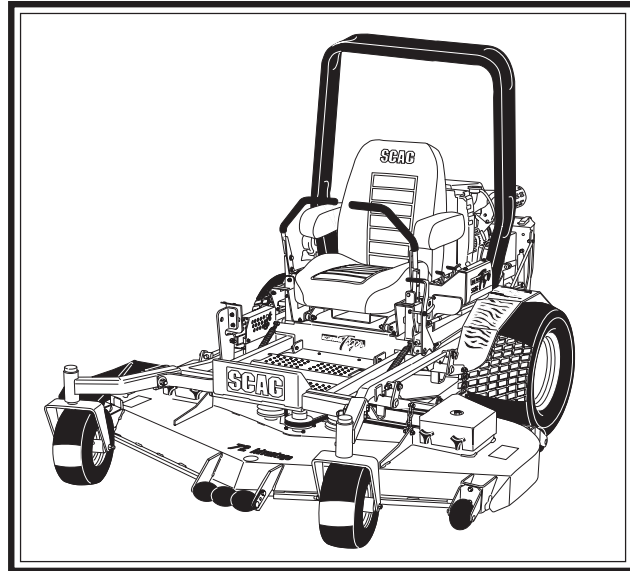


# SCAG<sup>®</sup>

## POWER EQUIPMENT



### MODEL STT-31BSD



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

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SCAG POWER EQUIPMENT  
DIVISION OF METALCRAFT OF MAYVILLE, INC.

PART NO. 03153  
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PRINTED IN USA



# WARNING:

## **FAILURE TO FOLLOW SAFE OPERATING PRACTICES MAY RESULT IN SERIOUS INJURY.**

- \* Keep all shields in place, especially the grass discharge chute.
- \* Before performing any maintenance or service, stop the machine and remove the spark plug wires and ignition key.
- \* If a mechanism becomes clogged, stop the engine before cleaning.
- \* Keep hands, feet and clothing away from power-driven parts.
- \* Read this manual completely as well as other manuals that came with your mower.
- \* Keep others off the tractor (only one person at a time)

## **REMEMBER - YOUR MOWER IS ONLY AS SAFE AS THE OPERATOR!**

**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.**

This manual covers the operating instructions  
and illustrated parts list for:

<b>STT-31BSD</b>	<b>with a serial number of A7400001 to A7499999</b>
<b>SMST-61A</b>	<b>with a serial number of A7500001 to A7599999</b>
<b>SMST-72A</b>	<b>with a serial number of A7600001 to A7699999</b>

Always use the entire serial number listed on the serial number tag when referring to this product.



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## 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.

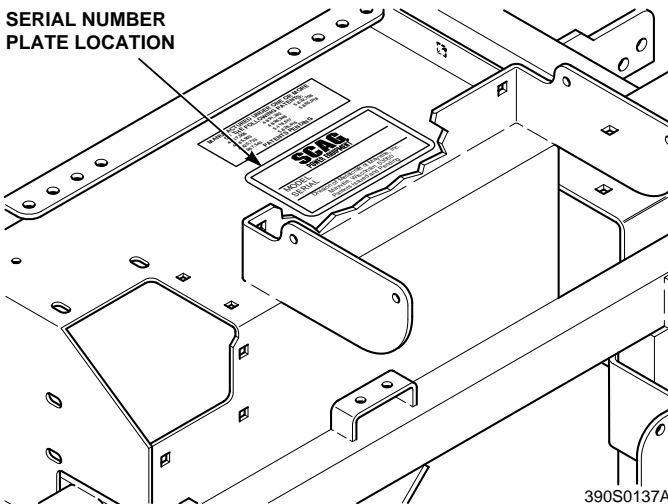


Figure 1-1 Tractor Serial Number Plate Location

#### USE ONLY SCAG APPROVED ATTACHMENTS AND ACCESSORIES.

Attachments and accessories manufactured by companies other than Scag Power Equipment are not approved for use on this machine.

Scag approved attachments and accessories:

- GC-STT (p/n 9049, 9039)
- GC-STT-CS (p/n 9053, 9041)
- Mulch Plate (p/n 9261, 9262)
- Hurricane Mulch (p/n 9266, 9267)
- Cup Holder (p/n 9240)
- STT Hitch (p/n 9242)
- STT Bumper (p/n 9256)
- STT - Suspension Seat (p/n 9270)
- STT - Lights (p/n 9279)
- Tiger Striper (p/n 9269)
- Blade Buddy (p/n 9212)

### WARNING:

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.

ISO Symbols		CE Mark
-------------	---	---------

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	Choke		Transmission
	Parking Brake	 <small>48071S</small>	Spinning Blade
	On/Start		Spring Tension on Idler
	Off/Stop		Oil
		Falling Hazard	

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	Fast		Slow
	Continuously Variable - Linear		Cutting Element - Basic Symbol
	Pinch Point		Cutting Element - Engage
	Hourmeter/Elapsed Operating Hours		Cutting Element - Disengage
	Thown Object Hazard Keep Bystanders Away		Read Operator's Manual

## 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. The owner/user can prevent and is responsible for accidents or injuries occurring to themselves, other people or property.

### 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 or via the Internet at [www.scag.com](http://www.scag.com). The manual for your machine can be downloaded by using the model and serial number or use the contact form to make your request. 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. Keep children out of the mowing area and in the watchful care of a responsible adult other than the operator. Be alert and turn machine off if a child enters the area.
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.



## Section 2

### 2.3 BEFORE OPERATION CONSIDERATIONS (CONT'D)

6. If the operator(s) or mechanic(s) cannot read English or Spanish, it is the owner's responsibility to explain this material to them.
7. **DO NOT** wear loose fitting clothing. Loose clothing, jewelry or long hair could get tangled in moving parts. Do not operate the machine wearing shorts; always wear adequate protective clothing including long pants. Wearing safety glasses, safety shoes and a helmet is advisable and is required by some local ordinances and insurance regulations.
8. Operator hearing protection is recommended, particularly for continuous operation of the mower. Wear suitable hearing protection. Prolonged exposure to loud noise can cause hearing impairment or loss.
9. Keep the machine and attachments in good operating condition. Keep all shields and safety devices in place. If a shield, safety device or decal is defective or damaged, repair or replace it before operating the machine.

#### **WARNING:**

**This machine is equipped with an interlock system intended to protect the operator and others from injury. This is accomplished by preventing the engine from starting unless the deck drive is disengaged, the parking brake is on, the steering control levers are in the neutral position and the operator is in the seat. The system shuts off the engine if the operator leaves the seat with the deck drive engaged and/or the steering control levers are not in the neutral position and the parking brake is not engaged. Never operate equipment with the interlock system disconnected or malfunctioning.**

10. Be sure the interlock switches are functioning correctly.
11. Fuel is flammable; handle it with care. Fill the fuel tank outdoors. Never fill it indoors. Use a funnel or spout to prevent spillage. Clean up any spillage before starting the engine.

12. **DO NOT** add fuel to a running or hot engine. Allow the engine to cool for several minutes before adding fuel.
13. Keep flammable objects (cigarettes, matches, etc.), open flames and sparks away from the fuel tank and fuel container.
14. Equipment must comply with the latest requirements per SAE J137 and/or ANSI/ASAE S279 when driven on public roads.

#### **-NOTE-**

*If the mower is driven on public roads, it must comply with state and local ordinances as well as SAE J137 and/or ANSI / ASAE S279 requirements. Contact your local authorities for regulations and equipment requirements.*

15. **DO NOT** operate without the side discharge chute installed and in the down position or with an optional grass catcher or mulch plate completely installed.
16. Check the blade mounting bolts at frequent intervals for proper tightness.
17. Make sure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before starting the machine.

### 2.4 OPERATION CONSIDERATIONS

1. Know the function of all controls and how to stop quickly.
2. Reduce speed and exercise extreme caution on slopes and in sharp turns to prevent tipping or loss of control. Be especially cautious when changing directions on slopes.

#### **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.**

### 2.4 OPERATION CONSIDERATIONS (CONT'D)

3. To prevent tipping or loss of control, start and stop smoothly, avoid unnecessary turns and travel at reduced speed.
4. When using any attachment, never direct the discharge of material toward bystanders or allow anyone near the machine while in operation.
5. Before attempting to start the engine, with the operator in the seat, disengage power to the cutter deck, place the steering control levers in the neutral position and engage the parking brake.
6. If the mower discharge ever plugs, shut off the engine, remove the ignition key, and wait for all movement to stop before removing the obstruction.
7. Be alert for holes, rocks, roots and other hidden hazards in the terrain. Keep away from any dropoff. Beware of overhead obstructions (low limbs, etc.), underground obstacles (sprinklers, pipes, tree roots, etc.). Cautiously enter a new area. Be alert for hidden hazards.
8. Disengage power to cutter deck before backing up. Do not mow in reverse unless absolutely necessary and then only after observation of the entire area behind the mower.
9. **DO NOT** turn sharply. Use care when backing up.
10. Disengage power to cutter deck before crossing roads, walks or gravel drives.
11. Mow only in daylight or good artificial light.
12. **NEVER** raise the deck with the blades engaged.
13. Take all possible precautions when leaving the machine unattended, such as disengaging the mower, lowering the attachments, setting the parking brake, stopping the engine, and removing the key.
14. Disengage power to the attachments when transporting or when not in use.
15. The machine and attachments should be stopped and inspected for damage after striking a foreign object, and damage should be repaired before restarting and operating the machine.

#### **WARNING:**

**DO NOT use your hand to dislodge the clogged discharge chute. Use a stick or other device to remove clogged material.**

#### **WARNING:**

**DO NOT run the engine inside a building or a confined area without proper ventilation. Exhaust fumes are hazardous and could cause death.**

16. Keep hands and feet away from cutter blades and moving parts. Contact can injure.
17. Use care when loading or unloading the machine onto a trailer or truck.
18. Use care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.

### 2.5 ROLL OVER PROTECTION SYSTEM

#### **WARNING:**

**Seat belt must be securely fastened during operation. Failure to do so could cause serious injury or loss of life.**

## Section 2

This 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.

Any or all parts of the Roll Over Protection System **MUST NOT** be removed. Failure to adhere to this guideline could result in injury or death.

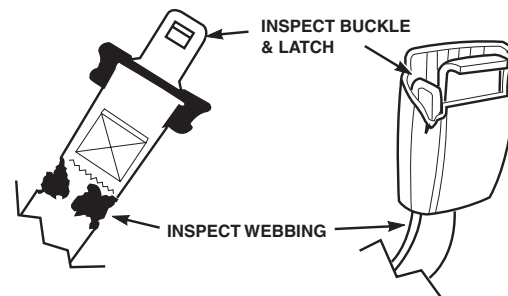
The potential exposure of this seat belt to severe environmental conditions make it crucial to inspect the seat belt system regularly.

It is recommended that the seat belt be inspected on a daily basis for signs of damage. Any seat belt system that shows cuts, fraying, extreme or unusual wear, significant discoloration due to UV exposure, dirt or stiffness, abrasion to the seat belt webbing, or damage to the buckle, latch plate, hardware or any other obvious problem should be replaced immediately.

### **! WARNING:**

**Failure to properly inspect and maintain the seat belt can cause serious injury or loss of life.**

1. Check the full length of the seat belt webbing for cuts, wear, fraying, dirt and stiffness. See Figure 2-1.
2. Check the seat belt webbing in areas exposed to ultra violet rays from the sun or extreme dust or dirt. If the original color of the webbing in these areas is extremely faded and/or is packed with dirt, the physical strength of this webbing may have deteriorated. If this condition exists, replace the seat belt system.
3. Check the buckle and latch for proper operation and determine if the latch plate is excessively worn, deformed, or if the buckle is damaged or cracked. See Figure 2-1.



**Figure 2-1 Seat Belt Inspection**

### **! WARNING:**

Reduce speed when turning, operating on slopes, slick or wet surfaces. Allow extra distance to stop.

Stay off of slopes too steep for safe operation. To check a slope, attempt to back up it (with the cutter deck down). If the machine can not back up the slope without the wheels slipping, do not operate the machine on this slope.

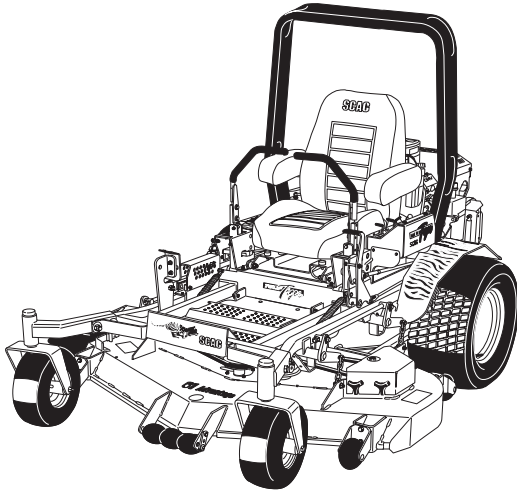
**ALWAYS** travel up or down the slope whenever possible. Never across the slope.

**DO NOT** mow near drop-offs, ditches or embankments. The machine could suddenly roll over if a wheel goes over the edge or if the edge caves in.

Operate the machine smoothly, no sudden turns, starts or stops on a slope.

**NEVER** tow on slopes. The weight of the towed equipment may cause loss of traction and loss of control.

**DO NOT** permit untrained personnel to operate the machine.



**Figure 2-2. STT-BSD With Roll Over Protection System.**

### 2.6 MAINTENANCE CONSIDERATIONS & STORAGE

1. Never make adjustments to the machine with the engine running unless specifically instructed to do so. If the engine is running, keep hands, feet, and clothing away from moving parts.
2. Disengage drives, lower implement, set parking brake, stop engine and remove key or disconnect spark plug wire to prevent accidental starting of the engine when servicing or adjusting the machine. Wait for all movement to stop before adjusting, cleaning or repairing.
3. Disconnect battery or remove spark plug wire before making any repairs. Disconnect the negative terminal first and the positive last. Reconnect the positive first and the negative last.
4. Keep all nuts, bolts and screws tight, to ensure the machine is in safe working condition. Check blade mounting bolts frequently to be sure they are tight.
5. Do not change the engine governor settings or overspeed the engine. See the engine operator's manual for information on engine settings.
6. To reduce fire hazard, keep the cutting units, drives muffler and engine free of grass, leaves, excessive grease, oil and dirt.
7. Park the machine on level ground and engage the parking brake.
8. **NEVER** allow untrained personnel to service the machine.
9. Use care when checking blades. Wrap the blade(s) or wear gloves and use caution when servicing blades. Only replace blades. **NEVER** straighten or weld blades.
10. Keep all parts in good working condition. Replace all worn or damaged decals.
11. Use jack stands to support components when required.
12. Carefully release pressure from components with stored energy.

### **WARNING:**

**Hydraulic fluid is under high pressure. Keep body and hands away from pinholes or nozzles that eject hydraulic fluid under high pressure. If you need service on your hydraulic system, please see your authorized Scag dealer. If hydraulic fluid is injected into the skin, it must be surgically removed within a few hours by a doctor or gangrene may result.**

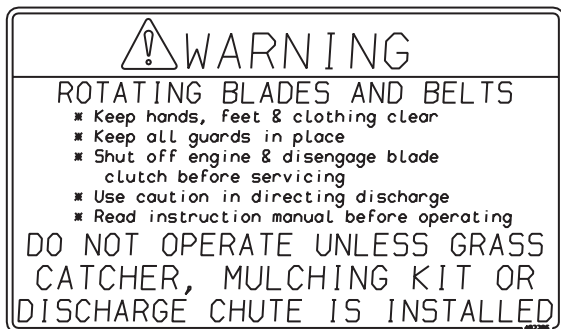
13. Let the engine cool before storing.
14. **DO NOT** store the machine near an open flame.
15. Shut off fuel while storing or transporting.
16. **DO NOT** store fuel near flames or drain indoors.
17. Charge batteries in an open well ventilated area, away from spark and flames. Unplug charger before connecting or disconnecting from battery. Wear protective clothing and use insulated tools.

## Section 2

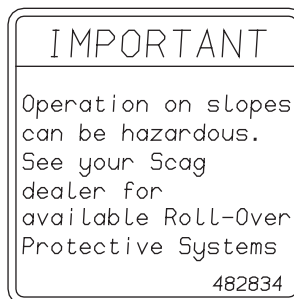
### 2.7 SAFETY AND INSTRUCTIONAL DECALS



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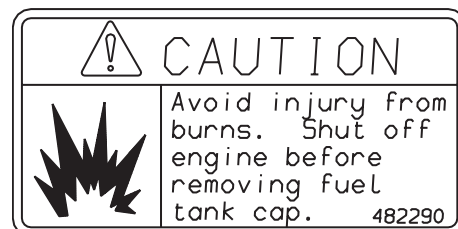
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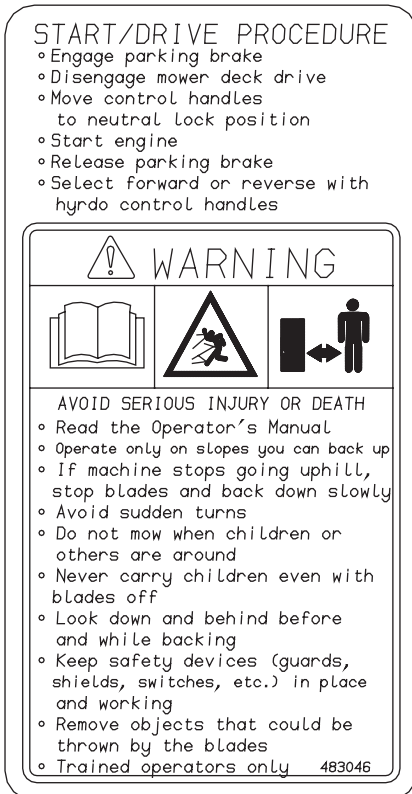
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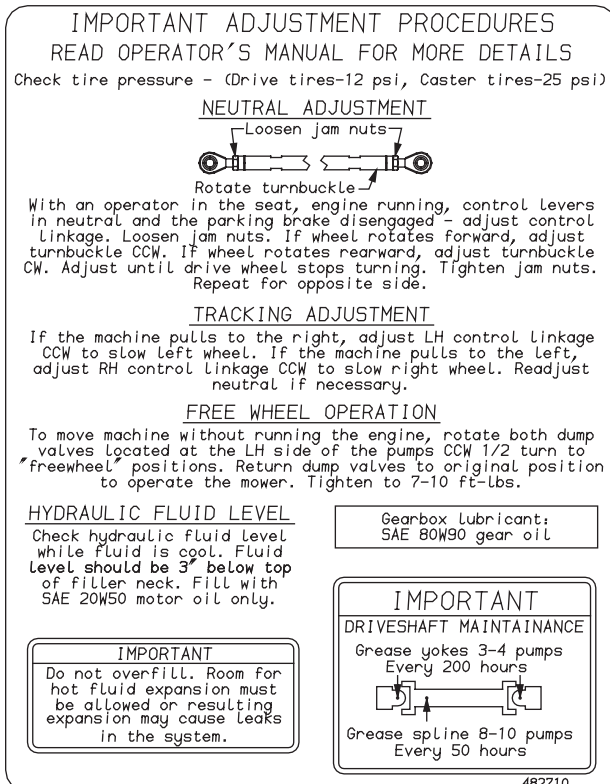
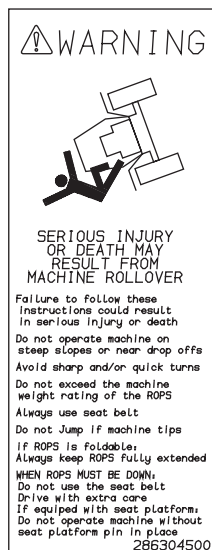
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## SPECIFICATIONS

### SCAG "SABRE TOOTH TIGER" ZERO-TURN RIDER MODEL: STT- 31BSD

#### ENGINE

General Type:	Heavy Duty Industrial/Commercial Turbo Charged Diesel
Brand:	Briggs Daihatsu Vanguard Liquid Cooled 31 HP
Model:	DM950D
Horsepower:	31 HP @ 3600 RPM
Type:	water cooled 4 cycle, overhead valve, 3 cylinder, diesel engine
Displacement:	952cc
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 ( $\pm 100$ rpm), idle set at 1700 rpm
Air Intake Group:	Canister type air filter system.
Exhaust Group:	Single exhaust canister muffler
Fuel Injection:	Distributor injection pump
Oil Pump Group:	Positive displacement Gerotor™ 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, solenoid shift type starter

#### ENGINE DECK

Fuel Tank:	10 gallon (38.0 litres) seamless polyethylene tank with fuel gauge cap
Drive Wheels/Tires:	24x12-12 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, BBC switch (hourmeter located at rear of machine), glow plug indicator, water separator indicator
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 on the cutting conditions.*

Date of Issue: October, 2004

Specifications Subject To Change Without Notice

## SPECIFICATIONS (CON'T)

### SCAG "SABRE TOOTH TIGER" ZERO-TURN RIDER MODEL: STT- 31BSD

#### 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 for a clean cutting.
Construction:	10-gauge steel top reinforced with 7 gauge support plate, deck skirt is 7 gauge steel
True Cutting Width:	72" cutter deck = 71.5 inches (181.6 cm); 61" cutter deck = 61.0" (155.0cm)
Cutting Height Adjustment:	Foot-operated pedal adjustment from operator's seat, 1" to 6" in 1/4" 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:	Split Steel with easily removed taper hubs
Cutter Deck Belts:	B-section with Kevlar cord
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

	<b>72"</b>	<b>61"</b>
Length:	92.0"	89.5"
Tracking Width:	56.0"	56.0"
Width:	83.0"	73.0"
Width (with discharge chute up):	73.0"	63.0"
Height:	43.0"	43.0"
Turning Radius:	zero radius turning	zero radius turning
Weight:	1635 lbs.	1600 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 7 MPH with an allowance for overlap and turns calculated in.

