



A-T Controls, Inc.

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Engineer: AMZ No.: D100043

Date Created: 07/09/2019

Date Modified:

TSM Extensions

TSM's are designed for use with fugitive emissions to act as another form of packing on valve series that are already designed for fugitive emissions. When used manually the handles are lockable. TSM's also allow for an extended mounting pad to which an actuator can be directly mounted. They can be added to the 22, 24, 33, 55, 77, T77, H78, 8R, 88, 90, D9 and F91 Series. See dimensional drawings P02774, P02776, T11580, and P02997 below.

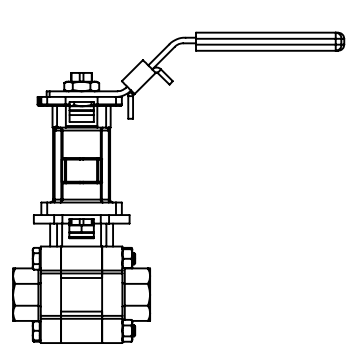
Spring Return Handles

Spring return handles are designed for manual operation and can spring open or close. Depending on the set up the valve will either spring open or closed when the handle is released. They are made up of a triangle pad and a handle. The spring is contained in the handle and is attached to the triangle pad, which can be seen in P03000 along with dimensions and applicable sizes. They can be added to the 22, 33, 77, 88/F88, F91, D9, FD9, 8R, F8R, 83/F83, and 90/F90 series. The F91, 8R / F8R, 83/F83 and 90/F90 series will additionally require a TSM for mounting purposes.

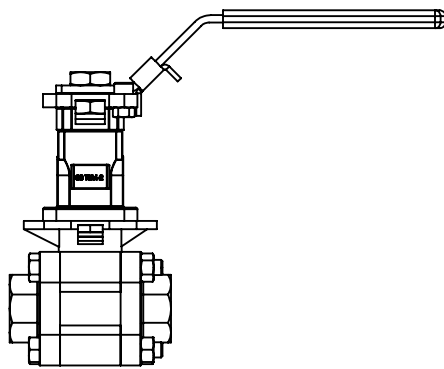


Manual and Automated Quarter Turn Valves
Complete Valve and Damper Automation

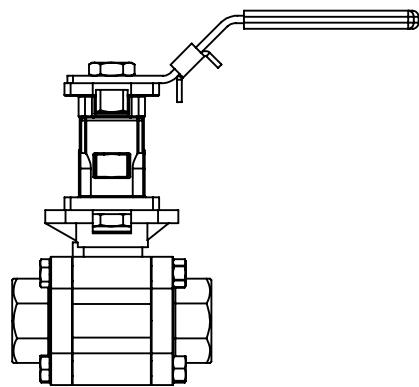




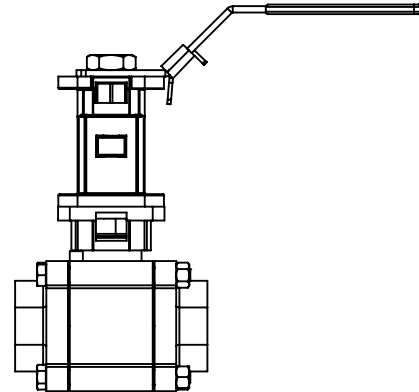
88-TSM-1
1/4" - 1/2"



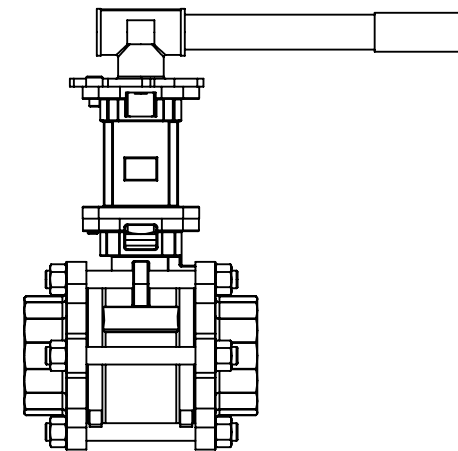
88-TSM-2
3/4"



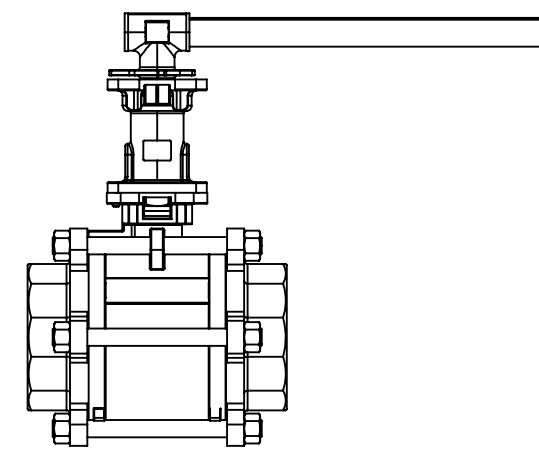
88-TSM-3
1" - 1-1/4"



