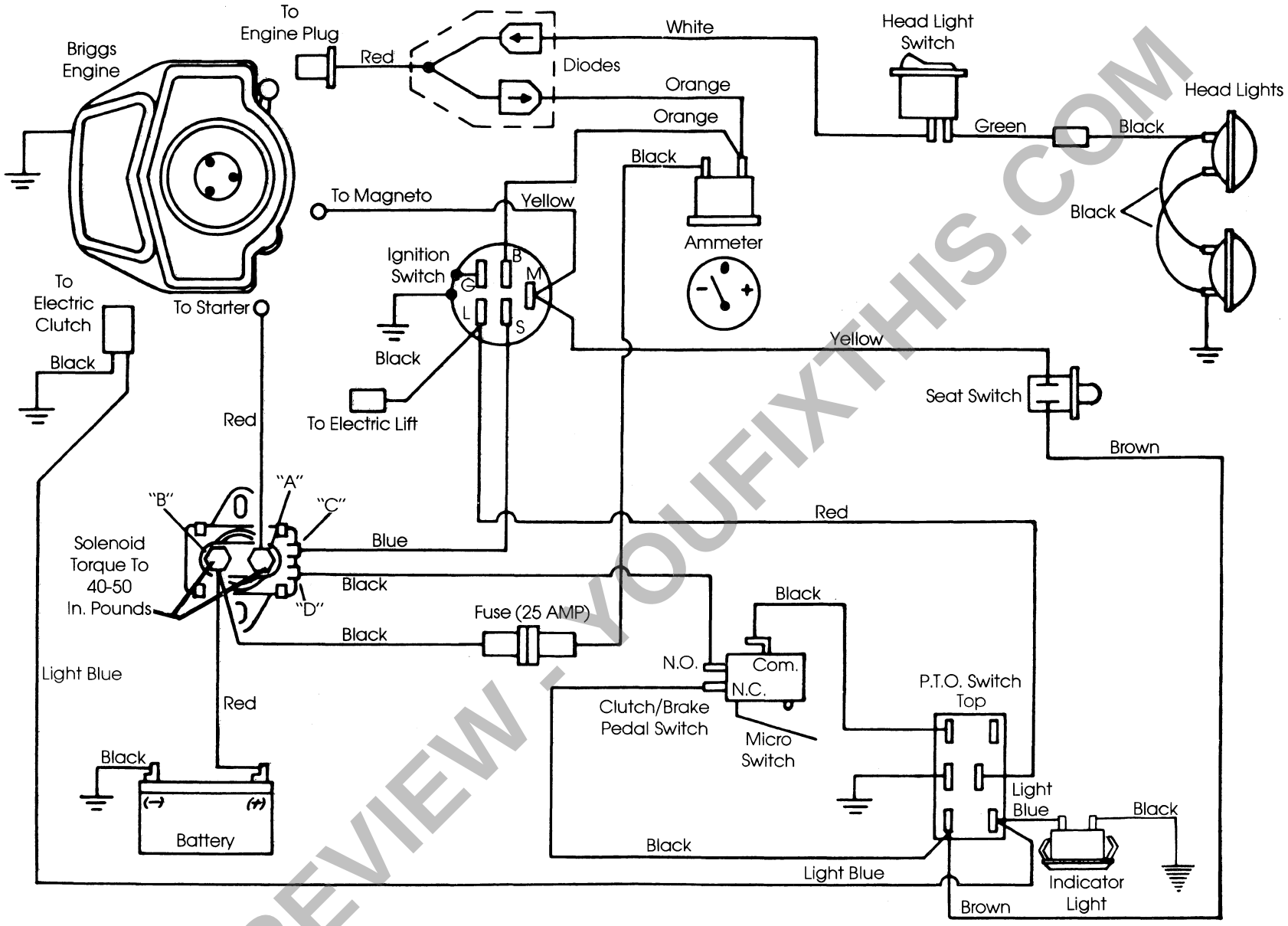
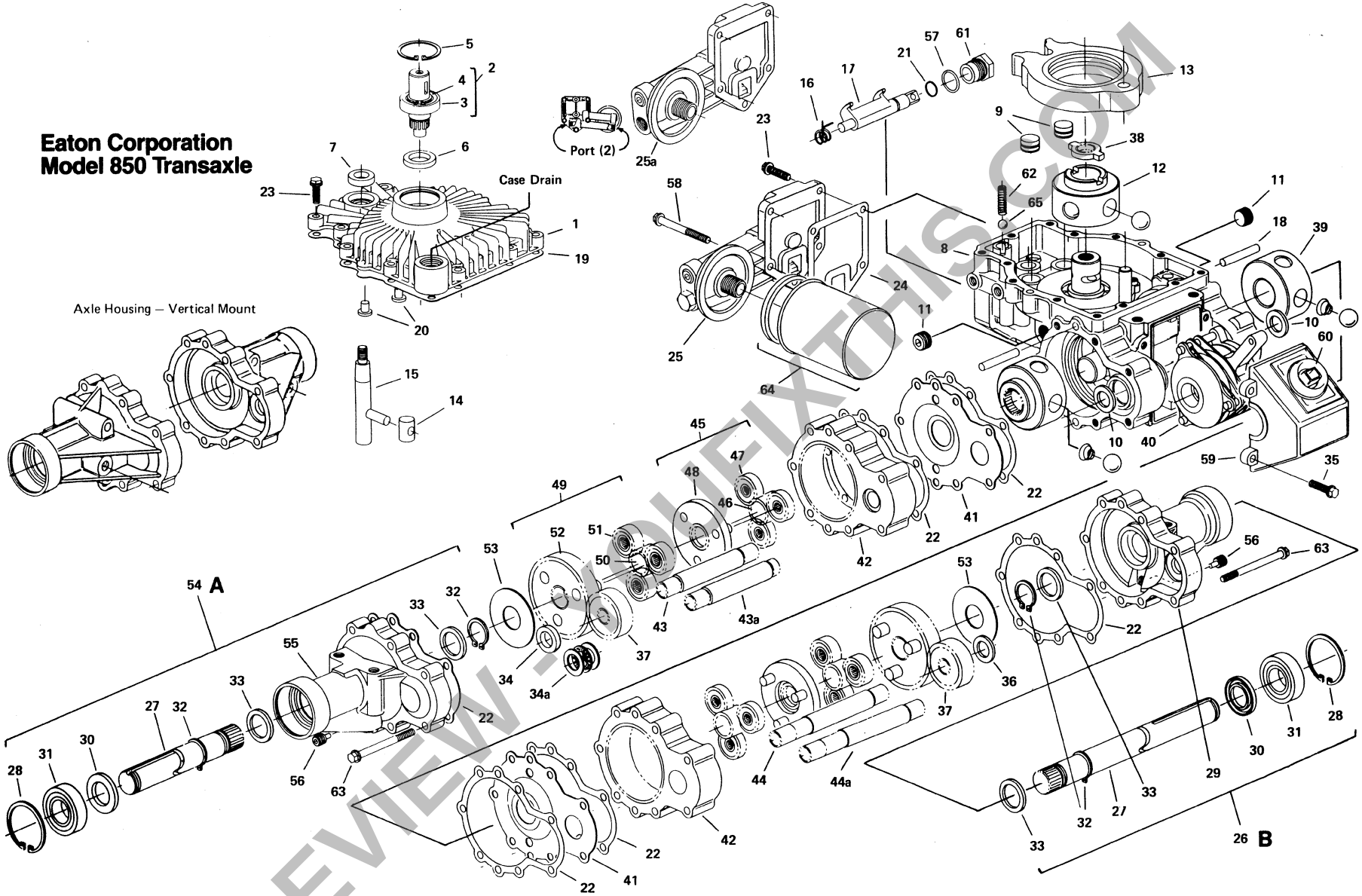


