

# **QUICK FACTS**

## **Service Information**

*Mini-Version of Quick Reference Book  
(695933)*

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For more detailed information, check the Quick Reference Book (Form No. 695933) or purchase a complete repair manual from your local Tecumseh Dealer.



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# GENERAL ENGINE

The following information is being provided to assist you in locating and recording your engine model and specification numbers. This information will be needed to use this book or obtain parts from a local Tecumseh dealer.

## 4-Cycle Quick Reference - Model Letter Designation

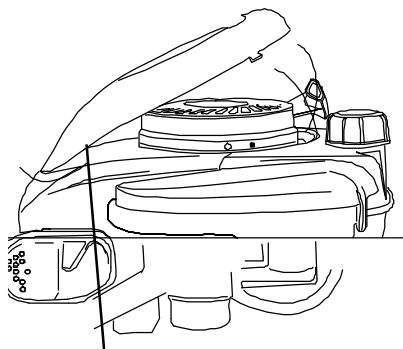
ECH - Exclusive Craftsman Horizontal	OHV - Overhead Valve Vertical (Medium Frame)
ECV - Exclusive Craftsman Vertical	OVM - Overhead Valve Vertical (Medium Frame)
H - Horizontal Shaft	OVRM - Overhead Valve Vertical (Small Frame) (Rotary Mower)
HH - Horizontal Heavy Duty (Cast Iron)	OVXL - Overhead Valve Vertical (Medium Frame) (Extra Life)
HHM - Horizontal Heavy Duty (Cast Iron) (Medium Frame)	TNT - Toro 'N' Tecumseh (Toro Exclusive Series)
HM - Horizontal Medium Frame	TVEM - Tecumseh Vertical European Model
HMSK - Horizontal Medium Frame (Snow King)	TVM - Tecumseh Vertical (Medium Frame) (Replaces V & VM)
HMXL - Horizontal Medium Frame (Extra Life)	TVS - Tecumseh Vertical Styled
HS - Horizontal Small Frame	TVT - Tecumseh Vertical Twin
HSSK - Horizontal Small Frame (Snow King)	TVXL - Tecumseh Vertical (Extra Life)
HXL - Horizontal (Extra Life)	V - Vertical Shaft
LAV - Lightweight Aluminum Frame Vertical	VH - Vertical Heavy Duty (Cast Iron)
LEV - Low Emissions Vertical	VLV - Vector Lightweight Vertical
OH - Overhead Valve Heavy Duty (Cast Iron)	VLXL - Vector Lightweight Vertical (Extra Life)
OHH - Overhead Valve Horizontal	VM - Vertical Shaft (Medium Frame)
OHM - Overhead Valve Heavy Duty Horizontal (Medium Frame)	VSK - Vertical Snow King
OHSK - Overhead Valve Horizontal (Snow King)	

### LOCATING AND READING ENGINE MODEL AND SPECIFICATION THE FOLLOWING WILL BE NEEDED TO LOCATE PARTS FOR YOUR ENGINE.

	<b>Model</b>	<b>Specification</b>	<b>Serial (DOM)</b>
<b>ENGINE:</b>	<b>TVM195</b>	<b>150288G</b>	<b>8150C</b>

ENGINE MODEL	SPEC NO.	D.O.M (SERIAL NO)
<b>TVM195</b>	<b>150288G</b>	<b>8150C</b>

Typical Engine I.D. Label



ENGINE MODEL NUMBER LOCATED UNDER COVER

**IMPORTANT ENGINE INFORMATION**

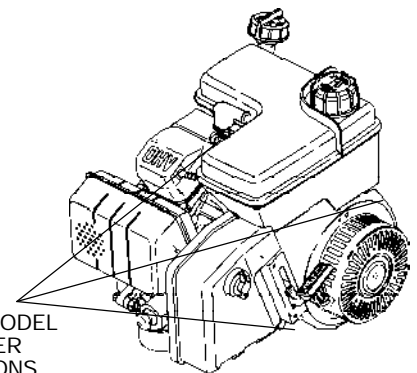
**TECUMSEH PRODUCTS CO.**

THIS ENGINE MEETS 1995-1998 CALIF/US EPA PH1 APPLICABLE EMISSION REGULATIONS FOR ULGE ENGINES FUEL REGULAR UNLEADED OIL SAE 30

ENGINE MODEL	<b>TVM195 150288G</b>	(E)
ENGINE FAMILY	STP318U1G2EA	
DISPLACEMENT	318	<b>8150 C</b>

**CAUTION** FOR PERSONAL PROTECTION REFER TO OWNER'S MANUAL FOR IMPORTANT SAFETY AND MAINTENANCE INFORMATION





ENGINE MODEL NUMBER LOCATIONS

## 4-Cycle Quick Reference for Spec. Numbers-To-Model Designation

The following information is being provided to assist you in locating and recording your engine model and specification numbers. This information will be needed to use this book or obtain parts from a local Tecumseh dealer.

### HORIZONTAL 4-CYCLE ENGINES

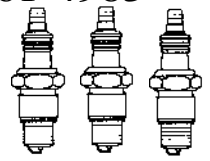
15000 - H22	67000 - HS & HSSK50	115000 - HH100	159950 - HMSK110
25000 - H25	68000 - OHH50	120000 - HH120	160000 - HH & OH140
26000 - OHH45	68500 - OHSK50	130000 - H70	170000 - HH150 & 160
35000 - H30	69000 - OHH55	130200 - HSK70	170000 - OH160
35400 - HSK30	69500 - OHSK55	132000 - HM & HMSK70	175000 - OH120
45000 - H & HT35	71100 - OHH60	132500 - HMXL70	180000 - OH180
45400 - HSK35	71500 - OHSK60	140000 - HH70	190000 - HHM80
47000 - HXL35	71700 - OHH65	146000 - ECH90	220000 - OHM120
55000 - H40	71900 - OHSK65	155000 - H & HM80	221000 - OHSK110
55200 - HS & HSSK40	72500 - OHSK70	155000 - HMSK80	222000 - OHSK120
55500 - HSK40	75000 - H60	155800 - HM85	223000 - OHSK90
55700 - H40	76000 - HSK60	155900 - HM & HMSK85	223400 - OHSK110
55800 - H40	85000 - HH40	156000 - HM90	223600 - OHSK120
55900 - HSSK40	95000 - HH50	156500 - HMSK90	223700 - OHSK125
65000 - H50	105000 - HH60	159000 - HM & HMSK100	223800 - OHSK130
65300 - HSK50	110000 - HH80	159900 - HMSK105	224600 - OHM120

