

**OWNERS
OPERATION AND SERVICE
MANUAL**

GAS MODELS GX-440, GX-444



E-Z-Go Division of Textron Inc.

E-Z-Go Division of Textron Inc.

AUGUSTA, GEORGIA

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Polaris E-Z-Go
Division of Textron Inc.

SERVICE MANUAL

SERVICE

**MODEL
GASOLINE
SECTION B**

IMPORTANT: It is in the best interest of both the car owner and servicing dealer to carefully follow the procedures recommended in this manual. Adequate preventive maintenance, applied at regular intervals, is the best guarantee for keeping your E-Z-GO Gasoline Car dependable and economical.

SERVICING A NEW GASOLINE CAR

Before a new car is put in operation, it is recommended that the owner make a check on the items shown in the INITIAL SERVICE CHART below.

Service operations are described in pertinent sections of Service Manual. See Table of Contents for location.

INITIAL SERVICE CHART

Item	Service Operation
Battery	Check electrolyte level and charge condition.
Tires	Check pressure.
Brakes	Check operation and adjust if necessary.
Fuel	Fill tank with correct gas/oil mixture.

DAILY CHECK LIST

After your E-Z-Go has been put into service, it is recommended that the following items be checked by the personnel handling the cars to make ready for each days' play. Personnel driving cars to and from the storage facility can be an asset to a proper maintenance program if trained to look, listen and feel for an unusual situation. This practice can be a great help in solving many maintenance problems in the minor stages while they can be corrected by simple adjustments, etc.

- A. Examine car for damages or abuse, unusual to normal wear and tear.
1. Torn seats
 2. Dents in body
 3. Damaged or missed bag straps
 4. Cuts in tires
 5. Tire pressure
 6. Mechanical damage, rods, etc.
 7. Be sure hill brake will hold on hill and not drag or prevent car from rolling freely.
 8. Be sure hill brake release works automatically with pedal.

HILL BRAKE ADJUSTMENT (See Fig. 8 C)

Before adjusting the hill brake, the service brake must be correctly adjusted and operating properly. Refer to Brake Adjustment.

If the Hill Brake fails to lock when the pedal (18) is depressed or will not release when the accelerator pedal is depressed, adjust as required using the following procedure.

If the lock arm (1) will not engage the catch bracket (5) or if the hill brake will not automatically release, loosen the two nuts (17) and bolts (11) securing bracket (16) and move bracket down as required to achieve full engagement of lock arm notch, then readjust cam (6) as follows:

With the pedal depressed and locked down, loosen two set screws (7) securing cam (6) to shaft (8) and rotate cam (6) until flush against lock arm (1).

REMOVAL OF HILL BRAKE RELEASE LINKAGE (See Fig. 8 C)

To remove the hill brake release linkage, hoist the front of car to allow access to underside.

To remove the linkage rod (15), disconnect the two ball joints (13) by sliding barrel part of joint away from the ball stud.

Loosen two set screws (7) in cam and slide cam off, then slide level arm shaft (8) out of pivot bracket.

Loosen two nuts (17) and bolts (11) and remove pivot bracket (16). If the flanged bearings (9) are worn, replace with new bearings.

Reassemble by reverse procedure.

DISASSEMBLY OF BRAKE PEDAL (See Fig. 9 C)

To repair or replace damaged or worn brake pedal parts, disassemble as follows:

Unhook the pedal return spring (14), (Insert a thin blade screw driver between small hook end and pedal bracket, force spring back and away from bracket.)

Remove lock nut (12) from pivot bolt (11) and remove bolt. Remove spring, disconnect cable clevis and lift pedal out through floorboard.

To remove hill brake pedal, make note of how the two springs (2) are positioned. Remove pushon retainer nut (1) (new nut required for reassembly) and remove hinge pin (6).

Pedal pad replacement will require a special adhesive, refer to your E-Z-GO parts manual. Reassemble and install in reverse order of disassembly.

SEAT BRAKE ADJUSTMENT (See Fig. 10 C)

The seat brake is designed to hold the car in position when parked on an incline, without assistance from the foot brake. To adjust or disassemble for repair or replacement of worn parts, use the following procedure:

Depress release level (21) and lock down with lock out hook (11). Run stop nut (7) up against bracket. Disengage hook (11), and swing level (21) back to gain access to pin (6).

