

# Industrial Components

Pneumatics

Hydraulics

Ball-Butterfly-Knife Valve

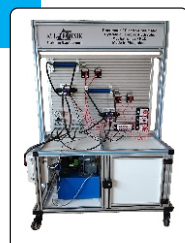
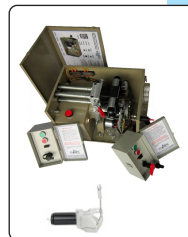
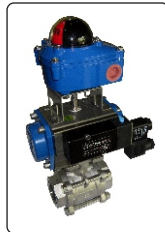
Sanitary Ball-Butterfly Valve

Pneumatic-Motorized Actuator

Vacuum Generator-Suction Cap

Pneumatic-Hydraulic Training Equipment

# AT-Pneumatik



# ALL-TECHNIK

& Components, Incorporated



**Brief INTRODUCTION**

**A**ll-Technik & Components, Inc. was founded in April 12, 2002 as a distributor/supplier of various industrial components in the Philippines. Since then, All-Technik established and distributed its own registered trademark of "AT-Pneumatik". After several years of distribution, this brand is being widely used and known for its quality and competitive price. April 12, 2020 All-Technik started producing Pneumatic-Hydraulic Training Equipment.

All-Technik products lines have expanded into several divisions, Pneumatics, Hydraulics, Vacuum, Process Control Valves, Motorized-Pneumatic Valve, Instruments and Pneumatic-Hydraulic Training Equipment.

For us to serve our clients better and faster, our office and warehouse located on the two adjacent building, with a combined space of more than 1,900m<sup>2</sup>. We have own machining center covering 300m<sup>2</sup> to cater the testing-repair-assembly and fabrication of pneumatic/hydraulic cylinder, hydraulic power units and process control valves.

We, at All-Technik are committed to provide the best after-sales service, competitive pricing, together with a reasonable delivery lead-time. Our sales team and office staff continually seeks ways to improve our level of competence and service through continuous technical and management training.



**Corporate Statement**

**VISION**

We, at All-Technik, envision our Employee and Management to embody

**Accountability, Teamwork, Change & Integrity**

to achieve, our goal to have compensation that is mutually beneficial to each other.

**MISSION**

To be the customer's first choice as the supplier with the highest level of service and quality products with a reasonable price.

**CORE VALUES**

**Accountability**

To do the right thing, it is to be, it's up to me, it is my responsibility

**Teamwork**

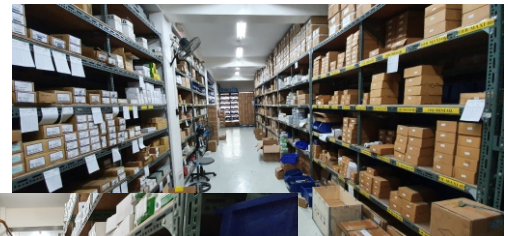
Committed to work together with compassion to each other and to the company

**Change**

To have courage to adapt, always remain open and responsive to change

**Integrity**

To be real and true at all time



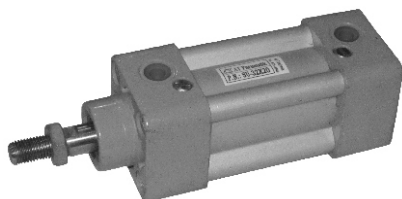
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## Warehouse and Machine shop Facilities

## SC/SU Series Standard Double Acting Cylinder

**SU Cylinder**



**SC Cylinder**



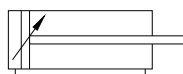
### Ordering Code

**SC - D - 32 X 50 - S - 25**

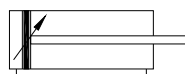
- SC** - Tie Rod Cylinder
- SU** - Profile Cylinder
- Blank** - Basic Cylinder
- D** - Thru Rod Cylinder
- J** - Thru Rod Cylinder with Adjustable Stroke
- 32** - Cylinder Bore Diameter (mm)
- 50** - Stroke Length (mm)
- Blank** - Non-magnetic Piston
- S** - Magnetic Piston
- 25** - Stroke Adjustment Length (mm)

SC/SU Pneumatic Cylinder head, piston and barrel made of aluminum alloy; piston rod made of chromed plated high carbon steel; seals are made of NBR for standard working temperature, for higher working temperature seals are made of viton or teflon.

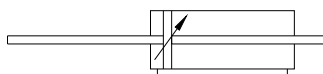
With Adjustable Cushioning



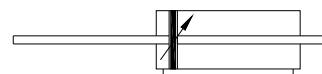
With Adjustable Cushioning & Magnet



Thru Rod with Adjustable Cushioning



Thru Rod with Adjustable Cushioning & Magnet



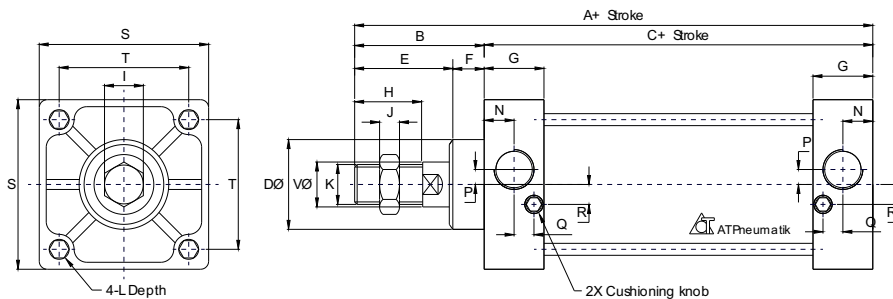
SC / SU Pneumatic Cylinder Specification									
Bore Diameter (mm)	32	40	50	63	80	100	125	160	200
Type	Double Acting								
Working Medium	Air								
Working Pressure	10 kg/cm <sup>2</sup>								
Test Pressure	13 Kg/cm <sup>2</sup>								
Working Temperature	0 - 70 °C								
Working Speed Range	50~800 mm/sec								
Cushioning	Adjustable								
Cushioning Adjustment	20			26				45	
Port Size	G1/8"	G1/4"		G3/8"			G1/2"		G3/4"

Theoretical Force Table Nm																				
Bore Dia. (mm)		32		40		50		63		80		100		125		160		200		
Piston Rod Dia.		12		16		20		20		25		25		32		40		40		
Cylinder Type		Double Acting		Double Acting		Double Acting		Double Acting		Double Acting		Double Acting		Double Acting		Double Acting		Double Acting		
		Push Side	Pull Side	Push Side	Pull Side	Push Side	Pull Side	Push Side	Pull Side	Push Side	Pull Side	Push Side	Pull Side	Push Side	Pull Side	Push Side	Pull Side	Push Side	Pull Side	
Air Pressure Kg/cm <sup>2</sup>	1	8.0	6.9	12.6	10.6	19.6	16.5	31.2	28.0	50.3	45.4	78.5	73.6	122.7	114.6	201.0	188.4	314.2	301.4	
	2	16.1	13.8	25.1	21.1	39.3	33.0	62.3	56.1	100.5	90.7	157.1	147.2	245.4	229.2	402.0	376.8	628.4	602.8	
	3	24.1	20.7	37.7	31.7	58.9	49.5	93.5	84.1	150.8	136.1	235.6	220.9	368.1	343.8	603.0	565.2	942.6	904.2	
	4	32.2	27.6	50.2	42.2	78.5	66.0	124.7	112.1	201.0	181.4	314.1	294.5	490.8	458.4	804.0	753.6	1,256.8	1,205.6	
	5	40.2	34.5	62.8	52.8	98.2	82.5	155.9	140.2	251.3	226.8	392.7	368.1	613.5	573.0	1,005.0	942.0	1,571.0	1,507.0	
	6	48.2	41.4	75.4	63.3	117.8	98.9	187.0	168.2	301.6	272.2	471.2	441.7	736.2	687.6	1,206.0	1,130.4	1,885.2	1,808.4	
	7	56.3	48.3	87.9	73.9	137.4	115.4	218.2	196.2	351.8	317.5	549.7	515.3	858.9	802.2	1,407.0	1,318.8	2,199.4	2,109.8	
	8	64.3	55.2	100.5	84.4	157.4	131.9	249.4	224.2	402.1	362.9	628.2	589.0	981.6	916.8	1,608.0	1,507.2	2,513.6	2,411.2	
	9	72.4	62.1	113.0	95.0	176.7	148.4	280.5	252.3	452.3	408.2	706.8	662.6	1,104.3	1,031.4	1,809.0	1,695.6	2,827.8	2,712.6	

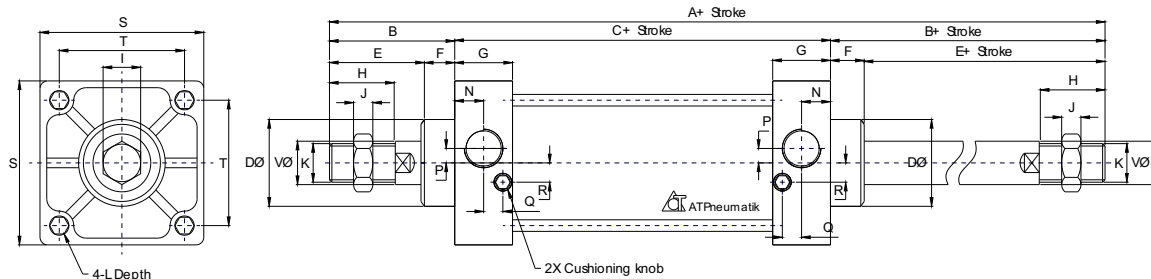


## SC/SU Series Standard Double Acting Cylinder

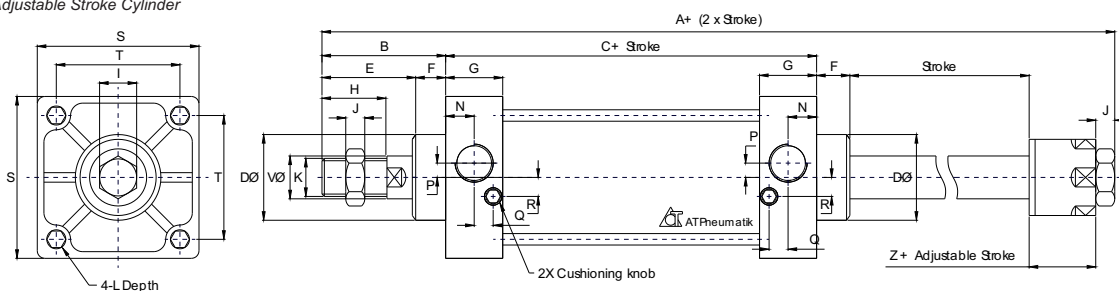
**SC / SU** Double Acting Cylinder



**SCD / SUD** Thru Rod Cylinder



**SCJ / SUJ** Adjustable Stroke Cylinder

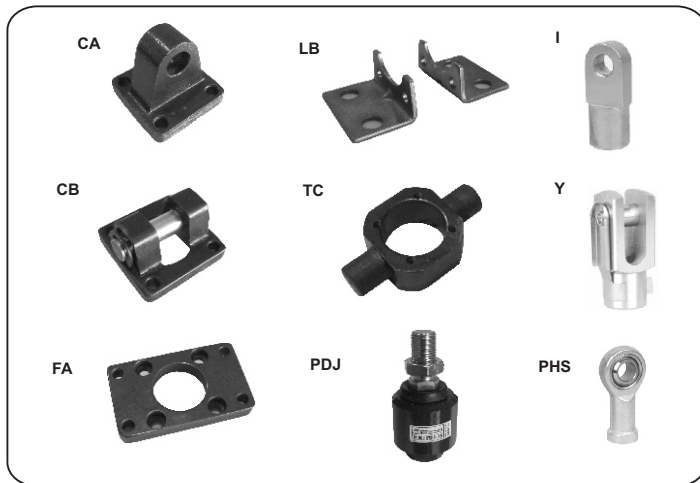


SC / SU Pneumatic Cylinder Dimension (mm)													
Bore Diameter	A	A1	A2	B	C	D	E	F	G	H	I	J	K
32	140	187	182	47	93	28	32	15	27.5	22	17	6	M10 X 1.25
40	142	191	185	48	93	32	34	15	27.5	24	17	7	M12 X 1.25
50	150	207	196	57	93	38	42	15	27.5	32	23	8	M16 X 1.5
63	153	210	199	57	96	38	42	15	27.5	32	23	8	M16 X 1.5
80	183	258	243	75	108	47	54	21	33.0	40	26	10	M20 X1.5
100	189	264	249	75	114	47	54	21	33.0	40	26	10	M20 X1.5
125	226	-	-	104	122	55	70	34	33.0	54	40	10	M27 X 2
160	291	-	-	123	168	62	91	32	50.0	72	55	18	M36 X 2
200	347	-	-	167	180	80	112	55	50.0	72	55	18	M36 X 2

SC / SU Pneumatic Cylinder Dimension (mm)												
Bore Diameter	M	N	O	P	Q	R	S	T	V	W	Z	L
32	9.5	13.5	G 1/8"	3.5	7.5	7.0	45	33	12	12	21	M06 X 1.0
40	9.5	1.5	G 1/4"	6.0	8.2	9.0	50	37	16	14	21	M06 X 1.0
50	9.5	13.5	G 1/4"	8.5	8.2	9.0	62	47	20	17	23	M06 X 1.0
63	9.5	13.5	G 3/8"	7.0	8.2	8.5	75	56	20	17	23	M08 X 1.25
80	11.5	16.5	G 3/8"	10.0	9.5	14.0	94	70	25	22	29	M10 X 1.5
100	11.5	16.5	G 1/2"	11.0	9.5	14.0	112	84	25	22	29	M10 X 1.5
125	15.5	16.5	G 1/2"	-	-	-	14	110	32	27	-	M12 X 1.75
160	17.5	25	G 1/2"	-	-	-	180	140	40	36	-	M16 X 2.0
200	17.5	25	G 3/4"	-	-	-	220	175	40	36	-	M16 X 2.0

Dimensions are in mm

## SC/SU Series Cylinder Mountings and Piston Rod Adaptors

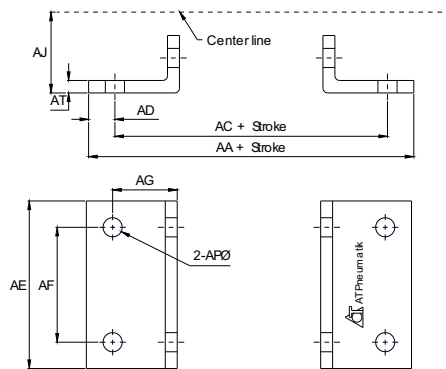


### Ordering Code

- SC** - **LB** - **32**
- SC** - Tie Rod Type Pneumatic Cylinder
  - SU** - Profile Type Pneumatic Cylinder
  - LB** - Foot Mounting
  - FA** - Front / Rear Mounting
  - CA** - Male Clevis Mounting
  - CB** - Female Clevis Mounting
  - TC** - Trunnion Mounting
  - Y** - Y-Knuckle Piston Rod Adaptor
  - I** - I-Knuckle Piston Rod Adaptor
  - 32** - Cylinder Bore Diameter (mm)

SC/SU Pneumatic Cylinder mountings and Piston rod adaptors are made of Low Carbon Steel materials.

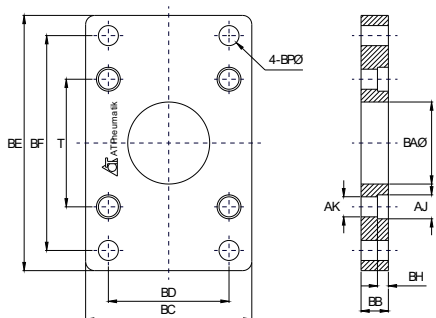
SC/SU - LB Foot Mounting



**SC/SU - LB Dimension**

Bore Diameter	32	40	50	63	80	100	125	160	200
AA	153	169	173	184	200	210	249	328	380
AC	134	140	149	158	168	174	213	288	320
AD	9.5	14.5	12	12	16	18	18	20	30
AE	50	57	68	80	97	112	140	180	220
AF	33	36	47	56	70	84	90	115	135
AG	20.5	23.5	28	31	30	30	45	60	70
AJ	28	30	36.5	41	49	57	90	115	135
AP	9	12	12	12	14	14	16	18	22
AT	3.2	3.2	3.2	3.2	4	4	8	8	10

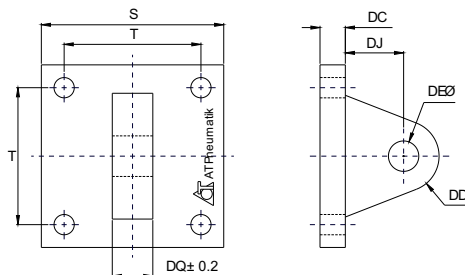
SC/SU - FA Flange Mounting



**SC/SU - FA Dimension**

Bore Diameter	32	40	50	63	80	100	125	160	200
BA	28.3	32.3	38.3	38.3	47.3	47.3	56	63	81
BB	10	10	10	12	16	16	20	25	25
BC	47	52	65	76	95	115	140	180	220
BD	33	36	47	56	70	84	90	115	135
BE	72	84	104	116	143	162	224	280	320
BF	58	70	86	98	119	138	180	230	270
BH	6.5	6.5	6.5	8.5	10.5	10.5	15	20	20
AJ	10.5	10.5	10.5	13.5	16.6	16.6	19	25	25
AK	6.5	6.5	6.5	8.5	10.5	10.5	12.5	16.5	16.5
BP	7	7	9	9	12	12	16	18	22
T	33	37	47	56	70	84	110	140	175

SC/SU - CA Male Clevis Mounting



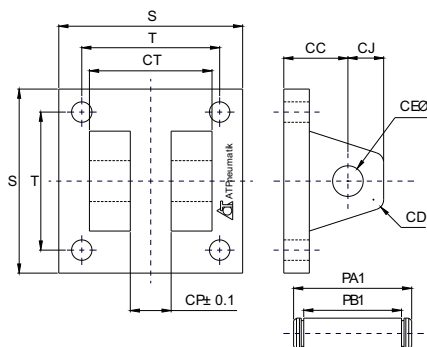
**SC/SU - CA Dimension**

Bore Diameter	32	40	50	63	80	100	125	160	200
S	48	50	62	75	94	112	140	180	220
T	33	37	47	56	70	84	110	140	175
DC	34	34	34	34	48	48	50	55	60
DD	14	14	15	15	20	20	25	30	30
DE	12	14	14	14	20	20	25	30	30
DJ	14	14	15	15	20	20	25	30	30
DQ	16	20	20	20	32	32	70	90	90

Dimensions are in mm

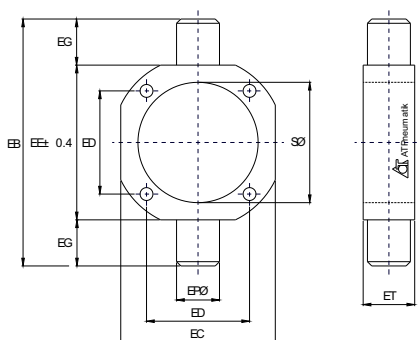
## SC/SU Series Cylinder Mountings and Piston Rod Adaptors

**SC/SU - CB** Female Clevis Mounting



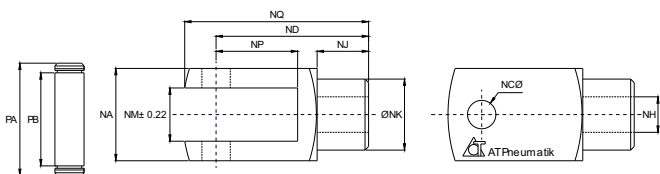
SC/SU - CB Dimension									
Bore Diameter	32	40	50	63	80	100	125	160	200
CC	19	19	19	19	32	32	50	55	60
CD	5	5	3	3	8	8	25	30	30
CE	12	14	14	14	20	20	25	30	30
CJ	13	13	15	15	21	21	25	30	30
CP	16.3	20.5	20.3	20.3	32.3	32.3	70	90	90
CT	32	44	52	52	64	64	120	160	160
PAI	41	51.8	60.3	60.3	73.8	73.8	130	170	170
PBI	33.5	45.8	54	54	65.5	65.5	121.5	161.5	161.5
S	48	50	62	75	94	112	140	180	220
T	33	37	47	56	70	84	110	140	175

**SC/SU - TC** Trunnion Mounting

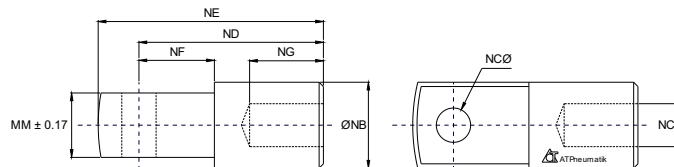


SC - TC Dimension								
Bore Diameter	40	50	63	80	100	125	160	200
EB	113	126	138	164	182	210	264	336
EC	63	76	88	114	132	160	200	245
ED	37	47	56	70	84	110	140	175
EE	63	76	88	114	132	160	200	245
EG	25	25	25	25	25	25	32	35
EP	25	25	25	25	25	30	32	32
ET	30	30	30	35	40	38	38	52
S	45.5	55.5	68.5	87.5	107.5	134.5	172.5	212.5

**Y** Piston Rod Adaptor

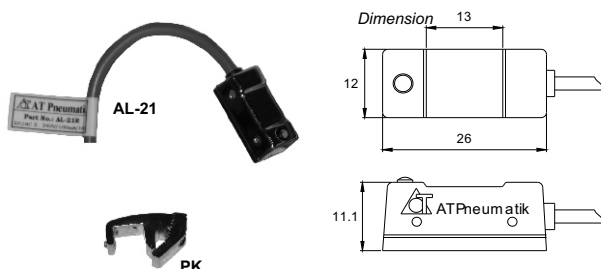


**I** Piston Rod Adaptor



Piston Rod Adaptor Dimension															
Bore Diameter	NA	NB	NC	ND	NE	NF	NG	NH	NJ	NK	NM	NP	NQ	PA	PB
32	19	20	10	40	52	15	20	M10 X 1.25	12	18	10	20	52	26.2	20
40	25.4	24	12	48	67	24	20	M12 X 1.25	20	23	12	24	62	32.8	26.5
50	32	32	16	64	89	32	23	M16 X 1.5	22	30	16	32	83	39.3	33
63	32	32	16	64	89	32	23	M16 X 1.5	22	30	16	32	83	39.3	33
80	44.4	40	20	80	112	40	30	M20 X 1.5	30	39	20	40	105	53.3	45
100	44.4	40	20	80	112	40	30	M20 X 1.5	30	39	20	40	105	53.3	45

**SC / SU Series** Magnetic Switch and Holder



Reed Switch Specification					
Model	Output	Current	Response	Indicator	Wire
AL-21-R	Contact	5-240Vac 5-110Vdc	5-60mA 1msec max.	LED	2M
AL-21-NPN	NPN	5-30Vdc			
AL-21-PNP	PNP				

When Ordering of Reed Switch Holder PK specify the Bore Diameter of Cylinder

## MA Series Stainless Steel Cylinder

### MA Stainless Steel Cylinder



### Ordering Code

- MA** - **U - 20 X 50 - S - 25**
- MA** - Double Acting Cylinder
  - MAD** - Double Acting Thru Rod Cylinder
  - MAJ** - Double Acting with Adjustable Stroke Cylinder
  - MAS** - Single Acting Cylinder Normally Retracted
  - MASE** - Single Acting Cylinder Normally Extended
  - U** - Flat End Mounting
  - CM** - Round End Mounting
  - Blank** - Standard Mounting
  - 20** - Bore Diameter (mm)
  - 50** - Stroke (mm)
  - S** - Magnetic Piston
  - Blank** - Non-Magnetic Piston
  - 25** - Stroke Adjustment for MAJ (mm)

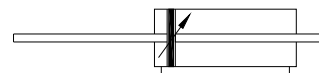
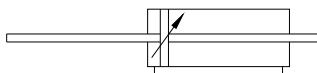
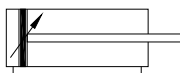
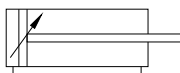
MA Pneumatic Cylinder head, piston and barrel made of aluminum alloy; piston rod made of chromed plated high carbon steel; seals are made of NBR for standard working temperature; for higher working temperature seals are made of viton or teflon.

With Cushioning

W/ Cushioning & Magnet

Thru Rod w/ Cushioning

Thru Rod w/ Cushioning & Magnet



### MA Pneumatic Cylinder Specification

Bore Diameter (mm)	16	20	25	32	40
Type	Double Acting / Single Acting				
Working Medium	Air				
Working Pressure	10 kg/cm <sup>2</sup>				
Test Pressure	13 Kg/cm <sup>2</sup>				
Working Temperature	0 - 70 °C				
Working Speed Range	50~800 mm/sec				
Cushioning	Rubber Bumper				
Port Size	M05	G 1/8"			G 1/4"

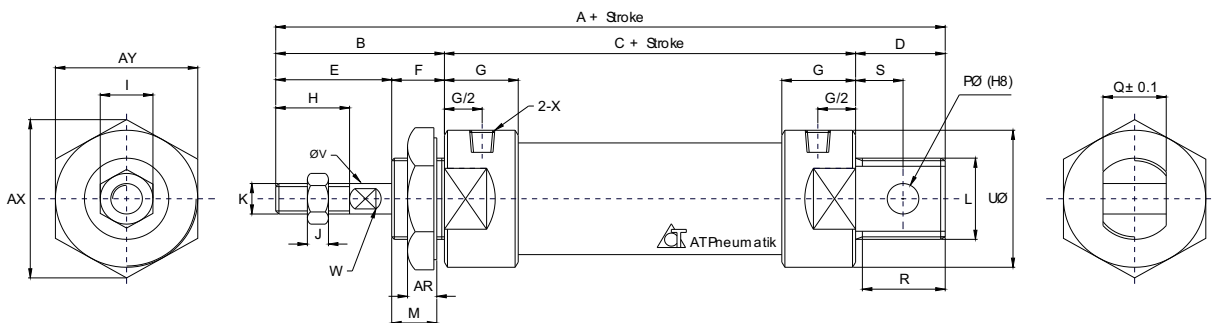
### Theoretical Force Table Nm

Bore Diameter (mm)		16		20		25		32		40						
Piston Rod Diameter		6		8		10		12		16						
Motion Pattern		Double Acting		Double Acting		Double Acting		Double Acting		Double Acting						
		Single Acting	Push Side	Pull Side	Single Acting	Push Side	Pull Side	Single Acting	Push Side	Pull Side	Single Acting	Push Side	Pull Side			
Air Pressure (Kgf/cm <sup>2</sup> )	1	-	2	1.8	-	3.1	2.6	-	4.9	4.1	-	8	6.9	-	12.6	10.6
	2	-	4	3.6	1.6	6.3	5.3	2.5	9.8	8.2	4	16.1	13.8	6.3	25.1	21.1
	3	2	6	5.4	4.7	9.4	7.9	7.4	14.7	12.4	12.1	24.1	20.7	18.8	37.7	31.7
	4	4	8	7.2	7.9	12.6	10.6	12.3	19.6	16.5	20.1	32.2	27.6	31.4	50.2	42.2
	5	6	10.1	9.1	11	15.7	13.2	17.2	24.5	20.6	28.1	40.2	34.5	44	62.8	52.8
	6	8	12.1	10.9	14.1	18.8	15.8	22.1	29.4	24.7	36.2	48.2	41.4	56.5	75.4	63.3
	7	10	14.1	12.7	17.3	22	18.5	27	34.3	28.8	44.2	56.3	48.3	69.1	87.9	73.9
	8	-	-	-	20.4	25.1	21.1	31.9	39.2	33	52.3	64.3	55.2	81.6	100.5	84.4
	9	-	-	-	23.6	28.3	23.8	36.8	44.1	37.1	60.3	72.4	62.1	94.2	113	95

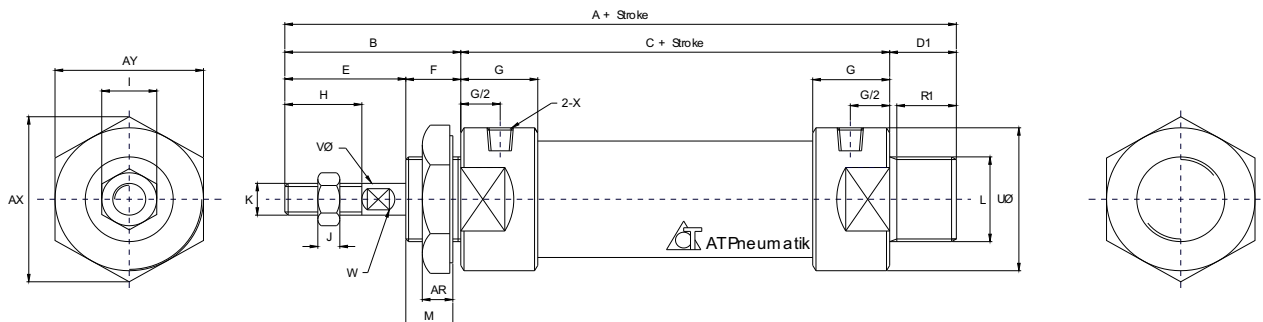


## MA Series Stainless Steel Double Acting Cylinder

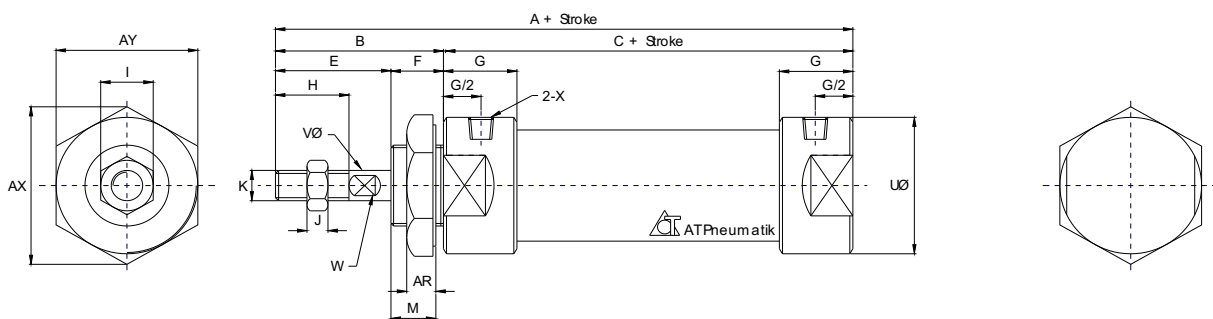
**MA - CA** Double Acting Cylinder



**MA - CM** Double Acting Cylinder



**MA - U** Double Acting Cylinder



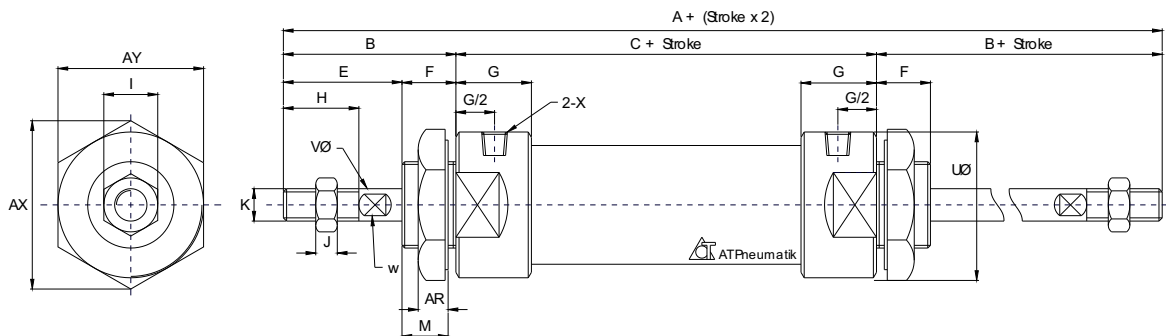
MA Pneumatic Cylinder Dimension															
Bore Diameter	A	A1	A2	B	C	D	D1	E	F	G	H	I	J	K	L
16	114	114	98	38	60	15	15	22	16	10	16	10	5	M06 X 1.0	M16 X 1.5
20	137	128	116	40	76	21	12	28	12	16	20	12	6	M08 X 1.25	M22 X 1.5
25	141	134	120	44	76	21	14	30	14	16	22	17	6	M10 X 1.25	M22 X 1.5
32	147	134	120	44	76	27	14	30	14	16	22	17	6	M10 X 1.25	M24 X 2.0
40	149	136	122	46	76	27	14	32	14	16.7	24	17	7	M12 X 1.25	M30 X 2.0

MA Pneumatic Cylinder Dimension														
Bore Diameter	M	P	Q	R	R1	S	U	V	W	X	AR	AX	AY	
16	8	6	12	13	13	6	20	6	/	M05	7	24	27.5	
20	10	8	16	19	12	12	29	8	6	G 1/8"	7	33	29	
25	12	8	16	19	14	12	34	10	8	G 1/8"	7	33	29	
32	12	10	16	25	14	15	39.5	12	10	G 1/8"	8	37	32	
40	12	23	20	25	14	15	39.5	16	14	G 1/4"	9	47	41	

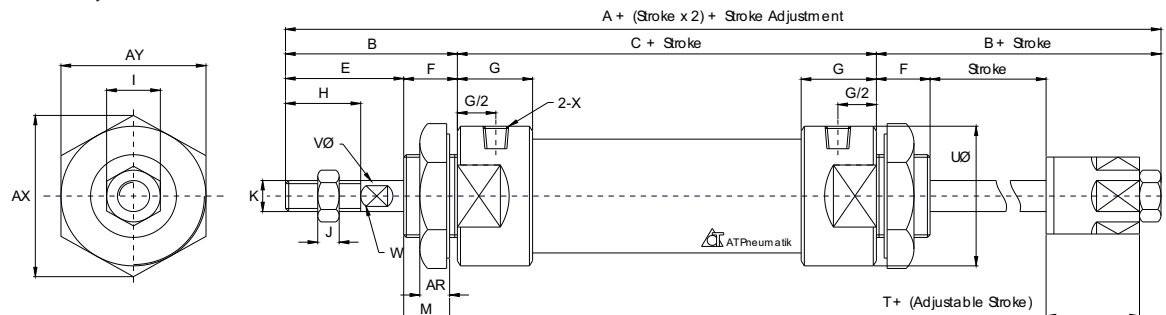
Dimensions are in mm

## MA Series Stainless Steel Double Acting Cylinder

### MAD Thru Rod Cylinder



### MAJ Adjustable Stroke Cylinder



**MA Pneumatic Cylinder Dimension**

Bore Diameter	A	A1	B	C	E	F	G	H	I	J	K	L
20	156	153	40	70	28	12	16	20	12	6	M08 X 1.25	M22 X 1.5
25	164	161	44	70	30	14	16	22	17	6	M10 X 1.25	M22 X 1.5
32	164	161	44	70	30	14	16	22	17	6	M10 X 1.25	M24 X 1.5
40	168	164	46	92	32	14	22	24	17	7	M12 X 1.25	M30 X 2.0

**MA Pneumatic Cylinder Dimension**

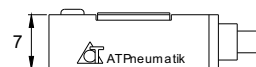
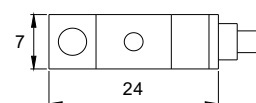
Bore Diameter	M	U	V	W	X	AR	AX	AY	T
20	10	29	8	6	G 1/8"	7	33	29	19
25	12	34	10	8	G 1/8"	7	33	29	21
32	12	39.5	12	10	G 1/8"	8	37	32	21
40	12	49.5	16	14	G 1/4"	9	47	41	21

### MA/MAL Magnetic Switch and Holder



AL-03 Magnetic Switch

Dimension



**BK Magnetic Switch Holder**  
20 to 40mm bore diameter cylinder

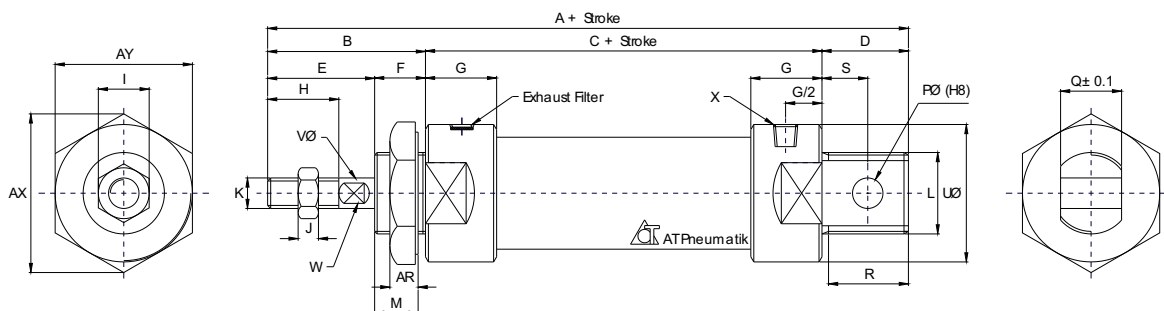
**Reed Switch Specification**

Model	Output	Current	Response	Indicator	Wire	
AL-03-R	Contact	5-240Vac	5-60mA	1msec max.	LED	2M
		5-110Vdc				
AL-03-NPN	NPN	5-30Vdc				
AL-03-PNP	PNP					

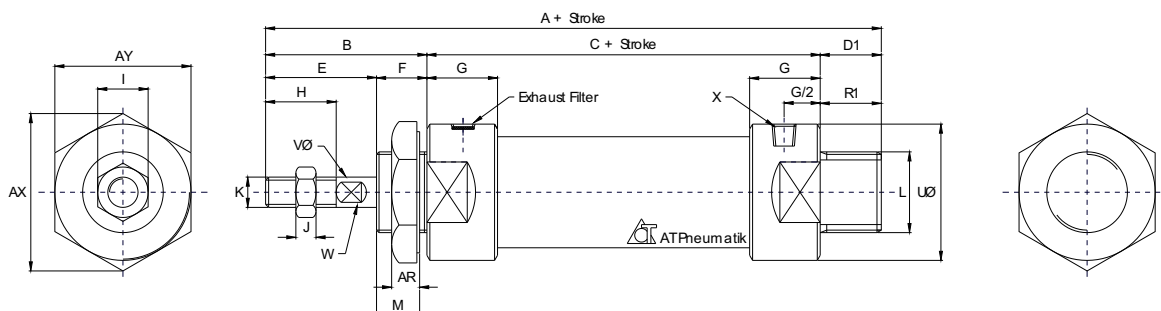
Dimensions are in mm

## MAS Series Stainless Steel Single Acting Cylinder

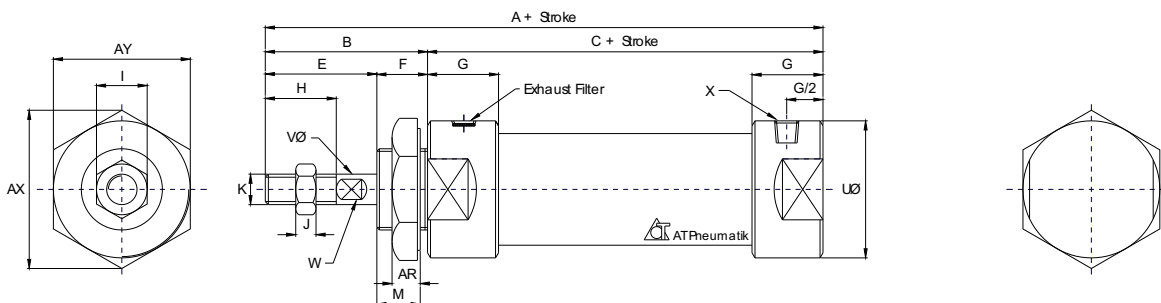
**MAS - CA** Single Acting Cylinder Normally Retracted



**MAS - CM** Single Acting Cylinder Normally Retracted



**MAS - U** Single Acting Cylinder Normally Retracted



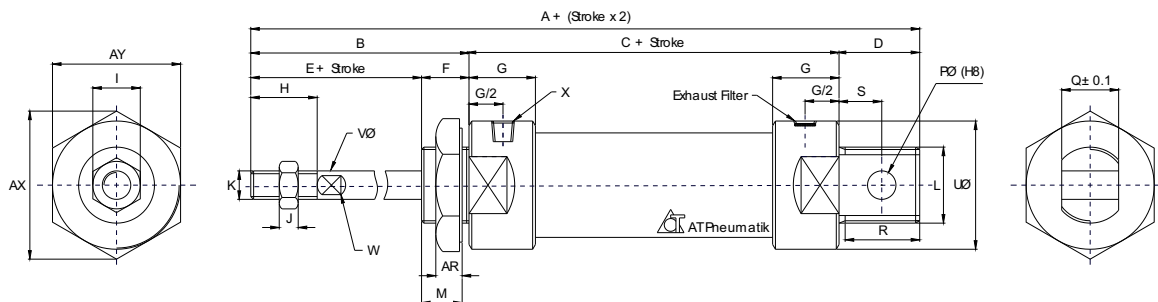
MAS Pneumatic Cylinder Dimension																	
Bore Diameter	A		A1		A2		B	C		D	D1	E	F	G	H	I	J
	0~50	51~100	0~50	51~100	0~50	51~100		0~50	51~100								
20	137	162	128	153	116	141	40	76	101	21	12	28	12	16	20	12	6
25	141	166	134	159	120	145	44	76	101	21	14	30	14	16	22	17	6
32	147	172	134	159	120	145	44	76	101	27	14	30	14	16	22	17	6
40	149	174	136	1611	122	147	46	76	101	27	14	32	14	22	24	17	7

MAS Pneumatic Cylinder Dimension															
Bore Diameter	K	L	M	P	Q	R	R1	S	U	V	W	X	AR	AX	AY
20	M08 X 1.25	M22 X 1.5	10	8	16	19	12	12	27	8	6	G 1/8"	7	33	29
25	M10 X 1.25	M22 X 1.5	12	8	16	19	14	12	30	10	8	G 1/8"	7	33	29
32	M10 X 1.25	M24 X 2.0	12	10	16	25	14	15	35	12	10	G 1/8"	8	37	32
40	M12 X 1.25	M30 X 2.0	12	12	20	25	14	15	41.6	16	14	G 1/8"	9	47	41

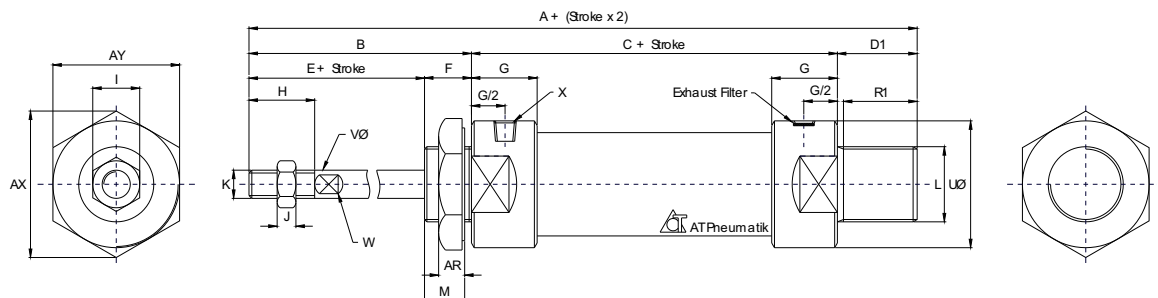
Dimensions are in mm

## MAS Series Stainless Steel Single Acting Cylinder

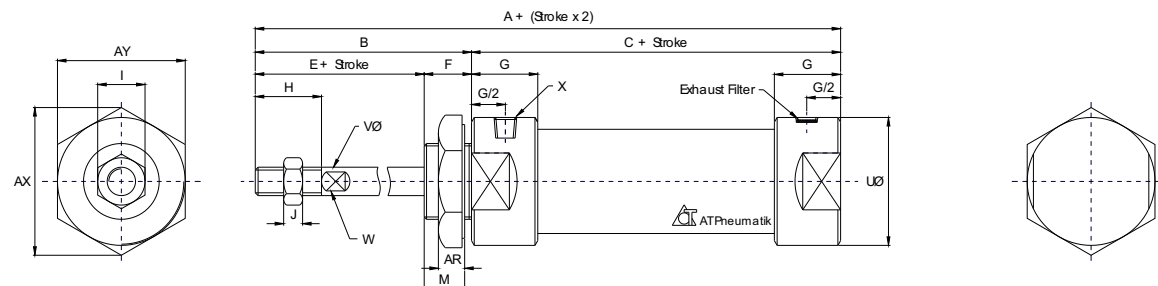
**MASE - CA** Single Acting Cylinder Normally Extended



**MASE - CM** Single Acting Cylinder Normally Extended



**MASE - U** Single Acting Cylinder Normally Extended



MASE Pneumatic Cylinder Dimension																	
Bore Diameter	A		A1		A2		B	C		D	D1	E	F	G	H	I	J
	0~50	51~100	0~50	51~100	0~50	51~100		0~50	51~100								
20	137	162	128	153	116	141	40	76	101	21	12	28	12	16	20	12	6
25	141	166	134	159	120	145	44	76	101	21	14	30	14	16	22	17	6
32	147	172	134	159	120	145	44	76	101	27	14	30	14	16	22	17	6
40	149	174	136	1611	122	147	46	76	101	27	14	32	14	22	24	17	7

MASE Pneumatic Cylinder Dimension																
Bore Diameter	K	L	M	P	Q	R	R1	S	U	V	W	X	AR	AX	AY	
20	M08 X 1.25	M22 X 1.5	10	8	16	19	12	12	27	8	6	G 1/8"	7	33	29	
25	M10 X 1.25	M22 X 1.5	12	8	16	19	14	12	30	10	8	G 1/8"	7	33	29	
32	M10 X 1.25	M24 X 2.0	12	10	16	25	14	15	35	12	10	G 1/8"	8	37	32	
40	M12 X 1.25	M30 X 2.0	12	12	20	25	14	15	41.6	16	14	G 1/8"	9	47	41	

Dimensions are in mm



## MAL Series Aluminum Cylinder

MAL Cylinder



### Ordering Code

**MAL - U - 20 X 50 - S - 25**

- MAL** - Double Acting Cylinder
- MALD** - Double Acting Thru Rod Cylinder
- MALJ** - Double Acting with Adjustable Stroke Cylinder
- MALS** - Single Acting Cylinder Normally Retracted
- MALSE** - Single Acting Cylinder Normally Extended
  
- U** - Flat End Mounting
- CM** - Round End Mounting
- Blank** - Standard Mounting
  
- 20** - Bore Diameter (mm)
- 50** - Stroke (mm)
  
- S** - Magnetic Piston
- Blank** - Non-Magnetic Piston
  
- 25** - Stroke Adjustment for MALJ (mm)

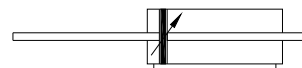
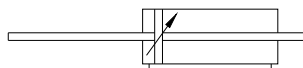
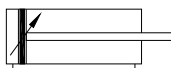
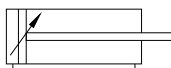
MAL Pneumatic Cylinder head, piston and barrel made of aluminum alloy; piston rod made of chromed plated high carbon steel; seals are made of NBR for standard working temperature; for higher working temperature seals are made of viton or teflon.

With Cushioning

W/ Cushioning & Magnet

Thru Rod w/ Cushioning

Thru Rod w/ Cushioning & Magnet



### MAL Pneumatic Cylinder Specification

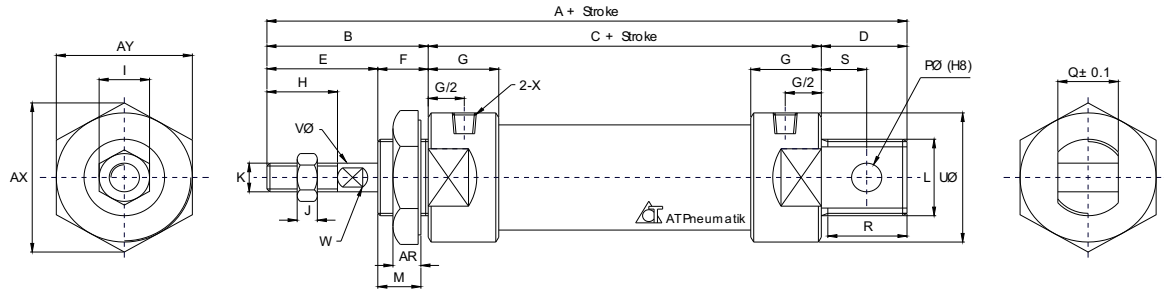
MAL Pneumatic Cylinder Specification					
Bore Diameter (mm)	16	20	25	32	40
Type	Double Acting / Single Acting				
Working Medium	Air				
Working Pressure	10 kg/cm <sup>2</sup>				
Test Pressure	13 Kg/cm <sup>2</sup>				
Working Temperature	0 - 70 °C				
Working Speed Range	50~800 mm/sec				
Cushioning	Rubber Bumper				
Port Size	M05	G 1/8"			G 1/4"

### Theoretical Force Table Nm

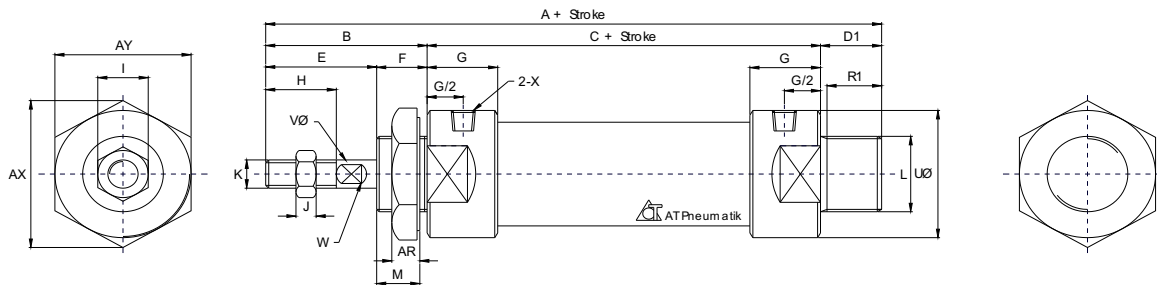
Theoretical Force Table Nm																
Bore Diameter (mm)		16			20			25			32			40		
Piston Rod Diameter		6			8			10			12			16		
Motion Pattern		Single Acting	Double Acting		Single Acting	Double Acting		Single Acting	Double Acting		Single Acting	Double Acting		Single Acting	Double Acting	
			Push Side	Pull Side		Push Side	Pull Side		Push Side	Pull Side		Push Side	Pull Side			
Air Pressure (Kgf/cm <sup>2</sup> )	1	-	2	1.8	-	3.1	2.6	-	4.9	4.1	-	8	6.9	-	12.6	10.6
	2	-	4	3.6	1.6	6.3	5.3	2.5	9.8	8.2	4	16.1	13.8	6.3	25.1	21.1
	3	2	6	5.4	4.7	9.4	7.9	7.4	14.7	12.4	12.1	24.1	20.7	18.8	37.7	31.7
	4	4	8	7.2	7.9	12.6	10.6	12.3	19.6	16.5	20.1	32.2	27.6	31.4	50.2	42.2
	5	6	10.1	9.1	11.0	15.7	13.2	17.2	24.5	20.6	28.1	40.2	34.5	44	62.8	52.8
	6	8	12.1	10.9	14.1	18.8	15.8	22.1	29.4	24.7	36.2	48.2	41.4	56.5	75.4	63.3
	7	10	14.1	12.7	17.3	22	18.5	27	34.3	28.8	44.2	56.3	48.3	69.1	87.9	73.9
	8	-	-	-	20.4	25.1	21.1	31.9	39.2	33	52.3	64.3	55.2	81.6	100.5	84.4
	9	-	-	-	23.6	28.3	23.8	36.8	44.1	37.1	60.3	72.4	62.1	94.2	113	95

## MAL Series Aluminum Double Acting Cylinder

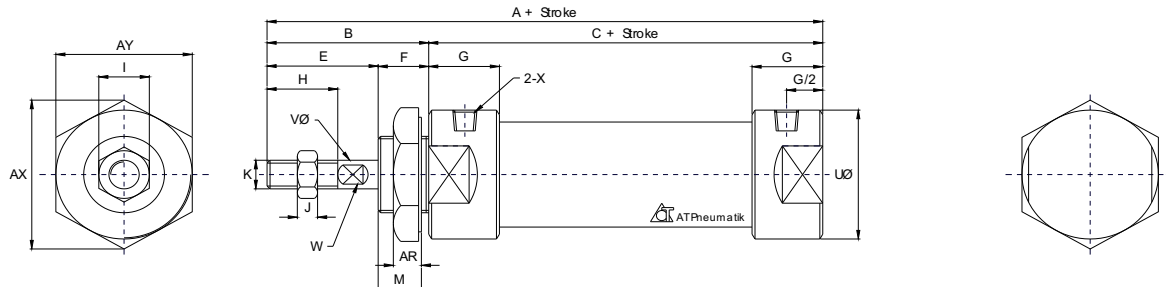
### MAL - CA Double Acting Cylinder



### MAL - CM Double Acting Cylinder



### MAL - U Double Acting Cylinder



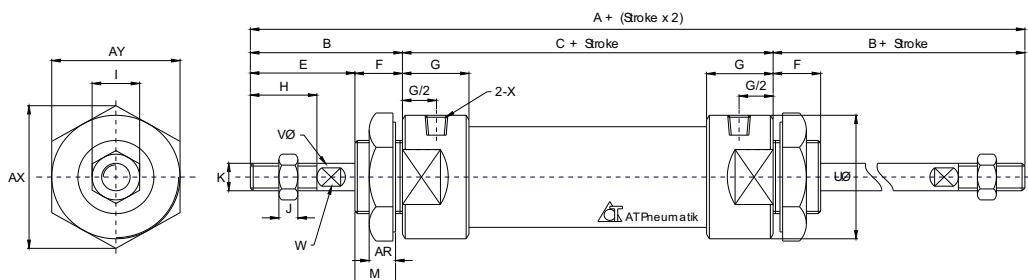
MAL Pneumatic Cylinder Dimension															
Bore Diameter	A	A1	A2	B	C	D	D1	E	F	G	H	I	J	K	L
16	104	104	90	38	52	15	15	24	14	11	16	10	5	M06 X 1.0	M16 X 1.5
20	131	122	110	40	70	21	12	28	12	16	20	12	6	M08 X 1.25	M22 X 1.5
25	135	128	114	44	70	21	14	30	14	16	22	17	6	M10 X 1.25	M22 X 1.5
32	141	128	114	44	70	27	14	30	14	16	22	17	6	M10 X 1.25	M24 X 2.0
40	165	152	138	46	92	27	14	32	14	22	24	17	7	M12 X 1.25	M30 X 2.0

MAL Pneumatic Cylinder Dimension													
Bore Diameter	M	P	Q	R	R1	S	U	V	W	X	AR	AX	AY
16	8	6	12	13	13	6	20	6	/	M05	7	24	27.5
20	10	8	16	19	12	12	29	8	6	G 1/8"	7	33	29
25	12	8	16	19	14	12	34	10	8	G 1/8"	7	33	29
32	12	10	16	25	14	15	39.5	12	10	G 1/8"	8	37	32
40	12	23	20	25	14	15	39.5	16	14	G 1/4"	9	47	41

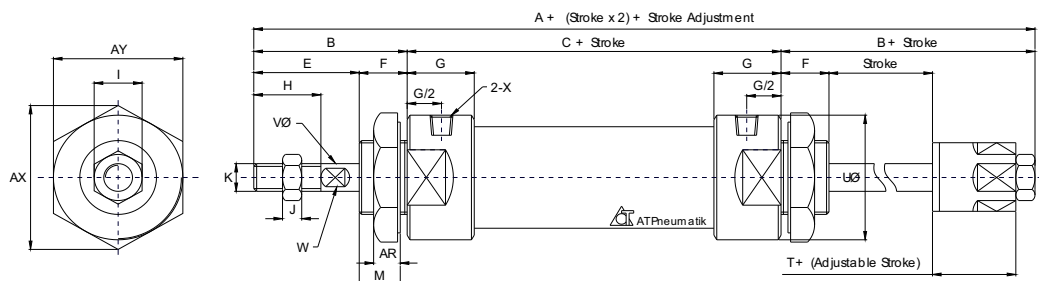
Dimensions are in mm

## MAL Series Aluminum Double Acting Cylinder

### MALD Thru Rod Cylinder



### MALJ Adjustable Stroke Cylinder



**MAL Pneumatic Cylinder Dimension**

Bore Diameter	A	A1	B	C	E	F	G	H	I	J	K	L
20	131	122	40	70	28	12	16	20	12	6	M08 X 1.25	M22 X 1.5
25	135	128	44	70	30	14	16	22	17	6	M10 X 1.25	M22 X 1.5
32	141	128	44	70	30	14	16	22	17	6	M10 X 1.25	M24 X 2.0
40	165	152	46	92	32	14	22	24	17	7	M12 X 1.25	M30 X 2.0

