CALIBRATION AND ADJUSTMENTS FOR DYNA 8000 SERIES CONTROLLERS

1.0 CONNECTION INFORMATION

1.1 When using an ILS unit, the remote speed potentiometer may be left connected to the controller as shown.

1.2 When an ILS unit is used, connect 3-wire shielded cable to terminals 6, 7 and 8. Connect drain shield wire to terminal 10 at the controller only. Other end of drain shield wire is to be cut off and taped.

2.0 CALIBRATION AND ADJUSTMENTS

2.1 See Figure 1 for a reference guide before making any adjustments of the potentiometers, DROOP, I, GAIN and SPEED.

2.2 Power OFF — engine not operating.

2.3 Initial potentiometer settings:

2.3.1 Set the I adjustment three divisions from zero and the GAIN at the second division from zero.

2.3.2 For isochronous operation, set DROOP counterclockwise to minimum position as shown in Figure 1.

2.3.3 For DROOP operation, set DROOP potentiometer clockwise to obtain desired amount of DROOP from no-load to full load. Turning potentiometer clockwise increases DROOP.

NOTE

If the full 35° rotation of the actuator shaft is used and the linkage adjusted to use only the active fuel range, the maximum obtainable DROOP would be approximately 12% at full load.

2.3.4 See step 3.0 for setting switches S1 and S2.

2.4 If a remote speed potentiometer is used for narrow range, set it to mid-range. If the remote speed potentiometer is connected to terminals 6, 7 and 9, a resistor "R" in the wiper is not needed. This will provide approximately a ±5% adjustable speed range.

2.5 Start the engine.

2.5.1 Adjust the controller speed potentiometer until the engine is operating at the desired engine RPM. Clockwise increases engine RPM.

2.5.2 If the governor system is unstable, slightly reduce the GAIN setting.

NOTE

Except for the speed adjustment, the potentiometers have internal stops at the 0 and 100% positions.

2.6 With the engine unloaded, finalize the settings, I and GAIN adjustments as follows:

2.6.1 Turn the GAIN adjustment clockwise slowly until the actuator lever oscillates. (One may need to disturb actuator lever to cause oscillation.) Reduce the GAIN adjustment slowly counterclockwise until the lever is stable. Upset the lever by hand. If the lever oscillates 3 to 5 diminishing oscillations and stops, the setting is correct.

If system performance to load changes is satisfactory, omit step 2.6.2.

2.6.2 Reduce the GAIN setting counterclockwise one division. Next, turn the I adjustment fully clockwise while observing the actuator lever. If the lever does not become unstable, upset it by hand. When the lever slowly oscillates, turn the adjustment counterclockwise slowly until the lever is stable. Upset the lever again; it should oscillate 3 to 5 times and then become stable for optimum response.

NOTE

Use the settings of step 2.6.1 or step 2.6.2, whichever provides the best performance.

2.6.3 Unit is now calibrated.
NOTE
For some diesel engines, better operation may be obtained by placing SW1 in "ON" position. If difficulty is experienced in "OFF" position, try SW1 ON and recalibrate.

F-22171-7

3.2 Two actuator selections, so the same controller can be used on the DYNA 8000, DYNA 8200 or DYNA 8400 actuator.*

• Set S2 to the OFF position when using a DYNA 8000 actuator.
• Set S2 to the ON position when using a DYNA 8200 or DYNA 8400 actuator.

* DYNA 8000 — DYNC 11020 Series
DYNA 8200 — DYNC 12000 Series
DYNA 8400 — DYNC 14800 Series

These actuators do not have a potentiometer feedback transducer.

4.0 GENERAL INFORMATION ON S1 AND S2

• Switch S1 selects one of two integrating rate ranges. The diesel version integrates at twice the rate of the gas version.
• Switch S2 selects the point at which actuator coil current level causes the integrator limit to be actuated. This level is nominally 6.3 amperes for the DYNA 8000 and 7.3 amperes for the DYNA 8200 and 8400 actuator.

5.0 PROPER PROCEDURES FOR SETTING SWITCHES S1 AND S2

Question: How do I know if the switches in the dual-in-line packages are correctly set as far as being in the OFF position or the ON position?

Answer: The drawings above should clarify any confusion about switch settings. The easiest way to set the switches is to apply pressure with a small pointed object until the switch clicks into position.