Python™ 1100 Series Control Valves Pneumatic and Electric Actuators

PYTHON™

Armstrong®

Armstrong® Python™ - 1100 Series Control Valves

When accurate control is desired from your steam or water applications the Armstrong Python 1100 Series Control Valve will squeeze every bit of performance out of your system and deliver precise control. With a wide range of materials, sizes, trim, and other features, you are sure to find the Python can accurately control your system. The Python 1100 Series Control Valve is constructed and equipped with state of the art materials and is designed to meet the most stringent budget.

Product Features

- Series 1100 valves are Globe two-way single seated body design valves, which satisfy the majority of control applications for HVAC, industrial and commercial markets.
- Body with top entry trim and bolted bonnet facilitates easy access to all internal parts for in-line inspection, maintenance and trim replacement.
- Stream line flow path provides large flow capacity.
- Variety of trim options are available to satisfy a vast application range including reduced port trims enabling nearest accurate selection for precise control requirements.
- Trims with top bush guided plugs are available with simple construction for stable operation, assuring high rangeability and turndown ratios.
- Micro trims available for control of minute flow rates.
- Trims with large guide plugs are available for full pressure balancing effect providing an economical choice for high pressure applications.
- All parts are renewable in-line.
- Pneumatic and electric positioners.
- Carbon steel or stainless steel body construction.
- Reverse and direct acting multi-spring actuators.
- Available in 1/2" - 2" NPT and 1/2" - 8" ANSI flange design.
- Rated for class IV shut-off.

Python Series 1100
Control Valve

Python Series 1100
Control Valve with Positioner

Accessories

- Electric Valve Actuator
- Pneumatic Valve Positioner
- Electro-Pneumatic (E/P) Valve Positioner
- Digital Valve Positioners
- Pressure/Temperature Controllers
- Air Filter Regulator

Python™ - 1100 Series Control Valve

List of Materials	
Valve Body*	Carbon Steel A216 Gr. WCB
Bonnet*	
Valve/Valve Seat	Stainless Steel AISI 410
Valve Stem	Stainless Steel 316
Gland Packing	V-Teflon - option 1 (366°F Max.) Grafoil - option 2
Yoke	S.G. Iron
Actuator Spring	Chrome Vanadium/Spring Steel
Actuator Diaphragm	Nitrile Reinforced with Nylon Fiber

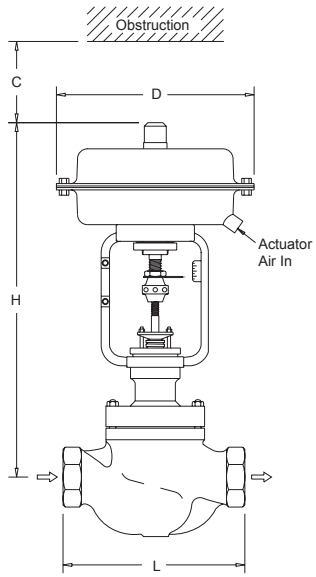
*Stainless steel available.

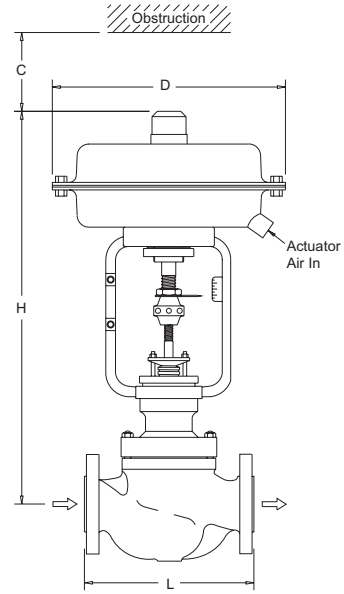
Technical Data		
Flow		Equal Percentage
Leakage		ANSI Class IV
Rangeability		50:1
Travel	1/2″ to 1″	11/16″ (18 mm)
	1-1/2″ to 2″	1-1/8″ (28 mm)
	2-1/2″ to 4″	1-1/2″ (38 mm)
	6″ to 8″	2-1/4″ (58 mm)
Maximum Temperature		450°F (232°C)
Maximum Pressure		300 psig (20 bar)