WIRING DIAGRAM MODEL 09GN2151

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Eaton Corporation
Model 850 Transaxle



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PROBLEM	REMEDY	REFERENCE
Traction drive belt slips off transaxle pulley.	1. Check and set belt fingers on flat idler V-idler and transaxle pulleys. 2. Bent pulley.	1. TACTION BELT REPLACEMENT
Excessive play in steering wheel.	1. Readjust steering gear.	1. STEERING GEAR ADJUSTMENT
PTO clutch does not properly engage or disengage.	1. Readjust gap in clutch surfaces. 2. Check coil windings of clutch. 3. Check for bad ground.	1. ELECTRICAL (PTO) CLUTCH/BRAKE—ADJUST. 2. ELECTRICAL (PTO) CLUTCH/BRAKE—CLUTCH COIL CHECK. 3. ELECTRICAL (PTO) CLUTCH/BRAKE—CLUTCH COIL CHECK.
PTO warning light does not operate.	1. Check wire connections. 2. Replace light.	1. PTO WARNING LIGHT 2. PTO WARNING LIGHT

BOLT TORQUE SPECIFICATIONS

The following chart lists the standard torque specifications for all capscrews and thread forming screws used in this unit. Unless **special** torques are called for, all torque values must meet these specifications.

	TYPE OF CAPSCREW	SAE GRADE 2 		SAE GRADE 5 		SAE GRADE 5 		SAE GRADE 2 OR 5 ALSO THREAD FORMING SCREWS	
	TYPE OF FASTENER USED	STANDARD HEX NUT		STANDARD HEX NUT		CONE LOCKNUT		INTO TAPPED HOLE	
	TORQUE FACTOR	FT./LBS. MIN.	MAX.	FT./LBS. MIN.	MAX.	FT./LBS. MIN.	MAX.	FT./LBS. MIN.	MAX.
SCREW SIZE	1/4	5	7	9	11	5	7	5	7
	5/16	9	14	18	22	9	14	9	14
	3/8	16	24	30	40	16	24	16	24
	7/16	25	37	50	60	25	37	25	37
	1/2	38	57	75	95	38	57	38	57
	5/8	73	110	150	185	73	110	73	110

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NOTE: When torque bracket is removed one flat washer on each mounting capscrew will fall out. When reassembling replace flat washers between torque bracket and main frame.

