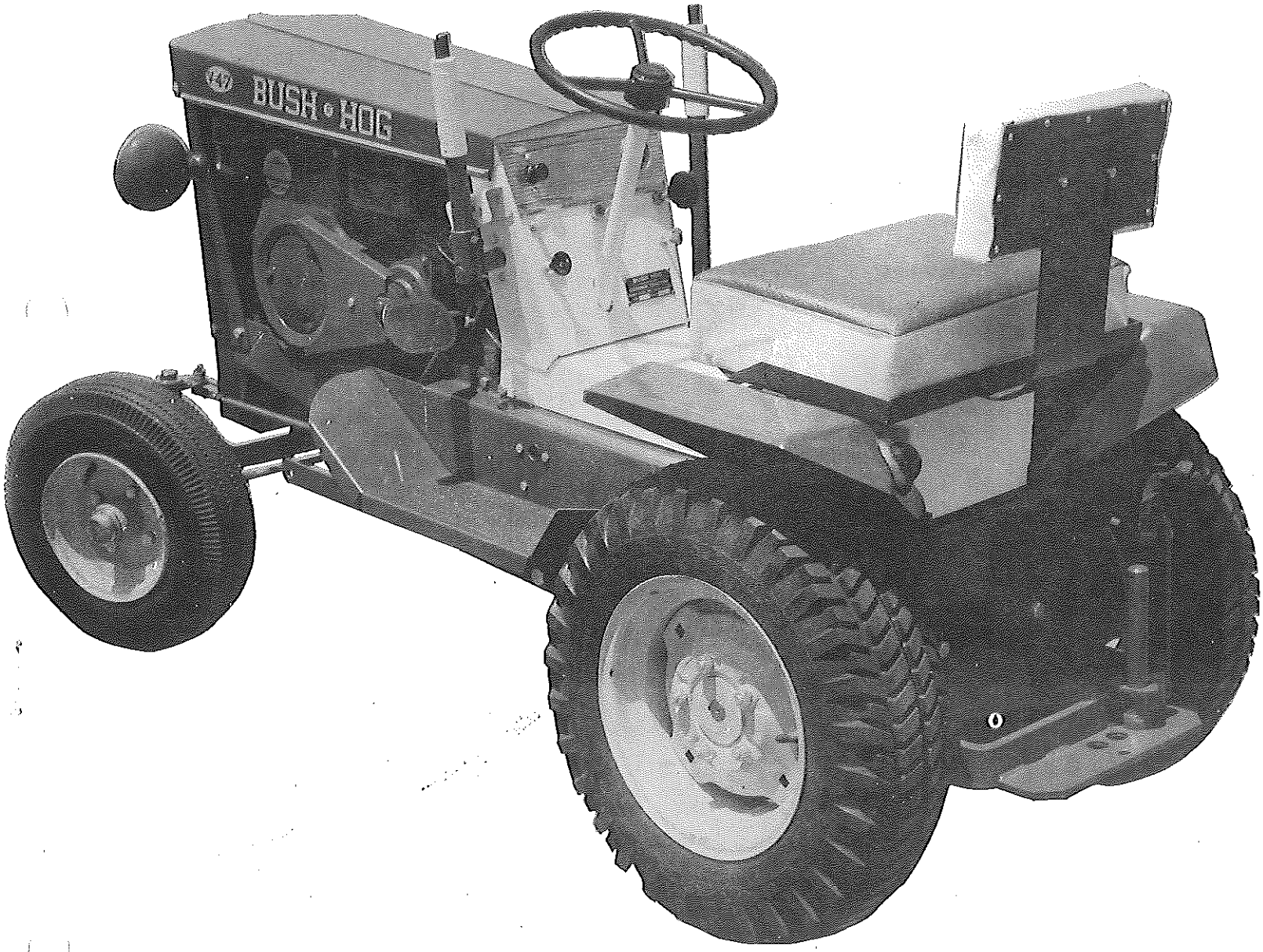
BUSH®HOG INCORPORATED
SELMA, ALABAMA

VARI-DRIVE
BELT DRIVEN TRACTORS

V3-6 V4-6 V4-7



OPERATORS MANUAL

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INTRODUCTION

The Vari-Drive Tractor is manufactured to the traditionally high standards of Bush Hog, Inc. It has many quality features which have been designed with you, the customer, in mind.

Your dealer also is sincerely interested in your new tractor and has the desire to help you get the most value from it. After reading this manual thoroughly, you will find that you can do many of the regular service jobs quickly and easily. However, when in need of parts or major service, be sure to see your dealer.

When in need of parts, be prepared to give your dealer both the tractor and engine serial numbers.

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 90 days, if 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 resulting from misuse, negligence, or accident.

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

SPECIFICATIONS

	MODELS		
	VE–4–7 VR–4–7	VE–4–6 VR–4–6	VE–3–6 VR–3–6
ENGINE			
Manufacturer	Wisconsin	Tecumseh	Tecumseh
Model	S–7D	HH–60	HH–60
Cylinders	One	One	One
Cycle	4	4	4
Bore & Stroke	3 x 2 5/8	2 5/8 x 2 1/2	2 5/8 x 2 1/2
Displacement	18.6 cu. in.	13.5 cu. in.	13.5 cu. in.
Speeds	1600–3600 rpm	2400–3600 rpm	2400–3600 rpm
Horsepower	7 1/4 at 3600	6 at 3600	6 at 3600
Compression Ratio	7.00 to 1	7.30 to 1	7.30 to 1
Valve Clearance (intake)cold	.006	.010	.010
Valve Clearance (exhaust)cold	.012	.010	.010
CAPACITIES			
Fuel tank	1 US Gal.	1 US Gal.	1 US Gal.
Crank case	1 quart	22 ounces	22 ounces
TRANSMISSION			
Type transaxle	4 fwd, 1 rev.	4 fwd, 1 rev.	3 fwd, 1 rev.
Lubricant	4 pints Shell Micoma No. 72 the equivalent 90 wt. trans. lubricant	4 pints Shell Micoma No. 72 the equivalent 90 wt. trans. lubricant	2 pints Shell Micoma No. 72 the equivalent 90 wt. trans. lubricant
GROUND SPEEDS MPH	Variable	Variable	Variable
1 st Gear	.55 to .90	.55 to .90	1.50 to 2.75
2 nd Gear	1.50 to 2.75	1.50 to 2.75	3.00 to 4.75
3 rd Gear	3.00 to 4.75	3.00 to 4.75	4.50 to 6.90
4 th Gear	4.50 to 6.90	4.50 to 6.90	
Reverse	2.00 to 3.25	2.00 to 3.25	2.25 to 3.75
ELECTRICAL SYSTEM	VE–4–7	VE–4–6	VE–3–6
Battery	45 amp 12 volt 20 hr rating	45 amp 12 volt 20 hr rating	45 amp 12 volt 20 hr rating
Ignition	Key type switch	Key type switch	Key type switch
Starter Switch	Push button	Push button	Push button
Starter motor	Delco Remy	Bendix type 12 volt DC	Bendix type 12 volt DC
Generator	Delco Remy	Magneto Alternator Circuit with Rectifier panel	Magneto Alternator Circuit with Rectifier panel

CONTINUED
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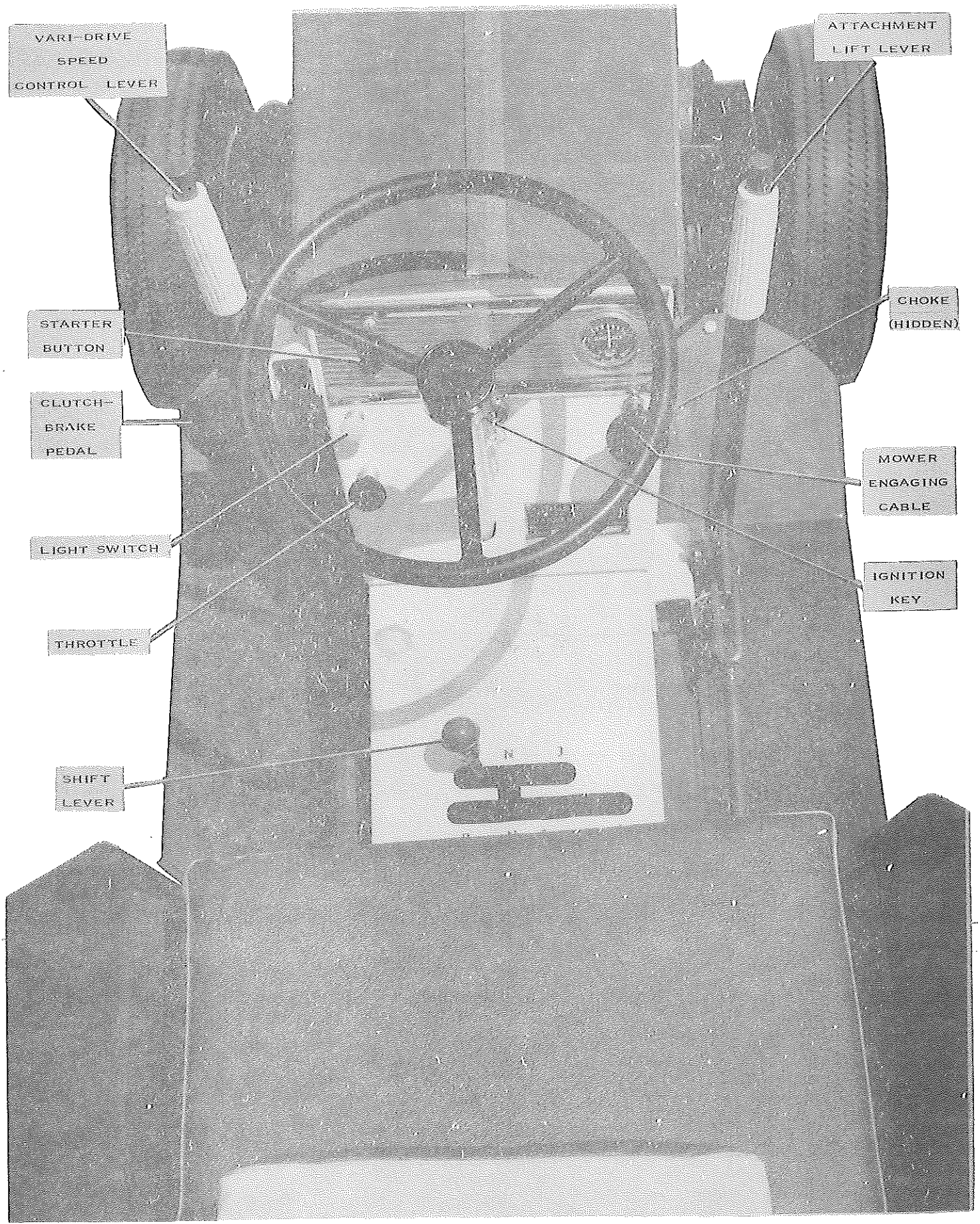
	VE—4—7 VR—4—7	VE—4—6 VR—4—6	VE—3—6 VR—3—6
SPARK GAP	.025	.025	.025
BREAKER POINT GAP	.020	.020	.030
BRAKES	DOUBLE ACTING FOOT OPERATED CLUTCH & BRAKE	DOUBLE ACTING FOOT OPERATED CLUTCH & BRAKE	DOUBLE ACTING FOOT OPERATED, CLUTCH & BRAKE
CLUTCH	V-BELT PEDAL OPERATED	V-BELT PEDAL OPERATED	V-BELT PEDAL OPERATED
STEERING	OPEN GEAR 6.4 TO 1	OPEN GEAR 6.4 TO 1	OPEN GEAR 6.4 TO 1
WHEEL BEARINGS			
FRONT	TAPER ROLLER	TAPER ROLLER	TAPER ROLLER
REAR	SEALED BALL	SEALED BALL	SEALED BALL

DIMENSIONAL DATA
ALL MODELS

	ALL PURPOSE AND TRACTION TIRES	HIGH FLOTATION TIRES
WHEEL TREAD		
FRONT	28 INCHES	29 INCHES
REAR	24 1/2 OR 30 1/2	24 1/2 OR 30 1/2
TIRE SIZES		
FRONT	4.80/4.00 x 8	16 x 6.50 -8
REAR	6.00 x 12	23 x 8.50 - 12
TIRE INFLATION		
FRONT	12 PSI	8 PSI
REAR	6 PSI	5 PSI
DIMENSIONS		
WHEEL BASE	49 INCHES	49 INCHES
OVERALL LENGTH	68 INCHES	68 INCHES
OVERALL HEIGHTH	38 3/4 INCHES	38 3/4 INCHES
OVERALL WIDTH		
(MAXIMUM)	36 INCHES	39 INCHES
(MINIMUM)	33 INCHES	33 INCHES

OPERATION

OPERATING CONTROLS



FUELS AND LUBRICANTS

FUELS

Filling fuel tank –

Raise tractor hood to fill fuel tank. Wipe dust and dirt from around tank cover before removing it to keep dirt out of the tank while filling. Use regular grade gasoline of recognized brand, White gas may be used only if the octane rating is at least 75. Never use premium gasoline. NOTE: Do not mix oil with gasoline. Be sure fuel containers are absolutely clean.

LUBRICANTS

Engine crankcase –

Oil used in the engine crankcase should have an American Petroleum Institute (API)/SAE classification of Service MS.

Depending on prevailing air temperature, use oil of viscosity as shown in the following chart.

Air Temperature – Season	Single-Viscosity Oil
30 to 90 F. Summer	SAE 30
—0 to 30 F. Winter	SAE 10W
Below 0 F.	SAE 5W—20

Use of SAE 5W—20 oil may cause some increase in oil consumption. Check oil level more often when using this oil.

Do not fill engine crankcase above full mark.

TRANSMISSION

1. All transaxles are filled with 4 pints of Shell Macoma No. 72 oil.

2. For refill or make-up oil in the field, we recommend SAE 90 weight oil.

Do not attempt to dismantle any part of your tractor transmission. See your dealer for all transmission service.

OPERATING THE ENGINE

BREAK–IN AND GET–ACQUAINTED PERIOD

Your new tractor should be subjected to a break-in period before it is operated at full load. Drive the tractor for several hours to get the feel of its operation. Actuate the vari - drive speed control lever through its full range during the get-acquainted period. Do not lower or operate any attachments.

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

PRE–STARTING INSPECTION

Before starting the engine each day, perform the following checks and services -

1. Check 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 screen covering engine flywheel is clean. A screen filled with grass clippings or dirt will cause engine to overheat.
4. Be sure air cleaner is free of obstructions and excessive dirt.

STARTING THE ENGINE

1. Depress clutch-brake pedal and apply braking pressure.
2. Place shift lever in neutral (N) position.
3. Advance throttle lever approximately half-way.
4. Pull choke button if necessary. Experience will soon tell you when choking is necessary. Generally, a cold engine will require a slight choke. Starting in extremely cold weather requires more choke.
5. Turn ignition key to the right as far as possible to start engine. If engine does not start after 3 or 4 attempts, refer to "trouble shooting," pages 27–12 in this manual.
6. Lower choke lever when engine starts and runs. NOTE: for extremely cold weather, it may be necessary to leave choke 1/3 or 1/4 open until engine warms up. Always allow engine to warm up before applying load.

STOPPING THE ENGINE

1. Before stopping the engine, remove load and allow engine to idle for a few minutes before turning it off. Sudden stopping of a hot engine can cause damage to engine parts.

2. Move vari-drive speed control lever to rear (slow speed)position or depress clutch-brake pedal.

3. Turn ignition key all the way to the left to stop engine. CAUTION: Be sure key is turned completely off(vertical position) before leaving tractor.

4. REMOVE KEY. This is important. Develop the habit of removing the key each time you leave the tractor.

OPERATING THE TRACTOR

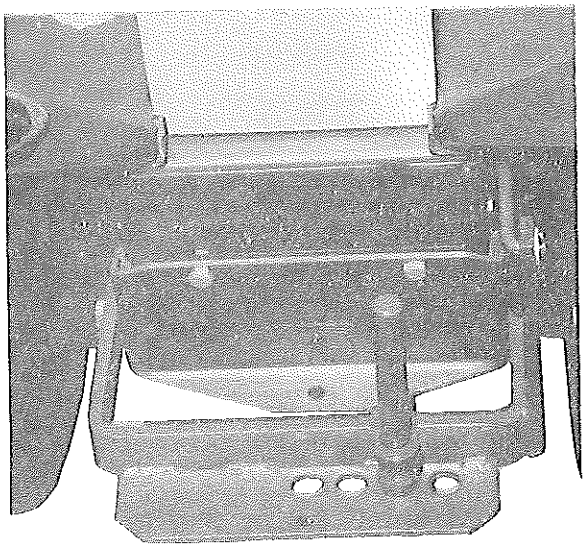
Proper ground speed will depend on (1) the type of attachment used on the tractor and (2) field, garden or yard conditions.

When using engine driven attachments select the transmission gear that will give a safe ground speed when the engine is operating at full throttle.

The tractor has a 3 or 4 forward gear and 1 reverse gear. Depress clutch pedal, and position shift lever in desired gear. IMPORTANT: Tractor must be completely stopped before shifting gears. The combination clutch-brake pedal makes this easy. When shifting gears, use strong, steady motion to slide gears firmly into mesh. Never allow gears to grind while shifting.

