




Valves, Air Preparation Equipment & Actuators Catalog


We make
things MOVE®



We Make Things Move®

A forward-thinking innovator, Bimba provides industry-leading pneumatic, hydraulic and electric motion solutions that are easy-to-use, reliable and ready for your engineering challenges.

Doing whatever it takes to help you get the job done is what the Bimba companies do best. With an extensive line of industry-leading air cylinders, rotary actuators, linear thrusters, rodless cylinders, NFPA, hydraulics, flow controls, position-sensing cylinders, valves, switches and air preparation equipment, the people of Bimba are ready to tackle your toughest applications.

Bimba is part of IMI Precision Engineering, a world leader in motion and fluid control technologies. Wherever precision, speed and engineering reliability are essential, we deliver exceptional solutions which improve the productivity and efficiency of customers' equipment.

Our range of high-performance products, such as actuators, valves, valve islands, pressure monitoring controls and air preparation products together with trusted products brands including IMI Norgren, IMI Buschjost, IMI FAS, IMI Herion and IMI Maxseal underpin our position as a leading global supplier.

Part of IMI plc, we have a sales and service network in 75 countries, as well as manufacturing capability in the USA, Germany, China, UK, Switzerland.

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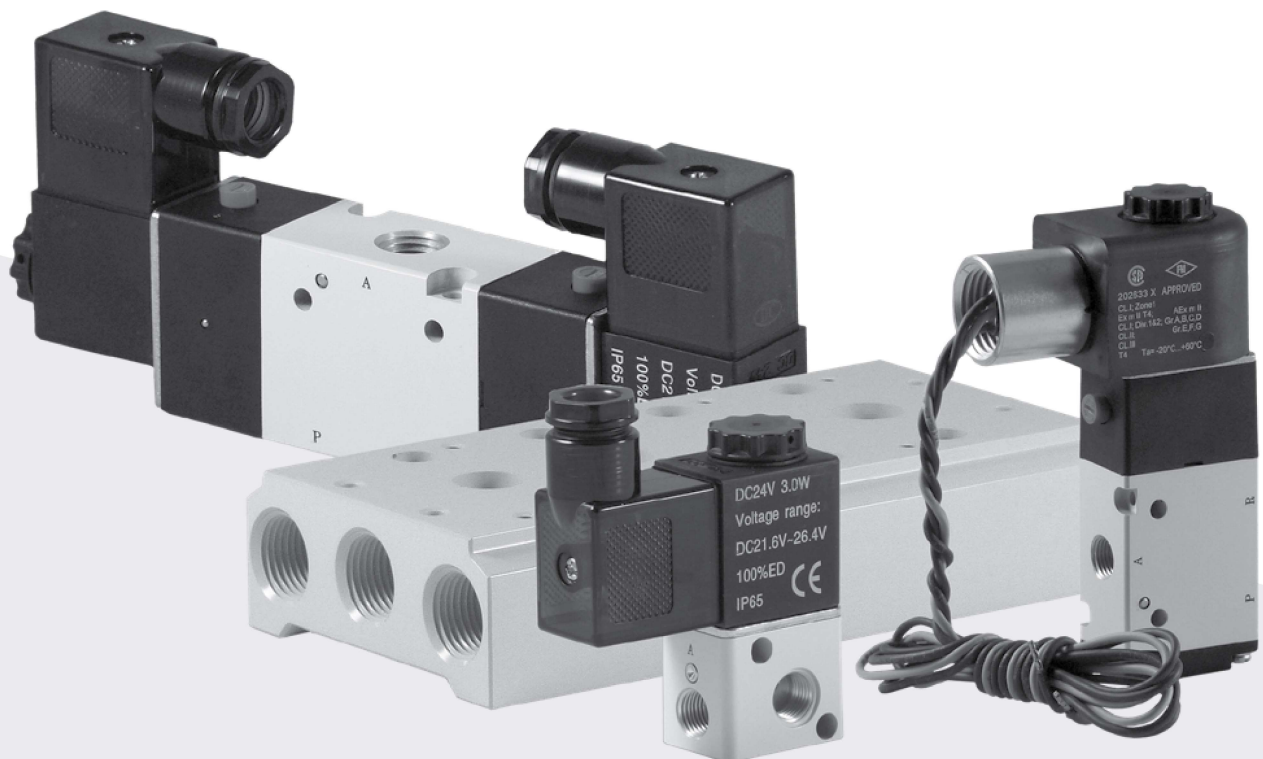
03 Valves

39 Air Preparation Equipment

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Valves

Control your media flow with Bimba's valves and valve accessories selection. Our line of compact, cost-effective valves covers a wide variety of unique applications, from standard solenoid and air pilot valves, to manually operated hand valves and explosion-proof options.



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Technical Data

Engineering Specifications

Model	M3V1-06
Fluid	Air (Clean/Dry)
Actuation	Direct Acting
Type	3 Port - 2 Position
Flow	Cv 0.051
Port Size	1/8 NPT
Lubrication	Not Required
Pressure Range	0 to 116 PSI (0 to 0.8 MPa)
Proof Pressure	215 PSI (1.5 MPa)
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C) (Explosion Proof -4 °F to 140 °F [-20 °C to 60 °C])
Max. Frequency	10 cycle/sec
Electrical Connection	DIN / LED Connector or Flying Leads or Explosion Proof Coil Conduit Entry
Voltage Range	AC: ±15% DC: ±10%
Power Consumption ³	AC: 3.5VA / DC: 3.0W
Protection	IP65 (DIN40050)
Insulation	Class B
Max. Response Time	50ms
Includes	Manual Override
Material	Aluminum Alloy Body
Connector/Coil ³	11mm DIN Connector, Industrial Form B

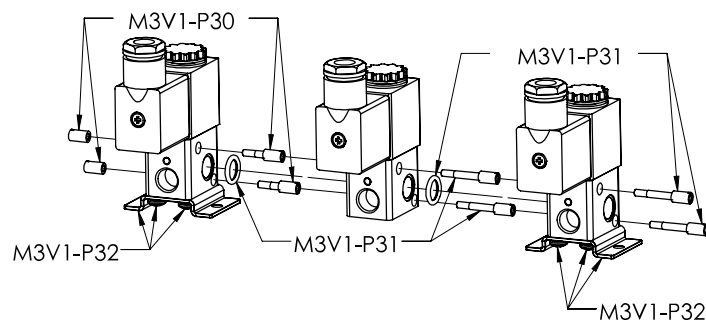
³ See page 24 for explosion proof specifications



How To Specify

Product Information

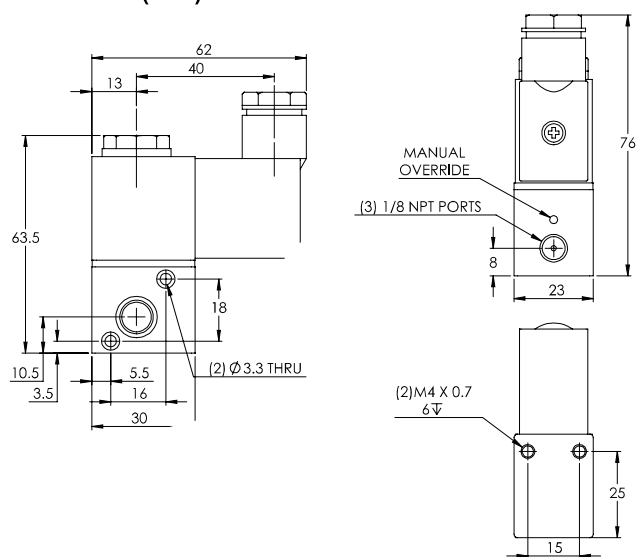
Stacking Assembly



Part Number	Description
M3V1-P30	Stack Starting Kit
M3V1-P31	Stack Coupling Kit
M3V1-P32	Mounting Bracket Kit

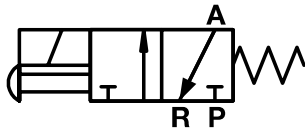
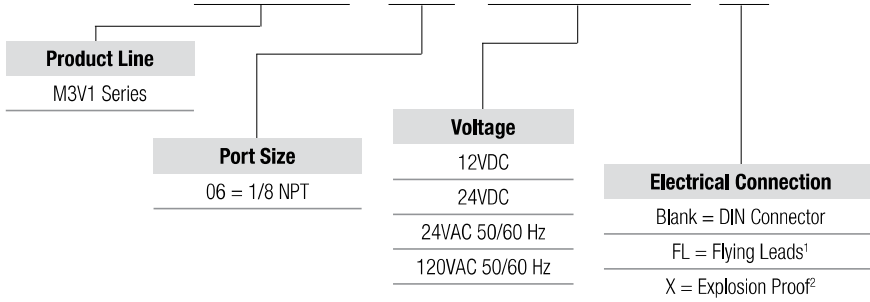
Note: Stacking Assembly not compatible with Explosion Proof coils

Dimensions (mm)



How To Order

M3V1-06-24VDC-X



¹ Not available with 24VAC. Flying Leads are 300mm long.
² See page 24 for specifications. Leads are 580mm long.

Product Features

Technical Data



Engineering Specifications

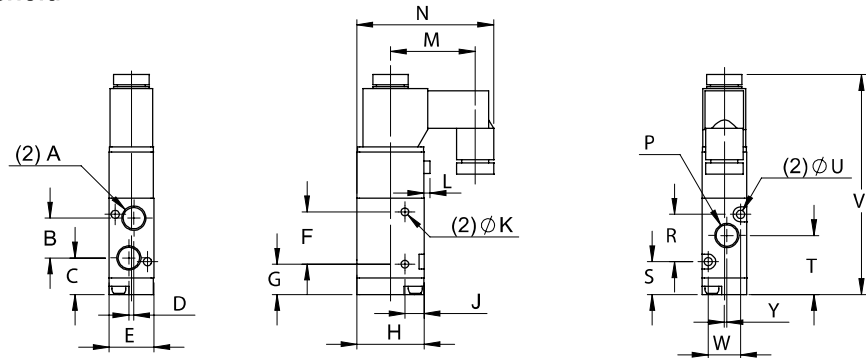
Model	M3V110-06 M3V120-06	M3V210-06 M3V220-06	M3V210-08 M3V220-08	M3V310-08 M3V320-08	M3V310-10 M3V320-10
Fluid	Air (Clean/Dry)				
Actuation	Internally Piloted				
Type	3 Port - 2 Position				
Flow	Cv 0.67	Cv 0.78	Cv 0.89	Cv 1.39	Cv 1.67
Port Size	1/8 NPT	1/8 NPT	1/4 NPT	1/4 NPT	3/8 NPT
Lubrication	Not Required				
Pressure Range	22 to 116 PSI (0.15 to 0.8 MPa)				
Proof Pressure	215 PSI (1.5 MPa)				
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C) [Explosion Proof -4 °F to 140 °F (-20 °C to 60 °C)]				
Max. Frequency	5 cycle/sec				
Electrical Connection	DIN / LED Connector or Flying Leads or Explosion Proof Coil Conduit Entry				
Voltage Range	AC: ±15% DC: ±10%				
Power Consumption ¹	AC: 2.5VA / DC: 2.5W		AC: 3.5VA / DC: 3.0W		
Protection	IP65 (DIN40050)				
Insulation	Class B				
Max. Response Time	50ms				
Material	Aluminum Alloy Body				
Connector/Coil ¹	9.4mm DIN, Industrial Form C		11mm DIN Connector, Industrial Form B		

¹ See page 24 for explosion proof specifications

Note: Manifold (shown on page 15) not compatible with Explosion Proof coils

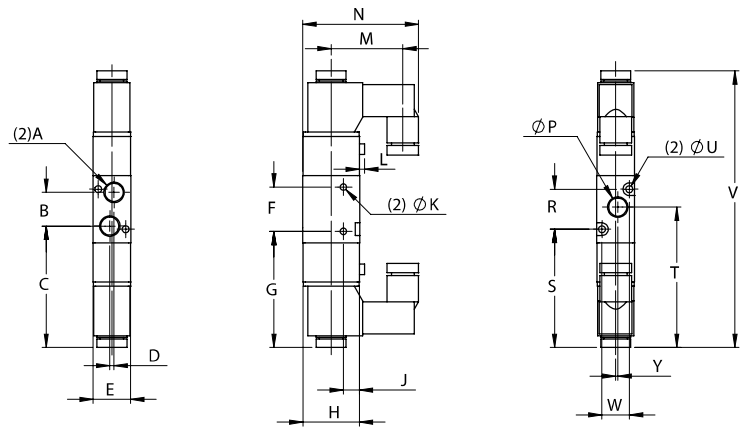
Product Information

Dimensions (mm) – Single Solenoid



Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	V	W	Y
M3V110-06	1/8 NPT	16	14.7	2	18	21	12.2	27	7.7	3.1	2.5	34	55	1/8 NPT	19	13.2	23.7	3.3	88.4	13	1
M3V210-06	1/8 NPT	22	16.7	0	22	25	15.2	35	8.2	4.2	3	40	67	1/8 NPT	30	12.7	27.7	3.3	109	17	0
M3V210-08	1/4 NPT	22.5	16.5	0	22	25	15.2	35	8.2	4.2	3	40	67	1/4 NPT	30	12.7	28.7	3.3	109	17	1.5
M3V310-08	1/4 NPT	24	20.5	0	27	30	17.5	40	10.5	4.3	2.4	40	69	1/4 NPT	35	15	32.5	4.3	120	20	0
M3V310-10	3/8 NPT	24	20.5	0	27	30	17.5	40	10.5	4.3	2.4	40	69	3/8 NPT	35	15	32.5	4.3	120	20	2

Dimensions (mm) – Double Solenoid



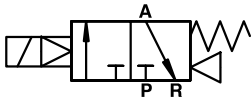
Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	V	W	Y
M3V120-06	1/8 NPT	16	57.7	2	18	21	55.2	27	7.7	3.1	2.5	34	55	1/8 NPT	19	56.2	66.7	3.3	131.4	13	1
M3V220-06	1/8 NPT	22	70.4	0	22	25	69	35	8.2	4.2	3	40	67	1/8 NPT	30	66.4	81.4	3.3	162.8	17	0
M3V220-08	1/4 NPT	22.5	70.2	0	22	25	69	35	8.2	4.2	3	40	67	1/4 NPT	30	66.4	82.4	3.3	162.8	17	1.5
M3V320-08	1/4 NPT	24	75.4	0	27	30	72.4	40	10.5	4.3	2.4	40	69	1/4 NPT	35	70	87.4	4.3	174.8	20	0
M3V320-10	3/8 NPT	24	75.4	0	27	30	72.4	40	10.5	4.3	2.4	40	69	3/8 NPT	35	70	87.4	4.3	174.8	20	2

How To Order

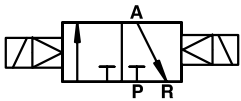
How To Order

M3V 2 10-08-NC-24VDC-X

Product Line M3V Series	Type 10 = Single Solenoid 20 = Double Solenoid	Operation¹ NC = Normally <small>1 Required for Single Solenoid only</small>	Voltage 12VDC 24VDC 24VAC 50/60 Hz 120VAC 50/60 Hz	Electrical Connection Blank = DIN Connector FL = Flying Leads ² X = Explosion Proof ³
Model 1 = 100 Series 2 = 200 Series 3 = 300 Series	Port Size 06 = 1/8 NPT (100, 200 Series) 08 = 1/4 NPT (200, 300 Series) 10 = 3/8 NPT (300 Series)			<small>2 Not available with 100 series 24VAC. Flying Leads are 300mm long. 3 See page 24 for specifications. Leads are 580mm long.</small>



10-NC



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Technical Data

Engineering Specifications



Model	M4V110-06 M4V120-06	M4V130C-06 M4V130E-06	M4V210-06 M4V220-06	M4V230C-06 M4V230E-06	M4V210-08 M4V220-08	M4V230C-08 M4V230E-08
Fluid	Air (Clean/Dry)					
Actuation	Internally Piloted					
Type	5 Port-2 Position	5 Port-3 Position	5 Port-2 Position	5 Port-3 Position	5 Port-2 Position	5 Port-3 Position
Flow	Cv 0.67	Cv 0.50	Cv 0.78	Cv 0.67	Cv 0.89	Cv 0.67
Port Size	1/8 NPT		1/8 NPT		Inlet/Outlet Ports 1/4 NPT Exhaust Ports 1/8 NPT	
Lubrication	Not Required					
Pressure Range	22 to 116 PSI (0.15 to 0.8 MPa)					
Proof Pressure	215 PSI (1.5 MPa)					
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C) (Explosion Proof -4 °F to 140 °F (-20 °C to 60 °C))					
Max. Frequency	5 cycle/sec	3 cycle/sec	5 cycle/sec	3 cycle/sec	5 cycle/sec	3 cycle/sec
Electrical Connection	DIN / LED Connector or Flying Leads or Explosion Proof Coil Conduit Entry					
Voltage Range	AC: ±15% DC: ±10%					
Power Consumption ¹	AC: 2.5VA / DC: 2.5W			AC: 3.5VA / DC: 3.0W		
Protection	IP65 (DIN40050)					
Insulation	Class B					
Max. Response Time	50ms					
Material	Aluminum Alloy Body					
Connector/Coil ¹	9.4mm DIN, Industrial Form C			11mm DIN Connector, Industrial Form B		

Model	M4V310-08 M4V320-08	M4V330C-08 M4V330E-08	M4V310-10 M4V320-10	M4V330C-10 M4V330E-10	M4V410-15 M4V420-15	M4V430C-15 M4V430E-15
Fluid	Air (Clean/Dry)					
Actuation	Internally Piloted					
Type	5 Port-2 Position	5 Port-3 Position	5 Port-2 Position	5 Port-3 Position	5 Port-2 Position	5 Port-3 Position
Flow	Cv 1.40	Cv 1.00	Cv 1.68	Cv 1.00	Cv 2.79	Cv 1.68
Port Size	1/4 NPT		Inlet/Outlet Ports 3/8 NPT Exhaust Ports 1/4 NPT		1/2 NPT	
Lubrication	Not Required					
Pressure Range	22 to 116 PSI (0.15 to 0.8 MPa)					
Proof Pressure	215 PSI (1.5 MPa)					
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C) (Explosion Proof -4 °F to 140 °F (-20 °C to 60 °C))					
Max. Frequency	4 cycle/sec	3 cycle/sec	4 cycle/sec	3 cycle/sec	3 cycle/sec	
Electrical Connection	DIN / LED Connector or Flying Leads or Explosion Proof Coil Conduit Entry					
Voltage Range	AC: ±15% DC: ±10%					
Power Consumption ¹	AC: 3.5VA / DC: 3.0W					
Protection	IP65 (DIN40050)					
Insulation	Class B					
Max. Response Time	50ms					
Material	Aluminum Alloy Body					
Connector/Coil ¹	11mm DIN Connector, Industrial Form B					

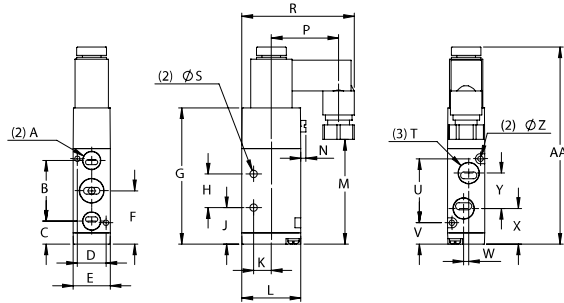
¹ See page 24 for explosion proof specifications

Note: Manifold (shown on page 17) not compatible with Explosion Proof coils

How To Specify

Product Information

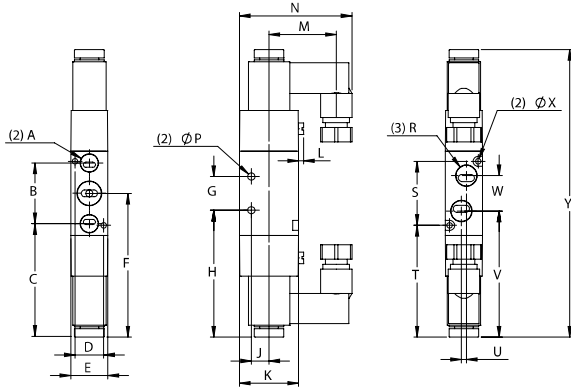
Dimensions (mm) – Single Solenoid



MODEL	A	B	C	D	E	F	G	H	J	K	L
M4V110-06	1/8 NPT	28	14.2	13	18	28.2	70.4	14	21.2	9.5	27
M4V210-06	1/8 NPT	36	13.7	17	22	31.7	81	20	21.7	10.5	35
M4V210-08	1/8 NPT	36	13.7	17	22	31.7	81	20	21.7	10.5	35
M4V310-08	1/4 NPT	45	17.5	20	27	40	98.7	24	28	13.5	40
M4V310-10	1/4 NPT	45	17.5	20	27	40	98.7	24	28	13.5	40
M4V410-15	1/2 NPT	63	25.5	27	34	57	132.3	28	43	17.5	50

MODEL	M	N	P	R	S	T	U	V	W	Y	Z	AA
M4V110-06	59.4	2.5	34	55	3.3	1/8 NPT	30	13.2	3	16	3.3	99.4
M4V210-06	62	3	40	67	4.3	1/8 NPT	38	12.7	0	18	3.3	117
M4V210-08	62	3	40	67	4.3	1/4 NPT	38	12.7	3	21	3.3	117
M4V310-08	80	2.4	40	69	4.3	1/4 NPT	50	15	0	22	4.3	135
M4V310-10	80	2.4	40	69	4.3	3/8 NPT	50	15	4	24	4.3	135
M4V410-15	114	2.8	40	74	5.5	1/2 NPT	72	21	4	36	4.3	168.4

Dimensions (mm) – Double Solenoid

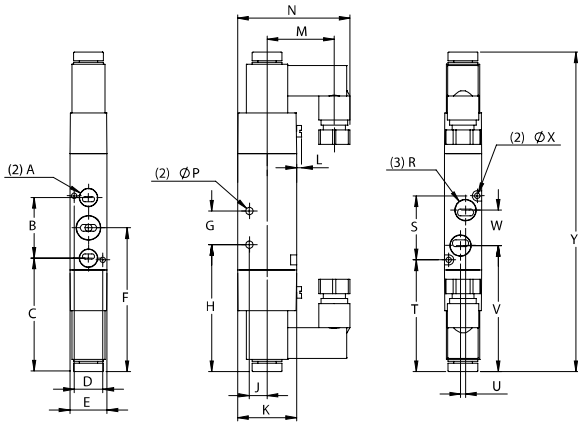


MODEL	A	B	C	D	E	F	G	H	J	K	L
M4V120-06	1/8 NPT	28	57.2	13	18	71.2	14	64.2	9.5	27	2.5
M4V220-06	1/8 NPT	36	67.4	17	22	85.4	20	75.4	10.5	35	3
M4V220-08	1/8 NPT	36	67.4	17	22	85.4	20	75.4	10.5	35	3
M4V320-08	1/4 NPT	45	72.4	20	27	94.9	24	83	13.5	40	2.4
M4V320-10	1/4 NPT	45	72.4	20	27	94.9	24	83	13.5	40	2.4
M4V420-15	1/2 NPT	63	80	27	34	111.4	28	97.4	17.5	50	2.8

MODEL	M	N	P	R	S	T	U	V	W	X	Y
M4V120-06	34	55	3.3	1/8 NPT	30	56.2	3	63.2	16	3.3	142.4
M4V220-06	40	67	4.3	1/8 NPT	38	66.4	0	76.4	18	3.3	171
M4V220-08	40	67	4.3	1/4 NPT	38	66.4	3	74.9	21	3.3	171
M4V320-08	40	69	4.3	1/4 NPT	50	70	0	83.9	22	4.3	190
M4V320-10	40	69	4.3	3/8 NPT	50	70	4	82.9	24	4.3	190
M4V420-15	40	74	5.5	1/2 NPT	72	75.4	4	93.4	36	4.3	223

Product Information

Dimensions (mm) – Double Solenoid, Three Position



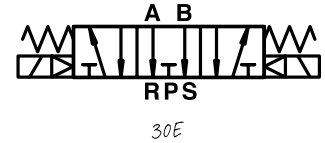
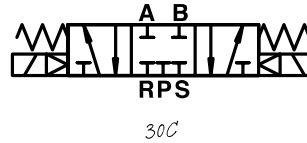
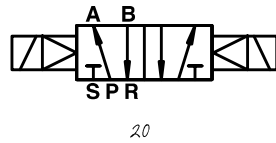
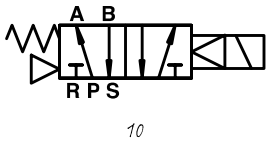
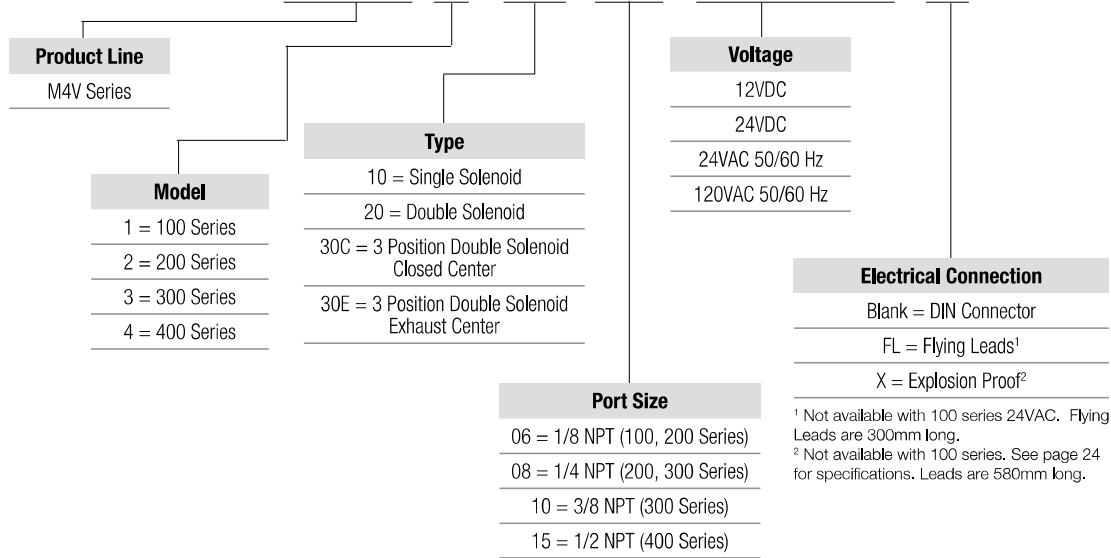
MODEL	A	B	C	D	E	F	G	H	J	K	L
M4V130_-06	1/8 NPT	28	57.2	13	18	71.2	14	64.2	9.5	27	2.5
M4V230_-06	1/8 NPT	36	67.4	17	22	85.4	20	75.4	10.5	35	3
M4V230_-08	1/8 NPT	36	67.4	17	22	85.4	20	75.4	10.5	35	3
M4V330_-08	1/4 NPT	45	72.4	20	27	94.9	24	83	13.5	40	2.4
M4V330_-10	1/4 NPT	45	72.4	20	27	94.9	24	83	13.5	40	2.4
M4V430_-15	1/2 NPT	63	80	27	34	111.4	28	97.4	17.5	50	2.8

MODEL	M	N	P	R	S	T	U	V	W	X	Y
M4V130_-06	34	55	3.3	1/8 NPT	30	56.2	3	63.2	16	3.3	157.4
M4V230_-06	40	67	4.3	1/8 NPT	38	66.4	0	76.4	18	3.3	190
M4V230_-08	40	67	4.3	1/4 NPT	38	66.4	3	74.9	21	3.3	190
M4V330_-08	40	69	4.3	1/4 NPT	50	70	0	83.9	22	4.3	209
M4V330_-10	40	69	4.3	3/8 NPT	50	70	4	82.9	24	4.3	209
M4V430_-15	40	74	5.5	1/2 NPT	72	75.4	4	93.4	36	4.3	243.8

How To Order

How To Order

M4V 2 10-08-24VDC-X



Technical Data

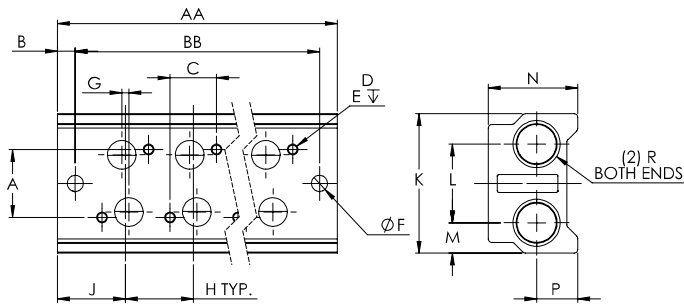
See page 8 for compatible valves.

