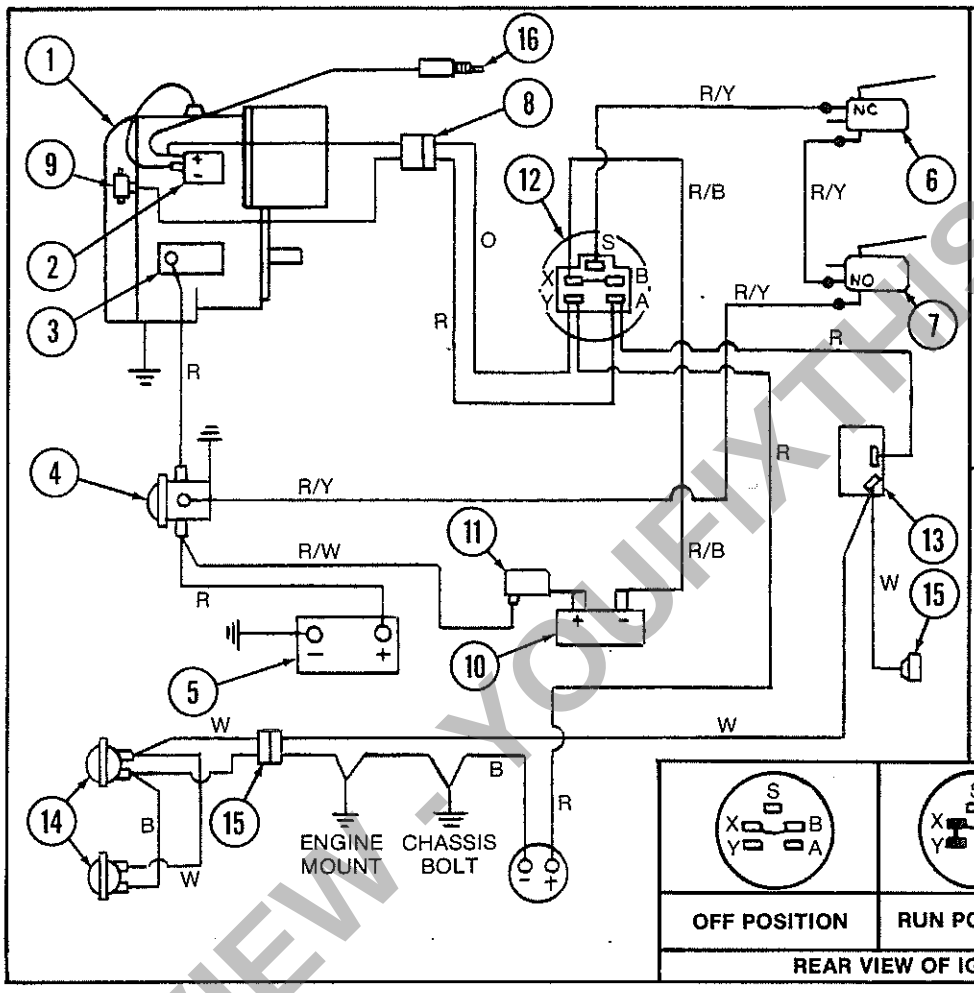
WIRING DIAGRAM
1660 S/N 0200101 AND LATER



1. ENGINE
2. IGNITION COIL
3. STARTER
4. SOLENOID
5. BATTERY
6. P.T.O. INTERLOCK SWITCH
7. BRAKE INTERLOCK SWITCH
8. CONNECTOR
9. REGULATOR/RECTIFIER
10. AMMETER
11. CIRCUIT BREAKER - 20 AMP
12. IGNITION SWITCH
13. LIGHT SWITCH
14. HEADLIGHTS
15. TAILLIGHTS (OPTIONAL)
16. THROTTLE SOLENOID

