

SPXFLOW

Provided by:

Holland[®]
APPLIED TECHNOLOGIES

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Phone: 800-800-8464

W60/W80/W90 Series

SHUT OFF AND DIVERT VALVES



Waukesha Cherry-Burrell[®]

Engineering excellence, allied to stringent quality control, ensures that SPX FLOW's unrivalled range of WCB products complies with the highest international standards for hygiene.

In the light of growing pressure worldwide to deliver safe, high quality food, all SPX FLOW products are designed for easy cleanability, while minimizing the use of valuable resources, such as energy.

The WCB product portfolio includes a wide range of pumps, valves, heat exchangers, mixers and homogenizers designed for use in the food, dairy and brewing industries, as well as in chemical, healthcare, pharmaceutical processing and heavy industries.

SPX FLOW, Inc. (NYSE:FLOW) is a leading manufacturer of innovative flow technologies, many of which help define the industry standard in the market segments they serve. From its headquarters in Charlotte, North Carolina, it operates a sales and support network, centers of manufacturing excellence, and advanced engineering facilities, throughout the world. Its cutting-edge flow components and process equipment portfolio includes a wide range of pumps, valves, heat exchangers, mixers, homogenizers, separators, filters, UHT, and drying technology that meet many application needs. Its expert engineering capability also makes it a premium supplier of customized solutions and complete, turn-key packages to meet the most exacting of installation demands.

Incorporating many leading brands, SPX FLOW has a long history of serving the food and beverage, power and energy, and industrial market sectors. Its designs and engineered solutions help customers drive efficiency and productivity, increase quality and reliability, and meet the latest regulatory demands. In-depth understanding of applications and processes, state-of-the-art Innovation Centers, and advanced pilot/testing technology further assist in optimizing processes and reducing timescales to reliably meet production targets.

To learn more about SPX FLOW capabilities, its latest technology innovations and complete service offerings, please visit www.spxflow.com.

W60/W80/W90 Series Shut Off & Divert Valves

APPLICATION

When stopping or diverting flow in a process system, the W60 single seat valve line provides both a flexible and reliable solution. These valves are pneumatically or manually operated, and offered in a wide variety of body configurations.

Available in 1" to 6" (25mm – 152mm) OD sizes.

Adapters: Refer to page 27 for descriptions of W80/W90 options.

MATERIALS

Product Wetted: ASTM 316L (UNS-S31603); (DIN-1.4404)

Non-Product: ASTM 304 (UNS-S30400); (DIN-1.4301)

Seat Material: Tef Flow™ (Std) See Page 3 for other available seat options.

Elastomers: FKM (Std)
EPDM (Opt)
FFKM (Opt)

Finish: $\leq 32Ra$ ($\leq 0.8 \mu m$) Other finishes available upon request

PRESSURE RATINGS

STANDARD ADAPTER					
SIZE	MAXIMUM PRESSURE AT 70°F/21°C	MAXIMUM PRESSURE AT 160°F/71°C	MAXIMUM PRESSURE AT 180°F/82°C	MAXIMUM PRESSURE AT 250°F/121°C	
1.0" 25mm	500 34	375 26	375 26	250 17	PSI Bar
1.5" 38mm	500 34	375 26	375 26	250 17	PSI Bar
2.0" 50mm	450 31	350 24	350 24	250 17	PSI Bar
2.5" 63mm	400 28	300 21	300 21	200 14	PSI Bar
3.0" 76mm	350 24	250 17	250 17	150 10	PSI Bar
4.0" 101mm	200 14	150 10	150 10	125 9	PSI Bar
6.0" 152mm	150 10	100 7	100 7	75 5	PSI Bar

Note:

*6" valves available in W61 Shutoff and W65 Divert only.





Typical Product Applications

PRESSURE RATINGS

HIGH PRESSURE ADAPTER AND CLAMPS					
SIZE	MAXIMUM PRESSURE AT 70°F/21°C	MAXIMUM PRESSURE AT 160°F/71°C	MAXIMUM PRESSURE AT 180°F/82°C	MAXIMUM PRESSURE AT 250°F/121°C	
1.0"	1220	1160	1160	1100	PSI
25mm	84	80	80	76	Bar
1.5"	1220	1160	1160	1100	PSI
38mm	84	80	80	76	Bar
2.0"	900	855	855	830	PSI
50mm	62	59	59	57	Bar
2.5"	720	690	690	660	PSI
63mm	50	48	48	46	Bar

Note:
 3, 4 or 6 inch high pressure clamp not available.
 W90 not available in high-pressure arrangements.
 For other valve types contact factory. For all valve options see Valve Key Datasheet (DS-1204).

OPTIONS AND ACCESSORIES

SEAT TYPE	MAXIMUM TEMPERATURE °F / °C *	APPLICATION	SERIES
 TEF-FLOW™ (TF)	180/82	Standard seat of choice. General Purpose, >90% of applications	W60
 TEF-FLOW™ "p" (TFP)	280/137	High Temp High Pressure Pressure Relief	W60 W80 W90
 Tri Ring (TR) EPDM, FKM	Oper. 280/137 EPDM Steril. 275/135 EPDM Oper. 350/176 FKM Steril. Consult Factory FKM	High Pressure Large Particulate	W60 W80 W90
 Metal (M)	375/190	High Pressure High Flow Large Particulate	W60 W80

Note:
 For higher temperature applications than those listed, please consult the factory.
 *Operating conditions such as flow rate and pressure must be considered when operating near max temperature rating.

Beverage

- Beer
- Cider
- Fruit Drinks
- Liquid Sugar and Glucose
- Soft Drinks
- Wine
- Wort



Food

- Animal Oils
- Flavorings
- Pet Food
- Soups and Sauces
- Vegetable Juices
- Vegetable Oils
- Vinegars



Dairy

- Cream
- Milk
- Milk Concentrate
- Raw Milk
- Skimmed Milk
- Whey
- Whey Concentrate



Pharmaceutical and Toiletries

- Emulsions
- Extracts
- Lotions
- Perfumes
- WFI (Water for Injection)
- High Purity Water
- Pure Water



Chemical

- Additives
- Adhesives
- Coatings
- Contaminated Liquids
- Detergents
- Emulsions
- Paint



Control Tops

WAUKESHA CHERRY-BURRELL CONTROL TOP



FEATURES AND BENEFITS

- Transparent Control Top keeps all electrical components visible.
- Maintainable, designed with the user in mind, making assembly and troubleshooting worry free and easy.
- Waukesha Cherry-Burrell uses the industry's most widely recognized electrical components, so access to off the shelf replacement parts is easy, ensuring quick delivery and less down time.
- NEMA 4x (IP64)
- Stainless Steel Control Top Option



CONNECTOR OPTIONS

- S/O Cord Grip for hard wire (std)
- Quick Disconnect Pin Connectors

INTERFACE OPTIONS

- AS-i Field Bus Card
- Device Net Field Bus Network Card

POSITION INDICATION

- Set & Forget Switch
- Inductive Proximity Switches 20-140V AC/DC, 2-Wire (Std)
- Microswitches 24VDC, 110VAC
- Intrinsically safe options 5-24VDC



SOLENOID VALVES

- 24VDC or 110VAC
- Select from 0 to 3 Solenoids

CU4 CONTROL TOP



FEATURES AND BENEFITS

- Reliability and long service life - robust clamp connection, reinforced Stainless Steel air coupling threads to avoid air leakages, and water tight seals
- Cost-effective - simple design and limited options for basic control top functionality
- Ease of operation - contains manual override solenoids and adjustment screw to throttle air flow to actuator to ensure optimal opening and closing
- Clarity - clear and bright indication of valve position - 5 diodes in LED panel and convenient location
- Standardization - same control top used on various APV valve lines, offers common look and controls interface
- NEMA 6 (I67)



CONNECTOR OPTIONS

- S/O Cord Grip for hard wire (std)
- Quick Disconnect Pin Connectors

INTERFACE OPTIONS

- AS-i Field® Bus Card

POSITION INDICATION

- 2 internal feedback sensor switches for valve open/ valve closed position detection

SOLENOID VALVES

- 24V DC or 110V AC
- Select 1 solenoid or solenoid with NOT element (air/air or air assist)

8681 CONTROL TOP



FEATURES AND BENEFITS

- Contact free position sensor including (3) programmable feedback signals
- Positions easily taught via intuitive push buttons or Autotune feature to ensure quick & easy set-up
- Ultra-bright 360° visual LED position indication with adjustable red, yellow, & green color assignments provide clarity from all points of view and avoid confusion
- Manual override and air throttle adjustable solenoids to assist start-up, maintenance, and troubleshooting
- Up to IP69K washdown rating available (IP65/67 as standard) for high washdown environments
- Built-in microcontroller tracks cycles and alerts operator when preventive maintenance is required
- Simple and robust stainless steel adapter & chemically resistant polycarbonate head
- Similar price as WCB control tops
- Supplied by industry leading Burkert Fluid Controls

CONNECTOR OPTIONS

- S/O Cord Grip for hard wire (STD)
- Quick Disconnect Pin Connectors

INTERFACE OPTIONS

- AS-i Field® Bus Card
- DeviceNet® Field Bus Network Card

POSITION INDICATION

- (3) programmable position sensors in control top

SOLENOID VALVES

- 24V DC or 110V AC
- Manual override and air throttle adjustment
- Up to (3) available in control top

Actuator Options

STROKE LENGTH

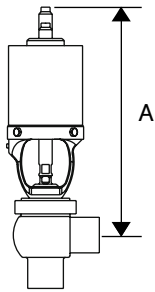
VALVE SIZE	W61/W63 W81/W83 STANDARD STROKE	W62/W65 W82/W85 STANDARD STROKE	W61/W63 W81/W83 LONG STROKE	W62/W65 W82/W85 LONG STROKE	W61 Y-BODY EXTRA LONG STROKE	W90 STANDARD STROKE
1.0" 25mm	0.625 16	0.625 16	--	--	--	0.600 15
1.5" 38mm	0.813 21	0.688 17	--	--	--	0.600 15
2.0" 50mm	0.813 21	0.688 17	--	--	--	0.600 15
2.5" 63mm	0.813 21	0.688 17	1.870 47	1.690 43	4.200 107	0.600 15
3.0" 76mm	0.813 21	0.688 17	2.310 59	2.090 53	4.200 107	0.600 15
4.0" 101mm	0.813 21	0.688 17	3.220 82	2.940 75	5.200 132	0.600 15
6.0" 152mm	--	--	3.220 82	3.020 77	--	--

Air Volume Required

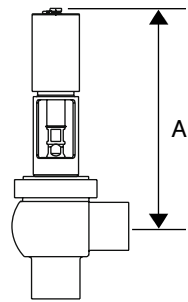
- 4" AR = 12.7 in³/81 cm³
- 4" AL = 14 in³/90 cm³
- 5" AR = 21.5 in³/138 cm³
- 5" AL = 27.1 in³/174 cm³
- 6" AR = 36.1 in³/223 cm³
- 6" AL = 33.1 in³/213 cm³

Note: Normal air supply requirement: 50 PSI for 4, 5, and 6 inch, A, B and C size actuators and long stroke actuators; 75 PSI for 4, 5, and 6 inch heavy duty spring actuators. These estimates may vary depending on other factors such as air pressure, pipe line pressure and air routing through solenoid. Standard stroke length is the same for maintainable and maintenance-free actuators.

