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Edition 3



Vacuforce started as an importer of European vacuum products. Our founder, originally from the UK, brought together over 20 years of vacuum applications, engineering and international procurement expertise to start the Vacuforce brand of vacuum products as shown in this catalogue.

With generic fit, form and function products as well as innovative vacuum solution packages, Vacuforce offers the user a "one stop shop" for all vacuum handling applications.

vacuforce.com was established in 2005 to provide Vacuforce distributors with low cost high quality pneumatic components and accessories. These two brands offer complete synergy in factory automation and enable industrial distributors easy access to fluid power solutions for customers throughout North America.

Vacuforce is focused on customer service. With fast reaction to enquiries and order processing, Vacuforce has undertaken the task of being the premier solution provider in the USA and Canada through service, innovation and competitive fluid power solutions. A local company offering global access for today's manufacturing needs.

For technical papers which include best vacuum practice, please refer to the Fluid Power Journal website (www.fluidpowerjournal.com) where Vacuforce has been a regular contributor since 2006.



The Squid is a universal vacuum tool offering users the benefit of a simple solution to multiple product handling. Consisting of self closing valves which isolate individual vacuum cups should they not seal properly against the load, full vacuum is maintained in the Squid at all times.

Available in standard sizes as shown in this catalogue as well as custom sizes The Squid is designed and built in North America offering fast delivery and real technical support.

IDC-USA®
Preferred Supplier
Partner

Vacuforce Inc
5789 Coopers Avenue Mississauga ON L4Z 3S6

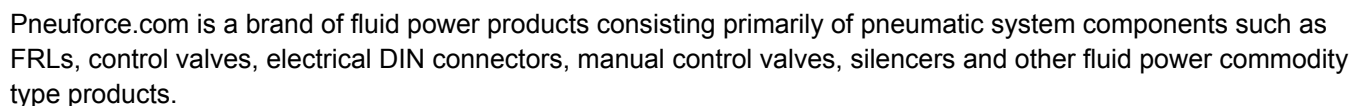
sales@vacuforce.com

Facetime on
416.523.7347

1.866.280.3766

1.866.280.4829





The pneuforce.com products are shown in this catalogue with technical data sheets and performance criteria. The online portal of pneuforce.com offers account holders full access to all pneuforce.com and Vacuforce vacuum products.

Account holders have full visibility of their historical purchase history, list and net prices and also the POD (pneuforce online discount) quantity break purchasing parameters.

Available 24 hours per day, 365 days per year, the pneuforce.com online portal is a window into the world of pneuforce and Vacuforce products and services.

Apply online for an account today www.pneuforce.com.

FRL Assemblies & Components

- Air Filters
- Pressure Regulators
- Airline Lubricators
- Inline Mini Regulators
- Safety Lock Out Valves

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- Poppet Valves
- Pilot Operated Spool Valves
- Process Valves
- Solenoid Spool Valves
- Valve Manifolds
- 2/23/2, 3/2, 5/2 & 5/3 configurations
- From 10-32UNF to 2NPT

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- Form A, Form B, Form C & D
- Molded DIN Connectors
- M8 Straight and 90° Connectors
- M12 Straight and 90° Connectors
- Solenoid Valve Timers

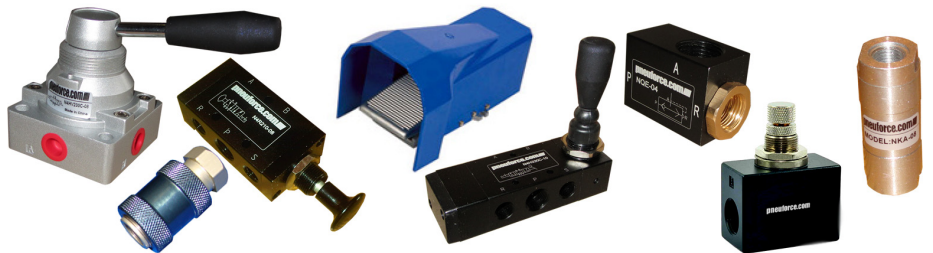
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Manual & Automatic Valves

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- Foot Pedal Valves
- Quick Exhaust Valves
- Shuttle Valves
- Check Valves
- Precision Flow Controls

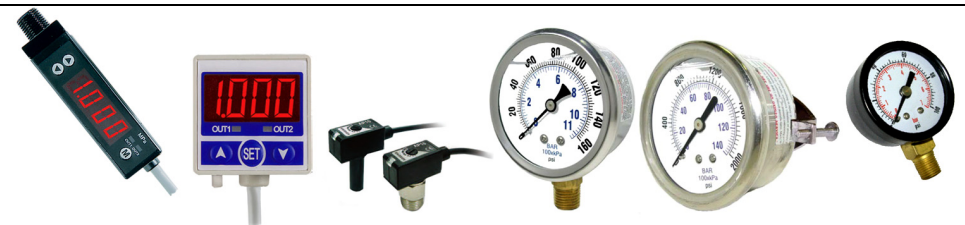
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- Universal Thread Fittings
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- Diaphragm Switches
- Low Cost OEM Type Switches
- Micro Switches
- Pneumatic Vacuum Switches

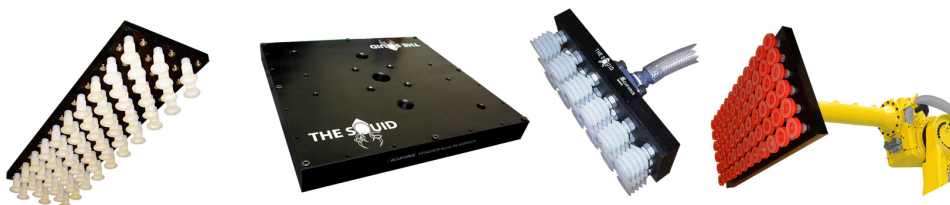
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The Squid!

- Universal Vacuum Tooling for automated pick and place applications, robotic palletizing and production machinery.

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NAF1000
mini filter

NAF 3000 – 03 D

Model Series

Body Size

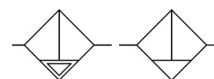
1000
2000
3000
4000
5000

Port Size

M5 10-32UNF
01 1/8NPT
02 1/4NPT
03 3/8NPT
04 1/2NPT
06 3/4NPT
10 1NPT

Drain Options

Blank Manual Drain
D Auto Drain



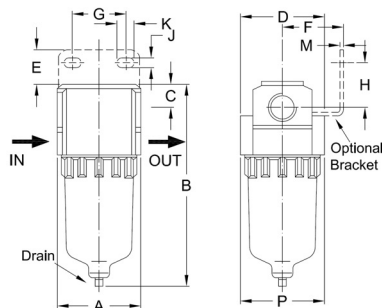
SPECIFICATIONS						
Model	NAF1000-M5	NAF2000-01/02	NAF3000-02/03	NAF4000-03/04	NAF4000-06	NAF5000-06/10
Port Size	10-32UNF	1/8" & 1/4"NPT	1/4" & 3/8"NPT	3/8" & 1/2"NPT	3/4"NPT	3/4" & 1"NPT
Filtration	25µ Sintered Bronze (5µ and 40µ and Polyethylene available)					
Max. Working Pressure	10bar(g) / 150psi(g)					
Proof Pressure	15bar(g) / 220psi(g)					
Working Temp. Range	5-60°C / 41-140°F					
Rated Flow	110l/min 4CFM	750 l/min 27CFM	1500 l/min 54 CFM	4000 l/min 143 CFM	7000 l/min 250 CFM	7000 l/min 250 CFM
Weight	0.07kg / 0.15lbs	0.19kg / 0.4lbs	0.29kg / 0.6lbs	0.55kg / 1.2lbs	1.08kg / 2.4lbs	1.08kg / 2.4lbs
Capacity	4cm³ / 0.14oz	15cm³ / 0.5oz	20cm³ / 0.68oz	45cm³ / 1.5oz		130cm³ / 4.4oz
Materials	Body	Aluminum Alloy Die Casting				
	Bowl	Polycarbonate				
	Bowl Guard	n/a		Painted Steel		



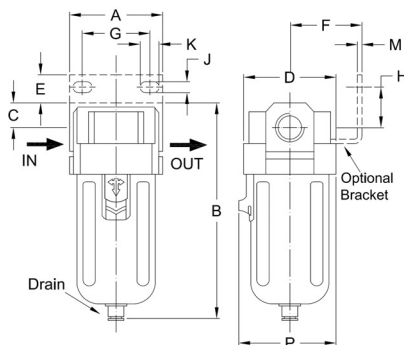
For spare elements
please refer to the FRL
accessory section.

DIMENSIONS (mm)													
Type	Port	A	B	C	D	E	F	G	H	J	K	M	P
NAF1000-M5	10-32UNF	25	66	7	25	-	-	-	-	-	-	-	26.5
NAF2000-01/02	1/8" & 1/4"NPT	40	97.5	11	40	17	30	27	22	5.4	8.4	2.3	40
NAF3000-02/03	1/4" & 3/8"NPT	53	132.5	14	53	16	41	40	23	6.5	8	2.3	56
NAF4000-03/04	3/8" NPT & 1/2"NPT	70	168.5	18	70	17	50	54	26	8.5	10.5	2.3	73
NAF4000-06	3/4"NPT	75	172.5	20	70	14	50	54	25	8.5	10.5	2.3	73
NAF5000-06/10	3/4" & 1"NPT	90	247.5	24	90	23	70	66	35	11	13	3.2	90

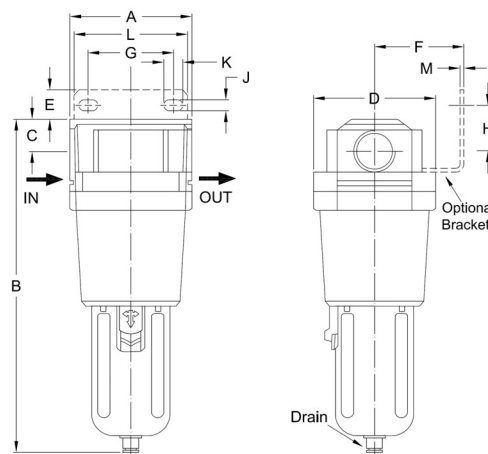
NAF1000-2000



NAF3000-4000



NAF5000





NAR 3000 – 03

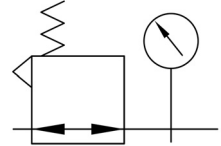
Model Series

Body Size

1000
2000
3000
4000
5000

Port Size

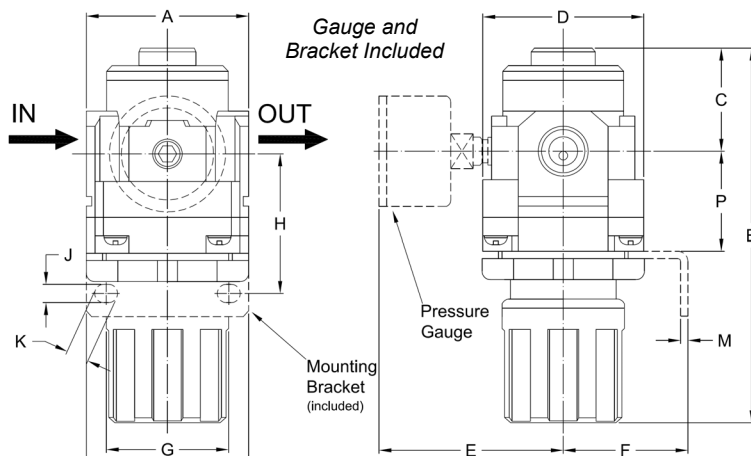
M5 10-32UNF
01 1/8NPT
02 1/4NPT
03 3/8NPT
04 1/2NPT
06 3/4NPT
10 1NPT



NAR1000 mini regulator

		SPECIFICATIONS					
Model		NAR1000-M5	NAR2000-01/02	NAR3000-02/03	NAR4000-03/04	NAR4000-06	NAR5000-06/10
Port Size		10-32UNF	1/8" & 1/4"NPT	1/4" & 3/8"NPT	3/8 & 1/2"NPT	3/4"NPT	3/4" & 1"NPT
Pressure Gauge Port		1/16NPT	1/8NPT	1/4NPT			
Max. Working Pressure		1MPa / 150psi					
Proof Pressure		1.5MPa / 220psi					
Working Temp. Range		5-60°C / 41-140°F					
Adj. Pressure Range		0.05-0.85MPa / 1-128psi(g)					
Rated Flow		100 l/min	550 l/min	2500 l/min	6000 l/min	6000 l/min	8000 l/min
		3.5CFM	20CFM	89CFM	214CFM	214CFM	286CFM
Weight		0.08kg / 0.18lbs	0.27kg / 0.6lbs	0.41kg / 0.9lbs	0.84kg / 1.8lbs	0.94kg / 2lbs	1.19kg / 2.6lbs
Materials	Body	Zinc Die Cast	Aluminum Alloy Die Cast				
	Deck	Reinforced Nylon			Aluminum Alloy Die Cast		
	Membrane	Nitrile Rubber					

DIMENSIONS (mm)													
Type	Port	A	B	C	D	E	F	G	H	J	K	L	M
NAR1000-M5	10-32UNF	25	61.5	11	25	26	25	28	30	4.5	6.5	40	20.5
NAR2000-01/02	1/8" & 1/4"NPT	40	95	17	40	56.8	30	34	45	5.4	15.4	55	2.3
NAR3000-02/03	1/4" & 3/8"NPT	53	127.5	35	53	60.8	41	40	46	6.5	8	53	2.3
NAR4000-03/04	3/8 & 1/2"NPT	70	149.5	37.5	70	65.5	50	54	54	8.5	10.5	70	2.3
NAR4000-06	3/4"NPT	75	154.5	40.5	70	69.5	50	54	56	8.5	10.5	70	2.3
NAR5000-06/10	3/4" & 1"NPT	90	168	48	90	75.5	70	66	65.8	11	13	90	3.2



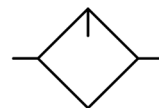
SPARE GAUGES + ALTERNATE PRESSURE MODELS				
(160psi models supplied as standard)				
Part Number	Dial Size	Pressure Range	Case Material	Port Size
GS-011.5030CSBA18	1.5"	0-30PSI	Black Carbon Steel	1/8NPT
GS-011.5060CSBA18		0-60PSI		
GS-011.5100CSBA18		0-100PSI		
GS-011.5160CSBA18		0-160PSI		
GS-012.0030CSBA14	2.0"	0-30PSI		1/4NPT
GS-012.0060CSBA14		0-60PSI		
GS-012.0100CSBA14		0-100PSI		
GS-012.0160CSBA14		0-160PSI		



NAL1000
mini lubricator

NAL 3000 - 03

Model Series	Body Size	Port Size
	1000	M5 10-32UNF
	2000	01 1/8NPT
	3000	02 1/4NPT
	4000	03 3/8NPT
	5000	04 1/2NPT
		06 3/4NPT
		10 1NPT



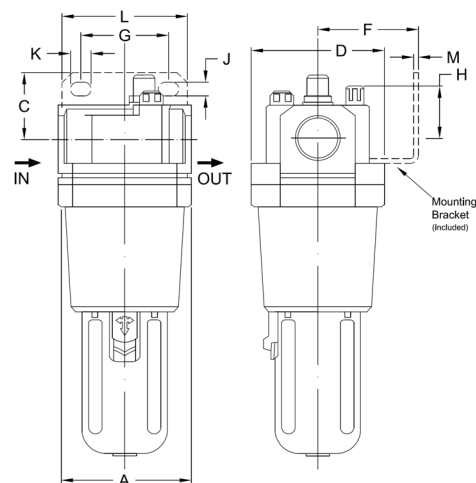
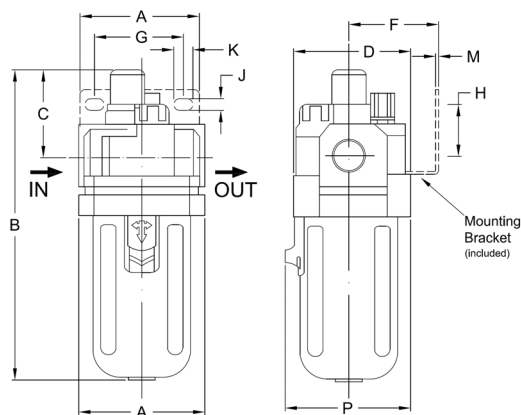
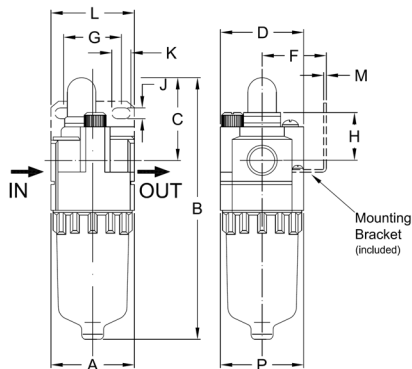
		SPECIFICATIONS							
Model		NAL1000-M5	NAL2000-01/02	NAL3000-02/03		NAL4000-03/04		NAL4000-06	NAL5000-06/10
Port Size		10-32UNF	1/8" & 1/4"NPT	1/4" & 3/8"NPT		3/8" & 1/2"NPT		3/4"NPT	3/4" & 1"NPT
Max. Working Pressure		1MPa / 150psi							
Proof Pressure		1.5MPa / 220psi							
Working Temp. Range		5-60°C / 41-140°F							
Minimum Oil Flow l/min		4	15	30	40	40	50	50	190
Lubrication Oil		ISOVG32 or equivalent							
Rated Flow		95 l/min 3.4CFM	800 l/min 26CFM	1700 l/min 61CFM		5000 l/min 179CFM		6300 l/min 223CFM	7000 l/min 250CFM
Weight		0.07kg / 0.15lbs	0.22kg / 0.5lbs	0.30kg / 0.6lbs		0.56kg / 1.2lbs		0.58kg / 1.3lbs	1.08kg / 2.4lbs
Bowl Capacity		7cm³ / 0.24oz	25cm³ / 0.85oz	50cm³ / 1.69oz		130cm³ / 4.4oz			
Materials	Body	Zinc Die Cast	Aluminum Alloy						
	Sight Glass	Polycarbonate							
	Bowl Guard	n/a			Painted Steel				

		DIMENSIONS (mm)											
Type	Port	A	B	C	D	F	G	H	J	K	L	M	P
NAL1000-M5	10-32UNF	25	81.5	25.5	25	-	-	-	-	-	-	-	27
NAL2000-01/02	1/8" & 1/4"NPT	40	122	38	40	30	27	22	5.4	8.4	40	2.3	40
NAL3000-02/03	1/4" & 3/8"NPT	53	142	38	53	41	40	23	6.5	8	53	2.3	56
NAL4000-03/04	3/8" & 1/2"NPT	70	177	41	70	50	54	26	8.5	10.5	70	2.3	73
NAL4000-06	3/4"NPT	75	177	39	70	50	54	25	8.5	10.5	70	2.3	73
NAL5000-06/10	3/4" & 1"NPT	90	254	45	90	70	66	35	11	13	90	3.2	90

NAL1000-2000

NAL3000-4000

NAL5000





For spare elements please refer to the FRL accessory section.

NAW 3000 – 03 D

Model Series

Body Size

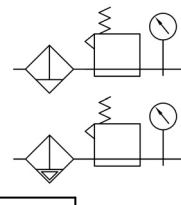
1000
2000
3000
4000
5000

Port Size

M5 10-32UNF
01 1/8NPT
02 1/4NPT
03 3/8NPT
04 1/2NPT
06 3/4NPT
10 1NPT

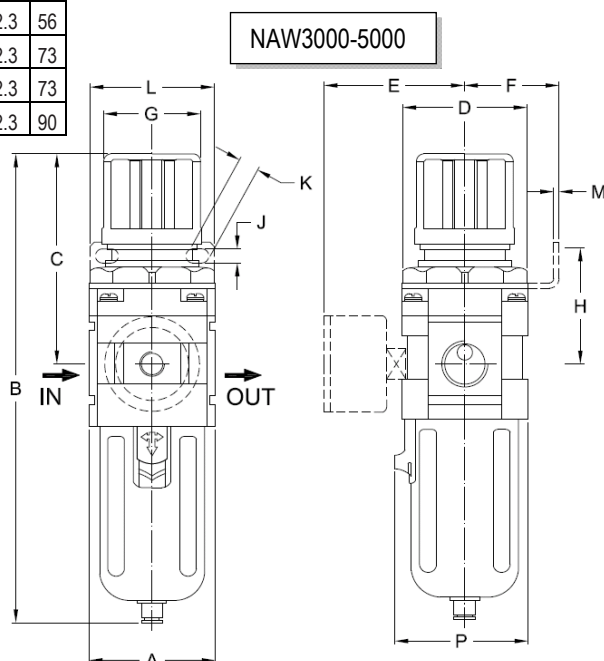
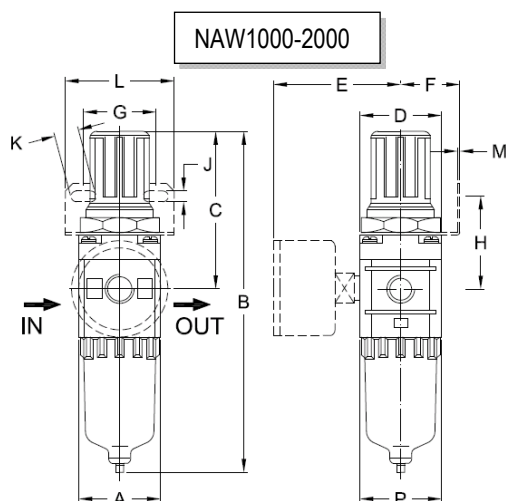
Drain Options

Blank Manual Drain
D Auto Drain



		SPECIFICATIONS					
Model		NAW1000-M5	NAW2000-01/02	NAW3000-02/03	NAW4000-03/04	NAW4000-06	NAW5000-06/10
Port Size		10-32UNF	1/8" & 1/4"NPT	1/4" & 3/8"NPT	3/8" & 1/2"NPT	3/4"NPT	3/4" & 1"NPT
Gauge Port		1/16NPT	1/8" NPT		1/4" NPT		
Max. Working Pressure		10bar(g) / 150psi(g)					
Proof Pressure		15bar(g) / 220psi(g)					
Working Temp. Range		5-60°C / 41-140°F					
Pressure Range		0.5-8.5bar(g) / 7-128psi(g)					
Filtration		25µ Sintered Bronze (5µ and 40µ and Polyethylene available)					
Rated Flow		110l/min 4CFM	550 l/min 20CFM	2000 l/min 71CFM	4000 l/min 143CFM	4500 l/min 159CFM	5500 l/min 197CFM
Weight		0.09kg / 0.2lbs	0.36kg / 0.8lbs	0.56kg / 1.2lbs	1.09kg / 2.4lbs	1.15kg / 2.5lbs	1.71kg / 3.7lbs
Bowl Capacity		4cm³ / 0.14oz	15cm³ / 0.51oz	20cm³ / 0.68oz	45cm³ / 1.5oz		130cm³ / 4.4oz
Materials	Body	Zinc Die Cast	Aluminum Alloy Die Cast				
	Deck	Reinforced Nylon			Aluminum Alloy Die Cast		
	Diaphragm	Nitrile Rubber					

DIMENSIONS (mm)														
Type	Port	A	B	C	D	E	F	G	H	J	K	L	M	P
NAW1000-M5	10-32UNF	25	109.5	50.5	25	26	25	28	30	4.5	6.5	40	2	28
NAW2000-01/02	1/8" & 1/4"NPT	40	164.5	78	40	56.8	30	34	45	5.4	15.4	55	2.3	40
NAW3000-02/03	1/4" & 3/8"NPT	53	211	92.5	53	60.8	41	40	46	6.5	8	53	2.3	56
NAW4000-03/04	3/8" & 1/2"NPT	70	262.5	112	70	70.5	50	54	54	8.5	10.5	70	2.3	73
NAW4000-06	3/4"NPT	75	267	114	70	70.5	50	54	56	8.5	10.5	70	2.3	73
NAW5000-06/10	3/4" & 1"NPT	90	338	116	90	75.5	49.2	54	62	8.5	10.5	70	2.3	90



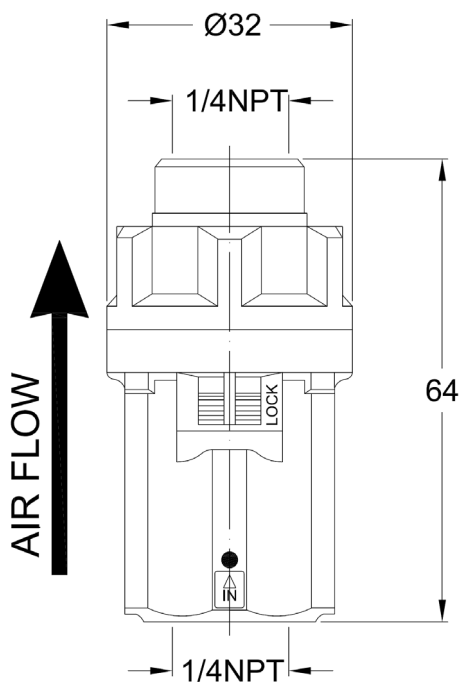
pneuforce.com ™ NMAR Mini Inline Regulators



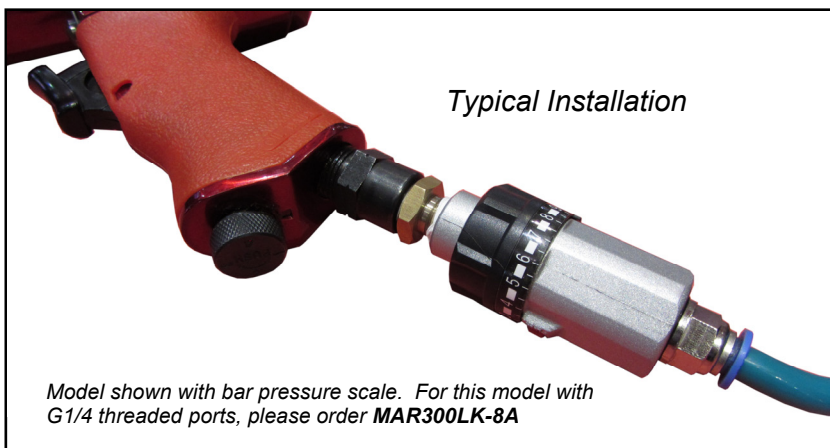
Model shown with bar pressure scale. For this model with G1/4 threaded ports, please order **MAR300LK-8A**

The NMAR series of pressure regulator has been designed for use in restricted space applications. An ideal application for the MAR regulator is with air tools where the user can adjust and lock the inlet pressure to the tool directly on the tool inlet.

Measuring just 2½" long and weighing only 2.8oz (80g) this regulator offers the user great flexibility in its installation and use. The locking feature of the regulator ensures that the pressure remains constant even when being rough handled during use.



Part Number	NMAR300LK-8A
Port Connections	1/4NPT
Media	Compressed Air
Supply Pressure	0-150psi(g)
Proof Pressure	550psi(g)
Adjustment Range	45-135psi(g)
Flow Rate	11CFM
Ambient Temp	32-140°F / 0-60°C
Weight	2.8oz / 80g



FRL Assembly Guide

The pneuforce FRL components are able to be assembled together to make the traditional FRL assemblies using the appropriate bracket. Please refer to the following guide to select the correct components.

Filter + Regulator + Lubricator

To Make This Assembly

Use TWO of these "L" brackets



Use this table to select the correct brackets and modules

Assembly Ref	Filter	Bracket	Regulator	Bracket	Lubricator
NAC2000-01/02	NAF2000-01/02	B210L	NAR2000-01/02	B210L	NAL2000-01/02
NAC3000-02/03	NAF3000-02/03	B310L	NAR3000-02/03	B310L	NAL3000-02/03
NAC4000-03/04	NAF4000-03/04	B410L	NAR4000-03/04	B410L	NAL4000-03/04
NAC4000-06	NAF4000-06	B510L	NAR4000-06	B510L	NAL4000-06
NAC5000-06/10	NAF5000-06/10	B610L	NAR5000-06/10	B610L	NAL5000-06/10

Piggy Back Filter Regulator + Lubricator

To Make This Assembly

Use ONE of these "T" brackets



Use this table to select the correct bracket and modules

Assembly Ref	Filter Regulator	Bracket	Lubricator
NAC2010-01/02	NAW2000-01/02	B210T	NAL2000-01/02
NAC3010-02/03	NAW3000-02/03	B310T	NAL3000-02/03
NAC4010-03/04	NAW4000-03/04	B410T	NAL4000-03/04
NAC4010-06	NAW4000-06	B510T	NAL5000-06
NAC5010-06/10	NAW5000-06/10	B610T	NAL5000-06/10

Spare Filtration Elements

Element Number	Description
FE2000-25	ELEMENT 2000 SERIES 25 MICRON
FE2000-40	ELEMENT 2000 SERIES 40 MICRON
FE2000-5	ELEMENT 2000 SERIES 5 MICRON
FE3000-25	ELEMENT 3000 SERIES 25 MICRON
FE3000-40	ELEMENT 3000 SERIES 40 MICRON
FE3000-5	ELEMENT 3000 SERIES 5 MICRON
FE4000-25	ELEMENT 4000 SERIES 25 MICRON
FE4000-40	ELEMENT 4000 SERIES 40 MICRON
FE4000-5	ELEMENT 4000 SERIES 5 MICRON
FE5000-25	ELEMENT 5000 SERIES 25 MICRON
FE5000-40	ELEMENT 5000 SERIES 40 MICRON
FE5000-5	ELEMENT 5000 SERIES 5 MICRON

*all elements are sintered bronze.

For polyethylene please inquire.



Safety Lock Out Valves



The safety lock out valves are used to isolate machinery that the FRL assembly is attached to from the compressed air supply. The relieving feature of these valves "dumps" air in the machinery to allow safe inspection or maintenance. The valves are able to be locked in the shut off position using a padlock type device or maintenance lock out tool.



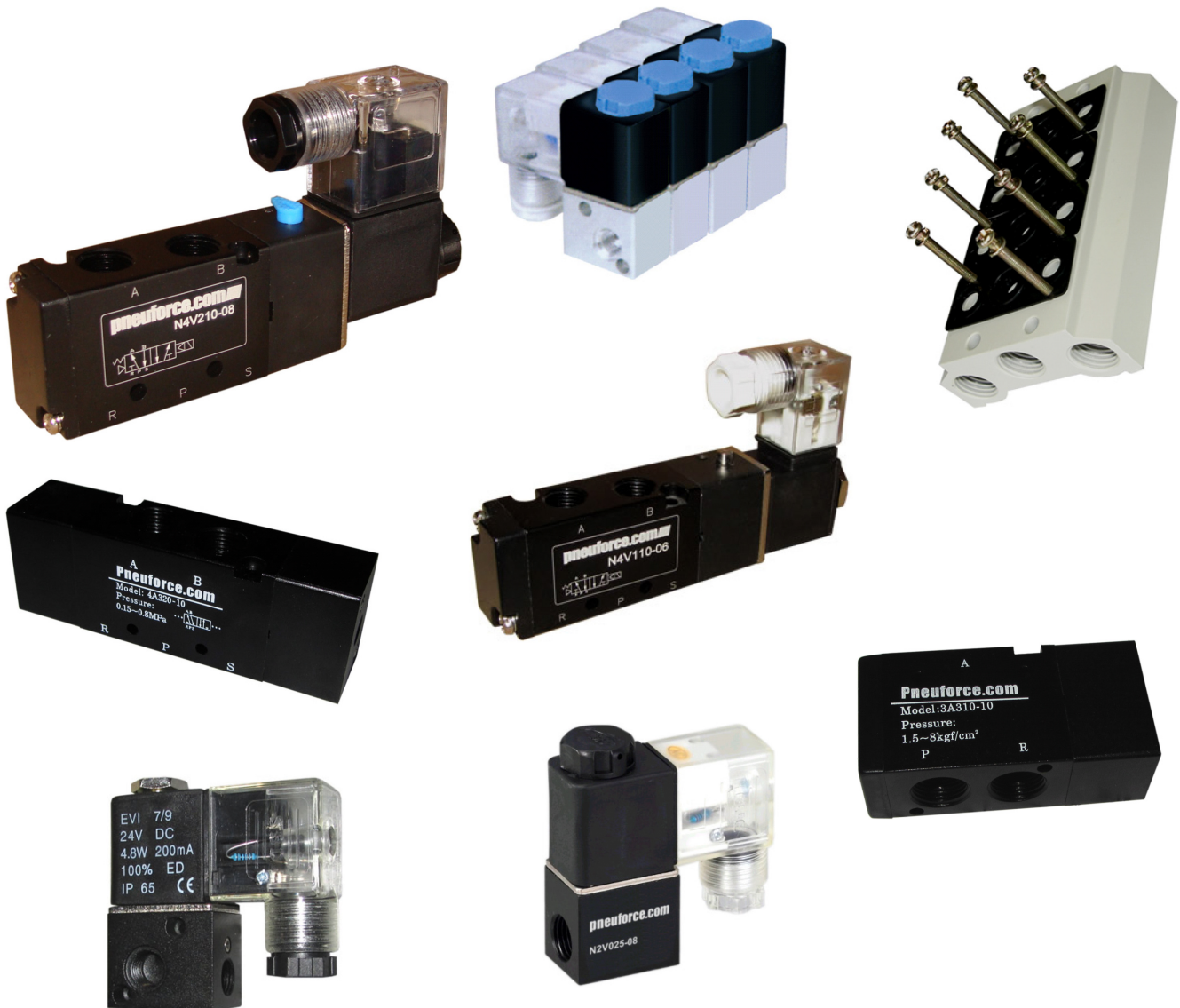
Model	Port Size	Vent Port	Suitable for connection to
SLO2000-01	1/8NPT	1/8NPT	2000-01 series modules
SLO2000-02	1/4NPT	1/8NPT	2000-02 series modules
SLO3000-02	1/4NPT	1/4NPT	3000-02 series modules
SLO3000-03	3/8NPT	1/4NPT	3000-03 series modules
SLO4000-03	3/8NPT	3/8NPT	4000-03 series modules
SLO4000-04	1/2NPT	3/8NPT	4000-04 series modules
SLO5000-06	3/4NPT	3/8NPT	5000-06 series modules
SLO5000-10	1NPT	3/8NPT	5000-10 series modules

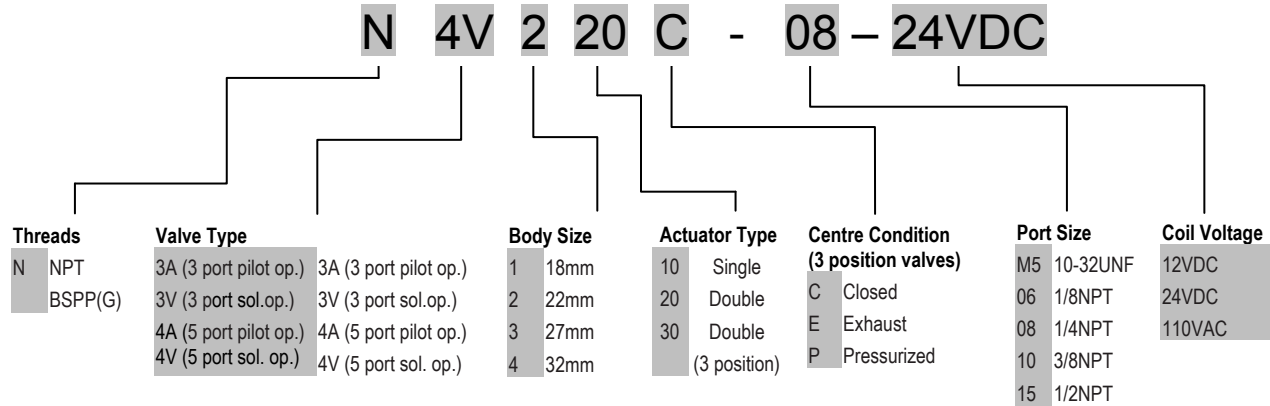
The pneuforce.com valve line has been manufactured exclusively for our distribution base in North America. Available in two-way, three-way and four-way configuration and with port sizes from 10-32UNF through to ½"NPT.

The N2V & N3V1 offering is a direct acting solenoid poppet style whereas the N3A / V and N4A / V operate using a balanced spool design. Both the poppet and spool valves are body ported but are able to be mounted to an inline manifold system with up to twelve station positions.

The aluminum body construction is offered as standard with a black, hard anodized finish ensuring long life particularly in harsh environments such as wash down or outdoor applications.

- **Materials:** Hard Anodized Aluminum, Stainless Steel, Thermoplastic
- **Maximum Pressure:** 29.9"Hg vacuum to 150psi(g) for direct acting and 20-125psi(g) for spool design models
- **Response:** <20ms
- **Manual Override:** 100 series: non-locking; 200,300, 400 locking
- **Electrical Connection:** DIN43650 with LED or 18" Lead Wire
- **Temperature Range:** 32°F to 150°F (0-65°C)
- **Seals:** Standard Nitrile (NBR), Viton or Silicone as an option. Please contact us for more information.





STANDARD MODELS

all solenoid valves are stocked with 24VDC DIN coils – Order spare coils for alternative voltages (Table 1)

① SPARE DIN COILS

Body Size	12VDC	24VDC	110VAC
1	110DIN12VDC	110DIN24VDC	110DIN110VAC
2	210DIN12VDC	210DIN24VDC	210DIN110VAC
3	210DIN12VDC	210DIN24VDC	210DIN110VAC
4	210DIN12VDC	210DIN24VDC	210DIN110VAC



① SPARE LEAD WIRE COILS (450mm / 18" leads)

Body Size	12VDC	24VDC	110VAC
1	110W12VDC	110W24VDC	110W110VAC
2	210W12VDC	210W24VDC	210W110VAC
3	210W12VDC	210W24VDC	210W110VAC
4	210W12VDC	210W24VDC	210W110VAC

Body Size 1	Body Size 2	Body Size 3	Body Size 4
N3A110-06	N3A210-08	N3A310-10	N3A410-15
N3A120-06	N3A220-08	N3A320-10	N3A420-15
N3V110-06-24VDC	N3V210-08-24VDC	N3V310-10-24VDC	N3V410-15-24VDC
N3V120-06-24VDC	N3V220-08-24VDC	N3V320-10-24VDC	N3V420-15-24VDC
N4A120-06	N4A210-08	N4A310-10	N4A410-15
N4A130C-06	N4A220-08	N4A320-10	N4A420-15
N4A130E-06	N4A230C-08	N4A330C-10	N4A430C-15
N4A130P-06	N4A230E-08	N4A330E-10	N4A430E-15
N4A110-06	N4A230P-08	N4A330P-10	N4A430P-15
N4V110-06-24VDC	N4V210-08-24VDC	N4V310-10-24VDC	N4V410-15-24VDC
N4V120-06-24VDC	N4V220-08-24VDC	N4V320-10-24VDC	N4V420-15-24VDC
N4V130C-06-24VDC	N4V230C-08-24VDC	N4V330C-10-24VDC	N4V430C-15-24VDC
N4V130E-06-24VDC	N4V230E-08-24VDC	N4V330E-10-24VDC	N4V430E-15-24VDC
N4V130P-06-24VDC	N4V230P-08-24VDC	N4V330E-10-24VDC	N4V430P-15-24VDC

*The valve models listed above are supplied with standard ports as shown in Table 2.
Other port sizes are available. Please refer to Table 3 below.

② Valve Body Port Sizes

Port Sizes	Supply	Outlet	Exhaust
M5	10-32UNF	10-32UNF	10-32UNF
06	1/8NPT	1/8NPT	1/8NPT
08	1/4NPT	1/4NPT	1/8NPT
10	3/8NPT	3/8NPT	1/4NPT
15	1/2NPT	1/2NPT	1/2NPT

Flow Performance Spool Valves

Supply Ports	Cv	@50 psig	@100 psig
#10-32	0.58	16 SCFM	27 SCFM
1/8" NPT	0.67	18 SCFM	31 SCFM
1/4" NPT	0.89	26 SCFM	49 SCFM
3/8" NPT	1.68	51 SCFM	93 SCFM
1/2" NPT	2.79	91 SCFM	171 SCFM

Spool Valve Specifications

Working Medium	40 micron filtered air
Operating Temperature	-5°C - 60°C
Lubrication	Not Necessary
Working Pressure	1.5 - 8.0 bar(g)
Supply Pressure	<12bar(g)
Coil Power	AC2.5VA DC2.5W
Insulation Class	IP65
Material	Aluminum
Cycle Rate	5 cycle/sec
Insulation	Class F
Voltage Tolerance	+/- 10%
Reaction Time	0.05sec

③ OPTIONAL PORT SIZES

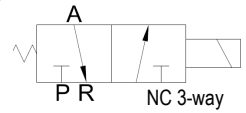
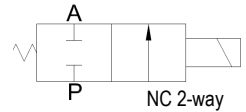
Body Size	Optional Port Size (all ports)	Part Number Indication
1	10-32UNF	-M5
2	1/8NPT	-06
3	1/4NPT	-08
4	only 1/2NPT	only 1/2NPT

For example N4V310-08-24VDC is a Size 3 body but with 1/4NPT threads for inlet, supply and exhaust ports, (P, A,B,R & S)

The N2V Series of direct acting poppet valves are available in both a 2-way and 3-way configuration. The exhaust port of the N2V035 valves is a 10-32UNF (M5) thread in the top of the solenoid stem.

The N3V1 valves series is a 1/8NPT ported valve but is able to be joined directly to a corresponding unit which shares a common supply port at either end of the valve assembly block. Unlike other types of valves, this series of valve does not require a separate manifold block.

These valves are supplied as standard with a 24VDC coil. For other voltages please order coils separately as shown in Table 1 below. For larger quantities the valve can be supplied with the preferred coil. Please enquire.



Valve Model	N2V025-06-24VDC	N2V025-08-24VDC	N2V035-06-24VDC	N2V035-08-24VDC	N3V1-06-24VDC
Valve Type	2-Way Direct Acting		3-Way Direct Acting		
Port Sizes	1/8NPT	1/4NPT	1/8NPT (10-32UNF exhaust)	1/4NPT (10-32UNF exhaust)	1/8NPT
Cv	0.23		0.12		0.05
Orifice Size	Ø2.5mm		Ø1.0mm		
Working Pressure	28" Hg to 115psi(g)				
Working Medium	air, inert gas & liquid				
Ambient Temperature	-5°C - +80°C / 23°F - 176°F				
Working Temperature	5°C - +60°C / 41°F - 140°F (no freezing medium)				
Cycle rate	10 cycles/sec				
Coil Insulation & Protection Class	F Class, IP65 (CE Certification)				
Coil Duty Cycle	100% ED				
Power Consumption	AC: 6.5VA DC: 6.5W				AC 5.5VA DC 4.8W
Voltage Range	+/- 10%				
Reaction Time	0.05 sec				
Electrical Connection	D = Form B DIN (LED indicator) or W = Flying Lead Coil (18" Lead Wire)				
Body Material	Hard Anodized Aluminum				

N2V Series



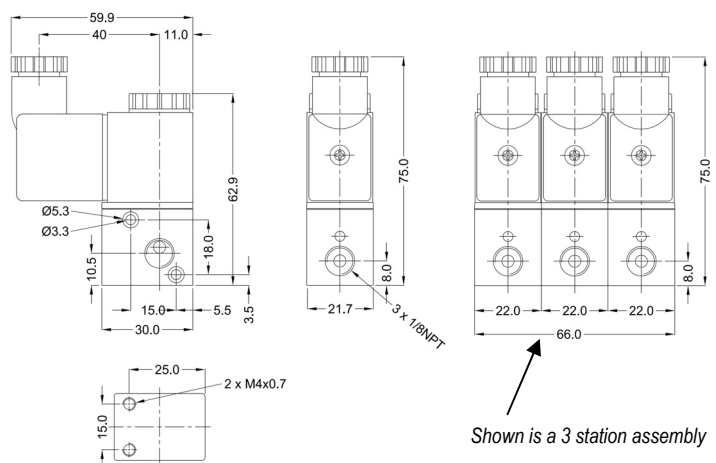
Dimensions (mm)

N3V1-06 Series



DIN Connector can be rotated 180°

Dimensions (mm)



Shown is a 3 station assembly

Spare Coils

1



12VDC 24VDC 110VAC

DIN Connector 210DIN12VDC 210DIN24VDC 210DIN110VAC

18" Lead Wire 210W12VDC 210W24VDC 210W110VAC

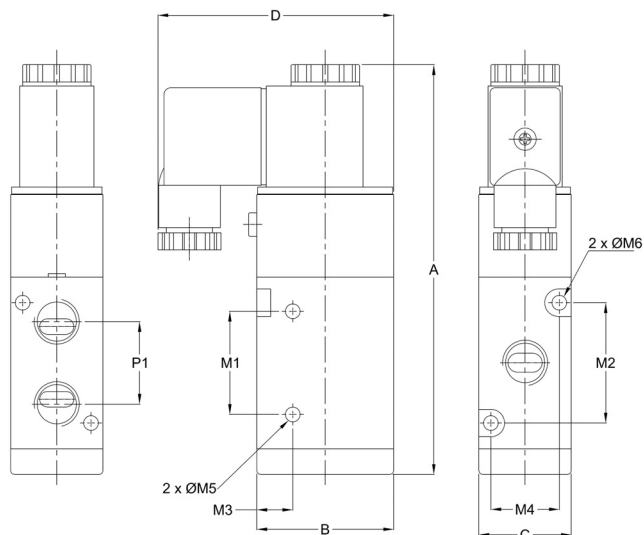
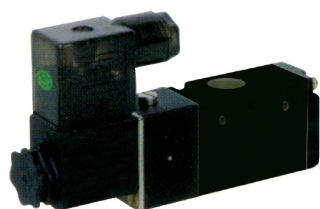
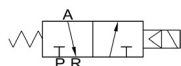
Dimensions (mm)

	N3V110	N3V210	N3V310	N3V410	N3V120	N3V220	N3V320	N3V420
Type	Single Solenoid / Spring Return				Double Solenoid			
A	57	77	81	97	69	88	96.5	120
B	27	35	40	50	27	35	40	50
C	18	22	27	34	18	22	27	34
D	55	67	69	75	55	67	69	75
M1	21	25	30	51	21	25	30	51
M2	19	33	35	44	19	33	35	44
M3	7.5	8	10.5	13.5	7.5	8	10.5	13.5
ØM4	18	22	27	34	18	22	27	34
ØM5	3.3	4.3		5.6	3.3		4.3	
ØM6	3.3	3.3	4.3	4.3	3.3	3.3	4.3	4.3
P1	16	18	24	36	16	18	24	36

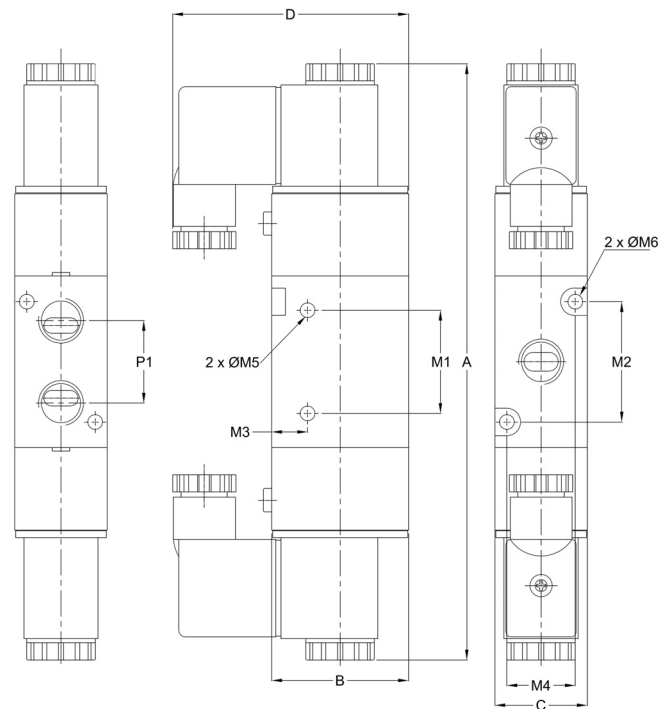
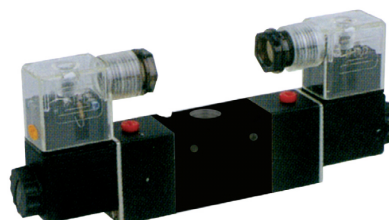
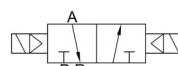
For complete model options including part numbers for ordering, please refer to the control valves specification page(s).

e.g N3V110-06-24VDC

N3V110 N3V210 N3V310 N3V410



N3V120 N3V220 N3V320 N3V420

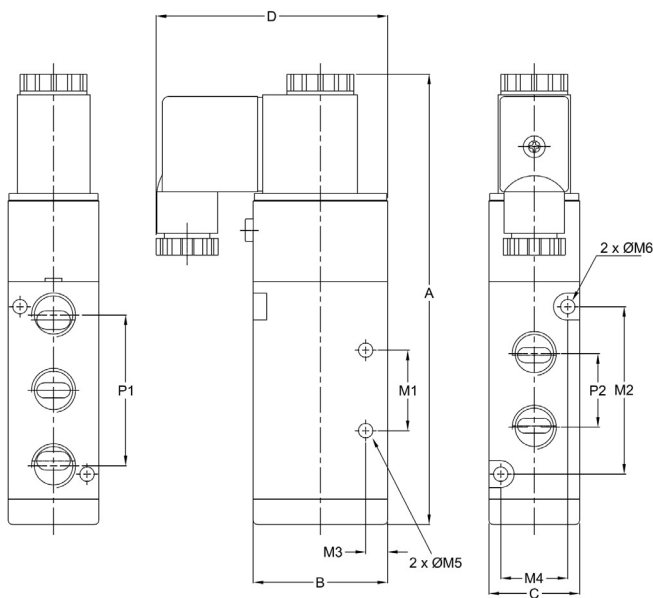


Dimensions (mm)

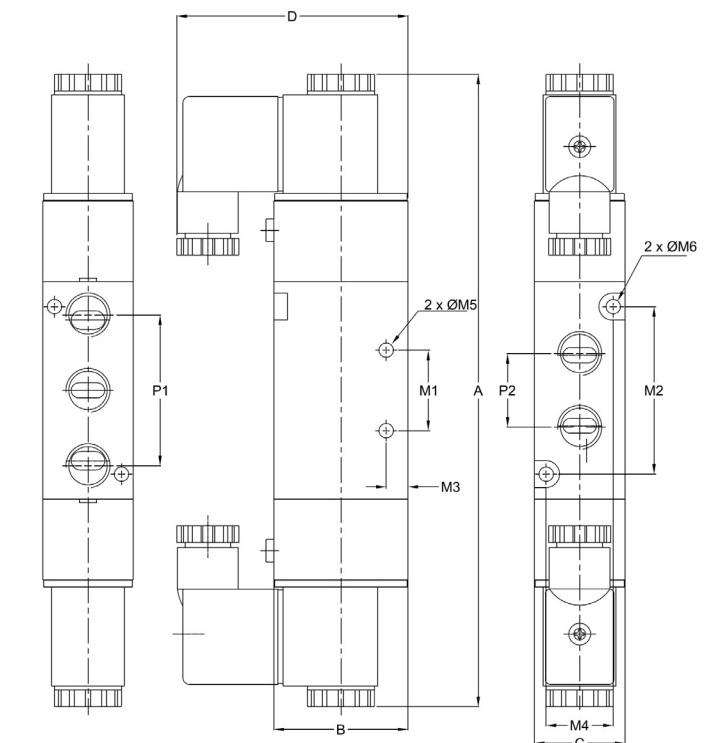
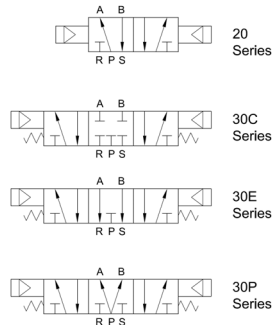
	N4V110	N4V210	N4V310	N4V410	N4V120	N4V220	N4V320	N4V420	N4V130	N4V230	N4V330	N4V430
Type	Single Solenoid / Spring Return				Double Solenoid				Double Solenoid 3 Position			
A	98	117	135	169	140	170	188	245	155	189	208	215
B	27	35	40	50	27	35	40	50	27	35	40	50
C	18	22	27	34	18	22	27	34	18	22	27	34
D	55	67	69	75	55	67	69	75	55	67	69	75
M1	14	20	24	28	14	20	24	28	14	20	24	28
M2	30	36	50	72	30	36	50	72	30	36	50	72
M3	4	7	6.5	7.5	4	7	6.5	7.5	4	7	6.5	7.5
ØM4	13	17	20	27	13	17	20	27	13	17	20	27
ØM5	3.3	4.3		5.5	3.3	4.3		5.5	3.3	4.3		5.5
P1	16	18	22	36	16	18	22	36	16	18	22	36
P2	28	36	45	63	28	36	45	63	28	36	45	63

For complete model options including part numbers for ordering, please refer to the control valves specification page(s).
e.g N4V110-06-24VDC

N4V110 N4V210 N4V310 N4V410



N4V120/30 N4V220/30 N4V320/30 N4V420/30



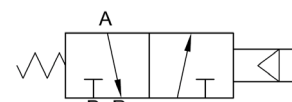
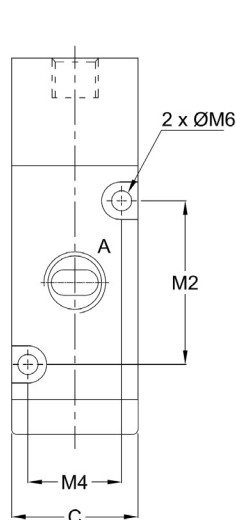
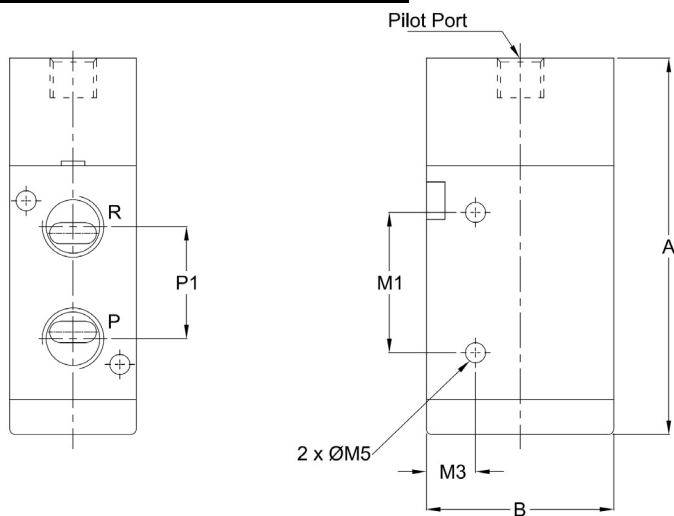
Dimensions (mm)

	N3A110	N3A210	N3A310	N3A410	N3A120	N3A220	N3A320	N3A420
Type	Single Pilot / Spring Return				Double Pilot			
Pilot Port	1/8NPT							
A	57	77	81	97	69	88	96.5	120
B	27	35	40	50	27	35	40	50
C	18	22	27	34	18	22	27	34
M1	21	25	30	51	21	25	30	51
M2	18	22	27	34	18	22	27	34
M3	7.5	8	10.5	13.5	7.5	8	10.5	13.5
M4	18	22	27	34	18	22	27	34
ØM5	3.3		4.3		3.3		4.3	
ØM6	3.3	4.3		5.6	3.3	4.3		5.6
P1	16	18	24	36	16	18	24	36

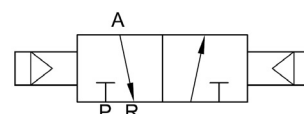
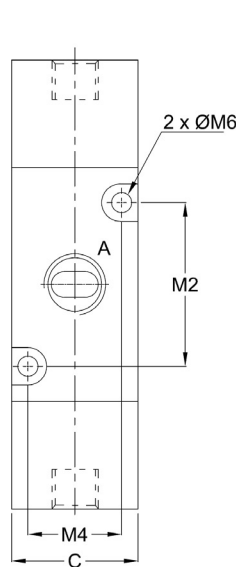
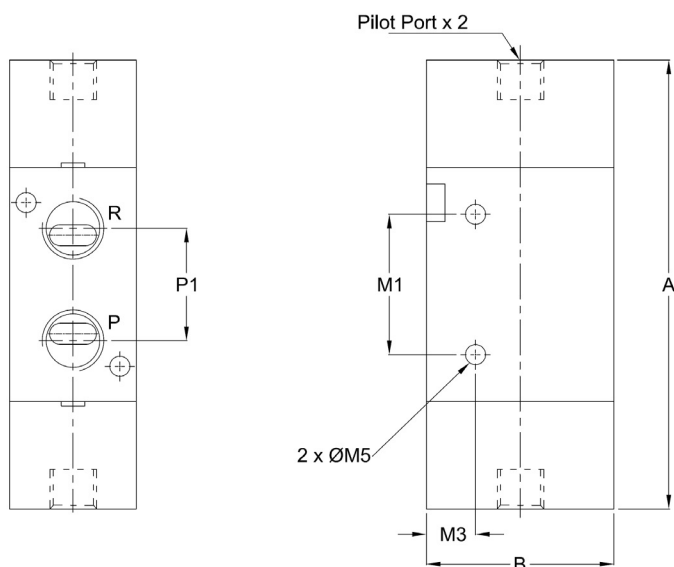
For complete model options including part numbers for ordering, please refer to the control valves specification page(s).

e.g N3A110-06

N3A110 N3A210 N3A310 N3A410



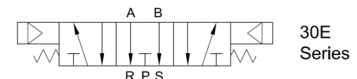
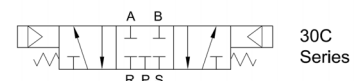
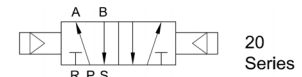
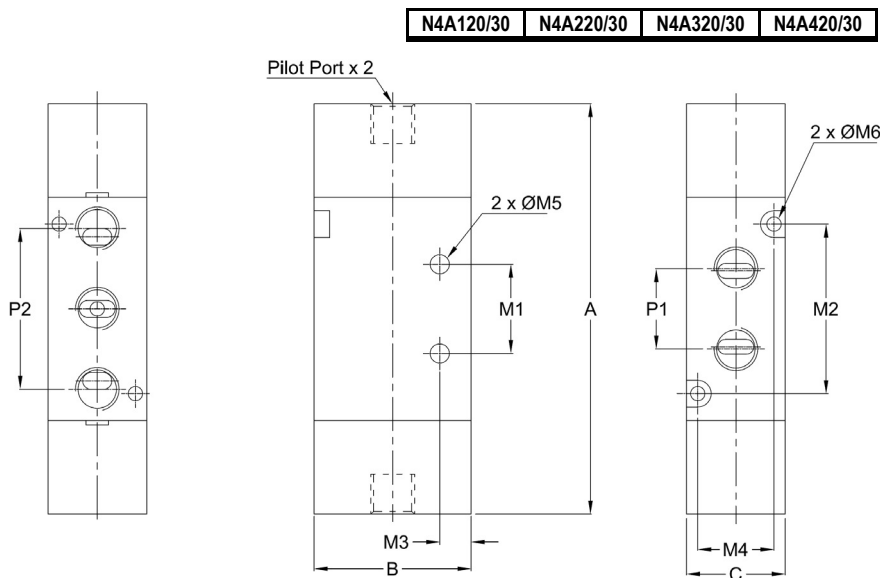
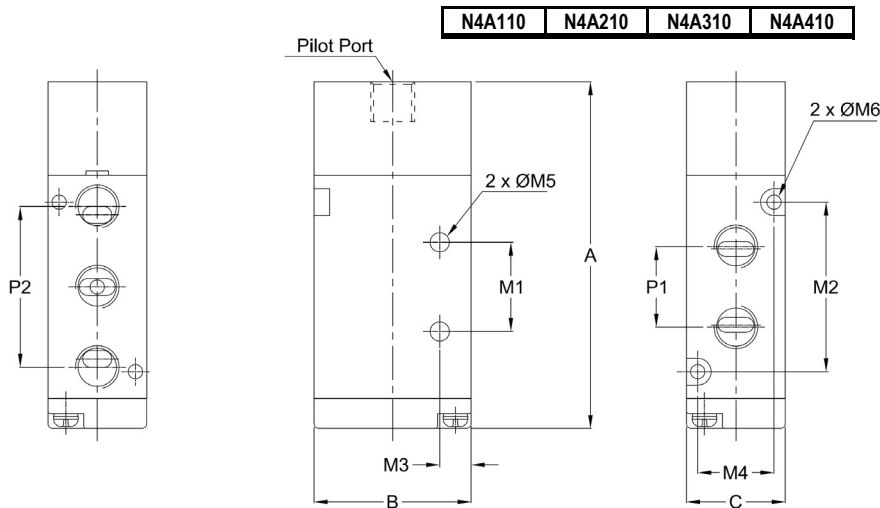
N3A120 N3A220 N3A320 N3A420

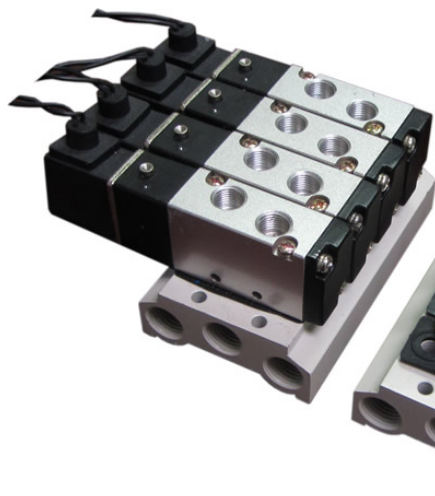


Dimensions (mm)

	N4A110	N4A210	N4A310	N4A410	N4A120	N4A220	N4A320	N4A420	N4A130	N4A230	N4A330	N4A430
Type	Single Pilot / Spring Return				Double Pilot				Double Pilot 3 Position			
Pilot Port	1/8NPT											
A	69	78	96	124	81	92	111	138	96	111	130	159
B	27	35	40	50	27	35	40	50	27	35	40	50
C	18	22	27	34	18	22	27	34	18	22	27	34
M1	14	20	24	28	14	20	24	28	14	20	24	28
M2	30	38	50	72	30	38	50	72	30	38	50	72
M3	4	7	6.5	7.5	4	7	6.5	7.5	4	7	6.5	7.5
ØM4	13	17	20	27	13	17	20	27	13	17	20	27
ØM5	3.3	4.3		5.5	3.3	4.3		5.5	3.3	4.3		5.5
P1	16	18	22	36	16	18	22	36	16	18	22	36
P2	28	36	45	63	28	36	45	63	28	36	45	63

For complete model options including part numbers for ordering, please refer to the control valves specification page(s).
e.g N4V110-06





These manifold blocks enable the connection of a common pressure supply (P) and exhaust ports (R & S) to multiple valves stations.

