

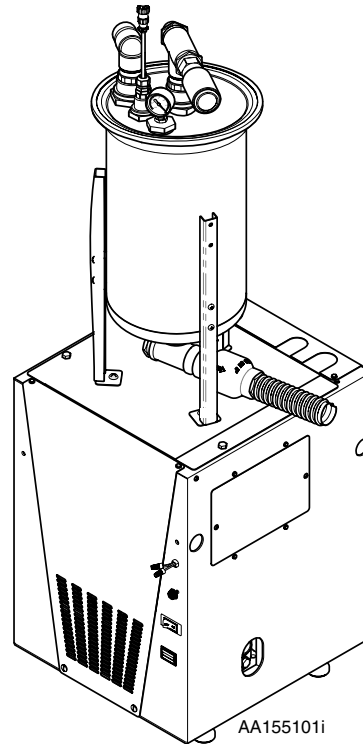
Midmark Equipment Room

Layout Design



For product inquiries, please contact Midmark Dental Customer Service at 1-800-MIDMARK. For more information or a demonstration, contact Midmark, 60 Vista Drive, P.O. Box 286, Versailles, Ohio 45380-0286. Call: 1-800-MIDMARK Fax: 1-877-725-6495 midmark.com

PowerVac® Specification Sheet



Classifications: Class 1, Type B Applied Part

Model	Max Users	Vac Unit H x W x D	Separator H x W x D	Actual Weight (LBS.)	Total HP	Voltage	Amps	Hertz	Recommended Breaker Size (Amps) (Min. 20 Amps EA)	Inlet Connection Size (IN.)	Fuses	Drain Connection Size (IN.)
P3	3	24 x 19.5 x 18.5	32 x 13 x 13	Vac Unit - 355 Separator - 47	2	208 / 230	11.4	60	30	1 1/2"	1/8 A, 250V Type T	1 1/2 "
P5	5	24 x 19.5 x 18.5	32 x 13 x 13	Vac Unit - 355 Separator - 47	2	208 / 230	11.4	60	30	1 1/2"	1/8 A, 250V Type T	1 1/2 "
P7	7	24 x 19.5 x 18.5	32 x 13 x 13	Vac Unit - 355 Separator - 47	2	208 / 230	11.4	60	30	1 1/2"	1/8 A, 250V Type T	1 1/2 "
P6	6	24 x 39 x 18.5	32 x 13 x 13	Vac Unit - 355 x 2 Separator - 47 x 2	4	208 / 230	22.8	60	2 x 30	2"	1/8 A, 250V Type T	1 1/2 "
P10	10	24 x 39 x 18.5	32 x 13 x 13	Vac Unit - 355 x 2 Separator - 47 x 2	4	208 / 230	22.8	60	2 x 30	2"	1/8 A, 250V Type T	1 1/2 "
P14	14	24 x 39 x 18.5	32 x 13 x 13	Vac Unit - 355 x 2 Separator - 47 x 2	4	208 / 230	22.8	60	2 x 30	2"	1/8 A, 250V Type T	1 1/2 "
Evacuation Control Box	N/A	N/A	5 x 5.5 x 6	2	N/A	115 VAC	3	60	15	N/A	1/4 A, 250V Type T 3A, 250V Type T	N/A

PowerVac® Site Requirements

PLUMBING

• EXHAUST LINE

Single Models P3, P5, P7

Twin Models P6, P10, P14

Type	PVC Sch 40, CPVC Sch 80, Copper or Galvanized Steel	CPVC Sch 80, Copper or Galvanized Steel
Size	1-1/2" for up to 15' exhaust line length 2" for greater than 15' exhaust line length	2" for all exhaust line lengths
Termination	1 1/2" NPT Male Pipe	

• INTAKE (SUCTION) LINE

Single Models P3, P5, P7

Twin Models P6, P10, P14

Type	PVC Sch 40 Pipe Recommended - for Main Trunk and Branch Lines	
Line Sizing	Refer to: "Site Requirement Layout", located in this document.	
Pump Termination	1-1/2"	2"

• DRAIN

Single Models P3, P5, P7

Twin Models P6, P10, P14

Type	Floor Drain or 1 1/2" PVC Sch 40 P-Trap	
Flow Capacity	Minimum 25 Gallons per Minute	
Tank Wash Supply	3/4" Garden Hose Fitting Provided per Tank for Non-Permanent Supply Water Connection	

ELECTRICAL *Note: All PowerVac® models electrically designed to be sold only in U.S.A. or Canada.*

• BOXES - PowerVac®

Single Models P3, P5, P7

Twin Models P6, P10, P14

Supply	(1) 208-230 Volt, Single Phase, 60Hz	(2) 208-230 Volt, Single Phase, 60Hz
Wire Size to Disconnect Box	#12 for distances Less than 8' (See NEC) #10 for distances up to 15' (See NEC) <i>Note: Avoid long wire runs from Main Breaker in system. Circuit must be PE grounded as per local codes.</i>	
User Supplied Fused Disconnect Switch Box <i>Note: Box(es) to be located within 6' of Vacuum Unit(s).</i>	1 @ 20 AMP Minimum 1 @ 30 AMP Recommended	2 @ 20 AMP Minimum 2 @ 30 AMP Recommended

• BOXES - Auto Drain Pump

Single Models P3, P5, P7

Twin Models P6, P10, P14

Supply	(1) 115 Volt, Single Phase, 60Hz	(2) 115 Volt, Single Phase, 60Hz
User Supplied Fused Disconnect Switch Box	1 @ 115 VAC 15 AMP <i>Note: Box(es) to be located within 6' of Vacuum Unit(s)</i>	

• SUPPLY LEADS

Single Models P3, P5, P7

Twin Models P6, P10, P14

Leads	(1) 6' Supply Conduit Provided	(2) 6' Supply Conduits Provided
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ENVIRONMENTAL