Dimensions and Weights

Size		Face-to-Face "L"						"C"		"D"		"H"		Weight					
in	mm	NPT		150#		300#								NPT		150#		300#	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg	lb	kg	lb	kg
1/2	15	6-1/2	165	7	178	—	—	4	102	9-7/16	240	18-1/2	470	31	14	34	15	—	—
3/4	20	6-1/2	165	7-1/8	181	—	—	4	102	9-7/16	240	18-1/2	470	31	14	34	15	—	—
1	25	7-3/4	197	7-1/4	184	—	—	4	102	9-7/16	240	18-1/2	470	33	15	36	16	—	—
1-1/4	40	9-1/4	25	8-3/4	222	—	—	5	127	11-7/16	290	20-9/32	515	51	23	55	25	—	—
1-1/2	40	9-1/4	25	8-3/4	222	—	—	5	127	11-7/16	290	20-9/32	515	51	23	55	25	—	—
2	50	10-1/2	267	10	254	10-1/2	267	5	127	11-7/16	290	20-9/32	515	60	27	65	30	71	32
2-1/2	65	—	—	10-7/8	276	11-1/2	292	6	127	15	380	25-3/16	640	—	—	120	54	135	61
3	80	—	—	11-3/4	299	12-1/2	318	6	152	15	380	25-3/16	640	—	—	135	61	154	70
4	100	—	—	13-7/8	353	14-1/2	368	6	152	15	380	26-3/8	670	—	—	176	80	220	100
6	150	—	—	17-3/4	451	18-5/8	473	7	175	17-5/8	448	43-1/2	1105	—	—	330	150	396	180
8	200	—	—	21-3/8	543	22-3/8	568	7	175	17-5/8	448	45-1/4	1150	—	—	551	250	650	295

Note: Additional sizes up to 20″ available upon request.

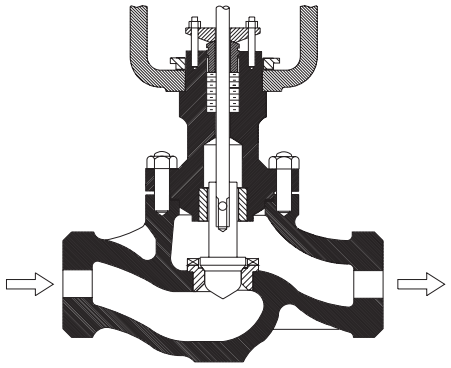




Various Trim Options

Contour Top Guided

The Contour Top Guided trims are the preferred choice for a variety of control applications due to their simple construction. Heavy top guided trim provides maximum support to impart complete stability. The plug shank is guided at the lowest portion of the bonnet minimizing the effect of side thrust on the valve plug and eliminating trim vibration.



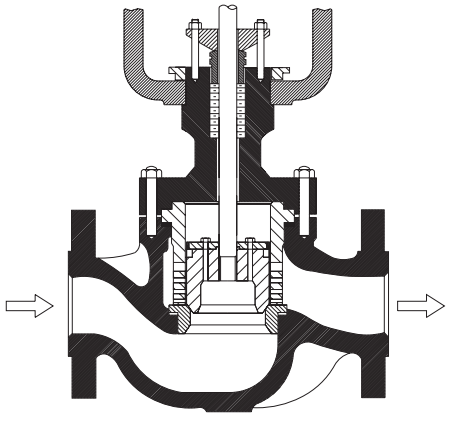
Contoured Top Guided Trim (Unbalanced)

Multi-Hole Cage Guided - Pressure Balanced

The large guide trims with pressure balancing effect enable the valve to handle higher Dp shut off without employing high power actuators. The flow characteristic is achieved through plug contour. Equalizing holes are opened in the plug which effectively cancel out the unbalanced force impressed on the top and bottom of the valve plug.

Pressure balance sealing is attained; 1) At seating surface 2) Through pressure balance seal rings which are fitted on the plug seal applying pressure along the inner wall of the large guide having a ground, honed and chrome plated surface.

This multi-hole trim also helps with noise attenuation.



