

ROSS CONTROLS®



PRESSURE REGULATORS



PRESSURE REGULATORS – KEY FEATURES

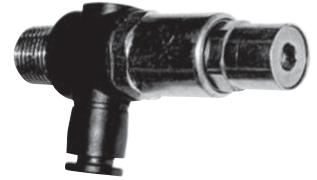
- Two design options available:
Piston design for highest air flow
Diaphragm design for high sensitivity and quick response
- Modular or Inline Mounting options
- Pressure Gauge included
- Removable Adjusting Knob for tamper resistance
- Self-relieving or non-relieving options
- Reverse Flow option available on some regulator models
- T-Handle option available on some regulator models

REGULATOR TYPE/SERIES	AVAILABLE PORT SIZES											MOUNTING		FLOW	CONSTRUCTION		OPTIONS					Page
	1/8	1/4	3/8	1/2	3/4	1	1¼	1½	2	3	INLINE	MODULAR	MAX FLOW (scfm)	PISTON	DIAPHRAM	SELF RELIEVING	NON RELIEVING	REVERSE FLOW	T-HANDLE	LOCKING KNOB		
REGULATORS																						
RIGHT-ANGLE													55								E2.3	
BANTAM													23								E2.4	
MINIATURE													40								E2.5	
MID-SIZE													100								E2.6	
MD3™													120								E2.7	
FULL-SIZE													155								E2.8	
MD4™													220								E2.9	
HIGH-CAPACITY													800								E2.10	
HIGH-PRESSURE REGULATORS																						
HIGH-PRESSURE													70								E2.11	
PRECISION REGULATORS																						
MINIATURE													4								E2.12	
FULL-SIZE													155								E2.13	
MD4™													170								E2.14	
HIGH-CAPACITY													800								E2.15	
REMOTE PILOT REGULATORS																						
FULL-SIZE													155								E2.16 - E2.18	
MD4™													190								E2.19	
HIGH-CAPACITY													4000								E2.20 - E2.23	
RELIEF VALVES																						
MINIATURE													40								E2.24	
HIGH-FLOW													450								E2.25	
PROPORTIONAL VALVES																						
RER Series													1000								E2.26	
RB-RER Series													4000								E2.27	

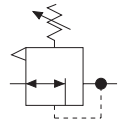
Inline Pressure Regulators

RIGHT-ANGLE Series

Port Sizes: 1/8, 1/4, 3/8 & 1/2 – Flow to 55 scfm

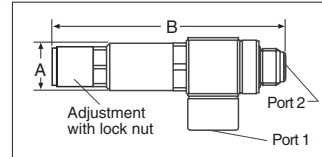


ISO Symbol
Regulator
Self-Relieving



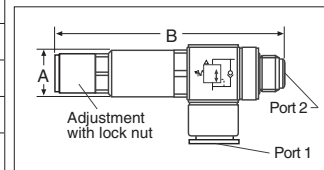
E2

Models with Threaded Banjo					
Port Size		Model Number	Dimensions inches (mm)		Tightening Torque Max. Ft-lb (Nm)
Port 1 (female threads)	Port 2 (male threads)		A	B	
1/8	1/8	5214A1010	0.7 (17)	2.9 (74)	7.38 (10)
1/4	1/4	5214A2010	0.7 (17)	3.2 (81)	8.85 (12)
3/8	3/8	5214A3010	0.9 (22)	3.5 (88)	14.75 (20)
1/2	1/2	5214A4010	1.1 (27)	3.5 (89)	22.13 (30)
G1/8	G1/8	D5214A1010	0.7 (17)	2.9 (74)	11.06 (15)
G1/4	G1/4	D5214A2010	0.7 (17)	3.2 (81)	14.75 (20)
G3/8	G3/8	D5214A3010	0.9 (22)	3.5 (88)	22.13 (20)
G1/2	G1/2	D5214A4010	1.1 (27)	3.5 (89)	22.50 (30)



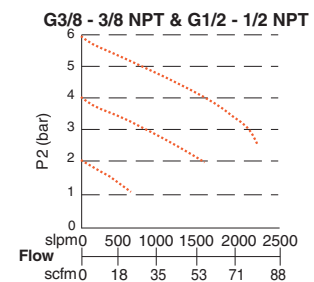
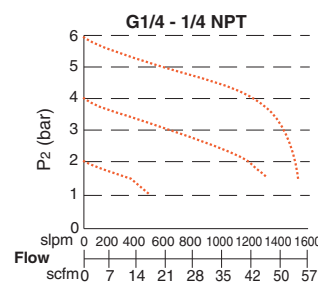
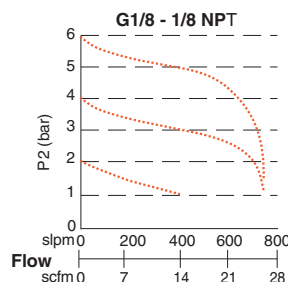
Models with Push-to-Connect Fitting					
Port Size		Valve Model Number	Dimensions inches (mm)		Tightening Torque Max. Ft-lb (Nm)
Port 1* (tube size)	Port 2** (thread size)		A	B	
5/32"	1/8	5214A1115	0.7 (17)	2.9 (73)	11.06 (15)
1/4"	1/8	5214A1120	0.7 (17)	2.9 (73)	11.06 (15)
1/4"	1/4	5214A2120	0.7 (17)	3.2 (81)	14.75 (20)
3/8"	1/4	5214A2130	0.7 (17)	3.2 (81)	14.75 (20)
3/8"	3/8	5214A3130	0.9 (22)	3.5 (88)	22.13 (30)
4 mm	G1/8	D5214A1140	0.5 (13)	2.9 (73)	7.38 (10)
6 mm	G1/8	D5214A1160	0.5 (13)	2.9 (73)	7.38 (10)
8 mm	G1/8	D5214A1180	0.5 (13)	2.9 (73)	7.38 (10)
6 mm	G1/4	D5214A2160	0.7 (17)	3.2 (81)	8.85 (12)
8 mm	G1/4	D5214A2180	0.7 (17)	3.2 (81)	8.85 (12)
10 mm	G1/4	D5214A2110	0.7 (17)	3.2 (81)	8.85 (12)
8 mm	G3/8	D5214A3180	0.9 (22)	3.5 (88)	14.75 (20)
10 mm	G3/8	D5214A3110	0.9 (22)	3.5 (88)	14.75 (20)

Port 1 tubing size in inches (") or millimeters (mm). ** Port 2 threads are male.



E

FLOW CHARTS



STANDARD SPECIFICATIONS (for products on this page):

Construction: Self-relieving.

Ambient/Media Temperature: 15° to 160°F (-10° to 70°C).

Flow Media: Filtered air.

Inlet Pressure: 15 to 240 psig (1 to 17 bar).

Regulated Pressure Range: 15 to 120 psig (1 to 8 bar).

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



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E2.3

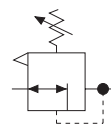
Port Sizes: 1/8, 1/4 & 3/8 – Flow to 23 scfm

Port Size	Model Numbers					
	Piston			Diaphragm		
	Regulated Pressure psig (bar)					
	0-50 (0-3.4)	0-100 (0-6.9)	0-125 (0-8.6)	0-50 (0-3.4)	0-100 (0-6.9)	0-125 (0-8.6)
With THREADED PORTS *						
1/8	5B01C0030	5B01C0010	5B01C0050	5B01C0040	5B01C0020	5B01C0060
1/4	5B02C0030	5B02C0010	5B02C0050	5B02C0040	5B02C0020	5B02C0060
With Quick Connect TUBE FITTINGS						
1/4	5B03C0030	5B03C0010	5B03C0050	5B03C0040	5B03C0020	5B03C0060
3/8	5B04C0030	5B04C0010	5B04C0050	5B04C0040	5B04C0020	5B04C0060
4mm	5B05C0030	5B05C0010	5B05C0050	5B05C0040	5B05C0020	5B05C0060
6mm	5B06C0030	5B06C0010	5B06C0050	5B06C0040	5B06C0020	5B06C0060
8mm	5B07C0030	5B07C0010	5B07C0050	5B07C0040	5B07C0020	5B07C0060
10mm	5B08C0030	5B08C0010	5B08C0050	5B08C0040	5B08C0020	5B08C0060
* NPT port threads. For BSPP threads add a “C” prefix to the model number e.g., C5B01C0030.						

* NPT port threads. For BSPP threads add a "C" prefix to the model number e.g., C5B01C0030.

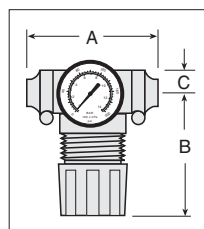


ISO Symbol
Regulator
Self-Relieving

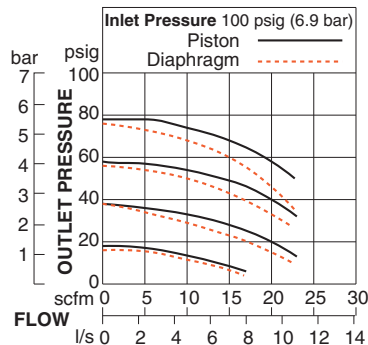


Port Size	Dimensions inches (mm)				Weight lb (kg)
	A	B	C	Depth*	
No Port	1.7 (43)	2.6 (67)	0.5 (13)	1.8 (45)	0.21 (0.09)
1/8, 1/4	3.0 (76)	2.6 (67)	0.5 (13)	1.8 (45)	0.43 (0.19)
<i>Models below have quick-connect tube fittings.</i>					
1/4	3.4 (86)	2.6 (67)	0.5 (13)	1.8 (45)	0.21 (0.09)
3/8	3.9 (99)	2.6 (67)	0.5 (13)	1.8 (45)	0.21 (0.09)
4 mm	3.4 (86)	2.6 (67)	0.5 (13)	1.8 (45)	0.41 (0.18)
6 mm	3.4 (86)	2.6 (67)	0.5 (13)	1.8 (45)	0.41 (0.18)
8 mm	3.1 (79)	2.6 (67)	0.5 (13)	1.8 (45)	0.41 (0.18)
10 mm	3.9 (99)	2.6 (67)	0.5 (13)	1.8 (45)	0.41 (0.18)

* Less gauge.



FLOW CHART



Pressure Gauge included.
Accessories ordered separately, refer to page E6.3-4.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Piston or diaphragm.

Self-relieving, for non-relieving option consult ROSS.

Ambient/Media Temperature: 40° to 125°F (4° to 52°C).

Fluid Media: Compressed air.

Inlet Pressure: 150 psig (10 bar) maximum.

Outlet Pressure: Adjustable up to 100 psig (7 bar).

Pressure Gauge: 0 to 160 psig (0 to 11 bar); 1/8 gauge ports front and rear.

Panel Mounting: 1-3/16 inch (30 mm) hole required.

Body: Acetal.

Dome and Knob: Acetal.

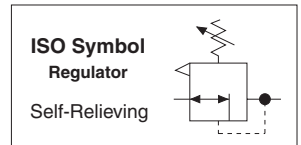
Seals: Nitrile.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Port Sizes: 1/8 & 1/4 – Flow to 40 scfm

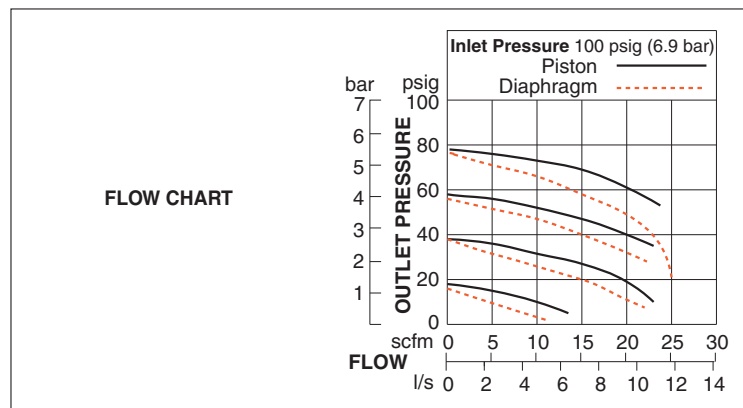
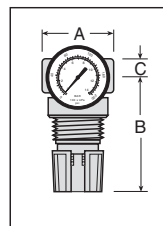
Port Size	Model Numbers*					
	Piston			Diaphragm		
	Regulated Pressure psig (bar)					
	0-50 (0-3.4)	0-100 (0-6.9)	0-125 (0-8.6)	0-50 (0-3.4)	0-100 (0-6.9)	0-125 (0-8.6)
1/8	5212C1004	5211C1004	5213C1004	5212C1005	5211C1005	5213C1005
1/4	5212C2004	5211C2004	5213C2004	5212C2005	5211C2005	5213C2005

* NPT port threads. For BSPP threads add a “C” prefix to the model number e.g., C5212C1004.



Port Size	Dimensions inches (mm)				Weight* lb (kg)
	A	B	C	Depth*	
1/8, 1/4	1.6 (41)	2.7 (68)	0.4 (10)	1.6 (41)	0.24 (0.11)

* Less gauge.



Pressure Gauge included.
Accessories ordered separately, refer to page E6.3-4.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Piston or diaphragm.
Self-relieving, for non-relieving option consult ROSS.
Ambient/Media Temperature: 40° to 125°F (4° to 52°C).
Fluid Media: Compressed air.
Inlet Pressure: 300 psig (21 bar) maximum.
Outlet Pressure: Adjustable up to 100 psig (7 bar).

Pressure Gauge: 0 to 160 psig (0 to 11 bar); 1/8 NPT gauge ports front and rear.
Panel Mounting: 1-3/16 inch (30 mm) hole required.
Body: Aluminum.
Dome and Knob: Acetal.
Seals: Nitrile.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



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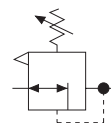
Port Sizes: 1/4, 3/8 & 1/2 – Flow to 100 scfm

Port Size	Model Numbers*		
	Pressure Range psig (bar)		
	0-50 (0-3.4)	0-100 (0-6.9)	0-150 (0-10.3)
1/4	5212B2015	5211B2015	5213B2015
3/8	5212B3015	5211B3015	5213B3015
1/2	5212B4015	5211B4015	5213B4015

* NPT port threads. For BSPP threads add a "C" prefix to the model number e.g., C5212B2015.



ISO Symbol
Regulator
Self-Relieving



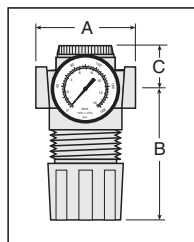
REGULATORS with REVERSE FLOW

Port Size	Regulated Pressure Range psig (bar)	Model Numbers*	
		Pressure Adjustment	
		Knob	T-Handle
1/4	0-100 (0-6.9)	5X00B2035	5X00B2039
3/8	0-100 (0-6.9)	5X00B3024	5X00B3021
1/2	0-100 (0-6.9)	5X00B4023	5X00B4041

* NPT port threads. For BSPP threads add a "C" prefix to the model number e.g., C5X00B2035.

