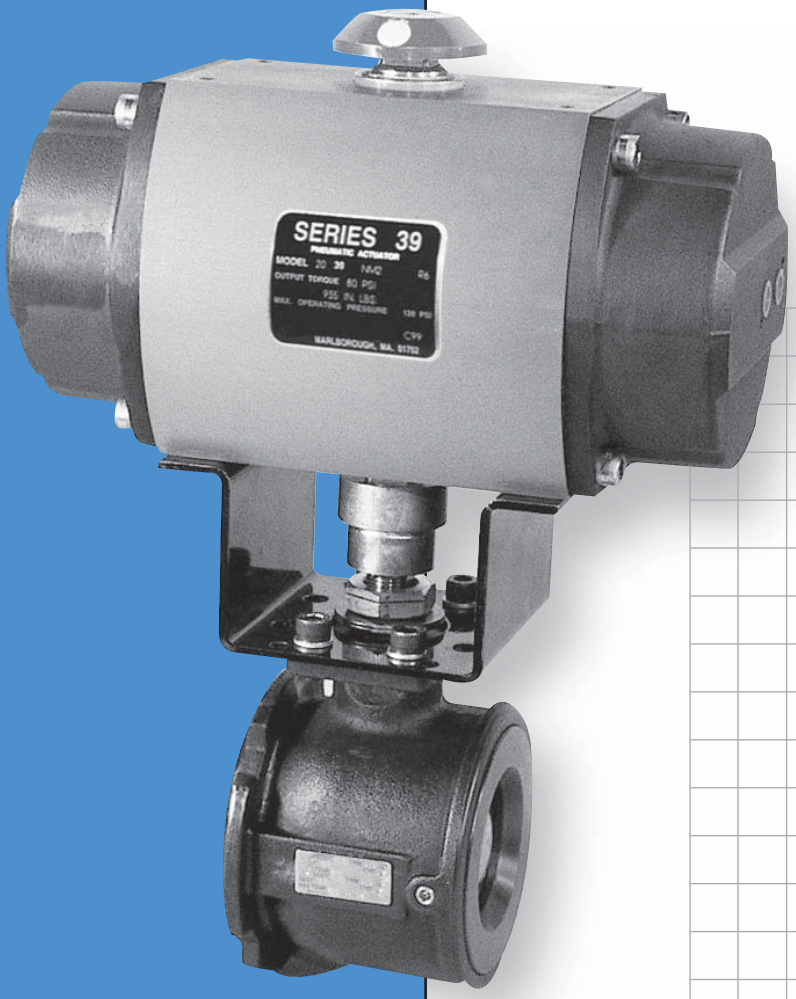
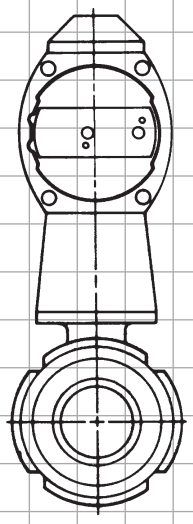
FLOWSERVE

Worcester Controls

FCD WCABR1041-01
(Part SB 502)



AN ISO 9001 REGISTERED COMPANY



3", 4" and 6" 151/301 Wafer Ball Valves

Compact, flangeless ball valves for installation between ANSI Class 150-pound and 300-pound flanges

Wafer Ball Valves

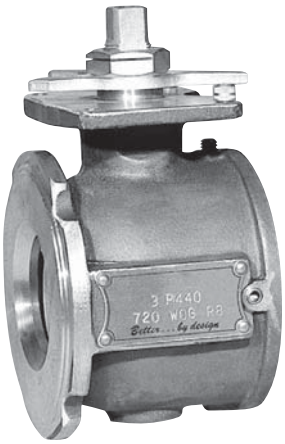
Compact, flangeless ball valves that keep process control costs low, the envelope small and installation simple

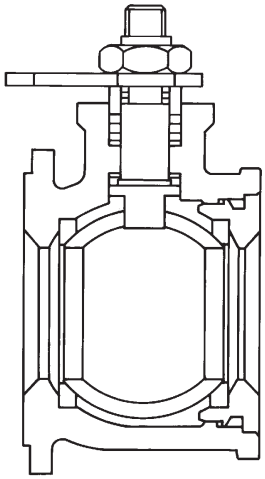
Flowserve Worcester Controls 151/301 wafer ball valves are designed for process systems where lightweight, compact envelope size and ease of installation and repair are important considerations. Available in sizes 3", 4" and 6", 151/301 wafer valves are rated at 720 cwp and mount between ANSI Class 150-pound and 300-pound flanges. Studs, suitable for the flange rating, are furnished with the valve.

