OPERATOR'S MANUAL & PARTS LIST

RIDING MOWER MODEL 124/52

CE

Form 172247-140613
Printed in U.S.A.

INTRODUCTION

Congratulations on your selection of Grasshopper equipment. We believe you have exercised excellent judgment in the purchase of Grasshopper equipment. We are most appreciative of your patronage.

We recommend that you carefully read this entire manual before operating the unit. Time spent becoming fully acquainted with its performance features, adjustments and maintenance will add a longer and more satisfactory life to your Grasshopper.

The Grasshopper equipment you have purchased has been carefully engineered and manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require cleaning and upkeep. Lubricate it as specified in the manual. Observe all safety information in this manual and all safety decals on the tractor and attachments.

The illustrations and data used in this manual were current at the time of printing, but due to possible in-line production changes, your machine may vary slightly in detail. The manufacturer reserves the right to make changes or add improvements to its products at any time without incurring any obligation to make such changes to products manufactured previously.

As with all lawn and grounds equipment, if handled carelessly this machine is a dangerous piece of equipment. **If used incorrectly this machine can cause severe injury.** You, the operator, are responsible when operating it. Therefore, safety is of the utmost importance.

ATTENTION:

- **Read the instructions and warnings carefully before using this machine.**
- **Read your Grasshopper warranty enclosed with the tractor manual. To validate warranty, fill in the required information and return the warranty form within 10 days of purchase to:**

  THE GRASSHOPPER CO.
  P.O. Box 637
  Moundridge, Kansas 67107

Use only genuine Grasshopper service parts. Substitute parts will void the warranty and may not meet standards required for safe and satisfactory operation. Record the model and serial number of your mower.

MODEL:_____

SERIAL NUMBER: _____

(Serial tag is located on tractor frame bottom, left of engine.)

Provide this information to your dealer to obtain correct repair parts.

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

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SPECIFICATIONS

124/52	
Engine	Briggs & Stratton two cylinder, 4 cycle, air cooled
Displacement	724 cc
No-load r.p.m.	3600
Charging System	12VDC 16 amp. negative ground
Starter	Electric
Electrical System	Safety interlocked
Deck Drive	Electric clutch
Drive System	Dual path hydrostatic direct drive
Steering	Dual levers independently control speed and direction of travel Zero turning radius
Speed	
Forward (variable)	0-12.1km/h
Reverse (variable)	0-9.6km/h
Fuel Tank Capacity	11.35 liter
Tire Sizes	
Drive Wheels - 4 ply rated	20 x 10 x 10
Front Wheels - 4 ply rated	13 x 6.5 x 6 rib
Dimensions of Tractor	
Seat Back Height	1.14 m
Seat Cushion Height	0.71 m
Tractor Width	1.12 m
Tractor Length	1.91 m
Wheel Base	1.14 m
Weight - Uncrated	379 kg
Weight - Crated	463 kg
Hour Meter	Standard

SAFETY SYMBOLS

This Safety Alert Symbol means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!** In this manual, the safety alert symbol identifies potential hazards and alerts the reader to safety messages. These hazards may cause serious injury or death if you do not follow the recommended precautions in the safety messages.

Throughout this manual the word **IMPORTANT** provides special mechanical specifications or information and is used to indicate that failure to observe can cause damage to equipment. The word **NOTE** emphasizes general information requiring special attention.

SAFETY DECALS

Replace Immediately If Damaged

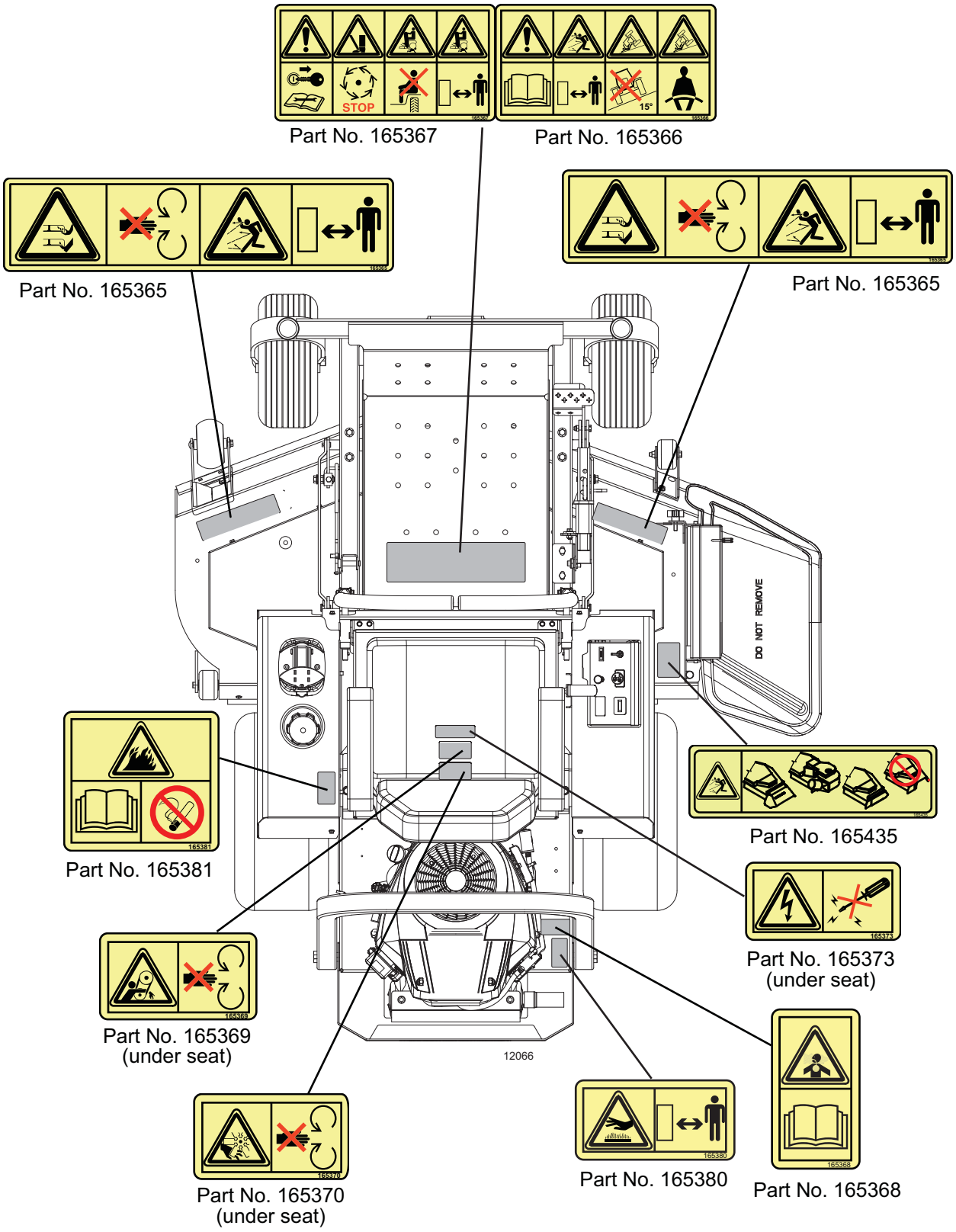
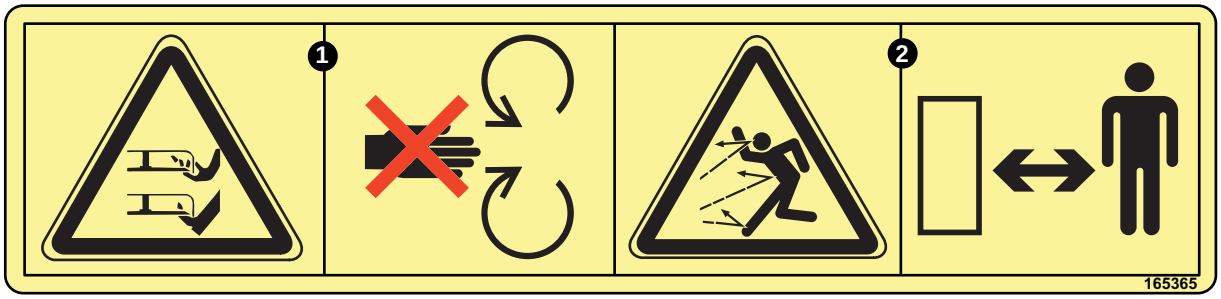


Fig. 1

SAFETY DECALS



Part No. 165365

1. Cutting/dismemberment hazard of hand or foot, mower blade - Stay away from moving parts.
2. Thrown object hazard - Keep bystanders a safe distance from the machine.

Part No.165366

1. Warning - Read Operator's Manual.
2. Thrown object hazard - Keep bystanders a safe distance from the machine.
3. Tipping hazard - Do not operate machine on slopes greater than 15 degrees.
4. Tipping hazard - Wear seatbelt.

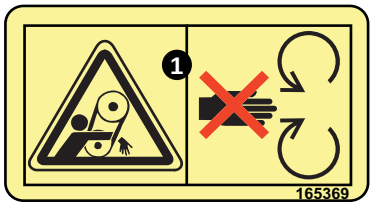
Part No.165367

1. Warning - Remove the ignition key and read the Operator's Manual before servicing or performing maintenance.
2. Cutting/dismemberment hazard of toes or foot - Wait until moving parts have stopped completely.
3. Machine runover hazard with cutting/severing, blade - No riders.
4. Machine runover hazard with cutting/severing, blade - Keep bystanders a safe distance from machine.

SAFETY DECALS

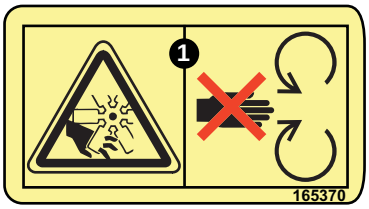
Part No.165368

1. Dust/Fumes inhalation hazard - Read the Operator's Manual.



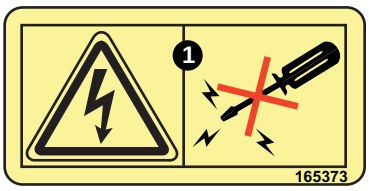
Part No. 165369

1. Hand/Arm Entanglement hazard, belt - Stay away from moving parts.



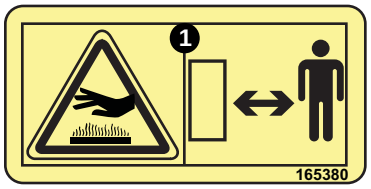
Part No. 165370

1. Hand/Arm Entanglement hazard, fan - Stay away from moving parts.



Part No.165373

1. Electrocution hazard - Do not modify the electrical system.

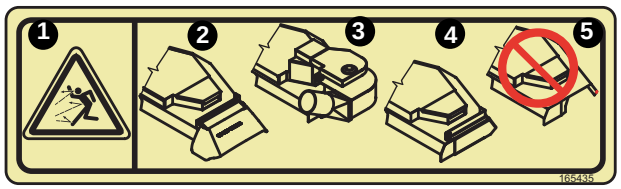


Part No. 165380

1. Hot surface - Keep a safe distance.

Part No.165381

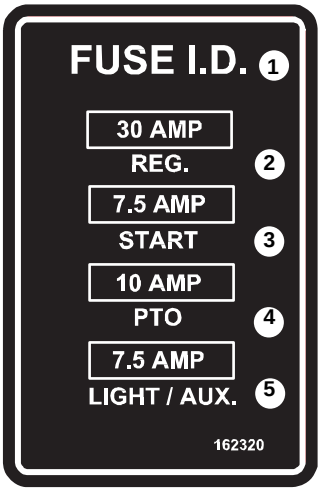
1. Fire hazard.
2. Read the Operator's Manual.
3. No smoking.



Part No.165435

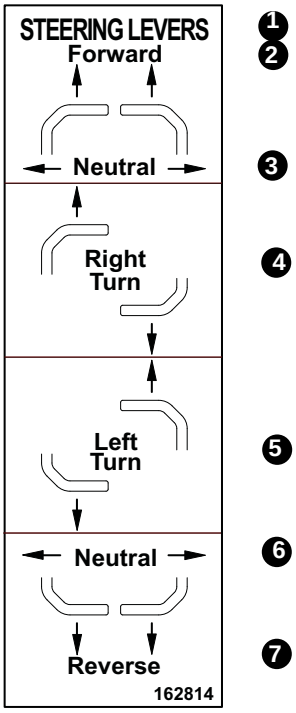
1. Thrown object hazard - Keep bystanders a safe distance from the machine.
2. Always operate mower with the Discharge Shield in place.
   or
3. Always operate mower with the Vacuum Blower Assembly in place and the complete grass catcher attachment installed.
   or
4. Always operate mower with the Discharge Opening Restriction Plate in place.
5. Do Not operate mower without the Discharge Shield, the Vacuum Blower Assembly or the Discharge Opening Restriction Plate in place.

INSTRUCTIONAL DECALS



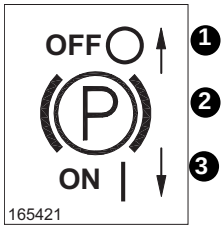
Part No.162320

1. Fuse I.D.
2. Regulator - 30 AMP
3. Start - 7.5 AMP
4. PTO - 10 AMP
5. Light / Auxiliary - 7.5 AMP



Part No.162814

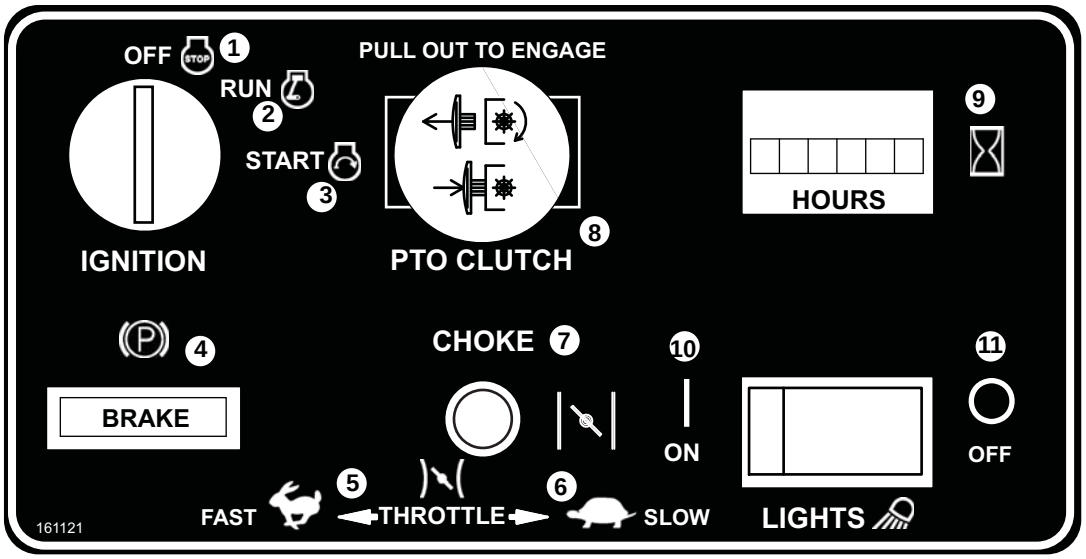
1. Steering Levers
2. Forward
3. Neutral
4. Right Turn
5. Left Turn
6. Neutral
7. Reverse



Part No.165421

1. Off
2. Parking Brake
3. On

INSTRUCTIONAL DECALS



Part No.161121

1. Ignition Switch - Off
2. Ignition Switch - Run
3. Ignition Switch - Start
4. Parking Brake Indicator Light
5. Throttle - Fast
6. Throttle - Slow
7. Choke
8. PTO Clutch - Pull Out to Engage
9. Hour Meter
10. Work Lights - On
11. Work Lights - Off

Sound Pressure Level
Note: The data contained in this section only pertains to units marked with the CE logo (CE).

This unit has an equivalent continuous A-weighted sound pressure level at the operator ear of 92dBA, based on measurements of identical machines per EN 11201.

Sound Power Level
Note: The data contained in this section only pertains to units marked with the CE logo (CE).

Model 124/52 has a guaranteed sound power level of 105 dBA, based on measurements of identical machines per EN 11094.

Vibration Acceleration Levels
Note: The data contained in this section only pertains to units marked with the CE logo (CE).

Vibration acceleration levels are based on measurements of identical machines per EN 1032 & EN 1033.

Hand/Arm, Steering	1.82 m/s^2
Whole Body, Foot	0.86 m/s^2
Whole Body, Seat	0.35 m/s^2

All values are meters per second squared (m/s^2) and represent the Mean Value of X, Y, Z Aeq.

WORK SAFELY - FOLLOW THESE RULES

The designed and tested safety of this machine depends on it being operated within the limitations as explained in this manual. Read manual before operating.

TRAINING

- Safety instructions are important! **READ THIS MANUAL AND ALL SAFETY RULES.**
- Know your controls and how to stop machine, engine and mower deck quickly in an emergency.
- To avoid accident or injury, do not allow anyone to operate this machine without proper instruction. Any person who operates this machine **MUST** be instructed in and capable of the safe operation of the unit and all controls.
- Do not allow children or unqualified individuals to operate machine.

PREPARATION

- Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough soled work shoes. Never operate machine in bare feet, sandals or sneakers.
- This machine produces sound levels in excess of 85 dBA at the operator ear and can cause hearing loss through extended periods of exposure. Wear hearing protection when operating this machine.
- Walk around machine and visually inspect for damaged, loose, or missing components. Do not operate unless all components are properly mounted, adjusted and in good working condition.
- Ensure all safety switches function properly. See Operation section for details.
- Ensure all safety shielding is in good condition and properly installed.
- Ensure either the discharge shield, restriction plate, or complete vacuum attachment is installed.
- Ensure OPS is in good condition and installed properly. Never modify OPS with holes, notches or welding. If OPS is damaged, it must be replaced.
- Check brake action before you operate. Adjust or service brakes as necessary.
- Ensure all safety decals are installed and in good condition.
- Remove accumulated debris from machine to avoid fire hazard.
- Inspect area to be cut removing stones, branches and other debris that might be thrown causing injury or damage.
- Evaluate the terrain to determine what accessories and attachments are needed to properly and safely perform the job.
- Low-hanging branches and similar obstacles can injure the operator or interfere with mowing operation. Before mowing, identify potential obstacles such as low-hanging branches, and trim or remove those obstacles.
- Never permit any person, other than the operator, to ride or board the mower at any time.
- Operate only in daylight or good artificial light.

