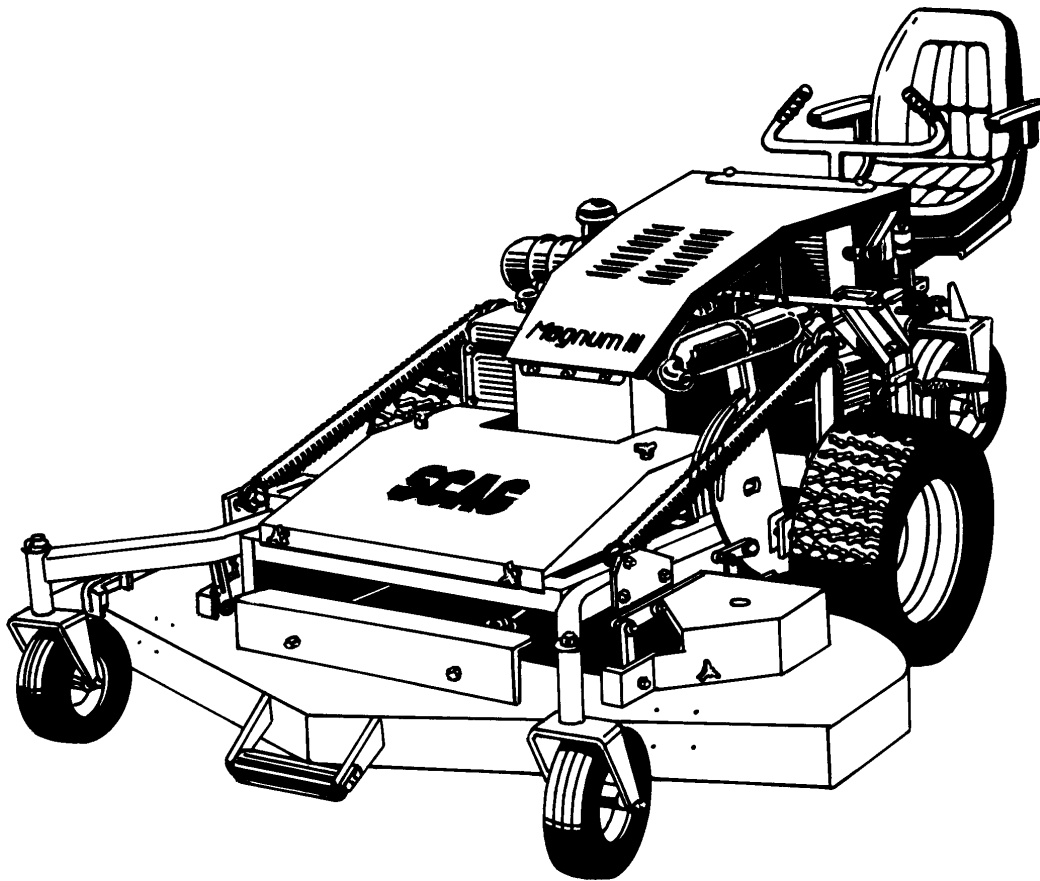


SCAG[®]

POWER EQUIPMENT

OPERATOR'S MANUAL



PART 03027



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 wire 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:

**All MAG Machines
with a serial number of 22060001- 22069999**

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

GENERAL INFORMATION

1.1 INTRODUCTION

Your mower was built to highest standards in the industry. However, the prolonged life and maximum efficiency of your mower depend 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 and cutting deck. The serial plates are located where shown in Figure 1-1.

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 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 pump and motors and gear boxes 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.

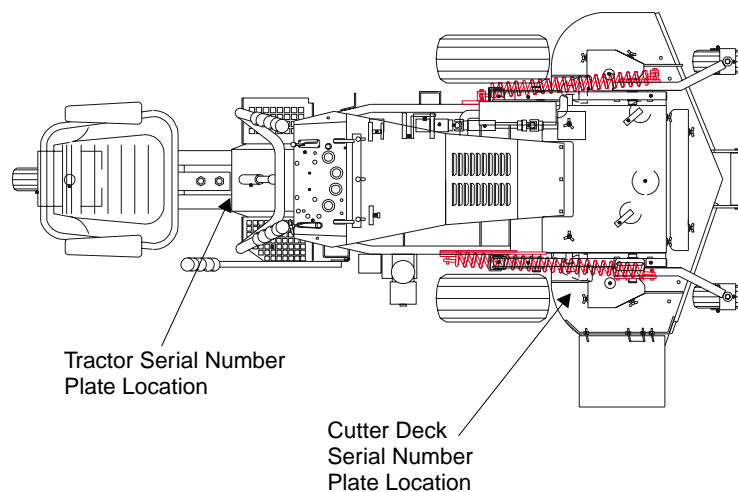


Figure 1-1 Serial Plate Locations

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 the controls before operating the mower.

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

A replacement manual is available from your authorized Scag Service Dealer or by Contacting Scag Power Equipment, Service Department at P.O. Box 152, Mayville, WI 53050. There is nominal charge of \$2.00 for each manual. Please indicate the complete model and serial number of your Scag product.

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 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 on safety decals 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 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 depend significantly upon your knowledge and understanding of all correct operating practices and procedures of this machine.

2.3 BEFORE OPERATION CONSIDERATIONS

1. **NEVER** allow children to operate this riding mower. Do not allow adults to operate this machine without proper instructions.
2. **DO NOT** mow when children and/or others are present.
3. Clear the area to be mowed of objects that could be picked up and thrown by the cutter blades.
4. **DO NOT** carry passengers.
5. **DO NOT** wear loose fitting clothing that could get caught 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.

6. Prolonged exposure to loud noise can cause hearing impairment or loss. Operator hearing protection is recommended, particularly for continuous operation of the mower. Wear suitable hearing protection.
7. 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 parking brake is applied and the blades are disengaged. The system also shuts off the engine if the operator removes his foot from the interlock pedal with the mower running and the parking brake not engaged. **Never operate equipment with the interlock system disconnected or malfunctioning.**

8. Be sure interlock switches are functioning correctly.
9. Fuel is flammable; handle with care.
10. Equipment must comply with the latest requirements per ANSI J137 and/or ANSI S279 when driven on public roads.
11. **DO NOT** operate without a chute deflector installed; keep the deflector in lowest possible position.
12. Check the blade mounting bolts at frequent intervals for proper tightness.
13. 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 drive up it (with cutter deck down). If machine can drive up the slope without the wheels slipping, reduce speed and use extreme caution. **ALWAYS FOLLOW OSHA APPROVED OPERATION.**

3. Do not stop or start suddenly. **WHEN GOING UPHILL OR DOWN HILL, MOW UP AND DOWN THE FACE OF SLOPES, NEVER ACROSS THE FACE.**
4. When using any attachment, never direct the discharge of material toward bystanders nor allow anyone near the machine while in operation.
5. Before attempting to start the engine, disengage power to all attachments and engage the parking brake. **DO NOT** depress the right foot pedal.
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, and roots in the terrain and other hidden hazards. Keep away from any drop off. 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 mower 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. Use counterweights or wheel weights when suggested in this manual.
11. Watch for traffic when crossing roads or operating near roadways.
12. Mow only in daylight or good artificial light.
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.
16. **DO NOT** touch the engine or the muffler while the engine is running or immediately after stopping. These areas may be hot enough to cause a burn.

2.5 MAINTENANCE CONSIDERATIONS

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. Remove the key from the ignition switch to prevent accidental starting of the engine when servicing or adjusting the machine.
3. 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.
4. Do not change the engine governor settings or overspeed the engine.
5. To reduce fire hazard, keep the engine free of grass, leaves, excessive grease and dirt.
6. **Hydraulic fluid is under high pressure.** Keep body and hands away from pin holes or nozzles that eject hydraulic fluid under high pressure. Use only cardboard or paper to search for leaks.
7. Hydraulic fluid under high pressure may have sufficient force to penetrate skin and cause serious injury. If hydraulic fluid is injected into the skin it must be surgically removed within a few hours by a doctor or gangrene may result.

2.6 SAFETY AND INSTRUCTIONAL DECALS



SPECIFICATIONS

3.1 ENGINE

General Type	Heavy Duty Industrial/Commercial Diesel
Brand	Kubota 28 HP Super 5 Series, Electric Start
Model	D1105-B
Horsepower	SAE Gross Intermittent, 28 HP @ 3000 RPM
Type	Horizontal Shaft, Water Cooled, 4-Cycle Diesel
Displacement	1123 cc.
Low Idle	850 - 950 RPM
Cylinders	3
Order of Firing	1-2-3
Direction of Rotation	Counter-clockwise (Viewed From Flywheel End)
Fuel Injection Pump	Bosch MD Type, Mini Pump
Injection Pressure	1,991 psi
Injection Timing (Before T.D.C.)	19°
Compression Ratio	23:1
Starting System	Electric Starting with Cell Starter, Glow Plug In Combustion Chamber
Fuel	Diesel Fuel No. 2 -D (ASTM D975)
Oil Type	API Sandard, CD Grade or Better
Oil Filter	Full Flow Oil Filter Cartridge
Oil Capacity	4 Quarts With Filter
Cooling	Pressurized, Sealed Cooling System, 170° F Thermostat, Blade Fan, Cooling Capacity 8 Quarts
Belts:	
Alternator	See Engine Manual for Part Number
Fan	Scag Part Number - 481114
Electric Clutch	Scag Part Number - 481104
Hydraulic Pump	Scag Part Number - 481103

3.2 ELECTRICAL

Battery	12 Volt
Charging System	Alternator
Charging Output	12 Volt, 30 Amp
System Polarity	Negative Ground
Starter	12 Volt Electric Ring Gear Type, Key and Solenoid Operated
Interlock Switches	Left Foot Pedal, Blade Brake, and Parking Brake
Fuses	Two (2) 30 Amp

3.3 TRACTOR

Drive Motors	12 Cu. In. Cast Iron High Torque Motors
Steering	Chain and Sprocket
Forward and Reverse Control	Pedal Operated Linkage Connected To The Hydraulic Pump
Parking Brake	Lever Actuated Linkage to Drum Brakes on Both Drive Wheel Assemblies
Wheels:	
(2) Front Caster	12 x 3.5
(2) Drive	2 x 10.5 -12, 4-ply Pneumatic Tubeless, Radius Edge
(1) Rear	18 x 8.50 -8 NHS
Fuel Tank	Seamless Polyethylene Tank; 8 Gallon Capacity
Tire Pressure:	
Front Caster	25 PSI
Drive	15 PSI
Rear	15 PSI

3.3 TRACTOR (CONT'D)

Seat	Milsco Seat With Adjustment Lever For Forward and Back Movement
Travel Speed:	
Forward	0 - 8 MPH Infinitely Variable
Reverse	0 - 4.3 MPH Infinitely Variable

3.4 CUTTER DECK

No. of Blades	3
Width of Cut:	
Mag-61	61 in.
Mag-72	72 in.
Blade Size:	
Mag-61	1/4 thick x 21" long, milled edge, 5150 alloy steel
Mag-72	1/4 thick x 24-1/2" long, milled edge, 5150 alloy steel
Blade Spindles	Cast Iron with Easy Removable Taper Hubs
Deck Drive	Belt Driven Electric Clutch Connected to Drive Shaft to Gearbox on Deck
Electric Clutch Type	Warner "Mag Stop" Electric Clutch
Blade Brake	Lever Controlled Linkage to Band Type Brake. Brake Hub Connected to Drive Shaft
Cutting Height	Switch on Instrument Panel Controls Electric Actuator; Cutting Heights - 1-1/2" to 5-1/2"
Deck Tilt	Switch on Instrument Panel Controls Electric Actuator
Cutter Deck Belts:	
Blade and Gearbox Drive (Mag-61)	Scag Part Number - 48204
Blade and Gearbox Drive (Mag-72)	Scag Part Number - 48089
Blade Drive (Mag-61)	Scag Part Number - 48265
Blade Drive (Mag-72)	Scag Part Number - 481295
Gearbox Type	Sealed Housing, Bevel Gear and Pinion Type
Drive Shaft	Quick-Disconnect Shaft With Two High Speed U-Joints

3.5 HYDRAULIC SYSTEM

Hydraulic Pump	Sunstrand Series 15
Hydraulic Cooler	Part of Radiator
Hydraulic Oil Filter	10 Micron Spin-on Element Type
Hydraulic Reservoir	High Density Polyethylene; 13 Quart Capacity

3.6 WEIGHTS AND DIMENSIONS

Length:	
Mag-61	120.0"
Mag-72	120.0"
Tracking Width:	
Mag-61	54.0"
Mag-72	54.0"
Overall Width:	
Mag-61	73.0"
Mag-72	84.0"
Overall Width (with Discharge Chute Up):	
Mag-61	62.0"
Mag-72	73.0"
Overall Height	51.0"
Operating Weight:	
Mag-61	1,750 lb.
Mag-72	1,800 lb.

OPERATING INSTRUCTIONS

CAUTION:

Do not attempt to drive 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.

A. Instrument Panel (See Figure 4-1)

1. Ignition Switch: The ignition switch is used to start and stop the engine and has four positions; PREHEAT, OFF, ON, and START. Rotate the key to the PREHEAT position to energize the glow plug. Hold the key at the PREHEAT position until the yellow indicator light for the glow plug turns off, then release and rotate the key to the START position.

Do not hold the key in the START position longer than 15 seconds. If the engine does not start, return the key to the OFF position for at least 60 seconds before a restart attempt is made. Prolonged cranking can damage the starter motor and shorten battery life. Release the key when the engine starts and it will automatically return to the run position. To stop the engine, rotate the key counter-clockwise to the OFF position.

2. Glow Plug Indicator Light: Yellow indicator turns off when glow plugs have been properly energized after the ignition switch is turned and held in the PREHEAT position.

3. Hourmeter: Indicates the number of hours the engine has been operated. It operates whenever the ignition key is in the ON position. Can be used to keep track of maintenance intervals and the amount of time required to perform various tasks.

4. Voltmeter: Indicates the battery condition and charge level.

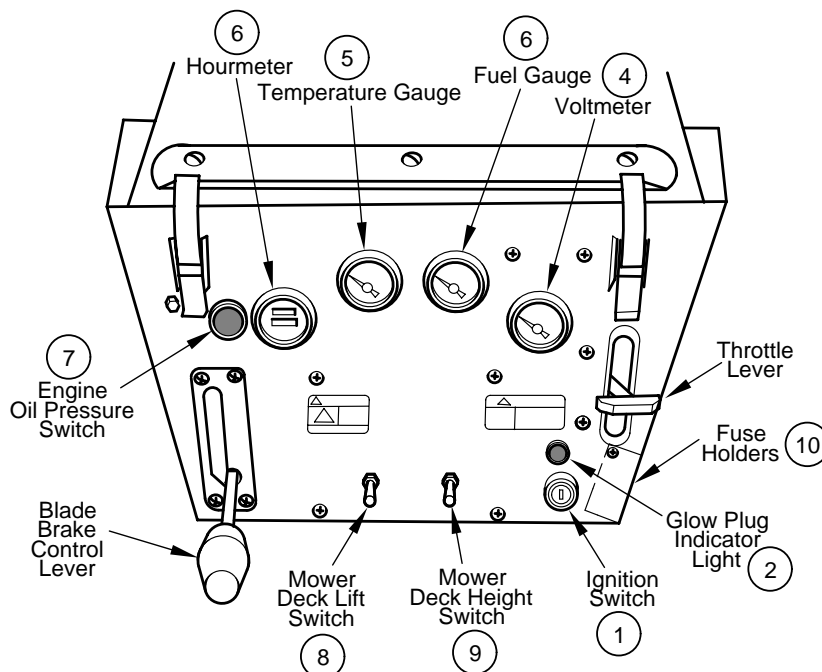


Figure 4-1 Instrument Panel

Section 4

5. **Temperature Gauge:** Indicates engine coolant temperatures. Green zone indicates proper working temperature. Red zone indicates engine over heating and the engine should be shut off immediately.
6. **Fuel Gauge:** Indicates the amount of fuel in the fuel tank.
7. **Engine Oil Pressure Indicator Light:** Indicator will light if oil pressure drops below a safe operating pressure. Stop the engine immediately; determine the cause and correct the problem before continuing operation.
8. **Mower Deck Lift Switch:** This switch raises and lowers the deck for road travel, etc. Pushing the switch forward tilts the mower deck back. Pulling the switch back tilts the deck forward.
9. **Mower Deck Height Switch:** This switch raises and lowers the cutting height of the mower deck. An indicator is located above the deck that gives the cutting height setting. Pushing the switch forward raises the deck cutting height. Pulling the switch back lowers the deck cutting height.
10. **Fuse Holders:** Two 30 amp fuses protect the mower's electrical system. To replace fuses, pull fuse out of socket and install new fuse.

B. Levers

1. **Blade Brake Control Lever (Figure 4-1):** Used to engage and disengage the mower blade brake. Pulling the lever down and to the right engages the brake and stops the blades from rotating. Pushing the lever up and to the left disengages the brake, allowing blades to rotate.
2. **Throttle Lever (Figure 4-1):** Regulates engine speed. Push the lever forward to increase or pull the lever backwards to decrease the engine speed.
3. **Parking Brake Lever (Figure 4-2):** Used to engage and disengage the parking brakes. Pull the lever backwards to engage the parking brake. Push the lever forward to disengage the parking brake.

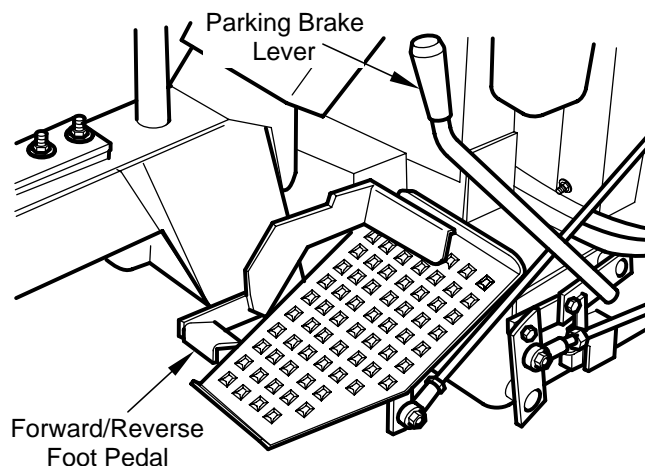


Figure 4-2

C. Foot Pedals

1. **Forward/Reverse Foot Pedal (Figure 4-2):** Used to select the travel direction of the mower. Pressing the pedal forward moves the mower in the forward direction. Pressing the pedal backwards moves the mower in the backward (reverse) direction.
2. **Interlock Switch Pedal (Figure 4-3):** Stops the mower when operator's left foot is raised off the pedal.

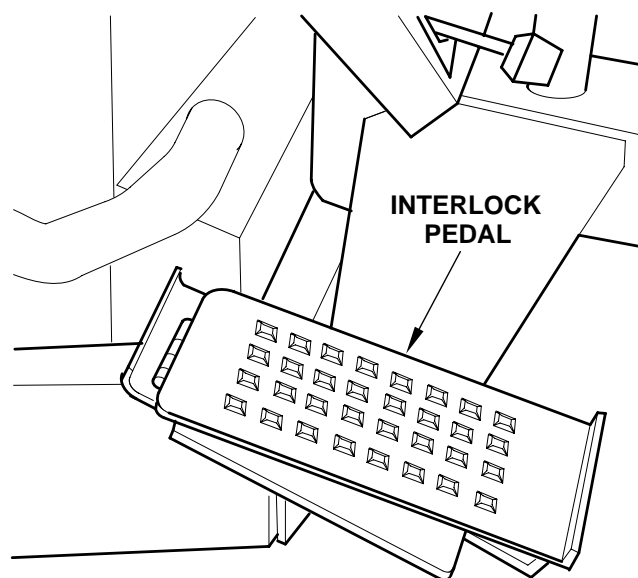


Figure 4-3 Interlock Pedal

4.2 SAFETY INTERLOCK SYSTEM

This mower is equipped with a safety system that prevents the engine from starting unless the mower blade brake is disengaged and parking brake is engaged. The system also shuts the engine off if the operator's left foot is raised from the interlock pedal with the mower and parking brakes disengaged.

WARNING:

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

If the safety interlock system is malfunctioning or if you want to ensure that it is working properly, perform the tests in Table 4-1. Stop the test and have the system inspected and repaired if:

- the engine does not start in test 1, or
- the engine does start during tests 2 and 3, or
- the engine continues to run during tests 4 and 5.

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

1. Check all belts for proper tension at 2, 4 and 8 hours; adjust as needed.
2. Check the neutral adjustment. If necessary, adjust the linkage so that the mower does not move when forward and reverse pedal is in neutral (See Adjustments in Section 6).
3. Check the tires for proper inflation (See Section 7-2).
4. Check for loose hardware. Tighten as needed.
5. Perform Interlock Tests in Table 4-1.
6. Apply lubricant to all machine grease fittings. See Lubrication Chart in Section 7.2.

Table 4-1 Interlock System Tests

Left Foot Lifted From Interlock Pedal			Parking Brake Brake		Mower Blade		Engine Operates	
Test	Yes	No	On	Off	On	Off	Yes	No
1	-	X	X			X	X	
2	X		X			X		X
3	-	X		X	X			X
4	X			X		X		X
5	X			X	X			X

Section 4

4.4 DIESEL ENGINE BREAK-IN

The proper break-in of a new diesel engine can make a difference in the performance and life of the engine. Perform the following break-in procedure during the first 50 hours of operation:

1. A new engine should be operated with as near full load as possible. However, the engine must be allowed to reach an operating temperature before operating at full load conditions.
2. The engine oil should be checked twice daily. Higher than normal oil consumption is not uncommon during the initial break-in period.
3. Change the oil and filter element after the first 40 hours of operation.
4. Check all engine belts for proper tension after the first 10 hours of operation and adjust, if necessary. Refer to Adjustments in Section 6.
5. During the break-in period, check and tighten all engine hardware.

4.5 STARTING THE DIESEL ENGINE



CAUTION:

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

1. Be sure the fuel shut-off valve is completely open. The valve is located in the fuel line between the fuel tank and electric fuel pump (See Section 7).
2. Sit in the operator's seat and depress the interlock foot pedal with your left foot. Make sure the parking brake and mower blade brake are engaged.
3. Set throttle lever to 3/4 throttle.

4. Turn the ignition key switch to the PREHEAT position until the indicator light for the glow plug glows bright red. The colder the temperature, the longer it will take to energize the glow plug. This step is not necessary when starting a warm engine.
5. Turn the ignition key switch to 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 inhibit overheating the starter motor. Prolonged cranking can damage the starter motor and shorten battery life.
6. Allow engine to warm to operating temperature.

4.6 OPERATOR COMFORT ADJUSTMENTS

Two adjustments can be made to make your mowing job comfortable. The steering handle can be adjusted up or down and the seat can be adjusted forward or back.

A. Adjusting Steering Handle Height

1. Remove the hardware securing the handle to the steering shaft. Two sets of holes are available to adjust the handle height.

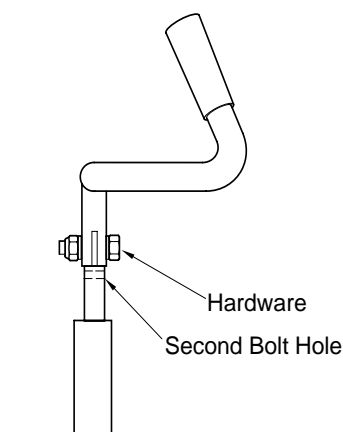


Figure 4-4 Steering Handle Adjustment

2. Move the handle to align with the other holes in the steering shaft. Install the hardware and tighten.

B. Seat Adjustment

1. Pull the handle on the left side of seat (Figure 4-5) and move the seat either forward or back.
2. Release the handle to lock the position.

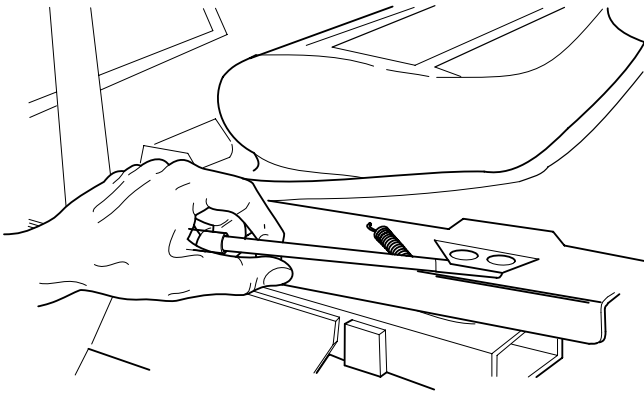


Figure 4-5 Seat Adjustment

4.7 ADJUSTING GROUND SPEED AND DIRECTION

-NOTE-

If you are not familiar with the operation of the hydrostatic drive, practice turning and maneuvering with the foot controls before engaging the blades. Learn the operation in an open area away from buildings, fences, or obstructions. Learn the operation on a flat ground before operating on slopes. Start maneuvering with SLOW engine speed until you are familiar with all operating characteristics. Practice maneuvering the mower until you can make it go exactly where you intend.

-NOTE-

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

-NOTE-

The left operator foot pedal must be depressed before operation.

1. To travel forward, depress the right foot pedal at the toe. (See Figure 4-6). The further the pedal is depressed the faster the mower will travel forward.

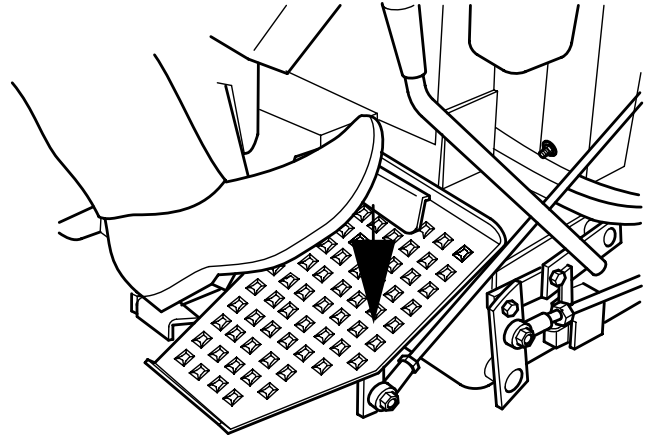


Figure 4-6 Forward - Depress Toe End of Pedal

-NOTE-

Before shifting from forward to reverse, or reverse to forward, come to complete stop then shift the foot pedal to the desired direction.

