

3L/T-2R/S33 Series

3 Way Valves

A flanged-end 3-way ball valve that will lower overall costs by allowing the replacement of two or three conventional straight-line valves, eliminating excessive fittings and simplifying automation.

- In sizes 2" through 6" with Class 150 flanges
- Sizes 2" through 4" with Class 300 flanges (2" CF8M valve rated 720 psi @ 100°F, 2-1/2" through 4" CF8M valve rated 580 psi @ 100°F)
- "L" and "T" port, 90° and 180° operation
- Full port design standard for optimal flow
- Blow-out proof stem and anti-static devices between ball and stem, and cover and stem
- Four-seated design for balanced seat loading and positive sealing at any port
- Trunnion-supported ball for lower torque and longer seat life
- Fully machined ISO 5211 mounting pad for simple and convenient automation

The Marwin Series 3L/T-2R/S33 is a versatile large size (2" – 6") multi-port ball valve. It can be configured as a 3-way valve with "L" or "T" ports. It consists of a heavy-duty center section with bolted-on flanged ends for 2" – 6" Class 150 flanges, or 2" – 4" Class 300 flanges. (See the pressure-temperature chart for rating information). All body gaskets are Teflon. The valve features four seats for equal seat loading, and a trunnion ball to prevent excessive seat loading and reduce side loading on the stem. It also features a unique live-loaded cup-and-cone lower stem seal/thrust bearing that separates the bearing and sealing functions, as well as a multiple v-ring upper stem seal.



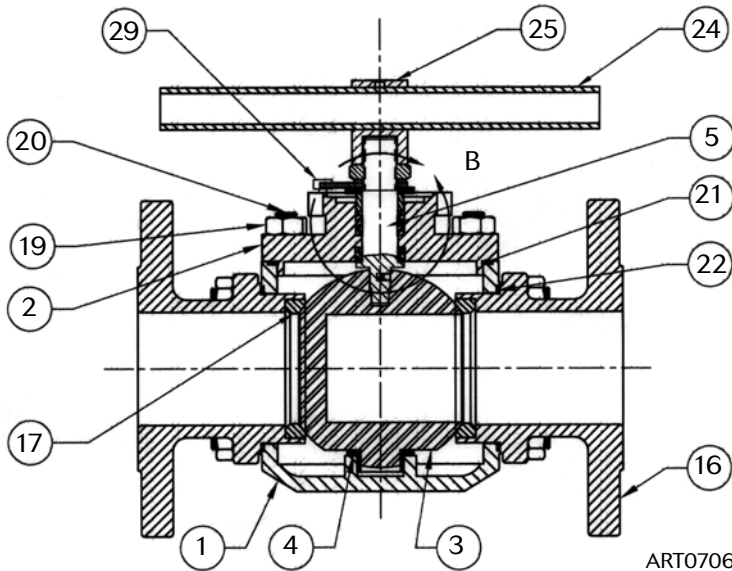
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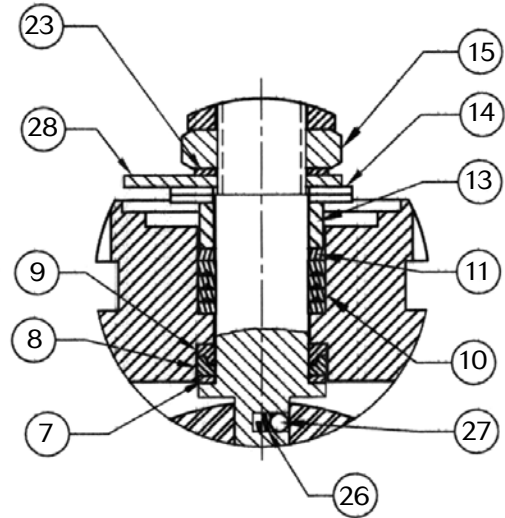
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Marwin Valve 3L/T2R/S33 Series – Material Specifications



