SLIDE TEXT
ST 55-56

CONSUMER PRODUCTS

55 and 56

RIDING MOWER

RM GEN 1

INTRODUCTION:

New for 1970 are the 55 and 56 JOHN DEERE Riding Mowers. These riding Mowers have been developed and tested to the high standard of JOHN DEERE quality. We feel that these two riders will make a valuable addition to our line of Consumer Products.

The 55 is a 5 horsepower rider with a 26-inch mower. The 56 is a 6 horsepower rider with a 28-inch mower and has an electric start option available.

There are many like features as well as distinguishing features between the 55 and 56 riders. This service text will cover both models. Where differences occur in the service procedure, it will be so noted and shown in this text.

SPECIFICATIONS:

Wheel Tread		
Front	55 & 56	22 in.
Rear	55 & 56	22 in.
Tire Sizes		
Front	55	10.50x3.50 Semi-pneumatic
	56	11x4.00 - 5
Rear	55 & 56	4.00x4.80 - 8
Tire Inflation		
Front	55	Semi-pneumatic
	56	8 lbs.
Rear	55 & 56	12 lbs.

DIMENSIONS:

Wheel Base 55 & 56	.....	40 in.
Over-all Length 55 & 56	.....	54 in.
Over-all Height 55	.....	36.5 in.
56	.....	37.5 in.
Over-all Width 55	.....	34.5 in.
56	.....	36.5 in.
Turns Outside 55 & 56	.....	30 in.
Weight (including mower) 55	..	250 lbs.
56	..	260 lbs.
Width of Cut 55	.....	26 in.
56	.....	28 in.
Height of Cut 55 & 56	.....	1-3 in.

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PREDELIVERY:

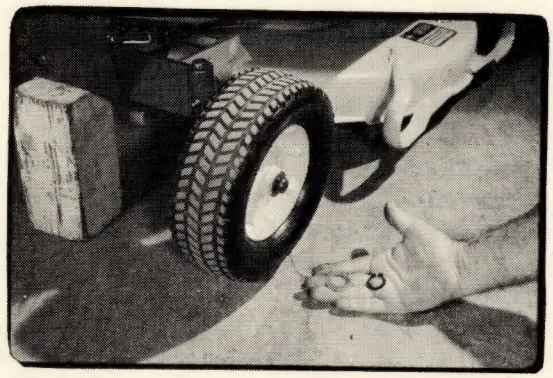
The rider mowers will be shipped without the front wheels assembled.

Assemble the front wheels to the riders by placing wheel, washer and snap ring on spindle as shown.

On 56 Riders, install plastic cap over wheel hub.

Grease the wheel with SAE approved multi-purpose grease.

RM GEN 2



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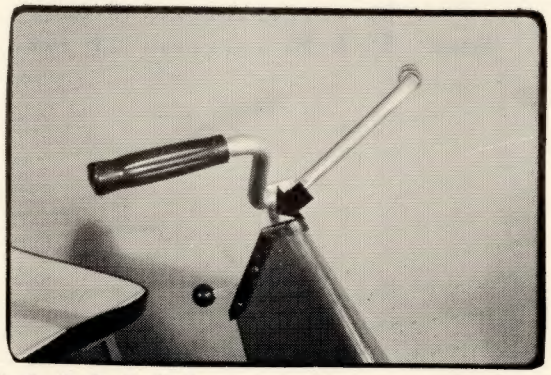
Position front wheels straight forward. Remove steering wheel or handle bars and spring pin from steering shaft. Place flat washer over steering shaft and position steering wheel or handle bars upright on shaft. Insert pin through hub and steering shaft.

RM GEN 3



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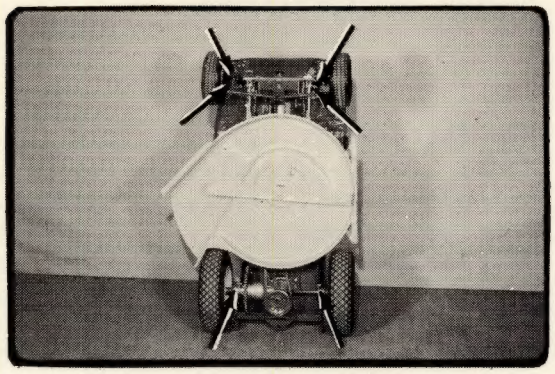
LUBRICATION:

Check lubrication and if necessary lubricate (6) areas shown with SAE multi-purpose grease. Lubricate every 10 hours of operation.

RM GEN 4



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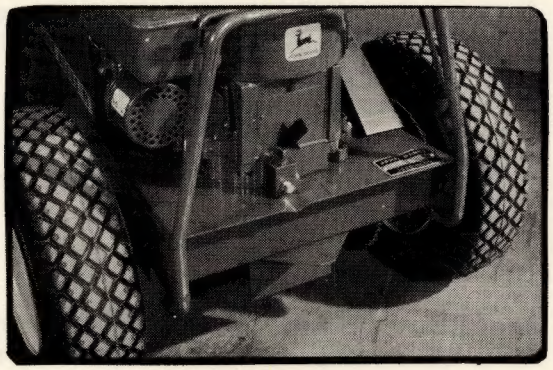
Check the engine oil level. When full, oil will be at the top of the plug hole. Add AM 30730 (SAE 30) oil if necessary.

Use AM 30730 (SAE 30) oil in Summer and AM 30710 (SAE 10) oil in Winter.

RM GEN 5



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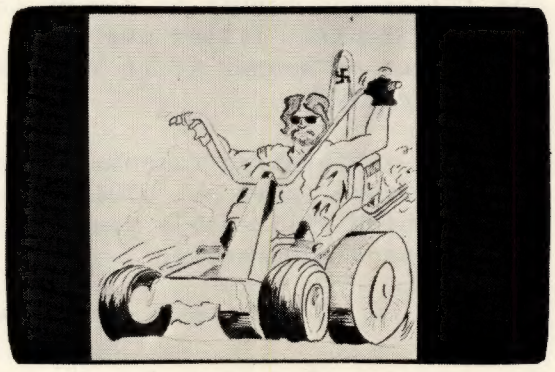
CUSTOMER DELIVERY:

Be sure the customer has his operator's manual and encourage him to read it.

Explain mower operation and safety features. Advise the customer to change oil after the first two hours of operation. This will remove any abrasive particles, which may appear after the first few hours of operation.

Remember: Not all customers will read their operator's manuals. The time you spend explaining the mower service and operation is most important.

RM GEN 6



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ENGINE SPECIFICATIONS:

	55	56
Manufacturer	Tecumseh	Tecumseh
Model	V 50	V 60
Cylinder	Single, C.I. sleeve	Single, C.I. sleeve
Bore and Stroke	2.63 x 2.25 in.	2.63 x 2.50 in.
Displacement	12.176 cu. in.	13.53 cu. in.
Type	4-cycle, vertical crankshaft	4-cycle, vertical crankshaft
Speeds (fast)	1800-3600 rpm	1800-3600 rpm
Speeds (idle)	1200-1700 rpm	1200-1700 rpm
Horsepower	5 HP @ 3600 rpm	6 HP @ 3600 rpm
Valve Clearance (intake) cold	0.010 in.	0.010 in.
Valve Clearance (exhaust) cold	0.010 in.	0.010 in.
Compression Release.	Internal mechanical type	Internal mechanical type
Crankcase Capacity	1-1/2 U.S. pints	1-1/2 U.S. pints
Type of Crankcase Lubricant	AM 30730 Summer	AM 30730 Summer
	AM 30710 Winter	AM 30710 Winter
Starter	Rope recoil	Rope recoil

We cannot over-stress the importance of a clean air filter. Tap filter lightly to remove dirt. Never use compressed air or a liquid cleaner of any type to clean filter as these may damage air filter and result in damage to the engine. Replace filter every 100 hours of service or sooner if it becomes extremely dirty.

Shown is a vibrating tachometer available from Tecumseh (part no. 670156, price $3.95) which will enable you to set the engine speed accurately.

70 ENG 1

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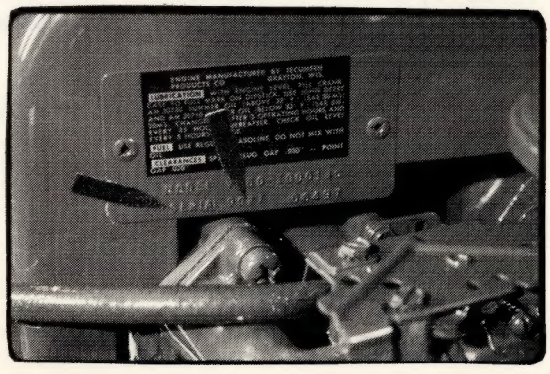
The serial number plate for the engine contains several groups of numbers. The serial number of the engine is the number which immediately follows the word serial on the serial plate. This number is valuable to the factory and should appear on warranty claims and correspondence referring to engine problems.

70 ENG 2



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SERVICE TOOLS:

70 ENG 3

Shown are the service tools required for 2-7 HP Tecumseh engines. 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 Tools. (Tecumseh 28676)
6. Flywheel Puller. (OTC 915A)

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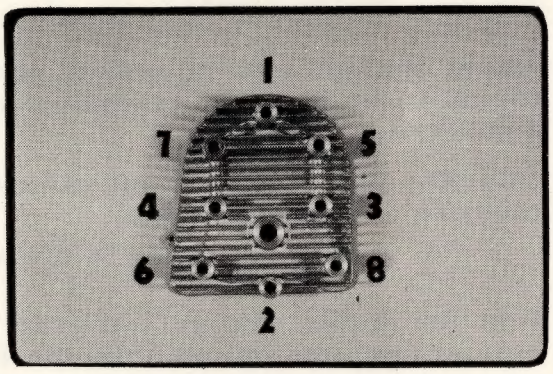
RM ENG 4



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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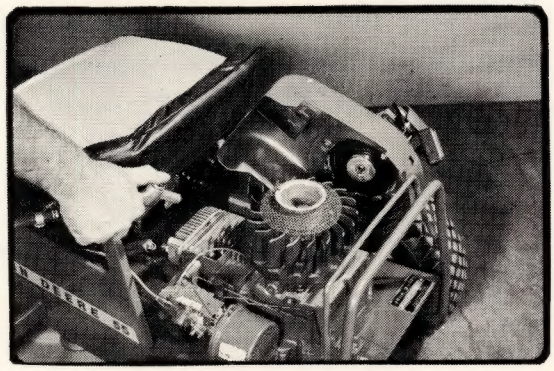
CLEANING SHROUDS AND FINS:

RM ENG 5



It is important to keep the shrouding and fins free of grass and debris to maintain proper cooling of the engine. Remove the shrouding with starter assembled, gas tank and use compressed air to clean hard to get at areas. Cover gas line when cleaning fins.

When reassembling the shrouding with starter attached, be sure the nylon guide in the starter is centered on the crankshaft.