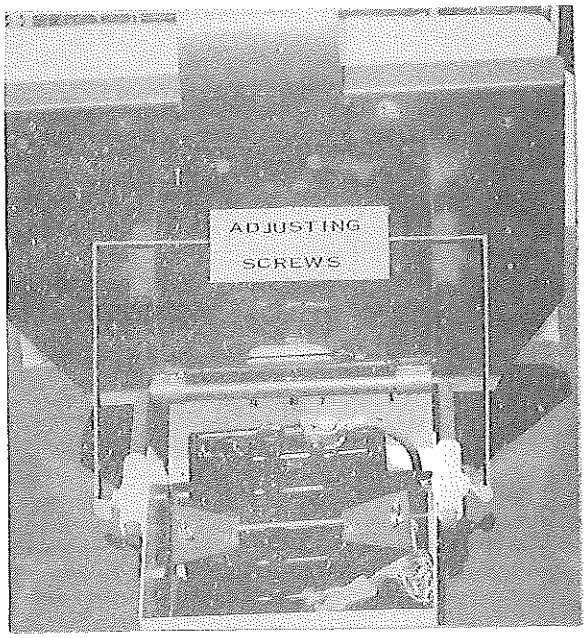
NOTE : Move shift lever forward as far as it will go before shifting into 3rd and 4th gear. Move shift lever back all the way before shifting into reverse or 1st and 2nd gear.

HITCH FOR REAR ATTACHMENTS



THE ATTACHMENT LIFT LEVER IS USED TO RAISE AND LOWER REAR MOUNTED ATTACHMENTS.

SEAT ADJUSTMENT

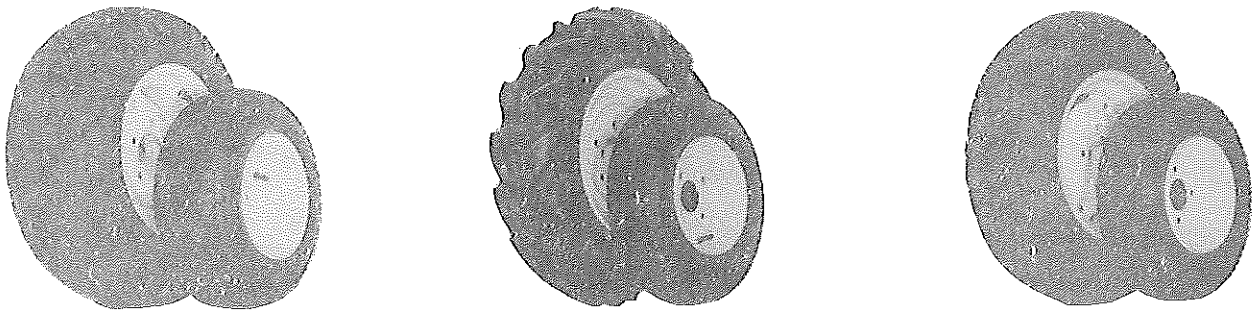


TRACTOR SEAT MAY BE ADJUSTED INTO DIFFERENT POSITIONS. LOOSEN THUMB SCREW AND ADJUST TO COMFORTABLE POSITION.

REAR WHEELS

REAR WHEELS ARE FACTORY ASSEMBLED IN THE NARROW (27—INCH) TREAD. WHEELS CAN BE TURNED AROUND ON THE HUBS FOR A WIDE (33-INCH) WHEEL TREAD FOR GREATER STABILITY. REMOVE WHEEL BOLTS, TURN WHEEL AROUND WITH VALVE STEM INWARD, AND REASSEMBLE ON HUB.

FRONT AND REAR TIRE SELECTION



1 2 3

1. HIGH FLOTATION-8.00 x 12 REAR AND 16—6.50 x 8 FRONT FOR TRAVEL OVER SOFT GROUND OR AREAS WHERE TIRE TRACKS MAY BE OBJECTIONABLE.

2. TRACTION TIRE - 4.80/4.00 x 8 FRONT AND 6.00 x 12 REAR FOR GREATER TRACTION WHEN WORKING HEAVIER LOADS.

3. ALL PURPOSE- 4.80/4.00 x 8 FRONT AND 6.00 x 12 REAR FOR GENERAL USE AND NORMAL LOAD APPLICATIONS.

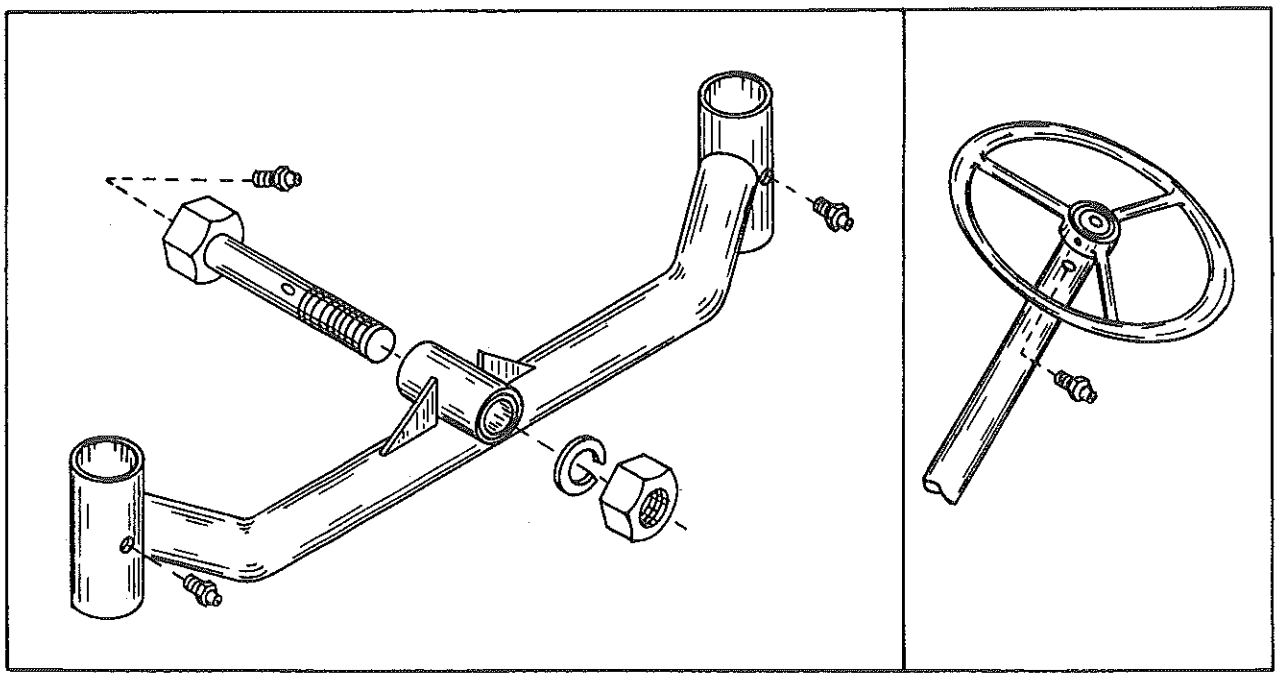
EVERY 500 HOURS OF OPERATION OR EACH SPRING AND FALL SEASON

Each fall and again in the spring the following service should be performed. If the tractor is to be placed in storage.

Repeat all 5 hour, 25 hour and 100 hour service checks and perform additional service as follows –

LUBRICATION OF FRONT AXLE AND STEERING COLUMN

Use pressure grease gun to lubricate steering column and front axle fittings with SAE (seasonal grade) multipurpose-type grease. Wipe fittings clean after lubrication.



DEALER SERVICES

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

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.

LUBRICATION AND PERIODIC SERVICE

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

Daily or every 5 hours of operation.
Weekly or every 25 hours of operation.
Every 100 hours.
Every 500 hours or each spring and fall season.

The following procedures are given in the order of frequency.

DAILY OR EVERY 5 HOURS OF OPERATION

Engine crankcase oil level –

Reaise tractor hood, wipe off dust and dirt and unscrew 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 screwed in tight. NOTE Oil should not be over full mark. Be sure tractor is on level ground and engine is stopped before checking oil level.

FLYWHEEL SCREEN

Make a visual check of the outside screen. The engine is air cooled and must have ample supply of air to prevent engine from overheating. Wipe all dirt or bedris covering any of the screen.

Check screen often, especially when mowing or mulching leaves, to be sure screen is never completely blocked with dry grass clippings.

BATTERY

Check battery, making sure liquid level is up to filler ring in each cell. If necessary, add distilled water.

Check battery terminals to be sure they are clean and free from corrosion.

TIRE PRESSURE

Inflate tires to pressures shown in chart below –

TIRE INFLATION

Tire	All purpose and traction tires	High flotation tires
Front	12 psi	8 psi
Rear	6 psi	5 psi

DRIVE BELT TENSION

Turn off engine. Check underside of tractor for general belt condition. Replace all blets showing excessive wear.

AIR CLEANER

See engine manual.

ENGINE CRANKCASE

Park tractor on slight incline if possible, with the front of the tractor lower than the rear.

Raise hood and remove front grille. Remove drail plug and allow oil to drain into container.

Replace plug and refill crankcase with proper grade oil to proper oil level.

Change oil every eight hours when working in extremely dusty conditions.

NOTE The best time to drain crankcase is at end of a day's operation at which time the oil is hot and all dirt and foreign material in crankcase is in suspension.

EVERY 100 HOURS OF OPERATION

Repeat all 5 hours 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 bolts holding engine shroud in place and brush out all dirt from cooling fins. Clean inside of shroud thoroughly. Soak off oil deposits with 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.

TRANSMISSION OIL LEVEL

Remove oil level(filler) plug and push tractor forward about six inches. Transmission ring gear will cause oil to spill out oil level hole if transmission is full.

When required, use pressure oil can to add transmission lubricant, through filler hole until oil spills out. Be sure tractor is on level surface when checking.

SERVICE

HOOD AND GRILLE

Engine and related parts are easily accessible by lifting and raising the hood. Hood will remain open after raising to a near vertical position.

To remove grille for access to ignition points, oil drain, etc., release spring clamps and lift grille out. When replacing, be sure guide pins grille bottom are in place.

FUEL SYSTEM

Proper inspection and service of your fuel system is important to continued successful operation of your tractor.

ELECTRICAL SYSTEM

ADJUSTING POINTS

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

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

After tightening locking screw, recheck point gap.

To replace points remove screws. Be sure lock washers are in place before reassembly.

SPARK PLUG GAP

Check spark plug gap and condition of electordes after every 100 hours of operation. Distance between electrodes should be .025 inch. Bend the outer electrode only for proper gap.

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 replacing battery, use a 12-volt, 45-amp-20 hour rating.

CAUTION: Prevent accidental operation of the starter or engine. Always disconnect spark plug cable whenever working on the elctrical system. Also do this when making adjustments to the engine or other moving parts.

CLEANING BATTERY

Remove battery cables and use a wire brush to remove corrosion 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.

Coat terminals with petroleum jelly and connect battery cables. Be sure they are tight.

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.

CHECKING BATTERY WATER LEVEL

Check the liquid level of each cell by removing the cap. Water should completely cover the cells at all times. Fill each cell to ring level inside filler hole with distilled water.

Use clean distilled water when possible to fill battery. When absolutely necessary,

clean drinkable water may be used.

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

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

Battery connections should be tight at all times, especially when charging batteries. Loose cables will cause arcing and pitting of the connections and cause eventual failure.

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

TROUBLE SHOOTING

HARD STARTING

A. Faulty ignition

Check for presence of spark by disconnecting high tension wire from plug and holding wire close to cylinder head while cranking engine with starter. If no spark, check—

1. Breaker point gap is incorrect.

2. Breaker points are worn or pitted. Replace points.

3. Spark plug gap is incorrect.

4. Spark plug electrodes are pitted or fouled. Replace plug.

5. If the forbgoing fails to correct 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.

C. Compression loss

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

ENGINE MISSING UNDER LOAD

A. Check spark plug for proper gap.

B. Check for lean fuel mixture. Adjust carburetor high speed screw.

C. Check for dirty (fouled) spark plug or 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. 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 regular gasoline.

B. Check engine for overheating. See Overheating below.

C. Check crankcase oil level. Fill to (F) mark on dipstick. **NOTE:** If engine knock has developed because of lack of crankcase oil, have your dealer check condition of 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. Use regular gas only.

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. Dirty Air Cleaner

1. Check and clean air cleaner.

C. Choke is Partly Closed

1. Check to be sure choke control cable is not jammed. Choke must be completely open (choke lever down) 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) LOOSE THROTTLE CABLE.

ENGINE WILL NOT IDLE

(A) CHECK CARBURETOR ADJUSTMENTS (B) 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.

TRANSMISSION WILL NOT STAY IN GEAR

(A) SHIFT GEAR FIRMLY WITHOUT LETTING GEARS GRIND BEFORE ENGAGING. (B) SEE YOUR SERVICEMAN TO REPLACE WORN GEARS.

BRAKES NOT EFFECTIVE

(A) ADJUST BRAKE AND CLUTCH LINKAGE. (B) REPLACE BRAKE BAND IF WORN EXCESSIVELY. SEE SERVICEMAN.

IMPROPER STEERING OR EXCESSIVE FRONT TIRE WEAR

(A) CHECK WHEEL ALIGNMENT AND TOE-IN.

CLUTCH HARD TO OPERATE

(A) MOVE SPEED CONTROL LEVER TO REAR (SLOW SPEED POSITION)BEFORE APPLYING CLUTCH PRESSURE. (B) DIRT ON VARITOR SHEAVE HUB-CLEAN HUB. (C)START ENGINE BEFORE DEPRESSING CLUTCH-BRAKE PEDAL.

STARTER INOPERATIVE OR WILL NOT TURN ENGINE

(A) CHECK FOR DISCHARGED BATTERY (B) ROTARY MOWER DRIVE IS ENGAGED. DISENGAGE, SEE MOWER OPERATOR' S MANUAL. (C) TIGHTEN MOTOR-GENERATOR BELT. (D) CHECK ELECTRICAL CONNECTIONS

TRACTOR WILL NOT MOVE WITH ENGINE RUNNING

(A) BE SURE TRACTOR IS IN GEAR.(B) MOVE SPEED CONTROL LEVER TO FAST SPEED POSITION. (C) ADJUST TRACTOR LINKAGE.

EXCESSIVE TRACTOR VIBRATION

(A) WORN OR LUMPY V-BELT. REPLACE V-BELTS (B) DIRT IN VARIATOR SHEAVES. CLEAN SHEAVES AND HUB (C) CHECK SHEAVES FOR EXCESSIVE WEAR AND WOBBLE.

STORAGE

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

Drain gasoline tank and crank engine and burn gas in carburetor.

Remove spark plug and pour in one tablespoonful SAE 30 oil. Turn engine over manually at lease two times and replace spark plut.

1. Remove battery and store where it will not freeze. Check water level and refill if necessary.
2. Clean tractor exterior thoroughly, removing all mud, dirt, grease and other material.
3. Touch up all unpainted and exposed surfaces with paint to prevent rust.
4. 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 starting again next season.
5. Block up tractor to take weight off tires. Store tractor in cool, dark and dry place if possible to prevent excess tire deterioration.
6. Wipe and clean belts with a dry cloth.
7. Remove belt tension from all belts. Block up secondary idler and loosen motor-generator. Disengage clutches on belt driven attachments.

Your dealer is equipped to give your tractor a complete service check and make recommendations for replacing parts in need of attention.

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.

Tractor

1. Reinstall battery. Check liquid level.
2. Check transmission oil level.
3. Check tire inflation.
4. Adjust v-belt tension.

V—BELT CARE AND MAINTENANCE

The v belt in your tractor transmit power by friction and a wedging action against the sheaves. Belts are therfore subject to wear through periodic heavy load and should be checked often to be certain belt wear is normal. All belts and sheaves wear with use. Normal wear can be recognized as even wear—both on the belt and sides of the sheaves.

DIRTY SHEAVES

Check to be sure dirt has not lodged and packed in sheave v-groove. Check especially the variator sheave. Excessive tractor vibration may be caused by dirt collecting inside the variator sheave. Loosen dirt so it will fall out when tractor is started.

Vibration can also be caused by lumpy v-belts. Check primary and secondary belts for swells and lumps. Use only factory recommended v-belts of the proper length when replacing.

V—BELT INSTALLATION

Whenever unusual v-belt wear, tear or other failure occurs, check immediately for the cause. After correcting the cause, replace v-belts by first loosening idler, loosening mounting bolts, or removing sheave.

IMPORTANT: Never pry blet over edge of sheave as this may rupture belt cords and shorten belt life. Place the belt in the sheave groove by hand.

V—BELT CLEANING

Clean belts by wiping them with a clean cloth. Immediately wipe off any spilled oil or grease. Avoid use of solvents, since this will soften the materials and cause the clutch to grab.

Do not use belt dressings. Dressings often give only temporary gripping action while softening the belt and causing eventual deterioration, and shortening of the belt life. Dressings also will cause a grabby clutch.

