

OPERATOR'S MANUAL & PARTS LIST



RIDING MOWER MODEL
721DT

THE GRASSHOPPER COMPANY
Moundridge, Kansas 67107 U.S.A.
(620) 345-8621
GRASSHOPPERMOWER.COM

Price \$7.00

Form 172218-171216
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.

Safety & Operation video
To view the video, scan the QR code
or enter the web address

English	Spanish
	
English www.grasshoppermower.com/safeops	
Spanish www.grasshoppermower.com/safeops_span	

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 under seat on tractor frame by throttle.)

Provide this information to your dealer to obtain correct repair parts. To locate your nearest dealer:

FindAGrasshopperDealer.com

IMPORTANT: This engine is not equipped with a spark arrester muffler. It is a violation of California Public Resource Code Section 4442 to use or operate the engine on any forest-covered, brush-covered or grass-covered land. Other states or federal areas may have similar laws.

The enclosed *Engine Owner's Manual* is supplied for information regarding the US Environmental Protection Agency (EPA) and the California Emission Control Regulation of emission systems, maintenance and warranty. Replacements may be ordered through the engine manufacturer.

CALIFORNIA
Proposition 65 Warning
Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

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SPECIFICATIONS

721DT

Engine	Kubota three cylinder 4 cycle liquid cooled
Model No.	D722
Horsepower (G.I.H.P.) *	20.0 (14.9 kw)
Displacement	44 cu. in. (719 cc)
No-load rpm	3670
Charging System	12VDC 12.5 amp. negative ground
Starter	Electric
Electrical System	Safety interlocked

* Engine Manufacturer's Gross Hp Rating

PTO	3100 r.p.m. (max.) Electric clutch
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Transmission	Tandem hydrostatic transmission direct drive
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Steering	Dual levers independently control speed and direction of travel. Zero turning radius (center of machine is pivot point).
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Speed	
Forward (variable)	0 to 9 m.p.h. (14.5 km/h)
Reverse (variable)	0 to 6 m.p.h. (9.6 km/h)

Fuel Tank Capacity	8 U.S. gal. (30.2 l)
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Tire Sizes

Front Drive Wheels	
Standard	22 x 11 x 10 - 4 ply rated
Optional	22 x 11 x 10 - 4 ply rated
Tail Wheel	13 x 6.50 x 6 rib - 4 ply rated

Dimensions of Tractor

Seat Back Height	47" (1.20 m)
Seat Cushion Height	30.5" (.78 m)
Tractor Width	50.0" (1.26 m)
Tractor Length	80.0" (2.03 m)
Wheel Base	51.5" (1.31 m)

Weight - Uncrated	920 lbs. (416.8 kg)
Weight - Crated	1090 lbs. (494.4 kg)

Hour Meter	Standard
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SAFETY SYMBOLS



This Safety Alert Symbol means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

Throughout this manual the term **IMPORTANT** is used to indicate that failure to observe can cause damage to equipment. The terms **CAUTION**, **WARNING** and **DANGER** are used in conjunction with the Safety Alert Symbol [a triangle with an exclamation mark] to indicate the degree of hazard for items of personal safety.

CAUTION

Is used for general reminders of good safety practices or to direct attention to unsafe practices.

WARNING

Denotes a specific potential hazard.

DANGER

Denotes the most serious specific potential hazard.

SAFETY DECALS

Replace Immediately If Damaged

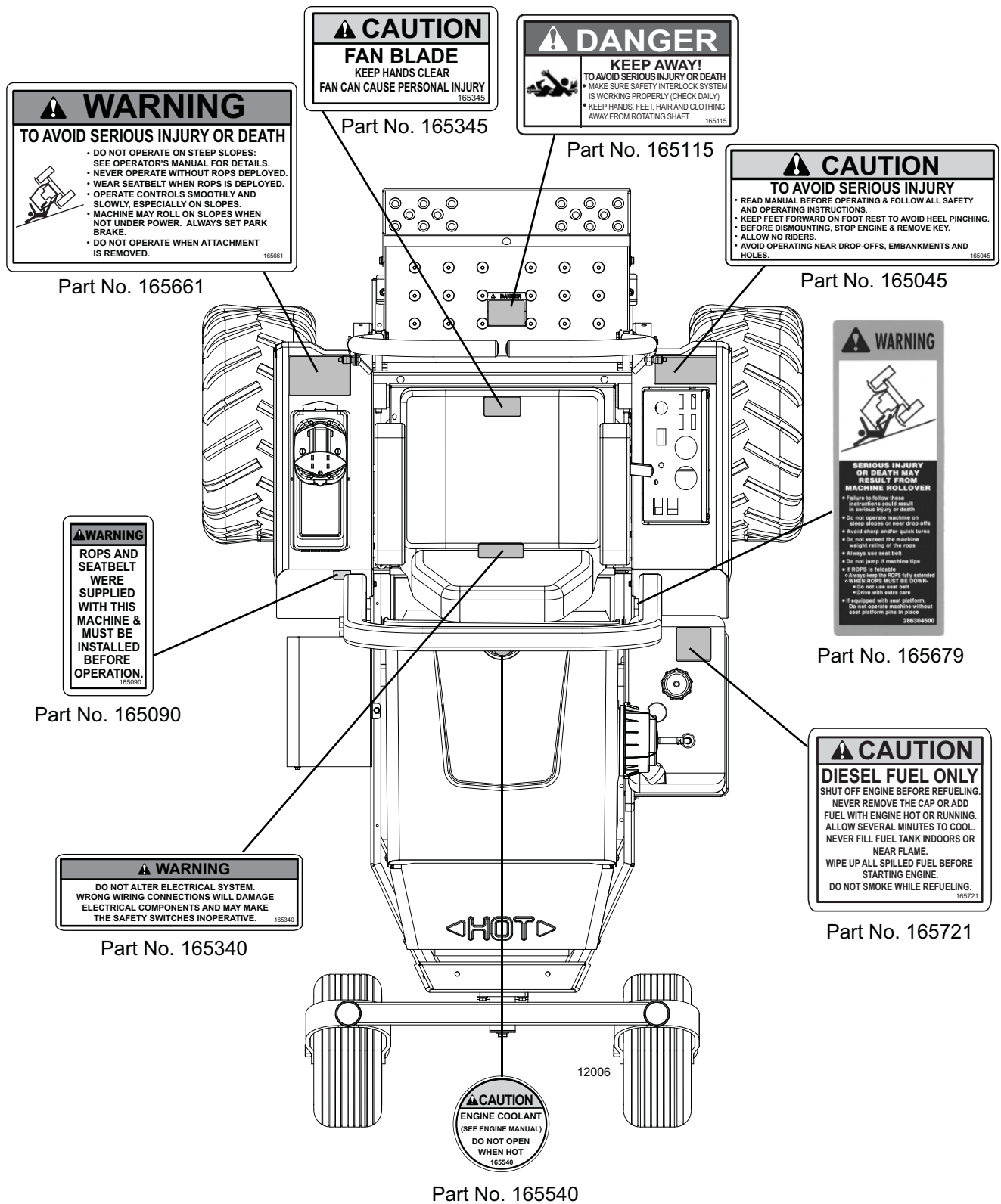


Fig. 1

WORK SAFELY - FOLLOW THESE RULES

CAUTION

The designed and tested safety of this equipment 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 equipment's controls and how to stop tractor, engine and attachments quickly in an emergency.
- To avoid accident or injury, do not allow anyone to operate this equipment without proper instruction. Any person who operates this equipment **MUST** be instructed in and capable of the safe operation of the unit, its attachments and all controls.
- Do not allow children or unqualified individuals to operate equipment.

PREPARATION

- Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough soled work shoes. Never operate tractor or implements 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.
- Ensure attachments are properly mounted, adjusted and in good operating condition.
- Make sure driveline spring-activated locking collar slides freely and is seated firmly in the tractor PTO groove.
- Ensure ROPS is in good condition and installed properly. Never modify ROPS with holes, notches or welding. If ROPS is damaged, it must be replaced.
- Check brake action before you operate. Adjust or service brakes as necessary.
- Ensure all safety switches function properly. See Operation section for details.

- Remove accumulated debris from attachment and tractor to avoid fire hazard.
- 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 all safety decals are installed and in good condition.
- Use correct counterweights when certain attachments are installed (see specific accessory installation instructions).
- 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 tractor or implements 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 tank 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 tank 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.
- Never store antifreeze or oil in the fuel container.
- 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.
- If a fuel dispenser nozzle must be used, keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete.
- Never use cellular phones or other portable electronic devices when handling fuel.

FILLING THE FUEL TANK

- Always fill the fuel tank with the machine parked on a hard LEVEL surface with the engine stopped, the park brake set, and the key removed from the ignition.
- Do not fill the fuel tank completely full. Air space is required in the full tank to allow the fuel to expand and contract with temperature changes. A valve is located in the top center of the tank to allow air to enter and exit the tank.
- Never fill the fuel tank when the engine is hot. Allow several minutes to cool.
- Filling the fuel tank, with the machine parked on a slope, can cause you to over fill the tank.

OPERATIONAL SAFETY

- Read “Operation” section of this manual before attempting to operate this unit.
- Do not operate without ROPS deployed.
- Fenders serve as shields. Do not operate without them.
- 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 tractor power takeoff and placing steering levers into the neutral swing-out position.
- Keep hands and feet away from underneath mower while engine is running. Stay clear of all moving parts on tractor and attachments.
- Wear suitable hearing protection when operating this machine.
- Never allow anyone behind tractor or in front of implements when operating.
- 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.
- If machine is equipped with a fixed ROPS, always wear seatbelt.
- If machine is equipped with a foldable ROPS, always wear seatbelt when ROPS is deployed.
- When foldable ROPS must be down (i.e. loading or unloading on an enclosed trailer), DO NOT use seatbelt and drive with extra care.
- Do not move steering levers from forward to reverse or reverse to forward position rapidly. The sudden change could cause loss of control and/or damage to equipment.
- Do not operate on steep slopes.
- Do not stop, start or change directions suddenly on slopes.
- Use extreme care and maintain minimum ground speed when traveling or operating on a hillside, over rough ground, or when

operating close to ditches and fences.

- Reduce speed on slopes and sharp turns to minimize tipping and avoid loss of control. Be careful when changing directions on slopes.
- Stay alert for holes, rocks, roots and other hidden hazards in the terrain. Keep away from drop-offs.
- Stop mower or other attachment and tractor immediately upon striking an obstruction. Turn engine off, inspect attachment and tractor. Repair any damage before resuming operation.
- Disengage power to attachment, stop engine, remove key and wait for all movement to stop before dismounting, making adjustments, cleaning, or unclogging the machine.
- Never transport attachments with PTO running.
- Watch for traffic when operating near or crossing roadways.
- This unit 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 tractor unattended: disengage PTO, lower attachment, place controls in neutral, set parking brake, stop engine and remove key from ignition.
- Move very slowly when attachment is removed. Never carry passengers.
- Do not run engine in an enclosed area without adequate ventilation. 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.

- 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.
- Never work under the attachment without holding it in the upright position with chains or straps or blocking underneath the deck. Do NOT rely solely on the electric or hydraulic system.
- 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.
- If it is necessary to run an engine in an enclosed area, remove the exhaust fumes from the area with an exhaust pipe extension. If an exhaust pipe extension is not available, work near open doors and get outside air into the area.
- 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.
- Keep engine free of grass, leaves, or excess grease to reduce fire hazard and minimize engine overheating.
- Do not change engine governor settings.
- Keep tractor and attachments in good operating condition and all safety devices in place.

- Periodically tighten all bolts, nuts and screws. Check that all cotter pins are properly installed to ensure equipment is in a safe condition.
- Check brake operation frequently. Adjust and service as required.

STORING SAFELY

- Never store equipment 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.
- Always provide adequate ventilation when running engine indoors. Exhaust gases contain carbon monoxide, an odorless and deadly poison.
- Never store an attachment in the raised position without securing the attachment with chains or straps or blocking underneath the attachment. It is best to remove attachment from tractor. Remove all accumulated debris from attachments and tractor.
- Clean machine with air or cloths. DO NOT high pressure wash. Never clean hot components with cold water.
- Sand areas where paint is chipped and repaint to prevent rust. Lubricate all locations to prevent moisture damage during storage.

GENERAL INFORMATION

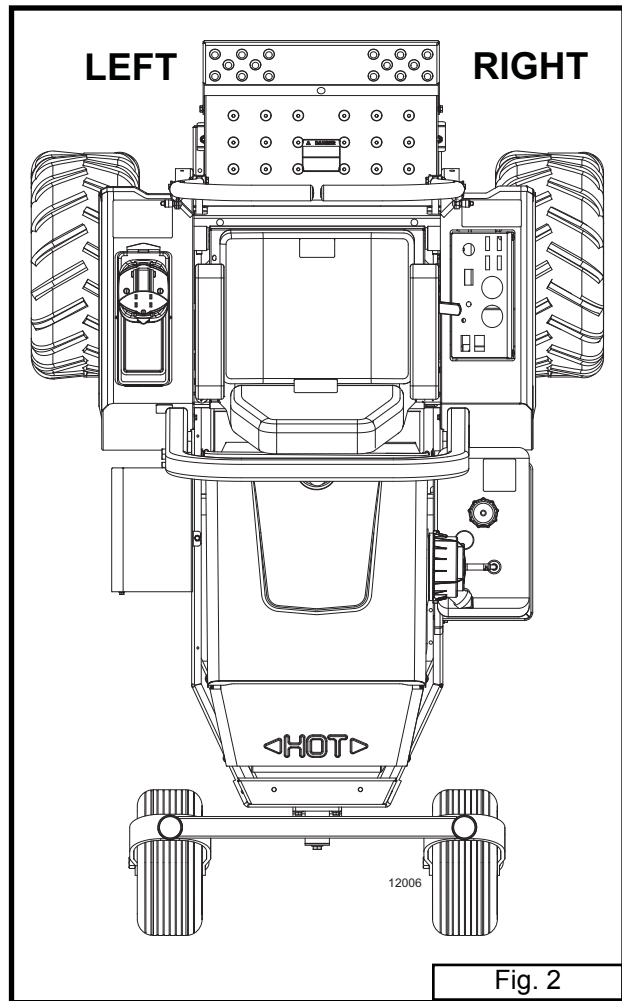
The purpose of this manual is to assist the operator in maintaining and operating **GRASSHOPPER** tractors. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance.

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 experience 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.

WARNING

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



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

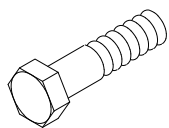
Measurements expressed in this manual are decimal values. Use the chart below if you are unsure of a measurement to obtain the fractional equivalent.

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

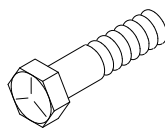
BOLT SIZE AND TIGHTENING RECOMMENDATIONS

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

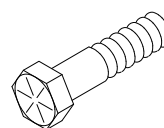
Bolt Head Markings



SAE Grade 2
(no dashes)



SAE Grade 5
(3 radial dashes)



SAE Grade 8
(6 radial dashes)

Recommended Torque in Foot Pounds				
Bolt Diameter in Inches				
Decimal	Fraction	SAE Grade 2	SAE Grade 5	SAE Grade 8
0.250	1/4	6	11	14
0.312	5/16	13	21	25
0.375	3/8	23	38	55
0.437	7/16	37	55	80
0.500	1/2	57	85	120
0.562	9/16	82	125	180
0.625	5/8	111	175	230
0.750	3/4	200	300	440
0.875	7/8	280	450	720
1.000	1	350	680	1035

OPERATION

The safe operation of this machine is the responsibility of the operator. The operator should be familiar with the tractor and all attachments that will be used before starting operation. Refer to and read safety information on pages 6 through 11.

CONTROLS AND SWITCHES

Know your controls and how to stop tractor, engine and attachments quickly in an emergency.

- **Stop tractor** by moving steering levers to neutral position (*refer to section on steering lever operation, page 19-20*).
- **Stop engine** by turning key to “OFF” position.
- **Disengage power to attachments** by moving PTO switch to “OFF” (down) position.

Operating this unit is not difficult once you master the use of the controls. We recommend you equip the tractor with the attachment you will be using and practice in a flat open area at a medium throttle setting until you are comfortable with the controls.

WARNING

Before operating this machine be sure the operator-presence safety system works. The engine should not run without the operator in the seat if the PTO switch is on or either steering lever is in the run position.

Several safety switches are incorporated in the unit’s design to prevent it from being started out of neutral or with the PTO engaged. All controls must be in the “OFF” or neutral position before the unit can be started. There is a safety switch under the operator’s seat that will cause the engine to stop should the operator leave the seat with any control engaged.

PRESTART CHECK LIST

- Place tractor on level surface.
- Check crankcase oil level (refer to “Engine Manual” for proper level and type of oil used).

CAUTION

Never attempt to check oil while engine is running.

- Check radiator coolant.

CAUTION

Do not remove radiator cap while engine is hot!

- Remove and clean air intake screen on radiator.

