

ADJUSTABLE E-VAC INSTALLATION & MAINTENANCE

SUCTION CUPS		VACUUM TUBING (O.D.) 900795 (1/4") 900796 (3/8")	VACUUM HOSE (I.D.) 900796 (1/4") 900689 (3/8") 900690 (1/2") 900063 (3/4") 900064 (1")	VACUUM GENERATOR	VACUUM GENERATOR CAN BE USED WITHOUT VACUUM CUPS.	
	SMALL ROUND MODEL DIAMETER THREADS 900752 1" 1/4 NPT 900753 1.5" 1/4 NPT 900754 2" 1/4 NPT 900755 2.5" 1/4 NPT 900756 3.5" 1/4 NPT					
	LARGE ROUND MODEL DIAMETER THREADS 900757 3.25" 3/8 NPT 900758 3.25" 1/4 NPT 900759 4.25" 3/8 NPT 900760 5" 3/8 NPT 900761 6" 1/2 NPT	OPTIONAL MUFFLER 890001 1/4 NPS 890003 1/2 NPS	STRAIGHT THROUGH 890004 3/4 NPS 890005 1 NPS		MODEL 9008 OR 9033 MODEL 9005 OR 9006 OR 9027 MODEL 9001 OR 9032	
FITTINGS (Male Global Thread fits either NPT or BSP)						
	OVAL MODEL SIZE THREADS 900762 .5" X 1" 1/8 NPT 900763 .5" X 2" 1/8 NPT 900764 .87" X 1.73" 1/8 NPT 900765 1.47" X 2.96" 1/8 NPT					
	BELLOWS MODEL DIAMETER THREADS 900766 .73" 1/4 NPT 900767 1" 1/8 NPT 900768 1.5" 1/4 NPT 900769 2" 1/4 NPT 900770 2.5" 1/4 NPT 900771 3.25" 3/8 NPT	PUSH-IN CONNECTORS for Tubing 900773 1/4 Tube X 1/8 FNPT 900774 1/4 Tube X 1/8 MGT 900775 1/4 Tube X 1/4 MGT 900776 1/4 Tube X 3/8 MGT 900777 3/8 Tube X 1/8 MGT 900778 3/8 Tube X 1/4 MGT 900779 3/8 Tube X 3/8 MGT 900780 3/8 Tube X 1/2 MGT MGT = Male Global Thread	PUSH-IN CONNECTORS for Hose 900969 1/4 MNPT x 1/4 hose barb 900970 1/4 MNPT x 3/8 hose barb 900971 1/4 MNPT x 1/2 hose barb 900972 1/2 MNPT x 1/4 hose barb 900973 1/2 MNPT x 3/8 hose barb 900974 1/2 MNPT x 1/2 hose barb 900975 1/2 MNPT x 3/4 hose barb 900976 3/4 MNPT x 3/8 hose barb 900977 3/4 MNPT x 1/2 hose barb 900978 3/4 MNPT x 3/4 hose barb 900979 3/4 MNPT x 1 hose barb 900980 1 MNPT x 3/4 hose barb 900981 1 MNPT x 1 hose barb	PUSH-IN SWIVEL TEE CONNECTORS 900781 1/4 Tube X 1/8 MGT 900782 1/4 Tube X 1/4 MGT 900783 1/4 Tube X 3/8 MGT 900784 3/8 Tube X 1/8 MGT 900785 3/8 Tube X 1/4 MGT 900786 3/8 Tube X 3/8 MGT 900787 3/8 Tube X 1/2 MGT MGT = Male Global Thread	PUSH-IN BRANCH ELBOW CONNECTORS 900788 1/4 Tube X 1/8 MGT 900789 1/4 Tube X 1/4 MGT 900790 3/8 Tube X 1/4 MGT 900791 3/8 Tube X 3/8 MGT MGT = Male Global Thread	PUSH-IN BULKHEAD CONNECTORS Female Union 900792 1/4 Tube X 1/4 Tube 900793 3/8 Tube X 3/8 Tube 900809 1/4 Tube X 1/4 NPT 900810 3/8 Tube X 1/4 NPT

COMPRESSED AIR LINE SIZES

For E-Vac Models 840008 – 840030, use 1/4" pipe or 3/8" hose for runs up to 25' (7.6m) long. For runs up to 50' (15.2m), use 3/8" pipe or 1/2" hose and for runs over 50' (15.2m), use 1/2" pipe or larger. For 840060 use 3/8" pipe or 1/2" hose for runs up to 25' (7.6m). For runs up to 50' (15.2m), use 1/2" pipe or larger. For runs over 50' (15.2m), use 3/4" pipe or larger. Do not use restrictive fittings or undersized lines that can "starve" the E-Vac by causing excessive line pressure drop.

