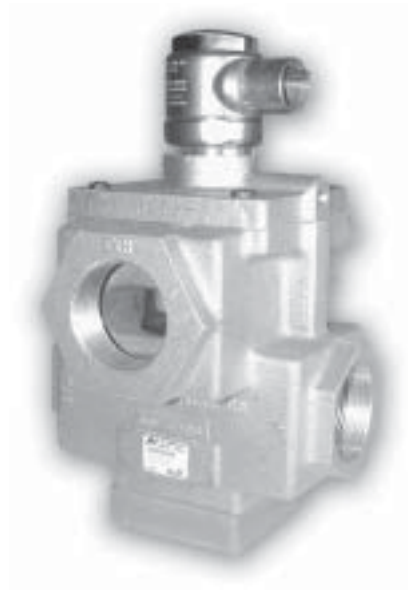


ISO 9001  
**AV** **AUTOMATIC**  
**VALVE**



**PILOT INLINE POPPET VALVES**

## DESIGN FEATURES

### VALVES



- Reliable - used world-wide in power plant applications.
- High flow design with short stroke for fast response.
- Front or rear mounting.
- Flow from 6 to 36 Cv.

### TAPERED CUSH-N-SEAL

- Molded from superior, tough, Carboxylated Nitrile. Provides five times the abrasion resistance and service life of standard Buna-N (NBR) seals.
- Cushion design increases life.
- Self-cleansing, cushioned poppet allows quieter operation.

### SOLENOID ... Guaranteed Against Burnout



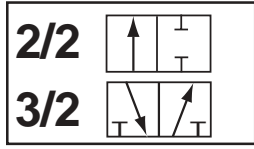
- Three-way pilot uses full air line pressure to shift the valve.
- Pilot is internally supplied when the pressure at port one is 35 to 150 PSIG (241 to 1034 kPa).
- Coil is hermetically sealed as an integral watertight molded unit.
- Push non-locking override. (Extended turn and turn lock available)

### PRODUCTS CERTIFIED TO INCLUDE

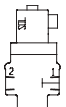
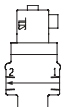
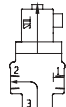
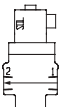
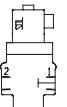
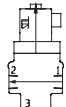
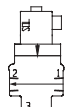
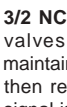
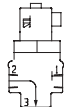
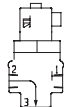
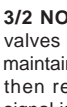
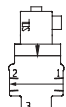



- CSA - (C22.2)
- UL - (STD 429)
- ATEX - (2018x)
- PTB - (EEExIIIT5) (EEExIICT6)
- CE - (73/23/EEC), (89/336/EEC)

## INDEX

	Page
Design Features	H2
Specifications	H3
Model Number Chart	H3
Standard Solenoid Models Dimensional Information (P06, P14)	H4 H5
Standard Solenoid Models Dimensional Information (P36)	H6 H7
Air Pilot Models Dimensional Information	H8 H9
Options	H10
Electrical Information	H11
Service Information	H12

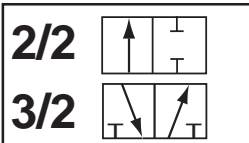


# SPECIFICATIONS

VALVE OPERATION				
		<b>2/2 NC</b> - 2 way 2 position normally closed valves shift and apply pressure when a maintained signal is applied to the operator then reset and block pressure when the signal is removed.		
DE-ENERGIZED	ENERGIZED		DE-ENERGIZED	
		<b>2/2 NO</b> - 2 way 2 position normally open valves shift and block pressure when a maintained signal is applied to the operator then reset and apply pressure when the signal is removed.		
DE-ENERGIZED	ENERGIZED		DE-ENERGIZED	
		<b>3/2 NC</b> - 3 way 2 position normally closed valves shift and apply pressure when a maintained signal is applied to the operator then reset and exhaust pressure when the signal is removed.		
DE-ENERGIZED	ENERGIZED		DE-ENERGIZED	
		<b>3/2 NO</b> - 3 way 2 position normally open valves shift and exhaust pressure when a maintained signal is applied to the operator then reset and apply pressure when the signal is removed.		
DE-ENERGIZED	ENERGIZED		DE-ENERGIZED	
	<b>OPERATING TEMPERATURES</b>	<b>Solenoid Pilot Operated Standard</b>	<b>BUNA-N SEALS (NBR, Standard)</b>	<b>FLUOROELASTOMER SEALS (FPM (FKM), Option A)</b>
		<b>Solenoid Pilot Operated High Temp Coil (Option )T</b>	-18°C to +52°C (0°F to +125°F)	-18°C to +66°C (0°F to +150°F)
		<b>Air Pilot Operated Standard</b>	-18°C to +82°C (0°F to +180°F)	-18°C to +82°C (0°F to +180°F)
	<b>OPERATING PRESSURES</b>	<b>SOLENOID PILOT OPERATED</b>	<b>INLET PORT</b>	<b>EXTERNAL PILOT PORT</b>
		Standard	240 - 1030 kPa (35 - 150 PSIG)	Not Required
		External Pilot (Option B)	0 - 1030 kPa (0 - 150 PSIG)	240 - 1030 kPa (35 - 150 PSIG) and ≥ inlet
		Vacuum Spring (Option J)	Vacuum	240 - 1030 kPa (35 - 150 PSIG) and ≥ inlet
	<b>Air Pilot Operated</b>	Standard	0 - 1720 kPa (0 - 250 PSIG)	Min 240 kPa (35 PSIG) and ≥ inlet
		Vacuum Spring (Option J)	Vacuum	240 - 1030 kPa (35 - 150 PSIG)
	<b>FILTRATION AND LUBRICATION</b>	<b>Media - Air or Inert Gas</b>		
		Lubrication of Automatic Valves is not required but recommended to maximize service life. Oils should be compatible with seal material, have an ISO 32 or lighter viscosity, and have an aniline range of 82°C (180°F) to 99°C (210°F). Refer to Maintenances section of catalog for recommended lubricants.  Filter to 50 microns or better. For temperatures below 40°F, air must be dry to prevent formation of ice.		

