



SETUP, PARTS & MAINTENANCE MANUAL ZTM 1250

Power Unit Model:

**442105-Power Unit ZTM1250 25 Klr Collection
(Operation & Safety Manual: 4136742)**

For Cutterdecks:

**954204A-Cutterdeck 42" Collection
954804A-Cutterdeck 48" Collection
(Parts Manual: 4136039)**



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



4136743 REV B

**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.



WARNING

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

**Californie Proposition 65
Avertissement**

Les échappements des moteurs diesel et certains de leurs composés sont reconnus par l'Etat de Californie pour être cancérigènes, provoquer des défauts congénitaux et d'autres dangers en matière de reproduction.



AVERTISSEMENT

L'émission du moteur de ce matériel contient des produits chimiques que l'Etat de Californie considère être cancérigènes, provoquer des défauts congénitaux et d'autres dangers en matière de reproduction.

**California Advertencia
de la Proposicion 65**

El estado de California hace saber que los gases de escape de los motores diesel y algunos de sus componentes producen cáncer, defectos de nacimiento y otros daños en el proceso de reproducción humana.



ADVERTENCIA

El estado de California hace saber que los gases de escape de este producto contienen productos químicos que producen cáncer, defectos de nacimiento y otros daños en el proceso de reproducción humana.

**CALIFORNIA
Proposition 65 Warning**

Battery posts, terminals, wiring insulation, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
WASH HANDS AFTER HANDLING.

IMPORTANT MESSAGE

Thank you for purchasing this Steiner product. You have purchased a world class mowing product, one of the best designed and built anywhere.

This machine comes with an Operation and Safety Manual and a separate Setup, Parts and Maintenance Manual. The useful life and good service you receive from this machine depends to a large extent on how well you read and understand these manuals. Treat your machine properly, lubricate and adjust it as instructed, and it will give you many years of reliable service.

Your safe use of this Steiner product is one of our prime design objectives. Many safety features are built in, but we also rely on your good sense and care to achieve accident-free operation. For best protection, study the manuals thoroughly. Learn the proper operation of all controls. Observe all safety precautions. Follow all instructions and warnings completely. Do not remove or defeat any safety features. Make sure those who operate this machine are as well informed and careful in its use as you are.

See a Steiner dealer for any service or parts needed. Steiner service ensures that you continue to receive the best results possible from Steiner's products. You can trust Steiner replacement parts because they are manufactured with the same high precision and quality as the original parts.

Steiner designs and builds its equipment to serve many years in a safe and productive manner. For longest life, use this machine only as directed in the manuals, keep it in good repair and follow safety warnings and instructions. You'll always be glad you did.

Jacobsen, a Textron Company
One Bob Cat Lane
Johnson Creek, WI 53038-0469

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NOTICE !!!

Unauthorized modifications may present **extreme** safety hazards to operators and bystanders and could also result in product damage.

Jacobsen, a Textron Company strongly warns against, rejects and disclaims any modifications, add-on accessories or product alterations that are not designed, developed, tested and approved by Jacobsen's Engineering Department. Any Jacobsen product that is altered, modified or changed in any manner not specifically authorized after original manufacture—including the addition of "after-market" accessories or component parts not specifically approved by Jacobsen—will result in the Jacobsen Warranty being voided.

Any and all liability for personal injury and/or property damage caused by any unauthorized modifications, add-on accessories or products not approved by Jacobsen will be considered the responsibility of the individual(s) or company designing and/or making such changes. Jacobsen will vigorously pursue full indemnification and costs from any party responsible for such unauthorized post-manufacture modifications and/or accessories should personal injury and/or property damage result.



This symbol means:
ATTENTION!
BECOME ALERT!

Your safety and the safety of others is involved.

Signal word definitions:

The signal words below are used to identify levels of hazard seriousness. These words appear in this manual and on the safety labels attached to Jacobsen machines. For your safety and the safety of others, read and follow the information given with these signal words and/or the symbol shown above.

DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.

WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.

CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury. It may also be used to alert against unsafe practices or property damage.

CAUTION

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, **MAY** result in property damage



MODEL NUMBER: This number appears on sales literature, technical manuals and price lists.

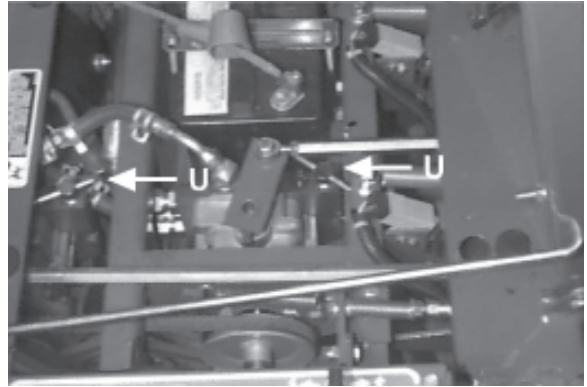
SERIAL NUMBER: This number appears only on your mower. It contains the model number followed consecutively by the serial number. Use this number when ordering parts or seeking warranty information.

TOOLS REQUIRED FOR ASSEMBLY

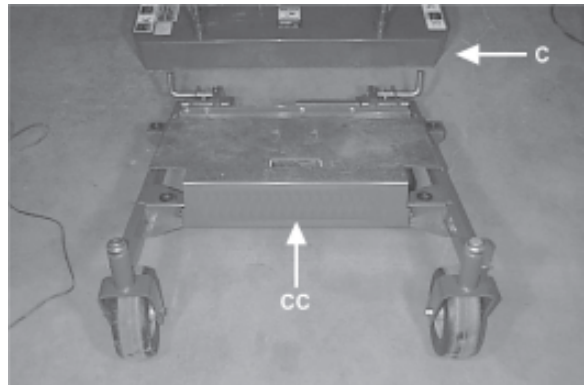
- Wrecking bar
- Claw hammer
- Ratchet: 3/8" drive
- Socket: 10 mm
- Pliers
- Side Cutter or Jack knife

NOTE: All references below to the "right" or "left" are with respect to an operator at the controls.

1. Open crates and remove packing material.
2. Open hydrostat release (dump) valves **U** on the pumps on the power unit and roll it off the pallet.

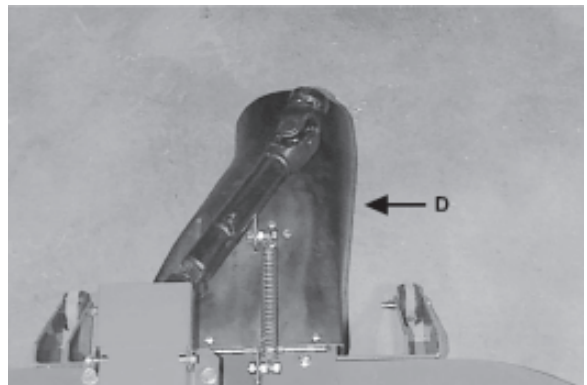


3. Remove the height of cut hairpin cotters from the height of cut posts and lift the cutterdeck carrier frame **CC** off the cutterdeck **C**.



4. Cut the wire tie holding the PTO shaft to the deck.

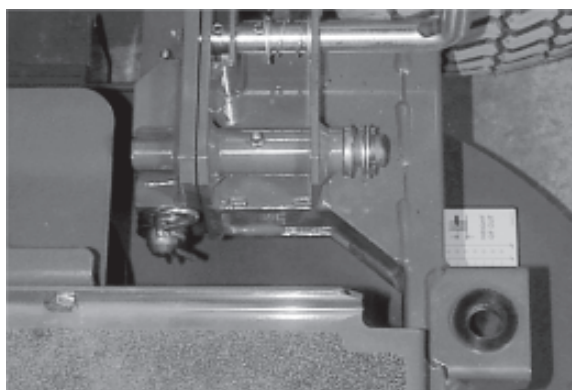
Bolt the discharge chute to the rear of the cutterdeck with (2) M6x16 carriage bolts, (2) M6 nylon locknuts and (2) washers. The head of the carriage bolt should be inside the chute. Connect the small spring between the bracket on the discharge chute and the bracket on the cutterdeck.



5. Roll the power unit up to the cutterdeck. Cut the tie holding the PTO shaft together. Connect the PTO shaft to the power unit gearbox with the quick coupler. Line up the splines in the coupler with those on the gearbox. Pull back on the outside of the quick coupler to slide it on the gearbox, then release. Pull back on the shaft to seat the locking balls in the groove of the gearbox shaft. When properly installed the PTO shaft should not pull off the gearbox shaft. Push the deck close to the power unit. Guide the discharge chute into the blower inlet opening.



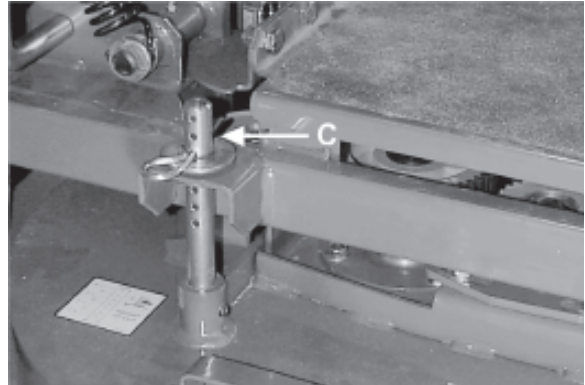
6. Roll the deck carrier frame to the power unit. Slide the receiver blocks over the power unit push arm pins (3/4"-10x1/4"). Secure the carrier frame with (2) (3/4 ID x1/4") thick washers and a hairpin cotter, on each side.



7. Have a helper lift the cutterdeck carrier frame as high as it will go. Connect a counterbalance spring from the carrier frame to the pin on the tractor.



8. Locate the cutterdeck height of cut posts **C** under the corresponding bushings of the cutterdeck carrier frame. Use the handles on the cutterdeck to lift the deck, guiding the height of cut posts into their bushings. Secure each with a 3/4"(19mm) I.D. washer and large hairpin cotter.
9. Set tire pressures down to 14 psi(.98kg/sq cm). Tires are over inflated for shipping. Close hydrostat release (dump) valves opened in step 2, finger tight. Do not overtighten.



10. FINAL PREPARATIONS

- Check the engine and hydraulic oil levels. Top up with the correct oil if necessary. Use 10W30 motor oil for the engine. Use fresh, clean 15W40 or 20W50 motor oil or 15W50 synthetic motor oil for the hydraulic system.
- Remove the battery from the machine. Fill the battery to the bottom of the vent wells with acid and trickle charge for several hours.



WARNING Battery acid is caustic and fumes are explosive and can cause serious injury or death.

Use insulated tools, wear protective glasses or goggles and protective clothing when working with batteries. Read and obey the battery manufacturer's instructions.

Be certain the ignition switch is "OFF" and the key has been removed before servicing the battery.

- a) Verify battery polarity before connecting or disconnecting the battery cables.
 - b) When installing the battery, always assemble the RED, positive (+) battery cable first and the ground, BLACK, negative (-) cable last.
 - c) Tighten cables securely to battery terminals and apply a light coat of silicone dielectric grease to terminals and cable ends to prevent corrosion. Keep terminal covers in place.
- Read Operation and Safety Manual before starting.
 - Run engine at full RPM for 5 minutes before engaging blades to allow the engine to be fully lubricated before load is applied.
 - Check the hydrostat neutral adjustment. Neutral is set at the factory but may require readjustment if air trapped during the initial oil fill has worked out of the system. See adjustments section later in this manual.
 - Do not use the machine without an approved grass collector, the grass discharge chute or mulching plates correctly fitted.

MAINTENANCE CHART

ZTM 1250

MAINTENANCE OPERATION	Maintenance is an ongoing job. These intervals are maximum times between maintenance operations. Perform more often under severe conditions.						
	FIRST 5 HOURS	DAILY	EVERY 25 HOURS	EVERY 50 HOURS	EVERY 100 HOURS	EVERY 200 HOURS	EVERY 500 HOURS
ENGINE							
Consult the engine manual for additional information and instructions							
Check oil level		X					
Check for Leaks		X					
Clean Air Intake Screen		X					
Clean Air Cleaner Precleaner			X				
Clean Air Cleaner Element					X		
Clean Cooling Fins					X		
Change Oil and Filter	X	See engine manufacturer's manual					
Check & gap Spark Plugs						X	
HYDRAULICS							
Check for Leaks		X					
Check oil level					X		
Change Oil and Filter	X						X
MACHINE							
Check Interlock Operation		X					
Check Tire Pressures		X					
Check/Top up Battery					X		
Lubricate All Points				X			

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CHECK DAILY

Operator Presence Interlock System - Start Operation

For the engine to crank, the parking brake must be on, the PTO (blades) off and traction levers in the neutral position. Sit in the seat and check, one by one, if the engine will crank with the parking brake off, the blades on, and either traction lever out of neutral.

Operator Presence Interlock System - Run Operation

The operator must be in the seat for the engine to run with the parking brake off, the traction levers moved out of the neutral position, or the blades on. To check:

1. Start the engine and run at 1/2 throttle with the operator on the machine but raised off the seat.
2. One by one: move the parking brake to the "OFF" position, traction levers out of the neutral position (check each independently), and turn the blades on. Each check should kill the engine after 1/2 second. (A 1/2 second delay is built into the system to prevent engine cutout when in rough terrain.)

Repair machine before using if the Operator Presence Interlock System does not operate correctly in start or run. Contact your authorized Steiner dealer.

Hardware

Tighten any nuts and bolts found loose. Replace any broken or missing cotter pins. Repair any other problems before operating.

Tire pressure

Tires should be kept inflated at 14 lbs/in² (1.0 kg/cm²). Improper tire inflation can cause rapid tire wear and poor traction. Uneven inflation can cause uneven cutting.

Battery

⚠ WARNING Battery acid is caustic and fumes are explosive and can cause serious injury or death.