Engineering Specifications

Model	Manifold
Fluid	Air (Clean/Dry)
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C)
Material	Aluminum Alloy
Includes	Gaskets and Screws
Compatible With	M3V Series



Dimensions (mm)



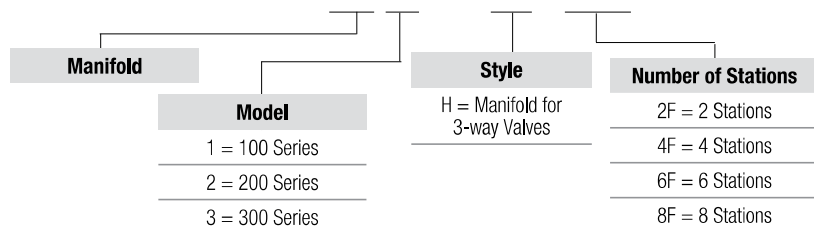
Model	A	B	C	D	E	F	G	H	J	K	L	M
M100H	19	5	13	M3X0.5	7	4.5	2	19	19	39	22	8.5
M200H	30	6	17	M3X0.5	7	4.5	0	23	23	45	25	10
M300H	35	6	20	M4X0.7	7	4.5	0	28	27	52	28	12

Model	N	P	R	AA				BB			
				2F	4F	6F	8F	2F	4F	6F	8F
M100H	25	11.5	1/4 NPT	57	95	133	171	47	85	123	161
M200H	25	11.5	1/4 NPT	69	115	161	207	57	103	149	195
M300H	29	13.5	3/8 NPT	82	138	194	250	70	126	182	238

How To Order

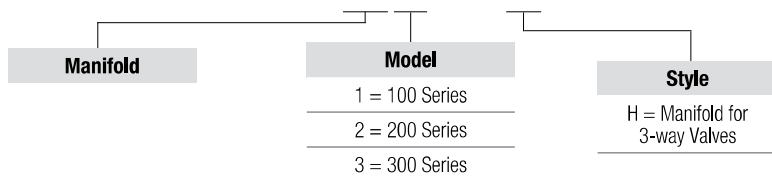
How To Order

M200H-4F



How To Order – Manifold Blanking Plates¹

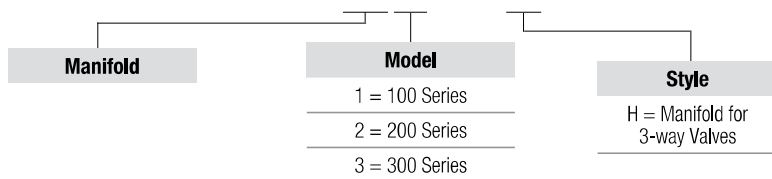
M200H-B



¹ Each kit includes one blanking plate and two screws.

How To Order – Manifold Gasket and Screw Kit²

M200H-G



² Each kit includes one gasket and two screws.

Technical Data

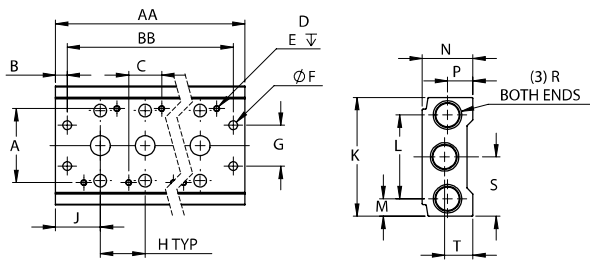
See page 11 for compatible valves.

Engineering Specifications

Model	Manifold
Fluid	Air (Clean/Dry)
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C)
Material	Aluminum Alloy
Includes	Gaskets and Screws
Compatible With	M4V, M4A, M4L Series



Dimensions (mm)



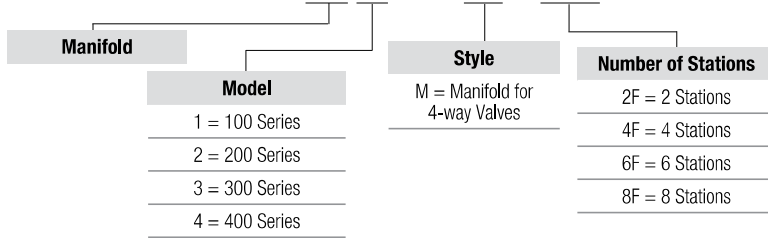
Model	A	B	C	D	E	F	G	H	J	K	L	M
M100M	30	5	13	M3X0.5	5.5	4.5	20	19	19	58	40	9
M200M	38	6	17	M3X0.5	5	4.5	21	23	23	61	43	9
M300M	50	6	20	M4X0.7	5	4.5	26	28	27	75	53	11
M400M	72	7	27	M4X0.7	6	5.5	32	35	31.5	104	68	18

Model	N	P	R	S	T	AA				BB			
						2F	4F	6F	8F	2F	4F	6F	8F
M100M	26	12.5	1/4 NPT	29	14	57	95	133	171	47	85	123	161
M200M	27	13	1/4 NPT	30.5	14.5	69	115	161	207	57	103	149	195
M300M	31	15	3/8 NPT	37.5	16.5	82	138	194	250	70	126	182	238
M400M	39	19	1/2 NPT	52	19	98	168	238	273	84	154	224	294

How To Order

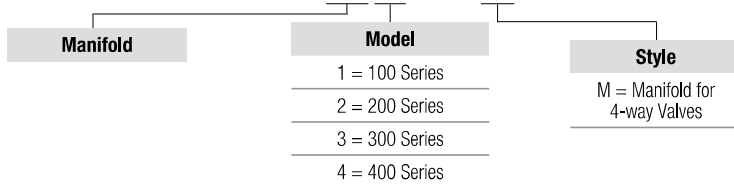
How To Order

M200M-4F



How To Order – Manifold Blanking Plates¹

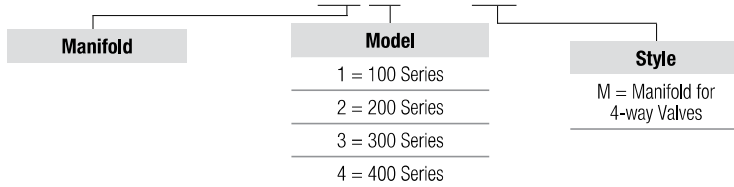
M200M-B



¹ Each kit includes one blanking plate and two screws.

How To Order – Manifold Gasket and Screw Kit²

M200M-G



² Each kit includes one gasket and two screws.

Technical Data

Valves and manifold not included. See page 21 for valves, manifold, and PowerStrip™ selection guide.

Engineering Specifications

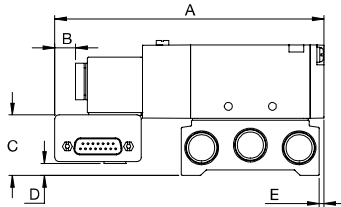
Model	MPS
Voltage Range	(-D) 12-24 VDC, (-A) 24-120VAC
Temperature Range	0 °F to 120 °F (-20 °C to 49 °C)
Max. Coil Power	4W
Electrical Connection	15-Pin D-Sub (DB15) Male
Circuit Protection	(-D) N4004 Diode, (-A) MOV
Enclosure Rating	IP65
LED Indicator	Yes
Material	ABS Body



Product Contents	
Model	Includes
MPS1-••• MPS2-••• MPS3-••• MPS4-•••	Manifold PowerStrip™, Screws, Gaskets, Connector Seal
MPS1-•••-C3 MPS2-•••-C3 MPS3-•••-C3 MPS4-•••-C3	Manifold PowerStrip™, Screws, Gaskets, 3m DB15 Cable, Connector Seal
MPS1-•••-C10 MPS2-•••-C10 MPS3-•••-C10 MPS4-•••-C10	Manifold PowerStrip™, Screws, Gaskets, 10m DB15 Cable, Connector Seal

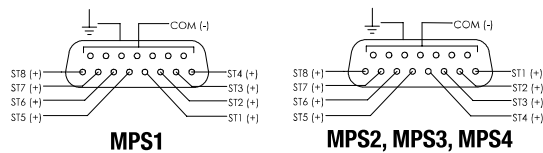
Valve Compatibility		
Valves	Manifold	Manifold PowerStrip™
M•V1•••• AC	M100•••F	MPS1-•-A-•
M•V1•••• DC		MPS1-•-D-•
M•V2•••• AC	M200•••F	MPS2-•-A-•
M•V2•••• DC		MPS2-•-D-•
M•V3•••• AC	M300•••F	MPS3-•-A-•
M•V3•••• DC		MPS3-•-D-•
M4V4•••• AC	M400M-•F	MPS4-•-A-•
M4V4•••• DC		MPS4-•-D-•

Dimensions (mm)

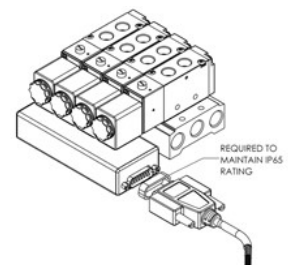
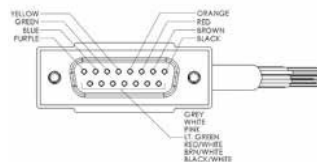
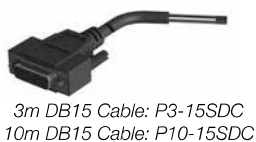


MODEL	A		B	C		D		E
	M3V	M4V		M3V	M4V	M3V	M4V	
MPS1	100.4	111.4	11.9	23.9	23.9	-2.5	-2.5	-0.8
MPS2	120.4	128.3	11.4	25.4	26.4	-1	0	1.5
MPS3	131.4	146.4	11.4	31.9	32.9	5.5	6.5	2.5
MPS4	-	180.0	11.4	-	45.6	-	20.2	5

Wiring Diagrams



Accessories

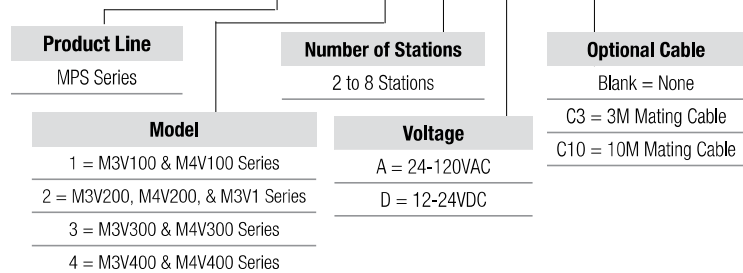


Accessories	Part Number
Blanking Plug - MPS1	MPS1-B
Blanking Plug - MPS2/MPS3/MPS4	MPS2-B

How To Order

How To Order

MPS 2-4-D-C3



How To Order

Step #1 - Valve

Select a Bimba Solenoid Valve

3-Way Valve

See page 8 for full valve specifications.

M3V 2 10-08-NC-24VDC

Product Line	Port Size	Operation	Voltage
M3V Series	06 - 1/8 NPT 08 - 1/4 NPT 10 - 3/8 NPT	NC = Normally	12VDC 24VDC 24VAC 120VAC
Model	Type		
1 = 100 Series 2 = 200 Series 3 = 300 Series	10 = Single Solenoid 20 = Double Solenoid		

4-Way Valve

See page 11 for full valve specifications.

M4V 2 10-08-24VDC

Product Line	Port Size	Voltage
M4V Series	06 - 1/8 NPT 08 - 1/4 NPT 10 - 3/8 NPT	12VDC 24VDC 24VAC 120VAC
Model	Type	
1 = 100 Series 2 = 200 Series 3 = 300 Series 4 = 400 Series	10 = Single Solenoid 20 = Double Solenoid 30C - 3 Position Double Solenoid Closed Center 30E - 3 Position Double Solenoid Exhaust Center	

Step #2 - Manifold

Match Manifold Model to Valve Model

3-Way Manifold

See page 15 for full manifold specifications.

M200H-4F

Manifold	Model	Number of Stations
	1 = 100 Series 2 = 200 Series 3 = 300 Series	2F = 2 Stations 4F = 4 Stations 6F = 6 Stations 8F = 8 Stations

4-Way Manifold

See page 17 for full manifold specifications.

M200M-4F

Manifold	Model	Number of Stations
	1 = 100 Series 2 = 200 Series 3 = 300 Series 4 = 400 Series	2F = 2 Stations 4F = 4 Stations 6F = 6 Stations 8F = 8 Stations

Step #3 - PowerStrip™

Match Manifold PowerStrip™ to Valve Model, Voltage & Manifold Length

Manifolds with double solenoid valves require two PowerStrips. See setup guide on www.Bimba.com for more information.

MPS 2-4-D-C3

Product Line	Number of Stations	Optional Cable
MPS Series	2 to 8 Stations	Blank = None C3 = 3M Mating Cable C10 = 10M Mating Cable
Model	Voltage	
1 = M3V100 & M4V100 Series 2 = M3V200, M4V200, & M3V1 Series 3 = M3V300 & M4V300 Series 4 = M3V400 & M4V400 Series	A = 24-120VAC D = 12-24VDC	



Example – Bill of Materials

Item	Quantity	Part Number
Valve	4	M4V210-08-24VDC
Manifold	1	M200M-4F
Manifold PowerStrip™	1	MPS2-4-D-C3



Product Features

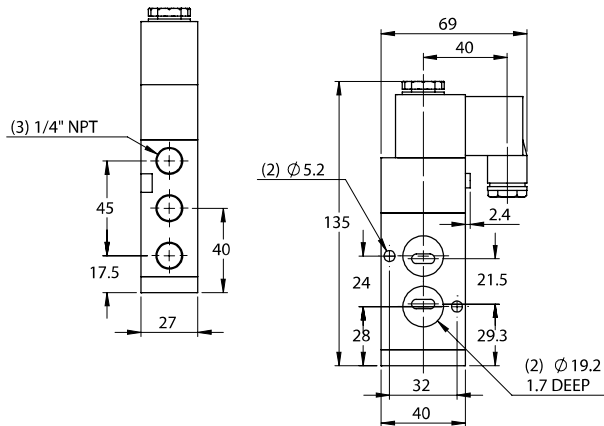
Technical Data

Engineering Specifications

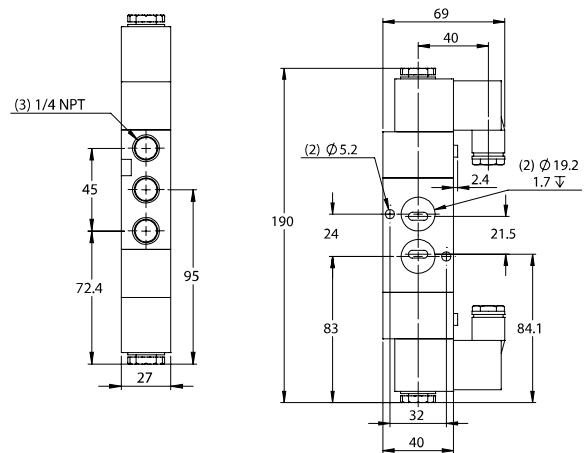
Model	M4M310-08 M4M320-08
Fluid	Air (Clean/Dry)
Actuation	Internally Piloted
Type	5 Port - 2 Position
Flow	Cv 1.40
Port Size	1/4 NPT
Lubrication	Not Required
Pressure Range	22 to 116 PSI (0.15 to 0.8 MPa)
Proof Pressure	215 PSI (1.5 MPa)
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C)
Max. Frequency	4 cycle/sec
Electrical Connection	DIN / LED Connector or Flying Leads
Voltage Range	AC: ±15% DC: ±10%
Power Consumption	AC: 3.5VA / DC: 3.0W
Protection	IP65 (DIN40050)
Insulation	Class B
Max. Response Time	50ms
Material	Aluminum Alloy Body
Screws	M5 X 0.8, 27.5mm long, Socket Head Cap Screw, Zinc Plated



Dimensions (mm) - Single Solenoid



Dimensions (mm) - Double Solenoid



How To Order

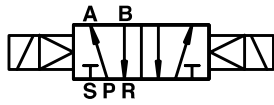
M4M 3 10-08-24VDC-FL

Product Line M4M Series	Port Size 08 = 1/4 NPT	Voltage 12VDC 24VDC 24VAC 120VAC	Electrical Connection Blank = DIN Connector FL = Flying Leads ¹
Model 3 = 300 Series	Type 10 = Single Solenoid 20 = Double Solenoid		

¹ Not available with 100 series 24VAC. Flying Leads are 300mm long.



10



20

Product Features

Technical Data

Engineering Specifications

Model	Explosion Proof Coils
Available On	M3V1, M3V200, M3V300, M4V200, M4V300, M4V400, MG200, MG300 and MG400 Series
Voltages Available	12VDC, 24VDC, 120VAC
Power Consumption	AC: 6.8VA / DC: 4.6W
Temperature Range	-4 °F to 140 °F (-20 °C to 60 °C)
Duty Cycle	100%
Protection	IP65
Material	Thermoplastic
Leads Length	24 inches
Connection Type	1/2 NPT Conduit
Hazardous Location	Ex m II T4 and Division 1 Class 1, Group A, B, C, and D Class II, Group E, F, and G Class III
Tested According To	CAN / CSA-E79-0-95 CAN / CSA-E79-18-95 for CSA ANSI / ISA-S12.00.01-1999 ANSI / ISA-S12.23.01-1998 for FM

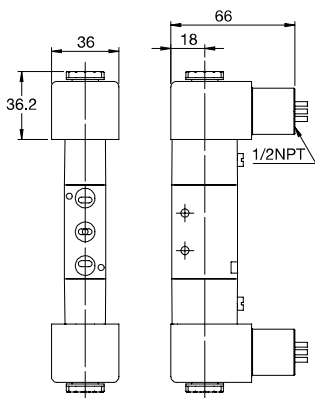


Dimensions (mm)

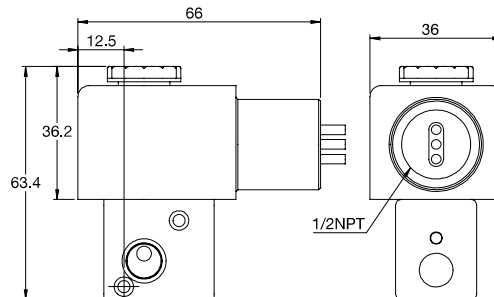
MODEL	A	B
MGV200	112	80.2
MGV300	118	82.7
MGV400	130	91.2

M3V & M4V Series

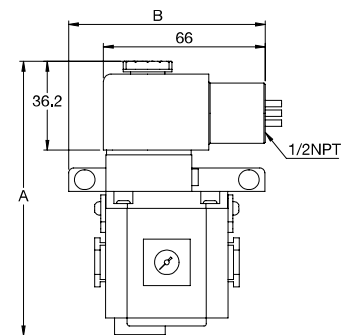
(M4V part shown)



M3V1 Series



MGV Series




See pages 9 and 12 for all other dimensions.
Note: overall length is the same as the equivalent DIN connector model.

Product Information

Solenoid Valve Coils

Type	Description	Part Number	Compatibility
	Coil for 9.4mm DIN Connector, 110/120 VAC	M4V110-016-4A	100 Series Solenoid Valves
	Coil for 9.4mm DIN Connector, 12VDC	M4V110-016-2A	
	Coil for 9.4mm DIN Connector, 24VAC	M4V110-016-6A	
	Coil for 9.4mm DIN Connector, 24VDC	M4V110-016-8A	200, 300, 400 Series Solenoid Valves MGV Soft Start Valves M3V1 Direct Acting Valves
	Coil for 11mm DIN Connector, 110/120 VAC	M4V210-016-2E	
	Coil for 11mm DIN Connector, 12VDC	M4V210-016-4E	
	Coil for 11mm DIN Connector, 24VAC	M4V210-016-6E	
Coil for 11mm DIN Connector, 24VDC	M4V210-016-8E		
	Coil with Flying Leads, 110/120 VAC	S100C-120VAC	100 Series Solenoid Valves
	Coil with Flying Leads, 12VDC	S100C-12VDC	
	Coil with Flying Leads, 24VDC	S100C-24VDC	
	Coil with Flying Leads, 110/120 VAC	S300C-120VAC	200, 300, 400 Series Solenoid Valves MGV Soft Start Valves M3V1 Direct Acting Valves
	Coil with Flying Leads, 12VDC	S300C-12VDC	
	Coil with Flying Leads, 24VAC	S300C-24VAC	
	Coil with Flying Leads, 24VDC	S300C-24VDC	
	Explosion Proof Coil 110/120VAC	3080172-003	200, 300, 400 Series Solenoid Valves MGV Soft Start Valves M3V1 Direct Acting Valves
	Explosion Proof Coil 12VDC	3080172-005	
	Explosion Proof Coil 24VDC	3080172-006	

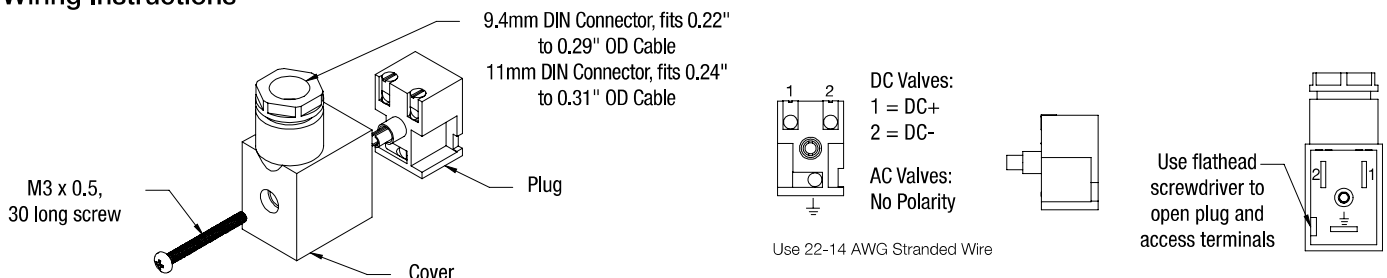
Solenoid Valve Connectors

Type	Description	Part Number	Compatibility
	9.4mm Industrial Form C DIN Connector, AC	M4V110-005-P2	100 Series Solenoid Valves with AC coil
	9.4mm Industrial Form C DIN Connector, DC	M4V110-005-P3	100 Series Solenoid Valves with DC coil
	11mm Industrial Form B DIN Connector, AC	M4V210-005-P2	200, 300, 400 Series, MGV Soft Start Valves, M3V1 Direct Acting Valves with AC coil
	11mm Industrial Form B DIN Connector, DC	M4V210-005-P3A	200, 300, 400 Series MGV Soft Start Valves M3V1 Direct Acting Valves with DC coil

1 Flying leads are 300mm long.

2 Not available for 100 series solenoid valves. Leads are 580mm long.

Wiring Instructions



Product Features

Technical Data

Engineering Specifications

Model	M4A210-06 M4A220-06	M4A230C-06	M4A210-08 M4A220-08	M4A230C-08
Fluid	Air (Clean/Dry)			
Actuation	Externally Piloted			
Type	5 Port - 2 Position	5 Port - 3 Position	5 Port - 2 Position	5 Port - 3 Position
Flow	Cv 0.78	Cv 0.67	Cv 0.89	Cv 0.67
Port Size	1/8 NPT		Inlet/Outlet Ports 1/4 NPT Exhaust Ports 1/8 NPT	
Lubrication	Not Required			
Pressure Range	22 to 116 PSI (0.15 to 0.8 MPa)			
Proof Pressure	215 PSI (1.5 MPa)			
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C)			
Max. Frequency	5 cycle/sec	3 cycle/sec	5 cycle/sec	3 cycle/sec
Material	Aluminum Alloy Body			

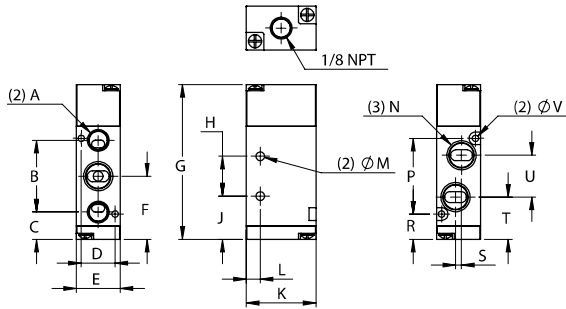


Model	M4A310-10 M4A320-10	M4A330C-10	M4A410-15 M4A420-15	M4A430C-15
Fluid	Air (Clean/Dry)			
Actuation	Externally Piloted			
Type	5 Port - 2 Position	5 Port - 3 Position	5 Port - 2 Position	5 Port - 3 Position
Flow	Cv 1.68	Cv 1.00	Cv 2.79	Cv 1.68
Port Size	Inlet/Outlet Ports 3/8 NPT Exhaust Ports 1/4 NPT		1/2 NPT	
Lubrication	Not Required			
Pressure Range	22 to 116 PSI (0.15 to 0.8 MPa)			
Proof Pressure	215 PSI (1.5 MPa)			
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C)			
Max. Frequency	4 cycle/sec	3 cycle/sec	3 cycle/sec	
Material	Aluminum Alloy Body			

See page 17 for compatible manifolds.

Product Information

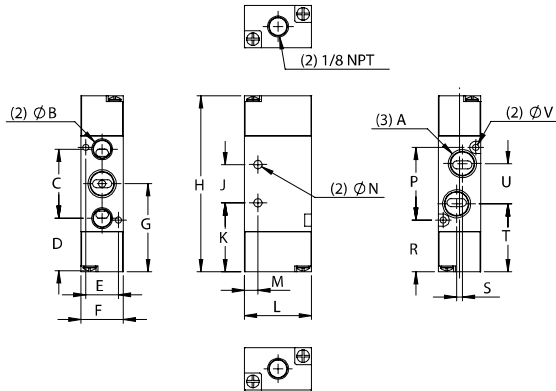
Dimensions (mm) – Single Air Pilot



Model	A	B	C	D	E	F	G	H	J
M4A210-06	1/8 NPT	36	13.7	17	22	31.7	77.7	20	21.7
M4A210-08	1/8 NPT	36	13.7	17	22	31.7	77.7	20	21.7
M4A310-10	1/4 NPT	45	17.5	20	27	40	95.5	24	28
M4A410-15	1/2 NPT	63	25.5	27	34	57	128	28	43

Model	K	L	M	N	P	R	S	T	U	V
M4A210-06	35	7	4.3	1/8 NPT	38	12.7	0	22.7	18	3.3
M4A210-08	35	7	4.3	1/4 NPT	38	12.7	3	21.2	21	3.3
M4A310-10	40	6.5	4.3	3/8 NPT	50	15	4	28	24	4.3
M4A410-15	50	7.5	5.5	1/2 NPT	72	21	4	39	36	4.3

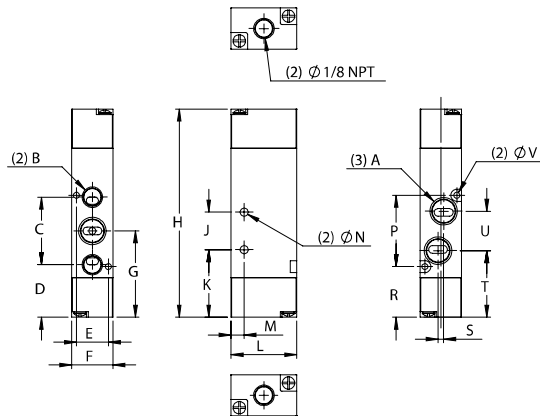
Dimensions (mm) – Double Air Pilot



Model	A	B	C	D	E	F	G	H	J
M4A220-06	1/8 NPT	1/8 NPT	36	28	17	22	46	92	20
M4A220-08	1/4 NPT	1/8 NPT	36	28	17	22	46	92	20
M4A320-10	3/8 NPT	1/4 NPT	45	33	20	27	55.5	111	24
M4A420-15	1/2 NPT	1/2 NPT	63	39.5	27	34	71	142	28

Model	K	L	M	N	P	R	S	T	U	V
M4A220-06	36	35	7	4.3	38	27	0	37	18	3.3
M4A220-08	36	35	7	4.3	38	27	3	35.5	21	3.3
M4A320-10	43.5	40	6.5	4.3	50	30.5	4	43.5	24	4.3
M4A420-15	57	50	7.5	5.5	72	35	4	53	36	4.3

Dimensions (mm) – Double Air Pilot - Closed Center



Model	A	B	C	D	E	F	G	H	J
M4A230C-06	1/8 NPT	1/8 NPT	36	28	17	22	46	111	20
M4A230C-08	1/4 NPT	1/8 NPT	36	28	17	22	46	111	20
M4A330C-10	3/8 NPT	1/4 NPT	33	33	20	27	55.5	130	24
M4A430C-15	1/2 NPT	1/2 NPT	39.5	39.5	27	34	71	163	28

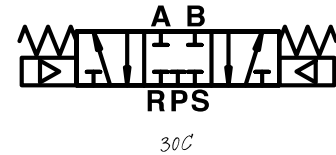
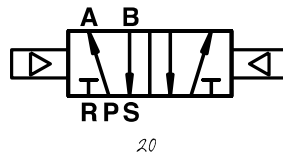
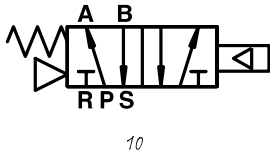
Model	K	L	M	N	P	R	S	T	U	V
M4A230C-06	36	35	7	4.3	38	27	0	37	18	3.3
M4A230C-08	36	35	7	4.3	38	27	3	35.5	21	3.3
M4A330C-10	43.5	40	6.5	4.3	50	30.5	4	43.5	24	4.3
M4A430C-15	57	50	7.5	5.5	72	35	4	53	36	4.3

How To Order

How To Order

M4A 2 10-08

Product Line	Model	Type	Port Size
M4A Series	2 = 200 Series	10 = Single Solenoid	06 = 1/8 NPT (200 Series)
	3 = 300 Series	20 = Double Solenoid	08 = 1/4 NPT (200 Series)
	4 = 400 Series	30C = 3 Position Double Air Pilot Closed Center	10 = 3/8 NPT (300 Series)
			15 = 1/2 NPT (400 Series)



