

ASSEMBLY

OPERATION

MAINTENANCE

PARTS LISTS



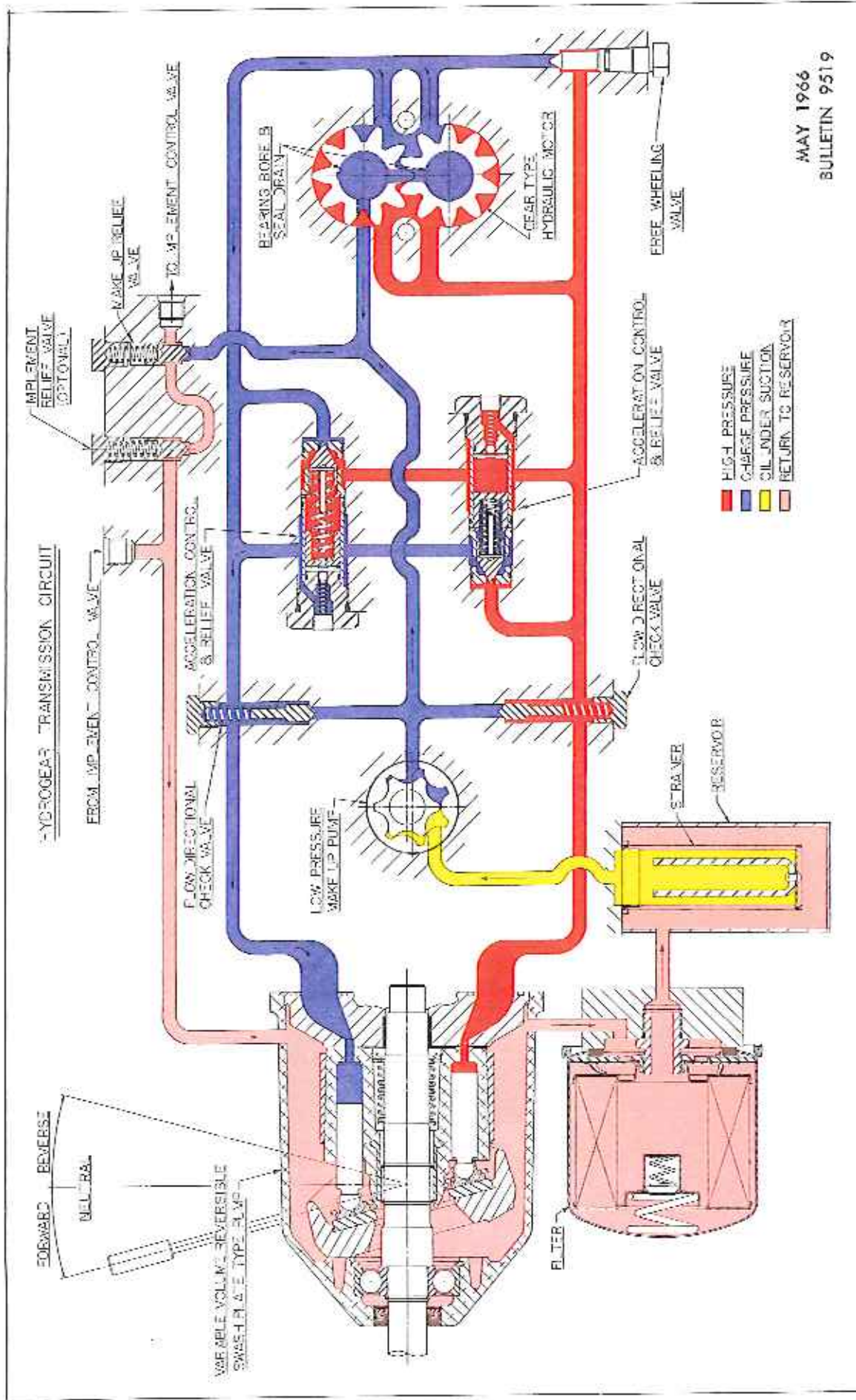
BUSH HOG

DIVISION OF  **ALLIED PRODUCTS CORPORATION**

JABALINA II

Owner's Manual

SHAW MANUFACTURING COMPANY
GALESBURG, KANSAS 66740



MAY 1966
BULLETIN 9519

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Introduction

This brand new member of the BUSH HOG family has never-before features going for it that will hold competition to a standstill. No other tractor can satisfy the needs of gardeners, small farmers and estate keepers like this one. Revolutionary design reduces hazards and eliminates danger areas common to ordinary small tractors. Powered with hydrostatic drive, it offers a safety-engineered combination of fingertip and foot pedal controls of forward and reverse speeds, without the need to clutch or shift. It's a compact package of the powerful 'muscle' and 'bloodlines' that characterize all BUSH HOG products. Nothing can compete with it Successfully!

Dealer Services

Your dealer offers complete tractor service. His trained personnel have access to accurate, detailed service information. Some of these dealer services are:

1. Testing battery and electrical components
2. Cleaning and adjusting carburetor
3. Cleaning out engine carbon
4. Testing engine compression
5. Replacing motor-generator brushes, cleaning commutator
6. Adjusting engine governor speed
7. Checking transmission
8. Tuning engine
9. Servicing tires

Specifications

ENGINE

Make Briggs and Stratton
Model 300424
Cylinders One
Cycle Four

Bore & Stroke 3 7/16" x 3 1/4"
Displacement 30.16
Speeds 1800 - 3600 RPM
Horsepower 12.00HP at 3300RPM

ELECTRICAL SYSTEM

Battery 45 amp - 12 volt
Ignition Key Type, Safety Switch
Starter Switch Key
Generator Magneto

CAPACITIES

Fuel Tank 12 Quarts
Crank Case 4 Pints

BRAKES - Brakes integral with hydraulic circuit of transaxle. Also, mechanical hand operated parking brake.

STEERING

Automotive Worm Gear Ratio: 3 - 1

TRANSMISSION

Type Transaxle - Hydrostatic Drive
Lubricant 4 quarts, Type A automotive transmission oil

TIRE SIZE

Front 16 - 6:50 - 8
Rear 23 - 8:50 - 12

WHEEL BEARINGS

Front Taper Roller
Rear Sealed Ball

DIMENSIONS

Wheel Base 49 inches
Overall length 76½ inches
Overall height 45½ inches
Overall width 42 inches

WEIGHT 850 lbs.

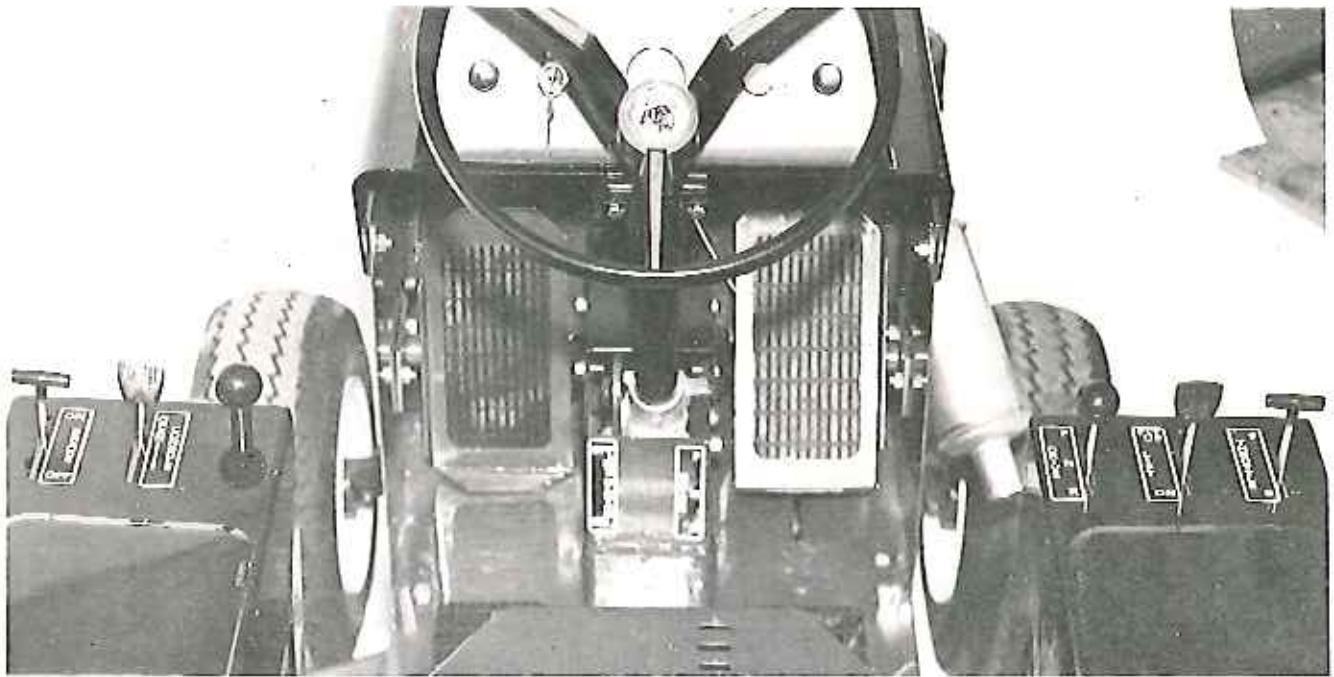


WARRANTY

Bush Hog tractors are warranted to the original retail purchaser to be free from manufacturing defects under normal use and service for one year from the date of purchase, or for 45 days if the tractor is used for commercial or rental purposes. The Bush Hog Company will replace defective parts free of charge, except items warranted by the original manufacturer such as engines or other products that carry a separate warranty. When defective parts are returned, they must be prepaid.

This warranty will not apply to Bush Hog products repaired or altered outside of a Bush Hog dealer service station. Neither will the warranty apply on any failure from misuse, negligence or accident.

The placing on a Bush Hog product of any part or attachment not approved by the Company shall void the warranty.



Controls

1. Starter Key - Your tractor is equipped with a 12-volt electrical system and key ignition. Turn the key to the right to start the engine. When turning off the engine, turn the key to the left. The key will be in an upright position. The starter is equipped with a safety switch which allows the engine to be started only if the direction control lever is in neutral. Remove the key from the tractor when the tractor is not in operation. **NOTE:** The left console must be closed for the engine to start.

2. Light Switch - The light switch is the second knob from the right on the dash panel. Pull the light switch out to turn on the front and rear lights. Note: These lights are located in the consoles. Push the switch in to turn off the lights.

3. Implement Clutch Control - To engage the implement clutch, push in the clutch control (located on the left side of the dash panel) and slowly release the foot pedal on the left. To disengage, push the foot pedal down, pull out the clutch control, and slowly release the foot pedal until it snaps into the lock.

4. Ammeter - The ammeter is located in the center of the dash panel.

5. Direction and Speed Controls - The tractor is equipped with both hand and foot controls. The hand lever is located on the right console and is equipped with a round control knob. The right foot pedal also controls the direction and speed. Push with the toe of your foot to go forward and with the heel of your foot to go backward.

6. Choke - The choke is located on the right side of the dash panel. The choke must be used if the engine has remained idle for any length of time.

7. Throttle - The throttle is the outside lever on the right console with a "T-Shaped" knob.

8. Hydraulic Lift Lever - The lift lever is the middle lever on the right console with a flat knob. Warning: Extreme forward is float. The operator should get the "feel" before operation.

9. Brake (Operational) - The speed and direction control lever acts as a brake. To bring the tractor to a smooth stop, move the lever to a neutral position.

10. Park Brake - The park brake lever is the outside lever on the left console with the T-shaped knob. To disengage, pull the lever back.

11. Console Lock Lever - The console lock lever is the middle lever on the left console with the flat knob. To open console, pull the knob back.

NOTE: All controls are labeled with description and operation.

Fuel and Oil Requirements

IMPORTANT: For all instructions pertaining to the operation of the tractor engine, refer to the instruction book form no. 270453-17. For Briggs and Stratton engine service, see the yellow pages under the heading "Engines, gasoline" or "Gasoline Engine".

FUEL - Use a regular grade gasoline of a recognized brand. Never use premium gasoline. Note: Do not mix oil with gasoline.

Be sure that fuel containers are clean. Strain all gasoline as it enters the tank. Wipe off the cap before removing to keep dust and dirt from entering the tank.

ENGINE AND TRANSMISSION LUBRICANTS

Engine Crankcase - Oil used in the engine crankcase should have an American Petroleum Institute (API/SAE)

classification of service MS. Do not use oil marked MM or ML, or oil that is unmarked. Multiple weight oils such as all season 10W-30 are not recommended.

According to prevailing air temperatures, use oil of viscosity as shown in the following chart :

AIR TEMPERATURE - SEASON	SINGLE-VISCOSITY OIL
40° to 90° F. summer	SAE 30
-0° to 40° F. winter	SAE 5W-20

Do not fill crankcase above full mark on dipstick. Pour slowly. Capacity-4 pints.

Remove cap and dipstick and fill to full mark on dipstick. When checking oil level, push dipstick assembly firmly but slowly until cap bottoms on tube. Do not overfill. Dipstick Assembly should be pushed fully into tube assembly at all times when engine is operating.



Hydrogear Transmission- The transmission has been filled with 4 quarts type A automatic transmission oil at the factory. Check oil periodically and maintain proper oil level. **THE TRANSMISSION MUST BE KEPT FULL OF OIL AT ALL TIMES.**

Remove the dipstick under the seat and make sure the transmission is kept at the full mark at all times.

Keep all oil you use clean and do not allow dirt and foreign matter in the transmission. **KEEP DIRT AND OTHER FOREIGN MATERIAL OFF THE HOUSING OF THE TRANSMISSION OR IT WILL BECOME TOO HOT.**

Parts service may be acquired from your dealer on your transmission.

PERIODIC LUBRICATION

Always lubricate your tractor at regular intervals. Regular and prompt service will insure trouble-free performance throughout the life of your tractor. Be sure to follow the instructions in this book for proper service.

The recommended lubrication and service periods for your tractor are as follows :

- Daily or every 5 hours of operation
- Every 25 hours of operation
- Every 50 hours of operation
- Every 100 hours of operation
- Every 500 hours of operation

The following lubrication periods and procedures are given in order of frequency :

DAILY OR EVERY FIVE HOURS OF OPERATION

Engine crankcase oil level must be checked every five hours. Raise the tractor hood, wipe off dust and dirt and pull oil dipstick. If necessary, add sufficient oil of the proper viscosity to bring oil level up to the full (F) mark on the dipstick when the dipstick is pushed in tight. Note: Oil should not be over the full mark. Before you check oil level, be sure tractor is on level ground and the engine is stopped.

Change engine oil after the first two (2) hours of operation. Then follow instructions under "25 Hours of Operation."

EVERY 25 HOURS OF OPERATION

Engine Crankcase: Drain engine oil every 25 hours of operation under normal conditions. See lube chart for recommended oil types.

Raise the hood. Remove the drain plug and allow the oil to drain into a container. The drain plug is located on the bottom left side of the engine.

Replace drain plug. Remove the dipstick and pour oil into filler tube. Do not overfill crankcase.

Note: The best time to drain the crankcase oil is at the end of a day's operation. At this time the oil is hot, and all dirt and other foreign material in the crankcase is in suspension.

Caution: If a non-detergent oil has been used, do not use a detergent oil.

EVERY 50 HOURS OF OPERATION

Repeat all 5 hour and 25 hour lubrication services and perform additional service as follows:

Hydrogear Transmission: After the first 50 hours, change transmission oil and filter. Use type A automatic transmission oil. Use filter S1166.

To change transmission oil, remove drain plug and allow oil to drain into a container. Change oil filter and replace drain plug. Remove oil dipstick. Add 4 quarts transmission oil.

Change oil and filter every 50 to 75 hours after the initial change. Change filter each time you change oil. Do not allow dirt to get into the transmission.

Keep the transmission housing clean of all foreign material. Keeping the housing clean is necessary for the dissipation of heat from the transmission. Do not dismantle the transmission or attempt repairs. See your dealer.

EVERY 100 HOURS OF OPERATION

Repeat all 5 hour, 25 hour, and 50 hour lubrication services and perform additional service as follows:

Lubrication of Front Axle and Steering Column: Use pressure grease gun to lubricate front axle fittings with SAE (seasonal grade) multi-purpose-type grease. Wipe fittings clean after lubrication. Also use pressure

grease gun to lubricate steering column. This may be greased from bottom of tractor or you may remove front universal joint cover from between pedals. Also grease universal joints from under the tractor (both front and rear joints).

GENERAL MAINTENANCE

Poor maintenance wears out more engines than does long hours of hard use. Tests have shown that intake of as little as 1/2 teaspoon of dust per hour completely ruins an engine within an 8 hour period. Unfortunately, even the best available filters cannot prevent microscopic particles from entering an engine. The only protection against damage from abrasive particles is provided through oil change and air cleaner service at the recommended hourly intervals or more frequently, even daily in severe conditions. The benefits of maintaining a proper service schedule will not only be immediate in improved performance but in continued satisfactory operation during a long trouble free service life.

To some engine users, the service frequency called for may seem excessive. A comparison of engine hours to vehicle miles will reveal that the service requirements are very close to those of an automobile. When relating engine hours to vehicle miles, the ratio commonly used is: 1 engine hour equals 40 miles. In making comparisons, multiply the number of hours by 40. The following table lists some of the more common hourly service intervals and the equivalent vehicle miles.

Engine Hours	Vehicle Miles
25 _____	1,000
50 _____	2,000
100 _____	4,000
250 _____	10,000
500 _____	20,000
750 _____	30,000
1,000 _____	40,000

PERIODIC MAINTENANCE

DAILY OR EVERY 5 HOURS OF OPERATION

Flywheel Screen: Make a visual check of the outside screen. The engine is air cooled and must have an ample supply of air to prevent the engine from overheating. Keep all dirt and debris off the screen.

Battery: Check battery, making sure liquid level is up to the filler ring in each cell. If necessary, add distilled water. Keep terminals free of corrosion. Check more often during summer than winter.

Tire Pressure: Inflate front tires with 12 to 20 psi. Inflate rear tires with 6 to 10 psi.

Air Cleaner: Neglecting air system maintenance is one of the most common causes of engine failure. See your engine manual for maintenance instructions.

EVERY 25 HOURS OF OPERATION

Repeat all 5 hour service checks and perform additional services as follows:

Fuel System: Proper inspection of your tractor's fuel system will save you time and money. Check gasoline sediment bowl after every 25 hours of operation. If water or dirt particles are present, close fuel shut-off valve and loosen thumb nut. Remove the bowl. Clean the bowl thoroughly and replace it.

Battery: Keep the water to ring level inside each filler hole. Use clean, distilled water when possible; otherwise use clean drinkable water.

Keeping the liquid at proper level during winter or freezing weather, is especially important. Also, the battery must be kept fully charged to prevent freezing.

Important: When adding water to the battery during freezing weather, be sure the engine is running and continues to run until water has had a chance to mix thoroughly. This running time should be at least an hour.

Battery connections should be tight at all times, especially when the battery is being charged. Loose cables will cause arcing and pitting of the connections and cause eventual battery failure.

Note: Be careful not to allow sparks or flames near a charged battery.

