Risk Solutions

Fire Pump Inspection, Testing and Maintenance

Fire pumps are used to ensure an adequate water supply by increasing pressure for fire suppression and, as such, are an integral part of the fire protection system for a facility. Failure of a fire pump to operate under fire conditions can result in a major loss. To help ensure the fire or booster pump is working, there needs to be periodic inspection, maintenance and testing of the pump. The following information provides an overview of the requirements; a separate checklist for electric pump and diesel pump is attached at the end of the document.

Who Can Perform the Inspections and Testing

NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems, states that inspection testing and maintenance should be performed by a qualified person who has developed competence through training and experience. Many companies use a qualified outside contractor for the annual flow test on a pump and use in-house personnel for the weekly or monthly tests. Some states require that the person conducting the annual fire pump test be certified.

What Needs to Done

Inspection, testing, and maintenance requirements are outlined in NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems. Below is an overview of the inspection and testing activities that should be completed on your pump. A detailed checklist for an electric pump and diesel pump follow on subsequent pages.

Weekly

- Pump house, heating, ventilating louvers
- Fire pump system
- Pump Operation (Diesel only)—no flow start and run test for 30 minutes

Monthly

- Pump Operation (Electric only)—no flow start and run test for 10 minutes

Annual

- Full flow test both diesel and electric pumps
- Fire pump alarm signals

Maintenance

- On an annual basis service hydraulic systems, mechanical transmission and motor
- All other maintenance on the pump and associated components varies and should be completed in accordance with the manufacturers' recommendations.

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Diesel Pump Inspection, Maintenance* and Testing—Weekly Visual Inspection

EQUIPMENT	CONDITION	YES	NO	COMMENTS ("NO" INDICATES UNSATISFACTORY CONDITION)
Pump House	Heat not less than 40°F (with engine heater) OR Heat not less than 70°F (no engine heater)			
Ventilating Louvers	Operating freely			
Housekeeping	Room free of combustible storage			
Valves	Pump suction, discharge and bypass valves fully open			
Piping	Free of leaks			
Suction Line	Pressure gauge normal			
Reservoir/Tanks (If applicable)	Suction reservoir or tank full			
Controller Pilot Light	Pilot light (power on) illuminated			
Fuel Tank	Fuel tank at least two-thirds full			
Controller	Selector switch in "AUTO" position			
Batteries	Voltage readings normal			
	Charging current readings normal			
	Pilot lights on			
	Pilot lights off terminals free of corrosion			
Alarm Pilots	Alarm pilots off			
Engine Oil	Engine oil is full			
Cooling Water	Cooling water is full			
Engine Running Time Meter	Meter is reading			
Jockey Pump (If provided)	Power to jockey pump			

**MAINTENANCE—maintenance of the pump and its components should be in accordance with the manufacturers' recommendations.*

checklist continued ▶

Diesel Pump Inspection, Maintenance* and Testing— Weekly No Flow ("Churn") Test

EQUIPMENT	CONDITION	YES	NO	COMMENTS ("NO" INDICATES UNSATISFACTORY CONDITION)
Pump	Start Properly			
	Run for 30 minutes			
Record pressures readings	Suction pressure psi—Normal?			
	Discharge pressure psi—Normal?			
Pump glands	Slight discharge when running			
General pump function	No unusual noises or vibration			
Packing Box, bearings, and pump casings	No signs of overheating in packing box, bearings, or pump casings			
Heat Exchanger	Cooling water flow			

Diesel Pump Inspection, Maintenance* and Testing— Annual

EQUIPMENT	CONDITION	YES	NO	COMMENTS ("NO" INDICATES UNSATISFACTORY CONDITION)
Full Flow test	Date of test Results satisfactory?			

Electrical Pump Inspection, Maintenance* and Testing— Weekly Visual Inspection

EQUIPMENT	CONDITION	YES	NO	COMMENTS ("NO" INDICATES UNSATISFACTORY CONDITION)
Pump House	Heat not less than 40°F			
Housekeeping	Room free of combustible storage			
Valves	Pump suction, discharge and bypass valves fully open			
Piping	Free of leaks			
Suction Line	Pressure gauge normal			
Reservoir/Tanks (If applicable)	Suction reservoir or tank full			
Controller Pilot Light	Pilot light (power on) illuminated			
Transfer Switch (if provided)	Switch is "ON" and illuminated (if applicable)			
Isolating switch	Isolating switch on each source of power is closed			
Reverse Phase Warning Light	Warning light is off			
Jockey Pump (if provided)	Power to jockey pump			

**MAINTENANCE—maintenance of the pump and its components should be in accordance with the manufacturers' recommendations.*

checklist continued ▶

Electrical Pump Inspection, Maintenance* and Testing—Monthly No Flow ("Churn") Test

EQUIPMENT	CONDITION	YES	NO	COMMENTS ("NO" INDICATES UNSATISFACTORY CONDITION)
Pump	Start Properly			
	Run for 10 minutes			
Record pressures readings	Suction pressure psi—Normal?			
	Discharge pressure psi—Normal?			
Pump glands	Slight discharge when running			
General pump function	No unusual noises or vibration			
Packing Box, bearings, and pump casings	No signs of overheating in packing box, bearings, or pump casings			
Heat Exchanger	Cooling water flow			

Electrical Pump Inspection, Maintenance* and Testing—Annual

EQUIPMENT	CONDITION	YES	NO	COMMENTS ("NO" INDICATES UNSATISFACTORY CONDITION)
Full Flow test	Date of test Results satisfactory?			

**MAINTENANCE—maintenance of the pump and its components should be in accordance with the manufacturers' recommendations.*

Hanover Risk Solutions Can Help

Your Risk Solutions consultant can meet with you to explain the inspection, testing, and maintenance requirements based on the fire protection systems installed at your facility. They can discuss the options with you for helping to ensure that your systems are adequately maintained.

To learn more about Hanover Risk Solutions, visit hanoverrisksolutions.com

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