2. To travel backwards (reverse), depress the right foot pedal at the heel (See Figure 4-7). The further the pedal is depressed the faster the mower will travel backwards. Use slower traveling speed when traveling backwards and observe the area behind you before moving.

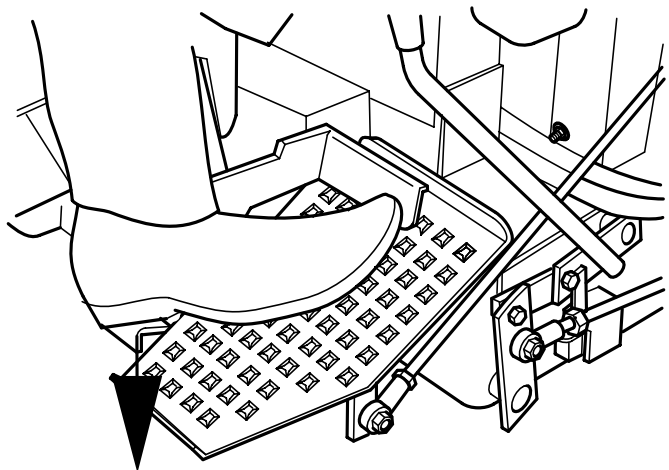


Figure 4-7 Backward (Reverse) Operation- Depress Heel End of Pedal

Section 4

3. Check that all systems function correctly.
4. When traveling, the throttle control can be adjusted to increase or decrease travel speed.
5. Reduce speed when turning around trees, shrubs, etc.

IMPORTANT:

Avoid high-speed turns on all surfaces. Tires can slip on grass and can wear rapidly on concrete and asphalt.

6. When going over curbs, first activate the mower deck lift switch to fully raise the deck to clear the curb. Go **FORWARD** over the curb.

4.8 ENGAGING THE MOWER

1. Set engine throttle about 1/2 speed. **Do not attempt to engage the blade at high engine speed** as this shortens the electric clutch life — use only moderate engine speed when engaging the blades.
2. Engage the mower blades by moving the blade brake lever down and to the right.

WARNING:

A safety interlock switch (left foot pedal) will cause the engine to stop if the blade brake is disengaged, and the left foot pedal is not depressed. The function of the switch should be checked by the operator raising his left foot and disengaging the blade brake; the engine should stop. If the switch is not working, it should be repaired or replaced before operating the mower. Do not disconnect the interlock safety switches because they are for the operator's protection.

-IMPORTANT-

Do not engage the mower blades when transporting the mower across drives, loose materials, etc.

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

4.9 HILLSIDE OPERATION

WARNING:

To minimize the possibility of overturning, the least dangerous method of operating on hills and terraces is to travel vertically up and down the slope, not horizontally along the slope. Avoid any unnecessary turns and travel at reduced speed.

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 limits traction and steering control.
2. To inhibit tipping or loss of control, do not start or stop suddenly, avoid unnecessary turns and travel at a reduced speed.
3. Keep tires properly inflated.
4. Always travel up or down the slope, whenever possible; **NEVER** across the slope.
5. If the mower cannot climb the slope, the grade is too steep for safe operation. Do not make another attempt to climb the slope. Engage the blade brake to stop the blades and back down slowly.

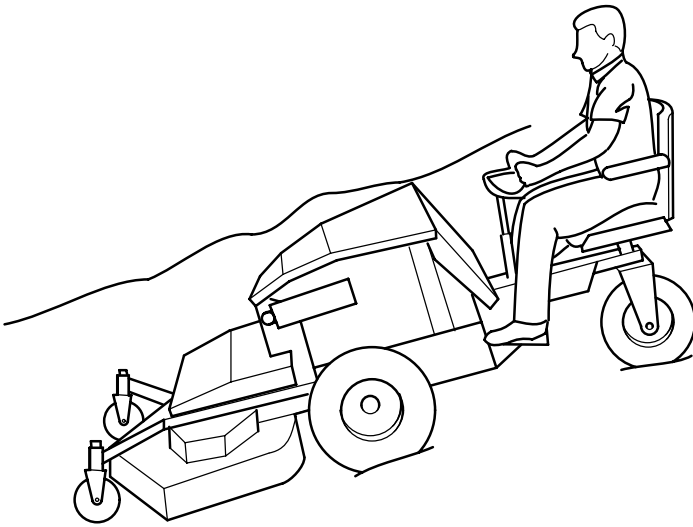


Figure 4-8 Proper Operation on Slope

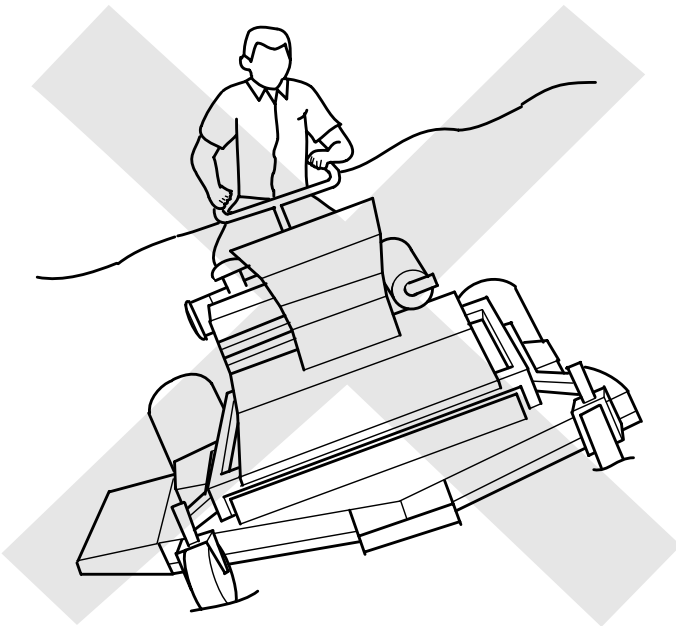


Figure 4-9 Improper Operation on Slope

4.10 STOPPING

1. Slow engine speed to idle.
2. Place the right foot pedal in the center (neutral) position.
3. Engage the blade brake.

-IMPORTANT-

If at all possible, do not engage the mower brake with engine running at high speed, since premature wear of the electric clutch will occur. Lower speed to near idle then engage the brake.

! CAUTION:

The blade brake stops the blades from rotating. If the blades do not stop, contact your Scag Dealer.

! CAUTION:

Remove the key from the ignition switch when leaving the mower unattended to inhibit children and inexperienced operators from starting the engine.

4. Engage the parking brake and turn ignition key to OFF.

4.11 AFTER OPERATION

1. Park the mower on a flat and level surface and fully lower the cutting deck to the ground. Stop the engine and engage the parking and blade brakes. Remove the key from the ignition switch.

-IMPORTANT-

If the radiator dirt screen is not removed and cleaned after every use, the screen will become clogged with grass clippings, etc., blocking the air flow through the radiator. This will cause a high engine operating temperature that may cause damage to the engine.

2. Clean the radiator dirt screen. See Section 7 for radiator dirt screen removal and cleaning instructions..
3. Wash the entire mower after each use. Do not use high pressure spray or direct the spray onto electrical components.

Section 4

-IMPORTANT-

Do not wash a hot or running engine. Use compressed air to clean the engine and the radiator fins. Cold water will damage the engine and/or radiator.

4. Keep the entire mower clean to inhibit serious heat damage to the engine or hydraulic oil circuit.
5. Recheck the cutter drive belts for proper tension, alignment and any signs of rubbing. Correct and adjust as necessary.
6. Fill the fuel tank with fresh, clean fuel at the end of every day of operation.
7. Check the tire pressure. Inflate tires if necessary.

4.12 MOVING MOWER WITH THE ENGINE STOPPED

To “free-wheel” or move the mower around without the engine running, rotate the dump valve handle (screw and nut) located on the side of the hydraulic pump to full open position. See Figure 4-10. Disengage the parking brake and move the mower by hand. The lever must be returned to the original position to operate the mower.

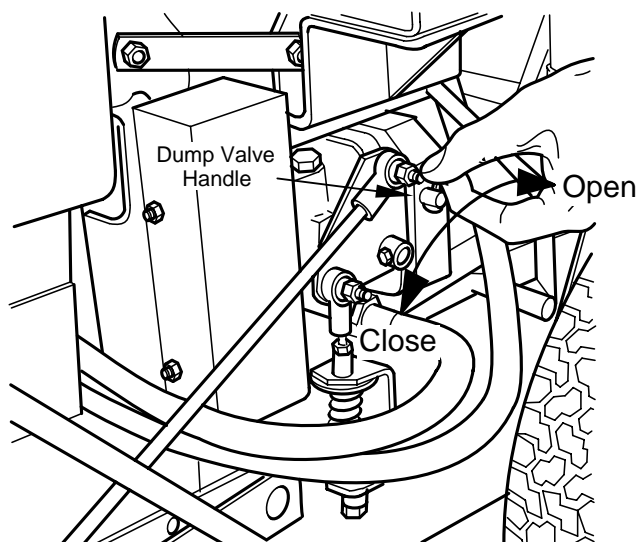


Figure 4-10 Dump Valve Handle

4.13 RECOMMENDATIONS FOR MOWING

1. Keep the mower deck and discharge chute clean.
2. Mow with sharp blades. A dull blade will tear grass, resulting in poor lawn appearance and takes extra power (slow mowing speed).
3. The discharge deflector must not be removed and must be kept in the lowest position to deflect grass clippings and thrown objects downward. Orient the side discharge away from sidewalks or street to minimize cleanup of clippings. When mowing close to obstacles, orient the discharge away from obstacles to reduce the chance of property damage by thrown objects.
4. Cut grass when it is dry and not too tall. Mow frequently and do not cut grass too short (cut off 1/3 or less of existing grass for best appearance).
5. Operate the engine at or near full throttle for best cutting. Mowing with a lower RPM causes the mower to not cut clean and tear the grass. The engine is designed to be operated at full speed.
6. Use slow travel speed for trimming purposes.
7. When mowing tall or wet grass, mow the grass twice. Raise the mower to the highest setting for the first pass and then make a second cutting pass to the desired height.
8. Be sure the mower is leveled properly for a smooth cut. See Section 7, Adjustments.
9. Use alternate stripe mowing pattern for best appearance and vary the direction of the stripe each time the grass is mowed to avoid wear patterns in the grass.

4.14 ADJUSTING CUTTING HEIGHT

The mower deck height switch on the instrument panel is used to adjust the cutting height of the deck. Do not adjust the cutting height while the mower is moving. Stop the mower, then activate the deck height switch to position the deck at the desired height. A gauge is located on the right front of the mower (See Figure 4-11) for use in selecting the proper cutting height.

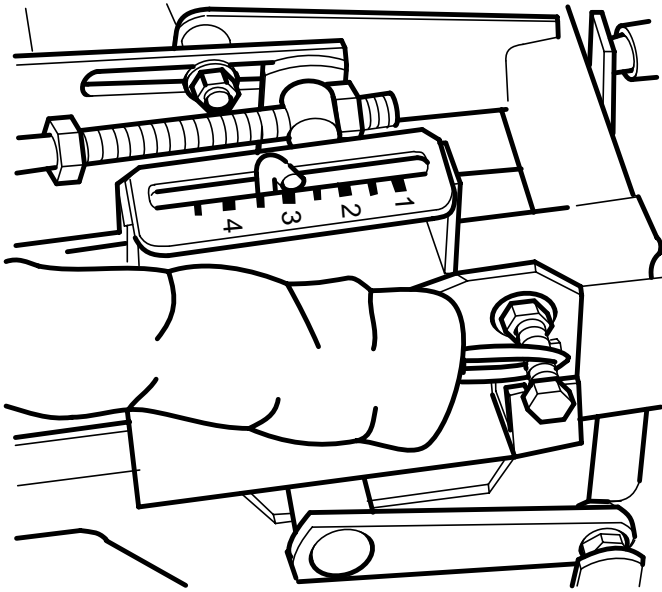


Figure 4-11 Mower Cutting Height Gauge

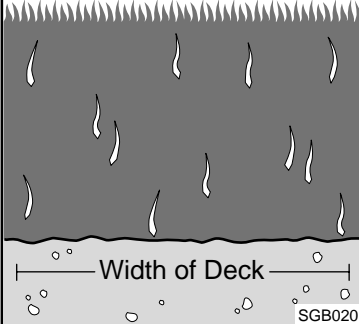
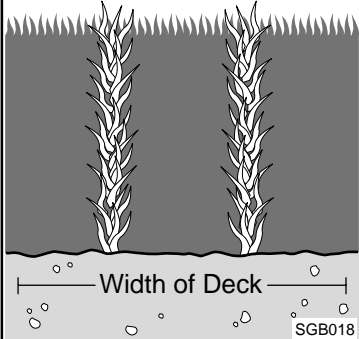
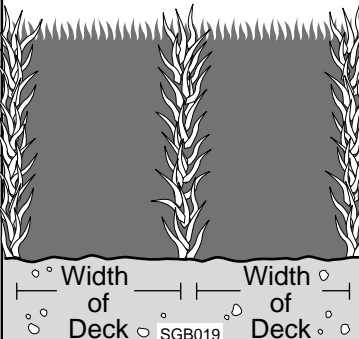
4.15 TILTING THE MOWER DECK

⚠ CAUTION:

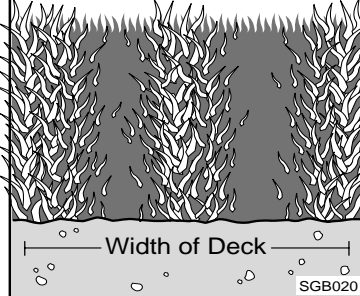
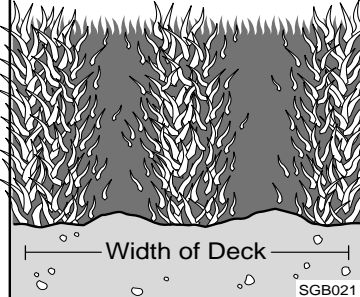
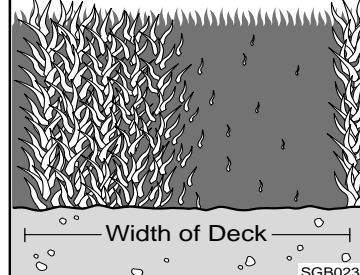
Do not tilt the deck with the mower blades rotating. Engage the blade brake before tilting the deck. Bodily injury or damage to the mower or property could result.

1. Stop the traveling movement of the mower and engage the blade brake.
2. Use the deck tilt control switch on the instrument panel to raise the deck.
3. Before lowering the deck, observe that there are no objects under the deck. Remove any objects then, activate the deck tilt switch to lower the deck.

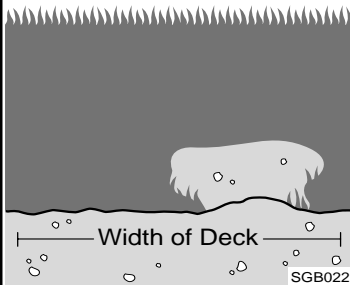
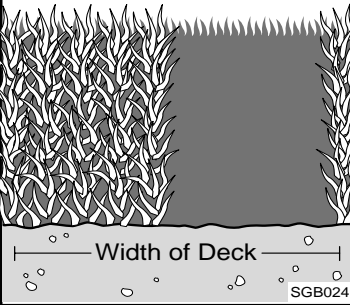
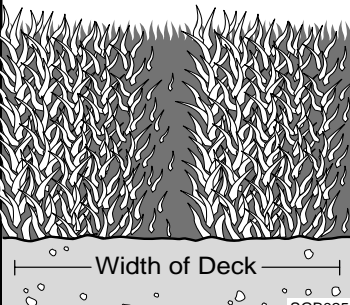
TROUBLESHOOTING CUTTING CONDITIONS

CONDITION	CAUSE	CURE
Stringers - Occasional Blades of Uncut Grass 	Low engine RPM	Run engine at full 3600 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 tensions
Streaking - Strips of Uncut Grass in Cutting Path 	Dull, worn blades	Sharpen blades
	Incorrect blade sharpening	Sharpen blades
	Low engine RPM	Run engine at full 3600 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
Streaking - Strips of Uncut Grass Between Cutting Paths 	Not enough overlapping between rows	Increase the overlap of each pass

TROUBLESHOOTING

CONDITION	CAUSE	CURE
Uneven Cut on Flat Ground - Wavy High-Low Appearance, Scalloped Cut, or Rough Contour 	Lift worn off of 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
Uneven Cut on Uneven Ground - Wavy Appearance, High-Low Scalloped Cut, or Rough Contour 	Uneven ground	May need to reduce ground speed, raise cutting height, and/or change direction of cut
Sloping Ridge Across Width of Cutting Path 	Tire pressures not equal	Check and adjust tire pressure
	Wheels uneven	Check and adjust tire pressure
	Deck mounted incorrectly	See your authorized SCAG dealer

TROUBLESHOOTING

CONDITION	CAUSE	CURE
Scalping - Blades Hitting Dirt or Cutting Very Close to the Ground 	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
Step Cut Ridge in Center of Cutting Path 	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
Slope Cut - Sloping Ridges Across Width of Cutting Path 	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 hold the mower from moving. A minor adjustment can be made at the control lever by loosening the jam nut shown in Figure 6-1 and turning the rod in a clockwise direction to tighten the linkage. Tighten the jam nut.

If this adjustment does not hold the mower from moving or no more thread is available on the rod, contact your Scag dealer before operating the mower.

6.2 FORWARD/REVERSE NEUTRAL ADJUSTMENT

The forward/reverse linkage should be adjusted whenever the mower will not stay stationary when the forward/reverse (right) foot pedal is placed in the neutral position.

1. Set the engine deck on jack stands so the wheels are free to rotate.
2. Block the caster wheels to prevent an accident should the unit fall off the jacks.
3. Start the engine and observe for drive wheel rotation.

If the wheels consistently rotate when the foot control is in neutral, go to step 4.

If the drive wheels intermittently rotate, i.e. the drive wheels sometimes rotate and sometimes do not when the foot pedal is not depressed, then check the neutral adjustment bolt for “zero free play” in the neutral control spring.

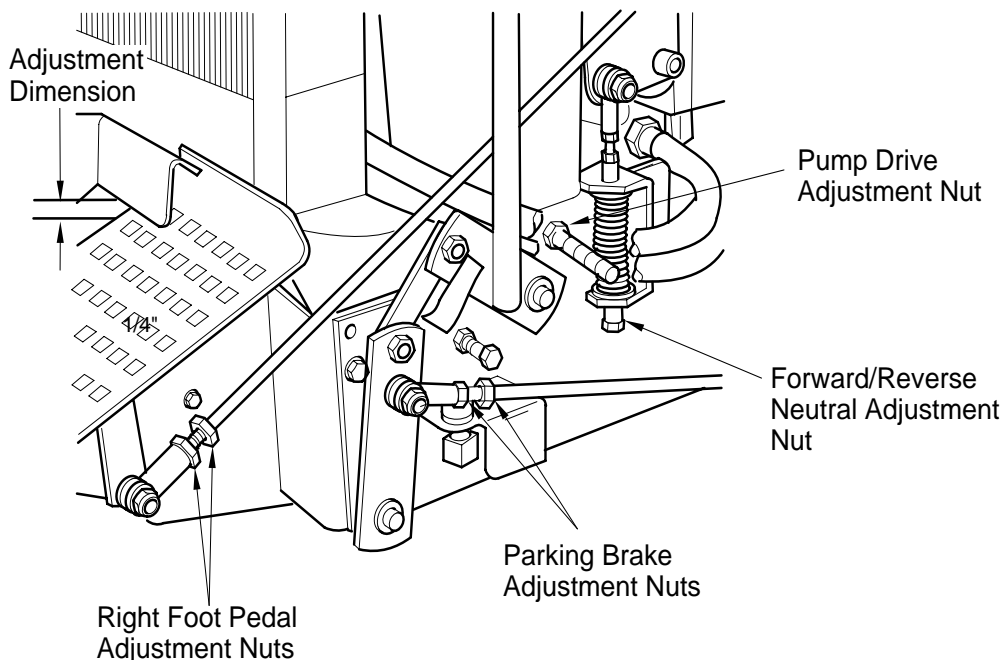


Figure 6-1 Adjustments

-NOTE-

If you turn the nut too much, you will compress the spring, making too much end play. Go to step 4.

4. If the drive wheels rotate in rearward travel direction, turn the adjustment bolt (Figure 6-1) clockwise until rotation stops. If the drive wheels rotate in the forward travel direction, turn the adjusting bolt counter-clockwise until rotation stops.
5. Check the adjustment of the right foot pedal for full forward speed. The bottom of the foot pedal should be 1/4 inch from the top of the foot plate (See Figure 6-1) when the pump is stroked in the full forward position.

To make an adjustment, loosen the jam nut at the pump control bellcrank (Figure 6-1). Depress the foot pedal and turn the control rod until 1/4 inch is obtained between the bottom of the foot pedal and the top of the foot plate. Tighten the jam nut.

6. Start the engine. The drive wheels should rotate only when the forward/reverse foot pedal is depressed.

6.3 THROTTLE CONTROL LINKAGE ADJUSTMENT

Should the throttle control lever not stay in position after moving it to increase or decrease the engine speed, the throttle linkage must be tightened. Hold the lock nut (Figure 6-2) with a wrench while turning the bolt clockwise to tighten the throttle lever against the friction plate. Do not overtighten as the control lever will be hard to move.

If the engine speed must be increased or decreased, consult your Scag dealer.

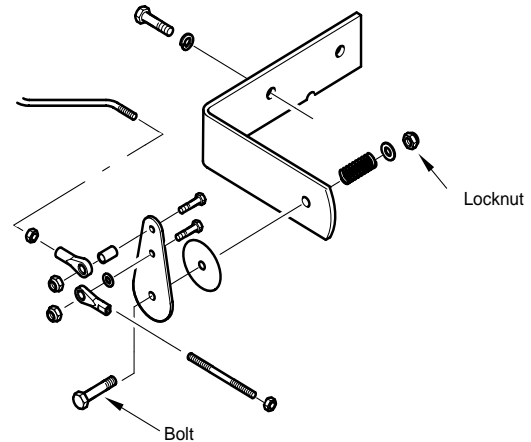


Figure 6-2 Throttle Control Adjustment

6.4 CUTTER BRAKE LINKAGE

The cutter brake linkage is self-adjusting. If the brake will not hold the cutter blades from turning, consult your Scag dealer. Do not operate the mower if the cutter brake is not functioning properly.

6.5 FAN BELT ADJUSTMENT

1. Remove the pump belt guard to gain access to the fan drive idler bracket.
2. Loosen the two bolts (A and B, Figure 6-3). Using a 3/8 inch ratchet wrench installed in hole C, rotate the bracket until 1/2 inch deflection in the belt is observed using 10 pounds of pressure on the belt. See Engine Drive Belts, section 7.9 for checking method.

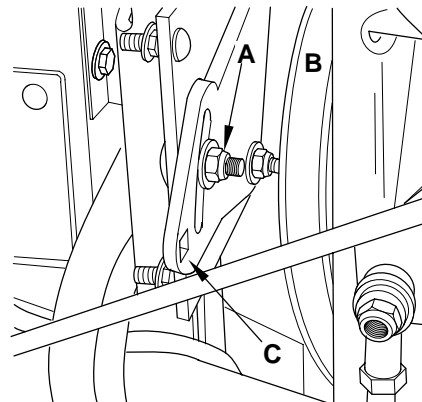


Figure 6-3 Fan Belt Adjustment

- After proper tension is obtained, tighten the two bolts and install the pump belt guard.

6.6 PUMP DRIVE BELT ADJUSTMENT

To adjust belt tension, turn the adjusting nut (Figure 6-1) until 1/2 inch deflection in belt is obtained with 10 pounds of pressure. See Engine Drive Belts, section 7.9 for checking method.

6.7 ELECTRIC CLUTCH DRIVE BELT ADJUSTMENT

To adjust the belt tension, turn the adjusting nut (Figure 6-4) to obtain 1/2 inch belt deflection with 10 pounds of pressure. See Engine Drive Belts, section 7.9 for checking method.

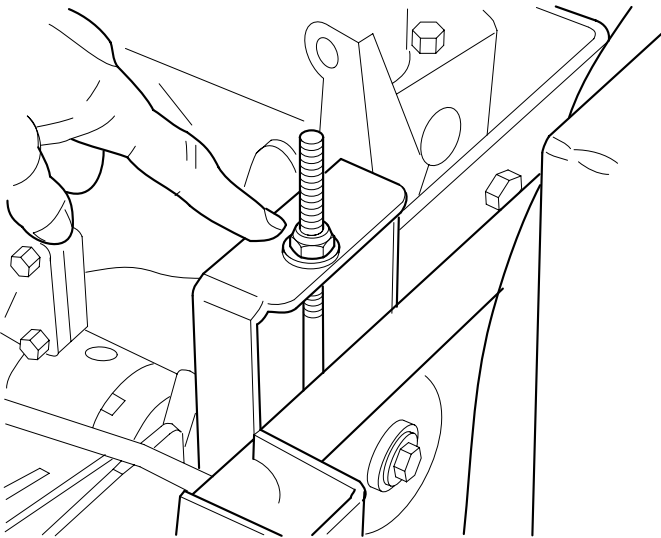


Figure 6-4 Electric Clutch Drive Belt Adjustment

6.8 ALTERNATOR BELT ADJUSTMENT

To adjust the alternator belt tension, loosen the two bolts holding the alternator (Figure 6-5). Move the alternator until proper tension of 0.28 to 0.35 inch deflection with 22 pounds of pressure is obtained, then tighten the two bolts. See Engine Drive Belts, section 7.9 for checking method.

