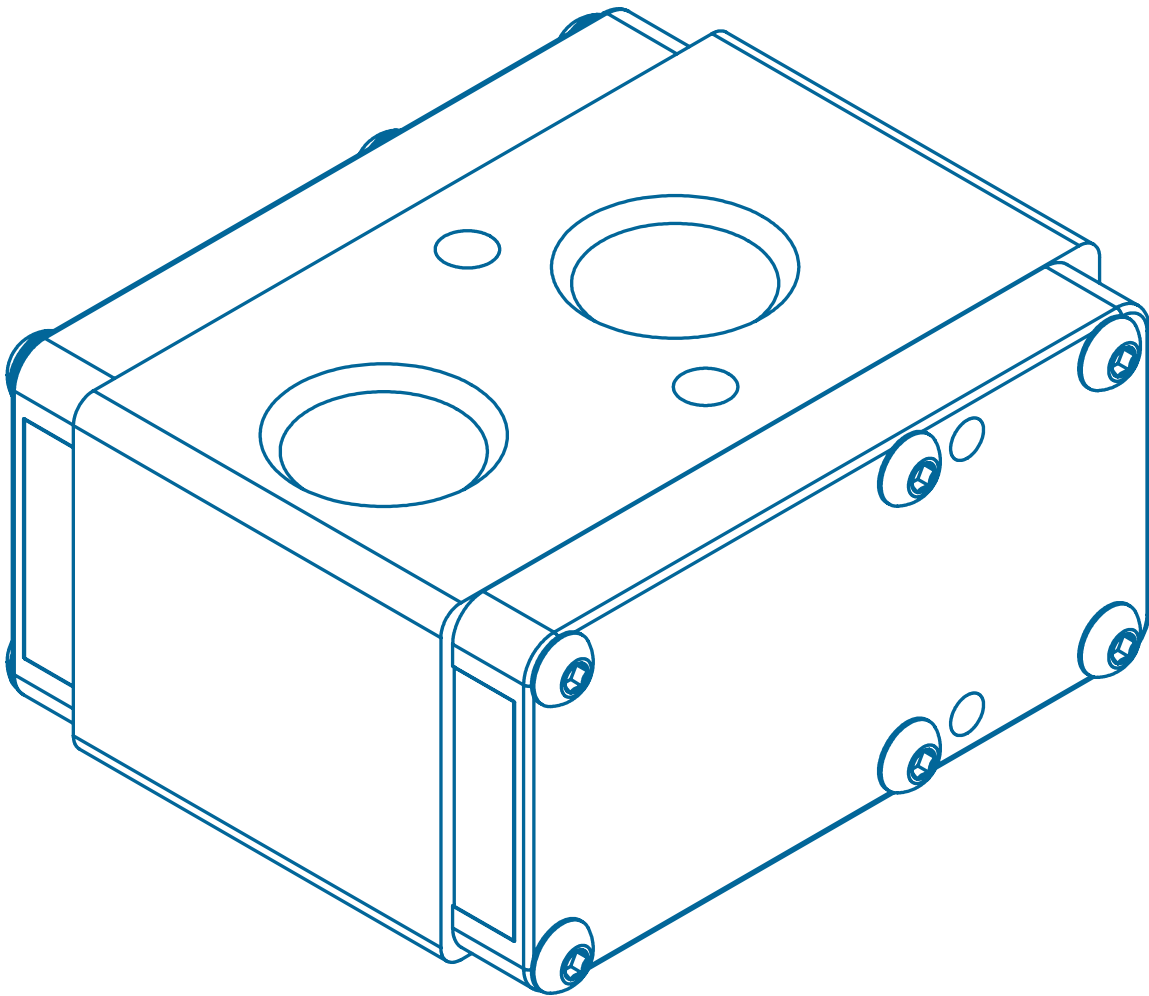
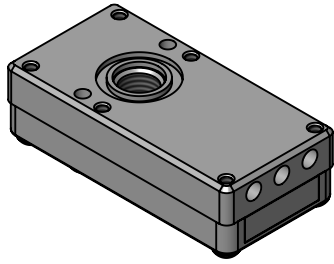


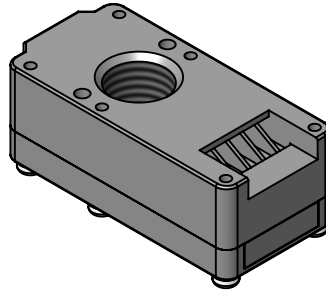
Chip Series Vacuum Pumps

Section 7

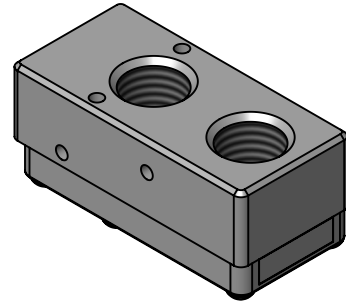




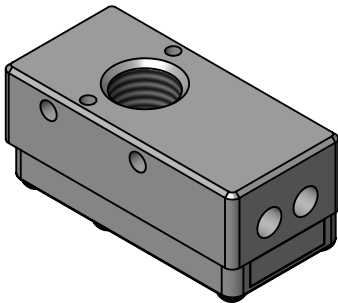
AA Base



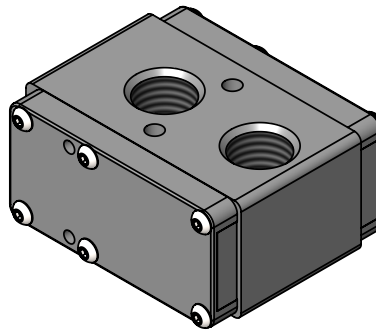
A & B Base



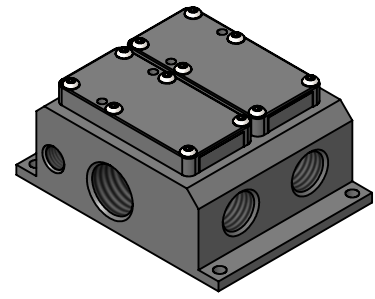
C Base



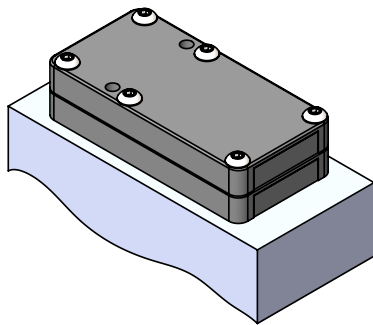
D Base



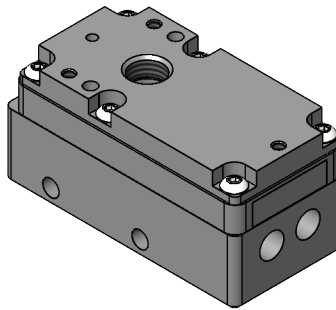
G Base



K Base



Z & ZS Option



Options

Information	3
AA Base	5
A & B Base	6
C Base	7
D Base	8
G Base	9
K Base	10
Z & ZS Option	11
Options	12
Performance	13