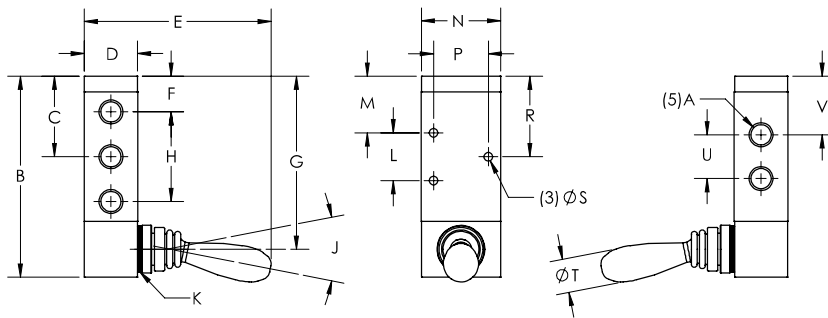
Technical Data

Engineering Specifications

Model	210-06	230-06	310-08	330-08
Fluid	Air (Clean/Dry)			
Actuation	Hand Lever			
Type	5 Port - 2 Position	5 Port - 3 Position	5 Port - 2 Position	5 Port - 3 Position
Flow	Cv 0.78	Cv 0.67	Cv 1.39	Cv 1.00
Port Size	1/8 NPT		1/4 NPT	
Lubrication	Not Required			
Pressure Range	0 to 116 PSI (0 to 0.8 MPa)			
Proof Pressure	215 PSI (1.5 MPa)			
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C)			
Material	Aluminum Alloy Body			



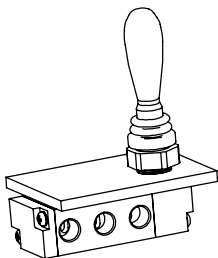
Dimensions (mm)



Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	V
M4H210-06/M4HA210-06	1/8 NPT	81.5	32.5	22	90	14.5	69.5	36	15	M16X1.5	20	22.5	35	23.5	32.5	4.3	18	18	23.5
M4H310-08/M4HA310-08	1/4 NPT	101	40.5	27	93.5	18	87	45	18	M20X1.5	24	28.5	40	27.5	40.5	4.3	18	22	29.5
M4H230C-06/M4H230E-06	1/8 NPT	81.5	32.5	22	90.5	14.5	69.5	36	17	M16X1.5	20	22.5	35	23.5	32.5	4.3	18	18	23.5
M4H330C-08/M4H330E-08	1/4 NPT	101	40.5	27	94	18	87	45	20	M20X1.5	24	28.5	40	27.5	40.5	4.3	18	22	29.5
M4HA230C-06/M4HA230E-06	1/8 NPT	100.5	32.5	22	90.5	14.5	88.5	36	17	M16X1.5	20	22.5	35	23.5	32.5	4.3	18	18	23.5
M4HA330C-08/M4HA330E-08	1/4 NPT	120	40.5	27	94	18	106	45	20	M20X1.5	24	28.5	40	27.5	40.5	4.3	18	22	29.5

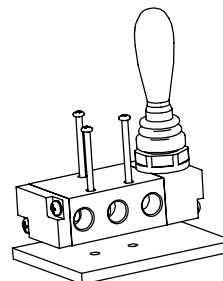
Installation Options

Panel Mount



- > Unscrew and remove handle, nut, and boot
- > Reassemble in panel
- > Panel thickness (200 Series: ≤5mm, 300 Series: ≤6mm)
- > Panel mounting hole diameter (200 Series: Ø16.75mm, 300 Series: Ø21mm)

Body Mount

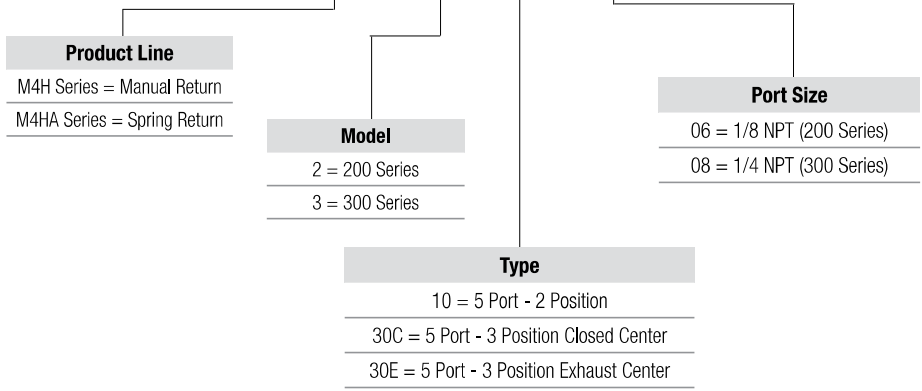


- > See Dimensions for mounting hole size and spacing
- > Screws not included

How To Order

How To Order

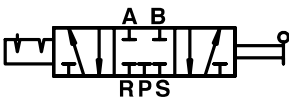
M4H 2 10-06



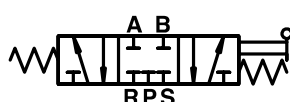
10 (Manual Return)



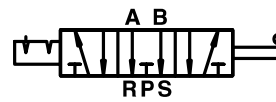
10 (Spring Return)



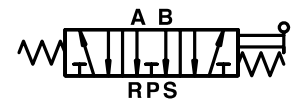
30C (Manual Return)



30C (Manual Return)



30E (Manual Return)



30E (Spring Return)

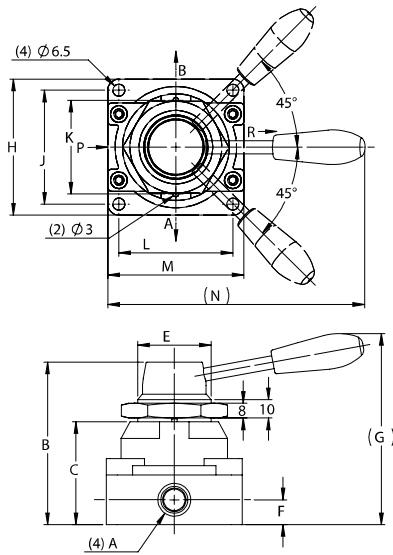
Technical Data

Engineering Specifications

Model	M4HV310-08-S	M4HV330-08-S	M4HV410-15-S	M4HV430-15-S
Fluid	Air (Clean/Dry)			
Actuation	Rotary Hand Lever			
Type	4 Port - 2 Position - Detented	4 Port - 3 Position - Closed Center - Detented	4 Port - 2 Position - Detented	4 Port - 3 Position - Closed Center - Detented
Flow	Cv 1.67		Cv 4.89	
Port Size	1/4 NPT		1/2 NPT	
Lubrication	Not Required			
Pressure Range	0 to 145 PSI (0 to 1.0 MPa)			
Proof Pressure	215 PSI (1.5 MPa)			
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C)			
Material	Aluminum Alloy Body			



Dimensions (mm)



Model	A	B	C	E	F	G	H	J	K	L	M	N
M4HV3	1/4 NPT	88.5	56	M40X1.5	13.5	104	74	62	51	62	74	140
M4HV4	1/2 NPT	110	72	M52X1.5	18	128	102	89	64	81	94	160

How To Order

How To Order

M4HV 3 10-08-S

Product Line

M4HV Series

Model

3 = 300 Series

4 = 400 Series

Port Size

08 = 1/4 NPT (300 Series)

15 = 1/2 NPT (400 Series)

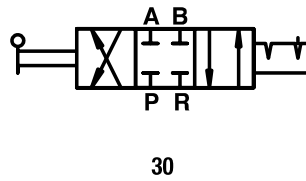
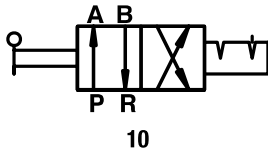
Type

10 = 4 Port - 2 Position

30 = 4 Port - 3 Position - Closed Center

Mounting

S = Panel Nut



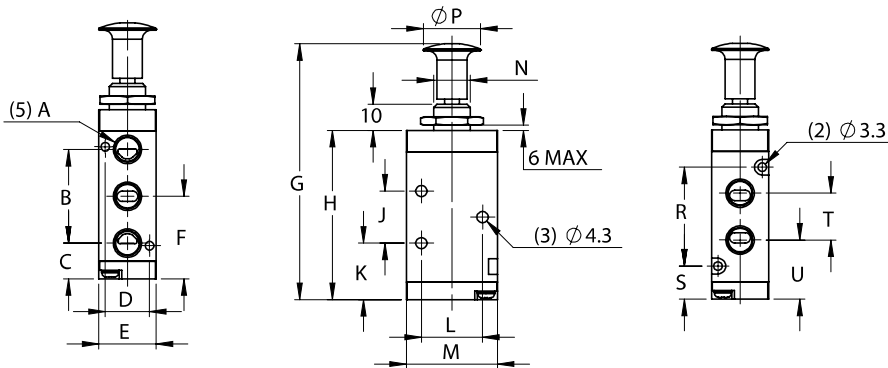
Technical Data

Engineering Specifications

Model	M4L210-06	M4L310-08
Fluid	Air (Clean/Dry)	
Actuation	Push-Pull Knob	
Type	5 Port - 2 Position - Detented	
Flow	Cv 0.78	Cv 1.39
Port Size	1/8 NPT	1/4 NPT
Lubrication	Not Required	
Pressure Range	0 to 116 PSI (0 to 0.8 MPa)	
Proof Pressure	215 PSI (1.5 MPa)	
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C)	
Material	Aluminum Alloy Body	



Dimensions (mm)

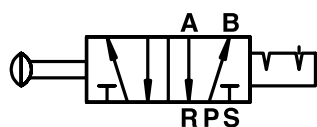
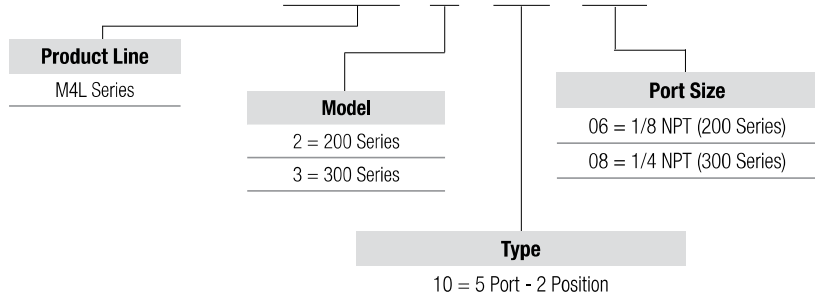


Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U
M4L210-06	1/8 NPT	36	14.5	17	22	32.5	106	65.8	20	22.5	23.5	35	M14X1.0	25	38	13.5	18	23.5
M4L310-08	1/4 NPT	45	18	20	27	40.5	121.5	81	24	28.5	27.5	40	M16X1.0	25	50	15.5	22	29.5

How To Order

How To Order

M4L 2 10-06



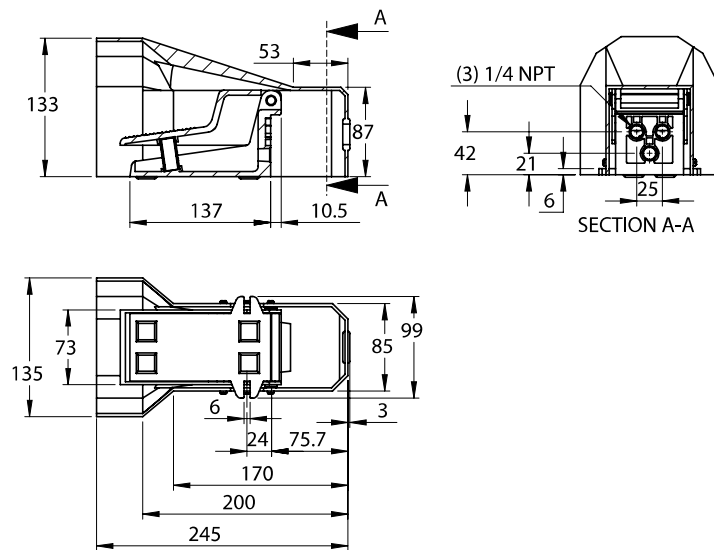
Technical Data

Engineering Specifications

Model	M4F210-08-G	M4F210-08-LG
Fluid	Air (Clean/Dry)	
Actuation	Foot Pedal	
Type	5 Port - 2 Position	
Flow	Cv 0.78	Cv 0.78
Lubrication	Not Required	
Pressure Range	0 to 116 PSI (0 to 0.8 MPa)	
Proof Pressure	215 PSI (1.5 MPa)	
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C)	
Material	Aluminum Alloy Body	



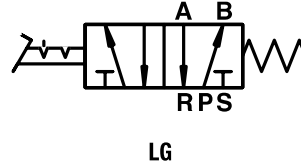
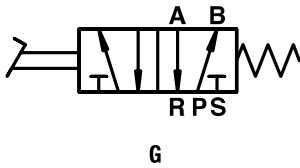
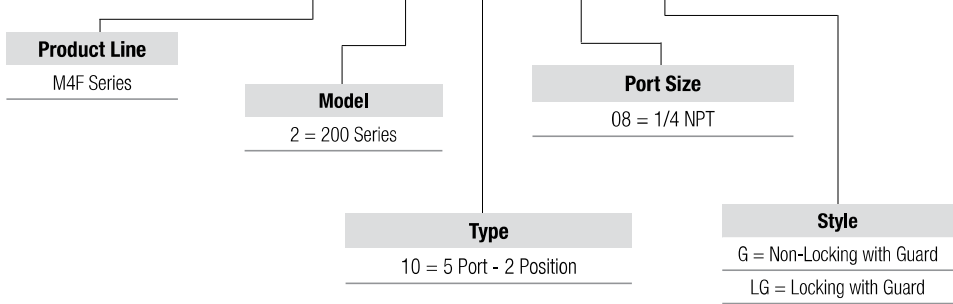
Dimensions (mm)



How To Order

How To Order

M4F 2 10-08-G



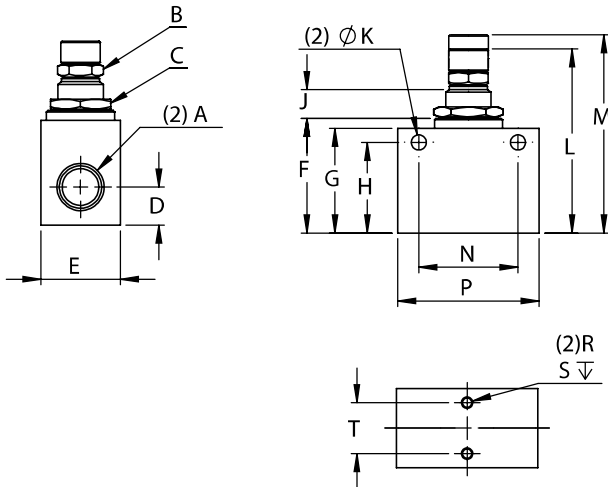
Technical Data

Engineering Specifications

Model	MASC100-06	MASC200-08	MASC300-10	MASC300-15	
Fluid	Air (Clean/Dry)				
Port Size	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT	
Pressure Range	7 to 138 PSI (0.05 to 0.95 MPa)				
Proof Pressure	215 PSI (1.5 MPa)				
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C)				
Max. Flow (SCFM)	Controlled	7.1	15.9	44.1	58.3
	Free	14.1	28.3	53.0	88.3
Material	Aluminum Alloy Body				



Dimensions (mm)



Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T
MASC100-06	1/8 NPT	M6X0.5	M12X0.75	10	18	26	23	18	8.6	4.3	47	52.5	22	32	-	-	-
MASC200-08	1/4 NPT	M6X0.5	M12X0.75	13.5	18	30	27	23	8.6	4.3	51	56.5	26	36	-	-	-
MASC300-10	3/8 NPT	M8X0.75	M16X1.0	17.5	28	40.5	37	32	10	5.3	65	74	35	50	M4X0.7	6	18
MASC300-15	1/2 NPT	M8X0.75	M16X1.0	17.5	28	40.5	37	32	10	5.3	65	74	35	50	M4X0.7	6	18

How To Order

How To Order

MASC 200 08

Product Line

M4F Series

Model

1 = 100 Series

2 = 200 Series

3 = 300 Series

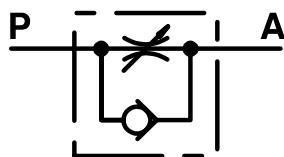
Port Size

06 = 1/8 NPT (100 Series)

08 = 1/4 NPT (200 Series)

10 = 3/8 NPT (300 Series)

15 = 1/2 NPT (300 Series)



Air Preparation Equipment

Air preparation equipment is a crucial element in many pneumatic circuits. Filters, regulators, and lubricators provide improved operation in pneumatic valves and actuators. Accessories such as gauges and switches allow you to further monitor your systems and ensure quality operation.



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44 – Engineering Specifications
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-
- 46** MGF Series General Purpose Filters
46 – Engineering Specifications
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- 49** MGFB Series Coalescing Filters
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- 61** MGZ Series Pressure Relief Valves
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Technical Data

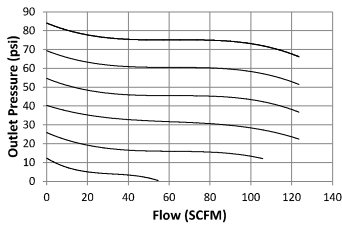
Engineering Specifications

Model	MGR
Fluid	Air (Clean/Dry)
Type	Relieving Regulator with Push to Lock Adjustment Knob
Pressure Range	Blank - 7 to 130 PSI (0.05 to 0.9 MPa) L - 7 to 60 PSI (0.05 to 0.4 MPa)
Proof Pressure	215 PSI (1.5 MPa)
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C)
Material	Aluminum Alloy Body
Pressure Gauge	Square/Flush-Mounted Gauge or Large Round/Port-Mounted Gauge
Mounting	Individual Stamped Steel Bracket or Modular Connecting Kit (page 38) or Panel Mount
Includes	Stamped Steel Bracket / Panel Nut

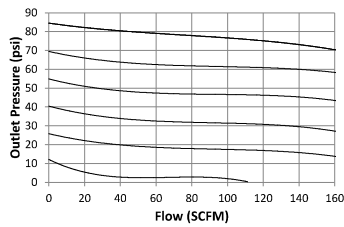


Performance Data MGR

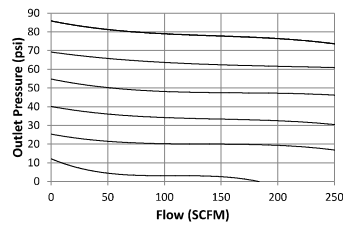
Flow Characteristics MGR200



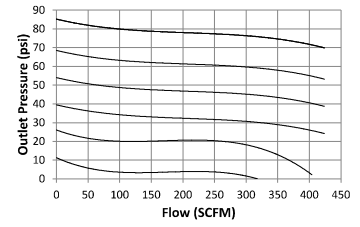
Flow Characteristics MGR300



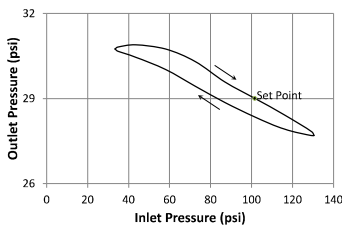
Flow Characteristics MGR400



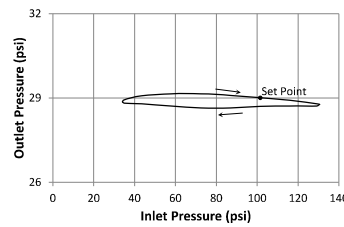
Flow Characteristics MGR600



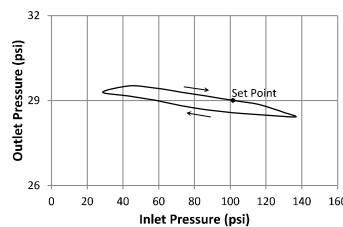
Regulator Characteristics MGR200



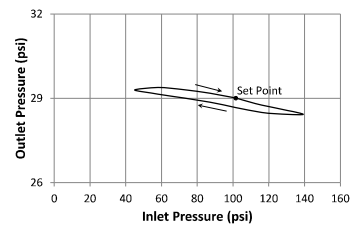
Regulator Characteristics MGR300



Regulator Characteristics MGR400



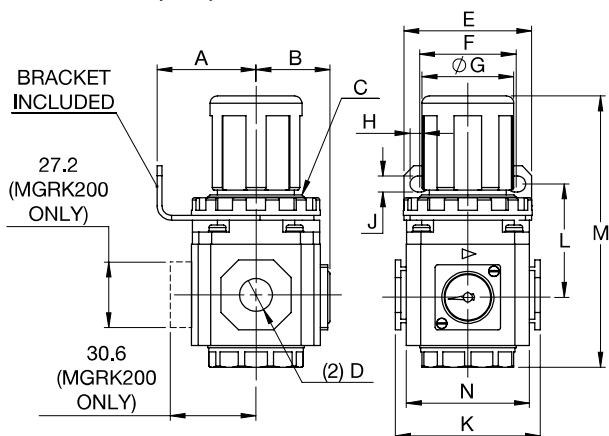
Regulator Characteristics MGR600



How To Specify

Product Information

Dimensions (mm)



Model	A	B	C	D	E	F	G	H	J	K	L	M	N
MGR_200-06	30	32	M30 x 1.5	1/8 NPT	55	34	28	15.5	5.5	47	43	89	38
MGR_200-08	30	32	M30 x 1.5	1/4 NPT	55	34	28	15.5	5.5	47	43	89	38
MGR_300-08	41	31	M40 x 1.5	1/4 NPT	53	40	38	8	6.5	60	46	112.5	50.8
MGR_300-10	41	31	M40 x 1.5	3/8 NPT	53	40	38	8	6.5	60	46	112.5	50.8
MGR_400-15	50	40	M55 x 2.0	1/2 NPT	72	55	52	11	8.5	80	53	140.5	67.5
MGR600-20	70	48	M68 x 1.5	3/4 NPT	90	66	64	13	11	99	73.5	191.5	85
MGR600-25	70	48	M68 x 1.5	1 NPT	90	66	64	13	11	99	73.5	191.5	85

How To Order

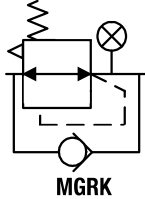
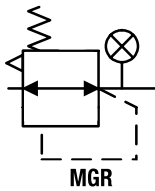
MGR K 300-08-L-R

Product Line MGR Series				
Series	Model	Port Size	Pressure Range	Gauge Type
Blank = Standard Relieving Regulator	200 Series	06 = 1/8 NPT (200 Series)	Blank = Square/Flush	Blank = Square/Flush
K = Relieving Regulator with Reverse Flow ¹	300 Series	08 = 1/4 NPT (200, 300 Series)	L = 7-60 PSI ²	R = Round/Port-Mounted ³
	400 Series	10 = 3/8 NPT (300 Series)		
	600 Series	15 = 1/2 NPT (400 Series)		
		20 = 3/4 NPT (600 Series)		
		25 = 1 NPT (600 Series)		

¹ K option only available with 200, 300 & 400 series

² L option only available with 200, 300 & 400 series

³ See page 73 for dimensions



Product Features

Technical Data

Engineering Specifications

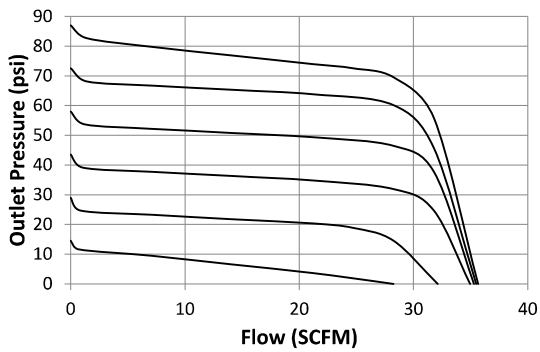
Model	MSR200-06	MSR200-08
Fluid	Air (Clean/Dry)	
Port Size	1/8 NPT	1/4 NPT
Type	Relieving Regulator with Push to Lock Adjustment Knob	
Pressure Range	7 to 130 PSI (0.05 to 0.9 MPa)	
Proof Pressure	215 PSI (1.5 MPa)	
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C)	
Material	Aluminum Alloy Body	
Mounting	Inline via Bracket / Panel Mount	
Includes	Gauge ¹ / Stamped Steel Bracket / Panel Nut / 2 Gauge Locations	

¹ 1/8 NPT, 40mm round gauge, 0-140 PSI

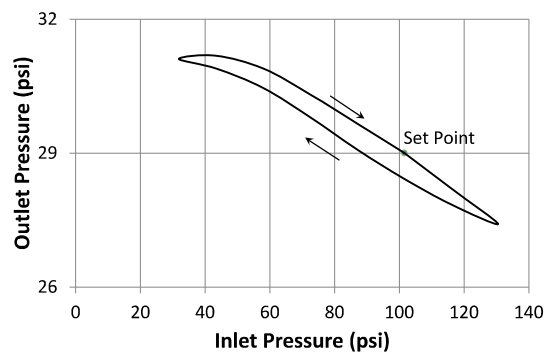


Performance Data MSR200

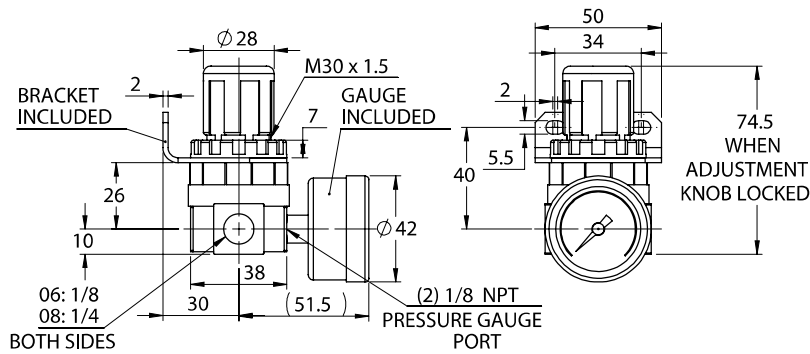
Flow Characteristics



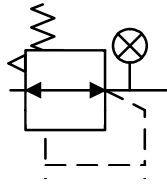
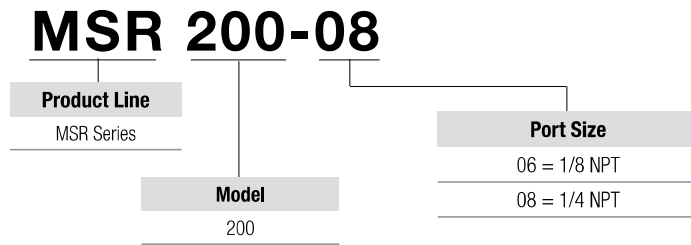
Regulation Characteristics



Dimensions



How To Order



Product Features

Technical Data

Engineering Specifications

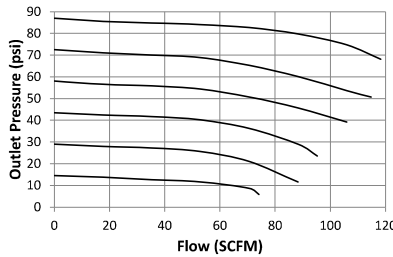
Model	MGF200	MGF300	MGF400	MGF600
Fluid	Air			
Pressure Range	Semi- Auto and Auto Drain: 22 to 130 PSI (0.15 to 0.9 MPa) Manual Drain: 7 to 130 PSI (0.05 to 0.9 MPa)			
Proof Pressure	215 PSI (1.5 MPa)			
Temperature Range	23 °F to 158 °F (-5 °C to 70 °C)			
Polycarbonate Bowl Capacity	0,34 FL OZ (10CC)	1,35 FL OZ (40CC)	2,7 FL OZ (80CC)	N/A
Metal Bowl Capacity	0,57 FL OZ (17CC)	1,35 FL OZ (40CC)	2,7 FL OZ (80CC)	7,8 FL OZ (230CC)
Bowl Material	Polycarbonate Bowl or Metal Bowl with Polycarbonate Level Indicator	Polycarbonate Bowl with Metal Bowl Guard or Metal Bowl with Polycarbonate Level Indicator		Metal Bowl with Polycarbonate Level Indicator
Material	Aluminum Alloy Body			
Mounting	Individual Stamped Steel Bracket or Modular Connecting Kit (page 38)			
Includes	Stamped Steel Bracket			



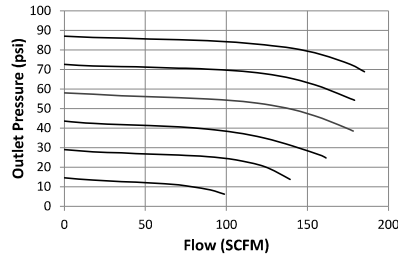
See page 71 for service parts.

