

Series 9410 Full Bore Seated Ball Valves for ANSI 150-300 DIN/BS 4504 PN10-PN40

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Specification

Series 9410 Full Bore Seated Ball Valves for ANSI 150-300 DIN/BS 4504 PN10-PN40

Series 9410 Features

General

Series 9410 ball valves are off-the-shelf standard valves that incorporate many special features. This series is designed for both pressure and vacuum service.

The valves have multiple fire safe guards: a secondary metal seat; a blowout-proof stem; and a static electric grounding device. The valves are available with a full bore and reduced bore.

Standard Specifications:

Flanged end, 2-pcs split body construction,
Floating ball design, Full bore or reduced bore,
Fields serviceable, wrench/gear/actuator mounted.

Valve Class: ANSI 150-600

Test Pressure: AS per API 6D Std.

- Shell -
(Hydrostatic)
Class 150: 425psi (30kg/cm²)
Class 300: 1100psi(77kg/cm²)

- Seat -
(Air)
Class 150: 80psi (6kg/cm²)
Class 300: 80psi(6kg/cm²)

Face to Face Dimension:

Per API 6D Std (refer to dimension tables)

End Connections:

Flanged, conforming to ANSI B 16.5. The ball valves comply with one or more of the following standard specifications as to pressure, temperature ratings and dimensions: ANSI, API, BS, DIN, MSS.

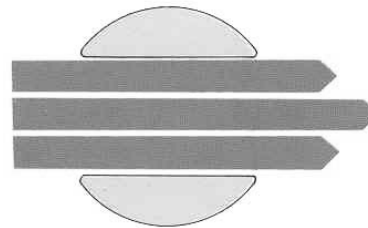


Figure 1. Maximum flow with full bore



Figure 2. Series 9210 Butterfly Valve

Ball Valve Specifications

Valve Type	Cylinder Operated Ball Valve													
Valve Model	Series 9410													
Body Type	2-way													
Valve Size (inch)	1/2	3/4	1	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14
(mm)	15	20	25	40	50	65	80	100	125	150	200	250	300	350
Pressure Rating	ANSI 150# ~ 300# (JIS 10K ~ 20K, PN 10~ 25)													
End Connection	RF, FF, RTJ													
Body Materials	A216WCB, A351CF8/CF8M, A351CF3M													
Bonnet Type	Plain(-17°C to 230°C), Extension(-45°C to -17°C, over 230°C)													
Packing	Teflon, EPDM													
Guiding	O-ring													
Seat Type	Metal/Soft													
Valve Plug Shapes	Ball													
Plug Characteristic	On-Off													
Trim Materials	A351CF8/CF8M, A351CF3/CF3M, and so on													

Seat / Seal Design

Unique ACTI-Seal Seat design uses a lip seal principle for efficient sealing at all pressures from zero to the maximum rated positive or negative pressure.

This design seals with a minimum and nearly uniform torque requirement. The seat seals are pre-loaded against the ball on assembly to provide shut off at low pressures. At higher pressures, the ball is forced against the seat and provides a positive seal to maximum rated pressures.

The generous lip section of the seat is added assurance of long and efficient seat life.

Ball

One of the most important components in any ball valve is the ball itself. The sphericity and surface finish of the ball are directly related to the life of the valve, its pressure holding capability and the operating torque.

For these reasons, we designed special production equipment to produce balls that have a sphericity of ± 0008 " and a 4RMS surface finish.



Figure 3. Ball

Stem Seal and Bearing

All ball valves incorporate a PTFE bearing to absorb any radial loading on the valve stem. A PTFE thrust bearing is also provided to reduce friction due to axial loading. Packing utilizes multiple "V" Shaped PTFE rings ; tightening the gland nut spreads each ring and creates a multiple seal between the stem and body. The simple gland adjustment also allows compensation for operational wear. In addition, fluid pressure below the stem packing spreads the rings and improves the seal by increasing the stress on the rings-prohibiting leakage and minimizing maintenance.

Fire-Safe API-607

One of the many requirements of today's industries is that ball valves must have a metal to metal seal in case the nonmetallic seal is destroyed by fire or other means.

It provides assurance to the user handling flammable or hazardous fluids that should the non-metallic seal be destroyed, the ball valve will stop the flow of material until a new seal is installed.

