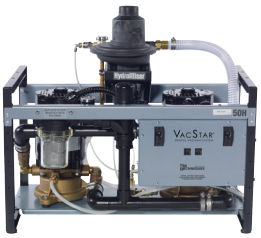
VacStar®

DENTAL VACUUM SYSTEMS

PRE-INSTALLATION GUIDE FOR MODELS VS50, VS50H, VS80 & VS80H



Model VS50



Model VS50H



Model VS80



Model VS80H

This VacStar Model is being installed:

(AS CHECKED)

❑ VS50 ❑ VS80

❑ VS50H ❑ VS80H

Doctor: _____

Address: _____

Phone#: _____

Dealer: _____

Dealer Address: _____

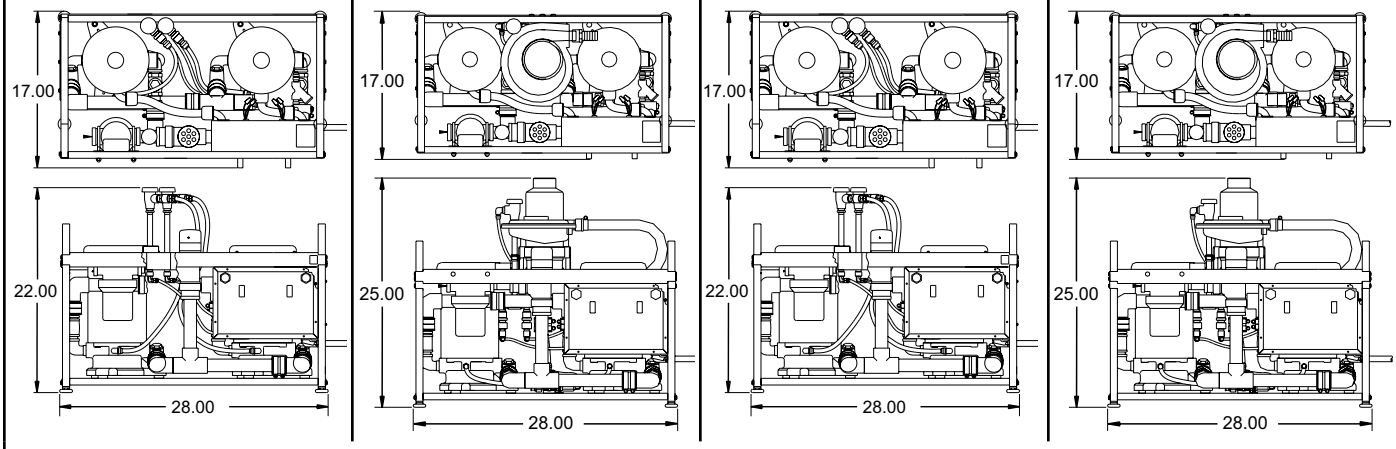
PRODUCT SPECIFICATIONS

Electrical	**VS50**	**VS50H**	**VS80**	**VS80H**
Voltage Rating	230	230	230	230
Voltage Min./Max.	198/242	198/242	198/242	198/242
Full Load Amps	16	16	26.8	26.8
Frequency	60	60	60	60
Water				
Inlet Water Pressure (psi)	20 - 100	20 - 100	20 - 100	20 - 100
Flow Rate Per Pump (gal/min) w/ HydroMiser	N/A	0.13	N.A.	0.18
Flow Rate Per Pump (gal/min) w/o HydroMiser	0.50	N/A	0.75	N/A
Inlet Water Temperature (°F)	40 - 75	40 - 75	40 - 75	40 - 75
Power and Heat (@ 100% duty cycle)				
Watts per Hour	1,500	1,875	2,460	3,075
BTU per Hour	5,119	6,398	8,394	10,493
Vacuum Level				
Preset at Factory (In Hg)	10	10	10	10
Physical Characteristics				
Shipping Weight in pounds	160	170	200	210
Height x Width x Depth Dimensions in inches	22 x 28 x 17	25 x 28 x 17	22 x 28 x 17	25 x 28 x 17

All installations must conform to local codes.

