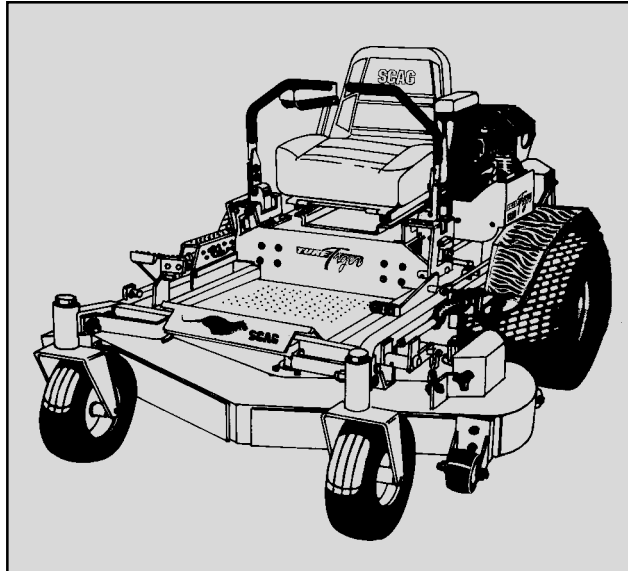


SCAG[®]

POWER EQUIPMENT

MODEL STT-31BSG



THIS MANUAL CONTAINS THE OPERATING INSTRUCTIONS AND SAFETY INFORMATION FOR YOUR SCAG MOWER. READING THIS MANUAL CAN PROVIDE YOU WITH ASSISTANCE IN MAINTENANCE AND ADJUSTMENT PROCEDURES TO KEEP YOUR MOWER PERFORMING TO MAXIMUM EFFICIENCY. THE SPECIFIC MODELS THAT THIS BOOK COVERS ARE CONTAINED ON THE INSIDE COVER. BEFORE OPERATING YOUR MACHINE, PLEASE READ ALL THE INFORMATION ENCLOSED.

OPERATOR'S MANUAL



TABLE OF CONTENTS

SUBJECT	PAGE
Section 1 - General Information	
1.1 Introduction	1
1.2 Directional Reference	1
1.3 Servicing the Engine and Drive Train Components	1
Section 2 - Safety Information	
Symbols	2-3
2.1 Introduction	4
2.2 Signal Words	4
2.3 Before Operation Considerations	4
2.4 Operation Considerations	5
2.5 Maintenance Considerations	6
2.6 Safety and Instructional Decals	7
Section 3 - Specifications	8-9
Section 4 - Operating Instructions	
4.1 Controls and Instrument Identification	10
4.2 Safety Interlock System	11
4.3 Initial Run-In Procedures	12
4.4 Starting the Engine	12
4.5 Ground Travel and Steering	12
4.6 Engaging the Deck Drive	13
4.7 Hillside Operation	14
4.8 Parking the Mower	14
4.9 After Operation	14
4.10 Removing Clogged Material	15
4.11 Moving Mower with Engine Stopped	15
4.12 Recommendations for Mowing	15
4.13 Adjusting Cutting Height	16
Section 5 - Troubleshooting Cutting Conditions.....	17-19

TABLE OF CONTENTS (CONT'D)

SUBJECT	PAGE
Section 6 - Adjustments	
6.1 Parking Brake Adjustment	20
6.2 Travel Adjustments	20
6.3 Throttle Control and Choke Adjustments	22
6.4 Belt Adjustment	22
6.5 Belt Alignment	22
6.6 Cutter Deck Adjustments	23
 Section 7 - Maintenance	
7.1 Maintenance Chart	25
7.2 Lubrication Fitting Points	26
7.3 Hydraulic System	28
7.4 Engine Oil	29
7.5 Engine Fuel System	30
7.6 Engine Air Cleaner	30
7.7 Battery	30
7.8 Drive Belts	32
7.9 Cutter Blades	32
7.10 Tires	33
7.11 Cutter Deck Gearbox	34
7.12 Cooling System	34
7.13 Body, Deck, Hopper and Upholstery	35
 Section 8 - Illustrated Parts List	
SMST 61" Adv., 72" Adv. Cutter Decks	36-37
Cutter Deck Controls	38-39
Sheet Metal Components	40-41
Deck Drive Components	42-43
Radiator, Coolers & Engine Brackets.....	44-45
Brake & Steering Components.....	46-47
Fuel & Hydraulic System	48-49
Electrical System	50-51
Hydraulic Pump Assembly - BDP-21L	52-53
Wire Harness, STT-31BSG	54
Replacement Decals	55-56

GENERAL INFORMATION

1.1 INTRODUCTION

Your mower was built to the highest standards in the industry. However, the prolonged life and maximum efficiency of your mower depends on you following the operating, maintenance and adjustment instructions in this manual.

If additional information or service is needed, contact your Scag Power Equipment Dealer.

We encourage you to contact your dealer for repairs. All Scag dealers are informed of the latest methods to service this equipment and provide prompt and efficient service in the field or at their service shop. They carry a full line of Scag service parts.

USE OF OTHER THAN ORIGINAL SCAG REPLACEMENT PARTS WILL VOID THE WARRANTY.

When ordering parts, always give the model and serial number of your tractor. The serial number plate is located where shown in Figure 1-1.

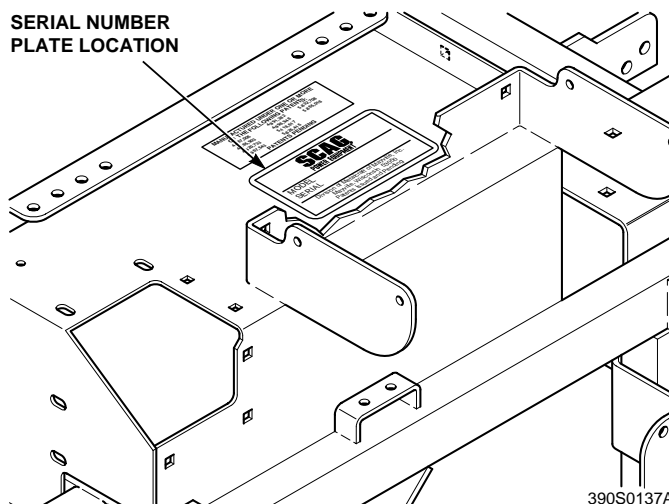


Figure 1-1 Tractor Serial Number Plate Location

For pictorial clarity, some illustrations and figures in this manual may show shields, guards or plates open or removed. Under no circumstances should your mower be operated without these devices in place.

All information is based upon product information available at the time of approval for printing. Scag Power Equipment reserves the right to make changes at any time without notice and without incurring any obligation.

1.2 DIRECTION REFERENCE

The “Right” and “Left”, “Front” and “Rear” of the machine are referenced from the operator’s right and left when seated in the normal operating position and facing the forward travel direction.

1.3 SERVICING THE ENGINE AND DRIVE TRAIN COMPONENTS

The detail servicing and repair of the engine, hydraulic pumps and gearboxes are not covered in this manual; only routine maintenance and general service instructions are provided. For service of these components during the limited warranty period, it is important to contact your Scag dealer or find a local authorized servicing agent of the component manufacturer. Any unauthorized work done on these components during the warranty period may void your warranty.

SAFETY INFORMATION

2.1 INTRODUCTION

Your mower is only as safe as the operator. Carelessness or operator error may result in serious bodily injury or death. Hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of the personnel involved in the operation, transport, maintenance and storage of the equipment. Make sure every operator is properly trained and thoroughly familiar with all of the controls before operating the mower.

READ THIS OPERATOR'S MANUAL BEFORE ATTEMPTING TO START YOUR MOWER.

A replacement manual is available from your authorized Scag Service Dealer or by contacting Scag Power Equipment, Service Department at P.O. Box 152, Mayville, WI 53050. Please indicate the complete model and serial number of your Scag product when requesting replacement manuals.

2.2 SIGNAL WORDS



This symbol means **“Attention! Become Alert! Your Safety is Involved!”** The symbol is used with the following signal words to attract your attention to safety messages found on the decals on the machine and throughout this manual. The message that follows the symbol contains important information about safety. To avoid injury and possible death, carefully read the message! Be sure to fully understand the causes of possible injury or death.

Signal Word:

It is a distinctive word found on the safety decals on the machine and throughout this manual that alerts the viewer to the existence and relative degree of the hazard.

DANGER:

The signal word “DANGER” denotes that an extremely hazardous situation exists on or near the machine that could result in high probability of death or irreparable injury if proper precautions are not taken.

WARNING:

The signal word “WARNING” denotes that a hazard exists on or near the machine that can result in injury or death if proper precautions are not taken.

CAUTION:

The signal word “CAUTION” is a reminder of safety practices on or near the machine that could result in personal injury if proper precautions are not taken.

Your safety and the safety of others depends significantly upon your knowledge and understanding of all correct operating practices and procedures of this machine.

2.3 BEFORE OPERATION CONSIDERATIONS

1. **NEVER** allow children to operate this riding mower. Do not allow adults to operate this machine without proper instructions.
2. **DO NOT** mow when children and/or others are present.
3. Clear the area to be mowed of objects that could be picked up and thrown by the cutter blades.
4. **DO NOT** carry passengers.
5. **DO NOT** operate the machine under the influence of alcohol or drugs.
6. If the operator(s) or mechanic(s) cannot read English it is the owner's responsibility to explain this material to them.