Loosen cable jam nut (14). Use adjusting tool (26), turn pin (6) to adjust out excess slack between clevis and cable swedge, while holding cable to prevent windup. (Maintain 1/8" dimension). Retighten jam nut (14) and back off stop nut (7) to end of threads on pin (6).

STEERING

The steering assembly is a rack and pinion type. There is no method of adjustment in this type gear box. If the steering has excessive play or backlash, it may be necessary to replace worn gears or ball joint on end of rack.

STEERING ASSEMBLY REMOVAL (Fig. 1 E)

Turn the steering wheel to the right to place rack end ball joint (48) in an accessible position. NOTE: On four wheel cars, it is necessary to remove four nuts securing the front shield and remove to give access to the steering arm area. Remove cotter pin (8) from slotted nut (9) and back nut off approximately half way or until threads are covered. Using a drag link tool as a lever, apply pressure to ball joint and tap nut with a hammer to loosen ball stud. Remove nut and lift stud from arm. Remove three bolts (32) securing gear box to floorboard. Remove "U" bolt (43) securing column (29) to bracket and lift assembly out of car.

Reinstall in reverse order of removal. Torque ball stud slotted nut (9) to 40 Ft lbs. Install new cotter pin.

DISASSEMBLY**Steering Wheel Removal:**

Remove two nuts (22) securing score card disc (23) and remove disc. Back shaft nut (26) off approximately two turns. Do not completely remove nut, so that column threads will not be damaged by puller. Install a bearing adapter on column under wheel hub. Use a two jaw puller and install with jaws hooked under bearing adapter. Tighten puller screw to apply pressure on wheel and against shaft. Strike top of puller screw with a hammer to break wheel loose. Remove nut, score card bracket (25) and wheel. If a puller is not available, it is possible to remove the wheel as follows: Remove score card disc and back nut off as described above. Remove "U" bolt (43) securing column to bracket. Remove three bolts (32) securing column flange to gear box and lift column and steering wheel out of car. Support wheel hub between two wood blocks or vice jaws. Place a metal block or bar on shaft nut and strike with a hammer to break wheel loose.

Removal and Replacement of Column Bushing:

Remove steering wheel (Refer to Steering Wheel Removal Procedure). Pull bushing (28) out, press in new bushing.

FRONT (4 Wheel Cars) Fig. 1 F**Removal and Disassembly:**

Removal of the suspension assembly as a unit is not required for repair work. However, if removal is required, proceed as follows:

Remove four nuts from back of shield and lift off. Remove front wheels. Remove two nuts (17) and two bolts (16) from front bracket (5). Remove four bolts securing center strut to frame at top and remove strut. Remove two nuts (11), two washers (10), and two bolts (9) from rear bracket (5). Remove cotter pin (42), back nut (41) off part way to protect threads. Using a drag link tool as a lever apply pressure up on ball joint (39), strike nut with a hammer to break joint loose. Remove nut and disconnect joint. Back off on set screw at top of steering arm pivot shaft, remove top retainer ring and push shaft out. Turn steering wheel to left to allow arm to move to right and swing steering arm up and clear of mounting box. Remove four nuts (37), washers (36), four bolts (34), and plate (33). Press down on spring (32) to remove from bracket, lift assembly up and away from frame.

Reinstall in reverse order of disassembly.

Spindle Repair: To replace spindle (24) or king pin bushings (23), proceed as follows: Remove wheel and hub (refer to Bearing Service Procedure). Disconnect ball joint (39) from spindle arm (Refer to procedure described above). Remove nut (19), lift upper support arm (2) from king pin (28), remove thrust washer (22) and lift spindle off pin. Clean spindle with a solvent and inspect for damage or worn bushings. If bushings are worn larger than (.630 inch) press out and replace with new bushings. Press bushings in until flush with housing. **Note:** Bushing I.D. will close slightly when pressed in. If a ream operation is required, use a (.625 inch) diameter sizing reamer.

Reinstall in reverse order of disassembly. Torque nut (41) to 40 Ft. lbs. and install new cotter pin.