FUEL HANDLING SAFETY

- In certain conditions, gasoline, ethanol, diesel and other types of fuel are extremely flammable and highly explosive. A fire or explosion from fuel can burn you and others and can damage property.
- Fill the fuel tanks outdoors, in an open area, when the engine is cold. Wipe up any fuel that spills.
- Do not remove the fuel cap if the engine or fuel tank is hot. Allow several minutes to cool.
- Remove the fuel cap slowly to release any pressure from the fuel tank.
- Do not fill the fuel tanks completely full. Add fuel to the tank until the level is .25" to .5" (6 mm to 13 mm) below the bottom of the filler neck. This empty space in the tank allows fuel to expand.
- Never smoke when handling fuel, and stay away from an open flame or where fuel fumes may be ignited by a spark.
- Store fuel in an approved container and keep it out of the reach of children. Never buy more than a 30-day supply of fuel.
- Always place fuel containers on the ground

away from your vehicle before filling.
- Do not fill fuel containers inside a vehicle or on a truck or trailer bed because interior carpets or plastic truck bed liners may insulate the container and slow the loss of any static charge.
- When practical, remove equipment from the truck or trailer and refuel the equipment with its wheels on the ground.
- If this is not possible, then refuel such equipment on a truck or trailer from a portable container, rather than from a fuel dispenser nozzle.
- Keep the dispenser nozzle in contact with the rim of the fuel tank or portable container opening at all times until fueling is complete.
- Never use cellular phones or other portable electronic devices when handling fuel.

OPERATIONAL SAFETY

- Read "Operation" section of this manual before attempting to operate this unit.
- This machine is equipped with an Operator Protective Structure (OPS) and a seat belt. Do not operate this machine without the OPS installed and in good condition.
- Always wear the seatbelt.
- Do not operate on slopes greater than 15 degrees (27%).
- To determine the angle of a slope, an angle measuring device (inclinometer) is readily available at your local hardware store.
- Fenders serve as shields. Do not operate without them.
- DO NOT drive machine without mower deck installed. The proper stability of the machine depends on the weight of the mower deck.
- Keep bystanders away from equipment while it is in operation.
- Keep children and pets a safe distance away. Never direct discharge toward anyone.
- Start engine from operator's seat after disengaging PTO and placing steering levers into the swing-out (neutral lock) position.
- Keep hands and feet away from underneath mower deck while engine is running. Stay clear of all moving parts on machine.
- Wear suitable hearing protection when operating this machine.
- Do not operate in reverse unless absolutely necessary and then only after careful observation of the entire area behind you.
- If operator must dismount to make adjustments the engine must not be running.
- Do not move steering levers from forward to reverse or reverse to forward position rapidly. The sudden direction change could cause loss of control, especially on slopes.
- Reduce speed on slopes and sharp turns to minimize tipping and avoid loss of control.
- The operator is responsible for safe operation on slopes, even slopes of 15 degrees (27%) or less. Only the operator can determine the stability of the mower on a given slope based on existing conditions like: machine speed and direction, slope variation, slipperiness, drop-offs, holes, obstacles, etc.
- Stay alert for holes, rocks, roots and other hidden hazards in the terrain. Keep away from drop-offs and soft embankments.
- Stop machine and mower deck immediately upon striking an obstruction. Turn engine off, inspect machine and mower deck. Repair any damage before resuming operation.
- Disengage PTO, stop engine, set park brake, remove key and wait for all movement to stop before dismounting, making adjustments, cleaning, or unclogging the machine.
- Never transport mower with blades running. Disengage PTO before crossing streets, sidewalks, driveways, etc.
- Watch for traffic when operating near or crossing roadways.
- This machine is not equipped for highway use, especially when safety lighting and marking is required. It is not a recreational vehicle.
- This unit is not equipped with a drawbar. Do not pull loads.
- Take all possible precautions when leaving machine unattended: disengage PTO, lower mower deck, place steering levers in neutral, set parking brake, stop engine and remove key from ignition.
- Never carry passengers.

- Never run engine indoors or in an enclosed area, unless exhaust gases are safely removed to the outdoors with an exhaust pipe extension/ hose combination. Exhaust gases contain carbon monoxide, an odorless and deadly poison.

MAINTENANCE SAFETY

- Always perform maintenance with the machine parked on a hard level surface; with the engine stopped and the PTO disengaged; with the park brake set; and with the key removed from the ignition.
- Always remove the grounded (-) clamp from the battery when performing maintenance on the engine, clutch, or any other electrical system. The battery is located under the seat.
- Always wear close fitting clothing and safety equipment appropriate for the job. Keep work area clean and dry.
- Never work under the machine without jack stands or other equivalent safety blocks. Do NOT rely solely on mechanical or hydraulic jacks or lifts for support. Always use adequate wheel chocks on tires remaining on the ground.
- Hydraulic hoses can fail due to physical damage, kinks, age, and exposure. Check hoses regularly. Replace damaged hoses.
- Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.
- Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.
- Never run engine indoors or in an enclosed area, unless exhaust gases are safely removed to the outdoors with an exhaust pipe extension/hose combination. Exhaust gases contain carbon monoxide, an odorless and deadly poison.
- Waste products such as used oil, fuel, coolant, and batteries can harm the environment and people. Dispose of waste products properly.
- Never attempt to disconnect or alter any part of the safety interlock systems.
- Do not change engine governor settings.
- Keep engine free of grass, leaves, or excess grease to reduce fire hazard and minimize engine overheating.
- Keep machine and mower deck in good operating condition and all safety devices in place.
- Periodically tighten all bolts, nuts and screws. Check that all locking pins are properly installed and in good condition.
- Check brake operation frequently. Adjust and service as required.

STORING SAFELY

- Never store machine with fuel in the tank inside a building where fumes may reach an open flame, spark or pilot light as on a furnace, water heater, clothes dryer, or other gas appliance. Allow engine to cool before storing in an enclosure.
- If engine is to be unused for 30 days or more, add a fuel stabilizer to the fuel system. Fuel stabilizer (such as STA·BIL®) is an acceptable additive in minimizing the formation of fuel gum deposits during storage. Add stabilizer to fuel in fuel tank or storage container. Always follow mix ratio found on stabilizer container. Run engine at least 10 minutes after adding stabilizer to allow it to reach the carburetor or injectors.
- If draining fuel tank, drain fuel into an approved container outdoors and away from open flame.
- Never run engine indoors or in an enclosed area, unless exhaust gases are safely removed to the outdoors with an exhaust pipe extension/hose combination. Exhaust gases contain carbon monoxide, an odorless and deadly poison.
- Remove all accumulated debris from mower deck and tractor.
- Sand areas where paint is chipped and repaint to prevent rust. Lubricate all locations to prevent moisture damage during storage.

GENERAL INFORMATION

The purpose of this manual is to assist the operator in maintaining and operating **GRASSHOPPER** mowers. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance.

These operating and maintenance instructions have been compiled from extensive field experience and engineering data. Some information may be general in nature due to unknown and varying conditions. However, through practice and these instructions you should be able to develop operating procedures suitable to your particular situation.

The illustrations and data used in this manual were current at the time of printing, but due to possible in-line production changes, your machine may vary slightly in detail. **GRASSHOPPER** reserves the right to redesign and change the machine as necessary without notification.

Some illustrations in this manual show the machinery with safety shields removed to provide a better view. The machine should never be operated with any safety shielding removed.

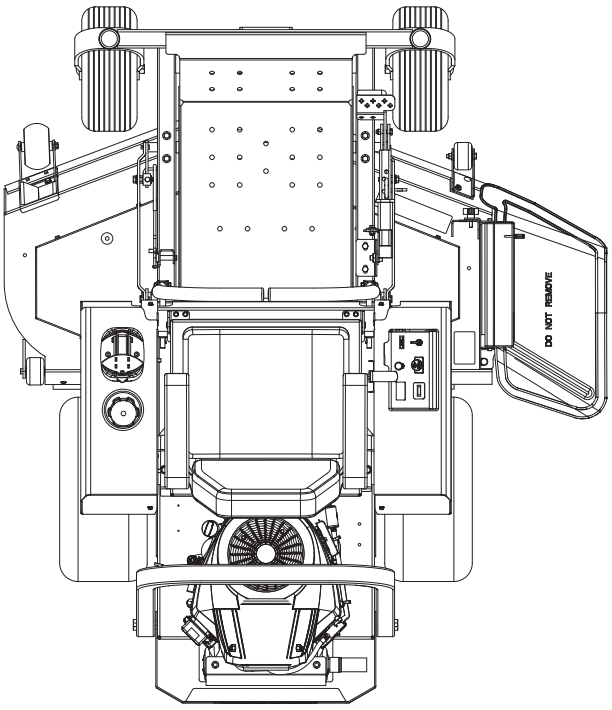


Fig. 2

Throughout this manual, references are made to right and left directions. These are determined by standing at the rear of the equipment and facing the direction of forward travel.

Mower blade rotation is clockwise as viewed from the top of mower.

MEASUREMENT CONVERSION

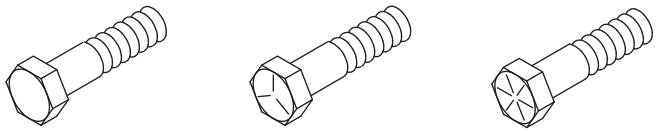
Measurements expressed in this manual are decimal values. Use the chart below if you are unsure of a measurement to obtain the fractional equivalent.

Conversion Table - Inches			
Decimal	**Fraction**	**Decimal**	**Fraction**
0.062	**1/16**	**0.562**	**9/16**
0.125	**1/8**	**0.625**	**5/8**
0.187	**3/16**	**0.687**	**11/16**
0.250	**1/4**	**0.750**	**3/4**
0.312	**5/16**	**0.812**	**13/16**
0.375	**3/8**	**0.875**	**7/8**
0.437	**7/16**	**0.937**	**15/16**
0.500	**1/2**	**1.000**	**1**

BOLT SIZE AND TIGHTENING RECOMMENDATIONS

The chart below lists the correct tightening torque for bolts used on Grasshopper machinery. When bolts are to be tightened or replaced refer to this chart to determine the grade of bolt and proper torque (*except when specif c torque values are assigned in the manual text*).

Bolt Head Markings



SAE Grade 2 (no dashes) **SAE Grade 5 (3 radial dashes)** **SAE Grade 8 (6 radial dashes)**

Recommended Bolt Torque				
Bolt Diameter in Inches		SAE Grade 2	SAE Grade 5	SAE Grade 8
Decimal	Fraction	ft lb (Nm)	ft lb (Nm)	ft lb (Nm)
0.250	1/4	6 (8)	11 (15)	14 (19)
0.312	5/16	13 (18)	21 (28)	25 (34)
0.375	3/8	23 (31)	38 (52)	55 (75)
0.437	7/16	37 (50)	55 (75)	80 (108)
0.500	1/2	57 (77)	85 (115)	120 (163)
0.562	9/16	82 (111)	125 (170)	180 (244)
0.625	5/8	111 (151)	175 (237)	230 (312)
0.750	3/4	200 (271)	300 (407)	440 (597)
0.875	7/8	280 (380)	450 (610)	720 (976)
1.000	1	350 (475)	680 (922)	1035 (1403)

The safe operation of this machine is the responsibility of the operator. Any person who operates the machine MUST be instructed in and capable of the safe operation of the machine and all controls. Read all safety information on pages 6 through 14.

CONTROLS AND SWITCHES

(Refer to Fig. 3)

Know your controls and how to stop the machine, engine, and mower deck quickly in an emergency. Do not operate this machine until you are completely familiar with the controls and comfortable with your ability. We recommend you practice in a flat open area at half throttle until you are comfortable with all the controls.

The two **Steering Levers** control speed, motion, and direction of the machine and are located on each side of the seat. The left lever controls flow of hydraulic oil from the left pump to the left drive wheel motor. The right lever controls flow of hydraulic oil from the right pump to the right drive wheel motor. This allows left and right drive wheels to turn independently, which provides the “zero turn” ability. Each lever has two positions: The swung “out” neutral lock position, where the lever will not activate the pump; and the swung “in” operation position, where the lever will activate the pump. For details of steering lever operation, refer to the “Steering Lever Operation” section, page 20-22.

The following controls are located on or beside the Operator’s Console which is located to the right side of the seat.

- The **Ignition Switch** (A) is the key switch located on the console. The ignition switch is used to start and stop the engine. The switch has three positions OFF, RUN, and START. Insert the key into the switch and rotate clockwise to the RUN position. The **Brake Light** (B) should be on at this point. Rotate the switch clockwise to the next (START) position to engage the engine starter (key must be held against spring pressure in this position).
- The **Choke Control** (C) is the small black push/pull knob located on the console. The choke is used to aid in starting a cold engine. Pull the choke knob "up" to activate the choke on the engine. Push the choke knob "down" for the choke to be off. DO NOT run a warm engine with the choke on.
- The **Throttle Control** (D) is the large black lever located beside the console to the right of the seat. The throttle is used to control engine speed. Move the throttle lever forward to increase engine speed and rearward to decrease engine speed.
- The **PTO switch** (E) is the red push/pull knob located on the console. Pull PTO knob “up” to engage the electric clutch that drives the belt connected to the mower deck that drives the cutting blades. Push the PTO knob “down” to disengage the electric clutch that stops the blades from turning within a few seconds.
- The **Hour Meter** (F) is the number indicator located on the console. The electric hour meter is connected to the ignition circuit and is provided to record the number of hours the engine runs. If the ignition switch is left on, without the engine running, the hour meter will continue to record.

The **Park Brake Lever** is the lever located on the left side of the footrest. The brake lever engages compression style parking brakes on the drive tires. Pull the brake lever up and rearward until the lever over centers and locks to set the brakes “on”. Push the brake lever forward and down to release the brakes “off”.

Several **Safety Switches** are incorporated in this machine’s design to prevent the engine from being started in certain conditions and to kill the running engine in certain conditions. These circuits should be checked before each operation to ensure they are working properly. See page 19 for check list on these circuits.

The **Start Circuits** will keep engine from starting unless:

- Both steering levers are swung out in their neutral locked position, and
- The PTO switch is down in it's disengaged position.

The **Kill Circuits** will stop the running engine if:

- The operator raises off the seat any time during operation of the machine with PTO engaged or steering levers in operating position.
- The steering levers are in their operating position and the park brake lever is moved into engaged locked (up) position.
- The park brake is set and the steering levers are moved into their operating position.
- The operator is off the seat and the steering levers are moved into their operating position.
- The operator is off the seat and the PTO switch knob is pulled up to its engaged position.

Do not operate this machine unless all safety systems are working properly as described above.

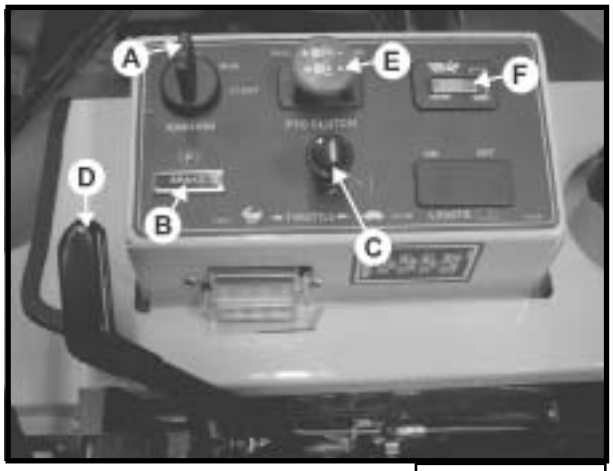


Fig. 3

PRE-START CHECK LIST

Maintain desirable operational standards and help ensure the safety of the operator by routinely checking the following on a daily basis:

- Walk around the machine and visually check for loose or missing components. Make sure all components are mounted properly and are in good working condition.
- Make sure all fenders, guards and shields are safely and securely attached.
- Make sure the discharge shield or restriction plate is installed at the discharge opening on the mower deck.
- Make sure all safety decals are clearly readable (see page 7).
- Check hydrostatic transmission fluid level. DO NOT operate machine with low fluid. Low fluid could cause damage to transmission and loss of control of the machine.
- Check engine oil level (refer to "Engine Manual" for proper level and type of oil used).

Never attempt to check oil while engine is running.

- Check for oil and fuel leaks.
- Clean rotating air intake screen on engine. When mowing in dusty conditions, dry grass or long grass, it may be necessary to frequently clean rotating air intake screen to prevent engine overheating.

Never attempt to clean rotating air intake screen while engine is running.

- Check air cleaner (refer to "Engine Manual"). When mowing in dusty conditions, dry grass or long grass, it may be necessary to frequently clean the foam pre-cleaner and paper cartridge.

- Make sure the engine is free of dirt and debris.
- Check fuel level. Refer to “Engine Manual” for correct fuel for your requirements.
- For best results, use only clean, fresh, unleaded gasoline with an octane rating of 87 or higher ((R+M)/2 rating method).
- **Do Not** use ethanol blends of gasoline (such as E15 or E85) with more than 10% ethanol by volume. Performance problems and/or engine damage may result which may not be covered under warranty.
- **Do Not** use gasoline containing methanol.

Do not fill fuel tank while engine is running. Allow engine to cool several minutes before adding fuel. If fuel is spilled, do not start engine and avoid creating a source of ignition until the fuel is wiped clean and evaporated.

- Check tire pressure (see page 28). Improper pressure will adversely affect traction, steering and level cutting height.
- Check tires for damage or cracking.
- Check hydrostatic pump drive belt for damage or cracking.
- Check mower deck belt for damage or cracking.
- Check mower deck level.
- Check to ensure blades are sharp and secure; the cutting edge should be positioned in the direction of blade rotation (clockwise as viewed from top of mower deck).
- Adjust cutting height if necessary.
- Check operation of park brake (see "Park Brake Adjustment" page 34).
- Remove grass and debris from machine.
- Test safety interlock systems (see chart below). Perform these tests in a clear open area and keep bystanders away. If there is a malfunction during one of these procedures, DO NOT operate machine. (See your Grasshopper dealer).