COMPRESSED AIR SUPPLY

With proper filtration and separation of dirt, moisture and oil from the compressed air supply, the E-Vac will operate for years with no maintenance required. Use a 10 micron or smaller filter separator on the compressed air supply (Model 9032 Automatic Drain Filter Separator is used for Model 840060; Model 9001 is used for all other models.).

To prevent problems associated with oil, use an oil removal filter (Model 9005 Oil Removal Filter is used with the Model 840030 E-Vac; Model 9006 for the Model 840060 E-Vac; Model 9027 is used for all other models.). The oil removal filter should be used downstream from the automatic drain filter separator. Filters should be used close to each E-Vac, within 10 to 15' (3 to 4.6m) is best.

E-Vac is designed to use normal shop air supplies up to 80 PSIG (5.5 BAR). For infinite control of flow and vacuum, pressure may be regulated (Model 9033 Pressure Regulator is used for the Model 840060 E-Vac; Model 9008 for all other models.). Maximum pressure is 250 PSIG (17.2 BAR, 1.72 MPa).

If air preparation units other than EXAIR models are being used, please note the following:

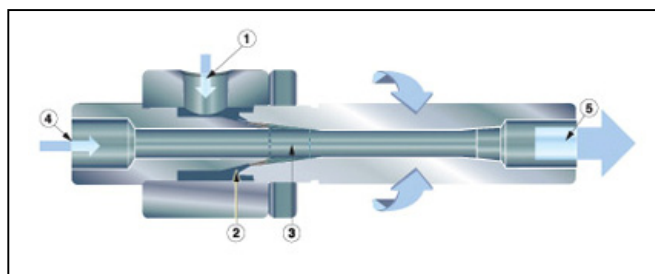
- **PRESSURE REGULATORS** – Must be pressure relieving and rated for a supply pressure of 250 PSIG (17.2 BAR, 1.72 MPa). Suggested operating pressure is 5-125 PSIG (0.3-8.6 BAR, 34-862 kPa). For models 840015 and under, flow should be minimum 40 SCFM (1133 SLPM). For models over 840015, flow should be a minimum of 150 SCFM (4248 SLPM).
- **AUTO DRAIN FILTER SEPARATORS** – Must be rated for a supply pressure of 250 PSIG (17.2 BAR, 1.72 MPa) and have 5 micron filtration. For models 840015 and under, flow should be minimum 40 SCFM (1133 SLPM). For

models over 840015, flow should be a minimum of 150 SCFM (4248 SLPM).

- **OIL REMOVAL FILTERS** – Must be rated for a supply pressure of 250 PSIG (17.2 BAR, 1.72 MPa) and have 0.03 micron filtration. For models 840015 and under, flow should be minimum 40 SCFM (1133 SLPM). For models over 840015, flow should be a minimum of 150 SCFM (4248 SLPM).

HOW IT WORKS

Compressed air flows through the inlet (1), then through an adjustable annular nozzle (2). As the airstream enters the vacuum flow, it expands and increases in velocity (3). A vacuum flow is induced, creating suction (4). The airflow that is drawn through the vacuum inlet mixes with the primary airstream, then exhausts on the opposite end (5).



The amount of vacuum flow can be adjusted. When facing the exhaust end, loosen the lock ring (turn counterclockwise), then turn the exhaust. To increase flow, turn the exhaust counterclockwise. To decrease flow, turn the exhaust clockwise. Be careful not to unthread the exhaust completely. There will be a point where no more vacuum flow can be achieved.

