

Clarke Mechanical Engine Controller Alarm Verification Procedure

- **Overspeed Alarm Verification**
 - Hold the OVERSPEED VERIFICATION switch in the “up” position located on the door of the Clarke panel (see Figure 1). This will provide the main pump controller with an overspeed signal and engine shutdown at 67% of the overspeed shutdown threshold RPM. The overspeed shutdown threshold is 120% of engine rated speed.
 - Start the engine via the main pump controller; the speed switch will generate an overspeed signal and shutdown protecting both the engine and pump.
 - **EXAMPLE**
 - Rated Speed: 1760 RPM
 - Overspeed Shutdown: 2112 RPM (120% of 1760 RPM)
 - Verification Shutdown: 1415 RPM (67% of 2112 RPM)
 - The controller will indicate an alarm at interconnect terminal #3
 - **CAUTION**-after verification of overspeed, lift the OVERSPEED RESET switch in the “up” position for 5 seconds and reset the main pump controller to re-instate normal operation of the engine and speed switch (see Figure 1).
 - Upon releasing the OVERSPEED RESET switch, the OVERSPEED INDICATION LIGHT on the door of the instrument panel will blink several times and then turn off. This is normal and indicates the speed switch is functioning normally. (see Figure 1)
 - The overspeed shut down set point is factory set. If field adjustments are needed, refer to Clarke Engineering Technical Bulletin – ETB003 on the www.clarkefire.com website, under **General Data** → **Engineering Data** → **Engineering Technical Bulletins**
- **Low Oil Pressure Alarm Verification**
 - With the engine running from the main pump controller, on JU4H, JU4R, JU6H, JU6R, DP6H, DQ6H, DR8H, & DSOH engine models jumper the “WK” terminal to engine ground. On DT2H engine models jumper the two terminals of the oil pressure switch together (see Figures 2b, & 2c).
 - Continue jumping the circuit until the alarm is indicated at the controller at interconnect terminal #4
 - Reset the main pump controller to re-instate normal operation of engine and controller
- **High Engine Coolant Temperature Alarm Verification**
 - With the engine running from the main pump controller, set the High Engine Coolant Temperature DIP switch to “ON”. Use a fine pick or small screwdriver and slide the white slider to the **left**. Wait for 30 seconds and controller alarm will activate.
 - DIP switch is located on the MECAB speed switch printed circuit board inside the Clarke instrument panel (see Figure 3). DIP switch is in the “ON” position when the white slider is **NOT** aligned with the white alignment marks above and below the slider
 - Wait until the alarm is indicated at the controller at interconnect terminal #5
 - Set white DIP switch slider to “OFF” (right) when simulation is complete. DIP switch is in the “OFF” position when the white slider is aligned with the white alignment marks above and below the slider (see Figure 3).
 - Reset the main pump controller to re-instate normal operation of engine and controller
- **Low Engine Coolant Temperature Alarm Verification**

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- With the engine NOT running (0 rpm), set the Low Engine Coolant Temperature DIP switch to “ON”. Use a fine pick or small screwdriver and slide the white slider to the **right**. Controller alarm will activate immediately.
 - DIP switch is located on the MECAB speed switch printed circuit board inside the Clarke instrument panel (see Figure 3). DIP switch is in the “ON” position when the white slider is **NOT** aligned with the white alignment marks above and below the slider
- Wait until the alarm is indicated at the controller at interconnect terminal #312
- Set white DIP switch slider to “OFF” (left) when simulation is complete. DIP switch is in the “OFF” position when the white slider is aligned with the white alignment marks above and below the slider (see Figure 3).
- Reset the main pump controller to re-instate normal operation of engine and controller
- **Overcrank Test**
 - **NEVER** shut off the fuel supply to the engine to prevent it from starting. Shutting off the fuel supply will cause an air lock condition in the fuel system and possibly cause fuel system component damage.
 - ETS Governor Solenoid: Use manual stop override to prevent the engine from starting during the cycle-crank testing. Override must be held continuously each time the engine attempts a crank start. This will allow the engine to crank only but will prevent it from running. (See Figures 4a, b, c, d, e)
- **Fuel Injection Malfunction (Low Fuel Pressure) (KA4H ONLY)**
 - With the engine running from the main pump controller, jumper between the “C” and the “NC” terminals of the fuel pressure switch located near the fuel transfer pump outlet. (see Figure 5)
 - Alarm will be indicated at interconnect terminal #302
 - Reset the main pump controller to re-instate normal operation of engine and controller

