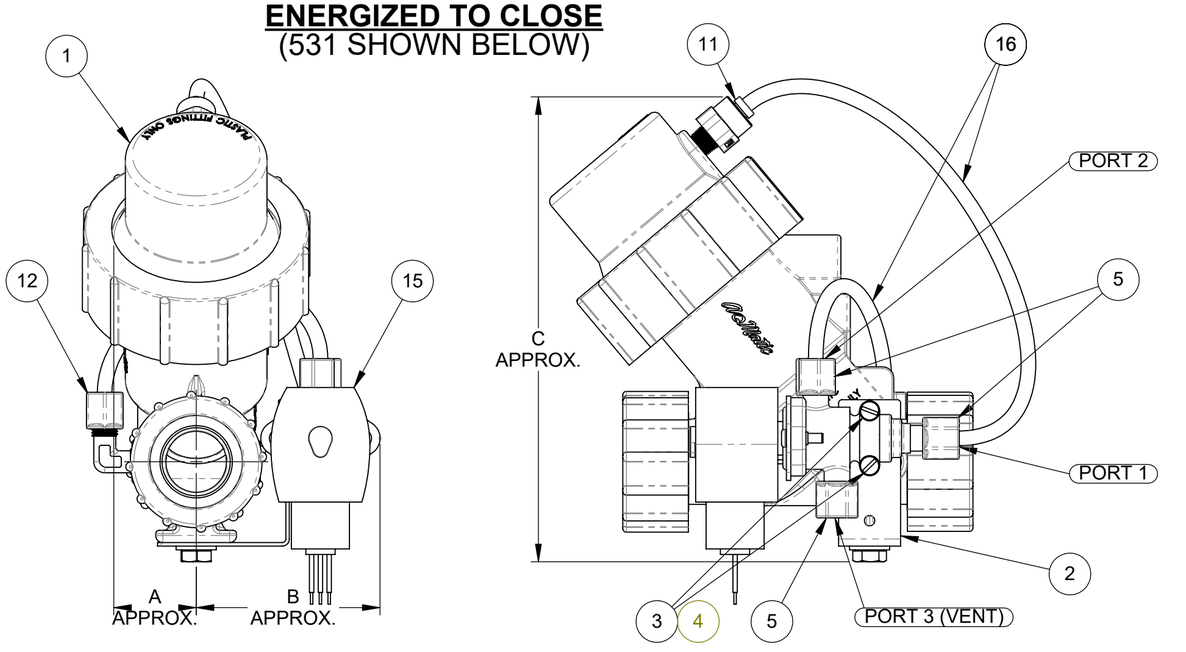
ITEM NO	PART NO	DESCRIPTION	531 EC QTY	531 EO QTY	534 EC QTY	534 EO QTY	535 EC QTY	535 EO QTY	537 EC QTY	537 EO QTY	UNIT
1	-	NORMALLY OPEN K53X SERIES VALVE	1	1	1	1	1	1	1	1	EACH
2	1073272	SOLENOID MOUNTING BRACKET	1	1	1	1	1	1	1	1	EACH
3	1072377	SCREW, RD HD, 8-32 X 1/4	2	2	2	2	2	2	2	2	EACH
4	1071646	NUT, HEX, 8-32	2	2	2	2	2	2	2	2	EACH
5	1071939	NUT & SLEEVE ASSEMBLY, 1/4" TUBE	3	3	3	3	3	3	3	3	EACH
6	1072354	SCREW, HEX HD, 5/16 X 5/8, SS	1	1	-	-	-	-	-	-	EACH
7	1073282	INSERT,HEADED KNURLED, 5/16-18	1	1	-	-	-	-	-	-	EACH
8	1073598	WASHER, FLAT, 5/16"	1	1	1	1	1	1	1	1	EACH
9	1072355	SCREW, HEX HD, CAP, 5/16-18	-	-	1	1	1	1	1	1	EACH
10	1071655	HEX NUT, 5/16"-18, 18-8SS	-	-	1	1	1	1	1	1	EACH
11	1078767	CONNECTOR, 1/8 MNPT X 1/4T	1	1	1	1	-	-	-	-	EACH
12	1071937	FITTING, ELBOW, 1/8NPT X 1/4T	1	1	1	1	-	-	-	-	EACH
13	1071941	CONNECTOR, 1/4 MNPT X 1/4T	-	-	-	-	1	1	1	1	EACH
14	1078770	FITTING, ELBOW, 1/4NPT X 1/4T	-	-	-	-	1	1	1	1	EACH
15	1075637	SOLENOID, ASCO, 120/60 VAC	1	1	1	1	1	1	1	1	EACH
	1075638	SOLENOID, ASCO, 220/50 VAC									
	1075639	SOLENOID, ASCO, 24/60 VAC									
	4510604	SOLENOID, ASCO, 24 VDC, N.O.	-	1	-	1	-	1	-	1	
	4510605	SOLENOID, ASCO, 24 VDC, N.C.	1	-	1	-	1	-	1	-	
16	1071936	TUBING, POLY 1/4" O.D. X .035"	12	12	16	16	17	17	20	20	INCHES
			7	7	9	9	9	9	11	10	