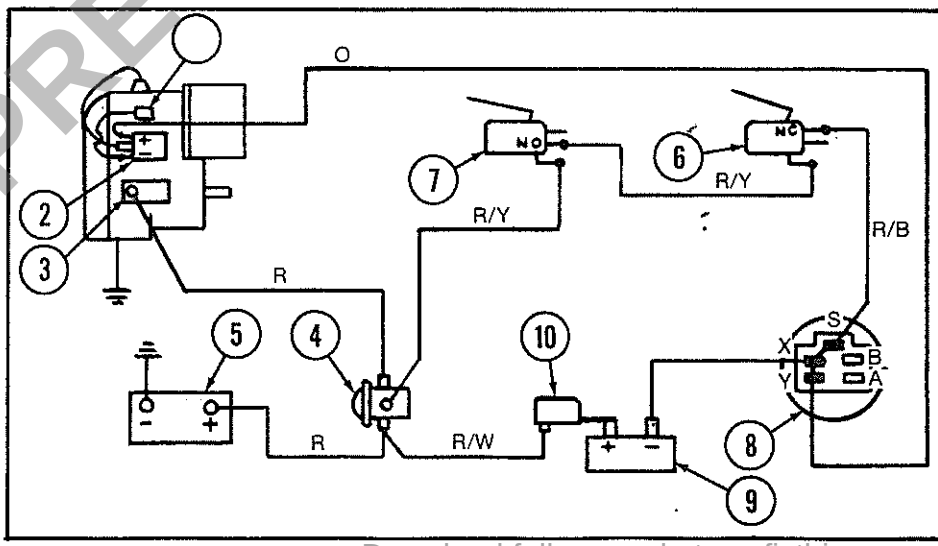
COLOR CODE

R - RED
O - ORANGE
B - BLACK
W - WHITE
R/Y - RED/YELLOW
R/W - RED/WHITE
R/B - RED/BLACK

OFF POSITION | RUN POSITION | START POSITION

REAR VIEW OF IGNITION SWITCH

START-RUN CIRCUIT
1660 S/N 0100101 AND LATER



1. CONDENSER
2. IGNITION COIL
3. STARTER
4. SOLENOID
5. BATTERY
6. P.T.O. INTERLOCK SWITCH
7. BRAKE INTERLOCK SWITCH
8. IGNITION SWITCH
9. AMMETER
10. CIRCUIT BREAKER

COLOR CODE

O - ORANGE
R - RED
B - BLACK
R/W - RED/WHITE
R/Y - RED/YELLOW
R/B - RED/BLACK

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HYDRAULIC SYSTEM (Continued)