King Pin Removal: Remove nut (19), lift upper support arm (2), remove thrust washer (22), lift spindle assembly (24) from pin, remove spring washer (27), remove nut (29) and remove bolt (30).

Reinstall in reverse order of disassembly. Take care not to tighten nut (19) to a point that will disallow free rotation of spindle.

Trunion Removal: To remove trunion (21), remove nut (19), remove nut (15), remove bolt (14), lift upper support arm (2) up and remove trunion. Clean and inspect for wear. If small hole is worn larger than (.506 inch) or large hole is larger than (.633 inch) replace with new part. Reassemble in reverse order of disassembly.

Leaf Spring and Bushing Removal: Remove nuts (29), remove bolts (30), remove four nuts (37), washers (36) and bolts (34). Remove spring, check bushings for wear. If bushings are worn larger than (.510 inch) press out and replace with new parts. When replacing spring be sure center bolt head lines up with hole in frame. Reassemble in reverse order of disassembly.

STARTER-DYNAMO REASSEMBLY

Position armature on crankshaft, taking care to align keyway with key in shaft.

Inspect brushes for wear. If brushes are worn to within 1/16 inch of wear mark, replace brushes.

Position stator assembly, and secure with five screws. Position brushes to commutator and check for free sliding in holders.

Position flywheel on armature shaft, taking care to align keyway with key in shaft: **NOTE:** Use extreme care not to damage the fiber block on the breaker points or bend the cam lobe oiler bracket. Damage can be avoided by rotating the crankshaft so that the flywheel cam lobe will be positioned to the lower side when installing flywheel.

Install access cover to flywheel using two screws and lockwashers. Install draw bolt and torque to 20-24 ft. lbs. Bend locking tab to lock draw bolt.

Install blower housing and exhaust in reverse order of disassembly. Reconnect wiring and secure to frame. **CAUTION!** Be sure braided ground strap is correctly reinstalled before starting engine.

CRANKCASE REPAIRS

If crankcase repairs are necessary the engine must be removed from frame. Follow procedure outlined under Removing and Installing Engine.

After removing engine, remove draw bolt securing drive clutch to shaft. Install clutch puller (Part Number A-12580-G1) and force clutch off.

Remove blower housing, cylinder air duct, cylinder and starter-dynamo. Refer to pertinent procedures.

Crankshaft Seals

If disassembly is for replacement of seals only, removal of the cylinder is not required. Remove clutch and starter-dynamo assemblies, pry worn seals out. Coat new seals with light oil before installing.

Crankshaft Bearings

To remove bearings the crankcase must be disassembled. Remove cylinder, starter-dynamo and clutch. Remove four bolts securing mounting base of cylinder to crankcase. Remove five bolts securing crankcase halves together. (See Fig. 11 G Removing Crankcase Bolts).

