

WEEKLY FIRE PUMP INSPECTION & TEST PROCEDURES

The purpose of the weekly fire pump inspection and test is to ensure the fire pump is in an operating condition free of physical damage and is capable of providing continuous delivery for required fire protection demands. An additional purpose of the weekly test is to detect deficiencies that may not be obvious by visual inspection.

To prevent false alarms, notification should be provided to the alarm monitoring facility prior to and after completion of the weekly fire pump test. After the test verify that all fire pump supervisory signals were received by the alarm monitoring facility.

The weekly inspection of the fire pump is a visual examination of the fire pump and its assemblies to verify that the pump appears to be in an operating condition and is free of physical damage. The weekly inspection procedure should be completed prior to starting the weekly “churn” test.

The weekly “churn” test verifies the operational status of fire pump and identifies deficiencies that may not be evident by visual examination.

WEEKLY INSPECTION PROCEDURE

- Check the power indicating light on the controller to verify that there is power to the pump
- Check to make sure there is adequate heat in the fire pump room (not less than 40°F and 70°F for diesel pumps without engine heaters) during colder months
- Check to make sure ventilating louvers are free to operate
- Check to make ensure the pump suction, discharge and bypass valves are open
- Examine piping, fitting, and connections for any physical damage or leakage
- Check to make sure the suction and discharge gauge pressure reading is normal
- Check the system pressure gauge to ensure the system pressure reading is normal

Electric Fire Pumps

- Check to make sure the transfer switch pilot light is illuminated
- Make sure the isolating switch is closed
- Check to make sure the reverse phase alarm pilot light is off or normal phase pilot light is on

Diesel Fire Pumps

- Make sure fuel tank is $\frac{3}{4}$ full
- Check the controller and verify the selector switch is in the automatic position
- Check to ensure voltage readings on both sets of batteries is normal
- Check and verify charging current readings are normal on both sets of batteries
- If provided, check oil level in right angle gear drive
- Check and verify crankcase oil level is normal

- Check and verify proper electrolyte levels in batteries
- Check to ensure battery terminals are free of corrosion and connections are tight
- Check to make sure cooling water level is normal
- If provided, check to ensure the water jacket heater is operating
- Check to ensure that antifreeze in cooling system heat exchanger is adequate
- Check all hoses, fuel lines, and cooling line connections for any leakage and to ensure they are in a good condition

ELECTRIC FIRE PUMP WEEKLY TEST PROCEDURE

- Verify start and stop settings on the pressure maintenance pump (jockey pump) by dropping the pressure in the jockey pump sensing line.
- After completion of all inspection procedures, start the pump automatically by slowly dropping the pressure in the controller sensing line. After starting, the pump should be run at least 10 minutes.
- Record the pressure at which the pump automatically started.
- Record the pump suction and discharge pressures.
- Check the pump packing glands to ensure proper tightness and adequate lubrication (should be a slow drip – approximately 1 drip per second – adjust glands if necessary with pump off).
- Check and verify proper operation of the circulation relief valve (this will usually be located on a 1 inch line off the discharge side of the pump – should be discharging a steady stream of water).
- Check the pump shaft bearings, packing gland stuffing box, and casing for any signs of overheating (bearings and stuffing box should be warm to the touch – casing should be cool to the touch).
- Check for any unusual noise or vibration.
- If the pump is equipped with a main relief valve, check to ensure proper operation.
- Verify operation of all supervisory signals (i.e., pump running, loss of power, phase reversal, etc.)
- Verify that pump is left in the automatic start mode upon completion of the test.

Note: If any abnormal operation or condition is noted during the weekly churn test, the pump should be shut down and left in the automatic start position until repairs are made. Repairs should be completed as soon as possible and the pump retested.

DIESEL FIRE PUMP WEEKLY TEST PROCEDURE

- Verify start and stop settings on the pressure maintenance pump (jockey pump) by dropping the pressure in the jockey pump sensing line.
- After completing all inspection procedures, start the pump by slowly dropping the pressure in the controller sensing line. The pump should be run a minimum of 30 minutes.
- Record the pressure at which the pump automatically started.
- Observe how long it takes the engine to crank and once started how long it takes to reach running speed.
- Record the pump suction and discharge pressures.
- Check the pump packing glands to ensure proper tightness and adequate lubrication (should be a slow drip – approximately 1 drip per second – adjust glands if necessary with pump off).
- Check for any unusual noise or vibration.
- Check the pump shaft bearings, packing gland stuffing box, and casing for any signs of overheating (bearings and stuffing box should be warm to the touch – casing should be cool to the touch).
- Verify proper operation of pressure relief valve.
- Check the heat exchanger for cooling water flow.
- Record cooling system temperature.
- Check engine speed and record rpm's.
- Check oil pressure (should conform to manufacturer's recommendation) and record.
- Record amp reading (should be +2 to +5 amps after 5 minutes of running time).
- Verify that engine will start off of both sets of batteries.
- Verify operation of all supervisory signals (i.e., pump running, pump off, etc.)
- Verify that pump is left in the automatic start mode upon completion of the test.

Note: If any abnormal operation or condition is noted during the weekly churn test, the pump should be shut down and left in the automatic start position until repairs are made. Repairs should be completed as soon as possible and the pump retested.