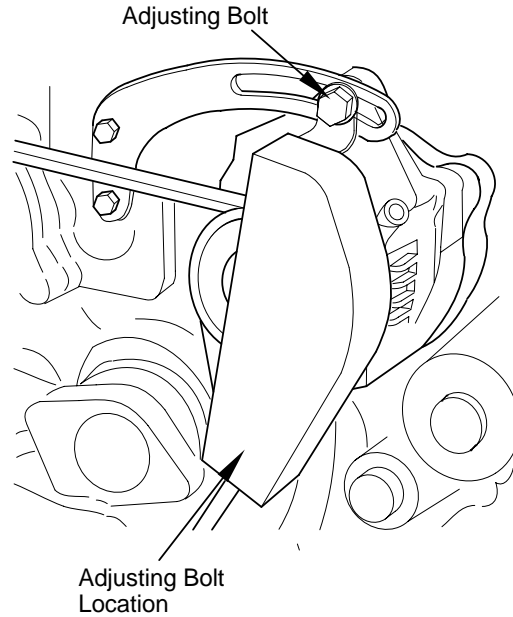


Figure 6-5 Alternator Belt Adjustment

6.9 CUTTER DRIVE BELT ADJUSTMENTS

- Remove the top cutter deck cover.
- Each belt has an adjustment rod attached to its belt idler arm. To adjust the belt tension, turn the adjusting nut (Figure 6-6) until 1/2 inch deflection in the belt is obtained with 10 pounds of pressure. See Cutter Deck Belts, section 7-10 for checking method.

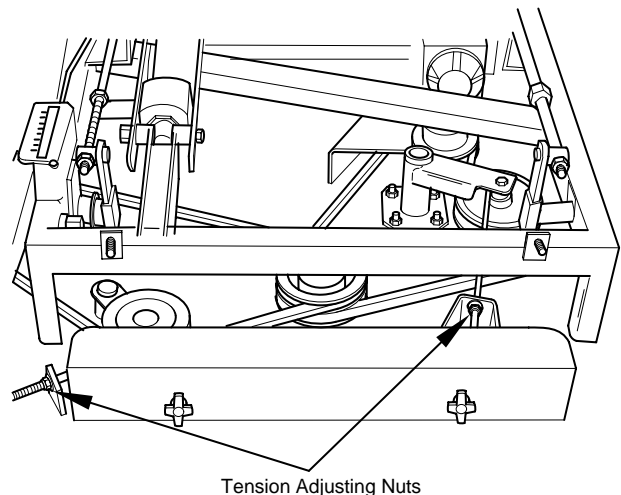


Figure 6-6 Blade Belt Tension Adjustments (Mag-72 Deck Shown)

- Replace the top cutter deck cover.

6.10 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 dealer for belt adjustment.

6.11 CUTTER DECK ADJUSTMENTS

Due to many conditions that exist, it is difficult to suggest a setting that will work for every lawn. However, two adjustments should be made on the cutter deck to ensure proper grass cutting: DECK LEVEL AND PITCH.

-NOTE-

Before checking for proper cutter deck adjustments, check that all tires are inflated to the correct pressure.

DECK LEVEL is the adjustment to level the deck side-to-side. For proper blade cutting, the deck should be level. To check for level, place the mower on a flat, level surface. On the right side of the deck, measure from the ground to the bottom of the cutter deck (Figure 6-7). Then, take a measurement on the left side of the deck. Both measurements should be equal. If different, adjust the deck to level.

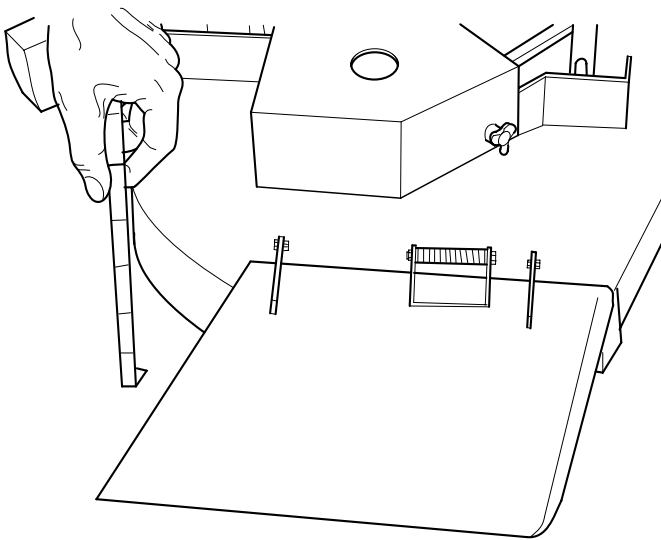


Figure 6-7 Measuring Height of Deck

To level the deck, loosen the adjusting nut (Figure 6-8) and lift or lower the deck until the left side measurement equals the right side measurement. Tighten the adjusting nut.

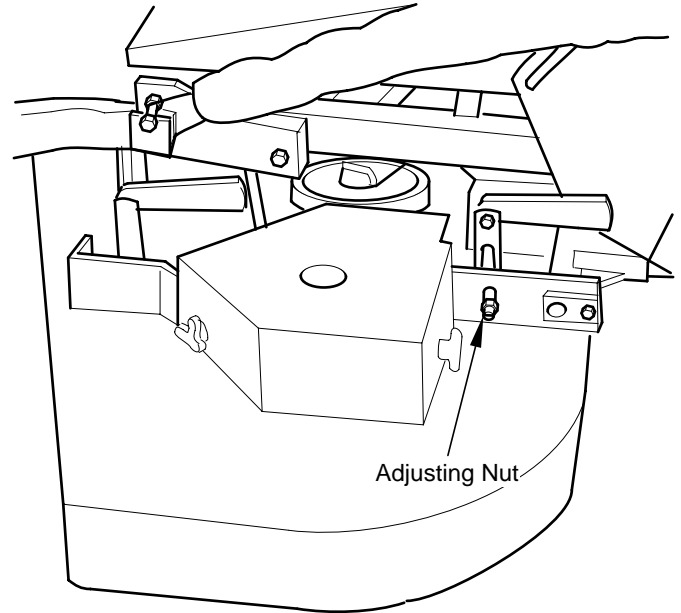


Figure 6-8 Leveling the Cutter Deck

PITCH is the adjustment to angle the blades from rear to front. For proper grass cutting, the blades should be angled forward. To check proper blade pitch, place the mower on a flat, level surface. Measure the distance from the ground to the rear of the mower deck ("X", Figure 6-9). Then, measure on both sides of the mower deck the distance from the ground to the front of the deck ("Y"). The front should be 1/4 inch lower than the rear. If not correct, adjust the pitch.

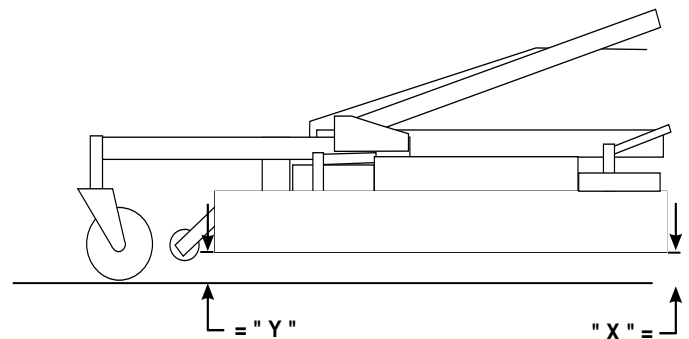


Figure 6-9 Pitch Measurement

1. To adjust the pitch, loosen the jam nut on both adjusting rods (See Figure 6-10).

- Turn the adjusting rods counter-clockwise to lower the front of the deck and clockwise to raise the front of the deck. When a difference of 1/4 inch from front to rear is obtained on left and right, tighten both jam nuts.

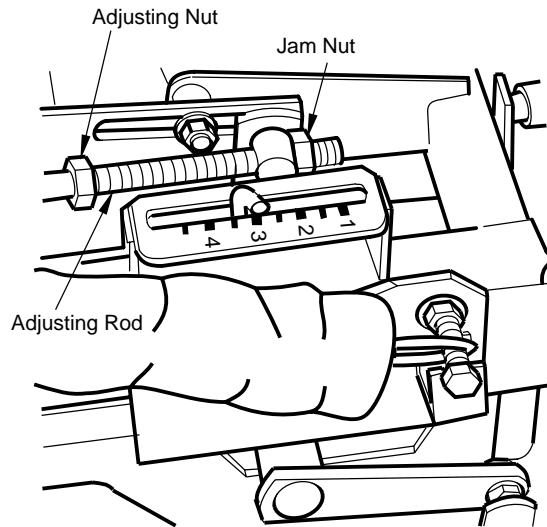


Figure 6-10 Adjusting Deck Pitch

6.12 BLADE CUTTING HEIGHT ADJUSTMENT

The blade cutting height is adjusted by actuating the deck height switch on the instrument panel. However, if the cutting height compared to what is shown on the cutting height gauge (See Figure 6-12) is in question, the cutting height should be checked. To check the cutting height, lift the discharge chute and measure from the ground to the cutting edge of the blade (See Figure 6-11). If the measurement is different from what is registered on the gauge, adjust the gauge rod to the proper setting.

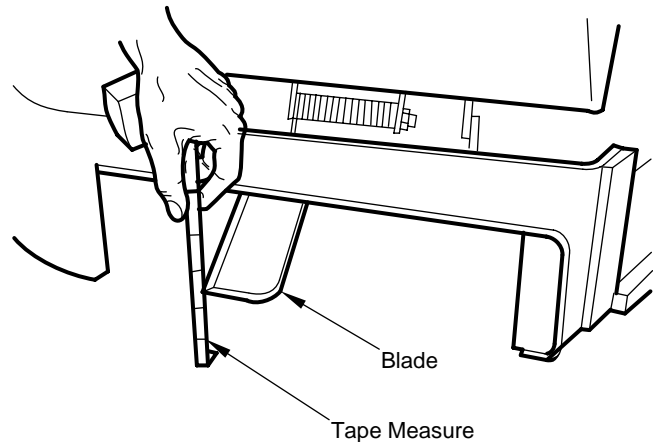


Figure 6-11 Measuring Cutting Edge Height

Loosen the two jam nuts on the gauge rod (See Figure 6-12). Slide the gauge rod to the proper setting on the height gauge. Tighten the jam nuts.

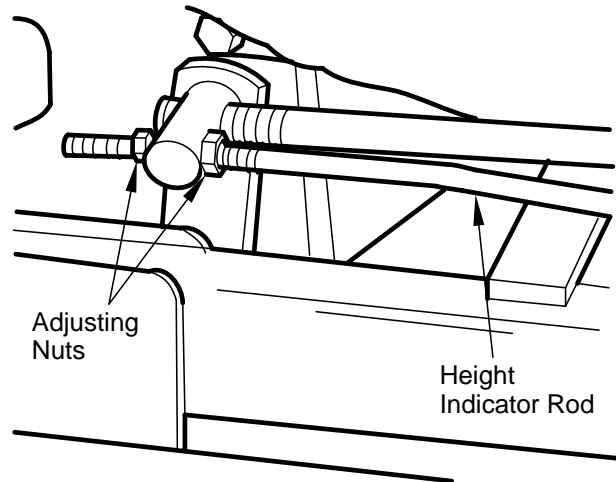


Figure 6-12 Adjusting Nuts

MAINTENANCE

7.1 MAINTENANCE CHART

MAINTENANCE CHART - RECOMMENDED SERVICE INTERVALS

HOURS						Procedure	Comments
Break-In (First 10)	8	40	100	200	500		
X						Check all hardware for tightness	
X						Check hydrostatic drive oil level	See paragraph 7.3
X						Check engine belts for tightness	See paragraph 7.9
X						Check cutter deck belts for tightness	See paragraph 7.10
	X					Fill fuel tank before starting	Use #2-D diesel fuel
	X					Check engine coolant level	See paragraph 7.7
	X					Check engine oil level	See paragraph 7.5
	X					**Clean radiator debris screen	See paragraph 7.7
	X					*Clean mower and remove debris under deck belt covers	See paragraph 7.13
	X					Check condition of blades	See paragraph 7.11
	X					Apply grease to fittings	See paragraph 7.2
	X					*Remove dust from air cleaner dust cup	See paragraph 7.7
	X					Check/clean air intake and cooling areas	See paragraph 7.7
	X					Check tire pressure	See paragraph 7.12
		X				Check battery electrolyte level, clean battery post and cables	See paragraph 7.8
		X				Change engine oil and filter (After first 40 hours)	See paragraph 7.5

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			Change engine oil	See paragraph 7.5
			X			Clean air cleaner element	See paragraph 7.7
			X			Check engine belts for tightness	See paragraph 7.9
			X			Check cutter deck belts for tightness	See paragraph 7.10
				X		Apply grease to fittings	See paragraph 7.2
				X		Check hardware for tightness	
				X		Change engine oil filter	See paragraph 7.5
				X		Check hydrostatic drive fluid level	See paragraph 7.3
				X		Grease rear wheel bearing	See paragraph 7.2
					X	Replace engine fuel filter cartridge and pre-filter	See paragraph 7.6
					X	Drain hydrostatic drive system and replace hydraulic oil	See paragraph 7.3 Use SAE 10W30 Oil
					X	Replace hydraulic oil filter	See paragraph 7.3
					X	Drain and replace engine coolant	See paragraph 7.7 Use 50/50 water and ethylene glycol anti-freeze

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

** Perform this maintenance procedure whenever the engine temperature gauge indicator is in the red zone

7.2 LUBRICATION

GREASE FITTING LUBRICATION CHART
(SEE FIGURE 7-1)

LUBRICATION LOCATION	INTERVAL	NO. LUBRICANT	OF PLACES
1. Cutter Drive Spindle	40 Hours/Weekly	+Lithium MP White Grease 2125	1
2. Cutter Deck Spindles	40 Hours/Weekly	+Lithium MP White Grease 2125	3
3. Caster Wheel Bearing	100 Hours/Bi-Monthly	Chassis Grease	2
4. Caster Wheel Pivot	100 Hours/Bi-Monthly	Chassis Grease	2
5. Electric Clutch Belt Idler Arm	100 Hours/Bi-Monthly	Chassis Grease	1
6. Cutter Drive Shaft	100 Hours/Bi-Monthly	Chassis Grease	3
7. Cutter Belt Idler Arms	100 Hours/Bi-Monthly	Chassis Grease	2
8. Deck Support Pivot	100 Hours/Bi-Monthly	Chassis Grease	2
9. Deck Push Arms	100 Hours/ Bi-Monthly	Chassis Grease	2
10. Deck Lift Bellcranks	100 Hours/Bi-Monthly	Chassis Grease	4
11. Pump Idler Arm	100 HoursBi-Monthly	Chassis Grease	1
12. Rear Wheel Pivot	200 Hours/Monthly	Chassis Grease	1
13. Rear Wheel Bearings	200 Hours/Monthly	+Lithium MP White Grease 2125	1
14. Right Hand Foot Plate Pivot	200 Hours/Monthly	Chassis Grease	1
15. Steering Handle	200 Hours/Monthly	Chassis Grease	1
16. Throttle Lever	200 Hours/Monthly	Chassis Grease	1
17. Parking Brake Lever	200 Hours/Monthly	Chassis Grease	1
18. Blade Brake Linkage Lever	200 Hours/Monthly	Chassis Grease	1
19. Blade Brake Linkage Bellcrank	200 Hours/Monthly	Chassis Grease	1
20. Blade Brake Control Lever	200 Hours/Monthly	Chassis Grease	1

* Lubrication may be required every 8 to 40 hours, depending on climate and environment. Apply two pumps of hand gun when lubricating these locations. DO NOT over-grease; damage to seal may occur.

+ Compatible Greases: Mobilix #2 found at Mobil Service Station

Ronex MP found at Exxon Service Stations

Super Lube MEP #2 & Super Stay-M #2 found at Conoco Station

Shell Alvania #2 found at Shell Service Station

Lidok EP #2 found at industrial shops

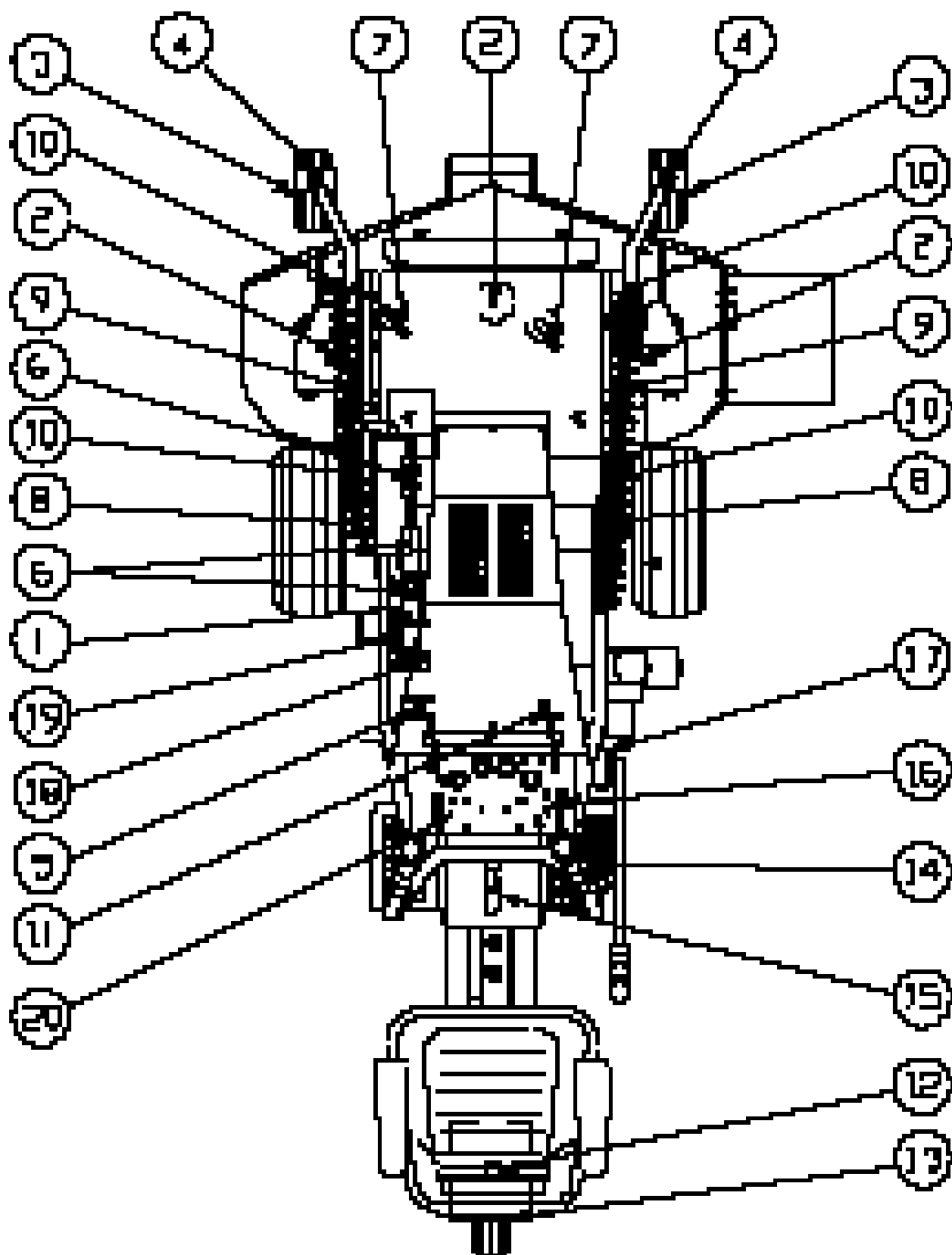


Figure 7.1 Grease Fitting Points

7.3 HYDROSTATIC DRIVE SYSTEM

A. Checking Hydraulic Oil Level

The hydrostatic drive 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 bottom of fill port. See Figure 7-2. If the level cannot be determined visually, use a clean tape measure to check the level. If the fluid is low, add recommended fluid. **DO NOT** overfill; fluid level more than 3 inches below the bottom of the fill port will spill from the reservoir.
3. Clean the cap and install it onto the reservoir.

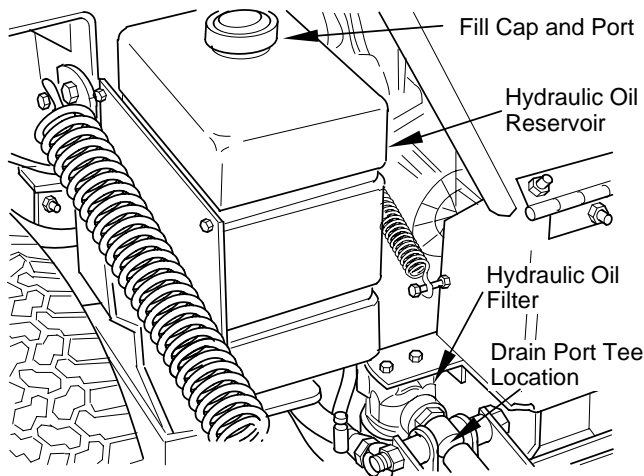


Figure 7-2 Hydraulic Oil Level

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 every time there is a major hydraulic component failure, or 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 filter. Remove the cap from the tee installed in the hydraulic oil filter head. See Figure 7-2. Allow the fluid to drain into the container.
3. Install the cap onto the tee and be sure it is tight.
4. Remove fill cap from reservoir and fill reservoir to 3 inches below fill port opening with recommended oil.
5. Start the engine and propel mower a few feet to fill all the lines, pump, and motors with oil and to remove any air in the system. Check the oil level in the reservoir. If necessary, fill it to within 3 inches from the bottom of the fill opening with SAE 10W30 motor oil.
6. Replace the reservoir fill cap.

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 and discard. Fill the new filter with clean oil. See Figure 7-2.
2. Install the new filter element. Hand tighten only.

3. Run the engine at idle speed with the hydrostatic drive system in neutral for five minutes.
4. Check the oil level in the hydraulic tank. It must be 3 inches from the bottom of the fill opening. If necessary, add SAE 10W30 motor oil.

7.4 ENGINE OIL

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.

B. Changing Engine Crankcase Oil

After the first 40 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.

C. Changing Engine Oil Filter

After the first 40 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.

7.5 ENGINE FUEL SYSTEM

A. Filling the Fuel Tank

Fill the fuel tank at the end of each operating day to within 1 inch below the filler neck. Do not overfill and never allow the tank to become completely empty. Use clean, fresh No. 2 diesel fuel with a minimum Cetane Rating of 45.

B. Replacing In-Line Fuel Filter Element and the Fuel Pre-Filter

The in-line fuel filter (Figure 7-3) and the fuel pre-filter

(Figure 7-4) should be replaced after every 500 hours of operation or annually, whichever occurs first.

-IMPORTANT-

Replace the fuel filter cartridge and the pre-filter periodically to prevent wear of the fuel injection pump plunger or the injection nozzle due to dirt in the fuel.

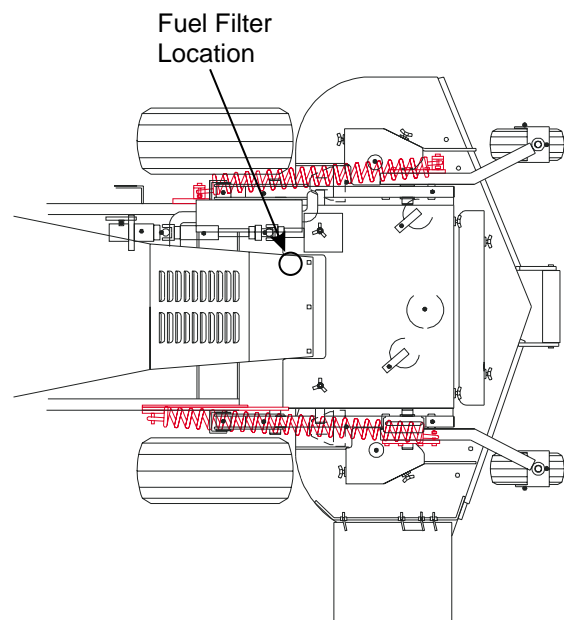


Figure 7-3 Fuel Filter

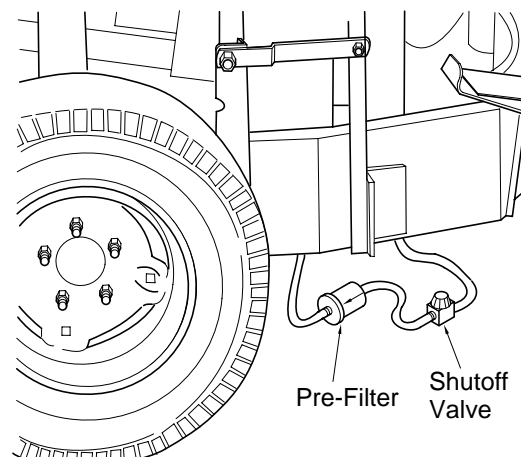


Figure 7-4 Fuel Pre-Filter and Shut-Off Valve

1. Reach into the frame opening, indicated in Figure 7-4, and pull the fuel shut-off valve and pre-filter from their stored position in the frame.
2. Close the shut-off valve. Remove the two clamps securing the pre-filter to the fuel hose. Remove the pre-filter.
3. Install a new pre-filter. Be sure it is installed in the proper direction as shown in Figure 7-4. Secure to the fuel hose using the two clamps.
4. Thoroughly clean the outside of the filter housing. Dirt must not be allowed to enter the fuel or the fuel injection system.
5. Unscrew the fuel filter cartridge from the housing.
6. Apply a thin layer of fuel oil over the gasket of the new cartridge and hand tighten the cartridge.
7. Bleed the air from the fuel system.

C. Fuel System Bleeding

Bleeding the fuel system is necessary after the fuel filter and lines have been removed, after the fuel tank has become empty, and after long storage of the mower.

WARNING:

To avoid personal injury do not bleed a hot engine. The bleeding procedure could cause fuel to spill onto a hot exhaust manifold creating a danger of fire.

1. Fill the fuel tank per instructions in section 7.5, filling the fuel tank. Be sure the fuel shut-off valve is open.
2. Open the air vent on top of the fuel injection pump (Figure 7-5).

