1842GV & 1842HV

SABRE YARD TRACTORS



TECHNICAL MANUAL

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John Deere
Worldwide Commercial And
Consumer Products Divison
TM1740 (01Jan98)

Litho in U.S.A.

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This technical manual is written for an experienced technician and contains sections that are specifically for this product. It is a part of a total product support program.

The manual is organized so that all the information on a particular system is kept together. The order of grouping is as follows:

- Table of Contents
- General Diagnostic Information
- Specifications
- Electrical Wiring Harness Legend
- Component Location
- System Schematic
- Wiring Harness
- Troubleshooting Chart
- Theory of Operation
- Diagnostics
- Tests & Adjustments
- Repair

Note: Depending on the particular section or system being covered, not all of the above groups may be used.

Each section will be identified with a symbol rather than a number. The groups and pages within a section will be consecutively numbered.

We appreciate your input on this manual. To help, there are postage paid post cards included at the back. If you find any errors or want to comment on the layout of the manual please fill out one of the cards and mail it back to us.

All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

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John Deere Worldwide Commercial and Consumer Equipment Division
Horicon, WI
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Safety
Specifications and Information
Engine—Briggs & Stratton
Electrical
Power Train (Gear)
Power Train (Hydrostatic)
Steering
Brakes
Attachments
Miscellaneous M

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RECOGNIZE SAFETY INFORMATION



This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

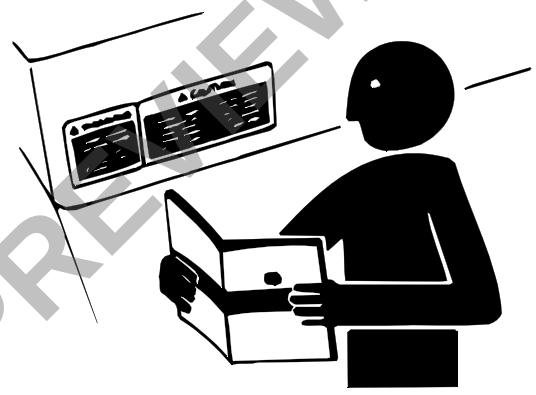
Follow recommended precautions and safe servicing practices.

- **UNDERSTAND SIGNAL WORDS**

A signal word—DANGER, WARNING, or CAUTION—is used with the safety-alert symbol.

- DANGER identifies the most serious hazards. Danger or Warning safety signs are located near specific hazards.
- CAUTION safety signs are used where general precautions should be used. CAUTION also calls attention to safety messages in this manual.

REPLACE SAFETY SIGNS

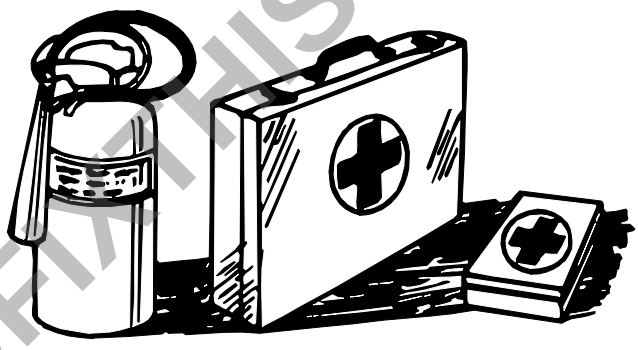


Replace missing or damaged safety signs. See the machine operator's manual for correct safety sign placement.

HANDLE FLUIDS SAFELY-AVOID FIRES

- **BE PREPARED FOR EMERGENCIES**





When you work around fuel, do not smoke or work near heaters or other fire hazards.

Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.

Make sure machine is clean of trash, grease, and debris.

Do not store oily rags; they can ignite and burn spontaneously.

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.

