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CAUTION

READ AND FOLLOW THESE INSTRUCTIONS CAREFULLY BEFORE PROCEEDING WITH INSTALLATION. DO NOT DEVIATE FROM WIRING INSTRUCTIONS. INCORRECT WIRING COULD CAUSE ELECTRICAL SHORT AND POSSIBLE FIRE. ALWAYS DISCONNECT BATTERY BEFORE MAKING ANY ELECTRICAL CONNECTIONS.
NOTE: VARIOUS STANDARD MAKING ORGANIZATIONS HAVE ESTABLISHED RULES FOR WIRING. THOSE APPLICABLE TO YOUR SITUATION SHOULD BE FOLLOWED.

THIS TACHOMETER IS DESIGNED TO OPERATE ONLY IN 12 VOLT NEGATIVE GROUND ELECTRICAL SYSTEMS. THE ALTERNATOR MUST BE EQUIPPED WITH A TERMINAL MARKED 'W', 'AC' OR 'R'.

Certain alternator manufacturers, such as Motorola, can supply an add-on adapter if such a terminal is not present. Alternator repair shops may also be able to provide a tachometer output from the alternator's internal rectifier circuit. You will need to know the number of poles in the alternator (can be obtained from alternator dealer or distributor), and the pulley ratio from the crankshaft to the alternator. Pulley ratio is found by dividing crankshaft pulley diameter by alternator pulley diameter. Example: 6" diameter crankshaft pulley, 2" alternator pulley -- 6 divided by 2 = 3. Ratio is 3:1

ADDITIONAL EQUIPMENT NEEDED TO COMPLETE INSTALLATION:

No. 16 stranded insulated wire (See Figure 2).
Insulated terminal lugs as required.

PREPARATION FOR INSTALLATION

1. Select a mounting location for gauge which provides for easy readability from the operating position. Check behind mounting panel for sufficient installation clearance.
2. Cut a 3-13/32" (86.5 mm) or 4-5/8" (117.5 mm) diameter hole through panel at desired location.
3. Insert Gauge (Item 1) into mounting hole in panel and check for fit.
4. Open Hardware Package (Item 2). Fit "U" Bracket over mounting studs on back of Gauge (See Figure 1) and check fit. Bracket is made to install gauges in panels up to 1/2" (13 mm) thick. If necessary, legs of Bracket may be cut down to accommodate thicker panels.
5. Examine the back of your Tachometer. It will have a Rotary Selector Switch, with 3 or 5 positions; or a DIP Switch Assembly with 4 slide switches (see Figure 2). Refer to Section "Determining Range Selector Switch Position" and determine setting for your application.

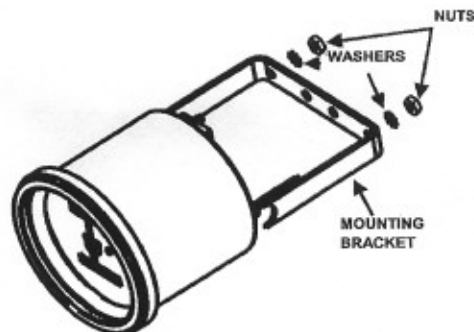
DETERMINING RANGE SELECTOR SWITCH POSITION

Refer to Charts 'A' (Tachometers with 3 position switch), 'B' (Tachometers with 5 position switch) or 'C' (Tachometers with 4 DIP or slide switches). For tachometers with rotary switches, set Range Selector Switch gently so that the arrow points to the corresponding alternator range. For DIP switch type, slide only one switch to the "On" or "Up" position. NOTE: Switch "D" is not used - only "A", "B", or "C".

The tachometer has been factory calibrated for the combinations of ratios and poles shown in the Charts below. If your application

TACHOMETER, TACH/HOURMETER INSTRUCTIONS DIESEL ALTERNATOR TYPE

FIGURE 1



exactly matches one of these, simply set the Range Selector Switch as shown and proceed. No further calibration adjustment should be required.

If your application is not listed, look in the column for the number of poles in your alternator for the next higher ratio, and use that Switch Setting. Tachometer will require calibration adjustment as described in Section 'CALIBRATION AND ADJUSTMENT'.