Performance Data MGF

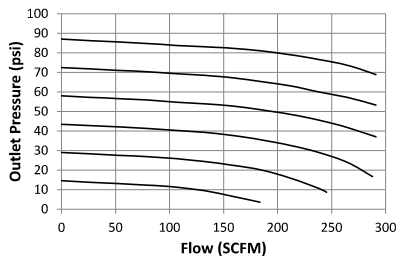
Flow Characteristics MGF200



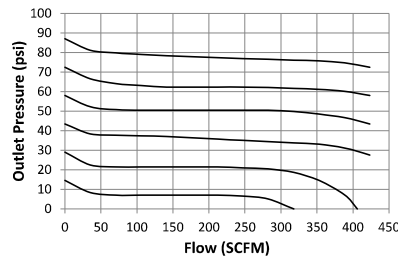
Flow Characteristics MGF300



Flow Characteristics MGF400

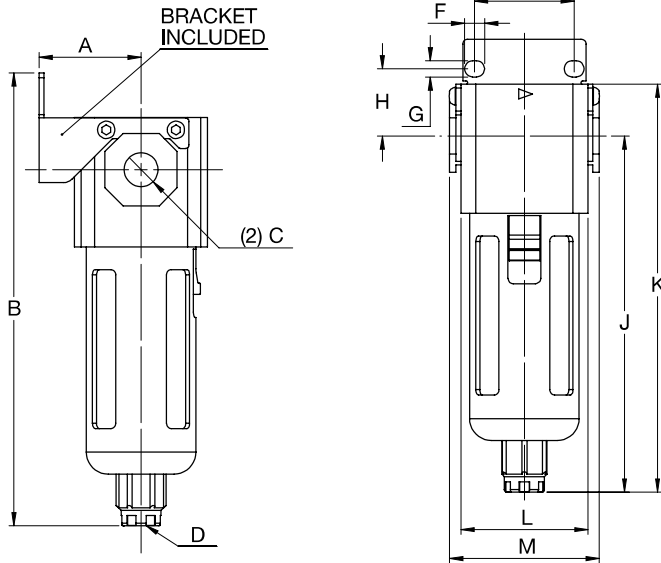


Flow Characteristics MGF600



Product Information

Dimensions (mm)



Model	A	B	C	D	E	F
MGF200-06	30	123* 137**	1/8 NPT	-	27	8.4
MGF200-08	30	123* 137**	1/4 NPT	-	27	8.4
MGF300-08	41	182	1/4 NPT	G 1/8	40	8
MGF300-10	41	182	3/8 NPT	G 1/8	40	8
MGF400-15	50	208	1/2 NPT	G 1/4	55	11
MGF600-20	70	280	3/4 NPT	G 1/4	66	13
MGF600-25	70	280	1 NPT	G 1/4	66	13

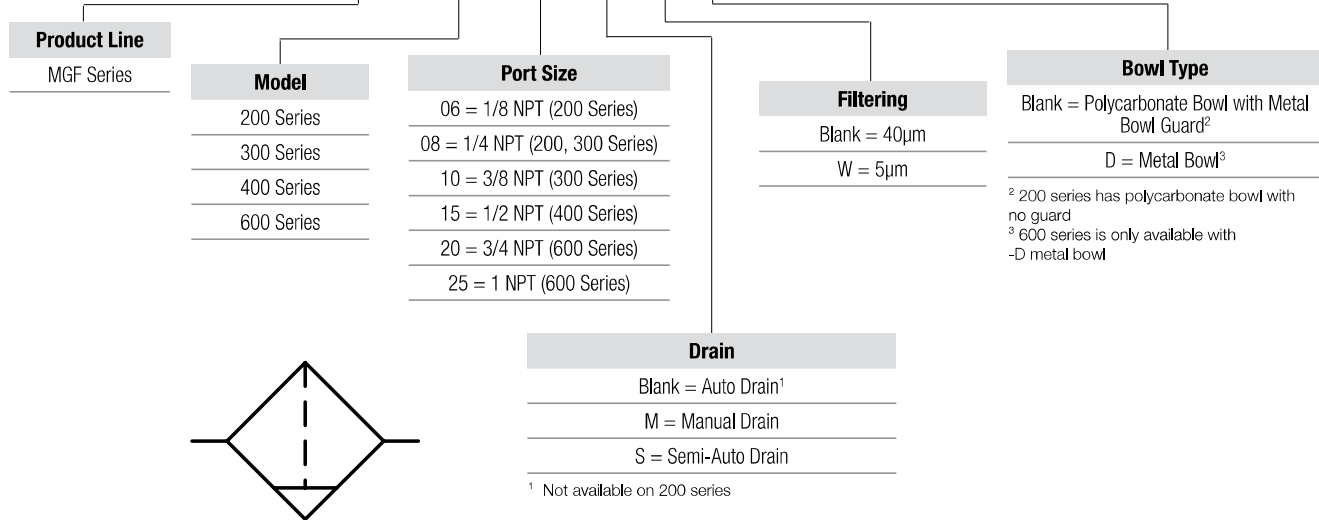
Model	G	H	J	K	L	M
MGF200-06	5.4	23	93* 107**	110* 124**	38	47
MGF200-08	5.4	23	93* 107**	110* 124**	38	47
MGF300-08	6.5	27	143	164	50.8	60
MGF300-10	6.5	27	143	164	50.8	60
MGF400-15	8.6	33.5	166.5	191.5	67.5	80
MGF600-20	11	50	219	256	84.5	99
MGF600-25	11	50	219	256	84.5	99

* Polycarbonate Bowl
 ** Metal Bowl

How To Order

How To Order

MGF 300-08-S-W-D



Technical Data

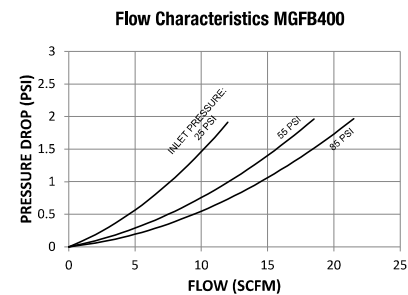
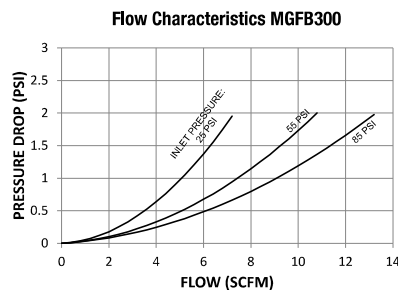
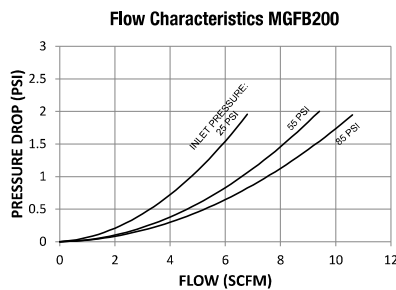
Engineering Specifications

Model	MGFB200	MGFB300	MGFB400
Fluid	Air to be filtered to 5 μ or better		
Pressure Range	Semi- Auto and Auto Drain: 25 to 130 PSI (0.17 to 0.9 MPa) Manual Drain: 7 to 130 PSI (0.05 to 0.9 MPa)		
Proof Pressure	215 PSI (1.5 MPa)		
Temperature Range	23 to 158 °F (-5 to 70 °C)		
Filtration Rating	0.01 μ (95% efficiency)		
Max Flow Rate ¹	5 SCFM	10 SCFM	20 SCFM
Polycarbonate Bowl Capacity	0.34 FL OZ (10CC)	1.35 FL OZ (40CC)	2.7 FL OZ (80CC)
Metal Bowl Capacity	0.57 FL OZ (17CC)	1.35 FL OZ (40CC)	2.7 FL OZ (80CC)
Bowl Material	Polycarbonate Bowl or Metal Bowl with Polycarbonate Level Indicator	Polycarbonate Bowl with Metal Bowl Guard or Metal Bowl with Polycarbonate Level Indicator	
Material	Aluminum Alloy Body		
Mounting	Individual Stamped Steel Bracket or Modular Connecting Kit (page 38)		
Includes	Stamped Steel Bracket		



¹ Maximum rated flow at 85 PSI inlet pressure for coalescing function.
See page 71 for service parts.

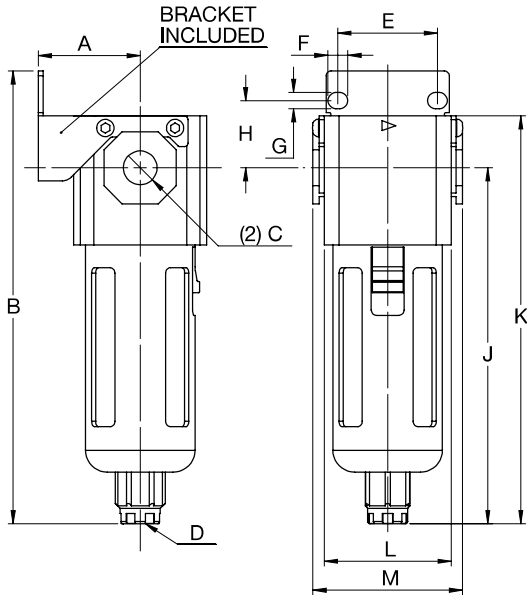
Performance Data MGFB



How To Specify

Product Information

Dimensions (mm)



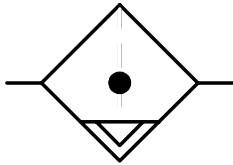
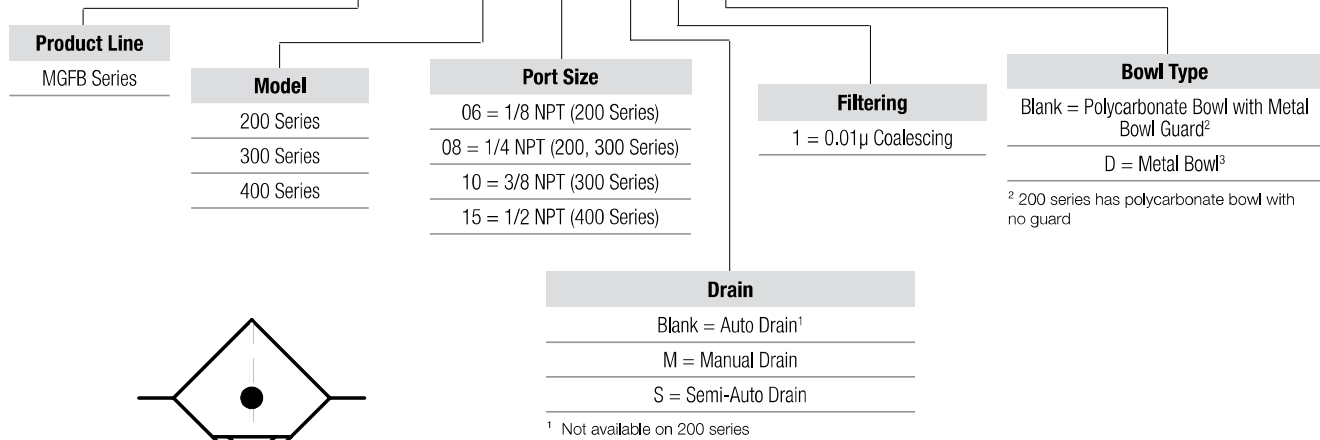
Model	A	B	C	D	E	F
MGFB200-06	30	123* 137**	1/8 NPT	-	27	8.4
MGFB200-08	30	123* 137**	1/4 NPT	-	27	8.4
MGFB300-08	41	182	1/4 NPT	G 1/8	40	8
MGFB300-10	41	182	3/8 NPT	G 1/8	40	8
MGFB400-15	50	208	1/2 NPT	G 1/4	55	11

Model	G	H	J	K	L	M
MGFB200-06	5.4	23	93* 107**	110* 124**	38	47
MGFB200-08	5.4	23	93* 107**	110* 124**	38	47
MGFB300-08	6.5	27	143	164	50.8	60
MGFB300-10	6.5	27	143	164	50.8	60
MGFB400-15	8.6	33.5	166.5	191.5	67.5	80

* Polycarbonate Bowl
 ** Metal Bowl

How To Order

MGFB 300-08-S-1-D



Product Features

Technical Data

Engineering Specifications

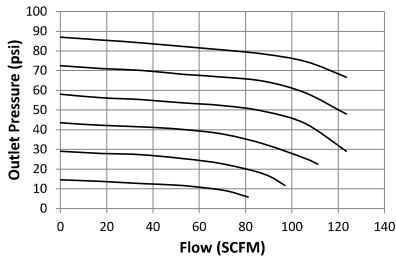
Model	MGL200	MGL300	MGL400	MGL600
Fluid	Air (Clean/Dry)			
Type	Fine Oil Mist			
Pressure Range	7 to 130 PSI (0.05 to 0.9 MPa)			
Proof Pressure	215 PSI (1.5 MPa)			
Temperature Range	23 °F to 158 °F (-5 °C to 70 °C)			
Polycarbonate Bowl Capacity	0.85 FL OZ (25CC)	2.5 FL OZ (75CC)	5.4 FL OZ (160CC)	N/A
Metal Bowl Capacity	1.08 FL OZ (32CC)	2.5 FL OZ (75CC)	5.4 FL OZ (160CC)	12.8 FL OZ (380CC)
Bowl Material	Polycarbonate Bowl or Metal Bowl with Polycarbonate Level Indicator	Polycarbonate Bowl with Metal Bowl Guard or Metal Bowl with Polycarbonate Level Indicator	Metal Bowl with Polycarbonate Level Indicator	
Material	Aluminum Alloy Body			
Recommended Lubricant	Non-Detergent SAE10, ISO VG32, or equivalent			
Mounting	Individual Stamped Steel Bracket or Modular Connecting Kit (page 38)			
Includes	Stamped Steel Bracket			



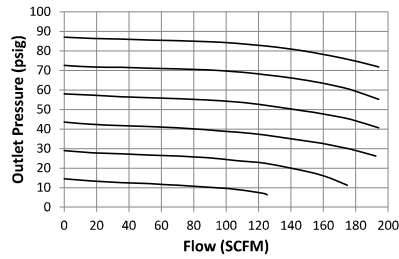
See page 71 for service parts.

Performance Data MGL

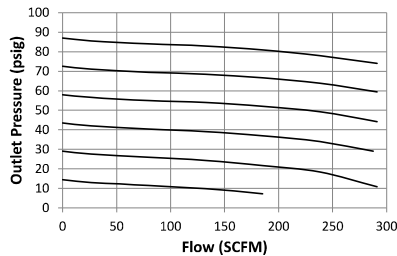
Flow Characteristics MGL200



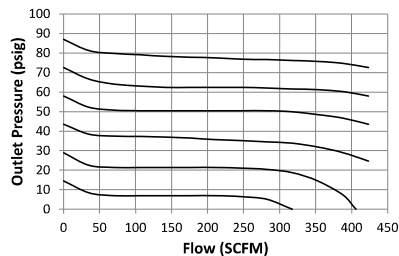
Flow Characteristics MGL300



Flow Characteristics MGL400

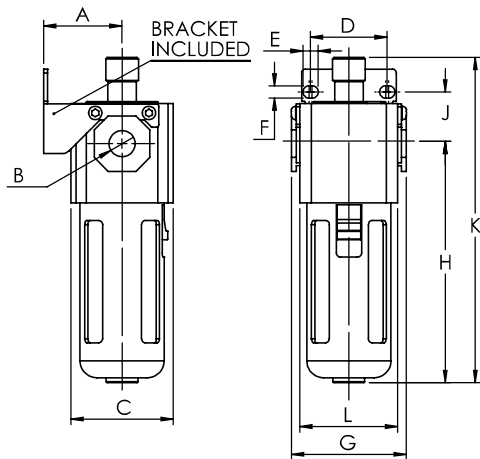


Flow Characteristics MGL600



Product Information

Dimensions (mm)



Model	A	B	C	D	E
MGL200-06	30	1/8 NPT	40	27	8.5
MGL200-08	30	1/4 NPT	40	27	8.5
MGL300-08	41	1/4 NPT	53.5	40	8
MGL300-10	41	3/8 NPT	53.5	40	8
MGL400-15	50	1/2 NPT	71	55	11
MGL600-20	70	3/4 NPT	89	66	13
MGL600-25	70	1 NPT	89	66	13

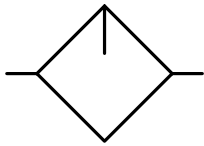
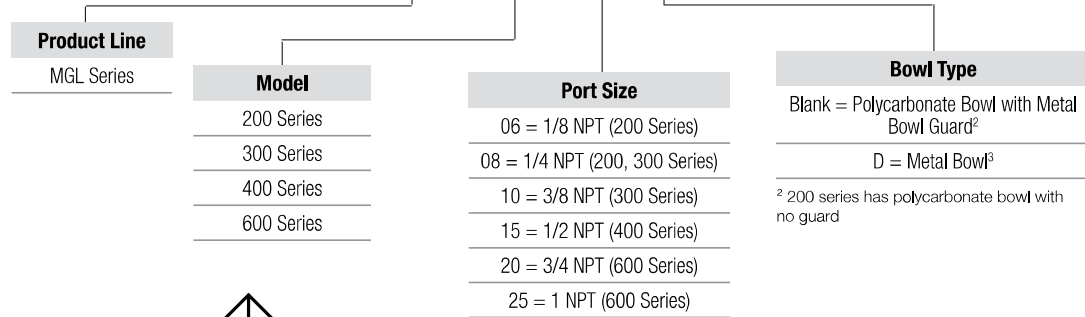
Model	F	G	H	J	K	L
MGL200-06	5.5	47	80* 94**	23	119* 133**	38
MGL200-08	5.5	47	80* 94**	23	119* 133**	38
MGL300-08	6.5	60	125	27	169	50.8
MGL300-10	6.5	60	125	27	169	50.8
MGL400-15	8.5	80	142	33.5	190	67.5
MGL600-20	11	99	194.5	50	256	84.5
MGL600-25	11	99	194.5	50	256	84.5

* Polycarbonate Bowl
 ** Metal Bowl

How To Order

How To Order

MGL 300-08-D



² 200 series has polycarbonate bowl with no guard



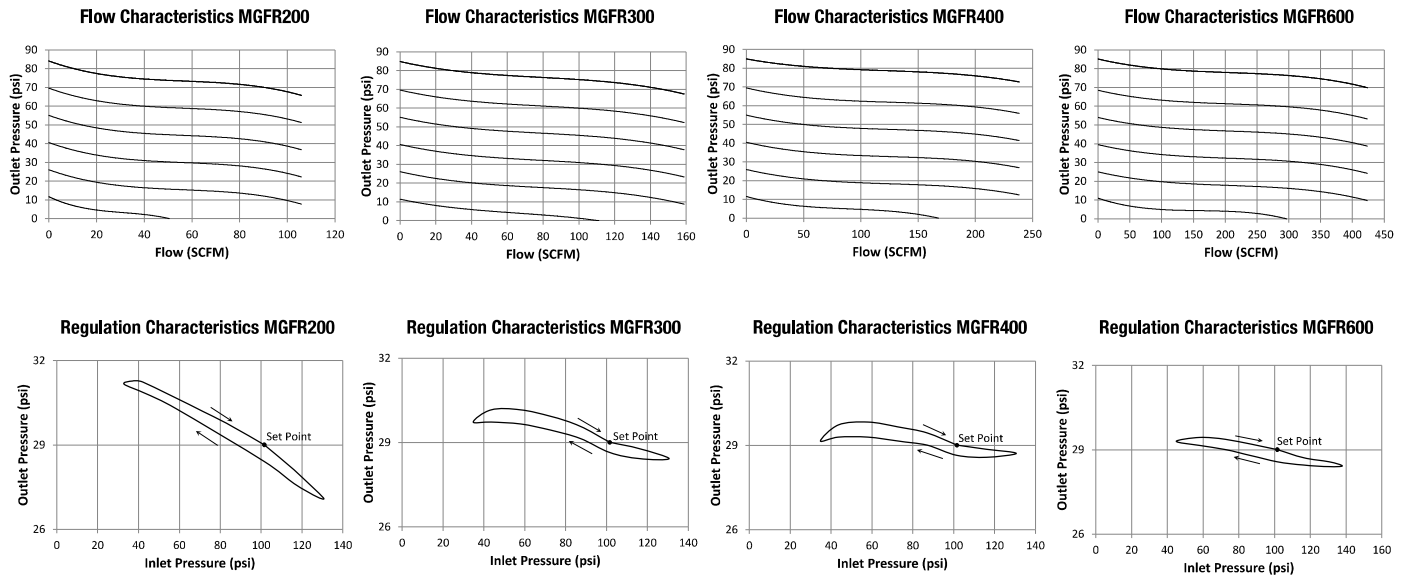
Technical Data

Engineering Specifications

Model	MGFR200	MGFR300	MGFR400	MGFR600
Fluid	Air			
Type	Relieving Regulator with Push to Lock Adjustment Knob			
Pressure Range	Semi- Auto and Auto Drain: Standard Pressure - 22 to 130 PSI (0.15 to 0.9 MPa) Low Pressure - 22 to 60 PSI (0.15 to 0.4 MPa) Manual Drain: Standard Pressure - 7 to 130 PSI (0.05 to 0.9 MPa) Low Pressure - 7 to 60 PSI (0.05 to 0.4 MPa)			
Proof Pressure	215 PSI (1.5 MPa)			
Temperature Range	23 °F to 158 °F (-5 °C to 70 °C)			
Polycarbonate Bowl Capacity	0.34 FL OZ (10CC)	1.35 FL OZ (40CC)	2.7 FL OZ (80CC)	N/A
Metal Bowl Capacity	0.57 FL OZ (17CC)	1.35 FL OZ (40CC)	2.7 FL OZ (80CC)	7.8 FL OZ (230CC)
Bowl Material	Polycarbonate Bowl or Metal Bowl with Polycarbonate Level Indicator	Polycarbonate Bowl with Metal Bowl Guard or Metal Bowl with Polycarbonate Level Indicator	Metal Bowl with Polycarbonate Level Indicator	
Material	Aluminum Alloy Body			
Mounting	Individual Stamped Steel Bracket or Modular Connecting Kit (page 38) or Panel Mount			
Includes	Stamped Steel Bracket / Panel Nut			

See page 71 for service parts.

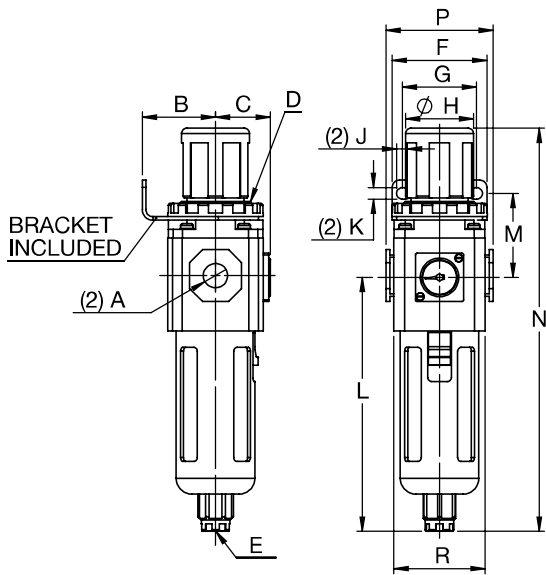
Performance Data MGFR



How To Specify

Product Information

Dimensions (mm)



Model	A	B	C	D	E	F	G
MGFR200-06	1/8 NPT	30	32	M30X1.5	-	55	34
MGFR200-08	1/4 NPT	30	32	M30X1.5	-	55	34
MGFR300-08	1/4 NPT	41	31	M40X1.5	G 1/8	53	40
MGFR300-10	3/8 NPT	41	31	M40X1.5	G 1/8	53	40
MGFR400-15	1/2 NPT	50	40	M55X2.0	G 1/4	72	52
MGFR600-20	3/4 NPT	70	48	M68X1.5	G 1/4	90	66
MGFR600-25	1 NPT	70	48	M68X1.5	G 1/4	90	66

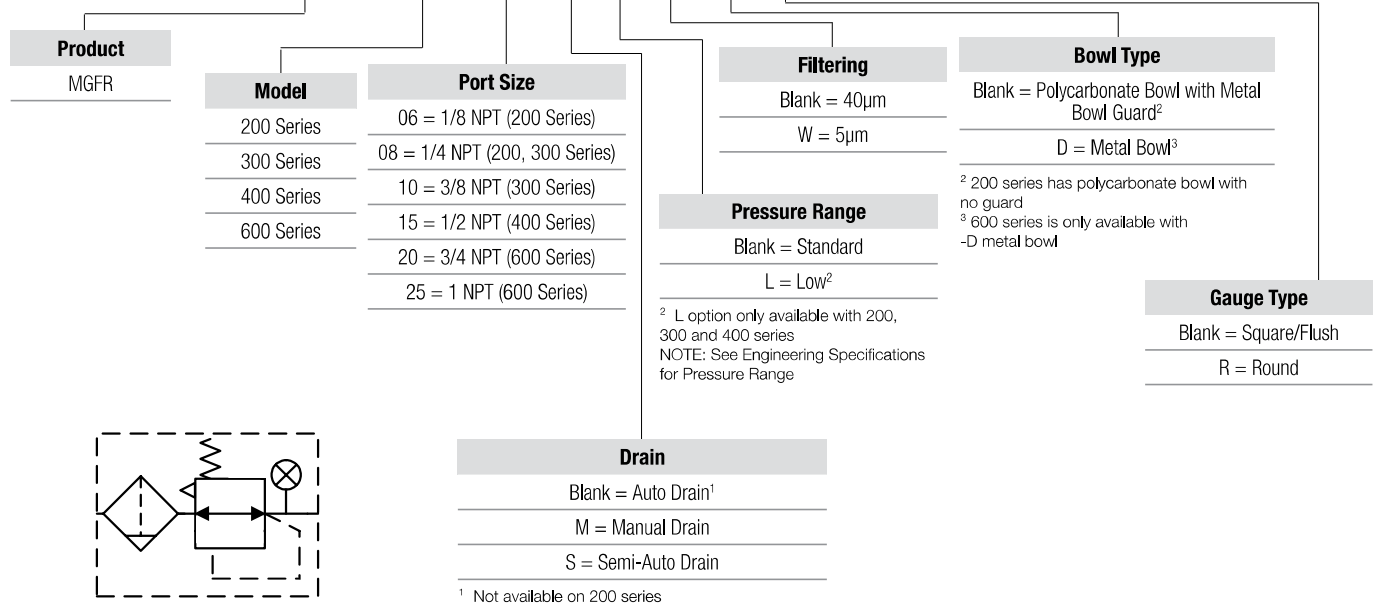
Model	H	J	K	L	M	N	P	R
MGFR200-06	28	15.5	5.5	93* 107**	48	161* 175**	47	38
MGFR200-08	28	15.5	5.5	93* 107**	48	161* 175**	47	38
MGFR300-08	38	8	6.5	143	46	225.5	60	50.8
MGFR300-10	38	8	6.5	143	46	225.5	60	50.8
MGFR400-15	52	11	8.5	166.5	53	270.5	80	67.5
MGFR600-20	64	13	11	219	76	363	99	84.5
MGFR600-25	64	13	11	219	76	363	99	84.5

* Polycarbonate Bowl

** Metal Bowl

How To Order

MGFR 300-08-S-L-W-D-R



Product Features

Technical Data

Engineering Specifications

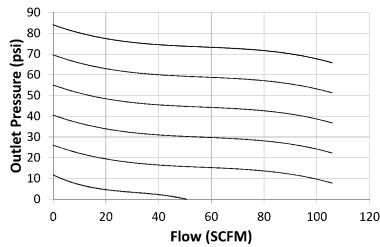
Model	MGFC200-06-S	MGFC200-08-S	MGFC300-08	MGFC300-10	MGFC400-15
Fluid	Air				
Port Size	1/8 NPT	1/4 NPT	1/4 NPT	3/8 NPT	1/2 NPT
Type	Relieving Regulator with Push to Lock Adjustment Knob and Fine Oil Mist Lubricator				
Pressure Range	22 to 130 PSI (0.15 to 0.9 MPa)				
Proof Pressure	215 PSI (1.5 MPa)				
Temperature Range	23 °F to 158 °F (-5 °C to 70 °C)				
Drain Bowl Capacity	0.34 FL OZ (10CC)		1.35 FL OZ (40CC)		2.7 FL OZ (80CC)
Oil Bowl Capacity	0.85 FL OZ (25CC)		2.5 FL OZ (75CC)		5.4 FL OZ (160CC)
Bowl Material	Polycarbonate Bowl		Polycarbonate Bowl with Metal Bowl Guard		
Material	Aluminum Alloy Body				
Mounting	Modular Connecting Kit (page 38) included				
Recommended Lubricant	Non-Detergent SAE10, ISO VG32, or equivalent				
Drain	Semi-Auto Drain		Auto Drain		
Includes	T Style Modular Connecting Kit / Panel Nut				



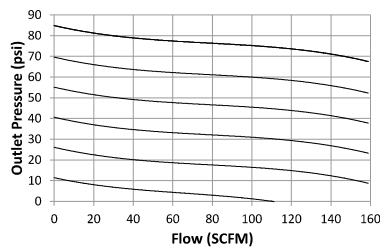
See page 71 for service parts.