The amount of vacuum created varies with the porosity of the load being picked up. Units come from the factory set to 15" Hg if used on a solid, non-porous surface. A maximum of 25" Hg can be achieved on a solid, non-porous surface, but will require increasing the air consumption and vacuum flow.

Model	Air Inlet	Vacuum Inlet	Exhaust Port
840008	1/8 NPT	1/4 NPT	1/4 NPT
840008M	1/8 NPT	1/4 NPT	1/4 NPS
840015	3/8 NPT	1/2 NPT	1/2 NPT
840015M	3/8 NPT	1/2 NPT	1/2 NPS
840030	3/8 NPT	1/2 NPT	3/4 NPT
840030M	3/8 NPT	1/2 NPT	3/4 NPS
840060	1/2 NPT	3/4 NPT	1 NPT
840060M	1/2 NPT	3/4 NPT	1 NPS

E-Vac Models (Silencing Mufflers may be installed to reduce noise levels.)	Straight-Through Muffler
840008	890001
840015	890003
840030	890004
840060	890005

FITTINGS AND TUBING

The vacuum port of the E-Vac has an NPT thread (a vacuum cup can be threaded directly into it). For vacuum cups that are remotely located, push-in connector fittings or hose barbs (most have global threads for use with NPT and BSP) can be installed on the E-Vac and the vacuum cup. Vacuum tubing is available (10', 20', 30', 40' and 50' lengths) to connect them. For best performance, the length of the tubing should be minimized to achieve the best attach and release times.

CHECK VALVE

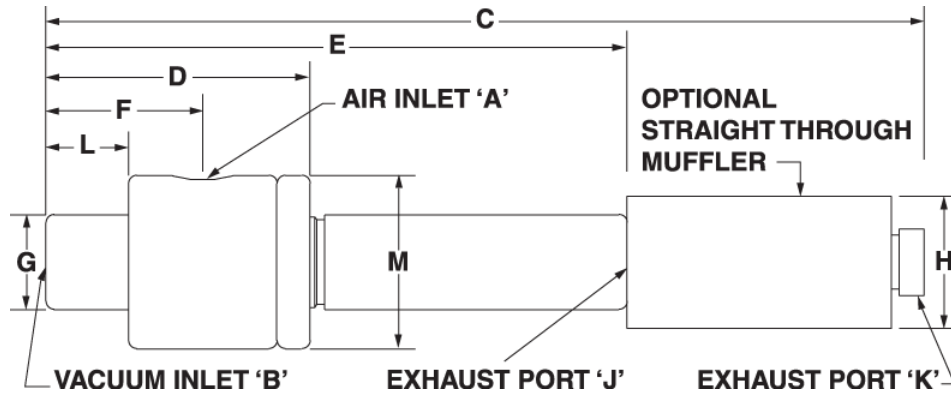
A vacuum check valve is available to hold the vacuum in case of compressed air loss. It is designed for high flow so it doesn't restrict airflow or slow the vacuum operation. Maximum vacuum can still be achieved without affecting the performance. E-Vac vacuum generators that are used without a check valve will release the load if there is a significant drop in compressed air pressure or the supply of compressed air is lost.

TROUBLESHOOTING & MAINTENANCE

If There Is A Reduction In Flow Or Vacuum From The E-Vac, check the pressure by installing a gauge at the compressed air inlet of the E-Vac. Large pressure drops are possible due to undersized lines, restrictive fittings and clogged filter elements.

For replacement or repair filter and regulator parts, contact EXAIR at 1-800-903-9247 or techhelp@exair.com.
Call (513) 671-3322 for outside the US and Canada.

