

TECUMSEH

Service Tools



TABLE OF CONTENTS

670195E Engine Tool Kit.....	Page 2
Tool Kit Description.....	Pages 3-4
General Repair Tools.....	Pages 4-7
Measuring Instruments.....	Page 8-9
4 Cycle Tools.....	Pages 10-11
Rebushing Drivers.....	Page 12
2 Cycle Tools.....	Pages 13-14
Outboard Engine Tools.....	Page 14
670254A Peerless Tool Kit.....	Page 15
How To Use A Seal Protector and Installer.....	Page 16
How To Build An Engine Repair Stand.....	Page 17
Tool Order Form.....	Pages 18-19

TOOL KIT 670195E



670305
STRAP WRENCH



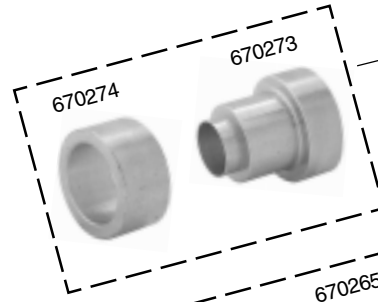
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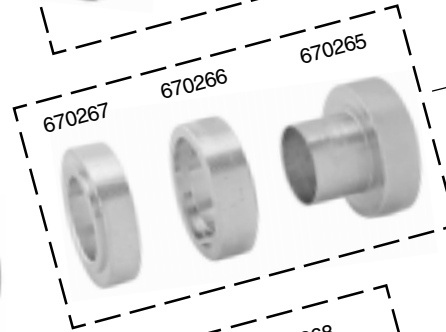
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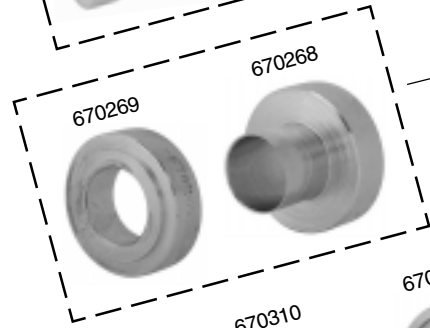


