

# Dansereau Dental Equipment

## Dry Vacuum Install Specs

# Roadrunner Hybrid

## 3 HP / 2 Stage

### Dry Vacuum

Updated 7/16 Rev 1

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UL - 60601 Issued 2003/04/25 Ed.  
Rev 2006/004/26  
CSA C22.2#601.1 Issued 1990/01/01 / (R2005)  
USFDA Medical Device Lic.# 2027216

# Roadrunner Hybrid 3 HP/2 Stage Dry Vacuum

## Install Dimensions



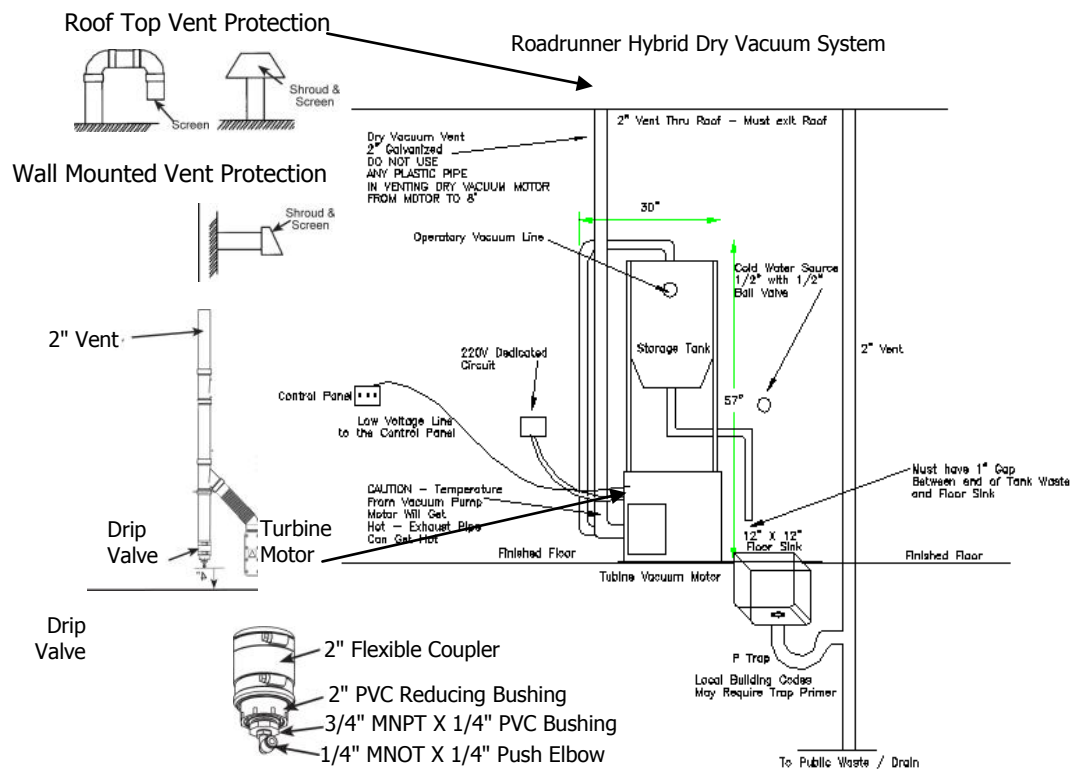
Required Air Flow Perimeter 12 Inches

NOTE: Air Flow is critical element in Dry Vacuum System. A minimum 12 inches of clearance is required to ensure proper air flow. An air vent fan for circulation in the Dry Vacuum Area is also required. Optimally an Air Conditioning Vent is recommended by not required.

# DHP Vacuum Pump - Pre-installation Guide

## Location

The DHP Roadrunner Hybrid 3 HP / 2 Stage Vacuum System should be installed in a well ventilated area. The DHP Roadrunner Hybrid 3 HP / 2 Stage Vacuum System is air cooled and without proper air circulation the lifespan of the vacuum pump could be shortened significantly. The sound level of the vacuum pump, when in operation, is very quiet and can be placed within a dental facility. The ambient temperature in the dental office equipment room should never exceed 40 degrees Fahrenheit minimum and 100 degrees Fahrenheit maximum. The dental office equipment room will require a minimum 5 air changes per hour which can be met with a 50 CFM vent fan in a 5' x 5' x 9' room. **However, if an Air Conditioning Supply and Return is available it is HIGHLY RECOMMENDED to ensure heat controls in the Utility Room.** NOTE THE DHP Roadrunner Hybrid 3 HP / 2 Stage Vacuum System CAN BE INSTALLED SIDE BY SIDE OR STACKED.



