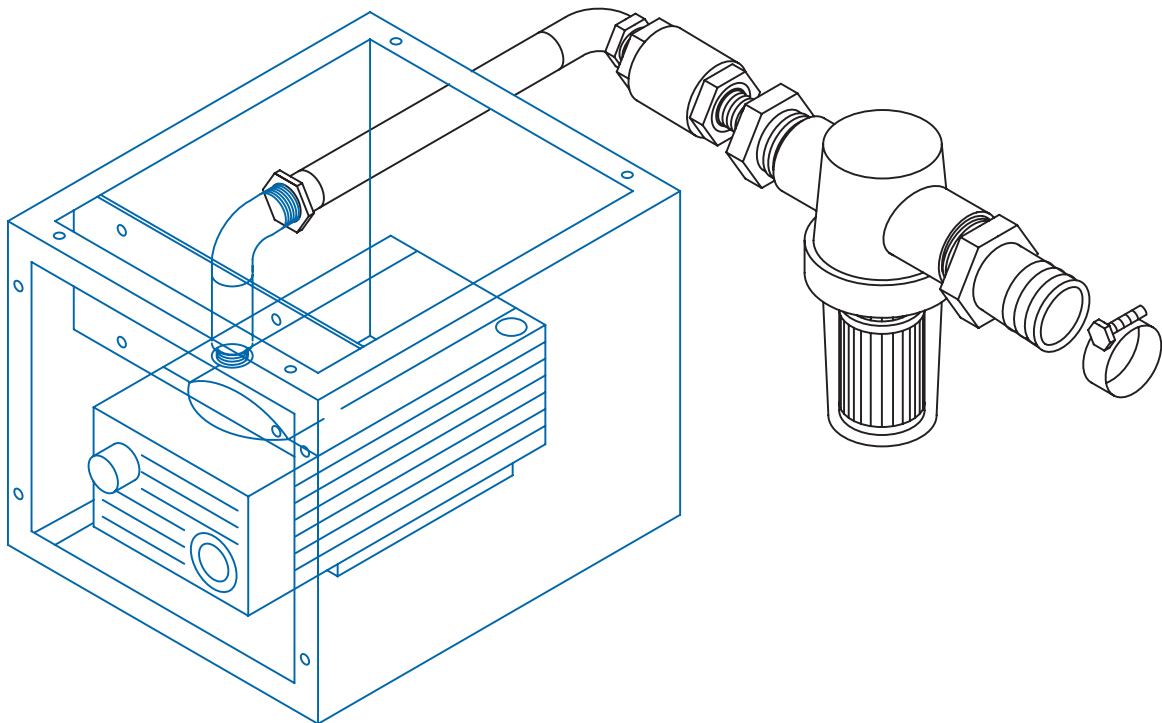


# HD SERIES

## INSTALLATION GUIDE FOR 1HD & 2HD SERIES



# IMPORTANT INFORMATION

## INTENDED USE

To provide vacuum suction during general examinations and procedures conducted by qualified dental professionals.

## DISPOSAL OF EQUIPMENT

At the end of product life, the unit(s), accessories, and other consumable goods may become contaminated from normal use. Consult local codes and ordinances for proper disposal of equipment, accessories and other consumable goods.

## TRANSPORTATION / STORAGE CONDITIONS

Ambient Temperature Range.....0°F to 160°F (-17°C to +71°C)

Relative Humidity .....10% to 90% (non-condensing)

Atmospheric Pressure .....500hPa to 1060hPa (0.49atm to 1.05atm)

## SAFETY SYMBOLS



### DANGER

Indicates an imminently hazardous situation which will result in serious or fatal injury if not avoided. This symbol is used only in the most extreme conditions.



### WARNING

Indicates a potentially hazardous situation which could result in serious injury if not avoided.



### CAUTION

Indicates a potentially hazardous situation which may result in minor or moderate injury if not avoided. It may also be used to alert against unsafe practices.



### EQUIPMENT ALERT

Indicates a potentially hazardous situation which could result in equipment damage if not avoided.

### NOTE

Amplifies a procedure, practice, or condition.

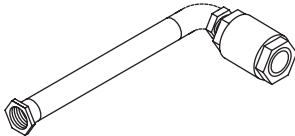
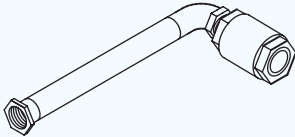
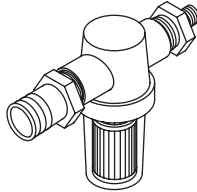
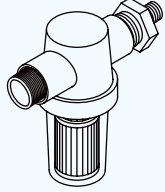
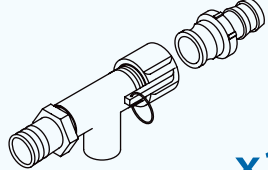
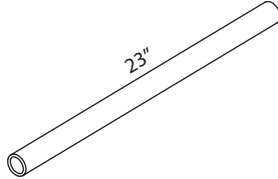
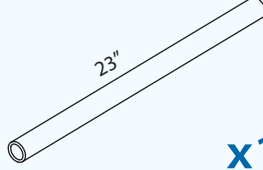
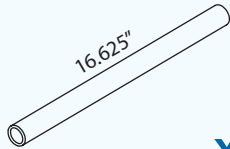