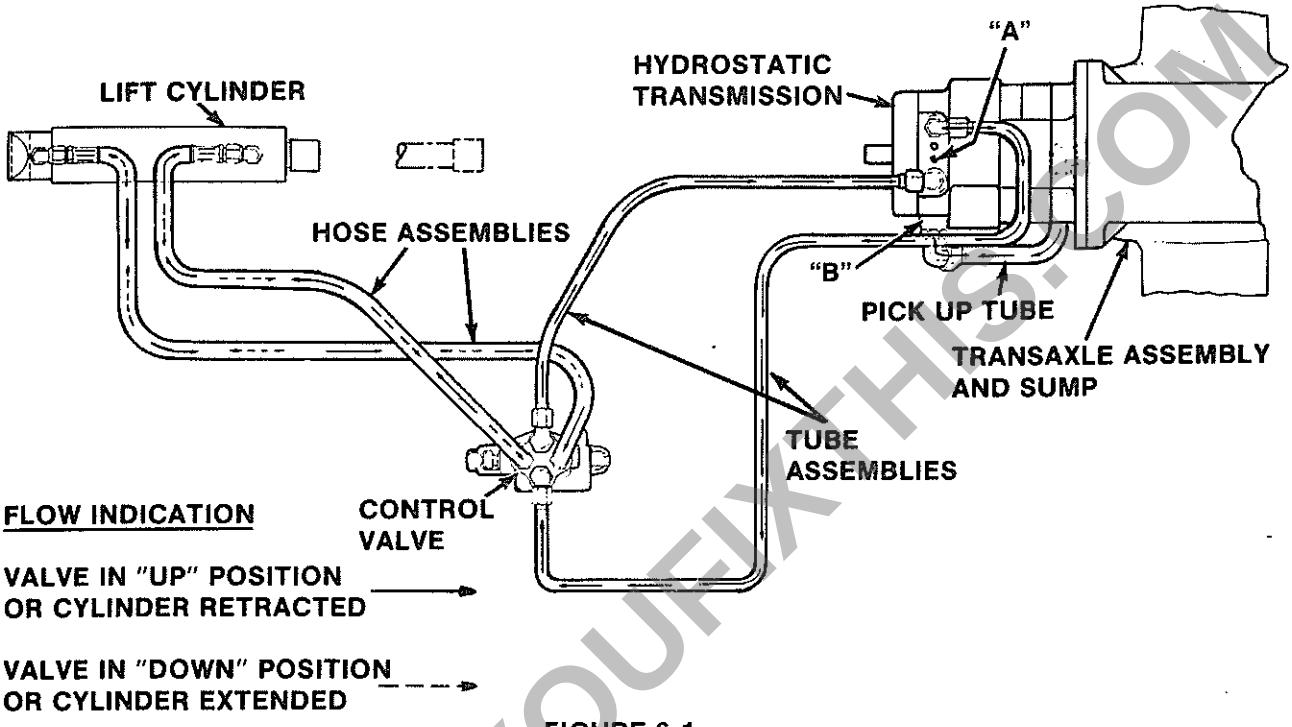


FIGURE 6-1

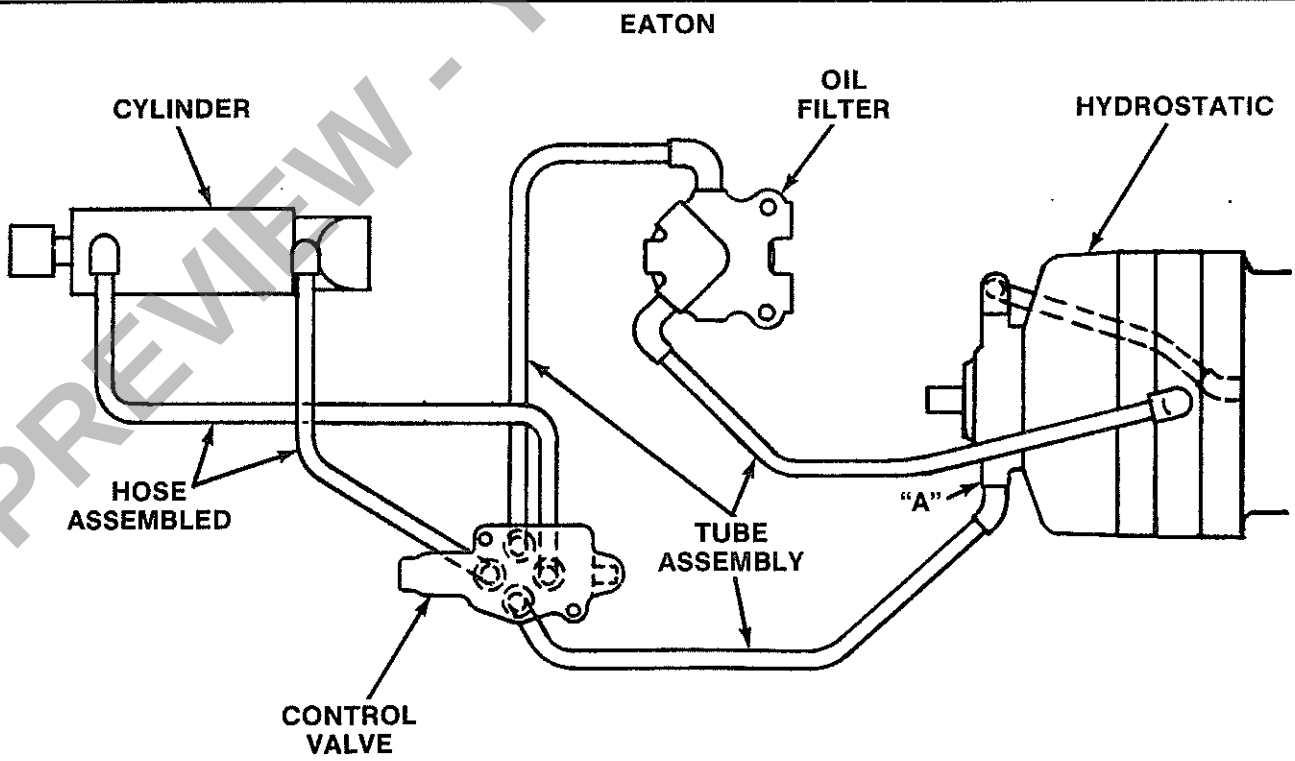


FIGURE 6-2

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HYDROSTATIC REPAIR

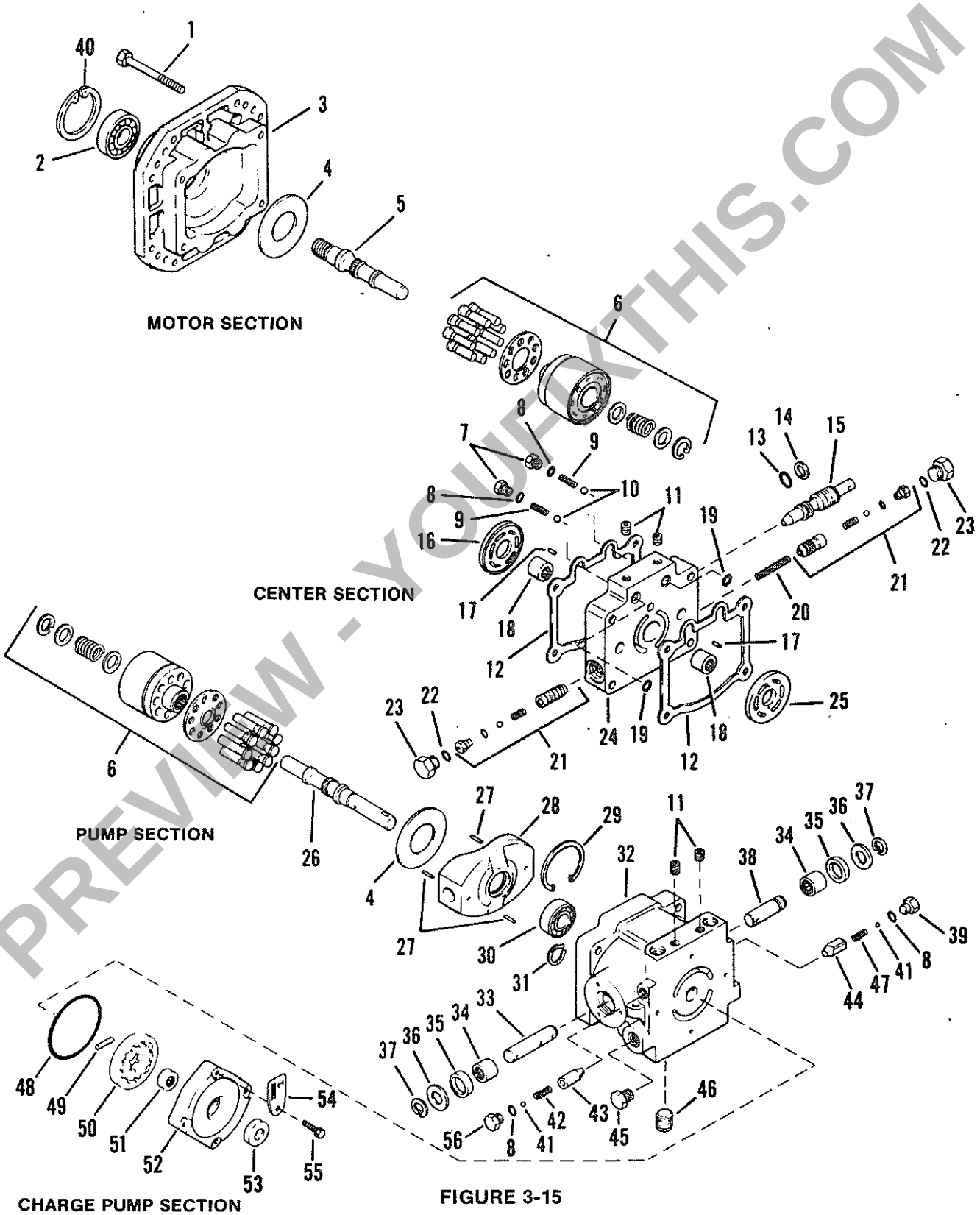


FIGURE 3-15

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TRANSAXLE REMOVAL

EATON HYDRO MODELS

MODEL 1666 SHOWN

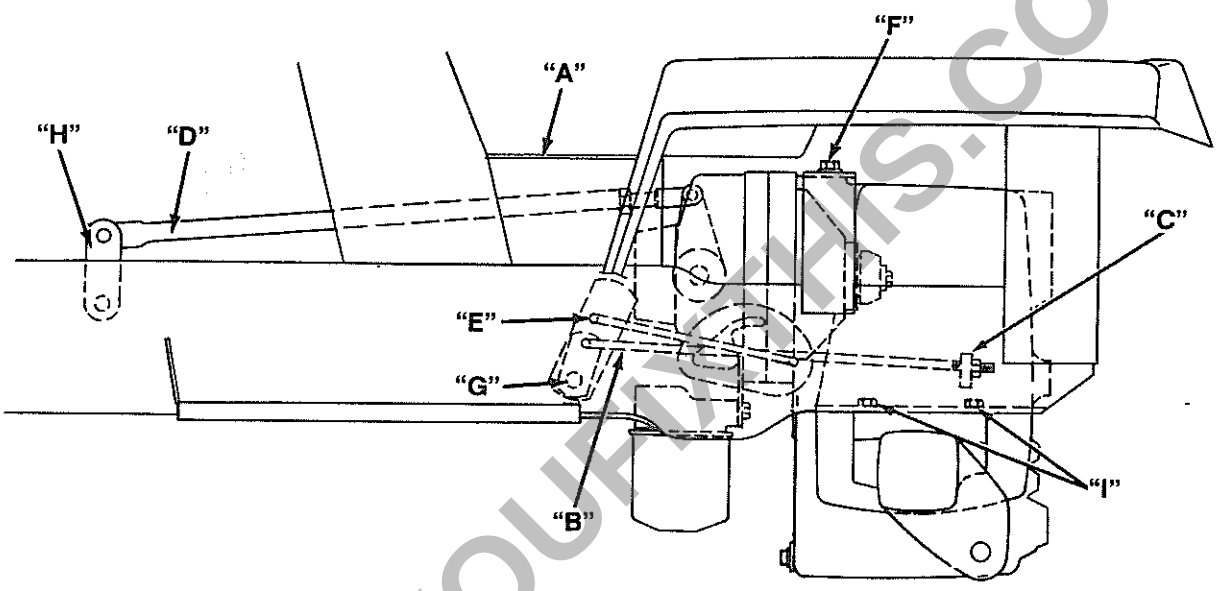


FIGURE 3-7

1. Remove seat and fender assemblies. Be careful to disconnect the seat switch wires before removing.
2. Remove tunnel (A) Figure 3-7.
3. If transaxle is to be worked on, drain fluid and dispose of.
4. Block tractor at midframe.
5. Disconnect two brake arms (B) from brake cross shaft.
6. Remove right hand and left hand brake arm extensions (C) (2 bolts each).
7. Locate hydraulic line between hydro charge pump and lift control valve and disconnect at hydro.
8. Disconnect oil line between control valve and oil filter manifold at manifold.
9. Remove cotter pin and washer and disassemble control rod (D) from the foot pedal shaft.