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670292



670269

670268

670293



670309



670277



670262



670261



670260



670329



670314



670337



670336



670327A



670310



670308



670169



670103



670335



670330



670335



670310



670308



670306
FLYWHEEL
PULLER



670315A
VALVE SPRING COMPRESSOR
FOR OVM, OVXL 120-125, OHV 11-17

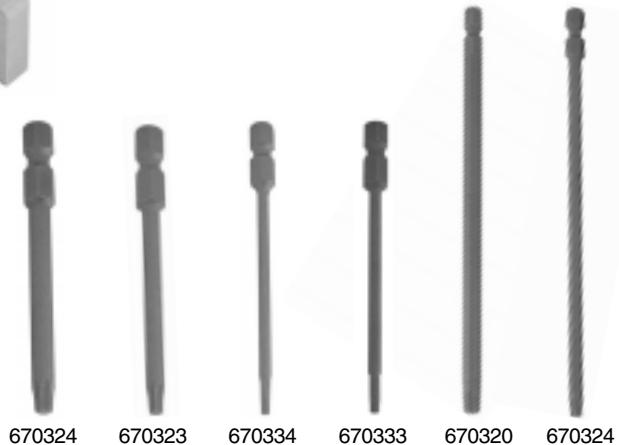


670299
FLYWHEEL
PULLER



670297
AIR GAP GAUGE
.0125

670321
AIR GAP GAUGE
.030



670324

670323

670334

670333

670320

670324

TOOL KIT 670195E
All Tools Listed Below Can Also Be Purchased Individually

TOOL NUMBER	DESCRIPTION	USE ON
670103	Flywheel knockoff	7/16 " x 20 thread
670169	Flywheel knockoff	1/2 " x 20 thread
670314	Flywheel knockoff	5/8" x 20 thread
670329	Flywheel knockoff	3/4" x 16 thread
670305	Flywheel strap wrench	All Tecumseh engines
670306	Flywheel puller	All Tecumseh engines (except TC)
670297	Air gap gauge .0125	Set air gap on external ignition (except some TC's)
670260	Seal protector	PTO & Magneto w/dia. of 1.187"-1.875" (30.149mm - 47.625mm) HH80-120, VH80-120, OH120-180, VM70-100, HM70-100
670261	Seal protector	PTO & Magneto w/dia. of .811"-.815" (20.599mm - 20.70mm) OHH45-65, OHSK55-70, All LEV External ignition lightweight engines
670262	Seal protector	PTO & Magneto w/dia. of .749"-.750" (19.024mm - 19.050mm) Standard ignition lightweight engines
670308	Seal Adaptor	PTO & Magneto on HM70-100, TVM170-220, OVM120, TVXL195-220, HMSK100, w/shaft dia. of 1.3745"-1.3750" (34.912mm - 34.925mm)
670309	Seal Protector	PTO & Magneto on HM70-100, TVM170-220, OVM120, TVXL195-220, HMSK100, w/shaft dia. of 1.3745"-1.3750" (34.912mm - 34.925mm)
670310	Seal Protector / Installer	PTO & Magneto on HM70-100, TVM170-220, OVM120, TVXL195-220, HMSK100, w/shaft dia. of 1.3745"-1.3750" (34.912mm - 34.925mm)
670263	Seal protector driver	Oil seal on extended camshaft medium frame engines w/dia. of .6248"-.6253" (15.869mm - 15.882mm) Extended 5/8" camshaft medium frame engines
670264	Seal protector driver	Oil seal on 1/2" extended camshaft small frame engines w/dia. of .4998"-.5001" (12.694mm - 12.702mm)
670272	Seal driver	Used with all oil seal installers
670277	Seal protector	Oil seal on 8-1/2:1 1/2" shaft on light weight vertical crankshaft engines
670292	Seal protector & installer assy.	Includes 670265, 670266, & 670267 I.D. 1.002", 1.052" and 1.050" (25.450mm, 26.720mm, 26.670mm) for V70, VM70-100, H70, HM70-100, V50-70, H50-70, HS40-50, LAV40-50, TVS105-120, TNT120, LAV80-120
670293	Seal protector & installer assy.	Includes 670268 & 670269 I.D. .875" - .935" (22.225mm - 23.749mm) H30-35, LAV30-35, TNT100, TVS75-90, ECV90-100
670315A	Valve spring compressor	For OVM, OVXL120-125, OHV 11-17 engines
670330	Seal protector- installer	OHV13.5-17 w/ 1-1/2" extended camshaft
670335	Seal protector - installer	HM70-100 PTO & Magneto w/dia. of 1.1870"-1.1875" (30.149mm - 30.162mm)



Tools Continued On Next Page

TOOL KIT 670195E [continued]
All Tools Listed Below Can Also Be Purchased Individually

TOOL NUMBER	DESCRIPTION	USE ON
670336	Seal installer- adapter	HM70-100 w/ 1-1/8" crankshaft
670337	Seal installer w/ ball bearing, PTO end Also for flywheel end	OHH/OHSK engines, use w/ tool 670265 Use tool 670266
670299	Flywheel puller	TC engines only
670321	Air gap gauge .030"	TC non-rotary engines only
670320	Torx 30 bit	2 and 4 cycle engines - Minimum length 6 inches (152 mm)
670333	Torx 10 bit	2 and 4 cycle engines - Minimum length 3 inches (76 mm)
670334	Torx 8 bit	2 and 4 cycle engines - Minimum length 3 inches (76 mm)
670323	Torx 15 bit	2 and 4 cycle engines - Minimum length 2-3/4 inches (70mm)
670324	Torx 20 bit	2 and 4 cycle engines - Minimum length

NOTE: Due to shaft bearing diameter changes in the last 20 years, some model engines may have 2 different diameters requiring a different size seal protector or installer.

GENERAL REPAIR TOOLS

	Part Number	Description	Use on:
	670103	Flywheel Knockoff	7/16" x 20 Thread
	670169	Flywheel Knockoff	1/2" x 20 Thread
	670314	Flywheel Knockoff	5/8" x 20 Thread
	670329	Flywheel Knockoff	3/4" x 16 Thread
	670257	Torx E-6 Socket	Torx sockets and drivers needed for servicing 2 cycle and 4 cycle engines.
	670307	Torx E-8 Socket	
	670339	Torx E-5 Socket	
	670332	Torx 25H Socket	Special tamper-proof torx socket for 1800/VST bellows cover.
	670319	Torx 25	Minimum length of 6" (152 mm)
670320	Torx 30	Minimum length of 6" (152 mm)	
670323	Torx 15	Minimum length of 2-3/4" (70 mm)	
670324	Torx 20	Minimum length of 2-3/4" (70 mm)	
670333	Torx 10	Minimum length of 3" (76 mm)	
670334	Torx 8	Minimum length of 3" (76 mm)	

GENERAL REPAIR TOOLS



670366: Ignition/Spark tester. Can be used in series with the spark plug on a running engine or connected to ground for a standard cranking test.