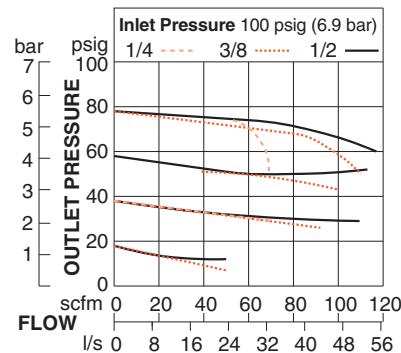
Port Size	Dimensions inches (mm)				Weight* lb (kg)
	A	B	C	Depth*	
1/4, 3/8, 1/2	2.7 (68)	3.3 (83)	1.3 (33)	2.1 (52)	1.0 (0.46)

*Less gauge.



Reverse-Flow Regulators provide regulated in-to-out pressure control, plus quick exhausting from out-to-in. Used for downstream pressure regulation of weld guns and other applications requiring quick exhausting through the regulator.

FLOW CHART



Pressure Gauge included.
Accessories ordered separately, refer to page E6.3-4.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Piston.
Self-relieving, for non-relieving option consult ROSS.
Ambient/Media Temperature: 40° to 125°F (4° to 52°C).
Fluid Media: Compressed air.
Inlet Pressure: 250 psig (17 bar) maximum.
Outlet Pressure: Adjustable up to 150 psig (10 bar).
Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.

Panel Mounting: 1-9/16 inch (40 mm) hole required.
Body: Zinc.
Cap: Nylon.
Dome: Acetal.
Knob: Acetal.
Seals: Nitrile.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Port Sizes: 1/4, 3/8 & 1/2 – Flow to 120 scfm

HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)

MD3 52K A R C 2 2 A

ADJUSTMENT TYPE	
Knob	52K
Tee Handle	52T
Locking Knob	52L

ADJUSTMENT RANGE	
0-200 psig (0-13.8 bar)	A
0-150 psig (0-10.3 bar)	B
0-100 psig (0-6.9 bar)	C
0-50 psig (0-3.4 bar)	D

PIPE SIZE	
1/4 NPTF	2
3/8 NPTF	3
1/2 NPTF	4
1/4 BSPP	B
3/8 BSPP	C
1/2 BSPP	D

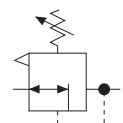
FLOW OPTIONS	
Reverse Flow	R
Standard Flow	S

GAUGE	
Without Gauge	A
Gauge 0-200 psig (0-13.8 bar)	B
Gauge 0-60 psig (0-4.1 bar)	C
Without Gauge, with Panel Mount Nut	D
Gauge 0-200 psig (0-13.8 bar), with Panel Mount Nut	E
Gauge 0-60 psig (0-4.1 bar), with Panel Mount Nut	F



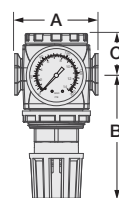
E2

ISO Symbol
Regulator
Self-Relieving

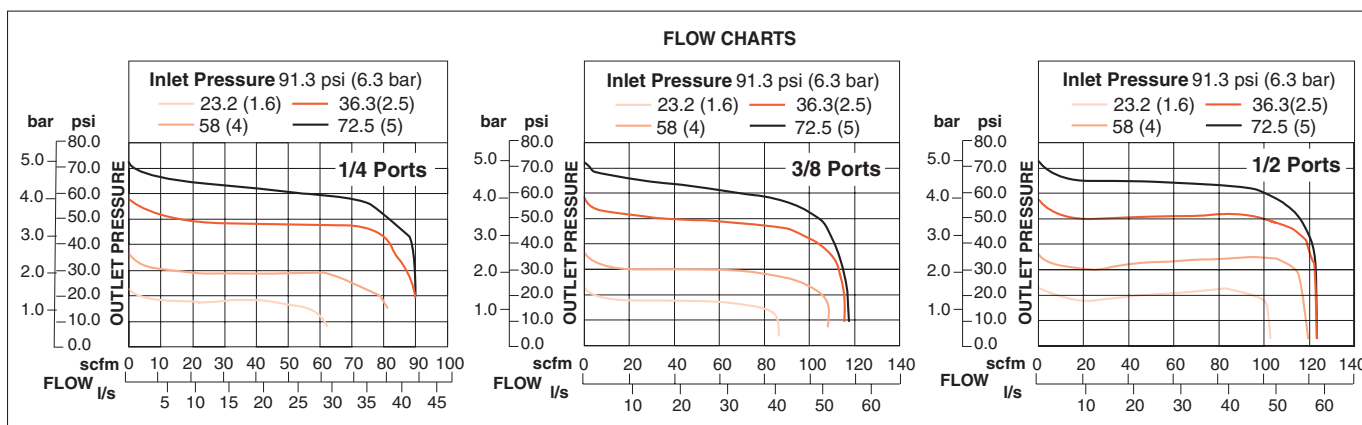


Port Size	Dimensions inches (mm)				Weight† lb (kg)
	A	B*	C**	Depth†	
1/4, 3/8, 1/2, 3/4	3.0 (76.2)	4.52 (114.9)	1.46 (37)	2.51 (63.8)	1.9 (0.86)

* Dome removal clearance: add 0.575 (14.6).
 ** Cap removal clearance: add 0.750 (19.1).
 † Less gauge.



E



Accessories ordered separately, refer to page E6.3-5.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Diaphragm.

Self-relieving, for non-relieving option consult ROSS.

Ambient/Media Temperature: 40° to 175°F (4° to 80°C).

Fluid Media: Compressed Air.

Inlet Pressure: 300 psig (21 bar) maximum.

Outlet Pressure: Adjustable up to 200 psig (14 bar); optional adjusting springs.

Optional Pressure Adjustment Locking Key: Removable.

Pressure Gauge: 0-200 psig (0-14 bar) or 0-60 psig (0-4 bar); 1/4-NPT gauge ports front and rear.

Panel Mounting: 2-1/16 inch (52 mm) hole required.

Self-relieving: Non-relieving optional.

Body: Zinc.

Dome: Nylon.

Knob: Acetal.

Seals: Nitrile.

Valve: Brass.

Valve Cap: Nylon.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



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E2.7

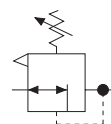
Port Sizes: 1/4, 3/8, 1/2 & 3/4 – Flow to 155 scfm

Port Size	Model Numbers*		
	Pressure Range psig (bar)		
	0-50 (0-3.4)	0-125 (0-8.6)	0-175 (0-12.1)
1/4	5212B2017	5211B2017	5213B2017
3/8	5212B3017	5211B3017	5213B3017
1/2	5212B4017	5211B4017	5213B4017
3/4	5212B5027	5211B5027	5213B5027

* NPT port threads. For BSPP threads add a "C" prefix to the model number e.g., C5212B2017.



ISO Symbol
Regulator
Self-Relieving



REGULATORS with REVERSE FLOW

Port Size	Model Numbers*	
	Pressure Adjustment 0-125 (0-8.6)	
	Knob	T-Handle
1/4	5X00B2010	—
3/8	5X00B3004	5X00B3012
1/2	5X00B4004	5X00B4047
3/4	5X00B5034	5X00B5044

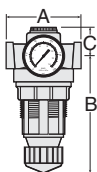
* NPT port threads. For BSPP threads add a "C" prefix to the model number e.g., C5X00B2010.

Port Size	Dimensions inches (mm)				Weight† lb (kg)
	A	B**	C***	Depth†	
1/4, 3/8, 1/2, 3/4	3.5 (89)	5.8 (146)	1.3 (33)	2.8 (71)	2.06 (0.92)

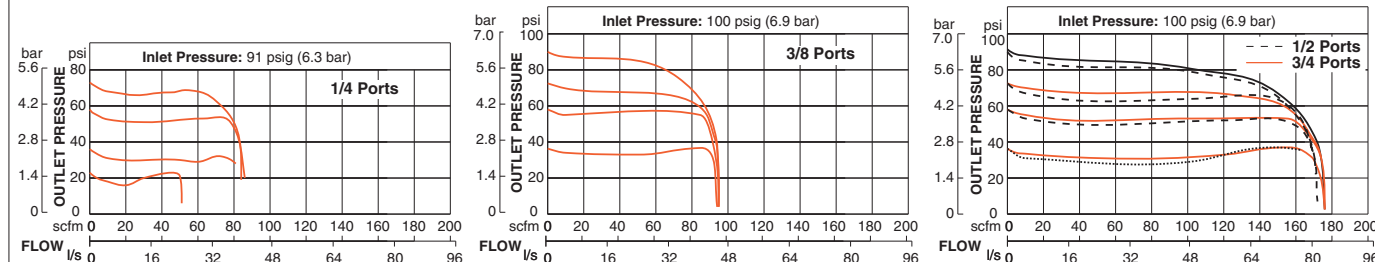
** Dome removal clearance: add 0.63 (16).

*** Cap removal clearance: add 0.5 (13).

† Less gauge.



FLOW CHARTS



Pressure Gauge included.
Accessories ordered separately, refer to page E6.3-4.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Diaphragm.

Self-relieving, for non-relieving option consult ROSS.

Ambient/Media Temperature: 40° to 175°F (4° to 80°C).

Fluid Media: Compressed air.

Inlet Pressure: 300 psig (21 bar) maximum.

Outlet Pressure: Adjustable up to 175 psig (12 bar).

Pressure Adjustment Locking Key: Removable.

Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.

Panel Mounting: 2-1/16 inch (52 mm) hole required.

Body: Zinc.

Dome: Nylon; aluminum with optional 0 to 175 psig (0 to 12 bar) spring.

Knob: Acetal.

Seals: Nitrile.

Valve: Brass.

Valve Cap: Nylon.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Port Sizes: 3/8, 1/2 & 3/4 – Flow to 220 scfm

HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)

MD4 **52K** **A** **S** **B** **5** **2** **B**

ADJUSTMENT TYPE

Knob	52K
Tee Handle	52T

ADJUSTMENT RANGE

0-175 psig (0-12.1 bar)	A
0-125 psig (0-8.6 bar)	B
0-50 psig (0-3.4 bar)	C
0-20 psig (0-1.4 bar)	D

PIPE SIZE

3/8 NPTF	3
1/2 NPTF	4
3/4 NPTF	5
3/8 BSPP	C
1/2 BSPP	D
3/4 BSPP	E

FLOW OPTIONS

Reverse Flow	R
Standard Flow	S

CAP COLOR

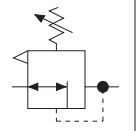
Gold	2
Gray	G
Yellow	Y
Red	R
Blue	B

GAUGE

Without Gauge	A
Gauge 0-200 psig (0-13.8 bar)	B
Gauge 0-60 psig (0-4.1 bar)	C
Without Gauge, with Panel Mount Nut	D
Gauge 0-200 psig (0-13.8 bar), with Panel Mount Nut	E
Gauge 0-60 psig (0-4.1 bar), with Panel Mount Nut	F

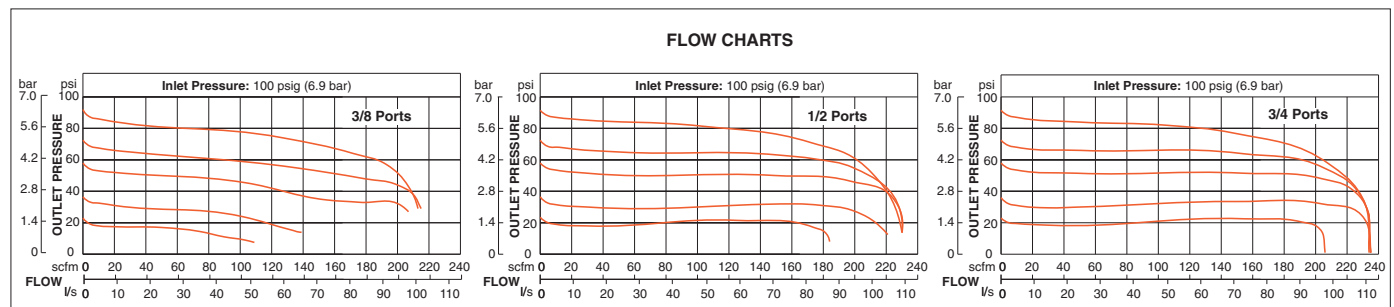


ISO Symbol
Regulator
Self-Relieving



Port Size	Dimensions inches (mm)				Weight † lb (kg)
	A	B*	C**	Depth †	
3/8, 1/2, 3/4	3.5 (87)	5.6 (142)	1.6 (40)	2.9 (73)	2.56 (1.16)

*Dome removal clearance: add 0.625 (16).
**Cap removal clearance: add 0.50 (13).
† Dimensions reflect less gauge.



Accessories ordered separately, refer to page E6.3-5.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Diaphragm.

Self-relieving, for non-relieving option consult ROSS.

Ambient/Media Temperature: 40° to 175°F (4° to 80°C).

Fluid Media: Compressed air.

Inlet Pressure: 300 psig (21 bar) maximum.

Outlet Pressure: Adjustable up to 175 psig (12 bar); optional adjusting springs.

Pressure Adjustment Locking Key: Removable.

Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.

Panel Mounting: 2-1/16 inch (52 mm) hole required.

Body: Zinc.

Dome: Nylon; aluminum with optional 0 to 175 psig (0 to 12 bar) spring.

Knob: Acetal.

Seals: Nitrile.

Valve: Brass.

Valve Cap: Nylon.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



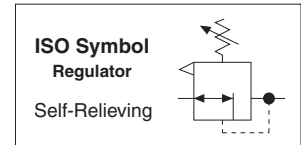
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Port Sizes: 3/4, 1, 1¼ & 1½ – Flow to 800 scfm

Port Size	Model Numbers*	
	Pressure Range psig (bar)	
	0-50 (0-3.4)	0-100 (0-6.9)
3/4	5212D5017	5211D5017
1	5212D6017	5211D6017
1¼	5212C7017	5211C7017
1½	5212C8017	5211C8017

* NPT port threads. For BSPP threads add a "C" prefix to the model number e.g., C5212D5017.