• TEMPERATURE

Single Models P3, P5, P7

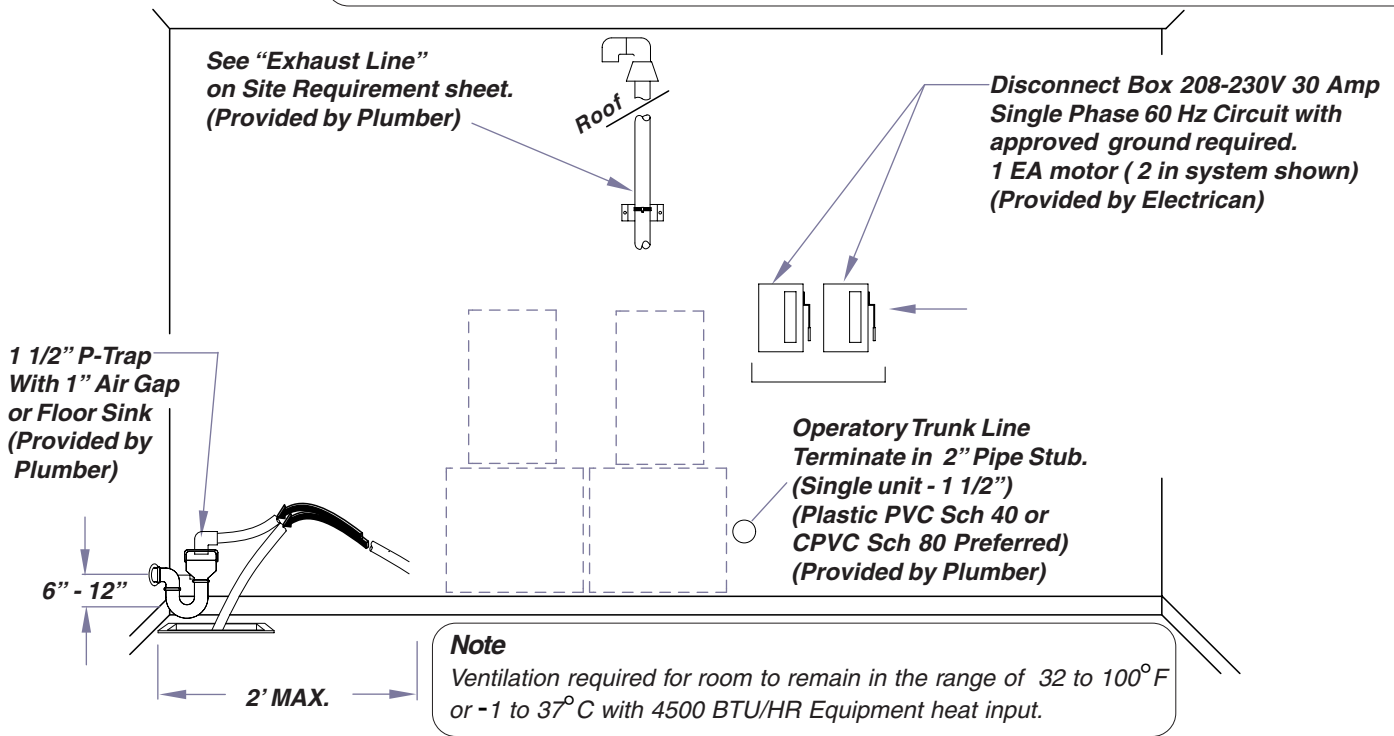
Twin Models P6, P10, P14

Equipment Room Vent	Continuous-run 800 CFM Fan	Continuous-run 1600 CFM Fan
Equipment Room Ambient Temperature	40° to 104° Fahrenheit 4° to 37° Celsius	

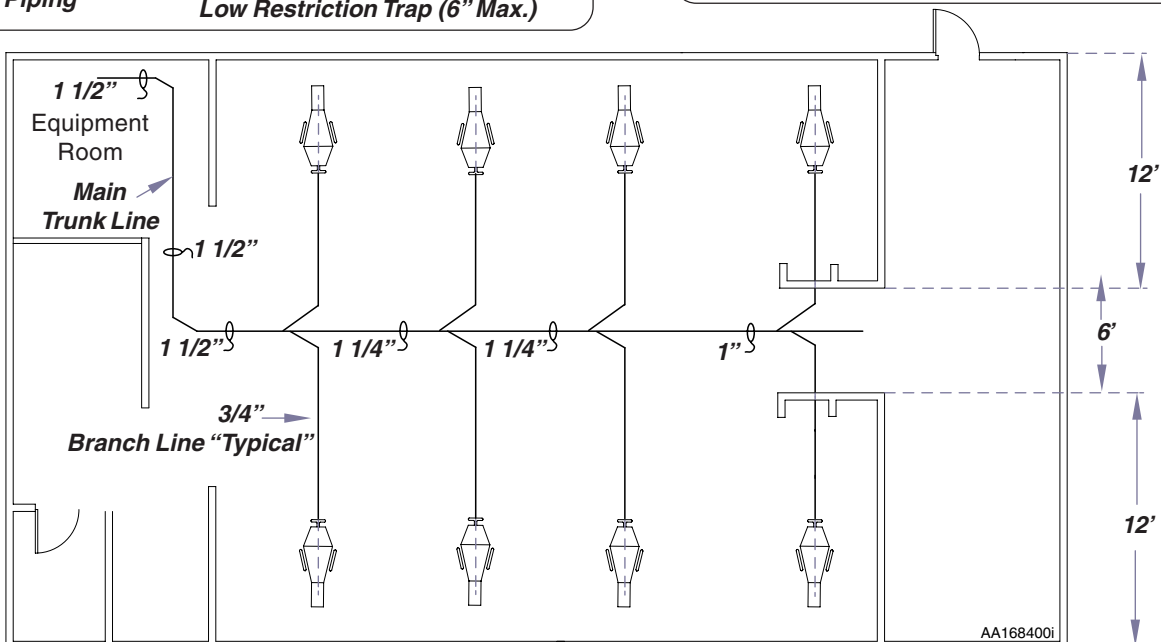
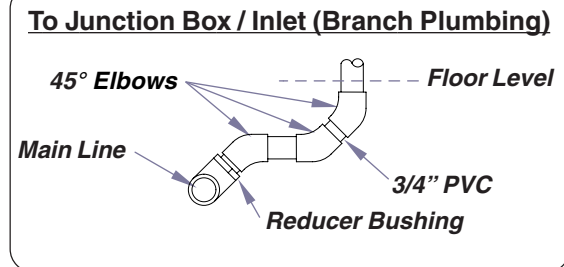
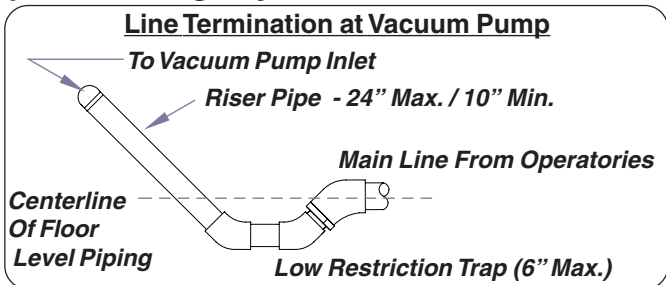
Note: All PowerVac® models are recommended to be installed and operated in a thermostatically or otherwise stable ambient temperature environment. Forced air and HVAC input should be used in addition to an exhaust fan if normal ambient temperatures vary from specified operating temperature range.