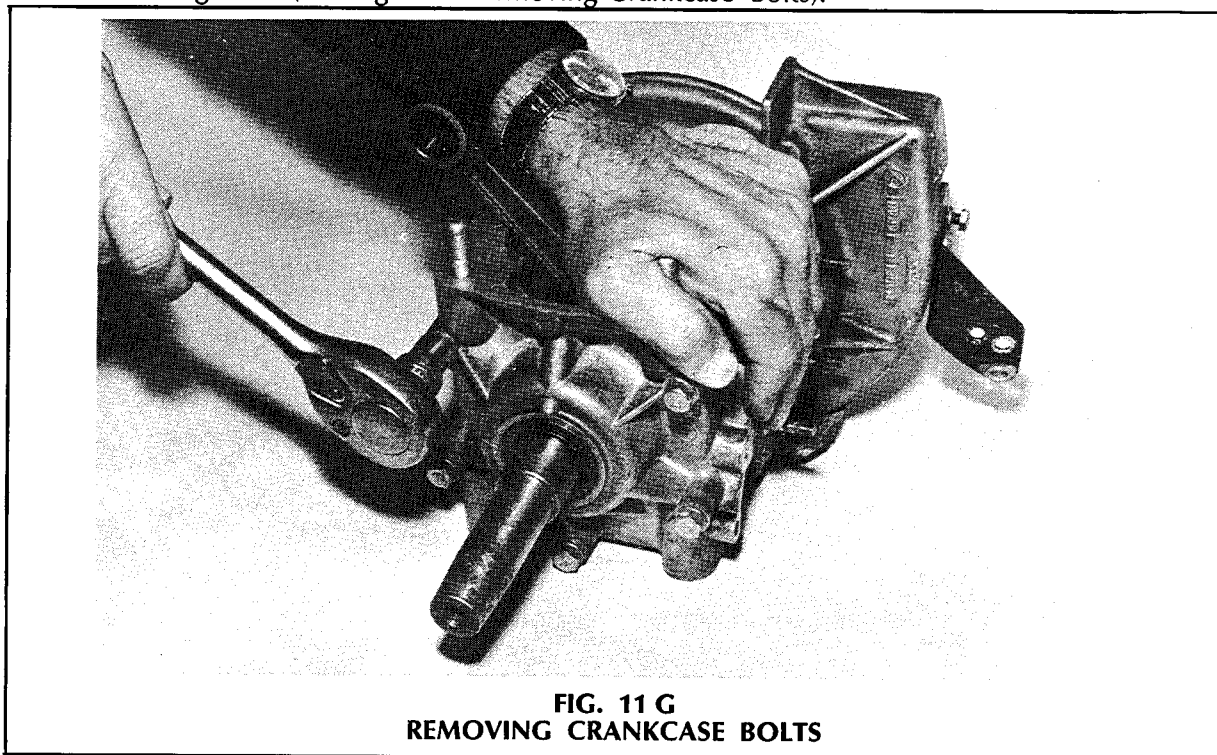
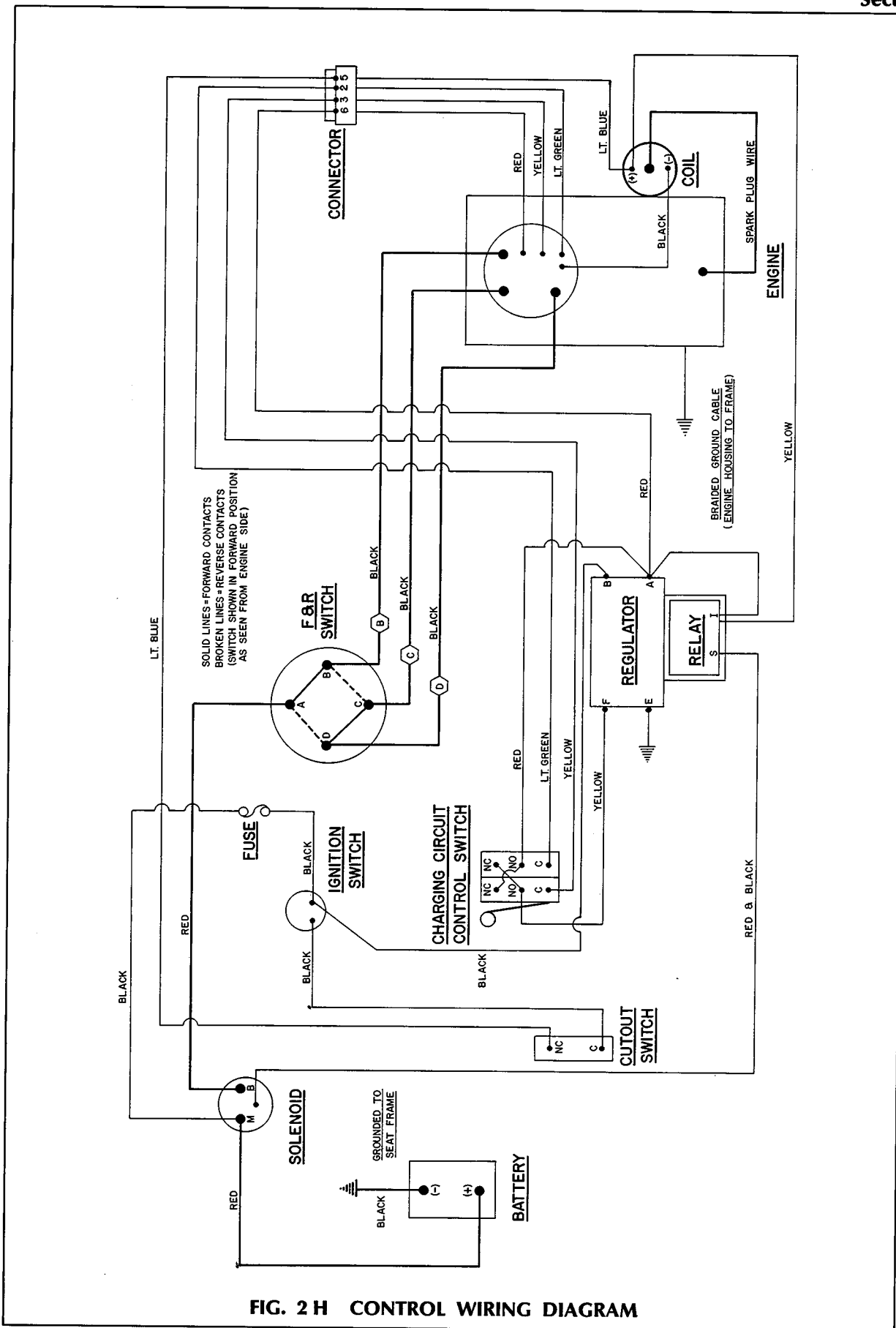