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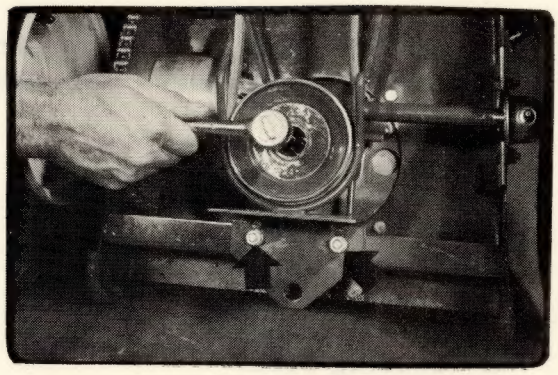
ENGINE REMOVAL:

RM ENG 6



Set the parking brake and raise the rider up on the rear stand.

Loosen the belt guides on the engine output sheave.

Remove the 3/8" cap screw in the center of the output sheave. Remove sheave and disconnect mower drive belt.

Remove the transmission drive belt from the engine sheave.

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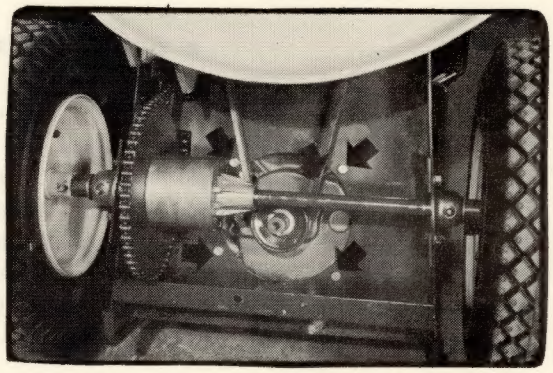
RM ENG 7



Set the rider back down on its wheels and remove the (4) bolts holding the engine in place.

Disconnect the safety start wires and throttle control cable.

Remove the gas tank by pulling straight up and cover gas line to prevent contamination.

CAUTION: Gas will leak out of tank as there is no shut-off valve.

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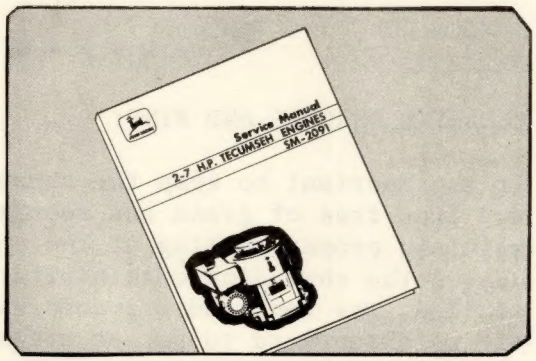
70 ENG 13



Turn the engine counter clockwise one quarter turn and remove from the rider.

Refer to SM 2091, 2-7 HP Tecumseh Engine Service Manual for engine service procedures.

Reverse the removal procedure for installation of the engine.

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THROTTLE CABLE INSTALLATION:

Place the control lever in the high-speed position.

Be sure that the control cover screws in the slotted holes on the left side of the control cover plate, are loose.

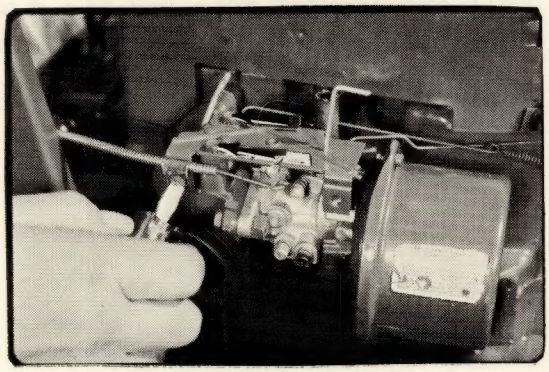
Align the carburetor control lever as shown, so that the hole in the crook of the control lever is in alignment with the slot in the carburetor control cover. This is the high-speed position. Any movement of the control lever to the right begins to close the choke.

Place a 3/32" alignment pin through control cover slot, choke lever, and choke operating arm.

This will align the control cover with the choke operating lever and choke lever itself. Tighten the cover screws. Then, install control cable in carburetor control lever. Tighten clamp on control cable and remove alignment pin.

The alignment pin used was cut from a standard wire coat hanger.

RM ENG 8



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RECOIL STARTER DISASSEMBLY:

Disconnect safety start wires and remove (4) bolts holding the starter assembly to the flywheel shrouding.

Remove starter assembly.

RM ENG 9

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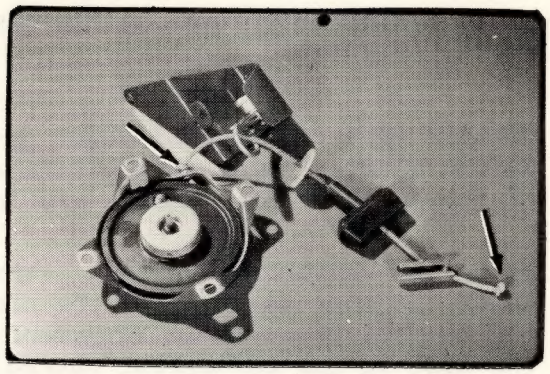
Pull out starter rope and tie a slip knot in the rope outside of the housing.

Untie the knot on the end of the rope and remove metal retainer, handle, washer and safety start assembly.

RM ENG 10



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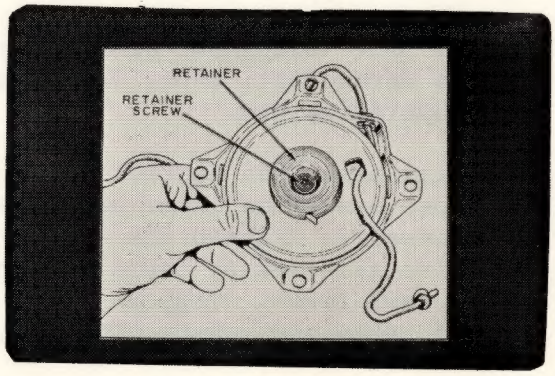
Untie slip knot and allow spring to unwind slowly, using your thumb as a brake.

Removal of the retainer screw will allow complete disassembly of the starter. Note the position of the starter dog and starter spring.

RM ENG 11



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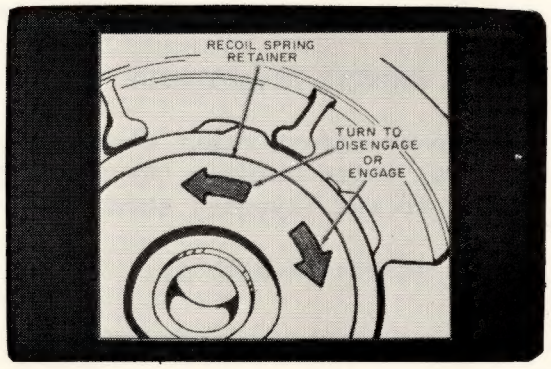
The recoil spring has a retainer, which can be removed by turning as shown.

RM ENG 12



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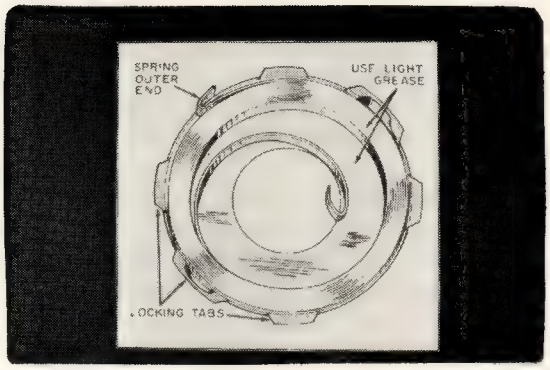
When reassembling, grease the center post and recoil spring lightly. Install the recoil spring retainer and lock tabs in place.

RM ENG 13



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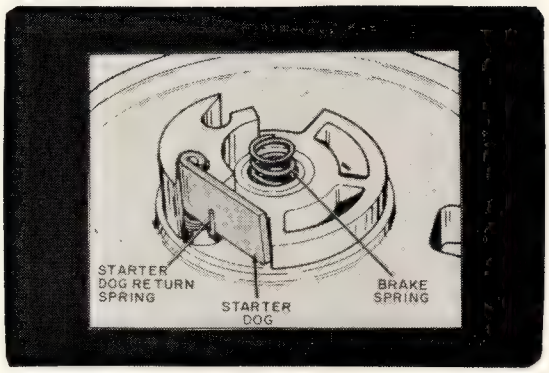
Install the starter dog, starter dog return spring and brake spring as shown.

RM ENG 14



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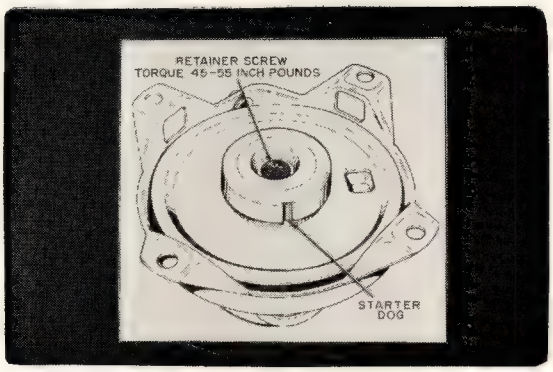
Reassemble retainer and tighten retainer screw 45-55 inch pounds.

RM ENG 15



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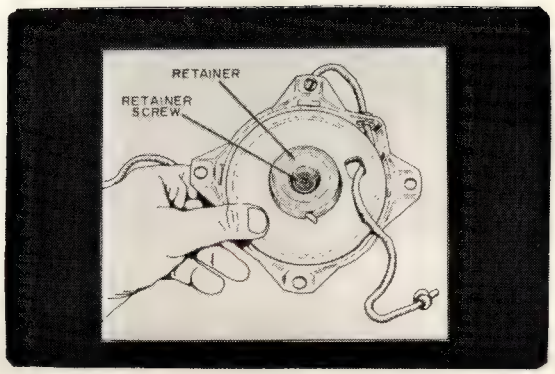
Hold starter as shown, using the thumb as a brake to retain the pulley as it is being wound. Insert a suitable tool in the knot opening in the pulley and wind until tight. Allow the pulley to to unwind only sufficiently so that the knot opening is positioned as shown.

RM ENG 11



Insert the rope as shown and seat the knot in the opening in the pulley. Tie a slip knot on the outside of the starter housing, so that the safety start bracket, washer, handle and retainer may be reinstalled.

Test by pulling the rope. Action should be smooth, the starter dog should emerge quickly and the rope should retract completely, if it is of the correct length.

* *

ENGINE TROUBLE SHOOTING

ENGINE FAILS TO START

A. Clutch and mower pedals not in proper starting position.

B. Carburetor not adjusted properly.

C. Throttle lever not set properly.

D. Spark plug wire loose or disconnected.

E. Spark plug improperly gapped.

ENGINE STOPS WHEN PEDALS ARE ENGAGED

Rope starter not retracted to hold neutral switch arm against engine.

On Electric Start 56 Riders, Key is in "RUN" position instead of "OPERATE".

HARD STARTING

A. Faulty Ignition.

Check for spark by removing the spark plug and grounding the plug to the cylinder head. Crank the engine 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 may be plugged. Clean fuel tank 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. Stickly 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 top of plug hole.

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

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

ENGINE TROUBLE SHOOTING CONT.