Original and maintenance costs are low with 151/301 wafer valves, yet the valves offer all the advantages of the Series 51/52 flanged valves; downstream seat sealing, low operational torque, bottom-entry, blowout-proof stem and easily removable end plug. Properly sized stem seal rings in a deep stuffing box assure zero leakage, and the Worcester Controls seat design assures positive shutoff.

The weight of Worcester wafer valves is 40 percent to 60 percent less than conventional flanged ball valves and substantially less than comparable gate valves. Their configuration is very compact. The center to top dimension of a 4" 151 wafer ball valve, for example, is only 7.84" as opposed to over 27" for a standard gate valve. This is a valuable space savings for OEM installations, skid-mounted systems and piping systems in confined areas.

Worcester Controls 151/301 wafer valves are available in bronze, ductile iron, carbon steel and 316 stainless steel. A wide number of seat and body seal materials enable these valves to handle a variety of process applications with pressures to 720 psig and temperatures to 500°F.



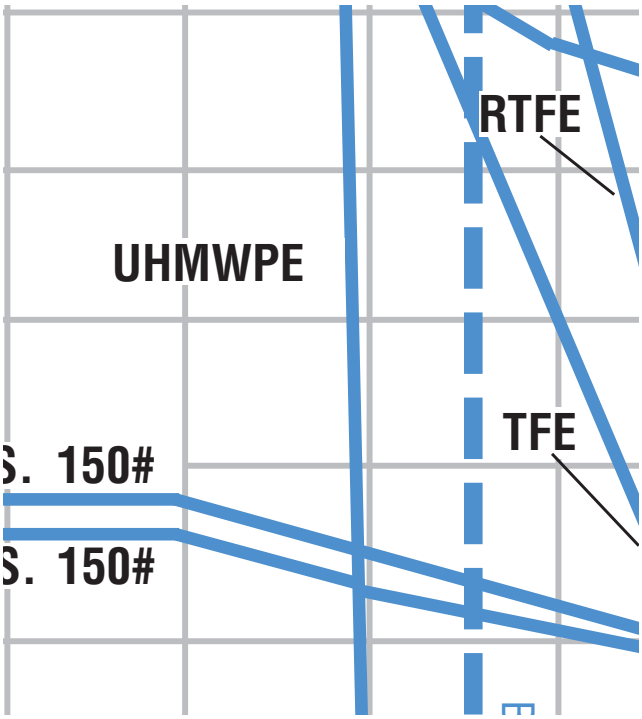


Easily automated for on/off or modulating control

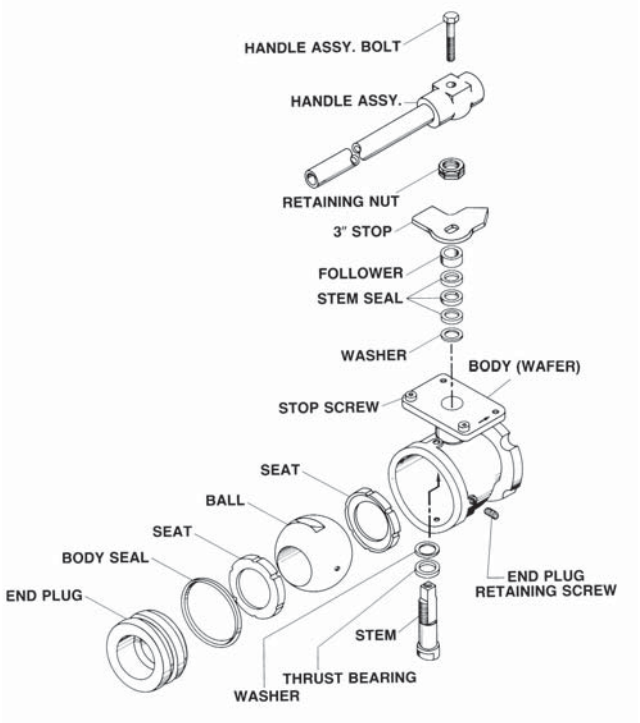
The lightweight compact design of the 151/301 valves combined with our Series 39 pneumatic or Series 75 electric actuators create a control package that is small, yet efficient. The package is symmetrically balanced to avoid stem side loading, and has a rugged linkage to operate well under high torque conditions. Our actuators are engineered to match the performance of the valve for optimum power and safety.