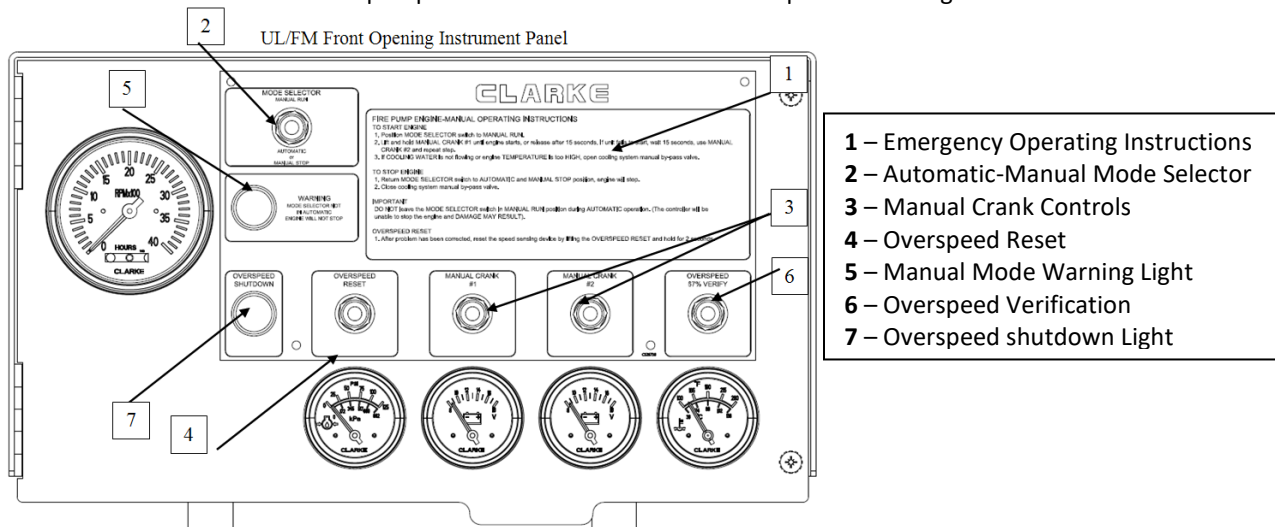


Figure 1



Figure 2b – JU4H, JU4R, JU6H, JU6R, KA4H, DP6H, DQ6H, DR8H, DS0H, DT2H, engine models: oil pressure switch – Jumper the "WK" terminal (orange #85 wire) to engine ground (battery negative)

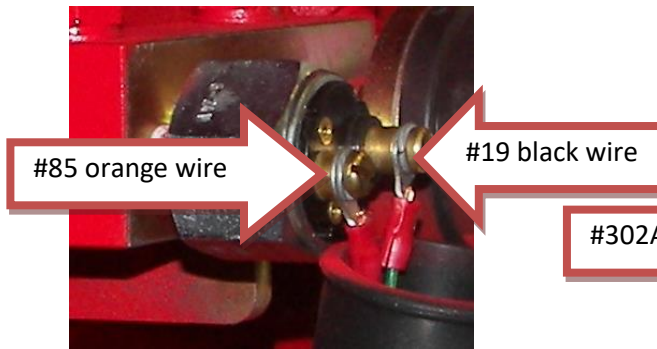


Figure 2c - DT2H engine models: oil pressure switch – Jumper both terminals together