LOSS OF ENGINE POWER

A. Overheating.

1. Check and clean intake screen and engine shrouds.
2. Check for use of premium gasoline with high octane rating. Use regular gas only.
3. Check carburetor for lean fuel mixture.
4. Check oil for excessive or too little oil in engine crankcase. Crankcase is full when oil is at the top of the plug hole.
5. Check breaker points for proper gap.

B. Dirty Air Filter.

1. Check and clean air filter.

C. Choke is Partly Closed When Operating at Full Throttle.

1. Make sure throttle choke control cable is properly adjusted.

ENGINE OPERATING ERRATICALLY

Check the following:

A. Carburetor setting.
B. Clogged fuel line.
C. Water in fuel. Drain fuel and clean fuel line.
D. Loose throttle cable.
E. Loose spark plug wire.
F. Air leaks in carburetor connections or gasket.
G. Carburetor jet clogged.
H. Fuel tank cap vent hole plugged.

ENGINE WILL NOT IDLE

A. Check carburetor adjustments. See Fuel Section.
B. Dirty carburetor.
C. Check and set spark plug gap - .030.
D. Check carburetor for air leaks in gasket.
E. Possible leaky valves or faulty condenser.

SPECIFICATIONS:

FUEL SYSTEM
Type of Fuel..... Regular gasoline
Fuel Tank..... 2 U.S. quarts

AIR CLEANER
Type..... AM 30900 dry filter
Clean every 25 hours of service.
Replace when dirty.

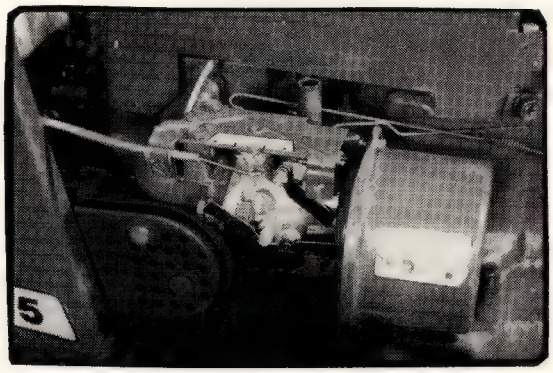
ADJUSTING CARBURETOR:

If the engine misses, backfires, surges or starts hard, carburetor adjustment may be required.

Idle adjustment and high speed adjustment must be made at the same time as each affects the other. Adjust as follows:

1. Turn high speed adjusting screw clockwise until closed. Screw on the left on 55 and on the bottom for 56. Close finger tight only. Then open one complete turn.
2. Turn idle adjusting screw clockwise until closed. Screw on the right on 55 and in the center on 56. Close finger tight only. Then open one and one-half turns.
3. Start engine and raise throttle lever to the "run" position. Allow engine to warm up.
4. Turn high-speed adjusting screw 1/8 turn each time, forward or backward, until engine runs smoothly at full throttle. Keep screw position slightly on the rich side (open) for maximum power when moving tall or thick grass.
5. Final idle adjustment should be made at an engine speed of 1200 to 1700 rpm. Move throttle lever to lowered "Idle" position and turn idle adjusting screw 1/8 turn each time, forward and backward, until engine idles smoothly.

RM FS 1



6. Raise throttle lever quickly to check for uniform acceleration. If engine misses, gas-air mixture is too lean. Turn high speed adjusting screw counterclockwise until positive acceleration can be obtained. If excess exhaust smoke is noticed, mixture is too rich. Readjust idle screw, if necessary until good balance is achieved and engine idles smoothly. The top screw adjusts the speed at which the engine idles. This is factory adjusted and will not normally require adjustment.

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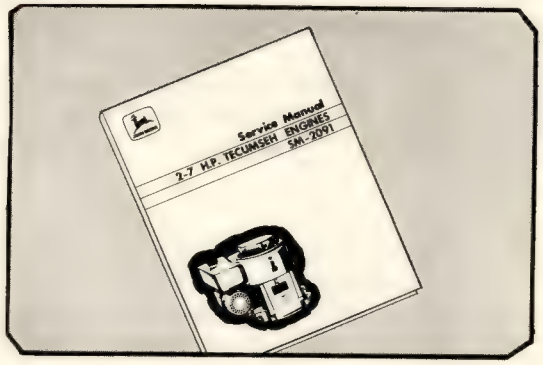
CARBURETOR SERVICE

The 55 Riding Mower is equipped with a diaphragm carburetor. The 56 is equipped with a float type.

For complete service on the internal components of the carburetors, refer to SM 2091, 2-7 HP Tecumseh Engine Service Manual.

70 ENG 13



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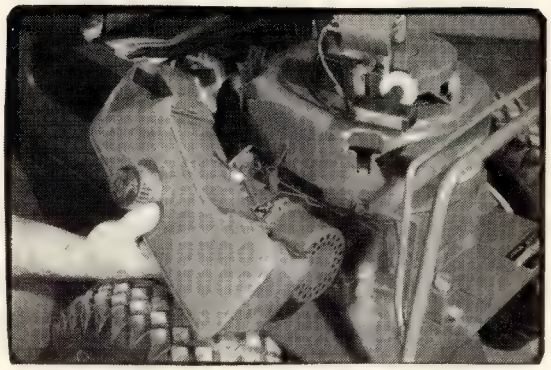
The fuel tank may be removed for easy access of other engine components. Lift straight up on tank to remove. Note retainer tabs holding tank to engine.

CAUTION: Gas will leak out the tank as there is no shut-off valve. Be careful not to get dirt in the gas line and carburetor.

RM FS 2



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SPECIFICATIONS:

Ignition	High Tension Flywheel Magneto
Spark Plug Gap	0.030 in.
Breaker Point Gap	0.020 in.
Optional Electric Start (BM 15529)	56 only
Requires battery, JOHN DEERE	AM 30094, 24 AMP. Hr. 12 volt
Includes Starter, Starter Switch, Wire Harness, External Battery Charger (AM32400)	

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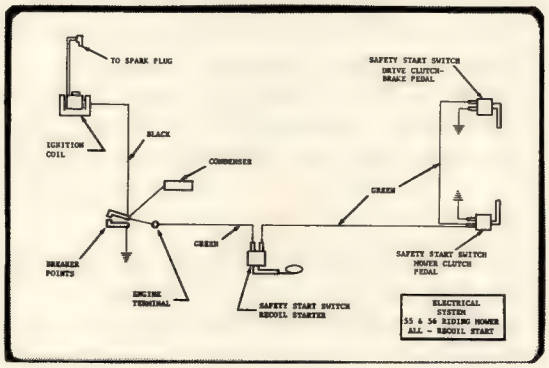
WIRING DIAGRAM AND SAFETY START SYSTEM:

RM ELECT 1



Shown is the wiring diagram for the 55 and 56 Riding Mowers.

There is no charge circuit as the mowers are equipped with manual recoil starters.

The 55 and 56 Riding Mowers are equipped with a safety start system. The safety start circuit is simply a grounding system connected to the engine magneto. There is a safety switch on the drive clutch-brake pedal, mower clutch pedal and recoil start mechanism.

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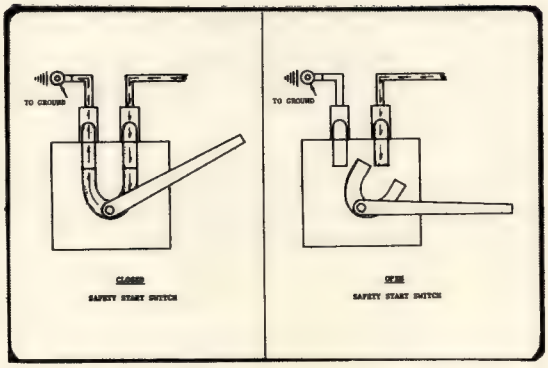
RM ELECT 2



If the engine is to start, the pedal safety switches must be "open" to prevent grounding of the magneto. Shown is a drawing of a closed and open safety switch. Note when the switch is closed, the magneto is grounded. The "open" condition is obtained at the drive clutch-brake pedal by setting the parking brake. The mower clutch switch is "open" when the pedal is in the disengaged position.

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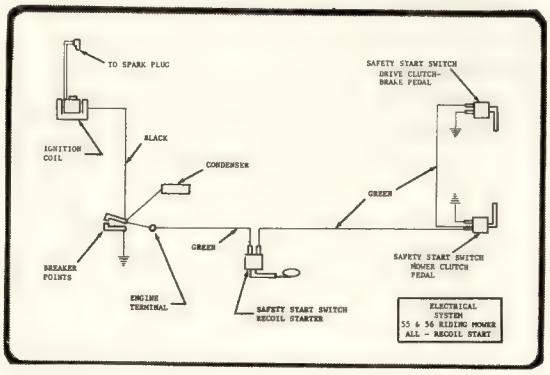
The engine switch is merely the connection between the magneto and the grounding switches on the drive clutch-brake and mower clutch pedals. Pulling out on the recoil starter rope closes the engine switch.

If the drive clutch-brake or mower clutch pedal is engaged, that switch will ground out the magneto and the engine will fail to start.

When the drive clutch-brake and mower clutch pedals are disengaged, the pedal switches are open, the engine will start.

With the recoil start rope retracted, the engine's neutral start switch is "open". This permits engagement of the drive clutch-brake or mower clutch pedals for normal operation without grounding the magneto and killing the engine.

RM ELECT 1



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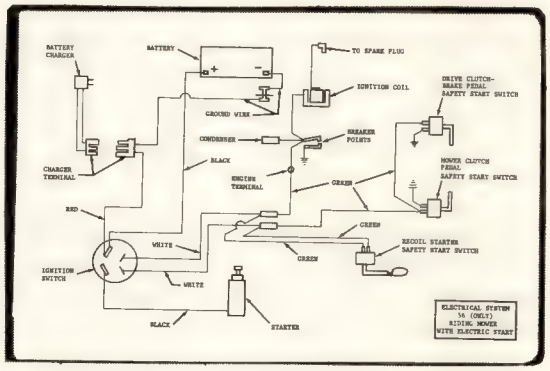
The 56 Riding Mower has an electric start kit available. Shown is the wiring diagram after the kit has been installed.

The operation of the safety start system works in the same way as before with the addition of a key start switch. When the key switch is in the "run" position the connection between the engine magneto and foot pedal safety switches is closed. Foot pedal engagement will kill the engine.

When the key switch is in the "operate" position the circuit is open and the foot pedals can be engaged.

RM ELECT 3



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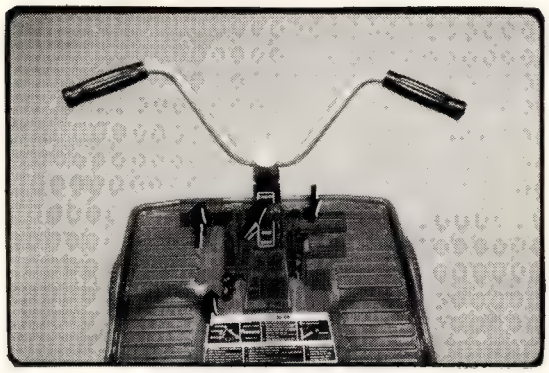
If the engine does not start after a few tries, check the system in the following sequence.