Basic Information

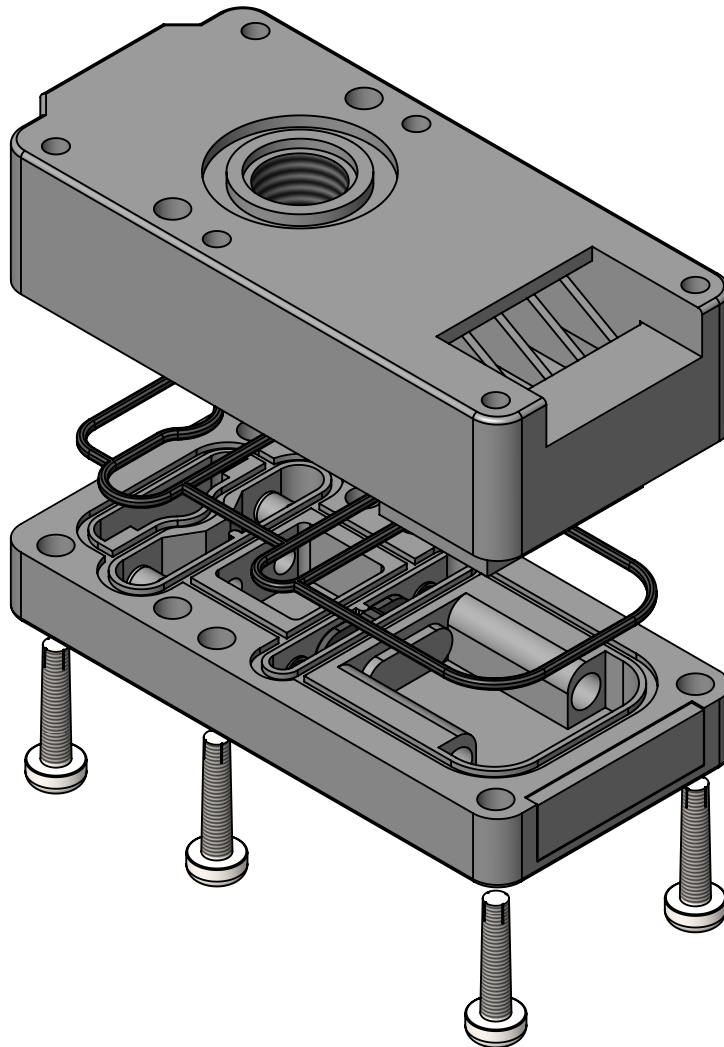
EDCO Vacuum Chip Pumps were named after electronic circuit chips whose small size and versatility have made modern products more efficient, compact, and affordable. Our low-cost Chip Pumps will do the same thing for your vacuum systems.

Chip Pumps provide the performance you expect from a multi-stage, multi-ejector, air-powered vacuum pump. To increase pump capacity, we simply add another pump module to the assembly stack. Our standard seal and valve elastomer is Nitrile, but we also offer Viton¹ and EPDM seal materials at a reasonable price. To make our systems easier to design and install, we offer non-return valves and direct mounted electronic sensors. We are always open to suggestions, so contact us if you need an accessory that you don't see in our catalog.

EDCO Chip Pumps are offered with seven standard base configurations and a "Z" option for no base at all. This allows a designer complete freedom to integrate a Chip Pump module into a proprietary assembly. However, it is more common to select an EDCO Vacuum Pump having one of the eleven standard bases that best suits your application needs. EDCO USA will design and manufacture custom bases and pump assemblies for OEMs that have special needs which are not satisfied by our standard products. Fill out the Application Worksheet in the resources available on our website.

We have selected 40% glass-filled Polyphenylene Sulphide (PPS, Ryton) for its extremely high strength, light weight, and chemical resistance. The pump bodies and ejectors are all made of PPS to eliminate chemical compatibility problems caused when different materials are used for parts within the same vacuum pump. A and B bases are also PPS for the same reason. All other bases are made of anodized aluminum for applications requiring maximum ruggedness or a larger capacity vacuum pump. All fasteners used are 303/304 series stainless steel.

¹Viton is a registered trademark of DuPont Dow.



Venturi Selection

Code	Air Pressure		Max Vacuum inHg [-kPa]
	psi	bar	
4M	60	4	25.50 [86.4]
5L	72	5	22.80 [77.2]
6E	87	6	25.50 [86.4]
6M	87	6	22.50 [86.4]

Seal Material Selection

Code	Description
N	Nitrile
E	EPDM
V	Viton ¹

¹Viton is a registered trademark of DuPont Dow.

Chemical Compatibility

Medium	Material				
	PPS	Aluminum	Nitrile	EPDM	Viton ¹
Weather, Ozone	E	G	L	E	E
Heat, Aging	E	E	G	G	E
Oil, Petrol	E	L	E	U	E
Hydrolysis	E	E	G	G	G
Acid, Alkali	E	U	G	E	G
Acetone	E	E	U	E	U
Ammonia	G	G	L	E	U
Amyl Alcohol	E	G	G	E	G
Benzene	E	G	U	U	E
Butanol	E	G	G	G	E
Cyclohexane	E	E	G	U	E
Ethanol	E	G	L	E	E
Ethyl Acetate	E	G	U	G	U
Hexane	E	E	E	U	E
Carbone Tetrachloride	E	U	U	U	E
Chlora Benzene	E	E	U	U	E
Chloroform	E	L	U	U	E
Methanol	E	G	E	E	L
Methylene Chloride	E	L	U	G	E
Methyl Ethyl Ketone	E	G	U	E	U
NaOH	E	U	G	E	G
Propanol	E	G	E	E	E
Sulphuric Acid	E	U	L	G	E
Tetrahydrofuran	E	U	U	G	U
Tetrachlorethelene	E	U	U	U	E
Toulene	E	E	U	U	E
Trichlorethane	E	U	U	U	E
Trichlorethylene	E	U	U	U	E
Xylene	E	G	U	U	E
Acetic Acid	E	L	E	E	G

E = Excellent | G = Good | L = Limited | U = Unsited

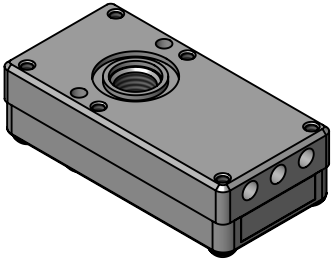
¹Viton is a registered trademark of DuPont Dow.

AA Base

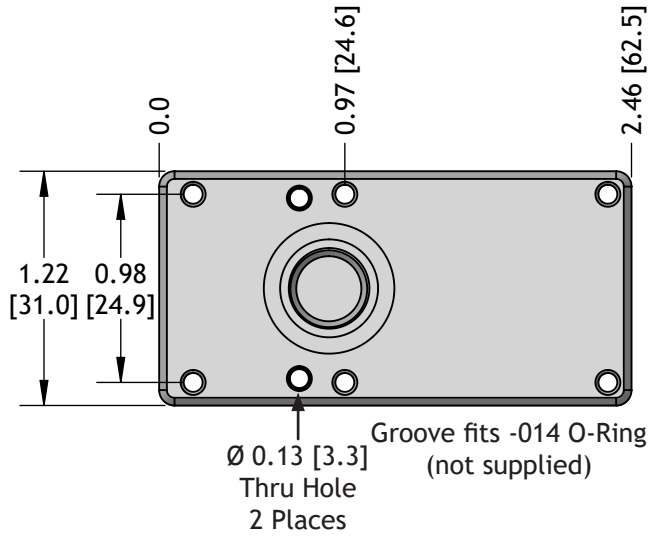
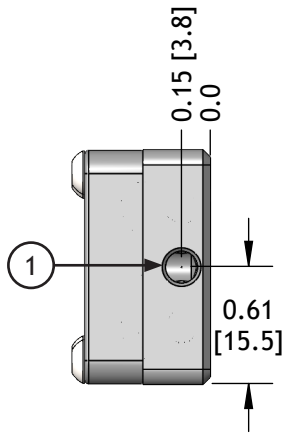
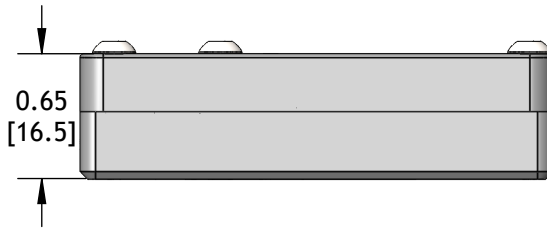
PPS Pump Module w/ Aluminum Base