Adjustable E-Vac Dimensions



Adjustable Vacuum Generator Dimensions													
Model	Air Inlet A	Vacuum Inlet B		C	D	E	F	G	H	L	M	Exhaust Port J	Exhaust Port K
840008	1/8 NPT	1/4 NPT	in	N/A	2.00	4.38	1.19	0.72	N/A	0.63	1.31	1/4 NPT	N/A
			mm	N/A	51	111	30	18	N/A	16	33		
840008M	1/8 NPT	1/4 NPT	in	6.63	2.00	4.38	1.19	0.72	0.75	0.63	1.31	1/4 NPT	1/4 NPS
			mm	168	51	111	30	18	19	16	33		
840015	3/8 NPT	1/2 NPT	in	N/A	2.38	5.44	1.31	.97	N/A	0.63	1.56	1/2 NPT	N/A
			mm	N/A	60	138	33	25	N/A	16	40		
840015M	3/8 NPT	1/2 NPT	in	9.69	2.38	5.44	1.31	.97	1.25	0.63	1.56	1/2 NPT	1/2 NPS
			mm	246	60	138	33	25	32	16	40		
840030	3/8 NPT	1/2 NPT	in	N/A	2.50	6.19	1.44	1.22	N/A	0.75	1.94	3/4 NPT	N/A
			mm	N/A	64	157	37	31	N/A	19	49		
840030M	3/8 NPT	1/2 NPT	in	13.63	2.50	6.19	1.44	1.22	2.00	0.75	1.94	3/4 NPT	3/4 NPS
			mm	346	64	157	37	31	51	19	49		
840060	1/2 NPT	3/4 NPT	in	N/A	2.75	6.50	1.56	1.47	N/A	0.75	2.19	1 NPT	N/A
			mm	N/A	70	165	40	37	N/A	19	56		
840060M	1/2 NPT	3/4 NPT	in	13.94	2.75	6.50	1.56	1.47	2.00	0.75	2.19	1 NPT	1 NPS
			mm	354	70	165	40	37	51	19	56		

CLEANING

If contaminants have clogged the E-Vac, inspect it for dirt contamination and a possible oil film inside the unit. Clean it with a mild detergent and reassemble. Occasionally, there is a build-up which occurs in the unit that is a result of vapors in the atmosphere that have been pulled through the E-Vac. Clean all surfaces with a solvent and a clean rag.

If you have any questions or problems, please contact an EXAIR Application Engineer at:

Toll Free: 1-800-903-9247 (U.S. & Canada)
Telephone: 513 671-3322 outside of U.S. & Canada
Toll Free Fax: 866-329-3924 (U.S. & Canada)
FAX: 513 671-3363 outside of U.S. & Canada
E-mail: techhelp@exair.com
Website: www.exair.com

IN-LINE E-VAC INSTALLATION & MAINTENANCE

SUCTION CUPS		FITTINGS (Male Global Thread fits either NPT or BSP)			
	SMALL ROUND MODEL DIAMETER THREADS 900752 1" 1/4 NPT 900753 1.5" 1/4 NPT 900754 2" 1/4 NPT 900755 2.5" 1/4 NPT 900756 3.5" 1/4 NPT	<p>VACUUM TUBING 900795 (1/4") 900796 (3/8")</p> <p>VACUUM GENERATOR CAN BE USED WITHOUT VACUUM CUPS.</p> <p>ATTACH ANY MODEL VACUUM CUP LISTED TO THE LEFT</p> <p>VACUUM GENERATOR</p> <p>OPTIONAL MUFFLERS</p> <p>STANDARD* 900800 1/4 NPT 900801 3/8 NPT 900802 1/2 NPT</p> <p>STRAIGHT THROUGH** 3905 1/4 NPT 3911 3/8 NPT 3912 1/2 NPT</p> <p>MODEL 9008</p> <p>MODEL 9005 OR 9027</p> <p>MODEL 9001 OR 9004</p>			
	LARGE ROUND MODEL DIAMETER THREADS 900757 3.25" 3/8 NPT 900758 3.25" 1/4 NPT 900759 4.25" 3/8 NPT 900760 5" 3/8 NPT 900761 6" 1/2 NPT				
	OVAL MODEL SIZE THREADS 900762 .5" X 1" 1/8 NPT 900763 .5" X 2" 1/8 NPT 900764 .87" X 1.73" 1/8 NPT 900765 1.47" X 2.96" 1/8 NPT	<p>PUSH-IN CONNECTORS</p> <p>900773 1/4 Tube X 1/8 FNPT 900774 1/4 Tube X 1/8 MGT 900775 1/4 Tube X 1/4 MGT 900776 1/4 Tube X 3/8 MGT 900777 3/8 Tube X 1/8 MGT 900778 3/8 Tube X 1/4 MGT 900779 3/8 Tube X 3/8 MGT 900780 3/8 Tube X 1/2 MGT</p> <p>MGT = Male Global Thread</p>	<p>PUSH-IN SWIVEL TEE CONNECTORS</p> <p>900781 1/4 Tube X 1/8 MGT 900782 1/4 Tube X 1/4 MGT 900783 1/4 Tube X 3/8 MGT 900784 3/8 Tube X 1/8 MGT 900785 3/8 Tube X 1/4 MGT 900786 3/8 Tube X 3/8 MGT 900787 3/8 Tube X 1/2 MGT</p> <p>MGT = Male Global Thread</p>	<p>PUSH-IN BRANCH ELBOW CONNECTORS</p> <p>900788 1/4 Tube X 1/8 MGT 900789 1/4 Tube X 1/4 MGT 900790 3/8 Tube X 1/4 MGT 900791 3/8 Tube X 3/8 MGT</p> <p>MGT = Male Global Thread</p>	
	BELLOWS MODEL DIAMETER THREADS 900766 .73" 1/4 NPT 900767 1" 1/8 NPT 900768 1.5" 1/4 NPT 900769 2" 1/4 NPT 900770 2.5" 1/4 NPT 900771 3.25" 3/8 NPT	<p>PUSH-IN BULKHEAD CONNECTORS Female Union</p> <p>900792 1/4 Tube X 1/4 Tube 900793 3/8 Tube X 3/8 Tube 900809 1/4 Tube X 1/4 NPT 900810 3/8 Tube X 1/4 NPT</p>			