## MODEL NUMBER CHART

SERIES	BODY TYPE	PORT SIZE	FUNCTION	BODY DESIGN	OPERATOR 1	OPERATOR 2	VOLTAGE	OPTIONS
P06	0 INLINE	3 1/4	G 3 WAY NC	A SINGLE ACTUATOR	A AIR PILOT W WEATHER-PROOF SOLENOID	R 2-POSITION SPRING	AA 110/50,120/60 AB 220/50,240/60,125VDC DA 22/50,24/60,12VDC DB 24VDC	A FLUOROELASTOMER SEALS
		4 3/8	H 3 WAY NO					B EXTERNAL PILOT CONNECTION
		5 1/2	J 2 WAY NC K 2 WAY NO					C CONDUIT COIL CT CONDUIT COIL HIGH TEMP G COIL WITH 18" LEADS
P14		5 1/2						J VACUUM SPRING
		6 3/4						T HIGH TEMP COIL (FOR P36)
		7 1						Y EXPLOSION-PROOF COIL (CSA,FM) Z EXPLOSION-PROOF COIL (ATEX,PTB)
P36		7 1			A AIR PILOT			1 PUSH TURN LOCKING OVERRIDE
		8 1 1/4			B WEATHER-PROOF SOLENOID			2 EXTENDED TURN LOCKING OVERRIDE
		9 1 1/2			D EXPLOSION-PROOF SOLENOID			