NOTE: When reassembling torque bracket, the black ground wire from connector for electric clutch, should be fastened onto right rear engine mounting capscrew before nut and lockwasher are used to secure torque bracket.

O. Remove two nuts and lockwashers from front engine mounting studs and two rear engine mounting capscrews and lockwashers.

P. Use suitable hoist, (two lifting lugs provided on top of engine) (Fig. 7) or at least two people (to avoid excessive strain) and lift engine from its mounting.

Q. Reverse above procedures to install engine until you reach the point of connecting the throttle and choke cables. Then follow these adjustment procedures:

a. THROTTLE CABLE - Move throttle control lever up to the "FULL FAST" detent position. (Fig. 10) Attach end of throttle cable to speed control lever and pull cable to the left until finger on speed control lever touches tang. (Fig. 6) Slip cable under clamp and tighten cable clamp screw.

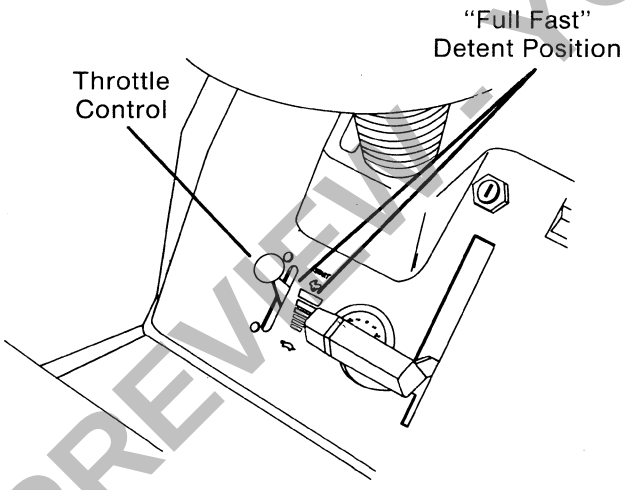


FIG. 10 2.0032

b. CHOKE CABLE - Remove air cleaner for this adjustment. Attach end of cable to choke lever on carburetor. (Fig. 6) Slip cable under cable clamp screw and lightly tighten screw. With choke control knob on instrument panel pushed in all the way, butterfly in carburetor throat should be fully open. Pull choke control knob out (minimum 1⅛"), butterfly in carburetor throat should be fully closed. Move cable under clamping screw until adjustments are achieved, then fully tighten choke cable clamp screw against choke cable.

4. ELECTRIC (P.T.O.) CLUTCH/BRAKE —

Adjustment —

A. To check adjustment, use a .012" feeler guage.

WARNING: To avoid accidental starting, move P.T.O. switch to "OFF" position and turn ignition switch "OFF" and remove key.

B. Insert feeler gauge through access slot and into air gap between armature and rotor. (Fig. 11) There should be some resistance felt, on both sides of gauge, when clutch/brake is properly adjusted. Repeat this step in at least three locations on clutch/brake. If feeler gauge cannot be inserted into air gap or gap is too large, follow procedures below to adjust.

C. If P.T.O. switch is turned "ON" and attachment does not drive, turn all three locknuts equally ¼ turn **clockwise**. (Fig. 11) This will decrease air gap and allow clutch surfaces to engage. Recheck gaps with feeler gauge, if more adjustment is required, continue turning locknuts equally ¼ turn until correct adjustment is achieved.

D. If P.T.O. switch is turned "OFF" and attachment does not stop or no resistance is felt in step "B", turn all three locknuts equally ¼ turn **counterclockwise**. This will incease air gap and allow clutch surfaces to disengage. Recheck gap with feeler gauge, if more adjustment is required, continue turning locknuts equally ¼ turn until correct adjustment is achieved.

Clutch Coil Check —

If electric (P.T.O.) clutch is not engaging properly to bring deck up to speed or does not drive at all, perform the following test to check the clutches field coil.

WARNING: To avoid accidental starting, remove spark plug wires and secure away from spark plugs.

