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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.

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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.

Contents

02 Introduction

03 Valves

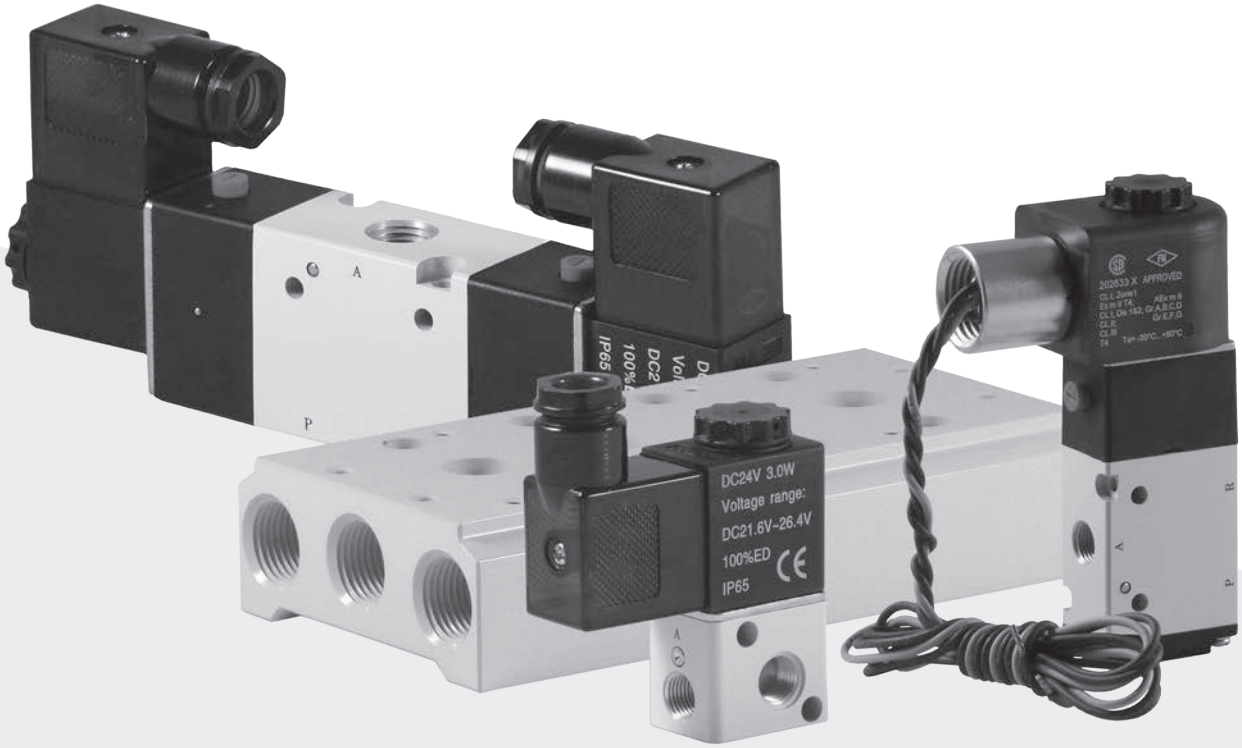
39 MG Series Air Preparation Equipment

81 MGA Series Air Preparation Equipment

121 Pneumatic Actuators

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.



Contents

5 M3V1 Series Solenoid Valves
5 – Engineering Specifications
6 – Stacking Assembly & Dimensions
7 – How to Order

8 M3V Series Solenoid Valves
8 – Engineering Specifications
9 – Dimensions
10 – How to Order

11 M4V Series Solenoid Valves
11 – Engineering Specifications
12 – Dimensions
14 – How to Order

15 Manifolds for M3V Series Valves
15 – Engineering Specifications
16 – How to Order

17 Manifolds for M4V Series Valves
17 – Engineering Specifications
18 – How to Order

19 MPS Series
19 – Engineering Specifications
19 – Dimensions & Wiring Diagram
19 – Accessories
20 – How to Order

21 Manifold Powerstrip™ Selection Guide
21 – How to Order

22 M4M (Namur) Series Solenoid Valves
22 – Engineering Specifications
22 – Dimensions
23 – How to Order

24 Explosion Proof Coils
24 – Engineering Specifications
25 – Solenoid Valve Coils & Connectors
25 – Wiring Diagram

26 M4A Series Air Pilot Valves
26 – Engineering Specifications
27 – Dimensions
28 – How to Order

29 M4H Series Hand Lever Valves
29 – Engineering Specifications
29 – Dimensions & Installation Options
30 – How to Order

31 M4HV Series Hand Lever Valves
31 – Engineering Specifications
31 – Dimensions
32 – How to Order

33 M4L Series Push-Pull Valves
33 – Engineering Specifications
33 – Dimensions
34 – How to Order

35 M4F Series Foot Pedal Valves
35 – Engineering Specifications
35 – Dimensions
36 – How to Order

37 MASC Series Flow Control
37 – Dimensions
38 – How to Order

Technical Data

Engineering Specifications

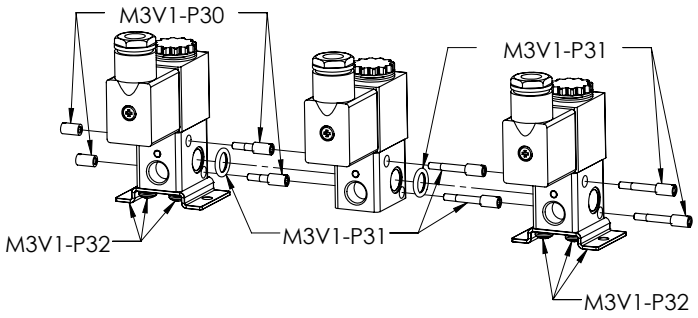
Model	M3V1-06
Fluid	Air (Clean/Dry)
Actuation	Direct Acting
Type	3 Port - 2 Position
Flow	Cv 0.051
Port Size	1/8 NPT
Lubrication	Not Required
Pressure Range	0 to 116 PSI (0 to 0.8 MPa)
Proof Pressure	215 PSI (1.5 MPa)
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C) (Explosion Proof -4 °F to 140 °F [-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. AC/DC coils cannot be interchanged.



Product Information

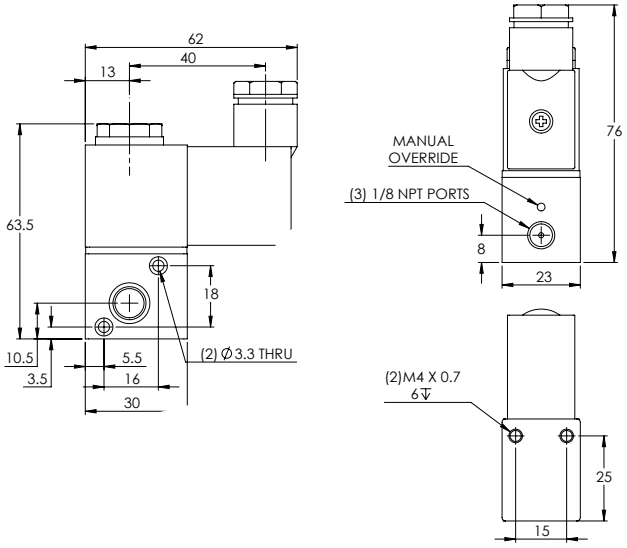
Stacking Assembly



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

Product Line
M3V1 Series

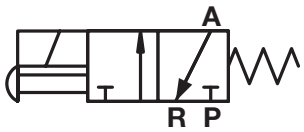
Port Size	
06	1/8 NPT

Voltage[3]
12VDC
24VDC
24VAC 50/60 Hz
120VAC 50/60 Hz

[3] AC/DC coils cannot be interchanged.

Electrical Connection	
Blank	DIN Connector
FL	Flying Leads[1]
X	Explosion Proof[2]

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



Technical Data



Engineering Specifications

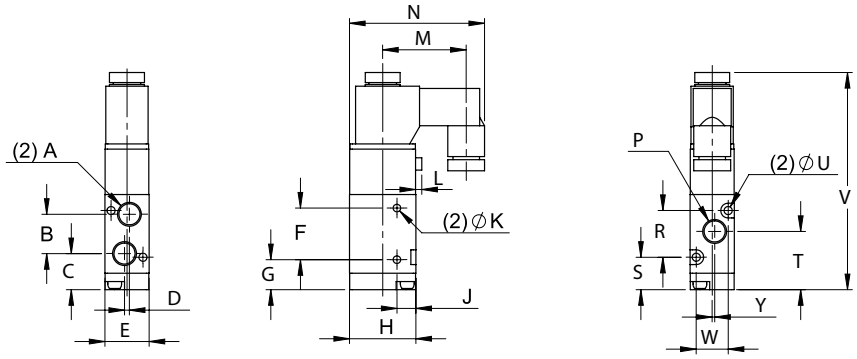
Model	M3V110-06 M3V120-06	M3V210-06 M3V220-06	M3V210-08 M3V220-08	M3V310-08 M3V320-08	M3V310-10 M3V320-10
Fluid	Air (Clean/Dry)				
Actuation	Internally Piloted				
Type	3 Port - 2 Position				
Flow	Cv 0.67	Cv 0.78	Cv 0.89	Cv 1.39	Cv 1.67
Port Size	1/8 NPT	1/8 NPT	1/4 NPT	1/4 NPT	3/8 NPT
Lubrication	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. AC/DC coils cannot be interchanged.

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

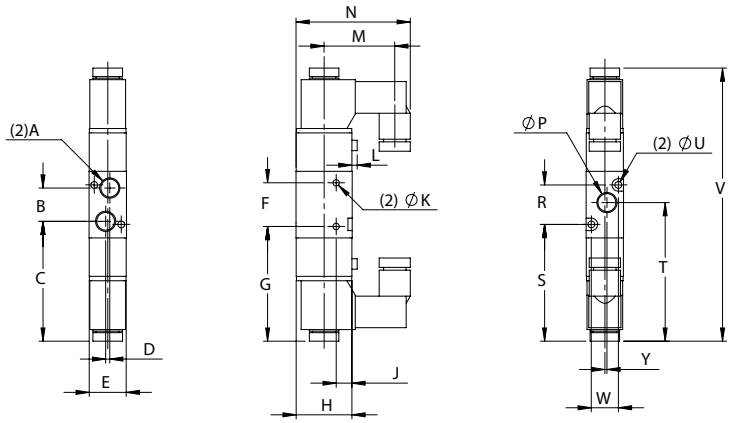
Product Information

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

Model	
1	100 Series
2	200 Series
3	300 Series

Type	
10	Single Solenoid
20	Double Solenoid

Port Size	
06	1/8 NPT (100, 200 Series)
08	1/4 NPT (200, 300 Series)
10	3/8 NPT (300 Series)

Operation[1]	
NC	Normally

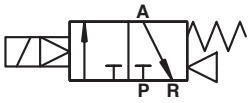
[1] Required for Single Solenoid only

Voltage[4]
12VDC
24VDC
24VAC 50/60 Hz
120VAC 50/60 Hz

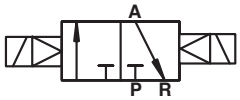
[4] AC/DC coils cannot be interchanged.

Electrical Connection	
Blank	DIN Connector
FL	Flying Leads[2]
X	Explosion Proof[3]

[2] Not available with 100 series 24VAC. Flying Leads are 300mm long.
[3] See page 24 for specifications. Leads are 580mm long.



10-NC



20

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			

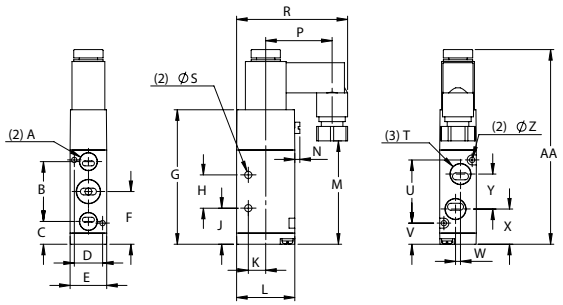
Model	M4V310-08 M4V320-08	M4V330C-08 M4V330E-08	M4V310-10 M4V320-10	M4V330C-10 M4V330E-10	M4V410-15 M4V420-15	M4V430C-15 M4V430E-15
Fluid	Air (Clean/Dry)					
Actuation	Internally Piloted					
Type	5 Port-2 Position	5 Port-3 Position	5 Port-2 Position	5 Port-3 Position	5 Port-2 Position	5 Port-3 Position
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. AC/DC coils cannot be interchanged.

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

Product Information

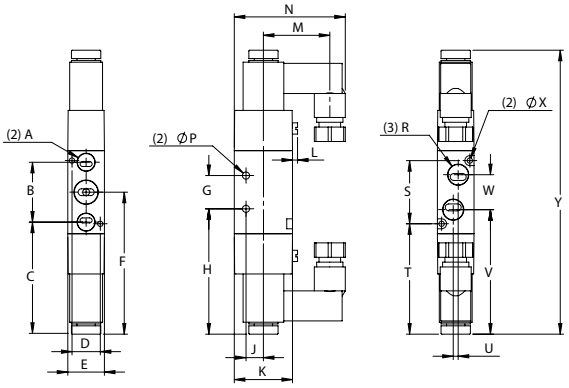
Dimensions (mm) – Single Solenoid



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

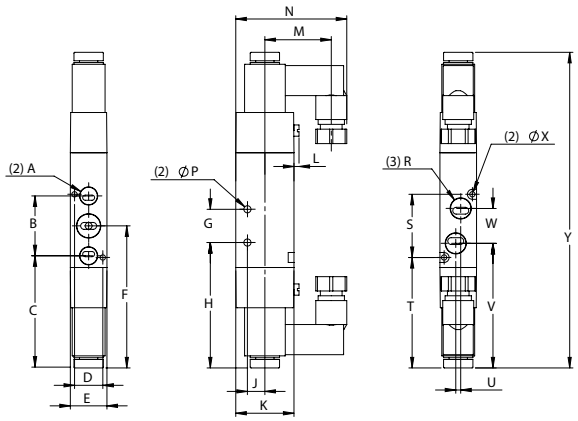


Model	A	B	C	D	E	F	G	H	J	K	L
M4V120-06	1/8 NPT	28	57.2	13	18	71.2	14	64.2	9.5	27	2.5
M4V220-06	1/8 NPT	36	67.4	17	22	85.4	20	75.4	10.5	35	3
M4V220-08	1/8 NPT	36	67.4	17	22	85.4	20	75.4	10.5	35	3
M4V320-08	1/4 NPT	45	72.4	20	27	94.9	24	83	13.5	40	2.4
M4V320-10	1/4 NPT	45	72.4	20	27	94.9	24	83	13.5	40	2.4
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

M4V 2 10 - 08 - 24VDC - X

Product Line
M4V Series

Model	
1	100 Series
2	200 Series
3	300 Series
4	400 Series

Type	
10	Single Solenoid
20	Double Solenoid
30C	3 Position Double Solenoid Closed Center
30E	3 Position Double Solenoid Exhaust Center

Port Size	
06	1/8 NPT (100, 200 Series)
08	1/4 NPT (200, 300 Series)
10	3/8 NPT (300 Series)
15	1/2 NPT (400 Series)

Voltage[3]
12VDC
24VDC
24VAC 50/60 Hz
120VAC 50/60 Hz

[3] AC/DC coils cannot be interchanged.

Electrical Connection	
Blank	DIN Connector
FL	Flying Leads[1]
X	Explosion Proof[2]

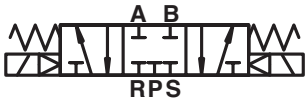
[1] Not available with 100 series 24VAC. Flying Leads are 300mm long.
[2] Not available with 100 series. See page 24 for specifications. Leads are 580mm long.



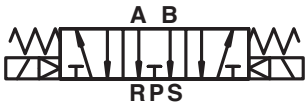
10



20



30C



30E

Technical Data

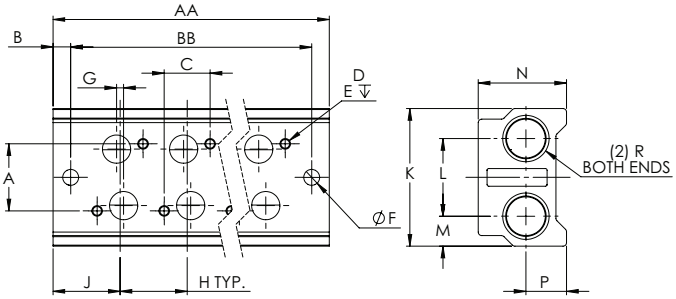
See page 8 for compatible valves.

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

M 200 H - 4F

Manifold	Model		Style		Number of Stations	
	1	100 Series	H	Manifold for 3-way Valves	2F	2 Stations
	2	200 Series			4F	4 Stations
	3	300 Series			6F	6 Stations
					8F	8 Stations

How to Order – Manifold Blanking Plates[1]

M 200 H - B

Manifold	Model		Style	
	1	100 Series	H	Manifold for 3-way Valves
	2	200 Series		
	3	300 Series		



[1] Each kit includes one blanking plate and two screws.

How to Order – Manifold Gasket and Screw Kit[2]

M 200 H - G

Manifold	Model		Style	
	1	100 Series	H	Manifold for 3-way Valves
	2	200 Series		
	3	300 Series		



[2] Each kit includes one gasket and two screws.

Technical Data

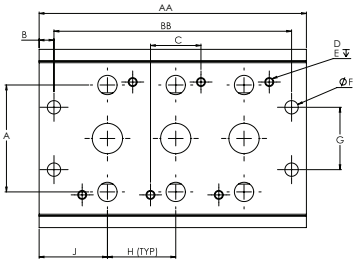
See page 11 for compatible valves.

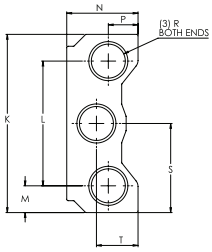
Engineering Specifications

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	60	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	100	68	16

Model	N	P	R	S	T	AA				BB			
						2F	4F	6F	8F	2F	4F	6F	8F
M100M	22	10	1/4 NPT	29	12.5	57	95	133	171	47	85	123	161
M200M	24	10	1/4 NPT	30	14	69	115	161	207	57	103	149	195
M300M	28	13.5	3/8 NPT	37.5	15	82	138	194	250	70	126	182	238
M400M	33	16	1/2 NPT	50	18	98	168	238	308	84	154	224	294

How to Order

How to Order

M 200 M - 4F

Manifold	Model		Style		Number of Stations	
	1	100 Series	M	Manifold for 4-way Valves	2F	2 Stations
	2	200 Series			4F	4 Stations
	3	300 Series			6F	6 Stations
	4	400 Series			8F	8 Stations

How to Order – Manifold Blanking Plates[1]

M 200 M - B

Manifold	Model		Style	
	1	100 Series	M	Manifold for 4-way Valves
	2	200 Series		
	3	300 Series		
	4	400 Series		



[1] Each kit includes one blanking plate and two screws.

How to Order – Manifold Gasket and Screw Kit[2]

M 200 M - G

Manifold	Model		Style	
	1	100 Series	M	Manifold for 4-way Valves
	2	200 Series		
	3	300 Series		
	4	400 Series		



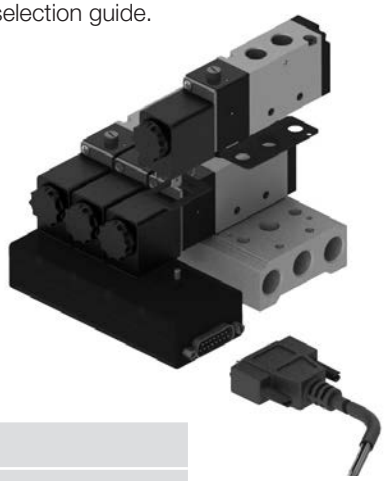
[2] Each kit includes one gasket and two screws.

Technical Data

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

Engineering Specifications

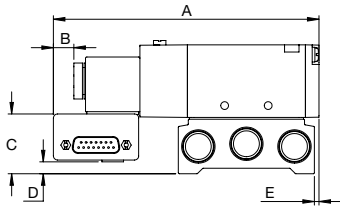
Model	MPS
Voltage Range	(-D) 12-24 VDC, (-A) 24-120VAC
Temperature Range	0 °F to 120 °F (-20 °C to 49 °C)
Max. Coil Power	4W
Electrical Connection	15-Pin D-Sub (DB15) Male
Circuit Protection	(-D) N4004 Diode, (-A) MOV
Enclosure Rating	IP65
LED Indicator	Yes
Material	ABS Body



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

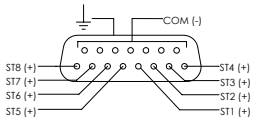
Valve Compatibility		
Valves	**Manifold**	**Manifold PowerStrip™**
M•V1• - • - • AC	M100• - • F	MPS1- • -A- •
M•V1• - • - • DC		MPS1- • -D- •
M•V2• - • - • AC	M200• - • F	MPS2- • -A- •
M•V2• - • - • DC		MPS2- • -D- •
M•V3• - • - • AC	M300• - • F	MPS3- • -A- •
M•V3• - • - • DC		MPS3- • -D- •
M4V4• - •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

Dimensions (mm)

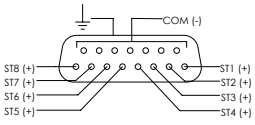


Model	A		B	C		D		E
	M3V	M4V		M3V	M4V	M3V	M4V	
MPS1	100.4	111.4	11.9	23.9	23.9	-2.5	-2.5	-0.8
MPS2	120.4	128.3	11.4	25.4	26.4	-1	0	1.5
MPS3	131.4	146.4	11.4	31.9	32.9	5.5	6.5	2.5
MPS4	-	180.0	11.4	-	45.6	-	20.2	5

Wiring Diagrams



MPS1



MPS2, MPS3, MPS4

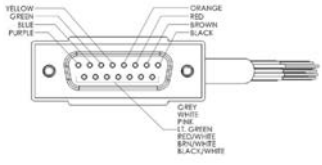
Accessories

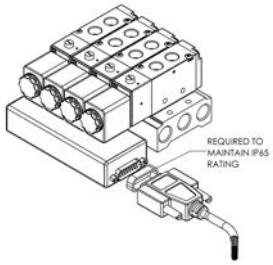


3m DB15 Cable: P3-15SDC
10m DB15 Cable: P10-15SDC



DB15 Connector Seal
P/N: 3701400





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

How to Order

MPS 2 - 4 - D - C3

Product Line
MPS Series

Model	
1	M3V100 & M4V100 Series
2	M3V200, M4V200, & M3V1 Series
3	M3V300 & M4V300 Series
4	M3V400 & M4V400 Series

Number of Stations
2 to 8 Stations

Voltage	
A	24-120VAC
D	12-24VDC

Optional Cable	
Blank	None
C3	3M Mating Cable
C10	10M Mating Cable

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

4-Way Valve

See page 11 for full valve specifications.

M4V 2 10 - 08 - 24VDC

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

Step #2 - Manifold

Match Manifold Model to Valve Model

3-Way Manifold

See page 15 for full manifold specifications.

M 200 H - 4F

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

4-Way Manifold

See page 17 for full manifold specifications.

M 200 M - 4F

Manifold	Model		Number of Stations	
	1	100 Series	2F	2 Stations
	2	200 Series	4F	4 Stations
	3	300 Series	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	Model		Number of Stations	Voltage		Optional Cable	
MPS Series	1	M3V100 & M4V100 Series	2 to 8 Stations	A	24-120VAC	Blank	None
	2	M3V200, M4V200, & M3V1 Series		D	12-24VDC	C3	3M Mating Cable
	3	M3V300 & M4V300 Series				C10	10M Mating Cable
	4	M3V400 & M4V400 Series					



Example – Bill of Materials

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



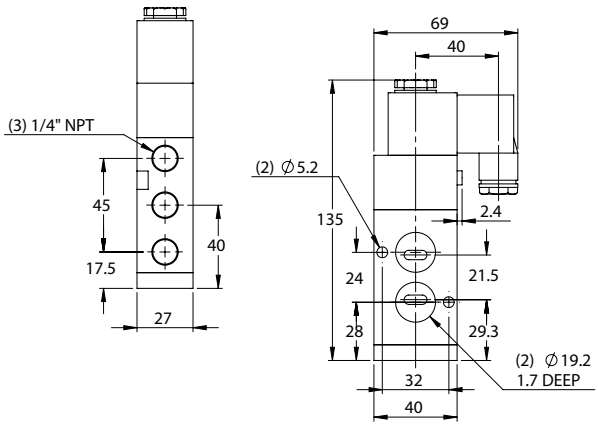
Technical Data

Engineering Specifications

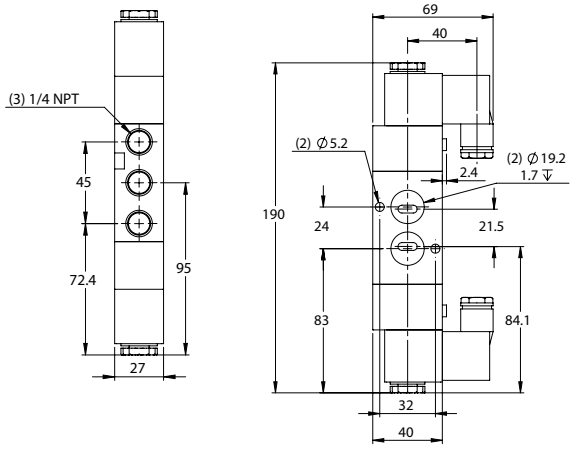
Model	M4M310-08 M4M320-08
Fluid	Air (Clean/Dry)
Actuation	Internally Piloted
Type	5 Port - 2 Position
Flow	Cv 1.40
Port Size	1/4 NPT
Lubrication	Not Required
Pressure Range	22 to 116 PSI (0.15 to 0.8 MPa)
Proof Pressure	215 PSI (1.5 MPa)
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C)
Max. Frequency	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	Model	Type	Port Size	Voltage	Electrical Connection
M4M Series	3 300 Series	10 Single Solenoid	08 1/4 NPT	12VDC	Blank DIN Connector
		20 Double Solenoid		24VDC	FL Flying Leads1
				24VAC	
				120VAC	

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



10

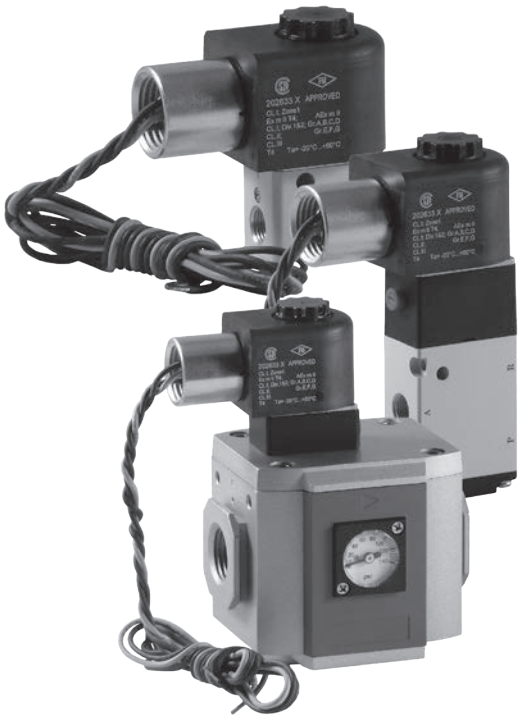


20

Technical Data

Engineering Specifications

Model	Explosion Proof Coils
Available On	M3V1, M3V200, M3V300, M4V200, M4V300, M4V400, MGV200, MGV300 and MGV400 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

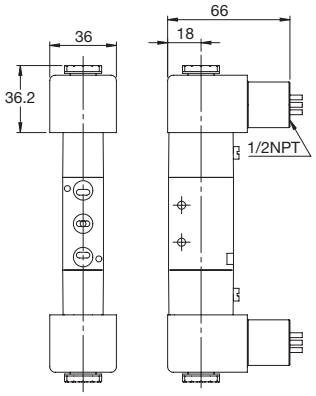


Dimensions (mm)

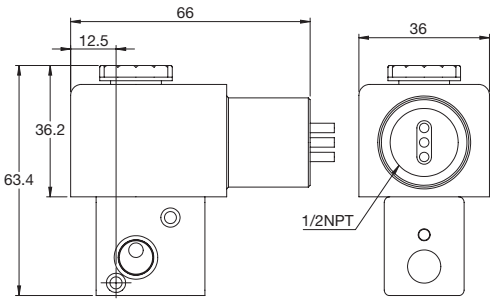
Model	A	B
MGV200	112	80.2
MGV300	118	82.7
MGV400	130	91.2

M3V & M4V Series

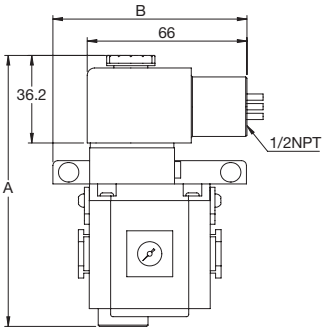
(M4V part shown)



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

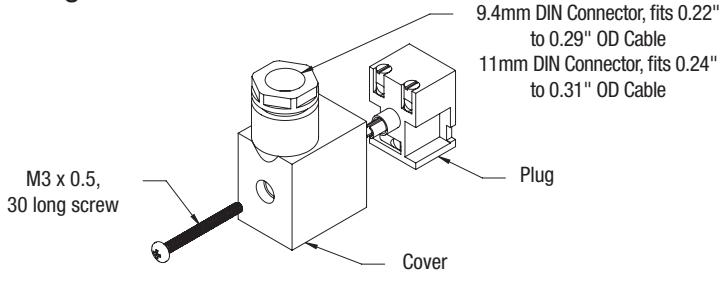
Type	Description	Part Number	Compatibility
Coils for DIN Connectors 	Coil for 9.4mm DIN Connector, 110/120 VAC	M4V110-016-4A	100 Series Solenoid Valves
	Coil for 9.4mm DIN Connector, 12VDC	M4V110-016-2A	
	Coil for 9.4mm DIN Connector, 24VAC	M4V110-016-6A	
	Coil for 9.4mm DIN Connector, 24VDC	M4V110-016-8A	
	Coil for 11mm DIN Connector, 110/120 VAC	M4V210-016-2E	200, 300, 400 Series Solenoid Valves MGV Soft Start Valves M3V1 Direct Acting Valves
	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	
Coils with Flying Leads[1] 	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 Coils[2] 	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	

