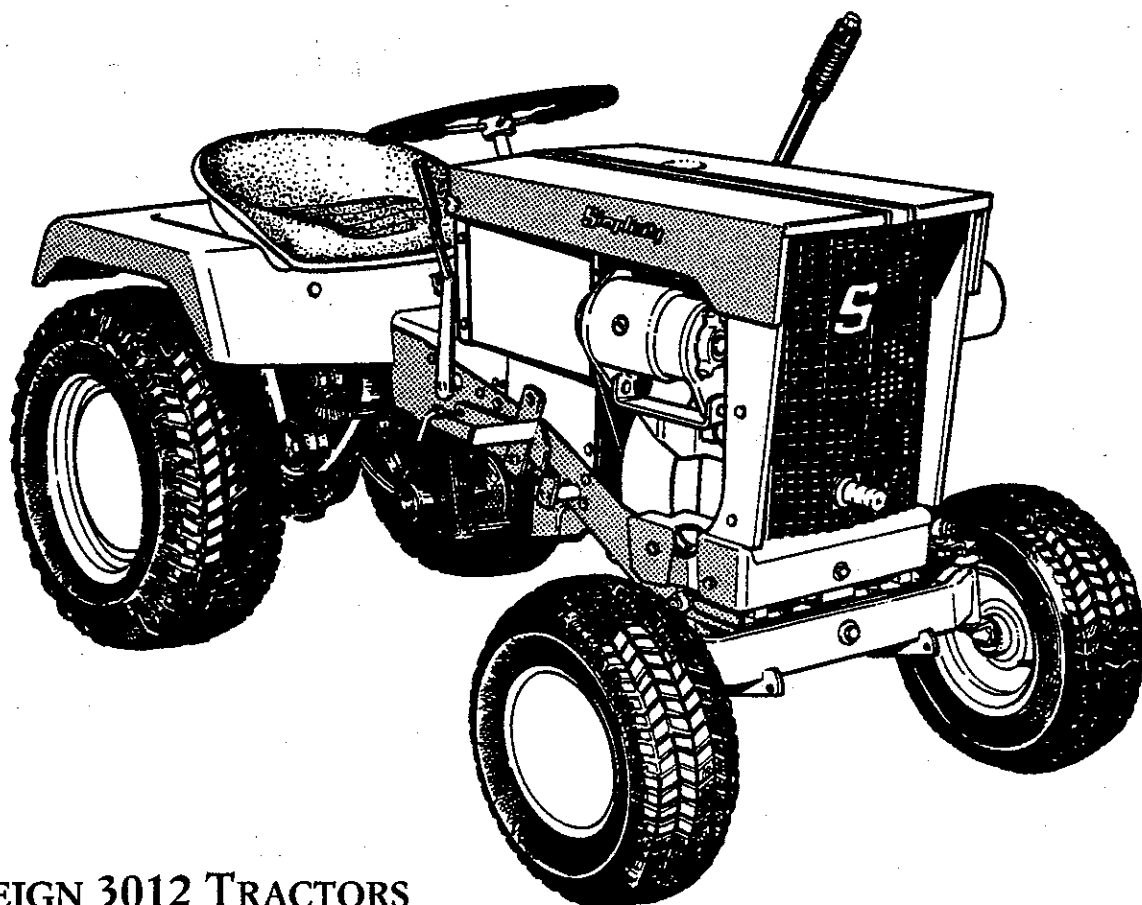


Simplicity[®]

Operator's & Parts Manual

SOVEREIGN 3012 SERIES RIDING TRACTORS



SOVEREIGN 3012 TRACTORS

Mfg. No.	Description
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990434	Sovereign 3012 with Manual Lift
990435	Sovereign 3012 with Hydro Lift

This manual also applies to

ALLIS-CHALMERS B-112 SERIES TRACTORS

Mfg. No.	Description
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2029900	B112 with Manual Lift
2029901	B112 with Hydro Lift

WARRANTY

The company warrants Simplicity Products to be free from defects in material and workmanship except the company makes no warranty express or implied with respect to tires, engines and engine accessories which generally are warranted by their respective manufacturers. Any part covered by this warranty which is proven defective within one year, under normal use, from date of purchase, will be replaced free of charge, f.o.b. Port Washington, Wisconsin, provided such part is returned to factory transportation charges prepaid and is found to be defective upon examination at the factory. The company is not obligated under this warranty to bear cost of labor or delivery charges in replacement of defective parts. This warranty does not apply to any Simplicity Products altered outside of Simplicity's factory. Such replacement of defective parts shall be the exclusive remedy and in no event shall Simplicity be liable for consequential damages. EXCEPT AS SPECIFICALLY PROVIDED HEREIN, THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON ANY SIMPLICITY PRODUCT.

Should warranty service be necessary, the information below should be presented to the authorized SIMPLICITY Dealer.

Customer's Name _____

Address _____

Mfg. No. _____ Serial No. _____

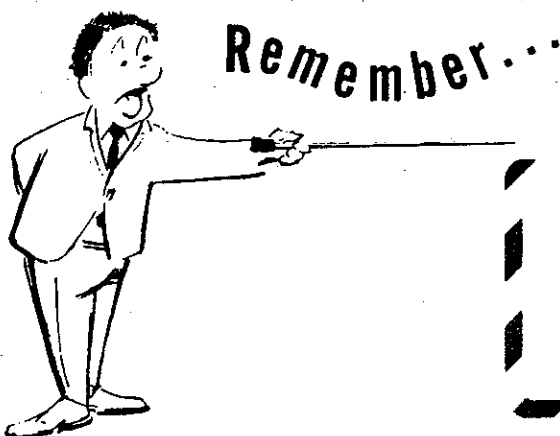
Date Purchased _____

Purchased From _____

Address _____

Engine Model No. _____ Serial No. _____ Type No. _____

To obtain replacement parts from dealer, advise quantity, part number and description.



Remember...

FOR YOUR SAFETY

- 1 ALWAYS STOP ENGINE BEFORE LEAVING MACHINE
- 2 ALWAYS STOP ENGINE BEFORE SERVICING OR ADJUSTING MACHINE OR EQUIPMENT
- 3 ALWAYS KEEP HANDS, FEET AND CLOTHING AWAY FROM POWER-DRIVEN PARTS

REAR LIFT GROUP INSTALLATION

The Rear Lift Group is to be installed in the following manner:

1. Remove 3 Hex. Cap Screws from left side of tractor as shown in Figure 1.
2. Swing hitch member outward and install Lift Assembly as shown. Return hitch member to original position and replace Hex. Cap Screws. See Figure 2.
3. Insert right end of Lift Assembly into hole in right hitch member and position Lift Assembly so that Collar is flush against Right Hitch Member. Position Collar on left side of Lift Assembly so it is flush against left hitch member; tighten Socket Hd. Set Screw with Allen Wrench. See Figure 3.
4. Connect Lift Assembly to Rear Lift Group. Secure with Cotter Pin. See Figure 3.
5. Adjust Rear Lift Rod so that there is clearance between the Gear Case and the Lift Assembly when the Lift Lever is in the forward, latched, position. Also adjust rod so that the Lift Assembly will strike the Gear Case before the Lift Lever strikes the Air Cleaner on engine when Lift Lever overtravels forward.

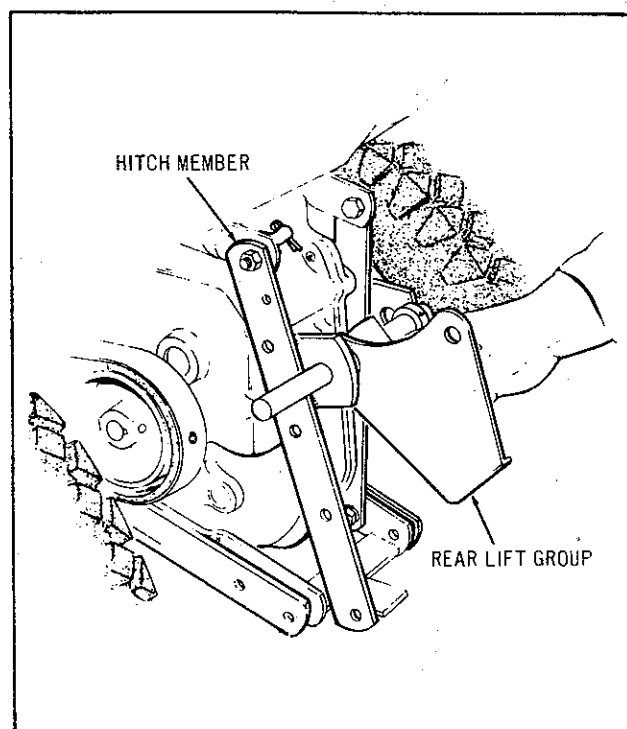


FIG. 2

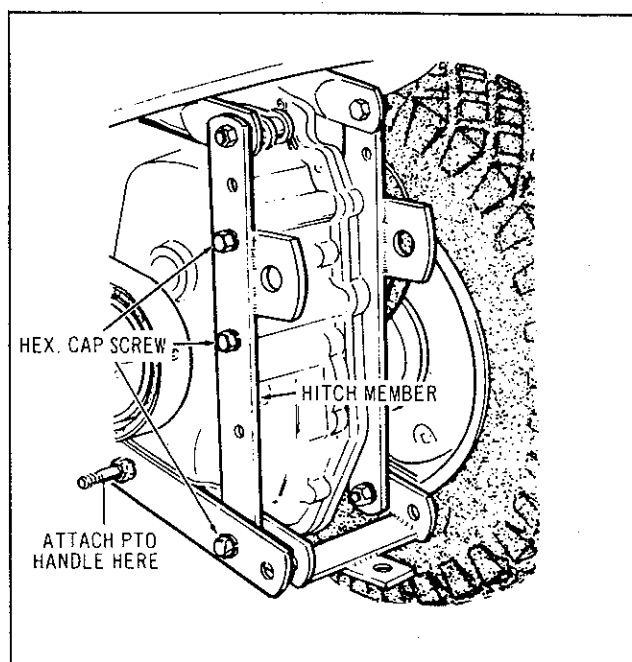


FIG. 1

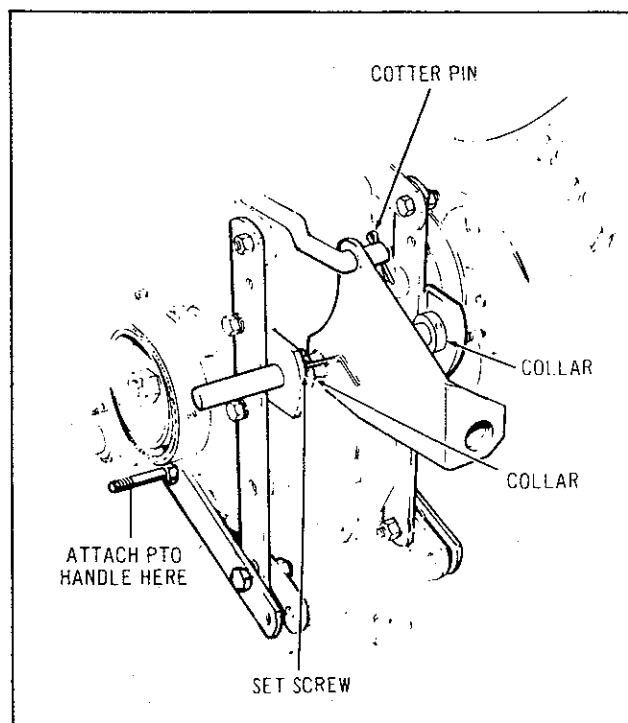


FIG. 3

LUBRICATION

The tractor has a total of 3 Grease Fittings which require lubrication with general purpose automotive grease. Use a standard grease gun for the following fittings:

Before lubricating, wipe each grease fitting with a rag to prevent grit and dirt from being carried into bearings with new grease.

(2) Front Spindles - Figure 4

(1) Rear Axle Tube - Figure 7

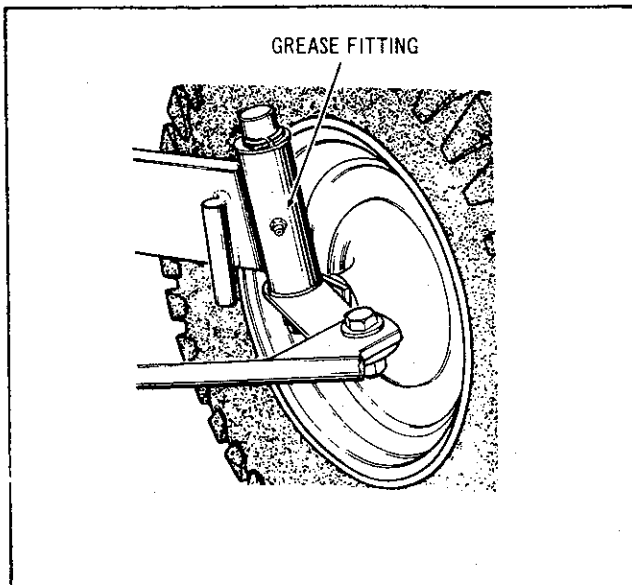


FIG. 4

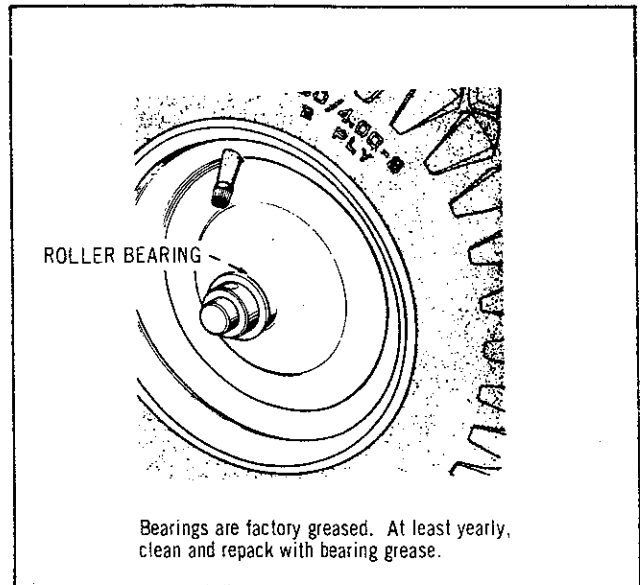


FIG. 5

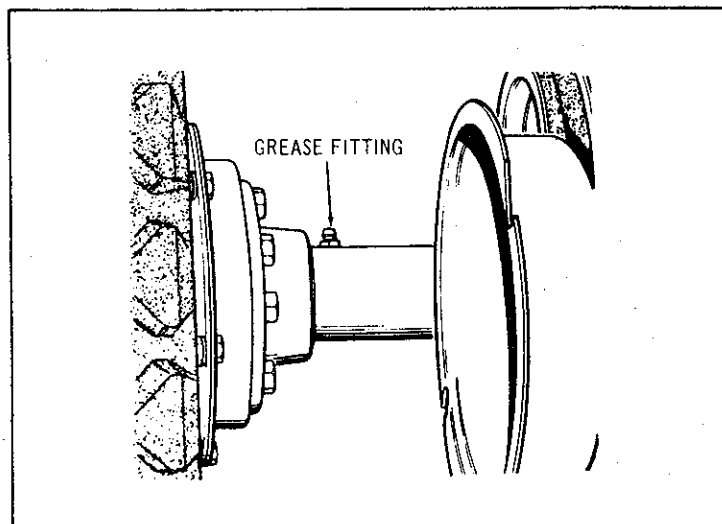


FIG. 6

The Transmission has a capacity of 1-1/2 Qts. of SAE 90 oil, and is filled at the factory. It will not normally require replenishment, but occasionally check Drain Plug for tightness and Axle Tube Oil Seals for leakage. Maintain oil level at lower edge of Filler Plug Hole. Remove Vent Plug from top of Transmission and allow oil to settle to normal level before checking. See Figure 7.

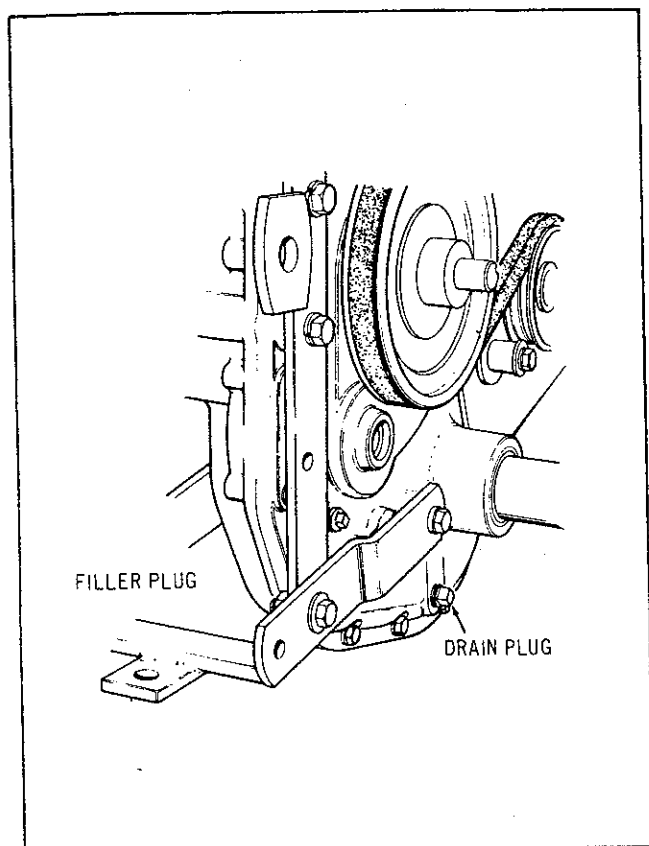


FIG. 7

ENGINE

Engine - Service Air Cleaner and Crankcase as recommended in Engine Service Manual. Be sure Air Cleaner is maintained in clean condition. Never use oil in Crankcase for more than 25 hours of operation. See Figure 11. CLEAN AIR AND CLEAN ENGINE OIL WILL GIVE LONG TROUBLE FREE OPERATION. DIRT WILL RUIN YOUR ENGINE IN A SHORT TIME. A funnel and extension are included with the tractor for use in changing oil.

The Bevel Gear Housing has a capacity of 1 pint of SAE 90 oil and is filled at the factory. It will not normally require replenishment, but occasionally check Drain Plug for tightness and Oil Seals for leakage. Keep oil up to level of Filler Plug. See Figure 8.

