Tecumseh Update 2002

TECUMSEH®

FACTORY TRAINING

featuring

LEAP™

LOW EMISSION, ADVANCED PERFORMANCE

Welcome to the 2002 Technician's Update Seminar presented by your Tecumseh Support Network representative.

The Tecumseh Education Department would like to welcome you to the 2002 Update Seminar, and a special welcome to our ever-growing number of Tecumseh Master Technicians (TMTs). We are excited to share with you some changes to our Engines and Motion-Drive systems as well as new and innovative products we will be rolling out during the 2002 season.

This year, we are providing more "hands-on" demonstrations to improve shop efficiency. These demonstrations will include some new tools that we trust will cut your diagnostic time to a minimum. With that in mind, this year's update will explain procedures on servicing the LTH hydrostatic transaxle, which is rapidly growing in popularity among Original Equipment Manufacturers.

One change this year is more "live" seminars through our TSN distributors instead of providing an Update Video. Everyone should now have an opportunity to come to a live Update Seminar to receive all of the update training. Please be sure to fill out the questionnaire to receive credit for attending this Update Seminar. We want to hear your opinions and make sure that our Nationwide Education Team is doing their best. ***Please submit the questionnaire to your meeting host.***

To provide you more training options , Tecumseh, in cooperation with the TSN, is adding more four-day factory schools in 2002. Tecumseh Master Technician certification tests are offered at the end of each four-day school. When you attend a Tecumseh factory school or a TSN school, you may be eligible for tuition reimbursement under Tecumseh's scholarship program, depending on the dealer agreement level of your dealership. Your dealership can only reap the full benefits of you as a TMT when you are employed by a Tecumseh *Premier* Service Dealer.

TMT TESTING AND BENEFITS

Tecumseh is now offering the most in-depth Master Technician certification test in our industry. This test covers all areas that are involved in normal daily repair of our products. The 2.5-hour test is comprised of the following:

- 100 questions- multiple choice, covering Four-cycle, Two-cycle, Warranty, Carburetion and Motion-Drive products.

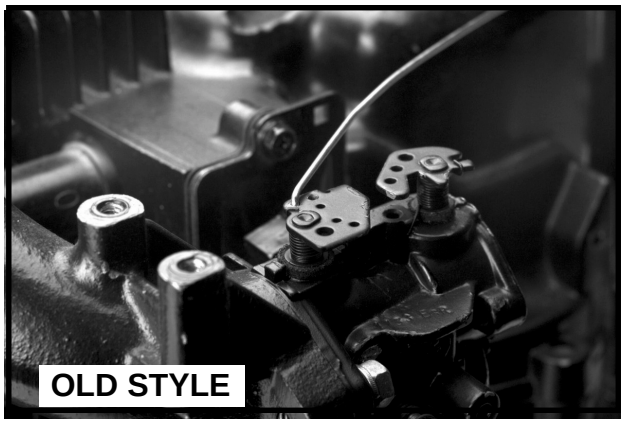
- The heavily weighted, failure analysis section of the test involves two failed products drawn at random, one Two or Four-Cycle Engine and one Motion-Drive. An ESA warranty claim form needs to be properly filled out listing your decision as to whether the repair is warrantable or not and listing all parts required for the repair. If the repair is warrantable, you will be responsible to sign the claim in the area previously reserved for your distributor representative. A working knowledge of the warranty claim form is a MUST.

- Once certified, you will receive a special code reserved for you alone, not a dealership. When you are employed by a Premier Dealer you are authorized to replace Engine, Short Block or Motion-Drive units without distributor approval. Please note that your TMT number and Dealer Code number must be in our records for warranty decisions to be accepted by Tecumseh.

- Re-certification is required every four years.

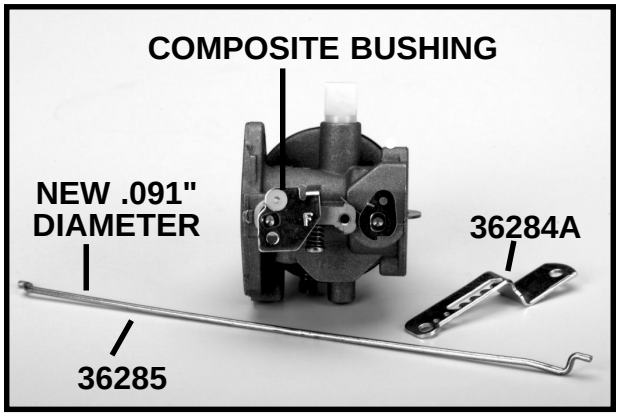
- Proof of holding the OPE Four-cycle certification must be supplied prior to taking the TMT test.

Contents



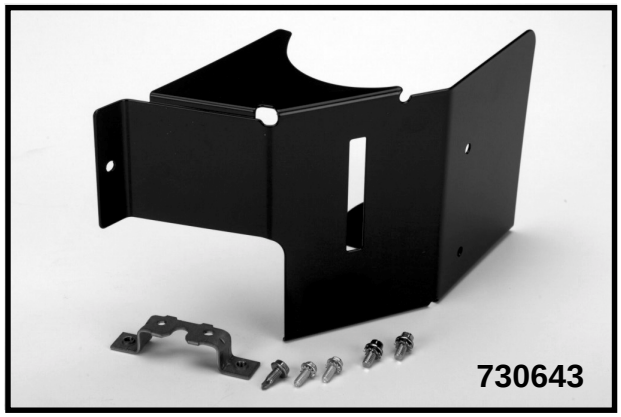
OVM/OHV Throttle Link Change

Beginning with the 1993 model year, we improved the throttle linkage on the OHV/OVM family of engines by reducing free play through installation of composite bushings. This change enhanced governor response between the carburetor and the governor arm. We have upgraded the service carburetor used on older models to the new style containing the bushing. If you replace the carburetor on models built prior to 1993, you will need to order the new link part # **36285** and the governor arm part # **36284A** to make the new style carburetor work properly.



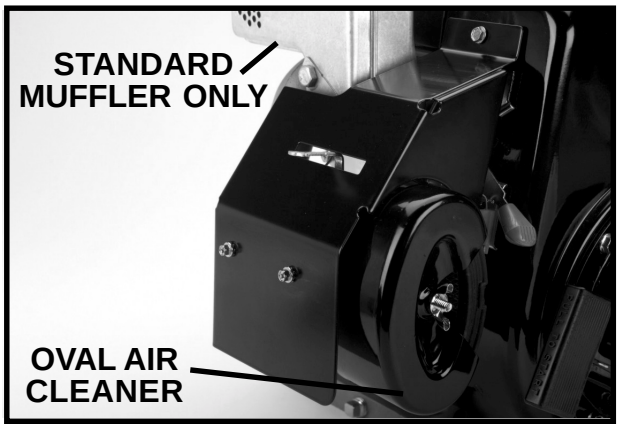
HM Series Climate Guard Retrofit Kit

Beginning with the 2002 model year, this feature will be required on all applications that can be operated in freezing temperatures such as generators and log splitters. This unique system is designed as an add on kit on earlier production units used to prevent carburetor icing on engines that use a standard muffler and oval air cleaner as shown. The Climate Guard Kit is designed to draw air from the muffler area. This pre-heated air prevents carburetor and breather icing on emissionized engines. Because this Climate Guard has been available to the OEM for several years, damage occurring from a frozen breather without this kit will not be considered warranty. The part number for the kit is # **730643** and is available through your local distributor.



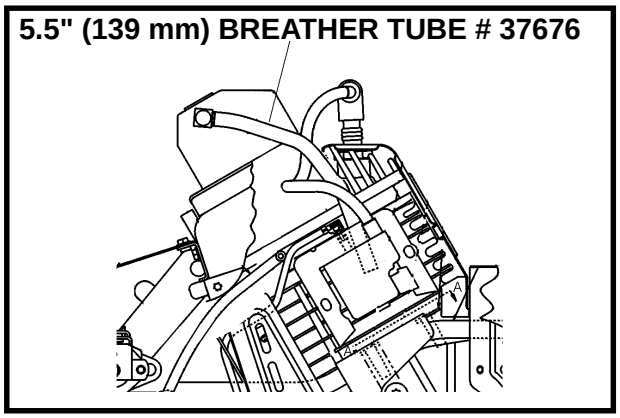
CAUTION: ***This system cannot be used on engines that have the # 37350 Low-Tone muffler. They require the original Climate Guard system part # 730630.***

NOTE: ***When applying this kit to earlier manufactured engines, it will be necessary to check for clearance of both throttle linkage and choke lever. Should interference be found, you may need to modify the shroud to obtain clearance.***



OHSK 50-70 New Service Breather Tube

The replacement breather tube for the OHSK 50-70 engines was changed from a cut-to-size tube to a pre-cut tube in July-01. This was done to prevent a kink or bend from occurring that might block the release of engine crankcase pressure and cause seal damage, excessive oil consumption or leakage. The kit, part **# 37676** now has the pre-cut tube 5.5 inches (139 mm) with routing instructions. These routing instructions are critical and must be followed if a OHSK50-70 needs a new breather tube.



Oil Vac Repair Kit

Over the past few years, the Tecumseh Oil Vac part **# 670354** has been an extremely popular tool with our service dealers. If however, they need to be serviced, we now have a repair kit available. The kit part # is **670380** and includes a new diaphragm, reeds, gaskets and "O" rings.

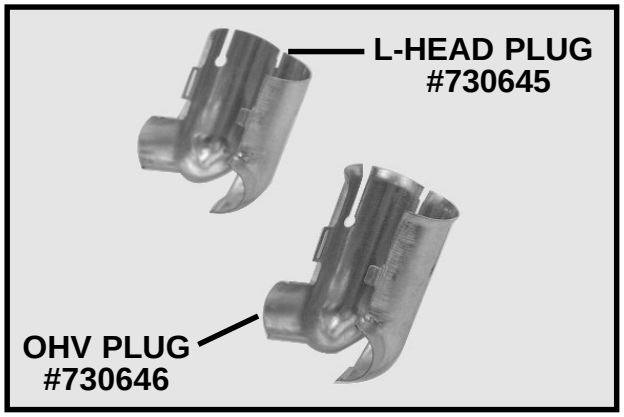
We have also added a **HOSE REPLACEMENT** kit part **# 670383.**

If needed, warranty repair should be performed by Thomas Industries. To locate your nearest service center, call **1-800-558-7721 or 920-457-4891.**

R.F.I. for U.S.

Last year we introduced Radio Frequency Interference (R.F.I.) shields for international products. We now have kits available for U.S. engines. They are part **# 730645** used on "L" head engines (short spark plugs) and **# 730646** for "OHV" engines (long spark plugs). Each kit includes a shield and sparklug boot. These kits have been available since 8-1-01.

Solid state ignition modules **# 34443C** and **# 35135A** have been upgraded to include spark plug boots that are compatible with the R.F.I. shields.

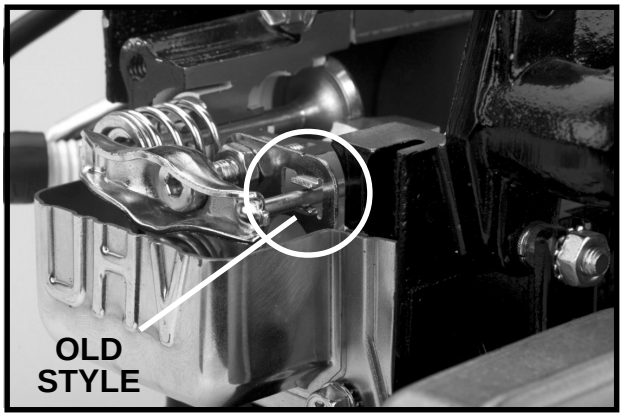


OHV Flywheel Washer Change

The split lock washer previously used on OHV135-175 and TVT engines between the flywheel and flywheel nut has been changed to a Belleville washer. This was done to reduce the possibility of damage to the thread on the crankshaft. The part number for the washer is **#651082**. The change should be apparent on all 2001 production. Always remember that the crown on the Belleville washer must face up or away from the flywheel when placing it between the flywheel and the nut. Proper torque and orientation of belleville washers is required during service. This holds the appropriate spring pressure on the flywheel down onto the tapered crankshaft.

OHH Guide Plate Change

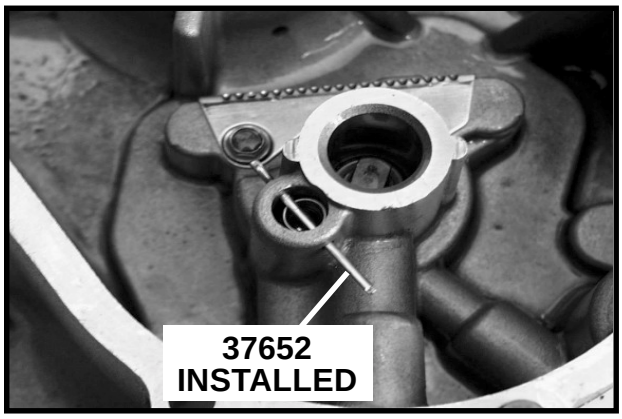
The guide plate used to direct the push rods on OHH and OVRM engines is being changed. They were previously assembled with the tabs facing up. The new plate improves push rod alignment during operation. You cannot just flip the old plate over because the fastener holes in the plateare offset. The new guide plates will have a location identity stamped on it. The words “side up” will appear on the plate and this stamping must face the cover. The part # **36649** does not change, and the new plate can be used where the old plate was. This plate has been in production on engines starting August 26, 2001.

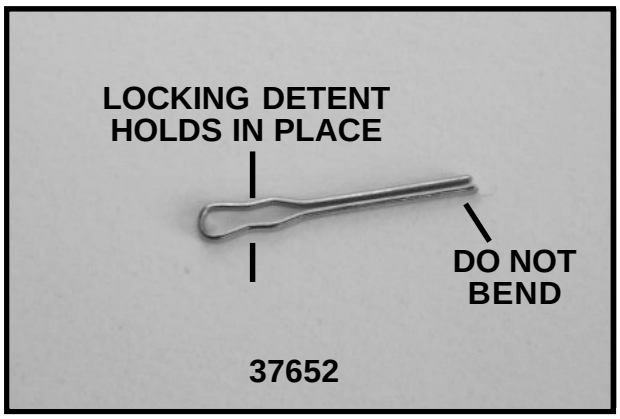


OHV 11-17 Oil Pressure Relief Change

The internal pressure relief system found on the OHV 11-17.5 hp engines that use oil filters are now more easily serviced. A cotter pin instead of a roll pin is now used to retain the check ball and spring. The roll pin was difficult to remove when cleaning this area. The cotter pin can be removed by hand or with a needle nose pliers and simply snaps into place due to the detent in the cotter pin. During service do not bend this cotter pin. The pin is part **# 37652** and does not need to have any particular orientation when assembled. This change has been basic since March of 2001 production.

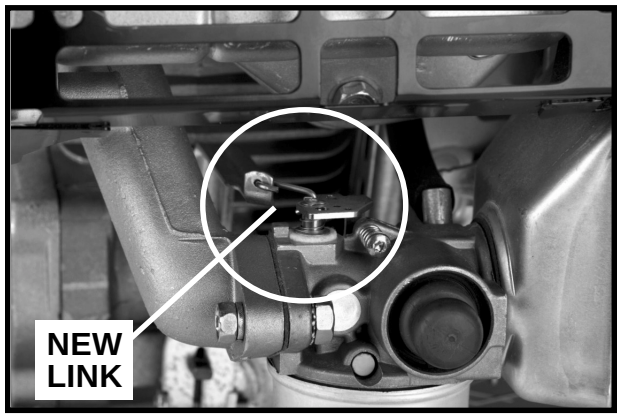
CAUTION: ***DO NOT bend the ends or they may contact the gears and be sheared off, introducing metal into the oil supply.***





OHH Link Material Change

The link that connects the governor to the throttle plate has under gone a material change. This part previously made of galvanized steel has been changed to stainless steel which gives it a more consistent dimensional control. This improvement will provide guaranteed smooth governor response. The part **# 36632** does not change.



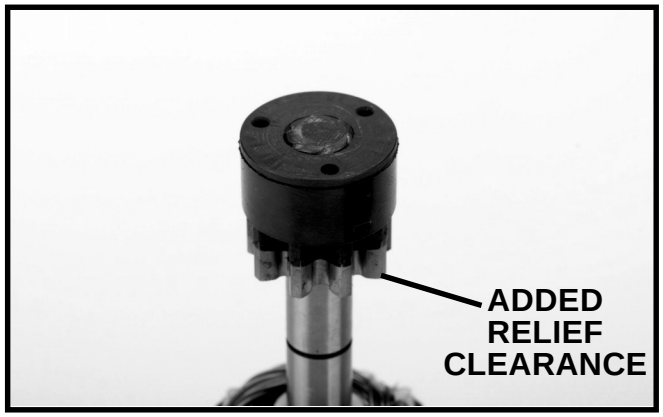
TVT Identification

Here is a little help for the dealer trying to figure out what horse power twin cylinder engine they have. All engine model numbers begin with the designation TVT 691 which stands for "Tecumseh Vertical Twin" 691 cc. The specification number sequence to horsepower rating is displayed to the right.

600000 series = 18 hp
600100 series = 18.5hp
600200 series = 19 hp
600400 series = 20 hp
600600 series = 21 hp
600800 series = 22 hp

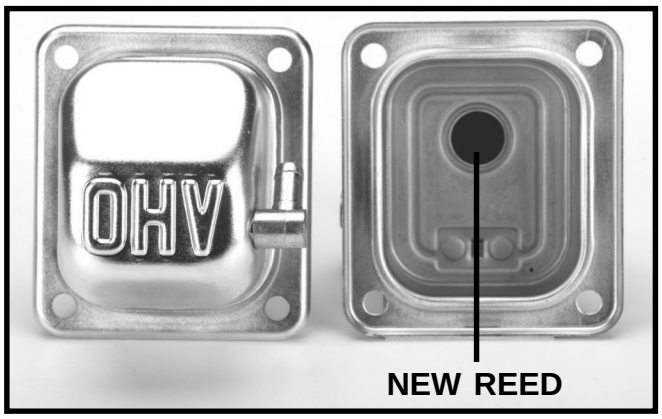
OHH/OHSK 50-70 Starter Pinion

There have been changes made to the 120 Volt A.C. and the 12 Volt D.C. starters used on these engines. The starter pinion has been given additional relief to eliminate some occasional binding that has occurred. This happened when the pinion engaged the flywheel. With the tolerance loosened up on these components, we have seen positive results without reducing the integrity of the starter. These changes were made in February of this year.



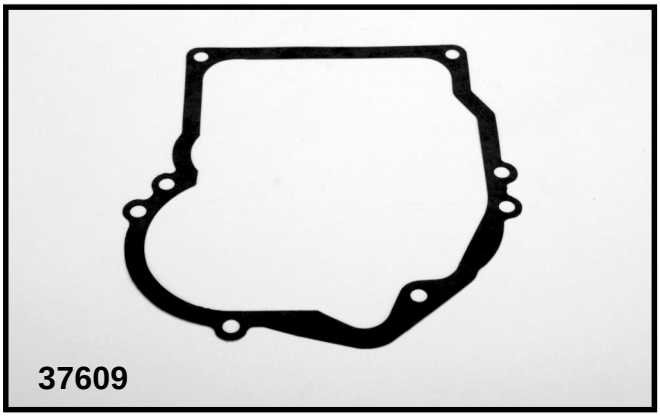
OHH/OHSK Breather Change

We have improved the breather system used on this family of engines. The original system was an umbrella seal that was changed to a reed breather system a few years ago. A heavier reed has been put in the breather to help increase crankcase vacuum. This has spun off some additional benefits. Increased crankcase vacuum helps reduced oil consumption making an already great engine even better. The part number only changes an alpha character to # **36630B** and occurred in July of 2001.



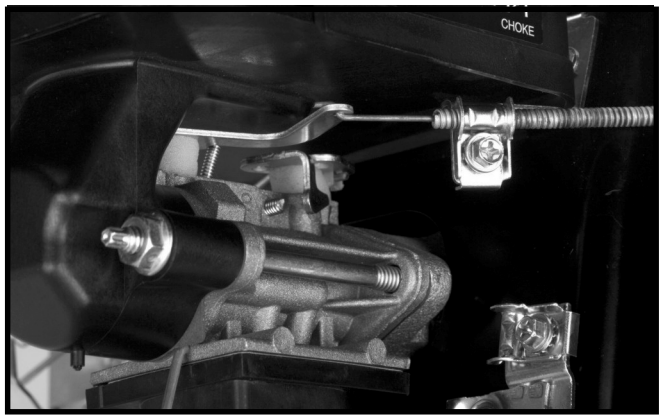
LEV/OVRM Rotary Mower Gasket

The flange gasket used on rotary mower LEV/ OVRM's, has been improved to reduce the possibility of weeping at the gasket surface. This was done by increasing the amount of fiber in the gasket. This new gasket, part **# 37609** has been used in production since February 2001.



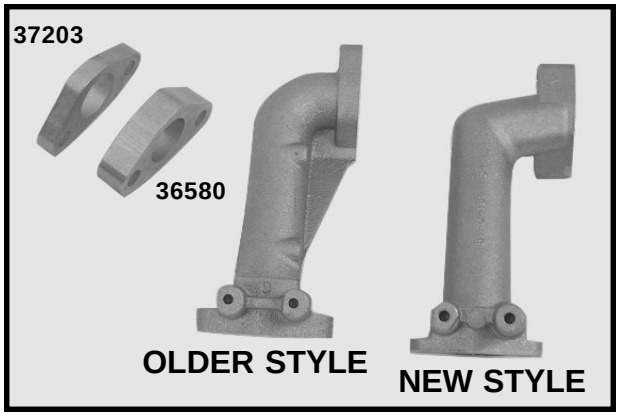
OHM 90-110 Choke Option

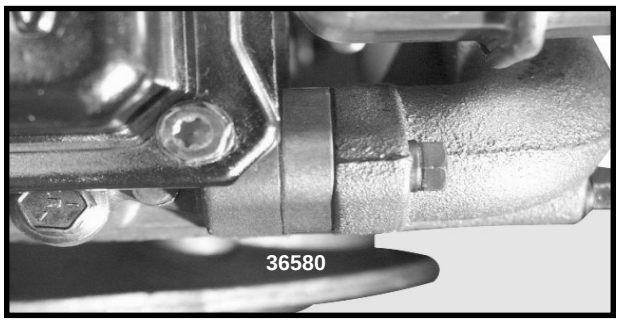
An optional feature for the Power Sports 9 and 11hp engines has been added to the product line. A remote choke is now available on these engines. They are typically used in conjunction with an electric start and allows the go-kart to be started from the drivers seat. We have created a new service engine that has this feature, the OHM 110. The 11 HP service engine part # is **211108**.



OVRM-105 Intake Pipe

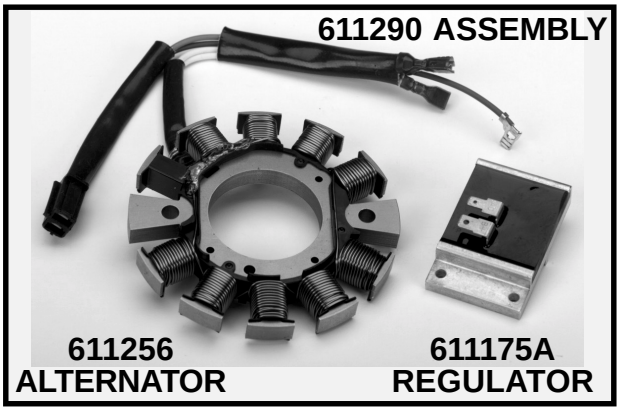
Last year we discussed the situation with spacers and intake pipes for OVRM engines. A kit was developed to change a two piece system to a one piece system. There are some exceptions to this rule. We have found OVRM-105 engines that use either a conical or oval air filter, have an improved run performance using the two piece pipe. If you order by model and specification number you will find that the repair kit will have the parts needed to make the repair.





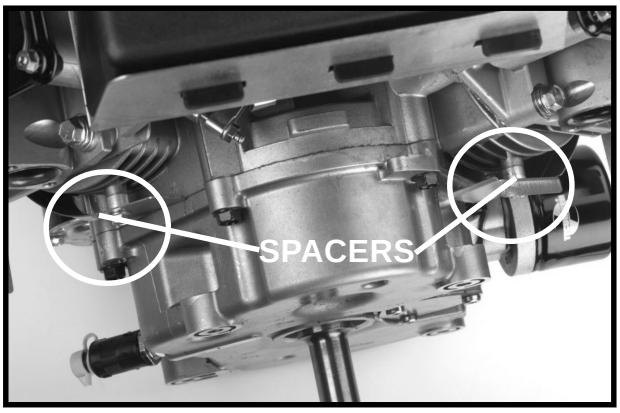
M Series Alternator Upgrade

The # **611097** seven Amp alternator used on medium frame engines back in the mid 80's is being replaced and upgraded to the newer replacement, part # **611290**. This assembly consists of two components, the **611256** alternator coil and the **611175A** regulator. There are also two connectors in the kit to resolve any wiring harness concerns. These changes have been in affect since October 2000.



TVT Air Baffle Improves Cooling

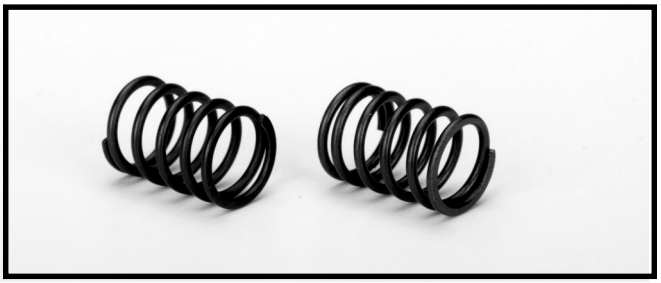
Some changes have been made to our V-Twin engine that have significantly reduced engine temperatures. Commercial lawn care professionals have much higher demands on their equipment which warranted this change. A reduction of 25 degrees has been noted when a spacer was placed between the two cylinder air baffles. This requires four spacers part # **37629** and four longer screws part # **651015**. These changes occurred on the 2001 model year and will be reflected in die changes to make this a permanent feature not requiring spacers.