*Max Pressure 150 psig (10 bar) Operating Temp 35°F-120°F (2°C-49°C)

**Not to be pressurized. Operating temp 35°F-200°F (2°C-93°C)

COMPRESSED AIR LINE SIZES

For E-Vac Models 800001- 800017 and 810002-810031, use 1/4" pipe or 3/8" hose for runs up to 25' (7.6m) long. For runs up to 50' (15.2m), use 3/8" pipe or 1/2" hose and for runs over 50' (15.2m), use 1/2" pipe or larger. Do not use restrictive fittings or undersized lines that can "starve" the E-Vac by causing excessive line pressure drop.

COMPRESSED AIR SUPPLY

With proper filtration and separation of dirt, moisture and oil from the compressed air supply, the E-Vac will operate for years with no maintenance required. Use a 10 micron or smaller filter separator on the compressed air supply (Model 9001 Automatic Drain Filter Separator for all models.).

To prevent problems associated with oil, use an oil removal filter (Model 9005 Oil Removal Filter is used with the Model 810031 E-Vac; Model 9027 Oil Removal Filter is used for all other models.). The oil removal filter should be used downstream from the automatic drain filter separator. Filters should be used close to each E-Vac, within 10 to 15' (3 to 4.6m) is best.

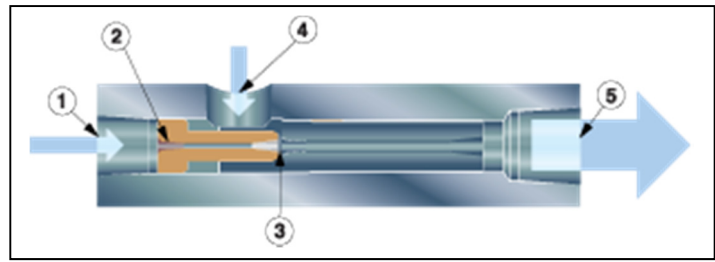
E-Vac is designed to use normal shop air supplies up to 80 PSIG (5.5 BAR). For infinite control of flow and vacuum, pressure may be regulated (Model 9008 Pressure Regulator for all models). Maximum pressure is 250 PSIG (17.2 BAR, 1.72 MPa).