EVERY 100 HOURS OF OPERATION

Repeat all 5 hour and 25 hour service checks and perform additional service as follows:

Engine Shrouds: Be sure the engine cooling fins and the shrouds which enclose them are clean at all times. Dirt, oil and other debris which may have entered through the screens may lodge on cooling fins, thereby restricting the normal air flow. This causes serious damage to engine parts because of overheating.

Remove the bolts which hold the engine shroud in place and brush out all dirt from cooling fins. Clean inside of shroud thoroughly. Soak off all oil deposits with a safe solvent. Caution: Do not run engine with shrouds removed.

Remove rotating screen and check for oil or dirty fins on the flywheel. Be sure screen is clean and not damaged.

Adjusting Points: Disconnect the spark plug cable to prevent accidental starting of the engine. Remove the ignition point cover and rotate engine flywheel until the points are fully open.

Check point gap with a .020 inch feeler gauge. If an adjustment is required, loosen locking screw and move screwdriver in v-slot until the points are properly set.

After tightening the locking screw, recheck the point gap.

To replace points, remove screws. Be sure lockwashers are in place before assembly.

Spark Plug Gap: Check spark plug gap and condition of electrodes after every 100 hours of operation. Distance between electrodes should be .030.

If electrodes have burned short or have become pitted, install a new spark plug.

Use a spark plug wrench to remove plug. Always use a new spark plug gasket when replacing plug. Tighten plug to 27 ft. lbs. torque.

Battery: Your tractor has a 12-volt electrical system. When you are replacing the battery, use a 12-volt, 45-amp, 20 hour rating or (AABM Group No. 60) equivalent.

Caution: Prevent accidental operation of the starter or engine. Always disconnect the spark plug cable when you are working on the electrical system. Also, disconnect plug cable when you are making adjustments to the engine or other moving parts.

Cleaning Battery: Remove battery cables and use a wire brush to remove corrosion from around battery terminals. Wash terminals with a solution consisting of one part baking soda to four parts water. Do not allow cleaning solution to run into battery cells.

Connect battery cables and be sure that they are tight. Coat the terminals with petroleum jelly.

Wipe and wash entire battery case, platform and hold-down straps with clear water.

Be sure top and bottom vent holes in each cell cap are open.

EVERY 500 HOURS OF OPERATION

Repeat all 5 hour, 25 hour, and 100 hour service checks.

Operation

OPERATING THE ENGINE

Your new tractor should be subjected to a break-in period before it is operated at full load. Drive the tractor long enough to get the feel of its operation. Do not lower or operate any attachments during the break-in period.

No special break-in oil is required. However, be sure to change oil after the first 5 hours of operation.

PRE-STARTING INSPECTION

Before you start the engine each day, perform the following checks and services:

1. Check the fuel supply. Use regular gasoline only.
2. Be sure oil in engine crankcase is at the proper level. Add oil as needed to maintain indicated level. **Caution:** Never overfill with oil.
3. Be sure your tractor's speed control lever is in neutral.
4. Be sure screen covering engine flywheel is clean. A screen filled with grass clippings or dirt will cause engine to overheat.
5. Be sure air cleaner is free of obstructions and excessive dirt.

6. Check transmission oil level. Keep oil to proper level. See "Lubrication."

7. Do not allow dirt or other foreign material to get into the transmission.

8. Be sure transmission housing is free of all foreign material such as dirt and grass clippings. If the housing is covered, the transmission will overheat.

STARTING THE ENGINE

The engine will not start unless the speed and direction control lever is in neutral. You must also have left console closed before the engine will start.

STOPPING THE ENGINE

1. Move the speed and direction control lever to the neutral position.
2. Before stopping the engine, remove load and allow engine to idle for a few minutes. Sudden stopping of a hot engine can cause damage to engine parts.

MOVING INOPERATIVE TRACTOR

Do not tow the tractor under any circumstances. If the tractor is towed behind another vehicle, the transmission will be damaged. If the engine will not run, haul the tractor to its destination.

The tractor transmission has a by-pass valve which may be opened should it be desirable to push the tractor or relocate it without starting the engine. Open the valve by turning it approximately $\frac{1}{2}$ round. Such a use might occur in a garage where it is simply desired to shift the tractor to a new location. Do not move the tractor manually without opening the by-pass valve. See figure - page 7.

TROUBLE SHOOTING

HARD STARTING

A. FAULTY IGNITION

Check for presence of spark by disconnecting high tension wire from plug and then holding wire close to the cylinder head while cranking engine with the starter. If there is no spark, check to see if:

1. Breaker point gap is incorrect.
2. Breaker points are worn or pitted. Replace points if they are damaged.
3. Spark plug gap is incorrect.
4. Spark plug electrodes are pitted or fouled. Replace plug.

If the foregoing fails to correct the problem, see your dealer.

B. FAULTY CARBURETION

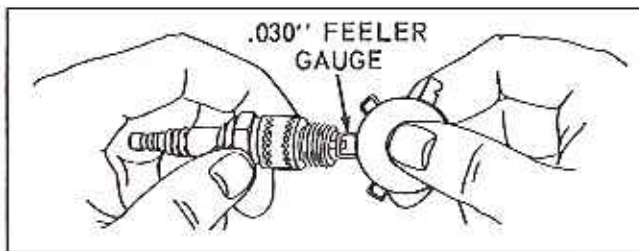
1. Gasoline may not be getting to the carburetor because of an air lock in the line. Lines may be gummed and plugged.

2. Carburetor may be dirty or out of adjustment.

If the engine can be turned over slowly by hand with little effort, there is a loss of compression. See your dealer or serviceman.

ENGINE MISSING UNDER LOAD

- A. Check spark plug for proper gap.
- B. Check for lean fuel mixture. Adjust the carburetor high speed screw.
- C. Check for dirty (fouled) spark plug or an improper type plug.
- D. Pitted or worn breaker points should be replaced with a new set.
- E. See your serviceman for proper ignition and carburetion adjustments.



BACKFIRING

- A. Check carburetor for lean fuel mixture.
- B. Check for sticky intake valve or improper ignition. See your serviceman or dealer.

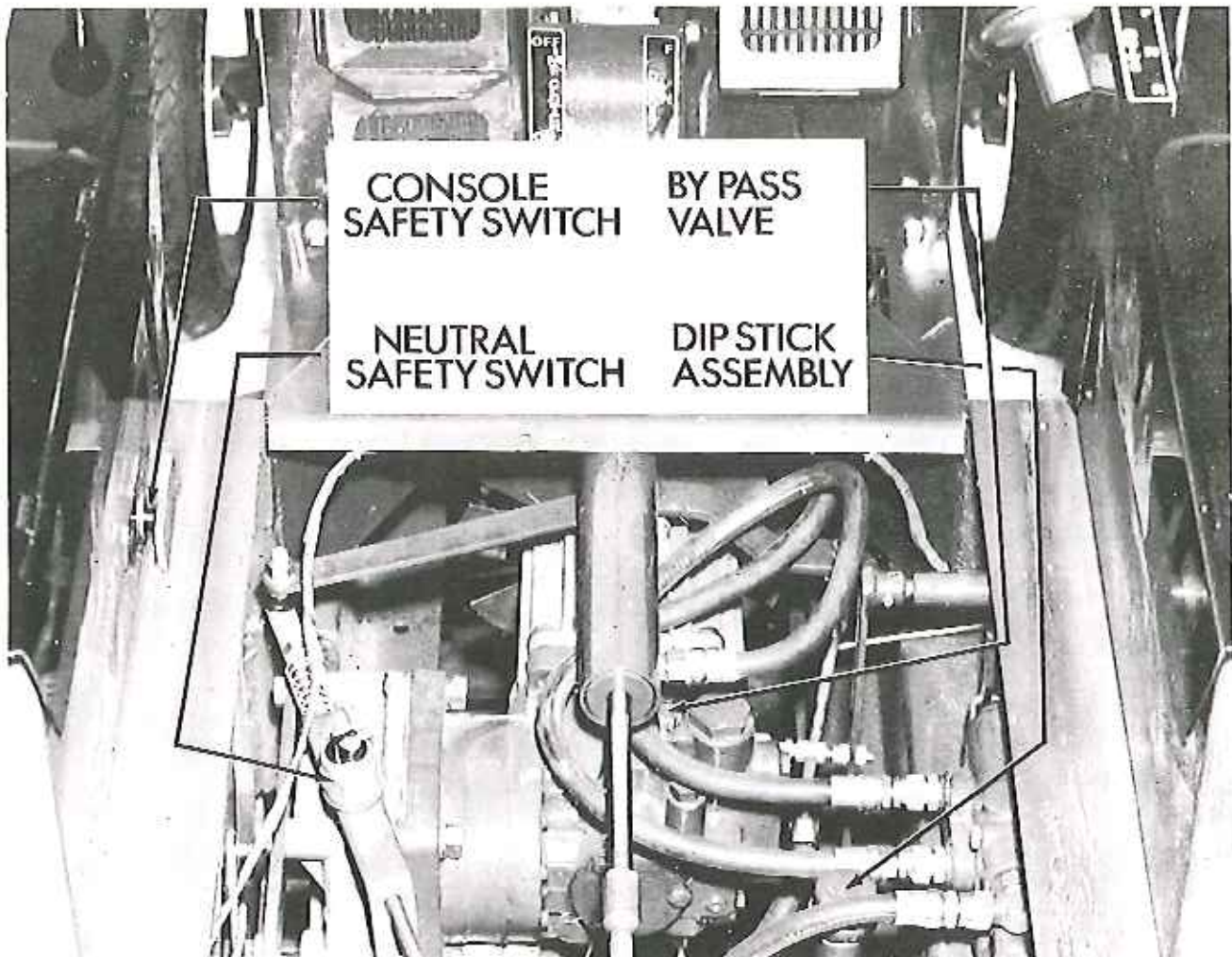
KNOCKING

- A. Check fuel supply for low octane rating. Use only quality grade of a regular gasoline.
- B. Check engine for overheating. See "Overheating".
- C. Check crankcase oil level. Fill to (F) mark on dipstick. Note: If an engine knock has developed because of lack of crankcase oil, have your dealer check the condition of the piston rod and cap.
- D. See your serviceman for possible loose connecting rod, improper timing or excessive carbon in combustion chamber.

LOSS OF ENGINE POWER

A. OVERHEATING

- 1. Check and clean screens and engine shrouds.
- 2. Using premium gasoline with high octane rating is a possible cause. Use only regular gas.



3. Check carburetor for lean fuel mixture.
4. Check oil dipstick for excessive oil in engine crankcase. Do not fill above oil level mark.
5. Check breaker points for proper gap.

B. PARTLY CLOSED CHOKER

1. Check to be sure the choke control cable is not jammed.
2. Choke must be completely open (choke lever in) after engine is warmed up, except on extremely cold days.

ENGINE OPERATING ERRATICALLY

Check the following:

(A) Carburetor set too lean (B) Clogged fuel line (C) Water in fuel (D) Faulty choke control (E) Loose electrical connections (F) Air leaks in carburetor connections or gasket (G) Carburetor jet clogged (H) See your serviceman for possible leaky valves or faulty condenser.

ENGINE WILL NOT IDLE

(A) Check carburetor adjustments (B) Check for dirty carburetor (C) Check and set spark plug gap (D) Check carburetor for air leaks in gasket (E) See your serviceman for possible leaky valves or faulty condenser.

STARTER INOPERATIVE OR WILL NOT TURN ENGINE

A. Be sure battery terminals are clean and tight. Also check to see that battery ground cable is grounded properly.

B. Make certain motor generator belt is tight.

GENERATOR AND REGULATOR TESTS

A. Ground the field post on the generator. If the generator charges full capacity, then the regulator is bad. If no charge indicated by ammeter, generator is bad.

TRIPLE SAFETY SWITCH CHECKS

A. To check S4642 console safety switch, remove black wire from ground post at top of breaker box cover on motor. If motor starts, replace console safety switch.

B. To check S4001 safety switch, remove seat, making sure lever is in neutral. Place a jumper wire between the two posts. If motor starts, replace safety switch.

C. If the above checks failed to start the motor, then the key ignition switch should be jumped and if motor starts replace ignition switch.

STARTER SOLENOID CHECKED

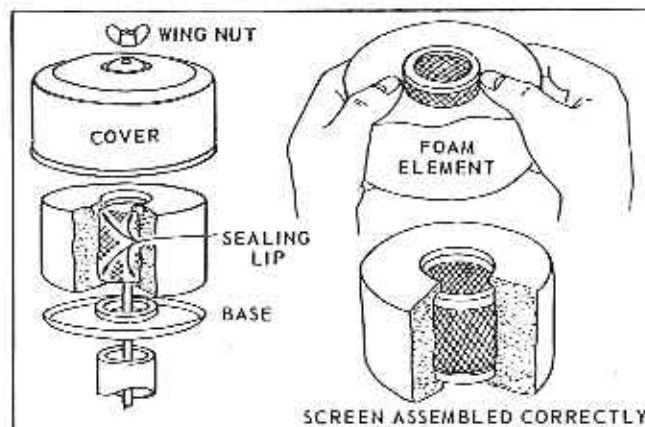
To check S4135 solenoid, take jumper wire and connect to center or small post on solenoid and ground other end. If solenoid does not work, replace starter solenoid

AMMETER CHECKED

Replace ammeter if line of current is broken. To check ammeter jump between the posts and current should be restored. If not, replace ammeter.

SERVICING OIL FOAM AIR CLEANERS

Clean and re-oil the air cleaner frequently (every few hours under extremely dusty conditions). Clean and re-oil at least every 25 hours under normal conditions.



1. Remove wing nut and cover.
2. Lift off foam element from base.
3. Push down foam element as shown, and pull out the screen.
4. Wash foam element in kerosene or liquid detergent and water to remove dirt.
5. Wrap foam in cloth and squeeze dry.
6. Saturate foam in engine oil. Squeeze to remove excess oil.
7. Put screen inside element. Be sure sealing lip is over end of screen (top and bottom).
8. Reassemble parts as shown. Screw wing nut down.

HYDROGEAR TRANSMISSION

Trouble Shooting Procedure

1. SYSTEM* WILL NOT OPERATE IN EITHER DIRECTION
 - A. System low on oil
 1. Check oil level in reservoir and replenish if necessary.
 2. Locate and fix leak or leaks causing the loss of oil.
 - B. Faulty Control Linkage
 1. Check the entire linkage to make sure it is connected and free to operate as it should.
 - C. Free Wheeling Valve Open
 1. Make sure the free wheeling or dumping valve is closing properly.
 - D. Disconnected Coupling
 1. Check to see that the coupling from the prime mover to the pump, and the coupling from the motor shaft to the driven mechanism is not slipping or broken.
 - E. Low or Zero Charge
 1. Charge pressure neutral should be at least 75 PSI or higher.
 2. Set input speed to at least 500 RPM. Charge pres-

*The word "system" denotes both pump and motor plus all lines, valves, filters, controls, etc., leading to and in between them.

sure should read at least 70 PSI or more when main pump control lever is in pumping position and fluid motor is operating.

3. Install pressure gauge (capable of 600 PSI)

4. Low pressure may be caused by:

- Charge pressure relief valve in center section is stuck open.
- Filter or suction line clogged
- Charge pump drive shaft sheared
- Internal damage to pump or motor

F. Low and Fluctuating Charge

- Air in system. Air will also cause system to be noisy. Check pipe fittings suction side
- Check oil level in reservoir
- Internal damage to pump or motor

G. Faulty Check Valves

- Remove the check valves located in the center section and check the following:
 - Check valves to see if cone or spring is missing.
 - Check to see if valve seat is eroded.

H. Internal Damage to Pump or Motor - indicated by:

- Low or zero charge pressure (See I-E) charge pressure may also fluctuate rapidly.
- Maximum obtainable operating pressure in both forward and reverse is less than the normal relief valve setting. Charge pressure, which will also be lower than normal, will drop to zero when the maximum pressure is reached.
- Piccos or flakes of brass in the reservoir and filter.
- Noisy unit (pump or motor).

Note: If either unit is considerably worn or damaged, the other unit should also be carefully checked.

I. Motor Seized

- Open free wheeling valve and attempt to push vehicle.

2. SYSTEM OPERATES IN ONE DIRECTION ONLY

A. Faulty Control Linkage

- Check the entire linkage to make sure it is connected and free to operate as it should.
- Make sure the control "stop", if used, is not out of adjustment.

B. Acceleration Relief Valve Stuck Open

- Disassemble metering plug portion of acceleration relief valves and inspect for blocking by contaminants. Make sure upper piston is free in its bore and that both springs are present. Inspect relief cone for proper seal.

C. One Check Valve Faulty

Follow instructions given in I-C.

3. NEUTRAL DIFFICULT OR IMPOSSIBLE TO FIND,

A. Faulty Linkage

- Disconnect control linkage at directional control arm. If system can now be returned to neutral, the linkage to control is out of adjustment or binding in some way.

4. SYSTEM OPERATING HOT (RESERVOIR TEMPERATURE ABOVE 180°)

A. Oil Level Low

1. Replenish oil supply.

B. Air Cooling Fins on Pump Housing Clogged with Dirt etc.

- Clean air cooling fins on pump housing.

C. Clogged Filter or Suction Line

- Replace filter. Clean or replace suction line.

D. Internal Leakage (Usually Accompanied by Loss of Acceleration and Power)

- One of the high pressure relief valves may be stuck partially open. Install gages and read the charge pressure and operating pressure in both directions. If the operating pressure is 200 PSI or more, lower than normal in one direction and normal in the other, switch the acceleration relief valves. If the low pressure also switches to the opposite side of the circuit, disassemble, check and clean the faulty (low) acceleration valve. Reinstall and recheck. Charge pressure should be normal at all times.

- Internal parts of pump or motor (or both) worn. Maximum obtainable operating pressure lower than the normal high pressure relief valve setting in both directions. When this pressure is reached, charge pressure will drop to or very near to zero. System will also be noisy at this point with the most noise issuing from the unit that is most worn. If either unit is considerably worn or damaged, the other unit should also be carefully checked. Replace the worn parts in the units affected or replace the complete unit.

5. SYSTEM NOISY

A. Air in System

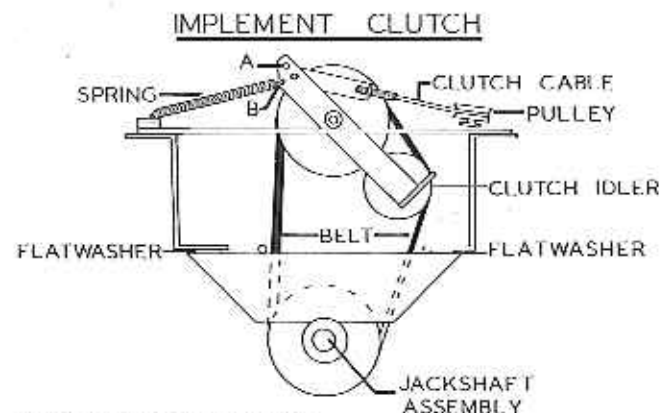
- Low oil level in reservoir.
- Suction passage between reservoir and charge pump, including suction filter leaking at some point and allowing air to be drawn into system. A good indication of air in the system is a considerable amount of foam in the reservoir.