A. Using a voltmeter, check voltage at clutch wire connector. Connect positive (+) probe to

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TROUBLE-SHOOTING

PROBLEM	REMEDY	REFERENCE
Engine will not crank to start.	1. Check or recharge battery. 2. Check wiring connections. 3. Replace blown fuse. 4. Check ignition switch. 5. Check interlock switches. 6. Check solenoid. 7. Check starting procedure.	1. ELECTRICAL SYSTEM — BATTERY 2. ELECTRICAL SYSTEM — WIRING DIAGRAM 3. ELECTRICAL SYSTEM — FUSE 4. ELECTRICAL SYSTEM — IGNITION SWITCH 5. ELECTRICAL SYSTEM — INTERLOCK SWITCH 6. ELECTRICAL SYSTEM — SOLENOID 7. ELECTRICAL SYSTEM — SYSTEM FUNCTIONS
Engine turns over but fails to start.	1. Fill fuel tank. 2. Contact authorized engine dealer.	
Engine starts with foot pedal up or PTO switch engaged, operator on seat.	1. Check interlock switches. 2. Check for grounded wire. 3. Check for improper wiring.	1. ELECTRICAL SYSTEM — INTERLOCK SWITCH 2. ELECTRICAL SYSTEM — WIRING DIAGRAM 3. ELECTRICAL SYSTEM — WIRING DIAGRAM
Engine fails to stop.	1. Loose magneto wire. 2. Check for other loose wiring. 3. Check ignition switch.	1. ELECTRICAL SYSTEM — WIRING DIAGRAM 2. ELECTRICAL SYSTEM — WIRING DIAGRAM 3. ELECTRICAL SYSTEM — IGNITION SWITCH
Engine fails to stop with foot pedal up or PTO switch engaged with operator off seat.	1. Loose magneto wire. 2. Check for bad ground. 3. Check interlock switches.	1. ELECTRICAL SYSTEM — WIRING DIAGRAM 2. ELECTRICAL SYSTEM — WIRING DIAGRAM 3. ELECTRICAL SYSTEM — INTERLOCK SWITCH
No traction drive.	1. Release parking brake. 2. Check or replace traction belt. 3. Wrong belt being used. 4. Check belt routing. 5. Transaxle needs repair or replacement. 6. Check rear axle drive key.	2. TRACTION BELT REPLACEMENT 3. TRACTION BELT REPLACEMENT 4. TRACTION BELT REPLACEMENT 5. TRANSAXLE
Shift lever misalignment.	1. Traction drive gear shift lever needs adjustment.	1. TRACTION DRIVE GEAR SHIFT LEVER ADJUSTMENT.
Traction drive brake fails to engage.	1. Brake pads need adjustment or replacement. 2. Adjust brake control rod spring. 3. Check engagement linkage. 4. Wrong belt being used.	1. TRACTION DRIVE BRAKE — ADJUST — PAD REPLACE 2. TRACTION DRIVE BRAKE — ADJUST 4. TRACTION BELT REPLACEMENT
Traction drive brake engaged all the time.	1. Adjust brake control rod spring. 2. Brake pads need replacement.	1. TRACTION DRIVE BRAKE — ADJUST 2. TRACTION DRIVE BRAKE — PAD REPLACE

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IDENTIFICATION PLATE LOCATION

The tractor model and serial number identification plate is located on the left side of engine base assembly below the engine. (Fig. 1)

Refer to engine manufacturer's engine literature for location of engine model and serial number.

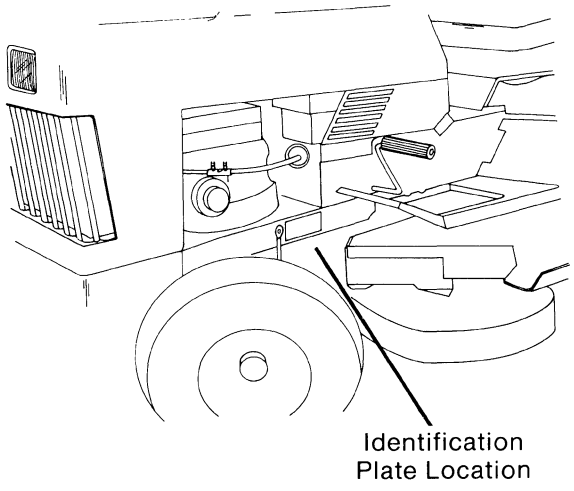


FIG. 1

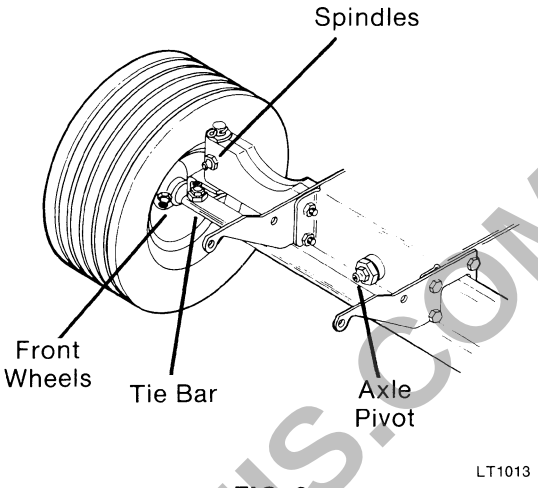


FIG. 2

c. Spindles - one fitting on both ends of front axle. (Fig. 2)

d. Axle Pivot - one fitting in center of axle. (Fig.2)

e. Steering Gears - clean gear teeth on steering gear and gear sector. Apply grease liberally to all gear teeth. (Fig. 3)

LUBRICATION AND MAINTENANCE

LUBRICATION:

1. ENGINE - Check engine oil level before each engine operation. Change engine oil every 25 operating hours (more often under dusty conditions). Consult engine manufacturer's service manual for all lubrication and maintenance specifications.