REGULATORS with REVERSE FLOW:			
Port Size	Pressure Range psig (bar)	Model Numbers*	
		Pressure Adjustment	
		Knob	T-Handle
3/4	0-100 (0-6.9)	5X00B5049	5X00B5050
1	0-100 (0-6.9)	5X00D6003	5X00B6038
1¼	0-100 (0-6.9)	5X00C7003	5X00B7016
1½	0-100 (0-6.9)	5X00C8001	5X00B8024

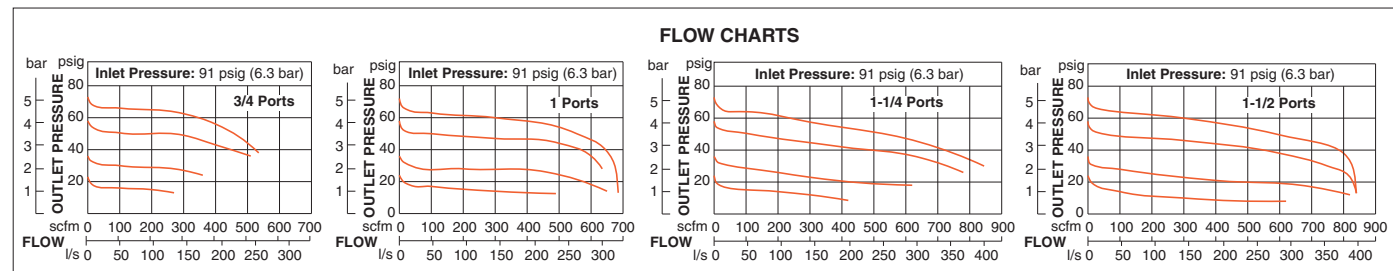
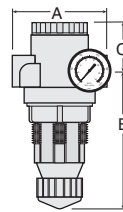
* NPT port threads. For BSPP threads add a "C" prefix to the model number e.g., C5X00B5049.

Port Size	Dimensions inches (mm)				Weight † lb (kg)
	A	B**	C***	Depth †	
3/4, 1	4.4 (111)	6.1 (154)	2.4 (62)	2.8 (71)	2.19 (0.99)
1¼, 1½	4.9 (124)	6.4 (162)	2.1 (54)	2.8 (71)	2.50 (1.14)

** Dome removal clearance: add 0.63 (16).

*** Cap removal clearance: add 0.65 (16.5).

† Dimensions reflect less gauge.



Pressure Gauge included.

Accessories ordered separately, refer to page E6.3-4.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Piston.

Self-relieving.

Ambient/Media Temperature: 40° to 175°F (4° to 80°C).

Fluid Media: Compressed air.

Inlet Pressure: 300 psig (21 bar) maximum.

Outlet Pressure: Adjustable up to 100 psig (7 bar).

Pressure Adjustment Locking Key: Removable.

Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.

Panel Mounting: 2-1/16 inch (52 mm) hole required.

Body: Aluminum.

Dome: Nylon; aluminum with optional 0 to 150 psig (0 to 10 bar) spring.

Knob: Acetal

Seals: Nitrile.

Valve: Brass.

Valve Cap: Nylon.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

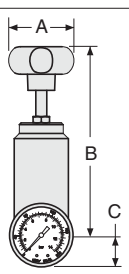
Port Sizes: 1/8, 1/4 & 3/8 – Flow to 70 scfm

Port Size	Model Numbers*	
	Piston Type	
	Relieving	Non-relieving
1/8	5215B1004	5X00B1025
1/4	5215B2004	5X00B2076
3/8	5215B3004	5X00B3052

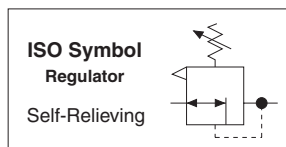
* NPT port threads. For BSPP threads add a "C" prefix to the model number e.g., C5215B1004.

Port Size	Dimensions inches (mm)				Weight** lb (kg)
	A	B	C	Depth**	
1/8, 1/4	1.9 (47)	7.3 (186) max	0.4 (10)	1.9 (47)	1.15 (0.53)
3/8	2.1 (54)	7.4 (188) max	0.5 (13)	2.1 (54)	1.30 (0.59)

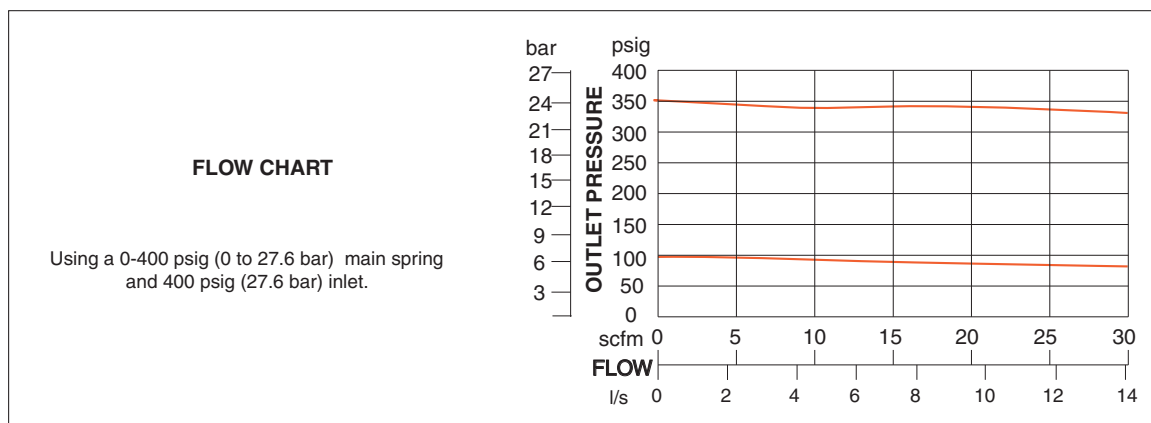
** Less gauge.



E2



E



Pressure Gauge included.
Accessories ordered separately, refer to page E6.3-4.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Piston.

Self-relieving, Non-relieving.

Ambient/Media Temperature: 40° to 175°F (4° to 80°C).

Fluid Media: Compressed air.

Inlet Pressure: 400 psig (28 bar) maximum.

Outlet Pressure: Adjustable up to 390 psig (27 bar).

Pressure Gauge: 0 to 600 psig (0 to 40 bar).

Body and Dome: Aluminum.

Knob: Nylon.

Seals: Fluororelastomer.

Max Flow Rate: 70 scfm (33.0 l/s) @ 400 psi (28 bar).

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



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E2.11

Port Sizes: 1/8 & 1/4 – Flow to 4 scfm

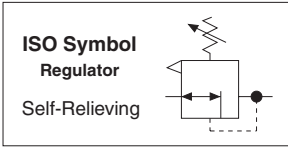
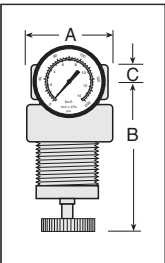
Port Size	Regulated Pressure Range# psig (bar)	Model Numbers*
1/8	0-50 (0-3.4)	5212C1006
1/4	0-50 (0-3.4)	5212C2006

For 0-10 psig (0-0.7 bar), 0-20 psig (0-1.4 bar), and 0-60 psig (0-4.1 bar) ranges, consult ROSS.
* NPT port threads. For BSPP threads add a “C” prefix to the model number e.g., C5212C1006.



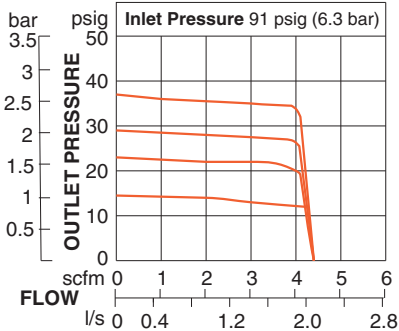
Port Size	Dimensions inches (mm)				Weight** lb (kg)
	A	B	C	Depth**	
1/8, 1/4	1.8 (44)	3.4 (86)	0.4 (10)	1.8 (44)	0.38 (0.16)

**Less gauge.



Precision Regulators have a small valve seat and a large diaphragm area, a combination that allows greater precision, sensitivity, adjustment resolution, and less variation in regulated pressure.

FLOW CHART



Accessories ordered separately, refer to page E6.3-4.

STANDARD SPECIFICATIONS (for products on this page):

- Construction:** Diaphragm.
Self-relieving.

Ambient/Media Temperature: 40° to 125°F (4° to 52°C).

Fluid Media: Compressed air.

Inlet Pressure: 300 psig (21 bar) maximum.

Outlet Pressure: Adjustable up to 100 psig (7 bar).
- Pressure Gauge:** 0 to 160 psig (0 to 11 bar); 1/8 NPT gauge ports front and rear.

Panel Mounting: 1-3/16 inch (30 mm) hole required.

Body: Aluminum.

Dome and Knob: Acetal.

Seals: Nitrile.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

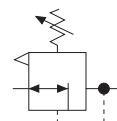
Port Sizes: 1/4, 3/8, 1/2 & 3/4 – Flow to 155 scfm

Internally Piloted Regulator		
Port Size	Model Numbers*	
	Pressure Range psig (bar)	
	15-200 (1-13.8)	15-250 (1-17.2)
1/4	5213C2018	5214C2018
3/8	5213C3018	5214C3018
1/2	5213C4018	5214C4018
3/4	5213C5018	5214C5018

* NPT port threads. For BSP threads add a "C" prefix to the model number e.g., C5213C2018.



ISO Symbol
Regulator
Self-Relieving



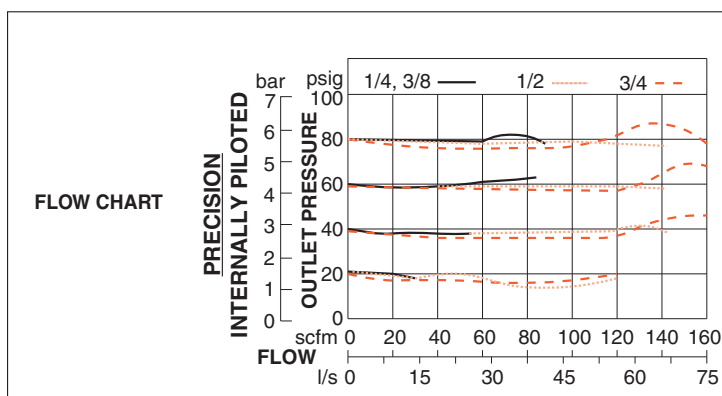
Port Size	Dimensions inches (mm)				Weight† lb (kg)
	A	B**	C***	Depth†	
1/4, 3/8, 1/2, 3/4	3.5 (89)	4.2 (106)	1.3 (33)	2.8 (71)	2.06 (0.92)

** Dome removal clearance: add 0.63 (16).
*** Cap removal clearance: add 0.5 (13).
† Less gauge.



E2

Precision internal Pilot Regulators provide improved torque control for pneumatic tools; diaphragm type. Pressure settings held within 3 psig (0.2 bar).



E

Pressure Gauge included.
Accessories ordered separately, refer to page E6.3-4.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Diaphragm.
Self-relieving.

Ambient/Media Temperature: 40° to 125°F (4° to 52°C).

Fluid Media: Compressed air.

Inlet Pressure: 300 psig (21 bar) maximum.

Outlet Pressure: Adjustable 15 to 250 psig (1 to 17 bar).

Pressure Adjustment Locking Key: Removable.

Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.

Panel Mounting: 2-1/16 inch (52 mm) hole required.

Body: Zinc.

Dome: Nylon; aluminum with optional 0 to 175 psig (0 to 12 bar) spring.

Knob: Acetal.

Seals: Nitrile.

Valve: Brass.

Valve Cap: Nylon.



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E2.13

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Port Sizes: 3/8, 1/2 & 3/4 – Flow to 170 scfm

HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)

MD4 **52K** **E** **B** **5** **2** **B**

ADJUSTMENT RANGE

15-200 psig (1.0-13.8 bar)	E
15-250 psig (1.0-17.2 bar)	F
15-100 psig (1.0-6.9 bar)	G

PIPE SIZE

3/8 NPTF	3
1/2 NPTF	4
3/4 NPTF	5
3/8 BSPP	C
1/2 BSPP	D
3/4 BSPP	E

GAUGE

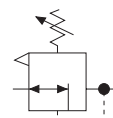
Without Gauge	A
Gauge 0-200 psig (0-13.8 bar)	B
Without Gauge, with Panel Mount Nut	D
Gauge 0-200 psig (0-13.8 bar), with Panel Mount Nut	E

CAP COLOR

Gold	2
Gray	G
Yellow	Y
Red	R
Blue	B

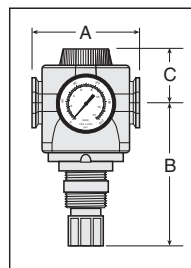


ISO Symbol
Regulator
Self-Relieving

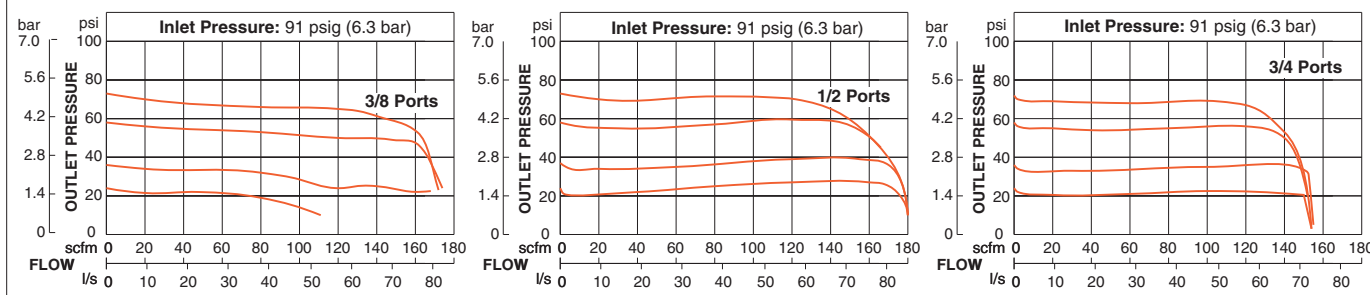


Port Size	Dimensions inches (mm)				Weight † lb (kg)
	A	B	C	Depth †	
3/8, 1/2, 3/4	3.5 (87)	4.8 (122)	1.6 (40)	2.9 (73)	2.3 (1.0)

† Dimensions reflect less gauge.



FLOW CHARTS



Accessories ordered separately, refer to page E6.3-5.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Diaphragm.

Self-relieving.

Ambient/Media Temperature: 40° to 125°F (4° to 52°C).

Fluid Media: Compressed air.

Inlet Pressure: 250 psig (17 bar) maximum.

Outlet Pressure: Adjustable 15 to 250 psig (1 to 17 bar).

Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.

Panel Mounting: 2-1/16 (52 mm) hole required.

Body and Dome: Zinc.

Bonnet and Knob: Acetal.

Seals: Nitrile.

Valve: Brass.

Precision Regulators: Provide improved torque control for pneumatic tools; diaphragm type. Pressure settings held within 3 psig (0.2 bar).

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

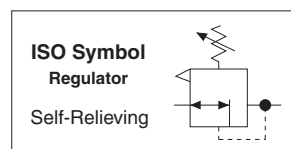
Port Sizes: 3/4, 1, 1¼, 1½ – Flow to 800 scfm

Port Size	Model Numbers*	
	Pressure Range psig (bar)	
	15-200 (1-13.8)	15-250 (1-17.2)
3/4	5213D5017	5214D5017
1	5213D6017	5214D6017
1¼	5213D7017	5214D7017
1½	5213D8017	5214D8017

* NPT port threads. For BSPP threads add a "C" prefix to the model number e.g., C5214D5017.