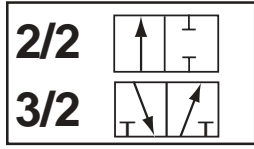
## P06 / P14 STANDARD SOLENOID MODELS



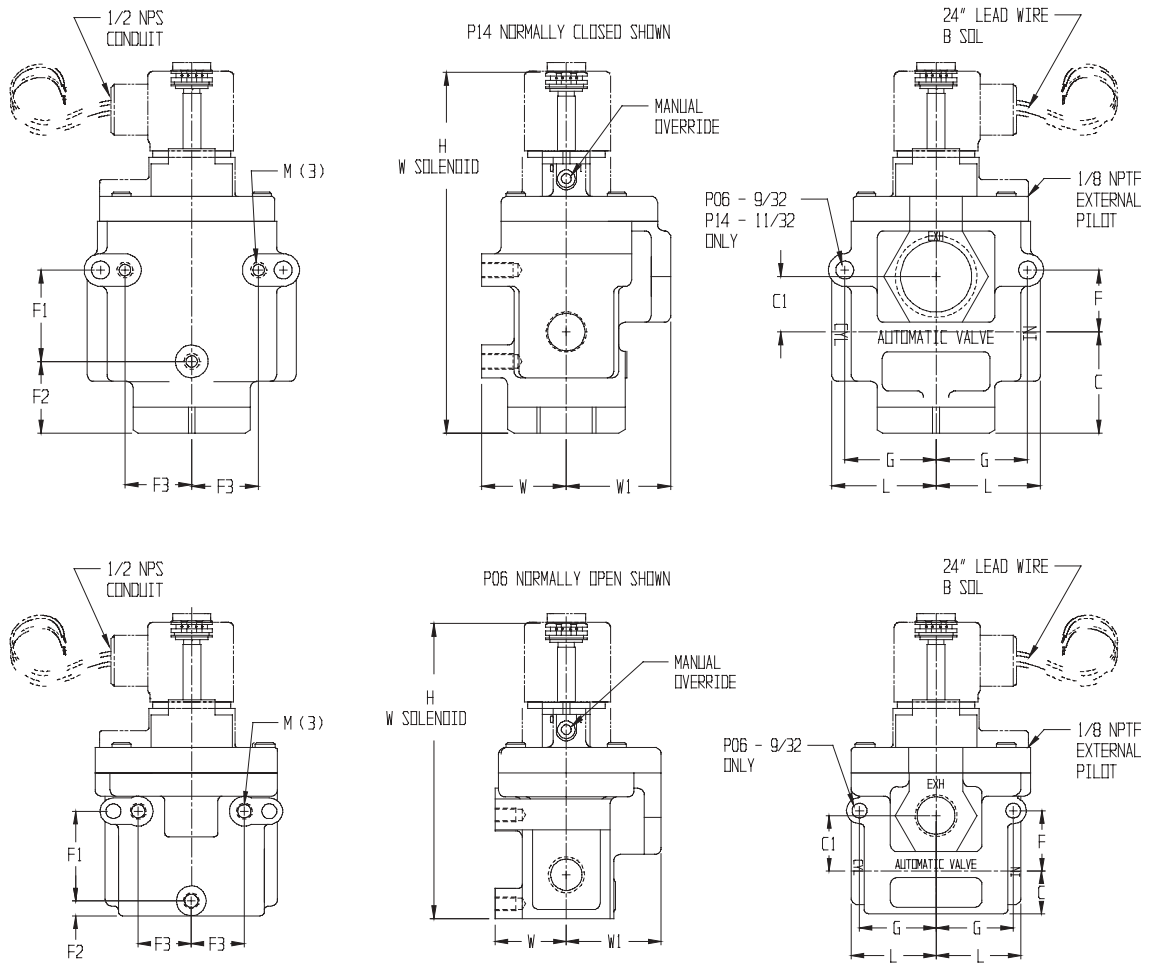
### MODEL NUMBERS

SERIES	PORT SIZE		Cv (l/min)	2/2		3/2		BODY MATERIAL	SEAL MATERIAL	Kg (LB)
	1,2	3		NORMALLY CLOSED	NORMALLY OPEN	NORMALLY CLOSED	NORMALLY OPEN			
P06	1/4	1/2	3.2 (3150)	P0603JAWR*	P0603KAWR*	P0603GAWR*	P0603HAWR*	ALUMINUM	NBR	1,8 (4.0)
	3/8	1/2	3.9 (3840)	P0604JAWR*	P0604KAWR*	P0604GAWR*	P0604HAWR*			
	1/2	1/2	5.5 (5410)	P0605JAWR*	P0605KAWR*	P0605GAWR*	P0605HAWR*			
P14	1/2	1	8.3 (8170)	P1405JAWR*	P1405KAWR*	P1405GAWR*	P1405HAWR*	ALUMINUM	NBR	2,3 (5.1)
	3/4	1	11.3 (11120)	P1406JAWR*	P1406KAWR*	P1406GAWR*	P1406HAWR*			
	1	1	13.8 (13580)	P1407JAWR*	P1407KAWR*	P1407GAWR*	P1407HAWR*			

\*Coils sold separately. Refer to Electrical Section for selection.

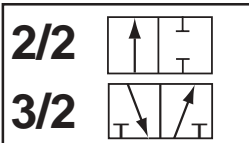


## DIMENSIONAL INFORMATION



SERIES		C	C1	F	F1	F2	F3	G	H	L	M	W	W1
P06	NC	32,5 1.28	20,6 .81	20,6 .81	42,9 1.68	30,9 1.22	25,4 1.00	37,3 1.47	145 5.72	41,3 1.62	1/4-20	33,3 1.31	44,5 1.75
	NO	20,6 .81	27,0 1.06	29,5 1.16	42,9 1.68	7,16 .28	25,4 1.00	37,3 1.47	140 5.51	41,3 1.62	1/4-20	33,3 1.31	44,5 1.75
P14	NC	49,3 1.94	27,0 1.06	30,2 1.19	44,5 1.75	34,9 1.37	33,3 1.31	44,5 1.75	175 6.88	50,8 2.00	5/16-18	41,3 1.62	50,8 2.00
	NO	22,1 .87	27,0 1.06	-	44,5 1.75	7,9 .31	33,3 1.31	-	159 6.26	50,8 2.00	5/16-18	41,3 1.62	50,8 2.00

Units of Measure: Top - mm, Bottom - inches, M = Tap Size



## P36 STANDARD SOLENOID MODELS



**P36  
WEATHERPROOF**



**P36  
EXPLOSION-PROOF**

### MODEL NUMBERS

SERIES	PORT SIZE		Cv (l/min)	2/2		3/2		BODY MATERIAL	SEAL MATERIAL	Kg (LB)
	1,2	3		NORMALLY CLOSED	NORMALLY OPEN	NORMALLY CLOSED	NORMALLY OPEN			