6. IMPLEMENT LIFT WILL NOT OPERATE

A. Faulty Implement Relief Valve

- Replace valve.

Note: See flow chart included.



IMPLEMENT CLUTCH

The implement clutch should never need adjusting as it is a spring loaded belt tightener clutch. If so desired, you (the customer) might want more tension. The spring may be moved to hole "A" in the clutch idler arm from hole "B". If bolts become loose and

allow slippage of belts, add one flatwasher between frame and jackshaft assembly (all four bolts).

STORAGE

If your tractor will not be used for a period of time such as through the winter season, perform the following operations:

1. Refer to your Briggs & Stratton Engine Manual for storage instructions.
2. Remove battery and store it where it will not freeze. Check water level and refill battery if necessary.
3. Clean tractor exterior thoroughly, removing all mud, dirt, grease, and other materials.
4. To prevent rust, touch up all unpainted and exposed surfaces with paint.
5. Check all visible moving parts for wear, breakage or damage. Now is the time to order any parts required and make necessary repairs to avoid needless delay when you use the tractor again next season.
6. Block up tractor to take weight off tires. If it is possible, store tractor in a cool, dark place to prevent excessive tire deterioration.
7. Loosen motor generator belt.

8. Lubricate all grease fittings.
9. Check worm gear steering oil level.

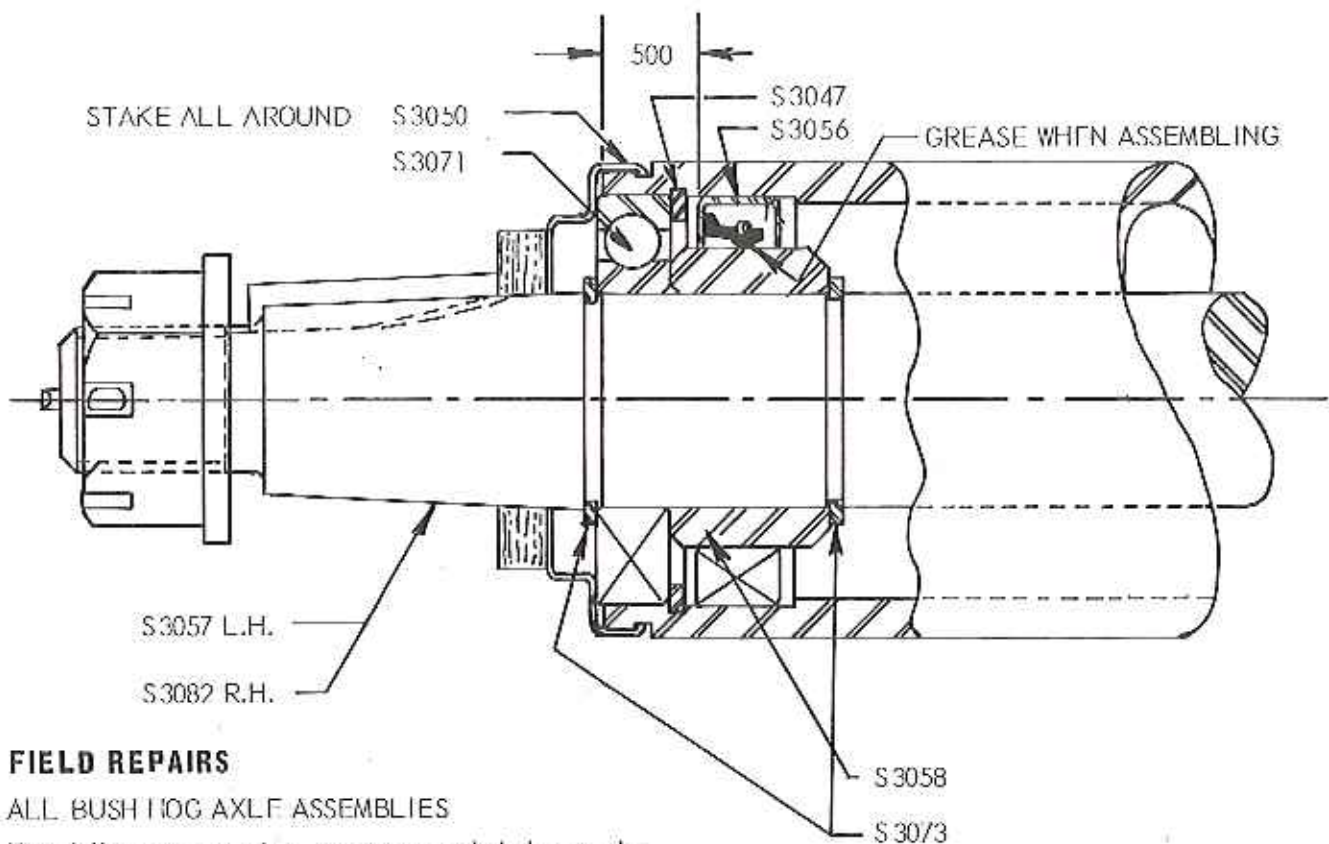
Preparing Tractor for Use After Storage

ENGINE

1. Drain and refill tractor crankcase with proper weight and grade oil.
2. Clean spark plug and set gap.
3. Check ignition point gap.
4. Clean fuel sediment bowl.
5. Service air cleaner.

TRACTOR

1. Reinstall battery. Check liquid level and clean battery.
2. Check tire inflation.
3. Drain transmission oil and refill with type A automatic transmission oil. See lubrication.
4. Tighten motor generator belt.



FIELD REPAIRS

ALL BUSHING AXLE ASSEMBLIES

The following procedure is recommended due to design improvements made on wheel ends and axle shaft life.

TO DISASSEMBLE

1. Remove retainers S3050 from each tube end.
- A. Use chisel to drive off, taking care not to damage tube ends.
2. Remove axle shaft assembly on each side and discard.

- A. Save key S3074 and nut on end of axle shaft.
3. Remove snap rings S3047 and discard.
4. Remove oil seals and discard.
5. Wipe out tube bores to remove any foreign material and oil lightly.

TO REASSEMBLE (See Attached Drawing)

1. Install new oil seal S3056 in each side.

- A. Use suitable tool and drive seal in tube ends, making sure the seal is properly seated.
2. Grease oil seal I.D. using a good quality multi-purpose grease.
3. Install snap ring S3047 in position making sure it is seated in groove provided.
4. Slide new shaft assembly No. S3082 into the right side and No. S3057 into the left side, taking care to

align splines on shaft into the unit.

5. Install bearing retainers S3050 over tube ends in position shown on print.

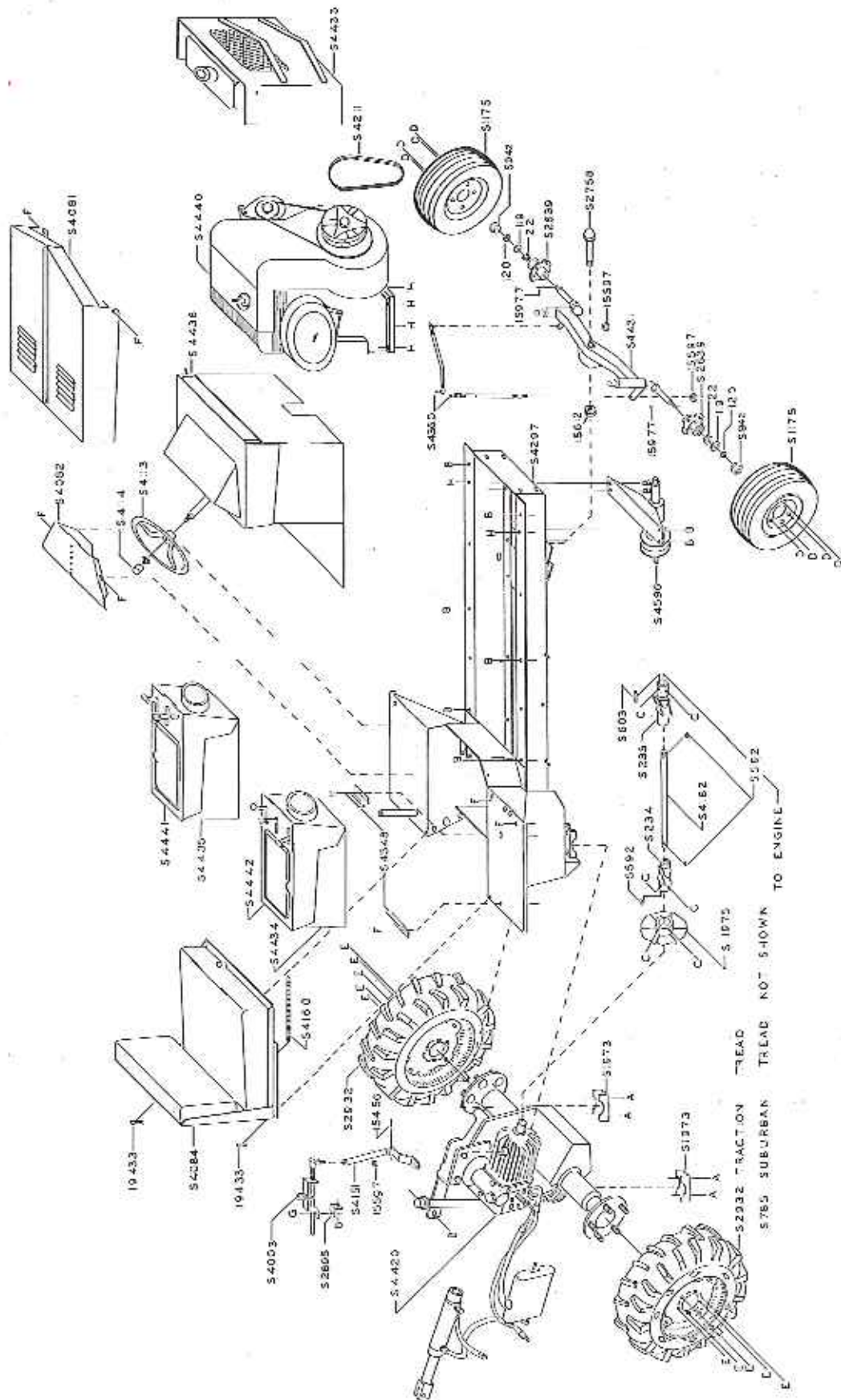
A. Stake each bearing retainer all around, taking care not to cut through the material. When this is properly secured it will appear as shown on the attached print.

6. Assemble balance of wheel end parts on shaft (key washer, nut, felt and cotter pin).











MAIN ASSEMBLY

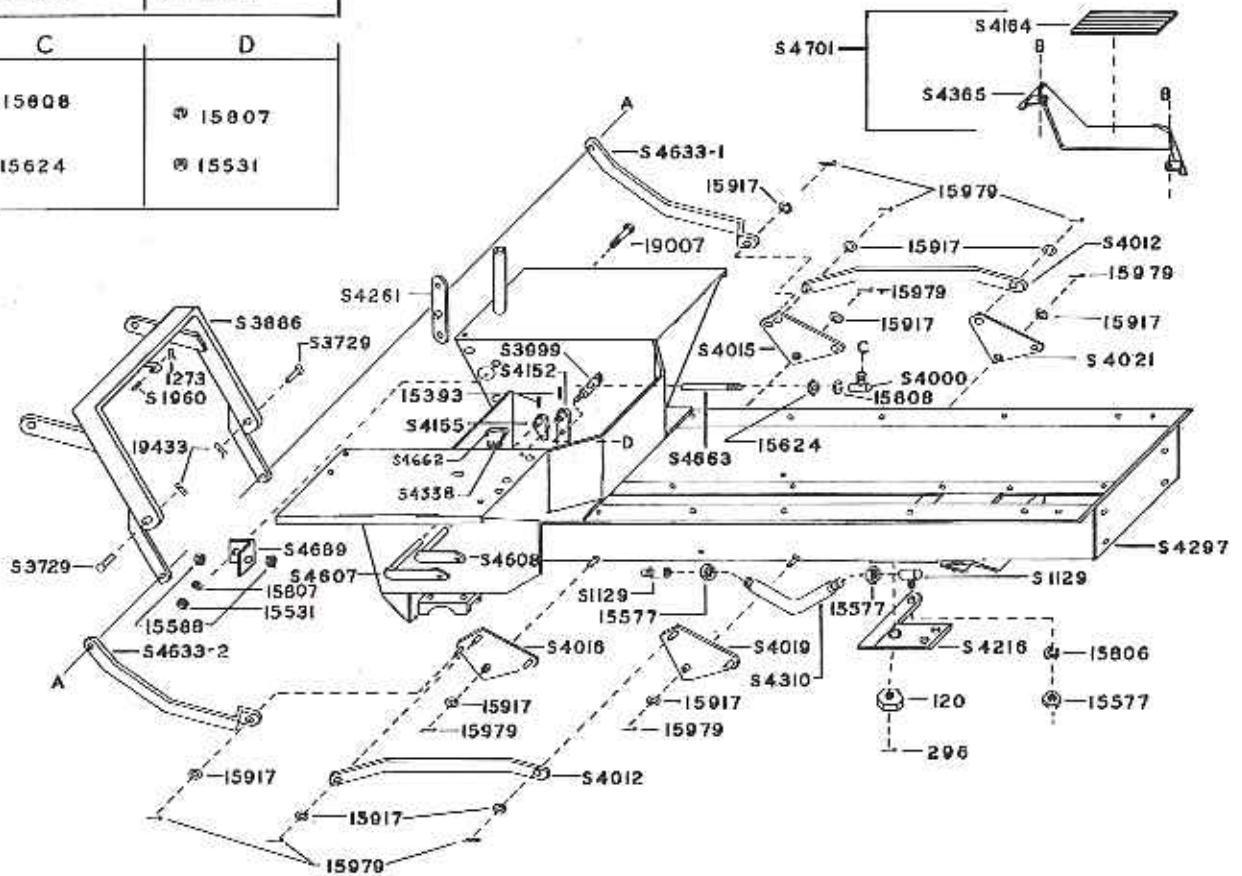
Part No.	Qty.	Description	Part No.	Qty.	Description
22	2	Bearing Cone	S4433	1	Hood Stand Assy.
119	2	Flatwasher	S4434	1	Console Bottom Assy. R. H.
120	2	Axle Hex Nut	S4435	1	Console Bottom Assy. L. H.
S234	1	Universal Joint Back	S4436	1	Dash Stand Assy.
S235	1	Universal Joint Front	S4440	1	Motor Assy.
S592	3	Key Woodruff 606	S4441	1	Console Top Assy. L. H.
S603	1	Key 1/4" x 1/4" x 2"	S4442	1	Console Top Assy. R. H.
S785	2	Suburban Tread Rear Tire Assembly	15010	6	Capscrew 3/8" x 16 UNC x 1 3/4"
S942	2	Dust Cap	15124	6	Setscrew 3/8" x 16 UNC x 3/8"
S1175	2	Front Tire Assy.	15141	8	Hub Bolt 1/2" x 20 UNF x 1"
S1973	2	Axle Clamp	15456	1	Roll Pin 1/2" x 1 1/4"
S1975	1	Fan	15507	4	Hex Nut 1/2" x 20 UNF
S2639	2	Front Hub Assy.	15522	10	Lug Nut 7/16" x 20 UNF
S2758	1	Capscrew 1" x 4 3/4" x 8 UNC	15527	12	Locknut 3/8" x 16 UNC
S2895	1	Angle Bracket	15531	8	Hex Nut 3/4" x 20 UNC
S2932	1	Traction Tread Rear Tire Assembly	15597	3	Hex Nut 3/8" x 24 UNF
S4003	1	Neutral Assembly	15612	1	Jamb Nut 1" x 8 UNC
S4081	1	Hood Assembly	15806	4	Lockwasher 1/2" Med.
S4082	1	Seat Adjustment Cover	15812	18	Lockwasher 3/8" Med.
S4084	1	Seat Assembly	15911	1	Flatwasher 3/8" Med.
S4113	1	Steering Wheel	15915	8	Flatwasher 3/8" Med.
S4114	1	Steering Wheel Cap	15977	2	Coller Pin 5/32" x 1 1/2"
S4151	1	Shifter Welded Assy.	19007	9	Capscrew 3/4" x 20 UNC x 3/4"
S4160	1	Seat Adjustment Spring	19117	11	Capscrew 3/8" x 16 UNC x 1"
S4182	1	Drive Shaft	20024	4	Capscrew 1/2" x 20 UNF x 4 1/2"
S4211	1	Bolt			
S4297	1	Frame Welded Assy.			
19433	2	Presto Pin			
S4348	2	Battery Hold Down			
S4360	2	Steering Linkage Assy.			
S4596	1	Jackshaft Assy.			
S4431	1	Front Axle Assy.			