Series	Capacity	Seal Material	Non-Return Option		Options	
C	6M	10	N		-AA	
	4M	M Series	E	EPDM	(Blank)	None
	6M	10	N	Nitrile	R	Non-Return
	5L	E & L Series	V	Viton ¹		
	6E	14				
					-PA5F	Port Adapter, M5X0.8
					-PA18F	Port Adapter, G 1/8 NPSF

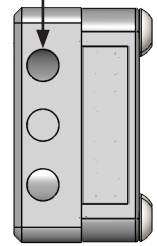
¹Viton is a registered trademark of DuPont Dow.



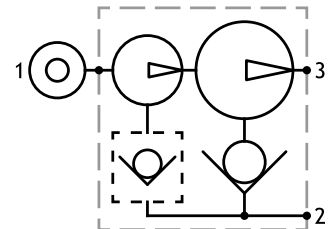
Weight: 2.36 oz [66.8 g]



Exhaust 3 Places



Code	Function	Ports
1	Air Supply	M5x0.8 (10-32 UNF)
2	Vacuum	G 1/8 NPSF



A & B Bases

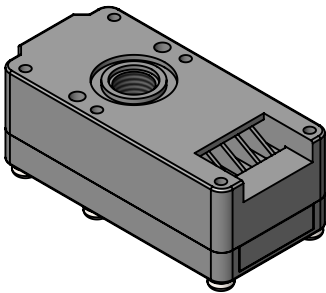
PPS Pump Module & Base

Series	Capacity	Seal	Non-Return Option	Base	Threads	Options
C	5L	14	V	-A		
	4M	M Series	E EPDM	(Blank) None	-A A Base	(Blank) None
	6M	10	N Nitrile	R Non-Return	-B B Base	-G G Threads ² -PA5F Port Adapter, M5X0.8
	5L	20	V Viton ¹			-PA18F Port Adapter, G 1/8 NPSF
	6E	E & L Series				
		14				
		28				

¹Viton is a registered trademark of DuPont Dow.

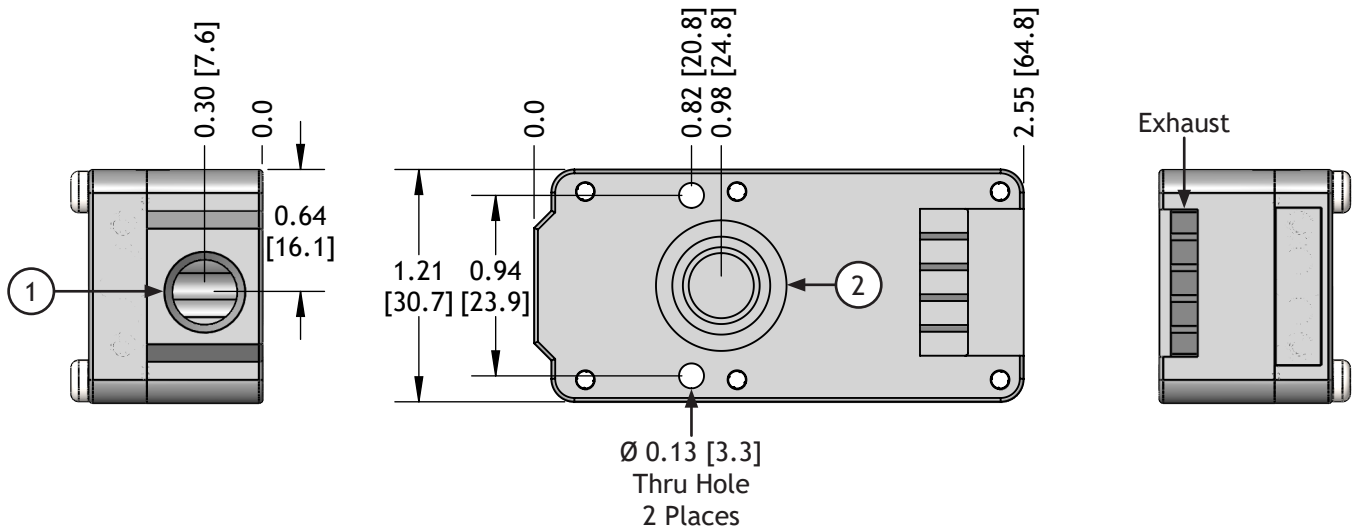
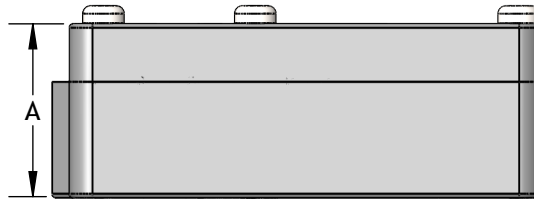
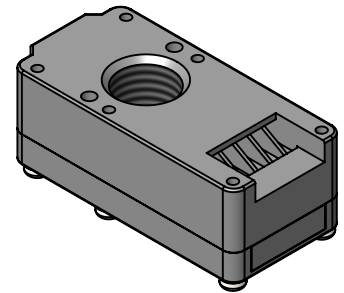
²Only available on B Base.

A Base



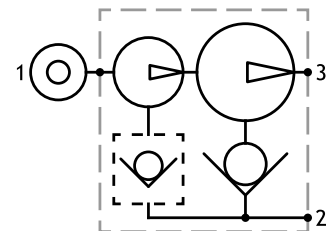
Groove fits -014 O-Ring
(not supplied)

B Base



Capacity	A	A - Weight	B - Weight
M	E & L	in [mm]	oz [g]
14	10	0.90 [22.9]	3.00 [85.0]
28	20	1.20 [30.5]	3.85 [109.1]

Code	Function	A	B - NPSF	B - G
1	Air Supply		G 1/8 NPSF	
2	Vacuum	G 1/8 NPSF	3/8 NPSF	G 3/8