<b>Cutting Width:</b>	61"    72"
<b>Acres Per Day:</b>	27    32

Date of Issue: October, 2004

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. Water Separator Indicator (Figure 4-1).** Amber indicator turns on when the Water Separator is full and needs to be cleaned out.

**3. 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.

**4. Glow Plug Indicator (Figure 4-1).** Yellow indicator turns off when the glow plugs have been properly heated after the ignition switch is turned on.

**5. 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.

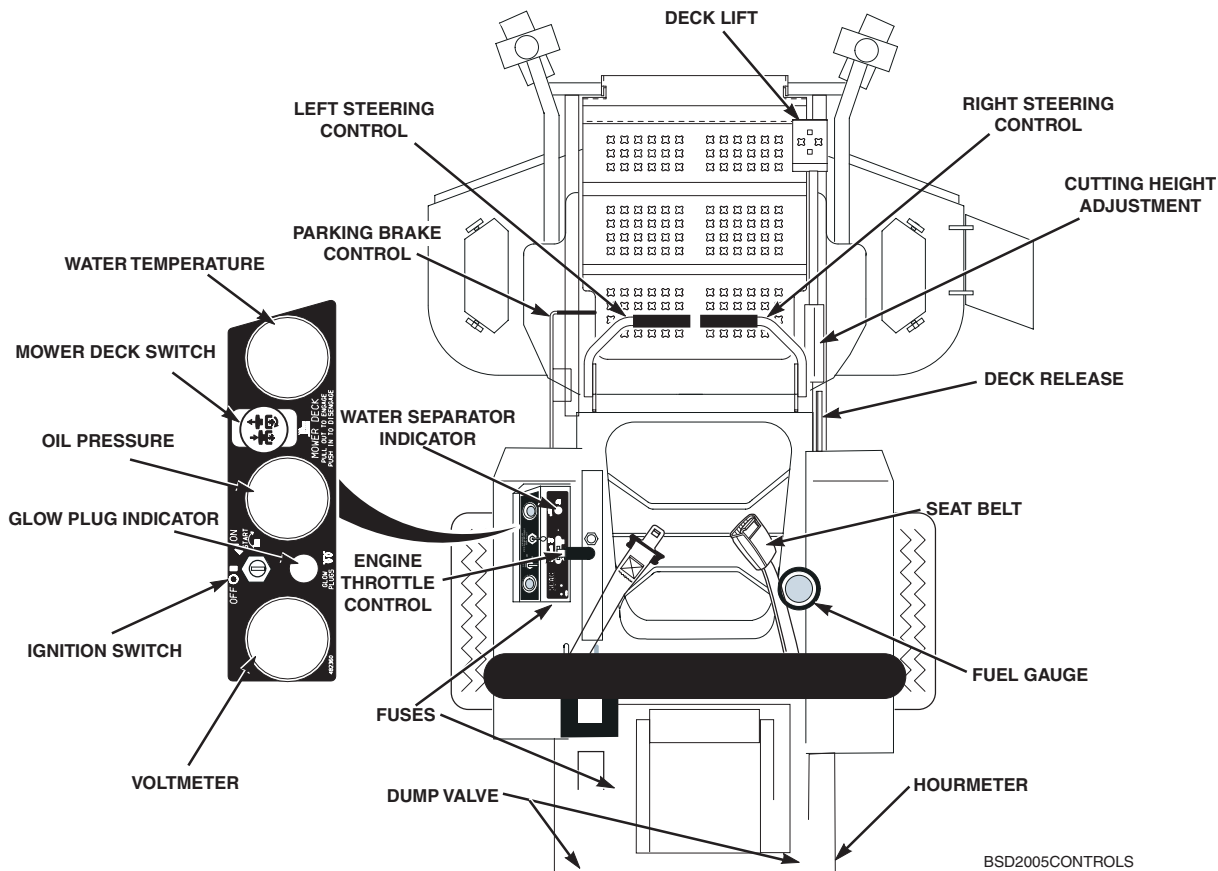
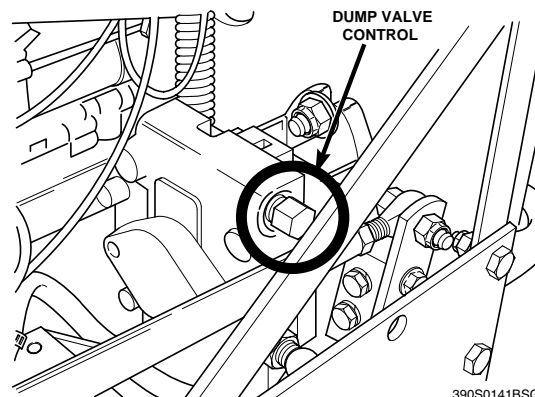


Figure 4-1 Controls and Instruments



## Section 4

6. **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.
7. **Oil Pressure (Figure 4-1).** Indicates engine oil pressure. Reference the engine operator's manual for further information.
8. **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.
9. **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.
10. **Left Steering Control (Figure 4-1).** Used to control the mower's left wheel when traveling forward or reverse.
11. **Right Steering Control (Figure 4-1).** Used to control the mower's right wheel when traveling forward or reverse.
12. **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.
13. **Fuel Tank Gauge (Figure 4-1).** Indicates the amount of fuel in the fuel tank.
14. **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 and torqued to 10ft/lbs during operation of the mower. Rotating the levers counter-clockwise allows the mower to be moved by hand (free-wheeling).
15. **Deck Lift Foot Lever (Figure 4-1).** Used to raise and lower the cutter deck.



**Figure 4-2 Dump Valve Control**

16. **Cutting Height Adjustment (Figure 4-1).** Used to set the cutter deck at the desired cutting height.
17. **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.
18. **Temperature Gauge (Figure 4-1).** Indicates the operating temperature of the engine.
19. **Seat Belt (Figure 4-1).** Used to secure the operator. Seat belt must be worn at all times during operation.

### 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. Before initial start or after running out of fuel, you must prime the fuel pump located on the right side of the engine. Pump the primer pump until it can no longer be depressed.
2. Be sure the fuel shutoff valve, located behind the operator's seat, is completely open. (See Section 7.5 Page 30)
3. Sit in the operator's seat, fasten seat belt and place the steering control levers in the neutral position.
4. Engage the parking brake.
5. Place the PTO switch in the disengaged position.

6. Move the engine throttle control to about half engine speed.
7. Turn the ignition key to the on position until the yellow indicator for the glow plugs goes out. Then 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.

## Section 4

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

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 on Page 16 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 the rear 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 may not travel straight in reverse. Slight adjustments may need to be made using the steering controls.*

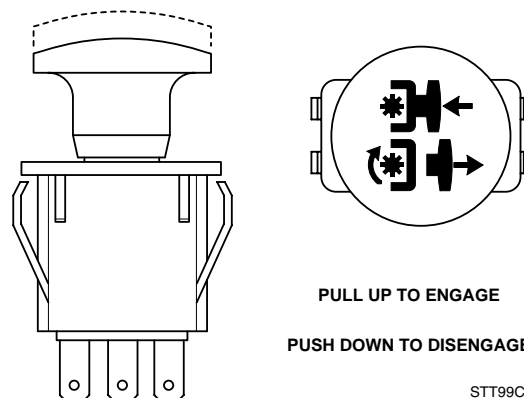
To steer left while traveling in reverse, allow the left steering control lever to move forward. The further the control is allowed to move forward, the quicker the mower will turn left.

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 up 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.
5. To properly burnish the electric PTO clutch brake, follow the following steps.
  - A. Start and run the engine at approximately 3/4 throttle.
  - B. Engage and disengage the PTO approximately 25 times, waiting for 10 seconds between each on/off cycle.

**-NOTE-**

*Burnishing the electric clutch improves longevity and performance and should be done on every new machine and after a clutch replacement. The burnishing procedure should not be performed while cutting grass.*

### 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. The Roll Over Protection System is standard equipment for this machine. See section 2.5, page 6 of this manual for further details.
2. To prevent tipping or loss of control, start and stop smoothly, avoid unnecessary turns and travel at reduced speed.

3. Keep tires properly inflated.

### 4.8 PARKING THE MOWER

1. Stop on level ground and 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 with a minimum cetane rating of 40 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.

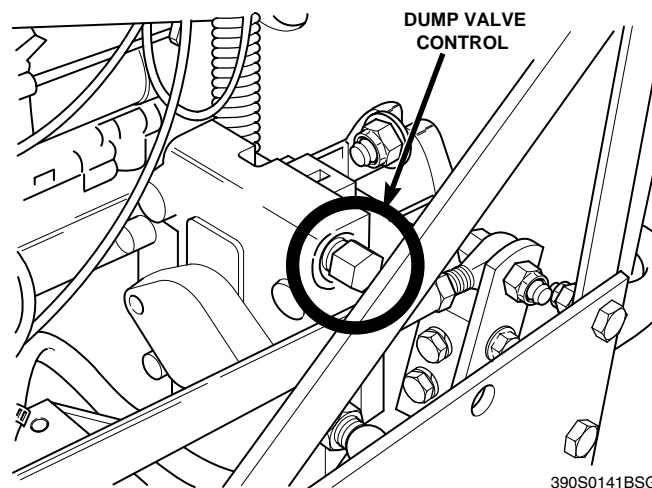
### 4.11 MOVING MOWER WITH ENGINE STOPPED

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 and torqued to 10ft/lbs 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 reduced mowing 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.
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.



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**Figure 4-2 Dump Valve Control**

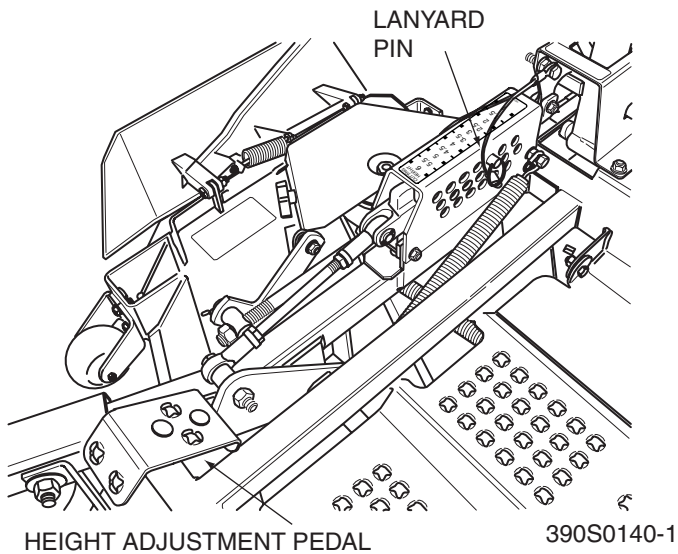
**! WARNING**

**DO NOT OPERATE WITHOUT DISCHARGE CHUTE, MULCHING KIT, OR ENTIRE GRASS CATCHER INSTALLED**

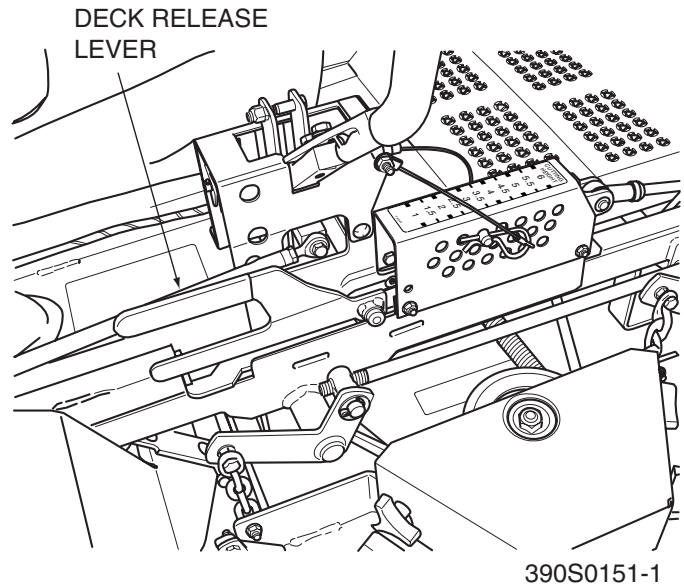
### 4.13 ADJUSTING CUTTING HEIGHT

The mower deck can be adjusted from a height of 1-inch to 6 inches at 1/4-inch intervals. To adjust the cutting height:

1. Push the cutting height adjustment foot pedal all the way forward using your right foot until it locks in place. (Figure 4-6).
2. Insert the lanyard pin into the cutting height index at the desired cutting height. Push forward on the deck lift foot lever, hold in place and lift up on the deck release lever, (Figure 4-7). Slowly release the foot pedal. A deck height decal is located on the cutting height index as an aid in adjusting the deck to the desired height. (Figure 4-6).



**Figure 4-6 Adjusting Cutting Height**

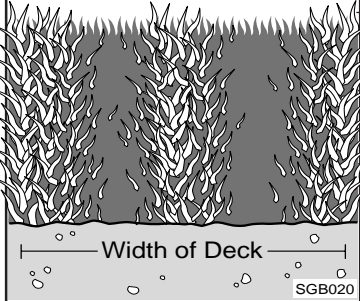
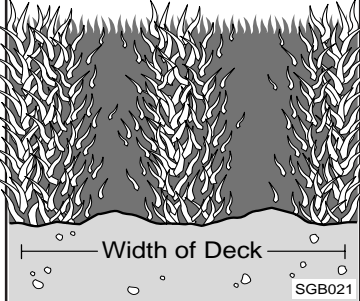
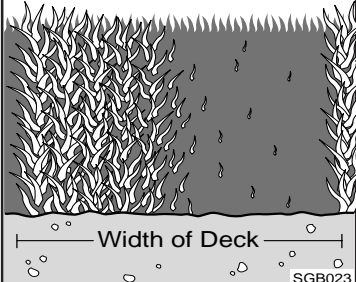


**Figure 4-7 Deck Release Lever**

## TROUBLESHOOTING CUTTING CONDITIONS

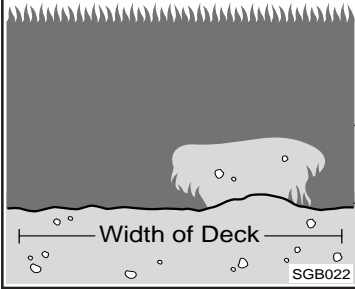
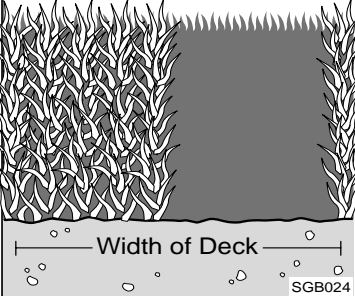
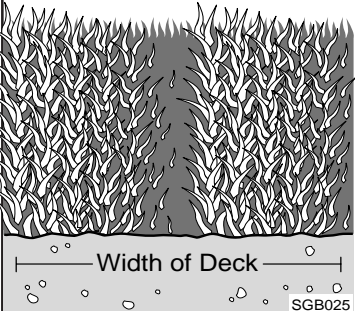
CONDITION	CAUSE	CURE
<p><b>Stringers - Occasional Blades of Uncut Grass</b></p> <p style="text-align: right; font-size: small;">SGB020</p>	Low engine RPM	Run engine at full RPM
	Ground speed too fast	Slow speed to adjust for conditions
	Wet grass	Cut grass after it has dried out
	Dull blades, incorrect sharpening	Sharpen blades
	Deck plugged, grass accumulation	Clean underside of deck
	Belts slipping	Adjust belt tension
<p><b>Streaking - Strips of Uncut Grass in Cutting Path</b></p> <p style="text-align: right; font-size: small;">SGB018</p>	Dull, worn blades	Sharpen blades
	Incorrect blade sharpening	Sharpen blades
	Low engine RPM	Run engine at full RPM
	Belt slipping	Adjust belt tension
	Deck plugged, grass accumulation	Clean underside of deck
	Ground speed too fast	Slow speed to adjust for conditions
	Wet grass	Cut grass after it has dried out
	Bent blades	Replace blades
<p><b>Streaking - Strips of Uncut Grass Between Cutting Paths</b></p> <p style="text-align: center; font-size: small;">SGB019</p>	Not enough overlapping between rows	Increase the overlap of each pass

### TROUBLESHOOTING (CONT'D)

CONDITION	CAUSE	CURE
<p><b>Uneven Cut on Flat Ground - Wavy High-Low Appearance, Scalloped Cut, or Rough Contour</b></p>  <p>Width of Deck SGB020</p>	Lift worn from blade	Replace blade
	Blade upside down	Mount with cutting edge toward ground
	Deck plugged, grass accumulation	Clean underside of deck
	Too much blade angle (deck pitch)	Adjust pitch and level
	Deck mounted improperly	See your authorized SCAG dealer
	Bent spindle area	See your authorized SCAG dealer
	Dull blade	Sharpen blade
<p><b>Uneven Cut on Uneven Ground - Wavy Appearance, High-Low Scalloped Cut, or Rough Contour</b></p>  <p>Width of Deck SGB021</p>	Uneven ground	May need to reduce ground speed, raise cutting height, and/or change direction of cut
<p><b>Sloping Ridge Across Width of Cutting Path</b></p>  <p>Width of Deck SGB023</p>	Tire pressures not equal	Check and adjust tire pressure
	Wheels uneven	Check and adjust tire pressure
	Deck mounted incorrectly	See your authorized SCAG dealer
	Deck not level side-to-side	Check for level and correct



**TROUBLESHOOTING (CONT'D)**

CONDITION	CAUSE	CURE
<p><b>Scalping - Blades Hitting Dirt or Cutting Very Close to the Ground</b></p>  <p style="text-align: right; font-size: small;">SGB022</p>	Low tire pressures	Check and adjust pressures
	Ground speed too fast	Slow speed to adjust for conditions
	Cutting too low	May need to reduce ground speed, raise cutting height, change direction of cut, and/or change pitch and level
	Rough terrain	May need to reduce ground speed, raise cutting height, and/or change direction of cut
	Ground speed too fast	Slow speed to adjust for conditions
	Wet grass	Cut grass after it has dried out
<p><b>Step Cut - Ridge in Center of Cutting path</b></p>  <p style="text-align: right; font-size: small;">SGB024</p>	Blades not mounted evenly	Adjust pitch and level
	Bent blade	Replace blade
	Internal spindle failure	See your authorized SCAG dealer
	Mounting of spindle incorrect	See your authorized SCAG dealer
<p><b>Slope Cut - Sloping Ridges Across Width of Cutting Path</b></p>  <p style="text-align: right; font-size: small;">SGB025</p>	Bent spindle mounting area	See your authorized SCAG dealer
	Internal spindle failure	See your authorized SCAG dealer
	Bent deck housing	See your authorized SCAG dealer

### ADJUSTMENTS

#### 6.1 PARKING BRAKE ADJUSTMENT

### WARNING:

Do not operate the mower if the parking brake is not operable. Possible severe injury could result.

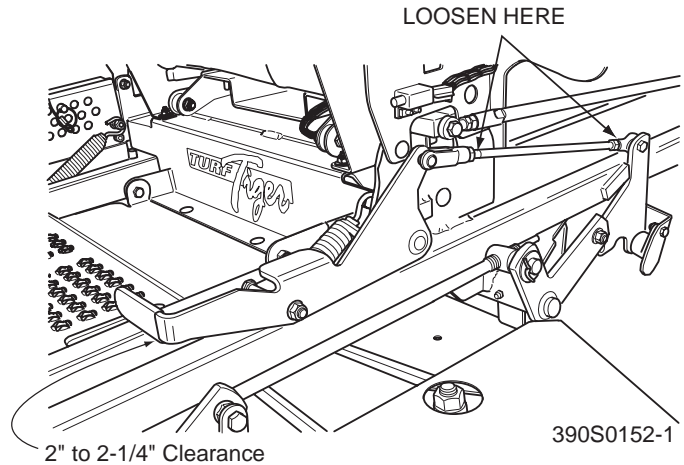
The parking brake linkage should be adjusted whenever the parking brake lever is placed in the “ENGAGE” position and the parking brake will not prevent the mower from moving. If the following procedures do not allow you to engage the parking brake properly, contact your Scag dealer for further brake adjustments.

1. Position a floor jack under the rear of the machine. Raise the machine and support it to prevent it from falling. Block the caster wheels to prevent the machine from moving. Remove the drive wheels.
2. With the brake lever in the disengaged position, check the distance between the top of the frame tube and the bottom of the brake handle. The distance should be 2" to 2-1/4" (See Figure 6-1).
3. If the distance is not at the specified measurement, adjust by loosening the jam nuts at both ends of the brake control rod and turning the rod until the proper distance is achieved. (See Figure 6-1). Tighten the jam nuts.
4. With the brake in the engaged position, check the distance between the lower nut on the brake actuator rod and the brake actuator lever on the LH side of the machine. The distance should be 1/8" (See Figure 6-2).
5. If the distance is not at the specified measurement, loosen the jam nut at the clevis on the top of the brake actuator rod (See Figure 6-2).
6. Turn the bolt at the bottom of the brake actuator lever until the 1/8" measurement is achieved and tighten the jam nut at the clevis on the brake actuator rod. (See Figure 6-2).