These manifolds are suitable for the spool valves N4V and N4A. Manifolds for the N3V and N3A are also available. Please enquire.

Manufactured in aluminum with an anodized finish.

Manifold Kit Contents

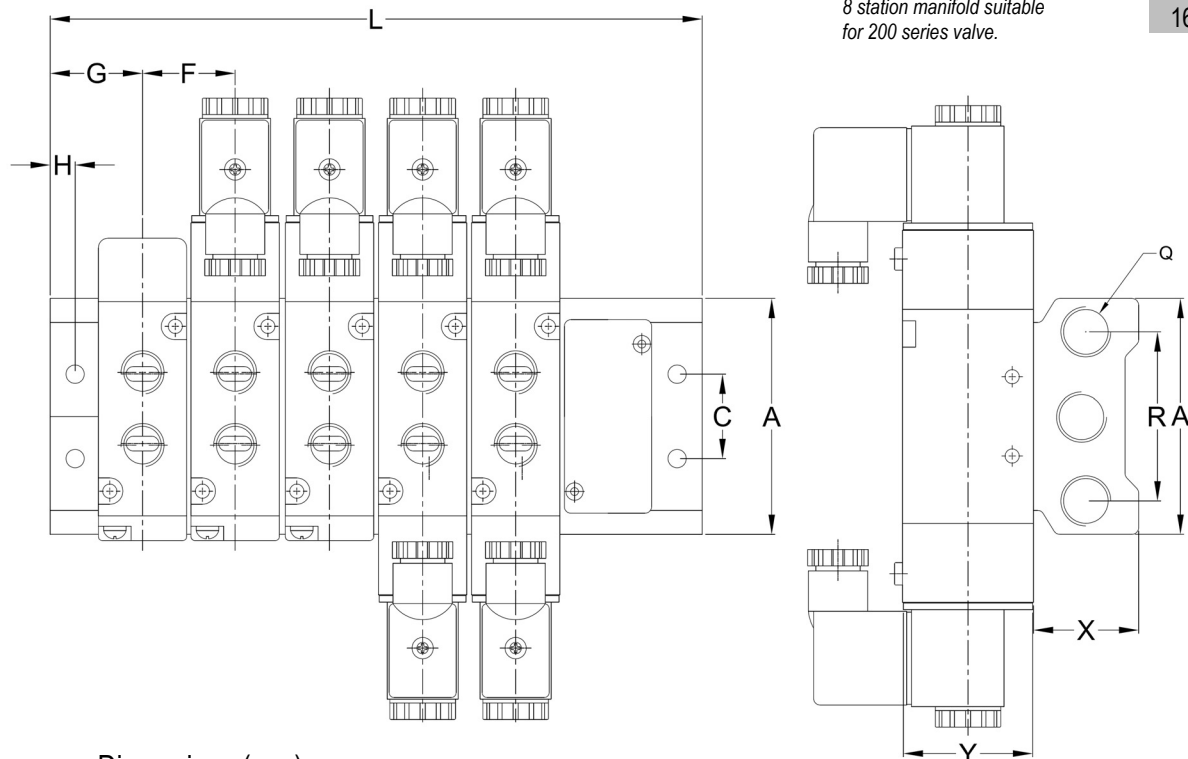
- Manifold
- Sealing Gaskets
- Connecting Bolts

BLANKING PLATES (to seal an empty valve station)	
Kit Part Number*	Manifold Series
N4V1BGS	N4V110F
N4V2BGS	N4V210F
N4V3BGS	N4V310F
N4V4BGS	N4V410F

*Kit comprises of one blanking plate, gasket and 2 screws

N	4V	110F	-	2
NPT	4V N4A 4V N4V	110F 100 Series 210F 100 Series 310F 300 Series 410F 400 Series		22 station 44 station 66 station 88 station 10 10 station 12 12 station 16 16 station

e.g N4V210F-8
8 station manifold suitable
for 200 series valve.



Dimensions (mm)

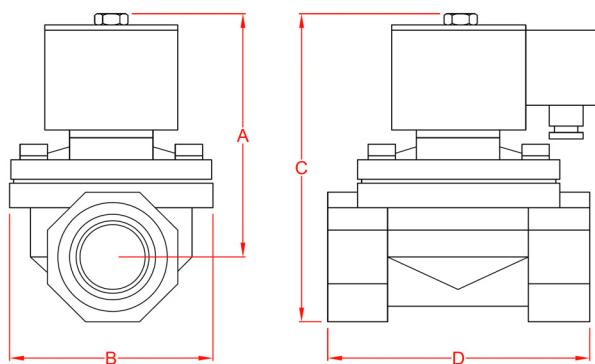
	A	B	C	E	F	G	H	K	L	M	Q	R	X	Y
110F	58	43	20	4.2	18.3	19	5	140	N * 19 + 38	155	1/4NPT	40	25	27
210F	59	50	21	4.3	22.2	23	6	170	N * 23 + 46	189	1/4NPT	43	26	35
310F	75	64	26	4.5	27.3	27	6	189	N * 28 + 54	208	3/8NPT	53	30	40
410F	98	94	32	4.5	34.3	31.5	7	222	N * 35 + 63	243	1/2NPT	68	38	50



The N2W series of brass process valves have been designed for general industry. These valves are developed with a coupled diaphragm and therefore can be used without a media pressure differential. Because of this feature they can also be used for vacuum duty or very low air pressure applications.

Supplied with a DIN43650 Form A coil these simple and robust valves offer the user unparalleled performance via the over sized orifices.

- Port sizes from 3/8NPT to 2NPT.
- Viton seals available as an option.
- N2W models are brass and N2S are stainless steel.



Body Size	A	B	C	D
160	102	57	117	69
200	107	57	124	73
250	112	74	135	99
350	142	95	172	123
400	142	95	172	123
500	172	123	209	168

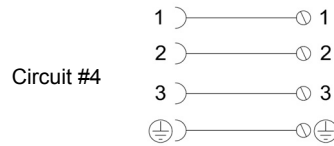
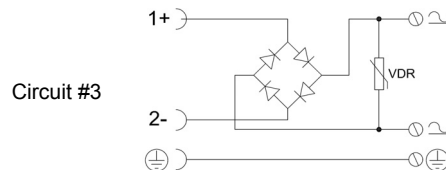
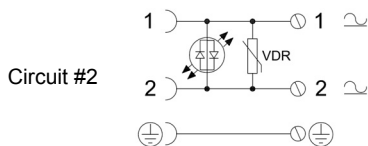
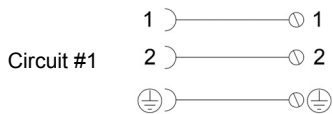
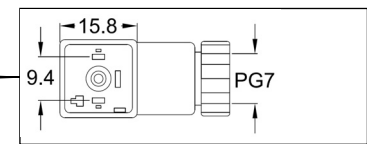
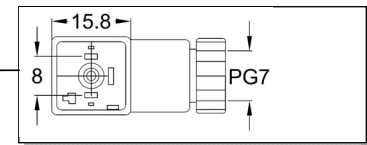
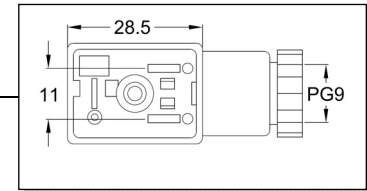
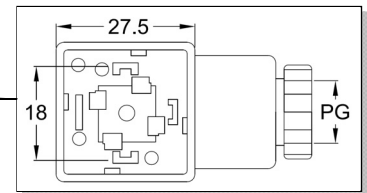
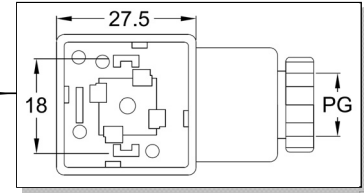
Part Number Brass Body	N2W160-10	N2W160-15	N2W200-20	N2W250-25	N2W350-35	N2W400-40	N2W500-50
Part Number Stainless Steel	N2S160-10	N2S160-15	N2S200-20	N2S250-25	N2S350-35	N2S400-40	N2S500-50
Orifice	16mm	16mm	20mm	25mm	35mm	40mm	50mm
Valve Type	2 Way Normally Closed						
Method	Coupled Diaphragm						
Operating Pressure	0 to 150psi(g) (110AC Coil) , 0 to 120psi(g) (24DC coil)						
Operating Temperature	14 to 176 °F (-10 TO 80 °C)						
Port Size (NPT)	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Body Materials	2W Series Brass 2S Series: Stainless Steel						
Seal Materials:	NBR (Viton® is optional)						
Insulation Class	IP65						
Coil Duty	100% ED						
Coil Power	20W				40W		
Electrical Connections	DIN43650 Form A (30mm Square)						
Service	Air, Liquid, Vacuum						

Voltage Requirements

Valves are available in 24VDC or 110VAC. Please add the voltage at the end of the part number.

e.g. N2W160-10-24VDC or N2W160-10-110VAC. Refer to pneuforce.com for stock and pricing. Other voltages available, please contact pneuforce.com.

Part Number	Type	Color	Cable Gland	Circuit & Voltage	Contacts
FORM A 18mm 3 Contacts (2 + GRND)					
KA132000B9	FORM A 18MM	Black	PG9	No Circuit	Circuit 1
KA132000B1	FORM A 18MM	Black	PG11	No Circuit	
KA132000B3	FORM A 18MM	Black	1/2NPTF	No Circuit	
KA132000A9	FORM A 18MM	Gray	PG9	No Circuit	
KA132000A1	FORM A 18MM	Gray	PG11	No Circuit	
KA132000A3	FORM A 18MM	Gray	1/2NPTF	No Circuit	
KA132V5GT9	FORM A 18MM	Transparent	PG9	12V Varistor and LED	Circuit 2
KA132V54T9	FORM A 18MM	Transparent	PG9	24V Varistor and LED	
KA132V55T9	FORM A 18MM	Transparent	PG9	115V Varistor and LED	
KA132R13B9	FORM A 18MM	Black	PG9	Rectifier Circuit	Circuit 3
FORM A 18mm 4 Contacts (3 + GRND)					
KA042000B9	FORM A 18MM	Black	PG9	No Circuit	Circuit 4
KA042000B1	FORM A 18MM	Black	PG11	No Circuit	
KA042000B3	FORM A 18MM	Black	1/2NPTF	No Circuit	
KA042000A9	FORM A 18MM	Gray	PG9	No Circuit	
KA042000A1	FORM A 18MM	Gray	PG11	No Circuit	
KA042000A3	FORM A 18MM	Gray	1/2NPTF	No Circuit	
FORM B 11mm 3 Contacts (2 + GRND)					
KB132000B9	FORM B 11MM	Black	PG9	No Circuit	Circuit 1
KB132V54T9	FORM B 11MM	Transparent	PG9	24V Varistor and LED	Circuit 2
KB132V55T9	FORM B 11MM	Transparent	PG9	115V Varistor and LED	
FORM C 8mm 3 Contacts (2 + GRND)					
KC136000B7	FORM C 8MM	Black	PG7	No Circuit	Circuit 1
KC136V54T7	FORM C 8MM	Transparent	PG7	24V Varistor and LED	Circuit 2
KC136V55T7	FORM C 8MM	Transparent	PG7	115V Varistor and LED	
FORM C 9.4mm 3 Contacts (2 + GRND)					
KD136000B7	FORM C 9.4MM	Black	PG7	No Circuit	Circuit 1
KD136V54T7	FORM C 9.4MM	Transparent	PG7	24V Varistor and LED	Circuit 2
KD136V55T7	FORM C 9.4mm	Transparent	PG7	115V Varistor and LED	



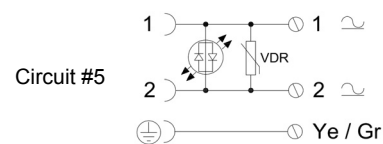
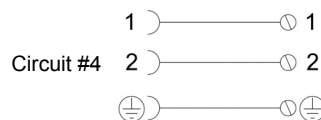
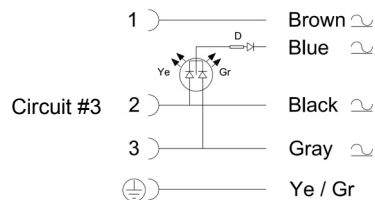
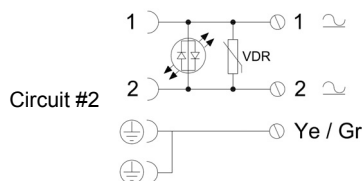
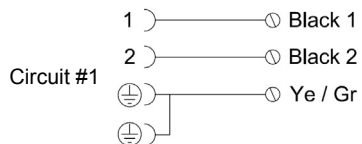
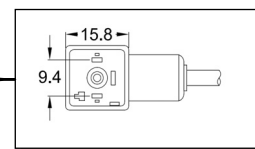
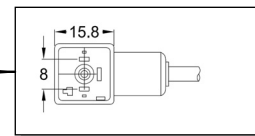
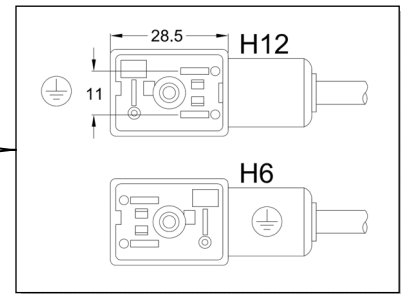
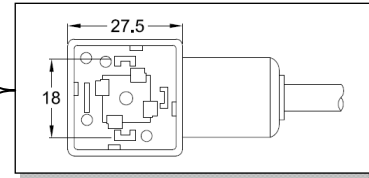
Standard
silver plated
contacts



Anti crush spigot to
prevent housing
deformation,
captive contacts
within body,
patented wire
protection plate



Part Number	Type	Cable Length	Circuit and Voltage	Contacts
FORM A 18mm				
MA134000PA05200	FORM A 18mm	6ft	Circuit 1	
MA134000PA05500	FORM A 18mm	15ft	Circuit 1	
MA634V54PA05200	FORM A 18mm	6ft	24VDC Circuit 2	
MA634V54PA05500	FORM A 18mm	15ft	24VDC Circuit 2	
MA634V55PA05200	FORM A 18mm	6ft	110VAC Circuit 2	
MA634V55PA05500	FORM A 18mm	15ft	110VAC Circuit 2	
MA634V5GPA05200	FORM A 18mm	6ft	12VDC Circuit 2	
MA634V5GPA05500	FORM A 18mm	15ft	12VDC Circuit 2	
MA635P3YPC04200	FORM A 18mm H12	6ft	Circuit 3	
MA635P3YPC04500	FORM A 18mm H12	15ft	Circuit 3	
MA636P3ZPC04200	FORM A 18mm H6	6ft	Circuit 3	
MA636P3ZPC04500	FORM A 18mm H6	15ft	Circuit 3	
FORM B 11mm				
MB135000PA05200	FORM B 11MM H12	6ft	Circuit 4	
MB135000PA05500	FORM B 11MM H12	15ft	Circuit 4	
MB136000PA05200	FORM B 11MM H6	6ft	Circuit 4	
MB136000PA05500	FORM B 11MM H6	15ft	Circuit 4	
MB635V54PA05200	FORM B 11MM H12	6ft	24VDC Circuit 5	
MB635V54PA05500	FORM B 11MM H12	15ft	24VDC Circuit 5	
MB635V55PA05200	FORM B 11MM H12	6ft	110VAC Circuit 5	
MB635V55PA05500	FORM B 11MM H12	15ft	110VAC Circuit 5	
MB636V54PA05200	FORM B 11MM H6	6ft	24VDC Circuit 5	
MB636V54PA05500	FORM B 11MM H6	15ft	24VDC Circuit 5	
MB636V55PA05200	FORM B 11MM H6	6ft	110VAC Circuit 5	
MB636V55PA05500	FORM B 11MM H6	15ft	110VAC Circuit 5	
FORM C 8mm				
MC134000PA01200	FORM C 8MM	6ft	Circuit 1	
MC134000PA01500	FORM C 8MM	15ft	Circuit 1	
MC634V54TA01200	FORM C 8MM	6ft	24VDC Circuit 2	
MC634V54TA01500	FORM C 8MM	15ft	24VDC Circuit 2	
MC634V55TA01200	FORM C 8MM	6ft	110VAC Circuit 2	
MC634V55TA01500	FORM C 8MM	15ft	110VAC Circuit 2	
FORM D 9.4mm				
MD134000PA01200	FORM C 9.4MM	6ft	Circuit 1	
MD134000PA01500	FORM C 9.4MM	15ft	Circuit 1	
MD634V54TA01200	FORM C 9.4MM	6ft	24VDC Circuit 2	
MD634V54TA01500	FORM C 9.4MM	15ft	24VDC Circuit 2	
MD634V55TA01200	FORM C 9.4MM	6ft	110VAC Circuit 2	
MD634V55TA01500	FORM C 9.4MM	15ft	110VAC Circuit 2	



Installation



Protective Cover



Over Molding

Circular Connectors



Part Number	Connection	Type	Type	Pin #	LED	Cable Length
C12-I-F-3A	12mm	Straight	Female	3	No	6ft
C12-I-F-3A-5M	12mm	Straight	Female	3	No	15ft
C12-I-F-4A	12mm	Straight	Female	4	No	6ft
C12-I-F-4A-5M	12mm	Straight	Female	4	No	15ft
C12-I-F-5A	12mm	Straight	Female	5	No	6ft
C12-I-F-5A-5M	12mm	Straight	Female	5	No	15ft
C12-I-M-3A	12mm	Straight	Male	3	No	6ft
C12-I-M-3A-5M	12mm	Straight	Male	3	No	15ft
C12-I-M-4A	12mm	Straight	Male	4	No	6ft
C12-I-M-4A-5M	12mm	Straight	Male	4	No	15ft
C12-I-M-5A	12mm	Straight	Male	5	No	6ft
C12-I-M-5A-5M	12mm	Straight	Male	5	No	15ft
C12-L-F-3A	12mm	90°	Female	3	No	6ft
C12-L-F-3A-5M	12mm	90°	Female	3	No	15ft
C12-L-F-3B	12mm	90°	Female	3	Yes	6ft
C12-L-F-3B-5M	12mm	90°	Female	3	Yes	15ft
C12-L-F-4A	12mm	90°	Female	4	No	6ft
C12-L-F-4A-5M	12mm	90°	Female	4	No	15ft
C12-L-F-4B	12mm	90°	Female	4	Yes	6ft
C12-L-F-4B-5M	12mm	90°	Female	4	Yes	15ft
C12-L-F-5A	12mm	90°	Female	5	No	6ft
C12-L-F-5A-5M	12mm	90°	Female	5	No	15ft
C12-L-F-5B	12mm	90°	Female	5	Yes	6ft
C12-L-F-5B-5M	12mm	90°	Female	5	Yes	15ft
C12-L-M-3A	12mm	90°	Male	3	No	6ft
C12-L-M-3A-5M	12mm	90°	Male	3	No	15ft
C12-L-M-4A	12mm	90°	Male	4	No	6ft
C12-L-M-4A-5M	12mm	90°	Male	4	No	15ft
C12-L-M-5A	12mm	90°	Male	5	No	6ft
C12-L-M-5A-5M	12mm	90°	Male	5	No	15ft
C8-I-F-3A	8mm	Straight	Female	3	No	6ft
C8-I-F-3A-5M	8mm	Straight	Female	3	No	15ft
C8-I-F-4A	8mm	Straight	Female	4	No	6ft
C8-I-F-4A-5M	8mm	Straight	Female	4	No	15ft
C8-I-M-3A	8mm	Straight	Male	3	No	6ft
C8-I-M-3A-5M	8mm	Straight	Male	3	No	15ft
C8-I-M-4A	8mm	Straight	Male	4	No	6ft
C8-I-M-4A-5M	8mm	Straight	Male	4	No	15ft
C8-L-F-3A	8mm	90°	Female	3	No	6ft
C8-L-F-3A-5M	8mm	90°	Female	3	No	15ft
C8-L-F-4A	8mm	90°	Female	4	No	6ft
C8-L-F-4A-5M	8mm	90°	Female	4	No	15ft
C8-L-M-3A	8mm	90°	Male	3	No	6ft
C8-L-M-3A-5M	8mm	90°	Male	3	No	15ft
C8-L-M-4A	8mm	90°	Male	4	No	6ft
C8-L-M-4A-5M	8mm	90°	Male	4	No	15ft

Electrical Dump Valve Times

Specifications	
Voltage	24-240V AC/DC 50/60Hz
Absorption Current	4mA
Operating Temp	-10°C - +50°C / 14°F - +122°F
Insulation	IP65 – EN60529
Switch Holding Voltage	400V
Switch Capacity	1A
Inrush Current	10A for 10ms
Duty Cycle	100% ED
Switch Life	3 x 10 ³

Part Number: XY-2000

Time On	0.5 to 9.5 sec (0.5 sec step)
	10 to 99 sec (1 sec step)
Indicators	Green ON Red OFF
Termination	DIN43650A / Form A

Supplied with KA132000B9



Part Number: XY-720

Time On	0.5 sec to 45 min
Indicators	Yellow ON
Termination	DIN43650A / Form A

Supplied with KA132000B9

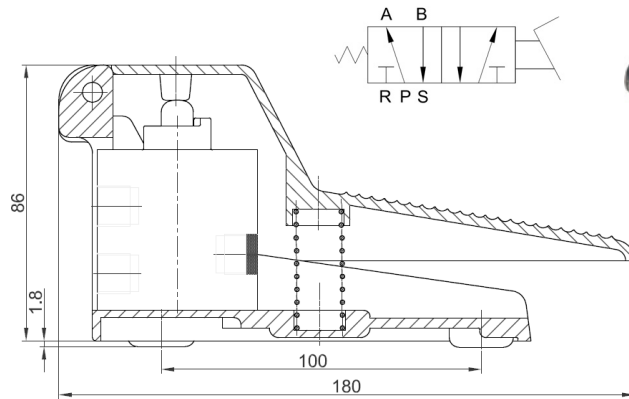
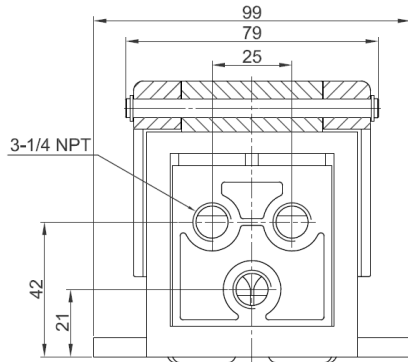


Pneuforce offers three standard types of foot pedal valves as shown below. Other types are available such as 3-way models. Please refer to www.pneuforce.com for details. All ports for supply and signal and exhaust are 1/4NPT.

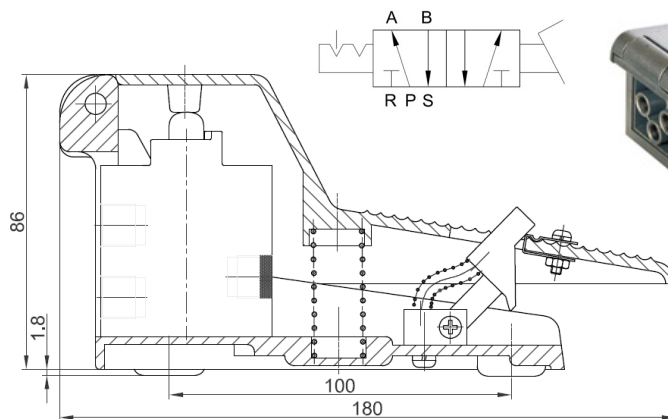
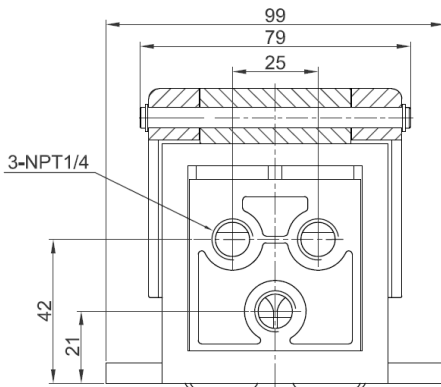
- 5 Port Two Position (N4F210-08)
- 5 Port Two Position With Latching Detent (N4F210-08L)

Dimensions (mm)

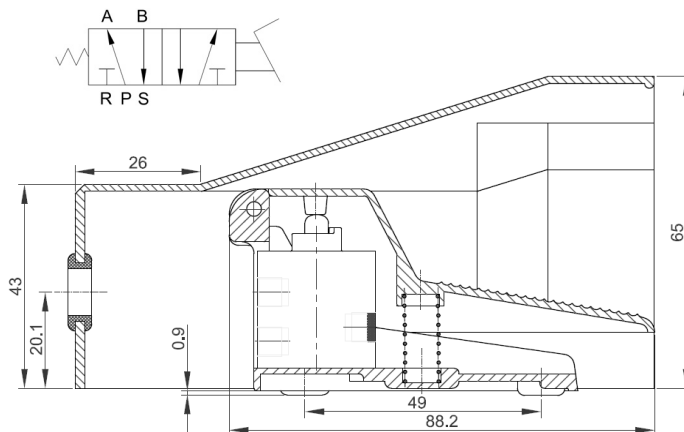
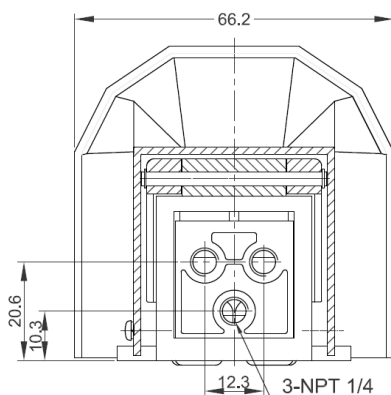
N4F210-08



N4F210-08L



N4F210-08G

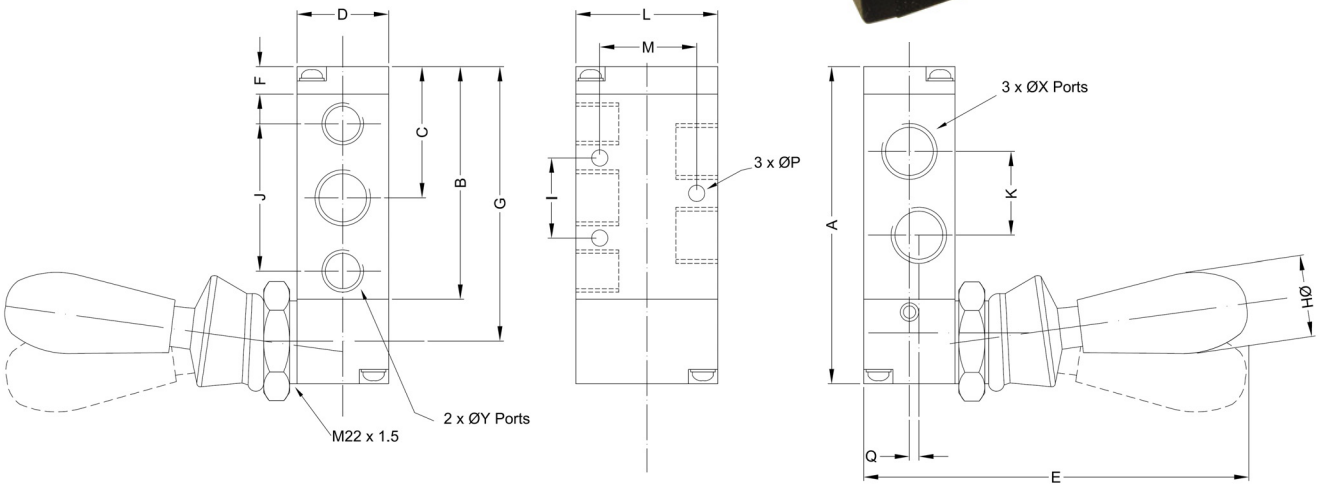
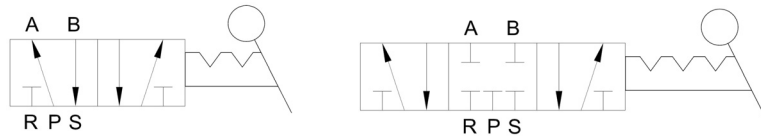


The N4H is available in 1/8, 1/4, 3/8 and 1/2NPT ports with either a 5/2 or 5/3 operation.

An ergonomically designed rubber handle with a dust cover to prevent debris from interfering with the lever mechanism, this valve design ensures reliability and long life. The M22 thread offers a panel mount installation option.

Finished in hard anodized black aluminum.

Dimensions (mm)

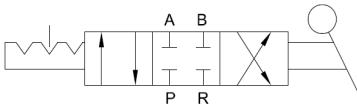
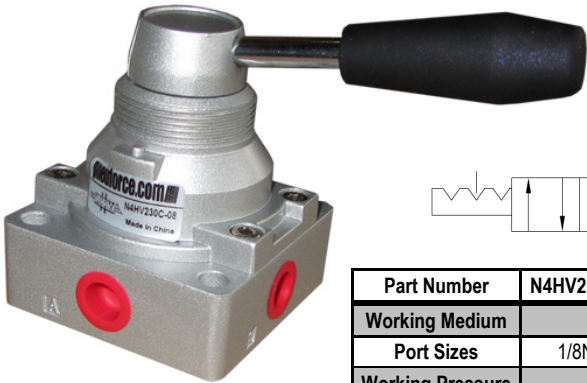


Dimensions (mm)

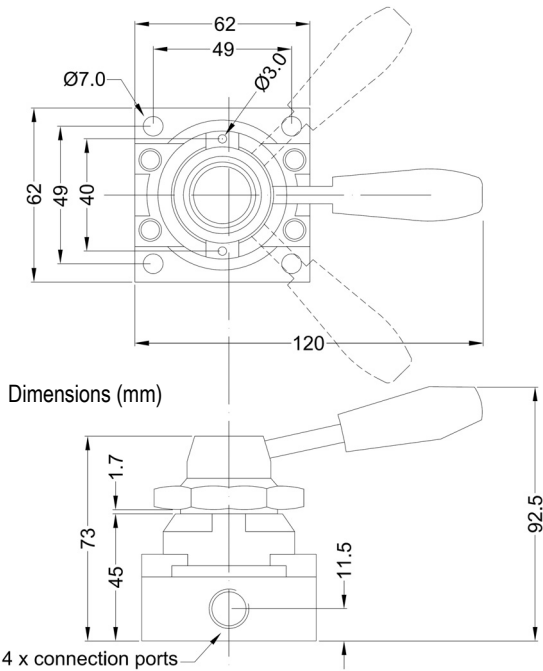
	N4H210-08	N4H230C-08	N4H310-10	N4H330C-10	N4H410-15	N4H430C-15
Type	2 position	3 position	2 position	3 position	2 position	3 position
A	76	95	96	115	126	147
B	56.5	75.5	72	91	102	123
C	31.5	31.5	40	60	55.5	76.5
D	22	22	27	27	34	34
E	95	95	100	100	110	110
F	6.5	6.5	7.5	7.5	7.5	7.5
G	66.5	85.5	84	103	114	135
ØH	18	18	18	18	18	18
I	20	20	24	24	28	28
J	36	36	45	45	63	63
K	21	21	24	24	36	36
L	35	35	40	40	50	50
M	21	21	27	27	35	35
X Ports	1/8NPT	1/8NPT	3/8NPT	3/8NPT	1/2NPT	1/2NPT
Y Ports	1/4NPT	1/4NPT	3/8NPT	3/8NPT	1/2NPT	1/2NPT
P	4.3	4.3	4.3	4.3	5.5	5.5
Q	1.5	1.5	2	2	-	-

N4HV Rotary Valve

The N4HV is available in 1/8 and 1/4 NPT ports and is used to mount directly to the machinery it is being used on. This selection valve is commonly used for the manual actuation of pneumatic cylinders and other pneumatic devices. The ceramic valve plate ensures a consistent performance and life.



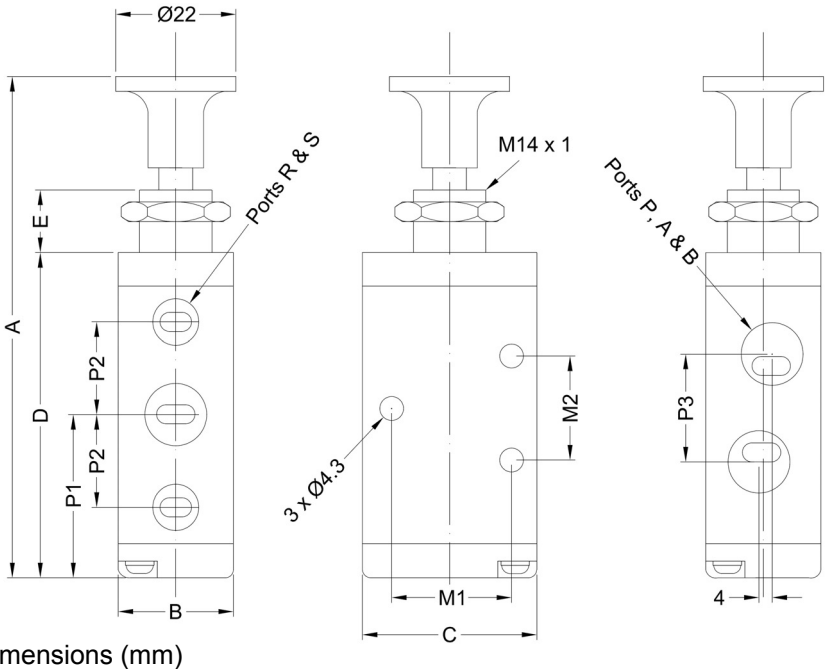
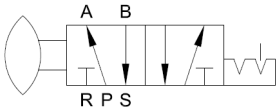
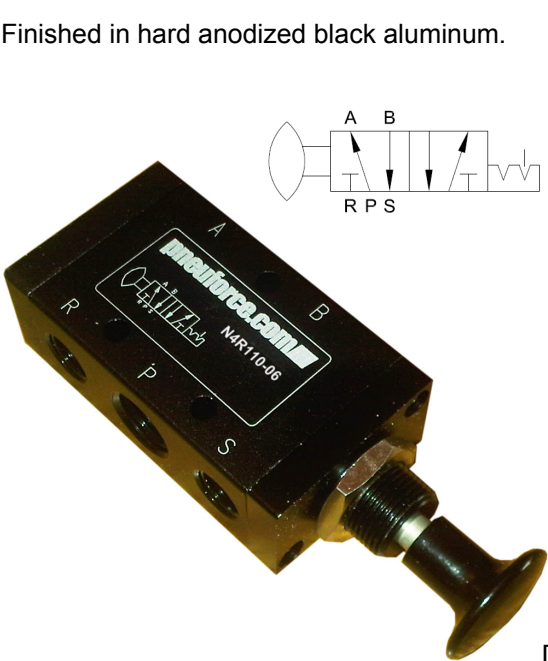
Part Number	N4HV230C-06	N4HV230C-08
Working Medium	40 Micron Air	
Port Sizes	1/8NPT	1/4NPT
Working Pressure	150psi(g)	
Test Pressure	180psi(g)	
Max Temperature	32 - 140°F	
Working Angle	90° (2 x 45°)	



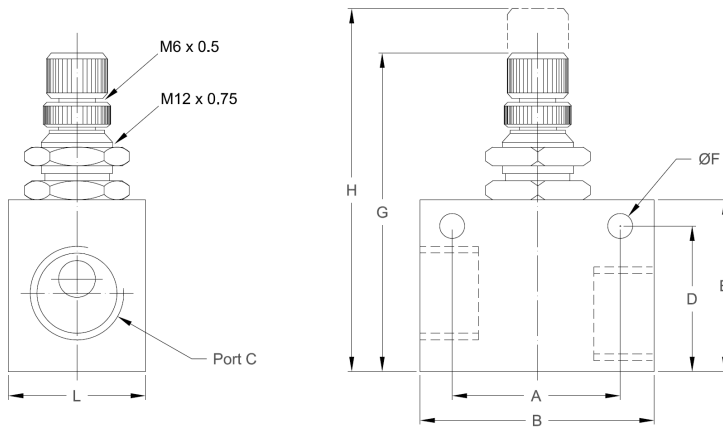
N4R Push-Pull Valve

The N4R110 is used in applications where a simple “push-pull” operation is required. An ergonomically designed handle allows a definite and positive feel to valve actuation. The handle which is Ø22mm (7/8”) diameter, is available in special styles and designs to suit user application. Please enquire.

Finished in hard anodized black aluminum.



	A	B	C	D	E	P1	P2	P3	M1	M2	Ports R,S	Ports P,A,B
N4R110-06	102	18	27	59	13	27	14	16	19	14	1/8NPT	1/8NPT
N4R210-08	98	22	35	64	13	32	18	21	24	20	1/8NPT	1/4NPT
N4R310-10	115	27	40	79	13	40	22.5	24	27	24	1/4NPT	3/8NPT

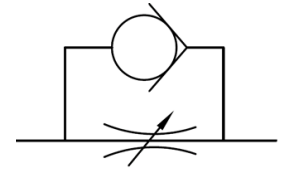


Dimensions (mm)

Model	A	B	C	D	E	ØF	G	H	K	L
NASC-06	22	32	1/8NPT	22	27	4.3	49.7	56.5	12	18
NASC-08	26	36	1/4NPT	22	27	4.3	49.7	56.5	12	18
NASC-10	28	40	3/8NPT	25	30	4.3	52.7	59.5	13	22
NASC-15	28	40	1/2NPT	30	35	4.3	58.7	65.5	13.5	26

The NASC flow controls are lightweight and very compact and are ideal for heavy duty applications.

The included lock nut allows installation in panel mount applications.

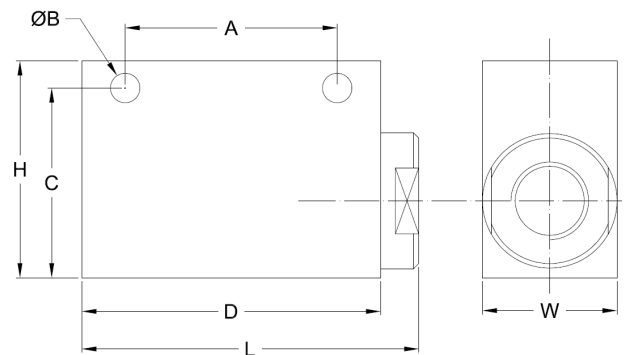
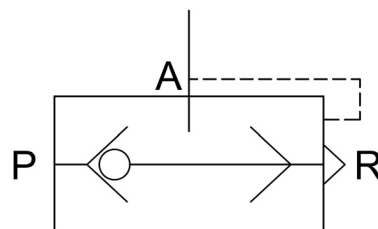


NQE Quick Exhaust Valve

Part Number	NQE-01	NQE-02	NQE-03	NQE-04
Effective cross section area	16mm ²	27.5mm ²	28mm ²	71mm ²
Port size	1/8NPT	1/4NPT	G3/8NPT	G1/2NPT
Working medium	Compressed Air			
Working pressure	0-150psi(g) (0-10bar)			
Max. Ambient Temperature	32-140°F (0-60°C)			

Quick exhaust valves are used to increase the speed of pneumatic cylinders by dumping the exhaust stream directly at the cylinder port instead of back through the control valve.

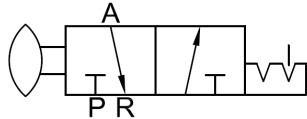
The NQE is available in 4 sizes up to 1/2NPT and manufactured in aluminum with an anodized finish.



Dimensions (mm)

Part Number	Thread	L	W	H	A	ØB	C	D
NQE-01	1/8NPT	46	20	32	30	4.3	27	40
NQE-02	1/4NPT	62	25	40	39	5.6	33.5	55
NQE-03	3/8NPT	62	25	40	39	5.6	33.5	55
NQE-04	1/2NPT	98	38	64	-	-	-	90

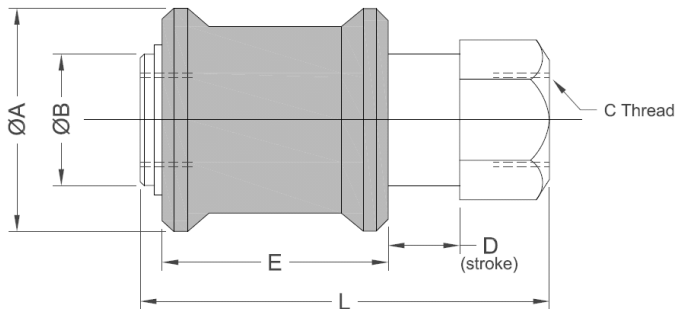
NHSV Slide Valves



The pneuforce.com NHSV slide valve is a simple ON/OFF isolation valve. It is compact unlike its predecessor, the typical ball valve. The 3/2 operation vents the downstream machine pressure when the valve is turned off.

Produced with an anodized finish and in NPT ports. G thread ports are also available.

Part Number	NHSV-01	NHSV-02	NHSV-03	NHSV-04
Thread Size (C)	1/8NPT	1/4NPT	3/8NPT	1/2NPT
Orifice Size	4mm	7mm	10mm	12mm
Working Medium	Air			
Working Pressure	0-150psi(g)			
Ambient Temperature	32 - 140°F			
Sliding Force	20N			



Dimensions (mm)

Model	NHSV-01	NHSV-02	NHSV-03	NHSV-04
A	25	30	35	40
B	13	18	21	26
C	1/8NPT	1/4NPT	3/8NPT	1/2NPT
D	9	11	14	15
E	28	32	39	45
F	14	19	22	27
L	48	58	68	80

NKA Check Valves

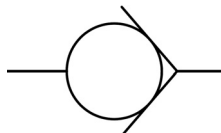
These check valves are able to be used on both pressure and vacuum systems. The crack pressure when being used in a vacuum operation is 10"Hg / 700mbar(a) or 532Torr.

Pressure Connections

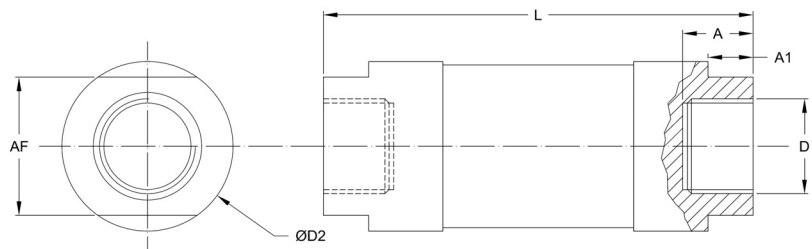
P – Pressure Supply A – Application

Vacuum Connections

P – Application A – Vacuum Source



	NKA-06	NKA-08	NKA-10	NKA-15
Working Medium	40 micron filtered air			
Port	1/8NPT	1/4NPT	3/8NPT	1/2NPT
Operating Temp	0-60°C / 32-140°F			
Working Pressure	5-150psi(g)			
Crack Pressure	5psi(g)			
Maximum Pressure	225psi(g)			



Dimensions (mm)

Model	Aperture	A	A1	D	ØD2	L	AF
NKA-6	6	10	6	1/8NPT	25	63	22
NKA-8	8	12	6	1/4NPT	25	63	22
NKA-10	10	14	10	3/8NPT	38	81	34
NKA-15	15	14	10	1/2NPT	38	81	34



AP25 Series



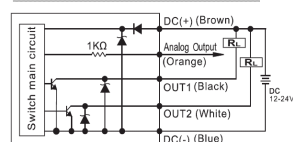
AP30 Series

The AP25 and AP30 are the same fundamental switch with regards to performance and selection criteria. They only differ in physical form and size.

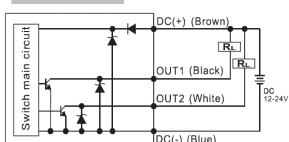
Available in the following configurations.

- COMPOUND 29.9"Hg - \pm 14.7psi(g)
- PRESSURE -14.7psi(g) - 150psi(g)
- VACUUM 0 - 29"Hg (0 - \sim 101.3KPa)

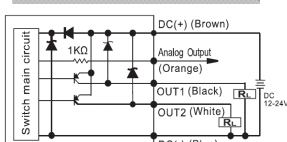
(01) NPN + ANALOGUE



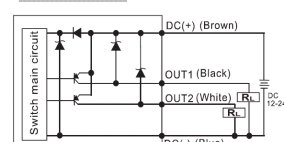
(02) NPN



(03) PNP + ANALOGUE



(04) PNP



	AP25	AP30
Media	Non lubricated dry air or non corrosive gas	
Maximum Over Pressure	43.5psi(g)	
Electrical Connection	M8 4 Pin male connector (analogue models – 6ft lead wire)	
Operating Voltage	12 – 24VDC \pm 10%	
Current Consumption	\leq 55mA	
Display	4 Digit 7 Segment Red LED (
Display Units	kPa, MPa, kgf/cm ² , bar, psi, inHg, mmHg, mmH ₂ O	
Repeatability	\leq 2% F.S \pm 1 digit	
Hysteresis	Adjustable	
Response Time	\leq 2.5ms (chatter proof selectable 24, 192 & 768ms)	
Indicator	OUT1 = Green LED OUT2 = Red LED	
Analogue Output	1 to 5V \leq \pm 5% F.S Linearity \leq \pm 1% F.S	
Insulation	IP65	IP40
Ambient Temp.	0-50°C (32-122°F)	
Vacuum / Pressure Port	1/8NPT Female	
Shock Resistance	980m/s (100G) 3 times in each direction X,Y & Z	
Weight	71g	35g

AP25 V 01 - F2 - QD

Series
25
30

M8 Male – non
analogue only

Type
C - Compound
P - Pressure
V - Vacuum

Output
01 – 2 x NPN + 1 x Analogue
02 – 2 x NPN
03 – 2 x PNP + 1 x Analogue
04 – 2 x PNP

M8 Connectors
for QD Models



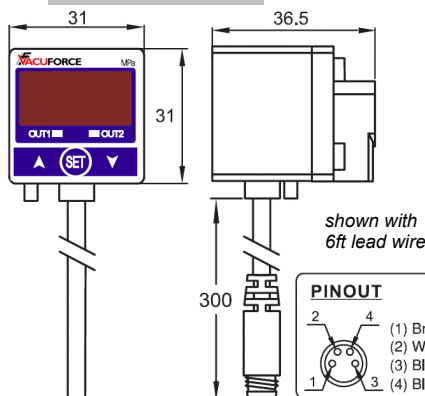
C8-I-F-4A-5M

15ft Straight Connector

C8-L-F-4A-5M

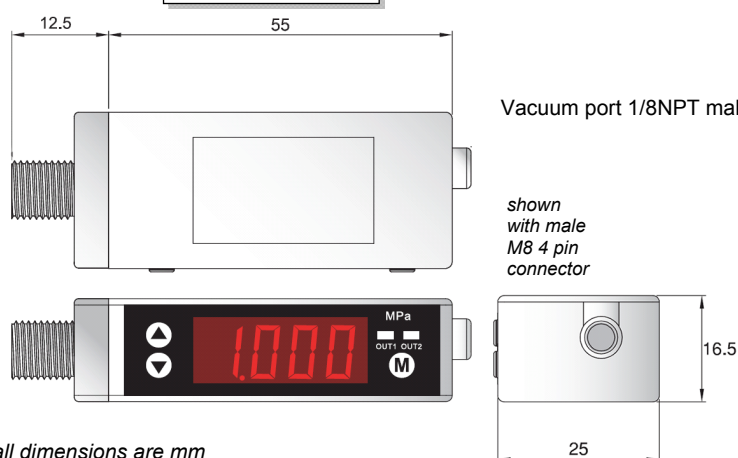
15ft 90° Connector

AP25 Series



Vacuum port 1/8NPT female

AP30 Series



all dimensions are mm

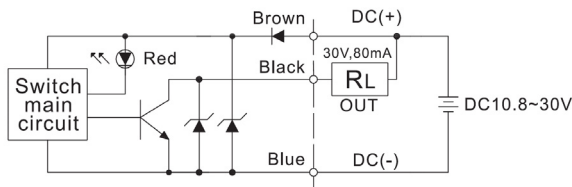
	AP10V	AP10P
Media	Non lubricated dry air or non corrosive gas	
Maximum Over Pressure	AP10V 87psi	AP10P 217psi
Electrical Connection	M8 3 Pin male connector or 9ft lead wire	
Operating Voltage	10.8 – 30VDC (includes ripple voltage)	
Load Current	90mA max.	
Repeatability	≤1% F.S ± 1 digit	
Hysteresis	3% F.S. max	
Response Time	≤2.5ms (chatter proof selectable 24, 192 & 768ms)	
Indicator	Red LED turns on	
Insulation	IP40	
Ambient Temp.	0-60°C (32-140°F)	
Vacuum / Pressure Port	Push In Stem for Fitting or 1/8NPT Male	
Shock Resistance	980m/s (100G) 3 times in each direction X,Y & Z	
Weight	50g with 9ft cable	

The AP10 series of Micro Sensors are able to be installed at the point of use. With extremely small dimensions these adjustable sensors are available for both pressure and vacuum applications.

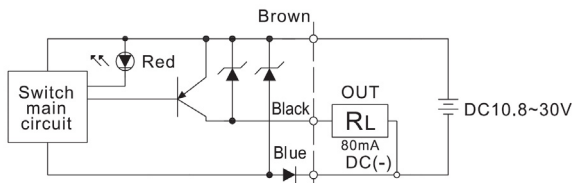


- PRESSURE -14.7psi(g) - 150psi(g)
- VACUUM 0 - 29"Hg (0 - 101.3KPa)

NPN



PNP



AP10 V - 04 - 1/4 - C

Series 10

Type
P - Pressure
V - Vacuum

Blank - 9ft cable
C - M8 3Pin male connector

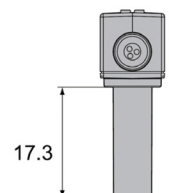
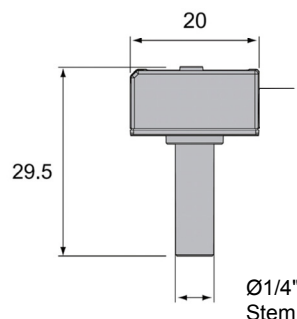
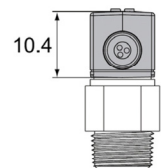
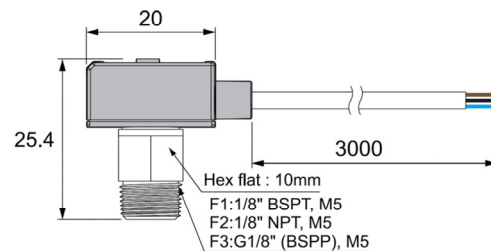
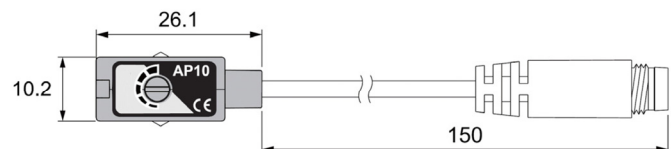
Output
02 - 2 x NPN
04 - 2 x PNP

Port Connection
1/4 - Ø1/4" Stem
F2 - 1/8NPT Male
M5 Female

Recommended Accessories
PC1/4 stud fittings



PE1/4 union elbow

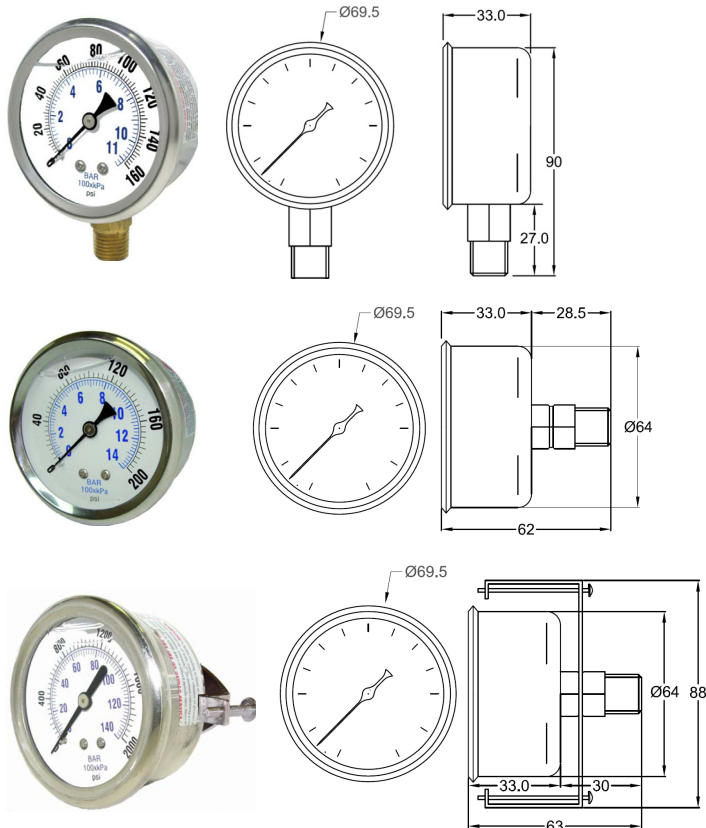


All dimensions are mm

Stainless Steel Case Gauges

All dimensions are mm

Part Number	Dial Ø	Pressure Range	Port	Port Position
SEC-201L-254A	2.5"	30"Hg Vacuum	1/4NPT	Stem Mount
SEC-201L-254F	2.5"	160psi	1/4NPT	
SEC-201L-254N	2.5"	1,500psi	1/4NPT	
SEC-201L-254P	2.5"	3,000psi	1/4NPT	
SEC-201L-254R	2.5"	5,000psi	1/4NPT	
SEC-201L-254U	2.5"	10,000psi	1/4NPT	
SEC-202L-254A	2.5"	30"Hg Vacuum	1/4NPT	Centre Back Mount
SEC-202L-254F	2.5"	160psi	1/4NPT	
SEC-202L-254N	2.5"	1,500psi	1/4NPT	
SEC-202L-254P	2.5"	3,000psi	1/4NPT	
SEC-202L-254R	2.5"	5,000psi	1/4NPT	
SEC-202L-254U	2.5"	10,000psi	1/4NPT	
SEC-203L-254A	2.5"	30"Hg Vacuum	1/4NPT	Panel Mount Centre Back Connection
SEC-203L-254F	2.5"	160psi	1/4NPT	
SEC-203L-254N	2.5"	1,500psi	1/4NPT	
SEC-203L-254P	2.5"	3,000psi	1/4NPT	
SEC-203L-254R	2.5"	5,000psi	1/4NPT	
SEC-203L-254U	2.5"	10,000psi	1/4NPT	

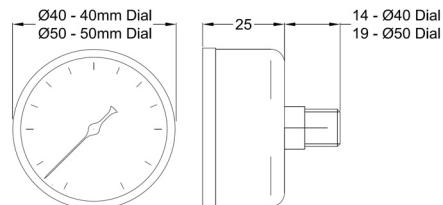


- Dial Sizes: 2 1/2"
- Stainless Steel Case and Bezel
- Wetted Parts: Brass (with built-in snubber)
- Bourdon Tube: Phosphor Bronze
- Lens: Plastic
- Liquid Filled
- Accuracy : 3-2-3 %
- Dual Scale: PSI & Bar (x100=kPa)
- Ambient temperature: 30°F to 160°F

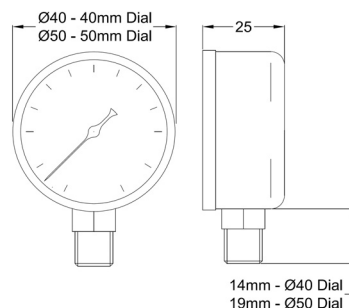
Carbon Steel Case Gauges

Part Number	Dial Ø	Pressure Range	Port	Port Position
GS-011.5030CSBA18	1.5"	30psi	1/8NPT	Centre Back Mount
GS-011.5030HGCSBA18		30"Hg Vacuum	1/8NPT	
GS-011.5060CSBA18		60psi	1/8NPT	
GS-011.5160CSBA18		160psi	1/8NPT	
GS-011.5030CSBO18		30psi	1/8NPT	Stem Mount
GS-011.5030HGCSBO18		30"Hg Vacuum	1/8NPT	
GS-011.5060CSBO18		60psi	1/8NPT	
GS-011.5160CSBO18		160psi	1/8NPT	
GS-012.0030CSBA14	2.0"	30psi	1/4NPT	Centre Back Mount
GS-012.0030HGCSBA14		30"Hg Vacuum	1/4NPT	
GS-012.0060CSBA14		60psi	1/4NPT	
GS-012.0160CSBA14		160psi	1/4NPT	
GS-012.0030CSBO14		30psi	1/4NPT	Stem Mount
GS-012.0030HGCSBO14		30"Hg Vacuum	1/4NPT	
GS-012.0060CSBO14		60psi	1/4NPT	
GS-012.0160CSBO14		160psi	1/4NPT	

Centre Back Mount



Stem Mount



- Dial Sizes: 1.5", 2.0"
- Case Material: Stainless Steel Case and Bezel
- Wetted Parts: Brass (with built-in snubber)
- Bourdon Tube: Phosphor Bronze
- Lens: Plastic Lens
- Accuracy : 3-2-3 %
- Dual Scale: PSI & Bar (x100=kPa)
- Ambient temperature: 30°F to 160°F

How To Order

PC 1/4 – N1

Tube Size ØOD

Tubing – inch and mm
Thread – NPT, BSPP(G) and Universal

Fitting Model	
PC	Male Connector
POC	Male Round Connector
PCF	Female Connector
PL	Male Elbow
PLH	Male 45° Elbow
PLL	Extended Male Elbow
PLF	Female Elbow
PB	Branch Tee
PD	Run Tee
PX	Branch Y
PH	Universal Elbow
PHF	Universal Female Elbow
PMF	Female Bulkhead
JSC	Flow Control
JSU	Inline Flow Control
PM	Bulkhead Union
PU	Straight Union
PV	Union Elbow
PE	Union Tee
PY	Union Y
PG	Reducing Straight Union
PW	Reducing Union Y
PGJ	Plug in Reducer
PEG	Reducing Tee Union
PZA	Union Cross
PP	Plug
PLJ	Plug In Elbow
PLGJ	Plug In Reducing Elbow
PYJ	Plug In Y
PWJ	Plug In Reducing Elbow
PIJ	Nipple
PIG	Reducing Nipple

Thread Type	
U	10-32UNF (M5)
N1	1/8NPT
N2	1/4NPT
N3	3/8NPT
N4	1/2NPT
U01	1/8 Universal
U02	1/4 Universal
U03	3/8 Universal
U04	1/2 Universal



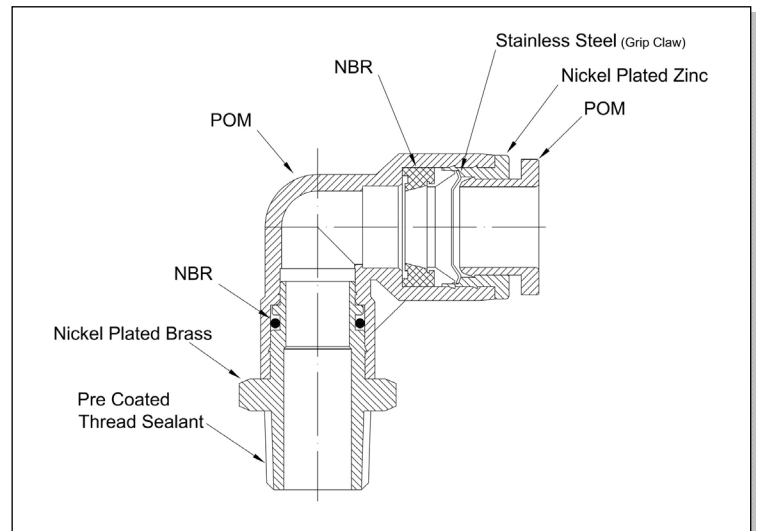
One touch “push in” fittings are used to connect pneumatic tubing to various fluid power valves, cylinders and associated equipment. The tubing can be attached and reattached many times without damaging the tube or fitting. All threads are nickel plated. NPT tapered threads have a pre-coated thread sealant applied for ease of assembly. Universal Tri Thread fittings and 10-32UNF threads utilize an NBR O Ring seal.

