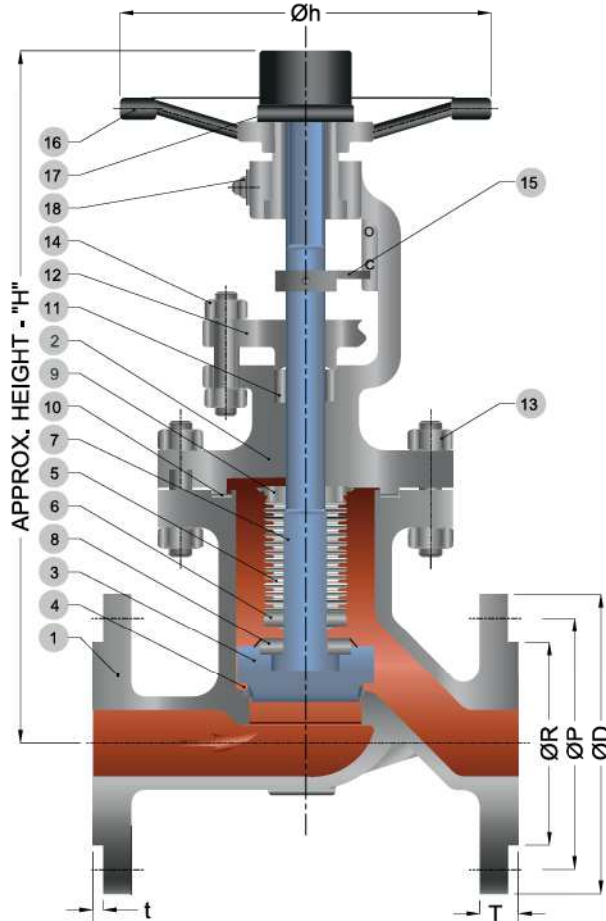
Carbon steel WCB (1.0619)

Temperature min. -10°C

Temperature max. +400°C

Testing pressure in bar

Hydro	Body	60
	Seat	44
Air	Seat	07



N°	COMPONENT	MATERIALS
1	Body	1.0619 / ASTM - A 216 Gr.WCB
2	Bonnet	1.0619 / ASTM - A 216 Gr.WCB
3	Plug	ASTM - A 217 Gr.CA15 + 13% Cr. OVERLAY
4	Integral seat	ASTM - A 216 Gr.WCB (1.0619) + 13% Cr. OVERLAY
5	Bellow	AISI - 321
6	Bellow collar	ASTM - A 276 TYPE 316
7	Stem	ASTM - A 276 TYPE 410
8	Collar ring	ASTM - A 276 TYPE 410
9	Top collar	ASTM - A 276 TYPE 316
10	Gasket	SPW - SS 304 + GRAPHITE
11	Packing	GRAPHITE
12	Gland bush /Flange	1.0619 / ASTM - A 216 Gr.WCB
13	Fastener	ASTM - A 193 Gr.B7 / A 194 Gr.2H
14	Gland stud & nut	ASTM - A 193 Gr.B7 / A 194 Gr.2H
15	Guide plate/Indicator	CARBON STEEL
16	Hand wheel	MILD STEEL / NODULAR CAST IRON
17	Hand wheelNut/cap	CARBON STEEL
18	Grease nipple	CARBON STEEL

