RHINO VALVES WORLDWIDE

Series 151

Lacking flanges, for use in applications where the space is critical.
This valve can be mounted among Flanges ANSI 150 #.
Compact valve, is a variant of the SERIES 150
for what is similar of versatile.

LICENSE No. 6D-0321

ISO 9001 REGISTERED
MGMT. SYS.
RvA C 024
DNV Certification B.V., The Netherlands

RHINO VALVES WORLDWIDE

SERIES 151

The Rhino Series valves are the best solution for applications needing a light weight, compact valve designed for installation between standard ANSI Class 150 flanges. Offered in 3", 4" and 6" sizes, these wafer style valves are rated at 285 cwp and feature the same quality features found an all Rhino valves, like our 150/300 Series flanged valves, the 151 series feature tight downstream sealing, live loaded bottom entry blow out proof stem, a variety of advance seat materials and a one piece body. These valves also weigh substantially less than regular flanged, gate or globe valves and are much more compact for use in areas limited in space. All these features mean the Series 151 will operate with less friction, lower operating torque and minimal seat wear white providing an economical and compact valve designed for years of trouble free service.

SPECIFICATIONS

Valve Size:
3", 4", 6".
(80,100,150)

Body Material:
Carbon Steel: ASTM A216 gr WCB
Stainless Steel: ASTM A351 gr CFBM

Ball and Stem material:
Carbon Steel: AISI I2L14 or SAE11 12 hard chrome plated ball Stainless Steel: ASTM A276 gr 316

Stem seals:
R-PTFE, UHMWPE.

Seats:
PTFE, R-PTFE (Reinforces 15% Fiber glass), UHMWPE. Multifil.
NOTE: Some other materials for seats and are available.

Body seals:
Buna, Viton, PTFE y Graphoil.
NOTE: Some other materials for seats and seals are available.

Operation:
Handle (1/2" to 8") or with pneumatic or electric actuators.

Design Specification:
ANSI 16.34 - Wall thickness.
MSS SP72 - Ball valves with flanged or butt-welding ends for general service.
NACE-MRO 1-75 - Material resistance.

SEATS

The design of Worcester/Rhino Valves allows flow pressure in both directions which is transferred to the floating ball. Then, this is pressed against the downstream seat, resulting in a bubble tight sealing. The resilient seats patented by Worcester allow relief the pressure to the upstream seat against the ball, resulting a low torque of operation and a long, soft operation even with high differential pressures. This low torque characteristic, permits a smaller actuator operation, resulting in lower cost. The seats also acts as a ball whipper, as it removes any adhered material to ball for a better sealing.

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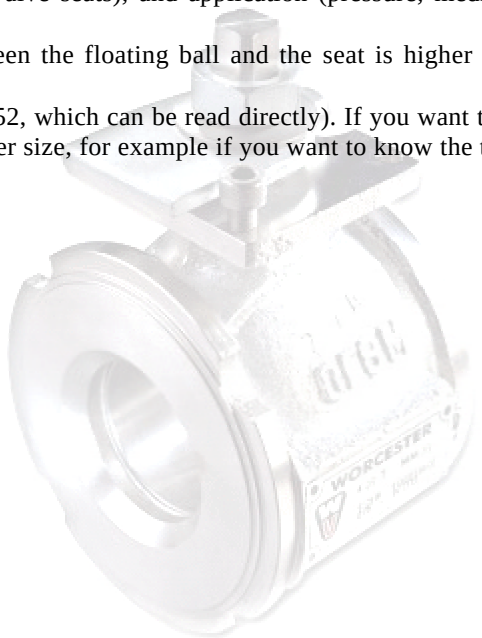
STEM

The stem is designed for both safety and a long, leak-tight service life. Inserted from the bottom through the cavity, it rests securely against an interior body shoulder.
The stem is held in place by a live loaded retaining system, featuring opposing belleville washers. These flex in response to thermal expansions and contractions and maintain effective sealing pressure as they compensate for normal stem seal wear. The seal can also be easily adjusted in-line by the accessible stem nut. In series 400 and 600, a stem nut retaining clip holds the nut in place and prevents backing off, particularly in high cycle actuated services. In series 152 a CHEVRON° type external stem seal is provided.