IMPORTANT

When mowing in dusty conditions, dry grass or long grass, it may be necessary to remove and clean air intake on the radiator frequently to prevent engine overheating.

- Check for grass wrapped around PTO shaft. When mowing long grass, turn off key and check for grass wrapped around PTO shaft every 30 minutes of operation.

WARNING

Remove fuel solenoid wire to prevent accidental engine starting before attempting to remove grass from around PTO shaft.

- Check air cleaner (refer to “Engine Manual”). When mowing in dusty conditions, dry grass or long grass, it may be necessary to remove and clean air intake on the air cleaner.
- Check to be sure engine is free of dirt and debris.
- Check fuel level. Refer to “Engine Manual” for correct fuel for your requirements.



Do not fill fuel tank while engine is running. Allow engine to cool several minutes before refueling. If fuel is spilled do not start engine; avoid creating any source of ignition until the fuel has evaporated.

- Check tire pressure (see page 22). Improper pressure will adversely affect traction, steering and level cutting height.
- Check that cooling fins on the transmission are clean.

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 TRACTOR - WITH MOWER DECK

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 frame to the footrest with your right foot. 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 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.

MOUNTING AND DISMOUNTING THE TRACTOR - WITH ALL OTHER ATTACHMENTS

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 footrest with your right foot. 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 to the ground with your right 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, i.e., 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.
- 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 "ON" (black dot on switch plate).
- Check to see that the oil lamp and battery lamp are on.
- Turn the key switch counterclockwise to preheat the glow plugs in the engine. This engine is equipped with quick heat glow plugs and the standard preheating time is from 5-10 seconds. Preheating is not required once the engine is warmed up.
- Return the key to "START". When engine starts release key immediately.
- Check to see that the oil lamp and battery lamp are off. If either lamp remains lit a problem exists in that system.
- Warm the engine up at medium speed for several minutes.

IMPORTANT

If the engine does not start within 10 seconds after the starter is engaged, stop cranking the engine and wait for 30 seconds. Repeat

starting sequence (including the preheating sequence). Also, if the engine will not start after refueling or after setting for a prolonged period, refer to bleeding fuel lines in the “Engine Troubleshooting” section of this manual. Never allow the starter motor to run continuously for more than 30 seconds. Be sure to warm engine up regardless of season. Loading an insufficiently warmed up engine will shorten its service life.

COLD WEATHER STARTING TIPS

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

Set throttle 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.

HIGH TEMPERATURE SHUTDOWN

This machine is equipped with a high temperature shutdown system that monitors engine coolant temperature. If coolant is too low, the high temperature shutdown system will not function properly. Check level daily (see Lubrication and Maintenance). When the engine coolant temperature reaches the red level, the electrical system disengages the PTO drive to the attachment. This reduces the load on the engine which reduces heat. If the engine temperature does not lower after the PTO is shut down, turn off the engine immediately. To re-engage the PTO, the shutdown system must be reset. The following procedure should be followed:

1. Set throttle to half, disengage PTO switch and set the parking brake.
2. Dismount the machine and remove the grille.
3. Clean the grille and radiator of all loose

debris.

4. Replace grille and remount to the operator seat.
5. Make sure the engine temperature gauge reads in the white or green. This may take a few minutes.
6. Set throttle to slow and turn off the engine at the key switch to reset system.
7. Restart the engine and check engine temperature.

To avoid engine overheating, maintain engine cooling system daily (see Lubrication and Maintenance section). If you experience repeated occurrences of high engine temperature shutdown, the radiator should be cleaned. Clean radiator with water from a normal pressure garden hose. Make sure direction of spray is straight into the radiator fins. **DO NOT USE HIGH PRESSURE SPRAY.** High pressure, directed at an angle to the fins, will bend fins over so air will not flow through the radiator. A radiator cleanout tool is available through your dealer (part no. 609015).

UNEVEN TERRAIN

WARNING

Be careful when operating machine on uneven ground.

WARNING

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 steep slopes. This machine was not specifically designed to operate on steep slopes.
- The operator is responsible for safe operation on slopes. Only the operator can determine the stability of the machine on a given slope based on existing conditions like: machine speed and direction, slope variation, slipperiness, drop-offs, holes,

- obstacles, etc.
- To determine stability on a slope, start at the bottom and try to drive the machine up the slope slowly. If you cannot drive up the slope or if you feel uneasy on it, do not operate on it.
- Always start mowing at the bottom of slopes. Traveling up slopes, this machine has more traction traveling in reverse than forward. Be careful on slopes to avoid driving into a position where there is not enough traction to enable driving out or stopping.
- Tires may lose traction on slopes even though the brakes are functioning properly.
- Avoid sudden stops and deceleration when traveling forward downhill as mower may tip forwards.
- 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.
- Pass diagonally through sharp dips and avoid sharp drops.
- 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 ROPS deployed.
- If machine is equipped with a fixed ROPS, always wear seatbelt.
- If machine is equipped with a foldable ROPS, always wear seatbelt when ROPS is deployed.
- 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, then move the throttle to slow idle.
- Move ignition switch to "OFF" position (up-right) and remove key.

CAUTION

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

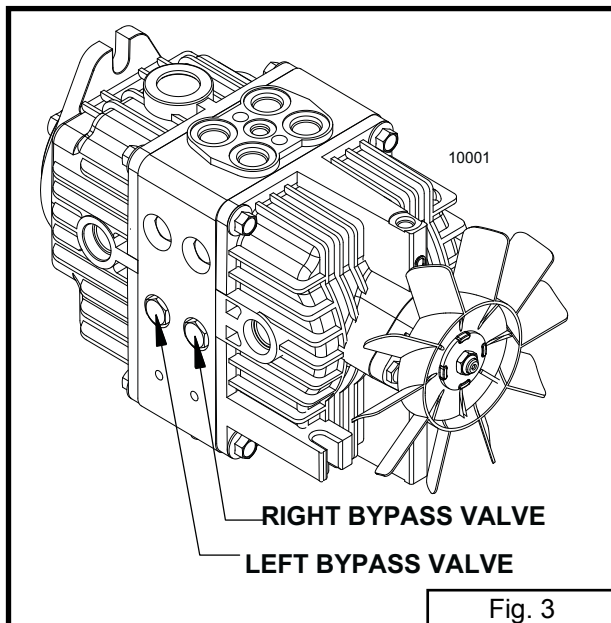
Emergency shutdown of engine:

If the engine does not stop running with the throttle at slow idle and the starter switch in the "OFF" position, the following procedure will stop the engine.

- Unplug the wires from the fuel shut-off solenoid (item 34, page 35).
- Push the engine stop lever forward toward the radiator (refer to the Engine Manual's illustration showing the location of the engine stop lever).
- It is important that the operator be familiar with where the parts are located on the engine.

MOVING UNIT WITHOUT POWER

The tandem hydro pump is equipped with bypass valves that allow the unit to be moved without power by deactivating the pump. With the bypass valves in normal operating position, the fluid in the pump will make it difficult to move the unit (even with the steering levers in neutral position). The bypass valves are located on the right side of the pump. Activate each bypass valve by rotating one revolution counter-clockwise with a .625 inch socket. When BOTH bypass valves are activated the unit becomes “freewheeling”, allowing it to be moved. Before the hydro pump becomes operational, the bypass valves must be returned to their normal operating position. **Do not tighten above 120 in lbs (10 ft lbs) maximum.**



STEERING LEVER OPERATION

(refer to Fig. 4 on page 20)

⚠ WARNING

Do not move steering levers from forward to reverse or reverse to forward position rapidly. The sudden change could cause loss of control or damage to equipment.

The Grasshopper tractor is very unstable without an attachment. Move very slowly when attachment is removed. Never carry passengers.

Steering levers control speed and direction of movement. Pushing the levers forward will move the tractor forward. Pulling levers to the rear will move tractor in reverse. The further forward or rearward the steering levers are moved, the faster the machine will move.

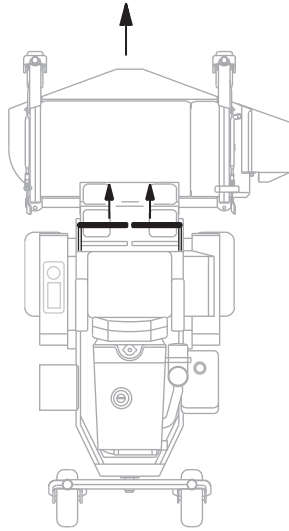
At half throttle move both steering levers from swing-out neutral inward. Move both steering levers forward. To turn right, advance left lever further forward than right lever. To turn left, advance right lever further forward than left lever. If you leave one steering lever in neutral and advance the other lever, the tractor will turn a complete circle. Move the levers to the rear and practice turning and maneuvering in reverse. Once you learn how the controls operate, practice until you become proficient and are comfortable with the unit before you begin operation with an attachment.

IMPORTANT

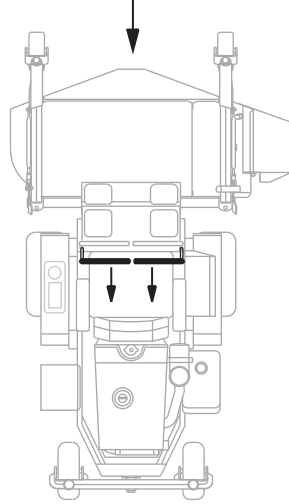
If you become confused during operation release both steering levers, they will automatically return to the centered neutral position and the tractor will stop.

STEERING LEVER OPERATION

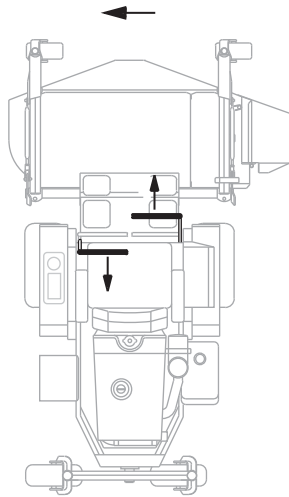
FORWARD



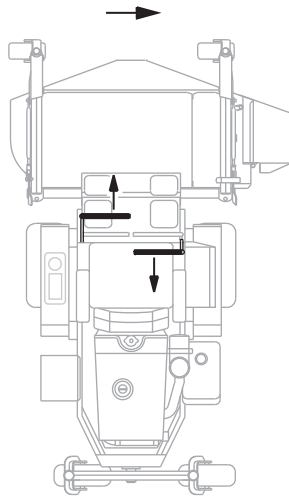
REVERSE



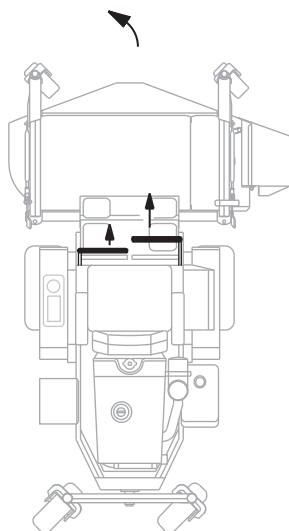
SHARP LEFT



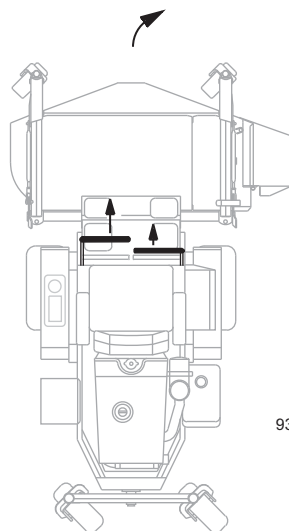
SHARP RIGHT



GENTLE LEFT



GENTLE RIGHT



93051

Fig. 4

LOADING / TRANSPORTING MACHINE

WARNING

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

Use a heavy-duty trailer to transport your machine. Trailer rating must exceed combined weight of machine and attachments. Trailer must have the necessary lights and signs required by law.

1. Park trailer on a hard level surface.
2. Push PTO switch down to the "OFF" position.
3. Drive FORWARD onto trailer with attachment raised.
 - Use extreme caution when operating machine on a ramp. Move Slowly.
 - Avoid sudden acceleration and deceleration when operating machine on a ramp.
 - Drive machine forward up ramp and reverse down ramp. **DO NOT** attempt to turn machine while on a ramp.
 - Use only a single, full width ramp; **AVOID** individual ramps for each side of the machine.
 - If it is not possible to use one full width ramp, use enough individual ramps tied together to simulate a full width continuous ramp.
 - **DO NOT** exceed a 15 degree angle between ramp and ground or between ramp and trailer or truck.
4. Position machine on trailer for optimal weight distribution (generally slightly forward of trailer axle). Follow tow vehicle and trailer manufacturer guidelines.
5. Lower attachment down to trailer platform.
6. Stop the engine, engage the park brake and remove the key.
7. 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.

LUBRICATION AND MAINTENANCE

CAUTION

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 11.

WARNING

Lower attachment to ground, shut off tractor engine, remove key and wires to fuel solenoid before performing any maintenance.

LUBRICATION

Do not let excess grease collect on or around parts, particularly when operating in sandy areas.

The chart gives the frequency of lubrication in operating hours based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication.

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

For Drive System and Optional Hydraulic Lift, 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.

Lubricate Every 8 Hours of Usage	Lubricate Every 80 Hours of Usage
Rear Wheel Bearings (two fitting)	Clutch Power Shaft (two fittings)
Universal Half Shaft (one fitting)	

CAPACITIES

Fuel Tank 8 U.S. gal. (30.2 l)

Units without Hydraulic Lift:

Drive System 2.7 U.S. qt. (2.56 l)

Drive System Fluid Change approx..... 2.2 U.S. qt (2.08 l)

Units with Hydraulic Lift:

Hydraulic System..... 0.9 U.S. qt (.85 l)

Hydraulic System Fluid Change approx..... 0.9 U.S. qt (.85 l)

TIRE AIR PRESSURE

Drive Tires

Standard 22 x 11 x 10 8 psi (55 kPa)

Optional 22 x 11 x 10 8 psi (55 kPa)

(refer to decal on wheel for correct tire air pressure)

Rear Tires 13 x 6.50 x 6 12 to 15 psi (83 to 103 kPa)

DRIVE SYSTEM

Fluid Change 1000 hours

Filter Change 1000 hours

CRANKCASE OIL AND AIR FILTER

Refer to the "Engine Manual" for the time table for changing or service.

COOLING SYSTEM

Check engine coolant daily when the engine is cool, before starting engine. Coolant in the expansion tank does NOT mean the radiator is full. Remove the radiator cap, with caution.

DO NOT REMOVE THE RADIATOR CAP ON A HOT ENGINE! Make sure you see coolant just below the neck of the radiator. Also visually check to make sure the hose, fittings and the radiator are in good condition and there are no leaks. If coolant is required, fill the radiator to just below the neck and then fill the expansion tank to proper level. Use a solution of 50% antifreeze and 50% water (freezing point about -34° F [-36° C]). Do not use 100% antifreeze or severe damage will occur.

Remove and clean radiator screen regularly. A dirty screen will cause the engine to overheat.

⚠ CAUTION

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.

In very dirty conditions, debris can build up in the radiator fins, which blocks air flow. This can cause the engine to run hot. To clean out, use a vacuum cleaner or air blower to remove foreign material from the engine and drive compartment. Following air cleanout, use the Radiator Cleaning Wand (PN 609015 available from your Grasshopper dealer) with water from a normal pressure garden hose to comb water pressure between radiator fins to dislodge residual packed-in dust and debris. Ensure spray angle is straight into the radiator fins and movement is side-to-side from top to bottom. **DO NOT USE HIGH PRESSURE SPRAY.** High pressure, directed at an angle to the fins, will bend fins, preventing air from flowing through the radiator.

BATTERY MAINTENANCE

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.

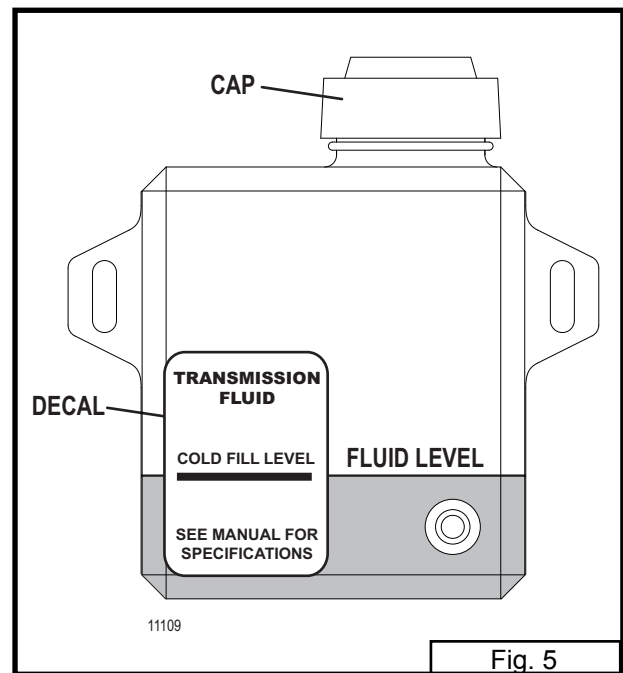
⚠ WARNING

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. The expansion tank is located on the right side under the seat. To check the fluid level, place unit on level surface and look through the side of the expansion tank. The fluid level should be equal to the full mark on the reservoir decal (Refer to Fig. 5). If fluid is required, make certain that expansion tank cap and the area around it is clean and free of any foreign matter before adding fluid. Use CoolTemp Hydro-Max™ Extended-Life Hydrostatic Fluid (Grasshopper part number 345044 for 1 quart [.94 l] container).