A wide range of options are available to complement your pneumatic or electric package, from computer compatible controls to limit switches to Cycle Length Control. For on/off or throttling applications, the actuated 151/301 valves are a dependable, precise unit. Because Flowserve supplies all the elements of your control package, we are your single source if you ever need a replacement part or service.

Pressure/Temperature Rating



Parts Identification



Specifications

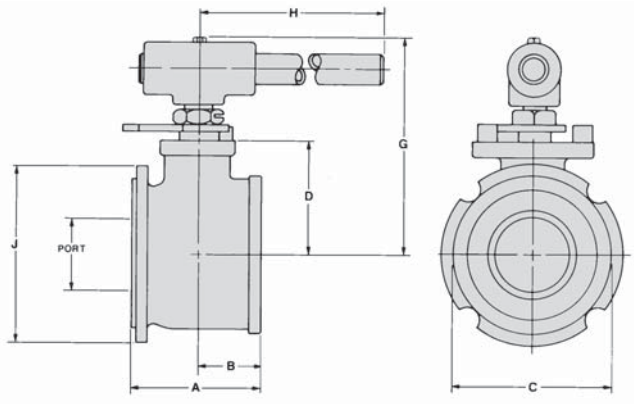
Sizes:	3", 4", 6"
Body Materials:	Carbon Steel (ASTM A216 WCB), 316 S.S. (ASTM A351 CF8M), Ductile Iron (ASTM A536 GR. 65-45-12), Bronze (ASTM B148-C95800)
Stem:	One-piece bottom-entry in Brass, 316 S.S., Monel®
Stem Seals:	15% Glass-Filled TFE, UHMWPE
Seats:	TFE, Reinforced TFE, Polyfill®, UHMWPE
Body Seals:	Graphite, TFE, Buna, Viton®, UHMWPE
Ball:	316 S.S., Monel
End Plug:	Carbon Steel, 316 S.S., Ductile Iron, Bronze
Stop Screw:	Carbon Steel, Zinc-Plated
Follower:	Stainless Steel (316L)
Handle Bolt:	Carbon Steel, Zinc-Plated
Handle:	3"–6" Cast Iron with pipe handle
Retaining Nut:	Carbon Steel, Zinc Plated, 316 S.S.
Thrust Bearing:	25% Glass-Filled TFE or UHMWPE
End Plug	
Retention Bolts:	Stainless Steel, Zinc-Plated
Stop Plate:	Carbon Steel, Zinc-Plated
Washer:	Stainless Steel, Carbon Steel, Brass
Operation:	Supplied with handle. Gear operators and electric or pneumatic actuators available.
Standards:	MSS SP-72, Ball Valves for general service. NACE MR-01-75. Pipeline valve standard for sour gas services.
Lubricant:	Standard Worcester valves are assembled with silicone based break-in lubricant. For other options, consult your distributor or Flowserve.

C_v Data

Valve Size	C_v	Equiv Length of Sched. 40 pipe feet
3"	350	7.1
4"	720	6.9
6"	1020	20.4

NOTE: For steam service, refer to Worcester's Steam Service Data Sheet for ratings. The data sheet is found in the Engineering Section of the general catalog binder.

