# CONSUMER PRODUCTS

# 70

# LAWN TRACTOR




Litho in U.S.A.

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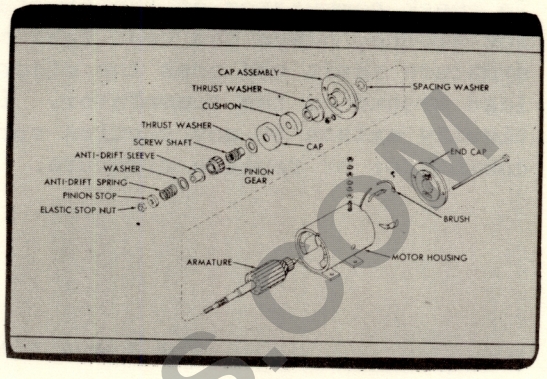
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STARTER:

The 70 Tractor is equipped with a starter motor. When the ignition switch is in the start position the starting circuit is closed and the armature starts to rotate. The bendix drive pinion moves out on a splined sleeve into mesh with the flywheel ring gear. The pinion than rotates along with the armature shaft to crank the engine. When the engine starts, the flywheel begins to turn faster than the armature in the starter, which throws the pinion back into the disengaged position. Then the ignition is put in the run position, the starting circuit is opened and the armature coasts to a stop. A small spring holds the pinion in the retracted position.

Cranking should be held to a maximum of 60 seconds to avoid overheating.

70 ELECT 22




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To check the fields for a ground, place one test lead on the starter terminal (Brush) and the other test lead to the starter housing. If continuity exists, fields are grounded and housing must be replaced.

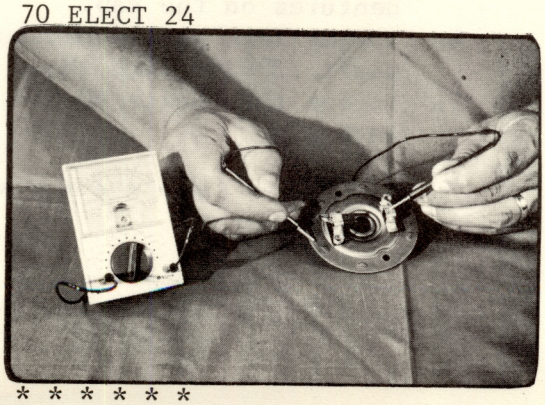
70 ELECT 23



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To check end cap for ground, place one test lead on end cap and other test lead on the brush that connects to fields. If this test shows continuity, end cap is shorted and needs to be replaced.

70 ELECT 24



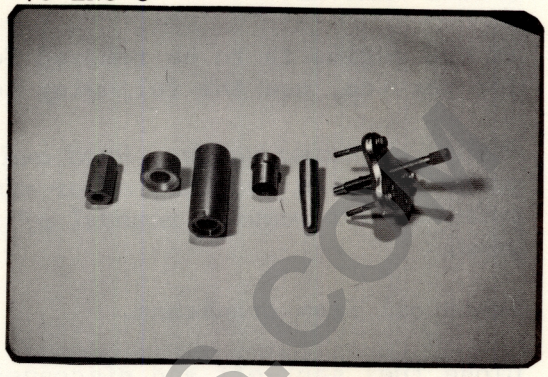
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SERVICE TOOLS:

70 ENG 3

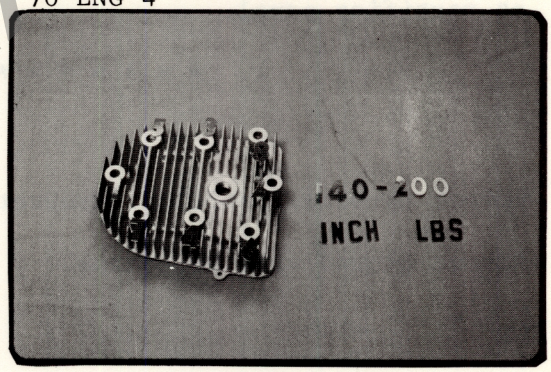


Shown are the service tools required for the VH 70 Engine. They are from left to right;

1. Flywheel Knock-off Nut. (Tecumseh 670169)
2. Oil Seal Driver Adapter. (Tecumseh 28677A)
3. Seal Seat Tools. (Tecumseh 28677A)
4. Bearing Tool. (Tecumseh 28678)
5. Oil Sleeve Tool. (Tecumseh 28676)
6. Flywheel Puller. (OTC 915A)