A	B	C	D	E	F	G	H
20024	917	15124	15222	18007	19007	15010	
15608	5812	15327	15327	561	5812		
15507	15915		15531	15531	15527		



FRAME ASSEMBLY

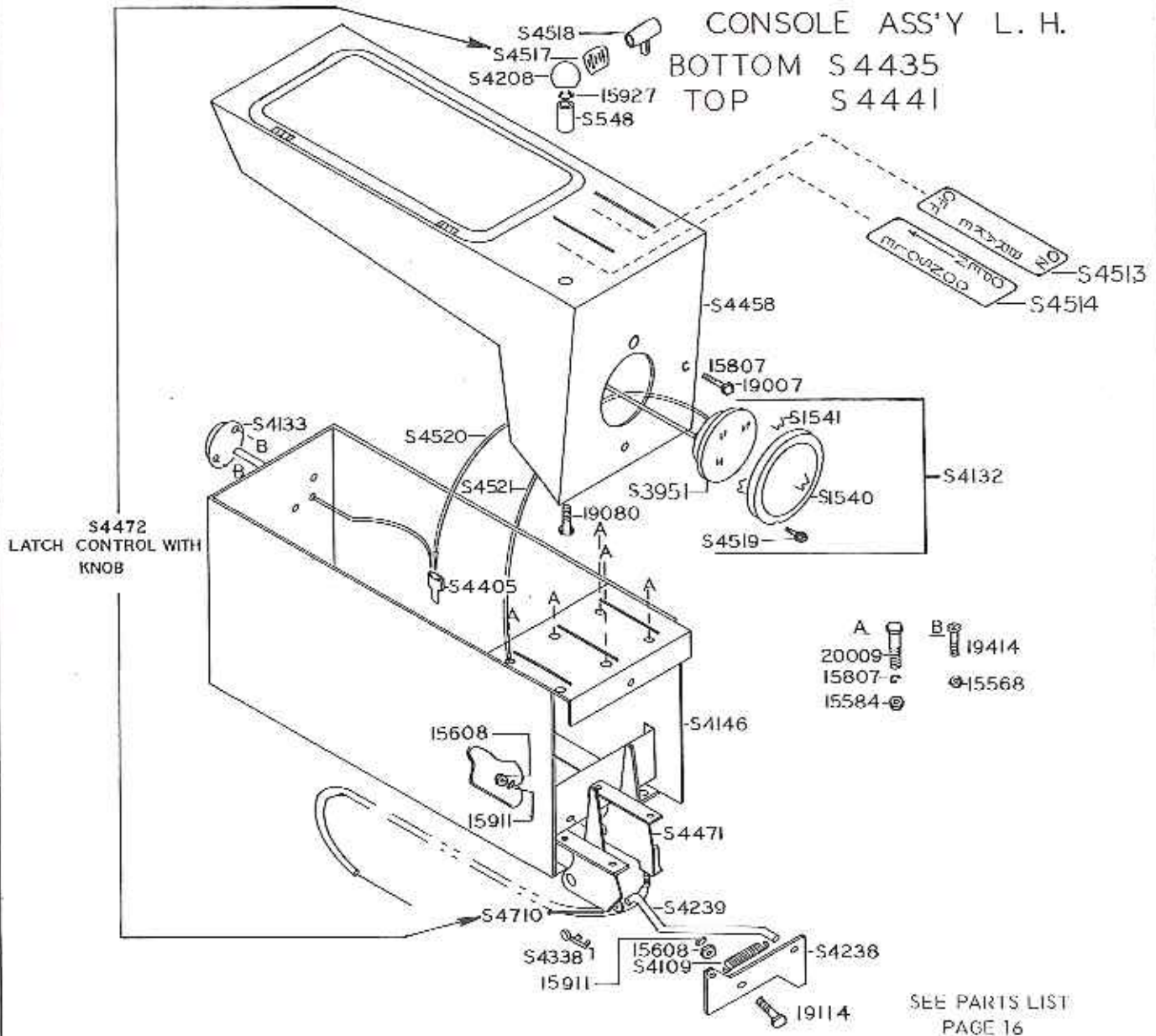
A	B
 19103	 19117
 15916	 15812
 15554	 15503
C	D
 15808	 15807
 15624	 15531



Part No.	Qty.	Description	Part No.	Qty.	Description	Part No.	Qty.	Description
S1190	2	Ball Joint 1/2"	S4021	1	Lift Bracket Right Front	S4633-1	1	Four Point Connector Left Hand
S1960	1	Rivet Lift	S4152	1	Control Strap Weld.	S4633-2	1	Four Point Connector Right Hand
S3729	2	Attachment Pin	S4155	1	Control Arm Weld.	S4662	1	Control Rod, short
S3886	1	Drawbar Weld.	S4154	1	Step Grip	S4663	1	Control Linkage, short
S3999	1	Ball Joint EC5-106 180°	S4216	1	Steering Arm Weld.	S4689	1	Cable Lock Angle
S4000	1	Ball Joint R-108-6 90°	S4297	1	Frame Weld.	S4701	1	Step Assembly
S4012	2	Connector	S4310	1	Drag Link	120	1	Nut Slotted 3/8"x16 UNF
S4015	1	Lift Bracket Right Rear	S4338	1	Carburetor Clip	296	1	Cotter Pin 1/8" x 1 1/2"
S4016	1	Lift Bracket Left Rear	S4365	1	Step Welded Assy.	1273	1	Presto Pin
S4019	1	Lift Bracket Left Front	S4437	1	Drag Link Assy.	15393	2	Roll Pin 3/16"x1 3/8"
			S4607	1	Shifter Bar Weld, Short	15503	2	Hex Nut 3/8"-16 UNC
			S4608	1	Shifter Bar Weld, Long	15531	2	Hex Nut 1/2"-20 UNC
						15554	2	Locknut 1/2"-13 UNC

FRAME ASSEMBLY (Contd.)

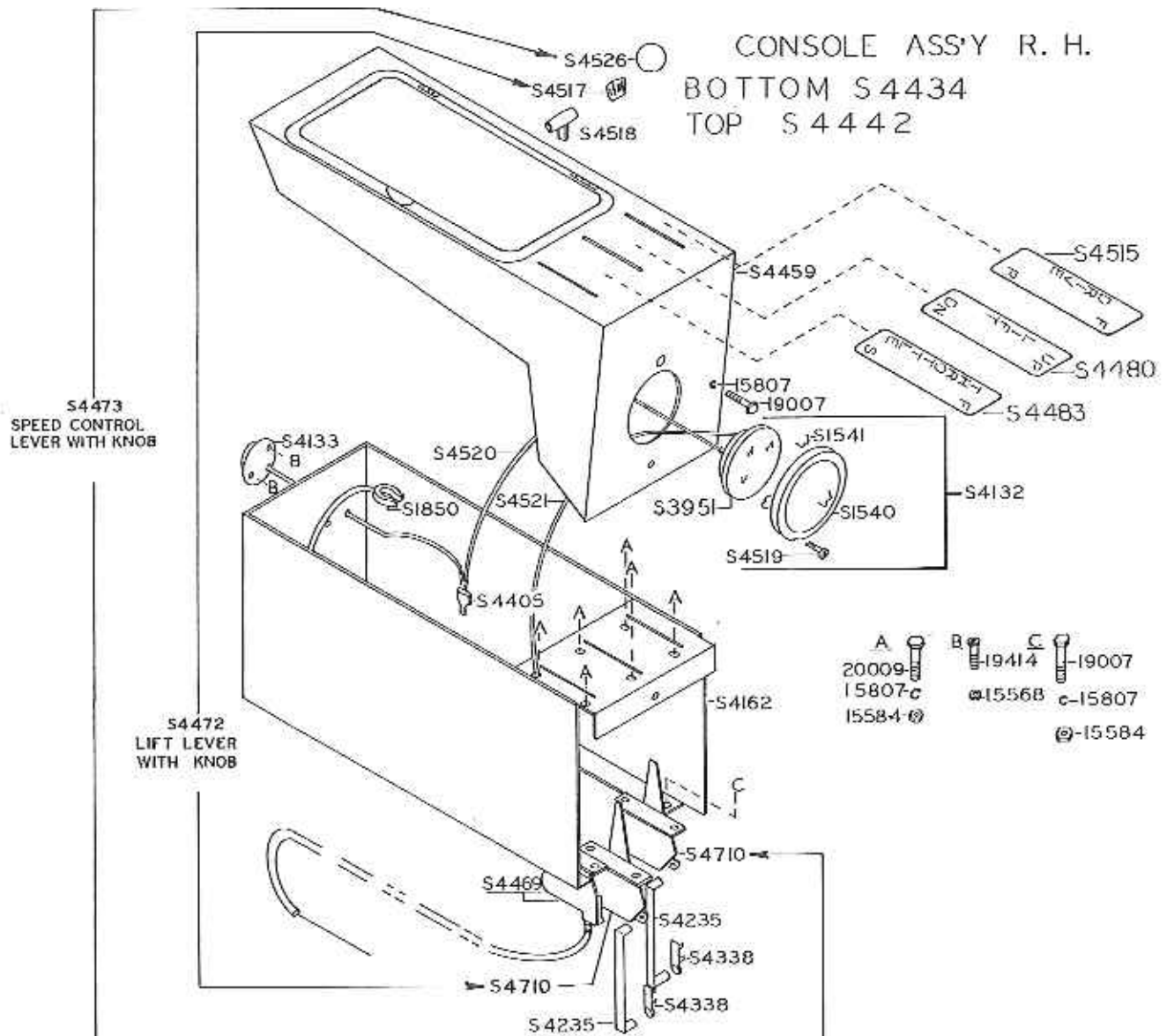
Part No.	Qty.	Description
15577	2	Hex Nut 1/2"-20 UNF
15588	2	Cable Nut 3/16"
15624	2	Hex Nut 5/16"-24 UNF
15806	1	Lockwasher 1/2" Med.
15807	2	Lockwasher 1/4" Med.
15808	2	Lockwasher 5/16" Med.
15812	2	Lockwasher 3/8" Med.
15916	2	Flatwasher 1/2" Med.
15917	10	Flatwasher 7/16"
15979	10	Cotter Pin 1/8" x 3/4"
19007	1	Capscrew 1/4"-20 UNC 3/4"
19103	2	Capscrew 1/2"-13 UNC x 1 1/4"
19117	2	Capscrew 3/8"-16 UNC x 1"
19433	2	Presto Pin
S4261	1	Park Brake Strap



SEE PARTS LIST
PAGE 16

CONSOLE ASSEMBLY L.H.

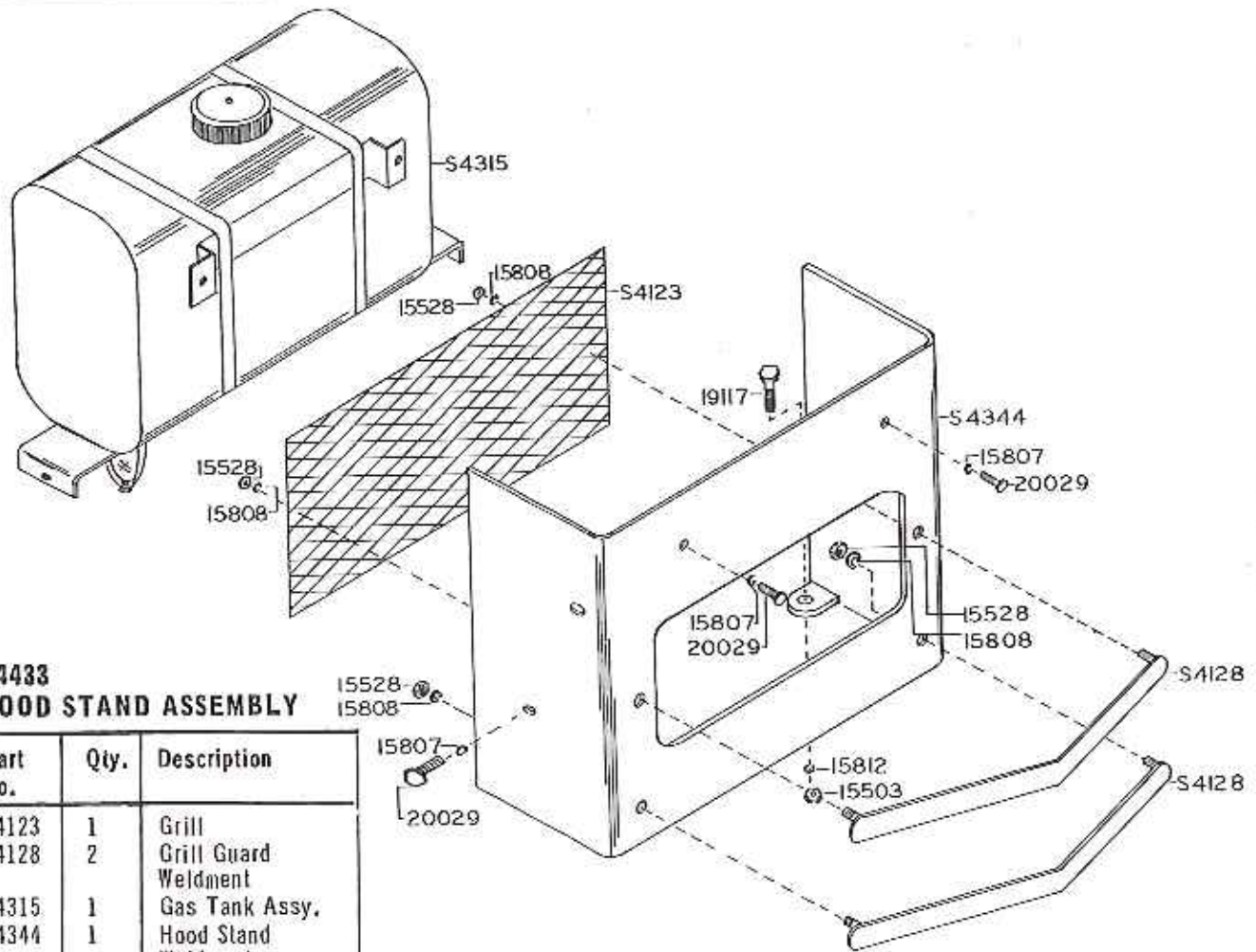
Part No.	Qty.	Description	Part No.	Qty.	Description	Part No.	Qty.	Description
S548	1	Hood Support Bushing	S4471	1	Park Brake Lever Assembly	15608	2	Locknut 1/4"-20 UNC
S1540	1	Face Plate, Headlight				15807	6	Lockwasher 1/4"
S1541	3	Locking Clip	S4472	1	Latch Control w/knob	15911	2	Flatwasher 1/4"
S3951	1	Sealed Beam Headlight Assy.	S4513	1	Decal - Brake	15927	1	Toothwasher 5/16"
			S4514	1	Decal - Console	19007	1	Capscrew 1/4"-20 UNC x 1/4"
S4109	1	Extension Spring	S4516	1	Sealed Beam Headlight			
S4133	1	Tail Light	S4517	1	Latch Control Knob	19080	1	Capscrew 5/16"-18 UNC x 1 1/4"
S4146	1	Console Weld, L.H.	S4518	1	Park Brake Lever Knob			
S4208	1	Seat Adjustment Knob	S4519	1	Headlight Bolt	19114	1	Capscrew 1/4"-20 UNC x 1 1/4"
S4238	1	Console Lock Weld.	S4520	1	Headlight Wire			
S4239	1	Latch Control Rod	S4521	1	Headlight Ground Wire	19414	2	Stove Bolt 3/16"-24 UNC x 1/2"
S4338	1	Carburetor Clip	S4710	1	Control Lever			
S4405	1	2 x 1 Connector	15568	2	Hex Nut 3/16"-24 UNC	20009	5	Capscrew 1/4"-20 UNC x 1/2"
S4458	1	Console Top Weld.	15584	5	Hex Nut 1/4"-20 UNC			



FOR PARTS LIST
SEE PAGE 17

CONSOLE ASSEMBLY R.H.

Part No.	Qty.	Description	Part No.	Qty.	Description	Part No.	Qty.	Description
S1540	1	Face Plate, Headlight	S4469	1	Throttle Lever Assy.	S4521	1	Headlight Ground Wire
S1541	3	Locking Clip	S4472	1	Lift Lever w/Knob	S4526	1	Speed Control Lever Knob
S1850	1	Ground Cable	S4473	1	Speed Control Lever w/Knob	S4710	2	Control Lever
S3951	1	Sealed Beam Headlight Assembly	S4480	1	Decal - Lift	15568	2	Hex Nut 3/16"-24 UNC
S4133	1	Tail Light	S4483	1	Decal - Throttle	15584	10	Hex Nut 1/4"-20 UNC
S4162	1	Console Welded Assy. Right Hand	S4515	1	Decal - Drive	15807	10	Lockwasher 1/4"
S4235	2	Control Rod, Long	S4516	1	Sealed Beam Headlight	19007	4	Capscrew 1/4"-20 UNC x 1/2"
S4338	2	Carburetor Clip	S4517	1	Latch Control Knob	19414	2	Stove Bolt 3/16"-24 UNC x 1/2"
S4405	1	2 x 1 Connector	S4518	1	Park Brake Lever Knob	20009	6	Capscrew 1/4"-20 UNC x 1/2"
S4459	1	Console Top Weld.	S4519	1	Headlight Bolt			
			S4520	1	Headlight Wire			

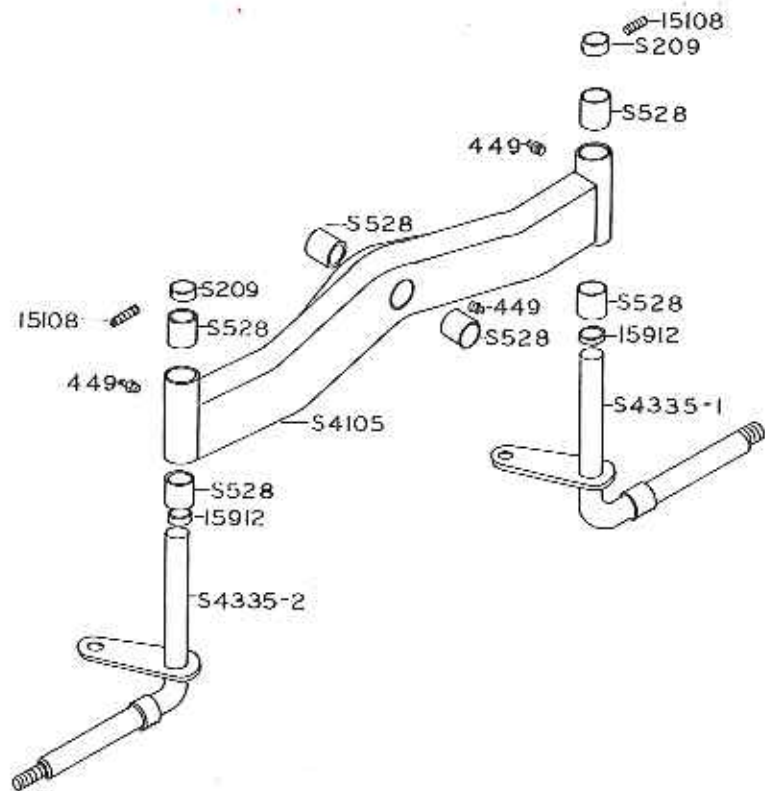


S4433 HOOD STAND ASSEMBLY

Part No.	Qty.	Description
S4123	1	Grill
S4128	2	Grill Guard Weldment
S4315	1	Gas Tank Assy.
S4344	1	Hood Stand Weldment
15503	4	Hex Nut 3/8"
15528	4	Hex Nut 5/16" x 18 UNC
15807	4	Lockwasher 1/4"
15808	4	Lockwasher 5/8"
15812	4	Lockwasher 3/8"
19117	4	Capscrew 3/8" - 16 x 1
20029	4	Capscrew 1/4" - 20 UNC x 1/2"

**S4431
FRONT AXLE ASSEMBLY**

Part No.	Qty.	Description
S209	2	Set Collar
S528	6	Axle Pivot Bushing
S4105	1	Front Axle Weld.
S4335-1	1	Spindle Welded Assembly L.H.
S4335-2	1	Spindle Welded Assembly R.H.
449	3	Grease Zerk
15108	2	Setscrew
15912	2	Machinery Bushing