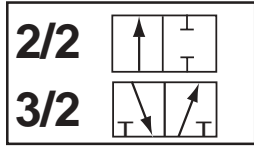
#### WEATHER-PROOF

P36	1	1 1/2	29.5 (29030)	P3607JABR-**	P3607KABR-**	P3607GABR-**	P3607HABR-**	ALUMINUM	NBR	4,2 (9.1)
	1 1/4	1 1/2	31.8 (31290)	P3608JABR-**	P3608KABR-**	P3608GABR-**	P3608HABR-**			
	1 1/2	1 1/2	33.8 (33260)	P3609JABR-**	P3609KABR-**	P3609GABR-**	P3609HABR-**			

#### EXPLOSION-PROOF

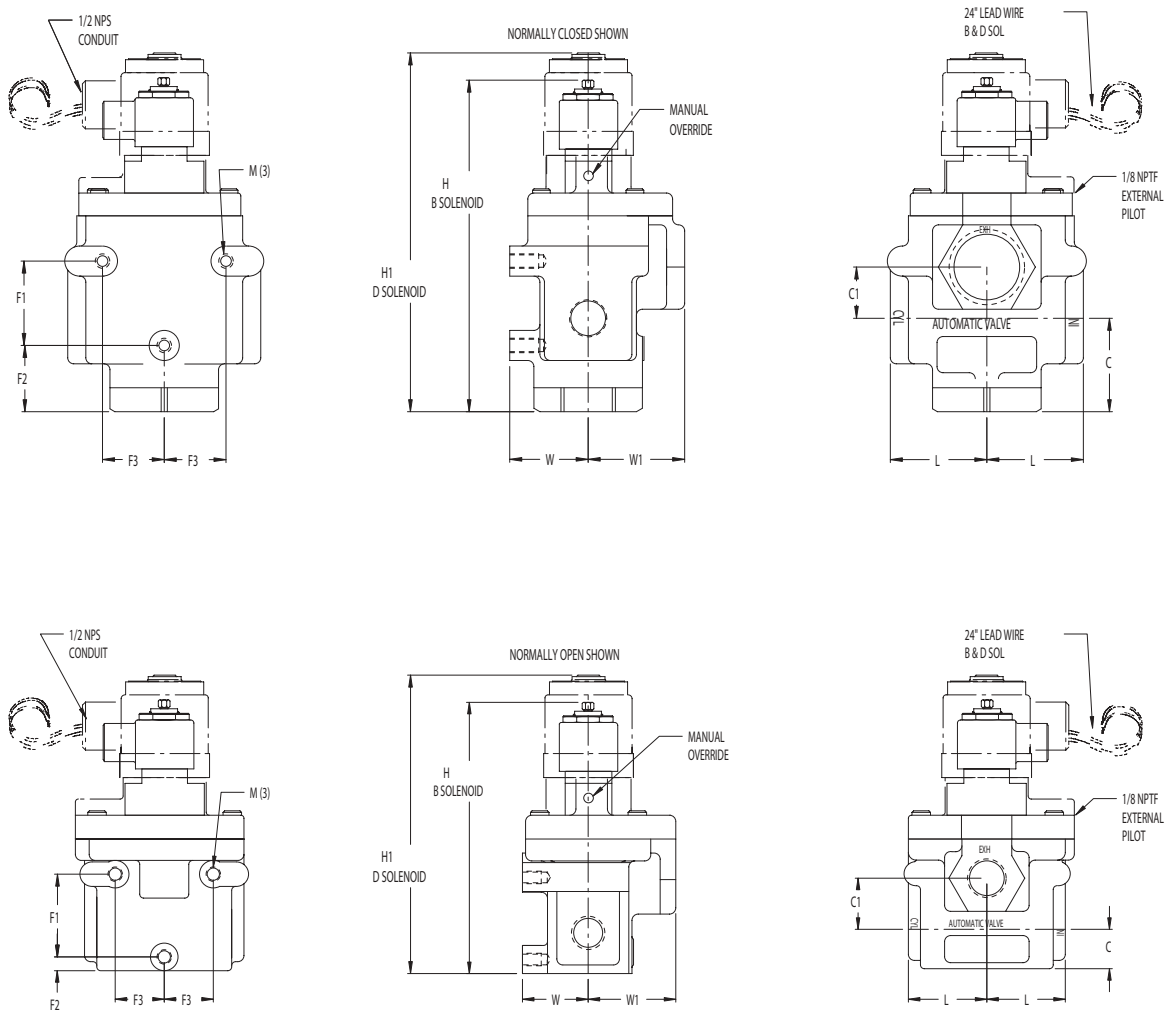
P36	1	1 1/2	29.5 (29030)	P3607JADR-**	P3607KADR-**	P3607GADR-**	P3607HADR-**	ALUMINUM	NBR	4,2 (9.1)
	1 1/4	1 1/2	31.8 (31290)	P3608JADR-**	P3608KADR-**	P3608GADR-**	P3608HADR-**			
	1 1/2	1 1/2	33.8 (33260)	P3609JADR-**	P3609KADR-**	P3609GADR-**	P3609HADR-**			

\*\*Coils included with valve. Refer to Electrical Section for voltage codes.