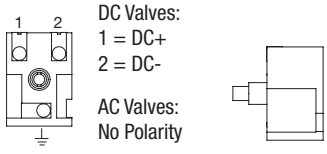
Solenoid Valve Connectors

Type	Description	Part Number	Compatibility
DIN Connectors 	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





Technical Data

Engineering Specifications



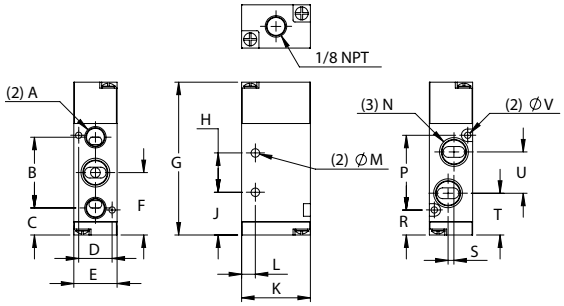
Model	M4A210-06 M4A220-06	M4A230C-06	M4A210-08 M4A220-08	M4A230C-08
Fluid	Air (Clean/Dry)			
Actuation	Externally Piloted			
Type	5 Port - 2 Position	5 Port - 3 Position	5 Port - 2 Position	5 Port - 3 Position
Flow	Cv 0.78	Cv 0.67	Cv 0.89	Cv 0.67
Port Size	1/8 NPT		Inlet/Outlet Ports 1/4 NPT Exhaust 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

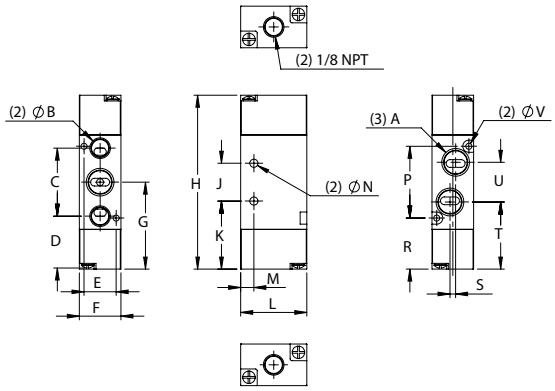
Dimensions (mm) – Single Air Pilot



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

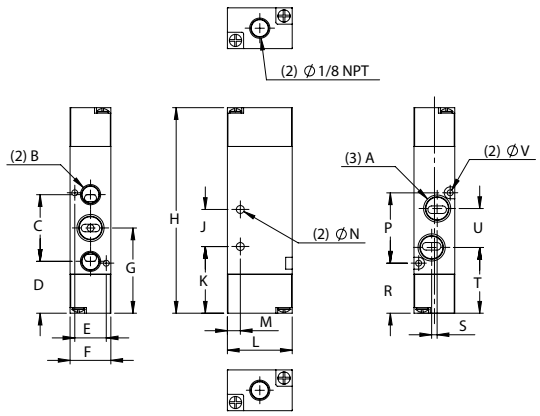
Dimensions (mm) – Double Air Pilot



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

M4A 2 10 - 08

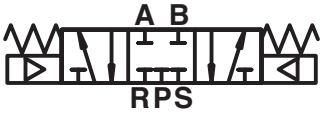
Product Line	Model		Type		Port Size	
M4A Series	2	200 Series	10	Single Solenoid	06	1/8 NPT (200 Series)
	3	300 Series	20	Double Solenoid	08	1/4 NPT (200 Series)
	4	400 Series	30C	3 Position Double Air Pilot Closed Center	10	3/8 NPT (300 Series)
					15	1/2 NPT (400 Series)



10



20



30C

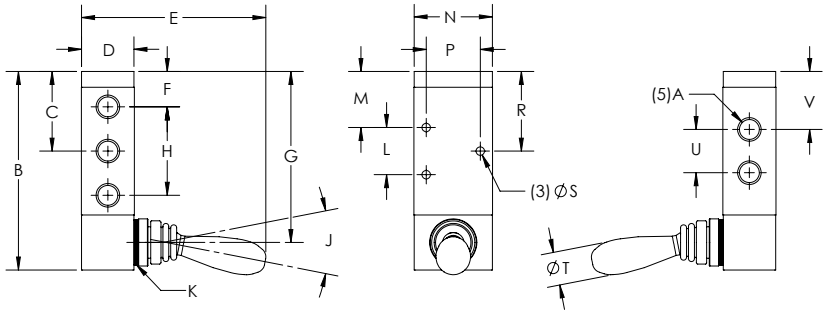
Technical Data

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			



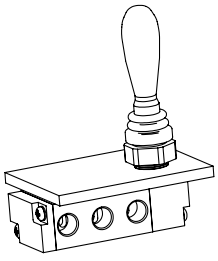
Dimensions (mm)



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

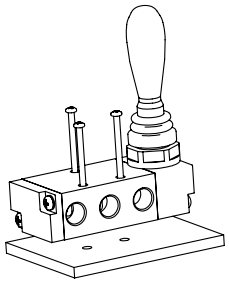
Installation Options

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

M4H 2 10 - 06

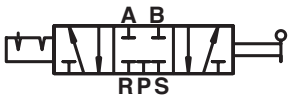
Product Line		Model		Type		Port Size	
M4H Series	Manual Return	2	200 Series	10	5 Port - 2 Position	06	1/8 NPT (200 Series)
M4HA Series	Spring Return	3	300 Series	30C	5 Port - 3 Position Closed Center	08	1/4 NPT (300 Series)
				30E	5 Port - 3 Position Exhaust Center		



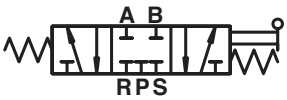
10 (Manual Return)



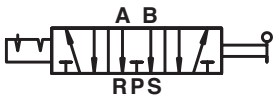
10 (Spring Return)



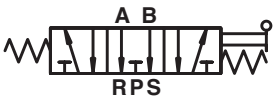
30C (Manual Return)



30C (Manual Return)



30E (Manual Return)



30E (Spring Return)

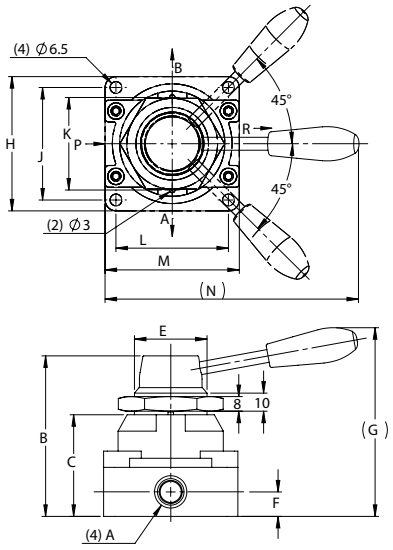
Technical Data

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

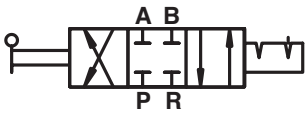
How to Order

M4HV 3 10 - 08 - S

Product Line	Model		Type		Port Size		Mounting	
M4HV Series	3	300 Series	10	4 Port - 2 Position	08	1/4 NPT (300 Series)	S	Panel Nut
	4	400 Series	30	4 Port - 3 Position - Closed Center	15	1/2 NPT (400 Series)		



10



30

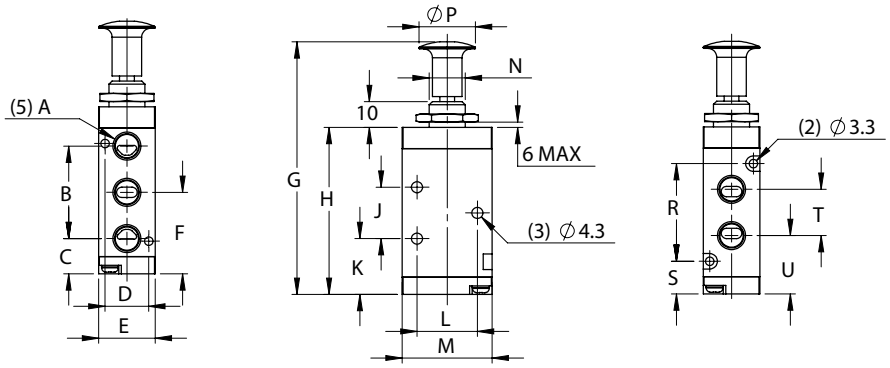
Technical Data

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

M4L 2 10 - 06

Product Line	Model		Type		Port Size	
M4L Series	2	200 Series	10	5 Port - 2 Position	06	1/8 NPT (200 Series)
	3	300 Series			08	1/4 NPT (300 Series)



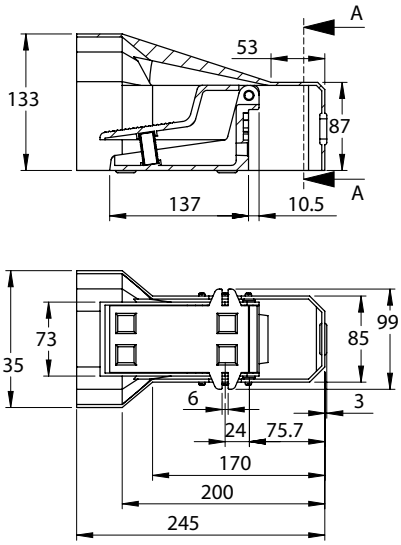
Technical Data

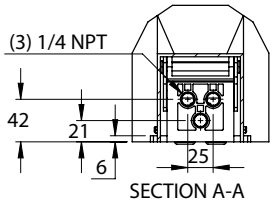
Engineering Specifications

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

M4F 2 10 - 08 - G

Product Line	Model	Type	Port Size	Style
M4F Series	2 200 Series	10 5 Port - 2 Position	08 1/4 NPT	G Non-Locking with Guard
				LG Locking with Guard



G



LG

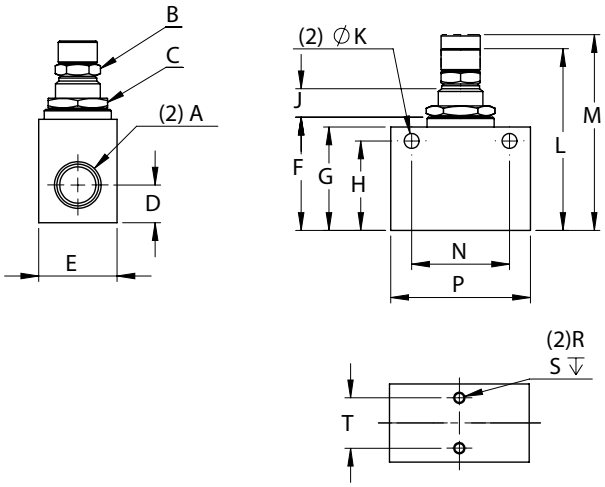
Technical Data

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

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)



MG Series Air Preparation Equipment

Air preparation equipment is a crucial element in many pneumatic circuits. MG Series 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.



Contents

41 MGR Series Regulators
41 – Engineering Specifications
41 – Performance Data
42 – Dimensions
43 – How to Order

44 MSR Series Mini Regulators
44 – Engineering Specifications
44 – Performance Data & Dimensions
45 – How to Order

46 MGF Series General Purpose Filters
46 – Engineering Specifications
46 – Performance Data
47 – Dimensions
48 – How to Order

49 MGFB Series Coalescing Filters
49 – Engineering Specifications
49 – Performance Data
50 – Dimensions
51 – How to Order

52 MGL Lubricators
52 – Engineering Specifications
52 – Performance Data
53 – Dimensions
54 – How to Order

55 MGFR Series Filter Regulators
55 – Engineering Specifications
55 – Performance Data
56 – Dimensions
57 – How to Order

58 MGFC Series Filter Regulator Lubricators
58 – Engineering Specifications
58 – Performance Data
59 – Dimensions
60 – How to Order

61 MGZ Series Pressure Relief Valves
61 – Engineering Specifications
61 – Dimensions
61 – Modular Connecting Kit
62 – How to Order

63 MGV Series Soft Start/Dump Valves
63 – Engineering Specifications
63 – Dimensions
63 – Modular Connecting Kit
64 – How to Order

65 Modular Connecting Kits
65 – Dimensions
66 – How to Order

67 Mounting Brackets
67 – Dimensions
68 – How to Order

69 Air Distribution Blocks
69 – Engineering Specifications
69 – Dimensions
69 – Modular Connecting Kit
70 – How to Order

71 Service Parts
71 – Filtering Specifications
71 – Types, Descriptions & Compatibility
71 – How to Order Filter Element
72 - Replacement Filter, Filter/Regulator, and Lubricator Bowls

73 Round Gauges
73 – Engineering Specifications
73 – Dimensions
74 – How to Order

75 Digital Gauges
75 – Engineering Specifications
75 – Dimensions
76 – How to Order
76 – Display Description

77 Digital Pressure Switches
77 – Engineering Specifications
77 – Analog Output Characteristics
78 – Dimensions & Accessories
79 – How to Order

Technical Data

MGR Series regulators will be discontinued in 2021. Please contact your local salesperson for additional information.

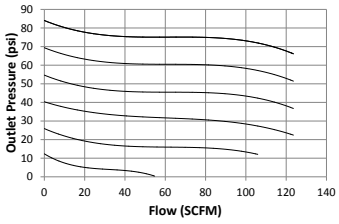


Engineering Specifications

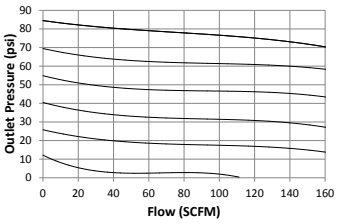
Model	MGR
Fluid	Air (Clean/Dry)
Type	Relieving Regulator with Push to Lock Adjustment Knob
Pressure Range	Blank - 7 to 130 PSI (0.05 to 0.9 MPa) L - 7 to 60 PSI (0.05 to 0.4 MPa)
Proof Pressure	215 PSI (1.5 MPa)
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C)
Material	Aluminum Alloy Body
Pressure Gauge	Square/Flush-Mounted Gauge or Large Round/Port-Mounted Gauge
Mounting	Individual Stamped Steel Bracket or Modular Connecting Kit (page 65) or Panel Mount
Includes	Stamped Steel Bracket / Panel Nut

Performance Data MGR

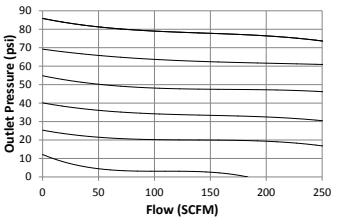
Flow Characteristics MGR200



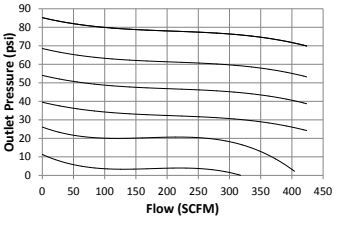
Flow Characteristics MGR300



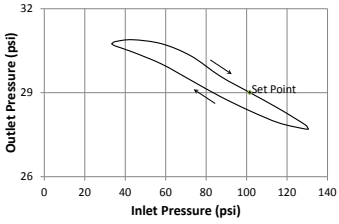
Flow Characteristics MGR400



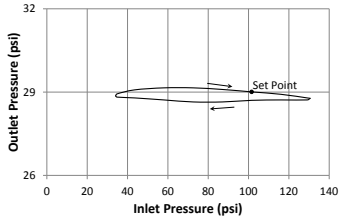
Flow Characteristics MGR600



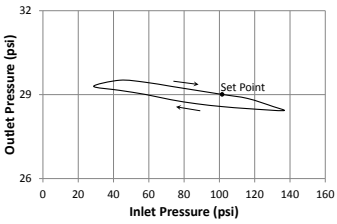
Regulator Characteristics MGR200



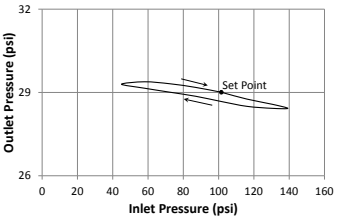
Regulator Characteristics MGR300



Regulator Characteristics MGR400

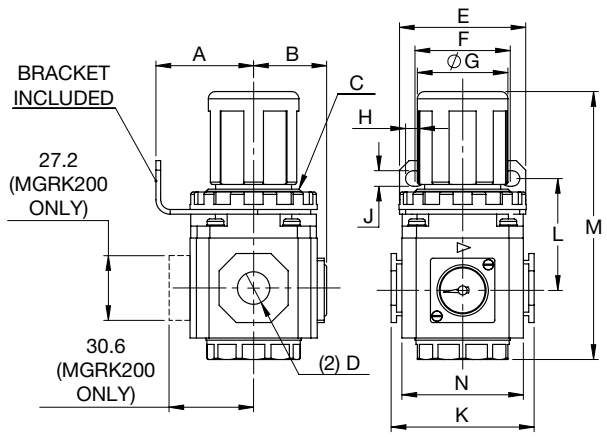


Regulator Characteristics MGR600



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	
Blank	Standard Relieving Regulator
K	Relieving Regulator with Reverse Flow[1]

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

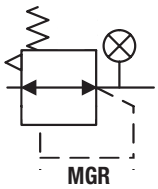
Model
200 Series
300 Series
400 Series
600 Series

Port Size	
06	1/8 NPT (200 Series)
08	1/4 NPT (200, 300 Series)
10	3/8 NPT (300 Series)
15	1/2 NPT (400 Series)
20	3/4 NPT (600 Series)
25	1 NPT (600 Series)

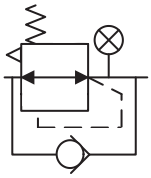
Pressure Range	
Blank	Square/ Flush
L	7 - 60 PSI[2]

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

Gauge Type	
Blank	Square/ Flush
R	Round/Port-Mounted



MGR



MGRK

Product Features

Technical Data

Engineering Specifications

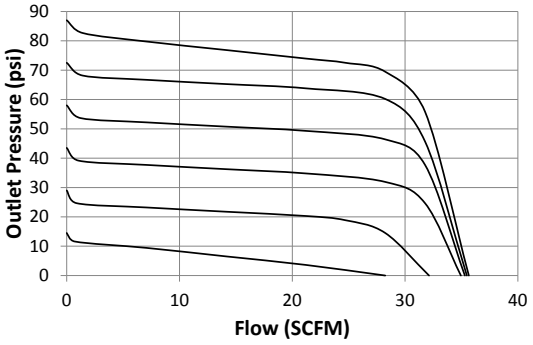
Model	MSR200-06	MSR200-08
Fluid	Air (Clean/Dry)	
Port Size	1/8 NPT	1/4 NPT
Type	Relieving Regulator with Push to Lock Adjustment Knob	
Pressure Range	7 to 130 PSI (0.05 to 0.9 MPa)	
Proof Pressure	215 PSI (1.5 MPa)	
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C)	
Material	Aluminum Alloy Body	
Mounting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

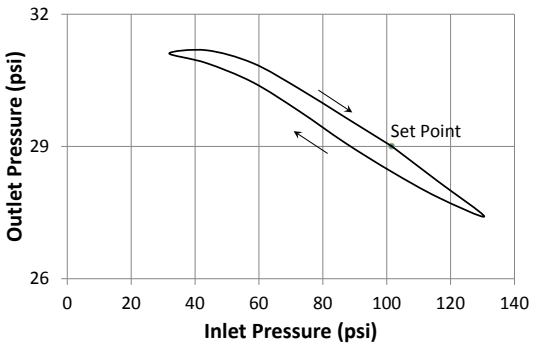


Performance Data MSR200

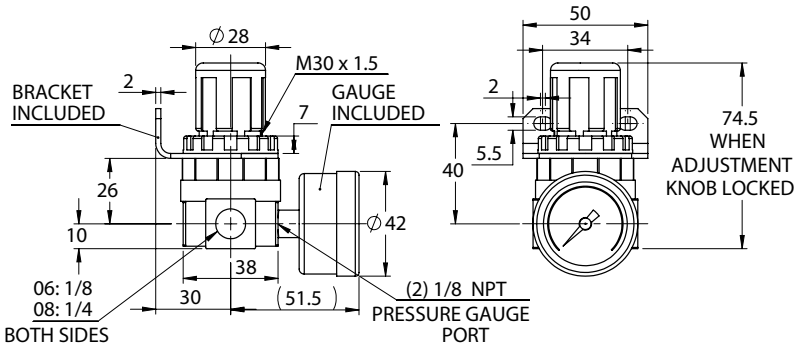
Flow Characteristics



Regulation Characteristics



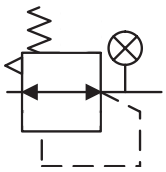
Dimensions



How to Order

MSR 200 - 08

Product Line	Model	Port Size	
MSR Series	200	06	1/8 NPT
		08	1/4 NPT



Product Features

Technical Data

MGF Series filters will be discontinued in 2021. Please contact your local salesperson for additional information.



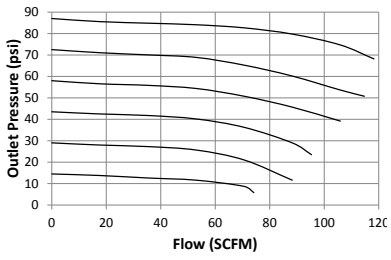
Engineering Specifications

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 65)			
Includes	Stamped Steel Bracket			

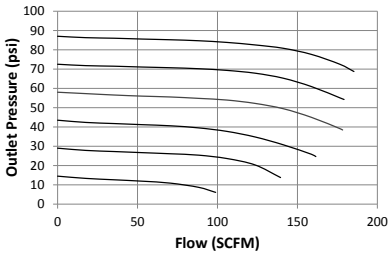
See page 71 for service parts.

Performance Data MGF

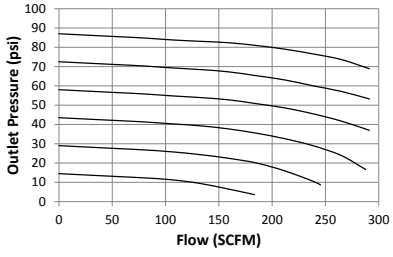
Flow Characteristics MGF200



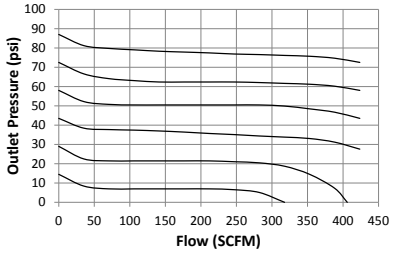
Flow Characteristics MGF300



Flow Characteristics MGF400

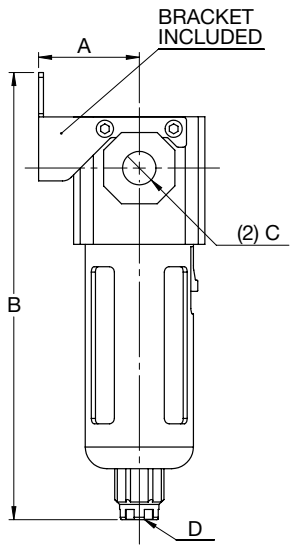


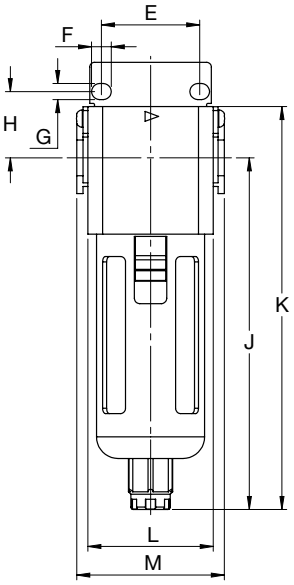
Flow Characteristics MGF600



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

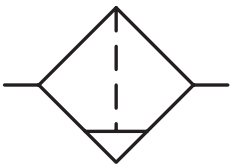
MGF 300 - 08 - S - W - D

Product Line	Model	Port Size		Drain		Filtering		Bowl Type	
MGF Series	200 Series	06	1/8 NPT (200 Series)	Blank	Auto Drain[1]	Blank	40µm	Blank	Polycarbonate Bowl with Metal Bowl Guard[2]
	300 Series	08	1/4 NPT (200, 300 Series)	M	Manual Drain	W	5µm	D	Metal Bowl[3]
	400 Series	10	3/8 NPT (300 Series)	S	Semi-Auto Drain				
	600 Series	15	1/2 NPT (400 Series)						
		20	3/4 NPT (600 Series)						
		25	1 NPT (600 Series)						

[1] Not available on 200 series

[2] 600 series is only available with -D metal bowl

[3] 600 series is only available with -D metal bowl



Technical Data

MGFB Series coalescing filters will be discontinued in 2021. Please contact your local salesperson for additional information.



Engineering Specifications

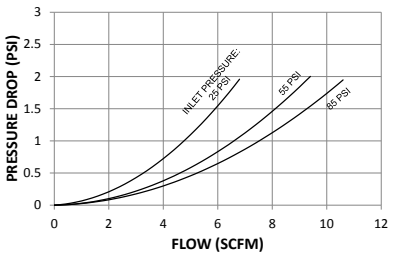
Model	MGFB200	MGFB300	MGFB400
Fluid	Air to be filtered to 5µ or better		
Pressure Range	Semi- Auto and Auto Drain: 25 to 130 PSI (0.17 to 0.9 MPa) Manual Drain: 7 to 130 PSI (0.05 to 0.9 MPa)		
Proof Pressure	215 PSI (1.5 MPa)		
Temperature Range	23 to 158 °F (-5 to 70 °C)		
Filtration Rating	0.01µ (95% 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 65)		
Includes	Stamped Steel Bracket		

[1] Maximum rated flow at 85 PSI inlet pressure for coalescing function.

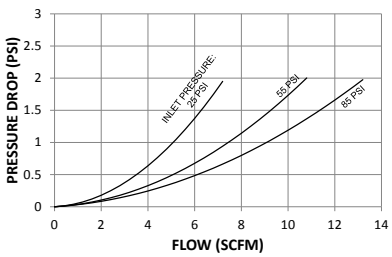
See page 71 for service parts.

Performance Data MGFB

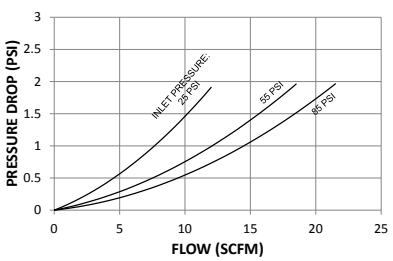
Flow Characteristics MGFB200



Flow Characteristics MGFB300

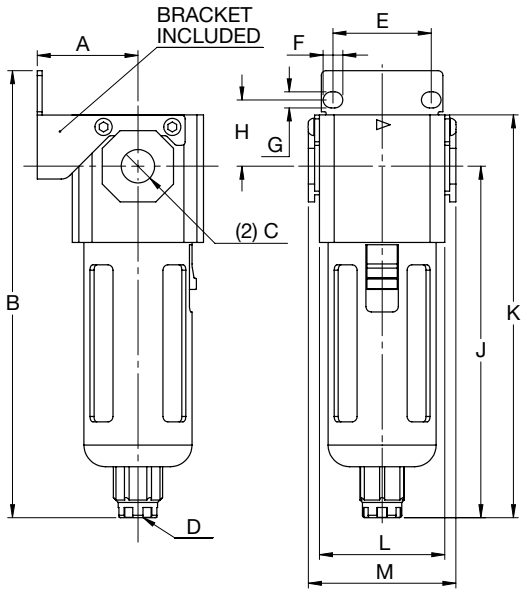


Flow Characteristics MGFB400



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

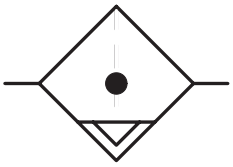
MGFB 300 - 08 - S - 1 - D

Product Line	Model	Port Size	Drain	Filtering	Bowl Type
MGFB Series	200 Series	06 — 1/8 NPT (200 Series)	Blank — Auto Drain[1]	1 — 0.01µ Coalescing	Blank — Polycarbonate Bowl with Metal Bowl Guard[2]
	300 Series	08 — 1/4 NPT (200, 300 Series)	M — Manual Drain		D — Metal Bowl[3]
	400 Series	10 — 3/8 NPT (300 Series)	S — Semi-Auto Drain		
	600 Series	15 — 1/2 NPT (400 Series)			

[1] Not available on 200 series

[2] 600 series only available with -D metal bowl

[3] 600 series is only available with -D metal bowl



Technical Data

MGL Series lubricators will be discontinued in 2021. Please contact your local salesperson for additional information.



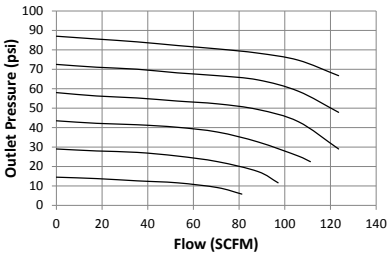
Engineering Specifications

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 65)			
Includes	Stamped Steel Bracket			

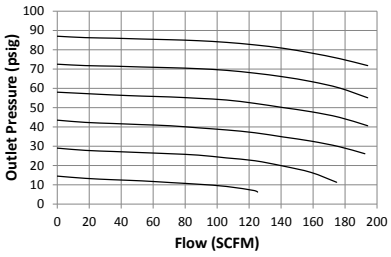
See page 71 for service parts.