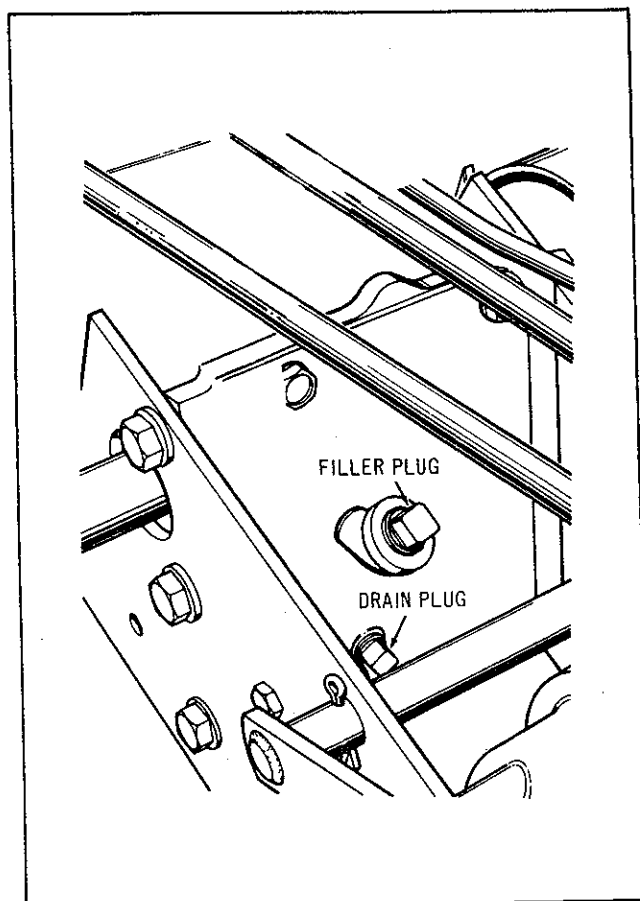


FIG. 8

TIRES

The tires of the tractor are inflated with air pressure in excess of the normal amount for shipment. For comfort of operation, release some of the pressure until a pressure of 10 lbs per square inch is attained for Front Tires and 7 lbs per square inch is attained for Rear Tires. Maintain tires at these pressures.

STARTING ENGINE-ELECTRIC STARTER

1. Place Gear Shift Lever in neutral position. See Figure 9. (Be sure tractor is on level ground and will not roll away in neutral. Apply parking brake.)
2. Pull Choke Knob out. See Figs. 9 & 10.
3. Set Throttle Lever in mid position and turn Ignition Key to "ON". See Figure 9. Press starter button to start engine and release. As engine warms up, Push Choke Knob in. Pull Throttle Knob out to desired position and turn to lock.

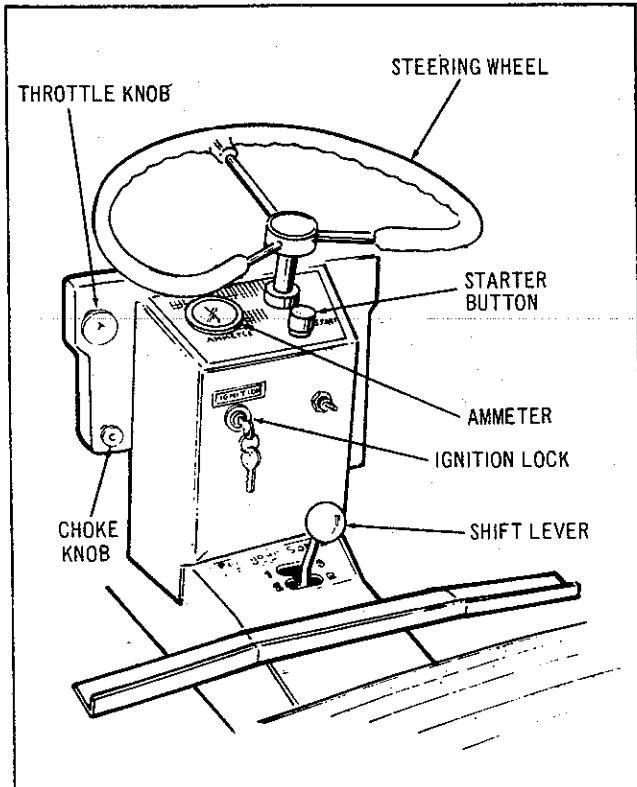


FIG. 9

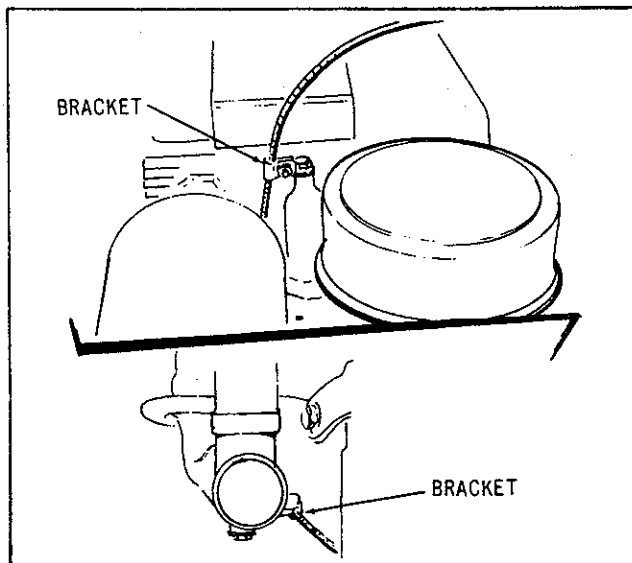


FIG. 10

TO STOP ENGINE

With Clutch disengaged, place Gear Shift in any gear and turn Ignition Key to "OFF" position. Engage clutch to hold tractor in parked position and remove Ignition Key for safekeeping. Apply Parking Brake.

OPERATION OF TRACTOR

To place Gear Shift in desired Gear Range, depress the combination Brake and Clutch Pedal located on right hand side of tractor. See Figure 11. When pedal is depressed move Shift Lever to desired position (See Figure 9) and gradually release pedal until clutch is engaged. When shifting from one range to another, pause briefly in neutral before completing shift. Set Throttle Lever to obtain desired speed. See Figure 9.

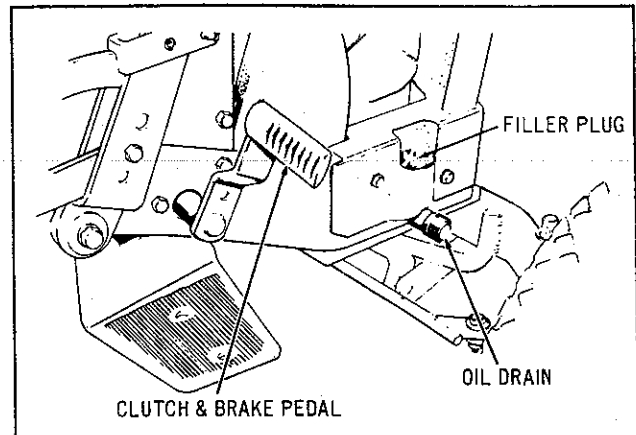


FIG. 11

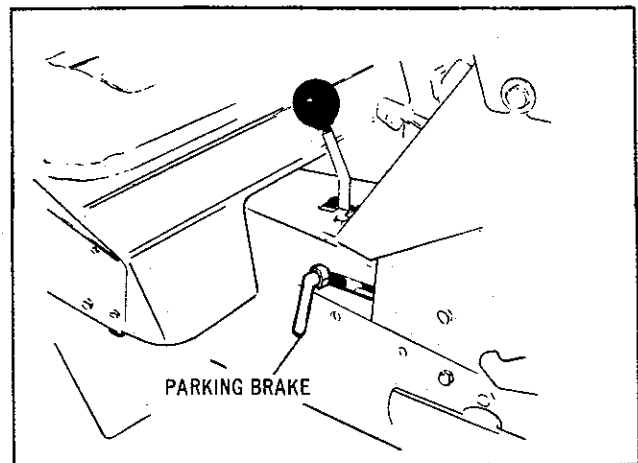


FIG. 12

PARKING BRAKE

To operate the Parking Brake, hold the Brake Pedal depressed and slide the Parking Brake Lever all the way to the rear of its slot and turn the lever in a clockwise direction until it is tight. Refer to Figure 12.

To release the Parking Brake, turn the Parking Brake Lever in a counter-clockwise direction until the Brake Pedal is released.

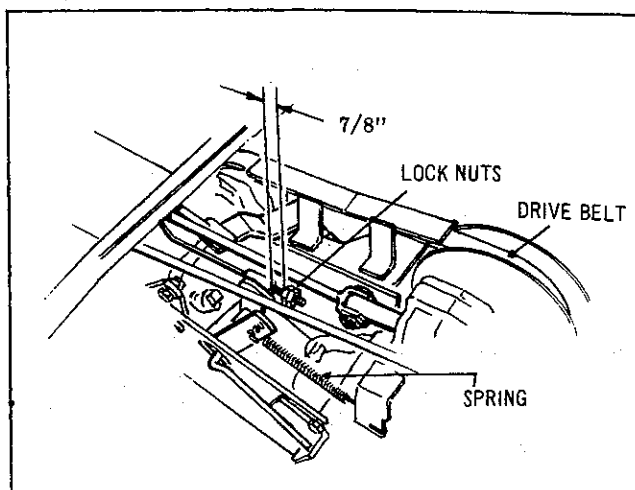


FIG. 13

CLUTCH ADJUSTMENT

Position the locknuts to leave a space of about $7/8$ " between them and the end of the Rod Guide with Variable Speed Lever in LOW SPEED POSITION.

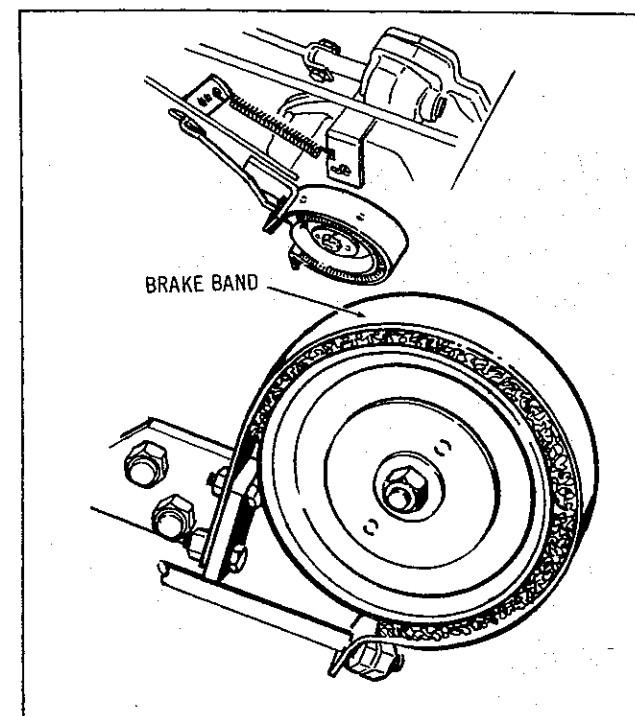


FIG. 14

BRAKE ADJUSTMENT

Should brake adjustment be necessary on the Sovereign tractor, follow the instructions as listed under the CLUTCH, BRAKE AND BELT ADJUSTMENTS for the variable speed.

POWER TAKE-OFF INSTALLATION

For operation of Rotary Mower and Sickle Bar attachments, a Power take-off attachment is required. This consists of the Power Take-Off Assembly, "V" Pulley for Bevel Gear Shaft, Drive Belt, Belt Guard, and Belt stop packaged in one carton.

For ease of attachment follow the steps outlined below:

1. Mount Drive Pulley to Shaft of Bevel Gear Assembly See Figure 15, and secure in place with Key and Set Screw. Hub of Drive Pulley is to face inward. Place Drive Belt on Drive Pulley and mount Belt Guard Support to inside surface of Side Plate nearest Drive Pulley. See Figure 19 for Mounting Bolt location. Attach the Belt Guard to the Guard Support as shown in Figure 15. Allow approximately $3/16$ " clearance between Belt and Guard.

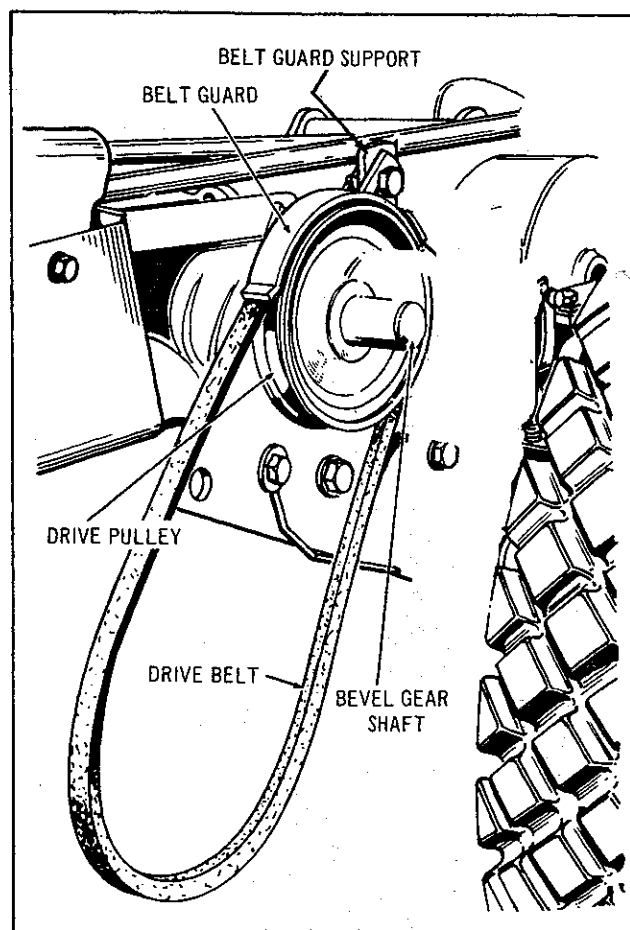


FIG. 15

2. Holding the Power Take-Off Assembly in left hand as shown in Figure 16, position the tube of the Drive Bracket Assembly between the Bevel Gear Housing Side Plates. Align the holes in Side Plates with the hole in Drive Bracket Assembly Tube and insert Pivot Pin through holes in Side Plates and Drive Bracket Assembly Tube.

3. Push Pivot Pin through the holes in Bracket and Tube until the position of Cotter Pin Hole in Pivot Pin is as shown in Figure 17. Secure in position with Cotter Pin furnished.

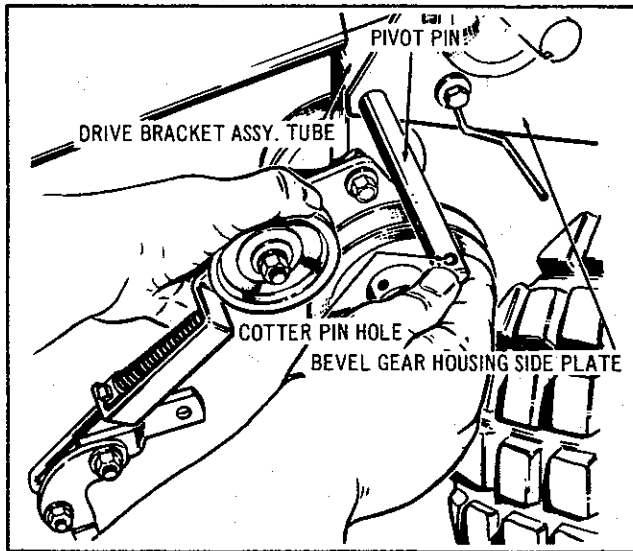


FIG. 16

4. Remove Hex. Cap Screw "D" from frame of tractor and mount bracket in place on Lift Lever Quadrant. See Figure 18. Position the Pivot Bar Assembly flush against bottom of Lift Quadrant and re-install Hex. Cap Screw and tighten securely. Check alignment of Drive Pulley on Bevel Gear Shaft, driven pulley of Power Take-Off, and Idler Pulley, and adjust Driving Pulley if necessary.

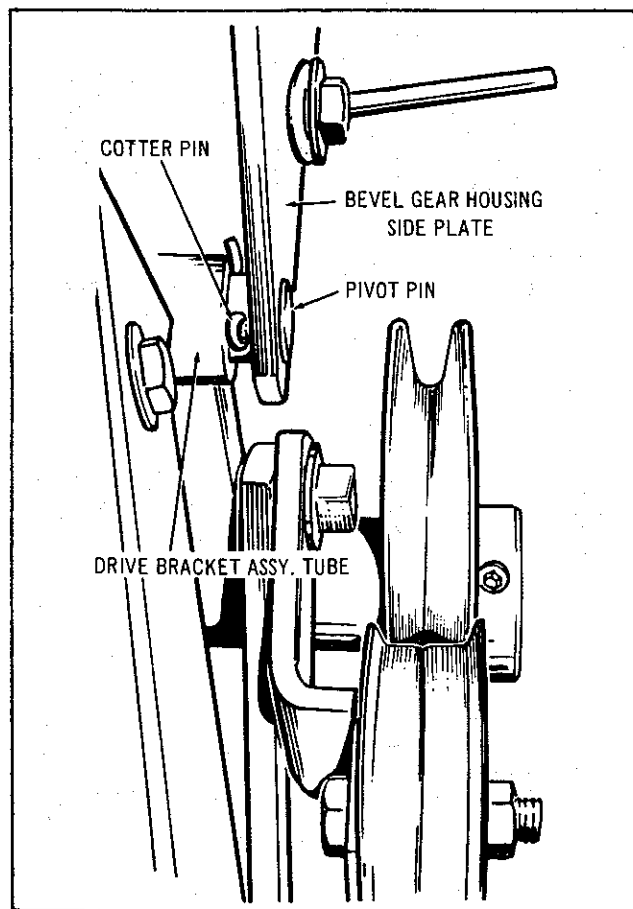


FIG. 17

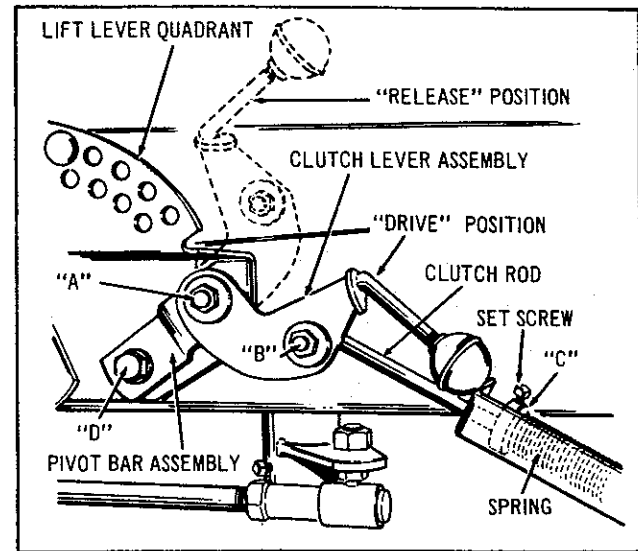


FIG. 18

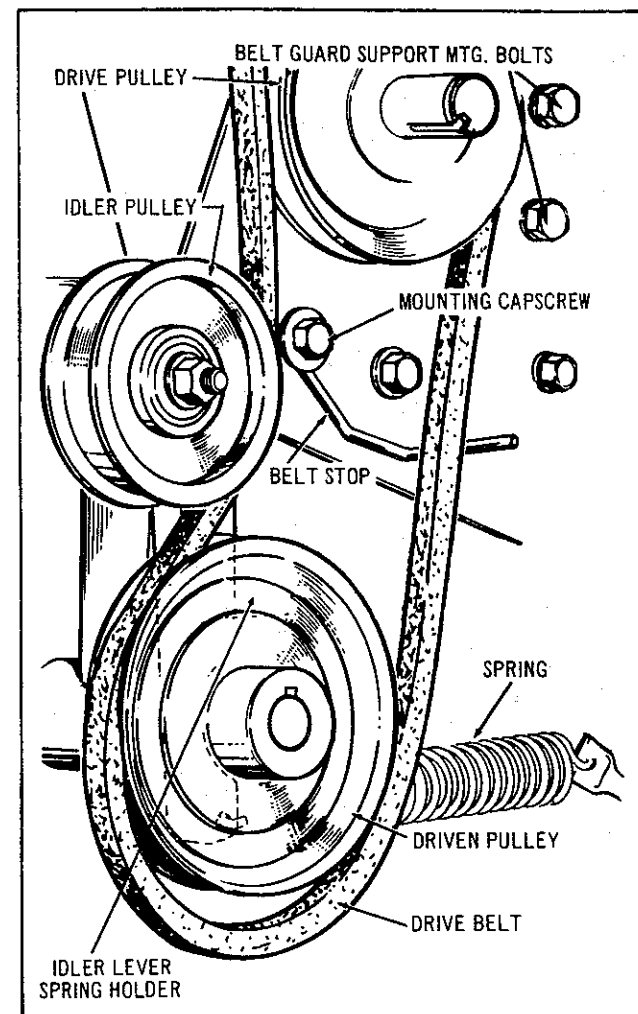


FIG. 19

5. Remove Front Hex. Cap Screw from Pull Bar. Replace with stud 157273 provided. Short end inserted. Slip on Handle Assembly and tighten with Hex. HeadLock Nut to permit free movement of handle. Mount "V" Belt in place on driven pulley as shown in Figure 19 and attach spring to hole provided in the bottom of the Bracket Assembly. Hook

other end of the spring to the Handle Assembly. Mount Belt Stop as shown with 3/8" Bolt, Flat Washer, Lock-washer, and Hex. Nut. When Implement is attached to tractor with Idler Pulley engaged, 1/8" clearance between Belt Stop and back of "V" Belt is required. NOTE: "V" Belt runs under Idler Pulley. See Figure 19.