V—BELT TENSION ADJUSTMENT

V-belt tension should be adjusted if—

A. Tractor engine fails to turn over when ignition switch is turned on and starter is running.

B. Clutch-brake pedal strikes the bottom of footrest when speed control lever is in the forward position.

C. Tractor does not move when speed control lever is in 1st notch (rear position).

D. Secondary belt strands operate less than 3/4 -inches apart.

Adjust v-belts as follows for each condition A through D.

A. Motor-generator belt tension

The motor-generator belt will require tightening whenever the engine fails to turn over when the ignition is turned on and starter is running.

When belt slippage is first noticed, tighten belt immediately to prevent excessive belt wear. Do so by loosening cap screw on bracket and moving motor-generator back until a 10-pound pressure midway between the sheaves deflects the belt 1/4 -inch.

Tighten cap screw to hold motor-generator in this position to maintain proper tension.

B–C. Primary belt tension

If at any time the clutch-brake pedal strikes the bottom of the footrest or if the tractor does not move with the speed control lever in the first notch(rear position)the tractor linkage will require adjusting.

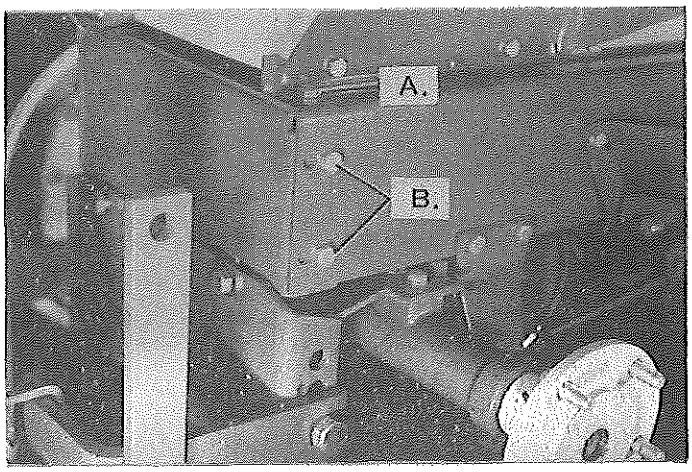
If, after making the adjustment the tractor is still inoperative with the speed control lever in the first notch on the quadrant install a new primary belt.

D. Secondary belt tension

If excessive belt stretching allows the idler to rub on the lower belt strand, additional belt tension can be obtained by removing capscrews A, loosening screws B , and moving transmission rearward.

Insert cap screws A through rear holes and tighten. Also, tighten screws B.

After moving transmission, be sure to readjust brake rod linkage. Tighten nuts firmly.



To replace worn or broken secondary belt, remove three cap screws from input sheave and remove sheave and old belt.

Install new belt around variator sheave. Block up secondary idler to remove belt tension and assemble belt and input sheave.

NOTE: If transmission has been moved forward, to take up secondary belt slack prior to belt replacement, loosen bolts and move transmission forward before installing new secondary belt. Tighten bolts holding transmission.

Readjust brake rod for proper length after moving transmission.

V—BELT REPLACEMENT

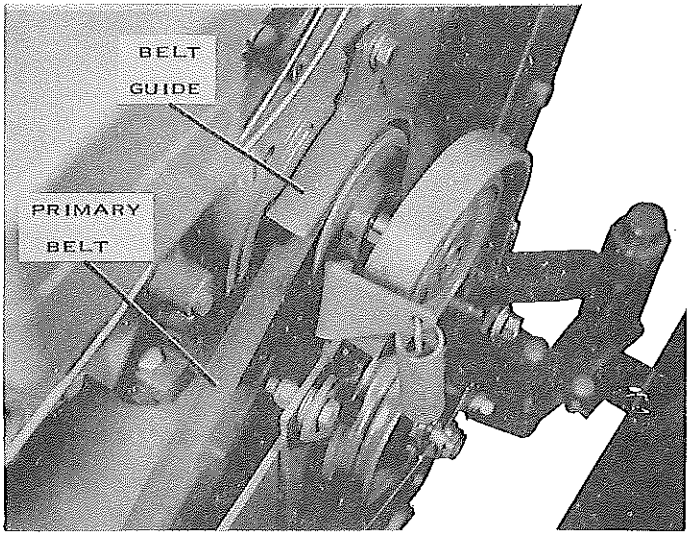
CAUTION: Be sure to remove spark plug cable before removing belts to prevent accidental starting of the engine.

MOTOR GENERATOR BELT

Replace motor-generator belt by removing belt guard. Loosen cap screw on bracket to allow motor-generator to pivot forward. Install belt and adjust tension. Replace guard.

PRIMARY BELT

First remove belt guide and secondary belt from variator.



Remove mower drive belt, if installed, belt guards and right hand tractor panel.

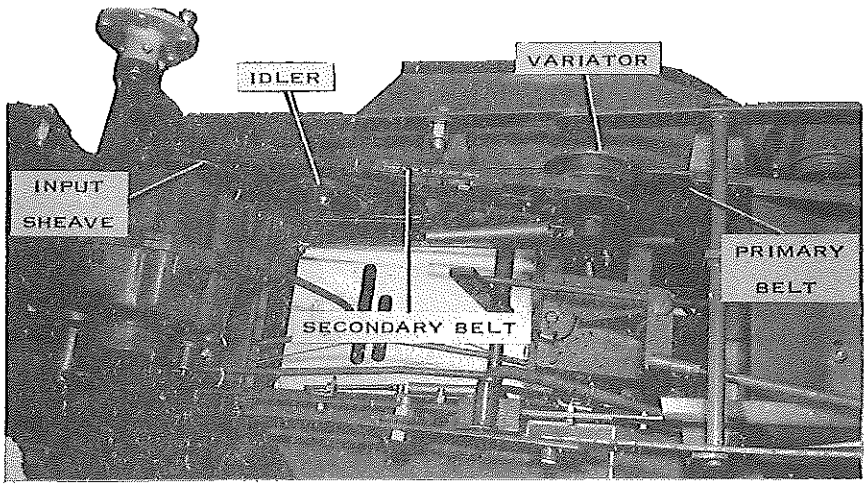
Remove cap screws and primary belt guide.

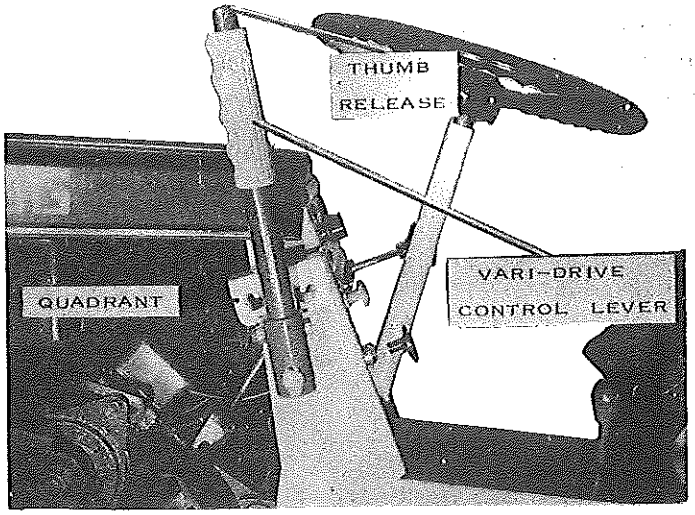
Depress clutch-brake pedal to hold variator forward. Lift belt off variator and engine sheave.

Reverse above procedure to install new belt. Assemble all guides and guards in place.

IMPORTANT: After replacing primary belt readjust tractor linkage as instructed.

SECONDARY BELT





THE VARI-DRIVE SPEED CONTROL LEVER MAY BE MOVED THROUGH ITS FULL RANGE WITHOUT DEPRESSING THE CLUTCH OR STOPPING THE TRACTOR. MOVE LEVER FORWARD TO INCREASE GROUND SPEED AND BACK TO DECREASE GROUND SPEED.

AFTER SELECTING TRANSMISSION GEAR, PRESS THUMB RELEASE AND MOVE INDEPENDENT GROUND SPEED CONTROL LEVER FORWARD UNTIL DESIRED SPEED IS ATTAINED. THIS FEATURE IS ESPECIALLY VALUABLE WHEN LOAD IS NOT UNIFORM. WHEN ENGINE-DRIVEN ATTACHMENTS ARE OVERLOADED, SUCH AS WITH HEAVY LAWN MOWING OR DEEP SNOW THROWING, THE GROUND SPEED MAY BE REDUCED WITH THE INDEPENDENT GROUND SPEED CONTROL LEVER TO RELIEVE THE LOAD WHILE THE ATTACHMENT CONTINUES TO OPERATE AT FULL SPEED.

CLUTCH BRAKE PEDAL

TRACTOR SPEED MAY ALSO BE REGULATED WITH FOOT ACTION ON THE CLUTCH-BRAKE PEDAL. MOVE THE SPEED CONTROL LEVER TO THE FORWARD POSITION. WITH ENGINE RUNNING AND TRACTOR IN GEAR, DEPRESS CLUTCH-BRAKE PEDAL TO SLOWLY REDUCE GROUND SPEED. RELEASE CLUTCH-BRAKE PEDAL TO INCREASE SPEED.

OPERATE THE VARI-DRIVE SPEED CONTROL LEVER AND CLUTCH PEDAL WHILE ENGINE IS RUNNING.

CLUTCH, BRAKE, AND VARI-DRIVE SPEED CONTROL

VARI-DRIVE SPEED CONTROL LEVER

WHEN THE VARI-DRIVE SPEED CONTROL IS MOVED FORWARD, THE PRIMARY BELT MOVES DEEPER INTO THE GROOVE OF THE VARIATOR SHEAVE. SINCE THE OUTSIDE SHEAVE IS FREE TO MOVE ON ITS SHAFT, THE SECONDARY BELT IS FORCED HIGHER ON THE SHEAVE, THEREBY CAUSING THE TRACTOR TO OPERATE AT MAXIMUM SPEED.

WHEN THE VARI-DRIVE SPEED CONTROL LEVER IS MOVED TO THE REAR POSITION, THE SECONDARY BELT IS FORCED DEEPER INTO THE VARIATOR SHEAVE, CAUSING THE PRIMARY BELT TO RIDE HIGHER ON THE SHEAVE, THEREBY DECREASING SPEED.

CLUTCH AND BRAKE

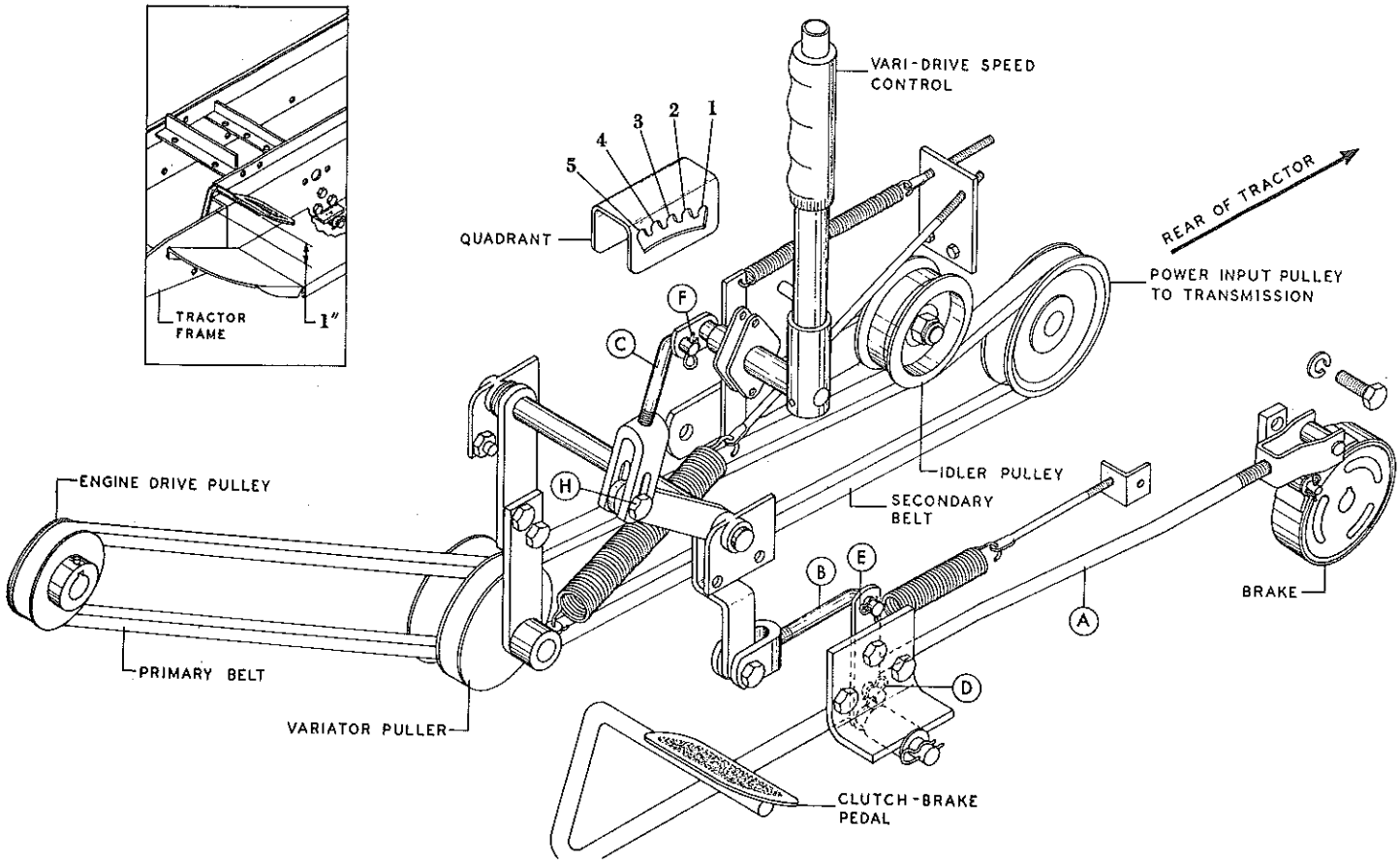
BY DEPRESSING THE CLUTCH-BRAKE PEDAL, THE BRAKE BAND IS TIGHTENED AND AT THE SAME TIME THE VARIATOR SHEAVE IS MOVED FORWARD CAUSING THE ENGINE PRIMARY BELT TO LOOSEN, THEREBY DISENGAGING THE DRIVE.

LINKAGE ADJUSTMENT

All mechanical linkages used to engage the clutch, brake, and vari-drive speed drive are factory adjusted and will not normally require adjusting. However, after a period of time, normal belt wear, and stretch may make adjustment necessary.

When tractor linkage is properly adjusted, the vari-drive speed control lever will increase tractor speed when moved forward from quardrant notch 1 through notch 5. Linkage adjustment is necessary when belt wear and stretch causes tractor to be inoperative when vari-drive speed control lever is in notch 1. When this happens, adjustment is necessary as follows.

1. Move vari-drive speed control lever to the fifth notch from the front of the quadrant.
2. Remove spring locking pins and link rods D , E , F , A , B , C .
3. Disconnect spark plug cable and turn engine with starter several revolutions.
4. Adjust rod A until clutch and brake pedal is about one inch from frame with pressure applied. Lock in position with spring, locking pin D.
5. With pedal released, hold clevis connected to rod C up so bolt H is in bottom of slot. Adjust rod C up or down until if can be easily inserted in position. Lock in position with spring locking pin F.
6. With pedal released, adjust rod B until it can be easily inserted and lock in position with spring locking pin E.
7. Replace spark plug cable. Start engine and move vari-drive speed control lever to all positions. If tractor does not operate correct, it imay be necessary to replace primary belt and reset linkage B and C.