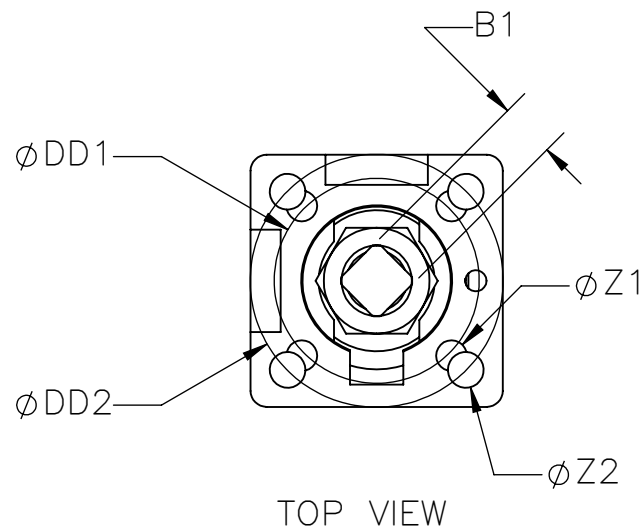
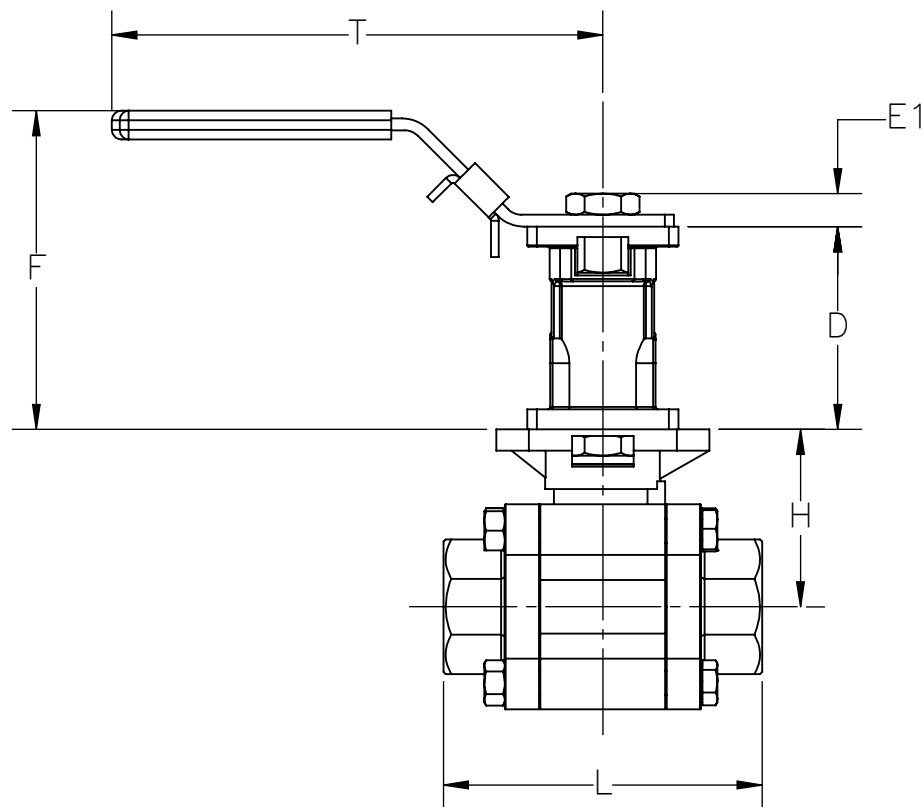
88-TSM-4
1-1/2" - 2"



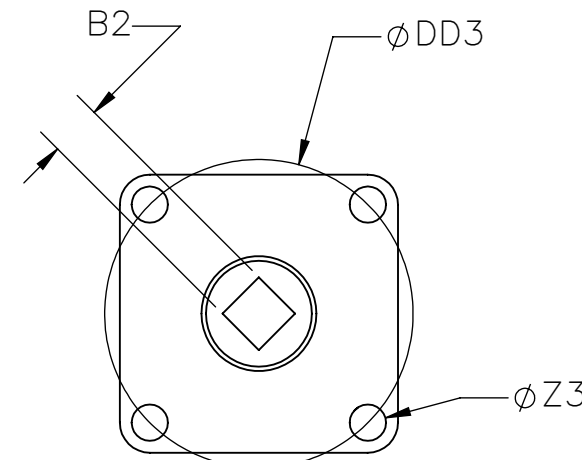
88-TSM-5
2-1/2"



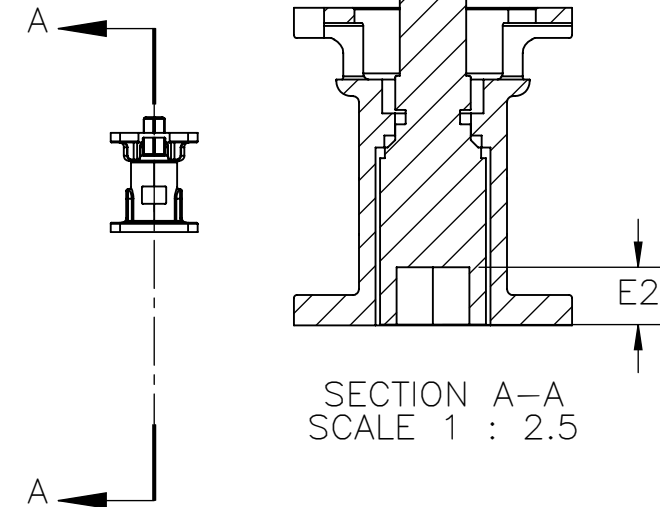
88-TSM-6
3" - 4"