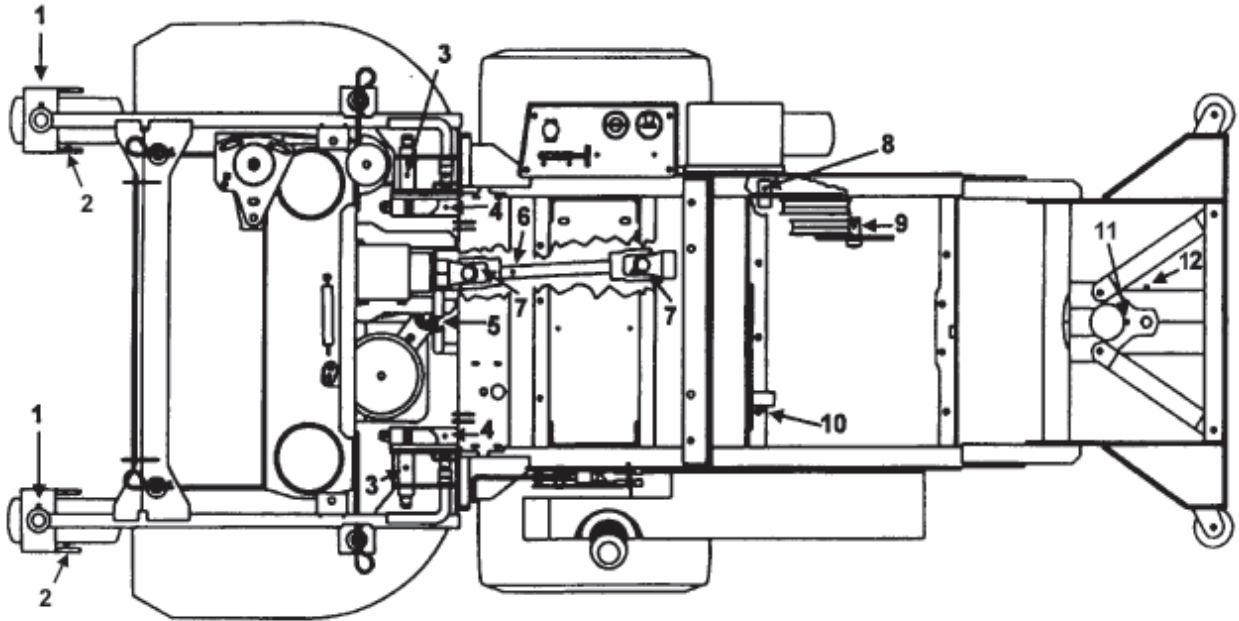
Use insulated tools, wear protective glasses or goggles and protective clothing when working with batteries. Read and obey the battery manufacturer's instructions.

Be certain the ignition switch is "OFF" and the key has been removed before servicing the battery.

1. Verify battery polarity before connecting or disconnecting the battery cables.
2. When installing the battery, always assemble the RED, positive (+) battery cable first and the ground, BLACK, negative (-) cable last.
3. When removing the battery, always remove the ground, negative (-) cable first and the red, positive (+) cable last.
4. Check the electrolyte level every 100 hours of operation.
5. Clean the cable ends and battery posts with steel wool. Use a solution of baking soda and water to clean the battery. Do not allow the solution to enter into the battery cells.
6. Tighten cables securely to battery terminals and apply a light coat of silicone dielectric grease to terminals and cable ends to prevent corrosion. Keep terminal covers in place.

Gearboxes

Check for evidence of leaks daily. If leaks are detected, get them repaired immediately to avoid wrecking a gearbox from lack of lubrication. The gearboxes only contain a few ounces of lubricant, which won't last long if there is a leak.



LUBRICATION

Every 50 hours of operation, lubricate the following points with grease:

1. Caster wheel pivots (2 points)
2. Caster wheel bearings (2 points)
3. Deck pivot (2 points, every 100 hrs.)
4. Pusharm (2 points, every 100 hrs.)
5. Deck idler pivot (1 point)
6. Drive shaft slip sleeve (1point)
7. Drive shaft u-joints (2 points)
8. Rear caster pivot (1 point)
9. Rear caster bearing (1 point)

NOTE ON BLADE SPINDLES - The blade spindles and blower spindle (if so equipped) on these machines use a superior sealed bearing that does not require relubrication.

HYDRAULIC SYSTEM

Check fluid level in the hydraulic system every 100 hours or when a leak has occurred. If the fluid is low, check all components for leaks.

To check, remove reservoir cap **M**. The fluid level should be at the bottom of the filler tube. If low, top up (do not overfill). Use one of the oils listed below:

- SAE 15W40 motor oil
- SAE 20W50 motor oil
- 15W50 synthetic motor oil

AFTER FIRST FIVE (5) HOURS

1. Remove plug **N** to drain hydraulic reservoir. Dispose of used oil in accordance with local requirements.
2. Clean and replace the plug.
3. Change hydraulic oil filter **G**.
4. Fill the reservoir with fresh oil to the bottom of the reservoir filler tube, using an oil from the list above. Do not overfill.

PERIODIC OIL CHANGES

Change the hydraulic fluid and hydraulic filter after each 500 hours of operation using the same procedure given above.

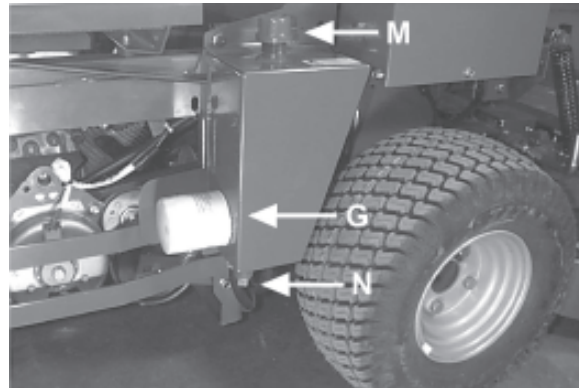
NOTES:

Before servicing the hydraulic system, stop the engine, disconnect spark plug wires and disengage the PTO.

- After any hydraulic line is opened, plug or cap it promptly to reduce the risk of contamination.
- Do not use teflon tape on hydraulic pipe fittings. Use a liquid sealant that will dissolve into the system.
- Make sure all hydraulic connections are tight and hydraulic hoses and lines are in good condition before applying pressure to system.

WARNING

The machine's hydraulic system operates under high pressure. When checking for leaks, do not use your hands to attempt to find a leak. Instead, use cardboard or paper. Escaping hydraulic fluid can be under sufficient pressure to penetrate skin and cause serious injury. If hydraulic fluid is injected into the skin, it must be promptly removed by a doctor familiar with this form of injury or gangrene may result.



View from right side

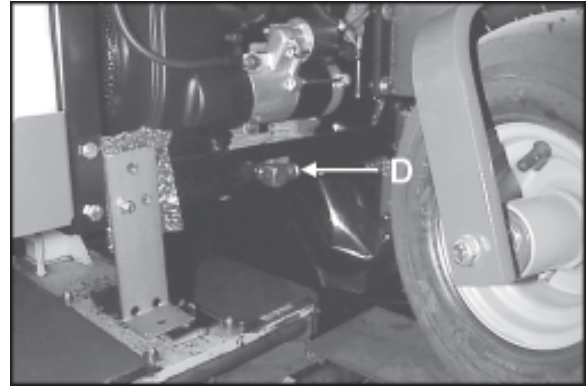
ENGINE OIL

Do not perform engine maintenance without the engine off, spark plug wires disconnected and PTO disengaged.

AFTER FIRST FIVE (5) HOURS

While the engine is warm:

1. Remove drain cap **D** and drain the crankcase. Dispose of used oil in accordance with local requirements.
2. Clean and replace the cap.
3. Change oil filter.
4. Fill the crankcase with fresh oil to the full mark. Do not overfill. See engine manual for oil specifications.



DAILY

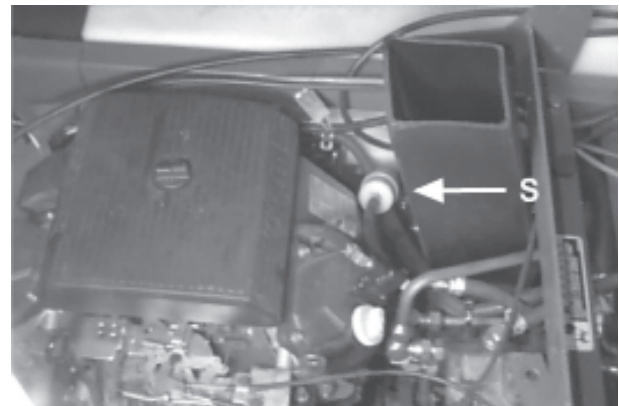
1. Check oil level with the dipstick.
2. If oil is needed, add fresh oil of proper viscosity and grade. See engine manual for oil specifications. Do not overfill.
3. Replace dipstick before starting engine.

PERIODIC OIL CHANGES

1. See engine manual for oil and filter change intervals after the break-in period.
2. Follow instructions for first oil change, above.

FUEL FILTER

An inline fuel filter **S** is located at the right side of the engine. Inspect at every oil change to make sure it is clean and unobstructed. Replace if dirty.



SPARK PLUGS

Remove each plug and check condition.

- Good operating conditions are indicated if the plug has a light coating of grey or tan deposit.
- A white blistered coating indicates overheating. A black coating indicates an “over rich” fuel mixture. Both may be caused by a clogged air cleaner or improper carburetor adjustment.
- Do not sandblast, wire brush or otherwise attempt to repair a plug in poor condition. Best results are obtained with a new plug.
- Set plug gap as specified in engine manual..

AIR CLEANER

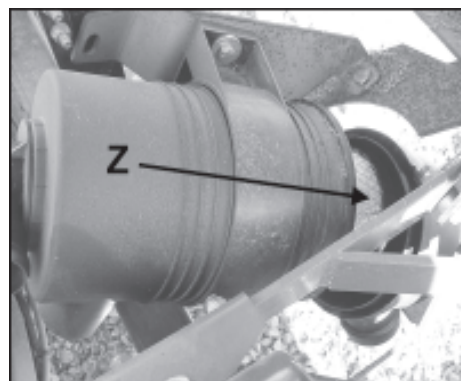
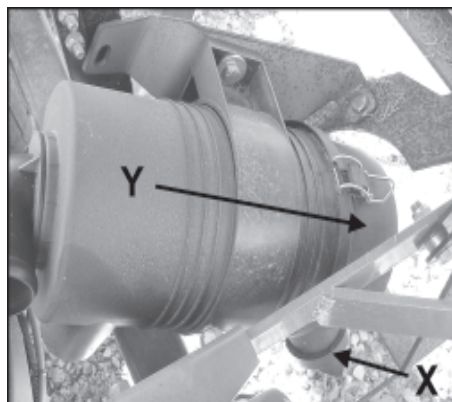
The air cleaner with this engine has a high density paper air cleaner cartridge. It should be inspected regularly and maintained. Uneven running, lack of power or black exhaust fumes may indicate a dirty air cleaner.

To clean or replace diesel engine air cleaner element:

1. Unclamp end cover **Y** and remove element **Z**.
2. Insert new element and replace end cover by clamping in position as shown on the cover.

Every 100 hours (more often under very dusty or dirty conditions), check the paper cartridge.

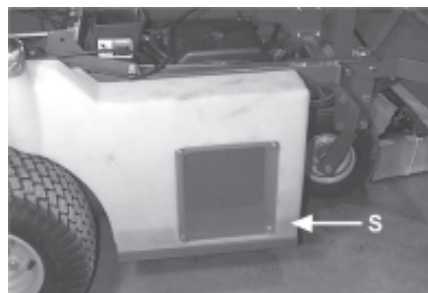
- Clean by tapping gently.
- Do not wash the cartridge or use compressed air which can cause damage.
- Replace when cartridge is dirty, bent or damaged.



ENGINE COOLING

Continued operation with a clogged cooling system will cause severe overheating and can result in engine damage.

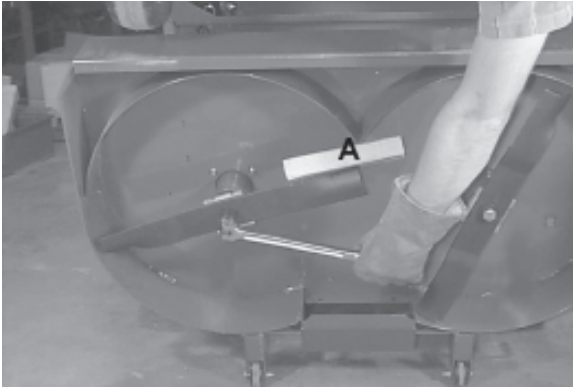
- **Daily:** Clean air intake screen **S**.
- **Every 100 hours:** Clean cooling fins beneath blower housing **H** with reference to information in the engine manufacturer's manual.



BLADE REMOVAL

Follow these instructions to prevent injury during blade removal:

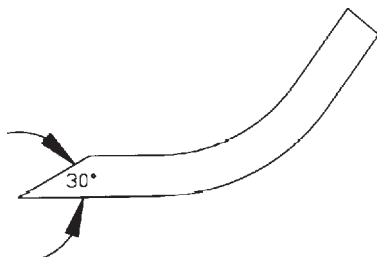
1. Loosen with a box wrench or a socket and long breaker bar. To gain additional leverage, slip a long pipe or thick-walled tube over breaker bar or wrench.
2. Insert a block of wood **A** as shown to prevent blade from turning when loosening.
3. Wear thickly padded gloves. Keep hands clear of blade path. Blades may rotate when bolt releases.



SHARPENING

Blades may be sharpened by filing or grinding.

- Inspect blades before sharpening.
- Replace bent or cracked blades.
- Replace blades when the lift portion has worn thin.
- Maintain cut angle at 30°.
- Do not overheat blades when sharpening.
- Always use Steiner blades. Use of another manufacturer's blades may be dangerous.



BLADE BALANCE

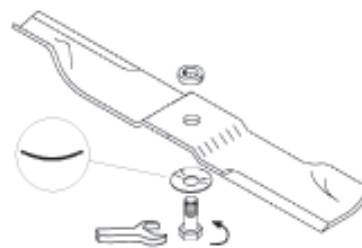
Blade balance must be maintained at 5/8 oz-in (19.4 g-cm) or less. Failure to keep blades balanced causes excess vibration, wear, and shortened life of most components of the machine.