REVISIONS				
REV	ECN	DESCRIPTION	DATE	APP'D
A		INITIAL RELEASE	06/21/2001	JWB
B		NUMBER CONVERSION	12/19/2002	APVD
C	1695	REDRAWN IN AQ TEMPLATE, CORRECTED BOM ERRORS	4/14/2020	PMJ
D	1789	ADDED SOLENOID P/N 4510604, 4510605	10/21/2020	PMJ

NOTES:
1. LENGTH OF TUBING VARIES WITH EACH SIZE OF DIAPHRAGM VALVE.
2. DIAPHRAGM VALVE IS NORMALLY OPEN, PRESSURE TO CLOSE.
3. BOSS NO. 1 ON VALVE TAPPED 1/8" N.P.T. (531, 534) OR 1/4" N.P.T. (535, 537)
4. DRY DRAIN OPTIONS DETAILED ON SHEET 2.
   INDEPENDANT CONTROL PRESSURE OPTIONS DETAILED ON SHEET 3.
5. EC STANDS FOR ENERGIZED TO CLOSE.
   EO STANDS FOR ENERGIZED TO OPEN.

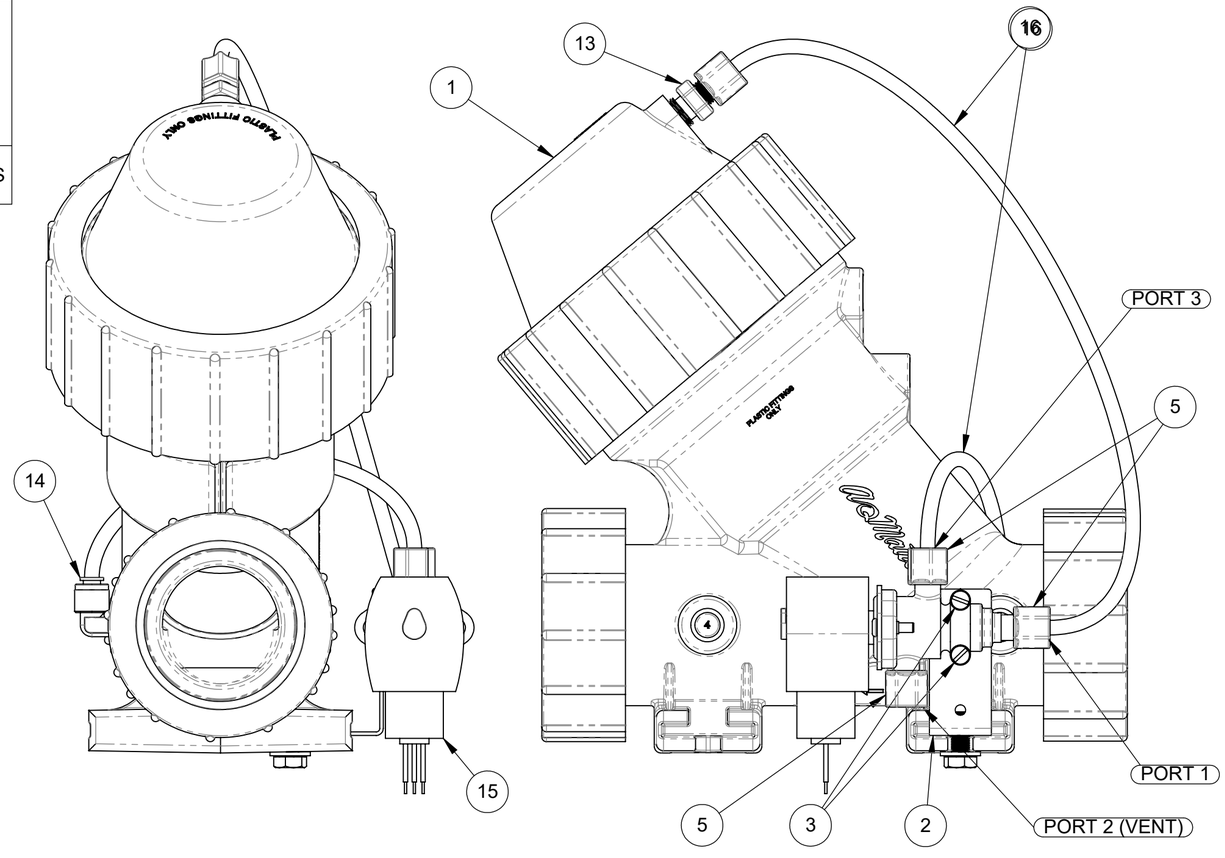
ENERGIZED TO CLOSE
(531 SHOWN BELOW)