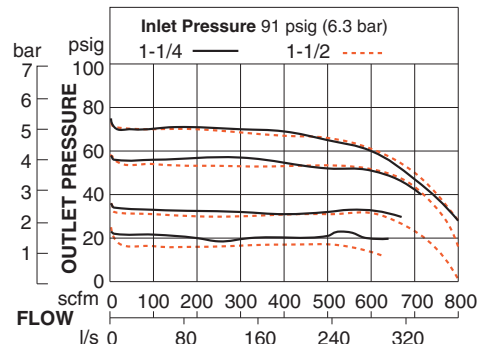
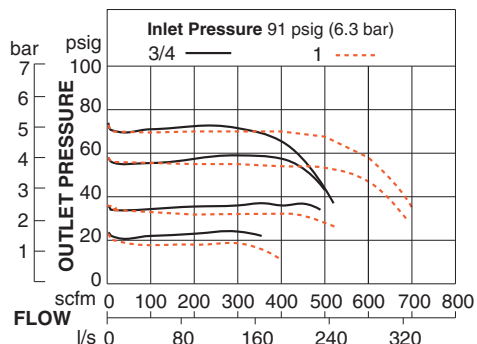
E2



Port Size	Dimensions inches (mm)				Weight † lb (kg)
	A	B	C	Depth †	
3/4, 1	4.4 (111)	4.6 (112)	2.4 (62)	2.8 (71)	2.0 (0.91)
1¼, 1½	4.9 (124)	4.9 (125)	2.1 (54)	2.8 (71)	2.38 (1.08)

† Dimensions reflect less gauge.

FLOW CHARTS



E

Precision Regulators:

Provide improved torque control for pneumatic tools. Pressure settings held within 3 psig (0.2 bar).

Pressure Gauge included.

Accessories ordered separately, refer to page E6.3-4.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Diaphragm.

Self-relieving.

Ambient/Media Temperature: 40° to 175°F (4° to 80°C).

Fluid Media: Compressed air.

Inlet Pressure: 300 psig (21 bar) maximum.

Outlet Pressure: Adjustable 15 to 250 psig (1 to 17 bar).

Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.

Panel Mounting: 1-3/16 (30 mm) hole required.

Body: Aluminum.

Bonnet and Knob: Acetal.

Dome: Zinc.

Seals: Nitrile.

Valve: Brass.

Valve Cap: Nylon.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



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E2.15

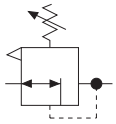
Port Sizes: 1/4, 3/8, 1/2, 3/4 – Flow to 155 scfm

Port Size	Model Numbers*
	Pressure Range psig (bar)
	0-200 (0-13.8)
1/4	5211C2007
3/8	5211C3007
1/2	5211C4007
3/4	5211C5007

* NPT port threads. For BSPP threads add a "C" prefix to the model number e.g., C5211C2007.

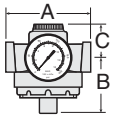


ISO Symbol
Regulator
Self-Relieving



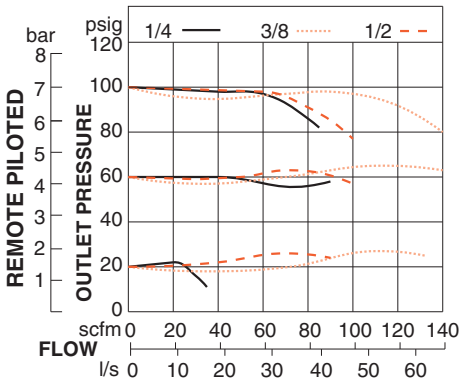
Port Size	Dimensions inches (mm)				Weight† lb (kg)
	A	B**	C***	Depth†	
1/4, 3/8, 1/2, 3/4	3.5 (89)	2.4 (62)	1.3 (33)	2.8 (71)	2.06 (0.92)

** Dome removal clearance: add 0.63 (16).
*** Cap removal clearance: add 0.5 (13).
† Less gauge.



Remote Pilot Regulators use any small regulator to provide remote adjustment and to ensure accurate pressure control.

FLOW CHART



Pressure Gauge included.
Accessories ordered separately, refer to page E6.3-4.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Diaphragm.
Self-relieving.
Ambient/Media Temperature: 40° to 175°F (4° to 80°C).
Fluid Media: Compressed air.
Inlet Pressure: 300 psig (21 bar) maximum.
Outlet Pressure: Adjustable 0 to 125 psig (0 to 14 bar).
Pressure Adjustment Locking Key: Removable.
Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.

Panel Mounting: 2-1/16 inch (52 mm) hole required.
Body: Zinc.
Dome: Zinc.
Knob: Acetal.
Seals: Nitrile.
Valve: Brass.
Valve Cap: Nylon.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS, WARNINGS on the inside back cover.

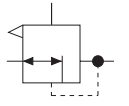
Port Sizes: 1/4, 3/8, 1/2 & 3/4 – Flow to 150 scfm

Port Size	Model Numbers*
1/4	5X00B2037
3/8	5X00B3025
1/2	5X00B4040
3/4	5X00B5035

* NPT port threads. For BSPP threads add a "C" prefix to the model number e.g., C5X00B2037.



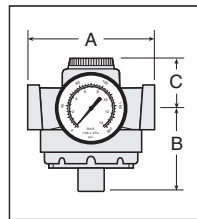
ISO Symbol
Regulator



E2

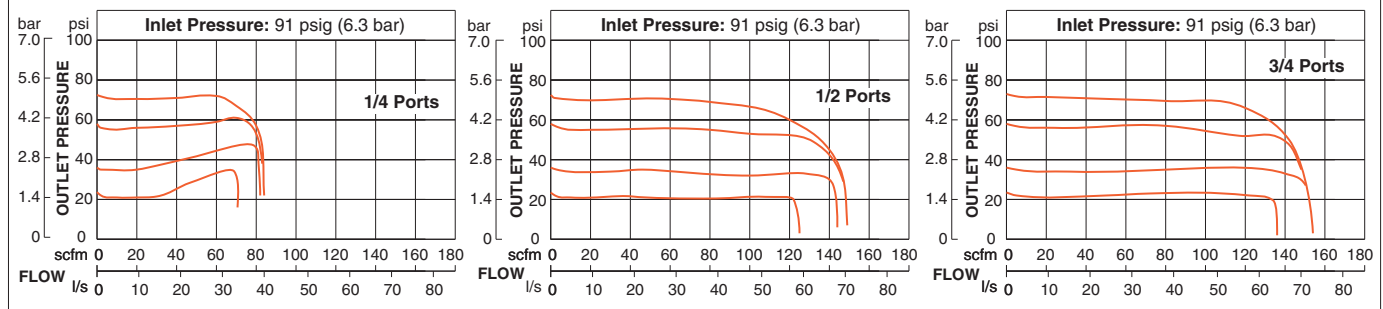
Port Size	Dimensions inches (mm)				Weight † lb (kg)
	A	B	C	Depth †	
1/4, 3/8, 1/2, 3/4	3.5 (87)	2.4 (62)	1.3 (33)	2.8 (71)	2.06 (0.92)

† Dimensions reflect less gauge.



E

FLOW CHARTS



Pressure Gauge included.

Accessories ordered separately, refer to page E6.3-4.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Diaphragm.
Self-relieving.

Ambient/Media Temperature: 40° to 175°F (4° to 80°C).

Fluid Media: Compressed air.

Inlet Pressure: 300 psig (21 bar) maximum.

Outlet Pressure: Adjustable 0 to 200 psig (0 to 14 bar).

Pilot Ports: 1/4 NPTF.

Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.

Body and Dome: Zinc.

Seals: Nitrile; Fluororelastomer seals optional, consult ROSS.

Valve: Brass.

Valve Cap: Nylon.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



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E2.17

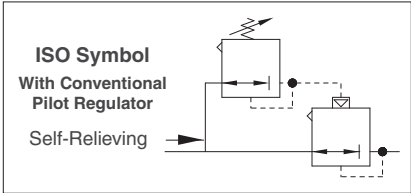
Inline Premium High-Relief Remote Pilot Regulators

FULL-SIZE Series

Port Sizes: 1/4, 3/8 & 1/2 – Flow to 150 scfm

Port Size	Model Numbers*
1/4	5216A2007
3/8	5216A3007
1/2	5216A4007

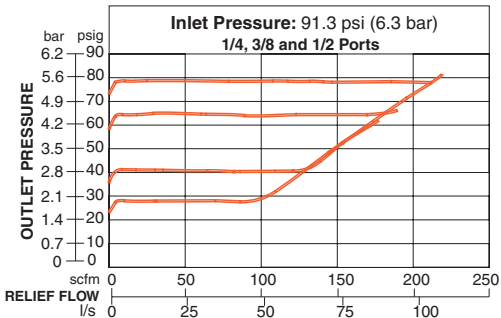
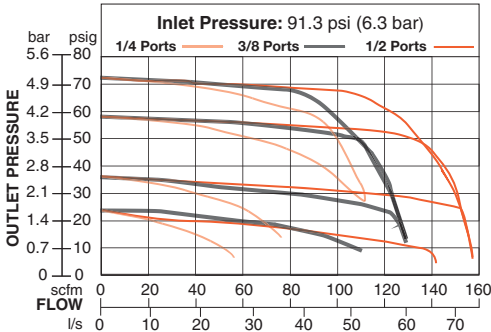
* NPT port threads. For BSPP threads add a "C" prefix to the model number e.g., C5216A2007.



Port Size	Dimensions inches (mm)				Weight† lb (kg)
	A	B**	C***	Depth†	
1/4, 3/8, 1/2	4.18 (106)	1.54 (39.1)	3.52 (89.3)	4.18 (106)	4.84 (2.2)

** Dome removal clearance: add 0.63 (16).
*** Cap removal clearance: add 0.5 (13).
† Less gauge.

FLOW CHARTS



Pressure Gauge included.
Accessories ordered separately, refer to page E6.3-4.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Diaphragm. Self-relieving.	Pressure Gauge: 0 to 200 psig (0 to 14 bar) standard, 1/4-NPTF (1/4 BSPP) gauge ports front and rear; 0 to 600 psig (0 to 40 bar) optional.
Ambient/Media Temperature: 0° to 158°F (-18° to 70°C).	Body and Dome: Zinc.
Fluid Media: Compressed air.	Valve: Brass.
Inlet Pressure: 400 psig (28 bar) maximum.	Valve Cap: Glass filled Nylon.
Outlet Pressure: Adjustable up to 250 psig (17 bar).	Seals: Nitrile

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS, WARNINGS on the inside back cover.

Modular Remote Pilot Regulators

MD4™ Series

Port Sizes: 3/8, 1/2 & 3/4 – Flow to 190 scfm

HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)

MD4 52K 1 B 5 2 B

RELIEF OPTION	
Relieving	1
Non-relieving	2

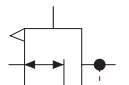
PIPE SIZE	
3/8 NPTF	3
1/2 NPTF	4
3/4 NPTF	5
3/8 BSPP	C
1/2 BSPP	D
3/4 BSPP	E

CAP COLOR	
Gold	2
Gray	G
Yellow	Y
Red	R
Blue	B

GAUGE	
Without Gauge	A
Gauge 0-200 psig (0-13.8 bar)	B



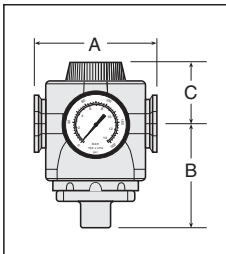
ISO Symbol
Regulator



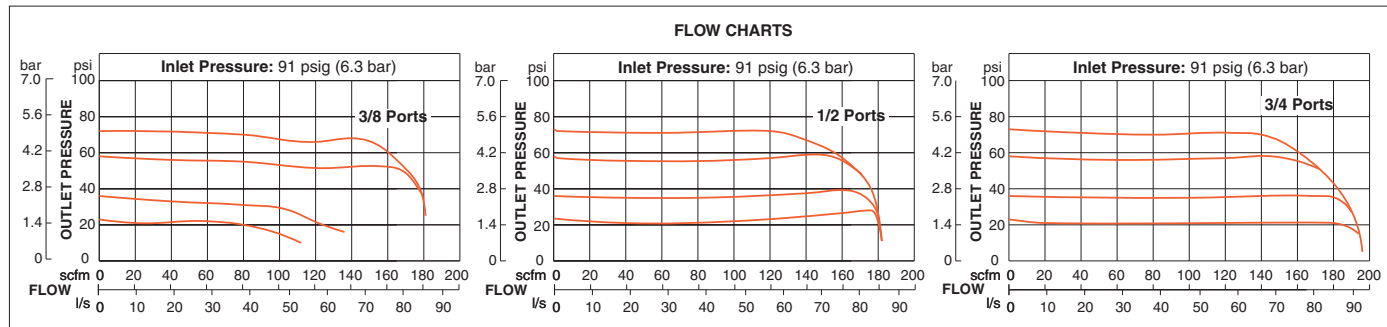
E2

Port Size	Dimensions inches (mm)				Weight † lb (kg)
	A	B	C	Depth †	
1/4, 3/8, 1/2, 3/4	3.5 (87)	2.4 (62)	1.6 (41)	2.9 (73)	2.2 (1.0)

† Dimensions reflect less gauge.



E



Accessories ordered separately, refer to page E6.3-5.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Diaphragm.

Self-relieving.

Ambient/Media Temperature: 40° to 175°F (4° to 80°C).

Fluid Media: Compressed air.

Inlet Pressure: 300 psig (21 bar) maximum.

Outlet Pressure: Adjustable 0 to 250 psig (0 to 17 bar).

Pilot Ports: 1/4 NPTF.

Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.

Body and Dome: Zinc.

Seals: Nitrile.

Valve: Brass.

Valve Cap: Nylon.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



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E2.19

Port Sizes: 3/4, 1, 1¼ & 1½– Flow to 740 scfm

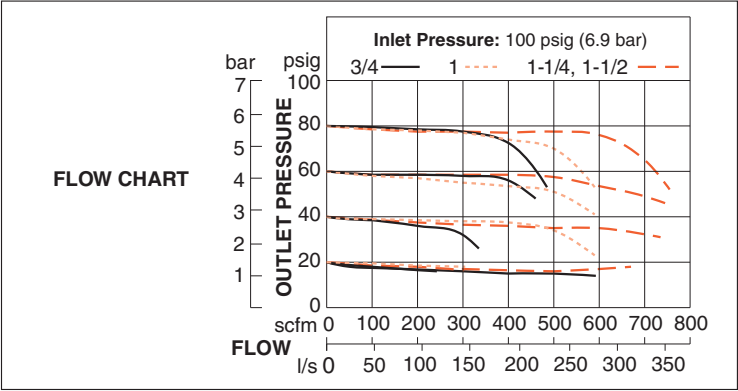
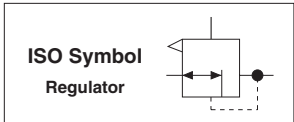
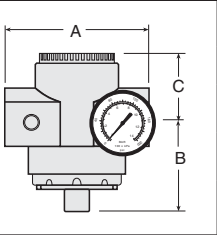
Port Size	Model Numbers*
3/4	5211D5006
1	5211D6007
1¼	5211D7007
1½	5211D8007

* NPT port threads. For BSPP threads add a "C" prefix to the model number e.g., C5211D5006.