ZERO LEAKAGE

DIN: Rate A acc.EN12266-1

Face to face acc. to EN558-1

Flanges acc. to EN 1092-1 form B

DN	PN	ØD (outer flange diameter)	ØP (Bolt circle)	ØR	T (FGL THK)	t	NO.OF HOLE / Ø	L (Face to face)	Øh	STROKE	H (closed)	Weight (Kg)
15	40	95	65	45	16	2	4/Ø14	130	150	4	260	8.5
20	40	105	75	58	18	2	4/Ø14	150	150	5	265	9.5
25	40	115	85	68	18	2	4/Ø14	160	150	6.5	280	11.5
32	40	140	100	78	18	2	4/Ø18	180	200	8	290	17.0
40	40	150	110	88	19	3	4/Ø18	200	200	10	318	19.0
50	40	165	125	102	20	3	4/Ø18	230	200	13	335	21.5
65	40	185	145	122	22	3	8/Ø18	290	250	16,5	415	33.5
80	40	200	160	138	24	3	8/Ø18	310	300	20	440	45.0
100	40	235	190	162	24	3	8/Ø22	350	300	25	515	61.5
125	40	270	220	188	26	3	8/Ø26	400	350	32	600	102.0
150	40	300	250	218	28	3	8/Ø26	480	400	38	655	122.0
200	40	375	320	285	34	3	12/Ø30	600	450	51	788	222.0
250	40	450	385	345	38	3	12/Ø33	730	500	64	930	362.0
300	40	515	450	410	42	4	16/Ø33	850	600	75	1.140	533.0

all dimensions in mm.

WORKING CONDITIONS

Temperature °C	-10/120	150	200	250	300	350	400
Pressure Bar	40	35,2	33,3	30,4	27,6	25,7	23,8



BV25066 PN40 EN 1092-1

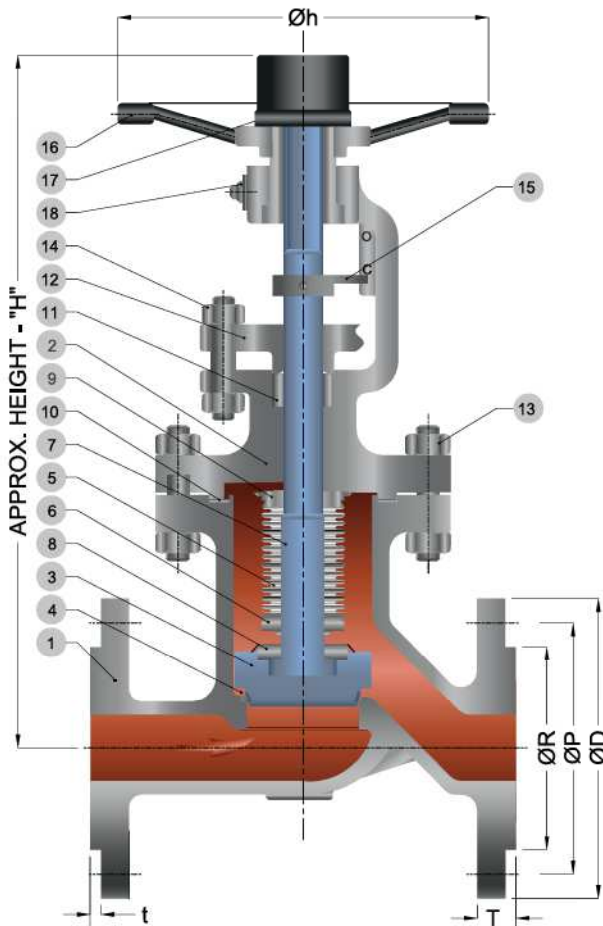
Stainless Steel CF8M (1.4408)

Temperature min. -60°C
Temperature max. +400°C

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Testing pressure in bar

Hydro	Body	60
	Seat	44
Air	Seat	07



N°	COMPONENT	MATERIALS
1	Body	1.4408 / ASTM - A 351 Gr.CF8M
2	Bonnet	1.4408 / ASTM - A 351 Gr.CF8M
3	Plug	1.4408 / ASTM - A 351 Gr.CF8M + Stellite Gr.6
4	Integral seat	1.4408 / ASTM - A 351 Gr.CF8M + Stellite Gr.21
5	Bellow	1.4571 / AISI - 316Ti
6	Bellow collar	1.4401 / ASTM - A 276 TYPE 316
7	Stem	1.4401 / ASTM - A 276 TYPE 316
8	Collar ring	1.4401 / ASTM - A 276 TYPE 316
9	Top collar	1.4401 / ASTM - A 276 TYPE 316
10	Gasket	SPW - SS 316 + GRAPHITE
11	Packing	GRAPHITE
12	Gland bush /Flange	1.4408 / ASTM - A 351 Gr.CF8M
13	Fastener	ASTM - A193 Gr.B8M / A194 Gr.8M
14	Gland stud & nut	ASTM - A193 Gr.B8M / A194 Gr.8M
15	Guide plate/Indicator	1.4408 / ASTM - A 351 Gr.CF8M
16	Hand wheel	MILD STEEL / NODULAR CAST IRON
17	Hand wheel Nut/cap	1.4401 / AISI - 316
18	Grease nipple	1.4401 / AISI - 316