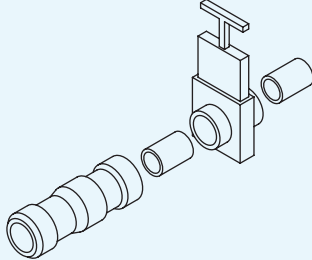
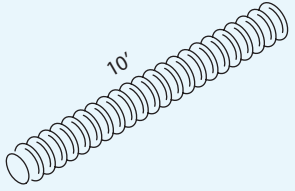


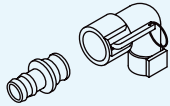
## BASEVAC™ SYSTEMS ARE MANUFACTURED BY:



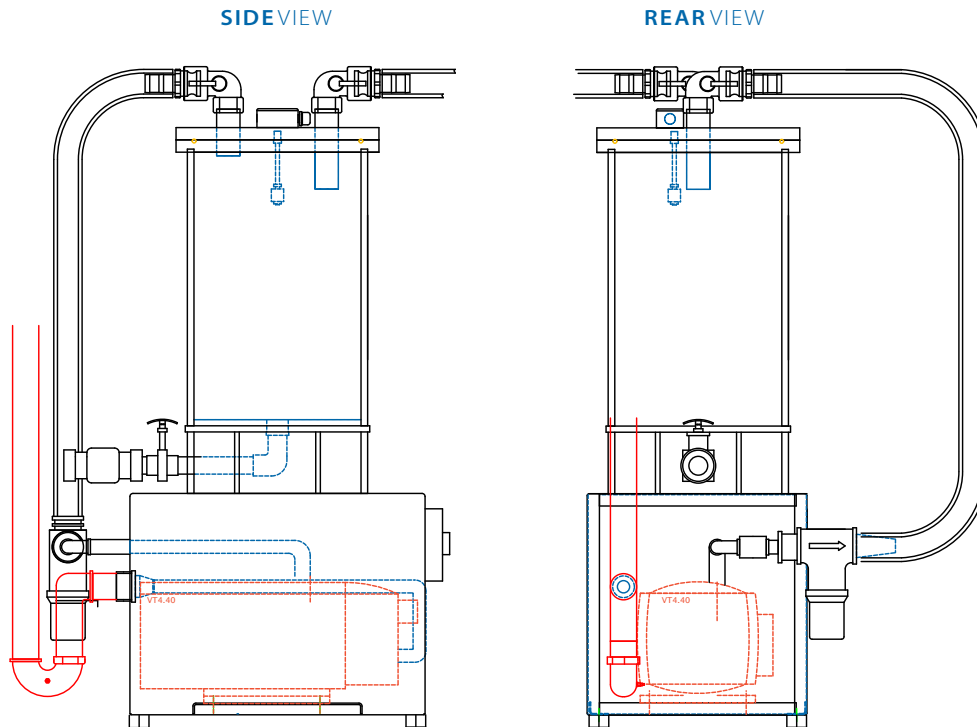
REM Equipment Inc. T 1.800.668.8736  
3615 Laird Road F 905.828.3674  
Mississauga, ON L5L 5Z8 info@remequip.com  
Canada www.remequip.com

Visit [www.basevacdental.com](http://www.basevacdental.com) for frequently asked questions, user submitted installation photos and downloadable resources.

# LOOSE PARTS

1HD SERIES 1HD4.16 / 1HD4.25 / 1HD4.40			2HD SERIES 2HD4.25 / 2HD4.40										
		x1			x2								
		x1		x2		x1							
		x1		x1		x1							
	x1		x1		x1		x4		x2		x3		
	x4		x2		x1		x2		x1				
					x3		x4						
<b>TANK</b>													
				x1					x1		x1		x3
									x2				