To balance a blade:

1. Sharpen blade first.
2. Balance the blade at the center.
3. Attach a 1/8 oz (3.9 g) weight at a distance 5" (127 mm) from center on the light end. This should make the light end the heavy end:
 - If it does, the blade is balanced.
 - If does not, file or grind the heavy end until the addition of the weight makes the light end the heavy end.

BLADE INSTALLATION

1. Wear thickly padded gloves to prevent cuts from the sharp blade.
2. Insert the blade bolt, in order, through the conical washer (cup side toward the blade, as shown), the blade, and the blade spacer.
3. Install assembly on the blade spindle.
4. Torque the blade bolt to 70 ft-lbs.



HEIGHT OF CUT

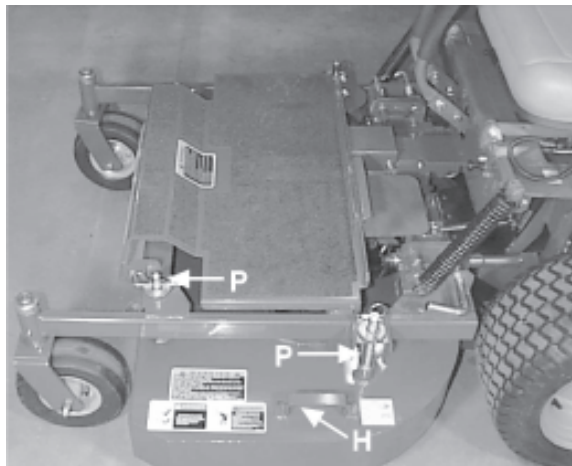
The height of cut is set by raising or lowering the cutterdeck on the carrier frame.

To change the height of cut:

1. Hold the deck up with the handle **H** provided.
2. Remove the hairpin cotters on one side.
3. Raise or lower the deck to the desired height of cut **P**.
Secure the height of cut with the hairpin cotters.
4. Repeat for the other side.

NOTES:

- Large changes in the height of cut may need to be done in two steps-1/2 in the first step, 1/2 in the second step.
- Height of cut may vary due to the amount of tread on the tires, variances in tire diameter, and inflation pressure.



BELTS

All V-belts are tensioned by spring loaded idlers. No adjustment is required. The blade drive timing belt does not require adjustment once properly tensioned.

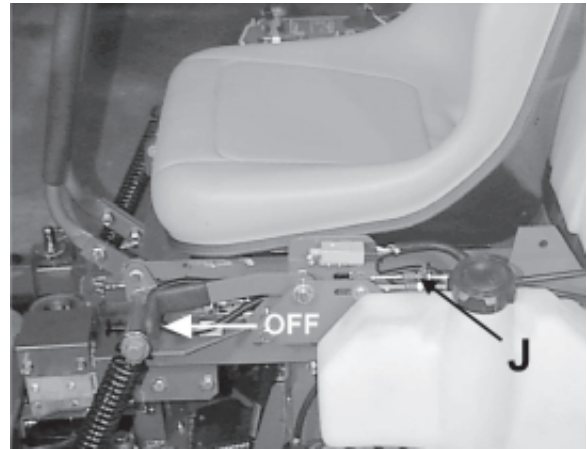
PARKING BRAKE

Adjust the parking brake to provide 1/4" travel in each cable before the slack is taken up.

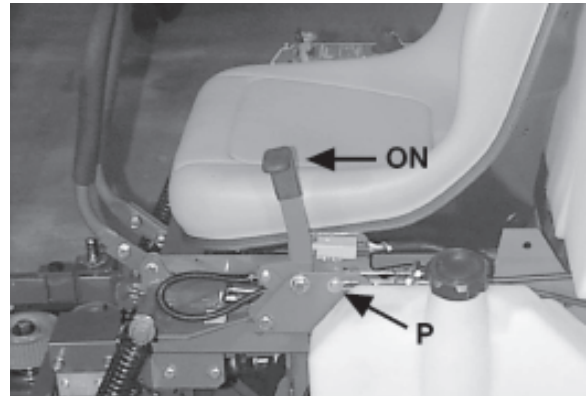
To adjust:

1. Start with the brake in the '**OFF**' position.
2. Remove the pin **P** holding the brake links to the brake cable ends.
3. Reinstall the pin but only through the end of one cable.
4. Move the brake lever toward the '**ON**' position until the slack in the cable is taken up, and resistance from the brake spring begins to be felt.
5. Adjust the cable with jam nuts **J** so there is 1/4" (6mm) of slack before the resistance of the spring is felt.
6. Repeat for the other brake cable. When both cables have been adjusted, reinstall the brake pin through both cable ends and secure with the hairpin cotter.

NOTE: If there isn't enough adjustment at the brake lever end of the cables, the drive wheels may be removed and the cable adjusted at the mounting bracket. Further adjustment may be obtained by turning the bracket over.



Parking brake assembly - (brake in OFF position).



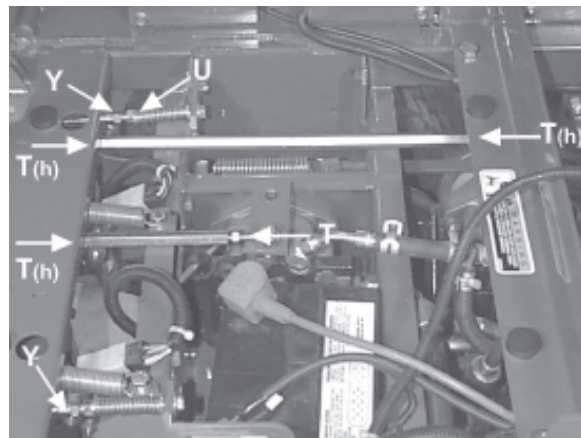
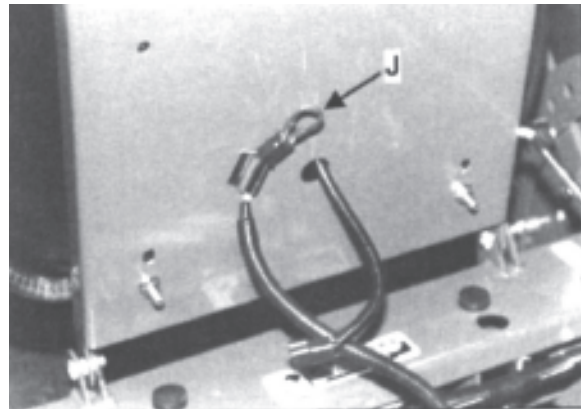
Parking brake assembly - (brake in ON position).

HYDROSTAT ADJUSTMENTS

A turnbuckle-style hydrostat neutral adjustment is provided.

Neutral:

1. Support the machine with the drive wheels off the ground. Use jackstands or equivalent support. Do not rely only on mechanical or hydraulic jacks.
2. Move the traction levers into the neutral position and raise the seat and grass collection hopper or utility box.
3. Disconnect the seat switch and temporarily connect the two terminals with jumper wire **J** as shown.
4. Loosen jam nuts **T** (h) =hidden) at both ends of the turnbuckle.
5. Start the engine and run at low speed.
6. Hold one of the traction control levers up against the resistance of the reverse return spring. Rotate the corresponding turnbuckle until the wheel it controls turns in reverse, then rotate the turnbuckle in the opposite direction until the wheel stops turning. Lock the turnbuckle jam nuts. Run the engine up to high idle and stroke the pump in forward and reverse to check the adjustment. Re-adjust if necessary.
7. Repeat steps 4 through 6 for the opposite side.
8. Remove the jumper wire and reconnect the seat switch. Lower the grass collection hopper or utility box



Reverse Return:

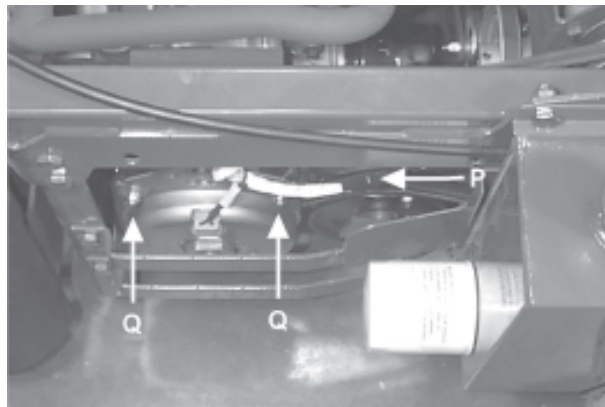
1. Move traction levers to neutral and raise the seat.
2. Locknuts **U** should be run on the bolt as far as they will go.
3. Loosen jam nuts **Y**. Move the traction levers to their forward stop. Adjust the clevis yoke by turning the head of the bolt until the pin through the clevis yoke is up against the back end of the slot in the traction control shaft lever. Once the initial setting is made for both sides, the levers may be evened up by adjusting the how far the bolt is turned into the clevis. Tighten jam nut **Y**.

NOTE: A slight creep in reverse is acceptable provided the wheel does not turn and the hydrostat pump does not whine when the parking brake is on. The reverse return should be adjusted and set before neutral is set on the hydrostatic transmissions.

NOTE: Always use Steiner replacement belts, not general purpose belts. Steiner belts are specially designed for use on commercial mowers and will normally last longer.

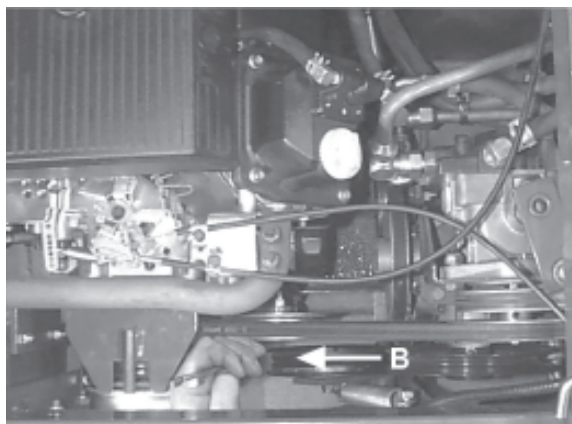
ENGINE-CUTTERDECK (PTO) BELT

1. Raise the seat and grass collection hopper or utility box.
2. Disconnect the electric clutch from the wire harness at plug **P**.
3. Remove the carriage bolts securing torque restraint **Q** to the clutch.
4. Insert the square drive end of a 3/8" ratchet or breaker bar into the square hole in the idler arm and use the ratchet handle to rotate the idler assembly enough to remove the belt from the idler and gearbox pulley.
5. Work the belt out of the space between the gearbox pulley and the frame and remove it from the electric clutch pulley.
6. Install the new belt by doing steps 1 through 4 in reverse order.



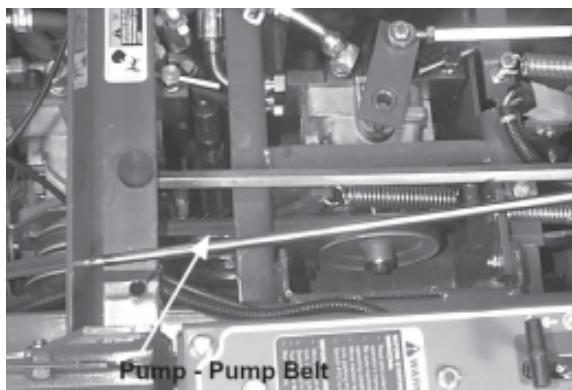
ENGINE-PUMP BELT

1. Remove the Engine-Gearbox belt. See Engine Gearbox belt in the preceding section.
2. Use a 9/16" wrench on the bolt **B** securing the idler pulley to rotate the idler arm enough to remove the belt from the idler and pump pulleys. Finish removing the belt from the engine pulley.
3. Install the new belt by doing steps 1 and 2 in reverse order.



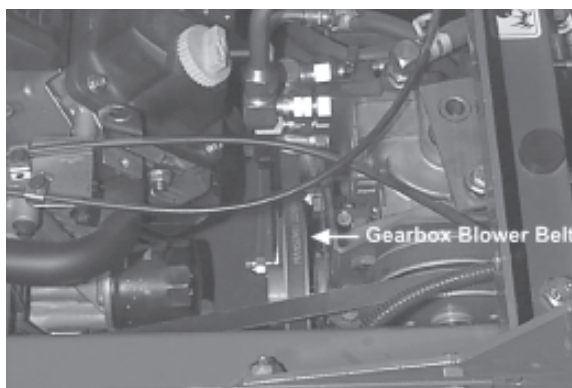
PUMP-PUMP BELT

1. Raise the seat and grass collection hopper or utility box.
2. Remove the Engine-Pump belt from the pump only. The Engine-Gearbox belt does not need to be removed. See Engine-Pump belt in the preceding section.
3. Rotate the Pump-Pump idler arm enough to remove the belt from the idler and pump pulleys. A 3/8" breaker bar may be useful to rotate the idler arm.
4. Install the new belt by doing steps 1 and 2 in reverse order.



GEARBOX-BLOWER BELT

1. Raise the grass collection hopper.
2. Insert a 3/8" ratchet in the square hole on the Gearbox-Blower idler arm. Use it to rotate the arm enough to remove the belt from the gearbox pulley. Remove the E-ring securing the idler arm at the pivot and slide the idler arm out far enough to remove the belt.
3. Install the new belt by performing steps 1 & 2 in reverse order.