INSTALLATION OF GAUGE

1. After checking fit of Gauge and "U" Bracket, insert Gauge into panel and install Bracket over mounting studs. Install a Nut and Washer onto each mounting stud as shown in Figure 1.
2. Tighten Nuts until Gauge can no longer be rotated in panel by hand.

CAUTION: OVERTORQUING OF NUTS MAY CRACK GAUGE HOUSING OR MOUNTING PANEL.

CONNECTION OF WIRING

Connect wiring to Gauge terminals using Washers and Nuts supplied.

CAUTION

MAKE SURE THAT ELECTRICAL WIRING IS DRESSED AWAY FROM MOVING OR HOT ENGINE COMPONENTS.

1. Refer to Figure 2. Run a wire from 'GND' (ground) terminal of gauge to electrical system Ground.
2. Run a wire from 'LT' (light) terminal of gauge to panel light switch or 'LT' terminal of another gauge.
3. Run a wire from the 'IGN' terminal of Gauge to 'IGN' (ignition) terminal of ignition switch.
4. Run a wire from the terminal marked "SEND" to the "W", "R" or "AC" terminal of the alternator. For dual control station applications, install second gauge according to previous instructions. Wiring may be connected to first gauge: LT to LT, GND to GND, SEND to SEND, IGN to IGN.

CAUTION

BEFORE RECONNECTING BATTERY TO ELECTRICAL SYSTEM, RECHECK WIRING TO ENSURE ALL CONNECTIONS ARE PROPERLY MADE. INCORRECT CONNECTIONS OR ELECTRICAL SHORTS COULD CAUSE DAMAGE OR FIRE IN SYSTEM. ELEMENTS OF ELECTRICAL SYSTEMS SHOULD HAVE PROPER FUSES INSTALLED.

**CHART A - TACHOMETERS WITH 3 POSITION SELECTOR SWITCH:
PRE-CALIBRATED FOR POLE/RATIO COMBINATIONS OF:**

# OF ALTERNATOR POLES	8	10	12	14	16	SWITCH SETTING
PULLEY RATIOS	1.5:1	1.2:1	1.0:1	0.85:1	0.75:1	A
	2.5:1	2.0:1	1.67:1	1.4:1	1.25:1	B
	3.75:1	3.0:1	2.5:1	2.15:1	1.875:1	C

**CHART B - TACHOMETERS WITH 5 POSITION SELECTOR SWITCH: PRE-CALIBRATED FOR
POLE/RATIO COMBINATIONS OF:**

# OF ALTERNATOR POLES:	8	10	12	14	16	SWITCH SETTING
PULLEY RATIOS:	1.5:1	1.2:1	1:1	0.857:1	0.75:1	A
	2.25:1	1.8:1	1.5:1	1.28:1	1.125:1	B
	3:1	2.4:1	2:1	1.71:1	1.5	C
	3.75:1	3:1	2.5:1	2.14:1	1.875:1	D
	4.5:1	3.6:1	3:1	2.57:1	2.25:1	E

**CHART C - TACHOMETERS WITH DIP SWITCH:
PRE-CALIBRATED FOR POLE/RATIO COMBINATIONS OF:**

# OF ALTERNATOR POLES	8	10	12	14	16	SWITCH "ON"
PULLEY RATIOS	1.5:1	1.2:1	1.0:1	0.85:1	0.75:1	A
	2.5:1	2.0:1	1.67:1	1.4:1	1.25:1	B
	3.75:1	3.0:1	2.5:1	2.15:1	1.875:1	C

When wiring is complete, connect power. Turn key "On" -- Tachometer pointer should move to "Zero". If not, check Ignition and Ground wiring. Start engine and check gauge for proper operation

CALIBRATION AND ADJUSTMENT

The gauge is factory calibrated to within +/-3% full-scale accuracy for the ratio/pole combinations shown in the Charts. However, provision has been made for other combinations; as well as for finer adjustment if desired, and/or for synchronization of two gauges.

1. Attach a remote master tachometer to engine to obtain true R.P.M reading. Adjust throttle to maintain a constant speed of 1/2 to 2/3 of engine's maximum RPM.

2. Insert small-bladed screwdriver in calibration hole ('CAL', Figure 2) on back of gauge casing. Carefully turn internal adjustment mechanism to advance or retard tachometer needle reading to correspond to actual engine R.P.M.