TORQUE

The operating torque of the ball valve is influenced by a number of factors which has to be considered to size a valve for actuation. These factors are divided in Design (type and material of valve seats), and application (pressure, media and frequency of operation).
The torque shown is in function of the pressure, as the friction between the floating ball and the seat is higher as the pressure is incremented.
Note: Our charts were made for reduced port valves (except for Series 152, which can be read directly). If you want to find the torque of a full port valve, please look for the curve of the next higher size, for example if you want to know the torque of a 1" fill port valve, you have to see the 1 1/4" valve readout.



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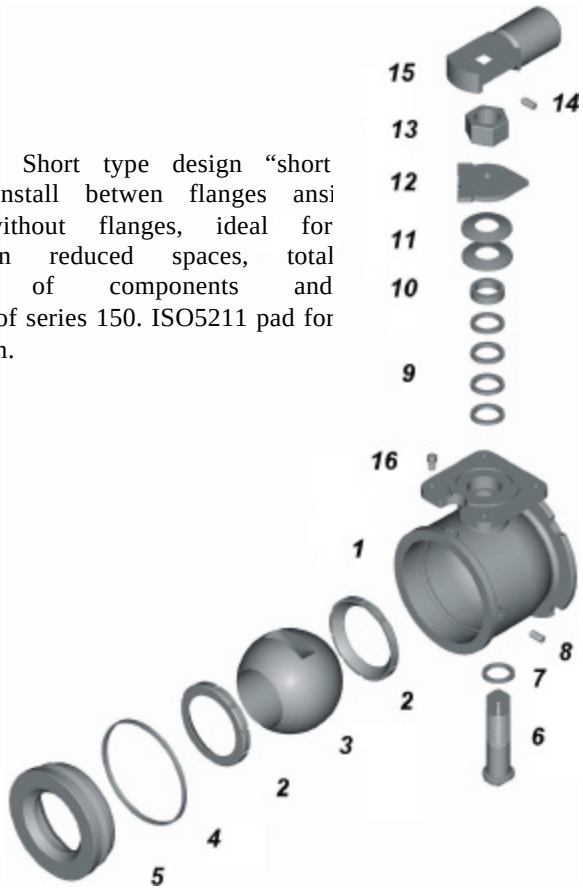
SERIES 151

SERIES 151. Short type design “short pattern” to install betwen flanges ansi 150#.Body without flanges, ideal for installation in reduced spaces, total compatibility of components and characteristics of series 150. ISO5211 pad for easy automation.



SERIES 151

FLOW RATE		
SIZE VALVE	Cv (USGPM)	EQUIVALENT LONGITUDE OF THE TUBE IDENTIFICATION 40 IN FEET
3"	350	7.1
4"	720	6.9
6"	1020	20.4

PARTS LISTING OF SERIES 151

			MATERIAL	
ITEM	QUANTITY	DESCRIPTION	CARBON STEEL	STAINLESS STEEL
1	1	BODY	ASTM A 216 WCB	ASTM A 351 CF 8M
2	2	SEAT	PTFE	PTFE
3	1	BALL	ASTM A 351 CF 8M	ASTM A 351 CF 8M
4	1	SEAL	PTFE	PTFE
5	1	END PLUG	ASTM A 216 WCB	ASTM A 351 CF 8M
6	1	STEM	AISI 1018/-12L14	AISI 316
7	2	STEM SEAL	R-PTFE 25%	R-PTFE 25%
8	1	SET SCREW	AISI 1045	AISI 304
9	3	STEM SEAL	R-PTFE 15%	R-PTFE 15%
10	1	FOLLOWER	AISI 416	AISI 416
11	2	BELLEVILLE WASHER	AISI 1075	AISI 302
12	1	STOP PLATE	SAE 1018-1020	SAE 1018 - 1020
13	1	RETAINING NUT	ASTM A 194 2HM	ASTM F594 TYPE A304
14	1	SET SCREW	AISI 1045	AISI 304
15	1	HANDLE	ASTM A 216 WCB	ASTM A 351 CF 8M
16	2	STOP SCREW	AISI 1045	AISI 304