If air preparation units other than EXAIR models are being used, please note the following:

- **PRESSURE REGULATORS** – Must be pressure relieving and rated for a supply pressure of 250 PSIG (17.2 BAR, 1.72 MPa). Suggested operating pressure is 5-125 PSIG (0.3-8.6 BAR, 34-862 kPa). For models 800017, 810013 and under, flow should be minimum 24 SCFM (680 SLPM). For models over 800017 and 810013, flow should be a minimum of 50 SCFM (1416 SLPM).
- **AUTO DRAIN FILTER SEPARATORS** – Must be rated for a supply pressure of 250 PSIG (17.2 BAR, 1.72 MPa) and have 5 micron filtration. For models 800017, 810013 and under, flow should be minimum 24 SCFM (680 SLPM). For models over 800017 and 810013, flow should be a minimum of 50 SCFM (1416 SLPM).
- **OIL REMOVAL FILTERS** – Must be rated for a supply pressure of 250 PSIG (17.2 BAR, 1.72 MPa) and have 0.03 micron filtration. For models 800017, 810013 and under, flow should be minimum 24 SCFM (680 SLPM). For models over 800017 and 810013, flow should be a minimum of 50 SCFM (1416 SLPM).

HOW IT WORKS

Compressed air flows through the inlet (1), then through a single directed nozzle (2). As the airstream exhausts, it expands and increases in velocity prior to passing through the venturi (3). A vacuum inlet tangential to the primary airflow (4) is located at the suction point between the orifice and the venturi. The airflow that is drawn through the vacuum inlet mixes with the primary airstream, then exhausts on the opposite end (5).



CHECK VALVE

A vacuum check valve is available to hold the vacuum in case of compressed air loss. It is designed for high flow so it doesn't restrict airflow or slow the vacuum operation. Maximum vacuum can still be achieved without affecting the performance. E-Vac vacuum generators that are used without a check valve will release the load if there is a significant drop in compressed air pressure or the supply of compressed air is lost.

TROUBLESHOOTING & MAINTENANCE

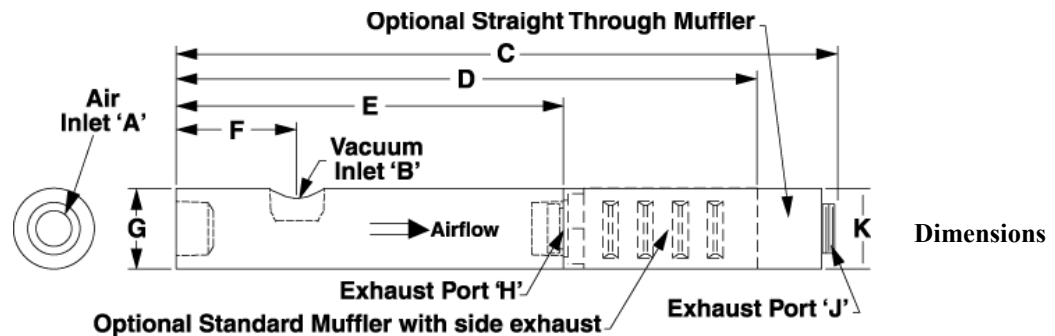
If There Is A Reduction In Flow Or Vacuum From The E-Vac, check the pressure by installing a gauge at the compressed air inlet of the E-Vac. Large pressure drops are possible due to undersized lines, restrictive fittings and clogged filter elements.

For replacement or repair filter and regulator parts, contact EXAIR at 1-800-903-9247 or techhelp@exair.com. Call (513) 671-3322 for outside the US and Canada.

CLEANING

If contaminants have clogged the E-Vac, inspect it for dirt contamination and a possible oil film inside the unit. Clean it with a mild detergent and reassemble. Occasionally, there is a build-up which occurs in the unit that is a result of vapors in the atmosphere that have been pulled through the E-Vac. Clean all surfaces with a solvent and a clean rag.