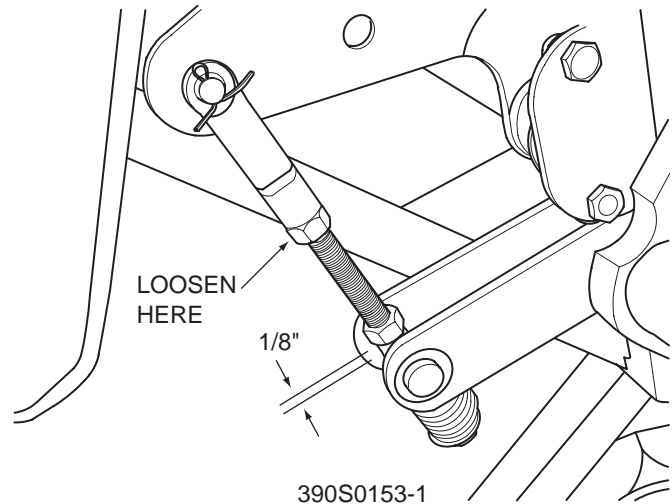
7. Repeat steps 4-6 on the RH side of the machine.
8. Replace the drive wheels and test the brake.

**-NOTE-**

If this procedure does not achieve proper brake adjustment, please contact your authorized Scag dealer.



**Figure 6-1. Brake Adjustment**



**Figure 6-2. Brake Rod Adjustment**

#### 6.2 TRAVEL ADJUSTMENTS

Neutral or tracking adjustments will need to be made if:

- A. The steering control levers are in the neutral position and the machine creeps forward or backward. (Neutral Adjustment, See Page 21).

## Section 6

- B. The steering control levers are in the full forward position and the mower pulls to one side or the other when traveling in a forward direction. (Tracking Adjustment, See Page 23).

### Neutral Adjustment

1. Be sure the dump valve levers are in the run position and the steering control levers are in the neutral lock position.
2. With an operator in the seat, start the engine and disengage the parking brake.
3. Run the engine at full operating speed and check if the machine creeps forward or backwards.
4. Adjust the RH wheel by loosening the jam nuts on the steering control rod and turning the rod until the drive wheel turns in the forward direction. Turn the rod back until the drive wheel stops moving. Turn the rod an additional 1/2 turn. (See Figure 6-3).
5. Tighten the jam nuts and repeat for the LH wheel. (See Figure 6-4).
6. Actuate the steering control levers forward and reverse several times and return them to the neutral position.
7. Check that the drive wheels remained in neutral and readjust if necessary.
8. Check that the steering control levers hit the stop before the pumps reach full stroke. Adjust as needed.

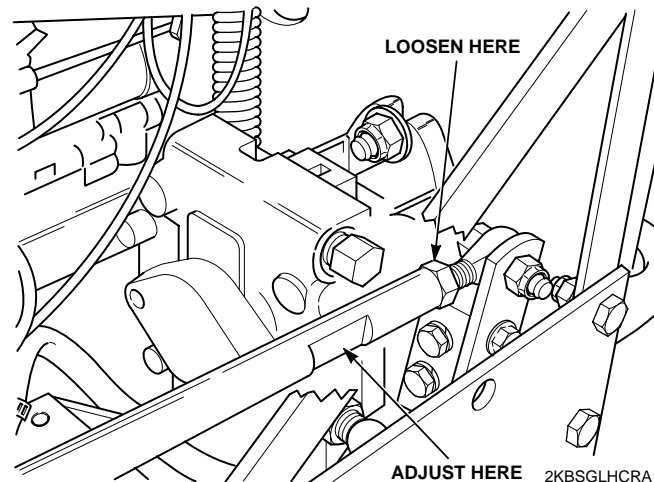
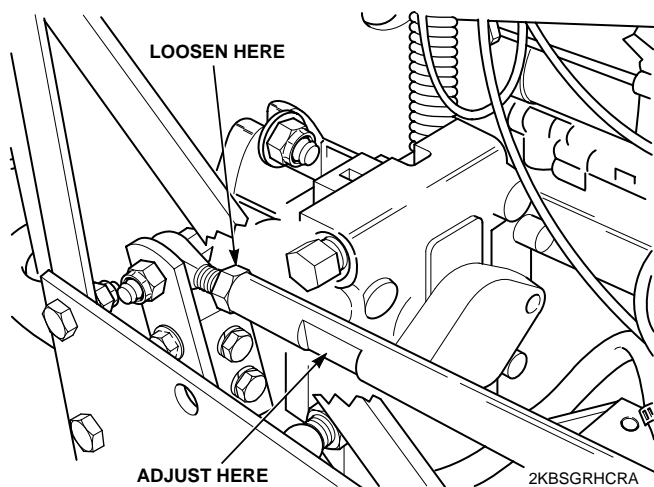
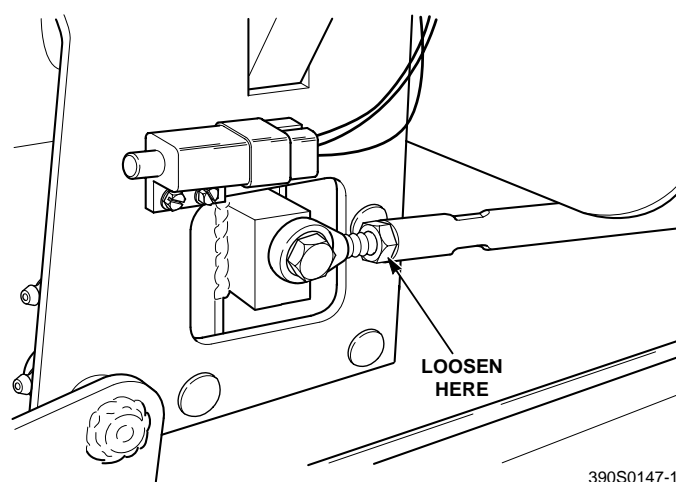
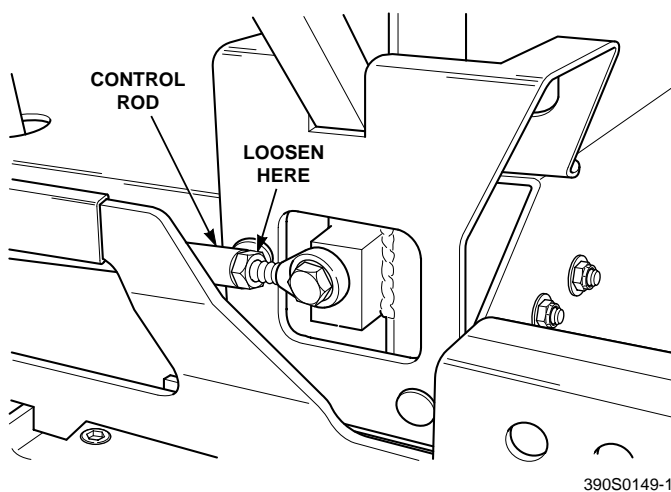


Figure 6-3. RH Steering Control Rod Adjustment

Figure 6-4. LH Steering Control Rod Adjustment

### Tracking Adjustment

#### **CAUTION:**

Stop the engine and remove the key from the ignition before making any adjustments. Wait for all moving parts to come to a complete stop before beginning work.

#### **CAUTION:**

The engine and drive unit can get hot during operation causing burn injuries. Allow engine and drive components to cool before making any adjustments.

**-NOTE-**

*Before proceeding with this adjustment, be sure that the caster wheels turn freely and that the tire pressure in the drive wheels is correct. If the tire pressure is not correct, the machine will pull to the side with the lower pressure.*

1. If at full speed the mower pulls right, it is an indication that the left wheel is turning faster than the right wheel. To adjust this condition, proceed as follows:
  - A. Stop the machine and place the steering control levers in the neutral position. Loosen the lock nuts securing the ball joints at each end of the LH steering control rod. Rotate the control rod to lengthen the rod and tighten the lock nuts. This will cause the control rod to stroke the LH pump less, slowing down the LH wheel. (See Figure 6-4)

**-NOTE-**

*If after making the adjustment as outlined in step 1A, the machine creeps forward or backward, the neutral adjustment must be made as described on page 21.*

2. If at full speed the mower pulls left, it is an indication that the right wheel is turning faster than the left wheel. To adjust this condition, proceed as follows:

- A. Stop the machine and place the steering control levers in the neutral position. Loosen the lock nuts securing the ball joints at each end of the RH steering control rod. Rotate the control rod to lengthen the rod and tighten the lock nuts. This will cause the control rod to stroke the RH pump less, slowing down the RH wheel. (See Figure 6-3)

**-NOTE-**

*If after making the adjustment as outlined in step 2A, the machine creeps forward or backward, the neutral adjustment must be made as described on page 21.*

### 6.3 THROTTLE CONTROL

These adjustments must be performed by your Scag dealer to ensure proper and efficient running of the engine. Should either need adjustment, contact your authorized Scag service center.

### 6.4 BELT ADJUSTMENT

#### **WARNING:**

**Before removing any guards, shut the engine off and remove the ignition key.**

All drive belts and cutter deck belts are spring-loaded and self-tensioning. The belts should be checked periodically for proper alignment and wear.

### 6.5 BELT ALIGNMENT

Belt alignment is important for proper performance of your Scag mower. If you experience frequent belt wear or breakage, see your authorized Scag service center for belt adjustment.

### 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.

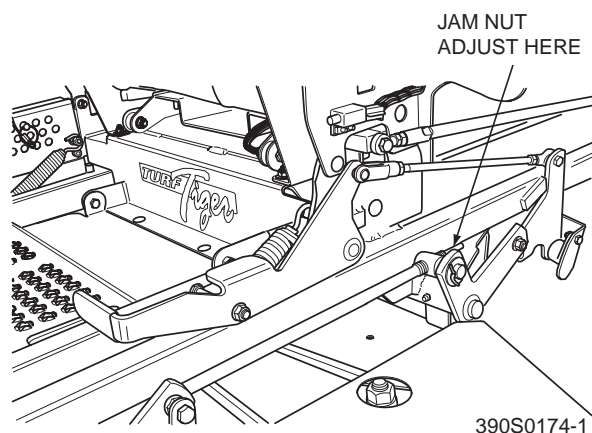
**-NOTE-**

*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. (See Figure 6-5)



**Figure 6-5. Cutter Deck Adjustment**

2. Loosen the elastic stop 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 elastic stop nut to secure the cutter deck in the proper position.

#### Cutter Deck Pitch

The pitch of the cutter deck should be equal between the front and rear 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. Use the following procedures, however, measure from the top of the cutter deck rather than the bottom edge. Lay a straight edged object on the top of the Advantage cutter deck, protruding towards the front of the machine, when measuring the front height.

Check the distance from the top 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 top 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 equal to 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 equal to the rear, the cutter deck pitch must be adjusted as follows:

1. Loosen the jam nuts on both adjusting rods. (See Figure 6-5)
2. Using a wrench on the spring compression 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.

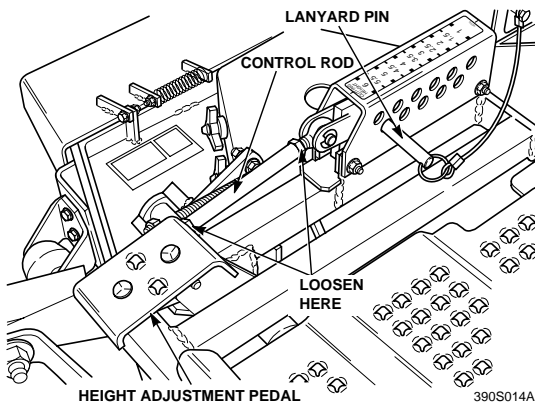
**-NOTE-**

*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

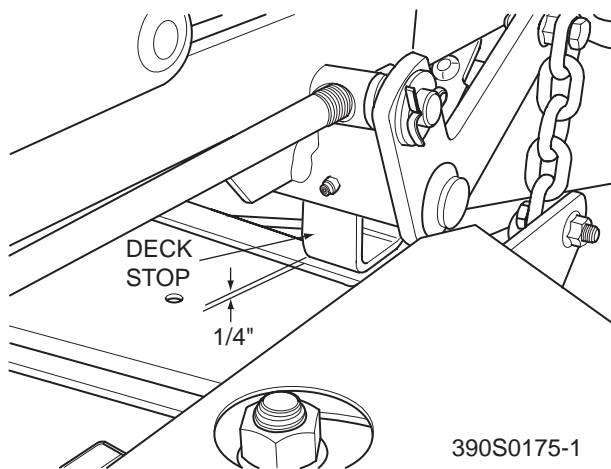
The cutter deck height adjustment is made to ensure that the cutter deck is cutting at the height indicated on the cutting height index gauge. To check for proper deck height, be sure that the mower is on a flat, level surface and the tires are properly inflated.

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 has to be made, be sure that the cutter deck can easily be locked into the transport position.*

### Custom-Cut Baffle Adjustment

The Custom-Cut Baffle is designed to deliver optimum airflow and superior cutting performance in any type of grass. The Custom-Cut Baffle can be raised or lowered to precisely tailor the deck's performance for the type of grass being cut. The baffle can be set in three (3) different positions for optimum performance.

- A. 3" Position - baffle is installed using the top set of holes on the front baffle welded inside the cutter deck. (See Figure 6-9). The Advantage cutter deck will deliver the best quality-of-cut in very tall, wiry, tough to cut grass.
- B. 3-1/2" Position (factory setting) - baffle is installed using the middle set of holes on the front baffle welded inside the cutter deck. (See Figure 6-10). For general purpose cutting, place the Custom Cut Baffle in the 3-1/2" position. This gives the best mix of cutting performance in all types of grass.
- C. 4" Position - baffle is installed using the bottom set of holes on the front baffle welded inside the cutter deck. (See Figure 6-11). Placing the baffle in the 4" setting will enhance fall cutting (leaf pickup) and reduce cutter deck "blowout".

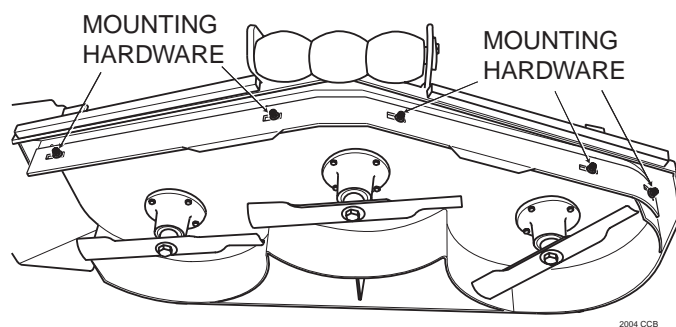
## Section 6

To adjust the Custom-Cut Baffle height:

1. Place the cutter deck in the transport position.
2. Remove the hardware securing the Custom-Cut Baffle to the cutter deck. (See Figure 6-8).

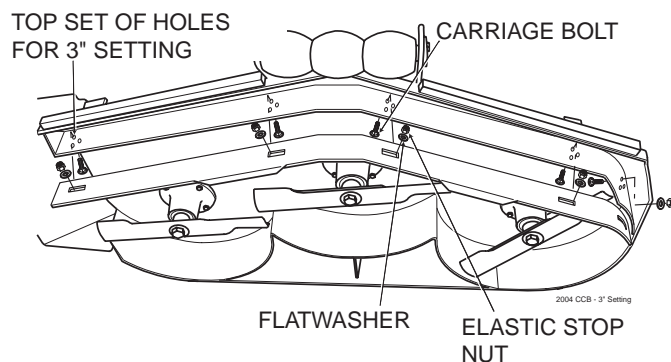
**-NOTE-**

Hardware location used in the illustrations are for reference only. Location of hardware may vary depending on cutter deck size.

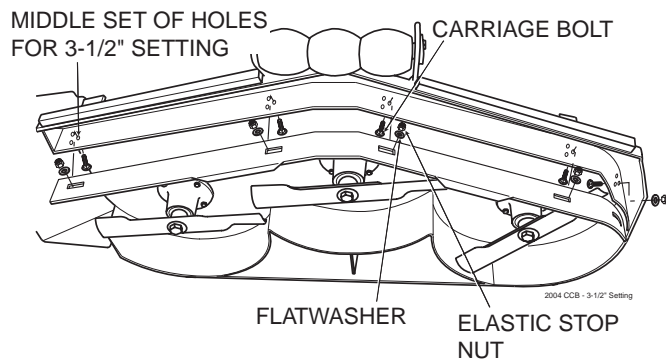


**Figure 6-8. Custom-Cut Baffle**

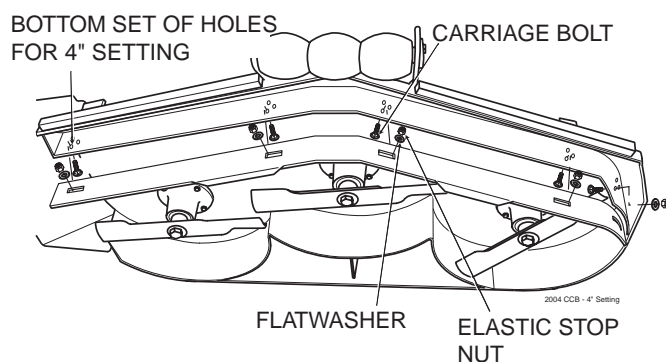
3. Move the Custom-Cut Baffle to desired position. (See Figures 6-9 through 6-11 for position).
4. Reinstall the mounting hardware as shown. (See Figures 6-10 through 6-11). Torque hardware to 39ft.lbs.



**Figure 6-9. 3" Custom-Cut Baffle Position**



**Figure 6-10. 3-1/2" Custom-Cut Baffle Position**



**Figure 6-11. 4" Custom-Cut Baffle 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)**

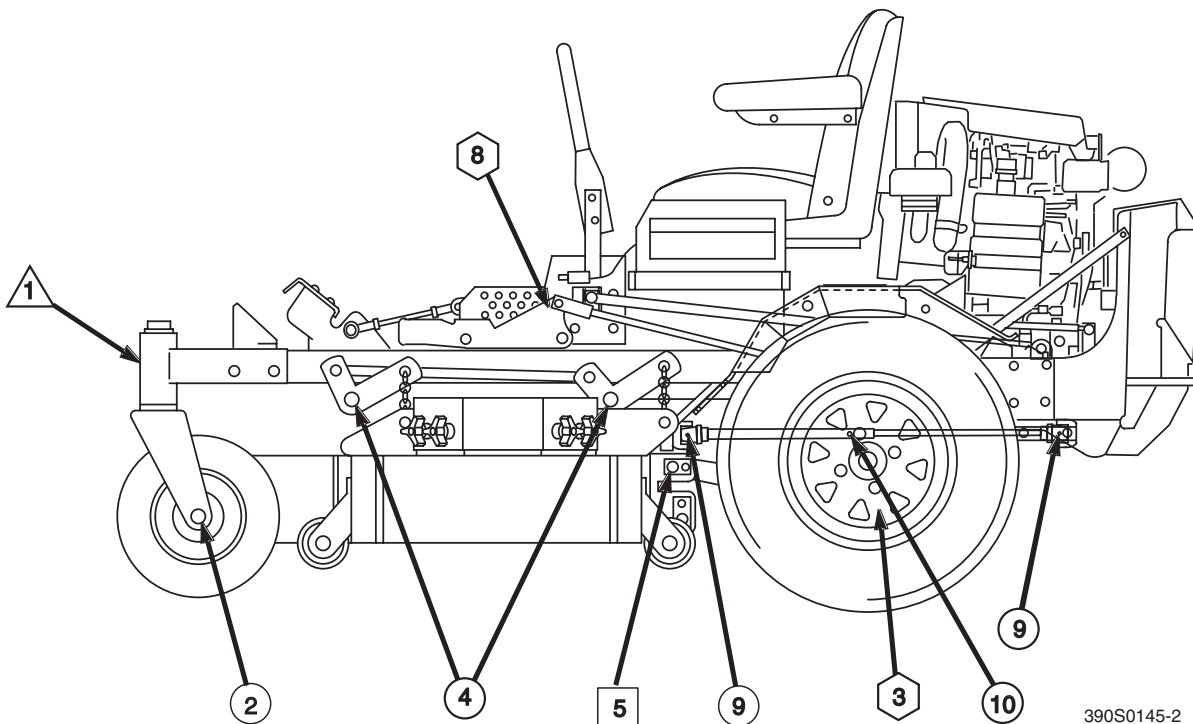
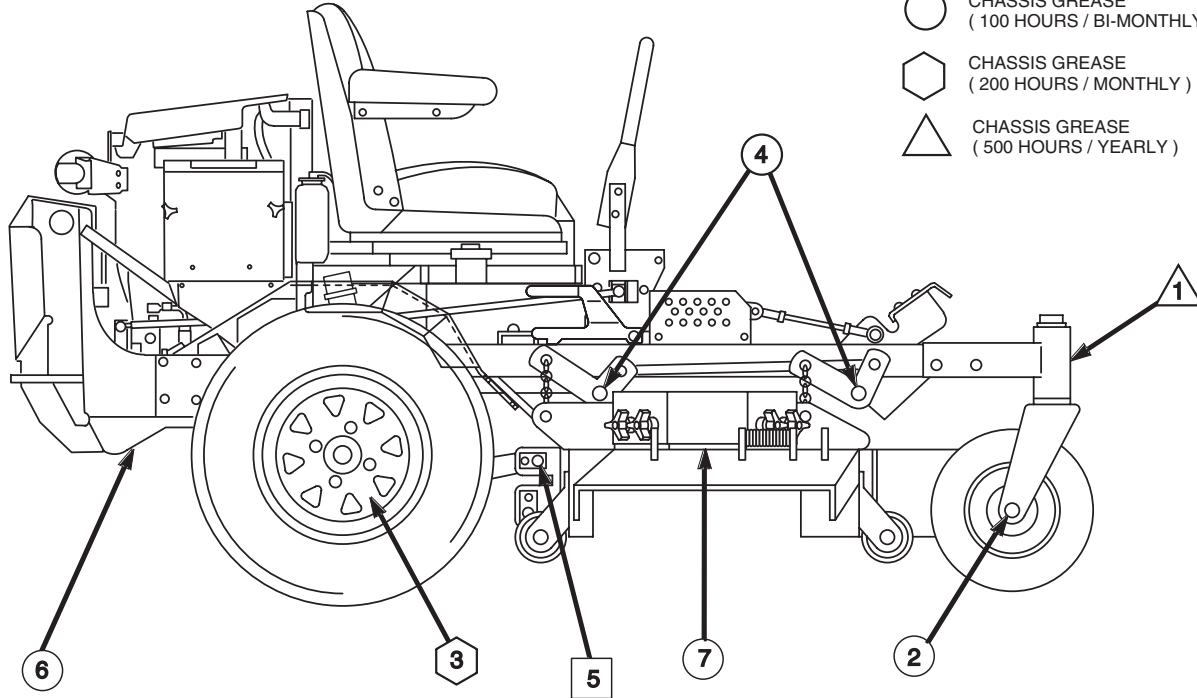
LOCATION	LUBRICATION INTERVAL	LUBRICANT	NO. OF PLACES
1 Caster Wheel Pivot	500 Hours/Yearly	Chassis Grease	2
2 Caster Wheel Bearings	100 Hours/Bi-Weekly	Chassis Grease	2
3 Brake Actuator	200 Hours/Monthly	Chassis Grease	2
4 Cutter Deck Bellcranks	40 Hours/Weekly	Chassis Grease	4
5 Cutter Deck Pusharms	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