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GENERAL VEHICLE SPECIFICATIONS

ENGINE

Make	Briggs & Stratton
Model Name	Vanguard V-Twin
Model Number	350777
Horsepower	13.42 kW (18 hp)
Displacement	570 mL (34.7 cu. in.)
Oil Capacity	
w/o Oil Filter	1.42 L (1.5 qt.)
w/ Oil Filter	1.65 L (1.7 qt.)
Cylinders	2
Stroke/Cycle	4
Valves	Overhead Valves
Lubrication	Fully Pressurized
Oil Filter	Single Element, Full Flow, Spin-On Filter
Cooling System	Air Cooled
Air Cleaner	Dual Stage (Paper Element w/Replaceable Outer Foam Pre-cleaner)
Muffler	Horizontal Discharge Below Frame

FUEL SYSTEM

Aspiration	Natural
Fuel Tank Location	Rear
Fuel Tank Capacity	11 L (3 U.S. gal)
Fuel (Minimum Octane)	Unleaded Gasoline, 87 Octane
Fuel Delivery	Float-Type Side Draft Carburetor
Fuel Filter	Replaceable In-Line

ELECTRICAL

Ignition	Electronic Capacitor Discharge Ignition (CDI)
Type of Starter	Solenoid Shift
Charging System	Flywheel Alternator
Charging Capacity	10 amp, Regulated
Battery Type	BCI Group, U1
Battery Voltage	12 VDC
Battery Reserve Capacity at 25 Amp	38 minutes
Battery Cold Cranking Amps at –18° C (0° F)	295 amps