CHANGING DRIVE SYSTEM FLUID AND FILTER

(Refer to illustration page 37)

Change fluid and filter every 1000 hours. To drain fluid, remove drain plug from the bottom of tandem hydro pump. Allow fluid to drain completely. Reinstall plug and tighten.

To replace filter (item 3), which is located in the bottom of tandem hydro pump, make certain that the area around filter is clean and free of any foreign matter. Remove the filter and replace with a new filter (Grasshopper part number 130505).

To refill the system with fluid, make certain that the area around the expansion tank adapter (item 70) is clean and free of any foreign matter. Disconnect the hose (item 64) from the adapter and remove adapter from tandem hydro pump. Refill the pump with CoolTemp Hydro-Max™ Extended-Life Hydrostatic Fluid (Grasshopper part number 345044 for 1 quart [.94 l] container). Reinstall adapter in pump and reconnect hose to adapter. Refill expansion tank with CoolTemp Hydro-Max™ Extended-Life Hydrostatic Fluid to the proper level (Refer to Fig. 5). Run engine and check that fluid level in expansion tank is at the proper level.

Note: No air bleeding is necessary since the system is self-bleeding.

ADJUSTMENTS AND TROUBLESHOOTING

CAUTION

Never make adjustments with the engine running.

LOSS OF POWER IN THE DRIVE SYSTEM

Check the fluid level and make sure the proper amount of fluid is in the reservoir. The cooling fins and fan blades should be clean and free of foreign matter.

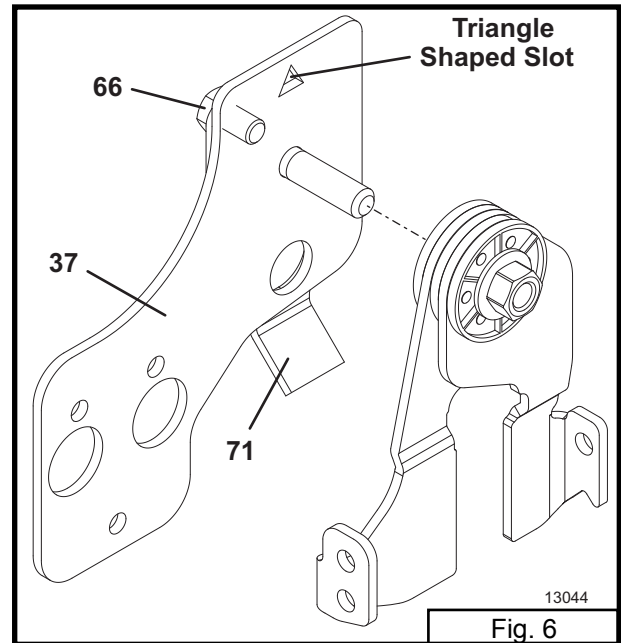
NO POSITIVE NEUTRAL POSITION

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. 6 and illustration page on 37)

1. Block up under tractor frame so both drive wheels are off the ground.
2. Make sure parking brake is released.
3. Remove linkage rod (item 28 or 29) from transmission control arm (item 16 or 17).
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. Locate the return mount (item 37) with the adjustment plate (item 71) bolted to it. The right plate adjusts the right side while the left plate adjusts the left side. Loosen the .312-24 x .5 bolt (item 66) located in the upper front corner of plate. Insert a screwdriver into the triangle shaped slot and rotate adjustment plate until neutral is achieved. Tighten bolt.
7. Repeat procedure on other side of transmission.
8. Reinstall linkage rod in control arm. If rod end (item 26) does not reinstall into control arm without moving the control arm, adjust length of linkage rod until it slides into control arm 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.

FUEL SOLENOID ADJUSTMENT

Adjust cable between fuel shut-off solenoid and engine fuel stop valve to provide full engagement of the solenoid. The solenoid should bottom out (be fully engaged) before fuel stop valve fully engages stop (approx. .0625" to .125" [1.6 to 3.2 mm] gap).

The solenoid is designed to hold the engine fuel stop valve open during operation. When the key is turned on, the solenoid energizes and opens the fuel valve. When the key is turned off, the solenoid releases and allows the fuel stop valve to close.

TESTING FUEL SOLENOID

Adjust cable as described in previous section. This model solenoid will not engage until engine is cranked. Disconnect shut-off cable from fuel shut-off lever and operate start switch. After briefly cranking the engine and with the key switch in the run position, the fuel solenoid should be engaged (pulled in). If it does not engage, check for a blown in-line fuse at the starter. If the fuse is not blown, test the solenoid as follows.

Unplug the wires leading to the fuel solenoid. Using an ohmmeter set on the X 1 OHM scale, connect meter leads to solenoid wires. Correct meter readings should be:

“Comm” wire to “Pull” wire - .25 ohms
“Comm” wire to “Hold” wire - 14 to 16 ohms

If you do not get these readings or one of the circuits reads open, the solenoid is defective and must be replaced.

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 is “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:

Determine if the fuel solenoid is stroking when the key switch is turned to the start position. If it is not, check for a blown fuse at the starter (item 17, page 44). If the fuse is not blown, check for voltage in the black wire at the fuel solenoid plug while the engine is cranking. If there is voltage to the solenoid while the engine is cranking, go to solenoid testing in the previous section.

If fuel shut-off solenoid is stroking but the engine will not start, it is possible the fuel line has become filled with air. The possible causes of a fuel line filled with air are:

- Running fuel tank empty before refueling.
- Plugged fuel filter.
- Loose or broken fuel line connection.

To bleed the air from the fuel lines follow the procedure outlined. Refer to “Engine Manual” for illustrations of the parts described.

- Unplug the fuel shut-off solenoid (item 34 page 35).
- Loosen air vent plugs on the fuel filter several turns. Crank the engine until bubbles do not come out any more. Tighten air vent plugs.
- Loosen air vent plug on top of the fuel injection pump. Crank the engine until bubbles do not come out anymore. Tighten air vent plug.

IMPORTANT

Cranking the engine for more than 15 seconds at a time can burn out the fuel solenoid and can lead to premature starter failure.

- Connect the fuel shut-off solenoid.
- If engine will not start after bleeding air from the line, review trouble shooting section of Engine Manual.

Engine dies when steering levers are engaged:

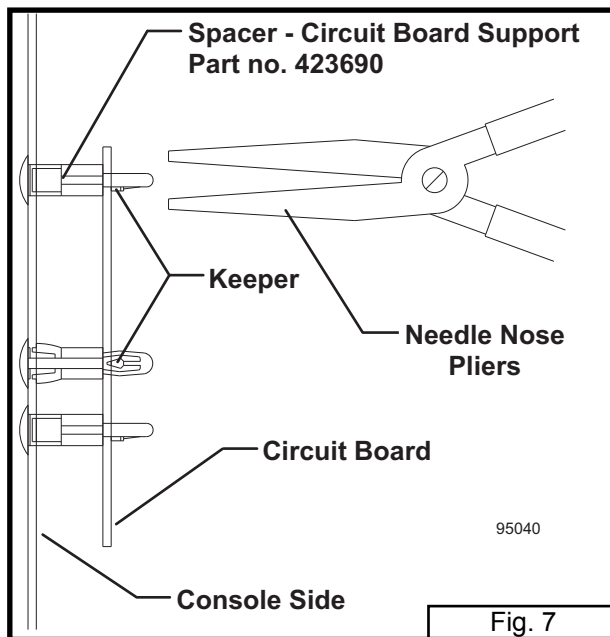
- If engine starts and runs but dies when either steering lever is engaged, check the following. Make sure the parking brake is released. The steering levers cannot be engaged with the parking brake on. With the key switch “ON” and the seat switch engaged, check for ground at the two yellow wires on the seat switch. If there is ground at one wire but not the other, either the seat switch is defective or it is not being activated properly.

- If there is ground at both yellow wires on the seat switch, check for ground at the yellow wire on the parking brake switch. If there is no ground, the wire between the seat switch and the parking brake switch is broken. If there is ground at the yellow wire, check for ground at the white wire. If there is no ground at the white wire, the parking brake switch is defective and must be replaced.

NOTE: These tests must be performed with an accurate voltmeter. Do not use a test light; the amperage in this circuit is too low to properly light a test light. This circuit is the ground side of relay A.

WIRING CIRCUIT BOARD REMOVAL

Remove the circuit board from the console by compressing the keeper in each of the three circuit board support spacers with needle nose pliers (refer to Fig. 7). Slide the board past each keeper when it is compressed.



PARKING BRAKE ADJUSTMENT

(Refer to Fig. 8 and illustration page 39.)

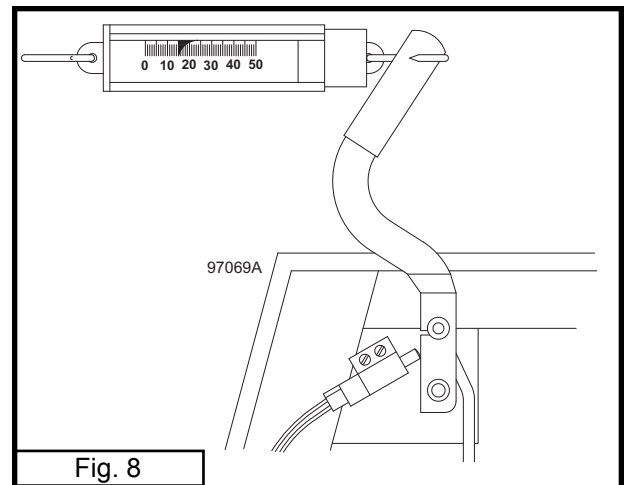
Adjust the right and left brake individually. Disconnect the right brake linkage rod (item 25). Adjust the linkage pin (item 27) attached to the left brake until it takes 14 lbs. of pull at the top of the hand lever to apply the parking brake. Adjustment of brake linkage arm (item 22) may also be required. Connect the right brake linkage.

Disconnect the left brake linkage rod and adjust

the linkage pin attached to the right brake until it takes 14 lbs. of pull at the top of the hand lever to apply the parking brake. Connect the left brake linkage.

With both brakes connected it should take 28 lbs. of pull at the top of the hand lever to apply the parking brake. Adjust the brake linkage arm (item 22) if necessary.

Be sure all cotter pins and jam nuts are secured.



CLUTCH REMOVAL/ REPLACEMENT

(Refer to page 42)

- Remove anti-rotation bracket (item 19).
- Using a 15/16 inch wrench, rotate the idler arm (item 23) with idler pulley (item 30) away from belts and remove drive belts (item 37).
- Unplug wires from clutch and remove center bolt (item 18). Slide clutch off engine crankshaft.
- Reverse order to install new clutch.
- Torque clutch bolt to 50 ft lbs. Run clutch 15 minutes, then torque to 50 ft lbs again.

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 fast idle. 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.

STEERING LEVER ADJUSTMENT

To adjust steering levers, loosen 3 prong thumb nuts that secure the upper levers to the lower. This allows the upper levers to be moved backward (refer to Fig. 9). Set levers to a comfortable position for the operator. Hold levers in position and tighten thumb nuts. The levers must line up when in neutral position and maintain a minimum of one inch of clearance between end of levers.

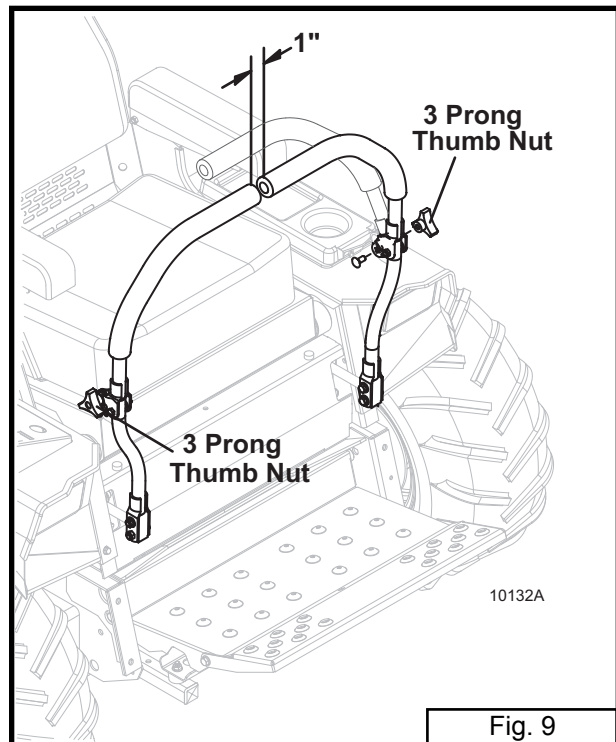
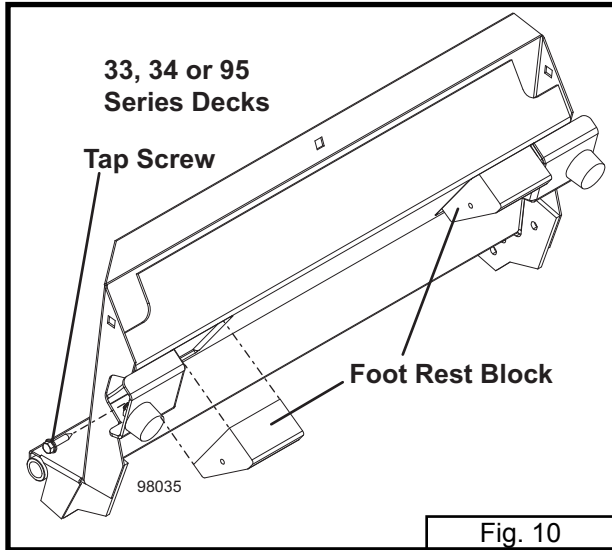


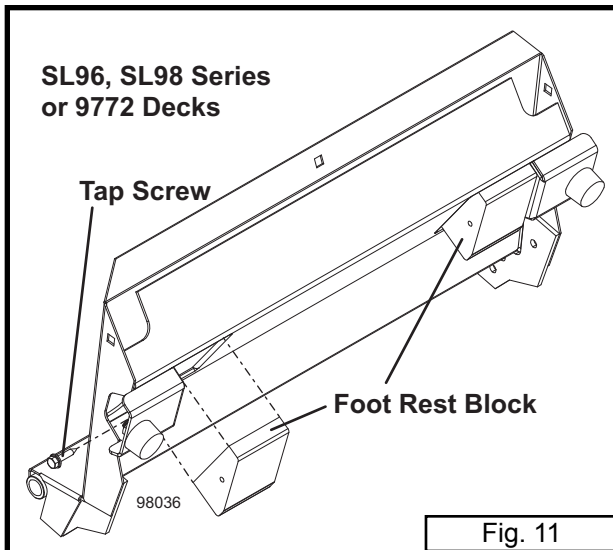
Fig. 9

FOOT REST BLOCK INSTALLATION

If installing a 33, 34 or 95 series deck on a 700 series tractor, install the foot rest blocks with the wide end of block toward the front (refer to Fig. 10).



If installing an SL96, SL98 series or 9772 deck on a 700 series tractor, install the foot rest blocks with the narrow end of block toward the front (refer to Fig.11).

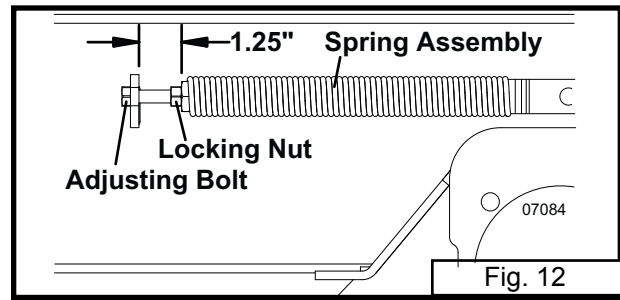


TRACTION KIT INFORMATION

⚠ CAUTION

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 11.



ADJUSTING TRACTION SPRING TENSION

⚠ WARNING

Do not over extend springs. Over extension will cause loss of weight to rear of tractor. This could cause operator to lose control of the machine, particularly while going down hill.

Set deck at a mid-height cutting position. Remove fender. Tighten adjusting bolt (Refer to Fig. 12) until a distance of 1.25" is between spring bracket and end of spring assembly. This setting applies to all deck models. Tighten locking nut against end of spring and install wheel and fender. Repeat on other side.

REMOVING MOWER DECK FROM TRACTION KIT EQUIPPED TRACTOR

Refer to mower deck manual and reverse attaching procedure.