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70 ENG 4

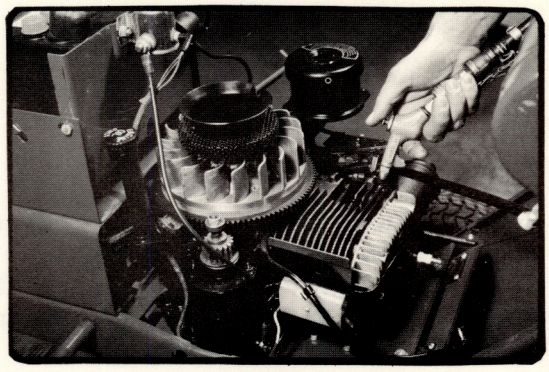



Torque cylinder head bolts to 140-200 in. lbs. in the sequence shown to assure uniform seating of the head and head gasket. For other torque values refer to SM 2091, 2-7 HP Tecumseh Engine Service Manual. These are available through the normal JOHN DEERE Service Manual channels.

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CLEANING SHROUDS AND FINS:

70 ENG 5



It is important to keep the shrouding and fins free of grass and debris to maintain proper cooling of the engine. Shown here is the easy method of removing the shrouding for cleaning. Use compressed air to clean hard to get at areas.

Remove top bolt on each side of cowl assembly, loosen lower bolts and tilt grille and hood assembly forward.

Remove upper three head bolts.

Remove screws holding shrouds - one at dipstick tube - one at battery ground strap connection. Debris in the fins can cause hot spots and pre-ignition.

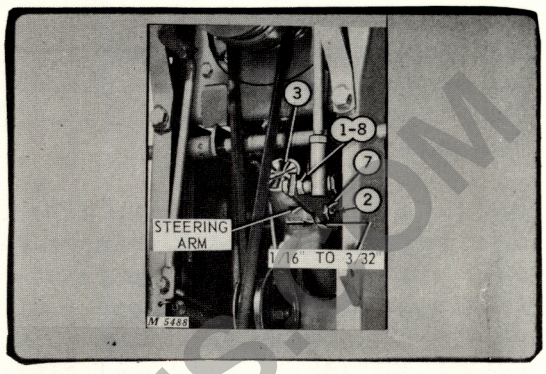
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STEERING GEAR ADJUSTMENT:

70 MISC 1

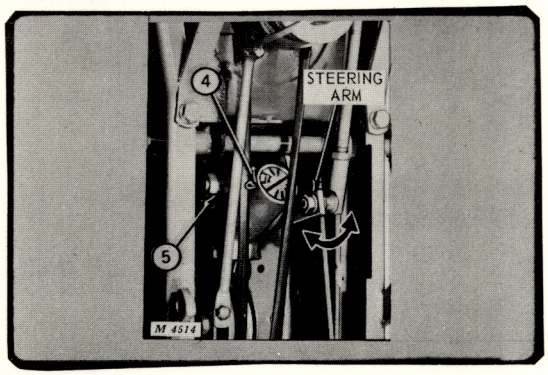



To remove excessive backlash (loose steering) and to properly adjust steering gear, follow this procedure:

1. Disconnect ball joint from lever arm.
2. Loosen jam nut and stud two or three turns.
3. Remove cotter pin holding adjusting plug in gear housing. Use screwdriver to turn adjusting plug into column until tight. Back plug out until steering wheel turns freely with no drag. Lift up on steering wheel to check end play.

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70 MISC 2




4. Turn plug only far enough after adjusting to insert cotter pin through housing and closest slot in plug. Bend one prong of cotter pin out to retain plug.
5. Loosen jam nut on pivot bolt and tighten only the inside nut using a thin open end wrench until all end play (see arrow) is removed or until the distance between 1/16 and 3/32-inch. Tighten jam nut. Check this by hand. (15/16" wrench JDST4 is available from Service Tools, Inc., 1900 Indiana Ave., Chicago, Ill., 60616)

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# ENGINE TROUBLE SHOOTING

## ELECTRIC STARTER INOPERATIVE OR WILL NOT TURN ENGINE

A. Clutch-brake pedal is not fully depressed.

1. Depress clutch-brake pedal.

B. PTO clutch lever is engaged.

1. Pull clutch lever to rear (disengaged position).

C. Solenoid clicks but engine will not start.

1. Check for discharged battery.

D. Engine still will not start.

1. Check electrical connections.
2. Check for faulty clutch-brake and PTO safety start switches.

## HARD STARTING

A. Faulty Ignition.

Check for spark by removing the spark plug and grounding the plug to the cylinder head. Crank the engine with the starter and observe the spark. If no spark, check:

1. Spark plug gap is incorrect.
2. Spark plug electrodes are pitted or fouled. Replace plug.
3. Breaker point gap is incorrect or breaker points are worn or pitted.
4. Faulty magneto.

