



Mitsubishi Engine North America

Start up procedures for non-preserved engines after prolonged storage

On any engine in which the equipment has been parked without being preserved for a period of one year or more, pre-start-up procedures are as follows:

1. The following parts MUST be replaced:
 - 1.1 Replace all V-belts.
 - 1.2 Replace all filters (engine oil, air & fuel).
 - 1.3 Change engine oil.

2. Check the following in this order:
 - 2.1 Visually check the engine.
 - 2.2 Check all linkages at the injection pump for free movement of the fuel rack. Move the throttle and/or shut off lever to stop and start positions. The fuel rack must follow without binding.
 - 2.3 Remove and test the injectors on the test stand.
 - 2.4 Check all pulleys (crankshaft, idler, alternator and compressor). Look for rust. Clean and/or replace if pitted.
 - 2.5 By random selection, remove 4 piston rod caps, remove bearing shells and check for rust on the rod journals. If rust is found, the crankshaft must be removed and de-rusted accordingly.
 - 2.6 Remove cylinder heads. Rotate engine slowly by hand and inspect the cylinder liners for rust or corrosion. Very light rust may be removed by honing with a ball- hone. Liners with heavy rust or pitting must be replaced. If heavy corrosion has occurred, the rings should also be inspected.
 - 2.7 Check all rubber parts such as engine mounts, hoses and molded rubber boots on the intake or air filtering system. Check to see if any of the parts are brittle or cracked. Make sure all of the clamps are tight.
 - 2.8 Check air filter housing for internal rust or corrosion.
 - 2.9 Drain the water (condensation) from the fuel tank by removing the fuel supply line. If the fuel is rusty, drain the fuel tank and inspect the tank internally for rust spots. Replace if heavy rust is found.
 - 2.10 Check fuel and/or primer pump for proper operation. Bleed fuel system.
 - 2.11 Check the electrical system for damage or corrosion. Check all of the wire connections for corrosion. Check fuses and terminals. Clean with a wire brush or replace if necessary.
 - 2.12 Flush the engine coolant circuit with water until in the return water all traces of rust color have disappeared.
 - 2.13 Before actually starting the engine, it will be necessary to reestablish the lubricating oil film in the bearings and bushings. This will be materialized by use of an external lubricating oil prime pump.

Check the starter and ignition switch. Turn the engine over by actuating the starter switch with the shut off lever (and fuel rack) at ZERO delivery. The starter must engage and disengage without delay.

Checking of the electrical system and starter should only be done after the inspections mentioned above been completed.

The one-year time factor previously mentioned is intended to serve only as a guide. Depending upon the climatic conditions such as dust, temperatures and humidity, the repairs and inspection procedures listed above may be necessary at an earlier or later date. You must determine that.