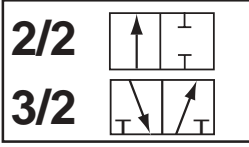
# P36

## DIMENSIONAL INFORMATION



SERIES	C	C1	F1	F2	F3	H	H1	L	M	W	W1	
P36	NC	67,5 2.66	50,8 2.00	100 3.94	43,7 1.72	41,3 1.62	229 9.0	239 9.39	76,2 3.00	3/8-16	60,5 2.38	79,2 3.12
	NO	35,1 1.38	50,8 2.00	100 3.94	11,1 .44	41,3 1.62	210 8.25	220 8.64	76,2 3.00	3/8-16	60,5 2.38	79,2 3.12

Units of Measure: Top - mm, Bottom - inches, M = Tap Size



## AIR PILOT MODELS



**SERIES P06 AND P14**

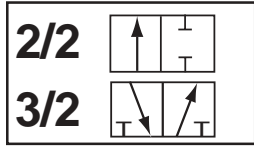


**SERIES P36**

## MODEL NUMBER CHART

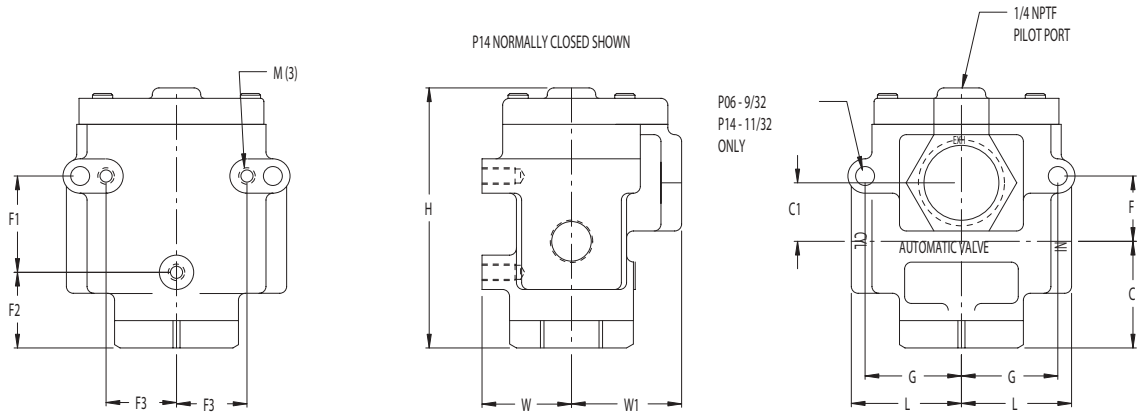
SERIES	PORT SIZE		Cv (l/min)	2/2		3/2		BODY MATERIAL	SEAL MATERIAL	Kg (LB)
	1,2	3		NORMALLY CLOSED	NORMALLY OPEN	NORMALLY CLOSED	NORMALLY OPEN			
P06	1/4	1/2	3.2 (3150)	P0603JAAR	P0603KAAR	P0603GAAR	P0603HAAR	ALUMINUM	NBR	,9 (2.0)
	3/8	1/2	3.9 (3840)	P0604JAAR	P0604KAAR	P0604GAAR	P0604HAAR			
	1/2	1/2	5.5 (5410)	P0605JAAR	P0605KAAR	P0605GAAR	P0605HAAR			
P14	1/2	1	8.3 (8170)	P1405JAAR	P1405KAAR	P1405GAAR	P1405HAAR	ALUMINUM	NBR	1,4 (3.0)
	3/4	1	11.3 (11120)	P1406JAAR	P1406KAAR	P1406GAAR	P1406HAAR			
	1	1	13.8 (13580)	P1407JAAR	P1407KAAR	P1407GAAR	P1407HAAR			
P36	1	1 1/2	29.5 (29030)	P3607JAAR	P3607KAAR	P3607GAAR	P3607HAAR	ALUMINUM	NBR	3,2 (7.0)
	1 1/4	1 1/2	31.8 (31290)	P3608JAAR	P3608KAAR	P3608GAAR	P3608HAAR			
	1 1/2	1 1/2	33.8 (33260)	P3609JAAR	P3609KAAR	P3609GAAR	P3609HAAR			