**MAL Pneumatic Cylinder Dimension**

Bore Diameter	M	U	V	W	X	AR	AX	AY	T
20	10	29	8	6	G 1/8"	7	33	29	19
25	12	34	10	8	G 1/8"	7	33	29	21
32	12	39.5	12	10	G 1/8"	8	37	32	21
40	12	49.5	16	14	G 1/4"	9	47	41	21

### MA/MAL Series Reed Switch and Holder



AL-03 Magnetic Switch

**BK Magnetic Switch Holder**  
20 to 40mm bore diameter cylinder

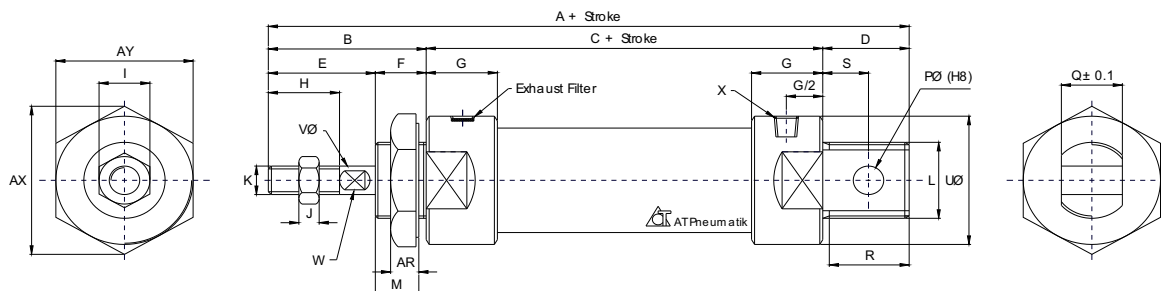
**Reed Switch Specification**

Model	Output	Current	Response	Indicator	Wire	
AL-03-R	Contact	5-240Vac	5-60mA	1msec max.	LED	2M
		5-110Vdc				
AL-03-NPN	NPN	5-30Vdc				
AL-03-PNP	PNP					

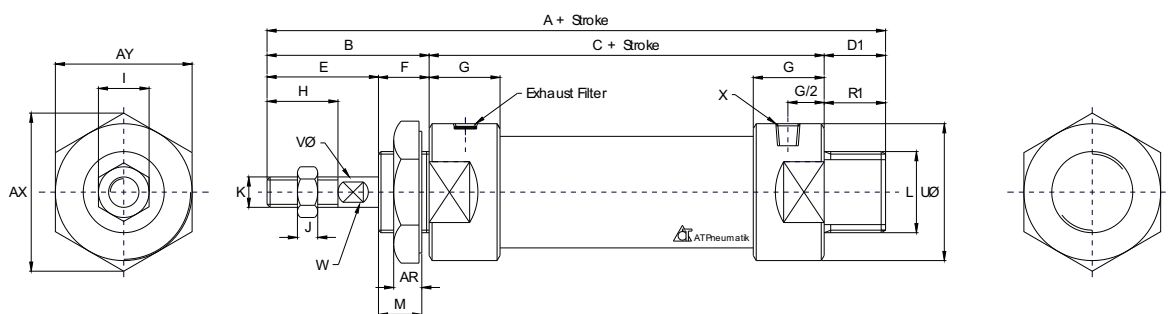
Dimensions are in mm

## MAL Series Aluminum Single Acting Cylinder

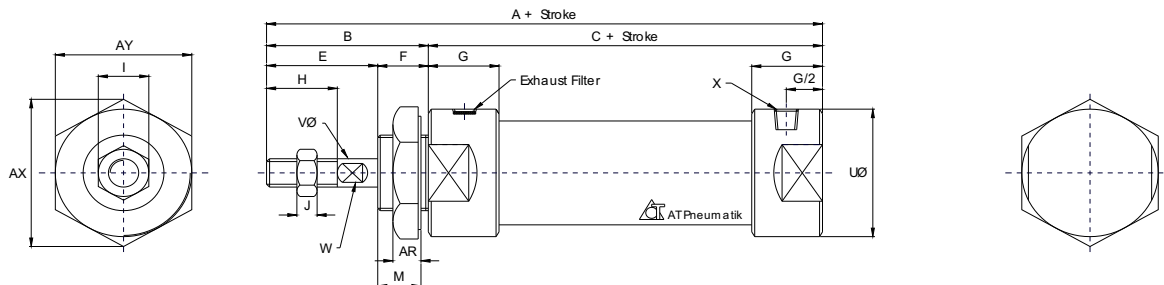
**MALS - CA** Single Acting Cylinder Normally Retracted



**MALS - CM** Single Acting Cylinder Normally Retracted



**MALS - U** Single Acting Cylinder Normally Retracted



MALS Pneumatic Cylinder Dimension																		
Bore	Stroke	A		A1		A2		B	C		D	D1	E	F	G	H	I	J
		0~50	51~100	0~50	51~100	0~50	51~100		0~50	51~100								
20		131	156	122	147	110	135	40	70	95	21	12	28	12	16	20	12	6
25		135	160	128	153	114	139	44	70	95	21	14	30	14	16	22	17	6
32		141	166	128	153	114	139	44	70	95	27	14	30	14	16	22	17	6
40		165	190	152	177	138	163	46	92	117	27	14	32	14	22	24	17	7

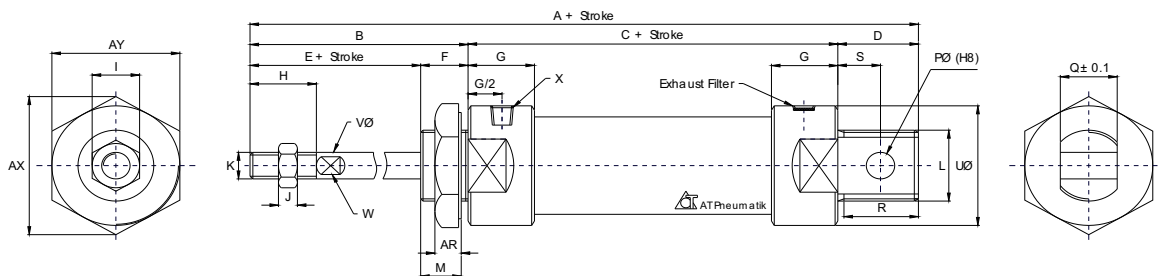
MALS Pneumatic cylinderDimension															
Bore Diameter	K	L	M	P	Q	R	R1	S	U	V	W	X	AR	AX	AY
20	M08 X 1.25	M22 X 1.5	10	8	16	19	12	12	29	8	6	G 1/8"	7	33	29
25	M10 X 1.25	M22 X 1.5	12	8	16	19	14	12	34	10	8	G 1/8"	7	33	29
32	M10 X 1.25	M24 X 2.0	12	10	16	25	14	15	39.5	12	10	G 1/8"	8	37	32
40	M12 X 1.25	M30 X 2.0	12	12	20	25	14	15	49.5	16	14	G 1/4"	9	47	41

Dimensions are in mm

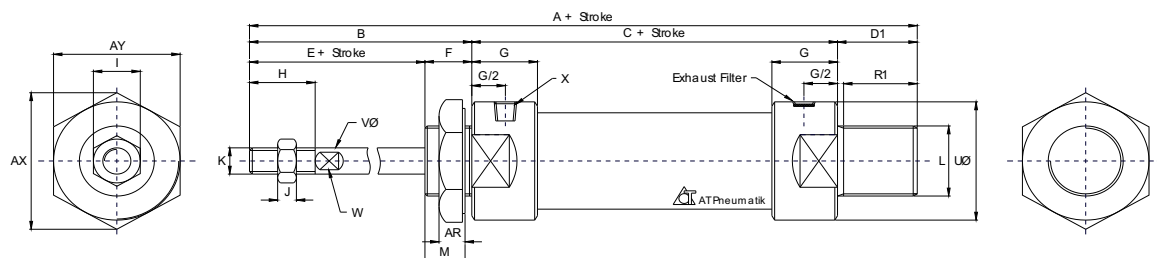


## MAL Series Aluminum Single Acting Cylinder

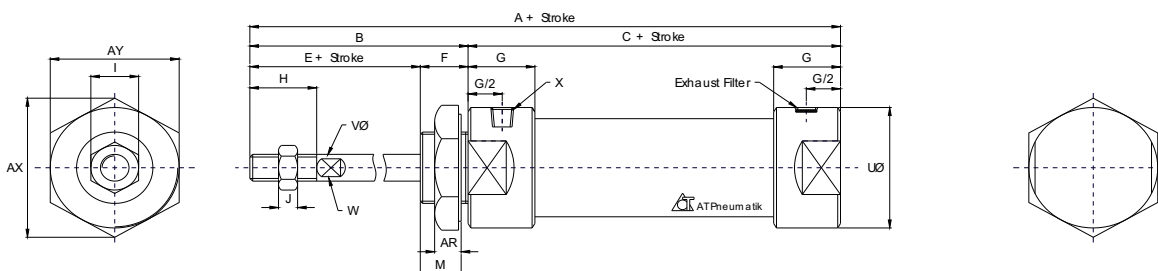
**MALSE - CA** Single Acting Cylinder Normally Extended



**MALSE - CM** Single Acting Cylinder Normally Extended



**MALSE - U** Single Acting Cylinder Normally Extended

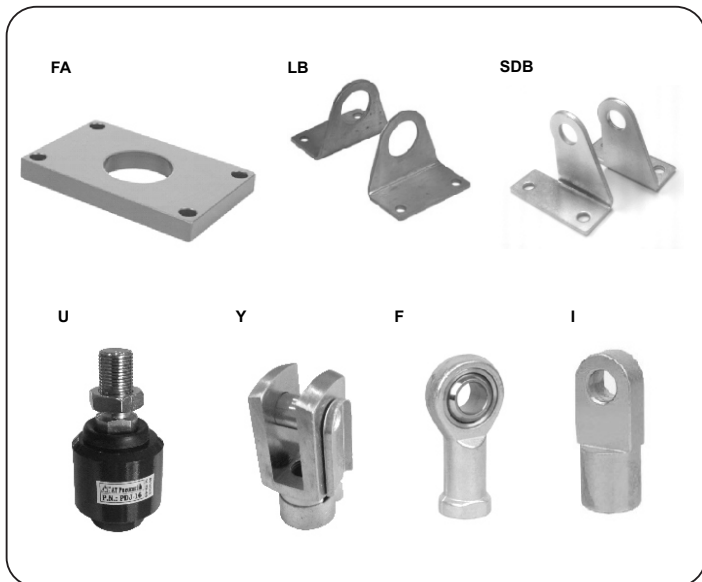


MALSE Pneumatic Cylinder Dimension																		
Bore	Stroke	A		A1		A2		B	C		D	D1	E	F	G	H	I	J
		0-50	51-100	0-50	51-100	0-50	51-100		0-50	51-100								
20		131	156	122	147	110	135	40	70	95	21	12	28	12	16	20	12	6
25		135	160	128	153	114	139	44	70	95	21	14	30	14	16	22	17	6
32		141	166	128	153	114	139	44	70	95	27	14	30	14	16	22	17	6
40		165	190	152	177	138	163	46	92	117	27	14	32	14	22	24	17	7

MALSE Pneumatic Cylinder Dimension															
Bore Diameter	K	L	M	P	Q	R	R1	S	U	V	W	X	AR	AX	AY
20	M08 X 1.25	M22 X 1.5	10	8	16	19	12	12	29	8	6	G 1/8"	7	33	29
25	M10 X 1.25	M22 X 1.5	12	8	16	19	14	12	34	10	8	G 1/8"	7	33	29
32	M10 X 1.25	M24 X 2.0	12	10	16	25	14	15	39.5	12	10	G 1/8"	8	37	32
40	M12 X 1.25	M30 X 2.0	12	12	20	25	14	15	49.5	16	14	G 1/4"	9	47	41

Dimensions are in mm

## MA / MAL Cylinder Mountings and Piston Rod Adaptors

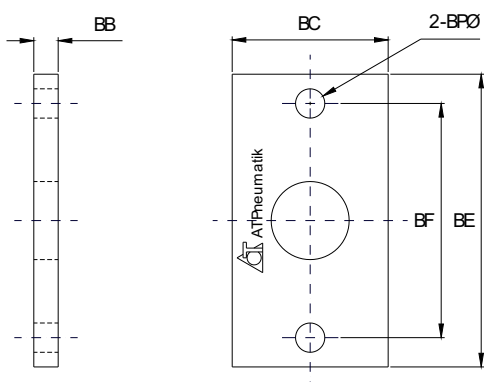


### Ordering Code

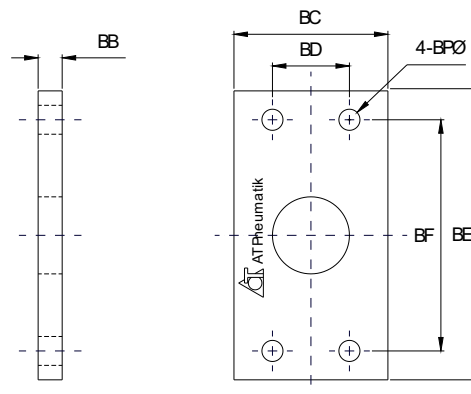
<b>MA</b>	-	<b>LB</b>	-	<b>32</b>
<b>MA</b>	-			Stainless Steel Cylinder
<b>MAL</b>	-			Aluminum Cylinder
<b>LB</b>	-			Foot Mounting
<b>FA</b>	-			Front / Rear Mounting
<b>SDB</b>	-			Clevis Mounting
<b>CB</b>	-			Female Clevis Mounting
<b>Y</b>	-			Y-Knuckle Piston Rod Adaptor
<b>I</b>	-			I-Knuckle Piston Rod Adaptor
<b>PHS</b>	-			Floating Joint Piston Rod Adaptor
<b>PDJ</b>	-			Universal Joint Piston Rod Adaptor
<b>32</b>	-			Cylinder Bore Diameter (mm)

MA/MAL Pneumatic Cylinder mountings and Piston rod adaptors are made of Low Carbon Steel materials.

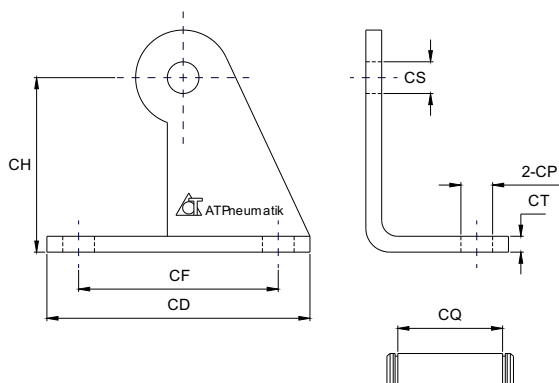
MA / MAL - FA - 20 & 32 Flange Mounting



MA / MAL - FA - 32 & 40 Flange Mounting



MA / MAL - SDB Clevis Mounting



MA / MAL - FA Dimension

Bore	BB	BC	BD	BE	BF	BP
20	4	38	-	64	50	6.5
25	4	38	-	64	50	6.5
32	4	47	33	72	58	6.5
40	4	50	36	84	70	6.5

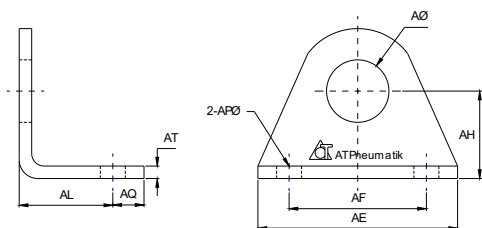
MA / MAL - SDB Dimension

Bore	D	CD	CE	CF	CH	CT	CP	CQ	CS
20	21	48	67	32	32	3	6.5	22	8
25	21	48	67	32	32	3	6.5	22	8
32	27	52	67	36	36	4	6.5	24	10
40	27	56	71	40	40	4	6.5	28	12

Dimensions are in mm

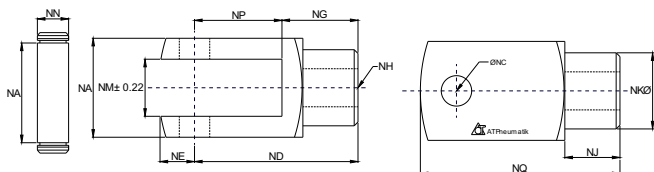
## MA / MAL Cylinder Mountings and Piston Rod Adaptors

### MA / MAL - LB Foot Mounting

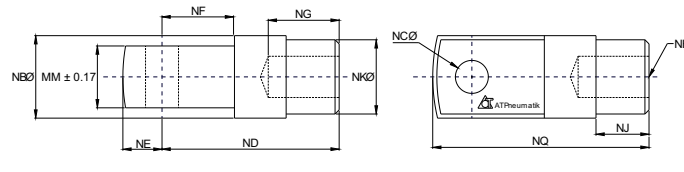


MA / MAL - LB Dimension								
Bore	AE	AF	AL	AQ	AP	AT	AH	A
20	54	40	15	8	6.5	3.2	325	22
25	54	40	15	8	6.5	3.2	25	22
32	59	45	25	8	6.5	4	32	24
40	64	50	25	8	6.5	4.5	36	30

### Y-knuckle Piston Rod Adaptor

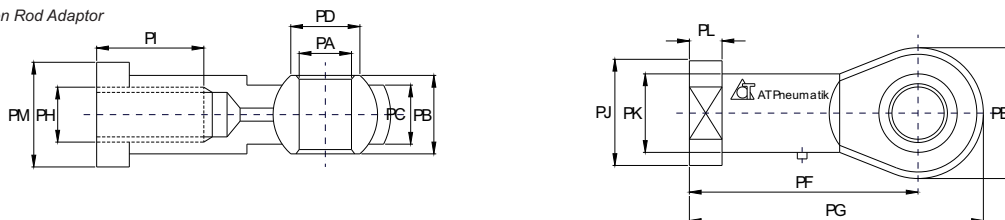


### I-knuckle Piston Rod Adaptor



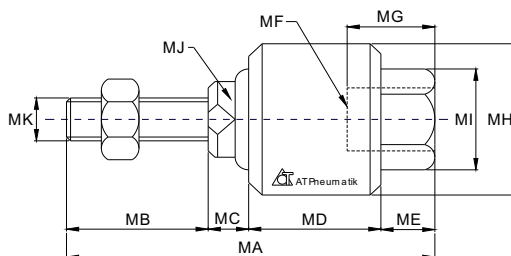
Y / I Knuckle Piston Rod Adaptor Dimension															
Bore	NA	NB	NC	ND	NE	NF	NG	NH	NJ	NK	NL	NM	NN	NP	NQ
20	16	16	8	30	14	11	15	M08 X 1.25	10	16	21	8	8	15	40
25	19	20	10	40	18	13	20	M10 X 1.25	12	20	25	10	10	20	52
32	19	20	10	40	18	13	20	M10 X 1.25	12	20	25	10	10	20	52
40	25.4	25	10	4.5	23	15	25	M12 X 1.25	15	25	31	14	4	20	57

### PHS Floating Joint Piston Rod Adaptor



Floating Joint Piston Rod Adaptor Dimension													
Bore	PA	PB	PC	PD	PE	PF	PH	PI	PJ	PK	PL	PM	
20	8	12	9	10.4	22	36	M08 X 1.25	17	16	12.5	5	14	
25	10	14	11	12.9	26	43	M10 X 1.25	21	19	15	6.5	17	
32	10	14	11	12.9	26	43	M10 X 1.25	21	19	15	6.5	17	
40	12	16	12	15.4	30	50	M12 X 1.25	24	22	17.5	6.5	19	

### PDJ Universal Joint Piston Rod Adaptor

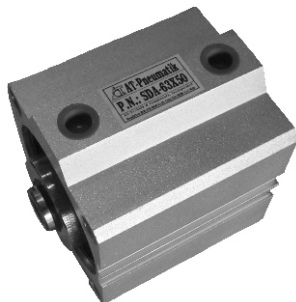


Universal Joint Piston Rod Adaptor Dimension											
Bore	MA	MB	MC	MD	ME	MF	MG	MH	MI	MJ	MK
20	51	20	6	17	8	M08 X 1.25	12	24	13	8	M08 X 1.25
25	58	22	7	21	8	M10 X 1.25	12	26	17	10	M10 X 1.25
32	58	22	7	21	8	M10 X 1.25	12	26	17	10	M10 X 1.25
40	58	22	8	21	7	M12 X 1.25	12	28	19	2	M12 X 1.25

Dimensions are in mm

## SDA Series Compact Cylinder

SDA Compact Cylinder



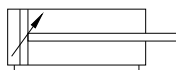
### Ordering Code

**SDA - 20 X 50 - S - 25**

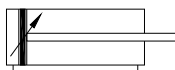
- SDA** - Double Acting Cylinder
- SSA** - Single Acting Cylinder Normally Retracted
- STA** - Single Acting Cylinder Normally Extended
- SDAD** - Double Acting Thru Rod Cylinder
  
- 20** - Bore Diameter (mm)
- 50** - Stroke (mm)
- S** - Magnetic Piston     **Blank** - Non-Magnetic Piston
- B** - Female Thread     **N** - Male Thread
- 25** - Adjustable Stroke Length (mm)

SDA/SSA Pneumatic Cylinder head, piston and barrel made of aluminum alloy; piston rod made of chromed plated high carbon steel; seals are made of NBR for standard working temperature; for higher working temperature seals are made of viton or teflon.

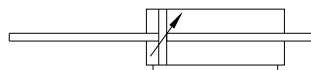
With Cushioning



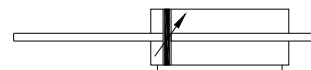
W/ Cushioning & Magnet



Thru Rod w/ Cushioning



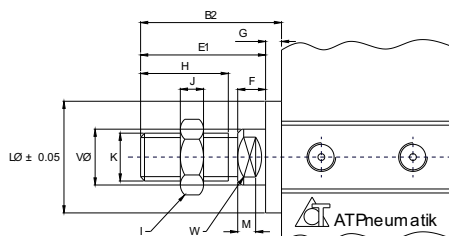
Thru Rod w/ Cushioning & Magnet



### SDA Compact Specification

SDA Compact Specification													
Bore Diameter		12	16	20	25	32	40	50	63	80	100		
Type of Cylinder		Double Acting											
		Single Acting							-				
Working Medium		Air											
Working Pressure	Double Acting	1~9.0 kg/cm <sup>2</sup>							-				
	Single Acting	2~9 kg/cm <sup>2</sup>							-				
Maximum Working Pressure		10.5 kg/cm <sup>2</sup>											
Working Temperature		0~70 °C											
Operating Speed mm/s	Double Acting	30~500							30~350		30~250		
	Single Acting	100~500							-				
Port Size		M05 X 0.8				G 1/8"			G 1/4"		G 3/8"		

SDA Male Piston Rod



### SDA Cylinder Dimension

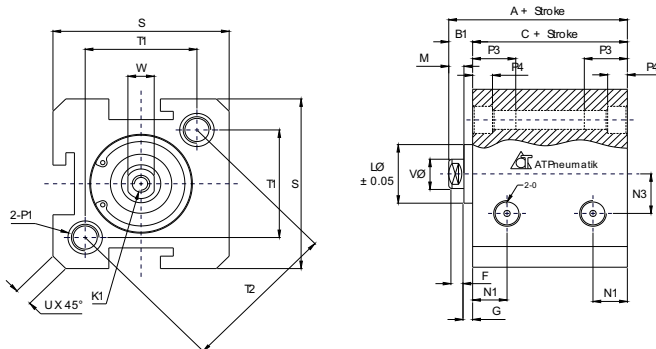
SDA Cylinder Dimension												
Bore Diameter	B2	E1	F	G	H	I	J	K2	L	M	W	V
12	17	16	4	1	10	8	4	M05 X 0.8	10.2	2.8	5	5
16	17.5	16	4	1.5	10	8	4	M05 X 0.8	11	2.8	5	5
20	20.5	19	4	1.5	13	10	5	M06 X 1.0	16	2.8	6	6
25	23	21	4	2	15	12	6	M10 X 1.25	17	2.8	8	8
32	25	22	4	3	15	17	6	M14 X 1.5	22	2.8	10	10
40	35	32	4	3	25	19	8	M18 X 1.5	28	2.8	14	14
50	37	33	5	4	25	24	11	M18 X 1.5	38	2.8	17	17
63	37	33	5	4	25	24	11	M22 X 1.5	40	2.8	17	17
80	44	39	6	5	30	32	13	M22 X 1.5	45	4	22	22
100	50	45	7	5	35	36	13	M26 X 1.5	55	4	27	27

Dimensions are in mm

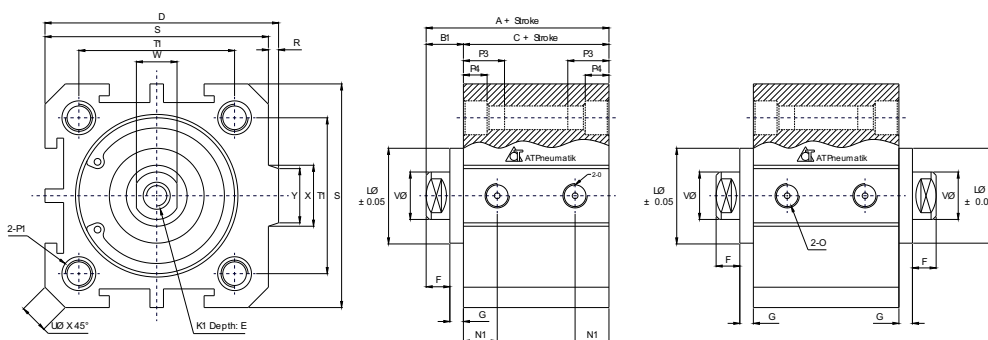


## SDA Series Compact Double Acting Cylinder

**SDA 12 ~ 16** Double Acting cylinder



**SDA 20 ~ 100** Double Acting cylinder



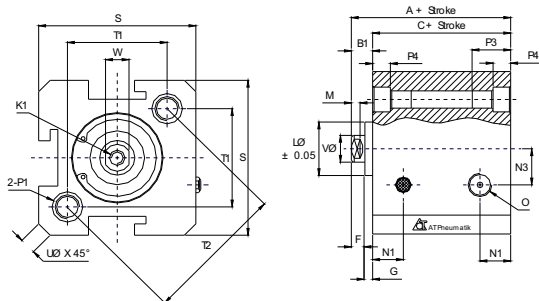
SDA Compact Double Acting Cylinder Dimension																
Bore Diameter	Without Magnet			With Magnet			D	E	F	G	K1	L	M	N1	N3	O
	A	B1	C	A	B1	C										
12	22	5	17	32	5	27	-	6	4	1	M03 X 0.5	10.2	2.8	6.3	6	M05X0.8
16	24	5.5	18.5	34	5.5	28.5	-	6	4	1.5	M03 X 0.5	11	2.8	7.3	6.5	M05X0.8
20	25	5.5	19.5	35	5.5	29.5	36	8	4	1.5	M04 X 0.7	16	2.8	7.5	-	M05X0.8
25	27	6	21	37	6	31	42	10	4	2	M05 X 0.8	17	2.8	8	-	M05X0.8
32	31.5	7	24.5	41.5	7	34.5	50	12	4	3	M06 X 1.0	22	2.8	9	-	G 1/8"
40	33	7	26	43	7	36	58.5	12	4	3	M08 X 1.25	28	2.8	10	-	G 1/8"
50	37	9	28	47	9	38	71.5	15	5	4	M10 X 1.5	38	2.8	10.5	-	G 1/4"
63	41	9	32	51	9	42	84.5	15	5	4	M10 X 1.5	40	2.8	11.8	-	G 1/4"
80	52	11	41	62	11	51	104	15	6	5	M14 X 1.5	45	4	14.5	-	G 3/8"
100	63	12	51	73	12	61	124	18	7	5	M18 X 1.5	55	4	20.5	-	G 3/8"

SDA Compact Double Acting Cylinder Dimension																
Bore Diameter	P1			P3	P4	R	S	T1	T2	U	V	W	X	Y		
	Counter Bore	Thread	Center Hole													
12	6.5 Ø	M05 x 0.8	4.2 Ø	12	4.5	-	25	16.2	23	1.6	6	5	-	-		
16	6.5 Ø	M05 x 0.8	4.2 Ø	12	4.5	-	29	19.8	28	1.6	6	5	-	-		
20	6.5 Ø	M05 x 0.8	4.2 Ø	14	4.5	2	34	24	-	2.1	8	6	11.3	10		
25	8.2 Ø	M06 x 1.0	4.6 Ø	15	5.5	2	40	28	-	3.1	10	8	12	10		
32	8.2 Ø	M06 x 1.0	4.6 Ø	16	5.5	6	44	34	-	2.15	12	10	18.3	15		
40	10 Ø	M08 x 1.25	6.5 Ø	20	7.5	6.5	52	40	-	2.25	16	14	21.3	16		
50	10 Ø	M08 x 1.25	6.5 Ø	25	8.5	9.5	62	48	-	4.15	20	17	30	20		
63	11 Ø	M08 x 1.25	6.5 Ø	25	8.5	9.5	75	60	-	3.15	20	17	28.7	20		
80	14 Ø	M12 x 1.75	9.2 Ø	25	10.5	10	94	74	-	3.65	25	22	36	26		
100	17.5 Ø	M12 x 1.75	11.3 Ø	30	13	10	114	90	-	3.65	32	27	35	26		

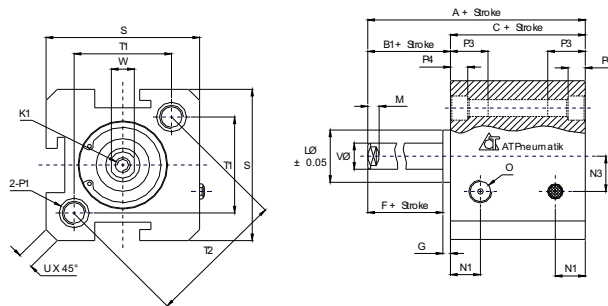
Dimensions are in mm

## SSA / STA Series Compact Single Acting Cylinder

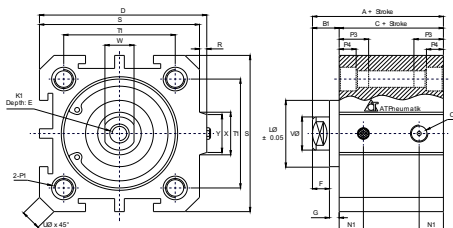
**SSA 12~16** Single Acting Cylinder Normally Retracted



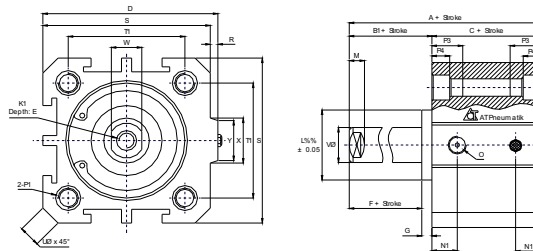
**STA 12~16** Single Acting Cylinder Normally Extended



**SSA 20~100** Single Acting Cylinder Normally Retracted



**STA 20~100** Single Acting Cylinder Normally Extended



### SSA / STA Compact Single Acting Cylinder Dimension

Bore	Stroke	Without Magnet					With Magnet					D	E	F	G	K1	L	M	N1	N3
		A	B1	C		A	B1	C												
12		32	42	5	27	37	42	52	5	37	47	-	6	4	1	M03 X 0.5	10.2	2.8	6.3	6
16		34	44	5.5	28.5	38.5	44	54	5.5	38.5	48.5	-	6	4	1.5	M03 X 0.5	11	2.8	7.3	6.5
20		35	45	5.5	29.5	39.5	45	55	5.5	39.5	49.5	36	8	4	1.5	M04 X 0.7	16	2.8	7.5	-
25		37	47	6	34	41	47	57	6	41	51	42	10	4	2	M05 X 0.8	17	2.8	8	-
32		41.5	51.5	7	34.5	44.5	51.5	61.5	7	44.5	54.5	50	12	4	3	M06 X 1.0	22	2.8	9	-
40		43	53	7	36	46	53	63	7	46	56	58.5	12	4	3	M8 X 1.25	28	2.8	10	-

### SSA / STA Compact single Acting Cylinder Dimension

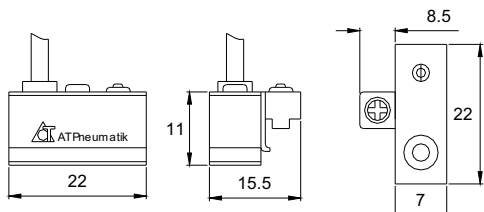
Bore	O	P1			P3	P4	R	S	T1	T2	U	V	W	X	Y
		Counter Bore	Thread	Center Hole											
12	M05 X 0.8	6.5 Ø	M05 x 0.8	4.2 Ø	12	4.5	-	25	16.2	23	1.6	6	5	-	-
16	M05 X 0.8	6.5 Ø	M05 x 0.8	4.2 Ø	12	4.5	-	29	19.8	28	1.6	6	5	-	-
20	M05 X 0.8	6.5 Ø	M05 x 0.8	4.2 Ø	14	4.5	2	34	24	-	2.1	8	6	11.3	10
25	M05 X 0.8	8.2 Ø	M06 x 1.0	4.6 Ø	15	5.5	2	40	28	-	3.1	10	8	12	10
32	G 1/8"	8.2 Ø	M06 x 1.0	4.6 Ø	16	5.5	6	44	34	-	2.15	12	10	18.3	15
40	G 1/8"	10 Ø	M08 x 1.25	6.5 Ø	20	7.5	6.5	52	40	-	2.25	16	14	21.3	16

**SDA / SSA / STA Series** Magnetic Switch



**AL-11** Magnetic Switch

Dimension



### Reed Switch Specification

Model	Output	Current	Response	Indicator	Wire
AL-11-R	Contact	5-240Vac	5-60mA	1msec max.	LED
		5-110Vdc			
AL-11-NPN	NPN	5-30Vdc			
AL-11-PNP	PNP				

Dimensions are in mm

## ISO-15552 SQ Series Standard Cylinder

### SQ Profile Cylinder



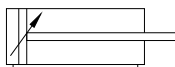
### Ordering Code

**SQ - D - S - 32 X 50 - 25**

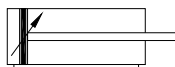
- SQ** - ISO-15552 Standard Cylinder
- Blank** - Basic Cylinder
- D** - Thru Rod Cylinder
- J** - Thru Rod Cylinder with Adjustable Stroke
- Blank** - Non-magnetic Piston
- S** - Magnetic Piston
- 32** - Cylinder Bore Diameter (mm)
- 50** - Stroke Length (mm)
- 25** - Adjustable Stroke Length (mm)

SQ Pneumatic Cylinder head, piston and barrel made of aluminum alloy; piston rod made of chromed plated high carbon steel; seals are made of NBR for standard working temperature; for higher working temperature seals are made of viton or teflon.

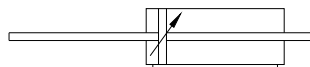
With Cushioning



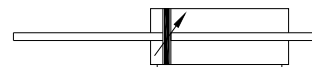
W/ Cushioning & Magnet



Thru Rod w/ Cushioning



Thru Rod w/ Cushioning & Magnet



### ISO-15552 SQ Series Double Acting Cylinder Specification

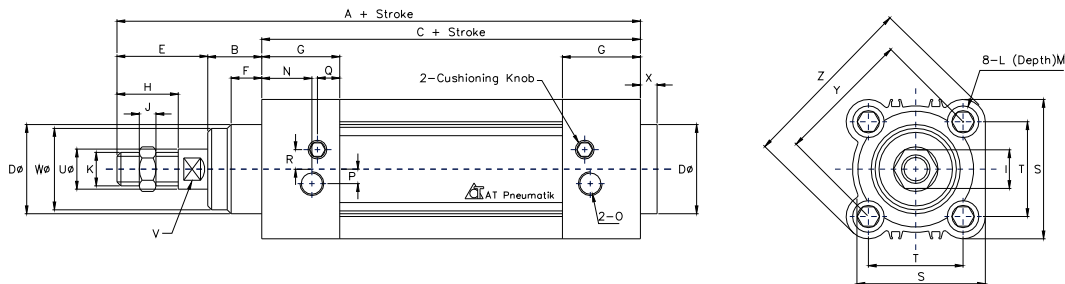
Bore Diameter (mm)	32	40	50	63	80	100	125
Action	Double Acting						
Working Medium	Air						
Working Pressure	10 kg/cm <sup>2</sup>						
Test Pressure	13 Kg/cm <sup>2</sup>						
Working Temperature	0 - 70 °C						
Working Speed Range	50~800 mm/sec						
Cushioning	Adjustable						
Cushioning Adjustment (mm)	20			26			
Port Size	G 1/8"	G 1/4"		G 3/8"		G 1/2"	

### Theoretical Force Table Nm

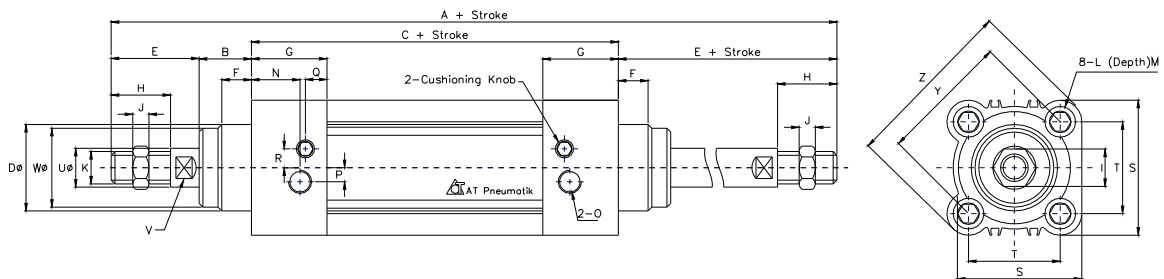
Bore Dia. (mm)		32	40	50	63	80	100	125							
Piston Rod Diameter		12	16	20	20	25	25	32							
Motion Pattern		Double Acting		Double Acting		Double Acting		Double Acting		Double Acting		Double Acting			
		Push Side	Pull Side	Push Side	Pull Side	Push Side	Pull Side	Push Side	Pull Side	Push Side	Pull Side	Push Side	Pull Side		
Air Pressure Kg/cm <sup>2</sup>	1	8	6.9	12.6	10.6	19.6	16.5	31.2	28	50.3	45.4	78.5	73.6	122.7	114.6
	2	16.1	13.8	25.1	21.1	39.3	33	62.3	56.1	100.5	90.7	157.1	147.2	245.4	229.2
	3	24.1	20.7	37.7	31.7	58.9	49.5	93.5	84.1	150.8	136.1	235.6	220.9	368.1	343.8
	4	32.2	27.6	50.2	42.2	78.5	66	124.7	112.1	201	181.4	314.1	294.5	490.8	458.4
	5	40.2	34.5	62.8	52.8	98.2	82.5	155.9	140.2	251.3	226.8	392.7	368.1	613.5	573
	6	48.2	41.4	75.4	63.3	117.8	98.9	187	168.2	301.6	272.2	471.2	441.7	736.2	687.6
	7	56.3	48.3	87.9	73.9	137.4	115.4	218.2	196.2	351.8	317.5	549.7	515.3	858.9	802.2
	8	64.3	55.2	100.5	84.4	157.4	131.9	249.4	224.2	402.1	362.9	628.2	589	981.6	916.8
	9	72.4	62.1	113	95	176.7	148.4	280.5	252.3	452.3	408.2	706.8	662.6	1,104.3	1,031.4

## ISO-15552 SQ Series Profile Double Acting Cylinder

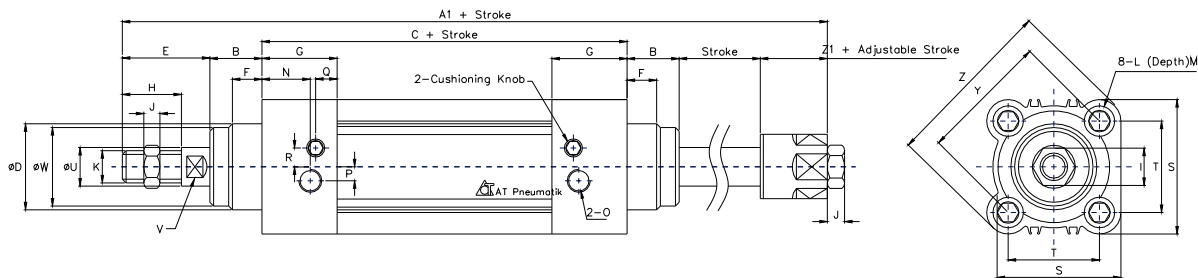
**SQ 32-125** Double Acting Cylinder



**SQ 32-125** Thru Rod Cylinder



**SQ 32-125** Adjustable Thru Rod Cylinder

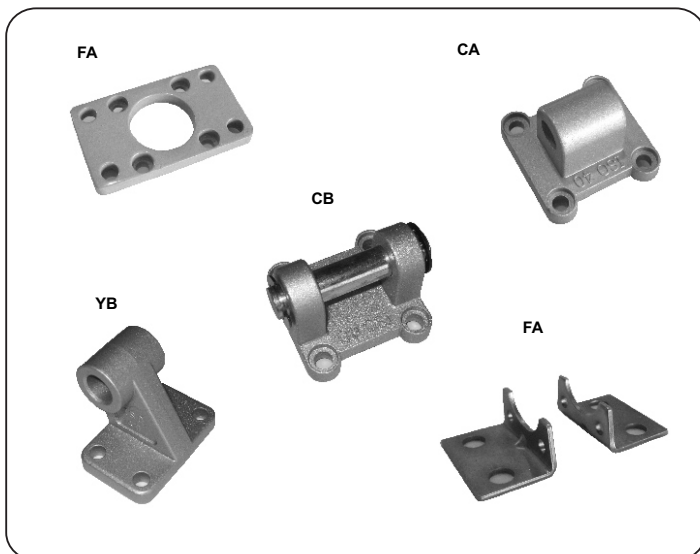


ISO-15552 SQ Profile Cylinder Dimension														
Bore Diameter	A	A1	A2	B	C	D	E	F	G	H	I	J	K	L
32	142	190	185	16	94	30	32	10	25	22	17	6	M10 X 1.25	M06
40	159	213	207	20	105	35	34	10	29.5	24	17	7	M12 X 1.25	M06
50	175	244	233	27	106	40	42	10	32	32	23	8	M16 X 1.5	M08
63	190	258	247	26	122	45	42	10	36	32	23	8	M16 X 1.5	M08
80	214	301	288	35	127	45	52	10	37	40	26	10	M20 X 1.5	M10
100	229	321	308	40	137	55	52	10	39	40	26	10	M20 X 1.5	M10
125	277	394	-	46	160	60	71	13	44	54	40	10	M27X2.0	M12

ISO-15552 SQ Profile Cylinder Dimension															
Bore Diameter	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Z1
32	12	15	G 1/8"	5	3	6.5	45	32.5	12	10	28	4	46	58.7	21
40	12	17.5	G 1/4"	7	3	7	52	38	16	13	33	4	53.7	68	21
50	12	21	G 1/4"	7	3	9	65	46.5	20	17	38	4	65.8	84.5	23
63	12	23	G 3/8"	8	5	9	76	56.5	20	17	40	4	79.9	99.6	23
80	15	24	G 3/8"	10	5	12	94	72	25	22	43	5	101.8	123.8	29
100	15	26	G 1/2"	10	5	14	112	89	25	22	47	6	125.9	148.9	29
125	20	29	G 1/2"	10	5	14	134	110	32	27	53	7	156.9	179.6	-

Dimensions are in mm

## ISO-15552 SQ Series Mounting & Piston Rod Accessories

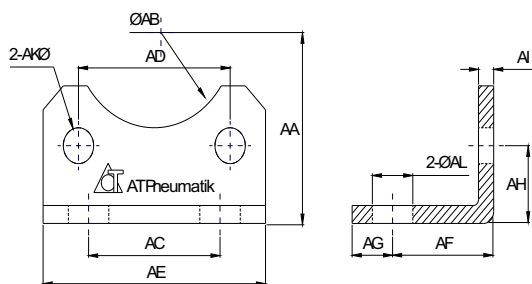


### Ordering Code

- SQ** - **LB - 32**
- SQ** - ISO 15552 Profile Cylinder
- LB** - Foot Mounting
- FA** - Front / Rear Mounting
- CA** - Male Clevis Mounting
- CB** - Female Clevis Mounting
- YB** - Y-Male Clevis Mounting
- 32** - Cylinder Bore Diameter (mm)

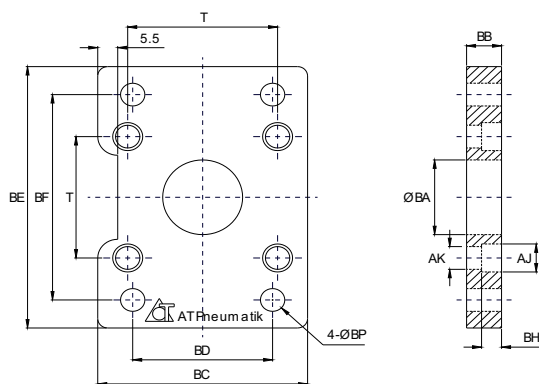
SQ Pneumatic Cylinder mountings and Piston rod adaptors are made of Low Carbon Steel materials.

#### SQ-LB Foot Mounting



SQ - LB Dimension							
Bore Diameter	32	40	50	63	80	100	125
AA	32	36	45	50	63	71	90
AB (min)	30	35	40	45	45	55	60
AC	32	38	46	56	72	89	90
AD	32.5	38	46.5	56.5	72	89	110
AE	45	52	65	76	94	112	140
AF	24	28	32	31.5	41.5	41.5	45
AG	9	11	11	11	14	16	18
AH	15.8	17	21.8	21.8	27	26.5	35
AI	3.2	3.2	3.2	3.2	4	4	8
AJ	142	161	170	185	210	220	250
AK	6.5	6.5	8.5	8.5	10.5	10.5	12.5
AL	7	9	9	9	12	14	16

#### SQ-FA Flange Mounting

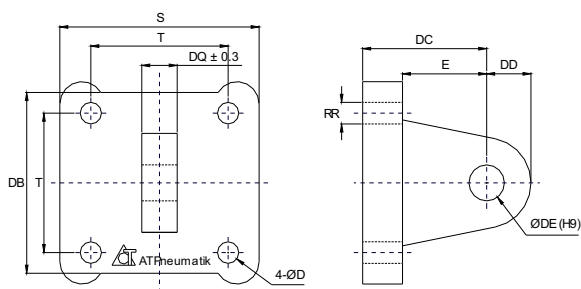


SQ - FA Dimension							
Bore Diameter	32	40	50	63	80	100	125
BA	30.3	35.3	40.3	45.3	45.3	55.3	60.3
BB	10	10	12	12	16	16	20
BC	45	52	65	76	94	112	140
BD	32	36	45	50	63	75	90
BE	80	90	110	120	150	175	224
BF	64	72	90	100	126	150	180
BH	6.5	6.5	8.5	8.5	10.5	10.5	15
AJ	10.5	10.5	13.5	13.5	16.5	16.5	19
AK	6.5	6.5	8.5	8.5	10.5	10.5	12.5
BP	7	9	9	9	12	14	16
T	32.5	38	46.5	56.5	72	89	110

Dimensions are in mm

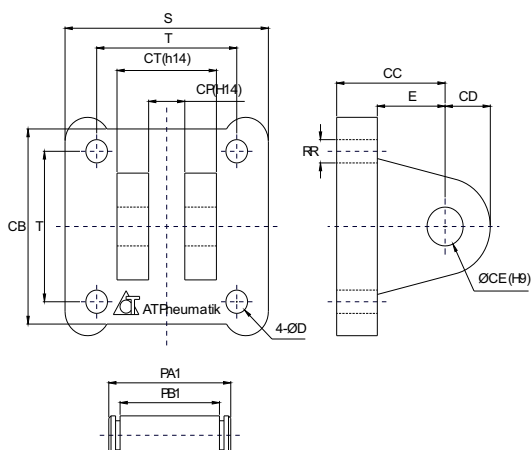
## ISO-15552 Mounting & Piston Rod Accessories

### SQ - CA Male Clevis Mounting



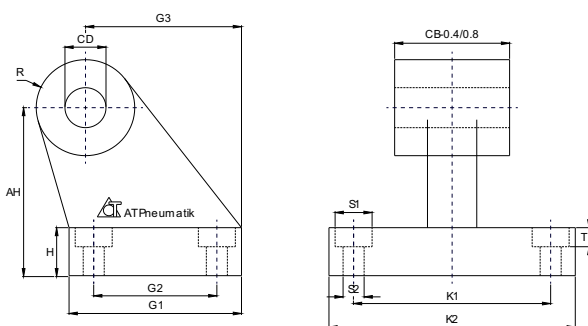
SQ - CA Dimension							
Bore Diameter	32	40	50	63	80	100	125
S	45	52	65	76	94	112	140
T	32.5	38	46.2	56.5	72	89	110
RR	6.5	6.5	9	9.5	11	11.5	12
DB	34	41	54	65	83	101	123
DC	22	25	27	32	36	41	50
DD	10	11	13	16	16	20	25
DE	10	12	12	16	16	20	25
DQ	26	28	32	40	50	60	70
D	6.5	6.5	8.5	8.5	10.5	10.5	12.5
E	14	17	17	22	24	25	30

### SQ - CB Female Clevis Mounting



SQ - CB Dimension							
Bore Diameter	32	40	50	63	80	100	125
S	45	52	65	76	94	112	140
T	32.5	38	46.5	56.5	72	89	110
D	6.5	6.5	8.5	8.5	10.5	10.5	12.5
E	14	17	17	22	24	25	30
RR	6.5	6.5	9	9.5	11	11.5	12
CB	34	41	54	65	83	101	123
CC	22	25	27	32	36	41	50
CD	10	11	13	16	46	20	25
CE	10	12	12	16	46	20	25
CP	26	28	32	40	50	60	70
CT	45	52	60	70	90	110	120
PA1	53	60	68	78	100	120	130
PB1	46.5	53.5	61.5	71.5	91.5	111.5	121.5

### SQ - YB Y-Male Clevis Mounting



SQ - YB Dimension							
Bore Diameter	32	40	50	63	80	100	125
AH	32	36	45	50	63	71	90
H	8	10	12	12	14	15	20
CD	10	12	12	16	16	20	25
G1	31	35	45	50	60	70	90
G2	18	22	30	35	40	50	60
G3	21	24	33	37	47	55	70
CB	26	28	32	40	50	60	70
K1	38	41	50	52	66	76	94
K2	51	54	65	67	86	96	124
S1	11	11	14	14	17	17	20
S2	6.6	6.6	9	9	11	11	14
T	1.6	1.6	1.6	1.6	2.5	2.5	3.2
R	10	11	13	15	15	19	22.5

Dimensions are in mm

## ISO-6432 DSN Standard Stainless Steel Cylinder

DSN Stainless Steel Cylinder

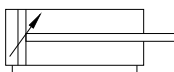


### Ordering Code

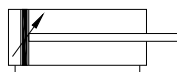
- DSN** - **20 X 50 - S**
- DSN** - Double Acting Cylinder
  - DSND** - Double Acting Thru Rod Cylinder
  - U** - Flat End Mounting
  - Blank** - Standard Mounting
  - C** - With cushioning
  - Blank** - Without cushioning
  - 20** - Bore Diameter (mm)
  - 50** - Stroke (mm)
  - S** - Magnetic Piston
  - Blank** - Non-Magnetic Piston

DSN Pneumatic Cylinder head, piston and barrel made of aluminum alloy; piston rod made of chromed plated high carbon steel; seals are made of NBR for standard working temperature; for higher working temperature seals are made of viton and teflon.

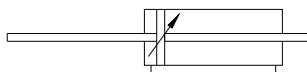
With Cushioning



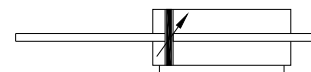
W/ Cushioning & Magnet



Thru Rod w/ Cushioning



Thru Rod w/ Cushioning & Magnet



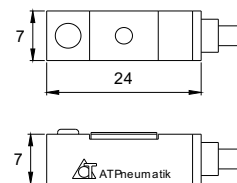
Bore	Standard Stroke														Max. Stroke		
	25	50	75	80	100	125	150	160	175	200	-	-					
12	25	50	75	80	100	125	150	160	175	200	-	-					300
16	25	50	75	80	100	125	150	160	175	200	-	-					300
20	25	50	75	80	100	125	150	160	175	200	250	300					500
25	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	500
32	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	500
40	25	50	75	80	100	125	150	160	175	200	250	300	350	400	450	500	500

Bore	12	16	20	25	32	40
Type	Double Acting / Single Acting					
Working Medium	Air					
Working Pressure Kg/cm <sup>2</sup>	1~9.0					
Maximum Pressure Kg/cm <sup>2</sup>	13.5					
Working Pressrue °C	0~70					
Speed mm/s	50~800					
Cushioning	Without			With Cushion Adjustment		
Port Size	M05 x 0.8			G 1/8"		

DSN Series Reed Switch and Holder



Dimension



AL-03 Magnetic Switch

BK Magnetic Switch Holder  
16 to 40mm bore diameter cylinder

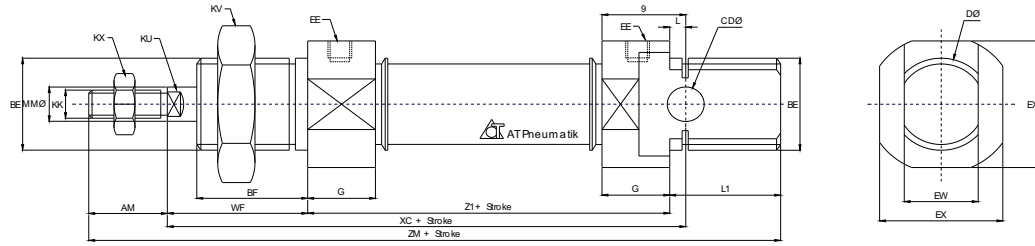
Reed Switch Specification						
Model	Output	Current	Response	Indicator	Wire	
AL-03-R	Contact	5-240Vac	5-60mA	1msec max.	LED	2M
		5-110Vdc				
AL-03-NPN	NPN	5-30Vdc				
AL-03-PNP	PNP					

Dimensions are in mm

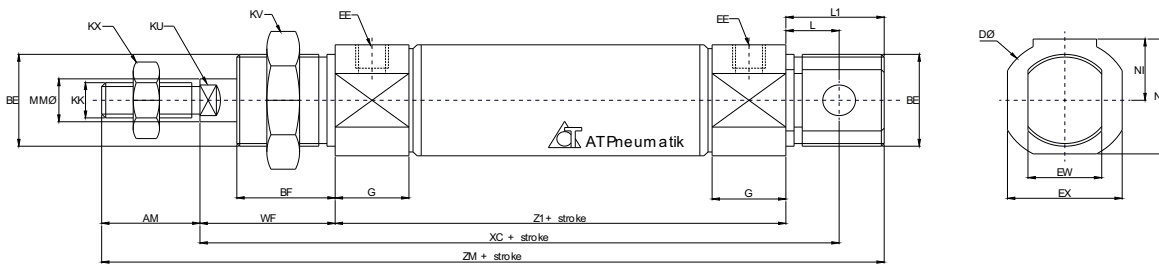


## DSN Series ISO-6432 Double Acting cylinder

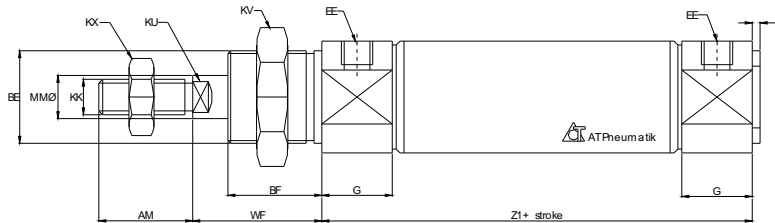
**DSN 12~16** Double Acting Cylinder



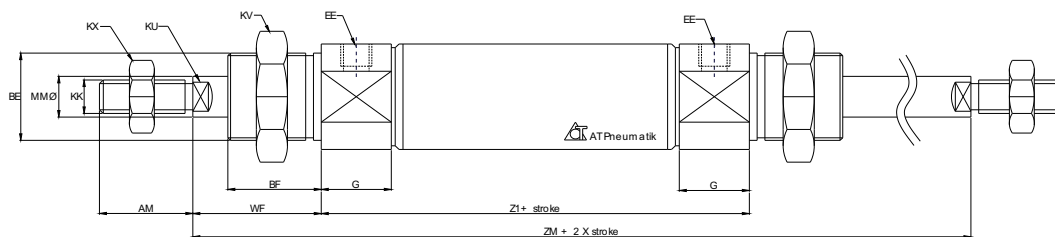
**DSN 20~40** Double Acting Cylinder



**DSNU 20~40** Double Acting Cylinder



**DSND 20~40** Double Acting Cylinder



**DSN Dimension**

Bore Diameter	AM	BE	BF	CD	D	EE	EX	EW	G	KK	KU	KV	KX	L	L1	MM	NI	NJ	WF	XC	Z1	ZB	ZM
12	16	M16 X 1.5	16	6	21	M05	19	12	10	M06 X 1.0	5	24	12	4	16	6	-	-	22	77	51	105	95
16	16	M16 X 1.5	16	6	21	M05	19	12	10	M06 X 1.0	5	24	12	9	16	6	-	-	22	82	51	105	102
20	20	M22 X 1.5	18	8	30	G 1/8"	27	16	15	M08 X 1.25	7	27	14	12	22	8	15	28.5	24	95	59	125	107
25	22	M22 X 1.5	20	8	30	G 1/8"	27	16	16	M10 X 1.25	9	27	17	12	22	10	15	28.5	28	104	64	136	120
32	23	M27 X 2.0	20	10	38	G 1/8"	35	20	16	M10 X 1.25	10	35	17	15	27	12	19	36.5	28	115	72	150	128
40	23	M33 X 2.0	20	10	40	G 1/8"	42	20	16	M14 X 1.5	14	41	22	15	27	16	22.5	43.5	28	115	72	150	128

Dimensions are in mm

## JDA Series Compact Cylinder ISO 21287

### ISO Compact Cylinder

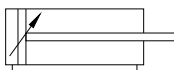


### Ordering Code

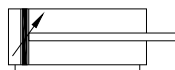
<b>JDA</b>	-	<b>20 X 50 - S - B</b>
<b>JDA</b>	-	Double Acting Cylinder
<b>JDAS</b>	-	Single Acting cylinder
<b>JDAD</b>	-	Double Acting Thru Rod Cylinder
<b>20</b>	-	Bore Diameter (mm)
<b>50</b>	-	Stroke (mm)
<b>S</b>	-	Magnetic Piston
<b>Blank</b>	-	Non-Magnetic Piston
<b>Blank</b>	-	Female Thread
<b>B</b>	-	Male Thread

JDA Pneumatic Cylinder head, piston and barrel made of aluminum alloy; piston rod made of chromed plated high carbon steel; seals are made of NBR for standard working temperature; for higher working temperature seals are made of viton or teflon.

