

SERIAL No.  
3239  
8361

## INSTRUCTIONS

### *Airguide Marine Tachometers*

To the serious boat owner, a tachometer is a very useful and interesting instrument. It enables the user to secure maximum horsepower from his motor without exceeding the maximum recommended RPM, thus preventing possible motor damage. Proper adjustment of high and low speed carburetor jets is simplified by the tachometer. Poor engine performance from worn or improperly adjusted breaker points is indicated by an erratic tachometer reading. Cavitation of the propeller shows up instantly on the tachometer. When two motors are used, quick and accurate synchronization is simple.

When used with a good speedometer, it helps you determine the most efficient motor speeds for your particular boat and motor combination. Also, it helps select the best propeller for your boat, motor and load combination. Best tilt angle and motor height on transom are reflected in the comparative readings of tachometer and speedometer.

This is only a partial list of the advantages of the tachometer. Many other uses will no doubt occur to you for safer, more efficient and more enjoyable boating.

The tachometer system consists of two components, the transmitter and the indicator. These units are matched and calibrated in manufacture and should not require adjustment of any kind before or after installation on the boat.

#### SELECTING THE LOCATION

Begin installation by making a general survey of the boat and determining the best location for indicator, transmitter and connecting wiring. Consider also the wiring needed for illumination of the indicator.

The indicator may be located in the instrument panel along with other instruments, but must be kept a minimum of 36" from the compass as compass compensation may be seriously affected by the strong magnet in the indicator.

The indicator should be kept well away from a radio transmitter and any of the transmitter's associated wiring. Wires between components of the tachometer system must not be placed near or closely parallel to output wiring or antenna of the radio transmitter as errors of reading can be induced in the tachometer when the radio is actually transmitting.

When mounting the indicator in a location other than in the instrument panel, choose a place where the indicator will not be exposed to spray or rain.

The tachometer transmitter may be placed at any convenient sheltered location within the boat where it may easily be connected to indicator, starting switch, terminal block or motor. The transmitter is sealed, and as it contains no battery or moving parts to wear out, it may be placed out of the way of other equipment in an area not easily accessible. It should, of course, be placed where the terminals will not be struck and shorted out by metallic objects stowed near the transmitter or by spray or rain.

Wiring of the components of the system may be done with the use of plastic or rubber-covered two-wire lamp cord, easily obtained from hardware, marine and other stores. A small insulated plug and socket, available from most boat stores, may be used to facilitate connection to motor.

### MOUNTING THE INDICATOR

After having chosen the position for mounting the indicator, use the mounting template enclosed for marking the hole location needed. Wood screws are supplied for securing the indicator to the panel. Connect the indicator to the transmitter, making certain that the proper polarity is maintained, plus to plus, and minus to minus, as marked at the terminals of the components. Use a long enough wire to allow some slack when securing the transmitter to the boat.

As shipped from the factory, the light socket is packed in a separate envelope without a bulb. When connecting to the 12 Volt system used for starting the motor, obtain a No. 53, or similar, bulb. Should a separate power supply be used, use the proper bulb according to the voltage as shown in the table below.

Voltage	Bulb No.
1.3 . . . . .	351 Spec.
2.5 . . . . .	43
3.2 . . . . .	45
6 . . . . .	51
28 . . . . .	313

After completing the wiring and inserting bulb in socket, remove plug button in the back of the indicator case and snap in the light socket.

**WARNING: The dark grey ground wire must go to a ground connection of the electrical system.**

### MOUNTING THE TRANSMITTER

Fasten the transmitter to the boat in a protected location. In some cases it will be more convenient to connect all wiring before securing the transmitter into place when a somewhat inaccessible place is used. The transmitter may be placed on any type of surface—wood, plastic or metal, and in any orientation: vertical, horizontal or inclined, as this has no affect on its operation.

## CONNECTING THE TRANSMITTER

**CAUTION:** This part of the installation is very important and must be done carefully. The transmitter is to be connected to the magneto with wires leading from transmitter M1 terminal to engine ground and from M2 to magneto primary. **DO NOT CONNECT WIRES FROM MAGNETO TO TRANSMITTER TERMINALS MARKED — METER +. PERMANENT DAMAGE WILL RESULT FROM SUCH INCORRECT WIRING. SEE WIRING DIAGRAMS.**

On 4 cylinder motors with electric starting systems or stop buttons, wiring may be simplified by connecting directly to stop terminals of the starting switch (usually black wires). On 2 cylinder motors, magneto connection may be made on stop terminal of switch, ground connection by running (1) wire to solenoid box or motor. When using a tachometer on a motor with no exterior connection to the magneto, it is necessary to provide one by leading a wire into the motor and connecting directly to magneto primary wiring. On larger motors with separate magnetos, connection is easily made at the primary terminal of the magneto.

Flywheel type magnetos, where there is no primary connection brought outside, present a somewhat larger problem in that it may be necessary to remove the flywheel in order to connect the wire onto the breaker point terminal to which the condenser is fastened. When making such a connection, make certain to replace all parts of the motor and cover in proper place and adjustment.