PHYSICAL CHARACTERISTICS

Model VS50		Model VS50H		Model VS80		Model VS80H	
Height	22 inches (56 cm)	Height	25 inches (64 cm)	Height	22 inches (56 cm)	Height	25 inches (64 cm)
Width	28 inches (71 cm)	Width	28 inches (71 cm)	Width	28 inches (71 cm)	Width	28 inches (71 cm)
Depth	17 inches (43 cm)	Depth	17 inches (43 cm)	Depth	17 inches (43 cm)	Depth	17 inches (43 cm)



Note: Dimensions are +/- ½"

Shipping Weight: 160 lbs. (73 kg)	Shipping Weight: 170 lbs. (77 kg)	Shipping Weight 200 lbs. (91 kg)	Shipping Weight 210 lbs. (95 kg)

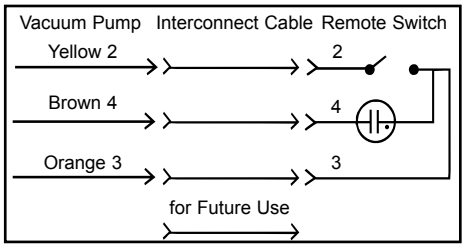
SITE REQUIREMENTS

Important: Each pump should have a dedicated circuit panel.

Electrical	VS50 & VS50H		VS80 & VS80H	
Connection Option	Two 15A Services	Single 30A Service	Two 20A Services	Single 40A Service
Min. Circuit Breaker Rating	15A, Qty 2	30A, Qty 1	20A, Qty 2	40A, Qty 1
Wire Size AWG (Min. Gauge)	14 AWG, Qty 2	10 AWG, Qty 1	12 AWG, Qty 2	8 AWG, Qty 1
Buck/Boost Transformer	#67002 (3.9 KVA), Qty 2	#67000-1 (7.8 KVA), Qty 1	#67002 (3.9 KVA), Qty 2	#67000-1 (7.8 KVA), Qty 1
Ambient Temperature	41 - 104°F (5 - 40°C)			

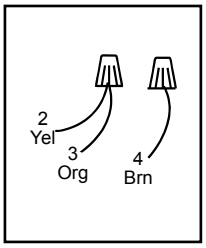
24V CONNECTIONS

Connection to 24 V Switch Only



Use 18 Gauge, 4 Conductor, Interconnect Cable Between VacStar Pump and Remote Switch

Connection without 24 V Switch

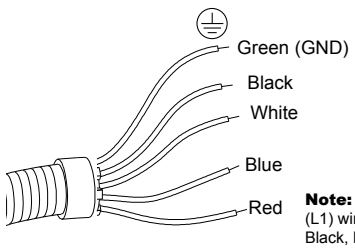


Interior Electrical Box Connections

ELECTRICAL CONNECTIONS

- If voltage falls below the minimum 198 or maximum 242 during operation, a Buck/Boost Transformer must be installed. See Product Specifications.
- All VacStars must be wired directly from an electrical box that complies with local electrical codes to the VacStar's Electrical Connections. See Figure 1.

Figure 1 - Interior View



Dual Circuit	
Pumps	**Power Leads**
Right	(L1) White (L2) Black
Left	(L1) Red (L2) Blue
Ground	(GND) Green

Note: For Single Circuit, connect White, Red and (L1) wires from branch circuit together. Connect Black, Blue and (L2) wires from branch circuit together. Connect Green to Ground/Protective Earth wires from branch circuit together (GND).

CLASSIFIED C UL US

MEDICAL ELECTRICAL EQUIPMENT

WITH RESPECT TO ELECTRICAL SHOCK, FIRE, MECHANICAL AND OTHER SPECIFIED HAZARDS ONLY IN ACCORDANCE WITH UL-60601-1, CAN/CSA C22.2 NO.601.1 66CA

PLUMBING SITE REQUIREMENTS

Plumbing	VS50 & VS50H	VS80 & VS80H
Min. CFM @ 0" Hg	32	44
Air Exhaust with Hydromiser	2" schedule 40 pipe	2" schedule 40 pipe
Overhead Plumbing		
Main Line Dia. Min./Max. ID in inches	1¼ to 2"	1½ to 2"
End Fitting	1" FNPT	1" FNPT
Overhead Main Line	1/2" ID	1/2" ID
Floor Plumbing		
Main Line Dia. Min./Max. ID in inches	1¼ to 2"	1½ to 2"
End Fitting	1" FNPT	1" FNPT
Branch Line Dia. Min./Max. ID in inches	1 to 1½"	1 to 1½"

Note: Suction piping must slope at least a ¼" for each 10 feet of run towards the pump. Use PVC Schedule 40 or Copper Type M.