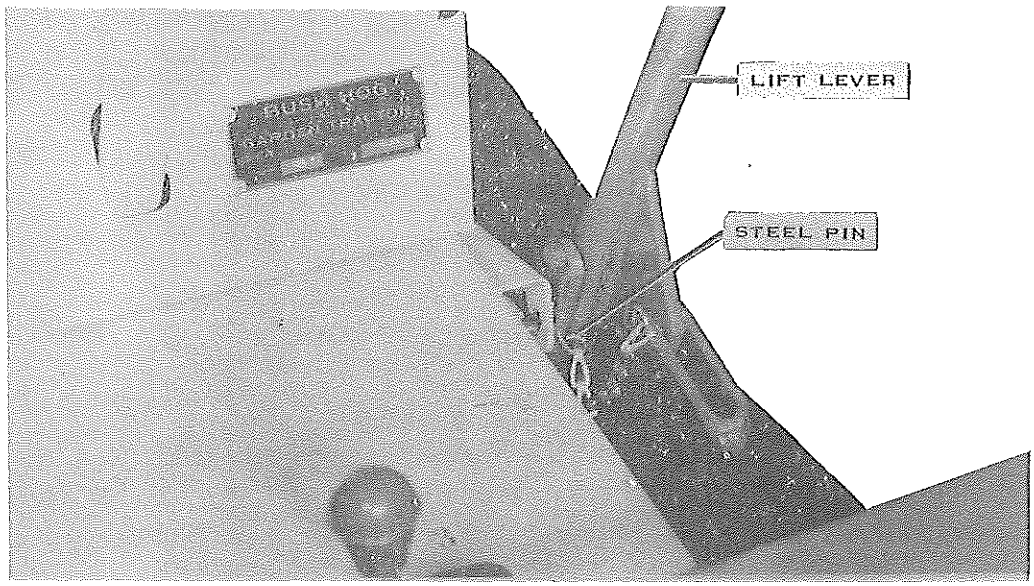


ATTACHMENT LIFT LEVER

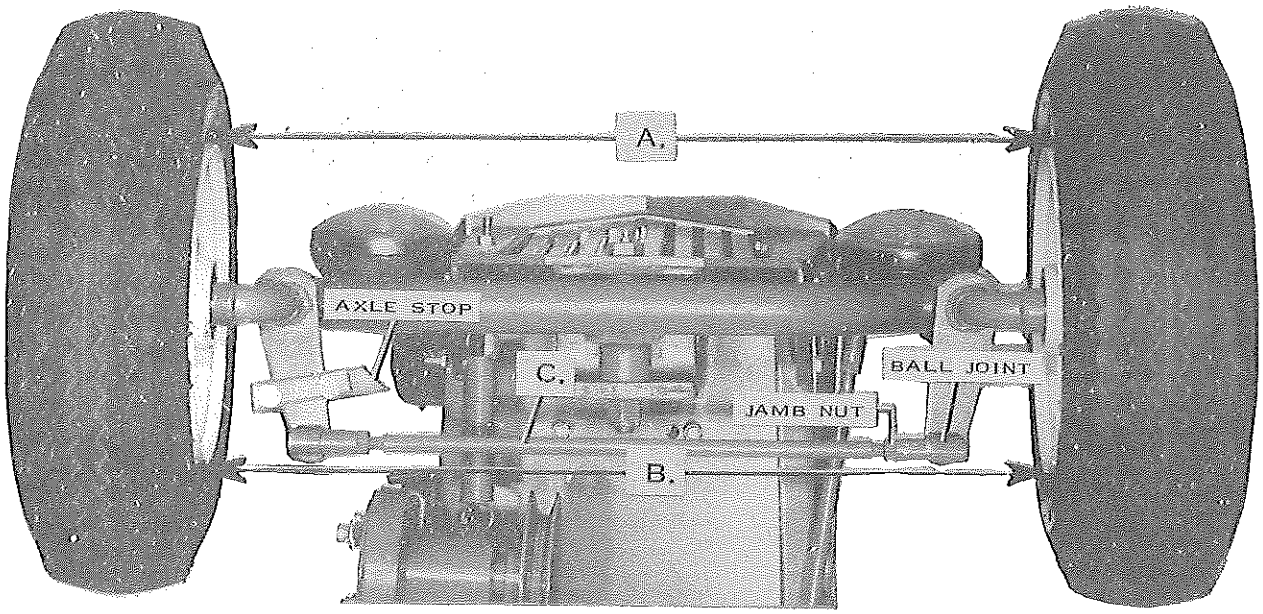
When the attachment lift lever is in the forward position the attachment is in the raised position. Moving the lever backward lowers the attachment. Press thumb release and move lever until attachment operates at desired height. Removing pressure from thumb release locks operating lever and attachment in desired position.

A pin lock -out is provided on the lower end of the lift lever to hold the thumb release in the lowered position. In this positon, the lift lever and attachments are free to float with the ground contour.

To set lever in float position, press thumb release. Place spring steel pin in hole as shown.



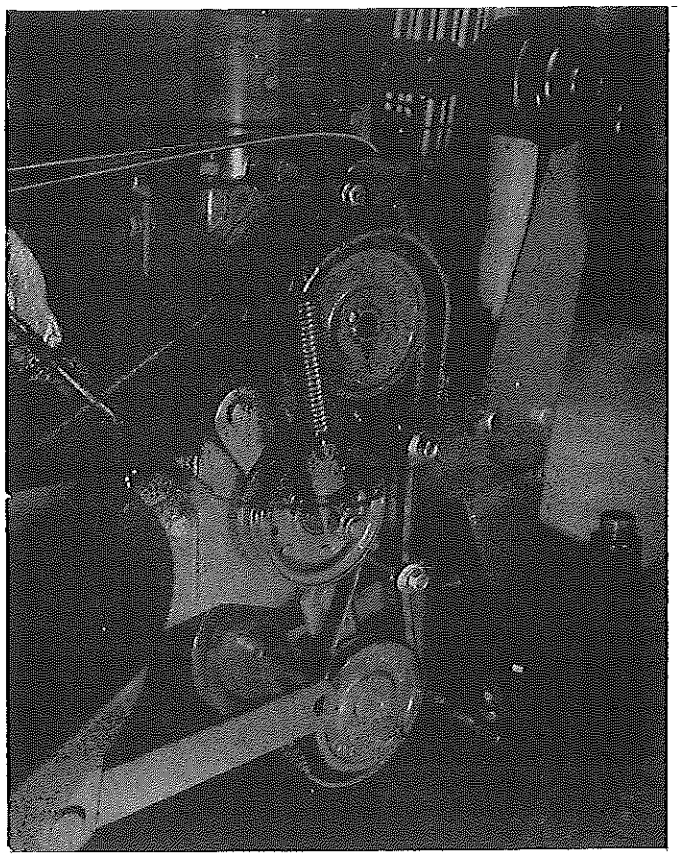
FRONT WHEEL TOE–IN



Measure distances A and B above. The tractor has proper toe-in or alignment when dimenstion A is 3/16 -inch less than dimension B. When necessary remove ball joint on either end of rod C and adjust till proper toe-in is obtained. Tighten jamb nut firmly.

V–BELT IMPLEMENT CLUTCH

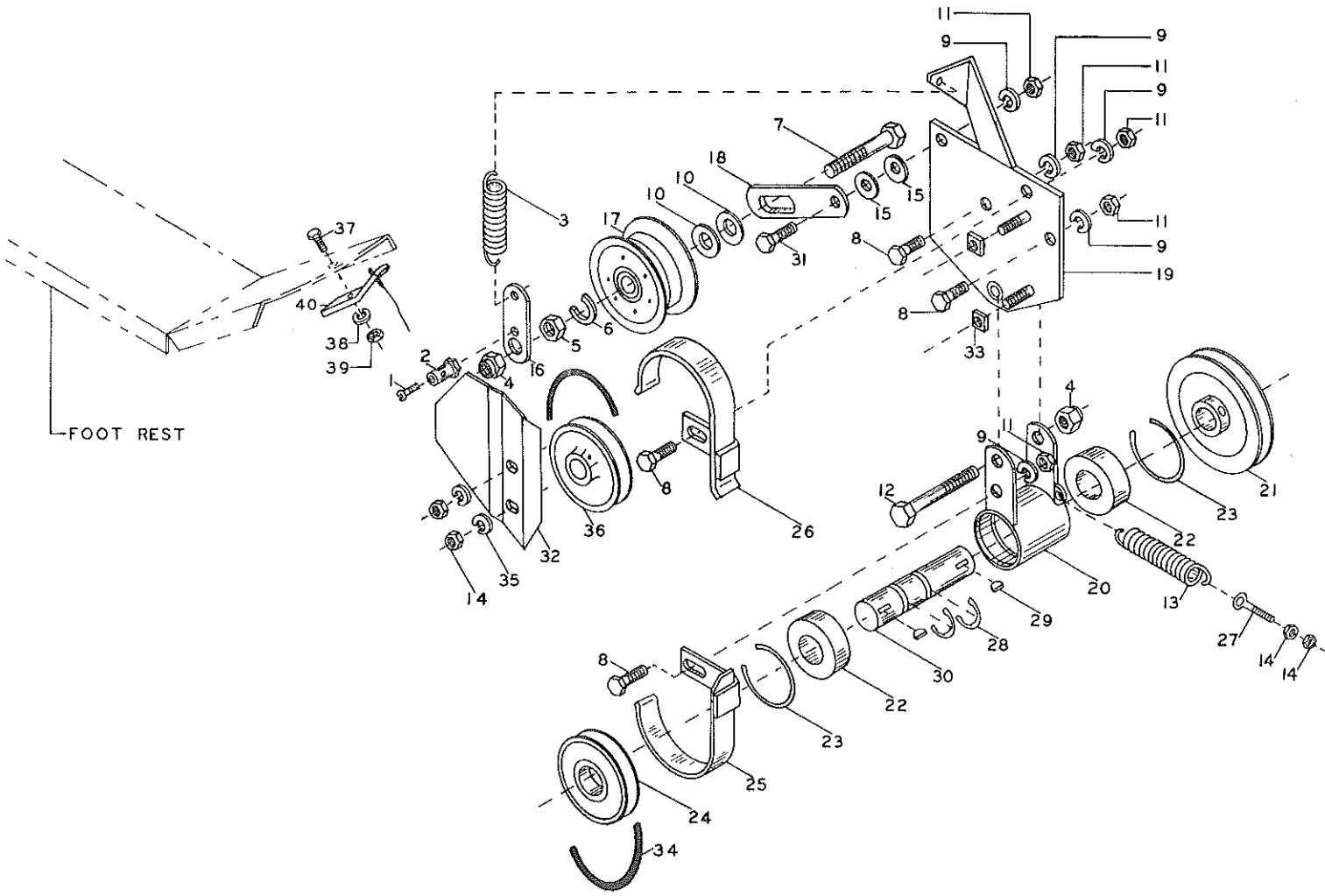
THE V–BELT IMPLEMENT CLUTCH COMES MOUNTED ON THE VARI–DRIVE TRACTOR AND IS READY FOR USE WITH YOUR BELT DRIVEN ATTACHMENTS. THIS CLUTCH IS HAND OPERATED FROM THE SEAT WITH A CABLE CONTROL MOUNTED IN THE DASH.



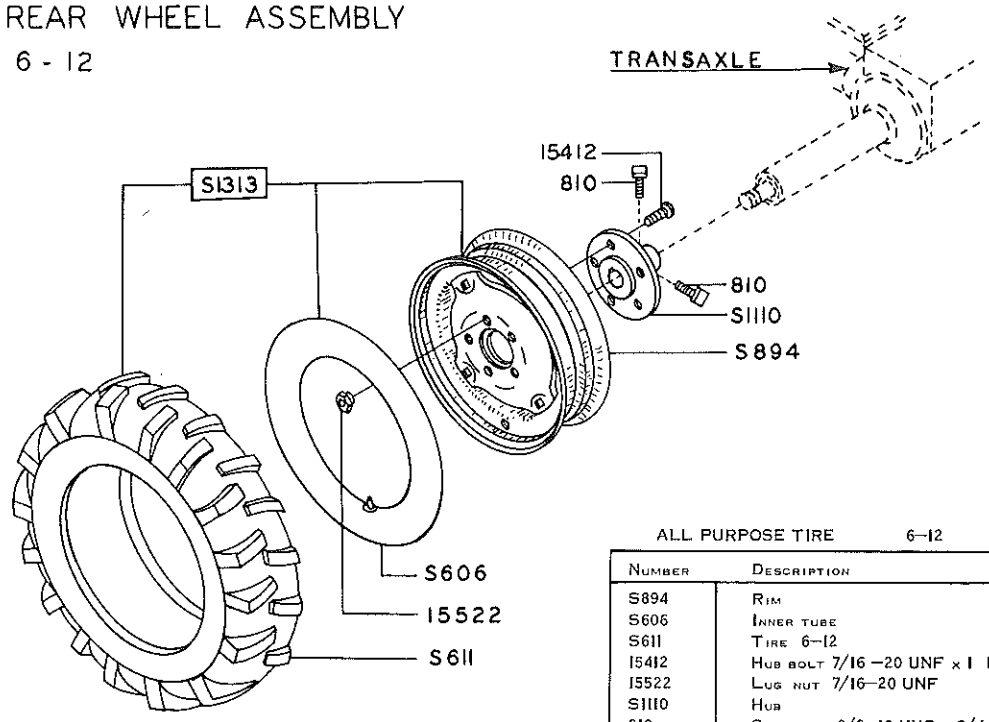
PARTS LIST

IMPLEMENT CLUTCH ASSEMBLY

Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	S1673	Swivel anchor	1	22	S1671	Bearing	2
2	S1672	Setscrew	1	23	S206	Wire ring	2
3	S1695	Spring	1	24	S1677	Pulley	2
4	15554	Locknut 1/2—13 UNC	2	25	S1684	Belt guide-bottom	1
5	15519	Jamb nut 1/2—13 UNC	1	26	S1685	Belt guide-top	1
6	15804	Lockwasher 1/2	1	27	S1698	Anchor	1
7	S1688	Bolt 1/2—13 UNC x 2 1/4	1	28	S1670	Retaining ring	2
8	15057	Bolt 3/8—16 UNC x 3/4	4	29	S1668	Key 1/4 x 7/8 woodruff	2
9	15802	Lockwasher 3/8	5	30	S1699	Jackshaft	1
10	936	Flatwasher 1/2	2	31	15066	Bolt 3/8 -16 UNC x 1	1
11	15539	Nut 3/8—16 UNC	5	32	S1700	Shield, jackshaft	1
12	15096	Bolt 1/2—13 UNC x 3	1	33	15553	Nut 5/16 —18 UNC	2
13	S1495	Spring	1	34	S1669	Belt	1
14	15517	Nut 5/16 - 18 UNC	4	35	15808	Lockwasher 5/16	2
15	741	Flatwasher 3/8	2	36	S1532	Pulley	1
16	S1678	Lever clutch control	1	37	19007	Bolt 1/4 x 3/4	2
17	S1675	Pulley, idler	1	38	15807	Lockwasher 1/4	2
18	S1693	Strap, clutch	1	39	15531	Nut 1/4	2
19	S1682	Mounting plate, weldment	1	40	S1658	Clamp engaging cable	1
20	S1683	Housing, weldment	1				
21	S1676	Pulley	1				



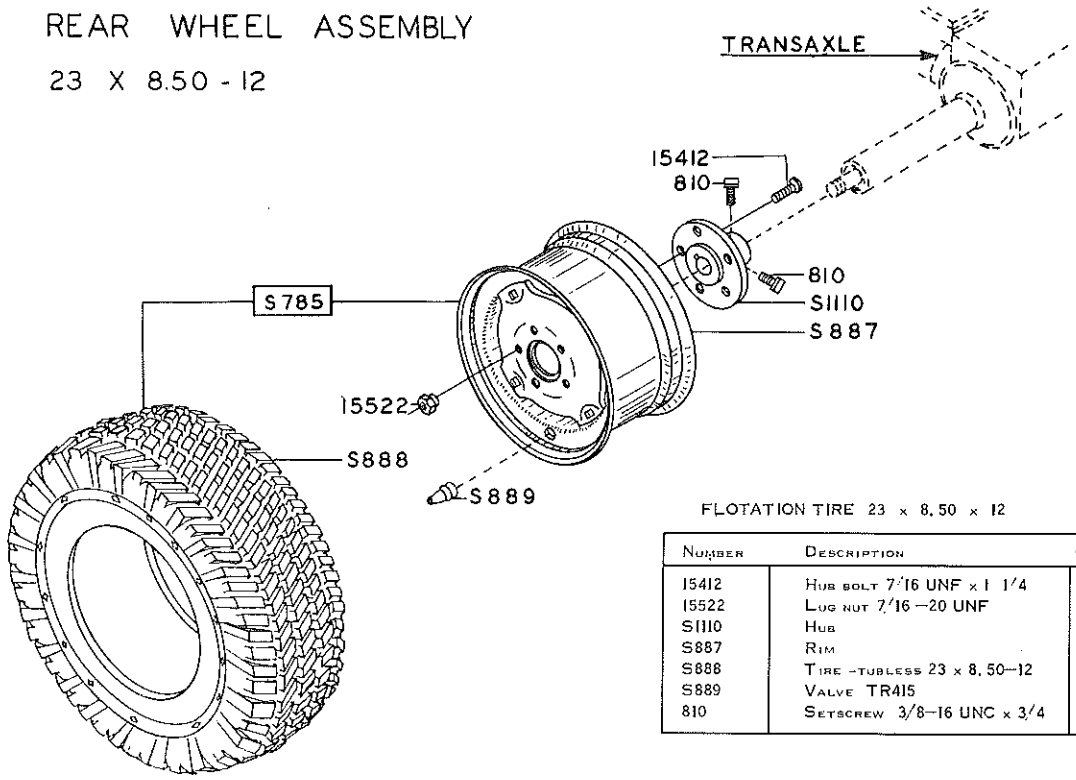
REAR WHEEL ASSEMBLY
6 - 12



ALL PURPOSE TIRE 6—12

Number	Description	Qty.
S894	Rim	1
S606	Inner tube	1
S611	Tire 6—12	1
15412	Hub bolt 7/16 —20 UNF x 1 1/4	5
15522	Lug nut 7/16—20 UNF	5
S1110	Hub	1
810	Setscrew 3/8—16 UNC x 3/4	2