*The above DHP Super Flow Dry Vacuum System Vacuum installation elevation is a typical installation.*

*It should be noted that local building codes will supersede any recommended installation guidelines in this manual.*

# DHP Dry Vacuum Specifications

## Specifications:

Voltage 240 VAC / Hz 50 - 60 - If 208V Present "**Buck Booster Required** "

- Output H.P. - 3 / Current Amps 6.8 - 20AMP CIRCUIT BREAKER REQUIRED !
- Free Delivery (CFM) 70 / Vacuum In. Hg. 9 " max 8" continuous
- Weight (lbs.) 97
- Width (inches) 16
- Length (inches) 20
- Height (inches) 16
- Tank (gallons) 16
- Includes: Low voltage control, separator tank with automatic drain and check valve
- **Copper NO LONGER RECOMMENDED FOR VACUUM LINES OR VENTING**

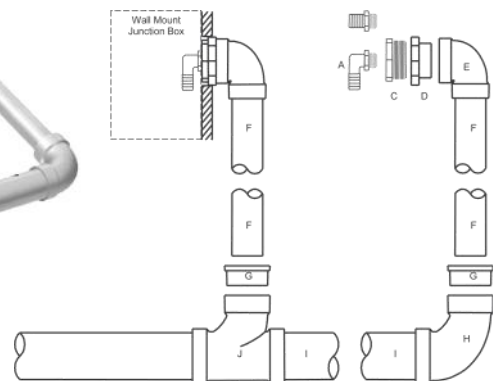
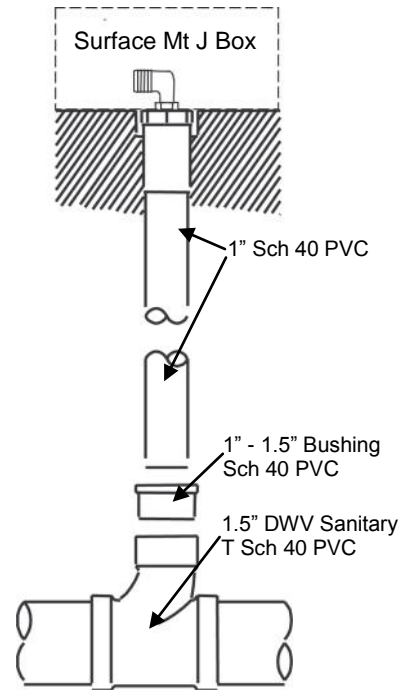
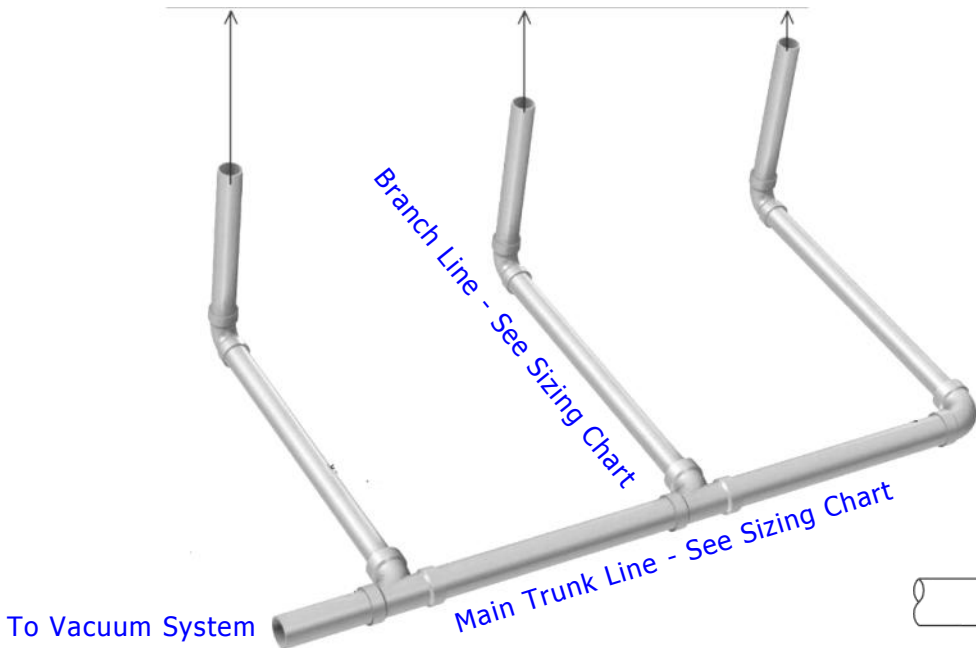
Dry Vacuum System	Number of Operatories	Vacuum Line Diameter PVC Sch. 40	Assembly Diameter PVC Sch. 40
Dry Vacuum System	1	1 - 1/2 "	1
Dry Vacuum System	2	1 - 1/2 "	1
Dry Vacuum System	3	1 - 1/2"	1
Dry Vacuum System	4	1 1/ 2" - 2 "	1
Dry Vacuum System	5	1 1/ 2" - 2 "	1
Dry Vacuum System	6	1 1/ 2" - 2 "	1
Dry Vacuum System	7	1 1/ 2" - 2 "	1
Dry Vacuum System	8	1 1/ 2" - 2 "	1
Dry Vacuum System	9	2"	1
Dry Vacuum System	10	2"	1 1 / 4"
Dry Vacuum System	11	2"	1 1 / 4"
Dry Vacuum System	12	2"	1 1 / 4"