Multi-Hole Cage Guided
Pressure Balanced Trims

Table 4-1. Contoured Top Guided Cv Values

Valve Size		Trim Size		Cv
in	mm	in	mm	
*1/2, *3/4, 1	*15, *20, 25	1	25	13
		3/4	20	9
		1/2	15	5
		5/16	8	3
		1/4	6	2
		1/8	3	1
1-1/2	40	1-1/2	40	30
		1-1/4	32	20
		1	25	13
2	50	2	50	50
		1-1/2	40	30
		1-1/4	32	20
2-1/2	65	2-1/2	65	80
		2	50	50
		1-1/2	40	30
3	80	3	80	110
		2-1/2	65	80
		2	50	50
4	100	4	100	200
		3	80	110
		2-1/2	65	80
6	150	6	150	400
		5	125	300
		4	100	200
8	200	8	200	640
		6	150	400
		5	125	300

Note: Additional sizes up to 20" available upon request.
* The trim size must be less than or equal to the valve size.

Table 4-2. Multi-Hole Cage Guided Cv Values

Valve Size		Trim Size		Cv
in	mm	in	mm	
1-1/2	40	1-1/2	40	24
		1-1/4	32	16
		1	25	10
2	50	2	50	40
		1-1/2	40	24
		1-1/4	32	16
2-1/2	65	2-1/2	65	64
		2	50	40
		1-1/2	40	24
3	80	3	80	90
		2-1/2	65	64
		2	50	40
4	100	4	100	160
		3	80	90
		2-1/2	65	64
6	150	6	150	320
		5	125	240
		4	100	160
8	200	8	200	510
		6	150	320
		5	125	240

Note: Additional sizes up to 20" available upon request.

Multi-Spring Actuators: Series M

The "M" Series control valve actuators are diaphragm actuators with pre-compressed multi-spring construction. They are compact (fewer parts), easy to maintain and quickly reversible. The actuators are suitable for regulating and on/off applications. Various models are available covering small to larger thrust requirements.

The increasing air pressure supply moves the diaphragm and actuator stem opposing the spring force. With decreasing air pressure supply, the spring force moves the diaphragm in the opposite direction and back to the normal position. To get various loading capacities the number of springs are altered.

Specifications

- Maximum Diaphragm Pressure:
  50 psi (3.5 bar) for Model M and Mp
- Actuator travel:
  11/16", 1-1/8", 1-1/2", 2-1/4"
  (18, 28, 38, 58 mm)
- Diaphragm:
  Nitrile reinforced with Nylon fiber
- Operating Temperature Range:
  -40° to 176°F (-40° to 80°C)
- Connections:
  1/4" NPT (F) for Models 00 and 11
  3/8" NPT (F) for Models 22 and 33
- Permissible Linearity and Hysterisis:
  ±5% of Signal Pressure Range

Features:

- Utility - Applicable for regulating and on-off applications
- High Power - Variety of models provide choice for low and high thrust requirements
- Construction - Due to multi-spring arrangement the actuators are lightweight and compact
- Reversible - The actuators are field reversible without demanding addition or deletion of parts
- Long Service Life - Rigid construction and durable components provide a long lasting service life
- Minimum Maintenance - The actuators are virtually maintenance free
- Accuracy - Rolling diaphragm construction provides constant effective area throughout the stroke

Direct Acting Actuators (Fail Open)

The actuator stem moves downward with increasing diaphragm pressure. When this pressure is reduced the opposing spring force moves the actuator stem upward. On air failure, the actuator stem is pulled to the extreme upward position by spring force.

This actuator is suitable for the following:
Fail Open - For valves with plugs that push down to close
Fail Close - For valves with plugs that push down to open

Reverse Acting Actuators (Fail Close)

The actuator stem moves upward with increasing diaphragm pressure. When this pressure is reduced the opposing spring force moves the actuator stem downward. On air failure, the actuator stem is pushed to extreme downward position by spring force.

