



a Siebe company

CALIBRATION PROCEDURE FOR DYNA I SMOKE LIMIT CONTROLLER

Part Number	Input Signal Frequency Maximum
DYN1-10693-001-0-12/24	1200 to 2500 Hz
DYN1-10693-002-0-12/24*	



Part Number	Input Signal Frequency Maximum
DYN1-10694-001-0-12/24	2500 to 5000 Hz
DYN1-10694-002-0-12/24*	
DYN1-10695-000-0-12*	

1.0 CALIBRATION PROCEDURE

1.1 Observe that potentiometer settings are adjustable from zero to 100%. Each small division is 10%. The speed potentiometer is 10K, 20 turn.

1.2 Set the small dip switch, S1, for the correct engine. (See paragraph 4) Set switch S2 in the "OFF" position for DYNA 8000 actuator, or in the "ON" position for the DYNA 8200 actuator. S2 is not used on DYN1-10695 controller, which is used only with the DYNA 8400 actuator.

1.3 If a remote speed potentiometer is used for narrow range, set to mid range.

2.0 INITIAL POTENTIOMETER SETTINGS

GAIN	20%
I	20%
RAMP TIME	0
START UP FUEL	100%
DROOP	0

2.1 For isochronous operation, set DROOP potentiometer counterclockwise (CCW) to minimum position.

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

3.0 START ENGINE (NO LOAD)

3.1 Adjust the controller speed potentiometer for desired engine speed.

— NOTE —

A warm engine is normally more stable than a cold one. If the governor is adjusted on a warm engine, turn the adjustment potentiometers counterclockwise (CCW) 5% (1/2 div.) to ensure a stable engine when started cold.

3.2 Adjust the GAIN potentiometer clockwise (CW) until the engine begins to hunt. (If the engine remains stable at 100% GAIN, physically disrupt the actuator linkage by hand.) With the engine hunting, turn the GAIN potentiometer counterclockwise (CCW) until stable.

— NOTE —

If engine remains stable with GAIN at 100%, leave it set at 100%.

3.3 Repeat step 3.2 for the "I" setting.

3.4 After calibration, it may be necessary to readjust the speed.

3.5 Following the above calibration, conduct the following test. With the engine operating at rated speed, turn the electric governor off. When engine speed slows to approximately half of rated speed, turn the electric governor back on. Observe the overshoot. If the overshoot is too great, turn the "I" potentiometer counterclockwise (CCW) to lessen the overshoot. If there is a small hunt at steady state, slightly turn the "I" potentiometer counterclockwise (CCW) until stable. In some cases, 2 to 3 Hz overshoot may be acceptable.

— WARNING —

For gas engines, make certain that method used does not put gas in exhaust which might result in an explosion.