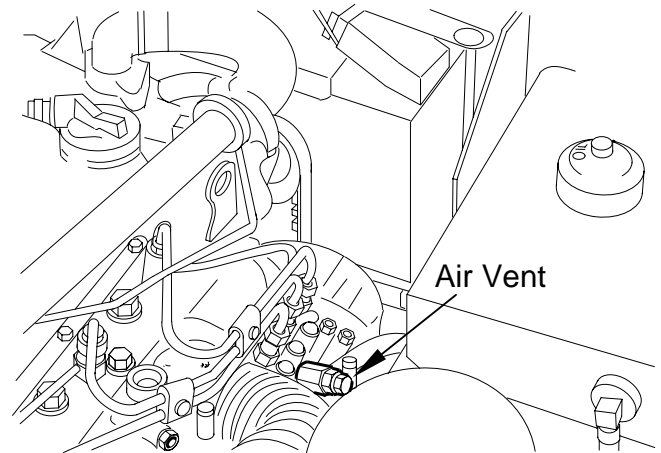


Figure 7-5 Fuel Injection Pump

-IMPORTANT-

Always keep the air vent plug on top of the fuel injection pump closed except when bleeding air from the system.

3. Turn the ignition key to the ON position and allow the fuel pump to run for about one minute to purge the air.
4. Close the air vent valve on the fuel injection pump.

7.6 ENGINE COOLANT SYSTEM

A. Checking Coolant Level

WARNING:

Hot coolant can scald. Check and service the cooling system only when cool.

Before each day of operation the coolant level should be checked. Visually check the overflow bottle. Coolant should be to the full mark on the overflow bottle. See Figure 7-6. If coolant is within the range between “FULL” and “LOW”, the coolant will last for one day’s work. If the coolant is low, add a mixture of water and anti-freeze to the overflow bottle or the radiator. **IF THE ENGINE IS HOT, DO NOT** remove the radiator cap. The system is under pressure and the coolant can cause severe burns or eye injury. When it is necessary to remove the radiator cap, wear protective clothing and safety glasses. Always turn the cap slowly to the first stop, and allow the pressure to escape before removing the cap completely.

-IMPORTANT-

Do not fill the radiator with coolant over the "FULL" level of the overflow bottle. When coolant is added, the coolant level drops the first time the engine is started. Stop the engine, and add more coolant.

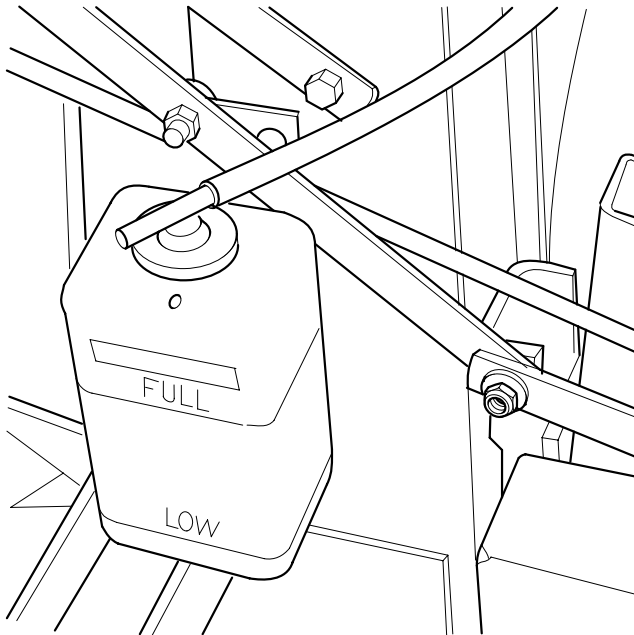


Figure 7-6 Coolant Overflow Bottle /Air Cleaner Cup

B. Cleaning Radiator Debris Screen

After every 8 hours of operation, or daily, remove and clean the radiator debris screen.

-IMPORTANT-

When operating the mower, occasionally look at the engine water temperature gauge. If the needle is in the red zone, stop the mower engine and remove and clean the debris screen.

1. Open the engine hood.
2. Pull the radiator debris screen up to remove (Figure 7-7).

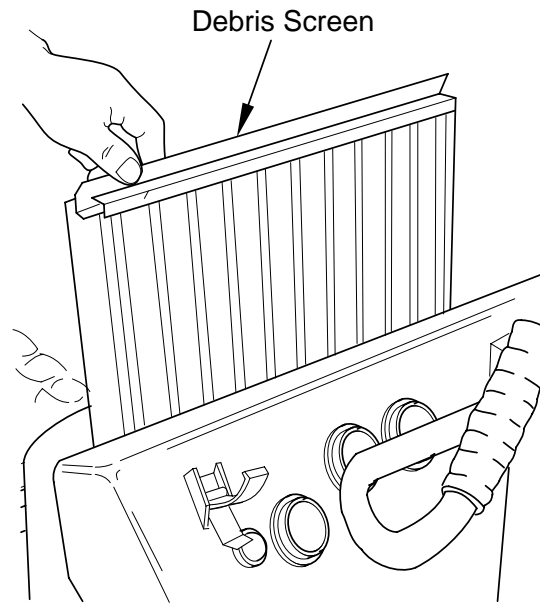


Figure 7-7 Debris Screen Removal

-IMPORTANT-

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

3. Clean the debris screen with compressed air or with a water hose.

-NOTE-

Check the radiator for excessive debris and clean with compressed air, if necessary.

4. Align the debris screen into the slots on the radiator and carefully push the screen down until it bottoms out.

C. Replacing Coolant



WARNING:
Change coolant only after the cooling system has cooled. Possible scalding or eye injury could occur.

The engine coolant should be replaced after every 500 hours of operation or annually, whichever occurs first.

1. Loosen the radiator cap, and open the radiator drain valve. Open the engine block drain valve located on the crankcase side of the engine. Drain the coolant into a suitable container. Drain and clean the overflow bottle.
2. Close both drain valves securely.
3. Fill the radiator and cooling system with a mixture of clean water and ethylene glycol based anti-freeze (capacity of system - approx. 3 quarts). Mix the anti-freeze for your coldest ambient temperature following the manufacturer's instructions.
4. If you add coolant more than once a month, or add more than one quart at a time, have a Scag dealer check the cooling system.

7.7 ENGINE AIR CLEANER

A. Emptying Air Cleaner Dust Cup

After every 8 hours or daily, empty the air cleaner dust cup. Squeeze the dust cup (Figure 7-8) to remove large particles of dust and dirt.

B. Cleaning and/or Replacing Air Cleaner Element

For any air cleaner, the operating environment dictates the air cleaner service periods. Inspect and clean the air cleaner element after every 100 hours of operation or bi-weekly, whichever occurs first and replace the element if required.

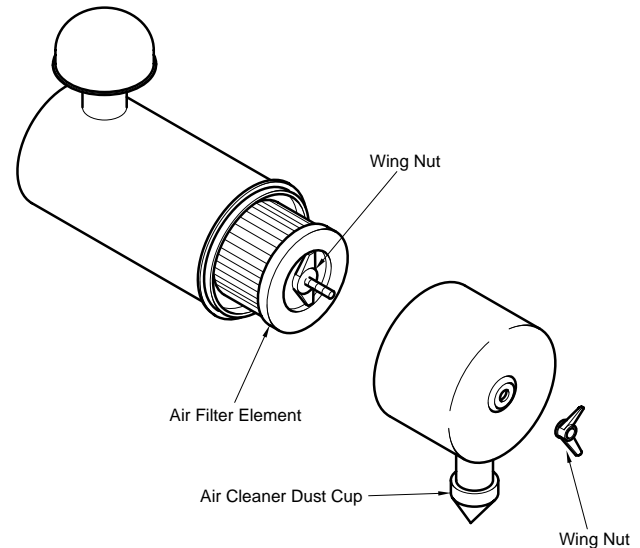
-NOTE-

In extremely dusty conditions it may be necessary to check the element once or twice daily to inhibit engine damage.

1. Remove the cover wing nut and remove the cover from the air cleaner.
2. Remove the wing nut securing filter the air cleaner

! CAUTION:

element and remove the element (Figure 7-8).



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

Figure 7-8 Air Cleaner

3. When dust adheres to the element, clean the filter element with compressed air. Use compressed air pressure of not more than 99 psi to clean the element. Rotate the element while directing the stream of air to the inside of the element.
4. When carbon or oil adheres to the element, soak the element in detergent for 30 minutes, then wash several times in water, rinse with clean water and allow to air dry. After the element has fully dried, inspect the inside of element with a light and check for damage. (Refer

to instructions on the label attached to the element).

5. Replace the element after six cleanings or after every 500 hours of operation or annually, whichever occurs first.

7.8 BATTERY

A. Checking Electrolyte Level and Cleaning Battery

WARNING:

After every 40 hours of operation or weekly, whichever occurs first, check the electrolyte level in the battery and clean the battery and connections. Dirt and fluid on the top of the battery can cause the battery to discharge. Corrosion of the battery terminals or loose connections will cause poor battery performance.

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.

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.

1. Remove the battery cover by removing the two nuts under the battery box.
2. Remove the battery cell caps. Visually inspect electrolyte level in the cells. If electrolyte is below the bottom of vent well, fill with clean distilled water to the bottom of vent wells (1/4 to 1/2 inch above the plates). Install the battery cell caps.
- IMPORTANT-**
Do not overfill the battery. Electrolyte will overflow through the vent tube onto parts of the machine resulting in severe corrosion.
3. Clean the cable ends and battery posts with steel wool. Use a solution of baking soda and water to clean the battery. Do not allow the solution to enter the battery cells.
4. Tighten the cable connections securely and apply a light coat of silicone dielectric grease to the terminal connections to prevent corrosion. Keep cable end covers in place.
5. Install the battery cover.

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. The only condition in which the battery may cause a problem is when it has been completely discharged for a long period of time. Under this condition, the alternator may not be able to recharge the battery, and a battery charger will be required for charging the battery.

Before using a battery charger, an attempt should be made

to recharge the battery using the engine alternator by first jump starting the mower and letting the engine run. See Jump Starting Instructions.

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. Disconnect the field connection from the alternator. See Figure 7-9.

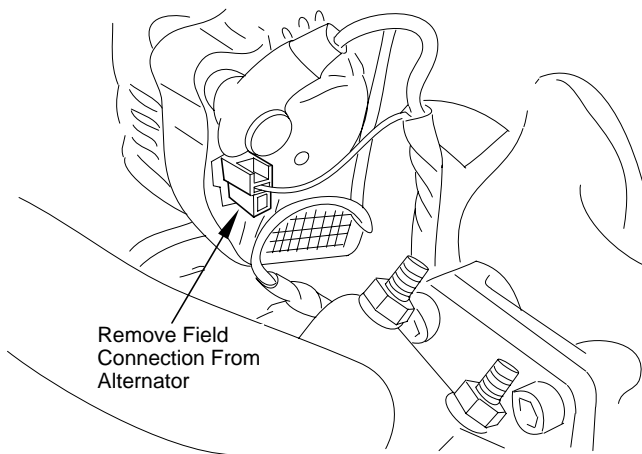


Figure 7-9 Field Connection

2. The booster battery must be a 12 volt type. If a vehicle is used for jump starting, it must have a negative ground system.
3. When connecting the jumper cables, be sure the positive is connected to the positive and the negative to the negative.
4. After the engine starts, remove the black cable first, then the red. Connect the field connection to the alternator.

7.9 ENGINE DRIVE BELTS

A. Checking Belt Tension and Damage

After the first 2, 4, and 8 hours of operation check for proper tension on all engine belts and check for any damage. Thereafter, check the belt tension after every 100 hours of operation or bi-monthly, whichever occurs first.

1. Using a belt tension gauge attached to the belt at the position shown in Figure 7-10, check that the belt deflects the distance shown with the proper tension applied. Adjust the belt tension as necessary. See Adjustment Section 6.
2. Check the belts for cracks, tears, and excessive wear. Replace any damaged belt immediately.

7.10 CUTTER DECK BELTS

A. Checking Belt Tension and Damage

After the first 2, 4, and 8 hours of operation, check the tension on the cutter deck drive belts and check for any damage. Thereafter, check the belt tension after every 100 hours of operation or bi-monthly, whichever occurs first.

1. Using a belt tension gauge attached to the belt at the position shown in figure 7-11, check that the belt deflects 1/2 inch with 10 pounds of force applied to the belt. Adjust the belt tension as necessary. See Adjustment Section 6.
2. Check the belts for cracks, tears, and excessive wear. Replace any damaged belt immediately.

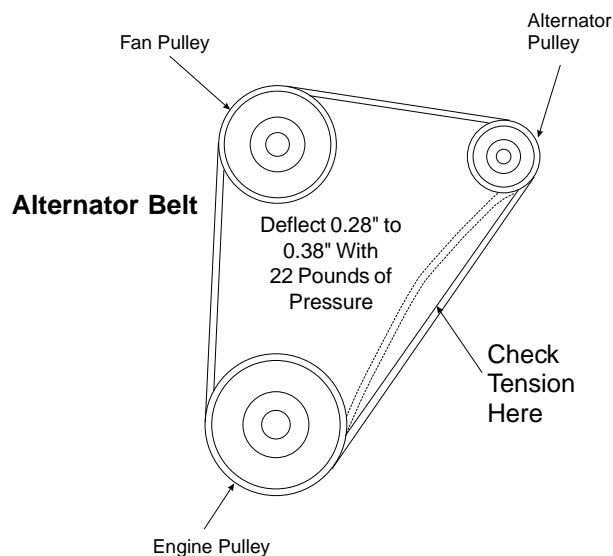
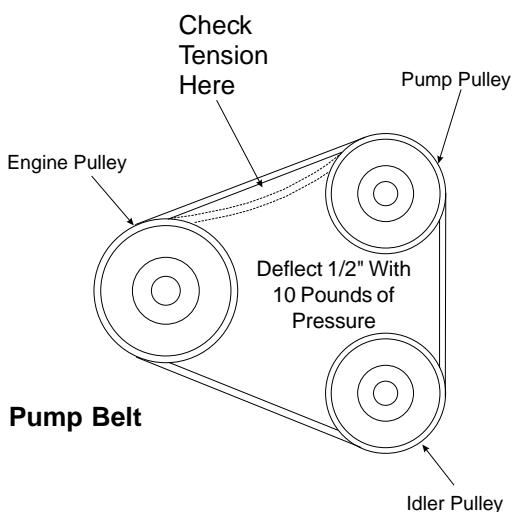
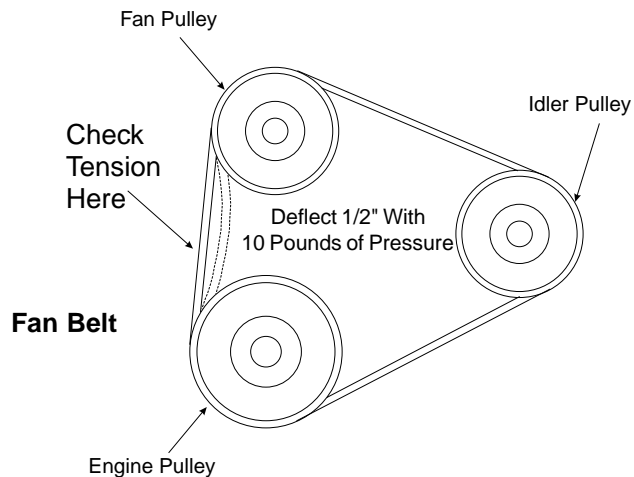
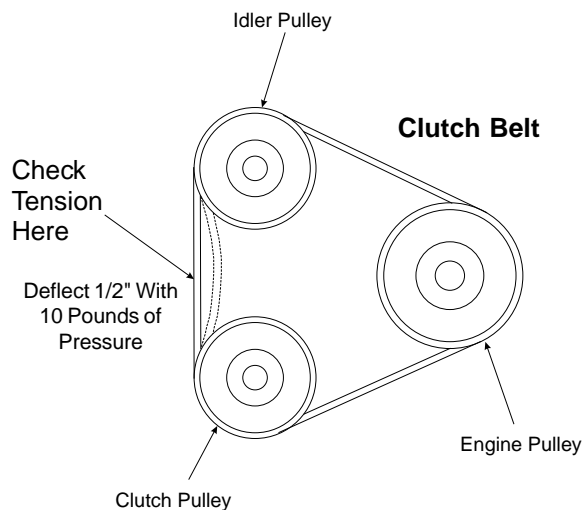


Figure 7-10 Engine Belt Tension

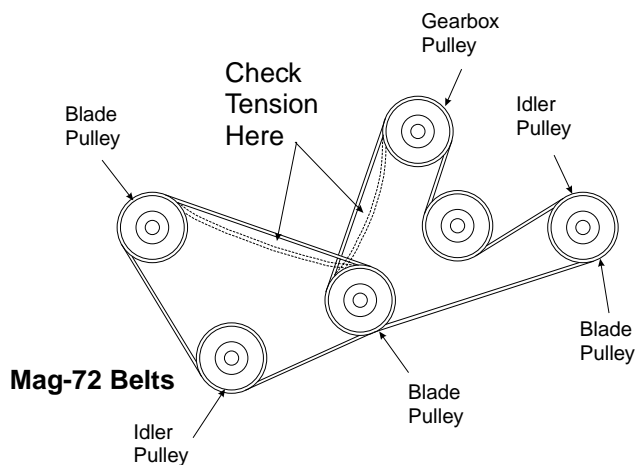
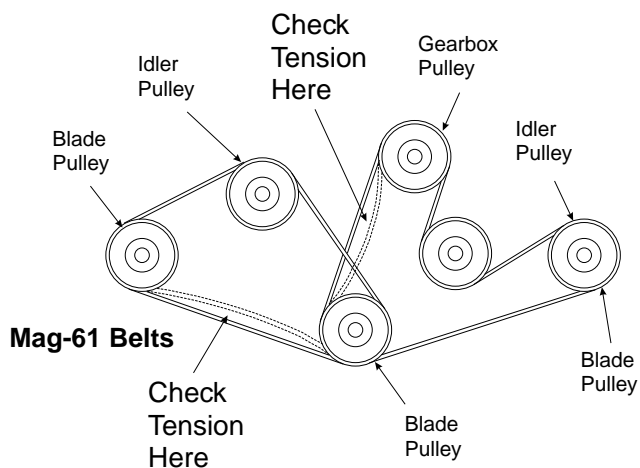


Figure 7-11 Cutter Deck Belt Tension

7.11 CUTTER BLADES

A. Blade Inspection

Check the mower blades for straightness, sharpness and the condition of cutting edge every 8 hours of operation, or daily (or more often when mowing abrasive type grass or operating on sandy soils). Blades will need to be replaced if worn, bent, cracked or otherwise damaged as described by blade replacement instructions in this section. The following procedure should be used to check and sharpen blades:

1. Remove the ignition key before servicing the blades.
2. Use the mower deck height switch on the instrument panel to raise the deck to its highest point.
3. Use the mower deck lift switch to tilt the deck up as far up as it will go.
2. The booster battery must be a 12 volt type. If a vehicle is used for jump starting, it must have a negative ground system.
3. When connecting the jumper cables, be sure the positive is connected to the positive and the negative to the negative.



WARNING:
Never operate the cutter blades with the deck in a raised position because it is hazardous

4. Check the blades for straightness by marking the tip position of the blade on the inside of the deck. Then rotate to the opposite tip of the blade to the same position. Compare the difference in blade tip track. If the track is more than 1/8 inch, the blade is bent and should 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.

5. 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. Sharpening Blades

-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.

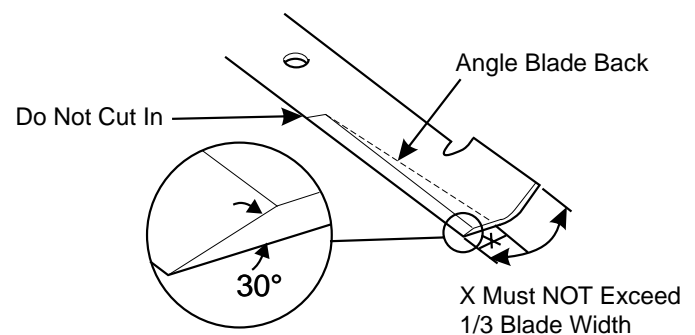


Figure 7-12 Blade Sharpening

1. Sharpen the cutting edge at same bevel as original. See Figure 7-12. Sharpen only the top of the cutting edge to maintain sharpness.
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

1. Remove the ignition key before replacing the blades.
2. Use the mower deck height switch on the instrument

3. Use mower deck lift switch to tilt the deck up as far as it will go.
4. Holding the nut at the top of the blade drive pulley with a wrench, loosen and remove the blade attachment bolt from beneath the mower deck. Remove the washer, blade, and top and bottom cutter blade spacers. Be sure not to misplace any of the blade spacers. Spacers are important to align the blades to cut evenly.
4. Install the top and bottom blade spacers, blade, washer and the blade attachment bolt to the bottom side of the spindle. Install the locknut to the bolt and tighten to a torque of 75 ft-lb. The nut and bolt must be tight to inhibit wobble in the blade, causing vibration and poor cutting.

7.12 TIRES

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

Caster Wheels 25 PSI

Rear Steering Wheel 15 PSI

Drive Wheels.....15 PSI

7.13 BODY, DECK AND UPHOLSTERY



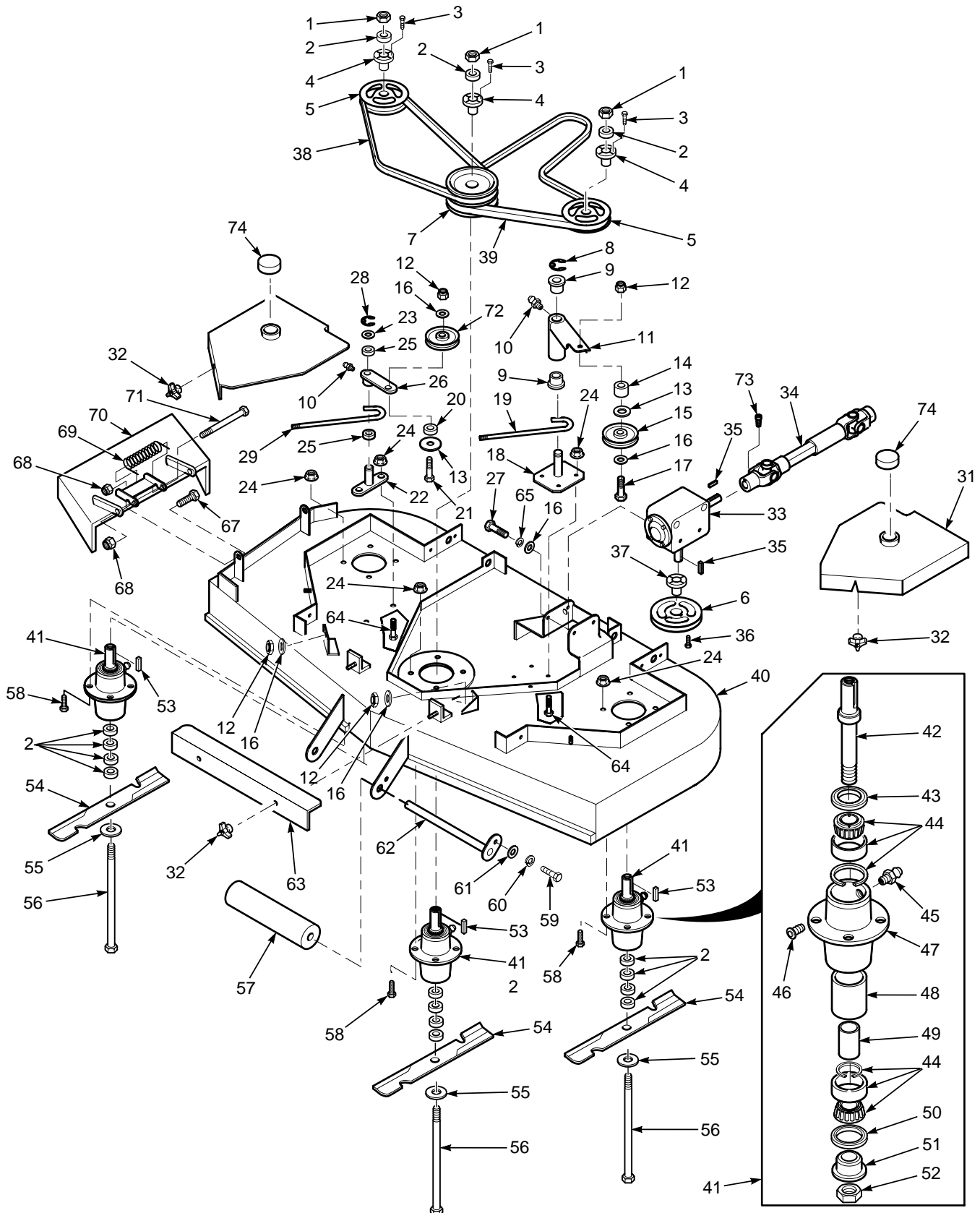
CAUTION:

Do not wash any portion of the equipment while it is hot. Do not wash the engine or radiator, use compressed air.