Be sure the throttle control lever is in the choke position (for a cold engine) or run position (for a warm engine) for starting.

Be sure the drive clutch-brake pedal is in the park position.

Check to see that the mower clutch pedal is disengaged.

RM ELECT 4



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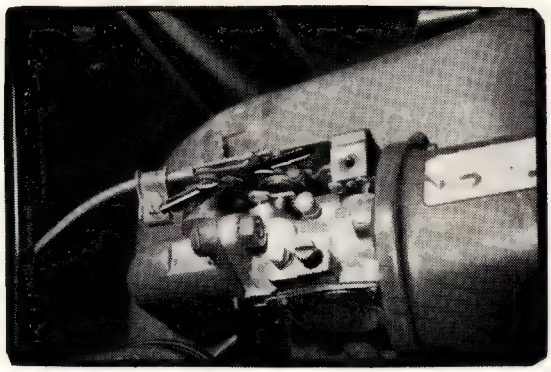
If the pedals and controls are set properly, check the throttle plate at the magneto connection to be sure that the magneto is not grounded out.

The throttle cable may be out of adjustment, causing the magneto to be grounded in position on the control panel other than stop.

RM ELECT 5



* *

If the magneto connection checks O.K., check the safety start wiring harness to see if there are any loose connections.

Use an ohm meter to check the safety switches.

Start with the switch at the drive clutch-brake pedal. Connect the ohm meter to the switch terminals. Move the drive clutch-brake pedal back and forth and observe the switch open and close on the ohm meter. If the switch does not open and close, be sure that the switch arm properly contacts the drive clutch-brake pedal. The bracket is adjustable.

Replace the switch if defective, or proceed to check the other switches.

RM ELECT 6

* *

Lock the drive clutch-brake pedal in the park position.

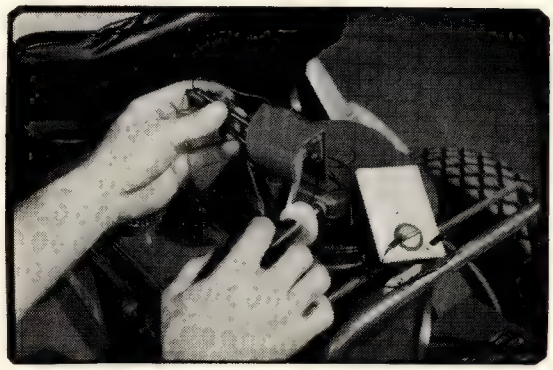
Connect the ohm meter leads to the safety switch on the mower clutch pedal. Move pedal back and forth to observe the switch open and close on the ohm meter. Again, check adjustment of switch and proceed or replace switch as necessary.

RM ELECT 7

* *

With the drive clutch-brake pedal down and the mower clutch pedal up, connect the ohm meter to the safety switch on the recoil starter. Pull the starter rope to activate the switch and observe switch on the ohm meter.

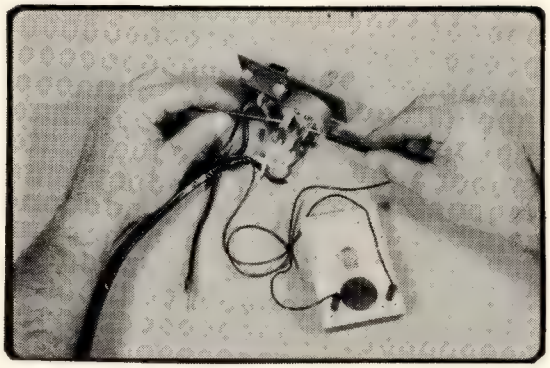
RM ELECT 8



* *

On the 56 Rider with the optional electric start, check the ignition switch with an ohm meter connected to the two small terminals. Switch the key from the run to operate position to observe the switch open and close.

RM ELECT 9



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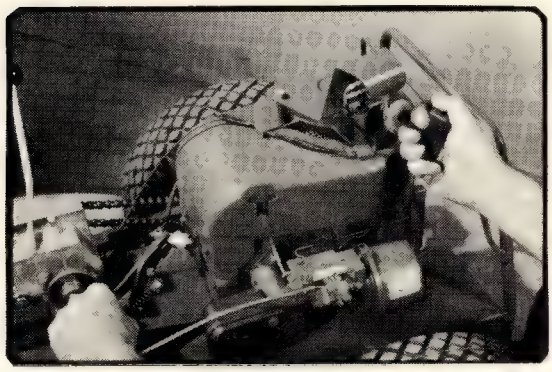
IGNITION SYSTEM:

If the safety circuit checks O.K., but the engine will not start, we should check the ignition spark at the spark plug.

At this point we will assume that the fuel system is functioning properly. In a situation of cranking but not starting, carburetor, fuel tank and line should all be checked as they may be malfunctioning.

RM ELECT 10



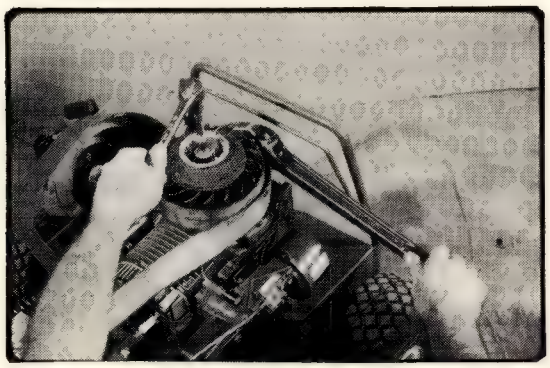
The first check would be to remove the spark plug and crank the engine with the plug grounded as shown. If weak or no spark is produced, check the spark plug gap. Proper gap is .030. It may be necessary to install a new plug if the old plug is pitted or burned. Then retest by cranking engine.

* *

If still no spark is produced, it will be necessary to remove the shrouding and flywheel to gain access to the ignition points.

A strap wrench like the one shown is a handy tool for holding the flywheel while removing the nut on the crankshaft.

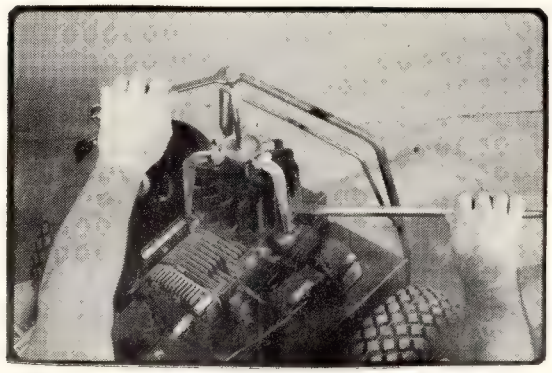
RM ELECT 11



* *

Apply a small amount of pressure with a bar as shown to help remove the flywheel. Never hit on the end of the crankshaft with a hammer as this may break crankshaft.

RM ELECT 12



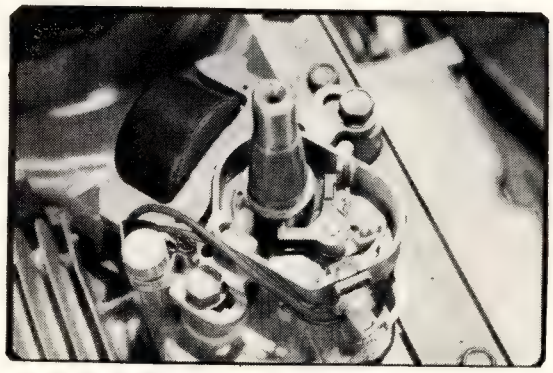
* *

Now turn the crankshaft until the lobe causes the points to open at the widest point. Check the points to see if they are pitted or burned. The proper gap is .020.

It is always a good policy to replace the condenser when the points are replaced. A faulty condenser can ruin the points.

Even though it was necessary to remove the top three head bolts to gain access to these electrical components, it is not necessary to replace the head gasket.

RM ELECT 13



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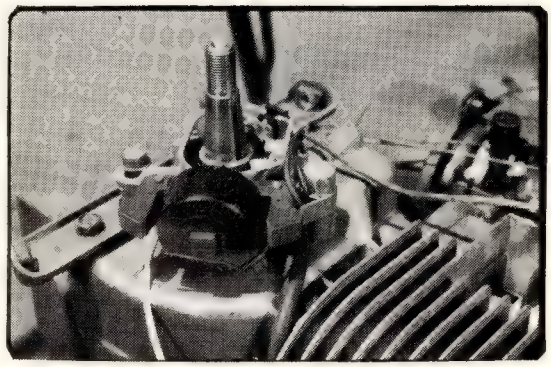
If the ignition points appear to be good, then we should check the ignition coil. Remove the coil by prying off the wire retainer and disconnecting the leads.

RM ELECT 14



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ENGINE TIMING:

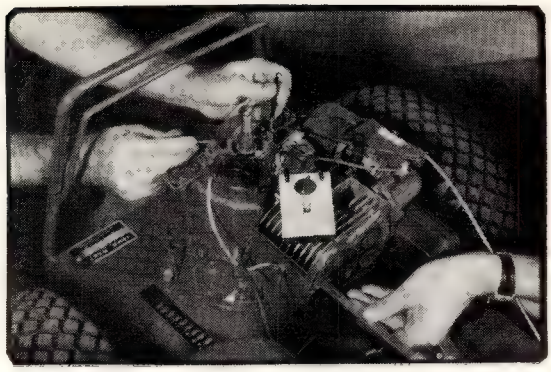
When short blocking the engine for any other service work which requires removal and replacement of the coil mounting core and plate assembly, it will be necessary to time the engine as follows:

1. Remove the engine shrouding with recoil starter assembled and flywheel.
2. Remove cylinder head and gasket.
3. Turn the crankshaft until the high point of the ignition cam causes the points to open. Set the point gap .020.
4. Turn crankshaft until the piston reaches top-dead-center. Then turn the crankshaft counterclockwise until the piston moves down .080/.090 below top of cylinder block surface.
5. Loosen the two screws that hold core and plate assembly to the cylinder. Remove the leads from the point terminal when using ohm meter or flashlight tester as shown.

   Connect one tester lead to the point terminal and the other lead to a ground.

   Position the core and plate assembly so that ignition cam on crankshaft just begins to open breaker points. This breaks the continuity and will be shown on the tester. Tighten core and plate assembly mounting screw to retain adjustment.
6. Reassemble engine. Be sure to install new cylinder head gasket when reassembling. Tighten head bolts to 140-200 in. lbs.

RM ELECT 15



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There are five tests for an ignition coil:

1. Coil power test.
2. Coil high speed test.
3. Coil surface insulation test.
4. Continuity test.
5. Coil ground test.

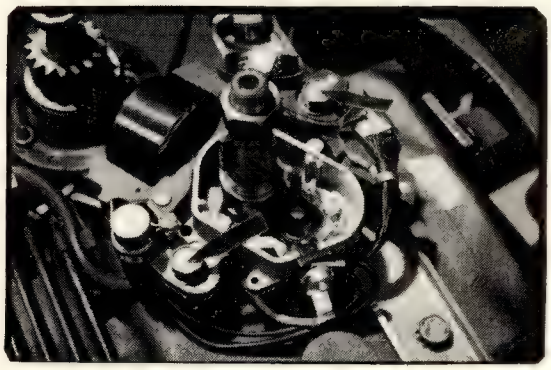
Make all of these tests according to the instructions and specifications, which came with your tester. If no tester is available, install a new coil and check to see if this will correct the spark problem.