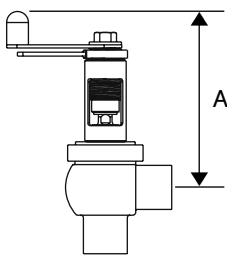
"A" - DIMENSIONS



4AR-4" Air to Raise Maintainable



M - Micrometer



H - Hand Lock
HLG - Hand Lock, long stroke
6YLG - Hand Lock

VALVE SIZE	4 AR 4 AL 4 AA	5 AR 5 AL 5 AA	6 AR 6 AL 6 AA	4* RHAR	5* RHAR	6* RHAR	4* RHAL	5* RHAL	6* RHAL	6 ARLG ALLG
1.0" 25mm	12.58 320	13.89 353	15.65 398	-- --	-- --	-- --	-- --	-- --	-- --	-- --
1.5" 38mm	12.58 320	13.89 353	15.65 398	15.89 404	17.27 439	19.14 486	-- --	-- --	-- --	-- --
2.0" 50mm	12.83 326	14.14 359	15.90 404	16.14 410	17.62 448	19.38 492	16.42 417	17.74 451	18.72 475	-- --
2.5" 63mm	13.08 332	14.39 366	16.15 410	16.39 416	17.77 451	19.64 499	16.67 423	17.99 457	18.97 482	25.30 643
3.0" 76mm	13.33 339	14.64 372	16.40 417	16.64 423	18.02 458	19.89 505	16.92 430	18.24 463	19.22 488	25.50 648
4.0" 101mm	13.81 351	15.12 384	16.88 429	17.13 435	18.50 470	20.37 517	17.41 442	18.73 476	19.70 500	26.00 660
6.0" 152mm	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	27.20 691

VALVE SIZE	HLG	H	M	4AL3	4AR3	4 ALLG ARLG	6 AALG	6 ARY ALY	A1 A2 A3 **	B1 B2 B3 **	C1 C2 C3 **
1.0" 25mm	-- --	8.65 220	8.80 224	14.66 372	16.07 408	-- --	-- --	-- --	14.51 369	15.73 399	17.50 444
1.5" 38mm	-- --	8.65 220	8.80 224	14.68 373	16.07 408	-- --	-- --	-- --	14.51 369	15.73 399	17.50 444
2.0" 50mm	-- --	8.90 226	9.10 231	14.93 379	16.32 415	-- --	-- --	-- --	14.76 375	15.98 406	17.75 451
2.5" 63mm	11.60 295	9.15 232	9.30 236	15.10 384	16.57 421	23.10 587	19.70 500	36.90 937	15.01 381	16.23 412	18.00 457
3.0" 76mm	11.80 300	9.40 239	9.60 244	15.30 389	16.82 427	23.40 594	20.40 518	36.80 935	15.26 388	16.48 418	18.25 463
4.0" 101mm	12.30 312	9.88 251	10.00 254	15.80 401	17.30 439	23.90 607	21.80 554	38.10 968	15.75 400	16.96 431	18.73 476
6.0" 152mm	12.40 315	-- --	-- --	-- --	-- --	-- --	22.80 579	-- --	-- --	-- --	-- --

All "A" Dimension are in fully extended (open) position.

*For sizing Over-Pressure valves, select a Heavy-Duty spring actuator with a holding pressure greater than the desired relief pressure. Designate with the "R" the valve model (i.e. WR61) and actuator size (i.e. 5RHAR). Refer to DS-1224 for more details on Over-Pressure Valves.

**A, B, and C maintenance free actuators are only available on W60 and W80 series valves. These have only standard spring and stroke options. The actuator spring action is easily reversible in the field.

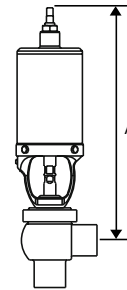
CONTROL TOP DIMENSIONAL ADDER

CONTROL TOP	ACTUATOR		
	MAINTAINABLE		MAINTENANCE-FREE
	4" & 5"	6"	
WCB	4.12"	4.45"	3.75"
WCB-LONG STROKE	6.02"		N/A
CU4	3.60"		3.75"
8681	7.70"		7.20"

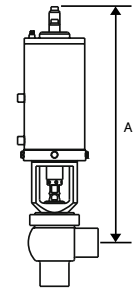
Note: Add control top dimension above to "A" dimension of selected valve and actuator size

Actuators

- 4AR - 4" (101mm) Air to Raise
- 4HAR - 4" (101mm) Air to Raise, Heavy Duty Spring
- 4RHAR* - 4" (101mm) Air to Raise, Spring Adjustable, Heavy Duty Spring
- 4ARLG - 4" (101mm) Air to Raise, Long Stroke
- 4AL - 4" (101mm) Air to Lower
- 4HAL - 4" (101mm) Air to Lower, Heavy Duty Spring
- 4RHAL* - 4" (101mm) Air to Lower, Spring Adjustable, Heavy Duty Spring
- 4ALLG - 4" (101mm) Air to Lower, Long Stroke
- 4AA - 4" (101mm) Air to Air
- 4AALG - 4" (101mm) Air to Air, Long Stroke



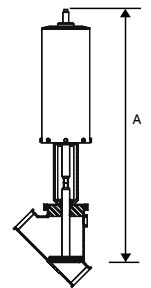
4AL3 - 4" Air to Lower, 3 position



4AR3 - 4" Air to Raise, 3 position

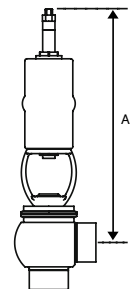
- 5AR - 5" (127mm) Air to Raise
- 5HAR - 5" (127mm) Air to Raise, Heavy Duty Spring
- 5RHAR* - 5" (127mm) Air to Raise, Spring Adjustable, Heavy Duty Spring
- 5AL - 5" (127mm) Air to Lower
- 5HAL - 5" (127mm) Air to Lower, Heavy Duty Spring
- 5RHAL* - 5" (127mm) Air to Lower, Spring Adjustable, Heavy Duty Spring
- 5ALD - 5" (127mm) Air to Lower, Diaphragm
- 5AA - 5" (127mm) Air to Air

- 6AR - 6" (152mm) Air to Raise
- 6HAR - 6" (152mm) Air to Raise, Heavy Duty Spring
- 6RHAR* - 6" (152mm) Air to Raise, Spring Adjustable, Heavy Duty Spring
- 6ARLG - 6" (152mm) Air to Raise, Long Stroke
- 6AL - 6" (152mm) Air to Lower
- 6HAL - 6" (152mm) Air to Lower, Heavy Duty Spring
- 6RHAL* - 6" (152mm) Air to Lower, Spring Adjustable, Heavy Duty Spring
- 6ALLG - 6" (152mm) Air to Lower, Long Stroke
- 6AA - 6" (152mm) Air to Air
- 6AALG - 6" (152mm) Air to Air, Long Stroke
- 6ARY - 6" (152mm) Air to Raise, Extra Long Stroke
- 6ALY - 6" (152mm) Air to Lower, Extra Long Stroke
- 6AAY - 6" (152mm) Air to Air, Extra Long Stroke



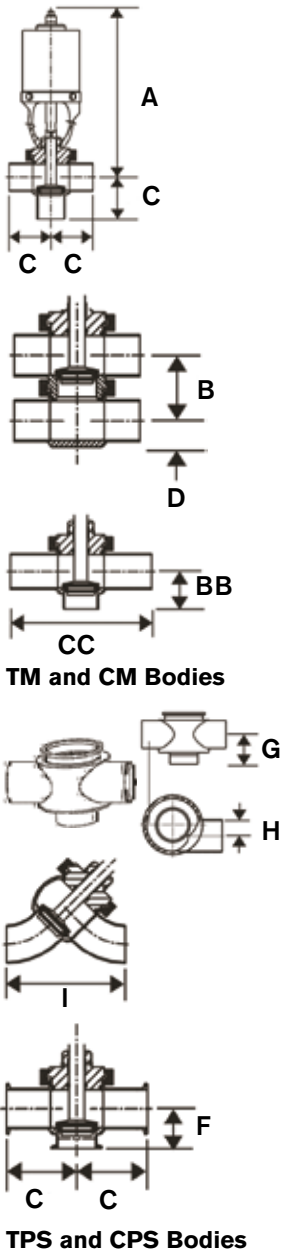
6ARY - 6" Air to Raise, extra long stroke

- A1 - 3" (74mm) Air to Raise
- A2 - 3" (74mm) Air to Lower
- A3 - 3" (74mm) Air to Air
- B1 - 4.5" (110mm) Air to Raise
- B2 - 4.5" (110mm) Air to Lower
- B3 - 4.5" (110mm) Air to Air
- C1 - 6.5" (165mm) Air to Raise
- C2 - 6.5" (165mm) Air to Lower
- C3 - 6.5" (165mm) Air to Air

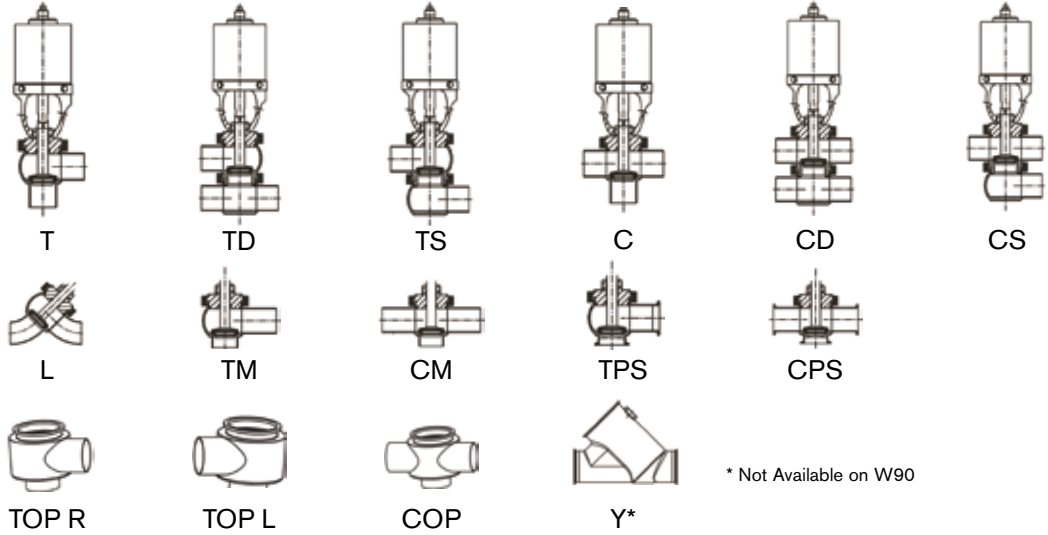


A1-3" (74mm) Air to Raise, Maintenance Free

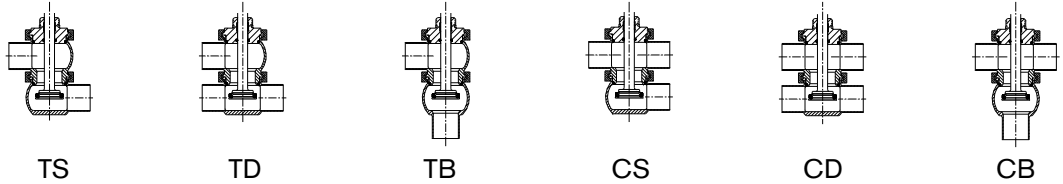
BODY CONFIGURATIONS (1 OF 2)