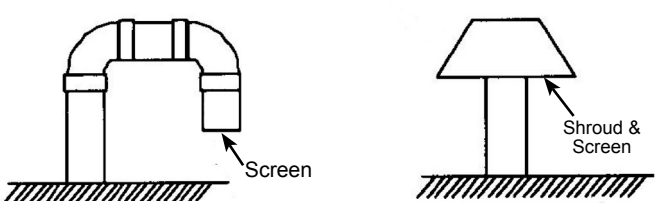
VENTILATION REQUIREMENTS

Equipment Room Temperature

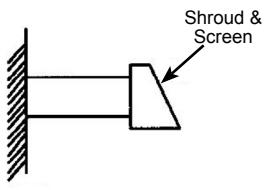
The VACSTAR equipment must be used in a controlled temperature environment. Maintain equipment room temperature between 40 and 105 degrees Fahrenheit. Adequate forced ventilation must be provided across the unit by placing an appropriate exhaust fan opposite an equivalent air intake vent. The fan should be higher than the associated intake vent.

Exhaust Vent Protection.

If the exhaust piping is venting to the outside of the building, precautions must be taken to protect the equipment room from weather elements and animal intrusion. This can be accomplished by using one of the three methods shown below.



Roof-Mounted Outside Vent Protection

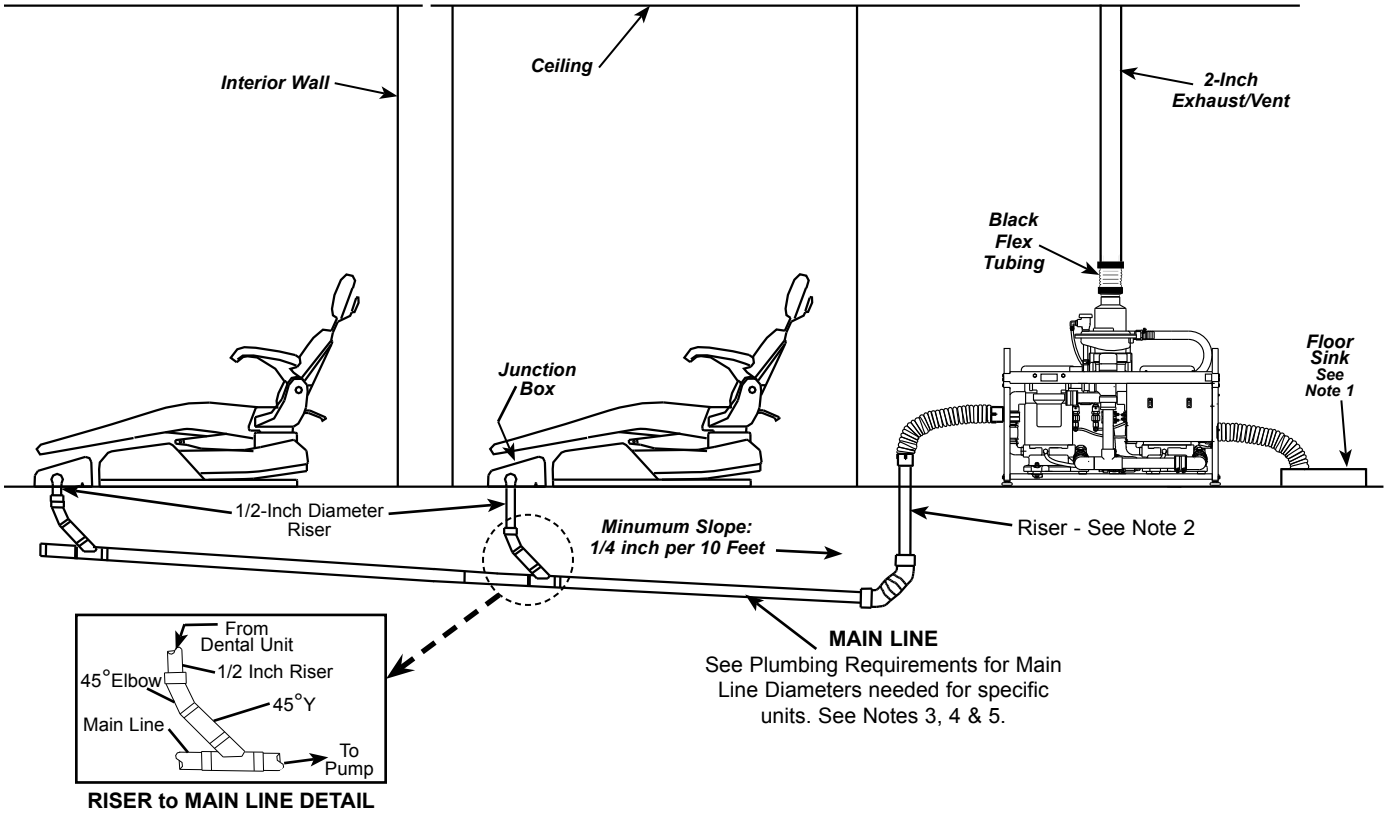


Wall-Mounted Outside Vent Protection

Make sure to use the required pipe type for associated system

PLUMBING INSTALLATION

SUB FLOOR INSTALLATION - The sub-floor plumbing layout shown below is the recommended layout for VacStar system installations and should be used whenever possible.



RISER to MAIN LINE DETAIL

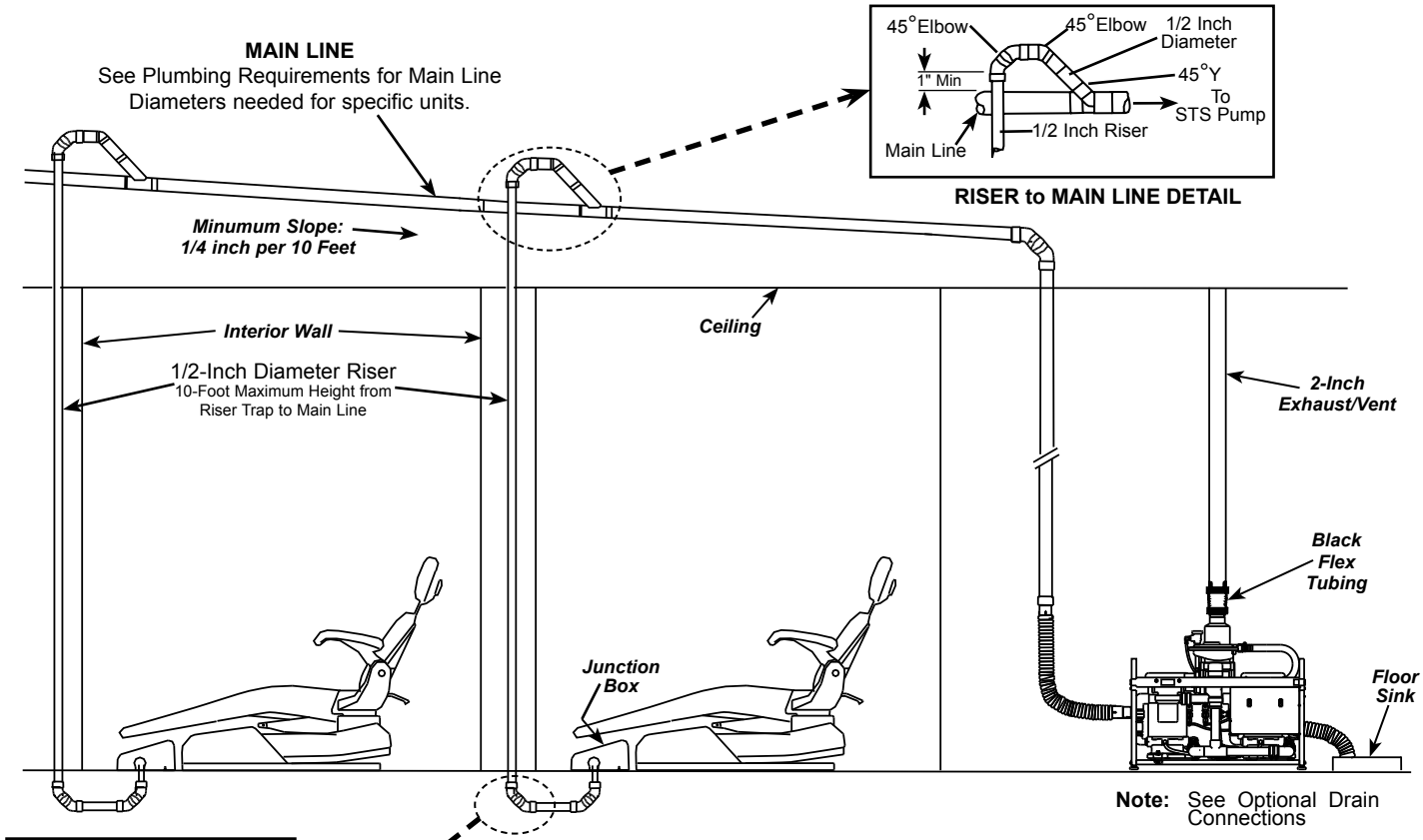
Notes:

1. See Optional Drain Connections shown below.
2. 8-Foot Maximum Height from Main Line to pump.
3. Consult Dental Unit Manufacturer's Guidelines for correct reduced size and height of termination of vacuum line inside junction box.
4. Limit branches. Orient main line under junction box or cabinet.
5. When main line is 1-1/2" I.D. or larger, use 45° Y's and elbows only.
6. Long radius 90° elbows can be used as alternates to 45° elbows.

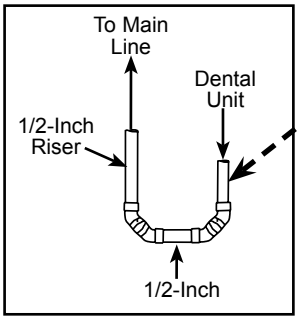
All installations must conform to local codes.

PLUMBING INSTALLATION

OVERHEAD INSTALLATION - The overhead plumbing layout shown below is the alternate layout for VacStar system installations and should be used only when unable to use the sub-floor plumbing layout.

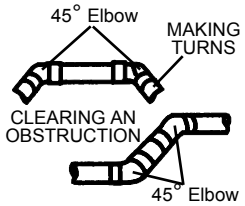


Note: Consult Dental Unit Manufacturer's Guidelines for correct reduced size and height of termination of vacuum line inside junction box.



RISER TRAP DETAIL
(Using 45° Elbows)

CONNECTION DETAILS ALL INSTALLATIONS -

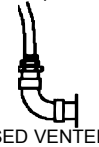


MAIN LINE

- DO NOT use 90° elbows except where main line terminates at vacuum pump.
- Use only 45° elbows to make turns in main line.
- If piping is diverted to clear an obstruction, DO NOT MAKE A TRAP.

DRAIN OPTIONS

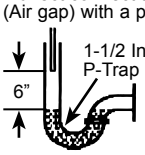
Direct connection to vented drain. No traps before vent.