REAR WEIGHT REQUIREMENTS

⚠ WARNING

Additional weight may be required on the rear of the Grasshopper tractor when certain attachments are used. See Weight Chart.

Weight kits are available from your Grasshopper dealer.

50 lb. (22.68 kg.) Weight Part No. 503218
Weight Mount Kit Part No. 503220

COUNTERWEIGHT REQUIREMENTS - 700 SERIES LIQUID COOLED				
COUNTERWEIGHT NOT REQUIRED ON UNITS EQUIPPED WITH COLLECTION SYSTEM				
Mower Deck Model	Single Tail Wheel w/o Grasscollector		Other Than Single Tail Wheel w/o Grasscollector	
		w/ 4 Post Rated ROPS or Enclosure		w/ 4 Post Rated ROPS or Enclosure
9544 / SL9644 / 3344	0	50 lbs. (22.68 kg.)	0	50 lbs. (22.68 kg.)
9548 / SL9648 / 3348	0	50 lbs. (22.68 kg.)	0	50 lbs. (22.68 kg.)
9552 / SL9852* / 3452	0	50 lbs. (22.68 kg.)	0	50 lbs. (22.68 kg.)
9561 / SL9861* / 3461	50 lbs. (22.68 kg.)	50 lbs. (22.68 kg.)	0	50 lbs. (22.68 kg.)
9772 / 3472	Not recommended		100 lbs. (45.36 kg.)	150 lbs. (68.04 kg.)
9772 / 3472 w/ Hyd. Deck Lift	Includes Max Trax and 50# counterweight. Requires an additional 100# for a total of 150# counterweight with 72" deck.			
AERA-vator 40"	50 lbs. (22.68 kg.)	150 lbs. (68.04 kg.)	50 lbs. (22.68 kg.)	150 lbs. (68.04 kg.)
AERA-vator 60"	100 lbs. (45.36 kg.)	150 lbs. (68.04 kg.)	100 lbs. (45.36 kg.)	150 lbs. (68.04 kg.)
Brooms: Bidirectional 48"	50 lbs. (22.68 kg.)	150 lbs. (68.04 kg.)	50 lbs. (22.68 kg.)	150 lbs. (68.04 kg.)
Bidirectional 60"	100 lbs. (45.36 kg.)	150 lbs. (68.04 kg.)	100 lbs. (45.36 kg.)	150 lbs. (68.04 kg.)
Fixed Angle 48"	0	100 lbs. (45.36 kg.)	0	100 lbs. (45.36 kg.)
Fixed Angle 60"	50 lbs. (22.68 kg.)	150 lbs. (68.04 kg.)	50 lbs. (22.68 kg.)	150 lbs. (68.04 kg.)
Hyd. Dozer 48"	0	100 lbs. (45.36 kg.)	0	100 lbs. (45.36 kg.)
Hyd. Dozer 60"	50 lbs. (22.68 kg.)	150 lbs. (68.04 kg.)	50 lbs. (22.68 kg.)	150 lbs. (68.04 kg.)
Snowthrowers 48"	50 lbs. (22.68 kg.)	150 lbs. (68.04 kg.)	50 lbs. (22.68 kg.)	150 lbs. (68.04 kg.)
Snowthrowers 60"	100 lbs. (45.36 kg.)	150 lbs. (68.04 kg.)	100 lbs. (45.36 kg.)	150 lbs. (68.04 kg.)
* <u>Deck Tilt Assist Kit</u> : Requires an additional 50 lbs. of counterweight, unless unit is already equipped with 150 lbs. of counterweight.				

This chart applies to both the standard single tail wheel and the optional dual tail wheel.

TRACTOR ASSEMBLY

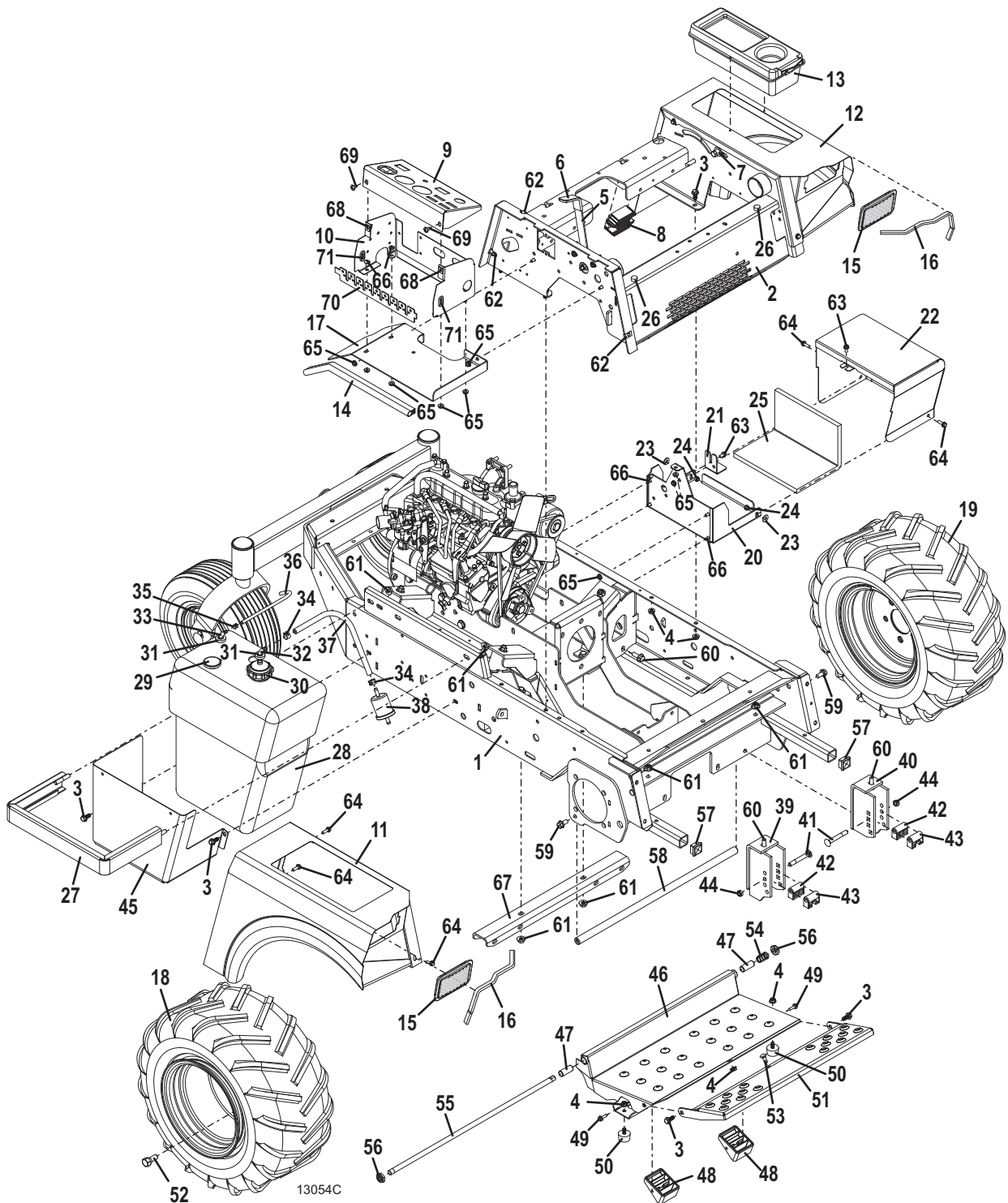
Item No.	Order No.	Description	Item No.	Order No.	Description
1	644877	Tractor Frame - Lower	31	101875	Bushing – Fuel Tube
2	645368	Tractor Frame - Upper	32	363930	Fuel Tube .312 x 17
3	253192	Whiz Bolt .312-18 x .75	33	363924	Fuel Tube .187 x 17
4	253035	Whiz Nut .312-18	34	280261	Hose Clamp .312
5	605820	Throttle Assembly (includes Cable Assembly)	35	280257	Hose Clamp .187
	323675	Cable Assembly	36	821741	Hose – Fuel Return
	722009	Throttle Lever Stop	37	821716	Hose – Fuel Line .312
	722736	Throttle Stop – Heavy Duty	38	101005	Fuel Prefilter
6	422150	Handle Grip	39	643092	Deck Mount Rt.
7	902280	Spacer	40	643093	Deck Mount Lt.
	243335	Bolt .375-16 x 1.25	41	247280	Bolt .375-16x2.75 Carriage-Special
	257040	Washer .375	42	282575	Deck Mount Bushing
8	185530	Voltage Regulator 12V	43	282576	Deck Mount Bushing–Floating (Opt)
9	693120	Console w/Decal	44	253460	Nut .375-16 Nylon Insert
10	722875	Frame - Console Mount	45	723339	Tank Shield - 8 gal.
11	693230	Fender Rt.	46	604346	Foot Platform Assembly (includes items 47-49)
12	693231	Fender Lt.	47	422615	Nylon Bearing
13	422040	Tool Box	48	424100	Isolator Block - Footrest
14	822501	Seal - Console Mount	49	243026	Tap Screw .25 x 1
15	422079	Hole Plug	50	424052	Rubber Bumper
16	822632	Trim – Fender Edge	51	643304	Extension–Foot Platform
17	645051	Console Mount	52	248565	Lug Bolt .5-20 x .875
18	483942	Wheel & Tire 22 x 11 x 10 Bar Tread Rt.	53	247130	Carriage Bolt .312-18 x .75
19	483943	Wheel & Tire 22 x 11 x 10 Bar Tread Lt.	54	283312	Compression Spring
	482483	Tire 22 x 11 x 10 Bar Tread	55	780673	Pivot Rod – Foot Platform
	483420	Wheel 10.00	56	253470	Nut .5-13 Nylon Insert
	483946	Wheel & Tire 22 x 11 x 10 Turf Tread (Optional)	57	422065	Square Plug 1"
	482477	Tire 22 x 11 x 10 Turf Tread (Opt)	58	780900	Tension Rod
20	644163	Battery Box	59	253200	Whiz Bolt .375-16 x .75
21	754135	Battery Hold Down Bracket	60	253203	Whiz Bolt .375-16 x 1
22	644478	Battery Box Lid	61	253043	Whiz Nut .375-16
23	257020	Washer .25	62	254431	Speed Nut .25-20
24	253440	Nut .25-20 Nylon Insert	63	253173	Whiz Bolt .25-20 x .5 Hex
25	427278	Pad – Battery Tray	64	253175	Whiz Bolt .25-20 x .75 Hex
26	424015	Rubber Bumper	65	253025	Whiz Nut .25-20
27	644826	Mount Bracket – Fuel Tank	66	253176	Whiz Bolt .25-20 x .5 Truss
28	604846	Fuel Tank Assembly – Diesel (includes item 29-33)	67	725511	Cross Member – Center
29	141144	Gauge – Fuel	68	254432	Nut .25 Plastic Retainer
	424275	Grommet	69	253180	Bolt .25-20 x .5 Phil Truss
30	100211	Fuel Cap - Diesel	70	773102	Plate - Relay Mount
			71	424216	Grommet

Item not pictured:

605420 Decal Set - 721DT Tractor

11-13054C

TRACTOR ASSEMBLY

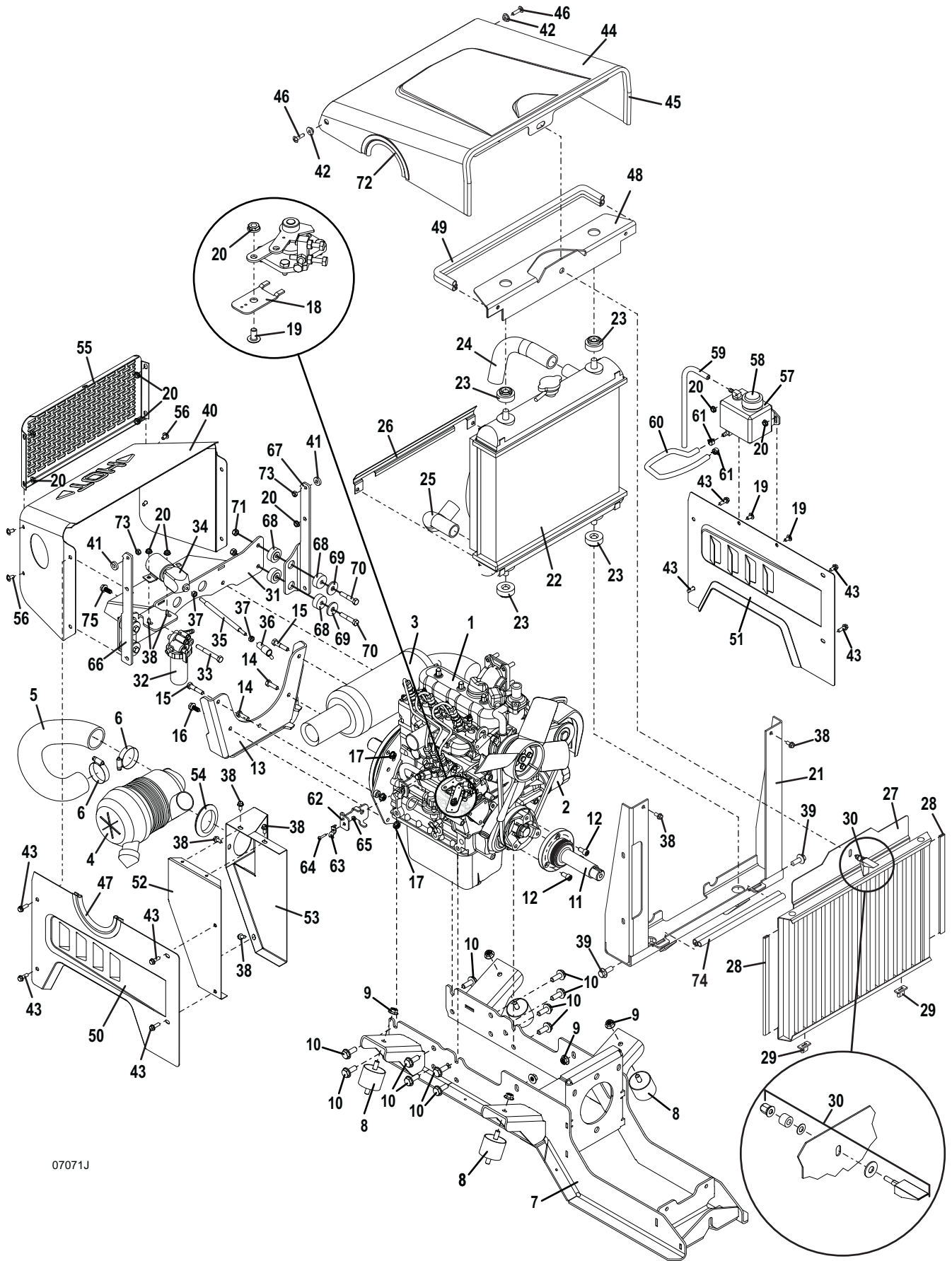


ENGINE ASSEMBLY

Item No.	Order No.	Description	Item No.	Order No.	Description
1	100176	Engine – Kubota Diesel	37	254434	Nut .25-28
2	100800*	Oil Filter (Kubota 70000-15241)	38	253173	Whiz Bolt .25-20 x .5
3	603590	Muffler	39	253203	Whiz Bolt .375-16 x 1
	101040	Muffler Gasket	40	722932	Box Panel – Hood
4	100208	Air Cleaner	41	901324	Spacer – Hood Hinge
	100942	Air Filter – Primary	42	422508	Step Bushing .255 x .5 x .25
	100943	Air Filter – Inner	43	253175	Whiz Bolt .25-20 x .75
5	424527	Hose – Air Intake	44	645315	Hood – Engine
6	280303	Hose Clamp – Screw Type 2.25	45	822639	Hood Trim – Front
7	644878	Mount – Drive Train	46	253181	Bolt .25-20 x 1 Phil Truss
8	424073	Vibration Isolator	47	822510	Trim Seal – Air Cleaner
9	253043	Whiz Nut .375-16	48	729327	Clamp Channel – Radiator
10	271121	Flange Bolt M10 x 1.25 x 20	49	822518	Bulb Seal – Hood
11	824415	Shaft – Kubota Front	50	722928	Hood Side – Rt.
12	270075	Socket Head Screw M8 x 1.25x1.25x16	51	762520	Hood Side – Lt.
			52	644067	Box Mount – Intake
13	645566	Mount – PTO Rear	53	644071	Cover – Intake Box
14	271023	Bolt M8 x 1.25 x 25	54	424297	Grommet
15	271055	Bolt M8 x 1.25 x 40	55	721294	Grille Panel – Bolt-In
16	253192	Whiz Bolt .312-18 x .75	56	253180	Bolt .25-20 x .5 Phil Truss
17	253035	Whiz Nut .312-18	57	604340	Expansion Tank Assembly (includes item 58 & O-Ring)
18	723063	Extension – Throttle Linkage			
19	253176	Whiz Bolt .25-20 x .5	58	421990	Cap w/Gasket
20	253025	Whiz Nut .25-20		425550	O-Ring
21	644655	Radiator Mount	59	821748	Hose – Tank Overflow
22	101612	Radiator	60	821749	Hose – Radiator Overflow
23	101080	Radiator Mount Bushing	61	280260	Hose Clamp – Spring
24	101058	Radiator Hose – Upper	62	724273	Mount – Throttle Cable
25	101059	Radiator Hose – Lower	63	180635	Clip – Conduit
26	721006	Fan Shield	64	250258	Machine Screw 10-24 x .75
27	604382	Grille w/Guard Assembly (includes items 28 & 29)	65	253020	Whiz Nut 10-24
			66	725576	Upright – Hood Support Rt.
28	822636	Trim – Radiator Grille	67	725577	Upright – Hood Support Lt.
29	422090	Isolator	68	424005	Step Bushing – Rubber
30	604805	Swell Latch Assembly	69	774020	Washer .406 x 1.25
31	645851	Support – Rear Hood	70	243220	Bolt .312-18 x 1.75
32	101000	Fuel Filter	71	253450	Nut .312-18 – Nylon Insert
33	253197	Whiz Bolt .312-18 x 2.5	72	822630	Trim - Air Cleaner - Upper
34	603350	Fuel Solenoid Assembly	73	253440	Nut .25-20 Nylon Insert
35	603209	Cable Assembly	74	822507	Radiator Seal - Lower
36	265610	Ball Joint	75	253194	Whiz Bolt .312-18 x 1.25

* Kubota part number 70000-15241 replaces original equipment Kubota part number 15841-32430.