PowerVac® Site Requirement Layout

Elevation View



Sample Plumbing Layout



*This drawing is one of many ways a P5 could be installed.



Classic Series™ & PowerAir™ Compressor Pre-Installation Guide

Applies to Models:
 CL21, CL22, CL32, CL52
 P3, P5, P7 (Single Units)
 P6, P10, P14 (Twin Units)

Classifications: Class 1, Type B Applied Part

Classic Series™ Specifications

Model	# of Users	CFM @ 80 PSI	Total HP	Tank Capacity	Voltage	Total Amps	Breaker Size (Amps)	Sound Level (dba)	Dimensions H x W x D (IN.)	Product Weight (lbs.)
CL21	1 - 3	5.3	1.0	10	115	12.4	20	68	29 x 26 x 24	202
CL22	1 - 3	5.3	1.0	10	208-230	6.0	20	68	29 x 26 x 24	202
CL32	3 - 5	10.6	2.0	20	208-230	12.0	20	71	31 x 33 x 26	329
CL52	5 - 7	15.9	3.0	32	208-230	18.0	30	75	32 x 41 x 27	460

PowerAir™ Specifications

Model	# Users	CFM @ 80 PSI	Total HP	Tank Capacity	Voltage	Total Amps	Breaker Size	Sound Level (dba)	Sound Level (dba) With Quiet Cover	Dimensions H x W x D (IN.)	Dimensions With Sound Cover H x W x D (IN.)	Product Weight (LBS.)
P21	1 - 3	5.2	1.5	10	115	16.0	20	65	60	27 x 26 x 24	32 x 26 x 25	225
P22	1 - 3	5.2	1.5	10	208-230	7.0	20	65	60	27 x 26 x 24	32 x 26 x 25	225
P32	3 - 5	7.8	2.25	20	208-230	11.0	20	67	62	29 x 33 x 26	33 x 33 x 28	295
P52	5 - 7	10.6	3.2	20	208-230	20.0	30	70	65	31 x 33 x 26	33 x 33 x 28	345
P72	7 - 10	15.9	4.8	32	208-230	29.0	40	73	68	33 x 40 x 27	39 x 40 x 30	425

Compressor Site Requirements

Electrical

Supply	Models								
	CL21	CL22	CL32	CL52	P21	P22	P32	P52	P72
Voltage	115	208-230	208-230	208-230	115	208-230	208-230	208-230	208-230
Single Phase	60 Hz								
Disconnect Switch Box - Fused - User Supplied - Box(es) must be located within 3 ft. of compressor	20 Amps	20 Amps	20 Amps	30 Amps	20 Amps	20 Amps	20 Amps	30 Amps	40 Amps

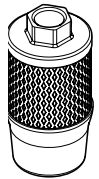
Plumbing

Fresh Air Intake Line	
Type	PVC
Line Sizing	1" Minimum (Provided by Contractor)
Compressor Connections	1" MPT or 1" PVC Slip Connectors
Drain	
Type	Poly Tube (Provided with Install Kit)
Delivery Line	
Main Trunk Line	3/8" to 3/4" Copper, as site layout dictates. Terminate in mechanical room with 1/2" FPT. Flex hose provided for service connection. Trunk line to slope 1/4" / 10ft toward source compressor.
Operatory Branch Lines	3/8" to 3/4" Copper - Same size as trunk line. Terminate 1/2" or 5/8" FPT at Operatory junction box location.

Environmental

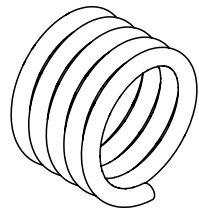
Equipment Room Ambient Temperature - Operational	40° - 104° Fahrenheit / 4° - 40° Celsius
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Installation Kit Provided with Compressors



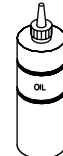
Exhaust Silencer

Indicator for Coalescing Filter



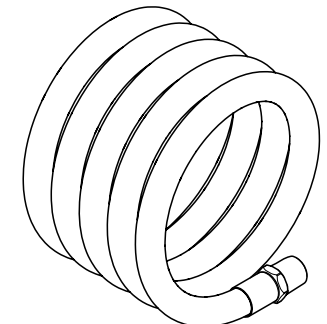
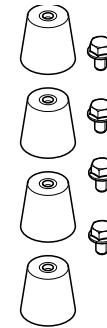
Fresh Air Intake Hoses
Length 10'