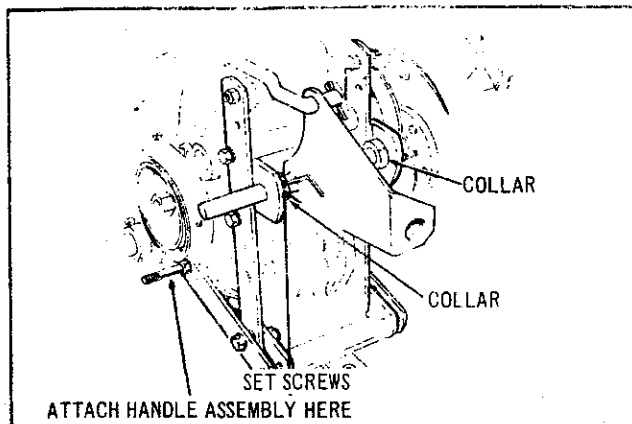


FIG. 20

LUBRICATION

The Power Take-Off is lubricated by means of one Grease Fitting located on the bottom front of the Drive Bracket Assembly. Occasionally apply grease by means of a standard grease gun loaded with automotive type grease. Be sure to wipe dirt and grit from grease fitting before applying grease gun. Lubricate all pivot points and Idler Pulley Bearings with SAE 20 oil every few hours of operation.

DIFFERENTIAL

The tractor is equipped with a Controlled Traction Differential. Tightening the hex head capscrews in the right hand wheel hub (see figure 21), provides pressure against a nylon plug and sleeve around the tractor axle and prevents excessive wheel slippage when the tractor is being used under abnormal slippery conditions. The adjusting capscrews are set at the factory to a torque of 25 ft. lbs. As the nylon sets itself through use, it may be necessary to readjust the capscrews a few times to maintain 25 ft. lbs. of torque (25 lbs. weight on wrench 1 ft. long).

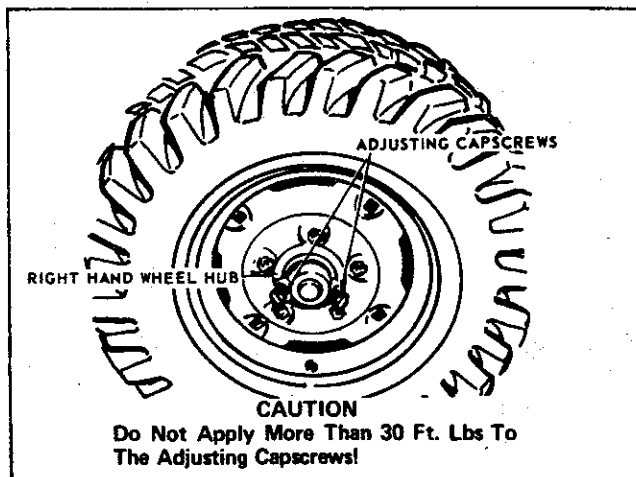


FIG. 21

OPERATION

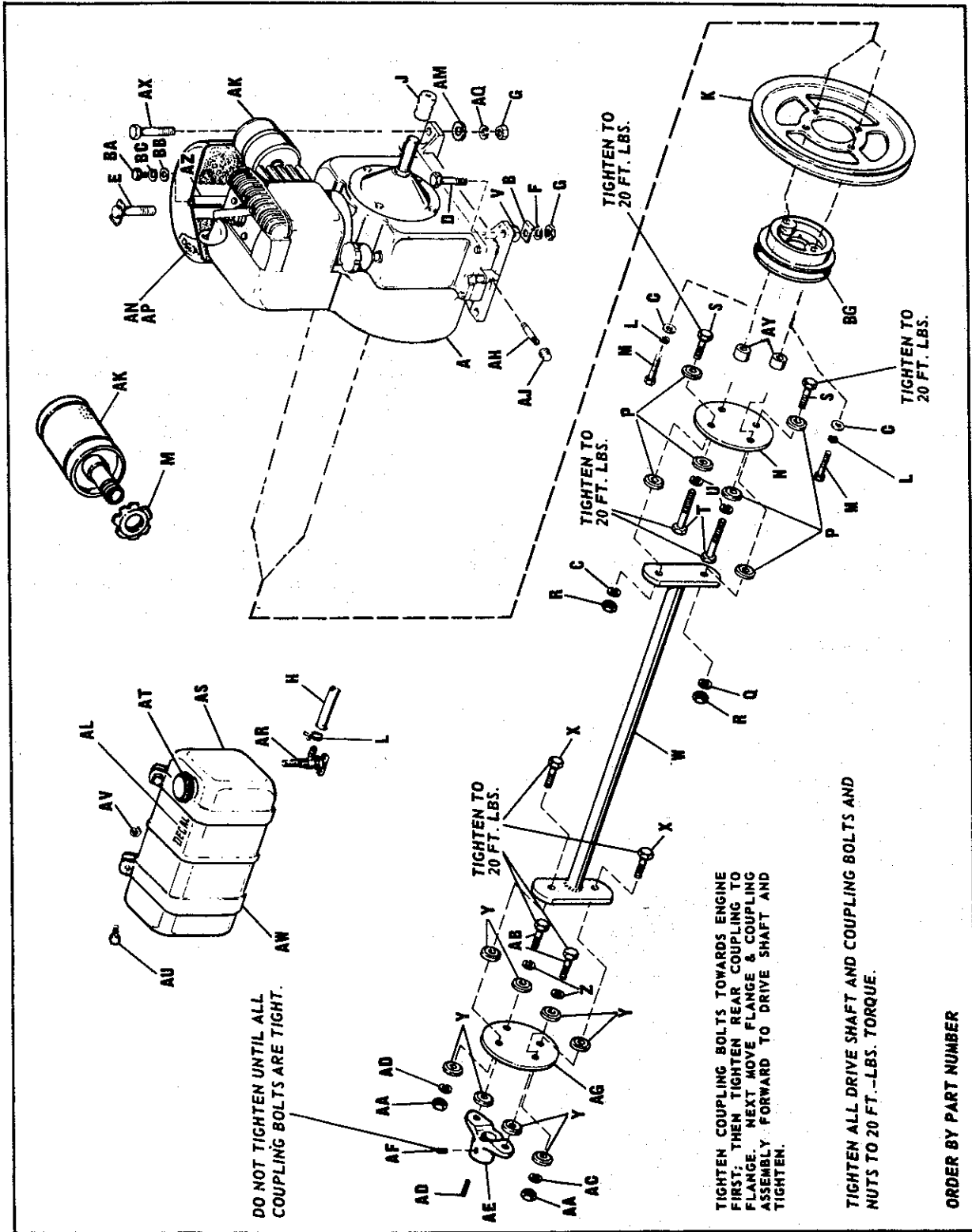
Operation of the Power Take-Off is controlled by movement of the Clutch Lever Assembly. See Figure 18. When the Clutch Lever is in the forward raised position, the Clutch Rod releases the tension holding the Idler Pulley against the Drive Belt, and power will not be transmitted to the driven pulley of the Power Take-Off Assembly. When the Clutch Lever is in the back, depressed position, the Clutch Rod applies tension to the Idler Pulley and as the Idler Pulley takes up the slack in the Drive Belt, power is transmitted from the Drive Pulley on Bevel Gear Box Shaft to the driven pulley of the Power Take-Off. Figure 18 shows Clutch Lever in Drive position.

ADJUSTMENT

At points "A" and "B" of Figure 18, check tightness of Hex. Nut to be sure that Clutch Lever Assembly and Clutch Rod are free to pivot without binding.

Place Clutch Lever in "Drive" position and observe clearance between collar "C" (Figure 18) and end of bracket. When implement is attached to tractor, this clearance should normally be approximately 3/4"; at this setting the Idler Pulley should be snugly against the Drive Belt. If additional tension is required, release Clutch Lever and loosen Set Screw on Collar and Slide Collar farther back on Clutch Rod. Retighten Set Screw in Collar and put Clutch Lever in Drive position. Recheck clearance. The tension of the Idler Pulley against the Drive Belt must be sufficient to operate whichever tractor attachment is being used. Any additional tension is unnecessary and will only cause premature failure of Belts and Idler Pulley bearings.

ENGINE AND DRIVE SHAFT

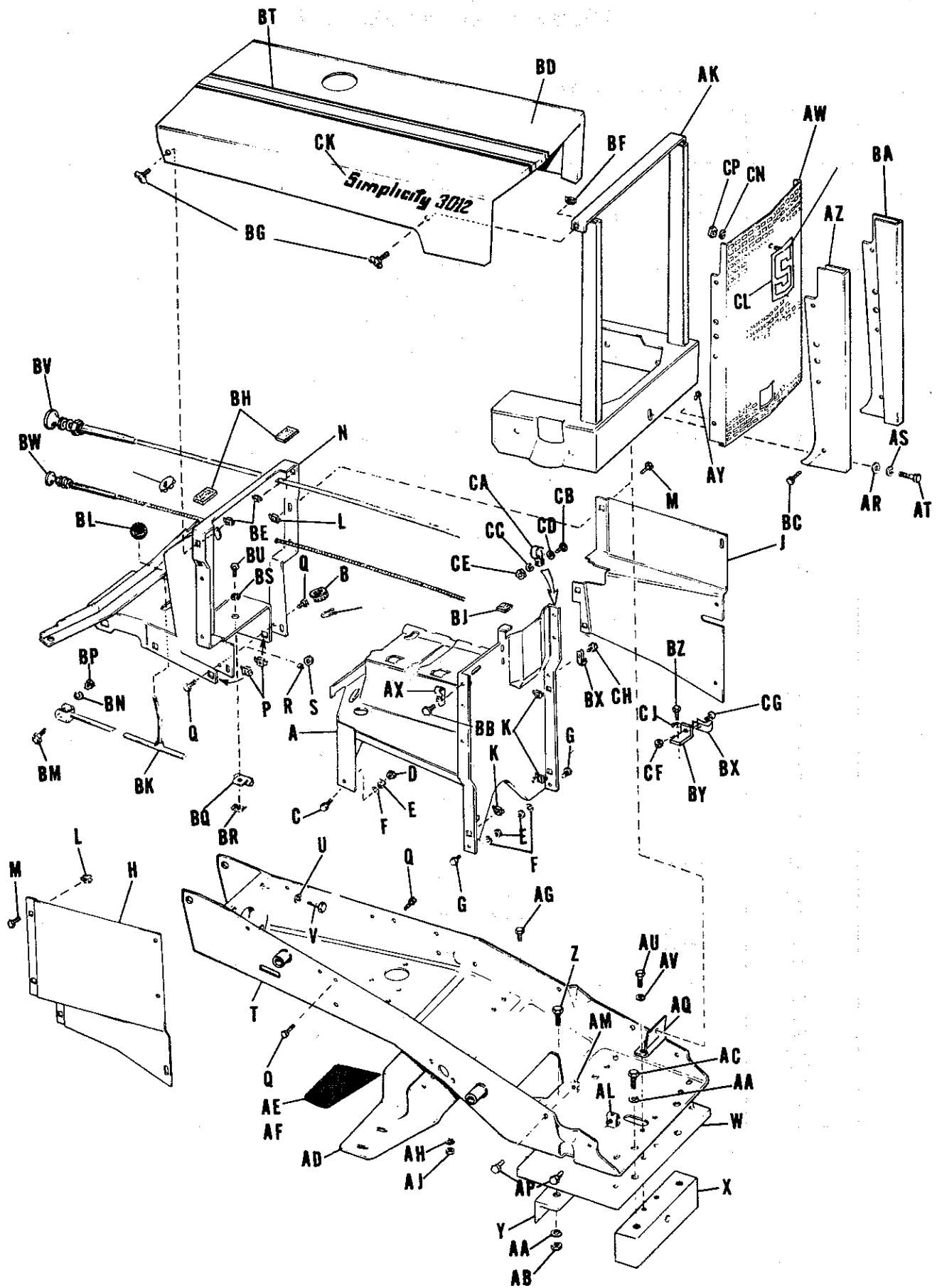


ENGINE AND DRIVE SHAFT

ORDER BY PART NUMBER

Ref. Let.	Part No.	Description
A		Engine, Briggs & Stratton
B	157144	Stop Axle
C	720002	Lock Washer, 3/8"
D	705010	Hex. Cap Screw, 3/8"-16 x 1-3/4" lg.
E	157556	Screw Assembly, Engine, L.H. Rear
F	720002	Lock Washer, 3/8"
G	717003	Full Hex. Nut, 3/8"-16
H	157316	Fuel Hose (Flexible)
J	154327	Crankshaft Extension Guard
K	157305	Engine Pulley
L	154372	Hose Clamp (FOR SERVICE ONLY)
M	154378	Lock Nut
N	157422	Coupling
P	157424	Special Washer
Q	720002	Lock Washer, 3/8"
R	717003	Full Hex. Nut, 3/8"-16
S	705016	Hex. Cap Screw, 3/8"-16 x 1-1/4" lg.
T	715043	Hex. Capscrew, 3/8-16 x 2-1/2"lg.
U	720002	Lock Washer, 3/8"
V	719001	Plain Washer, 3/8"
W	157016	Drive Shaft Assembly
X	705016	Hex. Cap Screw, 3/8"-16 x 1-1/4" lg.
Y	157424	Special Washer
Z	720002	Lock Washer, 3/8"
AA	717003	Full Hex. Nut, 3/8"-16
AB	705016	Hex. Cap Screw, 3/8"-16 x 1-1/4"
AC	720002	Lock Washer, 3/8"
AD	157427	Key
AE	154198	Drive Shaft Flange
AF	715049	Cup Point Socket Head Set Screw, 3/8"-24 x 5/8"
AG	157422	Coupling
AH	157437	Pipe Nipple, 3/8 x 1"lg.
AJ	726501	Pipe Cap, 3/8"
AK	157485	Exhaust Muffler
AL	157096	Decal, Fuel Tank
AM	719001	Plain Washer, 3/8"
AN	157185	Film, Air Cleaner
AP	157131	Film, Air Cleaner
AQ	720002	Lock Washer, 3/8"
AR	156176	Shut-Off Valve
AS	157006	Fuel Tank
AT	156175	Fuel Tank Cap
AU	705053	Hex. Hd. Capscrew, 1/4"-20 x 1-3/4"
AV	717005	Full Hex. Nut, 1/4"-20
AW	162060	Tank Strap
AX	705006	Hex. Hd. Capscrew, 3/8"-16 x 2" lg.
AY	157081	Spacer
AZ	157126	Air Cleaner Spacer
BA	715018	Hex. Hd. Capscrew, 1/4"-20 x 5/8"
BB	719006	Plain Washer, 1/4"
BC	720003	Lock Washer, 1/4"
BD	157355	Flywheel Spacer
BE	157307	Drive Hub
BF	8061100	Key
BG	157484	Pulley