Ground connections should be made at a convenient, secure and clean engine ground. Wire used inside the motor should be oil and heat resistant.

Certain motors have a mercury switch so mounted as to cut out magneto primary when the motor is tilted up as when striking an object in the water. The magneto terminal of this switch makes a suitable primary connection point.

On 2 cylinder-flywheel type magnetos, after completing required wiring, start the engine and operate it at 3,000 to 4,000 RPM, and while running at this speed, reverse the leads to the transmitter at M1 and M2. Note which position gives the higher reading on the indicator and secure the wires in this position. This is a check for reversed magneto polarity and assures correct transmitter connections.

The Airguide tachometer requires no adjustment or calibration after installation.

### CONNECTING THE TRANSMITTER

**CAUTION:** This part of the installation must be done carefully. The transmitter is to be connected to the motor with wires leading from transmitter D-2 terminal to engine ground and from D-1 to either the red or black wire leading from distributor to ballast resistors. The terminal on the ballast resistor (to which the lead from the distributor is attached) is a convenient point to make a connection. The ground connection should be made at a convenient, secure and clean point on the engine. Wire used in the installation should be oil and heat resistant. **DO NOT CONNECT WIRES FROM DISTRIBUTOR TO TERMINALS MARKED - METER +. PERMANENT DAMAGE TO TACHOMETER WILL RESULT FROM SUCH INCORRECT WIRING. SEE WIRING DIAGRAMS.**

Multiple motor single indicator installation may be easily accomplished with the use of an added switch. When installation is to be made where two 2 cylinder, two 4 cylinder or two 6 cylinder motors are used, connect a single pole double throw switch in line from transmitter to motors, as per special wiring diagram.

**NOTE:** In case of variable or erratic action of the indicator, check the magneto or distributor breaker points for wear or pitted condition and for misadjustment. Check the wiring to see that all connections are tight.

#### GUARANTEE

We guarantee this Airguide instrument to be free from defects of workmanship or material and to remain accurate in normal use. If within one year of purchase date this instrument fails to give satisfactory service, it will be repaired or replaced without charge. This guarantee does not cover breakage through accident or misuse. Replacement will be made if this instrument is returned postpaid to

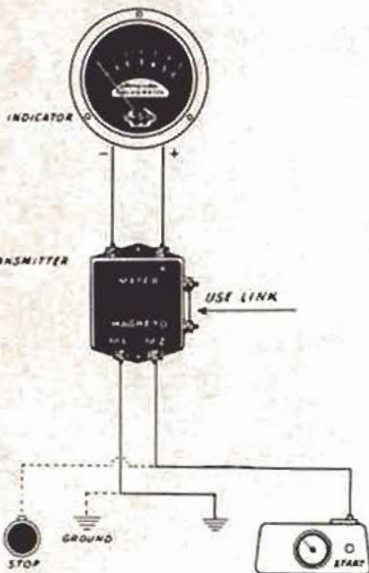
**AIRGUIDE INSTRUMENT COMPANY**

**Chicago 47, Illinois**

# WIRING DIAGRAMS

## 2 CYLINDER INSTALLATION

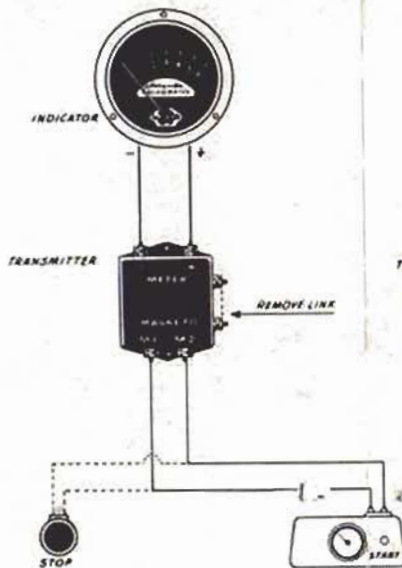
CONNECTED TO START SWITCH OR STOP BUTTON



