

America's Dental Equipment Company

PRECISION VACUUM SYSTEMS

*Owners Guide
2015*



Rev 2/15

Dansereau

(800) 423 - 5657 / WWW.DHPDENTAL.COM

CUSTOMER SUPPORT INFORMATION

Dansereau Health Products, Inc. has been manufacturing Dental Equipment for over 40 years. We have compiled a significant amount of data and information regarding the manufacturing, use and maintenance of dental equipment. Information contained in this manual will assist you in use and maintenance of your Dansereau equipment. We offer the most comprehensive 5 year warranty on USA manufactured dental vacuum systems today.

SUPPORT ACCESS

Dansereau Health Products, Inc.
1581 Commerce Street, Corona, CA 92880
Toll Free (800) 423-5657
Phone (951) 549-1400
Fax (951) 549-1411
Website-WWW.DHPDENTAL.COM

TESTING LABORATORIES

ETL Testing Lab.- Report #530937
Medical and Dental Equipment
Category - 6 - UL 544-2nd Ed.
CAN/CSA Testing Laboratories- Report #531003
Canadian Standard for Medical Electrical Equip.
No 601.1—M90
US Food and Drug Administration
Medical Device Registry- #202716
Dental Equipment: Classification B (Inside Use Only) IPX4
Environmental Conditions for Storage and Transport:
40 degrees (4 Degrees C) Min. / 100 Degrees (38 Degrees C) Max.
Site Conditions: 40 degrees (4 Degrees C) Min. / 100 Degrees (38 Degrees C) Max.
Installation Conditions - Inside

DAMAGED FREIGHT

Dansereau utilizes superior packaging procedures, however shipping accidents can occur. It is your responsibility to note any unusual conditions or subsequent damage to the shipping crate on the Bill of Laden prior to acceptance and signature for the product received from the freight carrier. After opening of boxes, concealed damage should be noted and reported immediately to Dansereau and the freight carrier. All freight is shipped FOB, Corona CA. and although Dansereau is not responsible for the damage we will support you in all claims and will send replacement parts immediately.

PRODUCT RETURNS:

Dansereau manufactured products are made to order and a 25% restocking fee may apply on returned orders. Returned orders on installed equipment is not available.

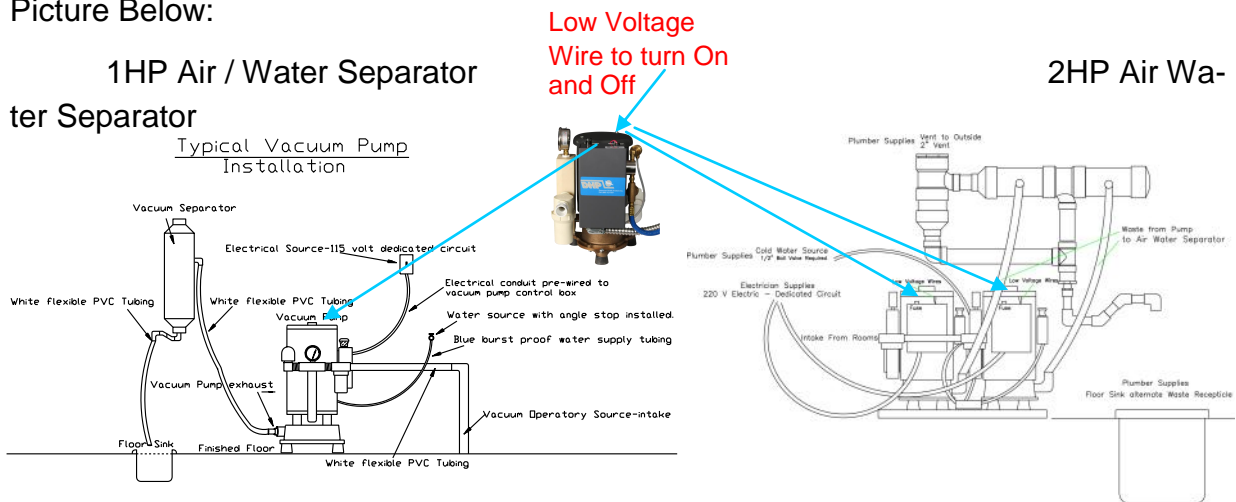
PRODUCT DESCRIPTION

VACUUM PUMP SYSTEM

The Vacuum Pump system is installed in a Utility Room in the typical dental office and is primarily used for oral evacuation of debris from the patients mouth. Recent changes in the industry have required manufacturers to add accessory items in order to properly meet upgraded and current installation standards as noticed by Uniform Building Codes. Below are listed items that may pertain the installation of the vacuum system in your dental office.