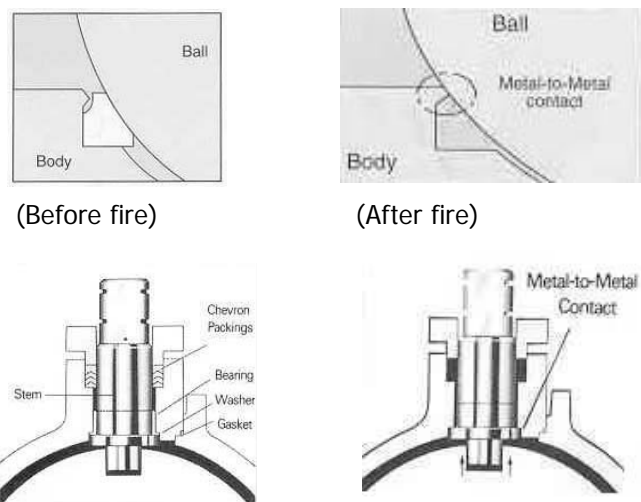


Figure 4. BLOW-OUT PROOF STEM & SEAL FEATURES

Seat Performance Data

TFE

General application seat material, exhibiting lowest operating torque and excellent resistance to chemical attack.

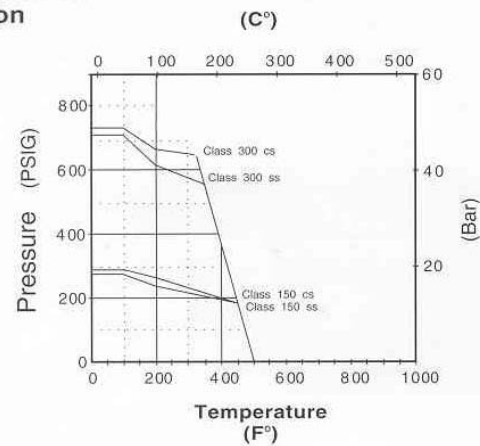
RTFE

Most commonly specified seat material, and used as the basis for published torque valves. Maintains the excellent chemical resistance of unfilled Teflon (TFE) with increased resistance to wear and abrasion resulting in longer life.

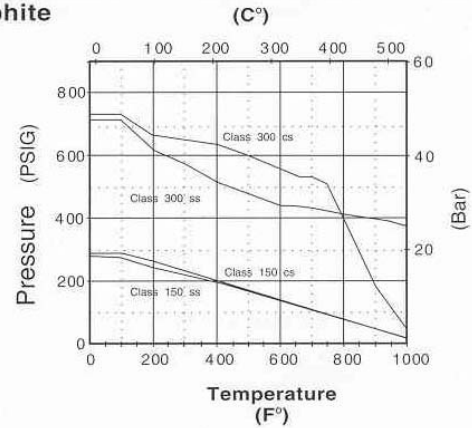
Carbon Graphite

Designed for high temperature applications. Maximum service temperature is limited to 759 deg F(404 deg C) in oxidizing applications. This seat like all hard seat materials does not necessarily provide "bubble tight" shut-off. Most test standards have allowable leakage rates or list "classes" of shut-off for this type of seat. Be aware of the system design requirements when specifying this or any hard sea.