B. Faulty Carburetion.

1. Gasoline may not be getting to the carburetor because fuel line or strainer may be gummed and plugged. Clean strainer and fuel line.
2. Carburetor may be dirty or out of adjustment.

## ENGINE MISSING UNDER LOAD

A. Check spark plug for proper gap - .030

B. Check for lean fuel mixture. Adjust carburetor high speed screw. See Fuel Section.

C. Check for dirty (fouled) spark plug or improper type plug.

D. Pitted or worn breaker points should be replaced with a new set.

## BACKFIRING

A. Check carburetor for lean fuel mixture. See Fuel Section.

B. Sticky intake valve or improper ignition.

## KNOCKING

A. Use only a quality grade of regular gasoline.

B. Check engine for overheating.

C. Check crankcase oil level. Fill to "FULL" mark on dipstick.

D. Check carburetor for lean fuel mixture. See Fuel Section.

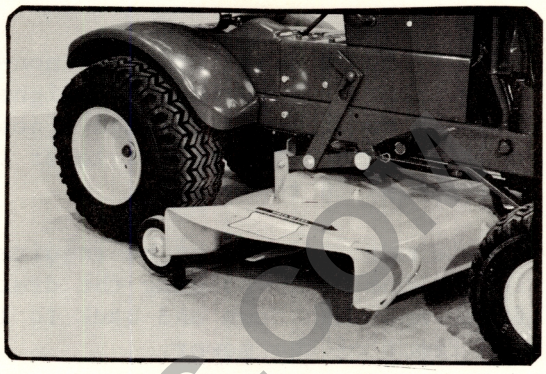
E. Possible loose connecting rod, improper timing or excessive carbon in combustion chamber.



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34 ROTARY MOWER:

34 RM 1



The 34 Rotary Mower will fit either the 60 or 70 Lawn Tractor. The mower will be shipped with the 70 Tractor.

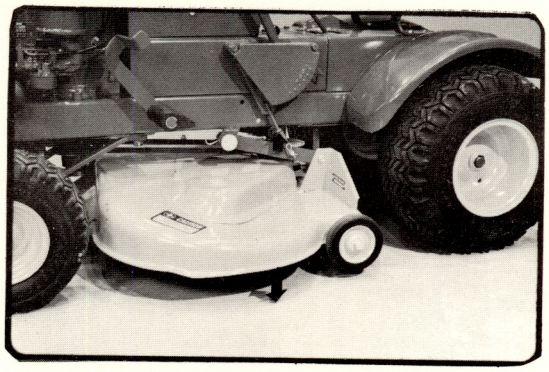
Complete installation and leveling instructions are given in the Operator's Manual. The importance of leveling the mower cannot be over emphasized. Always level the mower at the beginning of each mowing season or whenever the mower has been removed and reinstalled on the tractor.

To level the mower:

1. Park tractor on a hard flat surface such as a driveway, sidewalk or garage floor.
2. Inflate rear tires to exactly 6 psi and front tires to 12 psi. Check inflation with a low pressure tire gauge.
3. Check to be sure mower gauge wheels are both in the same adjusting hole. They can be in any one of the four holes, but they must both be in identical positions.
4. Raise mower with lift lever until gauge wheels are off the ground.
5. Measure distance between the ground and the bottom of the mower deck on each end of the mower.

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34 RM 2



When properly leveled the distance will be equal on each end of the mower.

If adjustment is required, remove adjustable clevis from rear draft link and turn clevis either up or down until right-hand dimension is exactly the same as left-hand dimension.

Tighten jam nut firmly against clevis after adjusting.

6. Adjust cutting height with lift lever and stop as instructed in the Operator's Manual.



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EQUIPMENT

34 Rotary Mower..... 34 Inch Cut
32 Snow Thrower..... 32 Inch Cut
40 Front Blade ..... 40 Inch Cut

The equipment and accessories for the 60 and 70 Tractors are interchangeable.

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PREDELIVERY:

The 70 Tractor will be shipped as you see it here.