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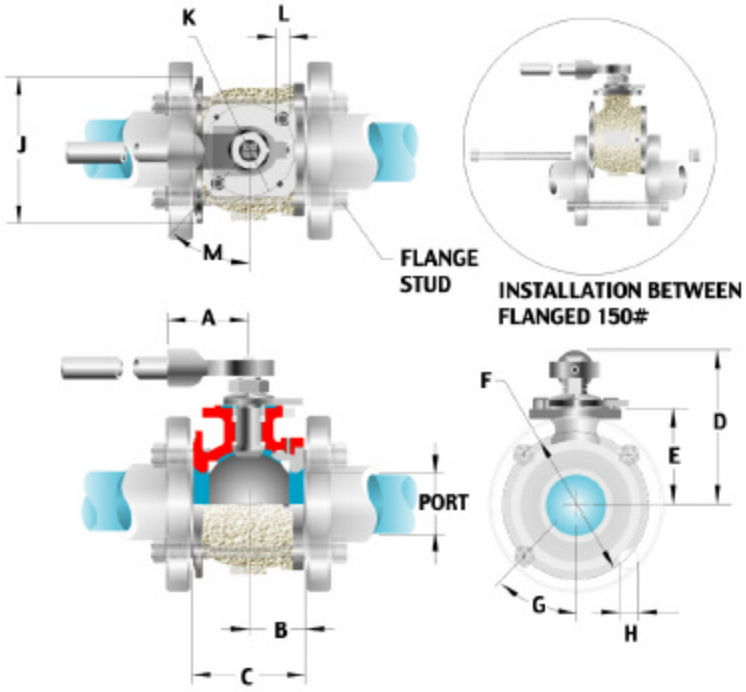
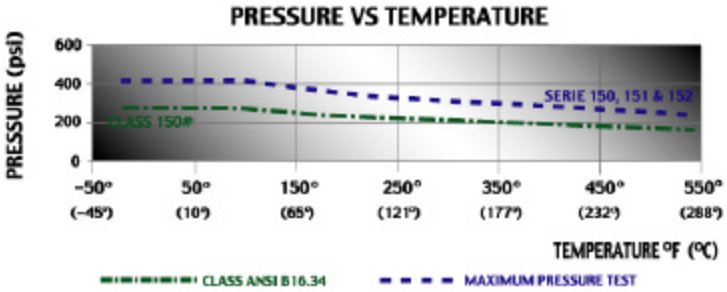
SERIES 151





The pipe is exclusively representative. They are only as reference and they are subject to changes without previous notice.

Dimension in inches.

SERIE 151 3", 4", 6"

SIZE	A	B	C	D	E	PORT
3"	3 1/4	2.26	4.50	5.82	3.88	2.500
4"	3 1/4	2.91	5.81	6.42	4.48	3.250
6"	4 11/32	3.69	7.38	9.00	6.19	4.375

SIZE	Flanged ANSI B 16.5 class 300						PLATE ISO 5211				
	F	G	H	J	Number of Holes	Bolt Flange		K	L	M	Weight in Lbs.
3"	5.88	45º	3/4	6.12	4	5/8	F10	4.02	M10	45º	22.487
4"	7.50	22.5º	3/4	7.62	8	5/8	F10	4.02	M10	45º	37.479
6"	9.88	22.5º	7/8	9.62	8	3/4	F12	4.92	M12	45º	63.493

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APPLICABLE INTERNATIONAL STANDARDS