CLOSED VENTED DRAIN

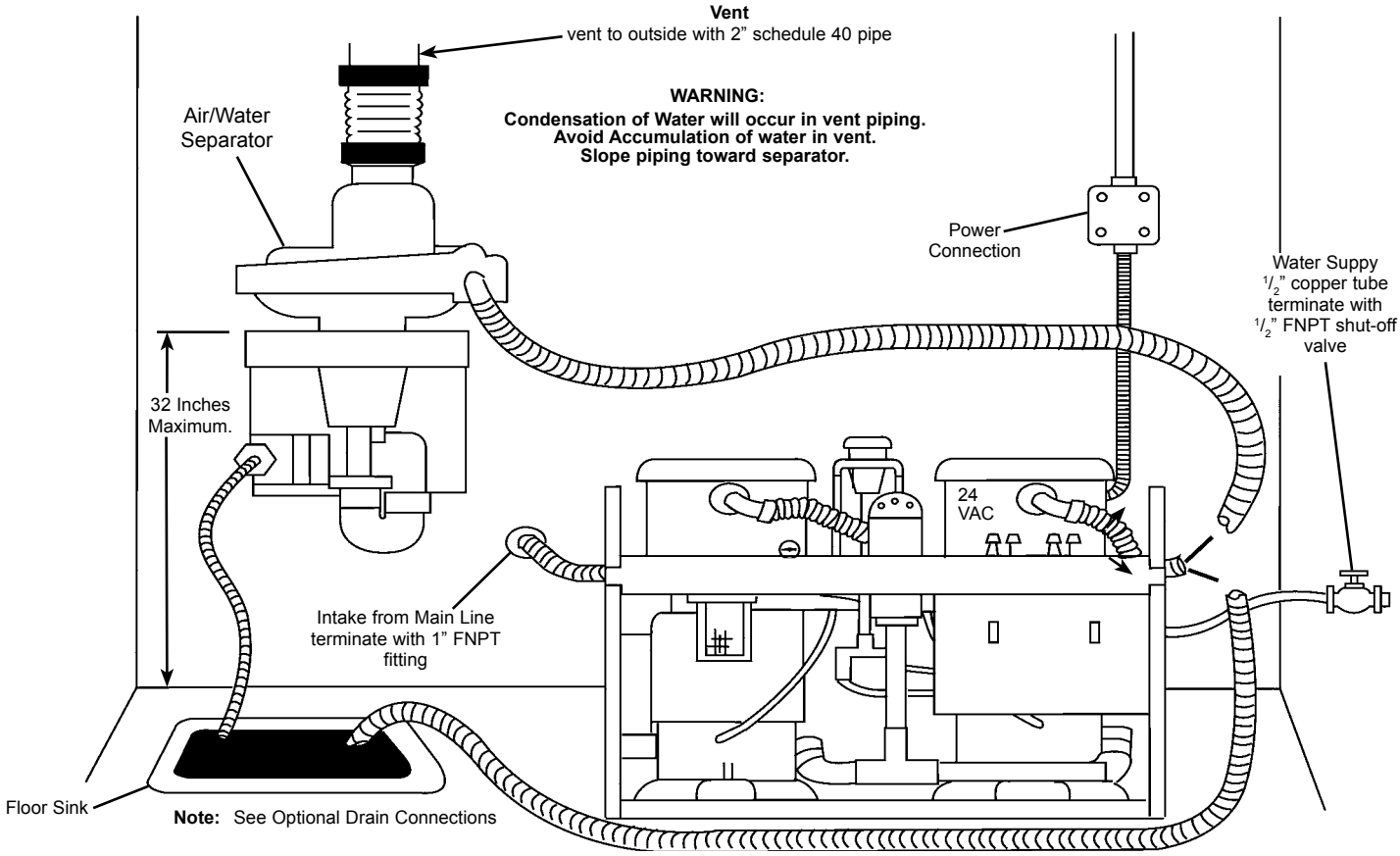
OR

Indirect connection (Air gap) with a p-trap.