Performance Data MGL

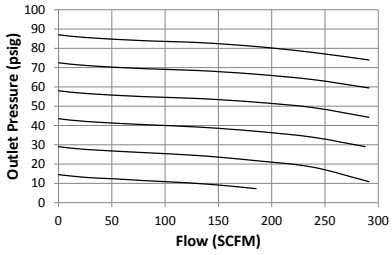
Flow Characteristics MGL200



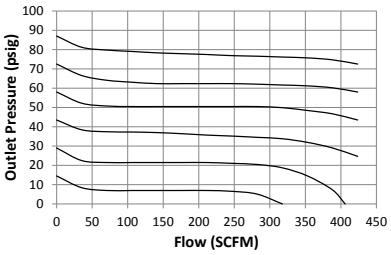
Flow Characteristics MGL300



Flow Characteristics MGL400

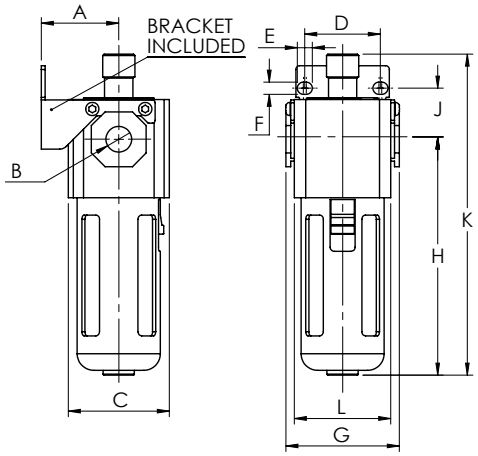


Flow Characteristics MGL600



Product Information

Dimensions (mm)

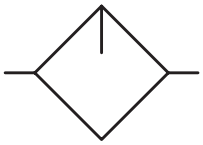


Model	A	B	C	D	E
MGL200-06	30	1/8 NPT	40	27	8.5
MGL200-08	30	1/4 NPT	40	27	8.5
MGL300-08	41	1/4 NPT	53.5	40	8
MGL300-10	41	3/8 NPT	53.5	40	8
MGL400-15	50	1/2 NPT	71	55	11
MGL600-20	70	3/4 NPT	89	66	13
MGL600-25	70	1 NPT	89	66	13

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



MGL 300 - 08 - D

Product Line
MGL Series

Model
200 Series
300 Series
400 Series
600 Series

Port Size	
06	1/8 NPT (200 Series)
08	1/4 NPT (200, 300 Series)
10	3/8 NPT (300 Series)
15	1/2 NPT (400 Series)
20	3/4 NPT (600 Series)
25	1 NPT (600 Series)

Bowl Type	
Blank	Polycarbonate Bowl with Metal Bowl Guard
D	Metal Bowl[2]

[2] 600 series only available with -D metal bowl

Technical Data

MGFR Series filter-regulators will be discontinued in 2021. Please contact your local salesperson for additional information.



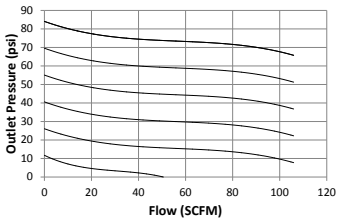
Engineering Specifications

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 65) or Panel Mount			
Includes	Stamped Steel Bracket / Panel Nut			

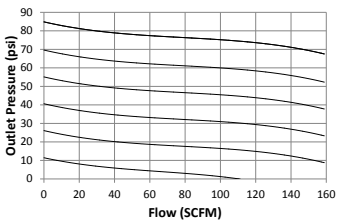
See page 71 for service parts.

Performance Data MGFR

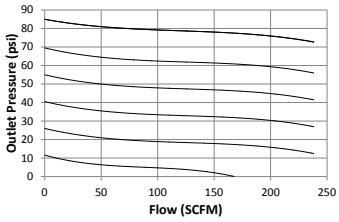
Flow Characteristics MGFR200



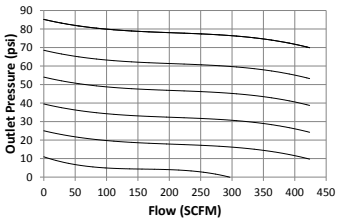
Flow Characteristics MGFR300



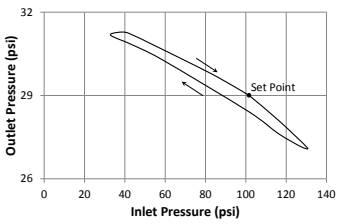
Flow Characteristics MGFR400



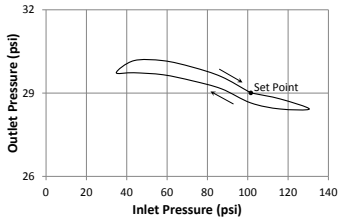
Flow Characteristics MGFR600



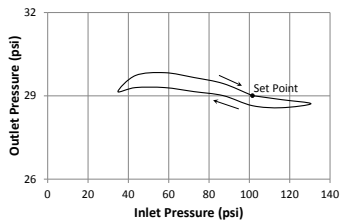
Regulation Characteristics MGFR200



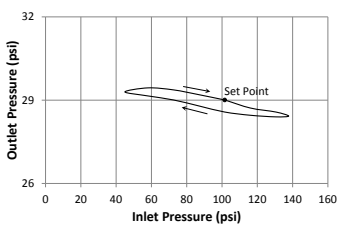
Regulation Characteristics MGFR300



Regulation Characteristics MGFR400

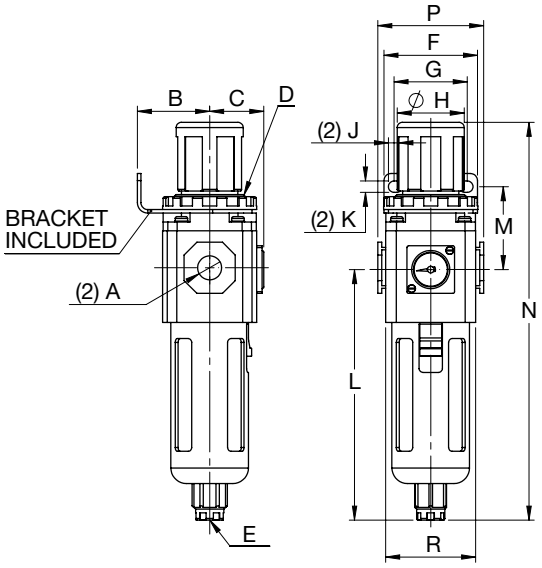


Regulation Characteristics MGFR600



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

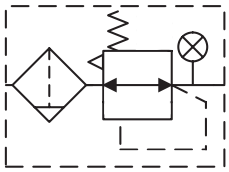
* Polycarbonate Bowl
** Metal Bowl

How to Order

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

Product Line	Model	Port Size		Drain		Pressure Range[2]		Filtering		Bowl Type		Gauge Type	
MGFR	200 Series	06	1/8 NPT (200 Series)	Blank	Auto Drain[1]	Blank	Standard	Blank	40µm	Blank	Polycarbonate Bowl with Metal Bowl Guard	Blank	Square/ Flush
	300 Series	08	1/4 NPT (200, 300 Series)	M	Manual Drain	L	Low[3]	W	5µm	D	Metal Bowl[4]	R	Round
	400 Series	10	3/8 NPT (300 Series)	S	Semi-Auto Drain								
	600 Series	15	1/2 NPT (400 Series)										
		20	3/4 NPT (600 Series)										
		25	1 NPT (600 Series)										

[1] Not available on 200 series
[2] See Engineering Specs for Pressure Range
[3] L option only available with 200, 300, and 400 series
[4] 600 series is only available with -D metal bowl



Product Features

Technical Data

MGFC Series filters-regulator-lubricator combination units will be discontinued in 2021. Please contact your local salesperson for additional information.



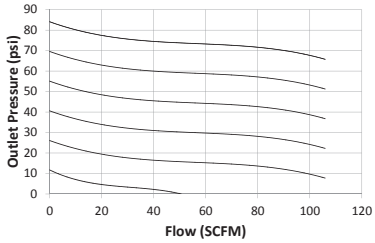
Engineering Specifications

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 65) included				
Recommended Lubricant	Non-Detergent SAE10, ISO VG32, or equivalent				
Drain	Semi-Auto Drain		Auto Drain		
Includes	T Style Modular Connecting Kit / Panel Nut				

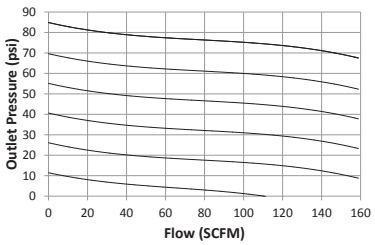
See page 71 for service parts.

Performance Data MGFC

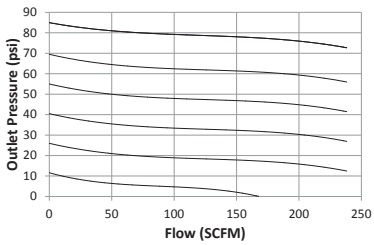
Flow Characteristics MGFC200



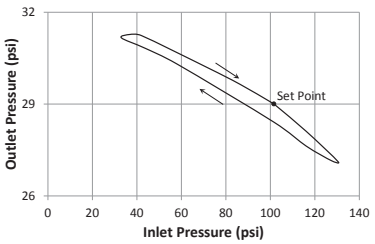
Flow Characteristics MGFC300



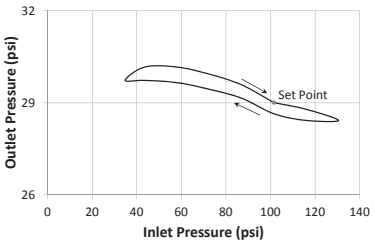
Flow Characteristics MGFC400



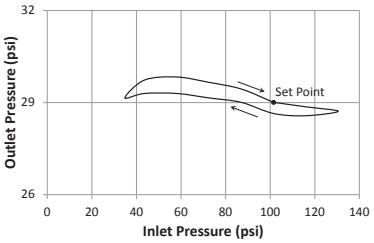
Regulation Characteristics MGFC200



Regulation Characteristics MGFC300

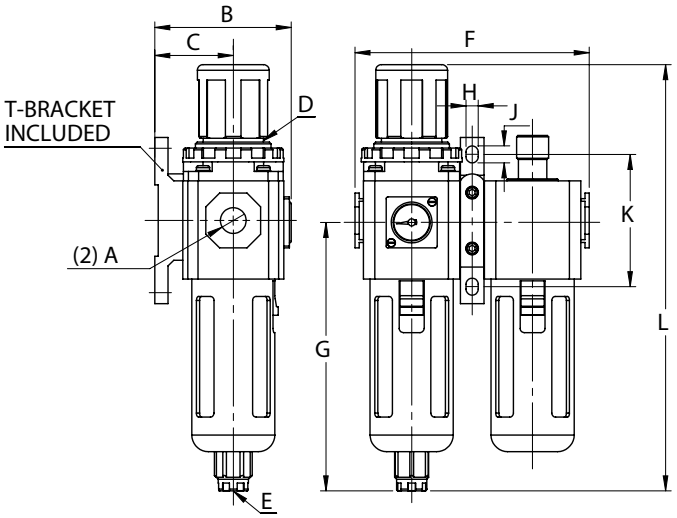


Regulation Characteristics MGFC400



Product Information

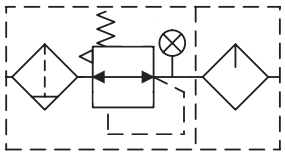
Dimensions (mm)



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



MGFC 200 - 08 - S - W

Product Line	Model	Port Size		Drain		Filtering	
MGFC Series	200 Series	06	1/8 NPT (200 Series)	Blank	Auto Drain[1]	Blank	40µm
	300 Series	08	1/4 NPT (200, 300 Series)	S	Semi-Auto Drain[2]	W	5µm
	400 Series	10	3/8 NPT (300 Series)				
		15	1/2 NPT (400 Series)				

[1] Not available on 200 series
[2] Not available on 300 & 400 series

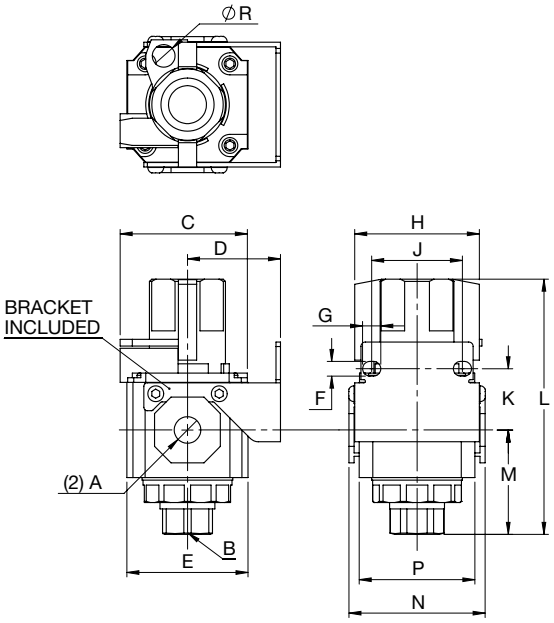
Technical Data

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



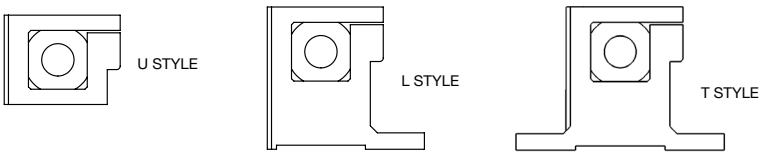
Dimensions (mm)



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



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

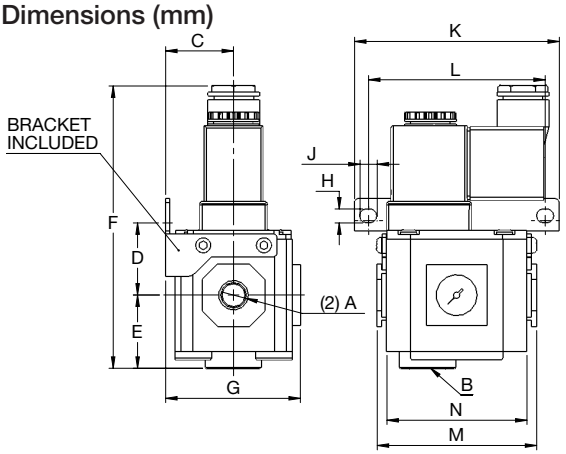
Engineering Specifications

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]	11mm DIN Connector, Industrial Form B				
Includes	Modular Connecting Kit / Stamped Steel Bracket				

[1] See page 24 for explosion proof specifications



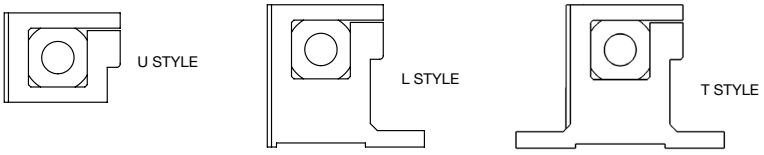
Dimensions (mm)



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

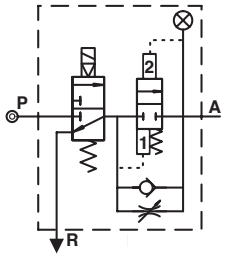
MGV 300 - 08 - T - 24VDC - X

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	24VAC 50/60 Hz	X Explosion Proof[3]
		15 1/2 NPT (400 Series)		120VAC 50/60 Hz	

[1] All Pressure Relief Valves also include stamped bracket

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

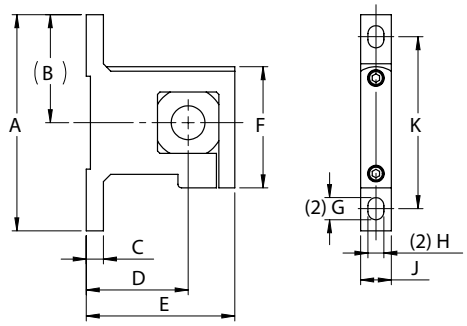
[3] See page 24 for specifications. Leads are 580mm long.



Product Information

Dimensions (mm)

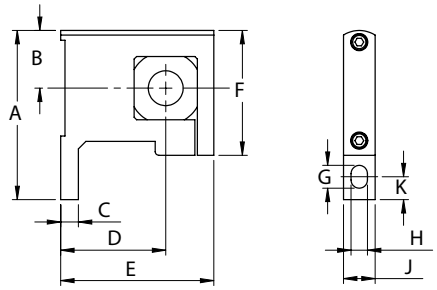
T Style





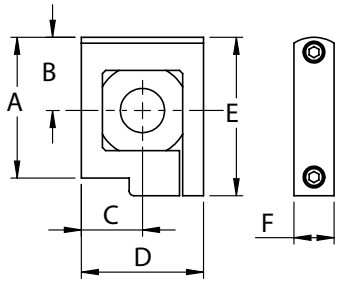
Model	A	B	C	D	E	F	G	H	J	K
MGA201-P1	66	33	5	30	45	38.3	8.5	5.5	11.5	50
MGA301-P1	88	44	7	41.5	60.4	49.3	9	6.5	13	70
MGA401-P1	104	52	7	50	76	58.5	12	8.6	15.5	80
MGA601-P1	128	64	10	70	104	79.5	16	11	19.8	100

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



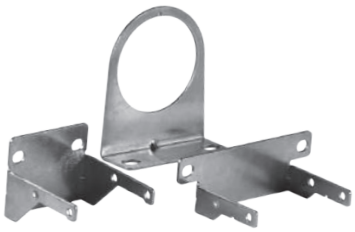
Model	A	B	C	D	E	F
MGA203-P1	35	18.3	15	30	38.3	11.5
MGA303-P1	43.8	22.9	19.5	38	49.3	13
MGA403-P1	52.5	27.5	26	52	58.5	15.5
MGA603-P1	76	38.5	34	68	79.3	19.8

How to Order

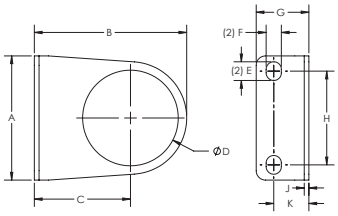
MGA 3 02 - P1

Product Line	Model		Type		Material	
MGA Series	2	200 Series	01	T Style (connecting and mounting)	P1	Aluminum
	3	300 Series	02	L Style (connecting and mounting)		
	4	400 Series	03	U Style (connecting only)		
	6	600 Series				

Product Information

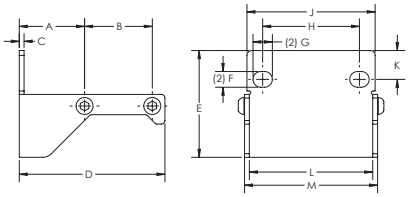


Brackets for MGFR, MGR Series



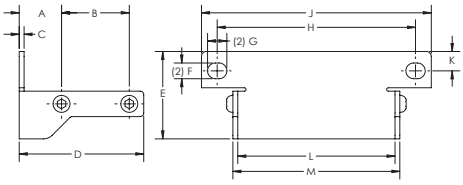
Model	A	B	C	D	E	F	G	H	J	K
MGB201-P2	55	49	30	30	15	5.2	24	34.5	2	17.5
MGB301-P2	53	65	41	40.8	8	6.5	22.5	40	2	15
MGB401-P2	72	83	56	55	11	8.5	27	55	2	18
MGB601-P2	90	110.5	70	68	13	11	35	66	2.5	24

Brackets for MGF, MGL Series



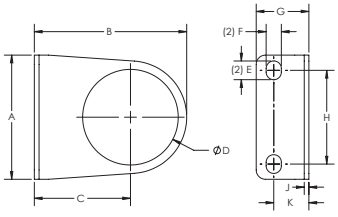
Model	A	B	C	D	E	F	G	H	J	K	L	M
MGB202-P2	20	20	2	45	33	5.4	8.4	27	40	6.4	38.2	42.3
MGB302-P2	27	28	2	60	44	6.5	8	40	55	11.7	51	55
MGB402-P2	30	42	2	75.5	47.3	8.5	11	55	72	9.5	68	72
MGB602-P2	42.4	53.2	2.5	104	51	11	13	66	90	10.7	84.5	90

Brackets for MGV Series



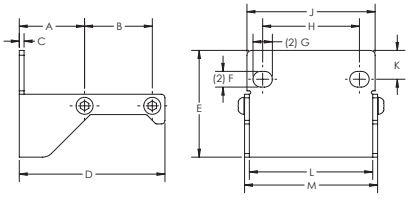
Model	A	B	C	D	E	F	G	H	J	K	L	M
MGB203-P2	14.8	20	2	39	27.7	5.3	8	67	80	6	50.2	54.2
MGB303-P2	19	25	2	50.2	32.5	6.5	8	82	95	8	65	69
MGB403-P2	21.5	36	2	65.3	40	8.5	11	102	120	8	78	82

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

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 Series		
			05	Bracket for MGZ Series		

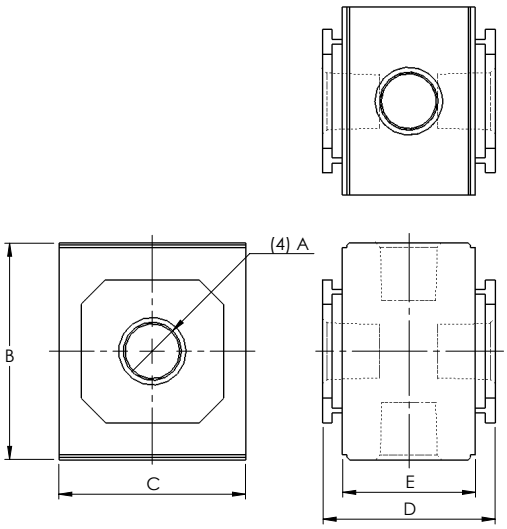
Technical Data

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

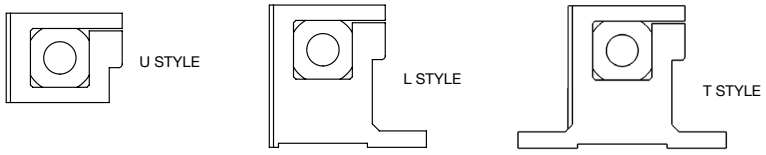


Dimensions (mm)



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

MGA 314 - 08 - T

Product Line
MGA Series

Model	
214	200 Series
314	300 Series
414	400 Series
614	600 Series

Port Size	
06	1/8 NPT (200 Series)
08	1/4 NPT (200, 300 Series)
10	3/8 NPT (300 Series)
15	1/2 NPT (400 Series)
20	3/4 NPT (600 Series)
25	1 NPT (600 Series)

Modular Connecting Kit[1]	
T	T Style
L	L Style
U	U Style

[1] All Pressure Relief Valves also include stamped bracket

Filter Elements

Filtering

Filtering	Material
40µm	White high density polyethylene
5µm	Blue high density polyethylene
0.01µm	Dual-Layer Borosilicate Glass



How to Order

MGF series filter elements can be configured using basic alphanumeric clusters. To create an MGF element part number, choose product line, model, and filtering. Sample MGF element part numbers and available options are featured below.

MGAF 300 - 004 - 1

Product Line	
MGAF	Standard Filter Element[1]
MGFB	Coalescing Filter Element[2]

[1] Only available with 40µm or 5µm filtering
[2] Only available with 0.01µm filtering

Model	
200	200 Series
300	300 Series
400	400 Series
600	600 Series[3]

[3] MGFB not available with 600 Series

Filtering	
1	40µm
2	5µm
3	0.01µm

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

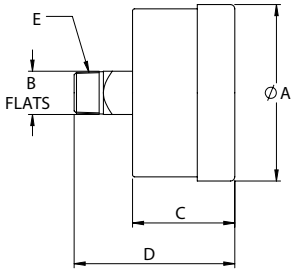
Technical Data

Engineering Specifications

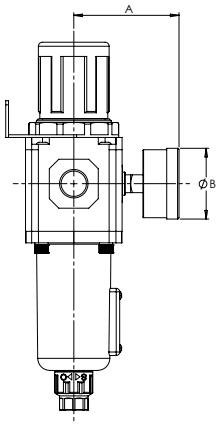
Model	Round Gauges
Fluid	Air (Clean/Dry)
Units	PSI and kgf/cm2
Pressure Range	Blank: 0 to 140 PSI (0 to 1.0 MPa) Low Pressure: 0 to 60 PSI (0 to 0.4 MPa)
Temperature Range	-4 °F to 140 °F (-20 °C to 60 °C)
Material	Shell: SPCC Steel Core: Brass



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

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]	
RGK	Gauge, Adapter, Hardware
RG	Gauge Only
RK	Adapter and Hardware

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

Gauge Size	
40	1/8 NPT, 40mm Round
50	1/4 NPT, 50mm Round

Pressure Range	
Blank	0-140 PSI
L	0-60 PSI[2]

[2] Only available on RGK-40 & RG-40

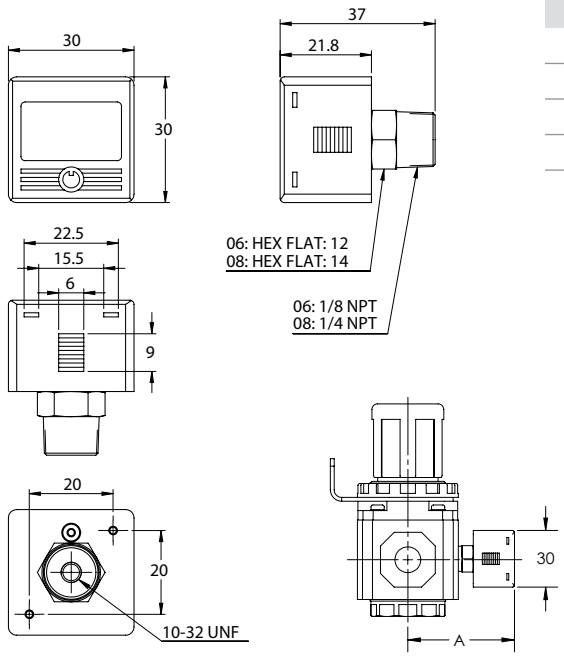
Technical Data

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/cm2, 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

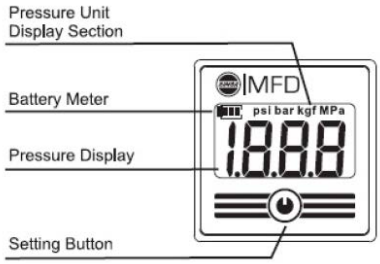
How to Order

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



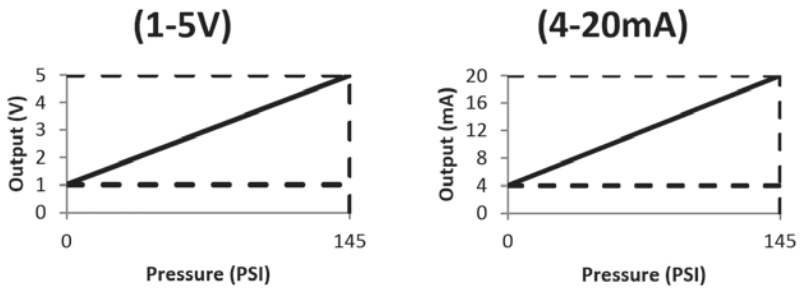
Technical Data

Engineering Specifications



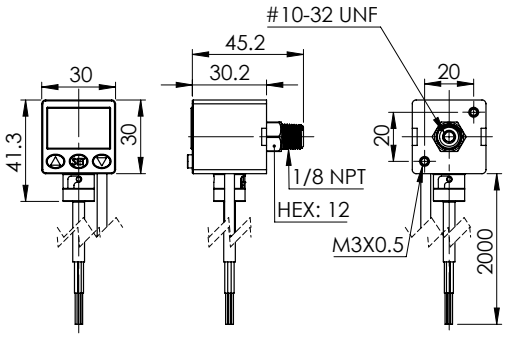
Model		DPSP-A	DPSP-B	DPSP-C	DPSP-D	DPSP-E	DPSP-F
Fluid		Air or Inert Gas (Clean/Dry)					
Rated Pressure Range		0 to 145 PSI (0 to 1.0 Mpa)					
Proof Pressure		217 PSI (1.5 Mpa)					
Pressure Setting Range		-14.5 to 145 PSI (-0.1 to 1.0 Mpa)					
Temperature Range		32 °F to 120 °F (0 °C to 50 °C)					
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/cm2, 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/s2 (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



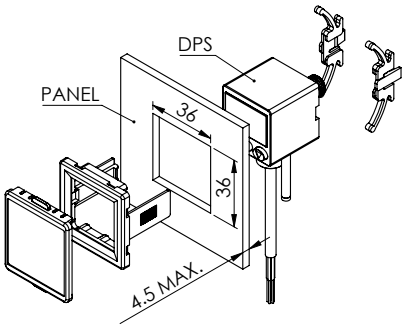
Product Information

Dimensions (mm)

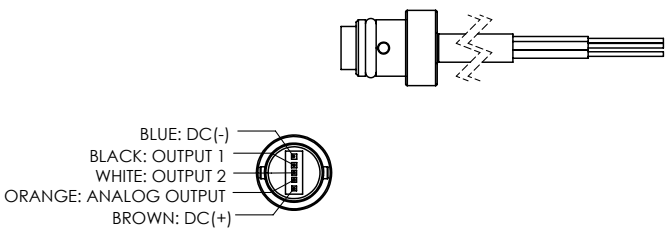


Accessories

Panel Adapter and Cover: DPS-PA



5m Data Cable: DPS-C5M



How to Order

DPS P - A - 06 - T

Product Line	Pressure Range	Output	Port	Thread
DPS Series	P (-14.5 to 145 PSI)	A 2 NPN digital, 1 (1-5V) analog B 2 NPN digital, 1 (4-20mA) analog C 2 NPN digital, copy function D 2 PNP digital, 1 (1-5V) analog E 2 PNP digital, 1 (4-20mA)	06 1/8"	T NPT

Notes

MGA Series Air Preparation Equipment

AIROS™ MGA Series air preparation equipment provides crucial support to all kinds of basic pneumatic circuits. MGA Series filters, regulators, and lubricators provide an economical way to improve operation in pneumatic valves and actuators in a modular package. The MGA Series brings accessible, affordable FRL options to the AIROS air preparation family.