SPECIFICATIONS

SCAG "SABRE TOOTH TIGER" ZERO-TURN RIDER

MODEL: STT-31BSG

ENGINE

General Type:	Heavy duty industrial commercial
Brand:	Briggs Daihatsu Vanguard Liquid Cooled 31 HP
Model:	DM950G
Horsepower:	31HP @ 3600 RPM
Type:	Water cooled 4 cycle, overhead valve, 3 cylinder, gas engine
Displacement:	952 cc
Cylinders:	3 inline sleeves
Governor:	High-speed flyweight governor, runs faster than engine crankshaft, provides precision speed governing and a steady low idle, 3600 rpm (± 100 rpm), idle set at 1500 rpm.
Air Intake Group:	Canister type air filter system.
Exhaust Group:	Single exhaust canister muffler.
Fuel Pump Group:	Electric fuel pump with mechanical choke and fuel shutdown solenoid.
Oil Pump Group:	Positive displacement Geroter™ oil pump with remote oil filter, capacity 3.2 U.S. quarts (3.0 ltrs) with oil filter.
Valve Group:	Overhead.
Electrical/Charging System:	12 volt battery with alternator, solid state ignition with key start, 40 amp regulated charging system using a microprocessor and one ignition coil for each cylinder, solenoid shift type starter.

ENGINE DECK

Fuel Tank:	10 gallon (38.0 liters) seamless polyethylene tank with fuel gauge gas cap.
Drive Wheels/Tires:	24 x 12-12 four ply pneumatic tubeless, radius edge, offset rims to improve operator's view.
Parking Brake:	Lever operated interlocked parking brake prevents operation with parking brake engaged.
Frame:	Compact tractor frame with structural steel tubing construction.

DRIVE SYSTEM

Type:	Hydro drive with two variable displacement pumps and two cast iron motors for independent control of each drive wheel.
Hydro Pumps:	Two Hydro-Gear Model BDP 21L pumps with dump valves for movement without running engine.
Drive Wheel Motors:	Two 23 cubic inch cast iron high torque wheel motors.
Transmission Belt Idler:	Self adjusting, self tightening, sealed bearings.
Hydro Fluid Cooling Group:	6 qt. capacity Nylon fluid reservoir. Uses SAE 20W50 fluid and 10 micron filter.
Steering/Travel Control:	Twin lever fingertip steering control with gas shock dampeners for smooth, responsive control to each wheel.
Axles:	1-1/4" heavy duty, tapered, motor shafts.
Wire Harness:	14 gauge wire.
Safety Group:	Seat actuated engine kill, neutral interlock, mower engagement (BBC) switch, parking brake.
Instrument Panel:	Voltmeter, water temperature gauge, oil pressure gauge, key switch, throttle, fuses, manual choke, BBC switch (hourmeter located at rear of machine).
Forward Ground Speed Range:	0 to 10.5 mph.
Reverse Ground Speed Range:	0 to 5.0 mph.

***Note:** The machine will travel at 10.5 mph for transport purposes. For best cutting performance the forward travel speed should be adjusted depending upon the cutting conditions.*

SPECIFICATIONS (con't)
SCAG "SABRE TOOTH TIGER" ZERO-TURN RIDER
MODEL: STT-31BSG

CUTTER DECK

Type:	SMST-72A ("Advantage") & SMST-61A ("Advantage"): Floating, adjustable anti-scalping, hybrid design combines out-front and belly-mount designs. "Advantage" - special extended front edge allows Bahia or other tough grasses to enter the deck standing upright.
Construction:	10 gauge steel top reinforced with 7 gauge support plate, deck skirt is 7 gauge steel.
True Cutting Width:	72" deck = 71.5 inches (181.6 cm); 61" deck = 61.0" (155.0 cm).
Cutting Height Adjustment:	Foot operated pedal adjustment from operator's seat, 1" to 6" in 1/2" increments.
Cutter Blades:	72" = three (3) 24" blades; 61" = three (3) 21" blades.
Cutter Deck Drive:	Drive shaft to 90 degree gear box.
Blade Engagement:	Electric blade engagement clutch with control panel knob.
Discharge Opening:	Extra wide 11.5" discharge opening with spring loaded discharge chute.
Caster Wheels:	13 x 5 x 6 caster wheels with tapered roller bearing pivots.
Spindles:	Heavy duty 1-1/8" top dimension spindle shaft, cast housing, taper roller bearing, low maintenance with top access grease fitting and grease overfill relief poppet.
Spindle Pulleys:	Cast iron with easily removed taper hubs.
Anti-scalp Rollers:	Two front, two rear 4-1/2" adjustable, two rear 12" fixed.

ADDITIONAL SPECIFICATIONS

Seat:	Thick padded seat cushions with special springs. Padded arm rests, lever adjustment forward and back.
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APPROXIMATE DIMENSIONS

	72"	61"
Length:	92.0"	88.0"
Tracking Width:	56.0"	56.0"
Width:	83.5"	72.0"
Width (with discharge chute up)	73.0"	61.5"
Height:	47.0"	47.0"
Turning Radius:	Zero radius turn	Zero radius turn
Weight:	1550 lbs.	1550 lbs.

PRODUCTIVITY

The following chart will aid you in determining how many acres your Scag mower will cut per day.

The chart is an estimate based on 8 hours per day cutting time at 4 MPH with an allowance for overlap and turns.

Cutting Width:	36"	48"	52"	61"	72"
Acres Per Day:	9.5	12.5	13.5	16	19

Date of issue: November, 2000
 Specifications Subject to Change Without Notice.

OPERATING INSTRUCTIONS

CAUTION:

Do not attempt to operate this mower unless you have read this manual. Learn the location and purpose of all controls and instruments before you operate this mower.

4.1 CONTROLS AND INSTRUMENT IDENTIFICATION

Before operating the mower, familiarize yourself with all mower and engine controls. Knowing the location, function and operation of these controls is important for safe and efficient operation of the mower.

- 1. Ignition Switch (Figure 4-1).** The ignition switch is used to start the engine and has three positions; OFF, ON, and START.
- 2. Mower Deck Switch (Figure 4-1).** Used to engage and disengage the mower drive system. Pulling up on the switch will engage the deck drive. Pushing down on the switch will disengage the deck drive.
- 3. Engine Choke Control (Figure 4-1).** Used to start a cold engine.
- 4. Engine Throttle Control (Figure 4-1).** Used to control the engine speed. Pushing the lever forward increases engine speed. Pulling the lever back decreases engine speed. Full back position is the IDLE position. Full forward is the cutting position.