670349: Digital Multimeter. The meter reads: Ohms, 20-ampere current draw, Transistor/Diode tests, Volts and mV scales. It comes with one thermocouple wire standard and will read both Fahrenheit and Celsius.

Measures:

- DC Volt
- AC Volt
- DC Amps
- AC Amps
- OHMS Resistance
- Diode Test
- hFE (Transistor)
- Battery
- Temperature
- Frequency (Hz)
- Capacitance



670358: Compression tester. Fits all-standard plug threads. Reads in PSI and bars.



670364A: Crankcase Vacuum / Oil Pressure and Compression Tester. This digital read out attachment can be used with any mV scale equipped DVOM (digital volt ohmmeter). Vacuum reads out in inches of water. The pressure side reads out in PSI for use in oil pressure testing.

- Oil Fill Tube Adapter
- Spin On Oil Fill Adapter (Part #670369)
- Compression Adapter Line
- Convenient Storage Case



670369: Oil Filter Adapter. This adapter uses a standard fitting which allows it to be used with existing pressure test kits. Fits standard spin on oil filter threads with a 3/4-16 UNS thread. Can be used with 670364 kit or existing pressure gauges.



670363: 0-600 in/lb. (0-67.8 Nm) 3/8" drive. Beam type torque wrench used for torquing connecting rod bolts, head bolts, etc.

GENERAL REPAIR TOOLS



670117: Piston ring expander. Wraps around the ring evenly distributing pressure to minimize risk of breakage. Works on 2 ¾ inches (69.85 mm) through 4 ¼ inches (107.95 mm).



670360: Flex hone. Equipped with 3-inch stones. Designed for cylinder diameters 2 inch (51 mm) through 7 inch (178 mm).



670346: Starter bendix ring removal tool. This has been designed to work on all electric starters. Saves time and reduces risk of injury.

The kit includes a special ring installation pliers and the removal tool.



670365: Tachometer (Inductive). Works on 2 and 4 cycle engines and single or two cylinder. Solid state ignitions only.



670216: Air Gap Gauge .0075. All Cast Iron.

670297: Air Gap Gauge .0125. Used on 2 and 4 cycle engines with external ignition, except some TC engines.

670321: Air Gap Gauge .030 TC non-rotary engines.



670377: Carburetor Tool. A multifunctional tool that allows the technician to perform many tasks on the carburetor during cleaning.

- Installs Seat
- Removes Seat
- Pilots Seat
- Removes Emulsion Tube
- Removes O-Rings
- Sets Float Height

GENERAL REPAIR TOOLS



670359: Standard band type piston ring compressor. Works on pistons from 2 inches (50.8 mm) through 5 inches (125 mm) diameters.



670306: Flywheel Puller. Aluminum Flywheels. All engines except TC's.



670156: Tachometer (Vibratach). Can be used with all engines. Measures 800 to 50,000 RPM's and 14 to 750 cycles (Hertz).



670305: Strap Wrench. Holds all flywheels for nut removal. Will also aid in removing oil filters.



670298: Alignment Pin. Compliance brake systems and other uses on engines for alignments.



670256: Spark Plug Gap Tool. Sets spark plug electrode gap. Measures both inches and millimeters.

MEASURING INSTRUMENTS

Micrometers: All micrometers are equipped with carbide tips and read to .0001" accuracy with ratchet thimble for constant force. Micrometers above 1 inch come with a calibration gauge and storage case.



670350: 0-1 inch



670351: 1-2 inch



670352: 2-3 inch



670353: 3-4 inch



670357: Telescoping gauge set. Measures ½ inch (12.7 mm) through 6 inch (152.4 mm). With some practice these can be as accurate as using a bore gauge.



670241: Dial Indicator. Makes point ignition timing easier, eliminating the need to remove the cylinder head. Special extended reach tip.



670361: Feeler gauge set. Equipped with both narrow and wide blades. The set ranges from .004 inch (.102 mm) through .040 inch (1.02 mm).

MEASURING INSTRUMENTS



670356: Small Hole Gauge. Used for measuring inside small holes such as valve guides. Diameter range from .125 inch (3.175 mm) through .500 inch (12.75 mm).



670340: Pressure Test Kit. For testing of carburetor inlet needle pop-off, transmission sealing and cylinder leak down. The kit includes a primary pressure regulator, low pressure gauge with pressure release valve, hose and adaptors.