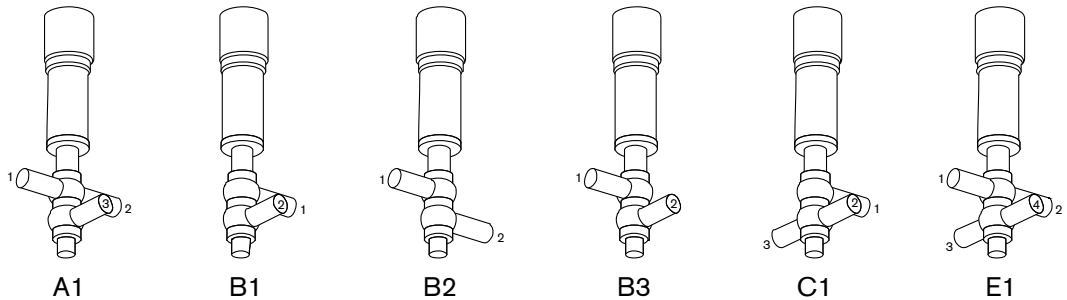
W61 Shut-off



W63 Shut-off



W61 and W63 Shut-off - One Piece Bodies

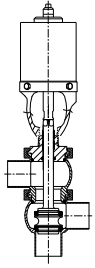


VALVE DIMENSIONS

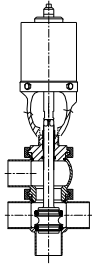
VALVE SIZE	A	B	BB	C BUTTWELD	C S-LINE	CC	D	F S-LINE	G BUTTWELD	G S-LINE	H	I BUTTWELD	I S-LINE
1.0" 25mm	SEE PAGE 6 FOR ACTUATOR OPTIONS	2.63	1.98	2.00	3.12	8.00	0.69	1.83	2.00	2.50	0.85	4.76	6.23
		67	50	51	79	203	18	46	51	64	21	121	158
1.5" 38mm		2.63	1.84	2.25	2.75	8.00	0.94	1.69	2.00	2.50	0.60	4.76	5.85
		67	47	57	70	203	24	43	51	64	15	121	149
2.0" 50mm		3.13	2.14	3.00	3.50	8.00	1.19	1.99	2.13	2.63	0.68	6.23	7.33
		80	54	76	89	203	30	51	54	67	17	158	186
2.5" 63mm		3.63	2.38	3.00	3.50	8.00	1.44	2.27	2.38	2.88	0.81	7.69	8.79
		92	60	76	89	203	37	58	60	73	20	195	223
3.0" 76mm		4.13	2.64	3.25	3.75	8.00	1.69	2.55	2.75	3.25	0.93	9.15	10.25
		105	67	83	95	203	43	65	70	83	23	232	260
4.0" 101mm	5.11	3.11	3.88	4.50	12.00	2.32	3.15	3.25	3.88	1.09	11.95	13.29	
	130	79	99	114	305	59	80	83	99	28	304	338	
6.0" 152mm	7.04	--	6.00	6.88	--	4.03	--	4.00	4.88	1.44	--	--	
	179	--	152	175	--	102	--	102	124	37	--	--	

BODY CONFIGURATIONS (2 OF 2)

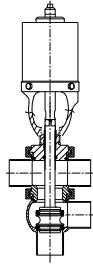
W62 Divert



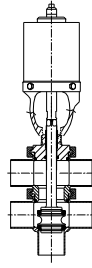
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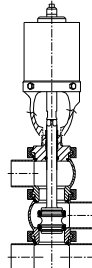
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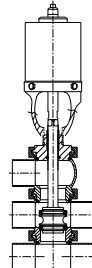
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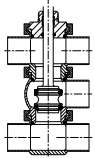
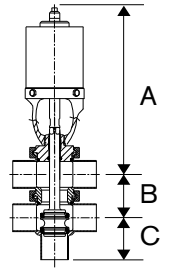
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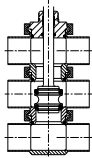
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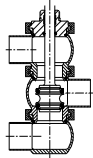
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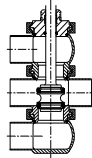
CTD



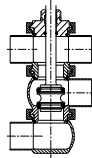
CCD



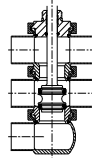
TTS



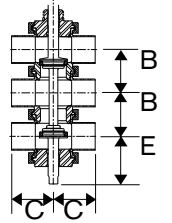
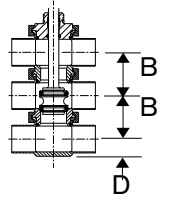
TCS



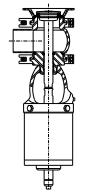
CTS



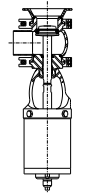
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W64 Tank Outlet

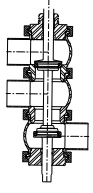


W64T/
W84T

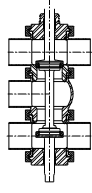


W64R/
W84R

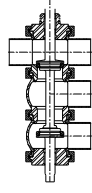
W65 Divert



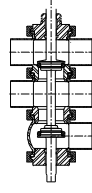
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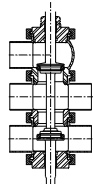
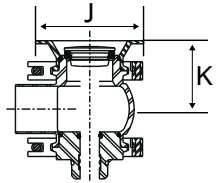
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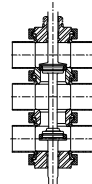
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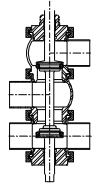
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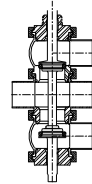
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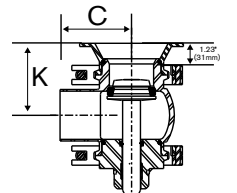
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TTC



TCT



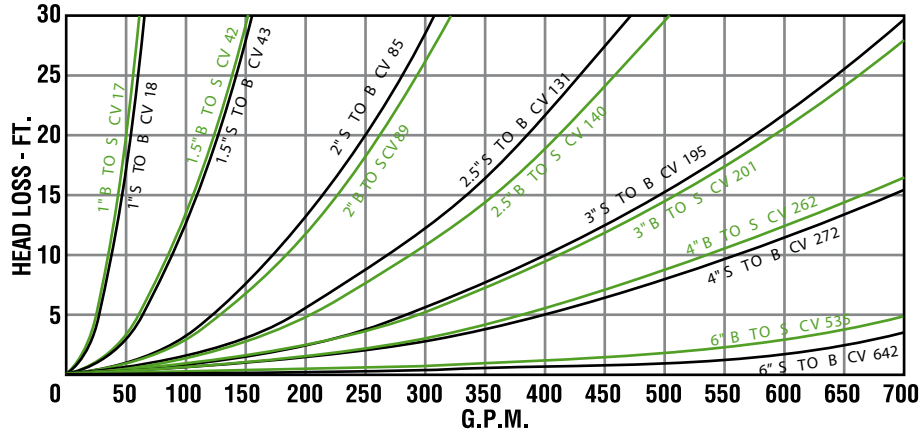
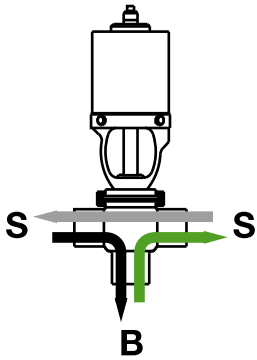
VALVE DIMENSIONS

VALVE SIZE	A	B	C BUTTWELD	C S-LINE	D	E	J	K
1.0" 25mm	SEE PAGE 6 FOR ACTUATOR OPTIONS	2.63	2.00	3.12	0.69	3.91	5.00	2.54
		67	51	79	18	99	127	65
1.5" 38mm		2.63	2.25	2.75	0.94	3.97	5.00	2.54
		67	57	70	24	101	127	65
2.0" 50mm		3.13	3.00	3.50	1.19	4.22	5.00	2.79
		80	76	89	30	107	127	71
2.5" 63mm		3.63	3.00	3.50	1.44	4.55	5.50	3.04
		92	76	89	37	116	140	77
3.0" 76mm		4.13	3.25	3.75	1.69	4.73	6.00	3.29
	105	83	95	43	120	152	84	
4.0" 101mm	5.11	3.88	4.50	2.32	5.06	6.00	3.79	
	130	99	114	59	129	152	96	
6.0" 152mm	7.04	6.00	6.88	4.03	6.20	--	--	
	179	152	175	102	157	--	--	

Pressure Loss Curves

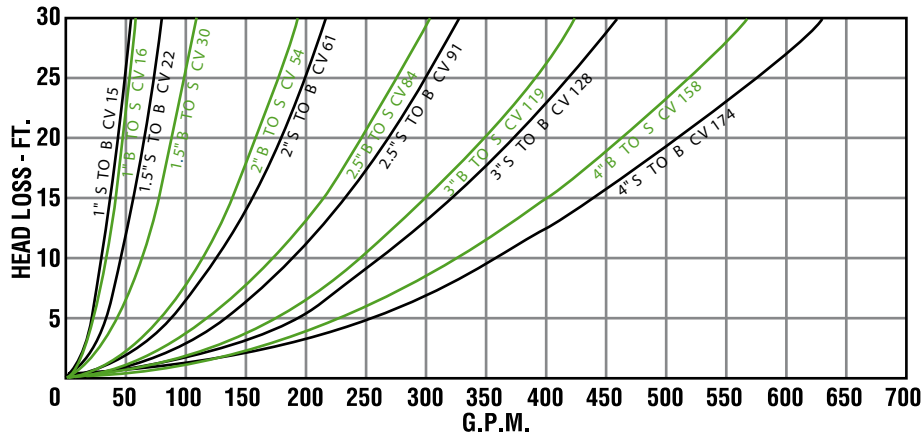
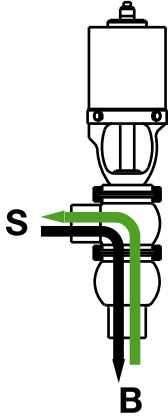
W80 and W90 valves are charted below under corresponding W60 header. Curves are based on water 70°F (21°C).

MODEL W61 & W64R

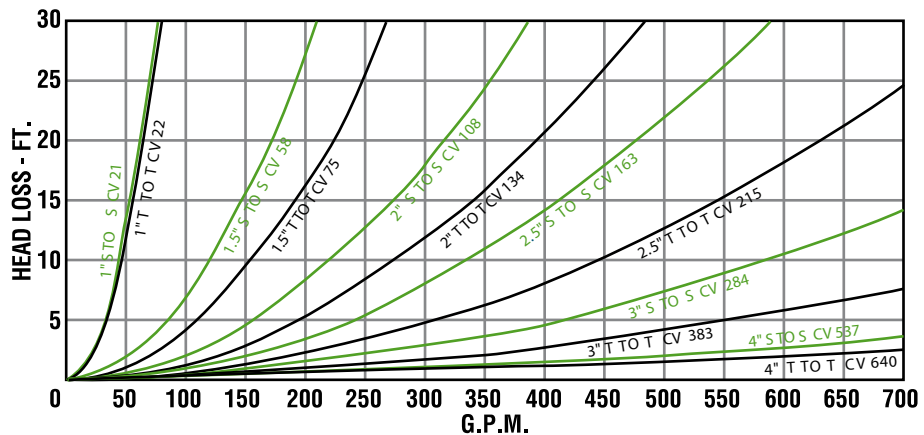
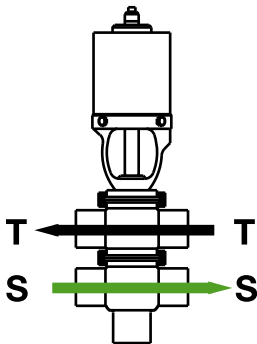


*Note: For W61 S to S curves see W62 T to T curves.