SOLENOID ENERGIZED:
UPSTREAM PRESSURE, FROM SOLENOID PORT 2 TO PORT 1, IS APPLIED TO UPPER DIAPHRAGM CHAMBER TO CLOSE THE VALVE.

SOLENOID DE-ENERGIZED:
PRESSURE FROM UPPER DIAPHRAGM CHAMBER IS VENTED, THROUGH SOLENOID PORT 1 TO PORT 3 TO DRAIN. UPSTREAM PRESSURE OPENS THE DIAPHRAGM VALVE.

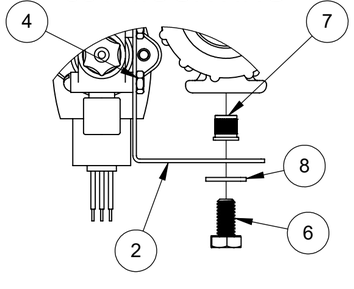
ENERGIZED TO OPEN
(535 SHOWN BELOW)



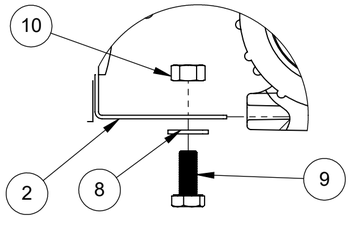
SOLENOID ENERGIZED:
PRESSURE FROM UPPER DIAPHRAGM CHAMBER IS VENTED, THROUGH SOLENOID PORT 1 TO PORT 2 TO DRAIN. UPSTREAM PRESSURE OPENS THE DIAPHRAGM VALVE.

SOLENOID DE-ENERGIZED:
UPSTREAM PRESSURE, FROM SOLENOID PORT 3 TO PORT 1, IS APPLIED TO UPPER DIAPHRAGM CHAMBER TO CLOSE THE VALVE.

DETAIL A
531 MOUNTING



DETAIL B
534-537 MOUNTING



VALVE SERIES	PIPE SIZE	A [MM] IN.	B [MM] IN.	C [MM] IN.
531	1"	[36] 1.41	[80] 3.14	[202] 7.94
534	1-1/2"	[62] 2.45	[108] 4.24	[255] 10.05
535	2"	[76] 2.98	[110] 4.33	[310] 12.21
537	3"	[99] 3.91	[96] 3.8	[377] 14.83

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CORNER FILLETS R.005-.020 [.127-.508]
TOLERANCES:
ANGLES : ± 1°
1 PLACE .X: ± .100 [2.54]
2 PLACE .XX: ± .010 [0.25]
3 PLACE .XXX: ± .005 [0.13]