670345: Low Pressure Adapter Kit. This kit will enhance a single purpose leak down tester to allow the technician to perform carburetor inlet needle pop off and transmission sealing tests. The kit includes a low pressure gauge with pressure relief valve, a transaxle adaptor plug and hardware.









670368: Dial Vernier. Six-inch dial vernier caliper reads out in .001 inch accuracy. Comes with storage case.

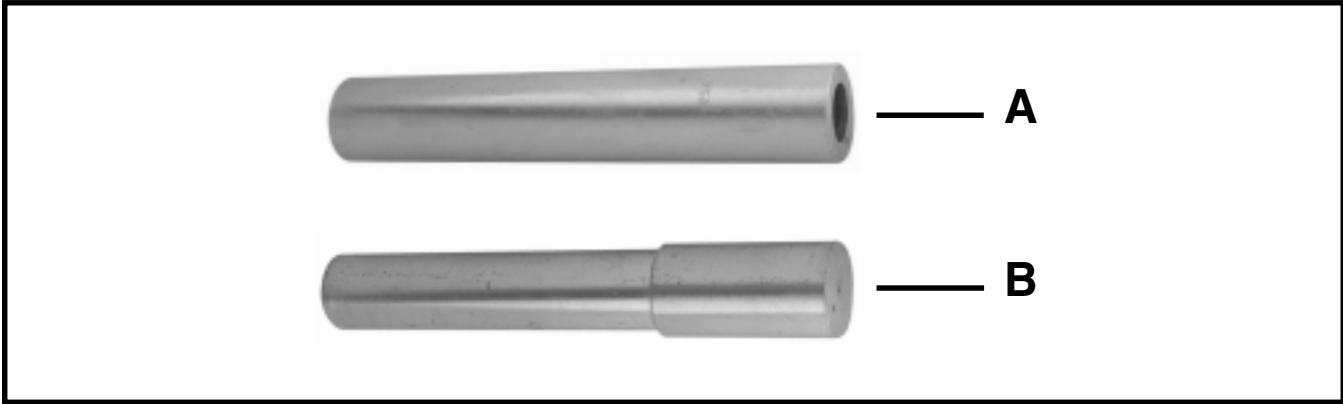
4 CYCLE TOOLS

	Part Number	Description	Use on:
	670154	Valve Lapping Tool	All four cycle engines. Used to check seat contact only.
	670315A	Valve Spring Compressor Tool	OVM, OVXL120,125, OHV12,12.5, 13, 17.5 TVT691, 18-22
	670237A	Valve Spring Compressor Tool	OH120 - 180 (Cast Iron Engine)
	670328	Valve Guide Reamer (Exhaust)	OVRM40-50 to obtain .2787"/.2797" (7.078mm/ 7.104mm) oversize
	670283	Valve Guide Reamer	Small frame 4 cycle engines to obtain .2807"/.2817" (7.129mm/7.155mm) oversize
	670284	Valve Guide Reamer	Medium and Large frame 4 cycle engines to obtain .3432"/.3442" (8.717mm/ 8.742mm) oversize
	670287	Oil Seal Remover (I.D. .880") (22.34mm)	PTO end w/dia. of .8735" - .8740" (22.186mm - 22.199mm) for most H25-35, LAV30-35, ECV90-100, TNT100, TVS75
	670288	Oil Seal Remover (I.D. .755") (19.18mm)	PTO & Magneto w/dia. of .7495" - .7500" (19.037mm - 19.05mm) for most H25-35, TVS, TNT, ECH, ECV w/external ignition
	670289	Oil Seal Remover (I.D. .817") (20.75mm)	Magneto end w/dia. of .8105" - .8110" (20.586mm - 20.599mm) for most V, H, VH, VH70, VM & HM70-100, HHM80
	670290	Oil Seal Remover (I.D. 1.003") (25.48mm)	Magneto end w/dia. of .9985" - 1.0003" (25.36mm - 25.48mm) engines without external ignition for most H25- 35, LAV30-35, TVS, TNT
	670312	Oil Seal Remover (I.D. 1.384")	Magneto end w/dia. of 1.3745" - 1.3750" (34.91mm - 34.93mm) for most HM70-100, TVM170-220, OVM120, OVXL120
	670278	Lag screw	All removers
	670331	Oil Seal Remover	1-1/2" OHV13.5 - 17 with I.D. of 1.504" (38.21mm) TVT18-22

4 CYCLE TOOLS






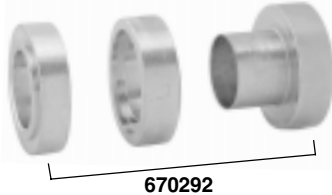
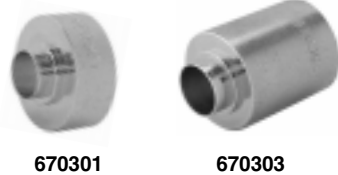