### VERTICAL 4-CYCLE ENGINES

10000 - TNT100	125000 - V70
12000 - TNT120	127000 - VM70, TVM170
20000 - LAV25, OVRM55	127200 - TVXL170
20500 - OVRM105	135000 - VH70
21000 - OVRM60	145000 - ECV100
21800 - OVRM60	147000 - ECV105
22000 - OVRM65	148000 - VH80
30000 - LAV30	149000 - VH100
33000 - TVS75	150000 - V & VM80, TVM195
40000 - LAV35	150200 - TVM & TVXL195
42000 - OVRM905 (Sears Only)	150500 - TVM195
42600 - OVRM40, OVRM45 (Premier Engine)	151000 - ECV110, TVM195
42900 - OVRM40 (High Tech Look)	151500 - TVM220
43000 - TVS90	152000 - ECV120
43600 - TVS90 (Premier Engine)	157000 - VM100, TVM220
43700 - TVS90, TVXL90	157200 - TVM & TVXL220
43900 - TVS90 (High Tech Look)	157400 - TVM220
44000 - TVS100	200000 - OVM120
44600 - TVS100 (Premier Engine)	202000 - OVXL120, OVXL125
44800 - TVS100	202200 - OVXL120 (I/C)
46000 - TVS90, TVXL90	202300 - OHV11, OHV115
46600 - TVS90	202400 - OVXL125
48000 - TVS90	202500 - OHV115
50000 - V40	202600 - OVXL125 (I/C)
50200 - LAV40	202700 - OHV12, OVXL120 (Tec.1200)
52600 - OVRM50, OVRM55 (Premier Engine)	203000 - OHV125, OVXL125 (Tec.1250)
52800 - OVRM50, OVRM55	203200 - OHV13
52900 - OVRM50, OVRM55 (High Tech Look)	203500 - OVXL125 (Tec.1250I/C), OHV13/135
53000 - TVS105	203600 - OHV14/140
53600 - TVS105 (Premier Engine)	203800 - OHV145
53800 - TVS105	204000 - OHV15/150
53900 - TVS105 (High Tech Look)	204200 - OHV16/160
54000 - TVXL105	204400 - OHV165
56000 - TVS105, TVS & TVXL115	204500 - OHV155
56600 - TVS105, TVS115 (Premier Engine)	204600 - OHV17/170
56800 - TVS115	204800 - OHV175
56900 - TVS105, TVS115 (High Tech Look)	206000 - OHV110
57000 - TVS & TVXL115	206200 - OHV115
57600 - TVS115 (Premier Engine)	206400 - OHV120
57800 - TVS115	206600 - OHV125
57900 - TVS115 (High Tech Look)	206800 - OHV130
60000 - V50, TVM125	206900 - OHV135
61000 - TVS & TVXL115	335000 - LEV100
61600 - TVS & TVXL115	338000 - LEV100
61800 - TVS115	338500 - VSK100
61900 - TVS115	340000 - LEV100
62000 - LAV50	345000 - LEV100
62100 - LAV50 & TVS115	350000 - LEV115
63000 - TVS120	355000 - LEV115
63200 - TVS120, TVEM120	360000 - LEV115
63600 - TVS120 (Premier Engine)	361000 - LEV120
63900 - TVS120 (High Tech Look)	361400 - VSK120
66000 - TVS120	400000 - VLV40
66100 - TVS120	500000 - ULT, VLV B24, VLXL50, & VLV126
70000 - V60, TVM140	501000 - ULT, VLV, VLXL55, & VLV126
80000 - VH40	502000 - ULT, VLV60, VLV65, & VLV126
90000 - VH50	502500 - VLV65, VLV66
100000 - VH60	600400 - TVT691



# Spark Plug Replacement



## 4-CYCLE SPARK PLUG

<b>Service Number 34046</b>	
<b>RL86C</b>	
† OHM120	* OVXL120,
‡ OHSK110-130	* OVXL/C120
OVM120	* OVXL125
<b>Note:</b>	
* OVXL models with specification nos. 202700, 203000 and up, use RN4C.	
† OHM 120 models with specification nos. 224000 and up, use RN4C.	
‡ OHSK 110, 120, 130 models with specification nos. 223000 and up, use RN4C.	

<b>Service Number 33636</b>	
<b>RJ17LM</b>	
H30-80	HS40-50
HM70-100	VLV-all

<b>Service Number 35552</b>	
<b>RL82C</b>	
HH140-160	
OH120-160	

<b>Service Number 37598</b>	
<b>RJ19LM4 (RJ19LM acceptable substitute .030 gap)</b>	
LEV80 - 120	
gapped at .045 (1.143 mm)	

<b>Service Number 37599</b>	
<b>RN4C4 (RN4C acceptable substitute .030 gap)</b>	
OVRM All	
gapped at .045 (1.143 mm)	

<b>Service Number 34645</b>		
<b>RN4C</b>		
† OHM120	* OVXL/C120	OHV110-17
‡ OHSK110-130	* OVXL125	TVT (V-Twin)
OVM120	OH180	OHM90-110
* OVXL120,	OHH/OHSK40-130	
* OVXL models with specification nos. below 202700 use RL86C.		
† OHM 120 models with specification nos. below 224000 use RL86C.		
‡ OHSK 110, 120, 130 models with specification nos. below 223000 use RL86C.		

<b>Service Number 34277</b>	
<b>RJ8C</b>	
H22	HXL35
H25	LAV25-50
HH40-120	TVM125-220
HHM80	TVXL170-220
HMXL70	V40-80
HT30	VH40-100
HT35	VM70-100

<b>Service Number 35395</b>	
<b>RJ19LM</b>	
ECV100-120	TVS75-120
HMSK70-100	TVXL105
HSK30-70	TVXL115
HSSK40-50	
TNT100	
VSK100-120	
TNT120	

## 2-CYCLE SPARK PLUG

<b>Service Number 611100</b>	
<b>RCJ6Y</b>	
TC300	
TCH300	

<b>Service Number 35395</b>	
<b>RJ19LM</b>	
TVS840	
TVXL840	

<b>Service Number 611049</b>	
<b>RCJ8Y</b>	
AH520	HSK850 HXL840
AH600	TC200
HSK600	TCH200
HSK840	Type 1500
HSK845	

<b>Service Number 33636</b>	
<b>RJ17LM</b>	
AV520	
AV600	
TVS600	

## EUROPA MODELS

<b>4-CYCLE SPARK PLUG</b>	
<b>Service Number 29010007</b>	
<b>J17LM</b>	
All Horizontal Models	Premier 153/173
BV	Prisma
BVL	Spectra
BVS	Synergy
Futura	Vantage
HTL	Centura
LAV	Legend

<b>Service Number 29010023</b>		
<b>RN4C</b>		
Premier 45/55	Synergy OHV	Futura OHV
Geotec OHV	Centrua OHV	