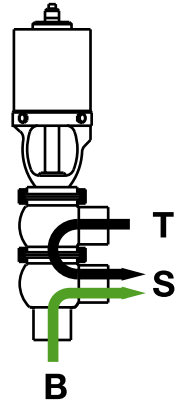
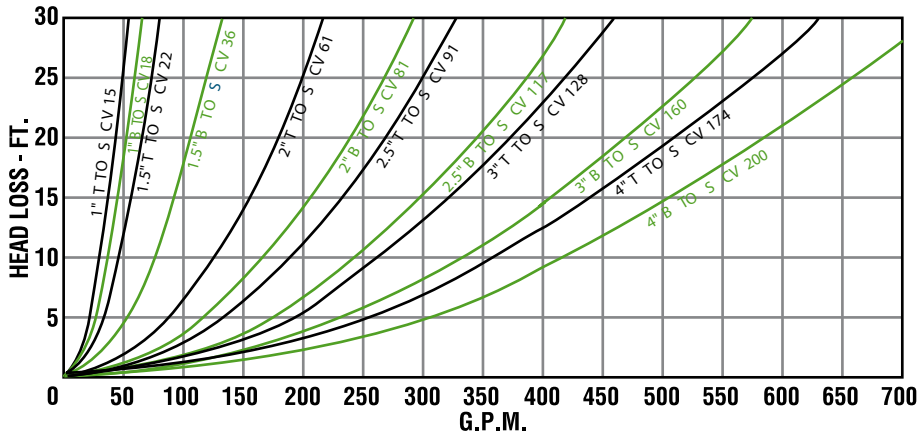
MODEL W63 & W64



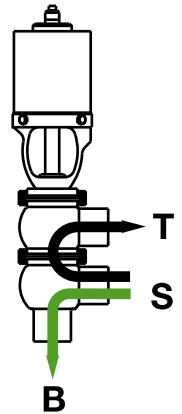
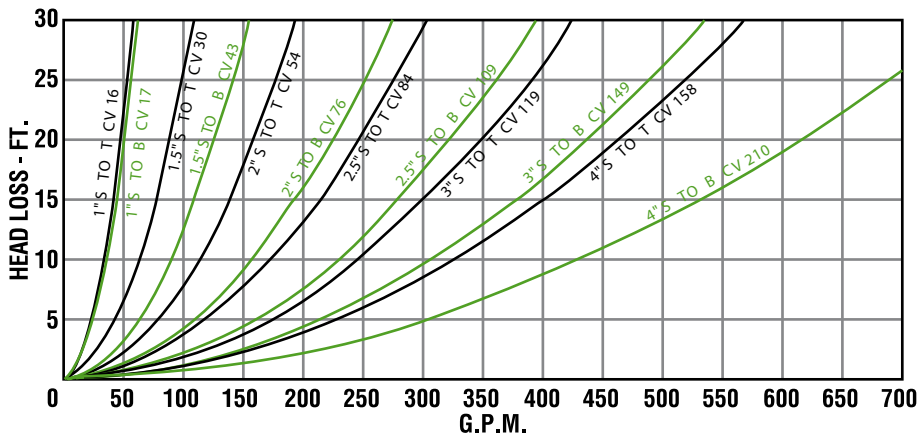
MODEL W62



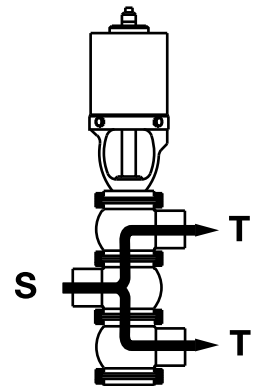
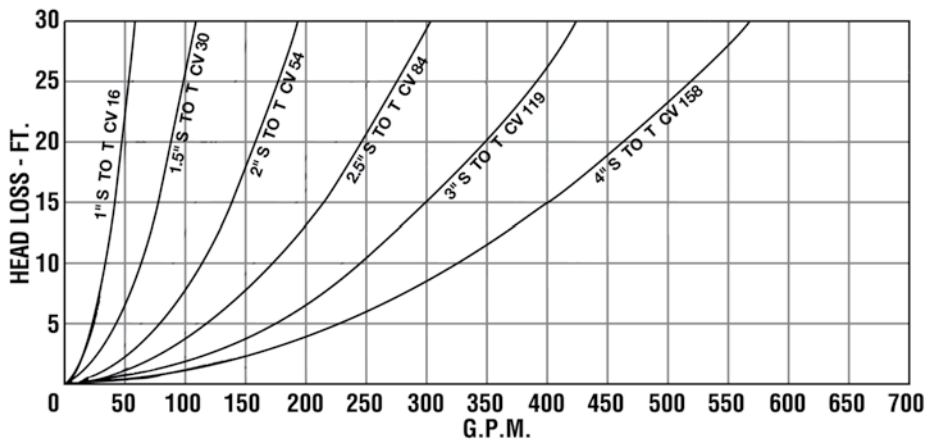
MODEL W62



MODEL W62



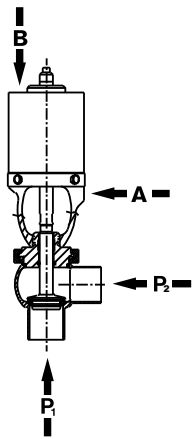
MODEL W65



W61 & W64R Holding Pressure Charts

W80 and W90 Holding Pressures are charted under the corresponding W60 header. W90 Maximum Operating Pressure is 100 PSI.

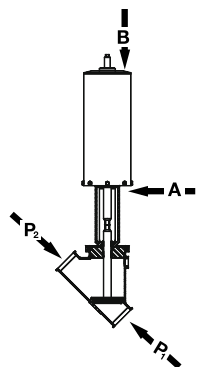
- If pressure rating is higher than documented in tables consult factory before exceeding.
- Normal air supply requirement: 50 PSI for 4, 5, and 6 inch, A, B, and C size actuators and long stroke actuators; 75 PSI for 4, 5, and 6 inch heavy duty spring actuators.
- For sizing Over-Pressure valves, select a Heavy-Duty spring actuator with a holding pressure greater than the desired relief pressure. Designate with the "R" valve model (i.e. WR61) and actuator size (i.e. 5RHAR).
- Please contact the factory for holding pressure values not listed.



VALVE SIZE	ACTUATOR SIZE									PSI Bar
	BOTTOM PORT (P ₁), ACTUATOR SPRING HOLDS CLOSED AGAINST:									
	4AR	4HAR	5AR	5HAR	6AR	6HAR	A1	B1	C1	
1.0"	160	213	251	--	347	--	--	--	--	PSI
25mm	11	15	17	--	24	--	--	--	--	Bar
1.5"	125	177	220	378	317	--	96	273	--	PSI
38mm	9	12	15	26	22	--	7	19	--	Bar
2.0"	70	99	124	212	178	338	54	153	370	PSI
50mm	5	7	9	15	12	23	4	11	26	Bar
2.5"	45	64	79	136	114	216	34	98	236	PSI
63mm	3	4	5	9	8	15	2	7	16	Bar
3.0"	31	44	55	94	79	150	24	68	164	PSI
76mm	2	3	4	6	5	10	2	5	11	Bar
4.0"	18	25	31	54	45	87	13	38	92	PSI
101mm	1	2	2	4	3	6	1	3	6	Bar

VALVE SIZE	ACTUATOR SIZE									PSI Bar
	SIDE PORT (P ₂), AIR TO PORT A, WILL OPEN AGAINST:									
	4AR 50PSI/ 3BAR	4HAR 75PSI/ 5BAR	5AR 50PSI/ 3BAR	5HAR 75PSI/ 5BAR	6AR 50PSI/ 3BAR	6HAR 75PSI/ 5BAR	A1 50PSI/ 3BAR	B1 50PSI/ 3BAR	C1 50PSI/ 3BAR	
1.0"	223	371	356	--	--	--	67	127	--	PSI
25mm	15	26	25	--	--	--	5	9	--	Bar
1.5"	270	419	398	--	--	--	67	127	--	PSI
38mm	19	29	27	--	--	--	5	9	--	Bar
2.0"	132	205	195	261	278	334	33	62	123	PSI
50mm	9	14	13	18	19	23	2	4	8	Bar
2.5"	80	124	118	158	168	202	20	38	74	PSI
63mm	6	9	8	11	12	14	1	3	5	Bar
3.0"	54	84	79	106	113	136	13	25	50	PSI
76mm	4	6	5	7	8	9	1	2	3	Bar
4.0"	29	45	43	57	61	72	7	14	27	PSI
101mm	2	3	3	4	4	5	0	1	2	Bar

W61Y-BODY (AIR-TO-RAISE) - EXTRA LONG STROKE



Note: Y-Body must use 6ARY/AL Actuator

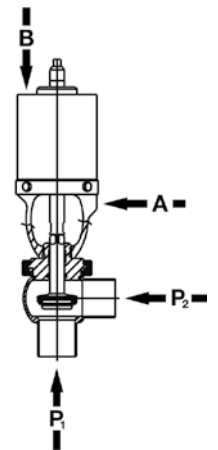
VALVE SIZE	ACTUATOR SIZE		PSI Bar
	PORT (P ₁), ACTUATOR SPRING HOLDS CLOSED AGAINST:	PORT (P ₂), AIR TO PORT A, WILL OPEN AGAINST:	
	6ARY	6ARY 50PSI/3BAR	
2.5"	44	52	PSI
63mm	3	3	Bar
3.0"	34	35	PSI
76mm	2	2	Bar
4.0"	16	16	PSI
101mm	1	1	Bar

W61 AR (AIR-TO-RAISE) - LONG STROKE

VALVE SIZE	ACTUATOR SIZE						PSI Bar
	BOTTOM PORT (P ₁), ACTUATOR SPRING HOLDS CLOSED AGAINST:			SIDE PORT (P ₂), AIR TO PORT A, WILL OPEN AGAINST:			
	4ARLG 50PSI/ 3BAR	6ARLG 50PSI/ 3BAR	6ARY 50PSI/ 3BAR	4ARLG 50PSI/ 3BAR	6ARLG 50PSI/ 3BAR	6ARY 50PSI/ 3BAR	
2.5" 63mm	33 2	112 8	--	93 6	170 12	--	PSI Bar
3.0" 76mm	23 2	80 6	--	63 4	112 8	--	PSI Bar
4.0" 101mm	13 1	44 3	--	34 2	62 4	--	PSI Bar
6" 152mm	--	21 2	15 1	--	30 2	29 2	PSI Bar

W61 AL/HAL (AIR-TO-LOWER) - STANDARD STROKE

VALVE SIZE	ACTUATOR SIZE									PSI Bar
	BOTTOM PORT (P ₁), AIR TO PORT B ₁ , WILL HOLD AGAINST:									
	4AL 50PSI/ 3BAR	4HAL 75PSI/ 5BAR	5AL 50PSI/ 3BAR	5HAL 75PSI/ 5BAR	6AL 50PSI/ 3BAR	6HAL 75PSI/ 5BAR	A2 50PSI/ 3BAR	B2 50PSI/ 3BAR	C2 50PSI/ 3BAR	
1.0" 25mm	111 8	221 15	218 15	245 17	383 26	328 23	--	--	--	PSI Bar
1.5" 38mm	76 5	185 13	187 13	184 13	353 24	213 15	31 2	43 3	--	PSI Bar
2.0" 50mm	43 3	104 7	105 7	104 7	198 14	120 8	18 1.2	24 2	46 3	PSI Bar
2.5" 63mm	27 2	66 5	67 5	66 5	127 9	77 5	11 0.8	16 1.1	30 2	PSI Bar
3.0" 76mm	19 1	46 3	47 3	46 3	88 6	53 4	8 0.5	11 0.8	21 1.4	PSI Bar
4.0" 101mm	11 1	27 2	27 2	27 2	50 3	32 2	4 0.3	6 0.4	12 1	PSI Bar

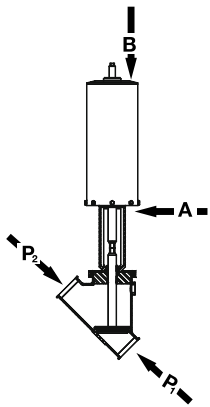


VALVE SIZE	ACTUATOR SIZE									PSI Bar
	SIDE PORT (P ₂), (STEM LOWERED) ACTUATOR SPRING OPENS STEM AGAINST:									
	4AL	4HAL	5AL	5HAL	6AL	6HAL	A2	B2	C2	
1.0" 25mm	288 20	361 25	--	--	--	--	--	--	--	PSI Bar
1.5" 38mm	300 21	409 28	--	--	--	--	154 11	430 30	--	PSI Bar
2.0" 50mm	164 11	200 14	216 15	388 27	260 18	--	76 5	211 15	502 35	PSI Bar
2.5" 63mm	99 7	121 8	131 9	234 16	157 11	361 25	46 3	127 9	303 21	PSI Bar
3.0" 76mm	67 5	81 6	88 6	158 11	106 7	243 17	31 2	86 6	204 14	PSI Bar
4.0" 101mm	36 2	44 3	47 3	85 6	57 4	131 9	17 1	47 3	112 8	PSI Bar