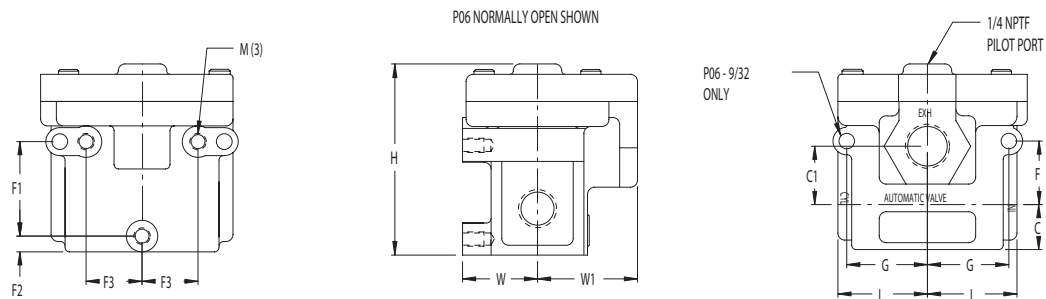


# DIMENSIONAL INFORMATION

## P14 NORMALLY CLOSED SHOWN



## P06 NORMALLY OPEN SHOWN



SERIES		C	C1	F	F1	F2	F3	G	H	L	M	W	W1
P06	NC	32,5 1.28	20,6 .81	20,6 .81	42,9 1.68	30,9 1.22	25,4 1.00	37,3 1.47	91,3 3.59	41,3 1.62	1/4-20	33,3 1.31	44,5 1.75
	NO	20,6 .81	27,0 1.06	29,5 1.16	42,9 1.68	7,16 .28	25,4 1.00	37,3 1.47	85,8 3.38	41,3 1.62	1/4-20	33,3 1.31	44,5 1.75
P14	NC	49,3 1.94	27,0 1.06	30,2 1.19	44,5 1.75	34,9 1.37	33,3 1.31	44,5 1.75	121 4.75	50,8 2.00	5/16-18	41,3 1.62	50,8 2.00
	NO	22,1 .87	27,0 1.06	-	44,5 1.75	7,9 .31	33,3 1.31	-	105 4.13	50,8 2.00	5/16-18	41,3 1.62	50,8 2.00
P36	NC	67,5 2.66	50,8 2.00	-	100 3.94	43,7 1.72	41,3 1.62	-	186 7.32	76,2 3.00	3/8-16	60,5 2.38	79,2 3.12
	NO	35,1 1.38	50,8 2.00	-	100 3.94	11,1 .44	41,3 1.62	-	165 6.50	76,2 3.00	3/8-16	60,5 2.38	79,2 3.12

Units of Measure: Top - mm, Bottom - inches, M = Tap Size

## OPTIONS

(LISTED AT THE END OF THE MODEL NUMBER IN ALPHA-NUMERIC ORDER)

### A - FLUOROELASTOMER SEALS

For applications where fluid media or ambient conditions are not compatible with nitrile seals. Note: Fluorocarbon seals do not increase the effective temperature range of the valve. For high temperature applications, consult the factory.

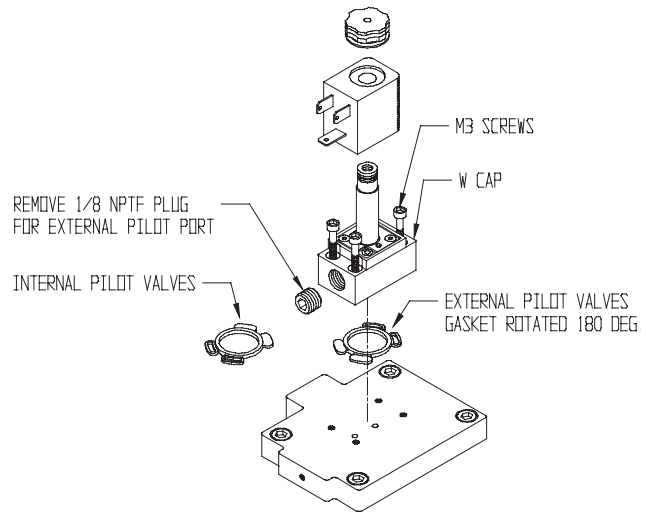
### B - EXTERNAL PILOT

For solenoid applications when the pressure to port 1 is less than 35 PSIG (2 BAR). See example below for field conversion.