# PRODUCT SPECIFICATIONS 1HD SERIES

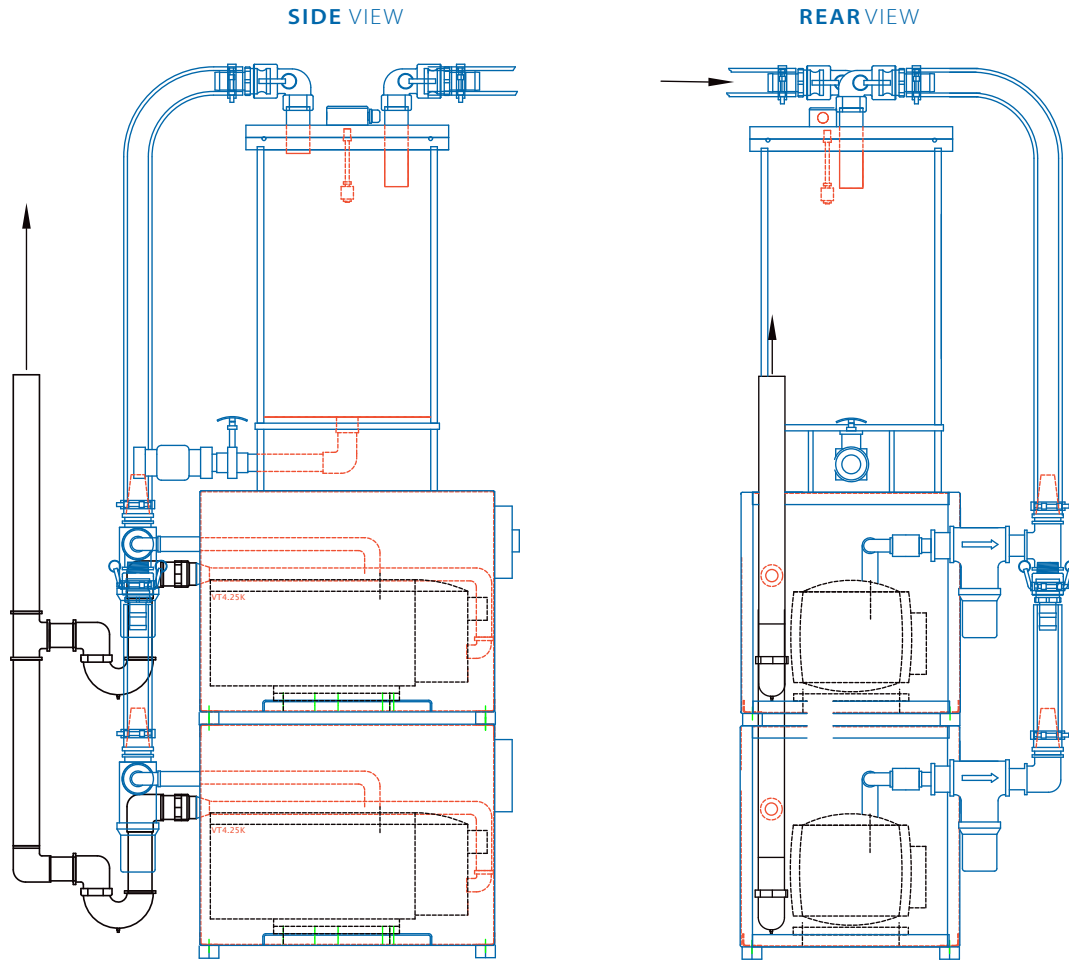


	MAX # HVE USERS	SUCTION POWER	POWER (hp)	POWER (amp)	VOLTAGE	NOISE LEVEL	DIMENSIONS	WEIGHT
<b>1HD 4.16P</b>	2	up to 25"Hg	0.94	5.2	220V – 1 Phase	67 dB	19" x 18" x 26"	87 lbs
<b>1HD 4.25P</b>	4	up to 25"Hg	1.2	8.8	220V – 1 Phase	65 dB	19" x 18" x 26"	94 lbs
<b>1HD 4.40P</b>	6	up to 25"Hg	2.0	9.5	220V – 1 Phase	72 dB	19" x 18" x 26"	121 lbs

- Systems come complete with: air/water separator, auto drain kit, quick disconnect hose kit, inlet piping kit and exhaust piping kit.
- 1HD Series pumps are expandable to 2HD systems with a simple upgrade kit or up to three pumps, with the addition of a wall mounted control panel and upgraded inlet and exhaust piping kits.
- Larger capacity and continuous run air water separators are compatible with 1HD systems.
- All models are available in 3 phase upon request.

**NOTE:** For easy installation please ensure there is 8" of space available for plumbing.

# PRODUCT SPECIFICATIONS 2HD SERIES



	MAX. # HVE USERS	SUCTION POWER	POWER (hp)	POWER (amp)	VOLTAGE	NOISE LEVEL	DIMENSIONS	WEIGHT
<b>2HD 4.25P</b>	8	Up to 25" Hg	2.4	2 x 8.8	220V – 1 Phase	74 dB	38" x 18" x 26"	188 lbs
<b>2HD 4.40P</b>	12	Up to 25" Hg	4.0	2 x 9.5	220V – 1 Phase	74 dB	38" x 18" x 26"	242 lbs

- Systems come complete with: air/water separator, auto drain kit, quick disconnect hose kit, inlet piping kit and exhaust piping kit.
- 2HD Series pumps are expandable up to three pumps, with the addition of a wall mounted control panel and upgraded inlet and exhaust piping kits.
- Larger capacity and continuous run air water separators are compatible with 2HD systems.
- All models are available in 3 phase upon request.