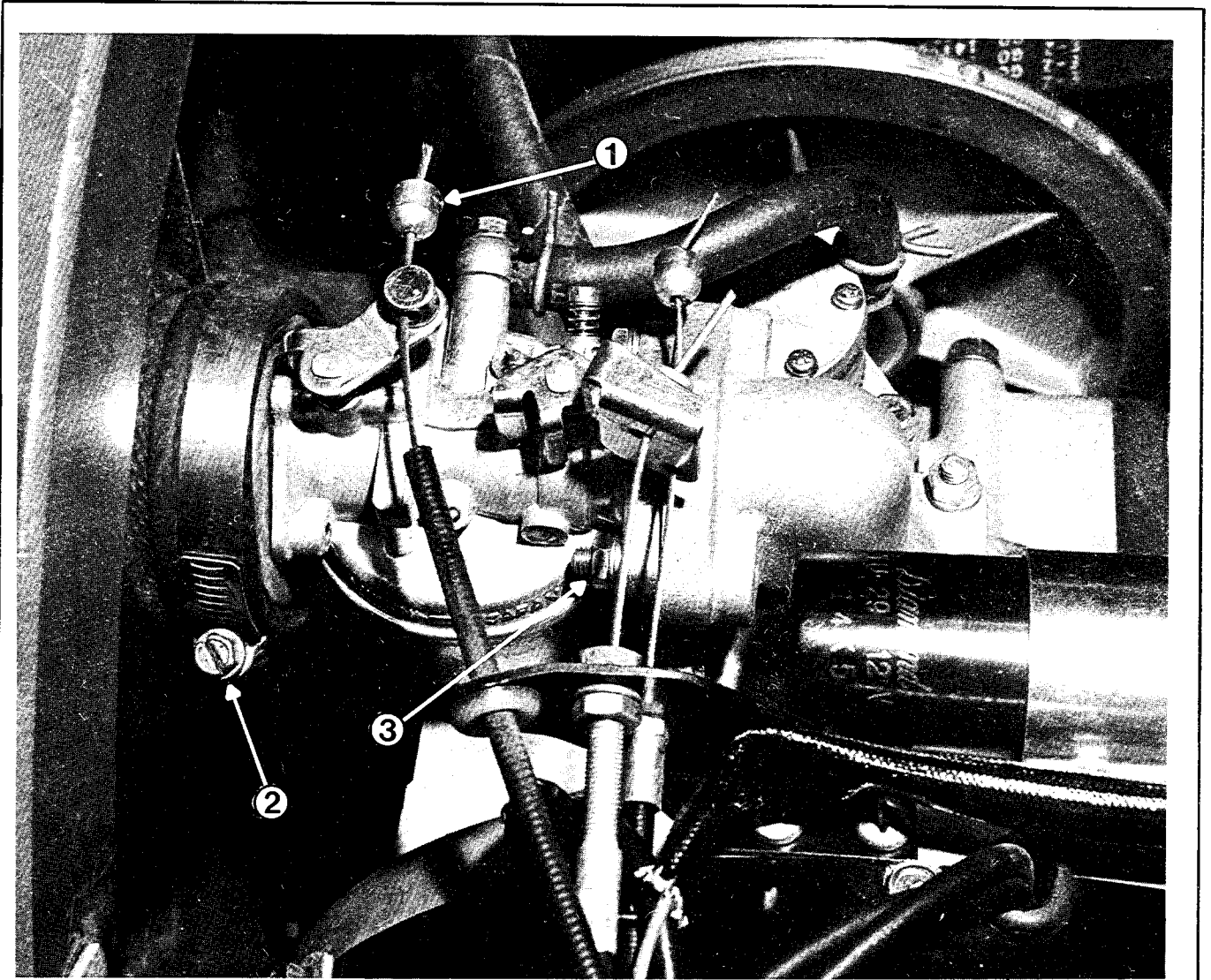
FIG. 11 G
REMOVING CRANKCASE BOLTS



REMOVAL FROM ENGINE (See Fig. 3 J)

Disconnect fuel line from fuel pump. Disconnect throttle, choke and governor cables by loosening set screw (1) and sliding cable clamps from cable. Disconnect air inlet hose by loosening clamp (2). Remove two nuts and washers (3) and slide carburetor off.

On BV-18 model carburetors, back off on set screw in choke lever, or remove clamps as above, remove nut on cable housing at bracket and move choke cable to one side to prevent damage.

**FIG. 3 J****MODEL BV-24 SHOWN**

GENERAL

The two clutch assemblies perform as an automatic torque converter. (Variable ratio drive). This drive system consists of a centrifugal member (Drive Clutch), a torque member (Driven Clutch), and drive belt. When the throttle is advanced, and the engine speed is increased, the movable flange of the centrifugal member (Mounted on engine shaft) is moved in to engage the drive belt by centrifugal force applied to cams operating in the movable flange housing. When throttle is closed, the engine slows down, reducing force on the cams, allowing the flanges to separate from spring pressure on the movable flange. At idle speed, the belt rides down at the bottom of the flanges on the clutch shaft so that the drive is disengaged. As engine speed is increased, the movable flange will move in against the belt, thus engaging the belt between the two clutch flanges. At this point the drive is at maximum ratio, with increasing engine speeds, the movable flange is forced toward the fixed flange, increasing the belt pitch diameter, which decreases the ratio, shifting the drive for higher speeds.