This actuator is suitable for the following:
Fail Close - For valves with plugs that push down to close
Fail Open - For valves with plugs that push down to open

Table 5-1. Air Volume Required Per Stroke

Model Number	Cubic Feet/Stroke
M-00, Mp-00	0.012
M-11, Mp-11	0.035
M-22, Mp-22	0.082
M-33, Mp-33	0.185

Table 6-1. Contoured Top Guided Shut Off Pressure

Model No.	Air Supply Pres. to Diaph.	Spring Setting Range		Diaph. Area	Maximum Differential Pressure (PSI) D P / Shut Off Pressure												
		Direct Acting Actuator	Reverse Acting Actuator		Trim Size												
	PSI	PSI	PSI	inch²	1/8″	1/4″ - 5/16″	1/2″	3/4″	1″	1-1/4″	1-1/2″	2″	2-1/2″	3″	4″	6″	8″
M-00	20	3 - 15	3 - 15	30	300	300	206	134	94	—	—	—	—	—	—	—	—
	23		6 - 18		300	300	300	300	222	—	—	—	—	—	—	—	—
	34	6 - 30	6 - 30		300	300	300	300	222	—	—	—	—	—	—	—	—
	37		9 - 32		300	300	300	300	300	—	—	—	—	—	—	—	—
	40		12 - 35		300	300	300	300	300	—	—	—	—	—	—	—	—
M-11	20	3 - 15	3 - 15	55	—	—	—	—	—	121	78	43	—	—	—	—	—
	23		6 - 18		—	—	—	—	—	269	178	102	—	—	—	—	—
	34	6 - 30	6 - 30		—	—	—	—	—	269	178	102	—	—	—	—	—
	37		9 - 32		—	—	—	—	—	300	279	162	—	—	—	—	—
	40		12 - 35		—	—	—	—	—	300	300	222	—	—	—	—	—
M-22	20	3 - 15	3 - 15	95	—	—	—	—	—	—	—	—	51	35	16	—	—
	23		6 - 18		—	—	—	—	—	—	—	—	114	80	38	—	—
	34	6 - 30	6 - 30		—	—	—	—	—	—	—	—	114	80	38	—	—
	37		9 - 32		—	—	—	—	—	—	—	—	178	125	62	—	—
	40		12 - 35		—	—	—	—	—	—	—	—	240	172	85	—	—
M-33	20	3 - 15	3 - 15	140	—	—	—	—	—	—	—	—	—	—	—	10	5
	23		6 - 18		—	—	—	—	—	—	—	—	—	—	—	27	14
	34	6 - 30	6 - 30		—	—	—	—	—	—	—	—	—	—	—	27	14
	37		9 - 32		—	—	—	—	—	—	—	—	—	—	—	42	25
	40		12 - 35		—	—	—	—	—	—	—	—	—	—	—	60	32

Do not exceed 50 PSIG air pressure to the actuator

Table 6-2. Multi-Hole Cage Guided Shut Off Pressure

Model No.	Air Supply Pres. to Diaph.	Spring Setting Range		Diaph. Area	Maximum Differential Pressure (PSI) D P / Shut Off Pressure						
		Direct Acting Actuator	Reverse Acting Actuator		Trim Size						
	PSI	PSI	PSI	inch²	1-1/2″	2″	2-1/2″	3″	4″	6″	8″
M-11	20	3 - 15	3 - 15	55	257	150	—	—	—	—	—
	23		6 - 18		300	300	—	—	—	—	—
	34	6 - 30	6 - 30		300	300	—	—	—	—	—
	37		9 - 32		300	300	—	—	—	—	—
	40		12 - 35		300	300	—	—	—	—	—
M-22	20	3 - 15	3 - 15	95	—	—	298	190	97	—	—
	23		6 - 18		—	—	300	300	300	—	—
	34	6 - 30	6 - 30		—	—	300	300	300	—	—
	37		9 - 32		—	—	300	300	300	—	—
	40		12 - 35		—	—	300	300	300	—	—
M-33	20	3 - 15	3 - 15	140	—	—	—	—	—	133	21
	23		6 - 18		—	—	—	—	—	300	258
	34	6 - 30	6 - 30		—	—	—	—	—	300	258
	37		9 - 32		—	—	—	—	—	300	300
	40		12 - 35		—	—	—	—	—	300	300

Do not exceed 50 PSIG air pressure to the actuator

MODEL NUMBER

1100 - 2 J H 9 1 1 - 55 RB - AA 01 01 - 090

MATERIAL
2 = Carbon Steel
3 = Stainless Steel

SIZE
D = 1/2″
E = 3/4″
F = 1″
G = 1-1/4″
H = 1-1/2″
J = 2″
K = 2-1/2″
L = 3″
M = 4″
O = 6″

ORIFICE
A = 1/8″
B = 1/4″
C = 15/16″
D = 1/2″
E = 3/4″
F = 1″
G = 1-1/4″
H = 1-1/2″
J =2″
K = 2-1/2″
L = 3″
M = 4″
0 = 6″
Z = Other