2. GREASE - Every 25 operating hours grease the following lubrication points with NLGI Grade 2 Lithium base EP grease (Ford 1T-M1C137-B). Reference (Figs. 2 and 3).

   NOTE: Clean off grease fittings before attaching grease gun. Grease only until grease comes out of bearings. Wipe off excess grease. Use a pressure type grease gun.

   a. Front Wheels - one fitting located on insides of each front wheel. (Fig. 2)

   b. Tie Bar - one fitting on both ends. (Fig. 2)

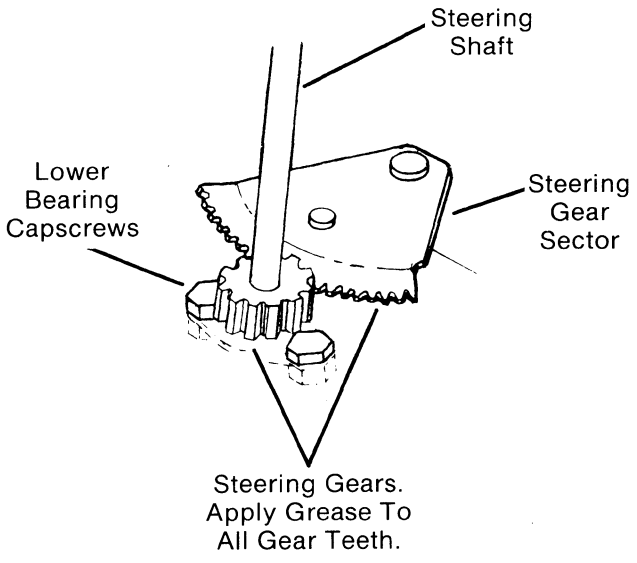


FIG. 3

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IMPORTANT: The replacement of any part on this product by other than the manufacturers' authorized replacement part may adversely affect the performance, durability or safety of this product.

The manufacturer reserves the right to make changes on and to add improvements upon its products at any time without notice or obligation. The manufacturer also reserves the right to discontinue manufacture of any product at its discretion at any time.

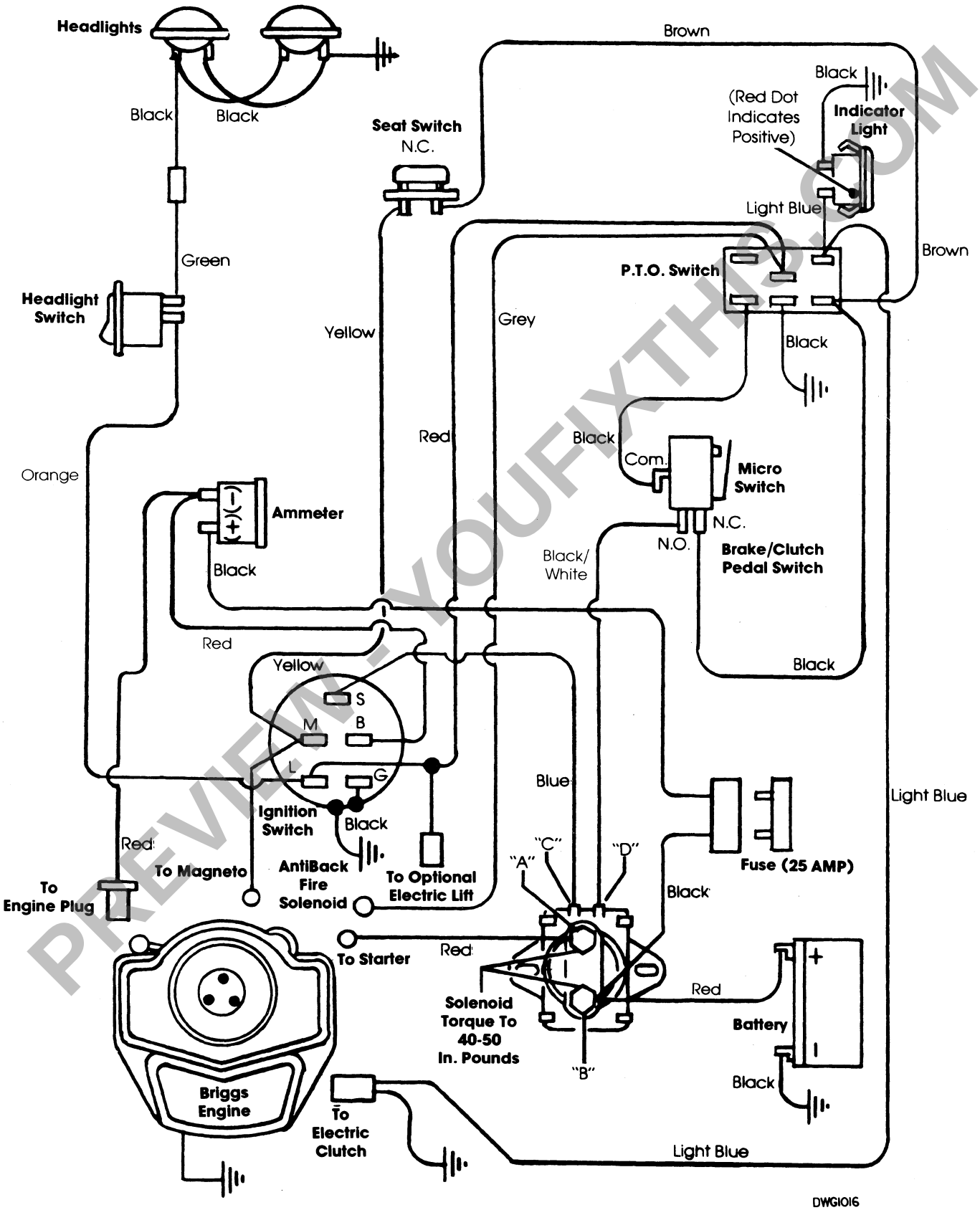
Notice to Serviceman in the State of California — The engine on this unit is NOT equipped with a spark arresting muffler.