FRAME, HOOD, GRILL, & INST. PANEL



FRAME, HOOD, GRILL, & INST. PANEL

ORDER BY PART NUMBER

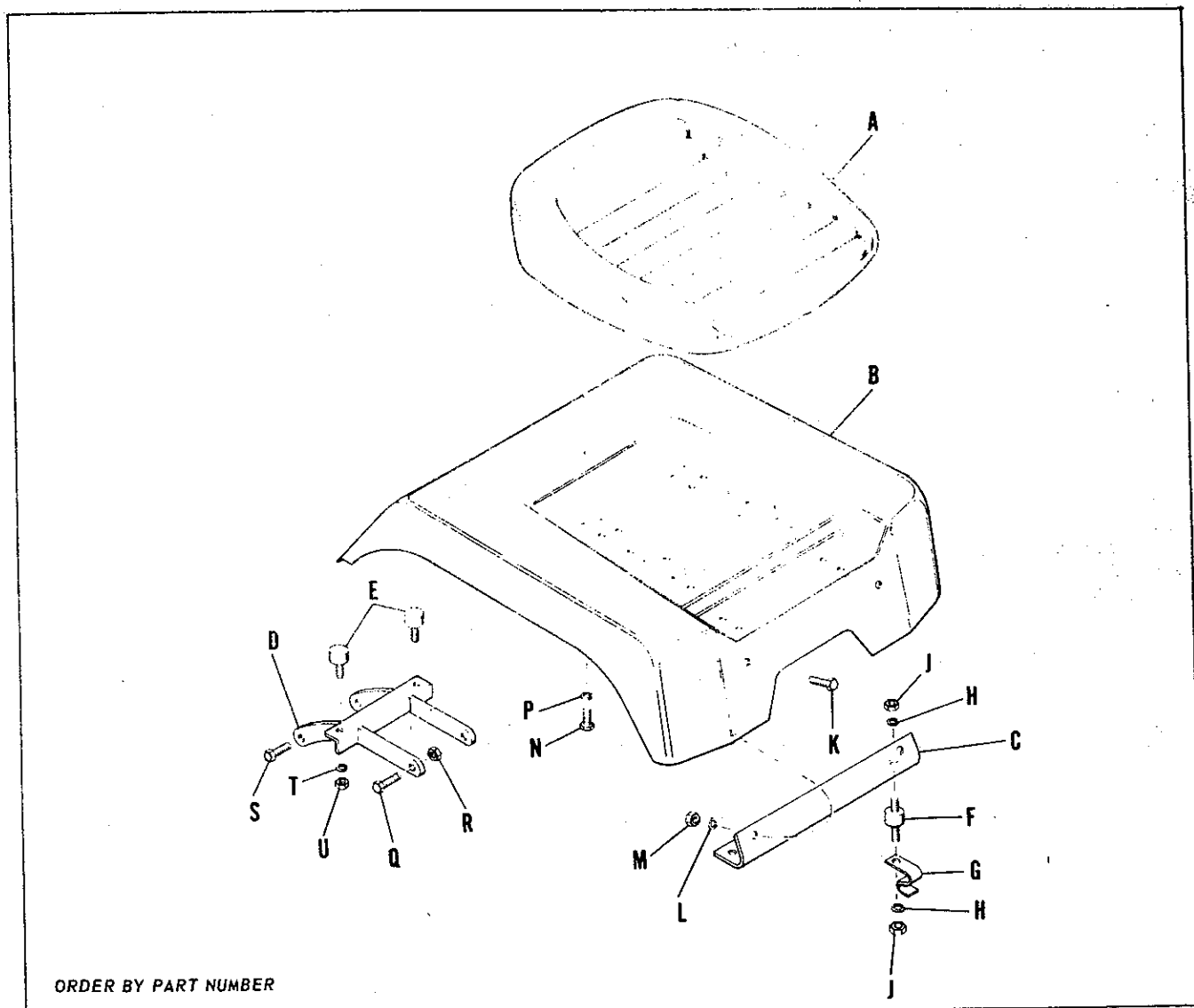
Ref. Let.	Part No.	Description
A	164003	Support Assembly, Fuel Tank & Battery
B	157077	Steering Bushing
C	705019	Hex. Cap Screw, 5/16"-18 x 1-1/4"
D	717511	Full Lock Hex. Nut, 5/16"-18
E	717001	Full Hex. Nut, 5/16"-18
F	720001	Lock Washer, 5/16"
G	705012	Hex. Cap Screw, 5/16"-18 x 5/8"
H	164014	R. H. Side Panel
J	164013	L. H. Side Panel
K	718032	Nut Retainer
L	164117	Nut Retainer
M	715018	Hex. Cap Screw, 1/4"-20 x 5/8"
N	164005	Inst. Panel Assembly
P	718032	Nut Retainer (Frame Cover)
Q	715018	Hex. Cap Screw, 1/4"-20 x 5/8"
R	720003	Lock Washer, 1/4"
S	717005	Full Hex. Nut, 1/4"-20
T	164052	Frame Assembly
U	720006	Lock Washer, 7/16"
V	705039	Hex. Cap Screw, 7/16"-14 x 1-1/2"
W	157057	Base Weight
X	157060	Front Support, 1-3/4" x 2-1/2" x 8-5/8"
Y	157482	Angle Assembly (Frame Rear)
Z	715080	Hex. Cap Screw, 7/16"-14 x 1-1/2"
AA	720006	Lock Washer, 7/16"
AB	717022	Full Hex. Nut, 7/16"-14
AC	706003	Hex. Cap Screw, 7/16"-20 x 1-1/2"
AD	157065	Foot Rest
AE	157090	L. H. Foot Rest Pad
AF	157089	R. H. Foot Rest Pad
AG	705004	Hex. Cap Screw, 3/8"-16 x 3/4"
AH	720002	Lock Washer, 3/8"
AJ	717003	Full Hex. Nut, 3/8"-16
AK	164008	Cover & Tube Assembly
AL	718022	Retainer Nut (Front)
AM	718030	Retainer Nut. (Rear)
AP	715082	Hex Screw, Whiz-Lock Flange, 5/16-18 x 3/4
AQ	157488	Bracket Assembly
AR	719002	Plain Washer, 5/16"
AS	720001	Lock Washer, 5/16"
AT	705019	Hex. Cap Screw, 5/16"-18 x 1-1/4"
AU	720001	Lock Washer, 5/16"
AV	705018	Hex. Cap Screw, 5/16"-18 x 1-1/2"
AW	164009	Grille
AX	122195	Clamp
AY	714003	Self Tapping Screw, #810 x 1/2"
AZ	164028	R. H. Side Plate
BA	164027	L. H. Side Plate
BB	714005	Self-Tapping Screw #10-24 x 1/2"lg.
BC	714003	Self Tapping Screw, #10 x 1/2"
BD	164011	Hood
BE	718041	Nut Retainer (Rear)
BF	718024	Nut Retainer (Front)
BG	715037	Thumb Screw
BH	164120	Felt Pad
BJ	164121	Felt Pad
BK	164118	Shifter Rod Assembly
BL	8021050	Ball
BM	705018	Hex. Cap Screw, 5/16"-18 x 1-1/2"
BN	720001	Lock Washer, 5/16"
BP	717001	Full Hex. Nut, 5/16"-18
BQ	157020	Shift Rod Guide Assembly
BR	718032	Retainer Nut
BS	720003	Lock Washer, 1/4"
BT	164129	Hood Strip
BU	715018	Hex. Cap Screw, 1/4"-20 x 5/8"
BV	164042	Throttle Control

ORDER BY PART NUMBER

Ref. Let.	Part No.	Description
BW	164019	Choke Control
BX	158475	Bowden Wire Clip
BY	157315	Throttle Cable Bracket
BZ	714021	Self Tapping Screw, 1/4"-20 x 5/8"
CA	122186	Clamp
CB	705015	Hex. Cap Screw, 1/4"-20 x 5/8"
CC	720003	Lock Washer, 1/4"
CD	719006	Plain Washer, 1/4"
CE	717005	Full Hex. Nut, 1/4"-20
CF	717007	Full Hex. Nut, #10-32
CG	710004	Mach. Rd. Hd. Screw, #10 -32 x 3/8"
CH	714005	Self Tapping Rd. Hd. Screw, #10-24 x 1/2"
CJ	720003	Lock Washer
CK	157562	Simplicity & Number 3012 Film
CL	164135	Plate, Assy.
CM	164137	Emblem "S"
CN	720007	Washer Lock
CP	717023	Hex Nut #10-24
CQ	164191	Plug Button

164131	Film, (Front) Sovereign
164132	Film, Shift Pattern & Safty
164133	Film, Ignition
164138	Film, Seat Deck-Rear
164139	Film, Seat Deck
164134	Film. Instrument Panel
157533	Film, "Synchro" Balanced

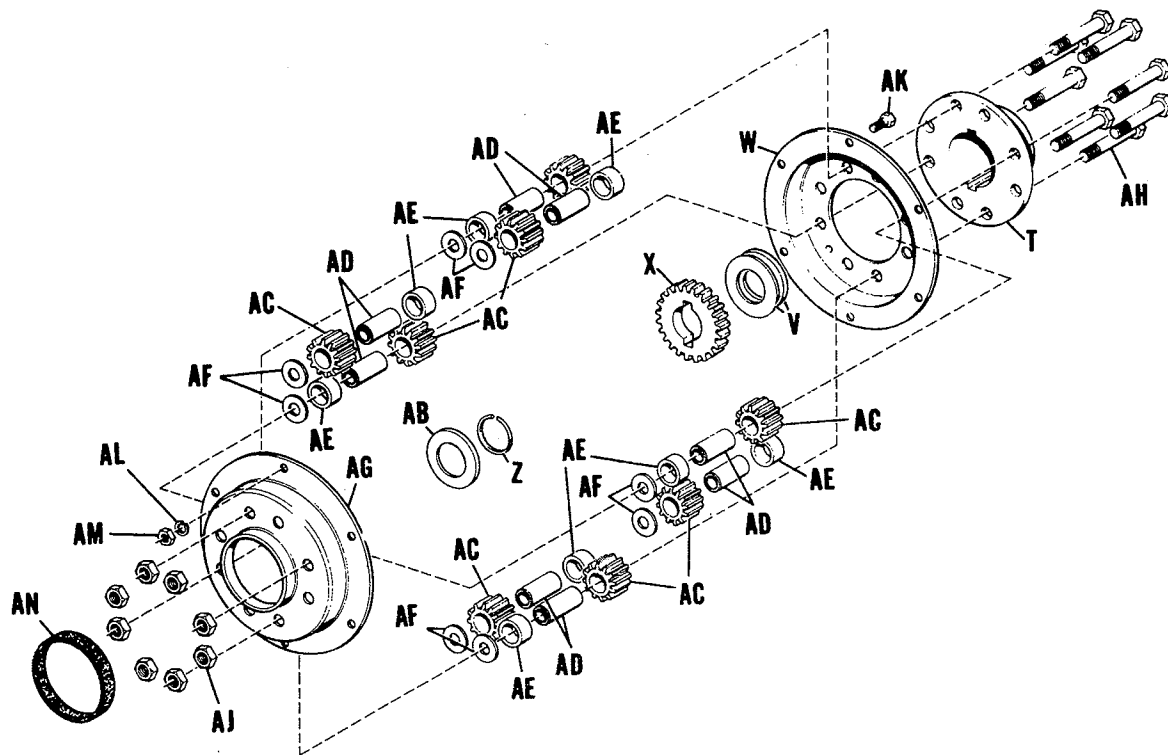
SEAT AND FENDERS



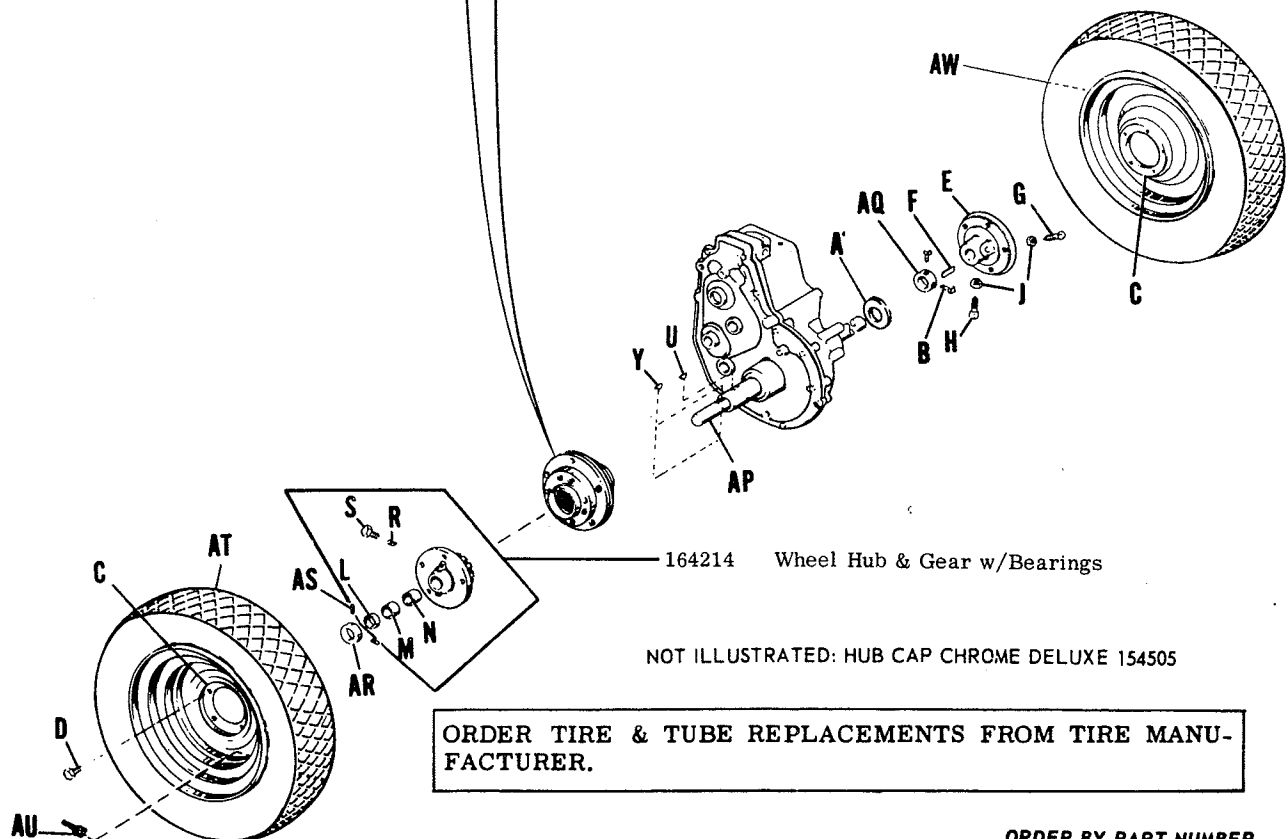
ORDER BY PART NUMBER

Ref. Let.	Part No.	Description
A	156203	Seat Assembly
B	164041	Seat Deck Assembly
C	164029	Seat Deck Bracket, Front
D	164050	Pivot Arm Assembly
E	164018	Seat Deck Connector, Rear
F	159085	Cushion Connector, Front
G	164145	Spring Clip
H	720001	Lock Washer, 5/16"
J	717001	Hex. Nut, Full, 5/16"-18
K	705012	Hex. Head Capscrew, 5/16"-18 x 5/8" lg.
L	720001	Lockwasher, 5/16"
M	717001	Hex. Nut, Full, 5/16"-18
N	705012	Hex. Head Capscrew, 5/16"-18 x 5/8" lg.
P	720001	Lockwasher, 5/16"
Q	705016	Hex. Head Capscrew, 3/8"-16 x 1-1/4"
R	717510	Hex. Locknut, Full, 3/8"-16
S	705005	Hex. Head Capscrew, 3/8"-16 x 1"
T	720001	Lockwasher, 5/16"
U	717001	Hex. Nut, Full, 5/16"-18

REAR WHEELS AND AXLE



ASSEMBLY #157471



REAR WHEELS AND AXLE

ORDER BY PART NUMBER

Ref. Let.	Part No.	Description
A	105050	Washer
B	713002	Set Screw, 5/16"-18 x 3/8"lg.
C	157025	Wheel Drive
D	8261100	Hub Bolt
E	154208	L. H. Wheel Hub
F	159129	Key
G	715022	Set Screw, 3/8"-16 x 1-1/2" lg.
H	713004	Set Screw, 3/8"-16 x 1" lg.
J	717021	Hex. Jam Nut, 3/8"-16
L	105058	Bearing
M	152041	Nylon Bearing
N	153068	Bearing
R	152042	Nylong Plug
S	713508	Control Traction Bolt 7/16"-20 x 1/2"lg.
T	164217	Differential Carrier
U	157120	Drive Key
V	154035	Axle Washer
W	164218 *	Differential Cover
X	164219	Differential Gear
Y	725501	Hi-Pro Key
Z	154291	Retaining Ring
AB	154277	Axle Washer
AC	121311	Differential Pinion
AD	121083	Pinion Differential Spindle
AE	121084	Differential Spacer
AF	719002	Plain Washer
AG	164220 *	Differential Cover
AH	715043	Hex. Cap Screw, 3/8"-16 x 2-1/2"
AJ	717510	Full Lock Hex. Nut, 3/8"-16
AK	705015	Hex. Cap Screw, 1/4"-20 x 5/8"
AL	720003	Lock Washer, 1/4"
AM	717005	Full Hex. Nut, 1/4"-20
AN	121190	Differential Cover Seal
AP	164221	Rear Axle
AQ	154065	Axle Collar
AR	154065	Axle Collar
AS	713002	Set Screw, 5/16"-18 x 3/8"
AT	157024	Tire 8 x 12
AU	157029	Valve Stem
AW	157602	Tube (For Service Only)

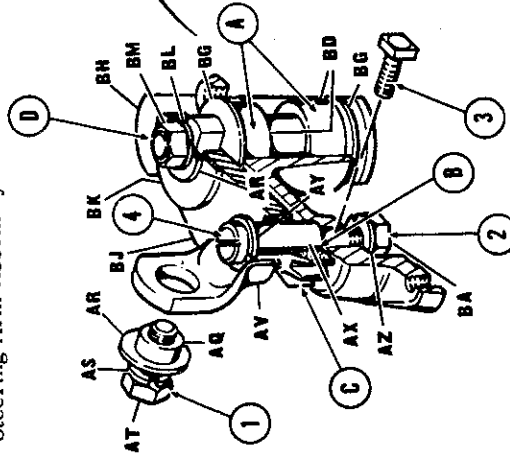
CAUTION

DO NOT EXCEED 25ft. POUNDS OF TORQUE ON PART NUMBER 713508,
REFERENCE LETTER (S), CONTROL TRACTION BOLTS.

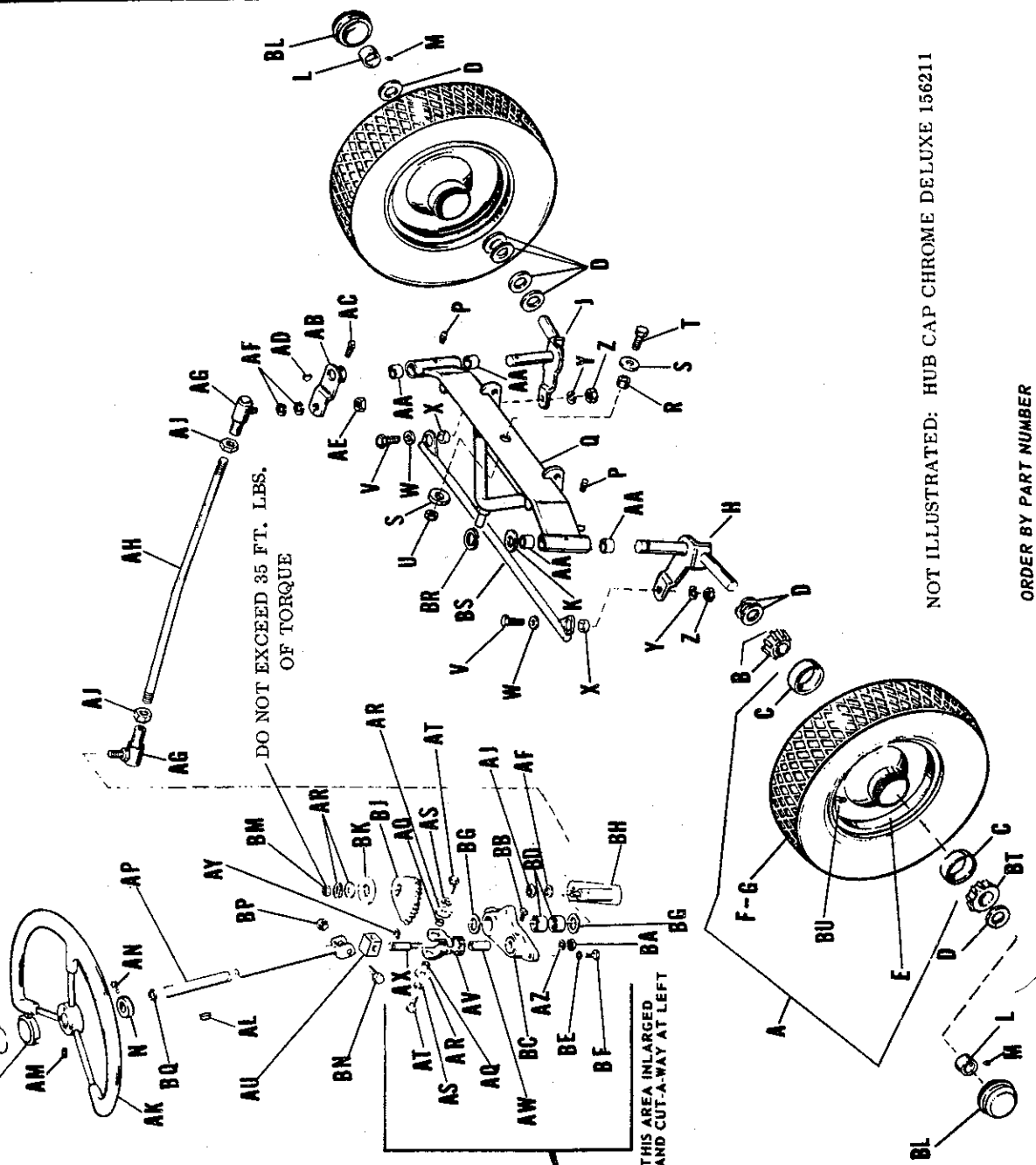
* Reference letters "W" and "AG" must be replaced in pairs.