TOP VIEW



BOTTOM VIEW



SECTION A-A
SCALE 1 : 2.5

TSM for Series 88 / 22 / 24 / 33 / 77 / T77 / H78 / and 91																							
TSM	88	22	24	33	77 / T77 / H78	91	Valve		Top TSM Dimensions										Bottom TSM Dimensions				
	Sizes						L	H	D	E1	F	T	B1	phi DD1	phi DD2	ISO	phi Z1	phi Z2	phi DD3	ISO	phi Z3	B2	E2
88-TSM-1	1/4" - 1/2"	1/4"-3/4"	1/4"-3/4"	1/4"-1/2"	1/2"-3/4"	N/A	Refer to catalog for valve dimensions	2.43	0.35	3.78	5.47	0.354	1.417	1.654	F03/F04	0.24	0.24	1.654	F04	0.26	0.354	0.402	
88-TSM-2	1/4" - 3/4"	1/4"-3/4"	1/4"-3/4"	1/4"-1/2"	N/A	N/A		2.65	0.43	4.21	6.50	0.433	1.654	1.969	F04/F05	0.24	0.28	1.969	F05	0.30	0.354	0.520	
88-TSM-3	1" - 1-1/4"	1"-1-1/4"	1"-1-1/4"	3/4"-1"	1"	1/2"-1"		2.65	0.43	4.21	6.50	0.433	1.654	1.969	F04/F05	0.24	0.28	1.969	F05	0.30	0.433	0.520	
88-TSM-4	1-1/2" - 2"	1-1/2"-2"	1-1/2"-2"	1-1/4"	1-1/2"-2"	1-1/2"		3.38	0.55	5.35	8.46	0.551	1.969	2.756	F05/F07	0.30	0.35	2.756	F07	0.47	0.551	0.677	
88-TSM-5	2-1/2" - 4"	N/A	N/A	1-1/2"-2-1/2"	2-1/2"-4"	2-1/2"-3"		4.14	0.66	6.46	11.81	0.748	2.756	4.016	F07/F10	0.39	0.47	4.016	F10	0.47	0.472	0.795	



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VALVES, ACTUATORS, AND AUTOMATION CONTROLS

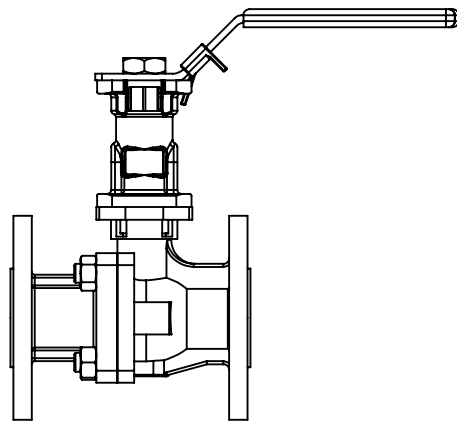
SHEET 1 of 1

DO NOT SCALE DRAWING

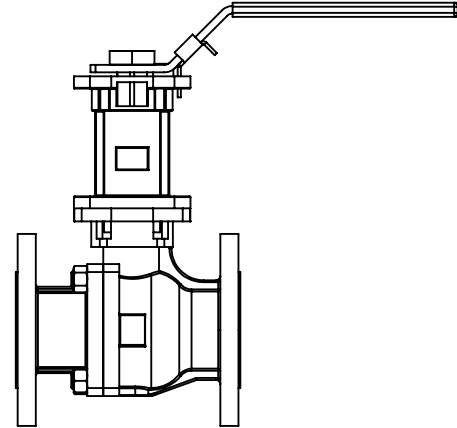
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22 / 24 / 33 / 77 / 88 / 91 TSM DIMENSIONAL DRAWING

MATERIAL	
DRAWING NO.	REVISION
P02774	A

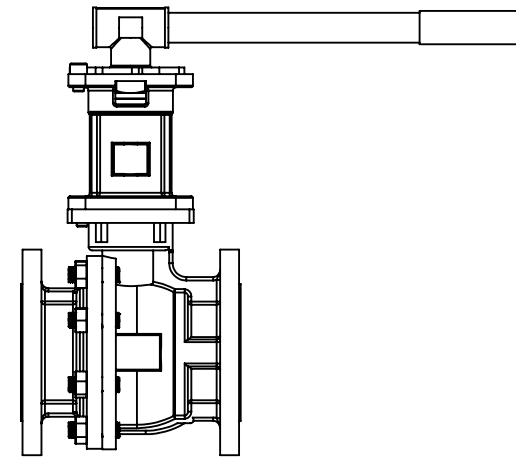
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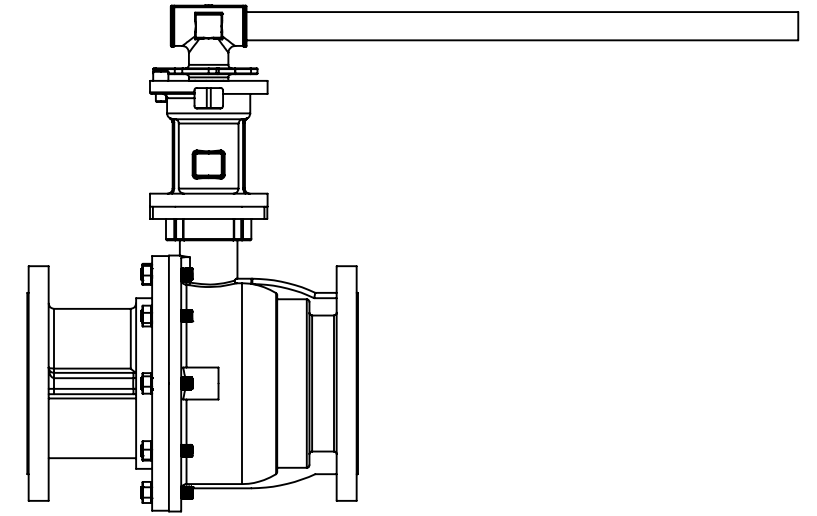
D9-TSM-1
1/2" - 1"