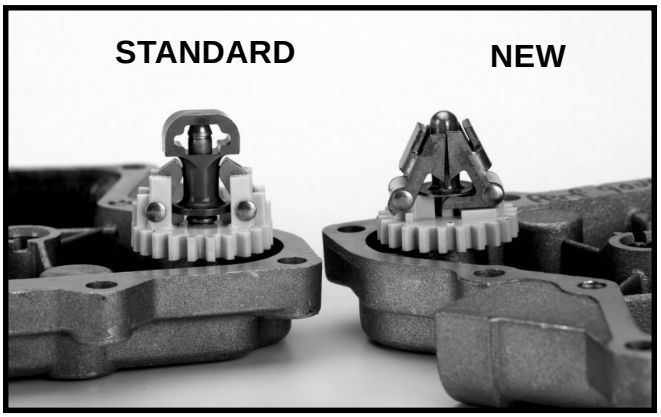
OHH/OHSK 65 is Powered Up!

Across the board the OHH/OHSK 65 has undergone some exciting enhancements on various engine components.

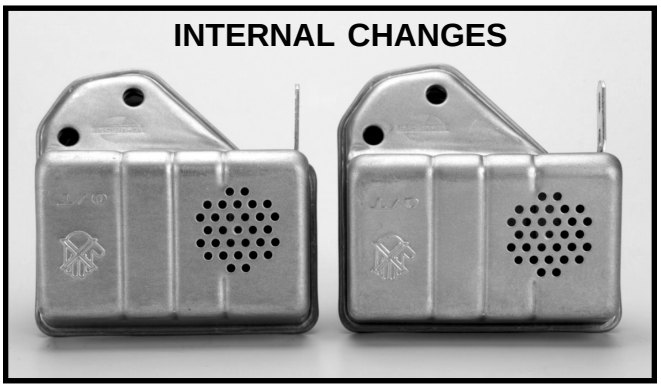
The engine features a new cast iron camshaft for added performance.



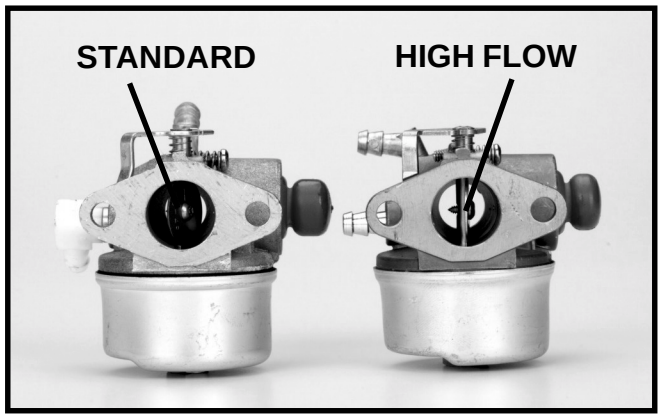
Valve spring rates have been increased.



There is a new quick response governor that will produce more power under varying loads.

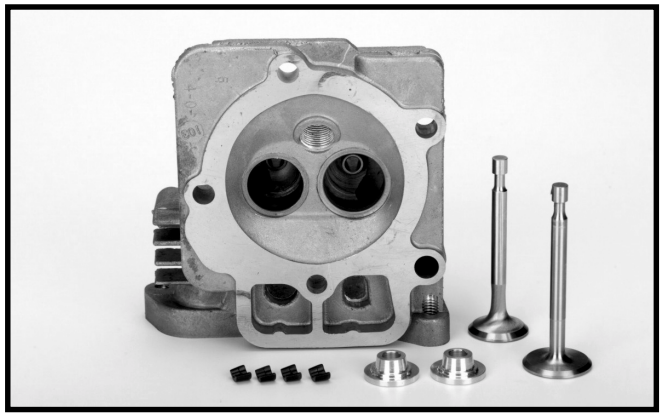


If that wasn't enough we added a higher flow muffler which produces a lower, more pleasing tone and more power.



The carburetor has been adjusted in it's design to produce an increased flow of fuel/air mixture by opening the throttle plate.

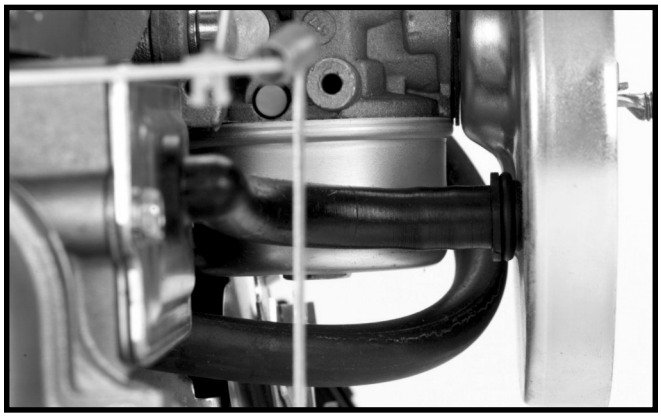
To accommodate this increased flow, the cylinder head utilizes larger valves.



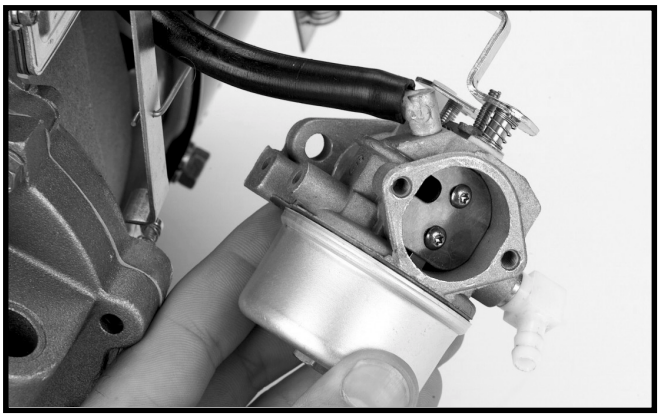
The valve keepers are new this year and are of automotive design. They have been changed to handle the additional spring tension. New automotive style valve keepers greatly improve valve retention and overall reliability.

OHM 120 Breather Tube Relocation

Since we began using closed breather systems on engines to aid in emission standards compliance, we have used two different methods of accomplishing that task. The engine would have a barbed fitting either on the carburetor where the breather hose is attached or on the air filter backing plate. The “OHM” series engine has used the backing plate method. All breathers emit some vapor so there is potential for some to go into the paper element and possibly restrict air flow if the filter gets saturated. Replacement carburetors will be equipped with a new fitting location. A plug will be provided with the new carburetor to plug the air filter backing plate hole. **NOTE:** The tube must be connected to the carburetor fitting to maintain emission compliance.



Connected to Air Filter Backing Plate



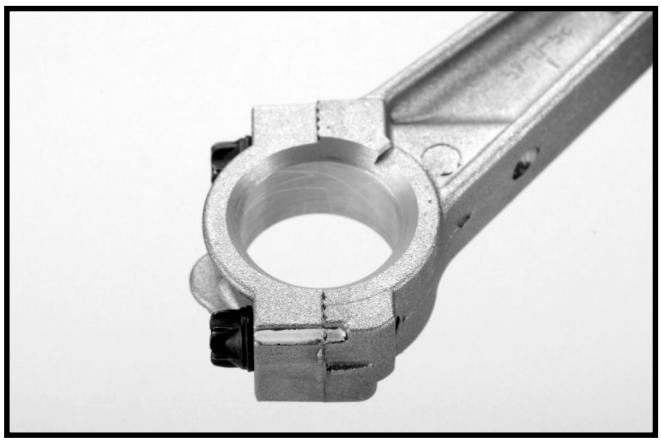
Connected to Carburetor

OVRM/LEV Utility Shroud Improvement

The OVRM/LEV engine shroud for utility specifications has undergone quite a face-lift. The shroud features larger air inlet holes of 1/4" in diameter. This design will be more esthetically pleasing and provide more cooling for high demand utility applications such as Pressure Washers, Pumps and Generators.

100-120 LEV Rod - Match Mark Change

The rod has beveled match marks to make service much easier during reassembly. The fasteners holding the rod cap use a 5/16" 12 point socket and are still torqued to 105 inch pounds/ 11.5Nm.



Quick Release Oil Drain

This quick release oil drain valve is a handy feature to have on your engine. Although it comes on some TVT engines, it can be added to many more. The threaded end of this drain is a 3/8-18 and can be used on TVM and OHV engines. If you apply it to an OHH, HM or OHM you need to use it with a reducer to adapt it to the 1/4-18 drain plug used on these engines. Use pipe tape to properly seal all threaded areas. The oil drain part # **37651** is available from your normal source of supply.

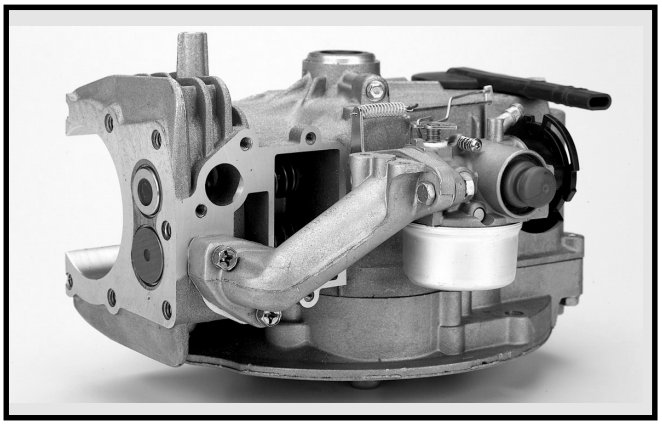
LEAP TECHNOLOGY

LOW EMISSION, ADVANCED PERFORMANCE

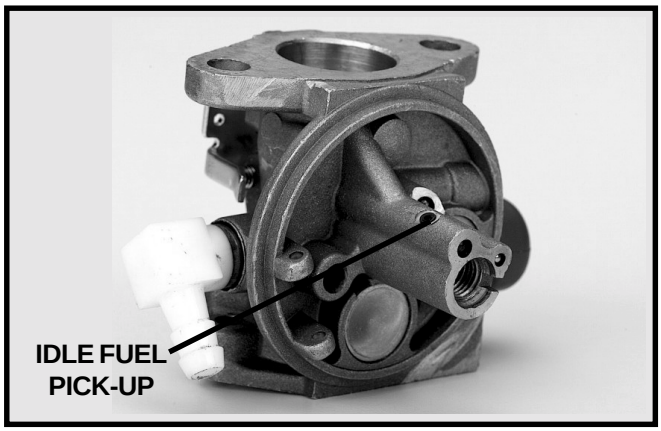
LEAP Technology

This term can only be applied to the Tecumseh "L" head engine. There is no other manufacturer that has an emissions compliant, 50-state approved, "L" head engine design. What does LEAP mean ? It means Low Emissions, Advanced Performance. How is it achieved ? Through technology that has been developed using automotive style piston, rod, and ring design, inverted cylinder porting, and a patented carburetion system. These features combined with other technological advances available on the LEV engines, produce 70% less emissions then engines from 10 years ago. The LEV 120 HO engine meets the EPA's stringent 2006 nationwide standards.

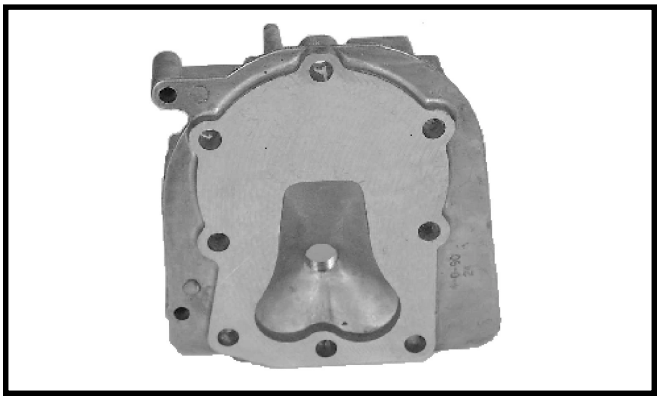
Tecumseh Products Company prides itself by offering new blower housing design to compliment OEM equipment for the 21st century.



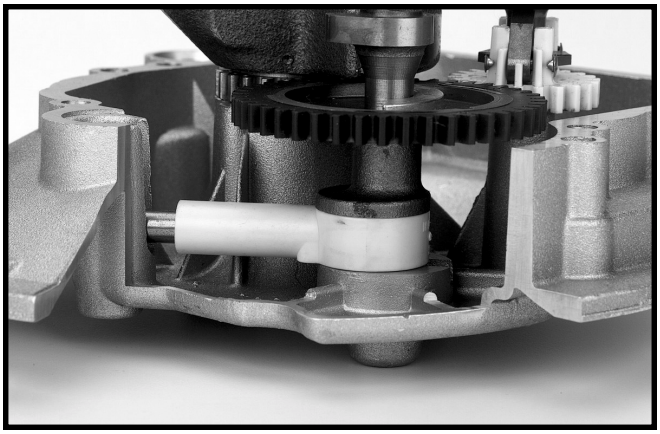
Inverted porting positions the exhaust port over the intake. This way the hottest part of the engine is in a direct line with the cooling air generated by the flywheel.



Series 11 Bridge carburetor provides sure starts and efficient operation.

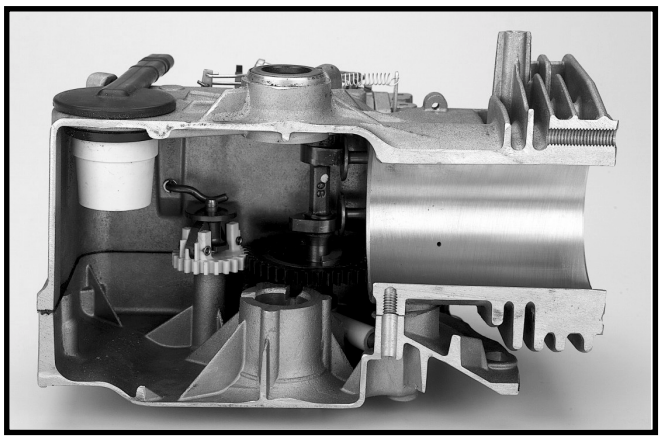


The combustion chamber concentrates air/fuel mixture directly at the spark plug for an efficient controlled burn.

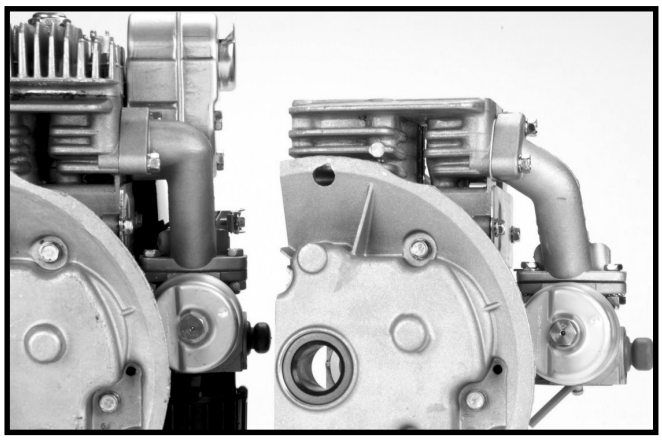


Oil pump lubrication to all critical bearing surfaces is a premium system.

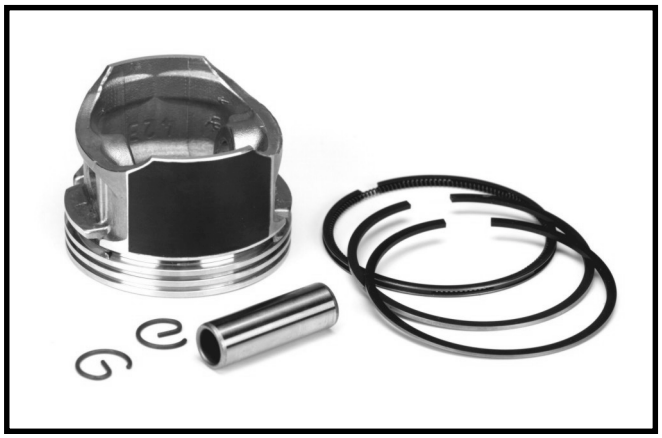
LEAP TECHNOLOGY



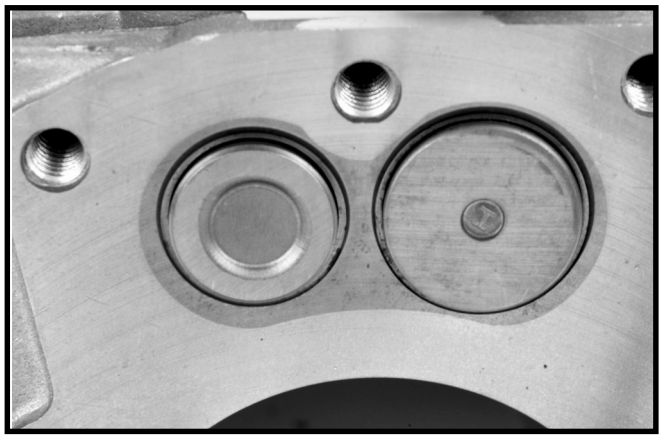
Tecumseh's mechanical governor responds instantly to varying loads to maintain smooth operation.



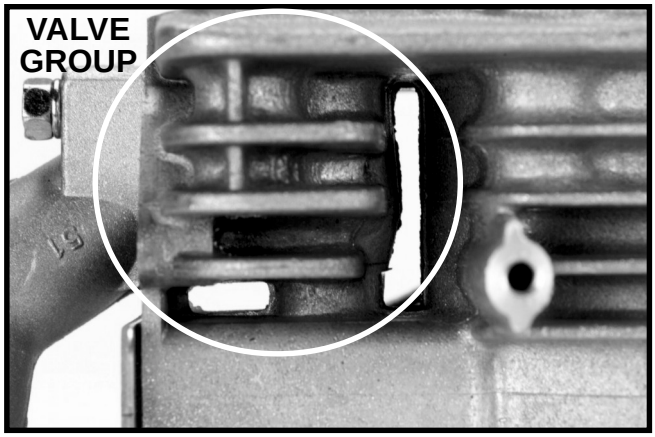
The leap engine produces more power with its high flow intake pipe. With 195 cc's of power working for you, the LEV120 HO is up to the task.



Leap engines have Automotive style piston/ring assemblies with Teflon skirts. The piston is elliptical in its shape and swells perfectly round when the engine warms to operating temperature. This means tighter tolerances can be held which provides better ring seal on the cylinder wall.



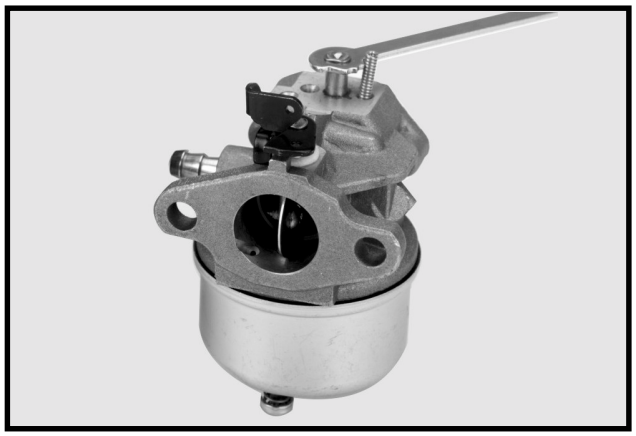
Tecumseh valve seats are cast iron and cast into the cylinder during ***the molding*** process. They never move or come loose.



The valve group is separated from the cylinder by the cast design. This helps keep the cylinder thermally balanced.

Carburetion

HSK 600



For the HSK 600 two-cycle engines, we have made a change to the carburetors by changing the idle fuel circuit. These new carbs will be drawing idle fuel separately, not through the high speed circuit. The result is a smoother running engine at light to no load conditions. The HSK600 with specification numbers ending in “U” and the HSK635 specification numbers ending in “B” will have the updated carb. The new carb was first used in production in July of 2001.

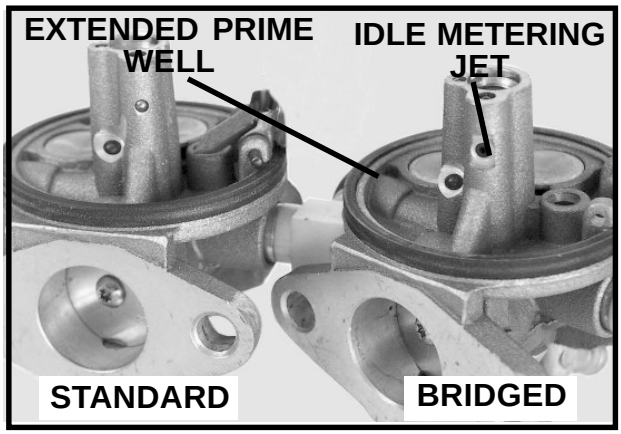
These HSK 600 carburetors have been upgraded with an "A" designation

OLD	NEW
640086	**640086A**
640122	**640122A**
640097	**640097A**
640092	**640092A**
640098	**640098A**
640090	**640090A**
640099	**640099A**

The HSK 870 carburetor is part # **640300.**

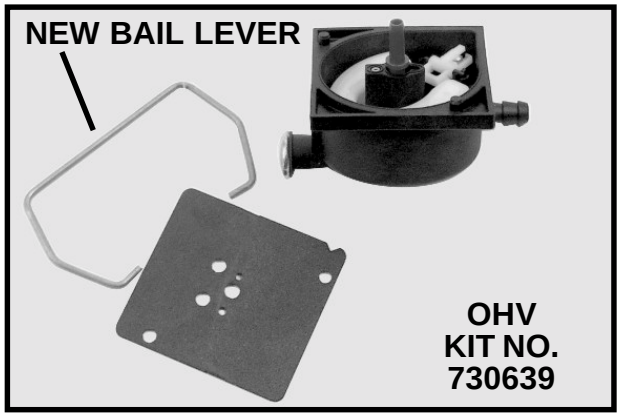
Bridged Series 11 Carburetor for LEV's

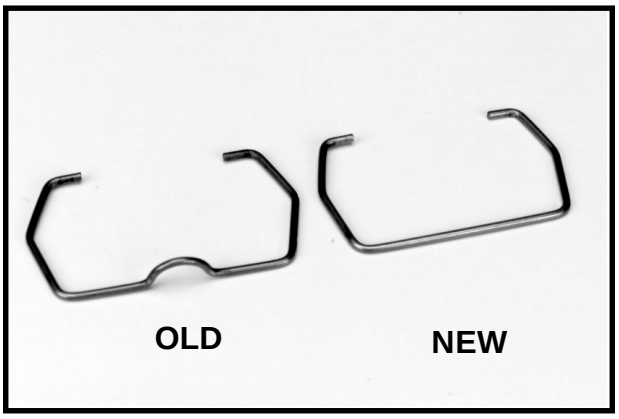
The Bridged Series 11 was originally designed for the OVRM 120. Based on the consistent reliability and run quality, the Bridged Series 11 carburetor will be taking a greater presence in our small frame product line with the Low Emissions Vertical (LEV) L-Head Engines. The carburetor receives fuel from inside the center leg through the main jet, and the metering jet located on the outside of the center leg of the carburetor body. After priming the carburetor three times the extended prime well located under the a welch plug (shown) is filled with fuel which provides a rich fuel mixture for sure, one pull starts in wide variation of temperatures. This carburetor incorporates two composite jets, that can only be cleaned with spray carburetor cleaner such as Tecumseh part # **696410** and tag wire not exceeding .012 inch (.3mm) diameter.



TVT and OHV Carburetor Bail Improvement

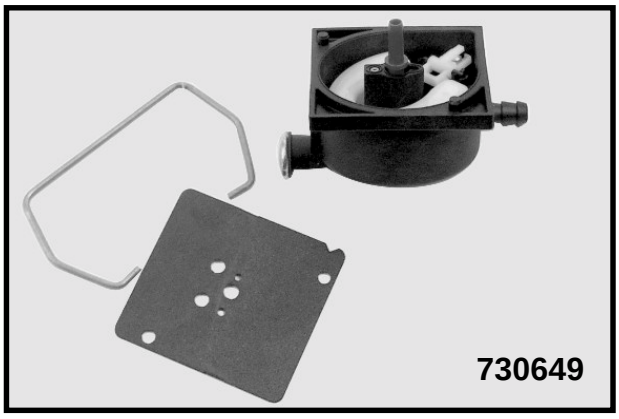
These engines use a series “7” carburetor that has a convenient bail that snaps open and allows the dealer to inspect and repair most of the parts involved in the fuel delivery function. This bail is critical to retaining the bowl and sealing the gasket. From time to time the bail has been distorted due to deflection caused by its removal. A stronger bail has been incorporated into production since January 2001. The OHV carburetor quick fix kits have been upgraded to include the bail and have been superceded with the same part # **730639**.





New TVT Series "7" Quick Fix Kit

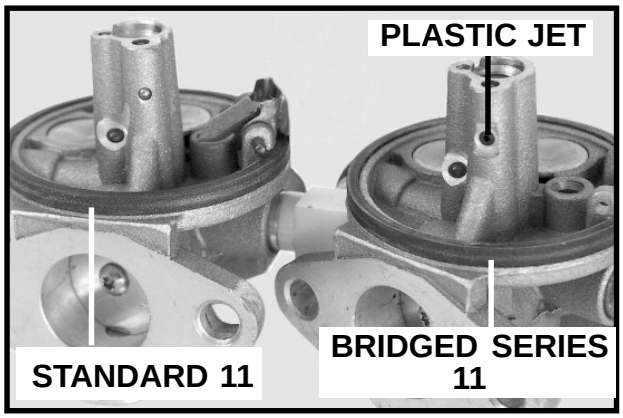
We have developed a quick repair kit for the TVT series 7 carburetor used on this engine. The kit includes all the item typically used in carburetor repair.