Reinforced Teflon



Carbon-Graphite



Actuator Sizing for Ball Valve

Series 6200 Cylinder Actuator

Body Size	Seat	150# (10K)		300# (20K)		Body Size	Seat	150# (10K)		300# (20K)	
		Spring Return	Double Acting	Spring Return	Double Acting			Spring Return	Double Acting	Spring Return	Double Acting
1/2"	Metal	AC06S	AC06D	AC06S	AC06D	4"	Metal	AC14S	AC10D	AC16S	AC14D
	Soft	AC06S	AC06D	AC06S	AC06D		Soft	AC12S	AC10D	AC14S	AC12D
3/4"	Metal	AC08S	AC06D	AC08S	AC06D	5", 6"	Metal	AC20S	AC14D	AC20S	AC16D
	Soft	AC06S	AC06D	AC08S	AC06D		Soft	AC16S	AC14D	AC16S	AC14D
1"	Metal	AC08S	AC06D	AC10S	AC08D	8"	Metal	AC25S	AC20D	AC30S	AC20D
	Soft	AC06S	AC06D	AC08S	AC06D		Soft	AC25S	AC20D	AC25S	AC20D
1 1/2"	Metal	AC08S	AC06D	AC10S	AC08D	10"	Metal	AC30S	AC20D	-	AC25D
	Soft	AC08S	AC06D	AC10S	AC06D		Soft	AC30S	AC20D	AC30S	AC20D
2"	Metal	AC10S	AC08D	AC10S	AC08D	12"	Metal	AC30S	AC20D	-	AC25D
	Soft	AC08S	AC06D	AC10S	AC08D		Soft	AC30S	AC20D	AC30S	AC25D
2 1/2"	Metal	AC10S	AC08D	AC12S	AC08D	14"	Metal	-	AC30D	-	AC30D
	Soft	AC10S	AC08D	AC10S	AC08D		Soft	-	AC25D	-	AC25D
3"	Metal	AC12S	AC08D	AC12S	AC10D						
	Soft	AC10S	AC08D	AC12S	AC10D						

Actuator Type Verification

Code	Actuator Type
S	Spring Return Single Cylinder
D	Double Acting Single Cylinder

Dimension

Figure 5. Series 9410 (Double Acting Cylinder)

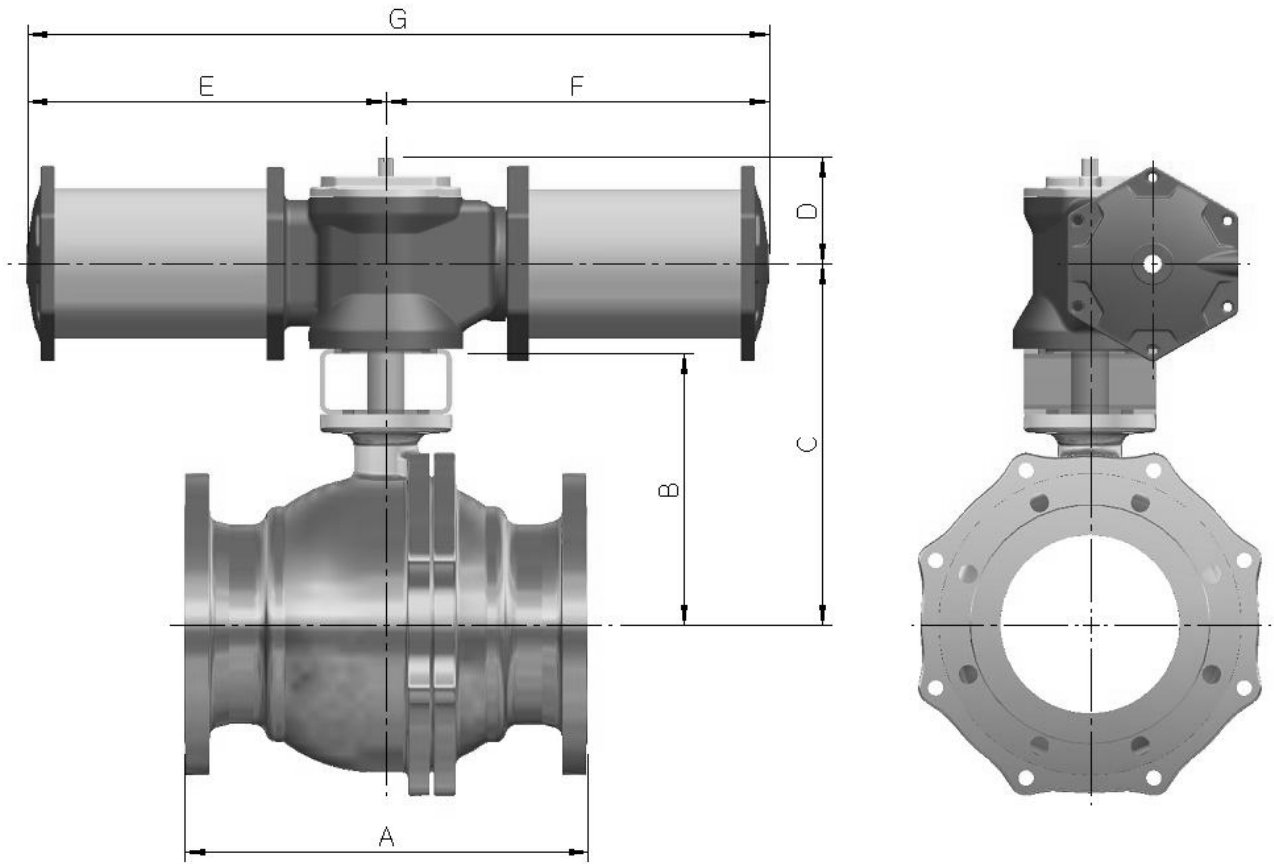


Table 1. Dimensions

(Unit: mm)

