

WINTER STORAGE PREPARATION

As cold weather approaches it becomes necessary to take preventive measures to properly protect your equipment investment from freezing temperatures. It is also a convenient time to take performance assessment of the machine and make restoration arrangements for repair and upgrades. The following guidelines are provided to identify some of the areas that are the most adversely affected.

A complete power-wash and cleaning of the machine is recommended. This will assist in the proper evaluation of each subsystem. The hydraulic cooler and engine radiator should be thoroughly cleaned due to their exposure to fine aggregate and cement dusts. *(The hydraulic cooler on most M1 models is hinge mounted and will swing out to provide convenient access to the face of the radiator.)*

DRAIN WATER & ADDITIVE TANKS

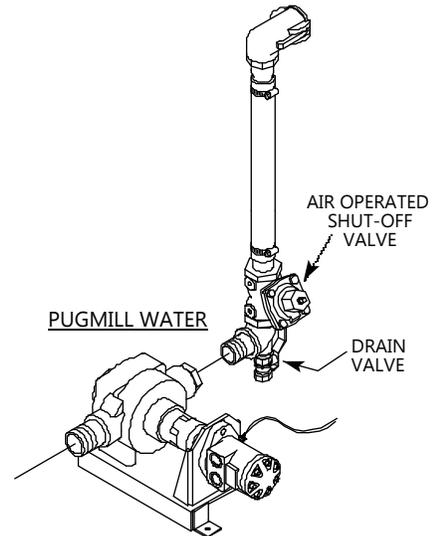
1. Remove drain plugs from all compartment pans to allow drainage for purging water systems and machine washing. Remove the front conveyor pan on *M1* models.
2. Drain the water tank and additive tank. The water tank is equipped with a ball valve located along the lower, middle side of the tank. The *M2 & M3* additive tanks are equipped with a ball valve while the *M1* has a drain plug mounted in the plumbing just below the supply line gate valve.
3. *M1 Models:* Remove the cap of the 'Y'-strainer mounted on the front of the rear LH lower compartment and inspect the strainer. Remove the pipe plug from the bottom side of the water supply manifold.

M2 Models: Remove the cap from the strainer manifold located within the LH pump compartment. Inspect the strainer.

M3 Models: Remove the cap of the 'Y'-strainer mounted between the water tank and the front hopper wall and inspect the strainer.

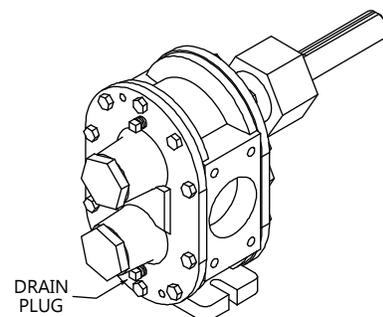
DRAIN WATER & ADDITIVE SYSTEMS

1. *M1 Models:* The pugmill water pump assembly is equipped with a ball valve located at the discharge side of the pump. This will drain the pump and the hose leading to the pugmill.



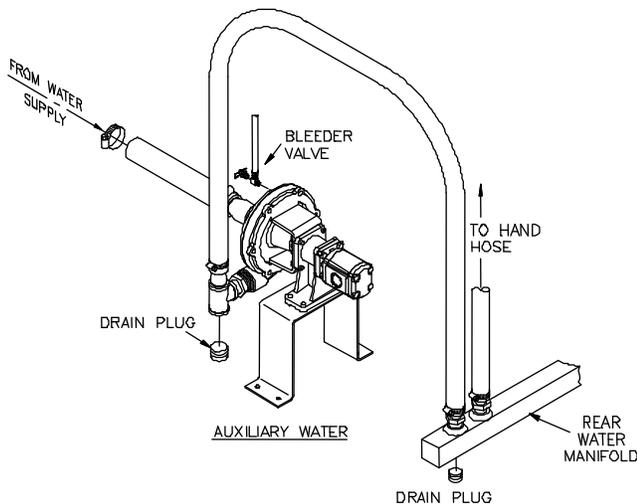
M2 & M3 models: It may be necessary to remove the discharge hose from the pump as this will drain the shut-off valve.

2. *M1 & M2 Models:* The water pump portion of the additive mix system can be drained by removal of the pipe plug located in the lower side of the rear end-cap of the pump.



Additive hoses leading from the tank plumbing to the suction side of the additive pump can then be removed and drained. Similarly, the additive load pump on the assembly can also be drained by removal of the end-cap pipe plug and by removal of the hose connection on the suction side.

3. *M1 Model:* The auxiliary water pump assembly is equipped with a drain plug at the discharge side of the centrifugal pump. Also, there is a bleeder valve at the top of the pump to be opened. The rear hand hose supply manifold built into the machine contains a pipe plug on the bottom side for drainage access.



M2 Models: Remove the lowest drain plug built into the side of the pump housing to completely drain the pump. Also, there is a bleeder valve built into the distribution tee which is located above the auxiliary water pump. It will also be necessary to disconnect the hose that connects the LH & RH hand hoses from one end. This will release any water trapped in the hose.

M3 Models: Remove the drain plug from the tee that supplies the rear auxiliary water functions. This tee is located underneath the RH fender below the auxiliary water strainer. It will also be necessary to disconnect the hose that connects the LH & RH hand hoses from one end. This will release any water trapped in the hose.