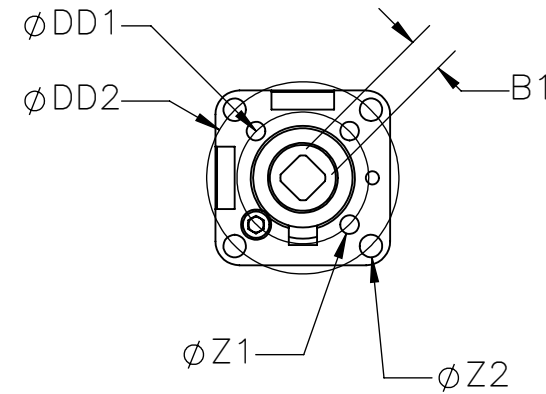
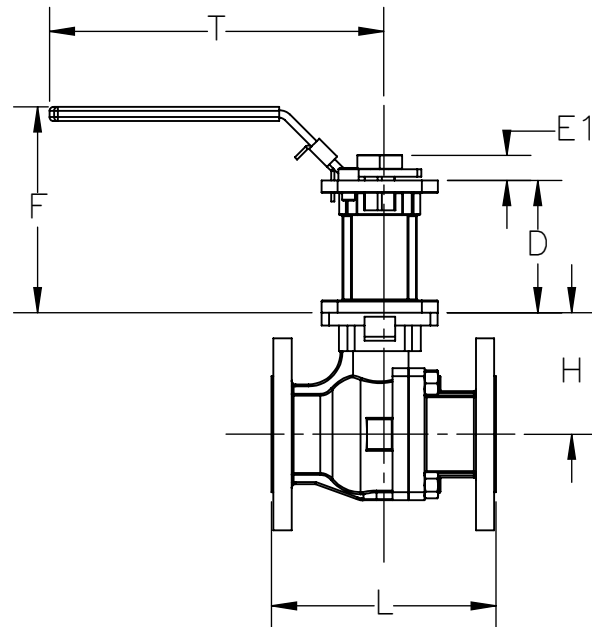
D9-TSM-2
1-1/2" - 2-1/2"



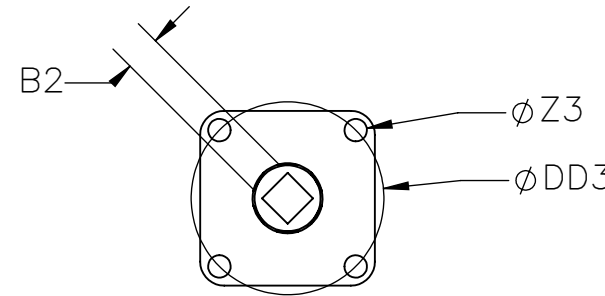
D9-TSM-3
3" - 4"



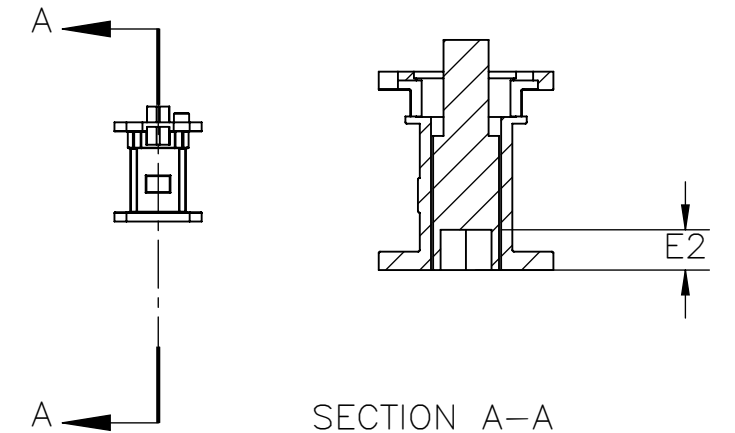
D9-TSM-4
6"



TOP VIEW



BOTTOM VIEW



SECTION A-A

Series D9 TSM																		
TSM	D9 Size	Valve Dimensions		Top TSM Dimensions									Bottom TSM Dimensions					
		L	H	D	E1	F	T	B1	ØDD1	ØDD2	ISO	ØZ1	ØZ2	ØDD3	ISO	ØZ3	B2	E2
D9-TSM-1	1/2" - 1"	Refer to catalog for valve dimensions		2.68	0.43	4.21	6.50	0.433	1.654	1.969	F04/F05	0.24	0.28	1.969	F05	0.30	0.433	0.52
D9-TSM-2	1-1/2" - 2-1/2"			4.17	0.66	6.26	10.35	0.748	2.756	4.016	F07/F10	0.39	0.47	4.016	F10	0.47	0.748	0.80
D9-TSM-3	3" - 4"			4.17	0.91	6.26	10.35	0.866	2.756	4.016	F10/F12	0.39	0.47	4.016	F10	0.47	0.866	0.80
D9-TSM-4	6"			5.91	1.12	8.50	27.76	1.063	4.921	5.512	F12/F14	0.55	0.71	4.921	F12	0.55	1.063	0.98



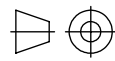
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SHEET 1 of 1

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DESCRIPTION
D9 TSM DIMENSIONAL DRAWING

MATERIAL

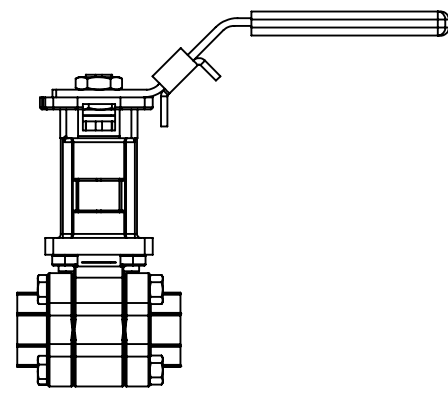
DRAWING NO.