CUTTERDECK-TIMING BELT

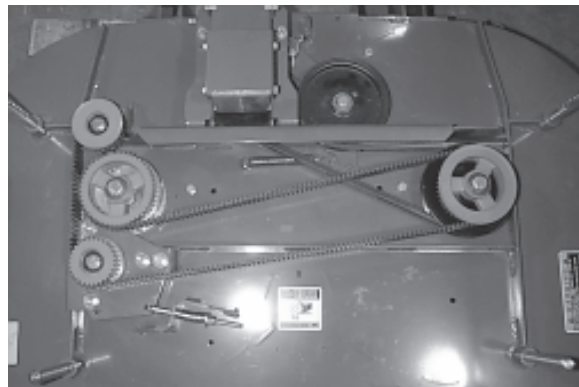
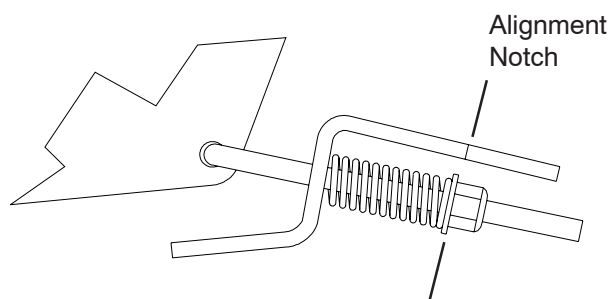
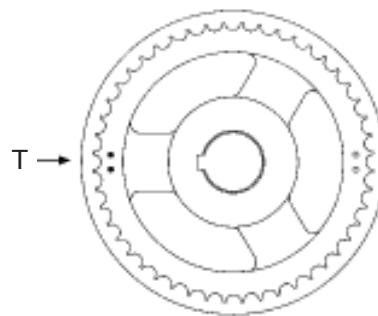
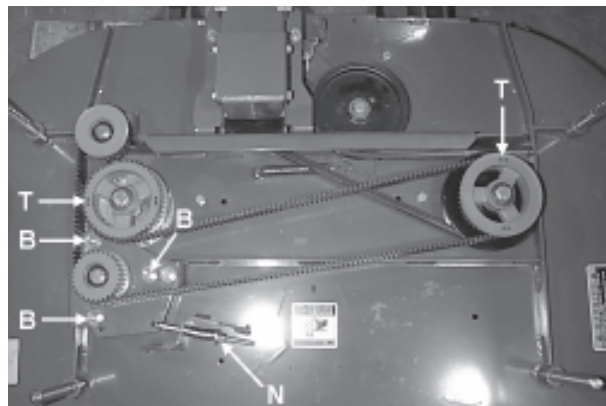
1. Raise the foot plate on the cutterdeck.
2. Back off nut **N** to allow for removal of timing belt.
3. Loosen the three bolts **B** locking the timing belt idler in place.
4. Install an extension on a 3/8" drive ratchet. Insert it in the square hole of the timing belt idler arm and use the ratchet handle to rotate the idler enough to remove the belt from the idler and drive sprockets.

CAUTION

When handling timing belts, take care not to twist or bend them severely. Mishandling timing belts can break the cords in them and lead to premature failure.

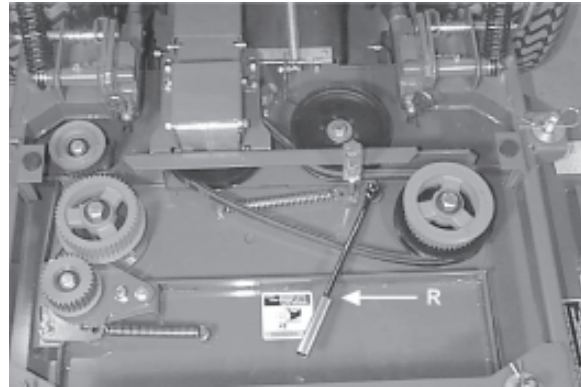
5. Install the new timing belt on the sprockets. Line up the drive sprockets so the timing marks **T** are at 90 degrees to each other. This puts the blades at 90 degrees to each other as well.
6. Tighten nut **N** until the bottom of the nut is aligned with the notch in the bracket as shown.
7. Lock the idler in place by tightening nuts **B**.
8. Start the engine and operate the deck for a few minutes to allow the belt to run in.
9. Loosen the locking nuts **B** and allow the spring to take up the slack. **DO NOT OVER TENSION.** The spring will supply the correct amount of tension as long as the idler arm is free to rotate. Lock the idler down.
10. Check the belt after the first several hours of operation for slack. If there is any slack, repeat step 9.

NOTE: Timing belts use fiberglass or Aramid fiber cords which have very little stretch. Once properly tensioned, no further adjustment is usually necessary. It is important that there be no slack in the belt, because any slack can allow the belt to jump teeth on the sprockets and get the blades out of time. Since there is no stretch in the belt, it can easily be over tightened. The spring allows the correct amount of tension to be applied without danger of over tension.



GEARBOX-SPINDLE BELT

1. Remove the cutterdeck timing belt as detailed in the cutterdeck timing belt section.
2. Insert a 3/8" ratchet extension in the square hole in the gearbox-spindle idler.
3. Use the ratchet handle **R** to rotate the idler enough to secure it in place with a phillips screwdriver through the hole in the idler arm and desk top. Remove the idler from the idler arm. Remove the gearbox mounting bolts and loosen the front bolts. Remove the belt from the blade spindle pulley and work it out from under the gear box.
4. Install the new belt by doing steps 1 through 3 in reverse order.



POWER UNITS**ENGINE :**

Construction: Aluminum block with cast-in cast iron sleeves. Aluminum head.

Configuration: 4-stroke, horizontal shaft, V-twin cylinder, overhead valve, air-cooled.

DRIVE SYSTEM:

Full hydrostatic pump and wheel motor combination for independently controlled drive wheels.

Pump: Hydrogear BDP-10L 10cc variable displacement piston pump.

Motors: Eaton \ Char Lynn 11.9 cu.in. displacement W series. Direct drive 1-1/4" (31.8mm) diameter output shaft.

Turn Radius: True 0"

**OPERATOR PRESENCE
INTERLOCK SYSTEM:**

Start: The PTO (blades) must be off, traction levers in neutral, and parking brake on for engine to crank.

Run: Operator must be in seat to take parking brake off, to move traction levers out of the neutral position, or to turn the PTO (blades) on or the engine will kill. The parking brake must be off for the traction levers to move out of the neutral position.

The operator may leave the seat with the engine running if the parking brake is on, the PTO (blades) is off, and the traction levers are in the neutral position. A time delay eliminates annoying engine cutout from operation over rough terrain.

CONTROLS:

Throttle; choke; power takeoff (PTO) clutch switch; traction levers; parking brake lever.

FUEL SYSTEM:

5.3 gallon capacity with a fuel shutoff valve (1/4 turn). Replaceable fuel filter.

MAXIMUM GROUND SPEEDS:

Forward: 8 mph (12.9 km/h)

Reverse: 4 mph (6.4 km/h)

WHEELS & TIRES:

Drive wheels: 18x10.50-10 4-ply rated turf tires

Rear Caster: 13x6.50-6 4-ply rib tread tire

Pressure: 14 p.s.i. (1 kg/cm²)

Deck Casters: 9x3.50-4.00 4-ply rated smooth tread

BRAKING:

Hayes disc type parking brakes. Spring applied for overload protection.

SEAT:

High back, foam padded hinged for easy tilt-up access to pumps and battery. Prop rod to hold in up position. Internally mounted seat switch.

WEIGHT:

1070 lbs (485 kg) with 42" collection cutterdeck.

SPECIFICATIONS

ZTM 1250

ENGINE	
MODEL NUMBER	442105
MANUFACTURER	Kohler
MODEL	CH25S
CYLINDERS	2
COOLING	Air
BORE/STROKE	3.27"/2.64" (83/67 mm)
DISPLACEMENT	44 cu.in. (725 cc)
COMPRESSION	9:1
OUTPUT POWER	25 hp (18.4 kW) @ 3600 rpm
OUTPUT TORQUE	39.5 ft-lb (54 N-m) @ 2400 rpm
LUBRICATION	FULL PRESSURE
GOVERNOR	Mechanical
AIR CLEANER	Ducted dual element
IGNITION SYSTEM	Electronic
CHARGING SYSTEM	15 amp, regulated
BATTERY	BCI group U1
FUSES	Two, 20 amp blade
FUEL CONSUMPTION @ MAX LOAD/ SPEED	2.1 gal./hr (7.9 l/hr)

FLUIDS	CAPACITY	TYPE	FILTER
FUEL	5.3 gal.	REGULAR, UNLEADED GASOLINE	REPLACEABLE
ENGINE OIL	2.0 qts (1.9 l)	SAE 10W30	SPIN-ON REPLACEABLE
HYDRAULIC OIL	3.5 qts (3.3 l)	SAE 15W40 MOTOR OIL SAE 20W50 MOTOR OIL 15W50 SYNTHETIC	25 MICRON SPIN-ON REPLACEABLE

CUTTERDECKS		
MODEL NUMBER	954204A	954804A
TYPE	Rear Discharge Collection	Rear Discharge Collection
CUTTING WIDTH	42" (107 cm)	48" (122 cm)
WIDTH	43.8" (111 cm)	49.5" (127 cm)
BLADES	High Lift	High Lift
NUMBER OF BLADES	2	2
BLADE LENGTH	22" (559 mm)	25" (635 mm)
BLADE THICKNESS	.250" (6.35 mm)	.250" (6.35 mm)
TIP SPEED	18,725 ft/min 5707 m/min	17,012 ft/min 5185 m/min
DAILY PRODUCTION (8 hr @ 6 mph)	20.4 acres (8.2 ha)	23.3 acres (9.4 ha)

CONSTRUCTION:

Fabricated and welded 10-gauge, double-layer steel top with 7-gauge side skirts. Full floating design.

CUTTERDECK DRIVE SYSTEM:

Electric clutch/brake drives belt directly from engine gearbox. Deck shaft driven from gearbox.

SPINDLES:

Top mounted and maintenance free, with 1" shaft in precision machined, ductile iron housing

CUTTING HEIGHT:

Pin and hole arrangement gives quick, no tools heights of cut from 1-1/2" to 4-1/2" in 1/2" increments.

