Wash Bay System

North America's #1 Name for High-Pressure Cleaning Equipment

What You Should Know About Pressure Washer System Installations

Motorized damper *seals the chimney from heat escaping or reverse cold air flow*

Draft diverter *acts as an air break device to eliminate downward or upward air flow*

Hot water burner *from the pressure washer is vented out of the building*

Machine stand *lifts the pressure washer up off of the floor for easier cleaning. Also protects the machine from drafts and flammable vapors*

Remote control *allows the machine to be turned on and off from the wash bay area. This is usually located away from the pressure washer*

Hydrominder *mixes concentrated detergent with water at a pre-determined ratio to be run through the pressure washer*

Detergent drums *allow for large quantities of detergent to be stored on site*

SYSTEM FEATURES

- Oil, LP Gas or Natural Gas Fired models are ideal for system installations
- No hooking up - no wheeling around
- Over 50 stationary models
- Protect equipment and reduce service calls

MACHINE location

LOCATION FOR YOUR PRESSURE WASHER

Whether it be a new facility being built or an existing building one thing is sure, the machine should be installed out of the wash bay and away from damaging overspray. Pressure washers are an electrical piece of equipment and should not be exposed to wet conditions. If the washer has to be installed in the wash bay, it is highly recommended that a wash curtain be installed to protect the machine frm overspray.

EQUIPMENT ROOM

When the machine is installed in an equipment room, place the machine away from any make up air vent. When located in an equipment room where an air compressor is also located, make sure the compressor draws in intake air from outside the equipment room. If not when the air compressor is drawing air from within the room it can create a down draft in the pressure washer exhaust stack causing improper venting. In areas of freezing, winter temperatures could freeze and damage the coil and other important components.

A floor drain near the machine is always beneficial and should be recommended in any new construction installations.

MEZZANINE INSTALLATION

When a machine is installed on a mezzanine, it is important to mount the machine inside a drip tray equipped with a 3/4” drain line to catch normal condensation as well as any unforeseen leak. An electric solenoid installed on the inlet water line is also recommended. The solenoid closes whenever the machine is turned off, eliminating any water leaking from the float tank, etc.

MACHINE STAND

Natural gas and Propane fired pressure washers should be mounted on a floor stand if the machine is installed in a service shop area where other flammable vapors or fumes may accumulate. Check your local codes as to the minimum height a pilot light is permitted from the floor and make your stand height accordingly. Elevating the machine also allows easier cleaning around and under the machine as well as a convenient place for a drum of detergent.

proper VENTING

DRAFT DIVERTER

A draft diverter is an air break device that allows the burner system on any natural gas or propane appliance to operate as a natural draft burner. With the air break system, no downward or upward air flow can affect burner operation.

It's secondary function is to draw cool air in and mix it with the hot exhaust gases to lower the chimney temperature. The draft diverter is not intended to stop a down draft of cold air from freezing the coil.

For a draft diverter to operate properly it must be the first piece installed on top of the chimney outlet of the burner.

MOTORIZED DAMPER

A motorized damper is a motor driven disc installed in a chimney of a natural gas or propane-fired pressure washer. Its purpose is to seal the chimney to stop the heat from escaping from the chimney, and to stop the reverse flow of air from the chimney allowing cold air to come downward and freeze the coils in the pressure washer when it's not in use.

When the pressure washer is started, the damper opens. One way to ensure the air flow does not reverse flow down the chimney is to heat the chimney via a pilot light. But new environmental regulations are pushing to eliminate utility wasting pilot flames, and they have been replaced with auto ignition pilot assemblies that only light when the burner is turned on. The reason we have a reverse flow of air at all, is due to the fact that cold outside air is heavier than the warm air inside the building. Negative air pressure inside a building can also cause a downward draft on a chimney. Generally caused by exhaust fans pulling air out of a building faster than it is being replaced by a make-up air system.

A motorized damper should always be installed as a safety measure and should never be installed as a cure for negative pressure in a building.