P02776

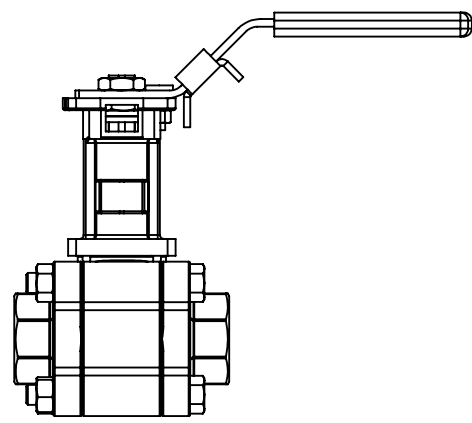
REVISION

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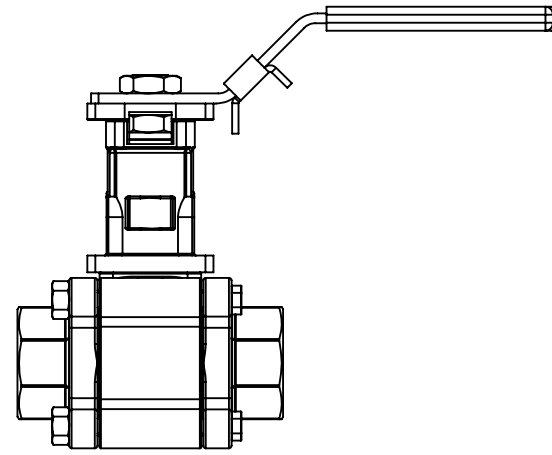
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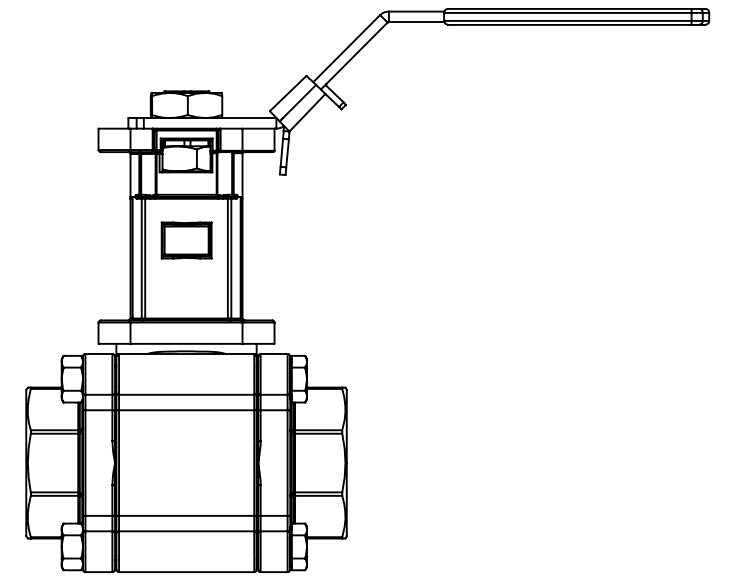
8R-TSM-1



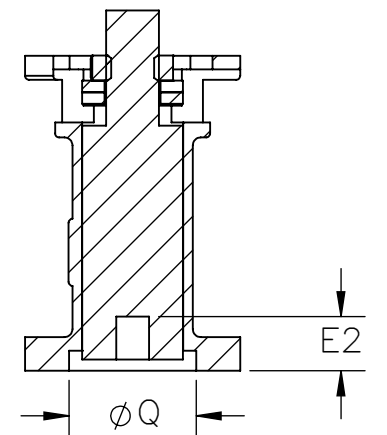
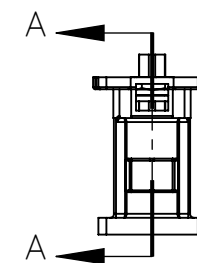
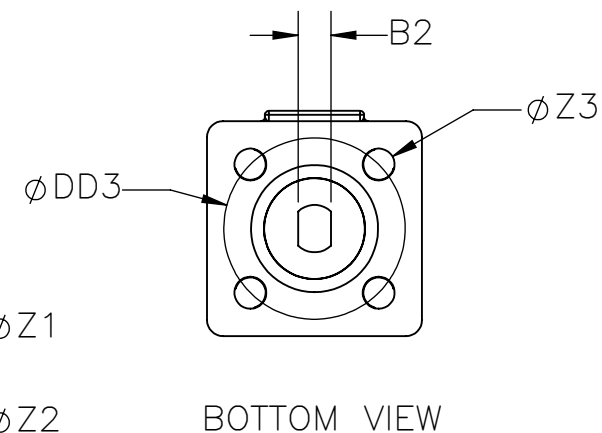
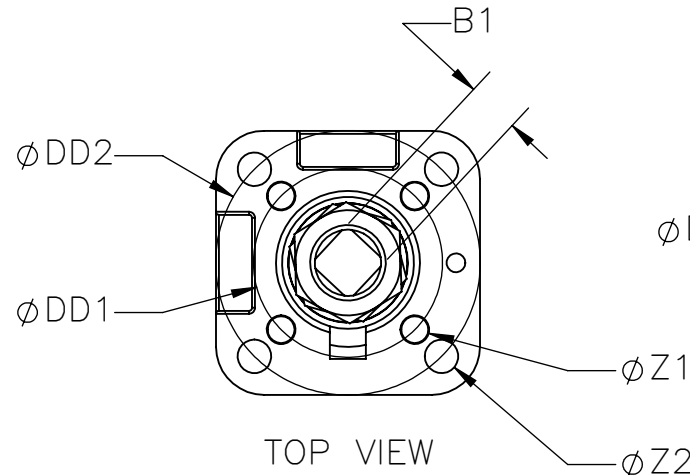
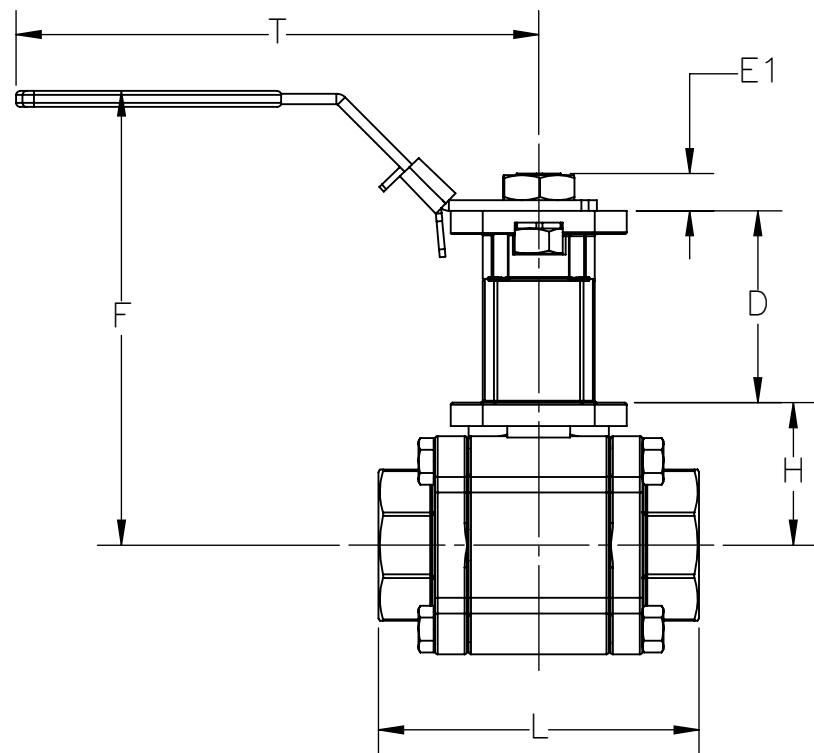
8R-TSM-2



