CALIBRATION PROCEDURE FOR DYN1 10794 CONTROLLERS FOR STANADYNE PUMPS USING DYNC 70025 INTEGRATED ACTUATOR

Part Number	Input Signal Frequency Maximum	Part Number CE	Input Signal Frequency Maximum
DYN1-10794-000-0-12/24	2500 to 5000 Hz	DYN1-10794-002-0-12/24*	2500 to 5000 Hz

***The DYN1-10794-002 Controller has an Integral Upper Limit Potentiometer which is not present on the DYN1-10794-000 controller.**

1.0 CALIBRATION PROCEDURE

1.1 Wire the controller as shown in the wiring diagram.

1.2 Set the GAIN potentiometer at 30%, the INTEGRAL UPPER LIMIT completely clockwise (CW) **[see NOTE]**, and the DROOP potentiometer completely counterclockwise (CCW).

1.3 Place the IDLE RUN SWITCH in the IDLE position and adjust the IDLE speed by turning the 20 turn potentiometer clockwise (CW) to increase and counterclockwise (CCW) to decrease speed.

1.4 Place the IDLE RUN SWITCH in the RUN position and adjust the RUN speed by turning the 20 turn potentiometer clockwise (CW) to increase, and counterclockwise (CCW) to decrease speed.

1.5 With the engine running at no load rated speed, slowly turn the GAIN potentiometer clockwise (CW) until the engine becomes unstable. Once unstable, slowly turn the potentiometer counterclockwise (CCW) until stable. Interrupt the governor by momentarily removing power from the governor. The engine should recover in 3 to 5 diminishing oscillations.

— NOTE —

Perform Step 1.6 only if you have a DYN1-10794-002

1.6 After GAIN and SPEED are adjusted, load engine to 100% (full load).

a) While observing FREQUENCY or RPM Meter, turn Integral Upper Limit potentiometer slowly counterclockwise (CCW) until frequency or RPM starts to decrease.

b) Turn Integral Upper Limit potentiometer slowly clockwise (CW) until the frequency or RPM returns to the original set speed.