ENGINE ASSEMBLY

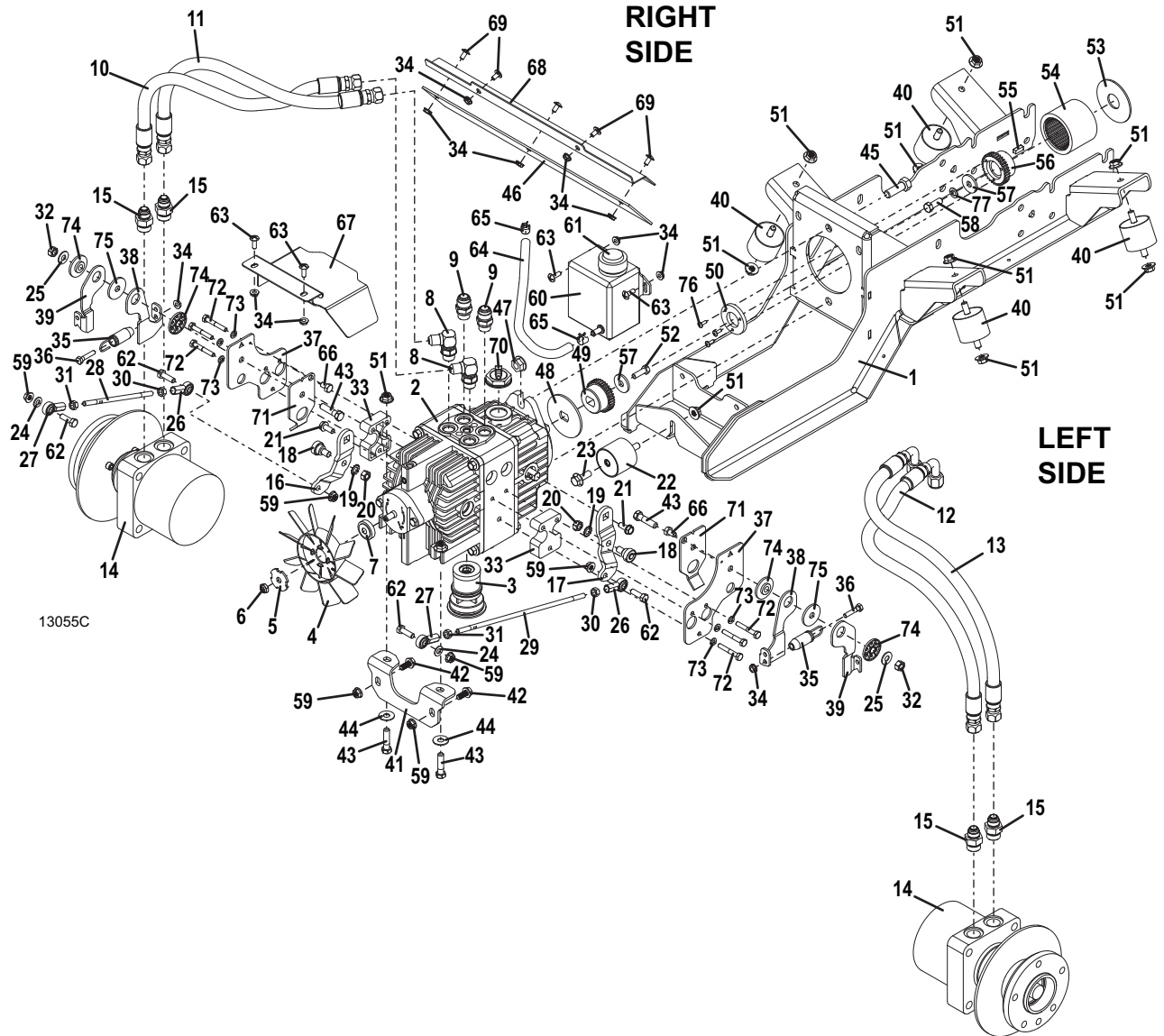


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DRIVE ASSEMBLY

Item No.	Order No.	Description	Item No.	Order No.	Description
1	644878	Mount – Drivetrain	40	424073	Vibration Isolator .375-16
2	391468	Hydro Pump - Tandem	41	725563	Front Mount – Tandem Pump
3	130505	Filter	42	253192	Whiz Bolt .312-18 x .75
4	130431	Fan	43	243340	Bolt .375-16 x 1.5
5	130432	Retainer – Fan	44	257040	Washer .375
6	253461	Nut – Nylon Insert	45	243565	Bolt .5-13 x 1.25
7	130430	Fan Hub	46	424162	Flap - Grille
8	360061	Adapter Fitting 8MB-8MJ 90°	47	253066	Whiz Nut .5-13
9	360064	Adapter Fitting 8MB-10MJ	48	774175	Washer - DD
10	424383	Hose Assembly .5 x 19.5	49	388577	Coupler Hub – DD Bore
11	424384	Hose Assembly .5 x 21	50	424151	Stabilizer – Coupling w/Holes
12	424385	Hose Assembly .5 x 23	51	253043	Whiz Nut .375-16
13	424386	Hose Assembly .5 x 25	52	243206	Bolt .312-24 x 1
14	603611	Wheel Motor w/Hub	53	774176	Washer – 1 x 3
15	360063	Adapter Fitting 8MB-10MJ	54	388560	Coupler Sleeve
16	726162	Neutral Return Arm Rt.	55	281580	Square Key .25 x .690
17	726163	Neutral Return Arm Lt.	56	831034	Flex Coupler w/Holes
18	603735	Roller Assembly – Opposed (includes items 19 & 20)	57	774020	Washer - .406 x 1.25
19	257410	External Star Washer	58	243331	Bolt .375-24 x 1
20	254450	Nut .375-16	59	253035	Whiz Nut .312-18
21	271021	Hex Flange Bolt 8M x 1.25 x 16	60	421981	Expansion Tank
22	424071	Vibration Isolator .375-16	61	421991	Cap
23	253200	Whiz Bolt .375-16 x .75	62	243205	Bolt .312-18 x 1
24	257032	Washer .312 SAE	63	253179	Whiz Bolt .25-20 x .75 Phil Truss
25	257030	Washer .312	64	821709	Hydraulic Hose
26	265650	Rod End .312-24 RH Female	65	280261	Clamp – Spring .312
27	265651	Rod End .312-24 LH Female	66	243186	Bolt .312-24 x .5
28	780169	Rod Steering Lt/Rt 6.563	67	722976	Shroud – Fan
29	780172	Rod Steering Lt/Rt 11.875	68	722982	Shield – Coupler
30	254441	Nut .312-24 RH Thread	69	253176	Whiz Bolt .25-20 x .5
31	254444	Nut .312-24 LH Thread	70	130510	Expansion Tank Adapter
32	253890	Lock Nut .375-16	71	766038	Adjustment Plate
33	422049	Spacer - Return	72	243038	Bolt .25-20 x 1.75
34	253025	Whiz Nut .25-20	73	257392	Lock Washer .25
35	283823	Extension Spring	74	822304	Pivot Bearing – Neutral Return
36	243035	Bolt .25-20 x 1.5	75	774292	Washer 1.5 x .406 x 10 Ga.
37	766037	Mount – Neutral Return	76	250164	Screw 8-32 x .5 Truss
38	766043	Arm – Neutral Return	77	257412	Lock Washer .375
39	766044	Arm – Neutral Return			

DRIVE ASSEMBLY

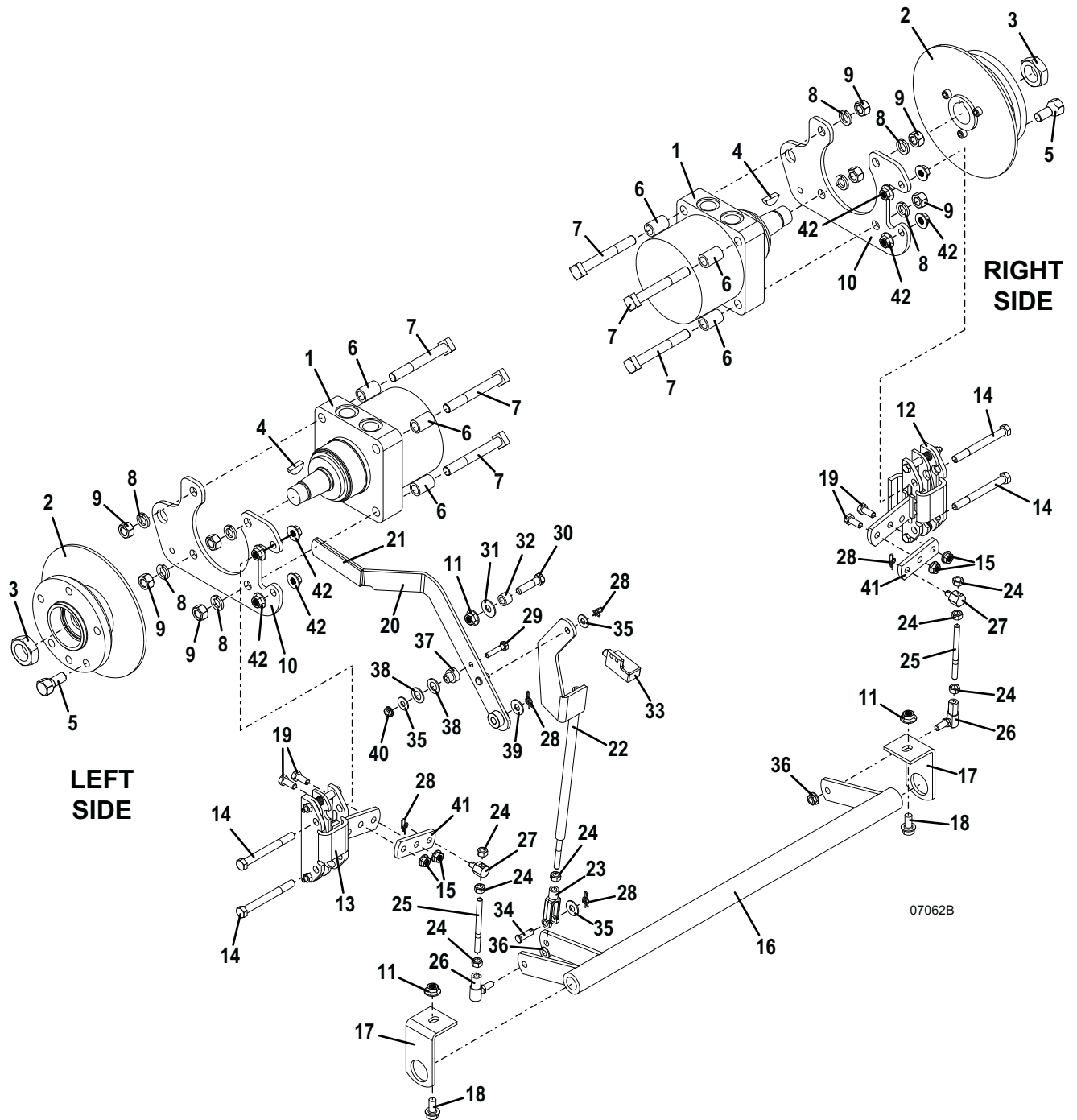


BRAKE ASSEMBLY

Item No.	Order No.	Description	Item No.	Order No.	Description
1	603611	Wheel Motor Assembly (includes items 2 - 4)	20	644035	Brake Lever
2	604437	Hub & Rotor Assembly	21	422150	Handle Grip
3	254522	Jam Nut 1-20 w/Nylok	22	645010	Arm – Brake Linkage
4	281860	Woodruff Key .312 x 1	23	265537	Clevis Yoke .312-24 x 2.5
5	248565	Lug Bolt .5-20 x .875	24	254441	Nut .312-24
6	902299	Spacer – Wheel Motor	25	780158	Linkage Rod – Brake
7	243622	Sq Head Bolt .5-13 x 4	26	265615	Ball Joint .312-24 RH Thread
8	257432	Lock Washer .5	27	880926	Linkage Pin – Brake
9	254470	Nut .5-13	28	260606	Ring Cotter .047 x .312
10	776122	Mount – Brake & Traction Kit	29	243030	Bolt .25-20 x 1.25
11	253043	Whiz Nut .375-16	30	243335	Bolt .375-16 x 1.2
12	481140	Caliper Brake Assembly – CW*	31	257040	Washer .375
	481160	Brake Pad Kit	32	902280	Spacer
13	481141	Caliper Brake Assembly – CCW*	33	183894	Brake Switch
	481160	Brake Pad Kit	34	261284	Clevis Pin .312-18 x 1
14	243382	Bolt .375-16 x 3.75 GR 8	35	257020	Washer .25
15	253035	Whiz Nut .312-18	36	253038	Whiz Nut .312-24
16	644539	Brake Pivot Tube	37	881130	Spacer – Brake Lever
17	732617	Mount – Brake Pivot	38	257063	Nylon Washer .50 ID
18	253200	Whiz Bolt .375-16 x .75	39	257030	Washer .312
19	243195	Bolt .312-18 x .75	40	253025	Whiz Nut .25-20
			41	782851	Brake Strap
			42	253044	Spirallock Flange Nut .375-16

*To determine CW or CCW, hold the brake assembly in hand with the brake pad opening facing away from you and the lever in the disengaged position. The direction of rotation of lever, when engaging brake, determines CW or CCW.