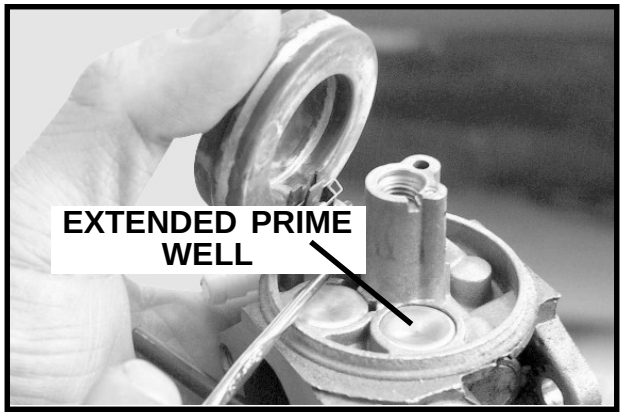
Carburetor Cleaning

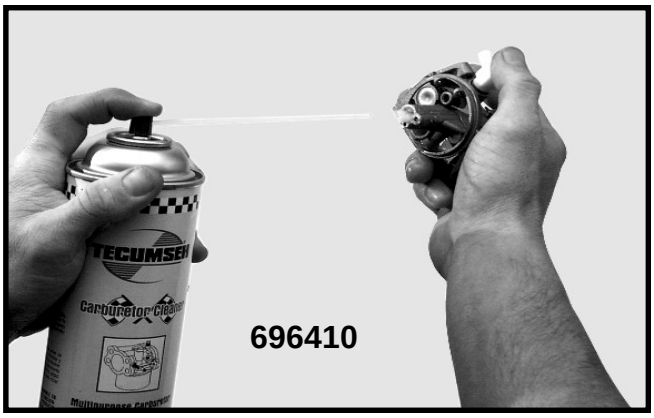
Carburetor Cleaning - Series 11

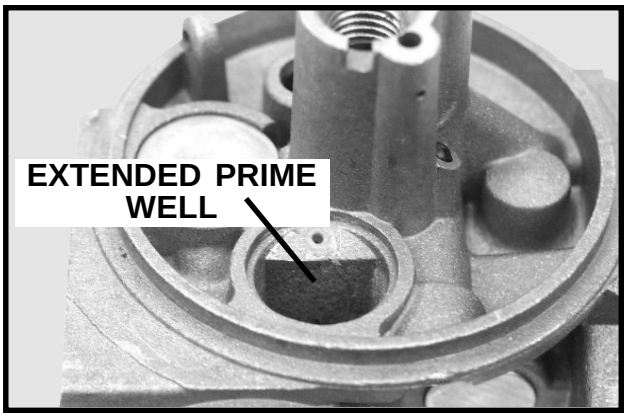
With the additional fuel well welch plug removed, you can see the small plastic metering jet, which can be distorted if left to soak in a carb dip tank. Currently, this metering jet is not a serviceable part. Our position has been to soak a carburetor no more than ½ hour but the exception is the Series 11 carburetor. To be safe, service all our carburetors with Carburetor Spray # **696410** along with a .012" (.304 mm) gauge wire.



Make sure to carefully seal this extended prime well with fingernail polish.

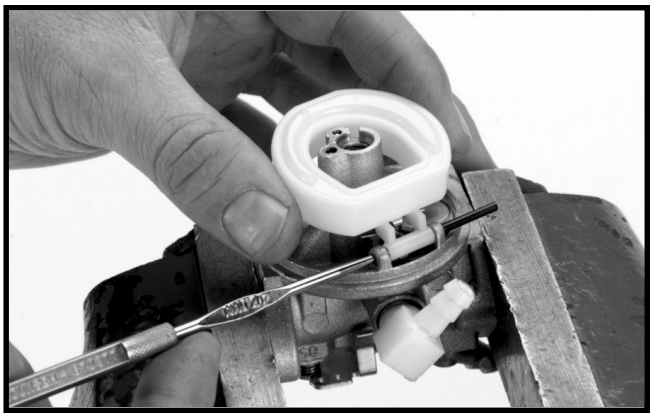




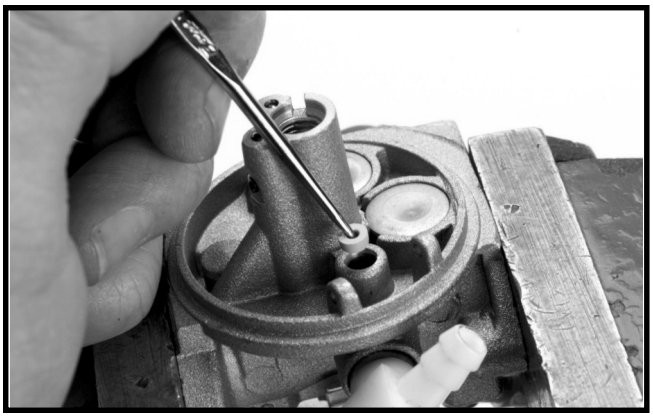


Always use the Tecumseh Carburetor tool when servicing carburetors. Part # **670377**.

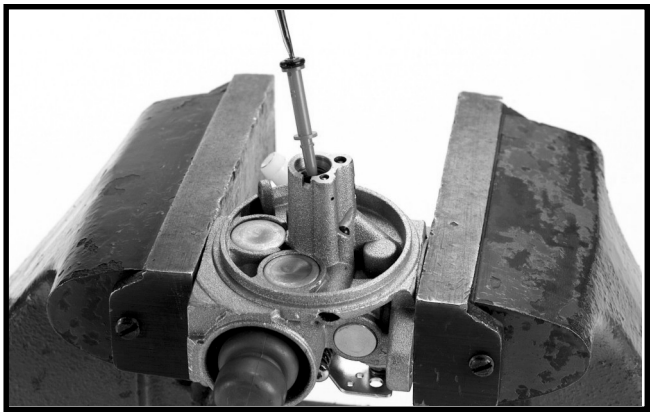
Carburetor Cleaning Series 11



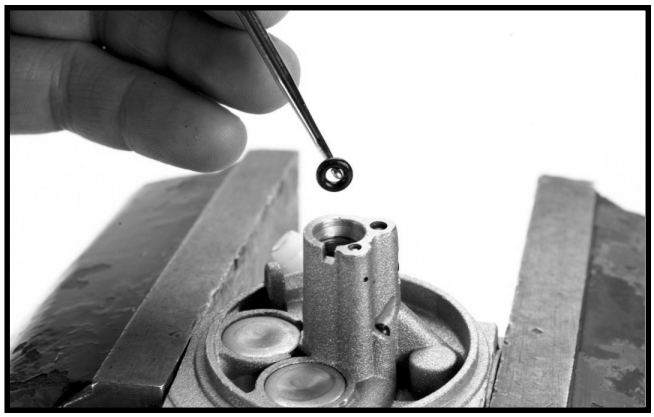
1. Remove bowl and push the float hinge pin out with carb tool part # **670377**. The float cannot be rotated upward.



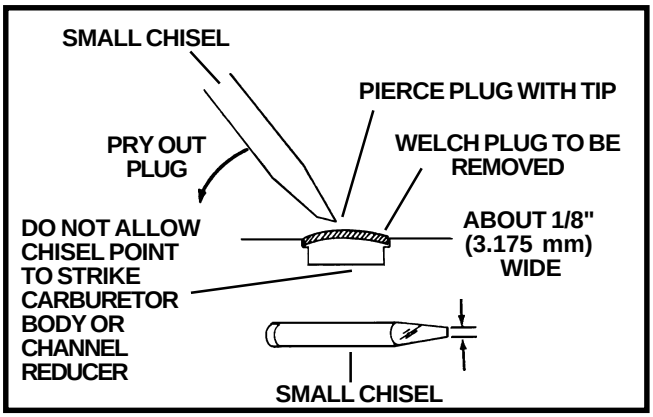
2. Remove the seat with the carb tool.



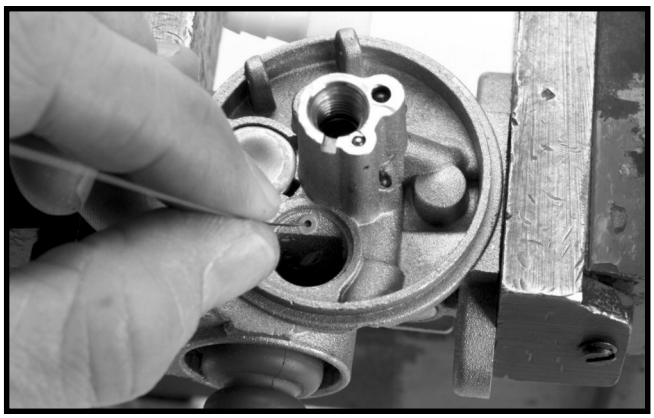
3. Remove the emulsion tube by gently inserting the carb tool. Rotate the hook end until you locate the air bleed passage. Then with hook in place, pull the tube out.



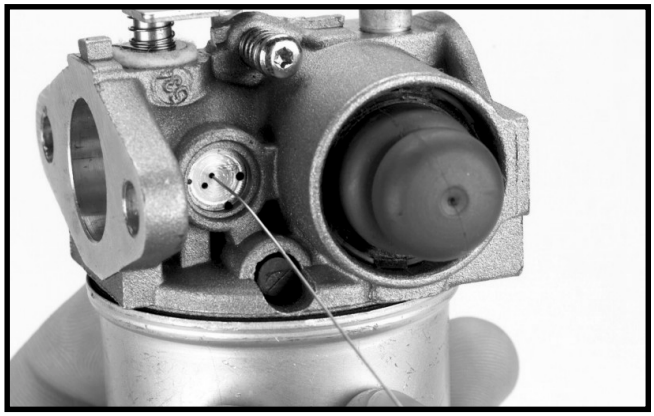
4. Remember there are two "O" rings on the emulsion tube. You may have to go into the center leg a second time to remove the upper second "O" ring.



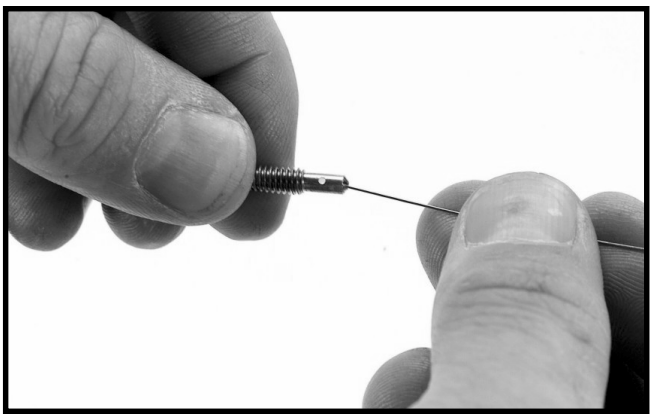
5. Remove the extended prime well welch plug with a sharpened chisel. When piercing through the extended prime well welch plug, pound close to the red primer bulb side as not to mar the casting.



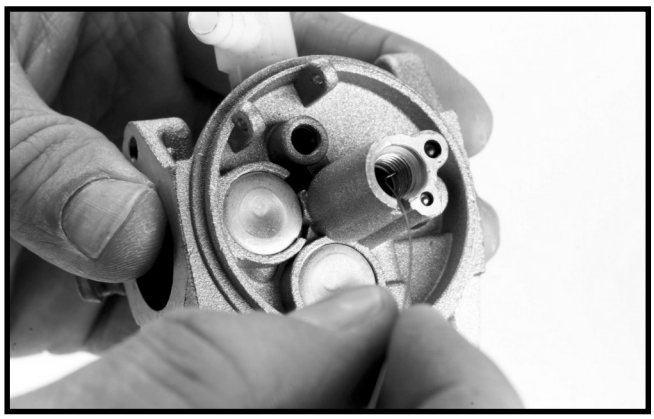
6. Clean the extended prime well w/.012" tag wire and carb spray.



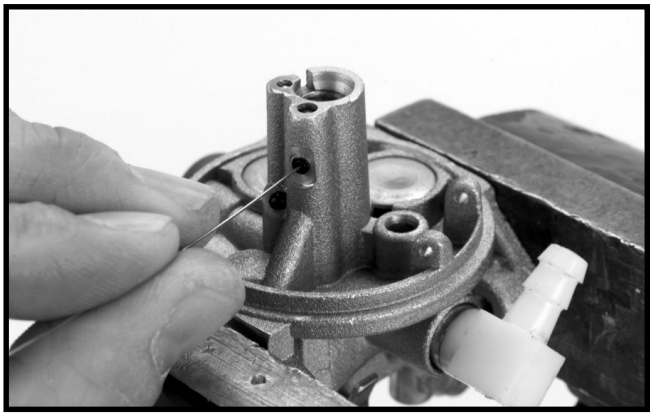
7. Remove the idle prime well welch plug. Using a sharpened chisel or punch. Clean the progression holes and the idle air bleed hole using tag wire and carb spray. If damage occurs in progression holes, replace with a new carburetor.



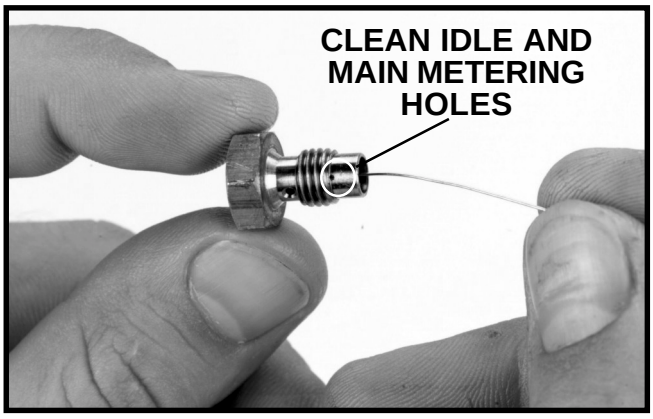
8. Remove the idle restrictor cap and clean the idle jet with tag wire and carb spray.



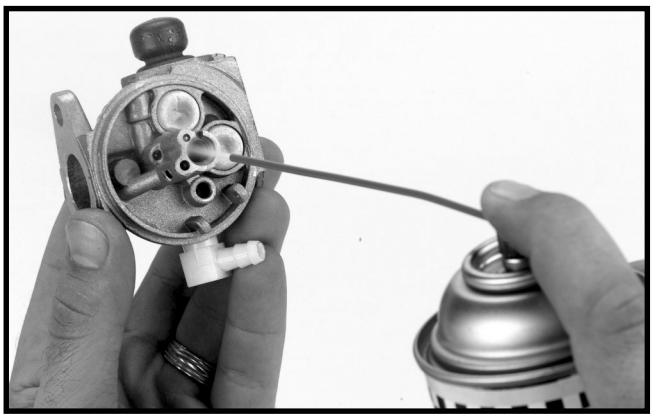
9. Clean the idle circuit fuel pick-up located in the center leg using tag wire.



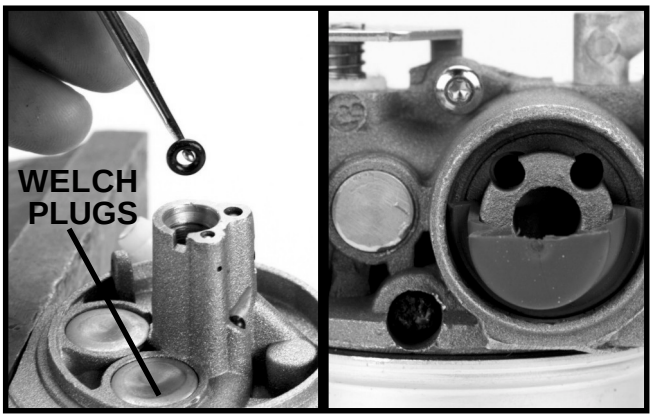
10. The Series 11 bridged carburetor has an additional idle circuit fuel pick-up jet or the side of the center leg. Clean this with .012" (.3 mm) tag wire.



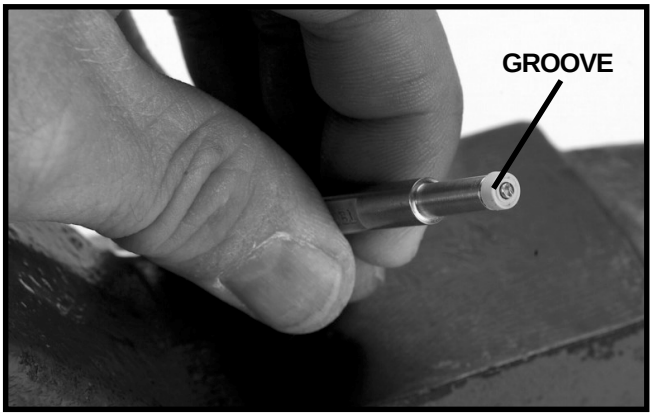
11. Clean main jet (bowl nut) with tag wire. Remember there are three drilled passages. The fuel pick-up, the main jet and the idle delivery hole.



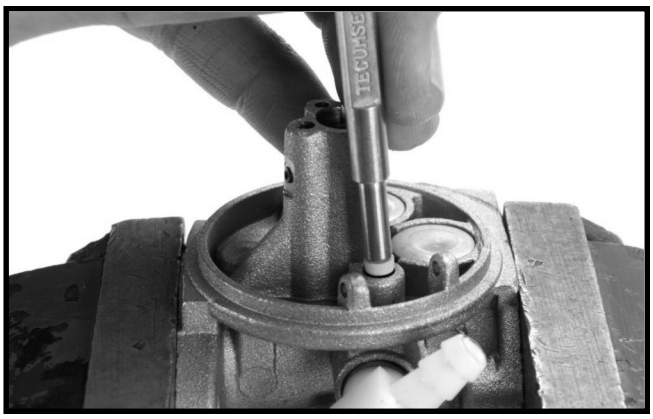
12. Spray all cavities with Tecumseh carburetor spray part # **696410**.



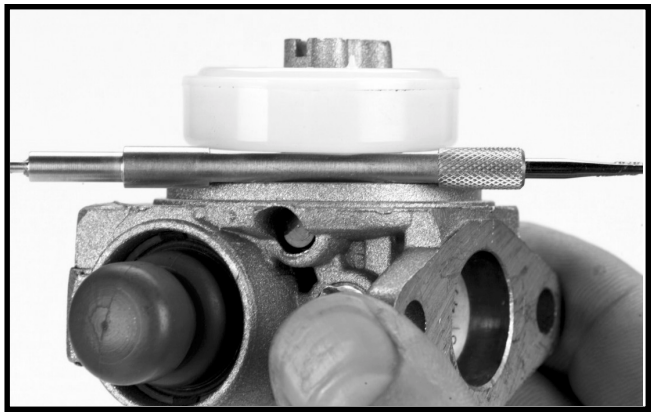
13. Replace both idle welch plugs included in carb kit with a flat punch and apply fingernail polish to the edge where the plug meets the casting.



14. Note that a seat has a grooved end (shown) which is installed first into the carburetor casting.



15. Install seat into the orifice with the carb tool until it bottoms on the casing.

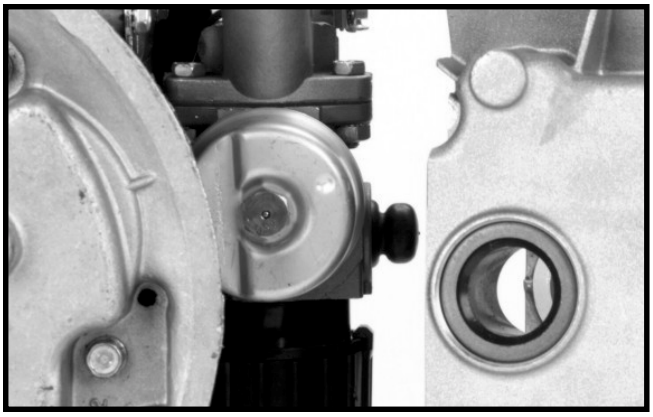


16. Check the float height with the carb tool. When the carb tool is removed, the float should remain in position. The dimension of the carb tool flats are 11/64".

17. Adjust the float if necessary by bending the middle tang.

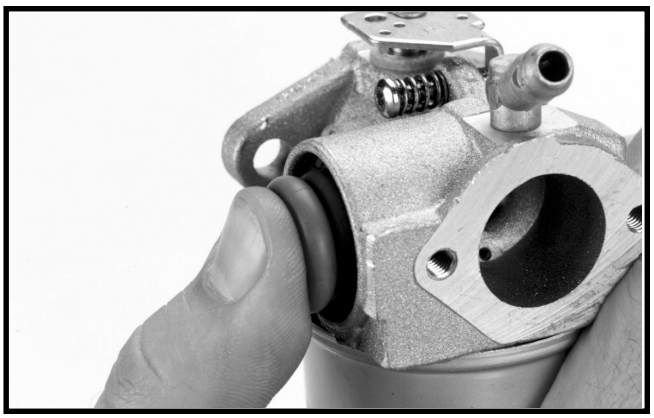
18. Bring the float/needle assembly down into position, then insert the float hinge pin.

Always remember the open end of the needle clip on a Tecumseh carburetor, faces out toward the air cleaner side.



19. Install a new float bowl, bowl "O" ring, and the bowl nut with a new bowl nut gasket.

    Remember to place the shallow part of the float bowl in line and beneath the hinge pin. This will allow the float full travel in the bowl.



20. Remember that a Tecumseh carburetor is best primed when using the thumb as shown. Wait a second between each fully depressed prime. Three primes will ensure one or two pull starts with outdoor temperatures above 60°F. Colder temperatures may need an additional prime or two.

Anatomy of a Prime

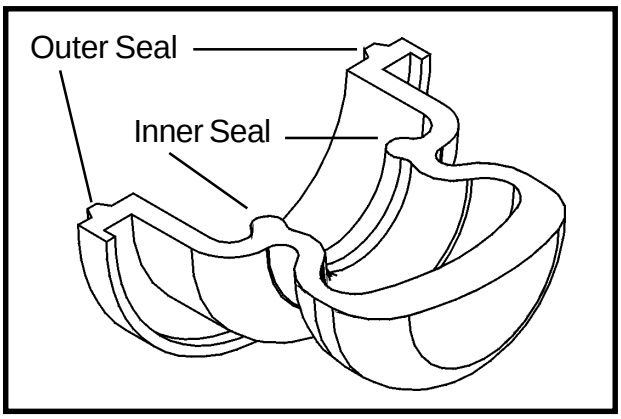
This section will review all the circuits and seals in the carburetor that are critical to a properly functioning priming circuit. If you suspect a priming problem check all areas listed.

The Ideal Prime

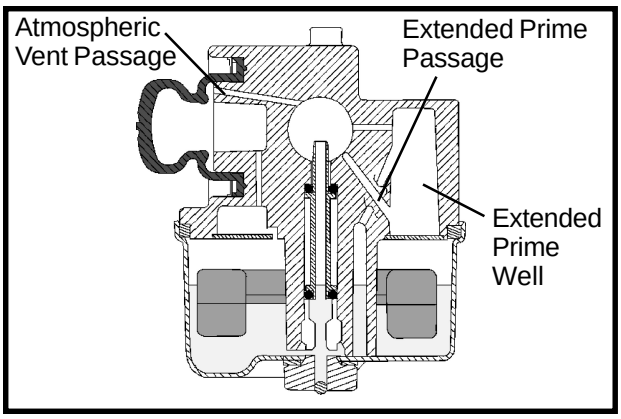
The cutaway view of the carburetor body underneath the primer displays the ledge against which the primer seals.

Primer Seals

The primer bulb has an inner and outer seal. Both seals must come in contact with the body of the carburetor when depressed to ensure sealing. If a seal is not created, the carburetor will not prime properly.

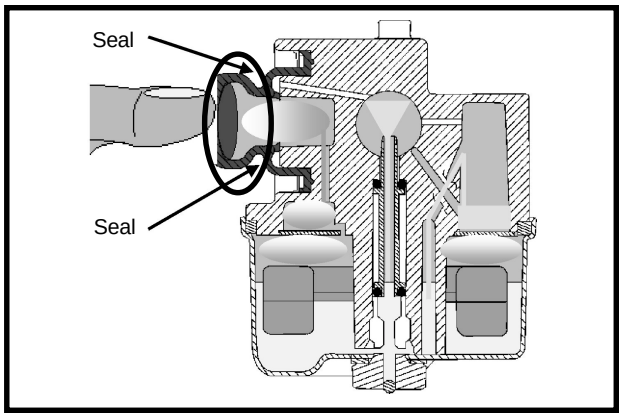


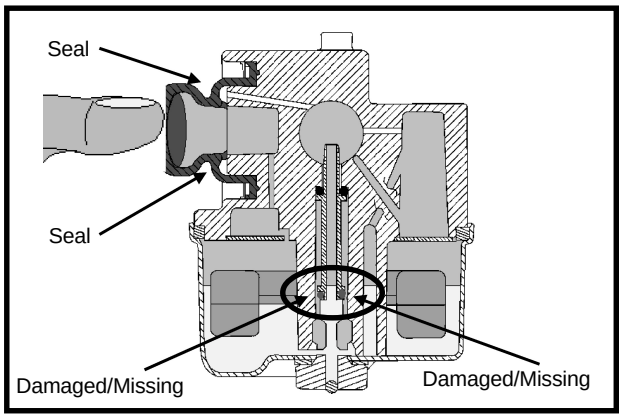
Side view of a Series Eleven "11" carburetor showing all key passages.



Pressing the primer bulb will force air through the bowl vent, which pressurizes the float bowl.

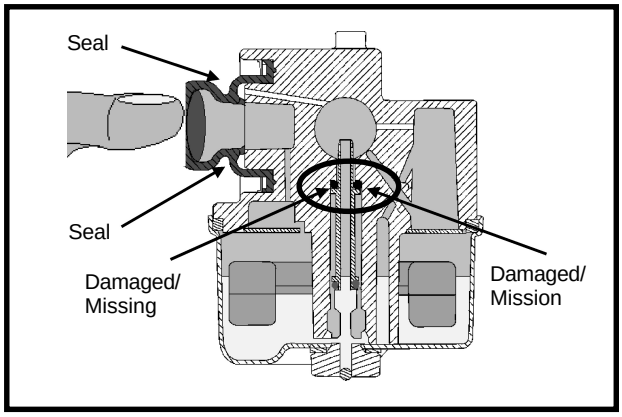
During priming, the fuel will travel into the extended prime well and main jet.