1) Air/Water Separator: The function of an Air/Water Separator is to allow the liquid waste evacuated from the patients mouth to be separated from the air born particles. The Air/Water Separator is installed after the vacuum pump and before eth drain or floor sink. A 2" vent pipe is required for correct installation of the separator.

Picture Below:



2) Water Recycler: The function of the Water Recycler is to allow the water used in the operation of the Vacuum Pump to be re-used, thus reducing the water usage in the dental office.

3) Boost Transformer: The function of the Boost Transformer is to increase the incoming line voltage to the Vacuum Pump. The voltage in some areas may be below the required level to properly operate the Vacuum Pump. All Vacuum Pumps require a 120volt or 208volt incoming electrical source, if the power source fluctuates or does not meet this requirement a Boost Transformer will be required. It is rare to not have adequate voltage within the USA or North America. Refer to a licensed electrician if you have questions regarding your power source.

4) Operating Information;

Start of the Day: Prior to turning on your DHP Precision Vacuum System verify the water system is turned on. Turn on the Vacuum System, it is designed as a continuous run system, therefore you can operate the system all day without turning off.

VACUUM SYSTEM INSTALLATION REQUIREMENTS

Installation Requirements:

- 1) 5" x 5" Utility Room requires No Less Than 5 Air Changes Per Hour with Ventilation Fan
- 2) Dental Vacuum Systems cannot be installed in Patient Care Area. Vacuum Systems has a Potential Risk of Safety Hazard and consideration must be taken to ensure Vacuum System must not be installed adjacent to Patient Care Area. It is recommended the Utility Room has a lock only permitting staff and authorized personnel entrance to room.
- 3) Dental Vacuum System Requires Dedicate Electrical Circuit (Refer to Chart Below for specifications). Vacuum System is supplied with Main Supply Power Disconnect. See Picture:
- 4) Vacuum Pump requires 6 inch clearance from adjacent structures or walls.

Electrical and Plumbing Requirements: Refer to Chart Below:

Electrical	DHP101	DHP202	DHP303
Voltage Rating	*120/230V - 14/7A /60hz	230 V/7A 60Hz	230V/7A 60Hz
Voltage	*110/125 - 60Hz	208/240 - 60Hz	208/240 - 60Hz
Internal Vacuum Fuse Rating	1.5A / MDL-.5R	1.5A / ABC20R	1.5 / AMC20R
Min/Max	208/240 - 60Hz		
Electrical Panel Breaker Size	20Amp	20Amp	30Amp
Full Load Amps	*16/8	13.4	21.6
Cubic Feet Per Minute	14	22	34
Water			
Inlet Water Pressure PSI	20-100	20-100	20-100
Flow Rate Per Pump (Gal.Min)	1	2	3
Water Temp (*F)	40-75	40-75	40-75
Vacuum Level			
Preset at Factory (In Hg)	10 to 12	10 to 12	10 to 12
Shipping Weight (lbs)	68	85	160
Dimensions (H"XW"XD")	14x11x11	17x11x11	22x28x16

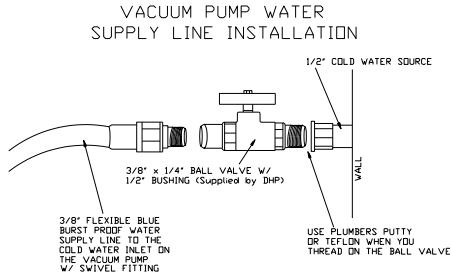
Low Voltage: The Vacuum Pump has a Low Voltage ON/OFF capability. A 3/18 low voltage rated wire can be run from one central location to allow the Vacuum Pump to be turned on and off. DO NOT CONNECT 120v or 240v to the low voltage lines as it will cause internal damage to the Vacuum Pump System.

Plumbing Requirements:

- 1) Cold Water Line: 1/2" Cold Water line is required for proper operation of any DHP Vacuum System. A 1/2" Female Ball Valve is required to install the cold water line from the Vacuum Pump to cold water source (Water Line Supplied by Dansereau). All Dansereau Vacuum Pumps have a Recognized Backflow Device installed to ensure no cross contamination of the Vacuum Pump to the Public Water Source, however it has been noted that some Building Departments are requesting a secondary backflow system be installed by the contractor.