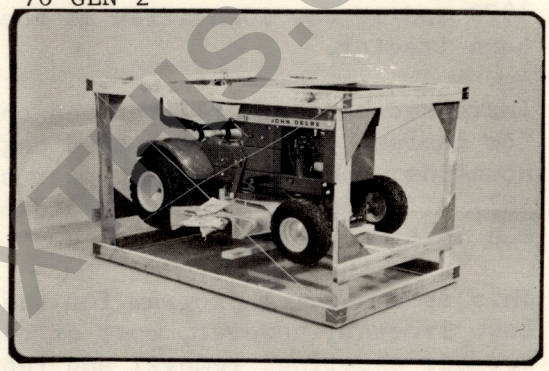
Install the steering wheel and tighten it to 10-12 Ft. Lbs.

Be sure to remove battery before filling with electrolyte to prevent damage. Always use caution when using battery acid as it can be harmful to person and tractor. Acid is available from Parts Depot in various quantities.

Be sure to connect solenoid cable to positive battery terminal first and cover with boot. Connect ground cable to negative terminal. Reversing these connections may burn out fuse on rectifier panel or possibly damage other electrical components.

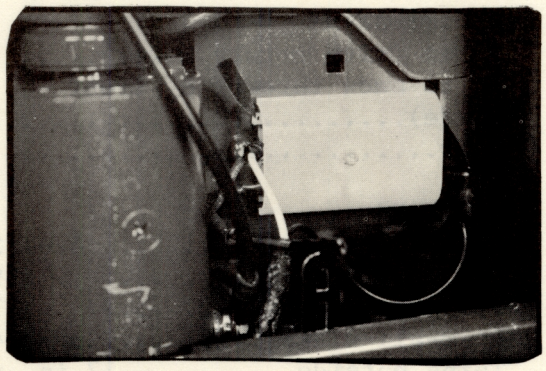
To prevent corrosion, coat battery posts and cable clamps with petroleum jelly. Be sure rubber boot covers positive battery terminal.

70 GEN 2



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70 GEN 3



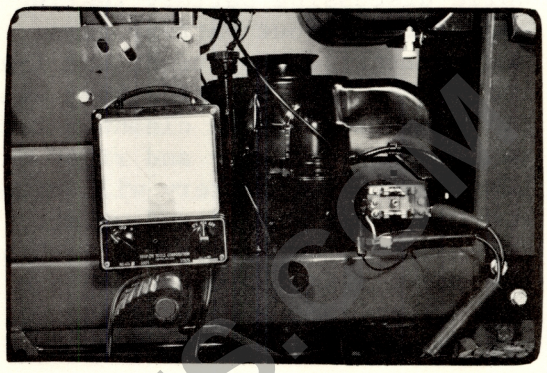
The rectifier wire is disconnected for shipment. This protects the rectifiers and fuse from burning out if the tractor is started manually before the battery is installed. After charging and installing battery, connect rectifier wires at connector "A" on rectifier panel. Be sure connectors are pushed together firmly.

More information will be included in the Electrical Section.



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70 ELECT 7



Should the battery check out to be good, but only discharged it will be necessary to check the charge circuit further to determine the cause.

The output amperage may be checked at the rectifier panel as shown here. Connect the positive lead of the amp meter to the output spade on the rectifier panel. Connect the negative lead to the main wiring harness connector which connects to the output spade. Start engine and run at full RPM. 2-4 Amps DC should be shown.

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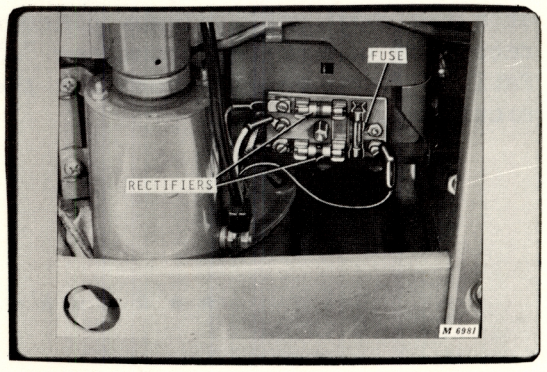
70 ELECT 8



If less than 2-4 Amps DC are shown or no Amp meter is available, check fuse and rectifiers with an Ohm meter. Full continuity should be shown in one direction only on rectifiers. Any reading other than this would indicate a defective rectifier. The fuse will show continuity in both directions.

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70 ELECT 9




The rectifiers are protected by the fuse which will burn out if polarity is reversed at the battery connections. This can also result from incorrect booster battery connection.

The tractor will start but the battery will not charge if the fuse is burned out.

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