IMPORTANT: USE OR OPERATION OF THIS ENGINE ON ANY FOREST COVERED, BRUSH COVERED, OR GRASS COVERED LAND WITHOUT A STATE APPROVED SPARK ARRESTOR IN EFFECTIVE WORKING ORDER CONSTITUTES A VIOLATION OF THE LAW OF THE STATE OF CALIFORNIA.

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WIRING DIAGRAM MODEL 09GN2153



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Removal and Replacement —

WARNING: To avoid accidental starting, move P.T.O. switch to "OFF" position and turn ignition switch "OFF" and remove key.

A. Remove P.T.O. drive belt, if still attached to electric clutch/brake pulley.

B. Disconnect wire connection at connector near electric clutch/brake under main frame.

C. Remove capscrew and washers through center of electric clutch/brake and pull clutch off crankshaft adaptor. (Fig. 12)

NOTE: If clutch is difficult to remove, use a pry bar between the frame and the top of the clutch assembly and pry clutch off; **or** if clutch has a cast pulley a pulley puller can be used above the upper pulley flange to remove clutch.

D. Electric (P.T.O.) clutch/brake assembly should be replaced as a complete unit when under warranty and repaired or replaced when out of warranty. Reverse above procedures to reassemble.

NOTE: When reassembling clutch onto crankshaft, lightly oil crankshaft and torque center capscrew to a torque of 50 ft./lbs.

NOTE: Torque bracket finger should fit through slotted hole in clutch bracket when reassembled. (Fig. 12)

NOTE: Check armature/rotor air gap by following procedures for ELECTRIC (P.T.O.) CLUTCH/BRAKE - ADJUSTMENT.

IMPORTANT: After proper air gap has been set and attachment has been reassembled onto tractor, **new** clutch/brake must be burnished to extend life of clutch/brake. Proceed as follows:

a. Position gear shift lever in NEUTRAL.

b. Start engine, and put throttle in "FULL FAST" position.

c. Turn P.T.O. switch ON and OFF **six** times, engaging and disengaging attachment.

NOTE: Allow attachment to come to a complete stop between ON—OFF cycles.