CONNECTION
1 = 150#
3 = 300#
9 = Threaded

TRIM
1 = Equal Percentage Top Guided
2 = Equal Percentage Cage Guided

PACKING
1 = V-Teflon
2 = Graphoil

ACTUATOR
30 = 30 in^2
55 = 55 in^2
95 = 95 in^2
140 = 140 in^2

SPRING RANGE
RA = Reverse Acting (3-15)
RB = Reverse Acting (6-18)
RC = Reverse Acting (6-30)
RD = Reverse Acting (9-32)
RE = Reverse Acting (12-35)
DA = Direct Acting (3-15)
DB = Direct Acting (6-30)

POSITIONER
AA = None
FP = SRP Foxboro Pneumatic
FA = SRI Foxboro I/P Analog
FD = SRD Foxboro I/P Digital
OT = Other

POSITIONER SET
01 = None
02 = 3/15 psi / 4-20 mA
03 = 3-9 psi / 4-12 mA
04 = 9-15 psi / 12-20 mA

ACCESSORIES
01 = None
02 = Limit Switch-Mechanical
03 = Limit Switch-Proximity
04 = Feedback 4-20 mA Position Transmitter

VALVE INLET PRESSURE (psi)

Armstrong® Python™- Electric Linear Actuators

When accurate control of your steam or water application is desired and air is not available, the Python AEL Electric Control Valve will deliver precise control. The electric version of the popular 1100 series control valve is built to out perform and deliver accurate control. The AEL Series Electric Control Valve is constructed and equipped with state of the art industrial materials combined with the standard 1100 series main valve.

Product Features:

- Power: 24v AC (120v AC or 240v AC available)
- Terminal board connection
- Pillar mechanical connection
- Auto/Manual control
- Control signal 4-20 ma, 0-10 volts
- Protection class IP 67
- High thrust capabilities
- Electronic position control
- Metal internal gears
- Compact design
- Mounts to the standard 1100 Series valve body
- Actuators available from 1/2" to 4"

Python Series 1100
AEL Electric Actuator

List of Materials	
Valve Body*	Carbon Steel A216 GR. WCB
Bonnet*	
Valve/Valve Seat	Stainless Steel AISI 410
Valve Stem	Stainless Steel 316
	V-Teflon- Option 1 (366°F max)
Gland Packing	Grafoil-Option 2
Yoke	S.G. Iron
Actuator Housing	Aluminum

*Stainless steel available.

Technical Data		
Flow		Equal Percentage
Leakage		ANSI Class IV
Rangeability		50:1
Travel	1/2" to 1"	11/16" (18mm)
	1-1/4" to 2"	1-1/8" (28mm)
	2-1/2" to 4"	1-1/2" (38mm)
	6" to 8"	2-1/4" (58mm)
Maximum Temperature		450°F (232°C)
Maximum Pressure		300 psig (20 bar)
Voltage		24v Power Supply

Dimensions and Weights

Size		Face-to-Face "L"						"C"		"D"		"H"		Weight					
in	mm	NPT		150#		300#								NPT		150#		300#	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg	lb	kg	lb	kg
1/2	15	6-1/2	165	7	178	—	—	7-7/8	200	5	127	14-9/16	370	22	10	34	15	—	—
3/4	20	6-1/2	165	7-1/8	181	—	—	7-7/8	200	5	127	14-9/16	370	22	10	34	15	—	—
1	25	7-3/4	197	7-1/4	184	—	—	7-7/8	200	5	127	24-15/16	633	24	11	36	16	—	—
1-1/4	32	9-1/4	235	8-3/4	222	—	—	6-5/16	160	7-1/4	183	26-1/8	664	39	18	55	25	—	—
1-1/2	40	9-1/4	235	8-3/4	222	—	—	6-5/16	160	7-1/4	183	26-1/8	664	39	18	55	25	—	—
2	50	10-1/2	267	10	254	10-1/2	267	6-5/16	160	7-1/4	183	26-11/16	678	48	22	65	30	71	32
2-1/2	65	—	—	10-7/8	276	11-1/2	292	6-5/16	160	7-1/4	183	26-5/16	668	—	—	120	54	135	61
3	80	—	—	11-3/4	299	12-1/2	318	6-5/16	160	7-1/4	183	28-1/2	724	—	—	135	61	150	68
4	100	—	—	13-7/8	353	14-1/2	368	6-5/16	160	7-1/4	183	31-5/8	803	—	—	176	80	210	95
6	150	—	—	17-3/4	451	18-5/8	473	6-5/16	160	7-1/4	183	34-1/4	870	—	—	322	146	380	172
8	200	—	—	21-3/8	543	22-3/8	568	—	—	—	—	—	—	—	—	540	245	630	286