Fluid Medium	Air
Working Pressure	0-150 psi(g) / 10bar(g)
Proof Pressure	450psi(g) / 30bar(g)
Vacuum Duty	29.5"Hg / 27mbar(a)
Working Temperature	32-140°F / 0-60°C (high temperature models available upon request)

NPT Thread Fittings

The pneuforce.com NPT fittings are suitable for inch size tubing. Tube sizes available: 1/8", 5/32", 3/16", 1/4", 5/16", 3/8" & 1/2".

It should be noted that 5/32" is identical in diameter to 4mm and 5/16" is identical to 8mm tubing. It should also be noted that 10-32UNF is the same thread form as the metric M5 model.



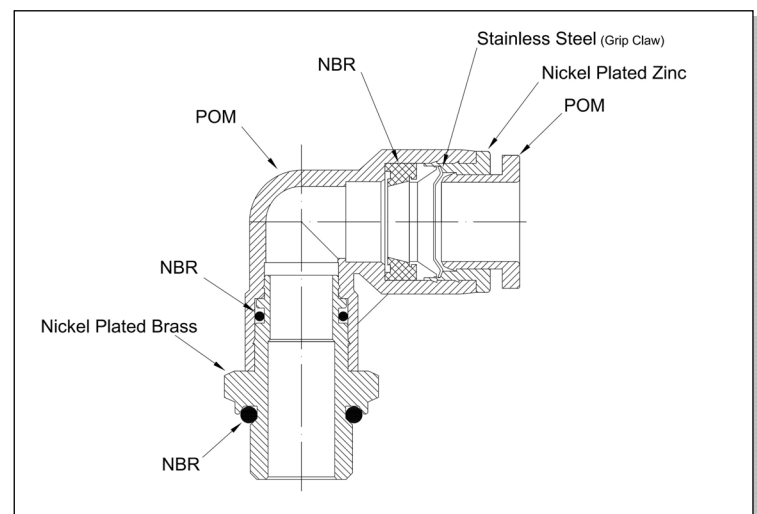
Tri Thread Universal Fittings

The pneuforce.com TRI THREAD fittings have been developed to connect with global fluid power products. With many factories in North America using a mix of NPT (American) and BSPP (Europe and Asia) threads, there is some confusion as to what male threads should be used or stocked by fluid power users.

Therefore the universal thread form of the TRI THREAD series has been developed to enable the connection of 1/8, 1/4, 3/8 and 1/2 male threads into the following female thread forms.

NPT, NPSF, BSPP(G), BSPT(R)

Tubing sizes available:
1/8", 5/32", 3/16", 1/4", 5/16", 3/8" & 1/2"
4mm, 6mm, 8mm, 10mm & 12mm.



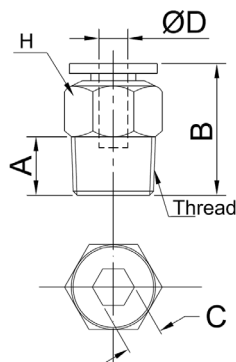
Due to the design of this thread form, the time taken to install the fittings has been dramatically decreased. The following procedure should be used when installing TRI THREAD fittings.

By hand, screw the TRI THREAD fitting into the female thread until the O ring seal pushes against the face of the component.

Using a suitably sized wrench, continue to tighten the fitting by turning clockwise by a further 1/4 turn.

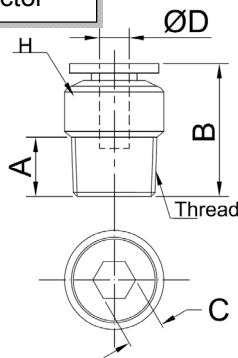
Unlike a tapered thread, the seal is made via an O ring seal which is captive in the TRI THREAD. It is not an interference fit like that of male and female tapered threads. The TRI THREAD can seal repeatedly.

Male Connector



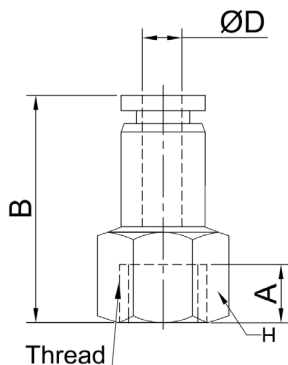
MODEL	Tube ØD	THREAD	A (mm)	B (mm)	H (inch)	C
PC1/8-U	1/8	10-32UNF	3.8	20.3	9/16"	3/32"
PC1/8-N1		NPT1/8	7.5	19.8		
PC5/32-U	5/32 (4mm)	10-32UNF	3.8	20.3		
PC5/32-N1		NPT1/8	7.5	19.8		
PC5/32-N2		NPT1/4	10.5	18.9	9/16"	
PC3/16-U	3/16	10-32UNF	3.8	20.9	9/16"	5/32"
PC3/16-N1		NPT1/8	7.5	20.6		
PC3/16-N2		NPT1/4	10.5	23.7	9/16"	
PC3/16-N3		NPT3/8	11.0	21.2	11/16"	
PC1/4-U	1/4	10-32UNF	3.8	21.2	1/2"	3/32"
PC1/4-N1		NPT1/8	7.5	20.9		5/32"
PC1/4-N2		NPT1/4	10.5	23.7	9/16"	
PC1/4-N3		NPT3/8	11.0	21.2	11/16"	
PC5/16-N1	5/16 (8mm)	NPT1/8	7.5	25.9	9/16"	3/16"
PC5/16-N2		NPT1/4	10.5	25.9		7/32"
PC5/16-N3		NPT3/8	11.0	22.4		
PC3/8-N1	3/8	NPT1/8	7.5	28.2	11/16"	3/16"
PC3/8-N2		NPT1/4	10.5	30.5		7/32"
PC3/8-N3		NPT3/8	11.0	27.5		5/16"
PC3/8-N4		NPT1/2	14.0	25.8		5/16"
PC1/2-N2	1/2	NPT1/4	10.5	33.9	7/8"	1/4"
PC1/2-N3		NPT3/8	11.0	30.4		5/16"

Male Round Connector



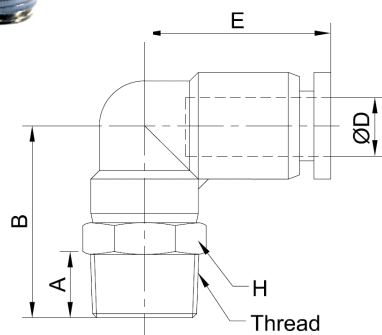
MODEL	Tube ØD	THREAD	A (mm)	B (mm)	H (mm)	C
POC5/32-U	5/32 (4mm)	10-32UNF	3.8	20.3	Ø10.0	3/32"
POC5/32-N1		NPT1/8	7.5	19.8		
POC1/4-U	1/4	10-32UNF	3.8	21.2	Ø12.0	5/32"
POC1/4-N1		NPT1/8	7.5	20.9		
POC1/4-N2	5/16 (8mm)	NPT1/4	10.5	23.7	Ø14.0	3/16"
POC5/16-N1		NPT1/8	7.5	25.9		
POC5/16-N2		NPT1/4	10.5	25.9	Ø17.0	7/32"
POC5/16-N3	3/8	NPT3/8	11.0	22.4		
POC3/8-N2		NPT1/4	10.5	30.5		
POC3/8-N3		NPT3/8	11.0	27.5		
POC3/8-N4	1/2	NPT1/2	14.0	25.8	Ø21.0	5/16"
POC1/2-N2		NPT1/4	10.5	33.9		
POC1/2-N3		NPT3/8	11.0	30.4		
POC1/2-N4		NPT1/2	14.0	33.4		

Female Connector



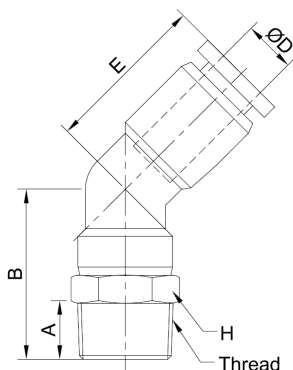
MODEL	Tube ØD	THREAD	A	B	H
PCF5/32-N1	5/32 (4mm)	NPT1/8	7.5	23.8	9/16"
PCF5/32-N2		NPT1/4	10.5	26.8	11/16"
PCF3/16-N1	3/16	NPT1/8	7.5	24.4	9/16"
PCF3/16-N2		NPT1/4	10.5	27.4	11/16"
PCF1/4-N1	1/4	NPT1/8	7.5	24.9	9/16"
PCF1/4-N2		NPT1/4	10.5	27.9	11/16"
PCF5/16-N1	5/16 (8mm)	NPT1/8	7.5	26.4	9/16"
PCF5/16-N2		NPT1/4	10.5	29.4	11/16"
PCF5/16-N3		NPT3/8	11.0	29.9	7/8"
PCF3/8-N2	3/8	NPT1/4	10.5	31.2	11/16"
PCF3/8-N3		NPT3/8	11.0	31.7	7/8"
PCF1/2-N2	1/2	NPT1/4	10.5	34.4	
PCF1/2-N3		NPT3/8	11.0	34.9	

Male Swivel Elbow



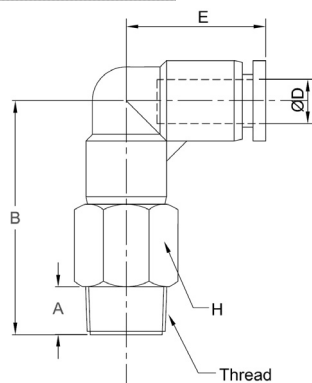
MODEL	Tube ØD	THREAD	A	B	E	H
PL5/32-U	5/32 (4mm)	10-32UNF	3.8	22.0	17.5	9/16"
PL5/32-N1		NPT1/8	7.5	24.0		
PL5/32-N2		NPT1/4	10.5	28.0		
PL3/16-U	3/16	10-32UNF	3.8	22.0	17.8	9/16"
PL3/16-N1		NPT1/8	7.5	24.5		
PL3/16-N2		NPT1/4	10.5	28.0		
PL3/16-N3	1/4	NPT3/8	11.0	29.0	19.0	11/16"
PL1/4-U		10-32UNF	3.8	24.4		
PL1/4-N1		NPT1/8	7.5	25.7		
PL1/4-N2	5/16 (8mm)	NPT1/4	10.5	29.2	22.8	9/16"
PL1/4-N3		NPT3/8	11.0	30.2		
PL5/16-N1		NPT1/8	7.5	29.5	26.3	11/16"
PL5/16-N2	3/8	NPT1/4	10.5	32.5		
PL5/16-N3		NPT3/8	11.0	33.5		
PL3/8-N1	1/2	NPT1/8	7.5	34.3	29.6	22.2
PL3/8-N2		NPT1/4	10.5	37.3		
PL3/8-N3		NPT3/8	11.0	37.8		
PL3/8-N4	1/2	NPT1/2	14.0	41.3	29.6	22.2
PL1/2-N2		NPT1/4	10.5	39.5		
PL1/2-N3		NPT3/8	11.0	40.0		
PL1/2-N4	1/2	NPT1/2	14.0	43.0		

Male 45° Swivel Elbow



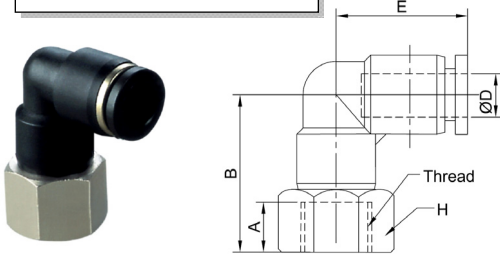
MODEL	Tube ØD	THREAD	A	B	E	H
PLH5/32-U	5/32 (4mm)	10-32UNF	3.8	20.7	16.2	9/16"
PLH5/32-N1		NPT1/8	7.5	22.7		
PLH5/32-N2		NPT1/4	10.5	26.7		
PLH3/16-U	3/16	10-32UNF	3.8	20.7	16.5	9/16"
PLH3/16-N1		NPT1/8	7.5	23.2		
PLH3/16-N2		NPT1/4	10.5	26.7		
PLH3/16-N3	1/4	NPT3/8	11.0	27.7	17.7	14.3
PLH1/4-U		10-32UNF	3.8	23.1		
PLH1/4-N1		NPT1/8	7.5	24.4		
PLH1/4-N2	5/16 (8mm)	NPT1/4	10.5	27.9	20.9	17.4
PLH1/4-N3		NPT3/8	11.0	28.9		
PLH5/16-N1		NPT1/8	7.5	27.6	22.2	22.2
PLH5/16-N2	3/8	NPT1/4	10.5	30.6		
PLH5/16-N3		NPT3/8	11.0	31.6		
PLH3/8-N1	1/2	NPT1/8	7.5	30.2	26.3	22.2
PLH3/8-N2		NPT1/4	10.5	33.2		
PLH3/8-N3		NPT3/8	11.0	33.7		
PLH3/8-N4	1/2	NPT1/2	14.0	37.2	26.3	22.2
PLH1/2-N2		NPT1/4	10.5	36.2		
PLH1/2-N3		NPT3/8	11.0	36.7		
PLH1/2-N4	1/2	NPT1/2	14.0	39.7		

Male Extended Swivel Elbow



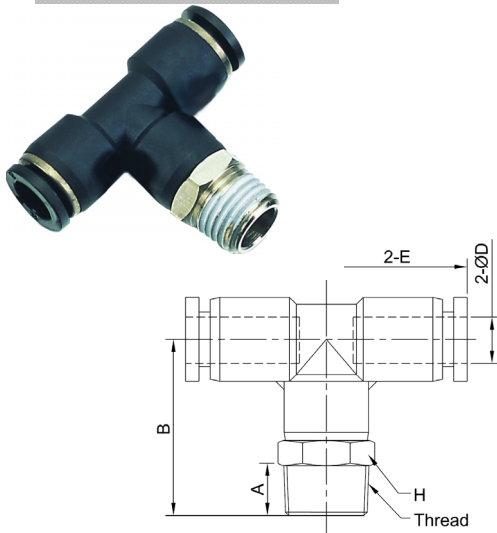
MODEL	Tube ØD	THREAD	A	B	E	H
PLL5/32-U	5/32 (4mm)	10-32UNF	3.8	33.5	17.5	9/16"
PLL5/32-N1		NPT1/8	7.5	36.0		
PLL3/16-N1		NPT1/8	7.5	36.0		
PLL3/16-N2	3/16	NPT1/4	10.5	39.5	17.8	9/16"
PLL3/16-N3		NPT3/8	11.0	40.5		
PLL1/4-N1		NPT3/8	11.0	44.2		
PLL1/4-N2	1/4	NPT1/8	7.5	39.7	19.0	12.7
PLL1/4-N3		NPT1/4	10.5	43.2		
PLL5/16-N1		NPT3/8	11.0	44.2		
PLL5/16-N2	5/16 (8mm)	NPT1/8	7.5	44.8	22.8	9/16"
PLL5/16-N3		NPT1/4	10.5	47.8		
PLL5/16-N4		NPT3/8	11.0	48.8		
PLL3/8-N2	3/8	NPT1/4	10.5	56.3	26.3	11/16"
PLL3/8-N3		NPT3/8	11.0	57.8		
PLL3/8-N4		NPT1/2	14.0	61.3		
PLL1/2-N2	1/2	NPT1/4	10.5	62.5	29.6	7/8"
PLL1/2-N3		NPT3/8	11.0	63.0		
PLL1/2-N4		NPT1/2	14.0	66.0		

Female Swivel Elbow



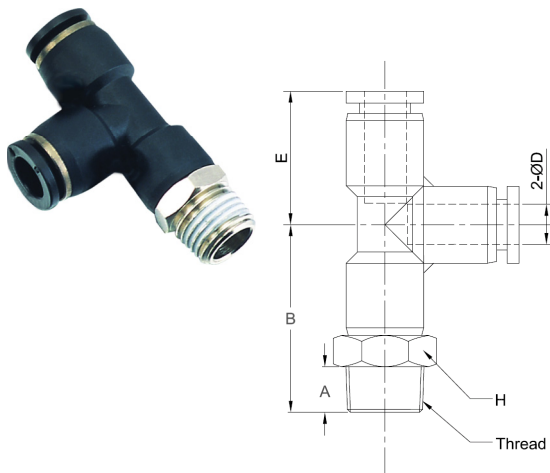
MODEL	TUBE ØD	THREAD	A	B	E	H
PLF5/32-N1	5/32 (4mm)	NPT1/8	7.5	23.5	17.5	9/16
PLF3/16-N1	3/16	NPT1/8	7.5	23.8	17.8	11/16"
PLF3/16-N2		NPT1/4	10.5	26.5		
PLF1/4-N1	1/4	NPT1/8	7.5	24.9	19.0	11/16"
PLF1/4-N2		NPT1/4	10.5	27.9		
PLF5/16-N1	5/16 (8mm)	NPT1/8	7.5	27.5	22.8	9/16
PLF5/16-N2		NPT1/4	10.5	31.0		11/16"
PLF5/16-N3		NPT3/8	11.0	32.0		7/8"
PLF3/8-N2	3/8	NPT1/4	10.5	35.3	26.3	11/16"
PLF3/8-N3		NPT3/8	11.0	35.8		7/8"
PLF1/2-N3	1/2	NPT3/8	11.0	37.5	29.6	25.4
PLF1/2-N4		NPT1/2	14.0	40.5		

Branch Tee



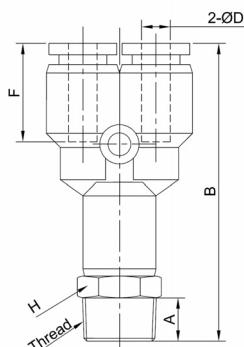
MODEL	Tube ØD	THREAD	A	B	E	H
PB5/32-U	5/32 (4mm)	10-32UNF	3.8	23.0	18.5	9/16"
PB5/32-N1		NPT1/8	7.5	25.0		
PB5/32-N2		NPT1/4	10.5	29.0		9/16
PB3/16-U	3/16	10-32UNF	3.8	23.0	18.8	9/16"
PB3/16-N1		NPT1/8	7.5	25.5		
PB3/16-N2		NPT1/4	10.5	29.0		9/16
PB3/16-N3		NPT3/8	11.0	30.0		11/16"
PB1/4-U	1/4	10-32UNF	3.8	24.7	19.3	1/2"
PB1/4-N1		NPT1/8	7.5	26.0		
PB1/4-N2		NPT1/4	10.5	29.5		9/16
PB1/4-N3		NPT3/8	11.0	30.5		11/16"
PB5/16-N1	5/16 (8mm)	NPT1/8	7.5	29.45	22.75	9/16
PB5/16-N2		NPT1/4	10.5	32.45		
PB5/16-N3		NPT3/8	11.0	33.45		
PB3/8-N1	3/8	NPT1/8	7.5	35.0	27.0	11/16"
PB3/8-N2		NPT1/4	10.5	38.0		
PB3/8-N3		NPT3/8	11.0	38.5		
PB3/8-N4		NPT1/2	14.0	42.0		
PB1/2-N2	1/2	NPT1/4	10.5	39.5	29.6	7/8"
PB1/2-N3		NPT3/8	11.0	40.0		
PB1/2-N4		NPT1/2	14.0	43.0		

Run Tee



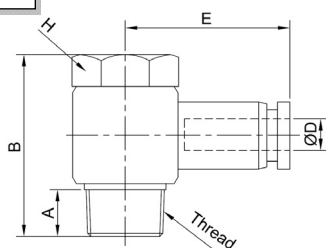
MODEL	Tube ØD	THREAD	A	B	E	H
PD5/32-U	5/32 (4mm)	10-32UNF	3.8	23.0	18.5	9/16"
PD5/32-N1		NPT1/8	7.5	25.0		9/16
PD5/32-N2		NPT1/4	10.5	29.0		
PD3/16-U	3/16	10-32UNF	3.8	23.0	18.8	9/16"
PD3/16-N1		NPT1/8	7.5	25.5		9/16
PD3/16-N2		NPT1/4	10.5	29.0		
PD3/16-N3		NPT3/8	11.0	30.0		11/16"
PD1/4-U	1/4	10-32UNF	3.8	24.7	19.3	1/2"
PD1/4-N1		NPT1/8	7.5	26.0		9/16
PD1/4-N2		NPT1/4	10.5	29.5		
PD1/4-N3		NPT3/8	11.0	30.5		11/16"
PD5/16-N1	5/16 (8mm)	NPT1/8	7.5	29.45	22.75	9/16
PD5/16-N2		NPT1/4	10.5	32.45		11/16"
PD5/16-N3		NPT3/8	11.0	33.45		
PD3/8-N1	3/8	NPT1/8	7.5	35.0	27.0	
PD3/8-N2		NPT1/4	10.5	38.0		
PD3/8-N3		NPT3/8	11.0	38.5		
PD3/8-N4		NPT1/2	14.0	42.0		
PD1/2-N2	1/2	NPT1/4	10.5	39.5	29.6	7/8"
PD1/2-N3		NPT3/8	11.0	40.0		
PD1/2-N4		NPT1/2	14.0	43.0		

Branch 'Y'



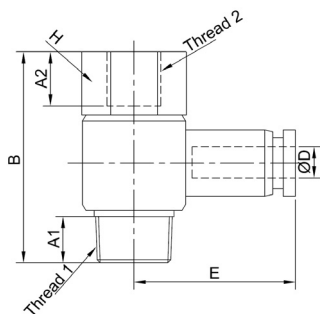
MODEL	Tube ØD	THREAD	A	B	F	H
PX5/32-U	5/32 (4mm)	10-32UNF	3.8	40.0	14	9/16"
PX5/32-N1		NPT1/8	7.5	42.0		
PX5/32-N2		NPT1/4	10.5	46.0		
PX3/16-U	3/16	10-32UNF	3.8	40.3	9/16	9/16"
PX3/16-N1		NPT1/8	7.5	42.8		
PX3/16-N2		NPT1/4	10.5	46.3		
PX3/16-N3		NPT3/8	11.0	47.3		
PX1/4-U	1/4	10-32UNF	3.8	42.5	14.8	1/2"
PX1/4-N1		NPT1/8	7.5	43.8		
PX1/4-N2		NPT1/4	10.5	47.3		
PX1/4-N3		NPT3/8	11.0	48.3		
PX5/16-N1	5/16 (8mm)	NPT1/8	7.5	47.1	18.2	9/16
PX5/16-N2		NPT1/4	10.5	50.1		
PX5/16-N3		NPT3/8	11.0	51.1		
PX3/8-N1	3/8	NPT1/8	7.5	55.1	19.5	11/16"
PX3/8-N2		NPT1/4	10.5	58.1		
PX3/8-N3		NPT3/8	11.0	58.6		
PX3/8-N4		NPT1/2	14.0	62.1		
PX1/2-N2	1/2	NPT1/4	10.5	63.1	21.6	7/8"
PX1/2-N3		NPT3/8	11.0	63.6		
PX1/2-N4		NPT1/2	14.0	66.6		

Universal Elbow



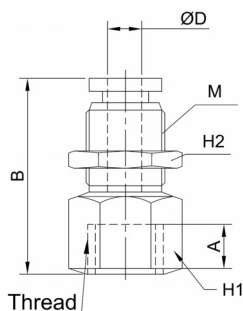
MODEL	TUBE ØD	THREAD	A	B	H	E
PH5/32-U	5/32 (4mm)	10-32UNF	3.8	17.0	8.0	20.0
PH5/32-N1		NPT1/8	7.5	23.5	11.1	22.3
PH3/16-U		10-32UNF	3.8	17.0	8.0	20.3
PH3/16-N1	3/16	NPT1/8	7.5	23.5	11.1	22.6
PH3/16-N2		NPT1/4	10.5	27.3	9/16	24.3
PH1/4-N1		NPT1/4	10.5	27.3	9/16	25.1
PH5/16-N1	5/16 (8mm)	NPT1/8	7.5	23.5	11.1	25.6
PH5/16-N2		NPT1/4	10.5	27.3	9/16	28.6
PH5/16-N3		NPT3/8	11.0	32.4	19.0	29.6
PH3/8-N2	3/8	NPT1/4	10.5	27.3	9/16	31.0
PH3/8-N3		NPT3/8	11.0	32.4	19.0	31.6
PH1/2-N3		NPT3/8	11.0	32.4	19.0	35.6
PH1/2-N4	1/2	NPT1/2	14.0	39.1	25.4	36.6

Universal Female Elbow



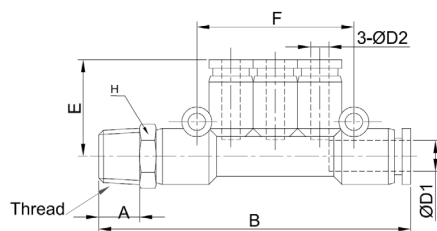
MODEL	TUBE ØD	THREAD	A1	A2	H	B	E
PHF5/32-U	5/32 (4mm)	10-32UNF	3.8	5.5	11.1	19.5	20.0
PHF5/32-N1		NPT1/8	7.5	7.5	9/16	30.0	22.3
PHF3/16-U		10-32UNF	3.8	5.5	11.1	19.5	20.3
PHF3/16-N1	3/16	NPT1/8	7.5	7.5	9/16	30.0	22.6
PHF3/16-N2		NPT1/4	10.5	10.5	11/16"	35.8	24.3
PHF1/4-N1		NPT1/4	10.5	10.5	11/16"	35.8	25.1
PHF5/16-N1	5/16 (8mm)	NPT1/8	7.5	7.5	9/16	30.0	25.6
PHF5/16-N2		NPT1/4	10.5	10.5	11/16"	35.8	28.6
PHF5/16-N3		NPT3/8	11.0	11.0	7/8"	40.9	29.6
PHF3/8-N2	3/8	NPT1/4	10.5	10.5	11/16"	35.8	31.0
PHF3/8-N3		NPT3/8	11.0	11.0	7/8"	40.9	31.6
PHF1/2-N3		NPT3/8	11.0	11.0	7/8"	40.9	35.6
PHF1/2-N4	1/2	NPT1/2	14.0	14.0	25.4	49.0	36.6

Female Bulkhead



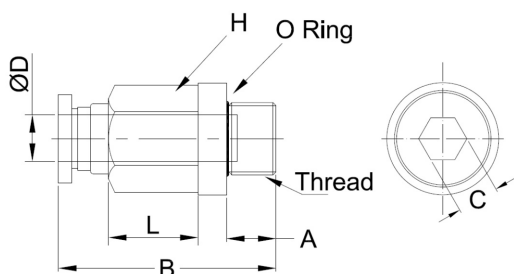
MODEL	TUBE ØD	THREAD	M	A	H1	H2	B
PMF5/32-N1	5/32 (4mm)	NPT1/8	M12	7.5	9/16	9/16	23.8
PMF3/16-N1	3/16	NPT1/8	M14	7.5	11/16"	11/16"	24.7
PMF3/16-N2		NPT1/4		10.5			30.4
PMF1/4-N1	1/4	NPT1/8		7.5			24.7
PMF1/4-N2		NPT1/4		10.5			30.4
PMF5/16-N1	5/16 (8mm)	NPT1/8	M16	7.5	19.0	19.0	27.9
PMF5/16-N2		NPT1/4		10.5			35.9
PMF5/16-N3		NPT3/8		11.0			35.4
PMF3/8-N2	3/8	NPT1/4	M20	10.5	7/8"	7/8"	31.9
PMF3/8-N3		NPT3/8		11.0			34.7
PMF1/2-N3	1/2	NPT3/8	M22	11.0	25.4	25.4	35.4
PMF1/2-N4		NPT1/2		14.0			41.4

4 Port Threaded Manifold



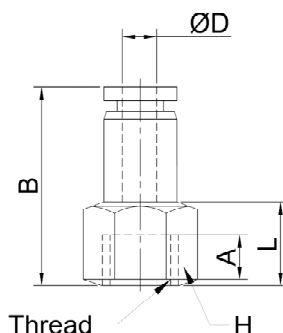
MODEL	ØD1	ØD2	H	THREAD	E	F	B	A
PKD3/16-5/32-N1	3/16	5/32 (4mm)	11.1	NPT1/8	19.0	36.0	64.3	7.5
PKD1/4-5/32-N1	1/4		12.7		19.0	36.0	64.3	
PKD5/16-5/32-N2	5/16 (8mm)	3/16	14.3	NPT1/4	20.0	42.0	72.3	10.5
PKD5/16-3/16-N2					20.3			
PKD5/16-1/4-N2					20.3			
PKD3/8-5/16-N3	3/8	5/16 (8mm)	17.4	NPT3/8	24.3	48.0	91.5	11.0

Male Connector



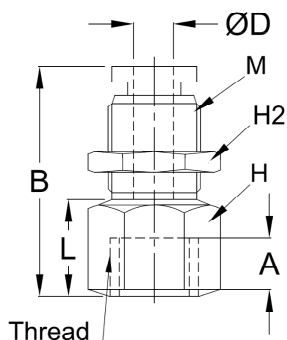
MODEL	ØD	Thread	A	B	L	H	C
PC5/32-U01	5/32" (4mm)	1/8	5.0	19.3	7.4	10	3/32"
PC5/32-U02		1/4	5.8	16.6	3.9		
PC06-M5	6	M5	4.0	21.0	6.0	12	5/32"
PC06-U01		1/8	5.0	19.9	6.7		
PC06-U02		1/4	5.8	20.4	6.4		
PC06-U03		3/8	6.8	20.0	4.5		
PC1/4-U01	1/4"	1/8	5.0	19.9	6.7	14	3/16"
PC1/4-U02		1/4	5.8	20.4	6.4		
PC1/4-U03		3/8	6.8	20.0	4.5		
PC5/16-U01	5/16" (8mm)	1/8	5.0	24.4	11.1	17	7/32"
PC5/16-U02		1/4	5.8	22.2	7.0		
PC5/16-U03		3/8	6.8	21.2	4.5		
PC3/8-U01	3/8"	1/8	5.0	26.3	11.0	20	5/16"
PC3/8-U02		1/4	5.8	27.5	13.9		
PC3/8-U03		3/8	6.8	25.0	8.9		
PC3/8-U04		1/2	8.0	22.7	4.9		
PC10-U01	10	1/8	5.0	26.3	11.0	24	6mm
PC10-U02		1/4	5.8	27.5	13.9		
PC10-U03		3/8	6.8	25.0	8.9		
PC10-U04		1/2	8.0	22.7	4.9		
PC12-U02	12	1/4	5.8	31.2	12.0	27	5/16"
PC12-U03		3/8	6.8	28.2	11.0		
PC12-U04		1/2	8.0	28.9	9.5		
PC1/2-U02	1/2"	1/4	5.8	31.2	12.0	30	1/4"
PC1/2-U03		3/8	6.8	28.2	11.0		
PC1/2-U04		1/2	8.0	28.9	9.5		

Female Connector



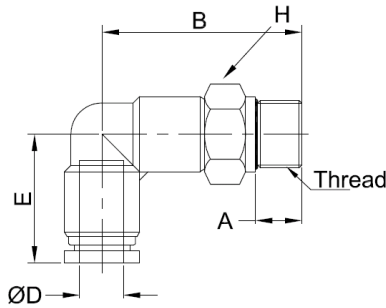
MODEL	ØD	Thread	A	B	H	L
PCF04-G01	5/32" (4mm)	G1/8	7.0	23.3	14	9.5
PCF04-G02		G1/4	9.0	25.3	17	11.5
PCF06-G01	6	G1/8	7.0	24.4	14	10.0
PCF06-G02		G1/4	9.0	26.4	17	12.0
PCF06-G03		G3/8	10.0	27.4	19	13.0
PCF06-G04		G1/2	12.0	30.9	24	15.0
PCF08-G01	5/16" (8mm)	G1/8	7.0	25.9	14	10.0
PCF08-G02		G1/4	9.0	27.9	17	12.0
PCF08-G03		G3/8	10.0	28.9	19	13.0
PCF08-G04		G1/2	12.0	30.9	24	15.0
PCF10-G01	10	G1/8	7.0	27.7	17	10.0
PCF10-G02		G1/4	9.0	29.7	19	13.3
PCF10-G03		G3/8	10.0	30.7	19	14.3
PCF10-G04		G1/2	12.0	32.7	24	16.3
PCF12-G02	12	G1/4	9.0	32.9	20	11.0
PCF12-G03		G3/8	10.0	33.9	20	12.0
PCF12-G04		G1/2	12.0	35.9	24	15.5

Female Bulkhead



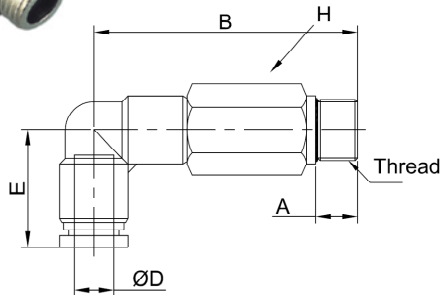
MODEL	ØD	Thread	M	A	H1	H2	L	B
PMF04-01	5/32" (4mm)	G1/8	M12	7.0	14	14	9.5	23.3
PMF04-02		G1/4		9.0	17		11.6	25.4
PMF06-01	6	G1/8	M14	7.0	17	17	7.0	24.2
PMF06-02		G1/4		9.0	17		12.0	29.2
PMF06-03		G3/8		10.0	19		13.0	30.2
PMF06-04		G1/2		12.0	24		15.0	36.4
PMF08-01	5/16" (8mm)	G1/8	M16	7.0	19	19	5.0	27.4
PMF08-02		G1/4		9.0	19		12.0	34.4
PMF08-03		G3/8		10.0	19		13.0	34.4
PMF08-04		G1/2		12.0	24		15.0	36.4
PMF10-01	10	G1/8	M20	7.0	21	24	7.7	28.4
PMF10-02		G1/4		9.0	21		9.7	30.4
PMF10-03		G3/8		10.0	21		13.0	33.7
PMF10-04		G1/2		12.0	24		15.0	35.7
PMF12-02	12	G1/4	M22	9.0	24	27	9.1	33.5
PMF12-03		G3/8		10.0	24		10.0	34.4
PMF12-04		G1/2		12.0	24		15.0	39.4

Male Swivel Elbow – Universal Thread



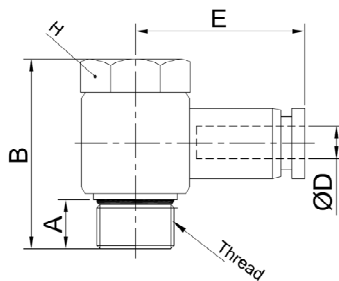
MODEL	ØD	Thread	A	B	E	H
PL5/32-U01	5/32" (4mm)	1/8	5.0	24.0	17.5	14
PL5/32-U02		1/4	5.8	25.3		17
PL06-M5	6	M5	4.0	25.0	19	14
PL06-U01		1/8	5.0	25.2		17
PL06-U02		1/4	5.8	26.5		20
PL06-U03		3/8	6.8	28.0		14
PL1/4-U01	1/4"	1/8	5.0	25.2	22.8	17
PL1/4-U02		1/4	5.8	26.5		20
PL1/4-U03		3/8	6.8	28.0		14
PL5/16-U01	5/16" (8mm)	1/8	5.0	28.5	26.3	17
PL5/16-U02		1/4	5.8	29.8		20
PL5/16-U03		3/8	6.8	31.3		24
PL5/16-U04		1/2	8.0	32.5		17
PL10-U01	10	1/8	5.0	33.3	29.6	20
PL10-U02		1/4	5.8	34.1		24
PL10-U03		3/8	6.8	35.6		17
PL10-U04		1/2	8.0	37.8		20
PL3/8-U01	3/8"	1/8	5.0	33.3	29.6	24
PL3/8-U02		1/4	5.8	34.1		17
PL3/8-U03		3/8	6.8	35.6		20
PL3/8-U04		1/2	8.0	37.8		24
PL12-U02	12	1/4	5.8	36.8	29.6	21
PL12-U03		3/8	6.8	37.8		21
PL12-U04		1/2	8.0	39.5		21
PL1/2-U02	1/2"	1/4	5.8	36.8	29.6	21
PL1/2-U03		3/8	6.8	37.8		21
PL1/2-U04		1/2	8.0	39.5		21

Male Extended Swivel Elbow - Universal Thread



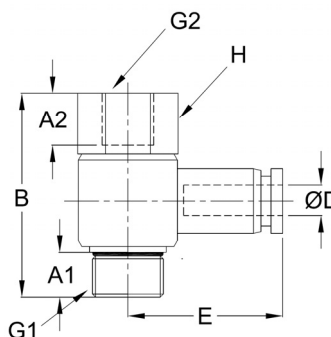
MODEL	ØD	Thread	A	B	E	H
PLL04-U01	5/32" (4mm)	1/8	5.0	38.7	17.5	14
PLL04-U02		1/4	5.8	40.5		17
PLL06-M5	6	M5	4.0	38.0	19	14
PLL06-U01		1/8	5.0	38.7		17
PLL06-U02		1/4	5.8	40.5		14
PLL1/4-U01		1/8	5.0	38.7		17
PLL1/4-U02	1/4"	1/4	5.8	40.5	23	17
PLL5/16-U01	5/16" (8mm)	1/8	5.0	43.3		14
PLL5/16-U02		1/4	5.8	45.1		17
PLL3/8-U02	3/8"	1/4	5.8	54.0		17
PLL3/8-U03		3/8	6.8	55.6		20
PLL3/8-U04		1/2	8.0	57.8		24
PLL10-U02	10	1/4	5.8	54.0	26	17
PLL10-U03		3/8	6.8	55.6		20
PLL10-U04		1/2	8.0	57.8		24
PLL12-U02	12	1/4	5.8	56.8	29.6	20
PLL12-U03		3/8	6.8	57.8		24
PLL12-U04		1/2	8.0	59.5		20
PLL1/2-U02		1/4	5.8	56.8		20
PLL1/2-U03	1/2"	3/8	6.8	57.8	29.6	24
PLL1/2-U04		1/2	8.0	59.5		24

Universal Swivel Elbow



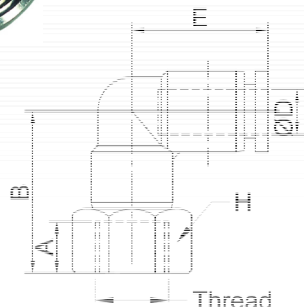
MODEL	ØD	Thread	A	B	H	E
PH04-G01	5/32" (4mm)	G1/8	5.0	22.5	10	22.3
PH06-G01	6	G1/8	5.0	26.2	14	23.1
PH06-G02		G1/4	5.8			25.15
PH08-G01		G1/8	5.0			25.6
PH08-G02		G1/4	5.8			28.65
PH08-G03	5/16" (8mm)	G3/8	6.8	31.7	19	29.6
PH10-G02		G1/4	5.8	26.2	14	31.05
PH10-G03		G3/8	6.8	31.7	19	31.6
PH12-G03	12	G3/8	6.8			35.6
PH12-G04		G1/2	8.0	37.1	24	36.6

Female Swivel Elbow – Universal Thread



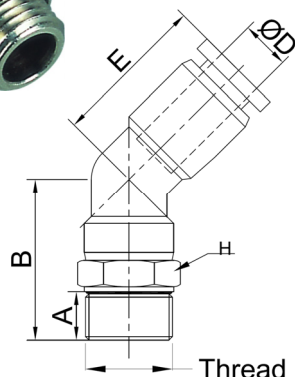
MODEL	ØD	G1	G2	A1	A2	H	B	E
PHF04-G01	4	G1/8	G1/8	5.5	7.0	14	30.0	22.3
PHF06-G01	6	G1/8	G1/8	5.5				23.1
PHF06-G02		G1/4	G1/4	6.5	9.0	17	33.7	25.1
PHF08-G01	8	G1/8	G1/8	5.5	7.0	14	30.0	25.6
PHF08-G02		G1/4	G1/4	6.5	9.0	17	33.7	28.6
PHF08-G03		G3/8	G3/8	7.5	10.0	19	39.7	29.6
PHF10-G02	10	G1/4	G1/4	6.5	9.0	17	33.7	31.1
PHF10-G03		G3/8	G3/8	7.5	10.0	19	39.7	31.6
PHF12-G03	12	G3/8	G3/8	7.5				35.6
PHF12-G04		G1/2	G1/2	9.0	12.0	24	45.0	36.6

Female Elbow Connector



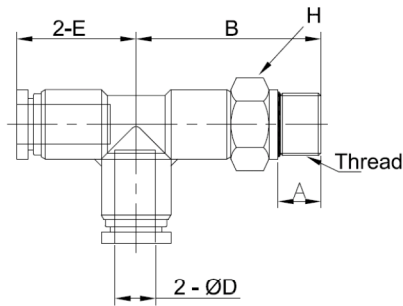
MODEL	ØD	Thread	A	B	E	H
PLF04-G01	5/32" (4mm)	G1/8	7.0	23.0	17.5	14
PLF04-G02		G1/4	9.0	25.0		17
PLF06-G01	6	G1/8	7.0	24.4	19.0	14
PLF06-G02		G1/4	9.0	26.4		17
PLF06-G03		G3/8	10.0	27.7		19
PLF08-G01	5/16" (8mm)	G1/8	7.0	24.8	22.8	14
PLF08-G02		G1/4	9.0	27.0		17
PLF08-G03		G3/8	10.0	28.5		19
PLF08-G04		G1/2	12.0	30.5		24
PLF10-G01	10	G1/8	7.0	23.0	26.3	17
PLF10-G02		G1/4	9.0	29.5		19
PLF10-G03		G3/8	10.0	31.0		24
PLF10-G04		G1/2	12.0	33.5		24
PLF12-G02	12	G1/4	9.0	26.0	29.6	21
PLF12-G03		G3/8	10.0	34.0		24
PLF12-G04		G1/2	12.0	36.5		24

Male 45° Swivel Elbow



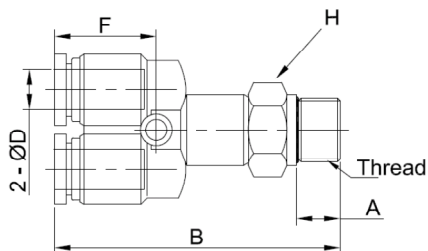
MODEL	ØD	Thread	A	B	E	H
PLH04-G01	5/32" (4mm)	G1/8	5.0	22.7	16.2	14
PLH04-G02		G1/4	5.8	24.0		17
PLH06-G01	6	G1/8	5.0	23.9	17.7	14
PLH06-G02		G1/4	5.8	25.2		17
PLH06-G03		G3/8	6.8	26.7		20
PLH06-G04		G1/2	8.0	27.9		24
PLH08-G01	5/16" (8mm)	G1/8	5.0	26.6	20.9	14
PLH08-G02		G1/4	5.8	27.9		17
PLH08-G03		G3/8	6.8	29.4		20
PLH08-G04		G1/2	8.0	30.6		24
PLH10-G01	10	G1/8	5.0	29.2	22.2	17
PLH10-G02		G1/4	5.8	30.0		20
PLH10-G03		G3/8	6.8	31.5		24
PLH10-G04		G1/2	8.0	33.7		24
PLH12-G02	12	G1/4	5.8	33.5	26.3	21
PLH12-G03		G3/8	6.8	34.5		24
PLH12-G04		G1/2	8.0	36.2		24

Run Tee - *Universal Thread*



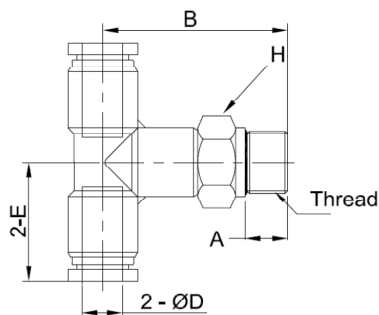
MODEL	ØD	Thread	A	B	E	H
PD5/32-U01	5/32" (4mm)	1/8	5.0	25.0	18.5	14
PD5/32-U02		1/4	5.8	26.3		17
PD06-M5	6	M5	4.0	24.5	19	14
PD06-U01		1/8	5.0	25.5		17
PD06-U02		1/4	5.8	26.8		20
PD06-U03		3/8	6.8	28.3		14
PD1/4-U01	1/4"	1/8	5.0	25.5	17	17
PD1/4-U02		1/4	5.8	26.8		20
PD1/4-U03	5/16" (8mm)	3/8	6.8	28.3	22.75	14
PD5/16-U01		1/8	5.0	28.5		17
PD5/16-U02		1/4	5.8	29.8		20
PD5/16-U03	3/8"	3/8	6.8	31.3	27	17
PD3/8-U01		1/8	5.0	34.0		20
PD3/8-U02		1/4	5.8	34.8		24
PD3/8-U03		3/8	6.8	36.3		17
PD3/8-U04	10	1/2	8.0	38.5	30	20
PD10-U01		1/8	5.0	34.0		24
PD10-U02		1/4	5.8	34.8		21
PD10-U03		3/8	6.8	36.3		24
PD10-U04	12	1/2	8.0	38.5	30	21
PD12-U02		1/4	5.8	36.8		24
PD12-U03		3/8	6.8	37.8		21
PD12-U04		1/2	8.0	39.5		24
PD1/2-U02	1/2"	1/4	5.8	36.8	30	21
PD1/2-U03		3/8	6.8	37.8		24
PD1/2-U04		1/2	8.0	39.5		24

Branch 'Y' - *Universal Thread*



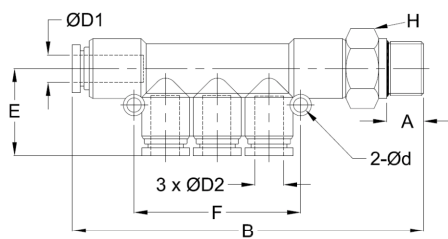
MODEL	ØD	Thread	A	B	F	H
PX5/32-U01	5/32" (4mm)	1/8	5.0	42.0	14.0	14
PX5/32-U02		1/4	5.8	43.3		17
PX06-M5	6	M5	4.0	42.5	14.8	14
PX06-U01		1/8	5.0	43.3		17
PX06-U02		1/4	5.8	44.6		20
PX06-U03		3/8	6.8	46.1		24
PX06-U04	1/4"	1/2	8.0	47.3	18.2	14
PX1/4-U01		1/8	5.0	43.3		17
PX1/4-U02		1/4	5.8	44.6		20
PX1/4-U03		3/8	6.8	46.1		24
PX1/4-U04	5/16" (8mm)	1/2	8.0	47.3	19.5	14
PX5/16-U01		1/8	5.0	46.1		17
PX5/16-U02		1/4	5.8	47.4		20
PX5/16-U03		3/8	6.8	48.9		24
PX5/16-U04	3/8"	1/2	8.0	50.1	21.6	14
PX3/8-U01		1/8	5.0	54.1		17
PX3/8-U02		1/4	5.8	54.9		20
PX3/8-U03		3/8	6.8	56.4		24
PX3/8-U04	10	1/2	8.0	58.6	21.6	14
PX10-U01		1/8	5.0	54.1		17
PX10-U02		1/4	5.8	54.9		20
PX10-U03		3/8	6.8	56.4		24
PX10-U04	12	1/2	8.0	58.6	21.6	14
PX12-U02		1/4	5.8	60.4		17
PX12-U03		3/8	6.8	61.4		20
PX12-U04		1/2	8.0	63.1		24
PX1/2-U02	1/2"	1/4	5.8	60.4	21.6	14
PX1/2-U03		3/8	6.8	61.4		17
PX1/2-U04		1/2	8.0	63.1		20

Branch Tee - Universal Thread



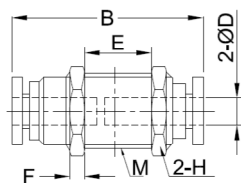
MODEL	ØD	Thread	A	B	E	H
PB5/32-U01	5/32" (4mm)	1/8	5.0	25.0	18.5	14
PB5/32-U02		1/4	5.8	26.3		17
PB06-M5	6	M5	4.0	24.5	19	14
PB06-U01		1/8	5.0	25.5		17
PB06-U02		1/4	5.8	26.8		20
PB06-U03		3/8	6.8	28.3		14
PB1/4-U01	1/4"	1/8	5.0	25.5	20	17
PB1/4-U02		1/4	5.8	26.8		20
PB1/4-U03		3/8	6.8	28.3		14
PB5/16-U01	5/16" (8mm)	1/8	5.0	28.5	23	17
PB5/16-U02		1/4	5.8	29.8		20
PB5/16-U03		3/8	6.8	31.3		24
PB5/16-U04		1/2	8.0	32.5		17
PB3/8-U02	3/8"	1/4	5.8	34.8	27	20
PB3/8-U03		3/8	6.8	36.3		24
PB3/8-U04		1/2	8.0	38.5		17
PB10-U02	10	1/4	5.8	34.8	27	20
PB10-U03		3/8	6.8	36.3		24
PB10-U04		1/2	8.0	38.5		21
PB12-U02	12	1/4	5.8	36.8	30	24
PB12-U03		3/8	6.8	37.8		21
PB12-U04		1/2	8.0	39.5		24
PB1/2-U02	1/2"	1/4	5.8	36.8	30	21
PB1/2-U03		3/8	6.8	37.8		24
PB1/2-U04		1/2	8.0	39.5		24

4 Port Threaded Manifold



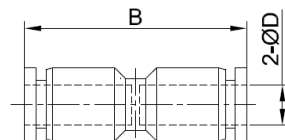
MODEL	ØD1	ØD2	H	Thread	E	F	B	A	Ød
PKD06-04-G01	6	5/32" (4mm)	14	G1/8	19.0	36	63.8	5.0	3.2
PKD08-04-G02	8		17	G1/4	20.0	42	69.6	5.8	
PKD08-06-G02		6			20.3				
PKD10-08-G03	10	5/16" (8mm)	20	G3/8	24.3	48	89.3	6.8	4.2

Bulkhead Union



All dimensions are mm

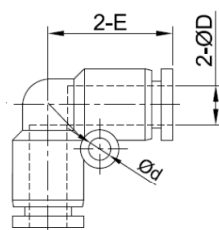
Straight Union



MODEL	TUBE ØD inch	M	E	B	H	F
PM1/8	1/8	M12	9.7	30.1	9/16	3.5
PM5/32	5/32					
PM3/16	3/16					
PM1/4	1/4	M14	7.5	31.8	11/16"	4.0
PM5/16	5/16	M16	6.8	35.3	19.0	4.5
PM3/8	3/8	M20	8.9	36.4	7/8"	5.0
PM1/2	1/2	M22	12.8	45.3	25.4	5.0
MODEL	TUBE ØD mm	M	E	B	H	F
PM04	4	M12	9.7	30.1	14	3.5
PM06	6	M14	7.5	31.8	17	4.0
PM08	8	M16	6.8	35.3	19	4.5
PM10	10	M20	11.5	39.0	24	5.0
PM12	12	M22	12.8	45.3	27	5.0

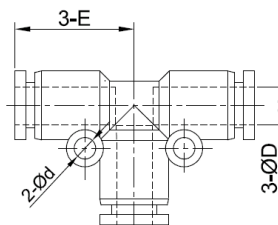
MODEL	TUBE ØD inch	B
PU1/8	1/8	33.0
PU5/32	5/32	
PU3/16	3/16	
PU1/4	1/4	35.2
PU5/16	5/16	39.1
PU3/8	3/8	45.2
PU1/2	1/2	49.2
MODEL	TUBE ØD mm	B
PU06	6	35.2
PU08	8	39.1
PU10	10	45.2
PU12	12	49.2
PU16	16	51.0

Union Elbow



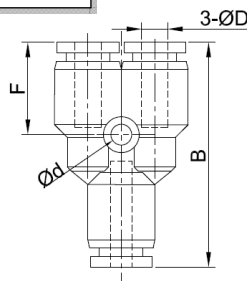
MODEL	TUBE ØD inch	Ød	E
PV1/8	5/32	3.2	17.5
PV5/32			
PU3/16	3/16	3.2	17.8
PV1/4	1/4	3.2	19.0
PV5/16	5/16	3.2	22.8
PV3/8	3/8	4.2	26.3
PV1/2	1/2	4.3	29.6
MODEL	TUBE ØD mm	Ød	E
PV04	4	3.2	17.5
PV06	6	3.2	19.0
PV08	8	3.2	22.8
PV10	10	4.2	26.3
PV12	12	4.3	29.6
PV16	16	5.1	33.0

Union Tee



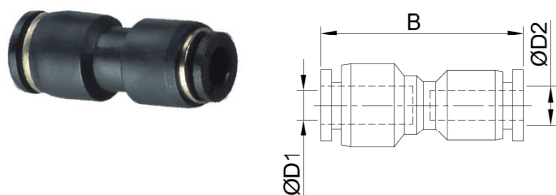
MODEL	TUBE ØD inch	Ød	E
PE5/32	5/32	3.2	18.5
PE3/16	3/16	3.2	18.8
PE1/4	1/4	3.2	19.3
PE5/16	5/16	3.2	22.75
PE3/8	3/8	4.2	27.0
PE1/2	1/2	4.3	29.6
MODEL	TUBE ØD mm	Ød	E
PE04	4	3.2	18.5
PE06	6	3.2	19.3
PE08	8	3.2	22.75
PE10	10	4.2	27.0
PE12	12	4.3	29.6
PE16	16	5.1	33.0

Union 'Y'



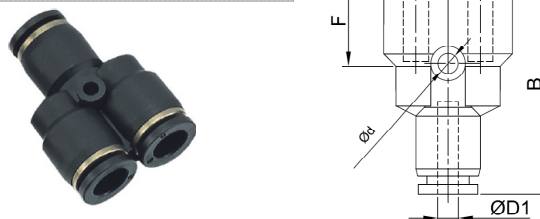
MODEL	TUBE ØD inch	Ød	B	F
PY5/32	5/32	3.2	35.5	14.0
PY3/16	3/16		36.1	9/16
PY1/4	1/4		37.1	14.8
PY5/16	5/16	4.2	40.4	18.2
PY3/8	3/8		47.1	19.5
PY1/2	1/2		53.2	21.6
MODEL	TUBE ØDmm	Ød	B	F
PY04	4	3.2	35.5	14.0
PY06	6		37.1	9/16
PY08	8		40.4	14.8
PY10	10	4.2	47.1	18.2
PY12	12		53.2	19.5
PY16	16	5.1	61.0	21.6