8R-TSM-3



8R-TSM-4



SECTION A-A
SCALE 1 : 1.5

NOTE: OPTIONAL SNIFFER PORT
AVAILABLE FOR 8R TSM'S (SP)

TSM for Series 8R / 83 / 55

TSM	8R 83 55			Valve Dimensions		Top TSM Dimensions										Bottom TSM Dimensions					
	Sizes			L	H	D	E1	F	T	B1	ØDD1	ØDD2	ISO	ØZ1	ØZ2	SP	ØDD3	ISO	ØZ3	B2	E2
8R-TSM-1	1/4" - 1/2"	1/4" - 3/8"	N/A	Refer to catalog for valve dimensions	2.52	0.39	3.96	5.535	0.354	1.417	1.654	F03/F04	0.24	0.24	1/16" NPT	1.417	F03	0.24	0.256	0.335	0.992
8R-TSM-2	3/4" - 1"	1/2" - 3/4"	1/4" - 3/4"		2.52	0.39	3.96	5.535	0.354	1.417	1.654	F03/F04	0.24	0.24	1/16" NPT	1.417	F03	0.24	0.256	0.768	0.992
8R-TSM-3	1-1/4" - 1-1/2"	1" - 1-1/4"	1" - 1-1/4"		2.54	0.43	4.09	6.496	0.433	1.654	1.969	F04/F05	0.24	0.28	1/8" NPT	1.654	F04	0.24	0.315	1.016	1.189
8R-TSM-4	2" - 2-1/2"	1-1/2" - 2"	1-1/2" - 2"		3.40	0.55	5.21	8.464	0.551	1.969	2.756	F05/F07	0.30	0.35	1/8" NPT	1.969	F05/F07	0.28	0.382	1.272	1.543



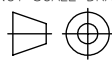
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VALVES, ACTUATORS, AND AUTOMATION CONTROLS

SHEET 1 of 1

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DESCRIPTION
8R / 83 / 55 TSM DIMENSIONAL DRAWING

