

# Magnetic Pickup Installation Instructions

## Models: MP3298, MP7905, and MP7906

MP-8802N  
Revised 03-02  
Section 20  
(00-02-0181)



Please read the following information before installing. A visual inspection of this product for damage during shipping is recommended before mounting. These instructions are intended for MP3298, MP7905, and MP7906 models.

### GENERAL INFORMATION

/ **WARNING** \

BEFORE BEGINNING INSTALLATION OF THIS MURPHY PRODUCT

- ✓ Disconnect all electrical power to the machine.
- ✓ Make sure the machine cannot operate during installation.
- ✓ Follow all safety warnings of the machine manufacturer.
- ✓ Read and follow all installation instructions.

### Description

A magnetic pickup is an AC generator. It is normally installed into the flywheel housing of an internal combustion engine, so that the starter ring gear acts upon it to generate a voltage pulse each time a gear tooth passes the end of the sensor.

### Specifications

#### Housing Material:

**MP3298:** Type 300 Stainless Steel.

**Locknut:** Type 300 Stainless Steel.

**MP7905 and MP7906:** Type 6061 Aluminum/Anodize Class 1.

**Locknut:** Steel Nickel Plated.

**Output Leads (all models):** Two insulated leads, 20AWG, STR/TEF insulated per MIL-W-16878D Type E, 1 White and 1 Black.

**Output Voltage (all models):** 200 V.P.P. TYP. (tested at 1000 I.P.S. 20 Pitch gear, 0.005 Gap., and 100K OHM Load).

#### Coil Resistance:

**MP3298:** 975 Ohms TYP.

**MP7905 and MP7906:** 2500 Ohms TYP.

**Potting (all models):** Internal portion of pickup is filled with epoxy resin, making the magnetic pickup oil and moist resistant.

**Temperature (all models):** -65° to +225°F (-54 ° to 107°C).

#### Coil Induct.:

**MP3298:** 800 mH max, @ 1K Hz.

**MP7905:** 400 mH TYP. @ 1K Hz.

Pickup Model	Part Number	Total Length	Threaded Length	Thread Size
MP3298	20700162	3 in. (76 mm)	3 in. (76 mm)	5/8-18 UNF
MP7906	20700161	3 in. (76 mm)	3 in. (76 mm)	3/4-16 UNF
MP7905	20700160	4-1/2 in. (114 mm)	4-1/2 in. (114 mm)	3/4-16 UNF

### Gap Chart

THREAD SIZE	TURN				GAP
	1/4	1/2	3/4	1	
5/8-18 UNF	.013 in. (0.33 mm)	.028 in. (0.71 mm)	.035 in. (0.88 mm)	.055 in. (1.39 mm)	GAP
3/4-16 UNF	.015 in. (0.38 mm)	.030 in. (0.76 mm)	.045 in. (1.14 mm)	.062 in. (1.57 mm)	

### Typical Installation

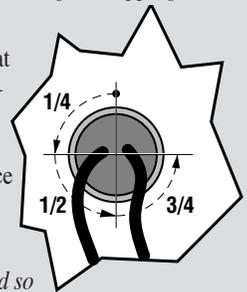
#### Magnetic Pickup Installation (see diagram below)

Drill and tap a hole in the flywheel housing (See Specifications for model and thread size). **IMPORTANT:** Drilling too deep may damage ring gear teeth. Blow chips with air hose when drilling and tapping hole.

#### Gap Adjustment

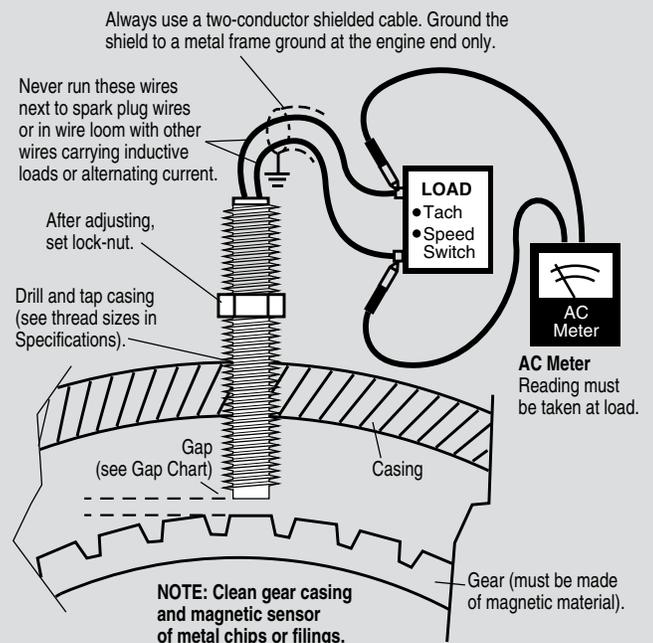
Insert magnetic pickup and turn until it stops at the face of the gear. Back-off the gear by turning the pickup counter-clockwise 1/4, 1/2, or 3/4 turn (drawing right).