10. Disconnect rod (E) from lock plate to brake cross shaft at cross shaft.
11. Remove the four screws securing the transaxle to the frame.
12. Remove the two top mounting screws (F).
13. Place one foot on the rear hitch or use a bar in rear hitch hole to balance the transaxle while removing.
14. Slowly roll the complete transaxle and hydro back and out of the frame.
15. After the transaxle assembly has cleared the frame, tip the transaxle backward to rest on a 6" block.

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TROUBLE SHOOTING GUIDE

PROBLEM	PROBABLE CAUSE	REMEDY
Starter Motor does not energize and solenoid does not click.	1. Attachment drive engaged. 2. Brake pedal not depressed. 3. Corroded or loose electrical solenoid connections. 4. Inoperative switches - Attachment drive, brake and key switch. 5. Inoperative key switch. 6. Defective key switch.	1. Disengage PTO. 2. Depress brake pedal. 3. Clean and tighten Red/White wire at solenoid. 4. Check and replace if necessary. (Refer to switch testing.) 5. Check and replace if necessary. (Refer to solenoid testing.) 6. Check and replace if necessary. (Refer to ignition switch test.)
Starter Motor does not energize but solenoid clicks.	1. Discharged battery. 2. Corroded or loose electrical connections on solenoid, or starter. 3. Inoperative solenoid.	1. Charge battery. 2. Check solenoid or starter. 3. Check and replace if necessary.
Engine cranks slowly.	1. Weak or discharged battery. 2. Corroded or loose electrical connections at battery.	1. Check battery, charge or replace if necessary. 2. Clean and tighten.
Battery discharges rapidly.	1. Low water level. 2. Inoperative battery.	1. Check and refill. 2. Check and replace if necessary.
Battery will not charge.	1. Corroded or loose battery cables. 2. Inoperative battery. 3. Inoperative diode or rectifier/regulator.	1. Clean and tighten. 2. Replace battery. 3. Check diode and replace if necessary. Check rectifier/regulator by substitutions. (Refer to diode test.)

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GENERAL (Continued)