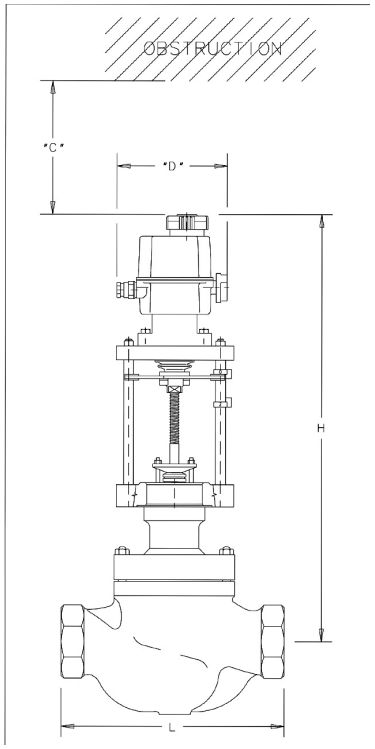
*Refer to images on page 9

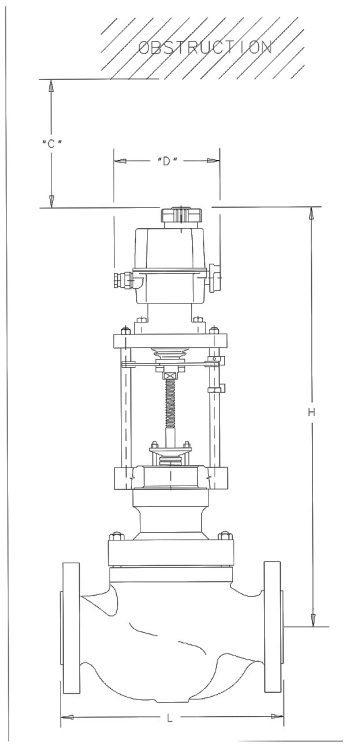
Table 9.1 Top Guided

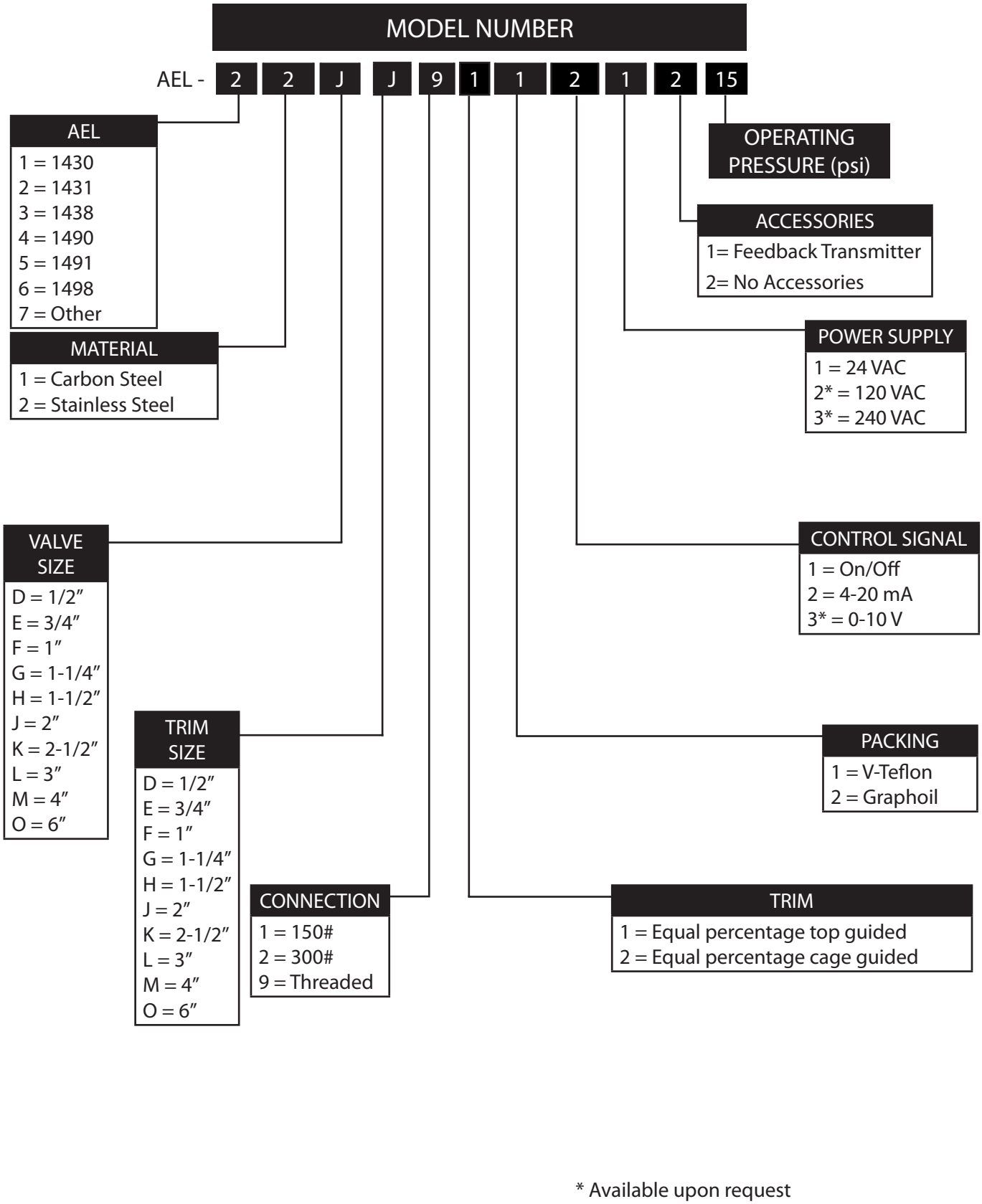
Size of Valve		NPT				150# Flg				
IN	MM	Switch-off thrust (N)	Speed (mm/min)	Modulating Model	ON/OFF Model	Switch-off thrust (N)	Speed (mm/min)	Modulating Model	ON/OFF Model	Stroke
1/2″	15	1900	28	AEL1430	AEL1490	1900	28	AEL1430	AEL1490	18mm
3/4″	20	1900	28	AEL1430	AEL1490	1900	28	AEL1430	AEL1490	18mm
1″	25	1900	28	AEL1430	AEL1490	1900	28	AEL1430	AEL1490	18mm
1-1/4″	32	3600	48	AEL1438	AEL1498	1900	48	AEL1438	AEL1498	28mm
1-1/2″	40	4600	48	AEL1438	AEL1498	3600	48	AEL1438	AEL1498	28mm
2″	50	7200	48	AEL1438	AEL1431	4600	48	AEL1438	AEL1498	28mm
2-1/2″	65	—	—	—	—	4600	48	AEL1438	AEL1498	—
3″	80	—	—	—	—	4600	48	AEL1438	AEL1498	—
4″	100	—	—	—	—	4600	48	AEL1438	AEL1498	—

Table 9.2 Multi-Hole

Size of Valve		150# Flg				300# Flg				
IN	MM	Switch-off thrust (N)	Speed (mm/min)	Modulating Model	ON/OFF Model	Switch-off thrust (N)	Speed (mm/min)	Modulating Model	ON/OFF Model	Stroke
1-1/2″	40	1900	48	AEL1438	AEL1498	1900	48	AEL1438	AEL1498	28mm
2″	50	1900	48	AEL1438	AEL1498	1900	48	AEL1438	AEL1498	28mm
2-1/2″	65	3600	48	AEL1438	AEL1498	3600	48	AEL1438	AEL1498	38mm
3″	80	3600	48	AEL1438	AEL1498	3600	48	AEL1438	AEL1498	38mm
4″	100	3600	48	AEL1438	AEL1498	3600	48	AEL1438	AEL1498	38mm
6″	150	4600	48	AEL1431	AEL1491	5800	48	AEL1438	AEL1431	58mm







* Available upon request

Valve Sizing

To determine the size of valve you need, calculate the required Cv value for your application. Once you have calculated the required Cv, refer to the valve Cv charts on page 3 to determine the size and trim of valve. Globe style control valves have the best control in the midrange of the valve's capacity. It is best to pick a valve so the calculated Cv is between 15% and 85% of the valve's maximum Cv. See the formulas below for steam and water applications. Consult factory for other types of fluids.