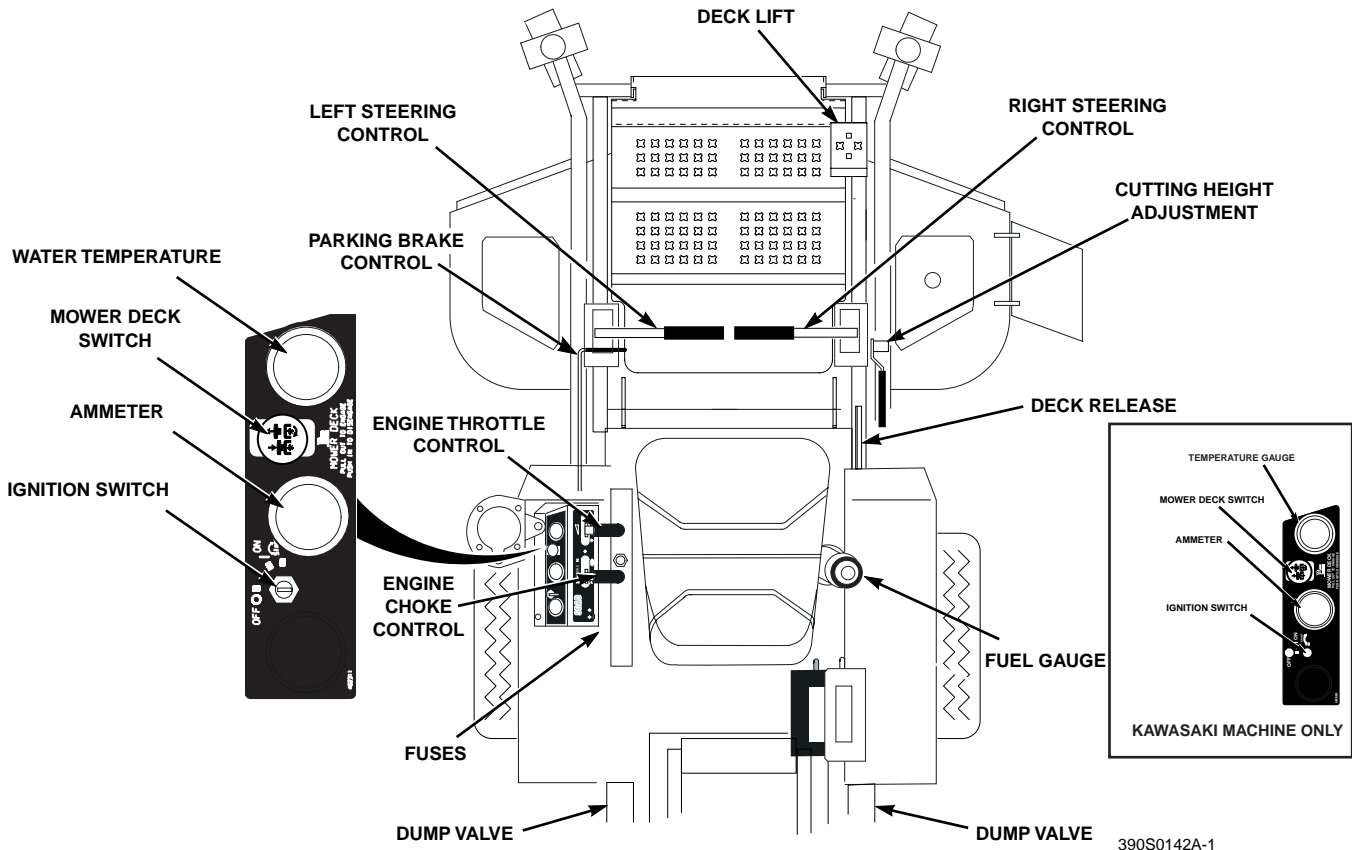


Figure 4-1 Controls and Hour Meter Instruments

Section 4

5. **Voltmeter (Figure 4-1).** Indicates the condition of the charging system. When the engine is running, in normal operating conditions, the needle should be in the 12 to 14 volt range.
6. **Oil Pressure (Figure 4-1).** Indicates engine oil pressure. Reference the engine operator's manual for further information.
7. **Hourmeter (Figure 4-1).** Indicates the number of hours the engine has been operated. It operates whenever the engine is running. It can be used to keep track of maintenance intervals and the amount of time required to perform various tasks.
7. **Fuse Holders (Figure 4-1).** There are two 20-amp fuses and one 40-amp fuse that protect the mower's electrical system. To replace fuses, pull fuse out of the socket and install a new fuse.
8. **Left Steering Control (Figure 4-1).** Used to control the mower's left wheel when traveling forward or reverse.
10. **Right Steering Control (Figure 4-1).** Used to control the mower's right wheel when traveling forward or reverse.
11. **Parking Brake Control (Figure 4-1).** Used to engage and disengage the parking brakes. Pull the lever back to engage the parking brakes. Push the lever forward to disengage the parking brakes.
12. **Fuel Tank Gauge (Figure 4-1).** Indicates the amount of fuel in the fuel tank.
13. **Dump Valve Control Levers (Figure 4-2).** Located on the hydraulic pumps, used to "free-wheel" the mower. Rotating the levers clockwise until they stop allows the unit to move under hydraulic power. The levers must be in this position during operation of the mower. Rotating the levers counter-clockwise allows the mower to be moved by hand (free-wheeling).
14. **Deck Lift Foot Lever (Figure 4-1).** Used to raise and lower the cutter deck.

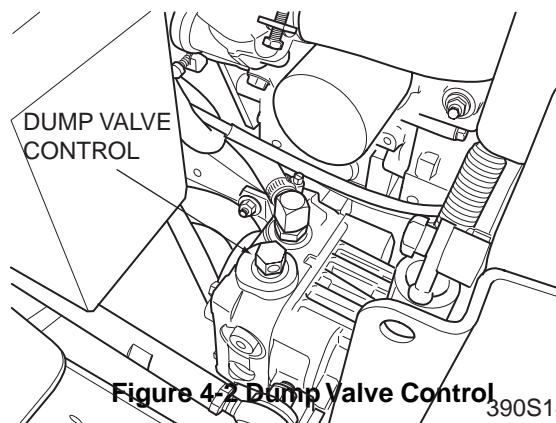


Figure 4-2 Dump Valve Control 390S141-1

15. **Cutting Height Adjustment (Figure 4-1).** Used to set the cutter deck at the desired cutting height.
16. **Deck Release Lever (Figure 4-1).** Used to lock the cutter deck in the transport position. Push the foot pedal forward and lift up on the release lever to release the cutter deck for normal mowing.
17. **Temperature Gauge (Figure 4-1).** Indicates the operating temperature of the engine. *Used on mowers with the Kawasaki liquid cooled engine only.*

4.2 SAFETY INTERLOCK SYSTEM

The mower is equipped with a safety interlock system that prevents the engine from starting unless the deck drive is disengaged, the parking brake is engaged, the steering control levers are in the neutral position and the operator is in the seat. The interlock system shuts off the engine if the operator leaves the seat with the steering control levers not in the neutral position and/or the cutter blades engaged and the parking brake not engaged.

WARNING:

Never operate the mower with the interlock system disconnected or malfunctioning. Do not disengage or bypass any switch; injury to yourself and others or property damage could result.

4.3 INITIAL RUN-IN PROCEDURES (First Day of Use or Approximately 10 Hours)

1. Check all belts for proper alignment and wear at 2, 4 and 8 hours.
2. Change the engine oil and oil filter after the first 5 hours of operation. (See Section 7.4.)
3. Check hydraulic oil level in reservoir. (See Section 7.3.)
4. Check for loose hardware. Tighten as needed.
5. Check interlock system for proper operation. (See Section 4.2.)
6. Check tire pressure. Adjust pressure if necessary. (See Section 7.10.)

4.4 STARTING THE ENGINE



CAUTION:

DO NOT USE STARTING FLUIDS. Use of starting fluids in the air intake system may be potentially explosive or cause a “runaway” engine condition that could result in engine damage and/or personal injury.

1. Be sure the fuel shutoff valve, located behind the operator's seat, is completely open. (See section 7.5.)
2. Sit in the operator's seat and place the steering control levers in the neutral position.
3. Engage the parking brake.
4. Place the PTO switch in the disengaged position.
5. If the engine is cold, choke the engine as needed.
6. Move the engine throttle control to about half engine speed.

7. Turn the ignition key to the START position and release the key as soon as the engine starts. Do not hold the key in the START position for more than 15 seconds at a time. Allow at least 60 seconds between each cranking attempt to prevent overheating of the starter motor. Prolonged cranking can damage the starter motor and shorten battery life.
8. Allow engine to warm before operating the mower.

4.5 GROUND TRAVEL AND STEERING

-IMPORTANT-

If you are not familiar with the operation of a machine with lever steering and/or hydrostatic transmissions, the steering and ground speed operations should be learned and practiced in an open area, away from buildings, fences, or obstructions. Practice until you are comfortable with the handling of the machine before attempting to mow. Learn the operation on flat ground before operating on slopes.

-IMPORTANT-

Start practicing with a slow engine speed and slow forward travel.

Learn to feather the steering controls to obtain a smooth operating action.

Practice operating the mower until you are comfortable with the controls before proceeding to mow.

Forward Travel

To travel forward with the mower, disengage the parking brake and slowly push the steering control levers forward an equal distance. The further the steering control levers are pushed forward the greater the forward speed will be. To increase the speed, push the steering control levers further forward and to decrease the speed, pull the steering control levers back.

To stop the forward travel, pull the steering control levers back to the neutral position.

Section 4

To steer the mower left while traveling forward, pull the left steering lever back. The further the lever is pulled back, the quicker the mower will turn left.

To steer the mower right while traveling forward, pull the right steering control lever back. The further the lever is pulled back, the quicker the mower will turn right.

-NOTE-

Smooth operation of the steering levers will produce smooth mower operation. While learning the operation of the steering controls, keep the travel speed low.

-IMPORTANT-

Do not travel forward over a curb. The mower will hang up on the curb. Raise the deck and travel backwards over the curb at a 45 degree angle. (see section 4.13 for cutter deck raising instructions)

Reverse Travel

CAUTION:
Disengage power to the mower before backing up. Do not mow in reverse unless absolutely necessary and then only after observation of the entire area behind the mower.

CAUTION:
Before backing up, observe behind the mower for persons and obstructions. Clear the area before backing up. Possible injury or property damage could occur.

To travel in reverse, pull both handles back. Keep the travel speed low while traveling in reverse.

-NOTE-

The mower will not travel straight in reverse. Slight adjustments must be made using the steering controls.

To steer left while traveling in reverse, allow the left steering control lever to move forward. The further the control is allowed to move forward, the quicker the mower will turn left.

To steer right while traveling in reverse, allow the right steering control lever to move forward. The further the control is allowed to move forward, the quicker the mower will turn right.

To stop the reverse travel, allow the steering control levers to return to the neutral position. If the mower is to be parked, engage the parking brake.

4.6 ENGAGING THE DECK DRIVE (CUTTER BLADES)

1. Set the throttle at about 3/4 speed. Do not attempt to engage the deck drive at high speed as this shortens the electric clutch life — use only moderate engine speed when engaging the deck drive.
2. Engage the deck drive by pulling out on the yellow switch, located on the instrument panel, (Figure 4-3) to the engage position.

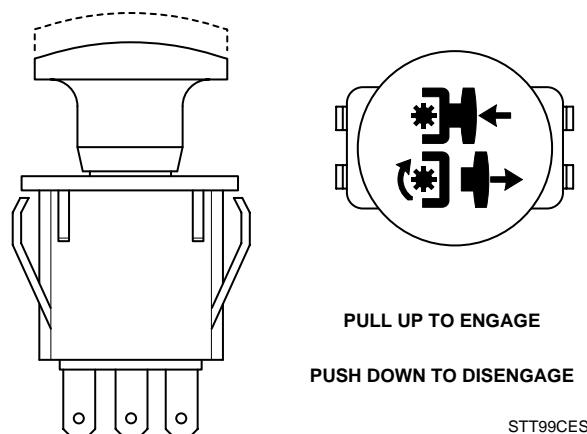


Figure 4-3 Cutter Engage Switch

-NOTE-

A squealing noise may be heard when engaging or disengaging the deck drive. It is caused by the electric clutch plates meshing as the mower comes up to speed.

3. To disengage the deck drive, push the switch in to the disengage position.

4. Always operate the engine at full throttle to properly maintain cutting speed. If the engine starts to lug down, reduce the forward speed and allow the engine to operate at maximum RPM.

4.7 HILLSIDE OPERATION



WARNING:

DO NOT operate on steep slopes. To check a slope, attempt to back up it (with the cutter deck down). If the machine can back up the slope without the wheels slipping, reduce speed and use extreme caution. ALWAYS FOLLOW OSHA APPROVED OPERATION.

1. The mower has been designed for good traction and stability under normal mowing conditions. However, caution must be used when traveling on slopes, especially when the grass is wet. Wet grass reduces traction and steering control.
2. To prevent tipping or loss of control, do not start or stop suddenly, avoid unnecessary turns and travel at reduced speed.
3. Keep tires properly inflated.

4.8 PARKING THE MOWER

1. Place the steering control levers in the neutral position.
2. Disengage the cutter blades
3. Slow the engine to idle speed.
4. Engage the parking brake.
5. Turn the ignition key to the OFF position and remove the key.