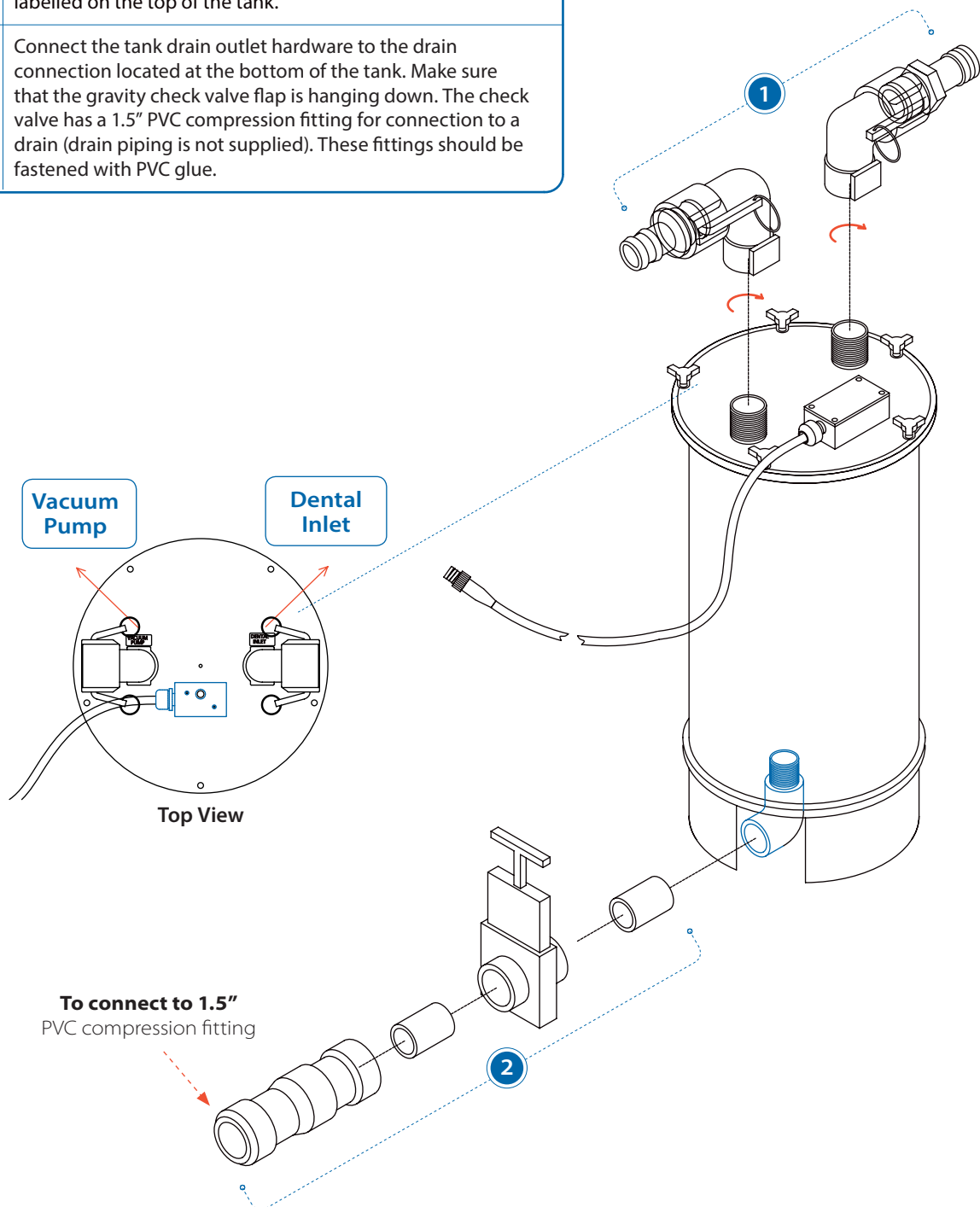
**NOTE:** For easy installation please ensure there is 8" of space available for plumbing.

# COLLECTION TANK SETUP

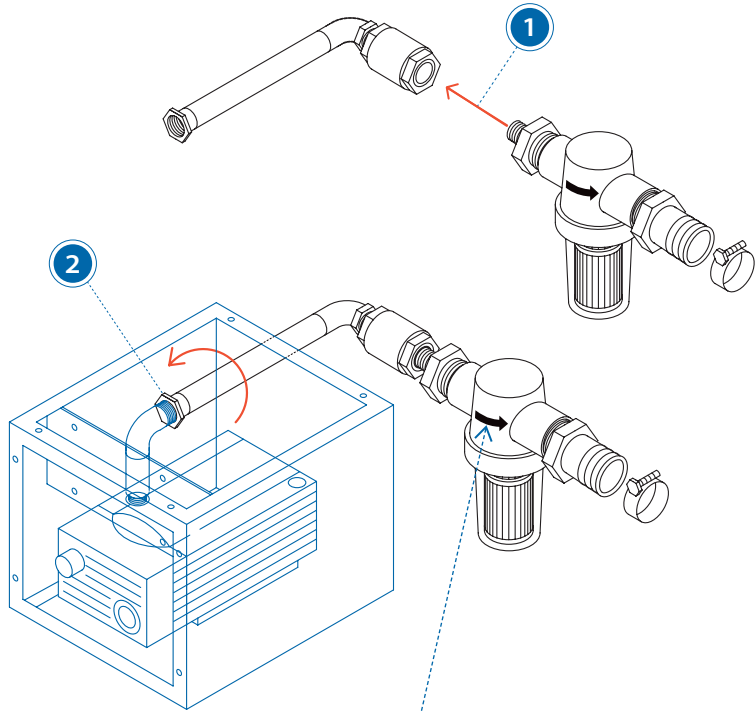
## NOTE

All connection hardware except for drain piping is included.