# DHP Dry Vacuum Specifications

## Vacuum Line: See Chart Page 4.

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.

Operatory Termination - See Vacuum Sizing Chart for Specs.



### 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.

# DHP Dry Vacuum Specifications

## OVERHEAD PLUMBING

If you are required to run Overhead Plumbing the specifications below will offer the best installation conditions for optimal performance. Incorrect installation of overhead vacuum piping will ensure low quality vacuum pressure.

### Plumbing Rules for Overhead Piping:

- Keep the vertical lift height as short as possible.
- The vertical pipe must tee into the top of the horizontal line.
- Run the vertical line in 1/2" pipe.
- Run the horizontal overhead line in 1-1/2" or preferably 2" size pipe. For more than 5 Operatories consult with Dansereau.
- Nitrous oxide scavengers must run in a separate vertical pipe and tee into the top of the horizontal line in a separate location from the "wet" vertical pipe.

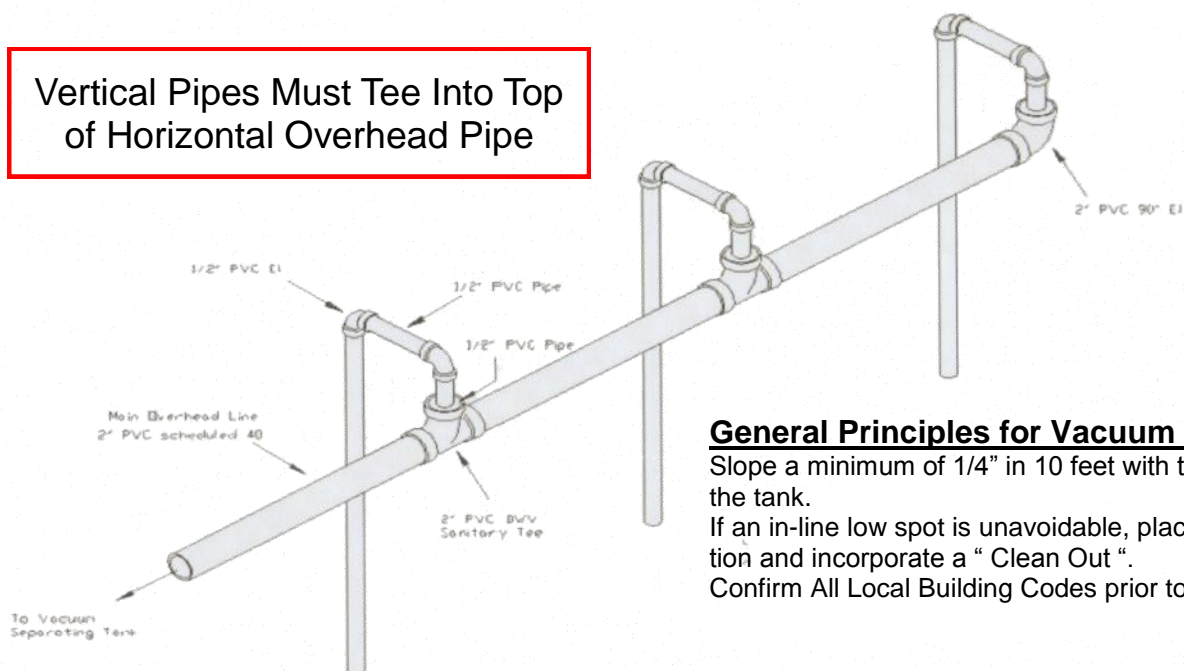
### Pump Sizing Rules for Overhead Piping:

- Dry Vacuum System is the only system that will ensure adequate vacuum in an Overhead System.
- Consult with Dansereau on Overhead Piping Line Size.

### Operator Rules for Overhead Piping:

- Operators must use Non Foaming Vacuum Line Cleansers ( Recommended Bio-Pure)
- Operators must flush lines and then allow air from open vacuum line to run in order to ensure complete liquid non foaming vacuum line cleaning solution has run through the system.

Vertical Pipes Must Tee Into Top of Horizontal Overhead Pipe



### General Principles for Vacuum Lines

Slope a minimum of 1/4" in 10 feet with the low end towards the tank.

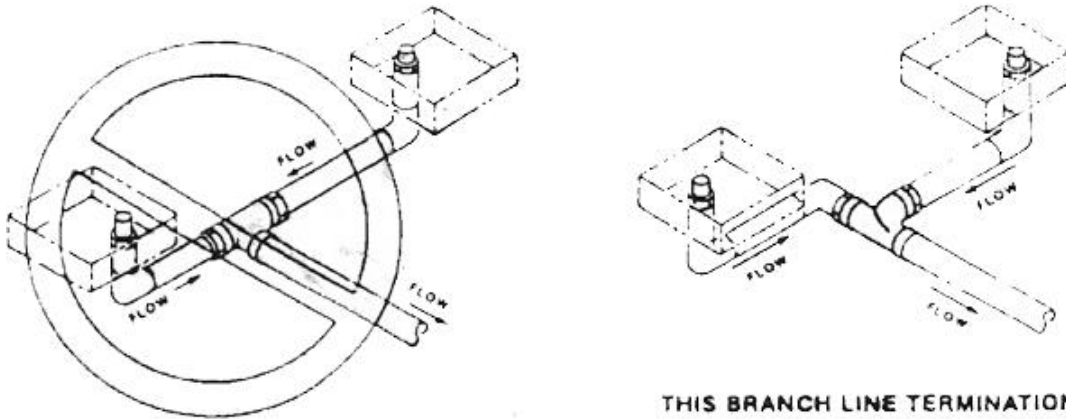
If an in-line low spot is unavoidable, place it in a known location and incorporate a "Clean Out".

Confirm All Local Building Codes prior to beginning plumbing.

# DHP Dry Vacuum Pre Installation

## Typical Errors in Plumbing Vacuum Lines

### BRANCH LINE TERMINATION TO TWO OPERATORIES



THIS BRANCH LINE TERMINATION IS SHOWN CORRECTLY. NEVER USE THE INCORRECT EXAMPLE SHOWN AT LEFT FOR VACUUM SYSTEMS.