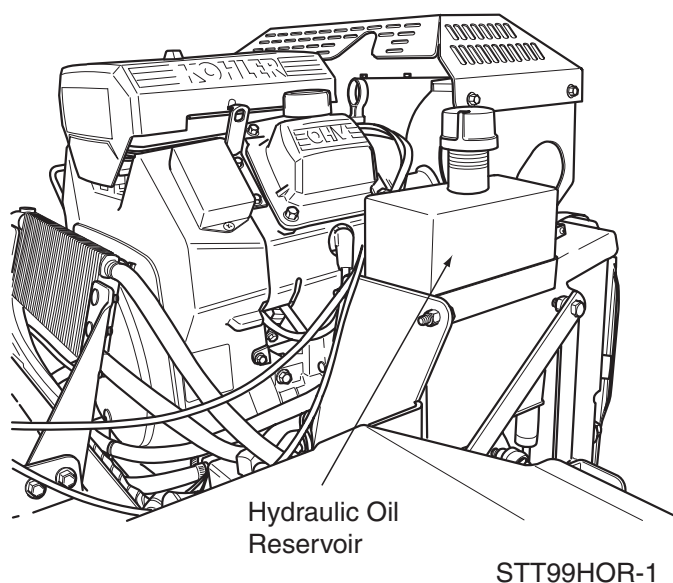
#### A. Checking Hydraulic Oil Level

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" 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-***

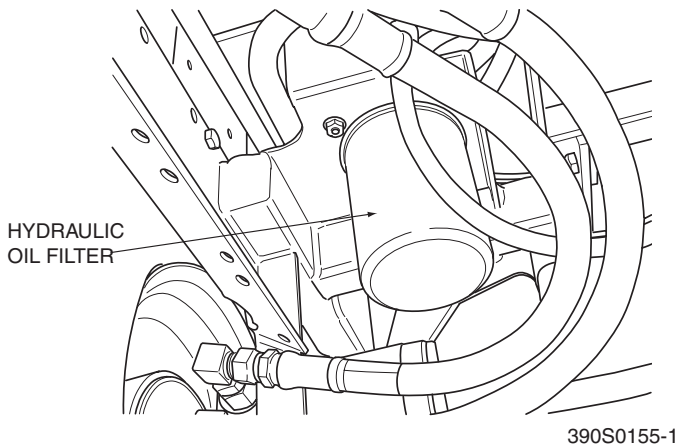
*The hydraulic oil should be changed if you notice the presence of water or a rancid odor to the hydraulic oil.*

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" 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.



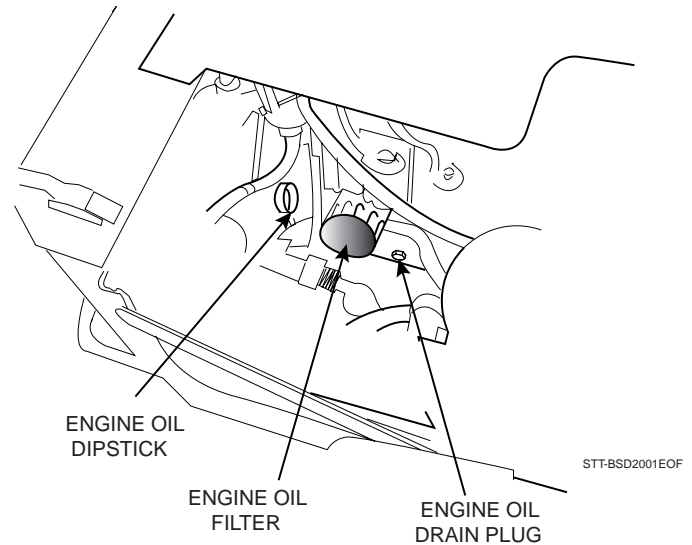
**Figure 7-3 Hydraulic Oil Filter**

### C. Changing Hydraulic Oil Filter Element

The hydraulic oil filter should be changed after every 500 hours of operation or annually, whichever occurs first.

1. Remove the oil filter element (Figure 7-3) and properly discard it. Fill the new filter with clean oil and install the filter. Hand tighten only.
2. Run the engine at idle speed with the speed control lever in neutral for five minutes.
3. Check the oil level in the hydraulic tank. It must be 3" inches from the top of the filler neck. If necessary, add SAE 20W50 motor oil.

## 7.4 ENGINE OIL



**Figure 7-4 Engine Dipstick, Filter, Oil Drain**

### A. Checking Engine Crankcase Oil Level

The engine oil level should be checked after every 8 hours of operation or daily as instructed in the Engine Operator's Manual furnished with this mower (See Figure 7-4).

### B. Changing Engine Crankcase Oil

After the first 5 hours of operation, change the engine crankcase oil and replace the oil filter. Thereafter, change the engine crankcase oil after every 100 hours of operation or bi-weekly, whichever occurs first. Refer to the Engine Operator's Manual furnished with this mower for instructions (See Figure 7-4).

### C. Changing Engine Oil Filter

After the first 5 hours of operation, replace the engine oil filter. Thereafter, replace the oil filter after every 200 hours of operation or every month, whichever occurs first. Refer to Engine Operator's Manual for instructions (See Figure 7-4).

## Section 7

### 7.5 ENGINE FUEL SYSTEM

#### **! DANGER:**

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

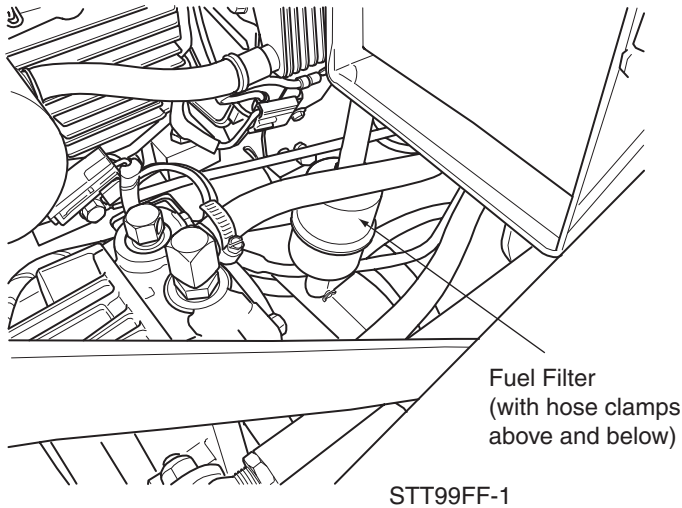


Figure 7-5 Fuel Filter

#### A. Filling the Fuel Tank

Fill the fuel tank at the beginning of each operating day to within one inch below the filler neck. Do not overfill. Use clean, fresh diesel fuel with a minimum cetane rating of 40.

#### B. Replacing In-Line Fuel Filter Element

##### **-NOTE-**

The fuel filter is located below the hydraulic tank. Figure 7-5 is for illustration purposes only.

The in-line fuel filter (Figure 7-5) should be replaced after every 500 hours of operation or annually, whichever occurs first.

1. Close the shut-off valve. Remove the two clamps securing the fuel filter to the fuel hose. Remove the fuel filter.

2. Install a new fuel filter. Be sure it is installed in the proper direction. Secure to the fuel hose using the two clamps.

### 7.6 ENGINE AIR CLEANER

#### A. Cleaning and/or Replacing Air Cleaner Element

For any air cleaner, the operating environment dictates the air cleaner service periods. To make it convenient for you we have installed an "Air Cleaner Indicator" which is located just behind the air filter. The indicator window will turn red when it is time to service the air filter. Do not service the filter unless this indicator is red.

##### **-NOTE-**

In extremely dusty conditions it may be necessary to check the indicator daily to prevent engine damage.

1. Snap open the two clips securing the air cleaner cover to the air cleaner box. Remove the air cleaner cover, clean the duck bill vent of any dust and set the cover aside.
2. Remove the air cleaner element and inspect.
3. Clean or replace the element as recommended by the engine manufacturer.
4. Replace the air filter cover and be sure to snap the two clips closed.
5. Reset the air cleaner indicator by pushing the button on the end of the indicator. The indicator window should return to clear.

### 7.7 BATTERY

#### **! WARNING:**

Lead-acid batteries produce flammable and explosive gases. To avoid personal injury when checking, testing or charging batteries, DO NOT use smoking materials near batteries. Keep arcs, sparks and flames away from batteries. Provide proper ventilation and wear safety glasses.

### **WARNING:**

Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to cause cancer and reproductive harm. Wash hands after handling.

### **WARNING:**

Electric storage battery fluid contains sulfuric acid which is **POISON** and can cause **SEVERE CHEMICAL BURNS**. Avoid contact of fluid with eyes, skin, or clothing. Use proper protective gear when handling batteries. **DO NOT** tip any battery beyond 45° angle in any direction. If fluid contact does occur, follow first aid suggestions below.

#### BATTERY ELECTROLYTE FIRST AID

**EXTERNAL CONTACT** — Flush with water.

**EYES** — Flush with water for at least 15 minutes and get medical attention immediately.

**INTERNAL** — Drink large quantities of water. Follow with Milk Of Magnesia, beaten egg, or vegetable oil. Get medical attention immediately. In case of internal contact, **DO NOT** give fluids that would induce vomiting.

## B. Charging the Battery

Refer to the battery charger's manual for specific instructions.

Under normal conditions the engine's alternator will have no problem keeping a charge on the battery. If the battery has been completely discharged for a long period of time, the alternator may not be able to recharge the battery, and a battery charger will be required.

**DO NOT** charge a frozen battery. It may explode and cause injury. Let the battery warm before attaching a charger.

Whenever possible, remove the battery from the mower before charging and make sure the electrolyte covers the plates in all cells.

### **WARNING:**

**BATTERIES PRODUCE EXPLOSIVE GASES.** Charge the battery in a well ventilated space so gases produced while charging can dissipate.

Charging rates between 3 and 50 amperes are satisfactory if excessive gassing or spewing of electrolyte does not occur or the battery does not feel excessively hot (over 125°F). If spewing or gassing occurs or the temperature exceeds 125°F, the charging rate must be reduced or temporarily stopped to permit cooling.

## C. Jump Starting

1. The booster battery must be a 12 volt type. If a vehicle is used for jump starting, it must have a negative ground system.
2. When connecting the jumper cables, connect the positive cable to the positive battery post, then connect the negative cable to the negative battery post.

## Section 7

### 7.8 DRIVE BELTS

All drive belts are spring loaded and self-tensioning, however after the first 2, 4, 8 and 10 hours of operation, the belts should be checked for proper alignment and wear. Thereafter, check the belts after every 40 hours of operation or weekly, whichever occurs first.

**-NOTE-**

*If you experience frequent belt wear or breakage, see your authorized Scag service center for belt adjustment.*

### 7.9 CUTTER BLADES

#### A. Blade Inspection

1. Remove the ignition key before servicing the blades.
2. Raise the mower deck to the highest position. Place the lanyard pin in the highest cutting height position to prevent the cutter deck from falling.

**! WARNING:**

**Always wear proper hand and eye protection when working with cutter blades.**

3. Check the cutter blades for straightness. If the cutter blades appear bent, they will need to be replaced.

**! WARNING:**

**Do not attempt to straighten a bent blade, and never weld a broken or cracked blade. Always replace it with a new blade to assure safety.**

4. If a blade cutting edge is dull or nicked, it should be sharpened. Remove the blades for sharpening. See "Blade Replacement."

**-NOTE-**

*Keep the blades sharp. Cutting with dull blades not only yields a poor mowing job, but slows the cutting speed of the mower and causes extra wear on the engine and the blade drive by pulling hard.*

#### B. Blade Sharpening

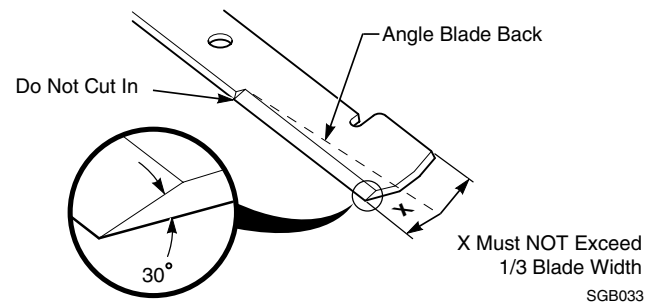
**-NOTE-**

*If possible, use a file to sharpen the blade. Using a wheel grinder may burn the blade.*

**-NOTE-**

*DO NOT sharpen the blades beyond 1/3 of the width of the blade. See Figure 7-9, Page 33.*

1. Sharpen the cutting edge at the same bevel as the original. See Figure 7-9, Page 33. Sharpen only the top of the cutting edge to maintain sharpness.



**Figure 7-9 Blade Sharpening**

2. Check the balance of the blade. If the blades are out of balance, vibration and premature wear can occur. See your authorized Scag dealer for blade balancing or special tools, if you choose to balance your own blades.

#### C. Blade Replacement

**! WARNING:**

**Always wear proper hand and eye protection when working with cutter blades.**

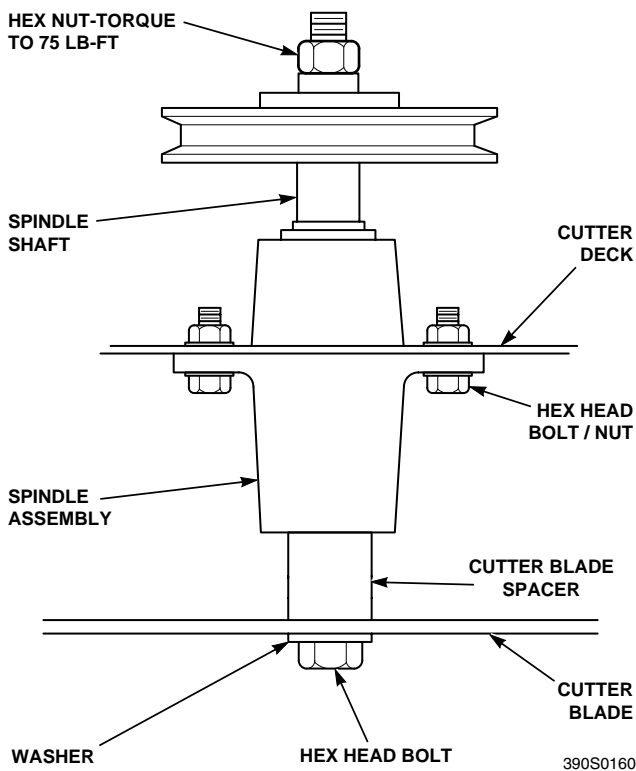
1. Remove the ignition key before replacing the blades.
2. Raise the mower deck to the highest position. Place the lanyard pin in the highest cutting height position to prevent the cutter deck from falling.

- Secure the cutter blades to prevent them from rotating, (use the optional Blade Buddy tool, P/N 9212, to assist in securing the cutter blades), remove the nut from the blade attaching bolt. Remove the cutter blade, bolt and spacer from the spindle shaft. (Figure 7-10)

**-NOTE-**

*The front of the machine will have to be raised slightly to remove the blade bolt from the cutter spindle.*

- To install the new cutter blade, put the flat washer onto the blade bolt and slide the bolt into the hole in the cutter blade.



**Figure 7-10 Blade Replacement**

**-NOTE-**

*Be sure that the blade is installed with the lift wing toward the top.*

- Install the spacer onto the blade bolt and insert the bolt into the cutter spindle shaft.

- Install the hex nut to the blade bolt at the top of the cutter spindle. Secure the blades from rotating and torque to 75 ft-lbs. (See Figure 7-10)

### 7.10 TIRES

Check the tire pressures after every 8 hours of operation or daily.

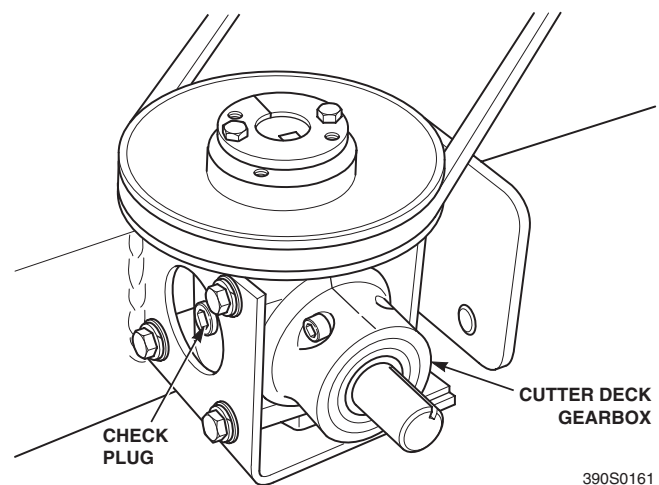
Caster Wheels .....	25 PSI
Drive Wheels .....	12 PSI

### 7.11 CUTTER DECK GEARBOX

#### A. Checking Lubricant Level

**⚠ CAUTION:**

The cutter deck gearbox can reach high operating temperatures. Allow the cutter deck gearbox to cool before servicing.



**Figure 7-12 Cutter Deck Gearbox**

The fluid level in the cutter deck gearbox (Figure 7-12) should be checked after every 100 hours of operation or bi-weekly, whichever occurs first.

- Lower the cutter deck to its lowest position to gain access to the cutter deck gearbox.



## Section 7

- Clean and remove the check plug from the side of the gearbox (See Figure 7-12). Visually check that the lubricant level is up to the bottom edge of the check plug hole. If lubricant is low, add SAE 80/90 lubricant through the check plug hole in the gearbox until it is level with the bottom of the check plug hole. Install the check plug and tighten securely.

### B. Changing Lubricant

The lubricant in the cutter deck gearbox should be changed every 500 hours of operation or yearly, whichever occurs first.

- Place a suitable container beneath the cutter deck gearbox and locate the gearbox drain plug.
- Remove the drain plug and drain the lubricant into the container and properly discard it.
- Re-install the drain plug and add EP-80/90 lubricant through the check plug hole in the gearbox until it is level with the bottom of the check plug hole. Install the check plug and tighten securely.

### 7.12 COOLING SYSTEM

#### **WARNING:**

To avoid burns, always allow the engine to cool before removing the radiator cap.

#### A. Checking Coolant Level

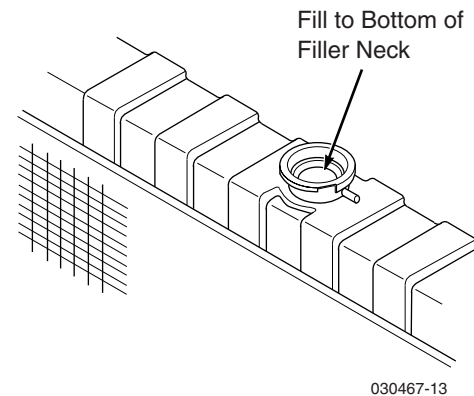
The coolant level should be checked before each day of operation.