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

ILLUSTRATED PARTS LIST MAGNUM III

MAG-61, MAG-72 CUTTER DECK



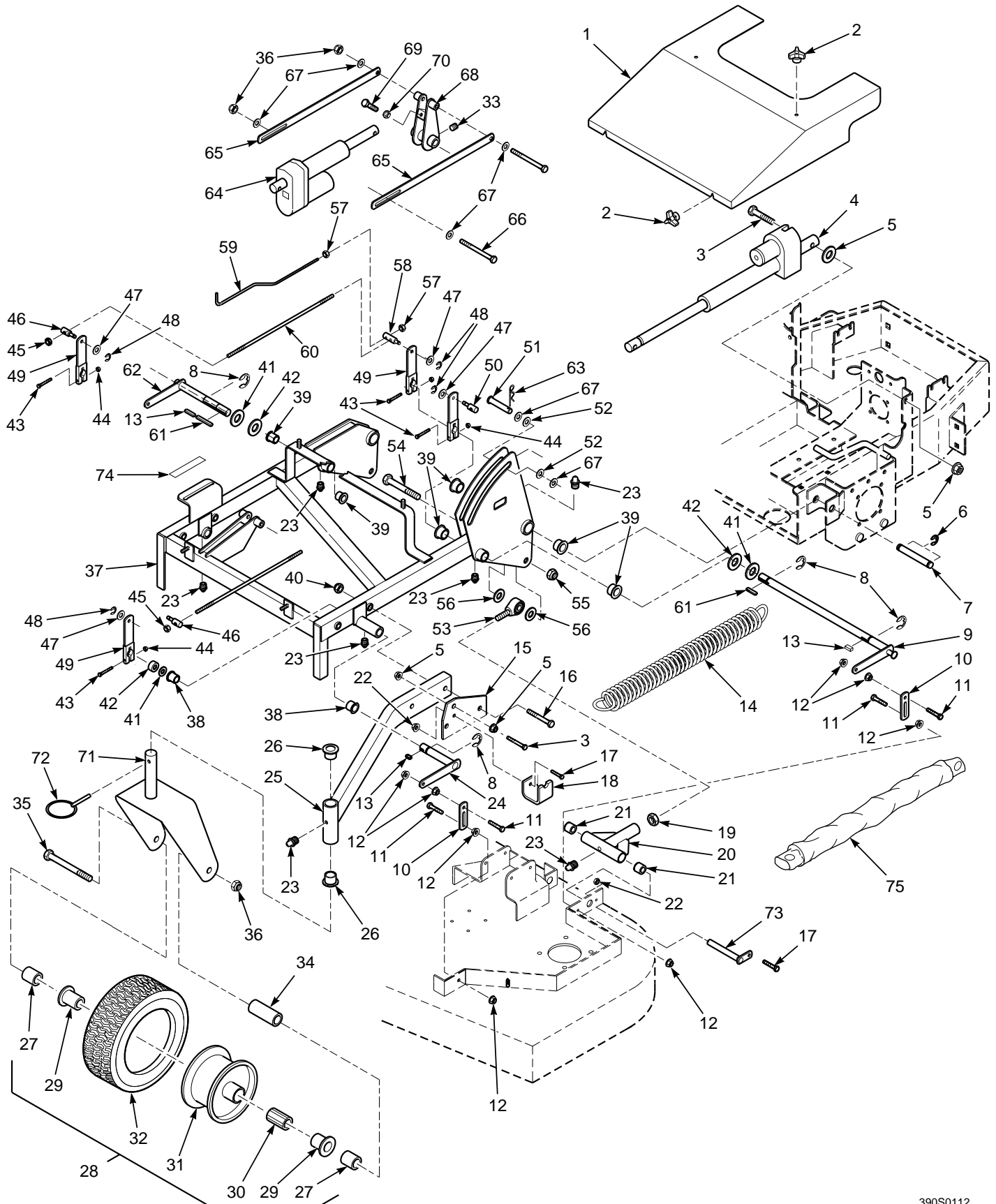
MAG-61, MAG-72 CUTTER DECK

Ref. No.	Part. Number	Description	Mag 61	Mag 72	Ref. No.	Part. Number	Description	Mag 61	Mag 72
1	04020-09	Nut, Hex, 5/8-11	X	X	40	46867	Cutter Deck with Decals	X	
2	43278	Spacer, Cutter Blade	X	X		46868	Cutter Deck with Decals		X
3	04001-01	Bolt, Hex Head, 1/4-20 x 3/4 Gr.5	X	X	41	46631	Spindle Assembly	X	X
4	48926	Taper Hub, 1.125 Bore	X	X	42	43298	Shaft, Cutter Spindle	X	X
5	48924	Pulley, 5.75 Dia.	X	X	43	481024	Seal, 2.00 OD x 1.50 Bore	X	X
6	48753	Pulley, 6.35 Dia.	X		44	481022	Bearing Assembly	X	X
	48924	Pulley, 5.75 Dia.		X	45	48114-04	Grease Fitting	X	X
7	48923	Pulley, 5.75 Double Groove	X	X	46	48677	Relief Fitting, Cutter Spindle	X	X
8	04050-05	Retaining Ring, .75 Ext "E"	X	X	47	43294	Spindle Housing	X	X
9	48100-02	Bushing, Oilite - 1.125 ID	X	X	48	43312	Spacer, Outside	X	X
10	48114-04	Grease Fitting	X	X	49	43296	Spacer, Inside	X	X
11	46866	Arm, Idler (Includes 9 & 10)	X	X	50	481025	Seal, 2.00 OD x 1.625 OD	X	X
12	04021-09	Locknut, Elastic Stop, 3/8-16	X	X	51	43297	Spindle Bushing, Bottom	X	X
13	04041-12	Flat Washer, 3/8 (.375 x 1.50 x .060)	X	X	52	481035	Nut, 1-1/16-18 UNEF-2B	X	X
14	43277	Spacer, J-Hook	X	X	53	04063-08	Key, 1/4 x 1/4 x 2	X	X
15	48269	Pulley, Idler	X	X	54	481159	Blade, 21"	X	
16	04041-07	Flatwasher, 3/8 (.391 x .938 x .105)	X	X		481160	Blade, 24-1/2"		X
17	04001-54	Bolt, Hex Head, 3/8-16 x 3	X	X	55	04040-10	Washer, 5/8 (.688 x 1.75 x .134)	X	X
18	45720	Pivot, Idler Arm	X	X	56	04001-41	Bolt, Hex Head, 5/8-11 x 9-1/2 Gr.5	X	X
19	44107	J-Hook	X	X	57	48038	Roller	X	X
20	43077	Spacer, J-Hook	X	X	58	04001-10	Bolt, Hex Head, 5/16-18 x 1-1/4	X	X
21	04001-46	Bolt, Hex Head, 3/8-16 x 2-1/4	X	X	59	04001-08	Bolt, Hex Head, 5/16-18 x 3/4	X	X
22	45037	Idler Pivot	X	X	60	04030-03	Lockwasher, 5/16	X	X
23	04041-08	Flatwasher, 3/4 (.776 x 1.25 x .059)	X	X	61	04040-15	Flatwasher, 5/16 (.375 x .875 x .083)	X	X
	04041-08S	Flatwasher, 3/4 (.776 x 1.25 x .035)	X	X	62	45046	Shaft, Roller	X	X
24	04019-03	Serr. Fl. Hex Nut, 5/16-18	X	X	63	421820	Cover, Belt - Front	X	X
25	48100-05	Bushing, Oilite - 3/4 ID	X	X	64	04017-16	Serr. Fl Hex Head Capscrew, 5/16-18 x 3/4	X	X
26	46081	Idler Arm (Includes 10 & 25)	X	X	65	04030-04	Lockwasher, 3/8	X	X
27	04001-19	Bolt, Hex Head, 3/8-16 x 1	X	X	66	04001-19	Bolt, Hex Head, 3/8-16 x 1 Gr.5	X	X
28	04050-02	Retaining Ring, .75 Ext "E"	X	X	67	04001-09	Bolt, Hex Head, 5/16-18 x 1.0	X	X
29	43028	Pull Rod, Idler	X		68	04021-10	Hex Locknut, Elastic Stop, 5/16-18	X	X
	44078	Pull Rod, Idler		X	69	481050	Spring, Discharge Chute	X	X
30	45816	Belt Cover, RH	X		70	46726	Discharge Chute	X	X
	45818	Belt Cover, RH		X	71	04001-108	Bolt, Hex Head, 5/16-18 x 4-1/4	X	X
31	45815	Belt Cover, LH	X		72	48181	Pulley, Idler	X	X
	45817	Belt Cover, LH		X	73	04012-06	Set Screw, Hex Socket, 3/8-16 x 1/2	X	X
32	04029-03	Wingnut, Plastic, 3/8-16	X	X	74	48098	Spindle Shield	X	X
33	481214	Gearbox, Deck Drive	X	X					
34	481213	Drive Shaft	X	X					
35	04063-01	Key, 1/4 x 1/4 x 1-1/4	X	X					
36	04001-109	Bolt, Hex Head, 1/4-20 x 1-3/8 (Full Thread)	X	X					
37	48141	Tapered Hub, 1.00 Bore	X	X					
38	48265	Belt, Cutter Deck	X						
	481295	Belt, Cutter Deck		X					
39	48204	Belt, Cutter Deck	X						
	48089	Belt, Cutter Deck		X					

-NOTE-

Some of the hardware is common hardware and you may purchase it locally. Be sure that all bolts purchased locally are a grade 5.

MAG-61, MAG-72 DECK SUPPORT



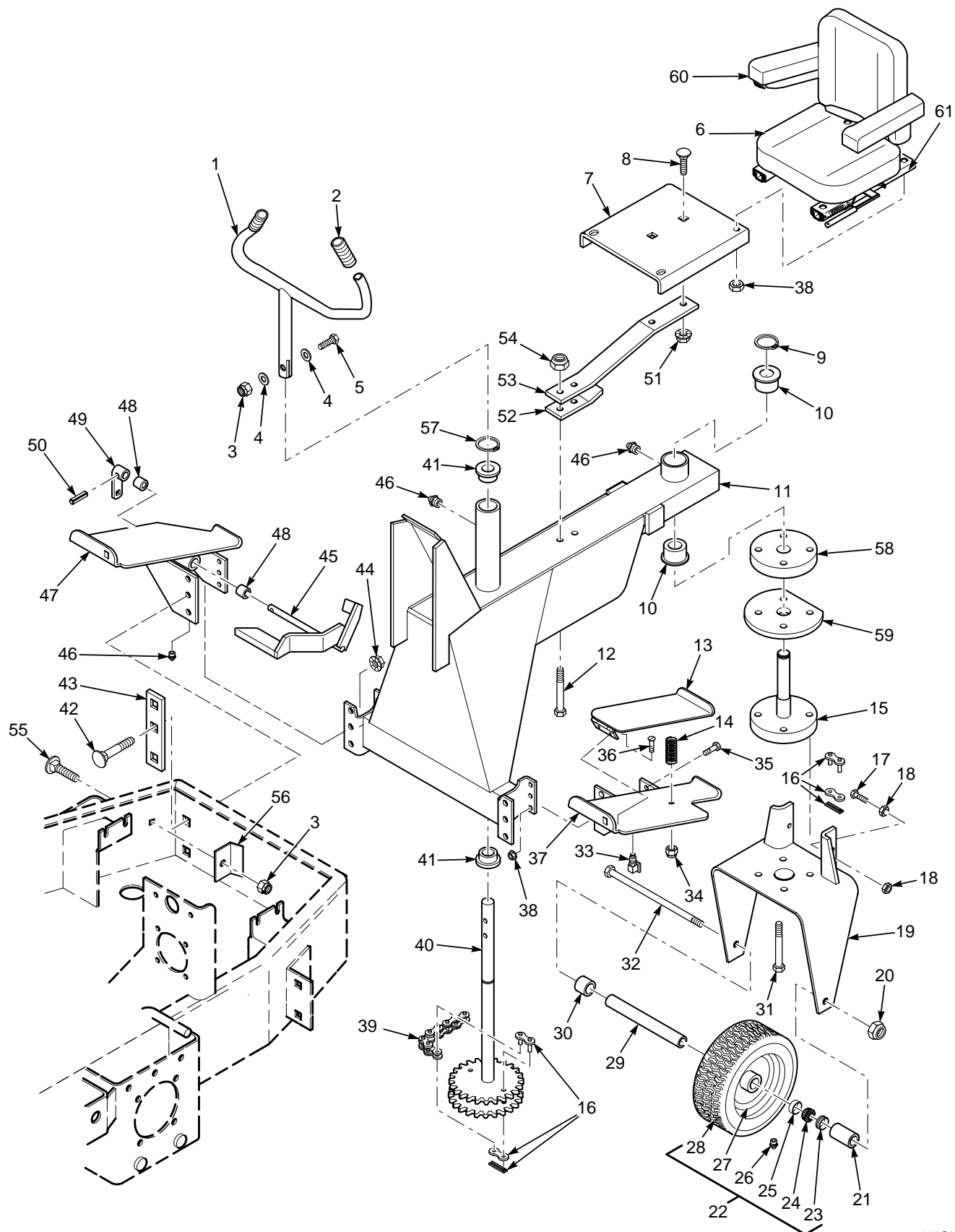
MAG-61, MAG-72 CUTTER DECK SUPPORT

Ref. Part	Mag	Mag	Ref. Part	Mag	Mag
No. Number Description	61	72	No. Number Description	61	72
1 45733 Cover, Belt	X	X			
2 04029-03 Wingnut, Plastic, 3/8-16	X	X			
3 04001-52 Bolt, Hex Head, 1/2-13 x 2-1/2	X	X	38 48100-02 Bushing, Olite - 1-1/8 ID	X	X
4 481195 Actuator, Deck Lift	X	X	39 48100-08 Bushing, Olite - 1.00 ID	X	X
5 04019-06 Serr. Fl. Hex Nut, 1/2-13	X	X	40 04021-13 Hex Locknut, Elastic Stop, 5/8-11	X	X
6 04050-05 Retaining Ring, 1.125 Ext	X	X	41 04042-05 Flatwasher, 1" (1.062 x 1.75 x .10)	X	X
7 43356 Pin, Deck support Mounting	X	X	04041-14 Flatwasher, 1" (1.062 x 1.50 x .048)	X	X
8 04050-08 Retaining Ring, 1.00 Ext "E"	X	X	42 43353 Spacer	X	X
9 45728 Lift Bellcrank, LH Rear	X	X	43 04001-45 Bolt, Hex Head, 3/8-16 x 2	X	X
10 421878 Link, Deck Support	X	X	44 04021-09 Hex Locknut, Elastic Stop, 3/8-16	X	X
11 04001-117 Bolt, Hex Head, 7/16-14 x 1-3/4	X	X	45 04020-09 Hex Nut, 5/8-11	X	X
12 04019-05 Serr. Fl. Hex Nut, 7/16-14	X	X	46 43270 Swivel Joint, RH	X	X
13 04063-19 Key, 1/4 x 1/4 x 3/4	X	X	47 04040-09 Flatwasher, 5/8 (.656 x 1.312 x .095)	X	X
14 481215 Spring, Deck Lift	X	X	48 04050-01 Retaining Ring, 5/8 Ext "E"	X	X
15 421838 Anchor, Deck Spring	X	X	49 45731 Lever, Deck Lift	X	X
16 04001-119 Bolt, Hex Head, 5/8-11 x 5-1/2	X	X	50 43271 Swivel Joint, LH	X	X
17 04017-16 Serr. Fl. Hex Head CPSCR,			51 04064-11 Pin, Clevis, 1/2 x 2.25	X	X
5/16-18 x 3/4	X	X	52 04044-01 Flatwasher, Nylon, 1" (.54 x 1.125		
18 422027 Retainer, Spring	X	X	x 25)	X	X
19 04020-21 Hex Nut, 3/4-16	X	X	53 481217 Rod End, Male, 3/4-16 RH	X	X
20 46865 Push Rod Assy (Includes 19, 21, 23,			54 04001-120 Bolt, Hex Head, 3/4-16 x 3	X	X
53)	X	X	55 04021-14 Hex Locknut, Elastic Stop, 3/4-16	X	X
21 48100-06 Bushing, Olite - 3/4 ID	X	X	56 43352 Spacer	X	X
22 04019-03 Serr. Fl. Hex Nut, 5/16-18	X	X	57 04020-04 Hex Nut, 3/8-16	X	X
23 48114-04 Grease Fitting	X	X	58 43357 Swivel Joint, LH	X	X
24 45727 Lift Bellcrank, Front	X	X	59 44113 Rod, Height Indicator	X	X
25 45722 Tube, LH Caster (Shown)	X		60 04004-15 Stud, Mower Lift	X	X
45724 Tube, LH Caster (Shown)		X	61 04063-01 Key, 1/4 x 1/4 x 1-1/4	X	X
45723 Tube, RH Caster (Not Shown)	X		62 45729 Lift, Bellcrank, RH Rear	X	X
45725 Tube, RH Caster (Not Shown)		X	63 04062-01 Cotter Pin, Hair - 0.94 x 1.62	X	X
26 48100-08 Bushing, Olite - 1.00 ID	X	X	64 481216 Actuator, Cutting Height	X	X
27 43041 Spacer	X	X	65 421834 Link, Deck Travel Limit	X	X
28 48537 Wheel Assembly, Caster (includes			66 04001-118 Bolt, Hex Head, 1/2-13 x 4-3/4	X	X
29, 30, 31, 32)	X	X	67 04040-07 Flatwasher, 1/2 (.531 x 1.06 x .095)	X	X
29 48006-07 Retainer	X	X	68 45730 Lever, Bellcrank Actuation	X	X
30 48006-06 Bearing, Roller	X	X	69 04001-72 Bolt, Hex Head, 1/2-13 x 2	X	X
31 48537-03 Rim	X	X	70 04020-07 Hex Nut, 1/2-13	X	X
32 48537-02 Tire	X	X	71 45325 Yoke, Caster Wheel	X	X
33 04012-04 Setscrew, Hex Socket, 5/16-18 x .75	X	X	72 04066-01 Quick Pin	X	X
34 43022 Sleeve, Caster Wheel	X	X	73 45332 Shaft, Push Rod	X	X
35 04001-80 Bolt, Hex Head, 1/2-13 x 6-1/2	X	X	74 481331 Decal, Cutting Height	X	X
36 04021-07 Hex Locknut, Elastic Stop, 1/2-13	X	X	75 481379 Cover, Spring	X	X
37 46869 Frame, Deck Support (Includes 23,					
38,39, 74)	X	X			

-NOTE-

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RIDER FRAME



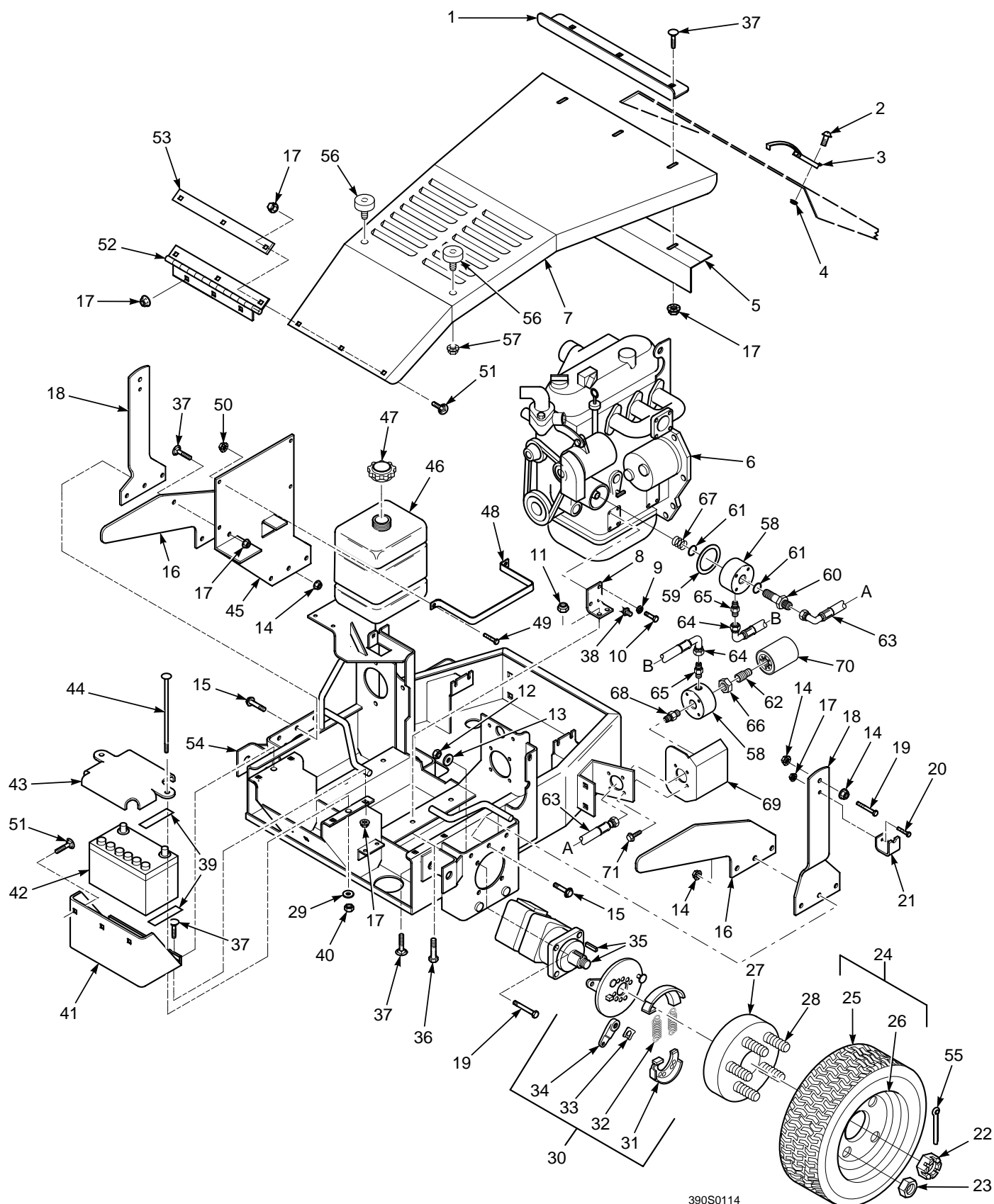
RIDER FRAME

Ref. Part No. Number Description	Ref. Part No. Number Description
1 46029 Handle, Steering (Includes 2)	34 04021-08 Hex Locknut, Elastic Stop, 1/4-20
2 48159 Handle Grip	35 04017-17 Serr. Fl. Hex Head Capscrew, 5/16-18 x 1.00
3 04021-10 Hex Locknut, Elastic Stop, 5/16-18	36 04010-17 Screw, Flat Hed, #10-32 x 3/4
4 04040-15 Flatwasher, 5/16 (.375 x .875 x .083)	37 45699 Footplate, LH
5 04001-12 Bolt, Hex Head, 5/16-18 x 1.75	38 04019-03 Serr. Fl. Hex Nut, 5/16-18
6 481156 Seat (with Adjuster Rails)	39 481152 Chain, Steering - #50
7 421976 Plate, Seat Mount	40 45696 Shaft, Steering
8 04003-11 Carriage Bolt, 3/8-16 x 1-1/4	41 48100-01 Bushing, Bronze - .877 ID
9 04050-05 Retaining Ring - 1.125 Ext	42 04003-18 Carriage Bolt, 1/2-13 x 1-3/4
10 48100-02 Bushing, Oilite - 1-1/8 ID	43 421784 Pad, Reinforcement
11 46870 Frame, Steering	44 04019-06 Serr. Fl. Hex Nut, 1/2-13
12 04001-83 Bolt, Hex Head, 7/16-14 x 3-1/2	45 45502 Foot Pedal
13 45606 Pedal, Foot Interlock	46 48114-04 Grease Fitting
14 481056 Spring, Foot Interlock Switch	47 46880 Footplate, RH
15 45698 Pivot, Rear Yoke	48 48100-06 Bushing, Oilite - 3/4 ID
16 481154 Connector Link, #50 Chain	49 45506 Foot Pedal Arm
17 43329 Anchor Bolt, Chain	50 04065-01 Pin, Drive Lock, 3/16 x 1-1/4
18 04020-12 Nut, Jam, 3/8-16	51 04019-04 Serr. Fl. Hex Nut, 3/8-16
19 45794 Yoke, Rear	52 42366 Reinforcement, Spring
20 04021-13 Hex Locknut, Elastic Stop, 5/8-11	53 42026 Spring, Seat Support
21 43020-05 Spacer, Rear Wheel	54 04021-11 Hex Locknut, Elastic Stop, 7/16-14
22 481345 Rear Wheel Assembly (Includes 23-29)	55 04003-12 Carriage Bolt, 5/16-18 x 3/4
23 48005-06 Seal, Grease	56 421988 Retainer, Bolt
24 48005-05 Bearing Cone	57 04050-03 Retaining Ring, 7/8 Ext
25 48005-04 Bearing Cup	58 421755 Guide, Top Chain
26 48114-06 Grease Fitting	59 421757 Divider, Chain Spacer
27 48005-03 Rim (Includes 23, 24, 25 & 26)	60 481480 Armrest Assembly
28 481345-02 Tire	61 481158 Track Set, Seat
29 43398 Sleeve, Rear Tire	
30 43020-06 Spacer, Rear Wheel	
31 04001-91 Bolt, Hex Head, 7/16-14 x 2-1/2	
32 04001-115 Bolt, Hex Head, 5/8-11 x 11-1/4	
33 481476 Switch, Foot Interlock	