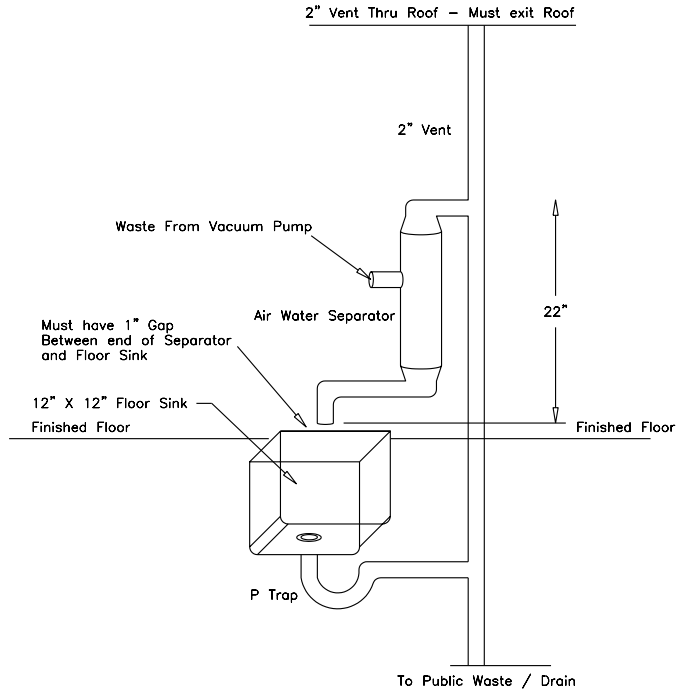
UTILITY ROOM SPECIFICATIONS

Typical Utility Room Schematics

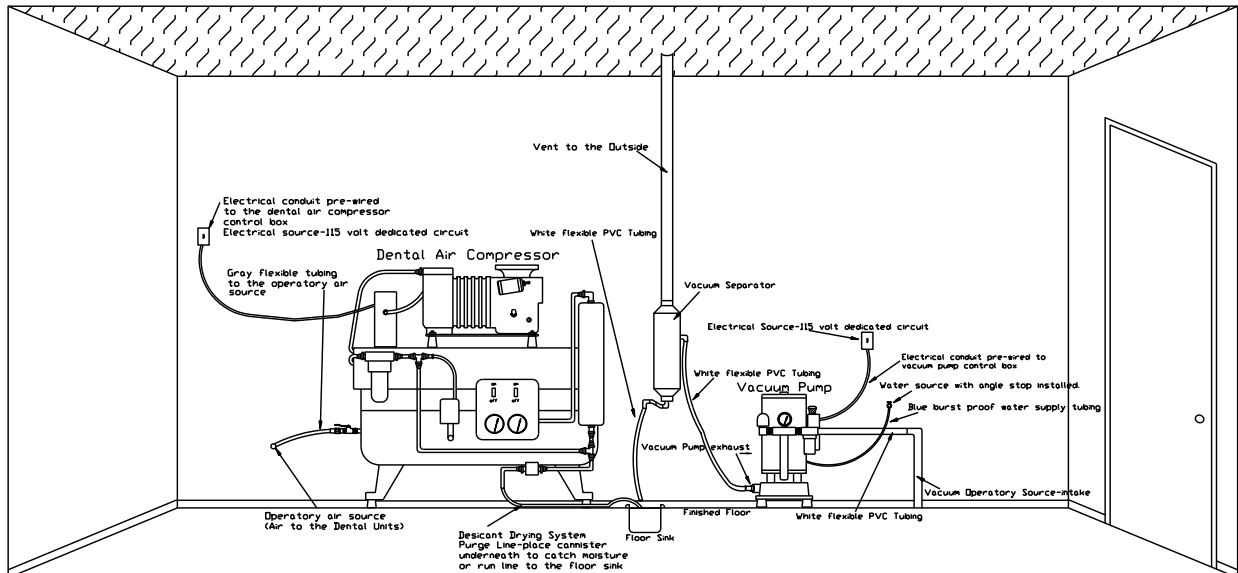


NOTE:

This is a Typical Utility Room configuration. Use this as a basic format for designing your Utility Room. Key elements are appropriate electrical and plumbing specs. need to be met, placement of electrical and plumbing can be modified if needed. Contact Dansereau to verify modifications prior to installation of electrical and plumbing connections.