70 ELECT 19

* *

When replacing points or ignition coil do not remove or loosen the core and plate assembly as this will throw the engine out of time.

70 ELECT 20



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SPECIFICATIONS:

Brakes
  Type ..... Friction, pedal operated
  Parking ..... Hand lock to foot brake

Clutch ..... V-belt

Transmission
  Type ..... Gear box
  Gear Selections/ 2 Forward, 1 Reverse
  Lubricant ..... EP Lithium (AT 30408)

Differential .... Bevel Gear Axle Assy.
  Lubricant ..... EP Lithium (AT 30408)

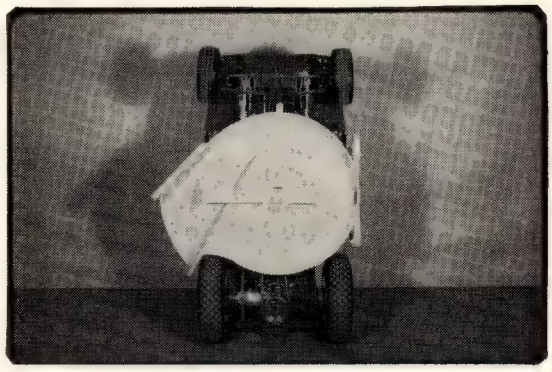
Travel Speeds (MPH)
  1st. Gear 55 & 56 ..... 2.5 MPH
  2nd. Gear 55 & 56 ..... 4.0 MPH
  Reverse 55 & 56 ..... 2.5 MPH

REPLACING TRANSMISSION DRIVE BELT:

Depress drive clutch-brake pedal and set parking brake. Raise rider up on the rear stand. Loosen belt guide on the engine output sheave.

NOTE: Bend the guides to 1/16 to 1/8-inch clearance from the sheave when installing new belt.

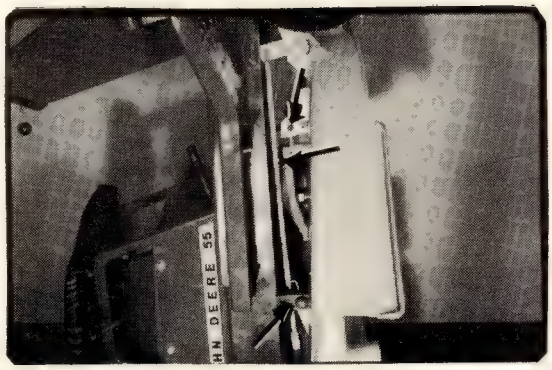
RM MOW 2



* *

Remove the mower from the rider in the following sequence. Remove the right rear lift pin, washer and quick pull pin. Remove the quick pull pin and washer from the lift rod and PTO engagement rod.

RM MOW 3

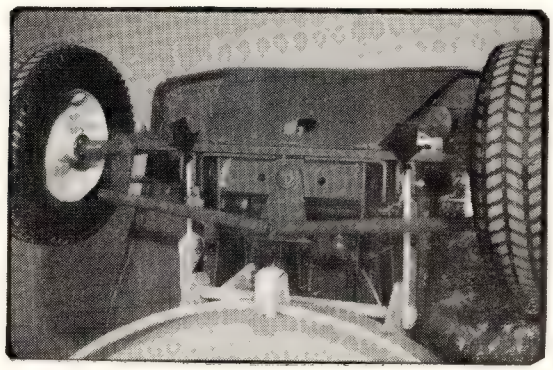


* *

Remove the front draft arm pins.

CAUTION: Hold the mower with one hand to prevent it from falling.

RM MOW 4



* *

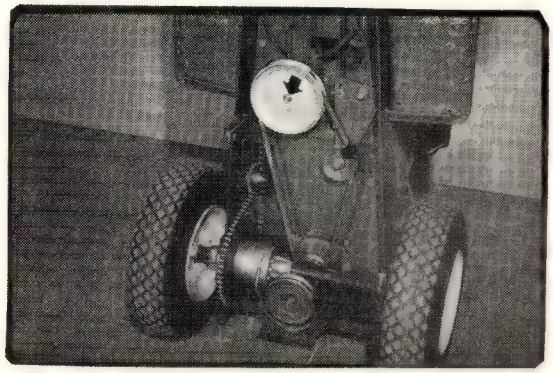
Remove the idler sheave from clutch idler arm.

Bend belt guides on transmission input sheave away from sheave and remove belt.

Remove belt from engine sheave. Install new belt in the reverse order.

NOTE: Bend belt guides to 1/4-inch from the transmission input sheave when installing new belt.

RM PT 1



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DRIVE CHAIN REPLACEMENT:

Raise rider up on rear stand.

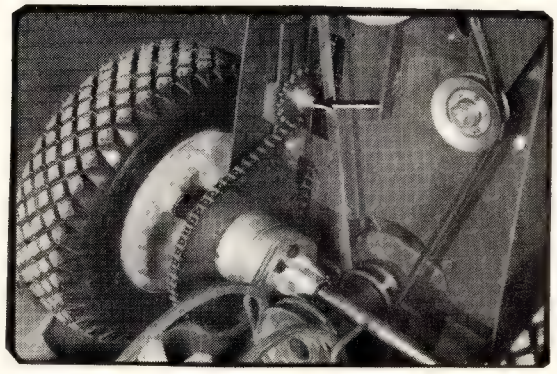
Remove the mower as explained before.

Loosen chain idler and slide out of the way.

Disconnect chain at spring clip and remove drive chain.

Replace chain by reversing removal procedure.

RM PT 2



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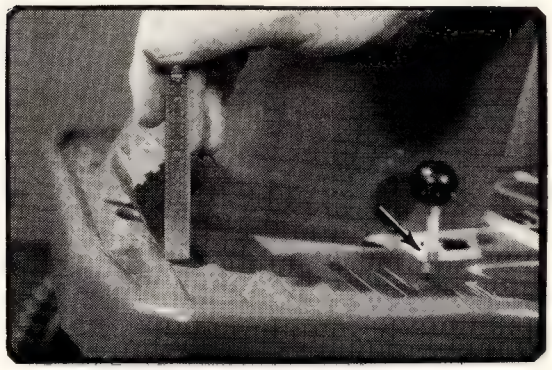
BRAKE ADJUSTMENT:

Adjust parking lever so pedal is 1/4 to 1/2 -inch above the footrest when the parking lever is locked. Adjust this distance by moving the nut on the adjustable parking lever.

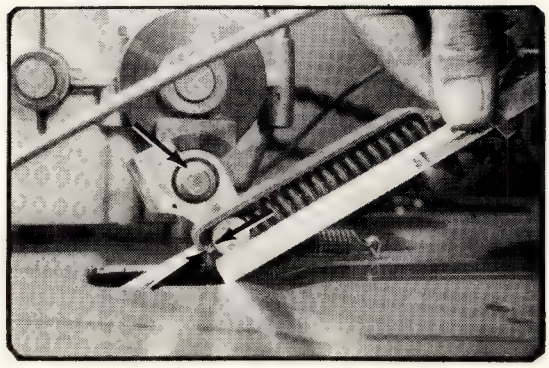
RM PT 3



* *

With the parking brake adjusted and in the locked position, adjust the nut on the rear of the brake rod so the brake rod spring is compressed 1/8 -inch. This is the distance between the spring holder and swivel.

RM PT 4



NOTE: It may be necessary to remove the pedestal when making this adjustment to be able to read the scale.

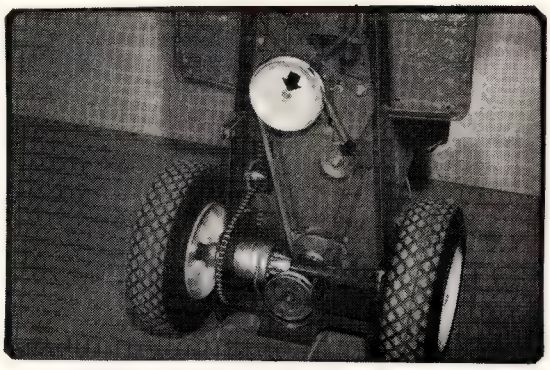
Brake service work, such as brake pad or disc replacement may be performed without disassembly of the transmission.

Remove the brake linkage and the 12 point cap screw holding the brake assembly to the transmission. Torque the cap screw 275 in. lbs. when reassembling the brake.

* *

TRANSMISSION REMOVAL:

RM PT 1



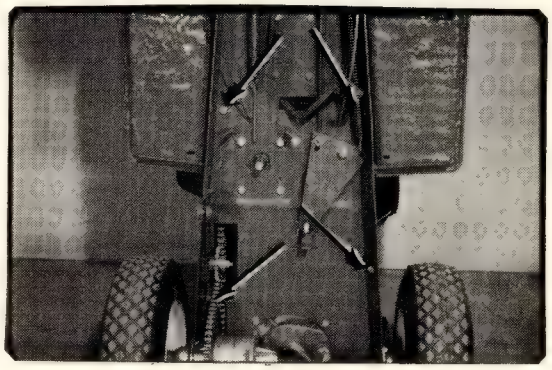
Remove the mower in the same sequence as for transmission drive belt replacement.

Remove the clutch idler pulley and remove the snap ring holding the transmission input sheave in place. Pull the input sheave off and remove the drive belt.

* *

Remove the (4) bolts holding the pedestal to the frame and lift off the pedestal and seat assembly.

RM PT 5



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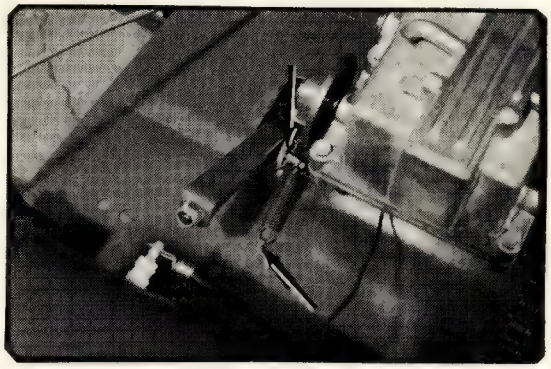
Remove the cotter key holding the tension spring on the brake link. Remove quick pull pin from brake link connector and separate brake rod from transmission.

RM PT 5A



* *

Remove the (4) bolts holding the transmission to the frame. Lift the transmission from the frame.

CAUTION: Do not lose the spacers on the lower two bolts.

RM PT 6

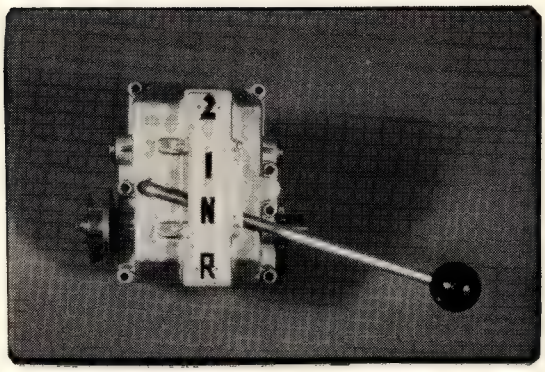
* *

TRANSMISSION DISASSEMBLY

Place shift lever in the neutral position as shown.