ZERO LEAKAGE

DIN: Rate A acc.EN12266-1

Face to face acc. to EN558-1

Flanges acc. to EN 1092-1 form B

DN	PN	ØD (outer flange diameter)	ØP (Bolt cercle)	ØR	T (FGL.THK)	t	NO.OF HOLE / Ø	L (Face to face)	Øh	STROKE	H (closed)	Weight (Kg)
15	40	95	65	45	16	2	4/Ø14	130	150	4	260	8.5
20	40	105	75	58	18	2	4/Ø14	150	150	5	265	9.5
25	40	115	85	68	18	2	4/Ø14	160	150	6.5	280	11.5
32	40	140	100	78	18	2	4/Ø18	180	150	8	290	17.0
40	40	150	110	88	19	3	4/Ø18	200	200	10	318	19.0
50	40	165	125	102	20	3	4/Ø18	230	200	13	335	21.5
65	40	185	145	122	22	3	8/Ø18	290	250	16,5	415	33.5
80	40	200	160	138	24	3	8/Ø18	310	300	20	440	45.0
100	40	235	190	162	24	3	8/Ø22	350	300	25	515	61.5
125	40	270	220	188	26	3	8/Ø26	400	350	32	600	102.0
150	40	300	250	218	28	3	8/Ø26	480	400	38	655	122.0
200	40	375	320	285	34	3	12/Ø30	600	450	51	788	222.0
250	40	450	385	345	38	3	12/Ø33	730	500	64	930	362.0
300	40	515	450	410	42	4	16/Ø33	850	600	75	1.140	533.0

all dimensions in mm.

WORKING CONDITIONS

Temperature °C	-60/-10	-10/150	150	200	250	300	350	400
Pressure Bar	40	40	36,3	33,7	31,8	29,7	28,5	27,4

Kvs values



Definition of Kv value:

Kv value is the amount of water (m³/h) at 20°C that flows through a valve at a fix opening rate (%) when pressure drop between inlet/outlet is 1 bar. Kvs is the Kv value when valve is 100% opened.

Determination of Kv value

Liquids (water, etc.)	$K_V = Q \cdot \sqrt{\frac{\rho}{1000 \cdot \Delta P}}$	<p>K_V = Flow coefficient (m³/h) Q = Volumetric flow (m³/h) ρ = Density (kg/m³)</p>
Saturated steam	Subcritical flow $\Delta P < \frac{P_1}{2}$ $K_V = \frac{G}{22,4 \sqrt{\Delta P \cdot P_2}}$	<p>K_V = Flow coefficient (m³/h) G = Mass flow (kg/h) ΔP = Pressure drop (bar) P_1 = Upstream pressure (bar a) P_2 = Downstream pressure (bar a)</p>
	Critical flow $\Delta P > \frac{P_1}{2}$ $K_V = \frac{G}{11,2 \cdot P_1}$	
Superheated steam	Subcritical flow $\Delta P < \frac{P_1}{2}$ $K_V = \frac{G}{31,7 \cdot \sqrt{\Delta P / V_2}}$	<p>K_V = Flow coefficient (m³/h) G = Mass flow (kg/h) ΔP = Pressure drop (bar) P_1 = Upstream pressure (bar a) P_2 = Downstream pressure (bar a) V_2 = Specific volume (m³/h) @ P_2, T_1 V = Specific volume (m³/h) @ $P_1/2, T_1$</p>
	Critical flow $\Delta P > \frac{P_1}{2}$ $K_V = \frac{G}{22,4 \sqrt{\Delta P / V}}$	
Gases	Subcritical flow $\Delta P < \frac{P_1}{2}$ $K_V = \frac{Q_N}{514} \sqrt{\frac{\rho_N \cdot T_1}{\Delta P \cdot P_2}}$	<p>K_V = Flow coefficient (m³/h) Q_N = Volumetric flow (Nm³/h) ρ_N = Density (kg/Nm³) T_1 = Upstream temperature (K) ΔP = Pressure drop (bar) P_1 = Upstream pressure (bar a) P_2 = Downstream pressure (bar a)</p>
	Critical flow $\Delta P > \frac{P_1}{2}$ $K_V = \frac{Q_N}{257 \cdot P_1} \sqrt{\rho_N \cdot T_1}$	