APPLICABLE INTERNATIONAL STANDARDS				
Norm	**Description**	**Applicable in**	**Size**	**Content**
NACE MR-01-75	Valves that require special resistance to fractures and hydrosulfuric attack	All the models except Brass	1/4" - 8"	For sour environment, stainless ferrous and not ferrous metals
ANSI/FCI 70-2	for seat leaks of control valves. Class VI	All the models	1/4" - 8"	(pneumatic) trapped air test
MSS-SP-26	System of Marking Standard	All the models except series 42, 43, 1000	1/4" - 8"	Size-thread-temperature. Pressure-material-Nom. Casting Heat. No.
MSS-SP-55	Visual inspection Method acceptance of cast steel valves	All the models except Brass	1/2" - 8"	12 types of frequent surface irregularities identifiable by comparative visual inspection
API 6D	Specification for piping and valves	All the models	2" - 8"	Quality system according to American Petroleum Institute
API 607	"Fire Safe" testing	All the models except series 42, 43 and 1000	1/4" - 8"	Available certificate in some valves
API 598	Inspection and test of valves	All the models	1/4" - 2"	Hydrostatic and pneumatic inspection
ANSI B 16.5	Flanges for steel pipe lines	All the flanged models	1/2" - 8"	Dimension-material-range. Pressure temperature-facing. Different types of flanges
ANSI B 16.10	End to end dimensions of valves with flanges and/or to weld ends	All the flanged models and weld end models	1/2" - 8"	Face to face Dimensions
ANSI B 16.11	End Dimensions: S.W. (Socket Weld) S.E. (Threaded)	All the models except flanged	1/4" - 6"	Face to face Dimensions
ANSI B 16.34	Steel valves	All the models	1/4" - 14"	Wall Thickness designs. Material-specifications. Range-Pressure-Temperature. Hydrostatic Test
ANSI B 16.25	Buttweld ends	All the models except flanged	1/2" - 6"	Angle of machine beveling and O.D. And I.D.

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HOW TO ORDER

HOW TO ORDER TO RHINO VALVES

1 1/2"	D	4	4	6	T	T	SW
Valve Size	Type	Series	Material: Body, pipe ends	Material: Ball Steam	Material: Seat	Material: Body Seals	Ends
1/4" 3/8" 1/2" 3/4" 1" 1 1/4" 1 1/2" 2" 3" 4" 6" 8"	- Normal FS - Fire Safe D - Diverter T - 3 Ways C - Cryogenic PT - Full Port	4 - 400 (44) 6 - 600 H6 - H600 42 - Mite 43 - Mass 60 - 6000 45 150 151 152 300 302 10 - 1000 20 - 2000	1 - Brass 4 - Carbon Steel 6 - Stainless Steel 6L - Stainless Steel CF-3M	1 - Brass 4 - Carbon Steel 6 - Stainless Steel	B - Buna T - Ptfe R - Tfe Y - Lubetal (Delrin) MT - Multifil U - Uhmwpe D - Devlon Note : Use only one letter if body seal is to be same material as seat	B - Buna T - Ptfe R - Tfe Y - Lubetal (Delrin) MT - Multifil U - Uhmwpe D - Devlon G - Graphoil V - Viton	SE - Screw End SW - Socket Weld BW - Butt Weld 150# - Ansi 150 300# - Ansi 300

NOT ALL THE COMBINATIONS ARE AVAILABLE. SEE THE FOLLOWING TABLE AND CONSULT TO THE COMPANY OR AUTHORIZED DISTRIBUTOR FOR AVAILABILITY.
THERE ARE SOME OTHER MATERIALS, OPTIONS AND ENDS AVAILABLE

COMMON COMBINATION FOR SEALS AND SEATS MATERIALS

SERIES	SEATS	BODY SEALS	STEAM SEAL
ALL	BUNA	BUNA	RTFE
ALL	PTFE	PTFE	RTFE
ALL	RTFE	PFTE	RTFE
ALL	LUBETAL	VITON	RTFE
ALL	MULTIFIL	MULTIFIL	MULTIFIL
ALL	UHMWPE	VITON	RTFE
FS ONLY	PTFE	GRAPHOIL	GRAPHOIL
H600 ONLY	DELRIN	VITON	DELRIN/MULTIFIL
6000 ONLY	DELRIN/VITON	VITON	DELRIN/MULTIFIL

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