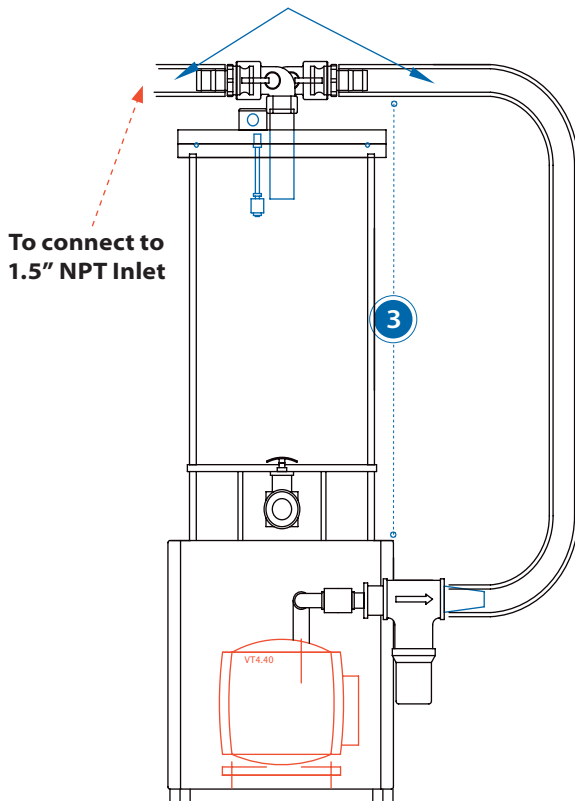
- 1 Twist on the Dental Inlet Connection to the Dental Inlet and the Vacuum Pump Connection to the Vacuum Pump Inlet as labelled on the top of the tank.
- 2 Connect the tank drain outlet hardware to the drain connection located at the bottom of the tank. Make sure that the gravity check valve flap is hanging down. The check valve has a 1.5" PVC compression fitting for connection to a drain (drain piping is not supplied). These fittings should be fastened with PVC glue.



# INLET CONNECTION SETUP



1-1/2" VACUUM HOSE



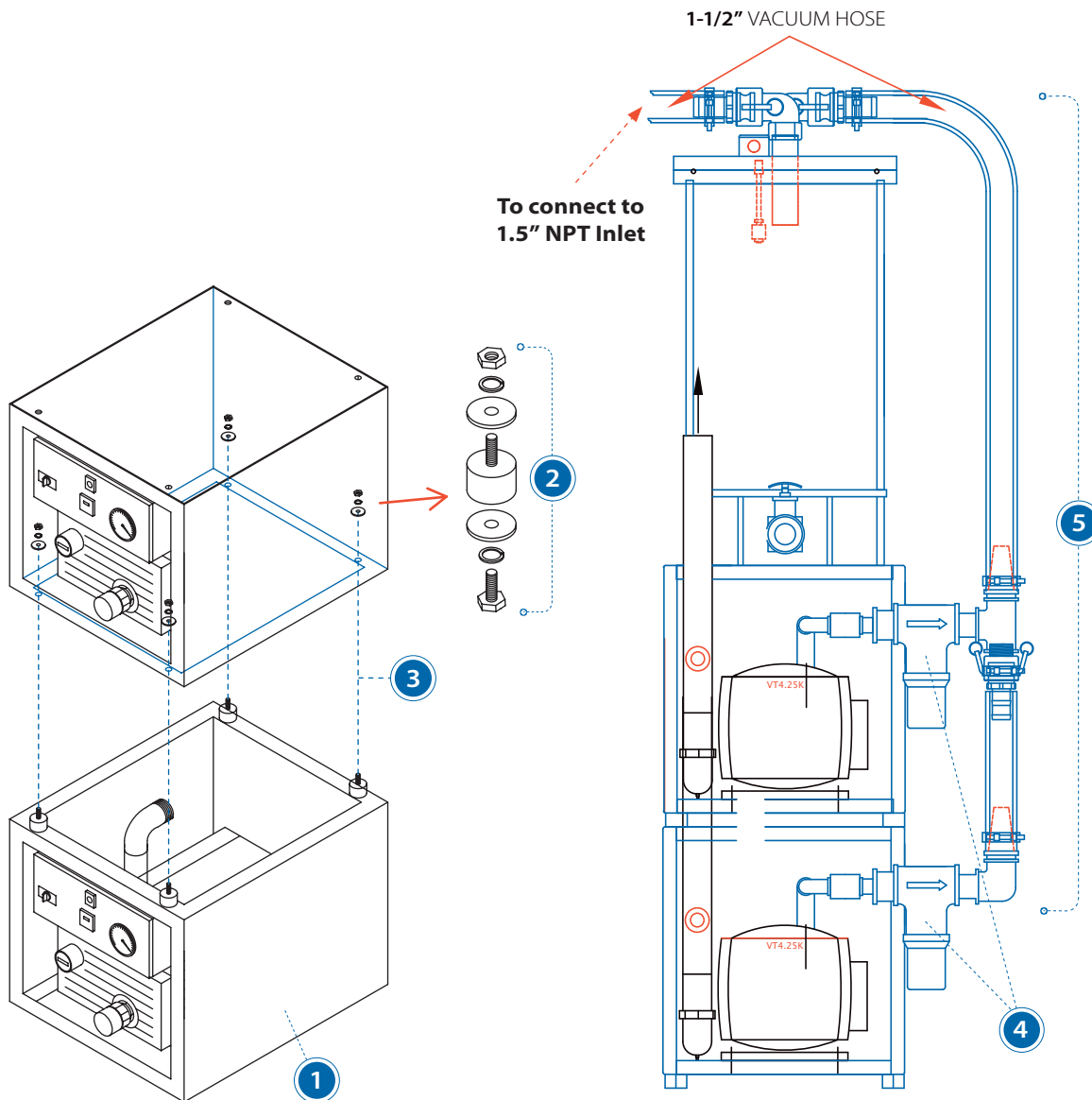
**NOTE**

The directional arrow on the filter housing is pointing away from the pump even though the direction of flow is opposite. This is done intentionally so if any liquid were to enter this line it would hit the baffle on the inside of the filter housing and disperse into the filter.