- Remove the radiator cap by turning it slowly counterclockwise to the first stop and allow any pressure to be released. Push down on the cap and turn counterclockwise to remove.

- Visually check the coolant level. The coolant level should be up to the bottom of the filler neck as shown in figure 7-13. Add a mixture of coolant and soft water as needed.

#### **-NOTE-**

Refer to the coolant manufacturer's instructions for the proper coolant mixture ratio.



**Figure 7-13 Coolant Level in Radiator**

- Replace the radiator cap. Push down on the cap and turn clockwise until it stops.

#### **-NOTE-**

The cooling system should be flushed and the coolant replaced every 500 hours of operation or annually. See your Scag dealer for proper coolant replacement.

#### B. Cleaning the Radiator Debris Screen

After each day of operation, remove and clean the radiator debris screen.

#### **CAUTION:**

To avoid personal injury, always wear safety glasses when using compressed air.

- Pull the debris screen up to remove.
- Clean the debris screen with compressed air or a water hose.

**-NOTE-**

*Check the radiator for excessive debris and clean with compressed air. Never spray a hot engine with water; use only compressed air to remove debris.*

3. Re-install the debris screen to the radiator.

### C. Checking The Fan Belt Tension

Periodically check the fan belt tension. The belt should deflect 1/2" with 10 pounds of pressure. See your Scag dealer if the belt is in need of adjustment or replacement.

### 7.13 BODY, DECK, AND UPHOLSTERY



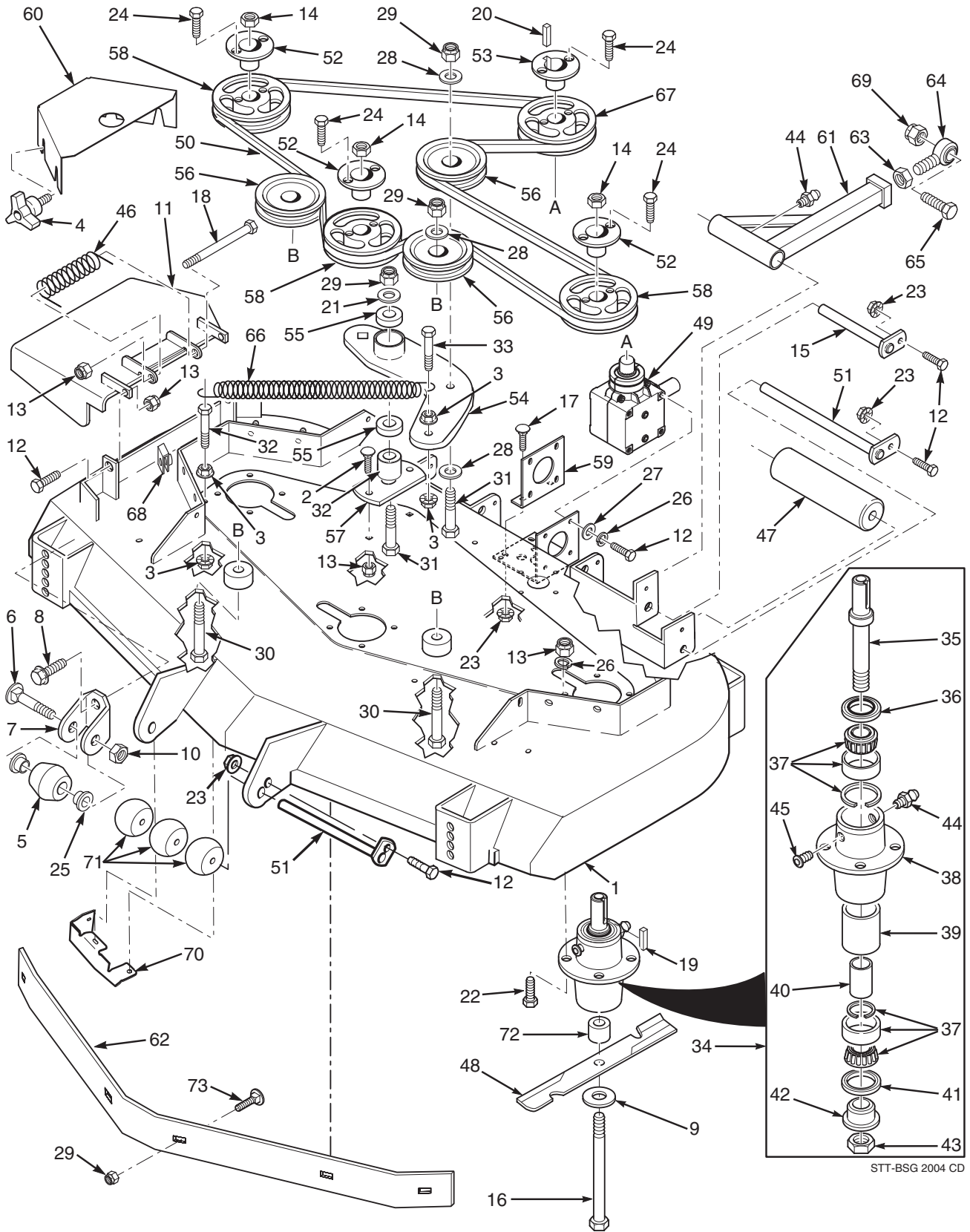
#### **CAUTION:**

**Do not wash any portion of the equipment while it is hot. Do not wash the engine; use compressed air.**

1. After each use, wash the mower and cutter deck. Use cold water and automotive cleaners. Do not use pressure cleaners.
2. Do not spray electrical components.
3. Use a mild soap solution or a vinyl/rubber cleaner to clean the seat.
4. Repair damaged metal surfaces using Scag touch-up paint available from your authorized Scag dealer. Wax the mower for maximum paint protection.

**NOTES**

## 61A, 72A CUTTER DECKS

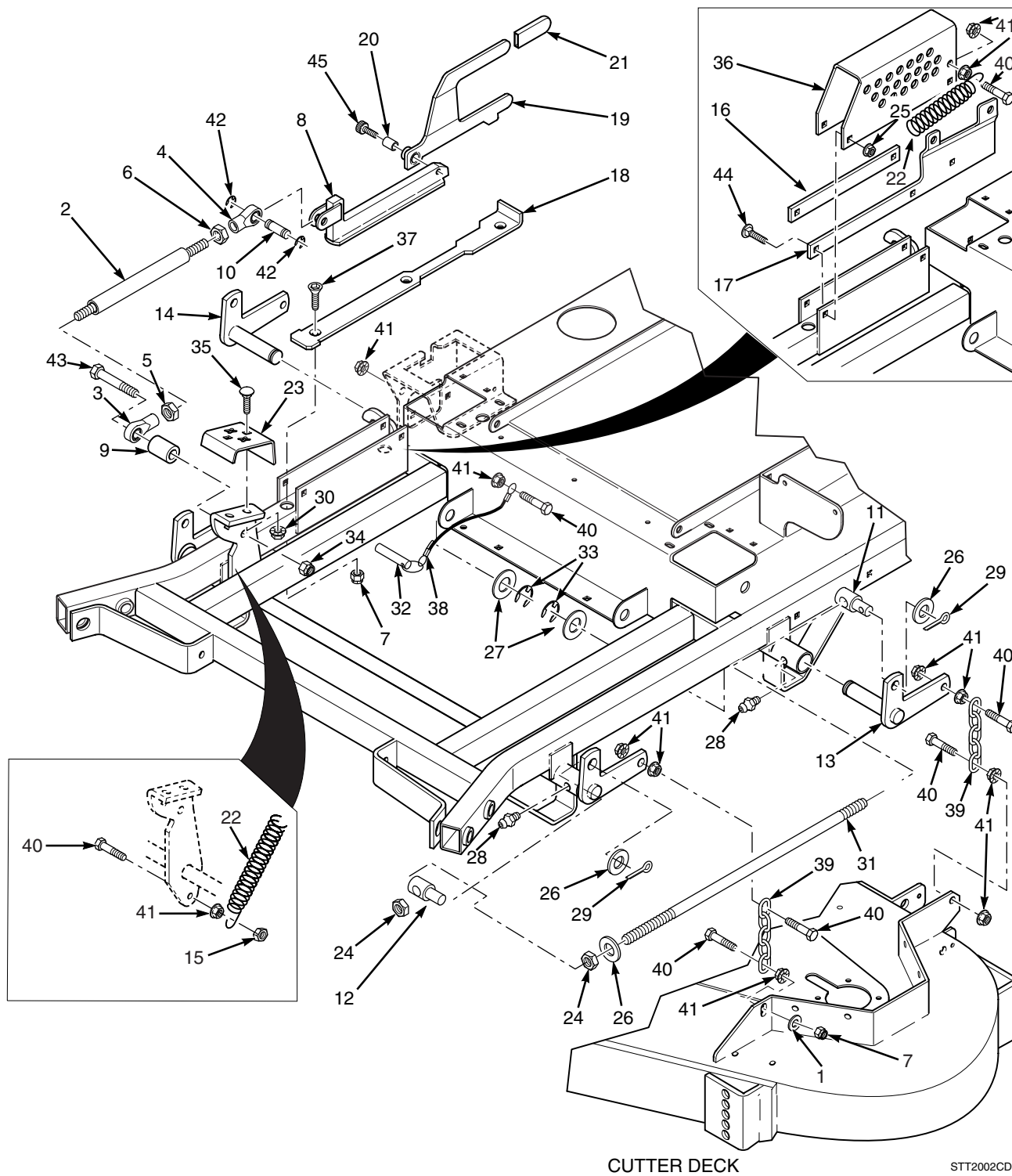


STT-BSG 2004 CD

## 61A, 72A CUTTER DECKS

Ref. Part No. No.	Description	Ref. Part No. No.	Description	
1	461657	Cutter Deck, 61" Advantage (Includes Decals)	43 481035	Nut, Special 1 - 1/16-18
1	461659	Cutter Deck, 72" Advantage (Includes Decals)	44 48114-04	Grease Fitting
2	04003-04	Bolt, Carriage 5/16-18 x 1"	45 48677	Relief Fitting, Tapered Spindle
3	04019-04	Nut, Hex Serrated Flange 3/8-16	46 482245	Spring, Discharge Chute
4	481625-01	Wing nut, 3/8-16	47 48038	Guide, Roller
5	481632	Anti-Scalp Wheel	48 482881	Cutter Blade, 21.0" 61"
6	04003-26	Bolt, Carriage 3/8-16 x 4"	482882	Cutter Blade, 24.5" 72"
7	422478	Anti-Scalp Wheel Bracket	49 482486	Gearbox Assembly, Deck Drive
8	04017-27	Bolt, Hex Serrated Flange 3/8-16 x 1"	50 481558	Belt, Cutter Deck Drive, 61"
9	04043-06	Flatwasher, 5/8" (.688 x 1.75 x .134)	50 481980	Belt, Cutter Deck Drive, 72"
10	04021-05	Locknut, 3/8-16 Center Lock	51 45944	Roller Shaft
11	461296	Discharge Chute, 61" & 72" Adv.	52 48926	Tapered Hub, 1-1/8" Bore
12	04001-12	Bolt, Hex Head 5/16-18 x 1.75" (Front)	53 48141	Tapered Hub, 1" Bore
	04001.11	Bolt, Hex Head 5/16-18 x 1.50" (Rear)	54 461174	Idler Arm, Cutter Deck
13	04021-10	Nut, Hex Elastic Stop 5/16-18	55 48224	Bearings, Ball
14	04020-09	Nut, 5/8-11 UNC	56 482416	Pulley, Idler
15	451240	Push Arm Shaft	57 422713	Base, Idler Pivot
16	04001-41	Bolt, Hex Head 5/8-11 x 9.50"	58 482745	Pulley, 6.35 O.D. - 61"
17	04003-12	Bolt, Carriage 5/16-18 x .75"	482747	Pulley, 6.95 O.D. - 72"
18	04001-154	Bolt, Hex Head 5/16-18 x 4.75"	59 422426	Mounting Plate, Gearbox
19	04063-08	Key, 1/4 x 1/4 x 2"	60 422413	Belt Cover, 61"
20	04063-01	Key, 1/4 x 1/4 x 1.25"	422677	Belt Cover, LH - 72"
21	04043-04	Flatwasher, 3/8-.39 x .938 x .105 HD	422708	Belt Cover, RH - 72"
22	04001-11	Bolt, Hex Head 5/16-18 x 1-3/4" Grade 8	61 461516	Pusharm (includes items 44, 63 & 64)
23	04021-10	Nut, Hex Serrated Flange 5/16-18	62 423792	Baffle, Custom Cut 61A
24	04001-172	Bolt, Hex Head 1/2-20 x 1" Grade 8	423795	Baffle, Custom Cut 72A
25	48100-15	Bushing, .376 I.D. Oilite	63 04020-16	Nut, Hex Head 5/8-18 UNF
26	04030-03	Lockwasher, 5/16"	64 48763	Rod End, 5/8" Male RH Thread
27	04040-15	Flatwasher, 5/16" (.375 x .875 x .083)	65 04001-79	Bolt, Hex Head 5/8-11 x 4-1/2"
28	04041-07	Flatwasher, 3/8" (.391 x .938 x .105)	66 481597	Spring, Cutter Deck
29	04021-09	Nut, Hex Elastic Stop 3/8-16	67 482746	Pulley, 6.75 O.D. - 61"
30	04001-62	Bolt, Hex Head 3/8-16 x 3.25"	482745	Pulley, 6.35 O.D. - 72"
31	04001-31	Bolt, Hex Head 3/8-16 x 2.50"	68 04110-03	U-Nut, 3/8-16
32	43503	Pivot, Idler - Short	69 04021-13	Nut, Hex Elastic Stop 5/8-11
33	04001-136	Bolt, Hex Head 3/8-16 x 1.50" Grade 8	70 423957	Discharge Baffle 61"
34	461663	Spindle Assembly	423958	Discharge Baffle 72"
35	43589	Spindle Shaft	71 482295	Guide Roller
36	481024	Seal, Top	72 43590	Spacer, Spindle
37	481022	Bearing Assembly	73 04003-23	Bolt, Carriage 3/8-16 x 1"
38	43644	Spindle Housing		
39	43312	Spacer, Outside		
40	43296	Spacer, Inside		
41	481025	Seal, Bottom		
42	43297	Spindle Bushing, Bottom		

## CUTTER DECK CONTROLS



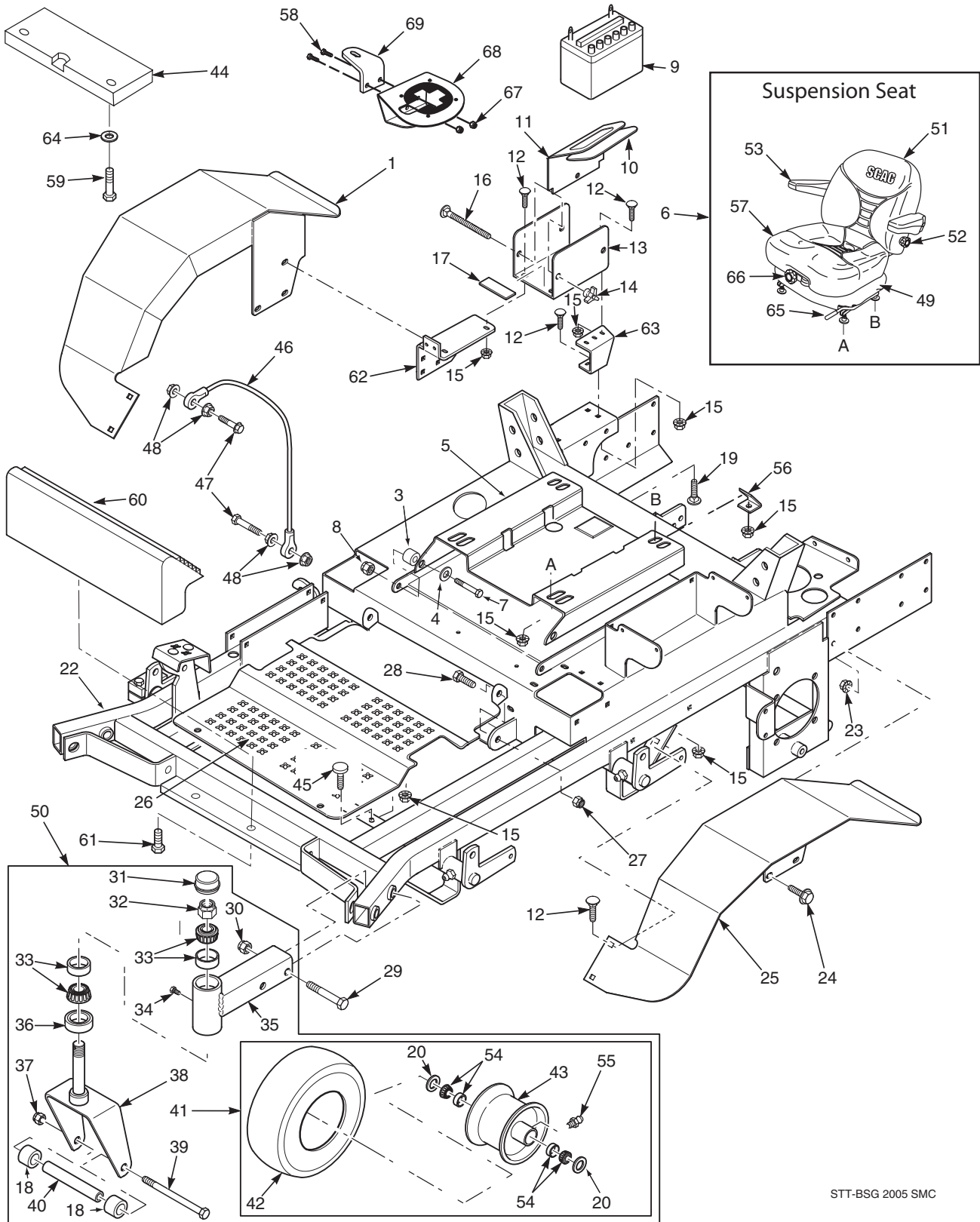
CUTTER DECK

STT2002CDC

## 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 I.D.
21	481428	Grip, Deck Latch
22	481598	Spring, Helper (61" & 72" Cutter Decks Only)
23	422451	Foot Pedal, Height Adjustment
24	04020-09	Nut, Hex 5/8-11
25	04019 -03	Nut, Hex Serrated Flange 5/16-18
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	04004-44	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"