Test Safety Interlock System Daily

Action	Left Steering Lever	Right Steering Lever	PTO Switch	Parking Brake	Proper Result
Start Circuits					
Try starting engine	Out	Out	Off	On	Engine Cranks
Try starting engine	**In**	Out	Off	On	**Engine will not crank**
Try starting engine	Out	**In**	Off	On	**Engine will not crank**
Try starting engine	Out	Out	**On**	On	**Engine will not crank**
Kill Circuits (with engine running at 1/2 throttle)					
Raise off seat	Out	Out	Off	On	Engine does not stop
Raise off seat	**In**	Out	Off	Off	**Engine Stops**
Raise off seat	Out	**In**	Off	Off	**Engine Stops**
Raise off seat	Out	Out	**On**	On	**Engine Stops**
Move left steering lever in		Out	Off	On	**Engine Stops**
Move right steering lever in	Out		Off	On	**Engine Stops**

MOUNTING AND DISMOUNTING THE MOWER

Always mount and dismount the mower from the left side, with the brake on, the PTO disengaged (down), the engine off, and the steering levers in their swung out (neutral lock) position. Mount the mower by stepping from the ground to the left side of the deck with your left foot, then step over the deck carrier frame to the footrest with your right foot. Anti-skid material is provided on the top of the deck and footrest. Always keep these surfaces clean and dry. Replace anti-skid material when necessary. Wait for all moving parts to stop before dismounting. Dismount the mower by standing up on the footrest, then turn to the left and step from the footrest, over the deck carrier frame, to the left side of the deck with your right foot, and then step to the ground with your left foot. The left steering lever can be used to stabilize your movement; however, it is not strong enough to support all your weight. Never leave the mower unattended with the key in the ignition.

STARTING THE ENGINE

Never start the engine in confined rooms. Exhaust gases contain carbon monoxide, an odorless and deadly poison.

Do not allow children to approach the machine while the engine is running.

Do not operate the machine around open flames such as trash fires.

Do not operate the engine when an odor of fuel is present or other explosive conditions exist.

- Position yourself on the tractor seat.
- Engage the park brake.
- Place both steering levers in swing-out neutral position.
- Place electric clutch switch in “OFF” (down) position.
- Set the throttle at 1/3 open.
- Insert the key into the ignition switch and turn to “RUN” position.
- Check to see that the brake lamp is on.
- Turn the key to “START” position. Choke as necessary to start. When engine starts, release key immediately. Push choke knob down gradually until choke is completely off and engine is running smoothly.
- Warm the engine up at medium speed for several minutes.

You will enhance the starter life by using short starting cycles of several seconds. Engaging starter motor more than 15 seconds per minute can result in damage to starter.

COLD WEATHER STARTING TIPS

Use proper viscosity oil for temperature expected (see “Engine Manual”).

Set throttle at half open.

A warm battery has better starting capacity than a cold one.

Use fresh winter grade fuel. It is better for winter starting than leftover summer grade fuel.

STEERING LEVER OPERATION

(Refer to page 22, Fig. 4)

Do not move steering levers from forward to reverse or reverse to forward position rapidly. Sudden direction changes could cause loss of control or damage the machine.

Help prevent personal injury. Learn use of the steering levers and practice at half throttle until becoming proficient and comfortable with the operation of the machine.

The steering levers control speed, motion and direction of the machine. The steering levers have two positions: (1) **Neutral Lock**, where the lever(s) are swung completely outward and cannot be moved fore and aft; (2) **Operating**, where the lever(s) are swung in and can be moved fore and aft.

Neutral Lock Position:

- Forward and reverse movement of the motion control levers is prevented when levers are in the swung out (neutral lock) position. Machine should not move with the steering levers in the swung out (neutral lock) position and the park brake released. If machine does move, see "Neutral Adjustment" section page 32-33.
- Steering levers must be in the swung out (neutral lock) position to start the engine.
- Steering levers must be in the swung out (neutral lock) position to safely enter and exit the operator seat.
- Operator can exit mower with the engine running when the steering levers are in the swung out (neutral lock) position, PTO switch is disengaged, and the park brake is engaged.

Operating Position:

- Machine speed, motion and direction can be controlled when the engine is running, park brake is released, and steering levers are in the swung in (operating) position.

Neutral

- When the steering levers are swung in and centered fore and aft, they are in operating (neutral). In operating (neutral), the hydrostatic pumps do not deliver fluid to the wheel motors.

Forward and Reverse Motion:

- Pushing both levers forward at the same time will move the machine forward.
- Pulling both levers to the rear at the same time will move the machine in reverse.
- The further forward or rearward the steering levers are moved, the faster the machine will move in that direction.

Turning:

- While moving forward, turn gently right by pushing the left lever further forward than the right.
- While moving forward, turn gently left by pushing the right lever further forward than the left.
- Make a sharp turn right by pushing the left lever forward and pulling the right lever rearward at the same time.
- Make a sharp turn left by pushing the right lever forward and pulling the left lever rearward at the same time.
- DO NOT turn the machine by leaving one lever in neutral and moving the other lever. This will cause damage to the turf under the tire that is not rotating.

Stopping:

- To stop motion, move both steering levers back to neutral. Machine is equipped with springs to automatically return both levers to neutral. If levers do not automatically return to neutral, see your authorized Grasshopper dealer for adjustment.

IMPORTANT

If you become confused during operation, release both steering levers. They will automatically return to the centered neutral position and the machine will stop.

STEERING LEVER OPERATION

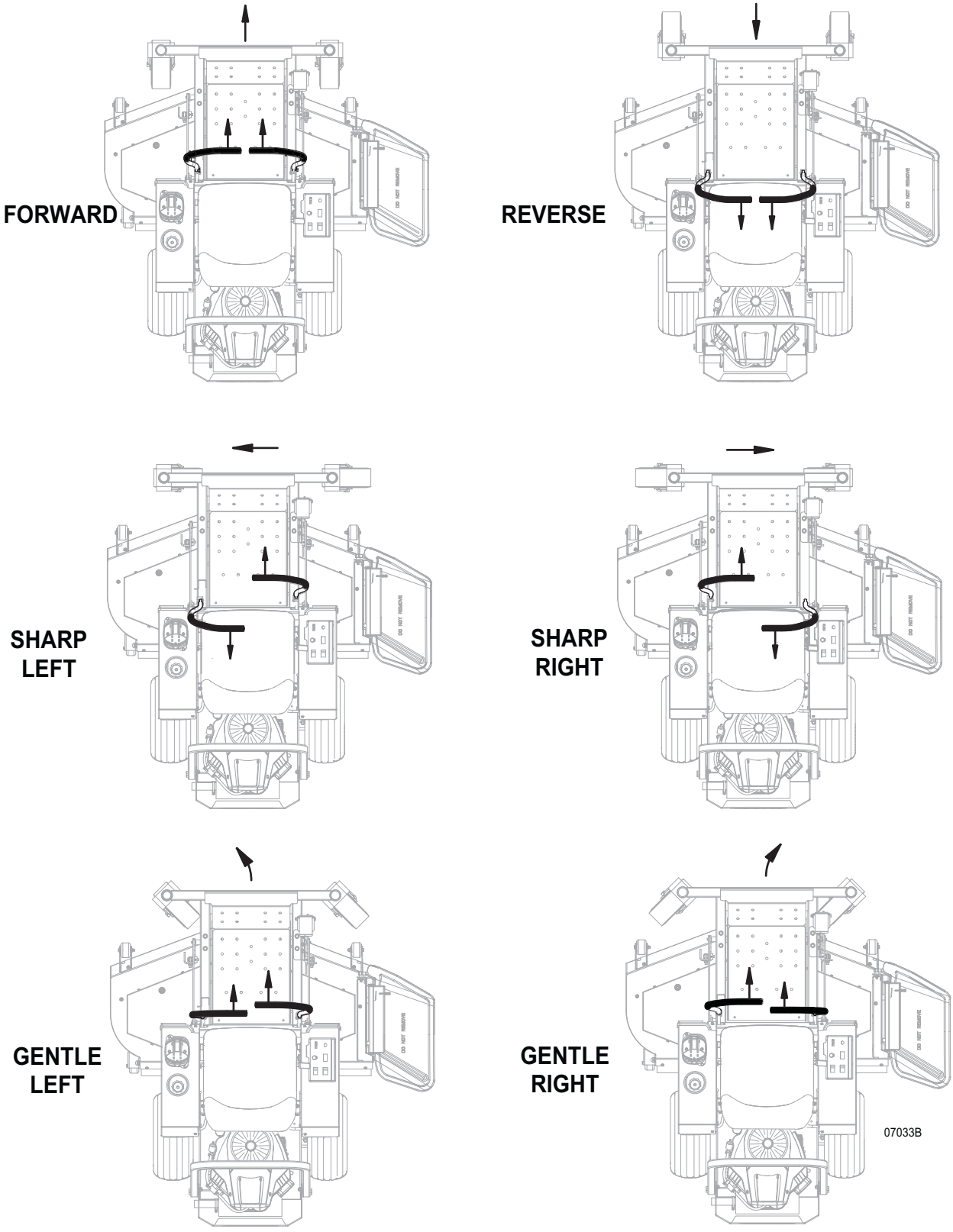


Fig. 4

CUTTING HEIGHT ADJUSTMENT

(Refer to Fig. 5)

1. The mower deck cutting height adjustment mechanism is located to the right front of the operator seat on the deck carrier frame.
2. When adjusting cutting height always come to a complete stop, disengage (down) the PTO and wait for blades to stop rotating.
3. Pushing down on the foot lever (A) with your foot will raise the deck and take pressure off the height adjustment pin (B).
4. To change cutting height, push down on the foot lever (A) and rotate the deck latch (F) behind the latch tube guide (E) to support the deck. This puts the deck in the transport (5 inch cut) height position.
5. With the deck supported by the deck latch (F), place the height adjustment pin (B) in the hole indicated by the cutting height decal for the desired cutting height.
6. To set the deck at this cut height, push down on the foot lever (A) until pressure on the deck latch (F) is released and lift the deck latch (F) out from behind the latch tube guide (E). Then slowly decrease pressure on the foot lever (A) to allow the deck to lower and the adjustment tube (C) to move backward through the latch tube guide (E) until the height adjustment pin (B) contacts the end of the latch tube guide (E) and supports the deck.
7. Holes provided in the adjustment tube (C) allow for cutting height adjustment in 1/2 inch increments. A height adjustment spacer (D) is provided to allow for cutting height adjustment in .25 inch increments.
8. To set cutting height at a .25 inch increment, the height adjustment spacer (D) should be located between the height adjustment pin (B) and the end of the latch tube guide (E).
9. To set the cutting height at a .5 inch increment, the height adjustment spacer (D) should be located forward of the height adjustment pin (B).

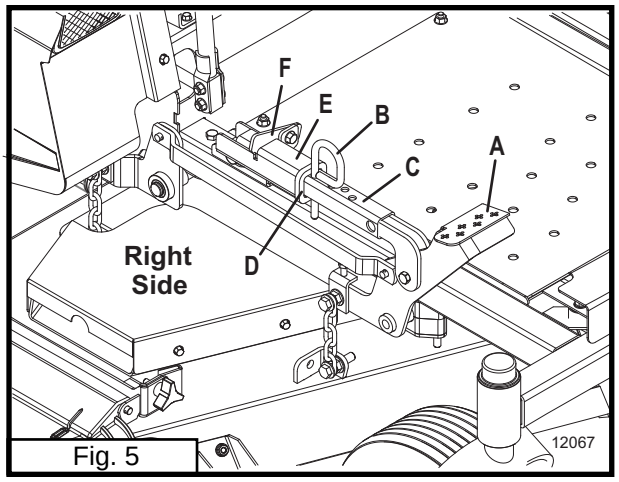


Fig. 5

MOWING

Walk area before mowing, picking up all rocks, twigs and other debris. Enter new areas carefully. Cut grass higher the first time to allow mower to clear unseen objects. Never assume an area is clear - always check!

Clear mowing area of all people when operating mower. Thrown objects could injure bystanders.

Before starting to mow, position the machine in the area to be mowed with the mower deck set at the desired cutting height. With the engine at half throttle, pull up on the PTO switch knob to start the blades turning. Accelerate to full throttle to begin mowing.

To avoid serious injury or death from thrown objects or contact with blades, NEVER operate mower without discharge shield or restriction plate installed.

Keep hands and feet away from discharge opening.

Before mowing, analyze the area to determine the best mowing procedure. Consider height, type of grass and terrain type (rolling, level or rough).

Proper ground speed for mowing will depend on the height, type and density of grass to be cut. Normally, ground speed will range from three to six miles per hour. Tall dense grass should be mowed at a low speed, while thin medium height grass can be cut at a faster ground speed. Always operate engine at full governed rpm when mowing. This is necessary to maintain proper blade speed to produce a clean cut.

Follow local recommendations for the suitable cutting height in your area. Avoid mowing grass too short to increase mowing intervals. This may stress the grass during hot weather and encourage weed growth during the growing season.

Mow with uncut grass to the left. This will distribute the clippings over the cut area. Discharging clippings over the uncut area will cause a grass buildup and may prevent uniform cutting.

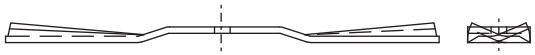
Remember that sharp blades produce cleaner cuts and use less power.
Extremely tall grass should be mowed twice. Cut grass higher on first pass. Cut the second time at desired height and 90° to the first pass.

BLADES

HI-LOW MULCHING BLADE

Hi-Low mulching blades are recommended with the discharge restriction plate and front shrouds installed (down discharge mulching option).

MEDIUM LIFT BLADE

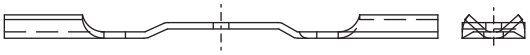


Medium lift blades are recommended when the optional vacuum attachment is installed.

CONTOUR BLADE

Contour blades are designed for operation with the side discharge shield and may be used when the optional vacuum attachment is installed.

HIGH LIFT NOTCHED BLADE



High lift notched blades should be used when the side discharge shield has been installed. These blades are recommended for mowing tall and/or lush areas.

Fig. 6

UNEVEN TERRAIN

Be careful when operating mower on uneven ground.

Do not operate on steep slopes. Operation on a steep slope could cause loss of control, machine to overturn and personal injury or death.

- Do not operate on slopes over 15 degrees (27%). This machine was not specifically designed to operate on steep slopes.
- The operator is responsible for safe operation on slopes, even slopes of 15 degrees (27%) or less. Only the operator can determine the stability of the mower on a given slope based on existing conditions like: machine speed and direction, slope variation, slipperiness, drop-offs, holes, obstacles, etc.
- To determine the angle of a slope, an angle measuring device (protractor/inclinometer) is readily available at your local hardware store.
- Always start mowing at the bottom of slopes. Traveling up slopes, this machine has more traction traveling forward than reverse. Be careful on slopes to avoid driving forward into a position where there is not enough traction to enable backing out or stopping.
- Tires may lose traction on slopes even though the brakes are functioning properly.
- Avoid sudden starts and acceleration when traveling forward uphill as mower may tip backwards.
- Do not mow slopes when grass is wet because slippery conditions will reduce traction and braking which in turn affects steering.
- Use caution when making turns. Slow the mower down before making sharp turns. Unit can spin very rapidly by positioning one lever too much ahead or behind the other.
- Look around you to be sure the area is clear before turning or backing up.
- Avoid starting or stopping on a slope. If tires lose traction, disengage the blades and proceed slowly straight down the slope.
- Keep all movement on slopes slow and gradual. Do not make sudden changes in speed or direction.
- Follow manufacturer's recommendation for counterweights for added stability when operating on slopes or using front or rear mounted attachments. Remove weights when not required.
- Use extra care with grass catchers or other attachments. These can change the stability of the machine. Do not use grass catcher on steep slopes.
- Do not operate without OPS installed.
- Always wear seatbelt.
- Be certain that the seatbelt can be released quickly if the machine is driven or rolls into ponds or water.
- Check carefully for overhead clearances such as, branches, doorways, or electrical wires, before driving under any objects and do not contact them.

STOPPING THE ENGINE

- Set the throttle at 1/3 open. Allow engine to idle at this setting for several minutes.
- Move ignition switch to "OFF" position (upright) and remove key.
- Never use carburetor choke to stop engine.

Always remove key from ignition switch when leaving machine unattended or when not in use.

MOVING MACHINE WITHOUT POWER

(Refer to Fig. 7)
The integrated transmissions are equipped with a bypass valve that allows the machine to be moved without power by deactivating the transmission. With the bypass valve in normal operating position, the fluid in the transmission will make it difficult to move the unit (even with the steering levers in neutral position). The bypass valve is located on the front of each transmission. Before activating the bypass valve, set the park brake. Raise the seat and activate the bypass valve by rotating lever toward the left side of unit. When BOTH transmissions are deactivated, the unit becomes “freewheeling”, allowing it to be moved. Before the transmissions become operational, the bypass valves must be returned to their normal operating position.

Be careful activating bypass valves when machine is on a slope. Machine could “freewheel” out of control causing serious injury or damage to equipment.

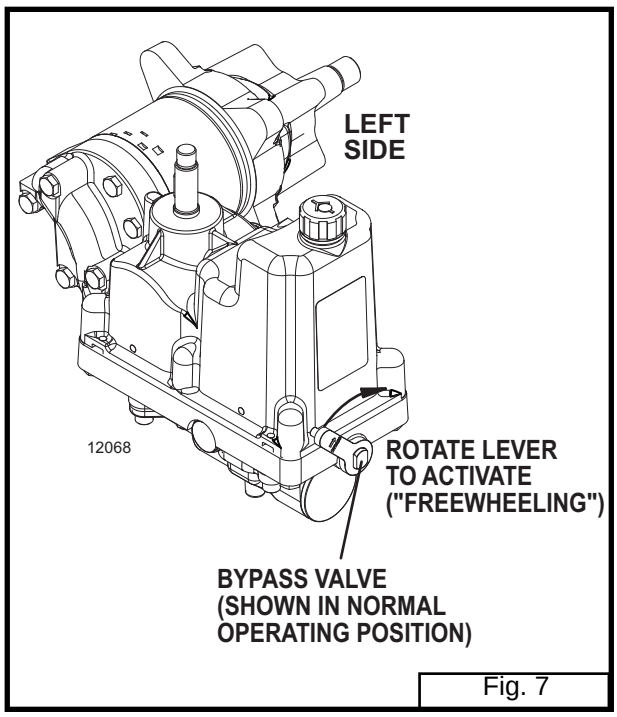


Fig. 7

TRANSPORTING MACHINE

Always back machine onto trailer to avoid accidental upset.