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THIRD ANGLE PROJECTION

APPROVALS	DATE
DRAWN PMJ	4/14/2020
CHECKED BY	
APPROVED	

AQMATIC Valves & Controls
AQ-MATIC VALVES AND CONTROLS

DESCRIPTION: K531-K537 SOLENOID OPERATED VALVES

SIZE	DWG NO.	REV.
C	1078170	D

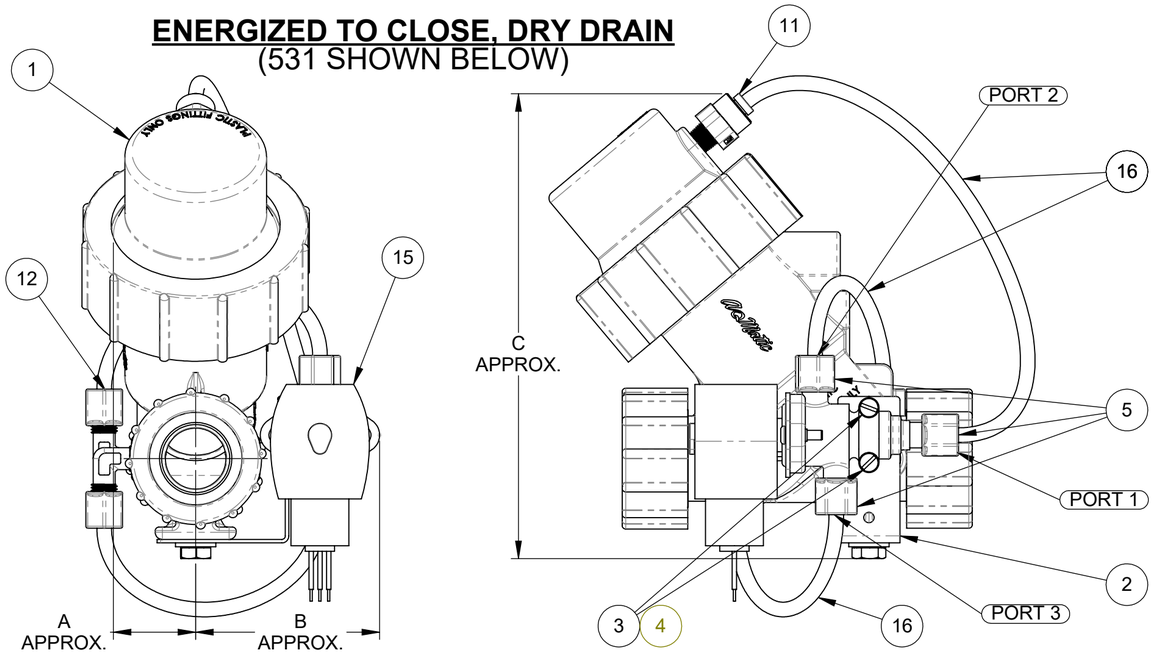
SCALE 1:2 | SOLIDWORKS FORMAT | SHEET 1 OF 3

ITEM NO	PART NO	DESCRIPTION	531 ECDD	531 EODD	534 ECDD	534 EODD	535 ECDD	535 EODD	537 ECDD	537 EODD	UNIT
1	-	NORMALLY OPEN K53X SERIES VALVE	1	1	1	1	1	1	1	1	EACH
2	1073272	SOLENOID MOUNTING BRACKET	1	1	1	1	1	1	1	1	EACH
3	1072377	SCREW, RD HD, 8-32 X 1/4	2	2	2	2	2	2	2	2	EACH
4	1071646	NUT, HEX, 8-32	2	2	2	2	2	2	2	2	EACH
5	1071939	NUT & SLEEVE ASSEMBLY, 1/4" TUBE	3	3	3	3	3	3	3	3	EACH
6	1072354	SCREW, HEX HD, 5/16 X 5/8, SS	1	1	-	-	-	-	-	-	EACH
7	1073282	INSERT,HEADED KNURLED, 5/16-18	1	1	-	-	-	-	-	-	EACH
8	1073598	WASHER, FLAT, 5/16"	1	1	1	1	1	1	1	1	EACH
9	1072355	SCREW, HEX HD, CAP, 5/16-18	-	-	1	1	1	1	1	1	EACH
10	1071655	HEX NUT, 5/16"-18, 18-8SS	-	-	1	1	1	1	1	1	EACH
11	1078767	CONNECTOR, 1/8 MNPT X 1/4T	1	1	1	1	-	-	-	-	EACH
12	1071937	FITTING, ELBOW, 1/8NPT X 1/4T	2	2	2	2	-	-	-	-	EACH
13	1071941	CONNECTOR, 1/4 MNPT X 1/4T	-	-	-	-	1	1	1	1	EACH
14	1078770	FITTING, ELBOW, 1/4NPT X 1/4T	-	-	-	-	2	2	2	2	EACH
15	1075637	SOLENOID, ASCO, 120/60 VAC	1	1	1	1	1	1	1	1	EACH
	1075638	SOLENOID, ASCO, 220/50 VAC									
	1075639	SOLENOID, ASCO, 24/60 VAC									
	4510604	SOLENOID, ASCO, 24 VDC, N.O.	-	1	-	1	-	1	-	1	
	4510605	SOLENOID, ASCO, 24 VDC, N.C.	1	-	1	-	1	-	1	-	
16	1071936	TUBING, POLY 1/4" O.D. X .035"	12	12	16	16	17	17	20	20	INCHES
			7	7	9	9	9	9	10	10	
			8	7	6	6	7	7	9	9	