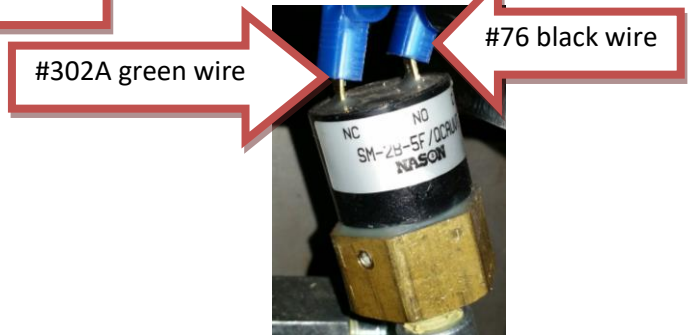


Figure 5 – KA4H fuel pressure switch – Jumper between "NC" (green #302A) and "C" (black #76) terminals together.

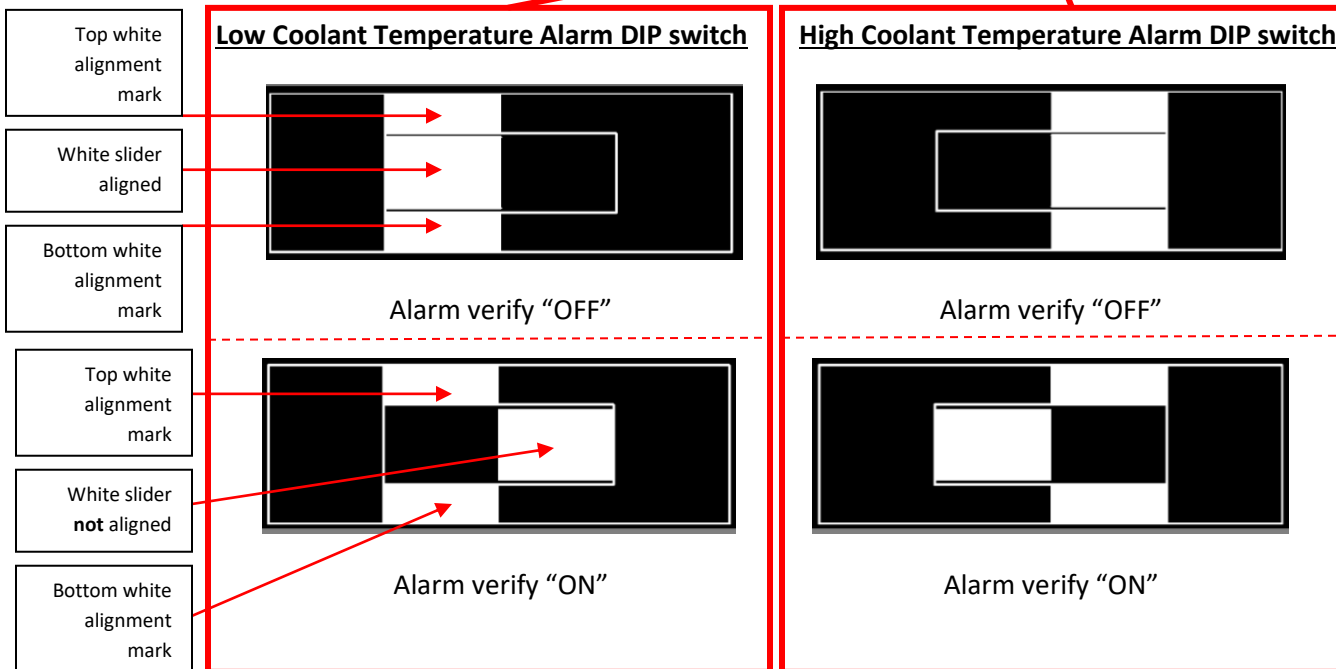
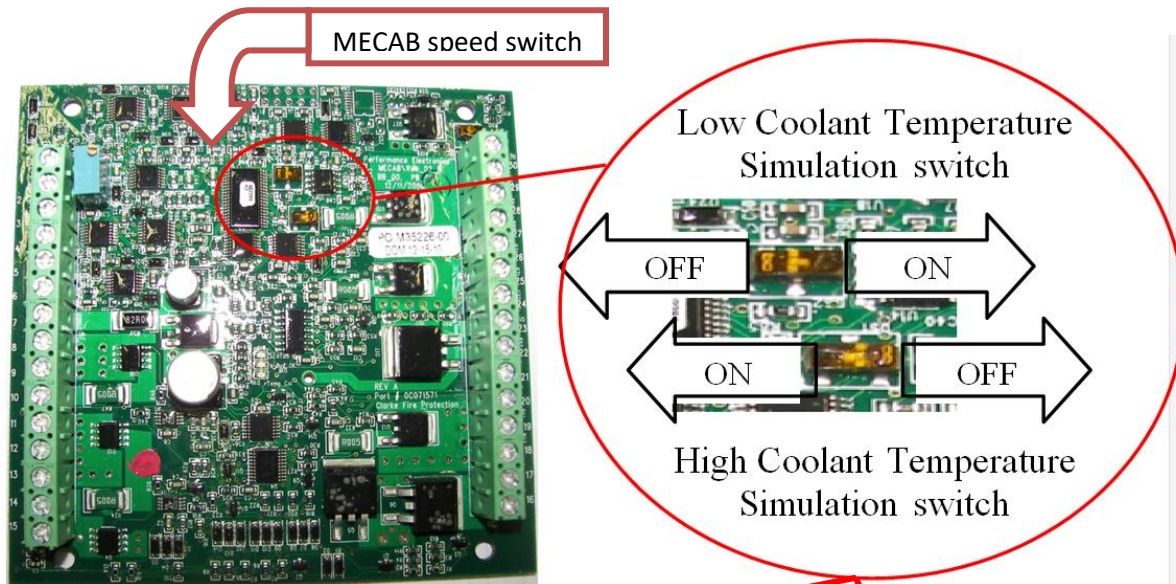