Use a heavy-duty trailer to transport your machine. Trailer must have signs and lights required by law.

1. Raise mower deck to the transport (highest) height position.
2. BACK machine onto trailer. See "LOADING MACHINE".
3. Stop the engine, engage the park brake and remove the key.
4. Lower the mower deck to the lowest position.
5. Securely fasten machine to trailer with heavy-duty straps, chains or cables. Both front and rear straps must be directed down and outward from machine.

LOADING MACHINE

Loading a machine onto a trailer or truck increases the possibility of backward-tip-over and could cause serious injury or death.

1. Use extreme caution when operating a machine on a ramp. Move slowly.
2. Avoid sudden acceleration and deceleration when operating a machine on a ramp.
3. BACK machine up ramp and drive forward down ramp.
4. Use only a single, full width ramp; DO NOT use individual ramps for each side of the machine.
5. If individual ramps must be used, BACK machine up ramp and drive forward down ramp.
6. DO NOT exceed a 15 degree angle between ramp and ground or between ramp and trailer or truck.

STORING SAFELY

Never store machine with gasoline in the tank inside a building where fumes may reach an open flame, spark or pilot light as on a furnace, water heater, clothes dryer, or other gas appliance. Allow engine to cool before storing in an enclosure.

Never run engine indoors or in an enclosed area, unless exhaust gases are safely removed to the outdoors with an exhaust pipe extension/hose combination. Exhaust gases contain carbon monoxide, an odorless and deadly poison.

- If engine is to be unused for 30 days or more, add a fuel stabilizer to the fuel system. Fuel stabilizer (such as STA·BIL®) is an acceptable additive in minimizing the formation of fuel gum deposits during storage. Add stabilizer to gasoline in fuel tank or storage container. Always follow mix ratio found on stabilizer container. Run engine at least 10 minutes after adding stabilizer to allow it to reach the carburetor.
- Remove all accumulated debris from mower deck and tractor.
- Sand areas where paint is chipped and repaint to prevent rust. Lubricate all locations to prevent moisture damage during storage.

Always perform maintenance with the machine parked on a hard level surface; with the engine stopped and the PTO disengaged; with the park brake set; and with the key removed from the ignition.

Always remove the grounded (-) clamp from the battery when performing maintenance on the engine, clutch, or any other electrical system. Battery is located under the right fender.

Always wear safety glasses and ear protection when performing any maintenance function that could cause injury to eyes or ears.

Read all safety information on pages 6 through 14.

LUBRICATION

(Refer to Fig. 8)

Do not let excess grease collect on or around parts, particularly when operating in sandy areas. See accompanying illustrations for lubrication frequency points. Severe or unusual conditions may require more frequent lubrication.

In addition to these lubrication points, lightly oil all linkage pivot points.

Use SAE multipurpose type grease for all locations shown. Be sure to clean fitting thoroughly before using grease gun.

Apply 1/2 to 1 Stroke Every 8 Hours of Usage

Front Wheel Bearings (A) (two fittings)

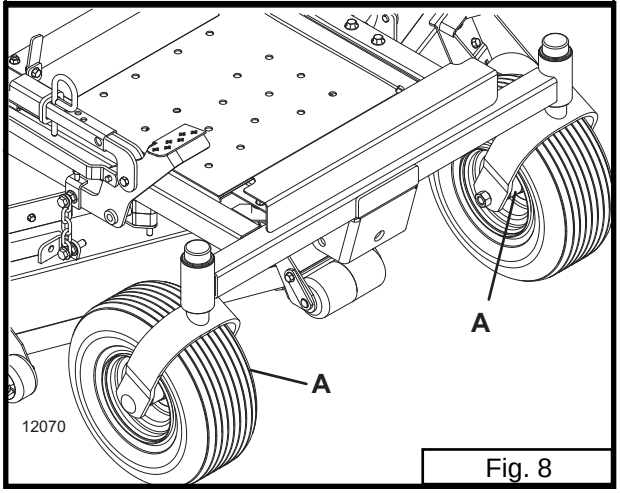


Fig. 8

CAPACITIES

Fuel Tank.....11.3 liter
Drive System.....2.37 liter
(Each Transmission).....1.66 liter

TIRE AIR PRESSURE

Drive Tires 20 x 10 x 10.....55 kPa (8 psi)
(Refer to decal on wheel for correct tire air pressure)
Front Tires.....83 kPa (12 psi)

DRIVE SYSTEM

Fluid Change.....300 hours
Filter Change.....300 hours

CRANKCASE OIL AND AIR FILTER

Refer to the “Engine Manual” for the timetable for changing or service.

COOLING SYSTEM

Inspect the engine cooling fins periodically for buildup of grass and debris. Buildup on the cooling fins will cause the engine to overheat.

Removal of engine cowling may be required to clean the fins, especially if cleaned infrequently.

Do not use high-pressure water or steam to clean the engine or drive compartment. Water and cleaning

detergent may damage electrical components and terminals, possibly leading to component and safety circuit failure.

Use a vacuum cleaner or air blower to remove foreign material from the engine and drive compartment.

BATTERY MAINTENANCE

Battery is located under the right fender. Follow the procedure below for battery maintenance.

- Clean battery.
- Inspect cables for loose connection.
- Clean terminals.
- Inspect battery tray and hold-down.
- Inspect battery case for cracks or leaks.

Batteries contain sulfuric acid. Avoid contact with skin, eyes and clothing. Batteries produce a highly explosive hydrogen gas while being charged. Always keep cigarettes, sparks, open flame and other sources of ignition away from battery. Always shield eyes and face from battery. In the event of accident, flush with water and call a physician immediately. Keep batteries and acid out of the reach of children.

CHECKING DRIVE SYSTEM FLUID LEVEL

Check fluid level with the engine turned off and fluid at normal operating temperature. The transmission fluid reservoirs are located at the front of each transmission. To check the fluid level, raise the seat and remove the breather/dipstick from the reservoir. The fluid level should be equal to the "hot" mark on the dipstick (Refer to Fig. 9). If fluid is required, use CoolTemp Hydro-Max™ Extended-Life Hydrostatic Fluid (Grasshopper part no. 345044 for 1 quart [.94 l] container).

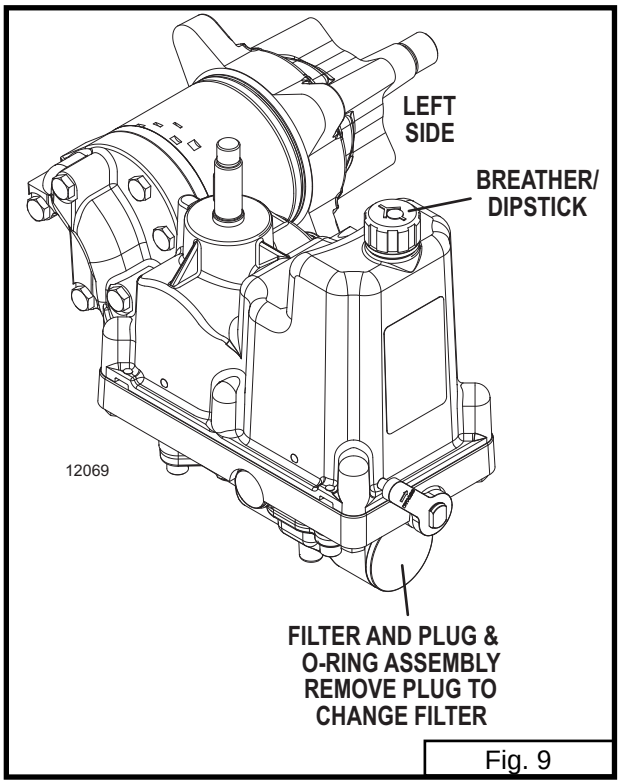


Fig. 9

DRIVE SYSTEM FLUID AND FILTER MAINTENANCE

For Drive System, use CoolTemp Hydro-Max™ Extended-Life Hydrostatic Fluid, part no. 345044 for 1 quart (.94 l) container or part no. 345046 for 2 gallon (7.52 l) container. Use part no. 130605 high efficiency oil filter.

CHANGING DRIVE SYSTEM FLUID

(Refer to Fig. 9)

Raise the seat. Place a drip pan under the transmission reservoir and filter (at the front of the transmission). Remove plug and filter and drain fluid into the pan. Allow transmission to drain completely. Install a new fluid filter and plug. torque plug to 115-135 in. lbs. Fill reservoir with fluid. Let engine idle a few minutes. Check fluid level and refill if needed. Repeat procedure for other transmission.

DO NOT operate machine with low fluid. Low fluid could cause damage to drive system and loss of control of the machine.

DECK CLEANING

IMPORTANT

After each use remove grass buildup from under the mower deck. Excessive grass buildup will interfere with the operation and performance of the mower deck. Excessive grass buildup may also cause component failure.

1. Park machine on hard level surface, stop engine and set the park brake. Remove key from the ignition switch.
2. Position the mower deck in the transport (all the way up) setting.
3. Lift the front of the machine, and support the machine using jack stands or other equivalent safety blocks. Do NOT rely solely on mechanical or hydraulic jacks or lifts for support. Always use adequate wheel chocks on tires remaining on the ground.
4. Use a long flat bar to clean under the deck, to avoid positioning yourself under the machine.
5. Clean out all grass and debris build-up from the underside of the deck, around blade spindles and the deck discharge chute.

BLADE INSPECTION

Do not handle mower blades with bare hands. Use heavy leather gloves or wrap blade with protective material and block securely when removing blades. Careless or improper handling may result in serious injury.

Inspect blades before each use to determine that they are mounted securely and are in good condition. Replace any blade that is bent, excessively nicked, worn, or has any other damage. Small nicks can be ground out when sharpening.

BLADE SHARPENING

IMPORTANT

When sharpening blades, be sure to balance them. Unbalanced blades will cause excessive vibration that can damage blade spindle bearings. Vibrations may also cause structural cracks in mower housings.

Follow original sharpening pattern. Do not sharpen backside of blade. Do not sharpen blade to a razor edge, but leave approximately .016 inch (.4 mm) blunt edge.

BLADE REMOVAL

(Refer to Fig. 10)

Remove bolt (A), which has right hand threads. Remove washer (B), flat washer (C), fiber washer (D) and blade.

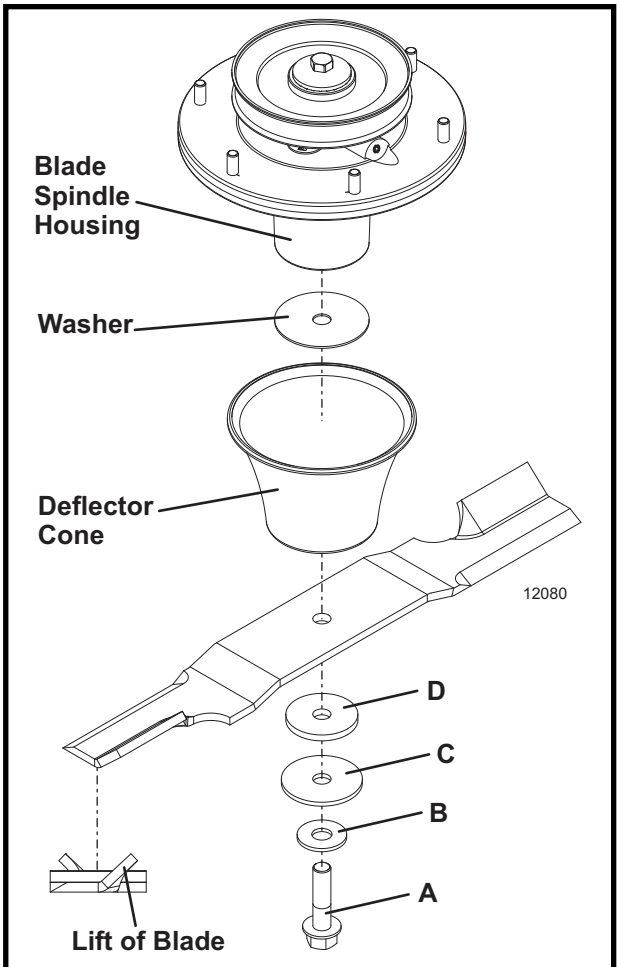


Fig. 10

BLADE INSTALLATION

Your dealer can supply Grasshopper replacement blades. They are made of special steel alloys and subjected to rigid heat-treat and inspection requirements. Substitute blades may not meet these rigid specifications and MAY BE DANGEROUS.

Reverse the removal procedure. Be sure fiber washer and cone are installed as shown.

IMPORTANT

When installing a blade, the lift of the blade must be toward blade spindle housing (refer to Fig. 10). Tighten bolt (item A, Fig. 10) into blade spindle housing to 50-55 ft lbs (68-75Nm).

Always make adjustments with the machined parked on a hard level surface; with the engine stopped and the PTO disengaged; with the park brake set; and with the key removed from the ignition.

Always remove the grounded (-) clamp from the battery when performing maintenance on the engine, clutch, or any other electrical system. Battery is located under the right fender.

LOSS OF POWER IN THE DRIVE SYSTEM

Check the fluid level and make sure the proper amount of fluid is in the reservoir. Make sure all hydraulic connections are tight and not leaking. Make sure drive belt is tight and not slipping. Check park brake adjustment. Make sure pump bypass valve is tight so pump does not freewheel.

DRIVE BELT REPLACEMENT

(Refer to Fig. 11)

1. Remove the deck belt (A) as described in "Deck Belt Replacement" section (page 37).
2. Remove the clutch center bolt (B) and slide the clutch (C) off the engine's crankshaft.
3. Loosen the .375" idler arm pivot bolt (D) and remove the .312" bolt (E) securing belt tensioner bracket in place. Using a half inch drive break-over bar or racket, inserted in half inch square hole, rotate idler pulley away from belt, relieving belt tension.
4. Remove the belt (F) from pulleys.
5. Install the new belt with the idler tension bracket loose. Using the break-over bar, reinstall the .312" bolt (E) (normally in center hole) in the idler tensioner bracket and secure. Do not over tighten belt. Belt should only be tight enough to prevent belt from slipping. Retighten .375 idler arm pivot bolt (D).
6. Install the deck belt as described in "Deck Belt Replacement" section (page 37).

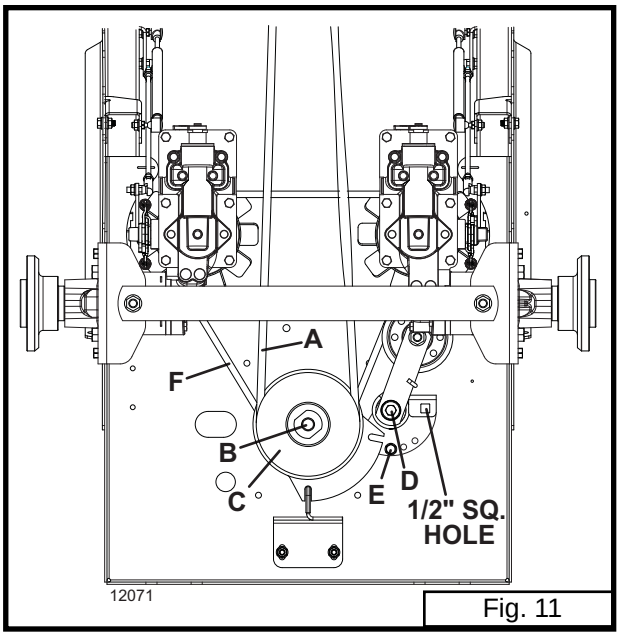


Fig. 11

NO POSITIVE NEUTRAL POSITION

If drive wheels travel forward or backward when the steering lever is in swing-out position (neutral), adjustment is required.

NEUTRAL ADJUSTMENT

(Refer to Fig 12)

1. Block up under tractor frame so both drive wheels are off the ground.
2. Make sure parking brake is released.
3. Remove linkage rods (A) from transmission neutral return arm (B).
4. Place steering levers in the neutral swing-out position and start engine.
5. If either of the drive wheels turn, proceed with the following adjustment.
6. With a .25" allen wrench loosen the socket head cap screw (C) directly below the control lever (D). Rotate the neutral return assembly left or right until neutral is achieved. Tighten socket head cap screw.
7. Repeat procedure for transmission on the other side.
8. Reinstall linkage rod (A) in neutral return arm (B). If ball joint does not reinstall into neutral return arm without moving the return arm, adjust length of linkage rod until it does to assure neutral adjustment will be maintained when linkage is connected.
9. Test-drive machine for straight-line travel

with both levers full forward. If travel is not in a straight line, adjust the steering lever stop on the side that is the fastest, i.e., if machine goes to the left, adjust the right steering stop to slow down the right transmission until travel is straight ahead.

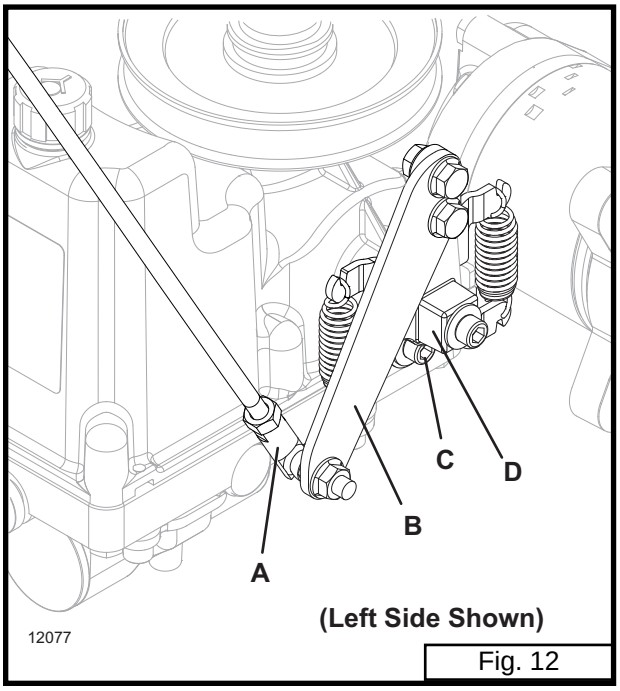


Fig. 12

STEERING LEVER ADJUSTMENT

(Refer to Fig. 13)

Steering levers are secured to the lever mount blocks with mounting bolts and nuts. A .5 inch wrench is required to adjust the levers.