Performance Data MGFC

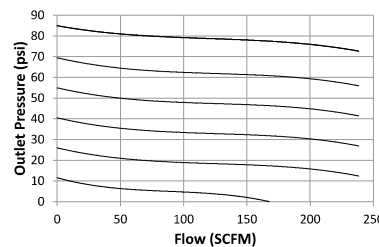
Flow Characteristics MGFC200



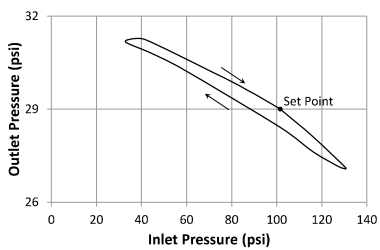
Flow Characteristics MGFC300



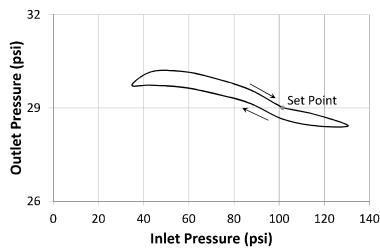
Flow Characteristics MGFC400



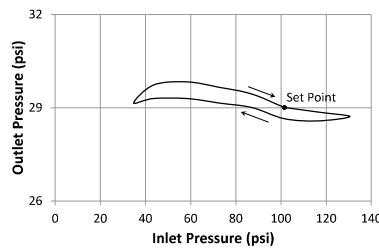
Regulation Characteristics MGFC200



Regulation Characteristics MGFC300

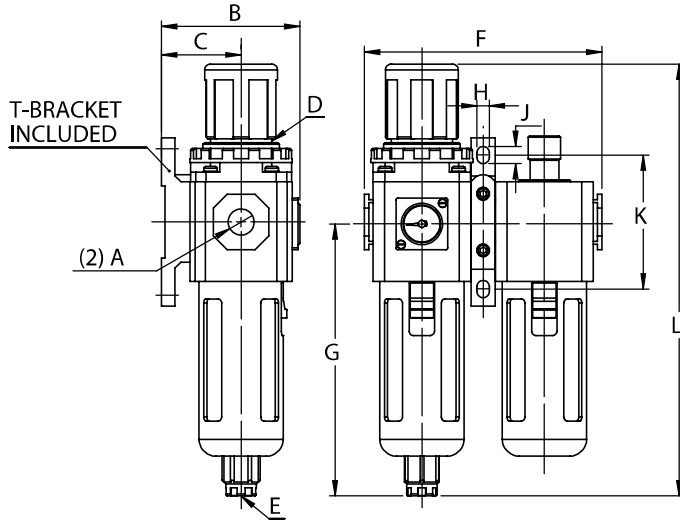


Regulation Characteristics MGFC400



Product Information

Dimensions (mm)



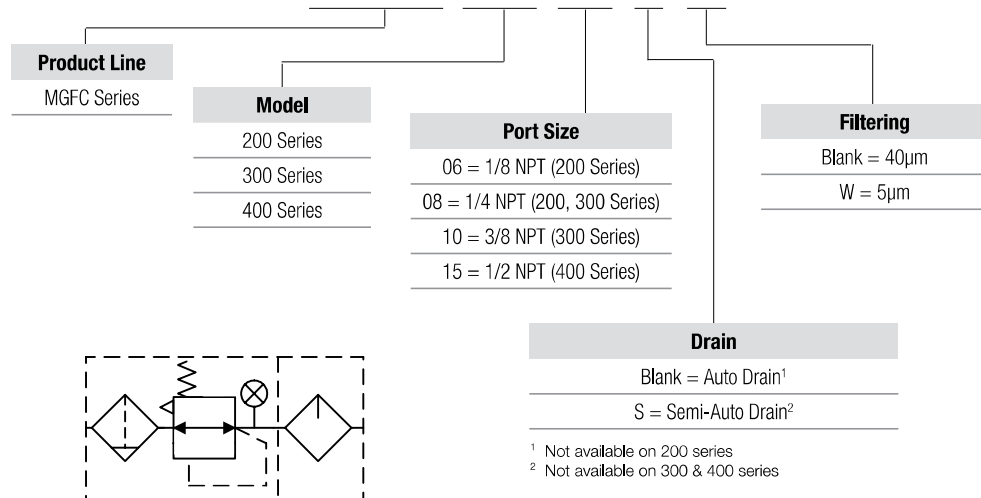
Model	A	B	C	D	E
MGFC200-06-S	1/8 NPT	62	30	M30X1.5	-
MGFC200-08-S	1/4 NPT	62	30	M30X1.5	-
MGFC300-08	1/4 NPT	72	41.5	M40X1.5	G 1/8
MGFC300-10	3/8 NPT	72	41.5	M40X1.5	G 1/8
MGFC400-15	1/2 NPT	89	50	M55X2.0	G 1/4

Model	F	G	H	J	K	L
MGFC200-06-S	97	93	5.5	8.5	50	161
MGFC200-08-S	97	93	5.5	8.5	50	161
MGFC300-08	124	143	6.5	9	70	225.5
MGFC300-10	124	143	6.5	9	70	225.5
MGFC400-15	164	165.5	8.5	12	80	270.5

How To Order

How To Order

MGFC 200-08-S-W



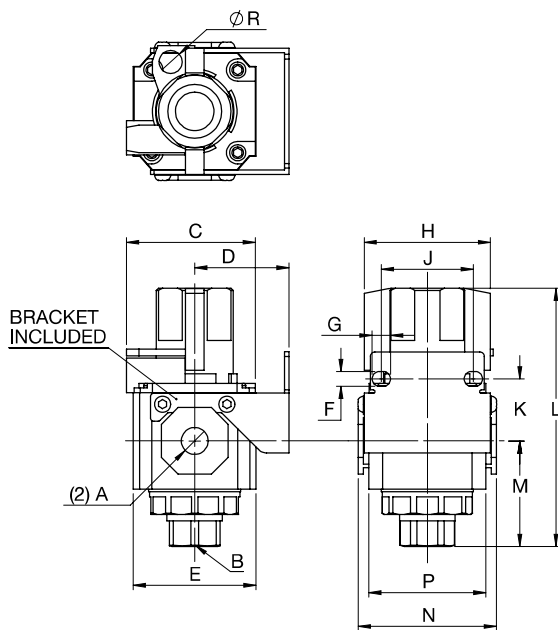
Technical Data

Engineering Specifications

Model	MGZ
Fluid	Air (Clean/Dry)
Actuation	Manual
Valve Type	3 Port - 2 Position
Pressure Range	0 to 130 PSI (0 to 0.9 MPa)
Proof Pressure	215 PSI (1.5 MPa)
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C)
Material	Aluminum Alloy Body
Mounting	Individual Stamped Steel Bracket or Modular Connecting Kit
Knob Motion	90° Twist
Includes	Modular Connecting Kit / Stamped Steel Bracket / Lock and Key



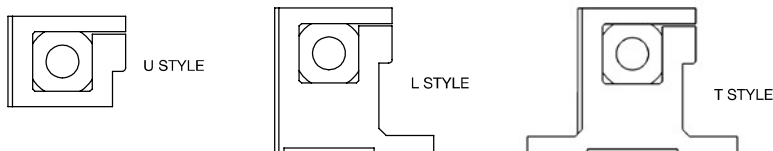
Dimensions (mm)



Model	A	B	C	D	E	F	G
MGZ200-06	1/8 NPT	1/4 NPT	42.5	30	40	5.5	8.5
MGZ200-08	1/4 NPT	1/4 NPT	42.5	30	40	5.5	8.5
MGZ300-08	1/4 NPT	3/8 NPT	56.5	41	53.4	6.5	8
MGZ300-10	3/8 NPT	3/8 NPT	56.5	41	53.4	6.5	8
MGZ400-15	1/2 NPT	1/2 NPT	66	50	64	8.5	11

Model	H	J	K	L	M	N	P	R
MGZ200-06	42	27	23	89	36.5	47	38	7.1
MGZ200-08	42	27	23	89	36.5	47	38	7.1
MGZ300-08	55	40	27	112.5	46	60	51	9.3
MGZ300-10	55	40	27	112.5	46	60	51	9.3
MGZ400-15	65	55	33.5	134	58.5	75	63	10.5

Modular Connecting Kit (included)



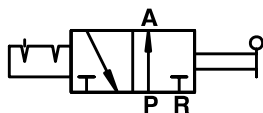
How To Order

How To Order

MGZ 300-08-T

Product Line	Model	Port Size	Modular Connecting Kit ¹
MGZ Series	200 Series	06 = 1/8 NPT (200 Series)	T = T Style
	300 Series	08 = 1/4 NPT (200, 300 Series)	L = L Style
	400 Series	10 = 3/8 NPT (300 Series)	U = U Style
		15 = 1/2 NPT (400 Series)	

¹ All Pressure Relief Valves also include stamped bracket



Technical Data

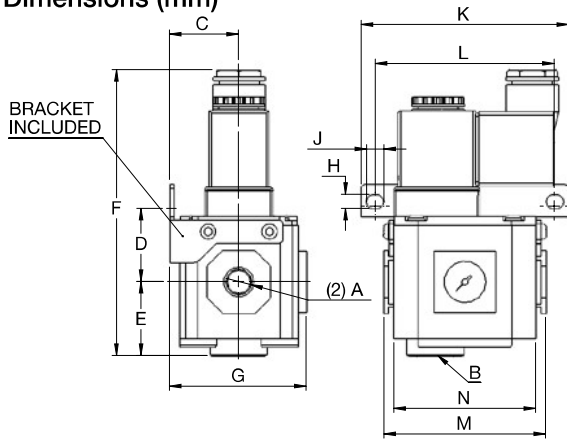
Engineering Specifications

Model	MGV200-06	MGV200-08	MGV300-08	MGV300-10	MGV400-15
Fluid	Air (Clean/Dry)				
Actuation	Solenoid Operated, 3/2 Soft Start				
Port Size	1/8 NPT	1/4 NPT	1/4 NPT	3/8 NPT	1/2 NPT
Exhaust Port Size	1/4 NPT		3/8 NPT		1/2 NPT
Pressure Range	36 to 130 PSI (0.25 to 0.9 MPa)				
Proof Pressure	215 PSI (1.5 MPa)				
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C) (Explosion Proof -4 °F to 140 °F [-20 °C to 60 °C])				
Electrical Connection	DIN / LED Connector or Flying Leads or Explosion Proof Coil Conduit Entry				
Voltage Range	-15% to +10%				
Insulation	Class B				
Power Consumption ¹	AC: 3.5VA / DC: 2.5W				
Mounting	Individual Stamped Steel Bracket or Modular Connecting Kit				
Material	Aluminum Alloy Body				
Connector/Coil ¹	11 mm DIN Connector, Industrial Form B				
Includes	Modular Connecting Kit / Stamped Steel Bracket				



¹ See page 24 for explosion proof specifications

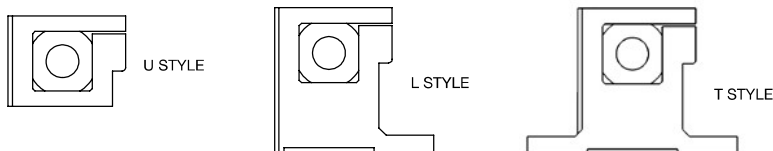
Dimensions (mm)



Model	A	B	C	D	E	F
MGV200-06	1/8 NPT	1/4 NPT	24.5	30.5	30	123.5
MGV200-08	1/4 NPT	1/4 NPT	24.5	30.5	30	123.5
MGV300-08	1/4 NPT	3/8 NPT	31.5	34.5	34	131
MGV300-10	3/8 NPT	3/8 NPT	31.5	34.5	34	131
MGV400-15	1/2 NPT	1/2 NPT	40.5	39	40.5	142.5

Model	G	H	J	K	L	M	N
MGV200-06	57	5.5	8	80	67	59	50
MGV200-08	57	5.5	8	80	67	59	50
MGV300-08	62.2	6.5	8	95	82	74	65
MGV300-10	62.2	6.5	8	95	82	74	65
MGV400-15	80	8.5	11	120	102	90	78

Modular Connection Kit (included)



How To Order

How To Order

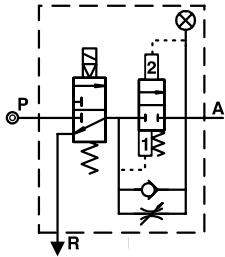
MGV 300-08-T-24VDC-X

Product Line	Model	Port Size	Modular Connecting Kit ¹	Voltage	Electrical Connection
MGV Series	200 Series	06 = 1/8 NPT (200 Series)	T = T Style	12VDC	Blank = DIN Connector
	300 Series	08 = 1/4 NPT (200, 300 Series)	L = L Style	24VDC	FL = Flying Leads ²
	400 Series	10 = 3/8 NPT (300 Series)	U = U Style	120VAC 50/60 Hz	X = Explosion Proof ³
		15 = 1/2 NPT (400 Series)			

¹ All Pressure Relief Valves also include stamped bracket

² Not available with 24VAC.
Flying Leads are 300mm long.

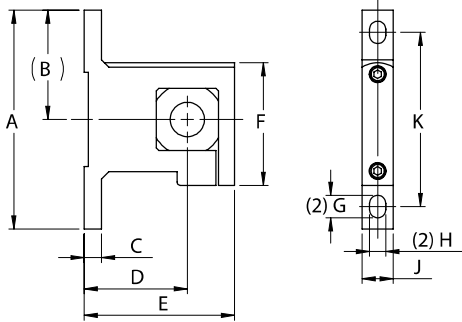
³ See page 24 for specifications.
Leads are 580mm long.



Product Information

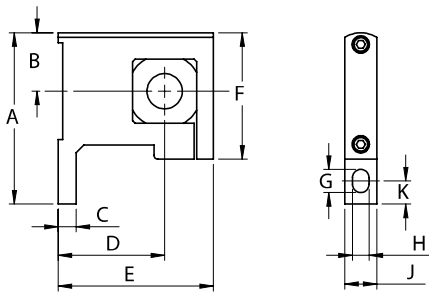
Dimensions (mm)

T Style



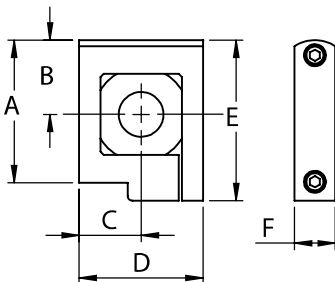
Model	A	B	C	D	E	F	G	H	J	K
MGA201-P1	66	33	5	30	45	38.3	8.5	5.5	11.5	50
MGA301-P1	88	44	7	41.5	60.4	49.3	9	6.5	13	70
MGA401-P1	104	52	7	50	76	58.5	12	8.6	15.5	80
MGA601-P1	128	64	10	70	104	79.5	16	11	19.8	100

L Style



Model	A	B	C	D	E	F	G	H	J	K
MGA202-P1	51	18.3	5	30	45	38.3	8.4	5.4	11.5	8
MGA302-P1	69	22.9	7	41.5	60.4	49.3	9	6.5	13	10.8
MGA402-P1	80	27.5	7	50	76	58.5	12	8.6	15.5	11.8
MGA602-P1	103.4	38.5	10	70	104	79.3	16	11	19.8	13.8

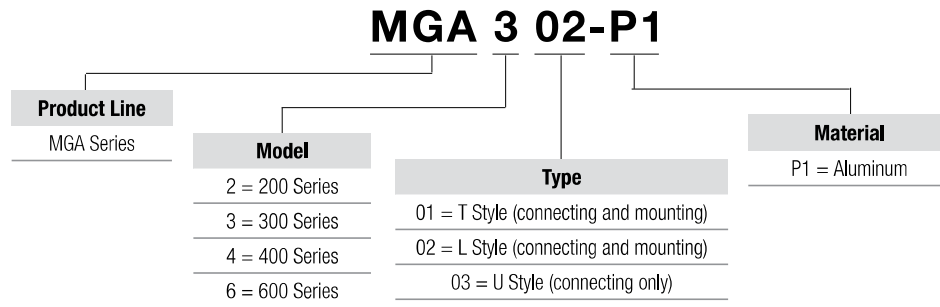
U Style



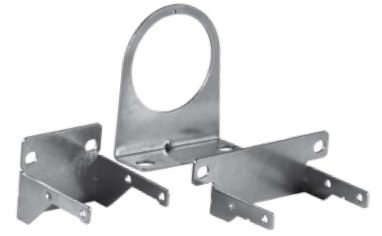
Model	A	B	C	D	E	F
MGA203-P1	35	18.3	15	30	38.3	11.5
MGA303-P1	43.8	22.9	19.5	38	49.3	13
MGA403-P1	52.5	27.5	26	52	58.5	15.5
MGA603-P1	76	38.5	34	68	79.3	19.8

How To Order

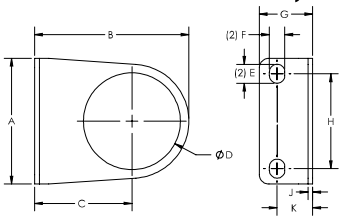
How To Order



Product Information

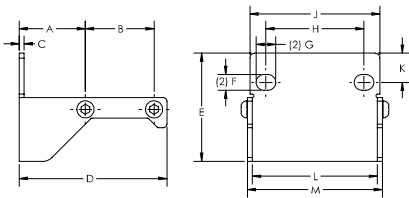


Brackets for MGFR, MGR Series



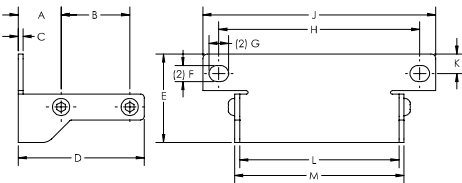
Model	A	B	C	D	E	F	G	H	J	K
MGB201-P2	55	49	30	30	15	5.2	24	34.5	2	17.5
MGB301-P2	53	65	41	40.8	8	6.5	22.5	40	2	15
MGB401-P2	72	83	56	55	11	8.5	27	55	2	18
MGB601-P2	90	110.5	70	68	13	11	35	66	2.5	24

Brackets for MGF, MGL Series



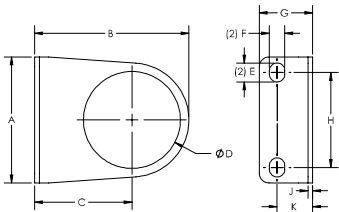
Model	A	B	C	D	E	F	G	H	J	K	L	M
MGB202-P2	20	20	2	45	33	5.4	8.4	27	40	6.4	38.2	42.3
MGB302-P2	27	28	2	60	44	6.5	8	40	55	11.7	51	55
MGB402-P2	30	42	2	75.5	47.3	8.5	11	55	72	9.5	68	72
MGB602-P2	42.4	53.2	2.5	104	51	11	13	66	90	10.7	84.5	90

Brackets for MGV Series



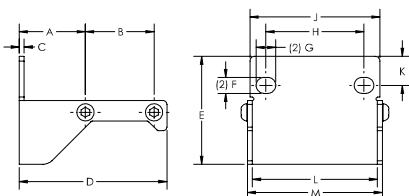
Model	A	B	C	D	E	F	G	H	J	K	L	M
MGB203-P2	14.8	20	2	39	27.7	5.3	8	67	80	6	50.2	54.2
MGB303-P2	19	25	2	50.2	32.5	6.5	8	82	95	8	65	69
MGB403-P2	21.5	36	2	65.3	40	8.5	11	102	120	8	78	82

Brackets for MSR Series



Model	A	B	C	D	E	F	G	H	J	K
MGB204-P2	50	49	30	30	7.2	5.5	20	34	2	14

Brackets for MGZ Series



Model	A	B	C	D	E	F	G	H	J	K	L	M
MGB205-P2	20	20	2	45	33	5.4	8.4	27	40	6.4	38.2	42.3
MGB305-P2	27	28	2	60	44	6.5	8	40	55	11.7	51	55
MGB405-P2	30	42	2	75	48	8.5	11	55	72	9.5	64	67

How To Order

How To Order

MGB 3 02-P2

Product Line	Model	Type	Material
MGB Series	2 = 200 Series	01 = Bracket for MGFR, MGR Series	P2 = Steel
	3 = 300 Series	02 = Bracket for MGF, MGL Series	
	4 = 400 Series	03 = Bracket for MGV Series	
	6 = 600 Series	04 = Bracket for MSR Serie	
		05 = Bracket for MGZ Series	

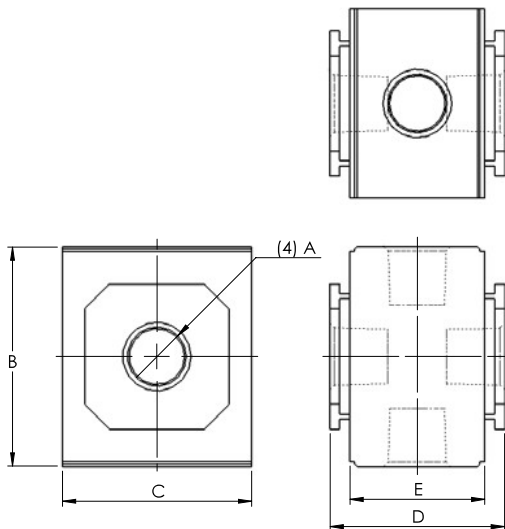
Technical Data

Engineering Specifications

Model	MGA Distribution Block
Fluid	Air (Clean/Dry)
No. of Auxiliary Ports	2
Pressure Range	0 to 130 PSI (0 to 0.9 MPa)
Proof Pressure	215 PSI (1.5 MPa)
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C)
Material	Aluminum Alloy Body
Includes	Modular Connecting Kit

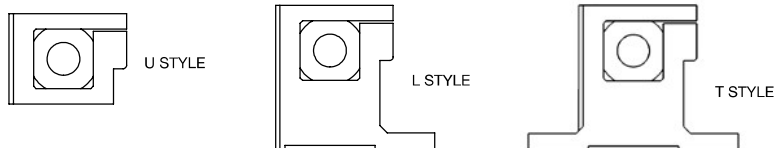


Dimensions (mm)



Model	A	B	C	D	E
MGA200-06-T	1/8 NPT	36	30	28.5	19
MGA200-08-T	1/4 NPT	36	30	28.5	19
MGA300-08-T	1/4 NPT	44	38	35	26
MGA300-10-T	3/8 NPT	44	38	35	26
MGA400-15-T	1/2 NPT	52	52	42	29.5
MGA600-20-T	3/4 NPT	76	68	60	47
MGA600-25-T	1 NPT	76	68	60	47

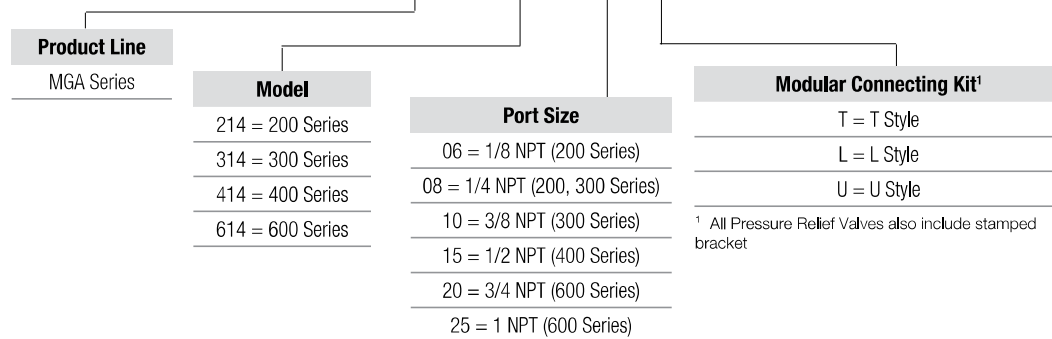
Modular Connecting Kit (included)



How To Order

How To Order

MGA 314-08-T



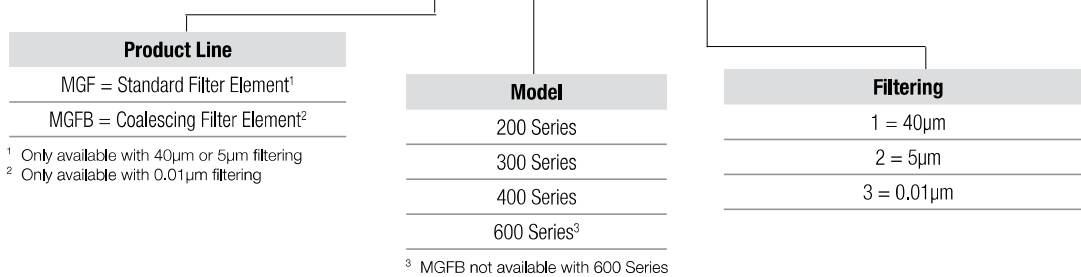
How To Order

Filtering

Filtering	Material
40µm	Bronze
5µm	Plastic (200, 300, 400 series) Bronze (600 series)
0.01µm	Dual-Layer Borosilicate Glass



MGF 300-004-1



How To Specify

Product Information

Replacement Filter, Filter/Regulator, and Lubricator Bowls

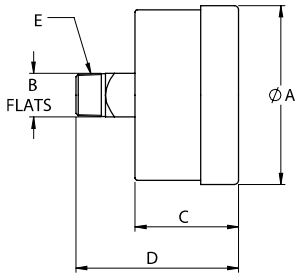
Type	Drain Style	Description	Part Number	Compatibility
Filter and Filter/Regulator Bowls	Manual Drain	200 Series Polycarbonate Bowl	MGF200-M	200 Series MGF, MGFB, MGFR
		300 Series Polycarbonate Bowl	MGF300-M	300 Series MGF, MGFB, MGFR
		400 Series Polycarbonate Bowl	MGF400-M	400 Series MGF, MGFB, MGFR
		600 Series Metal Bowl	MGF600-M	600 Series MGF, MGFR
	Semi-Auto Drain	200 Series Polycarbonate Bowl	MGF200-SA	200 Series MGF, MGFB, MGFR
		300 Series Polycarbonate Bowl	MGF300-SA	300 Series MGF, MGFB, MGFR
		400 Series Polycarbonate Bowl	MGF400-SA	400 Series MGF, MGFB, MGFR
		600 Series Metal Bowl	MGF600-SA	600 Series MGF, MGFR
	Auto Drain	300 Series Polycarbonate Bowl	MGF300-A	300 Series MGF, MGFB, MGFR
		400 Series Polycarbonate Bowl	MGF400-A	400 Series MGF, MGFB, MGFR
		600 Series Metal Bowl	MGF600-A	600 Series MGF, MGFR
Lubricator Bowls		200 Series Polycarbonate Bowl	MGL200-BWL	200 Series MGL
		300 Series Polycarbonate Bowl	MGL300-BWL	300 Series MGL
		400 Series Polycarbonate Bowl	MGL400-BWL	400 Series MGL
		600 Series Metal Bowl	MGL600-BWL	600 Series MGL

Technical Data

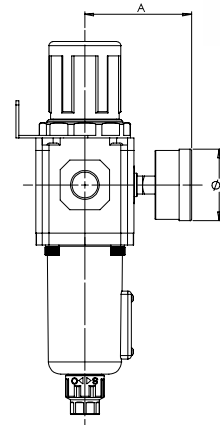
Engineering Specifications

Model	Round Gauges
Fluid	Air (Clean/Dry)
Units	PSI and kgf/cm ²
Pressure Range	Blank: 0 to 140 PSI (0 to 1.0 MPa) Low Pressure: 0 to 60 PSI (0 to 0.4 MPa)
Temperature Range	-4 °F to 140 °F (-20 °C to 60 °C)
Material	Shell: SPCC Steel Core: Brass

Dimension (mm)



Model	A	B	C	D	E
RGK/RG-40	42	11	24.5	38.5	1/8 NPT
RGK/RG-50	52	14	26.5	44.5	1/4 NPT



Model	A	B
MGFR200/MGR200	62	42
MGFR300/MGR300	61.7	42
MGFR400/MGR400	77.3	52
MGFR600/MGR600	85	52



How To Order

How To Order

Order as an Option

Specify "-R" for NPT round gauge in regulator or filter/regulator part number (see pages 43 and 57).

Note: To prevent shipment damage, units ship as base model with flush plate gauge assembled, along with RGK kit components for NPT round gauge.