REVISIONS				
REV	ECN	DESCRIPTION	DATE	APP'D
		SEE SHEET 1 FOR CHANGE LOG		

NOTES:
1. LENGTH OF TUBING VARIES WITH EACH SIZE OF DIAPHRAGM VALVE.
2. DIAPHRAGM VALVE IS NORMALLY OPEN, PRESSURE TO CLOSE.
3. BOSSES ON VALVE TAPPED 1/8" N.P.T. (531, 534) OR 1/4" N.P.T. (535, 537)
4. STANDARD OPTIONS DETAILED ON SHEET 1. INDEPENDANT CONTROL PRESSURE OPTIONS DETAILED ON SHEET 3.
5. ECDD STANDS FOR ENERGIZED TO CLOSE, DRY DRAIN. EODD STANDS FOR ENERGIZED TO OPEN, DRY DRAIN.
6. 531 VALVES ARE TAPPED IN BOSSES 1 & 3. 534 - 537 VALVES ARE TAPPED IN BOSSES 1 & 4.
7. DRY DRAIN OPTION REQUIES DOWNSTREAM SIDE OF VALVE TO BE AT ATMOSPHERIC PRESSURE WHEN VALVE IS CLOSED.

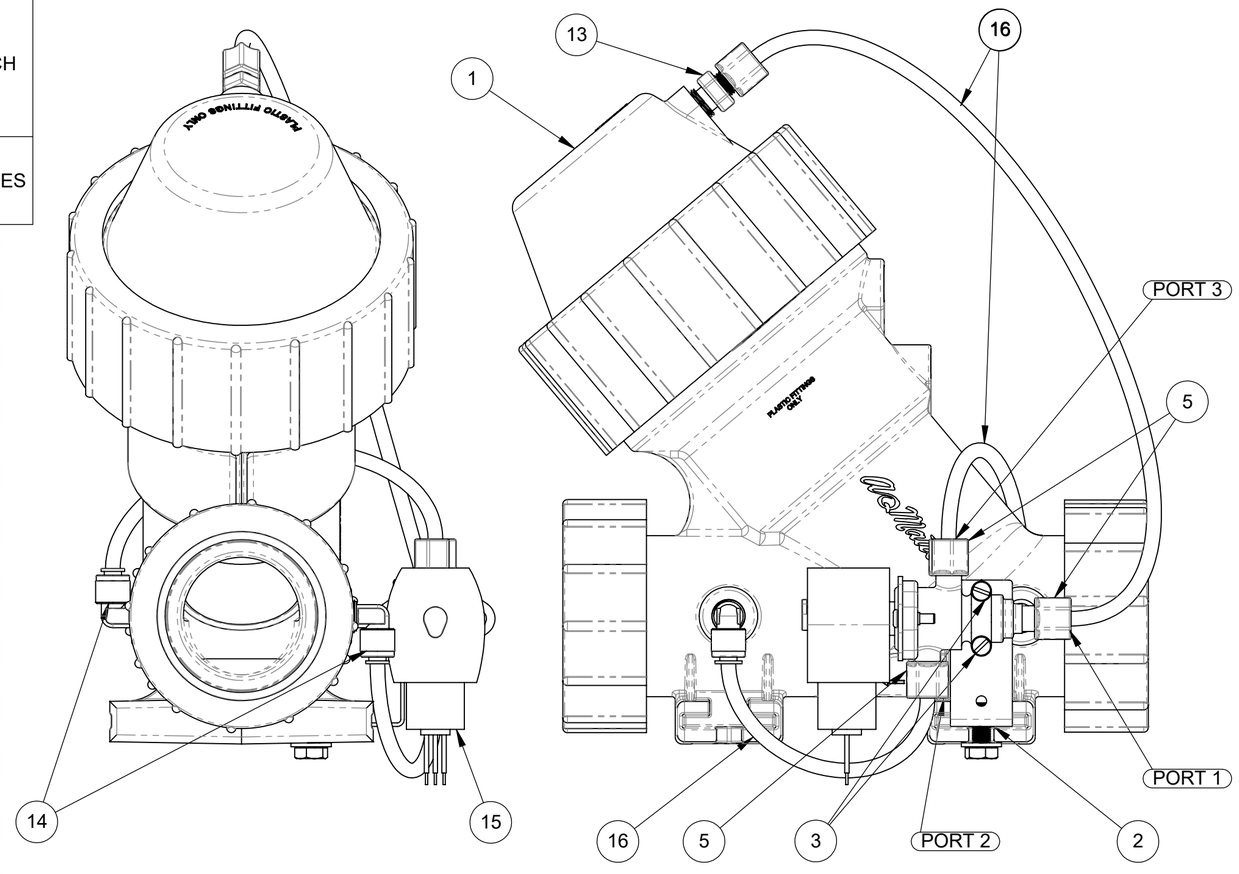
ENERGIZED TO CLOSE, DRY DRAIN
(531 SHOWN BELOW)



SOLENOID ENERGIZED:
UPSTREAM PRESSURE, FROM SOLENOID PORT 2 TO PORT 1, IS APPLIED TO UPPER DIAPHRAGM CHAMBER TO CLOSE THE VALVE.