## 2-CYCLE SPARK PLUG

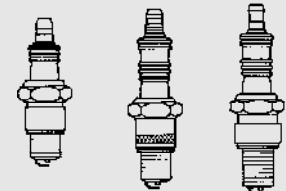
<b>Service Number 29010007</b>	
<b>J17LM</b>	
AV85/125	TVS600
AV520/600	
MV100S	

**NOTE:** THE SERVICE NUMBERS LISTED BELOW WILL GIVE CORRESPONDING CHAMPION AND AUTOLITE SUBSTITUTIONS.

	Champion	Autolite
35395	- RJ-19LM	458
37598	- RJ-19LM4	458
35552	- RL-82C	4092
34046	- RL-86C	425
34645	- RN-4C	403
37599	- RN-4C4	403
33636	- J-17LM	245
34277	- RJ-8C	304
611100	- RCJ-6Y	2974
611049	- RCJ-8Y	2976

\*NON CANADIAN APPLICATION

**SPARK PLUG AIR GAP IS .030 (.762 mm) UNLESS OTHERWISE NOTED**



3/8" 9.525 mm      1/2" 12.700 mm      3/4" 19.050 mm

**NOTE:** Not all spark plugs have the same heat range or reach. Using an incorrect spark plug can cause severe engine damage or poor performance. Tecumseh uses all three of the reaches shown. Some plugs require .045 gap.

**Note:** If you need assistance locating your engine model numbers please check page 2 & 3

## FUEL RECOMMENDATIONS

Today's fuels have a short shelf life and it is recommended you buy no more than a two week supply at a time.

### GASOLINE

Tecumseh Products Company strongly recommends the use of fresh, clean, unleaded regular gasoline in all Tecumseh engines. Unleaded gasoline burns cleaner, extends engine life, and promotes good starting by reducing the build-up of combustion chamber deposits. Leaded gasoline, gasohol containing no more than 10% ethanol, premium gasoline, or unleaded gasoline containing no more than 15% MTBE (Methyl Tertiary Butyl Ether), 15% ETBE (Ethyl Tertiary Butyl Ether) or 10% ethanol, can be used if unleaded regular gasoline is not available.

Reformulated gasoline that is now required in several areas of the United States is also acceptable.

**NEVER USE** gasoline, fuel conditioners, additives or stabilizers containing methanol, gasohol containing more than 10% ethanol, unleaded regular gasoline containing more than 15% MTBE (Methyl Tertiary Butyl Ether), 15% ETBE (Ethyl Tertiary Butyl Ether) or 10% ethanol, gasoline additives, or white gas because engine/fuel system damage could result.

**Specialty Fuels:** Fuels being marketed for use on small engines can have a significant affect on starting and engine performance. Prior to using any specialty fuel, the Reid Vapor Pressure (RVP) must be determined. Fuels with a rating of less than 50 kPa (7psi) should not be used in summer, and fuel with a rating of 85 kPa (12psi) should not be used during winter.

**Storage:** For year round fuel stability in and out of season, use "Ultra Fresh™" part number 730245A.

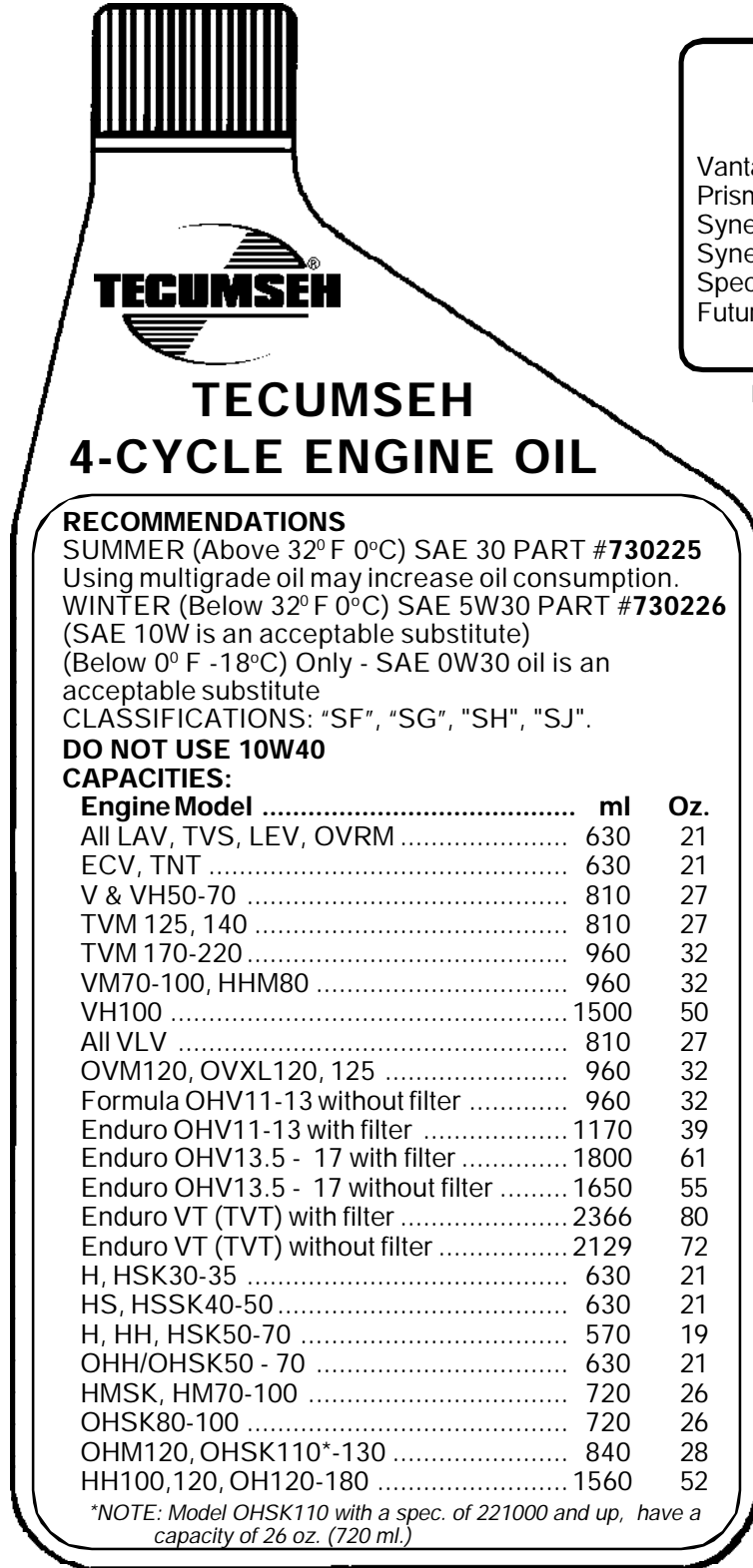
### FUEL ADDITIVES

Only fuel additives such as Tecumseh's fuel stabilizer Ultra Fresh™ part number 730245A or liquid varieties can be used when mixed properly. For winter applications, Isopropyl alcohol fuel dryers may be used in the fuel system but must be mixed at the proper ratio recommended by the manufacturer. **NEVER USE METHANOL BASED DRYERS.**

## TECUMSEH 4-CYCLE LUBRICATION REQUIREMENTS

We often get questions from both customers and dealers regarding the type and brand of oil we recommend.