STEERING GEAR CLEARANCE ADJUSTMENT

- A. Remove R.H. Side Panel.
 - B. Remove Capscrew (No. 1) from Steering Shaft and move out of the way.
 - C. Loosen Hex. Nut (No. 2).
 - D. Loosen Set Screw (No. 3).
 - E. Turn Eccentric Pin (No. 4) until the Pinion and Steering Gear are in a position that permits minimum backlash. Be sure that the Gears are not meshed to tight that it interferes with steering.
 - F. Tighten the Hex. Nut (No. 2) and Set Screw (No. 3).
 - G. Replace the Capscrews (No. 1) and R.H. Side Panel.
 - H. Grease Needle Bearings, (A) Bushing (B) and Gear Teeth (C) before reassembly.
- To grease Needle Bearings (A) remove attaching hardware (D) and remove Steering Arm Assembly.



157530 STEERING CAP 157533 DECAL



NOT ILLUSTRATED: HUB CAP CHROME DELUXE 156211

ORDER BY PART NUMBER

FRONT WHEELS, AXLE, TIE ROD & STEERING

FRONT WHEELS, AXLE, TIE ROD & STEERING

ORDER BY PART NUMBER

Ref. Let.	Part No.	Description
A	157505	Wheel and Tire Assembly (157505 for 2012)
B	154397	Bearing Cone, w/seal
C	154393	Bearing Cup
D	108181	Washer
E	157506	Wheel w/Bearing Cup
F	157490	Tire, 4.80/4.00
G	164247	Tube, 4.00-8
H	157494	Spindle Assembly, R.H.
J	157611	Spindle Assembly, L.H.
K	8061012	Washer
L	8021010	Set Collar
M	713503	Cup Point Socket Head Set Screw, 5/16"-18 x 5/16" lg.
N	8021010	Set Collar
P	727002	Grease Fitting
Q	157616	Axle Assembly, Front
R	157618	Spacer
S	719004	Plain Washer, 1/2"
T	705037	Hex. Cap Screw, 1/2"-13 x 1" lg.
U	717518	Full Lock Hex. Nut, 1/2" -13
V	705016	Hex. Cap Screw, 3/8"-16 x 1-1/4" lg.
W	719001	Plain Washer, 3/8"
X	154177	Spacer
Y	720002	Lock Washer, 3/8"
Z	717003	Full Hex. Nut, 3/8"-16
AA	154289	Bearing
AB	157613	Arm Assembly, Steering, L.H.
AC	713006	Screw, Set, Cup Point, Square Head, 5/16"-18 x 1/2" lg.
AD	157427	Key
AE	717008	Full Hex. Nut, 1/2"-20
AF	720004	Lock Washer, 1/2"
AG	154301	Ball Joint
AH	157421	Tie Rod
AJ	717016	Nut, 1/2"-20 N.F.
AK	157113	Steering Wheel
AL	725003	Woodruff Key, #9
AM	713503	Socket Head Cup Point Set Screw, 5/16"-18 x 5/16" lg.
AN	713502	Socket Hd. Set Screw, 5/16"-18 x 1/4" lg.
AP	157259	Steering Shaft Assembly
AQ	153081	Spacer
AR	719001	Plain Washer, 3/8"
AS	720002	Lock Washer, 3/8"
AT	715030	Hex Cap Screw, 3/8"-16 x 3/4" lg.
AU	154153	Universal Joint Pin
AV	157254	Bushing Assembly
AW	157258	Bushing
AX	157253	Pin Eccentric
AY	158399	Retainer Ring
AZ	720002	Lock Washer
BA	717003	Full Hex. Nut, 3/8" -16
BB	713012	Sq. Hd. Set Screw, 1/4"-20 x 3/4" lg.
BC	157302	Steering Bracket
BD	154258	Needle Bearing
BE	720001	Lock Washer, 5/16"
BF	705012	Hex. Cap Screw, 5/16"-18 x 5/8"
BG	8061012	Washer
BH	157250	Steering Arm Assembly
BJ	157289	Gear Steering
BK	108182	Arbor Washer
BL	154487	Hub Cap
BM	717519	Gripco Center Lock 7/16" - 14
BN	715026	Hex Cap Screw,
BP	717511	Full Hex. Nut, 5/16"-18
BQ	157241	Snap Ring
BR	157286	Retaining Ring
BS	157499	Drag Link
BT	154486	Outside Bearing
BU	157305	Valve Stem

VARIABLE SPEED PULLEY

CLUTCH — BRAKE & BELT ADJUSTMENT

The variable speed mechanism is adjusted at the factory under "no load" conditions. In most instances, this adjustment should provide satisfactory operation. If, however, under load or after the "break-in" period, erratic or improper operation is noted, follow the procedures outlined below to make the necessary adjustments.

NOTE

All Adjustments Require The Variable Speed Lever To Be Placed In The "High" Or "Low" Position. Carefully Observe Which Position The Variable Speed Lever Should Be Placed In Before Making Each Adjustment. **DO NOT ATTEMPT TO MOVE VARIABLE SPEED LEVER WHEN ENGINE IS NOT RUNNING OR WHEN CLUTCH PEDAL IS DEPRESSED.**

CHECK THE FOLLOWING ASSEMBLY ADJUSTMENTS:

1. Check bolt and locknut holding arm assembly to rocker arm. (See No. 1). (This adjustment to be made in "High" speed position).
2. Check for proper clearance on front belt guard. (See No. 2). (This adjustment to be made in "High" speed position).
3. Check for proper clearance of idler pulley belt stop. (See No. 3). (This adjustment to be made in "Low" speed position).
4. Check for proper clearance between the nuts on the clutch rod and the set collar. (See No. 4). (This adjustment to be made in "Low" speed position).
5. With variable speed lever in the "Low" speed position, the belt in the large, rear pulley should be approximately 1/8" below the top of the pulley. (See No. 5).
6. Check brake adjustment. (See No. 6). (This adjustment to be made in "Low" speed position).

OPERATING INSTRUCTIONS

1. Do not attempt to move variable speed lever when tractor engine is not running or when clutch pedal is depressed.
2. Insure that parking brake is fully disengaged before placing tractor in motion.
3. Occasionally check and remove foreign objects and debris from variable speed belt and pulleys.

GEAR RANGE AND SPEED SELECTIONS

1. To obtain the most desirable results with various attachments on the Sovereign Tractor, it is recommended the tractor engine be operated at 3/4 to full throttle setting.
2. When operating attachments such as the 10" Plow, Spring Tooth Harrow or Cultivator, which place a heavy draw-bar load on the tractor, it is preferable to operate tractor in I or II speed rather than III speed, low range.

BELT SLIPPAGE

If belt slippage is noted, check the following:

1. Check to insure the parking brake is fully disengaged.
2. Check No. 4 under Assembly Adjustments.
3. Check No. 5 under Assembly Adjustments.
4. On early production models the Spring No. 159106 is normally in the top hold. If less spring tension is desired, move spring to next lowest hole of pivot lever assembly. Less tension can be used when mowing on level terrain and if clutch pedal is found to be uncomfortably hard for the operator to depress. (See Figure 2). Greater belt tension is necessary to prevent variable speed belt from slipping when tractor and attachment are under heavy load. A slight chattering of the variable speed belt on the pulleys will be noticeable until the belt loses its stickiness and becomes smooth.

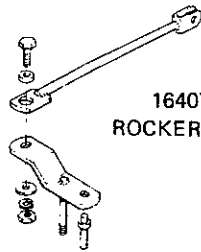
On later production models no further spring adjustment is necessary.

LUBRICATION

If sliding pulley halves stick, lubricate bushing on which pulley rides lightly with a few drops of oil. Excessive lubrication will tend to collect dirt and dust and tend to hamper operation. Also lubricate all clutch and brake lever pivot points and all places where pull rods or links join levers.

ARM ASSEMBLY

1



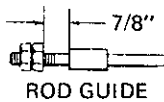
164075
ROCKER ARM

TO CHECK ADJUSTMENT NO. 1 THIS BOLT MUST BE TIGHT. REMOVE BELT AND PROCEED AS INDICATED BELOW.

PLACE VARIABLE SPEED LEVER IN "HIGH SPEED POSITION". PUSH ROCKER ARM NO. 164075 AS FAR FORWARD AS POSSIBLE SO INSIDE HUBS OF BOTH PULLEY HALVES, AT BEVEL GEAR HOUSING, ARE AGAINST EACH OTHER. REPLACE THE 3/8" NUT AND TIGHTEN SECURELY. REPLACE THE BELT AND BELT GUARD.

NOTE: WHEN VARIABLE SPEED LEVER IS IN HIGH POSITION, NUTS MUST NOT TOUCH ROD GUIDE.

CLUTCH ROD
ADJUSTMENT



4

INTERMEDIATE SPEED

LOW SPEED

HIGH SPEED

2 FRONT BELT GUARD
3/16" CLEARANCE
BETWEEN BELT &
GUARD

159106
SPRING

IDLER PULLEY
BELT STOP

5

1/8" RECESS

NOTE: THIS DIMENSION IS CORRECT FOR NEW BELT. OLDER BELTS MAY RIDE HIGHER IN PULLEY.

AXLE TUBE

8-7/8"

3

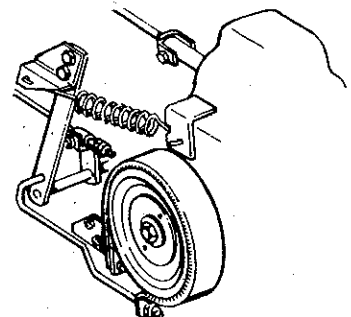
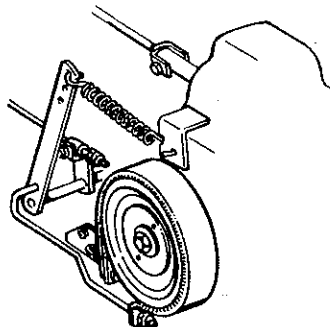
5a

IF BELT RIDES TOO HIGH, TURNBUCKLE SHOULD BE TURNED UP TOWARDS CENTER OF TRACTOR. IF BELT RIDES TOO LOW, TURN IN OPPOSITE DIRECTION. TURNBUCKLE SHOULD BE INSTALLED WITH GROOVE TOWARDS FRONT OF TRACTOR.

6

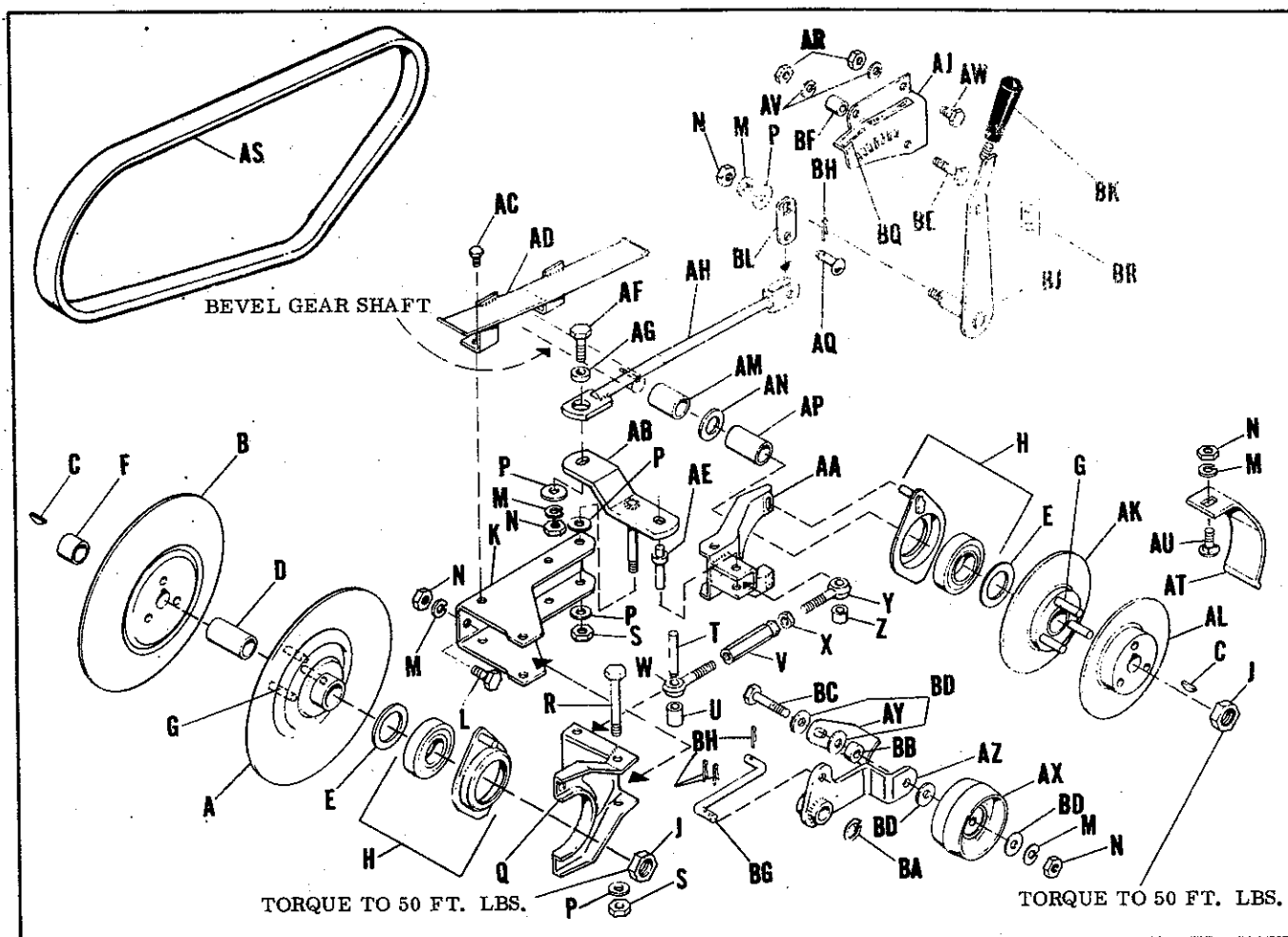
TIGHTEN THE ADJUSTING NUTS ON THE BRAKE BAND ASSEMBLY UNTIL A CREEPING MOTION OF THE BELT IS OBTAINED WHEN THE ENGINE IS RUNNING AND THE CLUTCH AND BRAKE PEDAL IS DEPRESSED. WHEN CREEPING MOTION OF BELT IS OBTAINED, BACK OFF ON NUTS UNTIL CREEPING MOTION STOPS. TO PREVENT POSSIBLE INJURY DO NOT ATTEMPT THIS ADJUSTMENT WHILE ENGINE IS RUNNING. ADJUSTMENT SHOULD BE MADE IN A NUMBER OF SMALL ADJUSTMENTS WITH ENGINE STOPPED, THEN START AND RUN ENGINE TO CHECK ADJUSTMENT.