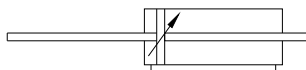
With Cushioning



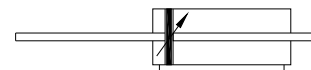
W/ Cushioning & Magnet



Thru Rod w/ Cushioning

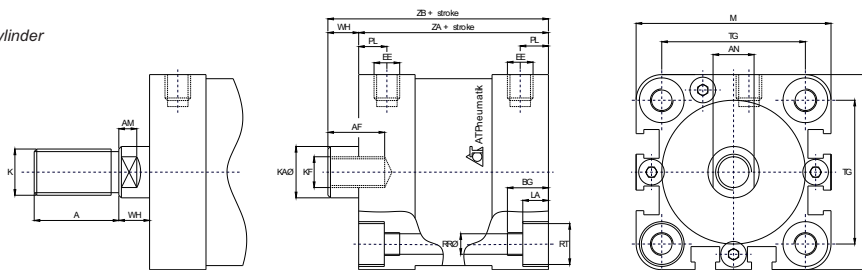


Thru Rod w/ Cushioning & Magnet



ISO 21287 JDA Series Cylinder Specification										
Bore Diameter (mm)		20	25	32	40	50	63	80	100	
Type		Double Acting								
		Single Acting Normally Extended / Normally Retracted				Double Acting				
Working Medium		Air								
Working Pressure Kg/cm <sup>2</sup>	Double Acting	1-9.0								
	Single Acting	2-9								
Maximum Working Pressure Kg/cm <sup>2</sup>		10.5								
Working Temperature °C		0-70								
Operating Speed mm/s	Double Action	30-500				30-350		30-250		
	Single Action	100-500								
Port size		M05 X 0.8				G 1/8"				

JDA - 20~100 Double Acting Cylinder



ADVU Cylinder Dimension																		
Bore	AF	AM	AN	A	WH	ZA	ZB	KF	KK	KA	EE	BG	RR	TG	E	RT	LA	PL
20	10	4	6	16	6	37	43	M06	M08 X 1.25	8	M05	15	4.1	22	38	M05	5	5
25	10	4	8	16	6	39	45	M06	M08 X 1.25	10	M05	15	4.1	26	41	M05	5	5
32	12	4	10	19	7	44	51	M08	M10 X 1.25	12	G 1/8"	16	5.1	32.5	50	M06	5	7.5
40	12	4	14	19	7	45	52	M08	M10 X 1.25	16	G 1/8"	16	5.1	38	58	M06	5	7.5
50	16	5	17	22	8	45	53	M10	M12 X 1.25	20	G 1/8"	16	6.4	46.5	70	M08	5	7.5
63	16	5	17	22	8	49	57	M10	M12 X 1.25	20	G 1/8"	16	6.4	56.5	89	M08	5	7.5
80	20	6	22	28	10	54	64	M12	M16 X 1.5	25	G 1/8"	17	8.4	72	96	M10	5	7.5
100	20	6	27	28	10	67	77	M12	M16 X 1.5	25	G 1/8"	17	8.4	89	116	M10	5	7.5

Dimensions are in mm

## 100 Series Directional Solenoid Valve

**Single Solenoid Valve**



**Double Solenoid Valve**

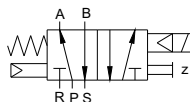


### Ordering Code

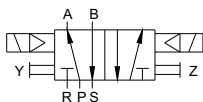
**4V1 - 10 - M5 - AC220V - DIN**

- 4V1** - 100 series, Directional Solenoid Valve
- 10** - 5/2 way Single Solenoid
- 20** - 5/2 way Double Solenoid
- 30C** - 5/3 way Double Solenoid Close center
- 30E** - 5/3 way Double Solenoid Exhaust center
- 30P** - 5/3 way Double Solenoid Open Center
  
- M5** - M05 X 0.8
- 06** - G 1/8"
  
- DC12V** - 12Vdc                    **AC24V** - 24Vac / 60Hz
- DC24V** - 24Vdc                    **AC110V** - 110Vac / 60Hz
- DC110V** - 110Vdc                **AC220V** - 220Vac / 60Hz
  
- DIN-LED** - Socket with LED    **DIN** - Socket without LED

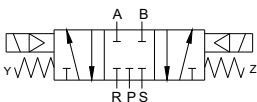
P.N.: 4V110-



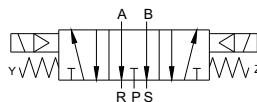
P.N.: 4V120-



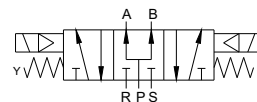
P.N.: 4V130C-



P.N.: 4V130E-



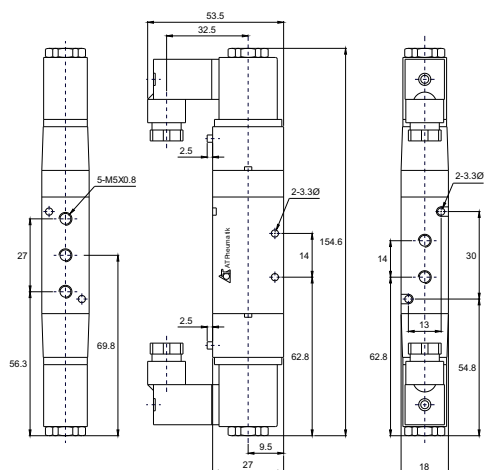
P.N.: 4V130P-



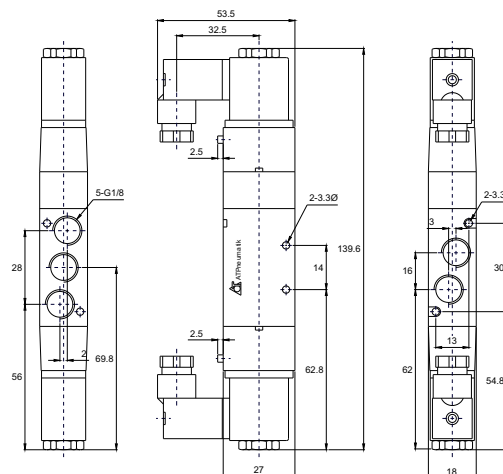
### Solenoid Valve Specification

Part Number	4V110-M5	4V120-M5	4V130C-M5	4V130E-M5	4V130P-M5	4V110-06	4V120-06	4V130C-06	4V130E-06	4V130P-06
Orifice Size	10mm <sup>2</sup> (CV=0.56)		7mm <sup>2</sup> CV=0.4)			12mm <sup>2</sup> (CV=0.67)		9mm <sup>2</sup> (CV=0.5)		
Port Connection	Supply, Outlet, Exhaust M05 X 0.8					Supply, Outlet, Exhaust G 1/8"				
Working Medium	40 Micron Filtered Air									
Working Pressure	0.15 ~ 0.8 MPa, 1.5 ~ 8 Kg/cm <sup>2</sup> , 22 ~ 117.6 PSI									
Maximum Test Pressure	1 MPa, 10 Kg/cm <sup>2</sup> , 150 PSI									
Working Temperature	5 ~ 60°C, 41 ~ 140°F									
Power Consumption	AC: 2.5VA DC: 2.5W ±10%									
Protection	F Class. IP65									
Connector	Lead Wire or Socket Type (DIN)									
Switching Cycle	5 Cycle / Sec									
Response Time	0.05 Second									

**4V130-M5** 5/3 way Double Solenoid Valve

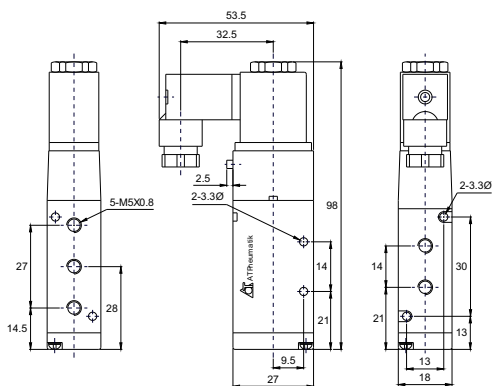


**4V130-06** 5/3 way Double Solenoid Valve

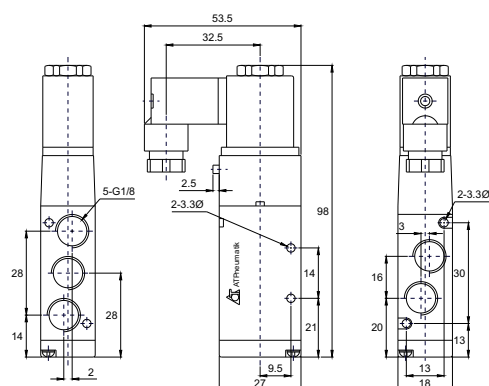


Dimensions are in mm

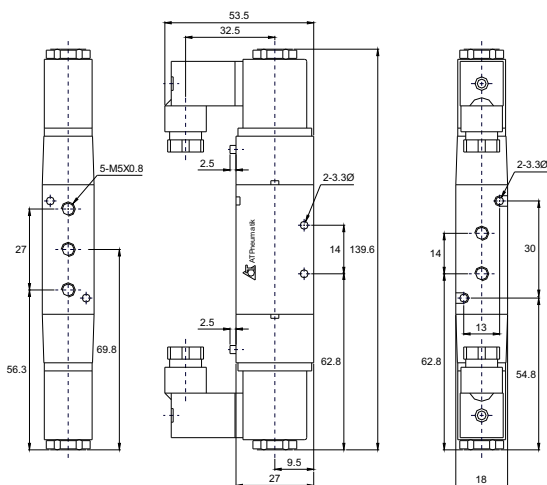
**4V110-M5** 5/2 way Single Solenoid Valve



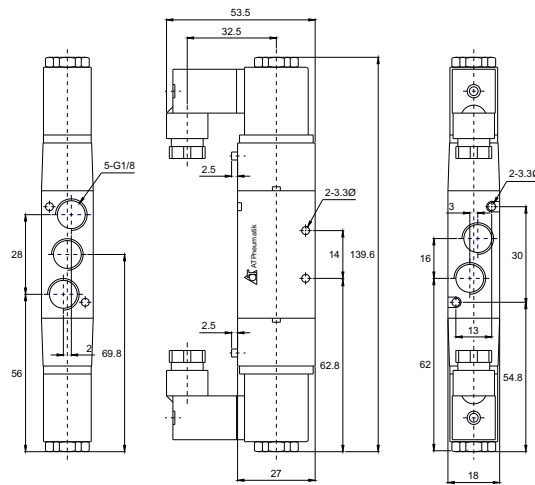
**4V110-06** 5/2 way Single Solenoid Valve



**4V120-M5** 5/2 way Double Solenoid Valve



**4V120-06** 5/2 way Double Solenoid Valve



### 200 Series Directional Solenoid Valve

Single Solenoid Valve



Double Solenoid Valve



### Ordering Code

**4V2 - 10 - 06 - B - AC220V - DIN**

**4V2** - 200 series Directional Solenoid Valve

**10** - 5/2 way Single Solenoid

**20** - 5/2 way Double Solenoid

**30C** - 5/3 way Double Solenoid Close Center

**30E** - 5/3 way Double Solenoid Exhaust Center

**30P** - 5/3 way Double Solenoid Open Center

**06** - G 1/8"

**08** - G 1/4"

**Blank** - Body Ported

**B** - Namur Mounting

**DC12V** - 12Vdc

**AC24V** - 24Vac / 60Hz

**DC24V** - 24Vdc

**AC110V** - 110Vac / 60Hz

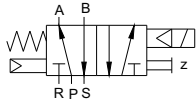
**DC110V** - 110Vdc

**AC220V** - 220Vac / 60Hz

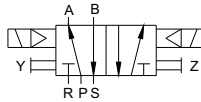
**DIN-LED** - Socket w/ LED

**DIN** - Socket w/o LED

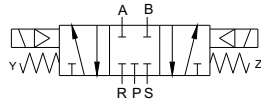
P.N.: 4V210-



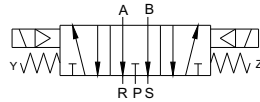
P.N.: 4V220-



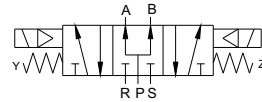
P.N.: 4V230C-



P.N.: 4V230E-



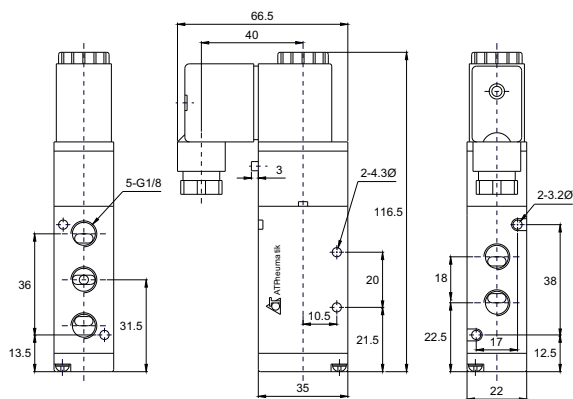
P.N.: 4V230P-



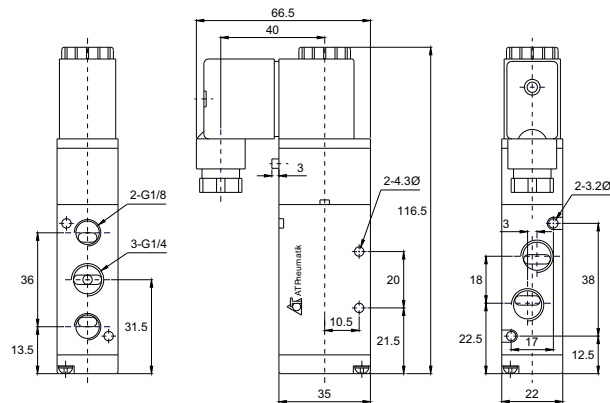
## Solenoid Valve Specifications

Part Number	4V210-06	4V220-06	4V230C-06	4V230E-06	4V230P-06	4V210-08	4V220-08	4V230C-08	4V230E-08	4V230P-08
Orifice Size	14mm <sup>2</sup> (CV=0.78)		12mm <sup>2</sup> (CV=0.67)			16mm <sup>2</sup> (CV=0.89)		12mm <sup>2</sup> (CV=0.67)		
Port Connection	Supply, Outlet, Exhaust G 1/8"					Supply & Outlet G 1/4", Exhaust G 1/8"				
Working Medium	40 Micron Filtered Air									
Working Pressure	0.15 ~ 0.8 MPa, 1.5 ~ 8 Kg/cm <sup>2</sup> , 22 ~ 117.6 PSI									
Maximum Test Pressure	1 MPa, 10 Kg/cm <sup>2</sup> , 150 PSI									
Working Temperature	5 ~ 60°C, 41 ~ 140°F									
Power Consumption	AC: 5.5VA DC: 4.8W ±10%									
Protection	F Class. IP65									
Connector	Lead Wire or Socket Type (DIN)									
Switching Cycle	5 Cycle / Sec									
Response Time	0.05 Second									

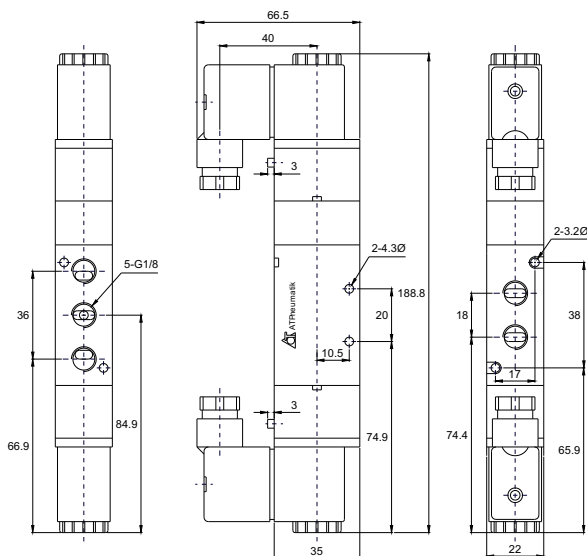
**4V210-06** 5/2 way Single Solenoid Valve



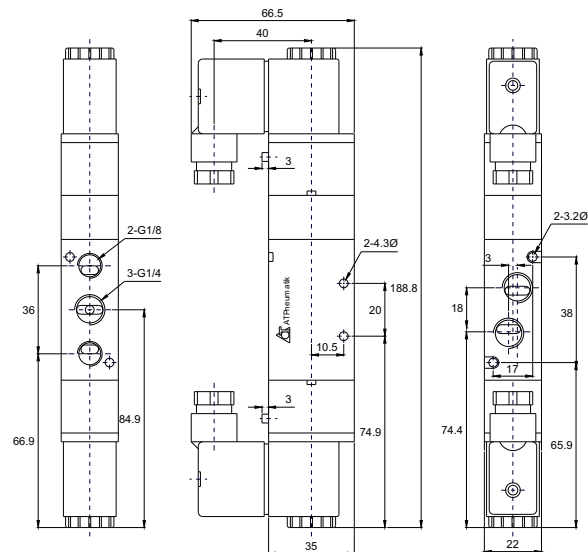
**4V210-08** 5/2 way Single Solenoid Valve



**4V230-06** 5/3 way Double Solenoid Valve

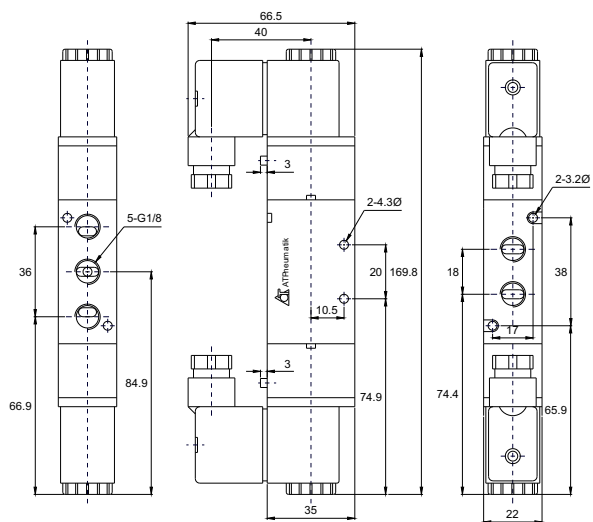


**4V230-08** 5/3 way Double Solenoid Valve

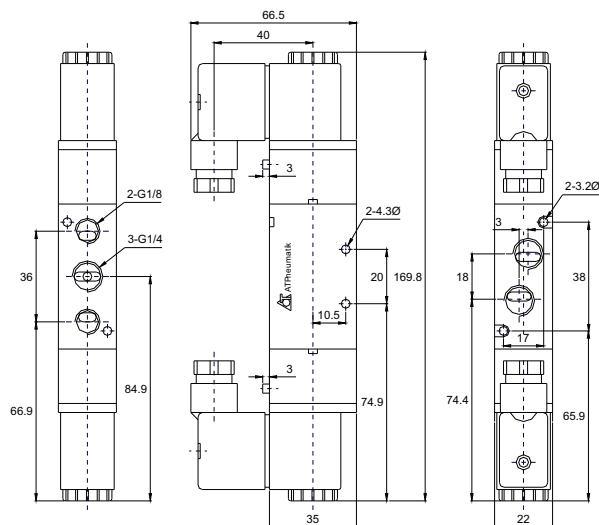


Dimensions are in mm

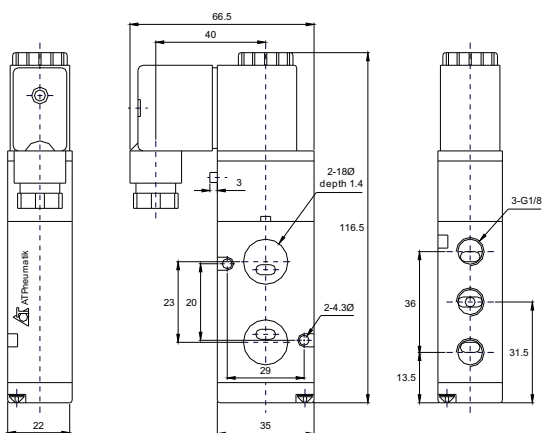
4V220-06 5/2 way Double Solenoid Valve



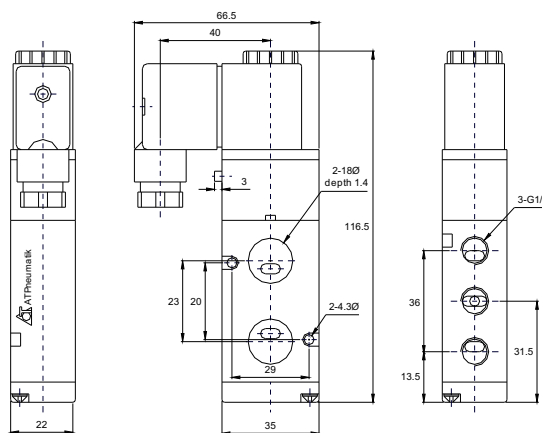
4V220-08 5/2 way Double Solenoid Valve



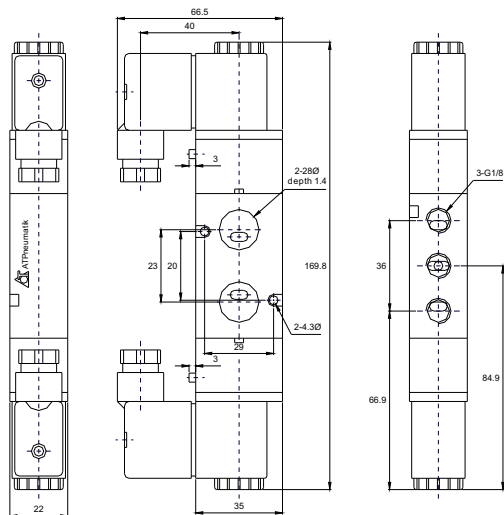
4V210-06-B 5/2 way Single Solenoid Valve NAMUR



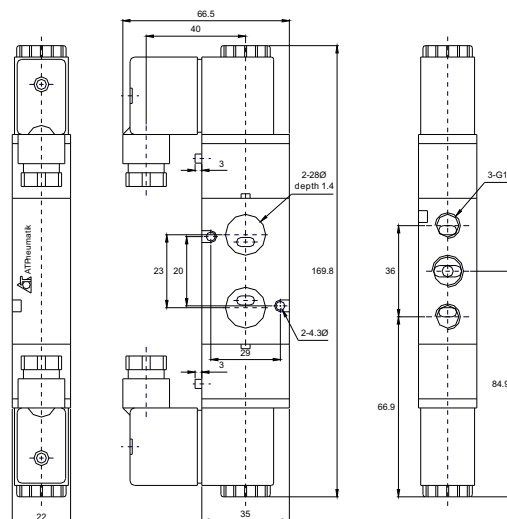
4V210-08-B 5/2 way Single Solenoid Valve NAMUR



4V220-06-B 5/2 way Double Solenoid Valve NAMUR



4V220-08-B 5/2 way Double Solenoid Valve NAMUR



Dimensions are in mm

## 300 Series Directional Solenoid Valve

Single Solenoid Valve



Double Solenoid Valve

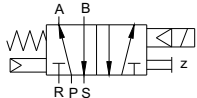


### Ordering Code

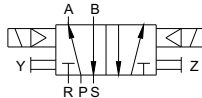
**4V3 - 10 - 08 - B - AC220V - DIN**

- |                |   |  |
|----------------|---|--|
| <b>4V3</b>     | - | 300 series, Directional Solenoid Valve |
| <b>10</b>      | - | 5/2 way Single Solenoid                |
| <b>20</b>      | - | 5/2 way Double Solenoid                |
| <b>30C</b>     | - | 5/3 way Double Solenoid Close Center   |
| <b>30E</b>     | - | 5/3 way Double Solenoid Exhaust Center |
| <b>30P</b>     | - | 5/3 way Double Solenoid Open Center    |
| <b>08</b>      | - | G 1/4"                                 |
| <b>10</b>      | - | G 3/8"                                 |
| <b>Blank</b>   | - | Body Ported                            |
| <b>B</b>       | - | Namur Mounting                         |
| <b>DC12V</b>   | - | 12Vdc                                  |
| <b>DC24V</b>   | - | 24Vdc                                  |
| <b>DC110V</b>  | - | 110Vdc                                 |
| <b>AC24V</b>   | - | 24Vac / 60Hz                           |
| <b>AC110V</b>  | - | 110Vac / 60Hz                          |
| <b>AC220V</b>  | - | 220Vac / 60Hz                          |
| <b>DIN-LED</b> | - | Socket w/ LED                          |
| <b>DIN</b>     | - | Socket w/o LED                         |

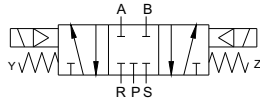
P.N.: 4V310-



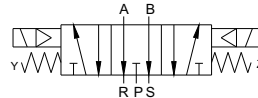
P.N.: 4V320-



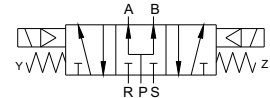
P.N.: 4V330C-



P.N.: 4V330E-



P.N.: 4V330P-

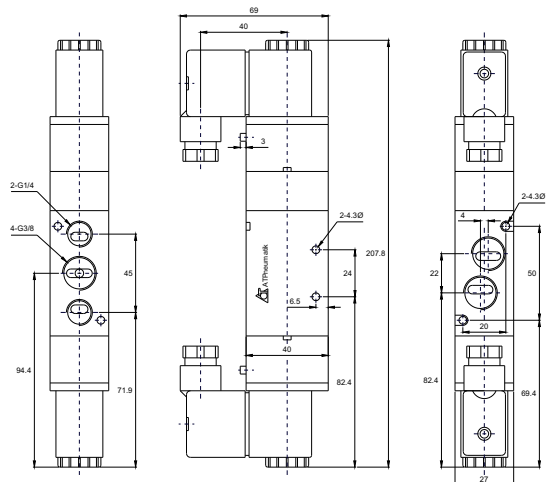
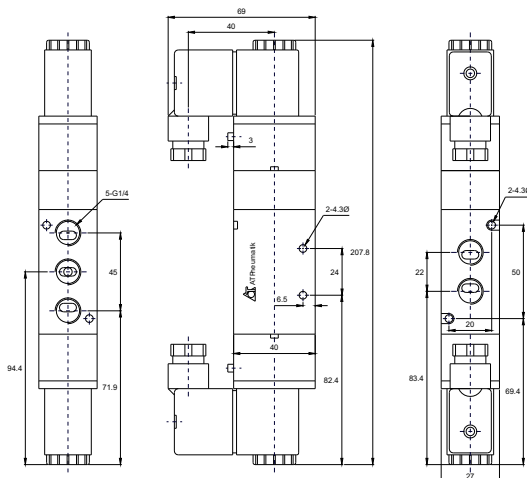


### Solenoid Valve Specification

Part Number	4V310-08	4V320-08	4V330C-08	4V330E-08	4V330P-08	4V310-10	4V320-10	4V330C-10	4V330E-10	4V330P-10
Orifice Size	25mm <sup>2</sup> (CV=1.40)		18mm <sup>2</sup> (CV=1.00)			30mm <sup>2</sup> (CV=1.68)		18mm <sup>2</sup> (CV=1.00)		
Port Connection	Supply, Outlet, Exhaust G 1/4"					Supply & Outlet G 3/8", Exhaust G 1/4"				
Working Medium	40 Micron Filtered Air									
Working Pressure	0.15 ~ 0.8 MPa, 1.5 ~ 8 Kg/cm <sup>2</sup> , 22 ~ 117.6 PSI									
Maximum Test Pressure	1 MPa, 10 Kg/cm <sup>2</sup> , 150 PSI									
Working Temperature	5 ~ 60°C, 41 ~ 140°F									
Power Consumption	AC: 5.5VA DC: 4.8W ±10%									
Protection	F Class. IP65									
Connector	Lead Wire or Socket Type (DIN)									
Switching Cycle	5 Cycle / Sec									
Response Time	0.05 Second									

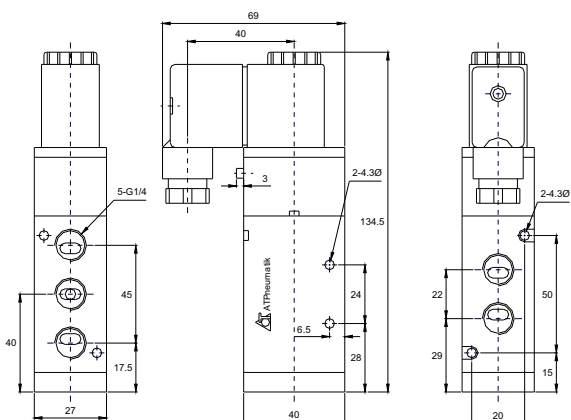
**4V330-08** 5/3 way Double Solenoid Valve

**4V330-10** 5/3 way Double Solenoid Valve

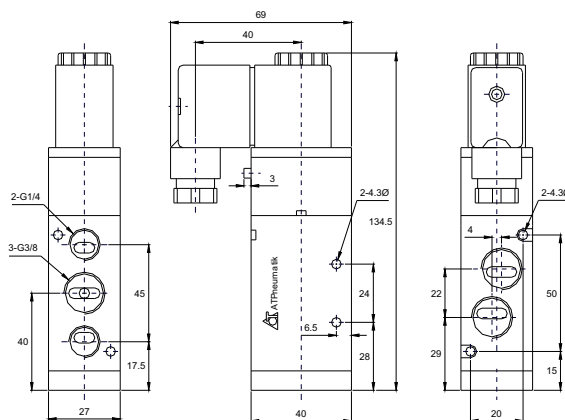


Dimensions are in mm

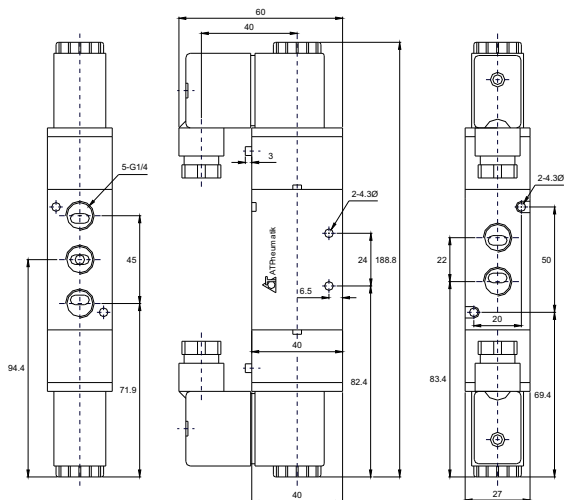
4V310-08 5/2 way Single Solenoid Valve



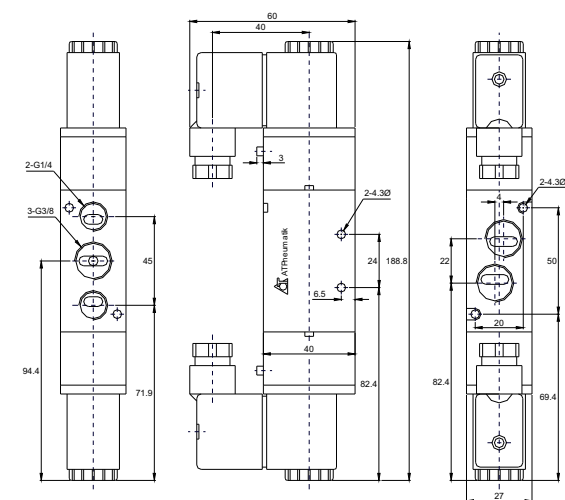
4V310-10 5/2 way Single Solenoid Valve



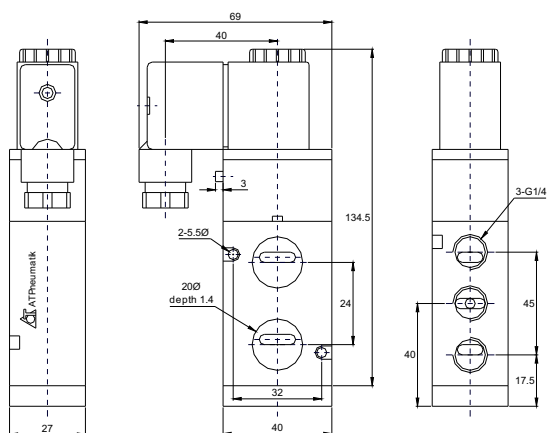
4V320-08 5/2 way Double Solenoid Valve



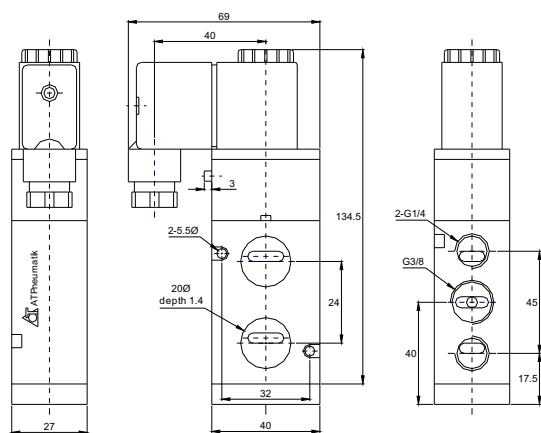
4V320-10 5/2 way Double Solenoid Valve



4V310-08-B 5/2 way Single Solenoid Valve NAMUR

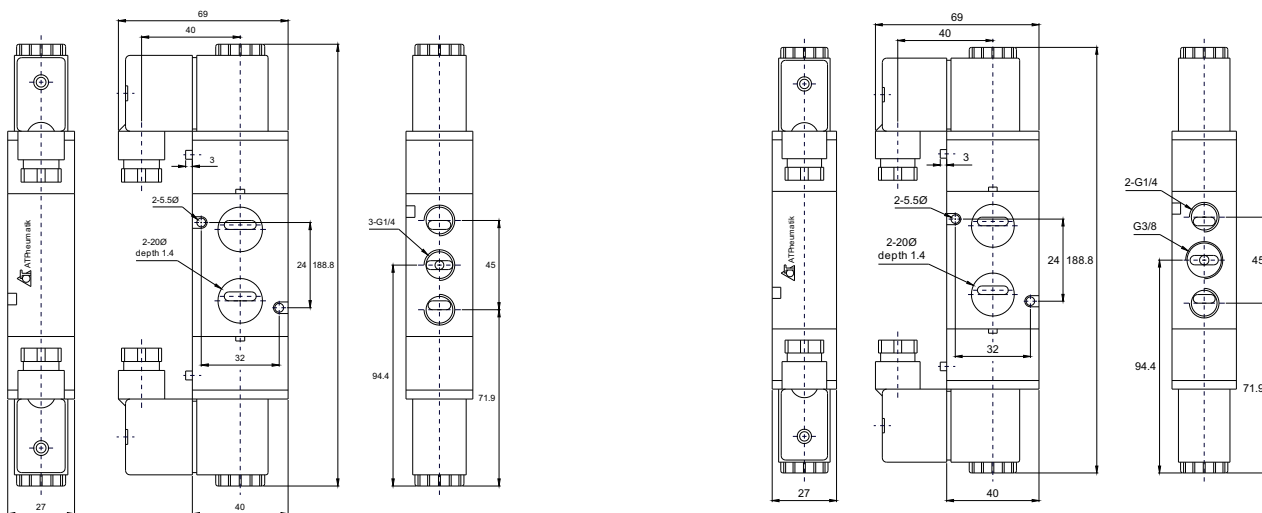


4V310-10-B 5/2 way Single Solenoid Valve NAMUR



Dimensions are in mm





## 400 Series Directional Solenoid Valve

Single Solenoid Valve



Double Solenoid Valve

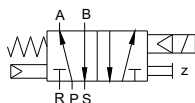


### Ordering Code

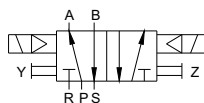
**4V4 - 10 - 15 - AC220V - DIN**

- 4V4** - 400 series, Directional Solenoid Valve
- 10** - 5/2 way Single Solenoid
- 20** - 5/2 way Double Solenoid
- 30C** - 5/3 way Double Solenoid close Center
- 30E** - 5/3 way Double Solenoid Exhaust Center
- 30P** - 5/3 way Double Solenoid Open Center
- 15** - G 1/2"
- DC12V** - 12Vdc
- DC24V** - 24Vdc
- DC110V** - 110Vdc
- AC24V** - 24Vac / 60Hz
- AC110V** - 110Vac /60Hz
- AC220V** - 220Vac /60Hz
- DIN-LED** - Socket w/ LED
- DIN** - Socket w/o LED

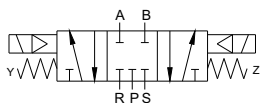
P.N.: 4V410-



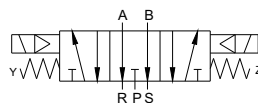
P.N.: 4V420-



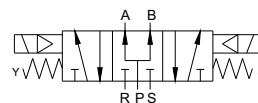
P.N.: 4V430C-



P.N.: 4V430E-



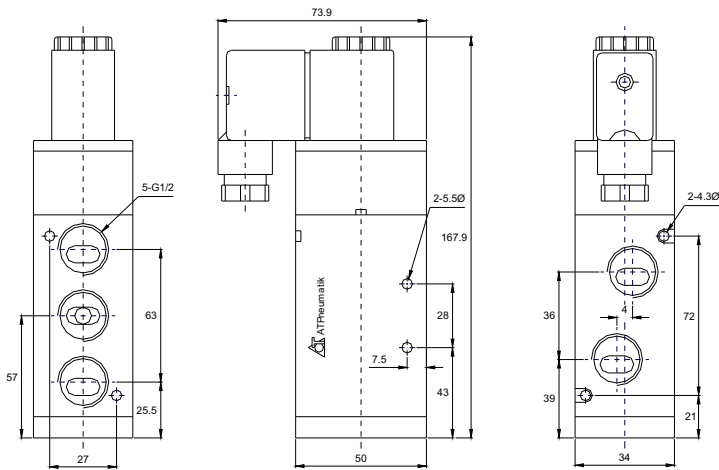
P.N.: 4V430P-



### Solenoid Valve Specification

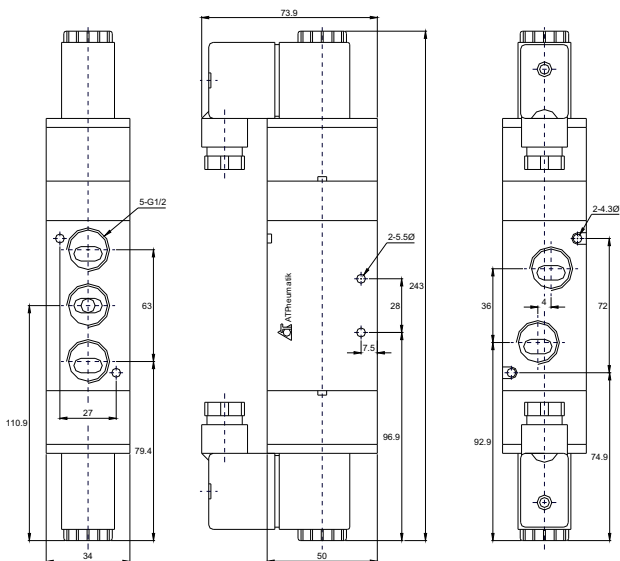
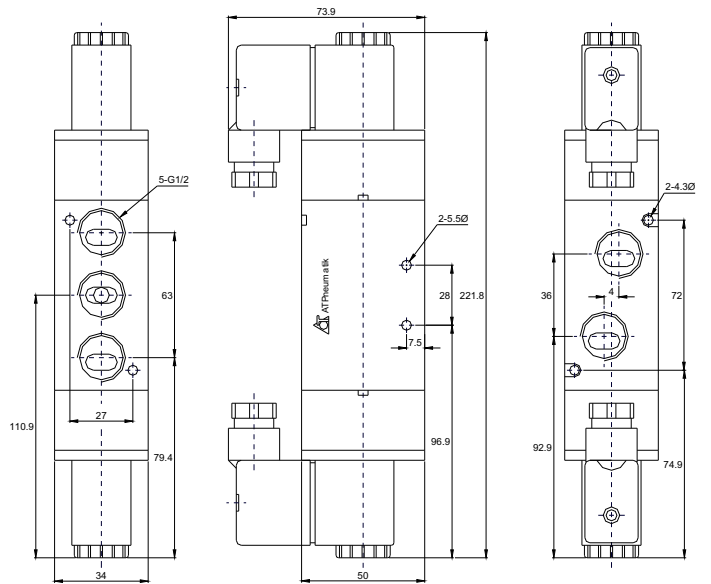
Part Number	4V410-15	4V420-15	4V430C-15	4V430E-15	4V430P-15
Orifice Size	50mm <sup>2</sup> (CV=2.79)		30mm <sup>2</sup> (CV=1.68)		
Port Connection	Supply, Outlet, Exhaust G 1/2"				
Working Medium	40 Micron Filtered Air				
Working Pressure	0.15 ~ 0.8 MPa, 1.5 ~ 8 Kg/cm <sup>2</sup> , 22 ~ 117.6 PSI				
Maximum Test Pressure	1 MPa, 10 Kg/cm <sup>2</sup> , 150 PSI				
Working Temperature	5 ~ 60°C, 41 ~ 140°F				
Power Consumption	AC: 5.5VA DC: 4.8W ±10%				
Protection	F Class. IP65				
Connector	Lead Wire or Socket Type (DIN)				
Switching Cycle	5 Cycle / Sec				
Response Time	0.05 Second				

Dimensions are in mm



**4V410-15** 5/2 way Single Solenoid Valve

**4V420-15** 5/2 way Double Solenoid Valve



**4V430-15** 5/3 way Double Solenoid Valve

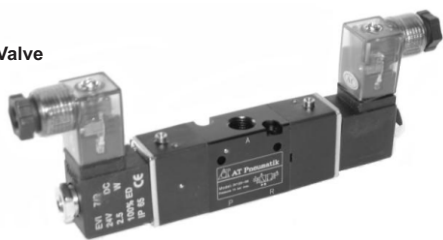
Dimensions are in mm

## 100 Series Directional Solenoid Valve

Single Solenoid Valve



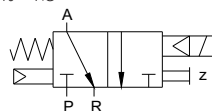
Double Solenoid Valve



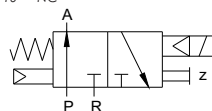
### Ordering Code

<b>3V1</b>	-	<b>10 - M5 - NO - AC220V - DIN</b>
<b>3V1</b>	-	100 series, Directional Solenoid Valve
<b>10</b>	-	3/2 way Single Solenoid
<b>20</b>	-	3/2 way Double Solenoid
<b>M5</b>	-	M5 X 0.8
<b>06</b>	-	G 1/8"
<b>Blank</b>	-	Normally Close
<b>NO</b>	-	Normally Open
<b>DC12V</b>	-	12Vdc
<b>DC24V</b>	-	24Vdc
<b>DC110V</b>	-	110Vdc
<b>AC24V</b>	-	24Vac / 60Hz
<b>AC110V</b>	-	110Vac / 60Hz
<b>AC220V</b>	-	220Vac / 60Hz
<b>DIN-LED</b>	-	Socket w/ LED
<b>DIN</b>	-	Socket w/o LED

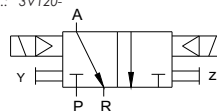
P.N.: 3V110- -NO



P.N.: 3V110- -NC



P.N.: 3V120-

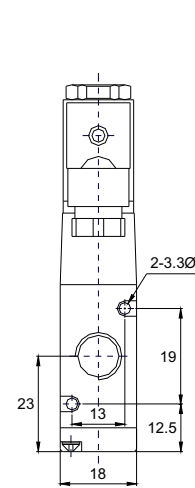
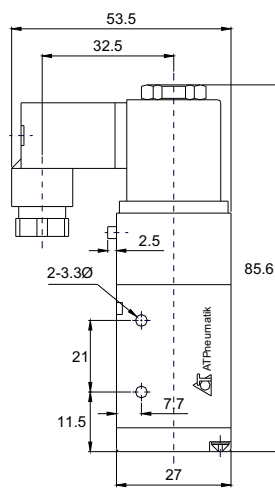
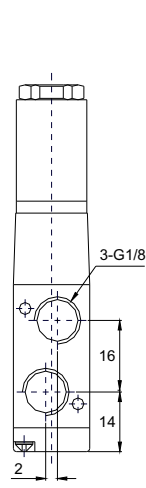
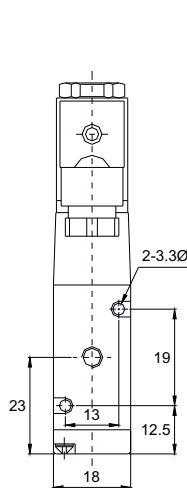
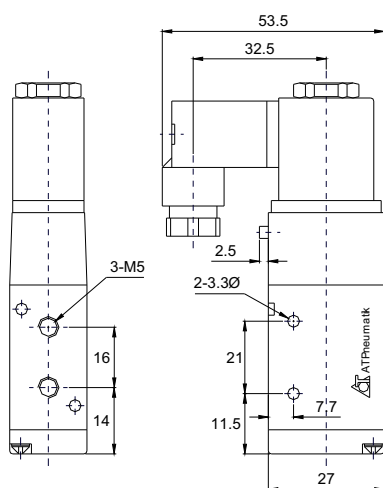


### Solenoid Valve Specification

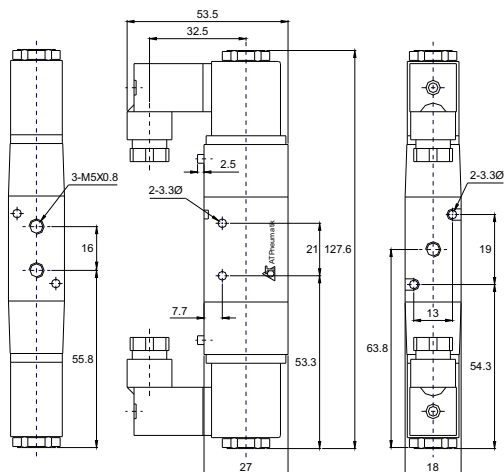
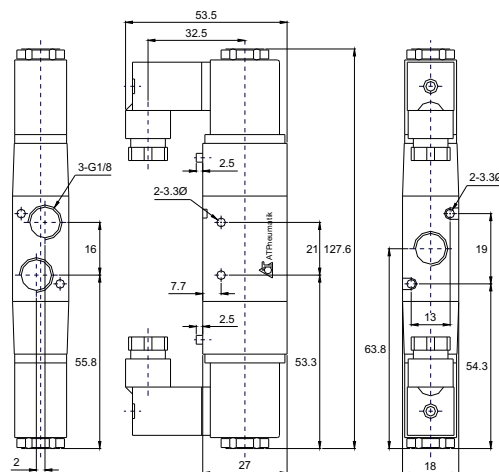
Part Number	3V110-M5	3V120-M5	3V110-06	3V120-06
Orifice Size	10mm <sup>2</sup> (CV=0.56)		12mm <sup>2</sup> (CV=0.67)	
Port Connection	Supply, Outlet, Exhaust M05 X 0.8		Supply, Outlet, Exhaust G 1/8"	
Working Medium	40 Micron Filtered Air			
Working Pressure	0.15 ~ 0.8 MPa, 1.5 ~ 8 Kg/cm <sup>2</sup> , 22 ~ 117.6 PSI			
Maximum Test Pressure	1 MPa, 10 Kg/cm <sup>2</sup> , 150 PSI			
Working Temperature	5 ~ 60°C, 41 ~ 140°F			
Power Consumption	AC: 2.5VA DC: 2.5W ±10%			
Protection	F Class. IP65			
Connector	Lead Wire or Socket Type (DIN)			
Switching Cycle	5 Cycle / Sec			
Response Time	0.05 Second			

**3V110-M5-NO/NC** 3/2 way Single Solenoid Valve

**3V110-06-NO/NC** 3/2 way Single Solenoid Valve



Dimensions are in mm

**3V120-M5** 5/2 way Double Solenoid Valve

**3V120-06** 5/2 way Double Solenoid Valve


### 200 Series Directional Solenoid Valve

**Single Solenoid Valve**

**Double Solenoid Valve**


### Ordering Code

**3V2 - 10 - 06 - NO - AC220V - DIN**

**3V2** - 200 series, Directional Solenoid Valve

**10** - 3/2 way Single Solenoid

**20** - 3/2 way Double Solenoid

**06** - G 1/8"

**08** - G 1/4"

**Blank** - Normally Close

**NO** - Normally Open

**DC12V** - 12Vdc

**DC24V** - 24Vdc

**DC110V** - 110Vdc

**AC24V** - 24Vac / 60hz

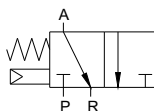
**AC110V** - 110Vac / 60Hz

**AC220V** - 220Vac / 60Hz

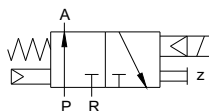
**DIN-LED** - Socket w/ LED

**DIN** - Socket w/o LED

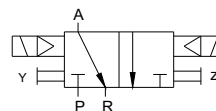
P.N.: 3V210- -NO



P.N.: 3V210- -NC



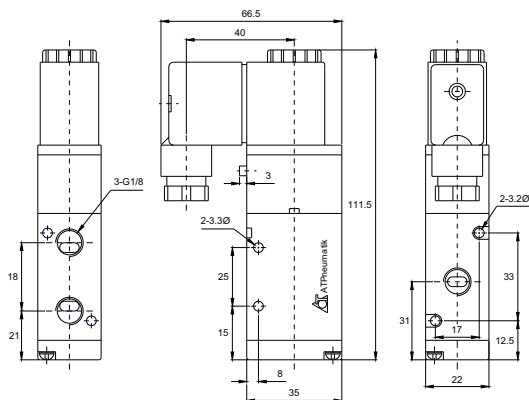
P.N.: 3V220-



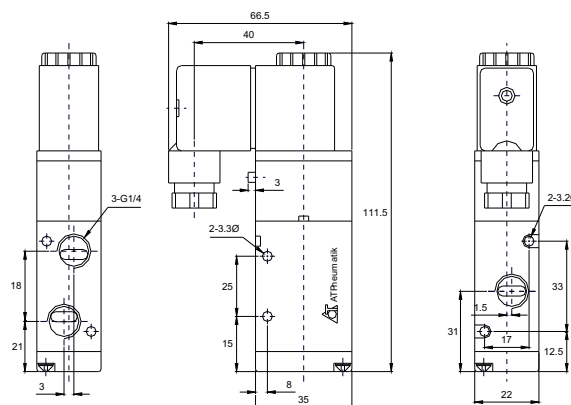
Solenoid Valve Specification				
Part Number	3V210-06	3V220-06	3V210-08	3V220-08
Orifice Size	14mm <sup>2</sup> (CV=0.78)		16mm <sup>2</sup> (CV=0.89)	
Port Connection	Supply, Outlet, Exhaust G 1/8"		Supply & Outlet G 1/4", Exhaust G 1/8"	
Working Medium	40 Micron Filtered Air			
Working Pressure	0.15 ~ 0.8 MPa, 1.5 ~ 8 Kg/cm <sup>2</sup> , 22 ~ 117.6 PSI			
Maximum Test Pressure	1 MPa, 10 Kg/cm <sup>2</sup> , 150 PSI			
Working Temperature	5 ~ 60°C, 41 ~ 140°F			
Power Consumption	AC: 5.5VA DC: 4.8W ±10%			
Protection	F Class. IP65			
Connector	Lead Wire or Socket Type (DIN)			
Switching Cycle	5 Cycle / Sec			
Response Time	0.05 Second			

Dimensions are in mm

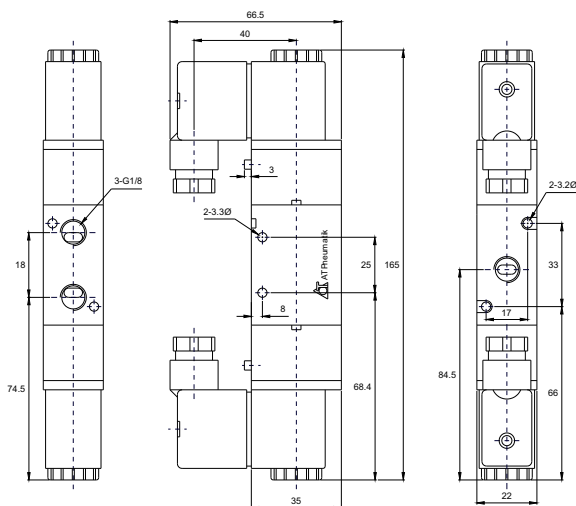
**3V210-06-NO/NC** 3/2 way Single Solenoid Valve



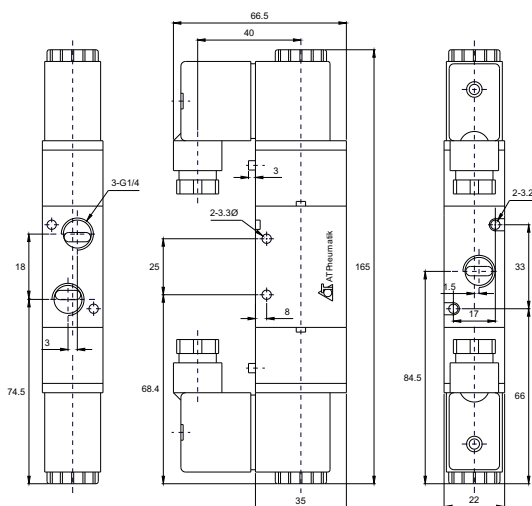
**3V210-08-NO/NC** 3/2 way Single Solenoid Valve



**3V220-06** 3/2 way Double Solenoid Valve



**3V220-08** 3/2 way Double Solenoid Valve



### 300 Series Directional Solenoid Valve

Single Solenoid Valve



Double Solenoid Valve



### Ordering Code

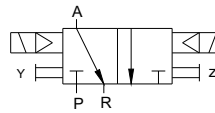
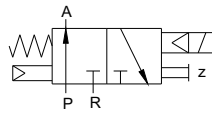
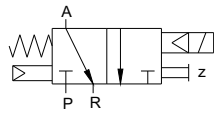
<b>3V3</b>	-	<b>10 - 08 - NO - AC220V - DIN</b>	
<b>3V3</b>	-	300 series, Directional Solenoid Valve	
<b>10</b>	-	3/2 way Single Solenoid	
<b>20</b>	-	3/2 way Double Solenoid	
<b>08</b>	-	G 1/4"	
<b>10</b>	-	G 3/8"	
<b>Blank</b>	-	Normally Close	
<b>NO</b>	-	Normally Open	
<b>DC12V</b>	-	12Vdc	<b>AC24V</b> - 24Vac / 60Hz
<b>DC24V</b>	-	24Vdc	<b>AC110V</b> - 110Vac / 60Hz
<b>DC110V</b>	-	110Vdc	<b>AC220V</b> - 220Vac / 60Hz
<b>DIN-LED</b>	-	Socket w/ LED	<b>DIN</b> - Socket w/o LED