Remove 7 bolts in housing and lift cover off.

RM PT 7



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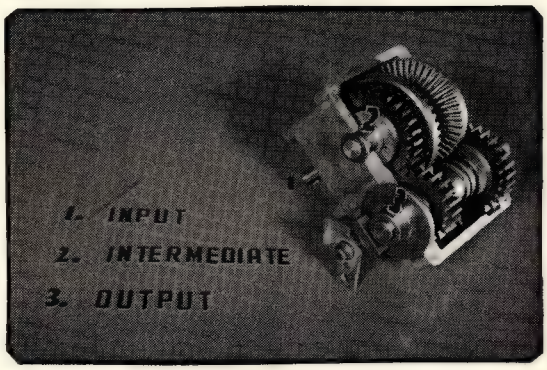
No. 1 is the Input Shaft Assembly.

No. 2 The shaft with the large bevel gears is called the Intermediate Shaft Assembly.

No. 3 The shaft with the disc brake is the Output Shaft.

RM PT 8



* *

To remove the Input Shaft remove the snap ring and spacer washer(s) on the outside of the transmission.

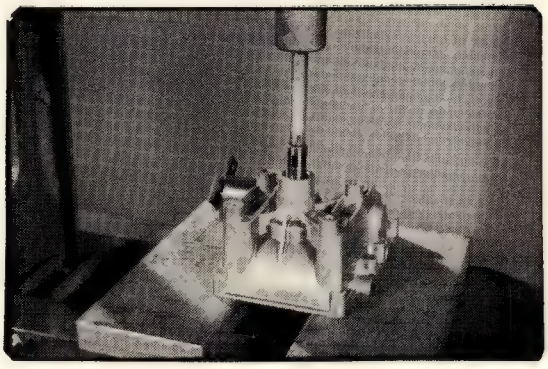
Press the Input Shaft out of the lower housing to the inside as shown.

Any other removal procedure on the Input Shaft will damage the needle bearings.

This will remove Input Shaft, Needle Bearings and Pinion Gear as an assembly.

CAUTION: If the Input Shaft is not to be removed, do not wash lower housing in solvent as it will wash all the grease out of the needle bearings.

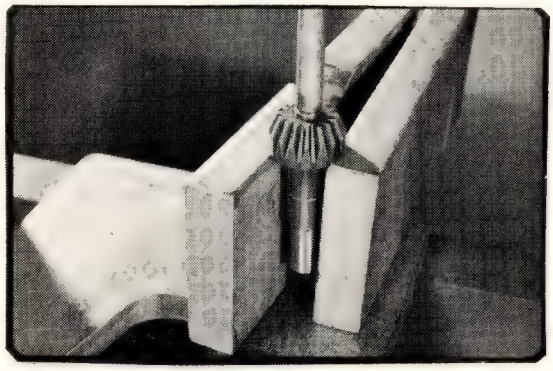
RM PT 9



* *

To disassemble Input Shaft Assembly, remove snap ring holding pinion gear and press shaft out of the pinion gear. Remove woodruff key, thrust washer and needle bearings.

RM PT 10



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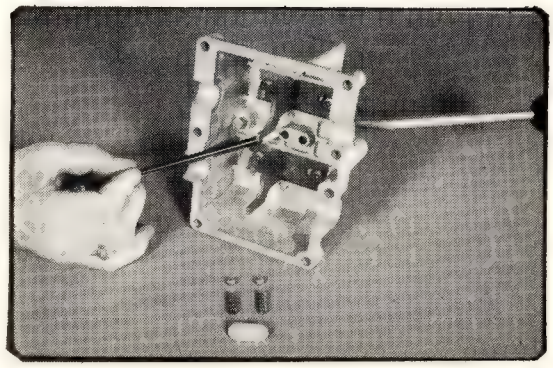
To disassemble the shift lever, shifter forks or cam assembly, remove the detent ball and springs first. This will release the spring pressure on the cam plate and top cover plate.

NOTE: It is not always necessary to disassemble the shifter assembly in the upper housing.

RM PT 11



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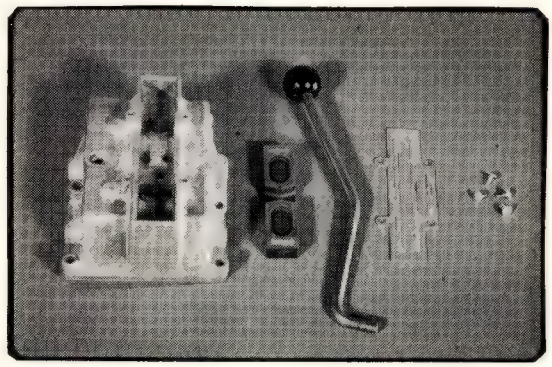
Remove four screws holding cover plate. Lift off cover plate and shift lever. Cam plate may then be removed.

Remove the shifter forks by removing the two shoulder screws on each fork.

RM PT 12



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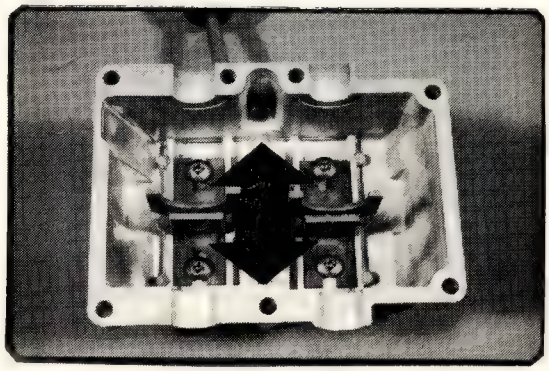
TRANSMISSION REASSEMBLY

Install each shifter fork with two shoulder screws. The shifter fork must be able to travel the full distance of the shifter track.

Torque shoulder screws 40-50 in. lbs.

RM PT 13



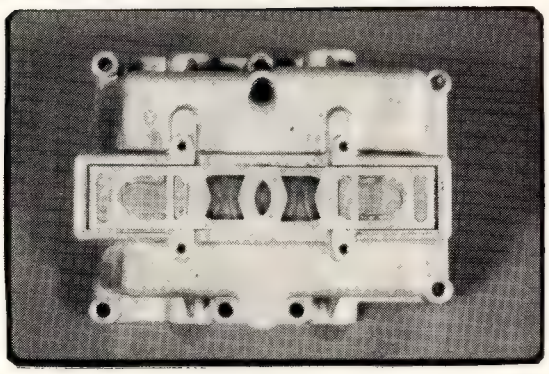
* *

Grease the cam plate lightly and install the cam plate. The cam plate must be able to travel the full distance of the cam track.

Replace the shift lever. Grease the bottom of the cover plate lightly and install. The extended portion of the cover plate goes to the knob side of the shift lever.

Install the four screws in the cover plate. Torque to 25-30 in. lbs.

RM PT 14



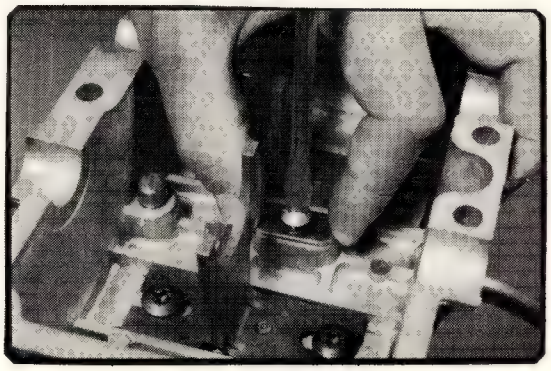
* *

Install the detent balls and springs. Apply pressure when screwing detent cover in place.

Unless pressure is applied against the balls and springs by the cover as shown, you may strip the threads in the aluminum housing.

Torque screw in cover 25-35 in. lbs.

RM PT 15



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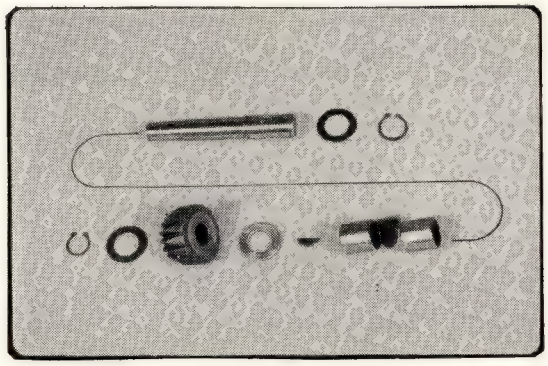
Assemble input shaft as shown. Install (2) needle bearings, thrust washer and woodruff key on input shaft.

Pinion gear has a pilot to start pinion over key. Press pinion in place on shaft.

NOTE: When rebuilding a transmission in the original housing, use the same washers if possible. This will give accurate end play on all shaft assemblies. If new washers are required, the end play should be .010 to .020 on shafts after assembly.

RM PT 16



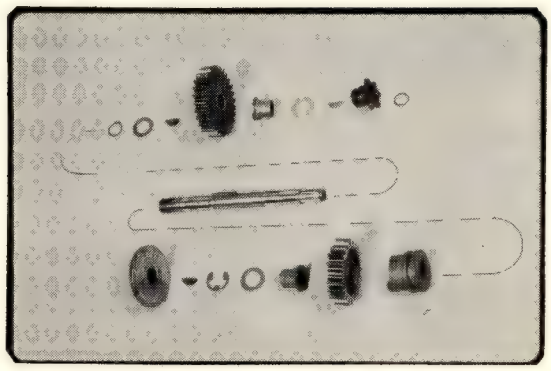
* *

Press input shaft assembly back into lower housing from the inside out. Install spacer washers and snap ring on input shaft on outside of transmission. Always reuse the same spacer washers if possible. Be sure input shaft turns freely in housing.

* *

Assemble output shaft as shown.

RM PT 17



Press special key into shaft. Install parts on shaft in the following sequence. Work from right hand end of shaft first.

1. Snap ring.
2. Thrust washer.
3. Brass Key on shaft.
4. 28 T Spur gear, flat side out.
5. Flanged bearing.
6. Washer.
7. 8 T Sprocket.
8. Snap ring.

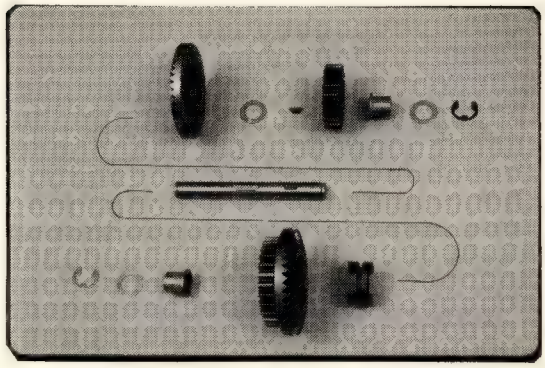
Install the parts on the left hand end as follows:

1. Clutch collar, flat side toward snap ring.
2. 22 T Spur gear, without keyway. (Flat side out)
3. Flanged bearing.
4. Flat washer.
5. Retaining ring.
6. Brass woodruff key.
7. Brake disc.