Reducing Straight Union



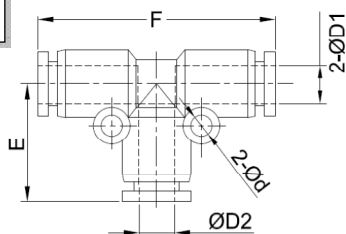
MODEL	TUBE ØD1	TUBE ØD2	B
PG3/16-5/32	3/16	5/32	33.3
PG5/32-1/8	5/32	1/8	
PG1/4-5/32	1/4	5/32	
PG1/4-3/16	1/4	3/16	35.2
PG5/16-1/4	5/16	1/4	38.6
PG3/8-5/16	3/8	5/16	47.3
PG1/2-3/8	1/2	3/8	48.9
MODEL	TUBE ØD1	TUBE ØD2	B
PG06-04	6	4	33.6
PG08-06	8	6	36.1
PG10-08	10	8	41.8
PG12-10	12	10	46.1
PG16-12	16	12	50.1

Reducing Y Union



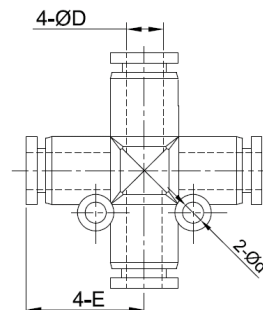
MODEL	TUBE ØD1	TUBE ØD2	Ød	B	F
PW3/16-5/32	3/16	5/32	3.2	35.8	14.0
PW5/32-1/8	5/32	1/8			
PW1/4-5/32	1/4	5/32		36.8	14.5
PW1/4-3/16	1/4	3/16	3.2	37.1	14.8
PW5/16-1/4	5/16	1/4	3.2	39.9	17.7
PW3/8-1/4	3/8	1/4	4.2	47.9	20.3
PW3/8-5/16	3/8	5/16			
PW1/2-3/8	1/2	3/8		51.6	20.0
MODEL	TUBE ØD1	TUBE ØD2	Ød	B	F
PW06-04	6	4	3.2	36.8	14.5
PW08-06	8	6	3.2	39.9	17.7
PW10-08	10	8	4.2	47.9	20.3
PW12-10	12	10	4.2	51.6	20.0

Reducing Union Tee



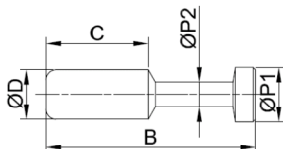
MODEL	TUBE ØD1	TUBE ØD2	Ød	E	F
PEG1/4-5/32	1/4	5/32	3.2	19.0	38.6
PEG5/16-1/4	5/16	1/4	3.2	22.3	45.5
PEG3/8-5/16	3/8	5/16	3.2	27.8	54
PEG1/2-3/8	1/2	3/8	4.2	29.3	59.2
MODEL	TUBE ØD1	TUBE ØD2	Ød	E	F
PEG06-04	6	4	3.2	19.5	38.6
PEG08-06	8	6	3.2	20.3	45.5
PEG10-08	10	8	4.2	24.8	54.0
PEG12-10	12	10	4.2	28.5	59.2
PEG16-12	16	12	5.1	32.1	66.0

Union Cross



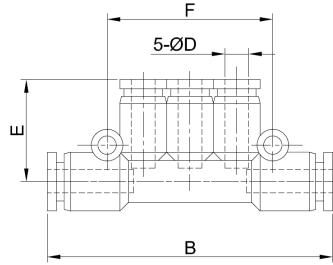
MODEL	TUBE ØD inch	Ød	E
PZA5/32	5/32	3.2	17.5
PZA3/16	3/16	3.2	17.8
PZA1/4	1/4	3.2	19.3
PZA5/16	5/16	3.2	22.75
PZA3/8	3/8	4.2	27.0
PZA1/2	1/2	4.3	29.6
MODEL	TUBE ØD mm	Ød	E
PZA04	4	3.2	17.5
PZA06	6	3.2	19.3
PZA08	8	3.2	22.75
PZA10	10	4.2	27.0
PZA12	12	4.3	29.6

Plug



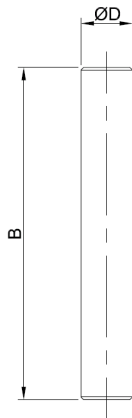
MODEL	TUBE ØD inch	B	ØP1	ØP2	C
PP5/32	5/32	28.0	5.0	3.0	15.0
PP3/16	3/16	28.0	5.0	3.0	15.0
PP1/4	1/4	33.0	7.0	3.0	17.0
PP5/16	5/16	37.0	9.0	4.0	18.0
PP3/8	3/8	42.0	11.0	5.0	20.5
PP1/2	1/2	44.0	13.0	6.0	23.0
MODEL	TUBE ØD mm	B	ØP1	ØP2	C
PP04	4	28.0	5	3	15.0
PP06	6	33.0	7	3	17.0
PP08	8	37.0	9	4	18.0
PP10	10	42.0	11.0	5	20.5
PP12	12	44.0	13.0	6	23.0

5 Port Equal Manifold



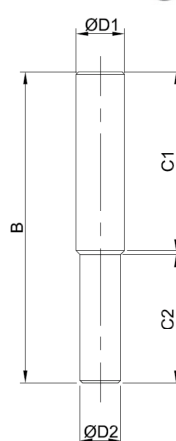
MODEL	ØD inch	F	E	B
PK5/32	5/32	36.	19.0	57.0
PK3/16	3/16	36.	19.3	57.6
PK1/4	1/4	42.	20.3	61.6
PK5/16	5/16	48.	24.3	81.6
MODEL	ØD mm	F	E	B
PK04	4	36	19	57.0
PK06	6	42	20.3	61.6
PK08	8	48	24.3	81.6

Nipple



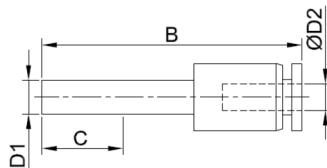
MODEL	TUBE ØD inch	B
PIJ 5/32	5/32	35.0
PIJ 3/16	3/16	35.0
PIJ 1/4	1/4	37.0
PIJ 5/16	5/16	41.0
PIJ 3/8	3/8	51.0
PIJ 1/2	1/2	54.0
MODEL	TUBE ØD mm	B
PIJ 04	4	35
PIJ 06	6	37
PIJ 08	8	41
PIJ 10	10	51
PIJ 12	12	54
PIJ 16	16	58

Reducing Nipple



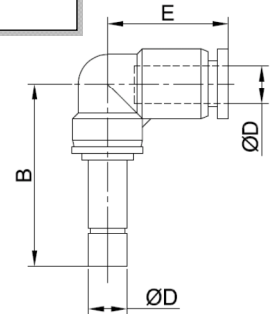
MODEL	TUBE ØD1 inch	TUBE ØD2 inch	C1	C2	B
PIG3/16-5/32	3/16	5/32	18.0	17.0	36.0
PIG1/4-5/32	1/4	5/32	18.0	17.0	
PIG1/4-3/16	1/4	3/16	18.0	17.0	
PIG5/16-1/4	3/16	1/4	20.0	18.0	39.0
PIG3/8-5/16	3/8	5/16	25.0	20.0	46.0
PIG1/2-3/8	1/2	3/8	27.0	26.0	54.0
MODEL	TUBE ØD1 mm	TUBE ØD2 mm	C1	C2	B
PIG06-04	6	4	18	17	36
PIG08-06	8	6	20	18	39
PIG10-08	10	8	25	20	46
PIG12-10	12	10	27	26	54
PIG16-12	16	12	28	28	56

Plug In Reducer



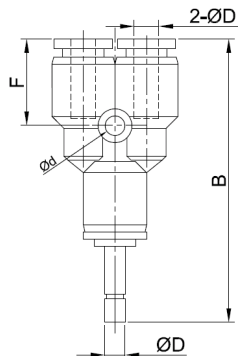
MODEL	TUBE ØD1 inch	TUBE ØD2 inch	B	C
PGJ1/4-5/32	1/4	5/32	39.5	16.0
PGJ5/16-5/32	5/16		41.5	18.6
PGJ5/16-1/4	1/4	1/4	41.8	
PGJ3/8-1/4	3/8	5/16	46.5	20.0
PGJ3/8-5/16	5/16		46.5	
PGJ1/2-1/4	1/4	1/4	51.8	23.5
PGJ1/2-5/16	5/16	5/16	52.3	
PGJ1/2-3/8	3/8	3/8	51.5	
MODEL	TUBE ØD1 mm	TUBE ØD2 mm	B	C
PGJ06-04	6	4	39.5	14.0
PGJ08-04	8		41.5	14.0
PGJ08-06	6	6	41.8	14.3
PGJ10-06	10	8	46.8	17.3
PGJ10-08	8		47.3	17.8
PGJ12-06	6	6	51.8	19.3
PGJ12-08	8	8	52.3	19.8
PGJ12-10	10	10	51.5	19.0

Plug In Elbow



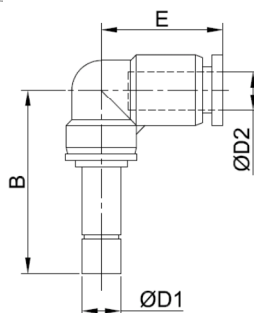
MODEL	TUBE ØD inch	B	E
PLJ5/32	5/32	33.0	17.5
PLJ3/16	3/16	33.0	17.8
PLJ1/4	1/4	36.2	19.0
PLJ5/16	5/16	42.5	22.8
PLJ3/8	3/8	50.8	26.3
PLJ1/2	1/2	54.5	29.6
MODEL	TUBE ØD mm	B	E
PLJ04	4	33.0	17.5
PLJ06	6	36.2	19.0
PLJ08	8	42.5	22.8
PLJ10	10	50.8	26.3
PLJ12	12	54.5	29.6

Plug In 'Y'



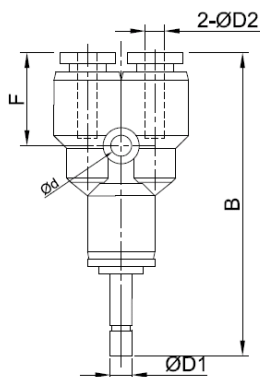
MODEL	TUBE ØD inch	Ød	B	F
PYJ 5/32	5/32	3.2	51.0	14.0
PYJ3/16	3/16	3.2	51.3	9/16
PYJ 1/4	1/4	3.2	54.3	14.8
PYJ 5/16	5/16	3.2	60.1	18.2
PYJ 3/8	3/8	4.2	71.6	19.5
PYJ 1/2	1/2	4.2	78.1	21.6
MODEL	TUBE ØD mm	Ød	B	F
PYJ 04	4	3.2	51.0	14.0
PYJ 06	6	3.2	54.3	14.8
PYJ 08	8	3.2	60.1	18.2
PYJ 10	10	4.2	71.6	19.5
PYJ 12	12	4.2	78.1	21.6

Plug In Reducing Elbow



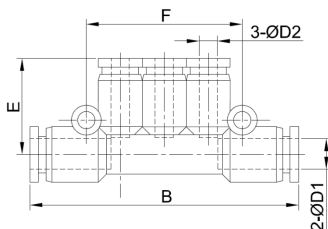
MODEL	TUBE ØD1 inch	TUBE ØD2 mm	B	E
PLGJ3/16-5/32	3/16	5/32	33.0	17.5
PLGJ1/4-5/32	1/4	5/32	35.0	17.5
PLGJ1/4-3/16	1/4	3/16	35.0	17.5
PLGJ5/16-1/4	5/16	1/4	39.2	19.0
PLGJ3/8-5/16	3/8	5/16	42.5	22.8
PLGJ1/2-3/8	1/2	3/8	52.8	26.3
MODEL	TUBE ØD1 mm	TUBE ØD2	B	E
PLGJ06-04	6	4	35.0	17.5
PLGJ08-06	8	6	39.2	19.0
PLGJ10-08	10	8	46.5	22.8
PLGJ12-10	12	10	52.8	26.3

Plug In Reducing 'Y'



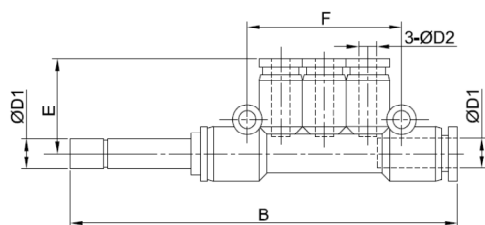
MODEL	TUBE ØD1 inch	TUBE ØD2 inch	Ød	B	F
PWJ1/4-5/32	1/4	5/32	3.2	53.0	14.0
PWJ5/16-1/4	5/16	1/4	3.2	57.3	14.8
PWJ3/8-5/16	3/8	5/16	4.2	64.1	18.2
PWJ1/2-3/8	1/2	3/8	4.2	73.6	19.5
MODEL	TUBE ØD1 mm	TUBE ØD2 mm	Ød	B	F
PWJ06-04	6	4	3.2	53.0	14.0
PWJ08-06	8	6	3.2	57.3	14.8
PWJ10-08	10	8	4.2	64.1	18.2
PWJ12-10	12	10	4.2	73.6	19.5

5 Port Reducing Manifold



MODEL	ØD1 inch	ØD2 inch	E	F	B
PKG3/16-5/32	3/16	5/32	19.0	36.0	57.6
PKG1/4-5/32	1/4		20.0		
PKG5/16-5/32	5/16	3/16	20.3	42.0	62.6
PKG5/16-3/16			20.3		
PKG5/16-1/4	3/8	1/4	23.8	48.0	80.0
PKG3/8-1/4		5/16	24.3		
PKG3/8-5/16					
MODEL	ØD1 mm	ØD2 mm	E	F	B
PKG06-04	6	4	19.0	36	57.6
PKG08-04	8		20.0		
PKG08-06	10	6	20.3	42	62.6
PKG10-06			23.8		
PKG10-08		8	24.3	48	80.0

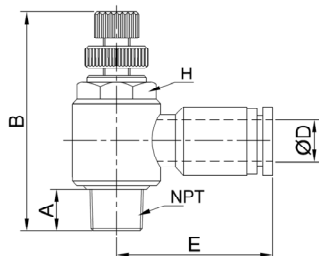
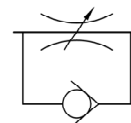
4 Port Stem Manifold



MODEL	ØD1 inch	ØD2 inch	E	F	B
PKJ3/16-5/32	3/16	5/32	19.0	36.0	72.8
PKJ1/4-5/32	1/4		19.0		74.8
PKJ5/16-5/32	5/16	3/16	20.0	42.0	82.3
PKJ5/16-3/16			20.3		
PKJ5/16-1/4	3/8	1/4	20.3	48.0	104.5
PKJ3/8-1/4		5/16	23.8		
PKJ3/8-5/16			24.3		
MODEL	ØD1 mm	ØD2 mm	E	F	B
PKJ06-04	6	4	19.0	36	74.8
PKJ08-04	8		20.0		
PKJ08-06	10	6	20.3	42	82.3
PKJ10-06			23.8		
PKJ10-08		8	24.3	48	104.5

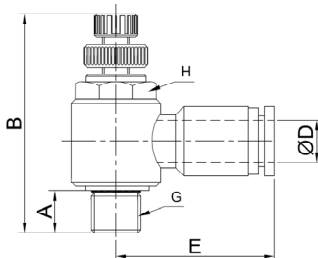
NPT to Inch Flow Control – Meter OUT
(for Meter IN add B suffix e.g JSC1/4-N1B)

All dimensions are mm



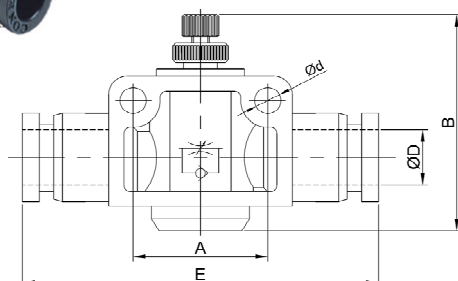
MODEL	TUBE ØD	Thread	A	H	E	B(max)
JSC1/8-U	1/8	10-32UNF	3.8	8.0	20.0	29.3
JSC1/8-N1		NPT1/8	7.5	11.1	22.6	40.1
JSC5/32-U	5/32	10-32UNF	3.8	8.0	20.0	29.3
JSC5/32-N1		NPT1/8	7.5	11.1	22.6	40.1
JSC1/4-U	1/4	10-32UNF	3.8	8.0	22.0	29.3
JSC1/4-N1		NPT1/8	7.5	11.1	23.1	40.1
JSC1/4-N2		NPT1/4	10.5	9/16	25.1	47.2
JSC1/4-N3	5/16	NPT3/8	11.0	19.0	26.8	53.9
JSC5/16-N1		NPT1/8	7.5	11.1	25.6	40.1
JSC5/16-N2		NPT1/4	10.5	9/16	28.6	47.2
JSC5/16-N3	3/8	NPT3/8	11.0	19.0	29.6	53.9
JSC3/8-N2		NPT1/4	10.5	9/16	31.0	47.2
JSC3/8-N3		NPT3/8	11.0	19.0	31.6	53.9
JSC3/8-N4	1/2	NPT1/2	14.0	25.4	34.6	58.4
JSC1/2-N3		NPT3/8	11.0	19.0	35.6	53.9
JSC1/2-N4		NPT1/2	14.0	25.4	36.6	58.4

BSPP (G) to mm Flow Control – Meter OUT
(for Meter IN add B suffix e.g JSC1/4-N1B)




MODEL	TUBE ØD	Thread	A	H	E	B(max)
JSC04-G01	4	G1/8	5.8	10	22.3	39.7
JSC04-G02		G1/4	7.3	14	24.1	46.4
JSC06-M5	6	M5	4.0	10	23.1	39.7
JSC06-G01		G1/8	5.8			
JSC06-G02		G1/4	7.3	14	25.1	46.4
JSC06-G03		G3/8	8.5	19	26.8	53.4
JSC06-G04	8	G1/2	10.0	24	29.8	57.9
JSC08-G01		G1/8	5.8	10	25.6	39.7
JSC08-G02		G1/4	7.3	14	28.6	46.4
JSC08-G03		G3/8	8.5	19	29.6	53.4
JSC08-G04		G1/2	10.0	24	32.6	57.9
JSC10-G01	10	G1/8	5.8	10	28.8	39.7
JSC10-G02		G1/4	7.3	14	31.1	46.4
JSC10-G03		G3/8	8.5	19	31.6	53.4
JSC10-G04	12	G1/2	10.0	24	34.6	57.9
JSC12-G02		G1/4	7.3	14	33.5	46.4
JSC12-G03		G3/8	8.5	19	35.6	53.4
JSC12-G04		G1/2	10.0	24	36.6	57.9


Inline Flow Control inch & mm





MODEL	TUBE ØD	Ød	A	B	E
JSU04	4	3.2	14	28.8	39.5
JSU06	6	4.3	20	42.6	47.6
JSU08	8	4.3	22	44.3	52.6
JSU10	10	4.3	26	53.4	60.5
JSU12	12	4.3	32	55.6	74.2
JSU1/8	1/8	3.2	14.0	28.8	39.5
JSU5/32	5/32	3.2	14.0	28.8	39.5
JSU3/16	3/16	3.2	14.0	28.8	40.1
JSU1/4	1/4	4.3	20.0	42.6	47.6
JSU5/16	5/16	4.3	22.0	44.3	52.6
JSU3/8	3/8	4.3	26.0	53.4	60.5
JSU1/2	1/2	4.3	32.0	55.6	74.2


 Straight Male T1	Part #	T1(NPT)	T2(NPT)	Part #	T1(BSPT)	T2(BSPT)
	PSMN01-N01	NPT1/8	NPT1/8	PSM01-01	R1/8	R1/8
	PSMN02-N02	NPT1/4	NPT1/4	PSM02-02	R1/4	R1/4
	PSMN02-N01	NPT1/4	NPT1/8	PSM02-01	R1/4	R1/8
	PSMN03-N03	NPT3/8	NPT3/8	PSM03-03	R3/8	R3/8
	PSMN03-N02	NPT3/8	NPT1/4	PSM03-02	R3/8	R1/4
	PSMN03-N01	NPT3/8	NPT1/8	PSM03-01	R3/8	R1/8
	PSMN04-N04	NPT1/2	NPT1/2	PSM04-04	R1/2	R1/2
	PSMN04-N03	NPT1/2	NPT3/8	PSM04-03	R1/2	R3/8
	PSMN04-N02	NPT1/2	NPT1/4	PSM04-02	R1/2	R1/4
	PSMN04-N01	NPT1/2	NPT1/8	PSM04-01	R1/2	R1/8
	PSMN06-N06	NPT3/4	NPT3/4	PSM06-06	R3/4	R3/4
	PSMN06-N04	NPT3/4	NPT1/2	PSM06-04	R3/4	R1/2
	PSMN06-N03	NPT3/4	NPT3/8	PSM06-03	R3/4	R3/8
	PSMN06-N02	NPT3/4	NPT1/4	PSM06-02	R3/4	R1/4
	PSMN08-N08	NPT1	NPT1	PSM08-08	R1	R1
	PSMN08-N06	NPT1	NPT3/4	PSM08-06	R1	R3/4
	PSMN08-N04	NPT1	NPT1/2	PSM08-04	R1	R1/2
	PSMN08-N03	NPT1	NPT3/8	PSM08-03	R1	R3/8


All pneuforce pipe fittings are manufactured from nickel plated brass and are offered in NPT, BSPT and BSPP threads.



 Straight Female T2	Part #	T1(NPT)	T2(NPT)	Part #	T1(BSPT)	BSPP
	PSFN01-N01	NPT1/8	NPT1/4	PSF01-01	R1/8	G1/4
	PSFN02-N02	NPT1/4	NPT1/4	PSF02-02	R1/4	G1/4
	PSFN02-N01	NPT1/4	NPT1/4	PSF02-01	R1/4	G1/8
	PSFN03-N03	NPT3/8	NPT1/2	PSF03-03	R3/8	G3/8
	PSFN03-N02	NPT3/8	NPT1/4	PSF03-02	R3/8	G1/4
	PSFN03-N01	NPT3/8	NPT1/8	PSF03-01	R3/8	G1/8
	PSFN04-N04	NPT1/2	NPT1/2	PSF04-04	R1/2	G1/2
	PSFN04-N03	NPT1/2	NPT3/8	PSF04-03	R1/2	G3/8
	PSFN04-N02	NPT1/2	NPT1/4	PSF04-02	R1/2	G1/4
	PSFN04-N01	NPT1/2	NPT1/8	PSF04-01	R1/2	G1/8
	PSFN06-N06	NPT3/4	NPT3/4	PSF06-06	R3/4	G3/4
	PSFN06-N04	NPT3/4	NPT1/2	PSF06-04	R3/4	G1/2
	PSFN06-N03	NPT3/4	NPT3/8	PSF06-03	R3/4	G3/8
	PSFN06-N02	NPT3/4	NPT1/4	PSF06-02	R3/4	G1/4
	PSFN08-N08	NPT1	NPT1	PSF08-08	R1	G1
	PSFN08-N06	NPT1	NPT3/4	PSF08-06	R1	G3/4
	PSFN08-N04	NPT1	NPT1/2	PSF08-04	R1	G1/2
	PSFN08-N03	NPT1	NPT3/8	PSF08-03	R1	G3/8


Male Plug	Part #	NPT	Part #	BSPT
	POM5	10-32UNF	POM5	M5
	PON01	NPT1/8	PO01	G1/8
	PON02	NPT1/4	PO02	G1/4
	PON03	NPT3/8	PO03	G3/8
	PON04	NPT1/2	PO04	G1/2
	PON06	NPT3/4	PO06	G3/4
	PON08	NPT1	PO08	G1


Female Cap	Part #	NPT	Part #	BSPT
	POFN01	NPT1/8	POF01	R1/8
	POFN02	NPT1/4	POF02	R1/4
	POFN03	NPT3/8	POF03	R3/8
	POFN04	NPT1/2	POF04	R1/2
	POFN06	NPT3/4	POF06	R3/4
	POFN08	NPT1	POF08	R1


Male Plug	Part#	NPT	Part #	BSPP
	POHM5	10-32UNF	POHM5	M5
	POHN01	NPT1/8	POH01	G1/8
	POHN02	NPT1/4	POH02	G1/4
	POHN03	NPT3/8	POH03	G3/8
	POHN04	NPT1/2	POH04	G1/2
	POHN06	NPT3/4	POH06	G3/4
	POHN08	NPT1	POH08	G1


 Male to Female Straight T2	Part #	T1(NPT)	T2(NPT)	Part #	T1(BSPT)	BSPP
	PSMFN01-N01	NPT1/8	NPT1/4	PSMF01-01	R1/8	G1/4
	PSMFN02-N02	NPT1/4	NPT1/4	PSMF02-02	R1/4	G1/4
	PSMFN02-N01	NPT1/4	NPT1/4	PSMF02-01	R1/4	G1/4
	PSMFN03-N03	NPT3/8	NPT1/2	PSMF03-03	R3/8	G1/2
	PSMFN03-N02	NPT3/8	NPT1/4	PSMF03-02	R3/8	G1/4
	PSMFN03-N01	NPT3/8	NPT1/8	PSMF03-01	R3/8	G1/8
	PSMFN04-N04	NPT1/2	NPT1/2	PSMF04-04	R1/2	G1/2
	PSMFN04-N03	NPT1/2	NPT3/8	PSMF04-03	R1/2	G3/8
	PSMFN04-N02	NPT1/2	NPT1/4	PSMF04-02	R1/2	G1/4
	PSMFN04-N01	NPT1/2	NPT1/8	PSMF04-01	R1/2	G1/8
	PSMFN06-N06	NPT3/4	NPT3/4	PSMF06-06	R3/4	G3/4
	PSMFN06-N04	NPT3/4	NPT1/2	PSMF06-04	R3/4	G1/2
	PSMFN06-N03	NPT3/4	NPT3/8	PSMF06-03	R3/4	G3/8
	PSMFN06-N02	NPT3/4	NPT1/4	PSMF06-02	R3/4	G1/4
	PSMFN08-N08	NPT1	NPT1	PSMF08-08	R1	G1
	PSMFN08-N06	NPT1	NPT3/4	PSMF08-06	R1	G3/4
	PSMFN08-N04	NPT1	NPT1/2	PSMF08-04	R1	G1/2
	PSMFN08-N03	NPT1	NPT3/8	PSMF08-03	R1	G3/8


	Part #	T1(NPT)	T2(NPT)		Part #	T1(BSPT)	T2(BSPP)
	PRMFN02-N01	NPT1/4	NPT1/8		PRMF02-G01	R1/4	G1/8
	PRMFN03-N01	NPT3/8	NPT1/8		PRMF03-G01	R3/8	G1/8
	PRMFN03-N02	NPT3/8	NPT1/4		PRMF03-G02	R3/8	G1/4
	PRMFN04-N01	NPT1/2	NPT1/8		PRMF04-G01	R1/2	G1/8
	PRMFN04-N02	NPT1/2	NPT1/4		PRMF04-G02	R1/2	G1/4
	PRMFN04-N03	NPT1/2	NPT3/8		PRMF04-G03	R1/2	G3/8
	PRMFN06-N02	NPT3/4	NPT1/4		PRMF06-G02	R3/4	G1/4
	PRMFN06-N03	NPT3/4	NPT3/8		PRMF06-G03	R3/4	G3/8
	PRMFN06-N04	NPT3/4	NPT1/2		PRMF06-G04	R3/4	G1/2


	Part #	NPT	Part #	BSPP
	PYFN01	NPT1/8	PYF01	G1/8
	PYFN02	NPT1/4	PYF02	G1/4
	PYFN03	NPT3/8	PYF03	G3/8
	PYFN04	NPT1/2	PYF04	G1/2


	Part #	NPT	Part #	BSPP
	PYTN01	NPT1/8	PYT01	G1/8
	PYTN02	NPT1/4	PYT02	G1/4
	PYTN03	NPT3/8	PYT03	G3/8
	PYTN04	NPT1/2	PYT04	G1/2


	Part #	NPT	Part #	BSPP
	PFLN01	NPT1/8	PFL01	G1/8
	PFLN02	NPT1/4	PFL02	G1/4
	PFLN03	NPT3/8	PFL03	G3/8
	PFLN04	NPT1/2	PFL04	G1/2
	PFLN06	NPT3/4	PFL06	G3/4
	PFLN08	NPT1	PFL08	G1


	Part #	NPT	Part #	BSPT
	PELN01-N01	NPT1/8	PEL01-01	R1/8
	PELN02-N02	NPT1/4	PEL02-02	R1/4
	PELN03-N03	NPT3/8	PEL03-03	R3/8
	PELN04-N04	NPT1/2	PEL04-04	R1/2
	PELN06-N06	NPT3/4	PEL06-06	R3/4
	PELN08-N08	NPT1	PEL08-08	R1


	Part #	NPT	Part #	BSPT
	PEFLN01-N01	NPT1/8	PEFL01-01	R1/8
	PEFLN02-N02	NPT1/4	PEFL02-02	R1/4
	PEFLN03-N03	NPT3/8	PEFL03-03	R3/8
	PEFLN04-N04	NPT1/2	PEFL04-04	R1/2
	PEFLN06-N06	NPT3/4	PEFL06-06	R3/4
	PEFLN08-N08	NPT1	PEFL08-08	R1


	Part #	T(NPT)	Part #	BSPP
	PMTN01	NPT1/8	PMT01	G1/8
	PMTN02	NPT1/4	PMT02	G1/4
	PMTN03	NPT3/8	PMT03	G3/8
	PMTN04	NPT1/2	PMT04	G1/2
	PMTN06	NPT3/4	PMT06	G3/4
	PMTN08	NPT1	PMT08	G1


	Part #	NPT	Part #	BSPT
	PSMTN01	NPT1/8	PSMT01	R1/8
	PSMTN02	NPT1/4	PSMT02	R1/4
	PSMTN03	NPT3/8	PSMT03	R3/8
	PSMTN04	NPT1/2	PSMT04	R1/2
	PSMTN06	NPT3/4	PSMT06	R3/4
	PSMTN08	NPT1	PSMT08	R1

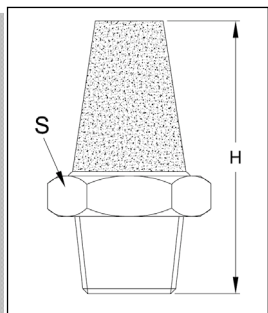
	Part #	NPT	Part #	BSPP
	PFTN01	NPT1/8	PFT01	G1/8
	PFTN02	NPT1/4	PFT02	G1/4
	PFTN03	NPT3/8	PFT03	G3/8
	PFTN04	NPT1/2	PFT04	G1/2
	PFTN06	NPT3/4	PFT06	G3/4
	PFTN08	NPT1	PFT08	G1

	Part #	NPT	Part #	BSPP
	PMSTN01	NPT1/8	PMST01	G1/8
	PMSTN02	NPT1/4	PMST02	G1/4
	PMSTN03	NPT3/8	PMST03	G3/8
	PMSTN04	NPT1/2	PMST04	G1/2
	PMSTN06	NPT3/4	PMST06	G3/4
	PMSTN08	NPT1	PMST08	G1

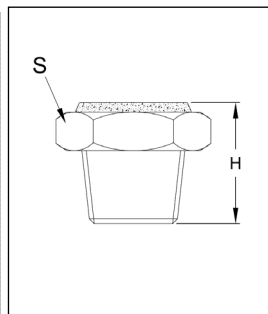
	Part #	NPT	Part #	BSPP
	PSFTN01	NPT1/8	PSFT01	G1/8
	PSFTN02	NPT1/4	PSFT02	G1/4
	PSFTN03	NPT3/8	PSFT03	G3/8
	PSFTN04	NPT1/2	PSFT04	G1/2
	PSFTN06	NPT3/4	PSFT06	G3/4
	PSFTN08	NPT1	PSFT08	G1

	Part #	NPT	Part #	BSPP
	PFCN01	NPT1/8	PFC01	G1/8
	PFCN02	NPT1/4	PFC02	G1/4
	PFCN03	NPT3/8	PFC03	G3/8
	PFCN04	NPT1/2	PFC04	G1/2

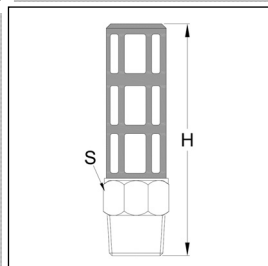
	Part #	NPT	Part #	BSPP
	PMMTN01	NPT1/8	PMMT01	G1/8
	PMMTN02	NPT1/4	PMMT02	G1/4
	PMMTN03	NPT3/8	PMMT03	G3/8
	PMMTN04	NPT1/2	PMMT04	G1/2
	PMMTN06	NPT3/4	PMMT06	G3/4
	PMMTN08	NPT1	PMMT08	G1



BSL Sintered Bronze Muffler			
Model	Thread	H	S
BSL-M5	10-32UNF	20	8
BSL-N1	1/8NPT	24	12
BSL-N2	1/4NPT	28	15
BSL-N3	3/8NPT	36	18
BSL-N4	1/2NPT	41	21
BSL-N6	3/4NPT	49	27
BSL-N8	1NPT	64	34

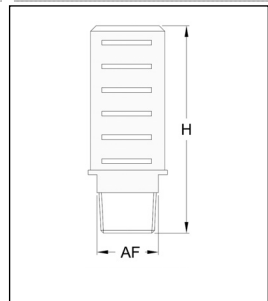


BSLM Sintered Bronze Breather			
Model	Thread	H	S
BSLM-M5	10-32UNF	9	8
BSLM-N1	1/8NPT	11	12
BSLM-N2	1/4NPT	13	15
BSLM-N3	3/8NPT	14	18
BSLM-N4	1/2NPT	15	21
BSLM-N6	3/4NPT	18	27
BSLM-N8	1NPT	19	34



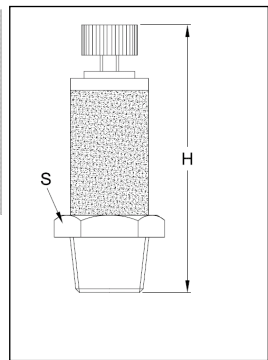
PSU Plastic Polyethylene Silencer			
Model	Thread	H	S
PSU-01	1/8	35	n/a
PSU-02	1/4	65	18
PSU-03	3/8	84	21
PSU-04	1/2	93	25

The PSU thread is suitable for both NPT & G female thread connection. 5μ Porosity

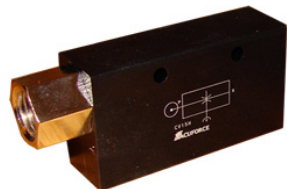
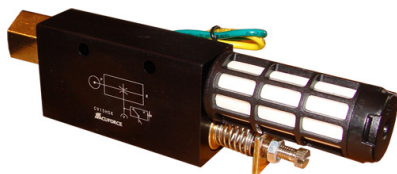


ASL Aluminum Silencer			
Model	Thread	H	AF
ASL-01	1/8NPT	41	16
ASL-02	1/4NPT	41	16
ASL-03	3/8NPT	84	25
ASL-04	1/2NPT	84	25

50μ stainless steel mesh element



Brass Flow Control			
Model	Thread	H	S
BESL-01	1/8NPT	33	12
BESL-02	1/4NPT	35	14
BESL-03	3/8NPT	43	17
BESL-04	1/2NPT	50	21



Features:

- Anodized Aluminum Body
- Maximum Vacuum of >26"Hg
- Vacuum Flow Rates up to 8CFM
- Single Stage Technology
- No Moving or Wearing Parts

CV

05

Nozzle Diameter
05 = 0.5mm
10 = 1.0mm
15 = 1.5mm
20 = 2.0mm
25 = 2.5mm
30 = 3.0mm

H

High
27"Hg

SK

Switch
Blank = No switch
S = Fixed Switch
SK = Adjustable switch


Switch Options

S = The fixed switch option is normally open and changes position at 12"Hg

SK = The adjustment of the SK model switch is between 6-16"Hg

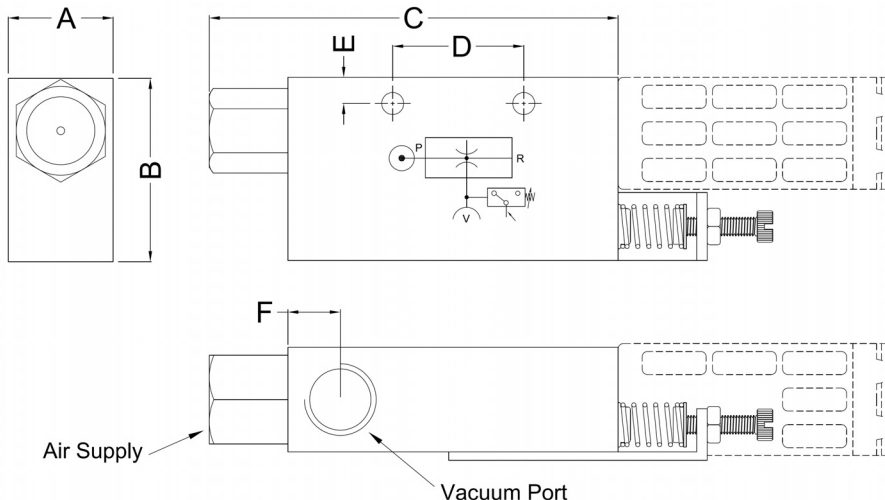
Venturi Model	Supply Pressure	Air Used CFM	Evacuation time to different vacuum levels in sec/ft ³								
			3"Hg	6"Hg	9"Hg	12"Hg	15"Hg	18"Hg	21"Hg	24"Hg	27"Hg
CV05H	70psi	0.46	24.3	57.3	101	160	231	305	433	597	-
CV10H		1.55	5	10	16	25	36	51	77	118	226
CV15H		3.53	2.5	5	7	11	16	22	32	47	112
CV20H		6.36	1.7	3	6	5.5	9	13	19	27	61
CV25H		9.36	0.8	1.9	3.1	4.7	6.7	9.7	13.8	21.1	47
CV30H		13.5	0.8	1.6	2.6	3.8	5.5	7.4	11.4	17.5	39

Venturi Model	Vacuum flow (SCFM) at different vacuum levels in "Hg									Max Vacuum "Hg
	0"Hg	3"Hg	6"Hg	9"Hg	12"Hg	15"Hg	18"Hg	21"Hg	24"Hg	
CV05H	0.21	0.19	0.17	0.15	0.13	0.11	0.09	0.07	0.05	26
CV10H	0.95	0.85	0.75	0.65	0.55	0.45	0.35	0.25	0.15	27.5
CV15H	2.22	1.98	1.74	1.5	1.26	1.01	0.76	0.51	0.26	
CV20H	3.88	3.45	3.02	2.59	2.16	1.73	1.3	0.87	0.44	
CV25H	5.65	5.48	4.95	4.24	3.36	2.54	1.66	0.99	0.53	
CV30H	7.95	7.07	5.65	4.77	3.71	2.76	1.94	1.17	0.67	

Venturi Model	Silencer Model	The SK and S models which have an integral vacuum switch include a silencer as standard. Except for the CV25 and CV30, the non switch models are supplied WITHOUT a silencer. If a silencer is required it should be ordered separately as shown in the table on the right.	
CV05H	PSU-01		
CV10H			
CV15H			
CV20H	PSU-02		
CV25H	Included		
CV30H			

Port Sizes			
Venturi Model	Air Supply Port	Vacuum Port	Exhaust Port
CV05	1/8NPT	1/8NPT	1/8NPT
CV10			
CV15	1/4NPT	1/4NPT	1/4NPT
CV20			
CV25H	3/8NPT	1/2NPT	3/4NPT
CV30H	1/2NPT	3/4NPT	

Model	A	B	C	D	E	F
CV05	16	32	56	20	4.5	8
CV10	16	32	56	20	4.5	8
CV15	20	35	76	25	5	10
CV20	27	40	106	32	7	14
CV20 S/SK		50				
CV25H	40	60	117	50	5.5	16
CV30H						



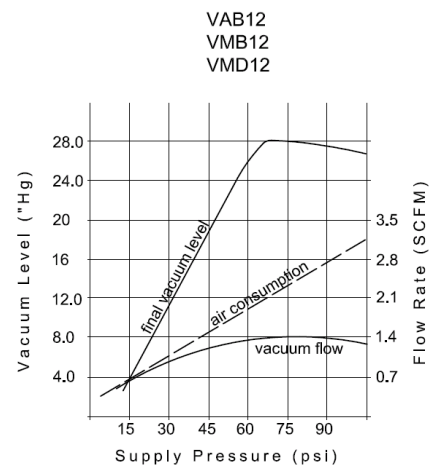
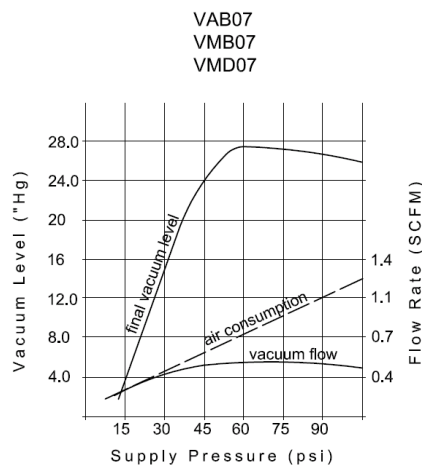
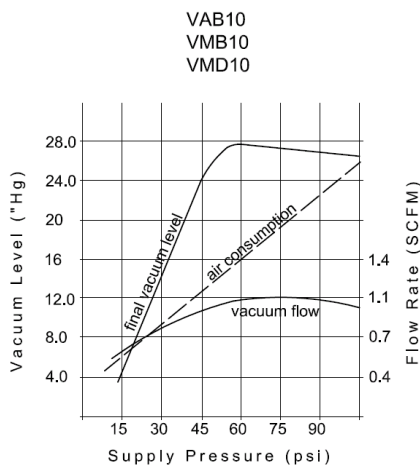
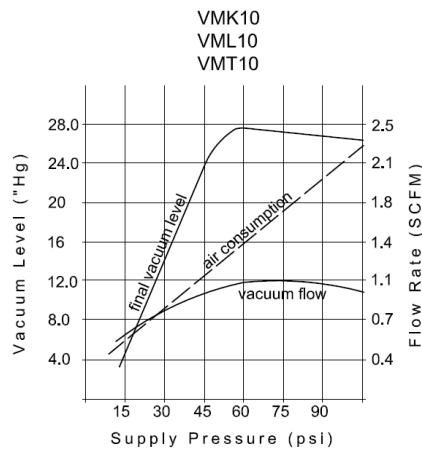
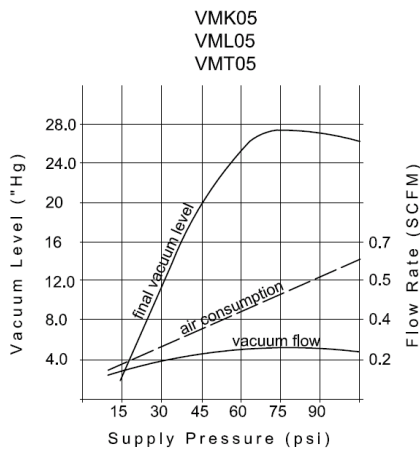


Features:

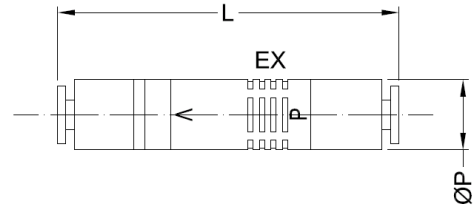
- Lightweight Delrin Plastic Construction
- Maximum Vacuum of 27"Hg
- Vacuum Flow Rates up to 4CFM
- Single Stage Technology
- No Moving or Wearing Parts
- Ideal for Point of Use Applications
- Compact & Low Cost
- Very Reliable Operation

Performance Tables

These performance tables offer details of the vacuum flow performance based on the venturi model and orifice size.

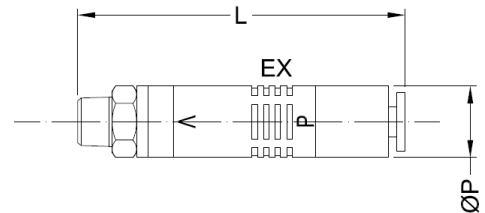


Model - VML



Model Number	Nozzle Diameter (mm)	Tube Connection	L	P	Max Vacuum	Air Consumption	Vacuum Flow
VML0504	0.5	5/32" (4mm)	60	14.3	27"Hg	0.6CFM	0.28CFM
VML0506N	0.5	1/4"	66	14.3	27"Hg	0.6CFM	0.28CFM
VML1006N	1.0	1/4"	76	15.8	27"Hg	2.3CFM	1.1CFM
VML1008	1.0	5/16 (8mm)	79	15.8	27"Hg	2.3CFM	1.1CFM

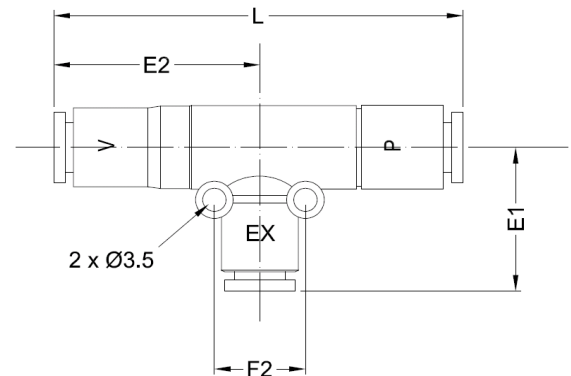
Model - VMK



Model Number	Nozzle Diameter (mm)	Tube Connection	Thread Size	L	P	Max Vacuum	Air Consumption	Vacuum Flow
VMK054M5	0.5	5/32" (4mm)	10-32UNF (M5)	56	14	27"Hg	0.6CFM	0.28CFM
VMK10801	1.0	5/16" (8mm)	1/8BSPT*	75	16	27"Hg	2.3CFM	1.1 CFM

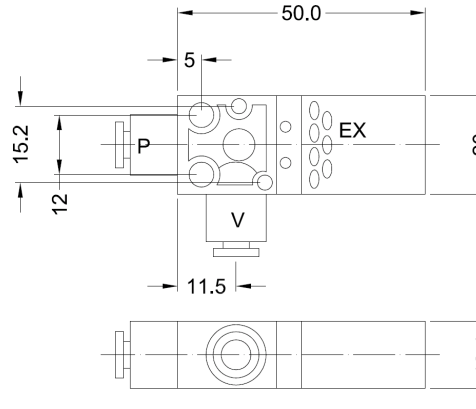
*please note that 1/8BSPT will seal in both BSPP and NPT female ports.

Model - VMT



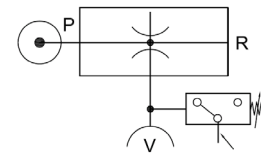
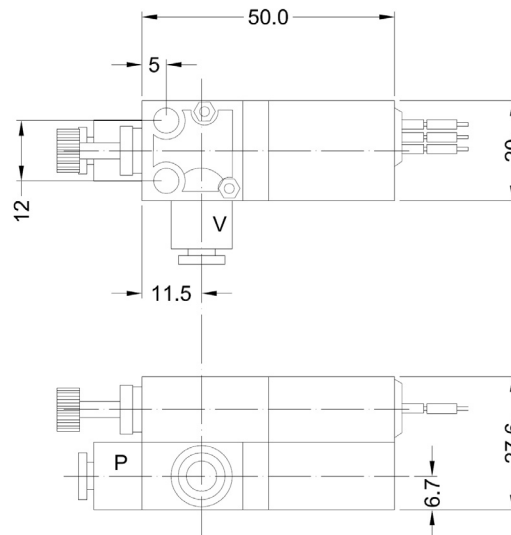
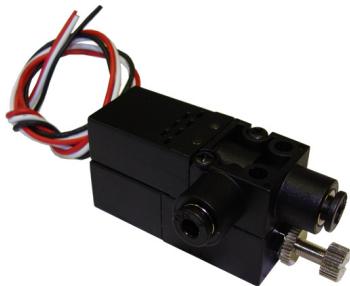
Model Number	Nozzle Diameter (mm)	Tube Connection	L	E1	E2	F2	Max Vacuum	Air Consumption	Vacuum Flow
VMT0504	0.5	5/32" (4mm)	60	24	29	15	27"Hg	0.6CFM	0.28CFM
VMT0506N	0.5	1/4"	60	24	32	15	27"Hg	0.6CFM	0.28CFM
VMT1006N	1.0	1/4"	76	27	40	15	27"Hg	2.3CFM	1.1CFM
VMT1008	1.0	5/16" (8mm)	79	27	42	15	27"Hg	2.3CFM	1.1CFM

Model - VAB



Model Number	Nozzle Diameter (mm)	Tube Connection	Max Vacuum	Air Consumption	Vacuum Flow
VAB0704	0.7	5/32" (4mm)	27"Hg	1.25CFM	0.5CFM
VAB0706N	0.7	1/4"	27"Hg	1.25CFM	0.5CFM
VAB1204	1.2	5/32" (4mm)	27"Hg	3.15CFM	1.4CFM
VAB1206N	1.2	1/4"	27"Hg	3.15CFM	1.4CFM

Model - VABS

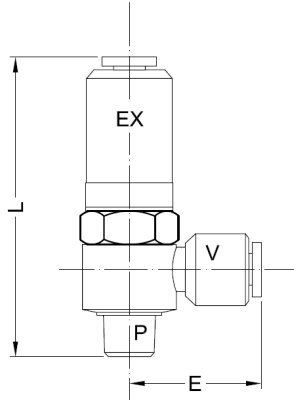


The VABS venturi is close coupled to the VAS series of vacuum switch (refer to the vacuum switches section). This combination provides a very compact solution to part presence automation.

Ideal for small pick and place applications where the user must know if the part being handled is located securely by the vacuum cup.

Model Number	Nozzle Diameter (mm)	Tube Connection	Max Vacuum	Set Point Range	Air Consumption	Vacuum Flow
VABS0704	0.7	5/32	27"Hg	4-12"Hg	1.25CFM	0.5CFM
VABS1204	1.2	5/32	27"Hg		3.15CFM	1.4CFM

Model - VMB

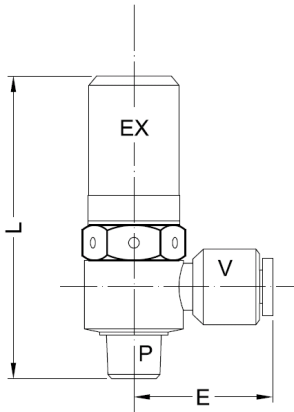


The VMB series allows connection of multiple units directly to a compressed air manifold to feed different vacuum points or can be mounted directly onto the “A” or “2” port of a 3-way compressed air valve. The exhaust port is a push to connect fitting so this ejector is ideal for a clean room environment where the product being handled is sensitive to exhaust gases from the venturi.

Model Number	Nozzle Diameter (mm)	Tube Connection	Thread	L	E	Max Vacuum	Air Consumption	Vacuum Flow
VMB07801	0.7	5/16" (8mm)	1/8BSPT*	60	28	27.3"Hg	1.2CFM	0.6CFM
VMB10801	1.0	5/16" (8mm)	1/8BSPT*	60	28	27.3"Hg	3.1CFM	1.4CFM

**please note that 1/8BSPT will seal in both BSPP and NPT female ports.*

Model - VMD



The VMD series is very similar to the VMB model above, but has integral exhaust ports around the circumference of the body.

Model Number	Nozzle Diameter (mm)	Tube Connection	Thread	L	E	Max Vacuum	Air Consumption	Vacuum Flow
VMD07801	0.7	5/16" (8mm)	1/8BSPT*	49	28	27"Hg	1.2CFM	0.6CFM
VMD10801	1.0	5/16" (8mm)	1/8BSPT*	49	28	27"Hg	3.1CFM	1.4CFM

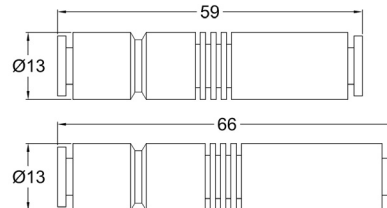
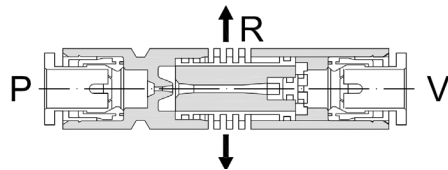
**please note that 1/8BSPT will seal in both BSPP and NPT female ports.*



The AZU series of vacuum venturi are available in both high and low vacuum versions with either a 0.5mm or 0.7mm orifice.

All models utilize a Ø6mm push to connect fitting for both the compressed air supply and vacuum connection.

Model	Nozzle Ø	Maximum Vacuum	Vacuum Flow	Air Consumption	Weight
AZU05S	0.5mm	25.4"Hg / 150mbar(a)	0.24SCFM / 7l/min	0.33SCFM / 9.5l/min	6.5g
AZU05L	0.5mm	14.4"Hg / 550mbar(a)	0.42SCFM / 12l/min	0.67SCFM / 19l/min	7.0g
AZU07S	0.7mm	25.4"Hg / 150mbar(a)	0.33SCFM / 9.5l/min	0.33SCFM / 9.5l/min	6.5g
AZU07L	0.7mm	14.4"Hg / 550mbar(a)	0.74SCFM / 21l/min	0.67SCFM / 19l/min	7.0g



AZU05

AZU07



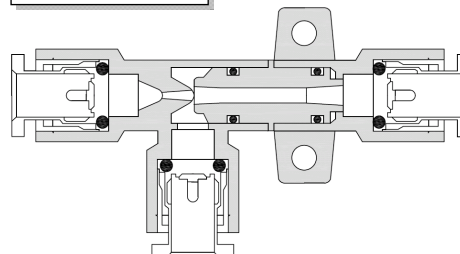
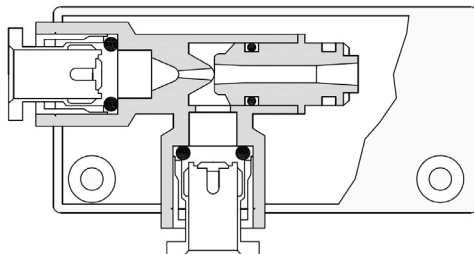
AZH Venturi

The AZH series of vacuum venturi are available in both high and low vacuum versions with a 0.5, 0.7, 1.0, 1.3, 1.5, 1.8 or 2.0mm venturi orifice.