4. *M1 Model:* To drain the front water load pump, open the inlet butterfly valve and remove the drain plug located in the front lower side of the

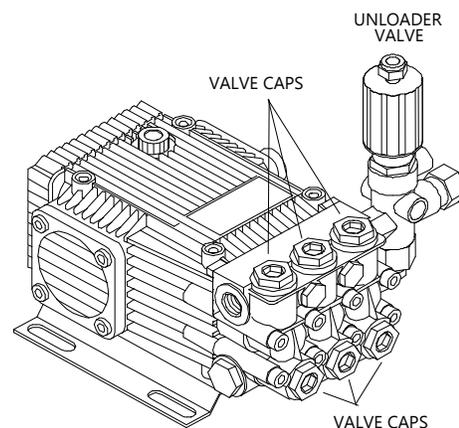
pump housing. The hose that connects the pump to the water tank should be disconnected at the water tank connection and drained to ensure removal of any water trapped in the hose.

DRAIN SPRAY BAR SYSTEM

1. Remove the drain plug from the rear and front spray bars. Remove all nozzles and inspect nozzle strainers if applicable.
2. *M1 & M2 Models:* Remove the strainer from the spray bar system to inspect and drain the water from the strainer basin.
3. *M1 Model:* Remove the drain plug located at the supply line connection of the rear spray bar. This plug is located behind the auxiliary water pump in the bottom of the tee that is plumbed into the spray bar on/off valve.

DRAIN POWER WASHER SYSTEM

1. Drain the hose reel and power washer hose by unrolling and disconnecting the inlet swivel. The power washer pump is a high pressure, tri-plex pump and will require removal of the six valve caps and valves. Drain the power washer strainer basin at this time and inspect the strainer.



POWER WASHER PUMP

WINTERIZE WATER & ADDITIVE SYSTEMS

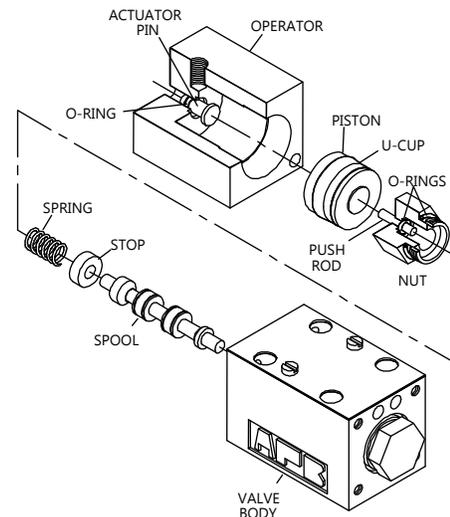
- Now that the water & additive systems have been drained, they are ready to winterize with a 50/50 solution of anti-freeze & water. Close valves; reinstall all system drain plugs, strainers and basins. Load the water and additive tank with enough solution to completely fill each of the system components. Operate each system for a short time to ensure that the anti-freeze solution fills all lines. Actuate the air operated shut off valves several times to guarantee adequate protection of the valves. The front load pump and circuit is filled by opening the inlet butterfly valve, thus purging air from the system.

SERVICE AIR SYSTEM

- Drain **all** air tanks to eradicate any condensation and to de-pressurize the air system.
- It is recommended that the air dryer be serviced every year. Depending on the model of the air dryer, this could mean replacing the desiccant in the canister or the complete replacement of the canister itself.
- Drain any condensation from each of the filter bowls on the regulator assemblies. The *M1 Paver* has two filter/regulator assemblies. One is mounted within the hydraulic cabinet at the rear of the machine and another in the front LH compartment. Replace the filter elements and clean the bowls with soap and water.
- As a preventive measure, disassemble and clean the air actuators on the air operated hydraulic valves. The *M1 Paver* stack valve configurations located within the front compartments have multiple actuators as well as the manifold mounted hydraulic valves contained in the rear hydraulic cabinet.

Remove the cover and coat the springs and piston components with a light film of petroleum jelly. Be sure to reassemble with the breather holes to the lower side. A few drops of air tool oil placed in the air line connection will protect

the cartridge valves mounted within the 2-speed/brake manifold.



EMULSION PUMPS & TANK

- Diesel fuel can be used to clean and help keep the emulsion from setting during winter storage.
- Dispose of any unused emulsion and purge system lines. Remove emulsion strainer and clean. Reinstall strainer and fill rear emulsion pump through the discharge plumbing line. Do the same for the front emulsion pump (if equipped) by filling through the inlet butterfly valve.
- Another alternative is to load diesel fuel or cleaning solvent directly into the tank and connect a hose from the rear emulsion to the front emulsion pump so that circulation of the cleaning solvent can clean and dilute the entire system.



Use extreme caution and observe safe handling procedures when using flammable liquids such as diesel and solvents. Be sure to make appropriate arrangements for disposal of used cleaning fluids. Conform to all handling instructions and Material Safety Data Sheet instruction associated with the solvent.

ADDITIONAL WINTER MAINTENANCE CHECK ITEMS

- ✓ Anti-freeze level in radiator and heater lines. Ensure coolant will protect your investment within the proper temperature range.
- ✓ Analyze hydraulic oil and hydraulic reservoir for water and dirt contaminants. Are hydraulic filters in need of replacement?
- ✓ Rear conveyor UHMW wear slats, side seals, and belt splices. Inspect drive chain links & sprockets for excessive wear.
- ✓ Inspect pugmill bottom, pugmill shafts, shaft bearings, paddle tips & drive gears. Also evaluate diverter chute and cylinder.
- ✓ Assess condition of front hopper auger shaft and flighting. Inspect bearings on front conveyor.
- ✓ Ensure that the cement hopper is clean and will remain dry throughout the winter.
- ✓ Inspect for air leaks. This is best accomplished by supplying shop air to the paver. Leaks can more easily be heard when the paver engine is not running.
- ✓ On continuous pavers, measure wheel motor case drain flow and parking brake wear.

To start your next year season on time, be sure to order your major replacement items in plenty of time for early delivery!