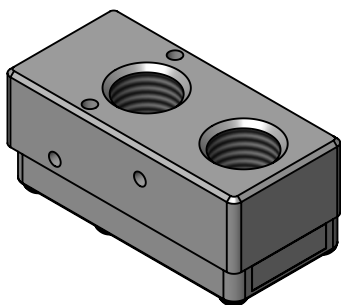
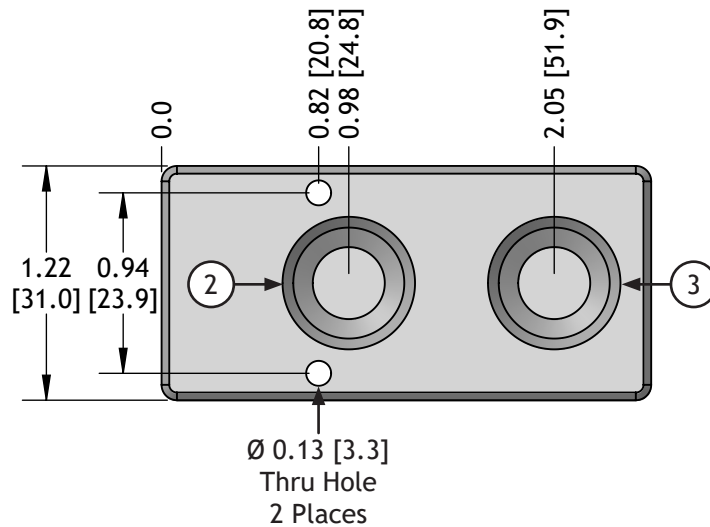
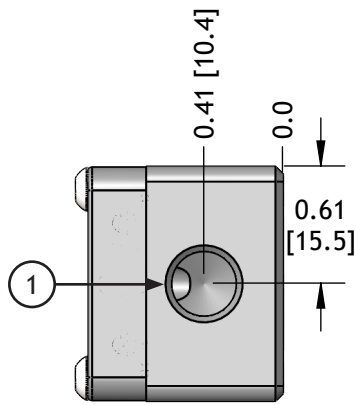
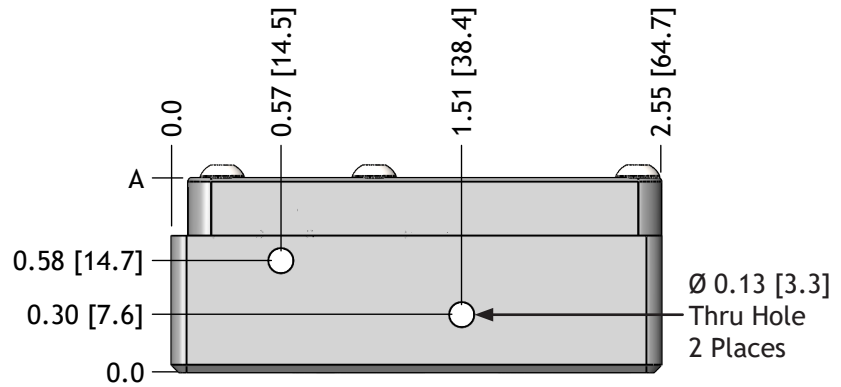


C Base

PPS Pump Module w/ Aluminum Base

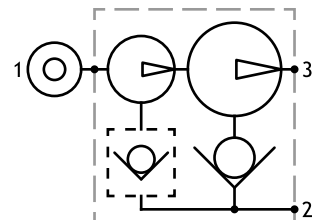
Series	Capacity	Seal	Non-Return Option		Options		Silencer			
C	6E	14	E	R	-C					
	4M	M Series	E	EPDM	(Blank)	None	(Blank)	None		
	6M	10	N	Nitrile	R	Non-Return	-PA5F	Port Adapter, M5X0.8	-ST	STB38M
	5L	20	V	Viton ¹			-PA18F	Port Adapter, G 1/8 NPSF		
	6E	30								
		40								
		E & L Series								
		14								
		28								
		42								
		56								

¹Viton is a registered trademark of DuPont Dow.



Capacity		A	Weight
M	E & L	in [mm]	oz [g]
10	14	1.01 [25.7]	3.73 [105.8]
20	28	1.31 [33.3]	4.58 [130.0]
30	42	1.61 [40.9]	5.44 [154.1]
40	56	1.91 [48.5]	6.29 [178.2]

Code	Function	Ports
1	Air Supply	G 1/8 NPSF
2	Vacuum	3/8 NPSF
3	Exhaust	3/8 NPSF

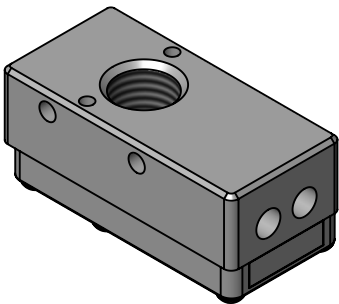
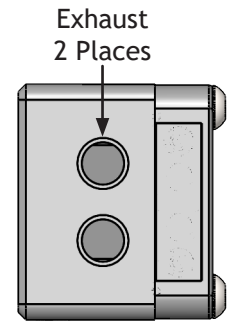
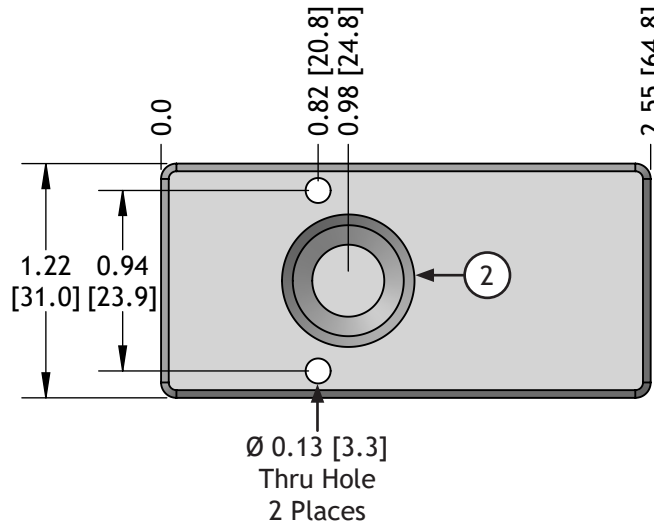
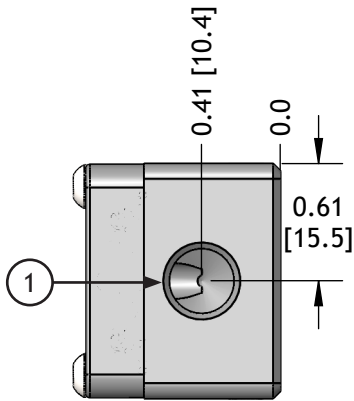
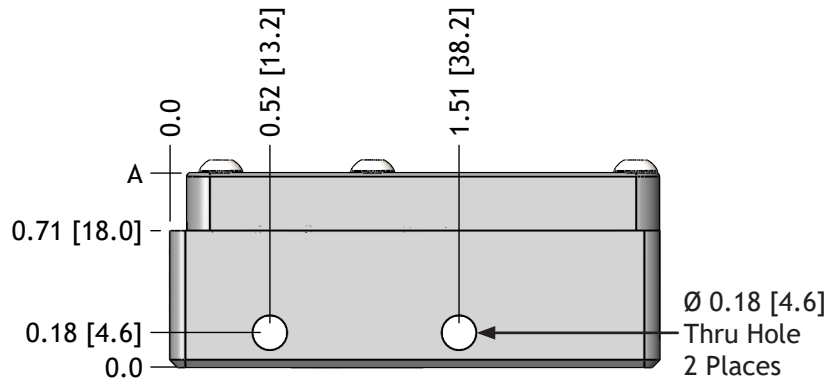


D Base

PPS Pump Module w/ Aluminum Base

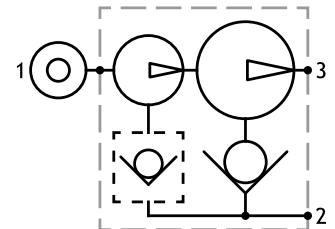
Series	Capacity	Seal	Non-Return Option	Options	Threads
C	5L	14	N	-D	
4M	M Series	E	EPDM	(Blank) None	(Blank) NPSF
6M	10	N	Nitrile	R Non-Return	-PA5F Port Adapter, M5X0.8 -G G Threads
5L	20	V	Viton ¹		-PA18F Port Adapter, G 1/8 NPSF
6E	30				
	E & L Series				
	14				
	28				
	42				

¹Viton is a registered trademark of DuPont Dow.



