

MAGNETIC SPEED SENSORS

PRODUCT
INFORMATION
BULLETIN

PTI 3000

APRIL 1999
MPC

INTRODUCTION

The magnetic speed sensor indicates when ring gear teeth, or other ferrous projections, pass the tip of the sensor. Electrical impulses are induced within the coil and sent to the speed control unit. The signal from the magnetic speed sensor, teeth per second (Hz.), is directly proportional to engine speed.

it touches a gear tooth, then back it out 3/4 of a turn and secure it with the locknut. Any ferrous gear may be used as long as the frequency and amplitude of the resulting signal meet the speed control unit specifications.

DESCRIPTION

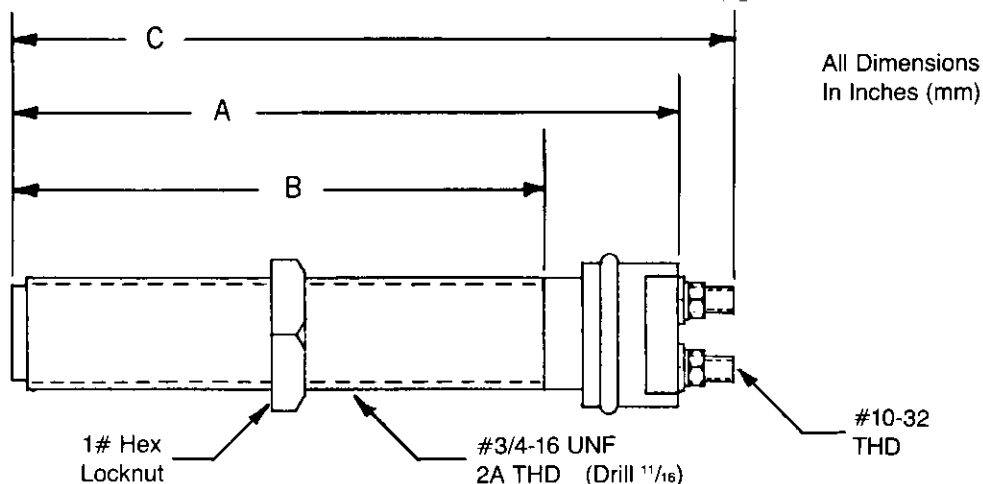
The magnetic speed sensor is mounted in the ring gear case or flywheel bell housing of the engine. The threaded hole for the speed sensor should be perpendicular to the centerline of the crankshaft and centered over the ring gear teeth. A spot face should be present to provide a flat surface on which to anchor the locknut. With the engine stopped, screw the speed sensor in until

The wire leads should be twisted for their entire length from the magnetic speed sensor to the control unit. The leads may need shielding if they are longer than 10 ft. (3 m), or if external interference is present.

Do not connect either of the speed sensor leads to anything but the speed control unit used. The shield should not be connected at the speed sensor end.