To adjust steering lever position, loosen nut on the top mounting bolt. In the swung in (neutral) position, the lever can now move forwards and backwards without moving the lever mount. If the lever mount moves with the steering lever, the bottom mounting bolt may need to be loosened. Set both levers in line and in a comfortable position for the operator. Move levers to the swung out (neutral lock) position and tighten top nuts and bottom nuts if loosened. Both mounting bolts MUST be tight to assure steering lever control of the machine.

Steering levers must line up in the swung in (neutral) position. Maintain one inch (25mm) minimum clearance between ends of levers. If the levers are allowed to lean toward the center when the mounting bolts are tightened, free play in the mounting holes may allow the levers to hit each other.

When completing a maintenance function, make sure all shields are in good condition and are installed before placing unit back into use.

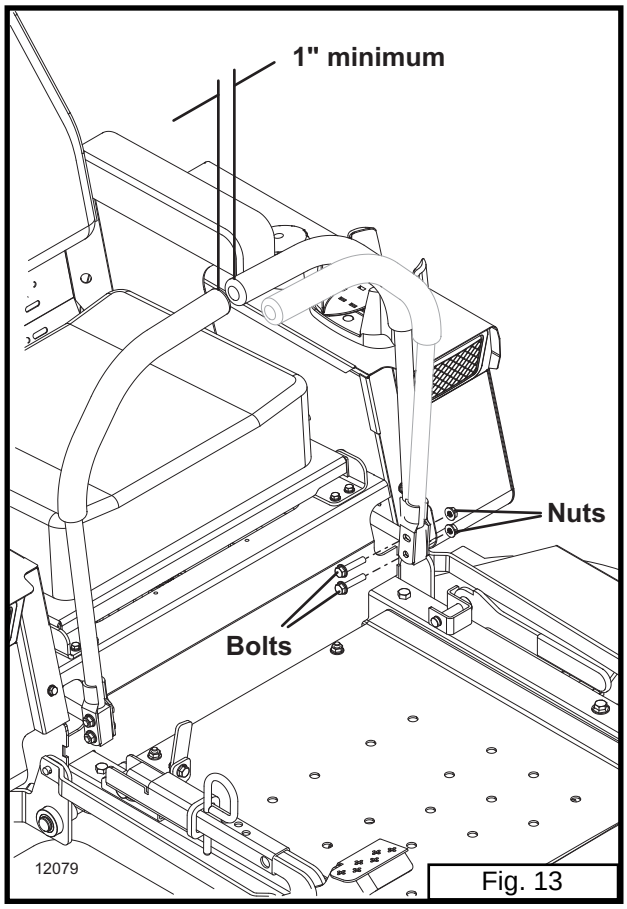


Fig. 13

ENGINE TROUBLESHOOTING

Should you experience trouble in starting the engine, use the following guide to locate possible causes.

Engine will not crank:

- Battery is discharged.
- Blown starter fuse.
- PTO switch in “ON”.
- Steering levers are not out in neutral.
- Steering lever switches are out of adjustment (listen for the switch “click”).
- A loose wire or connection.

Engine cranks, but will not start:

- Fuel tank is empty.
- Restricted fuel line or fuel filter.
- A loose wire or connection.

If the above points do not locate the problem, contact your authorized Grasshopper dealer for repair.

PARK BRAKE ADJUSTMENT

IMPORTANT

The performance of this parking brake depends on the tire used. Tire size, tread pattern, and tire pressure are important. Use only Factory supplied tires and wheels. Make sure tires are inflated to the proper pressure.

1. Stop engine, wait for all moving parts to stop, and remove key.
2. Disengage the park brake.
3. Adjust the linkage rod attached to the left brake until the clearance between the brake arm and the tire tread measures .25 inch to .5 inch (6mm to 13mm) with the park brake disengaged (see Fig. 14).
4. Repeat step 3 for the right side.
5. Engage and disengage park brake to check for proper engagement and disengagement. Readjust if necessary.
6. Be sure all cotter pins and jam nuts are secured.
7. Make sure the brake light is on when the park brake is set. If the brake lever does not contact the safety switch, adjust the switch in the mounting slots so it does.

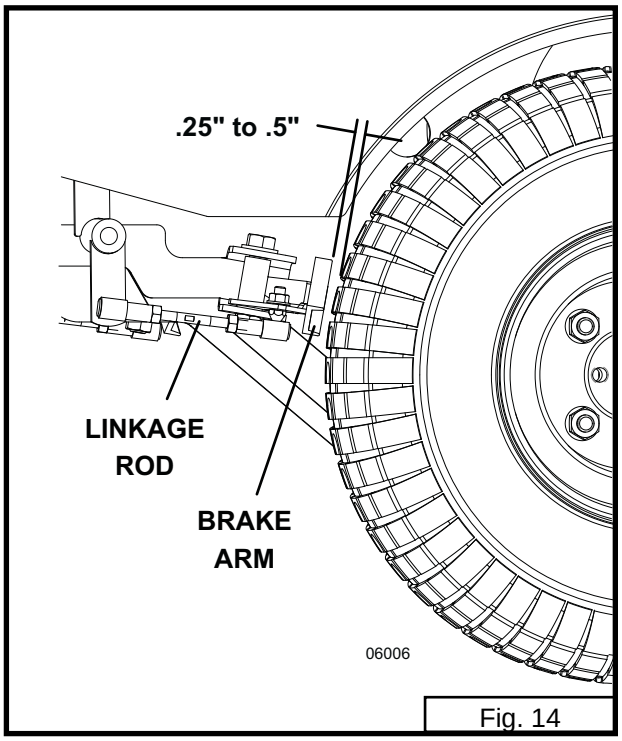


Fig. 14

CLUTCH/BRAKE BURNISHING

IMPORTANT

A new clutch, or one that has not been used for three months, will require burnishing to dress drive surfaces. The clutch could fail if you do not accomplish the following procedure.

Place tractor in neutral, start engine and run at half throttle. Turn clutch switch on 30 seconds and off 30 seconds, five times at half-throttle and repeat five times at full throttle. The time interval allows the clutch surface to cool.

CLUTCH REMOVAL/ REPLACEMENT

(Refer to Fig. 15)

1. Remove the deck belt (A) as described in "Deck Belt Replacement" section.
2. Remove the center bolt (B) and slide the clutch (C) off the engine crankshaft.
3. To install clutch, reverse order and install deck belt as described in "Deck Belt Replacement" section.
4. Tighten center bolt (B) to 50 ft lbs (68Nm). After 15 minutes of clutch usage retighten the bolt to 50 ft lbs (68Nm).

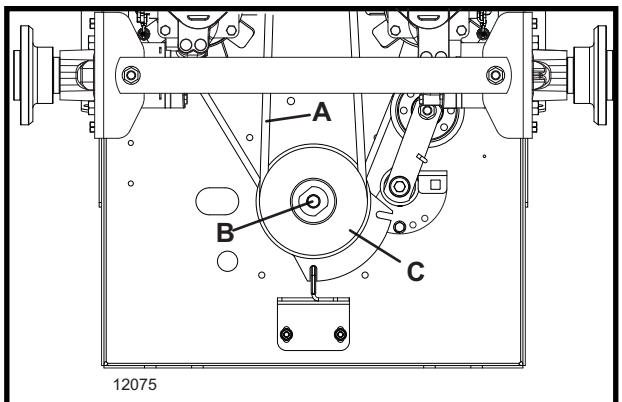


Fig. 15

MOWER DECK LEVELING ADJUSTMENT

(Refer to Fig. 16 & 17)

NOTE: The object is to have the mower blades cutting level side to side and cutting slightly lower in the front, with about the same weight on each mower deck hanger chain.

Mower blades are sharp. Wear heavy gloves or cover sharp edges of blades.

1 Check air pressure on all four tires and adjust to the correct pressure if necessary.

2. Mower deck can be leveled at any cut height position. If blade heights do not match cut height setting, do not adjust at this time. Mower deck must be leveled side to side and front to rear before cut height setting is adjusted. See appropriate sections below.

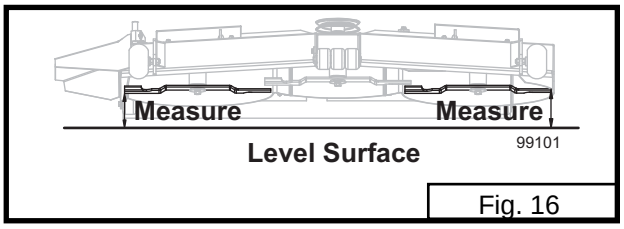


Fig. 16

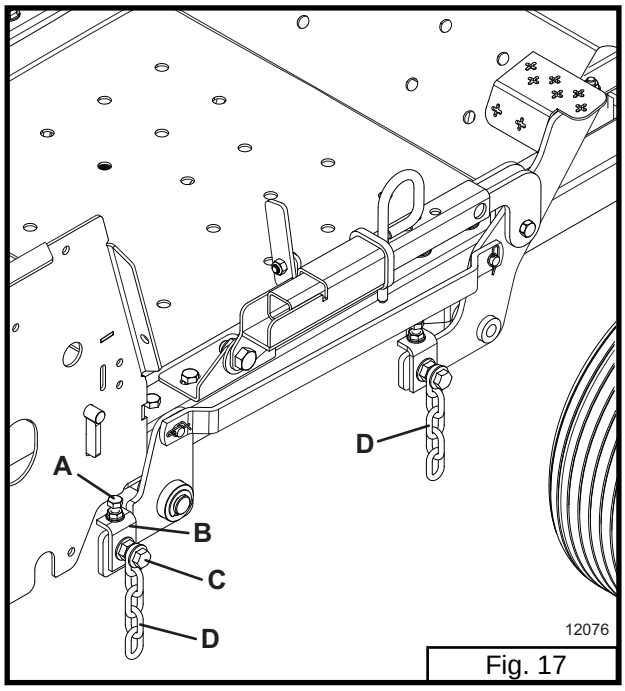


Fig. 17

3. Position left blade in the side to side position and measure from the outside blade tip to the level surface (refer to Fig. 16).
4. Position right blade in the side to side position and measure from the outside blade tip to the level surface.
5. If the difference between both measurements is greater than .125 inch (3mm), adjustment is necessary.
6. Locate the level adjust screw (A) on the right rear mower deck hanger (refer to Fig. 17).
7. Slightly loosen the .438 chain bolt (C) on the right rear mower deck hanger and level adjust bracket (B).
8. Adjust the right rear of the mower deck up or down as required to match the left rear by turning the level adjust screw (A) clockwise to raise and counter-clockwise to lower.
9. Adjust the level adjust screw (A) until blades on both sides are the same height above the level surface.
10. With blades leveled side to side, tighten the

.438 chain bolt (C) securely.

11. Position left blade in the front to rear position. Measure from the left front blade tip to the level surface. With the blade in the same position, measure from the left rear blade tip to the level surface.
12. The distance measured at the rear blade tip should be .125 to .25 inch (3mm to 6mm) higher than at the front blade tip (Refer to Fig. 18).
13. If the front to rear adjustment is not within the given tolerance, then either adjustment is necessary or the left blade may be bent.
14. Check to see if the left blade is bent by turning it 180° and measure from the left rear blade tip to level surface again. If the result is different by more than .125 inch (3mm), the left blade is bent and should be replaced.
15. If the blade is straight and adjustment is necessary, locate the level adjust screw on the left front mower deck hanger.
16. Slightly loosen the .438 chain bolt on the left front mower deck hanger and level adjust bracket.
17. Adjust the left front of the mower deck up or down by turning the level adjust screw clockwise to raise and counter-clockwise to lower until the front blade tip is .125 to .25 inch (3mm to 6mm) higher than the rear blade tip.
18. Tighten the .438 chain bolt securely.
19. Repeat steps 11 through 18 above on the right side.
20. Check that each of the mower deck hanger chains (D) are tight and are carrying weight. If a chain is loose, adjust as necessary.

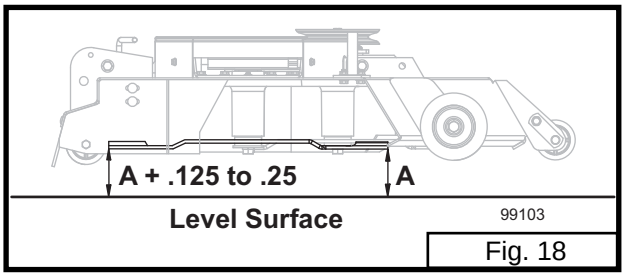


Fig. 18

MOWER DECK CUT HEIGHT SETTING ADJUSTMENT

NOTE: Adjust side to side and front to rear mower level before adjusting cut height.

1. Check air pressure on all four tires and adjust to the correct pressure if necessary.
2. With foot pedal, set the cut height at the notch marked 3.
3. Position left blade in the side to side position and measure from the outside blade tip to the level surface (refer to Fig. 18).
4. Position right blade in the side to side position and measure from the outside blade tip to the level surface.
5. If the difference between both measurements is greater than .125 inch (3mm), side to side adjustment is necessary (see previous section).
6. If both measurements are between 2.875 inches (73mm) and 3.125 inches (79mm), adjustment is not necessary.
7. If both measurements are less than 2.875 inches (73mm) or greater than 3.125 inch (79mm), adjustment is necessary.
8. To adjust the cut height, place blocks under both sides of the deck so there is slack in the hanger chains. The actual cut height is .5" (13mm) above the sides of the deck.
9. Loosen the 2 bolts that secure the cut height indicator.(Refer to page 23, Fig 5)
10. If the deck cut height needs raised, slide the cut height indicator forward.
11. If the deck cut height needs lowered, slide the cut height indicator back.
12. With blade cut height correct, securely tighten the bolts.
13. Make sure foot pedal still engages in upper most position.

DECK BELT ADJUSTMENT

(Refer to Fig. 19)

The belt tension is set at the factory, but may need adjustment after the first hour of initial use. Periodically belt should be checked for proper tension, following the procedure below:

1. Position the mower deck in the lowest (1.5 inch) cut height setting.
2. Loosen the lock nut (A) and adjust the draw nut (C) to change belt tension.
3. Increase belt tension by turning the draw nut (C) clockwise and decrease belt tension by turning the draw nut counterclockwise.
4. The idler spring (B) body length should measure approximately 5.75" for proper belt tension.
5. Tighten the lock nut (A) when the proper belt tension is achieved.

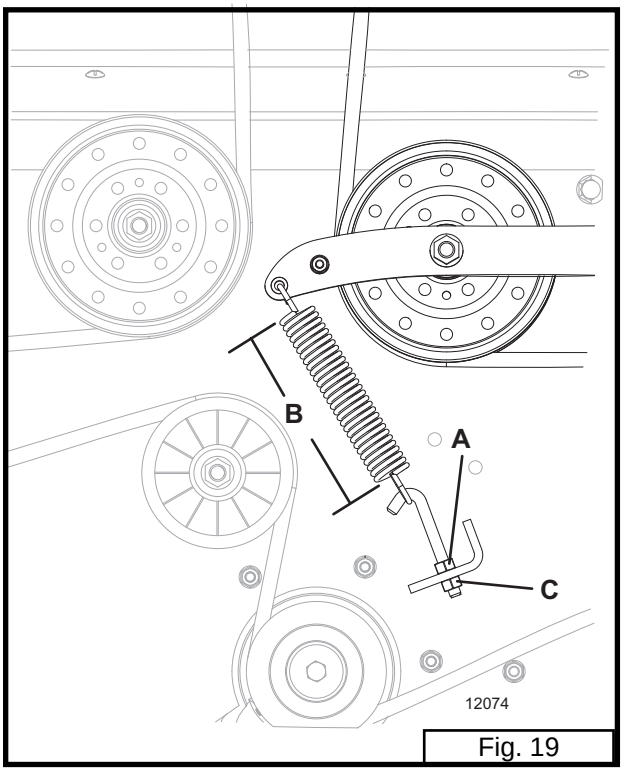


Fig. 19

DECK BELT REPLACEMENT

(Refer to Fig. 20)

Major causes of belt failure are improper installation and tension. Before installing a new belt, check spindle shafts and bearings for excessive endplay and wear by moving each spindle shaft side to side and up and down. Be sure they turn smoothly and freely. **Make sure idler is still aligned with spindle sheaves.** Check sheave grooves for cleanliness and wear. If grooves require cleaning, use a cloth moistened with a nonflammable nontoxic degreasing agent or commercial detergent and water.

Avoid excessive force during installation. Do not use tools to pry belt on or roll belt over sheaves. This can cause hidden damage and premature belt failure.

1. Position the mower deck in the lowest (1.5 inch) (38mm) cut height setting and remove the left and right belt shields.
2. Loosen the lock nut (A) and back off (counterclockwise) the draw nut (B) until tension is released from the old belt (C) and it can be lifted off the deck sheaves.
3. Install the new belt following Fig. 20 for proper belt routing.
4. Reset the belt tension using the procedure in the “Deck Belt Adjustment”.
5. Re-install the left and right belt shields.

