



# service information

ADVISORY  
 BULLETIN

No. 99-14

Circulate to:  Sales Manager  Accounting  Service Manager  Technician  Parts Manager

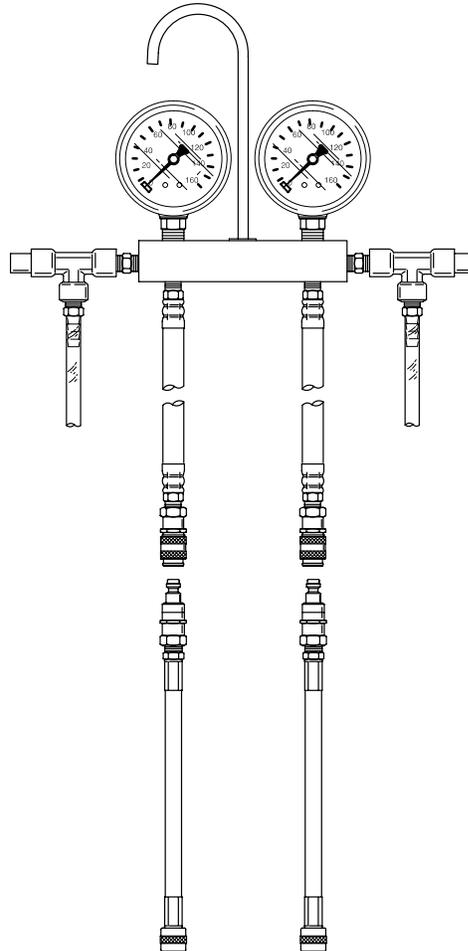
## New Service Tools

TWIN PRESSURE GAUGE	91-852087A3
ADAPTER KIT PRESSURE GAUGE	91-803804A2
PRESSURE RELEASE VALVE	91-804706
O-RING PRESSURE GAUGE	25-803803
SCHRADER VALVE TEE FITTING	22-849606
HARNESS TPS	91-859199
TEST HARNESS DIGITAL OPTIMAX	91-875233A2
TEST HARNESS DDT	91-875232T1
FLYWHEEL PULLER	91-849154T1
DDT CARTRIDGE	91-822608 6
DRIVESHAFT SEAL INSTALLER	91-858775A1
PROPELLER SHAFT SEAL INSTALLER	91-858776A1
BEARING CARRIER BEARING INSTALLER	91-858777A1
PINION BEARING RACE REMOVER	91-859749A1
FORWARD GEAR BEARING INSTALLER	91-877321A1
DIRECT VOLTAGE ADAPTER (DVA)	91-89045 1

## Twin Pressure Gauge – P/N 91-852087A3

The latest version of twin pressure gauge used for OptiMax/DFI product, has improved smaller quick disconnects that seal/close at both ends when disconnected. This will prevent fuel leakage, eliminating the need for a one way flow valve used on the earlier A2 version.

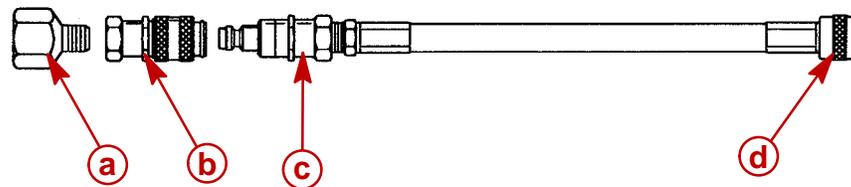
**P/N 91-852087A2 – – – – Supersedes to – – – – P/N 91-852087A3**



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## Adapter Kit – P/N 91-803804A2

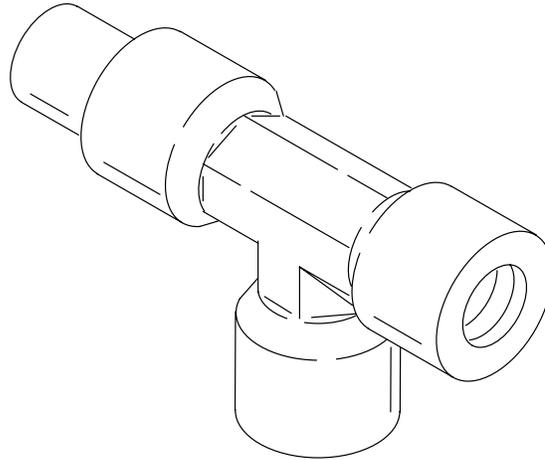
This new adapter kit will up-grade earlier twin pressure gauge P/N 91-852087A1 or A2 versions to the A3 version. The adapter kit **P/N 91-803804A2** will supersede both of the old adapter kits (P/N 91-803805A1 and 91-803804A1) shown on Service Bulletin 98-19. Two adapter kits are required to up-grade the twin gauge and a single adapter kit may be used to up-grade the single EFI fuel pressure gauge P/N 91-16850, A1/A2/A3/A5/ & A7.