	Part Number	Description	Use on:
	670326	Speed Adjustment Tool. Adjusts high and idle RPM settings.	OVM, OVXL, OHV, OHH TVM220, TVS, OVRM
	670362	"C" Type Valve Spring Compressor	All 4 cycle engines except OVM and OVXL
	670347	Carbide blade, valve seat cutting system. Produced by Neway Mfg. (Neway kit LG3000). Set includes the small cutter heads designed for today's overhead valve engines.	All 4 cycle engines
	670348	Valve refacer. Carbide valve face cutting system. Designed for both 45° and 30° degree valve faces. Tool automatically adjusts to all valve stem diameters. Product is made by Neway as the GIZMATIC 3.	All 4 cycle engines
	670367	Reservoir tank. Extreme duty three gallon oil tank designed for use with our oil vacuum pump, part number 670354. The tank has a float shut-off in the outlet.	All 4 cycle engines
	670354	Oil Vacuum Pump. Pump can be used with the 670367 oil tank or with your own home made airtight system. The pump will do all the work while you perform other repairs or maintenance on the equipment. Saves time by not having to remove drain plugs.	All 4 cycle engines

REBUSHING DRIVERS








Tool Number	Description	Use with:
A. 670158	Bearing Driver	7/8" (22.225mm) Main Bearings where bushings are available
B. 670159	Bushing Driver	
A. 670162	Bearing Driver	1" (25.4mm) Main Bearings where bushings are available
B. 670163	Bushing Driver	
A. NONE		1-3/8" (34.925mm) HM70 100, TVM170 220 and OVM120. 1-3/16" (30.175mm) HM70, HM80 and HM100 Cylinder cover
B. 670311	Bushing Driver	
670317	Bushing Driver	




2 CYCLE TOOLS

	Tool Number	Description	Use on:
	670318	EGR Installation Tool	TVS and TVXL 840's
	670297	Air Gap Gauge .0125" (.318mm)	All 2 and 4 cycle engines with external ignition except TC300 non-rotary mower applications.
	670321	Air Gap Gauge .030 (.76mm)	Used on TC300 non-rotary mower applications.
	670299	Flywheel Puller	TC200 and TC300
	670300	Engine Holder	TC200 and TC300
	670325	Needle Setting Tool	Walbro WTA and WT diaphragm carburetors on TC's
	670292	Seal Protector Assembly I.D. 1.050" (26.67mm)	P.T.O. Oil Seal TVS and TVXL840
	670301	Seal Protector and Installer I.D. .501" (12.72mm)	Magneto Oil Seal TC200
	670303	Seal Protector and Installer I.D. .626" (15.90mm)	P.T.O. Oil Seal TC200
	670286	Oil Seal Remover I.D. .827" (21.00mm)	P.T.O. end of the single cylinder AV520, 600 and 817 outboards with the one piece oil seal.

2 CYCLE TOOLS

	Tool Number	Description	Use with:
	670302	Bearing Installer I.D. .500" (12.70mm)	Magneto bearing on TC200
	670304A	Bearing Installer I.D. .625" (15.88mm)	P.T.O. bearing on TC200
	670275	Seal Protector and Installer I.D. .678/.682" (17.22mm/17.31mm)	PTO end of AV520, 600, 817 Outboard engines
	670276	Seal Driver / Spacer	PTO end of AV520, 600 817 Outboard engines
	670281	Seal Pilot I.D. .714/.710" (18.13mm/18.03mm)	PTO end of AV520, 600 817 Outboard engines

OUTBOARD ENGINE TOOLS

	670238A	Timing Gauge	Solid State outboards, Type 640
	670243	Flywheel Advance Tool	Twin Cylinder Outboard
	670244	Stator Timing Tool	Twin Cylinder Outboard

PEERLESS TOOL KIT 670254A



**Tool
Number**

Description

Use with:

670203	Oil Seal Installer	Seal with 13/16" I.D.
670204	Bushing Driver and Installer	Bushing with 3/4" I.D.
670205	Bushing Driver and Installer	Bushing with 1-1/2" I.D.
670206	Oil Seal Protector	Seal with 1/2" I.D.
670207A	Bearing Driver and Installer	Bearing with 5/8" I.D.
670209	Oil Seal Installer	Seal with 21/32" I.D.
670210	Bearing Driver and Installer	Bearing with 1/2" I.D.
670211	Oil Seal Installer	Seal with 1/2" I.D.
670213	Bearing Driver and Installer	Bearing with 9/16" I.D.
670234	Bearing Driver and Installer	Bearing with 5/8" I.D.
670251	Bearing Installer	Input Bearing on 800 Series
670252	Bearing Driver	Bearing with 11/16" I.D. 800 Series
670263	Oil Seal Protector	Seal with 5/8" I.D.