BRAKE ASSEMBLY

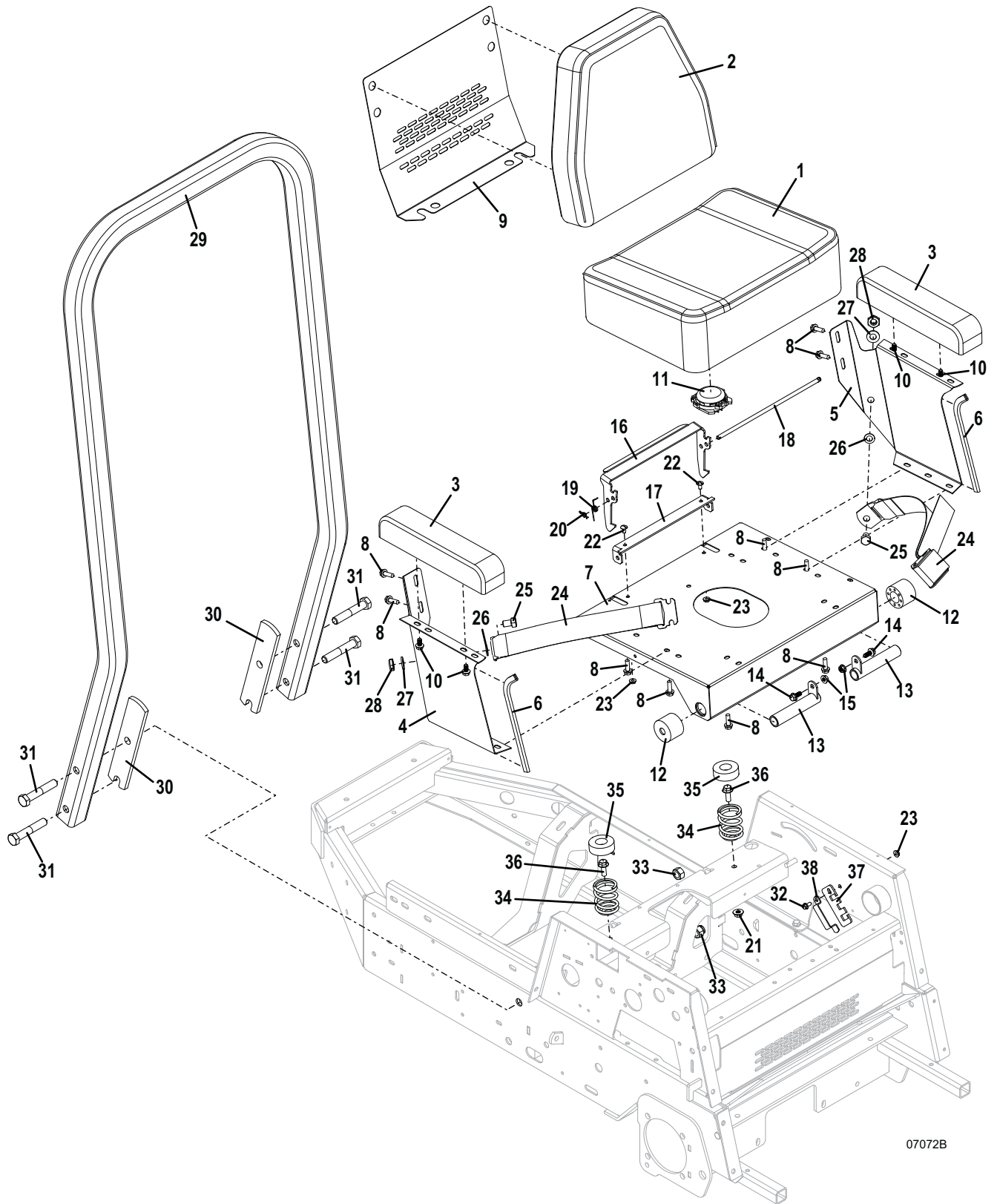


07062B

ROPS & SEAT ASSEMBLY

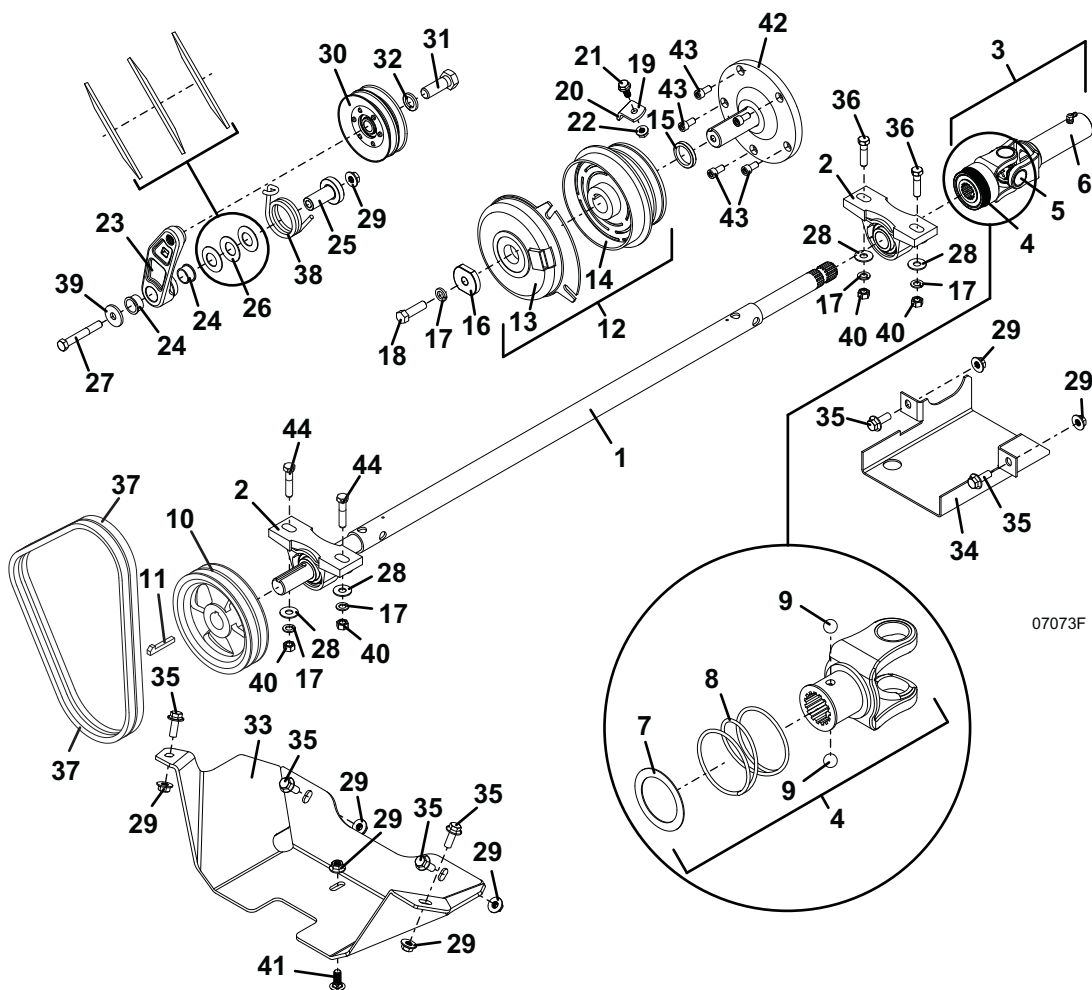
Item No.	Order No.	Description	Item No.	Order No.	Description
1	321518	Seat Cushion	21	253043	Whiz Nut .375-16
2	321519	Back Cushion	22	253176	Whiz Bolt .25-20 x .5
3	321523	Arm Rest	23	253025	Whiz Nut .25-20
4	723433	Seat Side Raised – Rt.	24	324200	Seat Belt – Non Retract
5	723434	Seat Side Raised – Lt.	25	243551	Bolt .5-13 x .75
6	822630	Seat Edge Trim	26	257063	Nylon Washer .5
7	644816	Seat Bottom	27	257062	Washer .5 SAE
8	253193	Whiz Bolt .312-18 x 1	28	253470	Nut .5-13 Nylon Insert
9	722884	Seat Reinforcement - Raised	29	324103	ROPS Tube
10	253191	Whiz Bolt .312-18 x .625	30	901645	Spacer - ROPS
11	183871	Seat Switch - Twist	31	243840	Bolt .625-11 x 3.5
12	424095	Seat Isolator	32	253173	Whiz Bolt .25-20 x .5
13	644618	Seat Hinge Pin	33	253970	Lock Nut .625-11
14	253192	Whiz Bolt .312-18 x .75	34	283516	Spring – Compression
15	253035	Whiz Nut .312-18	35	422127	Cap – Seat Spring
16	754240	Seat Handle – Dual Latch	36	253203	Whiz Bolt .375-16 x 1
17	754226	Reinforcement – Seat Handle	37	774046	Bracket – Wiring Mount
18	730230	Pivot Pin - Seat	38	722776	Clamp – Wiring Mount Bracket
19	284408	Torsion Spring			
20	260606	Ring Cotter .047 x .312			

ROPS & SEAT ASSEMBLY



07072B

PTO SHAFT & CLUTCH ASSEMBLY

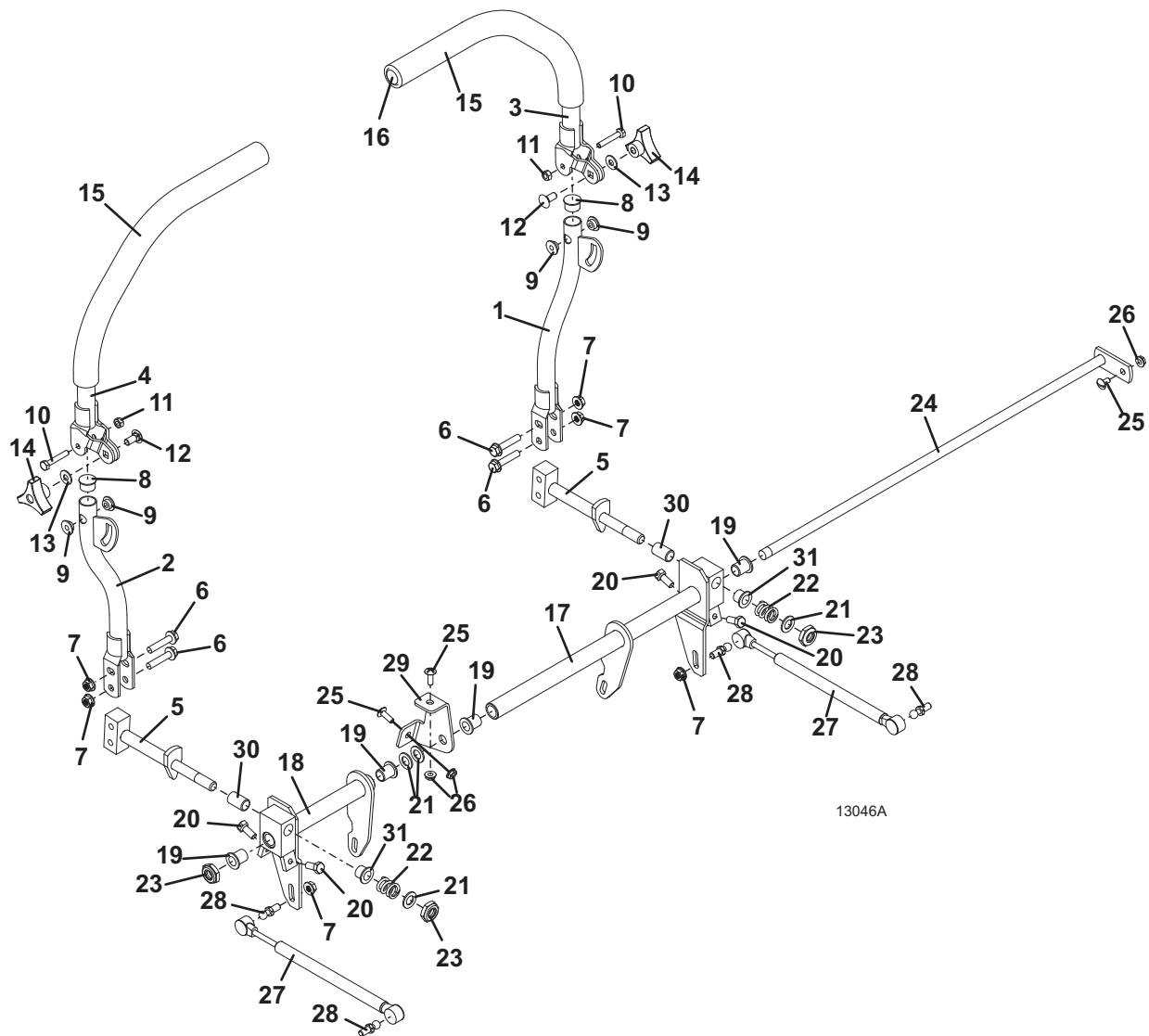


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Item No.	Order No.	Description	Item No.	Order No.	Description
1	644727	Power Shaft	22	253035	Whiz Nut .312-18
2	122044	Pillowblock Bearing	23	824467	Idler Arm (includes items 24-26)
3	398914	Universal Half Sleeve – QD (includes items 4 – 6)	24	121756	Flange Bearing - Oilite
4	401019	Splined Yoke - Quick Disconnect (includes items 7-9)	25	121651	Bearing Pedestal
5	121010	Cross & Bearing	26	257319	Spring Washer
6	401017	Yoke with Sleeve	27	243360	Bolt .375-16 x 2.75
7	263660	External Retainer	28	257040	Washer .375
8	283525	Compression Spring	29	253043	Whiz Nut .375-16
9	300014	Steel Ball	30	415610	Idler Pulley
10	415660	Sheave	31	243805	Bolt .625-11 x 1.75
11	281588	Gib Key .25 x 1.5	32	257452	Lock Washer .625
12	388771	Electric Clutch	33	644424	Sheave Guard
13	388875	Field Assembly w/Brake	34	729287	Shield – PTO Shaft
14	388866	Armature & Rotor Assembly	35	253203	Whiz Bolt .375-16 x 1
15	902583	Spacer – 1.125 x .225	36	243340	Bolt .375-16 x 1.5
16	257039	Washer 1.75 x 1.5 Double D	37	381917	Belt
17	257412	Lock Washer .375	38	284428	Torsion Spring
18	243337	Bolt .375-24 x 1.25 Grade 8	39	774020	Washer .406
19	732407	Anti-Rotation Bracket	40	254450	Nut .375-16
20	422087	Clutch Bracket Cover	41	247253	Carriage Bolt .375 x 1
21	253192	Whiz Bolt .312-18 x .75	42	824415	Shaft – Clutch Stub 1.125
			43	270075	Socket Head Screw M8-1.25 x 16
			44	243343	Bolt .375-16 x 1.75

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STEERING ASSEMBLY



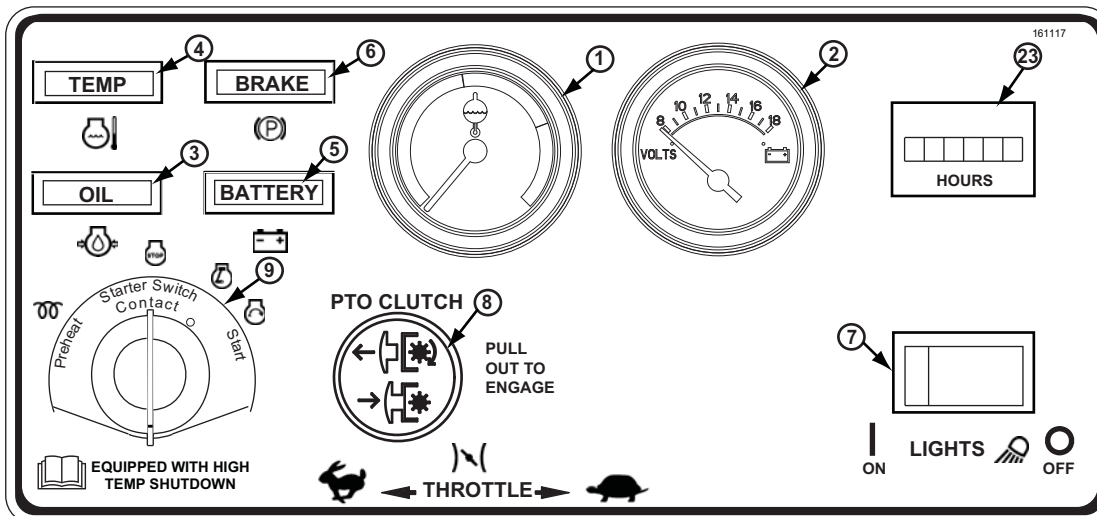
Item No.	Order No.	Description	Item No.	Order No.	Description
1	645748	Steering Lever – Lower Rt.	17	604608	Pivot w/Stop & Bearings Rt.
2	645749	Steering Lever – Lower Lt.	18	604609	Pivot w/Stop & Bearings Lt.
3	645744	Steering Lever – Upper Rt.	19	422559	Sleeve Bearing w/Flange
4	645745	Steering Lever – Upper Lt.	20	243197	Stop Bolt .312-18 x .75
5	643926	Steering Lever Mount	21	257063	Nylon Washer
6	253195	Whiz Bolt .312-18 x 1.5	22	283324	Compression Spring
7	253035	Whiz Nut .312-18	23	253470	Nut .5-13 Nylon Insert
8	422063	Plug – Nylon .75	24	644601	Steering Pivot
9	422508	Step Bushing	25	253179	Whiz Bolt .25-20 x .75 Phil Truss
10	243035	Bolt .25-20 x 1.5	26	253025	Whiz Nut .25-20
11	253850	Nut .25-20 – Lock	27	285032	Damper with Ball Socket
12	247130	Carriage Bolt .312 x .75	28	265680	Ball Stud
13	257019	Washer .25 – Hard	29	729700	Support – Steering Rod
14	252858	Thumb Screw .312-18 3 Prong	30	422557	Sleeve Bearing
15	422179	Grip – Foam	31	422556	Sleeve Bearing w/Flange
16	422095	Vinyl Cap			

