



# Magnetic Pickup Installation Instructions

## Models: MP3298, MP7905, and MP7906

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)	
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

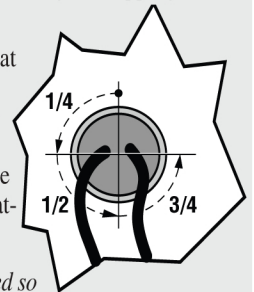
#### Magnetic Pickup Installation (see diagram below)

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

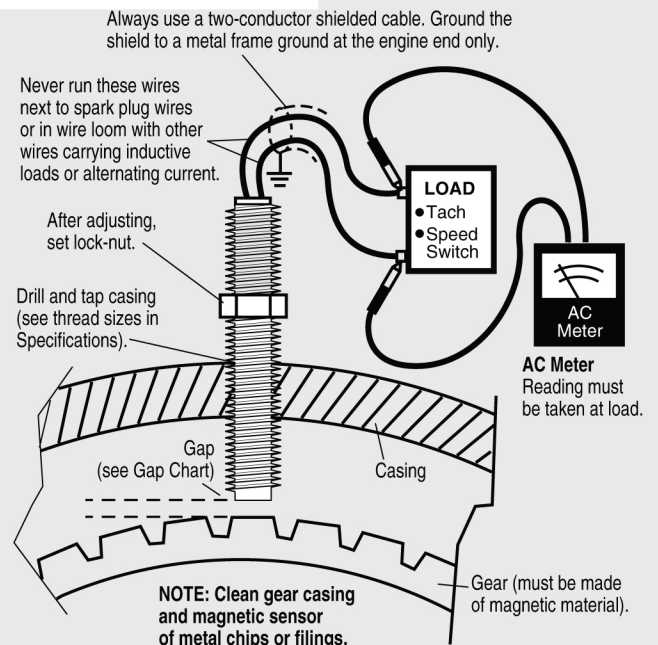
Insert magnetic pickup and turn until it stops at the face of the gear. Back-off the gear by turning the pickup counter-clockwise 1/4, 1/2, or 3/4 turn (drawing right).

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

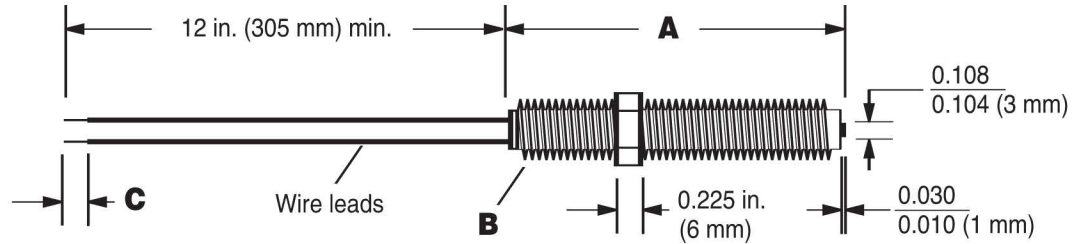


**NOTE:** Magnetic pickup gap should be adjusted so that the minimum voltage required is attained at the engine's lowest RPM. The voltage will increase as the speed increases.

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



## Typical Dimensions

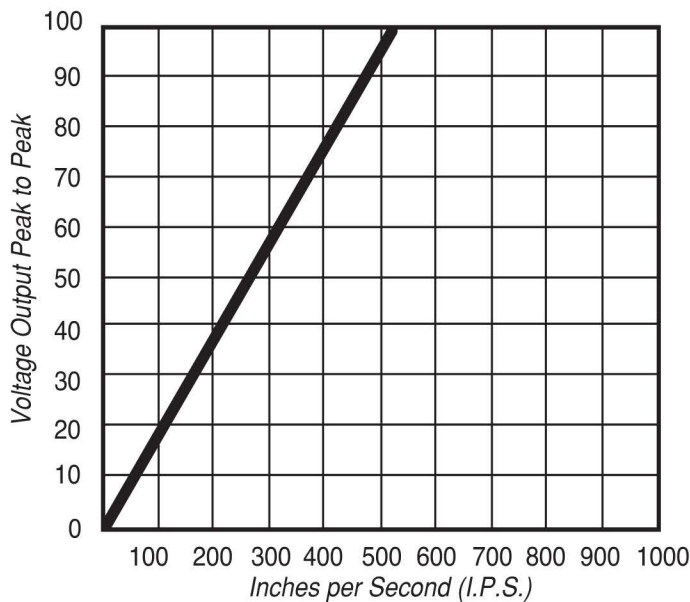


- A.** MP3298 and MP7906= 3 in. (76 mm)  
MP7905= 4.5 in. (114 mm)
- B.** MP3298= 5/8-18 UNF-2A  
MP7905 and MP7906= 3/4-16 UNF-2A

- 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 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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5311 S 122ND EAST AVENUE  
TULSA, OK 74146

**ENOVATION CONTROLS – SAN ANTONIO OFFICE**  
5757 FARINON DRIVE  
SAN ANTONIO, TX 78249

**ENOVATION CONTROLS – HOUSTON OFFICE**  
105 RANDON DYER RD  
ROSENBERG, TX 77471

**ENOVATION CONTROLS LTD. – UNITED KINGDOM**  
CHURCH ROAD LAVERSTOCK  
SALISBURY SP1 1QZ UK

**MURPHY ECONTROLS TECHNOLOGIES (HANGZHOU) CO, LTD.**  
77 23RD STREET  
HANGZHOU ECONOMIC & TECHNOLOGICAL DEVELOPMENT AREA  
HANGZHOU, ZHEJIANG 310018 CHINA

### DOMESTIC SALES & SUPPORT

**ECONTROLS PRODUCTS**  
PHONE: 210 495 9772  
FAX: 210 495 9791  
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**MURPHY INDUSTRIAL PANEL DIVISION**  
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FAX: 918 317 4124  
EMAIL: [IPDSALES@FWMURPHY.COM](mailto:IPDSALES@FWMURPHY.COM)

### INTERNATIONAL SALES & SUPPORT

**UNITED KINGDOM**  
PHONE: +44 1722 410055  
FAX: +44 1722 410088  
EMAIL: [SALES@ENOVATIONCONTROLS.EU](mailto:SALES@ENOVATIONCONTROLS.EU)  
[WWW.FWMURPHY.EU](http://WWW.FWMURPHY.EU)

**CHINA**  
PHONE: +86 21 6237 5885  
FAX: +86 21 6237 5887  
EMAIL: [APSALES@FWMURPHY.COM](mailto:APSALES@FWMURPHY.COM)

**LATIN AMERICA & CARIBBEAN**  
PHONE: 918 317 2500  
EMAIL: [LASALES@FWMURPHY.COM](mailto:LASALES@FWMURPHY.COM)

**SOUTH KOREA**  
PHONE: +82 70 7951 4100  
EMAIL: [SKOREASALES@FWMURPHY.COM](mailto:SKOREASALES@FWMURPHY.COM)

**INDIA**  
PHONE: +91 91581 37633  
EMAIL: [INDIASALES@FWMURPHY.COM](mailto:INDIASALES@FWMURPHY.COM)



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