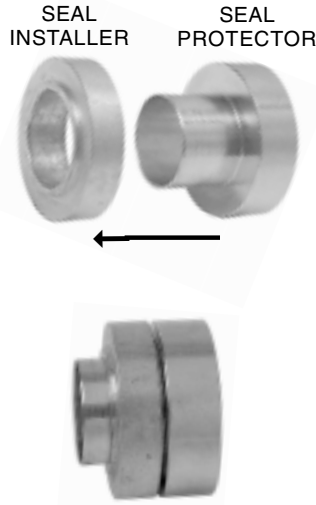
NOTE: All Tools listed above can also be purchased individually.



670342: VST Control Arm Puller: Removal of the control arm on the VST transaxle without this tool can cause severe internal damage. This one is suggested for any dealer working on VST models.

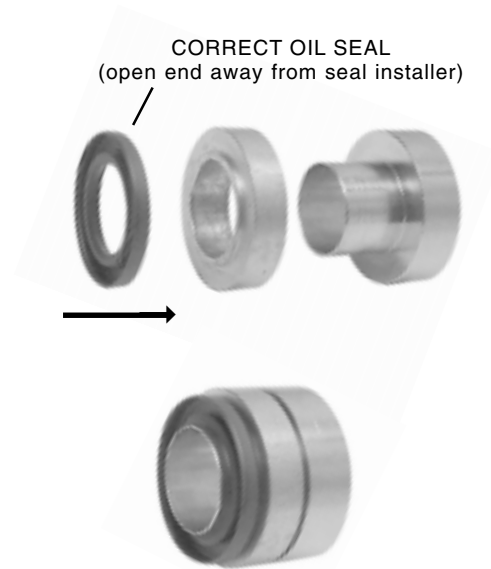
HOW TO REPLACE A SEAL USING A SEAL PROTECTOR AND SEAL INSTALLER

1



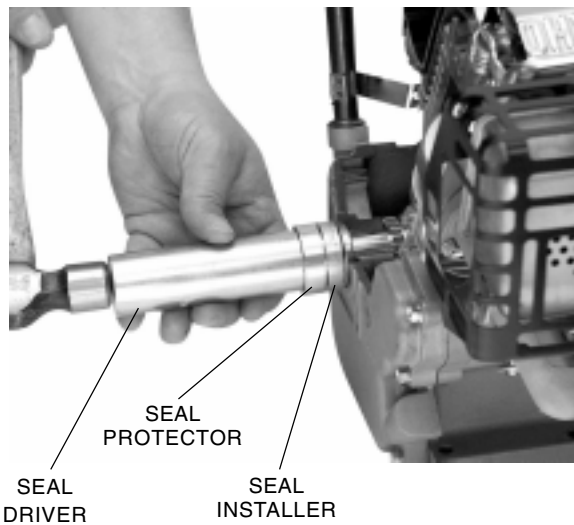
Place the seal protector inside the seal installer and push them together.

2



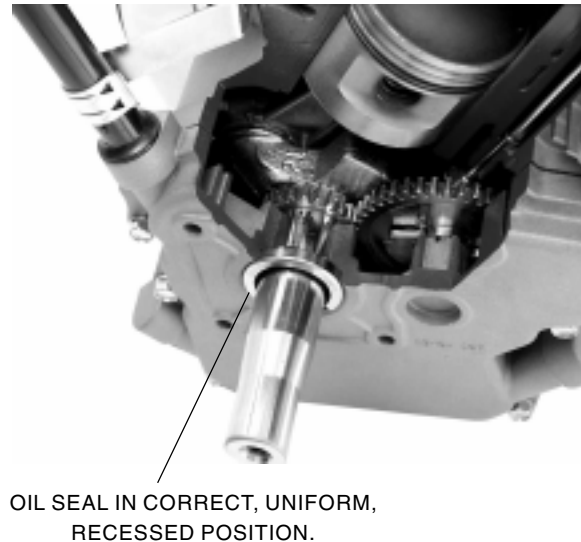
Slide the new oil seal onto the seal protector until it is flush with the seal installer.