-NOTE-

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ENGINE DECK



390S0114

ENGINE DECK

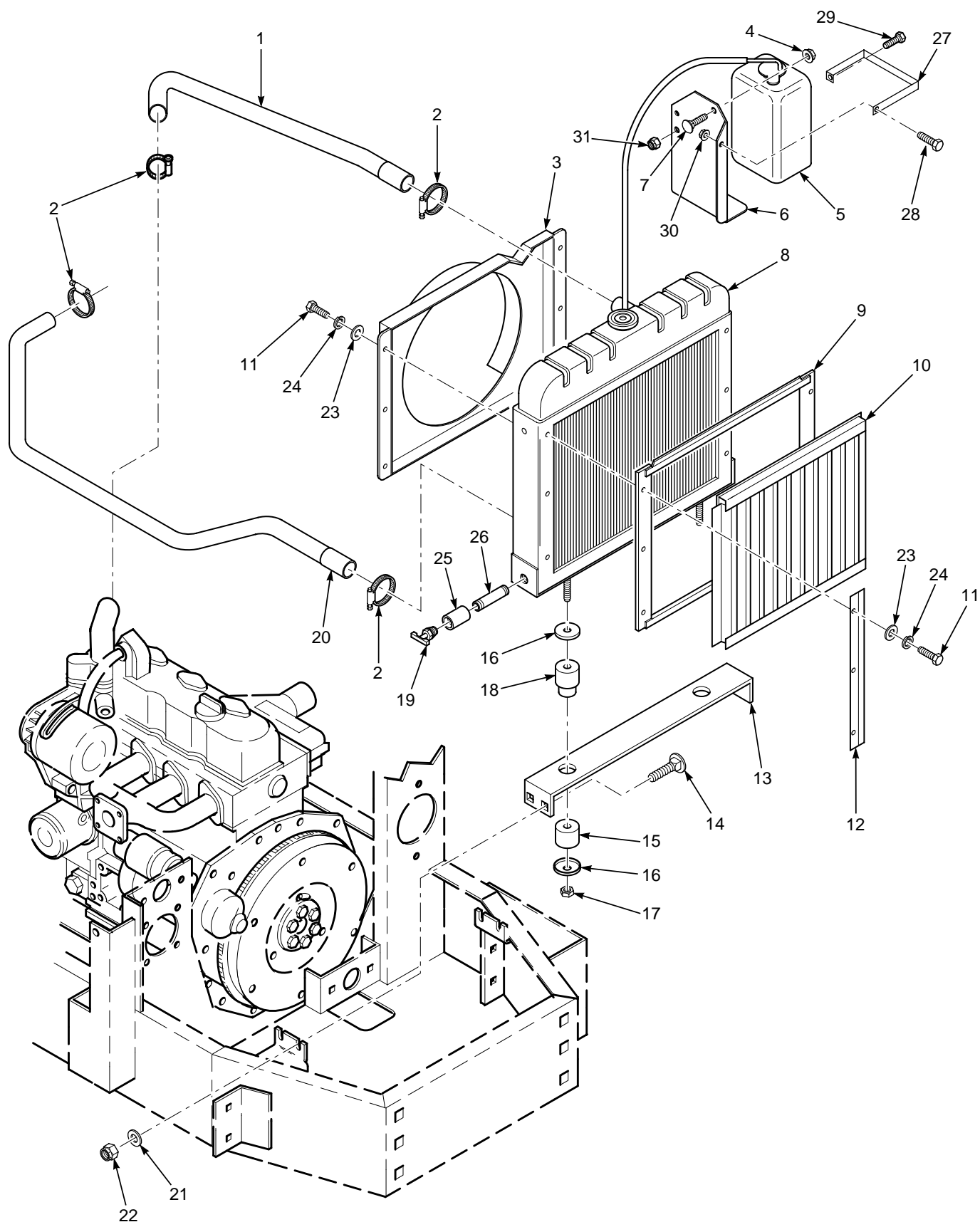
Ref. Part No. Number Description	Ref. Part No. Number Description
1 422002 Catch, Hood Latch	36 04001-28 Bolt, Hex Head, 7/16-14 x 1-1/4
2 04010-01 Screw, Round Head Washer, #10-32 x 1/2	37 04003-12 Carriage Bolt, 5/16-18 x 3/4
3 481309 Latch, Hood	38 43394 Stud, Metric
4 04020-01 Hex Nut, #10-32	39 48205 Pad, Rubber
5 421801 Stiffener, Hood	40 04021-10 Nex Locknut, Elastic Stop, 5/16-18
6 * Engine, Kubota, 28 HP Diesel	41 421798 Battery Box
7 422236 Hood	42 481177 Battery
8 421802 Mounting Plate, Engine	43 421799 Hold Down, Battery
9 04030-05 Lockwasher, 7/16	44 04003-20 Carriage Bolt, 5/16-18 x 10
10 04002-10 Bolt, Hex Head, M10 - 1.25 x 25	45 421781 Support Bracket, Hydraulic Tank
11 04021-11 Hex Locknut, Elastic Stop, 7/16-14	46 48711 Hydraulic Tank
12 04020-07 Hex Nut, 1/2-13	47 481164 Cap, Hydraulic Tank
13 04030-06 Lockwasher, 1/2	48 421288 Strap, Hydraulic Tank
14 04019-06 Serr. Fl. Hex Nut, 1/2-13	49 04017-05 Serr. Fl. Hex Head Capscrew, 1/4-20 x 3/4
15 04017-38 Serr. Fl. Hex Head Capscrew, 1/2-13 x 1-1/2	50 04021-08 Hex Locknut, Elastic Stop, 1/4-20
16 421782 Stop, Cutter Deck	51 04003-14 Carriage Bolt, 5/16-18- 1/2
17 04019-03 Serr. Fl. Hex Nut, 5/16-18	52 481165 Hinge
18 421806 Anchor, Deck Spring	53 421783 Plate, Hinge
19 04001-52 Bolt, Hex Head, 1/2-13 x 2-1/2	54 45862 Engine Deck
20 04017-16 Serr. Fl. Hex Head Capscrew, 5/16-18 x 3/4	55 04061-04 Pin, Cotter, 5/32 x 1-1/2
21 422027 Retainer, Spring	56 481284 Bumper, Rubber
22 48680 Castle Nut, 1.0-20 UNEF	57 04019-03 Nut, 5/16-18 Serrated Flange
23 04028-01 Nut, Wheel	58 481440 Adapter, Remote Oil Filter
24 481205 Wheel Assembly (Includes 25, 26)	59 481441 Gasket, Oil Filter Adapter
25 481205-02 Tire, 23 x 1050 -12, 4-ply	60 481442 MTG Bolt, Filter Adapter
26 481205-03 Rim	61 48603-04 O- Ring
27 46825 Hub, Wheel (includes 28)	62 481443 Reducer, Remote Filter
28 04008-01 Bolt, Hub	63 481444 Hose Assy., Remote Filter
29 04040-15 Flat Washer, 5/16 (.375 x .875 x .083)	64 481445 Hose Assy., Remote Filter
30 48461 Parking Brake Assembly (Includes 31, 32, 33, 34)	65 481446-01 Connector, 1/2 Pipe x 3/4 JIC
31 48461-02 Brake Pads - Pair	66 481447 Nut, 7/8 - 14
32 48461-03 Springs - Pair	67 481457 Spring Filter Adapter
33 48461-05 Clip	68 48572-08 Tube Union, 7/8-14 JIC x O-Ring
34 48461-04 Actuating Arm	69 422239 Guard Oil Filter
35 48769 Motor, Hydraulic - White (Includes 22)	70 * Oil Filter, Engine
	71 04001-01 Bolt, 1/4-20 X .75 Hex Head

*Available through the engine manufacturer only.

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RADIATOR/OIL COOLER



RADIATOR/OILCOOLER

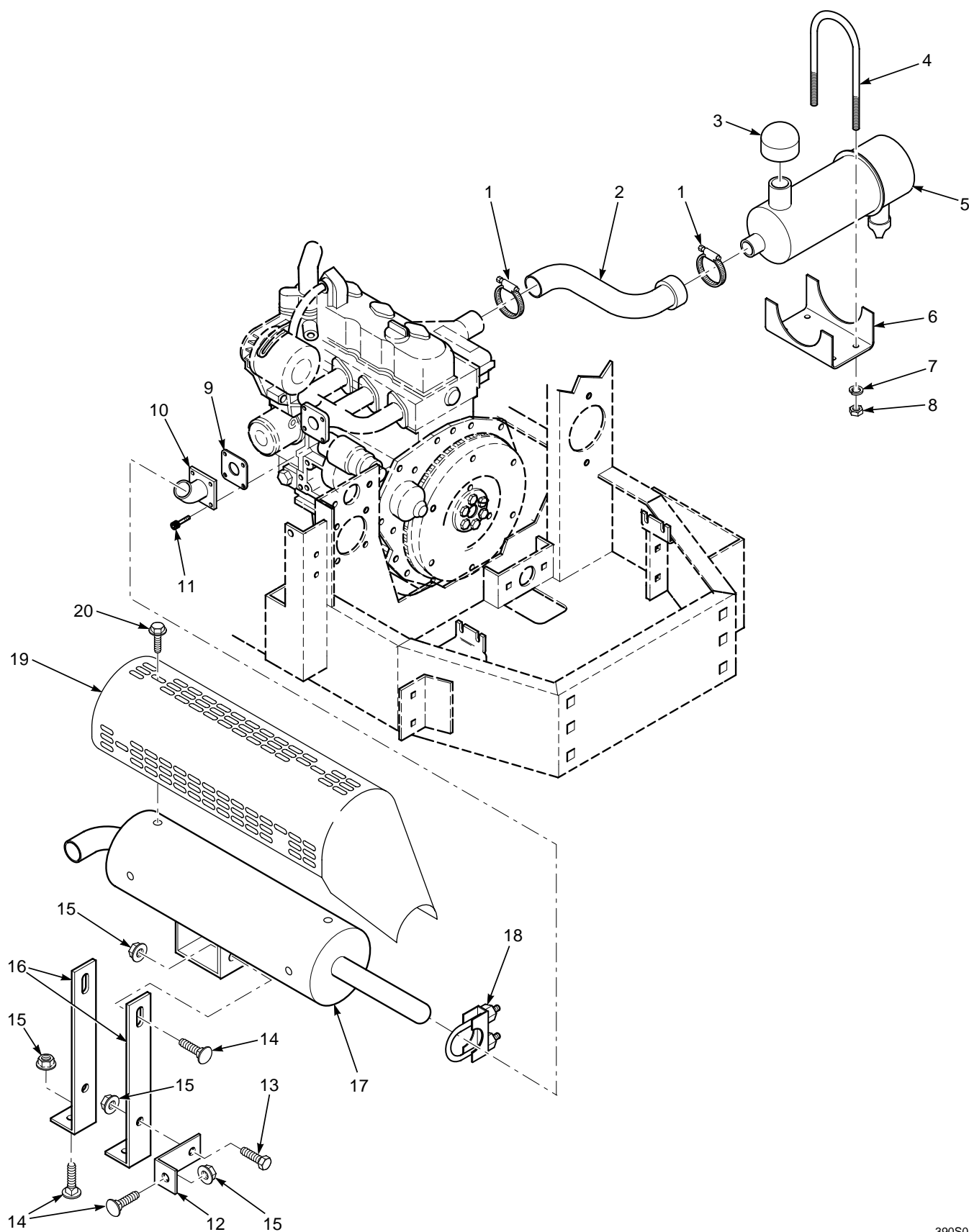
Ref. No.	Part Number	Description
1	481207	Hose, Upper Radiator
2	48136-06	Clamp, Hose
3	45783	Shroud, Fan
4	04019-03	Serr. Fl. Hex Nut, 5/16-18
5	*	Tank, Coolant Overflow
6	422192	Mounting Bracket, Coolant Tank
7	04003-12	Carriage Bolt, 5/16-18 x .75
8	481286	Radiator with Oil Cooler
9	45784	Frame, Debris Screen
10	45785	Screen, Debris
11	04001-06	Bolt, Hex Head, 1/4-20 X 5/8
12	422010	Side Rail, Debris Screen
13	421992	Bracket, Radiator Mounting
14	04003-11	Carriage Bolt, 3/8-16 x 1-1/4
15	*	Cushion, Radiator Mounting
16	*	Washer, Radiator Mounting
17	04021-05	Locknut, 3/8-16
18	*	Cushion, Radiator Mounting
19	481302	Drain Cock
20	481206	Hose, Lower Radiator
21	04041-07	Flatwasher, 3/8 (.391 x .938 x .105)
22	04021-09	Hex Locknut, Elastic Stop, 3/8-16
23	04040-14	Flatwasher, 1/4 (.312 X .75 X .065)
24	04030-02	Lockwasher, 1/4
25	48576-03	Coupling, 1/4 NPT
26	481383-01	Nipple, 1/4 NPT x 2.0
27	422194	Strap, Coolant Bottle
28	04001-44	Bolt, Hex Head, 1/4-20 x .50
29	04001-59	Bolt, Hex Head, 1/4-20 x 1.25
30	04019-02	Serr. Fl. Hex Nut, 1/4-20
31	04021-08	Hex Locknut, Elastic Stop, 1/4-20

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MUFFLER AND AIR CLEANER



MUFFLER AND AIR CLEANER

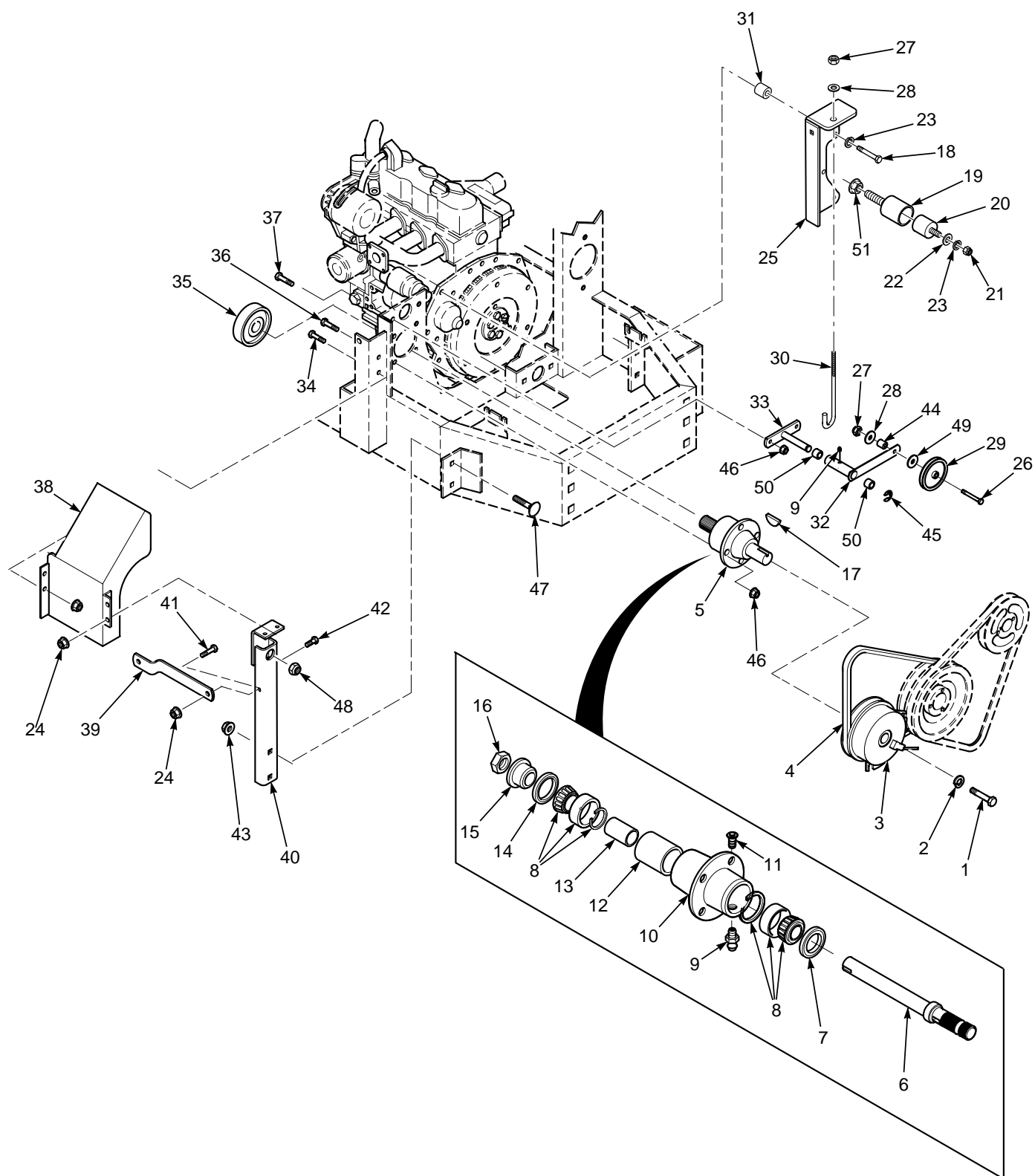
Ref. No.	Part Number	Description
1	48136-08	Hose Clamp
2	481191	Hose, Air Intake
3	481333	Cap. Precleaner
4	04100-03	U-Bolt
5	481192	Air Cleaner
6	421981	Mounting Bracket, Air Cleaner
7	04030-03	Lockwasher, 5/16
8	04020-03	Nut, Hex, 5/16-18
9	*	Gasket, Manifold
10	481340	Adapter, Manifold
11	04015-07	Capscrew, Socket Head, M8-1.125 x 20
12	422029	Brace, Muffler Support
13	04001-09	Bolt, Hex Head, 5/16-18 x 1
14	04003-12	Carriage Bolt, 5/16-18 x 3/4
15	04019-03	Serr. Fl. Hex Nut, 5/16-18
16	421983	Bracket, Muffler Support
17	481439	Muffler
18	48633	Clamp, Exhaust Pipe
19	422254	Muffler Guard
20	04011-08	Screw, 10-32 x .50 Type F HH

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DECK DRIVE SYSTEM



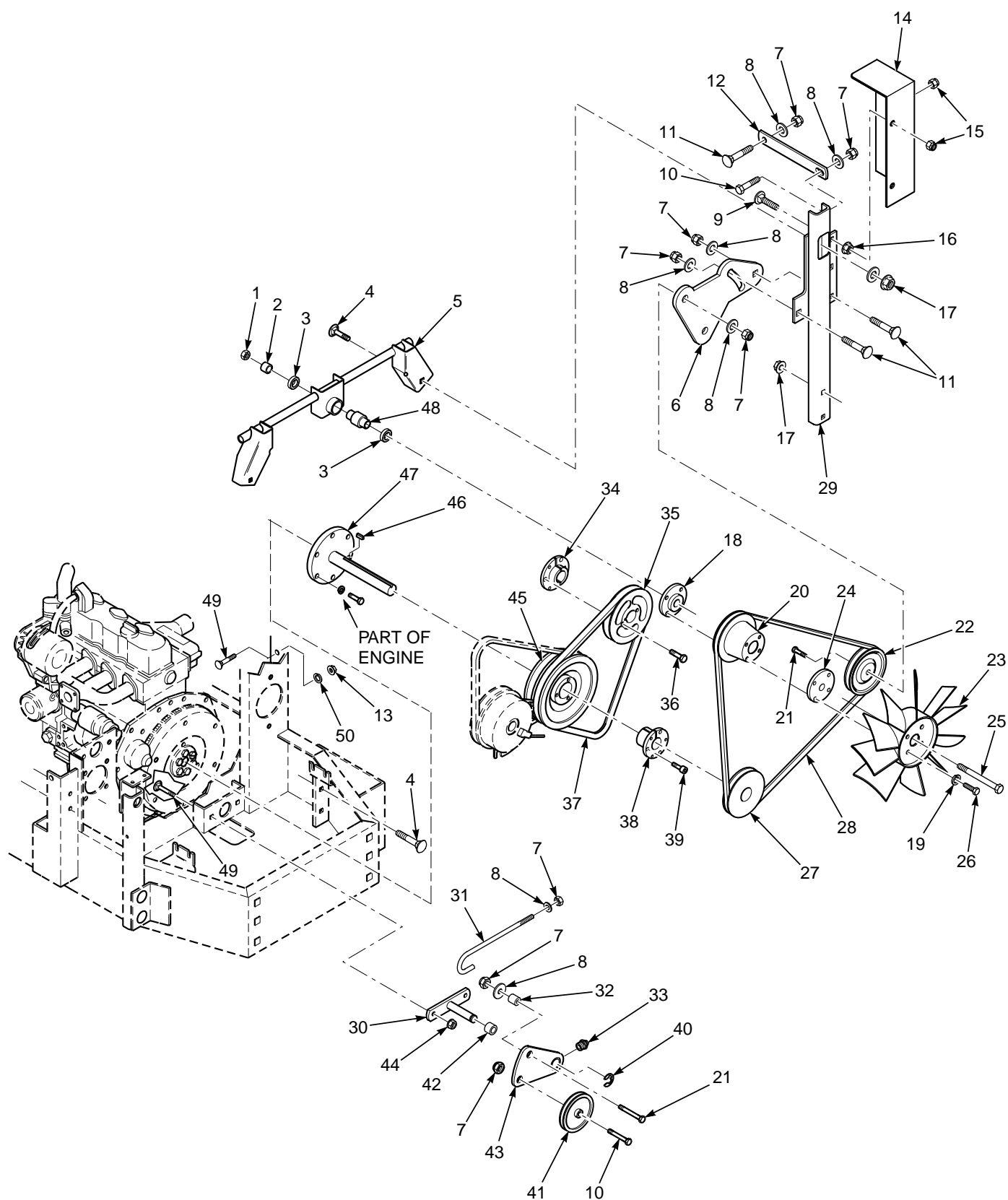
DECK DRIVE SYSTEM

Ref. Part No. Number Description	Ref. Part No. Number Description
1 04001-101 Bolt, Hex Head, 7/16-20 x 2-1/2	27 04021-09 Hex Locknut, Elastic Stop, 3/8-16
2 04030-05 Lockwasher, 7/16	28 04041-07 Flatwasher, 3/8 (.391 x .938 x .105)
3 481204 Clutch, Electric	29 48181 Pulley, Idler
4 481104 Belt, Deck Drive	30 43028 Rod, J-Hook
5 46827 Spindle, Deck Drive (Includes 6 thru 16)	31 43336 Spacer
6 43321 Shaft, Deck Drive	32 46871 Idler Arm, Clutch
7 481024 Seal, 2.00 O.D. 1-1/2 Bore	33 45212 Bracket, Idler Pivot
8 481022 Roller Bearing (Replace as a set only)	34 04017-16 Serr. Fl. Hex Head Capscrew, 5/16-18 x 3/4
9 48114-04 Grease Fitting	35 43330 Hub, Brake
10 43294 Housing, Spindle	36 04001-10 Bolt, Hex Head, 5/16-18 x 1-1/4
11 48677 Relief Fitting	37 04017-19 Serr. Fl. Hex Head Capscrew, 5/16-18 x 1-1/2
12 43296 Spacer, Outside	38 45792 Belt Guard, Electric Clutch
13 43312 Spacer, Inside	39 422018 Brace, Fan Support - LH
14 481025 Seal, 2.00 O.D. x 1-5/8 Bore	40 45712 Upright, Fan Support - LH
15 43297 Spindle Bushing, Bottom	41 04017-27 Serr. Fl. Hex Head Capscrew, 3/8-16 x 1
16 481112 Nut, 1-1/16-18	42 04003-12 Carriage Bolt, 5/16-18 x 3/4
17 04063-21 Key, #807 Woodruff, 1/4 x 7/8	43 04019-06 Serr. Fl. Hex Nut, 1/2-13
18 04002-13 Bolt, Hex Head, M8-1.25 x 40	44 43282 Spacer, J Pull Rod
19 43428 Base, Anti-Rotation-Clutch	45 04050-02 Retaining Ring, .75 Ext
20 481469 Isolator, Rubber	46 04019-03 Serr. Fl. Hex Nut, 5/16-18
21 04020-03 Nut, Hex, 5/16-18	47 04003-19 Carriage Bolt, 1/2-13 x 1-1/4
22 04040-15 Flatwasher, 5/16 (.375 x .875 x .083)	48 04021-07 Lock Nut, Elastic Stop, 1/2-13
23 04030-03 Lockwasher, 5/16	49 04041-11 Flat Washer, 3/8 (.406 x 1.50 x .179)
24 04019-03 Serr. Fl. Hex Nut, 5/16 - 18	50 48100-05 Bushing, Oilite - .753 I.D.
25 45873 Anchor Bracket, J-Bolt	51 04019-05 Nut, 7/16-14 Serr. Flg.
26 04001-46 Bolt, Hex Head, 3/8-16 x 2-1/4	

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PUMP AND FAN DRIVE SYSTEMS



PUMP AND FAN DRIVE SYSTEMS

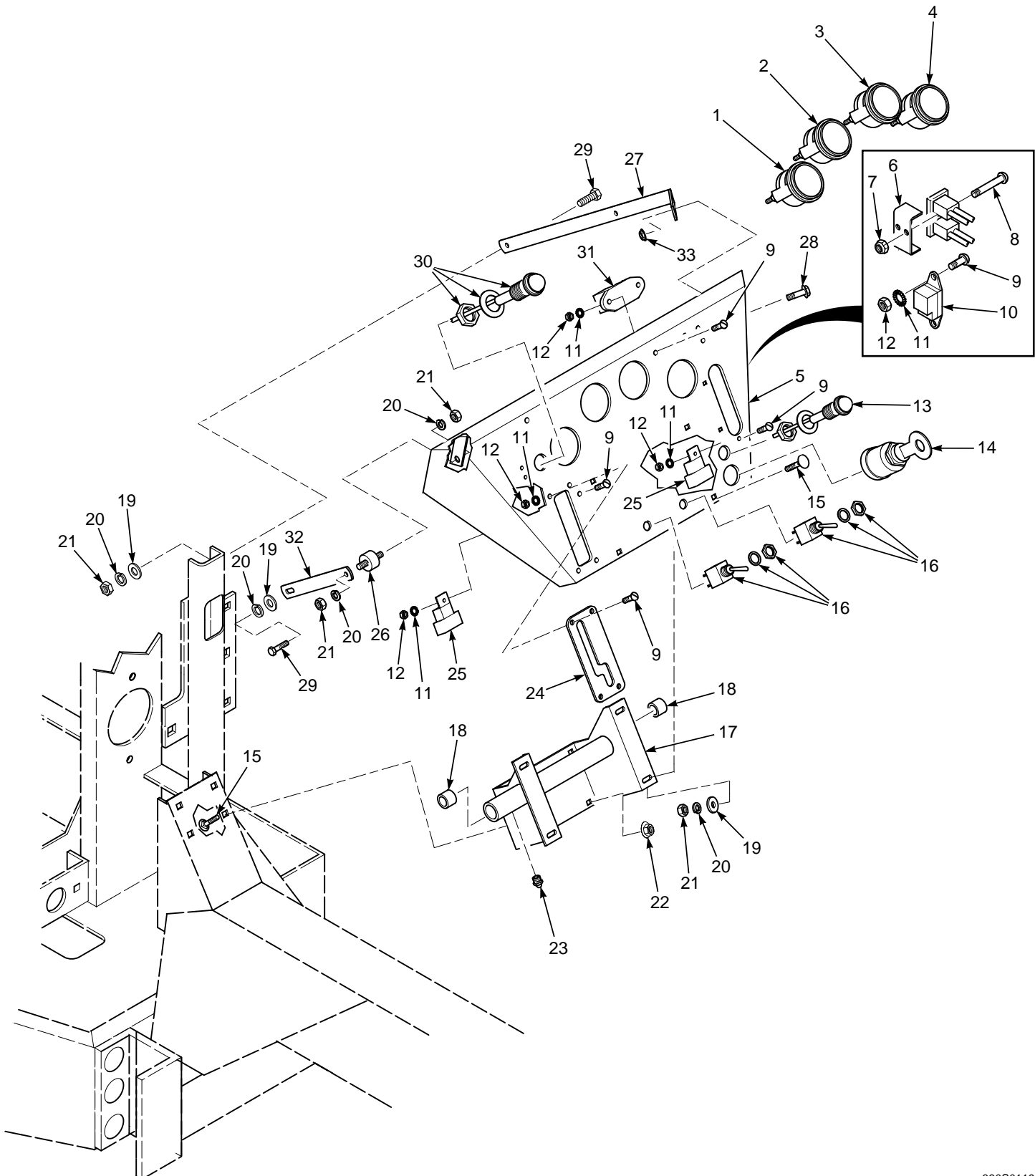
Ref. Part No. Number Description	Ref. Part No. Number Description
1 04021-16 Hex Locknut, 1/2-20	28 481114 Belt, Fan Drive
2 43335 Spacer, Fan	29 45713 Upright, Fan Support - RH
3 48442 Bearing	30 45307 Base, Idler Pivot - Pump
4 04003-19 Carriage Bolt, 1/2-13 x 1-1/4	31 44107 Rod, J-Hook
5 46872 Bracket, Fan Mounting (Includes 3, 48)	32 43282 Spacer, J Pull Rod
6 422017 Idler Bracket, Fan Drive	33 48114-04 Grease Fitting
7 04021-09 Hex Locknut, Elastic Stop, 3/8-16	34 48761 Taper Hub, .75 Bore
8 04041-07 Flat Washer, 3/8 (.391 x .938 x .105)	35 48790 Pulley, Pump, 5.94 O.D.
9 04003-06 Carriage Bolt, 1/4-20 x 1	36 04001-109 Bolt, Hex Head, 1/4-20 x 3/8
10 04001-32 Bolt, Hex Head, 3/8-16 x 1-1/4	37 481103 Belt, Pump Drive
11 04003-11 Carriage Bolt, 3/8-16x 1-1/4	38 481168 Taper Hub, 1-7/16 Bore
12 422019 Brace, Fan Support	39 04015-09 CPSCR, Socket Head, 1/4-20 x 1-1/4
13 04019-02 Serr. Fl. Hex Nut, 1/4-20	40 04050-02 Retaining Ring, .75 Ext
14 421808 Guard, Pump Belt	41 48181 Pulley, Idler, 5.95 O.D.
15 04021-08 Hex Locknut, Elastic Stop, 1/4-20	42 48100-05 Bushing, Olite - .75 I.D.
16 04003-12 Carriage Bolt, 5/16-18 x 3/4	43 46878 Arm, Idler (Includes 33, 42)
17 04019-06 Serr. Fl. Hex Nut, 1/2-13	44 04019-03 Serr. Fl. Hex Nut, 5/16-18
18 43334 Hub, Fan	45 481329 Pulley, Double Groove
19 04030-02 Lockwasher, 1/4	46 04063-22 Key, 3/8 x 1-1/4
20 * Pulley, Fan	47 * Stubshaft, Crankshaft
21 04001-21 Bolt, Hex Head, 3/8-18x 1-3/4	48 43139 Spacer
22 481315 Pulley, Belt Tensioning Idler	49 04003-12 Carriage Bolt, 5/16 - 18 x .75
23 * Fan	50 04040-14 Flatwasher, 1/4
24 43390 Hub, Fan	
25 04001-114 Bolt, Hex Head, 1/2-20 x 4.75 LH Thread	
26 04001-116 Bolt, Hex Head, 1/4-28 x 1	
27 481330 Pulley, 4.25 O.D. x 1.4375 I.D.	