Contents

83 MGAF Series General Purpose Filters
83 – Engineering Specifications
83 – Performance Data
84 – Dimensions
85 – How to Order

86 MGAFB Series Coalescing Filters
86 – Engineering Specifications
86 – Performance Data
87 – Dimensions
88 – How to Order

89 MGAL Lubricators
89 – Engineering Specifications
89 – Performance Data
90 – Dimensions
91 – How to Order

92 MGAR Series Regulators
92 – Engineering Specifications
92 – Performance Data
93 – Dimensions
94 – How to Order

95 MSR Series Mini Regulators
95 – Engineering Specifications
95 – Performance Data
95 – Dimensions
96 – How to Order

97 MGAFR Series Filter-Regulators
97 – Engineering Specifications
97 – Performance Data
98 – Dimensions
99 – How to Order

100 MGAFC Series Filter-Regulator-Lubricators
100 – Engineering Specifications
100 – Performance Data
101 – Dimensions
102 – How to Order

103 MGZ Series Pressure Relief Valves
103 – Engineering Specifications
103 – Dimensions
103 – Modular Connecting Kit
104 – How to Order

105 MGV Series Soft Start/Dump Valves
105 – Engineering Specifications
105 – Dimensions
105 – Modular Connection Kit
106 – How to Order

107 Modular Connecting Kits
107 – Dimensions
108 – How to Order

109 Mounting Brackets
109 – Dimensions
110 – How to Order

111 MGA Air Distribution Blocks
111 – Engineering Specifications
111 – Dimensions
111 – Modular Connecting Kit
112 – How to Order

113 Service Parts
113 – Filter Elements
113 – How to Order Filter Elements
114 – Replacement Filter, Filter/Regulator, and Lubricator Bowls

115 Pressure Gauges
115 – Engineering Specifications
115 – Dimensions

115 Round Gauges
115 – Order as a Kit
115 – How to Order

116 MGAR Series Gauge Adapters
116 – How to Order

116 Digital Pressure Gauges
116 – How to Order
116 – Display Description

117 Digital Pressure Switches
117 – Engineering Specifications
117 – Analog Output Characteristics
118 – Dimensions
118 – Accessories
119 – How to Order

MGAF Series Filters

Engineering Specifications

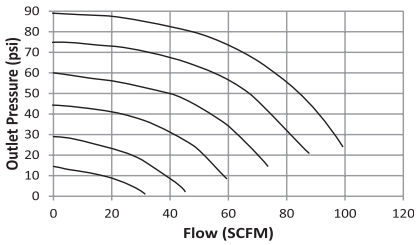


Model	MGAF200	MGAF300	MGAF400	MGAF600
Fluid	Air			
Pressure Range	20 - 145 psi (0.15 - 1.0 MPa)			
Proof Pressure	215 psi (1.5 MPa)			
Temperature Range	23 °F to 158 °F (-5 °C to 70 °C)			
Bowl Capacity	0.85 fl oz (25cc)	2.03 fl oz (60cc)	3.38 fl oz (100cc)	6.93 fl oz (205cc)
Bowl Material	Polycarbonate Bowl with Metal Bowl Guard or Metal Bowl with Polycarbonate Level Indicator or Nylon Bowl with Metal Bowl Guard			Metal Bowl with Polycarbonate Level Indicator
Material	Aluminum Alloy Body			
Mounting	Individual Stamped Steel Bracket or Modular Connecting Kit			
Includes	Stamped Steel Bracket			

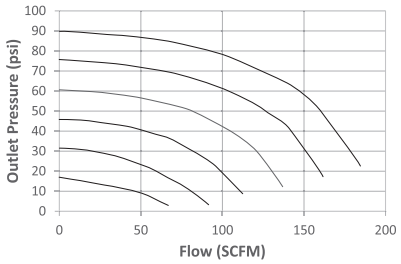
See page 113 for service parts.

Performance Data MGAF

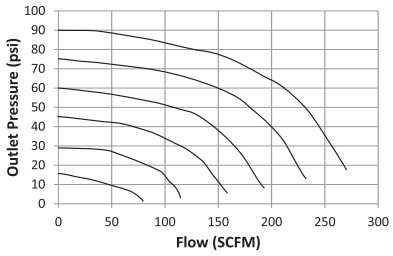
Flow Characteristics MGAF200



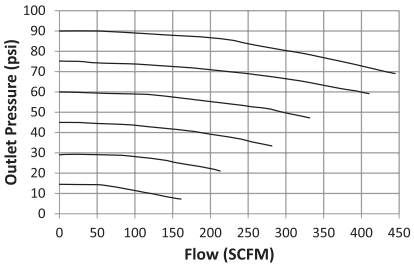
Flow Characteristics MGAF300



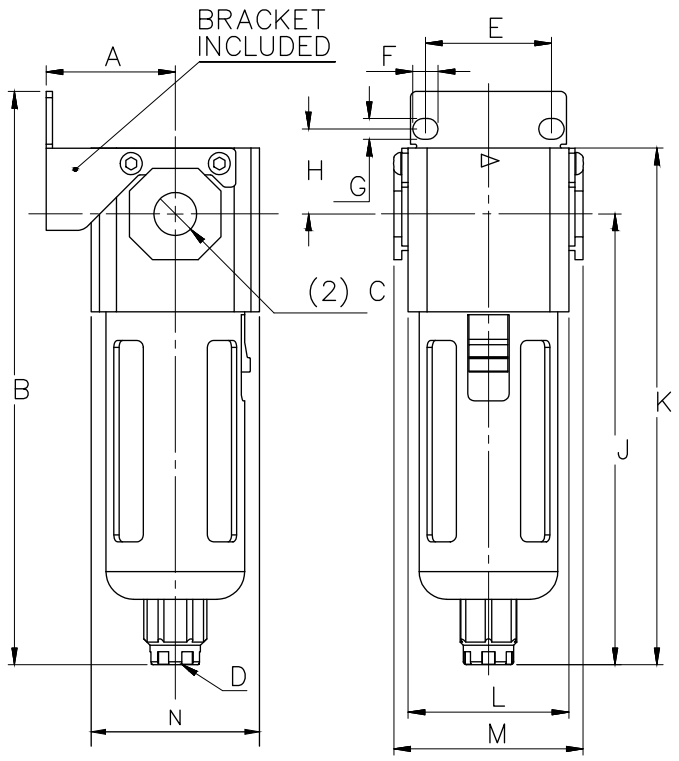
Flow Characteristics MGAF400



Flow Characteristics MGAF600



MGAF Series Dimensions (mm)



Model	A	B	C	D	E	F
MGAF200-06	33	150	1/8 NPT	M5X0.8	27	8.4
MGAF200-08	33	150	1/4 NPT	M5X0.8	27	8.4
MGAF300-08	41	197	1/4 NPT	G 1/4	40	8
MGAF300-10	41	197	3/8 NPT	G 1/4	40	8
MGAF400-15	50	220	1/2 NPT	G 1/4	55	11
MGAF600-20	70	266	3/4 NPT	G 1/4	66	13
MGAF600-25	70	266	1 NPT	G 1/4	66	13

Model	G	H	J	K	L	M	N
MGAF200-06	5.4	23	120	137	43	52.5	43
MGAF200-08	5.4	23	120	137	43	52.5	43
MGAF300-08	6.5	27	158	179	53.5	62.5	53
MGAF300-10	6.5	27	158	179	53.5	62.5	53
MGAF400-15	8.5	33.5	177.5	202.5	67.8	80	68
MGAF600-20	11	50	205	242	85.8	100	86
MGAF600-25	11	50	205	242	85.8	100	86

MGAF filter models can be configured using basic alphanumeric clusters. To create an MGAF series part number, choose model, port size, drain, filtering, and bowl type. Sample MGAF series part numbers and available options are featured below.

MGAF 300 - 08 - SM - W - D

Model	
200	200 Series
300	300 Series
400	400 Series
600	600 Series

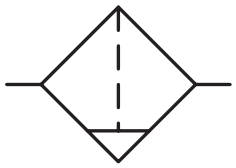
Port Size	
06	1/8 NPT (200 Series)
08	1/4 NPT (200, 300 Series)
10	3/8 NPT (300 Series)
15	1/2 NPT (400 Series)
20	3/4 NPT (600 Series)
25	1 NPT (600 Series)

Drain	
Blank	Auto Drain
SM	Semi-Auto/ Manual Drain

Filtering	
Blank	40µm
W	5µm

Bowl Type	
Blank	Polycarbonate Bowl with Metal Bowl Guard
D	Metal Bowl[1]
N	Nylon Bowl with Metal Bowl Guard

[1] 600 series is only available with -D metal bowl



MGAFB Series Coalescing Filters

Engineering Specifications

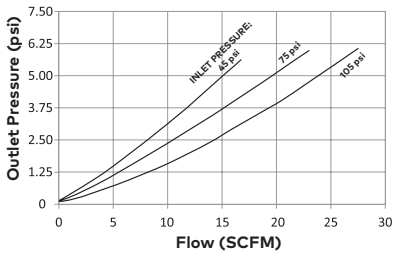


Model	MGAFB200	MGAFB300	MGAFB400
Fluid	Air to be filtered to 5µ or better		
Pressure Range	20 - 145 psi (0.15 - 1.0 MPa)		
Proof Pressure	215 psi (1.5 MPa)		
Temperature Range	23 to 158 °F (-5 to 70 °C)		
Filtration Rating	0.3µ (99.9% efficiency) 0.01µ (99.9% efficiency)		
Bowl Capacity	0.64 fl oz (19cc)	1.84 fl oz (54.5cc)	3.01 fl oz (89cc)
Bowl Material	Polycarbonate Bowl with Metal Bowl Guard or Metal Bowl with Polycarbonate Level Indicator or Nylon Bowl with Metal Bowl Guard		
Material	Aluminum Alloy Body		
Mounting	Individual Stamped Steel Bracket or Modular Connecting Kit		
Includes	Stamped Steel Bracket		

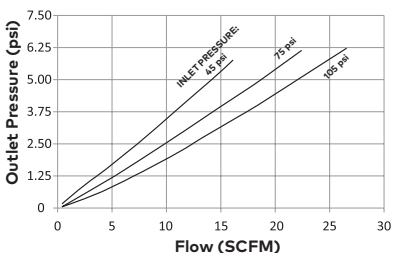
See page 113 for service parts.

Performance Data MGAFB

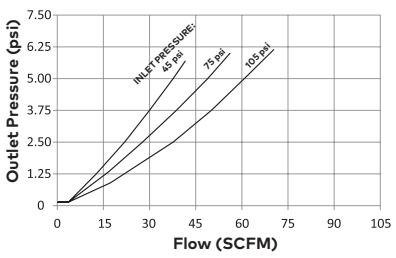
Flow Characteristics MGAFB200 (0.3µ)



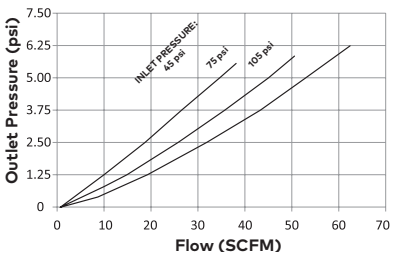
Flow Characteristics MGAFB200 (0.01µ)



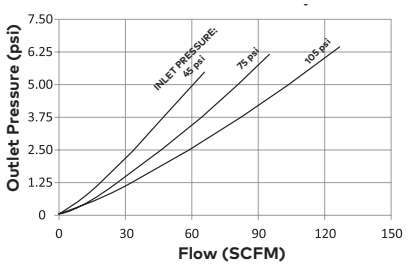
Flow Characteristics MGAFB300 (0.3µ)



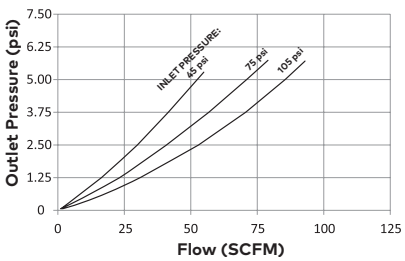
Flow Characteristics MGAFB300 (0.01µ)



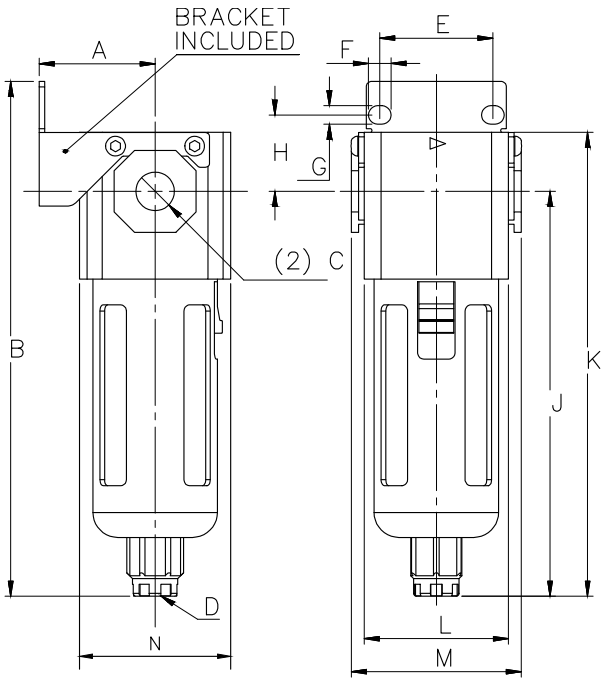
Flow Characteristics MGAFB400 (0.3µ)



Flow Characteristics MGAFB400 (0.01µ)



MGAFB Series Dimensions (mm)



Model	A	B	C	D	E	F
MGAFB200-06	33	150	1/8 NPT	M5X0.8	27	8.4
MGAFB200-08	33	150	1/4 NPT	M5X0.8	27	8.4
MGAFB300-08	41	197	1/4 NPT	G 1/4	40	8
MGAFB300-10	41	197	3/8 NPT	G 1/4	40	8
MGAFB400-15	50	220	1/2 NPT	G 1/4	55	11

Model	G	H	J	K	L	M	N
MGAFB200-06	5.4	23	120	137	38	52.5	43
MGAFB200-08	5.4	23	120	137	38	52.5	43
MGAFB300-08	6.5	27	158	179	50.8	62.5	53.6
MGAFB300-10	6.5	27	158	179	50.8	62.5	53.6
MGAFB400-15	8.5	33.5	177.5	202.5	67.5	80	67.8

How to Order

MGAFB coalescing filter models can be configured using basic alphanumeric clusters. To create an MGAFB series part number, choose model, port size, drain, filtering, and bowl type. Sample MGAFB series part numbers are available options are featured below.

MGAFB 300 - 08 - SM - 1 - D

Model	
200	200 Series
300	300 Series
400	400 Series

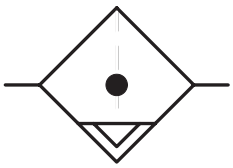
Port Size	
06	1/8 NPT (200 Series)
08	1/4 NPT (200, 300 Series)
10	3/8 NPT (300 Series)
15	1/2 NPT (400 Series)

Drain	
Blank	Auto Drain[1]
SM	Semi-Auto/ Manual Drain

[1] Not available on 200 series

Filtering	
1	0.01µ Coalescing
3	0.3µ Coalescing

Bowl Type	
Blank	Polycarbonate Bowl with Metal Bowl Guard
D	Metal Bowl
N	Nylon Bowl with Metal Bowl Guard



MGAL Series Lubricators

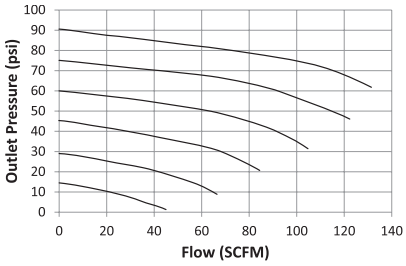
Engineering Specifications



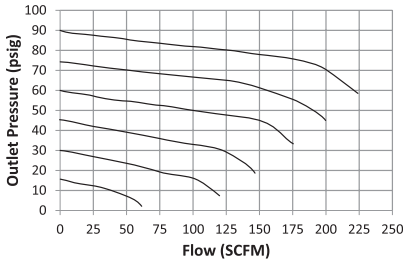
Model	MGAL200	MGAL300	MGAL400	MGAL600
Fluid	Air (Clean/Dry)			
Type	Fine Oil Mist			
Pressure Range	7 to 145 psi (0.05 to 1.0 MPa)			
Proof Pressure	215 psi (1.5 MPa)			
Temperature Range	23 °F to 158 °F (-5 °C to 70 °C)			
Bowl Capacity	1.22 fl oz (36cc)	3.31 (98cc)	6.26 fl oz (185cc)	13.86 fl oz (410cc)
Bowl Material	Polycarbonate Bowl with Metal Bowl Guard or Metal Bowl with Polycarbonate Level Indicator or Nylon Bowl with Metal Bowl Guard			Metal Bowl with Polycarbonate Level Indicator
Material	Aluminum Alloy Body			
Recommended Lubricant	ISO VG32 or equivalent			
Mounting	Individual Stamped Steel Bracket or Modular Connecting Kit			
Includes	Stamped Steel Bracket			

Performance Data MGAL

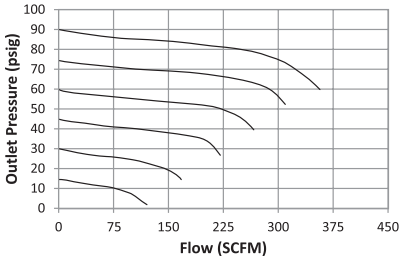
Flow Characteristics MGAL200



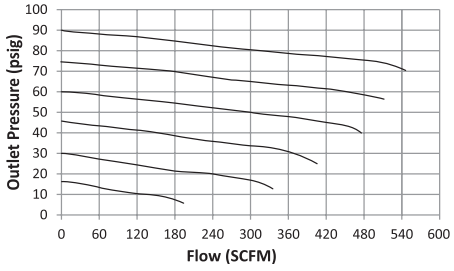
Flow Characteristics MGAL300



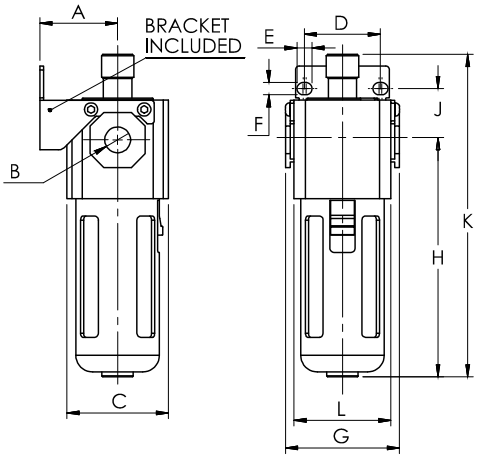
Flow Characteristics MGAL400



Flow Characteristics MGAL600



MGAL Series Dimensions (mm)



Model	A	B	C	D	E
MGAL200-06	33	1/8 NPT	43	27	8.5
MGAL200-08	33	1/4 NPT	43	27	8.5
MGAL300-08	41	1/4 NPT	53	40	8
MGAL300-10	41	3/8 NPT	53	40	8
MGAL400-15	50	1/2 NPT	68	55	11
MGAL600-20	70	3/4 NPT	86	66	13
MGAL600-25	70	1 NPT	86	66	13

Model	F	G	H	J	K	L
MGAL200-06	5.4	52.5	107	23	146.5	43
MGAL200-08	5.4	52.5	107	23	146.5	43
MGAL300-08	6.5	62.5	136	27	181	53.5
MGAL300-10	6.5	62.5	136	27	181	53.5
MGAL400-15	8.5	80	155	33.5	204.5	67.9
MGAL600-20	11	100	182.5	50	246	85.8
MGAL600-25	11	100	182.5	50	246	85.8

MGAL lubricator models can be configured using basic alphanumeric clusters. To create an MGAL series part number, choose model, port size, and bowl type. Sample MGAL series part numbers and available options are featured below.

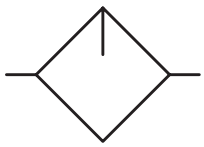
MGAL 300 - 08 - D

Model	
200	200 Series
300	300 Series
400	400 Series
600	600 Series

Port Size	
06	1/8 NPT (200 Series)
08	1/4 NPT (200, 300 Series)
10	3/8 NPT (300 Series)
15	1/2 NPT (400 Series)
20	3/4 NPT (600 Series)
25	1 NPT (600 Series)

Bowl Type	
Blank	Polycarbonate Bowl with Metal Bowl Guard
D	Metal Bowl[1]
N	Nylon Bowl with Metal Bowl Guard

[1] 600 series only available with -D metal bowl



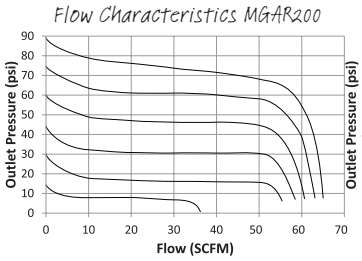
MGAR Series Regulators

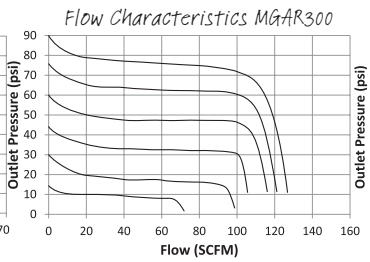
Engineering Specifications

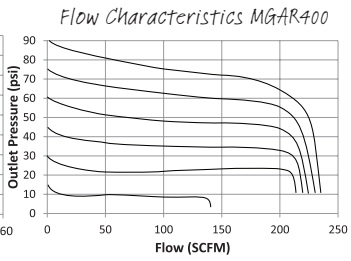
Model	MGAR
Fluid	Air (Clean/Dry)
Type	Relieving Regulator with Push to Lock Adjustment Knob
Pressure Range	Blank - 7 to 130 psi (0.05 to 0.9 MPa) L - 7 to 60 psi (0.05 to 0.4 MPa)
Proof Pressure	215 psi (1.5 MPa)
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C)
Material	Aluminum Alloy Body
Pressure Gauge	Large round flush mounted gauge
Mounting	Individual Stamped Steel Bracket or Modular Connecting Kit or Panel Mount
Includes	Stamped Steel Bracket / Panel Nut

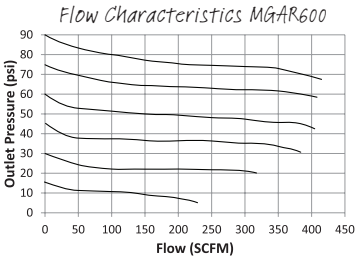


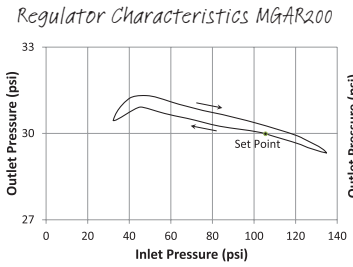
Performance Data MGAR

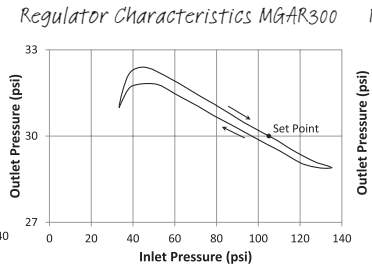


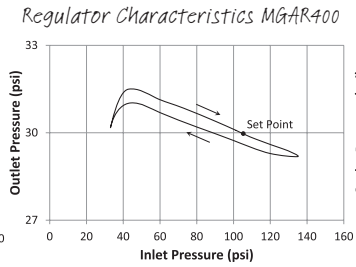


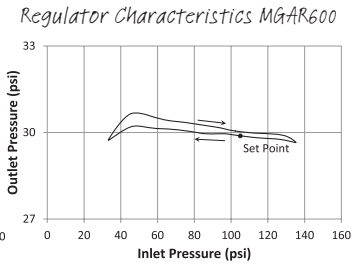




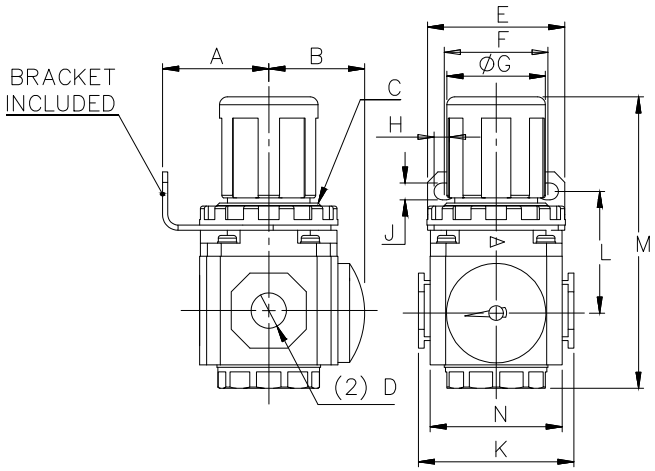




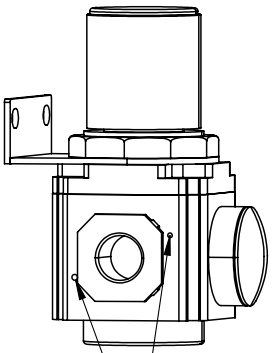




MGAR Series Dimensions (mm)



Model	A	B	C	D	E	F	G	H	J	K	L	M	N
MGAR_200-06	30	39	M33 x 1.5	1/8 NPT	55	34	31	15.4	5.4	52.5	45	91	43
MGAR_200-08	30	39	M33 x 1.5	1/4 NPT	55	34	31	15.4	5.4	52.5	45	91	43
MGAR_300-08	41	41.5	M40 x 1.5	1/4 NPT	53	40	38	8	6.5	62.5	46	112	53.4
MGAR_300-10	41	41.5	M40 x 1.5	3/8 NPT	53	40	38	8	6.5	62.5	46	112	53.4
MGAR_400-15	50	49	M55 x 2.0	1/2 NPT	72	55	52	11	8.5	80	53	140.5	67.8
MGAR600-20	70	58	M62 x 1.5	3/4 NPT	90	66	59	13	11	100	73.5	179.5	85.8
MGAR600-25	70	58	M62 x 1.5	1 NPT	90	66	59	13	11	100	73.5	179.5	85.8



FOR GAUGE OR BLANKING PLATE INSTALL:
LOOSEN SET SCREW, ROTATE PLATE 1/4 TURN CCW, THEN REMOVE. TO INSTALL, ROTATE CW 1/4 TURN, THEN SNUG SET SCREW (DO NOT OVERTIGHTEN)

How to Order

MGAR regulator models can be configured using basic alphanumeric clusters. To create an MGAR series part number, choose series, model, port size, pressure range, and gauge type. Sample MGAR series part numbers and available options are featured below.

MGAR K 300 - 08 - L

Series	
Blank	Standard Relieving Regulator
K	Relieving Regulator with Reverse Flow[1]

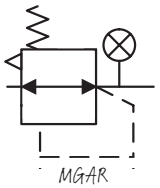
[1] K option only available with 200, 300 & 400 series

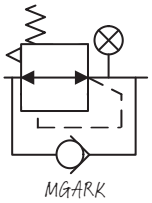
Model	
200	200 Series
300	300 Series
400	400 Series
600	600 Series

Port Size	
06	1/8 NPT (200 Series)
08	1/4 NPT (200, 300 Series)
10	3/8 NPT (300 Series)
15	1/2 NPT (400 Series)
20	3/4 NPT (600 Series)
25	1 NPT (600 Series)

Pressure Range	
Blank	7 to 130 psi
L	7-60 psi[2]

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





MSR Series Mini Regulators

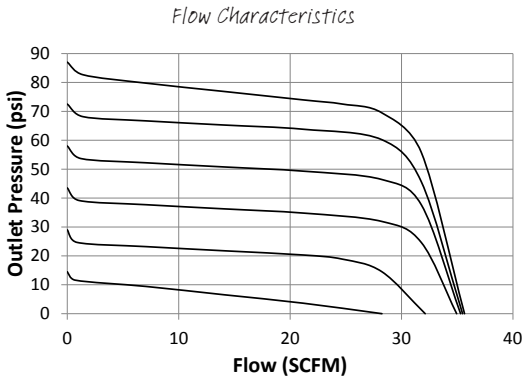
Engineering Specifications

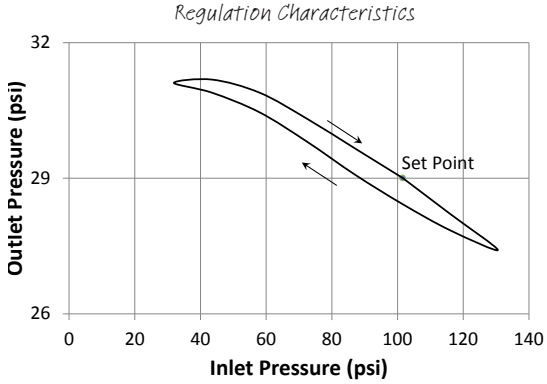
Model	MSR200-06	MSR200-08
Fluid	Air (Clean/Dry)	
Port Size	1/8 NPT	1/4 NPT
Type	Relieving Regulator with Push to Lock Adjustment Knob	
Pressure Range	7 to 130 psi (0.05 to 0.9 MPa)	
Proof Pressure	215 psi (1.5 MPa)	
Temperature Range	-4 °F to 158 °F (-20 °C to 70 °C)	
Material	Aluminum Alloy Body	
Mounting	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

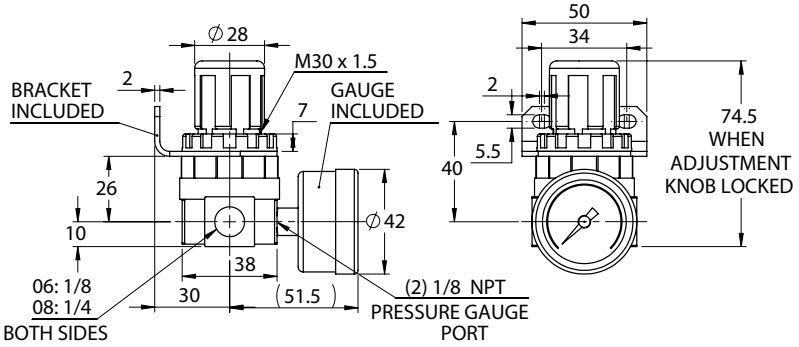


Performance Data MSR200





Dimensions



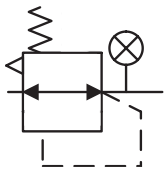
How to Order

MSR regulator models can be configured using basic alphanumeric clusters. To create an MSR series part number, choose model and port size. Sample MSR series part numbers and available options are featured below.