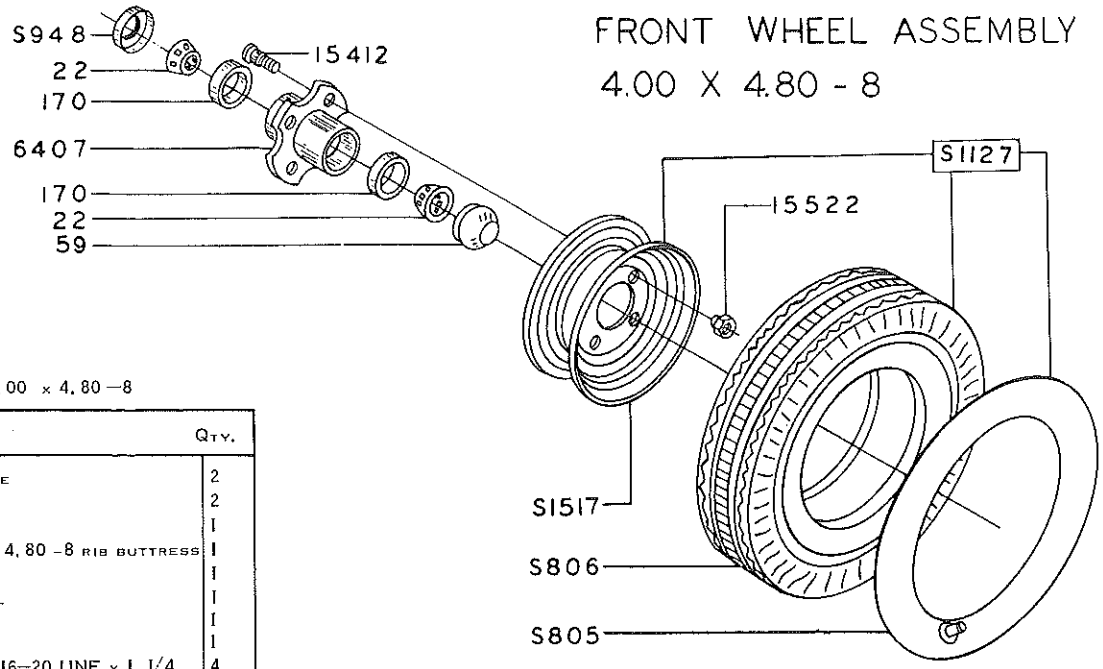
REAR WHEEL ASSEMBLY
23 X 8.50 - 12



FLOTATION TIRE 23 x 8.50 x 12

Number	Description	Qty.
15412	Hub bolt 7/16 UNF x 1 1/4	5
15522	Lug nut 7/16 —20 UNF	5
S1110	Hub	1
S887	Rim	1
S888	Tire -tubless 23 x 8.50—12	1
S889	Valve TR415	1
810	Setscrew 3/8—16 UNC x 3/4	2

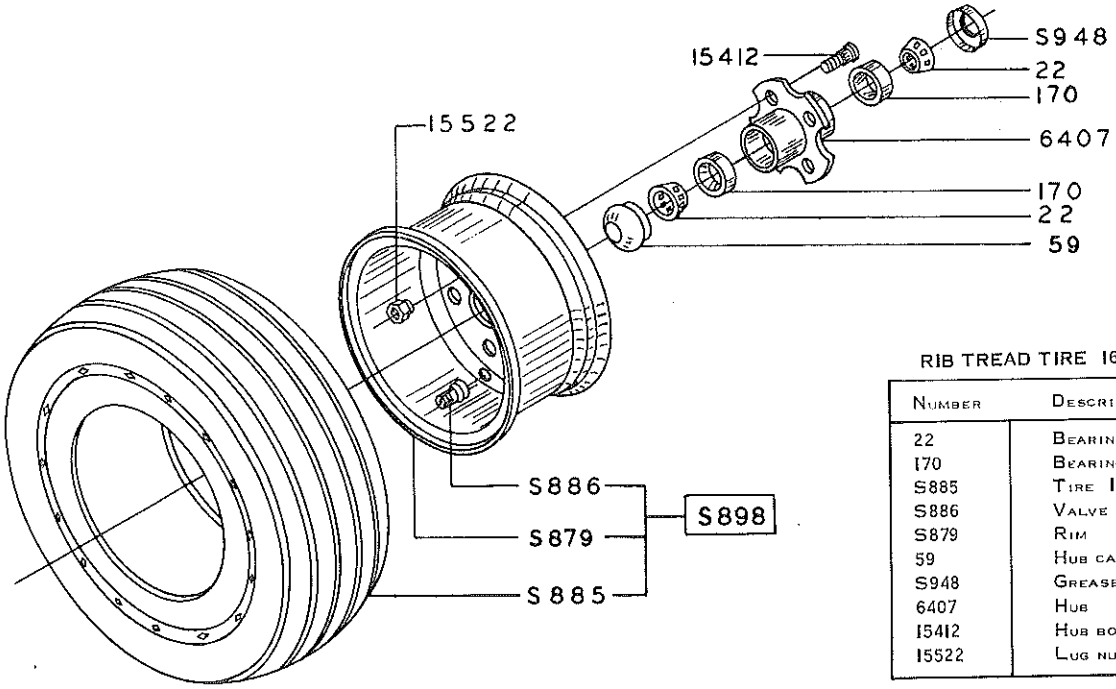
FRONT WHEEL ASSEMBLY
4.00 X 4.80 - 8



ALL PURPOSE TIRE 4.00 x 4.80 –8

Number	Description	Qty.
22	Bearing cone	2
170	Bearing cup	2
S805	Inner tube	1
S806	Tire 4.00 x 4.80 –8 rib buttress	1
59	Dust cap	1
S948	Grease seal	1
S1517	Rim	1
6407	Hub	1
15412	Hub bolt 7/16–20 UNF x 1 1/4	4
15522	Lug nut 7/16–20 UNF	4

FRONT WHEEL ASSEMBLY
16 X 6.50 - 8



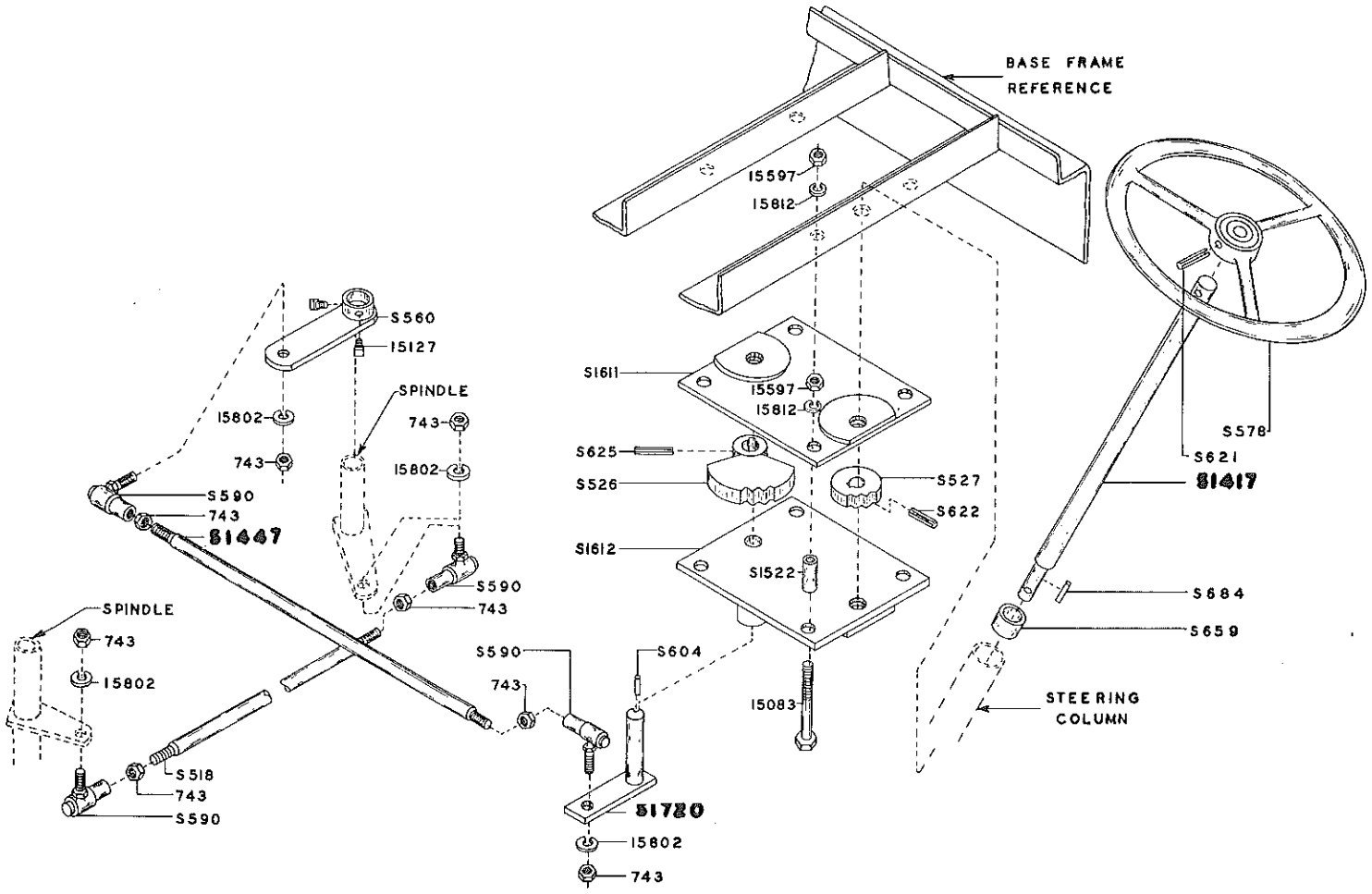
RIB TREAD TIRE 16 X 6.50 – 8

Number	Description	Qty.
22	Bearing cone	2
170	Bearing cup	2
S885	Tire 16 x 6.50 –8 rib terra	1
S886	Valve TR413	1
S879	Rim	1
59	Hub cap	
S948	Grease seal	1
6407	Hub	1
15412	Hub bolt 7/16–20 UNF x 1 1/4	4
15522	Lug nut 7/16–20 UNF	4

STEERING ASSEMBLY

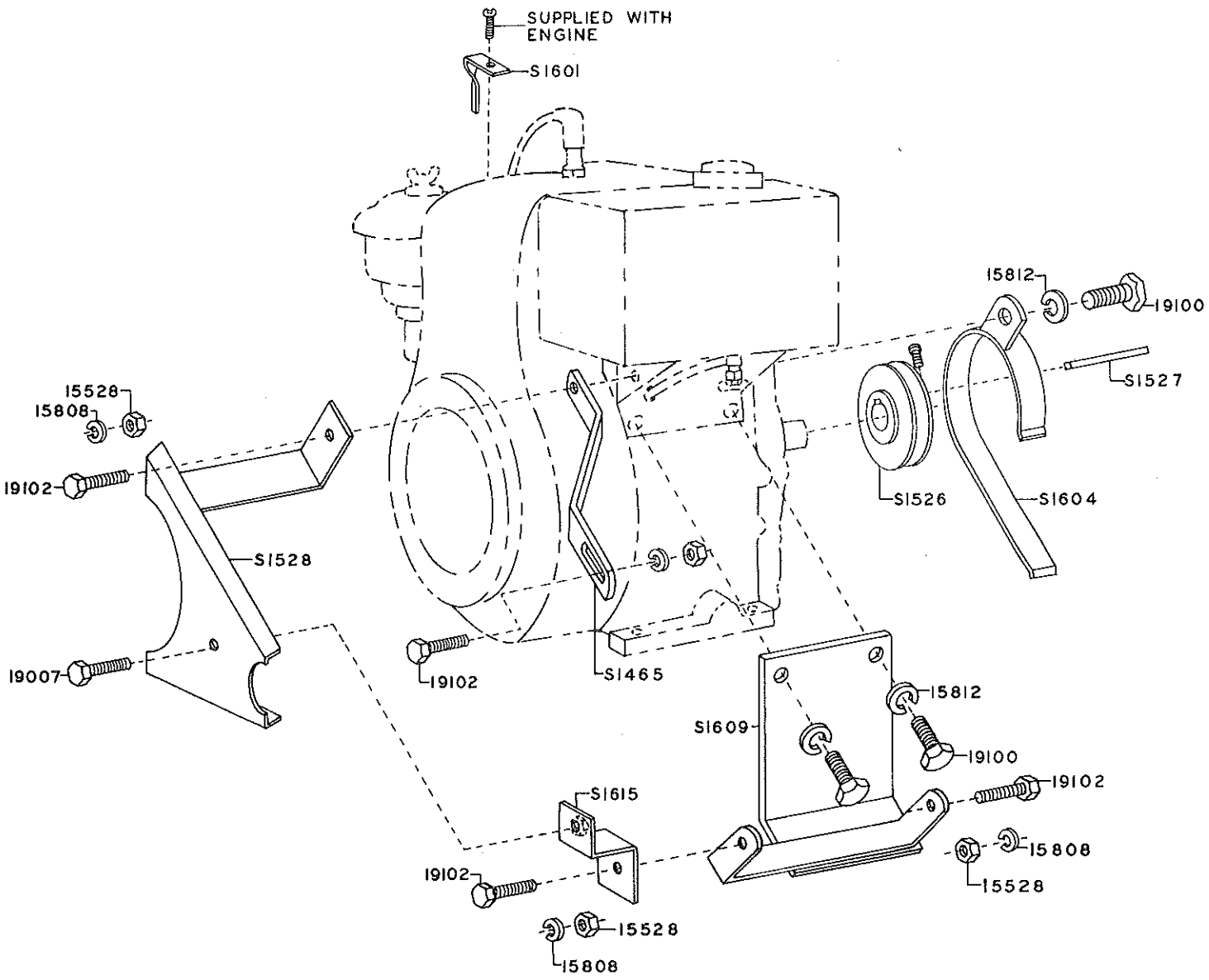
Number	Description	Qty.
S1720	Steering arm	1
S518	Tie rod	1
S1447	Drag link	1
S526	Driven gear	1
S527	Pinion gear	1
S560	Axle arm link	1
S578	Steering wheel	1
S1417	Steering shaft	1
S590	Ball joint	4
S604	Key 1/4 x 1/4 x 3/4	1
S621	Roll pin 3/16 x 2	1
S622	Roll pin 3/16 x 1	1

Number	Description	Qty.
S625	Roll pin 3/16 x 1 3/8	1
S659	Bushing	1
S684	Key 3/16 x 3/16 x 3/4	1
S1522	Pipe spacer	4
S1611	Top plate	1
S1612	Bottom plate	1
734	Nut 3/8—24 UNF	8
15083	Capscrew 3/8—24 UNF x 2 1/2 cad. pl.	4
15127	Setscrew 3/8— 16 UNC x 1/2	2
15597	Nut 3/8 —24 UNF cad. pl.	8
15802	Lockwasher 3/8 medium	4
15812	Lockwasher 3/8 cad. pl.	8



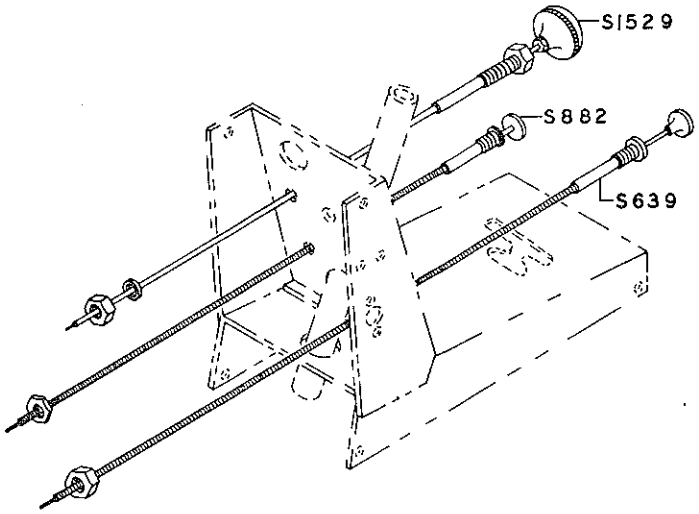
GENERATOR BRACKET, CHOKE BRACKET BELT GUARDS AND DRIVE PULLEY

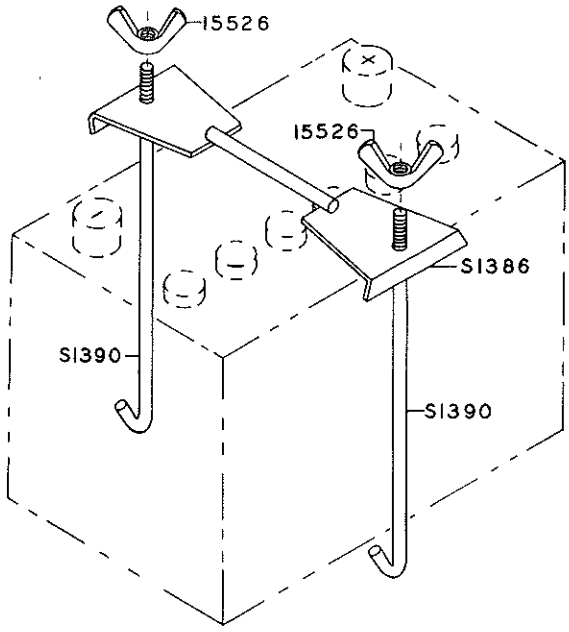
Part No.	Description	Qty.
S1465	Adjusting bracket	1
S1526	Drive pulley	1
S1527	Key	1
S1528	Belt guard	1
S1601	Choke bracket	1
S1604	**Belt Guide-Wisconsin**	1
S1609	Generator bracket	1
S1615	Guard bracket	1
15517	Nut 3/16	1
15528	Nut 5/16	3
15801	Lockwasher 3/16	1
15808	Lockwasher 5/16	3
15812	Lockwasher 3/8	3
19007	Bolt 1/4 x 3/4	1
19100	Bolt 3/8 x 3/4	3
19102	Bolt 5/16 x 1	4