Figure 3 – Low and high coolant alarm verify DIP switches on MECAB speed switch



Figure 4a - KA4H manual stop override knob located on instrument panel side of engine



Figure 4b - JU4, JU6 manual stop override knob located on side opposite of instrument panel

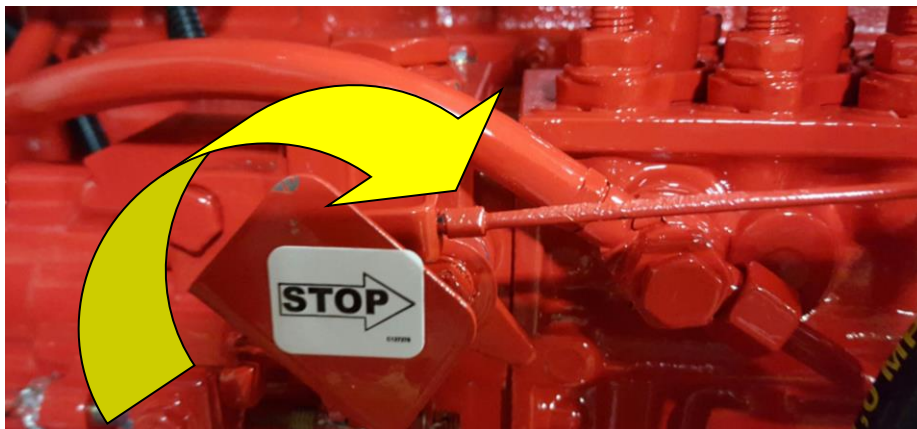


Figure 4c - DP6H, DQ6H manual stop override lever located on instrument panel side of engine



Figure 4d - ZE4H, ZF6H manual stop override lever located above flywheel housing



Figure 4e – DR8H, DS0H manual stop override lever located at front of engine, above belt guard;

DT2H-UFAA20/58/50/88 manual stop override lever located on instrument panel side of engine;
DT2H-UFAA60/98/92 manual stop override lever located on side opposite of instrument panel