Dimensions



Valve Size	A	B	C	D	G	H	J	Port Diameter	Approx Weight lb. (kg)
3"	4.50 (114.3)	2.25 (57.2)	5.31 (134.9)	3.88 (98.6)	7.22 (183.4)	22.00 (558.8)	5.88 (149.4)	2.50 (63.5)	21 (9.5)
4"	5.81 (147.6)	2.90 (73.7)	6.81 (173.0)	4.48 (113.8)	7.84 (199.1)	22.00 (558.8)	7.50 (190.5)	3.25 (82.6)	34 (15.4)
6"	7.38 (187.5)	3.68 (93.5)	8.69 (220.7)	6.19 (157.2)	11.21 (284.7)	26.00 (660.4)	9.88 (251.0)	4.38 (111.3)	64 (29.0)

How to Order

3"	4	Options	44	66	R	T	301	**
Size	**Style**	**Option**	**Body and End Plugs**	**Ball & Stem**	**Seals***	**Seals**	**Type**	**Variations**
3" **4"** **6"**	**4**	**Blank** - none **E** - No handle, valve built for automation **L** - U.L. approved (must specify service) **V** - Vacuum Service **X** - Oxygen Service	**1** - Bronze **2** - Ductile Iron **4** - Carbon Steel **6** - 316 S.S.	**1** - Brass stem, 316 S.S ball **6** - 316 S.S. stem & ball **7** - Monel	**T** - TFE **R** - Reinforced TFE **P** - Polyfill **U** - UHMWPE	**B** - Buna **T** - TFE **V** - Viton **Z** - Graph-look	**151** - for use between 150 ANSI flanges **301** - for use between 300 ANSI flanges	See below for V# listing

****Variations**

Blank - No Variations
V-3 - Upstream Relief Hole
V-5 - Hydrostatic Testing
V-6 - Source Inspection
V-14 - Handleless Valves
V-17 - Grounding Thrust Bearing
V-36 - Certificate of Compliance
V-37 - Certificate of Comp. & Hydro Test
V-41 - Chrome-Plated Brass Ball
V-46 - Silicone-Free Lubricant
V-51 - High-Cycle Stem Build
V-66 - Certificate of Compliance for European Valve Orders
V-72 - Certificate of Compliance for European Pressure Equipment Directive

Ordering Example: A 3" Wafer with carbon steel body and end plug, 316 stainless steel ball and stem, reinforced TFE seats, TFE seal for use between 300 ANSI flanges.

*Use only one letter if body seal is same as seat.

Polyfill® is a registered trademark of Flowserve. Viton® is a registered trademark of E.I. DuPont de Nemours & Company. Monel® is a registered trademark of Inc. Alloys International.

Flowserve Corporation has established industry leadership in the design and manufacture of its products. When properly selected, this Flowserve product is designed to perform its intended function safely during its useful life. However, the purchaser or user of Flowserve products should be aware that Flowserve products might be used in numerous applications under a wide variety of industrial service conditions. Although Flowserve can (and often does) provide general guidelines, it cannot provide specific data and warnings for all possible applications. The purchaser/user must therefore assume the ultimate responsibility for the proper sizing and selection, installation, operation, and maintenance of Flowserve products. The purchaser/user should read and understand the Installation Operation Maintenance (IOM) instructions included with the product, and train its employees and contractors in the safe use of Flowserve products in connection with the specific application.

While the information and specifications contained in this literature are believed to be accurate, they are supplied for informative purposes only and should not be considered certified or as a guarantee of satisfactory results by reliance thereon. Nothing contained herein is to be construed as a warranty or guarantee, express or implied, regarding any matter with respect to this product. Because Flowserve is continually improving and upgrading its product design, the specifications, dimensions and information contained herein are subject to change without notice. Should any question arise concerning these provisions, the purchaser/user should contact Flowserve Corporation at any one of its worldwide operations or offices.

For more information about Flowserve Corporation, visit www.flowserve.com or call USA 1-800-225-6989.

FLOWSERVE CORPORATION
FLOW CONTROL DIVISION
1978 Foreman Drive
Cookeville, TN 38501
Phone: 931-432-4021
Fax: 931-432-5518

FCD WCABR1041-01 (Part SB 502) Printed in USA.