Various configurations are available with two fundamental assembly types

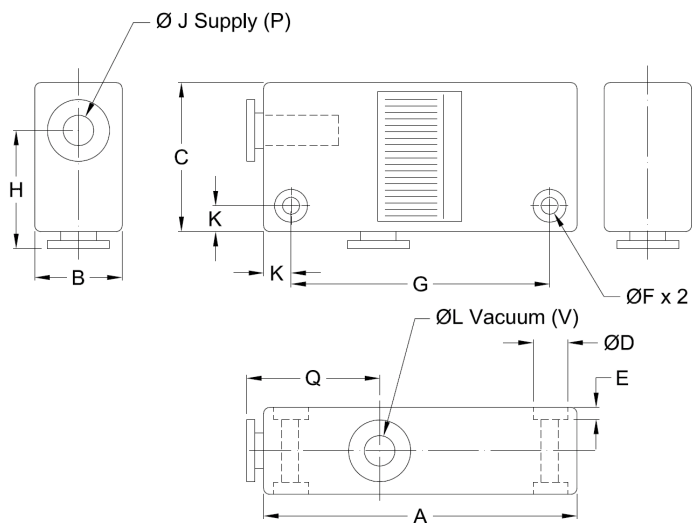
Box Body
Type - B

Ported Body
Type - D

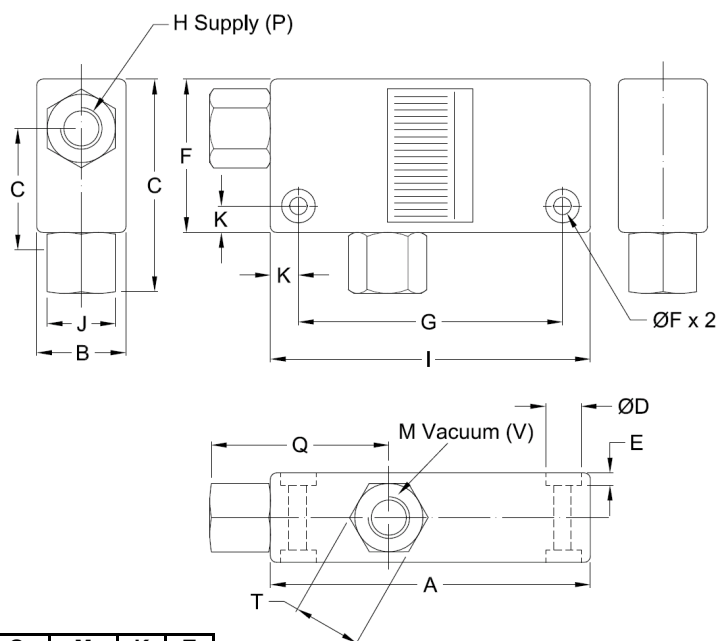
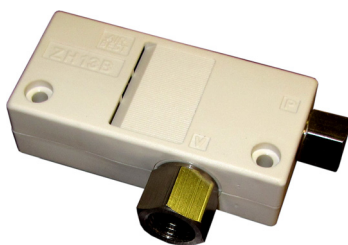


- Box Body – internal exhaust
- Ported Body – external exhaust

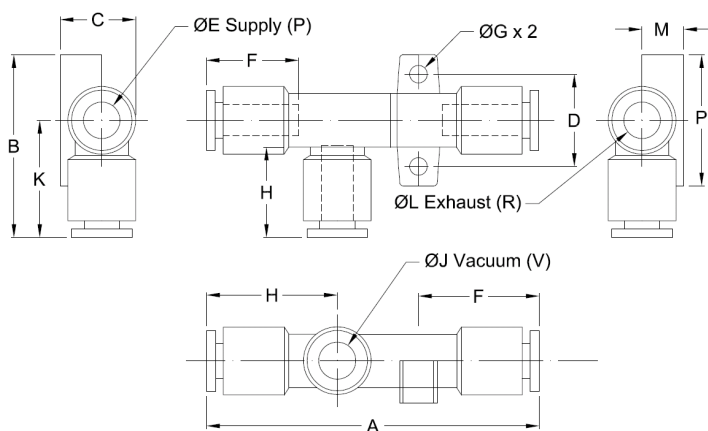
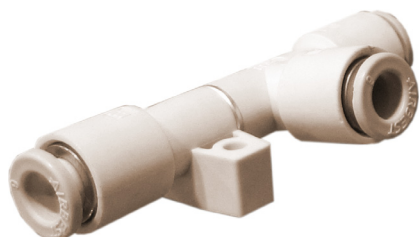
Model	Venturi Nozzle Ø (mm)	Body Type	Maximum Vacuum “Hg		Maximum Vacuum Flow SCFM		Air Consumption SCFM	Connections			Weight	
			Type S	Type L	Type S	Type L		Supply	Vacuum	Exhaust		
AZH05B□	0.5	Box Body	26.4	14.4	0.2	0.3	0.5	Ø6 / R1/8		n/a	28	
AZH07B□	0.7				0.4	0.7	0.8				33	
AZH10B□	1.0				0.8	1.2	1.6					
AZH13B□	1.3				1.4	2.5	2.8	Ø8 / R1/8	Ø10 or R1/4			66
AZH05D□	.05	Ported Body			14.4	0.2	0.3	0.5	Ø6 / R1/8		Ø6 / R1/8	11
AZH07D□	.07					0.4	0.7	0.8			Ø6 / R1/8	12
AZH10D□	1.0					0.8	1.2	1.6			Ø8 / R1/8	16
AZH13D□	1.3					1.4	2.5	2.8	Ø8 / R1/8	Ø10 / R1/4		27
AZH15D□	1.5			15.9		1.9	2.7	3.4	Ø10 / R1/4	Ø12 / R3/8		43
AZH18D□	1.8					2.3	3.9	5.3	Ø12 / R3/8			55
AZH20D□	2.0						3.0	4.8	6.5	Ø12 / R3/8	Ø16 / R1/2	



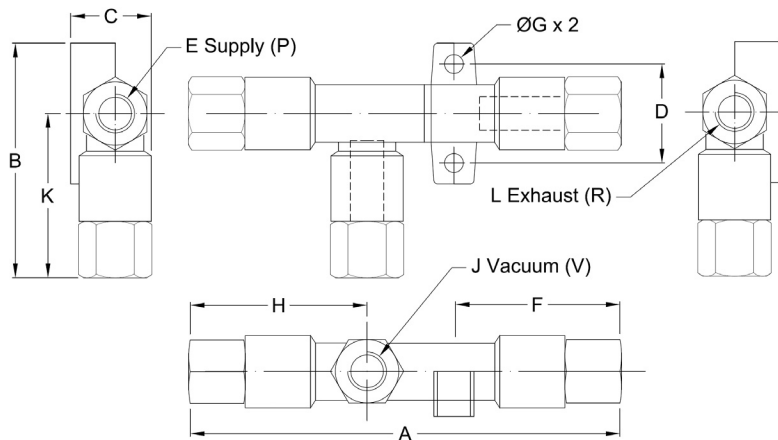
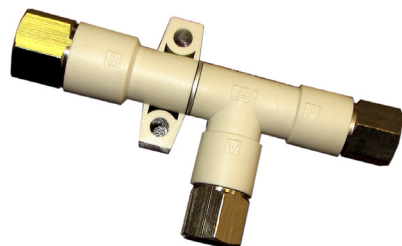
Model	A	B	C	D	E	ØF	G	H	ØJ	K	ØL	Q
AZH05B ^{S/L} -06-06	60	16	31	5.8	2	3.2	47	22	6	5	6	24
AZH07B ^{S/L} -06-06	60	16	31	5.8	2	3.2	47	22	6	5	6	24
AZH10B ^{S/L} -06-06	63	18	32	5.8	2	3.2	50	23	6	5	6	26
AZH13B ^{S/L} -08-10	78	23	38.5	7.5	3	4.2	61	27.5	8	7	10	28



Model	A	B	C	ØD	F	G	H	Q	M	K	T
AZH05B ^{S/L} -01-01	67.5	16	38.5	5.8	3.2	47	R1/8	31.5	R1/8	5	12
AZH07B ^{S/L} -01-01	67.5	16	38.5	5.8	3.2	47	R1/8	31.5	R1/8	5	12
AZH10B ^{S/L} -01-01	70.5	18	39.5	5.8	3.2	50	R1/8	33.5	R1/8	5	12
AZH13B ^{S/L} -01-02	86.5	23	50	7.5	4.2	61	R1/8	36.5	R1/4	7	17



Model	A	B	C	D	ØE	F	ØG	H	ØJ	K	ØL
AZH05D ^{S/L} -06-06-06	58.5	34	14.2	17	6	21	3.2	24	6	22	6
AZH07D ^{S/L} -06-06-06	61	34	14.2	17	6	22	3.2	24	6	22	6
AZH10D ^{S/L} -06-06-08	66	37	17.2	20	6	24.5	4.2	26	6	23	6
AZH13D ^{S/L} -08-10-10	74.5	42.5	20	22	8	27	4.2	28	10	27.5	10
AZH15D ^{S/L} -10-12-12	93.3	47	22.5	27	10	32.8	4.2	31.5	12	29.5	12
AZH18D ^{S/L} -03-03-03	114	41	21	10	12	50	3.5	35.5	12	30.5	12
AZH20D ^{S/L} -03-04-04	125	46	27	12	12	54.3	3.5	38.5	16	32.7	16



Model	A	B	C	D	E	F	ØG	H	J	K	L
AZH05D ^{S/L} -01-01-01	73.5	41.5	14.2	17	R1/8	28.5	3.2	31.5	R1/8	22	R1/8
AZH07D ^{S/L} -01-01-01	76	41.5	14.2	17	R1/8	29.5	3.2	31.5	R1/8	22	R1/8
AZH10D ^{S/L} -01-01-01	82	44.5	17.2	20	R1/8	33	4.2	33.5	R1/8	23	R1/8
AZH13D ^{S/L} -01-02-02	94.5	54	20	22	R1/8	38.5	4.2	36.5	R1/4	27.5	R1/4
AZH15D ^{S/L} -02-03-03	116.5	58.5	22.5	27	R1/4	44.5	4.2	43	R3/8	29.5	R3/8
AZH18D ^{S/L} -03-03-03	133	52.5	21	10	R3/8	57.5	3.5	47	R3/8	30.5	R3/8
AZH20D ^{S/L} -03-04-04	151	61	27	12	R3/8	69.3	3.5	50	R1/2	32.7	R1/2



The Vacuforce AZL series of multi stage ejector offer the user a compact and efficient vacuum generation solution. Available with various options including control valves for vacuum ON and compressed air release for faster cycle rates. This feature also aids in the ejection of dust and debris from the vacuum cup pick up surface.

The EB option includes a digital vacuum sensor embedded in the unit which offers the user control and part presence for automated pick and place applications. The specifications of the sensor are the same as the AP models shown in the Vacuum Switches section of this catalogue.

- Three Stage Multi Stage Venturi Design
- Modular Design Allowing Installation of a Vacuum Gauge or Vacuum Sensor Option
- Integral Vacuum Filter
- Integral Silencer

Without Valves AZL112

P **F**
 ① ②

With Control Valves AZL112

P **F** **K1** **5** **L** **Z** - **E** **25**
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Exhaust Specifications	
Blank	Built in Silencer
P	Port Exhaust

② Exhaust Port Thread	
Blank	R1/2
F	G1/2
T	1/2NPTF

③ Control Valve Combinations	
K1	Supply and Release
K2	Supply Only

④ Control Valve Voltage	
5	24VDC
3	110VAC

⑤ Valve Coil Connector	
G	300mm Lead Wire
L	Plugs c/w 300mm Wires

⑥ Light/ Surge Protection Options	
Blank	Unlit / No MOV*
S	MOV*
Z	LED + MOV*

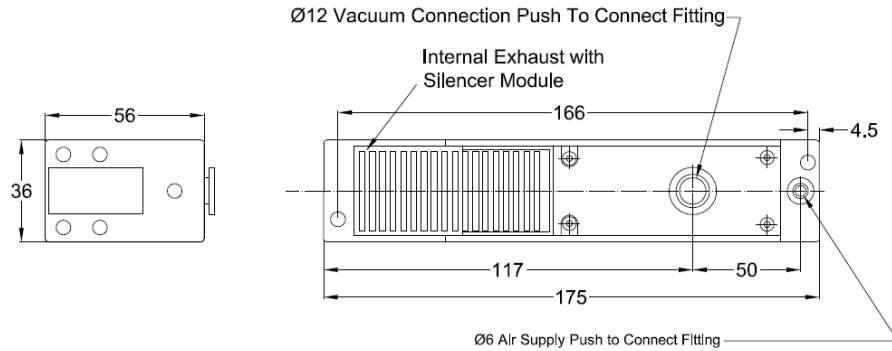
⑦ Manual Override	
Blank	Non Locking Type
D	Locking Type

⑧ Vacuum Pressure Adaptor	
Blank	No Sensor
GN	R1/8 Vacuum Port
E	Digital Vacuum Sensor

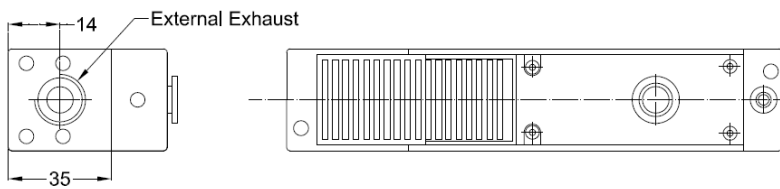
⑨ Digital Vacuum Sensor Type	
27	NPN Output
67	PNP Output

Supply & Release Valve Specifications	
Type	Internal Pilot NC
Operating Pressure Range	30 – 75psi / 2-5bar
Operating Temperature	41-122°F / 5-50°C
Max Operating Pressure	105psi(g) / 7bar(g)
Response Time	<25ms
Lubrication	Not Required

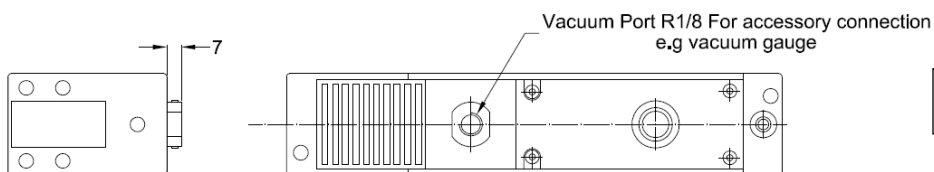
Venturi Nozzle Diameter	Ø1.2mm
Max Vacuum Flow	3.5SCFM / 100l/min
Air Consumption	2.2CFM / 63l/min
Max Vacuum Level	25"Hg / -84kPa
Max Operating Pressure	105psi(g) / 7bar(g)
Optimal Supply Pressure	60psi(g) / 4bar(g)
Operating Temperature	41-122°F / 5-50°C



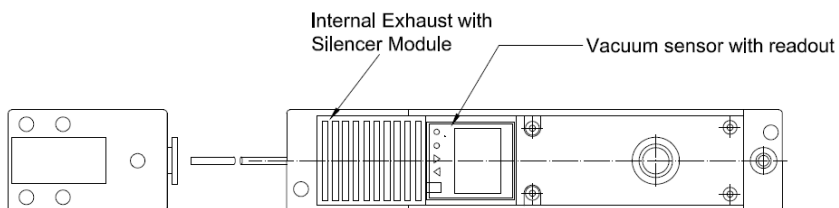
AZL112



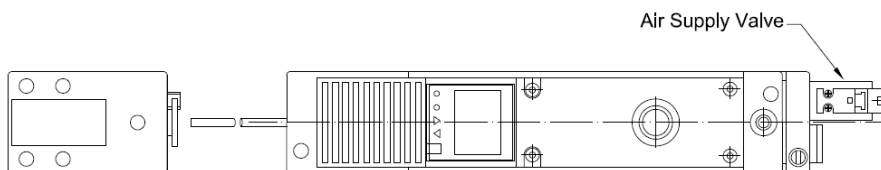
AZL112P



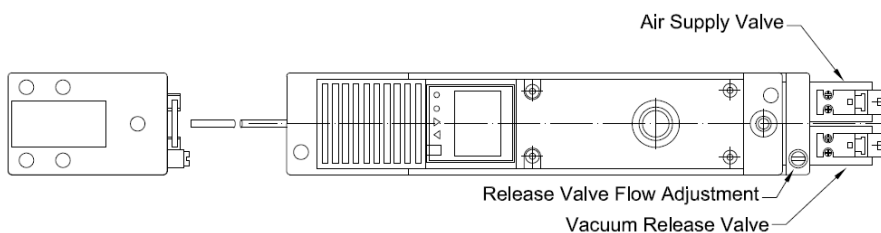
AZL112GN



AZL112-E



AZL112-K2□L□□-E25



AZL112-K1□L□□-E25

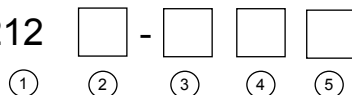


The Vacuforce AZL212 series of multi stage ejector is the same as the design of the AZL112 except for the vacuum flow capacity. The AZL212 has twice the amount of venturi nozzles as the AZL112 series. Consequently the physical size is larger.

The AZL212 is not available with the control valves option.

- Three Stage Multi Stage Venturi Design
- Modular Design Allowing Installation of a Vacuum Gauge or Vacuum Sensor Option
- Integral Vacuum Filter
- Integral Silencer

Without Valves AZL212



① Nozzle Diameter	
12	Ø1.2mm

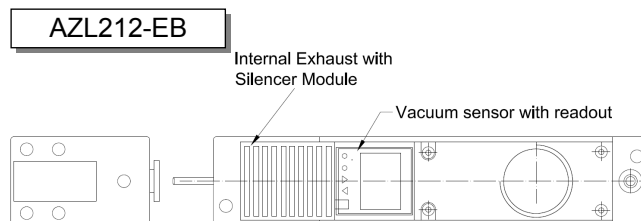
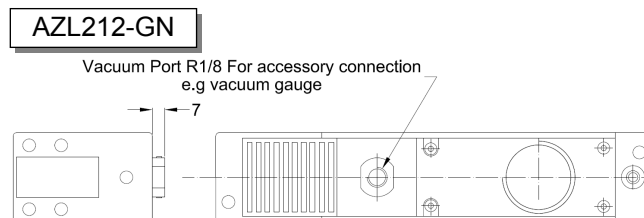
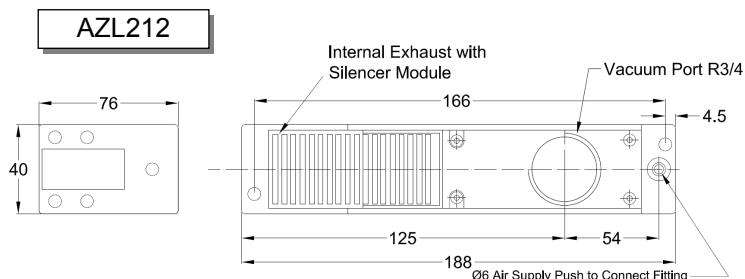
② Exhaust Type	
Blank	Integral Silencer
P	Ported Exhaust (R1)

③ Vacuum Sensor	
Blank	No Sensor
GN	R1/8 Vacuum Port
EB	Digital Vacuum Sensor

④ Digital Vacuum Sensor Type	
27	NPN Output
67	PNP Output

⑤ Lead Wire Length	
Blank	500mm (0.5m)
L	2900mm (2.9m)

Venturi Nozzle Diameter	Ø1.2mm x 2
Max Vacuum Flow	7.0SCFM / 200l/min
Air Consumption	4.4CFM / 126l/min
Max Vacuum Level	25"Hg / -84kPa
Max Operating Pressure	105psi(g) / 7bar(g)
Optimal Supply Pressure	60psi(g) / 4bar(g)
Operating Temperature	41-122°F / 5-50°C



Features:

- Maximum Vacuum Level of 27.5"Hg (-85kPa)
- Maximum Flow Rate 73SCFM
- Supply Pressure 50psi(g) Optimal (AL models @ 87psi)
- Noise Level <65dB(A)
- Option NRV models (for use in energy saving systems)
- Includes Silencer and Vacuum Gauge (as shown)
- PPS Body Material (polyphenylene sulphide)
- Seals in NBR with Fluorocarbon (Viton®) available

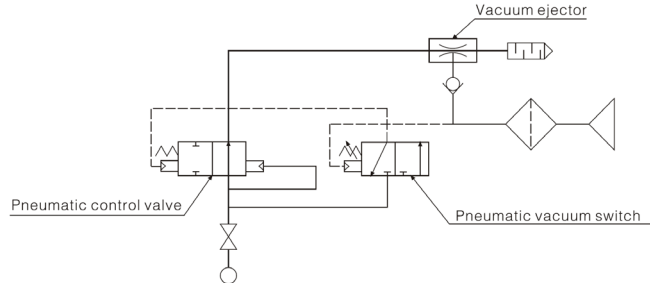
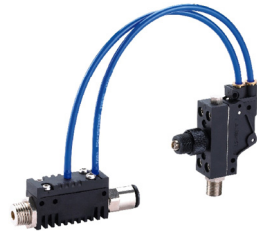


Model Number	Max Vacuum Level	Max Vacuum Flow	Air Consumption	Weight kg/lb
AM25L-B-N	>27"Hg	15SCFM	4CFM	0.6/1.4
AM50L-B-N		22SCFM	8CFM	
AM75L-B-N		28SCFM	13CFM	0.7/1.7
AM100L-B-N		34SCFM	16CFM	
AM150L-B-N	>24"Hg	45SCFM	23CFM	0.8/1.8
AL175-B-N		58SCFM	26CFM	1.0/2.2
AL200-B-N		73SCFM	29CFM	



The Energy Saving Kit – Part Number ES213

This assembly connects directly to the AM and AL venturi models and offers an ON/OFF function for the generator, depending on the vacuum level in the attached system. The switch has a set point range of 5-27"Hg and is ideal for centralized vacuum systems or systems using vacuum valves as the operator. Generator models with a non return valve (NRV or check valve) on the vacuum inlet should be ordered for use with the energy saving kit. Therefore the table on the right shows the designated suffix (A) for this option.

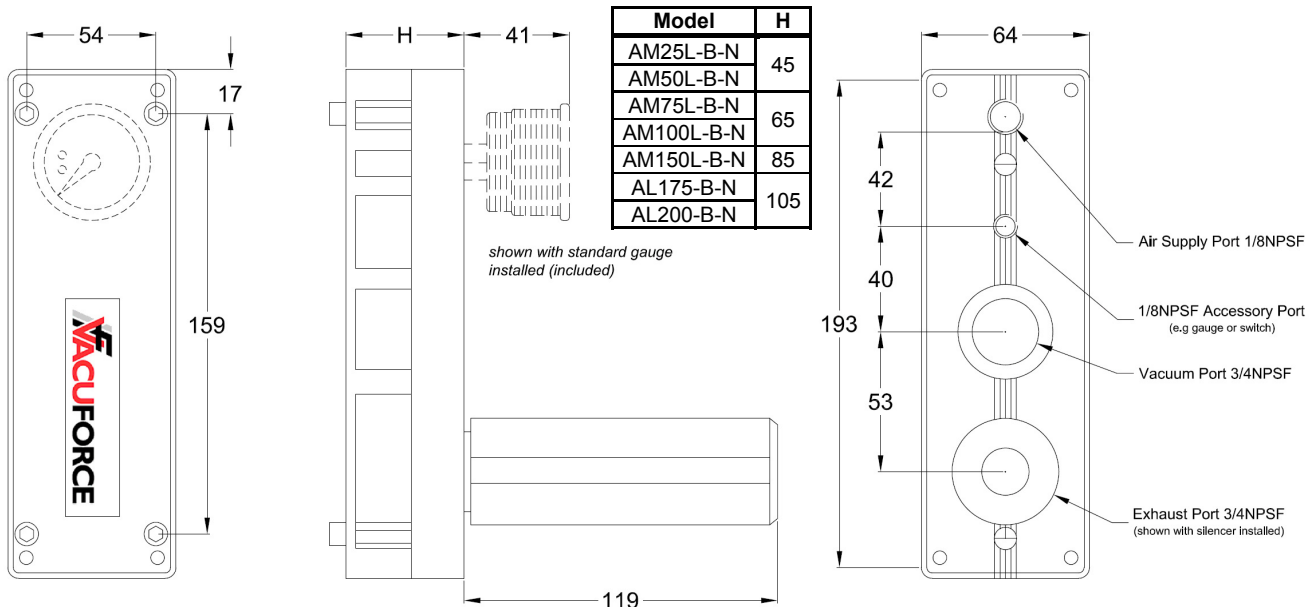


Check Valve Model

AM25L-B-N-A
AM50L-B-N-A
AM75L-B-N-A
AM100L-B-N-A
AM150L-B-N-A
AL175-B-N-A
AL200-B-N-A



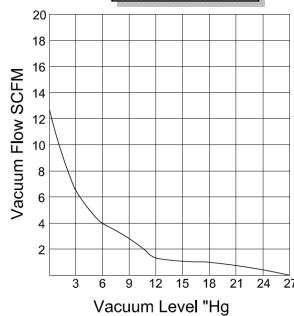
Shown with ES213 installed



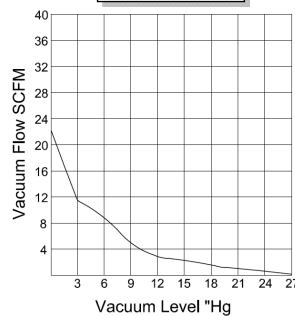
Model	Supply Pressure	Air Consumption CFM	Vacuum Flow in CFM at Different Vacuum Levels of "Hg										Maximum Vacuum Level "Hg
			0	3	6	9	12	15	18	21	24	27	
AM25L	50psi	4.1	12.7	6.4	4.1	2.8	1.5	1.1	0.80	0.55	0.27	0.04	27.6
	87psi	6.5	14.8	8.5	4.4	3.5	2.9	2.3	1.34	0.44	0.12	-	26.7
AM50L	50psi	8.1	21.2	11.3	8.8	4.8	2.7	2.1	1.63	1.06	0.46	0.05	27.6
	87psi	13.1	24.7	18.0	10.2	6.9	5.7	4.1	2.47	0.78	0.28	-	26.7
AM75L	50psi	12.9	26.9	15.7	12.0	6.2	3.9	3.0	2.47	1.52	0.71	0.06	27.6
	87psi	13.1	33.6	25.1	13.4	10.1	8.1	6.0	3.53	1.13	0.39	-	26.7
AM100L	50psi	15.7	30.0	19.4	15.2	9.9	5.1	4.1	3.00	2.12	0.99	0.08	27.6
	87psi	25.4	35.7	28.3	16.3	13.6	11.0	7.6	4.42	1.48	0.55	-	26.7
AM150L	50psi	23.1	42.4	347.4	19.4	12.7	7.6	6.0	4.59	3.18	1.27	0.18	27.6
	87psi	28.6	53.0	39.2	22.3	19.8	13.6	11.1	7.42	2.30	0.92	-	26.7
AL175	87psi	25.8	58.3	34.8	24.2	18.4	11.3	9.2	6.54	3.89	-	-	24.3
AL200	87psi	29.0	72.8	42.4	25.4	20.5	13.1	9.7	7.77	4.77	-	-	24.3

Model	Supply Pressure	Evacuation Time to Different Vacuum Levels sec/ft ³									
		3	6	9	12	15	18	21	24	27	
AM25L	50psi	0.022	0.06	0.11	0.21	0.4	0.65	0.95	1.6	4	
	87psi	0.018	0.05	0.08	0.18	0.25	0.4	0.62	1.55	-	
AM50L	50psi	0.014	0.031	0.06	0.1	0.2	0.34	0.5	0.8	2.5	
	87psi	0.01	0.022	0.048	0.08	0.11	0.2	0.35	0.78	-	
AM75L	50psi	0.012	0.029	0.058	0.095	0.18	0.31	0.46	0.89	1.5	
	87psi	0.009	0.019	0.045	0.075	0.13	0.18	0.31	0.7	-	
AM100L	50psi	0.01	0.025	0.043	0.075	0.11	0.19	0.27	0.45	1.2	
	87psi	0.007	0.018	0.038	0.055	0.8	0.12	0.19	0.47	-	
AM150L	50psi	0.005	0.013	0.027	0.045	0.07	0.105	0.23	0.46	0.9	
	87psi	0.003	0.009	0.014	0.03	0.06	0.095	0.2	0.8	-	
AL175	87psi	0.004	0.013	0.022	0.036	0.058	0.089	0.15	-	-	
AL200	87psi	0.002	0.009	0.018	0.032	0.049	0.08	0.13	-	-	

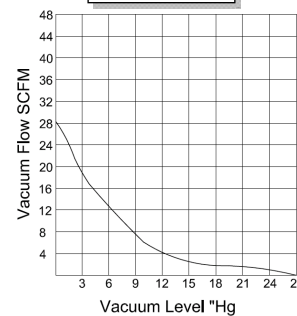
AM25L



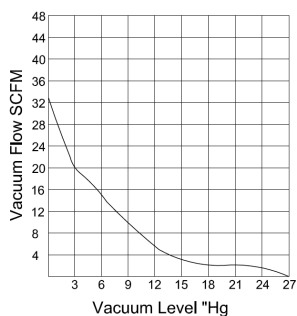
AM50L



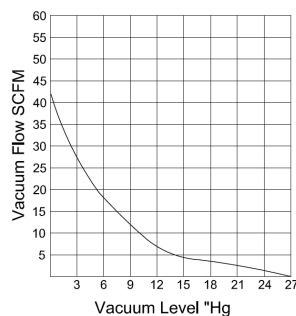
AM75L



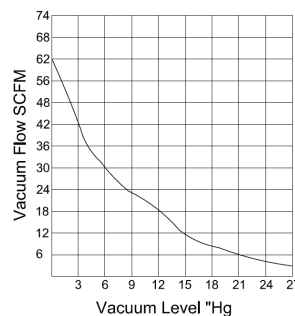
AM100L



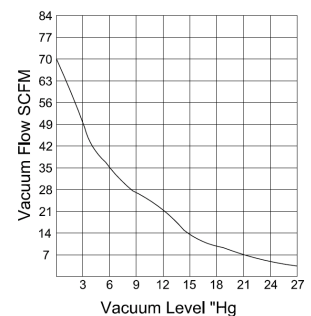
AM150L



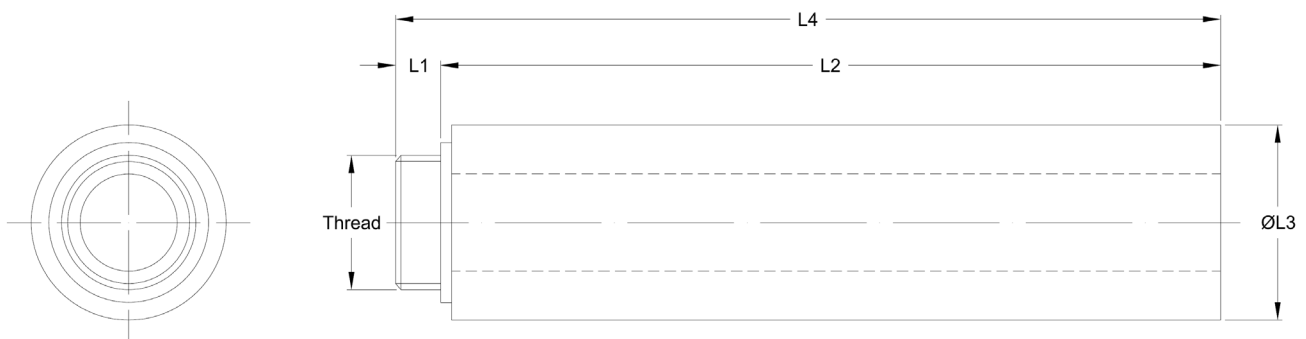
AL175



AL200



These acoustic silencers are used primarily on the ABM, AL and AM multi stage generators as shown on the previous pages. These silencers can be used on other similar type equipment to offer significant sound reduction particularly in environments where personnel are present.



Model	L1	L2	L3	L4	Thread	Weight (g)
ABS02	8	65	Ø20	73	G1/4	20
ABS03	8	64	Ø24	72	G3/8	25
ABS04	7	121	Ø30	128	G1/2	35
ABS06		119	Ø40	126	G3/4	55
ABS08			Ø49		G1	175

ABS06 installed on an
AM50L-B-N generator



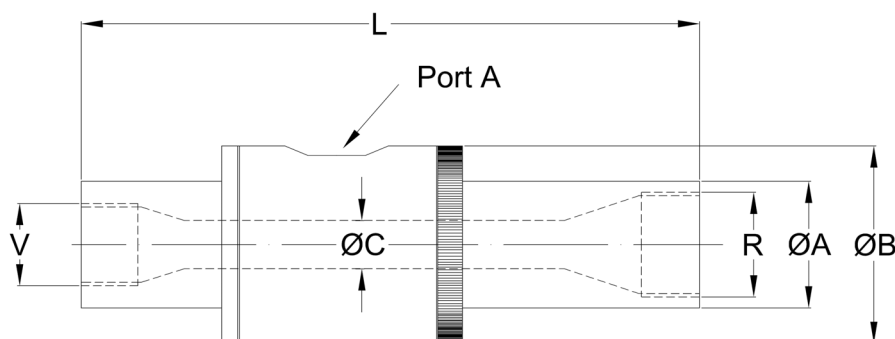
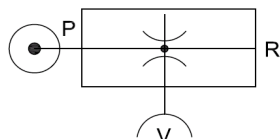


Features:

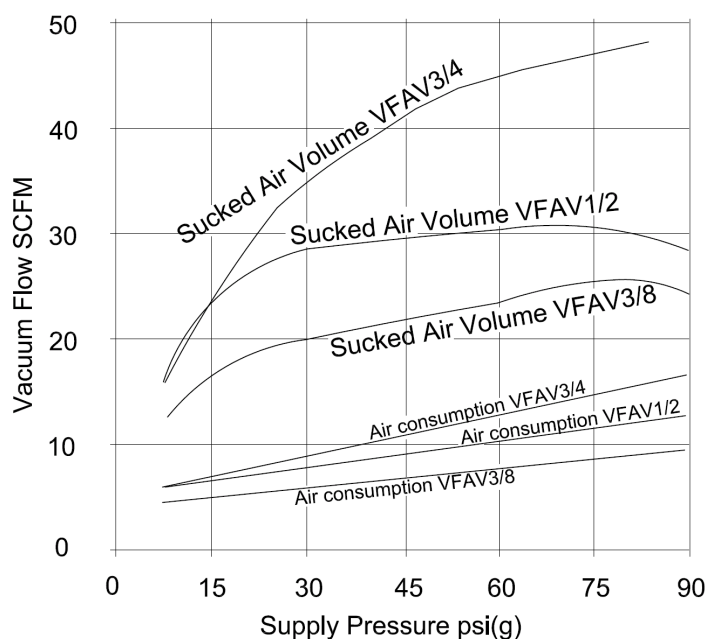
- Lightweight Aluminum Construction
- Hard Anodized Finish – Resistant to abrasion
- No Moving Parts
- No Heat Generation
- Maintenance Free

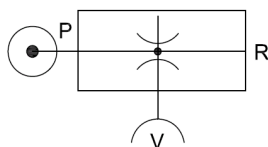
The Vacuforce AV venturi is an adjustable vacuum generator offering a straight through flow design.

The design features highlighted above, make these units particularly suitable for use in dusty or dirty vacuum applications such as brick, concrete, wood and porous box handling. They are adjustable independent of the compressed air inlet pressure, by increasing and decreasing the venturi aperture. This is achieved by rotating the exhaust assembly as shown in the product image opposite. Vacuum levels up to 25"Hg.



Model Number	V	R	Port A	ØA	ØB	ØC	L
VFAV3/8	3/8NPSF	1/2NPSF	1/4NPSF	26	38	10	150
VFAV1/2	1/2NPSF	3/4NPSF	3/8NPSF	32	50	12.5	150
VFAV3/4	3/4NPSF	1NPSF	1/2NPSF	38	57	16	172





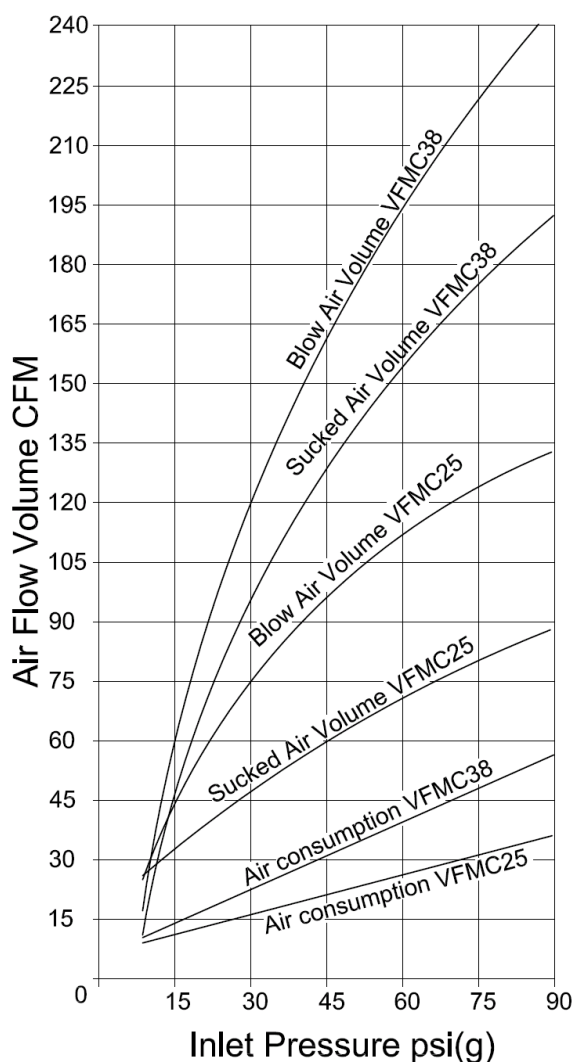
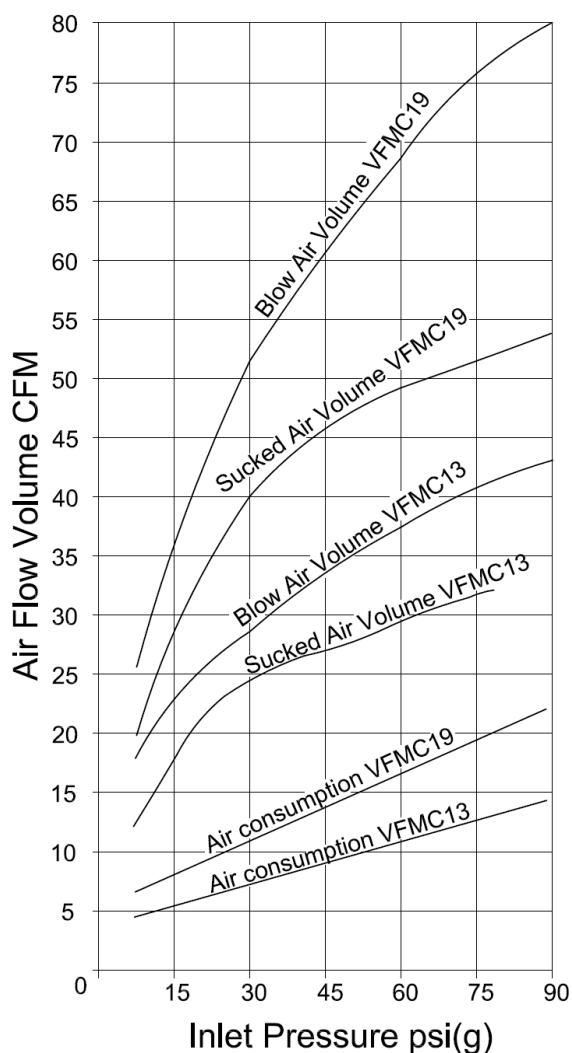
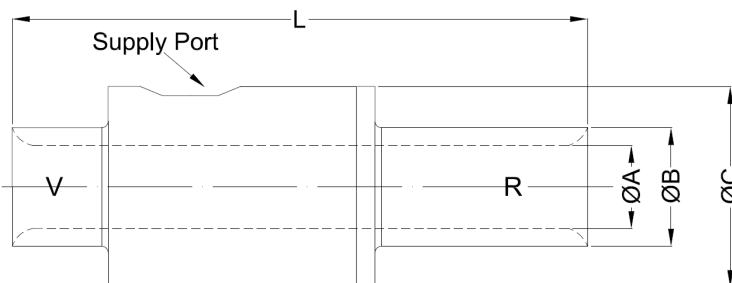
Features:

- Lightweight aluminum construction
- Hard anodized finish – resistant to abrasion
- No moving parts or heat generation
- Maintenance free

Suitable for conveying:

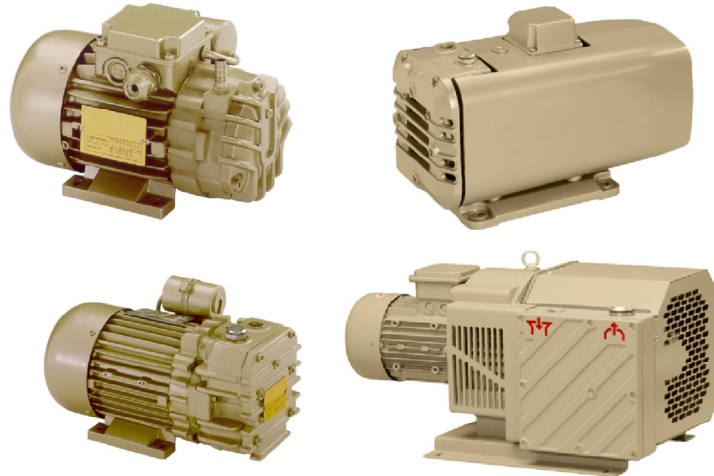
- Powder material, granular material
- Machining swarf, chips, fumes
- Wood chips & small parts

	ØA	ØB	ØC	L	Air Supply
VFMC13	13	25	45	140	1/4NPSF
VFMC19	19	32	54	190	1/4NPSF
VFMC25	25	38	60	190	3/8NPSF
VFMC38	38	51	75	190	3/8NPSF



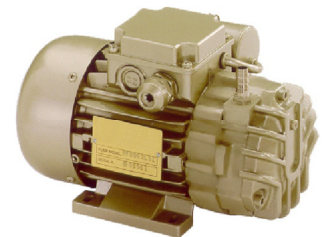
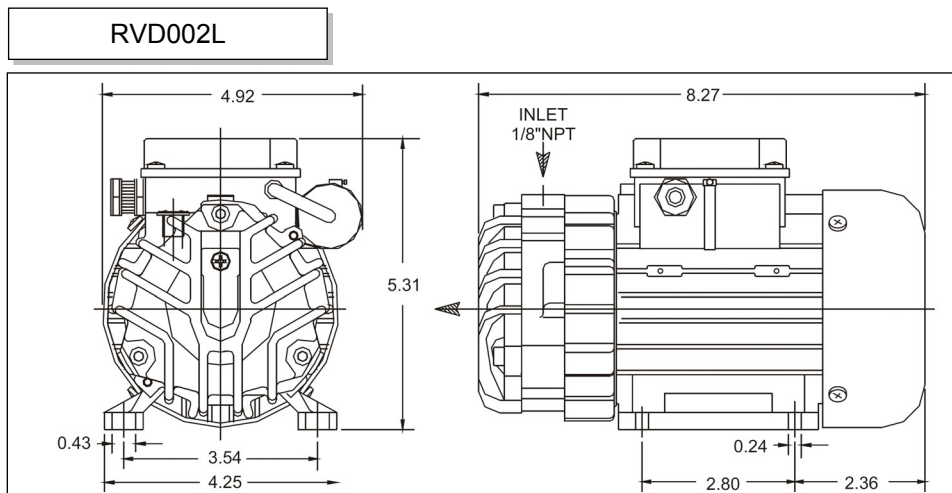
Product Features

- Heavy duty construction
- Compact design, small footprint
- High-tech vane material provides long vane life
- Low noise level
- Low maintenance
- Air cooled design
- Direct drive
- Simple to install

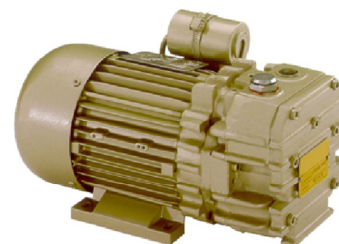
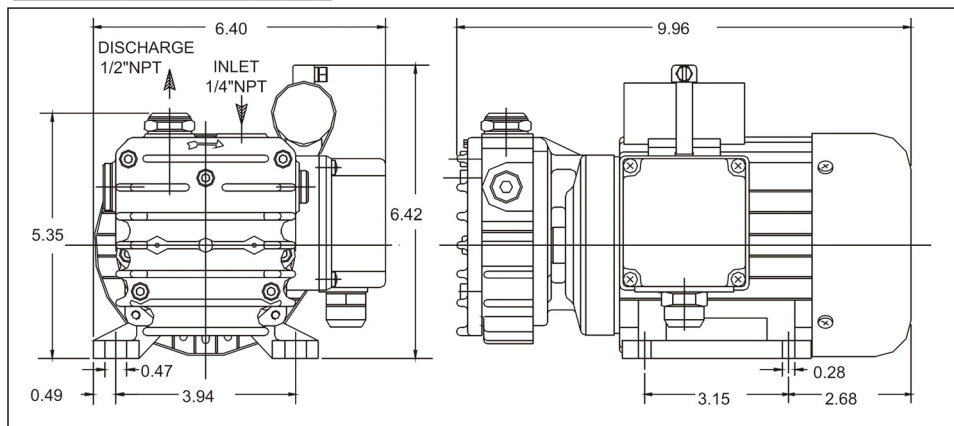


Pump Model Number	Nom Cap (CFM)	Final Pressure (Torr)	Motor 60Hz (HP)	Pump Speed (RPM)	Noise @ 3 ft (dBA)	Wt (Lbs)
RVD002L	2	90	0.25	3400	62	11
RVD004L	4.2	90	0.4	3400	62	18
RVD007L	7	90	0.6	1800	65	34
RVD012L	12	90	1	1800	65	65
RVD018L	18	90	1.25	1800	68	65
RVD028L	28	90	2.5	1800	72	88
RVD040L	42	90	3	1800	72	156
RVD060L	56	90	5	1800	74	162
RVD075L	71	75	5	1800	77	205
RVD100L	100	75	7.5	1800	78	211

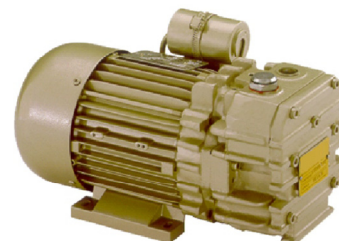
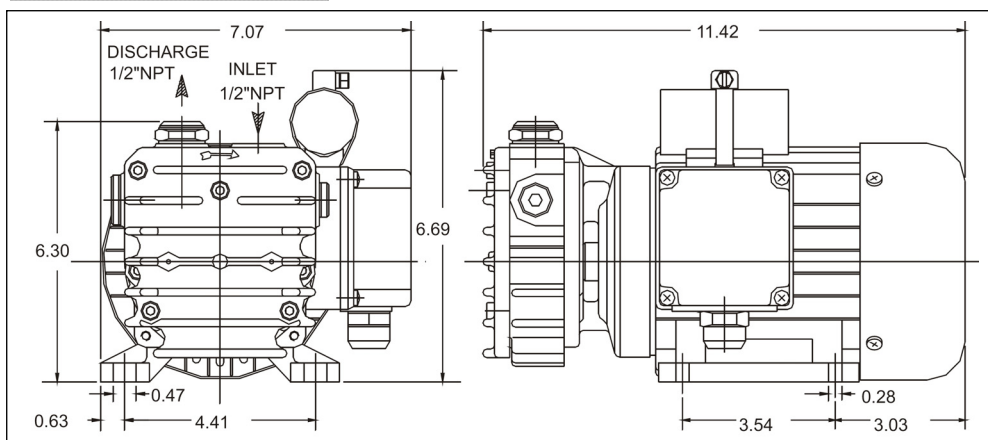
Dimensions (inches)



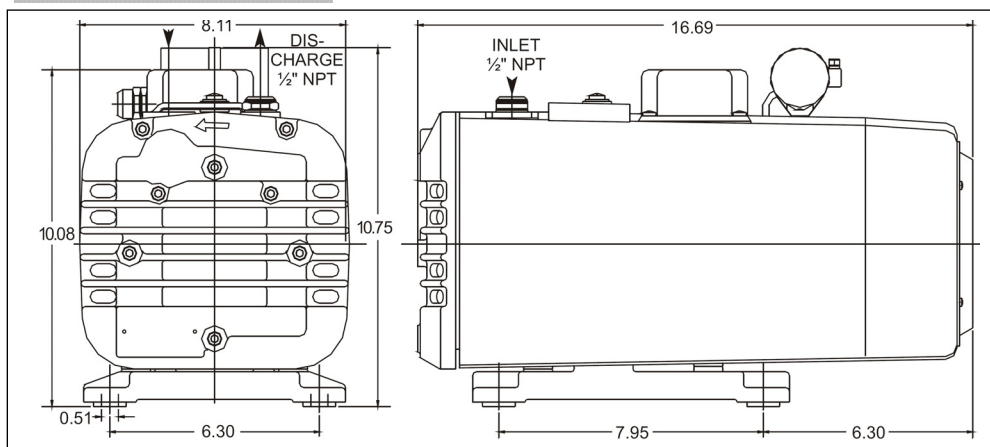
RVD004L



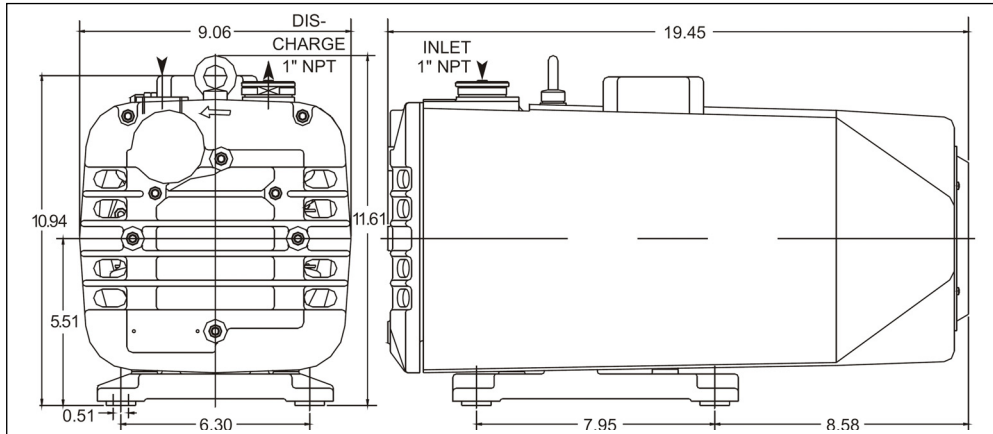
RVD007L



RVD012L & RVD018L

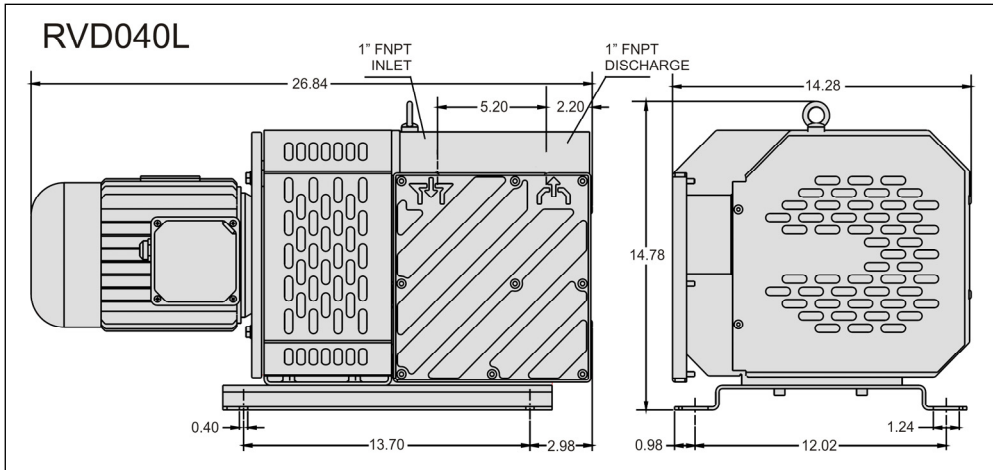


RVD028L



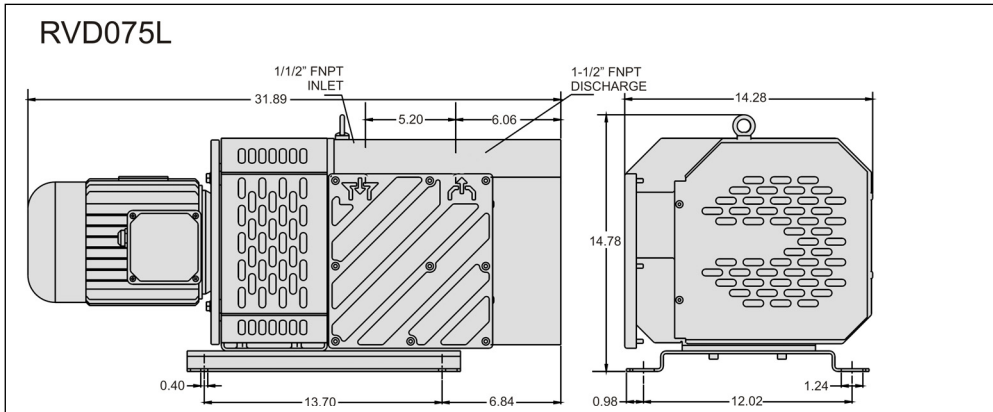
RVD040L & RVD060L

RVD040L



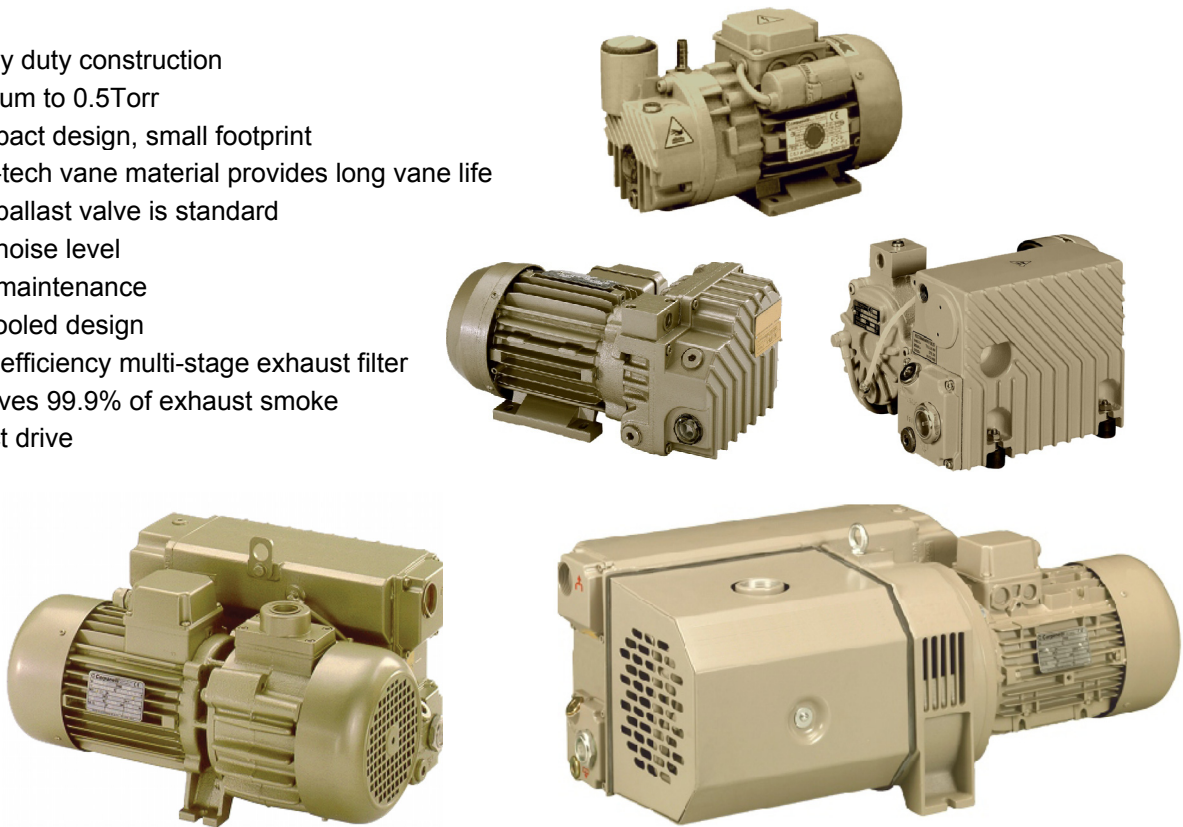
RVD075L & RVD100L

RVD075L



Product Features

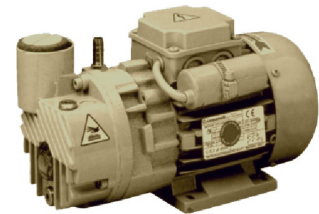
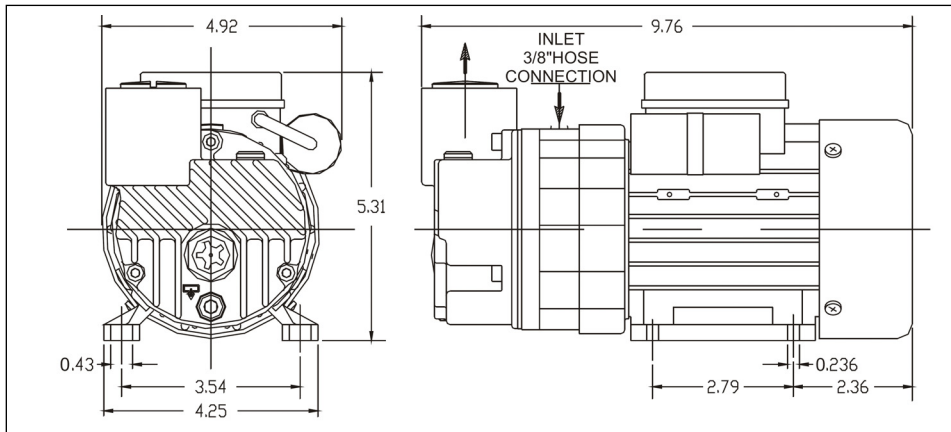
- Heavy duty construction
- Vacuum to 0.5Torr
- Compact design, small footprint
- High-tech vane material provides long vane life
- Gas ballast valve is standard
- Low noise level
- Low maintenance
- Air-cooled design
- High efficiency multi-stage exhaust filter removes 99.9% of exhaust smoke
- Direct drive



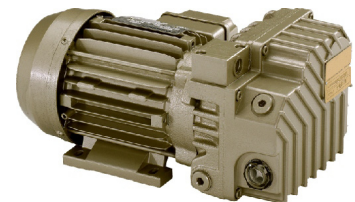
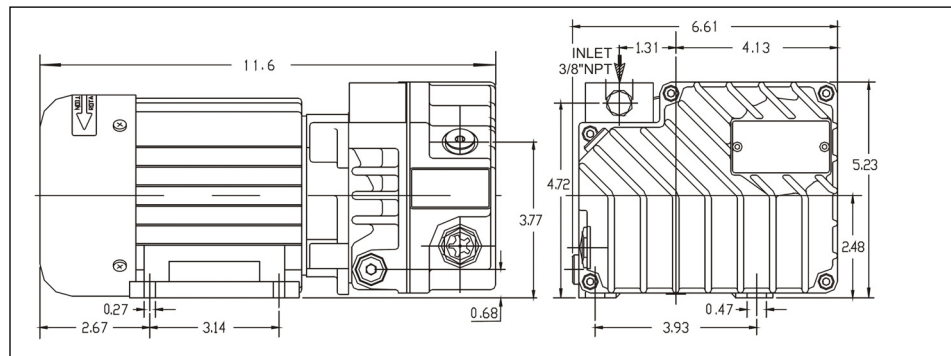
Pump Model Number	Nom Cap (CFM)	Final Pressure (Torr)	Motor 60Hz (HP)	Pump Speed (RPM)	Noise @ 3 ft (dBA)	Wt (Lbs)
RVL002H	2	1.5	0.2	3400	60	12
RVL003H	2.6	1.5	0.2	3400	60	12
RVL006H	5.6	1.5	0.4	3400	60	22
RVL010H	8.5	1.5	0.75	3400	62	35
RVL013H	12.7	1.5	1.25	3400	63	48
RVL020H	19	0.5	1.25	1800	65	55
RVL030H	28	0.5	2	1800	67	96
RVL050H	45	0.5	3	1800	69	98
RVL075H	75	0.4	4	1800	70	155
RVL110H	106	0.4	5	1800	72	176
RVL145H	145	0.4	7.5	1800	74	340
RVL215H	215	0.4	10	1800	76	361

Dimensions (inch)

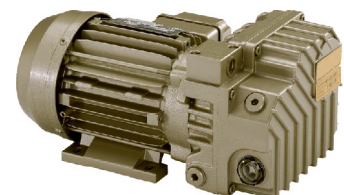
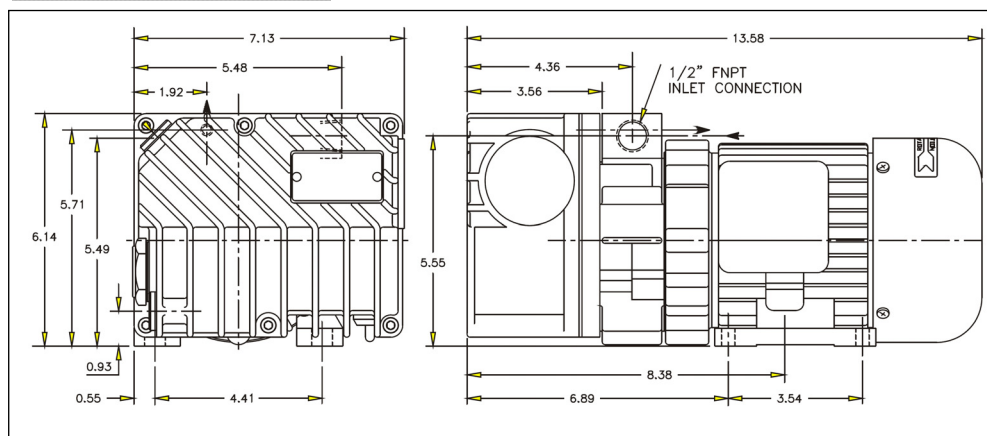
RVL002H / RVL003H



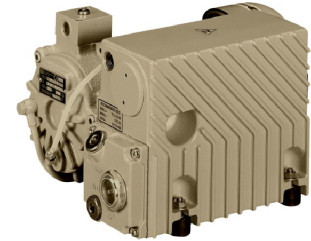
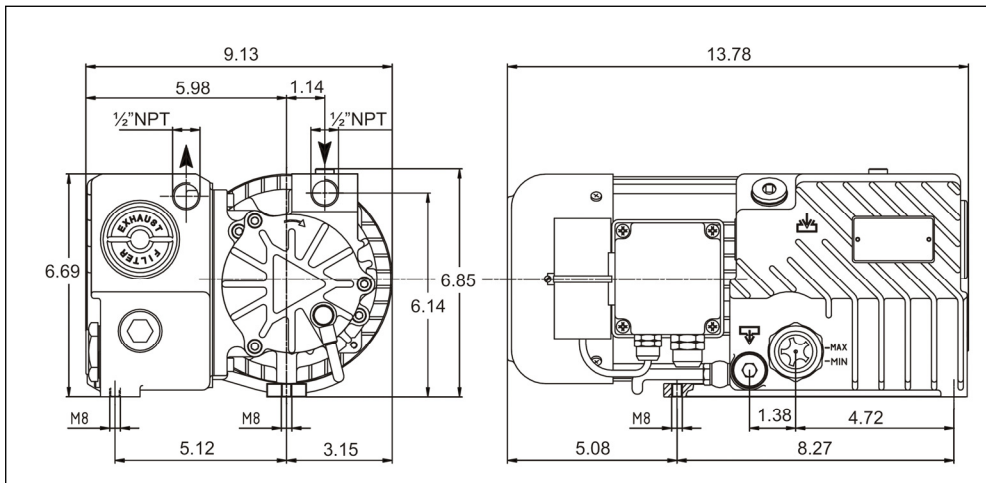
RVL006H



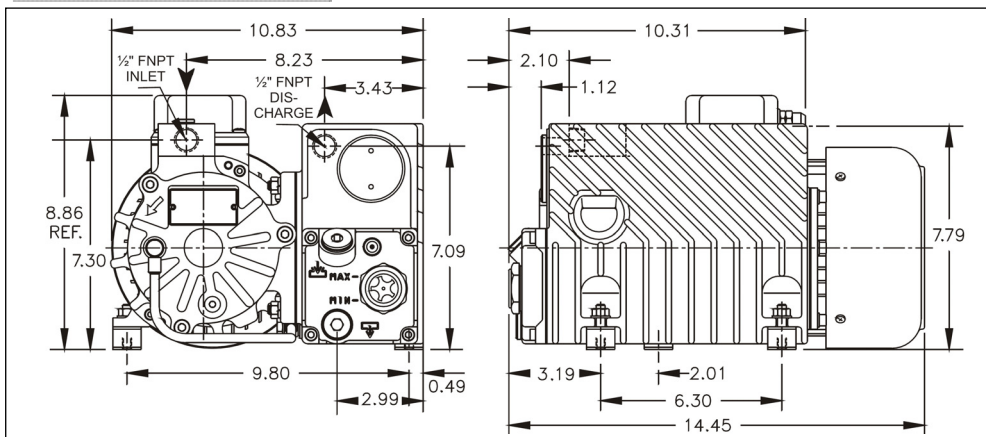
RVL010H



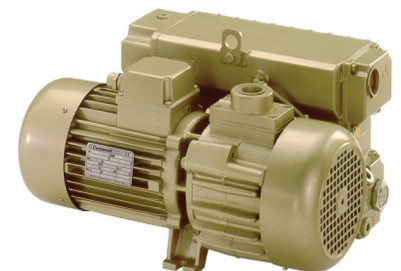
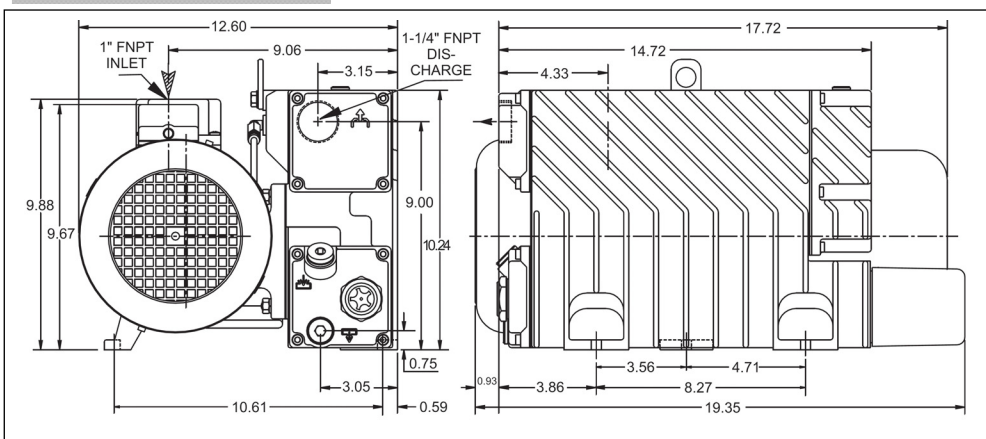
RVL013H



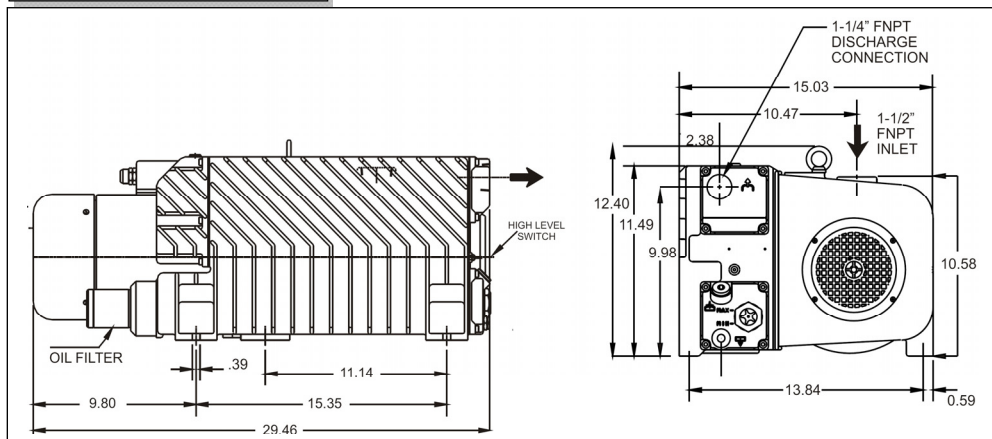
RVL020H



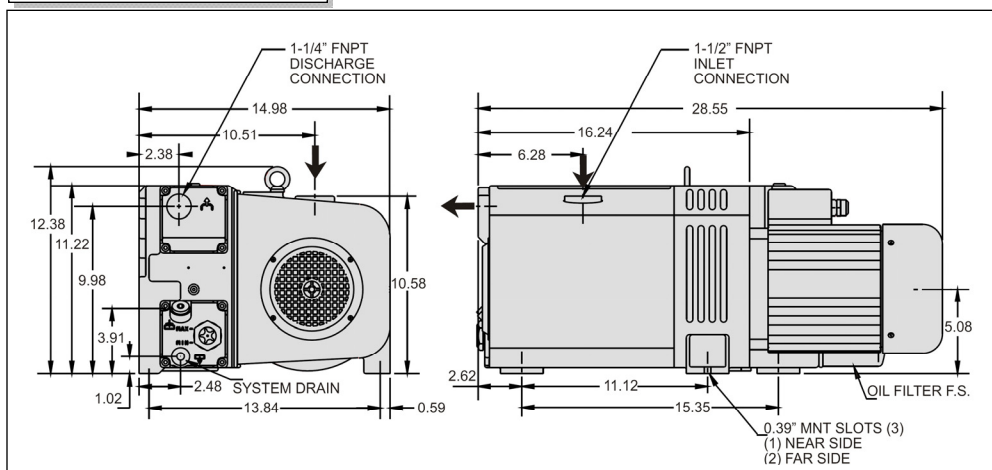
RVL030H & RVL050H



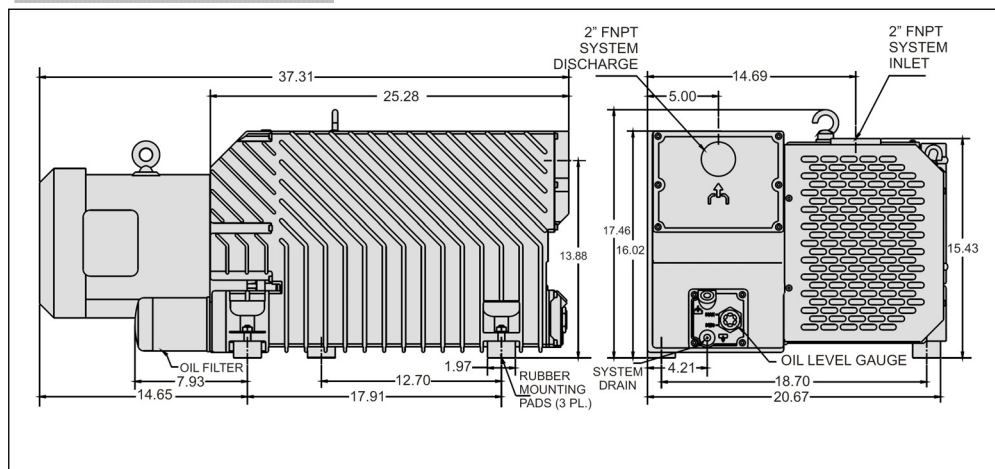
RVL075H



RVL110H



RVL145H & RVL215H





Vacuforce plastic in-line filters provide easy monitoring, economy and safety. These shatterproof filters are 100% airtight, can withstand high pressures up to 150psi(g) and are designed for use in applications where glass cannot be tolerated. A 10 micron porous plastic element prolongs element life under the most adverse environmental conditions.