3



Slide the assembly over the crankshaft, then place seal driver over the assembly (as shown above). Tap squarely on the driver with a hammer until the seal installer bottoms out on the engine.

4

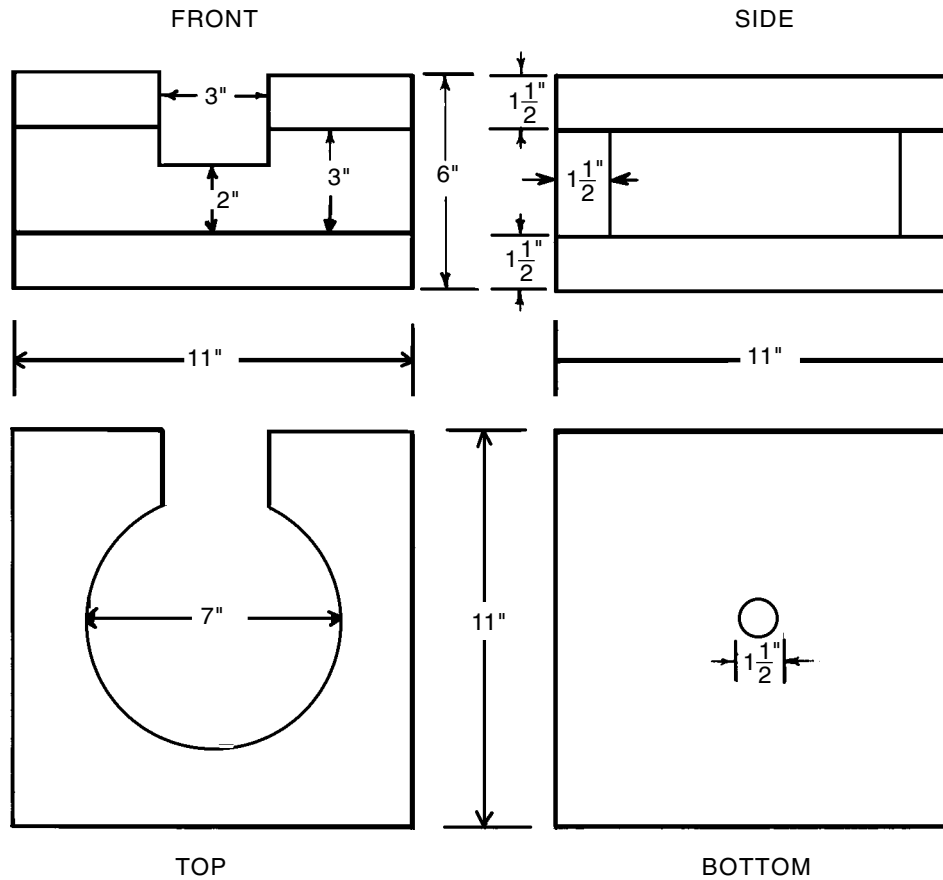
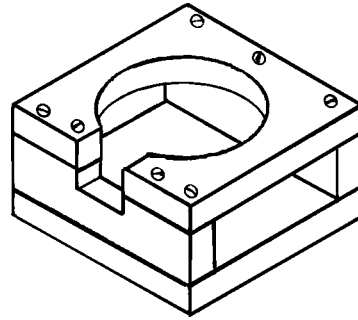


Remove the driver, protector and installer. The procedure is complete.

DO IT YOURSELF Engine Repair Stand

This engine stand should be made of hardwood and assembled with wood screws. This stand is NOT available from the factory.

- 1.5" = 38.1mm
- 2" = 50.8mm
- 3" = 76.2mm
- 6" = 152.4mm
- 7" = 177.8mm
- 11" = 279.4mm



TOOL SHOPPING LIST

(Purchase Tools through your Local Distributor)

QUANTITY

_____	670195E	Engine Tool Kit
_____	670260	* Seal Protector
_____	670261	* Seal Protector
_____	670262	* Seal Protector
_____	670308	* Oil Seal Adapter OVM120
_____	670309	* Seal Protector OVM120
_____	670310	* Seal Protector - Installer OVM120
_____	670263	* Seal Protector - Driver
_____	670264	* Seal Protector - Driver
_____	670272	* Seal Driver
_____	670277	* Seal Protector
_____	670292	* Seal Protector & Installer Assy.
_____	670293	* Seal Protector & Installer Assy.
_____	670330	* Seal Protector - Installer
_____	670335	* Seal Protector - Installer
_____	670336	* Seal Installer - Adapter
_____	670337	* Seal Installer w/ Ball Bearing, PTO End