In-Line E-Vac Dimensions



In-Line Vacuum Generator Dimensions											
Model	Air Inlet A	Vacuum Inlet B		C	D	E	F	G	H	J	K
800001, 800002, 800003, 810002, 810003, 810006	1/8 NPT	1/8 NPT	in	N/A	N/A	3.00	0.88	0.75	1/4	N/A	N/A
			mm	N/A	N/A	76	22	19	NPT	N/A	N/A
800001H, 800002H, 800003H, 810002H, 810003H, 810006H	1/8 NPT	1/8 NPT	in	N/A	5.00	3.00	0.88	0.75	1/4	N/A	0.81
			mm	N/A	127	76	22	19	NPT	N/A	21
800001M, 800002M, 800003M, 810002M, 810003M, 810006M	1/8 NPT	1/8 NPT	in	5.25	N/A	3.00	0.88	0.75	1/4	1/4 NPS	0.75
			mm	133	N/A	76	22	19	NPT	1/4 NPS	19
800005, 800008, 810008, 810013	1/4 NPT	3/8 NPT	in	N/A	N/A	4.50	1.50	1.00	3/8	N/A	N/A
			mm	N/A	N/A	114	38	25	NPT	N/A	N/A
800005H, 800008H, 810008H, 810013H	1/4 NPT	3/8 NPT	in	N/A	7.50	4.50	1.50	1.00	3/8	N/A	1.25
			mm	N/A	191	114	38	25	NPT	N/A	32
800005M, 800008M, 810008M, 810013M	1/4 NPT	3/8 NPT	in	7.75	N/A	4.50	1.50	1.00	3/8	3/8 NPS	1.00
			mm	197	N/A	114	38	25	NPT	3/8 NPS	25
800013, 800017, 810023, 810031	1/2 NPT	1/2 NPT	in	N/A	N/A	6.00	1.88	1.25	1/2	N/A	N/A
			mm	N/A	N/A	152	48	32	NPT	N/A	N/A
800013H, 800017H, 810023H, 810031H	1/2 NPT	1/2 NPT	in	N/A	9.00	6.00	1.88	1.25	1/2	N/A	1.25
			mm	N/A	229	152	48	32	NPT	N/A	32
800013M, 800017M, 810023M, 810031M	1/2 NPT	1/2 NPT	in	10.25	N/A	6.00	1.88	1.25	1/2	1/2 NPS	1.25
			mm	260	N/A	152	48	32	NPT	1/2 NPS	32

FITTINGS AND TUBING

The vacuum port of the E-Vac has an NPT thread (a vacuum cup can be threaded directly into it). For vacuum cups that are remotely located, push-in connector fittings (most have global threads for use with NPT and BSP) can be installed on the E-Vac and the vacuum cup. Polyurethane vacuum tubing is available (10', 20', 30', 40' and 50' lengths) to connect them. For best performance, the length of the tubing should be minimized to achieve the best attach and release times.

Model	Air Inlet	Vacuum Inlet	Exhaust Port
800001, 800002, 800003, 810002, 810003, 810006	1/8 NPT	1/8 NPT	1/4 NPT
800001H, 800002H, 800003H, 810002H, 810003H, 810006H	1/8 NPT	1/8 NPT	1/4 NPT
800001M, 800002M, 800003M, 810002M, 810003M, 810006M	1/8 NPT	1/8 NPT	1/4 NPT
800005, 800008, 810008, 810013	1/4 NPT	3/8 NPT	3/8 NPT
800005H, 800008H, 810008H, 810013H	1/4 NPT	3/8 NPT	3/8 NPT
800005M, 800008M, 810008M, 810013M	1/4 NPT	3/8 NPT	3/8 NPT
800013, 800017, 810023, 810031	1/2 NPT	1/2 NPT	1/2 NPT
800013H, 800017H, 810023H, 810031H	1/2 NPT	1/2 NPT	1/2 NPT
800013M, 800017M, 810023M, 810031M	1/2 NPT	1/2 NPT	1/2 NPT

E-Vac Models (Silencing Mufflers may be installed to reduce noise levels.)	Standard Muffler	Straight-Through Muffler
800001, 800002, 800003, 810002, 810003, 810006	900800	3905
800005, 800008, 810008, 810013	900801	3911
800013, 800017, 810023, 810031	900802	3912

If you have any questions or problems, please contact an EXAIR Application Engineer at:

Toll Free: 1-800-903-9247 (U.S. & Canada)
 Telephone: 513 671-3322 outside of U.S. & Canada
 Toll Free Fax: 866-329-3924 (U.S. & Canada)
 FAX: 513 671-3363 outside of U.S. & Canada
 E-mail: techhelp@exair.com
 Website: www.exair.com