Elbow for Operatory Line Connection



Oil

Feet with Hardware

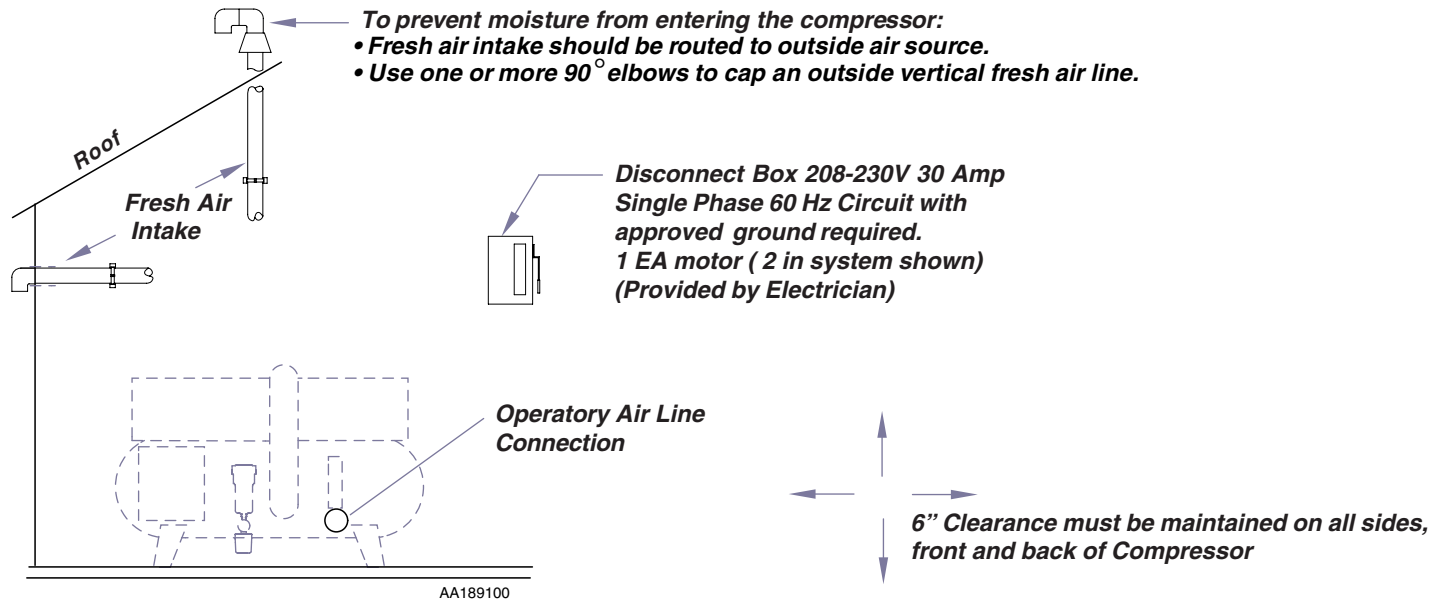


Operatory Air Line
Length - 6'

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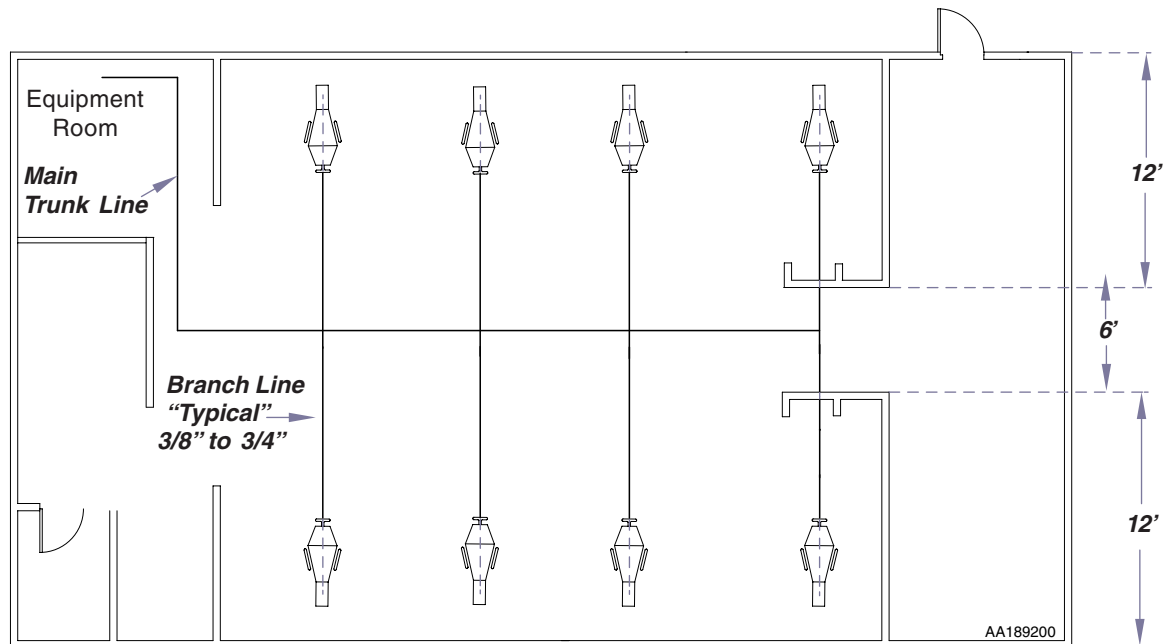
Compressor Site Layout

Elevation View



Sample Plumbing Layout

AIR LINE SIZING CHART	
Compressor CFM @ 80 psig	Main Header Line Size
5 - 10	3/8" ODT
10 - 20	1/2" ODT
20 - 30	5/8" ODT
30 - 40	3/4" ODT





Classic Series™ & PowerAir™ Compressor Pre-Installation Guide

Applies to Models:
 CL21, CL22, CL32, CL52
 P3, P5, P7 (Single Units)
 P6, P10, P14 (Twin Units)

Classifications: Class 1, Type B Applied Part

Classic Series™ Specifications

Model	# of Users	CFM @ 80 PSI	Total HP	Tank Capacity	Voltage	Total Amps	Breaker Size (Amps)	Sound Level (dba)	Dimensions H x W x D (IN.)	Product Weight (lbs.)
CL21	1 - 3	5.3	1.0	10	115	12.4	20	68	29 x 26 x 24	202
CL22	1 - 3	5.3	1.0	10	208-230	6.0	20	68	29 x 26 x 24	202
CL32	3 - 5	10.6	2.0	20	208-230	12.0	20	71	31 x 33 x 26	329
CL52	5 - 7	15.9	3.0	32	208-230	18.0	30	75	32 x 41 x 27	460

PowerAir™ Specifications

Model	# Users	CFM @ 80 PSI	Total HP	Tank Capacity	Voltage	Total Amps	Breaker Size	Sound Level (dba)	Sound Level (dba) With Quiet Cover	Dimensions H x W x D (IN.)	Dimensions With Sound Cover H x W x D (IN.)	Product Weight (LBS.)
P21	1 - 3	5.2	1.5	10	115	16.0	20	65	60	27 x 26 x 24	32 x 26 x 25	225
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P52	5 - 7	10.6	3.2	20	208-230	20.0	30	70	65	31 x 33 x 26	33 x 33 x 28	345
P72	7 - 10	15.9	4.8	32	208-230	29.0	40	73	68	33 x 40 x 27	39 x 40 x 30	425

Compressor Site Requirements

Electrical

Supply	Models								
	CL21	CL22	CL32	CL52	P21	P22	P32	P52	P72
Voltage	115	208-230	208-230	208-230	115	208-230	208-230	208-230	208-230
Single Phase	60 Hz								
Disconnect Switch Box - Fused - User Supplied - Box(es) must be located within 3 ft. of compressor	20 Amps	20 Amps	20 Amps	30 Amps	20 Amps	20 Amps	20 Amps	30 Amps	40 Amps

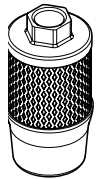
Plumbing

Fresh Air Intake Line	
Type	PVC
Line Sizing	1" Minimum (Provided by Contractor)
Compressor Connections	1" MPT or 1" PVC Slip Connectors
Drain	
Type	Poly Tube (Provided with Install Kit)
Delivery Line	
Main Trunk Line	3/8" to 3/4" Copper, as site layout dictates. Terminate in mechanical room with 1/2" FPT. Flex hose provided for service connection. Trunk line to slope 1/4" / 10ft toward source compressor.
Operatory Branch Lines	3/8" to 3/4" Copper - Same size as trunk line. Terminate 1/2" or 5/8" FPT at Operatory junction box location.

