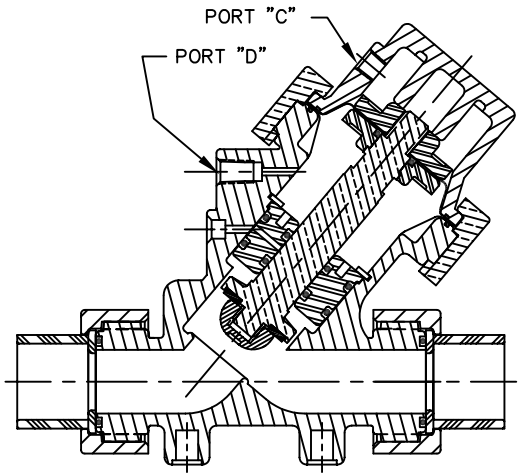
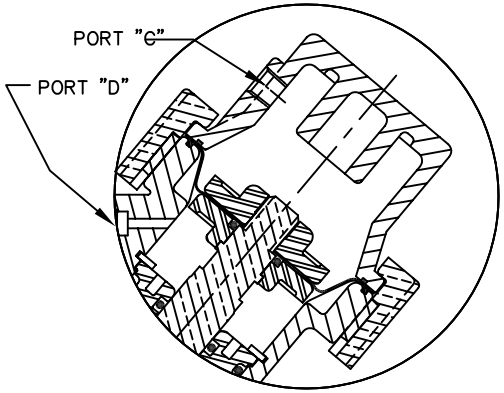
DIAPHRAGM VALVE CONFIGURATIONS - STANDARD MODEL



NORMALLY OPEN

LINE PRESSURE/FLOW AGAINST THE VALVE SEATING DISC WILL OPEN THE VALVE. CONTROL PRESSURE APPLIED TO THE TOP OF THE DIAPHRAGM (PORT "C") WILL CLOSE THE VALVE.

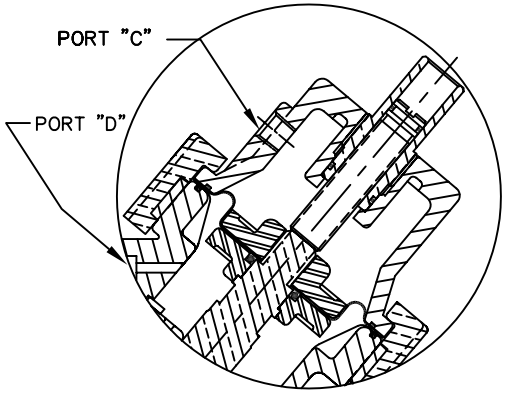


NORMALLY CLOSED

LINE PRESSURE AGAINST THE DISC, TRANSFERRED THRU AN EXTERNAL LINE TO PORT "C" AT THE TOP OF THE DIAPHRAGM, WILL CLOSE THE VALVE. CONTROL PRESSURE AT PORT "D" WILL OPEN THE VALVE. ADDITION OF "SPRING ASSIST CLOSED" FEATURE IS RECOMMENDED FOR THE FOLLOWING CONDITIONS:

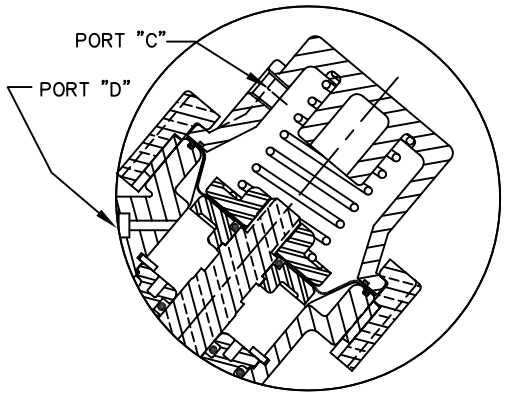
1. LOW PRESSURE AND/OR FLOW.
2. VALVE DISCHARGES TO ATMOSPHERE.

NORMALLY CLOSED FEATURE NOT RECOMMENDED FOR LINE MEDIA CONTAINING SOLIDS, HIGH TEMPERATURES OR OTHER MEDIA CONDITIONS WHICH MAY DAMAGE THE DIAPHRAGM.