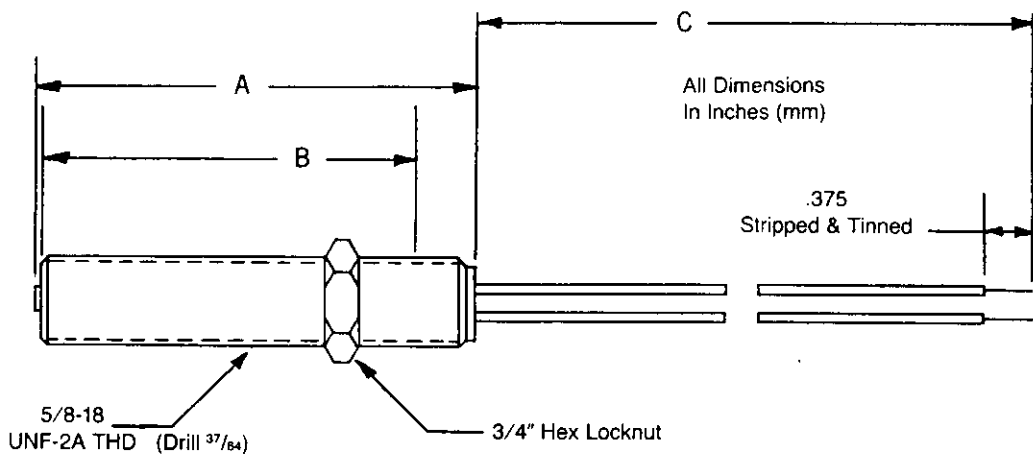
SPECIFICATIONS

| | |
|---|--|
| Dimensions | See Figure 1-4 |
| Proximity to gear teeth | .025 - .035 in. (.64 - .89 mm) |
| Temperature Range | -65° to +225° F (-55° to +105° C) |
| Output | 0.5 - 30 Volts RMS is recommended for input to control units (1 V RMS when cranking engine) |
| Resistance (Varies From Sensor to Sensor) | 30 - 1200 ohms |



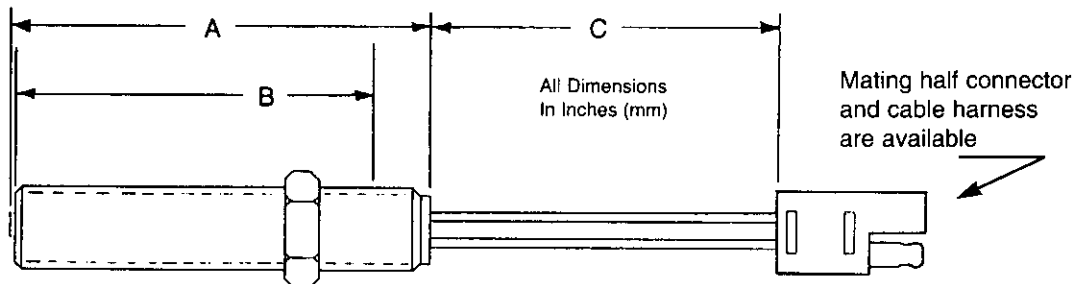
| GAC Part Number | Pickup Length A | Thread Length B | Overall Length C |
|-----------------|-----------------|-----------------|------------------|
| MSP 6718 | 4.375 (111) | 3.5 (89) | 4.71 (120) |

Figure 1 Magnetic Speed Sensor with Stud Terminals (Includes weather boot.)



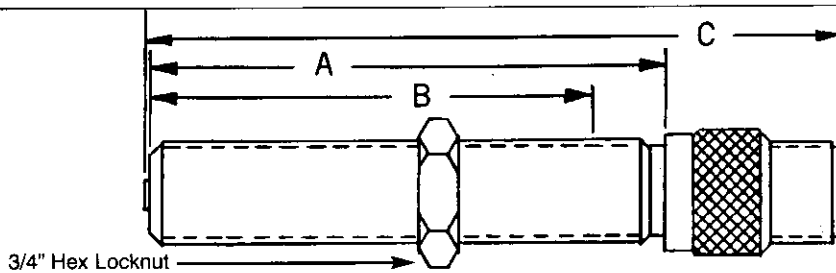
| GAC Part Number | Pickup Length A | Thread Length B | Lead Length C | Thread Size | Drill Size |
|-----------------|--------------------|--------------------|------------------|------------------|------------|
| MSP 675 | 3.125 (79) | 2.75 (70) | 7.00 (178) | 5/8-18 UNF-2A | 37/64 |
| MSP 676 | 5.0 (127) | 4.625 (118) | 12.00 (305) | 5/8-18 UNF-2A | 37/64 |
| MSP 6719 | 2.375 (60) | 2.00 (51) | 6.00 (152) | 5/8-18 UNF-2A | 37/64 |
| MSP 6720 | 3.875 (98) | 3.50 (89) | 4.500 (114) | 5/8-18 UNF-2A | 37/64 |
| MSP 6729 | 2.7 (69) | 2.25 (57) | 72.00 (1829) | 3/8-24 UNF-2A | .332 |
| MSP 6730 | 1.7 (43) | 1.25 (32) | 72.00 (1829) | 3/8-24 UNF-2A | .332 |
| MSP 6731 | 4.0 (102) | 3.55 (90) | 72.00 (1829) | 3/8-24 UNF-24 | .332 |