STEERING

Type	Sector and Pinion

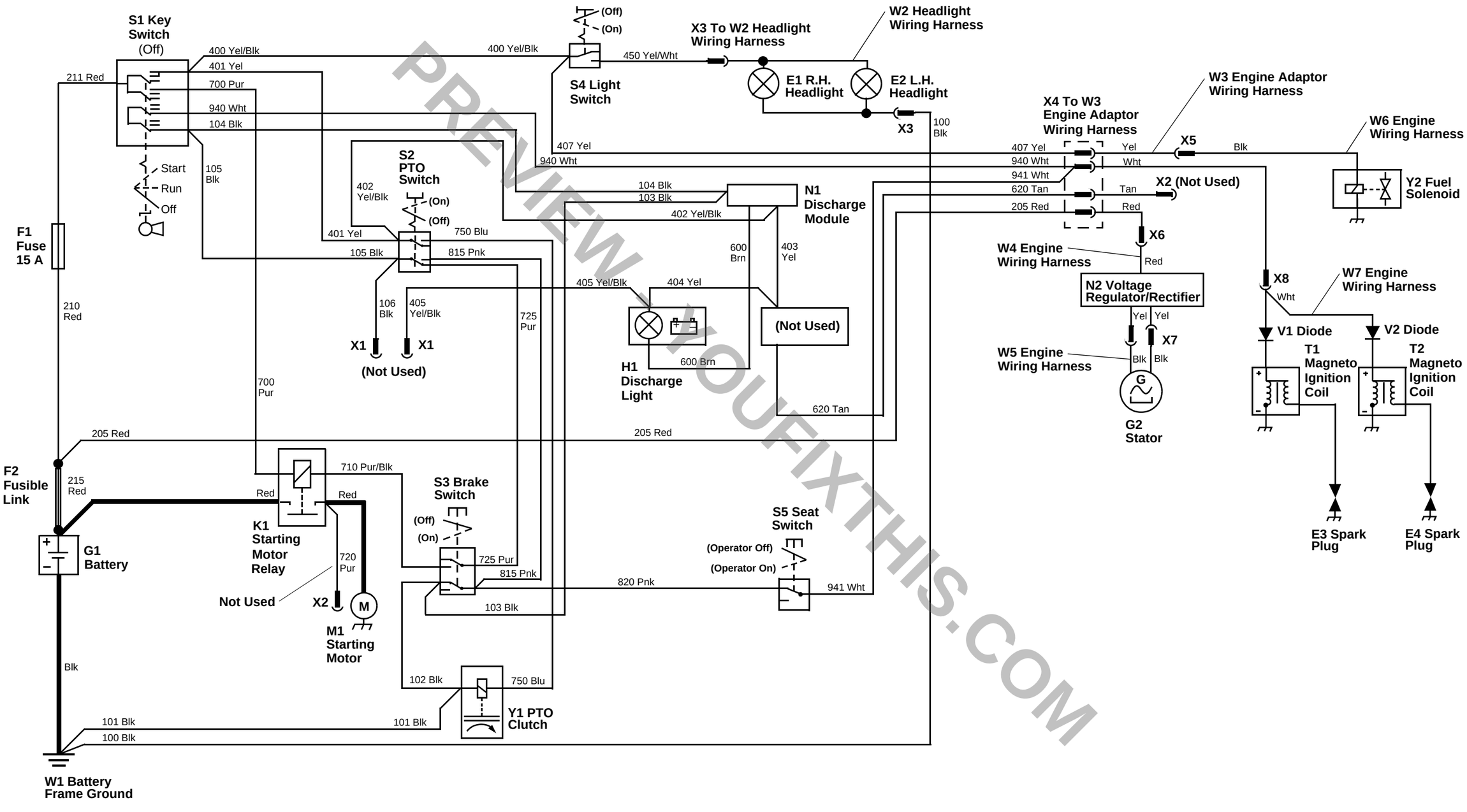
BRAKES

Location	Transaxle
Type	External Band, Single Pedal
Park Brake	Right Pedal, Clutch Interlock

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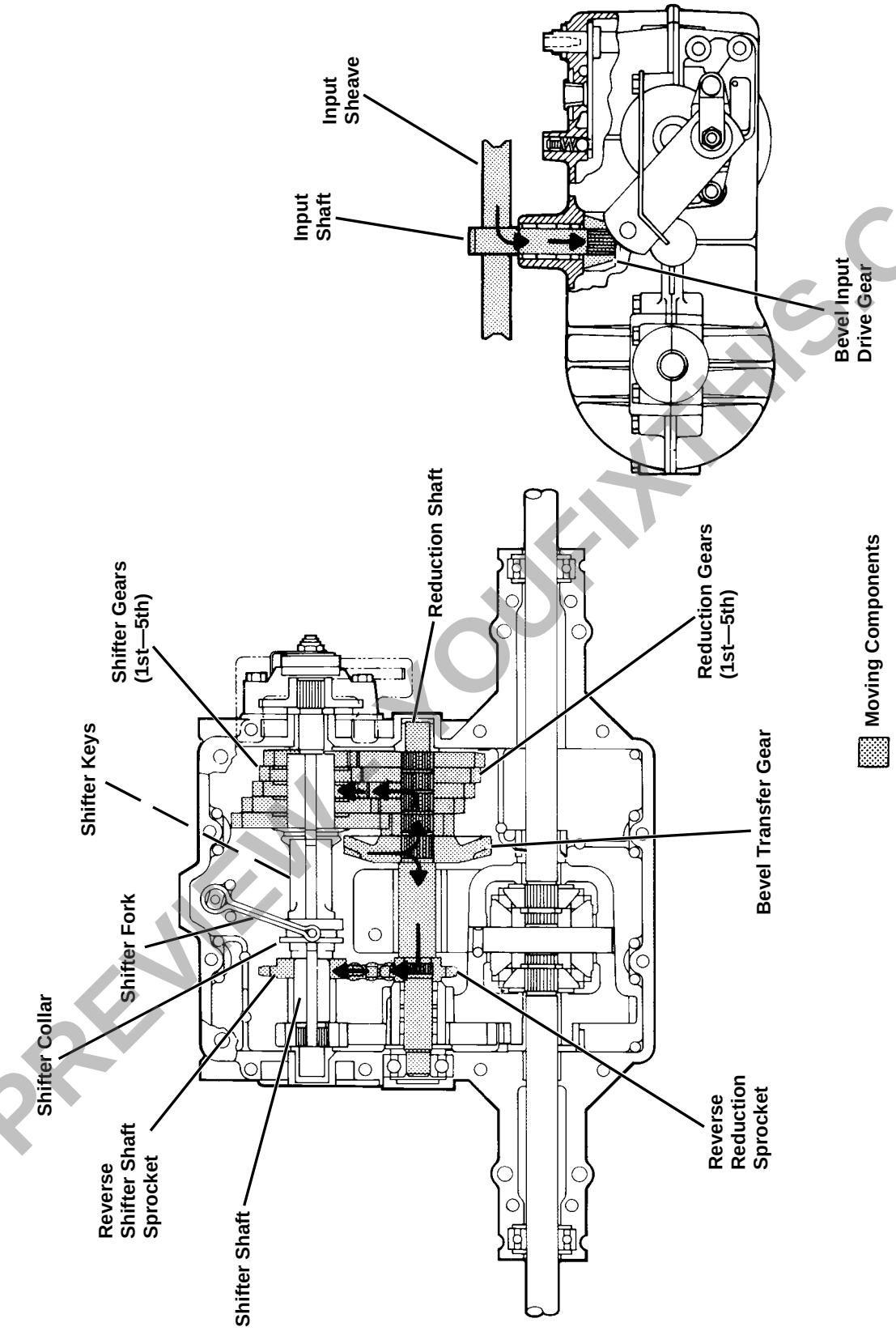
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MAIN ELECTRICAL SCHEMATIC