ART0706



ART0645

Item No.	Quantity	Part Name	316SS Valve	Carbon Steel Valve
1	1	Body	ASTM A351 Gr. CF8M	ASTM A216 Gr. WCB
2	1	Bonnet	ASTM A351 Gr. CF8M	ASTM A216 Gr. WCB
3	1	Ball	ASTM A351 Gr. CF8M	ASTM A351 Gr. CF8M
4	1	Bearing, Trunnion	50% SS Filled PTFE	50% SS Filled PTFE
5	1	Stem	ASTM A276 Type 316	ASTM A276 Type 316
7	1	Thrust Washer, Lower	50% SS Filled PTFE	50% SS Filled PTFE
8	1	Compression Ring	AISI 304	AISI 304
9	1	Thrust Washer, Upper	TFM 1600	TFM 1600
10	1 Set	Packing	PTFE	PTFE
11	1	Thrust Washer, Packing	50% SS Filled PTFE	50% SS Filled PTFE
13	1	Gland, Packing	AISI 304	AISI 304
14	2	Bellville Washer	AISI 304	AISI 304
15	1	Handle Nut	AISI 304	AISI 304
16	3	End Cap, Flanged	ASTM A351 Gr. CF8M	ASTM A216 Gr. WCB
17	4	Seat	PTFE, RPTFE or CRPTFE	PTFE, RPTFE or CRPTFE
18	1	Back Cover, Not Shown	ASTM A351 Gr. CF8M	ASTM A216 Gr. WCB
19	20	Nut	ASTM A194 Gr. B8	A194 Gr. 2H
20	20	Stud	ASTM A193 Gr. B8	A193 Gr. B7
21	1	Seal, Top Cover	PTFE	PTFE
22	4	Seal, End Cap	PTFE	PTFE
23	1	Lock Washer	AISI 304	AISI 304
24	1	Handle	AISI 304	AISI 304
25	1	Handle Adaptor	ASTM A351 Gr. CF8M	ASTM A351 Gr. CF8M
26	2	Anti-Static Spring	SS	SS
27	2	Anti-Static Ball	SS	SS
28	1	Stop Plate	AISI 304	AISI 304
29	1	Stop Bolt & Lock Washer	AISI 304	AISI 304

Marwin Valve

3L/T-2R/S33 Series – Technical/Port Configurations

3L/T-2R/S Series Technical Specifications

Size	Breakaway Torque (in-lbs)*	Cv L-Port	Cv T-Port 90° (Branch)	Cv T-Port Straight-Thru (Run)	Wt Class 150 3-way (lb)	Wt Class 300 3-way (Lb)	Wt, FNPT Ends (Lb)
2"	518	110	100	430	35	44	26
2-1/2"	920	160	150	670	58	69	—
3"	1725	240	240	1170	71	93	—
4"	3450	400	400	2070	133	155	—
6"	5750	970	970	5000	318	372	—

Port Configurations (Top View)

Three-Way "T" Port 180°

Position Flow Pattern	A (0°)	B (90°)	C (180°)
T1 180°			
T2 180°			
T6 180°			
T7 180°			

Three-Way "T" Port 90°

Position Flow Pattern	A (0°)	B (90°)	C (180°)
T3 90°			
T2 90°			
T8 90°			
T9 90°			

Arrows show sequence of positions (ABC or CBA) for the direct rotating UT-SR actuator air stroke (CCW).

Start/fail positions are as follows, and will be used if not specified on the order:

A for L1, L2, L3, T2, T3, T6, T7, T8 and T9;

B for T4

C for T1

Start positions opposite these are available but require clockwise rotating UT-SR actuators .