MSR 200-08

Model	
200	200 Series

Port Size	
06	1/8 NPT
08	1/4 NPT



MGAFR Series Filter-Regulators

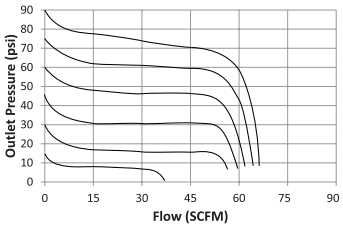
Engineering Specifications

Model	MGAFR200	MGAFR300	MGAFR400	MGAFR600
Fluid	Air			
Type	Relieving Regulator with Push to Lock Adjustment Knob			
Pressure Range	Standard Pressure: 20 to 130 psi (0.15 to 0.9 MPa) Low Pressure: 20 to 60 psi (0.15 to 0.4 MPa)			
Proof Pressure	215 psi (1.5 MPa)			
Temperature Range	23 °F to 158 °F (-5 °C to 70 °C)			
Bowl Capacity	0.85 fl oz (25cc)	2.03 fl oz (60cc)	3.38 fl oz (100cc)	6.93 fl oz (205cc)
Bowl Material	Polycarbonate Bowl with Metal Bowl Guard or Metal Bowl with Polycarbonate Level Indicator or Nylon Bowl with Metal Bowl Guard			Metal Bowl with Polycarbonate Level Indicator
Material	Aluminum Alloy Body			
Mounting	Individual Stamped Steel Bracket or Modular Connecting Kit or Panel Mount			
Includes	Stamped Steel Bracket / Panel Nut			

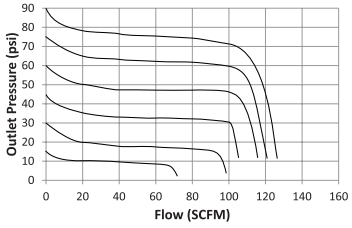


Performance Data MGAFR

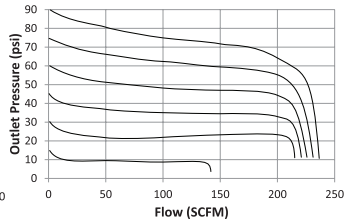
Flow Characteristics MGAFR200



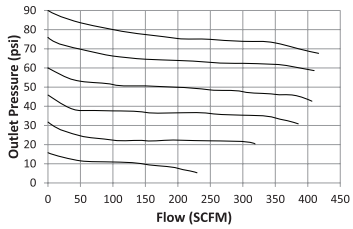
Flow Characteristics MGAFR300



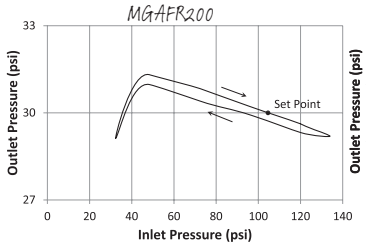
Flow Characteristics MGAFR400



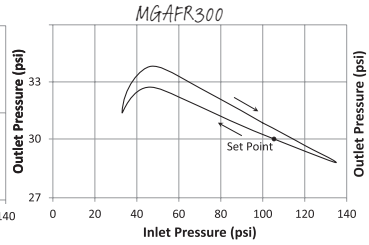
Flow Characteristics MGAFR600



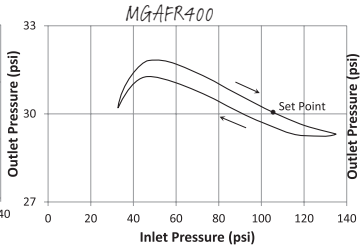
Regulation Characteristics MGAFR200



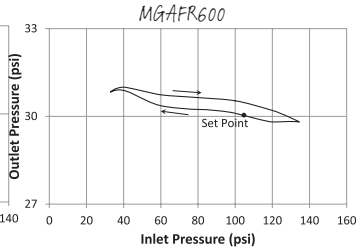
Regulation Characteristics MGAFR300



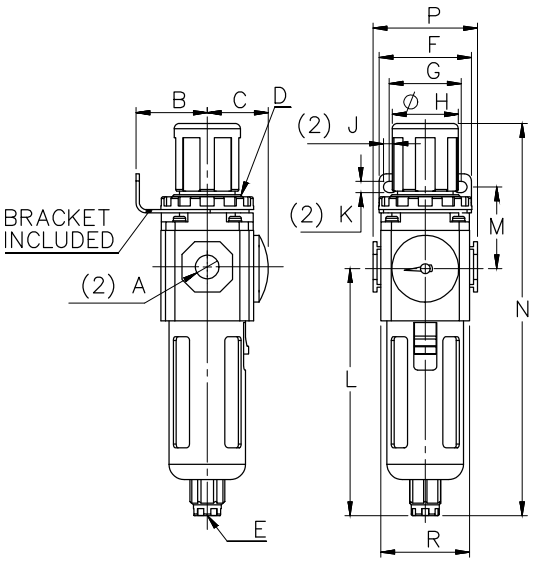
Regulation Characteristics MGAFR400



Regulation Characteristics MGAFR600

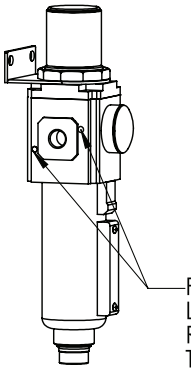


MGAFR Series Dimensions (mm)



Model	A	B	C	D	E	F	G
MGAFR200-06	1/8 NPT	30	39	M33X1.5	M5X0.8	55	34
MGAFR200-08	1/4 NPT	30	39	M33X1.5	M5X0.8	55	34
MGAFR300-08	1/4 NPT	41	41.5	M40X1.5	G 1/4	53	40
MGAFR300-10	3/8 NPT	41	41.5	M40X1.5	G 1/4	53	40
MGAFR400-15	1/2 NPT	50	49	M55X2.0	G 1/4	72	55
MGAFR600-20	3/4 NPT	70	58	M62X1.5	G 1/4	90	66
MGAFR600-25	1 NPT	70	58	M62X1.5	G 1/4	90	66

Model	H	J	K	L	M	N	P	R
MGAFR200-06	31	15.4	5.4	120	52	192.5	52.5	43
MGAFR200-08	31	15.4	5.4	120	52	192.5	52.5	43
MGAFR300-08	38	8	6.5	158	52.5	247	62.5	53.4
MGAFR300-10	38	8	6.5	158	52.5	247	62.5	53.4
MGAFR400-15	52	11	8.5	177.5	57	285.5	80	67.8
MGAFR600-20	59	13	11	205	76	336.5	100	85.8
MGAFR600-25	59	13	11	205	76	336.5	100	85.8



FOR GAUGE OR BLANKING PLATE INSTALL:
LOOSEN SET SCREW, ROTATE PLATE 1/4 TURN CCW, THEN
REMOVE. TO INSTALL, ROTATE CW 1/4 TURN,
THEN SNUG SET SCREW (DO NOT OVERTIGHTEN)

MGAFR filter/regulator models can be configured using basic alphanumeric clusters. To create an MGAFR series part number, choose model, port size, drain, pressure range, filtering, bowl type, and gauge type. Sample MGAFR series part numbers and available options are featured below.

MGAFR 300 - 08 - SM - L - W - D

Model	
200	200 Series
300	300 Series
400	400 Series
600	600 Series

Port Size	
06	1/8 NPT (200 Series)
08	1/4 NPT (200, 300 Series)
10	3/8 NPT (300 Series)
15	1/2 NPT (400 Series)
20	3/4 NPT (600 Series)
25	1 NPT (600 Series)

Drain	
Blank	Auto Drain
SM	Semi-Auto/ Manual Drain

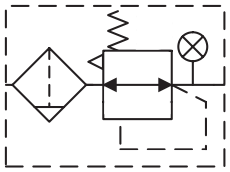
Pressure Range[1]	
Blank	Standard
L	Low[2]

[1] See Engineering Specifications for Pressure Range
[2] L option only available with 200, 300 and 400 series

Filtering	
Blank	40µm
W	5µm

Bowl Type	
Blank	Polycarbonate Bowl with Metal Bowl Guard
D	Metal Bowl[3]
N	Nylon Bowl with Metal Bowl Guard

[3] 600 series is only available with -D metal bowl



MGAFC Series Filter-Regulator-Lubricators

Engineering Specifications

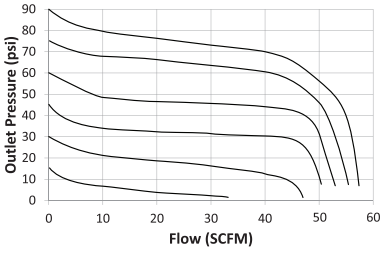


Model	MGAFC200-06-S	MGAFC200-08-S	MGAFC300-08	MGAFC300-10	MGAFC400-15
Fluid	Air				
Port Size	1/8 NPT	1/4 NPT	1/4 NPT	3/8 NPT	1/2 NPT
Type	Relieving Regulator with Push to Lock Adjustment Knob and Fine Oil Mist Lubricator				
Pressure Range	20 to 130 psi (0.15 to 0.9 MPa)				
Proof Pressure	215 psi (1.5 MPa)				
Temperature Range	23 °F to 158 °F (-5 °C to 70 °C)				
Drain Bowl Capacity	0.84 fl oz (25cc)		2.03 fl oz (60cc)		3.38 fl oz (100cc)
Oil Bowl Capacity	1.22 fl oz (36cc)		3.31 fl oz (98cc)		6.26 fl oz (185cc)
Bowl Material	Polycarbonate Bowl with Metal Bowl Guard				
Material	Aluminum Alloy Body				
Mounting	Modular Connecting Kit included				
Recommended Lubricant	ISO VG32 or equivalent				
Drain	Semi-Auto Drain		Auto Drain		
Includes	T Style Modular Connecting Kit / Panel Nut				

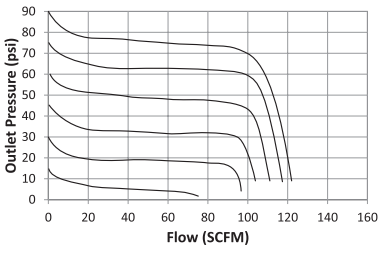
See page 113 for service parts.

Performance Data MGAFC

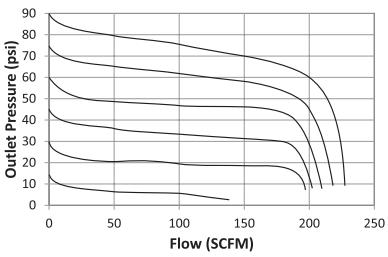
Flow Characteristics MGAFC200



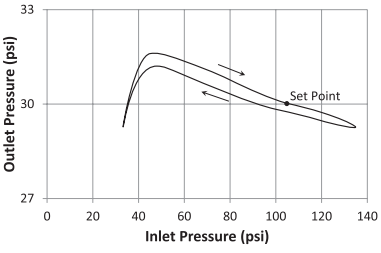
Flow Characteristics MGAFC300



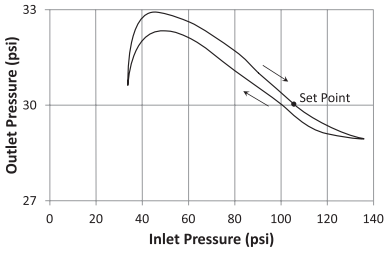
Flow Characteristics MGAFC400



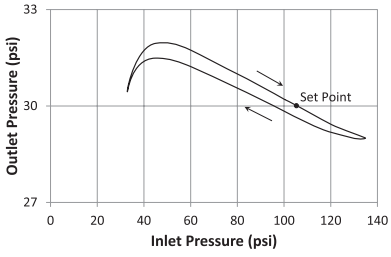
Regulation Characteristics MGAFC200



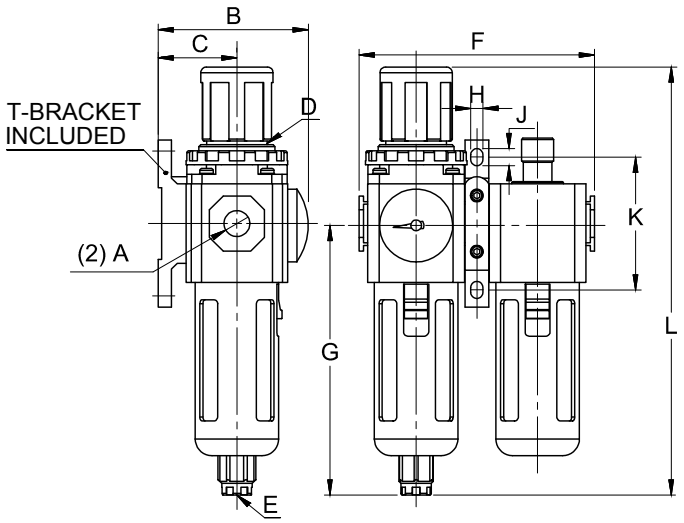
Regulation Characteristics MGAFC300



Regulation Characteristics MGAFC400

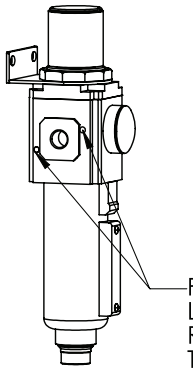


Dimensions (mm)



Model	A	B	C	D	E
MGAFC200-06-S	1/8 NPT	69	30	M33X1.5	M5X0.8
MGAFC200-08-S	1/4 NPT	69	30	M33X1.5	M5X0.8
MGAFC300-08	1/4 NPT	83	41.5	M40X1.5	G 1/4
MGAFC300-10	3/8 NPT	83	41.5	M40X1.5	G 1/4
MGAFC400-15	1/2 NPT	99	50	M55X2.0	G 1/4

Model	F	G	H	J	K	L
MGAFC200-06-S	107.5	120	5.5	8.5	50	192.5
MGAFC200-08-S	107.5	120	5.5	8.5	50	192.5
MGAFC300-08	128.5	158	6.5	9	70	247
MGAFC300-10	128.5	158	6.5	9	70	247
MGAFC400-15	164	177.5	8.5	12	80	285.5



FOR GAUGE OR BLANKING PLATE INSTALL:
LOOSEN SET SCREW, ROTATE PLATE 1/4 TURN CCW, THEN REMOVE. TO INSTALL, ROTATE CW 1/4 TURN, THEN SNUG SET SCREW (DO NOT OVERTIGHTEN)

How to Order

MGAFC filter/regulator-lubricator models can be configured using basic alphanumeric clusters. To create an MGAFC series part number, choose model, port size, drain, and filtering. Sample MGAFC series part numbers and available options are featured below.

MGAFC 200 - 08 - SM - W

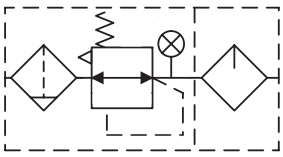
Model	
200	200 Series
300	300 Series
400	400 Series

Port Size	
06	1/8 NPT (200 Series)
08	1/4 NPT (200, 300 Series)
10	3/8 NPT (300 Series)
15	1/2 NPT (400 Series)

Drain	
Blank	Auto Drain[1]
SM	Semi-Auto/ Manual Drain[2]

[1] Not available on 200 series
[2] Not available on 300 & 400 series

Filtering	
Blank	40µm
W	5µm



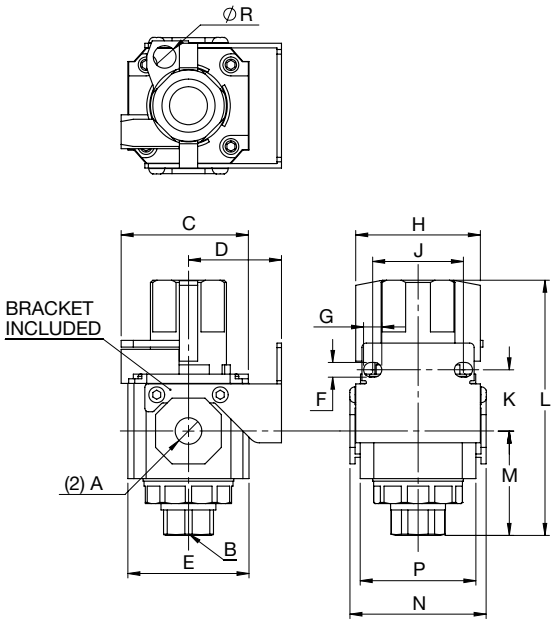
MGZ Series Relief Valves

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



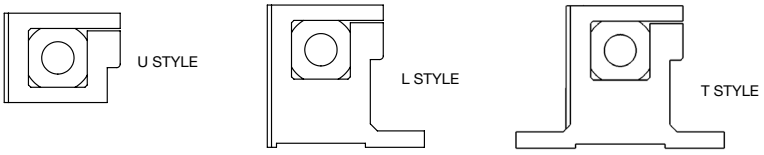
Dimensions (mm)



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

MGZ series relief valve models can be configured using basic alphanumeric clusters. To create an MGZ series part number, choose model, port size, drain, and filtering. Sample MGZ series part numbers and available options are featured below.

MGZ 300 - 08 - T

Model	
200	200 Series
300	300 Series
400	400 Series

Port Size	
06	1/8 NPT (200 Series)
08	1/4 NPT (200, 300 Series)
10	3/8 NPT (300 Series)
15	1/2 NPT (400 Series)

Modular Connecting Kit[1]	
T	T Style
L	L Style
U	U Style

[1] All Pressure Relief Valves also include stamped bracket



MGV Series Soft Start Valves

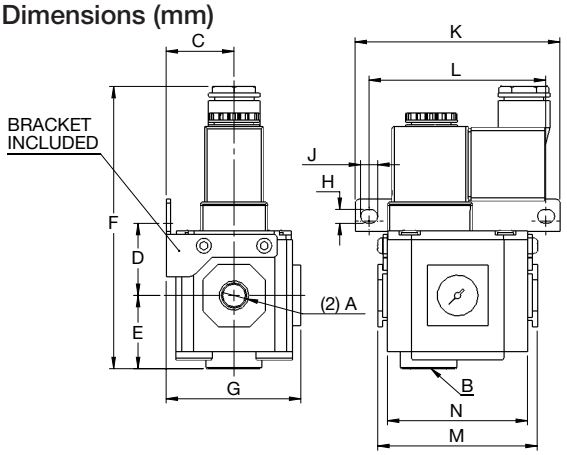
Engineering Specifications

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]	11mm DIN Connector, Industrial Form B				
Includes	Modular Connecting Kit / Stamped Steel Bracket				

[1] See Valves catalog for explosion proof specifications



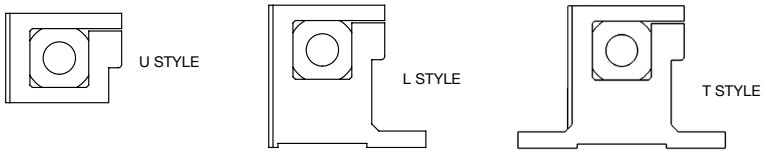
Dimensions (mm)



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

MGV series soft start valve models can be configured using basic alphanumeric clusters. To create an MGV series part number, choose model, port size, drain, and filtering. Sample MGV series part numbers and available options are featured below.

MGV 300 - 08 - T - 24VDC - X

Model	
200	200 Series
300	300 Series
400	400 Series

Port Size	
06	1/8 NPT (200 Series)
08	1/4 NPT (200, 300 Series)
10	3/8 NPT (300 Series)
15	1/2 NPT (400 Series)

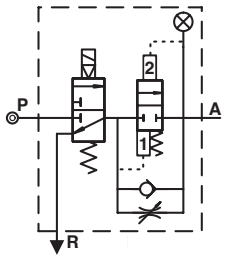
Modular Connecting Kit[1]	
T	T Style
L	L Style
U	U Style

[1] All Soft Start Valves also include stamped bracket

Voltage	
12VDC	12VDC
24VDC	24VDC
24VAC	24VAC 50/60 Hz
120VAC	120VAC 50/60 Hz

Electrical Connection	
Blank	DIN Connector
FL	Flying Leads[2]
X	Explosion Proof[3]

[2] Not available with 24VAC. Flying Leads are 300mm long.
[3] See Valves catalog for specifications. Leads are 580mm long.

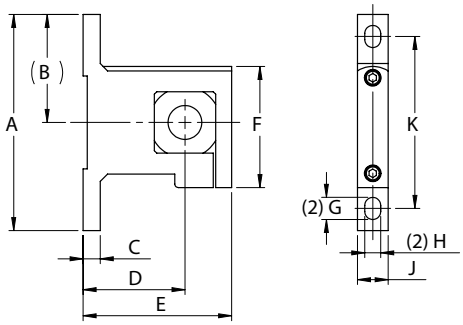


Modular Connecting Kits

Dimensions (mm)

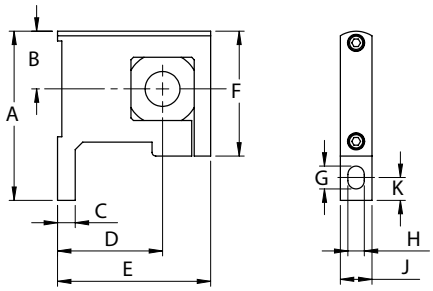


T Style



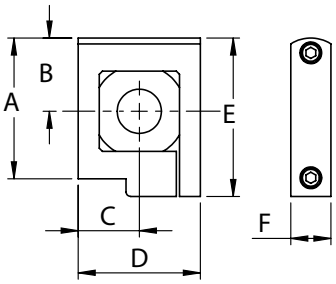
Model	A	B	C	D	E	F	G	H	J	K
MGA201-P1	66	33	5	30	45	38.3	8.5	5.5	11.5	50
MGA301-P1	88	44	7	41.5	60.4	49.3	9	6.5	13	70
MGA401-P1	104	52	7	50	76	58.5	12	8.6	15.5	80
MGA601-P1	128	64	10	70	104	79.5	16	11	19.8	100

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

MGA series modular connecting kits can be configured using basic alphanumeric clusters. To create an MGA series part number, choose model, type, and material. Sample MGA series part numbers and available options are featured below.

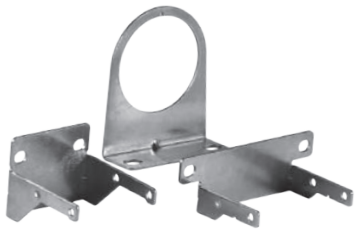
MGA 3 02 - P1

Model	
2	200 Series
3	300 Series
4	400 Series
6	600 Series

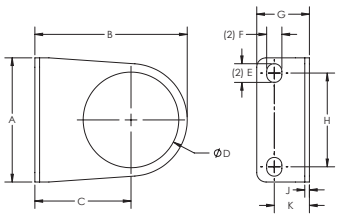
Type	
01	T Style (connecting and mounting)
02	L Style (connecting and mounting)
03	U Style (connecting only)

Material	
P1	Aluminum

MGB Series Mounting Brackets

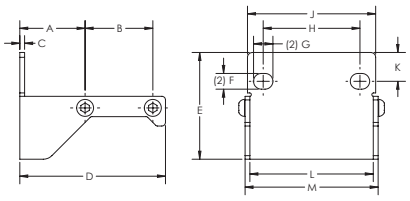


Brackets for MGAFR, MGAR Series



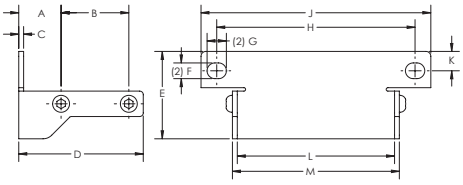
Model	A	B	C	D	E	F	G	H	J	K
MGB201-P2	55	49	30	30	15	5.2	24	34.5	2	17.5
MGB301-P2	53	65	41	40.8	8	6.5	22.5	40	2	15
MGB401-P2	72	83	56	55	11	8.5	27	55	2	18
MGB601-P2	90	110.5	70	68	13	11	35	66	2.5	24

Brackets for MGAF, MGAL Series



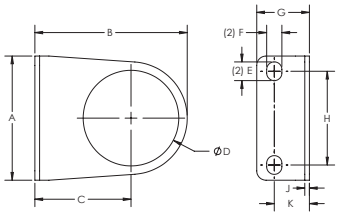
Model	A	B	C	D	E	F	G	H	J	K	L	M
MGB202-P2	20	20	2	45	33	5.4	8.4	27	40	6.4	38.2	42.3
MGB302-P2	27	28	2	60	44	6.5	8	40	55	11.7	51	55
MGB402-P2	30	42	2	75.5	47.3	8.5	11	55	72	9.5	68	72
MGB602-P2	42.4	53.2	2.5	104	51	11	13	66	90	10.7	84.5	90

Brackets for MGV Series



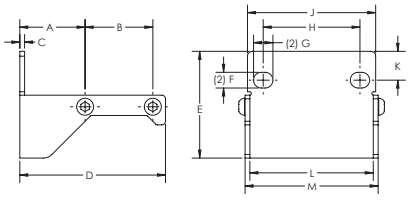
Model	A	B	C	D	E	F	G	H	J	K	L	M
MGB203-P2	14.8	20	2	39	27.7	5.3	8	67	80	6	50.2	54.2
MGB303-P2	19	25	2	50.2	32.5	6.5	8	82	95	8	65	69
MGB403-P2	21.5	36	2	65.3	40	8.5	11	102	120	8	78	82

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

MGB series mounting brackets can be configured using basic alphanumeric clusters. To create an MGB series part number, choose model, type, and material. Sample MGB series part numbers and available options are featured below.

MGB 3 02 - P2

Model	
2	200 Series
3	300 Series
4	400 Series
6	600 Series

Type	
01	Bracket for MGAFR, MGAR Series
02	Bracket for MGAF, MGAL Series
03	Bracket for MGV Series
04	Bracket for MSR Series
05	Bracket for MGZ Series

Material	
P2	Steel

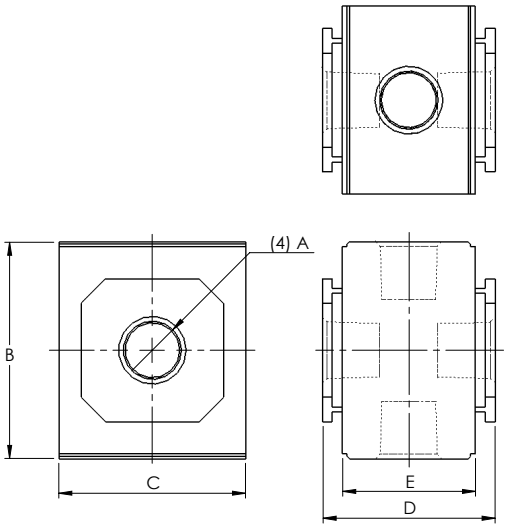
MGA Series Distribution Block

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

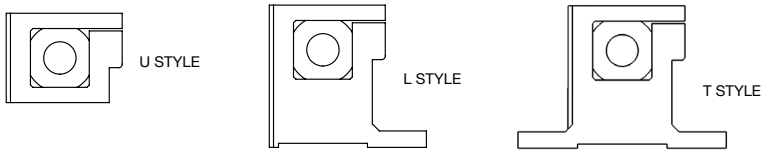


Dimensions (mm)



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

MGA series distribution blocks can be configured using basic alphanumeric clusters. To create an MGA series part number, choose model, type, and material. Sample MGA series part numbers and available options are featured below.

MGA 314 - 08 - T

Model	
214	200 Series
314	300 Series
414	400 Series
614	600 Series

Port Size	
06	1/8 NPT (200 Series)
08	1/4 NPT (200, 300 Series)
10	3/8 NPT (300 Series)
15	1/2 NPT (400 Series)
20	3/4 NPT (600 Series)
25	1 NPT (600 Series)

Modular Connecting Kit[1]	
T	T Style
L	L Style
U	U Style

[1] All Distribution Blocks also include stamped bracket

Filter Elements

Filtering

Filtering	Material
40µm	White high density polyethylene
5µm	Blue high density polyethylene
0.3µm	Blue dual-layer borosilicate glass
0.01µm	Red glass fiber filtering layer



How to Order

MGAF series filter elements can be configured using basic alphanumeric clusters. To create an MGAF element part number, choose product line, model, and filtering. Sample MGAF element part numbers and available options are featured below.

MGAF 300 - 004 - 1

Product Line	
MGAF	Filter Element

Model	
200	200 Series
300	300 Series
400	400 Series
600	600 Series[1]

[1] Filtering options 3 and 4 are not available on 600 Series.