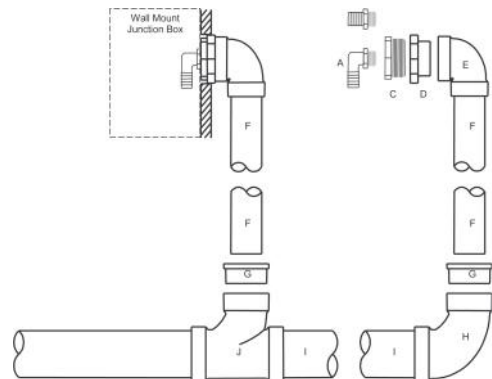
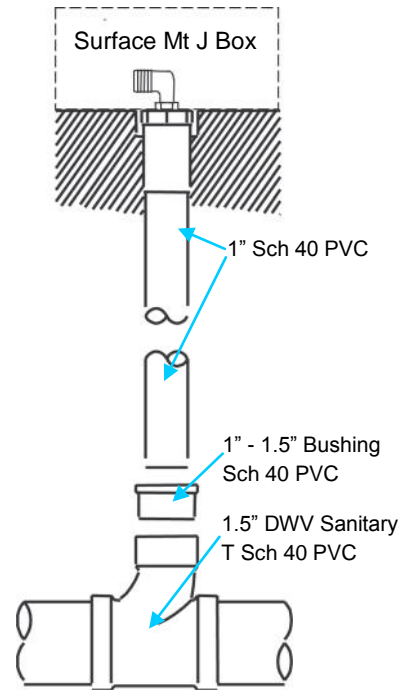
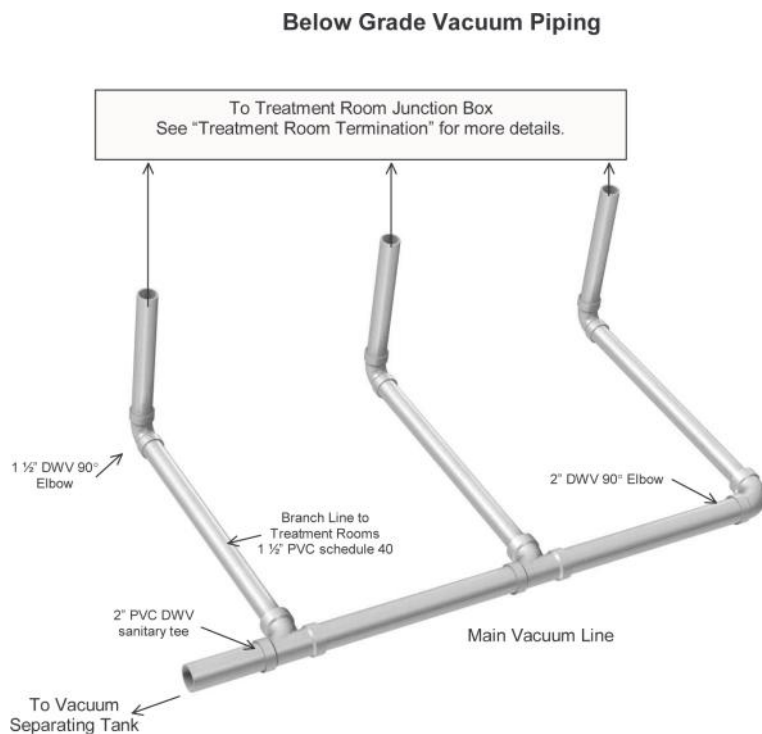
Typical Dental Equipment Room Design



VACUUM LINE SPECIFICATIONS

Vacuum Line: See Chart Below.

Dansereau Health Products, Inc. strongly recommends Schedule 40PVC for use as the Vacuum Line. However, be aware some Building Codes require a metal type vacuum line and require Copper as the Vacuum Line. Copper will eventually deteriorate over years of service, Schedule 40 PVC will not. NOTE: IF YOUR VACUUM LINE INSTALLATION IS OUTSIDE THE SCOPE LISTED BELOW CONTACT DANSEREAU FOR SPECIAL INSTRUCTIONS.



Site Requirements: Environment Conditions

Operating Conditions - Indoor use at altitudes up to 2000M.

Temperature 5 to 40 Degrees C (41 to 104 F)

Maximum relative humidity 80% for temperatures up to 31 C, decreasing linearly to 50% relative humidity to 40C.

Supply Voltage fluctuation of +/- 10% of nominal voltage.

IEC 60601 - 1

Not suitable for use in the presence of a flammable anesthetics mixture with air or with oxygen or nitrous oxide.

Class 1 Installation Category

Ordinary equipment (IPXO). Does not protect against ingress of water.

Unit is suitable for continuous operation.

VACUUM LINE SIZING

Vacuum Line Sizing Guide is recommended specifications. In order to ensure quality vacuum performance reduce the amount of angled fittings and bends in the piping system and make every effort to provide a 1/4" Grade Per Foot.