SOLENOID DE-ENERGIZED:
PRESSURE FROM UPPER DIAPHRAGM CHAMBER IS VENTED, THROUGH SOLENOID PORT 1 TO PORT 3 TO DOWNSTREAM. UPSTREAM PRESSURE OPENS THE DIAPHRAGM VALVE.

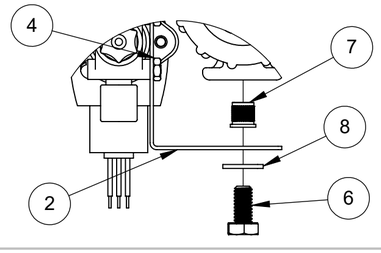
ENERGIZED TO OPEN
(535 SHOWN BELOW)



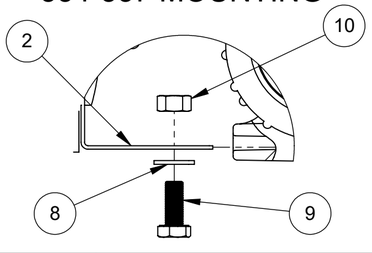
SOLENOID ENERGIZED:
PRESSURE FROM UPPER DIAPHRAGM CHAMBER IS VENTED, THROUGH SOLENOID PORT 1 TO PORT 2 TO DOWNSTREAM. UPSTREAM PRESSURE OPENS THE DIAPHRAGM VALVE.

SOLENOID DE-ENERGIZED:
UPSTREAM PRESSURE, FROM SOLENOID PORT 3 TO PORT 1, IS APPLIED TO UPPER DIAPHRAGM CHAMBER TO CLOSE THE VALVE.

DETAIL A
531 MOUNTING



DETAIL B
534-537 MOUNTING



VALVE SERIES	PIPE SIZE	A [MM] IN.	B [MM] IN.	C [MM] IN.
531	1"	[36] 1.41	[80] 3.14	[202] 7.94
534	1-1/2"	[108] 4.24	[62] 2.45	[264] 10.38
535	2"	[110] 4.33	[76] 2.98	[310] 12.21
537	3"	[99] 3.91	[96] 3.78	[377] 14.83

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CORNER FILLETS R.005-.020 [.127-.508]
TOLERANCES:
ANGLES : ± 1°
1 PLACE .X: ± .100 [2.54]
2 PLACE .XX: ± .010 [0.25]
3 PLACE .XXX: ± .005 [0.13]

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THIRD ANGLE PROJECTION

APPROVALS	DATE
DRAWN PMJ	4/14/2020
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AQMATIC Valves & Controls
AQ-MATIC VALVES AND CONTROLS

DESCRIPTION: K531-K537 SOLENOID OPERATED VALVES

SIZE	DWG NO.	REV.
C	1078170	D

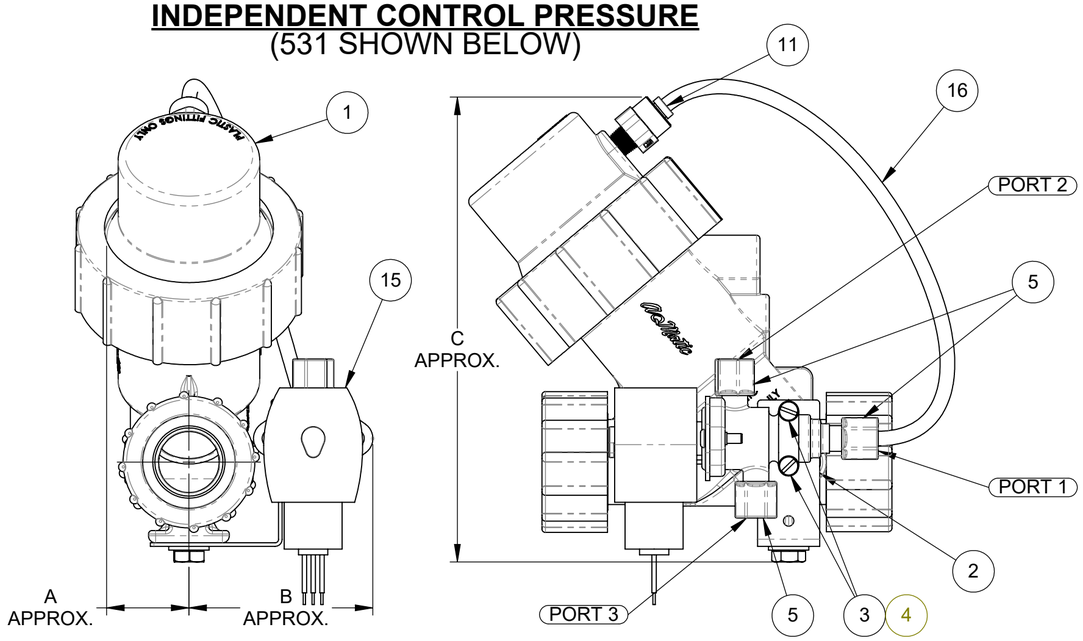
SCALE 1:2 | SOLIDWORKS FORMAT | SHEET 2 OF 3