#### FIELD CONVERSION

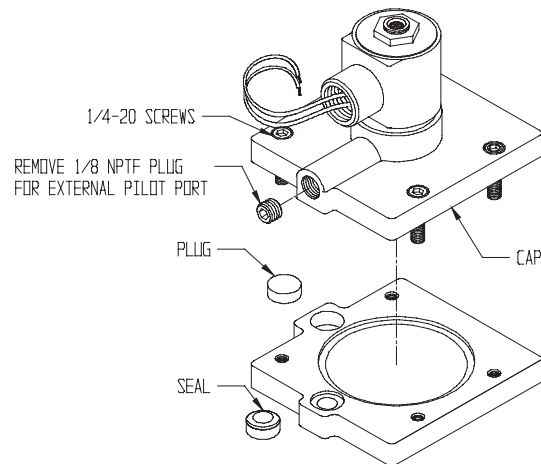
##### For W Solenoids

- Remove W cap.
- Remove gasket from bottom of W cap.
- Rotate gasket 180° and re-position on bottom of cap so that internal pilot hole is covered.
- Reassemble W cap to body and torque screws to 9 in/lbs (+/- 10%).
- Remove pipe plug from cap and make 1/8 external pilot connection.



##### For B & D Solenoids

- Remove cap from valve body.
- Remove seal from internal pilot supply and replace with plug stored in body.
- Reassemble cap to body and torque screws to 55 in/lbs (+/- 10%).
- Remove pipe plug from cap and make 1/8 external pilot connection.



ONLY THE BODY INTERFACE IS SHOWN

### C - CONDUIT COIL (P06, P14)

Refer to Electrical Section for details.

### CT - CONDUIT COIL HIGH TEMPERATURE

Refer to Electrical Section for details.

### G - COIL WITH 18" LEADS

Refer to Electrical Section for details.

### J - VACUUM SPRING

Provides additional reset force when pressure at port 1 is less than 0 PSIG (0 kPa). For solenoid pilot valves, also specify option "B".

### T - HIGH TEMPERATURE COIL (P36 ONLY)

For temperatures to 95°C (200°F) maximum.

### Y - EXPLOSION-PROOF COIL (CSA, FM)

Refer to Electrical Section for details.

### Z - EXPLOSION-PROOF COIL (ATEX, PTB)

Refer to Electrical Section for details.