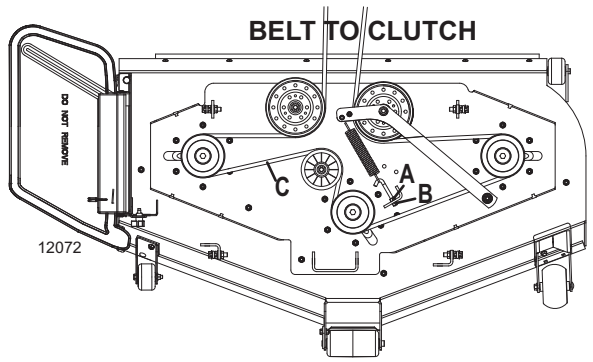


Fig. 20

BLADE SPINDLE ASSEMBLY REMOVAL

(Refer to Fig. 21)

1. It is not necessary to raise machine to remove the blade spindle assembly.
2. Raise the mower deck to the highest position.
3. Remove blade. Be careful handling sharp blades. Use protective material and block securely when removing blades.
4. Lower mower deck to the lowest (1.5 inch) cut height.
5. Remove belt shields.
6. Remove deck belt. See Deck Belt Replacement section above.
7. Remove the top bolt (2) and cup washer (3) from the spindle sheave (1).
8. Mark spindle sheave (1) on the topside so it will not be installed upside down on re-assembly.
9. Remove the spindle sheave (1) with a wheel puller. Make note if you remove any spacers or washers not shown in the illustration, as they will need to be reinstalled as they were removed. Spindle shaft (9) may fall out of the spindle assembly to the ground after removing sheave.
10. Remove square key (16) and bearing shield (4) and save for re-assembly.
11. Remove spindle assembly by removing the six bolts or nuts (17 or 18) that attach the spindle housing (7) to the mower deck. Spindle assembly will fall to the ground if not supported. Protect spindle housing as necessary.

BLADE SPINDLE ASSEMBLY REPAIR/REPLACEMENT

(Refer to Fig. 21)

1. Remove blade spindle assembly as described previously.
2. Press spindle shaft (9) down through bearings (6) and spindle housing (7).
3. Press bearings (6) out of housing (7) or remove from shaft (9) as necessary.
4. Visually inspect parts for excessive wear, corrosion, or damage. Feel parts and rotate bearing races to check for rough spots or excessive wear.
5. Replace with new parts as necessary.
6. Install lower bearing (6) on spindle shaft (9).
7. Install bearing spacer (8) on shaft.
8. Install this assembly into housing (7).
9. Press top bearing (6) onto shaft (9) down against bearing spacer (8).
10. Rotate assembly to make sure shaft moves freely.
11. Secure spindle assembly to the mower deck with the six nuts or bolts (17 or 18). Torque to 21 ft lbs.
12. Install bearing shield (4), square key (16), sheave (1), cup washer (3) and bolt (2) in same sequence as removed. Place a block under the spindle shaft (9) if necessary to hold it up in the spindle housing.
13. Make sure the concave side of the cup washer (3) is down toward the sheave and torque top bolt (2) to 38 ft lbs.
14. Rotate assembly to check for free movement.
15. Install deck belt and belt shields.
16. Install blade and tighten bolt (15) to 50-55 ft lbs.

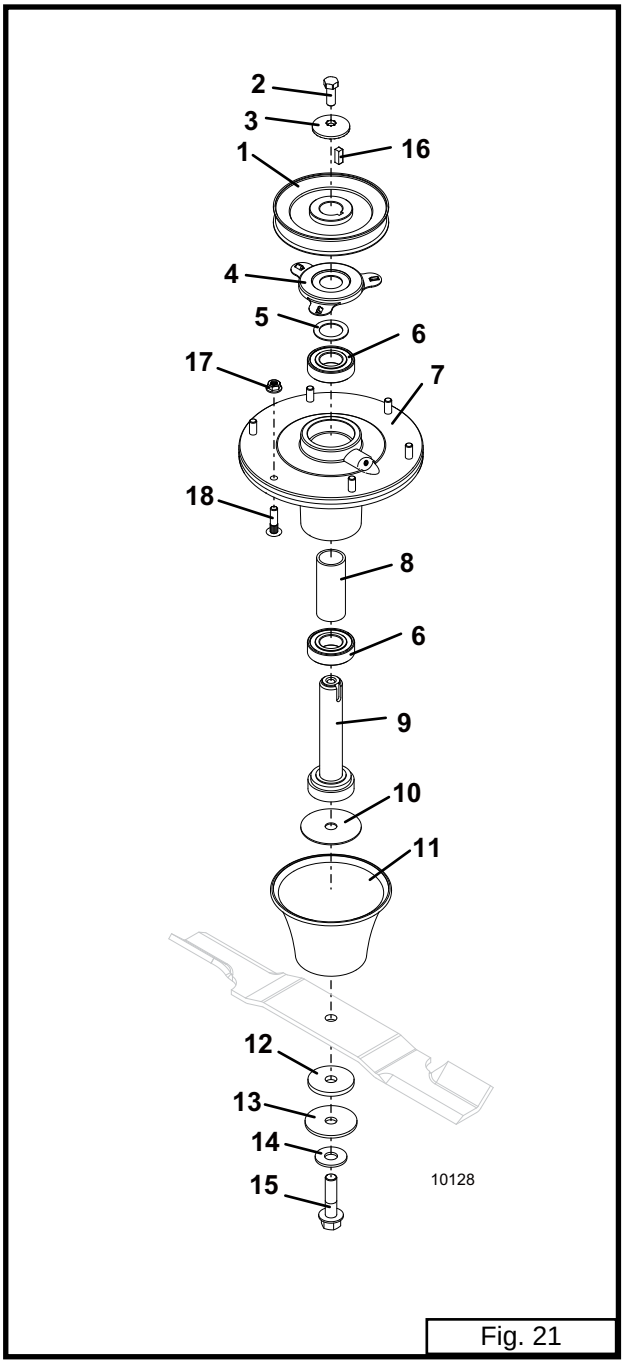


Fig. 21

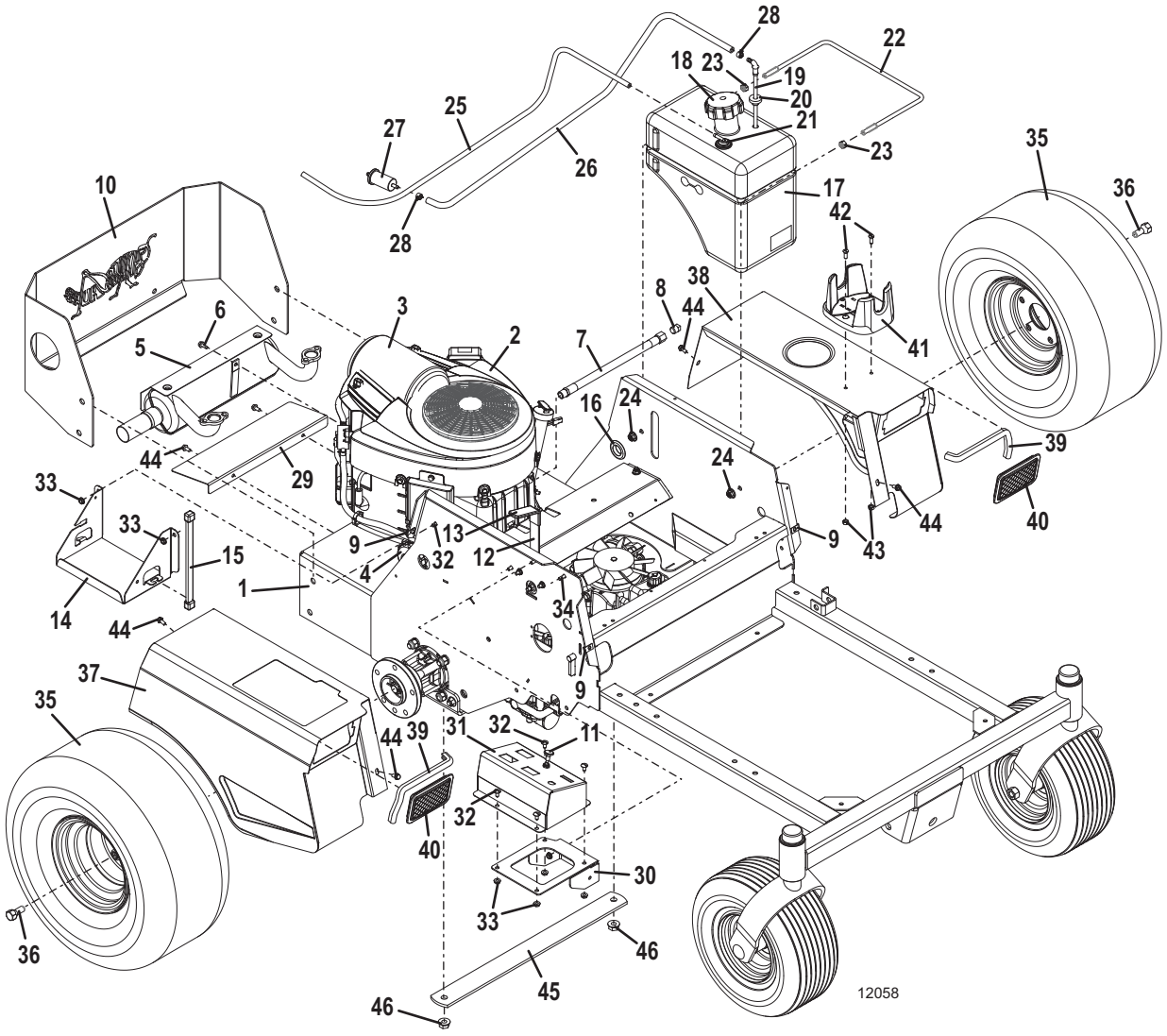
TRACTOR ASSEMBLY

Item No.	Order No.	Description
1	645376	Frame
2	100153	Engine
3	100919	Air Filter - Cyclonic
4	100803	Oil Filter
5	101197	Muffler
	101043	Gasket - Muffler
6	243016	Tap Screw
7	424319	Hose Assembly - Drain
8	365515	Plug
9	254431	Speed Nut
10	729734	Shield – Rear Guard
11	142250	Mechanical Choke
12	603854	Throttle Assembly
	323643	Cable Assembly
	722009	Throttle Lever Stop
	722736	Throttle Stop – Heavy Duty
13	422150	Handle Grip
14	723062	Mount - Battery
15	420610	Hold Down Stra
16	424250	Grommet
17	605791	Fuel Tank Assembly (includes items 18-21)
18	100212	Cap – Fuel Sealed Tether
19	363925	Fuel Tube
20	101875	Bushing – Fuel Tube
21	100216	Valve – Fuel Tank
22	730451	Rod – Fuel Tank Mount
23	254450	Nut
24	253043	Whiz Nut
25	821760	Fuel Hose
26	821768	Fuel Hose
27	366560	Fuel Filter
28	280260	Hose Clamp – Spring
29	751043	Shield - Heat
30	644410	Bracket - Console
31	645102	Console
32	253176	Whiz Bolt - Truss
33	253025	Whiz Nut
34	253177	Whiz Bolt - Truss
35	483924	Wheel & Tire
	483420	Wheel Without Tire
	482474	Tire
36	248565	Lug Bolt
37	645238	Fender – Rt.
38	645239	Fender – Lt.
39	822631	Trim – Fender Edge
40	422079	Hole Plug – Work Lamp
41	150225	Cup Holder
42	259030	Cap Screw - Hex
43	254436	Nut - Nylon
44	253173	Whiz Bolt - Hex
45	782898	Strap - Tension
46	253067	Flange Nut - Spirol Loc
	243565	Bolt

Item not pictured:

605363 Decal Set - 124 Mower

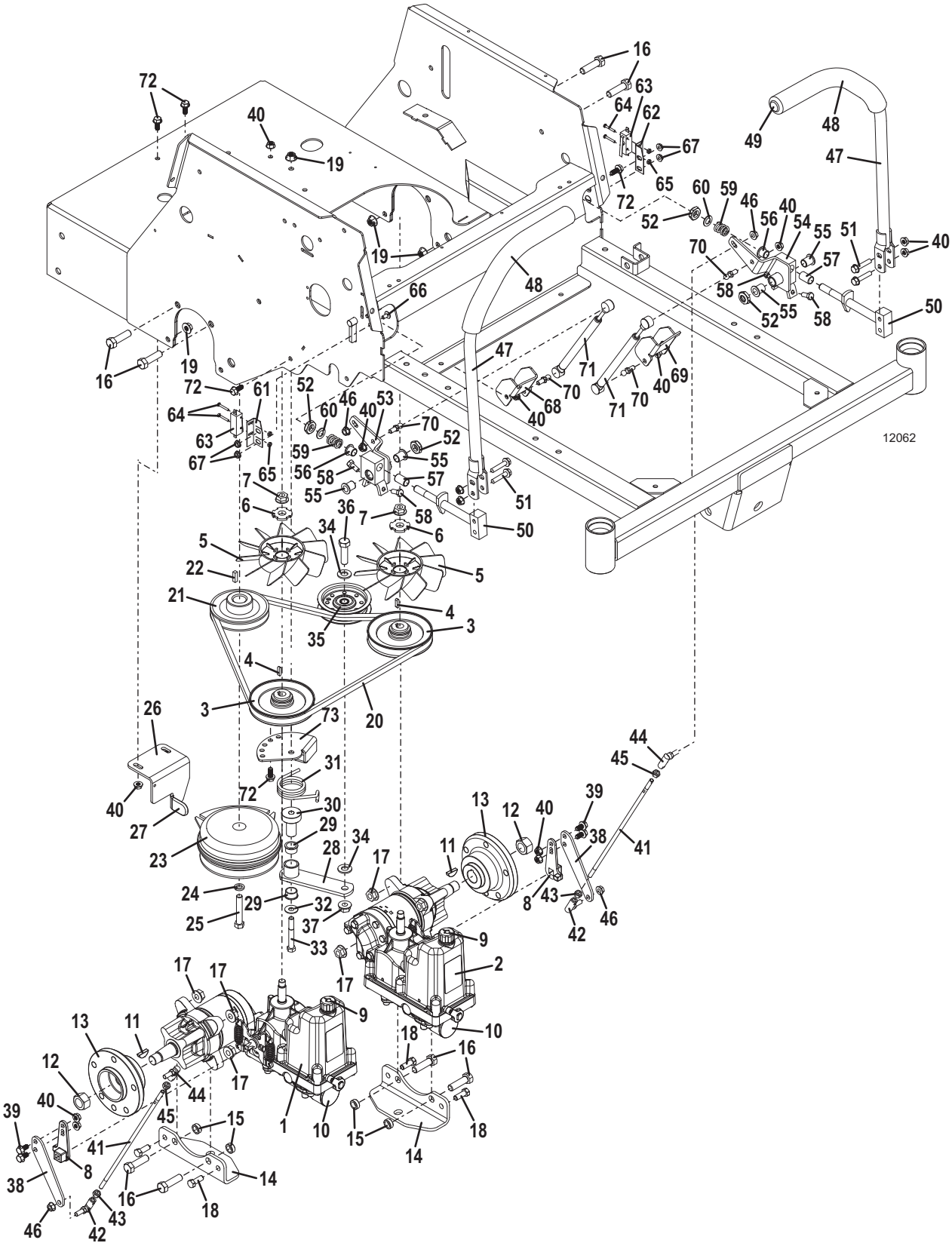
TRACTOR ASSEMBLY



DRIVE & STEERING ASSEMBLY

Item No.	Order No.	Description
1	391491	Integrated Transmission Rt. (includes items 3-12)
2	391490	Integrated Transmission Lt. (includes items 3-12)
3	130630	Pulley
4	281668	Square Key
5	130431	Fan
6	130632	Fan Spacer
7	253070	Whiz Nut
8	130618	Control Lever
	130619	Spring - Return
9	130610	Breather/Dipstick
10	130605	Filter
	130606	Filter Plug
11	281845	Woodruff Key
12	253992	Lock Nut
13	824458	Hub - Tapered
14	776156	Bracket – Tension Strap
15	902293	Spacer - Integrated
16	243575	Bolt
17	253067	Flange Nut - Spiral Loc
18	253203	Whiz Bolt
19	253043	Whiz Nut
20	381942	Belt
21	415545	Sheave
22	281582	Square Key
23	388750	Clutch
24	257422	Lock Washer
25	243470	Bolt
26	725123	Bracket – Anti Rotation
27	422088	Cover – Clutch Bracket
28	824478	Idler Arm Assembly (includes items 29 & 30)
29	121756	Oilite Bearing
30	121650	Bearing Pedestal
31	284428	Spring – Torsion LH
32	257040	Washer
33	243360	Bolt
34	257062	Washer - SAE
35	393195	Idler Pulley
36	243575	Bolt
37	253066	Whiz Nut
38	776158	Arm – Neutral Return
39	253191	Whiz Bolt
40	253035	Whiz Nut
41	780175	Rod – Steering Linkage
42	265615	Ball Joint - RH Thread
43	254441	Nut - RH Thread
44	265616	Ball Joint - LH Thread
45	254444	Nut .- LH Thread
46	253038	Whiz Nut
47	605741	Steering Lever Assembly (includes items 48 & 49)
48	422179	Lever Grip - Foam
49	422095	Vinyl Cap
50	643926	Mount – Steering Lever
51	253195	Whiz Bolt
52	253470	Nut - Nylon Insert
53	604856	Steering Pivot Assembly Rt. (includes items 55-58)
54	604857	Steering Pivot Assembly Lt. (includes items 55-58)
55	422559	Bearing Sleeve w/Flange
56	422556	Bearing Sleeve w/Flange
57	422557	Bearing Sleeve
58	243197	Bolt
59	283324	Spring – Compression
60	257063	Nylon Washer
61	720160	Mount – Steering Switch Rt.
62	720161	Mount – Steering Switch Lt.
63	183860	Safety Switch
64	250318	Machine Screw
65	254400	Nut
66	253176	Whiz Bolt
67	253025	Whiz Nut
68	729730	Bracket – Damper Mount Rt.
69	729731	Bracket – Damper Mount Lt.
70	265680	Ball Stud
71	285032	Damper
72	253192	Whiz Bolt
73	729733	Bracket - Belt Tensioner