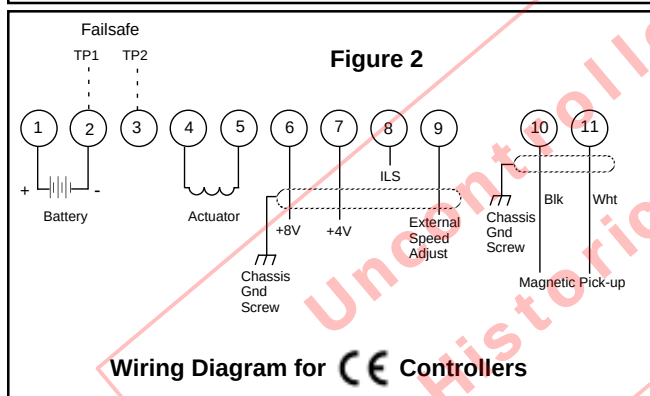
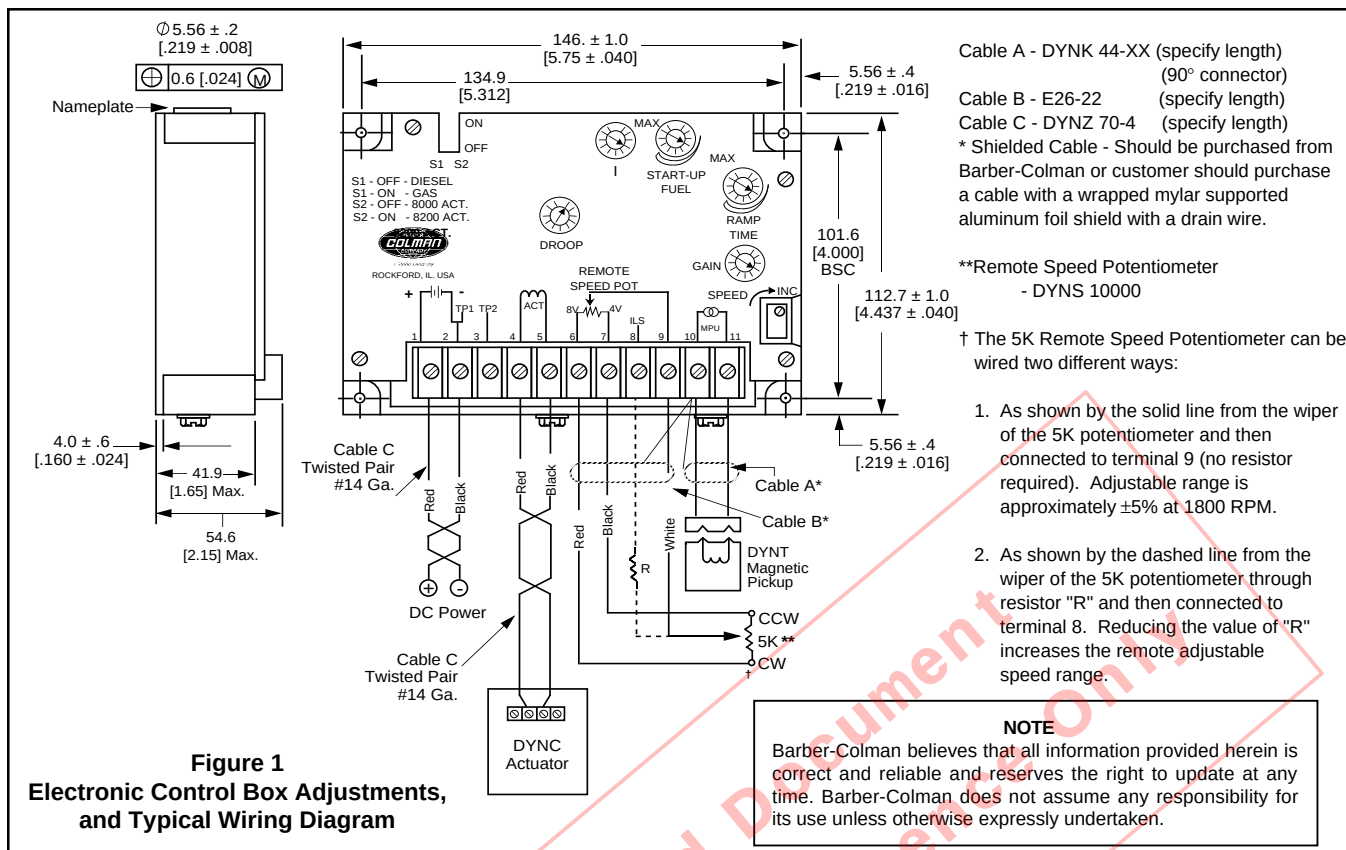
If possible, operate the unit through various load ranges up to 100% to ensure stability.

3.6 Adjust the START-UP FUEL potentiometer to the minimum position (fully counterclockwise position). Then crank the engine and adjust the START-UP FUEL potentiometer clockwise (CW) until the engine starts and reaches rated speed. (See paragraph 3.1 for adjusting rated speed). Adjust the START-UP FUEL potentiometer 2 to 3% more. START-UP FUEL is now set.

3.7 Adjust the RAMP TIME potentiometer to the desired ramp time, counterclockwise being minimum position 3 seconds, and clockwise being maximum position ramp time 10 seconds. The RAMP TIME adjustment ramps the speed to the desired set speed from 3 to 10 seconds.

CAUTION

As a safety measure, the engine should be equipped with an independent overspeed shutdown device in the event of failure which may render the governor inoperative.



4.0 CONTROLLERS HAVE SWITCHES S1 AND S2

4.1 Two response ranges for matching either the diesel or gas engine dynamics.

- Set S1 to "OFF" position for diesel engine applications.
- Set S1 to "ON" position for gas/gasoline engine applications.

4.2 Two actuator selections, so the same controller can be used on the DYNA 8000 and 8200 actuators.

- Set S2 to "OFF" position when using a DYNA 8000 actuator.
- Set S2 to "ON" position when using a DYNA 8200 actuator.
- S2 is not used on the DYN1-10695 controller, which is used only with the DYNA 8400 actuator.

5.0 GENERAL INFORMATION ON S1 AND S2

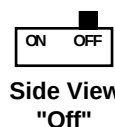
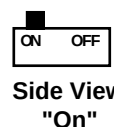
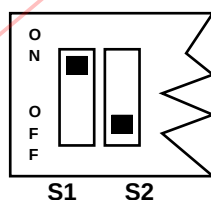
- Switch S1 selects one of two integrating rate ranges. The diesel version integrates at twice the rate of the gas version.
- Switch S2 selects the point at which actuator coil current level causes the integrator limit to be actuated. This level is nominally 6.3 amperes for the DYNA 8000 and 7.3 amperes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

DYNA 142-3

6.0 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?

Top View



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.

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