Port Size	Dimensions inches (mm)				Weight† lb (kg)
	A	B*	C**	Depth†	
3/4, 1	4.4 (111)	2.9 (74)	2.4 (62)	2.8 (71)	1.88 (0.85)
1¼, 1½	4.9 (124)	3.2 (81)	2.1 (54)	2.8 (71)	2.25 (1.02)

† Less gauge.



Pressure Gauge included.
Accessories ordered separately, refer to page E6.3-4.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Diaphragm.
Self-relieving.
Ambient/Media Temperature: 40° to 175°F (4° to 80°C).
Fluid Media: Compressed air.
Inlet Pressure: 300 psig (21 bar) maximum.
Outlet Pressure: 0 to 200 psig (0 to 14 bar).
NOTE: Outlet pressure depends on the adjustment of the pilot regulator.

Pilot Ports: 1/4 NPTF.
Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.
Body: Aluminum.
Dome: Zinc.
Seals: Nitrile.
Valve: Brass.
Valve Cap: Nylon.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Inline High-Relief Remote Pilot Regulators

HIGH-CAPACITY Series

Port Sizes: 3/4, 1, 1¼ & 1½ – Flow to 700 scfm

Port Size	Model Numbers*
3/4	5X00B5046
1	5X00B6039
1¼	5X00B7021
1½	5X00B8049

* NPT port threads. For BSPP threads add a "C" prefix to the model number e.g., C5X00B5046.

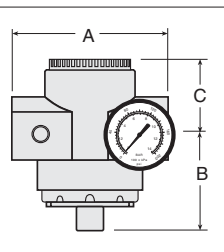


Port Size	Dimensions inches (mm)				Weight† lb (kg)
	A	B**	C***	Depth†	
3/4, 1	4.4 (111)	2.9 (74)	2.4 (62)	2.8 (71)	1.88 (0.85)
1¼, 1½	4.9 (124)	3.2 (81)	2.1 (54)	2.8 (71)	2.25 (1.02)

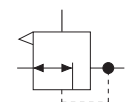
** Dome removal clearance: add 0.63 (16).

*** Cap removal clearance: add 0.5 (13).

† Less gauge.

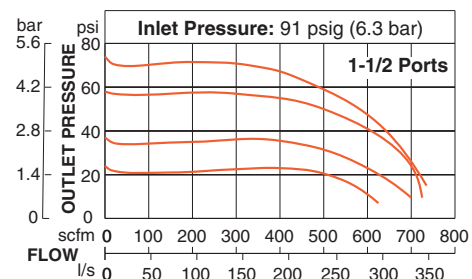
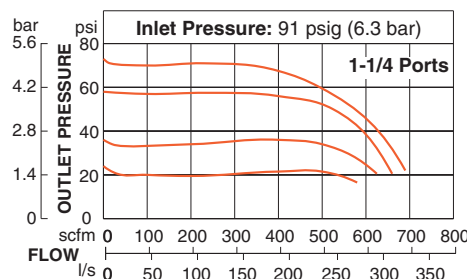
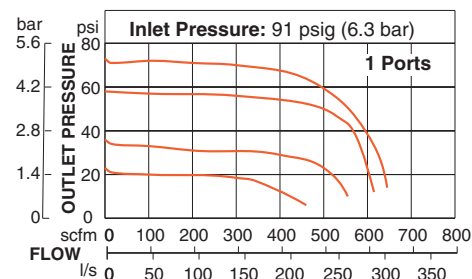
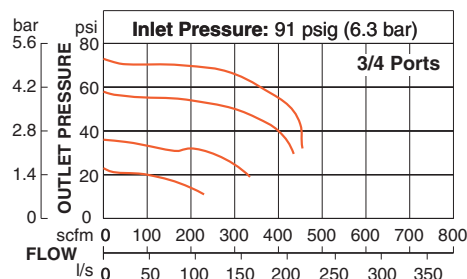


ISO Symbol
Regulator



E2

FLOW CHARTS



E

*Pressure Gauge included.
Accessories ordered separately, refer to page E6.3-4.*

STANDARD SPECIFICATIONS (for products on this page):

Construction: Diaphragm.

Self-relieving.

Ambient/Media Temperature: 40° to 175°F (4° to 80°C).

Fluid Media: Compressed air.

Inlet Pressure: 300 psig (21 bar) maximum.

Outlet Pressure: 0 to 200 psig (0 to 14 bar).

Pilot Ports: 1/4 NPTF.

Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports

front and rear.

Body: Aluminum.

Dome: Zinc.

Seals: Nitrile.

Valve: Brass.

Valve Cap: Nylon.



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IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

E2.21

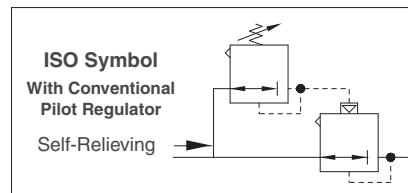
Inline Premium High-Relief Remote Pilot Regulators

HIGH-CAPACITY Series

Port Sizes: 3/4, 1 & 1 1/4 – Flow to 400 scfm

Port Size	Model Numbers*
3/4	5216A5007
1	5216A6007
1 1/4	5216A7007

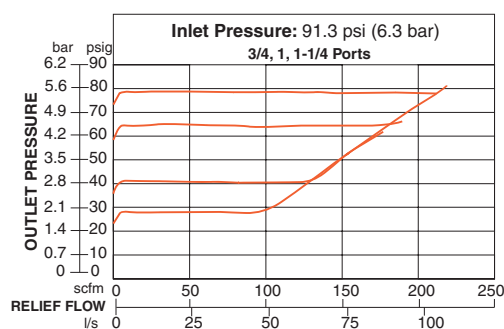
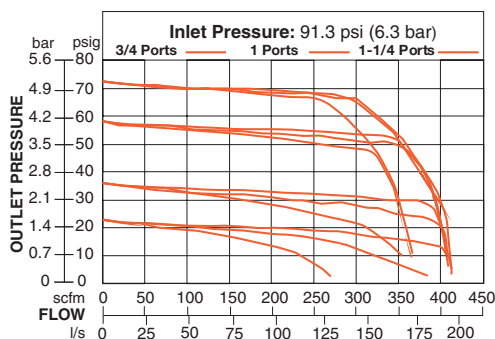
* NPT port threads. For BSPP threads add a "C" prefix to the model number e.g., C5216A5007.



Port Size	Dimensions inches (mm)				Weight† lb (kg)
	A	B**	C***	Depth†	
3/4, 1, 1 1/4	4.18 (117)	1.87 (47.5)	3.99 (101.3)	4.18 (106)	6.44 (3.0)

** Dome removal clearance: add 0.63 (16).
*** Cap removal clearance: add 0.5 (13).
† Less gauge.

FLOW CHARTS



Pressure Gauge included.

Accessories ordered separately, refer to page E6.3-4.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Diaphragm.
Self-relieving.

Ambient/Media Temperature: 0° to 158°F (-18° to 70°C).

Fluid Media: Compressed air.

Inlet Pressure: 400 psig (28 bar) maximum.

Outlet Pressure: Adjustable up to 250 psig (17 bar).

Pressure Gauge: 0 to 200 psig (0 to 14 bar) standard, 1/4-NPTF (1/4 BSPP) gauge ports front and rear; 0 to 600 psig (0 to 40 bar) optional.

Body and Dome: Zinc.

Valve: Brass.

Valve Cap: Glass filled Nylon.

Seals: Nitrile

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Inline Remote Pilot Regulators

HIGH-CAPACITY Series

Port Sizes: 1½, 2 & 3 – Flow to 4000 scfm

Flow to 850 scfm	
Port Size	Model Numbers*
1½	5211B8027
2	5211B9007

* NPT port threads. For BSPP threads add a "C" prefix to the model number e.g., C5211B8027.

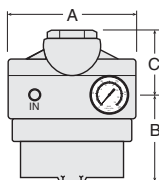
Flow to 4000 scfm		
Port Size	Seals	Model Numbers*
3	Nitrile	5211B9008
3	Fluororelastomer	5X00B9021

* NPT port threads. For BSPP threads add a "C" prefix to the model number e.g., C5211B9008.

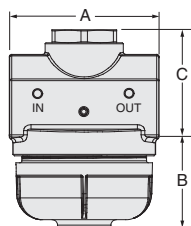
Port Size	Dimensions inches (mm)				Weight† lb (kg)
	A	B	C	Depth†	
1½, 2	6.4 (162)	5.0 (127)	3.0 (76)	2.8 (71)	8.94 (4.06)
3	8.4 (214)	7.36 (187)	3.74 (95)	8.0 (203)	21.77 (9.88)

† Less gauge.

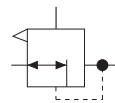
Port Size
1½, 2



Port Size
3



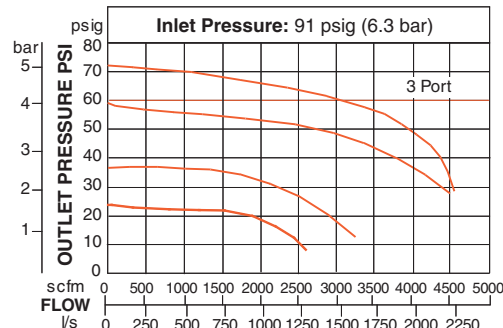
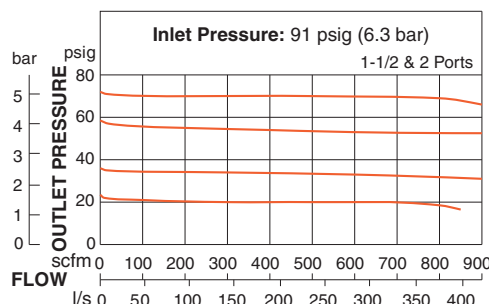
ISO Symbol
Regulator



E2

E

FLOW CHARTS



Pressure Gauge included.

Accessories ordered separately, refer to page E6.3-4.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Piston.

Self-relieving.

Ambient/Media Temperature: 40° to 175°F (4° to 80°C).

Fluid Media: Compressed air.

Inlet Pressure: 300 psig (21 bar) maximum.

Outlet Pressure: 0 to 200 psig (0 to 14 bar).

NOTE: Outlet pressure depends on the selection of the pilot regulator.

Pilot Ports: 1/4 NPTF.

Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.

Body and Dome: Aluminum.

Seals: Nitrile.

Valve: Brass on ½" & 2" ports; Aluminum on 3" ports.

Valve Cap: Aluminum.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



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E2.23

Port Sizes: 1/8 & 1/4 – Flow to 40 scfm

Port Size	Model Numbers*			
	Pressure Range psig (bar)			
	1-15 (0.07-1.0)	1-30 (0.07-2.1)	1-50 (0.07-3.4)	1-140 (0.07-9.6)
1/8	5210B1002	5210B1003	5210B1004	5210B1001
1/4	5210B2002	5210B2003	5210B2004	5210B2001

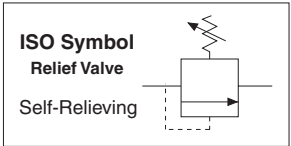
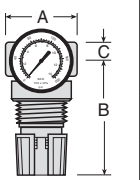
* NPT port threads. For BSPP threads add a "C" prefix to the model number e.g., C5210B1002.



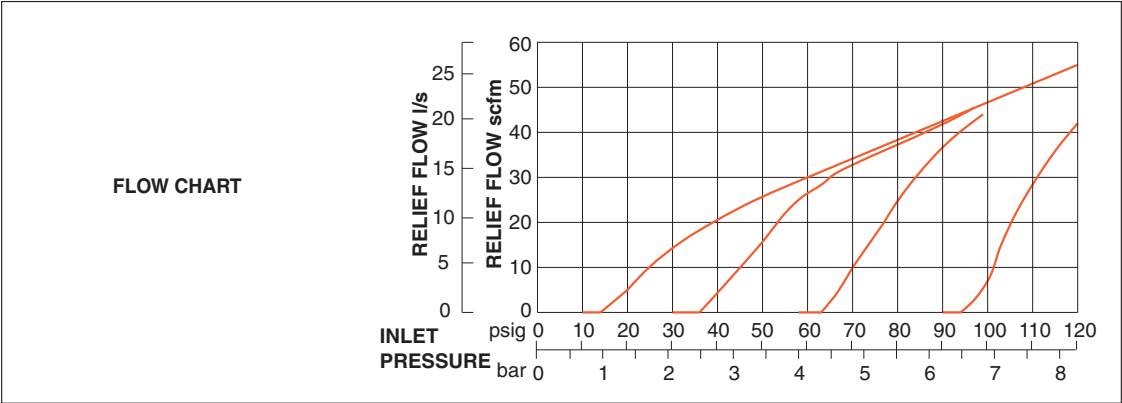
E2

Port Size	Dimensions inches (mm)				Weight† lb (kg)
	A	B	C	Depth†	
1/8, 1/4	1.6 (41)	2.7 (68)	0.4 (10)	1.6 (41)	0.24 (0.11)

†Less gauge.



E



Relief Valves have maximum relief flows of 10 to 20 scfm (4.7 to 9.4 l/s).
For models with increased sensitivity at lower pressure, consult ROSS.

Pressure Gauge included.
Accessories ordered separately, refer to page E6.3-4.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Diaphragm. Self-relieving.	Pressure Gauge: 0 to 160 psig (0 to 11 bar); 1/8 NPT gauge ports front and rear.
Ambient/Media Temperature: 40° to 125°F (4° to 52°C).	Panel Mounting: 1-3/16 inch (30 mm) hole required.
Fluid Media: Compressed air.	Body: Aluminum.
Inlet Pressure: 300 psig (21 bar) maximum.	Dome and Knob: Acetal.
Outlet Pressure: Adjustable 1 to 140 psig (0.07 to 9.6 bar).	Seals: Nitrile.

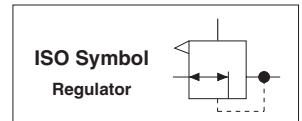
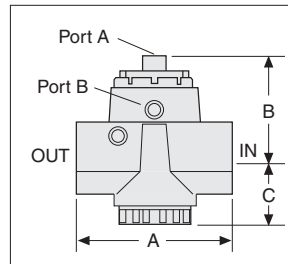
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Port Sizes: 1 – Flow to 450 scfm

Port Size	Model Numbers*
1	5X00D6012

* NPT port threads. For BSPP threads add a "C" prefix to the model number e.g., C5X00D6012.