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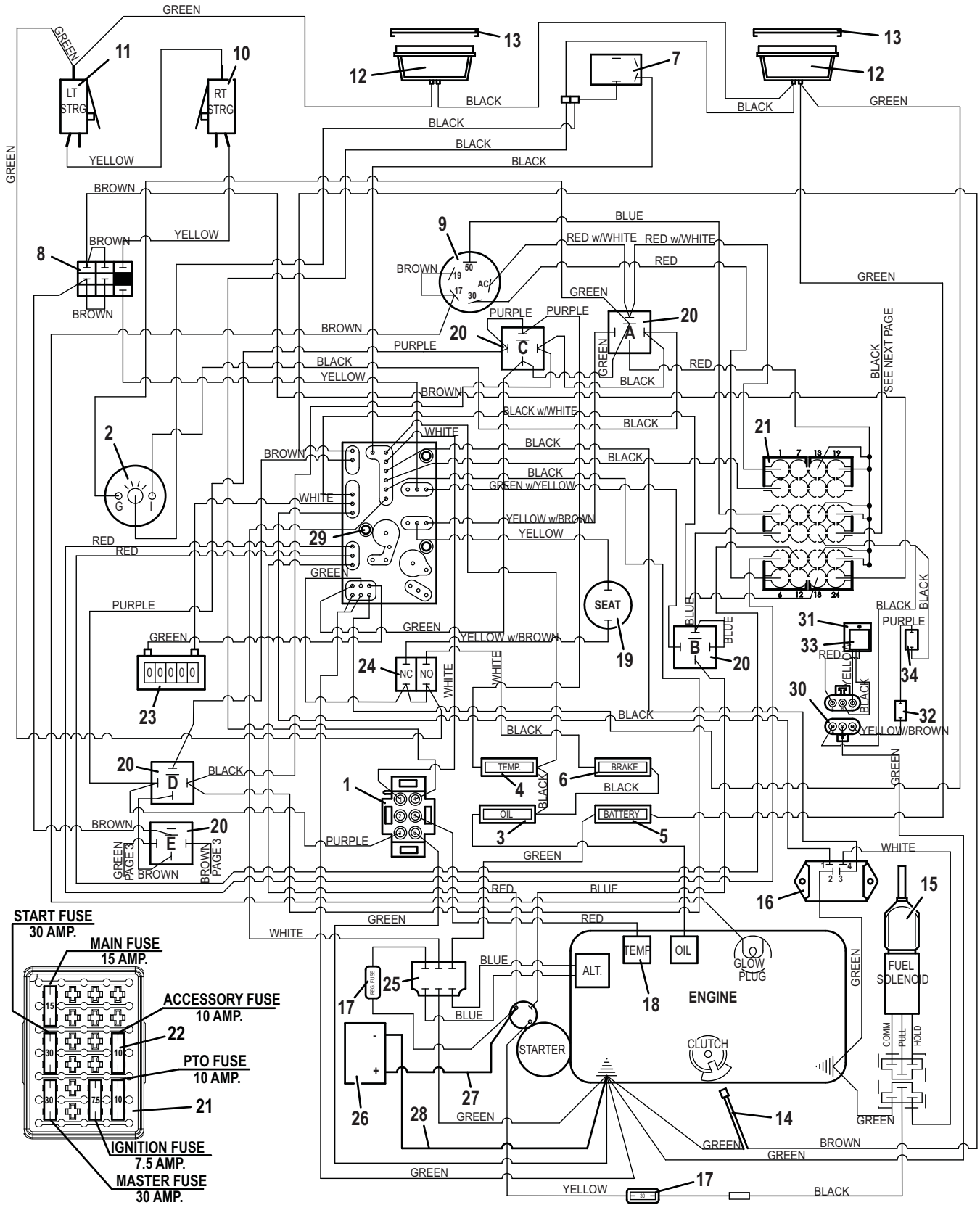
Rev. 06-16

WIRING DIAGRAM - 721DT

Item No.	Order No.	Description	Item No.	Order No.	Description
	605889	Wiring Assembly - 721DT	21	181725	Fuse Block ATM
	161117	Decal - Console		181726	Cover - Fuse Block
1	141165	Coolant Temperature Gauge		270821	Bolt - Hex Flange M6
2	141203	Voltmeter Gauge		184985	Cable Seal 5mm
3	182327	Oil Indicator Light		184986	Cavity Plug 6.2mm
4	182328	Temperature Indicator Light		162341	Decal - Fuse
5	182325	Battery Indicator Light	22	181456	Fuse 30 Amp Auto ATM
6	182326	Brake Indicator Light		181453	Fuse 15 Amp Auto ATM
7	184179	Light Switch (optional)		181452	Fuse 10 Amp Auto ATM
8	183925	Clutch Switch		181451	Fuse 7.5 Amp Auto ATM
9	183827	Ignition Switch	23	141551	Hour Meter
10	183860	Safety Switch - Rt. Steering	24	183894	Brake Switch
	720160	Rt. Steering Switch Mount	25	185530	Voltage Regulator
11	183860	Safety Switch - Lt. Steering	26	180130	Battery - 12V
	720161	Lt. Steering Switch Mount		243309	Bolt .375-16 x .375 Washer Head
12	182261	Worklamp LED Flood (optional) (includes item 13)		644163	Battery Box
				644478	Battery Box Lid
13	182251	Bezel (optional)		754135	Battery Hold Down Bracket
14	388840	Cable Assembly	27	180313	Battery Cable 14"
15	603350	Fuel Solenoid		425219	Starter Terminal Boot
16	184220	Module - Switch Interlock		425223	Battery Terminal Boot
17	181735	Fuse Holder	28	180282	Ground Cable 20"
	181470	Fuse 30 Amp Auto	29	423690	Spacer - PC Board Support
18	141224	Temperature Sender	30	184973	Weather Pack Connector (Optional)
19	183871	Seat Safety Switch	31	722747	Mount - Tilt Switch (Optional)
20	184266	Relay	32	144950	Hydraulic Solenoid (Optional)
			33	183710	Tilt Switch (Optional)
			34	183954	Toggle Switch (Optional)

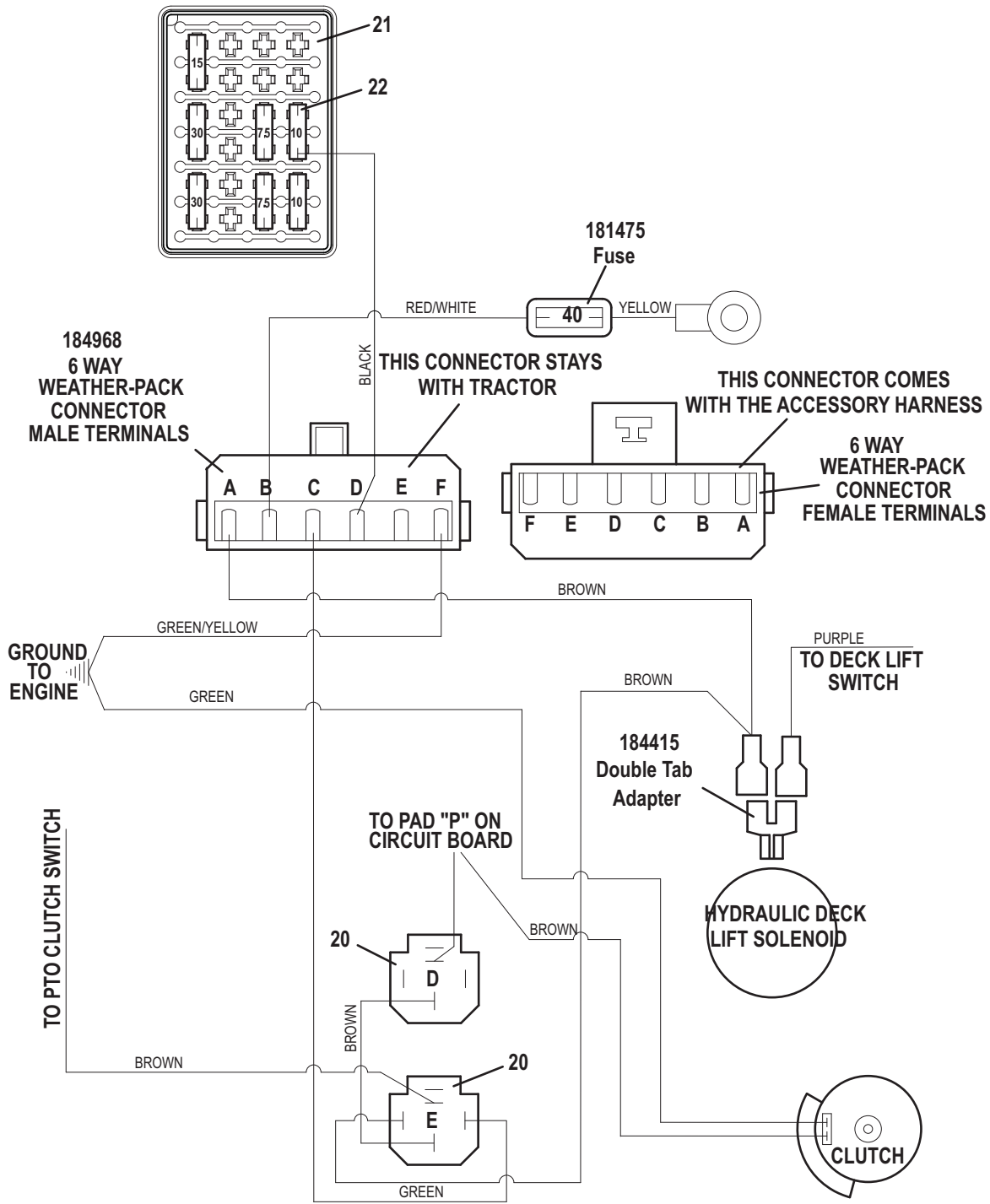


WIRING DIAGRAM - 721DT



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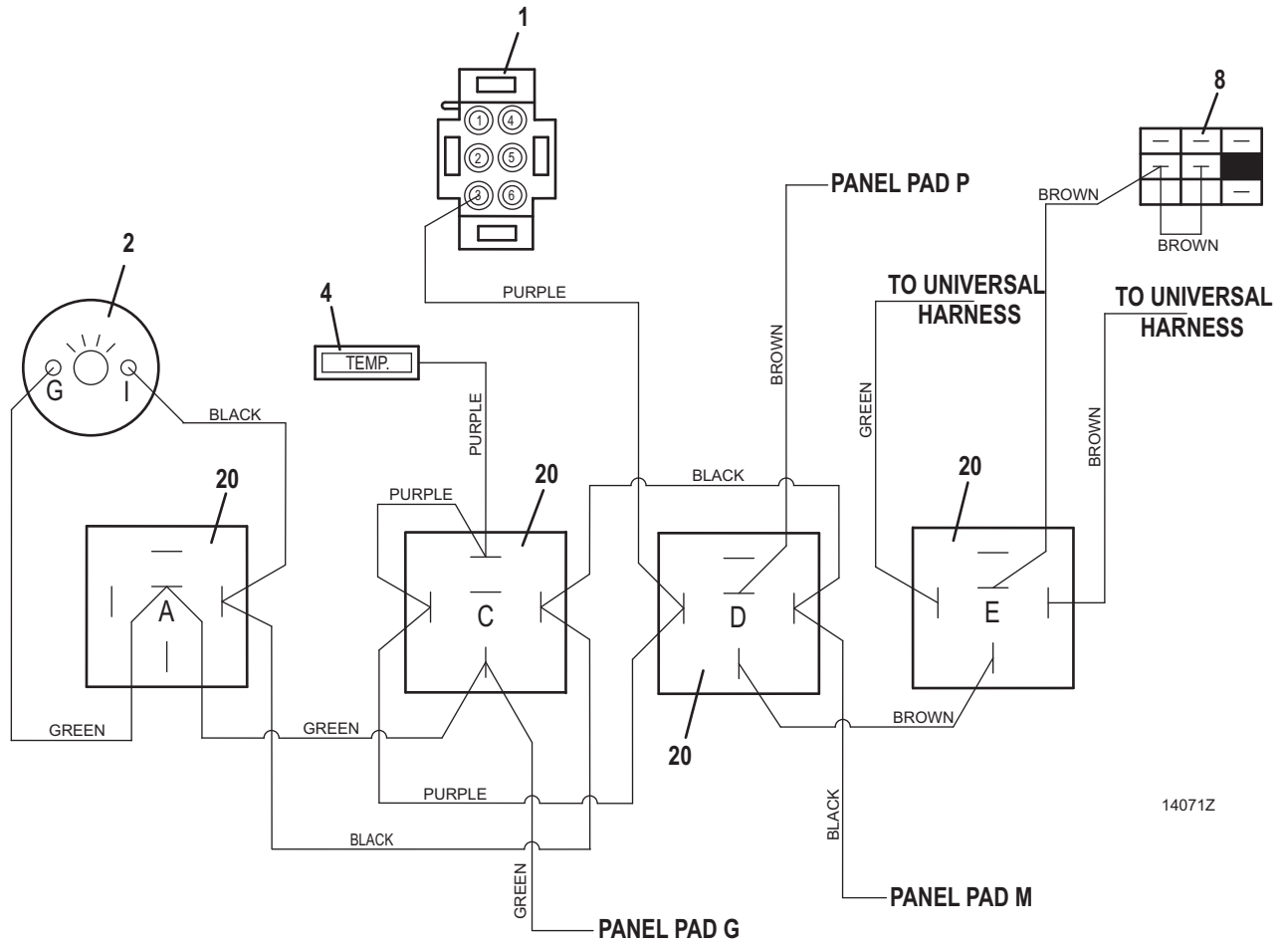
STANDARD UNIVERSAL HARNESS (ALL HYDRAULIC LIFT MODELS)



12033X

NOTE: See page 44 for parts list

HIGH TEMPERATURE WIRING DIAGRAM



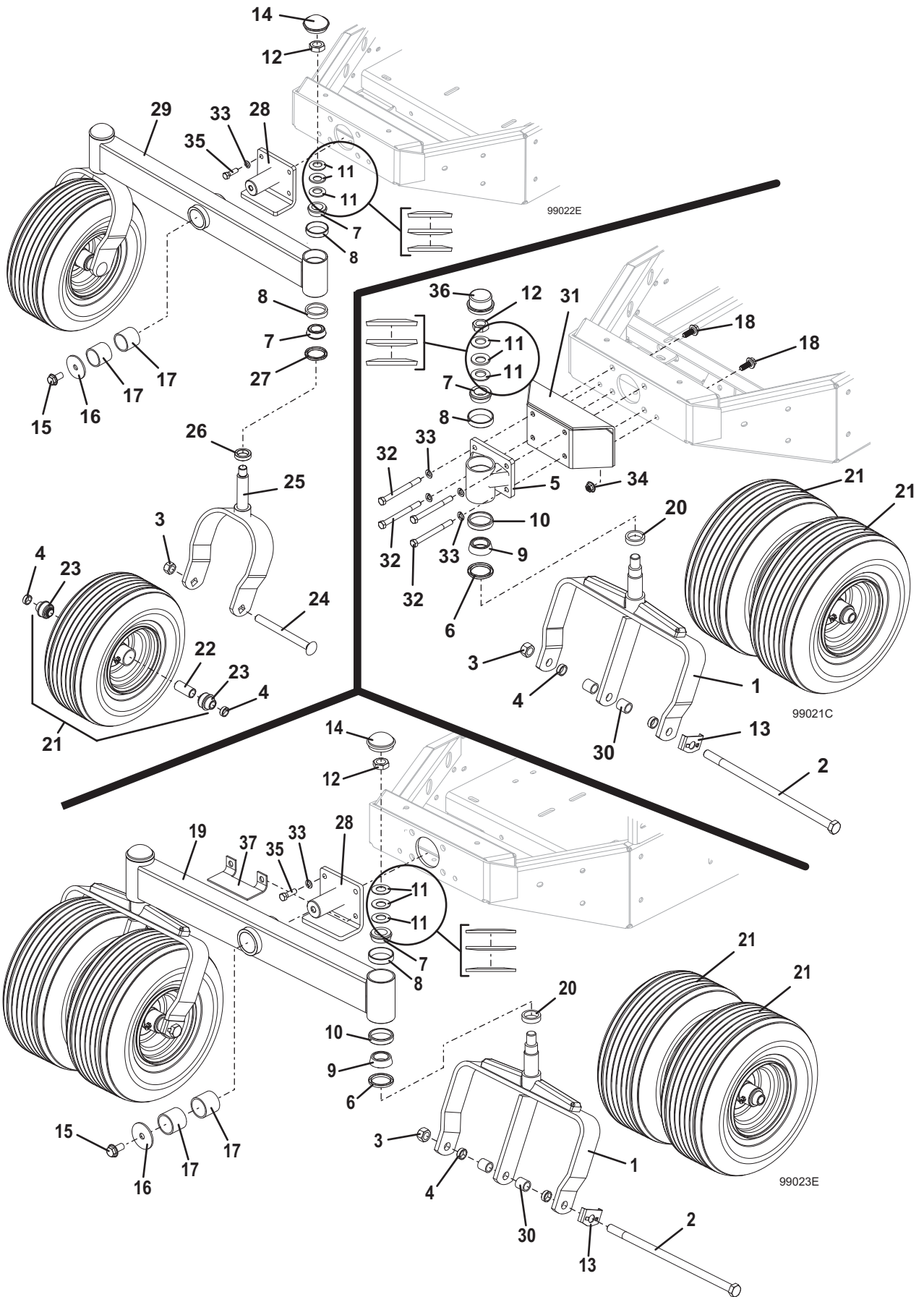
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NOTE: See page 44 for parts list