BATTERY CLAMP AND CONTROL CABLES

Part No.	Description	Qty.
S639	Throttle control	1
S882	Choke control	1
S1386	Battery clamp	1
S1390	Hold down rod	2
S1529	Implement clutch engaging cable	1
15526	Wing nut	2





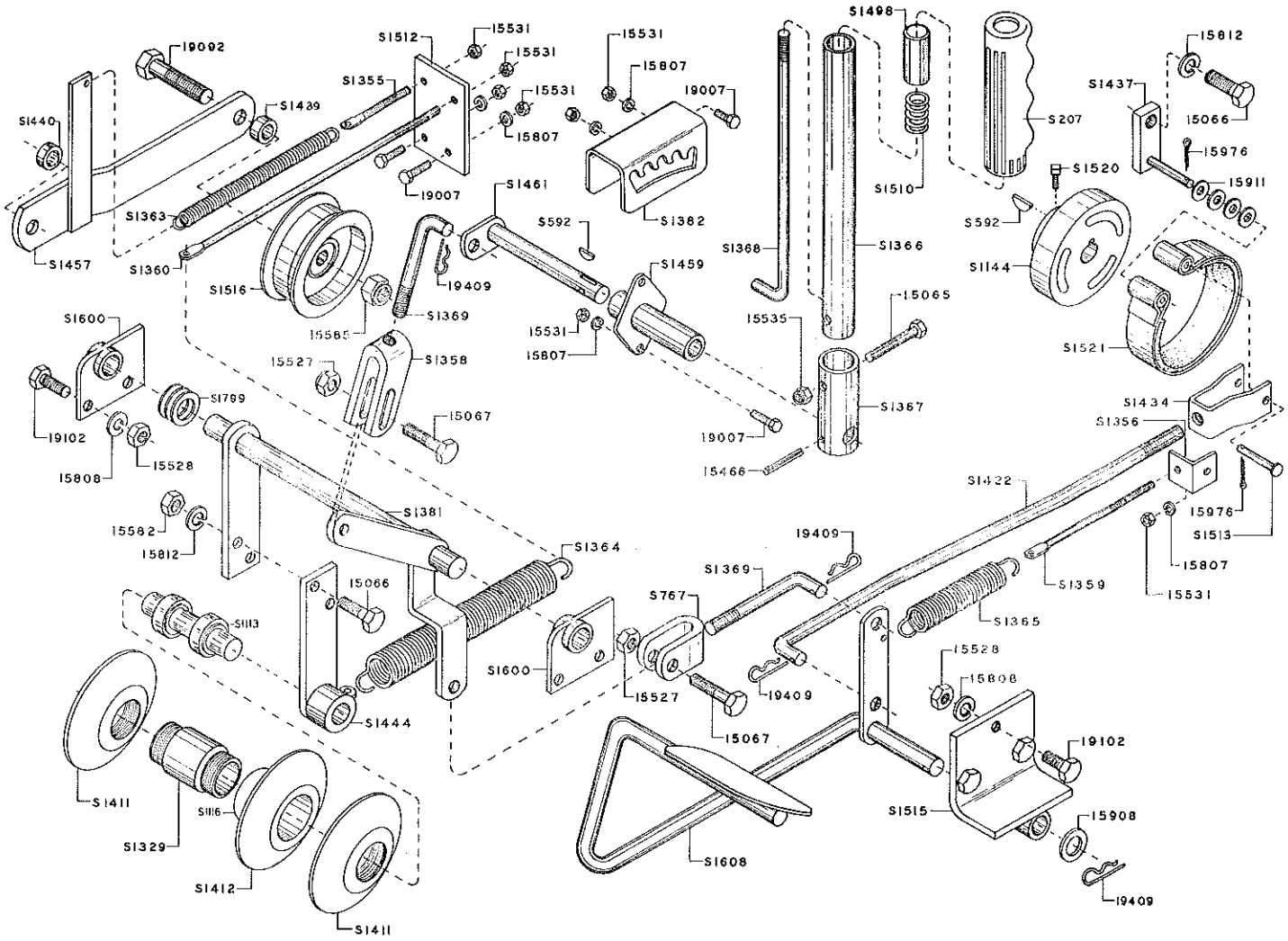
VARIATOR AND BRAKE ASSEMBLY

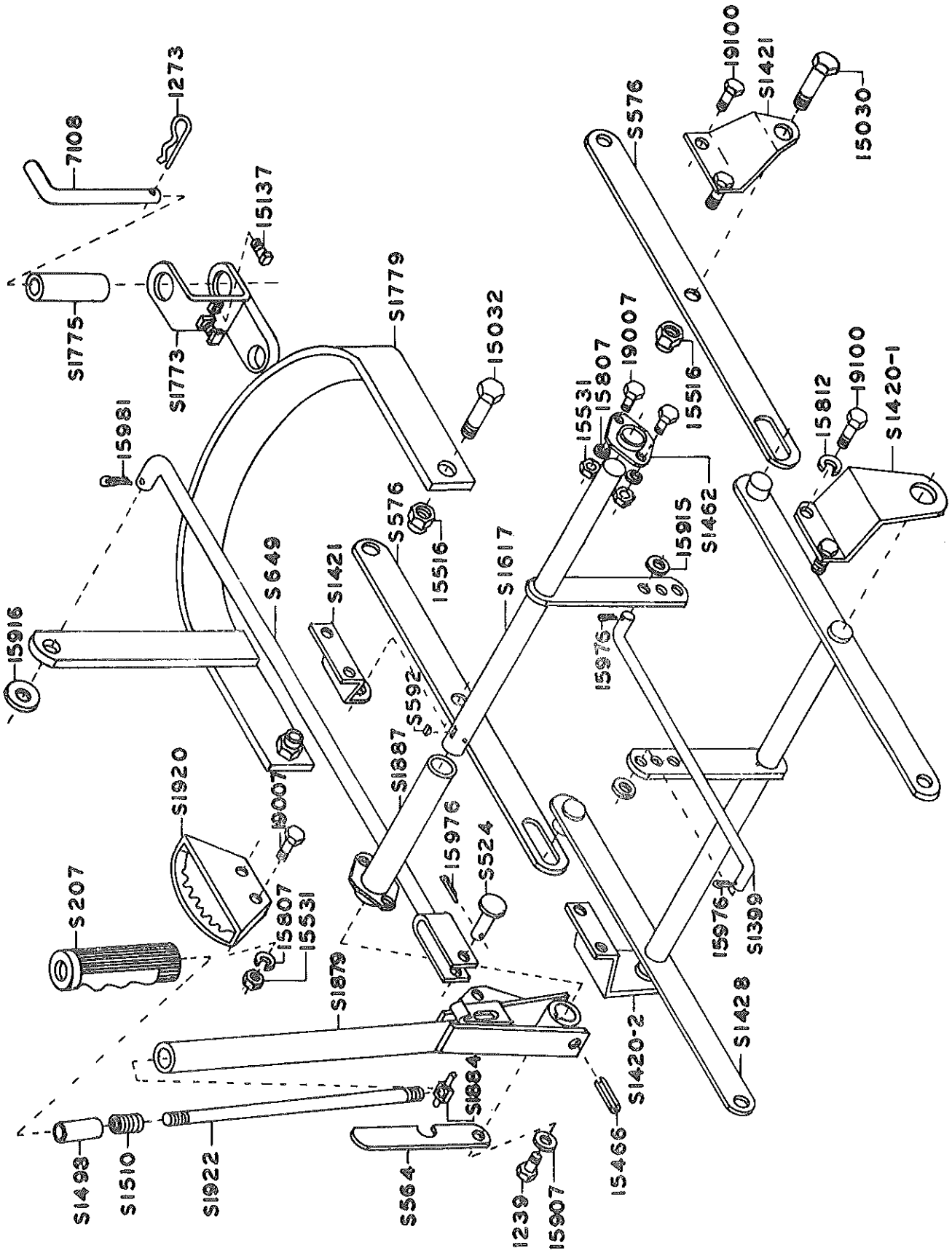
Part No.	Description	Qty.
S207	Hand grip	1
S592	Woodruff key	2
S1113	Bearing variator drive	1
S1116	Bearing	1
S1144	Brake pulley	1
S1329	Variator pulley	1
S1355	Eye bolt	1
S1356	Spring bracket (brake)	1
S1358	Clevis	1
S1359	Eye bolt	1
S1360	Eye bolt	1
S1363	Spring (idler bracket)	1
S1364	Spring(variator)	1
S1365	Spring (brake pedal)	1
S1366	Pipe vari-drive lever	1
S1367	Pipe bottom	1

Part No.	Description	Qty.
S1461	Rod	1
S1498	Thumb botton	1
S1510	Spring	1
S1512	Idler spring bracket	1
S1513	Pin	1
S1515	Bracket (brake pedal)	1
S1516	Idler pulley	1
S1520	Setscrew	1
S1521	Brake shoe	1
S1600	Bracket (variator bracket)	2
S1799	Spacer	1
15065	Bolt 3/8 x 2 UNF	1
15066	Bolt 3/8 x 1 UNC	3
15067	Bolt 3/8 x 1 1/2 UNC	2
19409	Presto pin	4
15466	Rolled pin	1

S1368	Thumb release rod	1
S1369	Rod	1
S1381	Variator control bracket	1
S1382	Speed adjusting bracket	1
S1411	Flange (outside)	2
S1412	Flange (center)	1
S1422	Rod (brake)	1
S1434	Yoke (brake rod)	1
S1437	Hanger brake shoe	1
S1439	Idler spacer	1
S1440	Bushing (idler)	1
S1444	Hanger (variator)	1
S1457	Idler bracket	1
S1459	Bearing	1

15527	Locknut 3/8 UNC	2
15528	Nut 3/8 UNC	7
15531	Nut 1/4 UNC	9
15535	Locknut 3/8 UNF	1
15582	Nut 3/8 UNC	2
15585	Locknut 1/2	1
15807	Lockwasher 1/4	7
15808	Lockwasher 5/16	7
15812	Lockwasher 3/8	3
15911	Flatwasher 1/4	4
15976	Cotter pin	2
19007	Bolt 1/4 x 3/4 UNC	2
19092	Bolt 1/2 x 2 UNC	6
19102	Bolt 5/16 x 1 UNC	7




7108
1273
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19007
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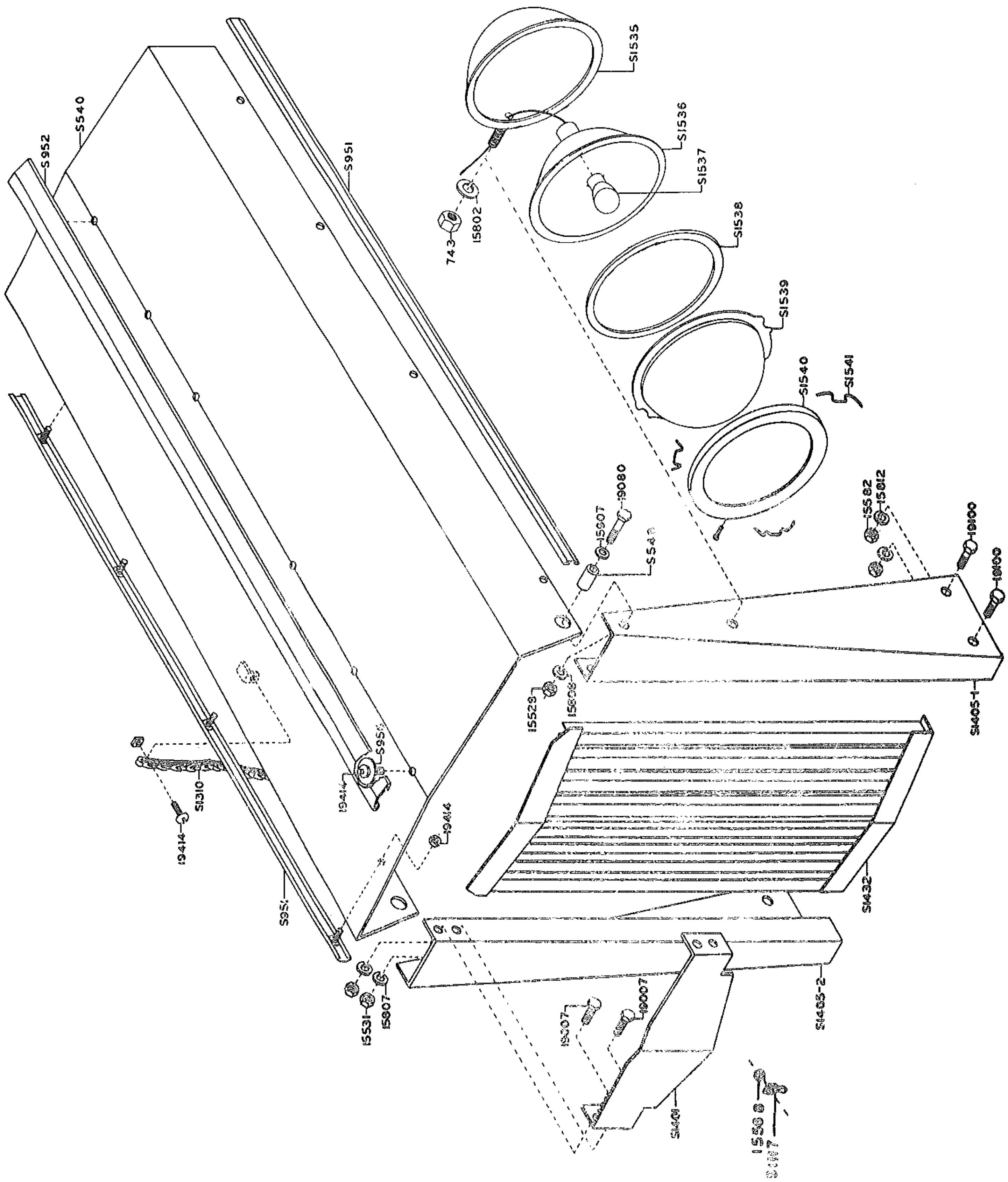
15807
15531
S1879
S1884
S1922
S1510
S1498
S564
1239
15907
15466
S1420-2
S1428
15976-1
S1399
15915
S1462
15531
15807
19007
15516
S576
19100
S1421
15030
15812
19100
S1420-1

LIFT ASSEMBLY

Part No.	Description	Qty.
S207	Hand grip	1
S524	Rivet	1
S564	Lock, lift	1
S576	Lift bar	2
S592	Key woodruff 3/16 x 3/4	1
S649	Lift rod	1
S1399	Rod adjusting lever	1
S1420–1	Bracket, front lift L.H.	1
S1420–2	Bracket, front lift R.H.	1
S1421	Bracket, rear lift	2
S1428	Lift arm bottom	1
S1462	Bearing	1
S1498	Thumb button	1
S1510	Spring	1
S1617	Lever shaft	1
S1773	Clevis	1
S1775	Hitch tube	1
S1779	Drawbar	1
S1884	Rod lock	1
S1887	Bearing	1

Part No.	Description	Qty.
S1920	Quadrant	1
1239	Capscrew 5/16–18 UNC x 1	1
1273	Presto pin	1
7108	Hitch pin	1
15030	Capscrew 5/8–18 UNF x 1 1/2	2
15032	Capscrew 5/8–18 UNF x 2	2
15137	Setscrew 1/2–13 UNC x 1	2
15466	Roll pin	1
15516	Locknut 5/8–18 UNF	4
15531	Hex nut 1/4–20 UNC	6
15807	Lockwasher 1/4	6
15812	Lockwasher 3/8 med.	8
15907	Flatwasher 5/16	1
15915	Flatwasher	2
15916	Flatwasher	1
15976	Cotter pin	3
15981	Cotter pin	1
19007	Capscrew 1/4–20 UNC x 3/4	6
19100	Capscrew 3/8–16 UNC x 3/4	8


S1535
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S540
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15808
S956
19414
S1310
19414
19414
S951
S1432
S1405-2
15531
15807
19007
19007
S1401