Tecumseh recommends the use of a high quality, brand name petroleum based oil in our engines. Very few air cooled engines have any type of oil filtration system, making regular oil changes critical to remove impurities from the engine and maximize engine life. **Consult the operators or repair manual for the oil change interval and viscosity base on equipment operating temperature.**



<b>EUROPA MODELS *</b>					
<b>VERTICALS</b>		<b>VERTICALS (CONT.)</b>			
	oz.	ml			
Vantage	21	630	Centura	21	630
Prisma	21	630	HTL	21	630
Synergy	21	630	BVS	21	630
Synergy "55"	27	810	<b>HORIZONTALS</b>		
Spectra	21	630	BH Series	21	630
Futura	21	630	Geotec	21	630
			Series 35 - 50		

**NOTE:** Vertical shaft engines with auxiliary PTO:  
 26 oz. / 700 ml

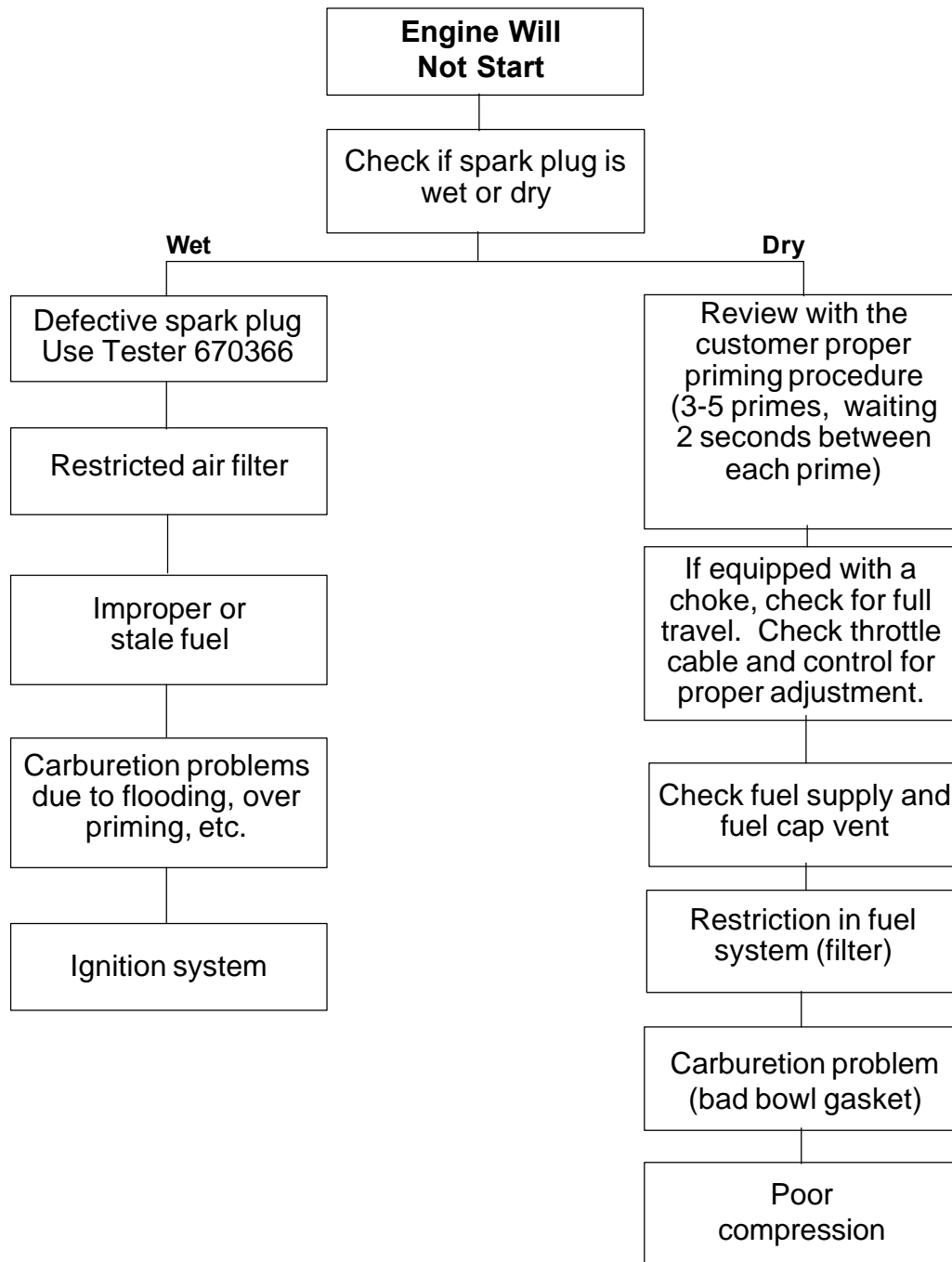
## Four-Cycle Troubleshooting

The following is provided as a basic trouble shooting guide to any piece of equipment. Its use requires a complete review of all conditions and symptoms. Always examine the exterior for clues: leaks, excessive dirt, or obvious damage. Some repairs will require the assistance of a Tecumseh service dealer.