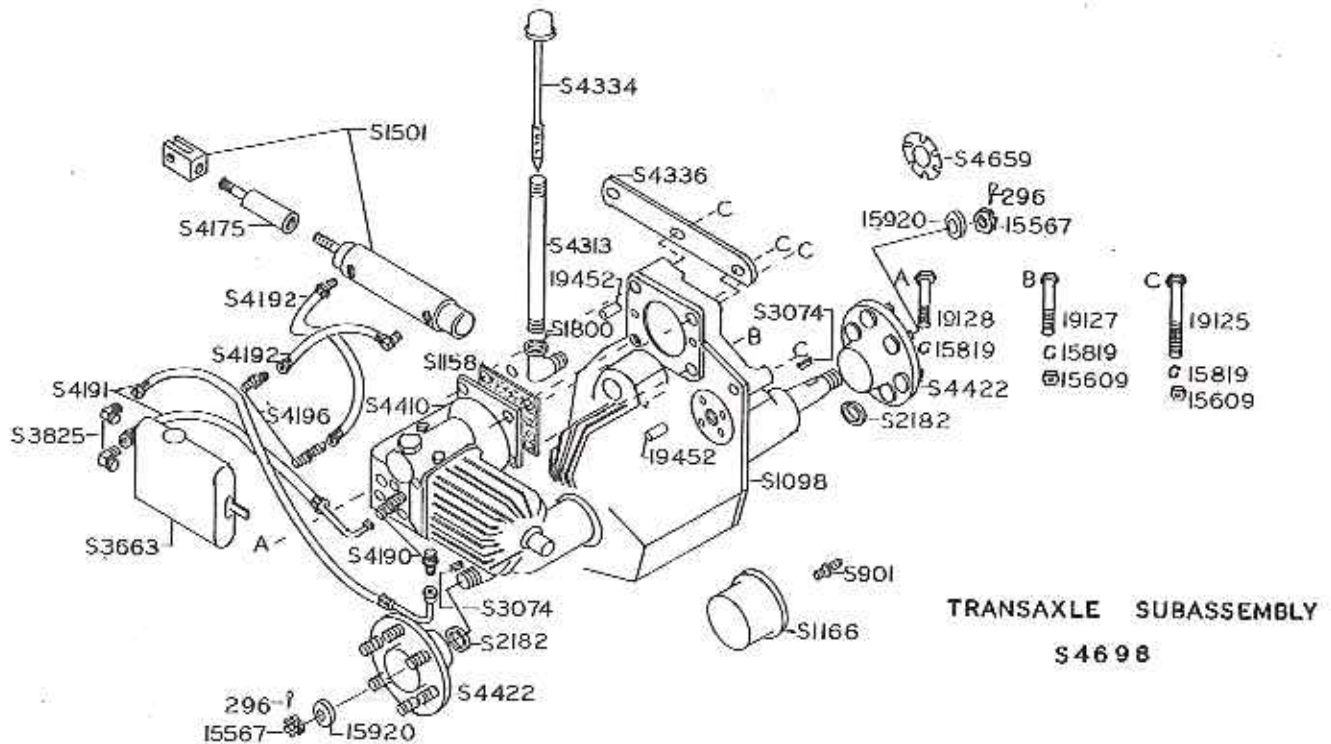


DASH STAND ASSEMBLY S4436

Part No.	Qty.	Description	Part No.	Qty.	Description	Part No.	Qty.	Description
S917	1	Light Switch	S4405	1	2 x 1 Connector	15807	10	Lockwasher 1/8" Med.
S1303	1	Ammeter	S4447	1	Steering Assembly	15808	2	Lockwasher 5/16"
S2191	1	Voltage Regulator	S4460	1	Clutch Control Cable	15812	2	Lockwasher 3/8"
S3905	1	Pedal Weld, R.H.	S4461	1	Choke Control Cable	15822	2	Lockwasher 3/16"
S3907	2	Pivot Bracket Weld.	S4478	1	Dash Panel Sub-Assy.	15911	4	Flatwasher 1/4"
S3912	1	Pedal Weld, L. H.	S4494	1	Dash Panel Assy.	19007	8	Capscrew 1/4"-20 UNC x 3/4"
S4000	2	Ball Joint	S4625	1	Ignition Switch Ground	19079	7	Capscrew 5/16" - 18 UNC x 3/4"
S4051	1	Steering Column Support Clamp	S4627	1	Dash Loom	19098	2	Capscrew 3/8" - 16 UNC x 1 1/4"
S4065	1	Clutch Lock	S4628	1	Engine Loom	19102	1	Capscrew 5/16"-18 UNC x 1"
S4099	1	Dash Weld.	S4660	1	Steering Cover	19414	2	Stove Bolt 3/16"-24 UNC x 1/2"
S4135	1	Starter Solenoid	S4664	1	Control Linkage, long	20009	2	Capscrew 1/4"-20 UNC x 1/2"
S4136	1	Ignition Switch	S4696	4	Pop Rivet			
S4164	2	Step Grip	S4702	1	Control Linkage Assy.			
S4273	2	Hood Latch	295	2	Cotter Pin			
S4328	2	Spacer Plate	15528	4	Hex Nut 5/16"-18 UNC			
S4361	1	Floorboard Weld.	15531	6	Hex Nut 1/4"-20 UNC			
S4393	4	Dished Tooth Washer	15568	2	Hex Nut 3/16"-24 UNC			
S4384	1	Wire Clamp	15602	5	Locknut 5/16"-18 UNC			
			15624	4	Hex Nut 5/16"-24 UNF			

FRONT CLUTCH ASSEMBLY S4706 - MOTOR ASSEMBLY S4440 SEE PAGE 21

Part No.	Qty.	Description	Part No.	Qty.	Description	Part No.	Qty.	Description
S1363	1	Spring, Idler	S4585	1	Pulley	15819	1	Lockwasher 7/16" Med.
S1819	2	1" Close Black Nipple	S4595	1	Cable Anchor	15917	1	Flatwasher 7/16"
S2117	1	Ring Lock	S4602	1	Clutch Arm Weld.	15980	1	Cotter Pin 1/16" x 3/4"
S2964	1	Muffler	S4668	1	Spacer, Idler	19433	1	Presto Pin
S3481	1	Straight Ell 1" x 45	S4700	1	Pulley, Clutch	19445	1	Clevis Pin 1/4" x 3/4"
S3975	1	Briggs & Stratton Balanced Motor	S4703	1	Clutch Mount Weld.	20009	1	Capscrew 1/4" - 20 UNC x 1/2"
S3990	1	Seal Collar	S4705	1	Square Key 1/4" x 1/2" x 1"	20017	1	Capscrew 3/8"-16 UNC x 2
S4080	1	Clutch Cable Assy.	S4707	1	Speed Adjusting Nut	20066	1	Capscrew 7/16"-20 UNF x 1 1/4"
S4249	1	Drive Pulley	15456	1	Roll Pin 1/4" x 1 1/4"			
			15527	1	Locknut 3/8"-16 UNC			
			15608	3	Locknut 1/4"-20 UNC			

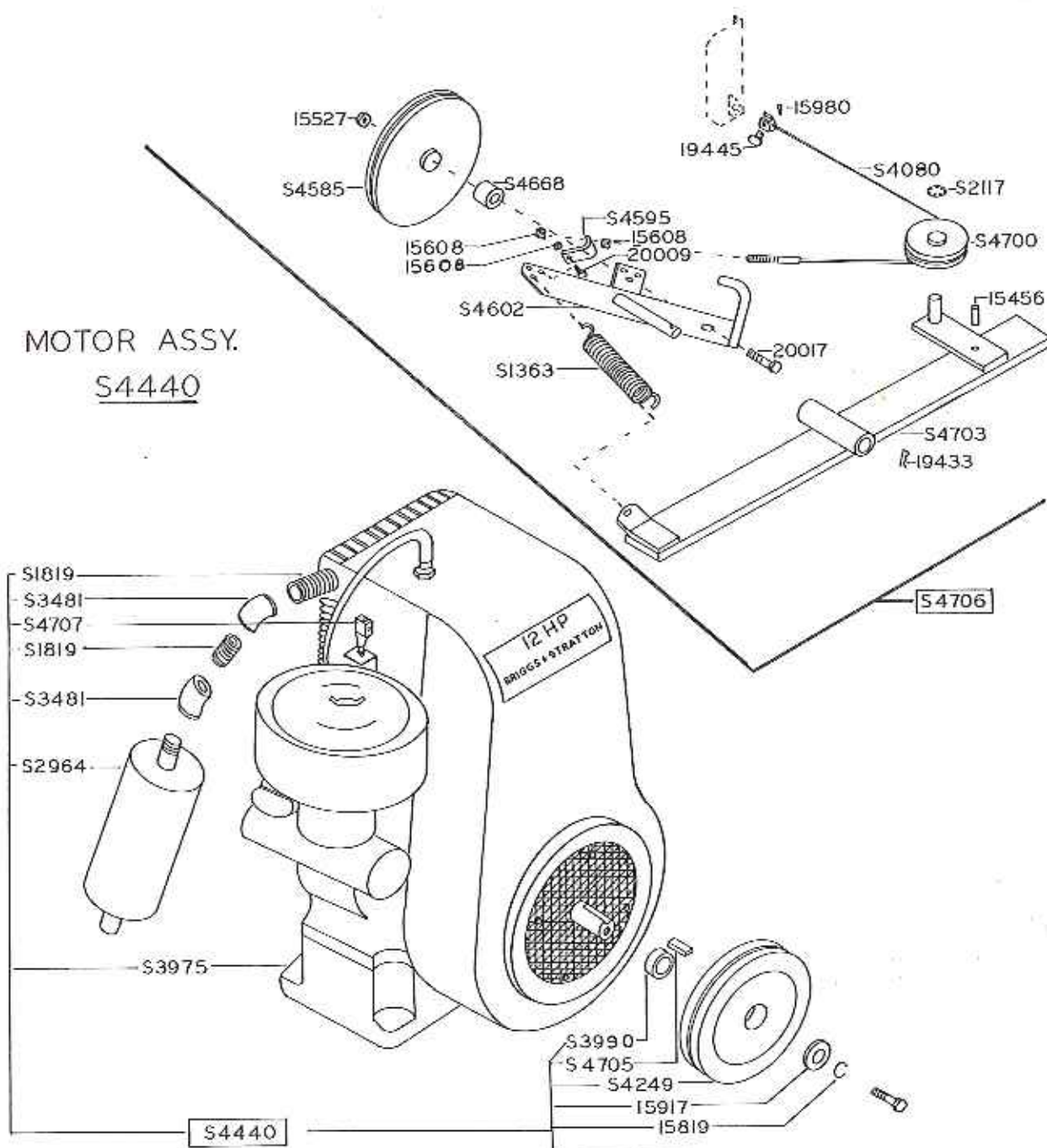


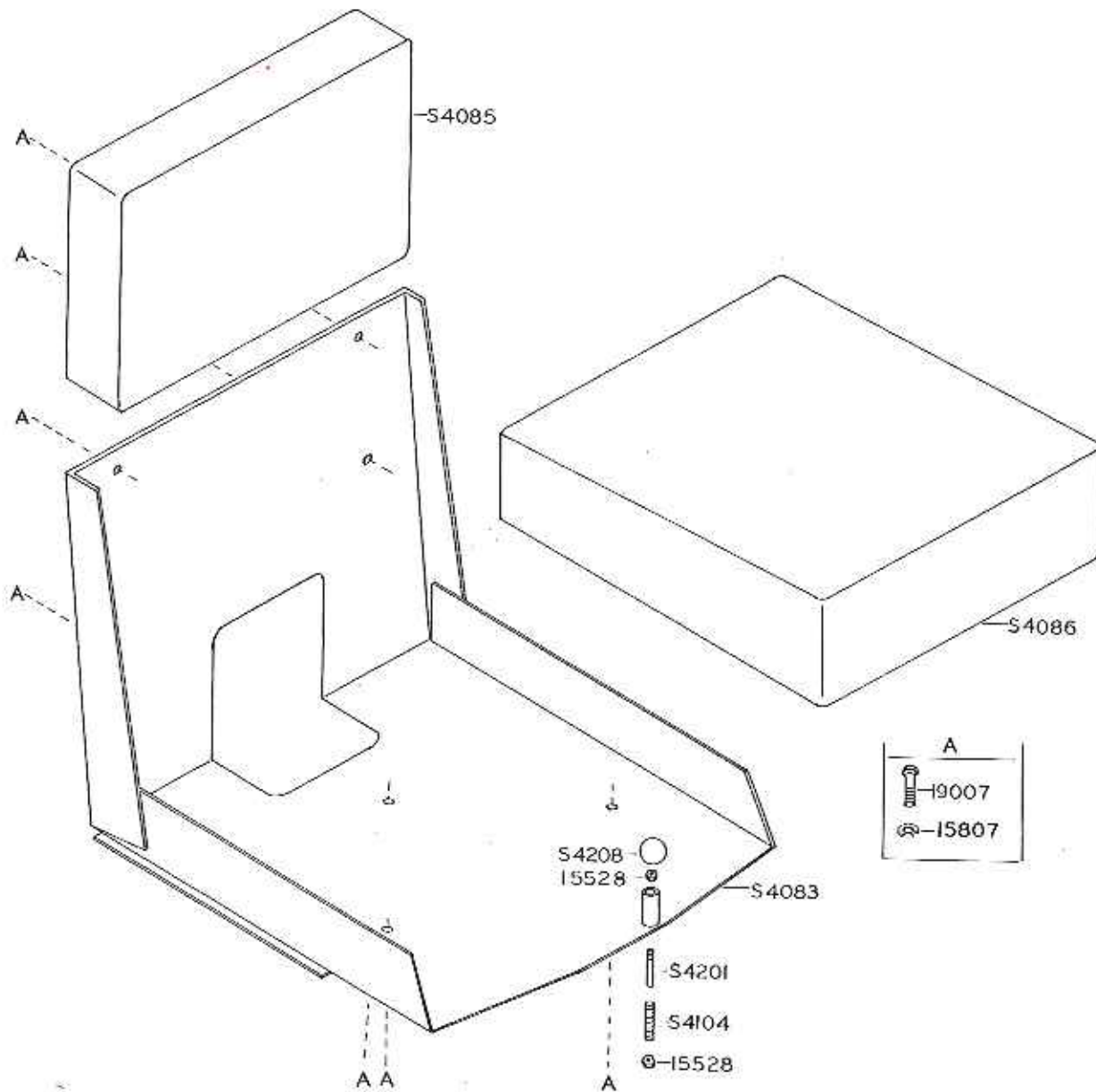
TRANSAXLE ASSEMBLY S4420

Part No.	Qty.	Description	Part No.	Qty.	Description	Part No.	Qty.	Description
S1501	1	Lift Cylinder	S4336	1	Transaxle Mount Strap	15567	2	Hex Nut Slotted 3/4" - 16 UNF
S1800	2	Street Ell	S4422	2	Rear Hub Assy.	15609	5	Hex Nut 7/16" 20 UNF
S2182	2	Axle, Seal	S4659	1	Park Brake Weld.	15819	6	Lockwasher 7/16"
S3043	1	"O" Ring	S4698	1	Transaxle Sub-Assy.	15920	2	Flatwasher 3/8" S.A.E.
S4722	1	Control Valve			(As Follows)	19125	4	Capscrew 7/16" - 20 UNF x 4"
S3825	2	Adapter	S901	1	Filter Adapter	19127	1	Capscrew 7/16" - 20 UNF x 3
S4175	1	Cylinder Extension	S1098	1	Dana Axle	19128	1	Capscrew 7/16" - 20 UNF x 1 1/2"
S4190	2	Pump Adapter	S1158	1	Gasket	19452	2	Dowel Pin
S4191	2	Hose	S1166	1	Oil Filter			
S4192	2	Hose	S3074	2	Key			
S4196	2	Adapter Valve	S4410	1	Sunstrand Pump			
S4313	1	Filler Pipe	296	2	Cotter Pin			
S4334	1	Dip Stick Weld.						