SPECIFICATIONS

KOHLER ENGINE	MODEL 1660	MODEL 1666 (SERIAL NO'S) 0600101 AND LATER)
Manufacturer	Kohler	Kohler
Model/Spec	K-341 AQS Spec. 71172A & 71176A	KT 17QS Spec. 24106A, 24152 & 24197
Type	Horz. shaft, air cooled 1 cyl., 4 cycle	Horz. shaft, air cooled 2 cyl., 4 cycle
Bore and Stroke	3-3/4" (95 mm) x 3-1/4" (82.5 mm)	3-1/8" (79 mm) x 2-3/4" (70 mm)
Piston Displacement	35.89 cu. In. (587 cc)	42.18 cu. In. (690 cc)
Mfr's H.P. Rating	16 H.P. at 3600 RPM	17 H.P. at 3600 RPM
Air Cleaner	Paper Element Kohler 4708301	Paper Element Kohler 4708301
Oil Capacity	1-1/2 Quarts (1.4 liter)	3 Pints (1.4 liter)
Governor	Mechanical	Mechanical
Speed Control	Remote cable operated	Remote, cable operated
Starter	Bendix Type	Bendix Type
Charging System	15 Amp. flywheel Alternator	15 Amp. flywheel Alternator
Spark Plug Size	14 mm	14 mm
Spark Plug	Champion H10	Champion RBL15Y
Spark Plug Gap	.025 (0.63 mm)	.025 (0.63 mm)
Breaker Point Gap	.020 (0.5 mm)	.020 (0.5 mm)
Timing	S Mark In Timing Hole	SP Mark in Timing Hole