MATERIAL

DRAWING NO.
T11580

REVISION
A

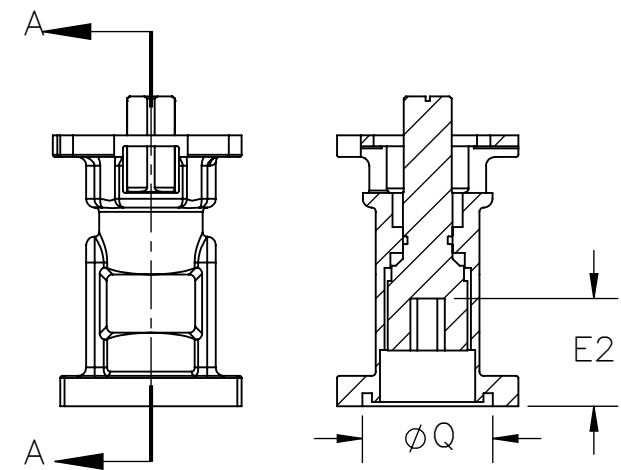
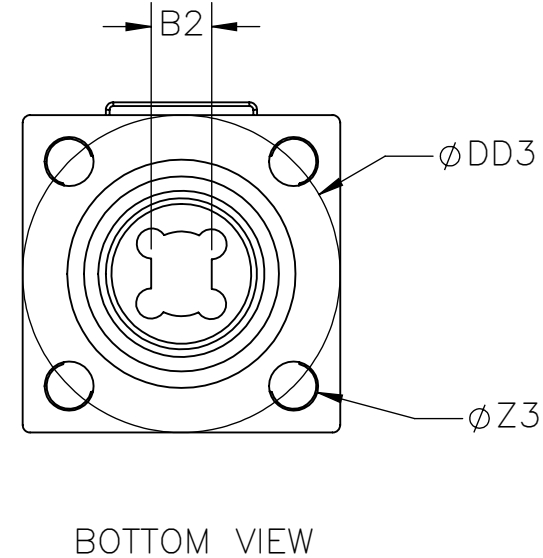
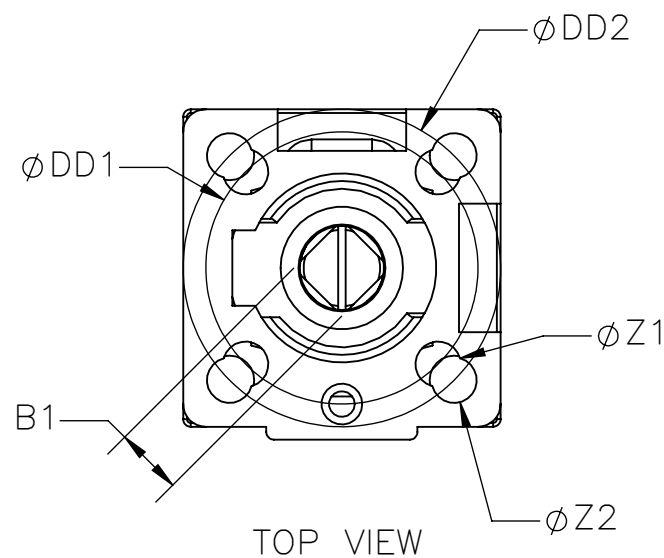
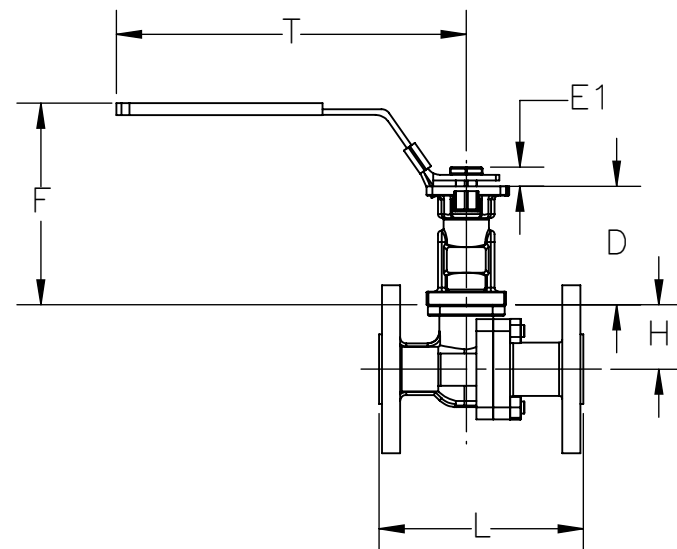
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90-TSM-1

90-TSM-2

90-TSM-3

90-TSM-4



NOTE: OPTIONAL SNIFFER PORT AVAILABLE FOR 90 TSM'S (SP)

Series 90 TSM																				
TSM	90 Sizes	Valve Dimensions		Top TSM Dimensions										Bottom TSM DIMENSIONS						
		L	H	D	E1	F	T	B1	ØDD1	ØDD2	ISO	ØZ1	ØZ2	SP	ØDD3	ISO	ØZ3	B2	E2	ØQ
90-TSM-1	1/4" - 1/2"	Refer to catalog for valve dimensions		2.47	0.35	4.06	7.28	0.354	1.417	1.654	F03/F04	0.24	0.24	1/16" NPT	1.654	F04	0.26	0.31	0.98	1.189
90-TSM-2	3/4" - 1"			2.64	0.43	4.33	8.35	0.433	1.654	1.969	F04/F05	0.24	0.28	1/8" NPT	1.969	F05	0.30	0.38	1.10	1.543
90-TSM-3	1-1/2" - 2-1/2"			3.39	0.55	5.28	10.35	0.551	1.969	2.756	F05/F07	0.30	0.35	1/8" NPT	2.756	F07	0.35	0.47	1.44	2.173
90-TSM-4	3" - 4"			4.13	0.66	6.50	14.57	0.669	2.756	4.016	F07/F10	0.39	0.47	1/4" NPT	4.016	F10	0.47	0.59	1.90	2.764



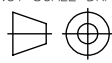
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DESCRIPTION
90 SERIES TSM DIMENSIONAL DRAWING