2.0 DROOP OPERATION

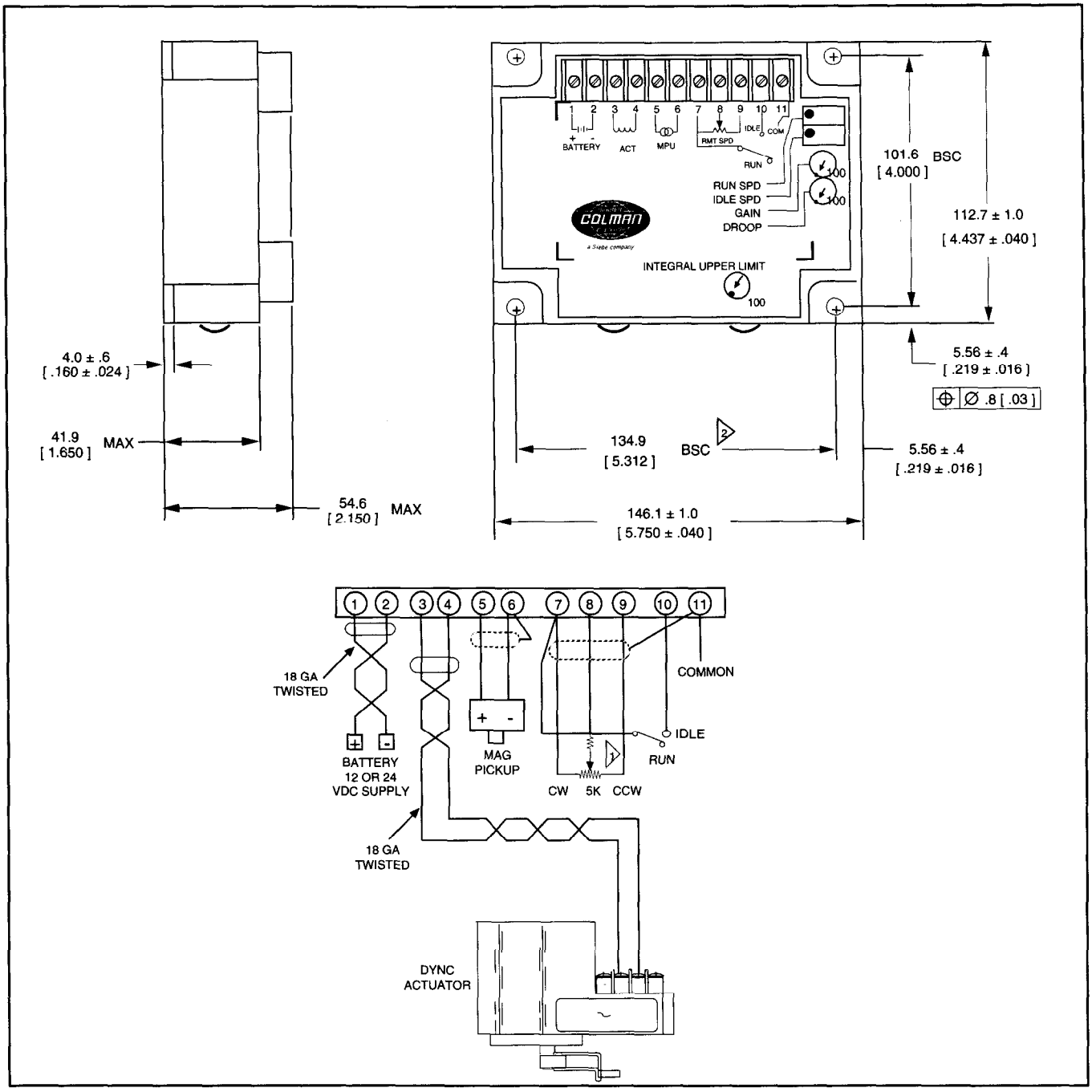
2.1 Set the engine run RPM at the desired no load speed.

2.2 Apply full rated load to the engine.

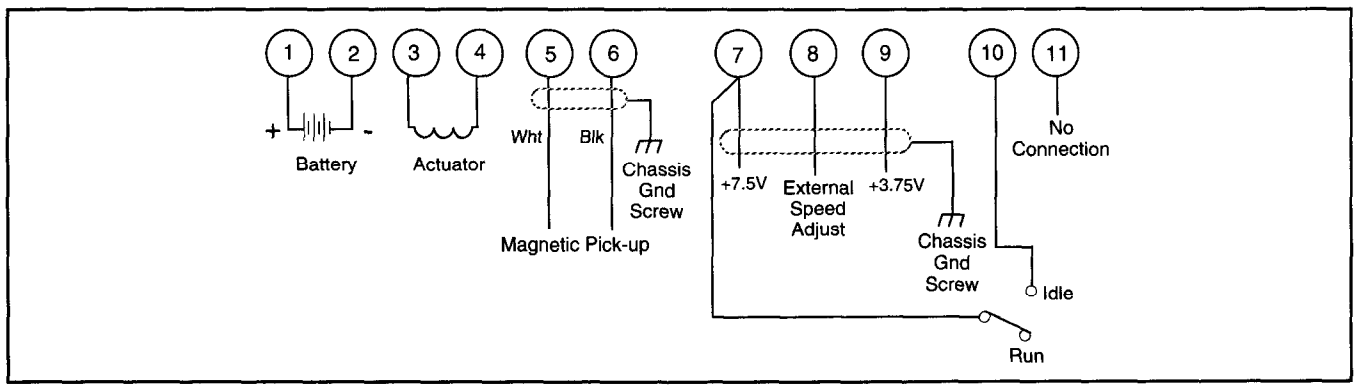
2.3 While watching the engine RPM, slowly turn the DROOP potentiometer clockwise (CW) until the percentage of droop is obtained.