## SHEET METAL COMPONENTS



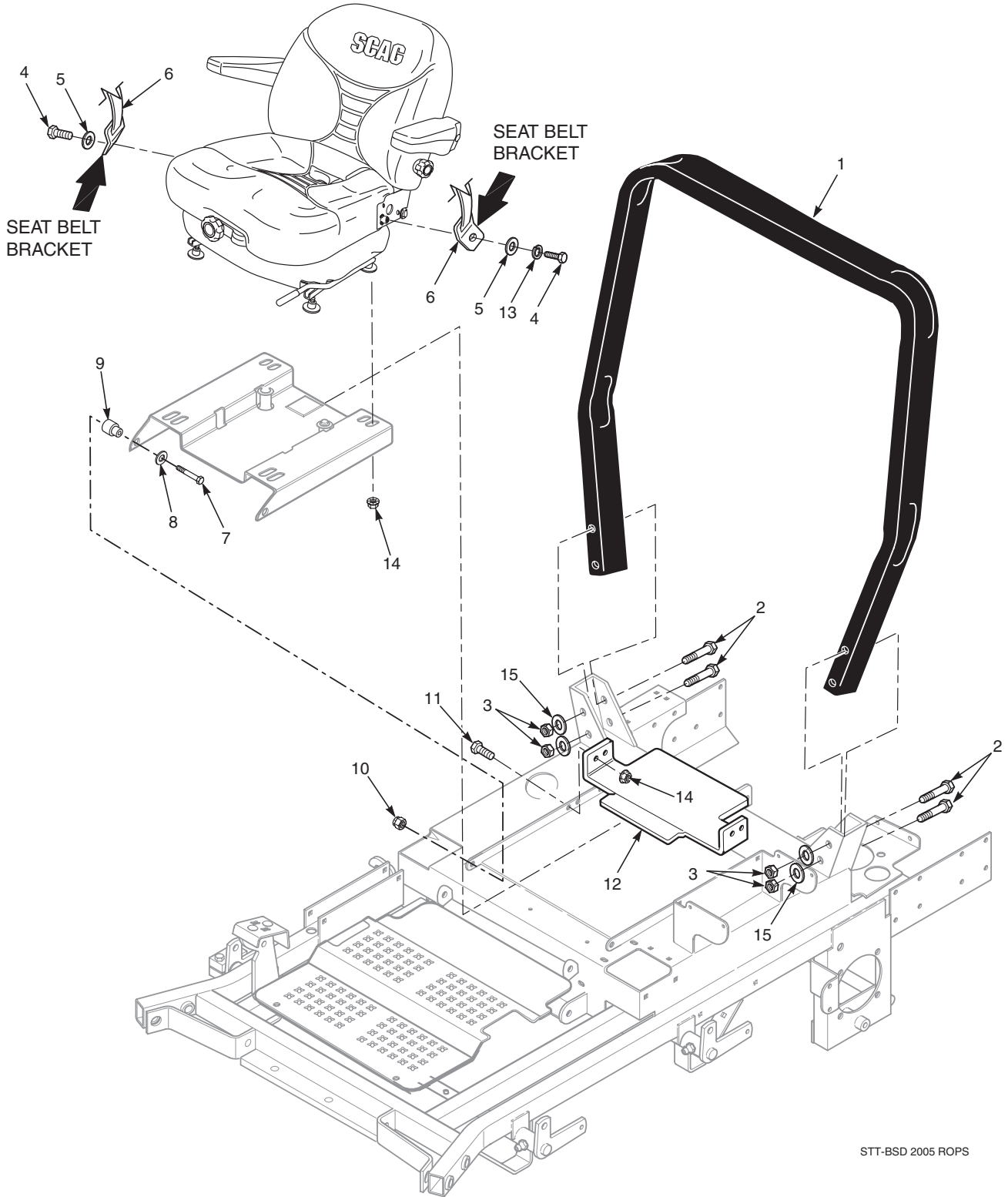
STT-BSG 2005 SMC



## SHEET METAL COMPONENTS

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	451481	Fender Weldment, RH	42	482619	Tire, 13 x 6.50 4-Ply (61A, 72A)
2	04001-09	Bolt, Hex Head, 5/16-18 x 1, Zinc	43	482620	Rim Assembly, 61A & 72A (Inc. item 55)
3	43606	Spacer	44	41020	Weight (61" cutter deck only)
4	04041-07	Flatwasher, 3/8-.391 x .938 x .105	45	481284	Bumper, Rubber
5	423946	Seat Plate	46	48566	Cable, Seat Stop
6	9270	Suspension Seat Assembly	47	04001-59	Bolt, Hex Head 1/4-20 x 1-1/4"
7	04001-45	Bolt, Hex Head 3/8-16 x 2.0"	48	04019-02	Nut, Hex Serrated Flange 1/4-20
8	04021-09	Nut, Elastic Stop 3/8-16	49	482942	Shock Absorber Kit
9	482283	Battery (Not Avail. through Scag)	50	461447	Caster Wheel Assy (Inc. 31 thru 43)
10	481780	Pad, Battery Cover			61A (LH)
11	422682	Cover, Battery		461448	Caster Wheel Assy (Inc. 31 thru 43)
12	04003-12	Bolt, Carriage 5/16-18 x 3/4"			61A (RH)
13	423425	Plate, Battery Box		461449	Caster Wheel Assy (Inc. 31 thru 43)
14	04029-01	Wing Nut, 1/4-20 x 3/4"			72A (LH)
15	04019-03	Nut, Hex Serrated Flange 5/16-18		461450	Caster Wheel Assy (Inc. 31 thru 43)
16	04003-30	Bolt, Carriage 1/4-20 x 6"			72A (RH)
17	48661	Rubber Pad	51	482940	Back Cushion Kit
18	43584	Spacer, Caster Wheel	52	482943	Lumbar Kit
19	04003-04	Bolt, Carriage 5/16-18 x 1"		482948	Knob Kit
20	482622	Seal	53	482950	Armrest Only
21	04021-09	Lock Nut, 3/8-16, Elast. Stop		482945	Armrest Assembly Kit, LH
22	451648	Main Frame		482946	Armrest Assembly Kit, RH
23	04019-04	Nut, Hex Serrated Flange 3/8-16	54	482621	Bearing w/ Race
24	04017-27	Screw, Hex Serrated Flange 3/8-16 x 1"	55	48114-07	Grease Fitting
25	451480	Fender Weldment, LH	56	424106	Seat Stop
26	423489	Foot Plate	57	482941	Seat Cushion Kit
27	04021-09	Nut, Hex Elastic Stop 3/8-16			Seat Drain Kit (Included with Seat Cushion)
28	04001-19	Bolt, Hex Head 3/8-16 x 1"	58	04001-01	Bolt, Hex Head 1/4-20 x 3/4"
29	04001-125	Bolt, Hex Head 5/8-11 x 4"	59	04001-145	Bolt, Hex Head 1/2-13 x 3.5"
30	04021-13	Nut, Hex Elastic Stop 5/8-11	60	481825	Footrest
31	481559	Cap, Grease	61	04001-71	Bolt, Hex Head 1/2-13 x 1.5"
32	04021-20	Nut, Hex Elastic Stop 1.0-14	62	423419	Mounting Bracket, Battery
33	481657	Bearing W/Race	63	423624	Support Bracket, Battery Box
34	482028-01	Plug, 1/4-28 THD Form	64	04040-13	Flat Washer 1/2-.562 x .1375 x .109
35	451450	Extention Weldment, Caster 61A (LH)	65	482952	Seat Adjustment, Track Set
	451451	Extention Weldment, Caster 61A (RH)	66	482944	Weight Adjustment Kit
	451452	Extention Weldment, Caster 72A (LH)		482948	Knob Kit
	451453	Extention Weldment, Caster 72A (RH)	67	04021-08	Nut, Elastic Stop 1/4-20
36	481025	Seal, 2.00 OD. x 1.625 Bore	68	9240	Cup Holder Assembly
37	04021-07	Nut, Hex Elastic Stop 1/2-13	69	423674	Mounting Bracket, STT Cup Holder
38	451416	Yoke Weldment, Caster (61A & 72A)	70	04001-01	Bolt, Hex Head 1/4-20 x 3/4"
39	04001-167	Bolt, Hex Head 1/2-13 x 9-1/2" (61A & 72A)			
40	43583	Sleeve, Caster Wheel (61A, 72A)			
41	482504	Wheel Assy (Inc.items 20, 42, 43, 54, 55)			

## STT ROLL OVER PROTECTION SYSTEM

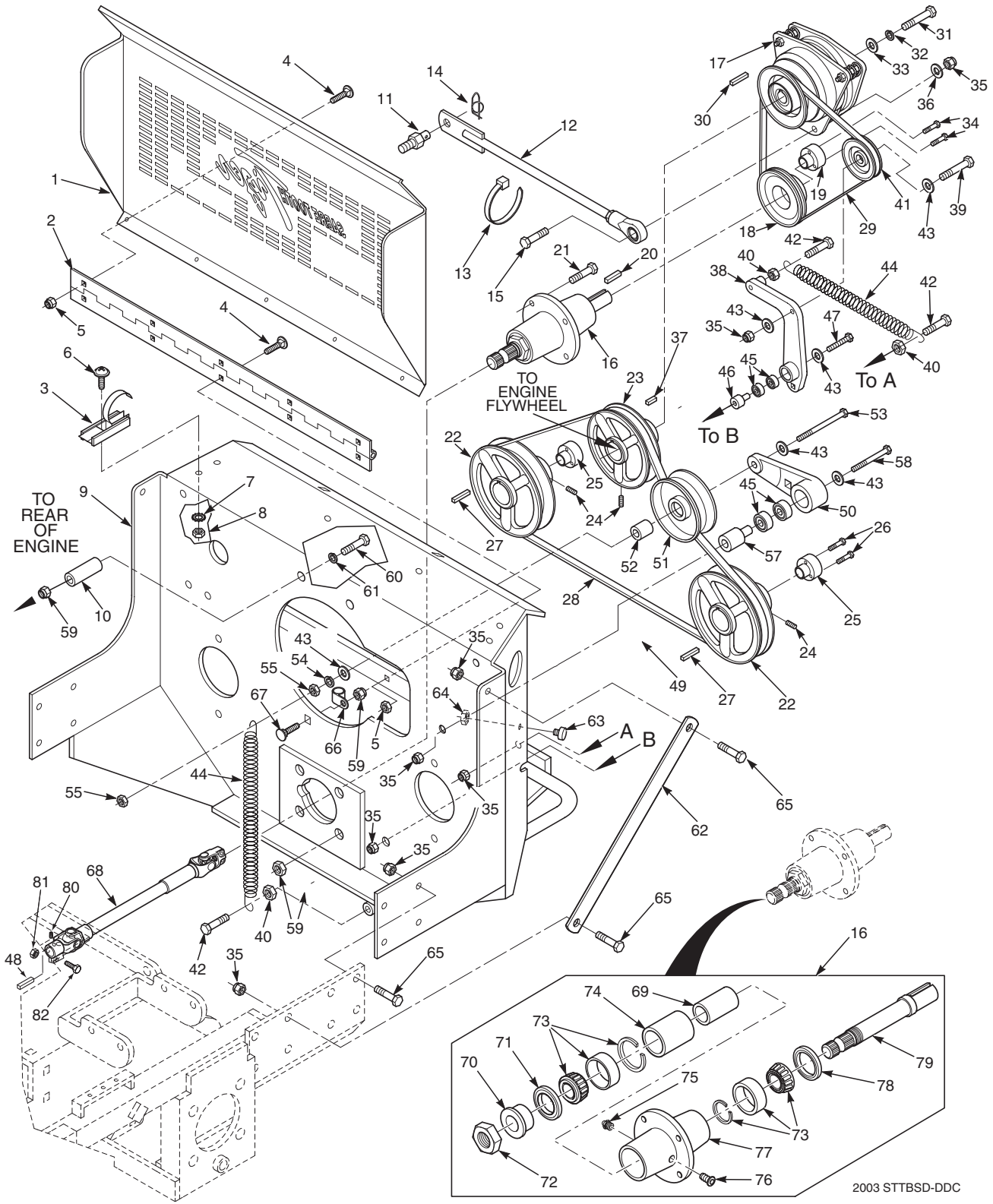


STT-BSD 2005 ROPS

**STT ROLL OVER PROTECTION SYSTEM**

<b>Ref. Part No. No.</b>	<b>Description</b>
1 461817	STT, ROPS
2 04001-82	Bolt, Hex Head 1/2-13 x 4-1/2"
3 04021-19	Nut, Center Lock 1/2-13
4 04001-178	Bolt, Hex Head 7/16-20 x 1"
5 04040-11	Flatwasher, 7/16-.500 x 1.25 x .083
6 483150	Seat Belt
7 04001-45	Bolt, Hex Head 3/8-16 x 2"
8 04041-07	Flatwasher, 3/8-.391 x .938 x .105
9 43606	Sleeve, Seat Base Mounting
10 04021-09	Nut, Elastic Stop 3/8-16
11 04001-09	Bolt, Hex Head 5/16-18 x 1"
12 424192	Bracket, Seat Hold Down
13 04030-05	Lockwasher, 7/16
14 04019-03	Nut, Serrated Flange 5/16-18
15 04040-13	Flatwasher, 1/2-.562 x 1.375 x .109

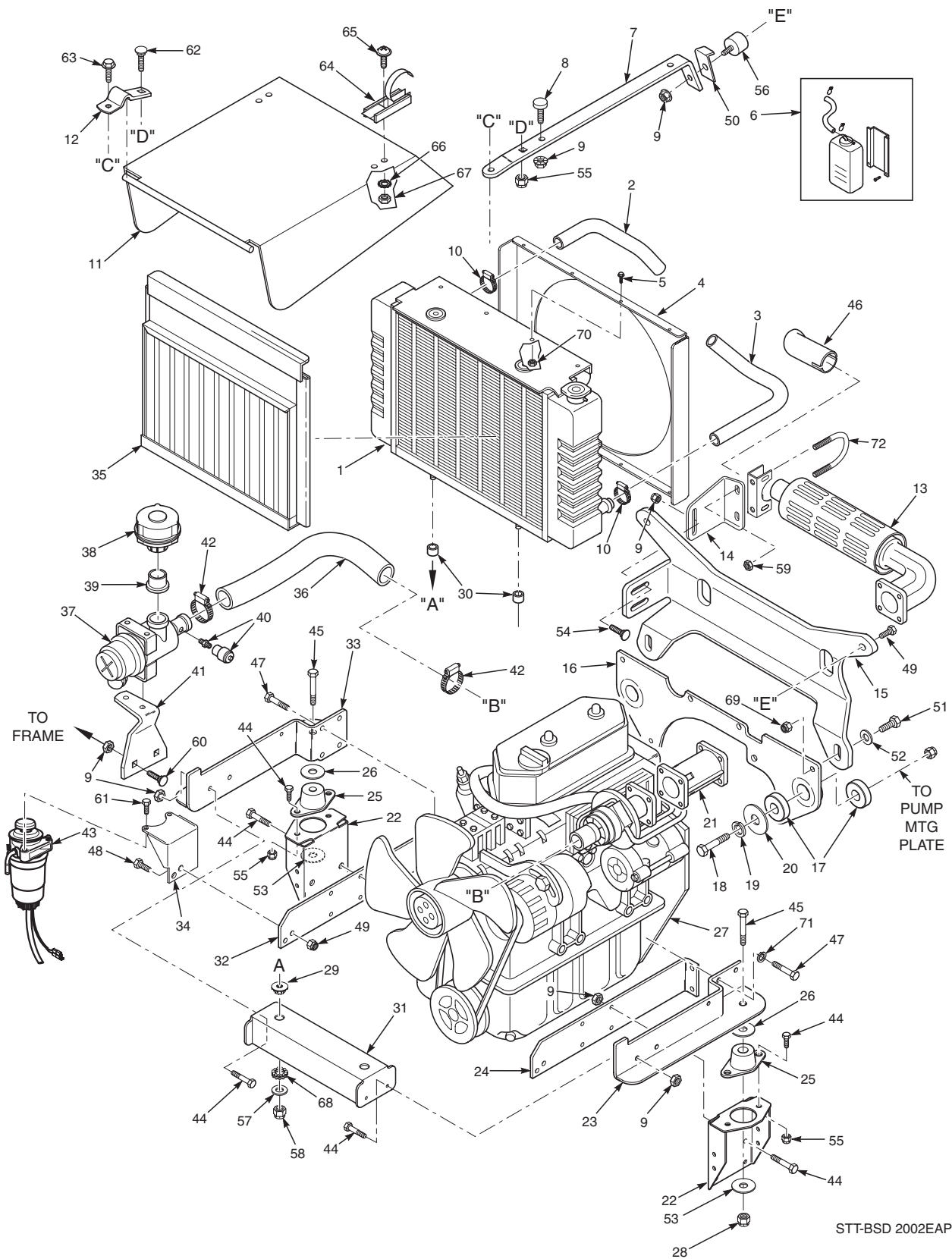
## DECK DRIVE COMPONENTS



## DECK DRIVE COMPONENTS

Ref. Part No. No.	Description	Ref. Part No. No.	Description	
1	423464	Belt Guard, Rear	53	04001-138 Bolt, Hex Head 3/8-16 x 3.75" Grade 8
2	481531	Hinge, Rear Belt Guard	54	04030-04 Lock Washer 3/8" .638 x .380 x .094"
3	481309	Latch, Hood	55	04020-04 Nut 3/8-16
4	04003-07	Carr. Bolt 1/4-20 x .5"	56	04021-05 Nut, Elastic 3/8-16
5	04019-02	Nut, Serr. Fig. 1/4-20	57	43604 Pivot, Idler - Long
6	04010-01	Screw, #10-32 x .5, Phillips Head	58	04001-62 Bolt, Hex Head 3/8-16 x 3-1/4"
7	04031-01	Lock Washer, #10	59	04021-10 Nut, Elastic 5/16-18
8	04020-01	Nut, #10-32	60	04001-49 Bolt, Hex Head 5/16-18 x 3.00"
9	451458	Weldment, Pump Mounting	61	04030-03 Lock Washer 5/16"
10	43506	Spacer, Engine	62	422684 Brace, Engine Mounting Plate
11	43507	Stud, Anti-Rotation	63	481284 Bumper, Rubber
12	482433	Linkage Assembly, Anti-Rotation	64	04019-03 Nut, Serr. Fig. 5/16-18
13	48028-05	Tie, Cable	65	04001-19 Bolt, Hex Head 3/8-16 x 1.00"
14	04069-01	Pin, Rue	66	48030-09 Clamp, Wire
15	04001-20	Bolt, Hex Head 3/8-16 x 1.50"	67	04003-12 Bolt, Carr. 5/16-18 x .75"
16	461697	Spindle Assembly, Deck Drive	68	482438 Driveshaft
17	461613	Clutch, Electric PTO	69	43296 Spacer, Inside
18	481398	Pulley, 6.35" dia. Tapered Bore	70	43297 Bushing
19	481536	Hub, Tapered 1" dia.	71	481025 Seal, 2.00 OD x 1.625 Bore
20	04063-06	Key, 1/4 x 1/4 x 1.5"	72	481035 Nut, 1.06-18
21	04001-175	Bolt, Hex Head 5/16-18 x 1-1/2" Grade 8	73	481022 Roller Bearing Assembly
22	482752	Pulley, 6.25" OD, Tapered	74	43312 Spacer, Outside
23	482791	Pulley, 5.45" OD	75	48114-04 Grease Fitting 1/4-28 Self Tapping
24	04012-04	Set Screw, 5/16-18 x .375"	76	48677 Relief Fitting
25	481884	Hub, Tapered 17mm Bore	77	43644 Spindle Housing
26	04001-172	Bolt, Hex Head 1/4-20 x 1" Grade 8	78	481024 Seal, 2.00 OD x 1.5 Bore
27	04063-27	Key, 5mm x 5mm x 30mm	79	43534 Shaft, Spindle
28	481461	Belt, Pump Drive	80	04012-08 Screw, Set 3/8-16 x 3/8"
29	481460	Belt, Deck Drive	81	04021-05 Nut, Center Lock 3/8-16
30	04063-11	Key, 1/4 x 1/4 x 2.5"	82	04001-21 Bolt, Hex Head 3/8-16 x 1-3/4"
31	04001-101	Bolt, Hex Head 7/16-20 x 2.5"		
32	04030-05	Lock Washer 7/16"		
33	04041-28	Flat Washer 7/16 x .469 x 1.75 x .25"		
34	04001-109	Bolt, Hex Head 1/4-20 x 1.375"		
35	04021-09	Nut, Elastic Stop 3/8-16		
36	04041-07	Flat Washer 3/8, .391 x .938 x .105"		
37	04063-20	Key, 1/4 x 1/4 x 1.00"		
38	461079	Idler Arm		
39	04001-46	Bolt, Hex Head 3/8-16 x 2.25"		
40	04019-04	Nut, Serr. Fig. 3/8-16		
41	48181	Pulley, PTO Idler		
42	04001-136	Bolt, Hex Head 3/8-16 x 1.5" Grade 8		
43	04043-04	Flat Washer 3/8" Grade 8		
44	481522	Spring		
45	48224	Bearing		
46	43576	Pivot, Idler - Short		
47	04001-145	Bolt, Hex Head 3/8-16 x 2-3/4"		
48	04063-20	Key, 1/4 x 1/4 x 1"		
49	04001-09	Bolt, Hex Head 5/16-18 x 1.00"		
50	461015	Idler Arm		
51	48198	Pulley, Pump Idler		
52	43277	Spacer		

