Preheating Procedure for Class 52 Diesel Hydraulic locomotives D1062 and D1013

1. Ensure locomotive is in a safe condition and ready to prepare for traffic.

2. Switch B.I.S. on at 'A' end. Switch on CCB in 'A' cab. Ensure all radiator shutters are closed.

3. In each cab, select a direction, Forward/Reverse and check fault lights on secondman's side:

   Coolant Low Level: Blue = safe to preheat
   Red **= DO NOT** preheat

   Engine Temperature: Blue = at engine starting temperature
   Red = requires preheating

   D1062: check water level in header tank site glass.

If you are in **ANY DOUBT** as to the fault light indication, or the cooling water level, you **MUST** make arrangements to fill the respective cooling system before preheating, and visually verify that coolant is in the header tank. D1062, check site glass on header tank in preheater comparment. D1013 & D1062, check for coolant at header tank overflow outlet.

4. Visually inspect preheater for water and fuel leaks. Wipe off any fuel. Ensure preheater jacket drain cock is closed.

5. Rotate coupling between motor/water pump by hand. Rotation should feel free without any tight spots.

6. Lift damper flap. Ensure it moves up/down freely.

7. Check stack switch. Ensure trip button is pushed in.
   DO NOT REMOVE GLASS AND FIDDLE WITH CAM

8. Rotate fuel filter two complete turns.

9. Turn preheater isolating switch to:

   BATTERY: run from loco battery supply
   SHORE SUPPLY: run from external electric supply

   Motor should start to run, circulating cooling water, but preheater will not fire up.

10. Press **START BUTTON**, and release immediately. There is no need to keep the start button depressed. The preheater should fire up within 30 seconds. If the preheater appears to fire intermittently, hold the damper flap down until you hear it fire up.
    If the preheater **DOES NOT** fire up after 3 attempts, start investigating cause of fault.
    Repeated attempts at firing without combustion will flood the preheater with fuel.

    D1062 only: if preheater does not fire up due to lack of fuel pressure, prime preheater by running fuel transfer pump and briefly opening priming valve in boiler room.
    If preheating from shore supply, switch off B.I.S.

PREHEAT LOCO USING SHORE SUPPLY WHEN EVER POSSIBLE

11. With preheater now firing, rotate fuel filter two complete turns. Check fuel pressure gauge: should indicate +/- 100 psi. Also check fuel pump area, burner pot area and damper piston for fuel leaks.

12. Check temperature of **TELEPHONE PIPE**, and also **INLET** and **OUTLET** pipes.
During preheating the temperature of the pipes should be:

INLET: COOLEST
TELEPHONE: WARM
OUTLET: WARMEST

The temperature of the telephone pipe should **NEVER EXCEED** the temperature of the outlet pipe during any stage of preheating.
If the **TEMPERATURE OF THE TELEPHONE PIPE EXCEEDS THAT OF THE OUTLET PIPE, SHUT DOWN THE PREHEATER IMMEDIATELY**. Investigate cause of fault.

13. Check preheater exhaust. This will initially be a little smokey but should clear quickly to give a "clear heat haze". If thick smoke is produced, **SHUT DOWN PREHEATER**. Investigate cause of fault.

14. During preheating, frequently check the temperature of the telephone pipe.

15. Once coolant temperature is up to Engine Starting Temperature, 43^{o}C, ensure preheater isolating switch is turned to **BATTERY**.
In cool weather preheat to well above 43^{o}C to ensure heat soaks into the engine block.

16. Open radiator shutters as required.

If faults occur, refer to **VAPOUR WATCHMAN PREHEATER MANUAL** for fault diagnosis.

If you are unable to diagnose a fault, **SEEK ASSISTANCE**.

THIS PREHEATING PROCEDURE MUST BE FOLLOWED RIGIDLY AND WITHOUT EXCEPTION. IF THE PREHEATER DOES NOT OPERATE CORRECTLY WHEN FOLLOWING THIS PROCEDURE, SEEK ASSISTANCE.

DO NOT FIDDLE WITH THE STACK SWITCH OR CONTROL BOARD SET UPS.