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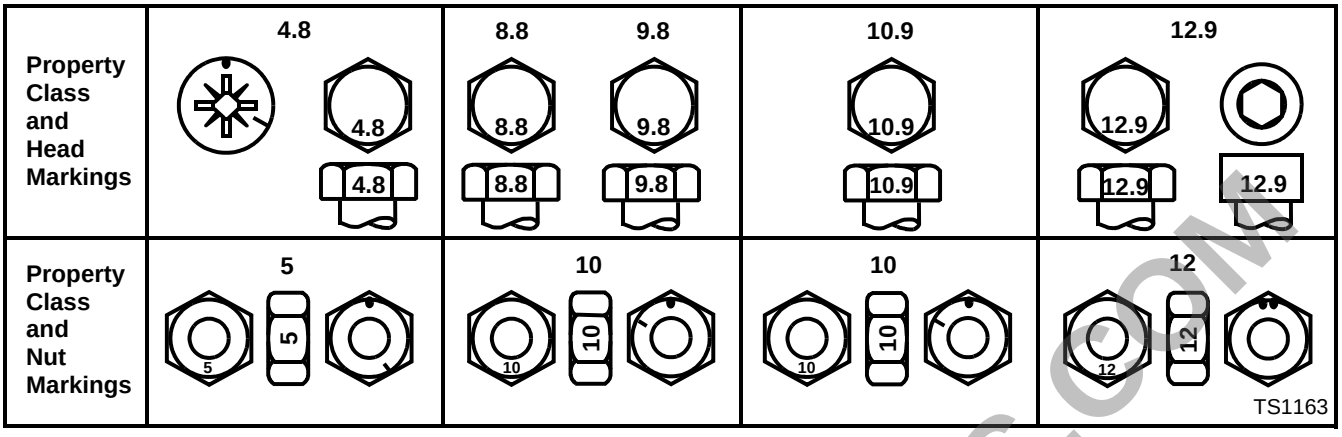
SE1 - STARTING	SE2 - IGNITION	SE3 - CHARGING	SE4 - ENGINE



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METRIC FASTENER TORQUE VALUES



	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Lubricated[a]		Dry[a]		Lubricated[a]		Dry[a]		Lubricated[a]		Dry[a]		Lubricated[a]		Dry[a]	
SIZE	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft
M6	4.8	3.5	6	4.5	9	6.5	11	8.5	13	9.5	17	12	15	11.5	19	14.5
M8	12	8.5	15	11	22	16	28	20	32	24	40	30	37	28	47	35
M10	23	17	29	21	43	32	55	40	63	47	80	60	75	55	95	70
M12	40	29	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	47	80	60	120	88	150	110	175	130	225	165	205	150	260	109
M16	100	73	125	92	190	140	240	175	275	200	350	225	320	240	400	300
M18	135	100	175	125	260	195	330	250	375	275	475	350	440	325	560	410
M20	190	140	240	180	375	275	475	350	530	400	675	500	625	460	800	580
M22	260	190	330	250	510	375	650	475	725	540	925	675	850	625	1075	800
M24	330	250	425	310	650	475	825	600	925	675	1150	850	1075	800	1350	1000
M27	490	360	625	450	950	700	1200	875	1350	1000	1700	1250	1600	1150	2000	1500
M30	675	490	850	625	1300	950	1650	1200	1850	1350	2300	1700	2150	1600	2700	2000
M33	900	675	1150	850	1750	1300	2200	1650	2500	1850	3150	2350	2900	2150	3700	2750
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2750	4750	3500