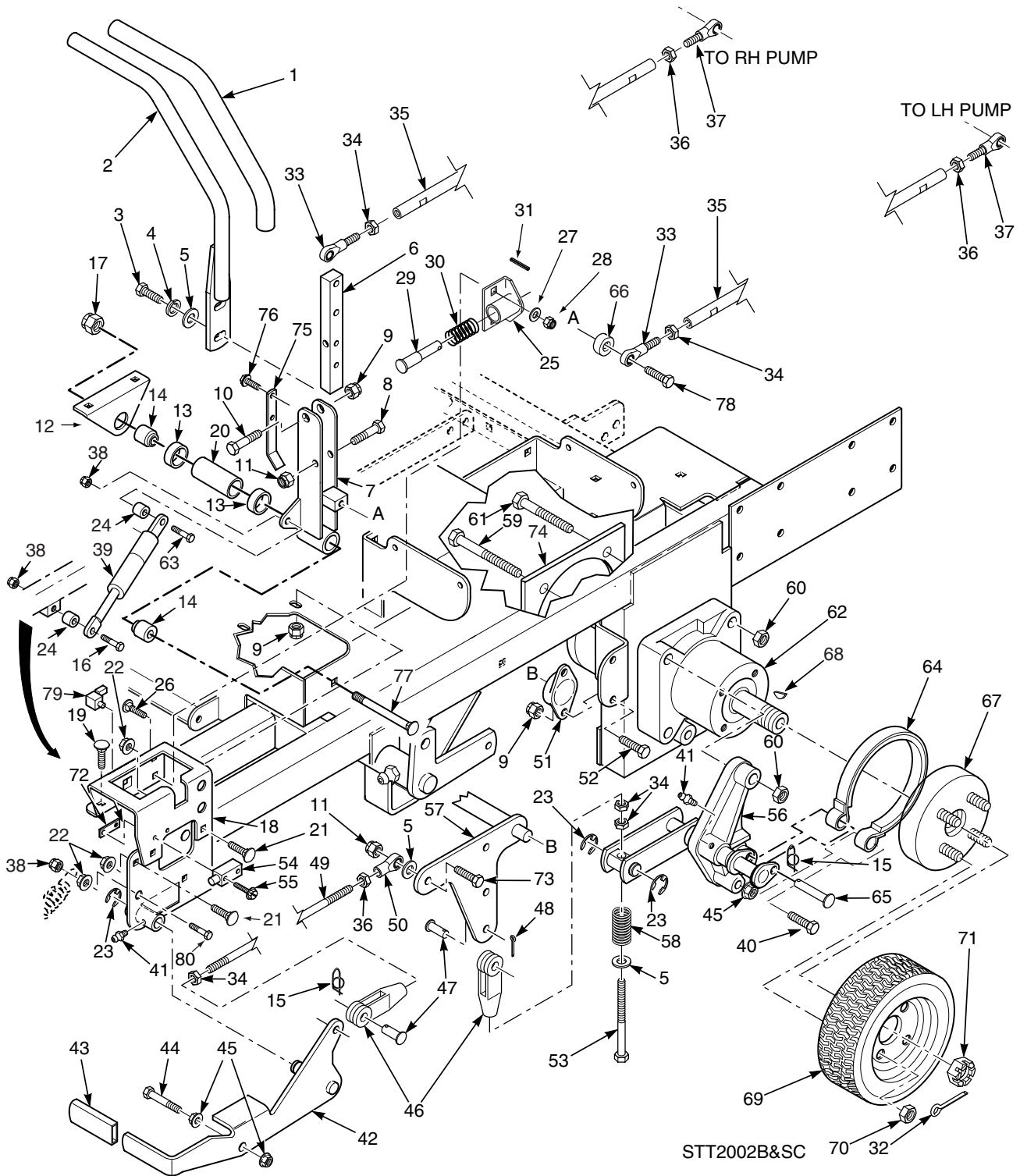
## RADIATOR & ENGINE BRACKETS



## RADIATOR & ENGINE BRACKETS

Ref. Part No. No.	Description	Ref. Part No. No.	Description
1	482308 Radiator	49	04017-16 Bolt, Hex Head 5/16-18 x 3/4"
2	481742 Hose, Upper Radiator	50	423641 Catch Bracket, Hood Latch
3	482366 Hose, Lower Radiator	51	04001-32 Bolt, Hex Head 3/8-16 x 1-1/4"
4	423379 Shroud, Fan	52	04041-07 Flatwasher, 3/8-.391 x .938 x .105
5	04010-26 Screw. #10-32 x 1/2"	53	04041-32 Flatwasher, 1/2-.531 x 2.13 x .1345
6	** Coolant Tank Assembly w/hose (Not Avail. Through Scag, Contact Briggs & Stratton)	54	04003-04 Bolt, Carriage 5/16-18 x 1"
7	423639 Support Bracket, Hood	55	04021-10 Nut, Elastic Stop 5/16-18
8	481284 Bumper, Rubber	56	482603 Rubber Isolator
9	04019-03 Nut, Serrated Flange 5/16-18	57	04041-35 Flatwasher, 7/16-.469 x 2.0 x .1345
10	48136-12 Clamp, 1-1/2" Dia.	58	04021-21 Nut, Center Lock 7/16-14
11	451486 Hood Weldment	59	04021-10 Nut, Elastic Stop 5/16-18
12	422703 Hinge, Hood	60	04003-12 Bolt, Carriage 5/16-18 x 3/4"
13	482404 Muffler with Guard	61	** Bolt, (Not Available Through Scag, Contact Briggs & Stratton)
14	423640 Brace, Muffler Support	62	04003-04 Bolt, Carriage 5/16-18 x 1"
15	423637 Mounting Bracket, Hood	63	04017-16 Bolt, Hex Head 5/16-18 x 3/4" Serr. Flange
16	451487 Mounting Bracket Weldment, Rear Engine Mount	64	481309 Latch, Hood
17	482363 Engine ISO Mount, Rear	65	04010-21 Screw, #10-32 x .375
18	04001-145 Bolt, Hex Head 1/2-13 x 3-1/2"	66	04031-01 Lockwasher, #10 Spring
19	04030-06 Lockwasher, 1/2" Spring	67	04020-01 Nut, #10
20	04041-33 Flatwasher, 1/2-.531 x 2.0 x .25	68	482601 Ring, Isolator
21	482403 Manifold Extension, Exhaust	69	04021-09 Nut, Elastic Stop 3/8-16
22	423381 Mounting Bracket, Engine	70	04021-01 Nut, Elastic Stop #10-32
23	451403 Mounting Bracket Weldment, Engine L.H.	71	04030-03 Lockwasher, 5/16 Spring
24	423382 Mounting Bracket, Engine L.H.	72	48633 Muffler Clamp 1-1/2" Dia.
25	482362 Engine ISO Mount, Front		
26	04041-33 Flatwasher, 1/2-.531 x 2.0 x .25		
27	482270 Engine, Briggs & Stratton 31hp Diesel (Spec. # ) Not Available Through Scag, Contact Briggs & Stratton		
28	04021-07 Nut, Elastic Stop 1/2-13		
29	482602 Bushing, Radiator Isolator		
30	43621 Bushing, Radiator ISO Mount		
31	423638 Support Bracket, Radiator		
32	423383 Mounting Bracket, Engine R.H.		
33	451404 Mounting Bracket Weldment, Engine R.H.		
34	423424 Mounting Bracket, Water Seperator		
35	451083 Debris Screen		
36	482368 Hose, Air Intake		
37	482405 Air Cleaner Assembly w/mounting Band		
38	481816 Pre Cleaner, Engine Air		
39	481924 Adapter, Pre Cleaner		
40	481818 Indicator, Air Cleaner		
41	423915 Bracket, Air Cleaner		
42	48136-15 Clamp, Hose 2-1/2" Dia.		
43	** Fuel Filter, Water Seperator (Not Avail. Through Scag)		
44	04001-08 Bolt, Hex Head 5/16-18 x 3/4"		
45	04001-52 Bolt, Hex Head 1/2-13 x 2-1/2"		
46	481827 Elbow, Exhaust		
47	04002-01 Bolt, Hex Head M8-1.25 x 3mm		
48	04001-32 Bolt, Hex Head 3/8-16 x 1-1/4"		

## BRAKE AND STEERING COMPONENTS

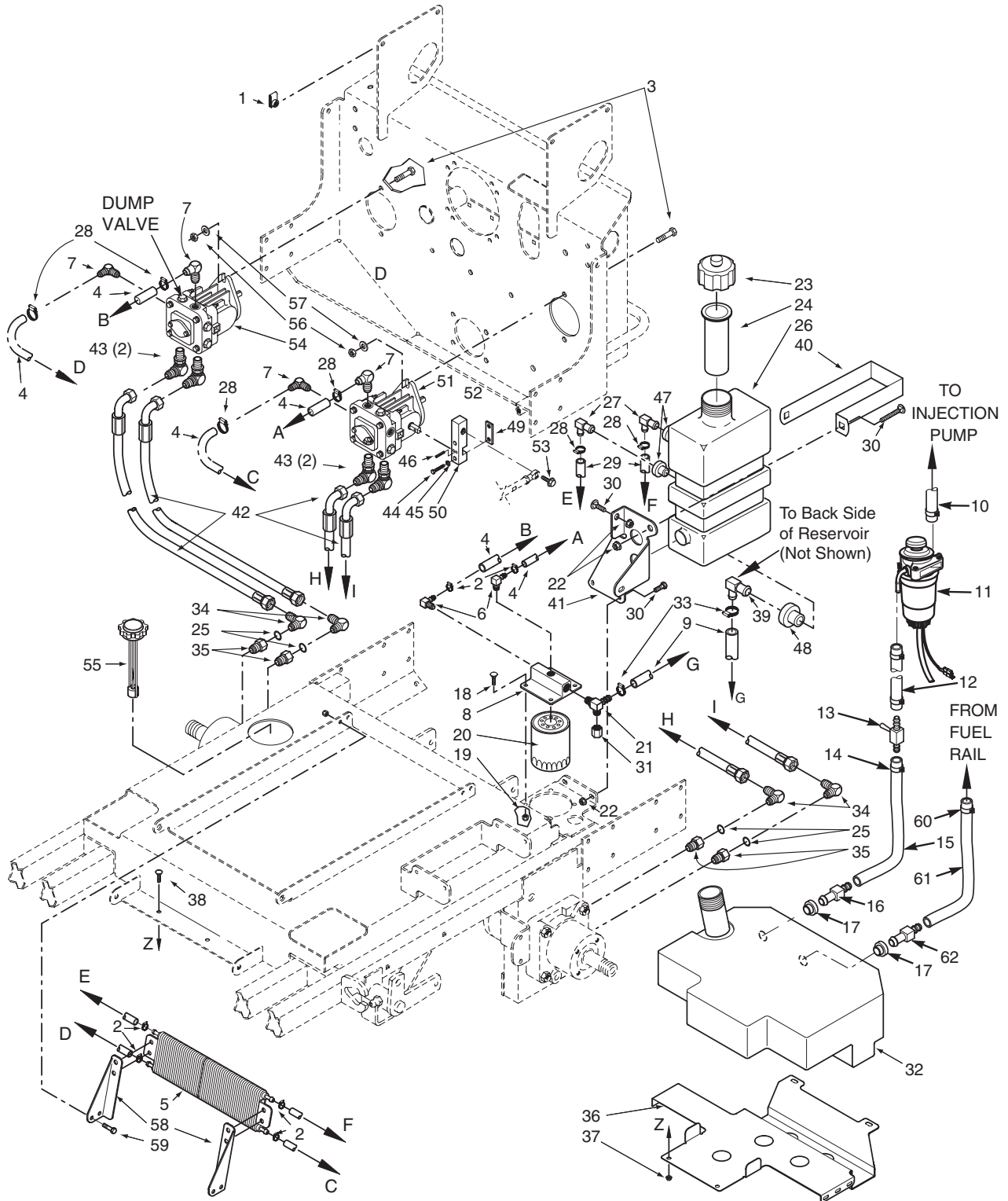




## BRAKE AND STEERING COMPONENTS

Ref. Part No. No.	Description	Ref. Part No. No.	Description		
1	482340	Grip, Handle Bar	44	04001-22	Bolt, Hex Head 3/8-16 x 2-3/4"
2	461386	Handle Bar (Includes item 1)	45	04019-04	Nut, Hex Serrated Flange 3/8-16
3	04001-32	Bolt, Hex Head 3/8-16 x 1-1/4"	46	48343-04	Clevis, Traction Control
4	04030-04	Lockwasher, 3/8"	47	04064-02	Pin, Clevis 3/8-16 x 1-1/16"
5	04041-07	Flatwasher, 3/8" (.391 x .938 x .105)	48	04061-02	Pin, Cotter 3/32 x .75
6	422372	Bar, Control Lever	49	04004-34	Rod, Parking Brake
7	451483	Control Lever Weldment, LH	50	48544	Rod End, LH Thread
	451484	Control Lever Weldment, RH	51	48796	Bushing, Self Align
8	04001-17	Bolt, Hex Head 5/16-18 x 2"	52	04001-08	Bolt, Hex Head 5/16-18 x 3/4"
9	04021-10	Nut, Hex Elastic Stop 5/16-18	53	04001-147	Bolt, Hex Hd 3/8-24 x 5-1/4", 23/4" Thrd
10	04001-45	Bolt, Hex Head 3/8-16 x 2"	54	481637	Switch
11	04021-09	Nut, Hex Elastic Stop	55	04010-12	Screw, Hex SLTD WSHR Head #10 32 x 3/4"
12	423488	Mount, Control Linkage	56	461471	Brake Linkage, LH
13	48224	Ball Bearings, Neutral Return		461472	Brake Linkage, RH
14	43607	Spacer	57	45953	Bellcrank, Brake Actuator
15	04069-01	Pin, Rue Cotter 3/8 Dia.	58	48807	Spring
16	04001-13	Bolt, Hex Head, 5/16-18 x 2.75 Zinc.	59	04001-163	Bolt, Hex Head 1/2-13 x 3-3/4"
17	04021-13	Nut, Hex Elastic Stop 5/8-11	60	04021-19	Locknut, Hex 1/2-13 Center Lock
18	461601	Bracket, Control Lever LH	61	04001-52	Bolt, Hex Head 1/2-13 x 2-1/2"
	461602	Bracket, Control Lever RH	62	481787	Wheel Motor, Ross
19	04003-04	Bolt, Carriage 5/16-18 x 1"	63	04001-12	Bolt, Hex Head, 5/16-18 x 1.75, Zinc
20	43600	Spacer, Bearing	64	481601	Brake Band Assembly
21	04003-12	Bolt, Carriage 5/16-18 x 3/4"	65	04064-16	Pin, Clevis 3/8" Dia. x 1.93"
22	04019-03	Nut, Hex Serrated Flange 5/16-18	66	43063	Spacer
23	04050-01	Ring, Retaining 5/8" External "E"	67	461438	Wheel Hub/Brake Drum Assembly
24	43602	Spacer	68	04063-25	Key, Woodruff 5/16 x 1"
25	45918	Bracket, Neutral Return	69	481850	Wheel Assembly 24 x 12-12 Turf Master
26	04003-02	Bolt, Carriage 1/4-20 x 3/4"		481851	Rim W/Valve Stem
27	04040-14	Flatwasher, 1/4" (.312 x .750 x .065)		481852	Tire, 24 x 12-12 Turf Master
28	04021-08	Nut, Hex Elastic Stop 1/4-20	70	04028-02	Lug Nut, 1/2-20
29	43477	Pin, Retaining Spring	71	48680	Nut, Hex Castle
30	481389	Spring	72	422373	Threaded Plate
31	04060-01	Roll Pin, Spring 5/32 x 3/4"	73	04001-20	Bolt, Hex Head 3/8-16 x 1-1/2"
32	04061-06	Pin, Cotter 9/16 x 1-1/2"	74	423279	Plate Weldment, Motor Backing
33	482586	Rod End, Male 3/8-24 RH Thread	75	423491	Actuator Switch
34	04020-25	Nut, 3/8-24 RH Thread	76	04017-16	Bolt, Hex Serrated Flange 5/16-18 x 3/4"
35	481767	Tube, Control Link	77	04003-36	Bolt, Carriage 3/8-16 x 4-3/4"
36	04020-26	Nut, Hex 3/8-24 LH Thread	78	04001-19	Bolt, Hex Head 3/8-16 x 1"
37	482585	Rod End, Male 3/8-24 LH Thread	79	481638	Switch
38	04021-10	Locknut, 5/16-18, Elastic Stop	80	04001-168	Bolt, Hex Head 3/8-16 x 1-1/4" Grade 8
39	482794	Gas Damper			
40	04001-31	Bolt, Hex Head 3/8-16 x 2-1/2"			
41	48114-04	Grease Fitting			
42	461082	Lever, Parking Brake (Includes item 43)			
43	481548	Grip, Parking Brake			

## FUEL AND HYDRAULIC SYSTEM



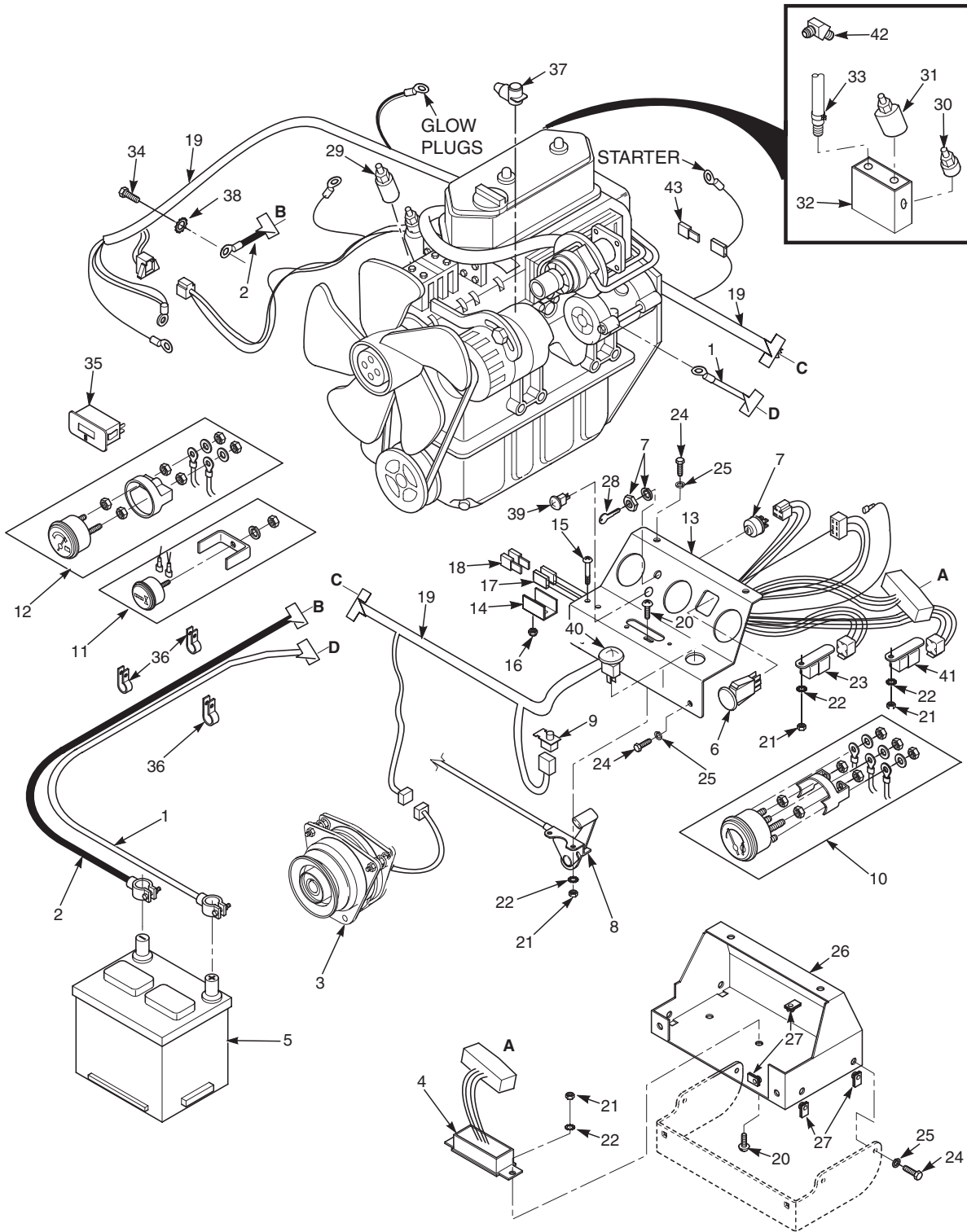
2002 STT-BSD F&HS.eps

## FUEL AND HYDRAULIC SYSTEM

Ref. Part No. No.	Description	Ref. Part No. No.	Description		
1	04110-01	U-Nut 1/4-20	36	423701	Support Bracket, Fuel Tank
2	48136-13	Hose Clamp, 0.69 dia.	37	04019-03	Nut, 5/16-18 Serrated Flange
3	04001-03	Bolt, Hex Head 1/4-20 x 2.0"	38	04003-02	Bolt, Carraige 1/4-20 x 3/4"
4	48811	Hose, 3/8" ID Pushlock - (order by inch)	39	482574	Elbow, 90 Degree
5	482505	Cooler, Oil	40	423513	Strap, Hydraulic Tank
6	482266-01	Elbow, 90 Degree - 9/16 O-ring x 3/8 Hose	41	423485	Support Bracket, Hydraulic Tank
7	482266-02	Elbow, 90 Degree - 3/4 O-ring x 3/8 Hose	42	482516	Hose Assembly, Pump
8	482417	Oil Filter Base	43	48350-05	Elbow, 90 Degree 7/8-14 Thread
9	482563	Hose Assembly, 1/2" ID (Tank to Filter Base)	44	04001-59	Bolt, Hex Head, 1/4-20 x 1-14"
10	48058	Fuel Hose to Carb., 1/4" ID (order by inch)	45	04030-02	Lockwasher, 1/4" Spring
11	**	Fuel Filter (Purchase from Briggs & Stratton)	46	04060-06	Roll Pin, Spring 3/16 x 3/4"
12	48058	Fuel Hose, 1/4" ID. (order by inch)	47	482571	Bushing, .56 Dia.
13	481308	Valve, Shutoff	48	482573	Bushing, .78 Dia.
14	48059-04	Clamp, Fuel Hose 5/16 ID	49	422694	Clamp Plate, Pump Control
15	481178	Fuel Hose, 5/16" ID. (order by inch)	50	481793	Block, Pump Control
16	481312	Hose Fitting	51	481792	Pump, Left Hand, BDP-21L-305
17	48309	Bushing	52	04021-09	Nut, Hex, Elastic Stop 3/8-16
18	04001-09	Bolt, Hex Head 5/16-18 x1.0" Zinc	53	04001-32	Bolt, Hex Head, 3/8-16 x 1-1/4
19	04019-03	Nut, Serrated Flange 5/16-18	54	481819	Pump, Right Hand, BDP-21L-403
20	48758	Oil Filter	55	482498	Cap, Fuel Tank W/Gauge
21	482483	Tee, 3/4 O-ring x JIC x 1/2" Hose	56	04021-09	Nut, Hex Elastic Stop 3/8-16
22	04021-08	Nut, Hex Elastic Stop 1/4-20	57	04043-04	Flatwasher, 3/8" (.391 x .938 x .105) Grade 8
23	481164	Cap, Hydraulic Tank	58	423524	Mounting Bracket - LH, Oil Cooler
24	481507	Insert, Filler Neck		423525	Mounting Bracket - RH, Oil Cooler
25	48603-02	O-Ring	59	04001-08	Bolt, Hex Head 5/16-18 x 3/4"
26	461451	Oil Reservoir Assembly (includes 24, 27, 39)	60	48059-03	Clamp, 3/16 Hose
27	482572	Elbow, 90 Degree, 9/16-18 JIC x 9/16 O-Ring	61	481179	Hose, 3/16" I.D. (order by inch)
28	48136-13	Hose Clamp, 0.69 dia.	62	481778	Hose Fitting, Straight DAPCO
29	48811	Hose, 3/8" ID, Pushlock (order by inch)			
30	04010-10	Screw, Phillips Head, 1/4-20			
31	48571-02	Cap			
32	461452	Fuel Tank Assembly (includes items 23 & 24)			
33	48136-05	Clamp, Hose			
34	48350-05	Elbow, 90 Degree, 7/8-14 THD			
35	48938-02	Bushing, 7/8-14 JIC x 3/4-16 O-Ring			

\*\* Available through the individual engine manufacturer.