* *

Assemble intermediate shaft as shown.

RM PT 18



Press special woodruff key into shaft.

Install parts on the shaft in the following sequence. Work from the right hand end of the shaft first.

1. Clutch collar (collar is reversible)
2. Bevel gear, smooth side out.
3. Washer.
4. Woodruff key.
5. 22 T Spur gear with keyway.
6. Flanged bearing.
7. Washer.
8. Retaining ring.

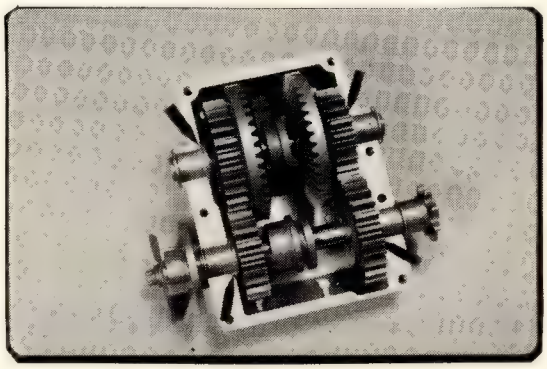
Install the parts on the left hand as follows:

1. Bevel gear, spur side out.
2. Flanged bearing.
3. Washer.
4. Retaining ring.

* *

Install Output Shaft Assembly and Intermediate Shaft Assembly into lower transmission housing. Be sure brake pads are in place when installing output shaft. Do not allow grease to contact brake pads.

RM PT 19



Be sure to align clutch collars in center so the shifter fork grooves are in alignment. These two fork grooves in center of transmission will give neutral lever position.

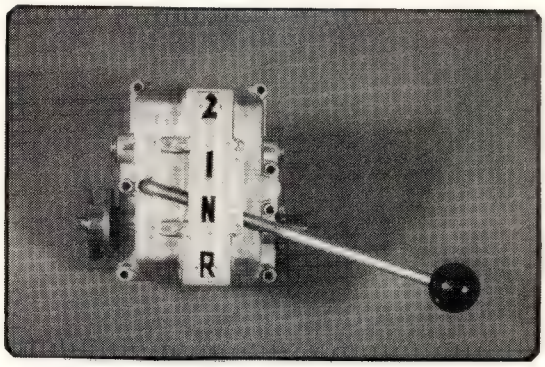
Set flange bearings so stops engage notches in the lower housing.

Fill lower case half with grease. (EP Lithium AT 30408)

Replace cover. Be sure lever is in neutral position. Torque seven case bolts, 80-90 in. lbs.

The washers on the Intermediate Shaft and the Output Shaft outside of the transmission housing, should be free to turn. They should not be tight. This will give .010 - .020 end play in these shafts.

RM PT 7



ANALYSIS:

Bevel gear cracked or broken indicates shock load.

Output bearing failure caused by high torque.

Radius of shifter collars indicates signs of shifting on the go.

* *

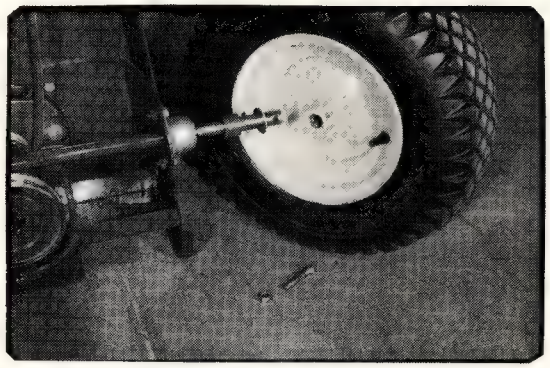
DIFFERENTIAL ASSEMBLY REMOVAL:

Remove the mower as explained for replacing transmission drive belt.

Remove both rear wheels by removing bolt with lock nut thru axle shaft.

Remove wheels, spacer washers, and spacer on axle shaft.

RM PT 21

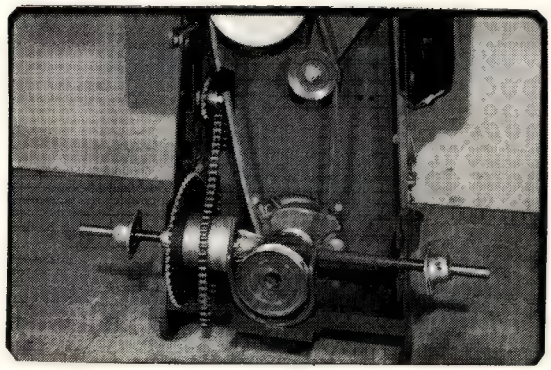


* *

Loosen chain tightener and lift chain off large sprocket to the inside of the differential.

Remove the bolts holding the self-aligning bearings on the axle to the frame. (Two on each side.)

RM PT 22



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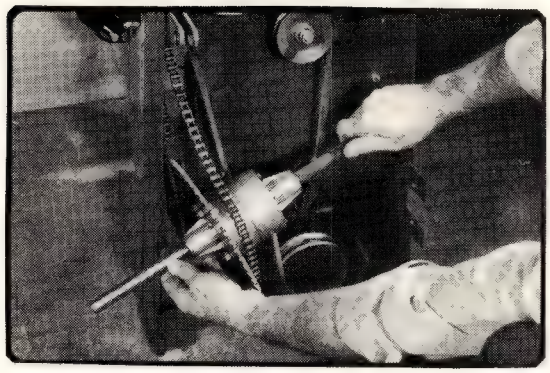
Lift the differential assembly out as shown. Raise and pivot the right hand side out first. This will eliminate the need of removing the engine output sheave.

RM PT 23



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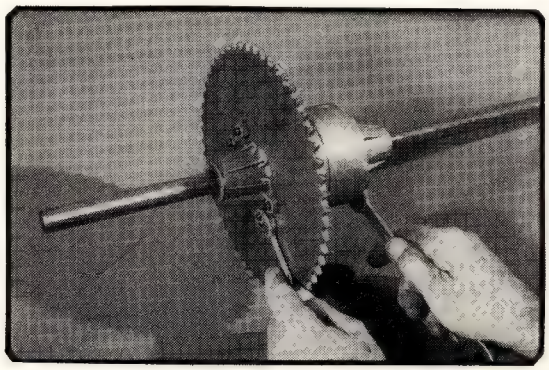
DIFFERENTIAL DISASSEMBLY:

Disassemble the differential by removing the (4) thru bolts in the differential.

Remove the snap ring from the axle shaft to separate bevel gear thrust washer, axle shaft and housing half.

RM PT 24



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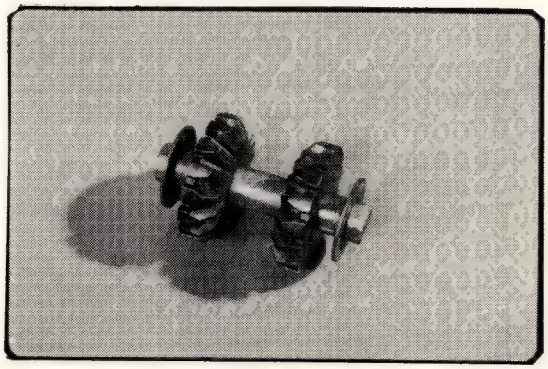
REASSEMBLY:

Assemble pinion assembly as shown with washers to the outside.

RM PT 25



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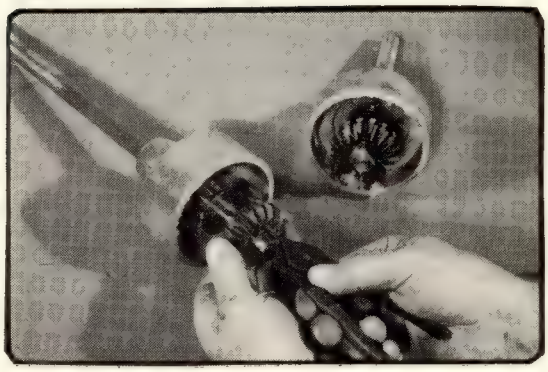
Begin assembling the differential with the long (right) axle shaft side. Reassemble axle shaft in differential housing and install thrust washer, bevel gear and snap ring.

Fill housing half with EP Lithium grease (AT 30408).

RM PT 26



* *

Install (4) thru bolts in housing as shown and lay the pinion assembly in place.

Pack both halves of the differential with grease.

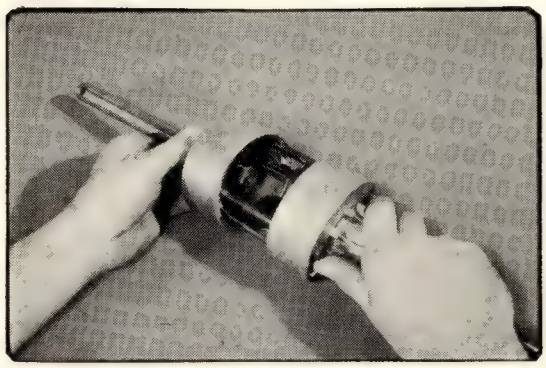
RM PT 27

* *

Assemble the short side of the differential assembly and place over the (4) thru bolts. Note the left housing half bolt holes are tapped. Torque bolts 19-22 ft. lbs.

Place the large sprocket over the thru bolts and install nuts. Torque nuts to 10-13 ft. lbs.

RM PT 28



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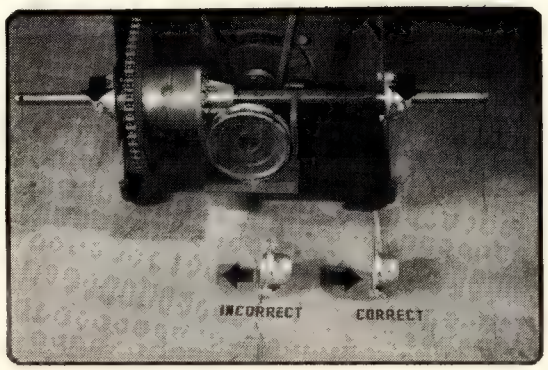
Install self-aligning bearings on the axle shaft as shown, making sure the grease retainer dish fits inside the bearing. The bearings bolt to the outside of the frame and the grease zerks go to the bottom.

Install the wheels on the axle with the valve stems to the inside.

Reinstall mower by reversing the removal procedure.

RM PT 29



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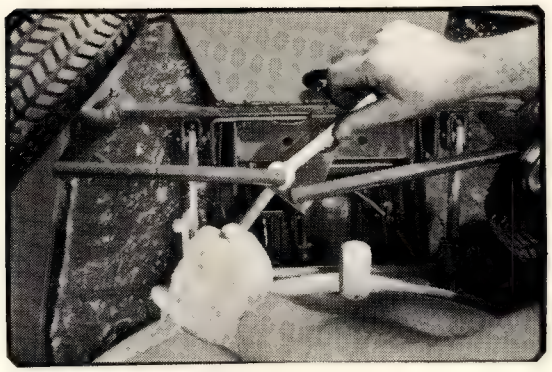
STEERING SHAFT REMOVAL:

Remove the nuts holding the tie rods to the steering shaft.