Dimensions are in mm

P.N.: 3V310-NO

P.N.: 3V310-NC

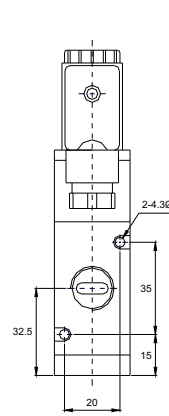
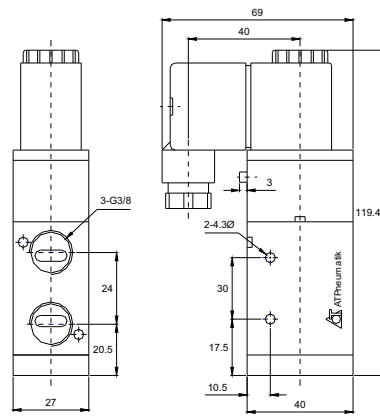
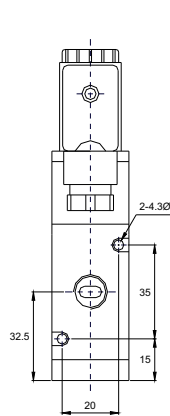
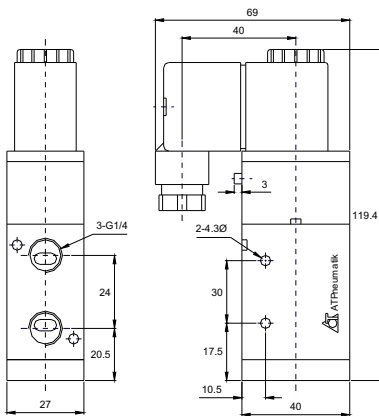
P.N.: 3V320-



Solenoid Valve Specification				
Part Number	3V310-08	3V320-08	3V310-10	3V320-10
Orifice Size	25mm <sup>2</sup> (CV=1.40)		30mm <sup>2</sup> (CV=1.68)	
Port Connection	Supply, Outlet, Exhaust G 1/4"		Supply & Outlet G 3/8", Exhaust G 1/4"	
Working Medium	40 Micron Filtered Air			
Working Pressure	0.15 ~ 0.8 MPa, 1.5 ~ 8 Kg/cm <sup>2</sup> , 22 ~ 117.6 PSI			
Maximum Test Pressure	1 MPa, 10 Kg/cm <sup>2</sup> , 150 PSI			
Working Temperature	5 ~ 60°C, 41 ~ 140°F			
Power Consumption	AC: 5.5VA DC: 4.8W ±10%			
Protection	F Class. IP65			
Connector	Lead Wire or Socket Type (DIN)			
Switching Cycle	5 Cycle / Sec			
Response Time	0.05 Second			

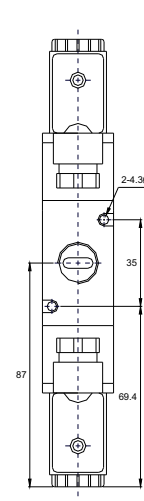
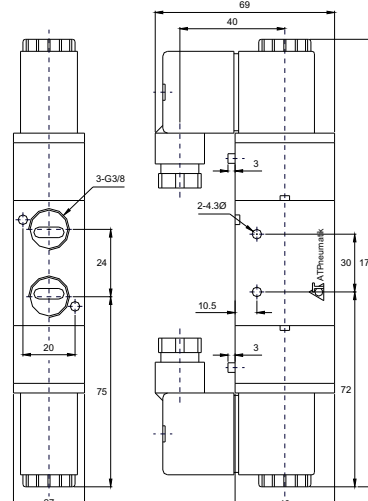
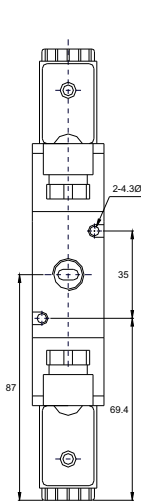
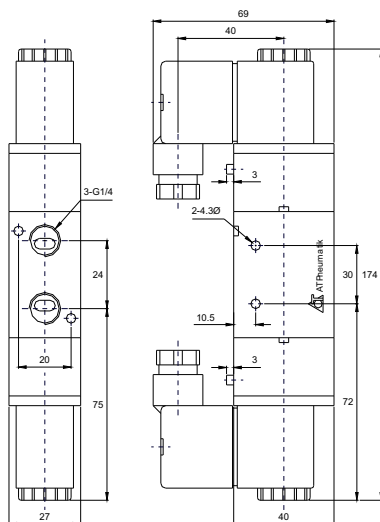
**3V310-08-NO/NC** 3/2 way Single Solenoid Valve

**3V310-10-NO/NC** 3/2 way Single Solenoid Valve



**3V320-08** 5/2 way Double Solenoid Valve

**3V320-10** 5/2 way Double Solenoid Valve



Dimensions are in mm

## 400 Series Directional Solenoid Valve

**Single Solenoid Valve**



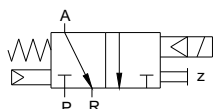
**Double Solenoid Valve**



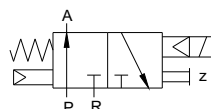
### Ordering Code

<b>3V4</b>	-	<b>10 - 15 - NO - AC220V - DIN</b>
<b>3V4</b>	-	400 series, Directional Solenoid Valve
<b>10</b>	-	3/2 way Single Solenoid
<b>20</b>	-	3/2 way Double Solenoid
<b>15</b>	-	G 1/2"
<b>Blank</b>	-	Normally Close
<b>NO</b>	-	Normally Open
<b>DC12V</b>	-	12Vdc
<b>DC24V</b>	-	24Vdc
<b>DC110V</b>	-	110Vdc
<b>AC24V</b>	-	24Vac / 60Hz
<b>AC110V</b>	-	110Vac / 60Hz
<b>AC220V</b>	-	220Vac / 60Hz
<b>DIN-LED</b>	-	Socket w/ LED
<b>DIN</b>	-	Socket w/o LED

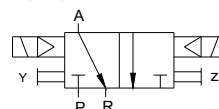
P.N.: 3V410- -NO



P.N.: 3V410- -NC



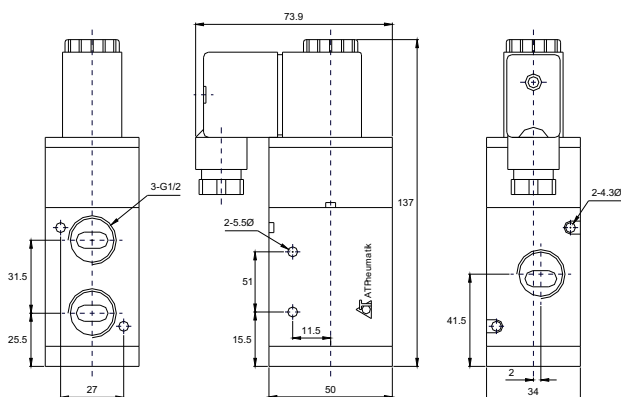
P.N.: 3V420-



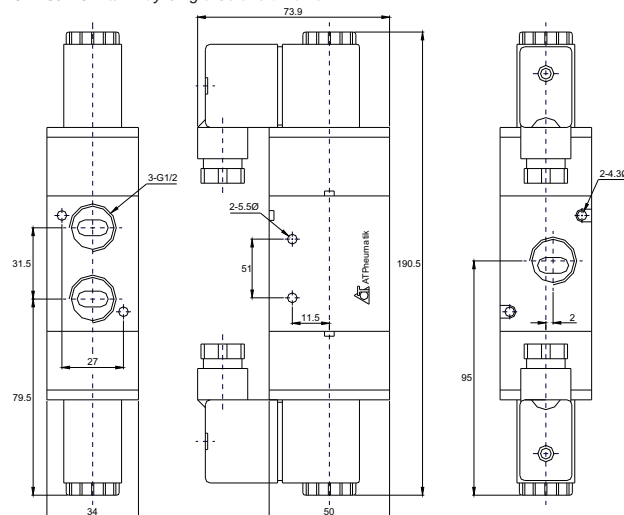
### Solenoid Valve Specification

Part Number	3V410-15	3V420-15
Power Consumption	AC: 5.5VA DC: 4.8W ±10%	
Protection	F Class. IP65	
Connector	Lead Wire or Socket Type (DIN)	
Orifice Size	50mm <sup>2</sup> (CV=2.79)	
Port Connection	Supply, Outlet, Exhaust G 1/2"	
Working Medium	40 Micron Filtered Air	
Working Pressure	0.15 ~ 0.8 MPa, 1.5 ~ 8 Kg/cm <sup>2</sup> , 22 ~ 117.6 PSI	
Maximum Test Pressure	1 MPa, 10 Kg/cm <sup>2</sup> , 150 PSI	
Working Temperature	5 ~ 60°C, 41 ~ 140°F	
Switching Cycle	5 Cycle / Sec	
Response Time	0.05 Second	

**3V410-15-NO/NC** 3/2 way Single Solenoid Valve

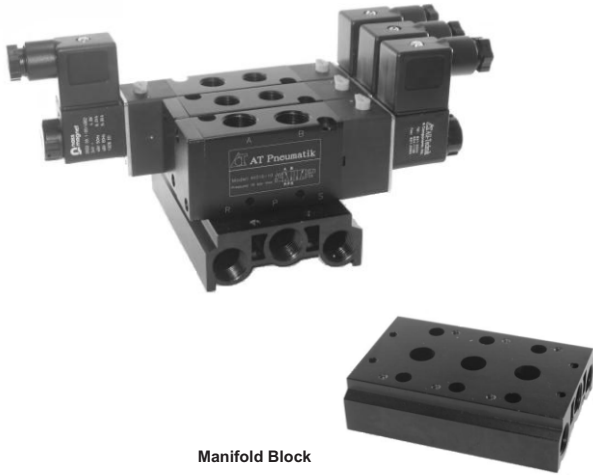


**3V420-15-NO/NC** 3/2 way Single Solenoid Valve



Dimensions are in mm

## Manifold Block for Solenoid Valve



Manifold Block

### Ordering Code

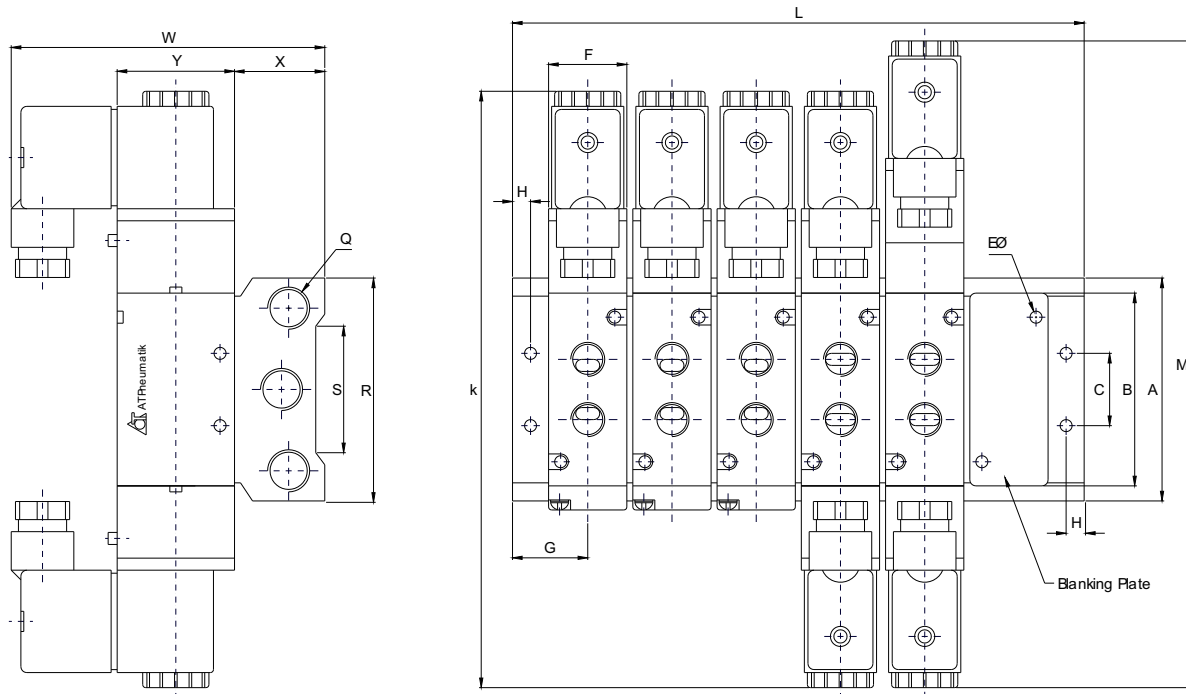
**100M - N - F**

**100M** - 100 series valve  
**200M** - 200 series valve  
**300M** - 300 series valve  
**400M** - 400 series valve

**N** - Specify the required valves quantity

**Note:**

Manifold is available from minimum of 2 stations to maximum of 12 stations



**Note:** n = number of valve or station

**Manifold Dimension**

Manifold Series	A	B	C	E	F	G	H	K	L	M	Q	R	S	W	X	Y
<b>100M-F</b>	58	44	20	4.2	18.3	19	5	140	$\{(n-1) \times 19\} + 38$	155	G 1/4"	40	30	78.5	25	27
<b>200M-F</b>	61	51	21	4.3	22.4	23	6	170	$\{(n-1) \times 23\} + 46$	189	G 1/4"	43	32	92.5	26	35
<b>300M-F</b>	75	65	26	4.5	27.3	27	6	189	$\{(n-1) \times 28\} + 54$	208	G 3/8"	53	48	99	30	40
<b>400M-F</b>	10	95	32	5.5	34.3	31.5	7	222	$\{(n-1) \times 35\} + 63$	243	G 1/2"	68	67	112	38	50

Dimensions are in mm



**Solenoid Coil**

Solenoid Coil BSC



Solenoid Coil SSC



**Ordering Code**

**BSC - 24Vdc - 4981**

- BSC** - 200, 300, 400 series Solenoid Valve Coil
- SSC** - 100 series Solenoid Valve Coil
- 24Vdc** - 12Vdc; 24Vdc; 100Vdc;
- 110Vac; 220Vac

**LD** - Lead wire

**DIN** - See DIN specifications

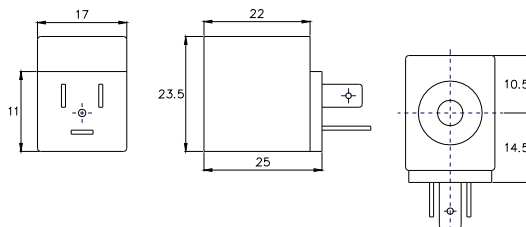
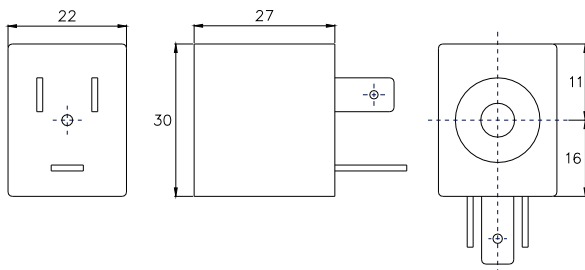
**Blank** - Solenoid coil only

When ordering of Explosion proof solenoid coil, voltage and area of application must be specified according to class ex. Zone 0, zone 1.....

For Solenoid coil with higher working temperature per request basis specified the working temperature.

Solenoid Coil 200, 300 & 400 series Solenoid Valve

Solenoid Coil 100 series Solenoid Valve



**DIN Plug**

DIN Plug for BSC



Without Light Indicator

With Light Indicator



DIN Plug for SSC  
With Light Indicator



**Ordering Code**

**DIN - LED - DC**

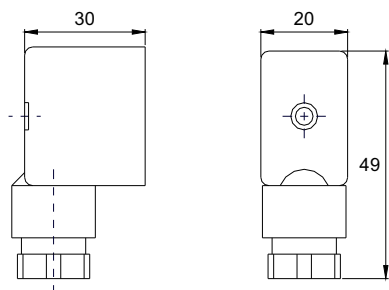
- DIN** - Socket Plug for BSC
- DINS** - Socket Plug for SSC

- LED** - with Light Indicator
- Blank** - without Light Indicator

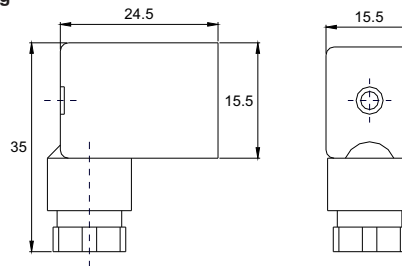
- DC** - For DC Solenoid Coil
- AC** - For AC Solenoid Coil

DIN-LED-AC voltage ranges from 5 to 220Vac  
DIN-LED-DC voltage ranges 10 to 110Vdc

DIN Plug



DINS Plug



Dimensions are in mm

## 100 Series Directional Air Pilot Valve

Single Air Pilot Valve



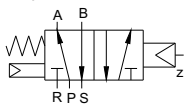
Double Air Pilot Valve



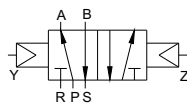
### Ordering Code

- 4A1** - **10** - **M5**
- 4A1** - 100 series Directional Air Pilot Valve
- 10** - 5/2 way Single Air Pilot
- 20** - 5/2 way Double Air Pilot
- 30C** - 5/3 way Double Air Pilot Close Center
- 30E** - 5/3 way Double Air Pilot Exhaust Center
- 30P** - 5/3 way Double Air Pilot Open Center
- M5** - M5 X 0.8
- 06** - G 1/8"

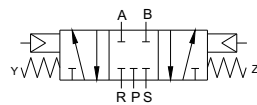
P.N.: 4A110-



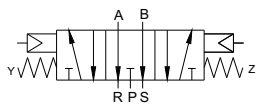
P.N.: 4A120-



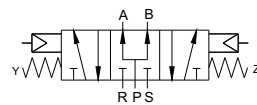
P.N.: 4A130C-



P.N.: 4A130E-



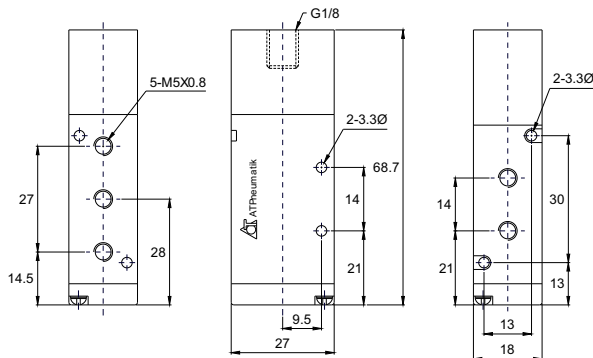
P.N.: 4A130P-



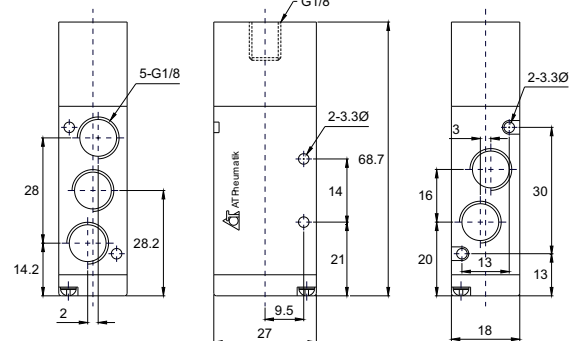
### Air Pilot Valve Specification

Part Number	4A110-M5	4A120-M5	4A130C-M5	4A130E-M5	4A130P-M5	4A110-06	4A120-06	4A130C-06	4A130E-06	4A130P-06
Orifice Size	10mm <sup>2</sup> (CV=0.56)					12mm <sup>2</sup> (CV=0.67)				
Port Connection	Supply, Outlet, Exhaust M05 X 0.8					Supply, Outlet, Exhaust G 1/8"				
Working Medium	40 Micron Filtered Air									
Working Pressure	0.15 ~ 0.8 MPa, 1.5 ~ 8 Kg/cm <sup>2</sup> , 22 ~ 117.6 PSI									
Maximum Test Pressure	1 MPa, 10 Kg/cm <sup>2</sup> , 150 PSI									
Working Temperature	5 ~ 60°C, 41 ~ 140°F									
Switching Cycle	5 Cycle / Sec									

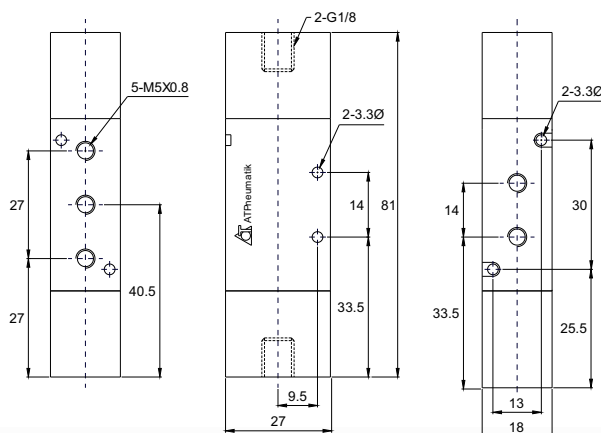
**4A110-M5** 5/2 way Single Air Pilot Valve



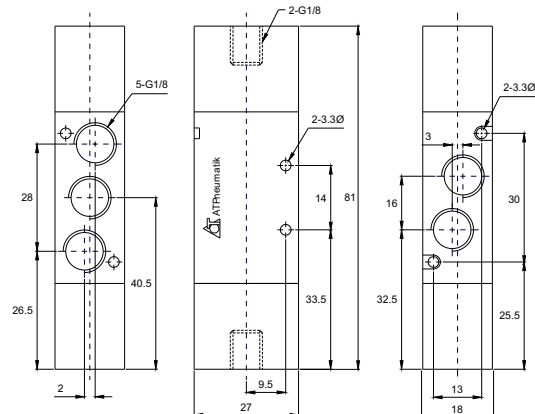
**4A110-06** 5/2 way Single Air Pilot Valve



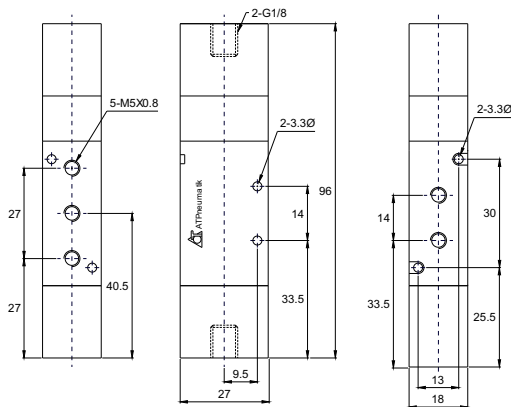
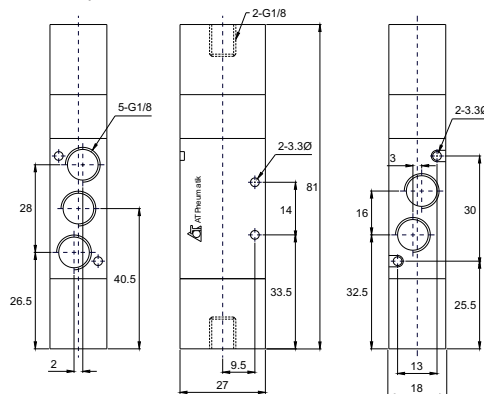
**4A120-M5** 5/2 way Double Air Pilot Valve



**4A120-06** 5/2 way Double Air Pilot Valve



Dimensions are in mm

**4A130 -M5** 5/3 way Double Air Pilot Valve

**4A130 -06** 5/3 way Double Air Pilot Valve


### 200 Series Directional Air Pilot Valve

**Single Air Pilot Valve**

**Double Air Pilot Valve**

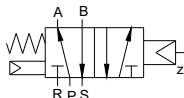

### Ordering Code

**4A2 - 10 - 06 - B**

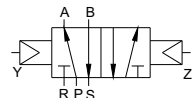
- 4A2** - 200 series, Directional Air Pilot Valve
- 10** - 5/2 way Single Air Pilot
- 20** - 5/2 way Double Air Pilot
- 30C** - 5/3 way Double Air Pilot Close Center
- 30E** - 5/3 way Double Air Pilot Exhaust Center
- 30P** - 5/3 way Double Air Pilot Open Center

- Blank** - Body Ported
- B** - Namur Connection
- 06** - G 1/8"
- 08** - G 1/4"

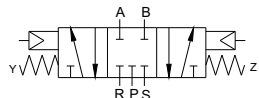
P.N.: 4A210-



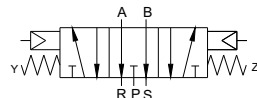
P.N.: 4A220-



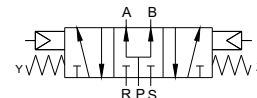
P.N.: 4A230C-



P.N.: 4A230E-

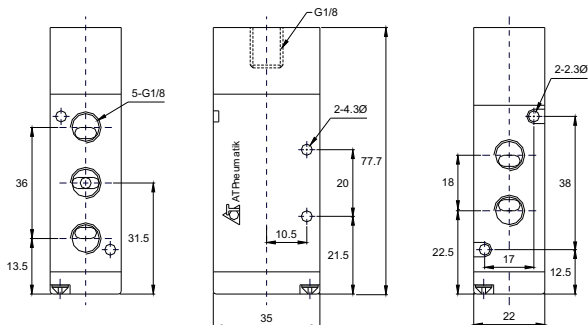
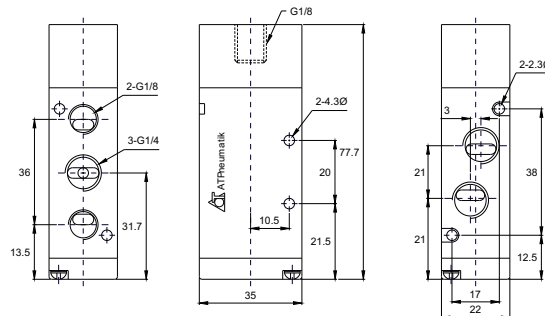


P.N.: 4A230P-



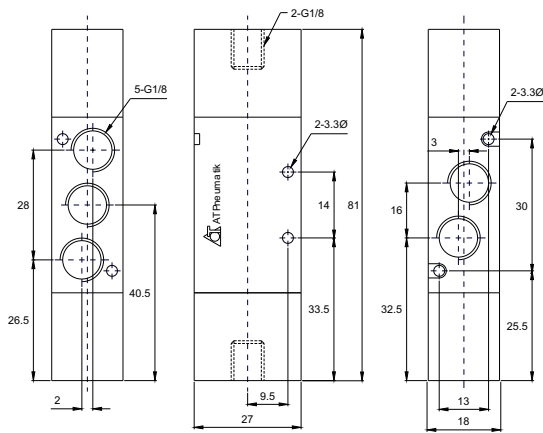
### Air Pilot Valve Specification

Part Number	4A210-06	4A220-06	4A230C-06	4A230E-06	4A230P-06	4A210-08	4A220-08	4A230C-08	4A230E-08	4A230P-08
Orifice Size	14mm <sup>2</sup> (CV=0.78)		12mm <sup>2</sup> (CV=0.67)			16mm <sup>2</sup> (CV=0.89)		12mm <sup>2</sup> (CV=0.67)		
Port Connection	Supply, Outlet, Exhaust G 1/8"					Supply, Outlet G 1/4", Exhaust G 1/8"				
Working Medium	40 Micron Filtered Air									
Working Pressure	0.15 ~ 0.8 MPa, 1.5 ~ 8 Kg/cm <sup>2</sup> , 22 ~ 117.6 PSI									
Maximum Test Pressure	1 MPa, 10 Kg/cm <sup>2</sup> , 150 PSI									
Working Temperature	5 ~ 60°C, 41 ~ 140°F									
Switching Cycle	5 Cycle / Sec									

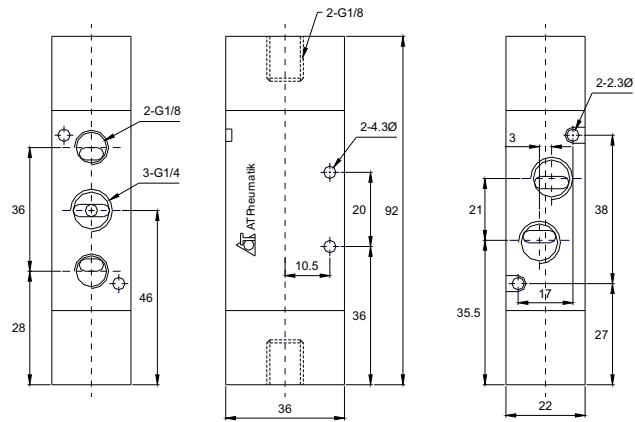
**4A210-06** 5/2 way Single Air Pilot Valve

**4A210-06** 5/2 way Single Air Pilot Valve


Dimensions are in mm

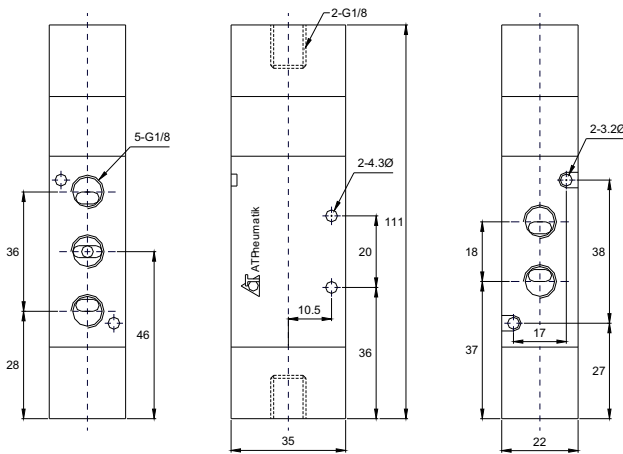
**4A220-06** 5/2 way Double Air Pilot Valve



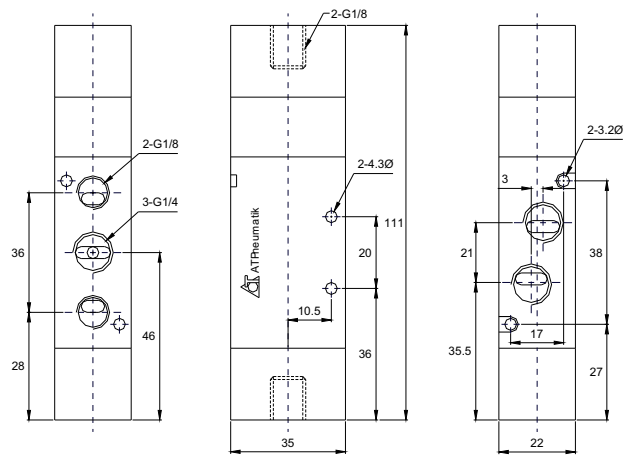
**4A220-08** 5/2 way Double Air Pilot Valve



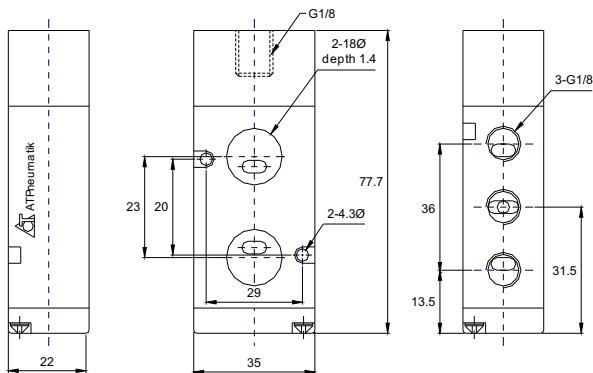
**4A230 -06** 5/3 way Double Air Pilot Valve



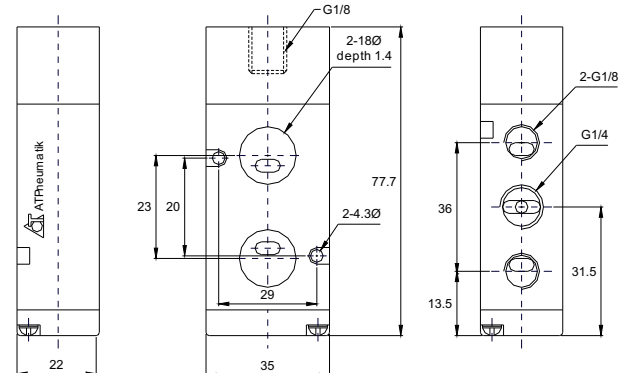
**4A230 -08** 5/3 way Double Air Pilot Valve



**4A210-06B** 5/2 way Single Air Pilot Valve NAMUR

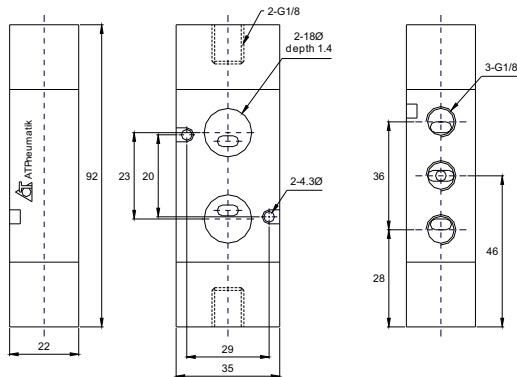


**4A210-08B** 5/2 way Single Air Pilot Valve NAMUR

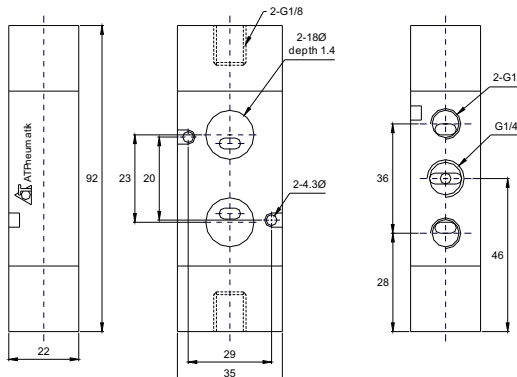


Dimensions are in mm

**4A220-06B** 5/2 way Double Air Pilot Valve NAMUR



**4A220-08B** 5/2 way Double Air Pilot Valve NAMUR



**300 Series Directional Air Pilot Valve**

Single Air Pilot Valve



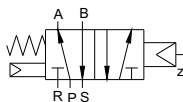
Double Air Pilot Valve



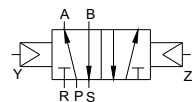
**Ordering Code**

- 4A3** - **10 - 08 - B**
- 4A3** - 300 series, Directional Air Pilot Valve
- 10** - 5/2 way Single Air Pilot
- 20** - 5/2 way Double Air Pilot
- 30C** - 5/3 way Double Air Pilot Close Center
- 30E** - 5/3 way Double Air Pilot Exhaust Center
- 30P** - 5/3 way Double Air Pilot open Center
- Blank** - Body Ported
- B** - Namur Connection
- 08** - G 1/4"
- 10** - G 3/8"

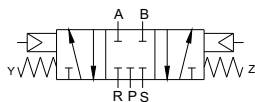
P.N.: 4A310-



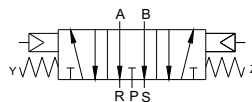
P.N.: 4A320-



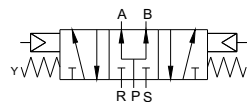
P.N.: 4A330C-



P.N.: 4A330E-

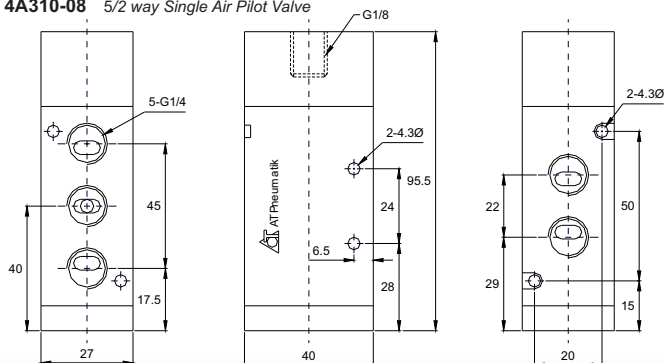


P.N.: 4A330P-

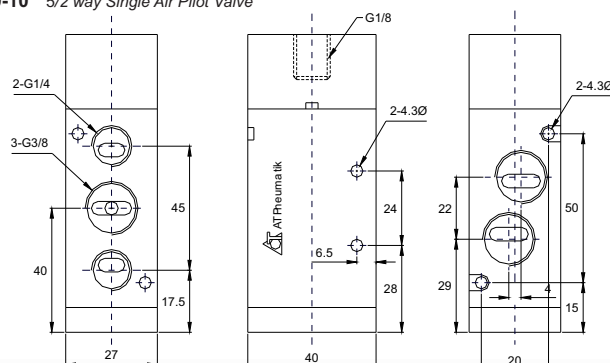


Air Pilot Valve Specification										
Part Number	4A310-08	4A320-08	4A330C-08	4A330E-08	4A330P-08	4A310-10	4A320-10	4A330C-10	4A330E-10	4A330P-10
Orifice Size	25mm <sup>2</sup> (CV=1.40)		18mm <sup>2</sup> (CV=1.00)			30mm <sup>2</sup> (CV=1.68)		18mm <sup>2</sup> (CV=1.00)		
Port Connection	Supply, Outlet, Exhaust G 1/4"					Supply, Outlet G 3/8", Exhaust G 1/4"				
Working Medium	40 Micron Filtered Air									
Working Pressure	0.15 ~ 0.8 MPa, 1.5 ~ 8 Kg/cm <sup>2</sup> , 22 ~ 117.6 PSI									
Maximum Test Pressure	1 MPa, 10 Kg/cm <sup>2</sup> , 150 PSI									
Working Temperature	5 ~ 60°C, 41 ~ 140°F									
Switching Cycle	5 Cycle / Sec									

**4A310-08** 5/2 way Single Air Pilot Valve

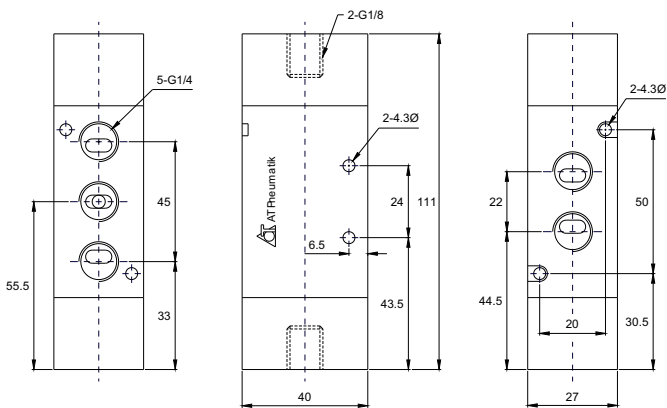


**4A310-10** 5/2 way Single Air Pilot Valve

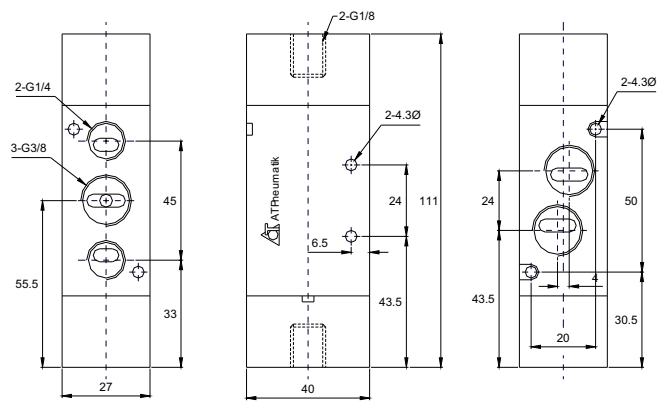


Dimensions are in mm

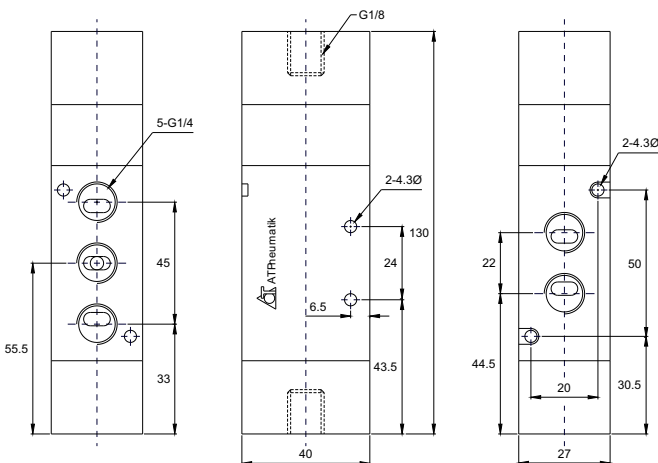
**4A320-08** 5/2 way Double Air Pilot Valve



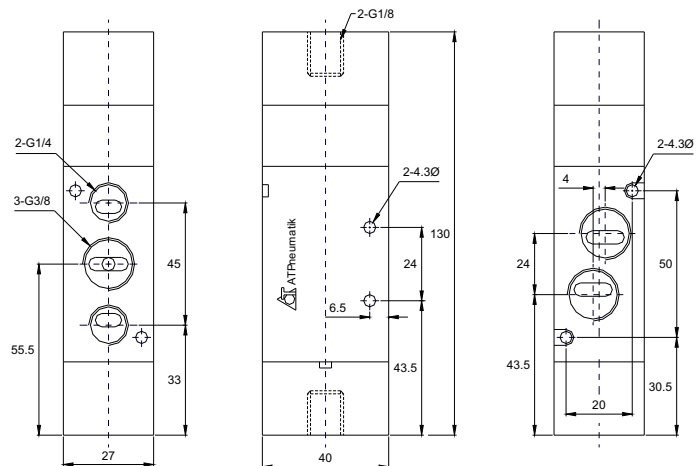
**4A320-10** 5/2 way Double Air Pilot Valve



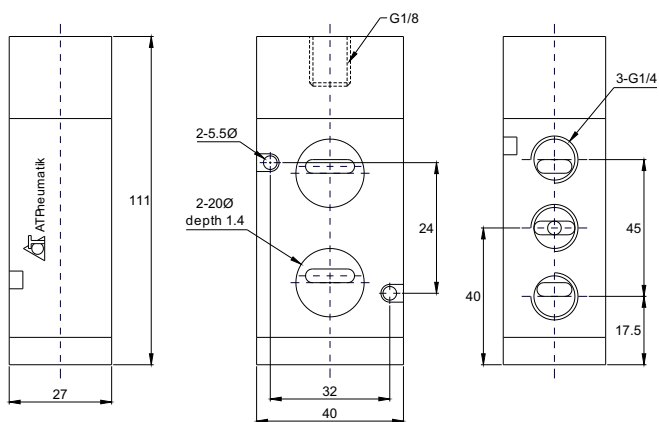
**4A330 -08** 5/3 way Double Air Pilot Valve



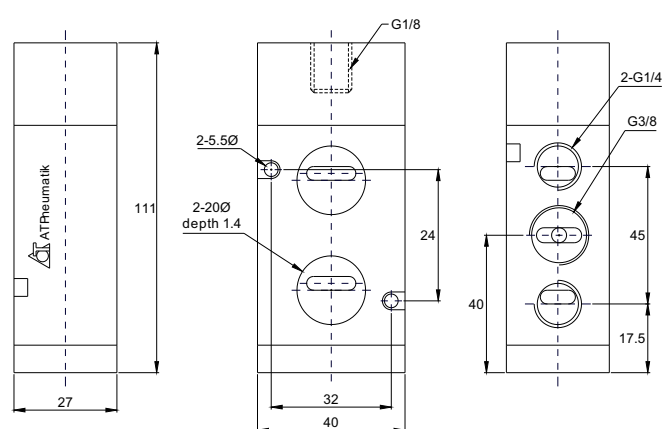
**4A330 -10** 5/3 way Double Air Pilot Valve



**4A310-08B** 5/2 way Single Air Pilot Valve NAMUR

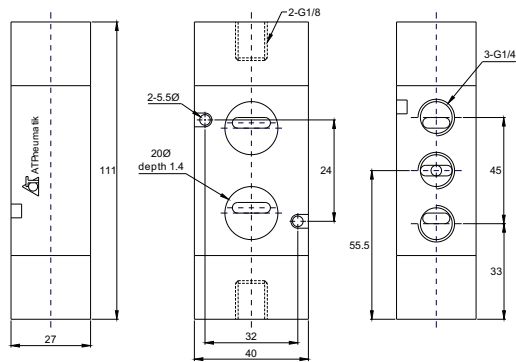


**4A310-10B** 5/2 way Single Air Pilot Valve NAMUR

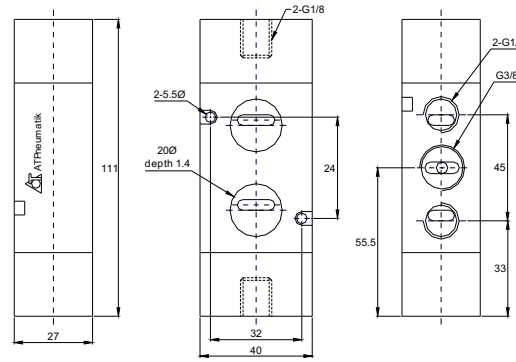


Dimensions are in mm

**4A320-08B** 5/2 way Double Air Pilot Valve



**4A320-10B** 5/2 way Double Air Pilot Valve



## 400 Series Directional Air Pilot Valve

Single Air Pilot Valve



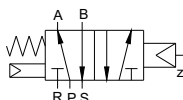
Double Air Pilot Valve



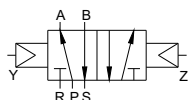
### Ordering Code

- 4A4** - **10 - 15**
- 4A4** - 400 series, Directional Air Pilot Valve
- 10** - 5/2 way Single Air Pilot
- 20** - 5/2 way Double Air Pilot
- 30C** - 5/3 way Double Air Pilot Close Center
- 30E** - 5/3 way Double Air Pilot Exhaust Center
- 30P** - 5/3 way Double Air Pilot Open Center
- 15** - G 1/2"

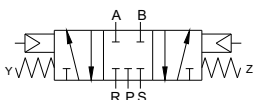
P.N.: 4A410-



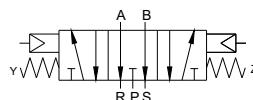
P.N.: 4A420-



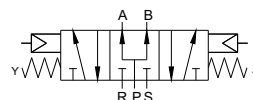
P.N.: 4A430C-



P.N.: 4A430E-



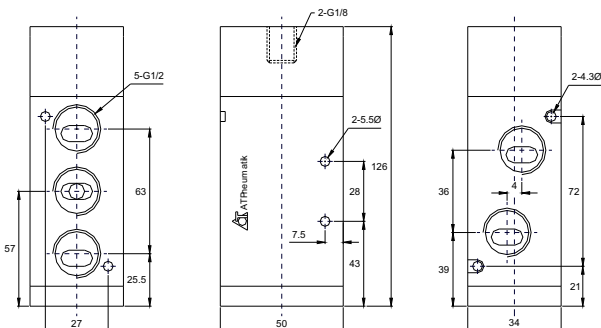
P.N.: 4A430P-



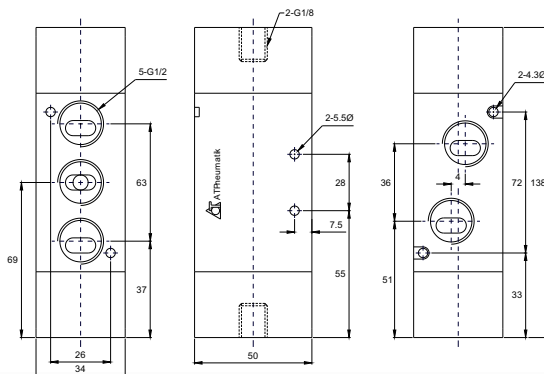
### Air Pilot Valve Specification

Part Number	4A410-15	4A420-15	4A430C-15	4A430E-15	4A430P-15
Orifice Size	50mm <sup>2</sup> (CV=2.79)			30mm <sup>2</sup> (CV=1.68)	
Port Connection	Supply, Outlet, Exhaust G 1/2"				
Working Medium	40 Micron Filtered Air				
Working Pressure	0.15 ~ 0.8 MPa, 1.5 ~ 8 Kg/cm <sup>2</sup> , 22 ~ 117.6 PSI				
Maximum Test Pressure	1 MPa, 10 Kg/cm <sup>2</sup> , 150 PSI				
Working Temperature	5 ~ 60°C, 41 ~ 140°F				
Switching Cycle	5 Cycle / Sec				

**4A410 -15** 5/2 way Single Air Pilot Valve

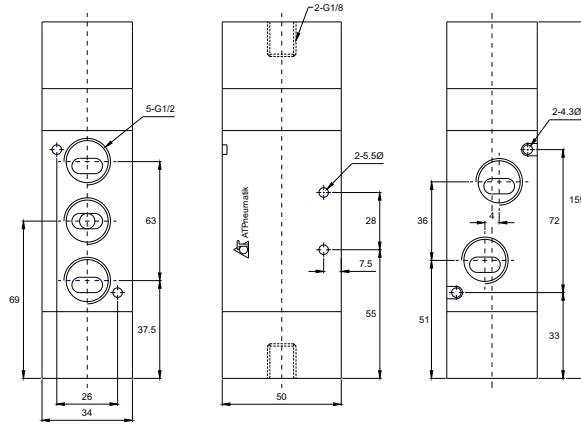


**4A420 -15** 5/2 way Double Air Pilot Valve

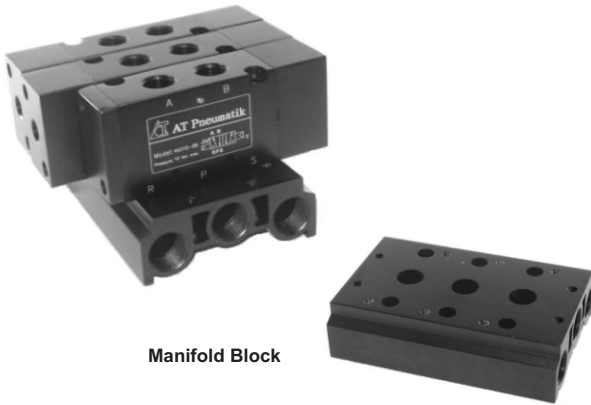


Dimensions are in mm

## 4A430 -15 5/3 way Double Air Pilot Valve



### Manifold Block for Air Pilot Valve



Manifold Block

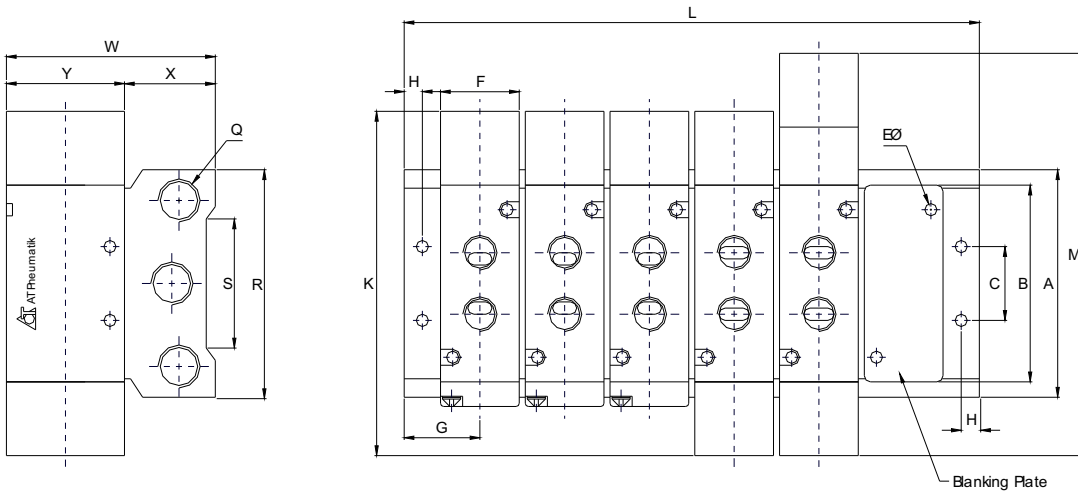
### Ordering Code

**100M - N - F**

- 100M** - 100 series valve
- 200M** - 200 series valve
- 300M** - 300 series valve
- 400M** - 400 series valve

**N** - Specify the required valves quantity when ordering

Manifold is available from minimum of 2 stations to maximum of 12 stations



Note: n = number of valve or station

### Manifold Dimension

Manifold Series	A	B	C	E	F	G	H	K	L	M	Q	R	S	W	X	Y
<b>100M- F</b>	58	44	20	4.2	18.3	19	5	69	$\{(n-1) \times 19\} + 38$	96	G 1/4"	40	30	78.5	25	27
<b>200M- F</b>	61	51	21	4.3	22.4	23	6	78	$\{(n-1) \times 23\} + 46$	111	G 1/4"	43	32	92.5	26	35
<b>300M- F</b>	75	65	26	4.5	27.3	27	6	96	$\{(n-1) \times 28\} + 54$	130	G 3/8"	53	48	99	30	40
<b>400M- F</b>	10	95	32	5.5	34.3	31.5	7	128	$\{(n-1) \times 35\} + 63$	163	G 1/2"	68	67	112	38	50

Dimensions are in mm



## 100 Series Directional Air Pilot Valve

Single Air Pilot Valve



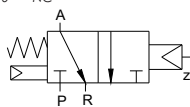
Double Air Pilot Valve



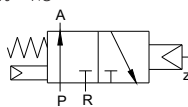
### Ordering Code

- 3A1** - **10** - **M5** - **NO**
- 3A1** - 100 series, Directional Air Pilot Valve
- 10** - 3/2 way Single Air Pilot  
**20** - 3/2 way Double Air Pilot
- M5** - M5 X 0.8  
**06** - G 1/8"
- Blank** - Normally Closed  
**NO** - Normally Open

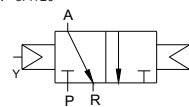
P.N.: 3A110- -NC



P.N.: 3A110- -NO



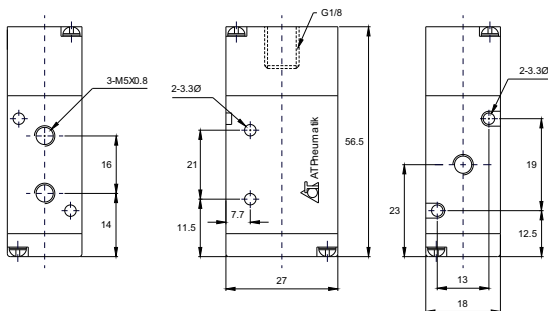
P.N.: 3A120-



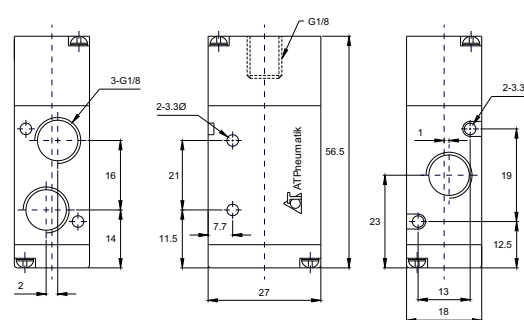
### Air Pilot Valve Specification

Part Number	3A110-M5	3A120-M5	3A110-06	3A120-06
Orifice Size	10mm <sup>2</sup> (CV=0.56)		12mm <sup>2</sup> (CV=0.67)	
Port Connection	Supply, Outlet, Exhaust M5 X 0.8		Supply, Outlet, Exhaust G 1/8"	
Working Medium	40 Micron Filtered Air			
Working Pressure	0.15 ~ 0.8 MPa, 1.5 ~ 8 Kg/cm <sup>2</sup> , 22 ~ 117.6 PSI			
Maximum Test Pressure	1 MPa, 10 Kg/cm <sup>2</sup> , 150 PSI			
Working Temperature	5 ~ 60°C, 41 ~ 140°F			
Switching Cycle	5 Cycle / Sec			

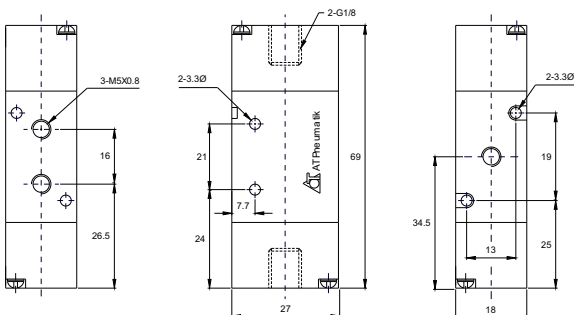
**3A110-M5-NO/NC** 3/2 way Single Air Pilot Valve