Environmental

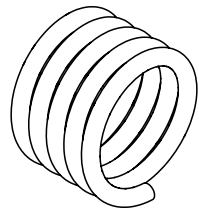
Equipment Room Ambient Temperature - Operational	40° - 104° Fahrenheit / 4° - 40° Celsius
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Installation Kit Provided with Compressors



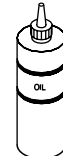
Exhaust Silencer

Indicator for Coalescing Filter



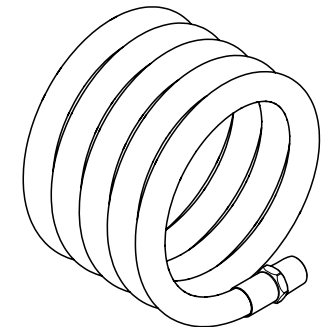
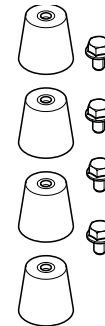
Fresh Air Intake Hoses
Length 10'

Elbow for Operatory Line Connection



Oil

Feet with Hardware

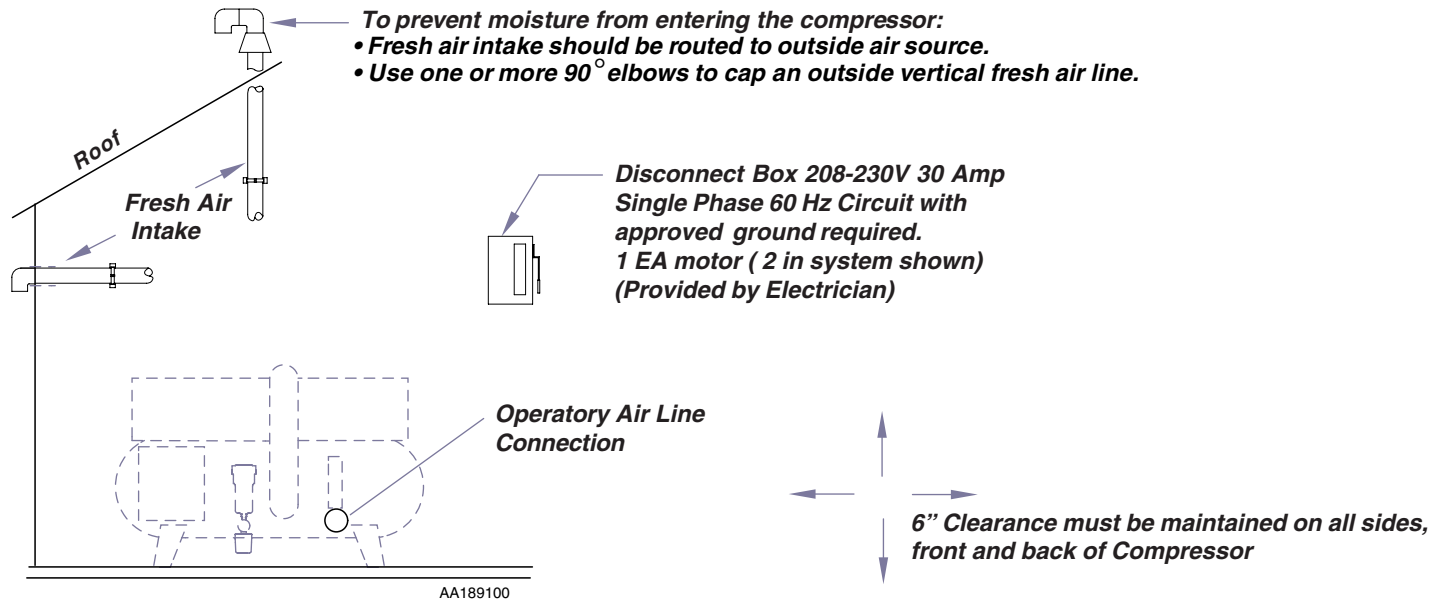


Operatory Air Line
Length - 6'

AA189300

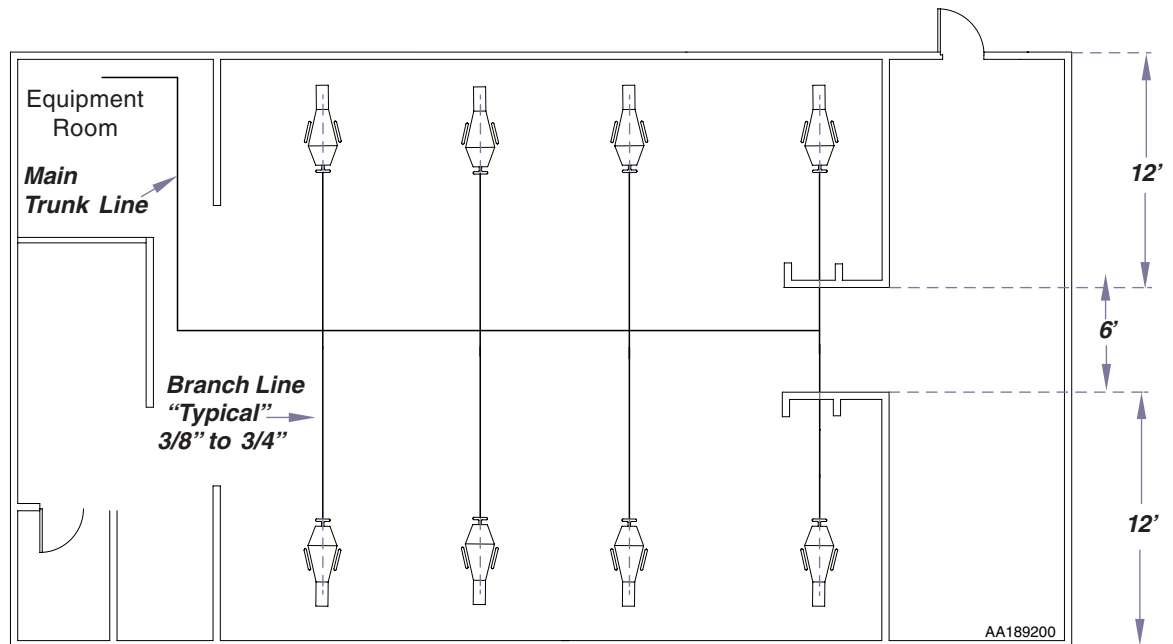
Compressor Site Layout

Elevation View



Sample Plumbing Layout

AIR LINE SIZING CHART	
Compressor CFM @ 80 psig	Main Header Line Size
5 - 10	3/8" ODT
10 - 20	1/2" ODT
20 - 30	5/8" ODT
30 - 40	3/4" ODT