See Gap Chart below to determine gap distance based on the turn. Check gap clearance by rotating the gear completely around.

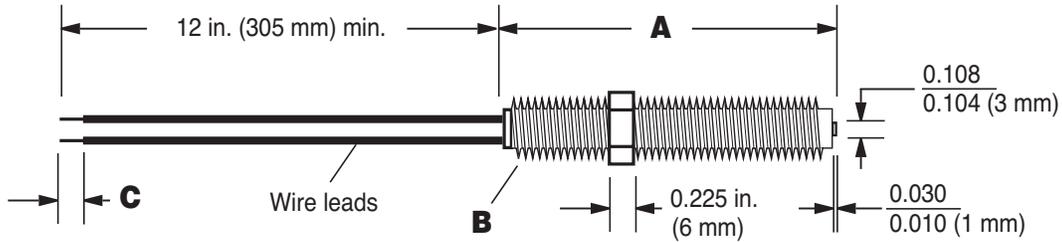


**NOTE:** Magnetic pickup gap should be adjusted so that the minimum voltage required is attained at the engine's lowest RPM. The voltage will increase as the speed increases.

If erratic readings occur, remove magnetic pickup and check the magnetic tip for metal chips.



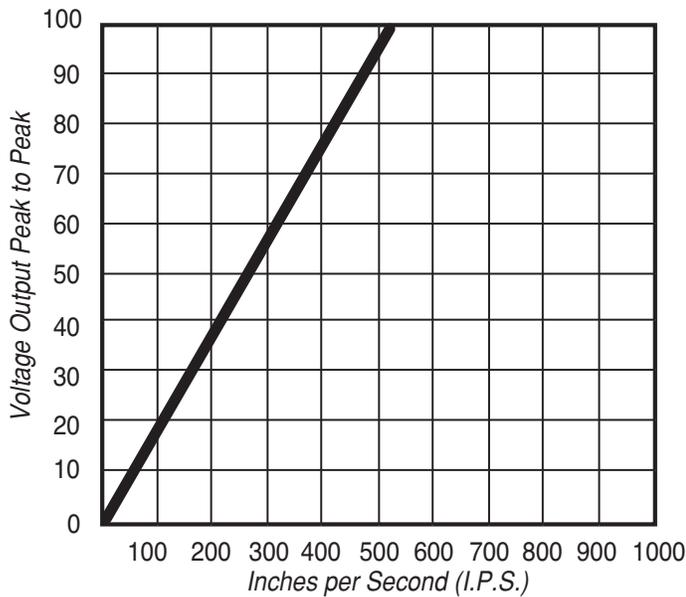
## DIMENSIONS



- A.** MP3298 and MP7906= 3 in. (76 mm)  
MP7905= 4.5 in. (114 mm)
- B.** MP3298= 5/8-18 UNF-2A  
MP7905 and MP7906= 3/4-16 UNF-2A

- C.** MP3298= 0.250 in. (6 mm)  
MP7905 and MP7906= 0.370 in. (9 mm)
- Polarity:** White lead is positive with respect to Black lead upon approach of ferrous metal.

### Output Voltage Operating Chart



**Note:** Tested at 1000 I.P.S. 20 pitch gear  
0.005 gap and 100K OHM load.

### Gear Pitch/Voltage Output Chart

Gear Pitch	% Output Std. Volts
6	187
8	172
10	162
12	157
16	118
20	100
24	85
32	23
48	—
64	—
72	—

**Note:** Dash indicates not recommended

$$\text{I.P.S.} = \frac{\text{R.P.M.} \times \text{dia.} \times 3.14}{60}$$

### Warranty

A limited warranty on materials and workmanship is given with this FW Murphy product.  
A copy of the warranty may be viewed or printed by going to [www.fwmurphy.com/support/warranty.htm](http://www.fwmurphy.com/support/warranty.htm)



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