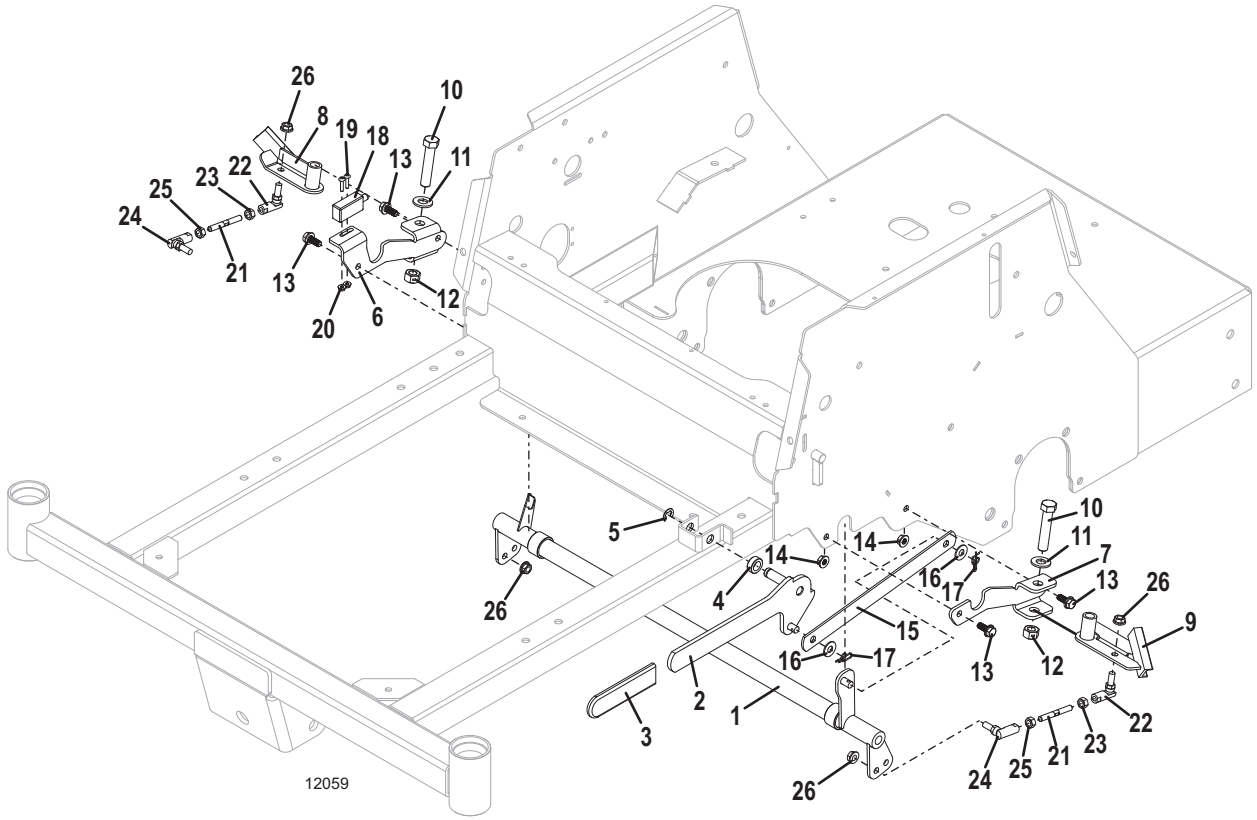
DRIVE & STEERING ASSEMBLY



BRAKES & LINKAGE ASSEMBLY

Item No.	Order No.	Description	Item No.	Order No.	Description
1	645104	Brake Tube	14	253035	Whiz Nut
2	645103	Brake Lever	15	782331	Strap – Brake Linkage
3	422155	Handle Grip	16	257030	Washer
4	902314	Spacer	17	260608	Ring Cotter
5	263500	Retainer - External	18	183894	Switch - Brake
6	776212	Bracket – Brake Support Rt.	19	250258	Machine Screw
7	776213	Bracket – Brake Support Lt.	20	253020	Whiz Nut
8	644398	Brake Arm Rt.	21	780179	Rod – Brake Linkage
9	644399	Brake Arm Lt.	22	265615	Ball Joint - RH Thread
10	243590	Bolt .- Full Thread	23	254441	Nut - RH Thread
11	257062	Washer - SAE	24	265616	Ball Joint .- LH Thread
12	253930	Lock Nut	25	254444	Nut - LH Thread
13	253192	Whiz Bolt	26	253038	Whiz Nut

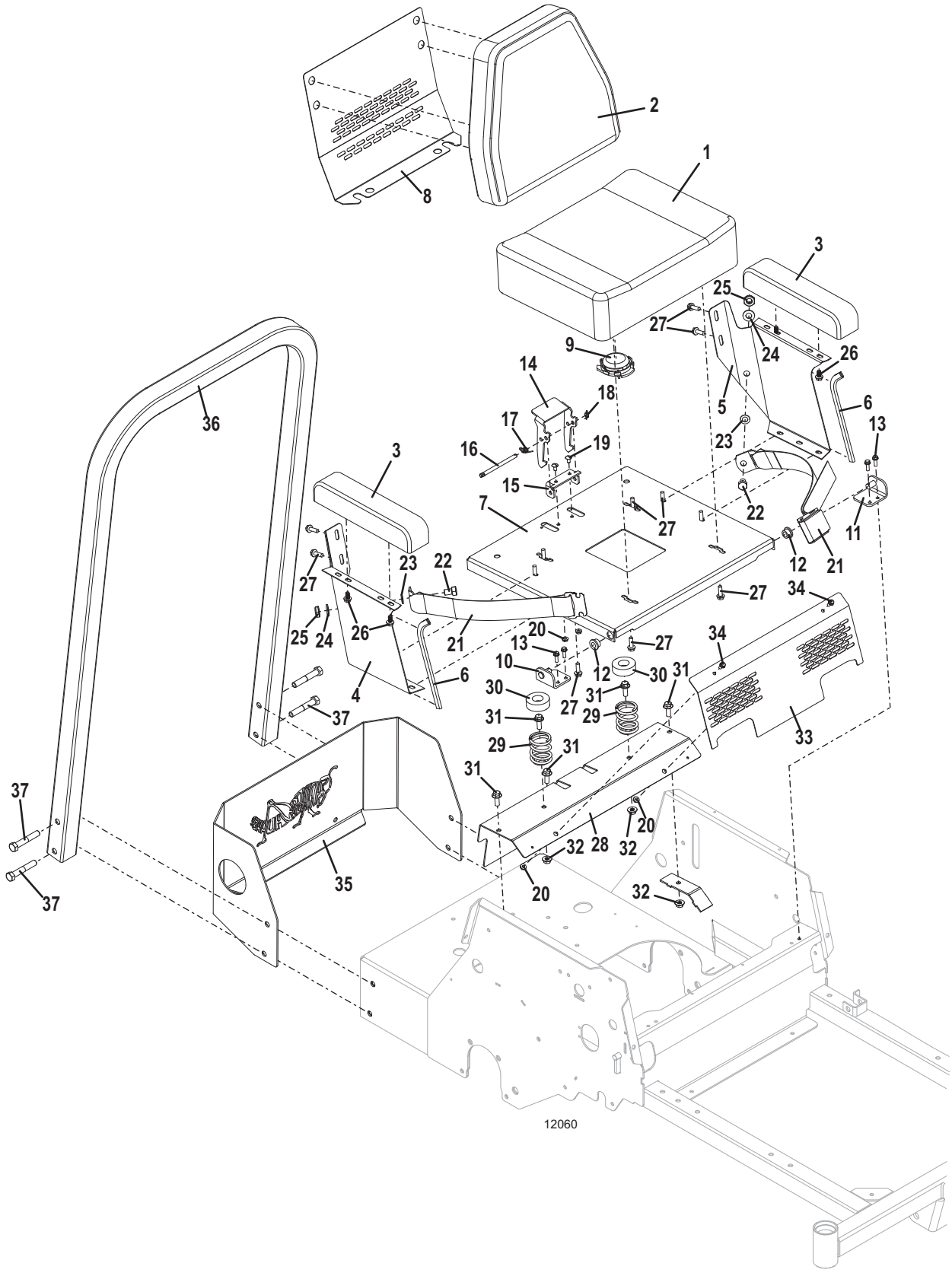
BRAKES & LINKAGE ASSEMBLY



SEAT ASSEMBLY & OPS TUBE

Item No.	Order No.	Description	Item No.	Order No.	Description
1	321518	Seat Cushion	20	253025	Whiz Nut
2	321519	Back Cushion	21	324200	Seat Belt
3	321523	Arm Rest Cushion	22	243551	Bolt
4	723433	Seat Side – Raised Rt.	23	257063	Nylon Washer
5	723434	Seat Side – Raised Lt.	24	257062	Washer - SAE
6	822630	Trim – Seat Edge	25	253470	Nut - Nylon Insert
7	643898	Seat Pan	26	253191	Whiz Bolt
8	722884	Seat Reinforcement - Raised	27	253193	Whiz Bolt
	163295	Decal - Grasshopper Emblem	28	729736	Cross Member – Seat
9	183871	Seat Switch - Twist	29	283516	Seat Spring – Compression
10	644401	Bracket – Seat Pivot Rt.	30	422127	Cap – Seat Spring
11	644402	Bracket – Seat Pivot Lt.	31	253203	Whiz Bolt
12	422565	Sleeve Bearing w/Flange	32	253043	Whiz Nut
13	253175	Bolt - Hex	33	751042	Shield – Fan
14	724930	Latch - Switch	34	253173	Whiz Bolt - Hex
15	724929	Mount Bracket – Seat Latch	35	729734	Shield – Rear Guard
16	730229	Pivot Pin – Seat Latch	36	324111	OPS Tube
17	284408	Spring Torsion		165092	Decal - Warning OPS
18	260606	Ring Cotter	37	243600	Bolt
19	253176	Whiz Bolt - Truss		253930	Lock Nut

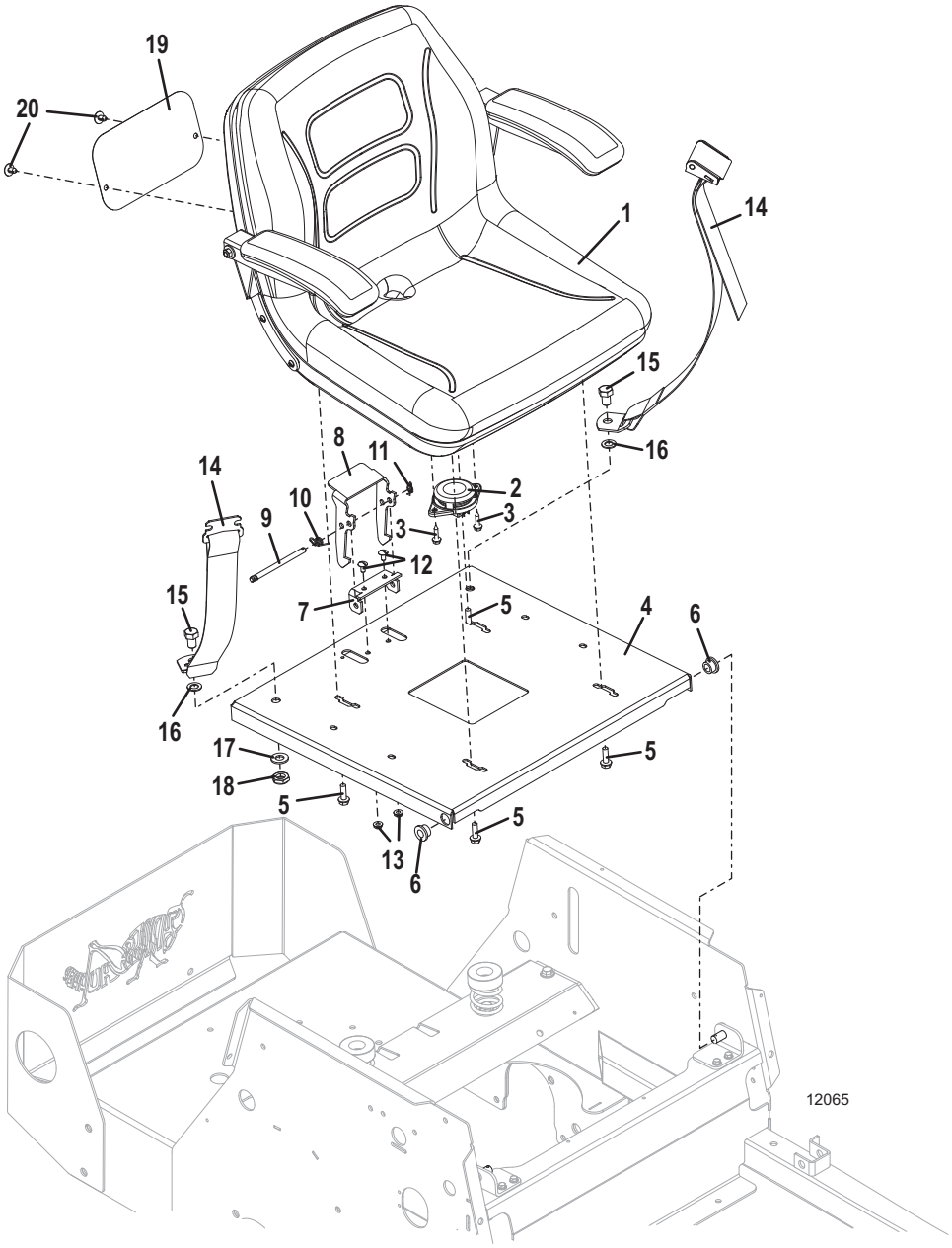
SEAT ASSEMBLY & OPS TUBE



OPTIONAL MOLDED SEAT ASSEMBLY

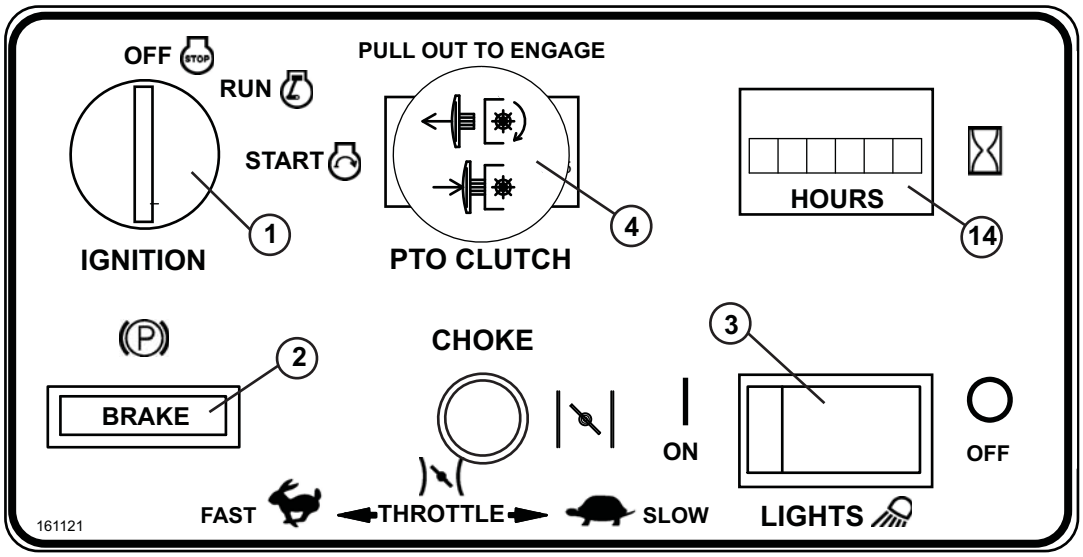
Item No.	Order No.	Description	Item No.	Order No.	Description
1	321570	Seat Assembly - Molded	12	253176	Whiz Bolt - Truss
2	183870	Switch - Seat	13	253025	Whiz Nut
3	243026	Bolt - Washer Head Tap	14	324200	Seat Belt
4	643898	Seat Pan	15	243551	Bolt
5	253193	Whiz Bolt	16	257063	Washer
6	422565	Sleeve Bearing with Flange	17	257062	Washer - SAE
7	724929	Mount Bracket – Seat Latch	18	253470	Nut - Nylon Insert
8	724930	Latch – Seat	19	770160	Decal Plate - Seat
9	730229	Pivot Pin – Seat Latch		163295	Decal – Grasshopper Emblem
10	284408	Spring - Torsion	20	246975	Push Stud - Plastic
11	260606	Ring Cotter			