For Saturated Steam Service

Subcritical Flow
When $\Delta P < 0.81(P_1/2)$

$$Cv = \frac{W}{2.1\sqrt{\Delta P(P_{1A}+P_{2A})}}$$

Critical Flow
When $\Delta P >= 0.81(P_1/2)$

$$Cv = \frac{W}{1.633\ (P_{1A})}$$

For Liquid Service

$$Cv = \frac{(GPM)\sqrt{G}}{\sqrt{\Delta P}}$$

C_v = Valve flow coefficient
W = Maximum flow capacity of steam, lbs/hr
P_{1A} = Inlet Pressure, psia (psig + 14.7)
P_{2A} = Outlet Pressure, psia (psig + 14.7)
DP = Pressure drop (P_1 - P_2) psi
GPM = Maximum flow capacity of Liquid, GPM
G = Specific Gravity

Actuator Sizing

To determine the required actuator, you need to determine the differential pressure (shut off pressure). The shut off pressure for a pressure reduction application is the pressure difference between P_1 and P_2. The shut off pressure for a temperature control application is the P_1 pressure.

Once you have calculated your shut off pressure, select the actuator model and spring setting range that exceeds your calculated shutoff pressure with the trim size previously selected. Select reverse acting for air to open (fail close) applications or direct acting for air to close (fail open) applications.

Make sure the required air pressure is available for the spring range selected.

Sizing Example 1:

Fluid: Saturated Steam
P_1 = 140 psig
P_2 = 20 psig
Flow: 13,000 lbs/hr
Actuator: Air to open (Fail Close)

Solution:
Valve Selection: Select the correct formula needed to calculate Cv. We need to use the critical flow formula since $\Delta P > .81(P_1/2)$.

$$Cv = \frac{13{,}000}{1.633(140 + 14.7)} = 52$$

Refer to the C_v charts on Page 4. Select a 2-1/2" Multi-hole cage guided with 2-1/2" Trim. Top bush guided would work as well, but multi-hole cage was chosen to help with noise attenuation.

Actuator Selection: Determine your shutoff pressure (ΔP).

ΔP = 140 - 20 = 120 psi

Refer to chart 6-2 (multi-hole cage guided) and go to the 2-1/2" trim size column. Follow the column until you get to a pressure greater than 120 psi, then follow the row horizontally to determine you need a Model M-22 with the 3-15 psi spring range.

Complete valve selection is 1100 series, 2-1/2" 150# Flange with 2-1/2" Multi-hole cage trim and M-22 actuator with 3-15 psi spring range.

Sizing Example 2:

Fluid: Saturated Steam
Application: Temperature Control
P_1: 125 psig
Flow: 1750 lbs/hr
Actuator: Air to open (Fail Close)

Solution:
Since this is a temperature control application and we do not know the P_2 pressure, we will size the valve with a 30% pressure drop. We need to use the subcritical flow formula.

$$Cv = \frac{1750}{2.1\sqrt{(37)((125+14.7)+(88+14.7))}} = 8.8$$

Refer to the Cv charts on Page 4. Select a 1" Contoured top guided with full port trim. The 1" is chosen over the 3/4" because the valve will control best between 15% - 85% of maximum valve capacity. The 3/4" valve would be operating at 98% of valve capacity.

Actuator Selection:
For temperature control applications, the shut off pressure is the P_1 pressure. Refer to chart 6-1 (Contoured Top Guided) and go to the 1" trim size column. Follow the column until you get to a pressure greater than 125 psi, then follow the row horizontally to determine you need a Model M-00 with a 6 - 18 psi spring range.

Complete valve selection is 1100 series 1" NPT with 1" contoured top guided trim and M-00 actuator with 6 - 18 psi spring range.

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