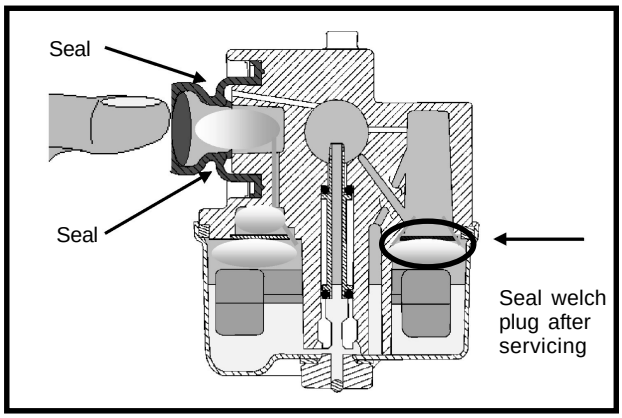
When performing service or evaluating possible trouble spots for poor priming, check for damaged "O" rings on the main nozzle. This area should also be inspected if the customer or another dealer had previously done repairs on the unit and not repaired it properly.

Technician Tip: The best way to check if the "O" ring is still in the upper center leg is by using a mini flash light.



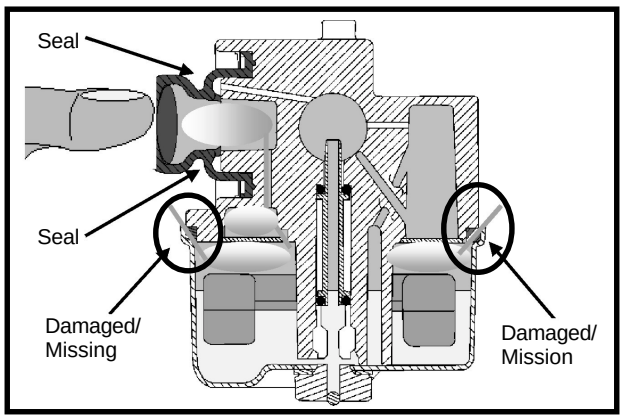
After servicing the extended prime well, remember to replace the welch plug and seal it with nail polish. If this welch plug is not sealed, the air from the prime charge will not pressurize the float, instead it will leak into the extended prime well.

NOTE: New production carburetors DO NOT have sealant because the area is tested in assembly.



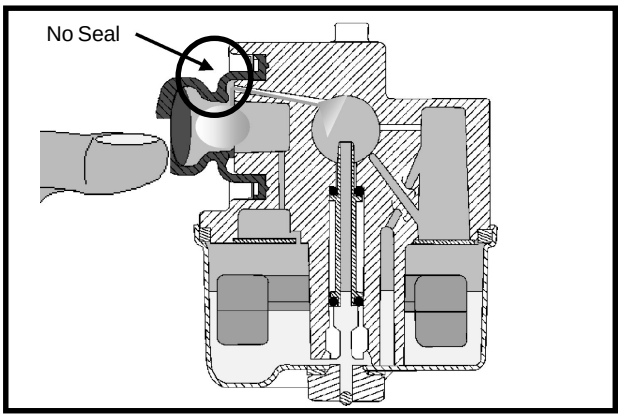
If the bowl gasket is missing or damaged, the air from the prime charge will leak out of the bowl and fail to pressurize the float.

ALWAYS REPLACE the gasket if the bowl is removed or disturbed.



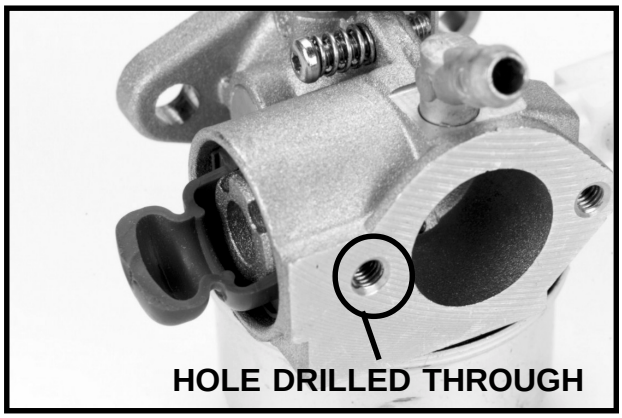
If the operator depresses the primer bulb in such a manner that it does not seal against the body of the carburetor, then the air from the prime charge will exit the carburetor through the atmospheric vent hole. The prime charge will not pressurize the float bowl.

NOTE: If the bulb feels stiff or hard replace it.



On some carburetors, the hole for mounting the air filter assembly is drilled through to the primer passage. If this hole is uncovered the prime charge will exit the carburetor through the drilling instead of pressurizing the fuel in the float bowl.

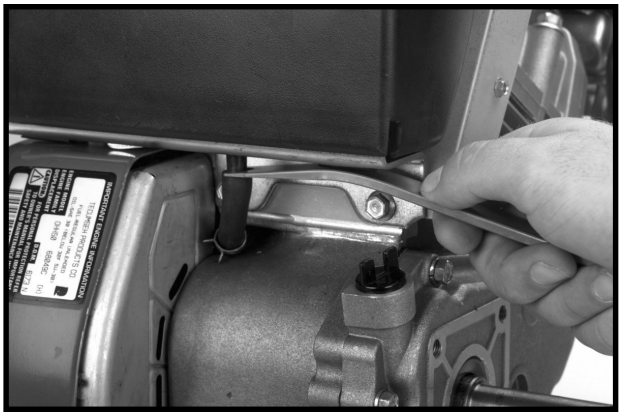
If you check for fuel coming from the main nozzle prior to re-assembly, make sure the hole is plugged using one of the filter box screws.

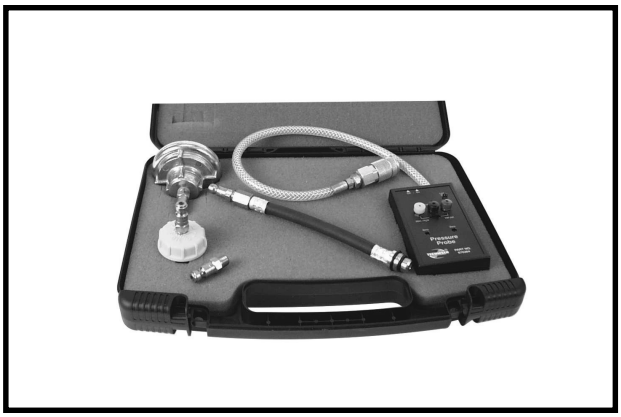


Tools

Fuel Line Tool

A new tool has been designed to remove the fuel line. This tool makes fuel line easy and safe to remove and eliminates potential damage to the fuel tank outlet and the fuel line itself . Using pliers can occasionally cause damage to the outlet spud or fuel line during removal. The tool part # **670382** makes this procedure a snap.

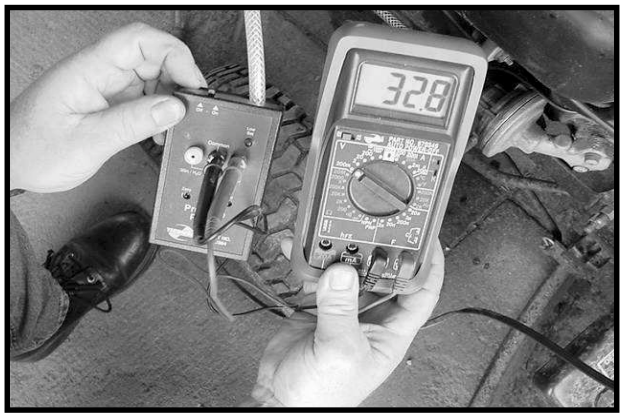


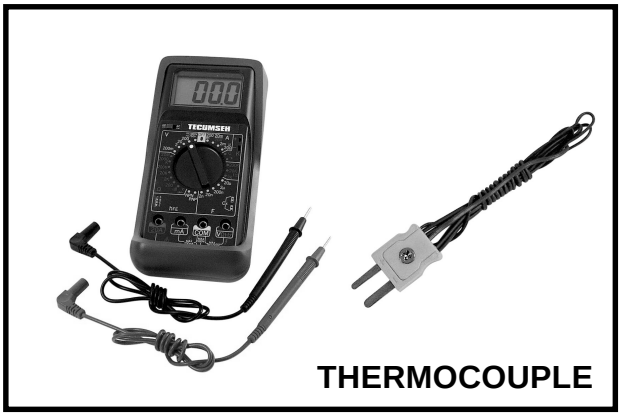


Vacuum, Oil Pressure and Compression Tester in One!

This tool will help speed up engine diagnosis. The pressure probe is meant to operate with any millivolt (mV) scale equipped Multimeter. Vacuum reads out in inches of water. The pressure side of the unit reads in Pounds per Square Inch (PSI) for oil pressure and compression testing. The kit part # is **670364A**. The kit includes the following items.

- Vacuum Pressure Probe
- Oil Fill Tube Adapter
- Spin-On Oil Filter Adapter # **670369**
- Compression Adapter Line
- Durable Storage Case

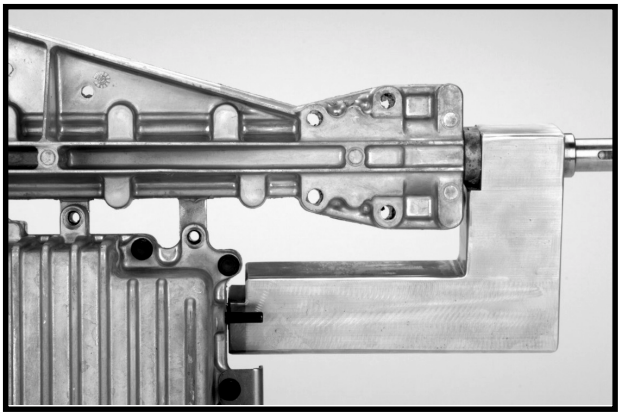




Digital Multimeter

This digital multimeter has a variety of functions that assist the technician in troubleshooting an engine. It comes with one thermocouple wire standard and will read both Fahrenheit and Celsius. Part # **670349** will measure. . .

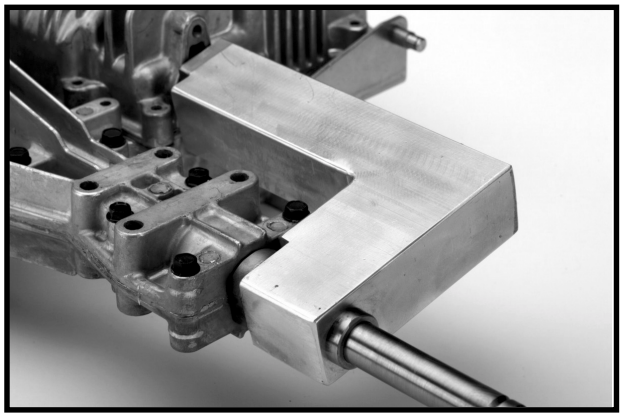
- DC Volts
- AC Volts
- DC Amps
- AC Amps
- Temperature (C° & F°)
- Frequency (Hz)
- Capacitance
- Ohms Resistance
- Diode Test
- hFE (Transistor)
- Battery



LTH Alignment Tool

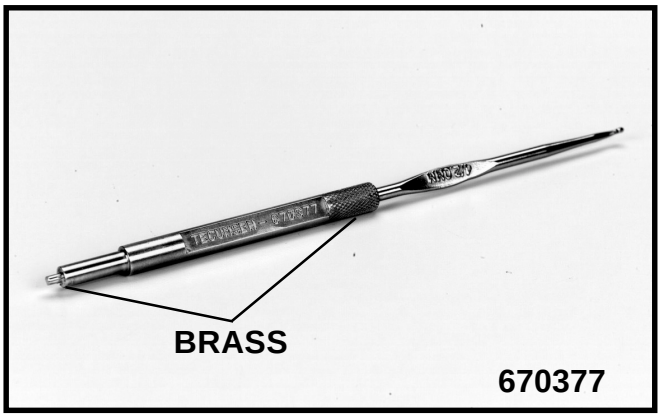
This new tool is required for proper alignment of the pump/motor module to the final drive of the LTH. The tool sets the distance from center of Final Drive Axle Shaft to the center of Pump/ Motor Module Control Shaft to a predetermined dimension. The tool is necessary so the final drive and pump/motor shafts are not placed in a bind during service installations. If the shafts are placed in a bind, the shafts could experience galling which could lead to a premature failure or prevent the differential disconnect from working properly. Tool part # **670383**.

The tool you will receive will be slightly different than the one shown. The redesigned tool will allow easier use with the unit mounted in the frame.



Telescoping Magnet

Tecumseh's handy telescoping magnet has a non magnetic shield. Order part **# 670378.**



Carb Tool # 670377 Gets A Lift!

The carb tool that was introduced last year (part **# 670377)** has undergone a few face lifts. The main body is now made of brass and works better than ever. We have also shortened the two flats used to set the float height. This was done to make access in tight areas easier.

Service and Shop

TecumsehPower.com

Visit us at our website which features a new dealer locator feature. During the coming year we will continue to enhance the web site so keep looking.

www.TecumsehPower.com

tecumsehwarranty.com

This electronic warranty claim system has been active since early 2000. This time and money saving program is available to all United States and Canadian Dealers. This program cuts warranty claim response time down to 2-3 weeks. See the tecumsehwarranty.com request form in the back of the book. Submit this form to your Distributor to be allowed access -**NOT TECUMSEH.** Upon the distribution approval we will send you a password to access the system. Once approved remember to fill out the claim accurately, and retain and tag all warranted items until you receive payment from Tecumseh Products Company.

www.tecumsehwarranty.com

New Snow Tune-Up Kits

We are pleased to introduce two NEW Snow King® Tune-Up Kits. These are designed to allow the customer to self service the product. The kits include:

- 1 Quart 5W30 winter oil
- 3 packs of Ultra-Fresh fuel stabilizer (treats 7.5 gallons)
- Resistor Spark Plug
- Spare Ignition Key

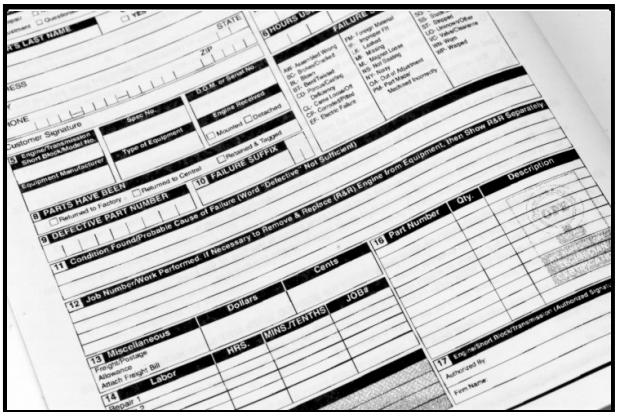
Kit No. **730281** for all L-Heads
Kit No. **730286** for all OHSK's

TMT Testing

Tecumseh's Service Division is shipping more and more copies of the TMT Test to our distributor network. The Premier dealers are quickly realizing that their time is up and they need a TMT on staff at their dealership.

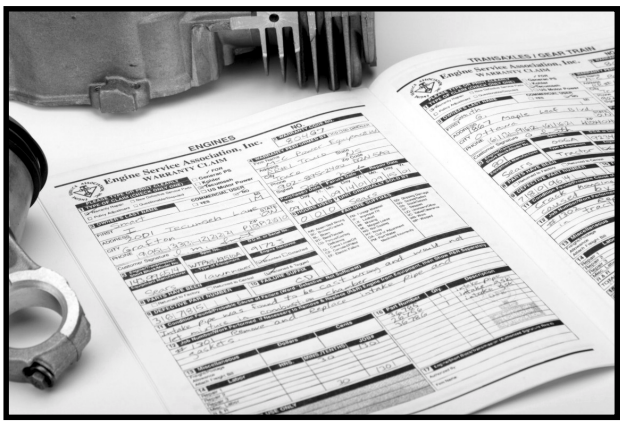
The TMT Test is a Tecumseh specific 100 question multiple choice test combined with a "hands-on" diagnostic section involving one engine and one transmission or Motion-Drive product.

The diagnostic portion of the test requires two ESA Warranty claim forms to be accurately completed. Some misconceptions potential TMT's have had is in Boxes 11 and 12 on the claim form. Box 11 needs to be an accurate and detailed description of what the Technician found as the source problem (inside the engine or Motion-Drive). Too often the technician does not go far enough and wants to describe to us what the customer states as the possible problem. Box 12 needs to specifically describe what work was performed on the Engine or Motion-Drive product to repair what Box 11 describes. If these two boxes are not correct there is a good chance of failing the test even if you scored high on the multiple choice section.



Each multiple choice question is worth 1.5 points and the diagnostic section is worth 50 points. The time allowed to complete the TMT test is 2.5 hours.

Tecumseh Products Company has decided to assist our dealership base even further by holding the cost of the test to $45.00 U.S until June 1, 2002. The prerequisite for taking the TMT test is the ESA 4-Cycle test. All of our technical handbooks are fair game and the current passing grade is 75%. The best way to successfully pass the TMT test is to attend a four-day Factory/TSN tear-down school.



Upon receiving a passing grade, the newly inducted TMT receives 3 embroidered TMT Patches, a framed Certificate, a Black and Red TMT Cap and a high quality engraved TMT Plaque to hang on the dealership wall.

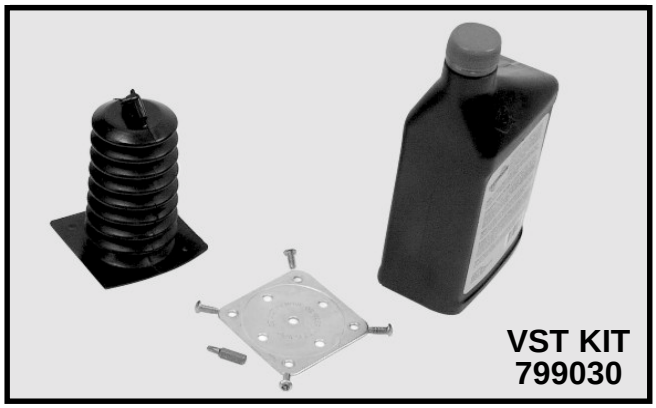
Not everyone can be a TMT. We encourage you to rise to the challenge and become certified. Remember that a TMT employed by a Premier Dealer has the authority to make their own warranty decisions. Also remember that the TMT status follows the Technician not the dealership.

Fuel Saver Plus

This tablet is a new, revolutionary fuel stabilizer and fuel systems cleaner in one! Fuel Saver Plus keeps fresh gasoline fresh for up to two years. This is a safe, non-toxic, easy to use tablet that dissolves in minutes. One tablet treats up to five gallons (19 liters) of fuel with regular use, it cleans the existing fuel system of gum and varnish buildup that is so common in todays reformulated fuels. Combustion chambers, valves and the entire carburetor benefit from the use of this product. The four tablet card treats 20 gallons of gasoline. You cannot overuse Fuel Saver Plus, part # **730275**.

VST 205 / 705 Service Kit

The bellows repair that was rolled out last year to repair the VST Hydrostatic Transaxle has been made into a kit # **799030**. Included in the kit is a new rubber bellows, a new style cover, 4 screws, 1 tamper-proof Torx 25 Bit, and a quart of synthetic hydrostatic oil. The VST 205 pump holds 56 oz. of oil. If you drain the oil completely, you will need to order an additional quart of synthetic oil, part # **730228**.

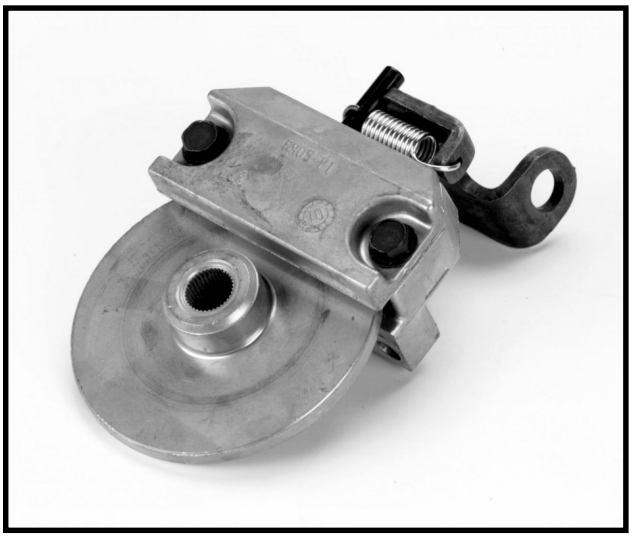


TecPub is a GO!

Our highly anticipated and long awaited TECPUB CD is coming to a Central Warehouse Distributor near you! This power packed CD features all Technicians repair manuals, Service bulletins, our most recent Update books and the History of Tecumseh Products Company in a movie format. Just pop it in your computer and take advantage of a wide variety of Tecumseh publications. The CD works with Adobe Acrobat Reader to view the variety of Tecumseh publications and pages can be printed from any of our books . The part # is **696130**.

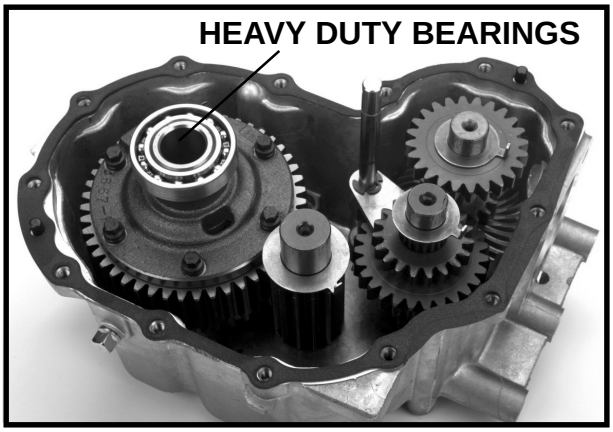
LTH New Transaxle Brake

We have developed a new brake system that is available to all OEM customers using the LTH series transaxle. This new brake mechanism is a dramatic improvement to the standard system used in the past. The system eliminates the sometimes complicated adjustment procedure for both the OEM and you the technician. The system includes a neutral return spring to help return the NEW horizontal lever to the off position. This feature is available with the 2002 season and makes service a snap.



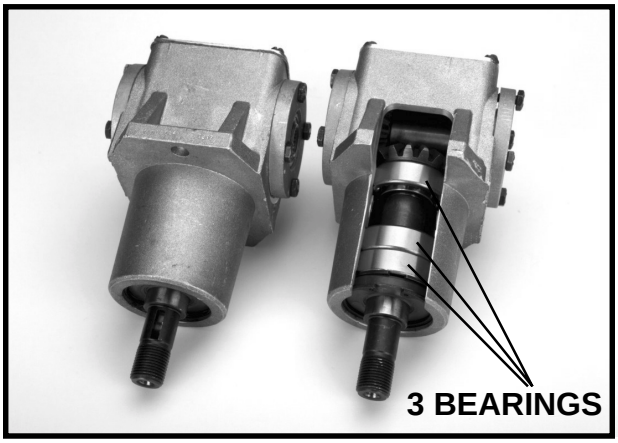
2600 New Series Heavy Duty Bearings

Based on customer requests and increasing the size of commercial turf equipment, we are offering a new carrier bearing set for the 2600 series. This extra heavy duty bearing set is now in production and available to all customers. The typical application using this product is a gang mower used on golf courses.



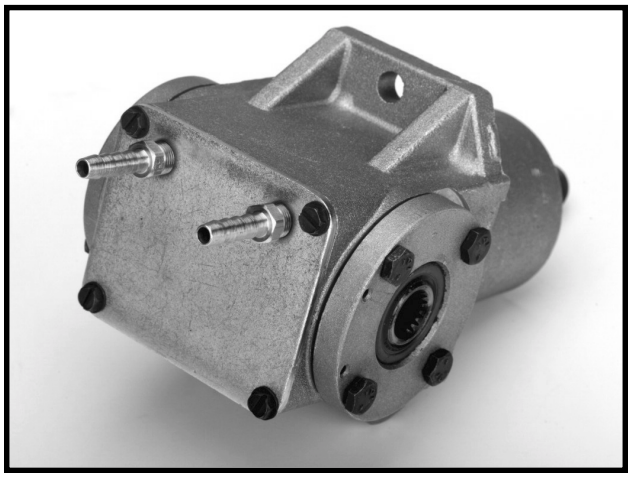
Heavy Duty 1000 New Series

We have developed a new longer housing that allows us to incorporate a third bearing on the input shaft. Look for this improvement on many commercial applications which have higher belt loads and torque going through the unit.



1000 Series New Lubrication

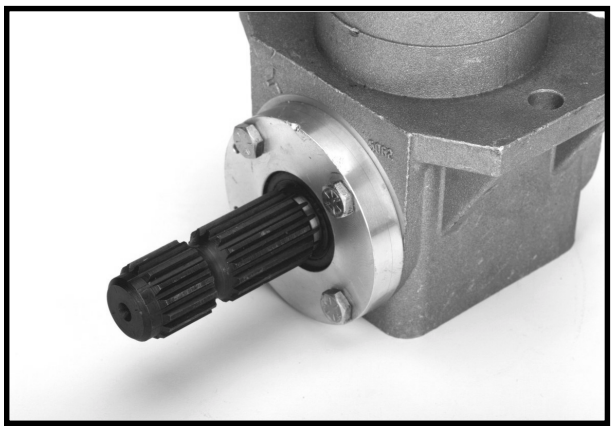
Based on commercial customer needs we have developed a new cover assembly for the 1000 series. This ported cover allows the OEM to circulate oil from the hydraulic system through the gearbox, dramatically extending the life of the unit through cooler filtered and fresh oil.



1000 Series New Bearing Retainers

As with the other options now available for this model, we have developed new bearing/seal caps for the output shafts. These new caps allow for a new oil seal and a larger load carrying bearing as needed by the OEM.