OPEN DRAIN PIPE

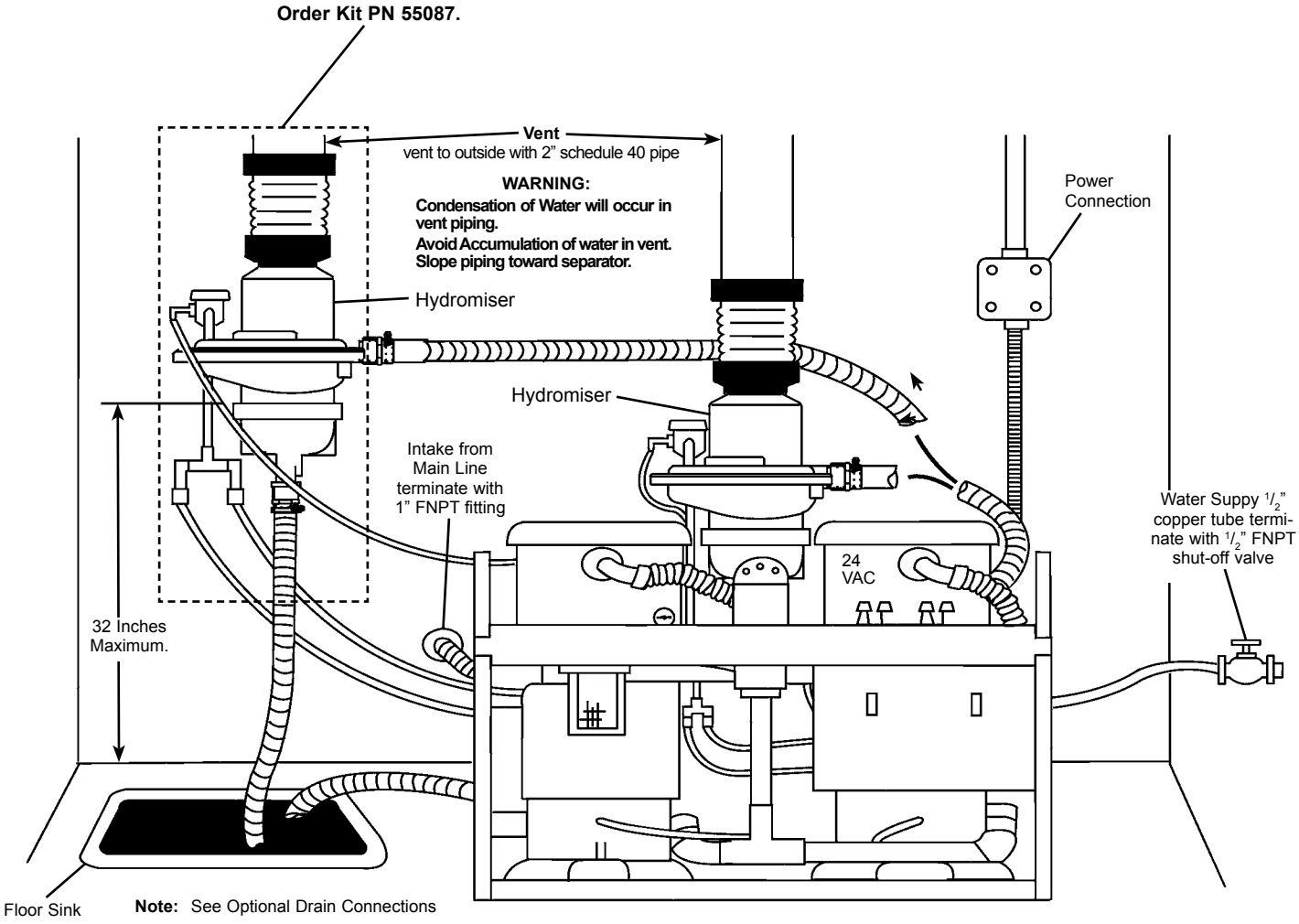
Typical for both VS50 and VS80



All VacStar vacuums comply with NFPA 99C level 3 requirements

Typical for both VS50H and VS80H

If the existing drain is higher than the HydroMiser outlet, the HydroMiser must be mounted so that its outlet is above the drain.
The HydroMiser can be installed up to 32” above the base of the VacStar.



You can obtain more information about Air Techniques' products by visiting our web site at
www.airtechniques.com

Additional installation information is available on our Authorized Air Techniques Dealer web site at
http://dealers.airtechniques.com

AIR TECHNIQUES equipped for life®

Air Techniques Inc.
1295 Walt Whitman Road, Melville, NY 11747-3062
Website: www.airtechniques.com
1-800-AIR-TECH (1-800-247-8324)

VacStar and Hydromiser are trademarks of Air Techniques, Inc.
© 2008 Air Techniques, Inc. • Part No. 55349, Rev. Y • August 2025