DHP 101	DHP 202 * Dual	DHP 303 * Triple
HVE's + SE's	HVE's + SE's	HVE's + SE's
2 + 0	3 + 0	4 +
1 + 1	2 + 2	3 + 2
0 + 4	1 + 4	2 + 4
	0 + 6	1 + 5

NOTES:

HVE= High Volume Evacuator

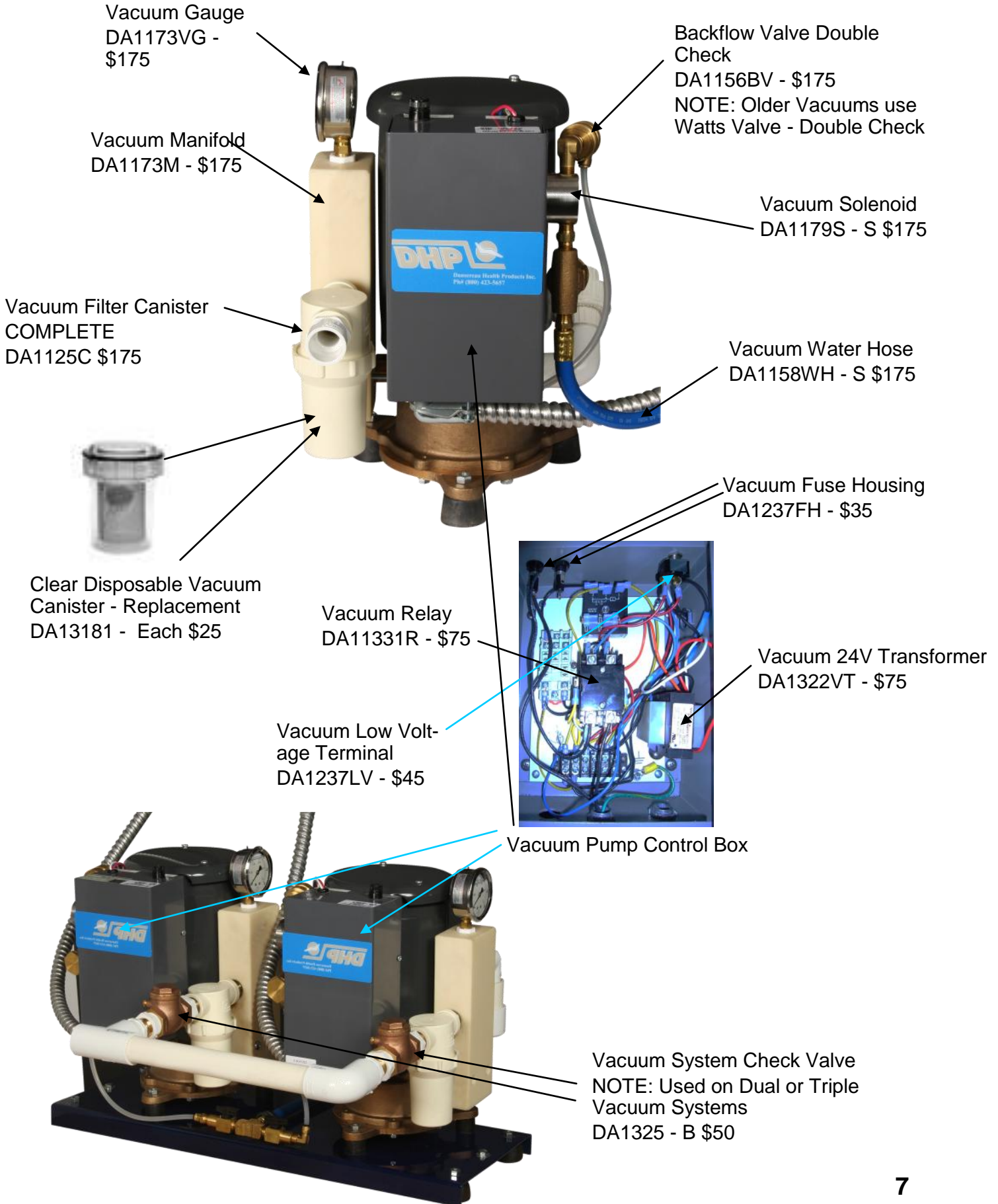
SE= Saliva Ejector

* These combinations apply if all pumps are running together.

If only one pump is running, Sizing Guide for DHP 101 applies.