4.9 AFTER OPERATION

1. Wash the entire mower after each use. Do not use high pressure spray or direct the spray onto electrical components.

-IMPORTANT-

Do not wash a hot or running engine. Cold water will damage the engine. Use compressed air to clean the engine if it is hot.

2. Keep the entire mower clean to inhibit serious heat damage to the engine or hydraulic oil circuit.
3. Check the drive belts for proper alignment and any signs of wear. Correct and adjust if necessary.



DANGER:

To avoid injury from burns, allow the mower to cool before removing the fuel tank cap and refueling.

4. After the mower has cooled down, fill the fuel tank with fresh, clean fuel at the end of every day of operation.
5. Check the tire pressure. Adjust pressure if necessary.

Section 4

4.10 REMOVING CLOGGED MATERIAL

 **DANGER:**
ROTATING BLADES

NEVER PUT YOUR HANDS INTO THE DISCHARGE CHUTE FOR ANY REASON! Shut off the engine and remove the key and only then use a stick or similar object to remove material if clogging has occurred.

1. If the discharge chute becomes clogged, shut off the engine and remove the ignition key. Using a stick or similar item, dislodge the clogged material. Then resume normal mowing.
5. When mowing wet or tall grass, mow the grass twice. Raise the mower to the highest setting for the first pass and then make a second pass to the desired height.
6. Use a slow travel speed for trimming purposes.
7. Operate the engine at full throttle for best cutting. Mowing with a lower RPM causes the mower to tear the grass. The engine is designed to be operated at full speed.
8. Use the alternate stripe pattern for best lawn appearance. Vary the direction of the stripe each time the grass is mowed to avoid wear patterns in the grass.

4.11 MOVING MOWER WITH ENGINE STOPPED

To “free-wheel” or move the mower around without the engine running, place the dump valve levers in the FREE-WHEEL position (Figure 4-2). Disengage the parking brake and move the mower by hand. The dump valve levers must be returned to the DRIVE position to drive the mower.

4.12 RECOMMENDATIONS FOR MOWING

1. Do not mow with dull blades. A dull blade will tear grass, resulting in poor lawn appearance and require extra power.
2. The discharge chute must not be removed and must be kept in the lowest position to deflect grass clippings and thrown objects downward. Direct the side discharge away from sidewalks or streets to minimize cleanup of clippings. When mowing close to obstacles, direct the discharge away from the obstacles to reduce the chance of property damage by thrown objects.
3. Cut grass when it is dry and not too tall. Do not cut grass too short (cut off 1/3 or less of existing grass for best appearance). Mow frequently.
4. Keep mower and discharge chute clean.

Section 6

6.6 CUTTER DECK ADJUSTMENTS

Cutter deck level, pitch and height are set at the factory. However, if these adjustments should ever need to be made, the following procedures will aid in obtaining the proper cutter deck adjustment.

-NOTE-

Before proceeding with the cutter deck adjustments, be sure that all tires are properly inflated.

Cutter Deck Level

The cutter deck should be level from side-to-side for proper cutting performance. To check for level, be sure that the mower is on a flat, level surface, the tires are properly inflated and the cutter deck is set at the most common cutting height that you will use. On the RH side of the machine, check the distance from the bottom of the cutter deck to the floor. Next check the distance from the bottom of the cutter deck to the floor on the LH side of the machine. Both measurements should be the same. If the two measurements are different, the cutter deck level must be adjusted as follows:

1. On the front LH side of the cutter deck locate the cutter deck adjusting bolt.

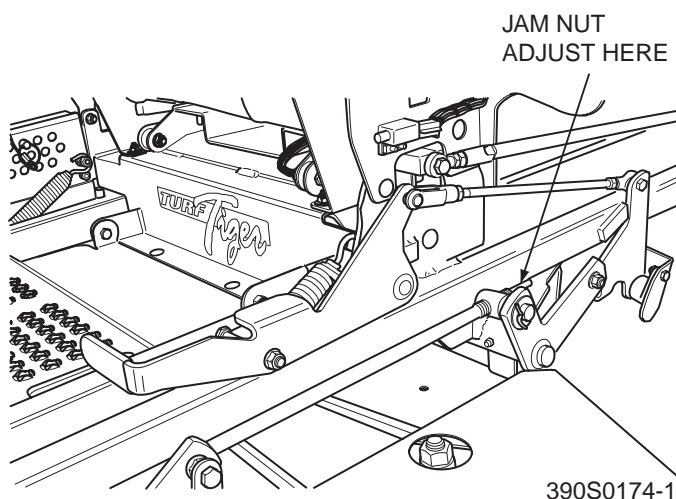


Figure 6-5. Cutter Deck Adjustment

2. Loosen the serrated flange hex nut and move the bolt up or down in the slot to adjust the cutter deck until the distance from the bottom of the cutter deck to the floor is the same as the measurement on the RH side of the machine.

3. Tighten the serrated hex nut to secure the cutter deck in the proper position.

Cutter Deck Pitch

The pitch of the cutter deck should be 1/4" down toward the front of the cutter deck for proper cutting performance. To check for proper deck pitch, be sure that the mower is on a flat, level surface and the tires are properly inflated.

Check the distance from the bottom of the cutter deck to the floor at the rear RH side of the cutter deck directly behind the cutter deck hanging chains. Next check the distance from the bottom of the cutter deck to the floor at the front RH side of the cutter deck directly in front of the cutter deck hanging chains. The measurement at the front of the cutter deck should be 1/4" lower than the measurement at the rear of the deck. Make these measurements at the LH side of the cutter deck also. If the measurement at the front of the deck is not 1/4" lower, the cutter deck pitch must be adjusted as follows:

1. Loosen the jam nut on both adjusting rods. (See Figure 6.5)
2. Using a wrench on the jam nut (See Figure 6.5) turn the adjusting rods until the 1/4" forward pitch is obtained on both the RH and the LH side of the cutter deck. Tighten both jam nuts.

-NOTE-

To prevent the cutter deck from teetering, all four cutter deck hanging chains must have tension on them. If all four chains do not have tension on them and the deck teeters, you must readjust the cutter deck as outlined in the procedures above.

Cutter Deck Height

The cutter deck height adjustment is made to ensure that the cutter deck is cutting at the height indicated on the cutting height index gauge. To check for proper deck height, be sure that the mower is on a flat, level surface and the tires are properly inflated.

1. Place the cutter deck in the transport position. Loosen the jam nuts on both ends of the deck height control rod. (See Figure 6.6)

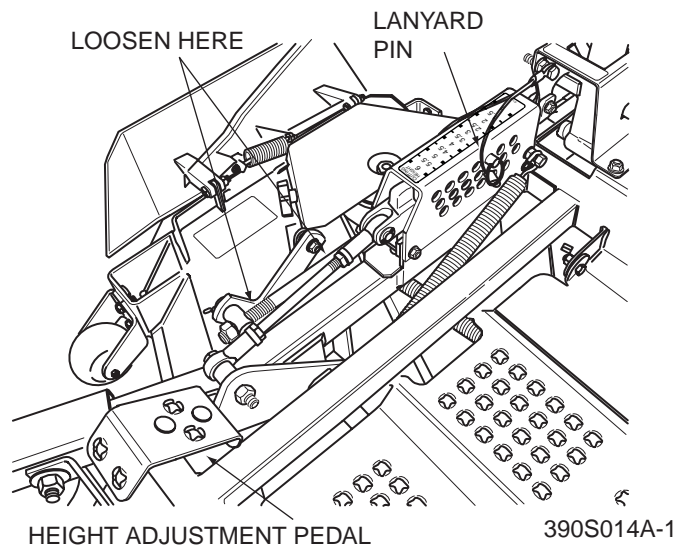


Figure 6-6. Cutter Deck Height Adjustment

2. Turn the control rod (See Figure 6.6) until there is a 1/4" space between the rear deck stop and the top of the cutter deck. (See Figure 6.7). Tighten the jam nuts on the control rod.

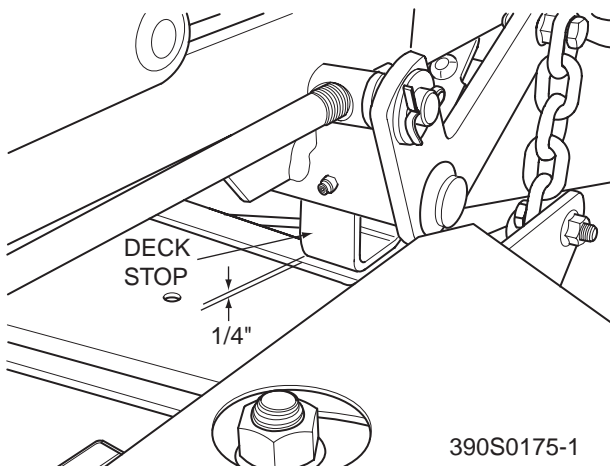


Figure 6-7. Cutter Deck Stop

3. Check the cutter deck cutting height by placing the lanyard pin in the 3" position on the cutting height index. Release the deck from the transport position and allow the deck to move to the 3" cutting height position.
4. Check the measurement from the floor to the cutter blade tip. If the measurement is not at 3", an adjustment can be made using the deck height control rod. (See Figure 6.6)

-NOTE-

If an adjustment had to be made, be sure that the cutter deck can easily be locked into the transport position.