- a** - 1/2 to 1/4" Adapter (if required)
- b** - Female Quick Disconnect
- c** - Male Quick Disconnect
- d** - Screw on Schrader

## Pressure Release Valve – P/N 91-804706

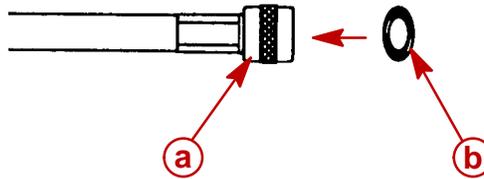
Service replacement pressure release valve is now available, for the twin pressure gauge P/N 91-852087A1/A2/A3 or the single pressure gauge P/N 91-16850, A1/ A2/A3/A5/ & A7 versions.



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## O-Ring – P/N 25-803803

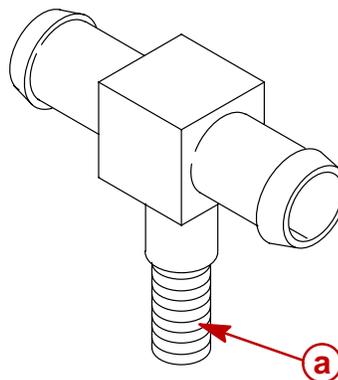
Replacement O-ring for screw on style schrader valve gauge connections. Seals off pressure between the schrader valve on engine and gauge connection.



- a** - Gauge Connection
- b** - O-Ring

## Schrader Valve Tee – P/N 22-849606

Used to check fuel pressure, **when** used with fuel pressure gauges that use a screw on schrader valve connector.

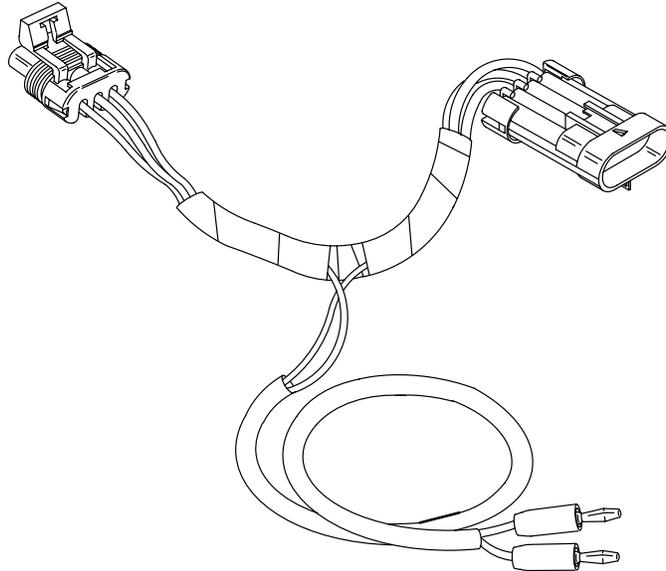


- a** - Schrader Valve Connection

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## Harness TPS – P/N 91-859199

This harness is required to set the Throttle Position Sensor (TPS) on the 2000 model year 2.5 Litre EFI engines (150/175/200 HP). New model engines have a three pin water-tight connectors.



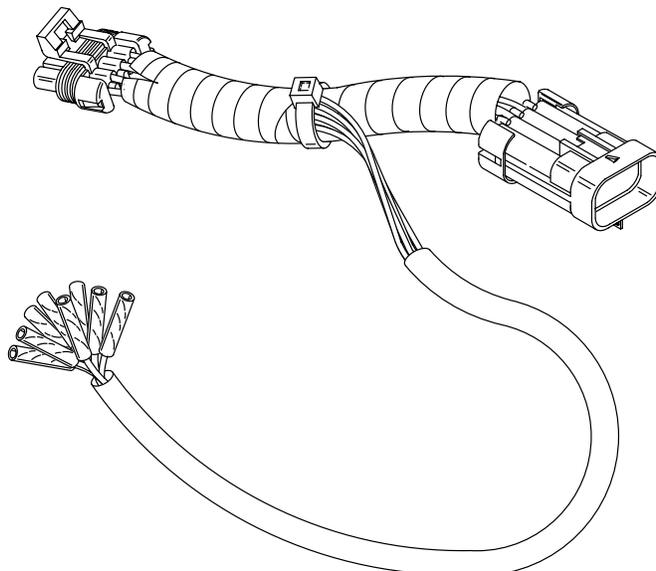
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## Test Harness Digital OptiMax Sensors – P/N 91-875233A2

This harness will allow for a quick and convenient way to test many of the Digital Optimax sensors. The harness “Tees” into the digital harness connector under the engine cowl. Using a standard Ohms/Volt meter the sensors can be tested for proper operation.