Figure 2 Magnetic Speed Sensor with Wire Leads



| GAC Part Number | Pickup Length A | Thread Length B | Lead Length C | Thread Size | Drill Size |
|-----------------|--------------------|--------------------|------------------|------------------|------------|
| MSP 6721 | 3.125 (79) | 2.75 (70) | 2.50 (64) | 5/8-18 UNF-2A | 37/64 |
| MSP 6723 | 3.125 (79) | 2.75 (70) | 2.50 (64) | M16x1.5 | 14mm |
| MSP 6724 | 4.00 (102) | 3.375 (86) | 2.50 (64) | 3/4-16 UNF-2A | 11/16 |

Figure 3 Magnetic Speed Sensor with Plug Connector



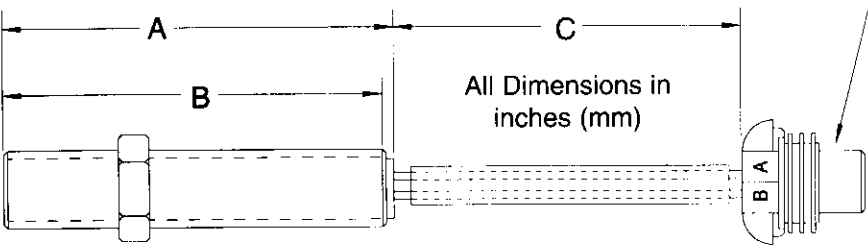
All Dimensions in inches (mm)

3/4" Hex Locknut

| GAC Part Number | Pickup Length A | Thread Length B | Overall Length C | Length of Connector | Thread Size | Drill Size |
|-----------------|-----------------|-----------------|------------------|---------------------|------------------|------------|
| MSP 677 | 3.125 (79) | 2.75 (70) | 4.25 (108) | | 5/8-18 UNF-2A | 37/64 |
| MSP 678 | 5.00 (127) | 4.75 (121) | 6.125 (156) | | 5/8-18 UNF-2A | 37/64 |
| MSP 679* | 3.125 (79) | 2.75 (70) | 4.25 (108) | 2.375 (60) | 5/8-18 UNF-2A | 37/64 |
| MSP 6710* | 5.00 (127) | 4.75 (121) | 6.125 (156) | 2.375 (60) | 5/8-18 UNF-2A | 37/64 |
| MSP 6714 | 3.125 (79) | 2.875 (73) | 4.25 (108) | M16x1.5 | | 14mm |
| MSP 6715* | 3.125 (79) | 2.875 (73) | 4.25 (108) | 2.375 (60) | M16x1.5 | 14mm |

*Magnetic Speed Sensors are with mating connector, cable clamp, and strain relief.

Figure 4 Magnetic Pickups with MIL Connector



All Dimensions in inches (mm)

PACKARD CONNECTOR

12052641 SHELL
12084200-L TERMINALS
12048087 SEALS

MATING HALF PACKARD CONNECTOR

12162000 SHELL
12045773 TERMINALS
12048086 SEALS

| GAC Part Number | Pickup Length A | Thread Length B | Overall Length C | Thread Size | Drill Size |
|-----------------|-----------------|-----------------|------------------|------------------|------------|
| MSP6728 | 3.125 (79) | 2.75 (70) | 6.5 (165) | 5/8-18 UNF-2A | 37/64 |
| MSP6728C* | 3.125 (79) | 2.75 (70) | 6.5 (165) | 5/8-18 UNF-2A | 37/64 |
| MSP6732 | 3.125 (79) | 2.75 (70) | 3** (76) | 5/8-18 UNF-2A | 37/64 |
| MSP6732C* | 3.125 (79) | 2.75 (70) | 3** (76) | 5/8-18 UNF-2A | 37/64 |
| MSP6733 | 3.125 (79) | 2.75 (70) | 6.5 (165) | 5/8-18 UNF-2A | 37/64 |
| MSP6733C* | 3.125 (79) | 2.75 (70) | 6.5 (165) | 5/8-18 UNF-2A | 37/64 |

* Magnetic Speed Sensors are with Mating Connector.

**MSP6732(C) has two in independent coils, therefore, it is designed with two separate cables of the same length.

Figure 5 Magnetic Speed Sensor with Packard Connector



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