Order as a Kit

Model	Includes
RGK	Gauge, Adapter Plate, (2) Assembly Screws, O-Ring
RG	Gauge Only
RK	Adapter Plate, (2) Assembly Screws, O-Ring



RGK-40-L

Product Line ¹	Gauge Size	Pressure Range
RGK = Gauge, Adapter, Hardware	40 = 1/8 NPT, 40mm Round	Blank = 0-140 PSI
RG = Gauge Only	50 = 1/4 NPT, 50mm Round	L = 0-60 PSI ²
RK = Adapter and Hardware		

¹ See "Order as a Kit" section above for model descriptions

² Only available on RGK-40 & RG-40

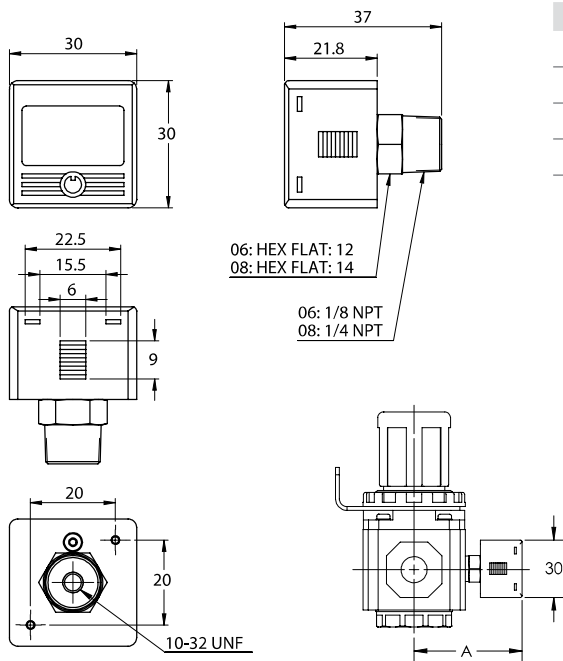
Technical Data

Engineering Specifications

Model	DG	
Fluid	Air (Clean/Dry)	
Pressure Range	0 to 145 PSI (0 to 1.0 MPa)	
Proof Pressure	215 PSI (1.5 MPa)	
Pressure Resolution	MPa	0.001
	kgf/cm ²	0.01
	bar	0.01
	PSI	0.1
Battery	CR 2032 Lithium	
Backlight	No	
Battery Life	3 years (5 uses/day)	
Low-Power Indicator	Yes	
Battery Replaceable	Yes	
Automatic Display Off	Display turns off after 30 sec.	
Sampling Rate	2 Hz (2 times/sec.)	
Pressure Units	PSI, bar, kgf/cm ² , MPa user selectable	
Repeatability	≤ ±0.2% F.S. ±1 digit	
LCD Display	3 1/2 digit, 7 segment	
Indicator Accuracy	≤ ±0.2% F.S. ±1 digit (ambient temp.: 25±3°C)	
Enclosure Rating	IP65 (breather tube must be installed)	
Temperature Range	32 °F to 120 °F (0 °C to 50 °C) Operation 32 °F to 140 °F (0 °C to 60 °C) Storage	
Humidity Range	35 to 85% (no condensation)	
Vibration	Total amplitude, 1.5mm or 10G, 10Hz-55Hz-10Hz scan for 1 minute, 2 hours each direction (X, Y, and Z)	
Shock	100m/s ² (10G), 3 times in each direction (X, Y, and Z)	
Temperature Characteristic	≤ ±0.2% F.S. of detected pressure (77°F (25°C)) at temp. range of 32 to 120 °F (0 to 50°C)	



Dimensions (mm)



Model	A
MGFR200/MGR200	50
MGFR300/MGR300	56.5
MGFR400/MGR400	65.5
MGFR600/MGR600	80

How To Order

How To Order

DG-08

Product Line	Port Size
DG Series	06 = 1/8 NPT, 10-32 UNF ¹
	08 = 1/4 NPT, 10-32 UNF ²

¹ RK-40 needed for installation on MGFR or MGR (not included)

² RK-50 needed for installation on MGFR or MGR (not included)

Display Description

Pressure Unit
Display Section

Battery Meter

Pressure Display

Setting Button



Product Features

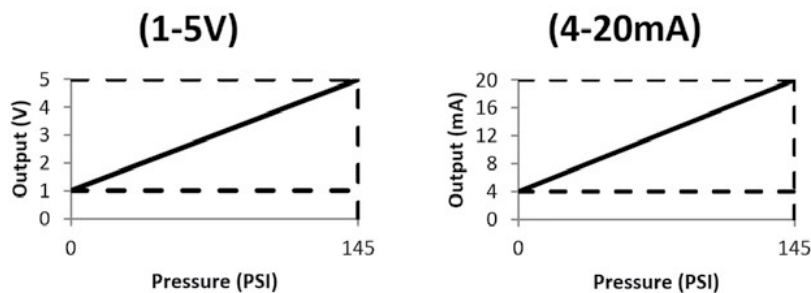
Technical Data

Engineering Specifications

Model	DPSP-A	DPSP-B	DPSP-C	DPSP-D	DPSP-E	DPSP-F
Fluid	Air or Inert Gas (Clean/Dry)					
Rated Pressure Range	0 to 145 PSI (0 to 1.0 Mpa)					
Proof Pressure	217 PSI (1.5 Mpa)					
Pressure Setting Range	-14.5 to 145 PSI (-0.1 to 1.0 Mpa)					
Temperature Range	32 °F to 120 °F (0 °C to 50 °C)					
Voltage	12 to 24 VDC +/- 10%, 10% max. ripple (P-P)					
Current Consumption	<= 40mA (no loads)					
Digital Outputs	Type	2 - NPN (Sinking)			2 - PNP (Sourcing)	
	Max. Load	125mA (each)				
	Residual Voltage	<= 1.5V				
	Response Time	<= 2.5ms (user-selectable: 25ms, 100ms, 250ms, 500ms, 1000ms, 1500ms anti-chatter function)				
	Short Circuit Protection	Yes				
	Repeatability	+/-0.2% F.S. +/-1 digit				
Analog Output	Type	1-5V (+/- 2.5% F.S.)	4-20mA (+/- 2.5% F.S.)	-	1-5V (+/- 2.5% F.S.)	4-20mV (+/- 2.5% F.S.)
	Impedance	~1kΩ	20-250Ω (12V Supply), 50-600Ω (24V Supply)	-	~1kΩ	20-250Ω (12V Supply), 50-600Ω (24V Supply)
	Linearity	+/- 1% F.S.	-	-	+/- 1% F.S.	-
Display	Type	3-1/2 digit, 7-segment (red, green, orange)				
	Resolution	0.001 Mpa, 0.01 kgf/cm ² , 0.01 bar, 0.1 PSI				
	Switch Indicator	One per digital output				
	Refresh Rate	~0.2s				
	Indicator Accuracy	+/-2% F.S. +/-1 digit at 77+/-5 °F (25+/-3 °C)				
Enclosure Rating	IP65 (with breather tube installed)					
Storage Temperature Rating	14 °F to 140 °F (-10 °C to 60 °C)					
Ambient Humidity Range	35 - 85% RH (no condensation)					
Withstand Voltage	1000VAC for 1 min between case and lead wire					
Insulation Resistance	50MΩ (at 500VDC between case and lead wire)					
Vibration Resistance	Total amplitude 1.5mm or 10g, 10Hz-55Hz-10Hz (one minute scan), two hours in X, Y, and Z					
Shock	100m/s ² (10g), three times X, Y, and Z					
Temperature Characteristic	+/-2% F.S. of detected pressure at 77°F (25°C)					
Included Cable	Oil-resistant, 2m long					
Weight	86g					



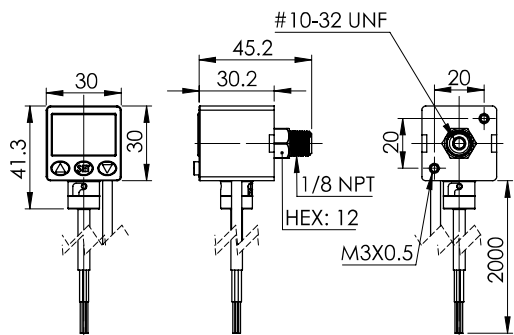
Analog Output Characteristics



How To Specify

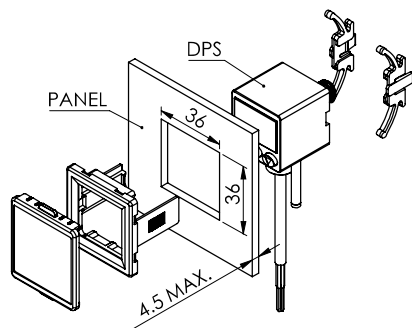
Product Information

Dimensions (mm)

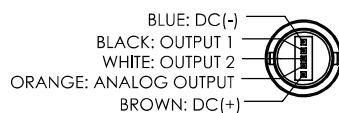
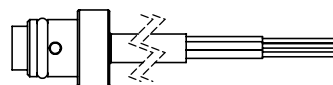


Accessories

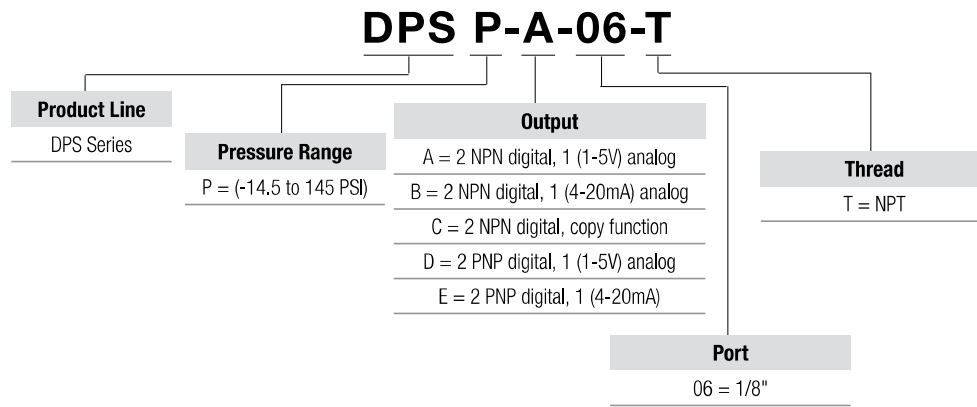
Panel Adapter and Cover: DPS-PA



5m Data Cable: DPS-C5M

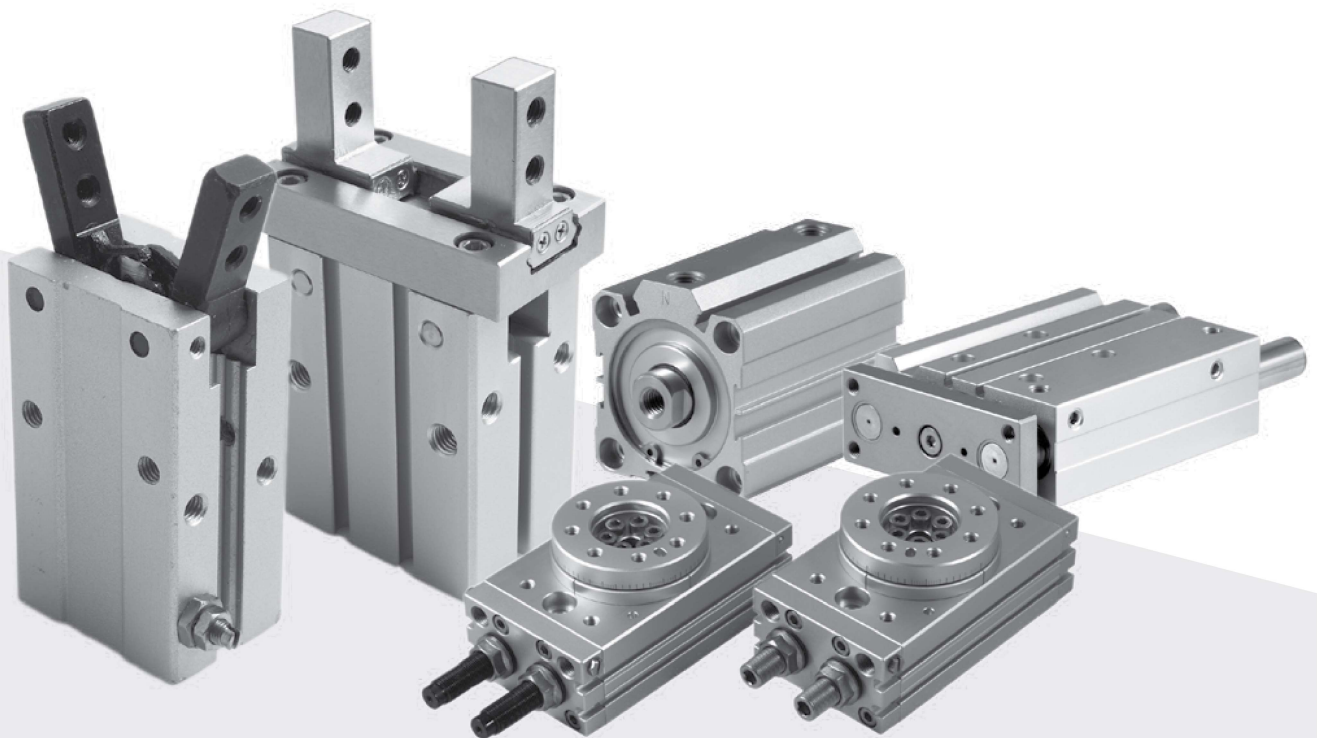


How To Order



Actuators

Specialized pneumatic actuators provide unique motion profiles for uncommon applications across a variety of industries. Extruded thrusters and compact cylinders provide distinctive twists on common pneumatics, while rotary actuators and grippers fill roles that traditional motion profiles cannot.



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- 107 – Descriptions, Bore Sizes
 - 107 – Reed & Solid State Switch Availability
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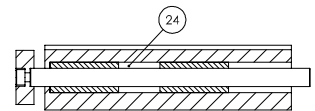
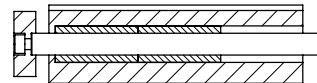
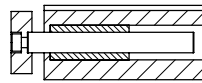
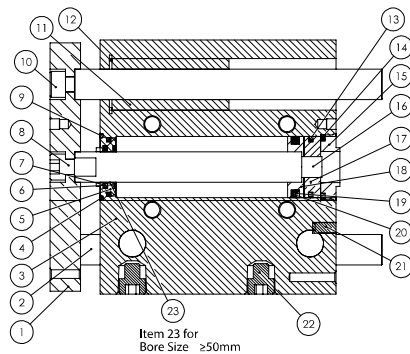
Technical Data

Engineering Specifications

Bore Size (mm)		12	16	20	25	32	40	50	63
Fluid		Air (Clean/Dry)							
Action		Double Acting							
Pressure Range		14 to 145 PSI (0.1 to 1.0 MPa)							
Proof Pressure		215 PSI (1.5 MPa)							
Temperature Range		-4 °F to 158 °F (-20 °C to 70 °C)							
Lubrication		Not Required							
Cushion Type		Bumper							
Speed Range		30 to 500 mm/s							
Stroke Tolerance		+1.0 / -0							
Non-Rotating Tolerance	Linear Bushing (MTCL)	± 0.08°	± 0.07°	± 0.06°	± 0.06°	± 0.06°	± 0.06°	± 0.06°	± 0.05°
	Brass Bushing (MTCM)	± 0.10°	± 0.09°	± 0.08°	± 0.08°	± 0.08°	± 0.08°	± 0.08°	± 0.06°
Port Size		M5X0,8			1/8NPT			1/4NPT	
Sensor Switch Compatibility ¹	Reed Switch					MCS1-G			
	Solid State Switch					MDS1-G			



¹ See page 104-105 for switch specifications



Type	Bore Size	Stroke
MTCL	Ø12 ~ Ø16	≤30mm
	Ø20 ~ Ø63	≤50mm
MTCM	Ø12 ~ Ø63	≤50mm

Type	Bore Size	Stroke
MTCL	Ø12 ~ Ø16	30<Stroke≤100mm
	Ø20 ~ Ø63	50<Stroke≤100mm
MTCM	Ø12 ~ Ø63	50<Stroke≤100mm

Type	Bore Size	Stroke
MTCL	Ø12 ~ Ø63	>100mm
MTCM	Ø12 ~ Ø63	>100mm

Materials

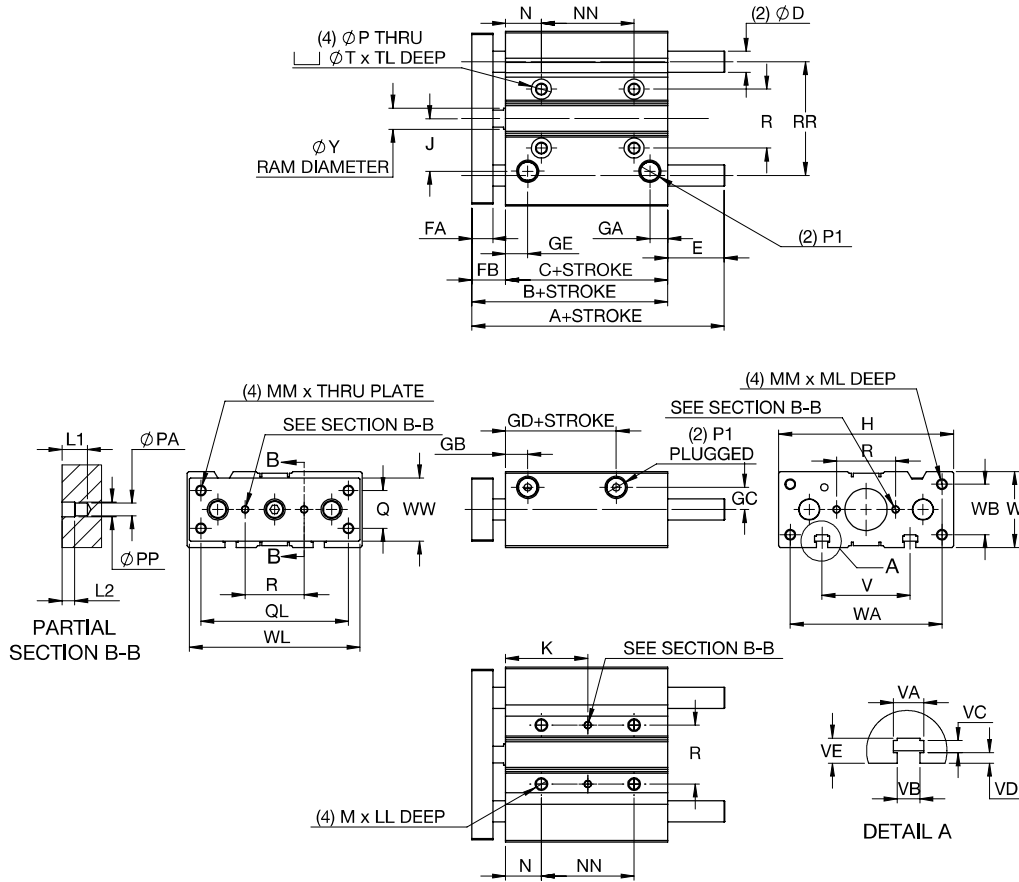
No.	Item	Material	No.	Item	Material
1	Tooling Plate	Free-Machining Steel	13	O-Ring	NBR
2	Guide Shaft	SAE440/SUS440C Steel; Chrome Plated	14	O-Ring	NBR
3	Body	Aluminum; 6463-T5; Anodized	15	Rear Cap	Brass; Ni Plated
4	Retaining Ring	Spring Steel	16	Piston Rod	Carbon Steel; Chrome Plated
5	Rod Guide	Brass; Ni Plated	17	Piston	Brass; Ni Plated
6	Bumper	Urethane	18	Magnet Seat	Brass; Ni Plated
7	Rod Seal	NBR	19	Magnet Washer	NBR
8	Screw	Stainless Steel	20	Magnet	Sintered Metal (Neodymium)
9	O-Ring	NBR	21	Plug	Carbon Steel; Zinc Plated
10	Screw/Rivet ²	Stainless Steel	22	Auxiliary Port Plug	Carbon Steel; Zinc Plated
11	Bearing	MTCM: Bronze MTCL: Steel Ball	23	Rod Bearing	Bronze (50mm and 63mm only)
12	Retaining Ring	Spring Steel	24	Spacer	Aluminum Alloy

² Item number 10 on MTCL-12 and MTCL-16 thrusters are screws. All other thrusters are rivets.

How To Specify

Product Information

Dimensions (mm)



Product Information

Dimensions (mm)

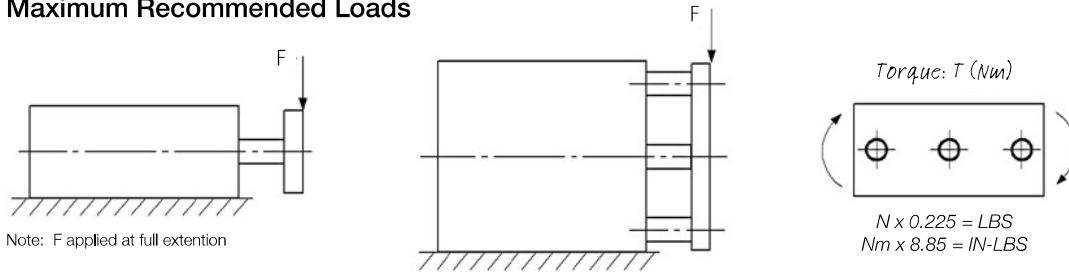
	Stroke (mm)	Bore Size (mm)			
		12	16	20	25
A	0-30	42	46	53	53.5
	31-100	55	65	80	82
	101-200	85	95	104	104.5
	201+	-	-	122	122
B		42	46	53	53.5
C		29	33	37	37.5
D		6 (MTCL) 8 (MTCM)	8 (MTCL) 10 (MTCM)	10 (MTCL) 12 (MTCM)	12 (MTCL) 16 (MTCM)
E	0-30	0	0	0	0
	31-50	13 (MTCL) 0 (MTCM)	19 (MTCL) 0 (MTCM)	27 (MTCL) 0 (MTCM)	28.5 (MTCL) 0 (MTCM)
	51-100	13	19	27	28.5
	101-200	43	49	51	51
	201+	-	-	69	68.5
FA		8	8	10	10
FB		13	13	16	16
GA		7.5	8	9	9
GB		11	11	10.5	11.5
GC		8	10	10.5	13.5
GD		13	15	12.5	12.5
GE		11	11	10.5	11.5
H		58	64	83	93
J		18	19	25	28.5
K	0-30	15	17	29	29
	31-100	25	27	39	39
	101-200	60	60	77	77
	201+	-	-	117	117
LL		10	10	12	12
L1		6	6	6	6
L2		3	3	3	3
M		M5 X 0.8	M5 X 0.8	M6 X 1.0	M6 X 1.0
ML		10	12	13	15
MM		M4 X 0.7	M5 X 0.8	M5 X 0.8	M6 X 1.0
N		5	5	17	17
NN	0-30	20	24	24	24
	31-100	40	44	44	44
	101-200	110	110	120	120
	201+	-	-	200	200
P		4.5	4.5	5.5	5.5
PA		3	3	3	4
PP		3.5	3.5	3.5	4.5
P1		M5 X 0.8	M5 X 0.8	1/8 NPT	1/8 NPT
Q		14	16	18	26
QL		48	54	70	78
R		23	24	28	34
RR		41	46	54	64
T		8	8	9.5	9.5
TL		4.5	4.5	5.5	5.5
V		37	38	44	50
VA		7.5	7.5	8.5	8.5
VB		4.5	4.5	5.5	5.5
VC		4	4	4.5	4.5
VD		2	2.5	3	3
VE		6.5	7	8	8.5
W		26	30	36	42
WA		50	56	72	82
WB		18	22	24	30
WL		56	62	81	91
WW		22	25	30	38
Y		6	8	10	12

	Stroke (mm)	Bore Size (mm)			
		32	40	50	63
A	0-50	65 (MTCL) 78 (MTCM)	66 (MTCL) 78 (MTCM)	76 (MTCL) 89 (MTCM)	77 (MTCL) 89 (MTCM)
	51-100	102	102	118	118
	101-200	118	118	134	134
	201+	140	140	161	161
B		59.5	66	72	77
C		37.5	44	44	49
D		16 (MTCL) 20 (MTCM)	16 (MTCL) 20 (MTCM)	20	20
E	0-50	5.5 (MTCL) 18.5 (MTCM)	0 (MTCL) 12 (MTCM)	4 (MTCL) 17 (MTCM)	0 (MTCL) 12 (MTCM)
	51-100	42.5	36	46	41
	101-200	58.5	52	62	57
	201+	80.5	74	89	84
FA		12	12	16	16
FB		22	22	28	28
GA		9	10	11	13.5
GB		12.5	14	12	16.5
GC		15	18	21.5	28
GD		7	13	9	14
GE		12.5	14	14	16.5
H		112	120	148	162
J		34	38	47	55
K	0-40	33	34	36	38
	41-100	45	46	48	50
	101-200	83	84	86	88
	201+	121	122	124	124
LL		16	16	20	20
L1		6	6	8	8
L2		3	3	4	4
M		M8 X 1.25	M8 X 1.25	M10 X 1.5	M10 X 1.5
ML		20	20	22	22
MM		M8 X 1.25	M8 X 1.25	M10 X 1.5	M10 X 1.5
N		21	22	24	24
NN	0-40	24	24	24	28
	41-100	48	48	48	52
	101-200	124	124	124	128
	201+	200	200	200	200
P		6.5	6.5	8.5	8.5
PA		4	4	5	5
PP		4.5	4.5	6	6
P1		1/8 NPT	1/8 NPT	1/4 NPT	1/4 NPT
Q		30	30	40	50
QL		96	104	130	130
R		42	50	66	80
RR		78	86	110	124
T		11	11	14	14
TL		7.5	7.5	9	9
V		63	72	92	110
VA		10.5	10.5	13.5	18
VB		6.5	6.5	8.5	11
VC		5.5	5.5	7.5	10
VD		3.5	4	4.5	7
VE		9.5	11	13.5	18.5
W		48	54	64	78
WA		98	106	130	142
WB		34	40	46	58
WL		110	118	146	158
WW		44	44	60	70
Y		16	16	20	20

How To Specify

Product Information

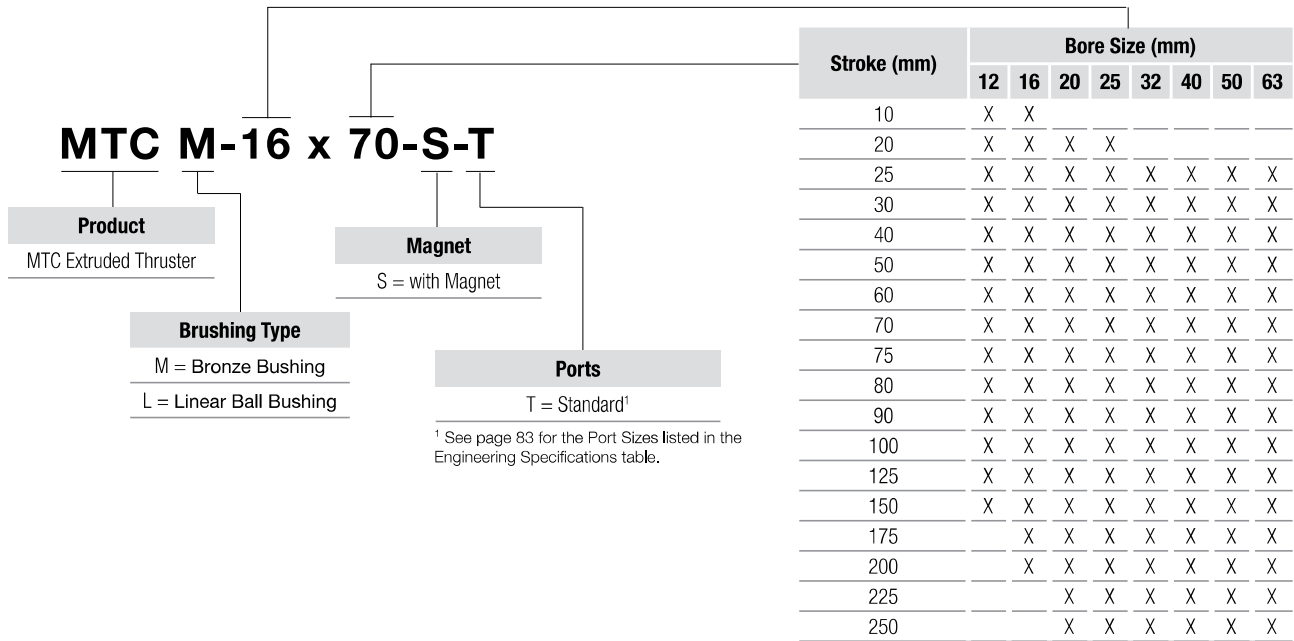
Maximum Recommended Loads



Bore Size (mm)	Type	Maximum Side Load (N)																	
		Stroke (mm)																	
		10	20	25	30	40	50	60	70	75	80	90	100	125	150	175	200	225	250
12	MTCM	44	33	29	26	41	36	30	28	26	25	24	22	19	17	-	-	-	-
	MTCL	37	27	25	22	35	30	27	24	23	21	19	18	15	12	-	-	-	-
16	MTCM	67	51	42	37	63	58	49	41	37	35	33	32	27	24	22	20	-	-
	MTCL	54	40	37	32	54	47	42	38	35	32	30	28	23	20	17	15	-	-
20	MTCM	-	78	61	57	123	112	99	91	87	84	79	75	66	59	54	49	45	42
	MTCL	-	58	52	48	101	90	83	74	70	69	63	58	62	54	48	43	39	35
25	MTCM	-	93	89	76	142	131	119	107	101	97	90	85	68	79	71	65	61	55
	MTCL	-	82	79	68	132	118	109	99	93	88	81	77	80	70	62	55	50	45
32	MTCM	-	-	203	190	179	164	221	197	182	172	163	157	142	127	116	106	98	91
	MTCL	-	-	191	182	166	157	207	178	164	156	150	144	203	186	171	158	146	137
40	MTCM	-	-	203	190	179	164	221	197	182	172	163	159	142	127	116	106	97	91
	MTCL	-	-	190	182	166	157	210	179	163	156	150	144	203	185	171	158	146	137
50	MTCM	-	-	296	283	268	245	303	288	273	266	253	241	216	195	179	164	155	142
	MTCL	-	-	208	196	185	173	259	232	223	212	207	199	264	242	224	207	195	181
63	MTCM	-	-	296	283	268	245	303	288	273	266	253	241	216	195	179	164	153	142
	MTCL	-	-	206	196	180	171	259	232	221	212	205	196	262	240	221	205	191	178