Sensors tested using harness P/N 91-875233A2:

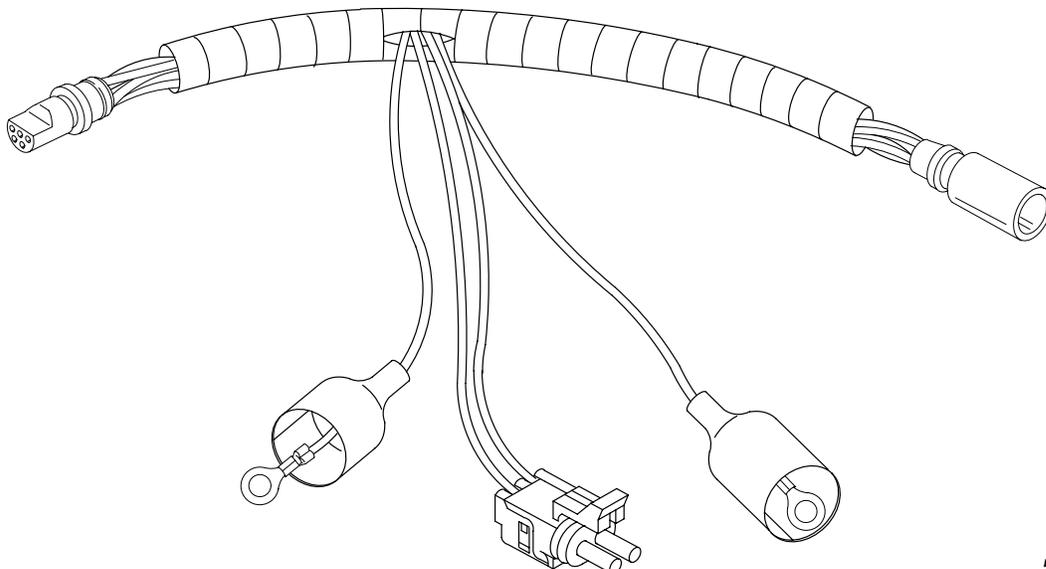
- Power trim angle
- Fuel tank level
- Sensor power supply
- Speed-o-meter pressure
- Oil tank level
- Paddle wheel frequency



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## Test Harness DDT – P/N 91-875232T1

This test harness allows connection of the Digital Diagnostic Terminal (DDT) under the dashboard to the instrument/helm end of the control harness. Connects to the 5 pin tachometer harness outlet. This will allow the technician to remain in the driver seat while viewing engine run information. At this time can only be used with 2000 model year Digital OptiMax engines.

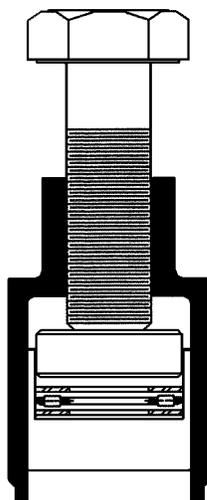


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## New Flywheel Puller – P/N 91-849154T1

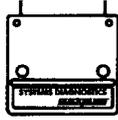
**Application:** For removal of flywheels with a inside thread of 1-1/2" - 16 UN-2A

This improved tool incorporates an inner thrust bearing, which will allow more torque to be applied during removal of the flywheel. This tool may be used in place of flywheel puller P/N 91-73687A1.



## DDT Cartridge – P/N 91-822608 6

New cartridge **P/N 91-822608 6**, software version (5.0), is now available for the Digital Diagnostic Terminal (DDT). Cartridge will include new reference manual **P/N 90-825159 4**. New cartridge will supersede P/N 91-822608 5.



What's new for cartridge version 5.0 – Outboard:

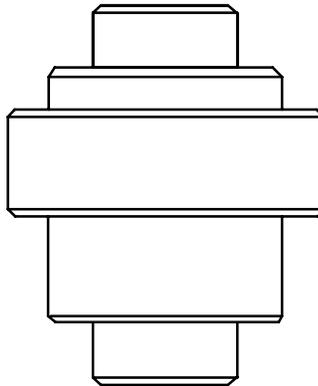
- Four Stroke 2 and 3 cylinder Outboard ECMs
- Engine Guardian protection system 2000 model year Optimax.
- Available Engine Power % for Optimax 2000 model year
- Two new TPS fault codes have been added to aid in troubleshooting and repair for 2000 model year OptiMax.