Simplified sizing equations acc. to ISA and IEC standards

Permissible differential pressure acc. EN 13709

PN	DN													
	15	20	25	32	40	50	65	80	100	125	150	200	250	300
PN 16							16					14	9	6
PN 25							25				21	14	9	6
PN 40							40			33	21	14	9	6



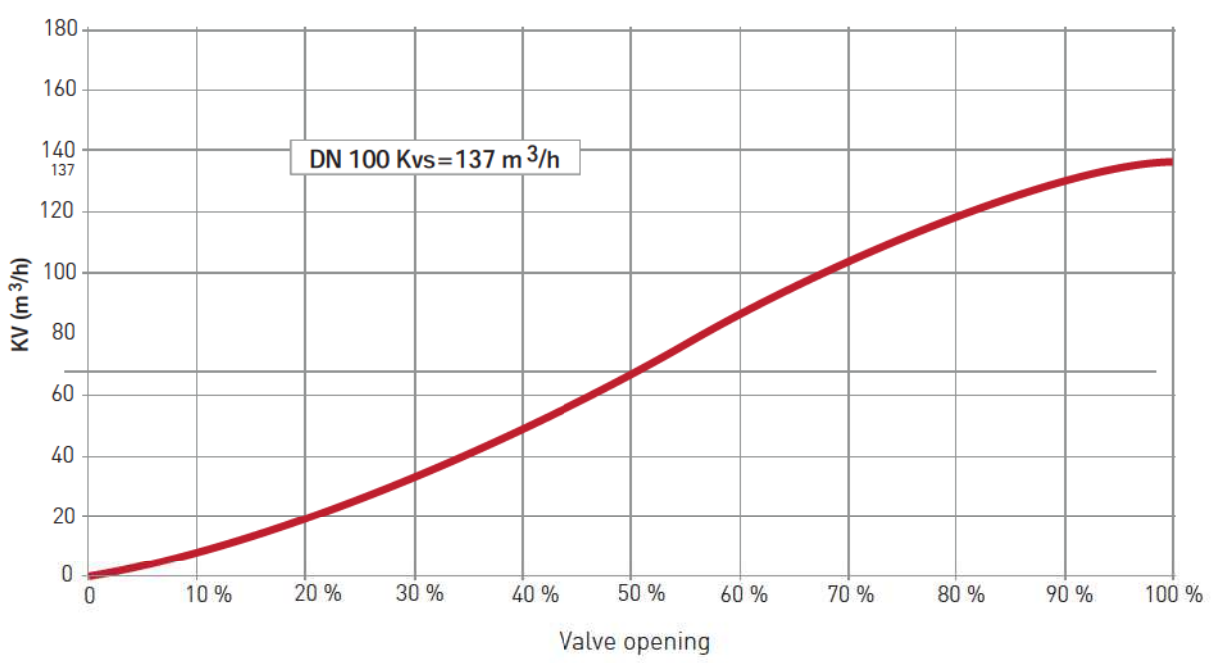
Kvs values

Kvs value standard plug

DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300
KVS	4.8	7.3	11.7	17.8	27.3	43	75.1	111	176	264	369	701	1056	1691

Throttling plug Kvs value

DN	15	20	25	32	40	50	65	80	100	125	150	200	250	300
KVS	4.36	6.76	9.21	16.3	25.1	36.8	61.7	91.6	137	184	287	471	898	1410



Optional plug types