Port Size	Dimensions inches (mm)				Weight lb (kg)
	A	B	C	Depth	
1	4.4 (111)	4.8 (122)	2.5 (62)	2.9 (72)	1.8 (0.8)



E2

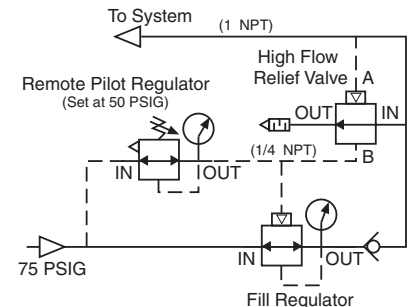
On the right is a typical circuit using the High-Flow Relief Valve. The circuit utilizes a remotely piloted "fill" regulator (port size 1 NPT) and a small, remotely mounted, pilot regulator with 1/4 NPT ports.

The required system pressure is set by adjusting the knob on the pilot regulator until the desired system pressure is shown on the pilot regulator's gauge. An example system pressure of 50 PSIG was selected in the circuit.

Outlet pressure from the pilot regulator is sent to the fill regulator's signal port and the Port 2 of the High-Flow Relief Valve. The Port 1 of the High-Flow Relief Valve is connected to the system, as shown, to monitor system pressure.

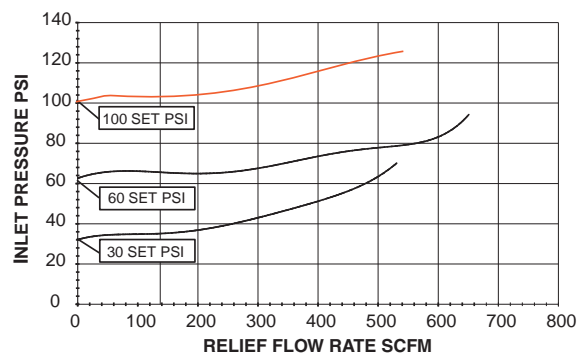
If the system pressure exceeds the pilot regulator setting (set-point), the High-Flow Relief Valve will begin to exhaust air after an approximate 2 psig (0.1 bar) rise above the set-point.

Should the system pressure drop below the set-point, the fill valve will open to supply air downstream and maintain the system at the set-point.



E

FLOW CHART



Accessories ordered separately, refer to page E6.3-4.

STANDARD SPECIFICATIONS (for products on this page):

Construction: Diaphragm.

Self-relieving.

Ambient/Media Temperature: 40° to 175°F (4° to 80°C).

Fluid Media: Compressed air.

Inlet Pressure: 200 psig (14 bar) maximum.

Outlet Pressure: 0 to 200 psig (0 to 14 bar).

Pilot Ports: 1/4 NPTF.

Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.

Body: Aluminum.

Dome: Zinc.

Seals: Nitrile.

Valve: Brass.

Valve Cap: Nylon.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



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E2.25

HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)

RER1

A

1

A

100

CONNECTOR	
6-Pin Brad Harrison	A
5-Pin M12	B

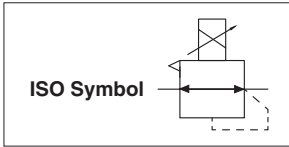
COMMAND INPUT	
0-10 volts DC	1
4-20 mA	2

MONITOR SIGNAL	
0-10 volts DC	A
4-20 mA - sinking	B
4-20 mA - sourcing	C

MAXIMUM CALIBRATED PRESSURE RANGE	
0-30 psig (0 to 2.1 bar)	030
0-50 psig (0 to 3.5 bar)	050
100 psig (0 to 6.9 bar)	100
0-200 psig (0 to 13.8 bar)	200
0-300 psig (0 to 20.7 bar)	300
0-20 in Hg (vacuum)	V20



Accessories ordered separately, see below.



ACCESSORIES

Cables

For 6-Pin Brad Harrison Connector.

Cable Length	Model Number*
6 feet (1.8 meters)	RER-CBL-6
12 feet (3.7 meters)	RER-CBL-12
25 feet (7.5 meters)	RER-CBL-25

*For cables for 5-Pin M12 connector, consult ROSS.



STANDARD SPECIFICATIONS (for products on this page):

Supply Voltage/Current: 15 – 24 volts DC/250 mA (required).
Analog Monitor Signal:
Voltage: 0 – 10 volts DC@20 mA maximum.
Current: 4 – 20 mA sinking (sourcing optional).
Command Signal Impedance: Voltage: 4.7 k_Ω, Current: 100_Ω.
Command Signal Voltage/Current: 0 – 10 volts DC/4 – 20 mA.
Electrical Connector: 6-pin Brad Harrison or 5-pin M12.
Ambient/Media Temperature: 32° to 158°F (0° to 70°C).
Fluid Media: Compressed Air.
Input Pressure: 29.9 in Hg to 300 psig (760 mm Hg to 21 bar).
Output Pressure: 0 to 200 psi (0 to 14 bar).

Body and Dome: Zinc.
Housing: Aluminum; powder coated.
Manifold: Brass. **Seals:** Fluorocarbon.
Transducer: Silicon, aluminum.
Valves: Nickel-plated brass.
Accuracy: < ± .25% F.S.
Linearity/Hysteresis: < ± .2% F.S. BFSL.
Repeatability: < ± .2% F.S.
Note: High-pressure Proportional valve ≥175 psi (12 bar) - inlet and exhaust ports reversed from picture shown.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS, WARNINGS on the inside back cover.

E-P Proportional Valves with Volume Booster

RB Series

Port Sizes: 1½, 2 & 3 – Flow to 4000 scfm

HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)

RB **1** **2** **A** **RER1** **A** **1** **A** **100**

REGULATOR TYPE	
1/4 to 3/4 - Self Relieving	1
3/4 to 1½ - Self Relieving	2
1/4 to 1/2 - High-Relief	3
3/4 to 1¼ - High-Relief	4

INLET/OUTLET PORTS	
1/4 NPTF	2
3/8 NPTF	3
1/2 NPTF	4
3/4 NPTF	6
1 NPTF	8
1¼ NPTF	J
1½ NPTF	K
1/4 BSPP	B
3/8 BSPP	C
1/2 BSPP	D
3/4 BSPP	E
1 BSPP	F
1¼ BSPP	G
1½ BSPP	H

Gauge	
Without Gauge	A
Gauge 0-200 psig (0-13.8 bar)	B
Gauge 0-600 psig (0-40 bar)	C
Gauge 0-30 psig (0-2 bar)	D
Gauge 0-60 psig (0-4 bar)	E
For Electronic Gauge, consult ROSS.	

CONNECTOR	
6-Pin Brad Harrison	A
5-Pin M12	B

COMMAND INPUT	
0-10 volts DC	1
4-20 mA	2

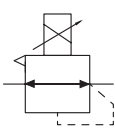
MAXIMUM CALIBRATED PRESSURE RANGE	
0-30 psig (0 to 2.1 bar)	030
0-50 psig (0 to 3.5 bar)	050
0-100 psig (0 to 6.9 bar)	100
0-200 psig (0 to 13.8 bar)	200
0-300 psig (0 to 20.7 bar)	300
0-20 in Hg (vacuum)	V20

MONITOR SIGNAL	
0-10 volts DC	A
4-20 mA - sinking	B
4-20 mA - sourcing	C



E2

ISO Symbol



Accessories ordered separately, see below.

Regulator Pressure Model	Inlet psi (bar)	Outlet psi (bar)	Relief scfm
RB1 - RB2	300 (20.7)	200 (13.8)	10
RB3 - RB4	400 (27.6)	250 (17.3)	200

Brass Inlet Filter (R37-R288) is included when purchasing a proportional-valve.
NOTE: Cable not included with the product, see choices below.



ACCESSORIES

E

Mounting Bracket Kit

Regulator Type	Kit Number ¹
Self Relieving	RER-BRK-1
High-Relief	R-A37-381



Cables

For 6-Pin Brad Harrison Connector.

Cable Length	Model Number*
6 feet (1.8 meters)	RER-CBL-6
12 feet (3.7 meters)	RER-CBL-12
25 feet (7.5 meters)	RER-CBL-25
*For cables for 5-Pin M12 connector, consult ROSS.	



STANDARD SPECIFICATIONS (for products on this page):

Supply Voltage/Current: 15 – 24 volts DC/250 mA (required).

Analog Monitor Signal:

Voltage: 0 – 10 volts DC@20 mA maximum.

Current: 4 – 20 mA sinking (sourcing optional).

Command Signal Impedance: Voltage: 4.7 k_Ω, Current: 100_Ω.

Command Signal Voltage/Current: 0 – 10 volts DC/4 – 20 mA.

Electrical Connector: 6-pin Brad Harrison or 5-pin M12.

Ambient/Media Temperature: 32° to 158°F (0° to 70°C).

Fluid Media: Compressed Air.

Input Pressure: 29.9 in Hg to 300 psig (760 mm Hg to 21 bar).

Output Pressure: 0 to 200 psi (0 to 14 bar).

Body and Dome: Zinc.

Housing: Aluminum; powder coated.

Manifold: Brass. **Seals:** Fluorocarbon.

Transducer: Silicon, aluminum.

Valves: Nickel-plated brass.

Accuracy: < ± 2.5% F.S.

Linearity/Hysteresis: < ± 2.0% F.S. BFUL.

Repeatability: < ± 0.6% F.S.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



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E2.27

E

ROSS CONTROLS®



FILTER, REGULATOR, AND LUBRICATOR ACCESSORIES



CONTENT	Page
Mounting Accessories	E6.3
Modular Assembly Components	E6.4
Clamp, Brackets, End Ports & Port Blocks	E6.5
Pressure Gauges	E6.6
External Drains, Silencers	E6.7

Mounting Screws for BANTAM Models

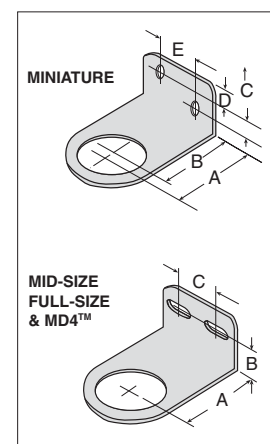
Usage Models	Kit Number
BANTAM	859K77

BANTAM models mounts with long screws that extend through end plates.

Mounting Brackets for Regulators and Integrated Filter/Regulators

Regulators and integrated filter/regulators can be mounted to a surface with a bracket that attaches to the regulator. Brackets and mounting panel nuts can be ordered separately or in a kit which includes both bracket and mounting panel nut.

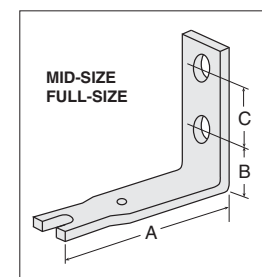
Usage Models	Model Number			Dimensions inches (mm)					
	Kit	Bracket	Panel Nut	A	B	C	D	E	Panel Mounting Hole Diameter
MINIATURE	873K77	872K77	874K77	1.375 (35)	1.125 (29)	0.31 (8)	0.31 (8)	0.69 (17)	1.19 (30)
MID-SIZE	876K77	875K77	877K77	2.38 (60)	1.00 (25)	1.50 (38)	—	—	1.56 (40)
MD3™	R-A127-11	—	R-127-11	2.38 (60)	1.00 (25)	1.50 (38)	—	—	2.06 (52)
FULL-SIZE, MD4™	879K77	878K77	880K77	2.38 (60)	1.00 (25)	1.50 (38)	—	—	2.06 (52)



Modular Mounting Brackets for Filters, Regulators, Lubricators, FRL's, or Clean Air Packages

Two L-shaped metal brackets as shown at the right can be used for wall mounting of modular FRLs or Clean Air Packages. A single bracket can be used to mount individual filters or lubricators. Kits include two brackets and four screws for attaching the brackets to the modules.

Usage Models	Kit Number	Dimensions inches (mm)			
		A	B	C	D
MID-SIZE & FULL-SIZE	915K77	3.0 (76)	0.88 (22)	1.00 (25)	1.20 (31)

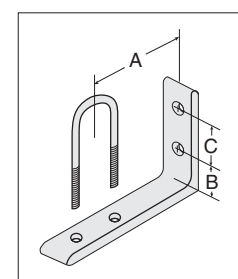


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FRLs Inline Mounting Pipe Brackets

Two pipe brackets can be used for wall mounting of FRLs assemblies that use pipe nipples to join the components. The bracket kits listed below include two sets of brackets.

Nipple Size	Kit Number	Dimensions inches (mm)		
		A	B	C
1/4	887K77	2.72 (28)	0.50 (13)	1.00 (25)
3/8	888K77	2.72 (28)	0.50 (13)	1.00 (25)
1/2	889K77	2.72 (28)	0.50 (13)	1.00 (25)
3/4	890K77	3.69 (94)	1.13 (29)	1.25 (32)
1	891K77	3.69 (94)	1.13 (29)	1.25 (32)



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Bracket Assembly Kit for HIGH-RELIEF Pilot Operated Regulator

High-Relief Pilot Operated Regulator with 1/4- thru 1 1/4 inch ports can be mounted to a vertical surface using a bracket assembly kit.

Kit Number	R-A37-381
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IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

MID-SIZE and FULL-SIZE Units

The modular designs of the MID-SIZE and FULL-SIZE series offer maximum flexibility in customizing FRLs assemblies. As shown at the right, connector kits are required to interconnect units. Various port kits (shown below) can be used to connect the assemblies to the inlet and outlet piping. Note that all FRLs components have threaded ports so that conventional pipe fittings may be used where desired.

Female Port Block

Used to connect to piping at inlet or outlet.

Port Size	Model Number	
	NPT Threads	BSPP Threads
1/4	897K77	D897K77
3/8	898K77	D898K77
1/2	899K77	D899K77
3/4	900K77	D900K77



Male Port Block

Used to connect modular to non-modular units.

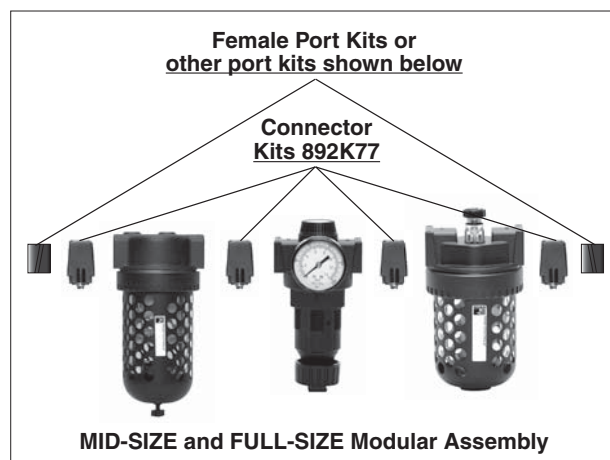
Port Size	Model Number	
	NPT Threads	BSPP Threads
1/4	893K77	D893K77
3/8	894K77	D894K77
1/2	895K77	D895K77
3/4	896K77	D896K77



Connector Kit

Used to connect units to one another as well as to any of the ports shown on this page.