Vacuum Line Sizing Chart		
NUMBER OF OPERATORIES	VACUUM LINE PVC sch 40	PIPE DIAMETER RISER DIAMETER
1	1 1/4"	1
2	1 1/4"	1
3	1 1/4"	1
4	1 1/2"	1
5	1 1/2"	1
6	2"	1
7	2"	1
8 to 12	2"	1

VACUUM PUMP PARTS LIST



VACUUM PUMP WIRING SCHEMATICS



CAUTION. Failure to carefully follow the described procedure may result in damage to the equipment.



WARNING. Failure to carefully follow the described procedure may result in damage to the equipment and the operator.



Risk of electrical shock present. Make sure power is disconnected before attempting this procedure.

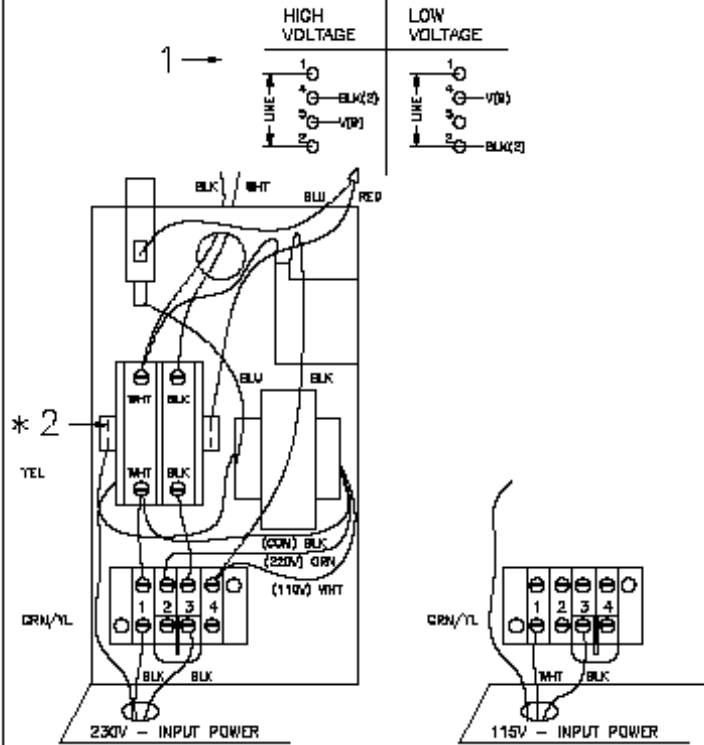
IEC Symbols

The following symbols conform to IEC labeling standards and may be located throughout the product:

- AC (Alternating Current)
- Protective earth (Ground)
- IPX4 Protected against splashing water
- Attention: Consult accompanying documents
- OFF
- ON
- Type B equipment (Protected against electrical shock)
- Dangerous voltage

TO CHANGE THE VACUUM PUMP'S INPUT POWER CONFIGURATION, MOVE THE TERMINAL STRIP JUMPER AS SHOWN BELOW AND RECONFIGURING THE MOTOR WIRES AVAILABLE UNDER THE MOTOR'S INSPECTION PLATE.

NOTE: THE RED AND BLUE WIRES PROTRUDING FROM THE TOP OF THE POWER CONTROL BOX CAN BE USED FOR REMOTE LOW VOLTAGE SWITCHING. EXTEND THESE WIRES TO THE DESIRED SWITCH LOCATION AND CONNECT TO THE SWITCH.



1 MOTOR WIRING FOR FRANKLIN ELECTRIC 1HP MOTOR
* 2 POWER CONNECTION TIE POINT FOR A REMOTE ON INDICATOR

Safety Labels

CAUTION!	RISK OF EXPLOSION IF USED IN THE PRESENCE OF FLAMMABLE ANESTHETICS.	¡ATENCIÓN!
CAUTION!	RISQUE D'EXPLOSION EN PRESENCE DE PRODUITS ANESTHÉTIQUES INFLAMMABLES.	¡ATENCIÓN!
CAUTION!	RIESGO DE EXPLOSIÓN SI SE UTILIZA EN PRESENCIA DE ANESTÉSICOS INFLAMABLES.	¡ATENCIÓN!
CAUTION!	ELECTRIC SHOCK HAZARD. DO NOT REMOVE COVER. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.	¡PELIGRO!
CAUTION!	RISQUE D'ELECTROCUTION. NE PAS OUVRIR LE COUVERCLE. FAIRE APPEL À UN TECHNICIEN QUALIFIÉ.	¡PELIGRO!
CAUTION!	RIESGO DE CHOQUE ELECTRICO. NO QUITE LA CUBIERTA. CONTRATE EL SERVICIO CON PERSONAL DE SERVICIO CALIFICADO.	¡PELIGRO!