Three-Way "L" Port 180°

Position Flow Pattern	A (0°)	B (90°)	C (180°)
L1 180°			
L3 180°			

Three-Way "L" Port 90°

Position Flow Pattern	A (0°)	B (90°)	C (180°)
L2 90°			

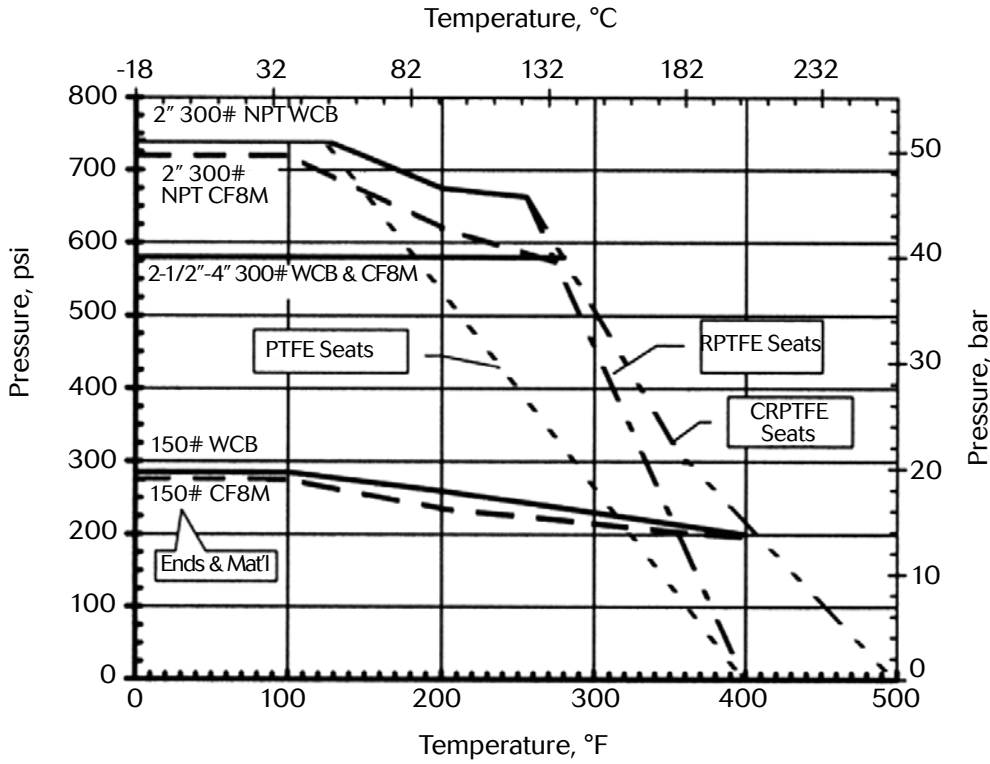
If not specified, **port configuration** start position L2A or T3A will be used for 90° valves, and L1A or T1C for 180° valves.

Rotation for UT-SR actuators is defined as follows:

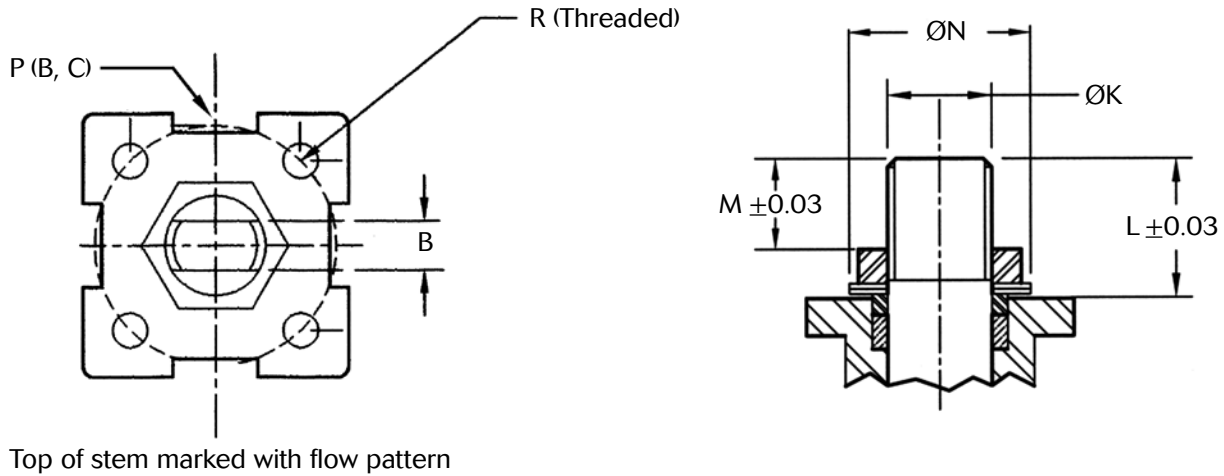
CCW (Standard) -- Output pinion rotates counter-clockwise when air is applied (air stroke), and clockwise when air is exhausted (spring stroke).