**WARNING:** ALWAYS USE APPROPRIATE SAFETY EQUIPMENT BEFORE ATTEMPTING ANY REPAIR.

### FUEL SYSTEM



Beyond this point contact a Tecumseh Dealer or purchase a repair manual (see educational materials)

**NOTE:** Refer to Technician's Handbook for a more detailed list of remedies.

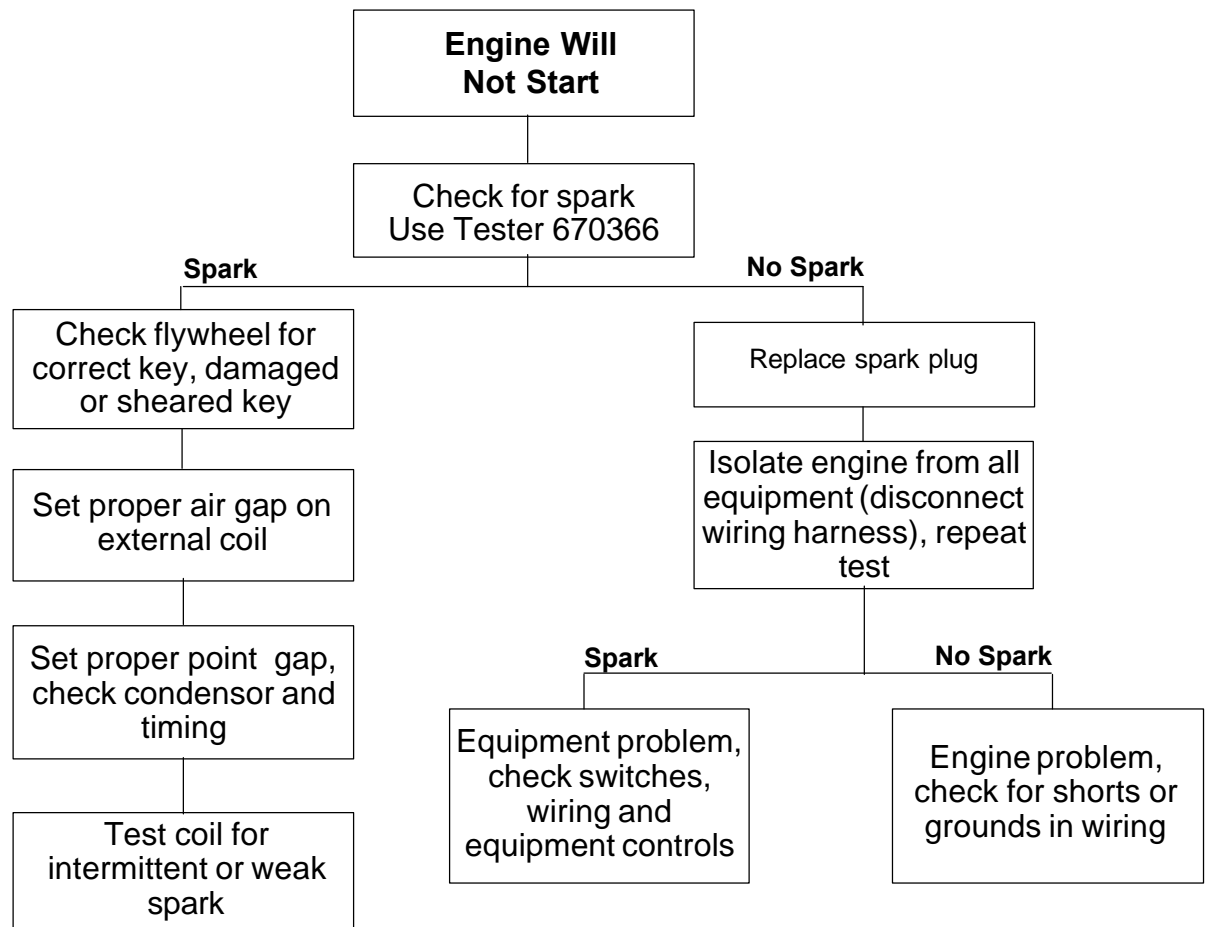


## Four-Cycle Troubleshooting - *continued*



**WARNING:** ALWAYS USE APPROPRIATE SAFETY EQUIPMENT BEFORE ATTEMPTING ANY REPAIR.

### IGNITION SYSTEM



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Beyond this point contact a Tecumseh Dealer or purchase a repair manual (see educational materials)

## TECUMSEH 2-CYCLE ENGINE OIL REQUIREMENTS

The proper type and ratio of two cycle oil is critical to long life and low maintenance of the engine. The use of non certified oils and improper mix ratio's can cause severe engine damage and possibly void warranty consideration.

The following is a list of 2 cycle engine oil classifications which are certified for use in Tecumseh 2 cycle engines:

- National Marine Manufacturers Association, (NMMA), TC-WII or TC-W3
- American Petroleum Institute, (API), TC
- Japanese Automobile Standard Organization, (JASO), FB or FC



MIXES EASY  
DOES NOT SEPARATE

PREMIUM BLEND FOR BOTH AIR AND WATER COOLED ENGINES ENSURES CYLINDER WALL LUBRICATION

TWO-CYCLE FUEL/OIL MIX RATIOS		
<b>24:1</b>	<b>32:1</b>	<b>50:1</b>
AV520 Types 670 & 653 AV600 Type 600-10 & Up TC-TCH 200/300 MV100S	TVS600 All Types AH600	TVS / TVXL HSK840 - 850 HSK600 - 635

Sears/Craftsman 40:1 Two Cycle Oil has been tested and approved for use in all engines, ACCEPT the TC Models which require a 24:1 Ratio.