FIX THE NEGATIVE AIR SITUATION

Possible solutions to negative air:

- Balance air system for exhaust air and make-up air.
- Enclose the pressure washer in its own room and add a combustion air vent to bring in fresh air to support combustion for the burner on the pressure washer.

For a motorized damper to work correctly, it must be installed above the draft hood and must have an electrical interlock to ensure the burner cannot light until the damper is in the fully open position.

side wall VENTING

SIDE WALL POWER VENTING

Side Wall vents are used when you cannot vent a pressure washer vertically through the roof of the building.

Examples: Over head cranes interfering.
Roof structures that cannot be penetrated.
Excessive roof height.
Unit installed inside a small room.

A sidewall vent can also save on installation costs if the pressure washer is installed in a separate room inside the main building.

In an installation where the unit is in a separate room, the chimney has to be 'A' type vent through the roof of the room and must stay as 'A' vent all the way through the main roof.

In some instances, there may be an office or storage above the room not allowing a vertical chimney to be used. In this case, it would be much less expensive to install the sidewall vent. Also, 20 plus feet of 'A' type vent is very heavy requiring extra support.

A sidewall vent has a built in fan that starts exhausting air out the wall vent when the burner switch is turned on. When the air proving switch acknowledges that the fan is exhausting air, the proving switch closes and allows the burner to light.

The sidewall vent costs about the same as a standard chimney in a building with a normal 20 to 24 foot roof.

CHIMNEY installation

PROPANE AND NATURAL GAS FIRED UNITS

All propane and natural gas fired pressure washers have extremely hot exhaust temperatures as compared to most other gas burning appliances. Below you'll find possible examples, **but it is very important to check your local codes**, as they vary so much. Exhaust temperatures from Hotsy propane and natural gas fired machines are typically between 550 and 750°F, which may be lower after a draft diverter.

Most gas burning appliances are vented with single wall galvanized 'C' type vents up to the roof and then a vent with an aluminum liner, a 1/2" airspace and an outer galvanized metal sleeve called 'B' type vent is run through the roof.

The 'B' type vent is used for gas burning appliances that have a stack temperature less than 470°F.

Any appliance with exhaust temperatures above 470°F are to be fitted through the roof with an 'A' type vent.

An 'A' type vent is a stainless steel inner and outer liner with 1inch of high temp insulation in between. Because propane and natural gas fired pressure washers have a stack temperature very close to 470°F, it may not be required, but it is advisable to use 'C' type vent to the roof and an "A" type vent through the roof rather than the 'B' type vent.

If you install a propane or natural gas pressure washer in a room inside a building and have to vent through the roof of the room, you must stay with 'A' type vent all the way through the roof of the building and it may be less expensive to use a sidewall vent.

DIESEL FIRED UNITS

Diesel fired units must have a barometric damper installed in the chimney. The barometric damper is a hinged flap that opens if air pressure inside the building is greater than the outside air pressure. This allows the diesel-fired burner to operate without any artificial airflow through the burner that could effect the quality of combustion. All diesel fired pressure washers must be installed with a 'C' type vent to the roof and an 'A' type through the roof.

remote START

REMOTE START OPTION

A remote start option allows you to install your pressure washer away from the wash location and provides you with three 2 - position switches to turn the pump on/off, the burner on/off, and the soap on/off.

All switches are mounted in a weather-proof enclosure and operate at low voltage to prevent shock hazard. A remote start is a very convenient option for remote applications but quite often the pressure washer cannot be seen or heard causing operators to leave the unit running for extended periods of time with the trigger gun closed and in time damaging the pump. In almost all applications a remote start/shutdown timer, although more expensive, is a much better option. It will save wear and tear on pumps and overall maintenance costs.

Running a pressure washer with the trigger gun closed is the quickest way to damage the seals in the pump because we are circulating less than a cup of water in the pump and it becomes hot very quickly as we transfer the heat from the crankcase through the plungers directly to the seals. The larger the unit the quicker they overheat.