EARLY PRODUCTION MODELS



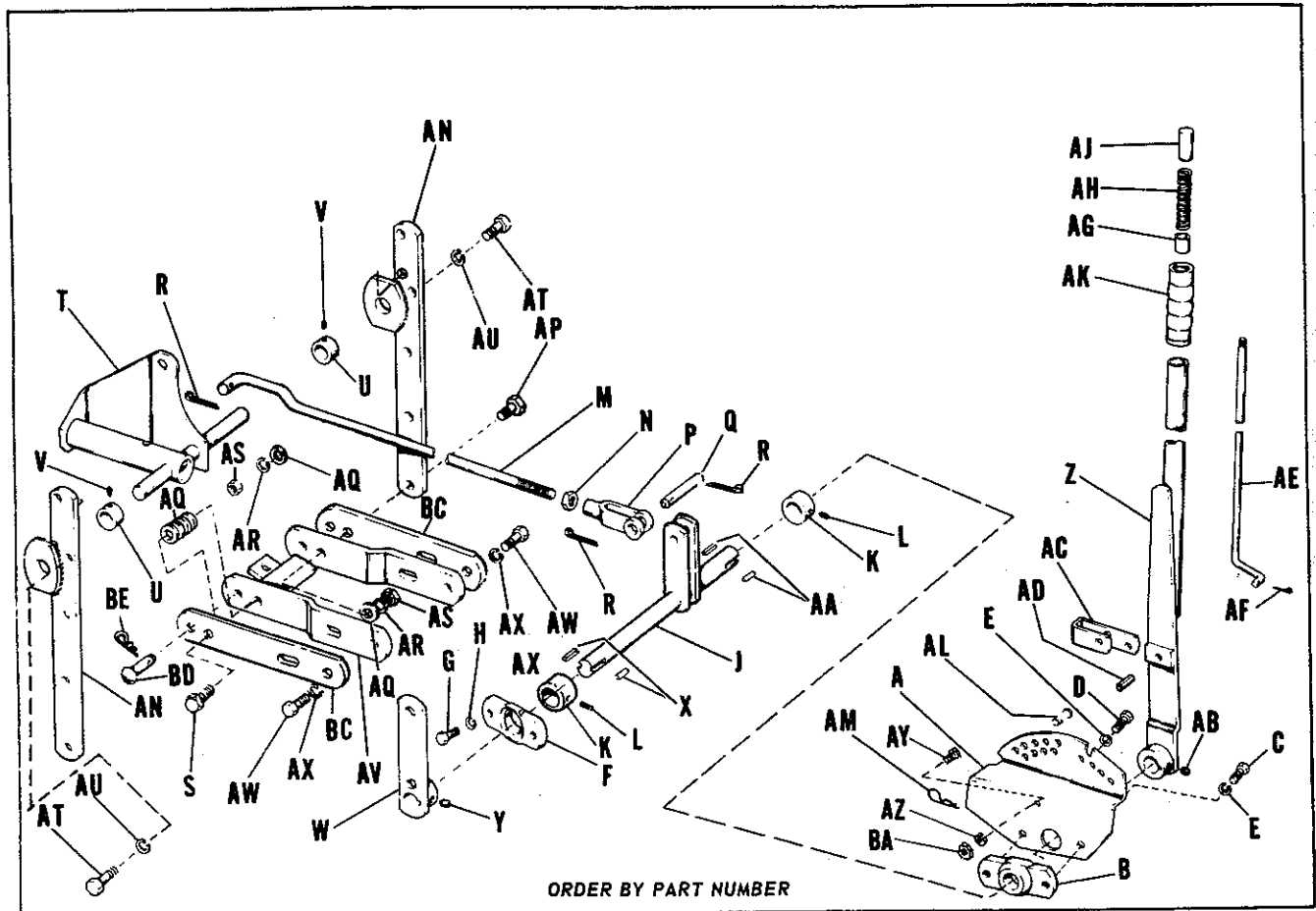
LATE PRODUCTION MODELS

VARIABLE SPEED PULLEY



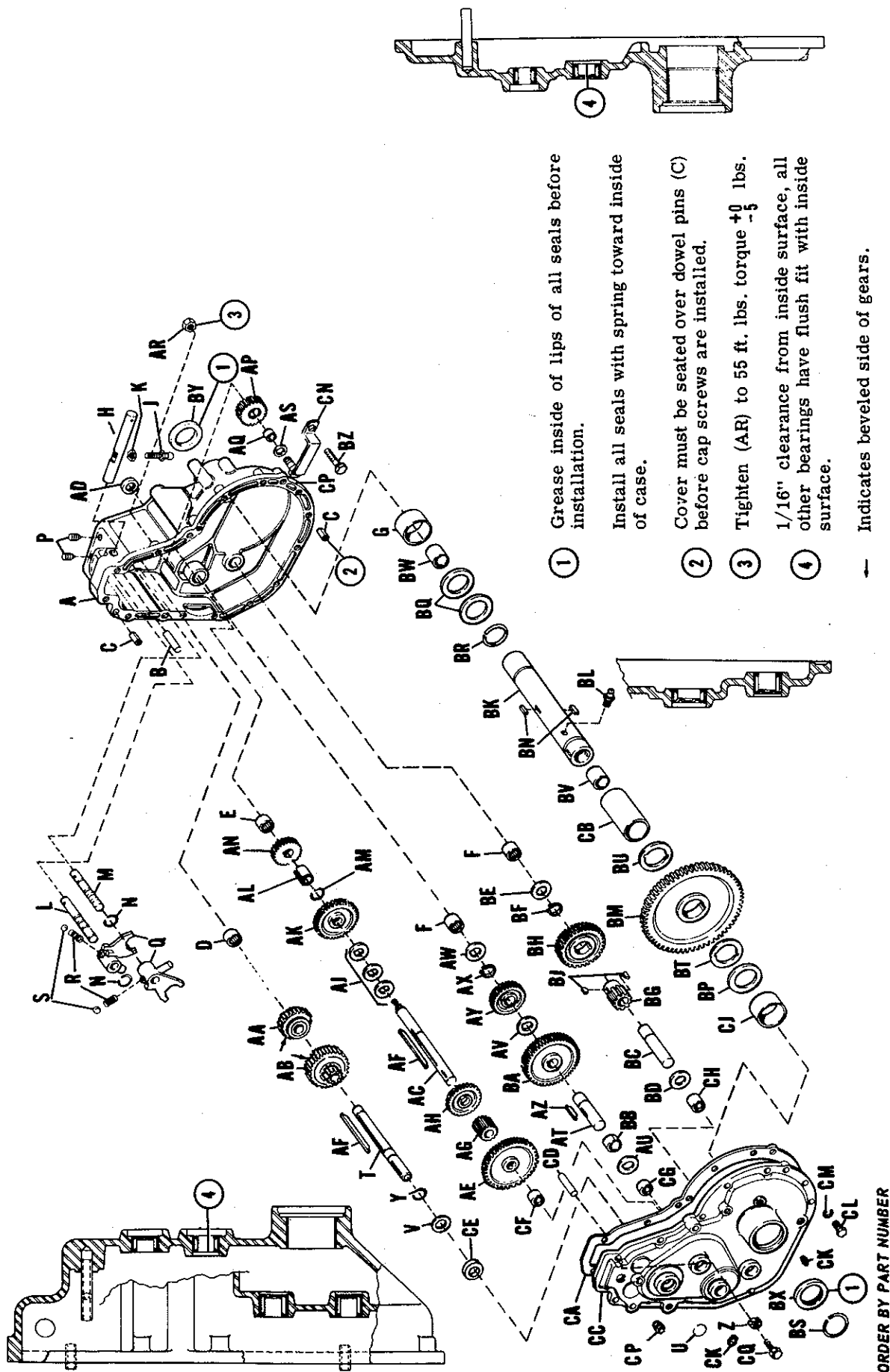
Ref. Let.	Part No.	Description
A	164166	Pulley-Half Assembly
B	164162	Pulley-Half
C	725504	Key
D	164067	Driven Slide Spacer (Teflon Coated)
E	164181	Washer
F	164068	Spacer
G	164066	Pins
H	164211	Retainer Ring/Bearing Assembly
J	717517	Hex Jam Nut, Lock
K	164157	Variable Speed Bracket
L	705031	Hex Capscrew, 3/8"-16 x 7/8" lg.
M	720002	Lock Washer, 3/8"
N	717003	Hex Nut, 3/8"-16
P	719001	Plain Washer, 3/8"
Q	164035	Transmission Fork Assembly
R	164069	Special Screw
S	717510	Hex Nut, 3/8"-16 Lock
T	164070	Pivot Pin
U	164071	Spacer
V	164072	Turnbuckle Body
W	164073	Eyebolt, R.H.
X	717010	Hex Nut, 3/8"-24
Y	164074	Eyebolt, L.H.
Z	164176	Spacer
AA	164033	Bevel Gear Housing Fork Assy.
AB	164075	Fork, Rocker Assy.
AC	715077	Screw, Taptite, 1/4"-20 x 5/8"
AD	164106	Belt Guard Assembly
AE	164078	Rod
AF	705016	Hex Capscrew, 3/8"-16 x 1-1/4" lg.
AG	164105	Spacer

Ref. Let.	Part No.	Description
AJ	164124	Quadrant
AH	164101	Arm Assembly
AK	164171	Pulley-Half Assembly
AL	164167	Pulley Half
AM	164174	Slide Spacer
AN	164175	Stop Washer
AP	164173	Slide Spacer (Teflon Coated)
AQ	153058	Pin
AR	717001	Hex Nut, 5/16"-18
AS	164080	"V" Belt
AT	164082	Belt Guard
AU	703004	Carriage Bolt, 3/8"-16 x 3/4" lg.
AV	720001	Lock Washer, 5/16"
AW	705012	Hex Capscrew, 5/16"-18 x 5/8" lg.
AX	164083	Idler Pulley
AY	164190	Idler Belt Stop
AZ	164084	Idler Lever Assembly
BA	118240	Retaining Ring
BB	154177	Spacer
BC	705006	Hex Capscrew, 3/8"-16 x 2" lg.
BD	719002	Plain Washer, 3/8"
BE	705018	Hex Capscrew, 5/16"-18 x 1-1/2" lg.
BF	164125	Spacer
BG	164088	Clutch Link
BH	722001	Cotter Pin
BJ	164097	Lever Assembly
BK	164180	Handle
BL	164123	Link
BM	164128	Film Quadrant
BN	164130	Film Instruction



Ref. Let.	Part No.	Description
A	154209	Lift Lever Quadrant
B	154210	Lift Lever Bearing
C	705031	Hex. Cap Screw, 3/8"-16 x 7/8"
D	705016	Hex. Cap Screw, 3/8"-16 x 1-1/4"
E	720002	Lock Washer, 3/8"
F	154210	Lift Lever Bearing
G	705031	Hex. Cap Screw, 3/8"-16 x 7/8"
H	720002	Lock Washer, 3/8"
J	157105	Lift Shaft Assembly
K	8211005	Set Collar
L	713503	Set Screw 5/16"-18 x 5/16"
M	164122	Rear Lift Rod
N	717008	Full Hex. Nut, 1/2"-20
P	157631	Adj. Yoke End
Q	157225	Pin
R	722006	Cotter Pin, 1/8" x 1"
S	705047	Hex. Cap Screw, 7/16"-14 x 1-3/4"
T	154214	Tiller Lift Assembly
U	8021010	Set Collar
V	713503	Set Screw, 5/16"-18 x 5/16"
W	157078	Front Lift Lever Assembly
X	157120	Key
Y	713502	Set Screw, 5/16"-18 x 1/4"
Z	157012	Lift Lever Assembly
AA	157120	Key
AB	713502	Set Screw, 5/16"-18 x 1/4"
AC	154224	Lift Lever Latch

Ref. Let.	Part No.	Description
AD	723007	Roll Pin
AE	157013	Latch Rod
AF	722001	Cotter Pin, 3/32" x 3/4"
AG	154226	Spacer
AH	152006	Spring
AJ	154227	Thumb Button
AK	156209	Handle Grip
AL	153058	Pin
AM	8161045	Spring Clip
AN	154200	Arm Assembly
AP	705039	Hex. Capscrew, 7/16"-14 x 1-1/2"
AQ	719001	Plain Washer, 3/8"
AR	720006	Lock Washer, 3/8"
AS	717022	Full Hex. Nut, 7/16"
AT	705041	Hex. Cap Screw, 7/16"-14 x 1"
AU	720006	Lock Washer, 7/16"
AV	154202	Draw Bar Assembly
AW	705042	Hex. Cap Screw, 7/16"-14 x 1-1/4"
AX	720006	Lock Washer, 7/16"
AY	715018	Hex Capscrew, 1/4-20 x 5/8"lg.
AZ	720003	Lock Washer, 1/4"
BA	717005	Hex Nut 1/4-20
BB	705001	Hex. Cap Screw, 5/16"-18 x 7/8"
BC	157091	Pull Bar
BD	155037	Round Head Pin
BE	8161045	Spring Clip



TRANSMISSION GROUP

TRANSMISSION GROUP

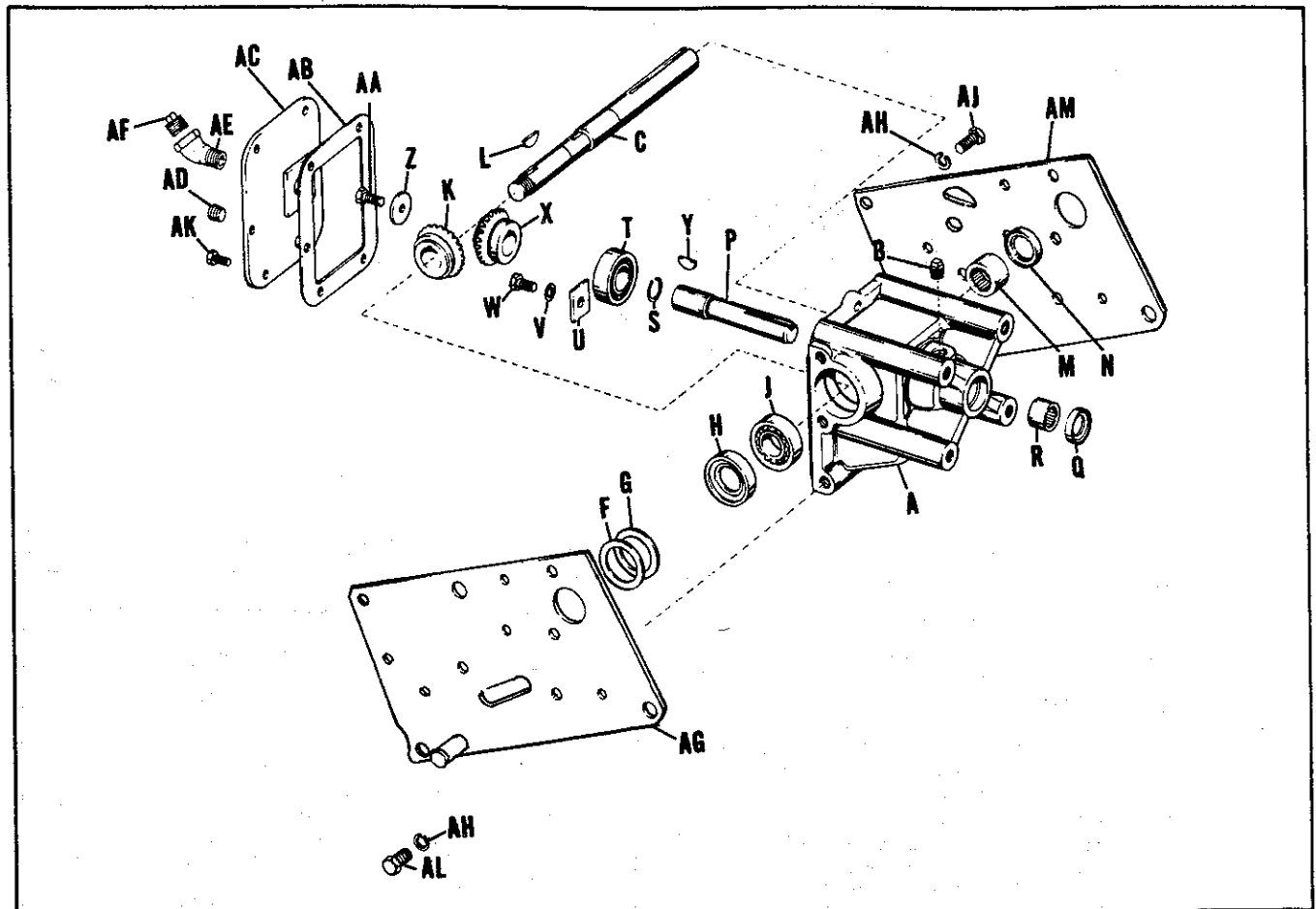
ORDER BY PART NUMBER

Ref. Let.	Part No.	Description
A	154190	Case, Gear, Complete w/bearings and dowel pins (Includes "B" thru "G")
B	154538	Roll Pin
C	723007	Roll Pin
D	154257	Needle Bearing
E	154258	Needle Bearing
F	154259	Needle Bearing
G	154260	Axle Tube Bearing
H	154066	Shift Rod
J	154261	Shift Stem
K	717010	Full Hex. Nut, 3/8"-24 N. F.
L	154067	Shifter Shaft Rev., Med.
M	154068	Shifter Shaft High, Low
N	8061048	Retaining Ring
P	715019	Set Screw, Hollow Head, Cone Point, 5/16"-18 x 1/2"
Q	154069	Shift Fork
R	154323	Spring
S	154262	Shift Lock Ball
T	164059	Pulley Shaft
U	164060	Retaining Ring
V	154462	Washer
Y	118134	Retaining Ring
Z	717001	Hex. Nut Jam, 5/16"-18
AA	154072	Pinion Assembly Rev. II
AB	154075	Pinion Assembly, I and III
AC	157290	Shaft, 1st Intm.
AD	154263	Oil Seal
AE	154078	Driven I, Gear
AF	154354	Key
AG	154079	Pinion, 1st Intm.
AH	154080	Pinion, Driven, III
AJ	8061012	Trans. Gear Spacer
AK	154081	Driven II Gear
AL	154082	Spacer
AM	154264	Retaining Ring
AN	154083	Reverse Pinion
AP	154087	Reverse Gear
AQ	154084	Rev. Gear Spacer
AR	717516	Lock Nut, 1/2"-20 N.F.
AS	154325	Washer
AT	154086	Shaft, 2nd. Intm.
AU	154038	Washer
AV	154038	Washer
AW	154038	Washer
AX	154266	Retaining Ring
AY	164062	Pinion, 2nd. Intm.
AZ	154267	Key
BA	154089	Gear, 2nd. Intm.
BB	154090	Spacer
BC	154091	Shaft, 3rd. Intm.
BD	154038	Washer
BE	154038	Washer
BF	154266	Retaining Ring
BG	154092	Pinion, 3rd. Intm.
BH	164051	Gear, 3rd. Intm.
BJ	725002	Key Woodruff
BK	164223	Axle Tube w/bushing

ORDER BY PART NUMBER

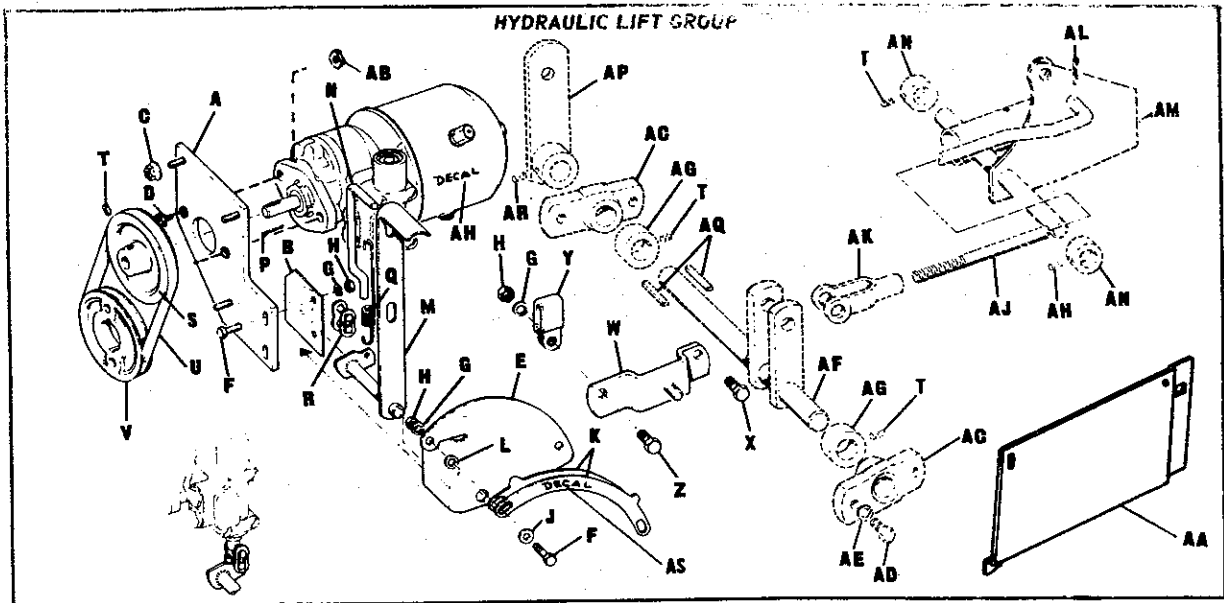
Ref. Let.	Part No.	Description
BL	727002	Grease Fitting
BM	154095	Drive Gear
BN	154096	Key
BP	154097	Washer
BQ	154097	Washer
BR	154268	Snap Ring
BS	154268	Snap Ring
BT	154130	Axle Tube Washer
BU	154130	Axle Tube Washer
BV	164224	Bearing
BW	157028	Bearing
BX	154269	Seal
BY	154269	Seal
BZ	705016	Hex. Cap Screw, 3/8"-16 x 1-1/4"
CA	154270	Gear Case Gasket
CB	154098	Axle Tube Spacer
CC	164063	Gear Case Cover, Complete w/ bearings
CD	154537	Roll Pin
CE	108202	Ball Bearing
CF	154257	Needle Bearing
CG	154271	Needle Bearing
CH	154259	Needle Bearing
CJ	154260	Axle Tube Bearing
CK	726003	Pipe Plug, 3/8"
CL	705007	Hex. Cap Screw, 5/16"-18 x 1"
CM	720001	Lock Washer, 5/16"
CN	154352	Rev. Gear Pin Assembly
CP	726003	Pipe Plug, 3/8"
CQ	705019	Hex. Cap Screw, 5/16"-18 x 1-1/4"