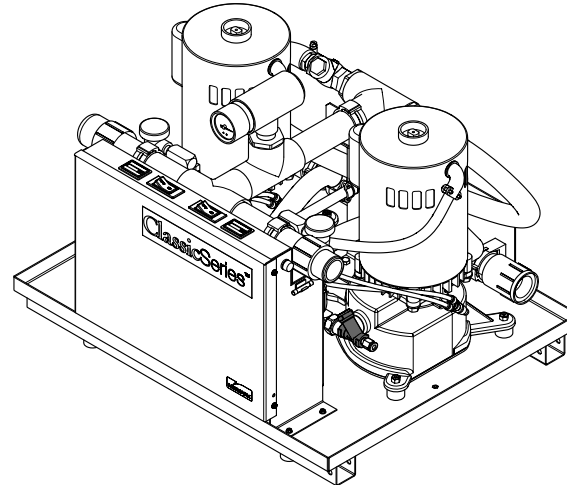
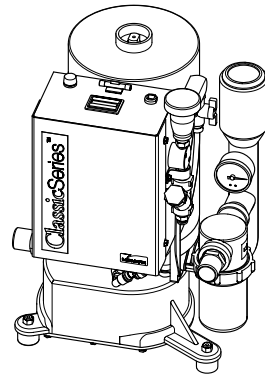


ClassicSeries™ Wet-Ring Vacuum Pre-Installation Guide

Applies to Models:
 CV3, CV3R
 CV5, CV5R (Single Units)
 CV6, CV6R
 CV10, CV10R (Twin Units)

Classifications: Class 1, Type B Applied Part

Specifications



Vacuum Model	Max. Users	Width (IN.)	Depth (IN.)	Height (IN.)	Weight (LBS.)	Total HP	Voltage (50/60 Hertz)	Breaker Size per Pump (Amps)	Inlet Connection Size (IN.)	Drain Connection Size (IN.)	Fresh Water Connection Size (FNPT)
CV3	3	12"	13"	15"	54	1	115 / 208-230	20	1"	1"	1/2"
CV3R	3	12"	13"	15"	56	1	115 / 208-230	20	1"	1"	1/2"
CV5	5	12"	13"	17"	63	2	208-230	20	1"	1"	1/2"
CV5R	5	12"	13"	17"	65	2	208-230	20	1"	1"	1/2"
CV6	6	25 1/2"	20"	18 1/2"	134	2	115 / 208-230	20	1 1/4"	1 1/4"	1/2"
CV6R	6	25 1/2"	20"	18 1/2"	134	2	115 / 208-230	20	1 1/4"	1 1/4"	1/2"
CV10	10	25 1/2"	20"	18 1/2"	154	4	208-230	20	1 1/4"	1 1/4"	1/2"
CV10R	10	25 1/2"	20"	18 1/2"	154	4	208-230	20	1 1/4"	1 1/4"	1/2"

Wet-Ring Vacuum Site Requirements



Equipment Alert

Harmful odors, vapor contaminants and nitrous oxide gasses are vented out the top of the separator, while liquid waste flows out of the lower drain and into a "P"-Trap or floor sink. **Verify all local codes before installing.**

Models

Electrical	Single Models				Twin Models			
	CV3	CV3R	CV5	CV5R	CV6	CV6R	CV10	CV10R
Supply								
Voltage	115 or 208-230	115 or 208-230	208-230	208-230	115 or 208-230 (Each Pump)	115 or 208-230 (Each Pump)	208-230 (Each Pump)	208-230 (Each Pump)
Phase	Single Phase, 50 / 60 Hz							
Wire Size to Control Panel	18 / 3 Jacketed Bell Wire							
Circuit Size Per Pump	20 AMP Minimum							
115 VAC 60 HZ	15.0 AMP	15.0 AMP			15.0 AMP	15.0 AMP		
208/230 VAC 60 HZ	8.2 / 7.5 AMP	8.2 / 7.5 AMP	13.1 / 11.9 AMP	13.1 / 11.9 AMP	8.2 / 7.5 AMP	8.2 / 7.5 AMP	13.1 / 11.9 AMP	13.1 / 11.9 AMP
208/230 VAC 50 HZ	8.2 / 8.1 AMP	8.2 / 8.1 AMP	11.2 / 11.1 AMP	11.2 / 11.1 AMP	8.2 / 8.1 AMP	8.2 / 8.1 AMP	11.2 / 11.1 AMP	11.2 / 11.1 AMP