FRONT CLUTCH ASSY.
S4706

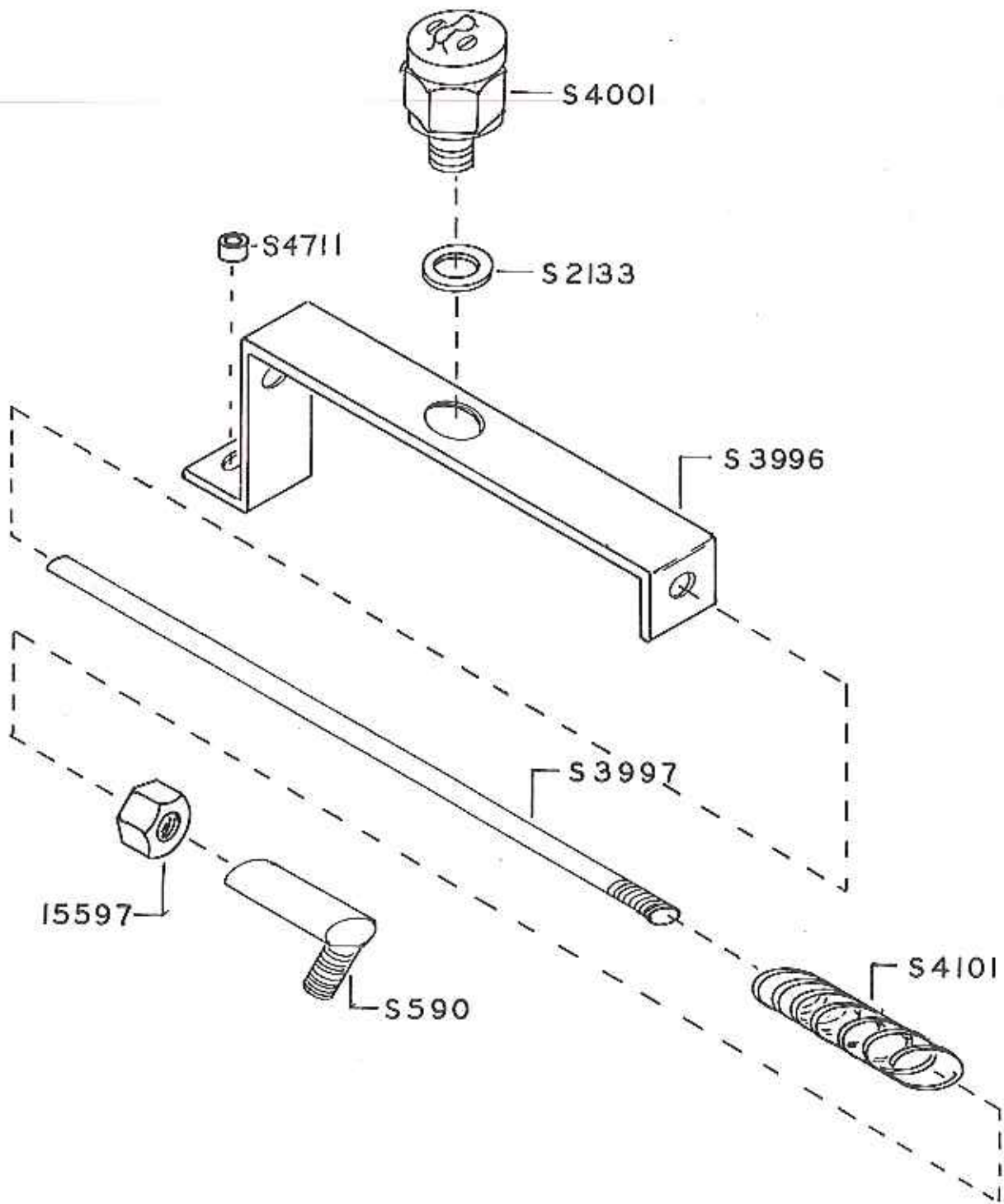
MOTOR ASSY.
S4440





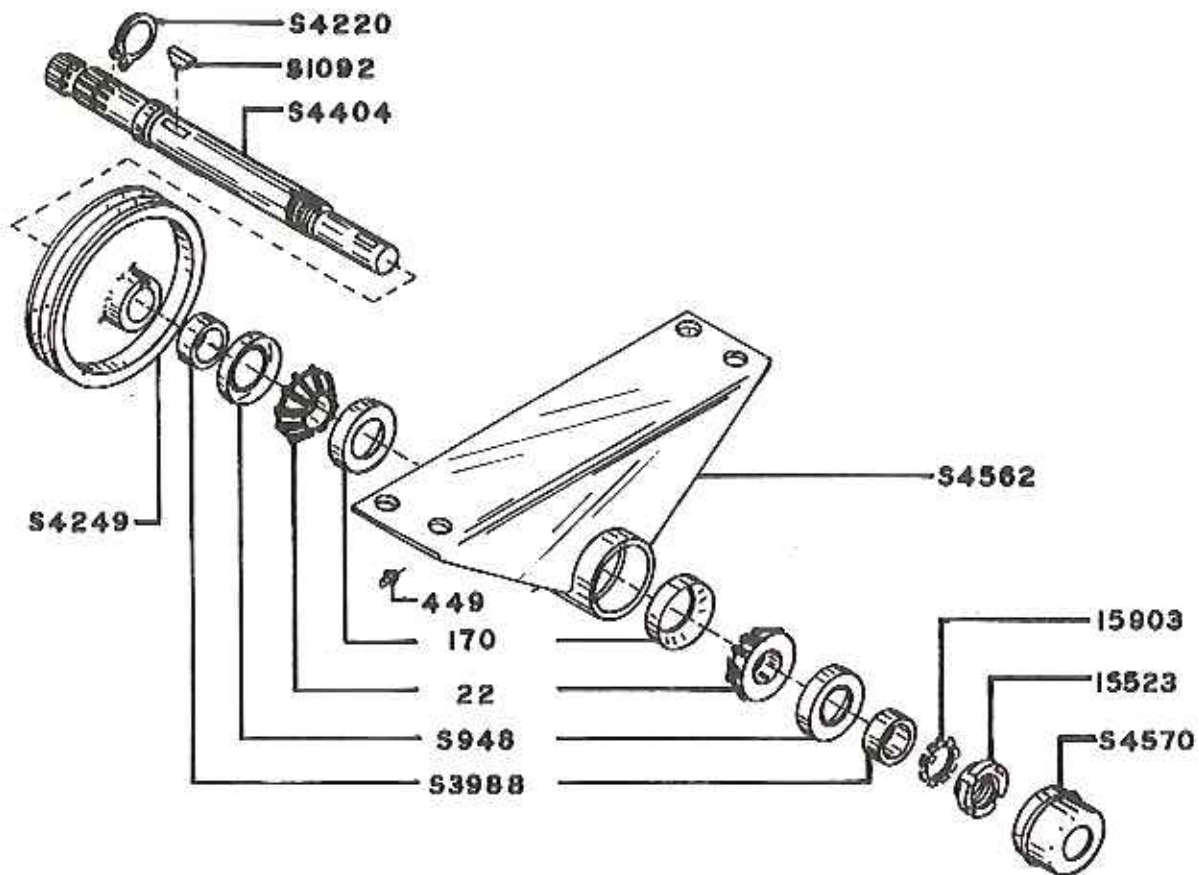
SEAT ASSEMBLY S4084

Part No.	Qty.	Description
S4083	1	Seat Weldment
S4085	1	Seat Cushion
S4086	1	Seat Cushion
S4104	1	Compression Spring
S4201	1	Seat Lock
S4208	1	Seat Adjustment Knob
15528	2	Hex Nut 5/16"-18 UNC
15807	7	Lockwasher 1/2"
19007	7	Capscrew 3/4"-20 UNC x 3/4"



S 4003 NEUTRAL ASSEMBLY

Part No.	Qty.	Description
S590	1	Ball Joint 3/8
S2133	1	Machinery Bushing $\frac{3}{8}$ I.D.
S3996	1	Guide Rod Strap
S4001	1	Safety Switch
S4101	1	Spring
S4711	1	Rubber Bushing
15597	1	Hex. Nut 3/8-24 UNF



JACKSHAFT ASSEMBLY S4596

Part No.	Qty.	Description
S3988	2	Collar
S4562	1	Jackshaft Mount
15903	1	Lockwasher
15523	1	Nut
S4570	1	Weed Guard
S4220	1	Retaining Ring
S1092	1	Woodruff Key
S4404	1	Jackshaft
S4249	1	Pulley
449	1	Grease Fitting
170	2	Bearing Cup
22	2	Bearing Cone
S948	2	Seal

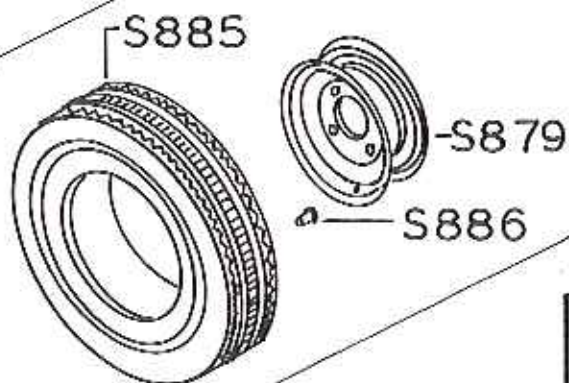


S2866 BOX OF TIRES

Part No.	Qty.	Description
S1175	2	Tire Assy. Front
S785	2	Tire Assy. Rear

S785 TIRE ASSEMBLY

Part No.	Qty.	Description
S887	1	Rim
S888	1	Sub Tire 8,50 x 12
S889	1	Valve Stem



S1175 TIRE ASSEMBLY

Part No.	Qty.	Description
S885	1	Tire 6,50 x 8
S886	1	Valve Stem
S879	1	Rim



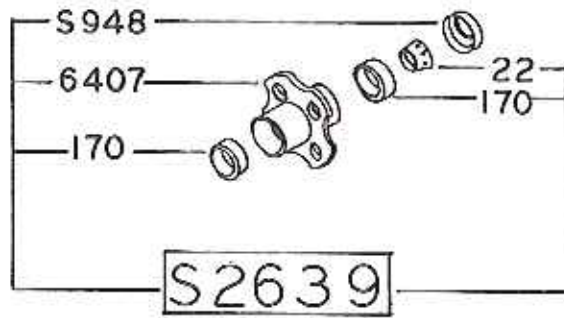
S2865 BOX OF TIRES

Part No.	Qty.	Description
S2932	2	Tire Assy. Rear
S1175	2	Tire Assy. Front

S2932 TIRE ASSEMBLY

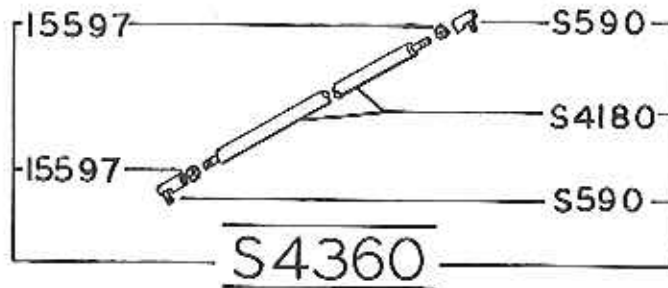
Part No.	Qty.	Description
S887	1	Rim
S889	1	Valve Stem
S2610	1	Tract Tire 8.50 x 12

HUB ASSEMBLY S2639

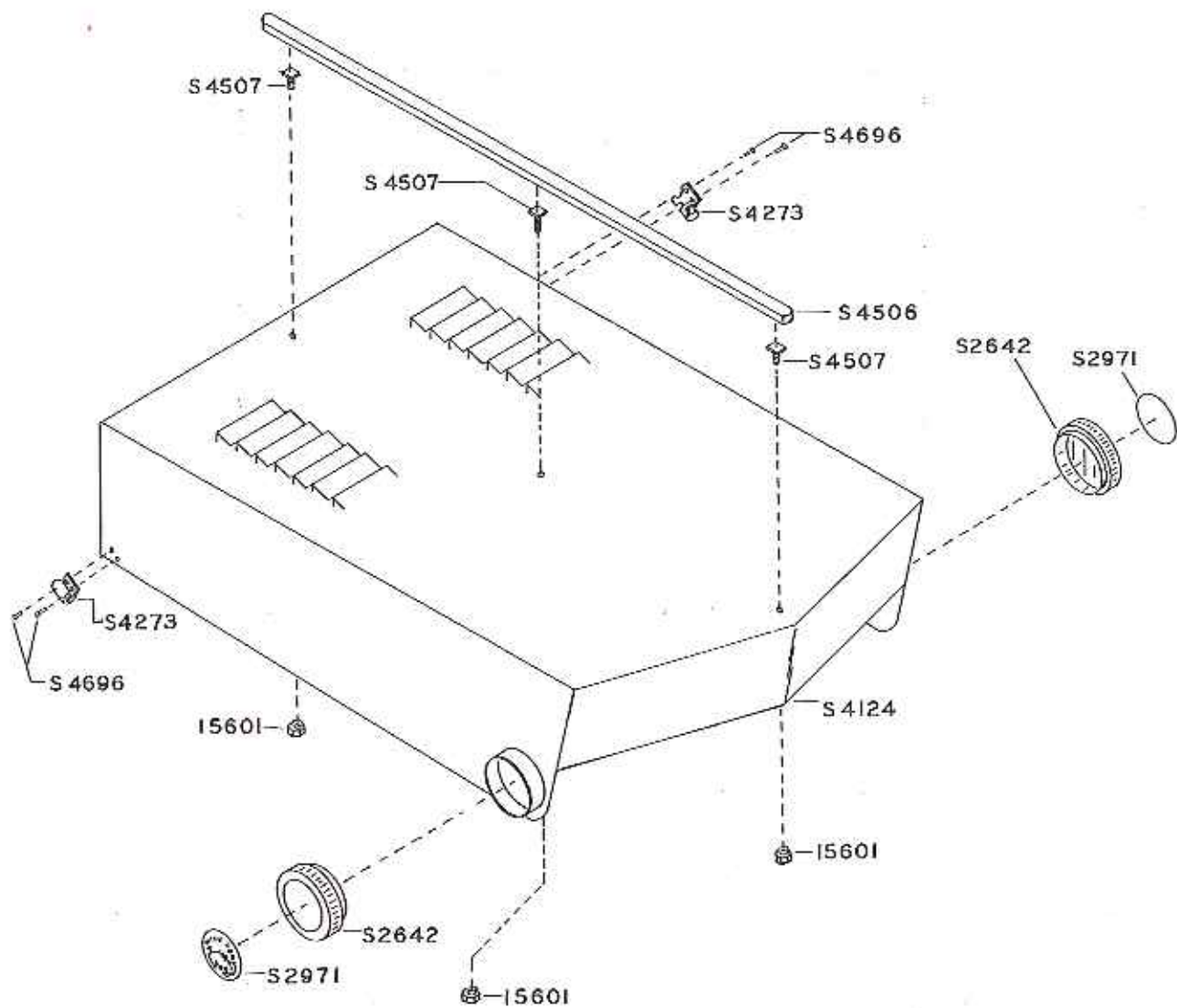


Part No.	Qty.	Description
S948	1	Grease Seal
22	1	Bearing Cone
170	2	Bearing Cup
6407	1	Hub

STEERING LINKAGE ASSY. S4360



Part No.	Qty.	Description
S590	2	Ball Joint
S4180	1	Steering Linkage
15597	2	Hex Nut 3/8"-24 UNF



HOOD ASSEMBLY S4432

Part No.	Qty.	Description
S2642	2	Steering Cap
S2971	2	Steering Wheel Decal
S4124	1	Hood Weldment
S4273	2	Hood Latch
S4506	1	Chrome Strip
S4507	3	Chrome Hold Down Bolt
S4696	3	Pop Rivet 3/16"
I560I	3	Hex Nut 10-32 UNF

WHEN ORDERING SPARE PARTS
FOR HYDROGEAR PUMP:

To help us serve you better, the following information should be included with parts orders:

1. Model Number
2. Part Number of Part Needed
3. Name of Part

If you are ordering parts for a specific pump or motor, also include:

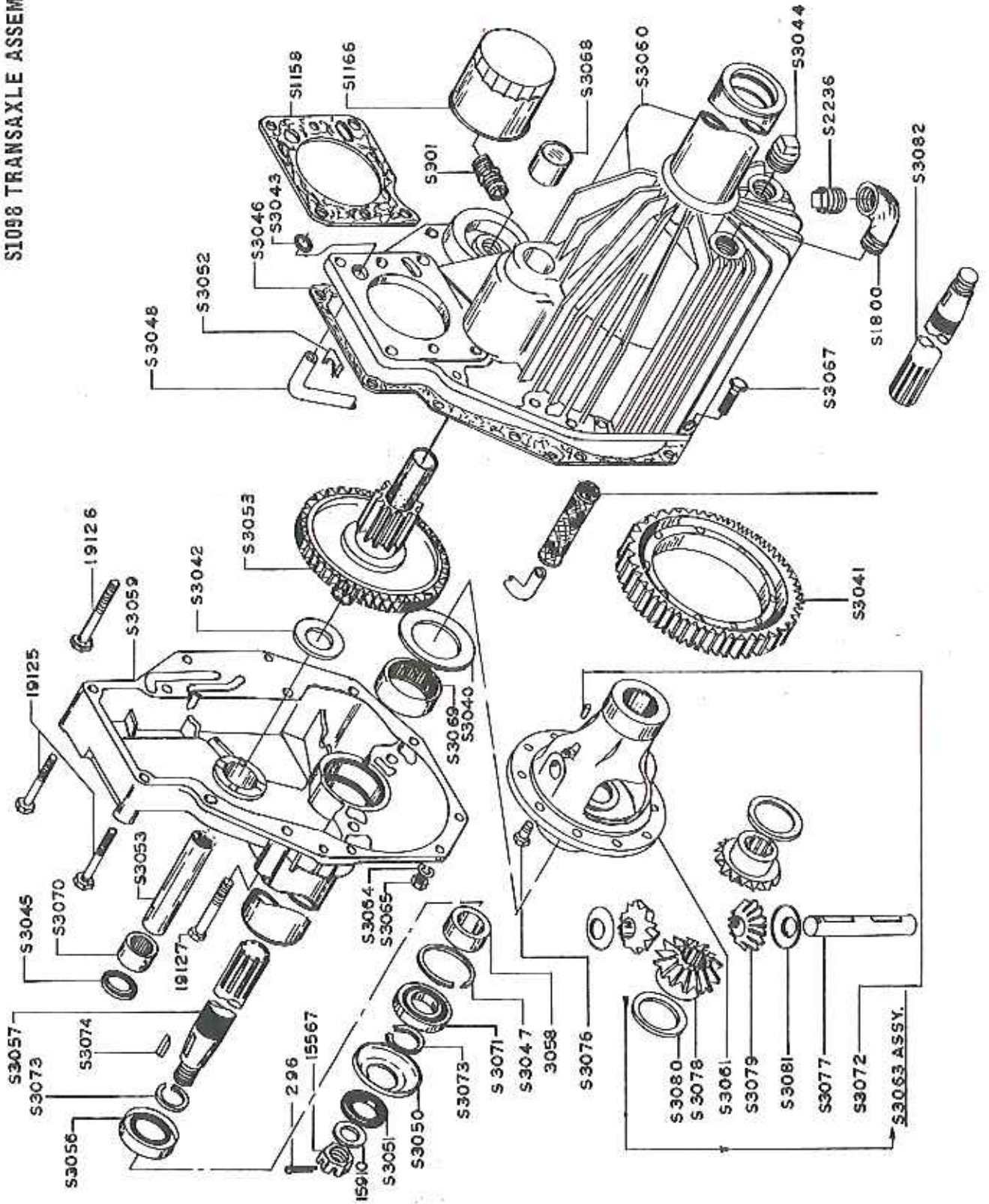
4. Serial Number of the Pump or Motor

The serial number and model number can be found on the name plate attached to the outside of the pump or motor.

S1098 TRANSAXLE ASSEMBLY

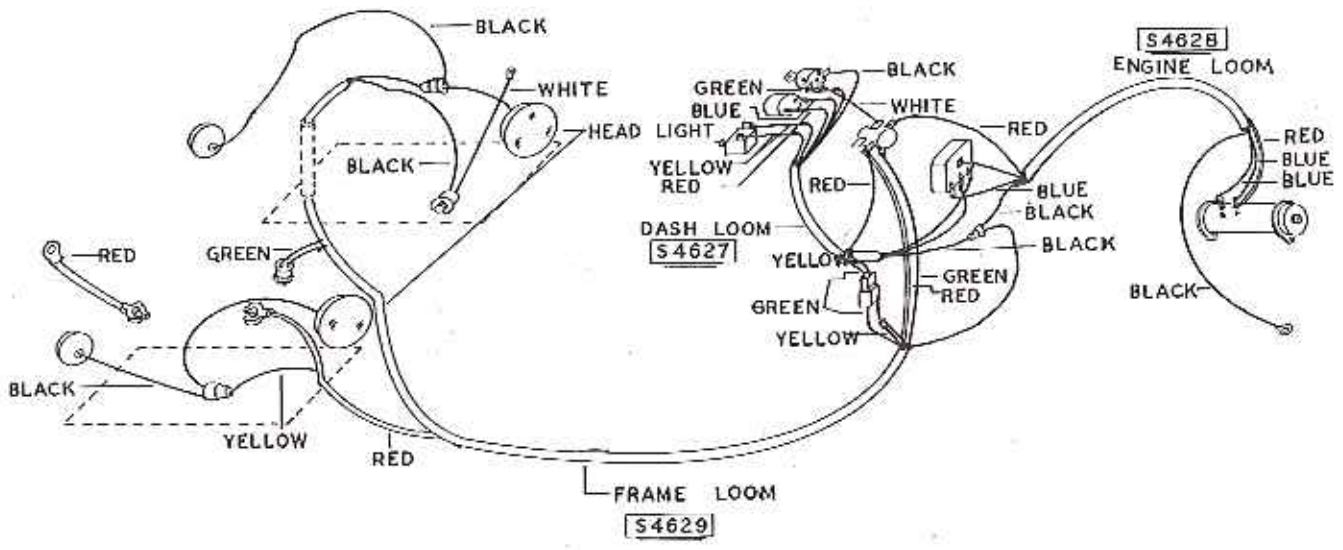
Part No.	Qty.	Description	Part No.	Qty.	Description	Part No.	Qty.	Description
S3040	2	Differential Case				S3076	10	Drive Gear Screw
		Thrust Washer	S3059	1	Cover & Tube Assy.	S3077	1	Pinion Mate Shaft
S3041	1	Differential Drive Gear			Fin.	S3078	2	Differential Side Gear
			S3060	1	Housing & Tube Assy.	S3079	2	Differential Pinion Mate
S3042	2	Countershaft Gear			Fin.	S3080	2	Diff. Side Gear Thrust Washer
		Thrust Washer	S3061	1	Diff. Case Sub-Assy.			
S3043	1	Oil Strainer Tube "O" Ring	295	2	Cotter Pin	S3081	2	Diff. Pinion Mate Thrust W.
			S2236	1	Filler Plug	S3082	1	Axle Shaft
S3044	1	Magnetic Drain Plug	S3064	7	Housing Bolt Nut	S1166	1	Oil Filter
S3045	1	Countershaft Oil Seal			Lockwasher	S1800	1	Street Elbow
S3046	1	Cover Gasket	S3065	7	Housing Bolt Nut	S901	1	Filter Connector
S3047	2	Tube Snap Ring	15567	2	Axle Shaft Nut	S3063	1	Differential Assembly
S3048	1	Oil Strainer Tube	S3067	7	Housing Bolt	S1158	1	Gasket
S3049	1	Oil Strainer	S3068	1	Countershaft Bearing	15819	6	Lockwashers 7/16" Med.
S3050	2	Bearing Retainer	S3069	2	Diff. Needle Bearing	15609	5	Hex Nuts 7/16"-20 UNF
S3051	2	Felt Seal	S3070	1	Countershaft Bearing	19128	1	Capscrew 7/16"-20 UNF x 1 1/2"
S3052	2	Oil Strainer Tube Clip	S3071	2	Wheel Bearing			
S3053	1	Countershaft and Gear Assembly	S3072	1	Pinion Mate Shaft Lock Pin	19127	1	Capscrew 7/16" 20 UNF x 3"
					Snap Ring	19126	2	Capscrew 7/16"-20 UNF x 3 1/4"
S3056	2	Tube Oil Seal	S3073	4	Axle Shaft Key			
S3057	1	Axle Shaft Fin.	S3074	2	Axle Shaft Nut Wash	19125	2	Capscrew 7/16"-20 UNF x4"
			15910	2				