SUGGESTION - ON 2 CYLINDER MOTOR REVERSE TERMINALS AND USE CONNECTION HAVING HIGHEST READING

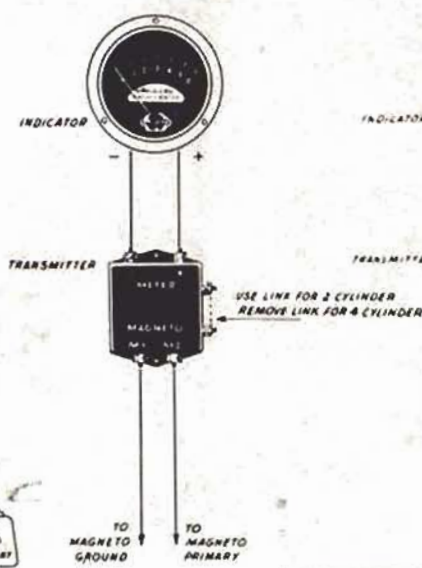
## 4 CYLINDER INSTALLATION

CONNECTED TO START SWITCH OR STOP BUTTON



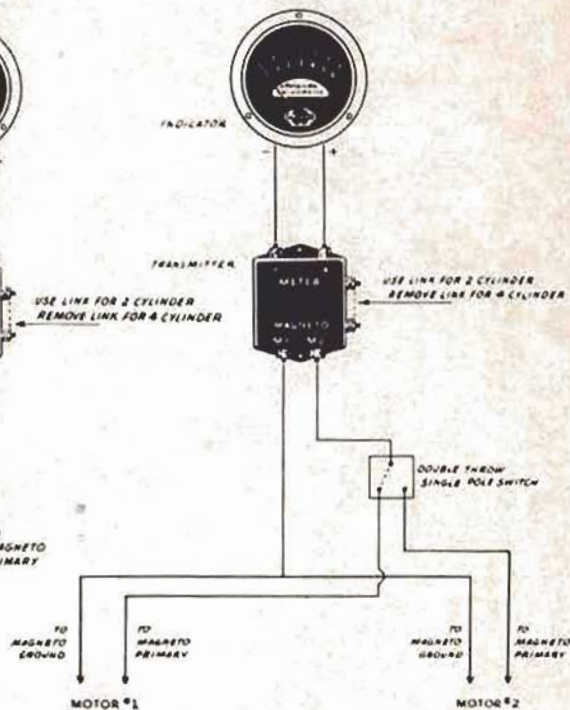
## 2 OR 4 CYLINDER INSTALLATION

CONNECTED DIRECT TO MAGNETO



## DUAL MOTOR INSTALLATION

BOTH 2 OR 4 CYLINDER



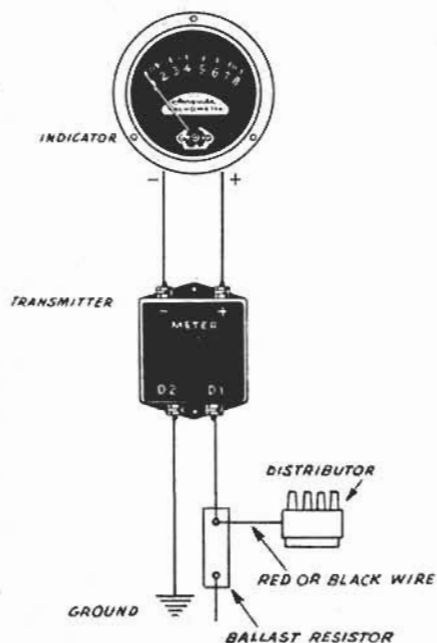
(FOR ONE 2 CYLINDER AND ONE 4 CYLINDER MOTOR - WRITE FOR SPECIAL WIRING DIAGRAM)

## WARNING

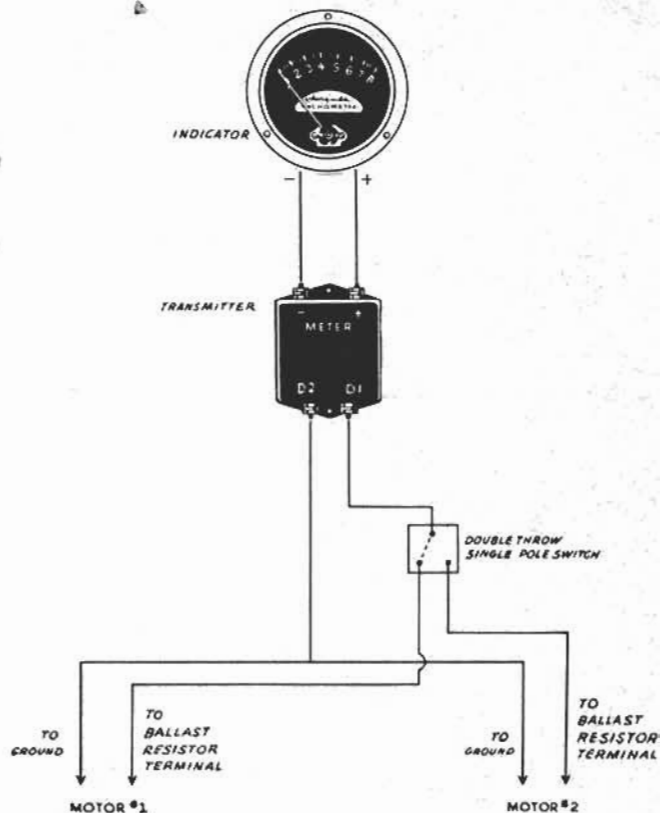
DO NOT connect wires from magneto or distributor to transmitter terminals marked " - meter +." Permanent damage will result.

# WIRING DIAGRAMS

## 6 CYLINDER INSTALLATION



## DUAL MOTOR INSTALLATION BOTH SIX CYLINDER



### WARNING

DO NOT connect wires from magneto or distributor to transmitter terminals marked "— meter +" Permanent damage will result.