Standard seal life without fresh water flowing through the pump is 57 minutes on a belt drive low RPM unit – faster on higher RPM direct drive or 3450 RPM systems.

Remote start control boxes can also have extra functions added such as wax, foam-brush, or both.

The cost to add the shutdown timer option is less than the pump repair if it is left running with the gun closed for a couple of hours.

SHUT DOWN TIMER OPTION

A shutdown timer option can be added to most pressure washers. It is intended to be a safety shutdown for a unit that is installed close enough to the wash site that it does not require remote starting. If the trigger gun is left closed for an extended length of time, a pre-set timer will shut the pump off saving wear and tear on the pump and related components.

You may be certain that your washer will always be turned off after use, but they are extremely quiet and if left running the repairs to the pump will cost more than the shutdown timer. In almost all situations permanently installed pressure washers should have a shutdown timer installed, it is just a matter of time until someone walks away and leaves the unit running.

No electric pressure washer over 5 HP should be permanently installed without some type of shutdown timer.

remote OPTIONS

REMOTE START / SHUTDOWN TIMER OPTION

The remote start/shutdown timer option has all the features of the remote start but has one very important feature. If the trigger gun is left closed on a washer with this option a pre-set timer will turn the pump off saving wear and tear on the pump and related components.

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TRIGGER GUN START OPTION

The trigger gun start option is generally used in production applications where you would not want to start/stop the pressure washer at the machine or a remote station, as the cleaning takes less time than turning the machine on and off.

With the trigger gun start option the pressure washer starts as soon as the trigger gun is opened and shuts off after a few seconds of the gun being closed. This option for production work is ideal although it does have some draw backs for typical wash applications. With trigger gun start, you have to return to the machine or the remote start control panel to turn the soap and burner on or off. If your cleaning process requires you to wash with soap and hot water and then rinse, there would be no advantage at all to the trigger gun start as you will already be at the controls to turn the burner/soap on or off.

The other disadvantage is that most trigger gun start options work on a pressure drop when the trigger gun is opened to start the pump, therefore it is very important to ensure that there are no leaks in the high pressure hoses, reels, booms or trigger guns. The client has to be capable and willing to ensure all components are in good working condition.

other ACCESSORIES

PROPORTIONERS

A proportioner is a soap device that automatically mixes concentrated soap with water at a pre-determined ratio to then be run thorugh your pressure washer. The proportioner is generally mounted on the soap container that the pressure washer is drawing from.

A fresh water supply is connected to the proportioner and a float in the soap container drops when the container is getting low. The fresh water then flows through a venturi and draws concentrated soap from the soap barrel. The soap is mixed to the proper concentration for your wash needs by installing a restrictor in the concentrate line. Mixing ratio using the various orifices can be from 50:1 to 250:1.

A proportioner is the only way to ensure consistent soap concentrate to water ratios. They will save you money and are fully automatic. Remember - your soap container with your mixed soap has to be at a level equal to or higher than the float tank of the pressure washer, or it will not draw soap.

WATER SOFTENER

To wash a vehicle and have a good clean finish, we need clean water. Hard water has dissolved minerals such as calcium and magnesium in it. If you use hard water to wash your vehicle you will see dust-like particles on the finish. What you are actually seeing is the calcium and magnesium that is left after the water evaporates.

Calcium and magnesium also neutralizes your soap when you are washing, therefore you will use considerably more soap to get the same amount of foam that you would have with soft water.

A water softener will remove the calcium and magnesium from water, which will allow you to reduce the scale build up in your heating coil, use considerably less soap and provide you with a much better finish.

Regardless of how hard your water is, a water softener will more than pay for it's self in the reduction of maintenance and chemical costs. A water softener uses salt to regenerate its filter media and it only regenerates when it is full.

Many times a customer will say "our water is not that hard" and the reply to that is "Great, you will save money on maintenance, chemical and spend very little on salt for your conditioner".

Remember, regardless of how hard your water is, you will always save more money on soap than you will spend on salt for your conditioner while providing a better finish and reduced maintenance costs.

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