S1098 TRANSAXLE ASSEMBLY



COLOR CODE

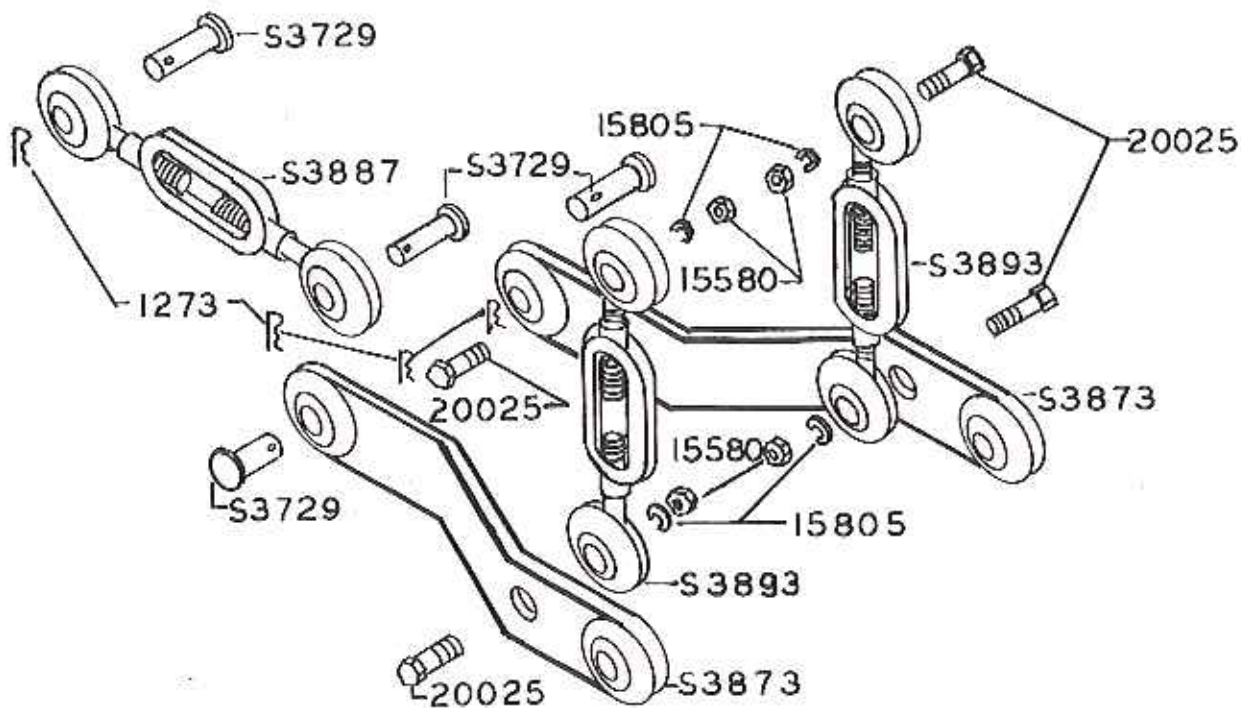
YELLOW	—	LIGHTS
GREEN	—	STARTER
BLUE	—	IGNITION
BLACK	—	IGNITION



WIRING DIAGRAM

Part No.	Qty.	Description
S4627	1	Dash Loom
S4628	1	Engine Loom
S4629	1	Frame Loom

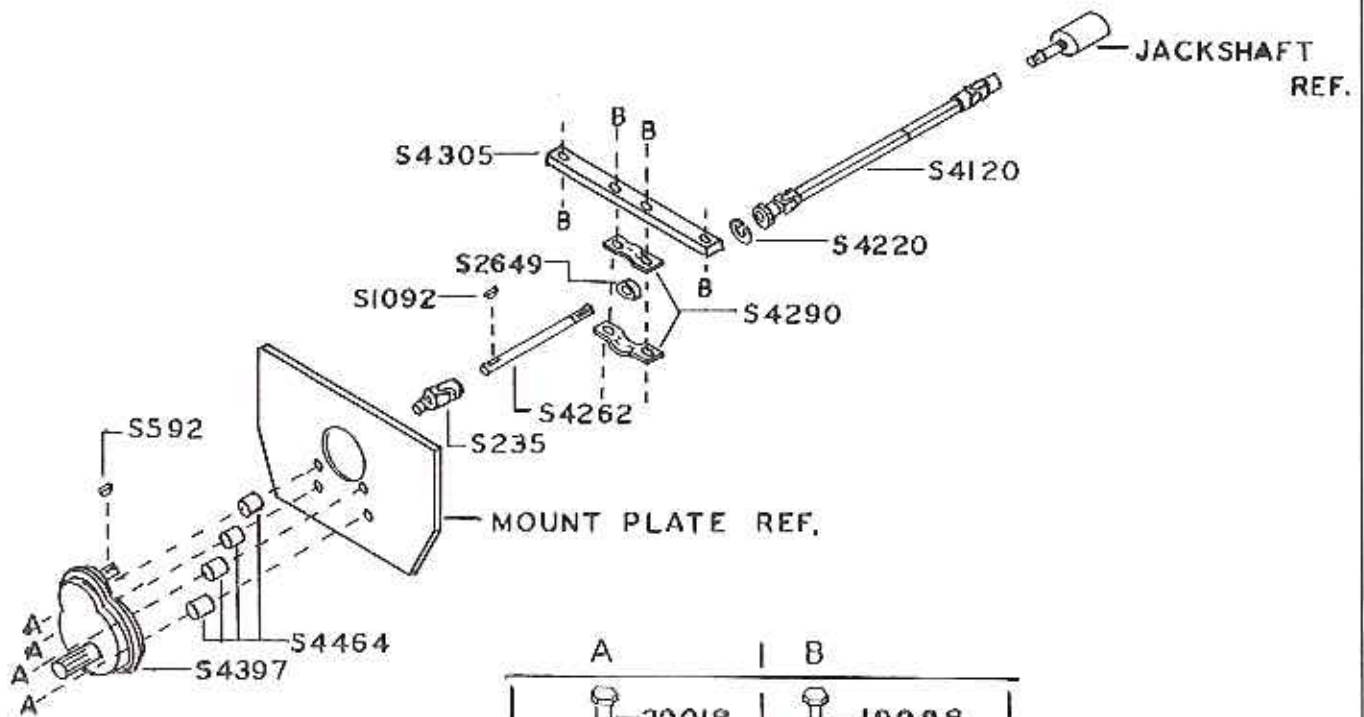
ACCESSORIES



3 PT. HITCH KIT S4246

Part No.	Qty.	Description
S3729	4	Hitch Pin
S3873	2	Attachment Arm Weldment
S3887	1	Upper Link Assembly
S3893	2	Lower Link Assembly
1273	4	Presto Pin
15580	4	Hex Nut 5/8"-11 UNC
15805	4	Lockwasher 5/8"
20025	4	Capscrew 5/8"-11 UNC x 2 3/4"

S4254 REAR P.T.O. KIT



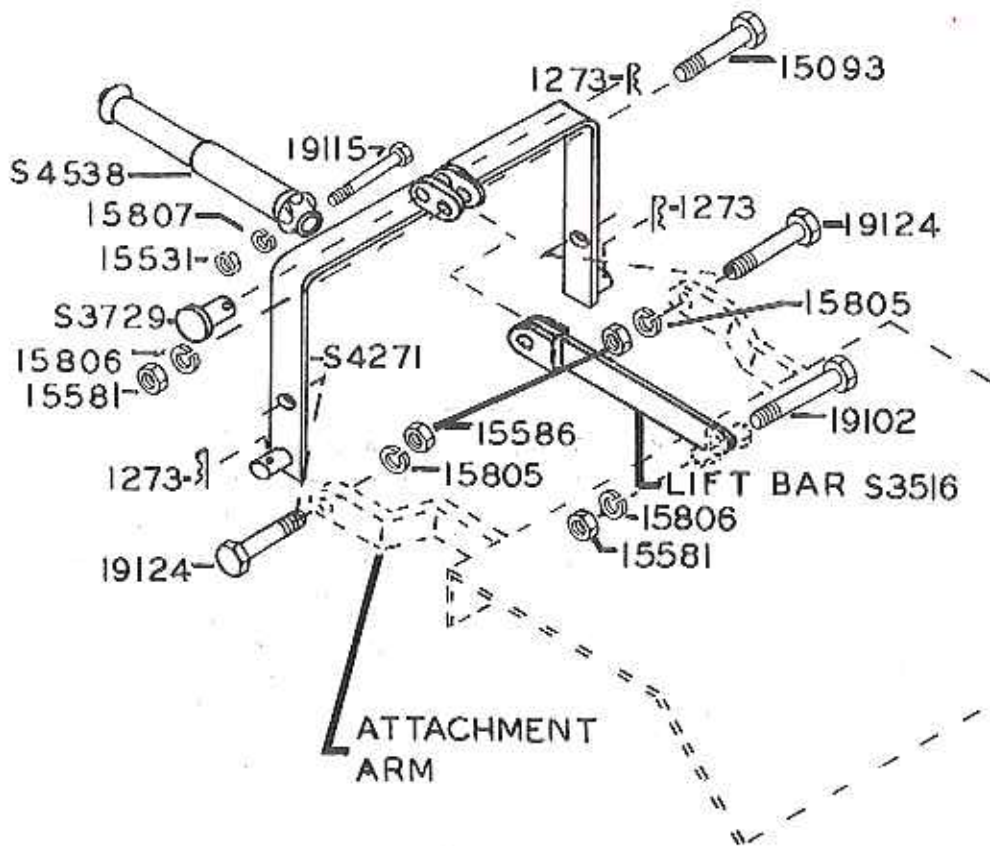
A	B
20018	19098
15812	15915
	15812
	15503

Part No.	Qty.	Description
S235	1	Universal Joint
S592	1	Woodruff Key 3/8" x 7/8"
S1092	1	Woodruff Key 3/16" x 3/4"
S2649	1	Pillow Block Bearing with Lockcollar
S4120	1	Drive Shaft
S4220	1	Retaining Ring
S4262	1	Drive Shaft
S4290	1	Stamped Pillow Block Mtg.
S4305	1	Bearing Support
S4397	1	Reduction Box Assembly
S4464	4	Spacer
15503	4	Hex Nut 3/8"-16 UNC
15812	8	Lockwasher 3/8" Med.
15915	4	Flatwasher 3/8" Med.
19098	4	Cap screw 3/8"-16 UNC x 1 1/4"
20018	4	Cap screw 3/8"-16 UNC x 2 3/4"

REAR P. T. O. INSTRUCTION SHEET

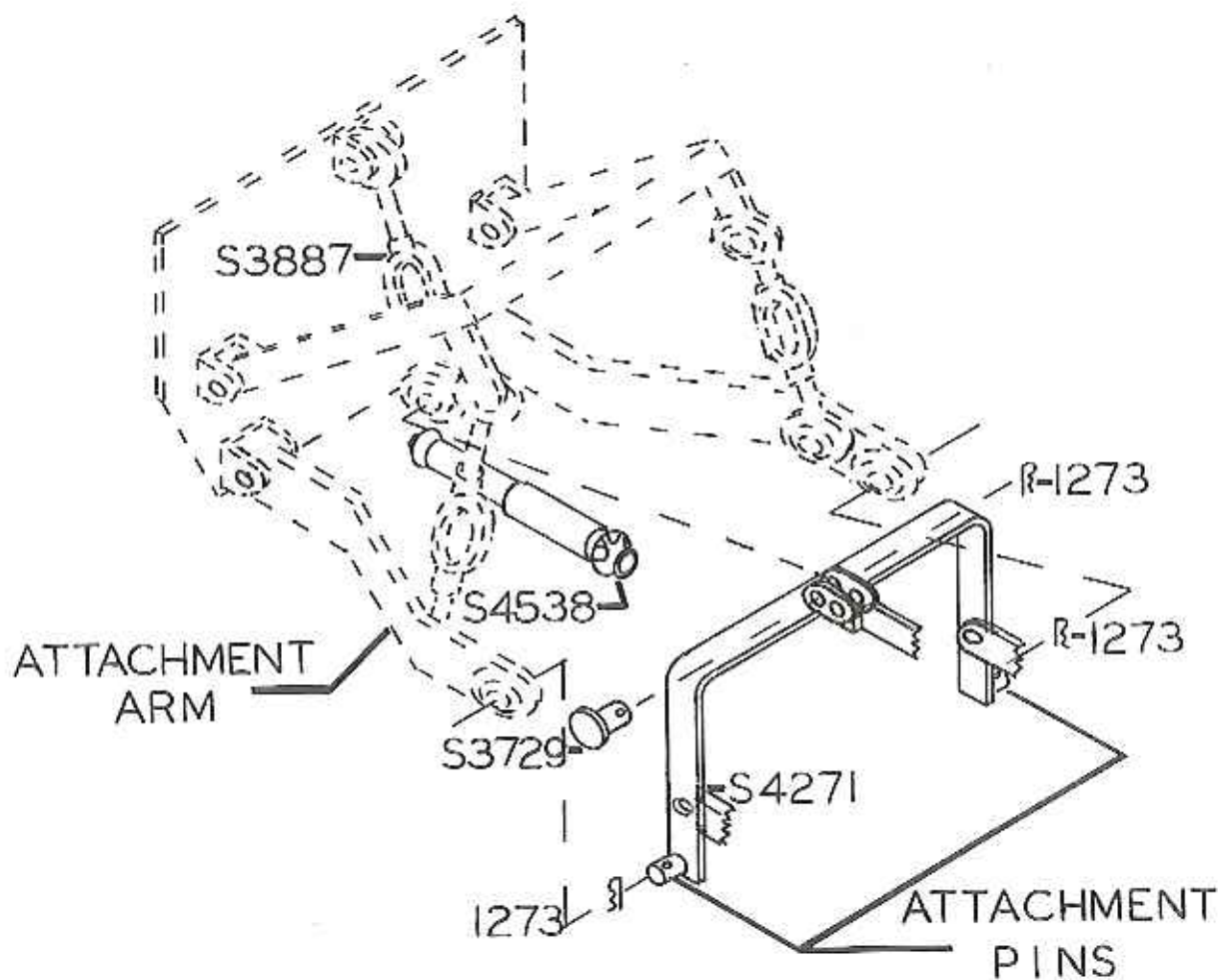
1. Insert Woodruff Key (S592, 3/16" x 3/4") into key seat of reduction box assembly. Slide universal joint (S235) 3/4" end onto shaft and key. Tighten setscrews securely.
2. Insert Woodruff Key (S1092 1/4" x 7/8") into key seat of drive shaft (S4262) and slide into 1" end of S235 universal joint. Lock collar and bearing (S2649) onto drive shaft. Place retaining ring (S4220) on groove just above spline of drive shaft.
3. Insert "A" bolts through reduction box and spacers (S4464) then bolt up to mount plate. Tighten securely.
4. Insert "B" bolts through center holes of bearing support (S4305) and pillow block mountings and flat-washer, lockwasher and start hex nut on bolt approximately the thickness of the nut. Bearing support then lays on top of lower edge of frame approximately 19" front of mount plate, use "B" bolt through frame bearing support, flatwasher, lockwasher and hex nut. Drive shaft goes between the 10 plates of the pillow block mounting. Bearing rests in the pillow block mounting, center pillow block mounting and bearing support with center of tractor to clear all parts, then tighten the four "B" bolts. Tighten securely.
5. Slide lock collar onto bearing race, turn either direction, hammer lock with punch and tighten setscrew securely.
6. Slide drive shaft (S4120) together. Slide either end on to drive shaft S4262, snap in place, then slide other end of drive shaft onto jackshaft and snap into place.

DOUBLE CHECK YOUR PROCEDURE BEFORE RUNNING P.T.O.