- |   |  |
|---|--|
| 1 | Assemble the 2 vacuum inlet parts by threading them together as shown.   |
| 2 | Mount this assembly onto the pump inlet. Rotate until assembly is tightly fastened to the inlet connection.  |
| 3 | Use the vacuum hose to connect the inlet assembly to the Vacuum Pump connection on the tank as shown. Use clamps to fasten hose to the hose barbs. |

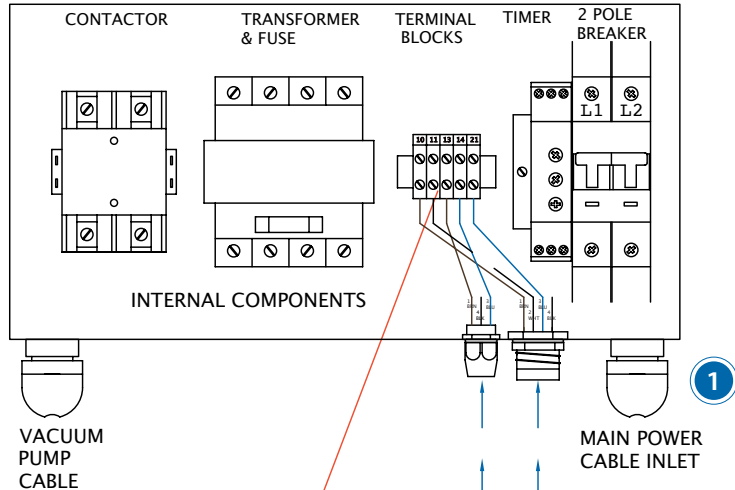
# DOUBLE SYSTEM SETUP

- 1 Place bottom pump into final position.
- 2 Remove nut, lock washer and flat washer from anti-vibration foot.
- 3 Place top pump on the bottom pump aligning the holes into the studs of the anti vibration feet. Then securely fasten the two pumps together using the hardware provided.
- 4 Follow steps from the **Inlet Connection Setup** for attaching the inlet assemblies to both pumps.
- 5 Use the piping hardware and vacuum hose provided to connect the two inlet assemblies together as shown.

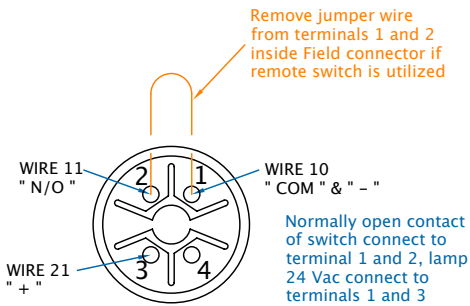




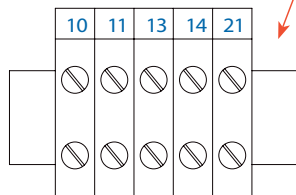
# ELECTRICAL CONNECTIONS



## REAR VIEW



FOLLOWING INSTALL GUIDE, INSERT STRIPPED WIRE INTO THE TERMINAL AND TIGHTEN FASTENING BOLT WITH SMALL FLAT SCREWDRIVER



### WIRE CONNECTIONS

HIGH LEVEL SHUT OFF	<b>13 &amp; 14</b>
REMOTE SWITCH	<b>10 &amp; 11</b>
REMOTE & LAMP (24 Vac)	<b>10 &amp; 21</b>

HIGH LEVEL FLOAT CABLE & CONNECTOR FROM TANK

REMOTE SWITCH FIELD CONNECTOR, CONNECT CABLE FROM REMOTE SWITCH AS PER INSTALL GUIDE, SEE WIRING CONNECTIONS TO LEFT

IMPORTANT: FIELD TERMINAL MUST BE CONNECTED TO CONTROL PANEL AS IT CONTAINS JUMPER WIRE

REMOTE CABLE TO BE SUPPLIED BY OTHERS, 18 awg maximum

**WARNING**  
All electrical connections are to be completed by qualified personnel only.

**NOTE**  
The standard panel is a 220 Vac 1 phase connection. A minimum of 215 Vac 1/ph and a maximum of 240 Vac 1/ph is to be connected. If below or above, a buck-boost transformer should be installed to maintain proper voltage. This input voltage should be checked at least 3 times daily to ensure stable voltage, in some cases voltages may vary from the load in the area during different times of day.

**1** The main electrical connection is made through wire harness MAIN POWER located on bottom right of panel. Connect to L1 and L2 and ground.

# ELECTRICAL DIAGRAM

**NOTE 1**

Connection for remote control switch (remove jumper if remote switch is utilized).

**NOTE 2**

Tank float switch to be connected to terminals 13 and 14 (wires are marked).