## GC Tools – 91-858775A1, 858776A1, 858777A1

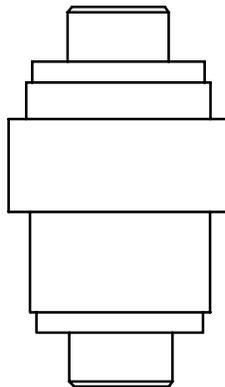
These various gearcase tools are listed in the latest 15 Big Foot (4S) service manual and will be added to the 20/25 (2S) service manual at the next revision.

**Application:** 2-Stroke Models  
20/25

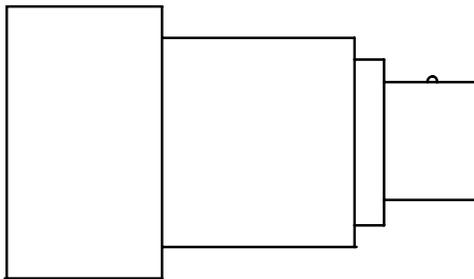
4-Stroke Models  
15 Big Foot



**91-858775A1 Driveshaft Seal Installation Tool**



**91-858776A1 Propeller Shaft Seal Installation Tool**

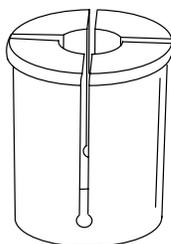


**91-858777A1 Bearing Carrier Prop Shaft Bearing Installation Tool**

## Pinion Bearing Race Removal Tool – P/N 91-859749A1

Previous two piece and wire spring hook design is replaced by the one piece design. The new race removal tool is similar in design to the 20/25 (2S) and 15 Big Foot (4S) removal tool. The new tool continues to use the 91-13779 driver rod.

**Application:** 2-Stroke Models  
 30/40 (2 Cyl.)  
 40/50 (3 Cyl.)  
 4-Stroke Models  
 30/40 (3 Cyl.)  
 45/50 (4 Cyl.)

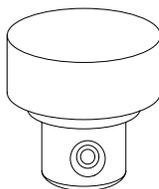


**91-859749A1 Pinion Bearing Race Removal Tool**

## Forward Gear Needle Bearing Installer – P/N 91-877321A1

Tool installs forward gear needle bearing to a depth of 0.200 in. (5.08 mm). The specially designed shoulder prevents damage to the thin shelled bearing during installation.

**Application:** 2-Stroke models  
 60 (3 cylinder) Big Foot – Mariner/Mercury  
 75/90 (3 cylinder) – Mariner/Mercury  
 100/115/125 (4 cylinder) – Mariner/Mercury  
 3.0 Litre, 225/250 Mariner/Mercury  
 4-Stroke models  
 40 Big Foot (3 cylinder) – Mariner/Mercury  
 50 Big Foot (4 cylinder) – Mariner/Mercury

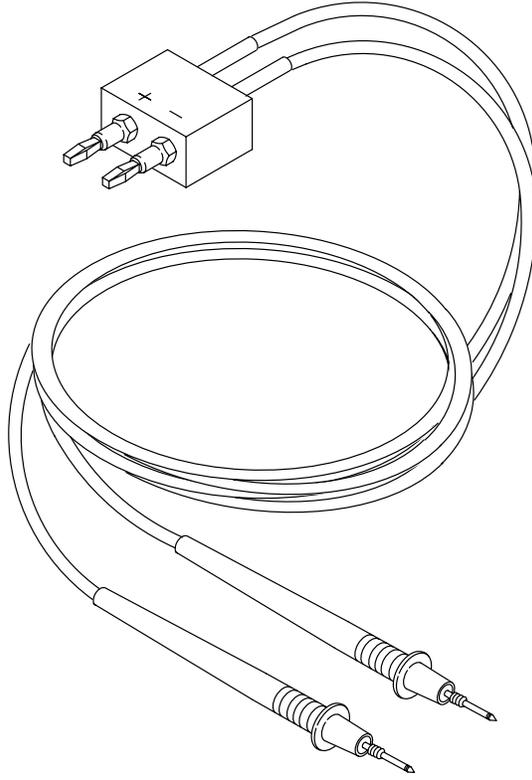


**91-877321A1 Forward Gear Needle Bearing Installer**

## Direct Voltage Adapter (DVA) – P/N 91-89045 1

Adapter is smaller, plugs directly into the meter, and has “sealed-in” leads.

**Application:** All Models



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