The new retainers also allow for a larger diameter output end of the shaft as requested by many of the commercial customers. This new style retainer allows for assembly from the outside in, the reverse of standard model 1000's.



Engine I.D. Decal Improvement

Identification decals on all engine specifications will be now much easier to read. The new layout will assist dealers in filling out warranty claims accurately by listing the model and engine specification more clearly. Another benefit is that customers who have lost their owners manual will be able to obtain one by calling the automated 1-800 #. This number also gives the customer a automated dealer location option. Tecumseh is making this change to reduce phone calls from consumers to their local dealers and at the same time meet the need of the end-user as quickly as possible. Another benefit of the change is that each engine will have it's own serial number, located directly after the D.O.M.

The D.O.M. is now two digits to display decade and the specific year in that decade it was manufactured.

NOTE: Claims not properly filled out will be returned to your Tecumseh distributor for review. When they have been completed and signed by that distributor, they will be processed.

Canadian Warranty Dollars

This is a reminder to our Canadian friends that Tecumseh pays out warranty claims in U.S. Dollars never Canadian. This has caused much confusion among dealers thinking they have been shorted for their repairs.

Educational Requirements for Dealers

(This replaces page 34 of the 2002 Update Book)

Educational requirements, for dealer re-classification, are as follows:

Dealer Level	Premier	Standard	Limited
Annual Update	Required	Required	Required
TMT on Staff	Required within 12 months of becoming a dealer	Recommended	Recommended
4-Cycle, OPE certification	TMT must have 4-Cycle certification	OPE 4-Cycle Required	OPE 4-Cycle Required
2-Cycle, OPE certification	Recommended	Recommended	Recommended
Driveline, OPE certification	Recommended	Recommended	Recommended
CWD or Factory four day school (unless test-out option is taken)	Required every 4 years	Required every 4 years	Required every 4 years

Additional Information:

- Tecumseh requires OPE 4 cycle certification before the TMT test can be taken.
- TMT Test Price: $45.00
- Test-Out option: Must be declared before taking the TMT test. This option is available to both new and existing dealers. It allows a dealer or prospective dealer to forgo the four day school requirements.
- If dealer fails to pass the test after choosing the Test Out option, there is no free retest and the four day school is then mandatory.
- For those not testing-out, there is a free retest if the first test was failed.
- All CWD's provide testing for OPEESA on the first Thursday of every month. They will provide additional testing by appointment. Contact your CWD for further information.
- TMT certification goes with the technician. If that technician changes employers, the dealership no longer meets Premier Dealer status and will have to test another technician.
- Verification of the employed TMT will be monitored by your distributor.

Removal of Broken Bolts in Aluminum and Cast Iron Cylinder Blocks

Wayne LeBlanc, one of our Southern dealers had this shop tip to share with us.

1. Place a flat washer over the broken bolt.
2. Weld a bead around the washer connecting the bolt to the washer.
3. Use a vise grip and work the washer back and forth.
4. If it is too difficult to loosen, weld a nut to the flat washer, put the weld in the center of the nut as well as around the perimeter leaving two perpendicular sides free of weld so access with the corresponding open end wrench may be possible.

By welding the washer and nut to the broken bolt, it causes heat to transfer down the bolt and loosens the oxidized fastener. With the extra leverage of the washer and nut it can break the fastener loose rather easily. Its a safer method than drilling and using easy-outs.

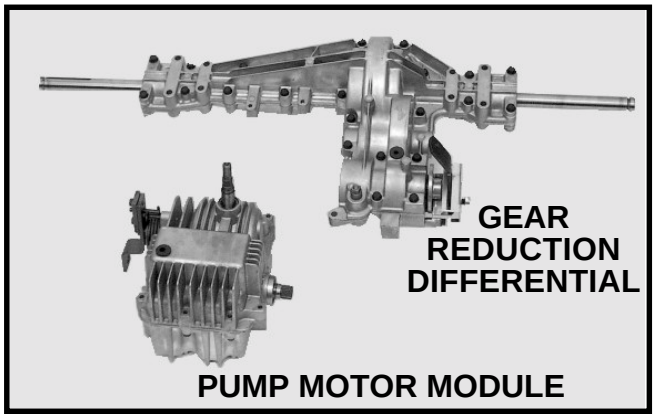
⚠ **Remove or shield any electronic component on or near the engine while welding.**

⚠ **Eliminate any flammable materials from the area while welding.**

LTH Service Instructions

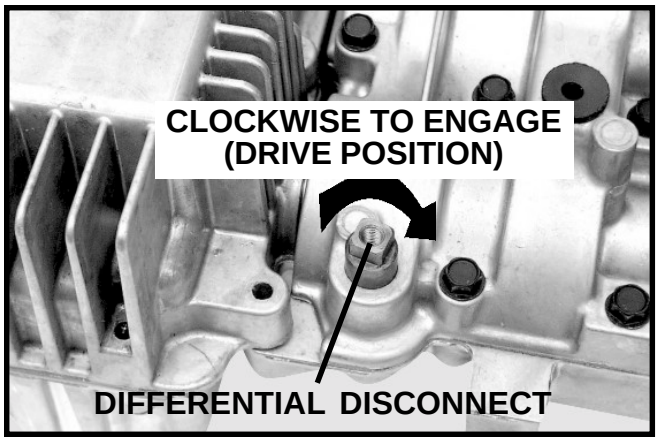
Prior to release of the repair manual covering the Lawn Tractor Hydrostatic Transaxle (LTH), we are including the servicing procedures for this latest addition to the Tecumseh/Transmission family of product. Should repair be needed, it is CRITICAL you follow the steps listed or a repeat failure could occur.

The LTH has been designed as a modular unit for easy service. In most applications, the pump can be removed from the transaxle without removing the complete assembly from the equipment. The following steps will guide you through replacement of the NON SERVICEABLE pump/motor module.

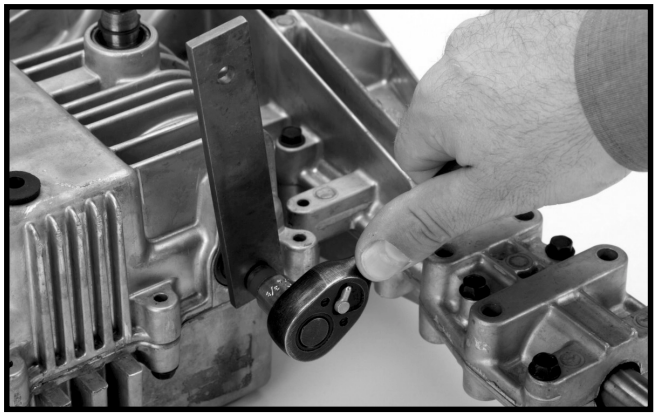


Removal - Pump & Motor Module

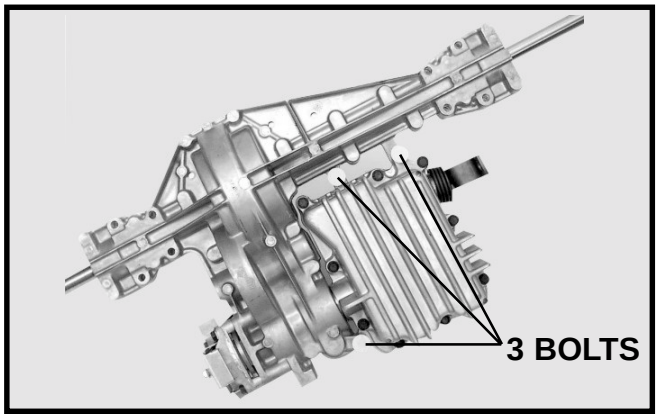
1. Begin by removing the drive belt and the control shaft linkage. Leave the differential disconnect lever in the drive position.



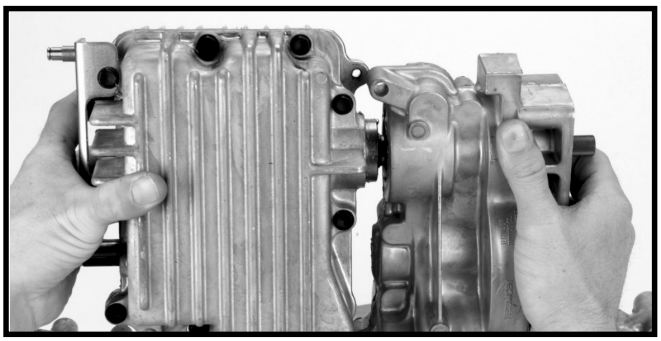
2. Remove the control lever and neutral return spring and transfer to the new module. You will also need to remove and transfer the pulley assembly.



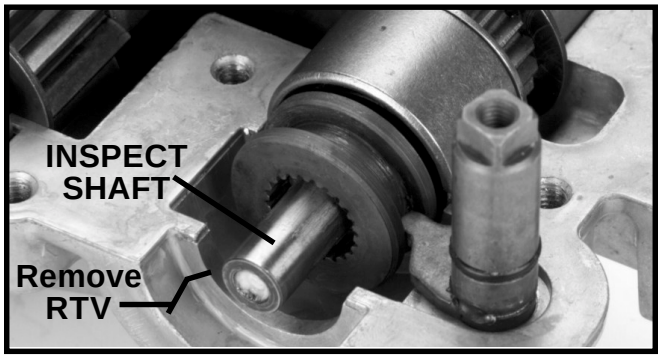
3. Remove the three hex head bolts using a 3/8" socket, which connects the pump/motor module to the transaxle.

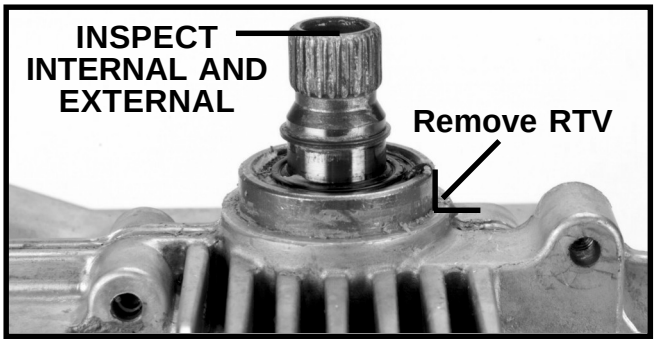


4. Rotate the pump motor module to break the RTV sealant at the joint, then remove the pump. Note the thrust washer and spring locations as shown on page 40. The thrust washer and spring position is CRITICAL on re-assembly. The flat washer goes against the snap ring on the pump.



5. Next inspect the reduction gear differential-input shaft for damage and the external splines on the output shaft of the pump/motor module. Should damage be present in either area removal of the transaxle assembly to replace the damaged shaft will be required. If both areas look undamaged, scrape any residual RTV sealant from the joint.





Installation - New Pump/Motor Module

1. Position the sleeve onto the splined input shaft of the gear reduction differential. This will open up space to receive Tecumseh Lubriplate grease as well as properly position the sleeve. Use Tecumseh small telescoping magnet part **# 670378** and a small screw-driver to work it on to the spline.

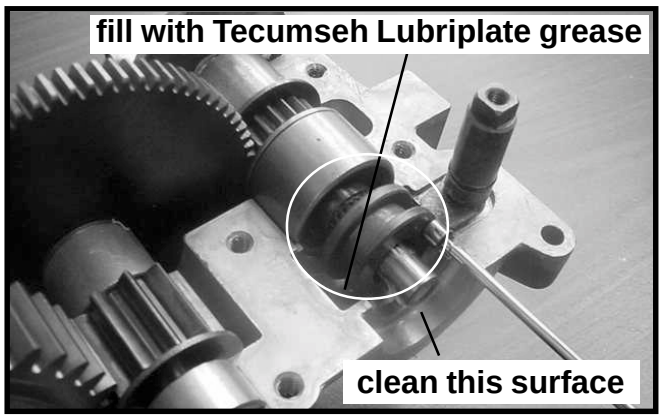


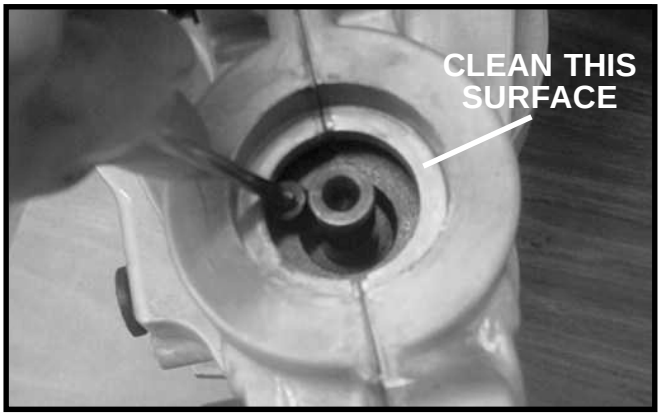
Photo showing cavity w/cover removed

2. If completely dry from differential service, fill the disconnect pocket with 1/3 oz. of Lithium grease.

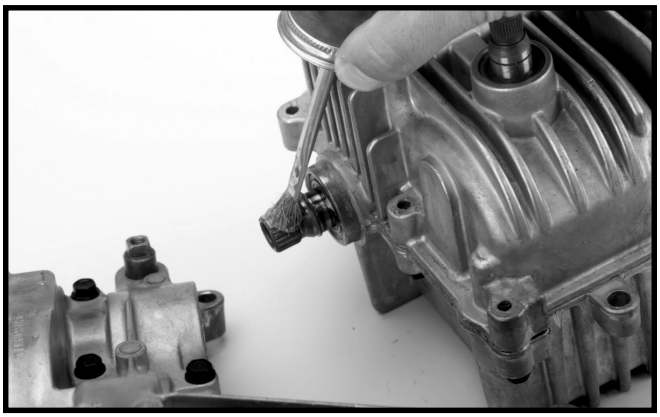
   NOTE: If you are replacing the pump/motor module you will only need to check for grease in the pocket. Add only a small amount if it appears low. Tecumseh Lubriplate part **# 730272.**

3. Wipe the sealing surface of excess Lithium grease from the previous step. Then wipe a second time with a rag with brake cleaner applied as you must have a residue free surface for the RTV sealer. (Step 6)

NOTE: Make sure the differential disconnect collar is still in the engaged position (on the spline).

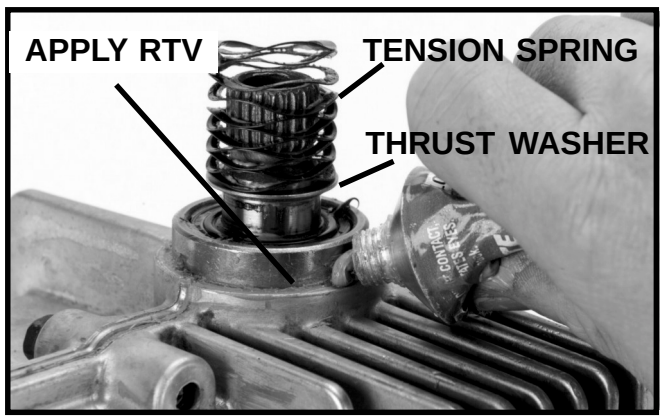


4. Next apply anti-seize lubricant to the external extension shaft and its mating internal shaft on the pump.

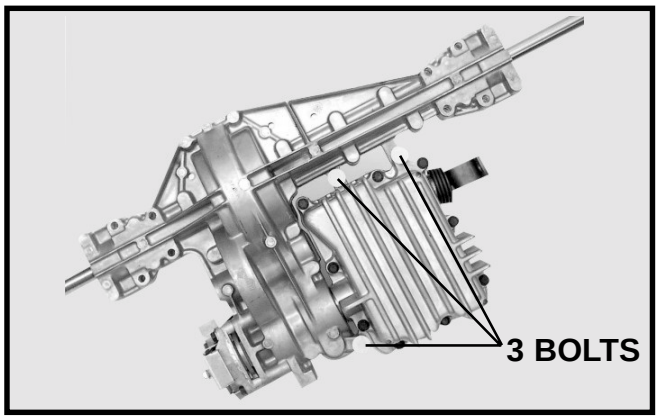


5. You are now ready to install the pump. Install the thrust washer and coil spring on the output shaft of the pump/motor module. The thrust washer will sit on the snap ring from the output shaft with the coil spring to follow.

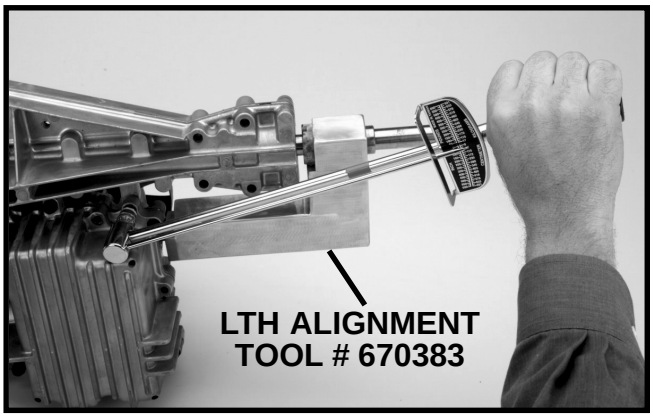
6. Apply a 1/4 inch (6mm) bead of RTV silicone on the shoulder of the pump housing that makes contact with the transaxle as shown. RTV sealant prevents moisture and impurities from entering the disconnect cavity.



7. Carefully install the pump/motor module back on the transaxle. Twist the module until the spline slides into the disconnect collar. Install the three bolts, but **DO NOT** tighten them.

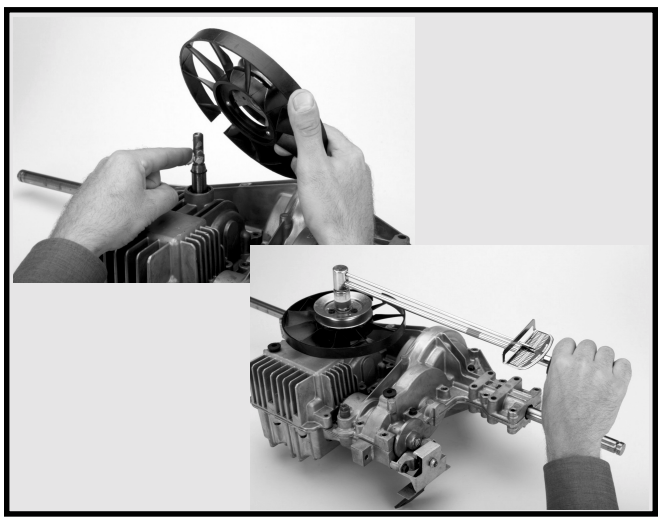


8. Install the REQUIRED alignment tool part # **670383** over the axle and the control shaft. With the alignment tool installed, torque the three bolts to 90 inch Lbs. (10 Nm) then remove.



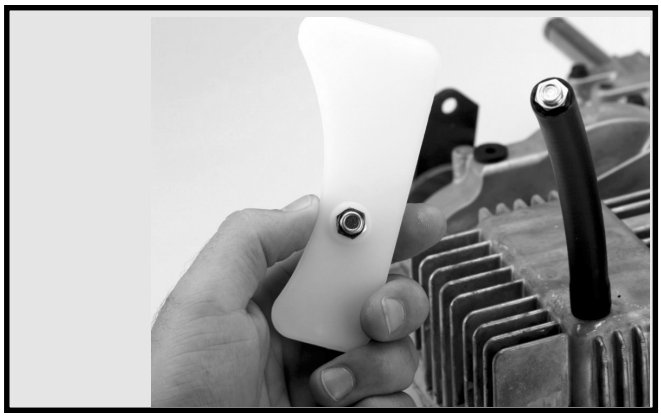
9. Apply anti-seize to the splines of the input shaft. Transfer the drive pulley/fan assembly and carefully torque the nut to 30 ft lbs./360 in. lbs. (40 Nm).

   CAUTION: ***Excessive torque could break the shaft ALWAYS use a torque wrench***.



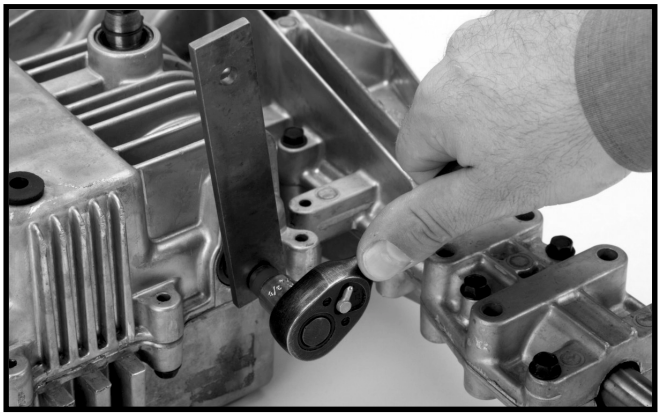
10. Position the pump/motor module on a level surface and remove the rubber oil fill plug. Install the new grommet and expansion tank supplied with the NEW pump.

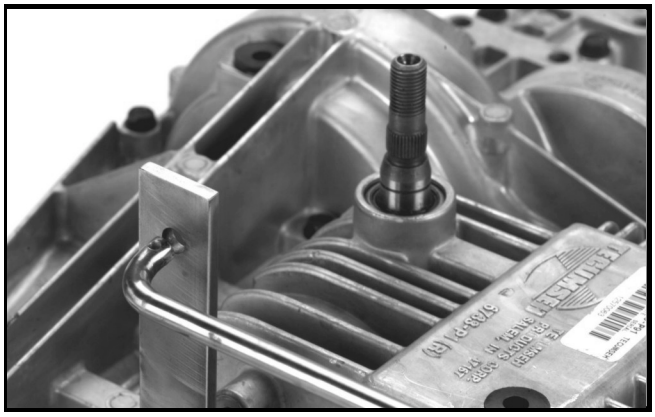
    CAUTION: ***DO NOT allow any contamination into the pump or FAILURE will occur.***



11. Install the neutral return spring (if equipped) and the control lever. Apply a small amount of blue Loctite (thread lock) to the bolt; install and torque it to 90 inch lbs. (10 Nm).

    NOTE: The bolts that hold the control lever and disconnect arm are 1/4" fine thread.





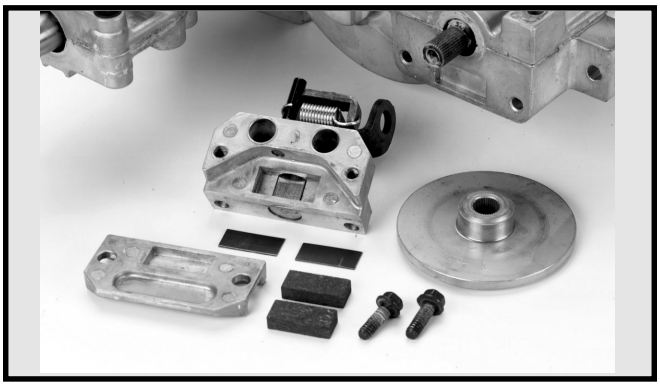
12. Next with the control shaft still in the neutral position, install the OEM linkage and drive belt. If the differential disconnect linkage was removed, it is CRITICAL to check for NO pre-load in the drive position. The OEM linkage rod MUST fall in at this point. If the link does not fall, linkage adjustment or repair is required as severe transaxle damage will occur.

Servicing the LTH Gear Reduction Differential

The Gear Reduction Differential part of the LTH has many of the time tested parts previously used in the 900 and MST models.

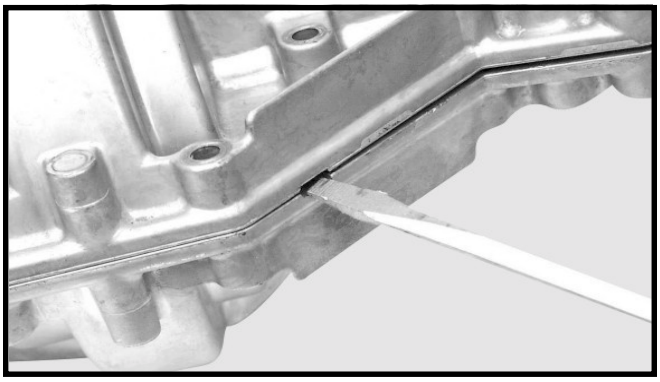
The following steps will review the disassembly/ assembly procedures and any areas that may need inspection.

Disassembly of Transaxle

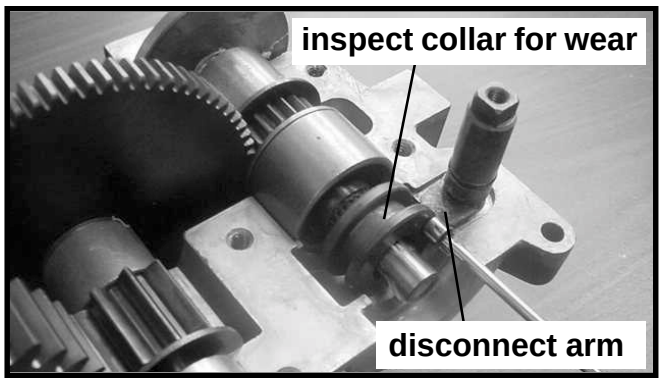


1. With the Pump/Motor module removed, remove the break assembly and inspect the pads for excessive wear.

2. Now remove the oil fill plug with a needle nose pliers and rolling motion as shown. With the plug removed, tip the unit over and drain the oil.

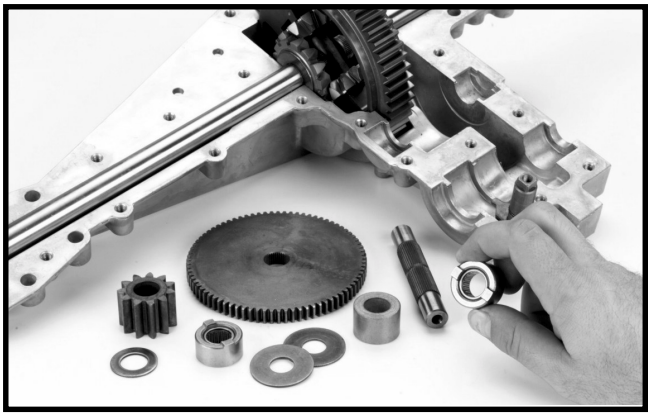


3. Next remove all the cover bolts. Then using the dedicated pry points, insert a screwdriver and twist to break the sealant between the case and cover.