Kit Number	892K77
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BANTAM Units

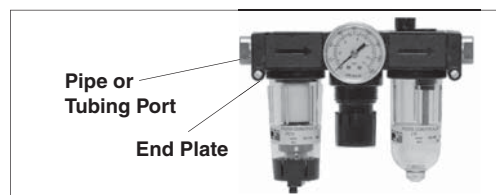
BANTAM modular units use end plates secured with screws to hold the pipe or tubing ports (see below), and also to serve as mounting brackets. Short screws are used to secure the end plates when a single BANTAM unit is used. If two or more units are combined, long screws extend through an end plate and thread into the next unit.

Screw kits required are as follows:

Single Unit: Two short screw kits.

Two-Unit Combination: One each short screw kit and long screw kit.

Three-Unit Combination: Two long screw kits.



Pipe Ports		
Kit Description	Model Number	
END PLATE (1)	857K77	
Short Screw (2)	858K77	
Long Screw (2)	859K77	
Small O-Ring (for inlet or mating ports)	860K77	
Large O-Ring (for outlet or mating ports)	861K77	

Pipe Ports		
Port Size	Model Number	
1/8 NPT	862K77	
1/4 NPT	863K77	
1/8 BSPP	D864K77	
1/4 BSPP	D865K77	

Tube Ports		
Port Size	Model Number	
1/4	866K77	
3/8	867K77	
4 mm	868K77	
6 mm	869K77	
8 mm	870K77	
10 mm	871K77	

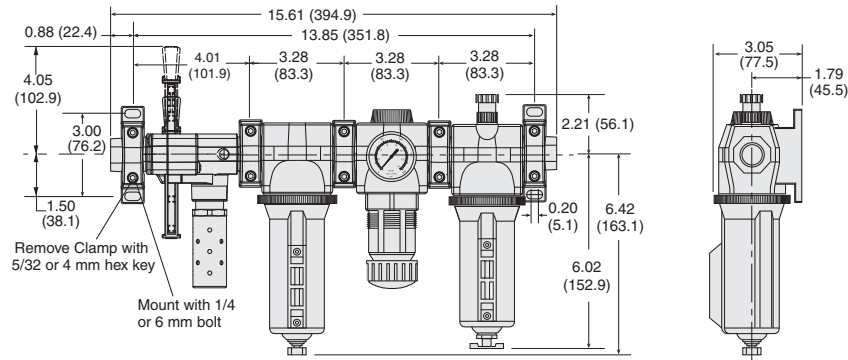
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Modular Assemblies

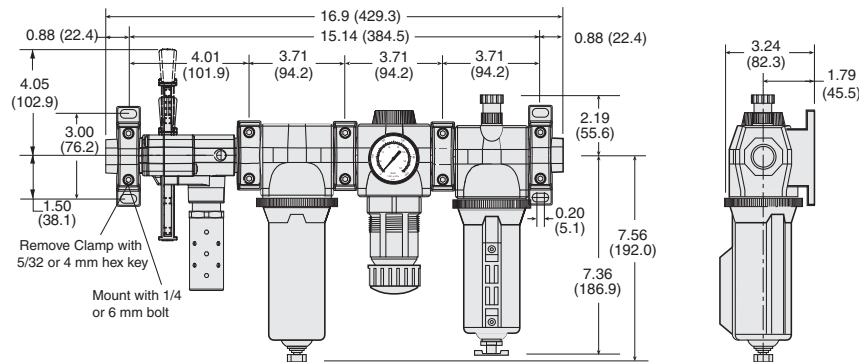
Accessories: Clamp, Brackets, End Ports & Port Blocks

MD Series

MD3™ Series



MD4™ Series



Clamp for Module Connections

Specially designed clamps provide a quick and easy assembly or disassembly of MD modules. Two allen-head bolts quickly tighten or loosen the clamp using a 5/32 or 4mm hex key. The clamp contains a plate carrying two O-rings to provide positive sealing between modules.

Order clamp by model number **R-A118-105**.

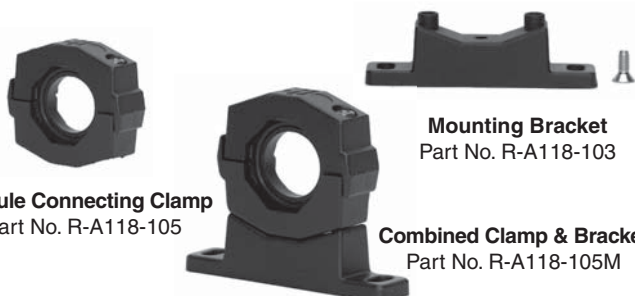
Combined clamp and bracket (below) can be ordered by model number **R-A118-105M**.

Mounting Brackets

Two brackets are normally used to mount an FRL to a vertical surface. The mounting bracket attaches to the module connecting clamp (see above) with a single screw. Each bracket then employs two bolts (1/4" or 6mm) to connect the assembly to the mounting surface.

Order bracket and screw by model number **R-A118-103**.

Combined bracket and clamp (above) can be ordered by model number **R-A118-105M**.





Module Connecting Clamp
Part No. R-A118-105

Mounting Bracket
Part No. R-A118-103

Combined Clamp & Bracket
Part No. R-A118-105M

Male and Female End Ports


Either male or female end ports can be attached to threaded inlet and outlet lines. This allows all modules of an FRL assembly to be removed easily and quickly without having to unthread the end modules. The end ports are attached to the modules with clamps (see at left). End ports can be included in an assembled FRL or ordered separately by the following model numbers:

Port Size	Male Part Number*		Port Size	Female Part Number*	
1/4	R-118-109-2F		1/4	R-118-100-2	
3/8	R-118-109-3F		3/8	R-118-100-3	
1/2	R-118-109-4F		1/2	R-118-100-4	
3/4	R-118-109-6F		3/4	R-118-100-6	

* For BSPP threads, add a "W" suffix to the model number, e.g., R-118-109-2FW.

Extra Port Blocks


An extra port block can be placed between modules to provide two auxiliary 1/4 NPTF ports. Its mounting position can be rotated to obtain the most convenient operating orientation. If only one auxiliary port is to be used, the unused port must be closed with a pipe plug. (The inlet and outlet are not threaded.)

Port Size	Model Number*	
1/4	R-118-106-2	
3/8	R-118-106-3	
1/2	R-118-106-4	

* For BSPP threads, add a "W" suffix to the model number, e.g., R-118-106-2W.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.






Pressure Gauges

Port Size	Model Number*	Pressure Range psig (bar)	Case Diameter inches (mm)	
1/8	5400A1002	0-160 (0-11)	1.5 (38)	
1/4	5400A2010	0-60 (0-4)	2.0 (51)	
1/4	5400A2011	0-200 (0-14)	2.0 (51)	
1/4	5400A2012	0-300 (0-20)	2.0 (51)	
1/4	5400A2014**	0-160 (0-11)	2.5 (64)	
1/4	5400A2015***	0-160 (0-11)	2.0 (51)	

* Center back mounting; male pipe threads.
 ** 5400A2014 - Stainless steel case liquid filled.
 *** 5400A2015 - Green shade between 40-70 psi (2.7-4.8 bar).



Differential Pressure Gauges

DIFFERENTIAL PRESSURE GAUGE TYPE/SERIES	Small Slide Gauge	Small Slide Gauge	Large Dual Face Gauge	Large Dual Face Gauge with Reed Switch (Normally Open)	Large Dual Face Gauge with Reed Switch (Normally Closed)
	R-A60F-28	R-K103-151	R-106-35	R-106-35E	R-106-35C
					
FILTERS					
BANTAM	—	—	—	—	—
MINIATURE	—	—	—	—	—
MID-SIZE	—	—	—	—	—
MD3™		—	—	—	—
FULL-SIZE	—	—	—	—	—
MD4™	—				
HIGH-CAPACITY	—	—	—	—	—
COALESCING FILTERS					
BANTAM	—	—	—	—	—
MINIATURE	—	—	—	—	—
MID-SIZE		—	—	—	—
FULL-SIZE	—				
MD3™		—	—	—	—
MD4™	—				
HIGH-CAPACITY	—				
OIL VAPOR REMOVAL (ADSORBING) FILTERS					
MD3™	—	—	—	—	—
MD4™	—	—	—	—	—
CLEAN AIR PACKAGES					
MD3™		—	—	—	—
MD4™	—				

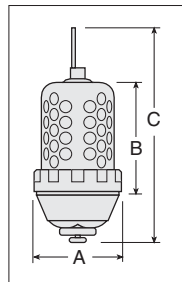
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

External Automatic Drains

Pipe Size	Model Number*	
	Polycarbonate Bowl**	Metal Bowl
1/8	5057B1001	5058B1001
1/4*	5057B2001	5058B2001

*Use 1/4 size with FULL-SIZE, HIGH-CAPACITY, MD3™ & MD4™ filters.
Use kit 1076K77 to convert standard bowl to accept auto drain unit.
**Available for FULL-SIZE filters only. Polycarbonate bowl includes metal bowl guard.

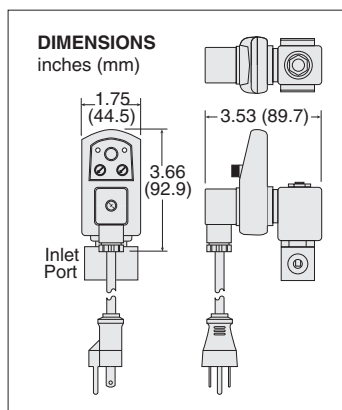
Port Size	Dimensions inches (mm)			Weight lb (kg)
	A	B	C	
1/8, 1/4	3.5 (89)	4.2 (107)	8.3 (211)	2.6 (1.2)



Electronically Controlled Drain

Pipe Size	Voltage	Model Number**
1/4	110-120 volts AC, 50/60 Hz	R-DED-115V-2
3/8	110-120 volts AC, 50/60 Hz	R-DED-115V-3
1/2	110-120 volts AC, 50/60 Hz	R-DED-115V-4
1/4	24 volts DC	R-DED-24V-2
3/8	24 volts DC	R-DED-24V-3
1/2	24 volts DC	R-DED-24V-4

** NPT port threads. For BSPP threads, add a "W" suffix to the model number, e.g., R-DED-115V-2W.



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STANDARD SPECIFICATIONS (for electronically controlled drain):

Drain Time: Adjustable 0.5 to 10 seconds.
Drain Interval: Adjustable 0.5 to 45 minutes.
Current Consumption: 4 ma maximum.
Ambient Temperature: 35° to 130°F (2° to 54°C).
Media Temperature: 35° to 190°F (2° to 88°C).

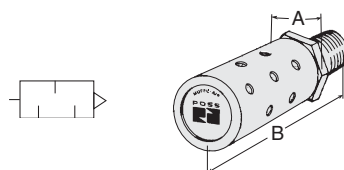
Electrical Connection: DIN 43650A, ISO 440/6952.
Valve Type: 2/2 direct acting, normally closed.
Valve Body: Forged brass; 3/16-inch (4.8 mm) orifice.
Maximum Pressure: 230 psig (15.8 bar).

Silencers



Port Size	Thread Type	Model Number*		Avg. C _v	Dimensions inches (mm)		Weight lb (kg)
		NPT Threads	BSPT Threads		A	B	
3/8	Male	5500A3003	D5500A3003	4.3	1.3 (32)	3.5 (88)	0.2 (0.1)
3/4	Male	5500A5013	D5500A5013	5.1	1.3 (32)	3.6 (92)	0.2 (0.1)
3/4	Male	5500A5003	D5500A5003	11.5	2.0 (51)	5.3 (135)	0.6 (0.3)

Flow Media: Filtered air.
Pressure Range: 0 to 300 psig (0 to 20.7 bar) maximum.



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IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Category	Series	Element Rating	Bowl Type	Element Material	Model Number
Filters	Bantam	5-µm		Polyethylene	933K77
	Miniature	5-µm		Polyethylene	933K77
	MID-SIZE	5-µm		Polyethylene	936K77
	MD3™	5-µm		Polyethylene	R-A60F-03PE5
		5-µm		Sintered Bronze	R-A60F-03E5
		20-µm		Sintered Bronze	R-A60F-03E4
		40-µm		Sintered Bronze	R-A60F-03E3
	FULL-SIZE	5-µm		Polyethylene	939K77
	MD4™	5-µm		Polyethylene	R-A115-106PE5
		40-µm		Sintered Bronze	R-A115-106PE3
	HIGH-CAPACITY Flow to 275 scfm	5-µm		Polyethylene	1010K77
	HIGH-CAPACITY Flow to 660 scfm	5-µm		Sintered Bronze	1656K77
		40-µm		Sintered Bronze	R-A114-106E3
Coalescing Filters	Bantam, Miniature	0.3-µm		Borosilicate-glass-fiber	945K77
		0.01-µm		Borosilicate-glass-fiber	R-A-10F-16E8
	MID-SIZE	0.3-µm	Standard	Borosilicate-glass-fiber	R-A60F-29
		0.3-µm	Extended	Borosilicate-glass-fiber	R-A60F-32
		0.01-µm	Standard	Borosilicate-glass-fiber	R-A60F-29E8
		0.01-µm	Extended	Borosilicate-glass-fiber	R-A60F-32E8
	MD3™	0.3-µm	Polycarbonate	Borosilicate-glass-fiber	R-A60F-23
			Metal	Borosilicate-glass-fiber	R-A60F-29
			Extended Metal	Borosilicate-glass-fiber	R-A60F-32
		0.01-µm	Polycarbonate	Borosilicate-glass-fiber	R-A60F-23E8
			Metal	Borosilicate-glass-fiber	R-A60F-29E8
			Extended Metal	Borosilicate-glass-fiber	R-A60F-32E8
	FULL-SIZE	0.3-µm	Standard	Borosilicate-glass-fiber	947K77
		0.3-µm	Extended	Borosilicate-glass-fiber	R-A103-160L
		0.01-µm	Standard	Borosilicate-glass-fiber	948K77
		0.01-µm	Extended	Borosilicate-glass-fiber	R-A103-160LE8
	MD4™	0.3-µm	Standard	Borosilicate-glass-fiber	R-A115-117
			Extended	Borosilicate-glass-fiber	R-A115-118
		0.01-µm	Standard	Borosilicate-glass-fiber	R-A115-117E8
			Extended	Borosilicate-glass-fiber	R-A115-118E8
	HIGH-CAPACITY Flow to 220 scfm	0.3-µm	Standard	Borosilicate-glass-fiber	949K77
		0.01-µm	Standard	Borosilicate-glass-fiber	R-A109-106E8
	HIGH-CAPACITY Flow to 295 & 450 scfm	0.3-µm	Standard	Borosilicate-glass-fiber	R-A114-112
			Extended	Borosilicate-glass-fiber	R-A114-113
		0.01-µm	Standard	Borosilicate-glass-fiber	R-A114-112E8
			Extended	Borosilicate-glass-fiber	R-A114-113E8
	HIGH-CAPACITY Flow to 465 scfm	0.3-µm	Standard	Borosilicate-glass-fiber	952K77
			Extended	Borosilicate-glass-fiber	953K77
		0.01-µm	Standard	Borosilicate-glass-fiber	R-A106-24E8
			Extended	Borosilicate-glass-fiber	R-A106-24LE8
	HIGH-CAPACITY Flow to 840 scfm	0.3-µm	Extended	Borosilicate-glass-fiber	953K77
		0.01-µm	Extended	Borosilicate-glass-fiber	R-A106-24E8
Oil Vapor Removal Filters	MD3™		Polycarbonate	Borosilicate-glass-fiber	R-A60F-29E9
			Metal	Borosilicate-glass-fiber	R-A60F-29E9
			Extended Metal	Borosilicate-glass-fiber	R-A60F-32E9
	MD4™	0.01-µm	Standard	Borosilicate-glass-fiber	R-A115-117E9
			Extended	Borosilicate-glass-fiber	R-A115-118E9
Silencers Reclassifiers	Port Size 1/2	20-µm		Sintered Bronze	940K77
	Port Size 3/4, 1	100-µm		Sintered Bronze	981K77

Lubricants, Polycarbonate Bowl Cautions

Compatible Lubricants

Although air line lubrication is not required for most ROSS valves, other mechanisms in the system may need such lubrication. When a lubricator is used, it should be supplied only with oils which are compatible with the materials used in the valves for seals and poppets. Generally speaking, these are petroleum base oils with oxidation inhibitors, and aniline point between 180°F (82°C) and 220°F (104°C) and an ISO 32, or lighter, viscosity. Oils with phosphate type additives, such as zinc dithiophosphate, must be avoided because they can harm polyurethane valve components. The best oils to use in pneumatic systems are those specifically compounded for air line lubricator service.