FIGURE 1

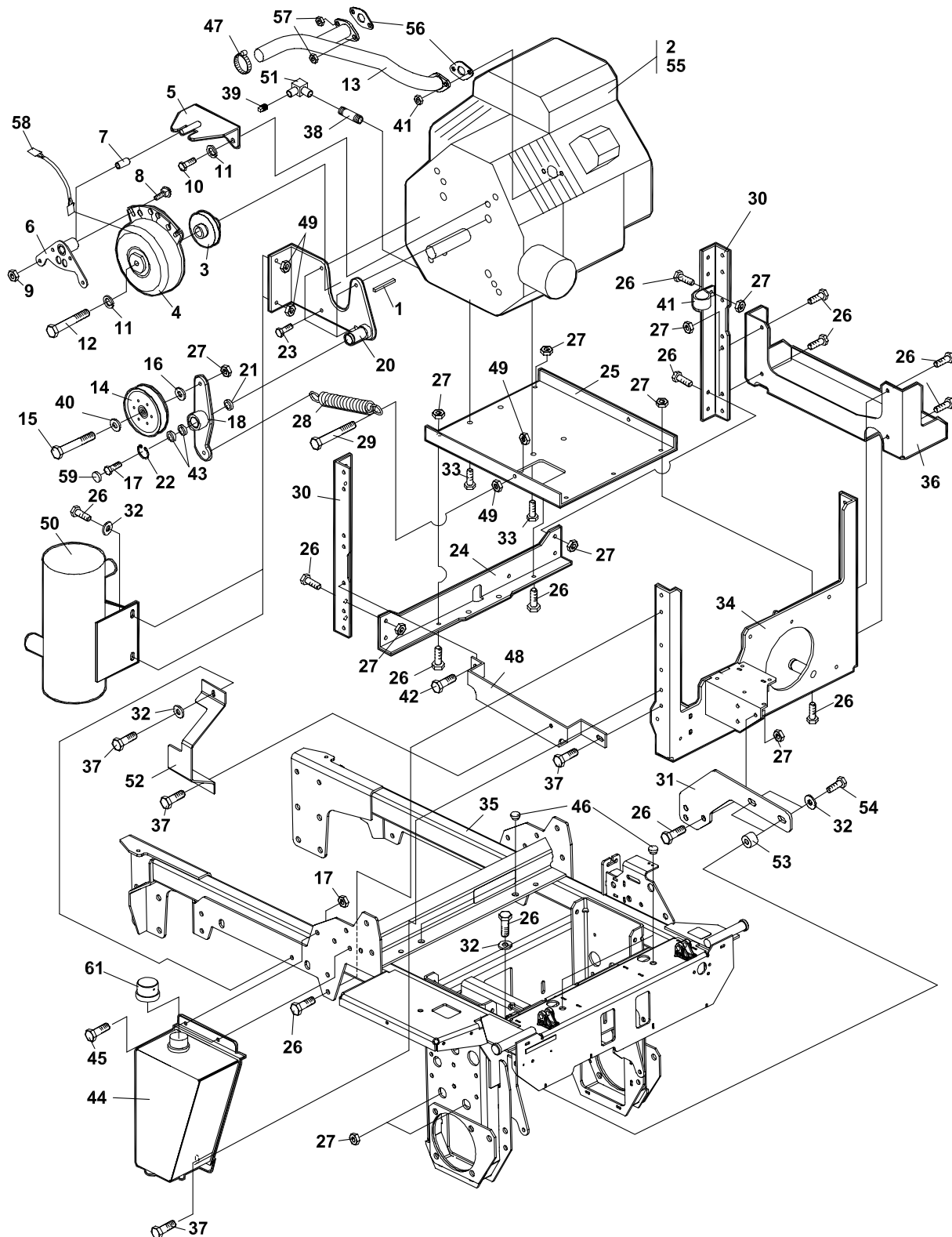


FIGURE 1

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	64164-12	1/4X1/4X1 SQ KEY	1	45	64123-15	BOLT-HEX 3/8-16X3/4	2
2	2228070	ENGINE-KOHLER CH25S	1	46	810149	BUMPER-RUBBER	4
3	2188188	PULLEY-4.25	1	47	48319-01	CLAMP-MUFFLER 1-3/8	1
4	2721337	CLUTCH, ELECTRIC (INCLUDES ITEM 58 & 59)	1	48	2720468.7	GUARD-CLUTCH	1
5	2226026.7	WLDMT-BRACKET CLUTCH	1	49	64141-4	NUT-WLF 3/8-16	6
6	2721338.7	WLDMT-CLUTCH STOP	1	50	2228040	MUFFLER	1
7	38304-03	BRG-FLANGED PLASTIC	1	51	2690033-01	ELBOW-3/8 PIPE, 90 DEG	1
8	64018-9	BOLT-CRG 5/16-18X3/4	2	52	2720469.7	GUARD-FILTER	1
9	64229-02	LOCKNUT-NYLON 5/16-18	2	53	2720834	SPACER	2
10	64123-38	BOLT-HEX 7/16-14X1	2	54	64123-70	BOLT-HEX 3/8-16X1-1/2	2
11	64006-06	LOCKWSHR-HELICAL 7/16	3	55	2228010	ENGINE-KOHLER CH20S	1
12	64123-155	BOLT-HEX 7/16-20X3	1	56	KOHLER EXHAUST GASKET (KOHLER # 2404102)	2	
13	2228039	MANIFOLD-EXHAUST	1	57	KOHLER HEX FLANGE M-8X1.25 (KOHLER # M-0841080) (AVAILABLE FROM YOUR KOHLER DEALER)	2	
14	2308000	PULLEY-IDLER 4.00 EOD	1	58	2720949	ASSY-CLUTCH WIRE	1
15	64123-87	BOLT-HEX 3/8-16X1-3/4	1	59	4128002	CAP-26 X 7, END	1
16	64163-46	WASHER	1	60*	4121560	KIT-BRAKE POLE	1
17	64270-01	BOLT-MET HEX M10-1.5X30	1	61	69216.7	CAP-RESERVOIR	1
18	4131284	ASSY-IDLER ARM TOP (INCLUDES ITEMS 21, 22 & 43)	1				
19	85010N	ZERK, 1/4-28 STR SELF TH	1				
20	4131381.7	WLDMT-IDLER BRACKET	1				
21	4127999	SEAL-16 X 24 X 7	1				
22	64144-40	SNAP RING-26MM INTERNAL	1				
23	64139-21	BOLT-WLF 3/8-16X3/4	4				
24	2222043.7	BRKT-ENGINE REAR	1				
25	2222067.7	PLATE-ENGINE BASE	1				
26	64123-50	BOLT-HEX 3/8-16X1	28				
27	64229-03	LOCKNUT-NYLON 3/8-16	28				
28	38219	SPRING-TENSION	1				
29	64123-100	BOLT-HEX 3/8-16X2-1/4	1				
30	2222042.7	BRKT-HANGER ENGINE	2				
31	2720833.7	BRKT-GEARBOX SUPPORT	1				
32	64163-31	WASHER	5				
33	64197-018	BOLT-TDFM 7/16-14X1-1/4	4				
34	2226030.7	WLDMT-PLATE PUMP	1				
35	4136748	S-FRAME W/LBLS STEINER	1				
36	2222074.7	SUPPORT-FUEL TANK	1				
37	64197-003	BOLT-TDFM 3/8-16X1.00	4				
38	48024-12A	FTG-NPT 3/8 X 2 NIPPLE	1				
39	69051-01	PLUG-PIPE 3/8	1				
40	64163-47	WSHR.391X1.110X16 GA	1				
41	48228-2A	CABLE CLIP 3/4 W/INSTN	1				
42	64197-016	BOLT-TDFM 3/8-16X1/2	2				
43	4128004	BEARING-BALL 10X26X8	1				
44	2226015.7	WLDMT-RESERVOIR	1				

***NOT ILLUSTRATED**

FIGURE 2

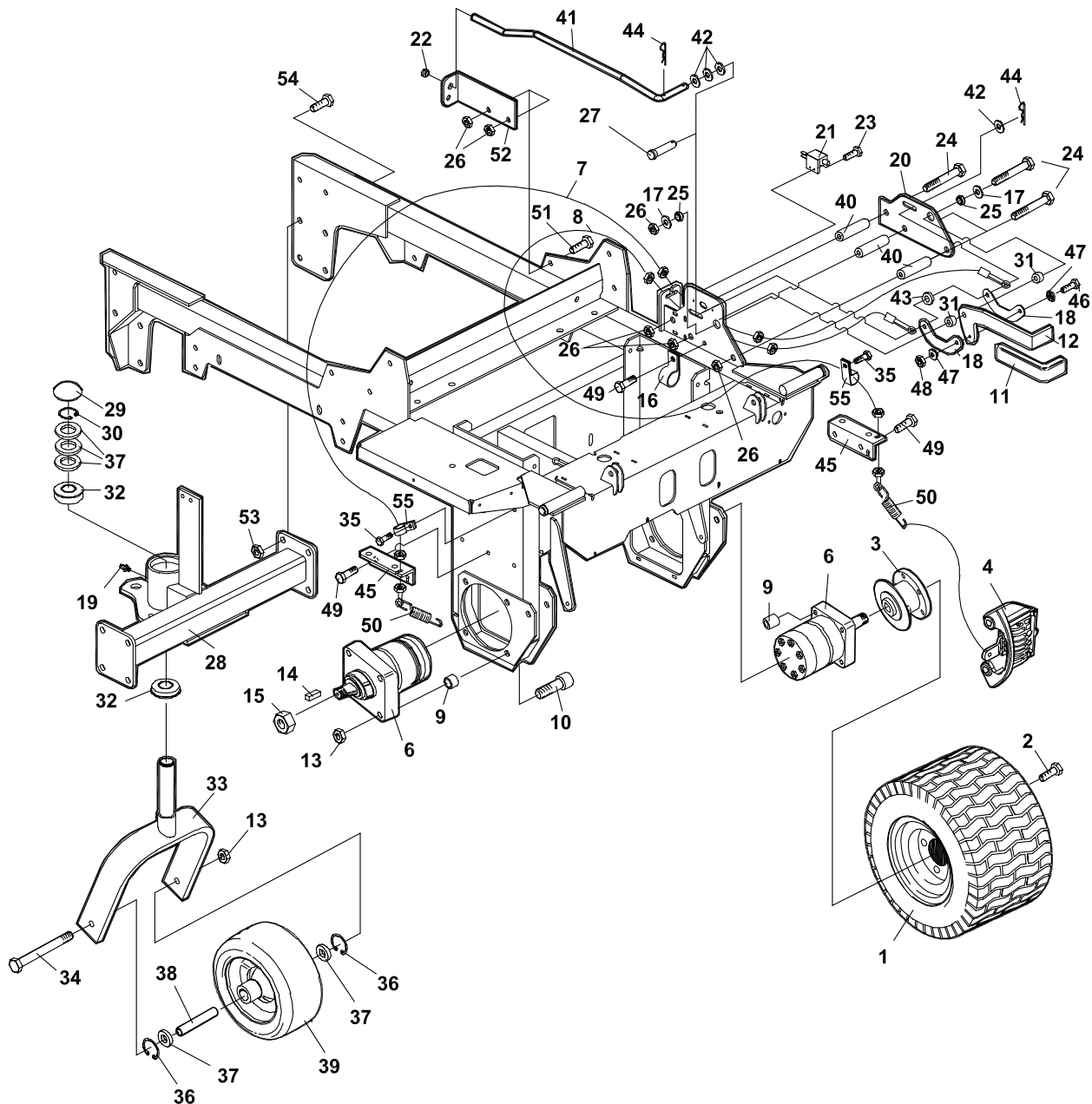


FIGURE 2

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	2228014	ASSY-WHL&TIRE 18X10.5-10	2	41	2720339	ROD-GRASSBOX	1
	* 2228014-01	S-10.0" RIM ASSY W/VL		42	64163-55	WSHR .328X.75X14 GA	4
	* 2228014-02	S-TIRE-18X10.5-10MULTI		43	64163-46	WSHR.383/.393X.88X7GA	1
	* 2228083	S-TIRE-18X11-10 FAST TR		44	64168-2	HAIRPIN COTTER	2
2	64220-01	BOLT-WHL 12-20X.75 60D	8	45	2222122.7	BRACKET-BRAKE CABLE	2
3	2228013	HUB-WHEEL/DISC 4 BOLT	2	46	64205-038	BLT-MET M6-1.00X20	1
4	2188147	ASSY, BRAKE CW (LH)	1	47	2223004	BUSHING-LINK BRAKE	2
5	* 2188148	ASSY, BRAKE CCW (RH)	1	48	64246-01	NUT-WHIZ M6-1.00	1
6	4117905-01	MOTOR-WHEEL (USE SEAL KIT 970265)	2	49	64197-016	BLT-TDFM 3/8-16X1/2	6
				50	128102	SPRING-EXTENSION	2
				51	64123-50	BLT-HEX 3/8-16X1	2
7	2228031-02	CABLE-BRAKE 76.0	1	52	2222176.7	BRACKET-GRSBX LATCH	1
8	2228031-01	CABLE-BRAKE 43.0	1	53	64237-06	LOCKNUT-NYLON M12-1.75	8
9	2183063-03	SPACER, 7.5MM LONG	8	54	A1105061	BOLT-M12-1.75X30	8
10	64189-13	BLT-HEX SOC 1/2-13X3-1/4	8	55	48228A	CABLE CLIP-INSULATED	2
11	2188155	GRIP, 1/4X1X4-1/2	1	56	64152-23	1/4-20X3/8 LG SP SCREW	2
12	2222110.7	LEVER-PARKBRAKE	1				
13	64229-05	LOCKNUT-NYLON 1/2-13	9				
14	64164-20	S-KEY FOR WHEEL MTR	2				
15	64151-30	NUT-NYLN INSERT JAM 1-20	2				
16	48228-2A	CABLE CLIP 3/4 W/INSTN	2				
17	64163-31	WASHER	2				
18	2222114.7	LINK-PARK BRAKE	2				
19	85010N	ZERK, 1/4-28 STR SELF TH	1				
20	2222093.7	PLATE-GUIDE PK BRAKE	1				
21	2188156	SWITCH-NONO DBL POLE	1				
22	118047-07	BUSHING FLIP-LOK	1				
23	64197-015	BLT-TDFM 10-32X1/2	2				
24	64123-100	BLT-HEX 3/8-16X2-1/4	4				
25	38371-02	BRG-NYLINER 5/8	2				
26	64229-03	LOCKNUT-NYL 3/8-16	6				
27	64188-41	PIN-CLEVIS	1				
28	2226012.7	WLDMT-SUBFRAME REAR	1				
29	2188135	DUST COVER	1				
30	64144-24	SNAP RING 1.00 EXT	1				
31	2223017	SPACER	2				
32	148042	BALL BRG 1.00 10	2				
33	2226005.2	WLDMT-CASTER REAR	1				
34	64123-221	BOLT-1/2-13X10	1				
35	64152-23	1/4-20X3/8 LG SP SCREW	2				
36	64221-1	E-CLIP	2				
37	64163-64	WSHR 1.015X1.500X14GA	5				
38	2722702	AXLE-CASTER REAR	1				
39	2722326	ASSY-WHL&TIRE 13X6.5-6	1				
	* 2722326-01S	TIRE-13X6.5-6 SM 4 PLY	1				
	* 2722326-02S	ASSY-RIM W/VALVE STEM	1				
	* 2722228-03	BEARING	2				
40	2223018	SPACER	3				