2.4 Unload the engine and readjust the no load RPM.

3.0 WIRING DIAGRAM



4.0 WIRING DIAGRAM FOR CE CONTROLLERS



5.0 TROUBLESHOOTING CHART

Problem	Detection	Corrective Action
I. System appears dead.	**1.** CHECK BATTERY VOLTAGE AT CONTROLLER with power switch "ON". Measure DC battery voltage between terminal 1 (B+) and terminal 2 (B-). Battery voltage should be present.	Check connections to battery.
	2. NO SIGNAL OR WEAK SIGNAL FROM MAGNETIC PICKUP. Measure AC voltage between terminals 5 & 6 on the controller while cranking engine. Voltage should be 2.5 volts RMS or greater. (AC input impedance of meter must be 5000 ohms/volt or greater)	Check for damage to or improper adjustment of magnetic pickup. Replace or re-adjust.
	3. CHECK ACTUATOR with power "ON" to controller, and the engine not running. Measure following terminals on control box with respect to terminal 2 (B-).	
	a. Terminal 3 to terminal 2 — 0 volts to be measured.	Replace controller if battery voltage is present.
	b. Terminal 4 to terminal 2 — 0 volts to be measured.	Replace controller if battery voltage is present.
	— Note — The following checks are to be made with nothing connected to the terminals.	
	c. Terminal 7 to terminal 2 — 7.5 volts ±.5V to be measured.	Replace controller if voltage is not present.
	d. Terminal 8 to terminal 2 — 3.75 volts ±.5V to be measured.	Replace controller if voltage is not present.
	e. Terminal 9 to terminal 2 — 3.75 volts ±.5V to be measured.	Replace controller if voltage is not present.
II. Actuator hunts during operation.	**1.** Improper governor adjustment.	Readjust calibration.
	2. Inadequate power supply voltage.	
	a. Turn power switch "OFF".	
	b. Connect a DC voltmeter to terminal 1 & terminal 2 at control box.	
	c. Disconnect both leads to actuator at terminals 3 &4.	
	d. Connect one actuator lead to terminal 1 and one actuator lead to terminal 2 of the control box.	
	e. Momentarily turn "ON" the DC power. The actuator should go to full fuel and the DC voltage must be greater than 80% of supply. 24 VDC @ 80% = 19.2 VDC 12 VDC @ 80% = 9.6 VDC	If actuator doesn't get to full fuel, then check actuator leads. If voltage is less than specified, check for loose or poor connections to battery, or get larger supply leads or larger power supply.
	Note: Reconnect actuator leads properly after completing this test.	
III. Engine fails to achieve full load.	**1.** Improper integral adjustment.	Readjust integral limit.
	2. Fuel restriction.	Check supply and return fuel lines for blockage.
IV. Engine overshoots on startup.	**1.** Improper integral adjustment.	Readjust integral limit.
V. Engine has excessive overspeed when rejecting load.	**1.** Improper integral adjustment.	Readjust integral limit.

NOTE

Barber-Colman believes that all information provided herein is correct and reliable and reserves the right to update at any time. Barber-Colman does not assume any responsibility for its use unless otherwise expressly undertaken.

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.

Barber-Colman Company
Aerospace & Power Controls Division
DYNA Product Group

1354 Clifford Avenue
P.O. Box 2940
Loves Park, IL 61132-2940
United States of America

Telephone (815) 637-3000
Facsimile (815) 877-0150

In Europe contact: Barber-Colman GmbH
Am Neuen Rheinhafen 4, D-67346 Speyer, Germany
Telephone 06232 1203, Facsimile 06232 12155, Telex 467 627

In Japan contact: Ranco Japan Ltd.
Shiozaki Bldg. 7-1, 2-chome, Hirakawa-Cho, Chiyoda-Ku
Tokyo 102, Japan
Telephone 3261 4293, Facsimile 3264 4691, Telex 0232 2087