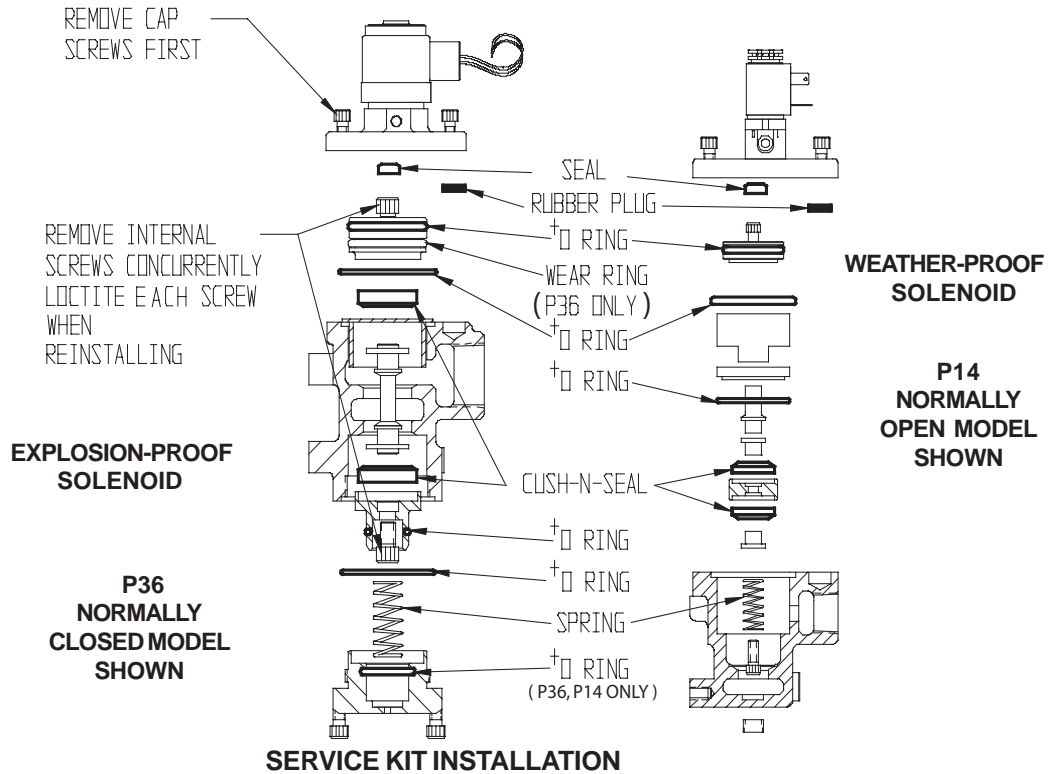
# ELECTRICAL INFORMATION

DESCRIPTION		SERIES	WHEN THE 8TH CHARACTER OF MODEL NUMBER IS:	INSTRUCTIONS	COIL PART NUMBER ** = VOLTAGE
NEMA 4X WITH DIN 43650 CONNECTION		P06 P14	W	Order coil separately (specify voltage code from below)	7019-9**
NEMA 4X WITH 18" LEADS		P06 P14	W	Order coil separately (specify voltage code from below)	7019-9**G
NEMA 4X 1/2" CONDUIT WITH 30" LEADS		P06 P14	W	Order coil separately (specify voltage code from below)	7019-9**C 7019-9**CT (High Temperature 82°C maximum)
NEMA 4X 1/2" CONDUIT WITH 24" LEADS		P36	B	Coil included (specify voltage code from below)	A5983-**F A5983-4**T (High Temperature 95°C maximum)
EXPLOSION-PROOF 1/2" CONDUIT WITH 24" LEADS (NEMA: 4, 4X, 7C, 7D, 9E, 9F & 9G; UL: CLASS I, DIV 2, GROUPS A, B, C & D; CLASS I, GROUPS C & D; CLASS II, GROUPS E, F, & G)		P36	D	Coil included (specify voltage code from below)	A6454-** (P36 Only)
EXPLOSION-PROOF 1/2" CONDUIT WITH 24" LEADS [ CSA 202633X FM APPROVED CL. I; ZONE1Ex m II T4; AEx m II CL. I; Div. 1; GR. A, B, C, D CL. II; GR. E, F, G CL. III T4 Ta= -20°C to +60°C NEMA: 4, 4X, 7C, 7D ]		P06 P14	W	Order coil separately	7019-9**Y
EXPLOSION-PROOF WITH 3m CABLE AND STRAIN RELIEF (Ex II 2G EExm II T - I EC Exm II T)		Z		Order coil separately (specify voltage code from below)	7152-9**

VOLTAGE +/- 10 %	** C O D E	CURRENT (AMPS)										RESISTANCE (OHMS @ 25° C)					POWER (AC = VA DC = WATTS)				
		INRUSH					HOLDING					W	B	D	Y	Z	W	B	D	Y	Z
		W	B	D	Y	Z	W	B	D	Y	Z										
22/50 24/60	DA	.40	-	-	.55	-	.40	-	-	.32	-	31	-	-	19	-	4.8	-	-	4.5	-
110/50 120/60	AA	.08	.26	.26	.096	-	.06	.16	.16	.054	.029	840	156	156	530	1164	4.8	8.7	8.7	6.5	3.0
220/50 240/60	AB	.04	.13	.13	.048	-	.03	.08	.08	.027	.015	3400	636	636	2345	6730	6.0	8.7	8.7	6.5	3.0
12 VDC	DA	.40	-	-	-	-	.40	.80	.80	.375	.267	31	15	15	32	45	4.8	9.5	9.5	7	3.5
24 VDC	DB	.20	-	-	-	.136	.20	.39	.39	.187	.136	121	62	62	128	177	4.8	9.5	9.5	-	3.5
125 VDC	AB	.04	-	-	-	-	.04	.11	.08	.06	-	3400	636	636	2000	-	4.8	9.5	9.5	7	-

DIN 43650 CONNECTORS						
TYPE	Strain Relief Without Cord	1/2" Conduit Without Cord	Molded With 6' Cord	Strain Relief With Light		Strain Relief With Light + 6' Cord
PART NUMBER	7020-001	7039-001	7020-006	100-240 AC 48-120 DC	6-48 AC/DC	100-240 AC 48-120 DC 7094-006 6-48 AC/DC 7094-007

# SERVICE KIT INFORMATION



1. Remove screws from cap of operator.
2. Remove cap.
3. Remove existing serviceable components.
4. Replace with kit components. \*All seals must be lubricated with Magnalube-G or equivalent.
5. Align pilot hole in body with pilot hole in cap.
6. Torque screws as shown above.

Lubrication of Automatic Valve products is not required but is recommended to maximize service life. Oils should be compatible with seal material, have an ISO 32 or lighter viscosity, and have an aniline point between 82°C (180°F) and 99°C (210°F). Refer to Maintenance section of catalog for recommended lubricants.

## MODEL NUMBERS

SERIES	FUNCTION	NORMALLY CLOSED PART NUMBER	DESCRIPTION	NORMALLY OPEN PART NUMBER	DESCRIPTION
P06	2 WAY 3 WAY	K-P0600J K-P0600G	Cush-N-Seal O Rings Rubber Plug Seal Spring	K-P0600K K-P0600H	Cush-N-Seal O Rings Rubber Plug Seal Spring
P14	2 WAY 3 WAY	K-P1400J K-P1400G	Cush-N-Seal O Rings Rubber Plug Seal Spring	K-P1400K K-P1400H	Cush-N-Seal O Rings Rubber Plug Seal Spring
P36	2 WAY 3 WAY	K-P3600J K-P3600G	Cush-N-Seal O Rings Rubber Plug Seal Spring	K-P3600K K-P3600H	Cush-N-Seal O Rings Rubber Plug Seal Spring