HITCH KIT S4532

Part No.	Qty.	Description
S3516	1	Lift Bar Weldment
S3729	1	Clevis Pin
S4271	1	Drawbar Hitch Weldment
S4538	1	Drive Shaft
1273	3	Presto Pin
15093	1	Capscrew 1/2"-13 UNC x 1 1/2"
15531	1	Hex Nut 1/4"-20 UNC
15581	2	Hex Nut 1/2"-13 UNC
15586	2	Hex Nut 5/8"-11 UNC
15805	2	Lockwasher 5/8"
15806	2	Lockwasher 1/2"
15807	1	Lockwasher 1/4"
19102	1	Capscrew 1/2"-13 UNC x 2"
19115	1	Capscrew 1/4"-20 UNC x 2"
19124	2	Capscrew 5/8"-11 UNC x 1 1/2"

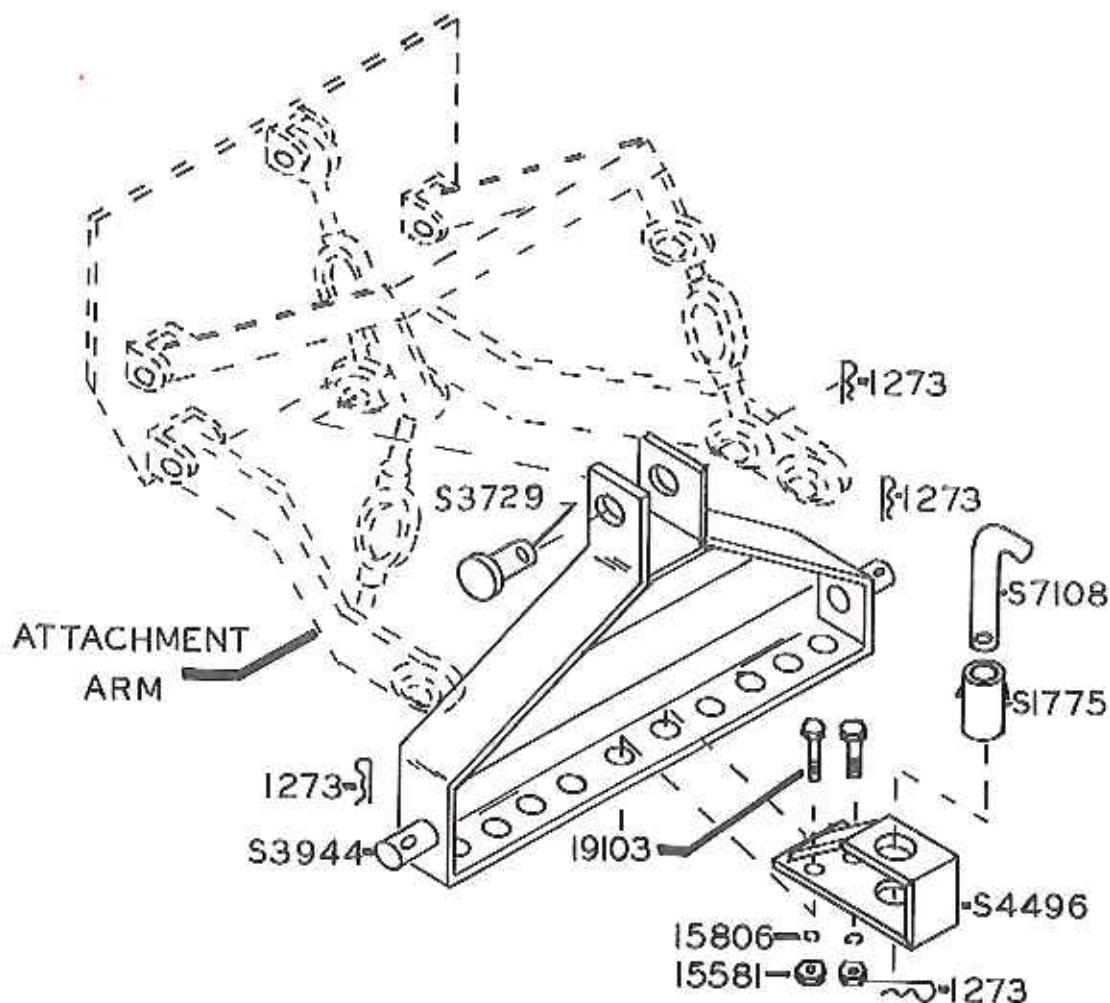


ASSEMBLY INSTRUCTIONS FOR S4532

1. Slide S4271 drawbar hitch weldment outside attachment arms of tiller and connect with 19124 capscrew ($5/8''-11$ UNC \times $1\frac{1}{2}''$), 15805 lockwasher ($5/8''$), and 15586 hex nut ($5/8''-11$ UNC).
2. Attach S3516 lift bar to tiller with 19102 capscrew ($1/2''-13$ UNC \times $2''$), 15806 lockwasher ($1/2''$), and 15581 hex nut ($1/2''-13$ UNC).
3. Slide S3516 lift bar between lugs on S4271 drawbar hitch weldment and attach with 15093 capscrew ($1/2''-13$ UNC \times $1\frac{1}{2}''$), 15806 lockwasher ($1/2''$), and 15581 hex nut ($1/2''-13$ UNC).
4. Connect drive shaft to tiller with 19115 capscrew ($1/4''-20$ UNC \times $2''$), 15807 lockwasher ($1/4''$), and 15531 hex nut ($1/4''-20$ UNC).

MOUNTING INSTRUCTIONS FOR S4532

5. Slide drawbar S4271 attachment pins through ball joints of S3873 attachment arm weldment and secure with 1273 presto pins (3" long).
6. Attach S3887 upper link assembly to lugs on drawbar S4271 with S3729 hitch pin and 1273 presto pin (3" long).
7. Connect S4538 drive shaft to tractor.



DRAWBAR FOR HYDRAULIC NO. S4247

Part No.	Qty.	Description
S1775	1	Hitch Tube
S3729	1	Attachment Pin
S3944	1	"A" Frame Weldment
S4496	1	Hitch Weldment
1273	4	Presto Pin
S7108	1	Clevis Pin
15581	2	Hex Nut $\frac{1}{2}$ "-13 UNC
15806	2	Lockwasher $\frac{1}{2}$ "
19103	2	Capscrew $\frac{1}{2}$ "-13 UNC x $1\frac{1}{4}$ "

MOUNTING INSTRUCTIONS FOR S4247

1. Slide attachment pins of S3944 "A" frame weldment through ball sockets of attachment arms and connect with 1273 presto pins (3" long).

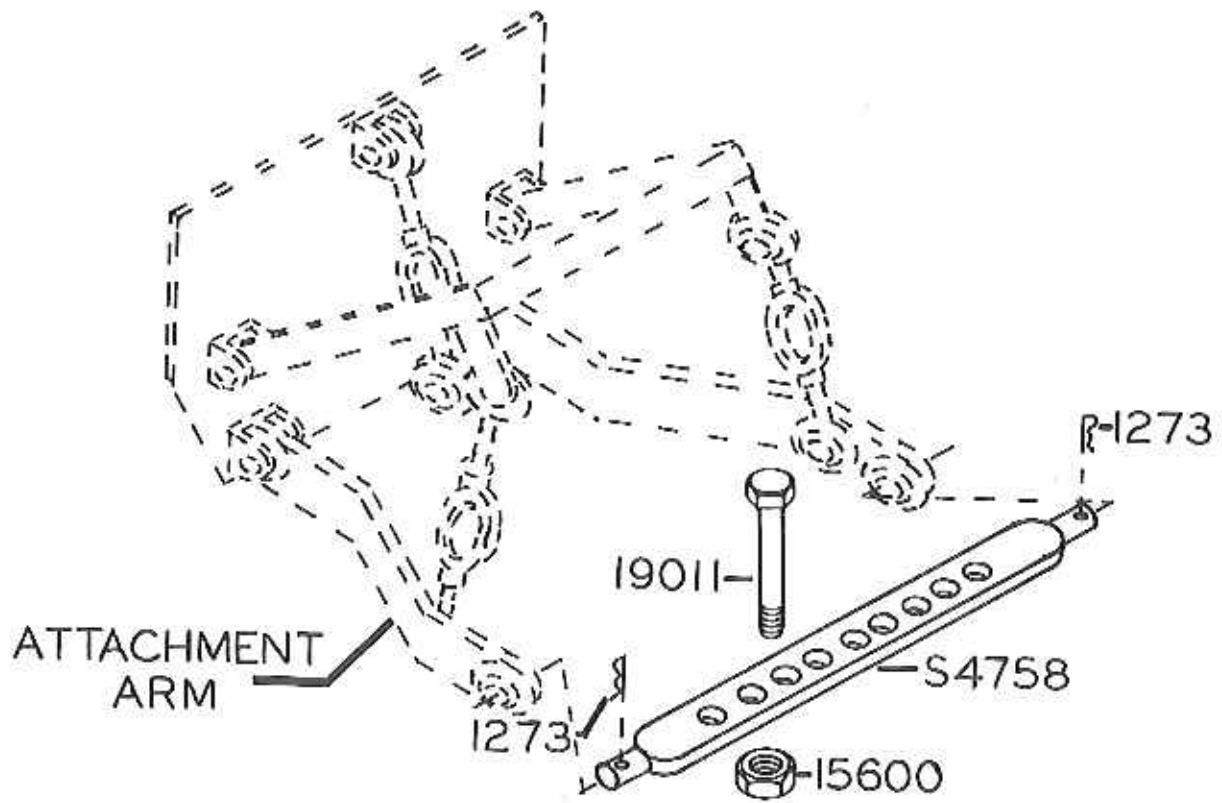
2. Connect ball socket of S3887 upper link assembly to top of S3944 "A" frame weldment with S3729 attachment pin and 1273 presto pin (3" long).

3. Attach S4496 hitch weldment to S3944 "A" frame weldment by placing hitch weldment on top of desired

holes in "A" frame weldment. Connect with 19103 capscrew ($\frac{1}{2}$ "-13 UNC x $1\frac{1}{4}$ "), 15806 lockwashers ($\frac{1}{2}$ "), and 15581 hex nuts ($\frac{1}{2}$ "-13 UNC).

4. Slide long end of S1775 hitch tube through hole in S4496 hitch weldment.

5. Slide 7108 hitch pin through S1775 hitch tube and secure with 1273 presto pin (3" long).

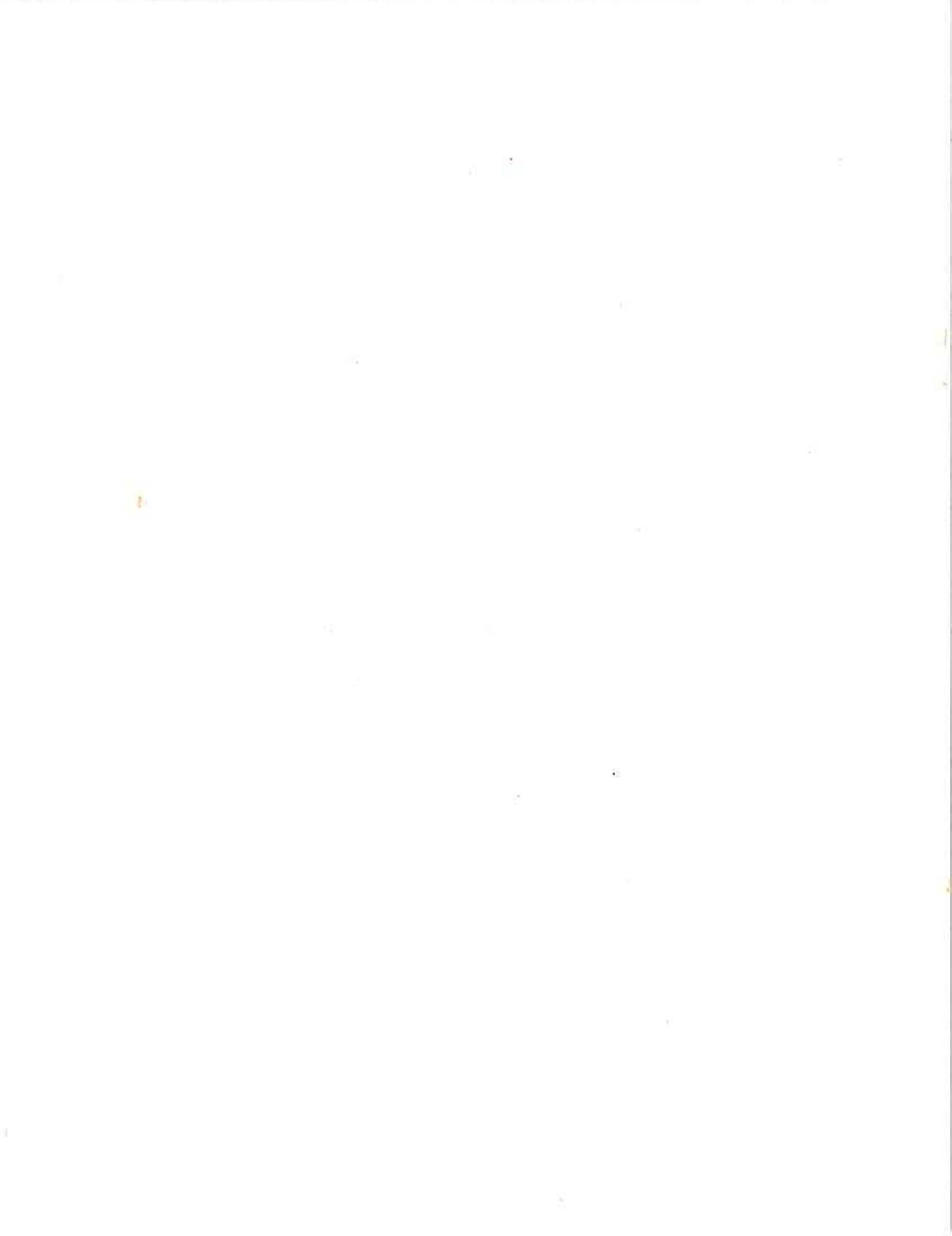


S 4757 DRAWBAR ASSEMBLY

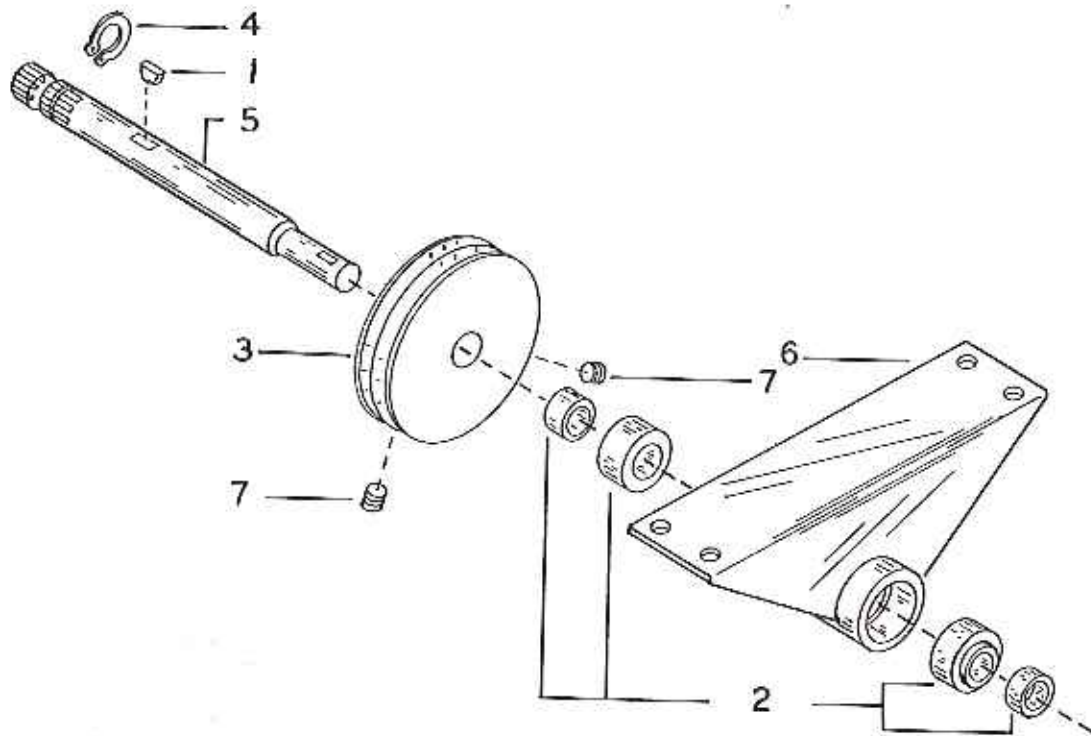
Part No.	Qty.	Description
S4758	1	Drawbar Weldment
1273	2	Presto Pin
15600	2	Locknut 5/8-11 UNC
19011	1	Capscrew 5/8-11 UNC x 3 1/4"

MOUNTING INSTRUCTIONS

1. Connect S4758 Drawbar Weldment to attachment arms with 1273 Presto Pins (3 inches long).
2. Use 19011 Capscrew (5/8-11 UNC x 3 1/4") and Locknut (5/8-11 UNC) to attach implements.



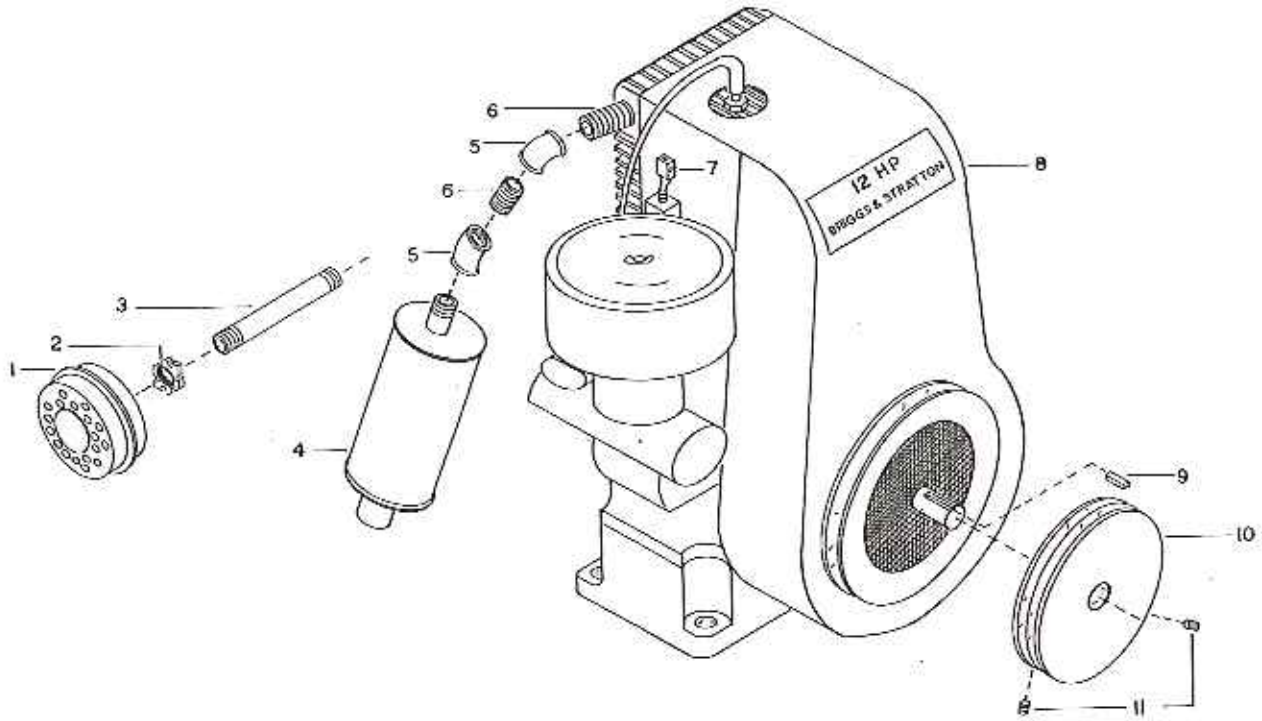
JACKSHAFT ASSEMBLY S4796



Jackshaft Assembly S4796 is used on tractors beginning with Serial No. 2751. Tractors preceding 2751 see page: 24

Ref. No.	Part No.	Qty.	Description
1	S1092	1	Woodruff Key
2	S2398	2	Bearing & Lock Collar
3	S3025	1	Drive Pulley
4	S4220	1	Retaining Ring
5	S4789	1	Jackshaft
6	S4795	1	Jackshaft Mount
7	15110	2	Setscrew

MOTOR ASSEMBLY S4840



Motor Assembly S4840 is used on tractors beginning with Serial No. 2751. Tractors preceding 2751 see page: 21

Ref. No.	Part No.	Qty.	Description
1	S4774	1	Muffler
2	S4762	1	Conduit Nut 1"
3	S3384	1	Pipe Nipple (Black)
4	S2964	1	Muffler
5	S3481	2	Straight Ell (1" x 45)
6	S1819	2	Close Nipple 1"
7	S4707	1	Speed Adjusting Nut
8	S3975	1	Briggs & Stratton Motor
9	S4705	1	Square Key
10	S3025	1	Pulley
11	15110	2	Setscrew