(See Definitions of Symbols section)

WARNING:
THIS DEVICE SHOULD ONLY BE CONNECTED TO HOSPITAL GRADE OUTLETS. FAILURE TO DO SO MAY RESULT IN ELECTRICAL SHOCK DUE TO IMPROPER GROUNDING.

ATTENTION!
CET APPAREIL DOIT ETRE BRANCHÉ A UNE PRISE DE TERRE ADEQUATE.

¡ADVERTENCIA!
ESTE DISPOSITIVO DEBE CONECTARSE ÚNICAMENTE A TOMACORRIENTES DE GRADO HOSPITALARIO. SI NO SE HACE ASÍ, PUEDE PRODUCIRSE UN CHOQUE ELECTRICO A CAUSA DE UNA PUESTA A TIERRA INADECUADA.

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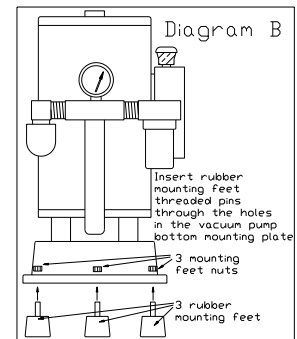
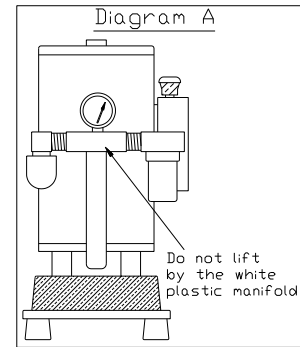
DANSEREAU HEALTH PRODUCTS

DANSEREAU HEALTH PRODUCTS
1581 COMMERCE ST.
CORONA, CA 92880
(951) 549-1400

VACUUM INSTALLATION GUIDE

Unpacking the Vacuum Pump

- 1) The DHP Vacuum Pump weighs approximately 70 lbs. With the Vacuum Pump box on the floor use a knife to open the box. Remove all the inner packing material and various parts and set aside, **DO NOT DISCARD ANY MATERIAL UNTIL THE VACUUM PUMP IS COMPLETELY INSTALLED.**
- 2) Remove the inner cardboard sleeve by sliding it upward.
- 3) The vacuum pump is mounted to a plywood pallet carefully lift the vacuum pump out of the box - realize the vacuum pump weighs 70 lbs. **DO NOT LIFT THE VACUUM PUMP BY THE WHITE PLASTIC MANIFOLD** (See diagram A below) - **LIFT THE VACUUM PUMP BY THE BASE HOUSING.**
- 4) Locate the three rubber mounting feet stapled to the wood platform the vacuum pump is attached. Remove the vacuum pump from the wood platform. Install the three rubber mounting feet. Be careful not to hold the vacuum pump by the white plastic manifold.

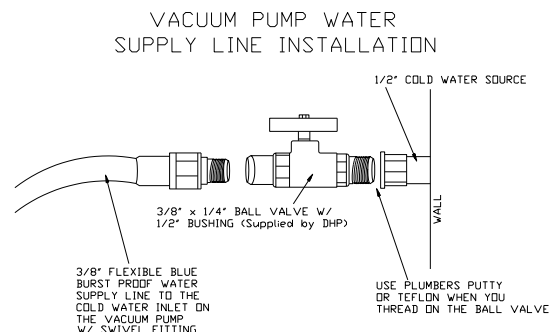


Vacuum Pump location

- 1) Set the vacuum pump on a level surface. A vinyl or tile surface is strongly recommended, carpeting and or wood surfaces may mildew and deteriorate over several years of use.