* NOT ILLUSTRATED

FOR BRAKE ASSEMBLY BREAKDOWN
SEE FIG 16

FIGURE 3

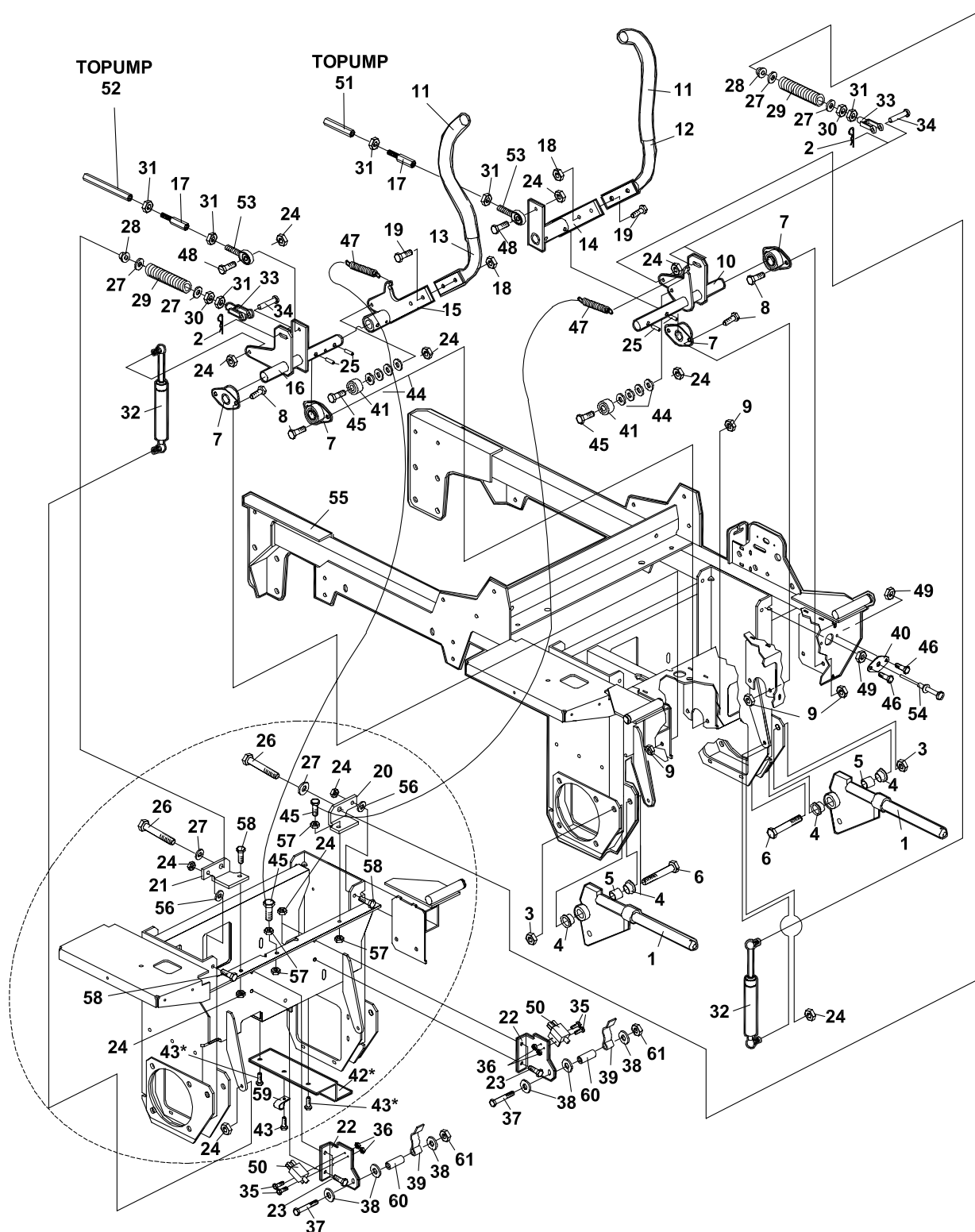


FIGURE 3

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	2226001.7	WLDMT-RCVR PUSHARM	2	49	64025-04	NUT-HEX 3/8-24	1
2	64168-2	HAIRPIN COTTER	2	50	108208	SWITCH DBL POLE	2
3	64229-05	LOCKNUT-NYL 1/2-13	2	51	2228037-01	TURNBUCKLE-134.0	1
4	2228047	BEARING-NYL FLNGD	4	52	2228037-02	TURNBUCKLE-364.0	1
5	2223025	SHAFT-CRADLE PIVOT	2	53	38369-01	ROD END BALL JOINT RH	2
6	64123-125	BOLT-HEX 1/2-13X2-3/4	2	54	108009-04	CONTROL-CHOKE 40.0	1
7	2188145	BEARING-.75ID BRZ	4	55	4136748	S-FRAME W/LBLS STEINER	1
8	64123-15	BOLT-HEX 3/8-16X3/4	8	56	64163-29	21/64 X 1 X 11GA WASHER	2
9	64141-4	NUT-WLF 3/8-16	8	57	64141-6	NUT-WLF 5/16-18	4
10	4118810.7	WLDMT-TRCTN SHAFT LH	1	58	64123-68	BOLT-HEX 5/16-18X1	3
11	2188144	GRIP, .75ID X 12	2	59	48228-2A	CABLE CLIP 3/4 W/INSTN	1
12	2223031.7	HANDLE-TRCTN CNTRL LH	1	60	153047	SPACER-PIVOT	2
13	2223030.7	HANDLE-TRCTN CNTRL RH	1	61	64229-01	LOCKNUT-NYLON 1/4-20	2
14	2226009.7	WLDMT-TRCTN CNTRL LH	1				
15	2226008.7	WLDMT-TRCTN CNTRL RH	1				
16	4118811.7	WLDMT-TRCTN SHAFT RH	1				
17	2228076	EXTENSION-ROD END	2				
18	64229-03	LOCKNUT-NYL 3/8-16	4				
19	64123-50	BOLT-HEX 3/8-16X1	4				
20	2222149.7	BRKT-REVERSE RTN LH	1				
21	2222150.7	BRKT-REVERSE RTN RH	1				
22	2222060.7	BRKT-NEUTRAL SWITCH	2				
23	64123-54	BOLT-HEX 5/16-18X3/4	4				
24	64229-02	LOCKNUT-NYLON 5/16-18	9				
25	64061-40	ROLL PIN-5/16X1-1/4	4				
26	64123-205	BOLT-HEX 5/16-24X4	2				
27	64163-55	WSHR .328X.75X14 GA	6				
28	38304-02	BRG, FLGD PLASTIC	2				
29	2720977	SPRING-COMPRESSION	2				
30	64229-08	LOCKNUT NYLON 5/16-24	2				
31	64025-03	NUT-HEX 5/16-24	6				
32	2228065	DAMPER-CONTROL	2				
33	38020N	CLEVIS YOKE, 5/16 PLATE	2				
34	64188-02	PIN, CLEVIS 5/16X1	2				
35	64152-46	SCR-SLT HH 10-24X1/2	4				
36	64025-15	NUT-HEX #10-24 KEPS	4				
37	64123-07	BOLT-HEX 1/4-20X1-1/2	2				
38	64163-03	WSHR-.256ID X .62OD	6				
39	2222061	LEVER-SWITCH	2				
40	2222092	PLATE-CHOKE MOUNT	1				
41	38372	BEARING-BALL	2				
42	2222144.7	GUIDE-DECK CHUTE	1				
43	64197-016	BOLT-TDFM 3/8-16X1/2	3				
44	64163-02	WASH.21/64X19/32	8				
45	64123-69	BOLT-HEX 5/16-18X1-1/2	4				
46	64152-23	1/4-20X3/8 LG SP SCR	2				
47	158139	SPRING-STEER TILT	2				
48	64123-47	BOLT-HEX 5/16-18X1-1/4	2				

FIGURE 4

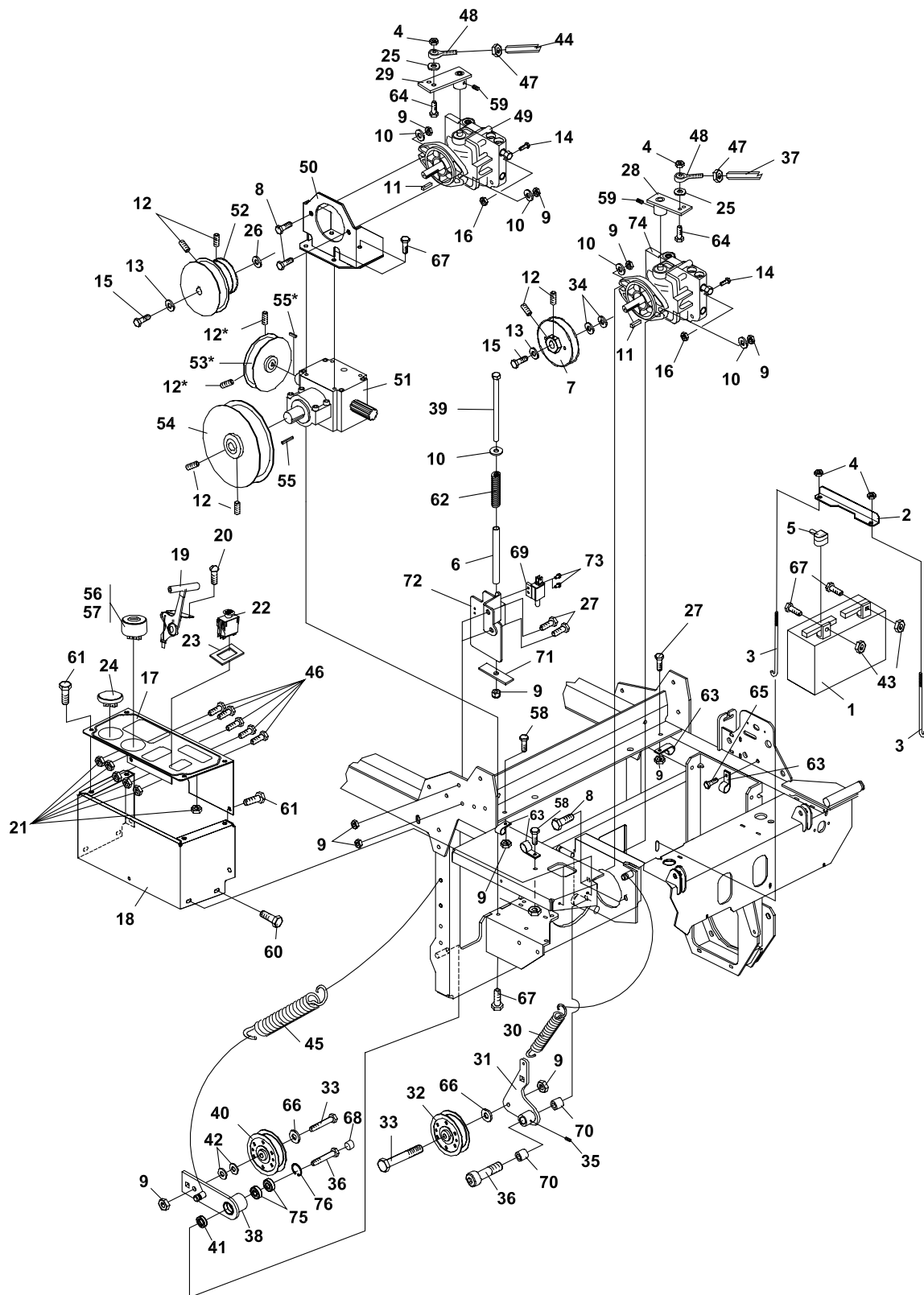


FIGURE 4

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	108055	BATTERY	1	45	2308133	SPRING, EXTENSION	1
2	2222125.7	BRKT-BATTERY HLDDWN	1	46	64152-47	SCR-SLT HH 10-24X3/8	5
3	2228048	BOLT-BATTERY HOOK	2	47	64025-33	NUT-HEX 5/16-24 LH	2
4	64229-02	LOCKNUT-NYLON 5/16-18	4	48	38369-02	ROD END BALL JOINT LH	2
5	112386	BOOT,BAT TERM POS	1	49	4121333	PUMP-HYDRO BDP-10A-440	1
6	2720966	SPACER 9.92X12.7X130.4	1	50	2720837.7	WLDMT-GEARBOX REAR	1
7	2228017	PULLEY-PUMP	1	51	2228004	GEARBOX-1:1	1
8	64123-16	BOLT-HEX 3/8-16X1-1/4	4		(SERVICE PARTS FOR GEAR BOX)		
9	64229-03	LOCKNUT-NYLON 3/8-16	11		2228008-01	SEAL-GEARBOX	2
10	64163-31	WASHER	9	*	800513	SCREW-SOC 5/16-18X1-1/4	8
11	64238-01	KEY 5MM SQ X 20MM LONG	2				
12	64044-18	SCREW-SET 5/16-18x5/16	8	52	2228018	PULLEY-PUMP DBL DECK	1
13	64209-09	WASHER-CONICAL SPRING	2	53	2228019	PULLEY-BLOWER DRIVE	1
14	64123-60	BOLT, 1/4-20X2 HEX	2	54	2228045	PULLEY-GEARBOX	1
15	64205-013	BLT-MET M6-1X12	2	55	64164-12	1/4X1/4X1 SQ END KEY	2
16	64229-01	LOCKNUT-NYLON 1/4-20	2	56	2228044	SWITCH-IGNITION W/GR	1
17	4136749	S-CONTROL PANEL	1	57*	2228044-01	KEY-IGNITION	1
18	2222121.17	WRAPPER-CONTROL PNL	1	58	64123-15	BLT-HEX 3/8-16X3/4	3
19	118020-12	CONTROL-THROTTLE 26.50	1	59	64192-04	SET SCREW 5/16-18X5/8	2
20	64152-46	SCR-SLT HH 10-24X1/2	2	60	64152-23	1/4-20X3/8 LG SP SCREW	5
21	64025-15	NUT-HEX #10-24 KEPS	7	61	64152-56	SCREW HS STAP #10X3/8	6
22	2721505	SWITCH, PTO	1	62	2720962	SPRING-COMPRESSION	1
23	2188178	SWITCH-RETAINER	1	63	48228-2A	CABLE CLIP 3/4 W/INSTN	4
24	48030N	HOUR METER ASSEMBLY	1	64	64123-47	BLT-HEX 5/16-18X1-1/4	2
25	64163-55	WSHR .328X.75X14 GA	2	65	64197-016	BLT-TDFM 3/8-16X1/2	1
26	64163-73	WSHR .625IDX1.12ODX.062	1	66	64163-47	WSHR.391X1.110X16 GA	2
27	64123-50	BLT-HEX 3/8-16X1	6	67	64123-54	BLT-HEX 5/16-18X3/4	10
28	4118528.7	WLDMT-PUMPARM LH	1	68	4128002	CAP-26 X 7, END	1
29	4118074.7	WLDMT-PUMPARM RH	1	69	38383	SWITCH-N.C.	1
30	38219	SPRING-TENSION	1	70	68110A	BRONZE BUSHING	4
31	4136109.7	WLDMT-IDLER ARM PMP-PMP1 (INCLUDES ITEMS 35 & 70)	1	71	2720967.7	PLATE-GRASSBOX SW	1
32	2228016	PULLEY-IDLER PUMP	1	72	2720965.7	WLDMT-BOX SWITCH BRKT	1
33	64123-87	BLT-HEX 3/8-16X1-3/4	1	73	64197-015	BLT-TDFM 10-32X1/2 TORX	2
34	64163-11	2X.625/.628X10 GA. WSH	2	74	4121332	PUMP-HYDRO BDP-10A-439	1
35	35027N	ZERK-90	1	75	4128004	BEARING-BALL 10 X 26 X 8	2
36	64270-01	BOLT-MET M10-1.5 X 30	2	76	64144-40	SNAP RING-26MM INTERNAL	1
37	2228037-01	TURNBUCKLE-134.0	1				
38	4131296	ASSY-IDLER PTO (INCLUDES ITEM 41, 75, 76)	1				
39	64123-219	BOLT 3/8-16x6	1				
40	38297	IDLER, 5 OD FLANGED	1				
41	4127999	SEAL-16 X 24 X 7	1				
42	64163-46	WSHR.383/.393X.88X7GA	2				
43	64025-02	NUT-HEX 5/16-18	2				
44	2228037-02	TURNBUCKLE-364.0	1				