BEVEL GEAR HOUSING



Ref. Let.	Part No.	Description
A	154062	Bevel Gear Housing, W/Bearings
B	154326	Pipe Plug
C	164114	Drive Shaft
E	717517	Hex Jam Nut
F	154137	Shim (As Required)
G	154138	Shim
H	154278	Oil Seal
J	118011	Ball Bearing
K	154139	Bevel Driven Gear
L	725003	Key
M	154279	Needle Bearing
N	118117	Oil Seal
P	157426	Driven Shaft
Q	154263	Oil Seal
R	154258	Needle Bearing
S	118134	Retaining Ring
T	118011	Ball Bearing

Ref. No.	Part No.	Description
U	154040	Bearing Clamp Plate
V	720001	Lock Washer, 5/16"
W	705012	Hex Capscrew, 5/16"-18 x 5/8" lg.
X	154121	Bevel Driven Gear
Y	725003	Key
Z	154026	Washer
AA	154281	Hex Capscrew, 5/16"-18 x 3/4" lg.
AB	154282	Gasket
AC	154141	Housing Cover Assembly
AD	726002	Pipe Plug
AE	728001	Street Elbow
AF	726003	Pipe Plug
AG	164177	R. H. Side Plate
AH	720006	Lock Washer, 7/16"
AJ	705041	Hex Capscrew, 7/16"-14 x 1" lg.
AK	707003	Hex Capscrew, 1/4"-20 x 5/8" lg.
AL	705042	Hex Capscrew, 7/16"-14 x 1-1/4" lg.
AM	164179	L. H. Side Plate



Ref. Let.	Part No.	Description
A	157587	Pump Support Assembly
B	157428	Angle Bracket
C	718033	Hex. Nut, Whiz Lock, 5/16"-18
D	709002	Machine Screw, Flat Hd. 3/8-16 x 1-1/4"lg.
E	157199	Quadrant
F	715057	Hex. Cap Screw, 1/4"-20 x 3/4"
G	720003	Lock Washer, 1/4"
H	717005	Full Hex. Nut, 1/4"-20
J	719006	Plain Washer, 1/4"
K	157204	Stop Plate
L	157205	Spacer
M	157200	Lever Assembly
N	157206	Latch Rod
P	722016	Cotter Pin, 3/32" x 5/8"
Q	157207	Spring
R	157208	Connecting Link
S	157430	Pump Pulley
T	713503	Set Screw, 5/16"-18 x 5/16"
U	157230	"V" Belt
V	157484	Drive Pulley

Ref. Let.	Part No.	Description
W	157233	Pivot Bar Assembly
X	705007	Hex. Cap Screw, 5/16"-18 x 1"
Y	157245	Hose Clamp
Z	705021	Hex Cap Screw, 1/4"-20 x 1"
AA	164044	Panel, Side L.H.
AB	718035	Nut, Whiz-Lock Flange 3/8"-16
AC	154210	Lift Lever Bearing
AD	705031	Hex. Cap Screw, 3/8"-16 x 7/8"
AE	720002	Lock Washer, 3/8"
AF	157317	Lift Shaft Assembly
AG	8211005	Set Collar
AH	157242	Decal
AJ	164122	Lift Rod
AK	157631	Adj. Yoke End
AL	722006	Cotter Pin, 1/8" Dia. x 1"
AM	154214	Tiller Lift Assembly
AN	8021010	Set Collar
AP	157078	Front Lift Lever Assembly
AQ	157120	Key
AR	713502	Set Screw, 5/16"-18 x 1/4"
AS	157232	Film

INSTRUCTIONS FOR ADJUSTING HAND LEVER AND FLOAT STOPS OF QUADRANT ON HYDRAULIC UNIT

Attach pump to pump support assembly #157587. Then attach support assembly to fuel tank and steering post support. Attach lever with connecting link to valve spool shaft.

Place the lever #157200 with the latch rod #157206 in the exact middle of the two hex cap screws "F" located in the quadrant #157199. This is done by adjusting the angle bracket #157428 and quadrant #157199 up or down on the support #157587. Tighten the capscrews securing the bracket and quadrant to the support.

Move lever to most extreme position (front or rear). Bring stop plate up so notch is striking rod #157206 and secure capscrew (F) furthest from handle. Repeat procedure to the other extreme for other stop plate.

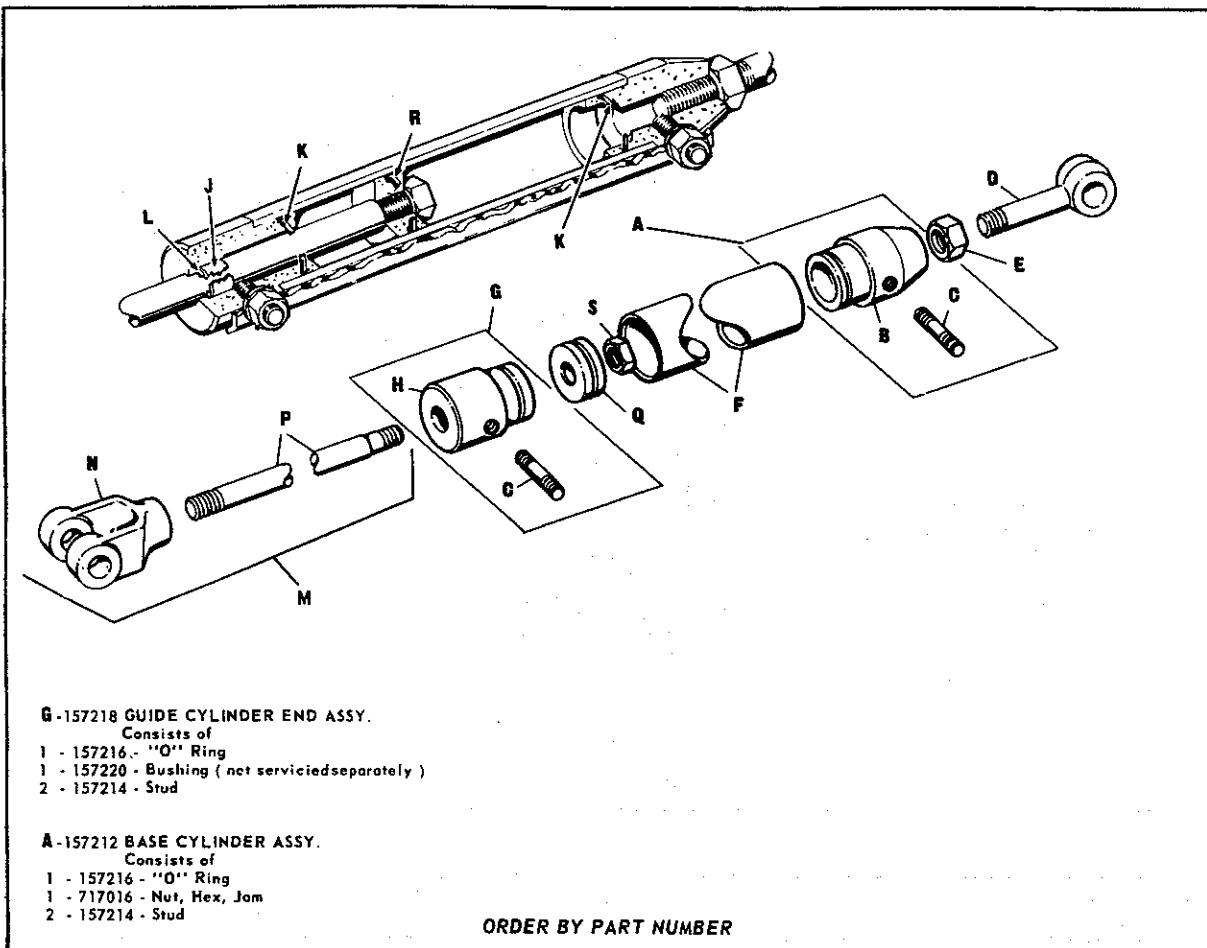
Check rod #157206 in both positions. This rod is not to have ANY FREE MOVEMENT when in front or rear float position. Excessive play at this point increases back pressure on the pump and may cause overheating of the pump. If pump is moved to lift position (front or rear) and then drops the load before entering float position, readjust the hand lever to center of quadrant as described above. Oil lever and rod to insure free movement.

The bolts holding the pump and tank together should be checked and tightened to torque or 50-60 INCH POUNDS.

CAUTION DO NOT OVERFILL

CAUTION DO NOT OVERFILL

HYDRAULIC LIFT GROUP



Ref. Let.	Part No.	Description
A	157212	Cylinder Base Sub-Assembly
B	157213	Cylinder Base
C	157214	Stud Bolt, 5/16"-18 x 7/8"
D	157215	Bolt Eye
E	717016	Jam Hex. Nut, 1/2"-20
F	157217	Cylinder
G	157218	Sub Assembly Guide
H	157219	Cylinder End Guide
J	157220	Bushing

Ref. Let.	Part No.	Description
K	157216	"O" Ring
L	157221	"O" Ring
M	157222	Yoke & Rod Sub-Assembly
N	157223	Yoke
P	157224	Piston Rod
Q	157226	Piston
R	157227	"O" Ring
S	717009	Full Hex. Nut

CAUTION

IT IS VITALLY IMPORTANT THAT THE HYDRAULIC FLUID AND ALL INTERNAL PARTS OF THIS UNIT BE KEPT COMPLETELY CLEAN AND FREE OF FOREIGN MATTER OF ANY TYPE.

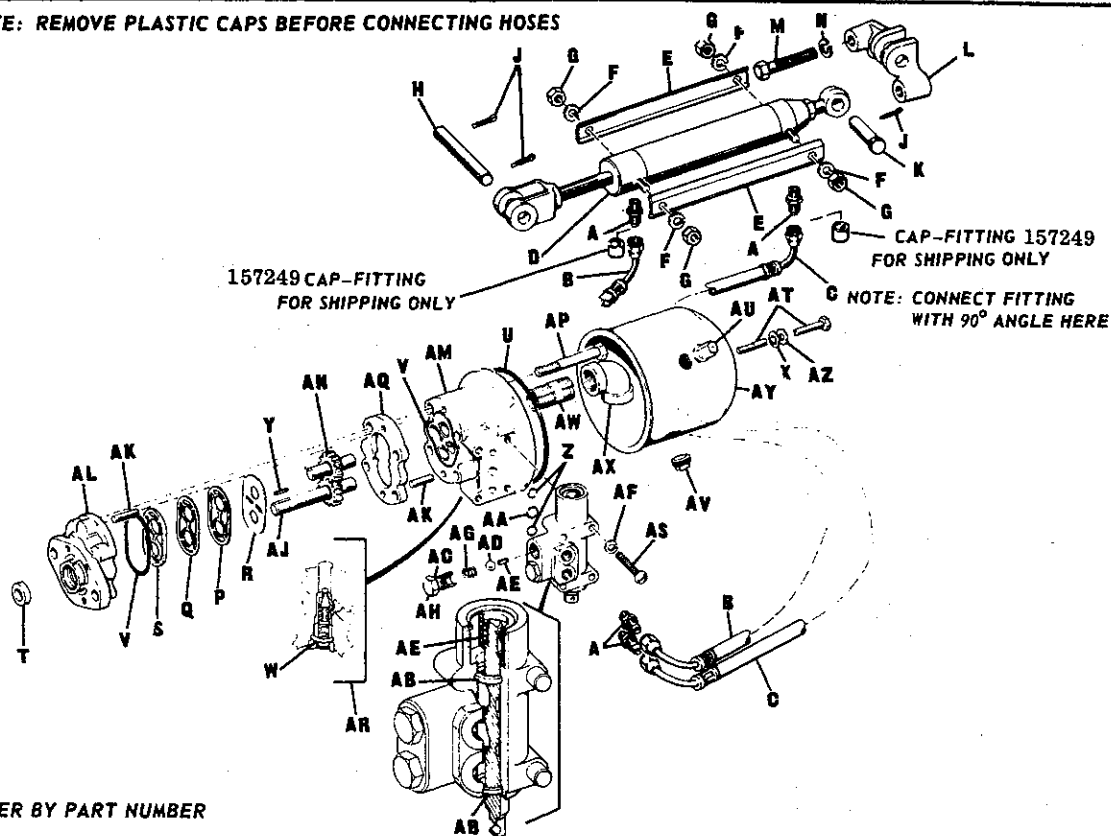
USE UTMOST CARE IN ADDING OR CHECKING FLUID, AND IN PERFORMING ANY SERVICE ON INTEGRAL PARTS.

(For instance if a fitting or other part is dropped on a contaminated surface, the part must be carefully washed and dried before re-using.)

REMEMBER-HYDRAULICS DEMAND CLEANLINESS

HYDRAULIC LIFT GROUP

NOTE: REMOVE PLASTIC CAPS BEFORE CONNECTING HOSES

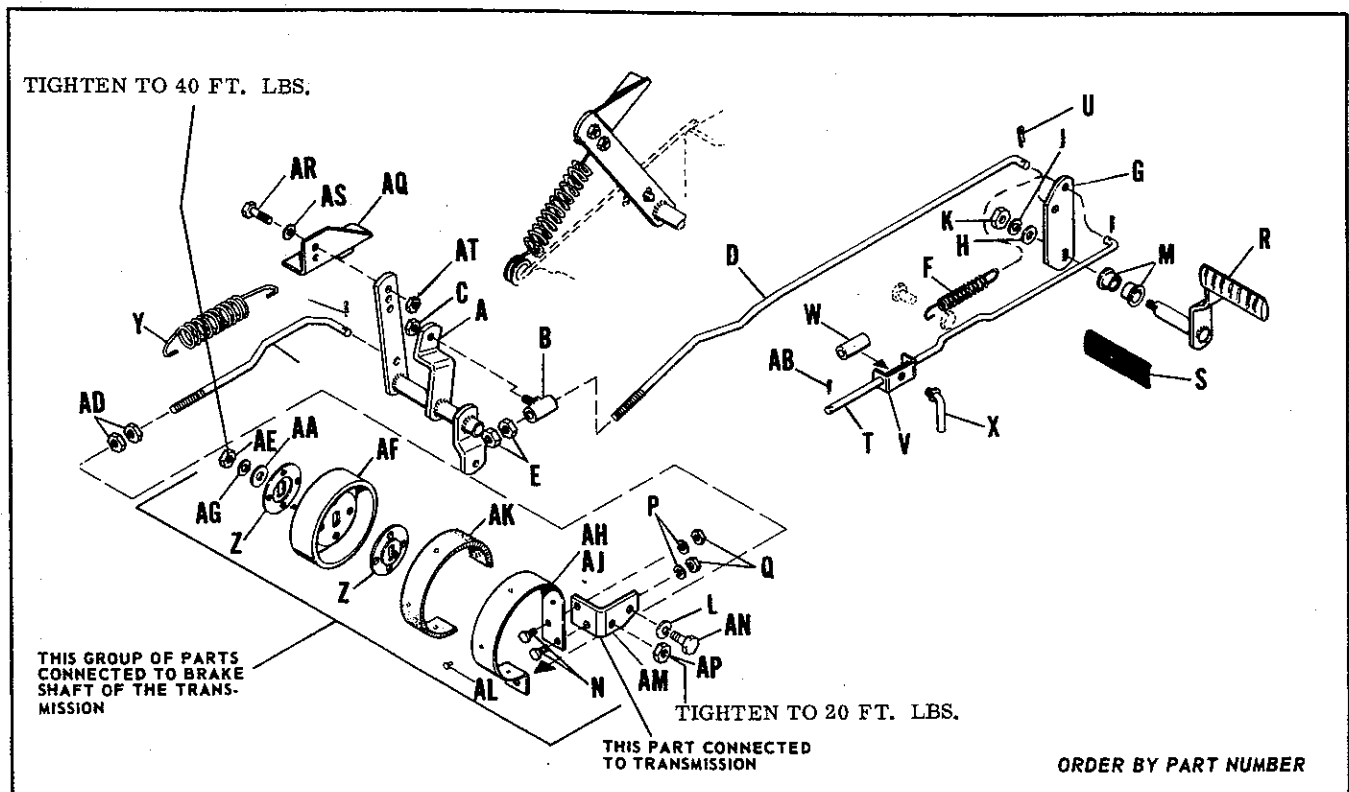


ORDER BY PART NUMBER

Ref. Let.	Part No.	Description
A	157209	Fitting
B	157210	Hose Assembly
C	157211	Hose Assembly
D	157236	Cylinder Assembly
E	157228	Side Bar
F	720001	Lock Washer, 5/16"
G	717001	Full Hex. Nut, 5/16"-18
H	157225	Pin
J	722009	Cotter Pin, 1/8" x 3/4"
K	157194	Ram Bracket Pin
L	157001	Ram Bracket
M	705052	Hex. Cap Screw 7/16"-14 x 2-1/4"
N	720006	Lock Washer, 7/16"
P	157433	Heat Shield (for service only)
Q	157434	Gasket
R	157435	Wear Plate
S	157436	Seal
T	157437	Rotary Seal
U	157438	"O" Ring
V	157439	"O" Ring
W	157404	"O" Ring
X	157441	Stat-O-Seal
Y	157442	Shaft Drive Key
Z	157406	"O" Ring