Cautions on the Use of Polycarbonate Bowls

Use Only with Compressed Air. Filters and lubricators with polycarbonate bowls are specifically designed for compressed air service, and their use with any other fluid (liquid or gas) is a misapplication. The use with or injection of certain hazardous fluids in the system (e.g., alcohol or liquefied petroleum gas) could be harmful to the polycarbonate bowl or result in a combustible condition or hazardous leakage. Before using with a fluid other than air, or for nonindustrial applications, or for life support systems, consult ROSS.

Use Metal Bowl Guard When Supplied. A metal bowl guard is supplied with all but the smallest bowls, and must always be used to minimize danger from fragmentation in the event of failure of a polycarbonate bowl.

Avoid Harmful Substances. Some compressor oils, chemical cleaners, solvents, paints, and fumes will attack polycarbonate bowls and can cause bowl failure. Do not use with or near these materials. When a bowl becomes dirty, replace the bowl or wipe it with a clean dry cloth. Immediately replace any polycarbonate bowl which is crazed, cracked, or deteriorated.

Substances HARMFUL to Polycarbonate Bowls

Acetaldehyde	Carbon disulfide	Ethylene dichloride	Phosphorous trichloride
Acetic acid	Carbon tetrachloride	Ethylene glycol	Propionic acid
Acetone	Caustic potash solution	Formic acid	Pyridine
Acrylonitrile	Caustic soda solution	Freon (refrigerant & propellant)	Sodium hydroxide
Ammonia	Chlorobenzene	Gasoline (high aromatic)	Sodium sulfide
Ammonium fluoride	Chloroform	Hydrazine	Styrene
Ammonium hydroxide	Cresol	Hydrochloric acid	Sulfuric acid
Ammonium sulfide	Cyclohexanol	Lacquer thinner	Sulfural chloride
Anaerobic adhesives & sealants	Cyclohexanone	Methyl alcohol	Tetrahydronaphthalene
Antifreeze	Cyclohexene	Methylene chloride	Thiophene
Benzene	Dimethyl formamide	Methylene salicylate	Toluene
Benzoic acid	Dioxane	Milk of lime (CaOH)	Turpentine
Benzyl alcohol	Ethane tetrachloride	Nitric acid	Xylene
Brake fluids	Ethyl acetate	Nitrobenzene	Perchlorethylene
Bromobenzene	Ethyl ether	Nitrocellulose lacquer	
Butyric acid	Ethylamine	Phenol	
Carbolic acid	Ethylene chlorohydrin	Phosphorous hydroxyl chloride	

Trade Names of Substances HARMFUL to Polycarbonate Bowls

- Atlas Perma-Guard • Buna N • Cellulube #150 & #220 • Crylex #5 cement • Eastman 910 • Garlock 98403 (polyurethane)
- Haskel 568-023 • Hilgard Company's hil phene • Houghton & Co. oil 1120, 1130, 1055 • Houtosafe 1000 • Kano Kroil
- Keystone penetrating oil #2 • Loctite 271, 290, 601 • Loctite Teflon sealant • Marvel Mystery Oil • Minn. Rubber 366Y
- National Compound N11 • Nylock VC-3 • Parco 1306 Neoprene • Permabond 910 • Petron PD287 • Prestone • Pydraul AC
- Sears Regular Motor Oil • Sinclair oil "Lily White" • Stauffer Chemical FYRQUEL 150 • Stillman SR 269-75 (polyurethane)
- Stillman SR 513-70 (neoprene) • Tannergas • Telar • Tenneco anderol 495 & 500 oils • Titon • Vibra-tite • Zerex



General Information

Standard Specifications

The standard specifications for the products on each page of this catalog are given on the same page or referenced. For solenoid pilot valves, models with internal pilot supply are listed. Most models are also available for use with external pilot supply or have a built-in pilot supply selector valve.

The products in this catalog are intended for use in industrial pneumatic systems. Most products are adaptable to other uses and conditions not covered by the standard specifications given in this catalog. Weights shown are approximate and are subject to change. Dimensions given, unless otherwise noted, are envelope dimensions (not for mounting). Consult ROSS for further information.

Port Threads

Ports of valves and bases described in this catalog have NPT (ANSI B2.1) threads. Other thread types can be specified by putting an appropriate prefix letter on the model or part number when ordering.

Thread Types by Model Prefix Letter

Pneumatic Port Threads	Prefix Letter	Threaded Electrical Opening
NPT (ANSI B2.1)	None	NPT
ISO 228 - DIN 259 Parallel, BSPP [#]	C*	—
ISO 228 - DIN 259 Parallel, BSPP [#]	D	G
ISO 228 - JIS B0203 Tapered [#]	J	ISO
SAE 1926- ISO 11926	S	NPT

* Used only for filters, regulators, lubricators.

[#] ISO 228 threads supersedes BSPP, G and JIS thread types.

Flow Ratings

Flow ratings are expressed as C_v where $C_v = 1$ corresponds to a steady state air flow of approximately 32 scfm under the following conditions:

Inlet pressure = 100 psig (6.7 bar)
Pressure drop = 10 psi (0.69 bar)
Air temperature = 68°F (20°C)
Relative humidity = 36%

Note: Because widely differing test standards are used to measure C_v values, the figures given in this catalog should not be used to compare ROSS valves with those of other makers. The C_v ratings given here are intended only for use with performance charts published by ROSS. The C_v ratings are averages for the various flow paths through the valve and are for steady flow conditions.

Approvals and Certifications

ROSS products are designed to meet a number of industrial standards, including the Canadian Standards Association (C.S.A.) guidelines. For more information on specific product approvals, contact your local distributor or ROSS.

Solenoids

All ROSS standard solenoids are rated for continuous duty (unless noted otherwise) and will operate the valve within the air pressure range specified in this catalog.

Explosion-Proof Solenoid Pilot available, for more information consult ROSS.

Voltage & Hertz

When ordering a solenoid valve, also specify the desired solenoid voltage and hertz.

Voltage Types by Model Suffix Letter

Voltage	Suffix Letter
120 volts AC	Z
220 volts AC	Y
12 volts DC	H
24 volts DC	W
48 volts DC	M
90 volts DC	K
110 volts DC	P
125 volts DC	C

Recommended Solenoid Voltages: 100-110 volts AC, 50 Hz; 100-120 volts AC, 60 Hz; 24 volts DC; 110 volts DC.

In addition, the following voltages are available:

200, 220 volts AC, 50 Hz
200, 240, 480 volts AC, 60 Hz
24, 48, 220 volts AC, 50 Hz
240 volts AC, 60 Hz
200, 220 volts AC, 50 Hz
200, 240 volts AC, 60 Hz.

For example: Model 2773B5001, 120 volts AC, 60 Hz.
Model W6076B2401, 220 volts AC, 50 Hz.

Please note that not all configurations are available for all models.

For additional information or help with voltage configuration, please contact your local distributor or ROSS.

Port Identification

Valve symbols in this catalog conform to the ISO 1219-1:1991 standard of the International Organization for Standardization (ISO) and the SAE J2051 standard of the Society of Automotive Engineers (SAE) respectively.

Information or Technical Assistance

For additional information or application assistance concerning ROSS products, consult ROSS or your local ROSS distributor (see contact information on the back cover).

Order Placement

For order placement, consult ROSS or your local ROSS distributor.

For a current list of countries and local distributors, visit ROSS' website at www.rosscontrols.com.



CAUTIONS, WARNINGS and STANDARD WARRANTY

PRE-INSTALLATION or SERVICE

1. Before servicing a valve or other pneumatic component, be sure that all sources of energy are turned off, the entire pneumatic system is shut off and exhausted, and all power sources are locked out (ref: OSHA 1910.147, EN 1037).
2. All ROSS products, including service kits and parts, should be installed and/or serviced only by persons having training and experience with pneumatic equipment. Because any installation can be tampered with or need servicing after installation, persons responsible for the safety of others or the care of equipment must check every installation on a regular basis and perform all necessary maintenance.
3. All applicable instructions should be read and complied with before using any fluid power system in order to prevent harm to persons or equipment. In addition, overhauled or serviced valves must be functionally tested prior to installation and use. If you have any questions, call your nearest ROSS location listed on the cover of this document.
4. Each ROSS product should be used within its specification limits. In addition, use only ROSS parts to repair ROSS products.

WARNING: *Failure to follow these directions can adversely affect the performance of the product or result in the potential for human injury or damage to property.*

FILTRATION and LUBRICATION

5. Dirt, scale, moisture, etc. are present in virtually every air system. Although some valves are more tolerant of these contaminants than others, best performance will be realized if a filter is installed to clean the air supply, thus preventing contaminants from interfering with the proper performance of the equipment. ROSS recommends a filter with a 5-micron rating for normal applications.
6. All standard ROSS filters and lubricators with polycarbonate plastic bowls are designed for compressed air applications only. Do *not* fail to use the metal bowl guard, where provided, to minimize danger from high pressure fragmentation in the event of bowl failure. Do not expose these products to certain fluids, such as alcohol or liquefied petroleum gas, as they can cause bowls to rupture, creating a combustible condition, hazardous leakage, and the potential for human injury or damage to property. Immediately replace a crazed, cracked, or deteriorated bowl. When bowl gets dirty, replace it or wipe it with a clean dry cloth.

7. Only use lubricants which are compatible with materials used in the valves and other components in the system. Normally, compatible lubricants are petroleum based oils with oxidation inhibitors, an aniline point between 180°F (82°C) and 220°F (104°C), and an ISO 32, or lighter, viscosity. Avoid oils with phosphate type additives which can harm polyurethane components, potentially leading to valve failure which risks human injury, and/or damage to property.

AVOID INTAKE/EXHAUST RESTRICTION

8. Do not restrict the air flow in the supply line. To do so could reduce the pressure of the supply air below the minimum requirements for the valve and thereby cause erratic action.
9. Do not restrict a valve's exhaust port as this can adversely affect its operation. Exhaust silencers must be resistant to clogging and must have flow capacities at least as great as the exhaust capacities of the valves. Contamination of the silencer can result in reduced flow and increased back pressure.

WARNING: *ROSS expressly disclaims all warranties and responsibility for any unsatisfactory performance or injuries caused by the use of the wrong type, wrong size, or an inadequately maintained silencer installed with a ROSS product.*

POWER PRESSES

10. Mechanical power presses and other potentially hazardous machinery using a pneumatically controlled clutch and brake mechanism must use a press control double valve with a monitoring device. A double valve without a self-contained monitoring device should be used only in conjunction with a control system which assures monitoring of the valve. All double valve installations involving hazardous applications should incorporate a monitoring system which inhibits further operation of the valve and machine in the event of a failure within the valve mechanism.

ENERGY ISOLATION/EMERGENCY STOP

11. Per specifications and regulations, ROSS L-O-X® and L-O-X® with EEZ-ON® operation products are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES.

STANDARD WARRANTY

limited to repair or replacement of the product or refund of the purchase price paid solely at the discretion of ROSS and provided such product is returned to ROSS freight prepaid and upon examination by ROSS is found to be defective. This warranty becomes void in the event that product has been subject to misuse, misapplication, improper maintenance, modification or tampering.

THE WARRANTY EXPRESSED ABOVE IS IN LIEU OF AND EXCLUSIVE OF ALL OTHER WARRANTIES AND ROSS EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED WITH RESPECT TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ROSS MAKES NO WARRANTY WITH RESPECT TO ITS PRODUCTS MEETING THE PROVISIONS OF ANY GOVERNMENTAL OCCUPATIONAL SAFETY AND/OR HEALTH LAWS OR REGULATIONS. IN NO EVENT IS ROSS LIABLE TO PURCHASER, USER, THEIR EMPLOYEES OR OTHERS FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES WHICH MAY RESULT FROM A BREACH OF THE WARRANTY DESCRIBED ABOVE OR THE USE OR MISUSE OF THE PRODUCTS. NO STATEMENT OF ANY REPRESENTATIVE OR EMPLOYEE OF ROSS MAY EXTEND THE LIABILITY OF ROSS AS SET FORTH HEREIN.

All products sold by ROSS CONTROLS are warranted for a one-year period [with the exception of all Filters, Regulators and Lubricators ("FRLs") which are warranted for a period of seven years] from the date of purchase to be free of defects in material and workmanship. ROSS' obligation under this warranty is





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AN INDEPENDENT REPRESENTATIVE



Full-Service Global Locations

There are ROSS Distributors Throughout the World

To meet your requirements across the globe, ROSS distributors are located throughout the world. Through ROSS or its distributors, guidance is available for the selection of ROSS products, both for those using pneumatic components for the first time and those designing complex pneumatic systems.

Other literature is available for engineering, maintenance, and service requirements. If you need products or specifications not shown here, please contact ROSS or your ROSS distributor. They will be happy to assist you in selecting the best product for your application.

For a current list of countries and local distributors, visit ROSS' website at www.rosscontrols.com.