Capacity	A	Weight	
M	E & L	in [mm]	oz [g]
10	14	1.01 [25.7]	3.58 [101.6]
20	28	1.31 [33.3]	4.44 [125.7]
30	42	1.61 [40.9]	5.29 [149.9]

Code	Function	NPSF	G
1	Air Supply		G 1/8 NPSF
2	Vacuum	3/8 NPSF	G 3/8



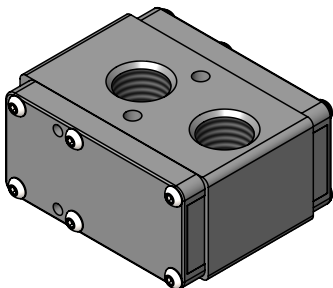
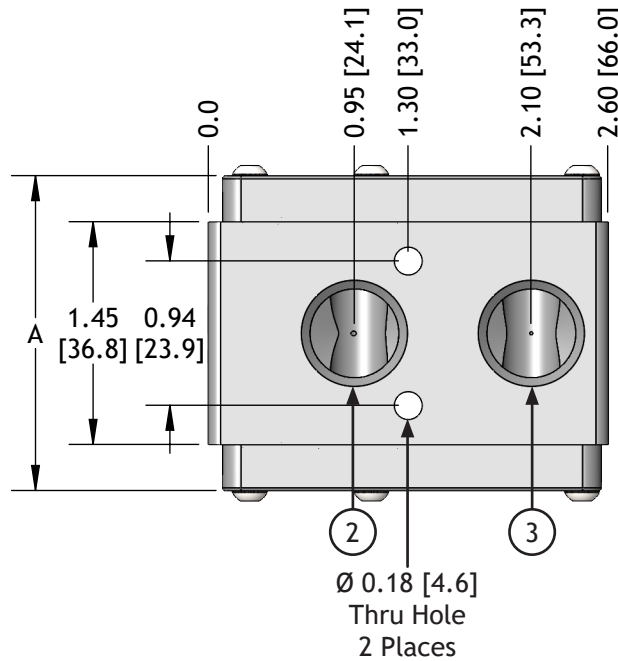
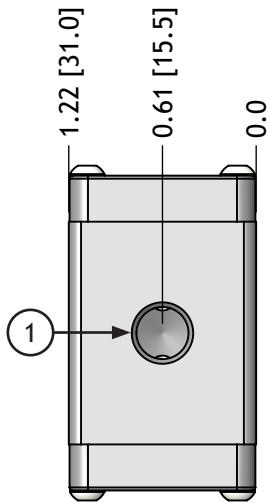
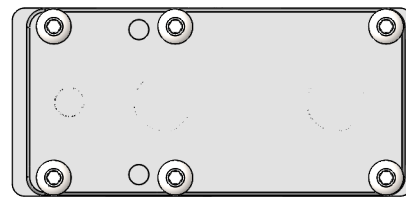
G Base

PPS Pump Module w/ Aluminum Base

Series	Capacity	Seal	Non-Return Option		Silencer		Options		
C	4M 20	N	-G						
4M	M Series	E	EPDM	(Blank)	None	(Blank)	None	(Blank)	None
6M	20	N	Nitrile	R	Non-Return	-ST	STB38M	-PA5F	Port Adapter, M5X0.8
5L	40	V	Viton ¹					-PA18F	Port Adapter, G 1/8 NPSF
6E	60								
	E & L Series								
	28								
	56								
	84								

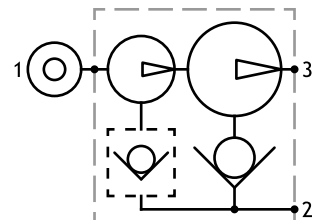
¹Viton is a registered trademark of DuPont Dow.

²Includes a t-style vacuum filter and replacement filter elements (qty 3).



Capacity		A	Weight
M	E & L	in [mm]	oz [g]
20	28	1.82 [46.2]	8.06 [228.4]
30	42	2.12 [53.8]	8.91 [252.5]
40	56	2.42 [61.5]	9.76 [276.6]
50	70	2.72 [69.1]	10.61 [300.7]
60	84	3.02 [76.7]	11.46 [324.8]

Code	Function	Ports
1	Air Supply	G 1/8 NPSF
2	Vacuum	3/8 NPSF
3	Exhaust	3/8 NPSF



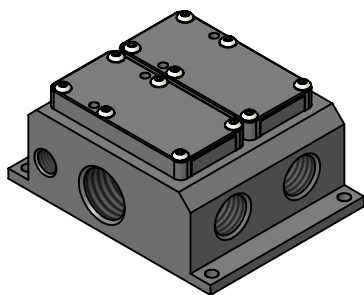
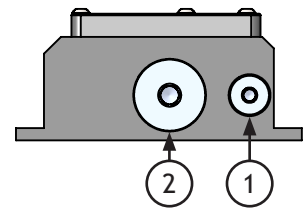
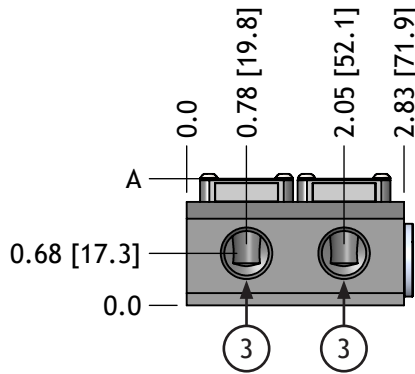
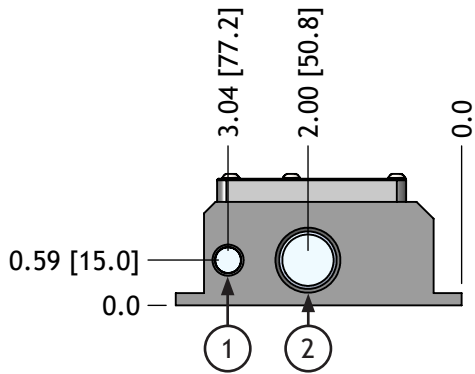
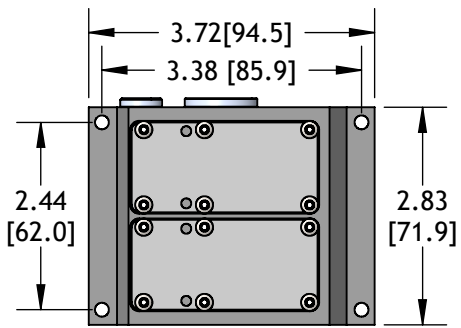
K Base