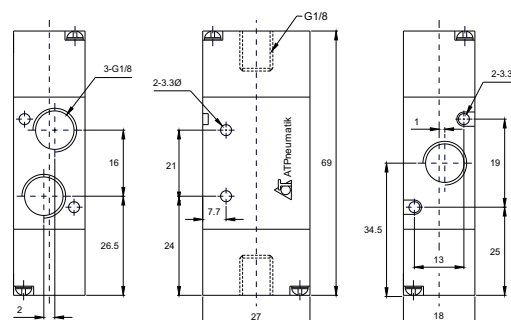
**3A110-06-NO/NC** 3/2 way Single Air Pilot Valve



**3A120-M5** 3/2 way Double Air Pilot Valve



**3A120-06** 3/2 way Double Air Pilot Valve



Dimensions are in mm

## 200 Series Directional Air Pilot Valve

Single Air Pilot Valve



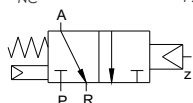
Double Air Pilot Valve



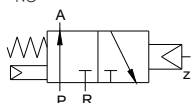
### Ordering Code

- |              |   |   |   |           |   |           |
|--------------|---|---|---|-----------|---|-----------|
| <b>3A2</b>   | - | <b>10</b>                               | - | <b>06</b> | - | <b>NO</b> |
| <b>3A2</b>   | - | 200 series, Directional Air Pilot valve |   |           |   |           |
| <b>10</b>    | - | 3/2 way Single Air Pilot                |   |           |   |           |
| <b>20</b>    | - | 3/2 way Double Air Pilot                |   |           |   |           |
| <b>06</b>    | - | G 1/8"                                  |   |           |   |           |
| <b>08</b>    | - | G 1/4"                                  |   |           |   |           |
| <b>Blank</b> | - | Normally Closed                         |   |           |   |           |
| <b>NO</b>    | - | Normally Open                           |   |           |   |           |

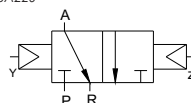
P.N.: 3A210- -NC



P.N.: 3A210- -NO



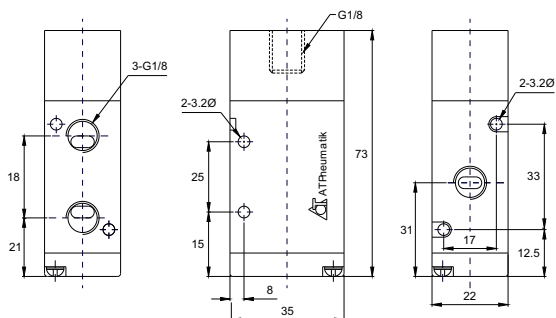
P.N.: 3A220-



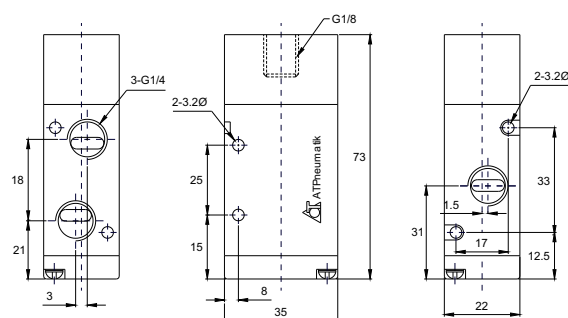
#### Air Pilot Valve Specification

Part Number	3A210-06	3A220-06	3A210-08	3A220-08
Orifice Size	14mm <sup>2</sup> (CV=0.78)		16mm <sup>2</sup> (CV=0.89)	
Port Connection	Supply, Outlet, Exhaust G 1/8"		Supply & Outlet G 1/4", Exhaust G 1/8"	
Working Medium	40 Micron Filtered Air			
Working Pressure	0.15 ~ 0.8 MPa, 1.5 ~ 8 Kg/cm <sup>2</sup> , 22 ~ 117.6 PSI			
Maximum Test Pressure	1 MPa, 10 Kg/cm <sup>2</sup> , 150 PSI			
Working Temperature	5 ~ 60°C, 41 ~ 140°F			
Switching Cycle	5 Cycle / Sec			

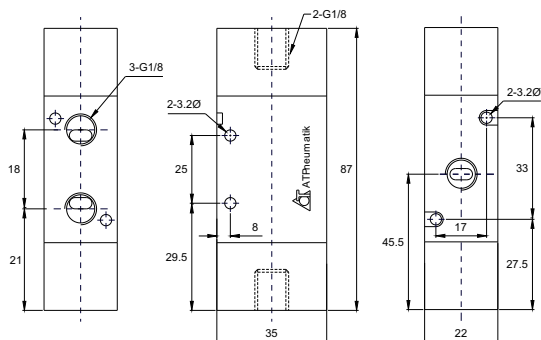
**3A210-06-NO/NC** 3/2 way Single Air Pilot Valve



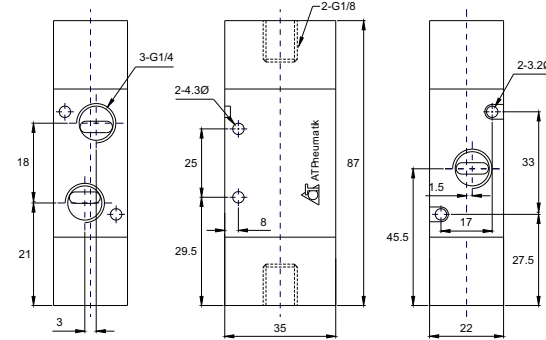
**3A210-08-NO/NC** 3/2 way Single Air Pilot Valve



**3A220-06** 3/2 way Double Air Pilot Valve



**3A220-08** 3/2 way Double Air Pilot Valve



Dimensions are in mm

### 300 Series Directional Air Pilot Valve

Single Air Pilot Valve



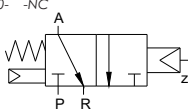
Double Air Pilot Valve



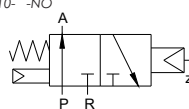
### Ordering Code

- 3A3** - **10 - 08 - NO**
- 3A3** - 300 series, Directional Air Pilot Valve
- 10** - 3/2 way Single Air Pilot
- 20** - 3/2 way Double Air Pilot
- 08** - G 1/4"
- 10** - G 3/8"
- Blank** - Normally Closed
- NO** - Normally Open

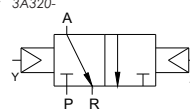
P.N.: 3A310- -NC



P.N.: 3A310- -NO



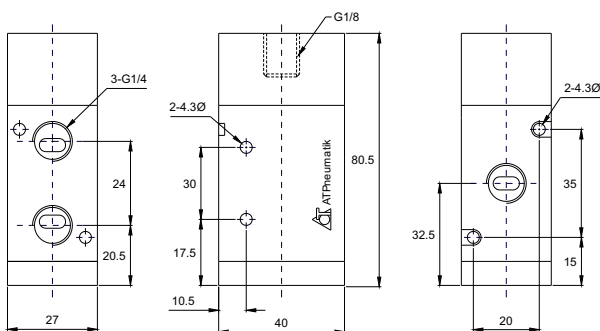
P.N.: 3A320-



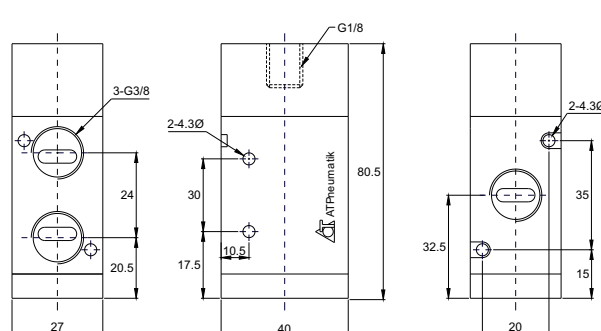
### Air Pilot Valve Specification

Part Number	3A310-08	3A320-08	3A310-10	3A320-10
Orifice Size	25mm <sup>2</sup> (CV=1.40)		30mm <sup>2</sup> (CV=1.68)	
Port Connection	Supply, Outlet, Exhaust G 1/8"		Supply & Outlet G 1/4", Exhaust G 1/8"	
Working Medium	40 Micron Filtered Air			
Working Pressure	0.15 ~ 0.8 MPa, 1.5 ~ 8 Kg/cm <sup>2</sup> , 22 ~ 117.6 PSI			
Maximum Test Pressure	1 MPa, 10 Kg/cm <sup>2</sup> , 150 PSI			
Working Temperature	5 ~ 60°C, 41 ~ 140°F			
Switching Cycle	5 Cycle / Sec			

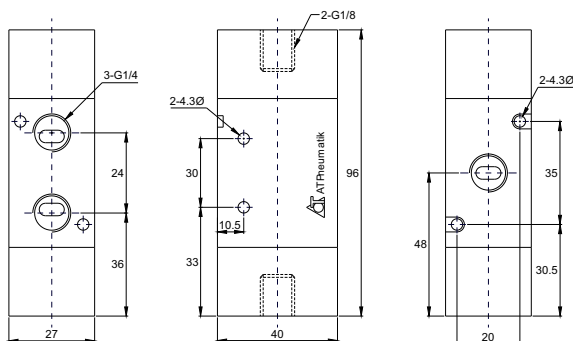
**3A310-08-NO/NC** 3/2 way Single Air Pilot Valve



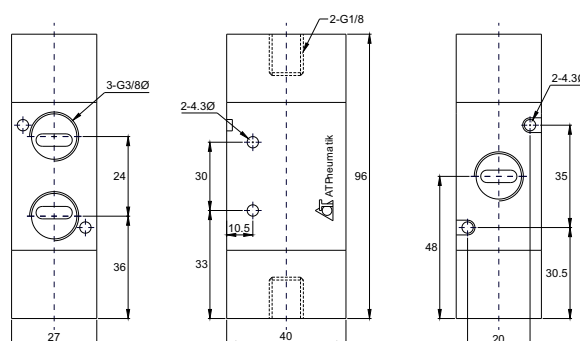
**3A310-10-NO/NC** 3/2 way Single Air Pilot Valve



**3A320-08** 3/2 way Single Air Pilot Valve



**3A320-10** 3/2 way Single Air Pilot Valve



Dimensions are in mm

## 400 Series Directional Air Pilot Valve

Single Air Pilot Valve



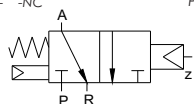
Double Air Pilot Valve



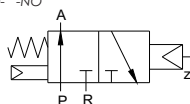
### Ordering Code

- |              |   |   |   |           |   |           |
|--------------|---|---|---|-----------|---|-----------|
| <b>3A4</b>   | - | <b>10</b>                               | - | <b>15</b> | - | <b>NO</b> |
| <b>3A4</b>   | - | 400 series, Directional Air Pilot Valve |   |           |   |           |
| <b>10</b>    | - | 3/2 way Single Air Pilot                |   |           |   |           |
| <b>20</b>    | - | 3/2 way Double Air Pilot                |   |           |   |           |
| <b>15</b>    | - | G 1/2"                                  |   |           |   |           |
| <b>Blank</b> | - | Normally Closed                         |   |           |   |           |
| <b>NO</b>    | - | Normally Open                           |   |           |   |           |

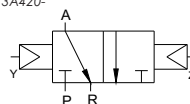
P.N.: 3A410- -NC



P.N.: 3A410- -NO



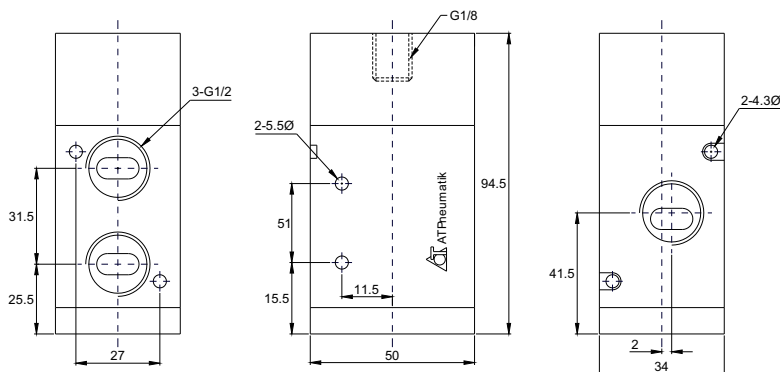
P.N.: 3A420-



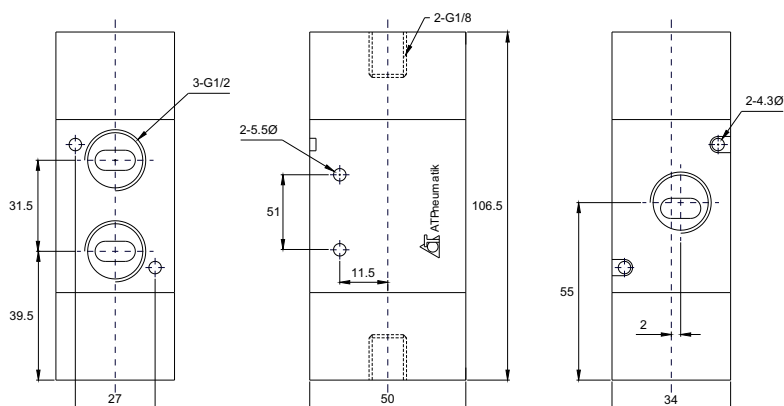
### Air Pilot Valve Specification

Part Number	3A410-15	3A420-15
Orifice Size	50mm <sup>2</sup> (CV=2.79)	
Port Connection	Supply, Outlet, Exhaust G 1/2"	
Working Medium	40 Micron Filtered Air	
Working Pressure	0.15 ~ 0.8 MPa, 1.5 ~ 8 Kg/cm <sup>2</sup> , 22 ~ 117.6 PSI	
Maximum Test Pressure	1 MPa, 10 Kg/cm <sup>2</sup> , 150 PSI	
Working Temperature	5 ~ 60°C, 41 ~ 140°F	
Switching Cycle	5 Cycle / Sec	

**3A410-15-NO/NC** 3/2 way Single Air Pilot Valve



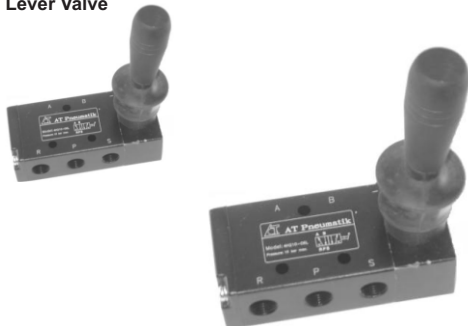
**3A420-15** 3/2 way Double Air Pilot Valve



Dimensions are in mm

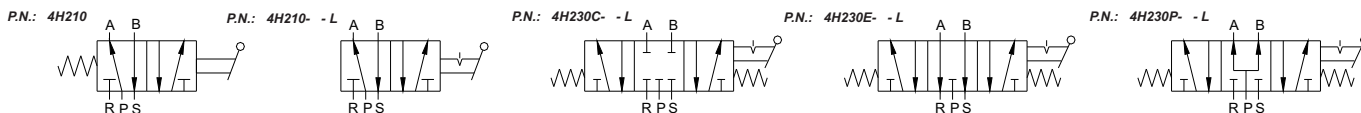
**Mechanical Hand Lever Valve**

Hand Lever Valve

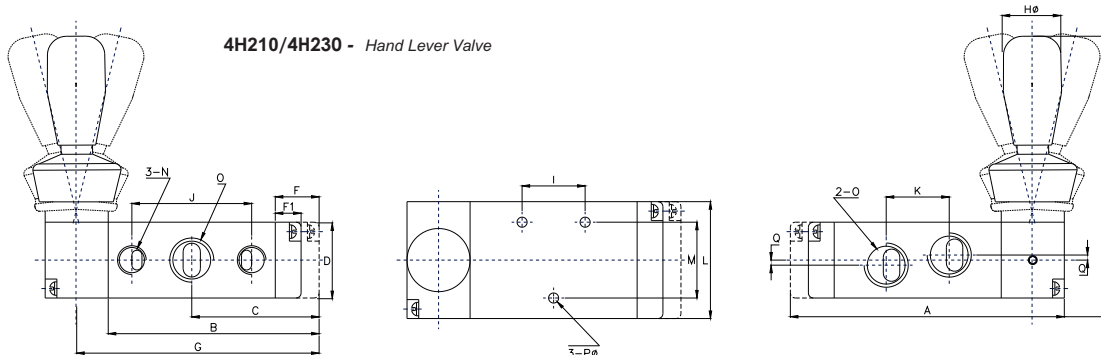


**Ordering Code**

- 4H** - 2 - 10 - 06 - L
- 4H** - Hand Lever Valve
- 2** - 200 series
- 3** - 300 series
- 4** - 400 series
- 10** - 5/2 way Hand Lever Valve
- 30C** - 5/3 way Hand Lever Valve Center Close
- 30P** - 5/3 way Hand Lever Valve Exhaust Center
- 30E** - 5/3 way Hand lever Valve Open Center
- 06** - G 1/8"                      **08** - G 1/4 "
- 10** - G 3/8"                     **15** - G 1/2"
- Blank** - Spring Return      **L** - With Lock



Hand Lever Valve Dimension										
Part Number	4H210-06	4H210-08	4H230-06	4H230-08	4H310-08	4H310-10	4H330-08	4H330-10	4H410-15	4H430-15
	4H210-06-L	4H210-08-L	4H230-06-L	4H230-08-L	4H310-08-L	4H310-10-L	4H330-08-L	4H330-10-L		
Working Medium	40Micron Filtered Air									
Flow Rate	CV = 0.78	CV = 0.89	CV = 0.67		CV = 1.4	CV = 1.68	CV = 1.00		CV = 2.79	CV = 1.68
Effectine Section Area	14mm <sup>2</sup>	16mm <sup>2</sup>	12mm <sup>2</sup>		25mm <sup>2</sup>	30mm <sup>2</sup>	18mm <sup>2</sup>		50mm <sup>2</sup>	30mm <sup>2</sup>
Connection	Supply, Output &	G 1/8"	G 1/4"	G 1/8"	G 1/4"	G 1/4"	G 3/8"	G 1/4"	G 3/8"	G 1/2"
	Exhaust Port	G 1/8"	G 1/4"	G 1/8"	G 1/4"	G 1/4"	G 3/8"	G 1/4"	G 3/8"	G 1/2"
Working Pressure	0~1MPa 150 psi									
Working Temperature	0~60°C									



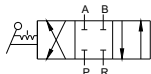
Hand Lever Valve Dimension										
Part Number	4H210-06	4H210-08	4H230-06	4H230-08	4H310-08	4H310-10	4H330-08	4H330-10	4H410-15	4H430-15
	4H210-06-L	4H210-08-L	4H230-06-L	4H230-08-L	4H310-08-L	4H310-10-L	4H330-08-L	4H330-10-L	4H410-15-L	4H430-15-L
A	76			95		96		115	126	147
B	56.6			75.5		72		91	102	123
C	31.5			31.5		40		60	55.5	76.5
D	22			22		27		27	34	34
E	95			95		100		100	110	110
F	6.5			19		7.5		19	8.5	21
G	66.5			85.5		84		103	114	135
H	18			18		18		18	18	18
I	20			20		24		24	28	28
J	36			36		45		45	63	63
K	21			21		24		24	36	36
L	35			35		40		40	50	50
M	21			21		27		27	35	35
N	G 1/8		G 1/8		G 1/4	G 3/8	G 1/4	G 3/8	G 1/2	G 1/2
O	G 1/8	G 1/4	G 1/8	G 1/4	G 1/4	G 3/8	G 1/4	G 3/8	G 1/2	G 1/2
P	4.3		4.3		4.3		4.3		5.5	5.5
Q	1.5(-)		1.5(-)		2(-)		2(-)		-	-

Dimensions are in mm

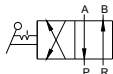


**Rotary Hand Lever Valve**

4/3 way Center Closed Valve



4/2 way Valve

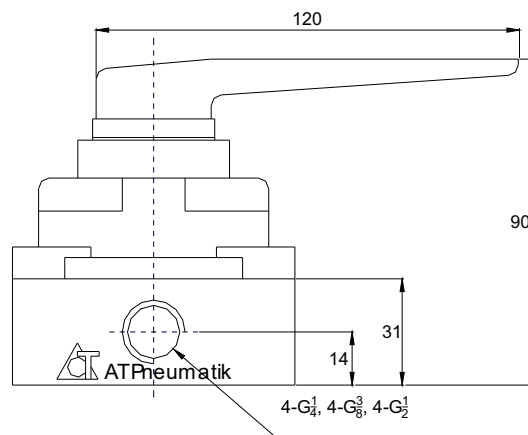
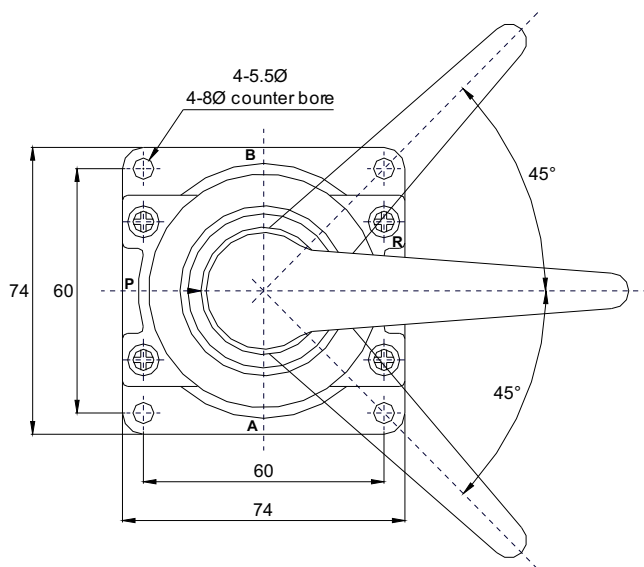


**Ordering Code**

- HV - 4 - 00 - 02**
- H** - Rotary Hand Lever Valve
  - 00** - 4/2 way Rotary Hand Lever Valve
  - 30C** - 4/3 way Rotary Hand Lever Valve Center Close
  - 02** - G 1/8"
  - 03** - G 3/8"
  - 04** - G 1/2"

Hand Lever Valve Specification			
Part Number	HV400-02	HV400-03	HV400-04
Working Medium	40 micron Filtered Air		
Mounting	Any position		
Type	4/3 way center closed		
Orifice Size	30 mm <sup>2</sup> ; CV = 1.68		
Connection	G 1/4"	G 3/8"	G 1/2"
Working Pressure	0 ~ 1.0 Mpa, 150 psi		
Operating Temperature	0 ~ 60°C		
Voltage Range	±10%		
Body Material	Aluminum		
Seal Material	NBR		

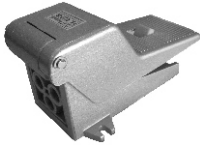
HV400 - 4/3 way Hand Lever valve



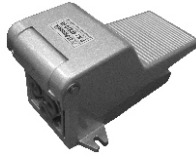
Dimensions are in mm

## 3/2 & 4/2 way Mechanical Foot Valve

4F210- -L



4F210-



FV320 /FV420



4F210 - -L-G



### Ordering Code

**4F210 - 08 - L - G**

**4F210** - 5/2 way Foot Valve

**08** - G 1/4"

**Blank** - Without Lock

**L** - With Lock

**G** - With Guard

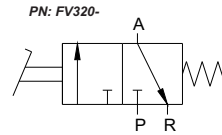
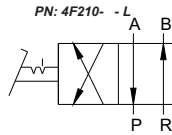
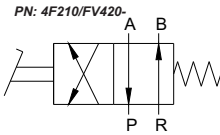
**FV - 320**

**FV** - Compact Foot Valve

**320** - 3/2 way Foot Valve

**420** - 5/2 way Foot Valve

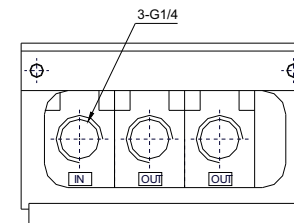
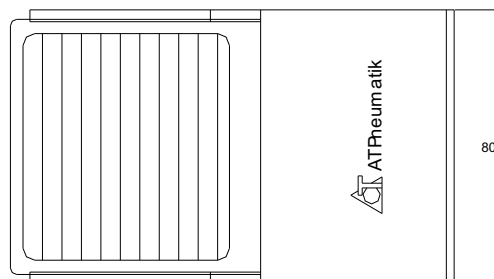
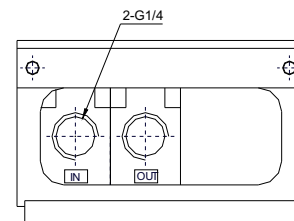
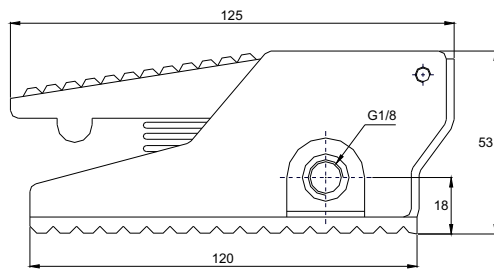
**08** - G 1/4"



### Foot Valve Specification

Part Number	4F210-08	4F210-08L	4F210-08G	4F210-08LG	FV420	FV320
Working Medium	40 Micron Filtered Air					
Type	4/2 way				4/2 way	3/2 way
Port Connection	Air Supply, Output Port = G1/4" Exhaust = Built-in Silencer				Air Supply, Output Port = G1/4" Exhaust Port = G1/8"	
Motion Pattern	Direct Drive Type					
Working Pressure	0~1.0 Mpa, 150 psi					
Working Temperature	0~60°C					

FV320 / FV420 - 4/3 way Hand Lever valve

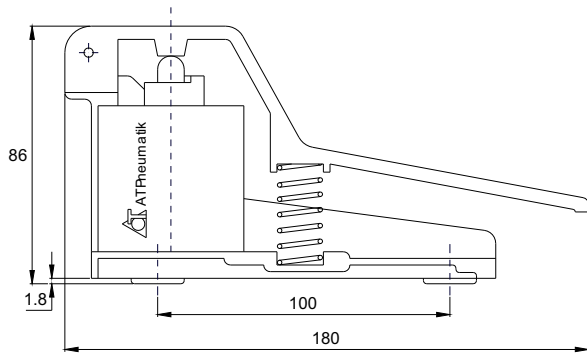


Dimensions are in mm

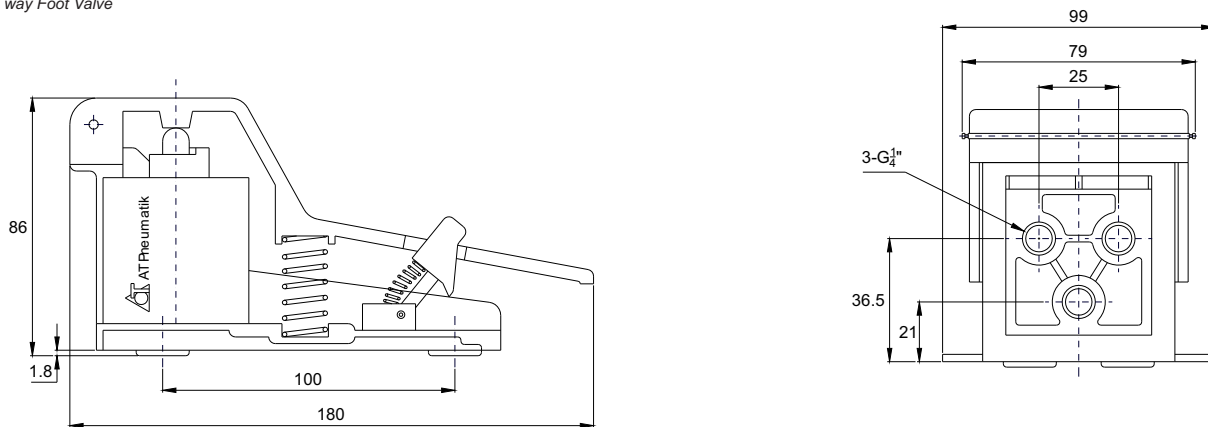


**Mechanical Foot Valve**

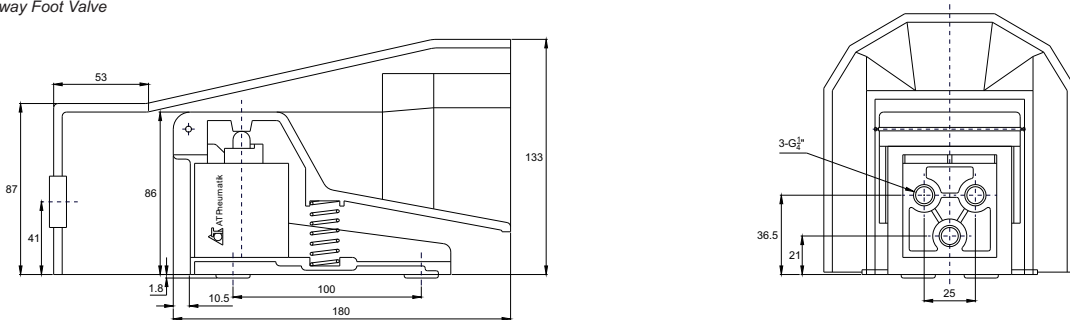
**FV 210 - 5/2 way Foot Valve**



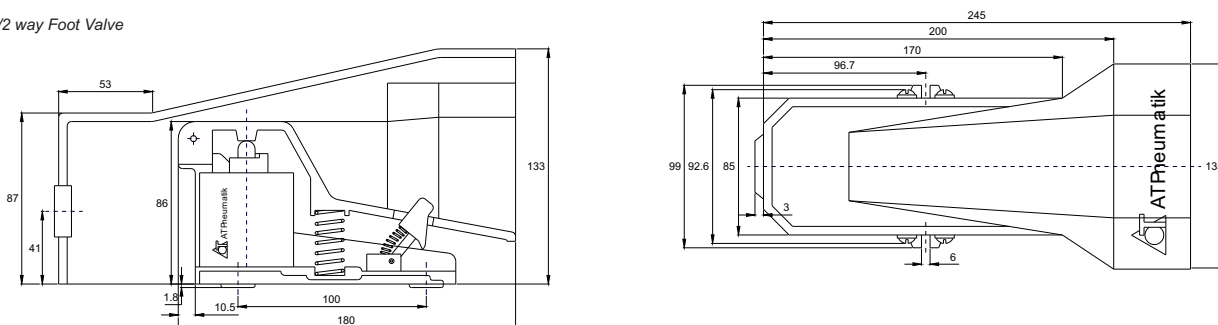
**FV 210 -L 5/2 way Foot Valve**



**FV 210 - G 5/2 way Foot Valve**



**FV 210 - LG 5/2 way Foot Valve**



Dimensions are in mm

## Mechanical Valve



3/2 way Selector



3/2 way Emergency Stop



3/2 way Roller



5/2 way Selector



5/2 way Push Button



5/2 way Roller

### Ordering Code

**MSV - 86 - 32 - 2 - R**

**MSV** - Mechanical Valve

**86** - 86 Series

**32** - 3/2-way Valve

**52** - 5/2-way Valve

**1** - G 1/8"

**2** - G 1/4"

**R** - Roller Valve

**LB** - Selector Knob (long)

**PP** - Flat Push Button

**EB** - Emergency Push

Button w/ Lock

**TB** - Selector Knob (short)

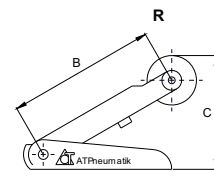
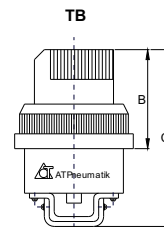
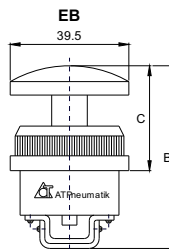
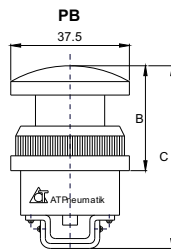
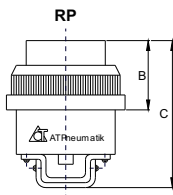
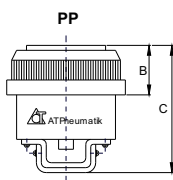
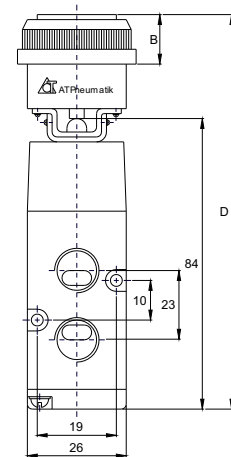
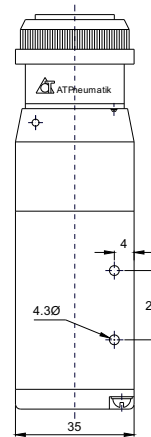
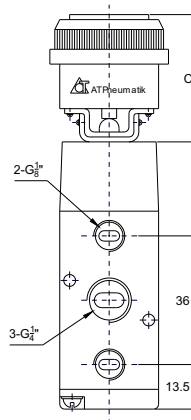
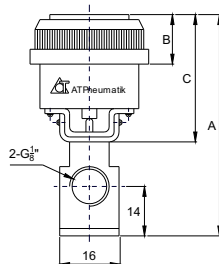
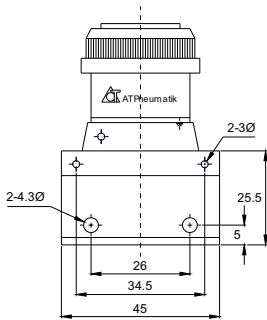
**PB** - Mushroom Head

**PPL** - Raised Push Button

### Mechanical Valve Specification & Dimension

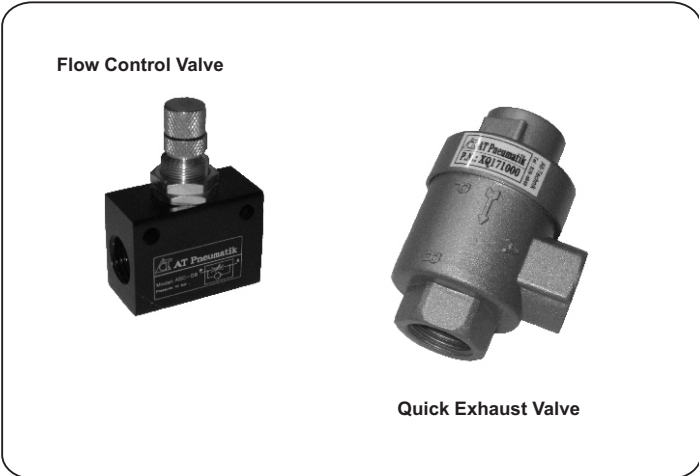
Model	MSV86321	MSV86521	Actuator							
			PP	PPL	LB	TB	EB	PB	R	
Port Connection	G 1/8"	G 1/8" / G 1/4"								
Working Medium	Air	Air	<b>A</b>	66.5	71.5	85.5	89.5	86.5	83.5	59.5
Working Pressure	1 MPa, 150 PSI	1 MPa, 150 PSI	<b>B</b>	17	22	33	34	37	34	42
Working Temperature	5 ~ 60°C, 41 ~ 140°F	5 ~ 60°C, 41 ~ 140°F	<b>C</b>	41	46	60	64	61	58	34.5
Orifice Size	12mm <sup>2</sup> (CV = 0.67)	16mm <sup>2</sup> (CV = 0.89)	<b>D</b>	125	130	144	148	145	142	118.5

MSV-86321- 3/2 Mechanical Valve



Dimensions are in mm

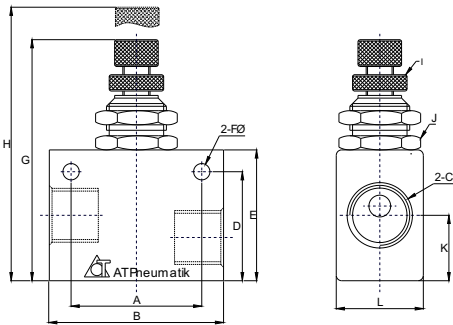
## Flow Control and Quick Exhaust Valve



### Ordering Code

<b>ASC</b>	-	<b>08</b>		
<b>ASC</b>	-	In-Line Flow Control Valve		
<b>06</b>	-	G 1/8"	<b>08</b>	- G 1/4"
<b>10</b>	-	G 3/8"	<b>15</b>	- G1/2"
<b>QEA</b>	-	<b>08</b>		
<b>QEA</b>	-	Quick Exhaust Valve		
<b>06</b>	-	G 1/8"	<b>08</b>	- G 1/4"
<b>10</b>	-	G 3/8"	<b>15</b>	- G1/2"

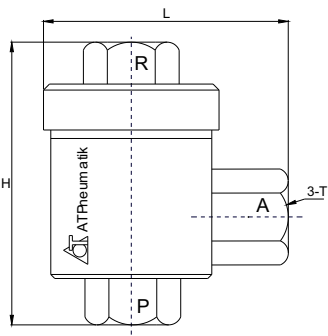
**ASC - Flow Control Valve**



Flow Control Specification				
Model	ASC-06	ASC-08	ASC-10	ASC-15
Port Connection	G 1/8"	G 1/4"	G 3/8"	G 1/2"
Working Medium	Air			
Working Pressure	1 MPa, 10 Kgf/cm <sup>2</sup> , 150 PSI			
Working Temperature	5 ~ 60°C, 41 ~ 140°F			

Flow Control Valve Dimension												
Part Number	A	B	C	D	E	F	G	H	I	J	A	L
ASC-06	22	32	G1/8	22	27	4.3	49.7	56.5	M06 X 0.5	M12 X 0.75	12	18
ASC-08	26	36	G1/4	22	27	4.3	49.7	56.5	M06 X 0.5	M12 X 0.75	12	18
ASC-10	28	40	G3/8	25	30	4.3	52.7	59.5	M06 X 0.5	M12 X 0.75	13	22
ASC-15	28	40	G1/2	30	35	4.3	58.7	65.5	M06 X 0.5	M12 X 0.75	13.5	26

**QEA - Quick Exhaust Valve**



Quick Exhaust Specification				
Part Number	QEA-06	QEA-08	QEA-10	QEA-15
Port Connection	G 1/8"	G 1/4"	G 3/8"	G 1/2"
Flow Rate	0.9 m <sup>3</sup> / min	0.9 m <sup>3</sup> / min	2.5 m <sup>3</sup> / min	4.5 m <sup>3</sup> / min
Working Medium	Air			
Working Pressure	1 MPa, 10 Kgf/cm <sup>2</sup> , 150 PSI			
Working Temperature	5 ~ 60°C, 41 ~ 140°F			

Quick Exhaust Dimension				
Part Number	QEA-06	QEA-08	QEA-10	QEA-15
T	G 1/8"	G 1/4"	G 3/8"	G 1/2"
H	51	51	68	77
L	45	45	62	86

Dimensions are in mm

## Air Filter + Regulator + Lubricator

AC1000



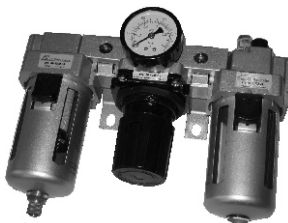
AC2000



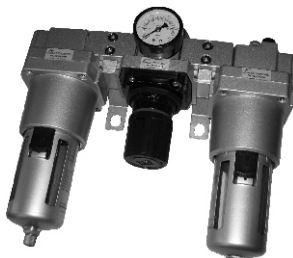
AC3000



AC4000



AC5000



### 1000 and 2000 Series Air Filter + Regulator + Lubricator

Part Number	AC1000-M5	AC2000-01	AC2000-02	AC1000-M5D	AC2000-01D	AC2000-02D
	Manual Drain			Automatic Drain		
Port Size	M05	G 1/8"	G 1/4"	M05	G 1/8"	G 1/4"
Pressure Gauge Connection	1/16"	G 1/8"	G 1/8"	1/16"	G 1/8"	G 1/8"
Flow Rate (l/min)	90	500	500	90	500	500
Working Pressure	1 Mpa, 10 Kgf/cm <sup>2</sup> , 150 psi					
Regulating Pressure	0.05 to 0.85 Mpa					
Working Temperature	5 to 60°C					
Recommended Lubricant	SAE10					
Bowl Material	Polycarbonate					
Filter Element	Bronze 5, 20, 25 μ					
Metal Guard Bowl	Not Available					

### 3000 series Air Filter + Regulator + Lubricator

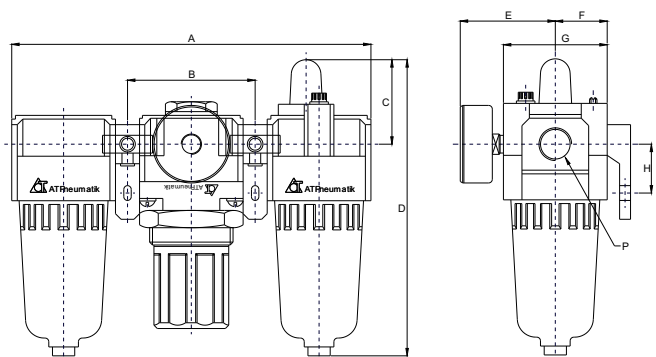
Part Number	AC3000-02	AC-3000-03	AC3000-02D	AC3000-03D
	Manual Drain		Automatic Drain	
Port Size	1/4"	3/8"	1/4"	3/8"
Pressure Gauge Connection	1/8"	1/8"	1/8"	1/8"
Flow Rate (l/min)	2000	2000	2000	2000
Working Pressure	1 Mpa, 10 Kgf/cm <sup>2</sup> , 150 psi			
Regulating Pressure	0.05 to 0.85 Mpa			
Working Temperature	5 to 60°C			
Recommended Lubricant	SAE10			
Bowl Material	Polycarbonate			
Filter Element	Bronze 5, 20, 25 μ			
Metal Guard Bowl	Available			

### 4000 Series Air Filter + Regulator + Lubricator

Part Number	AC4000-03	AC4000-04	AC4000-06	AC4000-03D	AC400-04D	AC4000-06D
	Manual Drain			Automatic Drain		
Port Size	G 3/8"	G 1/2"	G 3/4"	G 3/8"	G 1/2"	G 3/4"
Pressure Gauge Connection	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"
Flow Rate (l/min)	4000	4000	4500	4000	4000	4500
Working Pressure	1 Mpa, 10 Kgf/cm <sup>2</sup> , 150 psi					
Regulating Pressure	0.05 to 0.85 Mpa					
Working Temperature	5 to 60°C					
Recommended Lubricant	SAE10					
Bowl Material	Polycarbonate					
Filter Element	Bronze 5, 20, 25 μ					
Metal Guard Bowl	Available					

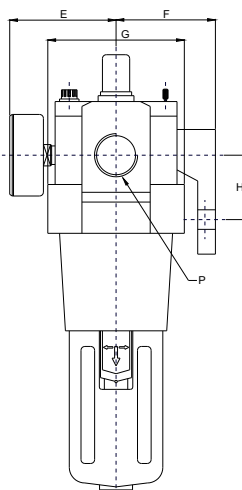
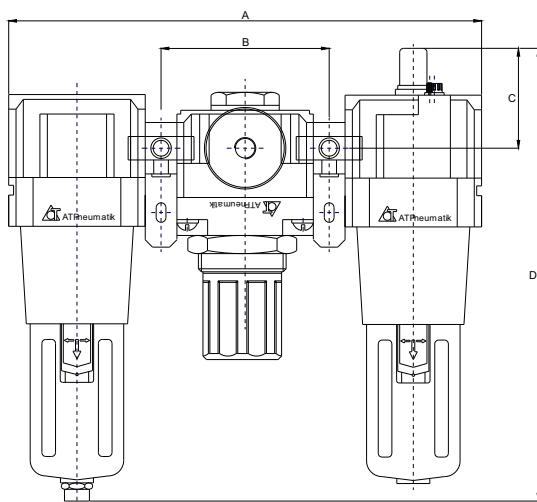
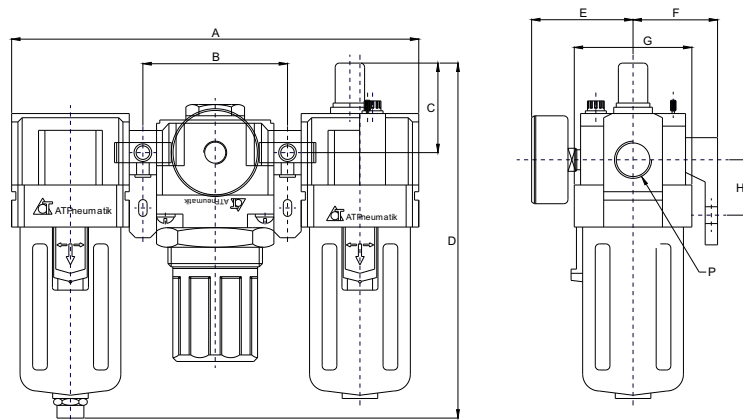
### 5000 Series Air filter + Regulator + Lubricator

Part Number	AC5000-06	AC5000-10	AC5000-06D	AC5000-10D
	Manual Drain		Automatic Drain	
Port Size	G 3/4"	G 1"	G 3/4"	G 1"
Pressure Gauge Connection	G 1/4"	G 1/4"	G 1/4"	G 1/4"
Flow Rate (l/min)	5000	5000	5000	5000
Working Pressure	1 Mpa, 10 Kgf/cm <sup>2</sup> , 150 psi			
Regulating Pressure	0.05 to 0.85 Mpa			
Working Temperature	5 to 60°C			
Recommended Lubricant	SAE10			
Bowl Material	Polycarbonate			
Filter Element	Bronze 5, 20, 25 μ			
Metal Guard Bowl	Available			



AC1000-  
AC2000-

AC3000-  
AC4000-



AC5000-

Air Filter + Regulator + Lubricator Dimensions									
Part Number	P (Port Size)	A	B	C	D	E	F	G	H
AC1000-M5	M05	109.5	50.5	29	58	26	25	25	20
AC2000-01	G 1/8"	164.5	78	45	90	56.8	30	40	24
AC2000-02	G 1/4"	164.5	78	45	90	56.8	30	40	24
AC3000-02	G 1/4"	211	92.5	58.5	117	60.8	41	53	35
AC3000-03	G 3/8"	211	92.5	58.5	117	60.8	41	53	35
AC4000-03	G 3/8"	262	112	77	154	70.5	41	70	40
AC4000-04	G 1/2"	262	112	77	154	70.5	41	70	40
AC4000-06	G 3/4"	267	114	82	164	70.5	50	70	40
AC5000-06	G 3/4"	338	116	97.5	195	75.5	69.8	90	50
AC5000-10	G 1"	338	116	97.5	195	75.5	69.8	90	50

Dimensions are in mm

## Air Filter Regulator + Lubricator

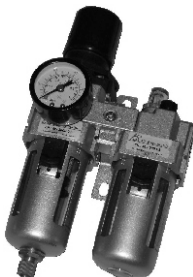
AC1010



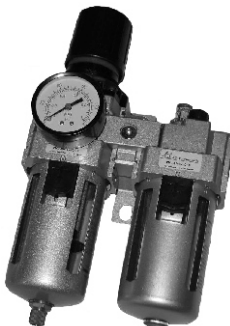
AC2010



AC3010



AC4010



AC5010

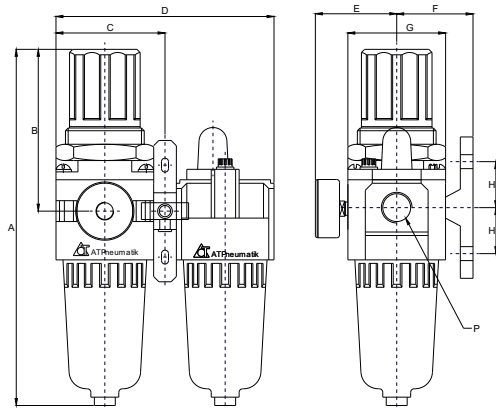


1000 and 2000 Series Air Filter Regulator + Lubricator						
Part Number	AC1010-M5	AC2010-01	AC2010-02	AC1010-M5D	AC2010-01D	AC2010-02D
	Manual Drain			Automatic Drain		
Port Size	M05	G 1/8"	G 1/4"	M05	G 1/8"	G 1/4"
Pressure Gauge Connection	1/16"	G 1/8"	G 1/8"	1/16"	G 1/8"	G 1/8"
Flow Rate (l/min)	90	500	500	90	500	500
Working Pressure	1 Mpa, 10 Kgf/cm <sup>2</sup> , 150 psi					
Regulating Pressure	0.05 to 0.85 Mpa					
Working Temperature	5 to 60°C					
Recommended Lubricant	SAE10					
Bowl Material	Polycarbonate					
Filter Element	Bronze 5, 20, 25 μ					
Metal Guard Bowl	Not Available					

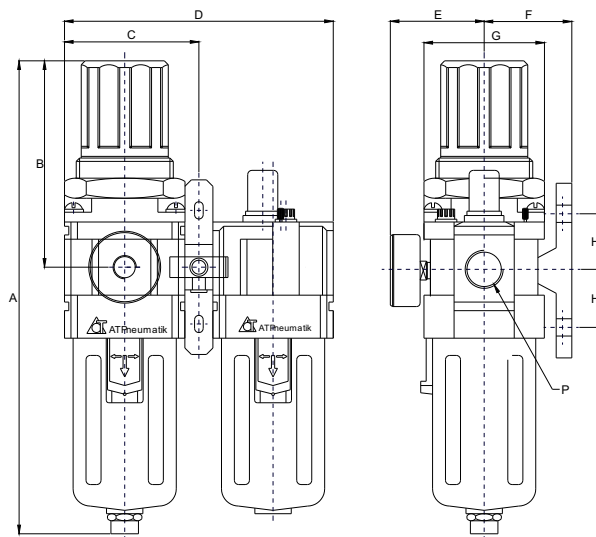
3000 series Air Filter Regulator + Lubricator				
Part Number	AC3010-02	AC3010-03	AC3010-02D	AC3010-03D
	Manual Drain		Automatic Drain	
Port Size	1/4"	3/8"	1/4"	3/8"
Pressure Gauge Connection	1/8"	1/8"	1/8"	1/8"
Flow Rate (l/min)	1700	1700	1700	1700
Working Pressure	1 Mpa, 10 Kgf/cm <sup>2</sup> , 150 psi			
Regulating Pressure	0.05 to 0.85 Mpa			
Working Temperature	5 to 60°C			
Recommended Lubricant	SAE10			
Bowl Material	Polycarbonate			
Filter Element	Bronze 5, 20, 25 μ			
Metal Guard Bowl	Available			

4000 Series Air Filter Regulator + Lubricator						
Part Number	AC4010-03	AC4010-04	AC4010-06	AC4010-03D	AC4010-04D	AC4010-06D
	Manual Drain			Automatic Drain		
Port Size	G 3/8"	G 1/2"	G 3/4"	G 3/8"	G 1/2"	G 3/4"
Pressure Gauge Connection	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"
Flow Rate (l/min)	3000	3000	3000	3000	3000	3000
Working Pressure	1 Mpa, 10 Kgf/cm <sup>2</sup> , 150 psi					
Regulating Pressure	0.05 to 0.85 Mpa					
Working Temperature	5 to 60°C					
Recommended Lubricant	SAE10					
Bowl Material	Polycarbonate					
Filter Element	Bronze 5, 20, 25 μ					
Metal Guard Bowl	Available					

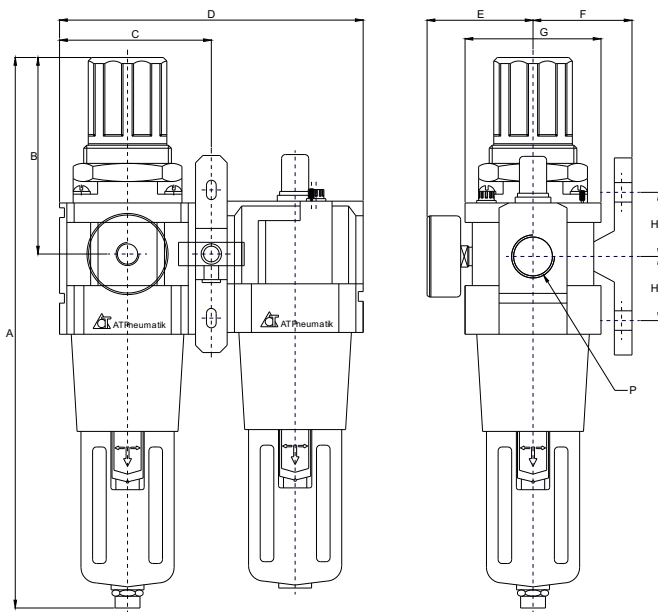
5000 Series Air Filter Regulator + Lubricator				
Part Number	AC5010-06	AC5010-10	AC5010-06D	AC5010-10D
	Manual Drain		Automatic Drain	
Port Size	G 3/4"	G 1"	G 3/4"	G 1"
Pressure Gauge Connection	G 1/4"	G 1/4"	G 1/4"	G 1/4"
Flow Rate (l/min)	4000	4000	4000	4000
Working Pressure	1 Mpa, 10 Kgf/cm <sup>2</sup> , 150 psi			
Regulating Pressure	0.05 to 0.85 Mpa			
Working Temperature	5 to 60°C			
Recommended Lubricant	SAE10			
Bowl Material	Polycarbonate			
Filter Element	Bronze 5, 20, 25 μ			
Metal Guard Bowl	Available			



AC1010-  
AC2010-



AC3010-  
AC4010-



AC5010-

**Air Filter Regulator and Lubricator Dimensions**

Part Number	P (Port Size)	A	B	C	D	E	F	G	H
AC1010-M5	M05	91	33	25.5	84.5	26	25	25	20
AC2010-01	G 1/8"	140	50	38	125	56.8	30	40	24
AC2010-02	G 1/4"	140	50	38	125	56.8	30	40	24
AC3010-02	G 1/4"	181	64	38	156.5	60.8	41	53	35
AC3010-03	G 3/8"	181	64	38	156.5	60.8	41	53	35
AC4010-03	G 3/8"	238	84	41	191.5	65.5	50	70	40
AC4010-04	G 1/2"	238	84	41	191.5	65.5	50	70	40
AC4010-06	G 3/4"	253	89	41	193	69.5	50	70	40
AC5010-06	G 3/4"	300	105	48	271.5	75.5	69.8	90	50
AC5010-10	G 1"	300	105	48	271.5	75.5	69.8	90	50

Dimensions are in mm

## Air Filter Pressure Regulator

AW1000



AW2000



1000 and 2000 Series Air Filter Regulator						
Part Number	AW1000-M5	AW2000-01	AW2000-02	AW1000-M5D	AW2000-01D	AW2000-02D
	Manual Drain			Automatic Drain		
Port Size	M05	G 1/8"	G 1/4"	M05	G 1/8"	G 1/4"
Pressure Gauge Connection	1/16"	G 1/8"	G 1/8"	1/16"	G 1/8"	G 1/8"
Flow Rate (l/min)	100	550	550	100	550	550
Working Pressure	1 Mpa, 10 Kgf/cm <sup>2</sup> , 150 psi					
Regulating Pressure	0.05 to 0.85 Mpa					
Working Temperature	5 to 60°C					
Bowl Material	Polycarbonate					
Filter Element	Bronze 5, 20, 25 μ					
Metal Guard Bowl	Not Available					

AW3000



3000 Series Air Filter Regulator				
Part Number	AW3000-02	AW-3000-03	AW3000-02D	AW3000-03D
	Manual Drain		Automatic Drain	
Port Size	G 1/4"	G 3/8"	G 1/4"	G 3/8"
Pressure Gauge Connection	G 1/8"	G 1/8"	G 1/8"	G 1/8"
Flow Rate (l/min)	2000	2000	2000	2000
Working Pressure	1 Mpa, 10 Kgf/cm <sup>2</sup> , 150 psi			
Regulating Pressure	0.05 to 0.85 Mpa			
Working Temperature	5 to 60°C			
Bowl Material	Polycarbonate			
Filter Element	Bronze 5, 20, 25 μ			
Metal Guard Bowl	Available			