NOTE: Adjustment inside housing needs only minimal turning to effect change of meter reading. **Overtorquing of adjustment will damage gauge mechanism.**

4. In dual engine installations, synchronize engines by master tachometer, connect panel tachometers to engines, and use calibration procedures as given until tachometer readings match.

CAUTION: DISCONNECT BATTERY BEFORE MAKING CONNECTIONS

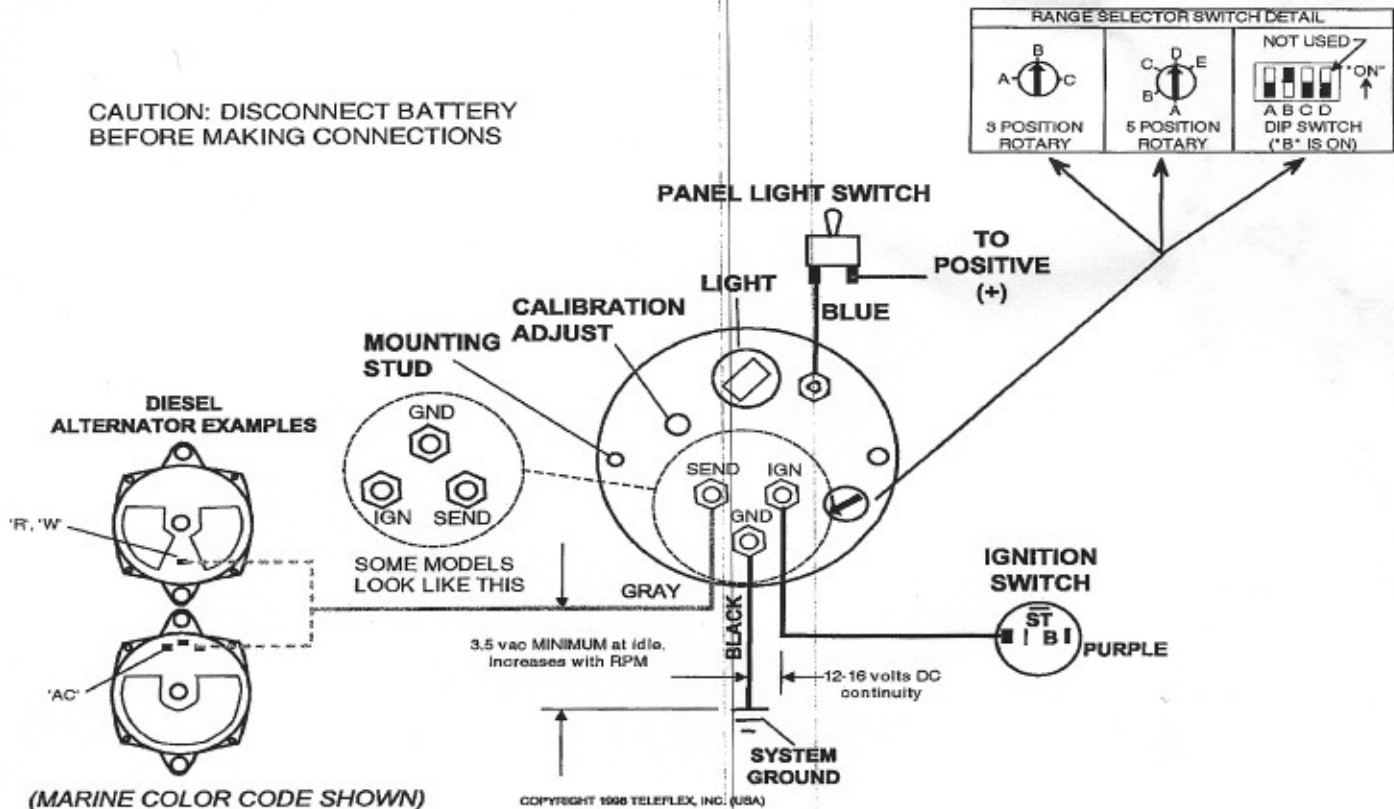


FIGURE 2

PARTS LIST

Item	Description	Quantity
1	Gauge Assembly	1
2	Hardware Package	1

NOTE: Engine designs are subject to change. All data shown is based on latest information available at time of publication. Teleflex assumes no responsibility for its correctness, or misapplication of its products.