ITEM NO	PART NO	DESCRIPTION	531 IP QTY	534 IP QTY	535 IP QTY	537 IP QTY	UNIT
1	-	NORMALLY OPEN K53X SERIES VALVE	1	1	1	1	EACH
2	1073272	SOLENOID MOUNTING BRACKET	1	1	1	1	EACH
3	1072377	SCREW, RD HD, 8-32 X 1/4	2	2	2	2	EACH
4	1071646	NUT, HEX, 8-32	2	2	2	2	EACH
5	1071939	NUT & SLEEVE ASSEMBLY, 1/4" TUBE	3	3	3	3	EACH
6	1072354	SCREW, HEX HD, 5/16 X 5/8, SS	1	-	-	-	EACH
7	1073282	INSERT,HEADED KNURLED, 5/16-18	1	-	-	-	EACH
8	1073598	WASHER, FLAT, 5/16"	1	1	1	1	EACH
9	1072355	SCREW, HEX HD, CAP, 5/16-18	-	1	1	1	EACH
10	1071655	HEX NUT, 5/16"-18, 18-8SS	-	1	1	1	EACH
11	1078767	CONNECTOR, 1/8 MNPT X 1/4T	1	1	-	-	EACH
13	1071941	CONNECTOR, 1/4 MNPT X 1/4T	-	-	1	1	EACH
15	1075637	SOLENOID, ASCO, 120/60 VAC	1	1	1	1	EACH
	1075638	SOLENOID, ASCO, 220/50 VAC					
	1075639	SOLENOID, ASCO, 24/60 VAC					
16	1071936	TUBING, POLY 1/4" O.D. X .035"	12	16	17	20	INCHES

REVISIONS				
REV	ECN	DESCRIPTION	DATE	APP'D
		SEE SHEET 1 FOR CHANGE LOG		

NOTES:
1. LENGTH OF TUBING VARIES WITH EACH SIZE OF DIAPHRAGM VALVE.
2. DIAPHRAGM VALVE IS NORMALLY OPEN, PRESSURE TO CLOSE.
3. BOSS NO. 1 ON VALVE TAPPED 1/8" N.P.T. (531, 534) OR 1/4" N.P.T. (535, 537)
4. STANDARD OPTIONS DETAILED ON SHEET 1.
   DRY DRAIN OPTIONS DETAILED ON SHEET 2.
5. IP STANDS FOR INDEPENDENT PRESSURE.

INDEPENDENT CONTROL PRESSURE
(531 SHOWN BELOW)