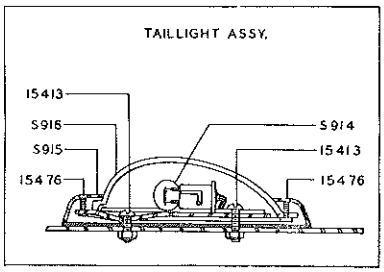
HOOD, GRILL, AND HEADLIGHT ASSEMBLY

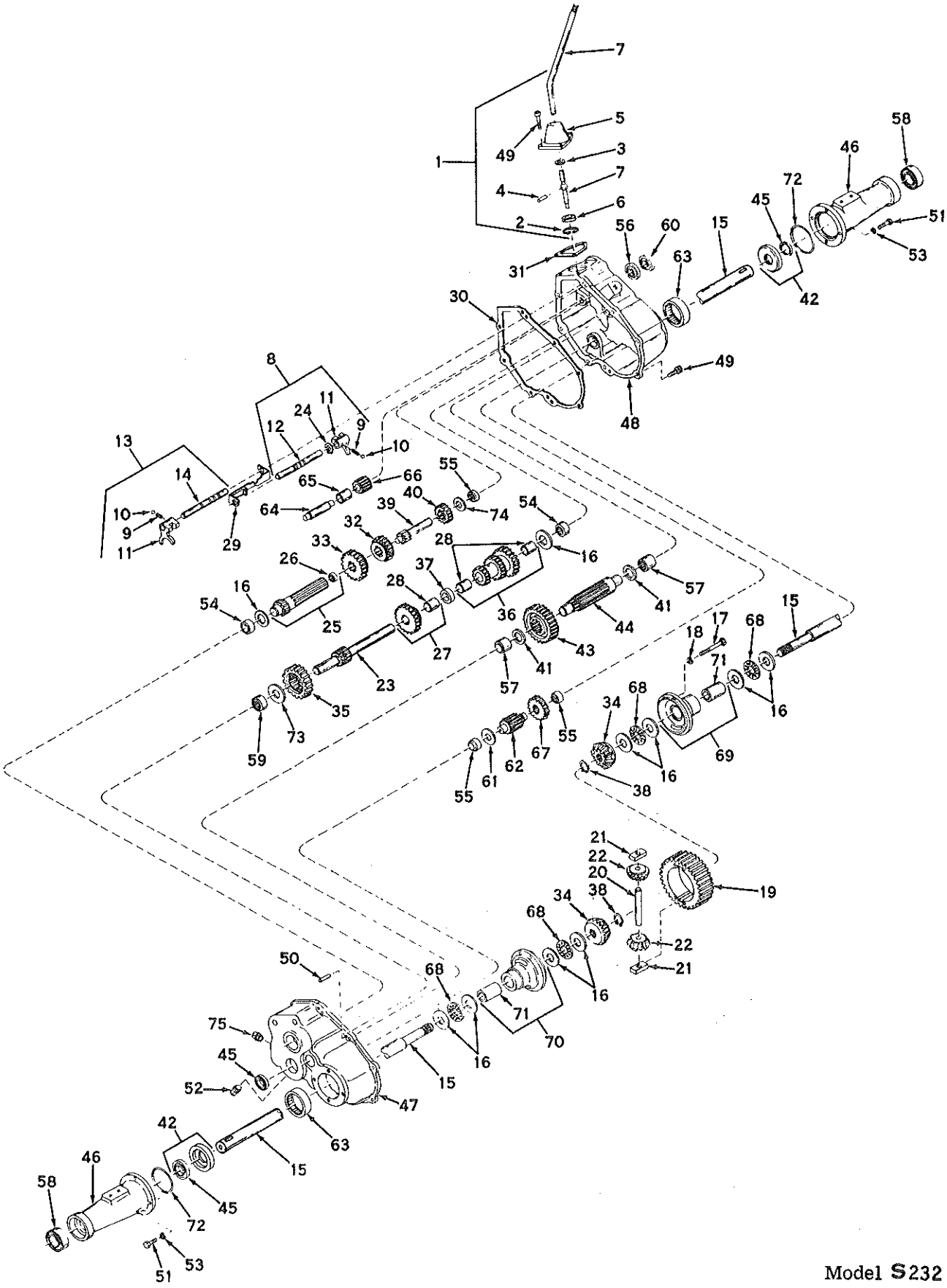
Part No.	Description	Qty.
S540	Hood	1
S548	Pipe bushing	2
S951	Chrome trim	2
S952	Chrome trim	1
S956	Hood trim bracket	4
S1117	Grill latch	1
S1310	Chain	1
S1401	Grill top	1
S1405—1	Grill side L.H.	1
S1405—2	Grill side R.H.	1
S1432	Grill	1
S1535	Housing, headlight	2
S1536	Reflector, headlight	2
S1537	Bulb 12 - volt	2
S1538	Gasket	2
S1539	Lens, headlight	2

Part No.	Description	Qty.
S1540	Face plate, headlight	2
S1541	Locking clip	6
743	Nut	2
15528	Nut	2
15568	Nut	1
15582	Nut	4
15802	Lockwasher	2
15807	Lockwasher	4
15808	Lockwasher	2
15812	Lockwasher	4
15907	Flatwasher	1
19007	Bolt	4
19080	Bolt	2
19100	Bolt	4
19414	Stove bolt & nut	14

TAIL LIGHT ASSEMBLY
NO. 918

Part No.	Description	Qty.
S914	Bulb-12 volt	1
S915	Housing	1
S916	Lens	1
15413	Stove bolt - No. 10	2
15476	Machine screw -No. 8	2

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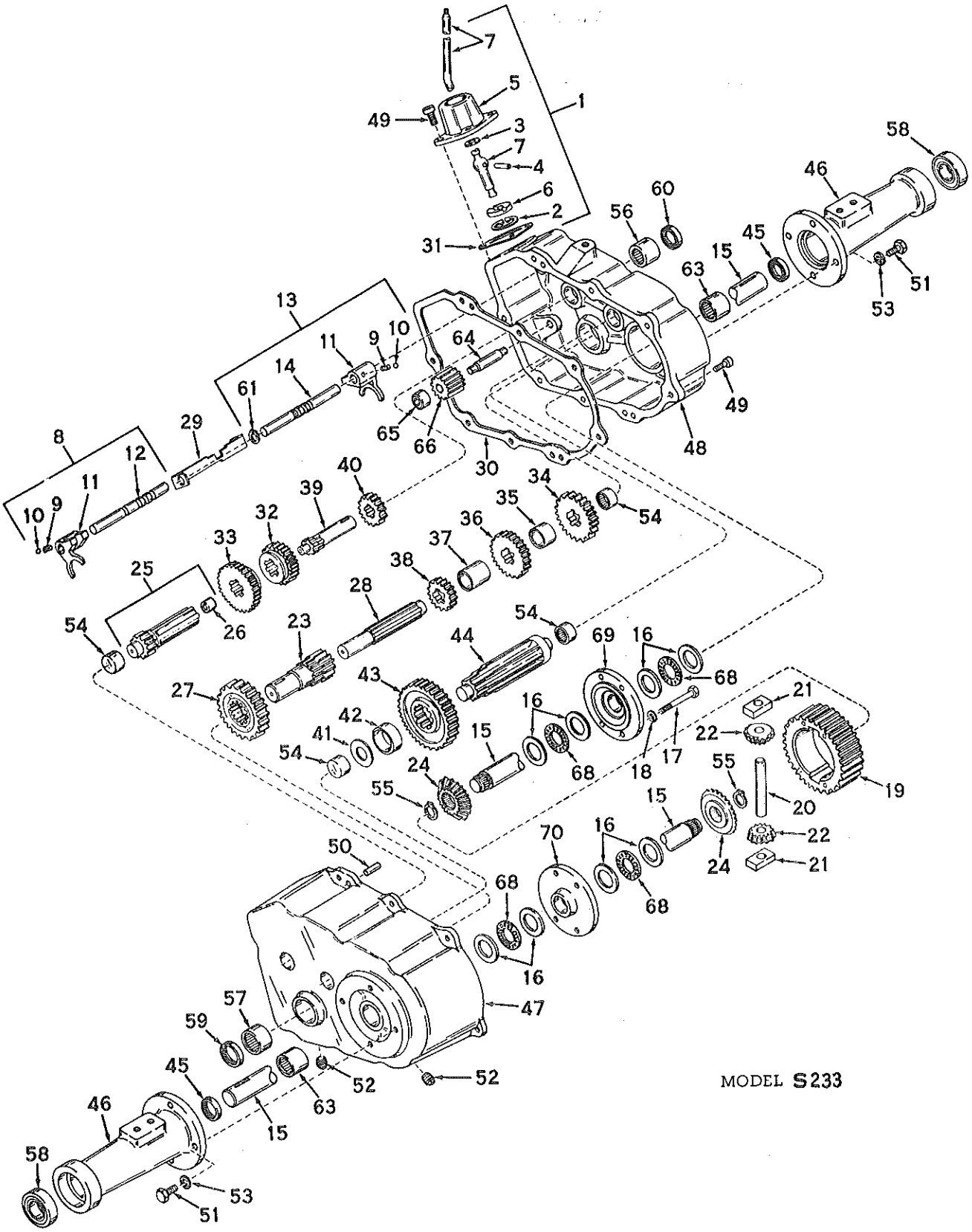
Model S232

TRANSAXLE MODEL NO. S232
FOUR SPEED

Ref. No.	Part No.	Description
1	S164	Lever & housing assy. shift (incl. 2 thru 7)
2	S108	Ring, snap
3	S109	Ring, quad.
4	S110	Pin, roll
5	S111	Housing, shift lever
6	S112	Keeper, shift lever
7	S113	Lever, shift
8	S114	Rod assy. shift (incl. 9 thru 12 & 24)
9	S115	Spring
10	S116	Ball, steel
11	S117	Fork, shifter
12	S118	Rod, shifter (3rd & 4th)
13	S119	Rod assy. shift (incl. 9, 10, 11, & 14)
14	S120	Rod, shifter (low)
15	S121	Axle
16	S122	Washer, thrust
17	S123	Screw, hex hd. cap 1/4–20 x 2 1/2
18	S124	Lockwasher, 1/4
19	S125	Gear, ring
20	S126	Pin, drive
21	S127	Block drive
22	S128	Pinion, bevel
23	S129	Shaft & gear, brake
24	S130	Ring, snap
25	S131	Shaft & bearing assy. pinion (incl. no. 26)
26	S132	Bearing
27	S133	Gear cluster assy. (incl. no. 28)
28	S134	Bushing
29	S135	Stop, shifter
30	S136	Gasket, case & cover
31	S137	Gasket, shift lever housing
32	S138	Gear, shifting (3rd & 4th)
33	S139	Gear, shifting (1st, 2nd, & rev.)
34	S140	Gear, bevel
35	S141	Gear, idler
36	S142	Gear cluster assy. (incl. no. 28)
37	S143	Spacer
38	S144	Ring, snap
39	S145	Shaft, input
40	S146	Spur gear, input shaft
41	S147	Washer, thrust
42	S148	Seal & retainer assy. oil (incl. no. 45)
43	S149	Gear, output
44	S150	Pinion, output
45	S151	Seal, oil
46	S152	Housing, axle
47	S153	Cover assy. transaxle (incl. 54, 55, 57, 59, & 63)
48	S154	Case assy. transaxle (incl. 54, 55, 57, & 63)
49	S155	Screw, socket hd. cap 1/4 –20 x 3/4
50	S156	Pin, dowel
51	S157	Screw, hex hd 5/16 – 18 x 7/8
52	S158	Plug, magnetic drain
53	S159	Lockwasher, split 5/16
54	S160	Bearing, needle
55	S161	Bearing, needle
56	S162	Bearing, ball
57	S165	Bearing, needle
58	S166	Bearing, ball
59	S167	Bearing, needle
60	S168	Seal, oil
61	S169	Washer
62	S170	Shaft & pinion
63	S171	Bearing, needle
64	S172	Shaft, reverse idler
65	S173	Spacer, reverse idler
66	S174	Idler, reverse
67	S175	Spur gear (22 teeth)
68	S176	Bearing, thrust
69	S177	Carrier assy. differential (incl. no. 71)
70	S178	Carrier assy. differential (incl. no. 71)
71	S179	Bushing
72	S180	O ring
73	S181	Washer, thrust
74	S182	Washer, thrust
75	S183	Plug, pipe

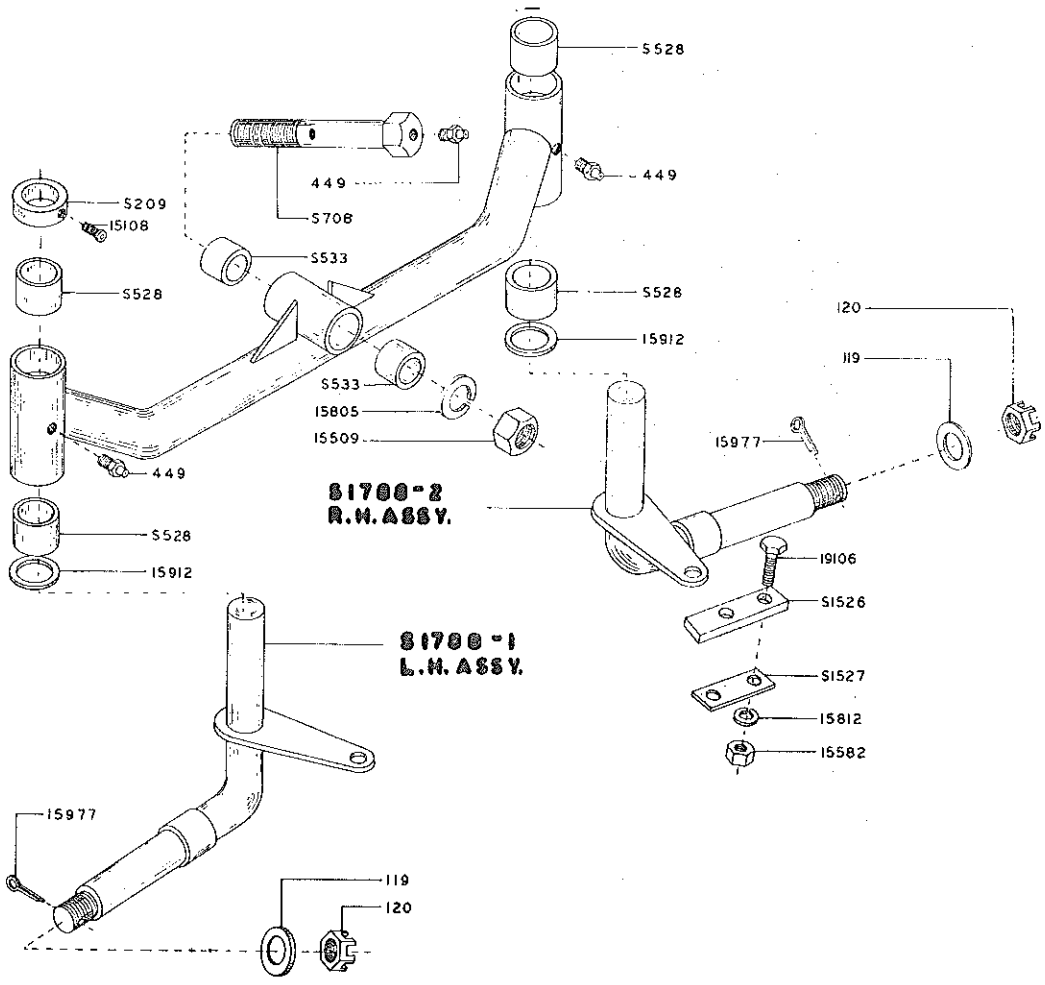

MODEL S233

TRANSAXLE MODEL NO. S 233
THREE SPEED

Ref. No.	Part No.	Description
1	S184	Lever & housing assy., shift (incl. no. 2 thru 7)
2	S108	Ring, snap
3	S109	Ring, quad.
4	S110	Pin, roll
5	S185	Housing, shift lever
6	S112	Keeper, shift lever
7	S186	Lever, shift
8	S187	Rod assy., shift (incl. no. 9 thru 12)
9	S115	Spring
10	S116	Ball, steel
11	S117	Fork, shifter
12	S188	Rod, shifter
13	S189	Rod assy., shift (incl.no. 9, 10, 11, 14, &61)
14	S118	Rod, shifter
15	S190	Axle
16	S191	Washer, thrust
17	S123	Screw, hex hd. cap 1/4–20 x 2 1/2
18	S124	Lockwasher 1/4
19	S125	Gear, ring
20	S126	Pin, drive
21	S127	Block, drive
22	S192	Pinion, bevel
23	S193	Pinion & bushing assy. idler
24	S194	Gear, bevel
25	S195	Shaft & bearing assy., shifter (incl. no. 26)
26	S132	Bearing
27	S196	Gear, idler
28	S97	Shaft, idler
29	S198	Stop, shifter
30	S199	Gasket, case & cover
31	S200	Gasket, shift lever housing
32	S138	Gear, shifting(2nd & high)
33	S139	Gear, shifting(1st & rev.)
34	S201	Gear, spur(26teeth)
35	S202	Spacer
36	S203	Gear, spur (22 teeth)
37	S204	Spacer
38	S208	Gear, spur (16 teeth)
39	S145	Shaft, input
40	S146	Spur gear, input shaft
41	S169	Washer
42	S213	Spacer
43	S149	Gear, output
44	S214	Pinion, output
45	S215	Seal, oil
46	S156	Housing, axle
47	S216	Cover assy., transaxle (incl. no. 54, 57, & 63)
48	S217	Case assy., transaxle (incl. no. 54, 56, & 63)
49	S155	Screw, socket hd. cap 1/4–20 x 3/4
40	S156	Pin, dowel
51	S218	Screw, hex hd. cap 5/16 -18 x 3/4
52	S183	Plug, pipe
53	S219	Lockwasher 5/16
54	S220	Bearing
55	S221	Ring, snap
56	S222	Bearing
57	S223	Bearing
58	S224	Bearing
59	S151	Seal, oil
60	S212	Seal, oil
61	S225	Ring, snap
63	S226	Bearing
64	S227	Shaft, reverse idler
65	S228	Spacer, reverse idler
66	S174	Idler, reverse
68	S229	Bearing, thrust
69	S235	Carrier, differential
70	S231	Carrier, differential