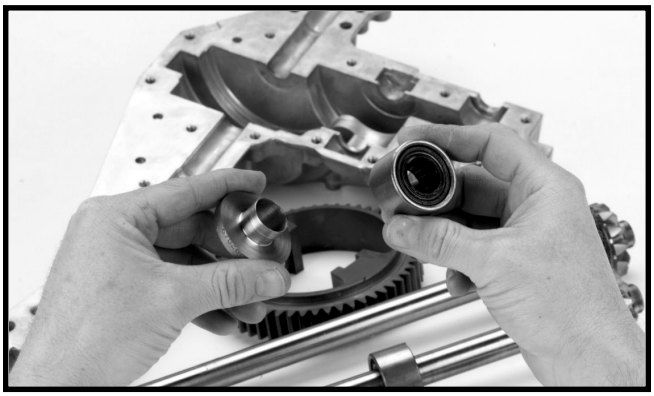


4. Next inspect the differential disconnect arm and collar for wear. Should excessive wear be found the OEM linkage was most likely misadjusted or damaged holding pressure on the brakeshaft and disconnect collar, causing wear. After damaged parts are replaced, follow the OEM linkage adjustment procedure upon installation. If the linkage was improperly assembled causing damage to the mechanical disconnect collar and arm, file a warranty claim with the OEM (if within the warranty period).

5. Inspect the bearing seal on the brake shaft assembly for wear or damage and replace as necessary.



6. Now remove the output shaft assembly. Inspect the bearings and gears for signs of excessive wear or damage and replace any worn or damaged parts.

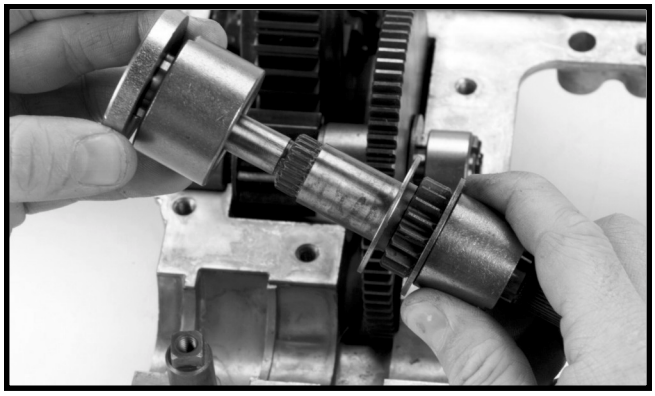


7. Next remove the differential assembly and inspect the gears and the axle bearing/seal assemblies for wear or damage. Clean all parts.

   Tech Tip: Prior to final sealing of the unit re-check for thrust washers between all rotating and any stationary surfaces. Also verify all bearing/seal assembly locator tabs are in the proper positions.

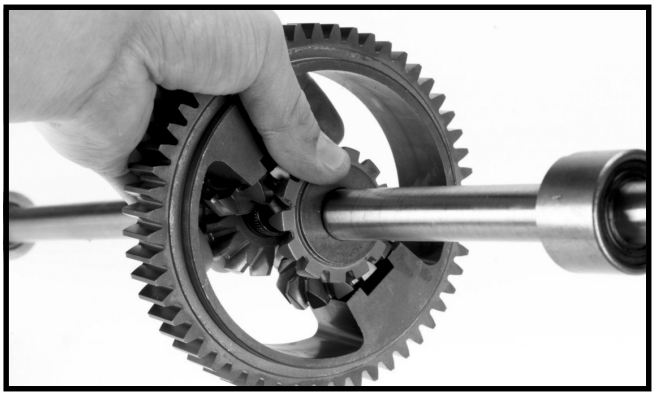
Assembly LTH Gear Reduction Differential

ASSEMBLY TIP: Always make sure there is a thrust washer between rotating and stationary surfaces (see picture).



NOTE: Protect all seal/bearing assemblies by using seal protector part # **670262A** or seal damage will occur.

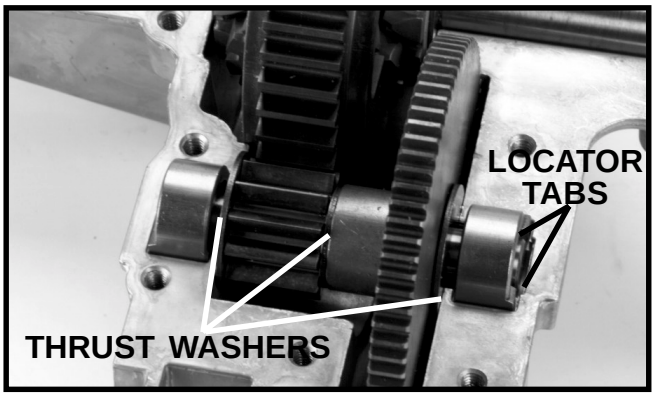
The "A" version of this seal protector has been modified to work on these seal/bearing packs. The standard # **670262** will NOT work.



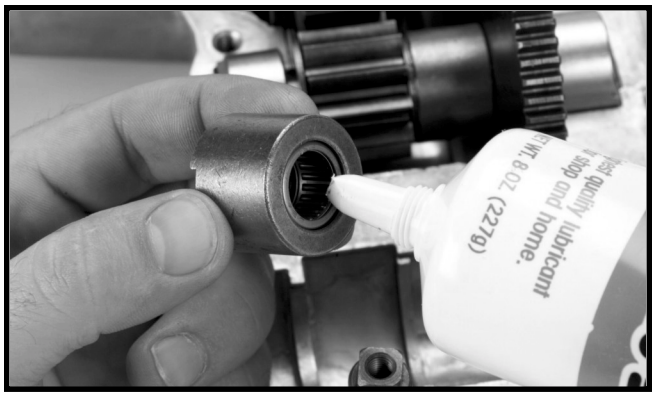
1. Start by installing the differential assembly and ensure the axles lay flat in both bearing pockets. Now rotate the axle bearings into their locked position. If you question that the differential assembly is not properly installed, spin axles by hand. The differential assembly should turn freely and not "climb" out of the case.

   CAUTION: ***Axle keyways can be extremely sharp.***

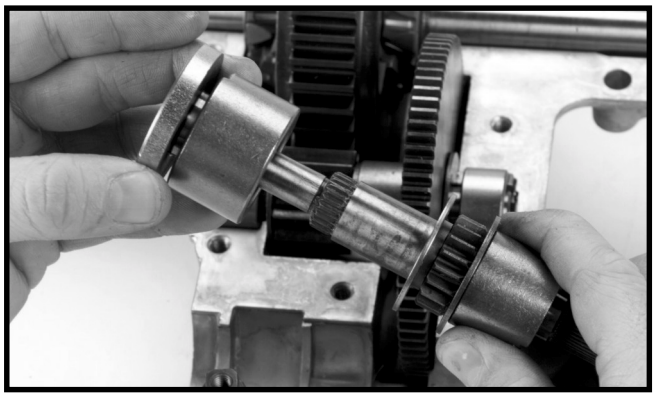
2. Install the output shaft assembly as shown. Rotate the bearings into their dedicated lock positions.



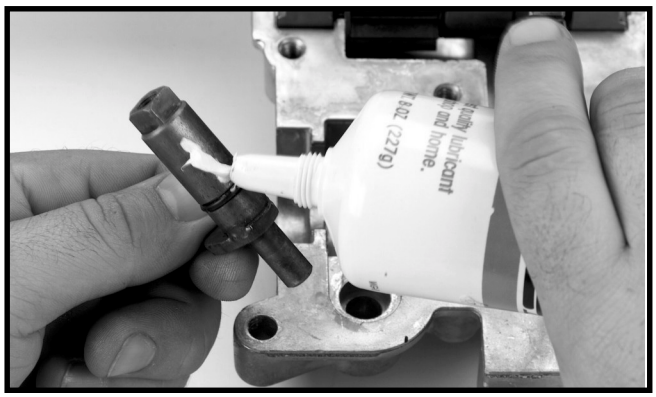
3. Assemble the brake shaft using the seal protector # 670262A. Apply Lubriplate to the brake shaft assembly.



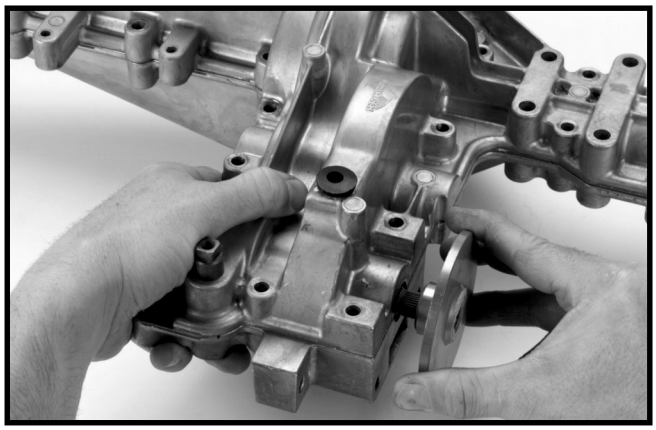
4. Before installing the disconnect lever and collar, place the bearing seal assembly on the brake shaft. Then lubricate the top and bottom of the disconnect lever with Lubriplate and install the disconnect lever and collar. Leave the disconnect collar in the engaged position. Fill the pocket with Lubriplate grease part **# 730272,** use the whole tube.



CAUTION: DO NOT apply excessive grease that could contaminate the sealing surface on assembly.



5. Before applying RTV sealant to the cover, it is a good idea to install the cover and perform a rock test to insure all the bearings and axle assemblies are installed correctly. The cover should be seated tightly to the case and the axles should rotate freely. Place the brake disc backwards on the brake shaft and rotate while holding the cover down on the case. Turning the brake disc by hand should easily turn all axle gears.



6. You are now ready to apply Loctite 598 RTV sealant to the cover and bearing seal pockets as shown. Install and torque the cover bolts to 90 inch lbs (10Nm).

NOTE: ***A small bead must be applied to the bearing/seal housing in the cover prior to assembly.***

7. Use the Tecumseh small telescoping magnet part # **670378** and a small screwdriver to work the disconnect collar onto the spline. Fill the disconnect pocket with Tecumseh Lubriplate **# 730272**, use the whole 3/8 oz. tube. This ensures that no oxidation will occur on the disconnect spline.

8. Wipe the sealing surface of excess Tecumseh Lubriplate grease from the previous step. Then wipe a second time with a clean rag with brake cleaner on the rag as you must have a residue free surface for the RTV sealer to be applied.

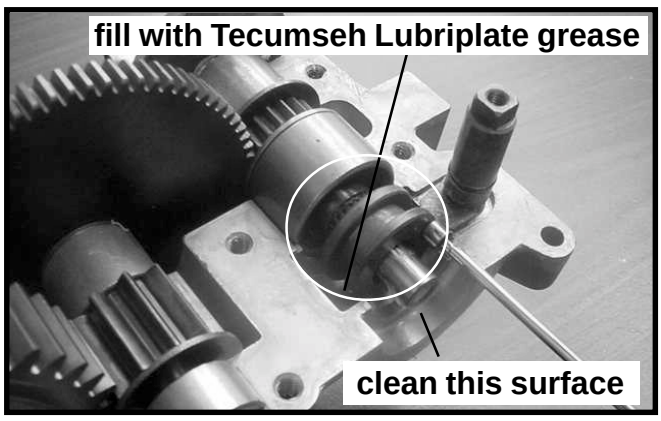
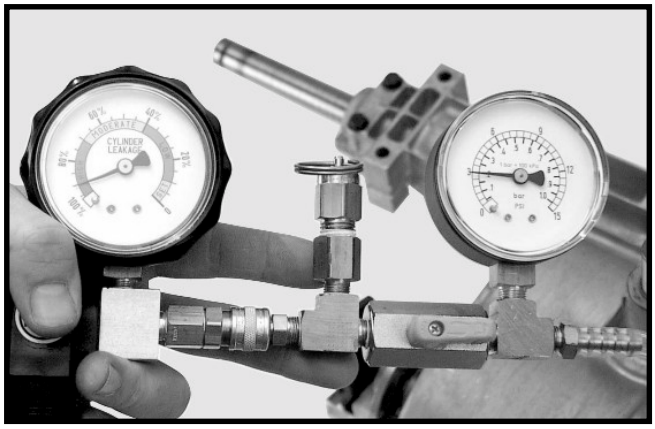


Photo showing cavity w/cover removed

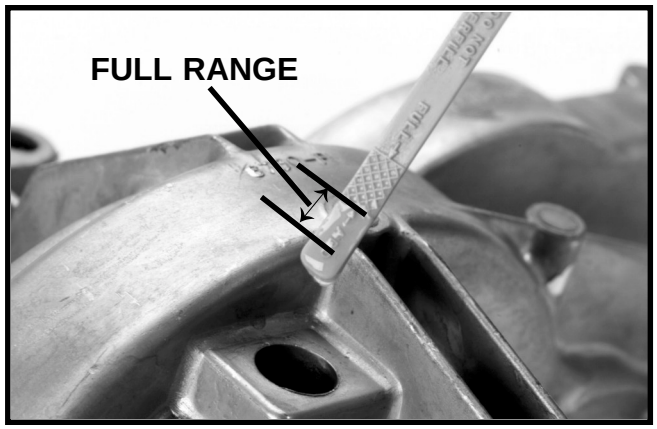
NOTE: ***Make sure the differential disconnect collar is still in the engaged position (on the spline).***

9. To insure customer satisfaction and no returns for a leaky unit, you should pressure test the unit. Use Tecumseh pressure tester part # **670340**. Remember do no exceed 3 PSI on fresh sealant or the RTV could be blown out causing a leak.

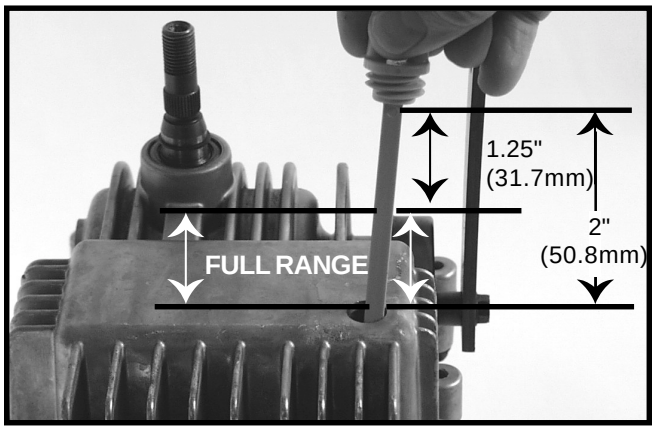
   NOTE: All checks are made on a cold unit



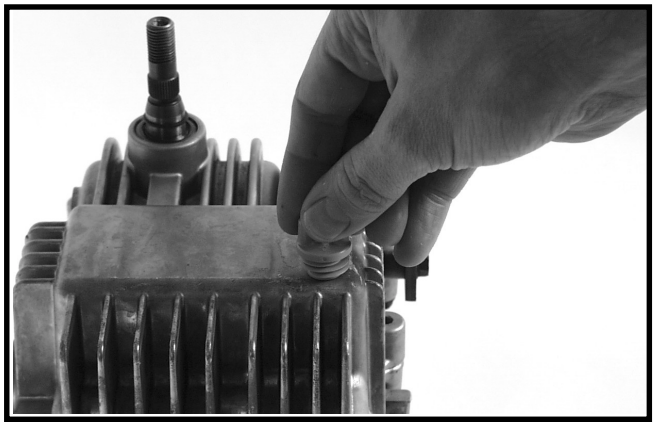
10. **Checking/Filling the Differential Oil Level**
    Fill the unit with 8 oz. (236 ml) of 80W90 Tecumseh part # **730229B**. Checking the differential oil level: To check the oil level in the differential we recommend using dipstick part # **35941**. THROUGHLY clean the area around the fill plug, and then remove it using a needle nose plier. Insert the dipstick at slight angle as shown and remove. The oil level should be between the first "D" from the end in the "add" word and the add line. If the oil level is low and a leak not be obvious, you should pressure test the unit to locate the leak and repair as needed.



11. **Checking the Pump/Motor Oil Level**
    If you suspect a low or excessive oil level in the pump/motor pack it can be checked using a RE-MARKED dipstick part # **35941**. Before removing the expansion tube or tank it is **CRITICAL** you completely clean the area around the plug.
    NOTE: Any contamination allowed in the unit will cause unit failure.



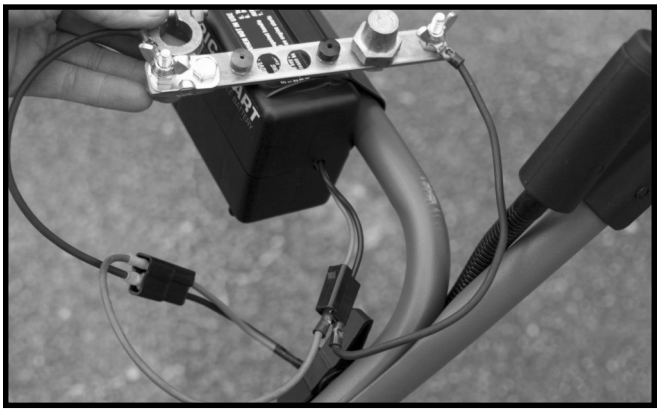
12. Next mark the dipstick at 1.25 and 2.0 inches (31.7-50.8mm) as shown to create a capacity range. Now install the gauge until it stops on the top of the pump surface as shown. The oil level should be between the lines. If the oil level is low and no leak is obvious you should pressure test the unit, using leak test kit part # **670340** or similar tool, DO NOT exceed 10 PSI pressure. If no leak is found you can add oil use ONLY Tecumseh's synthetic hydraulic oil part # **730228**. If the unit is within warranty, pump replacement will be required.



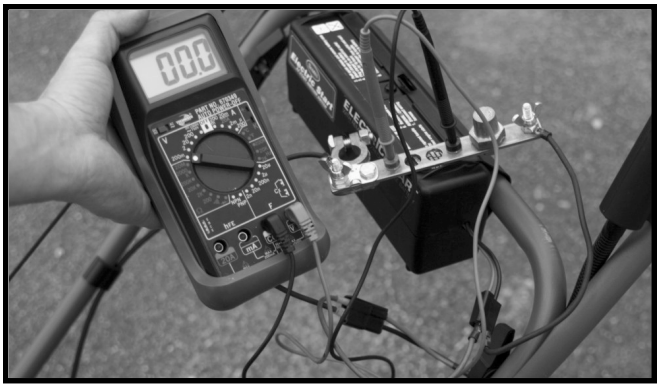
Rotary Mower Testing

Starter Draw Test, Alternator Output Test, Battery Capacity Test

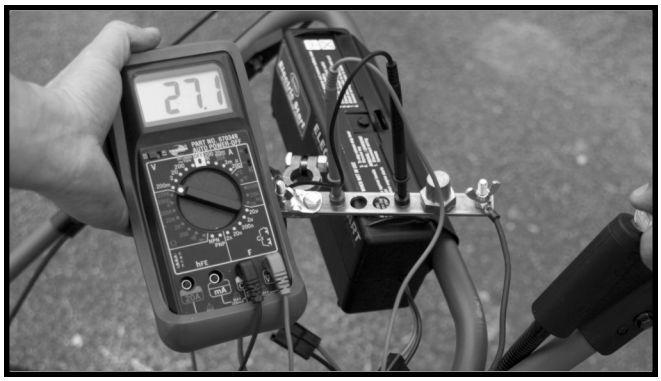
*Tools needed: Multimeter and shunt Tecumseh part # **670385** with three jumper wires.*



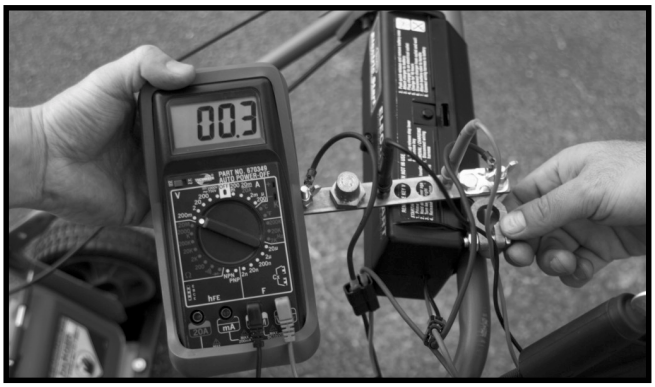
1. Disconnect the battery connection on an electric start rotary mower and place the shunt between the black wire from the mower's wire harness by plugging in the black jumper wire to one end of the shunt and the other black jumper wire on the opposite end of the shunt to the battery connection. Reconnect the positive (red wires) with the red jumper wire.



2. Turn on the Multimeter placing the dial to the Millivolt Scale (mV) with the AC/DC measurement in the DC position. Plug the black lead into the “COM” input and the red lead into the V/Hz input on the meter. Plug corresponding leads into the shunt, red to red and black to black as shown. Readings will be in Amps with the shunt connected and the meter dialed to the millivolt scale.



3. The meter will read the current in Amps that the starter is drawing from the battery. Watch as the starter is cranking. If the mower starts before you can get a reading, discount the spark plug boot.



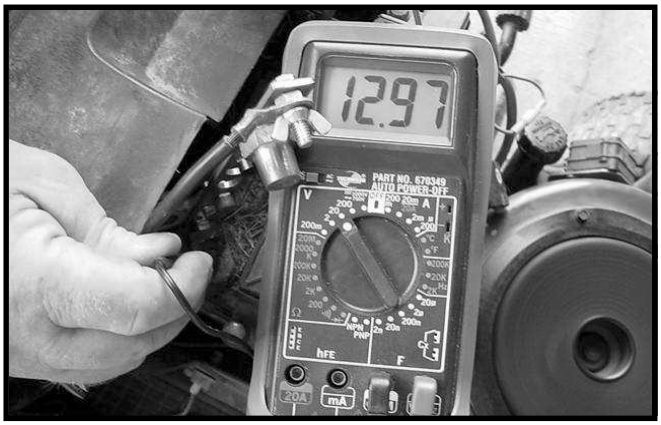
4. Once running, the current that the alternator is producing will be seen as 00.3 Amps or 300 milliamps on the meter.

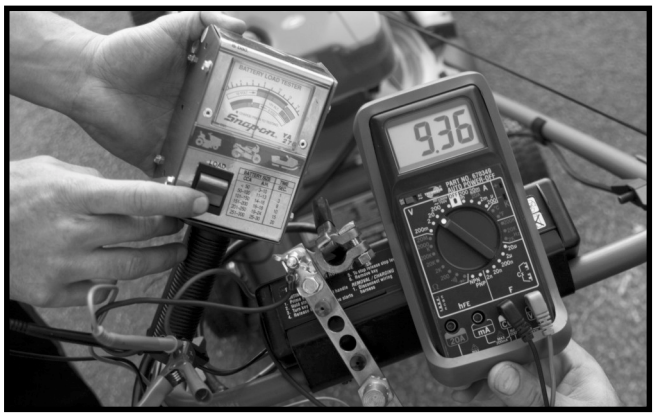
5. With the shunt connected as in step 4 you can see the maximum output of the alternator 400 milliamps as you load the battery with a load tester.

Battery Capacitance Test

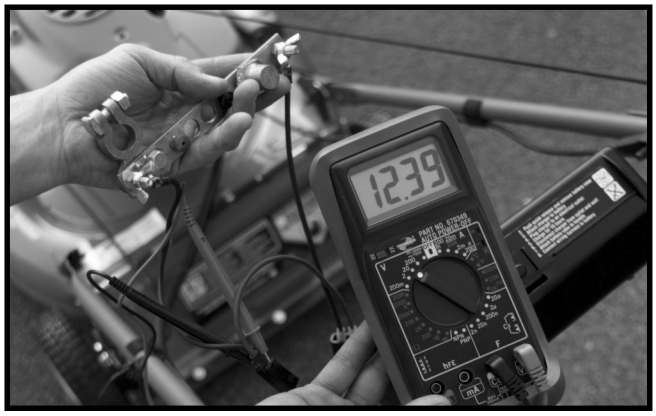
Battery testers come in a variety of capacities. Tecumseh recommends no more than a 75 Amp load model. A higher load will be excessive for industry batteries.

To test for battery capacitance on a tractor, touch a battery load tester to the battery leads at the connector. Turn meter to the 20 volt scale, load the battery and watch the meter while the load is being applied. If voltage goes down and then up past 12 volts immediately, (as this one did) the capacitance of the battery is full and it should be replaced. If good, the battery should **SLOWLY** rise in volts up to a reading above 12 volts.





To test for battery capacity on a walk behind mower, unplug the red and black meter leads from the shunt and plug them into the battery connector. Place a battery load tester to the battery leads at the connector. Turn meter to the 20 volt scale, load the battery and watch the meter while the load is being applied. If voltage goes down and then up past 12 volts immediately, the capacitance of the battery is full and should be replaced. It can no longer receive a charge. If good, the battery should **SLOWLY** rise in volts up to a reading above 12 volts.



Tractor Testing

Starter Draw Test, Alternator Output Test, Battery Capacity Test

Tools needed: Multimeter and shunt

1. Disconnect the negative battery cable on the tractor and place the shunt in series between the negative battery post and the negative cable.

2. Turn on the Multimeter placing the dial to the Millivolt Scale (mV) with the AC/DC measurement in the DC position. Plug the black lead into the “COM” input and the red lead into the V/Hz input on the meter. Plug corresponding leads into the shunt, red to red and black to black as shown. The meter will read the current in Amps that the alternator is producing.

3. The meter will read the current in Amps that the tractor starter is drawing from the battery at start up. If the tractor starts before you can get a reading, disconnect the spark plug boot. Once running, the Amps that the alternator is producing will be seen.

4. With the shunt connected you can see the maximum output of the alternator as you load the battery as seen in the photo on the right.