General Repair Tools:

_____	670298	Alignment Pin
_____	670103	* Flywheel Knockoff Tool (7/16" x 20 thread)
_____	670169	* Knock-Off Small/Medium Frame (1/2" x 20 thread)
_____	670314	* Knock-Off Tool for OVM120
_____	670329	* Flywheel Knockoff Tool (3/4" x 16 thread)
_____	670257	Torx E6 Socket
_____	670307	Torx E8 Socket
_____	670339	Torx E5 Socket
_____	670319	Torx 25 Driver - 6 inch (152 mm)
_____	670320	* Torx 30 Driver - 6 inch (152 mm)
_____	670323	* Torx 15 Driver - 2-3/4 inch (70 mm)
_____	670324	* Torx 20 Driver - 2-3/4 inch (70 mm)
_____	670333	* Torx 10 Driver - 3 inch (76 mm)
_____	670334	* Torx 8 Driver - 3 inch (76 mm)

QUANTITY

_____	670366	Ignition/Spark Tester
_____	670349	Digital Multimeter
_____	670358	Compression Tester
_____	670361	Feeler Gauge Set
_____	670363	Torque Wrench 0-600 in/lb. (67.8 Nm) 3/8" drive
_____	670359	Piston Ring Compressor
_____	670117	Ring Expander
_____	670360	Flex Hone
_____	670346	Starter Bendix Ring Remover Tool
_____	670365	Tachometer (Inductive)
_____	670306	* Flywheel Puller
_____	670156	Tachometer (Vibratach) .0075" (.1905mm)
_____	670216	Air Gap Gauge .0125" (.3175mm)
_____	670297	* Air Gap Gauge .030" (.762mm)
_____	670321	* Air Gap Gauge Flywheel Strap Wrench
_____	670305	* Spark Plug Gap Tool
_____	670256	Carburetor Tool
_____	670377	

Measuring Instruments:

_____	670350	0-1" Micrometer
_____	670351	1-2" Micrometer
_____	670352	2-3" Micrometer
_____	670353	3-4" Micrometer
_____	670357	Telescoping Gauge Set
_____	670241	Dial Indicator
_____	670340	Pressure Test Kit
_____	670345	Low Pressure Adapter Kit
_____	670368	Dial Vernier
_____	670356	Small Hole Gauge
_____	670364A	Crankcase Vacuum
_____	670369	Oil Filter Adapter

4 Cycle Tools:

_____	670154	Valve Lapping Tool
_____	670315A	* OVM Valve Spring Compressor
_____	670237A	OH Valve Spring Compressor
_____	670328	Valve Guide Reamer (Exhaust)
_____	670283	Valve Guide Reamer
_____	670284	Valve Guide Reamer

NOTE: Items marked with * are in 670195E Kit

TOOL SHOPPING LIST

[continued]

(Purchase Tools through your Local Distributor)

QUANTITY

4 Cycle Tools (continued):

_____	670287	Oil Seal Remover 7/8" P.T.O.
_____	670288	Oil Seal Remover 1" and some 7/8" magneto end
_____	670289	Oil Seal Remover
_____	670290	Oil Seal Remover Magneto End, External Ignition
_____	670312	Oil Seal Remover 1-3/8" P.T.O. End Magneto End Bearings
_____	670278	Lag Screw
_____	670331	Oil Seal Remover
_____	670326	Speed Adjustment Tool
_____	670362	"C" Type Valve Spring Compressor
_____	670347	Valve Seat Cutting System
_____	670348	Valve Refacer
_____	670367	Reservoir Tank
_____	670354	Oil Vacuum Pump

2 Cycle Tools:

_____	670318	EGR Installation Tool
_____	670297	.0125" Air Gap Gauge
_____	670321	.030" Air Gap Gauge
_____	670299	* Flywheel Puller - TC
_____	670300	Engine Holder - TC
_____	670325	Needle Setting Tool (152 mm)
_____	670292	Seal Protector Assembly
_____	670301	Seal Protector - Installer - TC
_____	670303	Seal Protector - Installer - TC
_____	670286	Oil Seal Remover
_____	670302	Bearing Installer - TC
_____	670304A	Bearing Installer - TC
_____	670275	Seal Protector & Installer
_____	670276	Seal Driver/Spacer
_____	670281	Seal Pilot

Outboard Engine Tools:

_____	670238A	Timing Gauge
_____	670243	Flywheel Advance Tool
_____	670244	Stator Timing Tool

NOTE: Items marked with * are in 670195E Kit