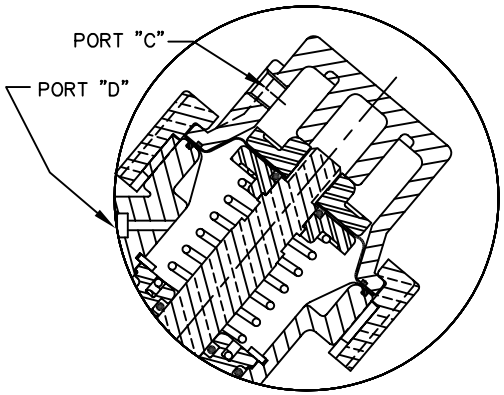
LIMIT STOP

INCLUDES AN ADJUSTMENT SCREW WHICH LIMITS THE VALVE STROKE. MAY BE USED TO CONTROL FLOW RATE, HOWEVER, FLOW RATE WILL VARY WITH CHANGES IN PRESSURE.



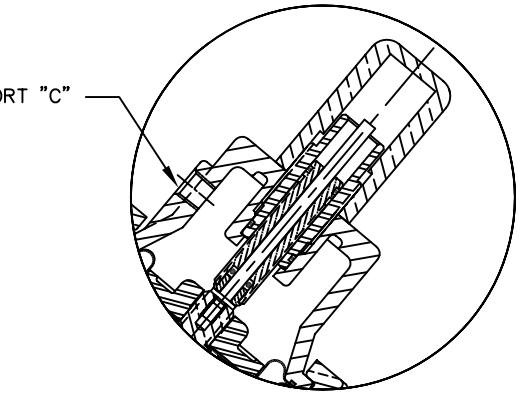
SPRING ASSIST CLOSED

SPRING SERVES AS AN ASSIST TO ASSURE FULL VALVE CLOSURE IN THE ABSENCE OF LINE AND CONTROL PRESSURES.



SPRING ASSIST OPEN

SPRING SERVES AS AN ASSIST TO ASSURE FULL VALVE OPENING IN THE ABSENCE OF LINE AND CONTROL PRESSURES.



POSITION INDICATOR

INDICATOR ROD IS ATTACHED TO MAIN VALVE STEM TO SHOW POSITION OF VALVE. ONLY AVAILABLE WITH COMBINATION OF SPRING ASSIST AND LIMIT STOP OPTIONS.

FORM NO. 1078165

PRINTED IN U.S.A.

REV	DESCRIPTION	ECO	DWN	DATE	APVD
B	NUMBER CONVERSION	1588	MSM	27NOV02	

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SERIES 530 DIAPHRAGM VALVES

SCALE	DRAWN	DATE	DWG. NO.
N/A	JWB	15JUN01	1084006

PLASTIC DIAPHRAGM VALVES (531 THRU 537)

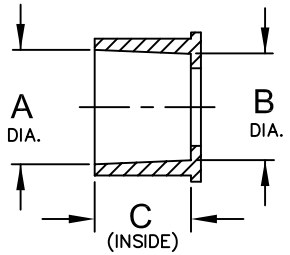
SERIES	PIPE SIZE	SEAT DIAMETER IN. / CM.	SEAT AREA SQ. IN. / SQ. CM.	DIAPHRAGM AREA SQ. IN. / SQ. CM.	TOTAL STROKE IN. / CM.	DIAPHRAGM CHAMBER (VOLUME) CUBIC IN. / CUBIC CM.	* Cv	** Kv	FLOW RATE @ 10 FT./SEC. (3 M./SEC.) NOTE 1 GAL./MIN. / CU.M/HR	FLOW RATE @ 20 FT./SEC. (6 M./SEC.) NOTE 2 GAL./MIN. / CU.M/HR	PRESSURE DROP @ 10 FT./SEC. (3 M./SEC.) NOTE 1 P.S.I. / bar	PRESSURE DROP @ 20 FT./SEC. (6 M./SEC.) NOTE 2 P.S.I. / bar
531	3/4",1"	1.062 / 2.70	.89 / 5.73	3.43 / 22.1	.86 / 2.18	6.21 / 102.0	18.0	16.0	27.7 / 6.3	55.3 / 12.6	2.3 / 0.16	9.4 / 0.65
534	1–1/2"	1.562 / 3.97	1.92 / 12.4	6.06 / 39.1	1.33 / 3.38	10.4 / 170.0	42.0	36.0	60 / 13.6	120 / 27.2	2.04 / 0.14	8.16 / 0.56
535	2"	2.062 / 5.24	3.34 / 21.5	8.82 / 56.9	1.75 / 4.45	25.3 / 414.0	84.0	72.0	104 / 23.4	208 / 46.8	1.53 / 0.11	6.13 / 0.42
537	3"	3.062 / 7.78	7.36 / 47.5	15.6 / 101.0	2.50 / 6.35	65.3 / 1070	200.0	172.0	230 / 52.2	460 / 104.4	1.32 / 0.09	5.3 / 0.36