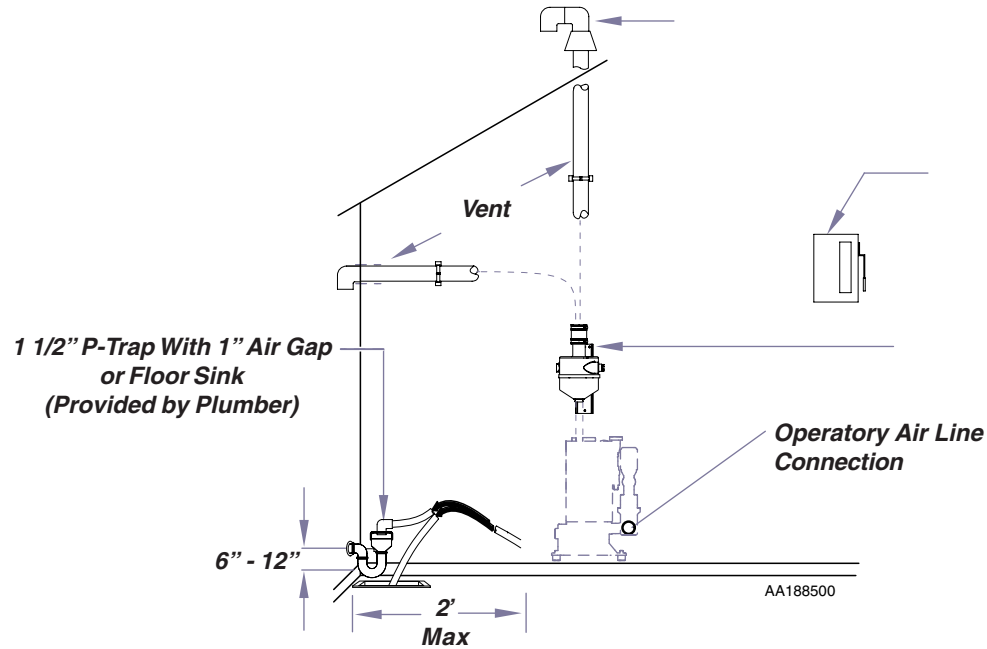
Plumbing

Intake (Suction Line)		
Type	PVC *Note: 3/4" Check valve is required on all inlets and outlets. Copper pipe is required only for return plenum installations.	
Line Sizing	1" Hose with 3/4" NPT Connection	1 1/2" Hose with 1 1/4" NPT Connection
Water Source		
Type	Poly Tubing	
Line Sizing	1/2" NPT x 1/4"	1/2" NPT x 3/8"
Pressure Range	20-120 psi / 1.4-8.3 bar	
Water Temperature Range	35-80° F / 2-12° C	
Separator	Small	Large
Vent Size	2"	
Inlet Hose	3/4" NPT	1 1/4" NPT
Drain Hose	3/4" NPT	1" NPT
Platform Drain Hose		
Type	N/A	Clear Vinyl
Size	N/A	3/8" OD
Exhaust		
Type	PVC	
Line Sizing	1" Hose with 3/4" NPT Connection	1 1/2" Hose with 1 1/4" NPT Connection

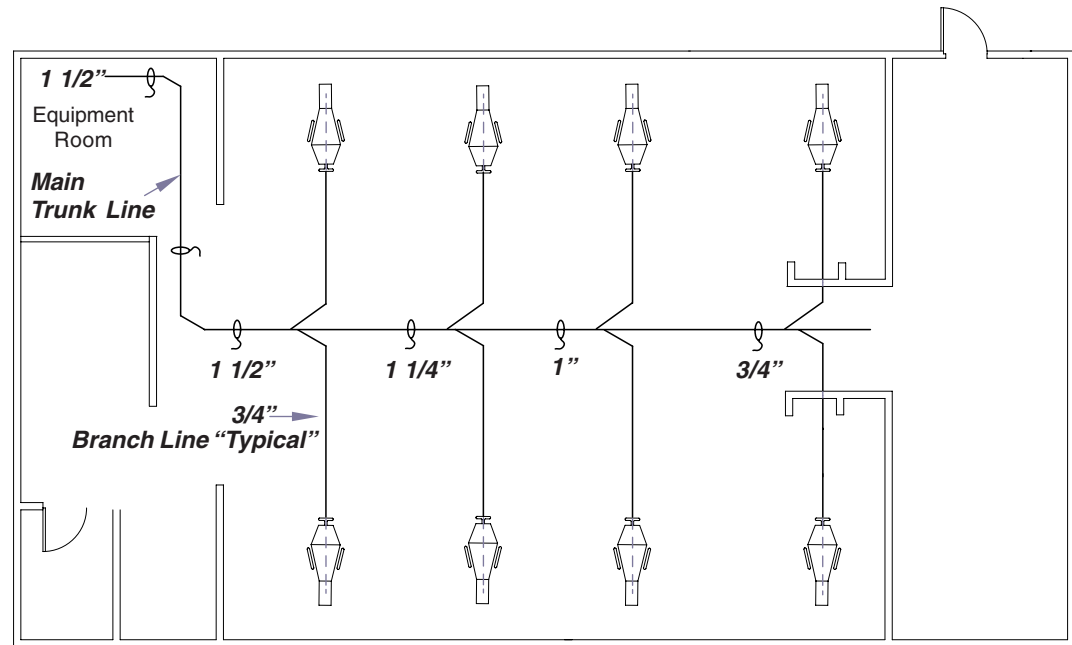
Environmental

Equipment Room Ambient Temperature - Operational	40° - 104° Fahrenheit / 4° - 40° Celsius
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Wet-Ring Vacuum Site Requirement Layout



VACUUM LINE SIZING CHART	
Number of Operatories Supplied Through Line	Main Line (PVC Sch 40) Pipe Diameter in Inches
1-2	3/4
3-4	1
5-6	1 1/4
7-10	1 1/2

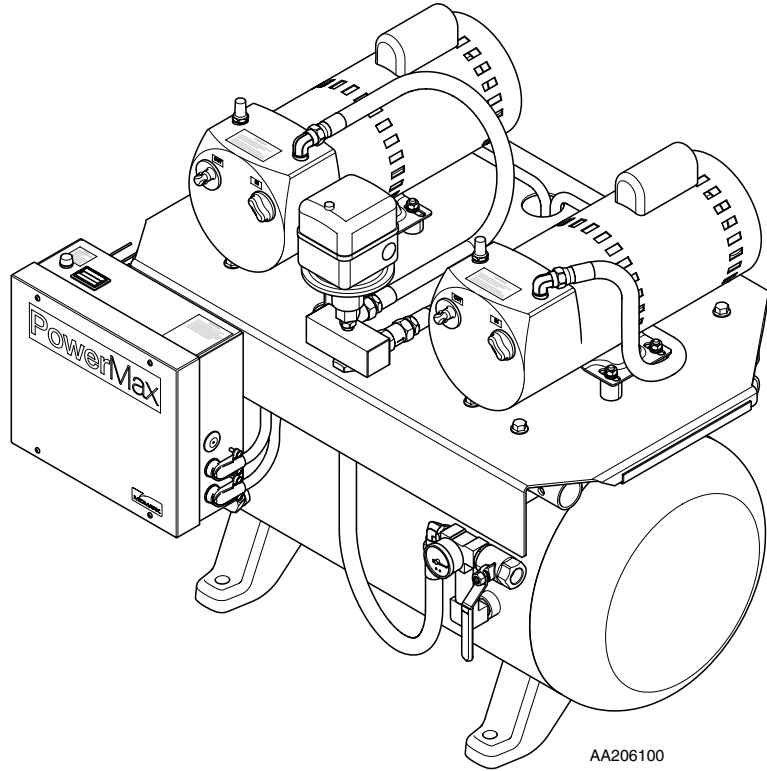




PowerMax Surgical Suction System Pre-Installation Guide

Applies to Models:
PM-1
PM-3
PM-4

Specifications



Model	Users	Height (IN.)	Width (IN.)	Depth (IN.)	Weight (LBS.)	HP	Voltage (50/60 Hertz)	Breaker Size per Pump (Amps)	Tank Capacity (GAL)	CFM Maximum
PM-1	1	31"	32"	25"	150	3/4	208-230 @ 5.1 Amp	20	20	8
PM-3	2-3	31"	32"	25"	210	1.5	208-230 @ 9.7 Amp	20	20	16
PM-4	3-4	34"	38"	27"	290	2.25	208-230 @ 14.3 Amp	20	32	24