Vacuum Pump water source installation

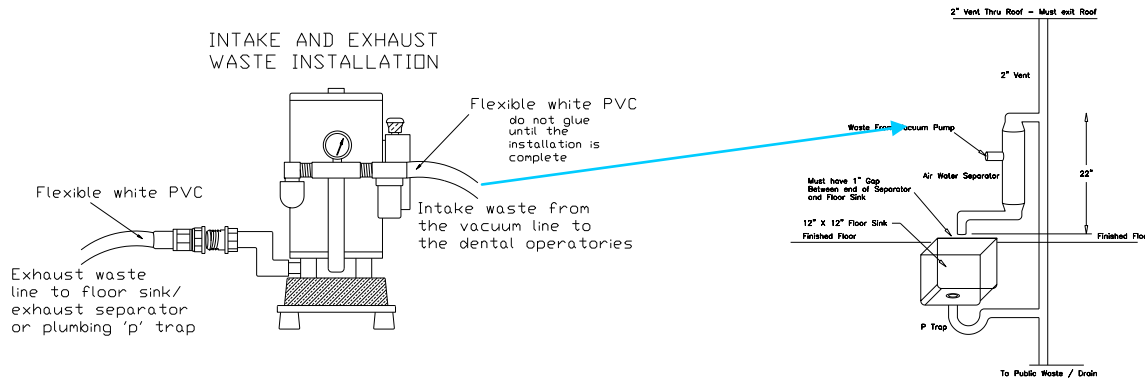
- 2) The water source line to the vacuum pump is a flexible burst proof blue tubing with a threaded fitting on the end. The blue tubing is designed to easily attach to the water ball valve that has been installed as per the pre-installation guide. As per the drawing below apply either plumbers putty or teflon to the male portion of the connection. After the teflon tape or the plumbers putty has been applied thread the water source burst proof blue tubing and hand tighten with an 11/16" open end wrench. **DO NOT OVER TIGHTEN** - After the water source line is tight turn on the water and check for water leaks.



VACUUM INSTALLATION GUIDE

Vacuum Pump Intake and Exhaust Installation

- 1) Locate the flexible white PVC tubing supplied by DHP and attach to the intake portion of the vacuum pump (labeled on the vacuum pump).
- 2) Locate the operatory vacuum line source(the plumber installed in the dental office)and attach the intake portion of the flexible white PVC tubing to the operatory vacuum line source.
- 3) Locate the second flexible white PVC tubing and attach to the exhaust portion of the vacuum pump (labeled on the vacuum pump).
- 4) If you choose to use a vacuum separator you will attach the exhaust portion of the flexible white PVC tubing (now attached to the vacuum pump) to the vacuum separator. Refer to the Vacuum Separator installation manual for additional instructions. If you choose not to use a vacuum separator the flexible white PVC exhaust hose will drain directly into the floor sink or plumbing 'P' trap. It is strongly recommended that the exhaust hose have a 1" air gap as per most local building codes.



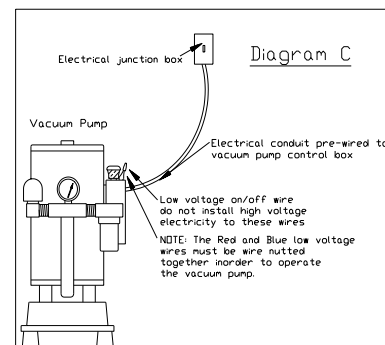
Electric Installation

IT IS EXTREMELY IMPORTANT THAT THE ELECTRICAL SOURCE AT THE ELECTRICAL PANEL BE TURNED OFF UNTIL THE VACUUM PUMP IS COMPLETELY INSTALLED.

- 1) Locate the electrical junction box at the end of the metal flexible conduit attached to the gray metal vacuum pump junction box. This is the 115 volt

electrical source for the single horsepower vacuum pump system or the 230 volt electrical source to the 2 horsepower vacuum pump system.

- 2) It is strongly recommended that the electrical portion of the vacuum pump installation be done by a qualified licensed electrician.



MANUFACTURER'S WARRANTY

Dansereau has the most comprehensive product warranty programs available to the dentist today. We offer a 5 Year Warranty on our Wet Vacuum Pump Systems, complete features are listed below:

Upon Installation of the Dansereau DHP Precision Vacuum System your warranty is automatically registered with Dansereau

5 Years 100%

Vacuum Pump Electric Motors, Brass Housing and Impellar, Manifold System, Pressure Gauge, Solenoid Valve, Solenoid Coil, Transformers, Relays and Double Check Valve.

Vacuum Filters are maintenance items and not covered under warranty.

Broken or User Damaged Items are Not Covered under Warranty.

Minimum Maintenance is required in order to guarantee full use of warranties

DHP Precision Vacuum System require not lubrication or maintenance other than routine filter changes. You can visit our website WWW.DHPDENTAL.COM to view a video on the filter change method.

GUARANTEE

Dansereau will guarantee against defects in material and workmanship. Defective parts will be repaired or replaced: no claim for labor or consequential damages will be allowed. All replacement parts claimed defective will be filled in the usual manner, such invoice being subject to adjustment after the alleged defective material has been returned and inspected by the manufacturer. The warranty does not cover damage resulting from improper installation, maintenance, accident or misuse.