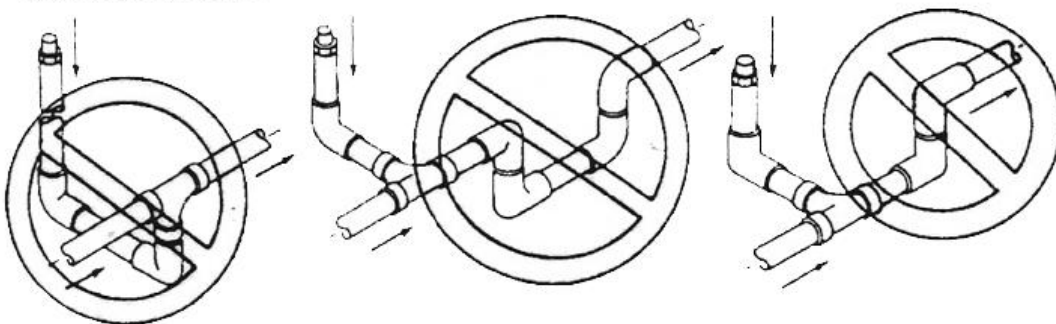
## Typical Errors in Plumbing Vacuum Lines

### MOST COMMON VACUUM PLUMBING ERRORS

DO NOT ALLOW ANY PIPE TO BRANCH OFF ANOTHER PIPE BELOW THE CENTERLINE OF THE MAIN OR BRANCH LINE PIPE. SEE FIG. 6 FOR CORRECT BRANCH LINE TAKE OFF.

#### IMPORTANT

TO PREVENT SUCTION LOSS, DO NOT ALLOW A TRAP TO BE PLUMBED AT ANY LOCATION IN THE SYSTEM EXCEPT MAIN LINE RISER ASSEMBLY (FIG. 1) AND OVERHEAD VERTICAL RISER (FIG. 5).



# DHP Dry Vacuum Specifications

## Electrical Requirements

**LINE VOLTAGE** - Single phase 240v/50/60hz electricity is required for proper operation of the DHP Dry Vacuum System. All electrical sources to the DHP Vacuum Pump MUST BE PROPERLY GROUNDED! All DHP Dry Vacuum Systems are operated by a LOW VOLTAGE SWITCH or the AUTO WASH DOWN SYSTEM WILL NOT OPERATE.

**LOW VOLTAGE** - A 18/3 (3 Color ) low voltage rated wire should be run from one central location to allow the DHP Dry Vacuum System to be turned on and off.

**SPECIAL NOTE: Roadrunner Hybrid Dry Vacuum Systems require Low Voltage Controls to operate, they cannot be operate On/Off functions, the On/Off functions cannot be operated by High Voltage Switching !**

## Plumbing Requirements

**WATER LINE** - A 1/2" cold water source is required for proper operation of the DHP Dry Vacuum System Wash Down. A 1/2" shut off valve is required at end of the water source. Cold water is an important requirement for the proper operation of the DHP Vacuum Pump.

**WASTE LINE** - The industry standard for exhausting the Dry Vacuum waste into a floor sink Local Building Codes will require a 1" air gap from the exhaust of the Dry Vacuum Waste Outlet into the floor sink.

**SPECIAL NOTE:** The Dry Vacuum Motor will require a minimum 2 Inch Vent from the Exhaust of the Motor thru the roof to outdoors, however a 2.5 Inch Vent is preferred. It is required that the first 6 feet (minimum) of the vent pipe from the Dry Vacuum Motor be of metal consistency (No Plastic). Recommended Galvanized. The exhaust of the Dry Vacuum Motor can be hot over constant usage.

## Vacuum Line

The industry standard is a 1.5" schedule 40 PVC line reduced to a 1" schedule 40 PVC line at the operatory. Schedule 40 PVC is the only Manufacturer Recommended product for Dental Vacuum Lines.

### Vacuum Pump Specifications:

Total Horsepower - 3

Electrical 208V - Buck Boost Transformer may be required if only 208 is present.

### Maximum Users:

High Volume Evacuation (HVE) - 7

High Volume Evacuation & Saliva Ejectors - 5(HVE) & 4 (SE)

### Tank Dimensions:

Height - 36 Inches / Depth - 21 Inches / Width - 21 Inches

### Motor Dimensions:

Height - 19 Inches / Depth - 24 Inches / Width - 24 Inches

Weight - Tank 45lbs / Motor - 110lbs

**UNDER NO CONDITIONS SHOULD CONTINUOUS RUN SINKS OR DENTAL CUSPIDORS BE INSTALLED ON A VACUUM LINE**