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INSTRUMENT PANEL



INSTRUMENT PANEL

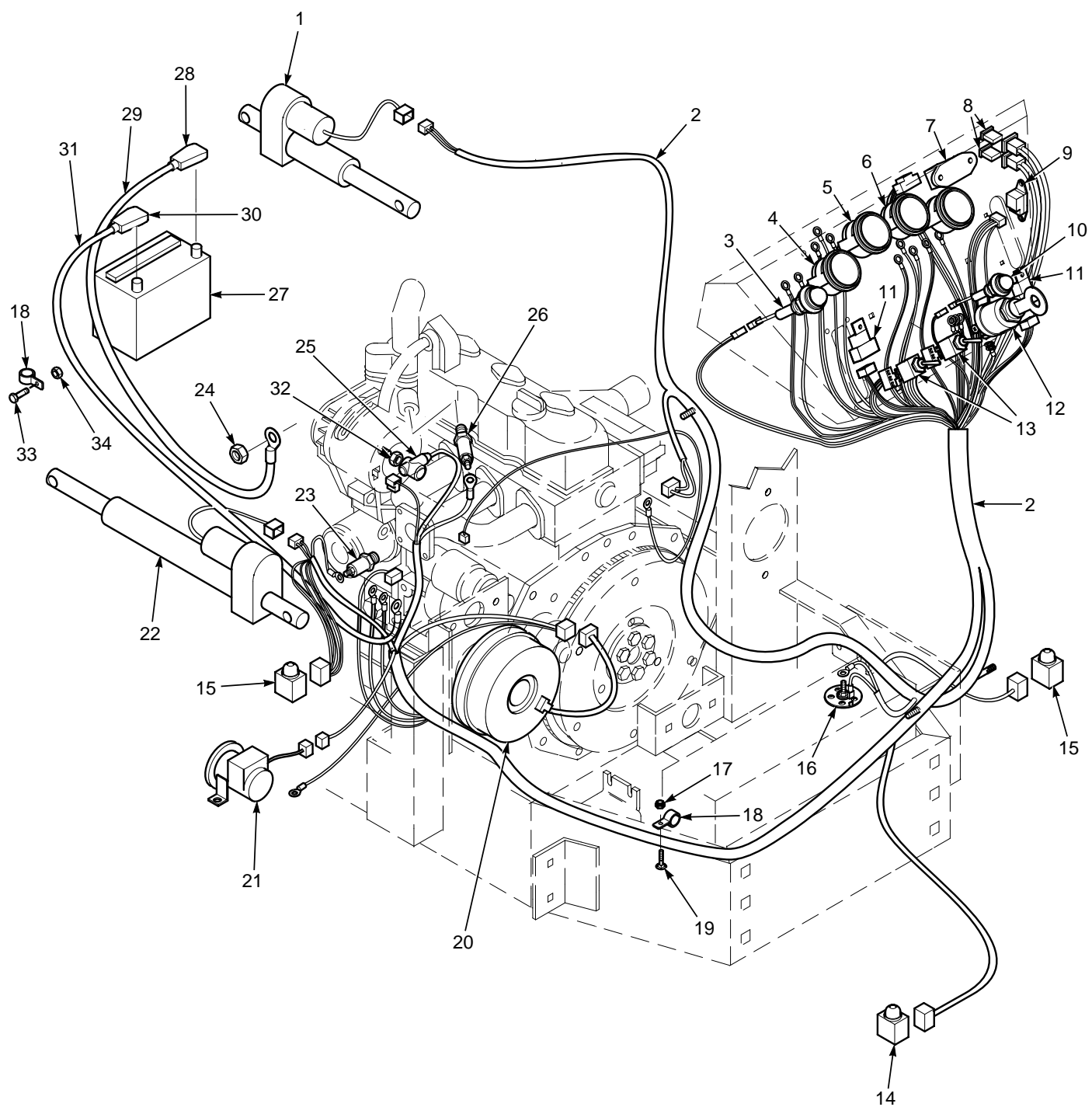
Ref. No.	Page Number	Description
1	48023	Hourmeter
2	481183	Gauge, Water Temperature
3	481306	Gauge, Fuel Level
4	481184	Voltmeter
5	46873	Instrument Panel with Decal
6	42413	Bracket, Fuse Holder
7	04021-01	Hex Locknut, Elastic Stop, #10-32
8	04010-11	Screw, Round Head, #10-32 x 1-1/2
9	04010-01	Screw, Round Head, #10-32 x 1/2
10	*	Timer, Glow Plug
11	04031-01	Lockwasher, External Tooth, #10
12	04020-01	Hex Nut, #10-32
13	481182	Indicator Light, Glow Plug, Yellow Lens
14	*	Keyswitch
15	04003-12	Carriage Bolt, 5/16-18 x 3/4
16	481087	Switch, Deck Lift
17	46874	Mounting Bracket, Instrument Panel (Includes 18, 23)
18	48100-06	Bushing, Oilite - .75 I.D.
19	04040-04	Flatwasher, 5/16 (.281 x .625 x .065)
20	04030-03	Lockwasher, 5/16
21	04020-03	Hex Nut, 5/16-18
22	04019-03	Serr. Fl. Hex Nut, 5/16-18
23	48114-04	Grease Fitting
24	421788	Guide, Clutch Lever
25	48788	Relay, Synchronize Start and Cutter Blade
26	481311	Rubber Isolator
27	422193	Brace, Instrument Panel
28	04001-59	Serr. Flg. Hex Head Capscrew, 5/6-18 x 3/4
29	04001-08	Bolt, Hex Head, 5/16-18 x 3/4
30	481181	Indicator Light, Oil Pressure, Red Lens
31	481316	Timer, Delay Circuit
32	422004	Bracket, Support Brace
33	04019-02	Serr. Fl. Hex Nut, 5/16-18
34	04021-19	Hex Nut, Elastic Stop, 3/8-16
35	04041-07	Flatwasher, 3/8 (.391 x .938 x .105)
36	04001-32	Bolt, Hex Head, 3/8-16 x 1-1/4

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WIRING HARNESS AND ELECTRICAL COMPONENTS



WIRING HARNESS AND ELECTRICAL COMPONENTS

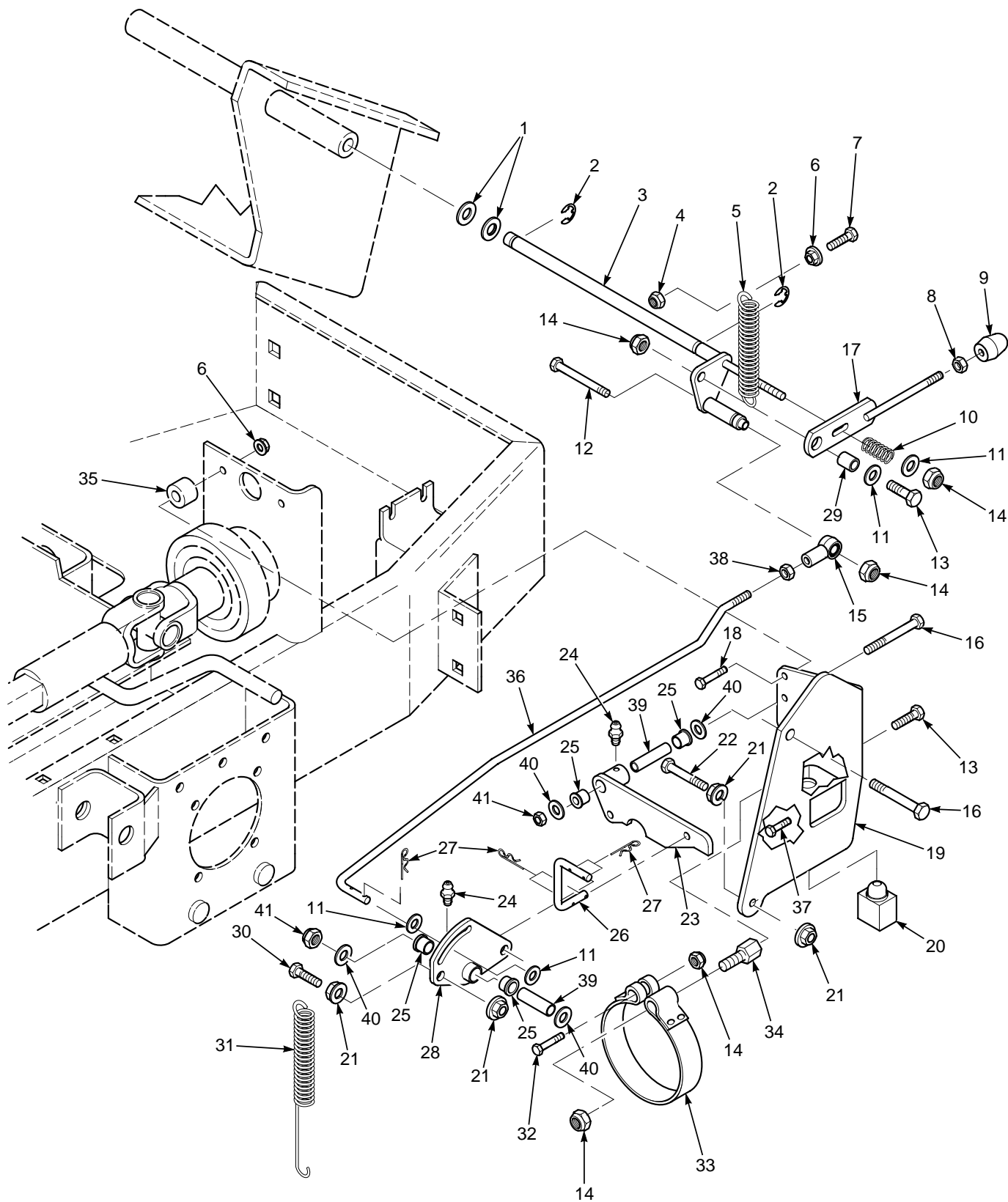
Ref. No.	Page Number	Description
1	481216	Actuator, Cutting Height
2	481185	Wire Harness
3	481182	Indicator Light, Oil Pressure
4	48023	Hourmeter
5	481183	Gauge, Water Temperature
6	481306	Gauge, Fuel Level
7	481316	Timer, Delay Circuit
8	481322	Fuse, 30 Amp
9	*	Timer, Glow Plug
10	481182	Indicator Light, Glow Plug
11	48788	Relay, Synchronize Start and Clutch Kill Circuit
12	*	Switch, Ignition
13	481087	Switch, Deck Lift and Cutting Height
14	481476	Switch, Safety - Parking Brake
15	481474	Switch, Foot Pedal and Cutter Brake Interlocks
16	481304	Sender, Fuel (includes Gasket and Screws)
17	04021-10	Hex Locknut, Elastic Stop, 5/16-18
18	48030-10	Clamp
19	04003-12	Carriage Bolt, 5/16-18 x 3/4
20	481204	Electric Clutch
21	*	Fuel Pump, Electric
22	481195	Actuator, Deck Lift
23	*	Sender, Oil Pressure
24	04025-02	Hex Nut, M8- 1.25
25	481335	Cap, Alternator Terminal
26	481190	Sender, Water Temperature
27	481177	Battery
28	481336	Cap, Battery Terminal - Black
29	481176-02	Battery Cable, Black
30	481337	Cap, Battery Terminal - Red
31	481176-01	Battery Cable, Red
32	04025-01	Hex Nut, M6 - 1.00
33	04017-16	Serr. Fl.Hex Head Capscrew, 5/16-18 x3/4
34	04019-03	Serr. Fl. Hex Nut, 5/16-18

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CUTTER BRAKE LINKAGE



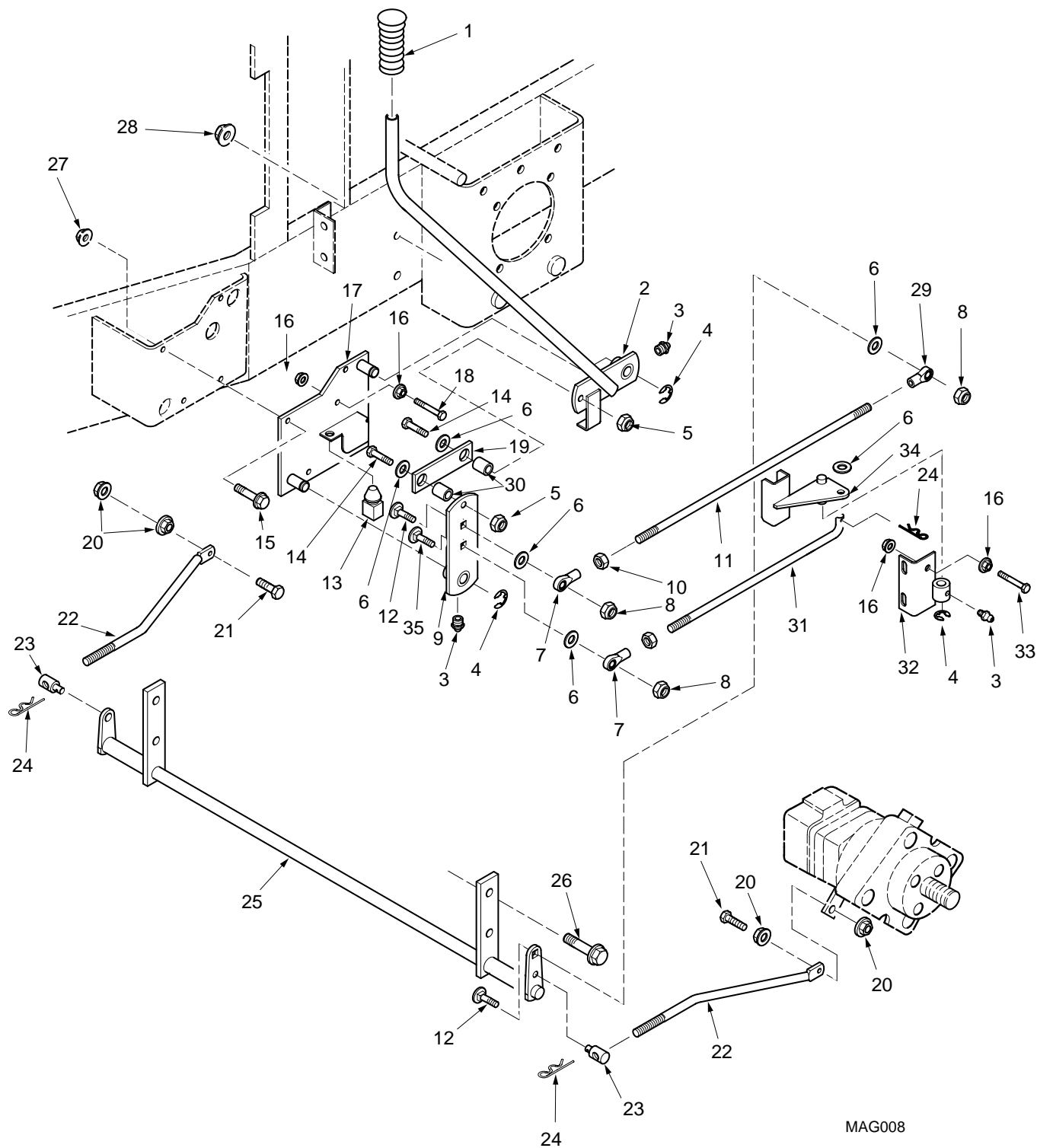
CUTTER BRAKE LINKAGE

Ref. Part No.	Part Number	Description
1	04041-08	Flatwasher, 3/4 (.766 x 1.250 x .060)
	04041-08S	Flatwasher, 3/4 (.766 x 1.250 x .035)
2	04050-02	Retaining Ring - .75 Ext
3	45702	Lever, Clutch Engage
4	04021-10	Hex Locknut, Elastic Stop, 5/16-18
5	481163	Spring, Clutch Lever
6	04019-03	Serr. Fl. Hex Nut, 5/16-18
7	04017-17	Serr. Fl. Hex Head Capscrew, 5/16-18 x 1
8	04020-04	Nut, Hex, 3/8-16
9	48092	Grip, Clutch Lever
10	481244	Spring, Friction Control
11	04041-07	Flatwasher, 3/8 (.391 x .938 x .105)
12	04001-51	Bolt, Hex Head, 3/8-16 x 3-3/4
13	04017-26	Serr. Fl. Hex Head Capscrew, 3/8-16 x 3/4
14	04021-09	Hex Locknut, Elastic Stop, 3/8-16
15	48464	Ball Joint, RH Thd, 3/8-16
16	04001-53	Bolt, Hex Head, 5/16-18x 2-1/2
17	45693	Lever, Clutch
18	04017-19	Serr. Fl. Hex Head Capscrew, 5/16-18 x 1-1/2
19	421805	Base, Brake Assembly
20	481474	Switch, Interlock
21	04019-04	Serr. Fl. Hex Nut, 3/8-16
22	04001-31	Bolt, Hex Head, 3/8-16 x 2-1/2
23	46875	Lever, Brake Engage (Includes 24, 25)
24	48114-05	Grease Fitting, Short
25	48100-04	Bushing, Oilite - .50 I.D.
26	44109	Rod, Clutch Engage
27	04062-02	Cotter Pin, Hair (.080 x1.19)
28	46876	Bellcrank, Clutch Engage (Includes 24, 25)
29	43212	Sleeve
30	04001-20	Bolt, Hex Head, 3/8-16 x 1-1/2
31	481034	Spring, Brake
32	04001-26	Bolt, Hex Head, 3/8-16 x 1-1/4
33	481170	Brake Band
34	43337	Anchor, Brake
35	43336	Spacer, Brake
36	44110	Rod, Clutch Engage
37	04017-20	Serr. Fl. Hex Head Capscrew, 5/16-18 x 1-3/4
38	04020-14	Hex Nut, 3/8-24
39	43110	Sleeve, Control Lever
40	04040-04	Flatwasher, 5/16 (.344 x .688 x .065)
41	04021-10	Hex Locknut, Elastic Stop, 5/16-18

-NOTE-

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PARKING BRAKE LINKAGE



MAG008

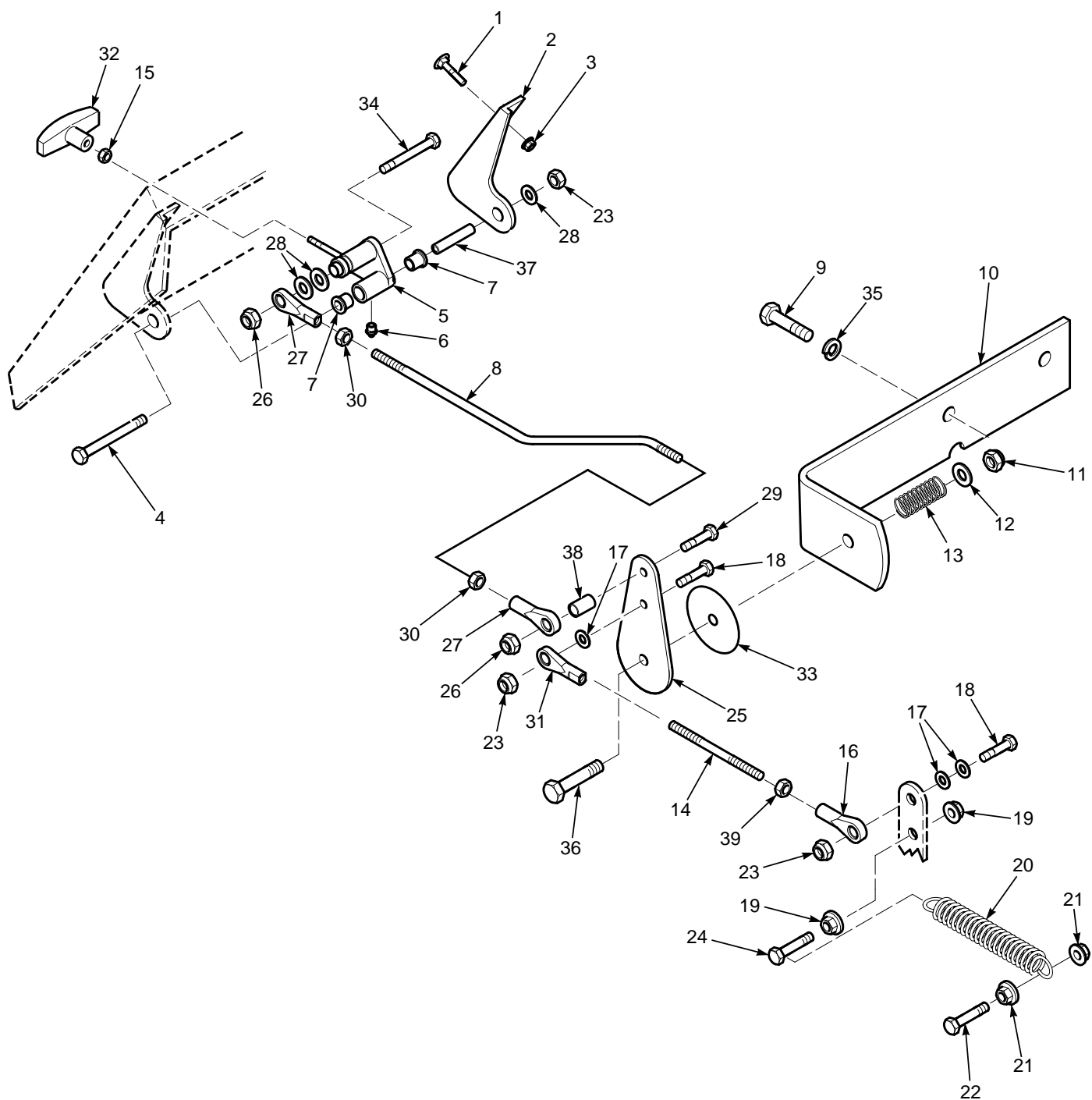
PARKING BRAKE LINKAGE

Ref. No.	Part Number	Description
1	48093	Grip, Handle
2	45716	Lever, Brake
3	48114-04	Grease Fitting
4	04050-01	Retaining Ring, .625 Ext
5	04020-05	Hex Locknut, Elastic Stop, 3/8-16
6	04041-07	Washer, Flat, 3/8 (.391 x .938 x .105)
7	48464	Ball Joint, 3/8-24 RH Thd
8	04021-09	Hex Locknut, Elastic Stop, 3/8-16
9	45782	Arm, Weldment
10	04020-14	Hex Nut, 3/8-24
11	04004-23	Rod, Parking Brake
12	04003-05	Carriage Bolt, 3/8-16 x 1-1/2
13	481474	Switch, Interlock
14	04001-19	Bolt, Hex Head, 3/8-16 x 1.00
15	04017-17	Serr. Fl. Hex Head Capscrew, 5/16-18 x 1.00
16	04019-04	Serr. Fl. Hex Nut, 3/8-16
17	45781	Mounting Base, Parking Brake
18	04001-21	Bolt, Hex head, 3/8-16 x 1-1/4
19	421338	Link, Cam
20	04019-02	Serr. Fl. Hex Nut, 1/4-20
21	04001-59	Bolt, Hex Head, 1/4-20 x 1-1/4
22	44108	Rod, Brake Actuator
23	43032	Swivel
24	0462-02	Hair Pin, Cotter, .08 x 1.19
25	45705	Actuator, Brake
26	04017-37	Serr. Fl Hex Head Capscrew, 1/2-13 x 1-3/4
27	04019-03	Serr. Fl. Hex Nut, 5/16-18
28	04019-06	Serr. Fl. Hex Nut, 1/2-13
29	48544	Ball Joint, 3/8-24 LH Thread
30	43212	Sleeve
31	44124	Rod, Interlock
32	45834	Bracket, Neutral Lockout Mounting
33	04001-51	Bolt, Hex Head, 3/8-16 x 3.75
34	45835	Bracket, Neutral Lockout
35	04003-03	Carriage Bolt