Filtering	
1	40µm[2]
2	5µm[2]
3	0.3µm[3]
4	0.01µm[3]

[2] Usable with MGAF, MGAFR, and MGAFC models
[3] Usable with MGAFB models

Replacement Filter, Filter/Regulator, and Lubricator Bowls

Type	Drain Style	Description	Part Number	Compatibility
Filter and Filter/ Regulator Bowls	Semi-Auto/Manual Drain	200 Series Polycarbonate Bowl	MGAF200-SM-P	200 Series MGAF, MGAFB, MGAFR, MGAFC
		200 Series Nylon Bowl	MGAF200-SM-N	200 Series MGAF, MGAFB, MGAFR, MGAFC
		200 Series Metal Bowl	MGAF200-SM-D	200 Series MGAF, MGAFB, MGAFR, MGAFC
		300 Series Polycarbonate Bowl	MGAF300-SM-P	300 Series MGAF, MGAFB, MGAFR, MGAFC
		300 Series Nylon Bowl	MGAF300-SM-N	300 Series MGAF, MGAFB, MGAFR, MGAFC
		300 Series Metal Bowl	MGAF300-SM-D	300 Series MGAF, MGAFB, MGAFR, MGAFC
		400 Series Polycarbonate Bowl	MGAF400-SM-P	400 Series MGAF, MGAFB, MGAFR, MGAFC
		400 Series Nylon Bowl	MGAF400-SM-N	400 Series MGAF, MGAFB, MGAFR, MGAFC
		400 Series Metal Bowl	MGAF400-SM-D	400 Series MGAF, MGAFB, MGAFR, MGAFC
		600 Series Metal Bowl	MGAF600-SM-D	600 Series MGAF, MGAFR
	Auto Drain	200 Series Polycarbonate Bowl	MGAF200-A-P	200 Series MGAF, MGAFB, MGAFR, MGAFC
		200 Series Nylon Bowl	MGAF200-A-N	200 Series MGAF, MGAFB, MGAFR, MGAFC
		200 Series Metal Bowl	MGAF200-A-D	200 Series MGAF, MGAFB, MGAFR, MGAFC
		300 Series Polycarbonate Bowl	MGAF300-A-P	300 Series MGAF, MGAFB, MGAFR, MGAFC
		300 Series Nylon Bowl	MGAF300-A-N	300 Series MGAF, MGAFB, MGAFR, MGAFC
		300 Series Metal Bowl	MGAF300-A-D	300 Series MGAF, MGAFB, MGAFR, MGAFC
		400 Series Polycarbonate Bowl	MGAF400-A-P	400 Series MGAF, MGAFB, MGAFR, MGAFC
		400 Series Nylon Bowl	MGAF400-A-N	400 Series MGAF, MGAFB, MGAFR, MGAFC
		400 Series Metal Bowl	MGAF400-A-D	400 Series MGAF, MGAFB, MGAFR, MGAFC
		600 Series Metal Bowl	MGAF600-A-D	600 Series MGAF, MGAFR
Lubricator Bowls		200 Series Polycarbonate Bowl	MGAL200-P	200 Series MGAL
		200 Series Nylon Bowl	MGAL200-N	200 Series MGAL
		300 Series Polycarbonate Bowl	MGAL300-P	300 Series MGAL
		300 Series Nylon Bowl	MGAL300-N	300 Series MGAL
		400 Series Polycarbonate Bowl	MGAL400-P	400 Series MGAL
		400 Series Nylon Bowl	MGAL400-N	400 Series MGAL

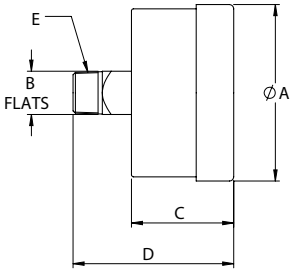
Pressure Gauges

Engineering Specifications

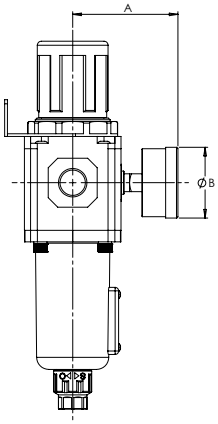
Model	Round Gauges
Fluid	Air (Clean/Dry)
Units	psi and kgf/cm2
Pressure Range	Blank: 0 to 140 psi (0 to 1.0 MPa) Low Pressure: 0 to 60 psi (0 to 0.4 MPa)
Temperature Range	-4 °F to 140 °F (-20 °C to 60 °C)
Material	Shell: SPCC Steel Core: Brass



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
MGAFR200/MGAR200	62	42
MGAFR300/MGAR300	61.7	42
MGAFR400/MGAR400	77.3	52
MGAFR600/MGAR600	85	52

Round Gauges

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]	
RGK[2]	Gauge, Adapter, Hardware
RG	Gauge Only
RK[2]	Adapter and Hardware

[1] See "Order as a Kit" section above for model descriptions
[2] RGK and RK models are only compatible with MGV Soft Start Valves.

Gauge Size	
40	1/8 NPT, 40mm Round
50	1/4 NPT, 50mm Round

Pressure Range	
Blank	0-140 psi
L	0-60 psi[2]

[2] Only available on RGK-40 & RG-40

How to Order

MGAR, MGAFR, and MGAFC Series Gauge Adapter

MGAR - 300 - GA - NPT

Product Line	
MGAR	MGAR Series Regulators

Model	
200	200 Series
300	300 Series
400	400 Series
600	600 Series

Type	
GA	Gauge Adapter
013	Blanking Cover

Port Style[1]
NPT
ISO G
PT

[1] Not used for blanking cover.

NOTE: 200 and 300 series are 1/8.
400 and 600 series are 1/4.





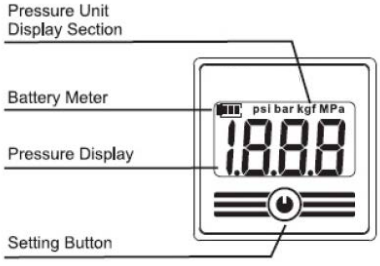
Digital Pressure Gauge

DG - 08

Port Size	
06	1/8 NPT, 10-32 UNF1
08	1/4 NPT, 10-32 UNF2

[1] RK-40 needed for installation on MGAFR or MGAR (not included)
[2] RK-50 needed for installation on MGAFR or MGAR (not included)

Display Description



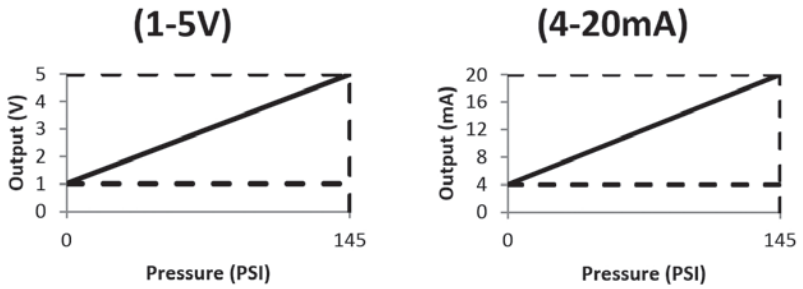
Digital Pressure Switches

Engineering Specifications



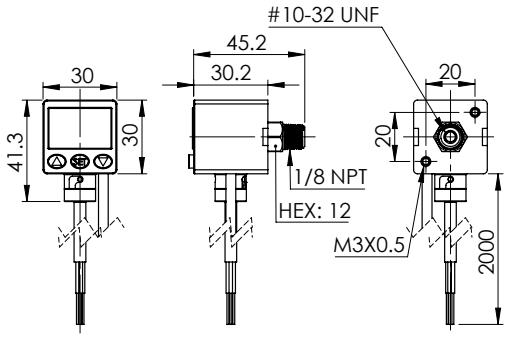
Model		DPSP-A	DPSP-B	DPSP-C	DPSP-D	DPSP-E	DPSP-F
Fluid		Air or Inert Gas (Clean/Dry)					
Rated Pressure Range		0 to 145 psi (0 to 1.0 Mpa)					
Proof Pressure		217 psi (1.5 Mpa)					
Pressure Setting Range		-14.5 to 145 psi (-0.1 to 1.0 Mpa)					
Temperature Range		32 °F to 120 °F (0 °C to 50 °C)					
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/cm2, 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/s2 (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



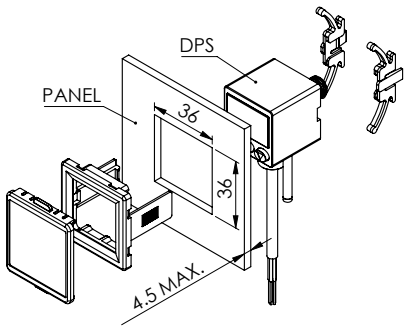
How to Specify

Dimensions (mm)

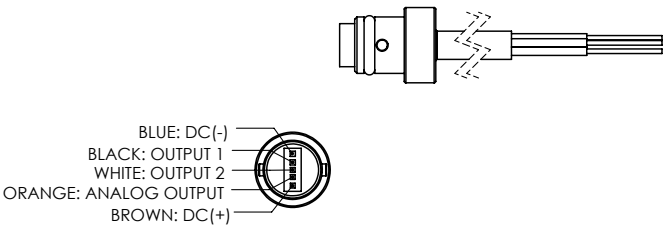


Accessories

Panel Adapter and Cover: DPS-PA



5m Data Cable: DPS-C5M



DPS series digital pressure switches can be configured using basic alphanumeric clusters. To create an DPS series part number, choose model, type, and material. Sample DPS series part numbers and available options are featured below.

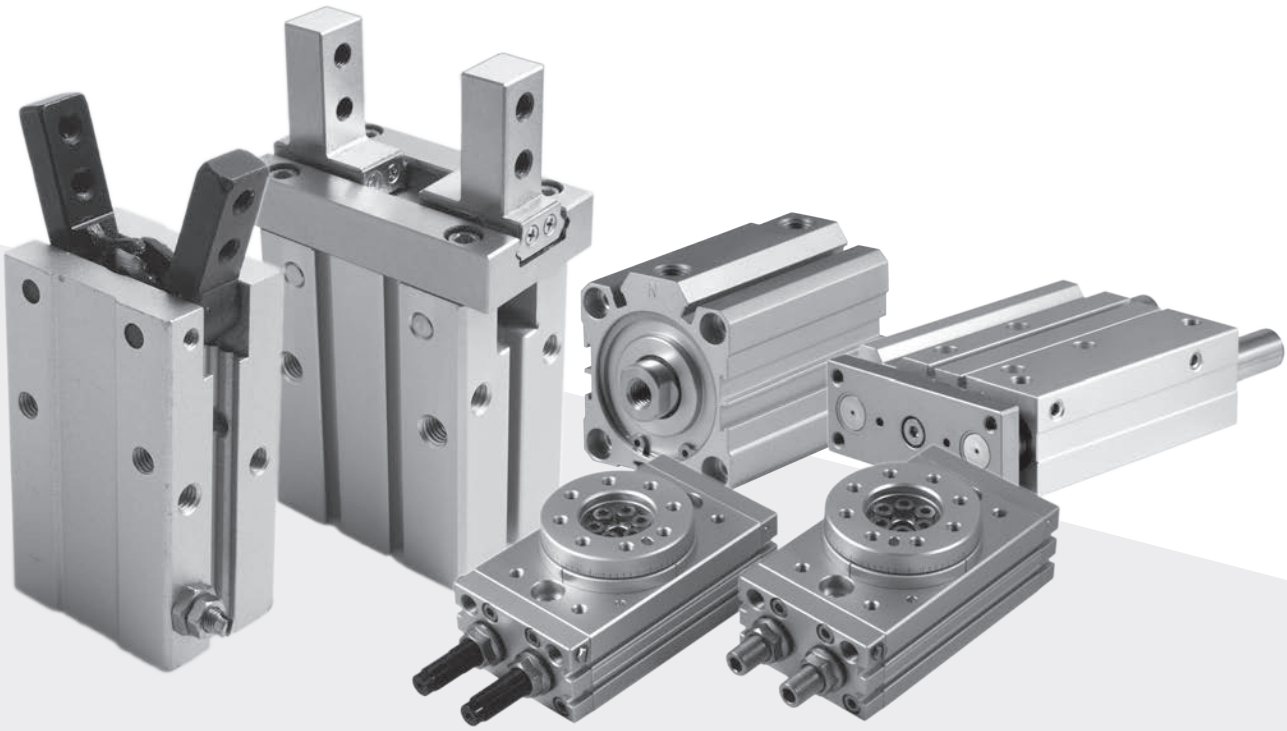
DPS P - A - 06 - T

Pressure Range		Output		Port		Thread	
P	-14.5 to 145 psi	A	2 NPN digital, 1 (1-5V) analog	06	1/8"	T	NPT
		B	2 NPN digital, 1 (4-20mA) analog				
		C	2 NPN digital, copy function				
		D	2 PNP digital, 1 (1-5V) analog				
		E	2 PNP digital, 1 (4-20mA)				

Notes

Pneumatic 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.



Contents

123 Extruded Thrusters
- 123 – Engineering Specifications
- 123 – Materials
- 124 – Dimensions
- 126 – Maximum Recommended Loads
- 127 – How to Order

128 Compact Cylinders
- 128 – Engineering Specifications
- 128 – Materials
- 129 – Dimensions
- 131 – How to Order
- 132 – Brackets & Adapter

133 Rotary Actuators
- 133 – Engineering Specifications
- 133 – Torque Output
- 133 – Max Energy Absorbsion & Loads
- 134 – Dimensions
- 135 – How to Order

136 Parallel Grippers
- 136 – Engineering Specifications
- 136 – Gripping Force & Stroke
- 137 – Dimensions & Mounting Styles
- 138 – How to Order

139 Angular Grippers
- 139 – Engineering Specifications
- 139 – Gripping Force & Stroke
- 140 – Dimensions & Mounting Styles
- 141 – How to Order

142 Angular & Parallel Gripper Reference
- 142 – How It Works

143 Parallel Multi-Finger Grippers
- 143 – Engineering Specifications
- 143 – Gripping Force & Stroke
- 143 – Finger Styles
- 144 – Gripping Force
- 147 – Dimensions
- 150 – How to Order

151 180° Grippers
- 151 – Engineering Specifications
- 151 – Gripping Force & Point Distance
- 152 – Dimensions
- 153 – How to Order

154 Service Parts
- 154 – Dimensions, Description & Compatibility Seal Kits

155 Solid State Switches
- 155 – Engineering Specifications
- 155 – Dimensions
- 156 – Wiring Diagrams
- 157 – How to Order

158 Switch Selector Guide
- 158 – Descriptions, Bore Sizes
- 158 – Solid State Switch Availability

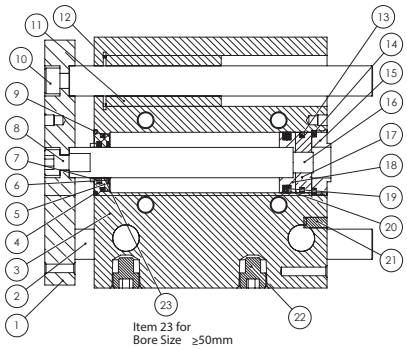
Technical Data

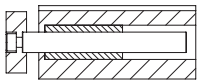
Engineering Specifications



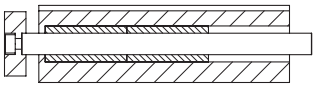
Bore Size (mm)		12	16	20	25	32	40	50	63
Fluid		Air (Clean/Dry)							
Action		Double Acting							
Pressure Range		14 to 145 PSI (0.1 to 1.0 MPa)							
Proof Pressure		215 PSI (1.5 MPa)							
Temperature Range		-4 °F to 158 °F (-20 °C to 70 °C)							
Lubrication		Not Required							
Cushion Type		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°		± 0.05°	
	Brass Bushing (MTCM)	± 0.10°		± 0.09°		± 0.08°		± 0.06°	
Port Size		M5X0.8		1/8NPT				1/4NPT	
Sensor Switch Compatibility[1]	Reed Switch	MWF-G							
	Solid State Switch	MWK-G, MWC-G							

[1] See page 155-158 for switch specifications

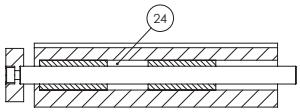




Type	Bore Size	Stroke
MTCL	Ø12 ~ Ø16	≤30mm
	Ø20 ~ Ø63	≤50mm
MTCM	Ø12 ~ Ø63	≤50mm



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

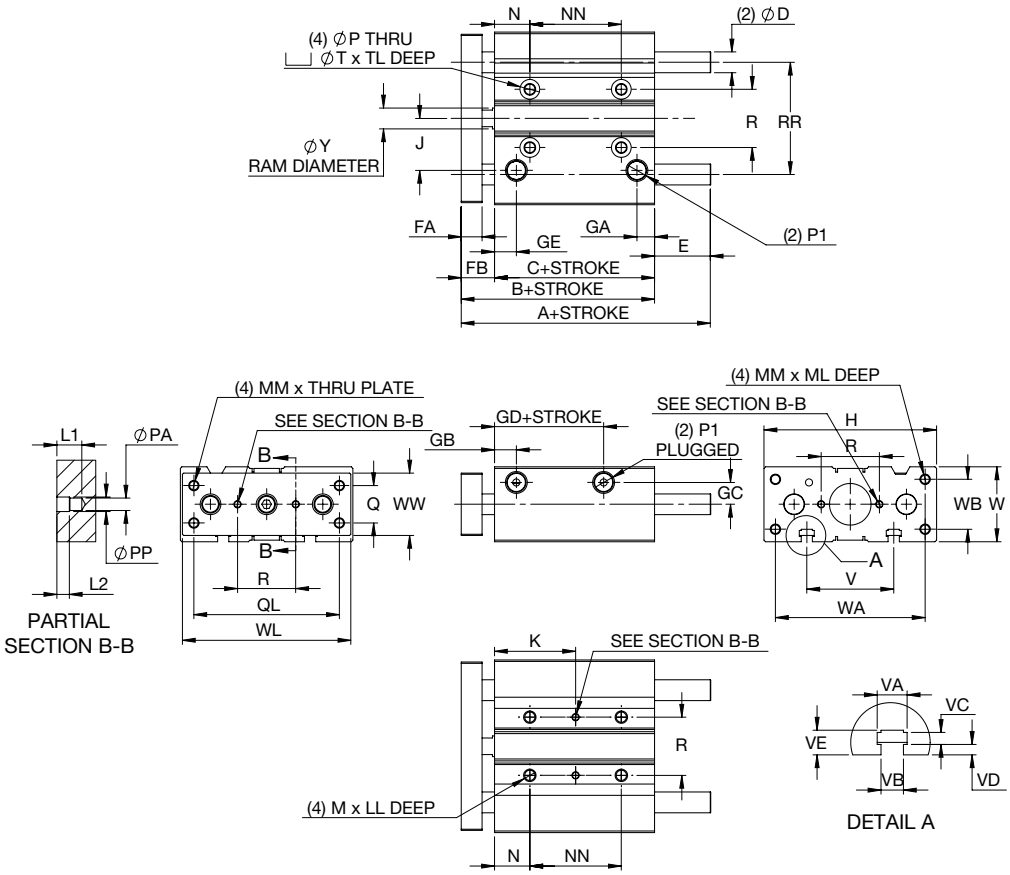
Materials

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.

Product Information

Dimensions (mm)



Product Information

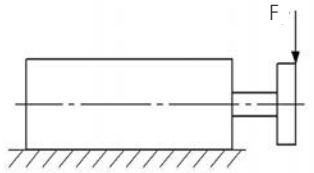
Dimensions (mm)

	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

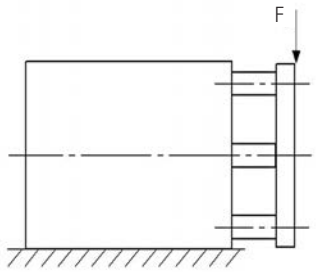
	Stroke (mm)	Bore Size (mm)			
		32	40	50	63
A	0-50	65 (MTCL) 78 (MTCM)	66 (MTCL) 78 (MTCM)	76 (MTCL) 89 (MTCM)	77 (MTCL) 89 (MTCM)
	51-100	102	102	118	118
	101-200	118	118	134	134
	201+	140	140	161	161
B		59.5	66	72	77
C		37.5	44	44	49
D		16 (MTCL) 20 (MTCM)	16 (MTCL) 20 (MTCM	20	20
E	0-50	5.5 (MTCL) 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

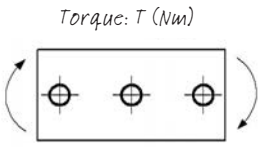
Product Information

Maximum Recommended Loads



Note: F applied at full extention





N x 0.225 = LBS
Nm x 8.85 = IN-LBS

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

MTC M - 16 x 70 - S - T

Product Line
MTC Extruded Thruster

Brushing Type	
M	Bronze Bushing
L	Linear Ball Bushing

Magnet	
S	with Magnet

Ports	
T	Standard[1]

[1] See page 123 for the Port Sizes listed in the Engineering Specifications table.

Stroke (mm)	Bore Size (mm)							
	12	16	20	25	32	40	50	63
10	X	X						
20	X	X	X	X				
25	X	X	X	X	X	X	X	X
30	X	X	X	X	X	X	X	X
40	X	X	X	X	X	X	X	X
50	X	X	X	X	X	X	X	X
60	X	X	X	X	X	X	X	X
70	X	X	X	X	X	X	X	X
75	X	X	X	X	X	X	X	X
80	X	X	X	X	X	X	X	X
90	X	X	X	X	X	X	X	X
100	X	X	X	X	X	X	X	X
125	X	X	X	X	X	X	X	X
150	X	X	X	X	X	X	X	X
175		X	X	X	X	X	X	X
200		X	X	X	X	X	X	X
225			X	X	X	X	X	X
250			X	X	X	X	X	X

Product Features

Technical Data

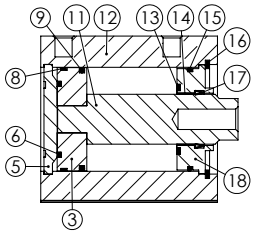
Engineering Specifications



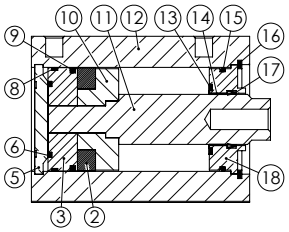
Bore Size (mm)		12	16	20	25	32	40	50	63	80	100
Fluid		Air (Clean/Dry)									
Action		Double Acting									
Pressure Range		14 to 145 PSI (0.1 to 1.0 MPa)									
Proof Pressure		215 PSI (1.5 MPa)									
Temperature Range		-4 °F to 176 °F (-20 °C to 80 °C)									
Cushion Type		Bumper									
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	MWF-G									
	Solid State Switch	MWK-G, MWC-G									

[1] Thrust at 0.6 MPa (87psi) inlet pressure.
[2] See pages 155-158 for switch specifications.
See page 132 for male thread adapter.

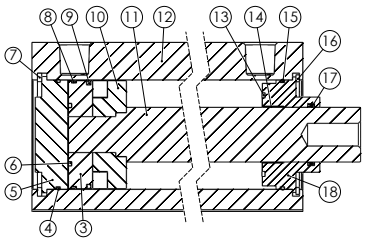
Stroke ≤100mm, No Magnet



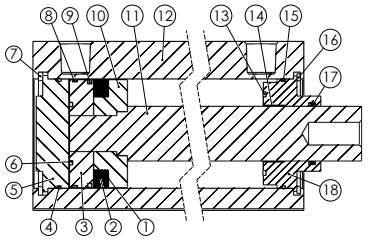
Stroke ≤100mm, With Magnet



Stroke >100mm, No Magnet



Stroke >100mm, With Magnet



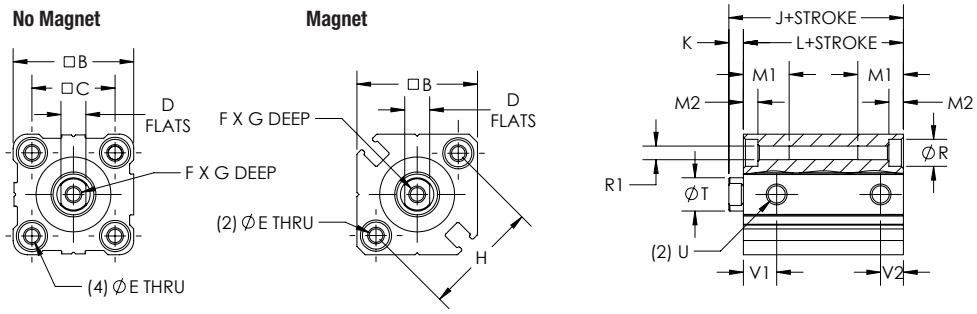
Materials

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

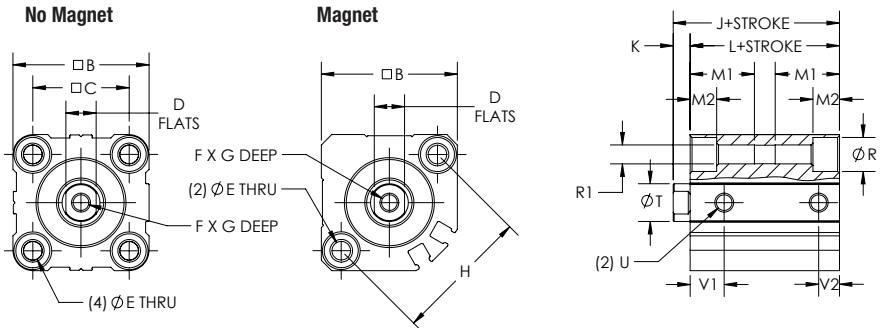
Product Information

Dimensions (mm)

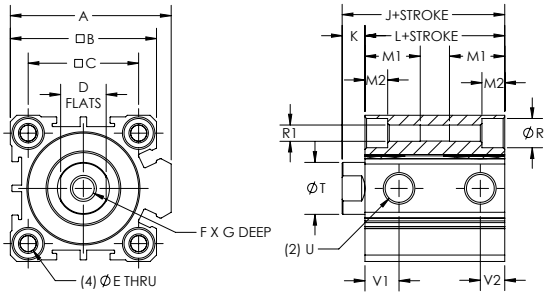
Ø12, Ø16



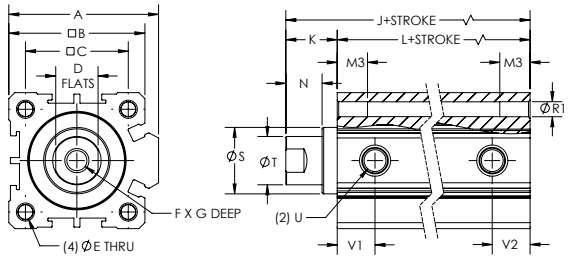
Ø20, Ø25



Ø32 - Ø100 (Stroke ≤ 100)



Ø32 - Ø100 (Stroke > 100)



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 132 for male thread adapter.

How to Order

MACQ - 16 x 30 - S - T

Product Line

MACQ Compact Cylinder

Magnet

Blank	No Magnet
S	with Magnet

Ports

T	Standard[1]

[1] See page 148 for the Port Sizes listed in the Engineering Specifications table.

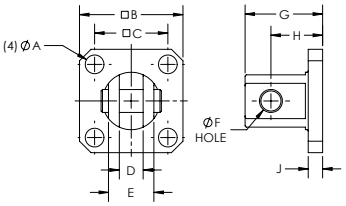
Stroke (mm)	Bore Size (mm)									
	12	16	20	25	32	40	50	63	80	100
5	X	X	X	X	X	X	X	X	X	X
10	X	X	X	X	X	X	X	X	X	X
15	X	X	X	X	X	X	X	X	X	X
20	X	X	X	X	X	X	X	X	X	X
25	X	X	X	X	X	X	X	X	X	X
30	X	X	X	X	X	X	X	X	X	X
40	X	X	X	X	X	X	X	X	X	X
50	X	X	X	X	X	X	X	X	X	X
75			X	X	X	X	X	X	X	X
100			X	X	X	X	X	X	X	X
125					X	X	X	X	X	X
150					X	X	X	X	X	X

How To Accessorize

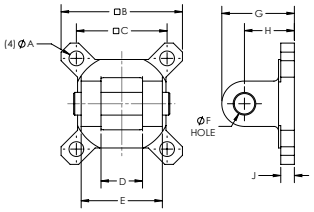
Product Information

Clevis Brackets for MACQ Series

Ø12 - Ø25



Ø32 - Ø100

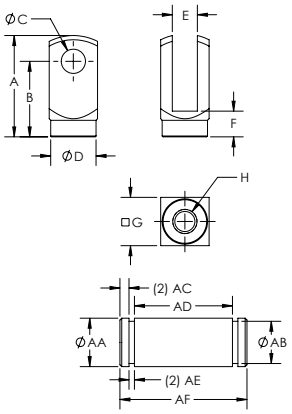


Model	A	B	C	D	E	F	G	H	J
F-MACQ-12-CB	4.5	25	15.5	5.3	9.8	5	20	14	4
F-MACQ-16-CB	4.5	29	20	6.8	11.8	5	21	15	4
F-MACQ-20-CB	6.5	36	25.5	8.3	15.8	8	27	18	5
F-MACQ-25-CB	6.5	40	28	10.3	19.8	10	30	20	5
F-MACQ-32-CB	6.5	45.5	34	18.3	35.8	10	30	20	5.5
F-MACQ-40-CB	6.5	53.5	40	18.3	35.8	10	32	22	7
F-MACQ-50-CB	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

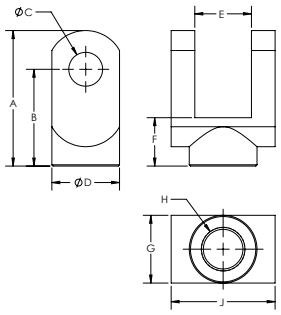
Pin, c-clips, and hardware included with all Clevis Brackets

Rod Clevis Brackets for MACQ Series

Ø12 - Ø25



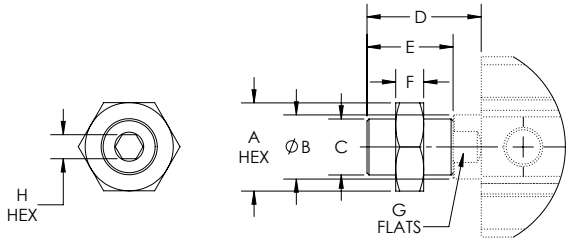
Ø32 - Ø100



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/-.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/-.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/-.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/-.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/-.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/-.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/-.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/-.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/-.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/-.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



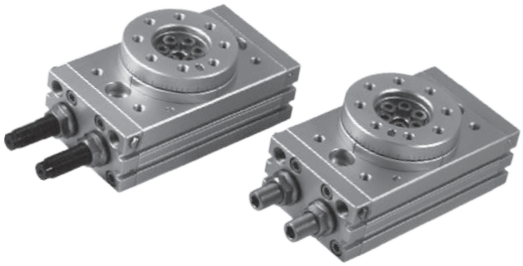
Male Adapter includes jam nut (cylinder not included).