MATERIAL

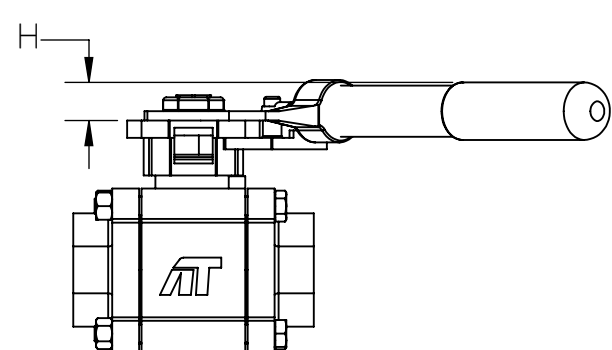
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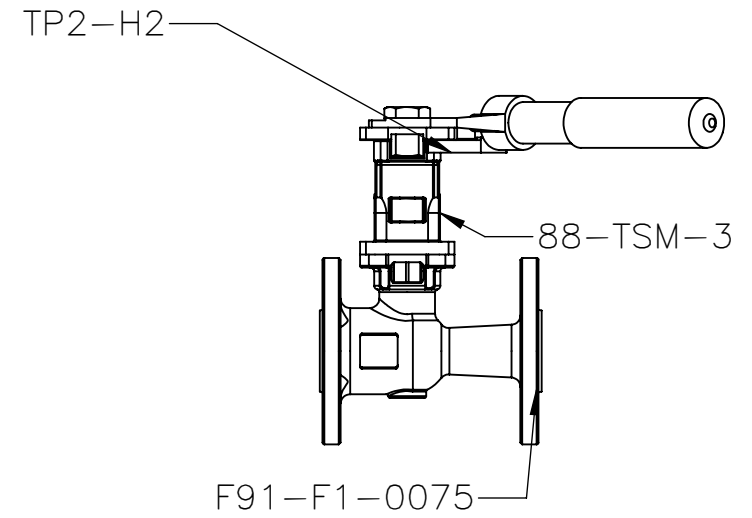
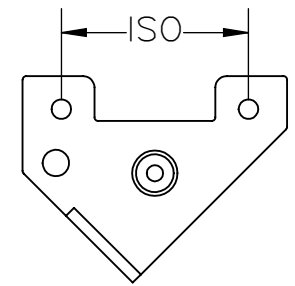
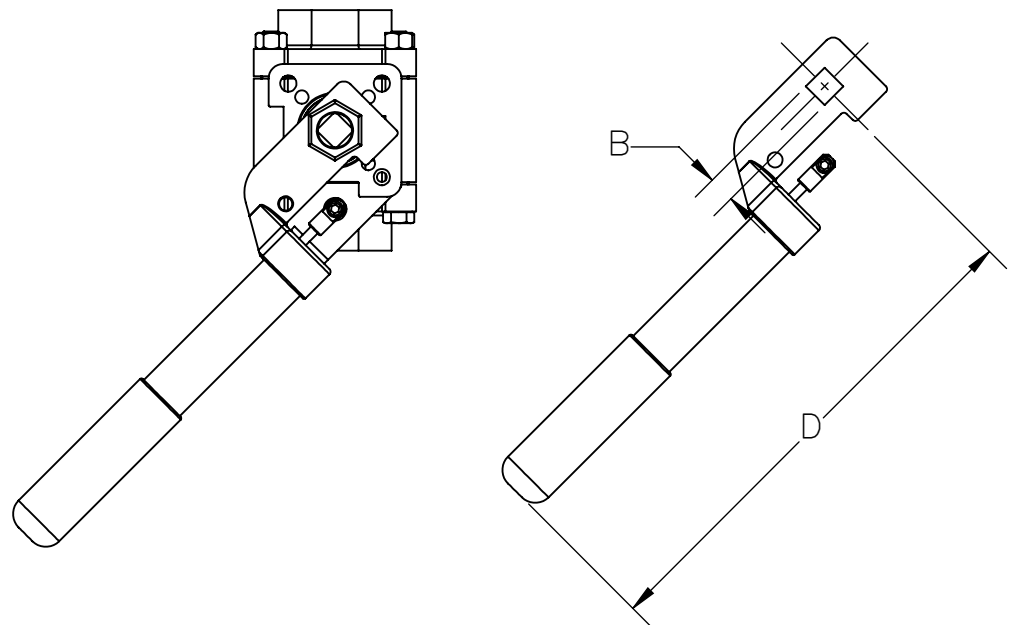
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88-TH-0150-XSX



Spring Return Handle								
Series	Sizes							
	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
22	TP2-H1	TP2-H1	TP2-H1	TP2-H1	TP2-H2	TP2-H2	TP4-H3	TP4-H3
33	TP2-H1	TP2-H1	TP2-H1	TP2-H2	TP4-H2	N/A	N/A	N/A
77	N/A	N/A	TP1-H1	TP1-H1	TP2-H2	N/A	TP4-H3	TP4-H3
88 / F88	TP2-H1	TP2-H1	TP2-H1	TP3-H1	TP3-H2	TP3-H2	TP4-H3	TP4-H3
F91	N/A	N/A	TP2-H2 + 88-TSM-3	TP2-H2 + 88-TSM-3	TP2-H2 + 88-TSM-3	N/A	TP4-H3 + 88-TSM-4	N/A
D9	N/A	N/A	TP2-H2	TP2-H2	TP2-H2	N/A	N/A	N/A
FD9-F1	N/A	N/A	TP2-H2	TP2-H2	TP2-H2	N/A	N/A	N/A
FD9-F3	N/A	N/A	TP2-H2	TP2-H2	TP2-H2	N/A	N/A	N/A
FD9-F6	N/A	N/A	TP2-H2	TP2-H2	TP3-H3	N/A	N/A	N/A
8R / F8R	TP1-H1 + 8R-TSM-1	TP1-H1 + 8R-TSM-1	TP1-H1 + 8R-TSM-1	TP1-H1 + 8R-TSM-2	TP1-H1 + 8R-TSM-2	TP2-H2 + 8R-TSM-3	TP2-H2 + 8R-TSM-3	TP4-H3 + 8R-TSM-4
83 / F83	TP1-H1 + 83-TSM-1	TP1-H1 + 83-TSM-1	TP1-H1 + 83-TSM-1	TP1-H2 + 83-TSM-2	TP2-H2 + 83-TSM-2	TP2-H3 + 83-TSM-3	TP4-H3 + 83-TSM-3	TP4-H3 + 83-TSM-4
90 / F90	N/A	N/A	TP1-H1 + 90-TSM-1	TP2-H2 + 90-TSM-2	TP2-H2 + 90-TSM-2	N/A	TP4-H3 + 90-TSM-3	TP4-H3 + 90-TSM-3

Spring Return Handle Dimensions			
Triangle Pad	ISO		
TP 1	F04		
TP 2	F05		
TP 3	F07		
TP 4	F07		
Handle	B	D	H
H1	0.354	7.99	0.62
H2	0.433	8.14	0.62
H3	0.551	10.58	0.78



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DRAWN BY AMZ CHECKED BY CMB RELEASED BY CMB
DATE 07/09/19 DATE 07/09/19 DATE 07/09/19

VALVES, ACTUATORS, AND AUTOMATION CONTROLS

SHEET 1 of 1

MATERIAL

DRAWING NO. P03000 REVISION A

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DESCRIPTION
Spring Return Handle Dimensional Drawing