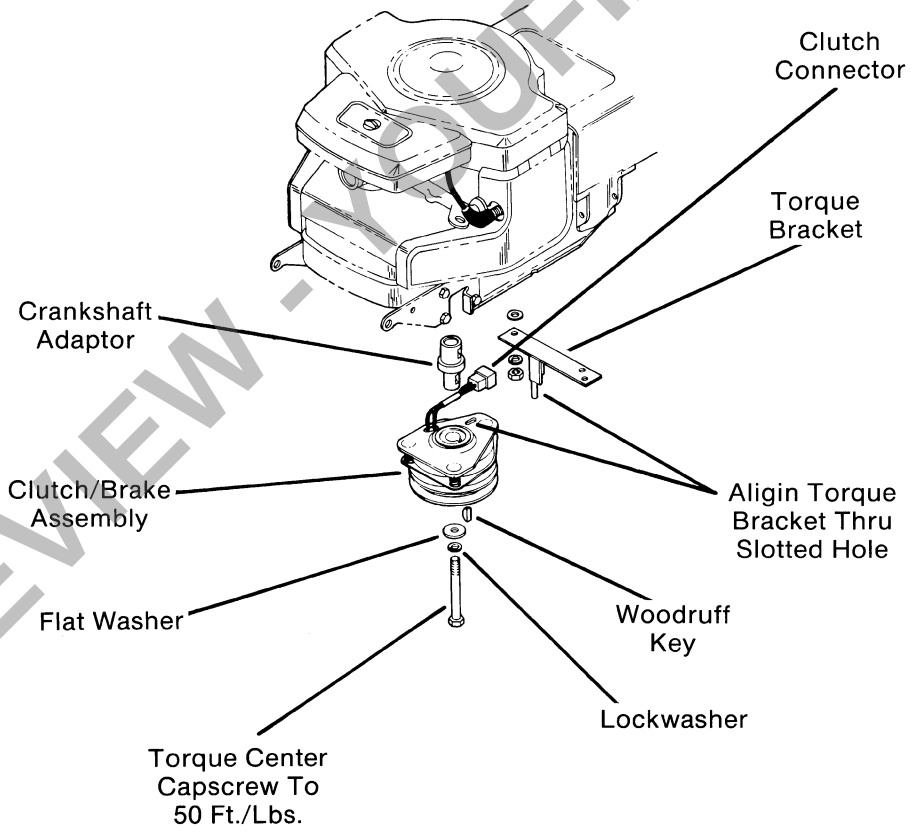


FIG. 12

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G. Pull shaft to the right while sliding both the brake arm lever and speed control release lever on the shaft until both hypro keys are exposed (Fig. 39). Remove both hypro keys from shaft.

H. Continue pulling shaft to the right until both levers are detached from shaft. Pull shaft out hole in right side of main frame. Service shaft as required.

I. Reverse above procedures to reassemble shaft into tractor.

NOTE: During reassembly of shaft, the speed control release rod should be positioned forward of shaft (Fig. 40). Also, if machine is so equipped; replace shim washers onto end of speed control release rod before inserting into hole in trunnion.

NOTE: The short leg of both the brake arm lever and speed control release lever should be positioned so they are toward the center of the machine, once mounted onto the shaft (Fig. 39).

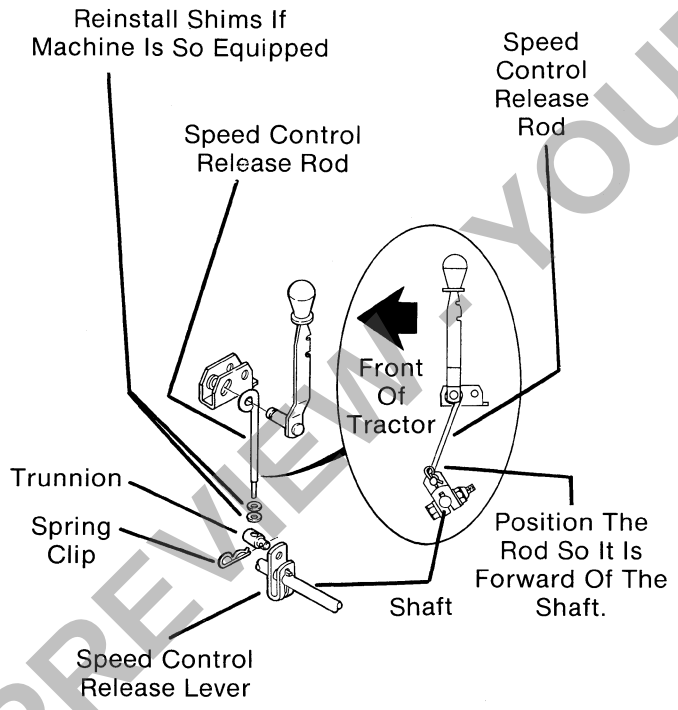


FIG. 40 1.0077

JACKSHAFT REMOVAL AND REPLACEMENT:

WARNING: To avoid accidental starting, remove spark plug wire and secure away from spark plug.

A. Before this procedure is performed, the attachment should be removed from this tractor as outlined in "ATTACHMENT" section in this service manual.

B. Remove primary and secondary drive belts from jackshaft pulleys by following procedures under "TRACTION DRIVE BELTS REMOVAL".

C. Remove cotter pin from belt adjustment rod. Disconnect rod from jackshaft. (Fig. 41)

D. Remove two capscrews lockwashers and nuts at left end of jackshaft holding left jackshaft plate assembly to left inside of main frame.

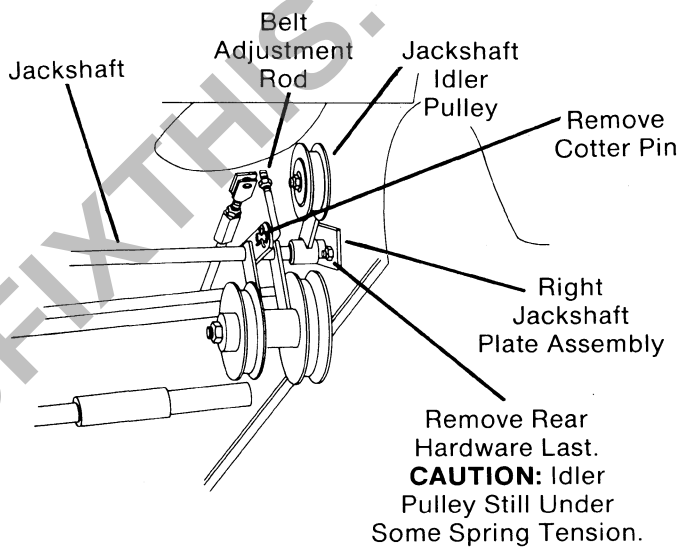


FIG. 41

WARNING: To avoid injury when removing right side jackshaft capscrews, special caution should be taken because jackshaft idler is still under spring tension.