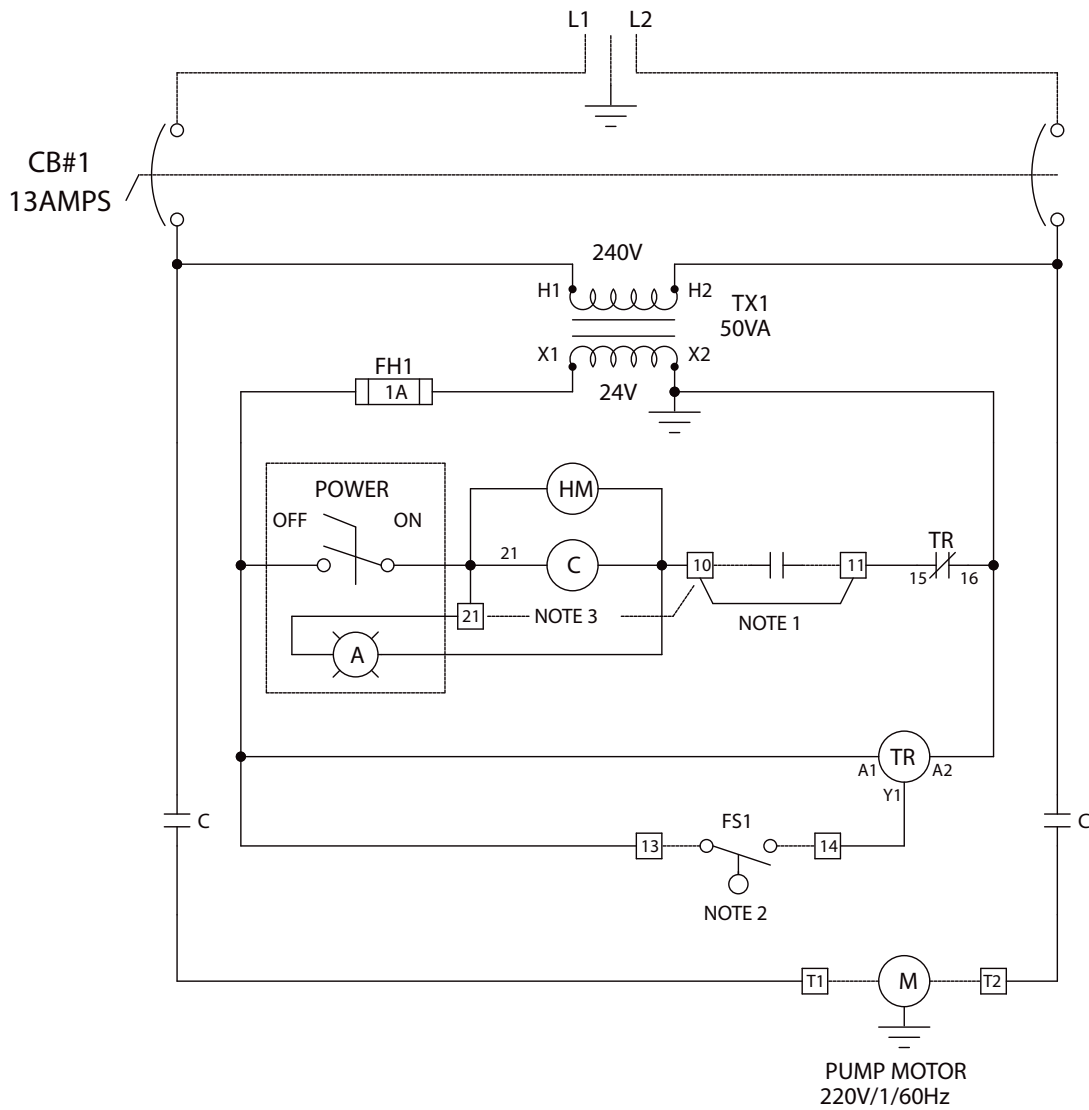
**NOTE 3**

Connection for remote switch lamp terminals 10 and 21. **Note: 24 Volt AC.**

**TR SETTINGS:** Function Dr Time 3.5 min, Range 60 s

□ - TERMINAL STRIP CONNECTION

----- - FIELD CONNECTION



# EXHAUST CONNECTIONS

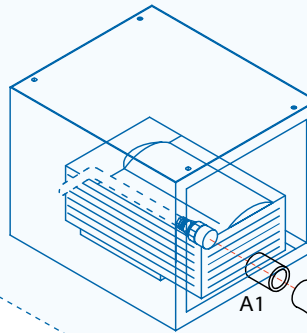
**NOTE 1**

Pump exhaust piping should run to an outdoor source.

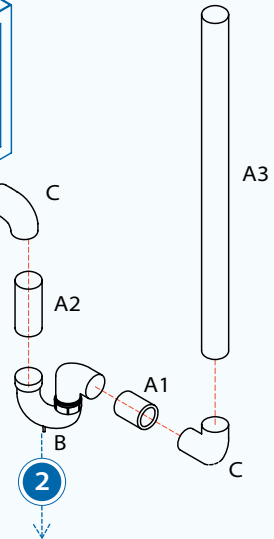
- 1 Assemble piping as shown for your series of pump. Use PVC glue to fasten piping. Extension to outside is to be supplied by others.
- 2 Connect hose barb located on bottom of p-trap and elbow (2HD systems only) to drain. (Hose is not supplied)