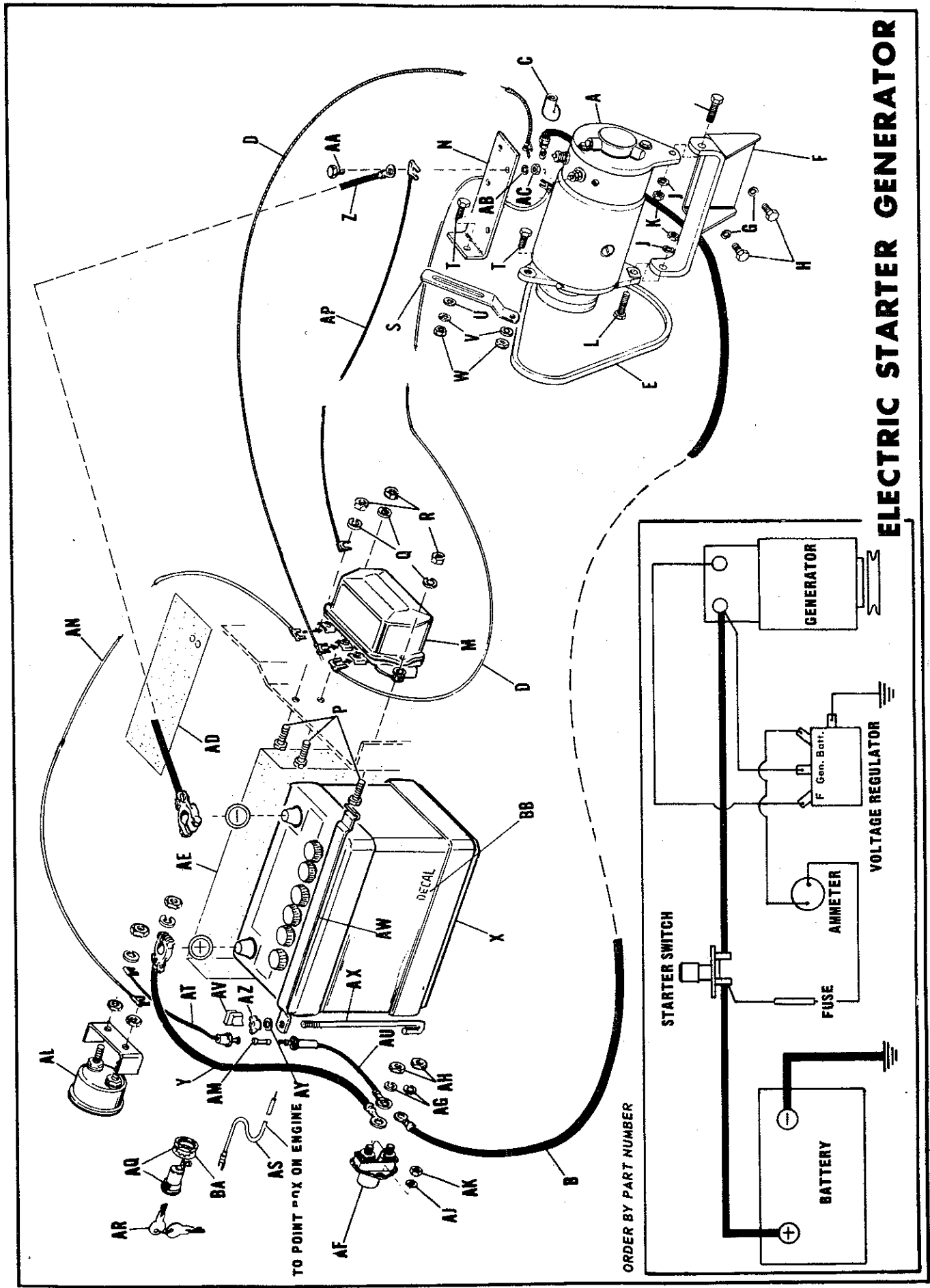
Ref. Let.	Part No.	Description
AA	157407	"O" Ring
AB	157405	"O" Ring
AC	157444	"O" Ring
AD	157445	Ball
AE	157446	Pin Cam
AF	720003	Lock Washer 1/4"
AG	157448	Spring
AH	157449	Cage
AJ	157450	Drive Gear Assembly
AK	157451	Dowel Pin
AL	157452	Front Cover Assembly
AM	157453	Back Cover Assembly
AN	157454	Driven Gear Assembly
AP	157455	Bolt
AQ	157456	Center, Section Machined
AR	157457	Relief Valve Assembly
AS	157459	Screw
AT	157460	Screw
AU	157462	Filler Cap Plug
AV	157463	Drain Plug
AW	157464	Inlet Nipple
AX	157465	Inlet Elbow
AY	157461	Tank Assembly
AZ	719006	Flat Washer, 1/4"

CLUTCH AND BRAKE GROUP



Ref. Let.	Part No.	Description
A	164089	Pivot Lever Assembly
B	164094	Rod Guide Assembly
C	717511	Hex Lock Nut, 5/16"-18
D	164096	Brake and Clutch Rod
E	717001	Hex Nut, 5/16"-18
F	159106	Tension Spring
G	157300	Foot Pedal Arm
H	719001	Washer, Plain, 3/8"
J	720002	Lock Washer, 3/8"
K	717003	Hex Nut, 3/8"-16
L	720002	Lock Washer, 3/8"
M	108419	Bushing
N	705030	Hex Capscrew, 1/4"-20 x 3/4" lg.
P	720003	Lock Washer, 1/4"
Q	717005	Hex Nut, 1/4"-20
R	157280	Foot Pedal Assembly
S	162098	Pedal Pad
T	164210	Parking Brake Rod
U	722009	Cotter Pin, 1/8" x 3/4" lg.
V	164143	Parking Brake Bracket Assy.
W	157287	Spacer
X	164142	Parking Brake Lock
Y	164213	Tension Spring

Ref. Let.	Part No.	Description
Z	158196	Special Washer
AA	719001	Washer, Plain, 3/8"
AB	722001	Cotter Pin, 3/32" x 3/4" lg.
AC	164189	Brake Rod
AD	717003	Hex Nut, 3/8"-16
AE	717022	Hex Nut, 7/16"-14
AF	157282	Brake Drum
AG	720006	Lock Washer, 7/16"-14
AH	164111	Brake Band Assembly
AJ	164112	Brake Band
AK	154133	Brake Lining
AL	724501	Rivet
AM	164113	Brake Band Bracket
AN	705005	Hex Capscrew, 3/8"-16 x 1" lg.
AP	717003	Hex Nut, 3/8"-16
AQ	164212	Spring Bracket
AR	705007	Hex Capscrew, 5/16"-18 x 1" lg.
AS	720001	Lock Washer, 5/16"
AT	717001	Hex Nut, 5/16"-18



ELECTRIC STARTER GENERATOR

ELECTRIC STARTER-GENERATOR SYSTEM

ORDER BY PART NUMBER

Ref. Let.	Part No.	Description
A	122041 **	Motor - Generator
B	122149	Generator Start Cable
C	122023	Terminal Cover
D	122140	Reg. Gen. Wire
E	157524	"V"-Belt
F	157004	Support Assembly
G	720001	Lock Washer, 5/16"
H	715048	Hex. Capscrew, 5/16"-18 x 3/4" lg.
J	720001	Lock Washer, 5/16"
K	717001	Full Hex. Nut, 5/16"-18
L	705019	Hex. Capscrew, 5/16"-18 x 1-1/4"
M	122193 **	Voltage Regulator
N	154002	Bracket
P	705030	Hex. Capscrew, 1/4"-20 x 3/4" lg.
Q	720003	Lock Washer, 1/4"
R	717005	Full Hex. Nut, 1/4"-20
S	157102	Belt Tightener
T	705017	Hex. Capscrew, 5/16"-18 x 3/4" lg.
U	719002	Plain Washer, 5/16"
V	720001	Lock Washer, 5/16"
W	717001	Full Hex. Nut, 5/16"-18
X	122190	Battery
Y	122139	Cable (Battery to Starter)
Z	122138	Cable (Battery to Ground)
AA	705015	Hex. Capscrew, 1/4"-20 x 5/8" lg.
AB	720003	Lock Washer, 1/4"
AC	717005	Full Hex. Nut, 1/4"-20
AD	122142	Battery Insulation
AE	122143	Fuel Tank Insulation
AF	122046	Starter Switch
AG	720002	Lock Washer, 3/8"
AH	717003	Full Hex. Nut
AJ	720003	Lock Washer, 1/4"
AK	717005	Full Hex. Nut, 1/4"-20
AL	122131	Ammeter
AM	122172	Fuse, 20 AMP.
AN	122144	Wire (Ammeter to Regulator)
AP	122147	Wire (Ground to Ground)
AQ	122048	Ignition Switch
AR	122111	Keys
AS	122141	Wire (Switch to Engine)
AT	122171	Wire (Fuse to Ammeter)
AU	122170	Wire (Fuse to Starter)
AV	122183	Clip Fuse
AW	122173	Battery Bracket
AX	122174	"J" Bolt
AY	720003	Lock Washer, 1/4"
AZ	718042	Wing Nut 1/4"-20
BA	721508	Lock Washer, Int. 13/16"
BB	122199	Film (SIMPLICITY)

** FOR SERVICE CONTACT YOUR
LOCAL UNITED MOTOR SERVICE DEALER (DELCO-REMY)

BATTERY INSTRUCTIONS

With proper care this battery should give the long service life built into it.

A battery which does not function properly is not necessarily worn out or defective. It may only need a good recharge. Therefore, if battery trouble is suspected, a full recharge and test by a competent battery man is recommended.

PUTTING DRY-CHARGED BATTERIES IN SERVICE

Remove wicks or tape covering from vent hole in filler caps. Make sure vent holes are open so battery gases produced when battery is charging can escape. If necessary, run a fine wire in vent hole to be sure it is open and free of all obstructions.

Fill battery with 1.265 specific gravity electrolyte or acid to proper level or 3/16 inch above plates and separators assuming room, battery, and electrolyte temperature is 70° - 100° Fahrenheit.

Allow battery to set for 20 minutes. Battery can then be installed but to obtain best results and maximum capacity, place battery on charge after the 20-minute setting period at 6 amperes until gravity reading is 1.265 - 1.275. If room, battery and electrolyte temperatures are below normal a longer charging period will be mandatory to bring the specific gravity up to 1.265 - 1.275.

WARNING

Under no conditions should battery be filled more than 3/16" over the plates. We cannot be responsible for damages if this warning is not observed.

CARE IN SERVICE

A hydrometer test of the battery solution should be made monthly. If the specific gravity tests 1.225 or less, the battery should be removed and thoroughly recharged. At the same time the solution level should be examined and distilled water added when necessary to retain the level of 3/16" over the plates. When necessary to add distilled water it should always be done just prior to recharging to mix the added water thoroughly into the solution.

When recharging is necessary and user does not have his own charging equipment, he should request service station to slow charge the battery at a rate of 4 to 6 amperes.

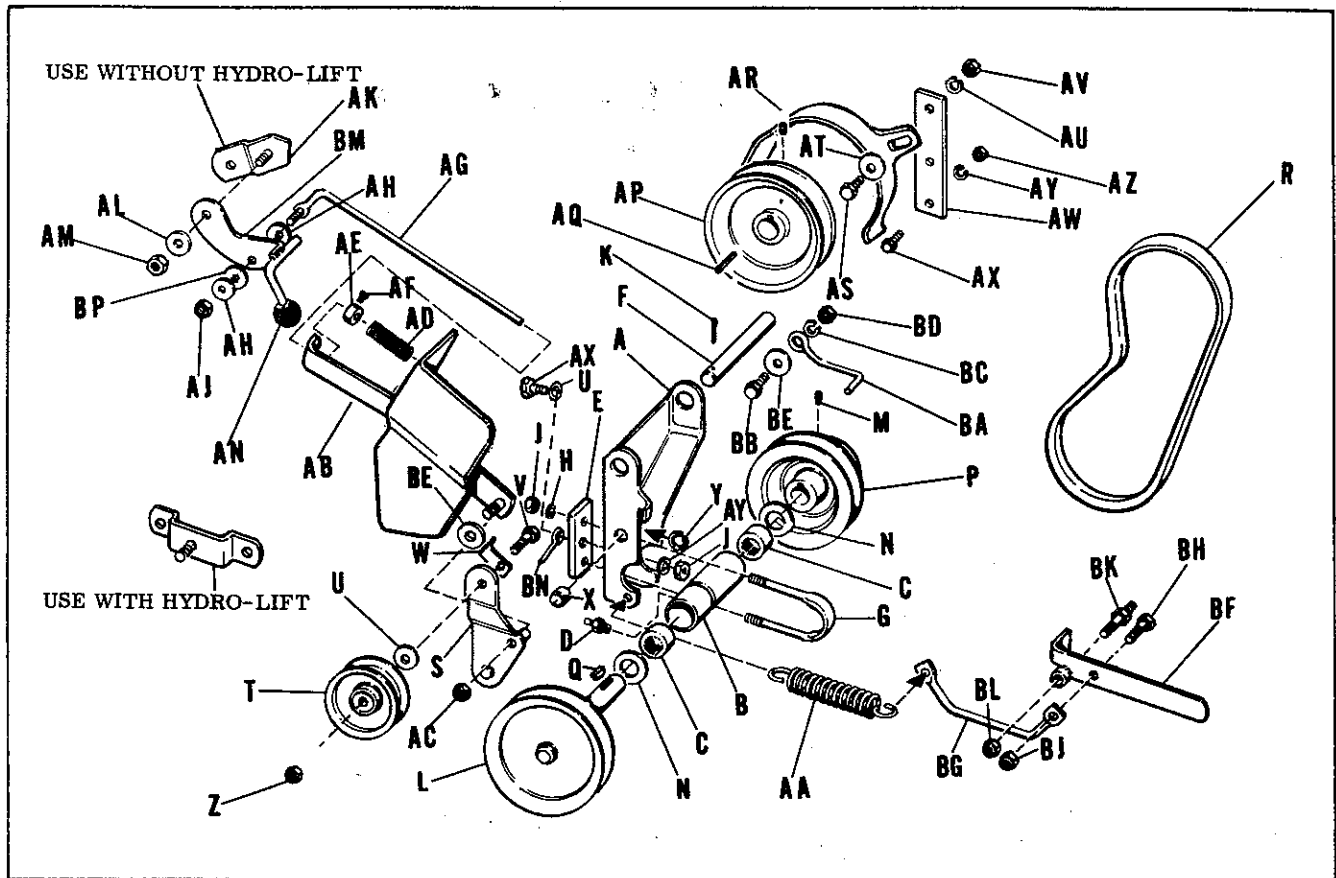
Any collection of grease or any other substance should be kept removed from the top of the battery and the top kept dry and clean at all times. The battery should be kept snug in its cradle and not permitted to get loose. If removed for charging, it should be fastened back in snugly enough to prevent any movement when in use. Vent caps should be kept tight and the small vent holes in top or side of cap be kept open at all times to permit escape of gases formed in the battery. Care should be exercised not to overfill the battery at any time and to always retain 3/16" of solution above the plates.

WINTER CARE

If battery will not be used during the winter months it should be removed and stored in a cool, dry place. Any collection of grease or other substance should be removed from the top of the battery.

The battery must be recharged monthly or whenever the hydrometer reads less than 1.225. Before reinstalling the battery in the spring, it should always be given a thorough recharge.

POWER TAKE-OFF



Ref. Let.	Part No.	Description
A	157285	P.T.O. - Bracket
B	157269	Bearing Housing
C	154258	Needle Bearing
D	727001	Grease Fitting
E	157472	Support Plate
F	154233	Pivot Rod, 5/8" Dia. x 6-13/16"
G	157270	"U" Bolt
H	720001	Lock Washer, 5/16"
J	717001	Full Hex. Nut, 5/16"-18
K	722007	Cotter Pin, 3/16" Dia. x 1-1/2"
L	157266	Shaft Assembly, P.T.O.
M	713503	Set Screw, 5/16"-18 x 5/16"
N	8061012	Washer
P	157116	P.T.O. Pulley
Q	725003	Woddruff Key #9-3/16" x 3/4"
R	164146	"V" Belt
S	157263	Idler Lever Assembly
T	154534	Idler Pulley
U	719002	Plain Washer, 5/16"
V	705016	Hex. Cap Screw, 3/8"-16 x 1-1/4"
W	157423	Stop
X	157272	Spacer
Y	157288	Retaining Ring
Z	717510	Full Hex. Nut, 3/8"-16
AA	157262	Tension Spring
AB	164153	Rod Guide Assembly
AC	717510	Full Lock Hex. Nut, 3/8"-16
AD	8191045	Spring
AE	8191022	Set Collar
AF	713001	Set Screw, 1/4"-20 x 3/8"
AG	164149	Clutch Rod Assembly

Ref. Let.	Part No.	Description
AH	719002	Plain Washer, 5/16"
AJ	717525	Elastic Stop Nut, 5/16-18
AK	154362	Pivot Bar Assembly
AL	719001	Plain Washer, 3/8"
AM	717510	Full Lock Hex. Nut, 3/8"-16
AN	122005	Knob
AP	157121	Pulley
AQ	8061081	Key
AR	164152	Belt Guard Assembly
AS	705005	Hex. Cap Screw, 3/8"-16 x 1"
AT	719001	Plain Washer, 3/8"
AU	720002	Lock Washer, 3/8"
AV	717003	Full Hex. Nut, 3/8"-16
AW	157050	Belt Guard Support
AX	705007	Hex. Cap Screw, 5/16"-18 x 1"
AY	720001	Lock Washer, 5/16"
AZ	717001	Full Hex. Nut, 5/16"-18
BA	161080	Belt Stop
BB	705007	Hex Capscrew, 5/16-18 x 1"lg.
BC	720001	Lock Washer, 5/16
BD	717001	Hex Nut, 5/16-18
BE	719002	Plain Washer, 5/16
BF	164155	Handle Assembly
BG	157291	Spring Tension Rod
BH	705019	Hex. CapScrew, 5/16"-18 x 1-1/4"
BJ	717511	Full Lock Hex. Nut, 5/16"-18
BK	157273	Stud
BL	717519	Full Lock Hex. Nut, 7/16"-14
BM	154356	Clutch Lever Assembly
BN	121044	Belt Guide
BP	159134	Special Washer

ATTACHMENTS AND ACCESSORIES FOR YOUR SOVEREIGN

045	WEIGHT (Use on No. 182)
046	WEIGHT, wheel,
085	CART, dump
182	WEIGHT, rear counterweight
223	WEIGHT, front counterweight
227	LAWN ROLLER, 36"
237	GRADER BLADE, 42" (Use 4 each No. 046)
273	MOWER, 3 gang
275	MOWER, 5 gang
280	HUB CAPS, chrome, (Set of 4)
286	DUAL WHEEL SET
312	DUAL LIFT LEVER
315	CHAINS, tire, pair
345	SNOW THROWER, rotary, 36" (Use No. 182 and No. 045)
356	SNOW PLOW and DOZER BLADE, 46" (Use No. 182 and 4 each No. 046)
398	CULTIVATOR
408	SPRING TOOTH HARROW (Use 4 each No. 046)
409	TINE EXTENSION SET
414	MOWER, rotary, 48" (Requires No. 461 P. T. O.)
421	SNOW THROWER, rotary, 42" (Use No. 182 and No. 045)
447	ROVING NOZZLE (For No. 452)
452	VACUUM COLLECTOR (Requires No. 414, No. 085, No. 453)(No. 447 optional)
453	VACUUM COLLECTOR ADAPTER for 48" Rotary Mower
454	LIGHT KIT, front
455	TILLER, rotary, 32" (Use No. 223) (No. 409 optional)
456	LIGHT KIT, rear
457	MULCHER, leaf (For No. 414)
461	POWER TAKE-OFF (For No. 434 or No. 435)
464	PLOW, 10" and HITCH ADAPTER (Use 4 each No. 046)
465	SICKLE BAR, 46" (Requires No. 461 P. T. O.)
468	"HYDROLIFT" KIT
472	WEED and BRUSH CUTTER, 40" (Use No. 182)