These filters are typically used on general vacuum applications to prevent impurities from entering the vacuum pump or compressed air venturi inlet.

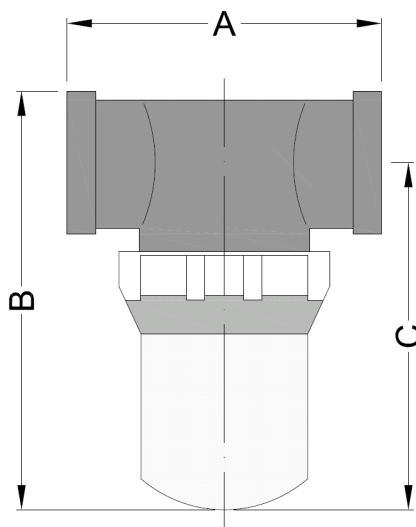
The transparent bowl offers visual inspection of the element condition and the quick release bowl enables fast element replacement.

To filter dust and other harmful particles from the vacuum flow
 Reduces the risk of breakdown or blockage in the pump
 Replaceable porous plastic 10 micron filter element
 Available in 1/8" to 1-1/2" NPT or BSP threads

Pressure Range	29.5"Hg to 150psi(g)
Materials Of Construction	PA (Nylon) Body PC (Polycarbonate) Bowl PE (Polyethylene) Element
Temperature	-4°F to 212°F (-20°C to 100°C)
Filtration Efficiency	10μ (0.01mm)

Model Number	Port Size	Spare Elements
PVF.125-PE	1/8NPT	PE25
PVF.25-PE	1/4NPT	
PVF.375-PE	3/8NPT	
PVF.5-PE	1/2NPT	PE75
PVF.75-PE	3/4NPT	
PVF1.0-PE	1NPT	PE10
PVF1.5-PE	1 1/2NPT	PE15

	PVF.125-PE	PVF.25-PE	PVF.375-PE	PVF.5-PE	PVF.75-PE	PVF1.0-PE	PVF1.5-PE
Weight (oz)	1.70	1.98	2.47	6.61	6.42	15.0	18.8
Flow SCFM	3	4.2	5.4	31	31	89	180
Volume in³	2.1	2.4	2.7	11.9	12.5	30.2	41.2
Filter Area (in²)	4.9	4.9	4.9	16.0	16.0	29.5	35.0



All dimensions in mm

	PVF.125-PE	PVF.25-PE	PVF.375-PE	PVF.5-PE	PVF.75-PE	PVF1.0-PE	PVF1.5-PE
A	75			91		125	129
B	68			136		163	206
C	50			119		141	175



Vacuforce heavy duty filters are normally used on more aggressive applications such as centralized vacuum pump or venturi applications.

The standard elements are pleated paper but pleated polyester is available (suffix /P) for damp applications where moisture is present in the air stream.

Pressure Range	29.5"Hg to 0psi(g)
Materials Of Construction	Plated Steel (Body)
Temperature	-4°F to 212°F (-20°C to 100°C)
Filtration Efficiency	>7μ (0.007mm)

Please note that part numbers with the suffix /P refer to POLYESTER ELEMENT CONSTRUCTION

NPT THREADED MODELS

Part Number	F.002/1	F.002	F.004/3	F.003/3	F.003/5	F.005/3	F.006/3	F.006/5	F.008/2
Flow ACFM	25	25	57	64	64	113	183	212	424
Port Size	½NPT	¾NPT	1 ¼NPT	1 ¼NPT	1 ½NPT	1 ½NPT	2NPT	2 ½NPT	4NPT
Spare Element	K.2034	K.2034	K.2032	K.2051	K.2051	K.2070	K.2050	K.2050	K2063

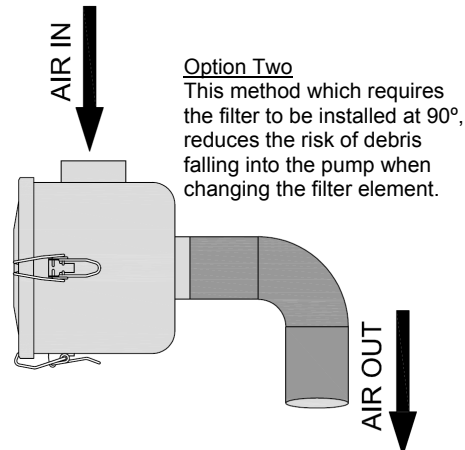
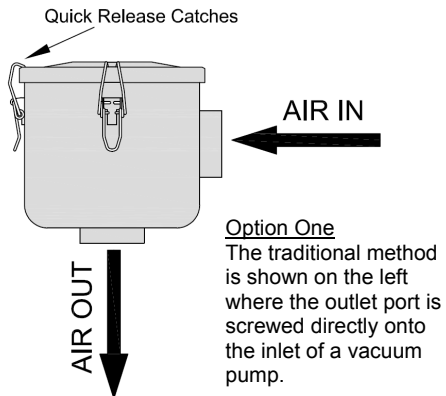
Part Number	F.002/1/P	F.002/P	F.004/3/P	F.003/3/P	F.003/5/P	F.005/3/P	F.006/3/P	F.006/5/P	F.008/2/P
Flow ACFM	25	25	57	64	113	113	183	212	424
Port Size	½NPT	¾NPT	1 ¼NPT	1 ¼NPT	1 ½NPT	1 ½NPT	2NPT	2 ½NPT	4NPT
Spare Element	K.2034/P	K.2034/P	K.2032/P	K.2051/P	K.2051/P	K.2070/P	K.2050/P	K.2050/P	K2063/P

G THREAD (BSPP) MODELS

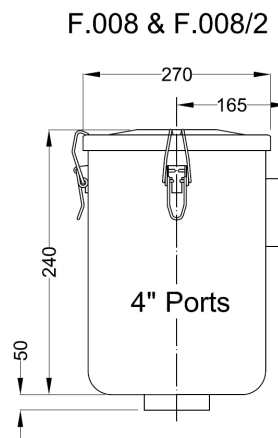
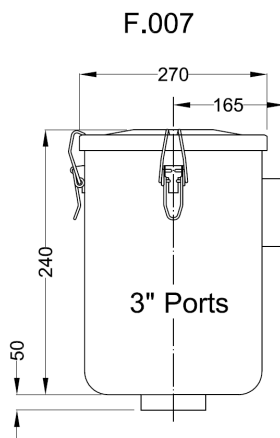
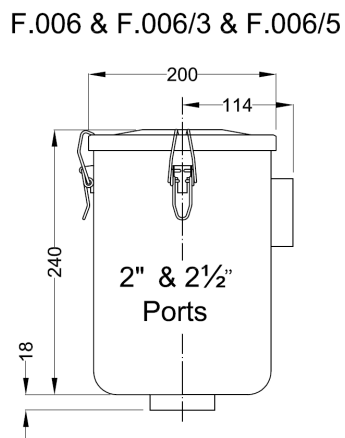
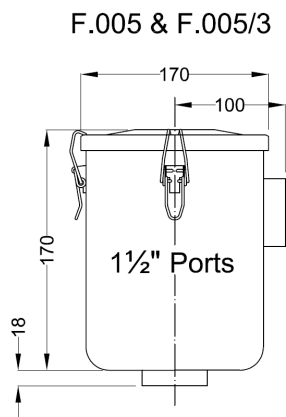
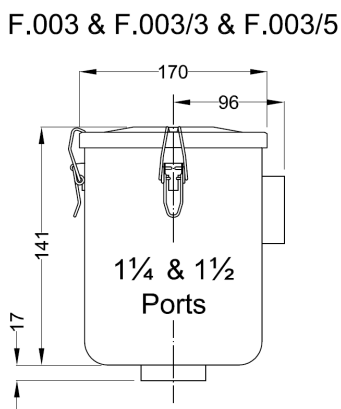
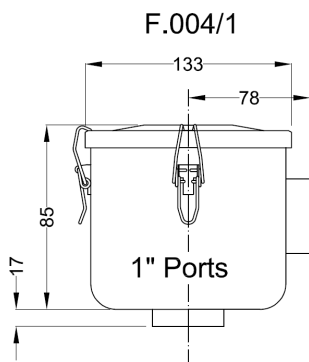
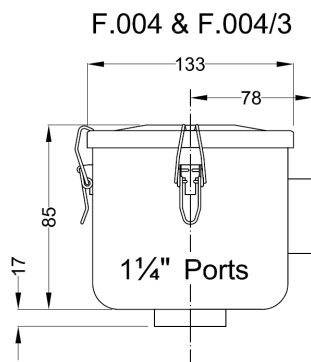
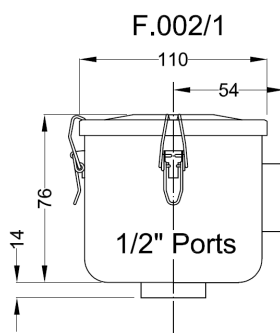
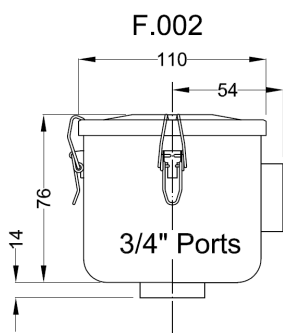
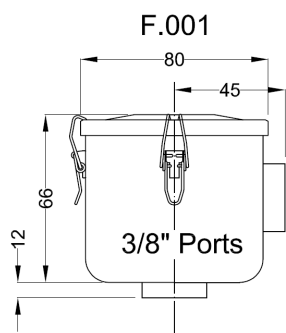
Part Number	F.001	F.002/1	F.002	F.004/1	F.004	F.003	F.005	F.006	F.007	F.008
Flow ACFM	14	25	25	50	57	64	113	183	325	425
Port Size	G ³ / ₈	G ½	G ³ / ₄	G1	G1 ¼	G1 ¼	G 1 ½	G2	G3	G4
Spare Element	K.2093	K.2034	K.2034	K2032	K.2032	K.2051	K.2070	K.2050	K.2063	K.2063

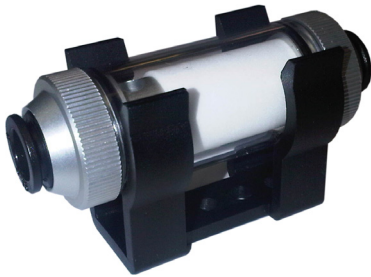
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Flow ACFM	14	25	25	50	57	64	113	183	325	425
Port Size	G ³ / ₈	G ½	G ³ / ₄	G1	G1 ¼	G1 ¼	G 1 ½	G2	G3	G4
Spare Element	K.2093/P	K.2034/P	K.2034/P	K2032/P	K.2032/P	K.2051/P	K.2070/P	K.2050/P	K.2063/P	K.2063/P

Installation Methods



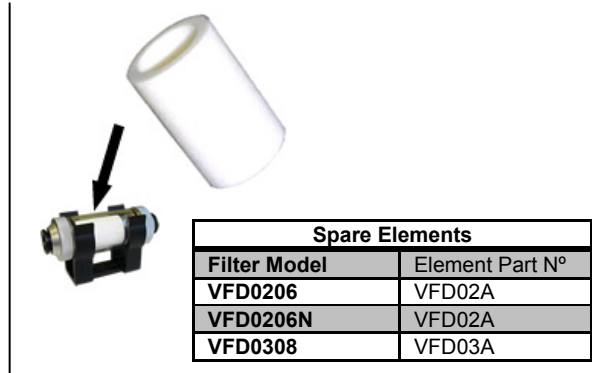
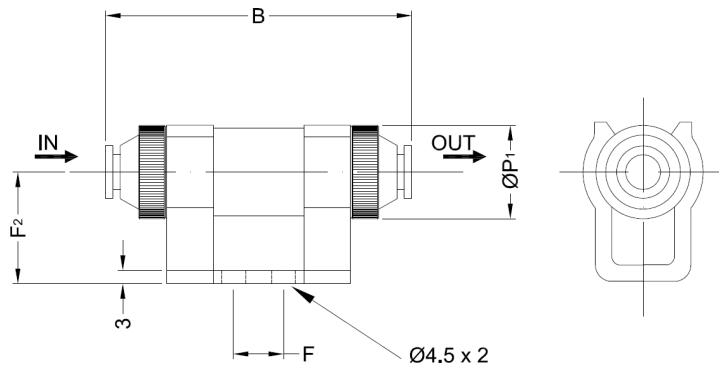
Dimensions (mm)





These small filters are used in applications requiring filtration at the point of use such as vacuum cup handling where a small vacuum venturi is the vacuum source and needs protection from dust and debris being pulled back from the work piece. Both ports are push to connect fittings.

Pressure Range	29.5"Hg to 14psi(g)
Materials Of Construction	Polycarbonate & Aluminum (end caps)
Temperature	32°F to 140°F (0°C to 60°C)
Filtration Efficiency	>10μ (0.010mm)

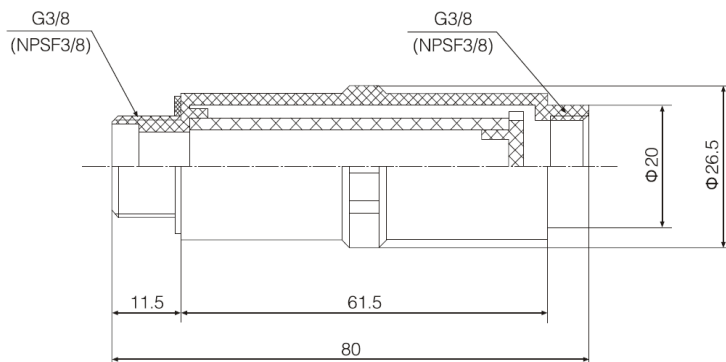


Model	Connection Tube Ø	B	F²	F	ØP	Filter Area	Weight	Spare Element
VFD0206	6mm	58	20	10	19	7.5mm²	25g	VFD02A
VFD0206N	1/4"	58	20	10	19	7.5mm²	25g	VFD02A
VFD0308	5/16"	68	24	14	23	12.5mm²	40g	VFD03A



The ALF filter is used as a simple inline filtration system and is particularly useful for connection to the ABM range of vacuum generators.

Compact and easy to change the ALF filter is able to be connected to both G3/8 and 3/8NPT female ports. The female G3/8 port will accept both G and NPT male 3/8 fittings.



Part Number	ALF-10-IN
Port Size	G3/8 NPSF3/8
Internal Volume	20cm³ / 0.68oz
Porosity	20μ
Weight	13g / 0.5oz
Temperature	32°F to 176°F (0°C to 60°C)
Materials	Polypropylene case Polyethylene element

all dimensions in mm

Vacuum Cup Materials

All Vacuforce vacuum cups are available in a variety of standard and non-standard materials. Different materials are used depending on the items being picked up or the environment the cup is being exposed to. All Vacuforce cups are compression molded offering consistent material conformance. All materials used are original virgin compounds.

Nitrile Rubber (N) Often referred to as oil resistant rubber, this compound is a very good general-purpose material and can be used in the majority of applications. It is resistant to oil, hydrocarbons and gases. This is the most popular compound in general industry. <i>Shore Hardness</i> 60 <i>Temperature Range</i> -40°C to +110°C (-40°F - 230°F) <i>Features</i> High mechanical wear Oil and hydrocarbon resistant <i>Used to handle</i> Steel, Stone, marble and glass <i>Color</i> Black as standard	Silicone Rubber (S) Used primarily for high temperature applications and applications requiring a flexible compliance of the cup. Silicone has the same resistance to oil, hydrocarbons and grease as Nitrile rubber. However the mechanical wear resistance is poor compared to NBR. <i>Shore Hardness</i> 40 <i>Temperature Range</i> -50°C to +300°C (-58°F - 572°F) <i>Features</i> Oil and hydrocarbon resistant Very flexible Non-marking <i>Used to handle</i> High temperature items. Cardboard and plastic film handling.
Polyurethane (PU) Polyurethane vacuum cups have the same fundamental vacuum cup properties as Nitrile rubber but also offer a non marking property. This makes them ideal for use in handling glass or decorative stone to prevent an oil film residue. These are also ideal for handling steel plate which is to be painted. <i>Shore Hardness</i> 30-60 <i>Temperature Range</i> -25°C to +80°C (-13°F - 176°F) <i>Features</i> High mechanical wear Oil and hydrocarbon resistant <i>Used to handle</i> Steel, stone, marble and glass <i>Color</i> Various	Special Compounds Vacuforce specialize in the handling of products in ALL industries and as such have developed special compounds for their customers. These include: <i>Antistatic materials</i> <i>Non-marking compounds</i> EPDM fluorocarbon (Viton®) High temperature <i>Call with your requirement</i>

Technical Data The holding force for vacuum cups can be calculated using the following formula. Lifting Force (lbs) = Area of cup (in²) @100% vacuum (ref 29.92"Hg) Therefore if using the vacuum cup at 15"Hg the Force would be 50% less. e.g. A 3" diameter cup has an area of 7.07in² (πr²) and therefore can hold 14.7lbs per in² = 104lbs. At 10"Hg this cup will hold 34.67 lb	Considerations should be made to the handling process. For example the following would affect the holding force. <ul style="list-style-type: none"> • Porous Load • If the grip plane of the load is not horizontal • Rough or irregular surfaces • Handling Speed Inertia
---	--

Material Resistance					
Material	Wear Resistance	Oil	UV /Weather & Anti Aging	Oxidation	Non Marking
NBR	☺	☺	☺	☺	☺
Silicone	☺	☺	☺	☺	☹
PUR	☺	☺	☺	☺	☺

The Vacuforce VFB series of vacuum cups are designed to offer the vacuum user a simple and effective generic style cup. The single bellows style offer slight vertical movement aiding sheet separation and also compliance on concave and convex surfaces. These cups are available in both Nitrile and Silicone rubber with a 60 and 40 Durometer hardness respectively.

Part Number Matrix			Material Codes	
Series	Ø	Material	N	Nitrile Rubber
VFB	40-2	N,S,ST	S	Red Silicone Rubber
example VFB40-2S			ST	White Translucent Silicone Rubber

VFB10-2
VFB15-2



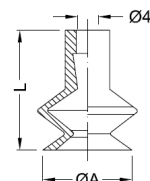
Cup # VFB10-2*
Cup # VFB15-2*

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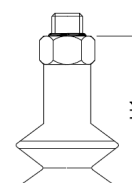
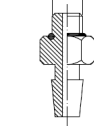
Fitting # VF0008061.5
M5
(10-32UNF)

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Cup & Fitting Assembled



* indicates cup material



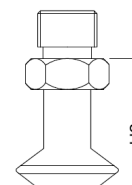
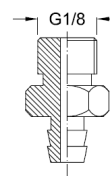
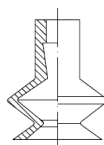
Cup # VFB10-2*
Cup # VFB15-2*

+

Fitting # VF000867

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Cup & Fitting Assembled



	ØA	L	H1	H2
VFB10-2*	11	17	21.5	22
VFB15-2*	16	19.5	24	24.5

VFB20



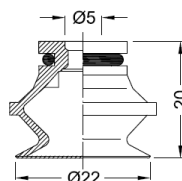
Cup # VFB20*

+

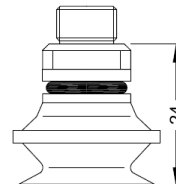
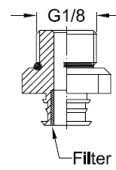
Fitting # VFPF20G1/8M

=

Cup & Fitting Assembled



* indicates cup material



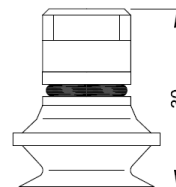
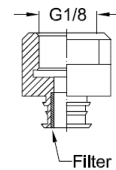
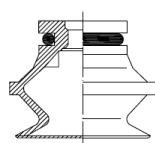
Cup # VFB20*

+

Fitting # VFPF20G1/8F

=

Cup & Fitting Assembled



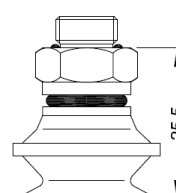
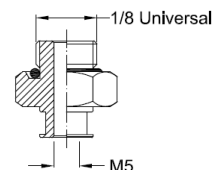
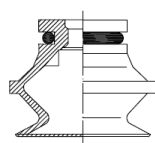
Cup # VFB20*

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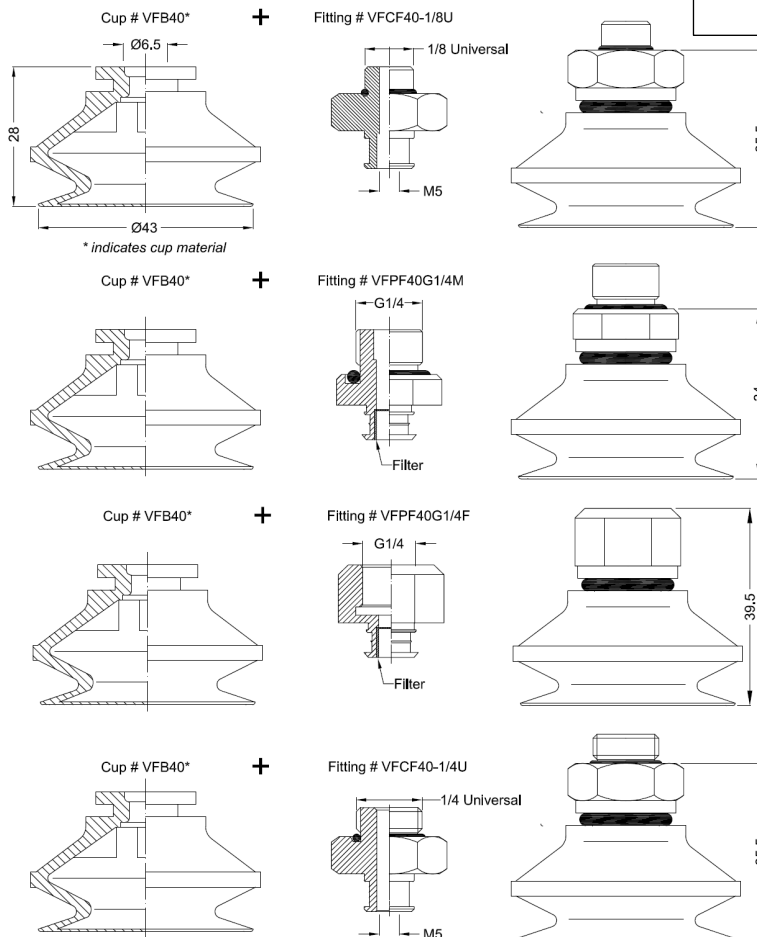
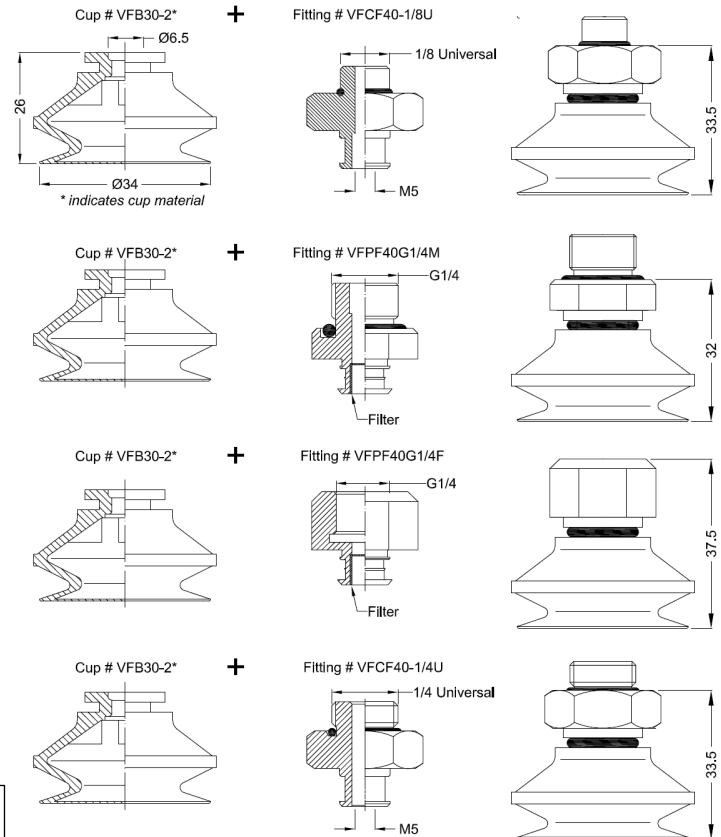
Fitting # VFCF20-1/8U

=

Cup & Fitting Assembled



VFB30-2



VFB40

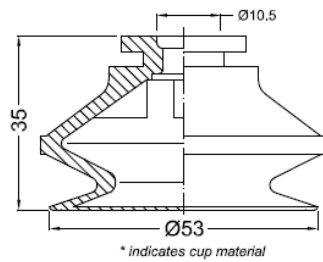


Cup Materials	
N	Nitrile Rubber
S	Silicone Rubber
ST	Translucent Silicone

VFB50-2



Cup # VFB50-2*

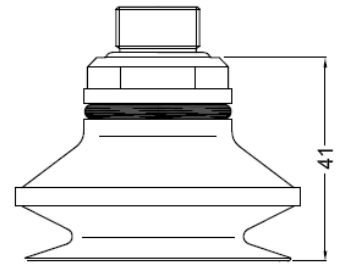
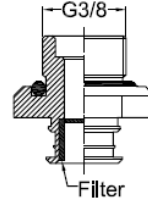


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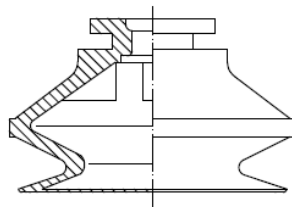
Fitting # VFPF50G3/8M

=

Cup & Fitting Assembled



Cup # VFB50-2*

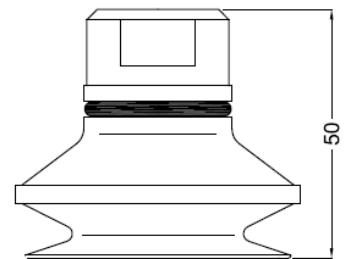
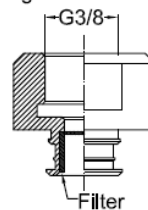


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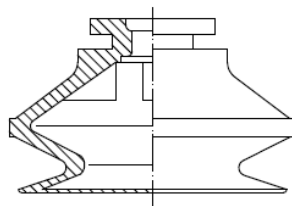
Fitting # VFPF50G3/8F

=

Cup & Fitting Assembled



Cup # VFB50-2*

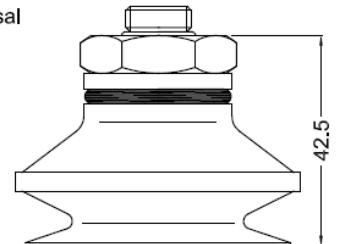
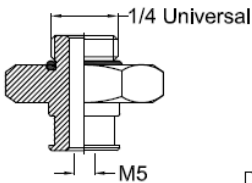


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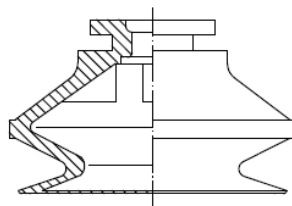
Fitting # VF50-1/4U

=

Cup & Fitting Assembled



Cup # VFB50-2*

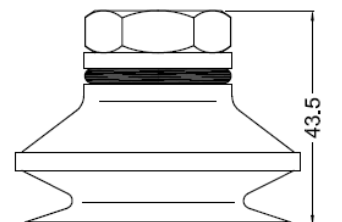
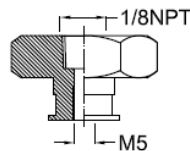


+

Fitting # VF50-1/8FNPT

=

Cup & Fitting Assembled



Cup Materials

N	Nitrile Rubber
S	Silicone Rubber
ST	Translucent Silicone

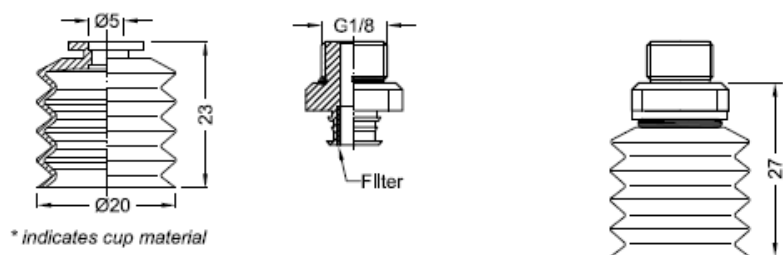
These multiple bellows cups are able to deform to the surface of bags, plastic materials and foodstuffs with ease due to the web thickness of the cup (inside to outside diameter)

These cups are available in Nitrile and silicone rubber which have a 60 and 40 Durometer respectively.

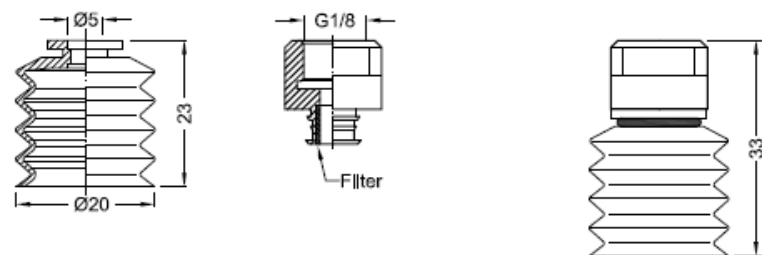
Part Number Matrix			Material Codes	
Series	Ø	Material	N	Nitrile Rubber
VFBL	40-2	N,S,ST	S	Red Silicone Rubber
example VFBL40-2S			ST	White Translucent Silicone Rubber

VFBL20-2

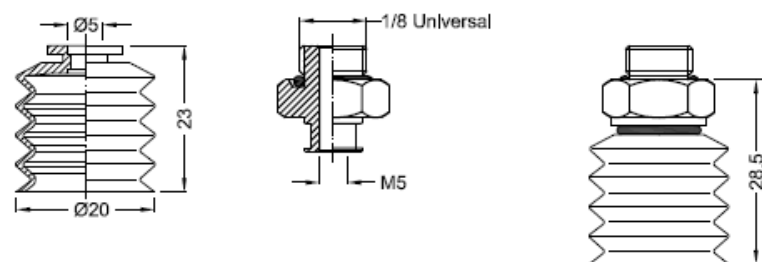
Cup # VFBL20-2* + Fitting # VFPF20G1/8M = Cup & Fitting Assembled



Cup # VFBL20-2* + Fitting # VFPF20G1/8F = Cup & Fitting Assembled



Cup # VFBL20-2* + Fitting # VFCE20-1/8U = Cup & Fitting Assembled



Cup Materials	
N	Nitrile Rubber
S	Silicone Rubber
ST	Translucent Silicone

all dimensions are mm

VFBL30-2

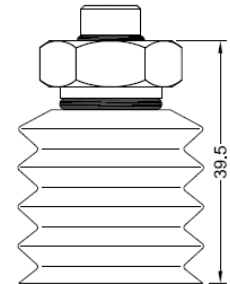
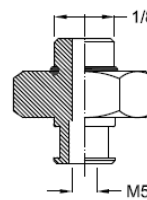
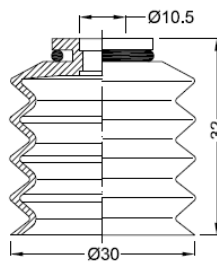


Typical application on
The Squid universal
vacuum lifter.

Cup # VFB30-2* +

Fitting # VFCF40-1/8U =

Cup & Fitting Assembled

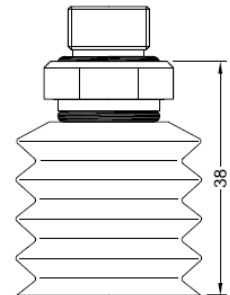
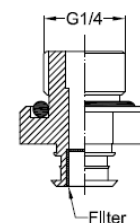
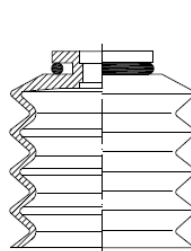


* indicates cup material

Cup # VFBL30-2* +

Fitting # VFPP40G1/4M =

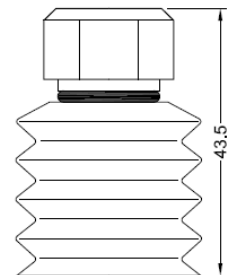
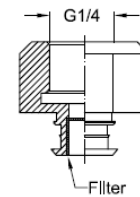
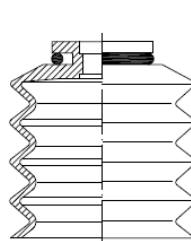
Cup & Fitting Assembled



Cup # VFBL30-2* +

Fitting # VFPP40G1/4F =

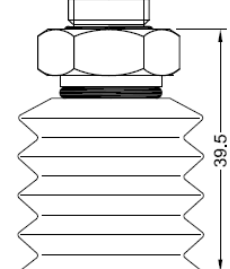
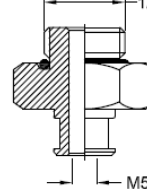
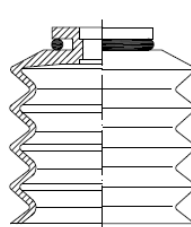
Cup & Fitting Assembled



Cup # VFB30-2* +

Fitting # VFCF40-1/4U =

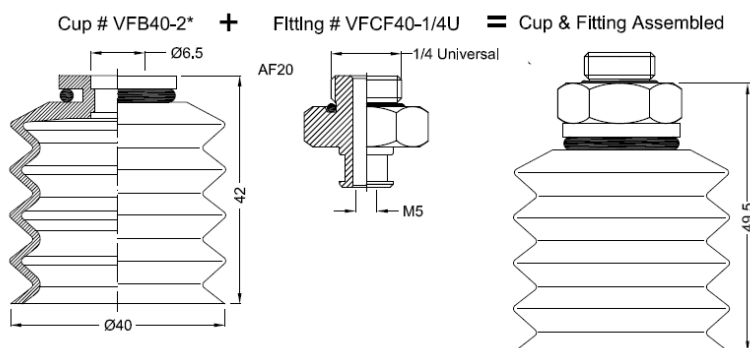
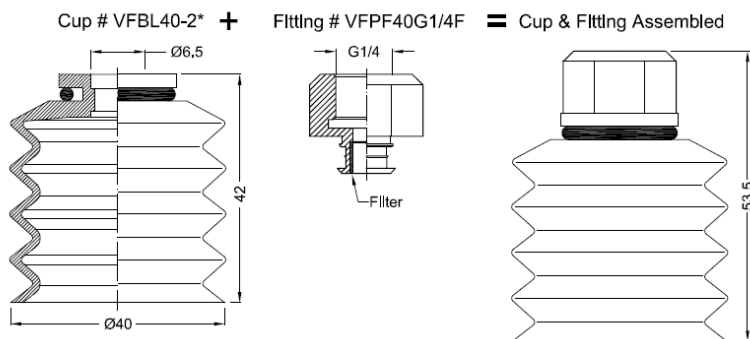
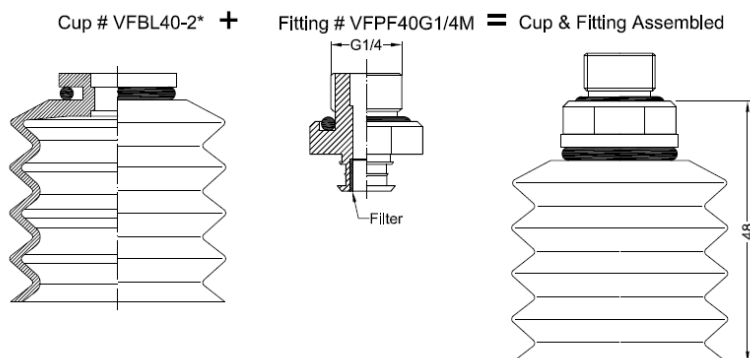
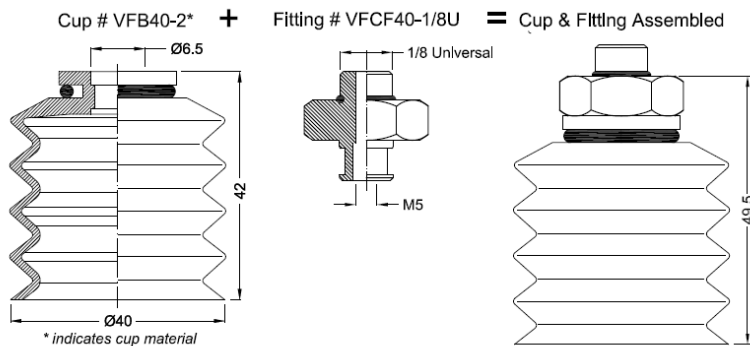
Cup & Fitting Assembled



Cup Materials	
N	Nitrile Rubber
S	Silicone Rubber
ST	Translucent Silicone

all dimensions are mm

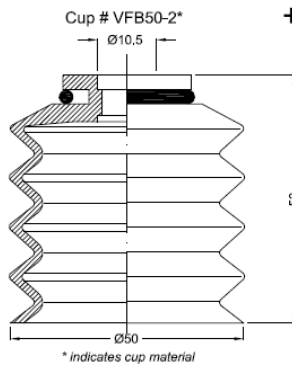
VFBL40-2



Cup Materials	
N	Nitrile Rubber
S	Silicone Rubber
ST	Translucent Silicone

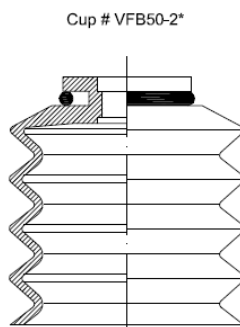
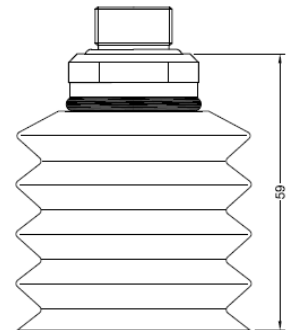
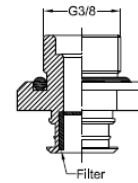
all dimensions are mm

VFBL50-2



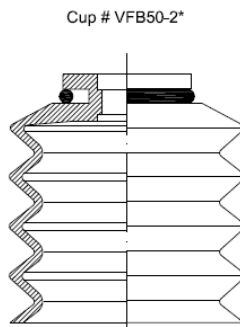
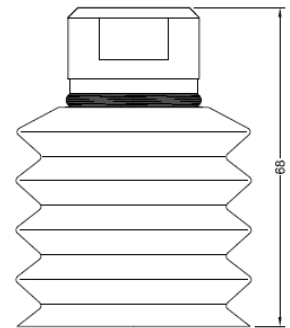
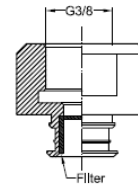
Fitting # VFPF50G3/8M

= Cup & Fitting Assembled



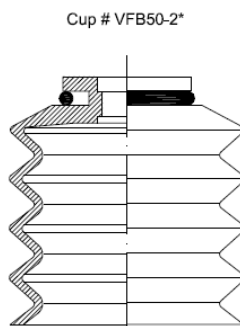
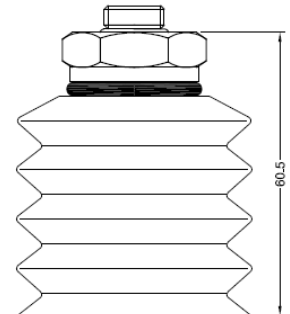
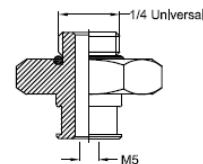
Fitting # VFPF50G3/8F

= Cup & Fitting Assembled



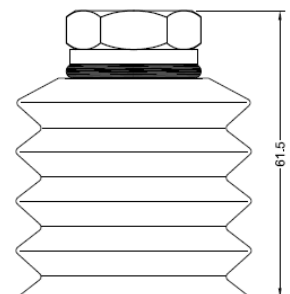
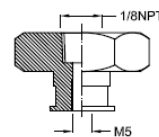
Fitting # VFCF50-1/4U

= Cup & Fitting Assembled



Fitting # VFCF50-1/8FNPT

= Cup & Fitting Assembled



all dimensions are mm

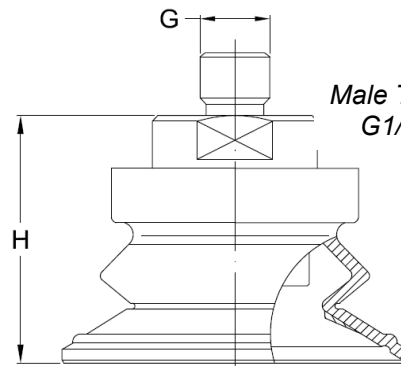
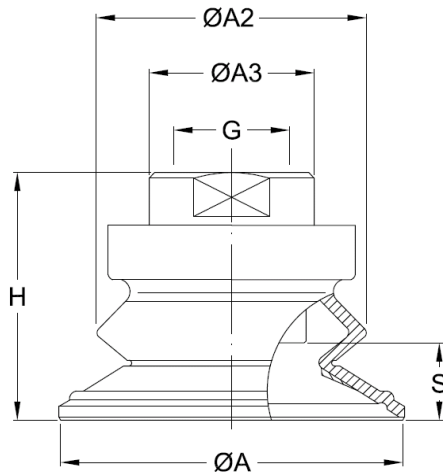
Cup Materials

N	Nitrile Rubber
S	Silicone Rubber
ST	Translucent Silicone

The Vacuforce SBF series of vacuum cups are designed to offer the vacuum user a cup that can pick up on angled surfaces and adapt to products such as formed sheet steel that has a tight radius. The cups include an aluminum male or female threaded fitting for machinery and vacuum source connection.

This cup is available as standard in **POLYURETHANE** which is a MARK FREE compound, as flexible as rubber but much harder wearing. Ideal for handling pressed steel sheet and glass products. Standard Durometer is 60. Other Durometer grades are available upon request.

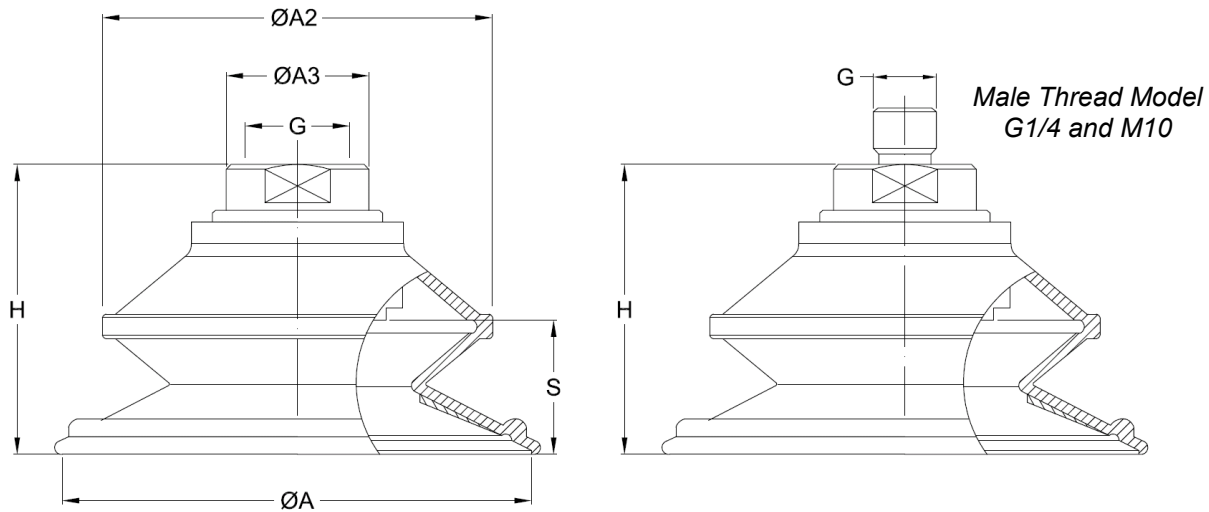
The single bellows design offers slight vertical movement when vacuum is applied independent of the machinery aiding sheet separation and also compliance on concave and convex surfaces.



*Male Thread Model
G1/4 and M10*

Cup Part Number	ØA	ØA2	ØA3	G	H	S
SBF30-PU-18F	30	32	20	G1/8	28	7
SBF30-PU-14F				G1/4		
SBF30-PU-38F				G3/8	35	
SBF30-PU-38NPSF				3/8NPSF		
SBF30-PU-14M				G1/4	28	
SBF30-PU-M10M				M10	28	
SBF40-PU-18F	40	32	20	G1/8	29	9
SBF40-PU-14F				G1/4		
SBF40-PU-38F				G3/8	35	
SBF40-PU-38NPSF				3/8NPSF		
SBF40-PU-14M				G1/4	29	
SBF40-PU-M10M				M10		
SBF50-PU-18F	50	40	25	G1/8	37	12
SBF50-PU-14F				G1/4		
SBF50-PU-38F				G3/8		
SBF50-PU-38NPSF				NPSF		
SBF50-PU-14M				G1/4		
SBF50-PU-M10M				M10		

All dimensions are mm



Cup Part Number	ØA	ØA2	ØA3	G	H	S
SBF60-PU-18F	60	50	15	G1/8	41.5	15
SBF60-PU-14F				G1/4		
SBF60-PU-38F				G3/8		
SBF60-PU-38NPSF				3/8NPSF		
SBF60-PU-12F				G1/2		
SBF60-PU-14M				G1/4		
SBF60-PU-M10M				M10		
SBF80-PU-18F	80	68	22.5	G1/8	50	22.5
SBF80-PU-14F				G1/4		
SBF80-PU-38F				G3/8		
SBF80-PU-38NPSF				3/8NPSF		
SBF80-PU-12F				G1/2		
SBF80-PU-14M				G1/4		
SBF80-PU-M10M				M10		
SBF100-PU-18F	100	83	21	G1/8	55	20.5
SBF100-PU-14F				G1/4		
SBF100-PU-38F				G3/8		
SBF100-PU-38NPSF				3/8NPSF		
SBF100-PU-12F				G1/2		
SBF100-PU-14M				G1/4		

All dimensions are mm



The VFDB series of vacuum cups are available in both a Dual Durometer polyurethane material where the lip has a 30 Durometer and the body has a 60 Durometer hardness (material code DD).

They are also available in NBR (60 Durometer) and silicone (40 Durometer) rubber.

These cups can be connected to a variety of standard fittings as shown in the illustrations on the proceedings pages. The cups and fittings should be ordered separately.