#	Part No.	Qty	Description
A1	3709 (4")	2	1.5" sch 80 pipe x 4" length
A2	3709 (5")	1	1.5" sch 80 pipe x 5" length
A3	3709 (23")	1	1.5" sch 80 pipe x 23" length
B	CP6609P	1	1.5" Union P Trap
C	1054	2	1.5" 90 Elbow (soc x soc)

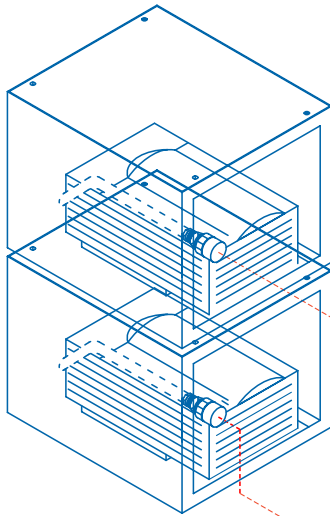
**1HD SERIES**



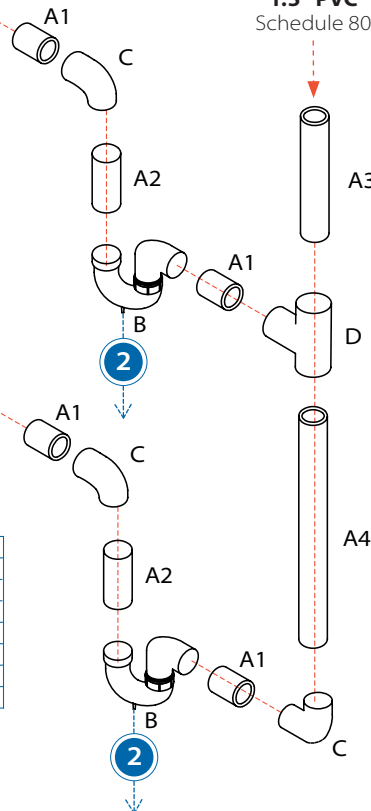
1.5" PVC  
Schedule 80



**2HD SERIES**



1.5" PVC  
Schedule 80



#	Part No.	Qty	Description
A1	3709 (4")	4	1.5" sch 80 pipe x 4" length
A2	3709 (5")	2	1.5" sch 80 pipe x 5" length
A3	3709 (23")	1	1.5" sch 80 pipe x 23" length
A4	3709 (16.625")	1	1.5" sch 80 pipe x 16.625" length
B	CP6609P	2	1.5" Union P Trap
C	1054	3	1.5" 90 Elbow (soc x soc)
D	1006	1	1.5" TEE (soc x soc x soc)

# TROUBLESHOOTING GUIDE

PROBLEM	POTENTIAL CAUSE	SYMPTOM	SOLUTION
Pump will not start	Electrical -Main fuse failure	Activate remote switch, nothing happens	- Check main fuse or breaker, reset or replace
	Electrical -Breaker OK, pump still will not start	Activate Pump panel switch to ON, nothing happens	- Check and reset overload in pump control panel.
	Mechanical -Vaness worn or broken	Pump keeps tripping breaker when turned on	If hour meter shows 6000 to 7000, vanes may have broken and need to be replaced, follow vane replacement guide.
	Pump internals have been flooded or seized with rust.	Pump keeps tripping; vanes are OK. Pump rusted inside	Remove vanes (see vane replacement guide). Use sand paper to remove visible rust. Using an Allen key, free the rotor with centre shaft bolt. Clean and replace vanes.
Low or Poor Vacuum	Clogging of filters and separators	Gradual drop in suction	- Clean all air filters in the line - Inspect amalgam separator to insure it is not full - Clean air-water separator
	Air Water separator full, float blocking inlet	Low or no vacuum	Turn pump off, wait 4 minutes for tank to drain and make sure drain valve is open (handle up)
	Pump problem	Sudden drop in suction, vanes noise sounds different	- Inspect the pump for broken vanes using vane replacement guide - Insure vacuum regulating valve is turned all the way in
Pump room is excessively hot	Exhaust piping	The pump room heats up during the day.	- Look for and correct leaks, crack or separation in exhaust or piping - Remove outside obstructions, example bird nest, garbage receptacle
Liquid leaking from front of pump	Air water separator malfunction	Pump continues to run water leaks from pump exhaust and filter cover. Pump in-line "white" filter bowl full.	- Inspect float switch in air water separator, clean and or replace - If using remote drain pump, check fuse - Remote drain pump - Check for drain obstructions <b>Important:</b> Correct problem and drain water from pump by following steps in vane replacement guide. Dry the pump with rags. Reassemble pump and immediately run the pump for minimum of 4 hours until it is dry.
	Condensation in exhaust line	Water is leaking from front of pump but inline "white" filter is dry.	- Inspect and drain drop leg condensate traps on exhaust piping - Insure exhaust piping slopes away from pump exhaust port - Review exhaust piping guidelines
Noise in exhaust piping	Vibration from Pump transferred to piping	The resonating sound changes with pump load.	- Check for rigid mounting connections and remove them. - Replace a section of rigid pipe with flex hose. - Install exhaust silencer
		The vibration sound never changes.	- Inspect pump to insure it is installed level with no brackets connected from the pump frame to wall or floor - Insure nothing is leaning against the pump or exhaust piping