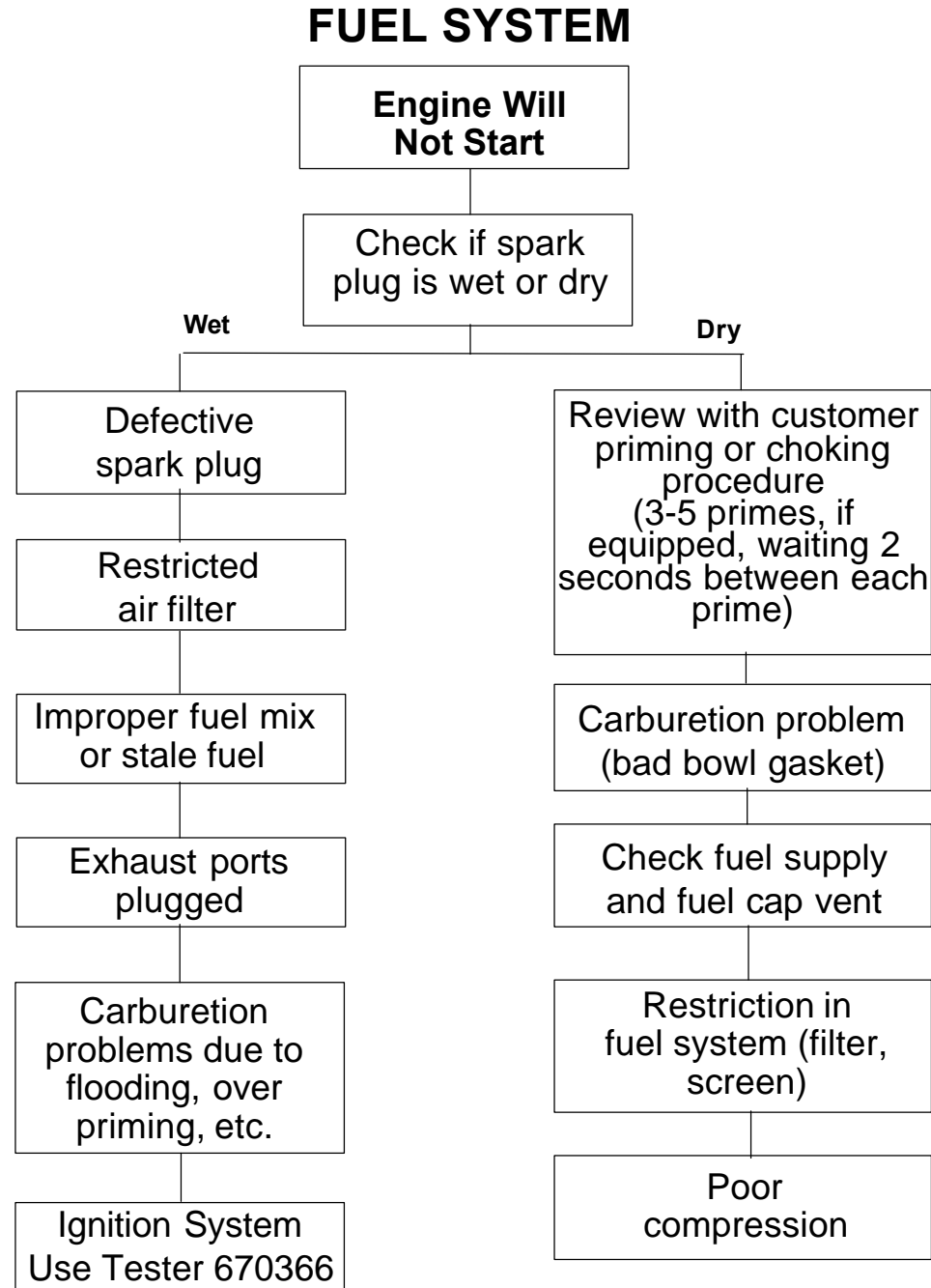
	ENGINE FUEL MIX			
	U.S. Gasoline	U.S. Amount of Oil To Be Added	METRIC Petrol	METRIC Amount of Oil To Be Added
24:1	1 Gallon	5.3 oz.	4 Liters	167 ml
	2 Gallons	10.7 oz.	8 Liters	333 ml
32:1	1 Gallon	4 oz.	4 Liters	125 ml
	2 Gallons	8 oz.	8 Liters	250 ml
50:1	1 Gallon	2.5 oz.	4 Liters	80 ml
	2 Gallons	5.0 oz.	8 Liters	160 ml

## Two-Cycle Troubleshooting

The following is provided as a basic trouble shooting guide to any piece of equipment. Its use requires a complete review of all conditions and symptoms. Always examine the exterior for clues: leaks, excessive dirt, or obvious damage. Some repairs will require the assistance of a Tecumseh service dealer.



**WARNING:** ALWAYS USE APPROPRIATE SAFETY EQUIPMENT BEFORE ATTEMPTING ANY REPAIR.



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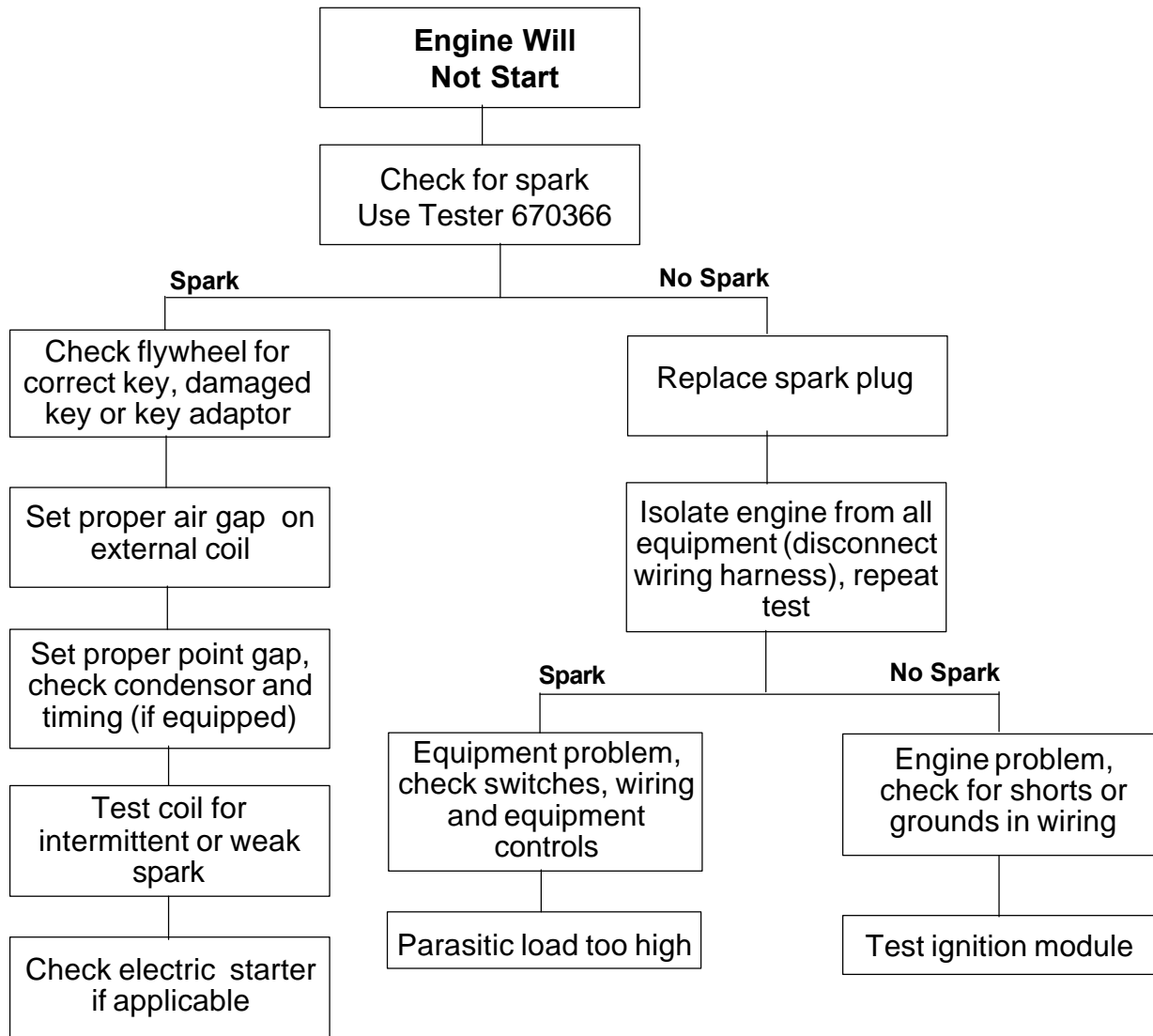
Beyond this point contact a Tecumseh Dealer or purchase a repair manual (see educational materials)

## Two-Cycle Troubleshooting - *continued*



**WARNING:** ALWAYS USE APPROPRIATE SAFETY EQUIPMENT BEFORE ATTEMPTING ANY REPAIR.

### IGNITION SYSTEM



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Beyond this point contact a Tecumseh Dealer or purchase a repair manual (see educational materials)

# TECUMSEH / PEERLESS® DRIVE TRAIN

The following information is being provided to assist you in locating and recording your Tecumseh Drive Train components model and specification numbers. This information will be needed to use this book or obtain parts from a local Tecumseh dealer.