PPS Pump Module w/ Aluminum Base

Series	Capacity	Seal	Non-Return Option		Silencer		Options		
C	4M 20	N	-K						
4M	M Series	E	EPDM	(Blank)	None	(Blank)	None	(Blank)	None
6M	20	N	Nitrile	R	Non-Return	-ST	STB38M	-PA5F	Port Adapter, M5X0.8
5L	40	V	Viton ¹					-PA18F	Port Adapter, G 1/8 NPSF
6E	60								
	E & L Series								
	28								
	56								
	84								

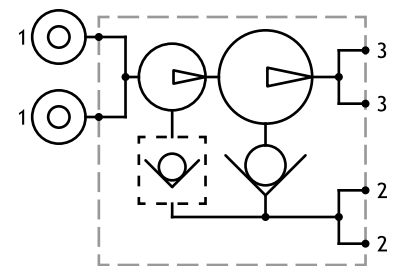
¹Viton is a registered trademark of DuPont Dow.

²Includes a t-style vacuum filter and replacement filter elements (qty 3).



Capacity		A	Weight
M	E & L	in [mm]	oz [g]
20	28	1.65 [41.9]	17.14 [485.8]
40	56	1.95 [49.5]	18.73 [531.0]
60	84	2.25 [57.2]	20.32 [576.2]

Code	Function	Ports
1	Air Supply	G 1/8 NPSF
2	Vacuum	G 1/2 NPSF
3	Exhaust	3/8 NPSF

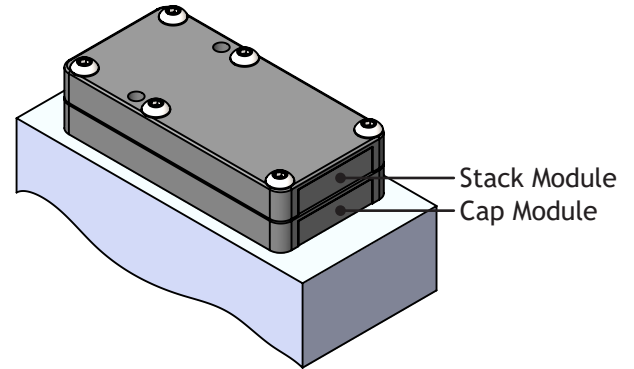
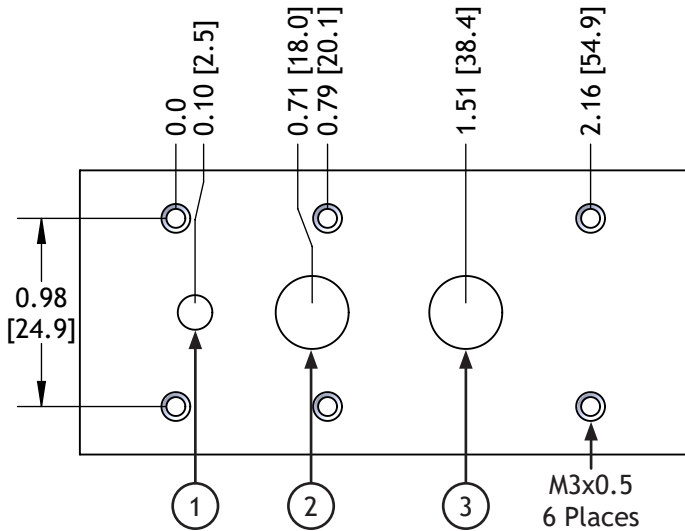


Z Option (Zero / No Base)

PPS pump module ready for integration into your custom design.

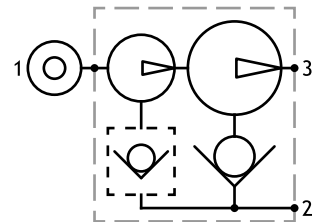
Series	Capacity	Seal	Non-Return Option	Module Type			
C	5L	14	E	R	-Z		
4M	M Series	E	EPDM	(Blank)	None	-Z	Cap
6M	10	N	Nitrile	R	Non-Return	-ZS	Stack
5L	E & L Series	V	Viton ¹				
6E	14						

¹Viton is a registered trademark of DuPont Dow.



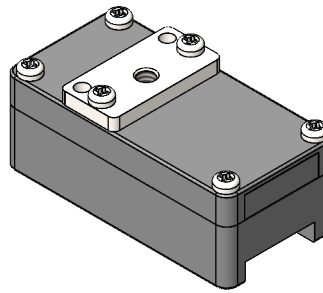
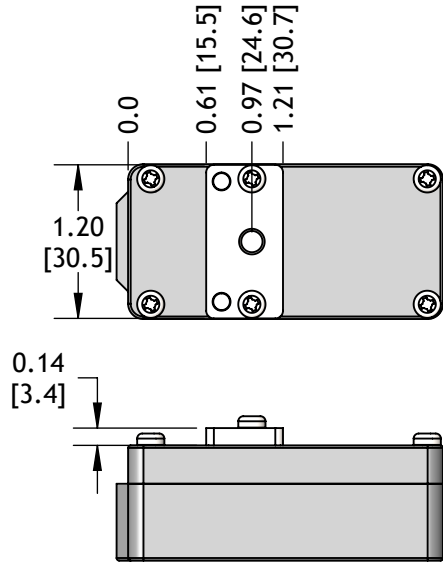
Weight: 0.86 oz [24.3 g]

Code	Function	Hole Ø in [mm]
1	Air Supply	0.18 [4.6]
2	Vacuum	0.38 [9.7]
3	Exhaust	0.38 [9.7]

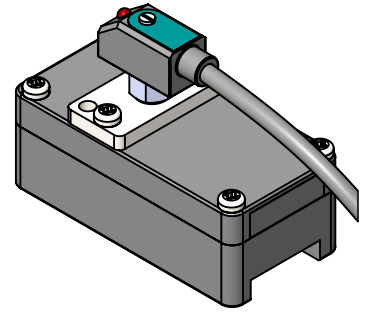


PA5F Option: M5 Monitor Port

An additional vacuum port allows for vacuum monitoring.

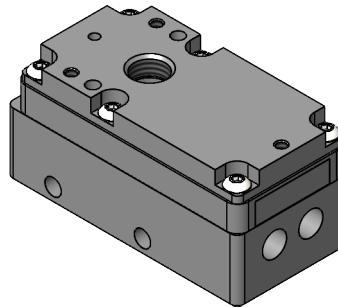
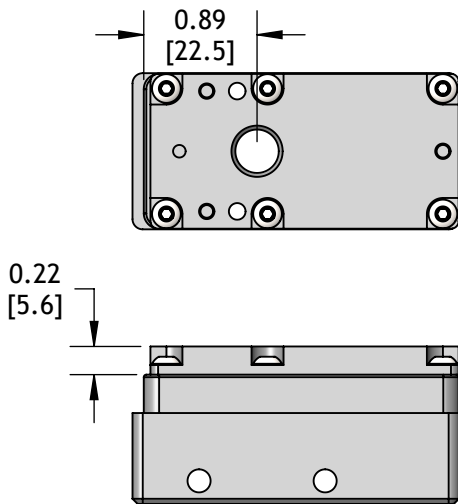


Additional Weight: 0.38 oz [10.7 g]

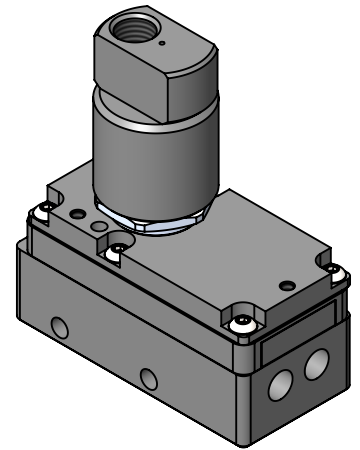


PA18F Option: G 1/8 NPSF Port

An additional vacuum port allows for mounting a vacuum switch or release check valve directly to the pump.