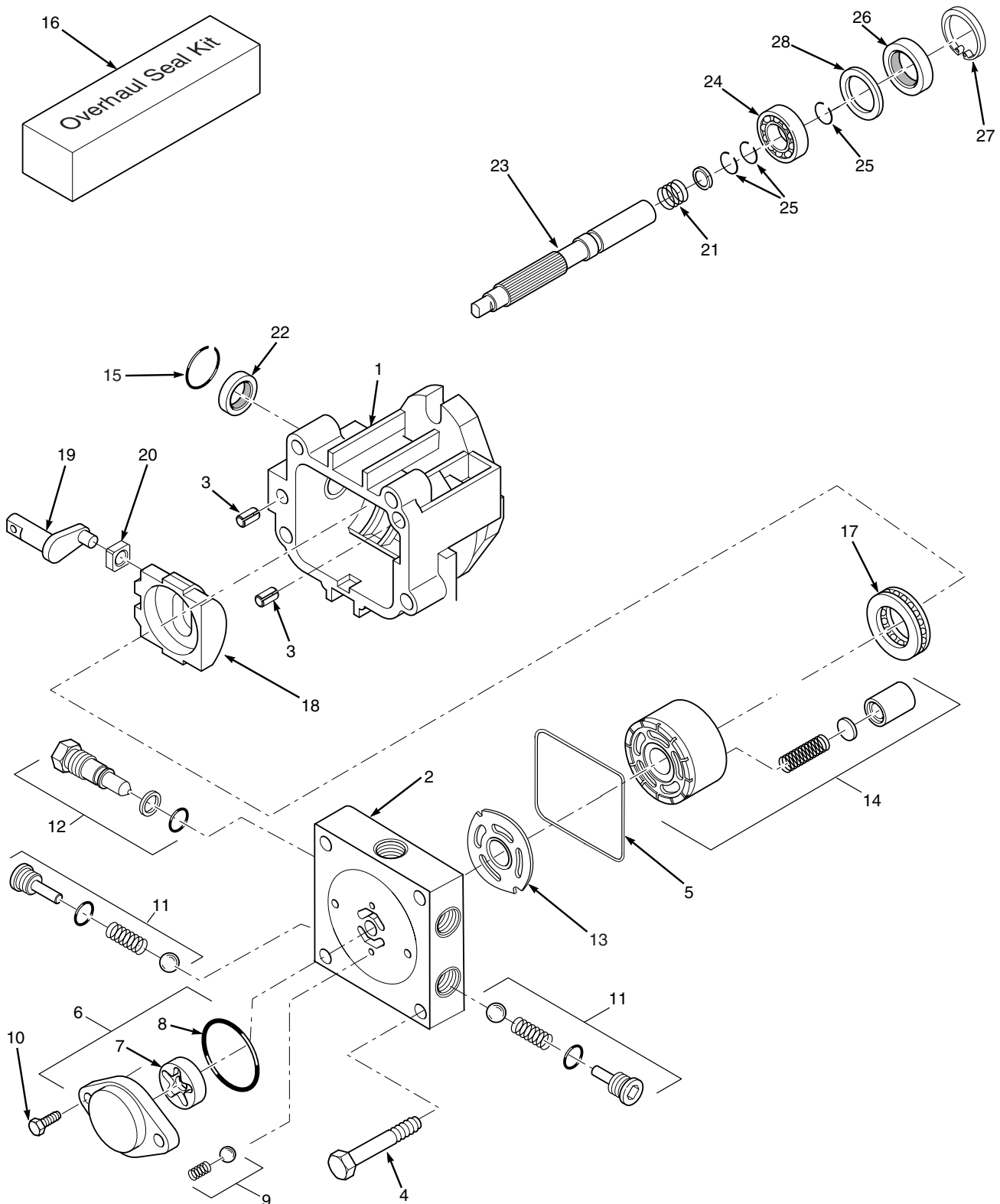
## ELECTRICAL SYSTEM



## ELECTRICAL SYSTEM

Ref. No.	Part No.	Description
1	481176-08	Cable, Positive Battery
2	481176-07	Cable, Negative Battery
3	461613	Clutch, Electric PTO
4	481808	Module, Interlock
5	*	Battery (not available through Scag)
6	481687	Switch, PTO
7	48798	Switch, Key (Includes Nut and Lockwasher)
	48017-03	Nut, 5/8-32 Special
	48017-04	Lock Washer 5/8"
8	481806	Cable, Control (Throttle, Choke)
9	481638	Switch, Seat
10	481183	Gauge, Water Temperature
11	481805	Gauge, Oil Pressure
12	481184	Gauge, Volts
13	423544	Panel, Instrument Panel
14	42413	Bracket, Fuse Holder
15	04010-11	Screw, #10-32 x 1.5" Phillips
16	04021-01	Nut, #10-32 Elastic Stop
17	48297	Fuse Holder w/ 20 Amp Fuse
18	48298	Fuse, 20 Amp
19	483057	Harness, Wiring
20	04010-01	Screw, #10-32 x .5" Phillips
21	04020-01	Nut, Hex #10-32
22	04031-01	Lock Washer #10
23	483013	Relay
24	04001-01	Bolt, Hex Head 1/4-20 x .75"
25	04030-02	Lock Washer 1/4"
26	451081	Base, Instrument Panel
27	04110-01	U-Nut, 1/4-20
28	48017-02	Key & Ring Assembly
29	481791	Sender Unit, Water Temperature
30	481812	Switch, Low Oil Pressure
31	481811	Sender Unit, Oil Pressure
32	481813	Manifold, Oil
33	481919	Hose, Oil Pressure Sender
34	04002-17	Bolt, Hex Head M8-1.25 x 14
35	483072	Hour Meter
36	48030-09	Clamp, Cable .5" ID
	48030-10	Clamp, Cable .75" ID
37	481335	Boot, Positive Battery Terminal
38	04031-03	Washer, Star
39	481182	Indicator Light, Glow Plugs
40	482361	Indicator Light, Water Separator
41	481826	Relay, 40 Amp
42	482365	Fitting, Oil Sender - 45 Degree
43	481824	Fuse, 40 Amp
	481089	Fuse Holder (Not Shown)

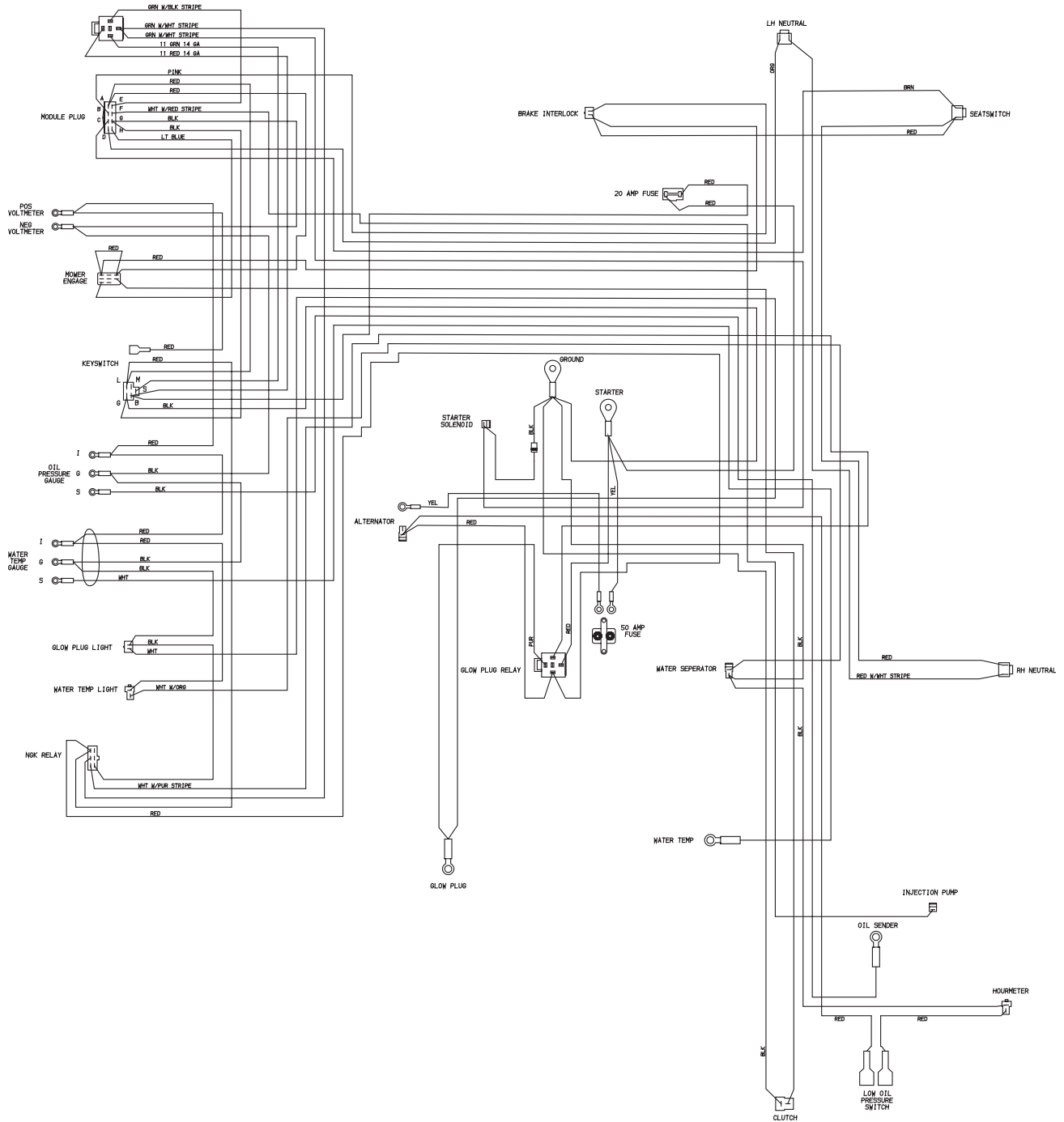
## HYDRAULIC PUMP ASSEMBLY - BDP-21L



**HYDRAULIC PUMP ASSEMBLY - BDP-21L**

<b>Ref. No.</b>	<b>Part No.</b>	<b>Description</b>
1	HG 2510065	Housing Kit (Includes Housing, Journal Bearing)
2	HG 2510066	End Cap
3	HG 50641	Straight Headless Pin
4	HG 50633	Socket Head Screw
5	HG 50381	End Cap Gasket
6	HG 2510071	Charge Pump Kit (Includes Charge Cover, Gerotor Assy., O-Ring)
7	HG 50406	Gerotor Assembly
8	HG 9004100-1430	O-Ring
9	HG 70402	Charge Relief Valve Kit
10	HG 9007200-3116	Socket Head Screw
11	HG 2510027	Check Valve Kit (Includes Check Plug, Spring, O-Ring, Orifice Check Valve)
12	HG 2513030	Bypass Valve Kit (Includes Bypass Valve, O-Ring, Back-up Ring)
13	HG 50619	Valve Plate
14	HG 70080	Cylinder Block Kit
15	HG 50574	Trunion Seal Retaining Ring
16	HG 2510073	Overhaul Kit
17	HG 50552	Roller Thrust Bearing
18	HG 50203	Swash Plate
19	HG 2000014	Trunnion Arm
20	HG 2000015	Guide Slot
21	HG 2000025	Block Spring
22	HG 2000037	Lip Seal
23	HG 50601	Pump Shaft
24	HG 2000032	Ball Bearing
25	HG 2000038	Retaining Ring
26	HG 51092	Lip Seal
27	HG 2000038	Retaining Ring
28	HG 2000023	Spacer

## WIRE HARNESS, STT - 31BSD PART NUMBER 483057





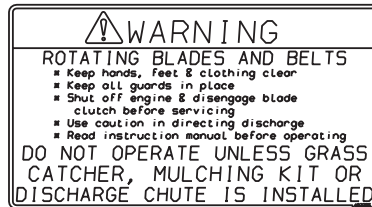
## REPLACEMENT DECALS AND INFORMATION PLATES

# 61 Advantage

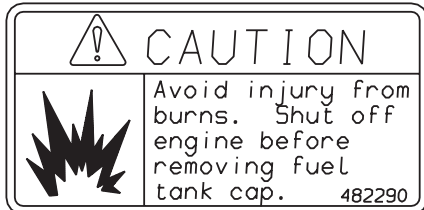
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481956 - 71A



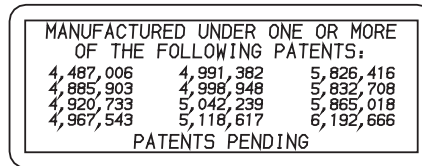
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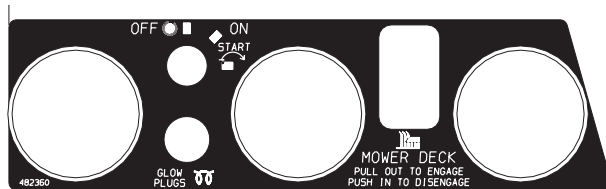
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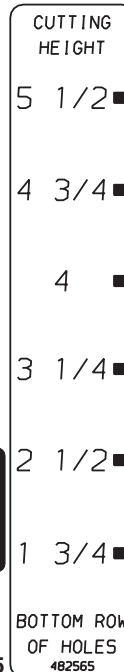
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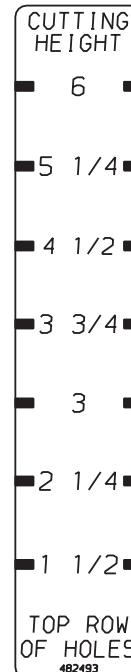
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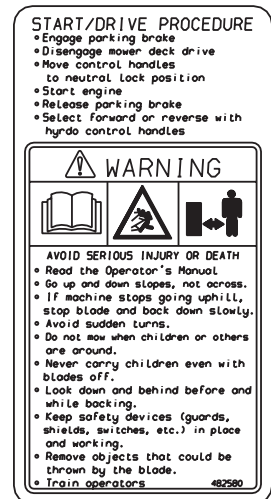
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482565



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482580

## REPLACEMENT DECALS AND INFORMATION PLATES

**SCAG**  
TURBO DIESEL  
482367

**SCAG**  
48825

**SCAG**  
48314



481937

**WARNING**  
DO NOT OPERATE WITHOUT DISCHARGE CHUTE, MULCHING KIT, OR ENTIRE GRASS CATCHER INSTALLED 482165

482165



481925



482581

**IMPORTANT**  
Operation on slopes can be hazardous. See your Scag dealer for available Roll-Over Protective Systems 482834

482834

<p><b>IMPORTANT ADJUSTMENT PROCEDURES</b> READ OPERATOR'S MANUAL FOR MORE DETAILS Check tire pressure - (Drive tires-12 psi, Caster tires-25 psi)</p>		<p><b>NEUTRAL ADJUSTMENT</b> Loosen jam nuts  Rotate turnbuckle</p>	
<p><b>HYDRAULIC FLUID LEVEL</b> Check hydraulic fluid level while fluid is cool. Fluid level should be 3" below top of filler neck. FILL with SAE 20W50 motor oil only.</p>	<p><b>IMPORTANT</b> Gearbox Lubricant: SAE 80W90 gear oil</p>	<p>With an operator in the seat, engine running, control levers in neutral and the parking brake disengaged - adjust control linkage. Loosen jam nuts. If wheel rotates forward, adjust turnbuckle CW. If wheel rotates rearward, adjust turnbuckle CCW. Adjust until drive wheel stops turning. Tighten jam nuts. Repeat for opposite side.</p>	
<p><b>IMPORTANT</b> Do not overfill. Room for hot fluid expansion must be allowed or resulting expansion may cause leaks in the system.</p>	<p><b>IMPORTANT</b> <b>DRIVESHAFT MAINTENANCE</b> Grease yokes 3-4 pumps Every 200 hours  Grease spline 8-10 pumps Every 50 hours</p>	<p><b>TRACKING ADJUSTMENT</b> If the machine pulls to the right, adjust LH control linkage CCW to slow left wheel. If the machine pulls to the left, adjust RH control linkage CW to slow right wheel. Readjust neutral if necessary.</p>	
<p>483154</p>		<p><b>FREE WHEEL OPERATION</b> To move machine without running the engine, rotate both dump valves located at the LH side of the pumps CW 1/2 turn to 'freewheel' positions. Return dump valves to original position to operate the mower. Tighten to 7-10 FT-Lbs.</p>	

483154



481664



481663

2005 STT-31B5D Decals 2

# LIMITED WARRANTY - COMMERCIAL EQUIPMENT

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Any part of the Scag commercial mower manufactured by Scag Power Equipment and found, in the reasonable judgment of Scag, to be defective in materials or workmanship, will be repaired or replaced by an Authorized Scag Service Dealer without charge for parts and labor. This warranty is limited to the original purchaser and is not transferable. Proof of purchase will be required by the dealer to substantiate any warranty claims. All warranty work must be performed by an Authorized Scag Service Dealer.

This warranty is limited to the following specified periods from the date of the original retail purchase for defects in materials or workmanship:

- \* Wear items including drive belts, blades, hydraulic hoses and tires are warranted for ninety (90) days.
- \* Batteries are covered for ninety (90) days.
- \* Frame and structural components including oil reservoir, fittings, and oil coolers are warranted for 2 years (Parts and labor 1st year; Parts only 2nd year).
- \* Cutter decks are warranted against cracking for a period of three (3) years. (Parts and labor 1st year; Parts only 2nd and 3rd year) The repair or replacement of the cutter deck will be at the option of Scag Power Equipment. We reserve the right to request components for evaluation. This warranty does not cover any mower that has been subject to misuse, neglect, negligence, or accident, or that has been operated in any way contrary to the operating instructions as specified in the Operator's Manual.
- \* Engines and electric starters are covered by the engine manufacturer's warranty period.
- \* Major drive system components are warranted for two (2) years by Scag Power Equipment. (Parts and labor 1st year; Parts only 2nd year) (Two year warranty exclude fittings, hoses, drive belts). The repair or replacement of the hydraulic pump or hydraulic motor will be at the option of Scag Power Equipment. This warranty does not cover any mower that has been subject to misuse, neglect, negligence, or accident, or that has been operated in any way contrary to the operating instructions as specified in the Operator's Manual.
- \* Electric clutches have a Limited Warranty for 2 year (Parts and labor 1st year; Parts only 2nd year).
- \* Cutter Spindle Assemblies 46631 have a Limited Warranty for three years (Parts and labor 1st year; Parts only 2nd and 3rd year).
- \* Any Scag product used for rental purposes is covered by a 90 day warranty.

The Scag mower, including any defective part must be returned to an Authorized Scag Service Dealer within the warranty period. The expense of delivering the mower to the dealer for warranty work and the expense of returning it to the owner after repair will be paid for by the owner. Scag's responsibility is limited to making the required repairs and no claim of breach of warranty shall be cause for cancellation or rescission of the contract of sale of any Scag mower.

**This warranty does not cover any mower that has been subject to misuse, neglect, negligence, or accident, or that has been operated in any way contrary to the operating instructions as specified in the Operator's Manual.** The warranty does not apply to any damage to the mower that is the result of improper maintenance, or to any mower or parts that have not been assembled or installed as specified in the Operator's Manual and Assembly Manual. The warranty does not cover any mower that has been altered or modified, changing performance or durability. In addition, the warranty does not extend to repairs made necessary by normal wear, or by the use of parts or accessories which, in the reasonable judgment of Scag, are either incompatible with the Scag mower or adversely affect its operation, performance or durability.

**Scag Power Equipment reserves the right to change or improve the design of any mower without assuming any obligation to modify any mower previously manufactured.** All other implied warranties are limited in duration to the two (2) year warranty period or ninety (90) days for mowers used for rental purpose. Accordingly, any such implied warranties including merchantability, fitness for a particular purpose, or otherwise, are disclaimed in their entirety after the expiration of the appropriate two year or ninety day warranty period. Scag's obligation under this warranty is strictly and exclusively limited to the repair or replacement of defective parts and Scag does not assume or authorize anyone to assume for them any other obligation. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

Scag assumes no responsibility for incidental, consequential or other damages including, but not limited to, expense for gasoline, expense of delivering the mower to an Authorized Scag Service Dealer and expense of returning it to the owner, mechanic's travel time, telephone or telegram charges, rental of a like product during the time warranty repairs are being performed, travel, loss or damage to personal property, loss of revenue, loss of use of the mower, loss of time or inconvenience. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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