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

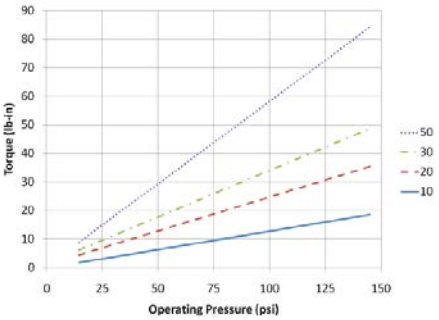
Engineering Specifications



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]	2-Wire Solid State	MWF-H			
	3-Wire Solid State	MWC-H, MWK-H			
Includes		Magnet			

[1] See pages 155-158 for switch specifications

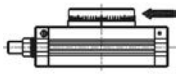
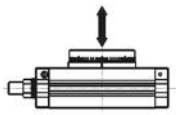
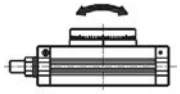
Torque Output



Maximum Energy Absorbsion (J)

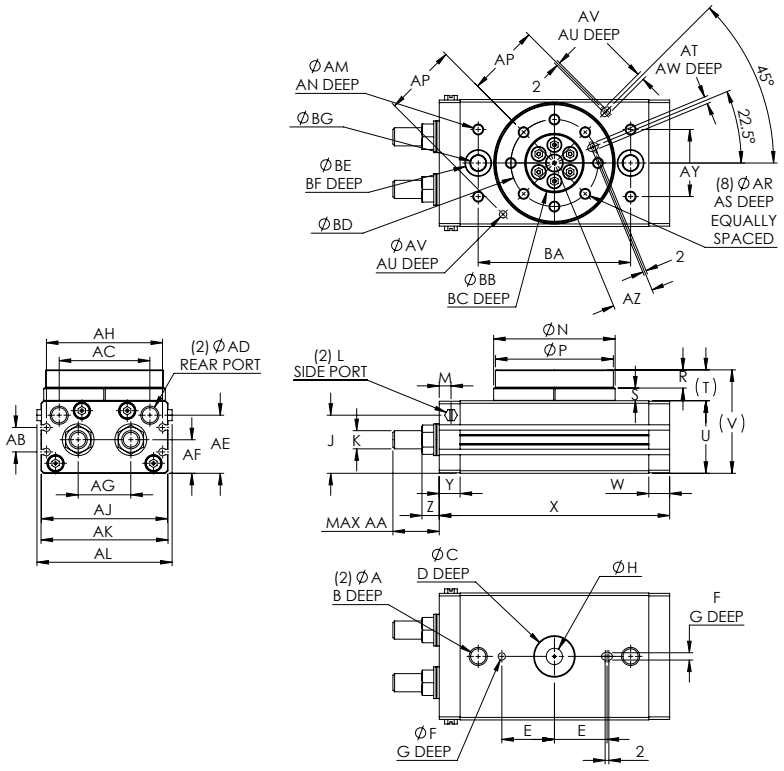
Model	With Bolt Adjustment	With Shock Absorber
MHRQ10	0.01	0.04
MHRQ20	0.025	0.12
MHRQ30	0.05	0.12
MHRQ50	0.08	0.30

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)

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

MHRQ 20 - A

Product Line
MHRQ Series

Model
10
20
30
50

End Stop	
Blank	Bolt Adjustment
A	Shock Absorber

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	MWF-G		MWF-G, MWF-H				
		Solid State Switch	MWF-H		MWC-G, MWC-H, MWK-G, MWK-H				
Includes			Magnet						

[1] See pages 155-158 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 (MHFTK)						
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

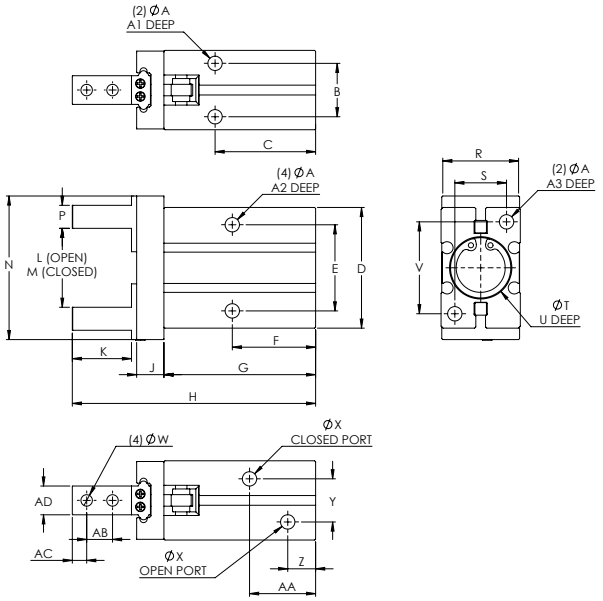
Model		Single Acting Normally Closed (MHFSK)						
Bore Size (mm)		**6**	**10**	**16**	**20**	**25**	**32**	**40**
Gripping Force[2], Fg (N)	Closing[3]	-	-	-	-	-	-	-
	Opening[3]	3.7	13	38	59	87	163	270
Closing/Opening Stroke (mm)		4	4	6	10	14	22	30
Weight (g)	Standard	26	57	125	238	430	778	1365
	Bottom	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 142.
[3] See figure 2 on page 142.

Product Information

Dimensions (mm)

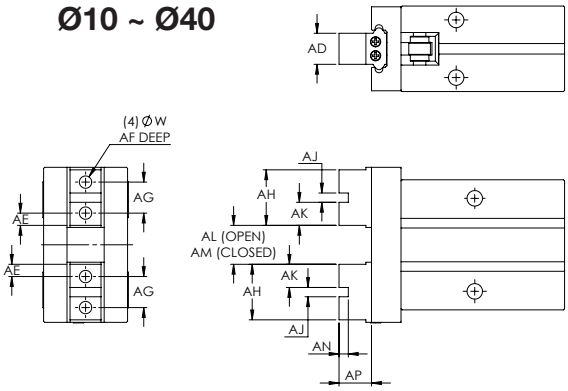
Standard Mounting Style



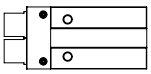
Bottom Mounting Style

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	M3 X 0.5	-	-	-	-	-	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

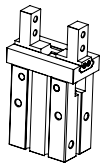
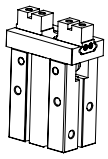
* Double Acting / ** Single Acting

How to Order

MHFK 20 - F

Model	
MHFK	Double Acting
MHFSK	Single Acting, Normally Closed
MHFTK	Single Acting, Normally Open

Bore Size	
06	6mm
10	10mm
16	16mm
20	20mm
25	25mm
32	32mm
40	40mm

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 ºF to 160 ºF (-20 ºC to 70 ºC)					
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	MWF-H	MWF-G				
		Solid State Switch	MWK-H, MWC-H	MWC-G, MWK-G				
Includes			Magnet					

[1] See pages 155-158 for switch specifications

Gripping Force and Stroke

1 MPa = 145.04 PSI
1 N-cm = 0.089 lb-in

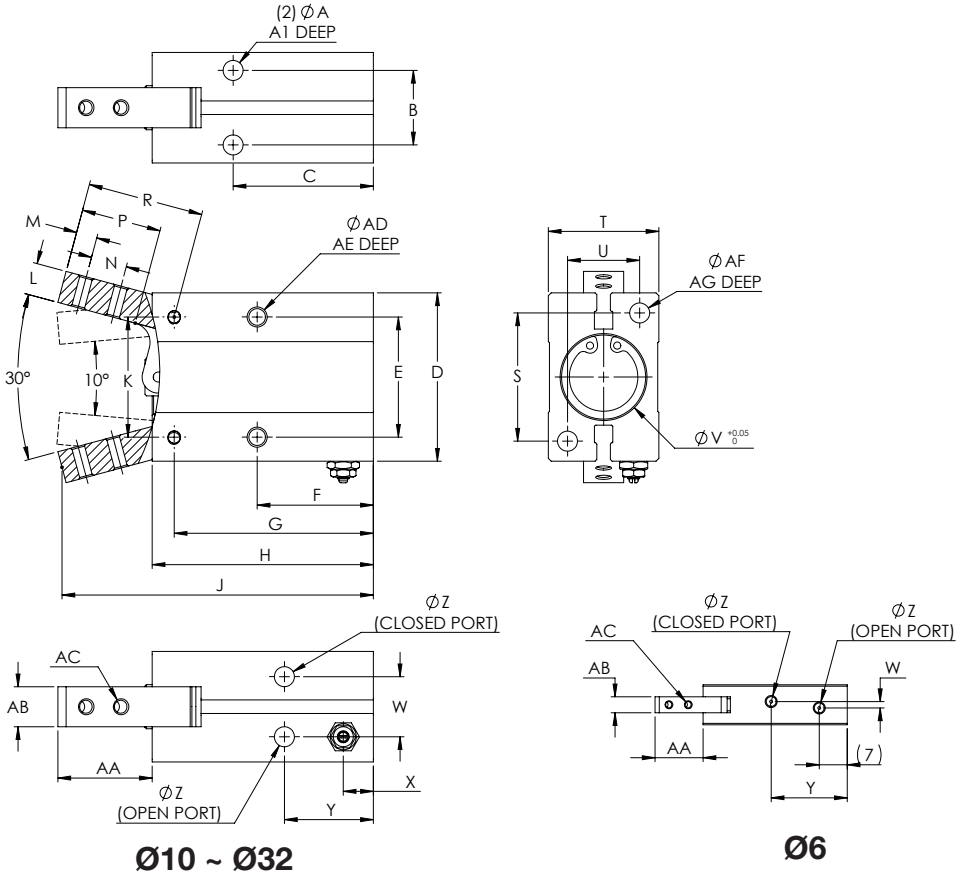
Model		Double Acting (MHFY)					
Bore Size (mm)		**6**	**10**	**16**	**20**	**25**	**32**
Gripping Moment[2], M_g (N-cm)	Closing[3]	7.4 x P	17.6 x P	90 x P	152 x P	304 x P	637 x P
	Opening[3]	10.6 x P	29.4 x P	129 x P	252 x P	473 x P	904 x P
Maximum Recommended Length to Gripping Point[4] (mm)		30	30	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 142.
[3] See figure 4 on page 142.
[4] See figure 5 on page 142.

Product Information

Dimensions (mm)



Ø10 ~ Ø32 **Ø6**

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	
MHFY	Double Acting
MHFTY	Single Acting, Normally Open

Bore Size	
06	6mm
10	10mm
16	16mm
20	20mm
25	25mm
32	32mm

Technical Data

Figure 1

Parallel Grippers
Gripping Force & Point

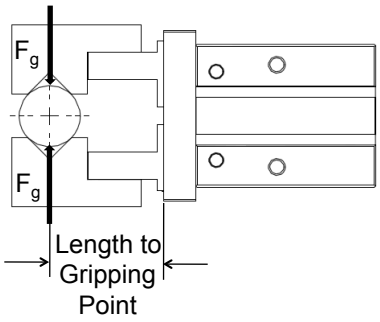


Figure 2

Parallel Grippers
Gripping Direction

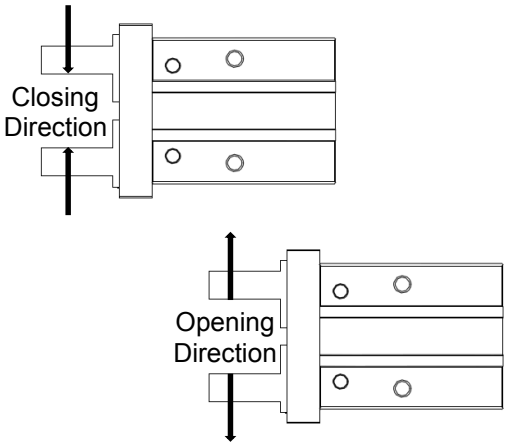


Figure 3

Angular Grippers
Gripping Moment

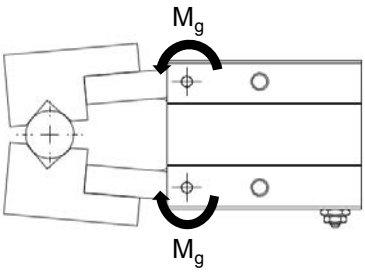


Figure 4

Angular Grippers
Opening and Closing Angles

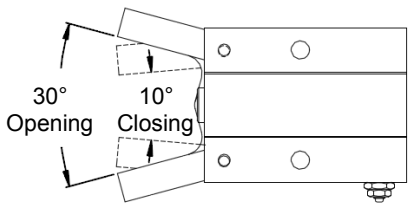
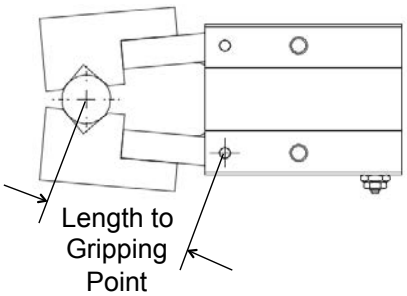


Figure 5

Angular Grippers
Gripping Point



Technical Data

Engineering Specifications

Bore Size (mm)		16	20	25	32	40	50	63
Acting Type		Double Acting						
Fluid		Air (to be filtered by 40µm filter element)						
Operating Pressure		28 to 100 PSI (0.2 to 0.7MPa)				22 to 100 PSI (0.15 to 0.7MPa)		
Temperature		14°F to 140°F (-10°C to 60°C)						
Lubrication		Not Required						
Repeatability		±0.01mm						
Max. frequency		120 cycles per minute				60 cycles per minute		
Port Size		M3x0.5				M3x0.8		
Sensor Switch Compatibility	Reed Switch	MWF-G						
	Solid State Switch	MWK-G, MWC-G						



Gripping Force and Stroke

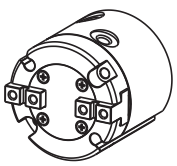
1 MPa = 145.04 PSI
1 N-cm = 0.089 lb-in

Model			Double Acting (MHFC)						
Bore Size (mm)			16	20	25	32	40	50	63
2 Gripper Fingers	Gripping Force per finger Effective valve (N)	Internal	23	42	71	123	195	306	537
		External	21	37	63	111	177	280	502
	Opening/Closing stroke (both sides) (mm)		4	4	6	8	8	12	16
3 Gripper Fingers	Gripping Force per finger Effective valve (N)	Internal	16	28	47	82	130	204	359
		External	14	25	42	74	118	187	335
	Opening/Closing stroke (both sides) (mm)		4	4	6	8	8	12	16
4 Gripper Fingers	Gripping Force per finger Effective valve (N)	Internal	12	21	35	61	97	153	268
		External	10	19	31	55	88	140	251
	Opening/Closing stroke (both sides) (mm)		4	4	6	8	8	12	16

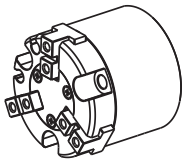
Note: The gripping force in the above table is in the working pressure of 75 PSI and with a gripping point of L=20mm (bore sizes 16mm to 25mm) or L=30mm (bore sizes 32mm to 63mm). Please reference dimensional drawings pages 106-108 for definition of "L".

Finger Styles

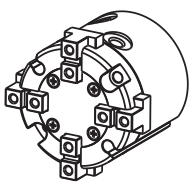
2 Finger Style



3 Finger Style

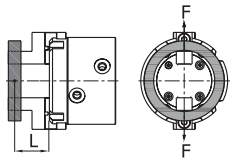


4 Finger Style

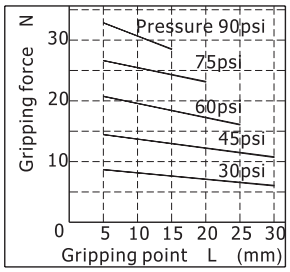


How to Specify

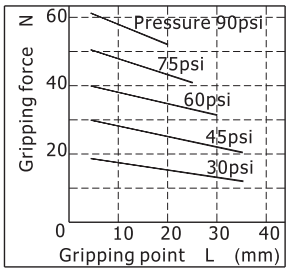
Opened Gripping Force (Two Finger)



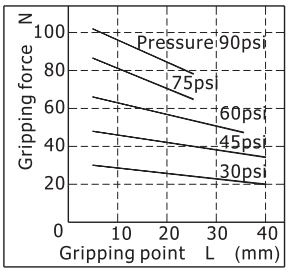
MHFC-2-16



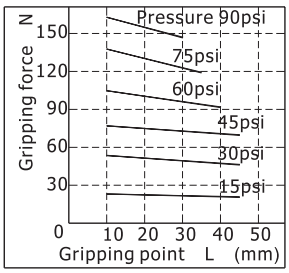
MHFC-2-20



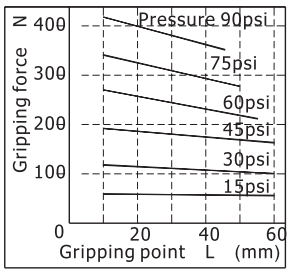
MHFC-2-25



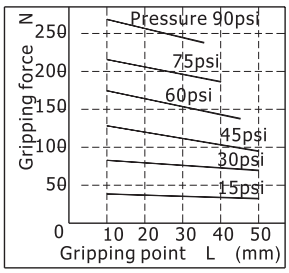
MHFC-2-32



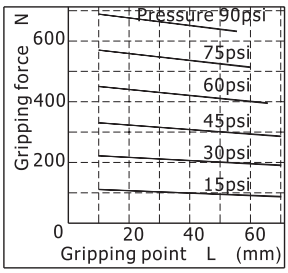
MHFC-2-50



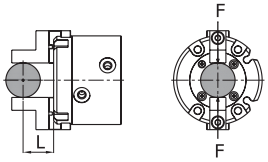
MHFC-2-40



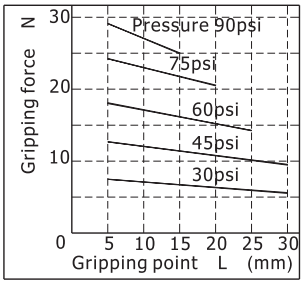
MHFC-2-63



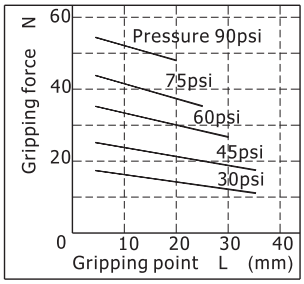
Closed Gripping Force (Two Finger)



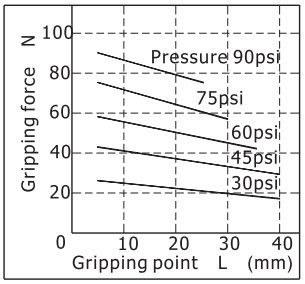
MHFC-2-16



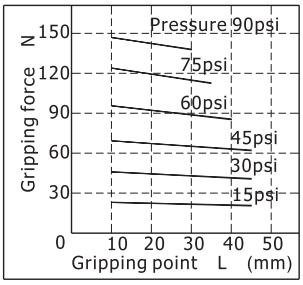
MHFC-2-20



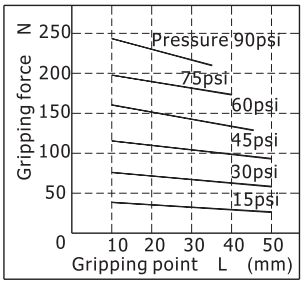
MHFC-2-25



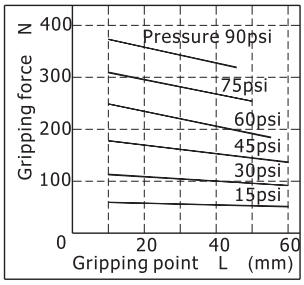
MHFC-2-32



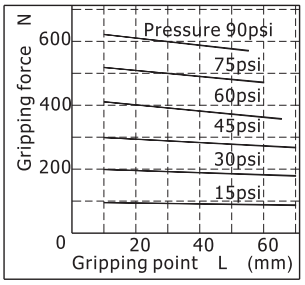
MHFC-2-40



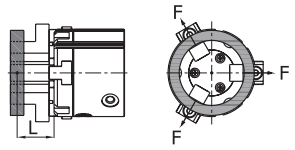
MHFC-2-50

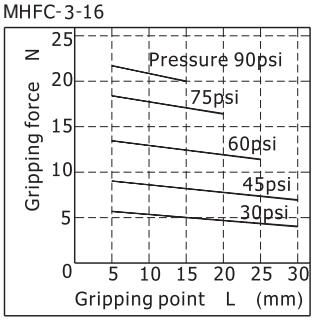


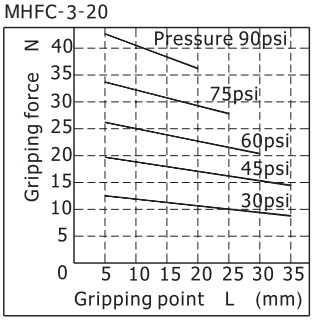
MHFC-2-63

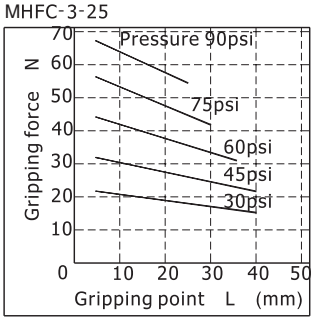


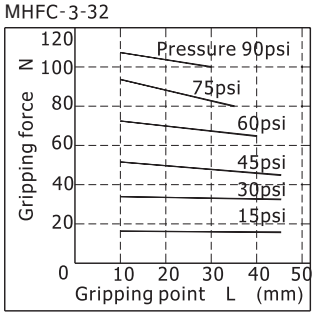
Opened Gripping Force (Three Finger)

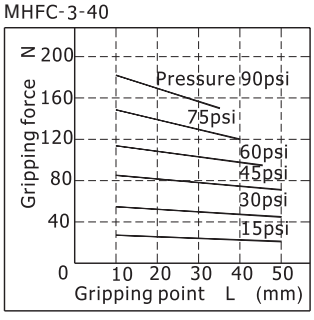


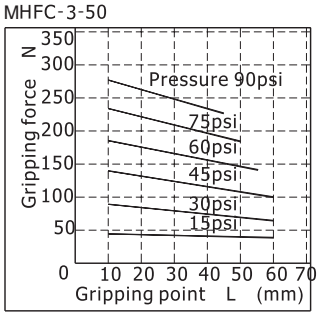


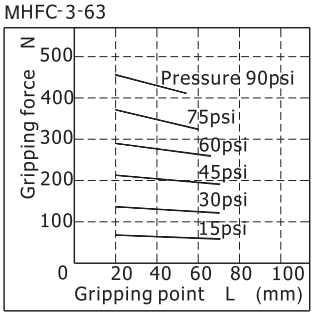




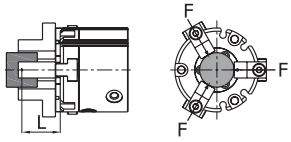


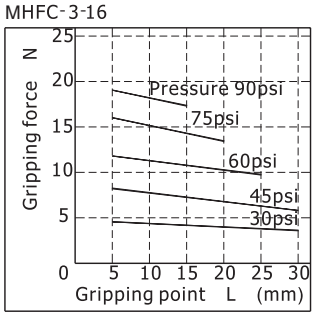


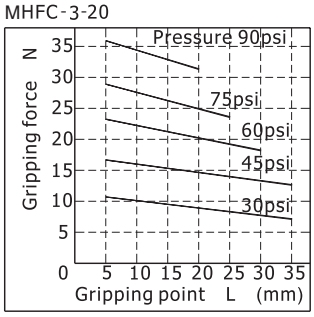


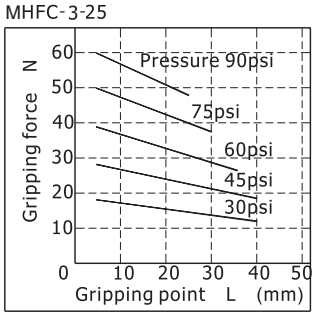


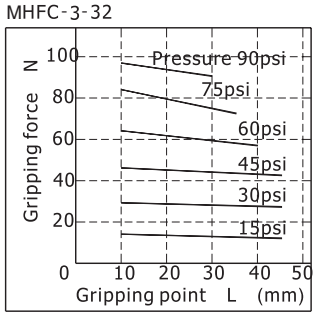
Closed Gripping Force (Three Finger)

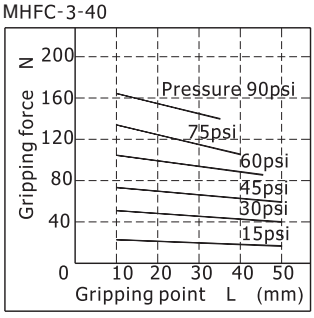


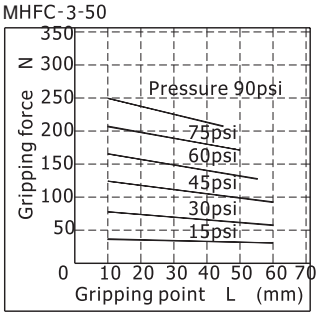


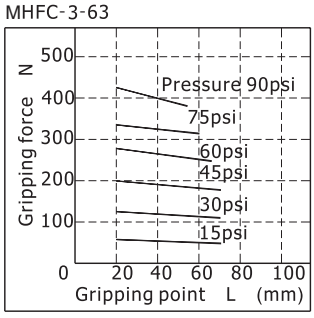






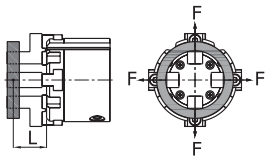


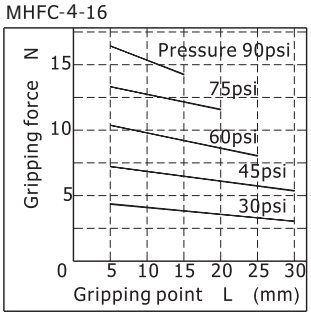


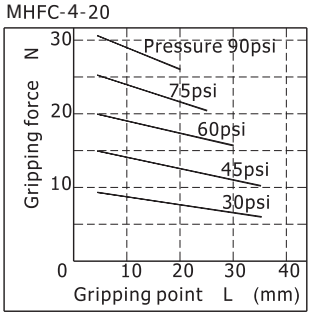


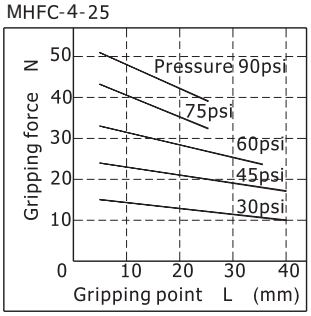
How to Specify

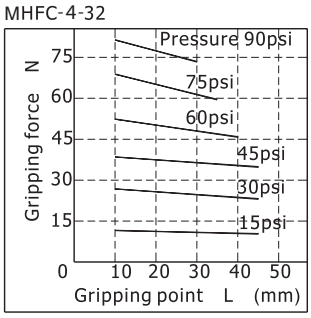
Opened Gripping Force (Four Finger)

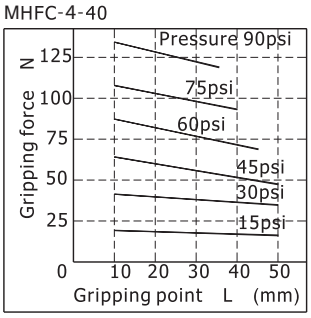


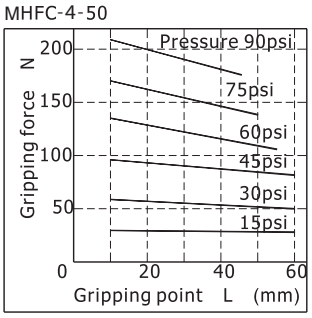


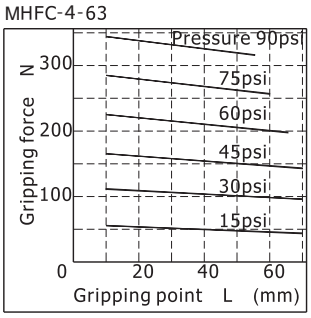




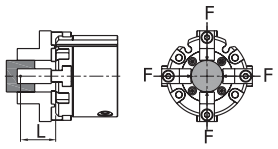


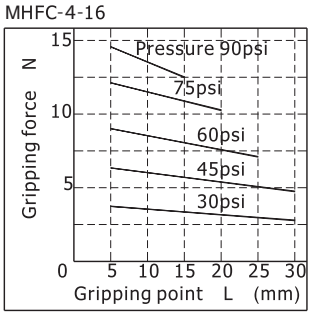


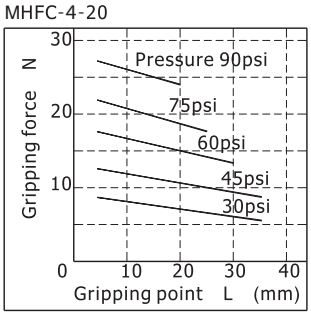


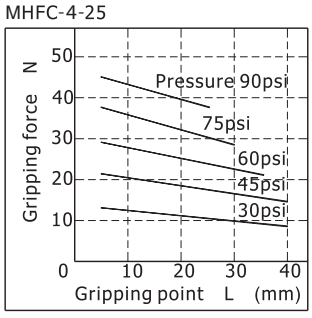


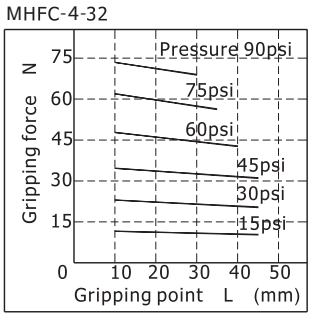
Closed Gripping Force (Four Finger)