***NOT ILLUSTRATED**

FIGURE 5

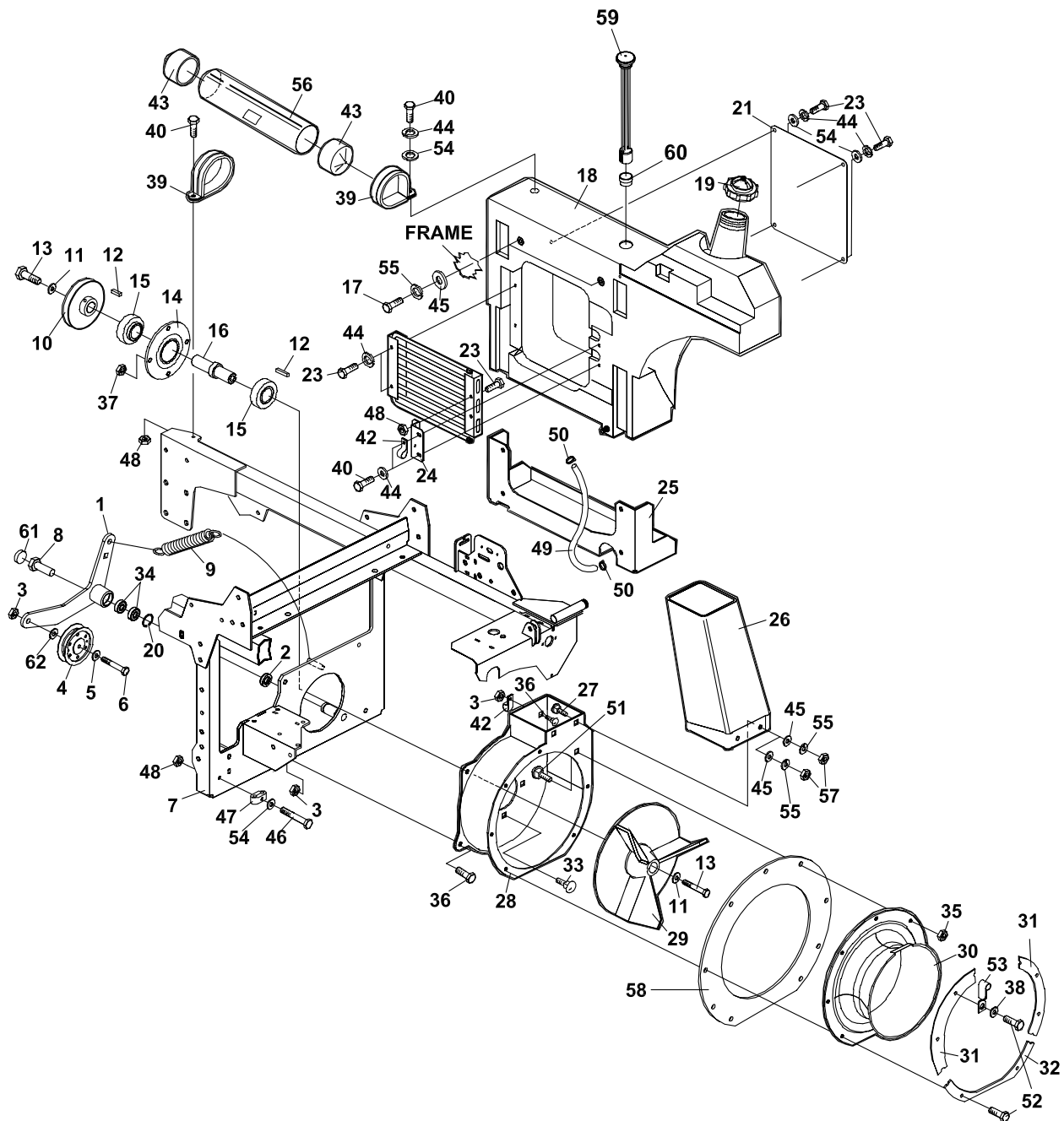


FIGURE 5

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	4129079	ASSY-IDLER ARM BLOWER (INCLUDES ITEMS 2, 20, 34)	1	45	64163-31	WASHER	4
2	4128000	SEAL-16 X 26 X 7	1	46	64123-60	BLT-HEX 1/4-20X2	1
3	64229-03	LOCKNUT-NYLON 3/8-16	5	47	148090-03	HOSE-SUPPORT 5/8	1
4	2228016	PULLEY-IDLER PUMP	1	48	64229-01	LOCKNUT-NYL 1/4-20	4
5	64163-47	WSHR.391X1.110X16 GA	1	49	09007-08	S-HOSE .25X.5X17"	1
6	64123-87	BLT-HEX 3/8-16X1-3/4	1	50	88042N	HOSE CLAMP	2
7	4131382.7	WLDMT-BULKHEAD	1	51	64018-15	BLT-CRG 5/16-18X1	1
8	64270-01	BOLT-MET HEX M10-1.5x30	1	52	64197-013	BLT-TDFM 5/16-18X1-1/4	8
9	38219	SPRING-TENSION	1	53	3009269	CLAMP-HOSE TWISTED	1
10	2228099	PULLEY-BLOWER	1	54	64163-03	WSHR-.256ID X .62OD	8
11	64209-03	SPRING WASHER .67 ID	2	55	64006-03	LOCKWSHR-HELICAL 3/8	4
12	64164-12	1/4X1/4X1 SQ END KEY	2	56	2306144	S-DOC TUBE W/DECAL	1
13	64123-208	BLT-HEX 5/8-18X1.5	2	57	64025-05	NUT-HEX 3/8-16	2
14	2228021	HOUSING-BEARING	1	58	2721588.7	RING-BLOWER WEAR	1
15	38348-01	BEARING-SPINDLE SLD	2	59	4124676	GAUGE-REMOTE FUEL	1
16	2223010	SHAFT-BLOWER	1	60	2218147	GROMMET-GAUGE	1
17	64123-15	BOLT-HEX 3/8-16X3/4	2	61	4128002	END CAP	1
18	4124682	TANK-FUEL	1	62	64163-46	WASHER.383/.393X.88X7GA	1
19	2720859	CAP-FUEL TANK	1				
20	64144-40	SNAP RING-26MM INTERNAL	1				
21	2222075.7	SCREEN-OIL COOLER	1				
22	2188173	COOLER-OIL	1				
23	64123-49	BOLT-HEX 1/4-20X1/2	8				
24	2222137.7	BRKT-OIL COOLER	1				
25	2222074.7	SUPPORT-FUEL TANK	1				
26	2226051	S-CHUTE GRASSBOX	1				
27	64018-3	BLT-CRG 3/8-16X1	2				
28	2721889.7	WLDMT-BLOWER	1				
	USE BLOWER ASSEMBLY KIT 970206						
	(INCLUDES ITEMS 10-16,28,29,33 & 37)						
29	2721892.7	WLDMT-FAN	1				
30	2228025	BLOWER-INLET	1				
31	2222139.7	PLATE-BACKING	2				
32	2222140.7	PLATE-BACKING NTCHD	1				
33	64018-23	BLT-CRG 3/8-16X3/4	4				
34	4128004	BEARING-BALL 10 X 26 X 8A	2				
35	64237-05	LOCKNUT-NYL M8-1.25	1				
36	64123-50	BOLT-HEX 3/8-16X1	4				
37	64141-4	NUT-WLF 3/8-16	4				
38	64163-55	WASHER .328X.75X14 GA	1				
39	38542	CLAMP-DOC TUBE	2				
40	64123-89	BLT-HEX 1/4-20X3/4	4				
41	64205-001	BLT-MET M8-1.25X20	12				
42	48228-2A	CABLE CLIP 3/4	2				
43	38061A	SPINDLE SHIELD	2				
44	64006-01	LOCKWASHER 1/4	9				

FIGURE 6

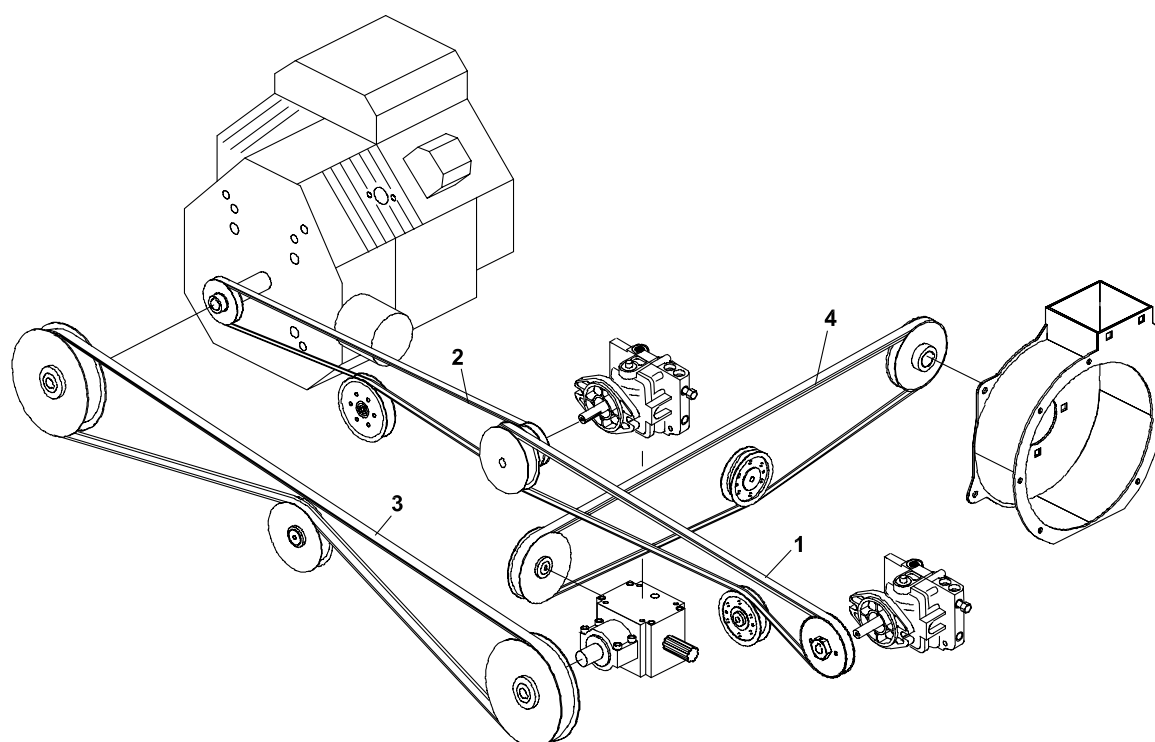


FIGURE 6

ITEM	PART NO.	DESCRIPTION	QTY
1	2721068	BELT-PUMP	2
2	2721069	BELT-ENGINE PUMP	1
3	2721065	BELT-PTO	1
4	2721067	BELT-BLOWER	1

ITEM	PART NO.	DESCRIPTION	QTY
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FIGURE 7

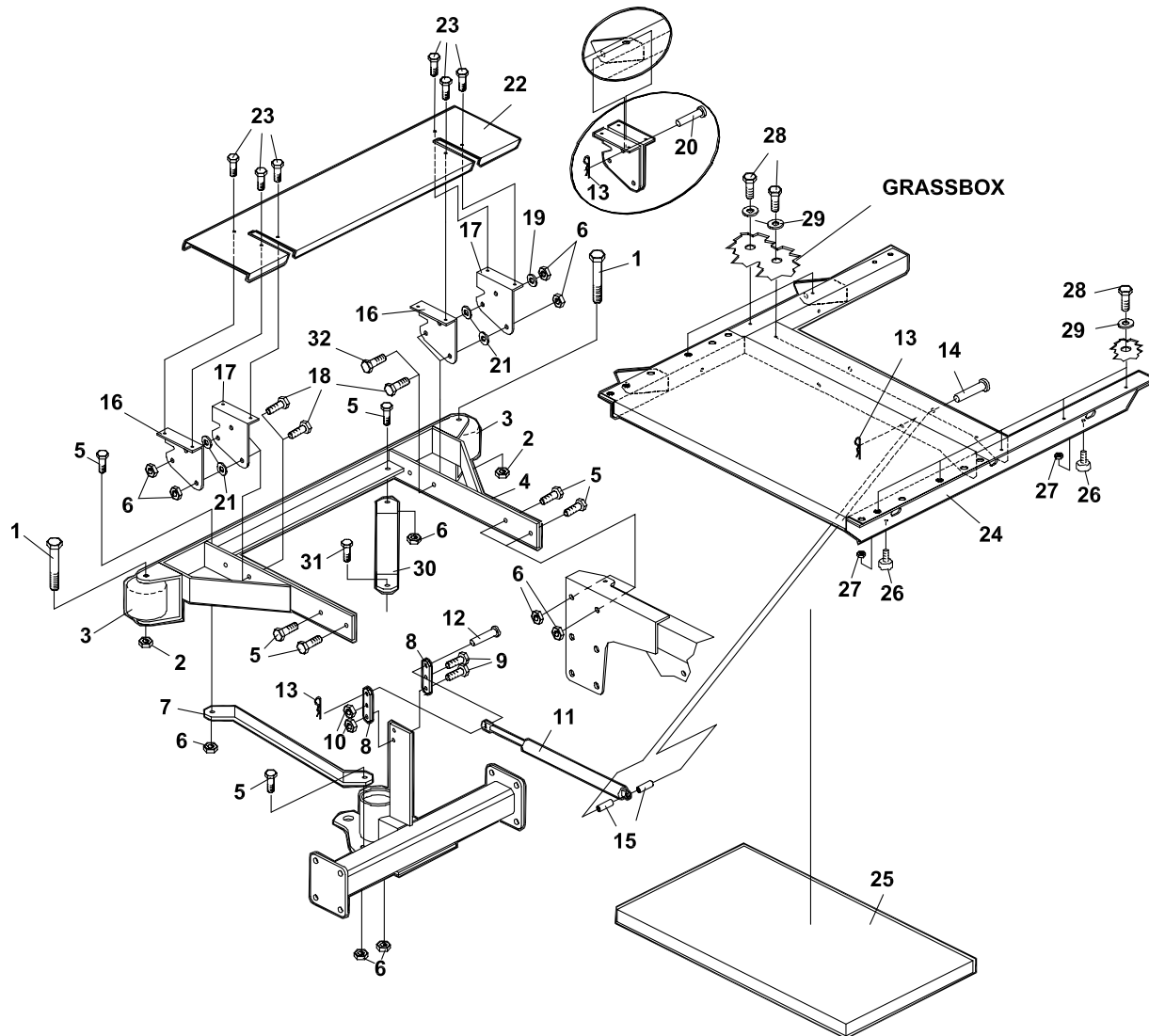


FIGURE 7

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	64123-206	BLT-HEX 5/8-11X4-1/2	2				
2	64229-06	LOCKNUT-NYLON 5/8-11	2				
3	2198153	ROLLER, 3	2				
4	2226011.7	WLDMT-BUMPER	1				
5	64123-50	BLT-HEX 3/8-16X1	8				
6	64229-03	LOCKNUT-NYLON 3/8-16	9				
7	2222049.7	BRACE-FRAME	1				
8	2222178.7	PLATE-CYLINDER MTG	2				
9	64123-47	BLT-HEX 5/16-18X1-1/4	2				
10	64229-02	LOCKNUT-NYLON 5/16-18	2				
11	2228077	CYLINDER-GAS	1				
12	64188-02	PIN, CLEVIS 5/16X1	1				
13	64168-2	HAIRPIN COTTER	4				
14	64188-42	PIN-CLEVIS 5/16X3.50	1				
15	2223037	SPACER-11.13X8.18X33.0	2				
16	2721080.7	BRKT-GRASSBOX RH	2				
17	2721079.7	BRKT-GRASSBOX LH	2				
18	64123-70	BLT-HEX 3/8-16X1-1/2	2				
19	64163-31	WASHER, 25/64X1X12	1				
20	64188-33	PIN, CLEVIS 3/8X1	1				
21	2720952	SPACER	4				
22	2721078.7	GRASSBOX-DEFLECTOR	1				
23	64152-23	1/4-20X3/8 LG SP SCREW	6				
24	2721014.7	WLDMT-FRAME GRSBX	1				
25	2228035	INSULATION-GRASSBOX	1				
26	108228	BUMPER	2				
27	64141-2	NUT-WLF 1/4-20	2				
28	64197-001	BLT-TDFM 5/16-18X3/4	9				
29	64163-29	WASHER	9				
30	4109180.7	BRACE-FRAME	1				
31	64123-16	BLT-HEX 3/8-16X1-1/4	2				
32	64123-87	BLT-HEX 3/8-16X1-3/4	1				