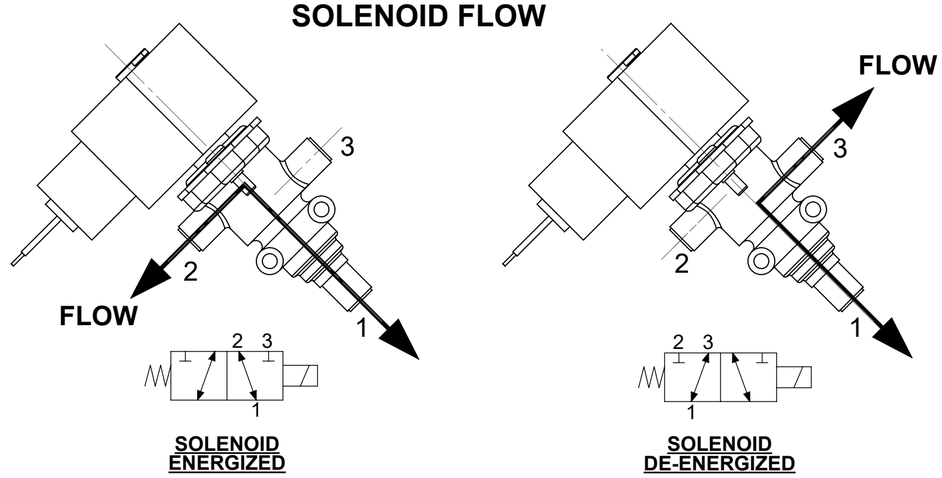


ENERGIZE TO OPEN
APPLY CONTROL PRESSURE
AT SOLENOID PORT NO. 3.
(PORT NO. 2 VENTED)

ENERGIZE TO CLOSE
APPLY CONTROL PRESSURE
AT SOLENOID PORT NO. 2.
(PORT NO. 3 VENTED)

CONTROL PRESSURE MUST BE EQUAL
TO OR GREATER THAN LINE PRESSURE

SOLENOID FLOW

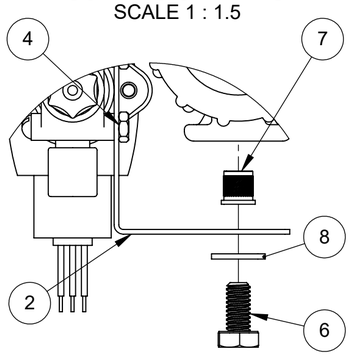


SOLENOID ENERGIZED

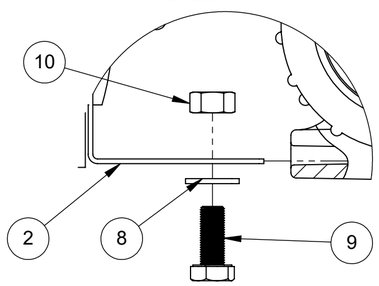
SOLENOID DE-ENERGIZED

CURRENT DRAIN (AMPERES)		
VOLTAGE	**INRUSH**	**HOLDING**
24V 60Hz	1.66	1.04
120V 60Hz	0.33	0.21
220V 50Hz	0.18	0.11

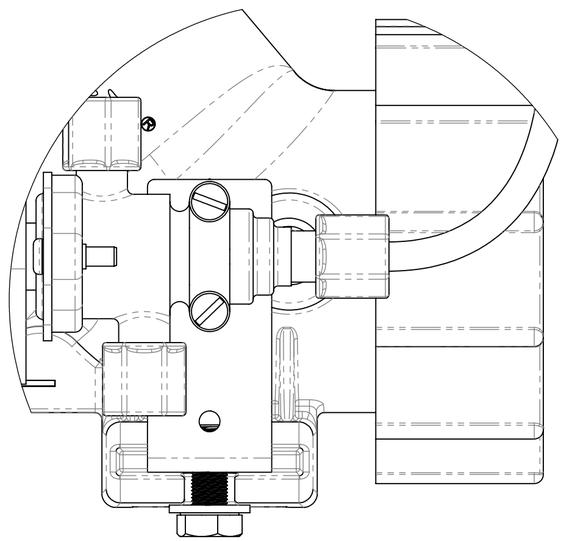
DETAIL A
531 MOUNTING
SCALE 1 : 1.5



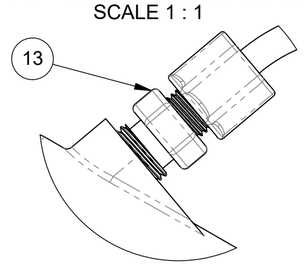
DETAIL B
534 - 537 MOUNTING
SCALE 1 : 1.5



DETAIL C
534 - 537 MOUNTING
SCALE 1 : 1



DETAIL D
535 - 537 CAP FITTING
SCALE 1 : 1



VALVE SERIES	PIPE SIZE	A [MM] IN.	B [MM] IN.	C [MM] IN.
531	1"	[80] 3.14	[49] 1.94	[202] 7.94
534	1-1/2"	[108] 4.24	[62] 2.45	[264] 10.38
535	2"	[110] 4.33	[76] 2.98	[310] 12.21
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THIRD ANGLE PROJECTION

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AQMATIC Valves & Controls

AQ-MATIC
VALVES AND CONTROLS

DESCRIPTION
K531-K537 SOLENOID OPERATED VALVES

SIZE	DWG NO.	REV.
C	1078170	D

SCALE 1:2 | SOLIDWORKS FORMAT | SHEET 3 OF 3