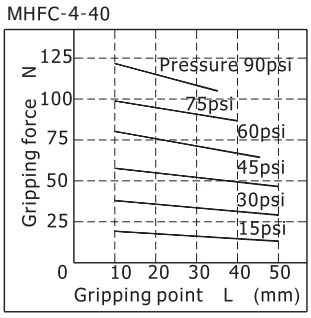


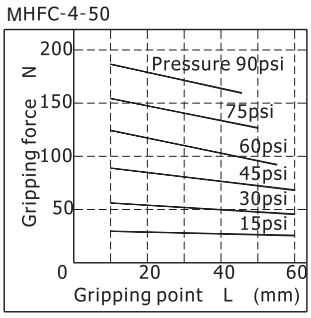


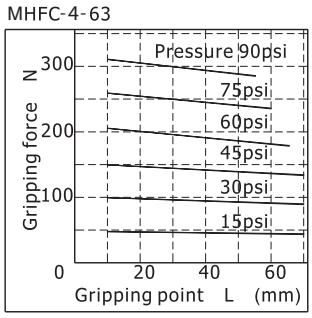






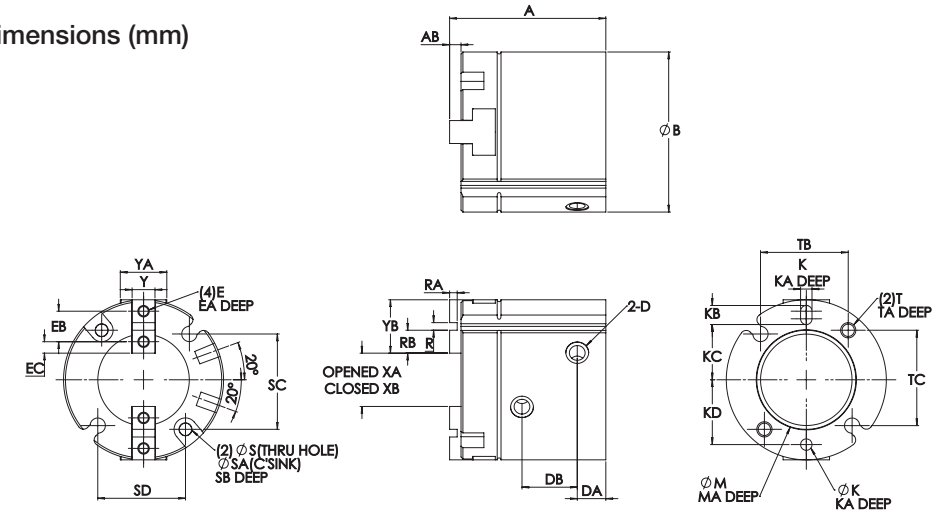






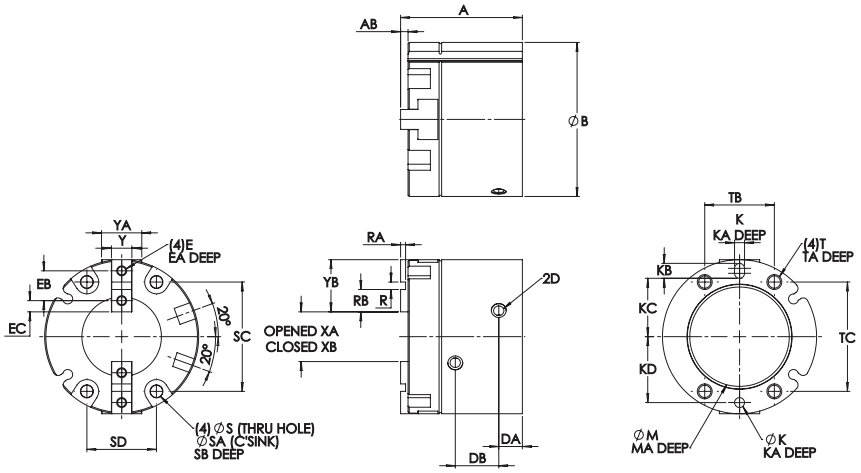
Product Information

Two Gripper Dimensions (mm)



Bore Size (mm)	A	AB	B	D	DA	DB	E	EA	EB	EC	K	KA	KB	KC	KD	M	MA	R
16	35	3	30	M3x0.5	7	10	M3x0.5	5	6	2	2	2	3	11	12.5	17 DIA	1.5	2
20	39	3	36	M5x0.8	7	13	M3x0.5	5	7	2.5	2	2	3	13	14.5	21 DIA	1.5	2
25	41	3	42	M5x0.8	7.5	14.5	M3x0.5	5	8	3	3	3	5	14.5	17	26 DIA	1.5	2

Bore Size (mm)	RA	RB	S	SA	SB	SC	SD	T	TA	TB	TC	Y	YA	YB	XA	XB
16	2	4	3.4	6	6	18	16	M4x0.7	8	18	16	5	8	10	14	10
20	2	5	3.4	6	6	24	18	M4x0.7	8	24	18	6	10	12	16	12
25	2	6	3.4	6	6	26	22	M4x0.7	8	26	22	6	12	14	20	14

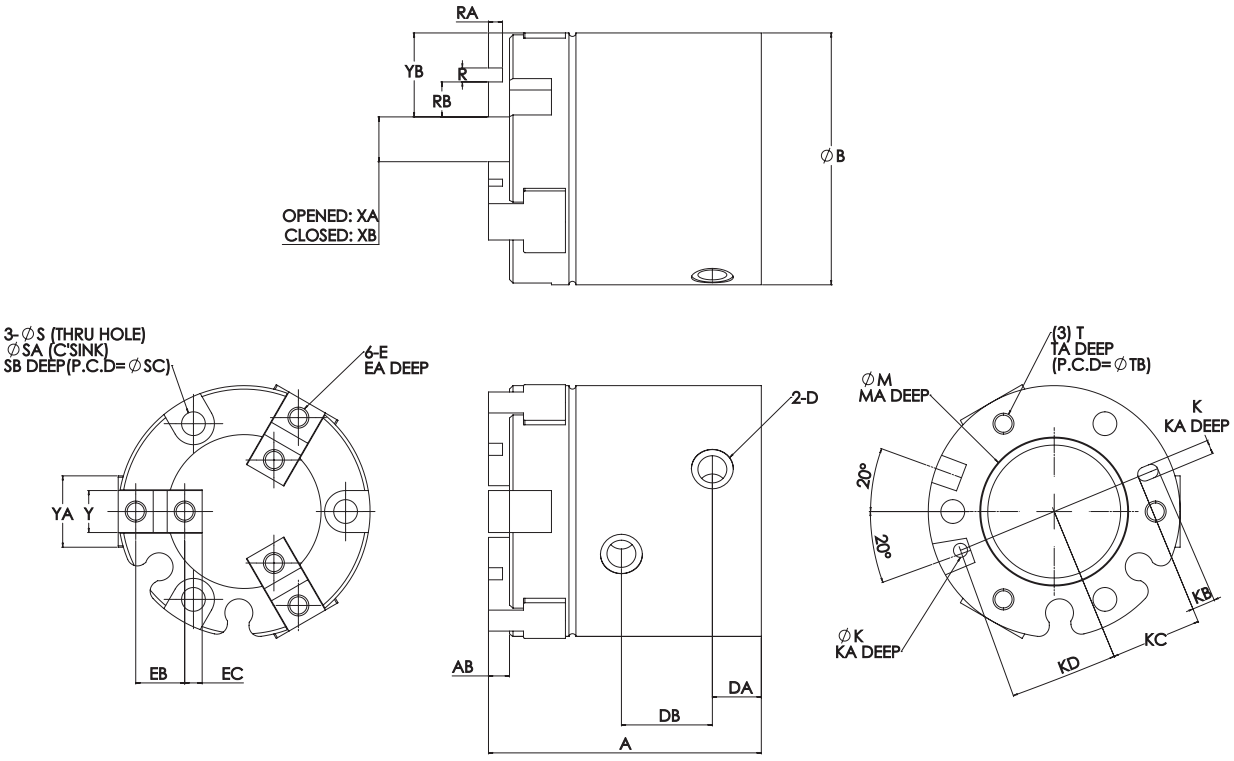


Bore Size (mm)	A	AB	B	D	DA	DB	E	EA	EB	EC	K	KA	KB	KC	KD	M	MA	R
32	45	3	55	M5x0.8	8.5	16	M4x0.7	8	11	4.5	3	3	5	20.5	23	34 DIA	2	2
40	49	3	62	M5x0.8	9.5	17.5	M4x0.7	8	12	4.5	4	4	6	23.5	26.5	42 DIA	2	3
50	57	3	70	M5x0.8	9.5	21	M5x0.8	9	14	5	4	4	6	28	31	52 DIA	2	4
63	68	4	86	M5x0.8	12	24	M5x0.8	9	17	5.5	5	5	7	34.5	38	65 DIA	2.5	6

Bore Size (mm)	RA	RB	S	SA	SB	SC	SD	T	TA	TB	TC	Y	YA	YB	XA	XB
32	2	9	4.2	8	9	38	25	M5x0.8	10	38	25	8	14	20	24	16
40	2	9	5.2	9.5	9	44	28	M6x1.0	12	44	28	8	16	21	28	20
50	2	10	5.2	9.5	9	52	34	M6x1.0	12	52	34	10	18	24	34	22
63	3	11	5.2	9.5	9	66	38	M6x1.0	12	66	38	12	24	28	46	30

Product Information

Three Gripper Dimensions (mm)

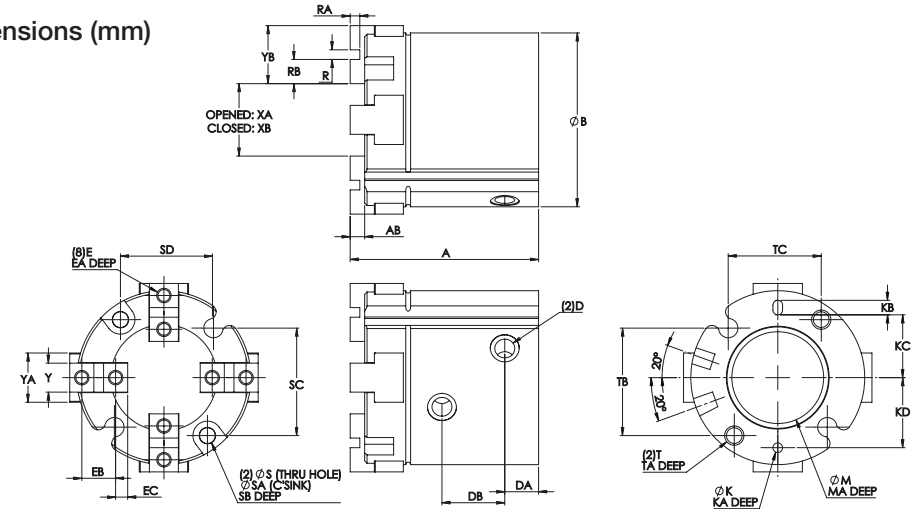


Bore Size (mm)	A	AB	B	D	DA	DB	E	EA	EB	EC	K	KA	KB	KC	KD
16	35	3	30	M3x0.5	7	10	M3x0.5	5	6	2	2	2	3	11	12.5
20	39	3	36	M5x0.8	7	13	M3x0.5	5	7	2.5	2	2	3	13	14.5
25	41	3	42	M5x0.8	7.5	14.5	M3x0.5	5	8	3	3	3	5	14.5	17
32	45	3	52	M5x0.8	8.5	16	M4x0.7	8	11	4.5	3	3	5	19.5	22
40	49	3	62	M5x0.8	9.5	17.5	M4x0.7	8	12	4.5	4	4	6	23.5	26.5
50	57	3	70	M5x0.8	9.5	21	M5x0.8	9	14	5	4	4	6	28	31
63	68	4	86	M5x0.8	12	24	M5x0.8	9	17	5.5	5	5	7	34.5	38

Bore Size (mm)	M	MA	R	RA	RB	S	SA	SB	SC	T	TA	TB	Y	YA	YB	XA	XB
16	17 DIA	1.5	2	2	4	3.4	6	6	25	M3x0.5	6	25	5	8	10	7	5
20	21 DIA	1.5	2	2	5	3.4	6	6	29	M3x0.5	6	29	6	10	12	8	6
25	26 DIA	1.5	2	2	6	4.5	8	9	34	M4x0.7	8	34	6	12	14	10	7
32	34 DIA	2	2	2	9	4.5	8	9	44	M4x0.7	8	44	8	14	20	12	8
40	42 DIA	2	3	2	9	5.5	9.5	9	53	M5x0.8	10	53	8	16	21	14	10
50	52 DIA	2	4	2	10	5.5	9.5	12	62	M5x0.8	10	62	10	18	24	17	11
63	65 DIA	2.5	6	3	11	6.6	11	14	76	M6x1.0	12	76	12	24	28	23	15

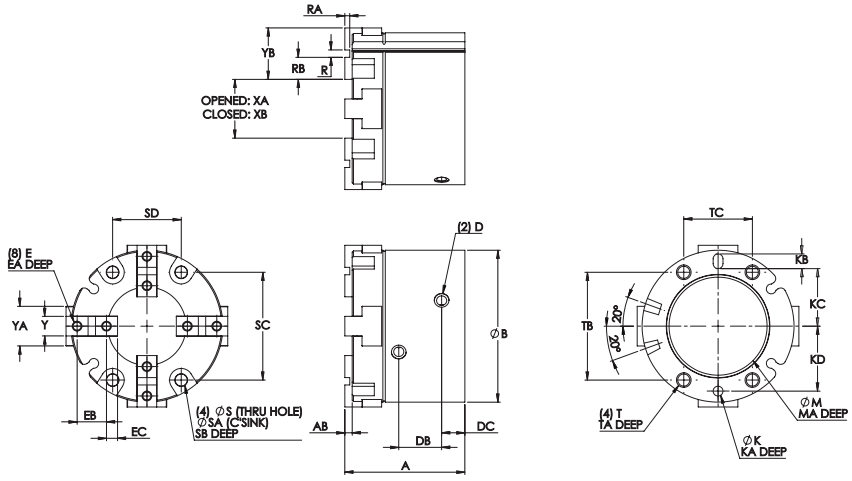
Product Information

Four Gripper Dimensions (mm)



Bore Size (mm)	A	AB	B	D	DA	DB	E	EA	EB	EC	K	KA	KB	KC	KD	M	MA	R	RA
16	35	3	30	M3x0.5	7	10	M3x0.5	5	6	2	2	2	3	11	12.5	17 DIA	1.5	2	2
20	39	3	36	M5x0.8	7	13	M3x0.5	5	7	2.5	2	2	3	13	14.5	21 DIA	1.5	2	2
25	41	3	42	M5x0.8	7.5	14.5	M3x0.5	5	8	3	3	3	5	14.5	17	26 DIA	1.5	2	2

Bore Size (mm)	RB	S	SA	SB	SC	SD	T	TA
16	4	3.4	6	6	18	16	M4x0.7	8
20	5	3.4	6	6	24	18	M4x0.7	8
25	6	3.4	6	6	26	22	M4x0.7	8



Bore Size (mm)	A	AB	B	D	DA	DB	E	EA	EB	EC	K	KA	KB	KC	KD	M	MA	R	RA
32	45	3	55	M5x0.8	8.5	16	M4x0.7	8	11	4.5	3	3	5	20.5	23	34 DIA	2	2	2
40	49	3	62	M5x0.8	9.5	17.5	M4x0.7	8	12	4.5	4	4	6	26.5	26.5	42 DIA	2	3	2
50	57	3	70	M5x0.8	9.5	21	M5x0.8	9	14	5	4	4	6	31	31	52 DIA	2	4	2
63	68	4	86	M5x0.8	12	24	M5x0.8	9	17	5.5	5	5	7	38	38	65 DIA	2.5	6	3

Bore Size (mm)	RB	S	SA	SB	SC	SD	T	TA
32	9	4.2	8	9	38	25	M5x0.8	10
40	9	5.2	9.5	9	44	28	M6x1.0	12
50	10	5.2	9.5	12	52	34	M6x1.0	12
63	11	5.2	9.5	14	66	38	M6x1.0	12

How To Order

MHFC-2-16

Model	Number of Fingers	Bore Size	
MHFC Series	2	16	16mm
	3	20	20mm
	4	25	25mm
		32	32mm
		40	40mm
		50	50mm
		63	63mm

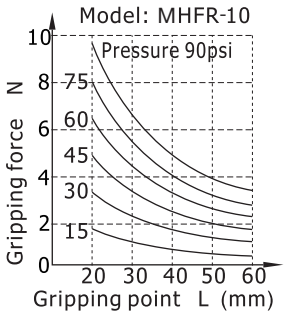
Technical Data

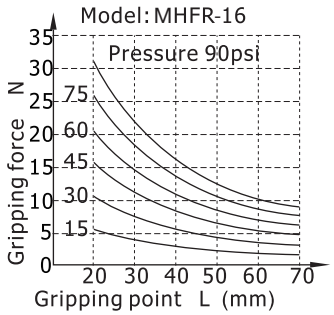
Engineering Specifications

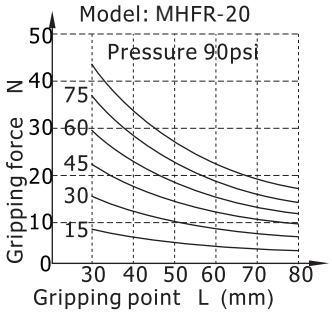
Bore Size (mm)		10	16	20	25	32
Acting Type		Double Acting				
Fluid		Air (to be filtered by 40µm filter element)				
Operating Pressure		21 to 100 PSI (0.15 to 0.7MPa)				
Temperature		-4°C to 158°F (-20°C to 70°C)				
Lubrication		cylinder: not required; gripper jaws: lubricate grease				
Repeatability (mm)		±0.02mm				
Max. frequency		60 cycles per minute				
Port Size		M5x0.8				
Sensor Switch Compatibility	Reed Switch	MWF-G				
	Solid State Switch	MWK-G, MWC-G				

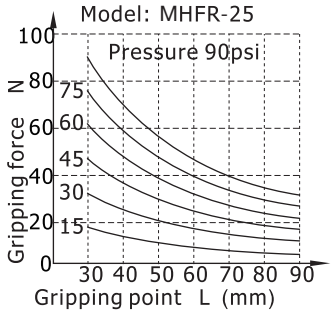


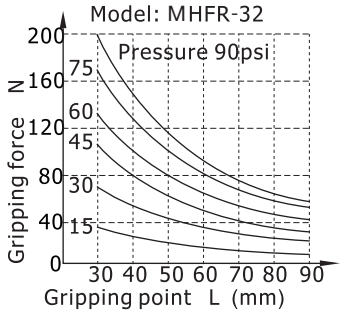
Connection Between Gripping Force and Gripping Point Distance

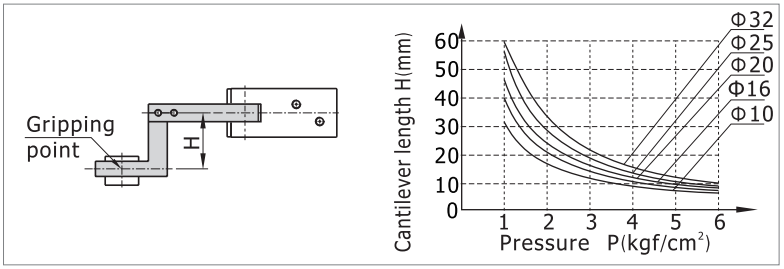






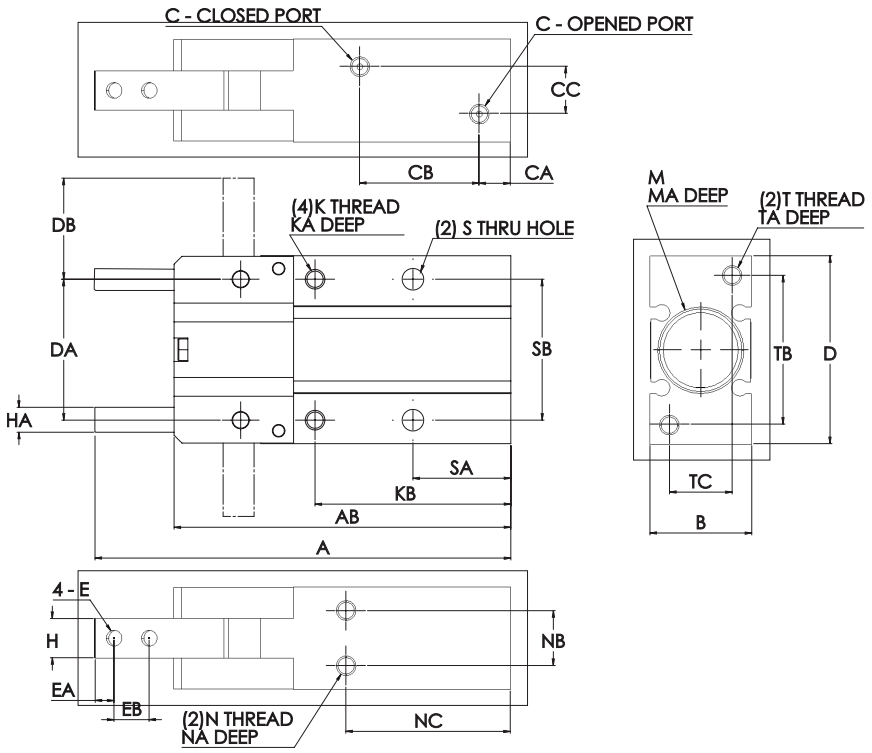






Product Information

Dimensions (mm)



Bore Size (mm)	A	AB	B	C	CA	CB	CC	D	DA	E	EA	EB	H	HA	S	SA	SB	K
10	71	58	15	M5x0.8	7	28.5	3	30	22	M3x0.5	3	6	6	4	3.3 DIA	18	24	M3x0.5
16	84	69	20	M5x0.8	7	30.5	8	38	28	M3x0.5	4	7	8	5	4.5 DIA	20	30	M4x0.7
20	106	86	26	M5x0.8	8	38.5	12	48	36	M4x0.7	5	9	10	8	5.5 DIA	25	36	M5x0.8
25	131	107	30	M5x0.8	8	48	14	58	45	M5x0.8	6	12	12	10	6.5 DIA	30	42	M6x1.0
32	158.5	122	40	M5x0.8	9	56	18	72	55	M6x1.0	9	16	14	12	6.5 DIA	35	46	M6x1.0

Bore Size (mm)	KA	KB	T	TA	TB	TC	M	MA	N	NA	NB	NC
10	6	35	M3x0.5	6	24	9	11 DIA	1.5	M3x0.5	4	9	30
16	8	41	M4x0.7	8	30	12	17 DIA	1.5	M4x0.7	5	12	33
20	10	50	M5x0.8	10	38	16	21 DIA	1.5	M5x0.8	8	14	42
25	12	60	M6x1.0	12	46	18	26 DIA	1.5	M6x1.0	10	16	50
32	14	64	M6x1.0	14	46	26	34 DIA	2	M6x1.0	12	26	59

How To Order

MHFR-16

Model
MHFR Series

Bore Size	
10	10mm
16	16mm
20	20mm
25	25mm
32	32mm

Product Information

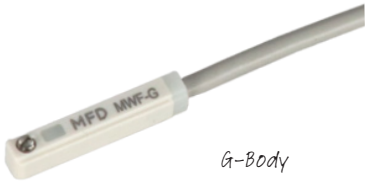
Dimensions (mm)

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

Technical Data

Engineering Specifications

Item/Type	MWF	MWC	MWK
Switch Logic	Solid State Transistor, Normally Open		
Sensor Type	2-Wire Solid State Switch	NPN	PNP
Operating Voltage (V)	10-28V DC	5-30V DC	
Max. Switching Current (mA)	50	100	
Max. Switching Power (W)	1.4	3	
Voltage Drop	2.65V Max @ 50mA DC	0.5V Max. @ 100mA DC	
Cable	Ø2.8, 2C, PVC	Ø2.8, 3C, PVC	
Indicator	Red	Green	Red
Sensitivity (Gauss)	40-800		
Max. Frequency (Hz)	200		
Temperature Range	14°F to 158°F (-10°C to 70°C)		
Enclosure Classification	IP68		



G-Body



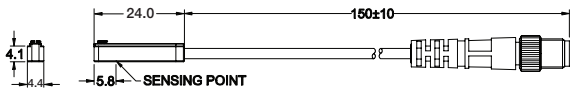
H-Body

See page 158 for Switch Selector Guide

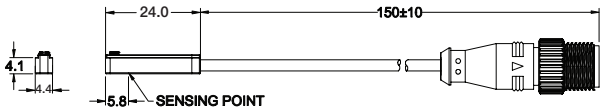
Dimensions (mm)

G-Body

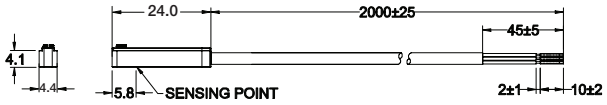
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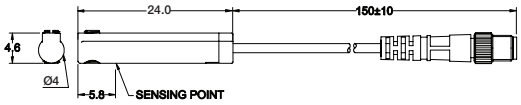


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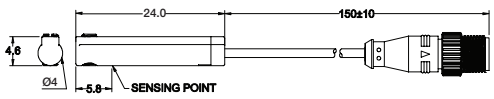


H-Body

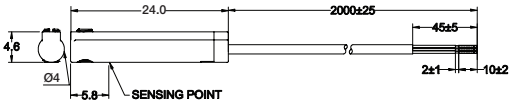
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Wire Style: C12



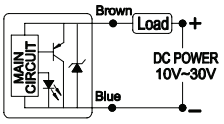
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Wiring Diagrams

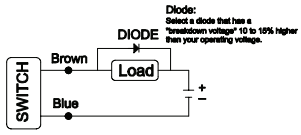
MWF

CIRCUIT & CONNECTION DIAGRAM

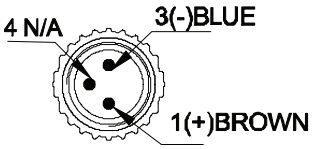


The brown wire series load to the positive (+)
and the blue to the negative (-) of power source.

EXTERNAL PROTECTION CIRCUIT

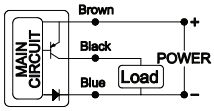


Applicable to
DC Conductive Load

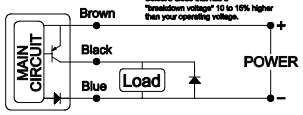


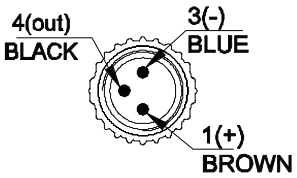
MWC

CIRCUIT & CONNECTION DIAGRAM



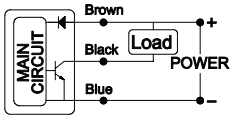
EXTERNAL PROTECTION CIRCUIT





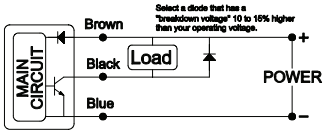
MWK

CIRCUIT & CONNECTION DIAGRAM

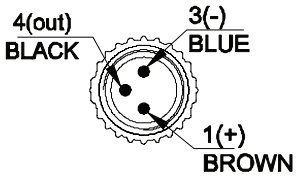


The brown wire to the positive (+) and the
blue to the negative (-) from DC power.
The black wire have to connect to the load.

EXTERNAL PROTECTION CIRCUIT



Applicable to Conductive Load
Attach an extenal diode between Brown(-) and Black(out)



How to Order

MWF - H - C08

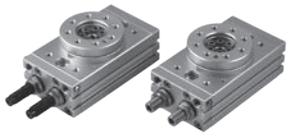
Model
MW Series

Output	
F	2 Wire (Solid State)
K	3 Wire, NPN (Sinking)
C	3 Wire, PNP (Sourcing)

Body Type	
H	Round
G	Square

Wire Style	
020	Flying Leads, 2 Meter Wire Length
C08	M8 Male Quick Connect, 150mm Wire Length
C12	M12 Male Quick Connect, 150mm Wire Length

Product Information

			MW Solid State Switches	
			G Body	H Body
MTC Thrusters		All Bore Sizes	X	
MACQ Compact Cylinders		All Bore Sizes	X	
MHRQ Rotary Actuators		All Bore Sizes		X
MHFK Parallel Grippers		6mm Bore		X
		10mm Bore	X	
		16-40mm Bore	X	X
MHFY Angular Grippers		6mm Bore		X
		10-32mm Bore	X	
MHFC Parallel Multi-Finger Grippers		16-63mm Bore		X
MHFR 180° Grippers		10-32mm Bore		X

Notes

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