MAINTENANCE

7.1 MAINTENANCE CHART - RECOMMENDED SERVICE INTERVALS

Break-In (First 10)	HOURS					Procedure	Comments
	8	40	100	200	500		
X						Check all hardware for tightness	
X						Check hydraulic oil level	See paragraph 7.3
X						Check all belts for proper alignment	See paragraph 7.8
X (First 5)						Change engine oil and filter	See paragraph 7.4
X						Check hydraulic hoses for leaks	Use extreme caution when checking the hydraulic hoses See paragraph 2.5
X						Check coolant level	See paragraph 7.12
	X					Check engine oil level	See paragraph 7.4
	X					*Clean mower	See paragraph 7.14
	X					Check condition of blades	See paragraph 7.9
	X					Apply grease to fittings	See paragraph 7.2
	X					Check tire pressure	See paragraph 7.10
	X					Check coolant level	See paragraph 7.12
		X				Check battery electrolyte level, clean battery posts and cables	See paragraph 7.7
		X				Check belts for proper alignment	See paragraph 7.8
			X			Apply grease to fittings	See paragraph 7.2
			X			Change engine oil	See paragraph 7.4
			X			*Clean air cleaner element	See paragraph 7.6
			X			Check lubricant in cutter deck gearbox	See paragraph 7.11

* Perform these maintenance procedures more frequently under extreme dusty or dirty conditions

MAINTENANCE CHART - RECOMMENDED SERVICE INTERVALS (CONT'D)

Break-In (First 10)	HOURS					Procedure	Comments
	8	40	100	200	500		
				X		Apply grease to fittings	See paragraph 7.2
				X		Check hardware for tightness	
				X		Change engine oil filter	See paragraph 7.4
				X		Check hydraulic oil level	See paragraph 7.3
					X	Replace engine fuel filter	See paragraph 7.5
					X	Drain hydraulic system and replace hydraulic oil	See paragraph 7.3 Use SAE 20W50 Motor Oil
					X	Replace hydraulic oil filter	See paragraph 7.3
					X	Replace cutter deck gearbox lubricant	See paragraph 7.1
					X	Change coolant	See paragraph 7.12

7.2 LUBRICATION

GREASE FITTING LUBRICATION CHART (SEE FIGURE 7-1)

LOCATION	LUBRICATION INTERVAL	LUBRICANT	NO. OF PLACES
1 Caster Wheel Pivot	500 Hours/Yearly	Chassis Grease	2
2 Caster Wheel Bearings	100 Hours/Bi-Weekly	Chassis Grease	2
3 Brake Actuator	200 Hours/Monthly	Chassis Grease	2
4 Cutter Deck Bellcranks	40 Hours/Weekly	Chassis Grease	4
5 Cutter Deck Pusharms	100 Hours/Bi-Weekly	Chassis Grease	2
6 PTO Spindle	40 Hours/Weekly	+Lithium MP White Grease 2125	1
7 Cutter Deck Spindle	40 Hours/Weekly	+Lithium MP White Grease 2125	3
8 Brake Handle	200 Hours/Monthly	Chassis Grease	1
9 Cutter Deck Drive Shaft	40 Hours/Weekly	Chassis Grease	3

- + Compatible Greases:
- Mobilix #2 found at Mobil Service Stations
 - Ronex MP found at Exxon Service Stations
 - Super Lube MEP #2 & Super Stay-M #2 found at Conoco Stations
 - Shell Alvania #2 found at Shell Service Stations
 - Lidok EP #2 found at industrial shops

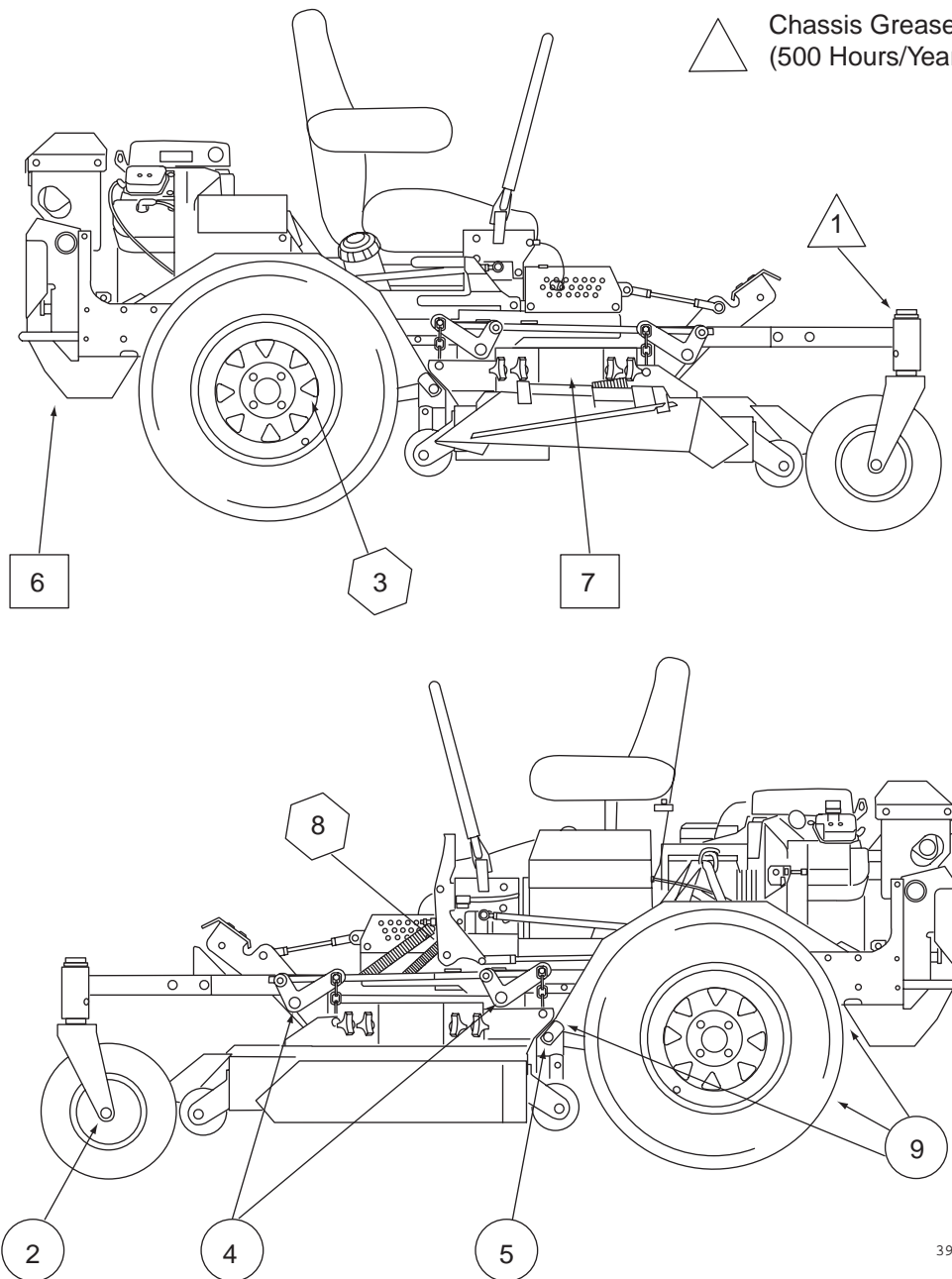
GREASE FITTING LUBRICATION
Lubricant Interval

□ Lithium MP White Grease 2125
 (40 Hours/Weekly)

○ Chassis Grease
 (100 Hours/Bi-monthly)

⬡ Chassis Grease
 (200 Hours/Monthly)

△ Chassis Grease
 (500 Hours/Yearly)



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Figure 7.1 Lubrication Fitting Points

7.3 HYDRAULIC SYSTEM

A. Checking Hydraulic Oil Level

The hydraulic oil level should be checked after the first 10 hours of operation. Thereafter, check the oil after every 200 hours of machine operation or monthly, whichever occurs first.

-IMPORTANT-

If the oil level is consistently low, check for leaks and correct immediately.

1. Wipe dirt and contaminants from around the reservoir cap. Remove the cap from the hydraulic oil reservoir.
2. Visually check the level of hydraulic oil. Hydraulic oil must be at least 3-1/4" inches from top of the filler neck. If the level cannot be determined visually, use a clean tape measure to check the level. If the fluid is low, add 20W50 motor oil. **DO NOT** overfill; (overfilling the oil reservoir may cause oil seepage around the cap area).
3. Clean the fill cap and install it onto the reservoir.

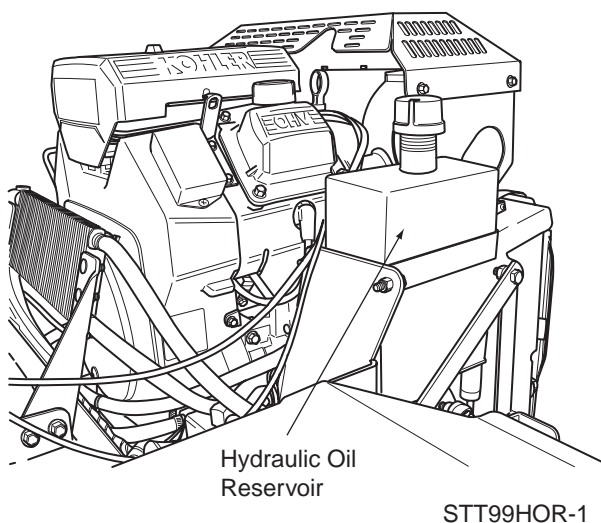


Figure 7-2 Hydraulic Oil Reservoir

B. Changing Hydraulic Oil

The hydraulic oil should be changed after every 500 hours or annually, whichever occurs first. The oil should also be changed if the color of the fluid has become black or milky. A black color and/or a rancid odor usually indicates possible overheating of the oil, and a milky color usually indicates water in the hydraulic oil.

-NOTE-

The hydraulic oil should be changed if you notice the presence of water or a rancid odor to the hydraulic oil.