AW4000



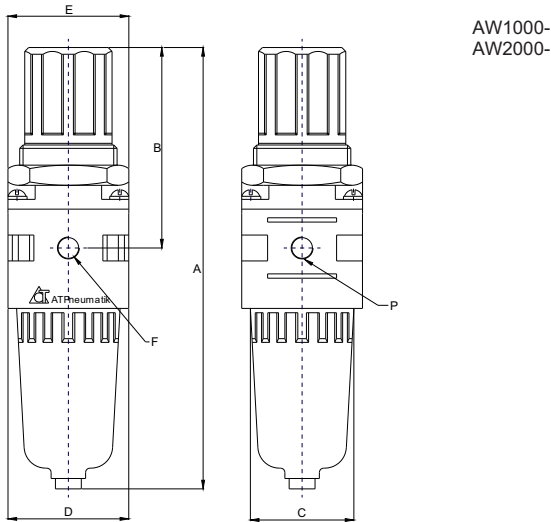
4000 Series Air Filter Regulator						
Part Number	AW4000-03	AW4000-04	AW4000-06	AW4000-03D	AW400-04D	AW4000-06D
	Manual Drain			Automatic Drain		
Port Size	G 3/8"	G 1/2"	G 3/4"	G 3/8"	G 1/2"	G 3/4"
Pressure Gauge Connection	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"
Flow Rate (l/min)	4000	4000	4500	4000	4000	4500
Working Pressure	1 Mpa, 10 Kgf/cm <sup>2</sup> , 150 psi					
Regulating Pressure	0.05 to 0.85 Mpa					
Working Temperature	5 to 60°C					
Bowl Material	Polycarbonate					
Filter Element	Bronze 5, 20, 25 μ					
Metal Guard Bowl	Available					

AW5000

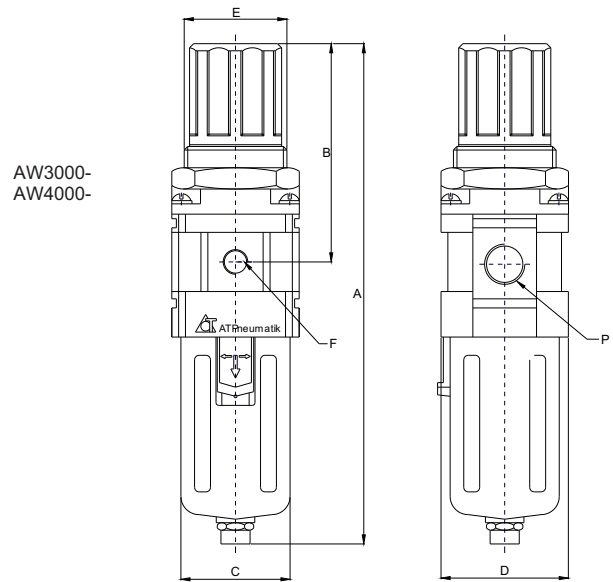


5000 Series Air Filter Regulator				
Part Number	AW5000-06	AW5000-10	AW5000-06D	AW5000-10D
	Manual Drain		Automatic Drain	
Port Size	G 3/4"	G 1"	G 3/4"	G 1"
Pressure Gauge Connection	G 1/4"	G 1/4"	G 1/4"	G 1/4"
Flow Rate (l/min)	5500	5500	5500	5500
Working Pressure	1 Mpa, 10 Kgf/cm <sup>2</sup> , 150 psi			
Regulating Pressure	0.05 to 0.85 Mpa			
Working Temperature	5 to 60°C			
Bowl Material	Polycarbonate			
Filter Element	Bronze 5, 20, 25 μ			
Metal Guard Bowl	Available			

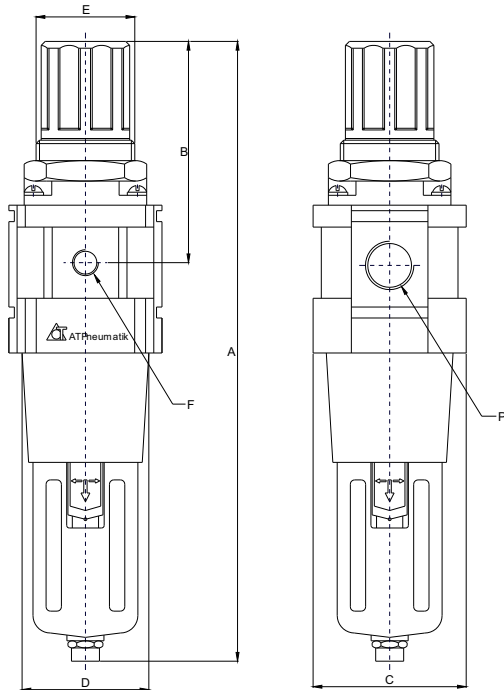




AW1000-  
AW2000-



AW3000-  
AW4000-



AW5000-

Air Filter Regulator Dimensions							
Peart Number	P (Port Size)	A	B	C	D	E	F (Pressure Gauge)
AW 1000-M5	M5	109.5	50.5	25	28	28	1/16"
AW2000-01	G 1/8"	164.5	78	40	40	34	G 1/8"
AW2000-02	G 1/4"	164.5	78	40	40	34	G 1/8"
AW3000-02	G 1/4"	211	92.5	53	53	40	G 1/8"
AW3000-03	G 3/8"	211	92.5	53	53	40	G 1/8"
AW4000-03	G 3/8"	262	112	70	70	54	G 1/4"
AW4000-04	G 1/2"	262	112	70	70	54	G 1/4"
AW4000-06	G 3/4"	267	114	70	70	54	G 1/4"
AW5000-06	G 3/4"	338	116	90	90	54	G 1/4"
AW5000-10	G 1"	338	116	90	90	54	G 1/4"

Dimensions are in mm

## Air Filter

**AF1000**



**AF2000**



**AF3000**



**AF4000**



**AF5000**



### 1000 and 2000 Series Air Filter

Part Number	AF1000-M5	AF2000-01	AF2000-02	AF1000-M5D	AF2000-01D	AF2000-02D
	Manual Drain			Automatic Drain		
Port Size	M05	G 1/8"	G 1/4"	M05	G 1/8"	G 1/4"
Flow Rate (l/min)	110	750	750	110	750	750
Working Pressure	1 Mpa, 10 Kgf/cm <sup>2</sup> , 150 psi					
Working Temperature	5 to 60°C					
Bowl Material	Polycarbonate					
Filter Element	Bronze 5, 20, 25 μ					
Metal Guard Bowl	Not Available					

### 3000 Series Air Filter

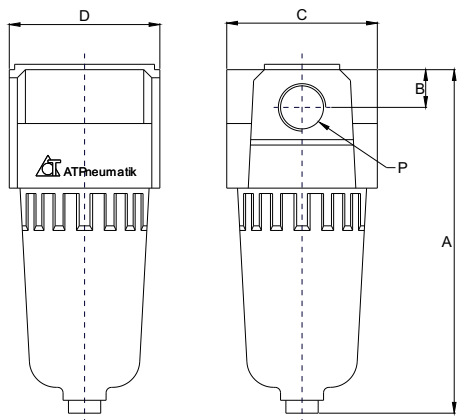
Part Number	AF3000-02	AF3000-03	AF3000-02D	AF3000-03D
	Manual Drain		Automatic Drain	
Port Size	G 1/4"	G 3/8"	G 1/4"	G 3/8"
Flow Rate (l/min)	1500	1500	1500	1500
Working Pressure	1 Mpa, 10 Kgf/cm <sup>2</sup> , 150 psi			
Working Temperature	5 to 60°C			
Bowl Material	Polycarbonate			
Filter Element	Bronze 5, 20, 25 μ			
Metal Guard Bowl	Available			

### 4000 Series Air Filter

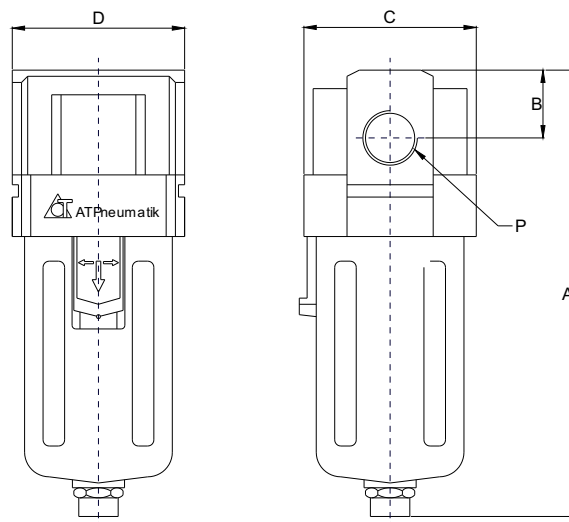
Part Number	AF4000-03	AF4000-04	AF4000-06	AF4000-03D	AF4000-04D	AF4000-06D
	Manual Drain			Automatic Drain		
Port Size	G 3/8"	G 1/2"	G 3/4"	G 3/8"	G 1/2"	G 3/4"
Flow Rate (l/min)	4000	4000	6000	4000	4000	6000
Working Pressure	1 Mpa, 10 Kgf/cm <sup>2</sup> , 150 psi					
Working Temperature	5 to 60°C					
Bowl Material	Polycarbonate					
Filter Element	Bronze 5, 20, 25 μ					
Metal Guard Bowl	Available					

### 5000 Series Air Filter

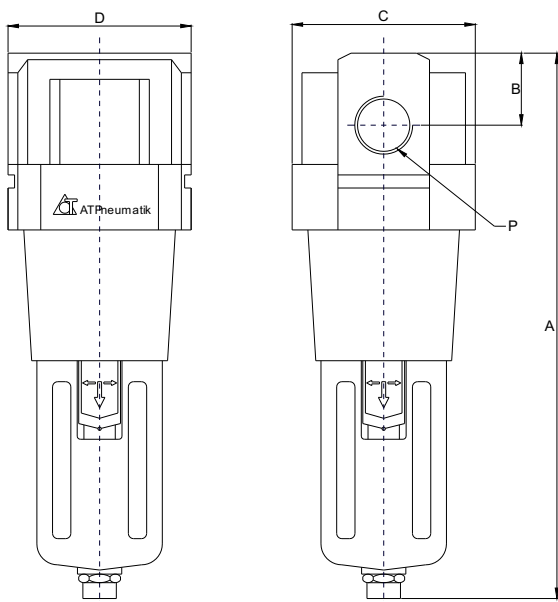
Part Number	AF5000-06	AF5000-10	AF5000-06D	AF5000-10D
	Manual Drain		Automatic Drain	
Port Size	G 3/4"	G 1"	G 3/4"	G 1"
Flow Rate (l/min)	7000	7000	7000	7000
Working Pressure	1 Mpa, 10 Kgf/cm <sup>2</sup> , 150 psi			
Working Temperature	5 to 60°C			
Bowl Material	Polycarbonate			
Filter Element	Bronze 5, 20, 25 μ			
Metal Guard Bowl	Available			



AF1000-  
AF2000-



AF3000-  
AF4000-



AF5000-06  
AF5000-10

Air Filter Dimensions					
Part Number	P (Port Size)	A	B	C	D
AF1000-M5	M05	66	7	25	-
AF2000-01	G 1/8"	97.5	11	40	40
AF2000-02	G 1/4"	97.5	11	40	40
AF3000-02	G 1/4"	132.5	14	53	53
AF3000-03	G 3/8"	132.5	14	53	53
AF4000-03	G 3/8"	168.5	18	70	70
AF4000-04	G 1/2"	168.5	18	70	70
AF4000-06	G 3/4"	172.5	20	70	70
AF5000-06	G 3/4"	247.5	24	90	90
AF5000-10	G 1"	247.5	24	90	90

Dimensions are in mm

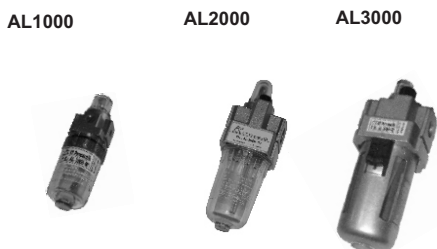
## Air Pressure Regulator / Lubricator / Automatic Drain Trap



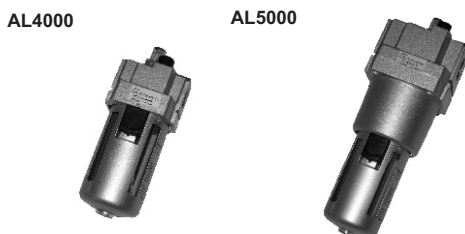
1000 / 2000 and 3000 Series Air Pressure Regulator					
Part Number	AR1000-M5	AR2000-01	AR2000-02	AR3000-02	AR3000-03
Port Size	M05	G 1/8"	G 1/4"	G 1/4"	G 3/8"
Pressure Gauge Connection	1/16"	G 1/8"	G 1/8"	G 1/8"	G 1/8"
Flow Rate (l/min)	100	550	550	2500	2500
Working Pressure	1 Mpa, 10 Kgf/cm <sup>2</sup> , 150 psi				
Regulating Pressure	0.05 to 0.85 Mpa				
Working Temperature	5 to 60°C				



4000 and 5000 Series Air Pressure Regulator					
Part Number	AR4000-03	AR4000-04	AR4000-06	AR5000-06	AR5000-10
Port Size	G 3/8"	G 1/2"	G 3/4"	G 3/4"	G 1"
Pressure Gauge Connection	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"
Flow Rate (l/min)	6000	6000	6000	8000	8000
Working Pressure	1 Mpa, 10 Kgf/cm <sup>2</sup> , 150 psi				
Regulating Pressure	0.05 to 0.85 Mpa				
Working Temperature	5 to 60°C				



1000 / 2000 and 3000 Series Air Lubricator					
Part Number	AL1000-M5	AL2000-01	AL2000-02	AL3000-02	AL3000-03
Port Size	M05	G 1/8"	G 1/4"	G 1/4"	G 3/8"
Flow Rate (l/min)	95	800	800	1700	1700
Working Pressure	1 Mpa, 10 kgf/cm <sup>2</sup> , 150 psi				
Recommended Lubricant	SAE10				
Working Temperature	5 to 60°C				
Bowl Material	Polycarbonate				
Bowl Guard	Not Available			Available	



4000 and 5000 Series Air Lubricator					
Part Number	AL4000-03	AL4000-04	AL4000-06	AL5000-06	AL5000-10
Port Size	G 3/8"	G 1/2"	G 3/4"	G 3/4"	G 1"
Flow Rate (l/min)	5000	5000	6300	7000	7000
Working Pressure	1 Mpa, 10 kgf/cm <sup>2</sup> , 150 psi				
Recommended Lubricant	SAE10				
Working Temperature	5 to 60°C				
Bowl Material	Polycarbonate				
Bowl Guard	Available				



Automatic Drain Trap			
Part Number	HAD4000-02	HAD4000-03	HAD4000-04
Port Size	G 1/4"	G 3/8"	G 1/2"
Discharge Rate	5 (l/min.)		
Working Pressure	1 Mpa, 10 kgf/cm <sup>2</sup> , 150 psi		
Working Temperature	5 to 60°C		
Drain	Automatic		
Drain Port	1/4" Female		
Bowl Material	Polycarbonate		
Bowl Guard	Available		

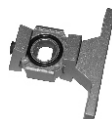
Filter Bracket  
B140/B540



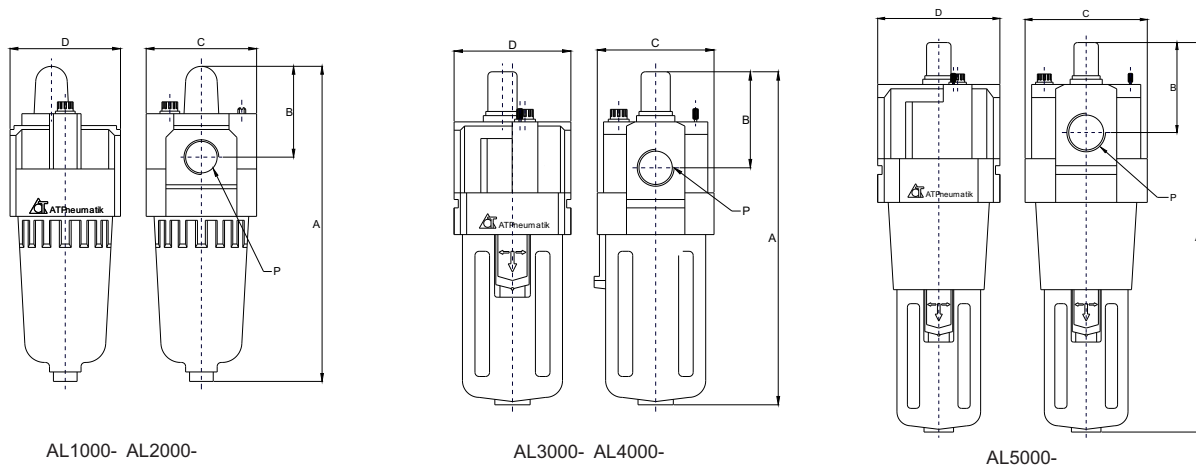
Pressure Regulator Bracket  
B120/B520



Connector Bracket  
Y20T / Y50T



Mounting Bracket								
Part Number				Part Number			Part Number	
B120	AR1000	AW1000	Y10T	AC1000	AC1010	B140	AF1000	
B220	AR2000	AW2000	Y20T	AC2000	AC2010	B240	AF2000	
B320	AR3000	AW3000	Y30T	AC3000	AC3010	B340	AF3000	
B420	AR4000	AW4000	Y40T	AC4000	AC4010	B440	AF4000	
B520	AR5000	AW5000	Y50T	AC5000	AC5010	B540	AF5000	

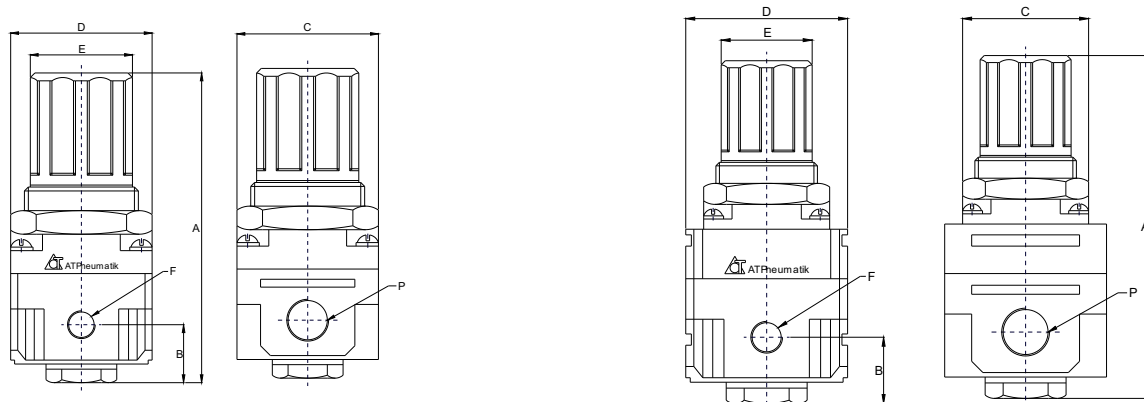


AL1000- AL2000-

AL3000- AL4000-

AL5000-

Air Lubricator Dimensions					
Part Number	P (Port Size)	A	B	C	D
AL1000-M5	M05	81.5	25.5	25	
AL2000-01	G 1/8"	122	38	40	40
AL2000-02	G 1/4"	122	38	40	40
AL3000-02	G 1/4"	142	38	53	53
AL3000-03	G 3/8"	142	38	53	53
AL4000-03	G 3/8"	177	41	70	70
AL4000-04	G 1/2"	177	41	70	70
AL4000-06	G 3/4"	177	41	70	70
AL5000-06	G 3/4"	254	45	90	90
AL5000-10	G 1"	254	45	90	90



AR1000- AR2000- AR3000- AR4000-

AR5000-

Air Pressure Regulator Dimensions							
Part Number	P (Port Size)	A	B	C	D	E	F ( Pressure Gauge)
AR1000-M5	M05	61.5	11	25	25	28	1/16"
AR2000-01	G 1/8"	95	17	40	40	34	G 1/8"
AR2000-02	G 1/4"	95	17	40	40	34	G 1/8"
AR3000-02	G 1/4"	127.5	35	53	53	40	G 1/8"
AR3000-03	G 3/8"	127.5	35	53	53	40	G 1/8"
AR4000-03	G 3/8"	149.5	37.5	70	70	54	G 1/4"
AR4000-04	G 1/2"	149.5	37.5	70	70	54	G 1/4"
AR4000-06	G 3/4"	154	40.5	70	75	54	G 1/4"
AR5000-06	G 3/4"	168	48	90	90	54	G 1/4"
AR5000-10	G 1"	168	48	90	90	54	G 1/4"

Dimensions are in mm

## Push-In Metric Fittings

PC



Thread		Part Number					
TØ	4	6	8	10	12	16	
M5	PC-04M5	PC-06M5					
1/8"	PC-0401	PC-0601	PC-0801	PC-1001			
1/4"	PC-0402	PC-0602	PC-0802	PC-1002	PC-1202		
3/8"		PC-0603	PC-0803	PC-1003	PC-1203	PC-1603	
1/2"		PC-0604	PC-0804	PC-1004	PC-1204	PC-1604	

PHF



Thread		Part Number					
TØ	4	6	8	10	12	16	
M5	PHF-04M5	PHF-06M5					
1/8"	PHF-0401	PHF-0601	PHF-0801	PHF-1001			
1/4"	PHF-0402	PHF-0602	PHF-0802	PHF-1002	PHF-1202		
3/8"		PHF-0603	PHF-0803	PHF-1003	PHF-1203	PHF-1603	
1/2"		PHF-0604	PHF-0804	PHF-1004	PHF-1204	PHF-1604	

PCF



Thread		Part Number					
TØ	4	6	8	10	12	16	
M5	PCF-04M5	PCF-06M5					
1/8"	PCF-0401	PCF-0601	PCF-0801	PCF-1001			
1/4"	PCF-0402	PCF-0602	PCF-0802	PCF-1002	PCF-1202		
3/8"		PCF-0603	PCF-0803	PCF-1003	PCF-1203	PCF-1603	
1/2"		PCF-0604	PCF-0804	PCF-1004	PCF-1204	PCF-1604	

PST



Thread		Part Number					
TØ	4	6	8	10	12	16	
M5	PST-04M5	PST-06M5					
1/8"	PST-0401	PST-0601	PST-0801	PST-1001			
1/4"	PST-0402	PST-0602	PST-0802	PST-1002	PST-1202		
3/8"		PST-0603	PST-0803	PST-1003	PST-1203	PST-1603	
1/2"		PST-0604	PST-0804	PST-1004	PST-1204	PST-1604	

PL



Thread		Part Number					
TØ	4	6	8	10	12	16	
M5	PL-04M5	PL-06M5					
1/8"	PL-0401	PL-0601	PL-0801	PL-1001			
1/4"	PL-0402	PL-0602	PL-0802	PL-1002	PL-1202		
3/8"		PL-0603	PL-0803	PL-1003	PL-1203	PL-1603	
1/2"		PL-0604	PL-0804	PL-1004	PL-1204	PL-1604	

PT



Thread		Part Number					
TØ	4	6	8	10	12	16	
M5	PT-04M5	PT-06M5					
1/8"	PT-0401	PT-0601	PT-0801	PT-1001			
1/4"	PT-0402	PT-0602	PT-0802	PT-1002	PT-1202		
3/8"		PT-0603	PT-0803	PT-1003	PT-1203	PT-1603	
1/2"		PT-0604	PT-0804	PT-1004	PT-1204	PT-1604	

PLL



Thread		Part Number					
TØ	4	6	8	10	12	16	
M5	PLL-04M5	PLL-06M5					
1/8"	PLL-0401	PLL-0601	PLL-0801	PLL-1001			
1/4"	PLL-0402	PLL-0602	PLL-0802	PLL-1002	PLL-1202		
3/8"		PLL-0603	PLL-0803	PLL-1003	PLL-1203	PLL-1603	
1/2"		PLL-0604	PLL-0804	PLL-1004	PLL-1204	PLL-1604	

PWT



Thread		Part Number					
TØ	4	6	8	10	12	16	
M5	PWT-04M5	PWT-06M5	PWT-08M5				
1/8"	PWT-0401	PWT-0601	PWT-0801	PWT-1001			
1/4"	PWT-0402	PWT-0602	PWT-0802	PWT-1002	PWT-1202		
3/8"		PWT-0603	PWT-0803	PWT-1003	PWT-1203	PWT-1603	
1/2"		PWT-0604	PWT-0804	PWT-1004	PWT-1204	PWT-1604	

PLF



Thread		Part Number					
TØ	4	6	8	10	12	16	
M5	PLF-04M5	PLF-06M5					
1/8"	PLF-0401	PLF-0601	PLF-0801	PLF-1001			
1/4"	PLF-0402	PLF-0602	PLF-0802	PLF-1002	PLF-1202		
3/8"		PLF-0603	PLF-0803	PLF-1003	PLF-1203	PLF-1603	
1/2"		PLF-0604	PLF-0804	PLF-1004	PLF-1204	PLF-1604	

PH



Thread		Part Number					
TØ	4	6	8	10	12	16	
M5	PH-04M5	PH-06M5					
1/8"	PH-0401	PH-0601	PH-0801	PH-1001			
1/4"	PH-0402	PH-0602	PH-0802	PH-1002	PH-1202		
3/8"		PH-0603	PH-0803	PH-1003	PH-1203		
1/2"		PH-0604	PH-0804	PH-1004	PH-1204		

SL



Thread		Part Number					
TØ	4	6	8	10	12	16	
M5	SL-04M5	SL-06M5					
1/8"	SL-0401	SL-0601	SL-0801	SL-1001			
1/4"	SL-0402	SL-0602	SL-0802	SL-1002	SL-1202		
3/8"		SL-0603	SL-0803	SL-1003	SL-1203		
1/2"		SL-0604	SL-0804	SL-1004	SL-1204		

SS



Thread		Part Number					
TØ	4	6	8	10	12	16	
M5	SS-04M5	SS-06M5					
1/8"	SS-0401	SS-0601	SS-0801	SS-1001			
1/4"	SS-0402	SS-0602	SS-0802	SS-1002	SS-1202		
3/8"		SS-0603	SS-0803	SS-1003	SS-1203		
1/2"		SS-0604	SS-0804	SS-1004	SS-1204		

HVFS



Thread		Part Number					
TØ	6	8	10	12	16		
M5							
1/8"	HVFS-0601	HVFS-0801	HVFS-1001				
1/4"	HVFS-0602	HVFS-0802	HVFS-1002	HVFS-1202			
3/8"	HVFS-0603	HVFS-0803	HVFS-1003	HVFS-1203	HVFS-1603		
1/2"	HVFS-0604	HVFS-0804	HVFS-1004	HVFS-1204	HVFS-1604		

PGJ



Thread		Part Number					
D10	DØ	4	6	8	10	12	16
4			PGJ-0406				
6				PGJ-0608			
8					PGJ-0810		
10						PGJ-1012	
12							PGJ-1216

BESL



Thread TØ		Part Number					
M05	1/8"	1/4"	3/8"	1/2"	3/4"		
BESL-M5	BESL-01	BESL-02	BESL-03	BESL-04	BESL-06		

PMM



Thread		Part Number					
TØ	4	6	8	10	12	16	
M5	PMM-0400	PMM-0600	PMM-0800	PMM-1000	PMM-1200	PMM-1600	

## Push-In Metric Fittings & Tubing

**PG**


		Part Number					
		Tube Outside Diameter (mm)					
D10	D0	4	6	8	10	12	16
	4	PG-0406					
	6		PG-0608				
	8			PG-0810			
	10				PG-1012		
	12					PG-1216	

**PEG**


		Part Number					
		Tube Outside Diameter (mm)					
D10	D0	4	6	8	10	12	16
	4	PEG-0406					
	6		PEG-0608				
	8			PEG-0810			
	10				PEG-1012		
	12					PEG-1216	

**PUC**


		Part Number					
		Tube Outside Diameter (mm)					
D10	D0	4	6	8	10	12	16
	4	PUC-0400					
	6		PUC-0600				
	8			PUC-0800			
	10				PUC-1000		
	12					PUC-1200	
	16						PUC-1600

**PUT**


		Part Number					
		Tube Outside Diameter (mm)					
D0	D0	4	6	8	10	12	16
	4	PUT-0400					
	6		PUT-0600				
	8			PUT-0800			
	10				PUT-1000		
	12					PUT-1200	
	16						PUT-1600

**PY**


		Part Number					
		Tube Outside Diameter (mm)					
D10	D0	4	6	8	10	12	16
	4	PY-0400					
	6		PY-0600				
	8			PY-0800			
	10				PY-1000		
	12					PY-1200	
	16						PY-1600

**PWY**


		Part Number					
		Tube Outside Diameter (mm)					
D10	D0	4	6	8	10	12	16
	4		PWY-0406				
	6			PWY-0608			
	8				PWY-0810		
	10					PWY-1012	
	12						PWY-1216

**PUL**


		Part Number					
		Tube Outside Diameter (mm)					
D10	D0	4	6	8	10	12	16
	4	PUL-0400					
	6		PUL-0600				
	8			PUL-0800			
	10				PUL-1000		
	12					PUL-1200	
	16						PUL-1600

**PZA**


		Part Number					
		Tube Outside Diameter (mm)					
D0	D0	4	6	8	10	12	16
	4	PZA-0400					
	6		PZA-0600				
	8			PZA-0800			
	10				PZA-1000		
	12					PZA-1200	
	16						PZA-1600

**PKD**


		Part Number					
		Tube Outside Diameter DØ (mm)					
Thread		4	6	8	10	12	16
M5							
1/8"		PKD-0401	PKD-0601	PKD-0801			
1/4"		PKD-0402	PKD-0602	PKD-0802	PKD-1002		
3/8"			PKD-0603	PKD-0803	PKD-1003	PKD-1203	
1/2"					PKD-1004	PKD-1204	

**PKG**


		Part Number					
		Tube Outside Diameter (mm)					
D10	D0	4	6	8	10	12	16
	4		PKG-0406	PKG-0408			
	6			PKG-0608	PKG-0610		
	8				PKG-0810		
	10					PKG-1012	
	12						

**PP**


		Part Number					
		Tube Outside Diameter DØ (mm)					
		4	6	8	10	12	16
		PP-0400	PP-0600	PP-0800	PP-1000	PP-1200	

**SA**


		Part Number					
		Tube Outside Diameter DØ (mm)					
		4	6	8	10	12	16
		SA-0400	SA-0600	SA-0800	SA-1000	SA-1200	SA-1600

**PSL**


		Part Number					
		Thread TØ					
		1/8"	1/4"	3/8"	1/2"		
		PSL-01	PSL-02	PSL-03	PSL-04		

**BSL**

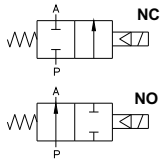

		Part Number					
		Thread TØ					
		M5	1/8"	1/4"	3/8"	1/2"	3/4"
		BSL-M5	BSL-01	BSL-02	BSL-03	BSL-04	BSL-06

**PU**


		Part Number					
		Tube Outside Diameter x Inside Diameter (mm)					
COLOR		4 X 2	6 X 4	8 X 5.5	10 X 6.5	12 X 9	16 X 12
Clear		PU-0402-CL	PU-0604-CL	PU-08055-CL	PU-10065-CL	PU-12090-CL	PU-16012-CL
Black		PU-0402-BK	PU-0604-BK	PU-08055-BK	PU-10065-BK	PU-12090-BK	PU-16012-BK
Blue		PU-0402-BU	PU-0604-BU	PU-08055-BU	PU-10065-BU	PU-12090-BU	PU-16012-BU
Yellow		PU-0402-YW	PU-0604-YW	PU-08055-YW	PU-10065-GN	PU-12090-YW	PU-16012-YW
Green		PU-0402-GN	PU-0604-GN	PU-08055-GN	PU-10065-GN	PU-12090-GN	PU-16012-GN
Red		PU-0402-RD	PU-0604-RD	PU-08055-RD	PU-10065-RD	PU-12090-RD	PU-16012-RD

## 2W / 2S Series 2/2 way Solenoid Valve for Water Oil Gas

### 2/2 way Solenoid Valve



With Wire Connector



Normally Open



DIN Connector



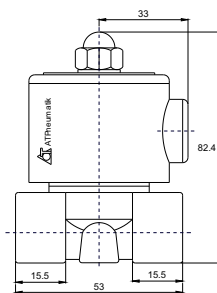
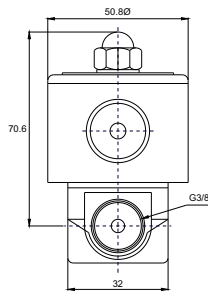
### Ordering Code

<b>2W</b>	-	<b>160 - 15 - V - AC110V - D - NO</b>		
<b>2W</b>	-	2/2 way Solenoid Valve Brass Body		
<b>2S</b>	-	2/2 way Solenoid Valve Stainless Steel 304 body		
<b>160</b>	-	16 mm orifice	<b>350</b>	- 35 mm orifice
<b>200</b>	-	20 mm orifice	<b>400</b>	- 40 mm orifice
<b>250</b>	-	25 mm orifice	<b>500</b>	- 50 mm orifice
<b>10</b>	-	3/8"	<b>35</b>	- 1 1/4"
<b>15</b>	-	1/2"	<b>40</b>	- 1 1/2"
<b>20</b>	-	3/4"	<b>50</b>	- 2"
<b>25</b>	-	1"		
<b>Blank</b>	-	NBR	<b>V</b>	- Viton
<b>DC12V</b>	-	12Vdc	<b>AC24V</b>	- 24Vac / 60Hz
<b>DC24V</b>	-	24Vdc	<b>AC110V</b>	- 110Vac / 60Hz
<b>DC110V</b>	-	110Vdc	<b>AC220V</b>	- 220Vac / 60Hz
<b>Blank</b>	-	with Wire	<b>D</b>	- DIN
<b>Blank</b>	-	N. Close	<b>NO</b>	- N. Open

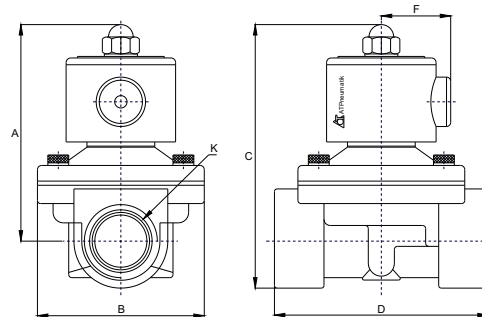
### WOG Solenoid Valve Specification

Part Number	2W160-10	2W160-15	2W200-20	2W250-25	2W350-35	2W400-40	2W500-50
	2S160-10	2S160-15	2S200-20	2S250-25	2S350-35	2S400-40	2S500-50
Working Medium	Air, Water, Oil						
Type	Normally Closed						
Flow Rate	16		20	25	35	40	50
CV Value	4.5		7.6	12	24	29	48
Connection	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
Fluid Viscosity	20 CST						
Working Pressure	Air: 0~0.7; Water: 0~0.5; Oil: 0~0.5						
Working Pressure	1Mpa 150 psi						
Operating Temperature	5 ~ 80°C						
Voltage Range	±10%						
Body Material	2W: Brass 2S: Stainless Steel						
Seal Material	NBR / VITON						

**2W/2S 040-10** 2/2 way solenoid valve



**2W/2S 160/500** - 2/2 way solenoid valve



### 2W / 2S WOG Solenoid Valve Dimension

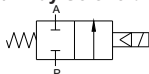
Part Number	A	B	C	D	E	F	K
2W / 2S-160-10	101.5	57	117	69	50	36	G 3/8"
2W / 2S-160-15	101.5	57	117	69	50	36	G 1/2"
2W / 2S-200-20	107	57	123.5	73	50	36	G 3/4"
2W / 2S-250-25	111.5	73.5	134.5	99	50	36	G 1/2"
2W / 2S-350-35	142	95	172	123	70.5	56	G 1-1/4"
2W / 2S-400-40	142	95	172	123	70.5	56	G 1-1/2"
2W / 2S-500-50	172	123	209	168	70.5	56	G 2"

Dimensions are in mm



## 2L Series 2/2 way Steam Solenoid Valve

2/2 way Solenoid Valve



Steam Solenoid Valve

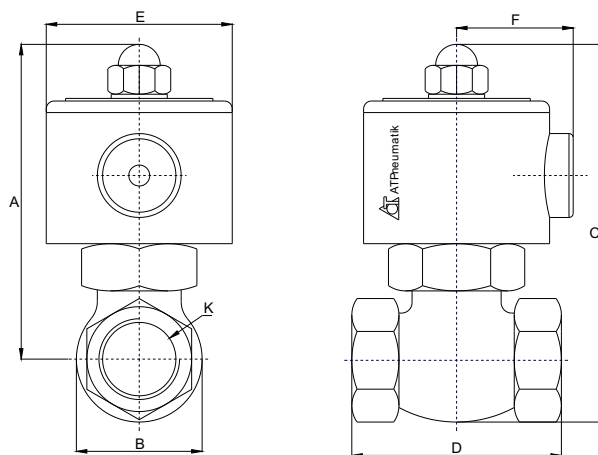
### Ordering Code

<b>2L</b>	-	<b>170</b>	-	<b>15</b>	-	<b>AC110V</b>	
<b>2L</b>	-	2/2 way Steam Solenoid Valve Brass Body					
<b>170</b>	-	17 mm orifice					
<b>200</b>	-	20 mm orifice					
<b>300</b>	-	30 mm orifice					
<b>400</b>	-	40 mm orifice					
<b>500</b>	-	50 mm orifice					
<b>10</b>	-	<b>3/8"</b>		<b>35</b>	-	<b>1 1/4"</b>	
<b>15</b>	-	<b>1/2"</b>		<b>40</b>	-	<b>1 1/2"</b>	
<b>20</b>	-	<b>3/4"</b>		<b>50</b>	-	<b>2"</b>	
<b>25</b>	-	<b>1"</b>					
<b>DC12V</b>	-	12Vdc		<b>AC24V</b>	-	24Vac / 60Hz	
<b>DC24V</b>	-	24Vdc		<b>AC110V</b>	-	110Vac / 60Hz	
<b>DC110V</b>	-	110Vdc		<b>AC220V</b>	-	220Vac / 60Hz	

### 2L Series Steam Solenoid Valve Specification

Model	2L170-10	2L170-15	2L170-20	2L200-25	2L300-35	2L300-40	2L500-50
Working Medium	Air, Water, Steam						
Mounting	Horizontal						
Type	Normally Closed						
Flow Rate	17			22	30		50
CV Value	4.8			12	20		48
Connection	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
Working Pressure	Air, Water, Steam: 0.1~1.0						
working Temperature	5 ~ 180°C						
Voltage Range	±10%						
Body Material	Brass						
Seal Material	PTFE						

2L170/500 - 2/2 way steam solenoid valve



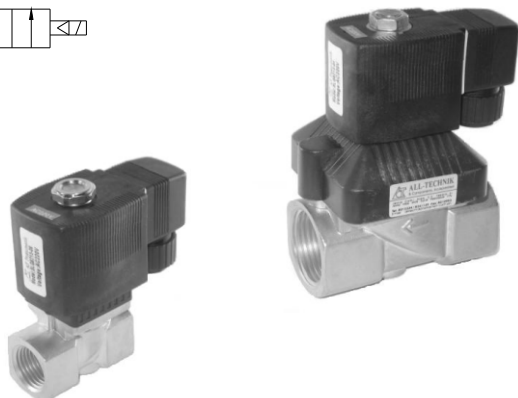
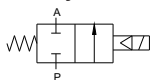
### 2L Series Steam Solenoid Valve Dimension

Part Number	A	B	C	D	K
2L170-10	125	42	146	82	G 3/8"
2L170-15	125	42	146	82	G 1/2"
2L170-20	125	42	146	82	G 3/4"
2L200-25	136	52	162	90.5	G 1/2"
2L300-35	148	74	185	111	G 1 1/4"
2L400-40	148	74	185	111	G 1 1/2"
2L500-50	176	86	223	163	G 2"

Dimensions are in mm

## SLGC6132 Series 2/2 way WOG Solenoid Valve

2/2 way Solenoid Valve



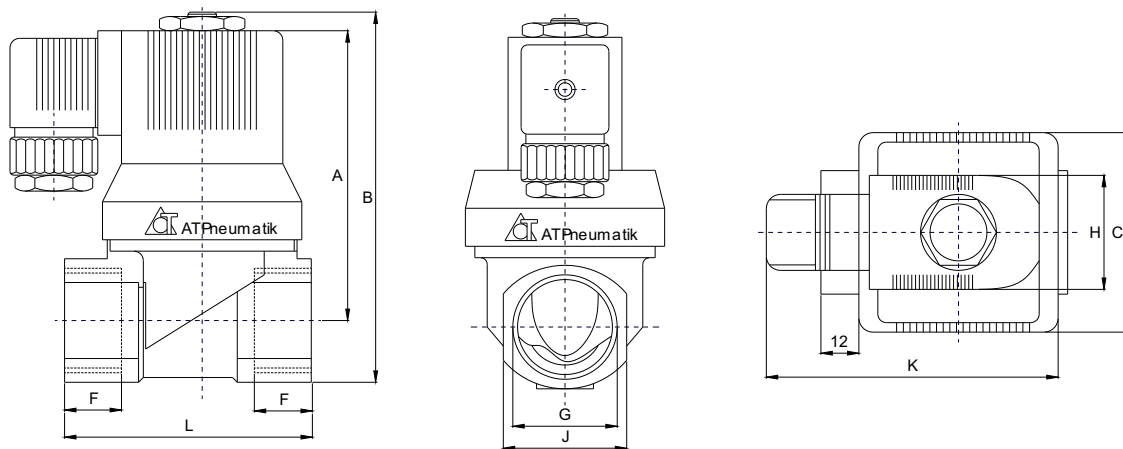
### Ordering Code

<b>SLGC</b>	-	<b>6132</b>	-	<b>02</b>	-	<b>AC110V</b>
<b>SLGC</b>	-	2/2 way WOG Solenoid Valve Brass Body				
<b>6232</b>	-	Body Size 1				
<b>6332</b>	-	Body Size 2				
<b>6432</b>	-	Body Size 3				
<b>02</b>	-	1/4"				
<b>03</b>	-	3/8"				
<b>04</b>	-	1/2"				
<b>06</b>	-	3/4"				
<b>08</b>	-	1"				
<b>DC12V</b>	-	12Vdc		<b>AC24V</b>	-	24Vac / 60Hz
<b>DC24V</b>	-	24Vdc		<b>AC110V</b>	-	110Vac / 60Hz
<b>DC110V</b>	-	110Vdc		<b>AC220V</b>	-	220Vac / 60Hz

### SLGC Series Solenoid Valve Specification

Part Number	SLGC6213-02	SLGC6213-03	SLGC6313-04	SLGC6313-06	SLGC6413-08
Working Medium	Water, Oil, Gas				
Mounting	Any position				
Type	Normally Closed				
Flow Rate M <sup>3</sup> /h	2		8		11
Power Consumption	AC = 14VA DC = 8VA				
Connection	G 1/4"	G 3/8"	G 1/2"	G 3/4"	G 1"
Working Pressure	:0.1~1.0 Mpa, 150 psi				
Operating Temperature	5 ~ 80°C				
Voltage Range	±10%				
Body Material	Brass				
Seal Material	NBR, Viton				

SLGC6213 - 2/2 way WOG solenoid valve



### SLGC6213 Series WOG Solenoid Valve Dimension

Part Number	G	C	F	L	J	A	B	H	K
SLGC6213-02	G 1/4"	38	14	50	26	71	85	35	71
SLGC6213-03	G 3/8"	38	14	50	26	71	85	35	71
SLGC6313-04	G 1/2"	45	16	58	31	81	96	35	80
SLGC6313-06	G 3/4"	45	16	58	31	81	96	35	80
SLGC6413-08	G 1"	65	18	82	41	96	117	35	90

Dimensions are in mm

Automatic Drain Timer

Electronic Drain Timer



Digital Timer

Analog Timer



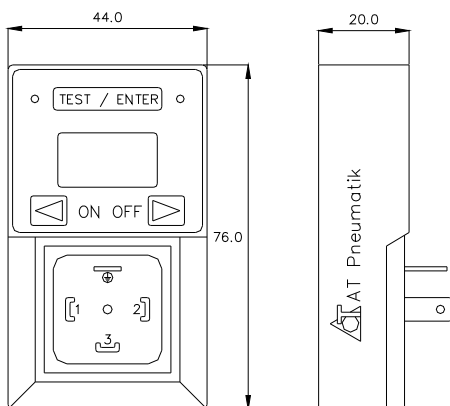
Ordering Code

JCF - 10 - 110Vac - DIN

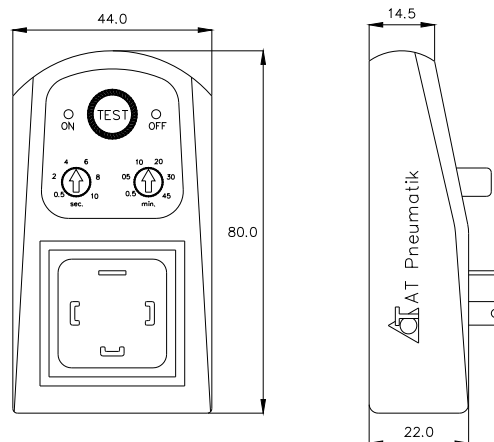
- JCF - Analog Drain Timer
- Digital Drain Timer
- Blank - Drain Timer without Solenoid Valve
- 10 - 3/8"
- 15 - 1/2 "
- 110Vac - 110Vac/60hz
- 220Vac - 220Vac/60hz
- DIN - Without Indicator
- DIN-LED - With LED Indicator

Electronic Drain timer is auto volt from 110 to 220Vac/60hz, specified the voltage, solenoid valve is normally closed, direct operated, 150psi, 80°C working temperature, timer connection is DIN standard and fitted majority of solenoid valve, it is recommended to install a strainer before the inlet of the valve to avoid clogging.

Digital Drain Timer Dimension



Analog Drain Timer Dimension



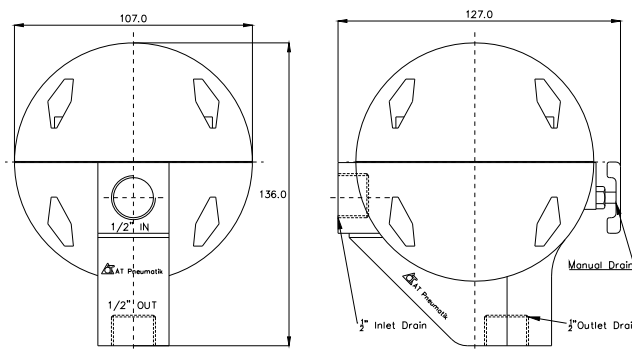
Condensate Drain

Mechanical Condensate Drain



Part Number : HAD-402B

Condensate Drain Dimension

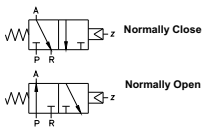


Mechanical Condensate Drain (zero drain loss); drain when the level of water rises inside the bowl, mechanical floats open the drain and release the condensate; slowly closing the valve while releasing the condensate, working pressure 150 psi, port size 1/2", with manual override, drain capacity 2GPM.

Dimensions are in mm

## Pilot Operated Large Orifice Valve

### 3/2 way Air Actuated Valve



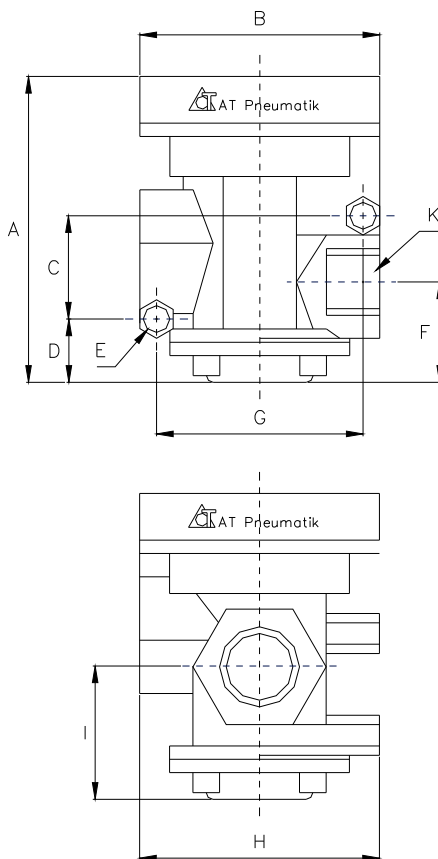
### Ordering Code

#### 3A - JZF - 10 - Blank

- 3A** - 3/2 way Air Pilot
- JZF** - Large orifice Valve
- 10** - 3/8"
- 15** - 1/2"
- 25** - 1"
- Blank** - Normally Closed
- NO** - Normally Open

Valve can be converted from normally closed to normally open by exchanging the Exhaust port R as supply port P; wherein the supply port P become an Exhaust port R.

### 3AJZF - 3/2 way Pilot Operated Valve



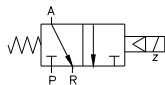
3 way Large Orifice Valve				
Part Number	3AJZF-10	3AJZF-15	3AJZF-20	3AJZF-25
Orifice Size	16mm <sup>2</sup>		25mm <sup>2</sup>	
Port Connection	3/8"	1/2"	3/4"	1"
Working Medium	40 Micron Filtered Air			
Working Pressure	0 to 150 psi / 0 to 10 bar			
Maximum Test Pressure	0 to 220psi / 0 to 15 bar			
Working Temperature	5 ~ 60°C, 41 ~ 140°F			
Body Material	Aluminum			

3/2 way Large Orifice Valve											
Part Number	A	B	C	D	E	F	G	H	I	J	k
3AJZF-10	101	75	32.5	23	2 X 7.7	31.5	62.4	75.2	43.7	55.3	3 X 3/8"
3AJZF-15	101	75	32.5	23	2 X 7.7	31.5	62.4	75.2	43.7	55.3	3 X 1/2"
3AJZF-20	114.2	96.3	38.5	20.5	2 X 9.7	33.5	76	93.5	47.5	62	3 X 3/4"
3AJZF-25	114.2	96.3	38.5	20.5	2 X 9.7	33.5	76	93.5	47.5	62	3 X 1"

Dimensions are in mm

**Solenoid Large Orifice Valve**

3/2 way Solenoid Valve

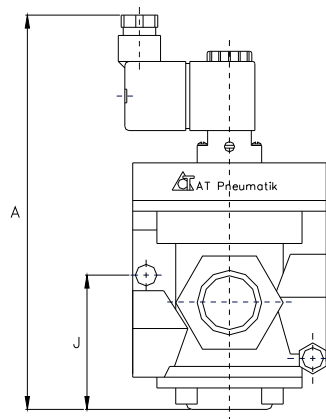
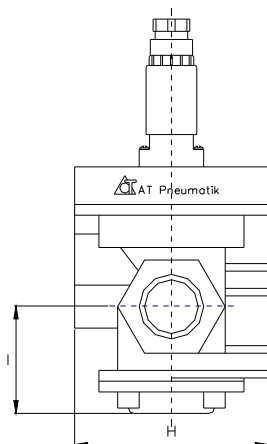
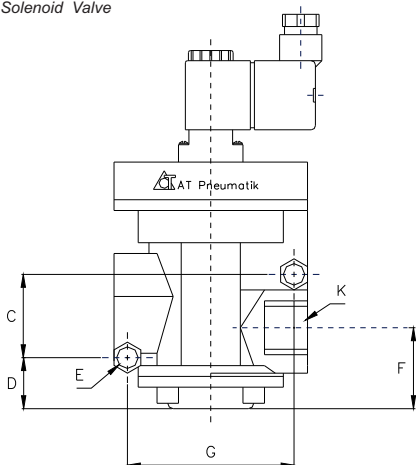


**Ordering Code**

**3S - JZF - 10 - Blank - DC12V - LD1**

- 3S JZF** - 3/2 way large Orifice Valve
- 10** - 3/8"
- 15** - 1/2"
- 25** - 1"
- Blank** - Internal Pilot
- E** - External Pilot G 1/8"
- DC12V** - 12Vdc
- DC110V** - 110Vdc
- AC24V** - 24Vac
- AC110V** - 110vac
- AC-220V** - 220Vac
- LD1** - with Light Indicator
- W** - with Lead wire
- Blank** - without Indicator

3S JZF - 3/2 way Solenoid Valve



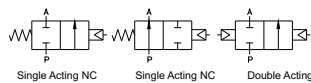
3 way Large Orifice Valve				
Part Number	3S JZF-10	3S JZF-15	3S JZF-20	3S JZF-25
Orifice Size	16mm <sup>2</sup>		25mm <sup>2</sup>	
Port Connection	3/8"	1/2"	3/4"	1"
Working Medium	40 Micron Filtered Air			
Working Pressure	0 to 150 psi / 0 to 10 bar			
Maximum Test Pressure	0 to 220psi / 0 to 15 bar			
Body Material	Aluminum			
Working Temperature	5 ~ 60°C, 41 ~ 140°F			
Power Consumption	AC: 5.5VA DC: 4.8W ±10%			
Protection	F Class. IP65			
Connector	Lead Wire or Socket Type (DIN)			

3/2 way Large Orifice Valve											
Part Number	A	B	C	D	E	F	G	H	I	J	k
3VJZF-10	163.5	75	32.5	23	2 X 7.7	31.5	62.4	75.2	43.7	55.3	3 X 3/8"
3VJZF-15	163.5	75	32.5	23	2 X 7.7	31.5	62.4	75.2	43.7	55.3	3 X 1/2"
3VJZF-20	176.5	96.3	38.5	20.5	2 X 9.7	33.5	76	93.5	47.5	62	3 X 3/4"
3VJZF-25	176.5	96.3	38.5	20.5	2 X 9.7	33.5	76	93.5	47.5	62	3 X 1"

Dimensions are in mm

## 2K200 Series Angle Seat Valve

### 2/2 way Angle Seat Valve



### Ordering Code

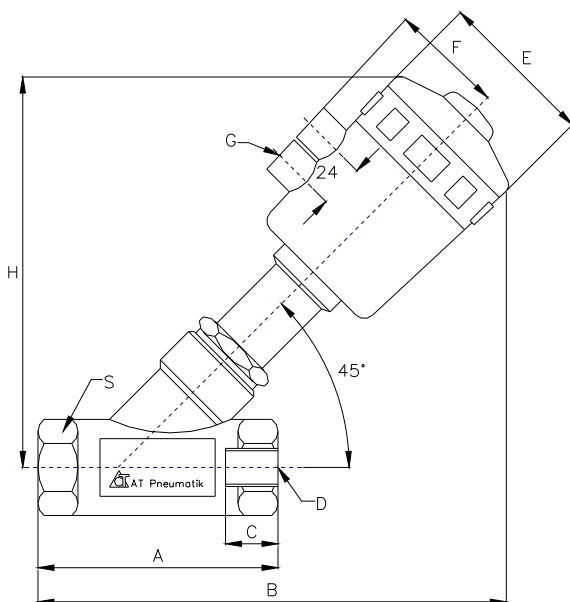
**2K200 - 10 - T - D - 1 - NC - Blank**

**2K200** - 2/2 way Plastic Actuator Angle Seat Valve

<b>10</b>	- 3/8"	<b>D</b>	- Bronze (Body)
<b>15</b>	- 1/2"	<b>SS304</b>	- SS304 (Body)
<b>20</b>	- 3/4"	<b>SS316</b>	- SS316 (Body)
<b>25</b>	- 1"		
<b>32</b>	- 1 1/4"	<b>1</b>	- Single Acting
<b>40</b>	- 1 1/2"	<b>2</b>	- Double Acting
<b>50</b>	- 2"		
<b>T</b>	- Threaded		
<b>Blank</b>	- Flow Over the Seat	<b>NC</b>	- Normally Closed
<b>U</b>	- Flow Under the seat	<b>NO</b>	- Normally Open

When ordering of Single Acting Angle Seat Valve, medium flow direction must be specified, however for double acting not necessary to specify the direction of flow.