OPTIONAL MOLDED SEAT ASSEMBLY

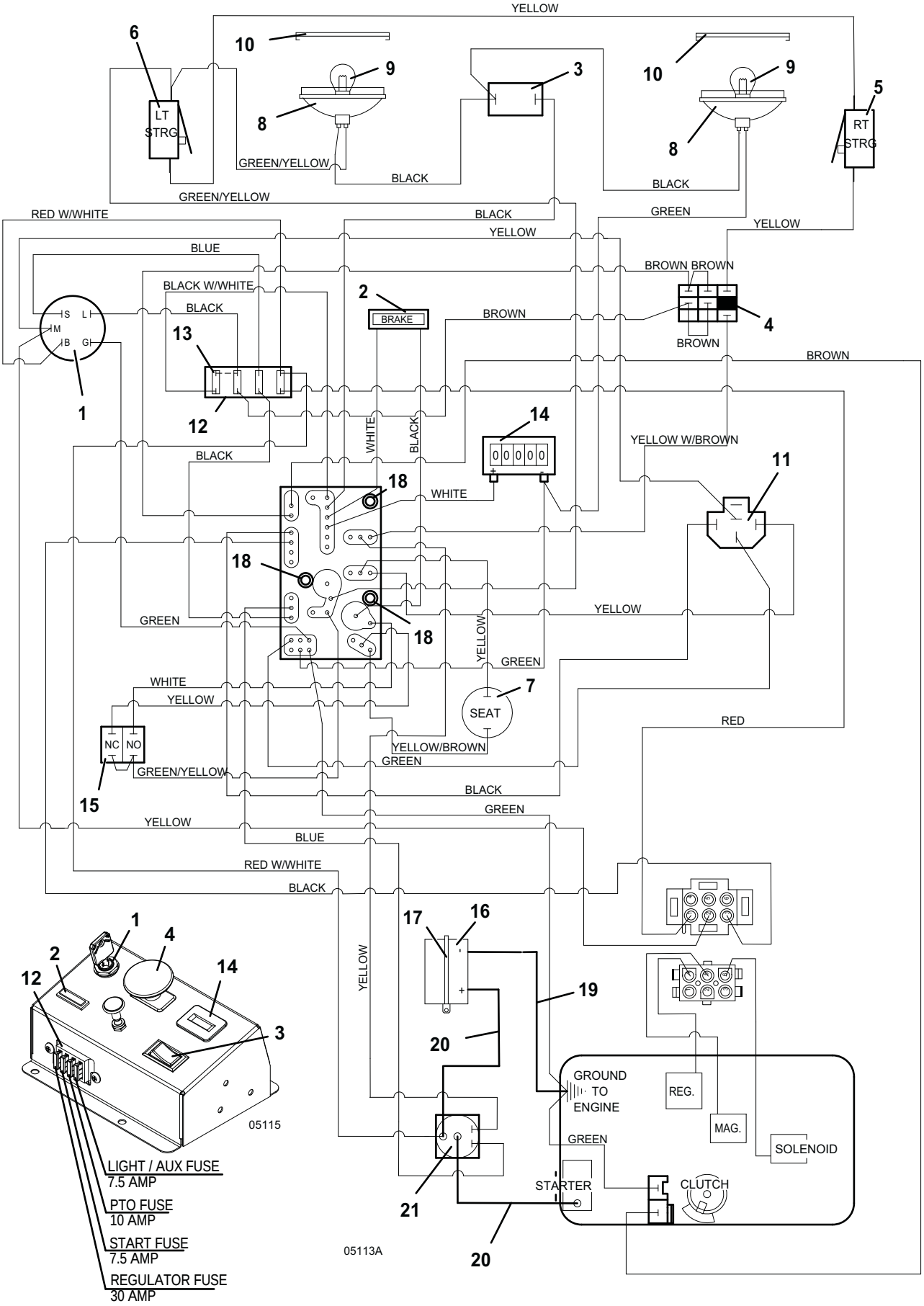


WIRING DIAGRAM

Item No.	Order No.	Description	Item No.	Order No.	Description
	605913	Wiring Assembly	11	184271	Relay w/Mount
	161121	Decal - Console	12	181720	Fuse Block
1	183806	Ignition Switch		162320	Fuse I.D. Decal
	254498	Nylon Nut - Ignition Switch	13	181470	Fuse 30 Amp Auto
2	182326	Indicator Light - Brake		181462	Fuse 10 Amp Auto
3	184179	Light Switch (optional)		181460	Fuse 7.5 Amp Auto
4	183925	Clutch Switch	14	141551	Hour Meter
5	183860	Safety Switch - Rt. Steering	15	183894	Brake Switch
	720160	Rt. Steering Switch Mount	16	180120	Battery 12 Volt
6	183860	Safety Switch - Lt. Steering		723062	Mount - Battery
	720161	Lt. Steering Switch Mount	17	420610	Battery Hold Down Strap
7	183871	Seat Safety Switch	18	423690	Spacer - PC Board Support
	183870	Seat Safety Switch (Optional Seat)	19	180290	Battery Cable 30" Black
8	182253	Work Lamp Assembly (optional)	20	180322	Battery Cable 24" Red
		(includes item 9)		425220	Battery Terminal Boot
9	182005	Light Bulb (optional)		425216	Alternator Terminal Boot
10	182251	Bezel (optional)	21	184251	Solenoid Switch 4 Post



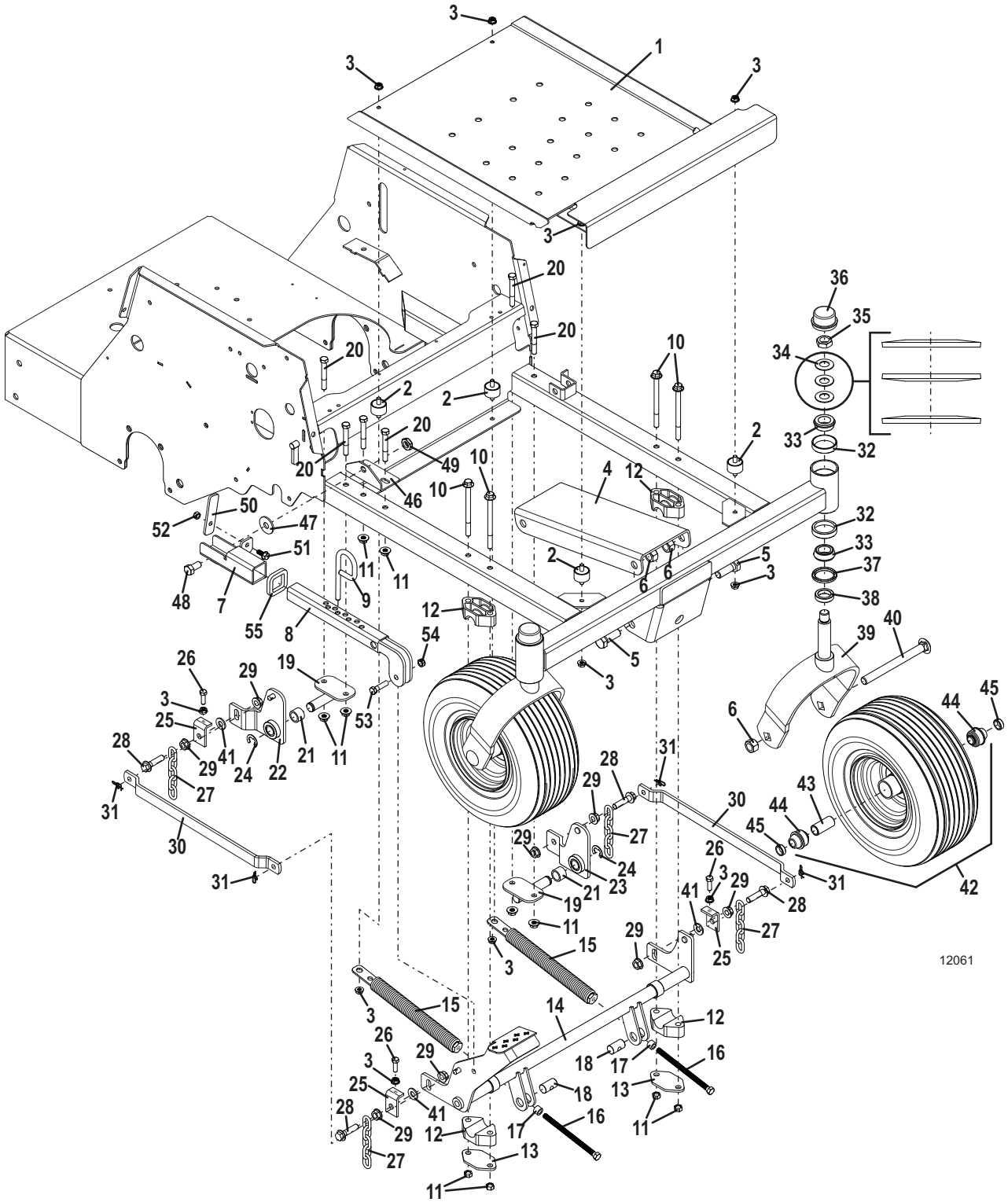
WIRING DIAGRAM



DECK CARRIER LINKAGE

Item No.	Order No.	Description
1	645316	Footrest
2	424074	Vibration Isolator
3	253035	Whiz Nut
4	776214	Radius Arm
5	243805	Bolt
6	253970	Lock Nut
7	645274	Guide – Latch Tube
8	645845	Tube – Height Adjust
9	730434	Deck Pin – Height Adjust
10	253215	Flange Bolt
11	253043	Whiz Nut - Lg Flange
12	423643	Lift Bearing Block
13	774064	Plate – Lift Bearing
14	645650	Pivot – Front Carrier
15	604762	Spring & Plug Nut Assembly
16	243399	Bolt - Full Thread
17	902280	Spacer
18	881154	Shaft – Spring Mount
19	644644	Pivot Carrier
20	243360	Bolt
21	902412	Spacer
22	603741	Rocker Assembly Rt.
	121764	Oilite Bearing
23	603728	Rocker Assembly Lt.
	121764	Oilite Bearing
24	263529	Retainer - External
25	732586	Adjusting Strap
26	243205	Bolt
27	820331	Chain – 5 Links
28	243458	Flange Bolt
29	253058	Whiz Nut
30	732811	Strap – Carrier Linkage
31	260608	Ring Cotter
32	123522	Bearing Cup
33	122522	Bearing – Tapered
34	257320	Washer – Spring
35	254505	Jam Nut - Nylon Top lock
36	481432	Dust Cap
37	125855	Seal
38	282615	Spacer
39	645221	Fork
40	247725	Carriage Bolt
41	257051	Washer - SAE
42	603975	Wheel & Tire Assembly w/Bearings & Spacer
43	902429	Bearing Spacer
44	120048	Wheel Bearing
45	902422	Spacer
46	729685	Mount – Height Adjust
47	821516	Washer – Nylon
48	243560	Bolt
49	253470	Nut - Nylon Insert
50	775147	Latch – Deck
51	253192	Whiz Bolt
52	253450	Nut - Nylon Insert
53	243340	Bolt
54	253460	Nut - Nylon Insert
55	423696	Spacer – Height Adjustment

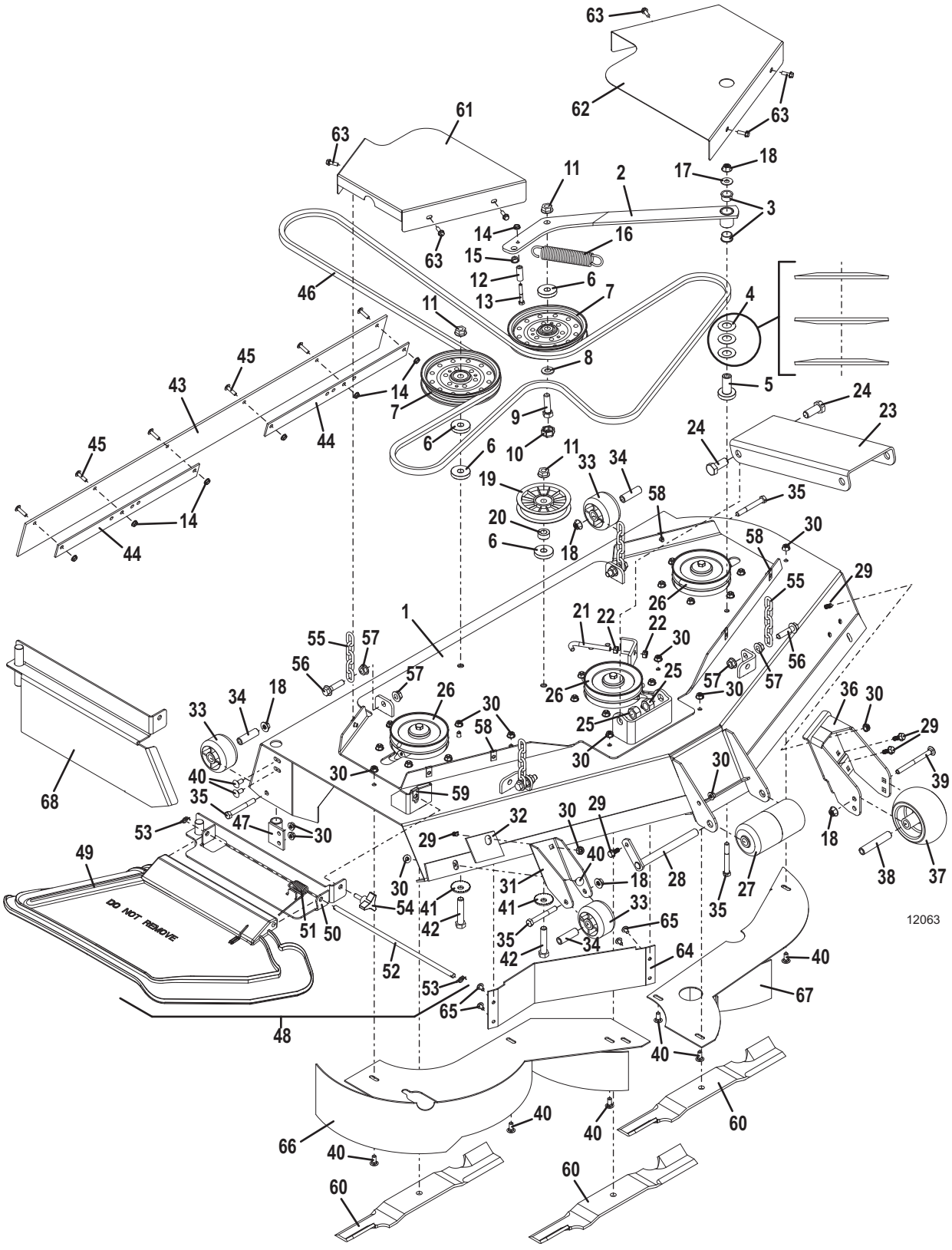
DECK CARRIER LINKAGE



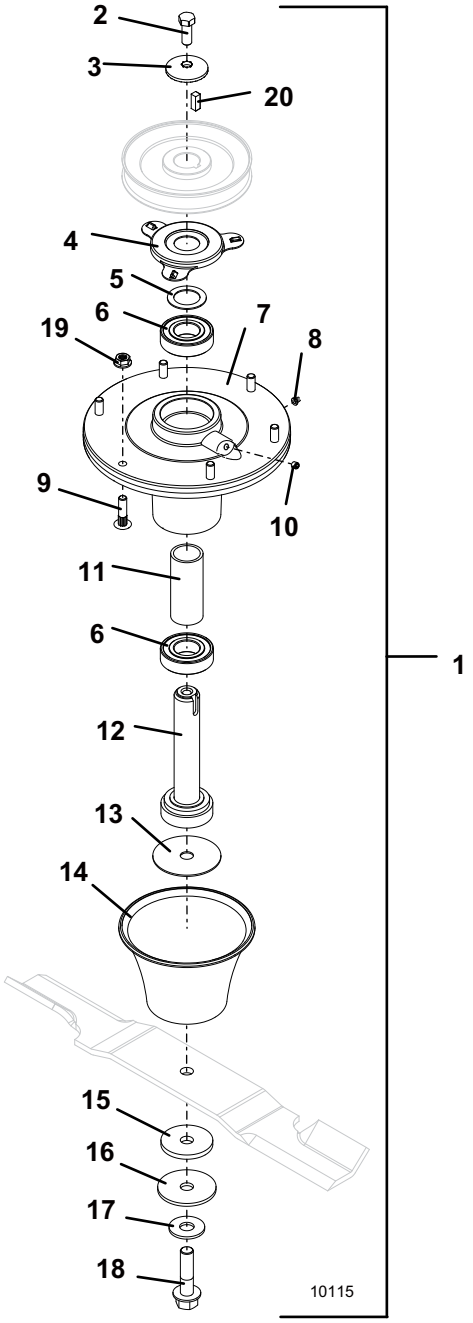
DECK ASSEMBLY - MODEL M252

Item No.	Order No.	Description
1	645189	Deck
2	824473	Idler Arm Assembly (includes items 3-5)
3	121756	Bearing - Oilite
4	257319	Washer - Spring
5	121651	Bearing Pedestal
6	257160	Washer
7	393250	Idler 6.0
8	257062	Washer SAE
9	243575	Bolt
10	423670	Stabilizer Cap
11	253067	Nut Flange Spiral Lock
12	784057	Tube - Guide
13	243038	Bolt
14	253025	Whiz Nut
15	422520	Nylon Bearing
16	283852	Spring - Extension
17	257040	Washer
18	253043	Whiz Nut
19	393225	Idler 4.75
20	902313	Spacer
21	730391	“J” Bolt – Idler Adjustment
22	254450	Nut
23	776214	Radius Arm
24	243800	Bolt
25	253970	Lock Nut
26	415902	Sheave
27	603725	Center Roller Assembly
28	644512	Lock Pin - Roller
29	253192	Whiz Bolt
30	253035	Whiz Nut
31	754203	Roller Mount – Formed Rt.
32	776231	Spacer – Roller Mount
33	426122	Roller
34	902284	Spacer – Roller Mount
35	243365	Bolt
36	645579	Mount – Anti-Scalp Roller Lt.
37	484230	Wheel – Anti-Scalp
38	942137	Bearing Tube
39	247310	Carriage Bolt
40	247130	Carriage Bolt
41	257059	Cupped Washer
42	243590	Bolt
43	424163	Deck Flap
44	774219	Strap - Deflector
45	253179	Bolt - Phil. Truss
46	382111	Belt
47	643632	Pivot Mount
48	604317	Discharge Shield Assembly (includes items 49-53)
49	422042	Discharge Shield
50	644570	Mount – Discharge Shield
51	284406	Spring - Torsion
52	780650	Pin
53	260608	Ring Cotter
54	252821	Stud – 3 Prong Head
55	820331	Lift Chain – 5 Links
56	243458	Bolt
57	253058	Whiz Nut
58	254431	Speed Nut
59	254448	Speed Nut
60	320239	Blade 18” High Lift Notched
	320240	Blade 18” Hi-Low Mulching
	320236	Blade 18” Medium Lift
	320238	Blade 18” Contour
61	751046	Shield – Belt Rt.
62	751047	Shield – Belt Lt.
63	253175	Whiz Bolt
64	724588	Auxiliary Front Shroud
65	253176	Whiz Bolt - Truss
66	644608	Mulch Plate Rt. (Optional)
67	644609	Mulch Plate Lt. (Optional)
68	644058	End Cap (Optional)

DECK ASSEMBLY - MODEL M252



BLADE SPINDLE ASSEMBLY



Item No.	Order No.	Description	Item No.	Order No.	Description
1	623750	Blade Spindle Assembly (includes items 2-15)	10	259305	Set Screw - Nylon
			11	903643	Bearing Spacer
2	243331	Bolt	12	604775	Spindle Shaft Assembly
3	257041	Cupped Washer	13	772061	Washer
4	721167	Bearing Shield	14	423680	Deflector Cone
5	257106	Washer - 18 Ga.	15	421200	Fiber Washer
6	110081	Ball Bearing – Double Seal	16	257061	Flat Washer
7	604413	Spindle Housing (includes items 8 & 9)	17	257057	Washer – Hardened
			18	243583	Bolt - Grade 8
8	280705	Plug – Relief	19	253035	Whiz Nut
9	247141	Stud Bolt	20	281580	Square Key

10115