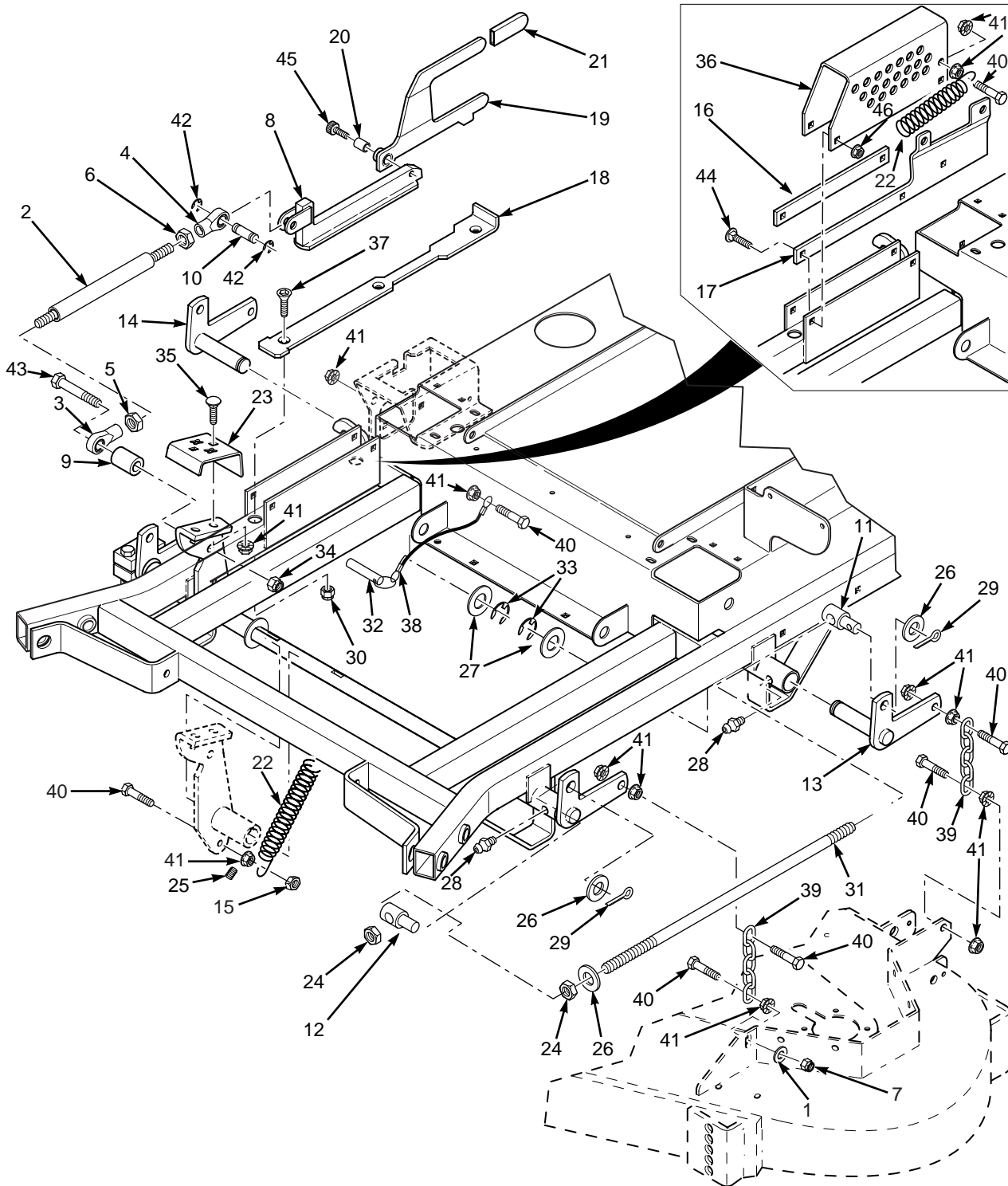
1. Park the mower on a level surface and stop the engine.
2. Place a suitable container under the hydraulic oil reservoir. Remove the fill cap from the reservoir. Remove the drain plug from the bottom of the reservoir. (See Figure 7-2). Allow the fluid to drain into the container and properly discard it.
3. Re-install the drain plug into the reservoir and be sure it is tight.

-NOTE-

Before refilling the hydraulic oil reservoir the hydraulic oil filter should be changed as outlined in section C on the next page.

4. Fill the reservoir to 3-1/4" inches from the top of the filler neck with 20W50 motor oil.
5. Replace the reservoir fill cap. Start the engine and drive forward and backward for two minutes. Check the oil level in the reservoir. If necessary, add oil to the reservoir.

CUTTER DECK CONTROLS



CUTTER DECK

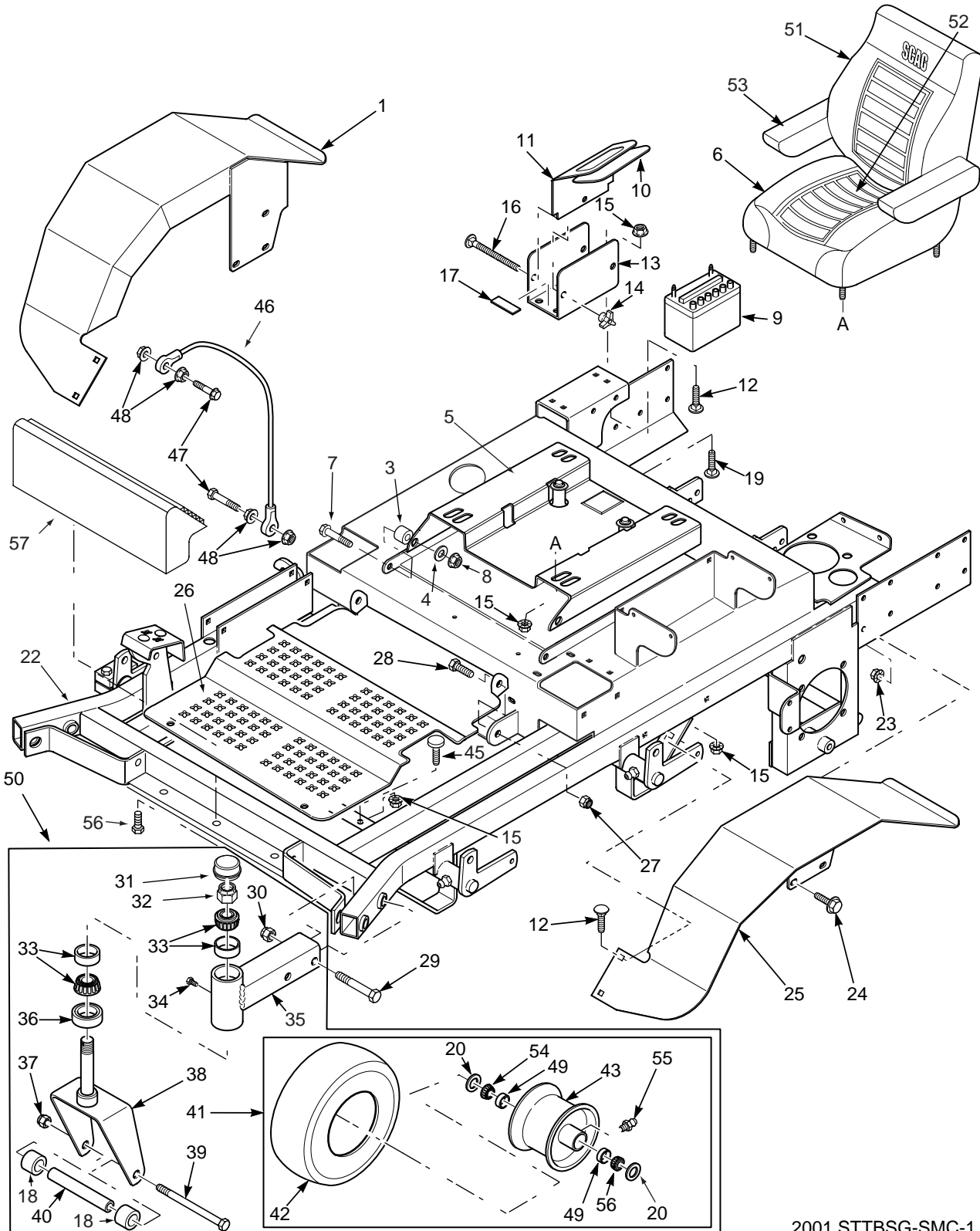
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CUTTER DECK CONTROLS

Ref. No.	Part No.	Description
1	04041-07	Flatwasher, 3/8"
2	481764	Link, Deck Lift
3	481765	Rod End, Female - 1/2-20 RH
4	481766	Rod End, Female - 1/2-20 LH
5	04020-27	Nut, Jam 1/2-20 RH
6	04020-28	Nut, Jam 1/2-20 LH
7	04021-09	Nut, 3/8-16 Elastic Stop
8	482429	Slide Weldment, Height Adjustment
9	43391	Spacer, Decklift Pedal
10	43487	Pin, Decklift
11	43526	Swivel Joint, LH
12	43527	Swivel Joint, RH
13	45904	Bellcrank Weldment, LH Rear
14	45905	Bellcrank Weldment, RH Rear
15	04021-05	Locknut, 3/8-16 Center Lock
16	422381	Guide, Short
17	423509	Guide, Long
18	422346	Lockplate, Decklift
19	46975	Deck Latch (Includes items 20& 21)
20	48100-14	Bushing, .502 ID.
21	481428	Grip, Deck Latch
22	481522	Spring, Helper (61" & 72" Cutter Decks Only)
23	422451	Foot Pedal, Height Adjustment
24	04020-09	Nut, Hex 5/8-11
25	04012-09	Set Screw, 5/16-18 x 1/2" Sq. Head
26	04040-09	Flatwasher, 5/8" (.656 x 1.312 x .095)
27	04041-14	Flatwasher, 1" (1.062 x 1.50 x .048)
28	48114-04	Grease Fitting
29	04061-07	Cotter Pin, 3/16 x 1"
30	04021-10	Nut, Hex Elastic Stop 5/16-18
31	04004-33	Stud, 5/8-11 x 22.0"
32	04067-05	Ring Pin, 1/2 x 3.30"
33	04050-08	Ring, Retaining 1" External "E"
34	04021-07	Nut, Hex Elastic Stop 1/2-13
35	04003-11	Bolt, Carriage 3/8-16 x 1-1/4"
36	423463	Bracket, Cutting Height Adjustment
37	04014-03	Screw, Cap 5/16-18 x 3" FHHS
38	481547	Lanyard, Deck Height Pin
39	48540	Chain
40	04001-20	Bolt, Hex Head 3/8-16 x 1-1/2"
41	04019-04	Nut, Hex Serrated Flange 3/8-16
42	04050-10	Ring, Retaining 1/2" External "E"
43	04001-74	Bolt, Hex Head 1/2-13 x 3"
44	04003-04	Bolt, Carriage 5/16-18 x 1"
45	04009-02	Bolt, Shoulder 1/2 x 3/4"
46	04019 -03	Nut, Hex Serrated Flange 5/16-18

* Common hardware which should be purchased locally. All bolts Grade 5 plated, all other fasteners zinc plated.