MODEL NUMBER REQUIRED FOR WARRANTY      SPECIFICATION NUMBER REQUIRED FOR WARRANTY

PEERLESS 205 - 027C TECUMSEH  
MODEL      DATE      SERIAL

205 - 027C8194A0048

① D.O.M. (DATE OF MANUFACTURE) ORIGINALLY SERIAL NUMBER

MODEL NUMBER REQUIRED FOR WARRANTY      SPECIFICATION NUMBER REQUIRED FOR WARRANTY

PEERLESS MST - 206 - 502A TECUMSEH  
DATE MFG.      SERIAL NO.

6304A00013

② D.O.M. (DATE OF MANUFACTURE) ORIGINALLY SERIAL NUMBER

MODEL NUMBER REQUIRED FOR WARRANTY      SPECIFICATION NUMBER REQUIRED FOR WARRANTY

PEERLESS VST - 205      Q20C  
MODEL      SPEC

D.O.M. 7070A - 0005

③ D.O.M. (DATE OF MANUFACTURE) ORIGINALLY SERIAL NUMBER

"NEW TYPE"

**SAMPLE (OLD STYLE)**

○ MODEL NUMBER ○  
PEERLESS  
1 275 1374

Individual Serial Number  
Manufactured on the 275th Day  
Manufactured in 1991

## BASIC GEAR DRIVE TROUBLESHOOTING

### Hard Shifting Transaxles and Drive Belts

Often hard shifting is blamed on an internal problem in the transaxle.

**To determine if the problem is transaxle or equipment related make these simple checks.**

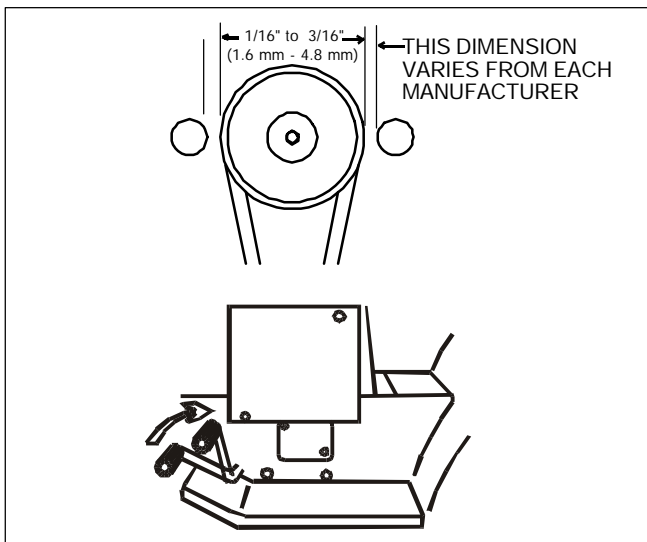
1. Turn the unit off so that all power is removed to the transaxle
2. With the unit off move the shift lever through the shift gate. Movement of the lever should have only slight resistance. The shifting effort should be equal when the engine is off and when running. If the unit is difficult to shift the problem would be internal and the transaxle would need to be removed and repaired
3. If the unit shifts with ease, check the following areas that would be equipment related. Check to see if the belt is releasing from the pulley on the engine and transmission / transaxle, it may require that the belt guides be repositioned. The distance required from the pulley to the guide is typically 1/16" to 3/16" (1.6 mm - 4.8 mm), always check the O.E.M. specs.
4. Check to see if the pulley is damaged and may not be releasing the belt.
5. Make sure that the belt is the correct length and type in case it was replaced with a non original, possibly more aggressive belt.
6. Check the brake/clutch pedal to make sure that when the pedal is depressed that the idler pulley is releasing the belt tension before it applies the brake. If this does not happen the unit will still be under a load and be impossible to shift
7. The final area to check would be for damaged or binding shift linkage.

**Hard shifting with the engine off could be caused by:**

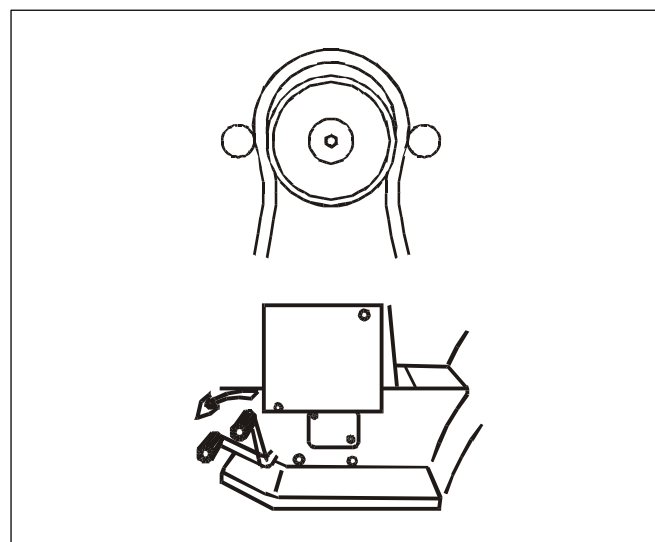
1. Shift linkage out of adjustment.
2. Corrosion in the transaxle or transmission.
3. Damaged shift keys, gears, or shifter brake shaft.
4. Belt guides missing or improperly adjusted (see equipment manufacturer specs.)

**Unit Seems to Slip:**

1. Check for proper belt adjustment (consult OEM operator's manual).
2. Check for proper clutch/brake adjustment (consult OEM operator's manual).
3. Check pulley condition and wheels for sheared or damaged keys.
4. Check drive belt condition, if glazed or worn replace it.



For proper declutching to occur, it is very important that the engine belt guide be set at a predetermined gap (set by the manufacturer) and away from the belt with the belt engaged.



With clutch disengaged, it is very important that the belt blossoms away from the engine pulley. Belt must stop turning before transaxle shifting can occur.