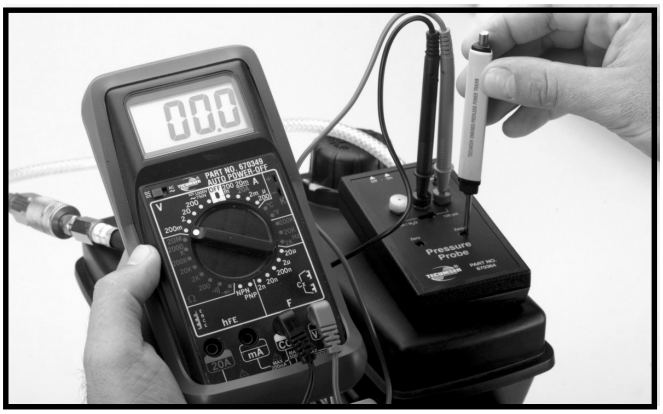
Compression Testing

Compression Test

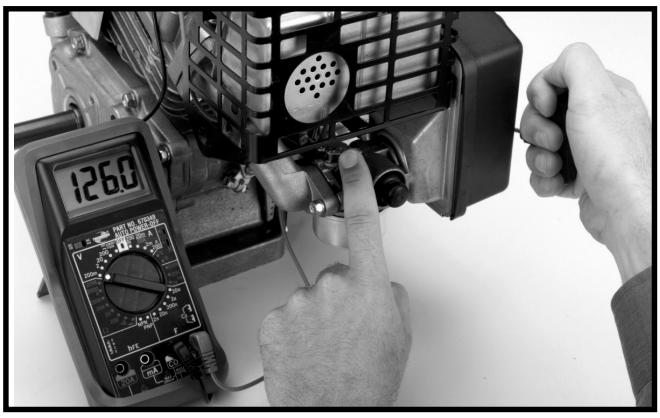
Tools needed: Multimeter and Pressure Probe

1. Turn on the Tecumseh Pressure Probe. Notice the Low Battery light should flicker once, which indicates a good battery. Turn probe selector to the 100 PSI position.

2. Turn on the Multimeter placing the dial to the Millivolt Scale (mV) with the AC/DC measurement in the DC position. Plug the black lead into the "COM" input on the meter and the "Common" black input on the Pressure Probe. Plug the red lead into the V/Hz input on the meter and the red "100 PSI" input on the Pressure Probe. Look at the meter, make sure to Zero the adjustment located directly below the Red 100PSI input with a small flat blade screw driver.



3. Install the compression hose into the spark plug hole and connect the probe to the compression hose. While holding the throttle in the Wide Open Position pull over or attempt to start the engine with the electric starter. If pulling by the recoil, pull the engine four to five times. Record your reading, lbs per square inch of compression.



Vacuum Testing

Crankcase Vacuum Test

Tools needed: Multimeter and Pressure Probe

NOTE: The most important part of any crankcase pressure test is to have some vacuum. If positive pressure is present it indicate one of the following.

- Defective breather assembly
- Leaking gasket(s), defective "O" ring(s) or seals
- Extreme cylinder/piston ring wear

NOTE: If pressure is above the maximum range as listed, inspect the air filter assembly for restrictions.

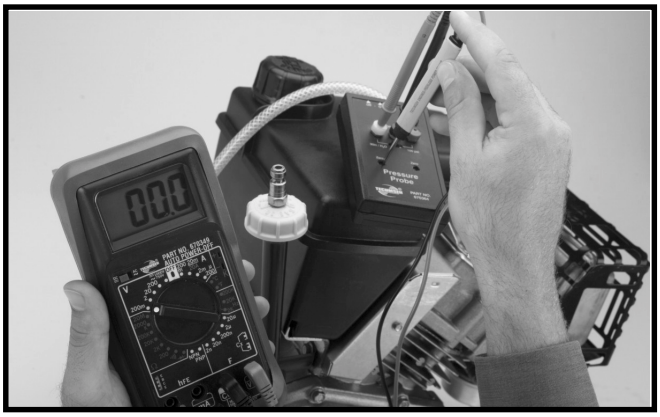
1. Turn on the Tecumseh Pressure Probe. Notice the Low Battery light should flicker once, which indicates a good battery. Turn the probe selector to the 30in/H_2O position.

2. Turn on the Multimeter placing the dial to the Millivolt Scale (mV) with the AC/DC measurement in the DC position. Plug the black lead into the “COM” input on the meter and the “Common” black input on the Pressure Probe. Plug the red lead into the V/Hz input on the meter and the Yellow 30in/H_2O input on the Pressure Probe. Look at the meter, with a small flat blade screw driver make sure to zero the adjustment located directly below the Yellow 30in/H_2O input.

   NOTE: Insert the "O" ring and replace as needed to insure a good seal on the oil fill tube.

3. Connect the supplied Oil tube cap adaptor to the top of the oil fill tube and connect with the vacuum/pressure probe.

4. Start the engine and note the reading which will be vacuum in inches of water.



Crank Case Vacuum Chart

VERTICAL SHAFT ENGINES

Displacement	Engine Model	CCV Max	CCV Min
127 cc	LEV80	12	5
163 cc	LEV100	16	8
185 cc	LEV115	12	4
195 cc	LEV120	20	5
172 cc	OVRM105	15	5
195 cc	OVRM120	16	5
358 cc	OHV110/115/120/125/130	27	6
490 cc	OHV14/15/16/17	11	7
691 cc	VT18/20/22	16	6
318 cc	TVM195	25	9
358 cc	TVM220	27	8
163 cc	VSK100	15	7

HORIZONTAL SHAFT ENGINES

Displacement	Engine Model	CCV Max	CCV Min
156 cc	H30/35/40	23	5
172 cc	OHH50	8	2
195 cc	OHH55/60/65	12	2
318 cc	OHM90/110	25	10
358 cc	OHM120	16	2
318 cc	HM80/90	18	9
358 cc	HM100	22	9
172 cc	OHSK50	14	2
195 cc	HSSK50/55	29	3
195 cc	OHSK55/60/65/70	15	2
222 cc	HSK60	20	9
247 cc	HSK70	20	8
318 cc	OHSK80/90/110	23	10
318 cc	HMSK80/90	25	10
358 cc	OHSK110/120/130	22	2
358 cc	HMSK100/110	28	7

NOTE: All measurements must be taken at high speed no-load.

Oil Pressure Testing

Oil Pressure Test

Tools needed: Multimeter and Pressure Probe

CAUTION: The probe MUST be kept above the oil level or damage will occur.

1. Turn on the Tecumseh Pressure Probe. Notice the Low Battery light should flicker once, which indicates a good battery. Turn the probe selector to the 100 PSI position.

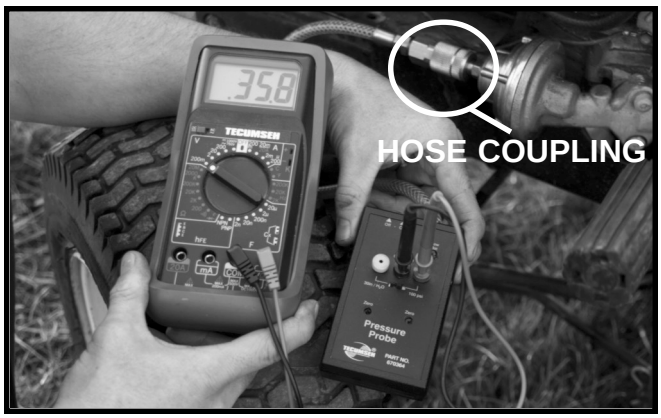
2. Turn on the Multimeter placing the dial to the Millivolt Scale (mV) with the AC/DC measurement in the DC position. Plug the black lead into the "COM" input on the meter and the "Common" black input on the Pressure Probe. Plug the red lead into the V/Hz input on the meter and the red "100 PSI" input on the Pressure Probe. Connect the oil pressure adapter nipple/oil filter pressure adapter on the engine. Look at the meter, make sure to Zero the adjustment with a small flat blade screw driver located directly below the Red 100PSI input.

3. Holding the pressure probe above the engine, start the engine and note the reading. Oil pressure less than 10 PSI suggests a system issue that will require disassembly and repair.

1997 MODEL OHV 170 @ IDLE SPEED

4. Once the pressure test is complete, disconnect the pressure probe hose from the engine and allow to thoroughly drain away from the pressure probe.

Tech. Tip: After removing the filter adapter you can reconnect it to the meter hose and allow any art in the line to drain out.



1997 MODEL OHV 170 @ HIGH SPEED

Europa News

The following issues regarding Bulletins or Policies apply to Europa only.

OHC (overhead cam) New Engine

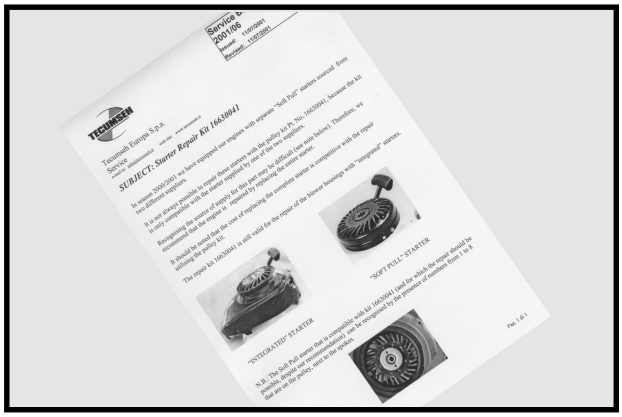
We are pleased to introduce our latest engine to the Tecumseh horizontal family of products. This engine features overhead cam technology, producing 7.5 HP and will be available this year.

* *Dual Ball Bearings flywheel/PTO end*
* *Extra quiet muffler*
* *Optional Low Oil Sensor*
* *Large triple stage air filter*
* *Cast iron cylinder sleeve basic*
* *Large 5 litre (5.6 quarts) fuel tank*

Starter Service Bulletin 2001/06

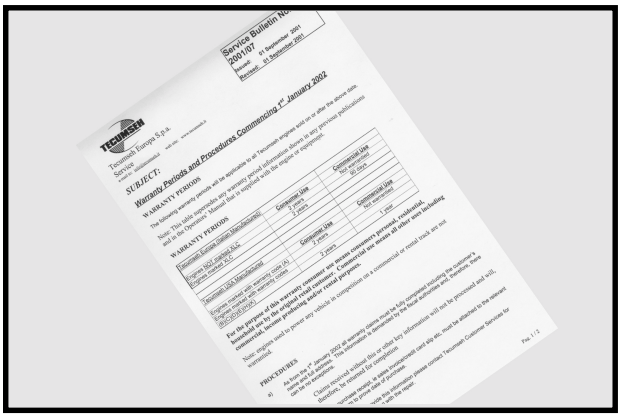
We have issued this European ONLY service bulletin to address the proper repair procedures for the bolt-on recoil. The NEW recommended procedure is to replace (NOT repair) this style with a complete assembly.

Please note the service pulley kit part number **16630041** would still be used on the integral starter/blower housing assembly.



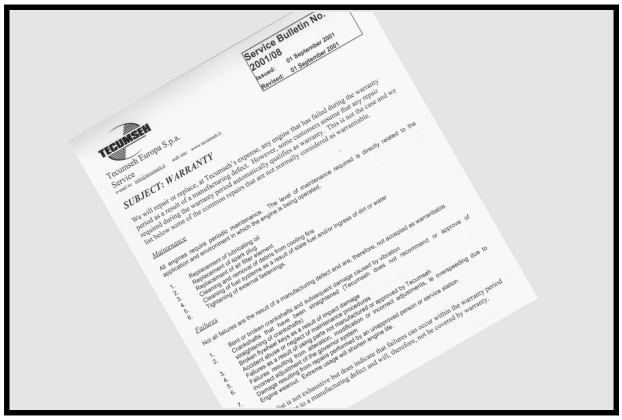
Service Bulletin 2001/07

This bulletin covers the new warranty policy regarding all engines sold in the European marketplace and will be in effect as of January 1, 2002.



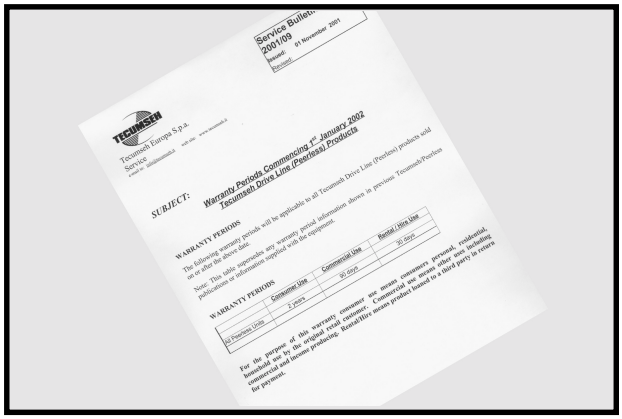
Service Bulletin 2001/08

This bulletin clarifies those items that are covered by warranty and those considered as customer maintenance and, therefore, NOT warranty. The bulletin also reviews typical types of failures caused by neglect and, therefore, NOT warrantable.


Service Bulletin No.
2001/08
Issued: 01 September 2001
Revised: 05 September 2001
TECUMSEH
Tecumseh Europa S.p.a.
SUBJECT: WARRANTY

Drive Line Bulletin

This bulletin reviews the warranty periods that apply to all drive train products sold in the European market, effective January-02. This reflects the changes in accordance with European law. If you do not have a copy, please contact your distributor.

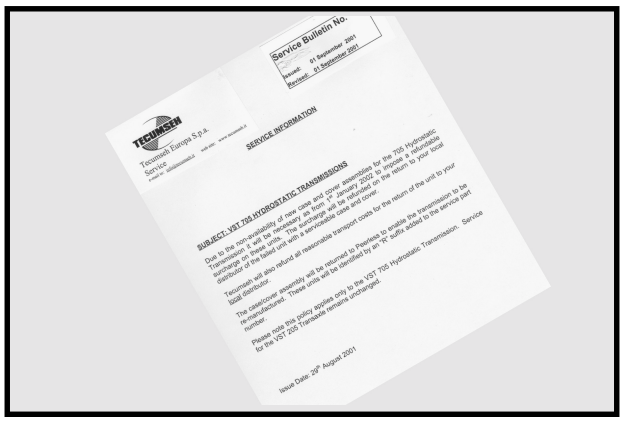

Service Bulletin
2001/09
Issued: 01 November 2001
Revised:
TECUMSEH
Tecumseh Europa S.p.a.
SUBJECT: Warranty Periods Commencing 1st January 2002 Tecumseh Drive Line (Peerless) Products
WARRANTY PERIODS
WARRANTY PERIODS

VST 705 Service Policy New Europe ONLY

The VST 705 transmission has principally been used in products manufactured and sold in the European market place. This large concentration of product has produced the need for a NEW replacement unit policy.

Effective January 1, 2002 we are establishing a refundable core surcharge program on these units. We will also refund any reasonable return freight cost through your distributor to you.

When the inventory of new service units has been depleted only remanufactured units will be available.


Service Bulletin No.
Issued: 01 September 2001
Revised: 01 September 2001
TECUMSEH
Tecumseh Europa S.p.a.
SERVICE INFORMATION
SUBJECT: VST 705 HYDROSTATIC TRANSMISSIONS
Issue Date: 30th August 2001

Aspen Fuel Approved

This alternative fuel is now approved for use in our 4-Cycle engines in place of the standard unleaded fuel in the European market place.

Service Tool List and Order Form

Special Service, Diagnostic, Measurement & Repair Tools Description	Part Number	User Cost	Premier Dealer	Standard Dealer	Limited Dealer	On Hand	On Order
*Tool Kit	670195E		M	M	M		
Tachometer (Inductive or Vibratach)	670156 Vibratach or 670365 Inductive		M or R	M or R	M or R		
Ignition Tester	670366		M	M	M		
Multi Meter VOM & Temperature	670349		M	M	M		
Compression Tester	670358		M	M	M		
Outside Micrometers 0-1"	670350		M	R	R		
1-2:	670351		M	R	R		
2-3"	670352		M	R	R		
3-4:	670353		M	R	R		
Telescoping Gauge Set	670357		M	R	R		
Dial Indicator	670241		M	R	R		
Inspection Plate (Plate Glass) - Obtain Locally			R	R	R		
Feeler Gauge Set	670361		M	M	M		
Inch Pound Torque Wrench 0-600 inch lbs.	670363		M	M	M		
Valve Spring Compressor "C" Type	670362		M	M	M		
Piston Ring Compressor	670359		M	M	M		
Piston Ring Expander	670117		M	M	M		
**Valve Seat (Neway LG3000 Kit or comparable)	670347		M	M	M		
**Face Cutting Set (Neway 612 Gizmatic)	670348		R	R	R		
Cylinder Hone (Flex)	670360		M	M	M		
Starter Bendix Ring Tool	670346		M	R	R		
Crankcase Vacuum / Oil pressure adapter	670364A		M	R	R		
Hole Gauge Set	670356		M	M	M		
Oil Vacuum 110 Volt Pump only	670354		R	R	R		
Extreme Duty Oil Tank	670367		R	R	R		
Oil Vacuum Kit (Includes vac and tank)	670379		R	R	R		
Leak Test Kit - Complete	670340		R	R	R		
Leak Test Transaxle / Carburetor Adapter Kit	670345		R	R	R		
Dial Caliper, 6"	670368		R	R	R		

* See Tecumseh Form #694862 for Complete Tool Kit List
** Neway LG2000 or 102 kits can be upgraded by calling Neway direct: 1-800-248-3889
M = Mandatory Tools (Must have or place order)
R = Recommended Tools
NOTE: Prices subject to change
Equivalent tools may be used.

Dealer Name _____
Address _____
City, State, Zip _____
Phone _____
Account No. _____

TECUMSEH®

SERVICE BULLETIN 116

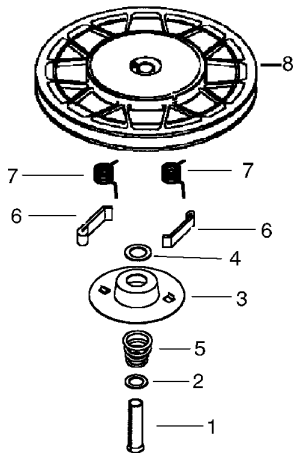
INFORMATIONAL

ISSUED: September 1993

REVISED: June 2001

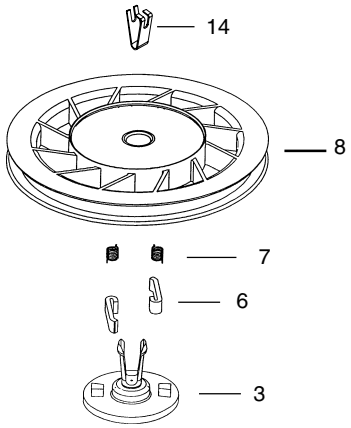
SUBJECT: Recoil Identification

During the past few years we have introduced you to several new styles of recoil assemblies. These recoils are used on all small and medium frame series engines. To assist you in making repairs, we have developed the quick reference illustrations below. By looking at the direction and style of ribs between the inner and outer parts of the pulley, you can use this chart to obtain the correct parts. Due to various housings, these parts will not be shown. **When parts are needed in addition to the ones shown in these illustrations, complete replacement should be considered.**



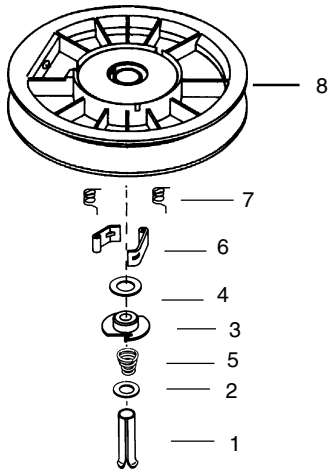
TYPE 1

1	590599A	Spring Pin (Incl. No. 4)
2	590600	Washer
3	590696	Retainer
4	590601	Washer
5	590697	Brake Spring
6	590698	Starter Dog
7	590699	Dog Spring
8	590700	Pulley & Rewind Spring Assy. (non-snow)
8	590709	Pulley & Rewind Spring Assy. (snow)



TYPE 2

3	590740	Retainer
6	590616	Starter Dog
7	590617	Dog Spring
8	590618A	Pulley & Rewind Spring Assy. (non-snow)
8	590645A	Pulley & Rewind Spring Assy. (snow)
14	590760	Locking Tab



TYPE 3

1	590599A	Spring Pin (Incl. No. 4)
2	590600	Washer
3	590679	Retainer
4	590601	Washer
5	590678	Brake Spring
6	590680	Starter Dog
7	590412	Dog Spring
8	590681	Pulley & Rewind Spring Assy. (non-snow)
8	590682	Pulley & Rewind Spring Assy. (snow)

TYPE 1, 2 & 3

590535 - Starter Rope (Length 98" - 9/64" diameter)
590701 - Starter Handle (non-snow)
590574 - Mitten Grip Handle (snow)

TECUMSEH®

SERVICE BULLETIN 415

4 CYCLE

ISSUED: June, 2001

SUBJECT: Defective Push Rods

Models Affected: All OHH and OHSK Engines

D.O.M.'s (date of manufacture) Affected: 0348 through 1073

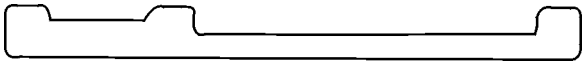
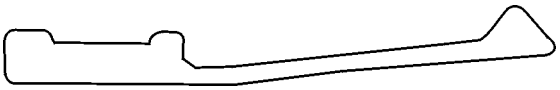
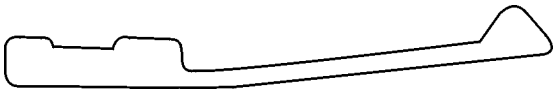
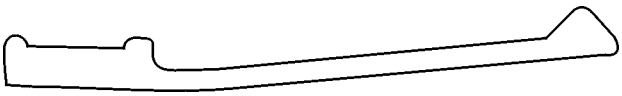
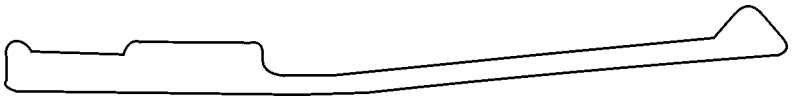
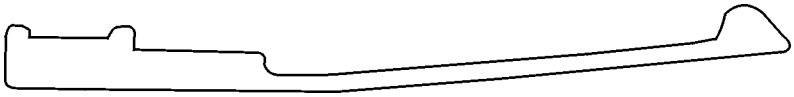
The engines listed above were manufactured with push rods that have an aluminum body with steel tips. These push rods have the potential to cause the engine to stop running. Any unit that is within the date codes listed should have the aluminum body push rods replaced even if they appear to be in good condition.

The repair requires the replacement of both push rods with the standard all steel rods, order two of service part number **36629** from your normal source of supply**.** When the push rods have been replaced pull the engine through one complete revolution to insure they are properly installed and seated.

Then with the engine at TDC on the compression stroke, set the cold valve clearance at .004 inch (.102 mm) on both valves. Install a new rocker box cover gasket (part number **35626**) and torque in a X pattern to 40 inch lbs (4.5 Nm).

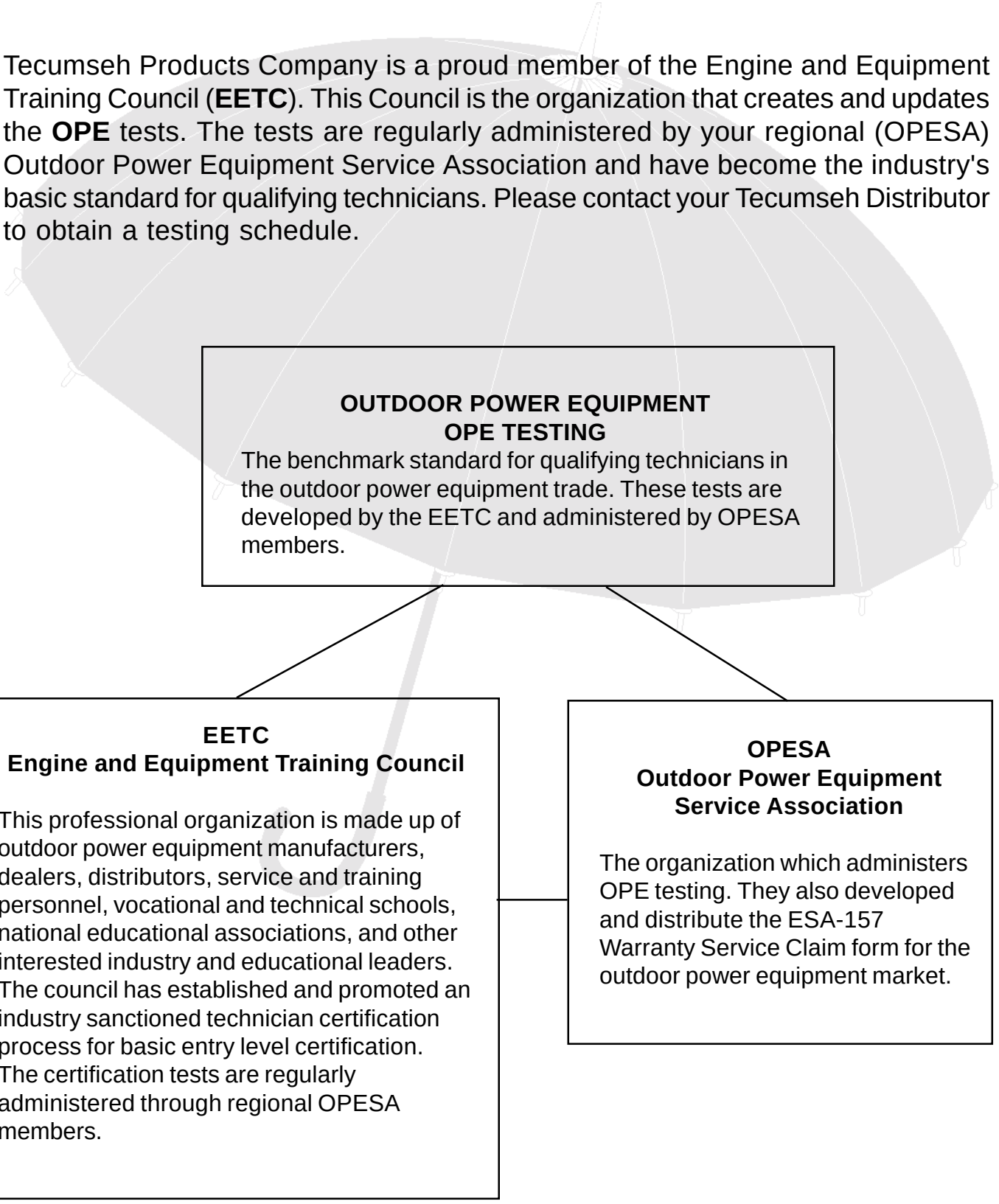
When the repair is completed file an ESA 157R warranty claim for the parts and 30 minutes labor.