ENGINE	MODEL 1966 (SERIAL NO'S) 0100101 AND LATER)
Manufacturer	Kohler
Model/Spec	KT 19QS Spec. 49139
Type	Horz. shaft, air cooled 2 cyl., 4 cycle
Bore and Stroke	3-1/8" (79 mm) x 3-1/16 (78.0 mm)
Piston Displacement	47 cu. in. (770 cc)
Mfr's H.P. Rating	19 H.P. at 3600 RPM
Air Cleaner	Paper Element Kohler 4508302 with Precleaner 5208302
Oil Capacity	1-1/2 Qts. (1.42 liter)
Governor	Mechanical
Speed Control	Remote, cable operated
Starter	Bendix Type
Charging System	15 Amp. flywheel Alternator
Spark Plug Size	14 mm
Spark Plug	Champion RBL15Y
Spark Plug Gap	.025 (0.63 mm)
Breaker Point Gap	.020 (0.5 mm)
Timing	SP Mark in Timing Hole

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GENERAL (Continued)

MAINTENANCE CHART

MAINTENANCE REQUIRED	Length of Operation	Type of Maintenance
Engine Cooling Air Screen —	Daily or 10 Hrs.*	Brush Clean
Engine Air Cleaner —	50 Hrs.*	Shake Out Dirt
	25 Hrs.	Clean Precleaner (if equipped)
	100 Hrs.*	Replace Element
Cooling Fins — (Engine) —	Daily or 100 Hrs.	Clean — Use Air Hose if Available
Spark Plugs —	100 Hrs.	Service or Replace
Breaker Points —	200 Hrs.	Service or Replace
Ignition Timing —	100 Hrs.	Adjust
Engine Valve Tappets —	400 Hrs.	Adjust
Power-Take-Off — 1666 S/N 0200101 and later 1660 1966	100 Hrs.*	Check and Adjust Brake
Fuel Filter —	100 Hrs.	Clean if two piece, replace if one piece
Battery —	Daily	Check electrolyte level - Add water as Necessary
Hydrostatic Transmission —	50 Hrs.*	Clean — Use Air Hose if Available
Belts —	50 Hrs.*	Check for Wear and Adjust
Tires —	25 Hrs.	Check for Damage and Air Pressure
Transmission Filter —	After First 5 Hours then After Every 100 Hrs.*	Change and Add oil to Bring to Operating Level (Use only Bolens Filter)
Brakes —	50 Hrs.*	Check for wear and Adjust

*More often under extreme conditions.

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MOWER DECKS

MOWER LEVELING

1. Place the tractor on a level surface. Check tires for proper pressure.
   Front – 12 PSI (88 kPa)
   Rear – 8 PSI (55 kPa)

2. Lower mower to the ground.

3. Set gauge wheels to the 3 inch cutting height. Place a two foot level across the mower deck, to check for front to rear leveling.

NOTE

IF A TWO FOOT LEVEL IS NOT AVAILABLE USE A SMALLER LEVEL AND A METAL STRAIGHT EDGE SUCH AS A CARPENTER'S SQUARE.

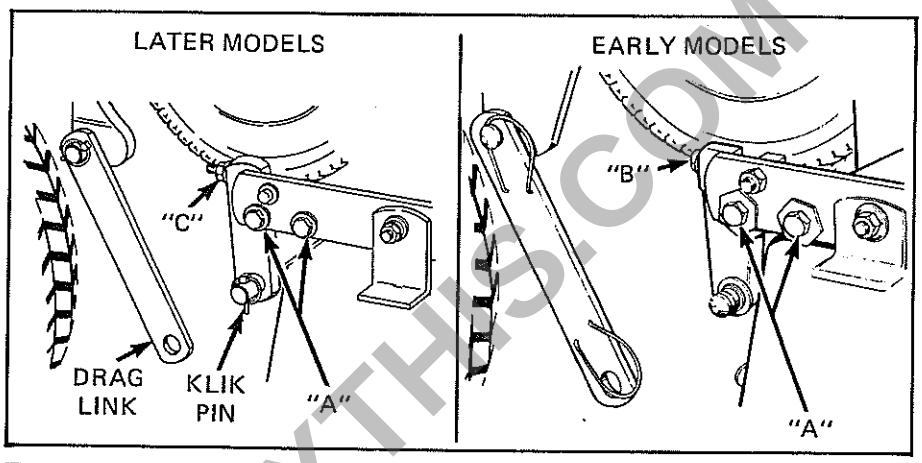
Loosen capscrews (A) Figure 8-1.