CW (Non-standard) -- Output pinion rotates clockwise on the air stroke and counter-clockwise on the spring stroke; requires that the pistons be reversed inside the actuator.

3L/T-2R/S Series Pressure – Temperature Chart



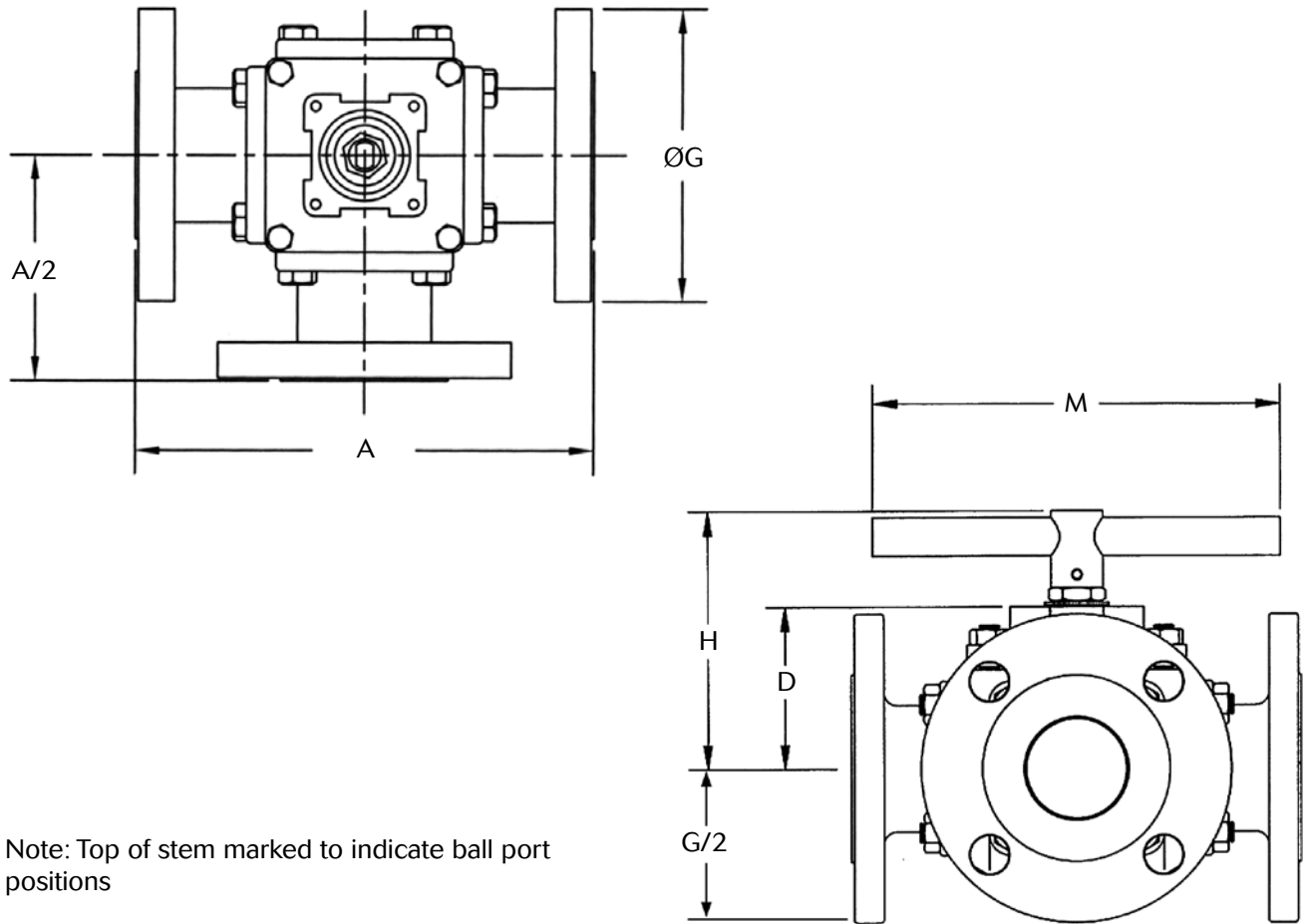
3L/T-2R/S Series Stem Connection Dimensions