### 2K200 - 2 way Angle Seat Valve



#### Angle Seat Valve Dimension

Size	A	B	C	D	E	F	G	S
<b>15</b>	85	173	12	1/2"	64	44	2 x 1/4"	27
<b>20</b>	95	178	12	3/4"	64	44	2 x 1/4"	32
<b>25</b>	105	212	14	1"	80	52	2 x 1/4"	41
<b>32</b>	118	236	16	1 1/4"	80	52	2 x 1/4"	55
<b>40</b>	130	230	18	1 1/2"	80	52	2 x 1/4"	55
<b>50</b>	150	238	20	2"	100	5	2 x 1/4"	70

**For Single Acting Angle Seat Valve always specify the direction of flow for correct sizing of actuator, under the seat flow is recommended to avoid the piston seat hammering, which may result damage on the valve seat.**

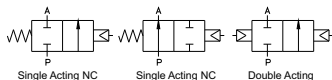
#### 2K200 Series Angle Seat Valve Specification

Part Number	2K200-15	2K200-20	2K200-25	2K200-32	2K200-40	2K200-40
Working Medium	Water, Oil, Gas					
Mounting	Any position					
Type	Normally Closed or open / Double or Single Acting					
Flow Rate M <sup>3</sup> /h	4	8	19	28	42	55
Actuator Port	G 1/4"					
Actuator Size	50	50	63	63	63	80
Working Pressure Mpa	1.6	1.1	1.1	1.5	1.25	1
Control Pressure Mpa	0.39	0.39	0.42	0.5	0.44	0.4
Operating Temperature	5 ~ 180°C					
Actuator Material	Polyamide					
Body Material	Brass, SS316, SS316L					
Seal Material	PTFE Teflon					

Dimensions are in mm

## 2S200 Series Stainless Steel Angle Seat Valve

### 2/2 way Stainless Steel Angle Seat Valve



### Ordering Code

**2S200 - 10 - T - D - 1 - NC - Blank**

**2S200** - 2 way Stainless Steel Actuator Angle Seat Valve

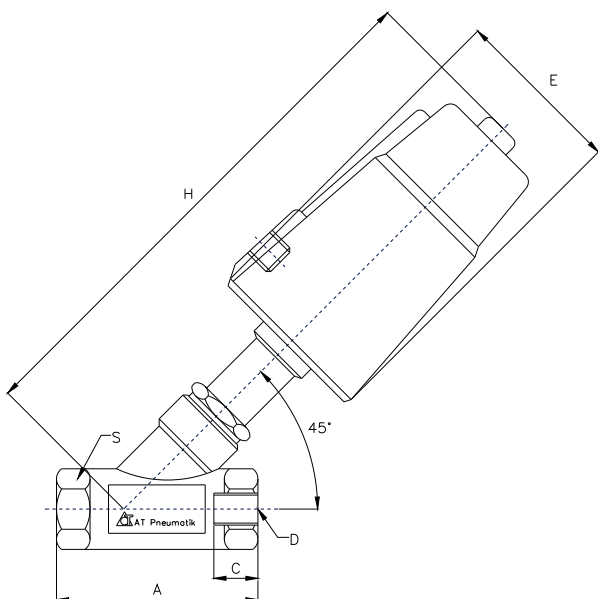
<b>10</b>	- 3/8"	<b>D</b>	- Bronze (Body)
<b>15</b>	- 1/2"	<b>SS304</b>	- SS304 (Body)
<b>20</b>	- 3/4"	<b>SS316</b>	- SS316 (Body)
<b>25</b>	- 1"		
<b>32</b>	- 1 1/4"	<b>1</b>	- Single Acting
<b>40</b>	- 1 1/2"	<b>2</b>	- Double Acting
<b>50</b>	- 2"		

**T** - Threaded

<b>Blank</b>	- Flow Over the Seat	<b>NC</b>	- Normally Closed
<b>U</b>	- Flow Under the seat	<b>NO</b>	- Normally Open

When ordering of Single Acting Angle Seat Valve, medium flow direction must be specified, however for double acting not necessary to specify the direction of flow.

**2S200** - 2-way Stainless Steel Angle Seat Valve



### Angle Seat Valve Dimension

Size	D	A	C	S	H	E
10	3/8"	55	17	21	120	51
15	1/2"	70	21	26.5	138	51
20	3/4"	76	23	32	154	62
25	1"	90	25	40	168	62
32	1 1/4"	116	32	50	200	76
40	1 1/2"	116	32	55.5	215	92
50	2"	138	40	68.5	230	92
65	2 1/2"	168	51	85	268	117
80	3"	192	54	100	325	140

**For Single Acting Angle Seat Valve always specify the direction of flow for correct sizing of actuator, under the seat flow is recommended to avoid the piston seat hammering, which may result damage on the valve seat.**

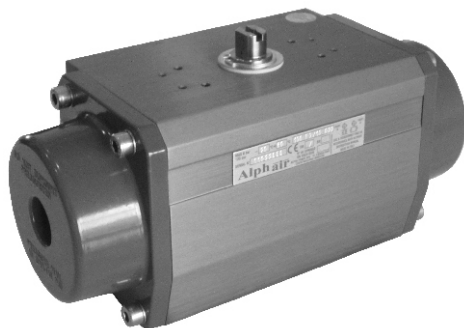
### 2S200 Series Angle Seat Valve Specification

Part Number	2S200-10	2S200-15	2S200-20	2S200-25	2S200-32	2S200-40	2S200-50	2S200-65	2S200-80
Working Medium	Water, Oil, Gas, Weak Acid, Steam								
Mounting	Any position								
Type	Normally Closed or open / Double or Single Acting								
Actuator Port	G 1/8" or 1/4"								
Actuator Size	40	40	50	50	63	80	80	100	125
Working Pressure	0 to 1.6Mpa								
Control Pressure	0.3 to 0.8 Mpa								
Operating Temperature	5 ~ 180°C								
Actuator Material	Stainless Steel 340								
Body Material	SS304 or SS316								
Seal Material	PTFE Teflon								

Dimensions are in mm

## Rack and Pinion Pneumatic Actuator

Pneumatic Actuator



### Ordering Code

#### AP - Blank - 032 - DA - 02 - Blank or AV

<b>AP</b>	-	Blank Standard 90°		
<b>Y</b>	-	120° Rotation		
<b>X</b>	-	180° Rotation		
<b>032</b>	-	032mm bore	<b>042</b>	- 042mm bore
<b>050</b>	-	050mm bore	<b>063</b>	- 063mm bore
<b>075</b>	-	075mm bore	<b>085</b>	- 085mm bore
<b>100</b>	-	100mm bore	<b>115</b>	- 115mm bore
<b>125</b>	-	125mm bore	<b>145</b>	- 145mm bore
<b>160</b>	-	160mm bore		
<b>DA</b>	-	Double Acting		
<b>SA</b>	-	Single Acting		
<b>02</b>	-	Number of spring for Single Acting Minimum of 1 maximum of 6 each side		
<b>Blank/AV</b>	-	Hard Anodized + Cover Polyester Paint		
<b>NV</b>	-	Nickel Plating + Cover Polyester Paint		
<b>NN</b>	-	Nickel Plating + Cover Nickel Plating		
<b>TF</b>	-	PTFE Coating + Cover PTFE Coating		

#### Pneumatic Actuator Specification

Body material	Aluminum
Treatment	Electro Plated (see option for treatment)
Seal material	NBR/PTFE
Working pressure	3 to 10 bar
Rotation	90° +/- 5°
Working Temperature	Low Temperature -40°C to 80°C
	High Temperature -20° to 150°C
Supply Port	G 1/4" NAMUR Standard
Actuator Type	Double Acting
	Single Acting (max. of 6 spring per side)
Mounting	ISO 5211-DIN3337 standard
Limit switch Mounting	Namur VDI/VDE-3845 standard

#### Option Description

Option	Body	Covers	Shaft
AV standard	Hard Anodizing	Polyester painting	High phosphorous nickel-plating (12%)
	Colour	Dark Gray	Brown
	Thickness	50 µ	15 µ
NV	High phosphorous nickel-plating (12%)	Polyester painting	High phosphorous nickel-plating (12%)
	Colour	Polished Steel	Brown
	Thickness	20 µ	15 µ
NN	High phosphorous nickel-plating (12%)	High phosphorous nickel-plating (12%)	High phosphorous nickel-plating (12%)
	Colour	Polished Steel	Brown
	Thickness	20 µ	15 µ
TF TF	Hard Anodizing + PTFE coating	Anodizing + PTFE coating	High phosphorous nickel-plating (12%)
	Colour	Colour	Blue
	Thickness	PTFE 15µ, Anodizing 20µ	15 µ

**Pneumatic Actuator Sizing and valve mounting Contact us;**  
**(02)829-4849; sales@alltechnik.com**

#### Double Acting Actuator Torque Table Nm

Part Number	Air Supply in Bar							
	3	4	5	6	7	8	9	10
AP-032		5.0	6.3	7.6	8.8	10.0	11.4	12.6
AP-042	6.5	8.7	10.9	13.0	15.2	17.3	19.5	21.7
AP-050	9.2	12.3	15.4	18.5	21.5	24.6	27.7	30.8
AP-063	16.5	22.0	27.5	33.0	38.5	44.0	49.5	55.0
AP-075	35.1	46.8	58.5	70.2	81.9	93.6	105.3	117.0
AP-085	53.4	71.2	89.0	106.9	124.7	142.4	160.3	178.1
AP-100	83.2	110.9	138.6	166.4	194.1	221.8	249.5	277.3
AP-115	137.2	183.0	228.7	274.5	320.2	366.0	411.7	457.5
AP-125	180.5	240.7	300.9	361.1	421.2	481.4	541.6	601.8
AP-145	260.1	346.8	433.5	520.2	606.9	693.6	780.3	861.0
AP-160	355.0	473.4	591.7	710.1	828.4	946.8	10,651.0	11,835.0
AP-180	479.0	638.6	798.3	958.0	11,186.0	12,773.0	14,370.0	15,976.0
AP-200	665.6	887.5	11,094.0	13,333.0	15,531.0	17,750.0	19,969.0	22,188.0
AP-240	11,176.0	14,902.0	18,627.0	22,533.0	26,078.0	29,804.0	33,529.0	37,254.0
AP-270	16,176.0	21,568.0	26,960.0	32,352.0	37,744.0	43,136.0	48,528.0	53,920.0
AP-330	29,295.0	39,060.0	48,824.0	58,589.0	68,354.0	78,119.0	87,884.0	94,649.0

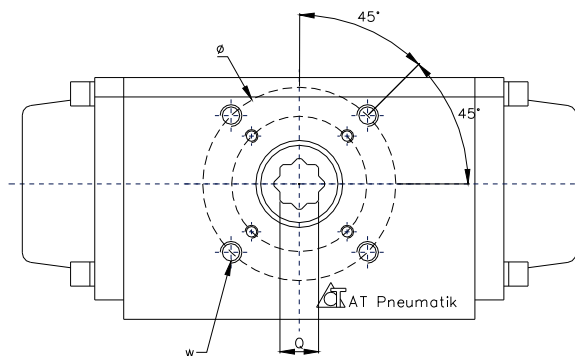
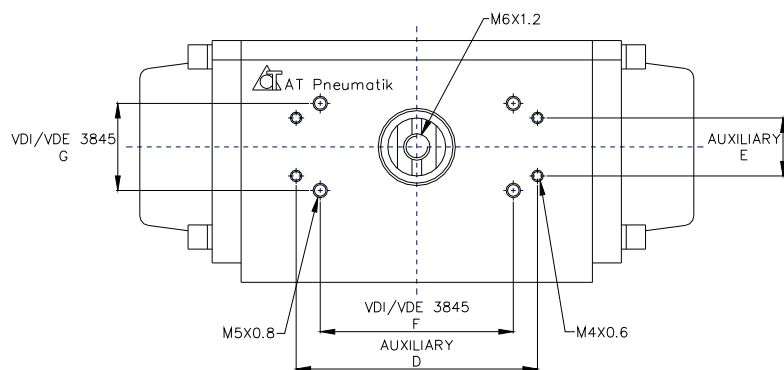
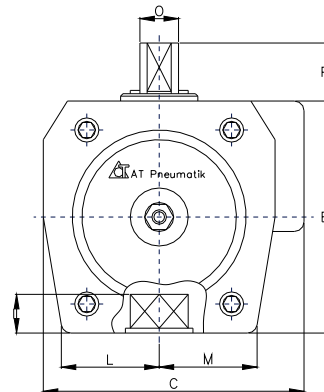
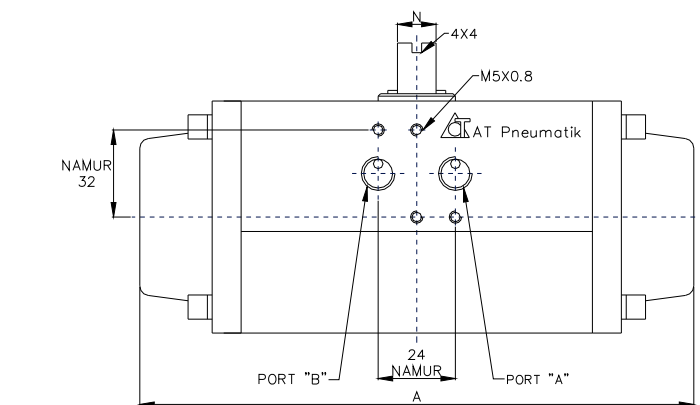


Pneumatic Actuator Torque Table Nm																					
Part Number	No. of Spring per Piston	Air Supply Bar										Springs									
		3		4		5		6		7		8		90°	0°						
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°								
AP-042	3					7.1	4.1			9.3	6.3			11.5	8.5			13.7	10.7	6.8	3.8
	4									8.1	4.1			10.2	6.2			12.4	8.4	9.0	5.0
AP-050	3	5.7	3.5			8.9	6.6	12.0	9.6	15.1	12.7	18.1	15.7	21.2	18.8			25.7	22.8	5.7	3.5
	4					7.7	4.7	10.8	7.7	13.9	10.8	16.9	13.8	20.0	16.9			22.1	18.8	7.7	4.7
	5							9.6	5.8	12.7	8.9	15.7	11.9	18.8	15.0			21.6	17.6	9.6	5.8
	6							8.4	3.9	11.5	7.0	14.5	10.0	17.6	13.1			19.7	14.6	11.5	7.0
AP-063	3	9.4	6.3			14.9	11.7	20.4	17.2	25.9	22.7	31.4	28.2	36.9	33.7			45.4	42.2	10.2	7.2
	4					12.3	8.3	17.8	13.8	23.3	19.3	28.8	24.8	34.3	30.3			41.8	37.8	13.7	9.7
	5							15.4	10.4	20.9	15.9	26.4	21.4	31.9	26.9			38.4	33.4	17.1	12.1
	6							13.0	7.0	18.5	12.5	24.0	18.0	29.5	23.5			35.0	29.0	20.5	14.5
AP-075	3	22.5	12.6			34.2	24.4	46.0	36.1	57.7	47.8	69.4	59.5	81.1	71.2			102.8	92.9	22.5	7.2
	4					30.0	16.9	41.8	28.6	53.5	40.3	65.2	52.0	76.9	63.7			93.6	80.4	30.0	16.9
	5							37.6	21.1	49.3	32.8	61.0	44.5	72.7	56.2			83.4	66.9	37.6	21.1
	6							33.4	13.6	45.1	25.3	56.8	37.0	68.5	48.7			79.2	59.4	45.1	25.3
AP-085	3	34.5	18.9			52.4	36.7	70.2	54.5	88.0	72.3	105.8	90.1	123.6	107.9			151.4	135.7	34.5	18.9
	4					46.1	25.2	63.9	43.0	81.7	60.8	99.5	78.6	117.3	96.4			144.0	123.1	46.1	25.2
	5							57.6	31.5	75.4	49.3	93.2	67.1	111.0	84.9			134.6	107.5	57.6	31.5
	6							51.5	20.0	69.1	37.8	86.9	55.6	104.7	73.4			126.4	95.1	69.1	37.8
AP-100	3	53.2	30.0			80.9	57.7	108.7	85.4	136.4	113.1	164.1	140.8	191.8	168.5			241.6	218.3	53.2	30.0
	4					70.9	40.0	98.7	67.7	126.4	95.4	154.1	123.4	181.8	150.8			228.6	207.6	70.9	40.0
	5							88.7	50.0	116.4	77.7	144.1	105.4	171.8	133.1			214.6	175.9	88.7	50.0
	6							78.7	32.2	106.4	60.0	134.1	87.7	161.8	115.4			197.8	151.4	106.4	60.0
AP-115	3	84.3	53.0			130.0	98.8	175.8	144.5	221.6	190.3	267.3	236.0	313.0	281.7			374.0	342.7	84.3	53.0
	4					112.3	70.7	158.1	116.4	203.9	162.2	249.6	207.9	295.3	253.6			350.0	308.3	112.3	70.7
	5							140.4	88.3	186.2	134.1	231.9	179.8	277.6	225.5			336.6	284.5	140.4	88.3
	6							122.7	60.2	168.5	106.0	214.2	151.7	259.9	197.4			312.0	250.5	168.5	106.0
AP-125	3	116.8	63.7			177.0	123.9	237.3	184.1	297.5	244.2	357.6	304.3	417.7	361.4			490.0	433.7	116.8	63.7
	4					155.7	85.0	216.0	145.2	276.2	205.3	336.3	265.4	396.4	325.5			466.0	395.1	155.7	85.0
	5							194.7	106.3	254.9	166.4	315.0	226.5	375.1	286.6			452.0	363.1	194.7	106.3
	6							173.4	67.4	233.6	127.5	293.7	187.6	353.8	247.7			438.0	331.1	233.6	127.5
AP-145	3	158.0	92.0			245.0	179.0	332.0	265.0	418.0	352.0	505.0	439.0	592.0	526.0			674.0	608.0	158.0	92.0
	4					211.0	123.0	298.0	210.0	384.0	269.0	471.0	383.0	558.0	470.0			640.0	552.0	211.0	123.0
	5							264.0	154.0	350.0	240.0	437.0	327.0	524.0	414.0			606.0	506.0	264.0	154.0
	6							230.0	98.0	316.0	184.0	403.0	271.0	490.0	358.0			572.0	440.0	316.0	184.0
AP 160	3	222.4	132.6			34.7	251.0	459.1	369.3	577.4	487.6	695.7	605.9	814.0	724.2			1022.0	932.2	222.4	132.6
	4					296.5	176.9	414.9	295.2	533.2	413.5	651.5	531.8	769.8	650.1			958.0	838.3	296.5	176.9
	5							370.7	221.1	489.0	339.4	607.3	457.7	725.6	576.0			892.0	742.4	370.7	221.1
	6							326.5	147.0	444.8	265.3	563.1	383.6	681.4	501.9			858.0	686.1	444.8	265.3
AP-180	3	287.9	191.0			447.6	350.7	607.3	510.4	766.9	670.0	926.6	829.7	1068.0	989.1			1270.0	1191.1	287.9	191.0
	4					383.9	254.7	543.6	414.4	703.3	574.0	862.9	733.7	1022.0	893.1			1223.0	1094.1	383.9	254.7
	5							479.9	318.4	639.6	478.1	792.2	637.7	958.6	797.1			1176.0	1017.1	479.9	318.4
	6							416.2	222.4	575.9	382.1	735.6	541.8	894.9	701.1			1130.0	941.1	575.9	382.1
AP-200	3	423.6	242.0			644.7	463.8	867.4	685.8	1089.0	907.7	1311.0	1130.0	1533.0	1351.0			1933.0	1751.0	423.6	242.0
	4					564.8	322.6	786.7	544.6	1008.0	766.5	1230.0	988.4	1452.0	1209.0			1804.0	1561.0	564.8	322.6
	5							706.0	403.4	927.9	625.3	1150.0	847.2	1372.0	1068.0			1706.0	1402.0	706.0	403.4
	6							625.3	262.2	847.2	484.1	1069.0	706.0	1291.0	927.0			1658.0	1295.0	847.2	484.1
AP-240	3	664.0	453.6			1,036.6	826.2	1,491.0	1,198.7	1,781.7	1,571.0	2,154.2	1,943.8	2,526.8	2,316.3			3,009.0	2,798.5	664.0	453.6
	4					885.4	604.8	1,257.9	977.4	1,630.5	1,349.9	2,003.0	1,722.5	2,375.6	2,095.0			2,958.0	2,677.5	885.4	604.8
	5							1,106.7	756.0	1,479.3	1,128.6	1,851.8	1,501.1	2,224.4	1,873.7			2,817.0	2,466.0	1,106.7	756.0
	6							955.5	534.7	1,328.1	907.2	1,700.6	1,279.8	2,073.2	1,279.8			2,727.0	2,306.0	1,328.1	907.2
AP270	3	912.5	705.1			1,451.7	1,244.3	1,990.9	1,783.5	2,530.1	2,322.7	3,069.3	2,861.9	3,608.5	3,401.1			4,355.0	4,147.6	912.5	705.1
	4					1,216.7	940.2	1,755.9	1,479.4	2,295.1	2,018.6	2,834.3	2,557.8	3,373.5	3,097.0			4,166.0	3,890.5	1,216.7	940.2
	5							1,520.9	1,175.5	2,060.1	1,714.4	2,599.3	2,144.4	3,138.5	2,792.8			4,038.0	3,692.1	1,520.9	1,175.5
	6							1,285.8	1,285.8	1,825.0	1,410.2	2,364.2	1,953.6	2,903.4	2,488.6			3,813.0	3,403.0	1,825.0	1,410.2
AP330	3	1,739.5	1,193.5			2,717.2	2,171.1	3,694.8	3,148.8	4,672.5	4,126.4	5,650.1	5,104.1	6,627.8	6,081.8			7,595.5	7,049.5	1,739.5	1,193.5
	4					2,319.3	1,591.3	3,297.0	2,569.0	4,274.6	3,546.6	5,252.3	4,524.3	6,230.0	5,501.9			7,231.0	6,503.0	2,319.3	1,591.3
	5							2,899.2	2,899.2	3,876.8	2,966.8	4,854.5	3,944.4	5,832.1	4,922.1			7,089.0	6,179.0	2,899.2	1,989.1
	6							2,501.3	2,501.3	3,479.0	2,386.9	4,456.7	3,364.6	5,434.3	4,342.3			6,417.0	5,305.0	3,479.0	2,386.9

Torque output available from air supply 0° = closed pistons, extended springs 90° = open pistons, compressed springs

Spring Torque

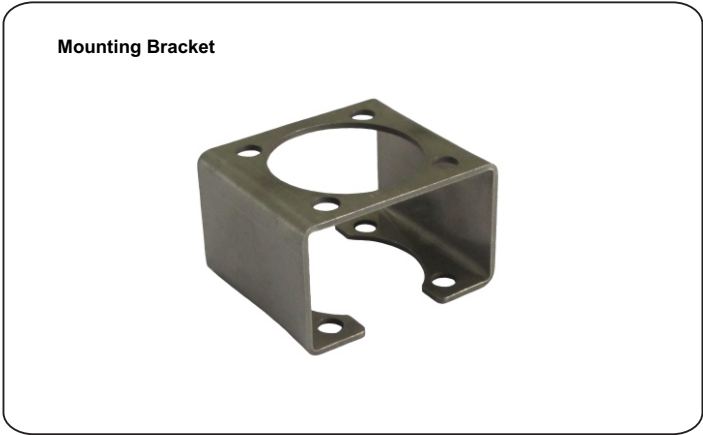
AP - Pneumatic Actuator Dimension



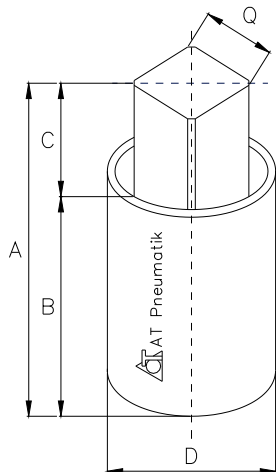
Position	Actuator Part Number																
	AP-032	AP-042	AP-050	AP-063	A-P075	AP-085	AP-100	AP-115	AP-125	AP-145	AP-160	AP-180	AP-200	AP-240	AP-270	AP-330	
A-90°	117	160	138	155.5	210	228	280.5	310	362	390	462	474	575	604	685	850	
A-120°	150	194	172	201	249	282	332	373	432								
A-180°	195	230	211	220	298	338	401	462	570								
B	45	57	67	83	100	110	125	142	155	175	196	220	240	298	332	414	
C	48	60.5	75	86	94	104	120	134	141	163	176	196	220	300	352	400	
AUX. D x E	105 x 22				105 x 22				130 x 30								
VDI/VDE 3845 F x G	50 x 25	80 x 30						130 x 30									
L	22.5	27	33.5	38	42.5	49	55	63.5	69.5	80	88	98	110	150	166	190	
M	25.5	33.5	41.5	48	51.5	55	65	70.5	71.5	83						210	
Port A & B DIN 259	1/8" GAS - NPT				1/4" GAS - NPT								1/2" GAS - NPT				
N x O	8 x 12				14 x 8				27 x 36				32 x 42		32 x 60	55 x 80	
P	20							30			50						
Q x I	9 x 10	9 x 10 11 x 13	9 x 10 11 x 13	9 x 10 11 x 13 14 x 16	11 x 13 14 x 16 17 x 20	14 x 16 17 x 20	17 x 20 17 x 25	17 x 20 17 x 25	17 x 20 22 x 25 27 x 30	17 x 20 22 x 25 27 x 30	22 x 25 27 x 30	22 x 25 27 x 30	27 x 30 36 x 39	27 x 30 36 x 39	36 x 39 46 x 50	22 x 25 27 x 30	46 x 50 55 x 60
F ISO 5211	F03 F04	F04 F03/05	F03 F04 F03/05 F05	F04 F03/05 F05 F05/07	F4 F05/07	F05/07	F07/10 F5/7/10	F07/10	F07/10 F12	F10/12	F10/12	F10/12 F14	F10/12 F14	F14 F16	F14 F16	F14 F16	

Dimensions are in mm

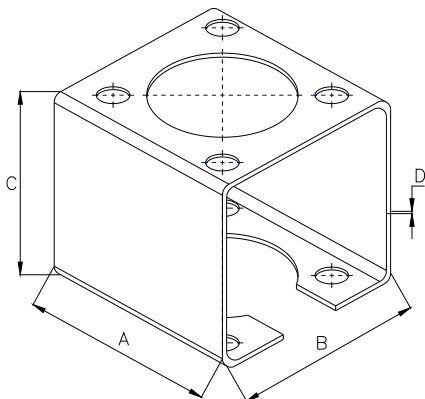
## Pneumatic Actuator Shafting Adaptor and Bracket



**ADR Dimension**



**BKF Dimension**



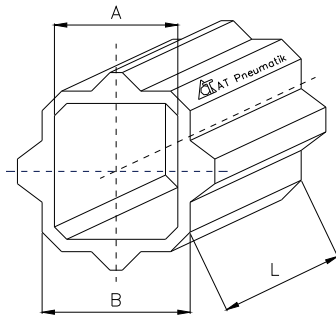
Blanking Drive Dimension					
TYPE	Q	A	B	C	D
ADR-09	9	60	50	10	Ø 20
ADR-11	11	62		12	
ADR-14	14	64		14	Ø 24
ADR-17	17	88	70	18	Ø 30
ADR-22	22	93		23	Ø 40
ADR-27	27	98		28	Ø 50
ADR-36	36	107		37	Ø 65
ADR-46	46	117		47	Ø 70
ADR-55	55	225	170	55	Ø 80
ADR-75	75	277	200	77	Ø 140

ISO 5211 Mounting Bracket Dimension					
TYPE	A	B	C	D	ISO 5211
BKF-03-03	45	52	40	2.5	F03 - F03
BKF-04-03	45	52	40	2.5	F04 - F03
BKF-04-04					F04 - F04
BKF-05-03	55	62	50	2.5	F05 - F03
BKF-05-04					F05 - F04
BKF-05-05					F05 - F05
BKF-07-04	70	82	50	2.5	F07 - F04
BKF-04-05					F07 - F05
BKF-07-07					F07 - F07
BKF-10-07	100	115	70	3	F10 - F07
BKF-10-10					F10 - F10
BKF-12-07	120	133	70	3	F12 - F07
BKF-12-10					F12 - F10
BKF-12-12					F12 - F12
BKF-14-10	137	153	70	4	F14 - F10
BKF-14-12					F14 - F12
BKF-14-14					F14 - F14
BKF-16-12	160	175	70	4	F16 - F12
BKF-16-14					F16 - F14
BKF-16-16					F16 - F16
BKF-25-16	320	320	70	8	F25 - F16
BKF-25-25			170		F25 - F25
BKF-30-25	400	420	200	10	F30 - F25
BKF-30-30					F30 - F30

Dimensions are in mm

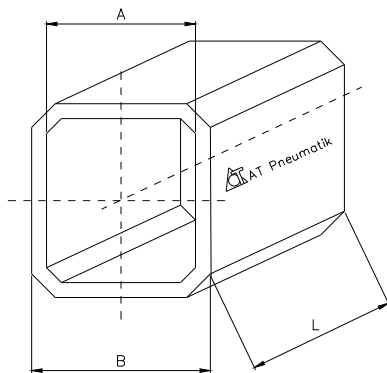
## Pneumatic Actuator Shafting Reductor

### Star Shaft Square Reductor

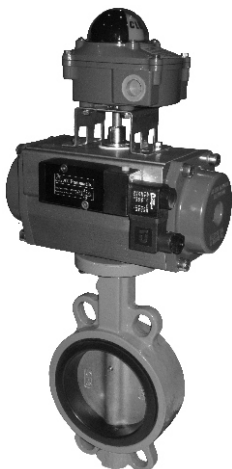


Star Shaft Reduction Dimension			
Part Number	L	A	B
RSTQ-08-11	12	8	11
RSTQ-09-11	12	9	11
RSTQ-09-13	12	9	13
RSTQ-11-13	12	11	13
RSTQ-11-14	16	11	14
RSTQ-14-17	17	14	17
RSTQ-16-22	22	16	22
RSTQ-17-22	22	17	22
RSTQ-22-27	27	22	27
RSTQ-27-36	36	27	36
RSTQ-36-46	46	36	46
RSTQ-46-55	55	46	55
RSTQ-55-75	77	55	75

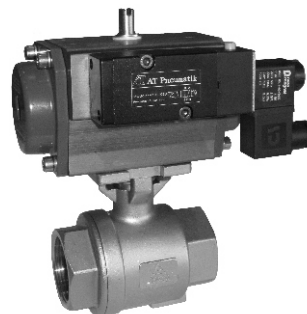
### Square Reductor



Square Reduction Dimension			
Part Number	L	A	B
RQ-08-11	12	8	11
RQ-09-11	10	9	11
RQ-09-14	16	9	14
RQ-10-14	16	10	14
RQ-10-17	17	10	17
RQ-11-14	16	11	14
RQ-11-17	17	11	17
RQ-12-14	16	12	14
RQ-12-17	17	12	17
RQ-14-17	17	14	17
RQ-16-22	22	16	22
RQ-17-22	22	17	22
RQ-22-27	27	22	27
RQ-27-36	36	27	36
RQ-36-46	46	36	46
RQ-46-55	55	46	55
RQ-55-75	77	55	75



Pneumatically Operated Butterfly Valve with Limit Switch Box and Namur Solenoid Valve



Pneumatically Operated Ball Valve with Namur Solenoid Valve

Dimensions are in mm

## Pneumatic Actuator Limit Switch Box ITS 100

Limit Switch Box with Position Indicator



### Ordering Code

**ITS - 1 - 0 - 0 - SS1**

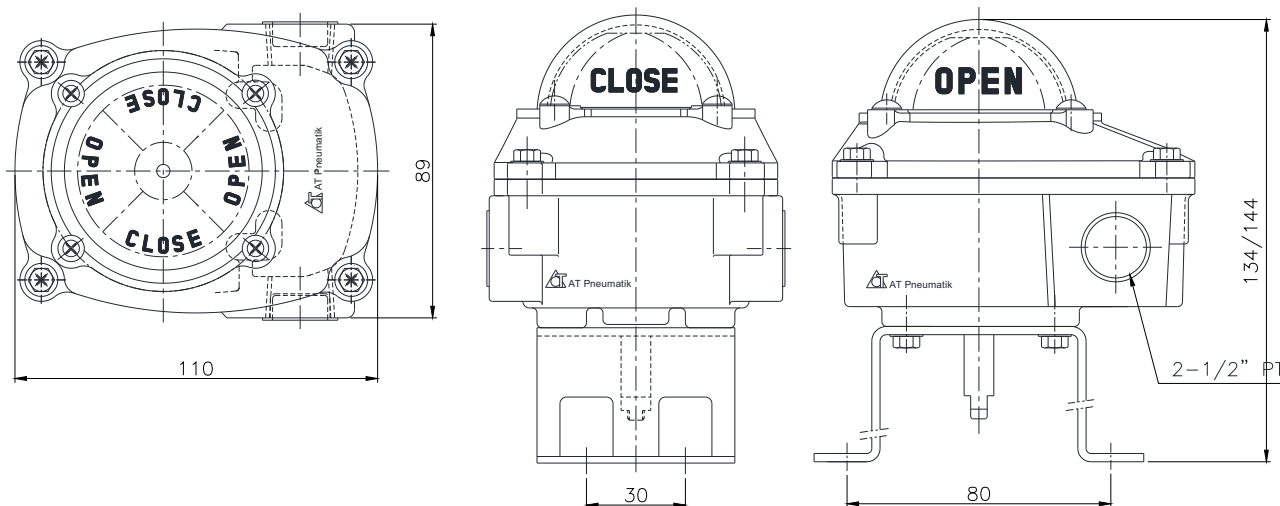
<b>ITS</b>	-	Small size series
<b>1</b>	-	Weather Proof
<b>0</b>	-	Mechanical Switch
<b>0</b>	-	2 SPDT Switch
<b>4</b>	-	4 SPDT Switch
<b>1</b>	-	Proximity Switch
<b>2</b>	-	Intrinsically Safe Switch
<b>S</b>	-	Per request switch
<b>SS1</b>	-	Namur Bracket 30 x 80 x 20(H)
<b>SS2</b>	-	Namur Bracket 30 x 80 x 30(H)
<b>SS3</b>	-	Namur Bracket 30 x 130 x 30(H)

ITS series position monitoring switch boxes are primary a rotary position indication device designed to integrate valve and NAMUR rotary pneumatic actuator with a variety of mounting options, internal switches or sensors and configuration

### Limit Switch Box Specification

SPECIFICATION	Standard	Option
Enclosure	Weather proof IP67, O-ring sealed	
Outside Coating	Epoxy-Polyester inside and outside against corrosion	Nylon Coating, special color coating
Ambient Temperature	5 ~ 180°C	
Cable entries	2-PT1/2", other standard threads	(NPT1/2", PF1/2", M20x1.5 and PG 13.5)
Terminal Block	8 terminal strips; 6 for Switches and 2 for Solenoid Valve	
Position Indicator	Dome Rotation 90°C Indication Close / Open	Others (3 way L-port, T-port)
Mounting Bracket	Stainless steel acc. to VDI/VDE3845 NAMUR SS1	SS2, SS3, MT1 as option
Switches (Sensors)	2-SPDT Mechanical Switch (Standard)	Proximity sensors and Intrinsically Safe Switch

ITS-100 Dimension



Dimensions are in mm

## Pneumatic Actuator Explosion Proof Limit Switch Box

Ex-proof Limit Switch Box with Position Indicator



### Ordering Code

**ITS - 3 - 0 - 0 - SS1**

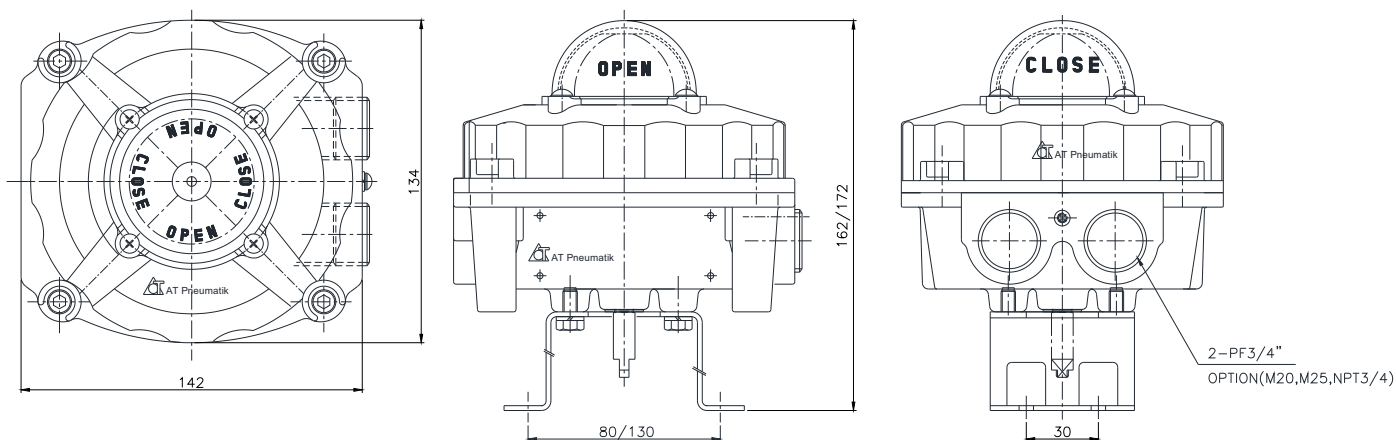
<b>ITS</b>	-	Small size series
<b>1</b>	-	Weather Proof
<b>0</b>	-	Mechanical Switch
<b>0</b>	-	2 SPDT Switch
<b>4</b>	-	4 SPDT Switch
<b>1</b>	-	Proximity Switch
<b>2</b>	-	Intrinsically Safe Switch
<b>S</b>	-	Per request switch
<b>SS1</b>	-	Namur Bracket 30 x 80 x 20(H)
<b>SS2</b>	-	Namur Bracket 30 x 80 x 30(H)
<b>SS3</b>	-	Namur Bracket 30 x 130 x 30(H)

This series are designated suitable for valve and actuators in hazardous are application, having compact but robust construction conforms to EN50018, also suitable in Zone 1 and 2, and ingress protection IP67. Standard aluminum housing provides reliable explosion proof performance.

### ITS300 Series Ex-proof Limit Switch Box Specification

SPECIFICATION	Standard	Option
Enclosure	Explosion proof Ex d IIC T6, IP67, O-ring Sealed	IP 68
Outside Coating	Epoxy-Polyester inside and outside against corrosion	Nylon Coating, special color coating
Ambient Temperature	0 ~ 80°C	0 - 100°C
Cable entries	2-PT3/4", other standard threads	(NPT3/4", PF3/4", M25x1.5)
Terminal Block	8 terminal strips; 6 for Switches and 2 for Solenoid Valve	
Position Indicator	Dome Rotation 90°C Indication Close / Open	Others (3 way L-port, T-port)
Mounting Bracket	Stainless steel acc. to VDI/VE3845 NAMUR SS1	SS2, SS3, MT1 as option
Switches (Sensors)	2-SPDT Mechanical Switch (Form C)	Proximity sensors and Intrically Safe Switch

#### ITS-300 Dimension



Dimensions are in mm

**Mechanical Switch Adjustment and Wiring diagram**

**Visual Position Indicator**



L Port and T Port Indicator for 3 way valve



Standard Indicator

Directly engaged with driving shaft to provide continuous position High strength, Chemical resistance and transparent poly-carbonate High visibility and reliability Red for close, Yellow for open (Red for close, Green for open as Option).

**Easy Set Cam / Terminal Block Strip**



**Limit Switch Cam**

Easy and precise cam set without setting tool Red cam for close, Green cam for open



**Terminal Strip**

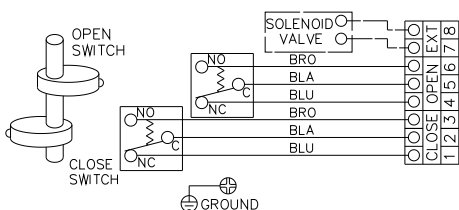
Socket type terminal strip with screws Maximum 2.5mm<sup>2</sup>, 26A at 30°C (approved by UL, CSA)

**Mechanical Switch Wiring Diagram**



**2-SPDT Switches**

Rating:  
16Amp 1/2hp 125/250Vac,  
0.6Amp 125Vdc  
0.3Amp 250Vdc  
Approved by UL, CSA

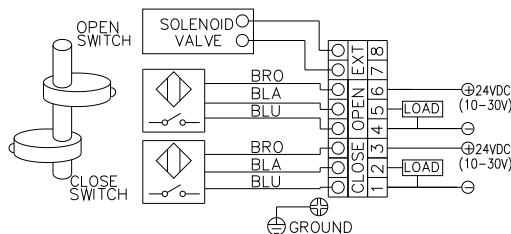


**Sensor Wiring Diagram**



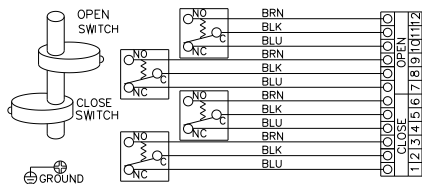
**Inductive Proximity Sensor**

Output : NPN or PNP  
Voltage : 10 to 30Vdc  
Working Temperature : 25 to 70°C



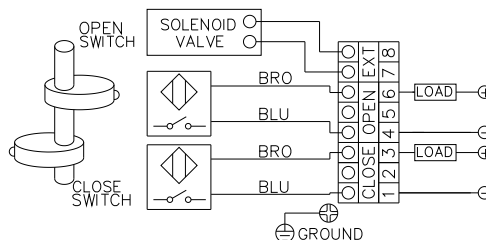
**4-SPDT Switches**

Rating:  
16Amp 1/2hp 125/250Vac,  
0.6Amp 125Vdc  
0.3Amp 250Vdc  
Approved by UL, CSA



**Intrinsically Safe Sensor**

Type : Two Wire  
Voltage : 8Vdc  
Working Temperature : 25 to 100°C



## Small Series Motorized Actuator

**Motorized Actuator ITQ-0020**



Pg11 Cable Gland with Wire

### Ordering Code

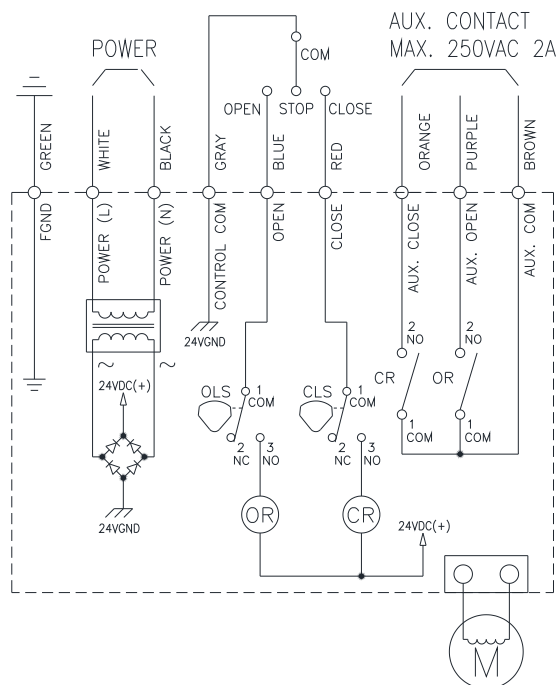
#### ITQ - 0020 - 24Vdc - Blank

- ITQ** - Motorized Actuator
- 0020** - 20Nm Motorized Actuator
- 24Vdc** - 24Vdc
- 24Vac** - 24Vac (Special Voltage)
- 110Vac** - 110Vac 50/60hz
- 220Vac** - 220Vac 50/60hz
- Blank** - 1 Phase
- 3 Phase not Available

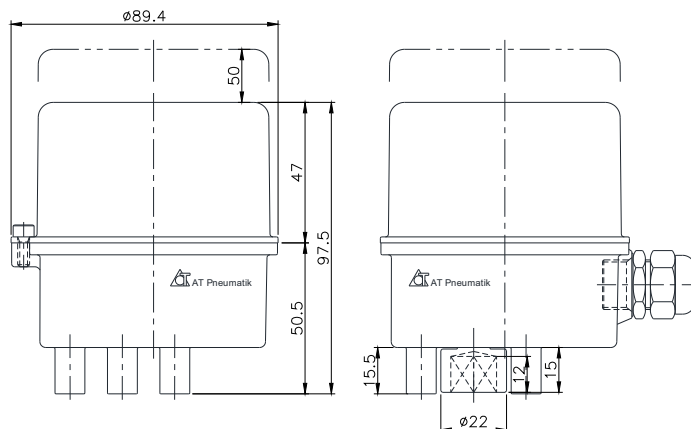
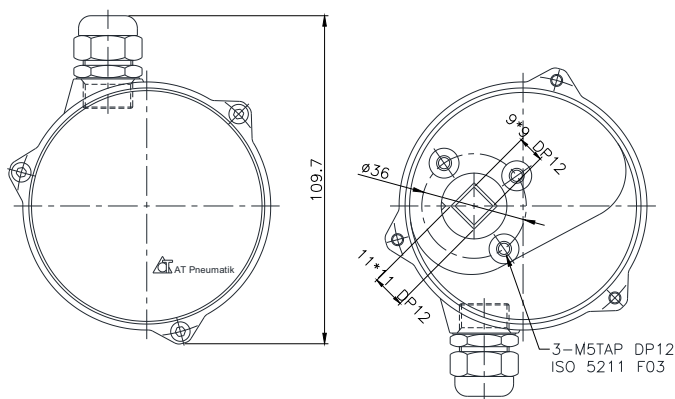
#### ITQ-0020 Specification

<b>Operating Time</b>	0 to 90° 11 seconds
<b>Weight</b>	1 Kg
<b>Torque</b>	25 Nm
<b>Enclosure</b>	IP66, O-ring Sealed
<b>Main Power</b>	110Vac / 1 Phase / 50 / 60Hz / 0.16Amp
	220Vac / 1 Phase / 50 / 60Hz / 0.08Amp
	24Vac 0.6Amp / 24Vac 0.55Amp
<b>Duty cycle (on/off)</b>	S2 : 50%
<b>Motor</b>	DC motor
	Insulation Class E
<b>Limit Switches</b>	2 ea for Open & Close (5A, 250VAC)
<b>Extra Limit Switches</b>	Relays for Open & Close (5A, 250VAC)
<b>Mounting</b>	ISO F03, 11 X 11 - DP12
	Square female shaft with insert 9X9mm
<b>Travel Angle</b>	90° ± 5°
<b>Cable Entry 7 wiring</b>	1-PG11 Cable gland with wires 30cm long
<b>Surface Protection</b>	Polyester coating
<b>Ambient Temperature</b>	0°C ~ +65°C
<b>Humidity (R.H)</b>	90%

#### Wiring Diagram



ITQ-0020 Dimension



Dimensions are in mm



Small Series Motorized Actuator

Motorized Actuator ITQ-0040



Ordering Code

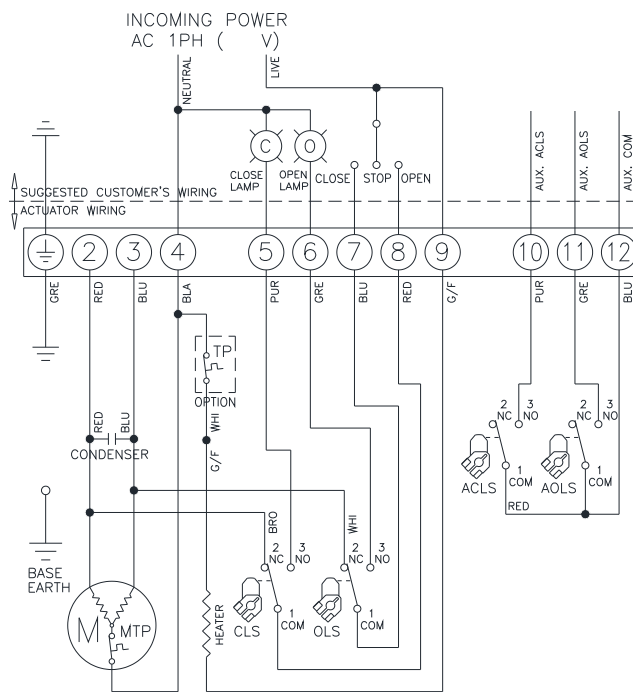
ITQ - 0040 - 24Vdc - Blank

- ITQ - Motorized Actuator
- 0040 - 40Nm motorized Actuator
- 24Vdc - 24Vdc
- 110Vac - 110Vac 50/60hz
- 220Vac - 220Vac 50/60hz
- Blank - 1 Phase
- 3 Phase not Available

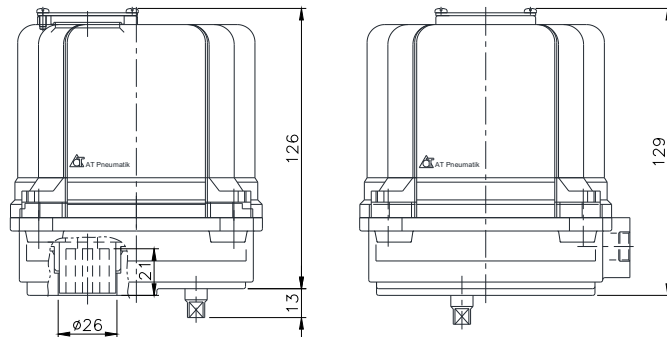
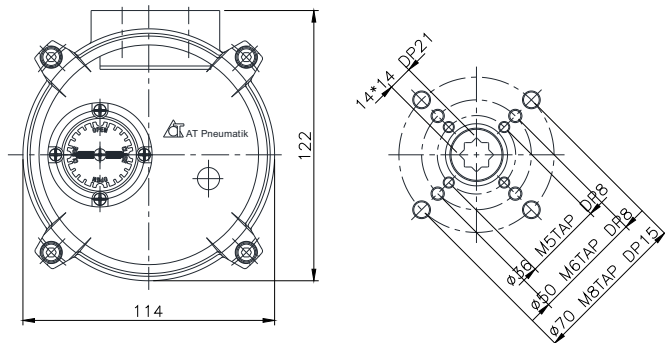
ITQ-0040 Specification

<b>Operating Time</b>	at 50Hz 0 to 90° 14 seconds at 60Hz 0 to 90° 12 seconds
<b>Weight</b>	3 Kg
<b>Torque</b>	40 Nm
<b>Enclosure</b>	IP66, O-ring Sealed
<b>Main Power</b>	110Vac / 1 Phase / 50 / 60Hz / 0.27Amp
	220Vac / 1 Phase / 50 / 60Hz / 0.18Amp
	24Vac 0.8Amp
	3 Phase not available
<b>Duty cycle (on/off)</b>	S2 : 50% Maximum 30 minutes
<b>Motor</b>	Induction Motor
	Insulation Class E
<b>Limit Switches</b>	2 each Travel
<b>Space Heater</b>	2 watts
<b>Manual Override</b>	Extruded Shaft on the Button
<b>Extra Limit Switches</b>	Not available
<b>Mounting</b>	ISO F03 / F05 / F07
	Square female shaft with insert 14 x 14mm
<b>Travel Angle</b>	90° ± 5°
<b>Terminal Block</b>	Spring loaded Push Type
<b>Cable Entry 7 wiring</b>	2 PG13.5
<b>Surface Protection</b>	Polyester coating
<b>Ambient Temperature</b>	0°C ~ +70°C
<b>Humidity (R.H)</b>	90%

Wiring Diagram



ITQ-0040 Dimension



Dimensions are in mm

## Small Series Motorized Actuator

**Motorized Actuator ITQ-0040**



### Ordering Code

#### ITQ - 0080 - 24Vdc – 1P – PK (option)

<b>ITQ</b>	-	Motorized Actuator
<b>0080</b>	-	80Nm Motorized Actuator
<b>24Vdc</b>	-	24Vdc
<b>110Vac</b>	-	110Vac 50/60hz
<b>220Vac</b>	-	220Vac 50/60hz
<b>380Vac</b>	-	380Vac 50/60hz
<b>440Vac</b>	-	440Vac 50/60hz
<b>1P</b>	-	1 Phase (380 and 440Vac not available)
<b>3P</b>	-	3 Phase
<b>PK</b>	-	Potentiometer Kit 0 to 1Kohms
<b>CT</b>	-	Output Transmitter 0-20mAmp
<b>RPC</b>	-	Input / Output Transmitter 0 to 20mAmp
<b>LP3</b>	-	Local / Remote Switch

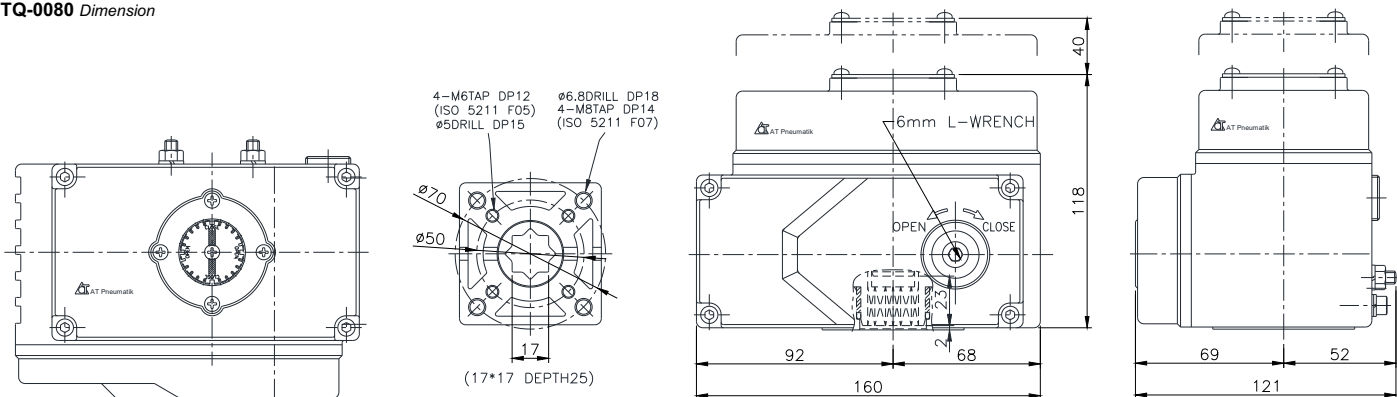
#### ITQ-0080 Specification

<b>Operating Time</b>	at 50Hz 0 to 90° 14 seconds
	at 60Hz 0 to 90° 12 seconds
<b>Weight</b>	3 Kg
<b>Torque</b>	40 Nm
<b>Enclosure</b>	IP66, O-ring Sealed
<b>Main Power</b>	110Vac / 1Phase / 50 / 60Hz / 0.27Amp
	220Vac / 1 Phase / 50 / 60Hz / 0.18Amp
	24Vac 0.8Amp
	3 Phase not available
<b>Duty cycle (on/off)</b>	S2 : 50% Maximum 30 minutes
<b>Motor</b>	Induction Motor
	Insulation Class E
<b>Limit Switches</b>	2 each Travel
<b>Space Heater</b>	2 watts
<b>Manual Override</b>	Extruded Shaft on the Button
<b>Extra Limit Switches</b>	Not available
<b>Mounting</b>	ISO F03 / F05 / F07
	Square female shaft with insert 14 x 14mm
<b>Travel Angle</b>	90° ± 5°
<b>Terminal Block</b>	Spring loaded Push Type
<b>Cable Entry 7 wiring</b>	2 PG13.5
<b>Surface Protection</b>	Polyester coating
<b>Ambient Temperature</b>	0°C ~ +70°C
<b>Humidity (R.H)</b>	90%

#### Actuator Option

<b>PK</b>	Potentiometer Kit (output signal 0 to 1 kohms)
	High resolution Potentiometer
	Continuous feedback for valve positioning
<b>CT</b>	Current Transmitter 4 to 20mAmp output
	Zero / Span Adjustment
	Convertible DIP Switch 4 wire and 2 wire
<b>RPC</b>	Remote Position Controller (Input / Output)
	Input 4 to 20mAmp, 0 to 10Vdc
	2 to 10Vdc, 1 to 5Vdc, 0 to 5Vdc
	Output 4 to 20mAmp, 0 to 10Vdc
	2 to 10Vdc, 1 to 5Vdc, 0 to 5Vdc
<b>LP3</b>	Mechanical Selector Switches
	Local / Remote & Open / Stop / Close
	Local Lamp Indicator
	Yellow indicates ON
	Red indicates OFF
	Green On Indicates Full Open
	Red ON Indicates Full closed

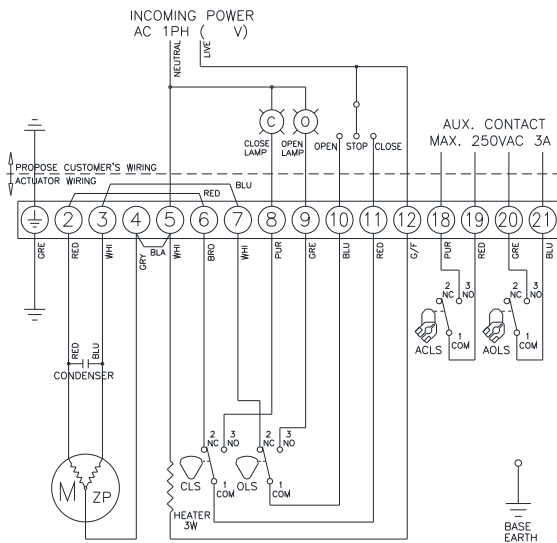
**ITQ-0080 Dimension**



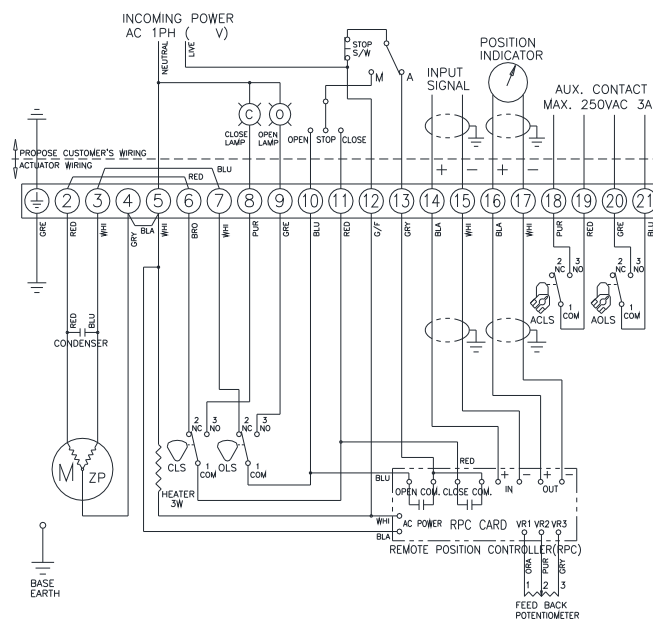
Dimensions are in mm

Motorized Actuator Wiring Diagram

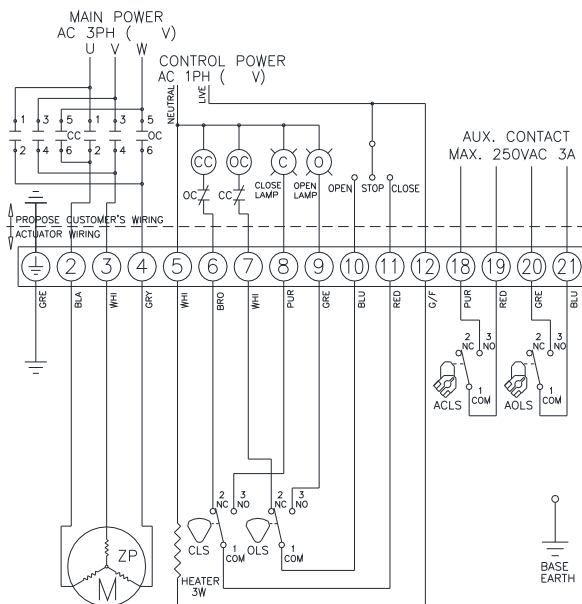
ITQ-0080 380/440Vac ON-OFF



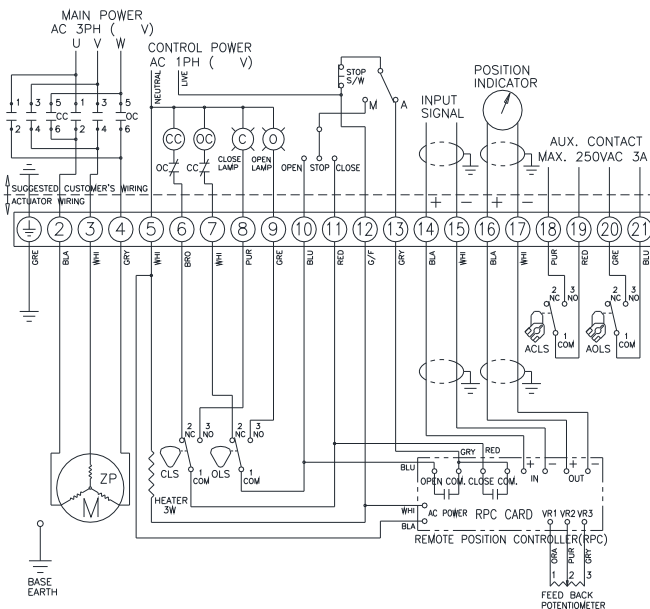
ITQ-0080 110/220Vac RPC



ITQ-0080 380/440Vac ON-OFF



ITQ-0080 380/440Vac RPC

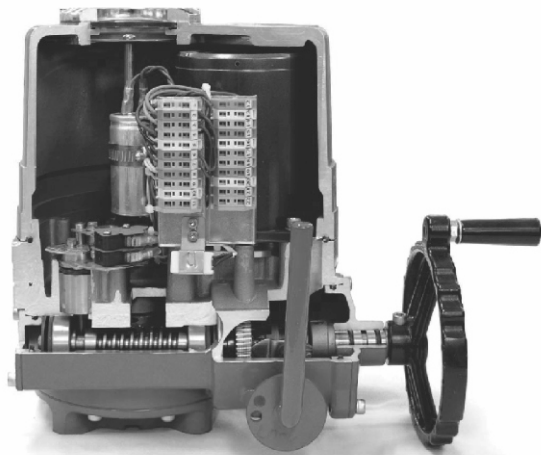


Motorized Actuator sizing, ball / butterfly valve mounting  
Wiring Diagram request for special voltage and other options,  
send your request at;  
sales@alltechnik.com



## Motorized Actuator Special Feature

### Motorized Actuator Inside Parts



### Housing

Hard anodized Aluminum and external epoxy powder coated against severe industrial environment.