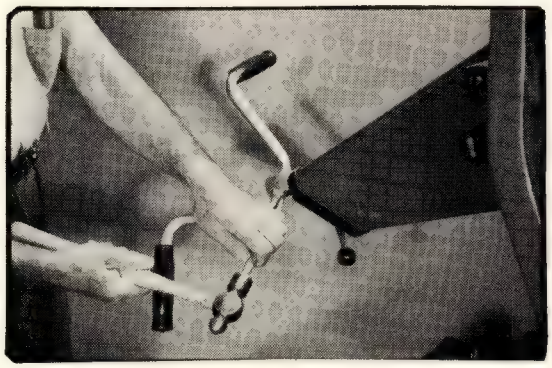
RM MISC 1



* *

Remove the handlebars or steering wheel by driving out the groove pin. Pull shaft out the bottom of the rider.

RM MISC 2



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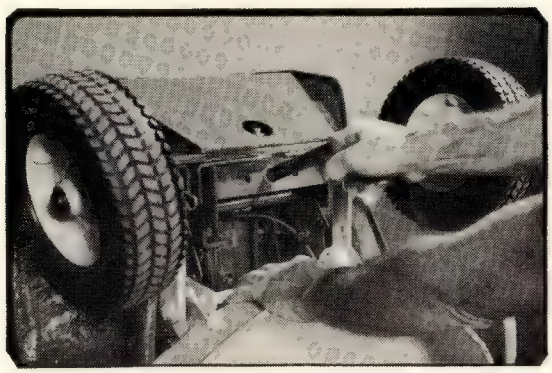
To reinstall shaft, push shaft in from the bottom. Be sure nylon bearings on top and bottom remain in place. Connect the tie rods back to the steering shaft.

RM MISC 3



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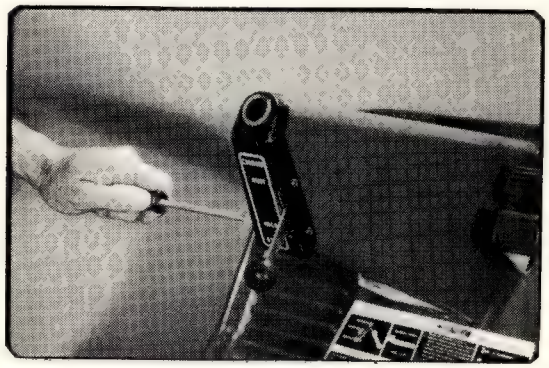
THROTTLE CONTROL CABLES:

Remove handlebars or steering wheel.
Remove (3) screws holding the control quadrant in place.

RM MISC 4



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SPECIFICATIONS:

55 Rider ..... 26" Mower
56 Rider ..... 28" Mower

There is a difference between "a profit on a sale and a profitable sale".

Remember, a large number of problems can result from over application.

MOWER OPERATION

RM MOW 1

Engage the mower by depressing the large pedal (1) on the right hand side of the steering column. Disengage by depressing small pedal (2) on right hand side.

The mower lift lever (3) is located in the front of the seat pedestal. Each notch in the quadrant adjusts the cutting height 1/2-inch. The range of cut is 1 to 3-inches.

When mowing in heavy, tall grass, start the mower in the raised position. Operate engine at full throttle (4) when mowing. Adjust the ground speed with the desired transmission speed.

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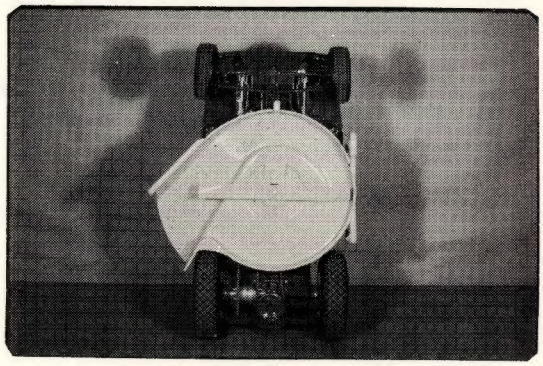
MOWER REMOVAL

RM MOW 2



Depress drive clutch-brake pedal and set parking brake.

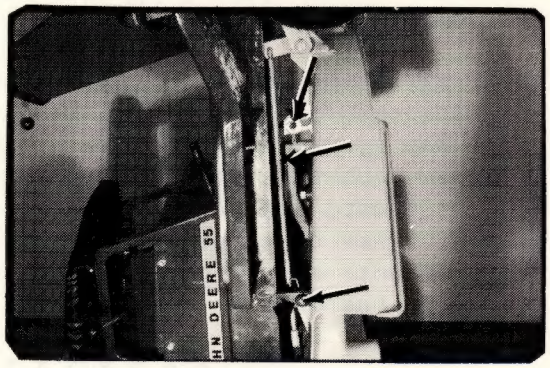
Raise rider up on the rear stand. Loosen all belt guides on the engine output sheave.

NOTE: Bend the guides to adjust 1/16 to 1/8-inch clearance from the sheave when installing new belt.

* *

Remove the mower from the rider in the following sequence. Remove the right rear lift pin, washer and quick pull pin. Remove the quick pull pin and washer from the lift rod and mower clutch engagement rod.

RM MOW 3



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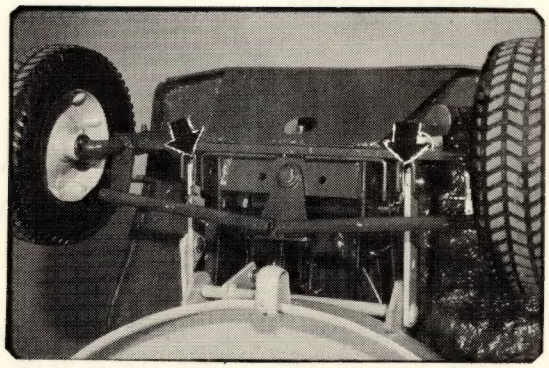
Remove the front draft arm pins.

CAUTION: Hold the mower with one hand to prevent it from falling.

Install mower by reversing removal procedure.

RM MOW 4



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MOWER BELT REPLACEMENT

Loosen belt (1) guides and turn away from sheave.

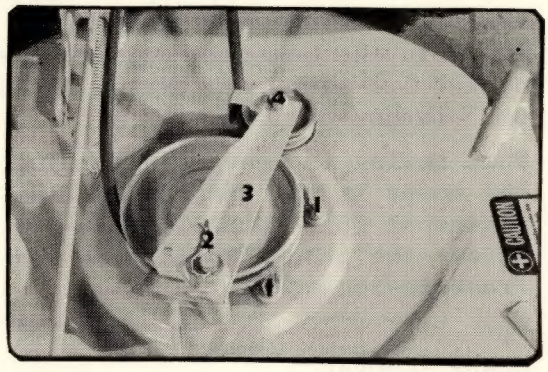
NOTE: Belt guides are properly adjusted when they are 1/8 to 1/4-inch away from the sheave.

Pull spring locking pin (2) and remove washer. Lift idler assembly (3) off pivot post.

Remove idler sheave (4) from arm and remove belt.

Install new belt in reverse order. Be sure belt is installed with back side against idler sheave.

RM MOW 5



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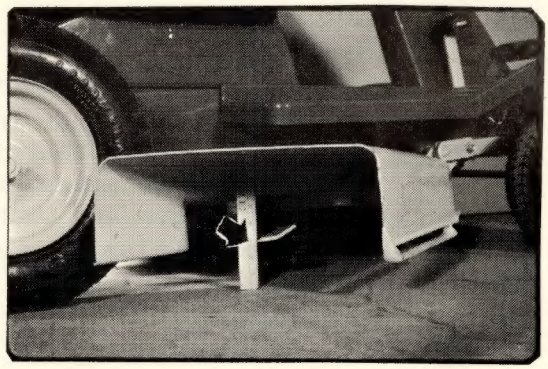
LEVELING MOWER

Park the mower on a flat surface such as a sidewalk or concrete driveway.

Disconnect the spark plug wire to prevent accidental starting.

With the mower in the raised position, measure the distance of one blade tip from the ground. Rotate the blade 90 degrees each time and measure distance at the front, rear and each side of the mower. When the mower is level, these measurements should be within 1/8-inch of being the same.

RM MISC 6



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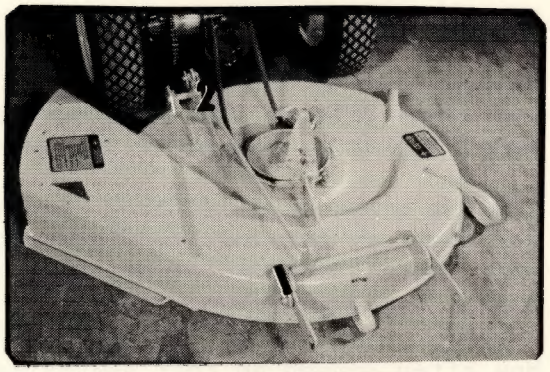
1. To adjust for side-to-side level, loosen bolt on right front draft arm, press down or raise mower deck until blade is level. Tighten nut firmly.

2. To adjust for front-to-rear level, pull cotter pin in rod and remove rod from bracket. Turn rod into yoke to raise rear of mower, or out of yoke to lower rear of mower, as necessary to level mower.

Mower removed for clarity.

RM MOW 7



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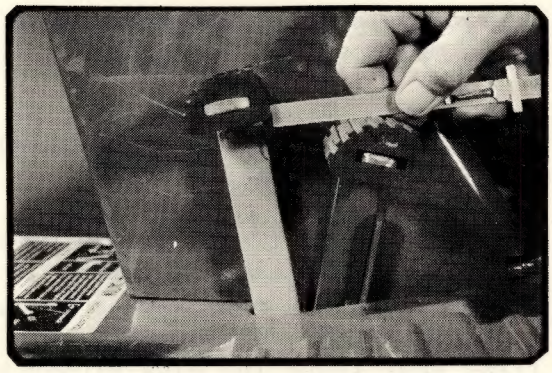
MOWER BRAKE ADJUSTMENT

The mower brake is properly adjusted when the distance between the mower engagement and release pedal is 1 to 1 1/2 -inch.

This will provide proper braking to the mower belt.

RM MOW 8



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To arrive at the 1 to 1-1/2-inch adjustment, adjust the locking collar on the mower clutch brake rod.

RM MOW 9

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MOWING TIPS

Pick up all rocks, glass, sticks, toys and other objects that may cause personal injury or damage to the mower.

Cutting grass at 1 1/2 or 2 -inches is satisfactory for most turf grasses. This will leave sufficient leaf area to give a neat appearing lawn.

Mow often enough so that approximately 1/3 of the leaf growth is removed at each cutting. This promotes dense growth which helps shade out weedy grasses.

Cutting less often produces dense clippings which should be removed.

When mowing dense, tall grass, it may be desirable to mow only a partial swath for efficient mowing.

Mow with the left side of the mower next to bordering objects and areas to discharge clippings away from fences, flower beds, sidewalks, driveways, etc. Use first gear range for slow ground speed. To reduce speed further, lower throttle to 3/4 or 1/2 setting.

"This has been our two cents worth."

RM MOW 10

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