DO NOT use these hand torque values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only and include a ±10% variance factor. Check tightness of fasteners periodically. DO NOT use air powered wrenches.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Fasteners should be replaced with the same class. Make sure fastener threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

When bolt and nut combination fasteners are used, torque values should be applied to the **NUT** instead of the bolt head.

Tighten toothed or serrated-type lock nuts to the full torque value.

[a] *"Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated (yellow dichromate - Specification JDS117) without any lubrication.*

Reference: JDS—G200.

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TROUBLESHOOTING

Problem or Symptom / Check or Solution	Engine will not crank	Engine cranks but will not start	Engine starts hard	Engine won't shutoff	Loss of power	Low compression	Excessive engine noise/vibration	Low oil pressure	Engine running on one cylinder	Engine overheats	Fuel mixture too rich
Battery has low or no charge/cables loose or dirty	●	●	●								
Fusible link (F2) or fuse (F1) open	●										
Starting Motor/Solenoid Defective	●										
Improper switch position (See Electrical Section)	●	●									
Engine seized	●										
Fuel shutoff solenoid defective		●		●							
Fuel filter/lines clogged		●	●		●						
Fuel pump defective		●	●		●						
Ignition coil air gap not adjusted properly		●	●		●				●		
Carburetor not adjusted properly, dirty		●	●	●	●					●	●
Air cleaner dirty		●	●		●						●
Old/contaminated fuel		●	●		●						
Spark plugs loose/dirty		●	●		●	●			●		
Magneto kill circuit grounded/shorted (See Electrical Section)		●							●		
Valve tappets need adjustment		●	●		●	●			●		
Lack of compression, check valves, pistons and rings		●	●		●				●		
Magneto kill circuit open (See Electrical Section)				●							
Mower deck binding or dragging					●		●			●	
Grass buildup under deck					●		●			●	
No lubrication in gear box or hydro/transaxle					●		●			●	
Excessive drive belt tension										●	
Deck spindles seized					●		●			●	
Loose cylinder head bolts						●			●		
Defective head gasket						●			●		
Burned valves, valve seats, and/or loose valve seats		●	●		●	●			●		

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TESTS & ADJUSTMENTS

THROTTLE CABLE ADJUSTMENT

Reason:

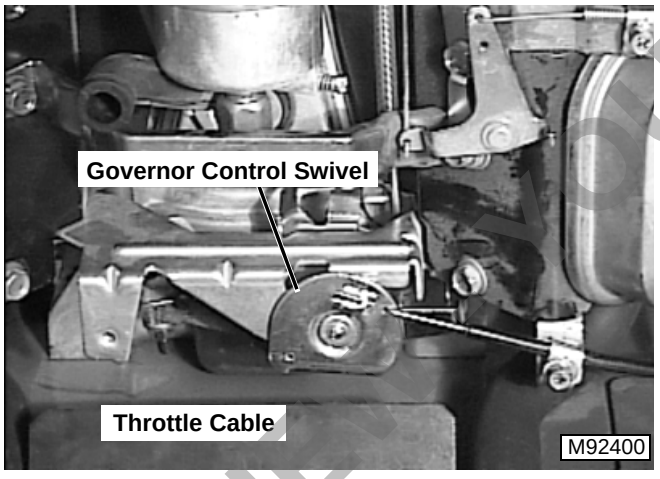
To make sure the throttle cable moves the throttle through its full range of movement.

Procedure:

1. Remove air cleaner assembly, and base. (See 'AIR CLEANER REMOVAL AND INSTALLATION' on page 17.)

NOTE: Nuts securing air cleaner base to carburetor also secure carburetor to intake manifold. DO NOT run engine with nuts removed.

2. Install nuts on carburetor studs.
3. Move throttle lever to FAST idle position.



4. Loosen throttle cable clamp.
5. Move throttle cable until governor control swivel is at end of travel.
6. Tighten throttle cable clamp.