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THROTTLE LINKAGE



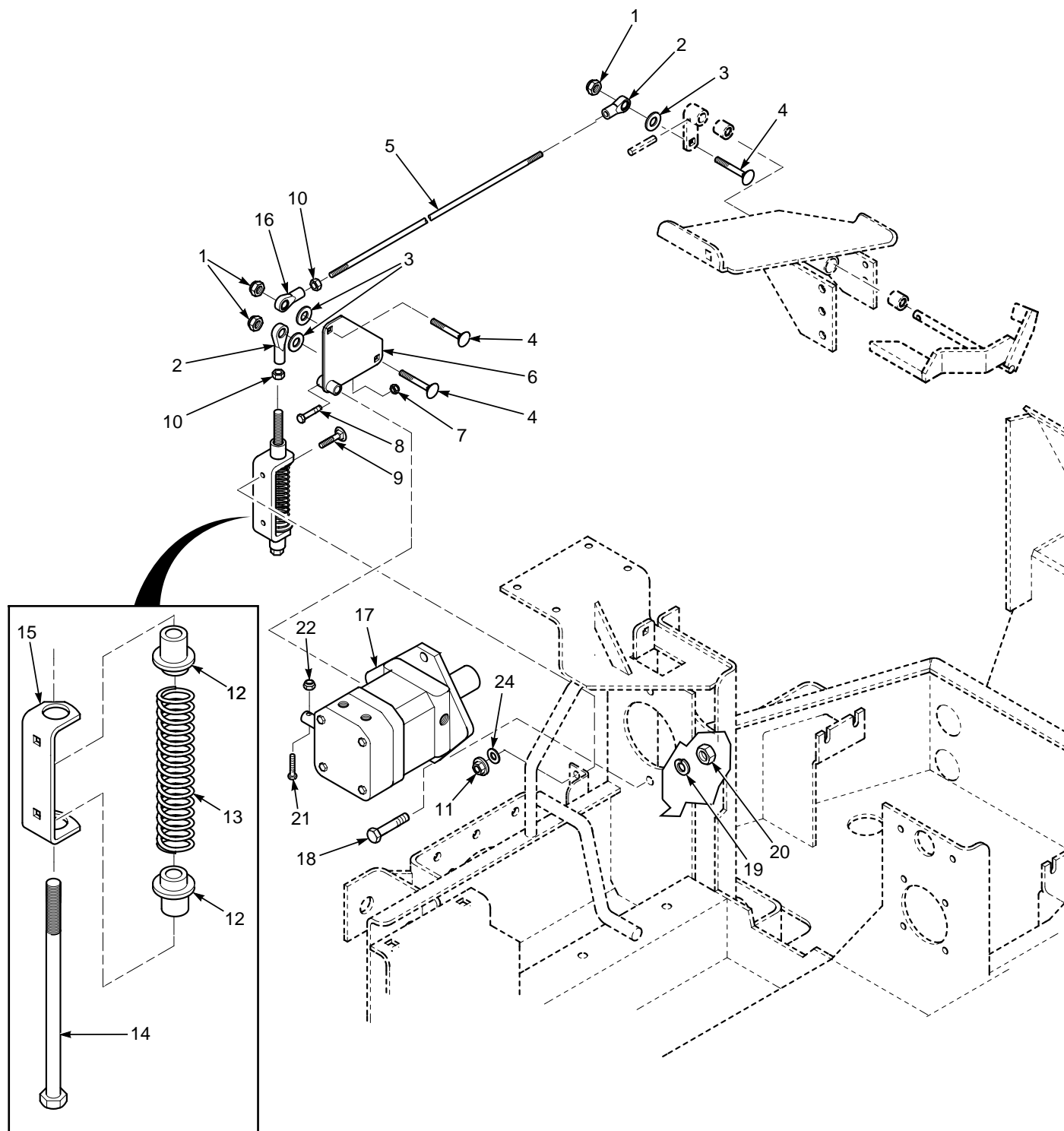
THROTTLE LINKAGE

Ref. No.	Part Number	Description
1	04003-02	Carriage Bolt, 1/4-20 x .75
2	421776	Mounting Base, Throttle
3	04019-02	Serr. Fl. Hex Nut, 1/4-20
4	04001-13	Bolt, Hex Head, 5/16-18 x 2-3/4
5	46877	Lever, Throttle (Includes 6, 7)
6	48114-05	Grease Fitting
7	48100-04	Bushing, Oilite - .50 I.D.
8	44115	Rod, Throttle Control
9	04002-11	Bolt, Hex Head, M10 - 1.25 x 30
10	45822	Mounting Bracket, Throttle
11	04021-13	Hex Locknut, Elastic Stop, 5/8-11
12	04041-10	Flatwasher, 5/8
13	481244	Spring, Friction Control
14	04004-26	Stud, 5/16-24 x 4.50
15	04020-03	Hex Nut, 5/16-18
16	481189	Rod End, 5/16-24 RH Thread
17	04040-04	Flatwasher, 5/16 (.344 x .688 x .065)
18	04001-10	Bolt, Hex Head, 5/16-18 x 1-1/4
19	04019-02	Serr. Fl. Hex Nut, 1/4-20
20	481314	Spring, Throttle Control
21	04019-03	Serr. Fl. Hex Nut, 5/16-18
22	04001-39	Bolt, Hex Head, 5/16-18 x 2-1/4
23	04021-10	Hex Locknut, Elastic Stop, 5/16-18
24	04001-59	Bolt, Hex Head, 1/4-20 x 1-14
25	421997	Lever, Throttle
26	04021-09	Hex Locknut, Elastic Stop, 3/8-16
27	48464	Ball Joint, 3/8-24 RH Thread
28	04040-04	Flatwasher, 5/16
29	04001-20	Bolt, Hex Head, 3/8-16 x 1-1/2
30	04020-14	Hex Nut, 3/8-24
31	481188	Rod End, 5/16-24 LH Thread
32	481092	Knob, Shifter
33	481243	Disc, Friction
34	04001-51	Bolt, Hex Head, 3/8-16 x 3-3/4
35	04030-05	Lockwasher, 7/16
36	04001-125	Bolt, Hex Head, 5/8-11 X 3-1/2
37	43110	Sleeve
38	43212	Sleeve
39	04020-13	Hex Nut, 5/16-24

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FORWARD/REVERSE LINKAGE



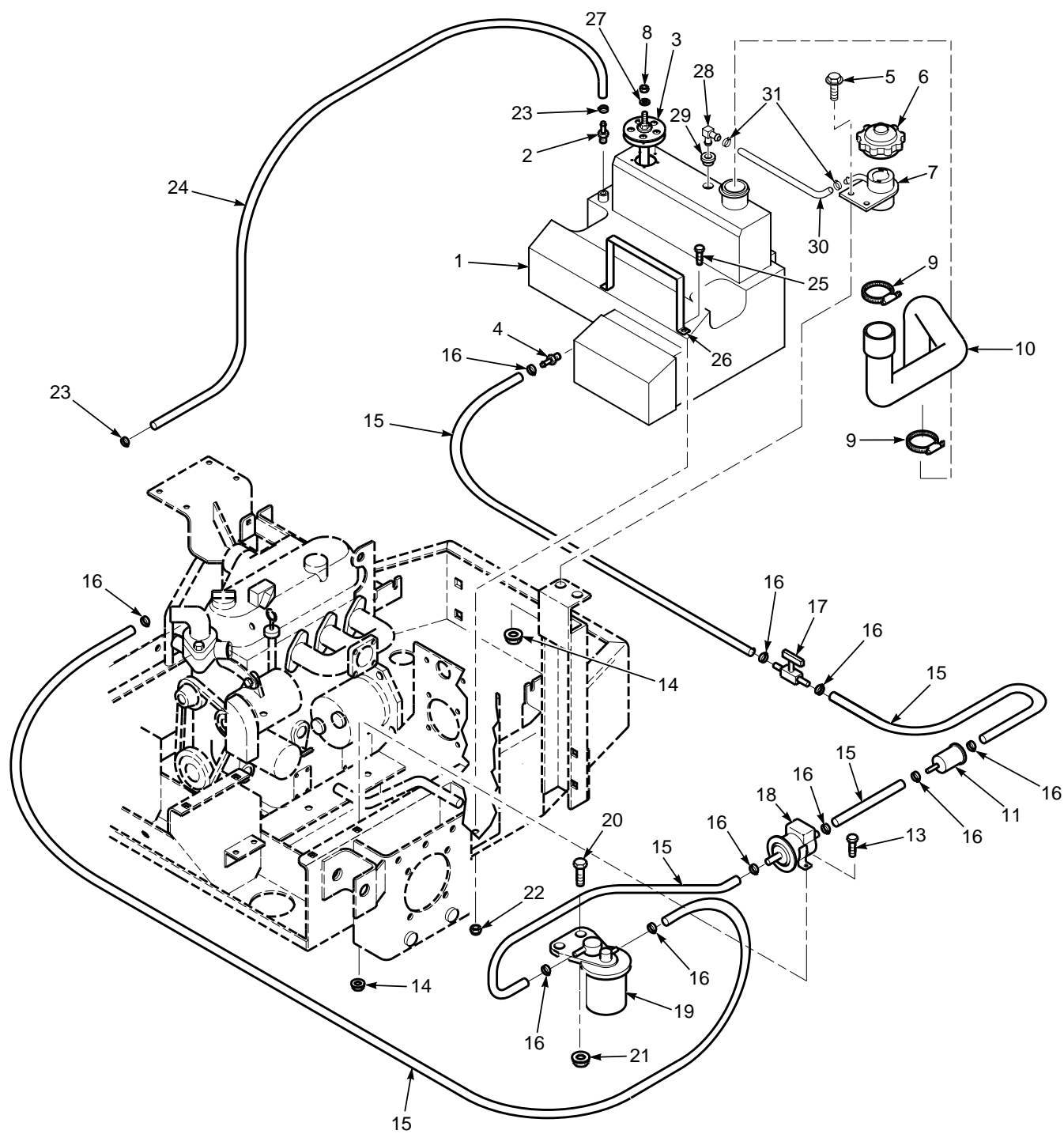
FORWARD/REVERSE LINKAGE

Ref. Part No.	Part Number	Description
1	04021-09	Hex Locknut, Elastic Stop, 3/8-16
2	48544	Ball Joint, 3/8-24 LH Thread
3	04041-07	Flatwasher, 3/8 (.391 x .938 x .105)
4	04003-05	Carriage Bolt, 3/8-16 x 1-1/2
5	04004-22	Rod, Transmission Control
6	45708	Bellcrank, Pump Control
7	04021-08	Hex Locknut, Elastic Stop, 1/4-20
8	04001-59	Bolt, Hex Head, 1/4-20 x 1-1/4
9	04003-04	Carriage Bolt, 5/16-18 x 1
10	04020-14	Hex Nut, 3/8-24
11	04019-03	Serr. Fl. Hex Nut, 5/16-18
12	43257	Bushing, Spring Keeper
13	48463	Spring, Neutral Return
14	48512	Bolt, Neutral Adjustment, 3/8-24 x 6-3/4
15	421148	Retainer, Neutral Spring
16	48464	Ball Joint, 3/8-24 RH Thread
17	481102	Hydraulic Pump
18	04001-71	Bolt, Hex Head, 1/2-13 x 1-1/2
19	04030-06	Lockwasher, 1/2
20	04020-07	Hex Nut, 1/2-13
21	04010-11	Screw, Round Head, #10-32
22	04021-01	Hex Nut, Elastic Stop, #10-32
23	04040-15	Flatwasher, 5/16 (.375 x .875 x .083)

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FUEL TANK AND LINES



FUEL TANK AND LINES

Ref. No.	Part Number	Description
1	46933	Fuel Tank (Includes 2, 3, 4)
2	481313	Fitting, Return Line
3	481304	Sender Unit, Fuel Level (Includes Gasket and Screws)
4	481312	Fitting, Hose
5	04017-16	Serr. Fl. Hex Head Capscrew, 5/16-18 x 3/4
6	481298	Cap, Diesel Fuel
7	45864	Fill Neck W/mt.
8	04020-01	Hex Nut, #10-32
9	48136-08	Clamp, Hose
10	481296	Hose, Fuel Fill
11	481307	Fuel Pre-Filter
12	48030-08	Clamp, Fuel Filter
13	04017-05	Serr. Fl. Hex Head Capscrew, 1/4-20 x 3/4
14	04019-02	Serr. Fl. Hex Nut, 1/4-20
15	481178	**Hose, Fuel Line
16	48136-05	Clamp Hose
17	481308	Valve, Fuel Shutoff
18	*	Fuel Pump, Electric
19	*	Fuel Filter (Kubota P/N 70000-43081)
20	04017-17	Serr. Fl. Hex Head Capscrew, 5/16-18 x 1
21	04019-03	Serr. Fl. Hex Nut, 5/16-18
22	04021-08	Hex Locknut, Elastic Stop, 1/4-20
23	48059-03	Fuel Hose Clamp, 3/16
24	481179	**Hose Fuel Line, 3/16 x 33"
25	04017-04	Serr. Fl. Hex Head Capscrew, 1/4-20 x1-1/2
26	422003	Strap, Fuel Tank
27	04030-01	Lockwasher, #10
28	481431	Elbow, 90 Deg.
29	481432	Bushing, Fuel Tank
30	48351-10	Hose, Fuel Vent, 1/2 x21.5"
31	48502-04	Clamp, Hose .75 OD Hose

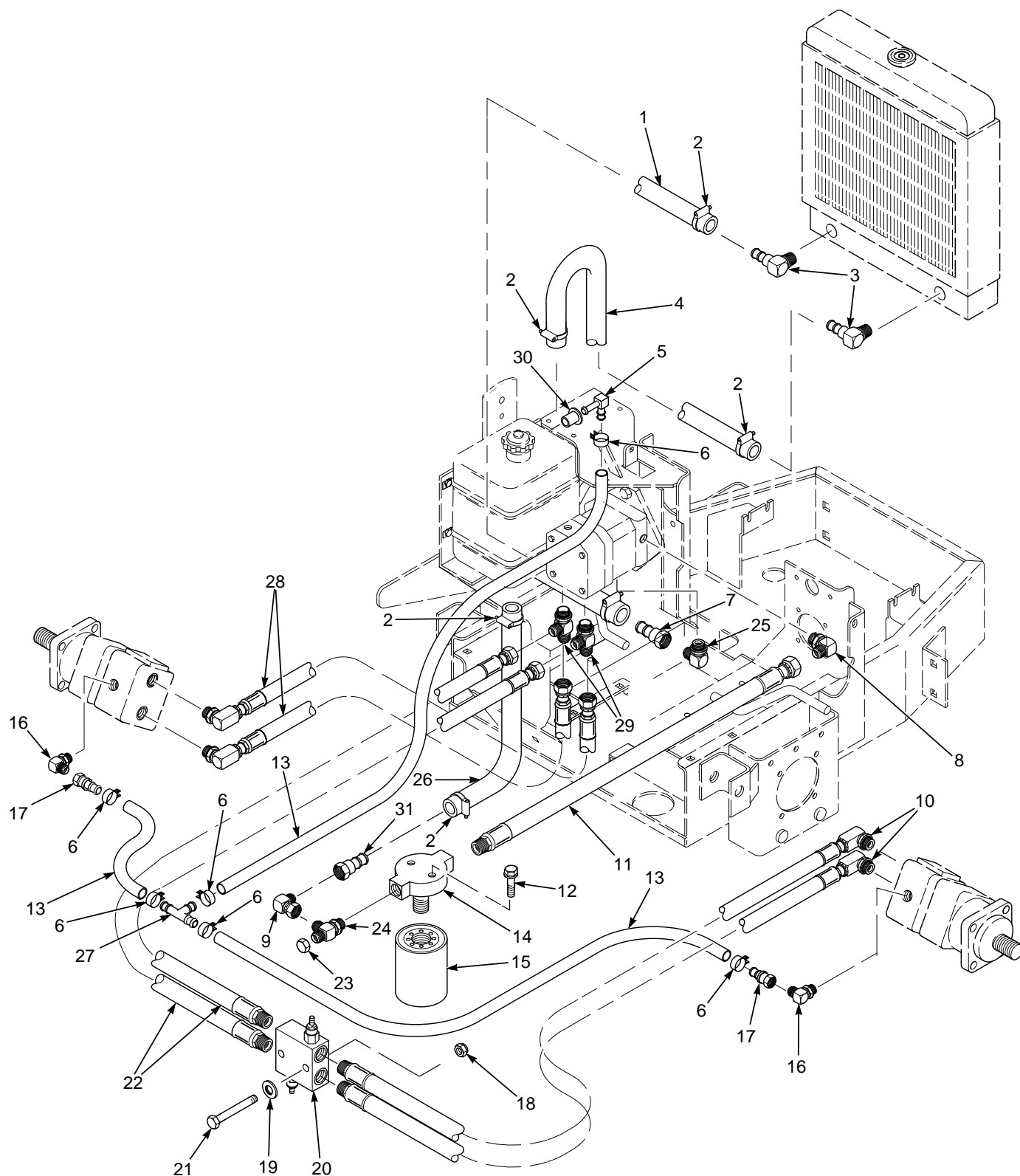
* Available only from the engine manufacturer.

** When ordering fuel line hose, specify the length required.

-NOTE-

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HYDRAULIC CIRCUITS



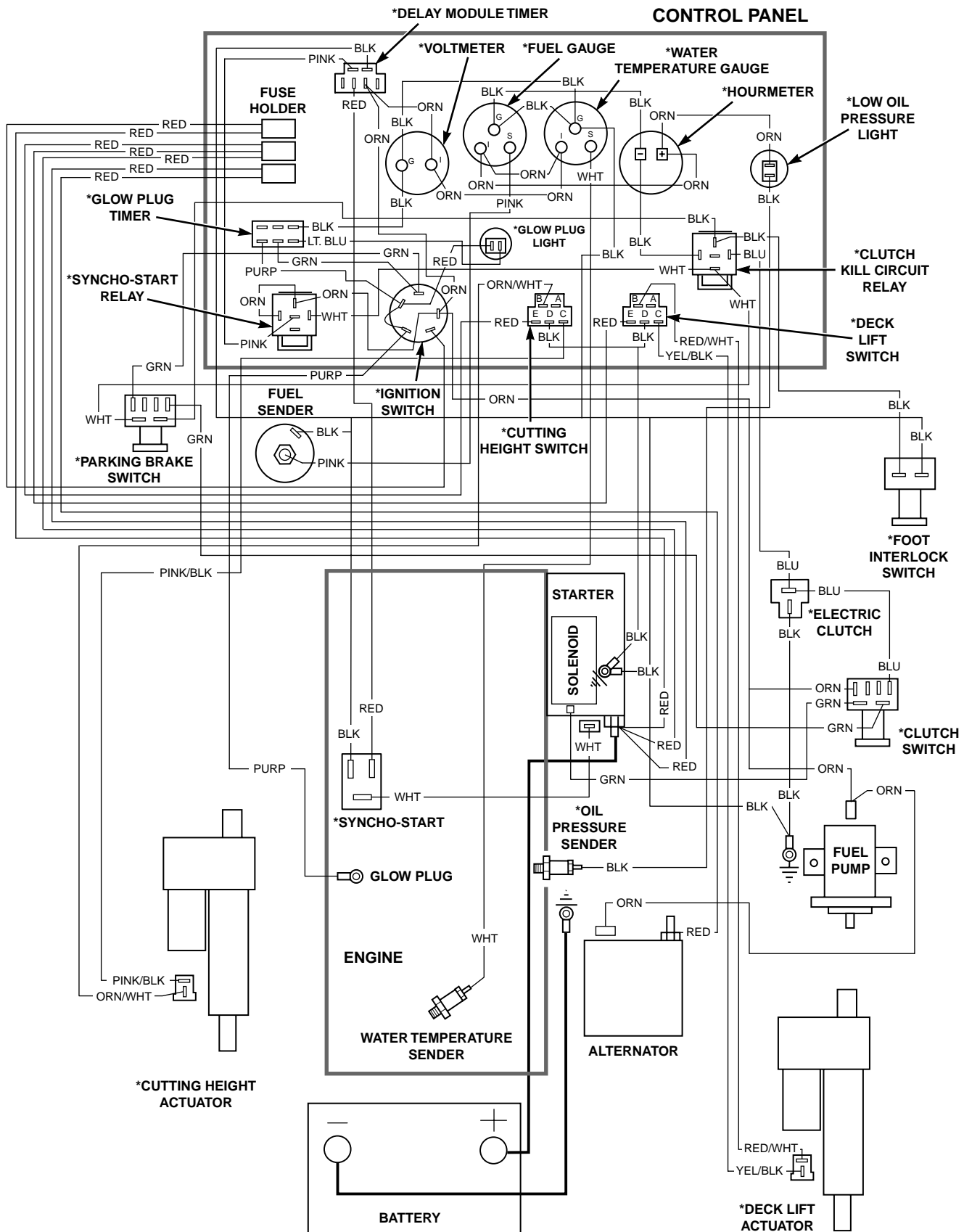
HYDRAULIC CIRCUITS

Ref. No.	Part Number	Description
1	481292	Hose, Pump to Oil Cooler, 5/8 Hose Barb
2	48136-04	Clamp, Hose
3	481301-01	Elbow, 90°
4	481202	Hose, Oil Cooler to Reservoir, 5/8 & 3/8 Hose Barb
5	48939	Elbow, 90°
6	48059-01	Clamp, Hose
7	48936-02	Coupling, Hose, 7/8-14 SAE x 5/8 Hose Barb
8	48350-13	Elbow, 90°, 1-1/16-12 JIC x 7/8-14 O-Ring
9	481203-01	Elbow, 90°, 3/4 JIC Swivel x 3/4 JIC
10	481197	Hose Assembly, Left Motor
11	481201	Hose Assembly, Pump Inlet
12	04017-05	Serr. Fl. Hex Head Capscrew, 1/4-20 x 3/4
13	48482	*Hose, Hydraulic, 1/4"
14	481174	Filter Head
15	48758	Filter, Hydraulic
16	48350-03	Elbow, 90°
17	48353-02	Coupling, Hose
18	04021-10	Hex Nut, Elastic Stop, 5/16-18
19	04040-04	Flatwasher, 5/16 (.344 x .688 x .065)
20	481196	Relief Valve, Dual Cross-Over
21	04001-39	Bolt, Hex Head, 5/16-18 x 2-1/4
22	481199	Hose Assembly, Pump to Valve
23	48571-03	Tube Cap, 1-1/16-12
24	48937-02	Tee, Run, 3/4 x 3/4
25	48350-05	Elbow, 90°, 7/8-14 JIC x 7/8-14 O-ring
26	48602	*Hose, Reservoir to Filter, 3/4
27	48935-01	Tee, Pushlock, 1/2
28	481198	Hose Assembly, Right Motor
29	48937-01	Tee, Run
30	48309	Bushing
31	48936-01	Hose BARb to JIC Swivel

* When ordering hydraulic hose, specify length required

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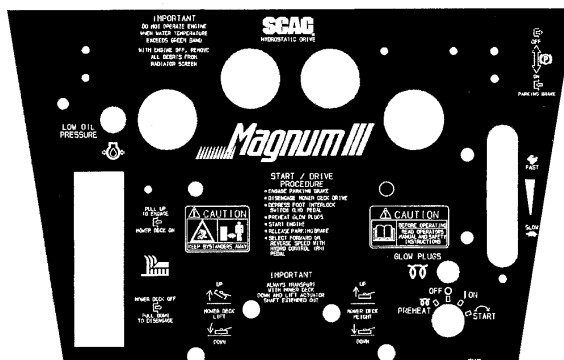
REPLACEMENT DECALS AND INFORMATION



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7a, 7b



10



2



6



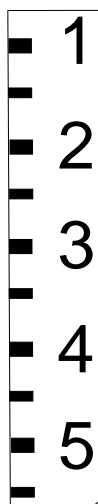
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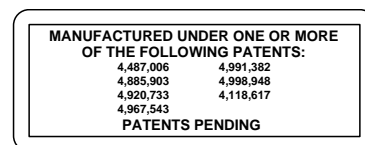
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8



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11



12

Ref. No.	Part Number	Description
1	48071	Decal, Danger - Spinning Blades
2	481040	Decal, Warning - Rotating Blades
3	481326	Decal, Magnum III
4	48072	Decal, Heavy Duty Commercial
5	481039	Decal, Warning - Belt Cover
6	48404	Decal, Metalcraft - Made In USA
7A	481355	Decal, Scag Logo - 12" x 4.23 (Hood)
7B	48825	Decal, Scag Logo - 8.5" x 2" (Seat Back)
8	481331	Decal, Cutting Height
9	48656	Decal, Patent
10	481186	Decal, Instrument Panel
11	48320	Decal, 61
12	48327	Decal, 72



WARNING:

If incorrectly used, this machine can cause severe injury. Those who use and maintain the machine should be trained in its proper use, warned of its dangers, and should read the entire manual before attempting to set up, operate, adjust or service the machine.

LIMITED WARRANTY-COMMERCIAL EQUIPMENT

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, hoses and tires are warranted for 90 days.
- * Batteries are covered for 90 days.
- * Frame, deck, and structural components including oil reservoir, fittings, and oil cooler are warranted for 1 year.
- * Engines and electric starters are covered by the manufacturer's warranty period.
- * Drive system components are warranted for 1 year by the component manufacturer, in conjunction with Scag Power Equipment. (Excluding fittings, hoses, cooling system, oil reservoir, drive belts).
- * Electric clutch components are warranted for 1 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 one (1) 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 one 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.