Top of stem marked with flow pattern

Size	Dimensions							
	Mtg. Pattern	ØP (B.C.)	R (Threaded)	B (Flats)	ØK	L	M	ØN
2" (DN50)	F07	2.76 (70,1)	M8	0.374 (9,5)	0.63 (16)	0.93 (24)	0.55 (14)	1.31 (33)
2-1/2" (DN65)	F10	4.02 (102,1)	M10	0.670 (17)	0.88 (22)	1.63 (41)	0.88 (22)	1.81 (46)
3" (DN80)	F10	4.02 (102,1)	M10	0.670 (17)	0.88 (22)	1.63 (41)	0.75 (19)	1.81 (46)
4" (DN100)	F10	4.02 (102,1)	M10	0.670 (17)	1.13 (29)	1.87 (47)	1.02 (26)	2.25 (57)
6" (DN150)	F12	4.92 (125,0)	M12	1.024 (26)	1.34 (34)	2.56 (65)	1.46 (37)	2.88 (73)

Marwin Valve 3L/T2R/S33 Series – Dimensions



Note: Top of stem marked to indicate ball port positions

Size	Dimensions								
	ØPort	A (150#)	A (300#)	A (FNPT End)	D	G (150#)	G (300#)	H	M
2" (DN50)	1.93 (49)	8.66 (220)	8.66 (220)	6.73 (171)	3.15 (80)	5.98 (152)	6.50 (165)	5.37 (136)	11.81 (300)
2-1/2" (DN65)	2.44 (62)	11.02 (280)	11.02 (280)	—	3.82 (97)	7.00 (178)	7.48 (190)	6.38 (162)	19.68 (500)
3" (DN80)	2.96 (75)	11.22 (285)	11.22 (285)	—	4.25 (108)	7.48 (190)	8.27 (210)	7.32 (186)	19.68 (500)
4" (DN100)	4.00 (102)	13.66 (347)	13.66 (347)	—	5.08 (129)	9.02 (229)	10.00 (254)	8.39 (213)	19.68 (500)
6" (DN150)	5.90 (150)	18.90 (480)	—	—	8.46 (215)	11.00 (279)	—	11.02 (280)	31.50 (800)

3L/T-2R/S33 Series Ordering Schematic

Body Port Configuration	Ball Port Configuration		Series/Body Material	Ball & Stem Material	Port Design		Size		Body Material	Packing/Seat	Ends	Handle
3	T	–	2S	00	F	–	200	–	S6	B	F	HL

Body Port Configuration	
3	3-Way

Ball Port Configuration	
L	"L" Port
T	"T" Port

Series/Body Material	
2S	Stainless Steel CF8M
2R	Carbon Steel WCB

Ball & Stem	
00	316SS

Size	
200	2" (DN50)
250	2-1/2" (DN65)
300	3" (DN80)
400	4" (DN100)
600	6" (DN150)

Body Material	
CS	Carbon Steel
S6	Stainless Steel

Packing/Seat	
F	Grafoil / RPTFE
B	PTFE / RPTFE (Standard)
C	PTFE / C-RPTFE
G	Grafoil / C-RPTFE

Ends	
F	Class 150 FE
G	Class 300 FE
A	FNPT (2" only)

Handle	
HL	Lever (Standard)
NN	None
*DA	Double Acting Pneumatic Actuator
*SR	Spring Return Pneumatic Actuator
*EA	Electric Actuator
*GO	Gear Operator

* These automation codes are general only, and require additional information. Specify type and size of actuator. Provide appropriate operating parameters, such as fail position, air supply pressure, electrical power supply characteristics, NEMA 4 weatherproof or NEMA 7 explosion proof electrical enclosures, etc. Also include any desired accessories. A unique code for the automation specified appears on the order, not these general codes.



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