Turn adjusting screw (B) or nut (C) Figure 8-1, clockwise to raise the front of mower and counterclockwise to lower.

NOTE

TURN BOTH ADJUSTING SCREWS THE SAME NUMBER OF TURNS TO MAINTAIN THE SIDE TO SIDE LEVEL.

After mower is adjusted, securely retighten capscrews (A).



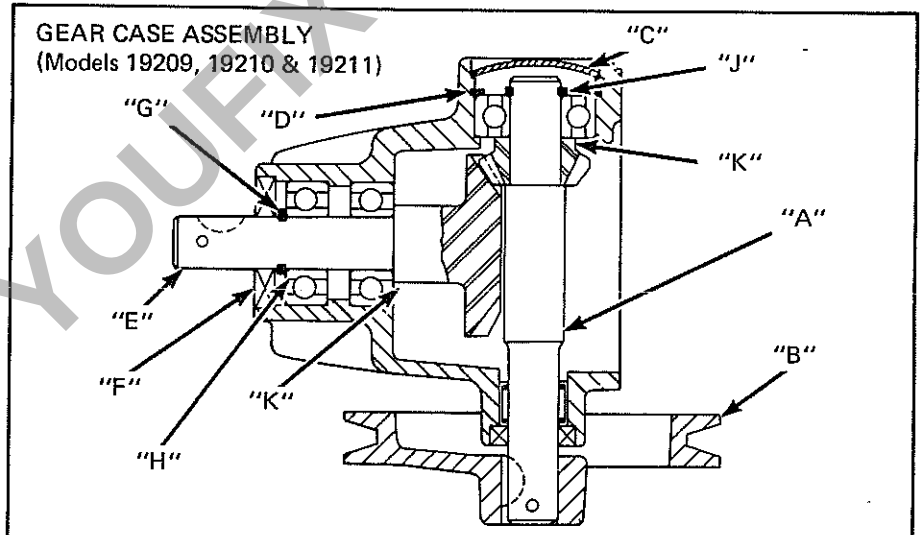


Fig. 8-2

GEAR CASE REMOVAL AND DISASSEMBLY (Models 19209, 19210 & 19211)

1. Remove universal joint.

2. Remove the mower R.H. cover and disassemble the belt from the drive pulley.

3. Lift front of mower up and drain oil from case.

4. Remove gear case assembly from mower mounting bracket.

5. Remove output shaft (A), Figure 8-2, as follows:
   a. Remove drive sheave (B) and woodruff key. Remove any burrs on end of shaft.
   b. Remove plug (C) and outside snap ring (D).
   c. Slide shaft (A), gear and bearing out of gear case.

6. Remove input shaft (E) by removing oil seal (F) and snap ring (G). Pull shaft out.

GEAR CASE ASSEMBLY AND RE-INSTALLATION

1. If necessary, remove and replace all bearings and oil seals.

2. Insert input shaft (E) in case.

3. Assemble snap ring to secure shaft. The input shaft should have a maximum of .005" (0.12 mm) end play. To achieve correct end play, shim at point (H). See parts list for shim numbers.

4. Insert output shaft (A) with gear and bearing in place and assemble outer snap ring (D). If the bearing has any end play, shim as required at point (J) to achieve a maximum of .005" (0.12 mm) clearance.

5. Check mesh of gears. If gears are loose shim as required at points (H), (J) or (K) to remove gap. See parts list for shim numbers.

6. Assemble expansion plug (C) and oil seal (F).

7. Install drive pulley to output shaft.

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