Bore Size (mm)	Type	Maximum Torque (Nm)																	
		Stroke (mm)																	
		10	20	25	30	40	50	60	70	75	80	90	100	125	150	175	200	225	250
12	MTCM	0.90	0.79	0.71	0.65	0.77	0.72	0.65	0.53	0.50	0.47	0.41	0.36	0.31	0.27	-	-	-	-
	MTCL	0.61	0.45	0.40	0.35	0.58	0.50	0.44	0.39	0.37	0.35	0.32	0.29	0.24	0.20	-	-	-	-
16	MTCM	1.21	1.04	0.94	0.88	1.23	1.11	0.99	0.72	0.69	0.65	0.61	0.58	0.50	0.44	0.40	0.36	-	-
	MTCL	0.99	0.74	0.66	0.59	0.99	0.86	0.77	0.69	0.65	0.61	0.57	0.52	0.43	0.37	0.32	0.28	-	-
20	MTCM	-	1.57	1.42	1.31	2.39	2.15	1.97	1.90	1.88	1.86	1.72	1.63	1.44	1.28	1.16	1.06	1.01	0.90
	MTCL	-	1.26	1.14	1.03	2.17	1.94	1.79	1.59	1.52	1.46	1.33	1.25	1.34	1.17	1.03	0.93	0.88	0.76
25	MTCM	-	2.40	2.22	2.01	3.66	3.35	3.17	3.06	2.96	2.91	2.77	2.57	2.26	2.02	1.83	1.67	1.57	1.42
	MTCL	-	2.11	1.96	1.75	3.37	3.02	2.71	2.42	2.38	2.33	2.19	1.97	2.05	1.78	1.58	1.41	1.22	1.16
32	MTCM	-	-	6.35	6.00	5.73	5.13	5.98	5.74	5.69	5.62	5.11	4.97	4.42	3.98	3.61	3.31	2.97	2.84
	MTCL	-	-	5.95	5.73	5.44	4.89	5.43	5.15	5.11	5.02	4.70	4.51	6.34	5.79	5.33	4.93	4.33	4.29
40	MTCM	-	-	7.00	6.60	6.11	5.66	6.66	6.31	6.27	6.23	5.86	5.48	4.87	4.38	3.98	3.65	3.34	3.13
	MTCL	-	-	6.55	6.21	5.77	5.39	6.17	5.67	5.62	5.58	5.33	4.96	6.98	6.38	5.87	5.43	5.00	4.72
50	MTCM	-	-	13.0	12.6	11.0	10.8	13.7	12.7	12.0	11.8	11.1	10.8	9.50	8.60	7.86	7.24	6.80	6.24
	MTCL	-	-	9.17	8.75	8.30	7.62	10.3	9.94	9.83	9.77	8.82	8.74	11.6	10.7	9.83	9.12	8.95	7.95
63	MTCM	-	-	14.7	13.6	12.9	12.1	19.4	16.2	13.5	12.7	12.1	11.9	10.7	9.69	8.86	8.16	7.52	7.04
	MTCL	-	-	10.2	9.74	9.20	8.48	17.5	14.0	11.0	10.6	10.2	9.74	13.0	11.9	11.0	10.2	9.63	8.84

How To Order



Product Features

Technical Data

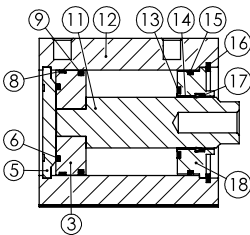
Engineering Specifications

Bore Size (mm)		12	16	20	25	32	40	50	63	80	100	
Fluid		Air (Clean/Dry)										
Action		Double Acting										
Pressure Range		14 to 145 PSI (0.1 to 1.0 MPa)										
Proof Pressure		215 PSI (1.5 MPa)										
Temperature Range		-4 °F to 176 °F (-20 °C to 80 °C)										
Cushion Type		Bumper										
Speed Range		30 to 500 mm/s										
Stroke Tolerance		+1.0 / -0										
Port Size		M5 X 0.8			1/8 NPT		1/4 NPT		3/8 NPT			
Thrust, N (lbs) ¹	Pushing Force	68 (15)	121 (27)	189 (42)	295 (66)	483 (108)	754 (169)	1178 (264)	1870 (420)	3016 (678)	4712 (1059)	
	Pulling Force	51 (11)	91 (20)	141 (32)	227 (51)	362 (81)	633 (142)	990 (222)	1682 (378)	2721 (611)	4230 (950)	
Sensor Switch Compatibility ²	Reed Switch						MCS1-G					
	Solid State Switch						MDS1-G					

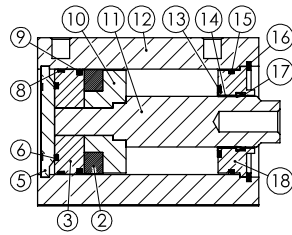


¹ Thrust at 0.6 MPa (87psi) inlet pressure.
² See pages 104-105 for switch specifications.
 See page 92 for male thread adapter.

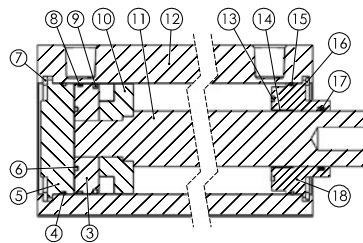
Stroke ≤100mm, No Magnet



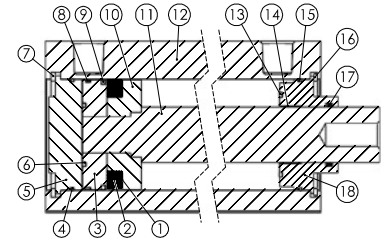
Stroke ≤100mm, With Magnet



Stroke >100mm, No Magnet



Stroke >100mm, With Magnet



Materials

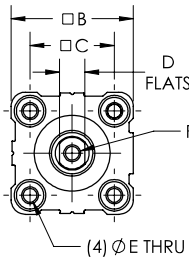
Number	Item	Material
1	Washer	No Washer (Ø12-Ø25 and Ø32-Ø100 with stroke ≤100mm); NBR (Ø32-Ø100 with stroke >100mm)
2	Magnet	Sintered Metal (Neodymium-Iron-Boron) (Ø12-Ø25); Plastic (Ø32-Ø100)
3	Piston	Brass (Ø12, Ø16); Aluminum Alloy (Ø20-Ø100)
4	O-Ring	NBR
5	Back Cap	Cap incorporated into body (Ø12, Ø16); Hard Anodized Aluminum Alloy
6	Bumper	TPU (Ø12-Ø25); NBR (Ø32-Ø100)
7	Retaining Ring	Spring Steel
8	Wear Ring	No Wear Ring (Ø12-Ø32); Polymer Bearing Material (Ø40-Ø100)
9	Piston Seal	NBR
10	Magnet Holder	Brass (Ø12, Ø16); Aluminum Alloy (Ø20-Ø100)
11	Piston Rod	Carbon Steel with 20µm Chrome Plating
12	Body	Hard Anodized Aluminum Alloy
13	Bumper	NBR
14	Bearing	No Bearing (Ø12-Ø32); Bearing Alloy (Ø40-Ø100)
15	O-Ring	NBR
16	Retaining Ring	Spring Steel
17	Rod Seal	NBR
18	Front Cap	Aluminum Alloy

Product Information

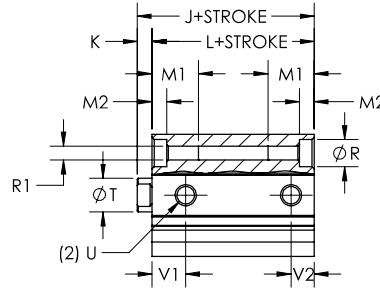
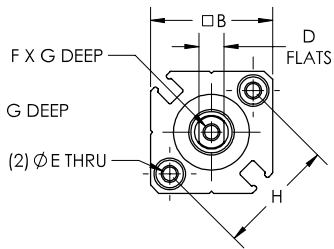
Dimensions (mm)

Ø12, Ø16

No Magnet

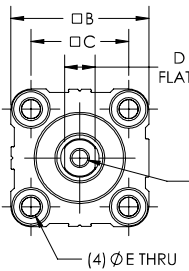


Magnet

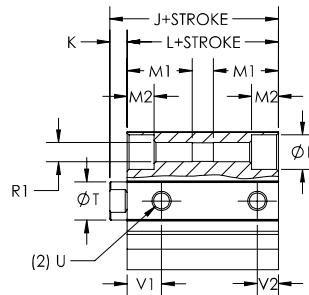
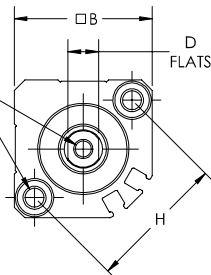


Ø20, Ø25

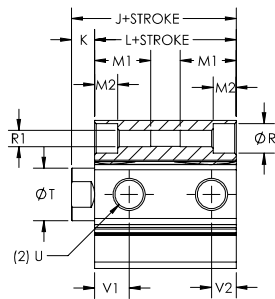
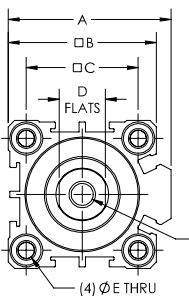
No Magnet



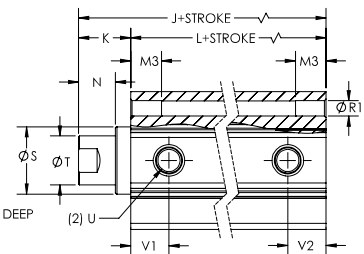
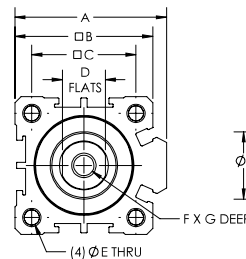
Magnet



Ø32 - Ø100 (Stroke ≤ 100)



Ø32 - Ø100 (Stroke > 100)



How To Specify

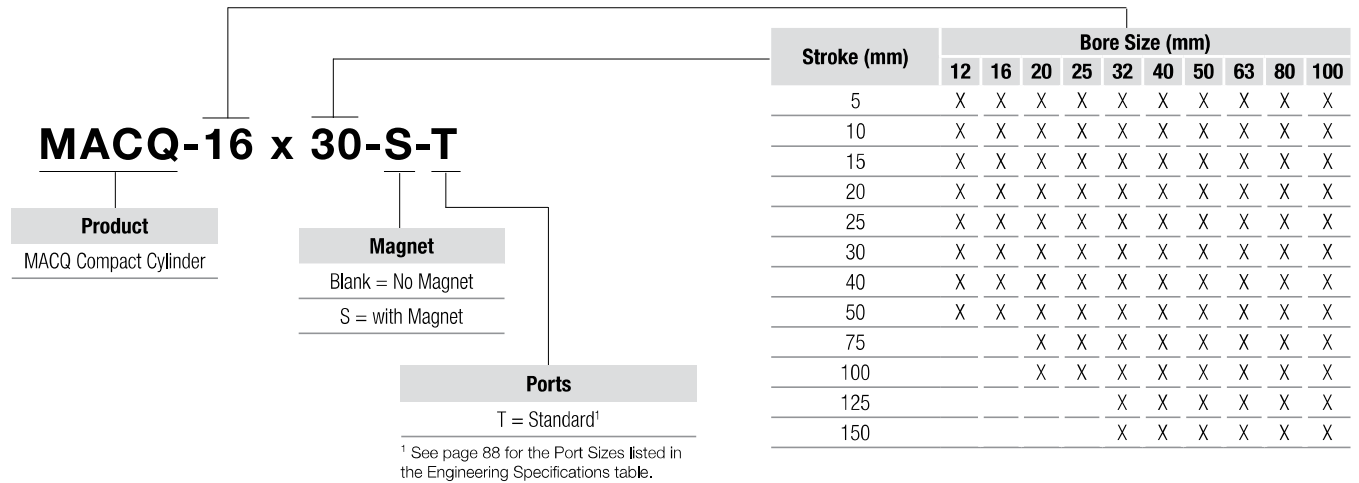
Product Information

Dimensions (mm)

	Stroke (mm)	Bore Size (mm)									
		12	16	20	25	32	40	50	63	80	100
A		-	-	-	-	49.5	57	71	84	104	123.5
B		25	29	36	40	45	53	64	77	98	117
C		15.5	20	25.5	28	34	40	50	60	77	94
D		5	6	8	10	14	14	17	17	22	27
E		3.4	3.4	5.2	5.2	5.2	5.2	6.8	8.5	10.3	10.3
F		M3 X 0.5	M4 X 0.7	M5 X 0.8	M6 X 1.0	M8 X 1.25	M8 X 1.25	M10 X 1.5	M10 X 1.5	M16 X 2.0	M20 X 2.5
G	5-100	6	8	7	12	13	13	15	15	20	26
	125+	-	-	-	-	13	13	15	15	21	27
H		22	28	36	40	-	-	-	-	-	-
J	5-50	20.5* 31.5**	22* 34**	24* 36**	27.5* 37.5**	30* 40**	36.5* 46.5**	38.5* 48.5**	44* 54**	53.5* 63.5**	65* 75**
	75-100	-	-	34* 36**	37.5	40	46.5	48.5	54	63.5	75
	125+	-	-	-	-	62.5	72	73.5	75	86	97.5
K	5-50	3.5	3.5	4.5	5	7	7	8	8	10	12
	125+	-	-	-	-	17	17	18	18	20	22
L	5-50	17* 28**	18.5* 30.5**	19.5* 31.5**	22.5* 32.5**	23* 33**	29.5* 39.5**	30.5* 40.5**	36* 46**	43.5* 53.5**	53* 63**
	75-100	-	-	29.5* 31.5**	32.5	33	39.5	40.5	46	53.5	63
	125+	-	-	-	-	45.5	55	55.5	57	66	75.5
M1		11	11	17	17	17	17	22	28.5	35.5	35.5
M2		3.5	3.5	7	7	7	7	8	10.5	13.5	13.5
M3		-	-	-	-	17	17	22	27	32	33
N	5-100	-	-	-	-	-	-	-	-	-	-
	125+	-	-	-	-	12	12	13	13	15	17
P		3.5	3	4	4.5	6	6	6.5	6.5	8.5	9.5
R	5-100	6.5	6.5	9	9	9	9	11	14	17.5	17.5
R1		M4 X 0.7	M4 X 0.7	M6 X 1.0	M6 X 1.0	M6 X 1.0	M6 X 1.0	M8 X 1.25	M10 X 1.5	M12 X 1.75	M12 X 1.75
S	5-100	-	-	-	-	-	-	-	-	-	-
	125+	-	-	-	-	22	28	35	35	43	59
T		6	8	10	12	16	16	20	20	25	32
U		M5 X 0.8	M5 X 0.8	M5 X 0.8	M5 X 0.8	1/8 NPT	1/8 NPT	1/4 NPT	1/4 NPT	3/8 NPT	3/8 NPT
V1	5	7.5* 9**	8* 9.5**	9* 9.5*	11	7.5* 10.5**	11	9* 10.5**	14* 15**	16	20
	10-100	7.5* 9**	8* 9.5**	9* 9.5**	11	10.5	11	10.5	15	16	20
	125+	-	-	-	-	12.5	14	14	16.5	19	23
V2	5	5* 7**	5.5	5.5	5.5	6.5* 7.5**	8	9* 10.5**	9.5* 10.5**	14	17.5
	10-100	5* 7**	5.5	5.5	5.5	7.5	8	10.5	10.5	14	17.5
	125+	-	-	-	-	12.5	14	14	16.5	19	23

* No Magnet
 ** With Magnet
 See page 92 for male thread adapter.

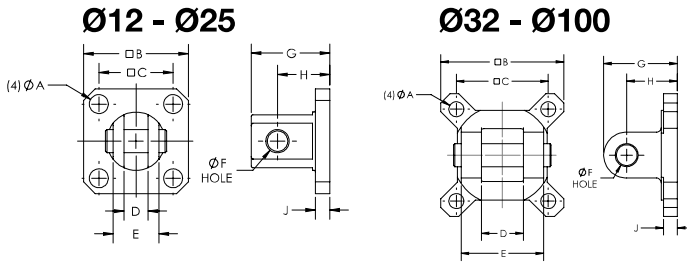
How To Order



How To Accessorize

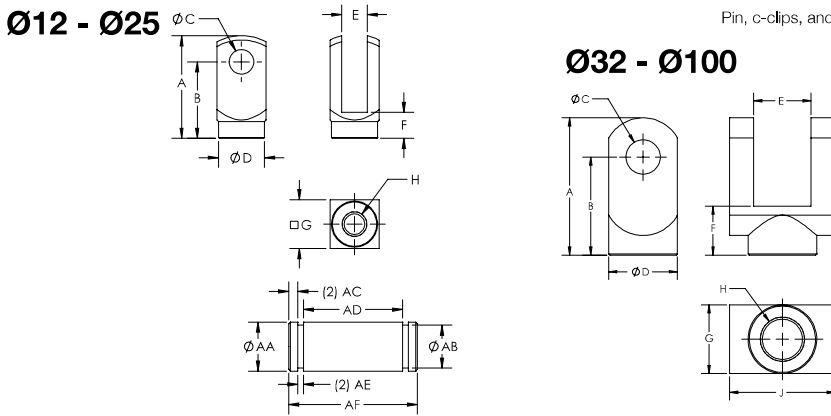
Product Information

Clevis Brackets for MACQ Series



Model	A	B	C	D	E	F	G	H	J
F-MACQ-12-CB	4.5	25	15.5	5.3	9.8	5	20	14	4
F-MACQ-16-CB	4.5	29	20	6.8	11.8	5	21	15	4
F-MACQ-20-CB	6.5	36	25.5	8.3	15.8	8	27	18	5
F-MACQ-25-CB	6.5	40	28	10.3	19.8	10	30	20	5
F-MACQ-32-CB	6.5	45.5	34	18.3	35.8	10	30	20	5.5
F-MACQ-40-CB	6.5	53.5	40	18.3	35.8	10	32	22	7
F-MACQ-50-CB	8.5	64.5	50	22.3	43.8	14	42	28	8
F-MACQ-63-CB	10.5	77.5	60	22.3	43.8	14	44	30	10
F-MACQ-80-CB	12.5	98.5	77	28.3	55.8	18	56	38	10
F-MACQ-100-CB	12.5	117.5	94	32.3	63.8	22	67	45	13

Rod Clevis Brackets for MACQ Series

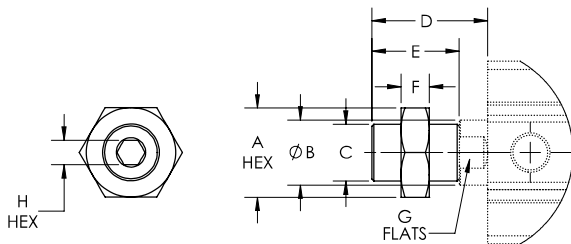


Pin, c-clips, and hardware included with all Clevis Brackets

Model	A	B	C	D	E	F	G	H	J	AA	AB	AC	AD	AE	AF
F-MACQ-12-Y	22	16	5 +.048/-0	9	5.3±0.1	6	10	M5 X 0.8	-	5 -.03/-0.06	4	1.5	10.2	0.7	14.6
F-MACQ-16-Y	28	21	5 +.048/-0	11	6.6±0.1	11	12	M6 X 1.0	-	5 -.03/-0.06	4	1.5	12.4	0.7	16.8
F-MACQ-20-Y	34	25	8 +.058/-0	15	8.3±0.1	8.5	16	M8 X 1.25	-	8 -.04/-0.076	7	1.5	16.2	0.9	21
F-MACQ-25-Y	41	30	10 +.058/-0	19	10.3±0.1	10.5	20	M10 X 1.25	-	10 -.04/-0.076	8	2	20.2	1.1	26.4
F-MACQ-32-Y	42	30	10 +.058/-0	22	18.4±0.1	16	22	M14 X 1.5	36	10 -.04/-0.076	8	2	36.2	1.1	42.4
F-MACQ-40-Y	42	30	10 +.058/-0	22	18.4±0.1	16	22	M14 X 1.5	36	10 -.04/-0.076	8	2	36.2	1.1	42.4
F-MACQ-50-Y	56	40	14 +.07/-0	28	22.4±0.1	20	28	M18 X 1.5	44	14 -.05/-0.093	12	2	44.2	1.1	50.4
F-MACQ-63-Y	56	40	14 +.07/-0	28	22.4±0.1	20	28	M18 X 1.5	44	14 -.05/-0.093	12	2	44.2	1.1	50.4
F-MACQ-80-Y	71	50	18 +.07/-0	38	28.4±0.1	23	38	M22 X 1.5	56	18 -.05/-0.093	15	2	56.2	1.7	63.6
F-MACQ-100-Y	79	55	22 +.084/-0	44	32.4±0.1	22	44	M26 X 1.5	64	22 -.065/-0.117	19	2.5	64.2	1.7	72.6

Pin, c-clips, and male adapter included with all Rod Clevis Brackets

Male Adapter for MACQ Series



Male Adapter includes jam nut (cylinder not included).

Model	A	B	C	D	E	F	G	H
F-MACQ-12-A	8	6	M5 X 0.8	14	10.5	4	5	2.5
F-MACQ-16-A	10	8	M6 X 1.0	15.5	12	5	6	3
F-MACQ-20-A	12	10	M8 X 1.25	18.5	14	6	8	4
F-MACQ-25-A	17	12	M10 X 1.25	22.5	17.5	6	10	5
F-MACQ-32-A	19	16	M14 X 1.5	28.5* / 38.5**	21.5	8	14	6
F-MACQ-40-A	19	16	M14 X 1.5	28.5* / 38.5**	21.5	8	14	6
F-MACQ-50-A	27	20	M18 X 1.5	33.5* / 43.5**	25.5	11	17	8
F-MACQ-63-A	27	20	M18 X 1.5	33.5* / 43.5**	25.5	11	17	8
F-MACQ-80-A	32	25	M22 X 1.5	43.5* / 53.5**	33.5	13	22	10
F-MACQ-100-A	36	32	M26 X 1.5	43.5* / 53.5**	31.5	13	27	10

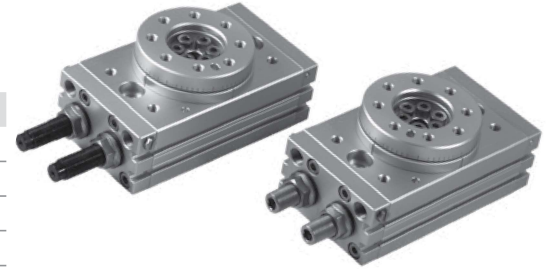
* Stroke = 5 to 100 ** Stroke = 125, 150

Technical Data

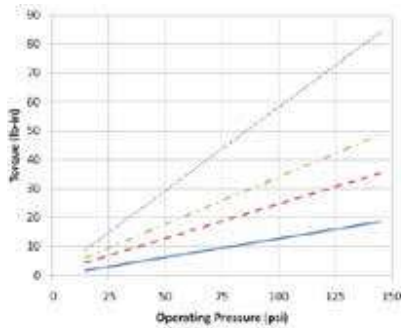
Engineering Specifications

Model	10	20	30	50
Fluid	Air (Clean/Dry)			
Action	Double Rack and Pinion (Double Acting)			
Pressure Range	Bolt Adjustment	14 to 145 PSI (0.1 to 1.0 MPa)		
	Shock Absorber	14 to 87 PSI (0.1 to 0.6 MPa)		
Proof Pressure	215 PSI (1.5 MPa)			
Temperature Range	32 °F to 140 °F (0 °C to 60 °C)			
Adjustment Angle Range	0° to 190° Rotation			
Repeatable Precision	Bolt Adjustment	0.2°		
	Shock Absorber	0.05°		
Rotation Times (s/90°)	Bolt Adjustment	0.2~1.0		
	Shock Absorber	0.2~0.7		
Cushion Type	Bolt Adjustment	Rubber Bumper		
	Shock Absorber	Shock Absorber		
Port Size	M5 X 0.8		Rear Ports 1/8 NPT Side Ports M5 X 0.8	
Sensor Switch Compatibility ¹	Reed Switch	MCS1-H		
	Solid State Switch	MDS1-H		
Includes	Magnet			

¹ See pages 106 for switch specifications



Torque Output



Maximum Energy Absorption (J)

Model	With Bolt Adjustment	With Shock Absorber
MHRQ10	0.01	0.04
MHRQ20	0.025	0.12
MHRQ30	0.05	0.12
MHRQ50	0.08	0.30

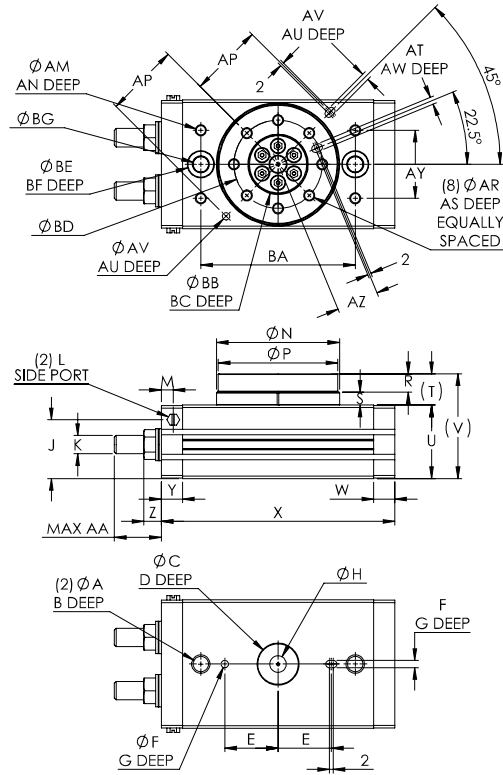
Maximum Loads

Loading Type	MHRQ10	MHRQ20	MHRQ30	MHRQ50
Maximum allowed radial loading	80N (18lbs)	150N (33.7lbs)	200N (45lbs)	300N (67.4lbs)
Maximum allowed axial loading	80N (18lbs)	150N (33.7lbs)	200N (45lbs)	300N (67.4lbs)
Maximum allowed bending moment	2.5Nm (22.1in-lbs)	4.0Nm (35.4in-lbs)	5.5Nm (48.7in-lbs)	10.0Nm (88.5in-lbs)

How To Specify

Product Information

Dimensions (mm)



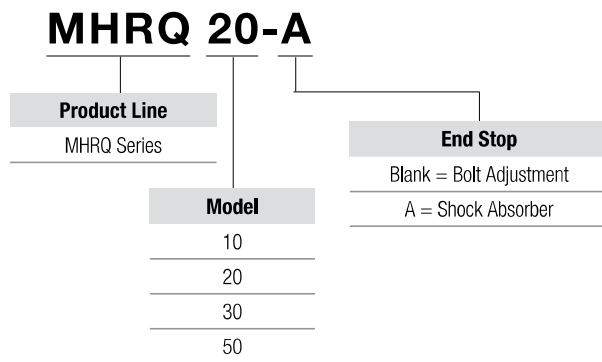
Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P
MHRQ10	M8 X 1.25	12	15 +.043/-0	3	20	3 +.03/-0	3.5	5	29	M10 X 1.0	M5 X 0.8	4.5	46 +0/-0.062	45 +0/-0.062
MHRQ20	M10 X 1.5	15	17 +.043/-0	2.5	25	4 +.03/-0	4.5	9	30	M12 X 1.0	M5 X 0.8	6	61 +0/-0.074	60 +0/-0.074
MHRQ30	M10 X 1.5	15	22 +.052/-0	3	29	4 +.03/-0	4.5	9	34	M12 X 1.0	M5 X 0.8	6.5	67 +0/-0.074	65 +0/-0.074
MHRQ50	M12 X 1.75	18	26 +.052/-0	3	34	5 +.03/-0	5.5	10	38	M14 X 1.5	M5 X 0.8	10	77 +0/-0.074	75 +0/-0.074

Model	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AJ	AK	AL	AM
MHRQ10	8	4.5	13	34	47	9.5	92	9.5	9.5	17.5* / 28.5**	13.5	34.5	M5 X 0.8	28	15.5	20.5	45	49.5	50	54.5	M5 X 0.8
MHRQ20	10	6.5	17	37	54	11	117	11	9.8	26* / 39**	12	47	M5 X 0.8	30	16	27.5	59	64.5	65	69.5	M6 X 1.0
MHRQ30	10	6.5	17	40	57	11.5	127	11.5	9.5	25.5* / 39**	13.5	50	1/8 NPT	32	18.5	29	64	69.5	70	74.5	M6 X 1.0
MHRQ50	12	7.5	20	46	66	15	152	15	14	31.5* / 51**	15	63	1/8 NPT	38	22	38	74.5	79.5	80	84.5	M8 X 1.25

Model	AN	AP	AR	AS	AT	AU	AV	AW	AY	AZ	BA	BB	BC	BD	BE	BF	BG
MHRQ10	8	28	M5 X 0.8	8	3 +.03/-0	3.5	3 +.03/-0	3.5	27	15	60	20 +.052/-0	4.5	32	11	6.5	6.5
MHRQ20	8	37	M6 X 1.0	10	4 +.03/-0	4.5	4 +.03/-0	4.5	34	20.5	76	28 +.052/-0	6.5	43	14	8.5	8.5
MHRQ30	8	40	M6 X 1.0	10	4 +.03/-0	4.5	4 +.03/-0	5	37	23	84	32 +.062/-0	5	48	14	8.5	8.5
MHRQ50	8	46	M8 X 1.25	12	5 +.03/-0	5.5	5 +.03/-0	6	50	26.5	100	35 +.062/-0	5.5	55	18	10.5	10.5

* Bolt Adjustment
** Shock Absorber

How To Order



Product Features

Technical Data

Engineering Specifications

Bore Size (mm)		6	10	16	20	25	32	40	
Fluid		Air (Clean/Dry)							
Pressure Range	Double Acting	6mm, 10mm		28 to 100 PSI (0.2 to 0.7 MPa)					
		16mm to 40mm		22 to 100 PSI (0.15 to 0.7 MPa)					
	Single Acting	6mm, 10mm		50 to 100 PSI (0.35 to 0.7 MPa)					
		16mm to 40mm		36 to 100 PSI (0.25 to 0.7 MPa)					
Temperature Range		-4 ° F to 160 ° F (-20 ° C to 70 ° C)							
Lubrication		Not Required							
Repeatability		±0.01mm					±0.02mm		
Maximum Frequency		180 Cycles/Min					60 Cycles/Min		
Port Size		M3x0.5			M5x0.8				
Sensor Switch Compatibility ¹	Reed Switch	MCS1-H			MCS1-G, MCS1-H				
	Solid State Switch	MDS1-H			MDS1-G, MDS1-H				
Includes		Magnet							



¹ See pages 104-107 for switch specifications

Gripping Force and Stroke

1 MPa = 145.04 PSI
 1 N = 0.225 lbf
 1 lbf = 453.6 g

Model		Double Acting (MHFK)						
Bore Size (mm)		6	10	16	20	25	32	40
Gripping Force ² , Fg (N)	Closing ³	3.3	11	34	45	69	160	255
	Opening ³	6.1	17	45	68	102	195	320
Closing/Opening Stroke (mm)		4	4	6	10	14	22	30
Weight (g)	Standard	25	56	124	236	428	729	1268
	Bottom	24	56	124	236	418	750	1340

Model		Single Acting Normally Open (MHFK)						
Bore Size (mm)		6	10	16	20	25	32	40
Gripping Force ² , Fg (N)	Closing ³	1.9	7	27	35	55	133	220
	Opening ³	-	-	-	-	-	-	-
Closing/Opening Stroke (mm)		4	4	6	10	14	22	30
Weight (g)	Standard	26	57	125	238	430	778	1365
	Bottom	25	57	125	238	420	799	1437

Model		Single Acting Normally Closed (MHFSK)						
Bore Size (mm)		6	10	16	20	25	32	40
Gripping Force ² , Fg (N)	Closing ³	-	-	-	-	-	-	-
	Opening ³	3.7	13	38	59	87	163	270
Closing/Opening Stroke (mm)		4	4	6	10	14	22	30
Weight (g)	Standard	26	57	125	238	430	778	1365
	Bottom	25	57	125	238	420	799	1437

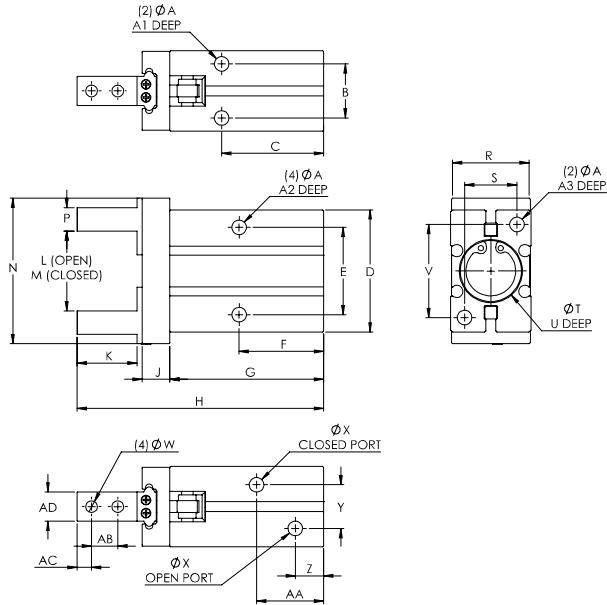
² Gripping force, F, measured with an operating pressure of 0.5MPa (72.5 PSI) at a gripping point of 20mm. See figure 1 on page 102.