FRONT AXLE ASSEMBLY

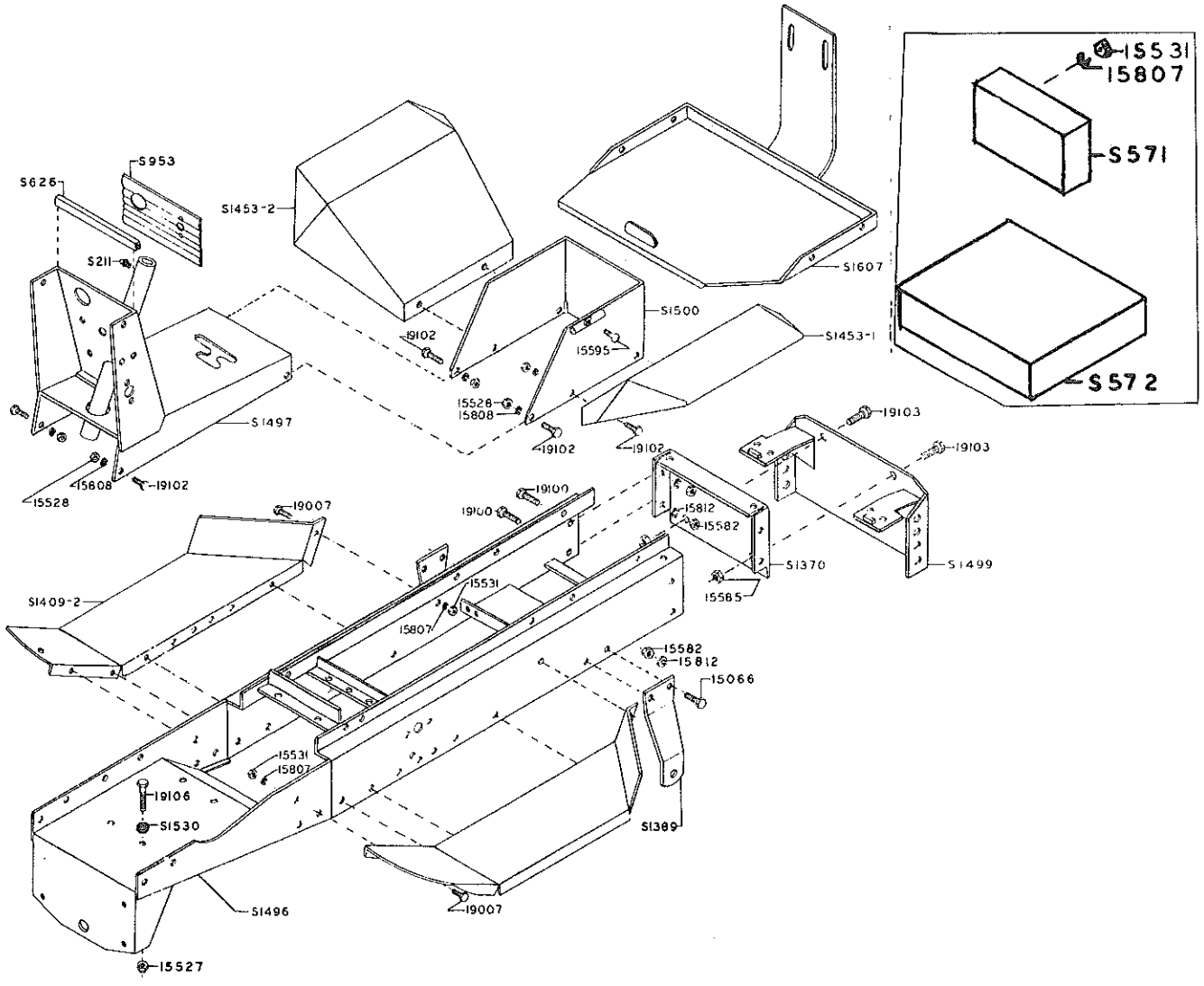
Part No.	Description	Qty.
119	Flatwasher 3/4	2
120	Nut castellated	2
449	Grease fitting	3
15108	Setscrew	1
15509	Nut 5/8-18 UNF	1
15805	Lockwasher	1
15912	Bushing	2
15977	Cotter pin 5/32 x 1 1/2	1
S209	Setcollar	1
S1788—1	Spindle L.H.	1
S1788—2	Spindle R.H.	1
S528	Bushing	4
S533	Bushing	2
		2
S708	Bolt	
15067	Bolt	2
15812	Lockwasher	2
15582	Nut	2
S1526	Plate top (axle stop)	1
S1527	Plate bottom (axle stop)	1



SEAT, FRAME, FENDER, AND DASH ASSEMBLIES

Part No.	Description	Qty.
S211	Grease fitting	1
S1370	End frame	1
S1409—1	Foot rest - L.H.	1
S1409—2	Foot rest - R.H.	1
S1453—1	Fender - L.H.	1
S1453—2	Fender - R.H.	1
S1496	Base frame	1
S1497	Dash assembly	1
S1499	Transmission mount	1
S1500	Battery box	1
S1607	Seat	1
15527	Locknut	4
15528	Nut 5/16 UNC cad. pl.	8
15531	Nut 1/4 UNC cad. pl.	10
15582	Nut 3/8 UNC cad. pl.	10
15585	Locknut 1/2 UNC cad. pl.	2

Part No.	Description	Qty
15595	Thumb screw 5/16 UNC x 3/4	2
15807	Lockwasher 1/4 cad. pl.	10
15808	Lockwasher 5/16 cad. pl.	8
15812	Lockwasher 3/8 cad. pl.	10
19007	Capscrew 1/4 UNC x 3/4 cad. pl.	10
19100	Capscrew 3/8 UNC x 3/4 cad. pl.	6
19102	Capscrew 5/16 UNC x 1 cad. pl.	8
19103	Capscrew 1/2 UNC x 1 1/4 cad. pl.	2
19106	Bolt 3/8 x 1 3/4	4
S953	Dash trim	1
S626	Rubber trim	1
S1530	Rubber washer	4
15489	Stove bolt (included nut)	2
S1389	Hanger rear	2
15066	Bolt 3/8 x 1 UNC	4
S571	cushion -back	1
S572	cushion - lower	1



SERVICE BULLETIN

BUSH HOG INC.
SELMA, ALABAMA
P.O. BOX 1039

BULLETIN NO.
6 — 66

DATE
2 — 14 — 66

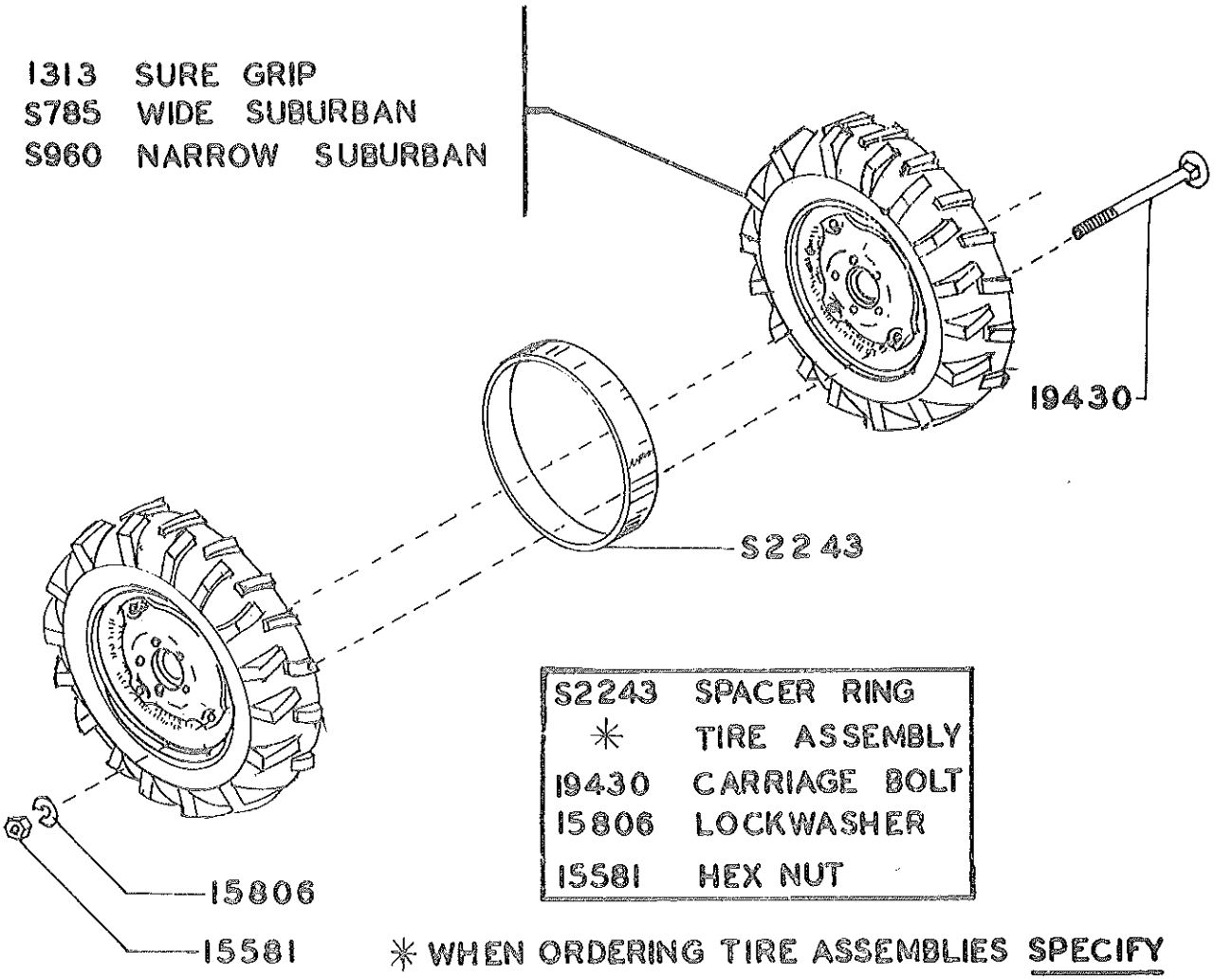
INSTALLATION

1. JACK UP REAR OF TRACTOR.
2. INSTALL 4 CARRIAGE BOLTS IN OUTER SET OF HOLES.
3. PLACE SPACER RING OVER BOLTS AND ATTACH OTHER WHEEL WITH LOCKWASHER AND NUT. (AS SHOWN)

SUBJECT: DUAL WHEELS
EFFECTIVE DATE: FEBRUARY 1, 1966

NOTE: WHEN ORDERING
ORDER DW-2
FOR VARI-DRIVE
AND DIRECT DRIVE
WITH OFFSET WHEELS.

1313 SURE GRIP
S785 WIDE SUBURBAN
S960 NARROW SUBURBAN



S2243	SPACER RING
*	TIRE ASSEMBLY
19430	CARRIAGE BOLT
15806	LOCKWASHER
15581	HEX NUT

* WHEN ORDERING TIRE ASSEMBLIES SPECIFY TYPE OF TREAD DESIGN.

SERVICE BULLETIN

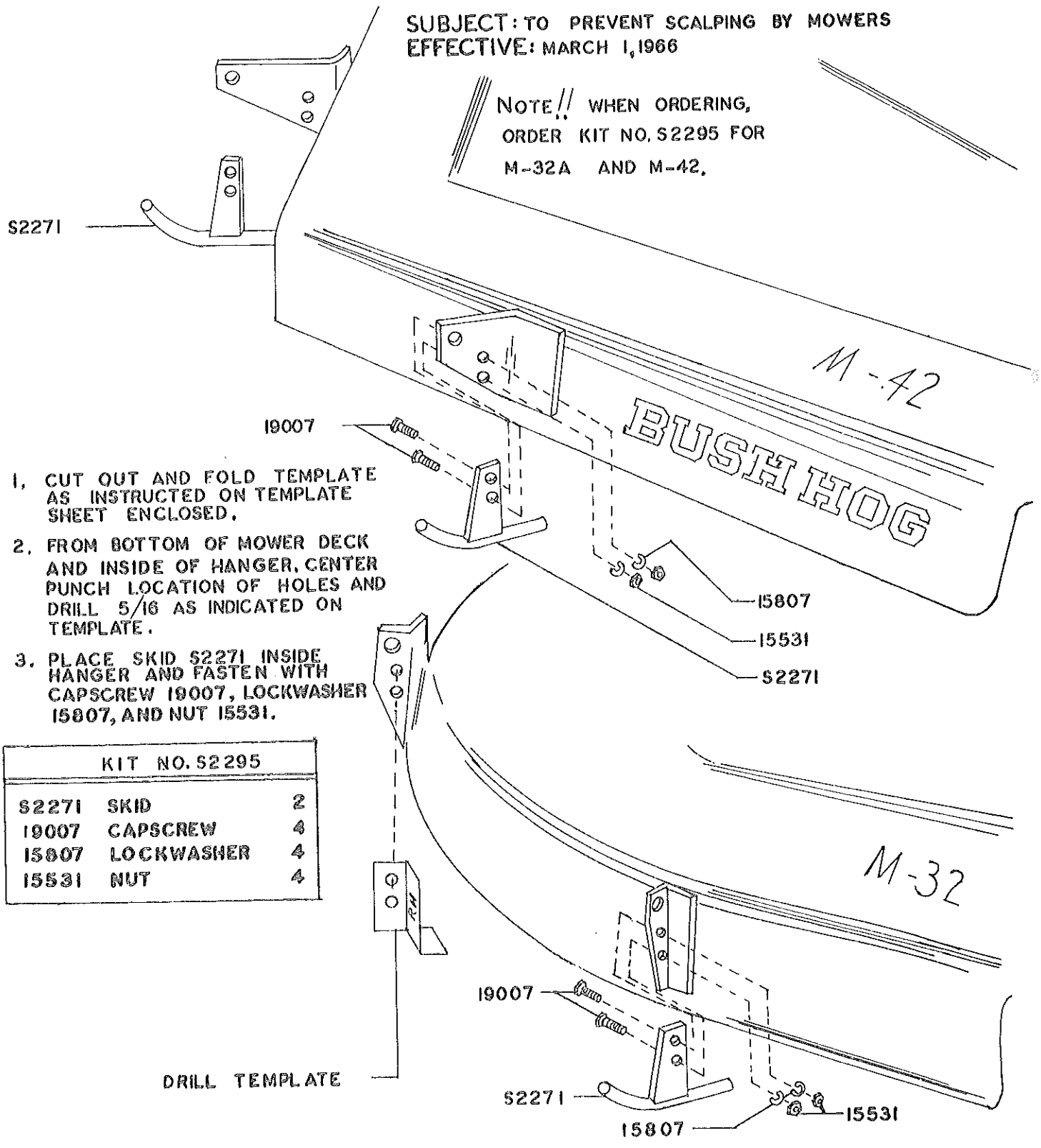
BUSH HOG INC.
SELMA, ALABAMA
P.O. BOX 1039

BULLETIN NO.
8 — 66

DATE
3 — 8 — 66

SUBJECT: TO PREVENT SCALPING BY MOWERS
EFFECTIVE: MARCH 1, 1966

NOTE!! WHEN ORDERING, ORDER KIT NO. S2295 FOR M-32A AND M-42.



1. CUT OUT AND FOLD TEMPLATE AS INSTRUCTED ON TEMPLATE SHEET ENCLOSED.
2. FROM BOTTOM OF MOWER DECK AND INSIDE OF HANGER, CENTER PUNCH LOCATION OF HOLES AND DRILL 5/16 AS INDICATED ON TEMPLATE.
3. PLACE SKID S2271 INSIDE HANGER AND FASTEN WITH CAPSCREW 19007, LOCKWASHER 15807, AND NUT 15531.

KIT NO. S2295		
S2271	SKID	2
19007	CAPSCREW	4
15807	LOCKWASHER	4
15531	NUT	4

SERVICE BULLETIN

BUSH HOG INC.
SELMA, ALABAMA
P.O. BOX 1039

BULLETIN NO.
9 — 66

DATE
3 — 18 — 66

SUBJECT: WIDE SUBURBAN TIRES FOR TRACTORS PRIOR TO SERIAL NO. 7183.
EFFECTIVE: MARCH 15, 1966

TO AVOID CHANGING SHORT SPINDLES ON TRACTORS PRIOR TO SERIAL NO. 7183 THE S2311 TIRE IS AVAILABLE. THIS S2311 TIRE WILL MOUNT ON THE NARROW RIM. IT USES THE S805 TUBE THAT IS USED IN THE S806 TIRE.

NOTE // THIS IS FOR DIRECT DRIVE TRACTORS