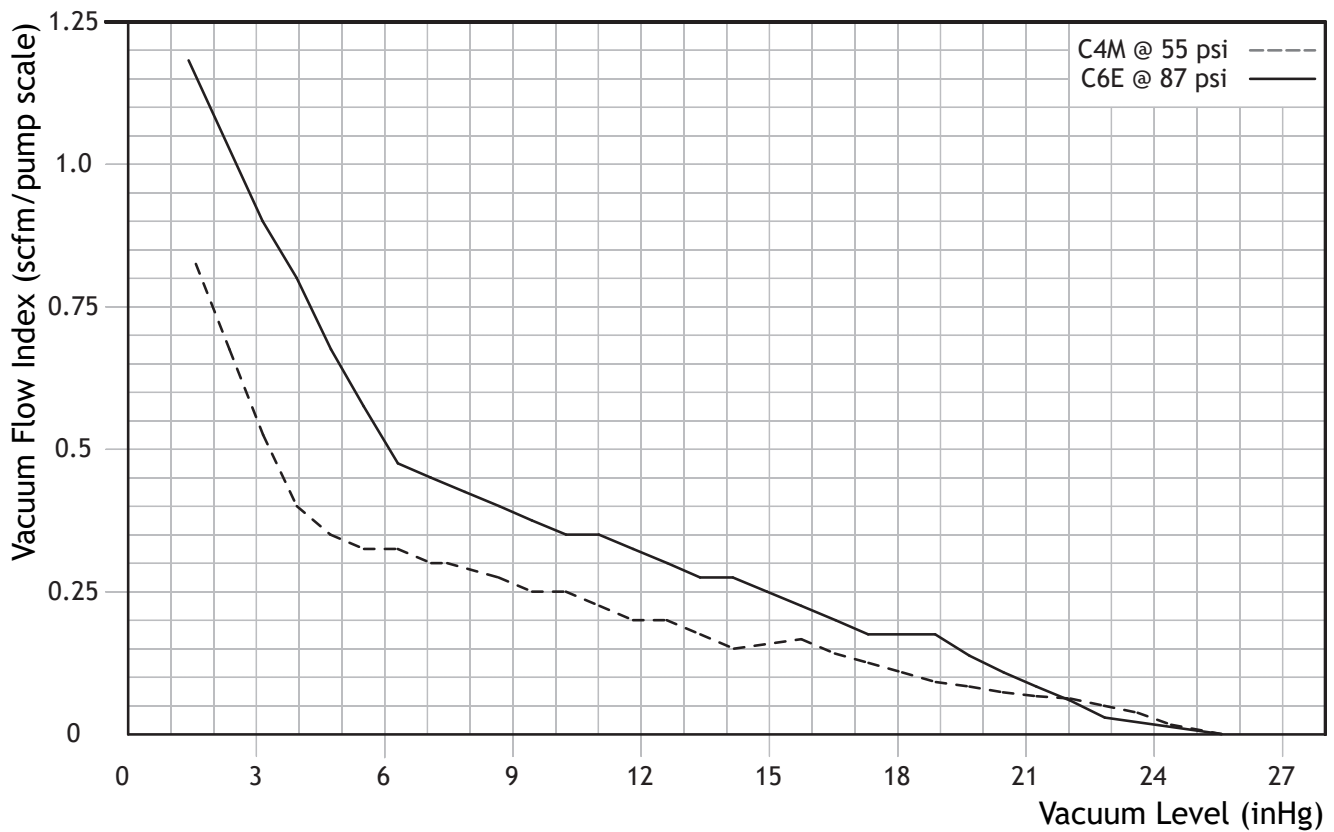
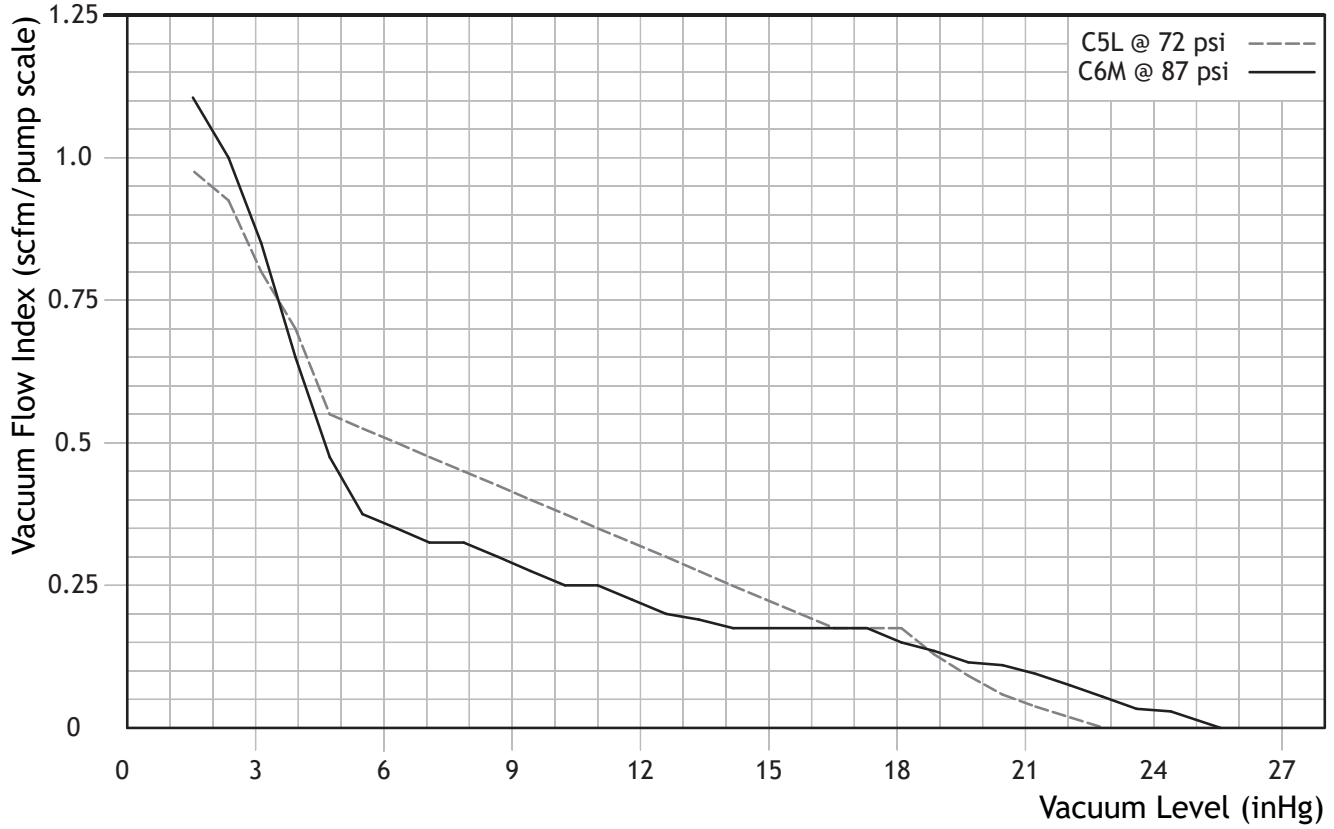
Additional Weight: 0.88 oz [25.0 g]



Performance

C5I & C6E	7	14	28	42	58	70	84	98	112
Scale	1	2	4	6	8	10	12	14	16

C4M & C6M	5	10	20	30	40	50	60	70	80
Scale	1	2	4	6	8	10	12	14	16



All performance data presented is a representation of production pumps but is not a guarantee due to variations in local barometric pressure and of mass produced components.