W61 AL (AIR-TO-LOWER) - LONG STROKE

VALVE SIZE	ACTUATOR SIZE						
	SIDEPORT (P ₂), ACTUATOR SPRING OPENS STEM AGAINST:			PORT (P1), AIR TO PORT B, WILL HOLD CLOSED AGAINST:			
	4ALLG	6ALLG	6ALY	4ALLG 50PSI/ 3BAR	6ALLG 50PSI/ 3BAR	6ALY 50PSI/ 3BAR	
2.5" 63mm	53 4	147 10	--	69 5	136 9	--	PSI Bar
3.0" 76mm	39 3	104 7	--	45 3	90 6	--	PSI Bar
4.0" 101mm	24 2	60 4	--	23 2	47 3	--	PSI Bar
6.0" 152mm	--	29 2	29 2	--	23 2	17 1	PSI Bar

W61Y-BODY (AIR-TO-LOWER) - EXTRA LONG STROKE



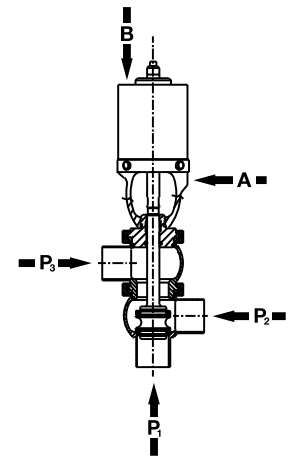
VALVE SIZE	ACTUATOR SIZE		
	PORT (P ₁), ACTUATOR SPRING HOLDS CLOSED AGAINST:	PORT (P ₂), AIR TO PORT A, WILL OPEN AGAINST:	
	6ALY	6ALY 50PSI/3BAR	
2.5" 63mm	57 4	52 4	PSI Bar
3.0" 76mm	46 3	35 2	PSI Bar
4.0" 101mm	27 2	16 1	PSI Bar

W62 Holding Pressure Charts

- If pressure rating is higher than documented in tables consult factory before exceeding.
- Normal air supply requirement: 50 PSI for 4, 5, and 6 inch actuators and long stroke actuators 75 PSI for 4, 5, and 6 inch heavy duty spring actuators.
- Please contact the factory for holding pressure values not listed.

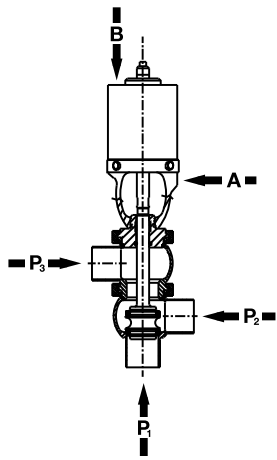
W62 AR/HAR (AIR-TO-RAISE) - STANDARD STROKE

VALVE SIZE	ACTUATOR SIZE									
	BOTTOM PORT (P ₁), ACTUATOR SPRING HOLDS CLOSED AGAINST:									
	4AR	4HAR	5AR	5HAR	6AR	6HAR	A1	B1	C1	
1.0"	125	177	220	378	317	--	--	--	--	PSI
25mm	9	12	15	26	22	--	--	--	--	Bar
1.5"	125	177	220	378	317	--	--	--	--	PSI
38mm	9	12	15	26	22	--	--	--	--	Bar
2.0"	70	99	124	212	178	338	--	--	--	PSI
50mm	5	7	9	15	12	23	--	--	--	Bar
2.5"	45	64	79	136	114	216	--	--	--	PSI
63mm	3	4	5	9	8	15	--	--	--	Bar
3.0"	31	44	55	94	79	150	--	--	--	PSI
76mm	2	3	4	6	5	10	--	--	--	Bar
4.0"	19	26	32	55	45	88	--	--	--	PSI
101mm	1	2	2	4	3	6	--	--	--	Bar



VALVE SIZE	ACTUATOR SIZE									
	SIDE PORT (P ₂), AIR TO ACTUATOR (WITH STEM RAISED), SPRING WILL LOWER AGAINST:									
	4AR	4HAR	5AR	5HAR	6AR	6HAR	A1	B1	C1	
1.0"	238	293	320	--	--	--	--	--	--	PSI
25mm	16	20	22	--	--	--	--	--	--	Bar
1.5"	253	308	333	--	--	--	--	--	--	PSI
38mm	17	21	23	--	--	--	--	--	--	Bar
2.0"	142	173	187	336	239	--	--	--	--	PSI
50mm	10	12	13	23	16	--	--	--	--	Bar
2.5"	91	111	120	215	153	367	--	--	--	PSI
63mm	6	8	8	15	11	25	--	--	--	Bar
3.0"	63	77	83	149	106	255	--	--	--	PSI
76mm	4	5	6	10	7	18	--	--	--	Bar
4.0"	37	44	48	86	61	147	--	--	--	PSI
101mm	3	3	3	6	4	10	--	--	--	Bar

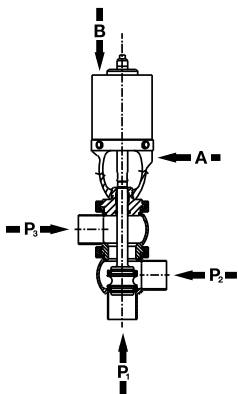
W62 AR/HAR (AIR-TO-RAISE) - STANDARD STROKE (CONTINUED)



VALVE SIZE	ACTUATOR SIZE									
	PORT (P ₂), AIR TO PORT A, WILL RAISE STEM (OPENS) AGAINST:									
	4AR 50PSI/ 3BAR	4HAR 75PSI/ 5BAR	5AR 50PSI/ 3BAR	5HAR 75PSI/ 5BAR	6AR 50PSI/ 3BAR	6HAR 75PSI/ 5BAR	A1 50PSI/ 3BAR	B1 50PSI/ 3BAR	C1 50PSI/ 3BAR	
1.0" 25mm	270 19	419 29	398 27	--	--	--	--	--	--	PSI Bar
1.5" 38mm	270 19	419 29	398 27	--	--	--	--	--	--	PSI Bar
2.0" 50mm	132 9	205 14	195 13	261 18	278 19	334 23	--	--	--	PSI Bar
2.5" 63mm	80 6	124 9	118 8	158 11	168 12	202 14	--	--	--	PSI Bar
3.0" 76mm	54 4	84 6	79 5	106 7	113 8	136 9	--	--	--	PSI Bar
4.0" 101mm	28 2	44 3	42 3	56 4	61 4	71 5	--	--	--	PSI Bar

VALVE SIZE	ACTUATOR SIZE									
	PORT (P ₂), AIR TO PORT A, (WITH STEM RAISED), WILL HOLD AGAINST:									
	4AR 50PSI/ 3BAR	4HAR 75PSI/ 5BAR	5AR 50PSI/ 3BAR	5HAR 75PSI/ 5BAR	6AR 50PSI/ 3BAR	6HAR 75PSI/ 5BAR	A1 50PSI/ 3BAR	B1 50PSI/ 3BAR	C1 50PSI/ 3BAR	
1.0" 25mm	118 8	264 18	264 18	272 19	438 30	185 13	--	--	--	PSI Bar
1.5" 38mm	99 7	244 17	247 17	239 16	421 29	121 8	--	--	--	PSI Bar
2.0" 50mm	48 3	119 8	121 8	117 8	206 14	59 4	--	--	--	PSI Bar
2.5" 63mm	29 2	72 5	73 5	71 5	125 9	36 2	--	--	--	PSI Bar
3.0" 76mm	20 1	49 3	49 3	48 3	84 6	24 2	--	--	--	PSI Bar
4.0" 101mm	10 1	25 2	26 2	24 2	45 3	9 1	--	--	--	PSI Bar

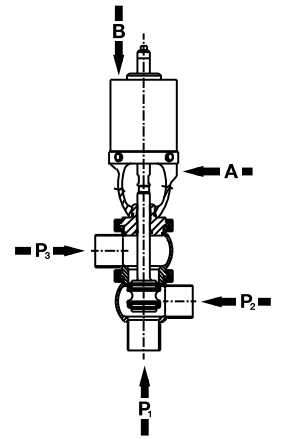
W62 AR (AIR-TO-RAISE) - LONG STROKE



VALVE SIZE	ACTUATOR SIZE								
	PORT (P ₂), ACTUATOR SPRING HOLDS CLOSED AGAINST:		PORT (P ₂), AIR TO ACTUATOR (WITH STEM RAISED), SPRING WILL LOWER AGAINST:		PORT (P ₂), AIR TO PORT A, WILL RAISE STEM (OPENS) AGAINST:		PORT (P ₃), AIR TO PORT A, WITH STEM RAISED WILL HOLD AGAINST:		
	4ARLG	6ARLG	4ARLG	6ARLG	4ARLG	6ARLG	4ARLG	6ARLG	
2.5" 63mm	33 2	112 8	49 3	135 9	93 6	170 12	75 5	145 10	PSI Bar
3.0" 76mm	23 2	78 5	36 2	97 7	63 4	114 8	48 3	94 6	PSI Bar
4.0" 101mm	13 1	44 3	23 2	59 4	34 2	62 4	23 2	47 3	PSI Bar

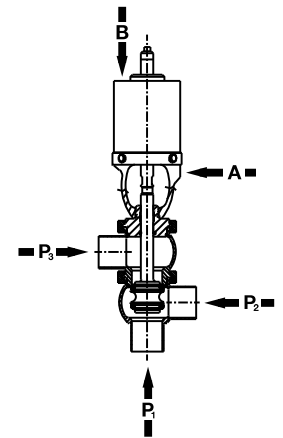
W62 AL (AIR-TO-LOWER) - LONG STROKE

ACTUATOR SIZE	ACTUATOR SIZE								PSI Bar
	PORT (P ₁), AIR TO PORT B HOLDS CLOSED AGAINST:		PORT (P ₂), (STEM LOWERED) SPRING OPENS STEM AGAINST:		PORT (P ₂), AIR TO PORT B, (WITH STEM RAISED) WILL CLOSE STEM AGAINST:		PORT (P ₃), (STEM RAISED) ACTUATOR SPRING HOLDS AGAINST:		
	4ALLG	6ALLG	4ALLG	6ALLG	4ALLG	6ALLG	4ALLG	6ALLG	
2.5" 63mm	69 5	135 9	54 4	148 10	85 6	158 11	36 2	123 8	
3.0" 76mm	45 3	91 6	39 3	103 7	59 4	110 8	24 2	83 6	
4.0" 101mm	22 2	47 3	24 2	61 4	33 2	62 4	13 1	45 3	



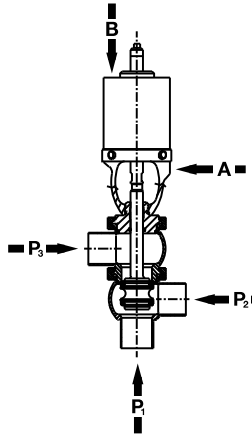
W62 AL/HAL (AIR-TO-LOWER) - STANDARD STROKE

VALVE SIZE	ACTUATOR SIZE									PSI Bar
	BOTTOM PORT (P ₁), AIR TO PORT B, WILL HOLD AGAINST:									
	4AL 50PSI/ 3BAR	4HAL 75PSI/ 5BAR	5AL 50PSI/ 3BAR	5HAL 75PSI/ 5BAR	6AL 50PSI/ 3BAR	6HAL 75PSI/ 5BAR	A2 50PSI/ 3BAR	B2 50PSI/ 3BAR	C2 50PSI/ 3BAR	
1.0" 25mm	76 5	185 13	187 13	184 13	353 24	213 15	--	--	--	
1.5" 38mm	76 5	185 13	187 13	184 13	353 24	213 15	--	--	--	
2.0" 50mm	43 3	104 7	105 7	104 7	198 14	120 8	--	--	--	
2.5" 63mm	27 2	66 5	67 5	66 5	127 9	77 5	--	--	--	
3.0" 76mm	19 1	46 3	47 3	46 3	88 6	53 4	--	--	--	
4.0" 101mm	16 1	27 2	27 2	28 2	50 3	33 2	--	--	--	