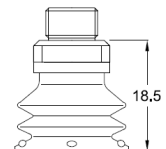
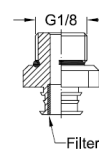
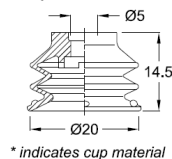
Material Codes	
DD	Dual Durometer
N	Nitrile Rubber
S	Red Silicone Rubber
ST	Translucent White Silicone Rubber

Part Number Matrix		
Series	Model	Material
VFDB	40	DD, N, S or ST
Example VFDB40DD		

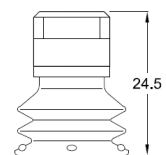
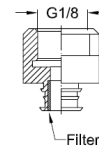
VFDB20



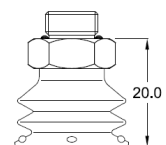
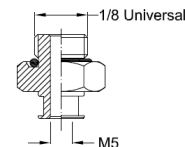
Cup # VFDB20* + Fitting # VFPPF20G1/8M = Cup & Fitting Assembled



Cup # VFDB20* + Fitting # VFPPF20G1/8F = Cup & Fitting Assembled



Cup # VFDB20* + Fitting # VFDCF20-1/8U = Cup & Fitting Assembled



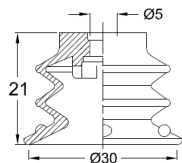
Cup Materials	
DD	Dual Durometer
N	Nitrile Rubber
S	Silicone Rubber
ST	Translucent Silicone

all dimensions are mm

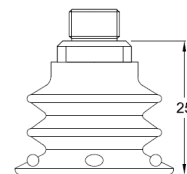
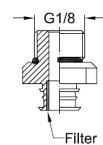
VFDB30



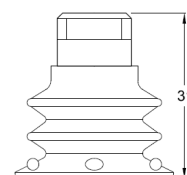
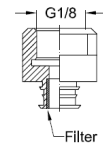
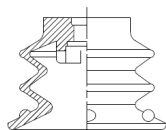
Cup # VFDB30* + Fitting # VFPF20G1/8M = Cup & Fitting Assembled



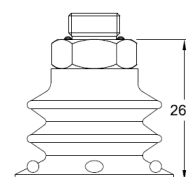
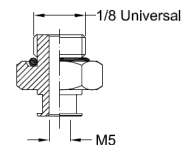
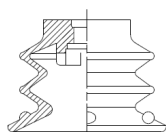
* indicates cup material



Cup # VFDB30* + Fitting # VFPF20G1/8F = Cup & Fitting Assembled



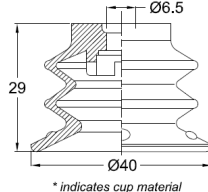
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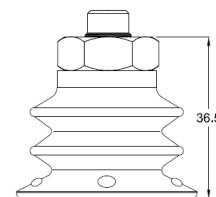
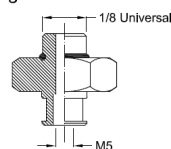
VFDB40



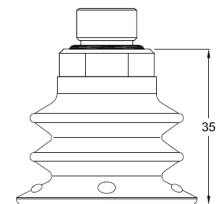
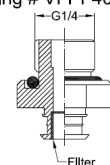
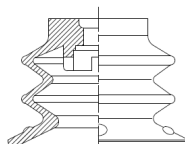
Cup # VFDB40* + Fitting # VFCF40-1/8U = Cup & Fitting Assembled



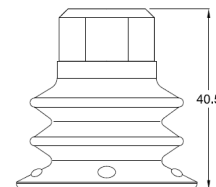
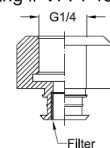
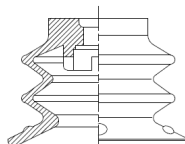
* indicates cup material



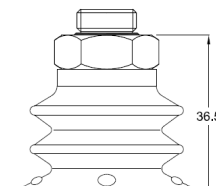
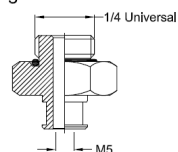
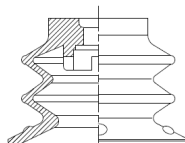
Cup # VFDB40* + Fitting # VFPF40G1/4M = Cup & Fitting Assembled



Cup # VFDB40* + Fitting # VFPF40G1/4F = Cup & Fitting Assembled



Cup # VFDB40* + Fitting # VFCF40-1/4U = Cup & Fitting Assembled



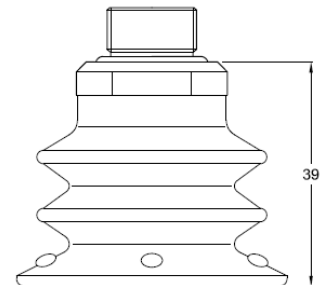
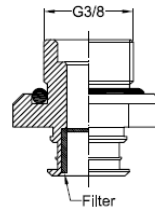
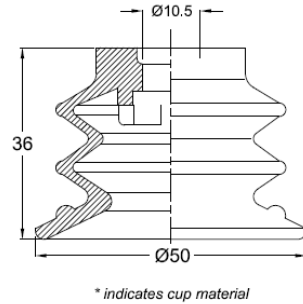
Cup Materials	
DD	Dual Durometer
N	Nitrile Rubber
S	Silicone Rubber
ST	Translucent Silicone

all dimensions are mm

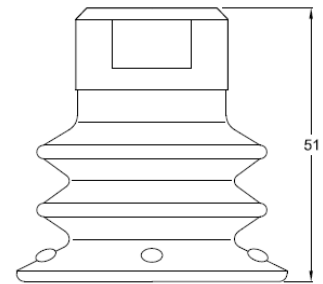
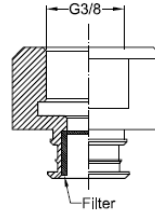
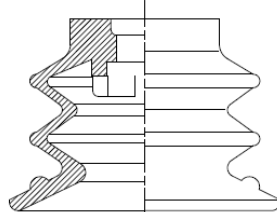
VFDB50



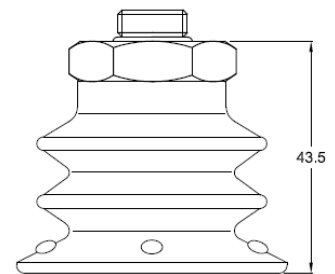
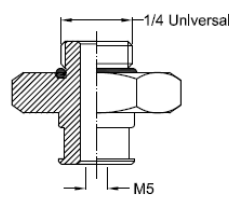
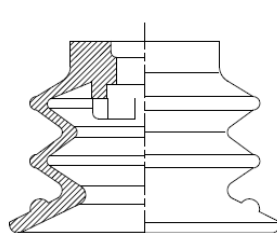
Cup # VFDB50* + Fitting # VFPF50G3/8M = Cup & Fitting Assembled



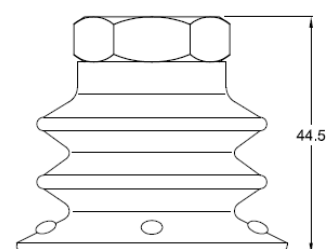
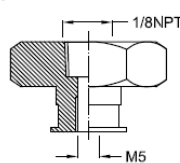
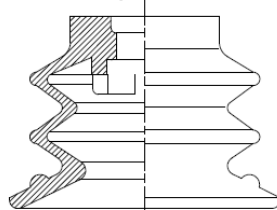
Cup # VFDB50* + Fitting # VFPF50G3/8F = Cup & Fitting Assembled



Cup # VFDB50* + Fitting # VF50-1/4U = Cup & Fitting Assembled



Cup # VFDB50* + Fitting # VF50-1/8FNPT = Cup & Fitting Assembled



Cup Materials

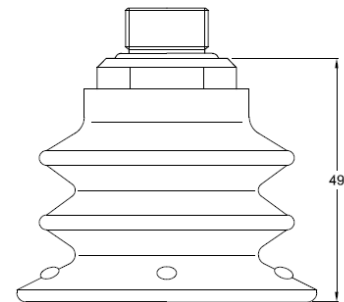
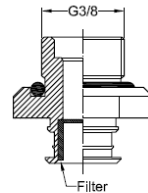
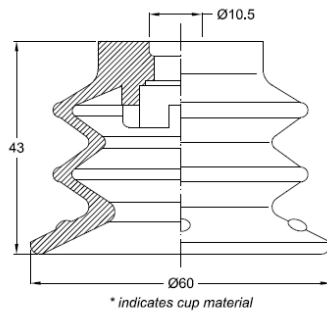
DD	Dual Durometer
N	Nitrile Rubber
S	Silicone Rubber
ST	Translucent Silicone

all dimensions are mm

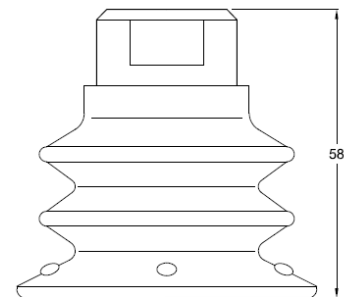
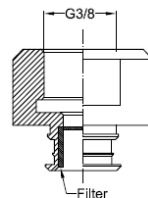
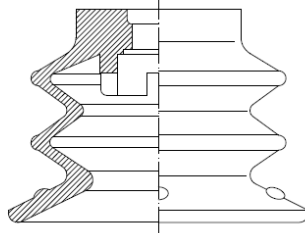
VFDB60



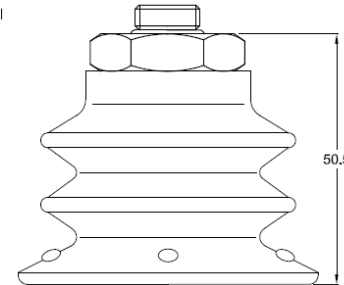
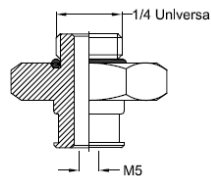
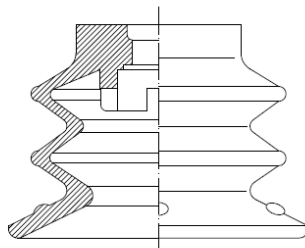
Cup # VFDB60* + Fitting # VFPF50G3/8M = Cup & Fitting Assembled



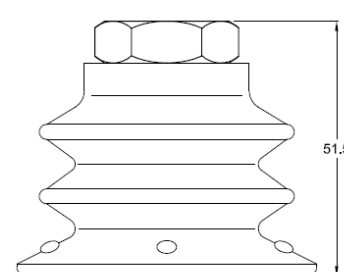
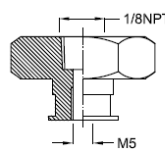
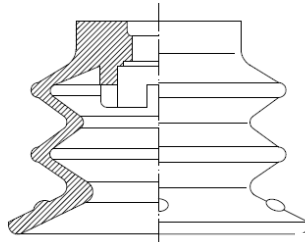
Cup # VFDB60* + Fitting # VFPF50G3/8F = Cup & Fitting Assembled



Cup # VFDB60* + Fitting # VFCE50-1/4U = Cup & Fitting Assembled



Cup # VFDB60* + Fitting # VFCE50-1/8FNPT = Cup & Fitting Assembled



Cup Materials	
DD	Dual Durometer
N	Nitrile Rubber
S	Silicone Rubber
ST	Translucent Silicone

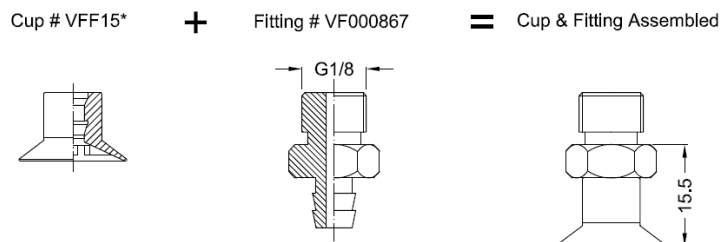
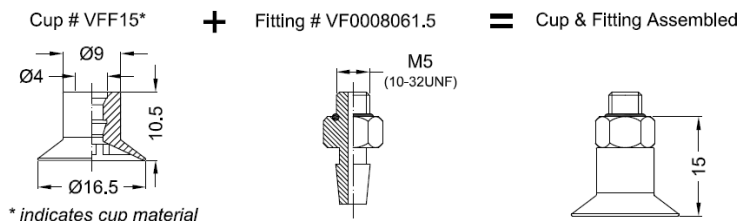
all dimensions are mm

The Vacuforce VFF series of vacuum cups are a generic style flat cup. These cups are available in both Nitrile and Silicone rubber with a 60 and 40 Durometer hardness respectively.

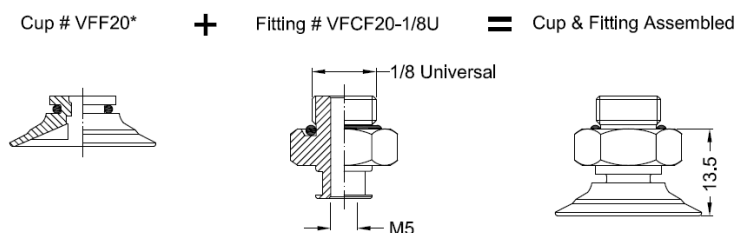
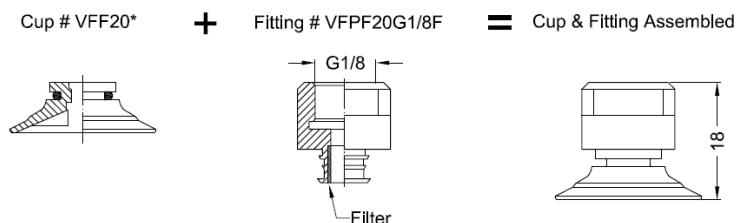
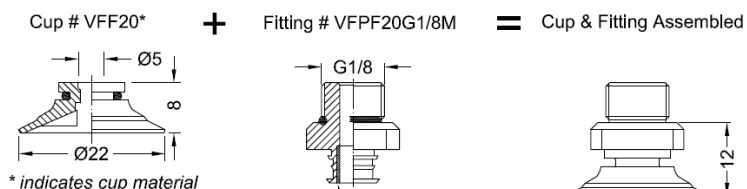
They can be connected to a variety of standard fittings as shown in the illustrations on the proceedings pages. The cup and fitting should be ordered separately.

Part Number Matrix			Material Codes	
Series	Ø	Material	N	Nitrile Rubber
VFF	40-2	N,S,ST	S	Red Silicone Rubber
example VFF40-2S			ST	White Translucent Silicone Rubber

VFF15 – Ø16.5mm

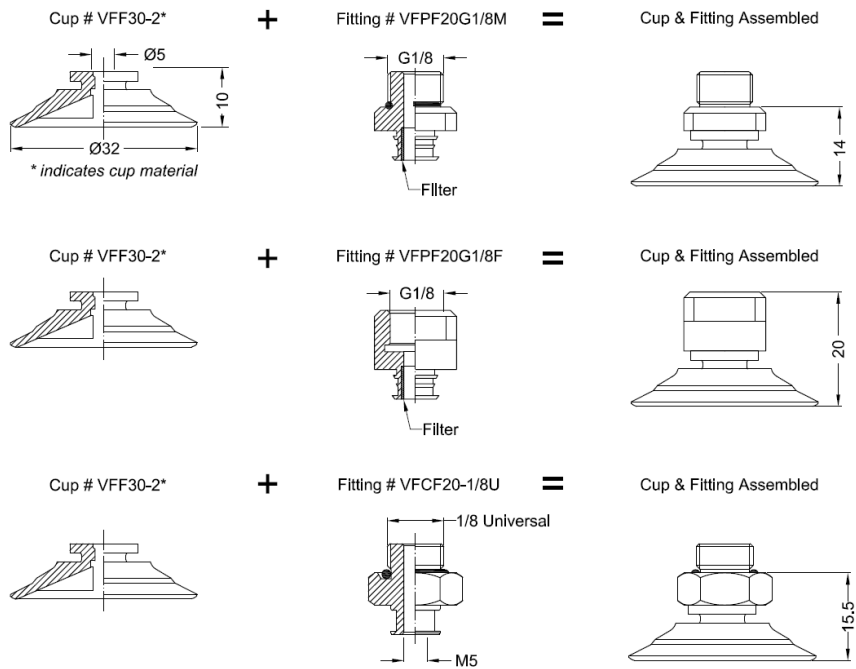


VFF20 – Ø22mm

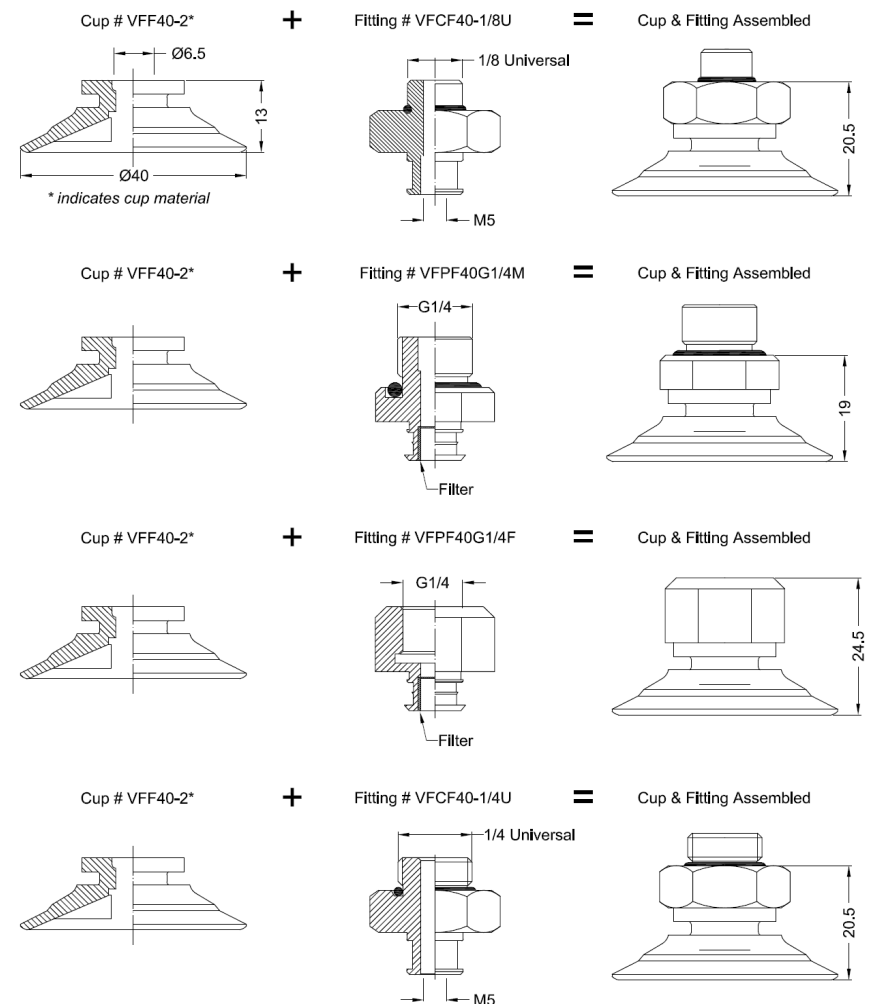


Cup Materials	
N	Nitrile Rubber
S	Silicone Rubber
ST	Translucent Silicone

VFF30-2 – Ø32mm



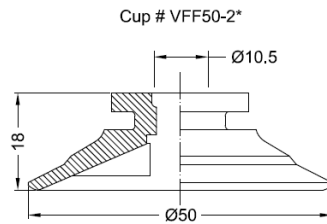
VFF40-2 – Ø40mm



Cup Materials

N	Nitrile Rubber
S	Silicone Rubber
ST	Translucent Silicone

VFF50-2 – Ø50mm

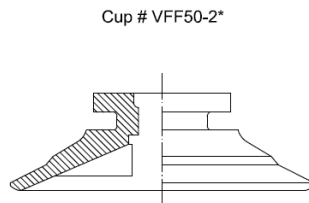
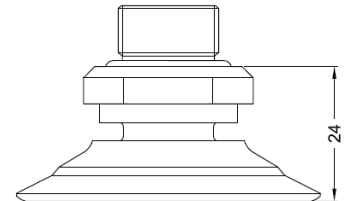
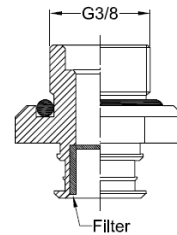


+

Fitting # VFPF50G3/8M

=

Cup & Fitting Assembled

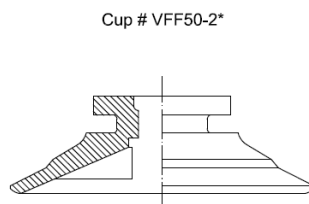
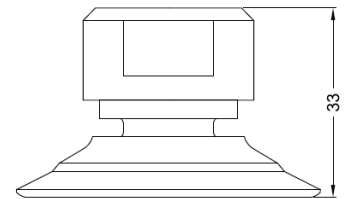
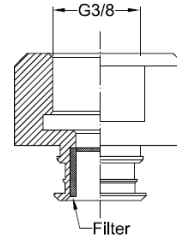


+

Fitting # VFPF50G3/8F

=

Cup & Fitting Assembled

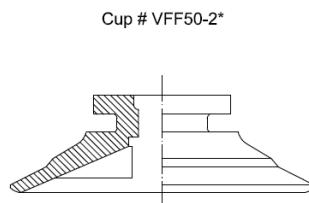
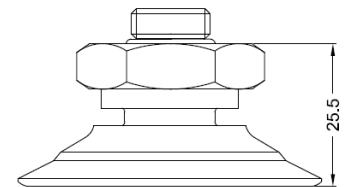
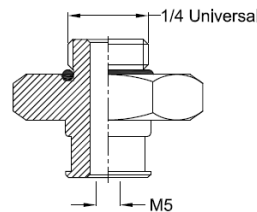


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Fitting # VFCF50-1/4U

=

Cup & Fitting Assembled

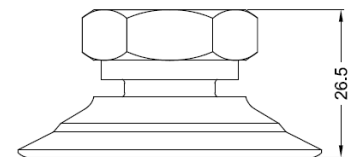
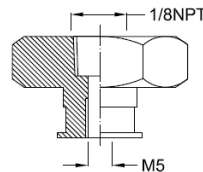


+

Fitting # VFCF50-1/8FNPT

=

Cup & Fitting Assembled



Cup Materials	
N	Nitrile Rubber
S	Silicone Rubber
ST	Translucent Silicone



The Vacuforce PFG series of vacuum cups are a generic flat style cup. The cup can be connected to machinery using simple fittings, bulkhead assemblies or sprung level compensators. These cups are available in both Nitrile and Silicone rubber with a 60 and 40 Durometer hardness respectively.

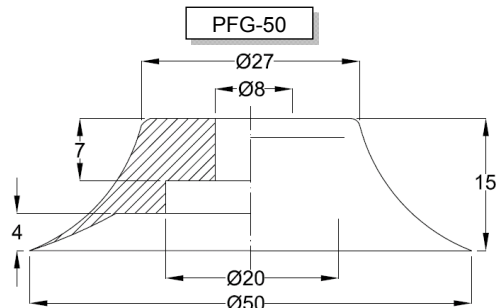
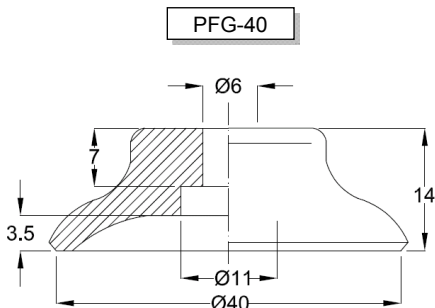
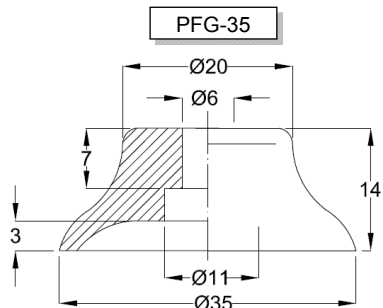
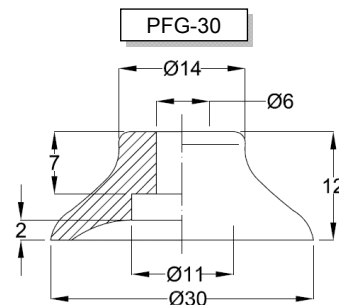
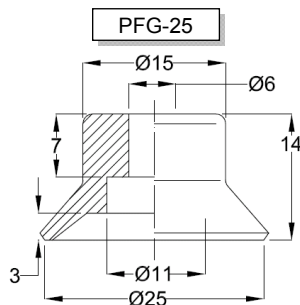
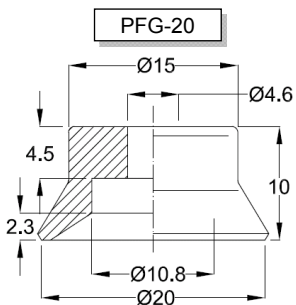
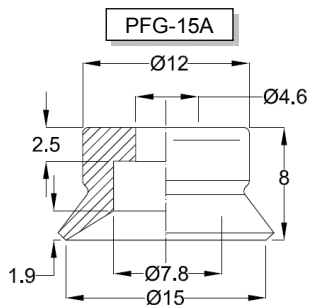
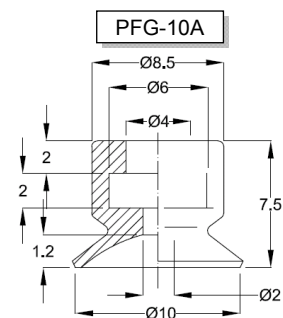
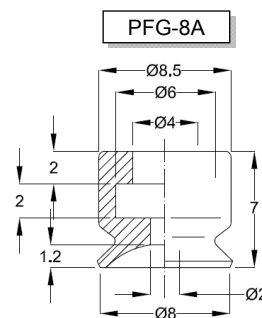
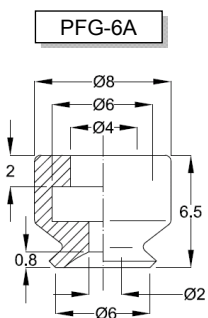
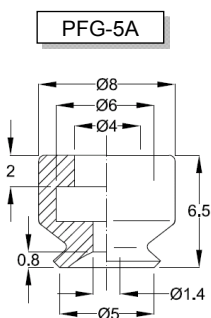
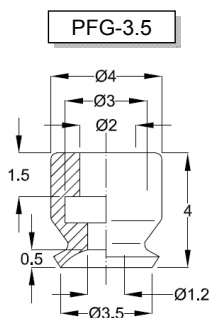
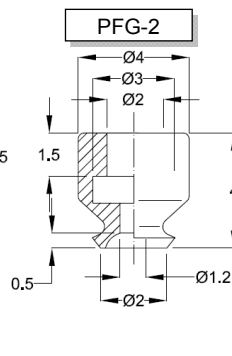
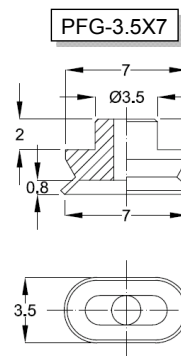
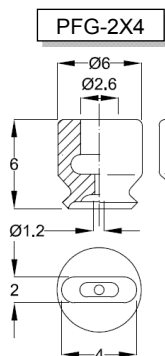
For connectivity options please refer to the Holder Section pg.100 & Cup Fittings Section pg.110

Part Number Matrix

PFG	-	30	-	NBR
Series		Model		Material
				NBR
				SI

Material Codes

NBR – 60 Durometer Nitrile Rubber
SI – 40 Durometer Silicone Rubber



all dimensions are mm

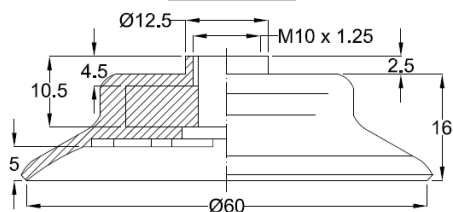


The larger diameter PFG and PA100 cups are used in heavier lifting applications. The PFG-60 through to PA100 have an integral metric thread for connection to threaded studding or the associated holders on the following pages.

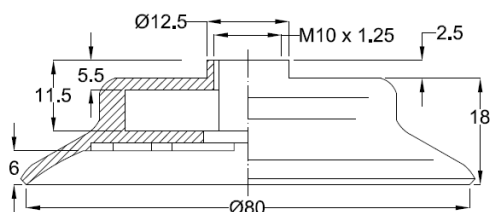
The PFG-120, 150 and 200 models utilizes a threaded boss connector, part number VFCFPFG1/2 or level compensators to facilitate mounting to machinery.

For connectivity options please refer to the Holder Section pg.100 & Cup Fittings Section pg.110

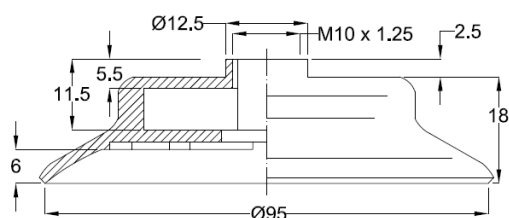
PFG-60



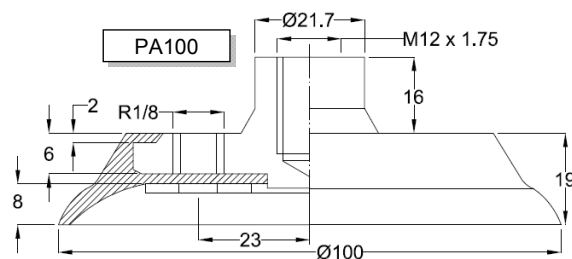
PFG-80



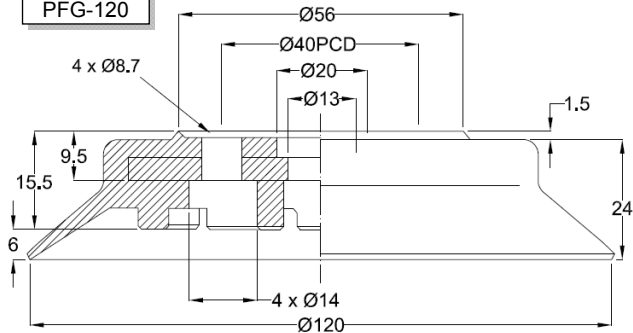
PFG-95



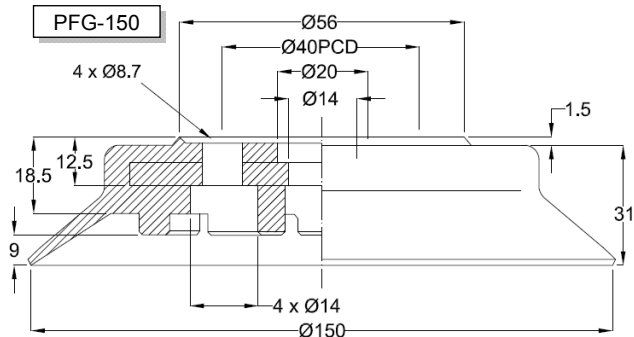
PA100



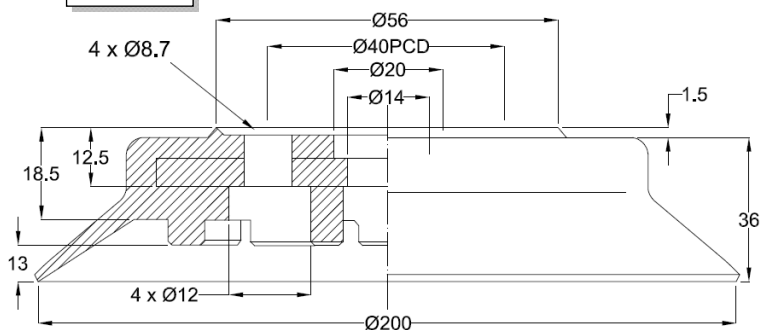
PFG-120



PFG-150



PFG-200



PFG-150-NBR shown with fitting VFCFPFG120



all dimensions are mm



The Vacuforce PJG series of vacuum cups are a generic single bellows style cup. Unlike many bellows cups, the design of this series offers very good rigidity when handling flat products as it pulls the load against a flat datum face.

The cup can be connected to machinery using simple fittings, bulkhead assemblies or sprung level compensators. These cups are available in both Nitrile and Silicone rubber with a 60 and 40 Durometer hardness respectively.

For connectivity options please refer to the Holder Section pg.100 & Cup Fittings Section pg.110

Part Number Matrix

PJG - 30 - NBR

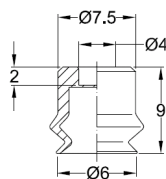
Series Model Material

NBR
SI

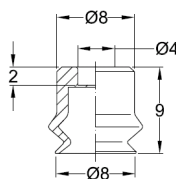
Material Codes

NBR – 60 Durometer Nitrile Rubber
SI – 40 Durometer Silicone Rubber

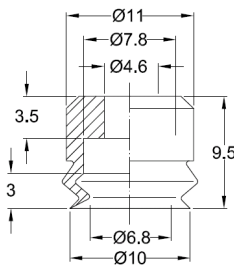
PJG-6



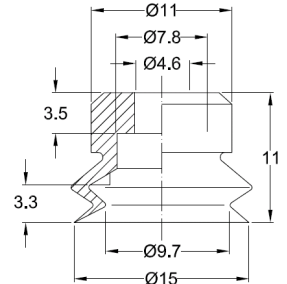
PJG-8



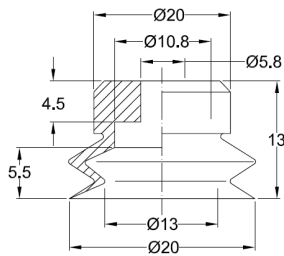
PJG-10



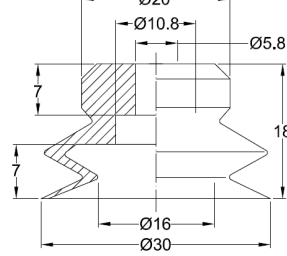
PJG-15



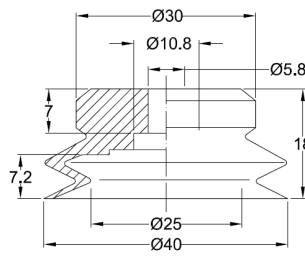
PJG-20



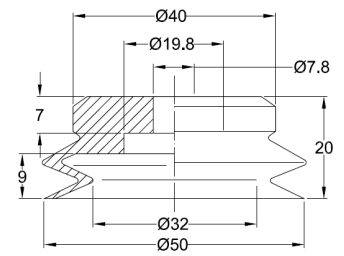
PJG-30



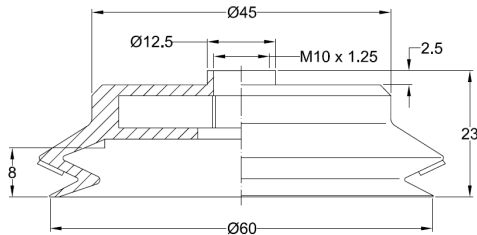
PJG-40



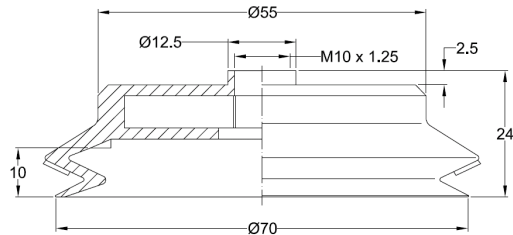
PJG-50



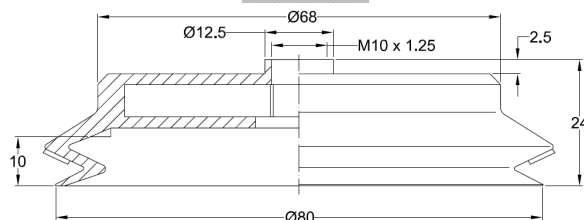
PJG-60



PJG-70



PJG-80



all dimensions are mm

PCG Series 2.5 Bellows Cup

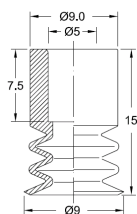


The PCG series of bellows cups are used in applications that require lift separation such as cardboard handling, paper sheet and steel plate transfer.

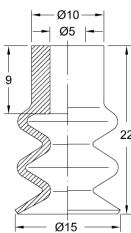
Due to the multiple bellows design these cups are able to deform to the product being handled, such as food packaging or other concave or convex surfaces or part surfaces which are approached at an angle.

For connectivity options please refer to the Cup Fittings Section pg.110

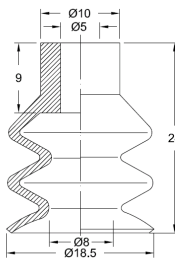
PCG-10



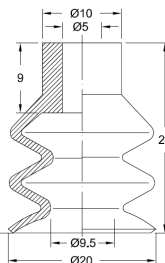
PCG-15



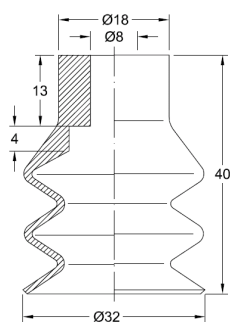
PCG-18



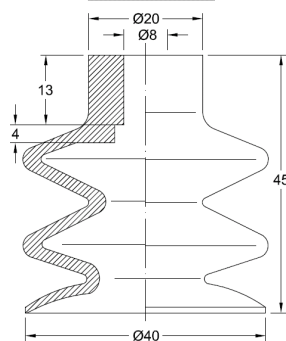
PCG-20



PCG-30



PCG-40



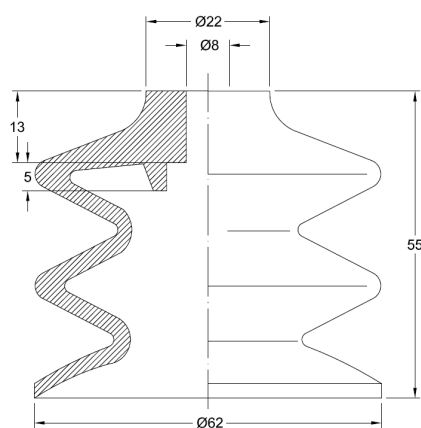
Part Number Matrix

PCG	-	30	-	NBR
Series		Model		Material
				NBR
				SI

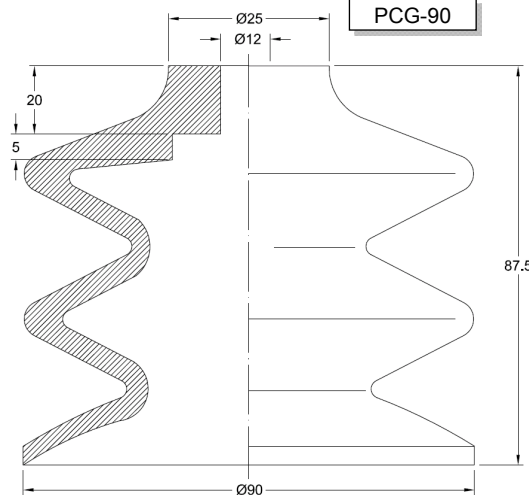
Material Codes

NBR – 60 Durometer Nitrile Rubber
SI – 40 Durometer Silicone Rubber

PCG-60



PCG-90



all dimensions are mm



The Vacuforce PAG series of vacuum cups are used to handle very thin plates which must not be deformed when the vacuum force is applied to the cup. The PAG cups are used to handle paper, thin film, plastic sheets and bag opening applications such as with candy filling machinery, etc.

The cup can be connected to machinery using simple fittings, bulkhead assemblies or sprung level compensators. These cups are available in both Nitrile and Silicone rubber with a 60 and 40 Durometer hardness respectively.

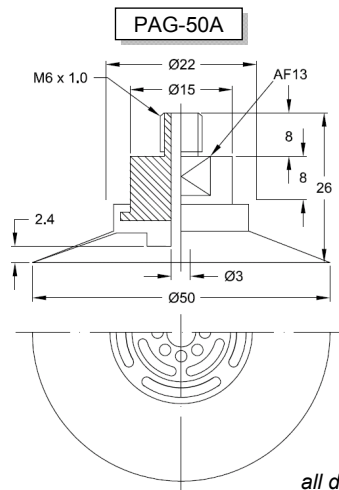
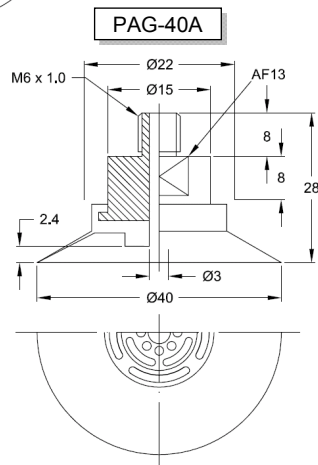
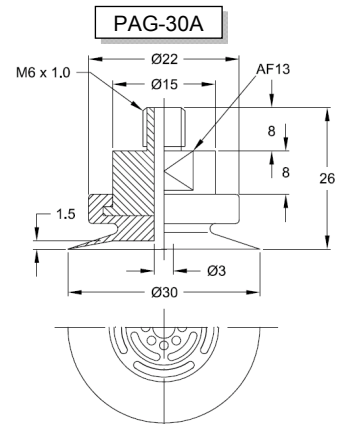
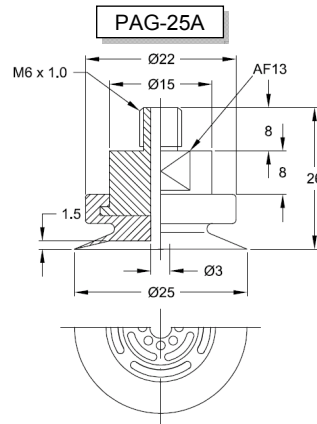
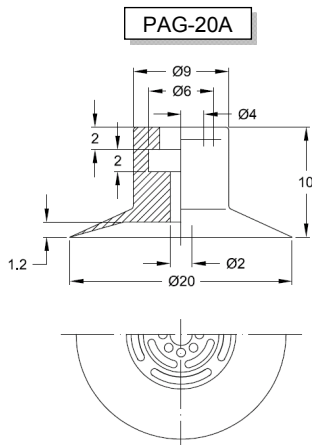
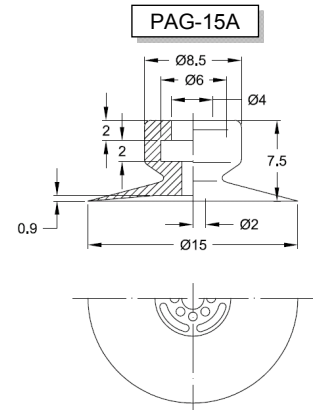
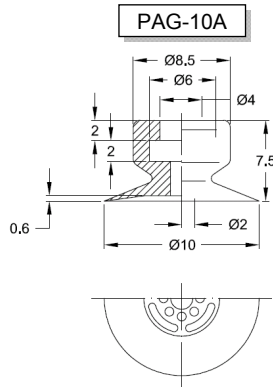
For connectivity options please refer to the Holder Section pg.100

Part Number Matrix

PAG	-	30A	NBR
Series		Model	Material
			NBR
			SI

Material Codes

NBR – 60 Durometer Nitrile Rubber
SI – 40 Durometer Silicone Rubber



all dimensions are mm

Flat Style (U)



Flat Style + Ribs (C)



Bellows Style (B)



The AZP range of vacuum cups are available in three styles

- Flat
- Flat with Ribs
- Single Bellows

Pad diameter	Φ2	Φ4	Φ6	Φ8	Φ10	Φ13	Φ16	Φ20	Φ25	Φ32	Φ40	Φ50
Flat(U)	•	•	•	•	•	•	•	•	•	•	•	•
Flat with ribs(C)					•	•	•	•	•	•	•	•
Bellow(B)	•	•	•	•	•	•	•	•	•	•	•	•

How to Order

AZP 10 U N

① ② ③

① Pad diameter

02	Φ2mm	16	Φ16mm
04	Φ4mm	20	Φ20mm
06	Φ6mm	25	Φ25mm
08	Φ8mm	32	Φ32mm
10	Φ10mm	40	Φ40mm
13	Φ13mm	50	Φ50mm

② Pad style

U	Flat style
C	Flat with ribs
B	Bellow style

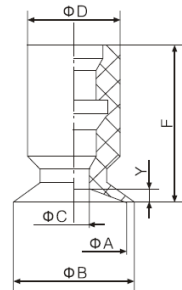
③ Pad material*

N	NBR
S	Silicon rubber
U	Urethane rubber
F	Fluorine rubber

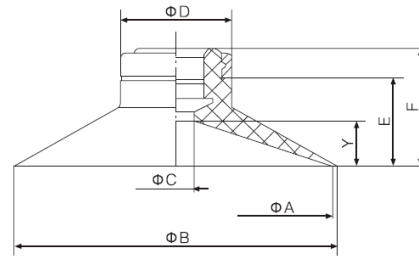
*also available is conductive NBR and Silicone rubber. Please enquire

Dimension(mm)

Flat style



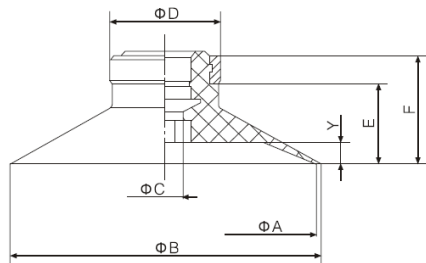
AZP02U~08U



AZP10U~50C

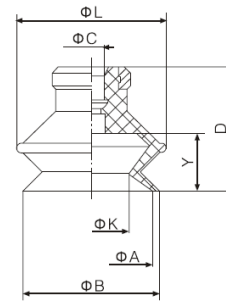
Model	ΦA	ΦB	ΦC	ΦD	E	F	Y
AZP02U	2	2.6	1.2	7	—	12	0.8
AZP04U	4	4.8	1.6	7	—	12	0.8
AZP06U	6	7	2.5	7	—	12	0.8
AZP08U	8	9	2.5	7	—	12	1
AZP10U	10	12	4	13	7.7	12	3
AZP13U	13	15	4	13	7.7	12	3
AZP16U	16	18	4	13	8.2	12.5	3.5
AZP20U	20	23	4	15	9.5	14	4
AZP25U	25	28	4	15	9.5	14	4
AZP32U	32	35	4	15	10	14.5	4.5
AZP40U	40	43	7	18	13.7	18.5	6.5
AZP50U	50	53	7	18	14.7	19.5	7.5

Flat with ribs



AZP10C~50C

Bellow style



AZP10B~50B

Model	ΦA	ΦB	ΦC	ΦD	E	F	Y
AZP10C	10	12	4	13	7.7	12	1.7
AZP13C	13	15	4	13	7.7	12	1.8
AZP16C	16	18	4	13	8.2	12.5	1.2
AZP20C	20	23	4	15	9.5	14	1.7
AZP25C	25	28	4	15	9.5	14	1.8
AZP32C	32	35	4	15	10	14.5	2.3
AZP40C	40	43	7	18	13.7	18.5	3.3
AZP50C	50	53	7	18	14.7	19.5	3.8

Model	ΦA	ΦB	ΦC	D	ΦK	ΦL	Y
AZP06B	6	7	2.5	13	3.3	9.1	4
AZP08B	8	9	2.5	13	4.7	10.1	4
AZP10B	10	12	2.5	16	5.5	13.8	5.5
AZP13B	13	15	2.5	18.5	8.7	19	7.5
AZP16B	16	18	2.5	20	9.9	21	8.5
AZP20B	20	22	3.5	23.5	12.4	25	10.5
AZP25B	25	27	3.5	24	15.6	28	10.5
AZP32B	32	34	3.5	29	18.9	37	14
AZP40B	40	43	4.5	34	24.4	48	16
AZP50B	50	53	4.5	38	32.4	57	19

all dimensions are mm



Description	Diameter	Part Number
Cup Support	150mm (6")	VFCF150MMF
Foam Ring	150mm (6")	VS150-E

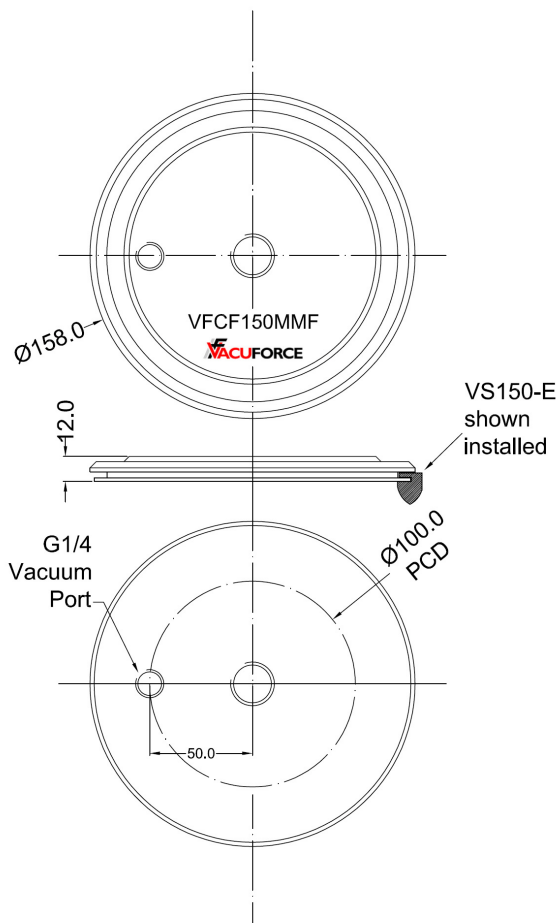
The Vacuforce EPDM foam vacuum cups are developed for handling very rough or coarse products such as concrete, rough sawn wood, marble and granite etc. These cups are sold as two separate parts.

The foam is able to deform to the profile of the product being handled and offer a virtually air tight seal to enable safe lift and transfer.

1. Anodized Aluminum Support
2. Foam Seal

A mounting port is central to the support. This thread is suitable for either 1/2NPT or G1/2 studding.

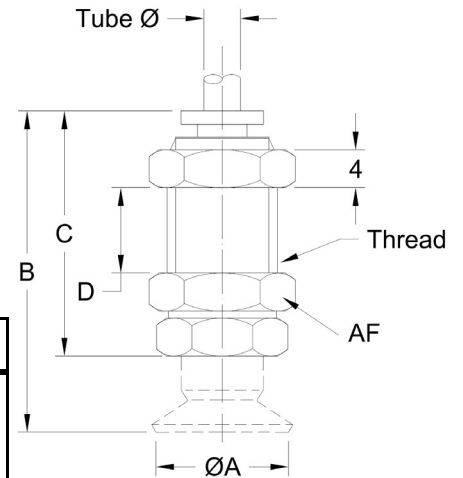
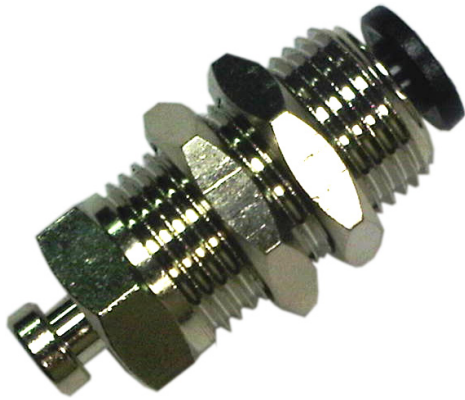
If a separate vacuum port is required, the offset G1/4 port can be used. This port is used for either a venturi or vacuum gauge connection.



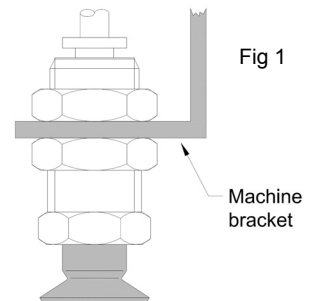
all dimensions are mm

These bulkhead holders are a simple way to connect a vacuum cup to machinery offering an accurate adjustment of height to ensure reliable pick and place of the products being handled.

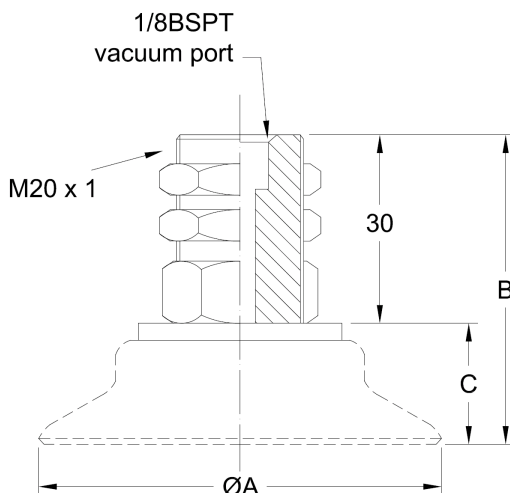
Fig 1 shows a typical installation.



Model Number	Cup Model (not included)	ØA	B	C	D	Thread	AF	Tube Ø
PAK10	PFG-5A	5	33	27	9	M12 x 1	12	Ø5/32" (4mm)
	PFG-6A	6	33.5					
	PFG-8A	8	34					
	PAG-10A	10	34.5					
	PFG-10A	10	36.5					
	PJG-10	10	34.5					
	PAG-15A	15	35					
	PFG-15A	15	38					
	PJG-15	15	37					
	PAG-20A	20	37					
PAK20	PFG-20	20	38	30	10	M14 x 1	14	Ø6mm
	PJG-20	20	44					
	PFG-25	25	42					
	PFG-30	30	44					
	PFG-35	35	44					
	PFG-40	40	48					
	PJG-30	30	45					
	PJG-40	40	45					
PAK50	PFG-50	50	45	50	50			
	PJG-50	50	50					

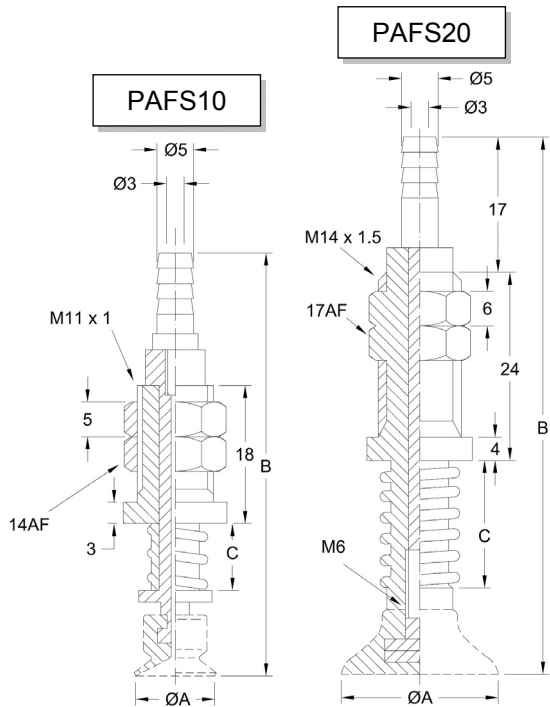


PAK60 shown attached to a PFG-60-NBR

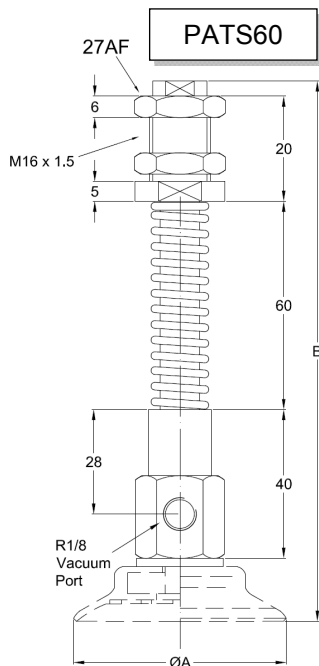


all dimensions are mm

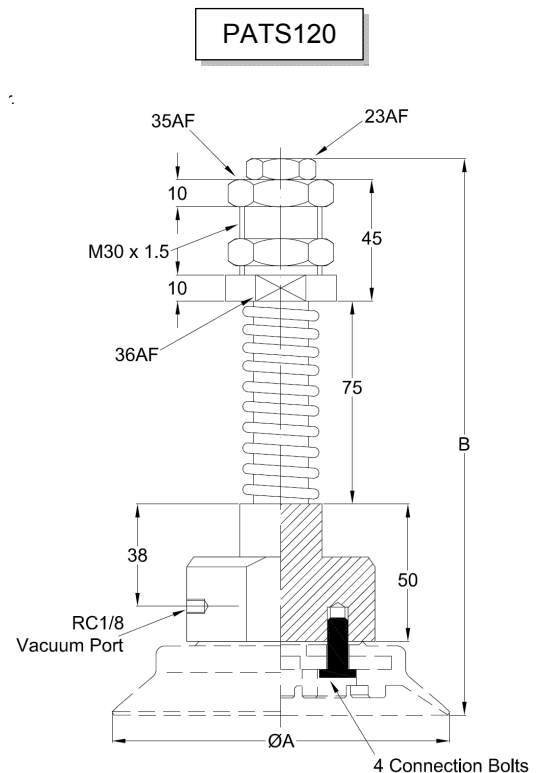
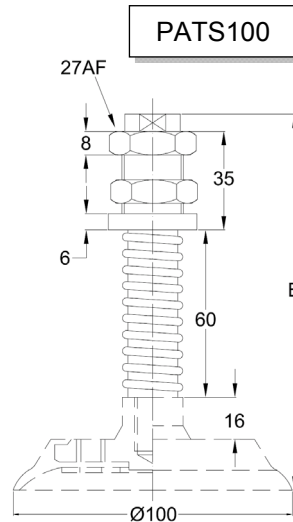
Model Number	Cup Model (not included)	ØA	B	C	Vacuum Connection
PAK60	PFG-60	60	48.5	18.5	1/8BSPT
	PFG-80	80	50.5	20.5	
	PFG-95	90	53	23	
	PJG-60	60	54	24	
	PJG-70	70			
	PFG-80	80			



Model Number	Cup Model (not included)	ØA	B	C	Real Stroke
PAFS10	PFG-5A	5	67.5	20	10mm
	PFG-6A	6			
	PFG-8A	8			
	PAG-10A	10	68.5		
	PFG-10A	10			
	PJG-10	10	70.5		
	PAG-15A	15	68.5		
	PFG-15A	15	69		
	PJG-15	15	72		
	PAG-20A	20	71		
	PFG-20	20			
PAFS20	PJG-20	20	83	30	15mm
	PFG-25	25	84.5		
	PFG-30	30	82.5		
	PFG-35	35	82.5		
	PFG-40	40			
	PJG-30	30	88		
	PJG-40	40			
	PFG-50	50	83.5		
	PAG-25A	25	86		
	PAG-30A	30			
	PAG-50A	50			
	PAG-40A	40			



The barb fitting u
leaving a female



Model Number	Cup Model (not included)	ØA	B	Vacuum Connection	Stroke
PATS60	PFG/PJG-60	60	151	1/8BSPP	30mm
	PJG-70	70	153		
	PFG/PJG-80	80			
	PFG-95	95			
PATS100	PFG/PJG-100	100	136		20mm
PATS120	PFG-120	120	204		
	PFG-150	150	211		
	PFG-200	200	215		

all dimensions are mm

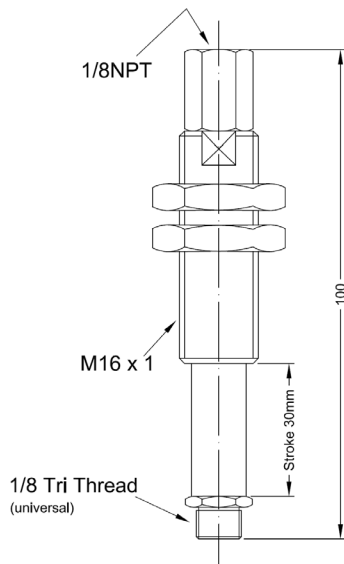
The Vacuforce level compensators are manufactured in nickel plated brass, utilizing stainless steel springs. The male threads on the Vacuforce compensators are of a universal design allowing connection to BSP (G) and NPT female threads.

This makes them a true universal cup holder that can be used globally with any manufacturer's 1/8 or 1/2 female thread.

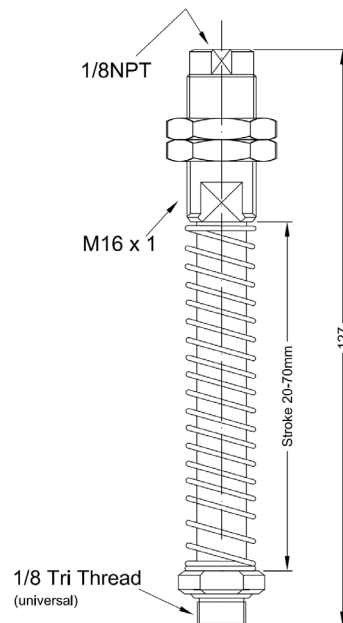
The holders are mounted through a bulkhead on the machine as shown in Fig 1.



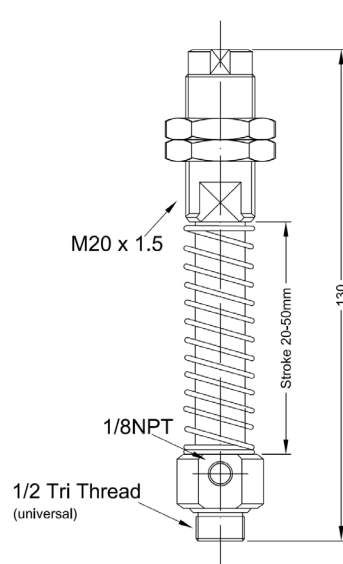
VFLC1/8U30



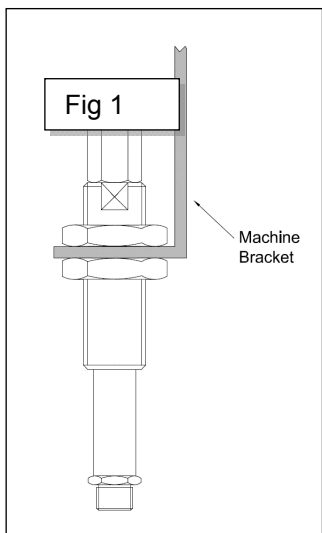
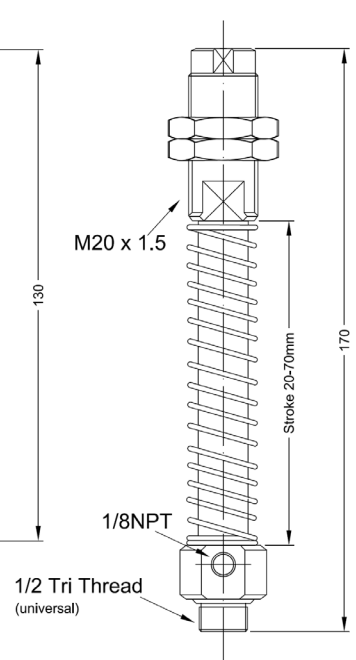
VFLC1/8U50



VFLC1/2U30



VFLC1/2U50



all dimensions are mm

The K5 series of level compensators are used to handle products which have a varying pick up height or on multiple layer picking. The K5 series utilizes a 10-32UNF (M5) thread for vacuum cup connection.

These level compensators are available with an external or internal spring mechanism depending on the model selected.

Material of construction is nickel plated brass.