### Gearing

Precisely machined double worm gear c/w minimum Back-lash, low noise, and high output torque.

### Self locking

Provided by double worm gearing to keep position of valve unchanged against reverse torque from valve.

### Sealing

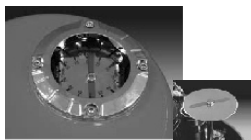
By O-ring in all interfaces IP67 (standard), and double o-ring for IP68 (option)

### Hand wheel

Different sizes depending on actuator torque and knob on hand wheel for easy operation.

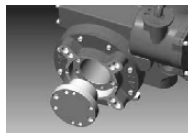
### Motor

Specially designed induction motor to generate high starting torque and high efficiency equipped with thermal protector to prevent damage from overheating.



### Indicator

Continuous mechanical position indicator and window with dial.



### Removable drive bushing and ISO5211 mounting base

(F07~F16) for easy Mounting on valve.



### Limit Switches

Directly engage with driving shaft to set accurate for position valve.

2 each travel end (open/close).  
Optional Extra Limit Switches (Max. 4 for each end) Except for ITQ0100



### External mechanical stopper

Prevents over run of travel angle when limit switch fails



### Captive cover bolts

Design to prevent losing it during maintenance or installation.

All external bolts are stainless steel for rust prevention.



### Torque Switches

Protect actuator from damage caused by overload torque driven valve over the whole travel. One each for open/close.



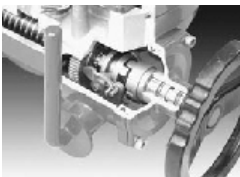
### Space Heater

Anti-condensation



### Terminal

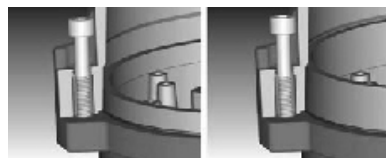
Spring loaded push type terminal for tight wiring connection under severe vibration.



### Manual override

Auto/Mechanical switchable lever and hand wheel engagement for emergency manual operation.

Drive force automatically resorted by motor start, unless lever padlocked to prevent this occurring.



### Tapered interface between cover and lower housing

For easy lifting cover up from lower housing for wiring or Maintenance.

Standard: Short interface for providing easier access to internal component.

Explosion proof: Long interface for keeping the length of flame path.

## Motorized Actuator

Motorized Actuator



### Ordering Code

**ITQ - 0100 - 24Vdc - 1P - EX - PK**

- |               |   |  |               |                   |
|---------------|---|--|---------------|-------------------|
| <b>ITQ</b>    | - | Motorized Actuator                     |               |                   |
| <b>0100</b>   | - | 0100Nm (Torque)                        | <b>0160</b>   | - 0160Nm (Torque) |
| <b>0240</b>   | - | 0240Nm (Torque)                        | <b>0350</b>   | - 0350Nm (Torque) |
| <b>0500</b>   | - | 0500Nm (Torque)                        | <b>0800</b>   | - 0800Nm (Torque) |
| <b>1100</b>   | - | 1000Nm (Torque)                        | <b>1500</b>   | - 1500Nm (Torque) |
| <b>2000</b>   | - | 2000Nm (Torque)                        | <b>3000</b>   | - 3000Nm (Torque) |
| <b>24Vdc</b>  | - | 24Vdc                                  | <b>110Vac</b> | - 110Vac 50/60hz  |
| <b>220Vac</b> | - | 220Vac 50/60hz                         | <b>380Vac</b> | - 380Vac 50/60hz  |
| <b>440Vac</b> | - | 440Vac 50/60hz                         |               |                   |
| <b>1P</b>     | - | 1 Phase (380 and 440Vac not available) |               |                   |
| <b>3P</b>     | - | 3 Phase                                |               |                   |

**See Details at Mechanical Option**

- |            |   |                   |            |   |                    |
|------------|---|-------------------|------------|---|--------------------|
| <b>EX</b>  | - | Explosion proof   | <b>WT</b>  | - | Water tight        |
| <b>ALS</b> | - | Aux. Limit Switch | <b>ATS</b> | - | Aux. Torque Switch |


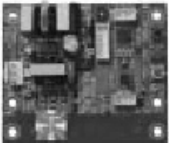

**See Additional Details at Remote Monitoring Option**

- |            |   |                                      |
|------------|---|--------------------------------------|
| <b>PK</b>  | - | Potentiometer Kit 0 to 1Kohms        |
| <b>CT</b>  | - | Output Transmitter 0-20mA            |
| <b>RPC</b> | - | Input / Output Transmitter 0 to 20mA |

### Mechanical Option

<b>EX</b>	Explosion proof (Ex d II B T4)	Approved by KLT
<b>WT</b>	Watertight (IP68), Temporary submersible	10M Head 100hours
<b>ALS</b>	Auxiliary limit switches (Max 2 for each travel end)	Except for ITQ 0100
<b>ATS</b>	Auxiliary torque switches (Max 2 for each travel end)	Except for ITQ 0100
<b>EXT</b>	Extended travel angle (up to 120°, 135°, 180°, 270°)	Except for ITQ with Gear Box
<b>SV</b>	Variation in Torque and operating speed	Please consult before ordering

### Remote Monitoring and Control Option

	<b>PK</b>	<p>Potentiometer kit (output signal : 0~1 Kohm)</p> <p>High resolution potentiometer and precisely machined gearing are directly engaged with drive shaft to feedback continuous position of valve</p>
	<b>CT</b>	<p>Current transmitter (output signal : 4-20mA)</p> <p>Zero / Span Adjustment</p> <p>Convertible DIP Switch (4 wire to 2 wire)</p>
	<b>RPC</b>	<p>Remote position controller (by input and output signal)</p> <p>Input : 4-20mA, 0-10VDC, 2~10VDC, 1~5VDC, 0~5VDC</p> <p>Output : 4-20mA, 0-10VDC, 2~10VDC, 1~5VDC, 0~5VDC</p> <p>Auto-calibration</p> <p>Reverse operating direction</p>

ITQ 0100 - 3000 Series Local Control		
	<b>LP2 for 1 &amp; 3 Phase</b> <b>ITQ 0100 - 3000</b>	Control power : 110/220VAC, 24VDC Mechanical selector switches – Local/Remote & Open/Stop/Close Local lamp indication – Remote – Yellow(on), Local-Red(on) Fully open – Green(on), Fully close-Red(on) * Options Available : PK, CT, RPC(Modulating), IP67, Explosion proof
	<b>LM2 for 3 phase</b> <b>ITQ 0100 - 3000</b>	Mechanical selector switches – Local/Remote & Open/Stop/Close Local lamp indication – Remote – Yellow(on), Local-Red(on) Fully open – Green(on), Fully close-Red(on) Mechanical reversing magnetic contactors, control transformer (110/220VAC) Options available : PK, CT, RPC(Modulating), IP67, Explosion proof
	<b>LP4 for 1 &amp; 3 phase</b> <b>ITQ 0160~3000</b>	Control power : 110/220VAC, 24VDC Magnetic selector switches – Local/Remote & Open/Stop/Close Local lamp indication – Fully close Green(On), Closing – Green(Flickering) Torque switch trip – Yellow(on), Fault – Yellow (Flickering) Fully open – Red (on), Opening – Red (Flickering) Options available : PK, CT, RPC (Modulating) IP67, Explosion proof

ITQ 0160 - 9000 Series Local Control		
	<b>LD1 for 3 phase</b> <b>ITQ 0160 ~ 9000</b>	Magnetic selector switches – Local/Remote & Open/Stop/Close Local amp indication – Fully close – Green(on), Closing – Green(Flickering) Torque switch trip – Yellow (on), Fault – Yellow (Flickering) Fully open – Red (on), Opening – Red (Flickering) Electronic reversing contactors, Transformer, Phase discriminator (Detection, Auto-correction) 34 points terminal strips Remote position indication : PK, CT, RPC(Modulating), Profibus communication, Local digital position indication (LCD) : Either 4-20Ma DC or % IP67, Explosion Proof
	<b>LD2 for 3 phase</b> <b>ITQ 0160 ~ 9000</b>	Magnetic selector switches – Local/Remote & Open/Stop/Close Local lamp indication – Fully close – Green(on), Closing – Green (Flickering) Torque switch trip – Yellow (on), Fault – Yellow (Flickering) Fully open – Red (on), Opening – Red (Flickering) Reversing electronic contactors, Transformer, Phase discriminator Auto Correction 34 points terminal strips, Separate compartment for terminal block Remote position indication : Position monitoring relays Options available : PK, CT, RPC(Modulating), Profibus communication, Local digital position indication (LCD): Either 4-20mA DC or % IP67, Explosion proof

ITQ 0100 - 0500 Fail Safe Function		
	<b>BP for 1 phase</b> <b>ITQ 0100 ~ 0500</b>	Rechargeable Battery back up – Fail safe function When main AC power is alive actuator works as normal on-off actuator Once power is cut, actuator moves to pre-set fail safe position. Input power : 110/220VAC, 50/60Hz Output CONTACTS : open/close/Alarm relay LED signal indication : 4 LEDs (Fully open/Close, Over torque and power status) Rechargeable battery : 2.0AH 27.5VDC(Ni-Cd)



## Motorized Actuator Technical Specification

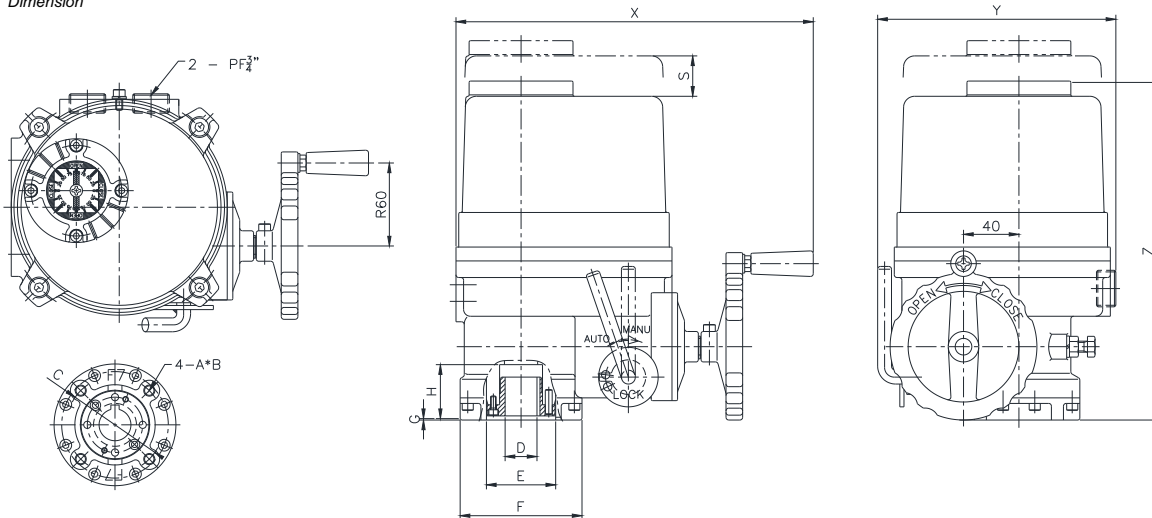
Actuator Specification	
Enclosure	Weatherproof IP67, NEMA4 and 6, O-ring sealed
Main Power Supply	110/220VAC/1 Phase/50/60Hz, 380/440vac/3 Phase/50/60Hz    -/+ 10%
Control power supply	110/220VAC/1 Phase/50/60Hz    -/+ 10%
Duty cycle (on-off)	S2: 10Min~30Min / S4: 20~50%
Duty cycle (modulating)	S4, 30~50%, 300~1200 start/Hour
Motor	Squirrel Caged induction motor
Limit Switches	2 each for Open and Close (SPDT 250VAC/10A rating)
Torque switches	1 each for Open and Close (SPDT 250VAC/10A rating except for ITQ 0100)
Stall protection / Set Temperature	Built in Thermal protection, Open 150                    °C    5°C, Close 97                    °C    1°C
Travel angle	90°            5o (0° ~ 100°)
Position indicator	Continuous mechanical indicator with arrow
Manual override	De-clutchable
Self locking	Provided by double worm gearing (no brake)
Mechanical stopper	1 each for each travel end (Open and Close), external & adjustable
Space Heater	5W (110/220VAC) for anti-condensation
Cable entries	2 - PF 3/4"    TAP
Lubrication	EP type grease
Terminal block	Screw and Lever Push type (spring loaded)
Ambient temperature	Basicactuator: -20°C ~ +70°C
	c/w control options: -10°C ~ +60°C
Ambient humidity	90%RH Max (Non condensing)
Anti Vibration	XYZ 10g. 0234Hz, 30 minutes
External coating	Dry powder (Polyester)

Technical Information										
Model	ITQ0100	ITQ0160	ITQ0240	ITQ0350	ITQ0500	ITQ0800	ITQ1100	ITQ1500	ITQ2000	ITQ3000
Rated torque (Nm)	100	160	240	350	500	800	1100	1500	2000	3000
Duty cycle S4 (%)	40	30	30	30	30	30	30	30	30	30
Operating time (sec) at 50Hz	21	26	26	31	31	39	39	93	117	117
Operating time (sec) at 60Hz	18	22	22	26	26	32	32	78	97	97
Max. Bore size (mm) Key (Ø)	22	25	25	40	40	48	48	75	75	75
Max. Bore size (mm) Square	20	23	23	34	34	40	40	64	64	64
Rated Amp. 1 Phase/110Vac-50Hz	0.98	1.60	1.62	1.72	3.60	3.90	3.90	3.60	3.80	3.80
Rated Amp. 1 Phase/110Vac-60Hz	1.10	1.70	1.72	1.80	3.90	4.20	4.30	3.90	4.20	4.20
Rated Amp. 1 Phase/220Vac-50Hz	0.52	0.85	0.87	0.87	1.50	2.05	2.15	1.50	2.05	2.15
Rated Amp. 1 Phase/220Vac-60Hz	0.58	0.90	0.90	0.90	1.60	2.20	2.30	1.60	2.20	2.30
Rated Amp. 3 Phase/380Vac-50Hz	0.43	0.30	0.32	0.32	0.52	0.82	0.84	0.52	0.82	0.84
Rated Amp. 3 Phase/380Vac-60Hz	0.33	0.30	0.32	0.32	0.56	0.88	0.90	0.56	0.88	0.90
Rated Amp. 3 Phase/440Vac-50Hz	0.59	0.30	0.32	0.32	0.55	0.82	0.84	0.55	0.82	0.84
Rated Amp. 3 Phase/440Vac-60Hz	0.42	0.32	0.35	0.35	0.58	0.88	0.88	0.58	0.88	0.88
Rated Amp. DC / 24V	2.8	4.0	5.0	5.0	-	-	-	-	-	-
Motor insulation class	F	F	F	F	F	F	F	F	F	F
ISO 5211 mounting flange	F07	F07/F1015	F07/F10	F10/F12	F10/F12	F12/F14	F12/14	F16	F16	F16
Weight (Kgs)	7	15	15	20	20	25	25	65	75	75
No. of handwheels turns	10	12	12	14	14	17	17	65	70	70

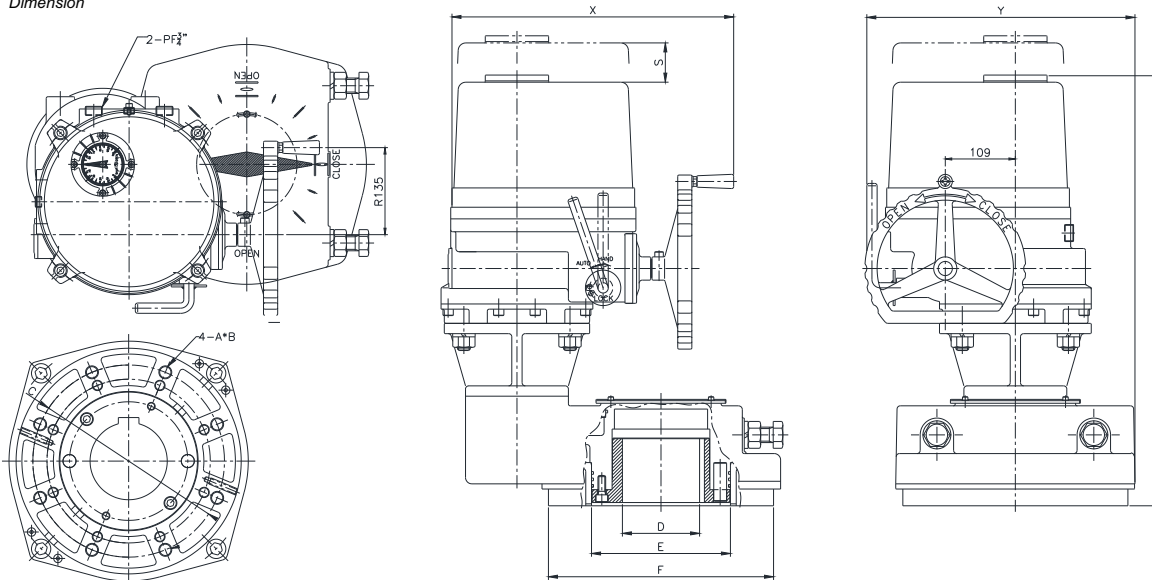
### Motorized Actuator Dimension

Type	ITQ0100	ITQ0160	ITQ0240	ITQ0350	ITQ0500	ITQ0800	ITQ1100	ITQ1500	ITQ2000	ITQ3000
Flange ISO5211	F07	F07	F07	F10	F10	F12	F12	F16	F16	F16
		F10	F10	F12	F12	F14	F14			
C	Ø 70	Ø 70	Ø 70	Ø 102	Ø 102	Ø 125	Ø 125	Ø 165	Ø 165	Ø 165
		Ø 102	Ø 102	Ø 125	Ø 125	Ø 140	Ø 140			
A	M8	M8/M10	M8/M10	M10/M12	M10/M12	M12/M16	M12/M16	M20	M20	M20
B	14	14/17	14/17	17/21	17/21	20/25	20/25	32	32	32
D(key)	Ø 22	Ø 25	Ø 25	Ø 40	Ø 40	Ø 48	Ø 48	Ø 75	Ø 75	Ø 75
D(Squ.)	20	23	23	34	34	40	40	64	64	64
E	Ø 50	Ø 58.5	Ø 58.5	Ø 80	Ø 80	Ø 95	Ø 95	Ø 135	Ø 135	Ø 135
F	Ø 88	Ø 125	Ø 125	Ø 148	Ø 148	Ø 178	Ø 178	Ø 245	Ø 245	Ø 245
G	3	3	3	3	3	3	3	5	5	5
H	37	57	57	62	62	67	67	90	90	90
S	100	115	115	145	145	170	170	145	170	170
X	258	338	338	357	357	380	380	368	380	380
Y	172	229	229	244	244	287	287	293	312	312
Z	220	253	259	288	288	313	313	506	531	531

ITQ-0100 - 1100 Dimension



ITQ-1500 - 9000 Dimension



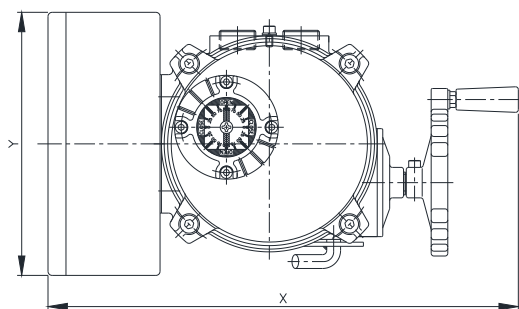
Dimensions are in mm



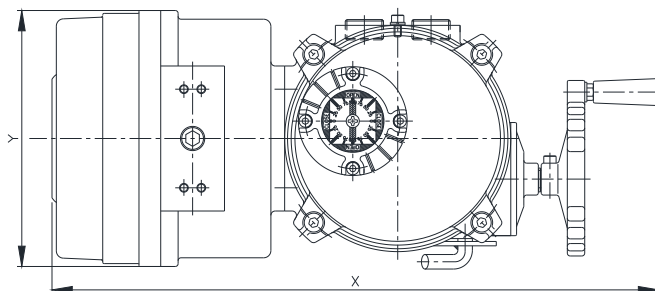
Control Option Dimension																		
Type	RPC			CT			BP			LP2/LM2			LP4/LD1			LD2		
	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z
ITQ 0100	340	190	220	316	172	220	428	172	220	428	172	220	419	172	220	X		
ITQ 0160 ITQ 0240	O			O			508	229	259	508	229	259	499	299	259	517	284	259
ITQ 0350	O			O			527	244	288	527	244	288	518	244	288	536	284	288
ITQ 0500	O			O			X			527	244	288	518	244	288	536	284	288
ITQ 0800 ITQ 1100	O			O			X			550	284	313	541	284	313	559	284	313
ITQ 1500	O			O			X			538	293	506	529	293	506	547	284	506
ITQ 2000 ITQ 3000	O			O			X			550	312	531	541	312	531	559	284	531

O Installed Inside the Actuator X not Available

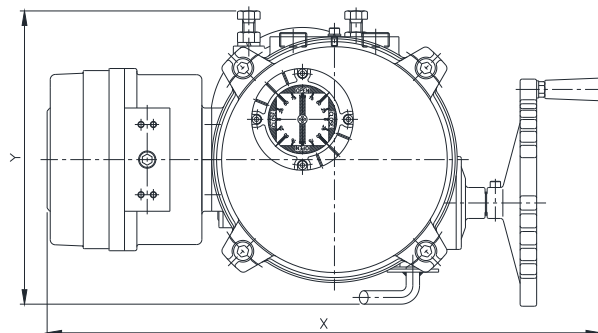
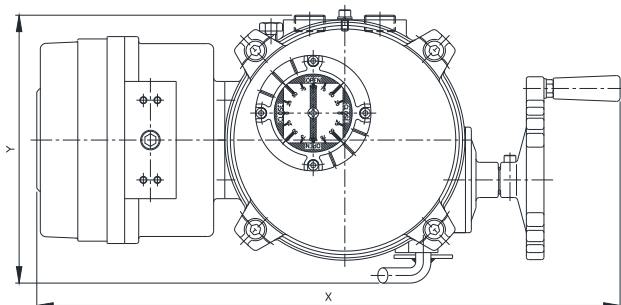
ITQ-0100 - 0500 Dimension



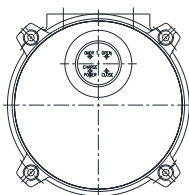
RPC/CT Option



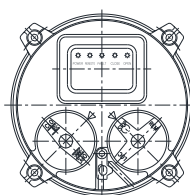
ITQ-0800 - 9000 Dimension



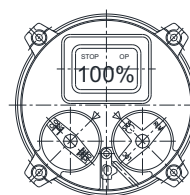
BP Panel



LP / LM Panel

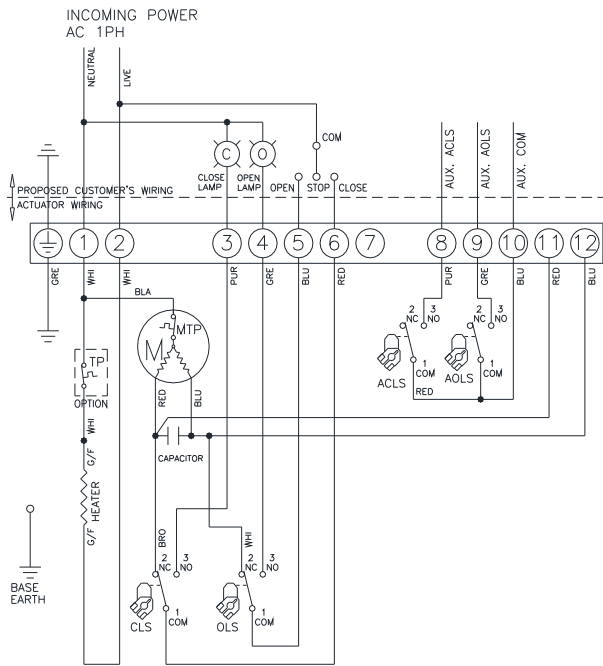


RPC / LM / LP Panel

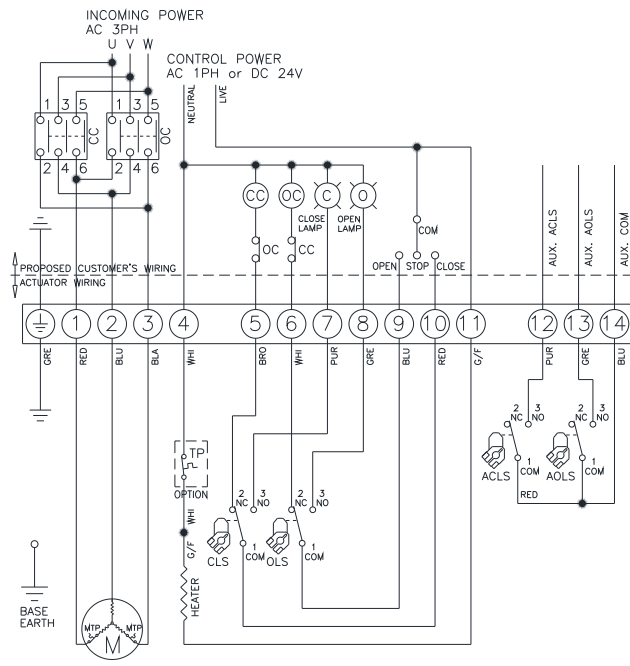


Dimensions are in mm

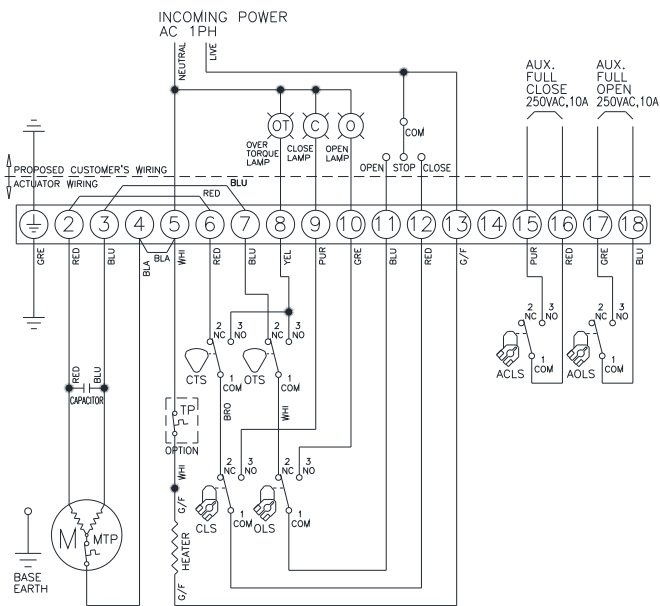
## ITQ-0100 1Ph 110/220 Vac ON-OFF



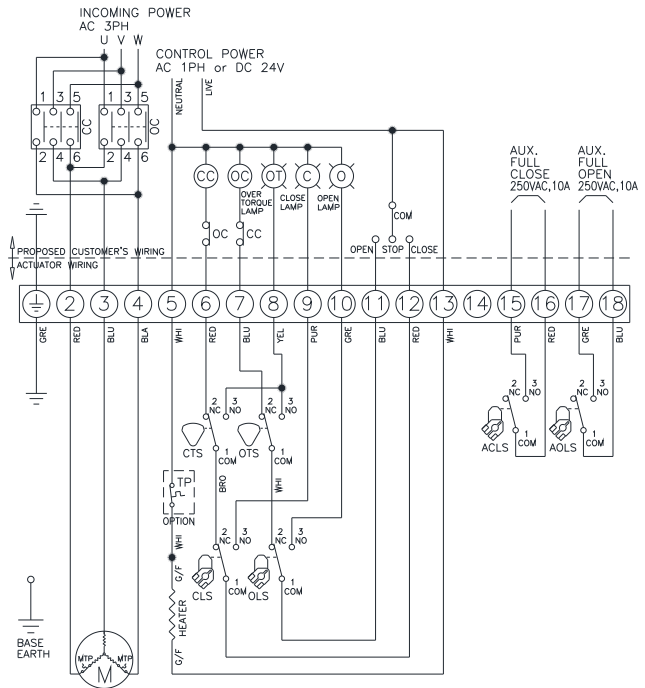
## ITQ-0100 3Ph 380/440 Vac ON-OFF



## ITQ-0160 - 9000 1Ph 110/220 Vac ON-OFF



## ITQ-0160 - 9000 3Ph 380/440 Vac ON-OFF



Electric Actuator sizing, ball and butterfly valve mounting  
Wiring Diagram for special voltage and other options,  
send your request at;  
[sales@alltechnik.com](mailto:sales@alltechnik.com)

## Three Piece Two Way Full Bore Ball Valve ISO5211 Direct Mount

**Three Piece Ball Valve**



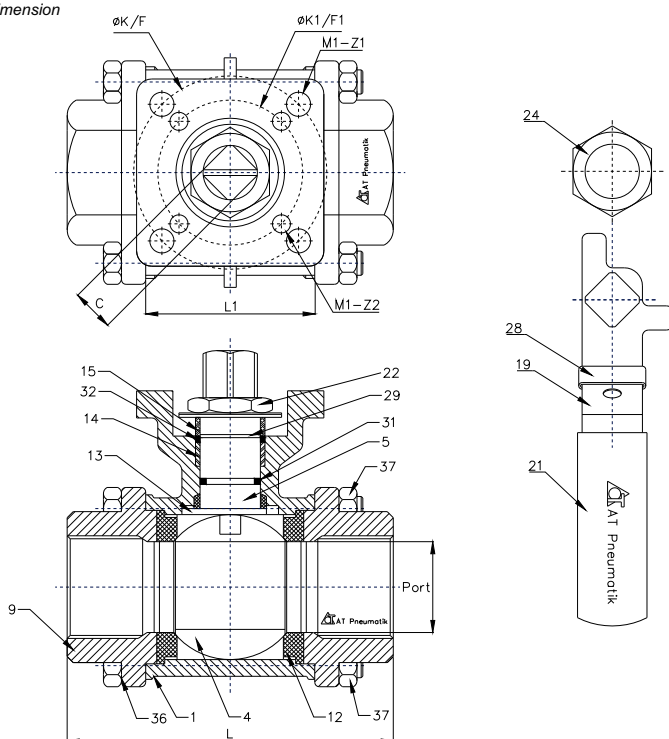
### Ordering Code

#### K158T - DN08 - CF8M - Blank - BSPT

- K168T** - Three Piece Ball Valve
- DN08** - DN08 1/4"                      DN10 3/8"  
                  DN15 1/2"                      DN20 3/4"  
                  DN25 1"                              DN32 1 1/4"  
                  DN40 1 1/2"                          DN50 2"
- CF8M** - Stainless Steel 316
- CF8** - Stainless Steel 304
- Blank** - Bare Shaft
- H** - With Handle
- BSPT** - Standard Thread Slightly Tapered Thread
- BSP** - Parallel Thread European Standard Thread

Working Pressure 800psi at 80°C, 150 psi at 180°C, actuator ready direct mount ISO5211.

Ball Valve Dimension



Material List		
Number	Part Name	Material
1	Body	ASTM A351 Gr.CF8M
4	Ball	ASTM A351 Gr.CF8M
5	Stem	SS316
9	End Cap	ASTM A351 Gr.CF8M
12	Seat	RTFE
13	Thrust Washer	PTFE
14	Stem packing	PTFE
15	Gland Bush	SS304
19	handle	SS304
21	Handle Nut	PLASTIC
22	Stem Nut	SS304
24	Handle Cover	SS304
28	lock Device	SS304
29	Belleville Washer	SS304-CSP
30	Tab Washer	SS304
31	O-ring	VITON
32	Packing Follower	PTFE.+25%G.F.
35	Body Bolt	SS304
36	Bolt Washer	SS304
37	Bolt Nut	SS304

Three Piece Ball Valve Dimension														
Size	Port	L	L1	E	H	H1	H4	C	ØK	ØK1	Z	Z1	M1	
DN08	1/4"	11.5	63.5	22.5	112	73	8.5	37	9	50	36	7	6	4
DN10	3/8"	12.5	63.5	22.5	112	73	8.5	37	9	50	36	7	6	4
DN15	1/2"	15	63.5	22.5	112	73	8.5	37	9	50	36	7	6	4
DN20	3/4"	20	72.5	27.5	112	80.8	8.5	45	9	50	36	7	6	4
DN25	1"	25	81	34	136	90.5	11.4	53.5	9	50	36	7	6	4
DN32	1-1/4"	32	94.5	42.5	185	98.7	11.4	59	9	50	36	7	6	4
DN40	1-1/2"	38	108	52	197.9	115.3	14	74.8	14	70	50	9	7	4
DN50	2"	50	121.5	63.5	197.9	124	13.7	83.5	14	70	50	9	7	4
DN65	2-1/2"	65	157.5	85.5	267	155	18	108.8	17	102	70	11	9	4
DN80	3"	80	190	102	267	208.5	18	118.3	17	102	70	11	9	4
DN100	4"	100	225	128.5	322	216.7	18	153.8	17	102	70	11	9	4

Dimensions are in mm

## Two Piece Two Way Full Bore Ball Valve ISO5211 Direct Mount

Two Piece Ball Valve



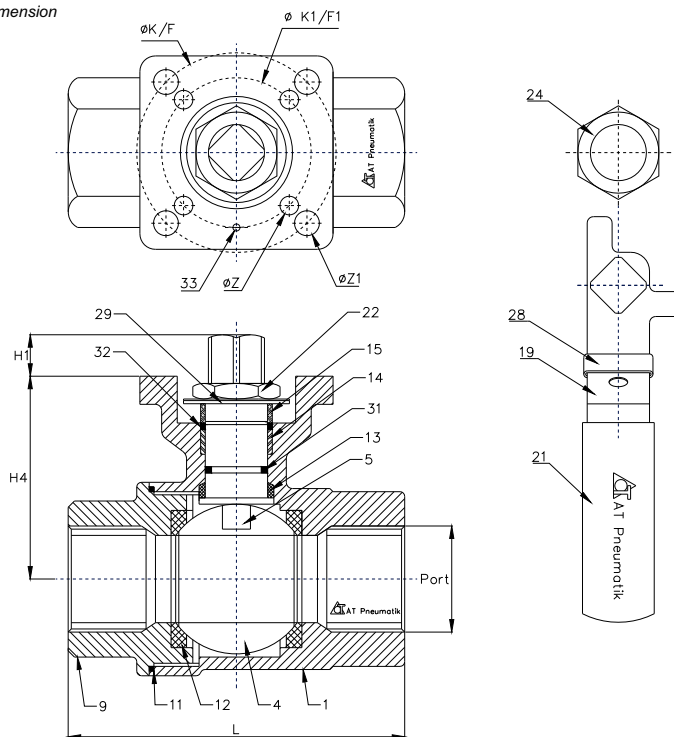
### Ordering Code

#### K168T - DN08 - CF8M - Blank - BSPT

- K168T** - Two Piece Ball Valve
- DN08** - DN08 1/4"                      DN10 3/8"  
                   DN15 1/2"                    DN20 3/4"  
                   DN25 1"                              DN32 1 1/4"  
                   DN40 1 1/2"                    DN50 2"
- CF8M** - Stainless Steel 316
- CF8** - Stainless Steel 304
- Blank** - Bare Shaft
- H** - With Handle
- BSPT** - Standard Thread Slightly Tapered Thread
- BSP** - Parallel Thread European Standard Thread

Working Pressure 800psi at 80°C, 150 psi at 180°C, actuator ready direct mount ISO5211.

Ball Valve Dimension



Material List		
Number	Part Name	Material
1	Body	ASTM A351 Gr.CF8M
4	Ball	ASTM A351 Gr.CF8M
5	Stem	SS316
9	End Cap	ASTM A351 Gr.CF8M
12	Seat	RTFE
13	Thrust Washer	PTFE
14	Stem packing	PTFE
15	Gland Bush	SS304
19	Handle	SS304
21	Handle Cover	PLASTIC
22	Stem Nut	SS304
24	Handle Nut	SS304
28	Locking Device	SS304
29	Bellevalle Washer	SS304-CSP
30	Tab Washer	SS304
31	Stem O-ring	VITON
32	Packing Follower	PTFE +25%G.F.
33	Stop Pin	SS304

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Two Piece Ball Valve Dimension													
Size	Port	L	L1	E	H	H1	H4	C	ØK	ØK1	Z	Z1	
DN08	1/4"	11.5	63.5	22.5	112	73	8.5	37	9	50	36	7	6
DN10	3/8"	12.5	63.5	22.5	112	73	8.5	37	9	50	36	7	6
DN15	1/2"	15	63.5	22.5	112	73	8.5	37	9	50	36	7	6
DN20	3/4"	20	72.5	27.5	112	80.8	8.5	45	9	50	36	7	6
DN25	1"	25	81	34	136	90.5	11.4	53.5	9	50	36	7	6
DN32	1-1/4"	32	94.5	42.5	185	98.7	11.4	59	9	50	36	7	6
DN40	1-1/2"	38	108	52	197.9	115.3	14	74.8	14	70	50	9	7
DN50	2"	50	121.5	63.5	197.9	124	13.7	83.5	14	70	50	9	7
DN65	2-1/2"	65	157.5	85.5	267	155	18	108.8	17	102	70	11	9
DN80	3"	80	190	102	267	208.5	18	118.3	17	102	70	11	9
DN100	4"	100	225	128.5	322	216.7	18	153.8	17	102	70	11	9

Dimensions are in mm

### Three Way Ball Valve ISO5211 Direct Mount

L/T Port Ball Valve



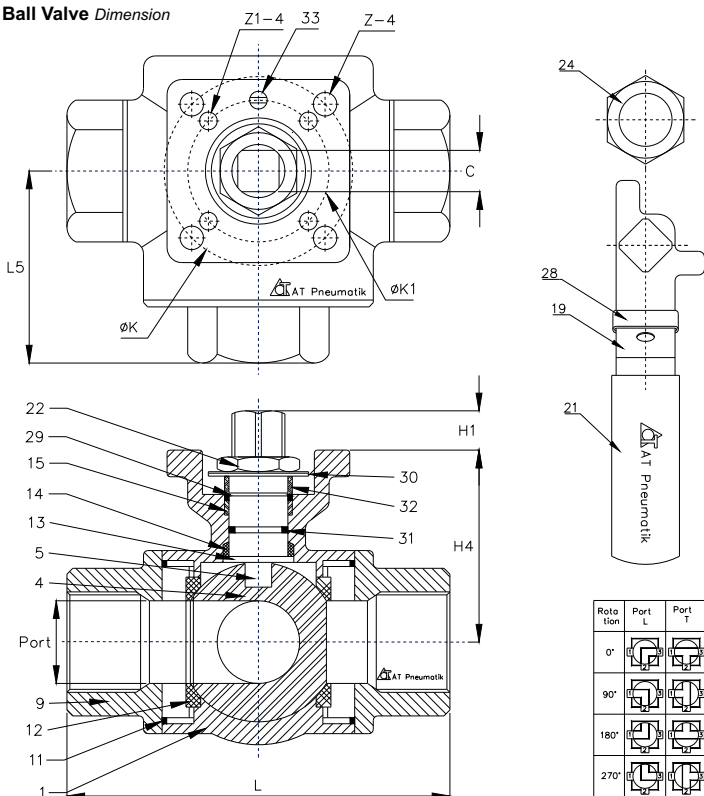
### Ordering Code

#### K318 - T - DN08 - CF8M - Blank - BSPT

- K168T** - Two Piece Ball Valve
- T** - T-Port (Ball Orientation)
- L** - L-Port (Ball Orientation)
  
- DN08** - DN08 1/4"                      DN10 3/8"  
           DN15 1/2"                      DN20 3/4"  
           DN25 1"                         DN32 1 1/4"  
           DN40 1 1/2"                    DN50 2"
- CF8M** - Stainless Steel 316
- CF8** - Stainless Steel 304
- Blank** - Bare Shaft
- H** - With Handle
- BSPT** - Standard Thread Slightly Tapered Thread
- BSP** - Parallel Thread European Standard Thread

Working Pressure 800psi at 80°C, 150 psi at 180°C, actuator ready direct mount ISO5211.

L/T Port Ball Valve Dimension



Material List		
Number	Part Name	Material
1	Body	1.4408/EN1503-1
4	Ball	ASTMA351 Gr.CF8M
5	Stem	SS316
9	Cap	1.4408/EN1503-1
11	Body Seal	RTFE
12	Seat	RTFE
13	Thrust Washer	RTFE
14	Stem packing	RTFE
15	Gland Bush	SS304
19	Handle	SS304
21	Handle Cover	PLASTIC
22	Stem Nut	SS304
24	Handle Nut	SS304
28	Locking Pad	SS304
29	Belleville Washer	SS304 CSP
30	Stop Washer	SS304
31	O-ring	VITON
32	Packing Follower	PTF.+25%G.F.
33	Stop Pin	SS304

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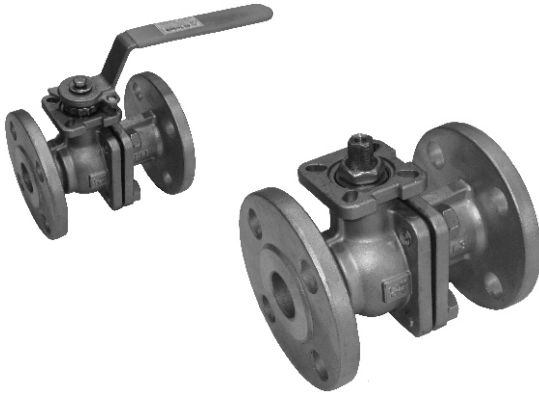
### Three Way Ball Valve Dimension

SIZE		PORT	L	L5	E	H	H1	H4	C	Y	ØK	ØK1	Z	Z1
DN8	1/4"	11	75.7	37.3	112	77.5	9	38.2	9	12	42	-	6	-
DN10	3/8"	11	75.7	37.3	112	77.5	9	38.2	9	12	42	-	6	-
DN15	1/2"	12.7	75.7	37.3	112	77.5	9	38.2	9	12	42	-	6	-
DN20	3/4"	16	86.6	44.7	112	82	9	45.2	9	12	42	-	6	-
DN25	1"	20	102.4	51.4	136.5	93.7	11	56.5	11	15.8	50	-	7.1	-
DN32	1-1/4"	25	118.2	57.7	188	101.1	11	61.9	11	15.8	50	-	7.1	-
DN40	1-1/2"	32	125.8	62.7	197.5	120.3	14.3	78.3	14	20.8	70	50	9.2	7.1
DN50	2"	38.1	149	74.6	197.5	129.9	14	87.4	14	20.8	70	50	9.2	7.1

Dimensions are in mm

## Two Way Flange Ball Valve ISO5211 Direct Mount

Direct Mount Ball Valve



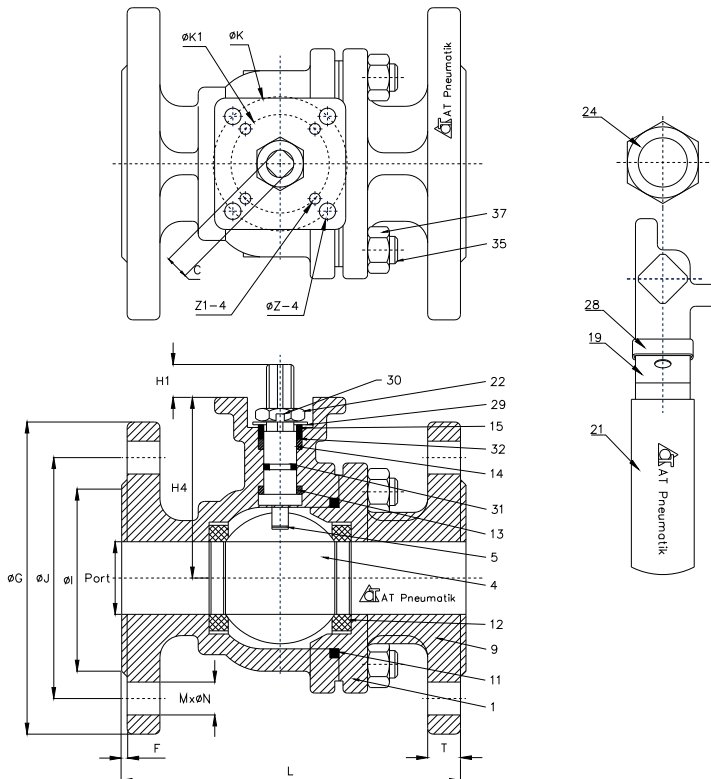
### Ordering Code

#### MD28 - DN08 - CF8M - Blank - ANSI150

- MD28** - Flange Connection Two Piece Ball Valve
- DN08** - DN08 1/4"      DN10 3/8"  
           DN15 1/2"      DN20 3/4"  
           DN25 1"        DN32 1 1/4"  
           DN40 1 1/2" DN50 2"  
           DN65 2 1/2" DN80 3"  
           DN100 4"
- CF8M** - Stainless Steel 316
- CF8** - Stainless Steel 304
- Blank** - Bare Shaft
- H** - With Handle
- ANSI150** - Class 150/B16.5

Working Pressure 800psi at 80°C, 150 psi at 180°C, actuator ready direct mount ISO5211, Raised Flange

Ball Valve Dimension



Material List		
Number	Part Name	Material
1	Body	ASTMA351 Gr.CF8M
4	Ball	ASTMA351 Gr.CF8M
5	Stem	SS316
9	End Cap	ASTMA351 Gr.CF8M
11	Body Seal	PTFE
12	Seat	RTFE ( 15%G.F. )
13	Thrust Washer	PTFE
14	Stem Packing	PTFE
15	Gland	SS304
15-1	Gland Washer	RTFE
19	Handle	SS304
21	Handle Cover	PLASTIC
22	Stem Nut	SS304
23	Handle Washer	SS304
24	Handle Nut	SS304
28	Locking Pad	SS304
29	Belleville Washer	SS304
30	Stop Washer	SS304
31	Stem O-ring	VITON
33	Stoper	SS304
36	Stud	ASTMA193 Gr.B8
37	Nut	ASTMA194 Gr.8

### Two Piece Flange Ball Valve Dimension

SIZE	PORT	L	E	H1	H4	C	ØG	ØJ	Ø1	T	F	M	ØN	ØK	ØK1	M1	Z1	Z2	
DN15	1/2"	15	140	112	8.5	48	9	95.3	66.5	35	11.2	1.6	4	16.0	50	36	4	7	6
DN20	3/4"	20	152	112	8.5	62	9	117.4	82.6	43	12.7	1.6	4	19.1	50	36	4	7	6
DN25	1"	25	165	136	11.4	64	9	124	88.9	51	14.3	1.6	4	19.1	50	36	4	7	6
DN32	1-1/4"	32	178	185	11.4	71	9	133.4	98.6	63.5	15.9	1.6	4	19.1	50	36	4	7	6
DN40	1-1/2"	38	190	198	14	76	14	155.5	114.3	73.2	17.5	1.6	4	22.3	70	50	4	9	7
DN50	2"	50	216	198	13.7	84.5	14	165.1	127	92	19.1	1.6	4	19.1	70	50	4	9	7
DN65	2-1/2"	63	241	265	18	106.8	17	290.5	149.4	104.7	23.3	1.6	4	23.3	102	70	4	11	9
DN80	3"	80	283	265	18	116	17	209.5	168.1	127	23.9	1.6	4	23.3	102	70	4	11	9
DN100	4"	98	305	325	18	154.5	17	264	200.2	157.2	23.9	1.6	4	23.3	102	70	4	11	9

Dimensions are in mm



## Butterfly Valve ISO5211 Direct Mount

Direct Mount Butterfly Valve



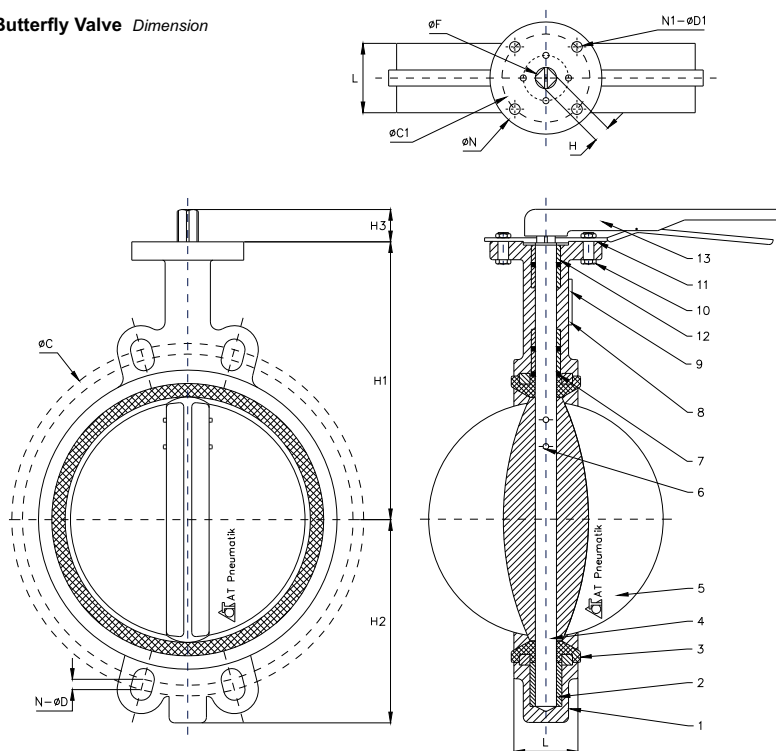
### Ordering Code

#### B13W - DN08 - CF8M - EPDM - Blank - U

- B13W** - Wafer Type
- DN50** -
 

DN050	2"	DN65	2 1/2"
DN080	3"	DN100	4"
DN125	5"	DN150	6"
DN200	8"	DN250	10"
DN300	12"		
- CI** - Cast Iron Body
- CS** - Cast Steel Body
- CF8M** - Stainless Steel 316 (Disc Material)
- CF8** - Stainless Steel 304 (Disc Material)
- EPDM** - EPDM Seal
- NBR** - NBR; Perbunan Rubber
- Blank** - Bare Shaft
- H** - With Handle
- U** - Universal Connection; JIS 10K; PN10/16; ANSI150

Butterfly Valve Dimension



### Material List

Number	Part Name	Material
1	Body	CI / CS Epoxy Coated SS304 / SS316
2	Bushing	PTFE
3	Seat	EPDM / NBR / PTFE
4	Shaft	SS410
5	Disc	CF8 / CF8M
6	Pin	SS316
7	O-ring	EPDM / NBR
8	Name Plate	Aluminum / Bronze
9	Rivets Plate	Aluminum
10	Bolts	Steel
11	Gaskets	Steel
12	Bushing	PTFE
13	Lever	Malleable Iron

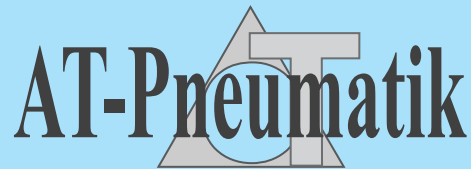
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### Two Piece Flange Ball Valve Dimension

SIZE		L	H1	H2	H3	ISO5211				DIN2501 PN10/PN16		øZ	øF	H1
DN	NPS					No.	øN	øC1	n1-ød1	øC	n-ød			
50	2"	43	110	60	29	F05	65	50	4-ø8	125	4-ø18	12.6	12.1	9
65	2-1/2"	46	116	68	29	F05	65	50	4-ø8	145	4-ø18	12.6	12.1	9
80	3"	46	126	82	29	F05	65	50	4-ø8	160	8-ø18	12.6	12.1	9
100	4"	52	146	100	29	F07	90	70	4-ø10	180	8-ø18	15.8	14.1	11
125	5"	56	161.5	112	29	F07	90	70	4-ø10	210	8-ø18	18.9	18.1	14
150	6"	56	180	128	29	F07	90	70	4-ø10	240	8-ø22	18.9	18.1	14
200	8"	60	216.5	161.8	35	F10	125	102	4-ø12	295	8/12-ø22	22.1	22.1	17
250	10"	68	249	195	35	F10	125	102	4-ø12	350/355	12-ø22/26	28.5	28.2	22
300	12"	78	281	232	35	F10	125	102	4-ø12	400/410	12-ø22/26	31.6	28.2	22

Dimensions are in mm

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