Tecumseh Transmissions
Shift Key Quick Reference Guide

Service No.	Length	Where Used	Shape and Size (shown actual size)
792071	2.950" 7.493 cm	500s	
792089A	2.625" 6.668 cm	700/800/801/910	
792094	2.812" 7.142 cm	728/A/729/A/757/A/759/780/792	
792018	3.165" 8.039 cm	900s	
792123A	3.980" 10.109 cm	820/920/930	
792136A	3.980" 10.109 cm	820/930/MST	
792131	4.040" 10.262 cm	820-014/A	

The OPE Umbrella

Tecumseh Products Company is a proud member of the Engine and Equipment Training Council (**EETC**). This Council is the organization that creates and updates the **OPE** tests. The tests are regularly administered by your regional (OPESA) Outdoor Power Equipment Service Association and have become the industry's basic standard for qualifying technicians. Please contact your Tecumseh Distributor to obtain a testing schedule.



Equipment & Engine Training Council

Technician Shortage

Yes, there is a shortage! Skilled service technicians in the power equipment industry are in short supply. At a recent industry meeting, one equipment manufacturer indicated that their dealers were short more than **3,500** technicians to service their products. It is conceivable that the real numbers for the whole industry may be many times higher. The U.S. Bureau of Labor indicates that **70% of jobs by the year 2005** will require **technically trained** professionals. So we've got to get going if we are to have the technicians we need for our future.

Changing the Perception

You certainly can't blame parents for wanting the best future for their children. However, we must take the lead in changing their perception of our industry. If the image of the service technician remains negative, then we have very little hope of developing a new generation of skilled service professionals.

We, as an industry, must take advantage of the growth in the service sector by educating parents and counselors in the benefits of becoming a professional service technician. Through our school accreditation program, technician certification, and student recruitment video we can make a difference.

Your Challenge...

This is where **Tecumseh dealers** come in. We need your help to insure that skilled professional service technicians are available to repair the power equipment products you sell. You can support the industry's efforts in insuring the availability of skilled technicians by becoming a member of EETC. Won't you please join other Tecumseh dealers who are already members in this worthwhile endeavor.

For more information call (262) 367-6700 or e-mail us at eetc@eetc.org

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COMPLETE THE MEMBERSHIP FORM BELOW AND MAIL WITH YOUR CHECK TO:

Equipment & Engine Training Council
PO Box 648
Hartland, WI 53029
(262) 367-6700 · Fax (262) 367-9505

Tecumseh Dealer Membership: $50.00
Please make checks payable to Equipment & Engine Training Council

Name: _____ Title: _____

Company Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

E-mail: _____

2002 Update Seminar Technician Test

1. How many multiple choice questions are there on the TMT test?
   A. 75 B.100 C.25 D. None its all essay

2. To file electronic warranty you must fill out a Warranty Web Site Access Request form and send it to?
   A. Central Warehouse Distributor
   B. Tecumseh Products Company
   C. ESA
   D. There is no form needed

3. Why did the OVM/OHV throttle link change in 1993?
   A. To compensate for a change in the intake pipe.
   B. It changed in 1995 not 1993
   C. Because of the use of composite bushings.
   D. None of the above

4. Can the Climate Guard Kit part # 730643 be used on any HM engine?
   A. Yes B. No

5. What is the length of the new breather tube used on OHSK 50-70's ?
   A. 3.5" B. 5.3" C. 5.5" D. 5"

6. What is all included in the oil vac repair kit?
   A. Diaphragm, reeds, gaskets and "O" rings
   B. Reeds and gaskets
   C. Reeds gaskets and "o" rings
   D. Pump motor

7. Which RFI kit is used on OHV engines
   A. 730645 B. 730646 C. 730647 D.730648

8. Why did the OHV and TVT change to using a Belleville Washer rather the a lock washer?
   A. To reduce thread damage on the crankshaft.
   B. Belleville washers hold torque better
   C. Cost
   D. Lock washer breakage

9. What words will appear on the new guide plate used on OHH and OVRM engines.
   A. Tabs down B. New plate
   C. Side down D. Side up

10. How is the cotter pin on the OHV oil pressure relief system held in place?
    A. Bending the ends of the cotter pin
    B. Slightly bending the center with a punch
    C. Held in place by the detent on the cotter pin
    D. Held in place by gravity

11. What material is the OHH throttle link made of?
    A. Galvanized steel B. Magnesium
    C. Carbon steel D. Stainless steel

12. What is the horse power of an engine with the specification number of TVT 691-600430D?
    A)18 hp B.18.5 hp C. 20 hp D. 22 hp

13. What problem was solved with the added relief given to the pinion on the AC & DC starters used on OHH engines?
    A. False starts B. Non engagement
    C. Binding D. Over heating

14. What was one additional benefit spun off by putting in a heavier reed in the OHH/OHSK breather?
    A. Reduced oil consumption B. Easier starting
    C. Hotter Spark D. No backfire

15. Did the part number of the gasket change on the OVRM/LEV when the increase of fiber was made?
    A. Yes B. No

16. What is the part # of the spacer used between the block and the intake pipe on the OVRM 105?
    A. 37203 B. 37302 C. 35680 D. 36580

17. What is the part # of the seven amp alternator that is being replaced on the medium frame engines?
    A. 611290 B. 611097 C.611256 D. 611175A

18. What was the reduction in temperature (degrees) when the spacers were added to the TVT cooling system?
    A. 25 B. 15 C.40 D.30

19. How does the 6.5 OHH accommodate increased fuel flow into the combustion chamber?
    A. Higher flow mufflers
    B. Increased spring rate tension
    C. Automotive style valve keepers
    D. Larger valves

20. Why was the breather tube relocated on the OHM engine?
    A. To prevent oil from saturating the air filter.
    B. To clean out the carburetor
    C. The tube had been shortened
    D. Enhance engine performance

21. What is the practical advantage of the redesigned shroud used on OVRM utility applications?
    A. Increased horse power
    B. Better appearance
    C. Dent proof
    D. Better Cooling

22. What does the word LEAP stand for?
    A. Low emissions Arctic Pressure
    B. Large Enhanced Auto Prime
    C. Jump
    D. Low Emissions Advanced Performance

23. Certified TMT Technician may make judgement calls on Warranty decisions when employed by a Standard dealer.
    A. TRUE B. FALSE

24. The best way to successfully pass the 2.5 HR. TMT test is by attending a Factory/TSN 4-Day (32 hour) teardown school.
    A. TRUE B. FALSE

25. Emissionized carburetors such as the Bridged Series 11 carburetor may be soaked in a carburetor dip for no longer than 1/2 hour.
    A. TRUE B. FALSE

26. The positive or negative Pressure Probe tester shown in the book can be safely used in any angle.
    A. TRUE B. FALSE

27. Newly sealed transaxle case/cover assemblies should be tested at _____ PSI.
A. 5 PSI B.7 PSI
C. 3 PSI D. 10 PSI

28. When servicing the series “7” bowl assembly you should replace the bail lever only if it is damaged ?
A. TRUE B. FALSE

29. The HSK 600 series engine carburetor was changed to eliminate the ___.
A. High speed eratic running
B. Low speed no-load erratic running
C. Mid range surging
D. Poor performance

30. When servicing the series eight through eleven model carburetors you must always locate and replace all three main nozzle/air bleed "O" Rings ?
A. TRUE B. FALSE

31. During service of the series “11” Bridged, carburetor you must clean which of the following passages?
A. The idle passage through the side leg
B. The main metering jet
C. The Main metering jet idle passage
D. All of the above

32. The open end of the fuel inlet needle ALWAYS faces the air intake side of the carburetor?
A. TRUE B. FALSE

33. Emissionized engines that use a closed breather system are all connected to the air filter backing plate and the hole plugged if disconnected if removed.
A. TRUE B. FALSE

34. The extended prime well on both the standard and bridged series “11” carburetor performs what function.
A. Holds some of the prime charge for initial cold start-up and performance.
B. Improves hot restarting through a ready supply of fuel.
C. Improves the engine high speed operation.
D. All of the above.

35. Proper service of the LTH differential assembly requires the use seal protector part number ____
A. 670260 B. 670262A C. 670195E D. 670377

36. Both of the restrictors used in the bridge series “11” carburetor are replaceable using part number 34443A.
A. TRUE B. FALSE

37. When checking crankcase pressure you should always find a positive pressure which prevents oil leakage.
A. TRUE B. FALSE

38. The rounded brass portion of carburetor tool 670377 is used to set float height at Tecumseh's recommended height.
A. TRUE B. FALSE

39. The differential and Hydrostatic oil levels on the LTH transaxle can be checked using a modified engine dipstick service part number _____.
A. 640241 B. 35621 C. 670262A D. 35941

40. Tecumseh has introduced three new Snow King Tune-up Kits.
A. TRUE B. FALSE

41. Tecumseh’s new customer friendly Fuel Stabilizer/ Cleaner “Fuel Guard Plus” has how many pills per package _____.
A. One B. Three C. Four D. Six

42. The new brake system available for the LTH improves the _____.
A. Transaxle performance
B. Braking force
C. Need for adjustment
D. None of the above

43. Rotary mower charging systems typically have a built in 12 volt alternator on the engine that charges at a rate of_____
A. 1 Ampere B. .5 Ampere
C. 3 Ampere D. .3 Ampere

44. The synthetic fluid level on a “spotlessly clean” properly filled and COLD, LTH Pump/Motor must be _____from the casting surface.
A. 1.0 - 2.0 inch B. 1.5- 2.0 inch
C. 1.25-2.0 inch D. .5-1.25 inch

45. A compression test can be used as a quick check for basic troubleshooting a reading below 50 PSI suggests which areas to pursue _____.
A. Cylinder Head Gasket
B. Valves
C. Piston Rings/Cylinder Condition
D. All the above

46. Effective January, 2002 warranty claims within the United States and Canada that are not properly filled will be returned to your distributor for handling.
A. TRUE B. FALSE

47. The diagnostic section of the TMT test involves accurately completing a ESA warranty claim form. In the test and when working at your dealership Box 11 (labeled Condition Found/Probable Cause of Failure) is where the customers interpretation of the problem is to be recorded. I can fill in this box while the customer is telling me their story.
A. TRUE B. FALSE

48. To properly prime a Tecumseh carburetor I need to instruct my customers to depress the primer bulb with the thumb waiting .5 seconds between primes. For a total of 3. In colder weather it may be higher.
A. TRUE B. FALSE

49. The sealant applied at the joint of the pump/motor and the final drive of the LTH transaxle to ____.
A. Prevent oil from leaking out of the pump
B. Seals moisture and impurities out of the pocket
C. Eliminates loss of final drive oil
D. All of the above

50. Battery load testers used for lawn and garden batteries should not exceed ___ amps load.
A. 120 Amps B. 75 Amps C. 100 Amps D.50 Amps

Notes

TECUMSEH FACTORY TRAINING APPLICATION

Please Print

Dealership Name _____ Phone No. _____ Code No. _____

Address _____ City _____ State _____ Zip _____

Student's Name _____ Student's Signature _____

Employer's Name _____ Employer's Signature _____

4-DAY SCHOOL SCHEDULE - Factory Facilities

Grafton, Wisconsin
Date

Dec. 9-14, **2001**
Jan. 6-11, **2002**
Jan. 13-18
Feb. 10-15
March 10-15
March 24-29
Nov. 3-8
Dec. 1-6

Douglas, Georgia
Date

Nov. 4-9, **2001**
Nov. 11-16
Jan. 27-Feb.1, **2002**
Feb. 24-March 1

TEACHER'S SCHOOL

Grafton, Wisconsin
Date

Jul. 29-Aug. 3, **2001**
Aug. 4-9, **2002**

Douglas, Georgia
Date

July 7-12, **2002**

FACTORY CERTIFIED TRAINING ☐ Application to attend

TEACHER'S SCHOOL ☐ Application to attend

Master Technician Testing will only be offered for pre-registered applicants with proof of holding OPE 4-Cycle certification.

Master Technician Test ☐ I would like to take the Master Technician Test at the reduced cost of $45.00.

School Dates: 1st choice _____ 2nd choice _____

Please check *all* that apply

☐ Single Accommodations **$475.00**
☐ Double Accommodations **$350.00**
☐ Factory School Only **$200.00**
☐ Tecumseh Master Technician Test **$45.00**

☐ Smoker
☐ Non-Smoker

To make payment using a credit card, please fill out the following information:

(Check One)
☐ Master Charge ☐ Visa ☐ Discover

Print Name (as it appears on card): _____

Account Number: _____

_____
Signature of Card Holder

Exp. Date: _____ Phone Number: _____

For registration information call the Education Department: 262-377-2700 or fax your application: 262-376-8238.
The Tecumseh Network Support Distributors in your area may hold in-house Factory Certified Training.
Please contact them for further information.

FOUR-DAY TECHNICIAN EDUCATION PROGRAM

Tecumseh has been working with our distributor education team to develop a completely updated Technician Education Program, designed to meet the needs of today's dealers and the technicians they employ. Throughout the coming years the Tecumseh Support Network, consisting of all Central Warehouse Distributors in the USA and Canada, will offer four-day schools at their facilities. This training will be equivalent to being educated at one of our Tecumseh factory facilities.

The following program outline is a sample of what you can expect from these classes. At the end of the Four-Day session, testing will be offered in both the Outdoor Power Equipment (OPE) and Tecumseh Master Technician (TMT) certifications. During the coming months, you will be hearing from your Tecumseh sales representative about the special benefits that are part of being TMT certified. All certifications stay with the technician and, depending on your level of proficiency, should increase your value to the dealership.

Best of all, the course itself may be free or available to you at reduced cost. Your distributor sales representative can provide the details.

Day One Information Retrieval Systems Computer, Microfiche and Paper 2-Cycle Engine Theory and hands on covering TC, HSK and AV Product	**Day Three** Enduro VT Twin Teardown/Assembly Fuel Systems New Emissions Carburetors Electrical/Charging Systems
Day Two 4-Cycle Overview L-Head and Overhead Valve OHH Enduro Teardown/Rebuild and Running Adjustments LEV Teardown/Reassembly	**Day Four** Failure Analysis Warranty Procedures Transaxle Teardown/Reassembly MST, 800 Series LTH and VST Overview

We have listed all of the training directors from your regional distributors. These Team Tecumseh educators can supply you with a complete list of classes available. Please contact them directly.

The Tecumseh Factory School Schedule and Application are located in the back of the book.

Tecumseh Factory Education Facilities

BILLIOU'S INC.
1343 S. Main
Porterville, CA 93257
Phone No. 559-784-4102
Fax No. 559-781-1875
EDUCATION DIRECTOR: RICK GROVES

CENTRAL POWER DISTRIBUTORS
1101 McKinley St.
Anoka, MN 55303
Phone No. 612-576-0901
Fax No. 612-576-0920
EDUCATION DIRECTOR: BILL TORGERUD

CPD-OH
8181 Washington Church Rd.
Dayton, OH 45458
Phone No. 612-576-0901
Fax No. 612-576-0920
EDUCATION DIRECTOR: BILL TORGERUD

CENTRAL POWER DISTRIBUTORS
N90W14635 Commerce Dr.
Menomonee Falls, WI 53051
Phone No. 612-576-0901
Fax No. 612-576-0920
EDUCATION DIRECTOR: BILL TORGERUD

W.J. CONNELL CO.
65 Green St.
Foxboro, MA 02035
Phone No. 508-543-3600
Fax No. 508-543-8394
EDUCATION DIRECTOR: MARK DIAS

ENGINES SOUTHWEST
1255 N. Hearne
P.O. Box 67 (Zip Code 71161-0067)
Shreveport, LA 71107-7108
Phone No. 318-222-3871
Fax No. 318-425-4638
EDUCATION DIRECTOR: BRYAN CLARK

MEDART - KANSAS CITY
2644 S. 96th Street
Edwardsville, KS 66111-3483
Phone No. 636-282-2300
Fax No. 1-800-695-9530
EDUCATION DIRECTOR: GARY FIEBIG & BRIAN JONES

MEDART - ST. LOUIS
124 Manufacturers Drive
Arnold, MO 63010-4727
Phone No. 636-282-2300
Fax No. 1-800-695-9530
EDUCATION DIRECTOR: GARY FIEBIG & BRIAN JONES

POWER EQUIPMENT SYSTEMS
1645 Salem Industrial Dr., NE
PO Box 669 (Zip Code 97308)
Salem, OR 97303
Phone No. 503-585-6120
Fax No. 800-637-9243
EDUCATION DIRECTOR: WAYNE WENDLAND

SMITH ENGINES INC.
4205 Golf Acres Dr.
P.O. Box 668985
Charlotte, NC 28266-8985
Phone No. 704-392-3100
Fax No. 704-392-5208
EDUCATION DIRECTOR: HARRY WILLIAMS

SMITH ENGINES INC.
2303 Premier Row
Orlando, FL 32809
Phone No. 407-855-4288
Fax No. 407-855-4736
EDUCATION DIRECTOR: BILL ROBERTS

SMITH ENGINES INC.
1665 Lakes Parkway Suite 116
Lawrenceville, GA 30243
Phone No. 770-237-0707
Fax No. 770-237-0210
EDUCATION DIRECTOR: JOHN VANEK

TECUMSEH PRODUCTS COMPANY
900 North Street
Grafton, WI 53024
Phone No. 262-377-2700
Fax No. 262-377-4485
CONTACT: PAUL BECHWAR

TECUMSEH DOUGLAS FACILITY
Tecumseh Products Company
1545 Kellog Drive
Douglas, GA 31535
Phone No. 262-377-2700
Fax No. 262-377-4485
CONTACT: PAUL BECHWAR

CPT CANADA POWER TECH. LTD.
161 Watline Ave.
Mississauga, ON L4Z 1P2
Phone No. 905-890-6900
Fax No. 905-890-0147
EDUCATION DIRECTOR: ROBERT BARTON

CPT CANADA POWER TECH. LTD.
#101 - 10411 0 178 Street
Edmonton, AB T5S 1R5
Phone No. 780-453-5791
Fax No. 780-454-8377
EDUCATION DIRECTOR: BILL BERNARD

CPT CANADA POWER TECH. LTD. MONTREAL BRANCH
226 Migneron
St. Laurent, PQ H4T 1Y7
Phone No. 514-731-3559
Fax No. 514-731-0064
EDUCATION DIRECTOR: MICHAEL BOISVERT

TECUMSEH
ENGINES & TRANSMISSIONS

Tecumseh Update 2002 Test
Answer Sheet for Test

Return to Your Distributor for Scoring NOT Tecumseh

1.	A	B	C	D	26.	A	B	C	D
2.	A	B	C	D	27.	A	B	C	D
3.	A	B	C	D	28.	A	B	C	D
4.	A	B	C	D	29.	A	B	C	D
5.	A	B	C	D	30.	A	B	C	D
6.	A	B	C	D	31.	A	B	C	D
7.	A	B	C	D	32.	A	B	C	D
8.	A	B	C	D	33.	A	B	C	D
9.	A.	B	C	D	34.	A.	B	C	D
10.	A	B	C	D	35.	A	B	C	D
11.	A	B	C	D	36.	A	B	C	D
12.	A	B	C	D	37.	A	B	C	D
13.	A	B	C	D	38.	A	B	C	D
14.	A	B	C	D	39.	A	B	C	D
15.	A	B	C	D	40.	A	B	C	D
16.	A	B	C	D	41.	A	B	C	D
17.	A	B	C	D	42.	A	B	C	D
18.	A	B	C	D	43.	A	B	C	D
19.	A	B	C	D	44.	A	B	C	D
20.	A	B	C	D	45.	A	B	C	D
21.	A	B	C	D	46.	A	B	C	D
22.	A	B	C	D	47.	A	B	C	D
23.	A	B	C	D	48.	A	B	C	D
24.	A	B	C	D	49.	A	B	C	D
25.	A	B	C	D	50.	A	B	C	D

Tecumseh's Report Card & Customer Survey

Please let us know if we're meeting your needs and expectations. Grade us in the categories below and offer suggestions for improvement. After all, YOU are the only reason we're here.

Date: _____

City Attended: _____

Instructor: _____

Class Topic: ❒ Tecumseh

Class Type: ❒ Update ❒ Sales & Service ❒ Teardown

(Circle the appropriate letter grade)

Grade the Instructor	+				−
Instructor's knowledge of material	A	B	C	D	F
Instructor's clarity and ease of understanding	A	B	C	D	F
Instructor's pacing of the class (Did it move along well?)	A	B	C	D	F
Instructor's appropriate responses to class comments/questions	A	B	C	D	F
Instructor's overall performance in class	A	B	C	D	F
Grade the Class					
Was the class informative?	A	B	C	D	F
Was the class enjoyable?	A	B	C	D	F
How were our Audio/Visual Materials?	A	B	C	D	F
How were our books/handouts?	A	B	C	D	F

The best things about this class were....

The things I would change about the class in the future are....

One topic to drop (why?) _____

One topic to keep (why?) _____

What other class topics might help you do your job better?

Anything else on your mind? _____

How relevant or practical to your work situation did you find the material presented?	A	B	C	D	F
Did the class cover the topics in the appropriate depth?	A	B	C	D	F
Please rate the overall quality of the class itself	A	B	C	D	F
Was the class the right length of time?	Way Too Short	Too Short	Just Right	Too Long	Way Too Long
Grade the Facility					
Quality/Comfort of room	A	B	C	D	F
How well could you see and hear?	A	B	C	D	F
Quality of food	A	B	C	D	F
Quality of facility's service	A	B	C	D	F
Overall rating of facility	A	B	C	D	F

Job Title: _____

Length of Time in Industry: _____

Are you OPE Certified? ❒ Yes ❒ No
❒ 2-Stroke ❒ 4-Stroke
❒ Electrical ❒ Driveline/Hydraulics
❒ Generator ❒ Compact Diesel

Are you Briggs & Stratton certified? ❒ Yes ❒ No

Name (optional): _____

Company (optional): _____

City (optional): _____

Gender	❒ Male ❒ Female	*Any Additional Comments?*
Age Group	❒ 16-25 ❒ 26-32 ❒ 33-38 ❒ 39-45 ❒ 45-52 ❒ 52-55 ❒ 55+	
Do you use a computer in your business?	❒ Yes ❒ No ❒ Adding within 6 months	
Do you place orders via the Internet?	❒ Yes ❒ No ❒ Adding within 6 months	
Do you use EDI to place orders?	❒ Yes ❒ No ❒ Adding within 6 months	
Do you have a Business Web Site?	❒ Yes ❒ No ❒ Adding within 6 months	Web Address:
Business E-mail Address		❒ Yes ❒ No Would you like to receive occasional informative E-mails from Tecumseh?
Rate your favorite sales incentive (10-most favorite, 1-least favorite)	Free Merchandise (hats, shirts, etc.) Free Shipping Additional Discounts Extended Dating Terms Program Marketing Plan (print/radio ads, displays) Weekend Trips Gift Certificates (for tools, sun glasses, food, etc.) Other	(most) 10 9 8 7 6 5 4 3 2 1 (least) ❒ No opinion (most) 10 9 8 7 6 5 4 3 2 1 (least) ❒ No opinion (most) 10 9 8 7 6 5 4 3 2 1 (least) ❒ No opinion (most) 10 9 8 7 6 5 4 3 2 1 (least) ❒ No opinion (most) 10 9 8 7 6 5 4 3 2 1 (least) ❒ No opinion (most) 10 9 8 7 6 5 4 3 2 1 (least) ❒ No opinion (most) 10 9 8 7 6 5 4 3 2 1 (least) ❒ No opinion (most) 10 9 8 7 6 5 4 3 2 1 (least) ❒ No opinion
Please rate Distributor service (10-great, 1-poor):	Customer Service Sales Promotions Technical Support Product Knowledge Territory Manager Education / Training	(great) 10 9 8 7 6 5 4 3 2 1 (poor) ❒ No opinion (great) 10 9 8 7 6 5 4 3 2 1 (poor) ❒ No opinion (great) 10 9 8 7 6 5 4 3 2 1 (poor) ❒ No opinion (great) 10 9 8 7 6 5 4 3 2 1 (poor) ❒ No opinion (great) 10 9 8 7 6 5 4 3 2 1 (poor) ❒ No opinion (great) 10 9 8 7 6 5 4 3 2 1 (poor) ❒ No opinion
Please rate your top three distributors in descending order:	1st _____ 2nd _____ 3rd _____	Why? _____ Why? _____ Why? _____

Note: All personally identifiable information is treated as strictly confidential and will not be shared with others

Warranty Web Site Access Request Form

United States and Canada ONLY

The following information must be submitted through your Tecumseh Products Company, Central Warehouse Distributor. **DO NOT** send it directly to the factory or it will be returned and delay your access to the website.

All information must be completed by your Company's owner and submitted for approval.

Company Name _____
Mailing Address _____
City _____ State _____
Phone _____ Fax _____
E-mail Address _____
Authorized Person (print) _____
Signature _____

Tecumseh Dealer I.D. Number _____

TSN/CWD ONLY

Approving TSN/CWD _____
Signature _____

Upon completion and approval by your Tecumseh Central Warehouse Distributor we will mail your I.D. and password within 4-6 weeks.