Part Number Nomenclature

K **E** **5** **10** - **Y** - **A12**

① ② ③ ④

① Buffer Style

E	External Spring
I	Internal Spring

② External Spring Buffer Stroke

10
20

Internal Spring Buffer Stroke

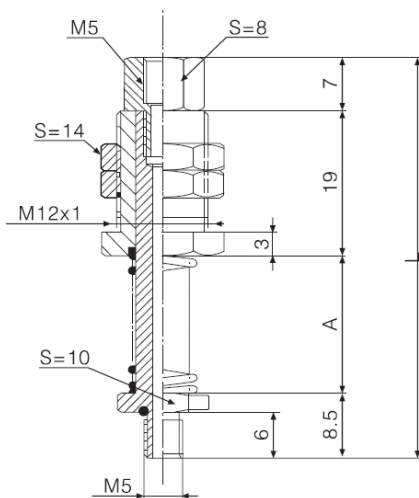
Type	Stroke
R,B,E,S	6,10,25
V	7,10,20

③ Vacuum Connection

	Male Thread
V	Female Thread
Y	Hose Barb

④ Bulkhead Thread

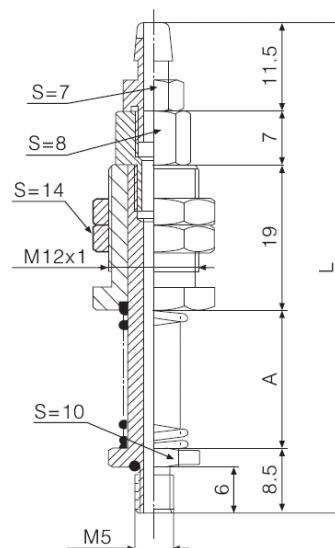
Code	Thread	Hex AF
A8	M8 x 1	12
A10	M10 x 1	14
A12	M12 x 1	



KE5 10-A12

(mm)

Buffer stroke	A	L
10	18	53
20	28	63

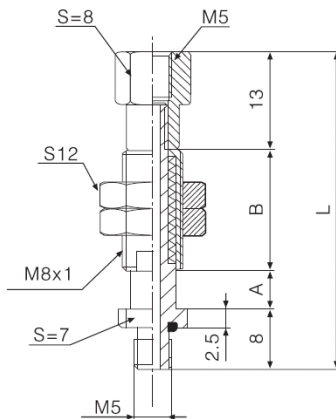


KE5 10-Y-A12

(mm)

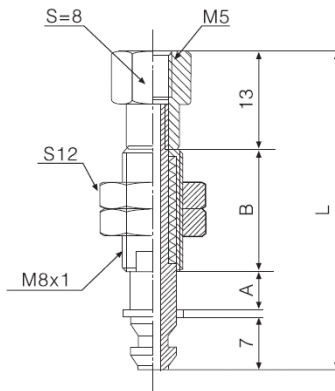
Buffer stroke	A	L
10	18	64
20	28	74

all dimensions are mm



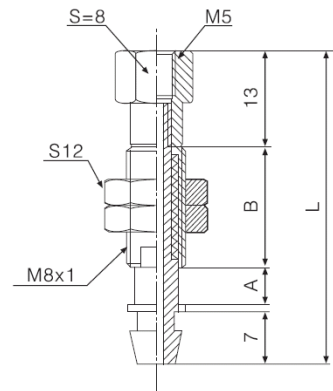
KI5 06 -A8

	(mm)		
Buffer stroke	A	B	L
6	6	15	42
10	10	44	75
25	25	44	90



*Barb fitting for cups
with a Ø2mm throat*

KI5 06 -R-A8



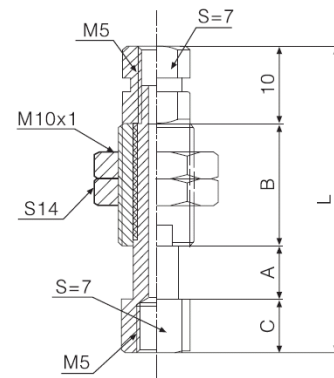
*Barb fitting for cups
with a Ø4mm throat*

KI5 06 -B-A8

	(mm)		
Buffer stroke	A	B	L
6	6	15	42
10	10	44	75
25	25	44	90



*The barbed holder shown above are typically used
with smaller vacuum cups such as the VFB10,
VFB15 and VFF15 series as shown above.*



KI5 15 -V-A10

	(mm)			
Buffer stroke	A	B	C	L
7	7	19	7	43
15	15	23	27	75
20	20	36	7	73

S:Width across flats

all dimensions are mm

The K18 series of level compensators are used to handle products which have a varying pick up height or on multiple layer picking. The K18 series utilizes a G1/8 thread for vacuum cup connection.

These level compensators are available with an external or internal spring mechanism depending on the model selected.

Material of construction is nickel plated brass.



Part Number Nomenclature

K **E** **18** **10** - **L** - **A14**

① ② ③ ④

① Buffer Style

E	External Spring
I	Internal Spring

② Buffer Stroke

10
20
30
50

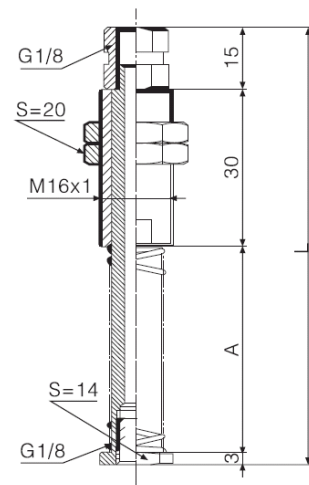
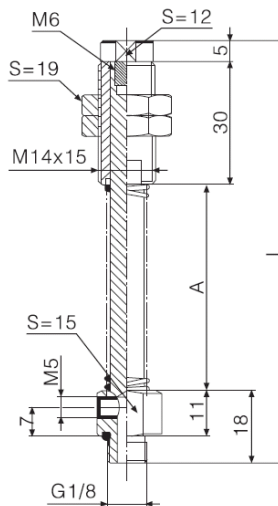
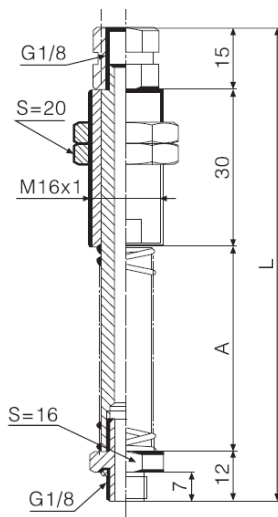
③ Vacuum Connection

	Top Entry
L	Side Entry
V	Female Thread

④ Bulkhead Thread

Code	Thread	Hex AF
A14	M14 x 1	19
A16	M16 x 1	20
A18	M18 x 1	22

all dimensions are mm



KE18 **50** -A16

(mm)

Buffer stroke	A	L
10	20	77
20	35	92
30	50	107
50	70	127

KE18 **30** -L-A14

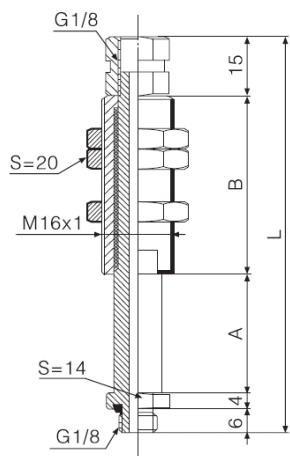
(mm)

Buffer stroke	A	L
10	20	73
20	35	88
30	50	103
50	70	123

KE18 **20** -V-A16

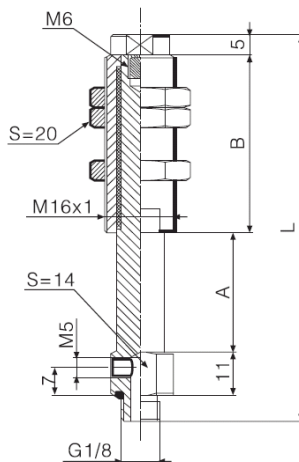
(mm)

Buffer stroke	A	L
10	20	68
20	35	83
30	50	98
50	70	118



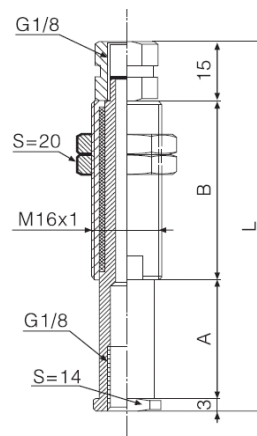
KI18 20 -A16

(mm)			
Buffer stroke	A	B	L
10	10	25	60
20	20	35	80
30	30	45	100
50	50	65	140



KI18 20 -L-A16

(mm)			
Buffer stroke	A	B	L
10	10	25	58
20	20	35	78
30	30	45	98
50	50	65	138



KI18 20 -V-A16

(mm)			
Buffer stroke	A	B	L
10	10	25	53
20	20	35	73
30	30	45	93
50	50	65	133

all dimensions are mm

The K14 series of level compensators are used to handle products which have a varying pick up height or on multiple layer picking. The K14 series utilizes a G1/4 thread for vacuum cup connection.

These level compensators are available with an external or internal spring mechanism depending on the model selected.

Material of construction is nickel plated brass.



Part Number Nomenclature

K **E** **14** **10** - **L** - **A18**

① ② ③ ④

① Buffer Style

E	External Spring
I	Internal Spring

② Buffer Stroke

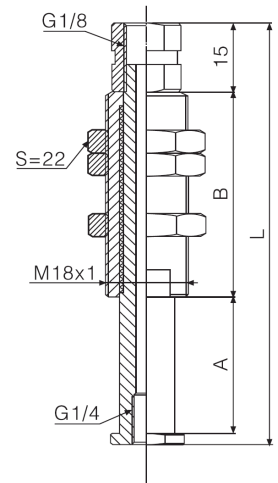
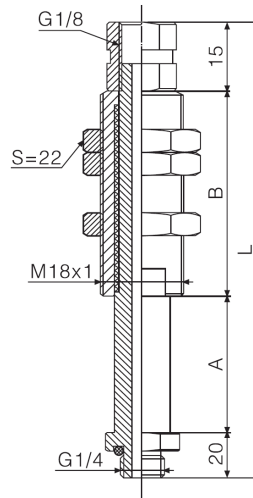
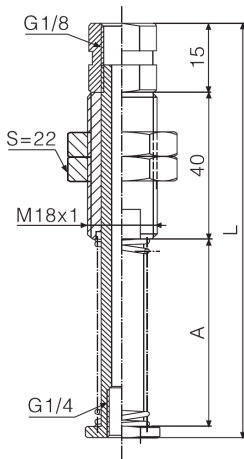
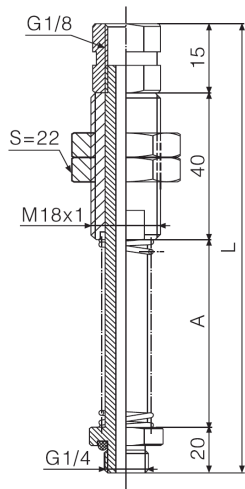
10
20
30
50

③ Vacuum Connection

	Top Entry
V	Female Thread

④ Bulkhead Thread

Code	Thread	Hex AF
A18	M18 x 1	22
A20	M20 x 1.5	24



KE14 20 -A18

(mm)

Buffer stroke	A	L
10	20	95
20	35	110
30	50	125
50	70	145

KE14 20 -V-A18

(mm)

Buffer stroke	A	L
10	20	80
20	35	95
30	50	110
50	70	130

KI14 20 -A18

(mm)

Buffer stroke	A	B	L
10	10	25	70
20	20	35	90
30	30	45	110
50	50	65	150

KI14 20 -V-A18

(mm)

Buffer stroke	A	B	L
10	10	25	55
20	20	35	75
30	30	45	95
50	50	65	135

all dimensions are mm

The K38 series of level compensators are used to handle products which have a varying pick up height or on multiple layer picking. The K38 series utilizes a G3/8 thread for vacuum cup connection.

These level compensators are available with an external or internal spring mechanism depending on the model selected.

Material of construction is nickel plated brass.



Part Number Nomenclature

K **I** **K** **38** **10** - **A18**

① ② ③ ④

① Buffer Style

E	External Spring
I	Internal Spring

② Holder Type

	Rotating
K	Non Rotating

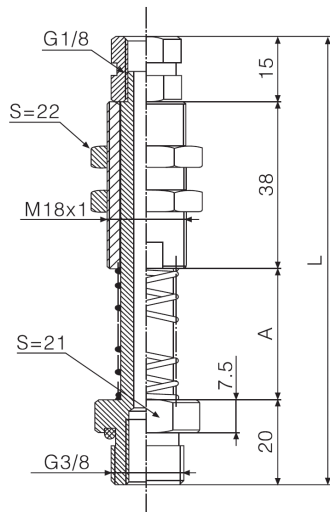
Non rotating models for internal spring models only

③ Buffer Stroke

10
20
30
50

④ Bulkhead Thread

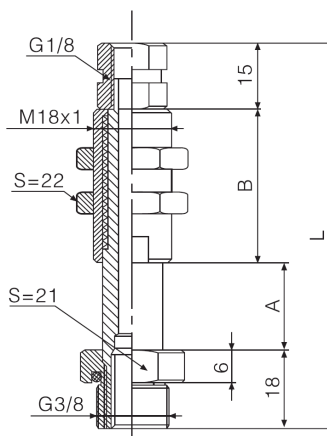
Code	Thread	Hex AF
A18	M18 x 1	22
A20	M20 x 1.5	24



KE38 20 -A18

(mm)

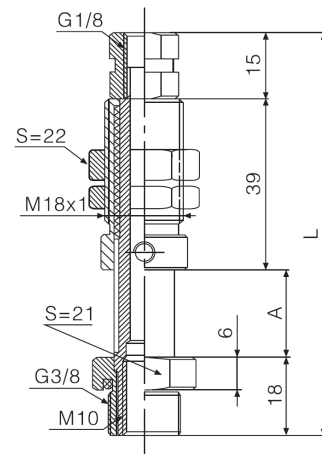
Buffer stroke	A	L
10	20	93
20	35	108
30	50	123
50	70	143



KI38 20 -A18

(mm)

Buffer stroke	A	B	L
10	10	24	67
20	20	35	88
30	30	46	109
50	50	66	149



KIK38 20 -A18

(mm)

Buffer stroke	A	B	L
10	10	28	71
20	20	39	92
30	30	50	113
50	50	70	153

all dimensions are mm

The K12 series of level compensators are used to handle products which have a varying pick up height or on multiple layer picking. The K12 series utilizes a G1/2 thread for vacuum cup connection.

These level compensators are available with an external or internal spring mechanism depending on the model selected.

Material of construction is nickel plated brass.



Part Number Nomenclature

K **E** **12** **10** - **L** - **A18**

① ② ③ ④

① Buffer Style

E	External Spring
I	Internal Spring

② Buffer Stroke

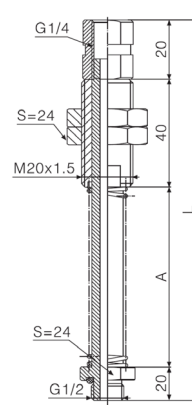
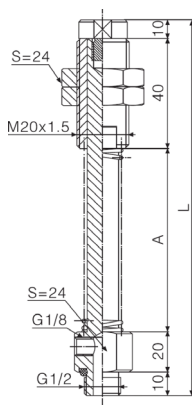
10
20
30
50

③ Vacuum Connection

	Top Entry
L	Side Entry

④ Bulkhead Thread

Code	Thread	Hex AF
A18	M18 x 1	22
A20	M20 x 1.5	24
A22	M22 x 1.5	26

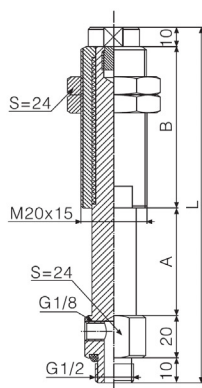


KE12 30 -L-A20

Buffer stroke	A	L
10	20	100
20	35	115
30	50	130
50	70	150

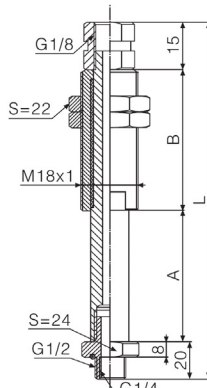
KE12 30 -A20

Buffer stroke	A	L
10	20	100
20	35	115
30	50	130
50	70	150



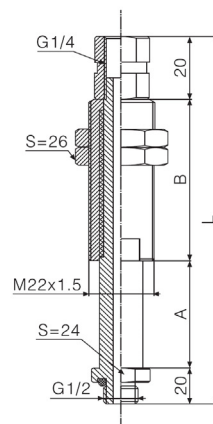
KI12 30 -L-A20

Buffer stroke	A	B	L
10	10	30	80
20	20	35	95
30	30	50	120
50	50	70	160



KI12 30 -A18

Buffer stroke	A	B	L
10	10	30	75
20	20	35	90
30	30	50	115
50	50	70	155



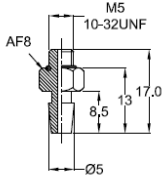
KI12 30 -A22

Buffer stroke	A	B	L
10	10	30	80
20	20	35	95
30	30	50	120
50	50	70	160

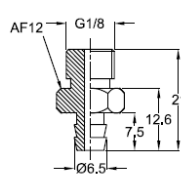
all dimensions are mm



VF0008061.5



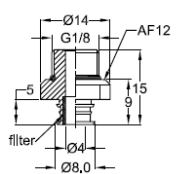
VF000867



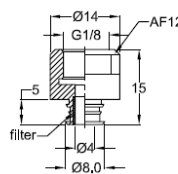
Suitable for Vacuum Cups
VFB10-2
VFB15-2
VFF15

VF000867 only
PCG-10,15,18 & 20

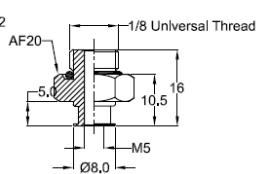
VFPF20G1/8M



VFPF20G1/8F

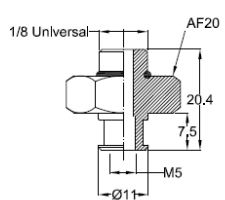


VFCF20-1/8U

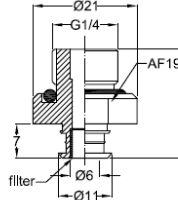


Suitable for Vacuum Cups
PJG-20
VFB20
VFBL20-2
VFF20
VFF30-2
VFDB20
VFDB30

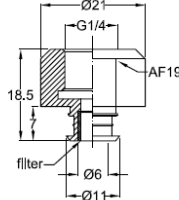
VFPF40-1/8U



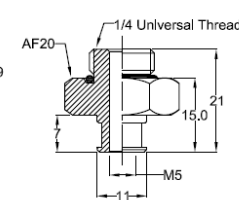
VFPF40G1/4M



VFPF40G1/4F

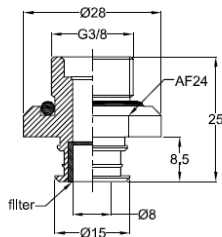


VFCF40-1/4U

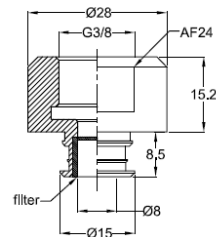


Suitable for Vacuum Cups
PJG-30, 40 & 50
VFB30-2
VFB40
VFBL30-2
VFBL40-2
VFDB40
VFF40-2

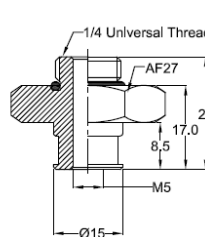
VFPF50G3/8M



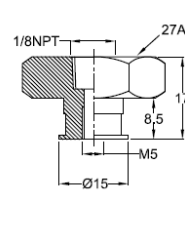
VFPF50G3/8F



VFCF50-1/4U

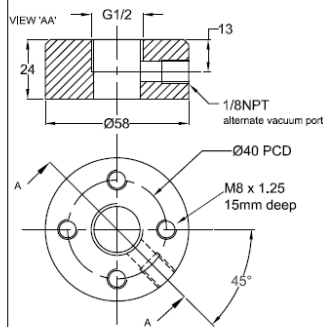


VFCF50-1/8FNPT



Suitable for Vacuum Cups
VFB50-2
VFBL50-2
VFDB50
VFDB60
VFF50-2

VFPFG120



Suitable for Vacuum Cups
PFG-120
PFG-150
PFG-200

all dimensions are mm



The Vacuforce direct acting vacuum valves have been developed for use in applications which require a full port vacuum flow without the need for an external air pilot.

As shown in the schematic below, port P is connected to the vacuum source (pump or generator/venturi). This valve is Normally Closed (NC). When power is connected to the valve via the coil, the valve will open allowing vacuum flow between Ports P and A.

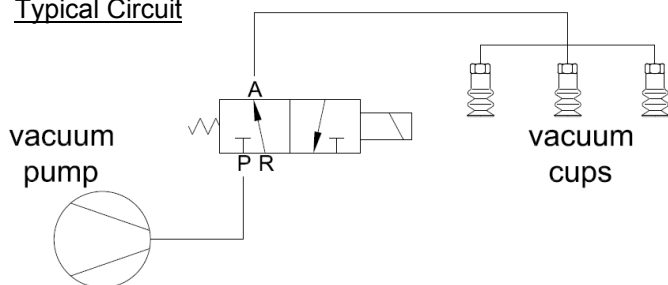
When power is removed from the coil the valve will spring closed and port A and R (top of the solenoid stem) will connect, exhausting the vacuum pressure between the valve and the application, such as vacuum cups.

The direct acting poppet design offers the user a cycle rate of ≥ 10 cycles/sec with a choice of coils for different voltages.

Please note that the coil should be ordered separately selecting from the coil table below.

Shown with Coil Assembled
(Form A DIN connector can be rotated at 90° increments)

Typical Circuit



Specifications

Model Number	Port Size	Exhaust Port	Cycle Rate	Flow
VFDAVV1/4	1/4NPT	G1/8	10/sec	3SCFM
VFDAVV1/2	1/2NPT	G1/8	10/sec	6SCFM

Dimensions

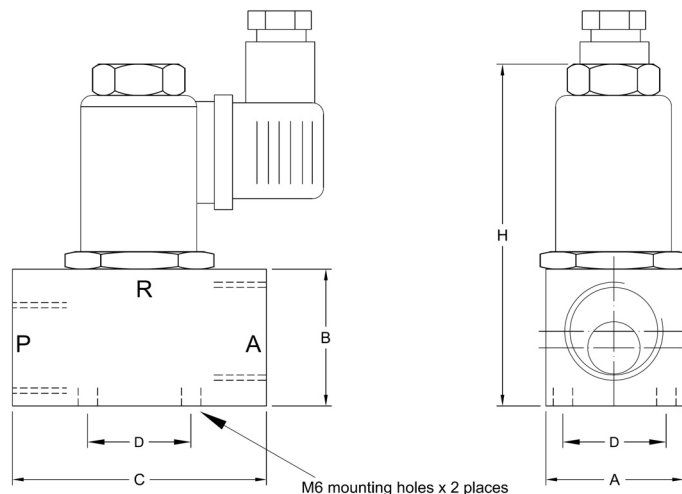
A	B	C	D	H
25	25	44	16	67
35	35	65	25	79



Coil Connector is a DIN43650 Form A type which includes an LED for Power On Indication

Coil Selection (must be ordered separately)

Voltage	Coil Part Number
24VDC	SB486-24VDC
110VAC	SB486-110VAC



M6 mounting holes x 2 places



The JZF series of vacuum valves have been developed to offer the end user a high vacuum flow solution when using larger vacuum pumps or generators.

With port sizes of either 1/2NPT or 1NPT, these vacuum valves are far superior in reaction time and cycles per second than traditional actuated ball valve type models normally used in these applications.

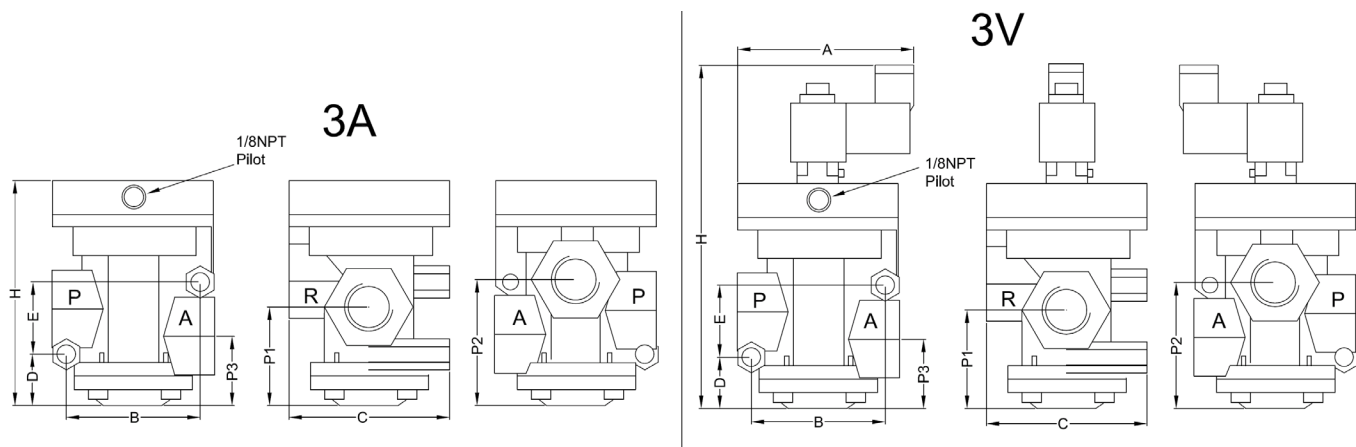
Manufactured in painted cast aluminum with Nitrile rubber seals and available with special seal materials on request, the JZF series stands alone in its performance and price bracket for the vacuum user.

The two types available are 3VJZF (solenoid actuated with pneumatic pilot) and 3AJZF (pneumatic pilot)

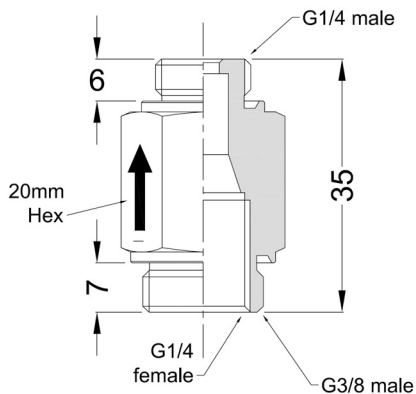
Coils for the solenoid valves (3VJZF) should be ordered separately and are available as follows:

	3VJZF-15EP	3VJZF-25EP	3AJZF-15EP	3AJZF-25EP
Working Medium	Air			
Operation	Pilot Assisted, Solenoid Control		Pilot Operated	
Orifice	15mm	25mm	15mm	25mm
Port Size	1/2NPT	1NPT	1/2NPT	1NPT
Working Pressure	0-27"Hg			
Body Material	Die Cast Aluminum			
Seal Material	Nitrile Rubber			
Operating Temperature	-5°C to +70°C			
Flow Rate	28SCFM	71SCFM	28SCFM	71SCFM
Pilot Port	1/8NPT			

Voltage	Coil c/w DIN Connector
24VDC	210DIN24VDC
110VAC	210DIN110VAC

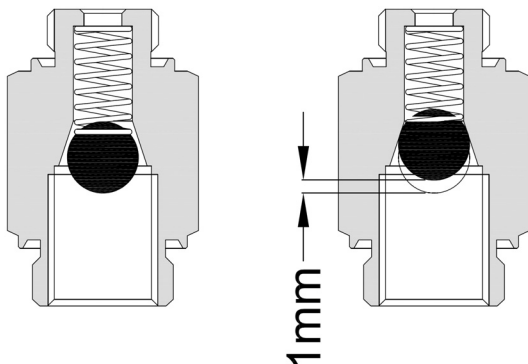


	3AJZF-15EP	3AJZF-25EP	3VJZF-15EP	3VJZF-25EP
A	-	-	86.5	96.3
B	62.4	76	62.4	76
C	75.2	93.5	75.2	93.5
D	23	20.5	23	20.5
E	32.5	38.5	32.5	38.5
P1	43.7	47.5	43.7	47.5
H	101	117	164	177
P2	55.3	62	55.3	62
P3	31.5	33.5	31.5	33.5



Adjustment Instructions

The self closing valve works on the principle of air flow volume. The adjustment of this valve is dependent on the volume of air between the valve and the sealing surface of the cup. Therefore this distance should be minimized to ensure accuracy and repeatability. The brass set screw should be turned inwards in a CW direction to decrease the amount of flow that closes the valve and turned outwards in a CCW direction to increase the amount of flow to close the valve. An approximate guide for use on a 40mm diameter single bellows cup is 1mm of ball movement. If the cup is larger or sealing on a porous surface, this adjustment might need to be increased. The image below demonstrates how this valve seals with the black ball sealing against the seat simulating the valve in a closed position.



The Vacuforce self closing valve is used on vacuum cup handling systems where multiple cups are utilizing the same vacuum source.

The valve is mounted directly onto the vacuum port of the vacuum cup. If that cup is damaged or does not seal against the load being lifted, the induced vacuum air flow closes the valve shut.

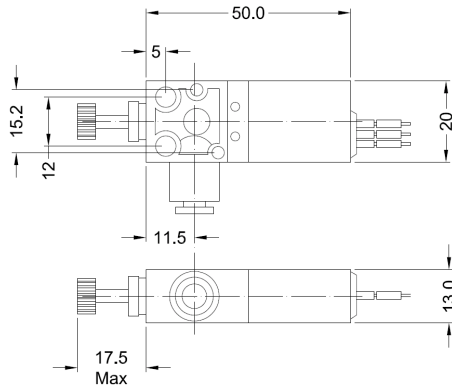
This ensures that the vacuum level is retained in the rest of the vacuum cups installed on the same circuit. This valve is adjustable and therefore can be used on various size vacuum cups or even on porous surfaces such as cardboard or MDF paneling.

The cup mounting can be facilitated using either the G1/4 female or G3/8 male thread. The brass adjustment screw, depending on the cup fitting design, can be adjusted with the vacuum cup installed.

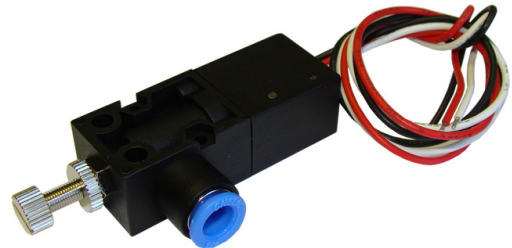
The image below shows the simple construction of this valve consisting of:

- Valve Body
- Spring
- Nitrile Sealing Ball
- Brass Adjustment Screw





The VAS vacuum switch is a simple mechanical indicator of vacuum level achievement. Fully adjustable with a simple push to connect fitting for vacuum connection, the VAS switch is ideal for most part presence applications.

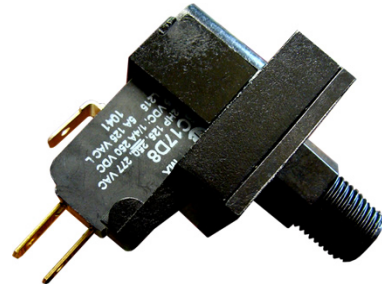


Model	VAS04	VAS06N
Adjustment Range	4.5 – 12"Hg	
Accuracy	1.5"Hg	
Hysteresis	3"Hg	
Electrical Rating	AC125V – 5A	
Vacuum Connection	5/32" (4mm)	1/4"

All dimensions are mm

Part Number PSF109S-NPT-81-330

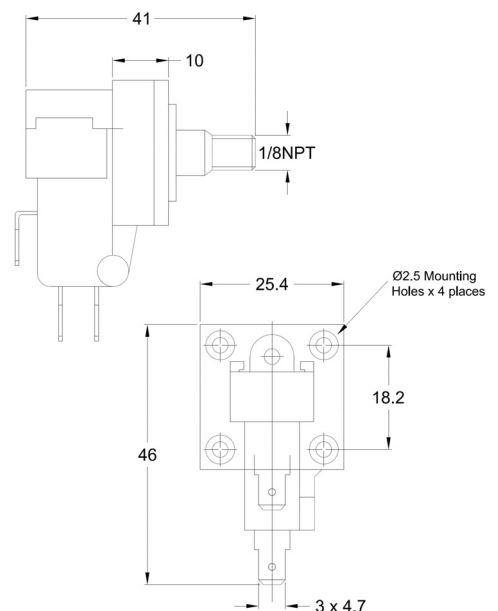
- Controllable hysteresis
- Field adjustable vacuum set point, 5.9" to 24.25"Hg
- Snap action basic switch, up to 15A*, 125/250 VAC
- 1/8" NPT male vacuum connection
- Small size, lightweight
- Dependable long life (10+ million cycles)



MECHANICAL
Standard Tolerance $\pm 20\%$
Switch Type SPDT Normally Open or Normally Closed
Switching Medium Air; compatible fluids
Mechanical Life More than 10 million cycles
Operating Temp. +40°F to +150°F (standard)

PHYSICAL
Case Material Polycarbonate (optional: Lexan 141, Supec®, Ultem®, Noryl®)
Vacuum Port Options .250" diameter, 1/8" NPT, Quick Connect Fitting Port
Diaphragm Material Polyurethane (Teflon® optional)
Contact Points Silver (Gold available on special order)
Electrical Connections Terminals – .187"x.020" tab-type for use with quick
Mounting #2 Screws through eyelets;
Weight Less <20g

ELECTRICAL
Current Rating – 15A
Operating Voltage 24VDC through 230VAC



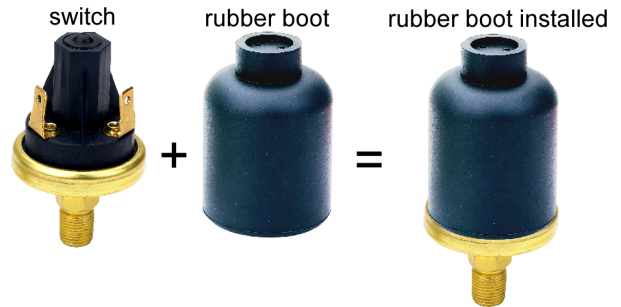
Vacuum Switches

The LF20 vacuum and pressure switch has been developed to offer typical set points. Two standard models are available for vacuum in both a normally open and normally closed configuration.

As standard they are supplied with a rubber boot to offer insulation of IP65.

Other pressure and vacuum settings available. Please enquire.

This switch is compatible with air, water, hydraulic fluid, motor oils and refrigerants.



Features include:

- Automatic reset
- Factory calibrated set points
- Rugged construction

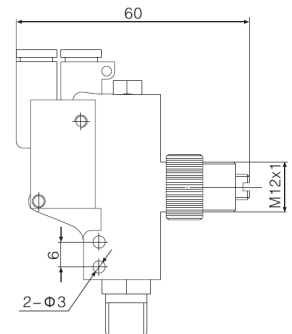
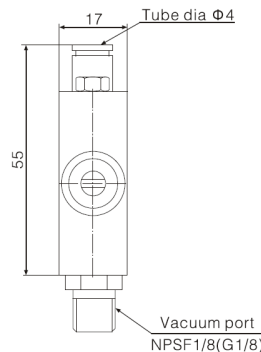
Part Number	Switch Point	Type	Rubber Boot	Port Size
LF20-V-31111B-15"HG	15"Hg	NC	Included	1/8NPT
LF20-V-32111B-15"HG	15"Hg	NO	Included	1/8NPT

Media	Air, Water, motor oils, transmission oils, refrigeration fluid etc
Working Pressure	<150psi(g)
Burst Pressure	500 psi(g)
Operating Temperature Range	-40°F to +176°F (-40°C to +80°C)
Switch Type	Direct action, blade contact
Electrical Rating	120/240VAC, 375VA 120VVAC, 5.8FLA-34.8LRA 240VAC 2.9FLA-15LRA 24VAC/DC, 3A
Dielectric Strength	750 VRMS across open contacts 1550 VRMS terminal to fitting
Terminals	1/4" Spade Connection
Connection	1/8NPT (other connection types available, please enquire)



This adjustable pneumatic vacuum switch is used on applications where the device requires a compressed air signal when a specific vacuum level is met. Normally open (NO) and normally closed (NC) models are available depending on the specifics of the intended use.

Pneumatic Vacuum Switch



AVS-212 NC	
AVS-213 NO	

Model	AVS-212	AVS-213
Switch Function	NC (normally closed)	NO (normally open)
Signal Pressure Range	22.5-120psi(g) / 1.5-8bar(g)	
Hysteresis	3.6"Hg / 120mbar(a)	0.9"Hg / 30mbar(a)
Temperature Range	14°F - 140°F / -10°C - +60 °C	
Weight	1.5oz / 44g	
Vacuum Connection	NPSF1/8 / G1/8	

Need digital vacuum switches?
Look at the switches in the pneuforce product section on page 24



The Squid has been developed to offer the vacuum user a universal end of arm vacuum tool. The Squid utilizes different “end effectors” such as vacuum cups, foam, orifice fittings and self closing valves. The choice of Squid is dependent on the application and user preference. Please contact Vacuforce to discuss the application.

The following components are required to build a complete Squid System.

A Two Part Assembly

Every Squid requires a Base Box. This is the top of the Squid system which mounts to the robot or lifting device. The cup plate will connect to the underside of the Squid. There are two types of cup plates; one is an orifice fitting option and the other for use with self closing valves.

- **Orifice Fittings**

Orifice fittings are used inside the cup plate when using vacuum foam or inside the vacuum cup fitting when using rubber vacuum cups. The orifice fittings restrict the vacuum air flow if the cup is not fully covered by the product being handled. Therefore the vacuum generator selected should be sized according to the potential leakage that may occur. This is a very simple and cost effective solution.

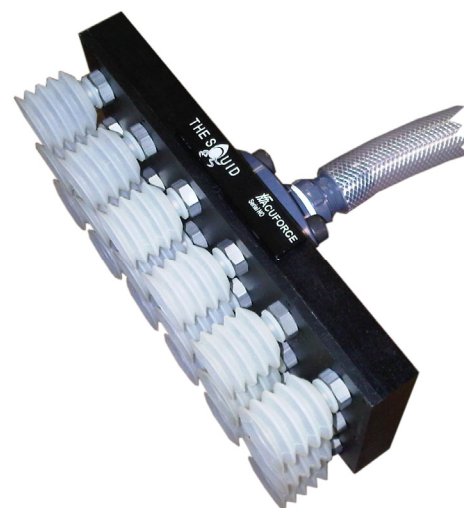
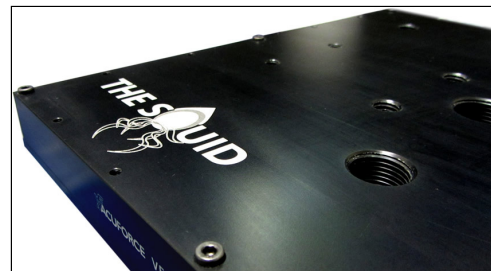
OR

- **Self Closing Valves**

The SCV option requires a deeper cup plate to accommodate the self closing valves inside the Squid. The self closing valve will close if the vacuum cup does not seal properly against the load being handled. Therefore a much smaller vacuum generation device can be used. The Vacuforce self closing valve is also adjustable and therefore can be used on products which are porous. The valve rest position is under a spring force. Consequently high inertia or inverted positioning of the Squid will not inadvertently close the valve.

Squid Assembly

The Squid is offered in component form to allow for a more flexible and easier approach to integration. The Squid consists of the following components:



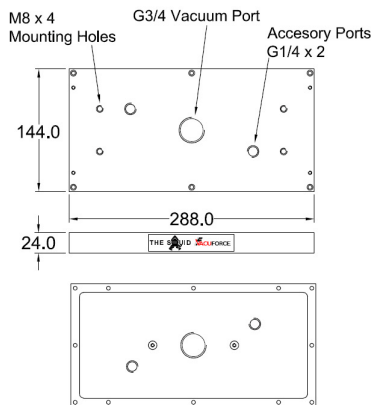
The following Squid Base Boxes are available in the standard sizes shown. The cup plates on the following pages connect to the corresponding Base Box. The vacuum port is designed for use with a standard 1"NPT pipe flange which can be seen on the Squid accessory page.

The M8 mounting holes shown are standard on a 50mm pitch, but can be configured to suit different machinery connections.

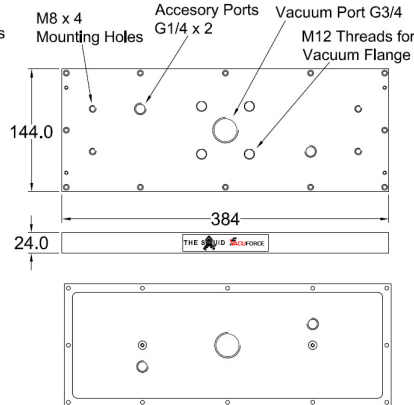


Part Number	Orifice Cup Plate	Self Closing Valve Plate
VFSQ1530	VFSQP481530	VFSQP481530SCV
VFSQ1540	VFSQP481540	VFSQP481540SCV
VFSQ1560	VFSQP481560	VFSQP481560SCV
VFSQ3030	VFSQP483030	VFSQP483030SCV
VFSQ3040	VFSQP483040	VFSQP483040SCV
VFSQ3060	VFSQP483060	VFSQP483060SCV

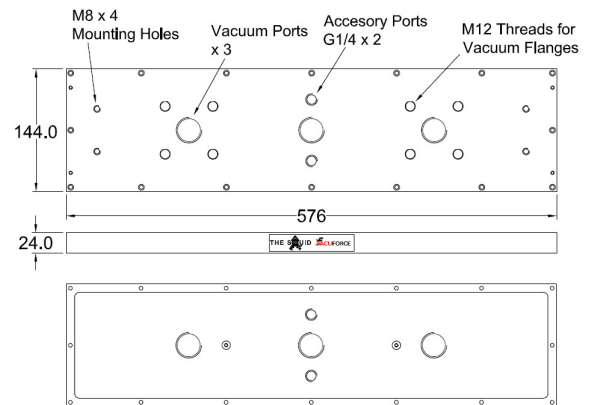
VFSQ1530



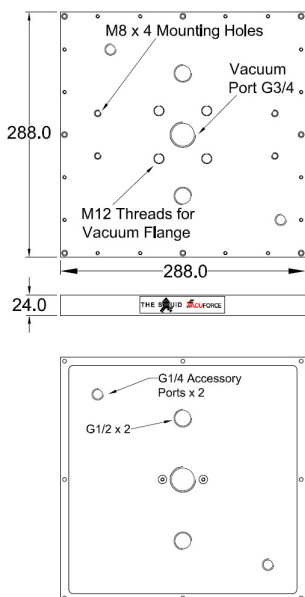
VFSQ1540



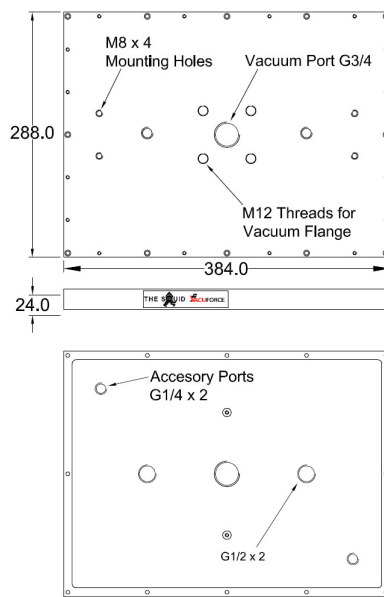
VFSQ1560



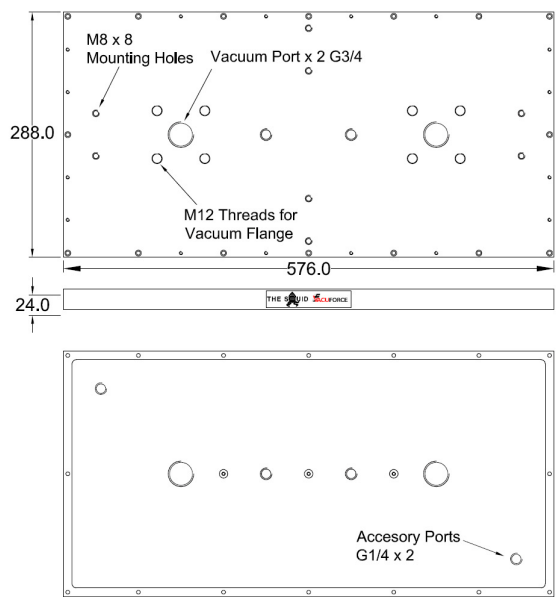
VFSQ3030



VFSQ3040

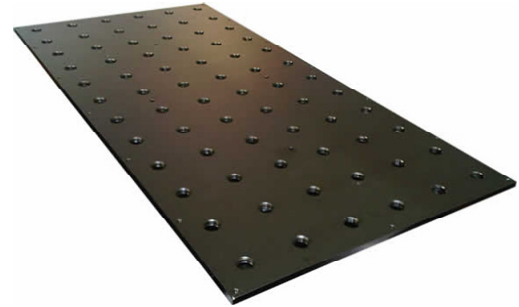


VFSQ3060



The vacuum cup plates shown below are used with orifice screws. The orifice screws are installed in the vacuum cup fitting or directly into the cup plate if being used with vacuum foam. The different orifice screws are shown on the Squid accessory page.

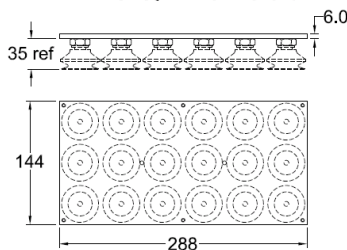
The cup plates are hard anodized in black offering an attractive finish but also long life particularly in regards to wear, caustic wash down and outside use.



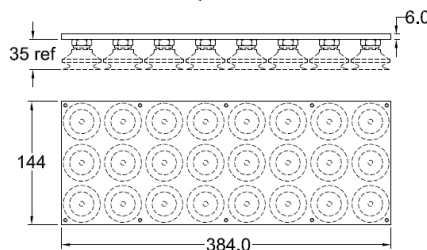
Cup Plate Part Number	Cup N°	Cup Part N°	Cup Fitting Part N°	Foam Orifice Screw	13mm Thick Foam Seal Part #	25mm Thick Foam Seal Part #
VFSQP481530	18	VFB40	VFCF40-1/4U	VFBP1/4U1.5	FM153013	FM153025
VFSQP481540	24				FM154013	FM154025
VFSQP481560	36				FM156013	FM156025
VFSQP483030	36				FM303013	FM303025
VFSQP483040	48				FM304013	FM304025
VFSQP483060	72				FM306013	FM306025

Orifice Screw Selection	Part Number
For use with VFCF40-1/4U cup fitting	VFOS1.5
For use directly in the cup plate (foam option)	VFBP1/4U1.5

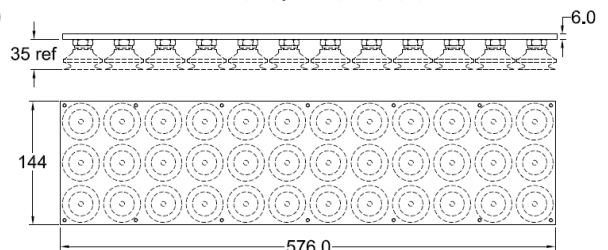
VFSQP481530



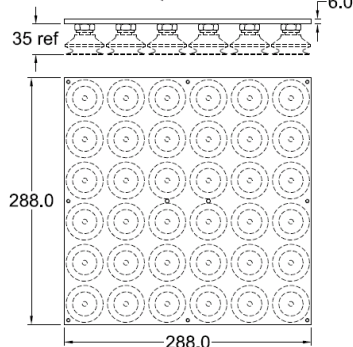
VFSQP481540



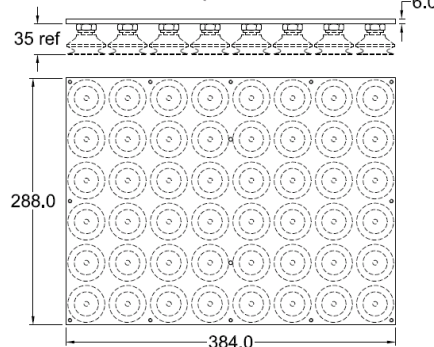
VFSQP481560



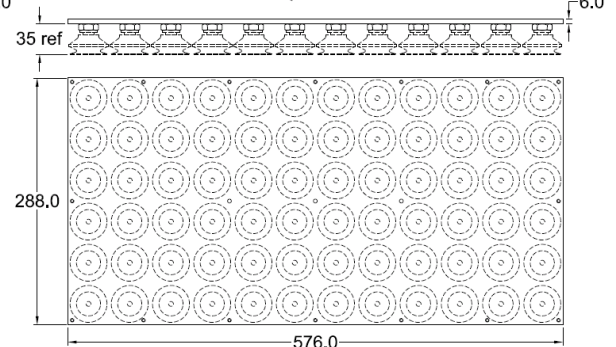
VFSQP483030



VFSQP483040



VFSQP483060



Cup Plates for Self Closing Valves

The SCV cup plate option is interchangeable with the standard orifice cup plate, using the same Squid Base Box. The height is larger and the cup thread is G3/8 instead of the standard G1/4.

The design of the VFSC3/8 self closing valve allows the 1/4" thread of a cup fitting to screw directly into the SCV. As illustrated in Fig 1 below this allows the cup fitting to be flush with the underside of the Squid cup plate when installed.

Self Closing Valve (velocity fuse)
VFSCV3/8

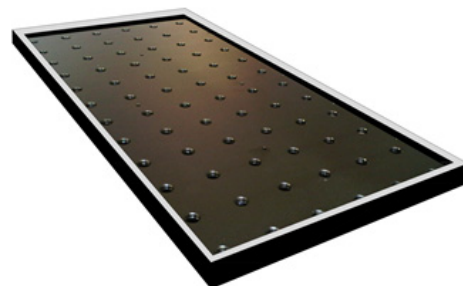
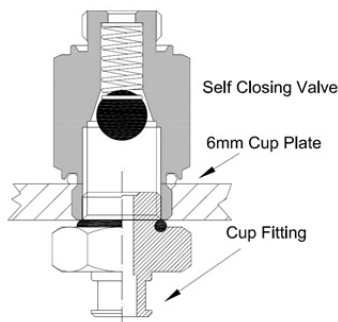
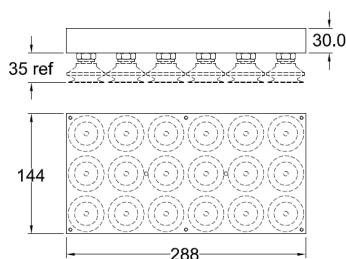


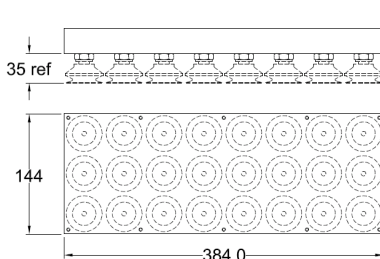
Fig 1

Cup Plate Part Number	Cup Positions	Self Closing Valve	13mm Thick Foam Seal Part #	25mm Thick Foam Seal Part #
VFSQP481530SCV	18	VFSCV3/8	FM153013	FM153025
VFSQP481540SCV	24		FM154013	FM154025
VFSQP481560SCV	36		FM156013	FM156025
VFSQP483030SCV	36		FM303013	FM303025
VFSQP483040SCV	48		FM304013	FM304025
VFSQP483060SCV	72		FM306013	FM306025

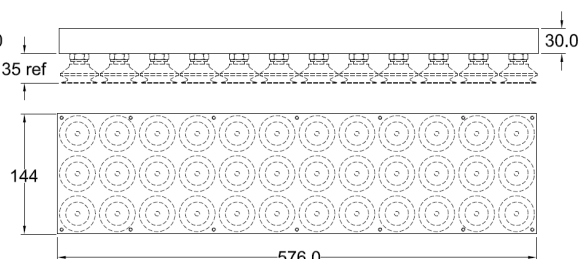
VFSQP481530SCV



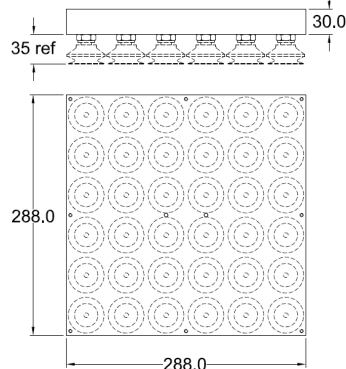
VFSQP481540SCV



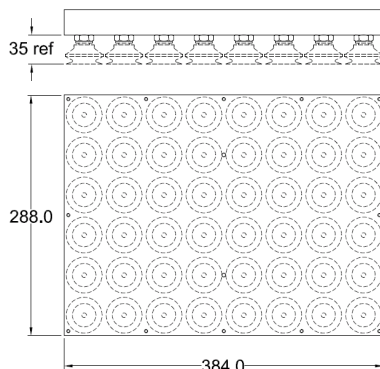
VFSQP481560SCV



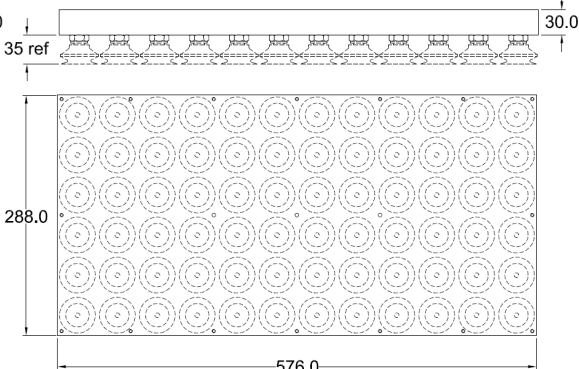
VFSQP483030SCV



VFSQP483040SCV



VFSQP483060SCV

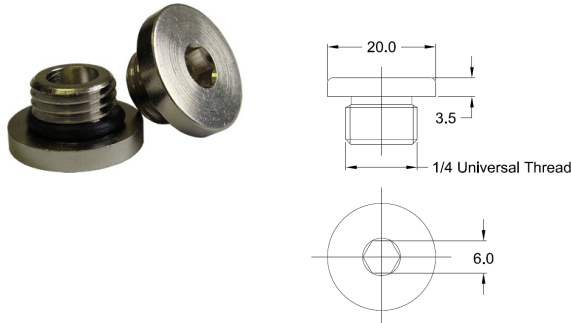


Accessories

The following components are the standard accessories for use with a standard Squid system. These options can be replaced with alternative vacuum cups, cup fittings and orifice screws should the application warrant it. Please note that the standard cup pitch on the squid is 48mm. Therefore cups larger than Ø46mm, when compressed should be staggered on the cup plate. The blanking plug, VFBP1/4U can be used where a cup is not installed as shown in Fig 1 below.

Fig 1

Blanking Plug – 1/4" Universal Thread VFBP1/4U



Vacuum Foam

Vacuum foam is a closed cell foam rubber available in neoprene and offers the user excellent flexibility when gripping non flat loads such as concrete blocks or rough sawn wood.

However the life of vacuum foam is not as long as a traditional rubber vacuum cup. Caution should also be taken as to the vacuum level being used. Vacuum foam consists of thousands of small air pockets which under a very high vacuum could possibly fracture. Therefore vacuum foam should only be used on lower vacuum applications less than 15"Hg.

Vacuum cups offer longer life and durability and where possible should always be used instead of vacuum foam.

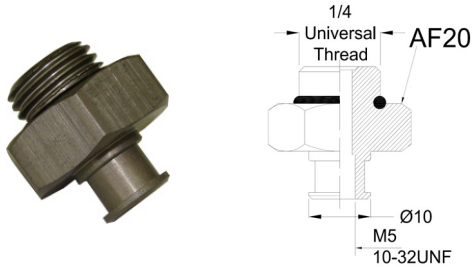


Cup Fittings

Cup fittings are utilized to mount the vacuum cups to the cup plate of The Squid. The VFCE40-1/4U is the standard cup fitting for the VFB40 single bellows vacuum cup as shown on page 75 and also the VFBL40-2 cup shown on page 79.

The VFCE40-1/U has a female 10-32UNF (M5) thread for connection of the orifice screw VFOS1.5 which is used in applications that do not require the self closing valves VFSC3/8.

Cup Fitting – 1/4" Universal Thread VFCE40-1/4U

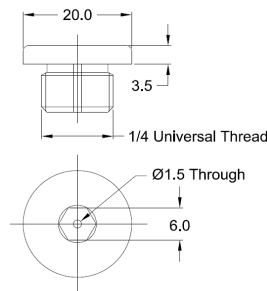


Orifice Screw – Ø1.5mm (1/16") VFOS1.5



This orifice screw is suitable for various Vacuforce cup fittings.

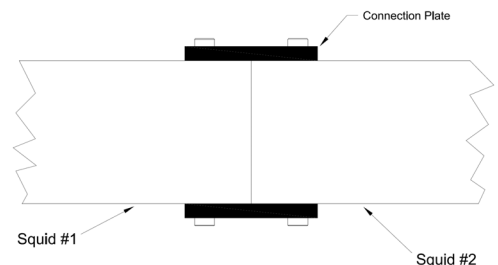
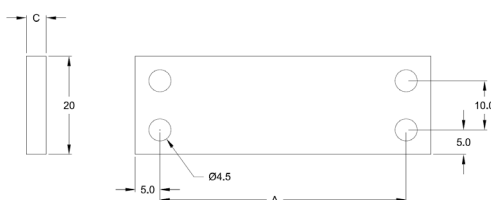
VFOS1.5-1/4U (connects into cup plates when using foam seals)



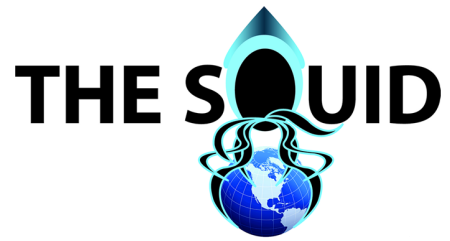
Connection Plates

The connection plates are used to offer secure connection of multiple Squid modules. These plates are able to attach to the top and underside of the Squid assembly to enable a rigid modular construction.

Part Number	Dimension A
VFCP50	50
VFCP100	100



APPLICATION Q & A



Name: _____

Telephone: _____

Company: _____

email: _____

Project Title: _____

General Description of Application: _____

Vacuum Generation Preference (check one)

☐

Compressed Air Generator (venturi)

☐

Vacuum Pump (electric motor driven)

Product Being Handled

Weight of Heaviest Piece

Maximum L x W x H

Minimum L x W x H

Cycle Rate: _____

Squid Coverage

Minimum Squid Coverage _____%

Maximum Inertia (g): _____

Type Of Handling Device (check one)

☐

Automated Robotic Arm

☐

Gantry 3 Axis Device

☐

Manual Manipulator

Type of Pick & Place Application (check one)

☐

Pick 1 piece, drop one piece

☐

Pick multiple pieces, drop multiple pieces

☐

Pick multiple pieces, drop individual pieces

Maximum Weight of Squid Preferred: _____ lbs

Is the Product Porous?

☐

Yes

☐

No

Does the Product Turn through 90°?

☐

Yes

☐

No

Further Information: _____

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