³ See figure 2 on page 102.

Product Information

Dimensions (mm)

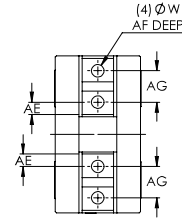
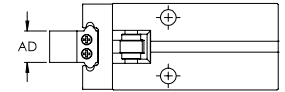
Standard Mounting Style



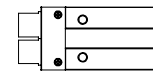
Bottom Mounting Style

Dimensionally same as Standard except as shown

Ø10 ~ Ø40



Ø6



Bore Size (mm)	A	A1	A2	A3	B	C	D	E	F	G	H	J	K	L	M
6	-	-	-	-	-	-	20	12	25.5	31	53	7.9	11	11 +2/-0	8 +0/-1
10	M3 X 0.5	6	5.5	6	11.5	27	23	16	23	37.5	57	6	12	15.5 +2/-0	11.5 +0/-1
16	M4 X 0.7	4.5	8	8	16	30	30.5	24	24.5	42.5	67.5	7.5	15	21 +2/-0	15 +0/-1
20	M5 X 0.8	8	10	10	18.5	35	42	30	29	53	84.5	9.5	20	26.5 +2/-0	16.5 +0/-1
25	M6 X 1.0	10	12	12	22	36.5	52	36	30	63.6	102.5	11	25	33.5 +2/-0	19.5 +0/-1
32	M6 X 1.0	10	13	13	26	48*/57**	60	46	40*/49**	67*/76**	113*/122**	12	29	48 +2.5/-0	26 +0/-1
40	M8 X 1.25	13	16	17	32	58*/71**	72	56	49*/62**	83*/96**	139*/152**	15	36	60 +2.5/-0	30 +0/-1

Bore Size (mm)	N	P	R	S	T	U	V	W	X	Y	Z	AA	AB
6	21	4 +0/-0.05	10 +/-0.05	-	7 +0.05/-0	1.5	-	M2 X 0.4	M3 X 0.5	1.6	5.5	19	5
10	30	4 +0/-0.05	16.4	12	11 +0.05/-0	2	18	M2.5 X 0.45	M3 X 0.5	10	7.5	19	5.7
16	39	5 +0/-0.05	23.6	15	17 +0.05/-0	2	22	M3 X 0.5	M5 X 0.8	13	7.5	19	7
20	53	8 +0/-0.05	27.6	18	21 +0.05/-0	3	32	M4 X 0.7	M5 X 0.8	15	9.5	23	9
25	71	10 +0/-0.05	33.6	22	26 +0.05/-0	3.5	40	M5 X 0.8	M5 X 0.8	20	10	24	12
32	106	12 +0/-0.05	40	26	34 +0.05/-0	4	46	M6 X 1.0	M5 X 0.8	24	11	31*/40**	14
40	132	14 +0/-0.05	48	32	42 +0.05/-0	4	56	M8 X 1.25	M5 X 0.8	28	12	38*/50**	17

Bore Size (mm)	AC	AD	AE	AF	AG	AH	AJ	AK	AL	AM	AN	AP
6	2.5	4 +0/-0.05	2	3	3.5	7.5	-	-	4 +1.5/-0	1.5 +0/-0.5	-	7
10	3	5 +0/-0.05	2.45	4	6	11	2 +0.025/-0	4.5	5.5 +2/-0	1.5 +0/-0.5	2	5
16	4	8 +0/-0.05	3.05	6	8	14	2.5 +0.025/-0	5.8	7.5 +2/-0	1.5 +0/-0.5	2.5	8
20	5	10 +0/-0.05	3.95	8	10	18	3 +0.025/-0	7.5	11.5 +2/-0	1.5 +0/-0.5	3	10.5
25	6	12 +0/-0.05	4.9	10	12	22	4 +0.030/-0	9	16 +2.5/-0	2 +0/-0.5	4	13
32	7	15 +0/-0.05	7.3	12	20	34.5	5 +0.030/-0	14.8	25 +2.5/-0	3 +0/-0.5	5	18
40	9	18 +0/-0.05	8.7	16	24	41.5	6 +0.030/-0	17.7	33 +3/-0	3 +0/-0.5	6	22

* Double Acting / ** Single Acting

How To Order

How To Order

MHFK 20-F

Model

MHFK = Double Acting

MHFSK = Single Acting, Normally Closed

MHFTK = Single Acting, Normally Open

Bore Size

06 = 6mm 25 = 25mm

10 = 10mm 32 = 32mm

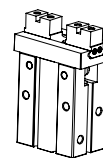
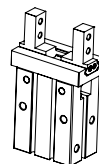
16 = 16mm 40 = 40mm

20 = 20mm

Finger Style

Blank = Standard

F = Bottom





Technical Data

Engineering Specifications

Bore Size (mm)		6	10	16	20	25	32
Fluid		Air (Clean/Dry)					
Pressure Range	Double Acting	6mm	28 to 100 PSI (0.15 to 0.7 MPa)				
		10mm to 32mm	22 to 100 PSI (0.1 to 0.7 MPa)				
	Single Acting	6mm	50 to 100 PSI (0.3 to 0.7 MPa)				
		10mm to 32mm	36 to 100 PSI (0.25 to 0.7 MPa)				
Temperature Range		-4 °F to 160 °F (-20 °C to 70 °C)					
Lubrication		Cylinder: Not Required Jaws: Grease Regularly					
Cushion Type		Bumper					
Integrated Flow Control		Not Available		Standard - Flow Control in Closing Direction			
Maximum Frequency		180 cycles per minute					
Port Size		M3x0.5			M5x0.8		
Sensor Switch Compatibility ¹	Reed Switch	MCS1-H			MCS1-G		
	Solid State Switch	MDS1-H			MDS1-G		
Includes		Magnet					

¹ See pages 104-107 for switch specifications

Gripping Force and Stroke

1 MPa = 145.04 PSI

1 N-cm = 0.089 lb-in

Model		Double Acting (MHFY)					
Bore Size (mm)		6	10	16	20	25	32
Gripping Moment ² , M _g (N-cm)	Closing ³	7.4 x P	17.6 x P	90 x P	152 x P	304 x P	637 x P
	Opening ³	10.6 x P	29.4 x P	129 x P	252 x P	473 x P	904 x P
Maximum Recommended Length to Gripping Point ⁴ (mm)		30	30	40	60	70	85
Opening Angle ³		30° +3/-0					
Closing Angle ³		10° +0/-3					

Model		Single Acting Normally Open (MHFTY)					
Bore Size (mm)		6	10	16	20	25	32
Gripping Moment ² , M _g (N-cm)	Closing ³	5.7 x P	11.8 x P	71.2 x P	122.4 x P	252 x P	589 x P
	Opening ³	-	-	-	-	-	-
Maximum Recommended Length to Gripping Point ⁴ (mm)		30	30	40	60	70	85
Opening Angle ³		30° +3/-0					
Closing Angle ³		10° +0/-3					

Note: P = Operating Pressure (MPa)

² See figure 3 on page 102.

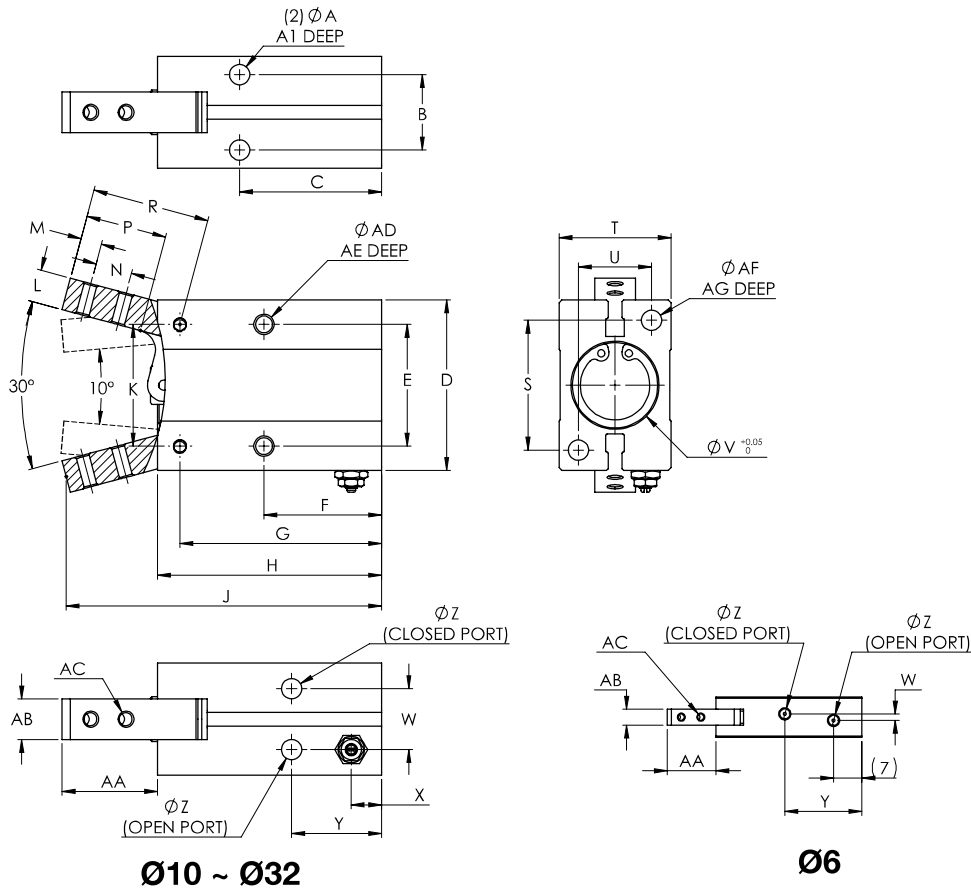
³ See figure 4 on page 102.

⁴ See figure 5 on page 102.

How To Specify

Product Information

Dimensions (mm)



Bore Size (mm)	A	A1	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S
6	-	-	-	-	20	12	26	32	36	47.5	14	4	2.5	5	11	16	-
10	M3 X 0.5	6	11.5	27	23	16	23	35.8	38.5	52.5	14	4	3	5.7	12	17.2	18
16	M4 X 0.7	8	16	30	30.5	24	24.5	39.7	44.5	62.5	24	7	4	7	16	23.6	22
20	M5 X 0.8	10	18.5	35	42	30	29	49.7	55	78	30	8	5	9	20	29	32
25	M6 X 1.0	10	22	36.5	52	36	30	54.8	60.5	92	36	10	8	12	27	38.5	40
32	M6 X 1.0	10	26	30	60	44	37.5	58	68	96.5	42	10	6	14	27	40	46

Bore Size (mm)	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG
6	10.5	-	7	1.5	-	19	M3 X 0.5	12	4	M2 X 0.4	M3 X 0.5	-	-	-
10	16.5	12	11	10	6.5	19	M3 X 0.5	14.5	6.4	M2.5 X 0.45	M3 X 0.5	5	M3 X 0.5	6
16	23.5	15	17	13	7	18.5	M5 X 0.8	19	8	M3 X 0.5	M4 X 0.7	8	M4 X 0.7	8
20	27.5	18	21	15	7.5	22	M5 X 0.8	23.5	10	M4 X 0.7	M5 X 0.8	10	M5 X 0.8	10
25	33.5	22	26	20	7.7	23.5	M5 X 0.8	32.5	12	M5 X 0.8	M6 X 1.0	12	M6 X 1.0	12
32	40	26	34	24	9.2	31	M5 X 0.8	29.5	18	M6 X 1.0	M6 X 1.0	16	M6 X 1.0	12

How To Order

MHFY 20

Model	Bore Size
MHFY = Double Acting	06 = 6mm
MHFTY = Single Acting, Normally Open	10 = 10mm
	16 = 16mm
	20 = 20mm
	25 = 25mm
	32 = 32mm

How It Works

Technical Data

Figure 1

*Parallel Grippers
Gripping Force & Point*

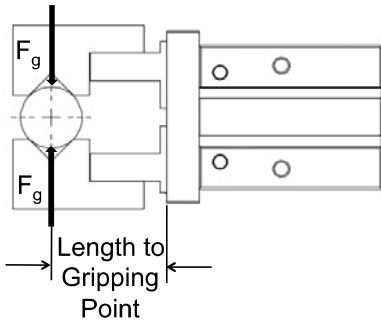


Figure 2

*Parallel Grippers
Gripping Direction*

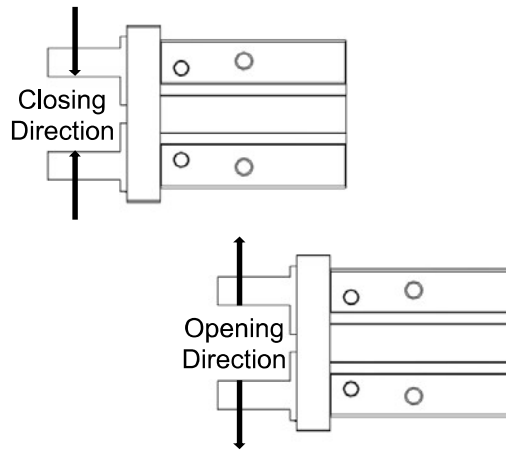


Figure 3

*Angular Grippers
Gripping Moment*

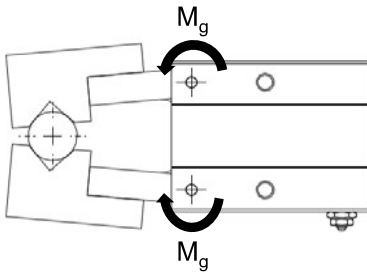


Figure 4

*Angular Grippers
Opening and Closing Angles*

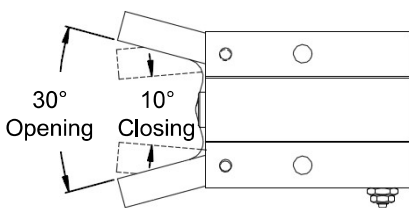
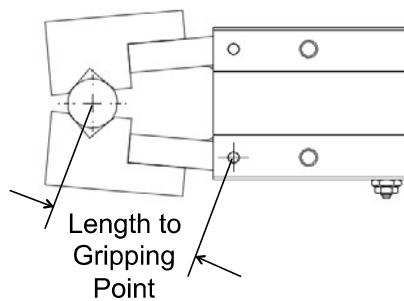


Figure 5

*Angular Grippers
Gripping Point*



Product Information

Dimensions (mm)

Type	Description	Part Number	Compatibility	
Seal Kits				
Extruded Thruster Seal Kits	Seal Kit, MTCL/MTCM 12mm Bore	MTCK-12	12mm MTCL and MTCM Thrusters	
	Seal Kit, MTCL/MTCM 16mm Bore	MTCK-16	16mm MTCL and MTCM Thrusters	
	Seal Kit, MTCL/MTCM 20mm Bore	MTCK-20	20mm MTCL and MTCM Thrusters	
	Seal Kit, MTCL/MTCM 25mm Bore	MTCK-25	25mm MTCL and MTCM Thrusters	
	Seal Kit, MTCL/MTCM 32mm Bore	MTCK-32	32mm MTCL and MTCM Thrusters	
	Seal Kit, MTCL/MTCM 40mm Bore	MTCK-40	40mm MTCL and MTCM Thrusters	
	Seal Kit, MTCL/MTCM 50mm Bore	MTCK-50	50mm MTCL and MTCM Thrusters	
	Seal Kit, MTCL/MTCM 63mm Bore	MTCK-63	63mm MTCL and MTCM Thrusters	
	High Temperature Seal Kit, MTCL/MTCM 12mm Bore	MTCK-12V	12mm MTCL and MTCM Thrusters	
	High Temperature Seal Kit, MTCL/MTCM 16mm Bore	MTCK-16V	16mm MTCL and MTCM Thrusters	
	High Temperature Seal Kit, MTCL/MTCM 20mm Bore	MTCK-20V	20mm MTCL and MTCM Thrusters	
	High Temperature Seal Kit, MTCL/MTCM 25mm Bore	MTCK-25V	25mm MTCL and MTCM Thrusters	
	High Temperature Seal Kit, MTCL/MTCM 32mm Bore	MTCK-32V	32mm MTCL and MTCM Thrusters	
	High Temperature Seal Kit, MTCL/MTCM 40mm Bore	MTCK-40V	40mm MTCL and MTCM Thrusters	
	High Temperature Seal Kit, MTCL/MTCM 50mm Bore	MTCK-50V	50mm MTCL and MTCM Thrusters	
	High Temperature Seal Kit, MTCL/MTCM 63mm Bore	MTCK-63V	63mm MTCL and MTCM Thrusters	
	Compact Cylinder Seal Kits	Seal Kit, MACQ 12mm Bore	MACQK-12	12mm MACQ Cylinders
		Seal Kit, MACQ 16mm Bore	MACQK-16	16mm MACQ Cylinders
Seal Kit, MACQ 20mm Bore		MACQK-20	20mm MACQ Cylinders	
Seal Kit, MACQ 25mm Bore		MACQK-25	25mm MACQ Cylinders	
Seal Kit, MACQ 32mm Bore		MACQK-32	32mm MACQ Cylinders	
Seal Kit, MACQ 40mm Bore		MACQK-40	40mm MACQ Cylinders	
Seal Kit, MACQ 50mm Bore		MACQK-50	50mm MACQ Cylinders	
Seal Kit, MACQ 63mm Bore		MACQK-63	63mm MACQ Cylinders	
Seal Kit, MACQ 80mm Bore		MACQK-80	80mm MACQ Cylinders	
Seal Kit, MACQ 100mm Bore		MACQK-100	100mm MACQ Cylinders	
High Temperature Seal Kit, MACQ 12mm Bore		MACQK-12V	12mm MACQ Cylinders	
High Temperature Seal Kit, MACQ 16mm Bore		MACQK-16V	16mm MACQ Cylinders	
High Temperature Seal Kit, MACQ 20mm Bore		MACQK-20V	20mm MACQ Cylinders	
High Temperature Seal Kit, MACQ 25mm Bore		MACQK-25V	25mm MACQ Cylinders	
High Temperature Seal Kit, MACQ 32mm Bore		MACQK-32V	32mm MACQ Cylinders	
High Temperature Seal Kit, MACQ 40mm Bore		MACQK-40V	40mm MACQ Cylinders	
High Temperature Seal Kit, MACQ 50mm Bore		MACQK-50V	50mm MACQ Cylinders	
High Temperature Seal Kit, MACQ 63mm Bore		MACQK-63V	63mm MACQ Cylinders	
High Temperature Seal Kit, MACQ 80mm Bore	MACQK-80V	80mm MACQ Cylinders		
High Temperature Seal Kit, MACQ 100mm Bore	MACQK-100V	100mm MACQ Cylinders		

Product Features

Technical Data

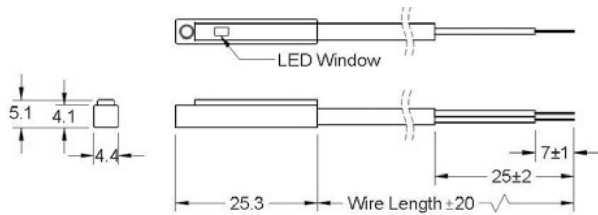
Engineering Specifications

Item/Type	MCS1-G	MDS1-GN	MDS1-GP
Switch Logic	SPST Normally Open	Solid State Transistor, Normally Open	
Sensor Type	Reed Switch	NPN	PNP
Operating Voltage (V)	5-240V AC/DC	5-30V DC	
Max. Switching Current (mA)	100	200	
Max. Switching Power (W)	10	6	
Current Consumption	-	15mA Max. @ 24V	
Voltage Drop	2.5V Max @ 100mA DC	0.5V Max. @ 200mA DC	
Cable	Ø2.8, 2C, Oil Resistant PVC (Flame Retardant)	Ø3.3, 3C, Oil Resistant PVC	
Indicator		LED	
Leakage Current	-	0.01mA Max.	
Sensitivity (Gauss)	60-75	60-75	
Max. Frequency (Hz)	200	1000	
Shock (m/s ²)	300	500	
Vibration (m/s ²)		90	
Temperature Range (°C)		-10 to 70	
Enclosure Classification		IP67 (NEMA6)	
Protection Circuit	None	Power Reverse Polarity, Surge Suppression	



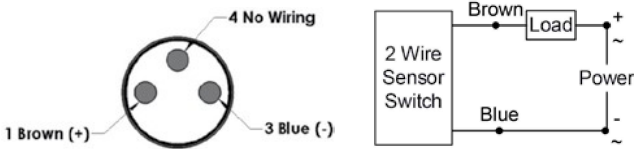
See page 107 for Switch Selector Guide

Dimensions (mm)

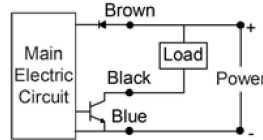


Wiring Diagrams

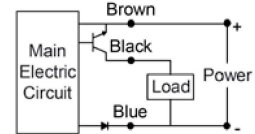
2 Wire Reed Switch



3 Wire Solid State NPN

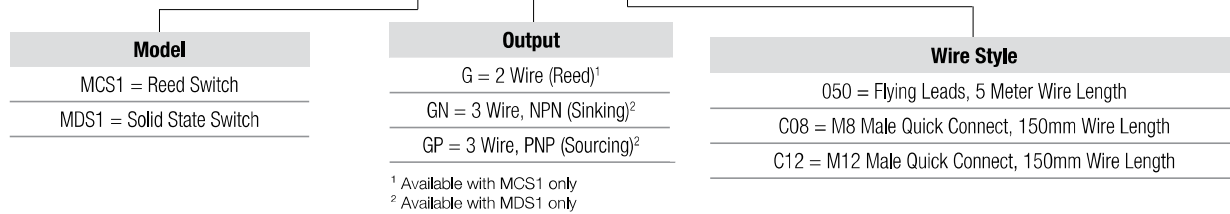


3 Wire Solid State PNP



How To Order

MDS1-GN-C08



Product Features

Technical Data

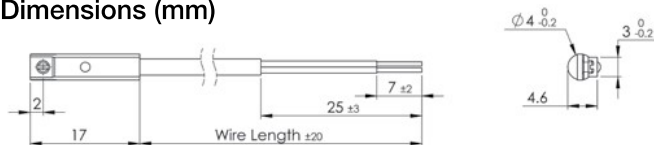
Engineering Specifications

Item/Type	MCS1-H	MDS1-HN	MDS1-HP
Switch Logic	SPST Normally Open	Solid State Transistor, Normally Open	
Sensor Type	Reed Switch	NPN	PNP
Operating Voltage (V)	5-120V AC/DC	5-30V DC	
Max. Switching Current (mA)	50	200	
Max. Switching Power (W)	6	6	
Current Consumption	-	15mA Max. @ 24V	
Voltage Drop	3.0V Max	0.5V Max. @ 200mA DC	
Cable	Ø2.8, Polyurethane	Ø3.3, 3C, Oil Resistant PVC	
Indicator		LED	
Leakage Current	-	0.01mA Max.	
Sensitivity (Gauss)	40	60-75	
Max. Frequency (Hz)	200	1000	
Shock (m/s ²)	300	500	
Vibration (m/s ²)		90	
Temperature Range (°C)		-10 to 70	
Enclosure Classification		IP67 (NEMA6)	
Protection Circuit	None	Power Reverse Polarity, Surge Suppression	



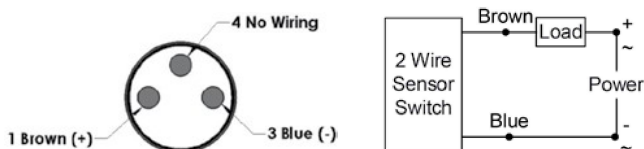
See page 107 for Switch Selector Guide.

Dimensions (mm)

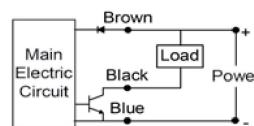


Wiring Diagrams

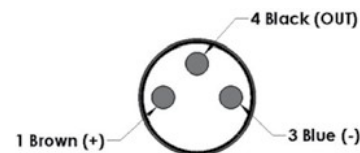
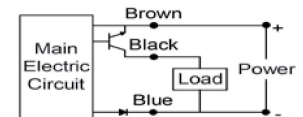
2 Wire Reed Switch



3 Wire Solid State NPN



3 Wire Solid State PNP



How To Order

MDS1-HN-050

Model	Output	Wire Style
MCS1 = Reed Switch	H = 2 Wire (Reed) ¹	010 = Flying Leads, 1 Meter Wire Length ¹
MDS1 = Solid State Switch	HN = 3 Wire, NPN (Sinking) ²	050 = Flying Leads, 5 Meter Wire Length ²
	HP = 3 Wire, PNP (Sourcing) ²	






¹ Available with MCS1 only

² Available with MDS1 only

¹ Available with MCS1 only

² Available with MDS1 only

Product Information

			Reed Switch		Solid State Switch	
			MCS1-G	MCS1-H	MDS1-G	MDS1-H
MTC Thrusters		All Bore Sizes	X		X	
MACQ Compact Cylinders		All Bore Sizes	X		X	
MHRQ Rotary Actuators		All Bore Sizes		X		X
MHFK Parallel Grippers		6mm Bore		X		X
		10mm Bore	X		X	
		16-40mm Bore	X	X	X	X
MHFY Angular Grippers		6mm Bore		X		X
		10-32mm Bore	X		X	

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