SHEET METAL COMPONENTS



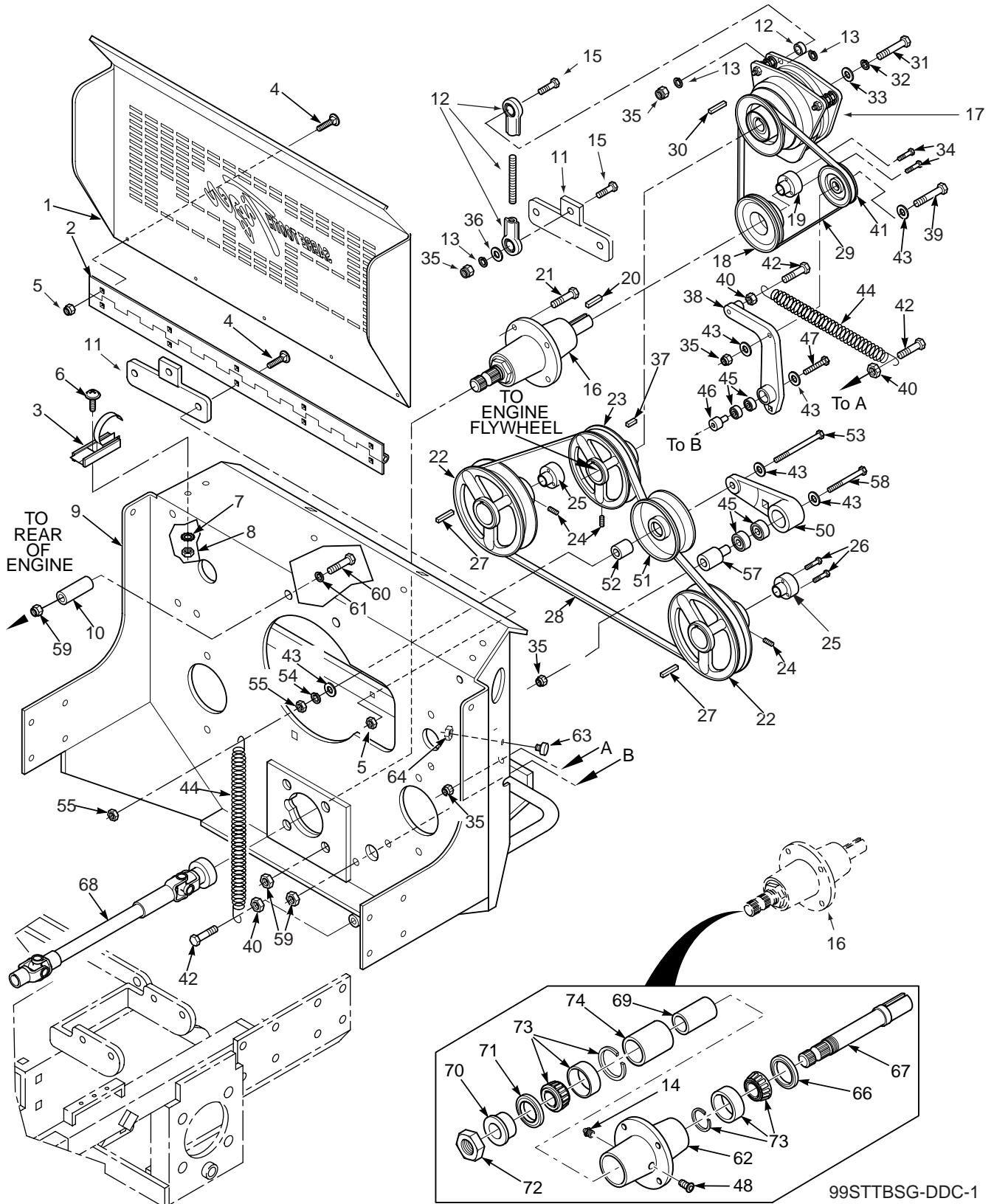
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SHEET METAL COMPONENTS

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	451481	Fender Weldment, RH	35	45936	Extention Weldment, Caster 52A (LH)
2	04001-09	Bolt, Hex Head, 5/16-18 x 1, Zinc		45937	Extention Weldment, Caster
3		Spacer			52A (RH) & 61A (LH &RH)
4		Flatwasher,		45939	Extention Weldment, Caster 72A (LH)
5	451448	Seat Plate Weldment		451128	Extention Weldment, Caster 72A (RH)
6	482147	Seat Assembly w/armrest	36	481025	Seal, 2.00 OD. x 1.625 Bore
7		Bolt	37	04021-07	Nut, Hex Elastic Stop 1/2-13
8		Nut	38	45934	Yoke Weldment, Caster
9	48015	Battery	39	04001-134	Bolt, Hex Head 1/2-13 x 7-1/2"
10	48903	Pad, Battery Cover	40	43581	Sleeve
11	421274	Cover, Battery	41	481551	Wheel Assy (Inc.items 42,43 & 55 thru 57)
12	04003-12	Bolt, Carriage 5/16-18 x 3/4"	42	481613	Tire
13	421703	Plate, Battery Box	43	481612	Rim Assembly (Includes item 55)
14	04029-01	Wing Nut, 1/4-20 x 3/4"	44	04041-07	Washer, 3/8"
15	04019-03	Nut, Hex Serrated Flange 5/16-18	45	481284	Bumper, Rubber
16	04003-01	Bolt, Carriage 1/4-20 x 6"	46	48566	Cable, Seat Stop
17	48657	Rubber Pad	47	04001-59	Bolt, Hex Head 1/4-20 x 1-1/4"
18	43584	Spacers	48	04019-02	Nut, Hex Serrated Flange 1/4-20
19	04003-04	Bolt, Carriage 5/16-18 x 1"	49	481846	Roller Bearing
20		Seal	50		Caster Wheel Assy (Inc. 31 thru 47)
21	04021-09	Lock Nut, 3/8-16, Elast. Stop			52A (RH) & 61A (LH &RH)
22		Main Frame			Caster Wheel Assy (Inc. 31 thru 47)
23	04019-04	Nut, Hex Serrated Flange 3/8-16			52A (LH)
24	04017-27	Screw, Hex Serrated Flange 3/8-16 x 1"			Caster Wheel Assy (Inc. 31 thru 47)
25	451480	Fender Weldment, LH			72A (LH)
26	423489	Foot Plate			Caster Wheel Assy (Inc. 31 thru 47)
27	04021-09	Nut, Hex Elastic Stop 3/8-16			72A (RH)
28	04001-19	Bolt, Hex Head 3/8-16 x 1-1/4"	51	482341	Back Cushion Cover
29	04001-125	Bolt, Hex Head 5/8-11 x 4"	52	482342	Seat Cushion Cover
30	04021-13	Nut, Hex Elastic Stop 5/8-11	53	482344	Arm Rest, Both Sides
31	481559	Cap, Grease		482343	Arm Rest Cover
32	04021-20	Nut, Hex Elastic Stop 1.0-14	54	481770	Bearing, Oilite
33	481657	Bearing W/Race	55	48114-06	Grease Fitting
34	482028-01	Plug, 1/4-28 THD Form	56	04001-71	Bolt, Hex Head, 1/2-13 x 1.5"
			57	481825	Footrest

* Common hardware which should be purchased locally. All bolts Grade 5 plated, all other fasteners zinc plated.