VALVE SIZE	ACTUATOR SIZE									PSI Bar
	SIDE PORT (P ₂), (STEM LOWERED), SPRING OPENS STEM AGAINST:									
	4AL	4HAL	5AL	5HAL	6AL	6HAL	A2	B2	C2	
1.0" 25mm	335 23	409 28	--	--	--	--	--	--	--	
1.5" 38mm	335 23	409 28	441 30	--	--	--	--	--	--	
2.0" 50mm	164 11	200 14	216 15	388 27	260 18	--	--	--	--	
2.5" 63mm	99 7	121 8	131 9	234 16	157 11	361 25	--	--	--	
3.0" 76mm	67 5	81 6	88 6	158 11	106 7	243 17	--	--	--	
4.0" 101mm	31 2	43 3	47 3	84 6	57 4	129 9	--	--	--	

W62 AL/HAL (AIR-TO-LOWER) - STANDARD STROKE (CONTINUED)



VALVE SIZE	ACTUATOR SIZE									
	BOTTOM PORT (P ₂), AIR TO PORT B, (WITH STEM RAISED), WILL CLOSE STEM AGAINST:									
	4AL 50PSI/ 3BAR	4HAL 75PSI/ 5BAR	5AL 50PSI/ 3BAR	5HAL 75PSI/ 5BAR	6AL 50PSI/ 3BAR	6HAL 75PSI/ 5BAR	A2 50PSI/ 3BAR	B2 50PSI/ 3BAR	C2 50PSI/ 3BAR	
1.0"	189	301	288	379	--	--	--	--	--	PSI
25mm	13	21	20	26	--	--	--	--	--	Bar
1.5"	204	316	301	404	--	--	--	--	--	PSI
38mm	14	22	21	28	--	--	--	--	--	Bar
2.0"	115	176	169	227	260	356	--	--	--	PSI
50mm	8	12	12	16	18	25	--	--	--	Bar
2.5"	73	114	108	145	166	227	--	--	--	PSI
63mm	5	8	7	10	11	16	--	--	--	Bar
3.0"	51	79	75	101	115	158	--	--	--	PSI
76mm	4	5	5	7	8	11	--	--	--	Bar
4.0"	32	45	43	59	66	92	--	--	--	PSI
101mm	2	3	3	4	5	6	--	--	--	Bar

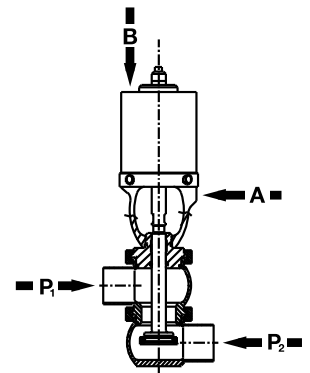
VALVE SIZE	ACTUATOR SIZE									
	PORT (P ₂), (STEM RAISED), ACTUATOR SPRING HOLDS AGAINST:									
	4AL	4HAL	5AL	5HAL	6AL	6HAL	A2	B2	C2	
1.0"	184	253	300	531	402	--	--	--	--	PSI
25mm	13	17	21	37	28	--	--	--	--	Bar
1.5"	164	233	290	497	385	--	--	--	--	PSI
38mm	11	16	20	34	27	--	--	--	--	Bar
2.0"	81	114	142	244	189	323	--	--	--	PSI
50mm	6	8	10	17	13	22	--	--	--	Bar
2.5"	49	69	86	147	114	195	--	--	--	PSI
63mm	3	5	6	10	8	13	--	--	--	Bar
3.0"	33	46	58	99	77	131	--	--	--	PSI
76mm	2	3	4	7	5	9	--	--	--	Bar
4.0"	15	24	31	52	41	68	--	--	--	PSI
101mm	1	2	2	4	3	5	--	--	--	Bar

W63 & 64 Holding Pressure Charts

- If pressure rating is higher than documented in tables consult factory before exceeding.
- Normal air supply requirement: 50 PSI for 4, 5, and 6 inch actuators and long stroke actuators 75 PSI for 4, 5, and 6 inch heavy duty spring actuators.
- ¹For sizing Over-Pressure valves, select a Heavy-Duty spring actuator with a holding pressure greater than the desired relief pressure. Designate with the "R" valve model (i.e. WR61) and actuator size (i.e. 5RHAR).
- Please contact the factory for holding pressure values not listed.

W63 AR/HAR (AIR-TO-RAISE) - STANDARD STROKE

VALVE SIZE	ACTUATOR SIZE									
	BOTTOM PORT (P ₂), STEM RAISED, ACTUATOR SPRING WILL OPEN AGAINST:									
	4AR	4HAR	5AR	5HAR ¹	6AR	6HAR	A1	B1	C1	
1.0"	203	257	289	--	384	--	--	--	--	PSI
25mm	14	18	20	--	26	--	--	--	--	Bar
1.5"	253	308	333	--	426	--	--	--	--	PSI
38mm	17	21	23	--	29	--	--	--	--	Bar
2.0"	142	173	187	336	239	--	--	--	--	PSI
50mm	10	12	13	23	16	--	--	--	--	Bar
2.5"	91	111	120	215	153	367	--	--	--	PSI
63mm	6	8	8	15	11	25	--	--	--	Bar
3.0"	63	77	83	149	106	255	--	--	--	PSI
76mm	4	5	6	10	7	18	--	--	--	Bar
4.0"	37	44	48	86	61	147	--	--	--	PSI
101mm	3	3	3	6	4	10	--	--	--	Bar

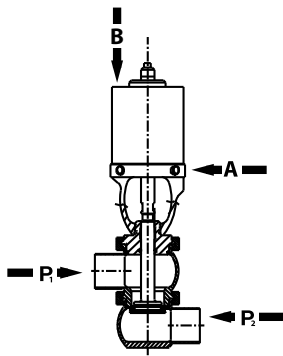


VALVE SIZE	ACTUATOR SIZE									
	PORT (P ₁), AIR TO PORT A, WILL HOLD VALVE CLOSED AGAINST:									
	4AR 50PSI/ 3BAR	4HAR ¹ 75PSI/ 5BAR	5AR 50PSI/ 3BAR	5HAR ¹ 75PSI/ 5BAR	6AR 50PSI/ 3BAR	6HAR ¹ 75PSI/ 5BAR	A1 50PSI/ 3BAR	B1 50PSI/ 3BAR	C1 50PSI/ 3BAR	
1.0"	165	312	305	353	478	339	--	--	--	PSI
25mm	11	22	21	24	33	23	--	--	--	Bar
1.5"	99	244	247	239	421	121	--	--	--	PSI
38mm	7	17	17	16	29	8	--	--	--	Bar
2.0"	48	119	121	117	206	59	--	--	--	PSI
50mm	3	8	8	8	14	4	--	--	--	Bar
2.5"	29	72	73	71	125	36	--	--	--	PSI
63mm	2	5	5	5	9	2	--	--	--	Bar
3.0"	20	49	49	48	84	24	--	--	--	PSI
76mm	1	3	3	3	6	2	--	--	--	Bar
4.0"	10	25	26	24	45	9	--	--	--	PSI
101mm	1	2	2	2	3	1	--	--	--	Bar

W63 AR (AIR-TO-RAISE) - LONG STROKE

VALVE SIZE	ACTUATOR SIZE				
	PORT (P ₂), STEM RAISED, ACTUATOR SPRING WILL OPEN AGAINST:		PORT (P ₁), AIR TO PORT A, WILL HOLD VALVE CLOSED AGAINST:		
	4ARLG	6ARLG	4ARLG	6ARLG	
2.5"	48	131	77	149	PSI
63mm	3	9	5	10	Bar
3.0"	37	97	48	94	PSI
76mm	3	7	3	6	Bar
4.0"	23	58	23	47	PSI
101mm	2	4	2	3	Bar

W63 AL/HAL (AIR-TO-LOWER) - STANDARD STROKE



VALVE SIZE	ACTUATOR SIZE									
	PORT (P ₁), ACTUATOR SPRING HOLDS CLOSED AGAINST:									
	4AL	4HAL	5AL	5HAL	6AL	6HAL	A2	B2	C2	
1.0"	231	301	349	--	442	--	--	--	--	PSI
25mm	16	21	24	--	30	--	--	--	--	Bar
1.5"	164	233	290	497	385	--	161	386	--	PSI
38mm	11	16	20	34	27	--	11	27	--	Bar
2.0"	81	114	142	244	189	323	59	174	403	PSI
50mm	6	8	10	17	13	22	4	12	28	Bar
2.5"	49	69	86	147	114	195	35	105	243	PSI
63mm	3	5	6	10	8	13	2	7	17	Bar
3.0"	33	46	58	99	77	131	24	71	164	PSI
76mm	2	3	4	7	5	9	2	5	11	Bar
4.0"	17	24	31	52	41	68	--	--	--	PSI
101mm	1	2	2	4	3	5	--	--	--	Bar

VALVE SIZE	ACTUATOR SIZE									
	PORT (P ₂), AIR TO PORT B, WILL OPEN AGAINST:									
	4AL 50PSI/ 3BAR	4HAL 75PSI/ 5BAR	5AL 50PSI/ 3BAR	5HAL 75PSI/ 5BAR	6AL 50PSI/ 3BAR	6HAL 75PSI/ 5BAR	A2 50PSI/ 3BAR	B2 50PSI/ 3BAR	C2 50PSI/ 3BAR	
1.0"	154	265	257	319	420	--	--	--	--	PSI
25mm	11	18	18	22	29	--	--	--	--	Bar
1.5"	204	316	300	404	462	--	--	--	--	PSI
38mm	14	22	21	28	32	--	--	--	--	Bar
2.0"	115	178	169	227	260	356	--	--	--	PSI
50mm	8	12	12	16	18	25	--	--	--	Bar
2.5"	73	114	108	145	166	227	--	--	--	PSI
63mm	5	8	7	10	11	16	--	--	--	Bar
3.0"	51	79	75	101	115	158	--	--	--	PSI
76mm	4	5	5	7	8	11	--	--	--	Bar
4.0"	30	45	43	59	66	92	--	--	--	PSI
101mm	2	3	3	4	5	6	--	--	--	Bar

W63 AL (AIR-TO-LOWER) - LONG STROKE

VALVE SIZE	ACTUATOR SIZE				
	PORT (P ₁), ACTUATOR SPRING HOLDS CLOSED AGAINST:		PORT (P ₂), AIR TO PORT B, WILL OPEN STEM AGAINST:		
	4ALLG	6ALLG	4ALLG	6ALLG	
2.5"	36	123	85	158	PSI
63mm	2	8	6	11	Bar
3.0"	24	83	59	110	PSI
76mm	2	6	4	8	Bar
4.0"	13	45	33	62	PSI
101mm	1	3	2	4	Bar

W65 Holding Pressure Charts

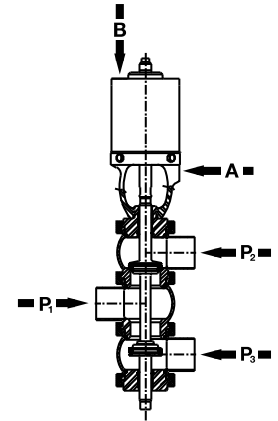
- If pressure rating is higher than documented in tables consult factory before exceeding.
- Normal air supply requirement: 50 PSI for 4, 5, and 6 inch actuators and long stroke actuators 75 PSI for 4, 5, and 6 inch heavy duty spring actuators.
- Please contact the factory for holding pressure values not listed.