Performance

Vacuum Flow - SCFM

Model	Air Supply PSI	Air Consu SCFM	Max Vacuum inHg	SCFM at Vacuum Level							
				3 inHg	6 inHg	9 inHg	12 inHg	15 inHg	18 inHg	21 inHg	24 inHg
C5L14	72	2.0	23.6	1.6	1.0	0.83	0.64	0.45	0.35	0.09	-
C5L28	72	4.0	23.6	3.3	2.0	1.7	1.30	0.9	0.7	0.18	-
C5L42	72	6.0	23.6	4.9	3.1	2.5	1.9	1.4	1.1	0.27	-
C5L56	72	8.0	23.6	6.6	4.1	3.3	2.6	1.8	1.4	0.36	-
C5L70	72	10.0	23.6	8.2	5.1	4.2	3.2	2.3	1.8	0.45	-
C5L84	72	12.0	23.6	9.8	6.1	5.0	3.8	2.7	2.1	0.54	-
C6E14	87	2.3	25.6	1.8	1.0	0.78	0.64	0.5	0.35	0.18	0.03
C6E28	87	4.6	25.6	3.7	2.1	1.6	1.30	1.0	0.7	0.36	0.06
C6E42	87	6.9	25.6	5.5	3.1	2.3	1.9	1.5	1.1	0.54	0.09
C6E56	87	9.2	25.6	7.4	4.1	3.1	2.6	2.0	1.4	0.72	0.12
C6E70	87	11.5	25.6	9.2	5.2	3.9	3.2	2.5	1.8	0.9	0.15
C6E84	87	13.8	25.6	11.0	6.2	4.7	3.8	3.0	2.1	1.1	0.18
C4M10	55	1.6	25.5	1.1	0.65	0.53	0.40	0.32	0.22	0.14	0.05
C4M20	55	3.2	25.5	2.2	1.3	1.1	0.80	0.64	0.44	0.28	0.11
C4M30	55	4.8	25.5	3.3	2.0	1.6	1.2	1.0	0.66	0.42	0.33
C4M40	55	6.4	25.5	4.4	2.6	2.1	1.6	1.3	0.88	0.56	0.44
C4M50	55	8.0	25.5	5.5	3.3	2.7	2.0	1.6	1.1	0.70	0.27
C4M60	55	9.6	25.5	6.6	3.9	3.2	2.4	1.9	1.3	0.84	0.66
C6M10	87	1.6	25.5	1.8	0.72	0.44	0.35	0.31	0.2	0.2	0.06
C6M20	87	3.2	25.5	3.5	1.4	0.88	0.7	0.62	0.4	0.4	0.12
C6M30	87	4.8	25.5	5.2	2.2	1.3	1.0	0.93	0.6	0.6	0.18
C6M40	87	6.4	25.5	7.0	2.9	1.8	1.4	1.2	0.80	0.8	0.24
C6M50	87	8.0	25.5	8.8	3.6	2.2	1.8	1.6	1.0	1.0	0.3
C6M60	87	9.6	25.5	10.5	4.3	2.6	2.1	1.9	1.2	1.2	0.36

SCFM X 28.32 = nl / m

Evacuation Time - sec / 100 in³

Model	Air Supply PSI	Air Consum SCFM	Max Vacuum inHg	SCFM at Vacuum Level							
				3 inHg	6 inHg	9 inHg	12 inHg	15 inHg	18 inHg	21 inHg	24 inHg
C5L14	72	2.0	23.6	0.14	0.39	0.77	1.4	2.3	3.9	6.8	-
C5L28	72	4.0	23.6	0.07	0.2	0.39	0.68	1.2	1.9	3.4	-
C5L42	72	6.0	23.6	0.05	0.13	0.26	0.45	0.76	1.3	2.3	-
C5L56	72	8.0	23.6	0.04	0.1	0.19	0.34	0.57	0.97	1.7	-
C5L70	72	10.0	23.6	0.03	0.08	0.15	0.27	0.46	0.77	1.4	-
C5L84	72	12.0	23.6	0.02	0.07	0.13	0.23	0.38	0.64	1.1	-
C6E14	87	2.3	25.6	0.13	0.34	0.71	1.3	2.2	3.6	6.3	7.1
C6E28	87	4.6	25.6	0.07	0.17	0.36	0.64	1.1	1.8	3.2	3.6
C6E42	87	6.9	25.6	0.04	0.11	0.24	0.42	0.72	1.2	2.1	2.4
C6E56	87	9.2	25.6	0.03	0.09	0.18	0.32	0.54	0.91	1.6	1.8
C6E70	87	11.5	25.6	0.03	0.07	0.14	0.25	0.43	0.73	1.3	1.4
C6E84	87	13.8	25.6	0.02	0.06	0.12	0.21	0.36	0.61	1.1	1.2
C4M10	55	1.6	25.5	0.16	0.50	1.0	1.9	3.2	5.4	9.3	18.2
C4M20	55	3.2	25.5	0.08	0.25	0.50	1.0	1.6	2.7	4.7	9.1
C4M30	55	4.8	25.5	0.05	0.17	0.33	0.63	1.1	1.8	3.1	6.1
C4M40	55	6.4	25.5	0.04	0.13	0.25	0.48	0.8	1.4	2.3	4.6
C4M50	55	8.0	25.5	0.03	0.1	0.2	0.38	0.64	1.1	1.9	3.6
C4M60	55	9.6	25.5	0.03	0.08	0.17	0.32	0.53	0.9	1.6	3.1
C6M10	87	1.6	25.5	0.12	0.37	0.79	1.5	2.5	4.3	7.5	14.5
C6M20	87	3.2	25.5	0.06	0.19	0.40	0.74	1.3	2.2	3.8	7.3
C6M30	87	4.8	25.5	0.04	0.17	0.26	0.49	0.83	1.4	2.5	4.8
C6M40	87	6.4	25.5	0.03	0.09	0.2	0.37	0.63	1.1	1.9	3.6
C6M50	87	8.0	25.5	0.02	0.07	0.16	0.3	0.5	0.86	1.5	2.9
C6M60	87	9.6	25.5	0.02	0.06	0.13	0.25	0.42	0.72	1.3	2.4

sec / 100 in³ X 0.61 = sec / l

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