Size	A	B	C	D	E	F	G	Actuator
1/2"	108	64	115	43	117	117	234	AC06D
3/4"	117	64	115	43	117	117	234	AC06D
1"	127	78	129.5	43	117	117	234	AC06D
1 1/2"	165	102	172	43	117	117	234	AC06D
2"	178	110	180	43	117	117	234	AC06D
2 1/2"	203	130	200	52	143	143	286	AC08D
3"	203	150	220	52	143	143	286	AC08D
4"	229	175	245	62	172	172	344	AC10D
6"	394	255	359	72	222	222	444	AC14D
8"	457	330	434	124	398	425	823	AC16D
10"	533	410	537.5	124	429	429	958	AC20D
12"	610	432	600	124	429	429	858	AC20D
14"	686	440	610	161	509	509	1018	AC25D

Dimension

Figure 6. Series 9410 (Spring Return Cylinder)

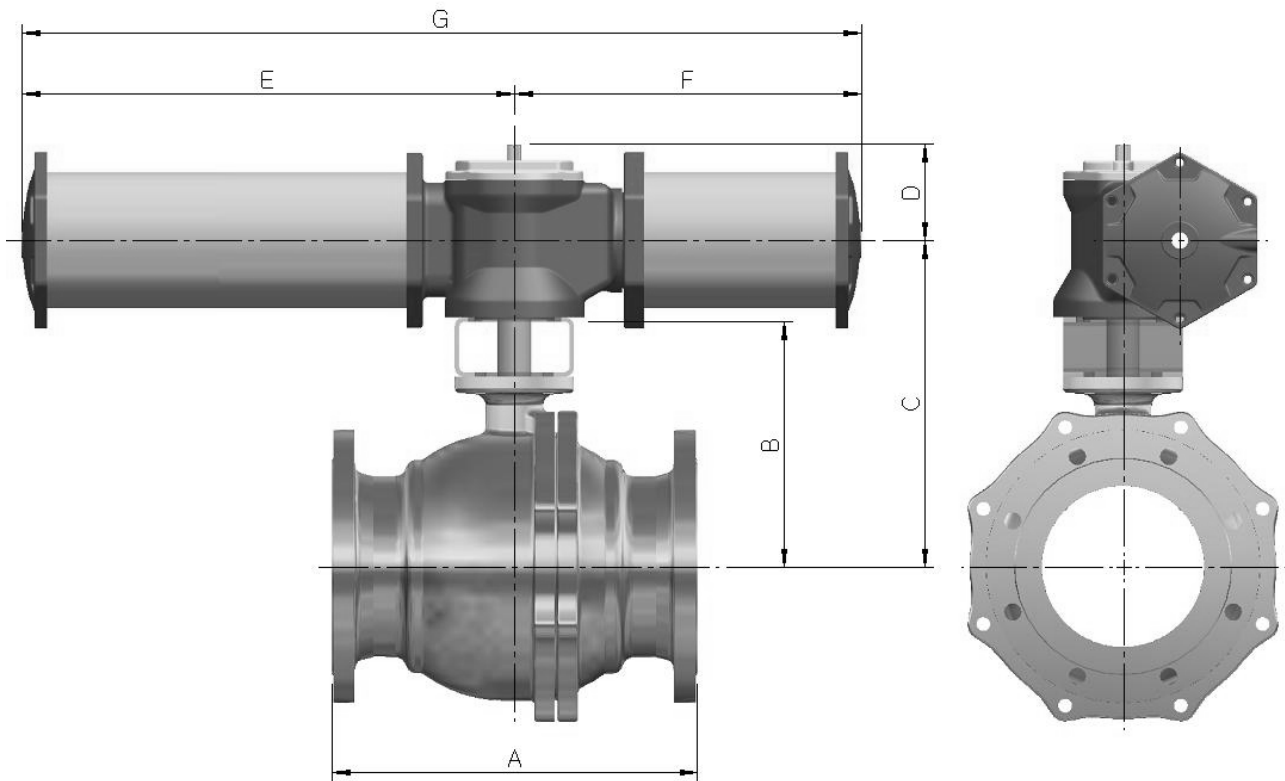


Table 2. Dimensions

(Unit: mm)