The torque member (Driven Clutch) is a torque-responsive variable pitch sheave which maintains an equilibrium condition with the centrifugal member at all speeds. Flange pressure varies directly with torque so that the drive "down-shifts" its ratio with increased torque demand without change of engine speed. The sliding flange spiral ramp and followers are activated by belt friction. The spring is used to assure constant belt contact under all operating conditions.

DRIVE BELT

Removing Belt

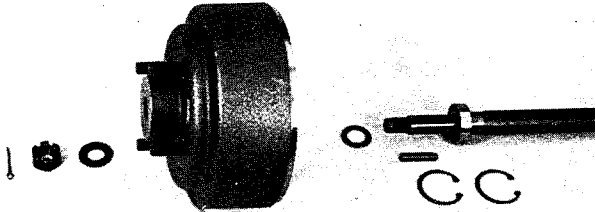
CAUTION: Do not remove Drive Belt when engine is Hot.

Pull up on belt and rotate the movable flange of driven clutch (mounted on differential pinion) backwards to spread; then roll belt over the movable flange.

Belt Service

The belt should not require any service except when the car has been operated in an extremely dusty or muddy area. In such case it should be washed with water.

If belt is frayed, or badly worn it should be replaced.

ASSEMBLING AXLE

Place new bearing on axle shaft. Press bearing onto shaft until firmly seated against the shaft shoulder. Fig. 11L **Note:** When reinstalling Brake drum on Axle Shaft. Coat shaft with "Never Seez" Anti Size Compound (E-Z-GO P/N A-12719-G1)

INSPECTING AXLE PARTS**Bearings**

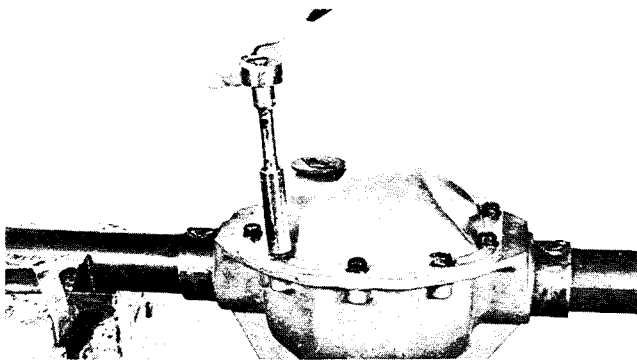
It is recommended, but not necessary, that whenever bearings are removed, they (regardless of mileage) are to be replaced with new ones.