* Cv – FLOWRATE (GAL./MIN.) OF WATER AT 60° F. AT 1 P.S.I. PRESSURE DROP

** Kv – FLOWRATE (CU. M./HR) OF WATER AT 15.5° C. AT 1 BAR PRESSURE DROP

NOTE 1: MAXIMUM CONTINUOUS VELOCITY THROUGH THE VALVE.

NOTE 2: MAXIMUM CONTINUOUS VELOCITY. EXTENDED SERVICE AT THIS VELOCITY MAY CAUSE CAVITATION.



TO DETERMINE FLOWRATE AT ANY GIVEN PRESSURE DROP, THE FOLLOWING FORMULAS CAN BE USED.

FOR WATER AND LIQUIDS:

$$Q = \frac{Cv\sqrt{\Delta P}}{\sqrt{e}}$$

FOR AIR AND GAS:

WHEN P2 < .5P1

$$Cv = \frac{CFM\sqrt{e}}{.5P1}$$

WHEN P2 > .5P1

$$Cv = \frac{CFM\sqrt{e}}{\sqrt{\Delta P\ P2}}$$

Q – FLOWRATE IN GAL./MIN.
ΔP – PRESSURE DROP (LB./SQ. IN.)
e – SPECIFIC GRAVITY (WATER = 1.00)

CFM – CU. FT./MIN. FLOW
e – SPECIFIC GRAVITY (AIR = 1.00)
P1 – INLET PRESSURE (LB./SQ. IN.)
P2 – OUTLET PRESSURE (LB./SQ. IN.)

FEMALE SOCKET WELD END CONNECTOR KITS

VALVE SERIES	STANDARD	PART NO.	DIAMETER A	DIAMETER B	DEPTH C
531	A.S.T.M. 3/4"	1070411 (K531–577)	1.062"	1.050"	1.18"
	A.S.T.M. 1"	1070412 (K531–060)	1.330"	1.312"	1.18"
	J.I.S. 25MM	1070413 (K531–061)	1.282"	1.234"	1.18"
	I.S.O. 25MM	1070414 (K531–062)	1.269"	1.269"	1.18"
534	A.S.T.M. 1–1/2"	1070419 (K534–060)	1.920"	1.81"	1.37"
	J.I.S. 40MM	1070420 (K534–061)	1.895"	1.829"	1.36"
	I.S.O. 40MM	1070421 (K534–062)	1.978"	1.955"	1.36"
535	A.S.T.M. 2"	1070425 (K535–060)	2.393"	2.341"	1.50"
	J.I.S. 50MM	1070426 (K535–061)	2.392"	2.274"	1.50"
	I.S.O. 50MM	1070427 (K535–062)	2.493"	1.931"	1.50"
537	A.S.T.M. 3"	1070431 (K537–060)	3.522"	3.492"	1.95"
	J.I.S. 80MM	1070432 (K537–061)	3.537"	3.470"	1.95"
	I.S.O. 75MM	1070433 (K537–062)	3.557"	3.535"	1.95"

NOTE: ALL CONNECTOR KITS CONTAIN (2) CONNECTORS, (ONE KIT REQ'D PER VALVE)

THE DATA PRESENTED HERE IS BELIEVED TO BE RELIABLE AND OFFERED AS SUGGESTION ONLY. ACTUAL RESULTS MAY VARY DEPENDING UPON APPLICATION.

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SERIES 530 DIAPHRAGM VALVES

FORM NO. 1078165

REV	DESCRIPTION	ECO	DWN	DATE	APVD
B	NUMBER CONVERSION	1588	MSM	27NOV02	

SCALE	DRAWN	DATE	DWG. NO.
N/A	JWB	14JUN01	1084006

DIAPHRAGM VALVE INFORMATION - STANDARD MODEL