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PowerMax Site Requirements

Electrical	Models		
	PM-1	PM-3	PM-4
Supply			
Voltage	208-230 VAC		
Phase	Single Phase, 50 / 60 Hz		
Circuit Size	20 AMP Minimum		
Wire Size to Control Panel	18 / 3 Jacketed Bell Wire		
208/230 VAC 60 HZ	5.1 AMP	9.7 AMP	14.3 AMP

Plumbing

Intake (Suction Line)			
Type	Type K or L Copper Tubing - *Note: Do Not use compression fittings for vacuum lines.		
Line Sizing	1"	1 1/4"	1 1/4"
Operatory Termination	5/8" OD Copper		

Recovery Package

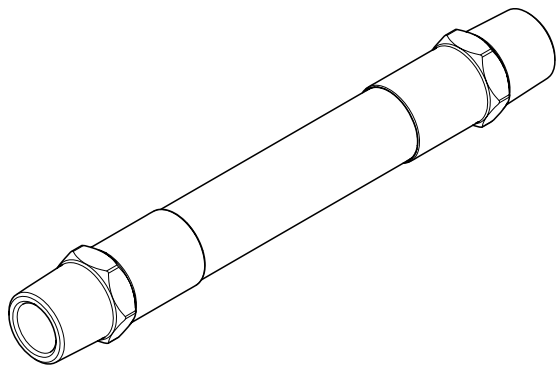
Important: The vacuum system must terminate at a surgical operatory recovery room package (Available from Midmark) to prevent contamination of vacuum outlets and the PowerMax unit.

Exhaust	Exhaust May be vented to the outside using an optional Exhaust Kit. (Available from Midmark)		
Vent Type	Copper Tubing or Conduit (Installer Supplied)		
Line Sizing	3/4"		

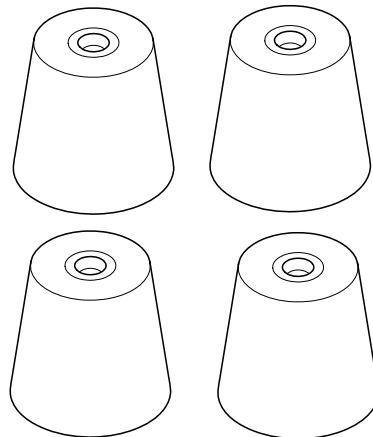
Environmental

Equipment Room Ambient Temperature - Operational	40° - 104° Fahrenheit / 4° - 40° Celsius		
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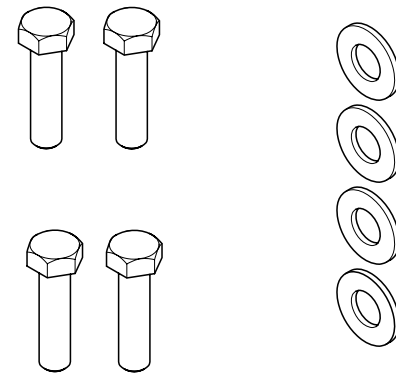
Installation Kit Provided with PowerMax



**6' Vacuum Hose with 1/2" NPT Connections
Connects from PowerMax to Operatory**



Feet, Qty 4



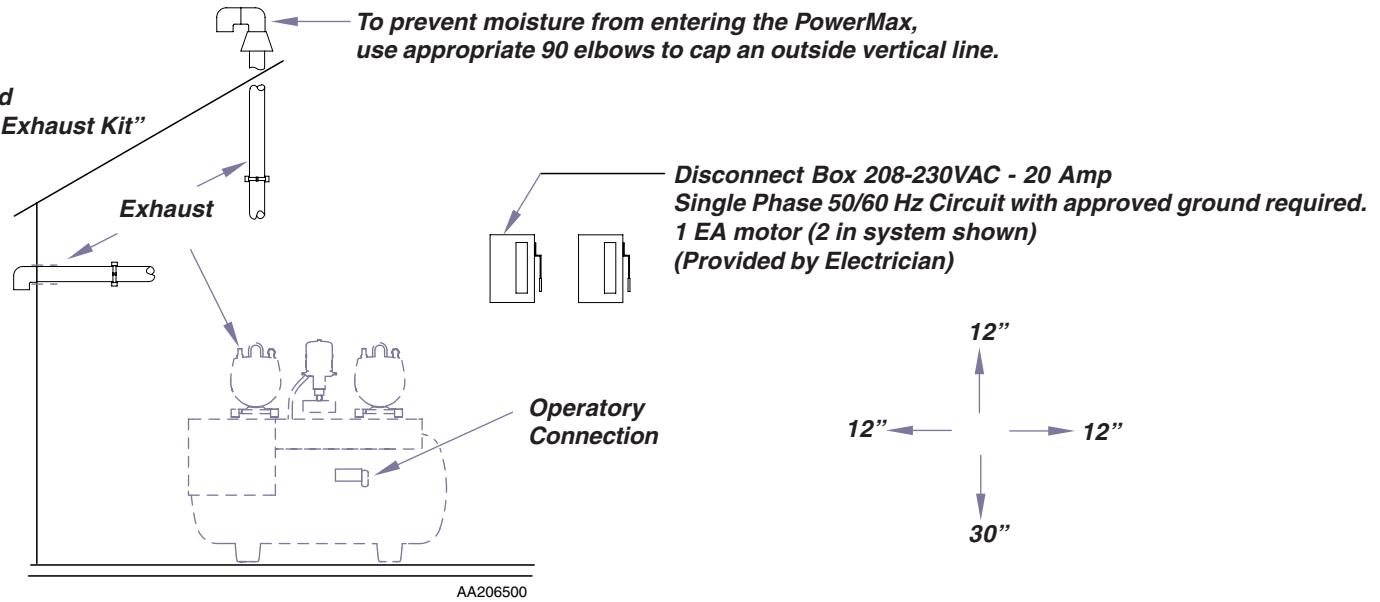
**Hardware for Feet, Qty 4
Bolts and Washers**

AA205600

PowerMax Site Requirement Layout

Elevation View

If Optional Exhaust System is Used
Only Install, "Midmark PowerMax Exhaust Kit"



Sample Plumbing Layout