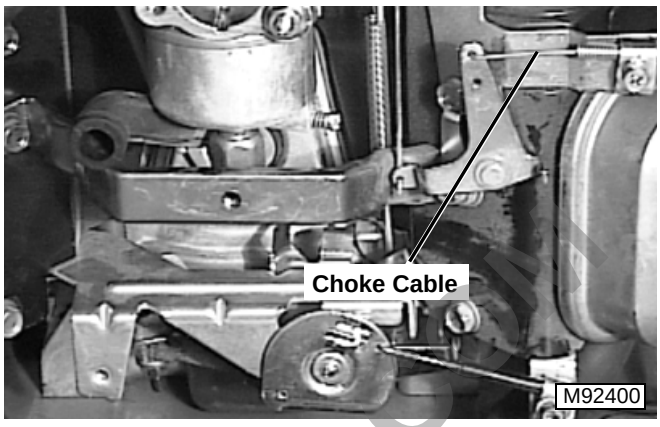
CHOKE CABLE ADJUSTMENT

Reason:

To make sure the choke cable moves the choke through its full range of movement.

Procedure:

1. Pull choke knob to full choke position.



2. Loosen choke cable clamp.
3. Move choke cable until choke is completely closed.
4. Tighten choke cable clamp.
5. Push choke knob in and make sure choke is opening completely. Readjust if necessary.

FUEL SHUTOFF SOLENOID TEST

Reason:

To test proper operation of fuel shutoff solenoid.

Required Tools:

- Jumper wire

Procedure:

1. Listen for an audible click when ignition switch is turned from OFF to ON.
2. If solenoid does not click, problem could be in equipment wiring.
3. Disconnect wire from solenoid.
4. Momentarily place a jumper wire from solenoid wire to battery positive terminal.
5. If solenoid now clicks, the solenoid is working properly.

NOTE: If battery voltage drops below 9 volts when cranking engine or while engine is running, the solenoid will not function.

Results:

- Solenoid is operating properly if a click is heard when ignition switched from off to on

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SPECIFICATIONS

Torque Specifications:

Spindle assembly lock nuts . . . . . 60 N•m (40 lb-ft)
Front wheel bolts . . . . . 88 ± 10 N•m (65 ±7 lb-ft)
Tie rod
Lock nuts . . . . . 50 N•m (37 lb-ft)
Jam nuts . . . . . 70 N•m (52 lb-ft)
Steering wheel nut . . . . . .Snug Only

Lubrication Interval:

Spindle grease fitting and kingpin . . . . . Every 25 hours (severe conditions)
. . . . . Every 50 hours (normal conditions)

Toe-In Adjustment:

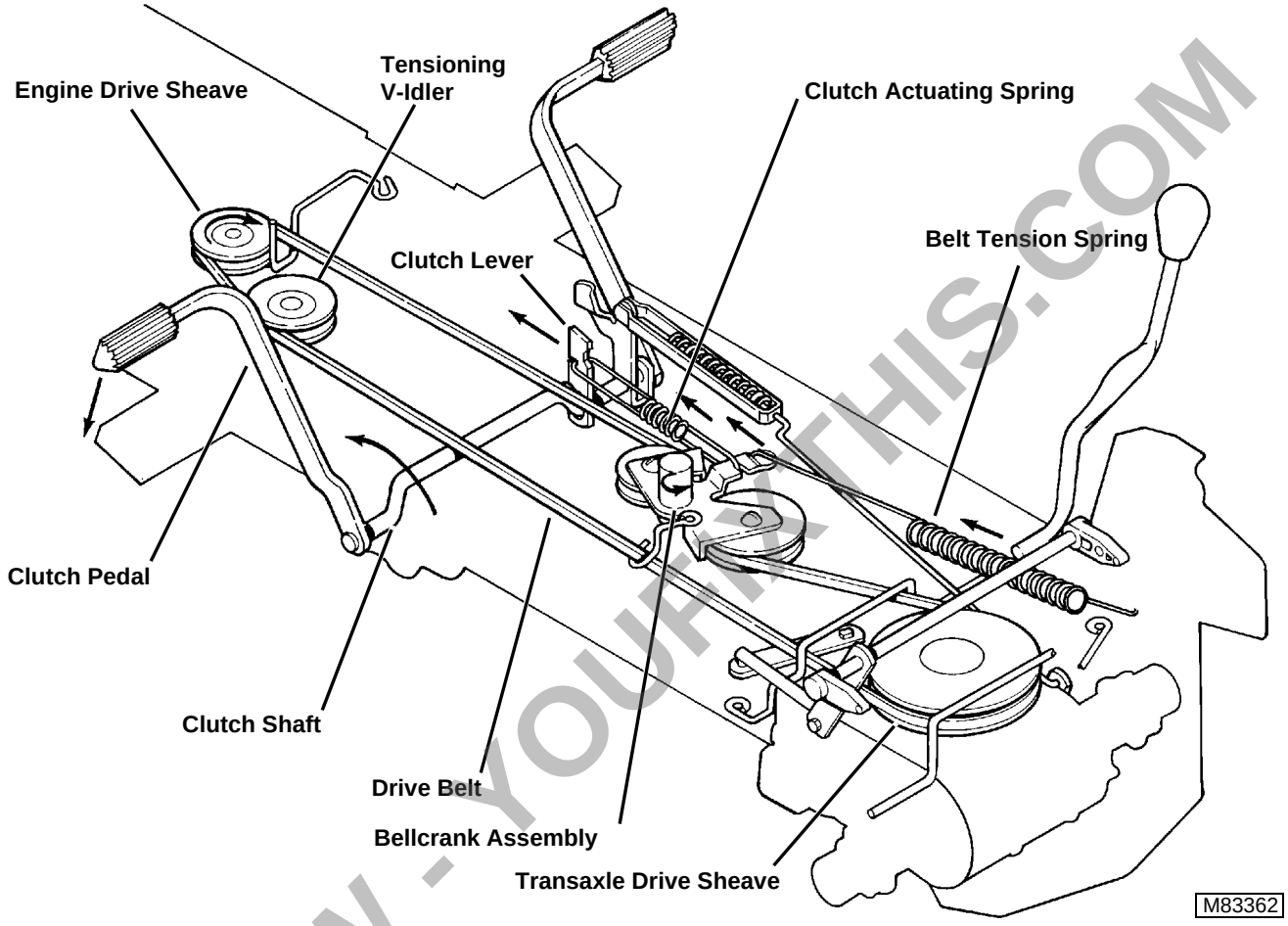
Front-to-rear difference . . . . . front is 4 ± 3 mm (0.16 ± 0.12 in.) less than rear

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THEORY OF OPERATION

BELT DRIVE SYSTEM OPERATION



Function:

The function of the clutching system is to transfer power from the engine drive sheave through the drive belt and bellcrank tensioning assembly to the transaxle drive sheave. This system also allows the power to be interrupted in order to stop the tractor while in gear, or to change to a different gear.

Theory of Operation:

The clutch pedal is located on the left side of the vehicle and is operated by the operators left foot. The clutch is also operated whenever the brake is applied.

As the clutch pedal is depressed, the clutch shaft rotates and the arm welded to the clutch shaft pulls the clutch actuating spring forward. Initial movement of the pedal compresses the actuating spring; once compressed, it transfers forward movement into rotating movement of the bellcrank assembly. As the bellcrank is rotated drive belt tension is released, allowing the drive belt to slip on the engine drive sheave due to slack now present in the drive belt.

When the clutch is in the fully depressed position, the operator can shift the transaxle into any gear (forward, neutral, or reverse)

As the clutch pedal is released the bellcrank assembly rotates to its original position and gradually applies tension to the drive belt. This allows power to be transferred from the rotating engine drive sheave through the drive belt to the transaxle drive sheave.

At the same time, the spring loaded movement of the bellcrank tensioning assembly is transferred through the clutch actuating spring to the clutch shaft arm, clutch shaft, and clutch pedal; bringing the pedal back to the top of its travel as the operator removes his left foot from the clutch pedal.

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