Size	A	B	C	D	E	F	G	Actuator
1/2"	108	64	115	43	160	160	320	AC06S
3/4"	117	64	115	43	160	160	320	AC06S
1"	127	78	129.5	43	160	160	320	AC06S
1 1/2"	165	102	172	54	209	209	418	AC08S
2"	178	110	180	54	209	209	418	AC08S
2 1/2"	190	130	200	62	253	253	506	AC10S
3"	203	150	220	62	253	253	506	AC10S
4"	229	175	245	82	325	325	650	AC12S
6"	394	255	359	124	425	425	1033	AC16S
8"	457	330	434	124	429	429	1049	AC25S
10"	533	410	537.5	124	509	509	1348	AC30S
12"	610	432	600	161	509	509	1348	AC30S

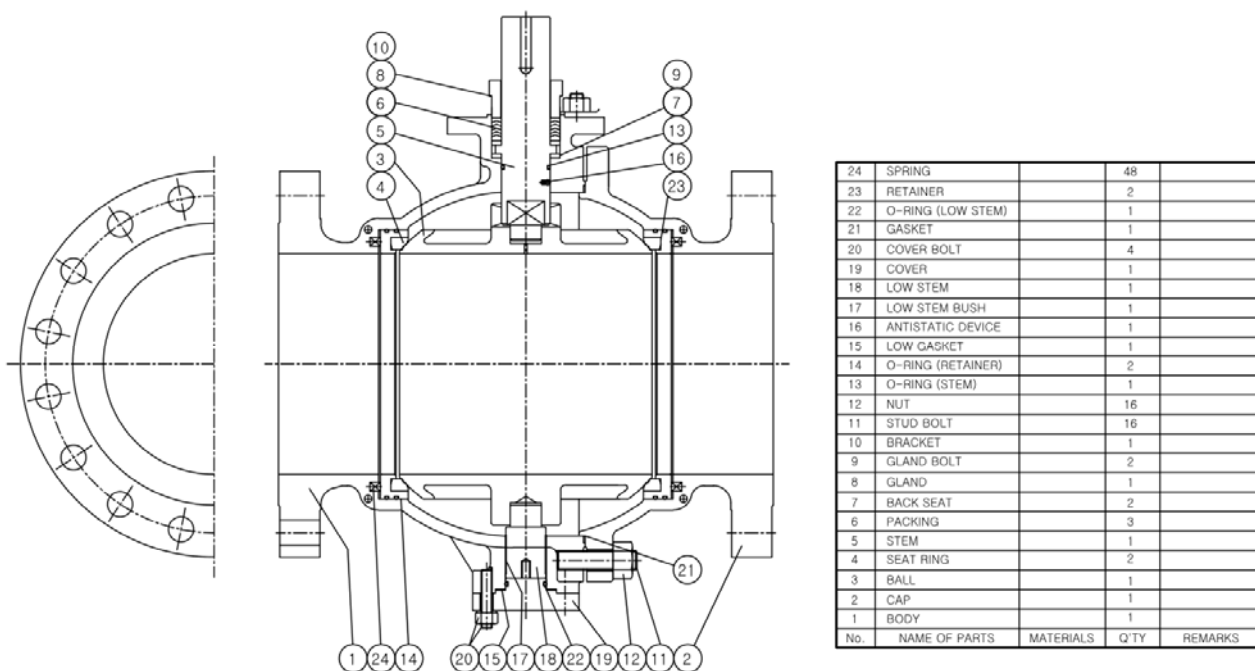


Figure 7. Body Assembly Diagram

Warranty / Remedy

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Contact your local sales office for warranty information. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace without charge those items it finds defective. The foregoing is Buyer's sole remedy and is **in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.**

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