DECK DRIVE COMPONENTS

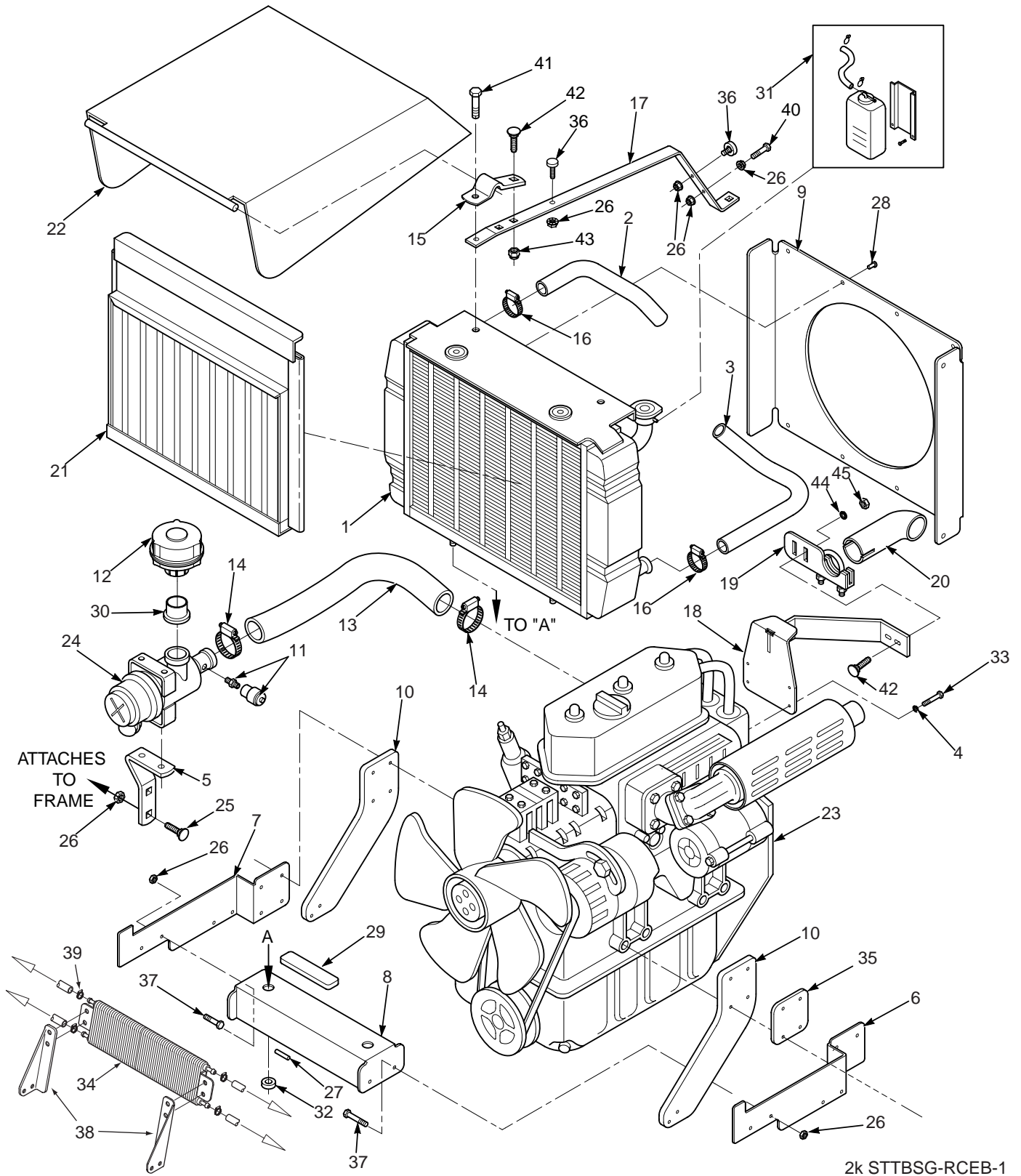


DECK DRIVE COMPONENTS

Ref. Part No. No.	Description	Ref. Part No. No.	Description		
1	422845	Belt Guard, Rear	38	461079	Idler Arm
2	481531	Hinge, Rear Belt Guard	39	04001-46	Bolt, Hex Head 3/8-16 x 2.25"
3	481309	Latch, Hood	40	04019-04	Nut, Serr. Flg. 3/8-16
4	04003-07	Carr. Bolt 1/4-20 x .5"	41	48181	Pulley, PTO Idler
5	04019-02	Nut, Serr. Flg. 1/4-20	42	04001-136	Bolt, Hex Head 3/8-16 x 1.5" Grade 8
6	04010-01	Screw, #10-32 x .5, Phillips Head	43	04043-04	Flat Washer 3/8" Grade 8
7	04031-01	Lock Washer, #10	44	481522	Spring
8	04020-01	Nut, #10-32	45	48224	Bearing
9	451080	Weldment, Pump Mounting	46	43503	Pivot, Idler - Short
10	43506	Spacer, Engine	47	04001-31	Bolt, Hex Head 3/8-16 x 2.5"
11	48114-04	Grease Fitting 1/4-28 Self Tapping	48	48677	Relief Fitting
12		Rod, Anti-Rotation	49	04001-09	Bolt, Hex Head 5/16-18 x 1.00"
13		Lockwasher	50	481756	Idler Arm
14		Plate	51	48198	Pulley, Pump Idler
15	04001-20	Bolt, Hex Head 3/8-16 x 1.50"	52	43277	Spacer
16	46977	Spindle Assembly, Deck Drive	53	04001-138	Bolt, Hex Head 3/8-16 x 3.75" Grade 8
17	461399	Clutch, Electric PTO	54	04030-04	Lock Washer 3/8" .638 x .380 x .094"
18	481398	Pulley, 6.35" dia. Tapered Bore	55	04020-04	Nut 3/8-16
19	481536	Hub, Tapered 1" dia.	56	04021-05	Nut, Elastic 3/8-16
20	04063-06	Key, 1/4 x 1/4 x 1.5"	57	43504	Pivot, Idler - Long
21	04001-10	Bolt, Hex Head 5/16-18 x 1.25"	58	04001-54	Bolt, Hex Head 3/8-16 x 3.00"
22	481883	Pulley, 6.25" OD, Tapered	59	04021-10	Nut, Elastic 5/16-18
23	481788	Pulley, 5.45" OD	60	04001-49	Bolt, Hex Head 5/16-18 x 3.00"
24	04012-04	Set Screw, 5/16-18 x .375"	61	04030-03	Lock Washer 5/16"
25	481884	Hub, Tapered 17mm Bore	62	43294	Spindle Housing
26	04001-01	Bolt, Hex Head 1/4-20 x .75"	63	481284	Bumper, Rubber
27	04063-27	Key, 5mm x 5mm x 30mm	64	04019-03	Nut, Serr. Flg. 5/16-18
28	481461	Belt, Pump Drive	65	04001-19	Bolt, Hex Head 3/8-16 x 1.00"
29	481460	Belt, Deck Drive	66	48030-09	Clamp, Wire
30	04063-11	Key, 1/4 x 1/4 x 2.5"	67	04003-12	Bolt, Carr. 5/16-18 x .75"
31	04001-101	Bolt, Hex Head 7/16-20 x 2.5"	68	481785	Driveshaft
32	04030-05	Lock Washer 7/16"	69	43296	Spacer, Inside
33	04041-28	Flat Washer 7/16 x .469 x 1.75 x .25"	70	43297	Bushing
34	04001-109	Bolt, Hex Head 1/4-20 x 1.375"	71	481025	Seal, 2.00 OD x 1.625 Bore
35	04021-09	Nut, Elastic Stop 3/8-16	72	481035	Nut, 1.06-18
36	04041-07	Flat Washer 3/8, .391 x .938 x .105"	73	481022	Roller Bearing Assembly
37	04063-20	Key, 1/4 x 1/4 x 1.00"	74	43312	Spacer, Outside

* Common hardware which should be purchased locally. All bolts Grade 5 plated, all other fasteners zinc plated.

RADIATOR, COOLERS & ENGINE BRACKETS



2k STTBSG-RCEB-1

RADIATOR, COOLERS & ENGINE BRACKETS

Ref. No.	Part No.	Description
1	481810	Radiator
2	481742	Hose, Upper Radiator
3	481743	Hose, Lower Radiator
4	04030-03	Lockwasher, 5/16 (.317 x .586 x .078) Helical Spring
5	422701	Bracket, Air Cleaner
6	422697	Bracket, Engine Mounting LH
7	422698	Bracket, Engine Mounting RH
8	422702	Bracket, Radiator Mounting
9	422704	Shroud, Radiator
10	422696	Plate, Engine Mounting
11	481818	Indicator, Air Cleaner
12	481816	Pre-Cleaner, Engine Air
13	481750	Hose, Air Intake
14	48136-09	Clamp, Hose (2.25" Dia.)
15	422703	Hinge, Hood
16	48136-12	Clamp, Hose (1.50" Dia.)
17	422736	Bracket, Hood Support
18	451120	Bracket, Exhaust Support
19	451121	Clamp Weldment, Muffler (Clamp and Weldment)
	48633	Clamp, Muffler (Clamp Only)
20	481827	Elbow, Exhaust
21	451083	Screen, Debris
22	451082	Hood
23	481795	Engine, Briggs & Stratton 31 HP (Spec. # 580447-0116-E2) Not Available Through Scag, Contact Briggs & Stratton)
24	**	Air Cleaner Assembly w/ Mounting Band (Not Available Through Scag, Contact Briggs & Stratton)
25	04003-12	Bolt, Carr. 5/16-18 x .75"
26	04019-03	Nut, Serr. Flng 5/16-18
27	04069-02	Pin, Rue Cotter 1/2" dia.
28	04090-04	Rivet, Pop 1/8 x .294"
29	481817	Pad, Radiator
30	481924	Adaptor, Pre-Cleaner
31	**	Coolant Tank Assembly w/Hose (Not Available Through Scag, Contact Briggs & Stratton)
32	43508	Spacer, Radiator
33	04002-12	Bolt, Hex Head M8 x 20MM LG
34	482505	Cooler, Oil
35	422715	Engine Spacer
36	481284	Bumper, Rubber
37	04001-08	Bolt, Hex Head 5/16-18 x .75"
38	423524	Mounting Bracket, LH, Oil Cooler
	423525	Mounting Bracket, RH, Oil Cooler
39	48136-13	Hose Clamp, 0.69" Dia. (4)
40	04001-11	Bolt, Hex Head 5/16-18 x 1.50"
41	04017-16	Bolt, Hex Head 5/16-18 x .75 Serrated Flange
42	04003-04	Bolt, Carrage 5/16-18 x 1.0"
43	04002-10	Nut, 5/16-18 Elastic Stop
44	04040-15	Flatwasher, 5/16 (.375 x .875 x .083)
45	04021-10	Nut, 5/16-18 Elastic Stop

* Common hardware which should be purchased locally. All bolts Grade 5 plated, all other fasteners zinc plated.

** Purchase through Briggs & Stratton.