Oil Seals

Inspect oil seals for signs of leaking. Look for cuts or cracks. Be sure the spring on the inside of the seal lip is in place.

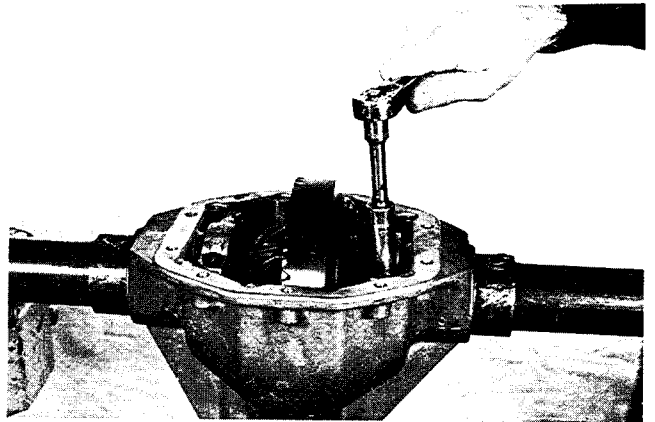
Axle Shaft Seal Surface

Inspect sealing surface of shaft. Replace if seal has grooved the surface more than 1/64".

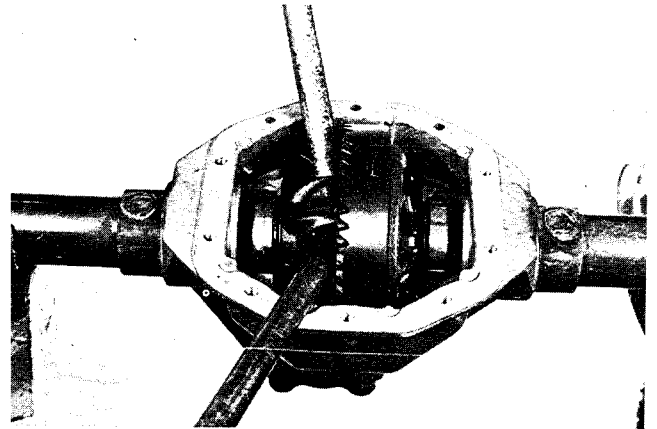
DISASSEMBLING DIFFERENTIAL

Remove right and left hand axle shaft assemblies as previously stated. Remove ten cover plate screws and remove rear cover. Fig. 12L

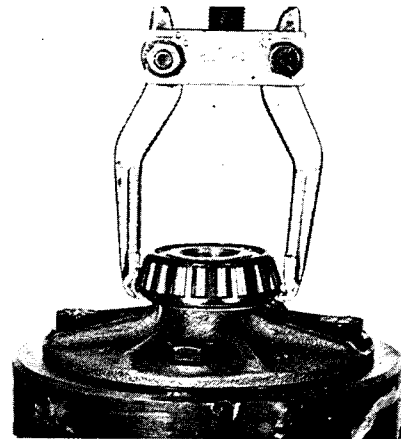
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Bearing caps are marked for identification. Letters or numbers are in horizontal and vertical position. When reassembling, place them back in the same position. Remove 4 bearing cap screws and remove caps. Place caps in a safe place to avoid damaging their machine surface. Fig. 13L



Pry differential case from the carrier with two pry bars. If new bearings are not required, old bearings and shims are to be replaced same side as removed. Fig. 14L



Do not remove bearing from differential case unless bearing failure is evident. When bearings are removed, before you replace them, make sure there is no sign of damage. If damage occurs, replace with new bearings. *Insert jaw puller into indentations provided in the differential case. Fig. 15L

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