E. Remove **front** capscrew, lockwasher and nut from right end of jackshaft. Then holding on to jackshaft, remove **rear** capscrew, lockwasher and nut holding right jackshaft plate assembly to right side of main frame. (Fig. 41)

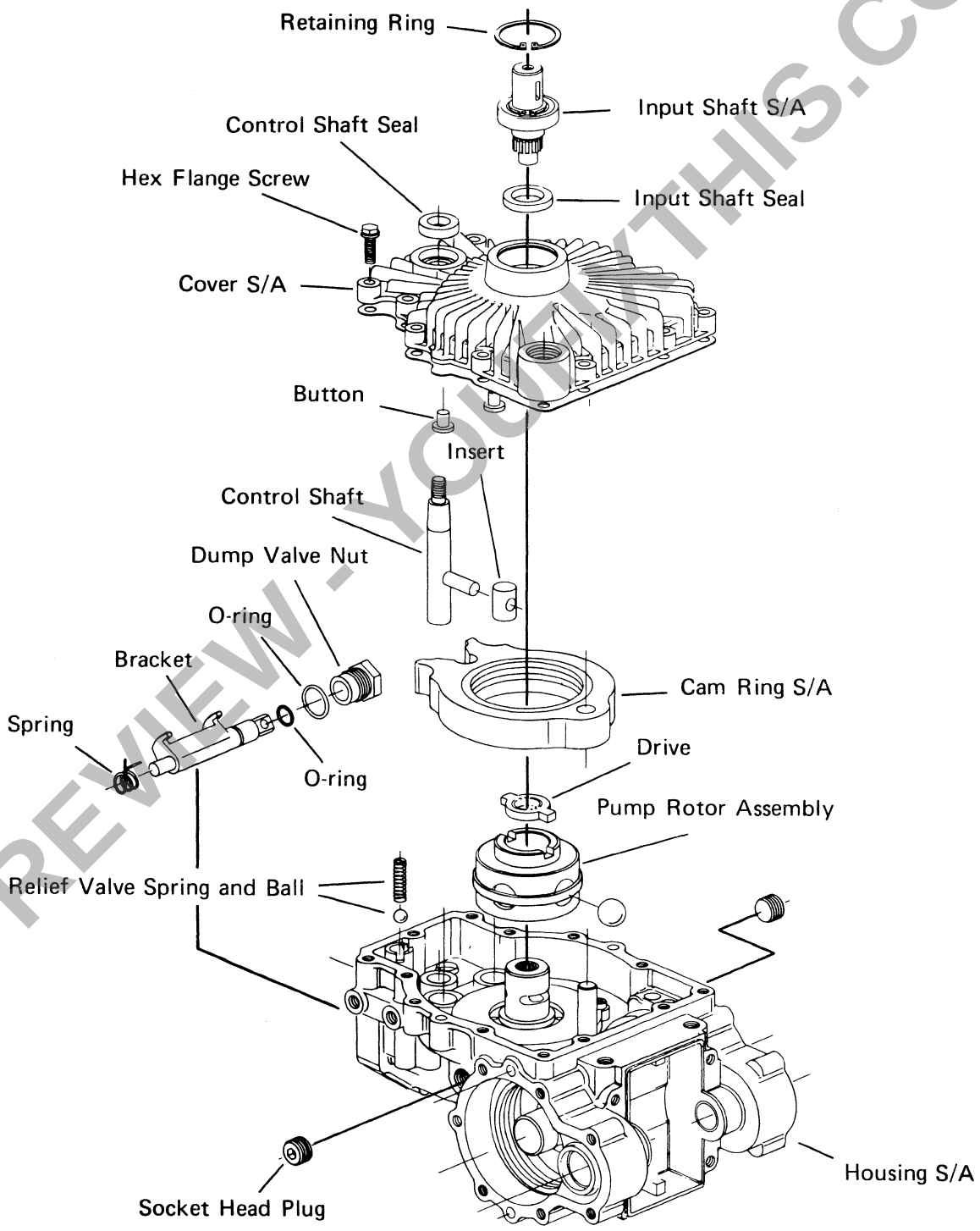
F. Carefully let jackshaft slip forward and remove front end of idler spring from steering crossmember. Remove jackshaft.

NOTE: Before idler spring is reattached to crossmember, attach **rear** capscrew, lockwasher and nut through main frame and right jackshaft plate. Then stretch idler spring and attach to front of steering crossmember.

G. Sevice jackshaft assembly as required and reassemble by reversing above procedures. Pay special attention to "NOTE" in step "F".

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