TAIL WHEEL OPTIONS

Item No.	Order No.	Description	Item No.	Order No.	Description
1	604366	Dual Fork With Nut	21	603975	Wheel & Tire Assembly
2	243922	Bolt .625-11 x 14			13 x 6.5 x 6 w/Bearing & Spacer
3	253970	Lock Nut .625-11			(includes items 22 & 23)
4	902422	Axle Spacer		482355	Tire 13 x 6.5 x 6
5	824534	Pivot Housing - Rear Dual Fork		483306	Wheel Without Tire 6 x 4.5
6	125855	Seal	22	423750	Bearing Spacer
7	122522	Bearing - Taper	23	120048	Wheel Bearing
8	123522	Bearing Cup	24	247726	Bolt .625 x 7 Carriage
9	122523	Bearing - Taper	25	645221	Rear Fork
10	123521	Bearing Cup	26	282615	Spacer .375 x 1
11	257320	Washer - Spring	27	125855	Seal
12	254505	Jam Nut .75-16 Nylon Toplock	28	643631	Rear Axle Pivot
13	723008	Bolt Lock	29	824510	Axle Beam w/Bushing
14	481434	Dust Cap - Domed	30	902425	Axle Spacer
15	253243	Whiz Bolt .5-13 x 1	31	643015	Pivot Mount Adapter
16	257061	Washer .5 x 2.25	32	243385	Bolt .375-16 x 4
17	833275	Oilite Bearing Reamed	33	257412	Lock Washer .375
18	253203	Whiz Bolt .375-16 x 1	34	253043	Whiz Nut .375-16
19	824508	Axle Beam w/Bushing - Dual	35	243334	Bolt .375-16 x 1.25 Grade 8
20	830420	Spacer .375 x 1.156	36	481432	Dust Cap
			37	900160	Spacer - Axle Beam

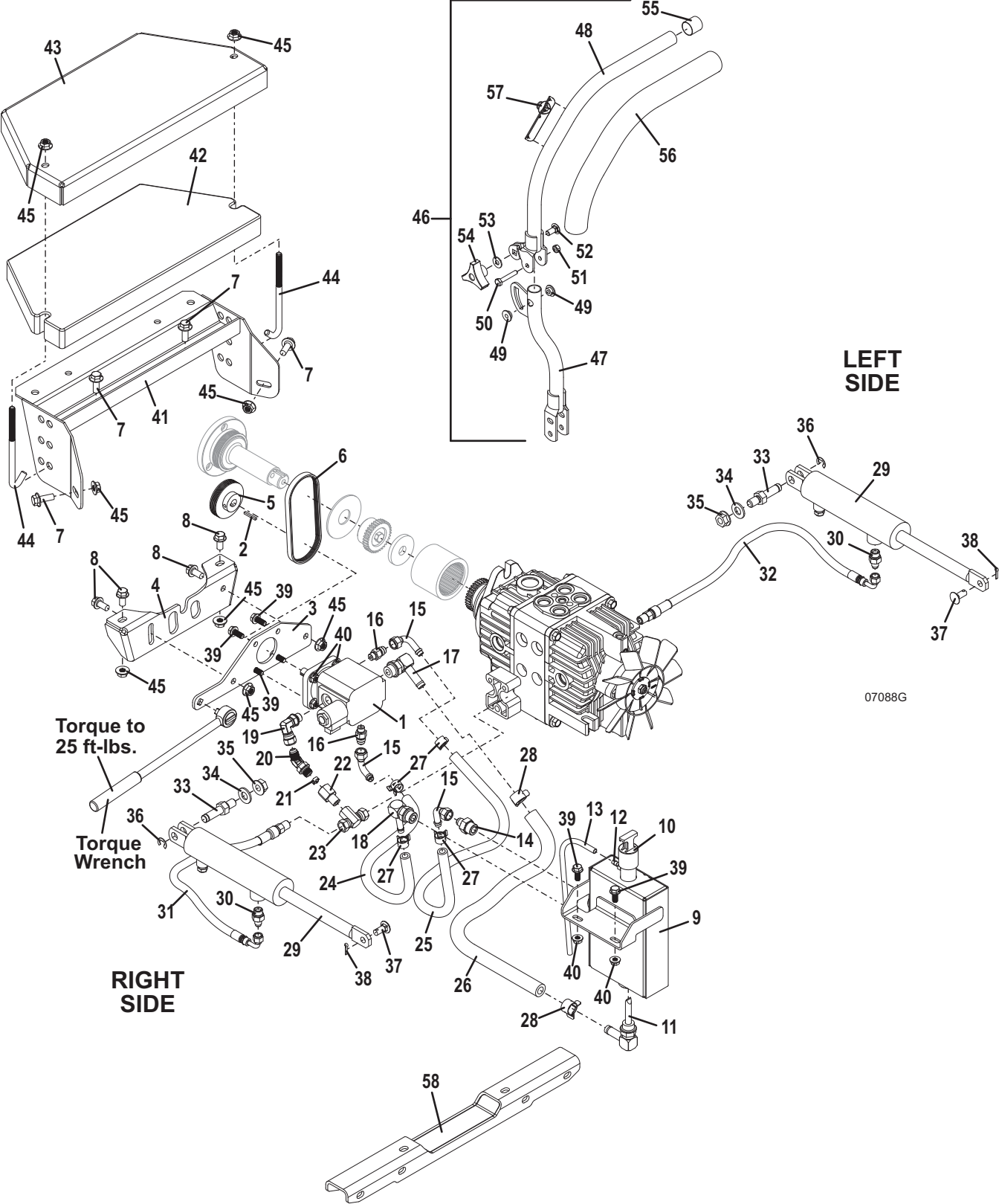
TAIL WHEEL OPTIONS



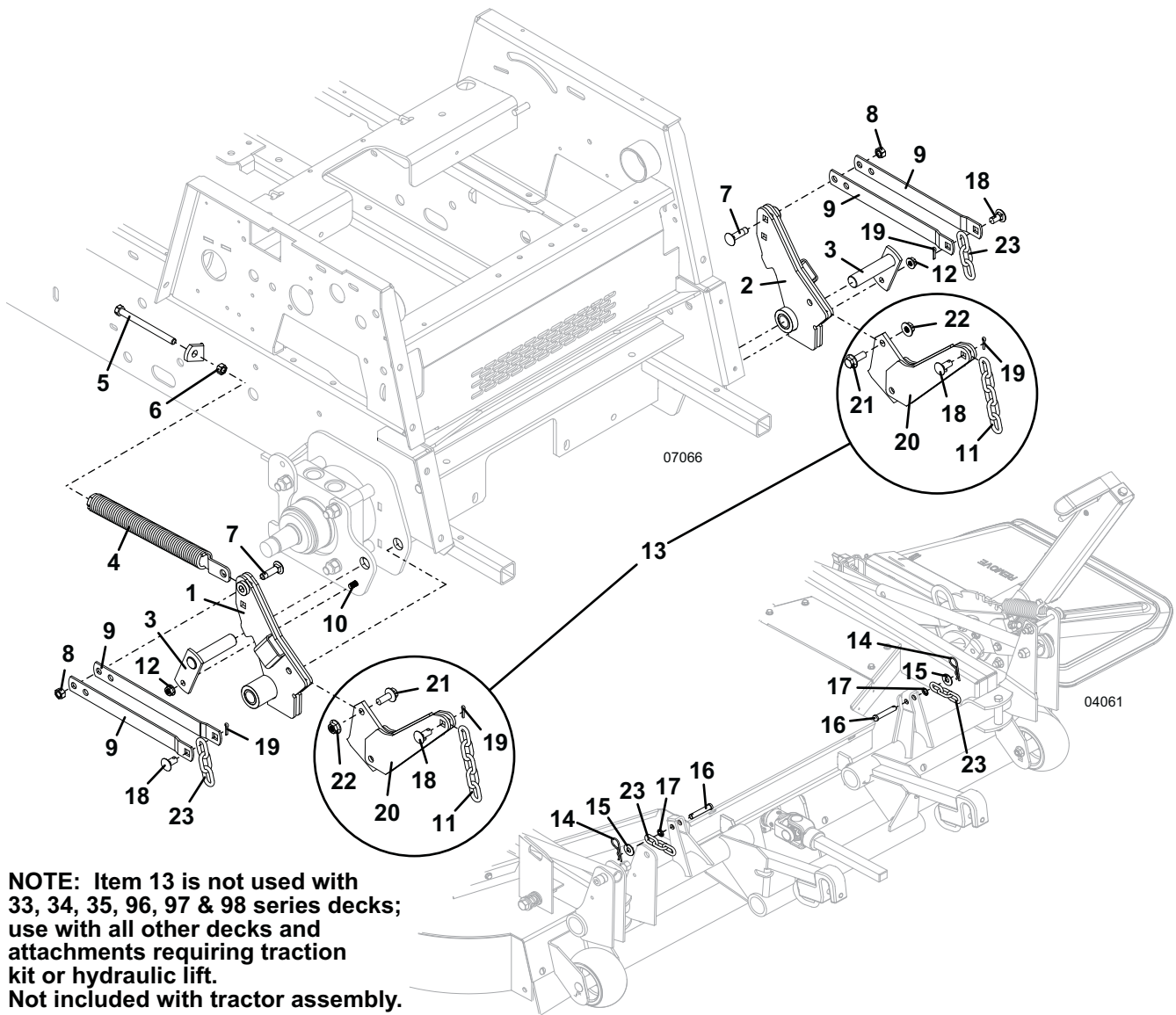
OPTIONAL HYDRAULIC LIFT ASSEMBLY

Item No.	Order No.	Description	Item No.	Order No.	Description
1	290074	Pump – Hydraulic CCW w/Solenoid	30	360052	Adapter M O-Ring/M Flare
	144950	Solenoid Valve	31	424540	Hose Assembly .25 x 18.5
2	281540	Square Key .125 x 1	32	424545	Hose Assembly .25 x 23
3	775137	Plate – Hydraulic Pump Mount	33	887119	Pin – Cylinder Mount
4	645559	Mount – Hydraulic Pump	34	257062	Washer .5 SAE
5	831429	Sheave	35	253066	Whiz Nut .5-13
6	381390	Belt	36	263500	Retainer – External .5 x .042
7	253203	Whiz Bolt .375-16 x 1	37	261339	Clevis Pin .375 x .875 Sq. Shank
8	253200	Whiz Bolt .375-16 x .75	38	260648	Cotter Pin .125 x .5
9	644845	Oil Tank – Aux.	39	253192	Whiz Bolt .312-18 x .75
10	100728	Dipstick	40	253035	Whiz Nut .312-18
11	603330	Fitting w/Strainer	41	644915	Mount – Weight
12	363826	Fitting - Barb	42	323951	Counterweight
13	821723	Hose – Vent	43	729691	Weight Cover
14	360080	Adapter Fitting	44	240151	Hook Bolt .375-16 x 6
15	363846	Fitting Beaded Stem Swivel 90°	45	253043	Whiz Nut .375-16
16	360053	Adapter	46	603804	Steering Lever Assembly w/Switch (includes items 47-57)
17	360082	Adapter Stem 90°	47	824579	Steering Lever - Lower Rt.
18	360062	Adapter Stem 90°	48	824577	Lever - Offset Folding w/Switch
19	360044	Adapter O-Ring 90°	49	422508	Step Bushing .255 x .5 x .25
20	360043	Adapter O-Ring 45°	50	243035	Bolt .25-20 x 1.5
21	780507	Flow Restrictor	51	253850	Nut .25-20 - Lock
22	360045	Adapter M NPT/F O-Ring	52	247130	Carriage Bolt .312 x .75
23	360005	Adapter Tee NPT/Flare	53	257019	Washer .25 - Hard
24	821787	Hose – Hydraulic .375 x 17	54	252858	Thumb Screw .312-18 3 Prong
25	821773	Hose – Hydraulic .375 x 22	55	422095	Vinyl Cap
26	821800	Hose – Hydraulic .5 x 21.5	56	422179	Handle Grip - Foam
27	280264	Hose Clamp – Spring .375 TOC	57	604799	Switch/Mount Assembly
28	280266	Hose Clamp – Spring .5 TOC	58	645204	Cross Member - Center Hyd.
29	290021	Cylinder – Hydraulic			
	290096	Cylinder Seal Kit			

OPTIONAL HYDRAULIC LIFT ASSEMBLY



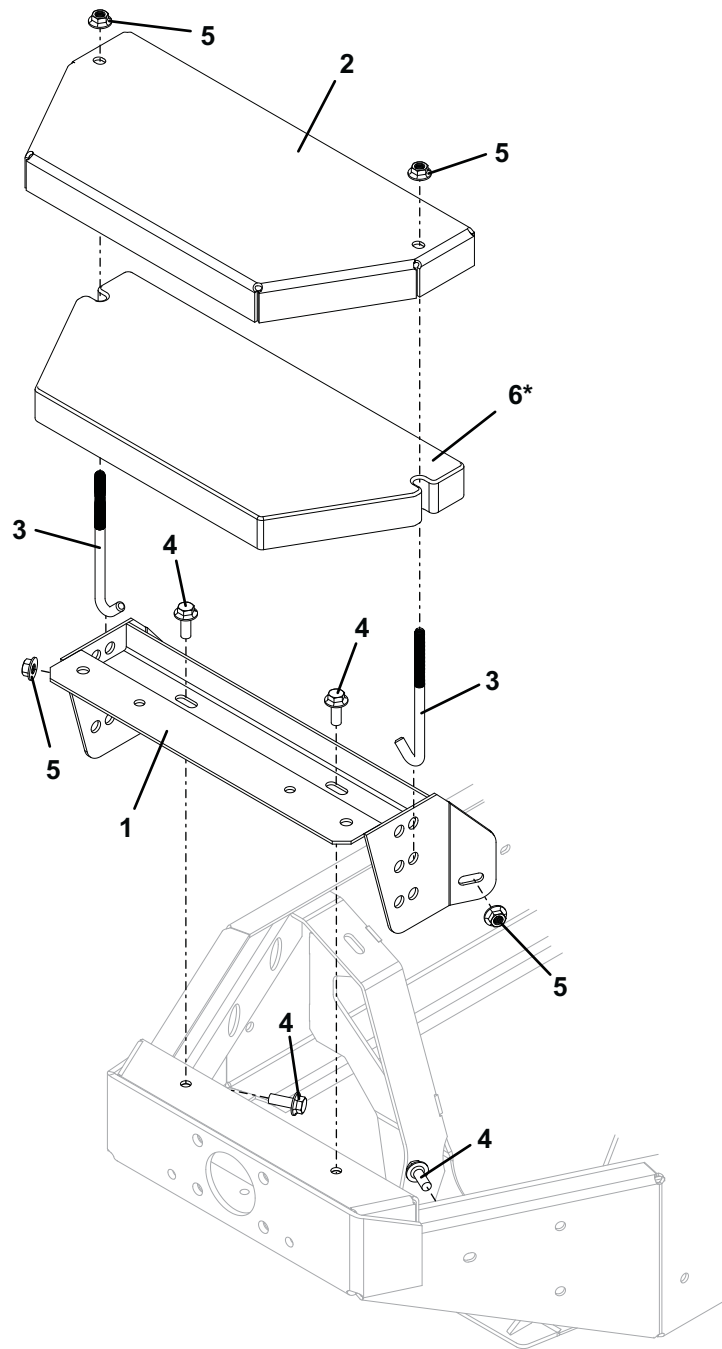
TRACTION KIT



NOTE: Item 13 is not used with 33, 34, 35, 96, 97 & 98 series decks; use with all other decks and attachments requiring traction kit or hydraulic lift. Not included with tractor assembly.

Item No.	Order No.	Description	Item No.	Order No.	Description
1	603699	Rocker w/Bearing Rt.	13	604708	Rocker Arm Extension Kit (opt.) (includes 2 each of items 11 & 18-22)
	121764	Oilite Bearing			
2	603700	Rocker w/Bearing Lt.	14	260523	Hair Pin .094 x 2
	121764	Oilite Bearing	15	257040	Washer .375
3	644635	Pin	16	261362	Clevis Pin .375 x 1.75
4	604838	Spring Assembly	17	262950	Push-on Retainer
5	243395	Bolt .375-16 x 4.5 Full Thread	18	261339	Clevis Pin .375 x .875 Sq. Shank
6	254450	Nut .375-16	19	260648	Cotter Pin .125 x .5
7	247254	Carriage Bolt .375 x 1.375 Special	20	644706	Extension - Rocker Arm
8	253890	Lock Nut .375-16	21	253203	Whiz Bolt .375-16 x 1
9	732410	Lift Strap	22	253043	Whiz Nut .375-16
10	253192	Whiz Bolt .312-18 x .75	23	820317	Lift Chain (3 Links)
11	820320	Lift Chain (5 links)			
12	253035	Whiz Nut .312-18			

COUNTERWEIGHT MOUNT KIT



10133

Item No.	Order No.	Description	Item No.	Order No.	Description
	503220	Counterweight Mount Kit	4	253203	Whiz Bolt .375-16 x 1
1	644915	Weight Mount	5	253043	Whiz Nut .375-16 Lg Flange
2	729691	Weight Cover	*6	503218	Counterweight - 50#
3	240151	Hook Bolt .375-16 x 6			
			*		Not Included in Kit