W65 AR/HAR (AIR-TO-RAISE) - STANDARD STROKE

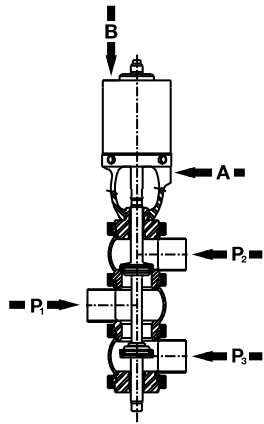
VALVE SIZE	ACTUATOR SIZE									
	BOTTOM PORT (P ₁), ACTUATOR SPRING HOLDS CLOSED AGAINST:									
	4AR	4HAR	5AR	5HAR	6AR	6HAR	A1	B1	C1	
1.0"	214	284	336	--	--	--	--	--	--	PSI
25mm	15	20	23	--	--	--	--	--	--	Bar
1.5"	162	230	289	495	418	--	--	--	--	PSI
38mm	11	16	20	34	29	--	--	--	--	Bar
2.0"	76	109	139	237	200	367	--	--	--	PSI
50mm	5	8	10	16	14	25	--	--	--	Bar
2.5"	50	70	87	150	126	239	--	--	--	PSI
63mm	3	5	6	10	9	16	--	--	--	Bar
3.0"	34	47	59	101	85	161	--	--	--	PSI
76mm	2	3	4	7	6	11	--	--	--	Bar
4.0"	19	26	32	56	46	89	--	--	--	PSI
101mm	1	2	2	4	3	6	--	--	--	Bar

VALVE SIZE	ACTUATOR SIZE									
	PORT (P ₂), STEM RAISED, SPRING LOWERS STEM AGAINST:									
	4AR	4HAR	5AR	5HAR	6AR	6HAR	A1	B1	C1	
1.0"	344	418	--	--	--	--	--	--	--	PSI
25mm	24	29	--	--	--	--	--	--	--	Bar
1.5"	344	418	433	--	--	--	--	--	--	PSI
38mm	24	29	30	--	--	--	--	--	--	Bar
2.0"	169	205	218	392	279	--	--	--	--	PSI
50mm	12	14	15	27	19	--	--	--	--	Bar
2.5"	102	124	132	237	168	404	--	--	--	PSI
63mm	7	9	9	16	12	28	--	--	--	Bar
3.0"	69	83	89	160	114	274	--	--	--	PSI
76mm	5	6	6	11	8	19	--	--	--	Bar
4.0"	37	45	49	89	63	152	--	--	--	PSI
101mm	3	3	3	6	4	10	--	--	--	Bar

VALVE SIZE	ACTUATOR SIZE									
	PORT (P ₂), AIR TO PORT A, WILL RAISE STEM AGAINST:									
	4AR 50PSI/ 3BAR	4HAR 75PSI/ 5BAR	5AR 50PSI/ 3BAR	5HAR 75PSI/ 5BAR	6AR 50PSI/ 3BAR	6HAR 75PSI/ 5BAR	A1 50PSI/ 3BAR	B1 50PSI/ 3BAR	C1 50PSI/ 3BAR	
1.0"	223	371	356	--	--	--	--	--	--	PSI
25mm	15	26	25	--	--	--	--	--	--	Bar
1.5"	275	425	403	--	--	--	--	--	--	PSI
38mm	19	29	28	--	--	--	--	--	--	Bar
2.0"	138	212	200	272	285	361	--	--	--	PSI
50mm	10	15	14	19	20	25	--	--	--	Bar
2.5"	79	124	117	157	167	200	--	--	--	PSI
63mm	5	9	8	11	12	14	--	--	--	Bar
3.0"	53	83	79	106	113	135	--	--	--	PSI
76mm	4	6	5	7	8	9	--	--	--	Bar
4.0"	29	45	43	57	61	73	--	--	--	PSI
101mm	2	3	3	4	4	5	--	--	--	Bar

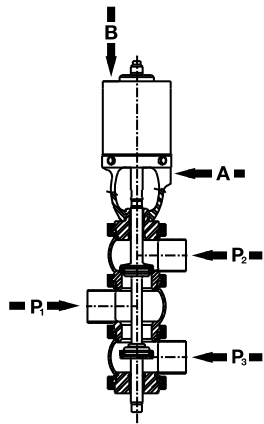


W65 AR/HAR (AIR-TO-RAISE) - STANDARD STROKE (CONTINUED)



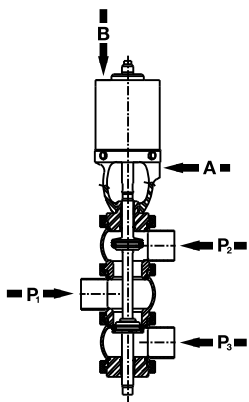
VALVE SIZE	ACTUATOR SIZE									PSI Bar
	PORT (P ₁), AIR TO PORT A, (WITH STEM RAISED), WILL HOLD AGAINST:									
	4AR 50PSI/ 3BAR	4HAR 75PSI/ 5BAR	5AR 50PSI/ 3BAR	5HAR 75PSI/ 5BAR	6AR 50PSI/ 3BAR	6HAR 75PSI/ 5BAR	A1 50PSI/ 3BAR	B1 50PSI/ 3BAR	C1 50PSI/ 3BAR	
1.0" 25mm	93 6	238 16	241 17	228 16	416 29	102 7	--	--	--	PSI Bar
1.5" 38mm	113 8	258 18	259 18	263 18	433 30	167 12	--	--	--	PSI Bar
2.0" 50mm	48 3	119 8	120 8	116 8	206 14	58 4	--	--	--	PSI Bar
2.5" 63mm	29 2	72 5	73 5	70 5	125 9	35 2	--	--	--	PSI Bar
3.0" 76mm	19 1	48 3	48 3	46 3	83 6	22 2	--	--	--	PSI Bar
4.0" 101mm	10 1	25 2	26 2	24 2	45 3	10 1	--	--	--	PSI Bar

W65 AR (AIR-TO-RAISE) - LONG STROKE



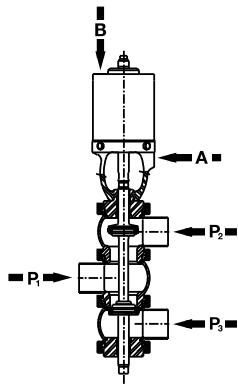
VALVE SIZE	ACTUATOR SIZE								PSI Bar
	PORT (P ₁), ACTUATOR SPRING HOLDS CLOSED AGAINST:		PORT (P ₁), (STEM RAISED) SPRING LOWERS STEM AGAINST:		PORT (P ₁), AIR TO PORT A, WILL RAISE STEM AGAINST:		PORT (P ₁), (WITH STEM RAISED) WILL HOLDS AGAINST:		
	4ARLG	6ARLG	4ARLG	6ARLG	4ARLG	6ARLG	4ARLG	6ARLG	
2.5" 64mm	36 2	123 8	53 4	147 10	93 6	170 12	76 5	146 10	PSI Bar
3.0" 76mm	24 2	83 6	39 3	103 7	63 4	114 8	48 3	94 6	PSI Bar
4.0" 102mm	13 1	45 3	21 1	60 4	34 2	62 4	26 2	48 3	PSI Bar
6.0" 152mm	--	19 1	--	26 2	--	24 2	--	18 1	PSI Bar

W65 AL (AIR-TO-LOWER) - LONG STROKE



VALVE SIZE	ACTUATOR SIZE								PSI Bar
	PORT (P ₁), AIR TO PORT B, WILL HOLD CLOSED AGAINST:		PORT (P ₁), (STEM RAISED) SPRING HOLDS CLOSED AGAINST:		PORT (P ₁), AIR TO PORT B, WILL LOWER STEM AGAINST:		PORT (P ₁), STEM LOWERED, ACTUATOR SPRING RAISES STEM AGAINST:		
	4ALLG	6ALLG	4ALLG	6ALLG	4ALLG	6ALLG	4ALLG	6ALLG	
2.5" 64mm	76 5	149 10	36 2	123 8	93 6	173 12	53 4	147 10	PSI Bar
3.0" 76mm	48 3	97 7	24 2	83 6	63 4	117 8	39 3	103 7	PSI Bar
4.0" 102mm	24 2	49 3	13 1	45 3	34 2	64 4	24 2	60 4	PSI Bar
6.0" 152mm	--	18 1	--	19 1	--	24 2	--	26 2	PSI Bar

W65 AL/HAL (AIR-TO-LOWER) - STANDARD STROKE

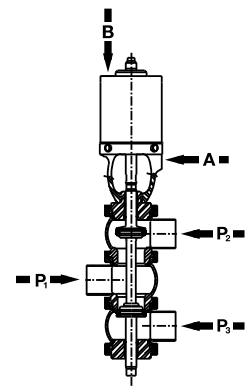


VALVE SIZE	ACTUATOR SIZE									PSI Bar
	PORT (P ₁), AIR TO PORT B, WILL HOLD CLOSED AGAINST:									
	4 AL 50PSI/ 3BAR	4 HAL 75PSI/ 5BAR	5 AL 50PSI/ 3BAR	5 HAL 75PSI/ 5BAR	6 AL 50PSI/ 3BAR	6 HAL 75PSI/ 5BAR	A2 50PSI/ 3BAR	B2 50PSI/ 3BAR	C2 50PSI/ 3BAR	
1.0" 25mm	149 10	295 20	292 20	327 23	--	--	--	--	--	PSI Bar
1.5" 38mm	96 7	241 17	245 17	237 16	--	267 18	--	--	--	PSI Bar
2.0" 50mm	44 3	115 8	117 8	110 8	226 16	120 8	--	--	--	PSI Bar
2.5" 63mm	31 2	73 5	74 5	74 5	140 10	86 6	--	--	--	PSI Bar
3.0" 76mm	21 1	50 3	50 3	50 3	94 6	59 4	--	--	--	PSI Bar
4.0" 101mm	12 1	27 2	28 2	28 2	52 4	33 2	--	--	--	PSI Bar

VALVE SIZE	ACTUATOR SIZE									PSI Bar
	PORT (P ₁), (STEM RAISED), SPRING HOLDS CLOSED AGAINST:									
	4 AL	4 HAL	5 AL	5 HAL	6 AL	6 HAL	A2	B2	C2	
1.0" 25mm	158 11	227 16	285 20	--	380 26	--	--	--	--	PSI Bar
1.5" 38mm	178 12	248 17	300 21	--	397 27	--	--	--	--	PSI Bar
2.0" 50mm	80 6	114 8	142 10	243 17	188 13	322 22	--	--	--	PSI Bar
2.5" 63mm	49 3	69 5	86 6	147 10	114 8	196 14	--	--	--	PSI Bar
3.0" 76mm	32 2	46 3	57 4	98 7	76 5	129 9	--	--	--	PSI Bar
4.0" 101mm	17 1	24 2	31 2	52 4	41 3	68 5	--	--	--	PSI Bar

W65 AL/HAL (AIR-TO-LOWER) - STANDARD STROKE (CONTINUED)

VALVE SIZE	ACTUATOR SIZE									
	BOTTOM PORT (P ₂), AIR TO PORT B, (WITH STEM RAISED), WILL CLOSE STEM AGAINST:									
	4AL 50PSI/ 3BAR	4HAL 75PSI/ 5BAR	5AL 50PSI/ 3BAR	5HAL 75PSI/ 5BAR	6AL 50PSI/ 3BAR	6HAL 75PSI/ 5BAR	A2 50PSI/ 3BAR	B2 50PSI/ 3BAR	C2 50PSI/ 3BAR	
1.0"	278	428	407	--	--	--	--	--	--	PSI
25mm	19	30	28	--	--	--	--	--	--	Bar
1.5"	258	408	389	--	--	--	--	--	--	PSI
38mm	18	28	27	--	--	--	--	--	--	Bar
2.0"	134	207	197	265	300	415	--	--	--	PSI
50mm	9	14	14	18	21	29	--	--	--	Bar
2.5"	81	125	119	160	182	249	--	--	--	PSI
63mm	6	9	8	11	13	17	--	--	--	Bar
3.0"	55	85	81	109	124	171	--	--	--	PSI
76mm	4	6	6	8	9	12	--	--	--	Bar
4.0"	31	47	45	61	68	95	--	--	--	PSI
101mm	2	3	3	4	5	7	--	--	--	Bar