## VST Hydrostatic Model Troubleshooting

The information on this page has been provided to help understand the internal operation of the VST. Do not use this information to attempt any internal repairs. Tecumseh's current policy on hydrostatic transaxles that have internal failures is to replace the complete unit. This has not changed. However, Tecumseh would like to provide a failure checklist to assist in making an accurate evaluation of the complete tractor to eliminate any unnecessary replacements. Here is a list of items to check and corrective actions to take.

To properly test the unit for power loss.

1. Allow the unit to cool before trying the following steps.
2. Put the shift lever in a position that is 1/2 of the travel distance from neutral to forward.
3. Place the tractor on a 17 degree grade.
4. Drive the tractor up the grade (without the mower deck engaged). The loss of power experienced should be approximately 20%. This is considered normal. If the loss of power is approximately 50%, this would be considered excessive.
5. Bring the unit to neutral, shift into forward and note the response. Care should be taken to move the lever slowly to avoid an abrupt wheel lift.

To determine if the problem is with the hydro unit, all external problem possibilities must be eliminated. Here are some potential problem areas.

1. **Overheating:** Heat can cause a breakdown in the viscosity of the oil which reduces the pressure used to move the motor. Remove any grass, debris, or dirt buildup on the transaxle cover and / or between the cooling fins and fan. Buildup of material will reduce the cooling efficiency.
2. **Belt slippage:** A belt that is worn, stretched, or the wrong belt (too large or wide) can cause belt slippage. This condition may have the same loss of power symptom as overheating. Typically, the unit which has a slipping belt will exhibit a pulsating type motion of the mower. This can be verified visually by watching the belt and pulley relationship. If the belt is slipping, the belt will chatter or jump on the pulley. If the belt is good, a smooth rotation will be seen. Replace the belt and inspect the pulley for damage.
3. **Leakage:** The VST and 1800 Series have two oil reservoirs which can be checked for diagnostic purposes. The first is the pump and motor expansion bellows, with a small diameter blunt or round nose probe, check the bellows depth through the center vent hole. Proper depth from the edge of that hole is 3-1/4 - 3-1/2 inches (8.25 - 8.9 cm).

The second chamber is for the output gears including the differential. FIRST make sure the tractor is level, then remove the drain/fill plug. NOTE: Some units that do not have differential disconnect will have two plugs. We recommend using only the primary plug. With a small pocket rule insert until you touch bottom of case. You can then remove it and check for 1/4 - 3/8 inches (6.5 - 9.5 mm) contact, this is full at its 8 oz. capacity.

4. **Low ground speed:** If the linkage is not synchronized to absolute neutral, or the shift lever is not properly fastened to the tapered control shaft, full forward travel may not be achieved. This may cause a false reading and be misdiagnosed as a low power condition. This also could be caused by the brake not releasing.

To determine absolute neutral, the hole in the tapered control shaft must face straight up and down, at this point make sure the OEM linkage is in neutral. To properly fasten the control lever to the shaft, torque the nut to 25-35 ft. lbs. (34 - 48.3 Nm) of torque with the shaft and the lever in neutral.

When attaching the shifter arm to the shaft you must prevent any rotation during torquing. This can be done by placing a long 5/16 bolt in the hole of the shaft. Hold the bolt until the tapers are locked and the nut torque is correct.

To make sure that the brake is not binding, drive the unit up a slight grade.. Position the speed control lever into neutral. The unit should coast backwards. If the unit does not coast back slowly, the brake is not released from the brake disk. Adjust the brake linkage to release the brake completely when the foot pedal is released.

5. **Hard to shift:** Typically hard to shift symptoms are not caused by the hydrostatic unit. The shift arm should move with relative ease. Approximately 40-50 inch lbs. (4.48 - 5.6 Nm) at the transaxle for foot pedal units or 150-200 inch lbs. (16.8 -22.4 Nm) for hand operated units. This varies depending on the type of linkage. Binding may occur in the linkage connections due to rust or moisture. Lubricating these connections and checking for bent or damaged parts should resolve hard shifting.

## Tecumseh/ Peerless® Lubrication Requirements

Note: It is **CRITICAL** to your units long life that you use **ONLY** the recommended lubricant in all models as listed.

TRANSAXLES		TRANSMISSIONS		RIGHT ANGLE AND T DRIVES	
Model No.	Quantity	Model No.	Quantity	Model No.	Quantity
600	24 oz./710 ml Oil	2600	†	All Models	4 oz./118 ml Grease
800	30 oz./887 ml Grease	700	12 oz./355 ml Grease	Except *	
801	36 oz./1065 ml Grease	700H	12 oz./355 ml Grease	*1408-P91	3 oz./89 ml Grease
820	36 oz./1065 ml Grease	2800	†	*1409-P91	
900	26 oz./769 ml Grease			*1410-P91	
910	18 oz./532 ml Grease			*3002	
915	10 oz./296 ml Grease			*3003	
920	30 oz./887 ml Grease			*3028	
930	30 oz./887 ml Grease			*3029	
1200	48 oz./1420 ml Oil ††			*3035	
1301	32 oz./946 ml Oil			1000 Series	6 oz. / 180 ml Oil
1305					†††
1309				1100	16 oz./473 ml Oil
1313					
1302	44 oz./1301 ml Oil			<b>DIFFERENTIALS</b>	
1303				All Models	3 oz./89 ml Grease
1304				<b>TWO SPEED AXLE</b>	
1306				All Models	2 oz./59 ml Grease
1307				<b>THREE SPEED AXLE</b>	
1308				All Models	2 oz./59 ml Grease
1310					
1311					
1312					
1314					
1315					
1316					
1317					
1318					
1320					
1321					
1322					
1325					
1328					
1329					
1319					
1323	24 oz./710 ml Oil				
1326					
1327					
LTH	8 oz./240 ml Oil				
MST200	16 oz./473 ml Oil				
VST205 and 1800's	††††				
2300	64 oz./1892 ml Oil				
2400	32 oz./946 ml Oil				
2500	†				

Grease: Bentonite Grease  
Part Number 788067B

Oil: SAE E.P. 80W90 Oil  
Part Number 730229A

† Refer to O.E.M. Mechanic's Manual for type of lubricant

†† To be filled through shift lever opening

††† Some 1000 Right Angle and T-Drives use Bentonite Grease.

†††† Tecumseh's current policy on hydrostatic transaxles with internal failure, is to replace the complete unit. VST and 1800's have two separate reservoirs which can be checked for diagnostic purpose only. The output gear reservoir can be checked with a small pocket rule as outlined in the Motion Drive Systems Book.

Refer to Motion Drive Systems Book, 691218.