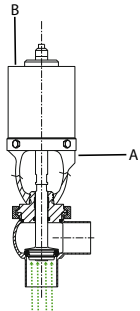


VALVE SIZE	ACTUATOR SIZE									
	PORT (P ₃), (STEM RAISED), ACTUATOR SPRING HOLDS AGAINST:									
	4AL	4HAL	5AL	5HAL	6AL	6HAL	A2	B2	C2	
1.0"	288	360	400	--	--	--	--	--	--	PSI
25mm	20	25	28	--	--	--	--	--	--	Bar
1.5"	302	414	446	--	--	--	--	--	--	PSI
38mm	21	29	31	--	--	--	--	--	--	Bar
2.0"	170	206	222	398	265	--	--	--	--	PSI
50mm	12	14	15	27	18	--	--	--	--	Bar
2.5"	99	120	130	233	157	359	--	--	--	PSI
63mm	7	8	9	16	11	25	--	--	--	Bar
3.0"	66	81	87	157	105	241	--	--	--	PSI
76mm	5	6	6	11	7	17	--	--	--	Bar
4.0"	36	44	48	85	57	131	--	--	--	PSI
101mm	2	3	3	6	4	9	--	--	--	Bar

Air Assist Charts

- 1 Refer to W61 & W65 holding pressure charts for spring only holding force.
- 2 Refer to W62 & W63 holding pressure charts for spring only holding force.
- 3 Air requirements: 50 PSI to actuate 4", 5", & 6" Actuators (refer to holding pressure charts for holding power).
75 PSI to actuate 4" & 5" Heavy Duty and 6" Heavy Duty Spring Actuators (refer to holding pressure charts for holding).

AIR BOOST FOR PORT B



PRODUCT PRESSURE APPLIED TO BOTTOM OF PLUG.

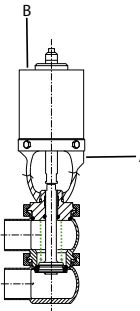
ACTUATOR SIZE	PRODUCT RATIO PER VALVE SIZE						
	1" (25MM)	1.5" (36MM)	2" (59MM)	2.5" (64MM)	3" (76MM)	4" (102MM)	6" (152MM)
"4" (102mm)	6.50	6.50	3.70	2.40	1.60	0.90	--
"5" (127mm)	10.40	10.40	5.80	3.70	2.60	1.50	--
"6" (152mm)	15.00	15.00	8.40	5.40	3.70	2.10	0.95
Y-BODY*	--	--	--	2.20	1.70	0.93	--
"A" Size (74mm)	3.50	3.50	2.00	1.30	0.90	0.50	--
"B" Size (110mm)	8.10	8.10	4.50	2.90	2.00	1.10	--
"C" Size (165mm)	18.60	18.60	10.40	6.70	4.60	2.60	--

Note: * Y Body Valve is only available with 6ARY and 6ALY actuators

Chart shows additional product holding pressure per 1 PSI or BAR of air applied to port B to:

- air assist spring holding force¹ (spring to close)
- calculate holding power on air to air actuator
- calculate additional holding power above the nominal air requirement of the actuator³
- Maximum Air Assist Pressures should not exceed:
 - 70 psi on 4", 5", 6" Maintainable Actuators
 - 15 psi on A, B or C sized Maintenance Free Actuator
- Air Assist pressures should be air regulated to the lowerest required amount of air pressure

AIR BOOST FOR PORT A



ACTUATOR SIZE	PRODUCT RATIO PER VALVE SIZE						
	1" (25MM)	1.5" (36MM)	2" (59MM)	2.5" (64MM)	3" (76MM)	4" (102MM)	6" (152MM)
"4" (102mm)	6.50	6.50	3.70	2.40	1.60	0.90	--
"5" (127mm)	10.40	10.40	5.80	3.70	2.60	1.50	--
"6" (152mm)	15.00	15.00	8.40	5.40	3.70	2.10	0.95
Y-BODY*	--	--	--	2.20	1.70	0.93	--
"A" Size (74mm)	4.70	4.70	2.30	1.40	0.90	0.50	--
"B" Size (110mm)	10.80	10.80	5.30	3.20	2.20	1.20	--
"C" Size (165mm)	24.80	24.80	12.10	7.30	4.90	2.70	--

Chart shows additional product holding pressure per 1 PSI or BAR of air applied to port A to:

- air assist spring holding force¹ (spring to close)
- calculate holding power on air to air actuator
- calculate additional holding power above the nominal air requirement of the actuator³
- Maximum Air Assist Pressures should not exceed:
 - 70 psi on 4", 5", 6" Maintainable Actuators
 - 15 psi on A, B or C sized Maintenance Free Actuator
- Air Assist pressures should be air regulated to the lowerest required amount of air pressure

Example:

W61T-3" with 5" Air to Raise (Spring to Close) actuator required to hold against 75 PSI product pressure.

Holding pressure required: 75 PSI

Minus Spring only holding force: - 55 PSI

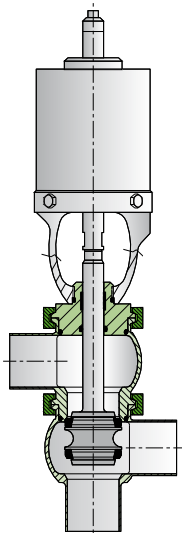
(From page 16)

Additional holding power required: 20 PSI _____

$$\text{Air Assist pressure required} = \frac{\text{Additional holding power required}}{\text{Product Ratio from chart above}} = \frac{20}{2.6}$$

7.79 PSI
Air Required to Port B

W60 Series Valves: Safe, Strong and Sanitary



W62TT

Cleanable, Designed For Sanitary / Hygienic Applications

- 316L Stainless Steel wetted parts
- Minimal internal crevices and high surface finishes
- Free-spinning, snap-on TFM or PEEK seats for reliable sealing: choice of Tef-Flow, Tef-Flow P, tri-ring, or metal
- Captive, supported stationary seals located forward to the product zone: choice of o-ring, quad, or wiping stem seals
- Free draining in multiple positions – including upside down
- 3-A compliant, FDA approved materials, EHEDG certified

Heavy-duty Construction

- Machined-from-bar body construction can withstand mishandlings of active plant environment & lead to long service life
- Consistently thick body wall dimensions & laser welded port extensions minimize body distortion during manifolding & extreme fluid temperature changes
- Deep, inter-locking bodies and adapters
- Heavy-Duty Clamps & High Pressure Adapters for up to 1220 PSI applications
- Multiple split TFM bearing support of stems

Flexibility & Modularity

- Major components (body, stem, adapter, actuators) are modular in design to quickly and easily assemble or retrofit in field a valve to meet specific applications
- Choice of standard fully maintainable actuator or cost-effective maintenance-free actuator with 5-year warranty with various sizes and spring options
- True-line mix body sizes and custom 45° or other angled ports available to match complicated pipe design
- One-piece bodies or two-piece clamped
- AL6XN alloy product zone parts available for corrosive products
- Custom port lengths and center-to-center dimensions can match competitor and legacy series valves to provide easy drop-in replacements
- Various control top models available to fit customer needs: cost-effective CU4 full-featured, robust WCB control tops, or state-of-the-art Burkert 8681



Heavy-duty Construction

Low Cost of Ownership

- Heavy-duty construction maximizes service life
- Minimum proprietary parts gives off-the-shelf availability and low price of most spares and components
- Available spare parts from local distributor or factory in Delavan, WI
- Modular design enables multi-use parts, easy training & familiarity with whole family of valves, minimum spares required on shelf
- Long life standard actuator is field-maintainable with finger-safe, caged springs and cartridge piston assemblies
- Commonality of parts: same part numbers used multiple places
- Simple, easy-to-maintain design is intuitive and does not require advanced mechanical skills

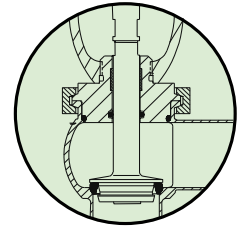
Domestic Manufacture, Local Support

- Value-Added Distributor Relationships
- Face-to-Face Representation
- Manufacturing, Assembly, Inventory, Engineering & Customer Service in Delavan, Wisconsin, USA

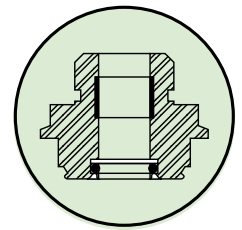


Valve Adapter Options

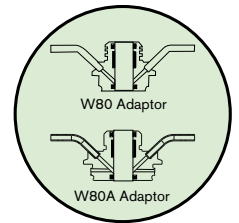
The 'standard' adapter is used on all models of short and long stroke W60 Series valves. Machined from 316LSS bar with a thick cross-section, the adapter adds strength to the valve body and provides alignment for the stem. The outer perimeter seals to the valve body with an O-ring that is located forward to the product zone to minimize crevices. The product stem passes through the adapter and is sealed to the adapter with an O-ring. A TFM split bearing guides the stem and takes up the mechanical loading imparted by hydraulic forces. This increases the service life of the stem seal. Adapters are made in 1"-6" (25mm -152mm) sizes.



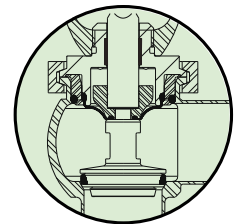
The pressure limitation of the W60 adapter is the sealing capability of the dynamic O-ring on the product stem. This variation of the W60 adapter uses a backing ring added on the atmospheric side to support the stem O-ring. This significantly boosts the pressure rating on the stem O-ring. The product stem passes through the adapter and is sealed to the adapter with an O-ring and is guided by a TFM split bearing.



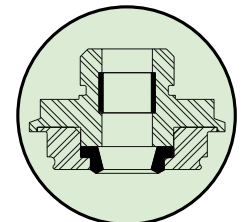
This adapter is used to convert a 'standard' W60 series valve to a W80. The outer perimeter seals to the valve body with an O-ring that is located forward to the product zone to minimize crevices. The product stem passes through the adapter and is sealed in the upper part and the lower part of the adapter with O-rings. The space between the O-rings is flushed with a suitable liquid or steam. The TFM split bearing is located in the flushed chamber. Adapters are made in 1"-6" (25mm - 152mm) sizes. For vacuum-rated, extended shelf-life (ESL) applications, the W80A adapter adds steam trace to the adapter-to-valve body connection.



This adapter is used to convert a 'standard' W60 series valve to a diaphragm-stem seal valve for use with extended shelf-life (ESL) applications. The valve stem is modified to work in conjunction with the adapter. This adapter is made in sizes 1.5" through 4" (38mm through 101mm). All sizes use the 1.5" (38mm) diaphragm with the difference in diameter being taken up by a spacer ring. The outer perimeter of the spacer ring is sealed to the 'standard' W60 body with an O-ring. The stem used with the W90 adapter is a two piece design. The seat rings are FDA compliant PEEK™, suitable to 280°F (138°C) and high pressures.



For high-risk and hard to clean product applications, the wiping stem seal fills the gap between the product zone and the traditional O-ring stem seal. The adapter is a two-piece design to allow easy inspection or replacement of the wiping stem seal. The outer perimeter seals to the valve body with an O-ring that is located forward to the product zone to minimize crevices. A TFM split bearing is used to guide and support the valve stem.



W60/W80/W90
Series

SHUT OFF AND DIVERT VALVES

SPXFLOW

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