HEAVY DUTY AIR CLEANER

ZTM 1250

FIGURE 8

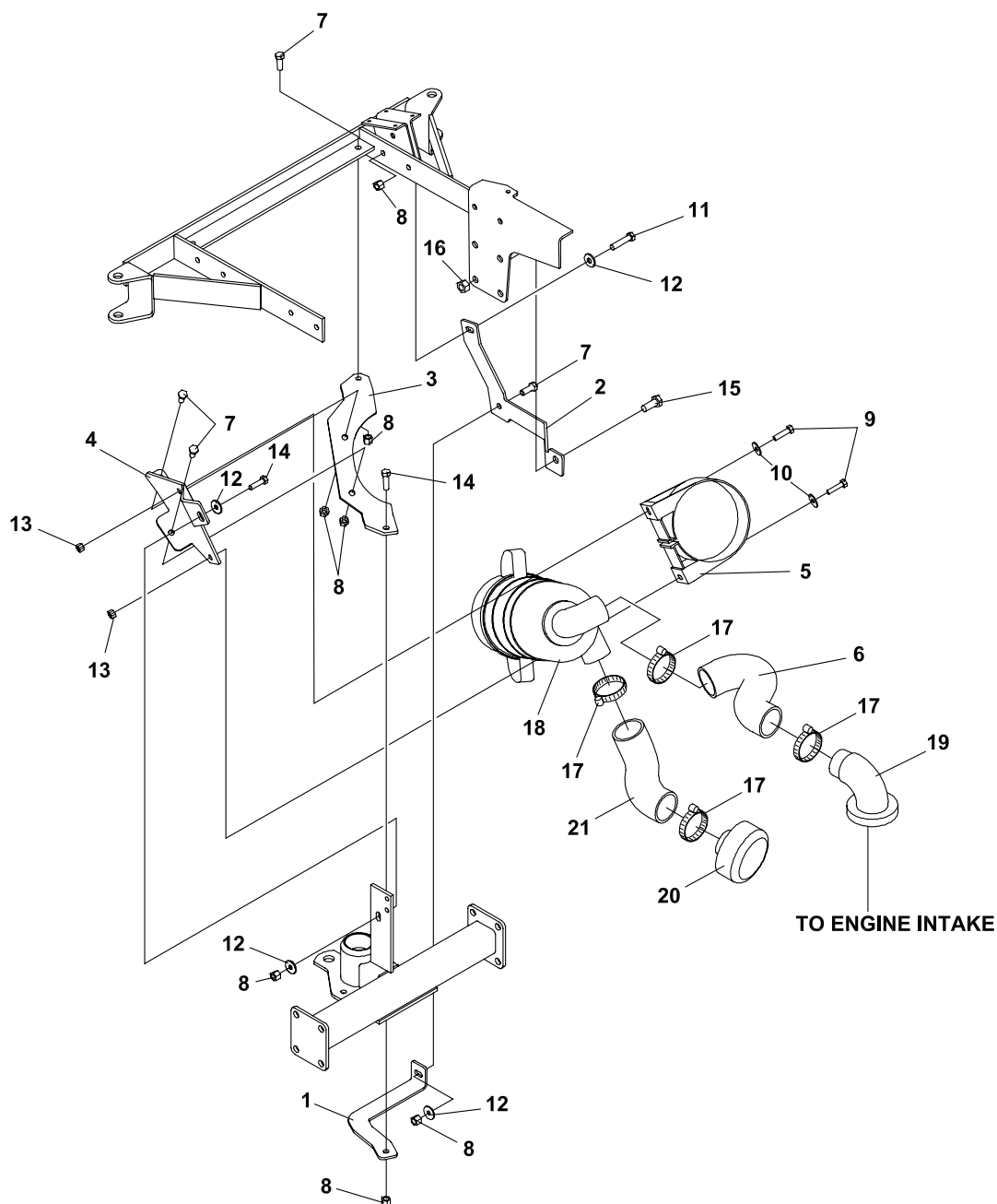


FIGURE 8

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	4114350.7	BUMPER-AIR CLNR UPPER	1				
2	4114359.7	BUMPER-AIR CLNR LOWER	1				
3	4109180.7	BRACE-FRAME	1				
4	4109261.7	BRACKET-A/C MOUNTING	1				
5	2198297	CLAMP-AIR CLEANER	1				
6	2722703	HOSE-AIR	1				
7	64123-50	BOLT-HEX 3/8-16X1	2				
8	64229-03	LOCKNUT-NYLON 3/8-16	7				
9	64123-47	BLT-HEX 5/16-18X1-1/4	2				
10	64163-29	WASHER	2				
11	64123-87	BLT-HEX 3/8-16X1-3/4	1				
12	64163-31	WASHER, 25/64X1X12	4				
13	64229-02	LOCKNUT-NYLON 5/16-18	2				
14	64123-16	BLT-HEX 3/8-16X1-1/4	2				
15	A1105061	BOLT-M12-1.75X30	1				
16	64237-06	LOCKNUT-NYLON M12-1.75	1				
17	108094-09	CLAMP-HOSE SAE36	4				
18	2198147	AIR CLEANER	1				
	(INCLUDES AIR CLEANER ELEMENT)						
	2198147-01	ELEMENT	1				
19	24 029 21	ELBOW	1				
	(AVAILABLE THRU KOHLER)						
20	2720885	PRECLEANER-AIR FILTER	1				
21	2198191	HOSE-AIR INTAKE	2				
22*	2208292	COVER, HOSE	1				

***NOT ILLUSTRATED**

FIGURE 9

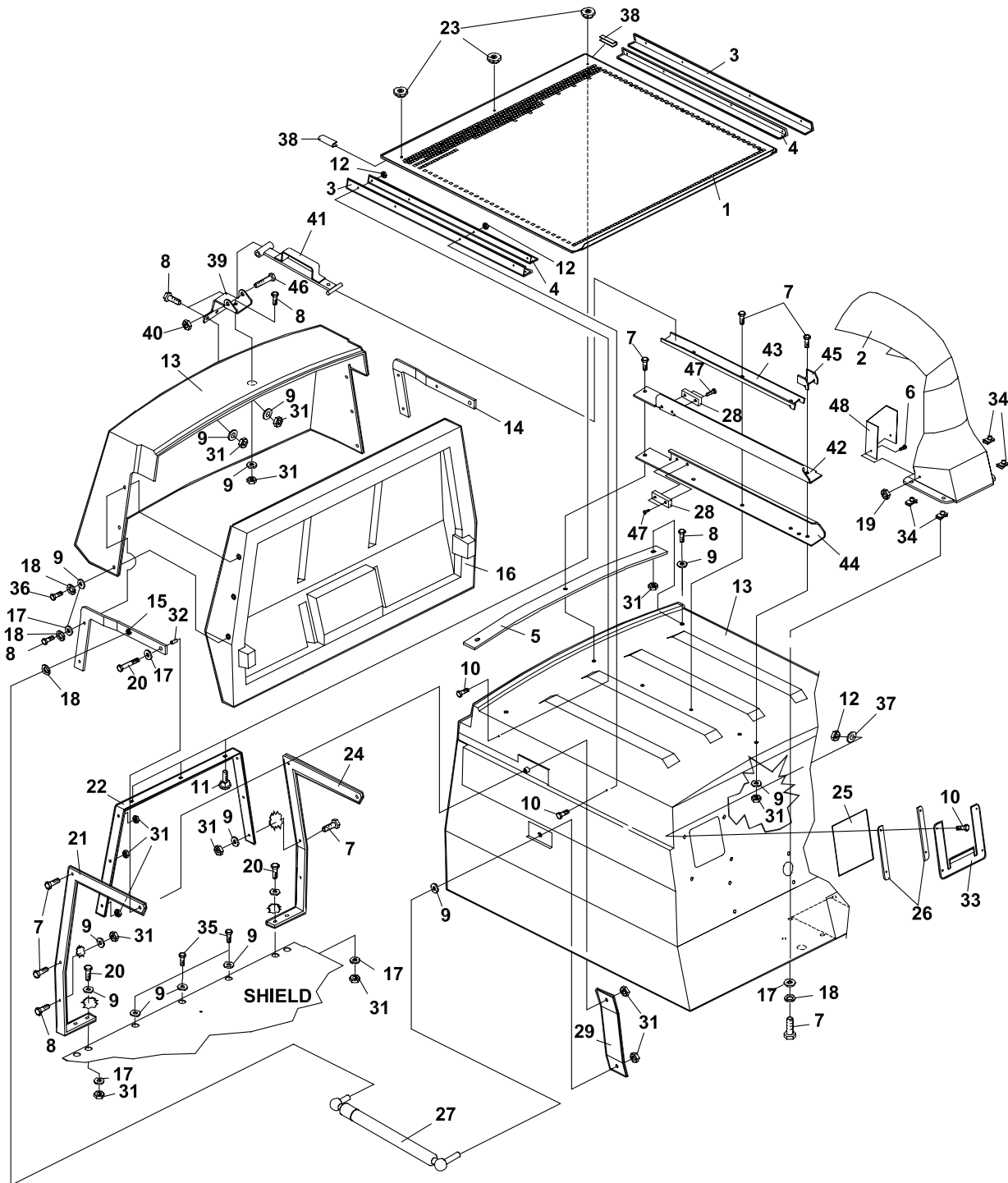


FIGURE 9

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	2222198.7	SCREEN-GRASSBOX	1	43	2720936.7	BRKT-LIFT INNER	1
2	4124677	CHUTE-GRASSBOX	1	44	2720934.7	BRKT-LIFTOUTER LH	1
3	2222107.7	SCREEN-SLIDE A	2	45	2720935.7	BRKT-LIFT STOP	1
4	2222108.7	SCREEN-SLIDE B	2	46	64123-75	BLT-HEX 3/8-16X3	1
5	2720449.7	SUPPORT-GRASSBOX	1	47	64152-56	BLT-HEX	4
6	64139-04	BOLT-WLF 1/4-20X3/4	3	48	2722460.7	SUPPORT-GRASS CHUTE	1
7	64123-47	BLT-HEX 5/16-18X1-1/4	13				
8	64123-68	BLT-HEX 5/16-18X1	11				
9	64163-29	21/64X1X11GA.WASHER	28				
10	64152-49	SCR-SLT HH 10-24X3/4	9				
11	64018-2	BLT-CRG 1/4-20X3/4	3				
12	64025-15	NUT-HEX #10-24 KEPS	10				
13	4124681	GRASSBOX & DEFLECTOR	1				
14	2722643.7	WLDMT-LH DOOR HINGE	1				
15	2722644.7	WLDMT-RH DOOR HINGE	1				
16	4124678	DOOR-GRASS BOX	1				
17	64163-55	WASHER	16				
18	64006-02	LOCKWSHR-HELICAL 5/16	12				
19	64229-01	LOCKNUT-NYLON 1/4-20	3				
20	64123-69	BLT-HEX 5/16-18X1-1/2	6				
21	2721080.7	BRACE-GRSBX HINGE RH	1				
22	2222199.7	JAMB-GRASSBOX	1				
23	2228080	KNOB-KNURLED FEMALE	3				
24	2721079.7	BRACE-GRSBX HINGE LH	1				
25	2228082	WINDOW-GRASSBOX	1				
26	2720971.7	SPACER-WINDOW	2				
27	2722332	SPRING-EXT W/DAMPING	2				
28	2721056	BLOCK	2				
29	2222098.7	BRACKET-RH SPRING	1				
30*	2222097.7	BRACKET-LH SPRING	1				
31	64229-02	LOCKNUT-NYLON 5/16-18	24				
32	43094A	TUBING,SPACR PTO T-20N	2				
33	2222185.7	RETAINER-WINDOW	1				
34	64259-01	U-NUT MTH 5/16 THICK	4				
35	64197-001	BLT-TDFM 5/16-18X3/4	9				
36	64123-54	BLT-HEX 5/16-18 X 3/4	2				
37	64163-03	WSHR-.256IDX .62OD	5				
38	108194-22	CHANNEL FLEX TRIM	2				
39	2720930.7	BRACKET-DOOR	1				
40	64229-03	NUT 3/4 NYLOCK	1				
41	2720928.7	WELDMENT-LIFT HANDLE	1				
42	2720933.7	BRKT-LIFT OUTER RH	1				

***NOT ILLUSTRATED**

ELECTRICAL

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ELECTRICAL

ZTM 1250

FIGURE 10

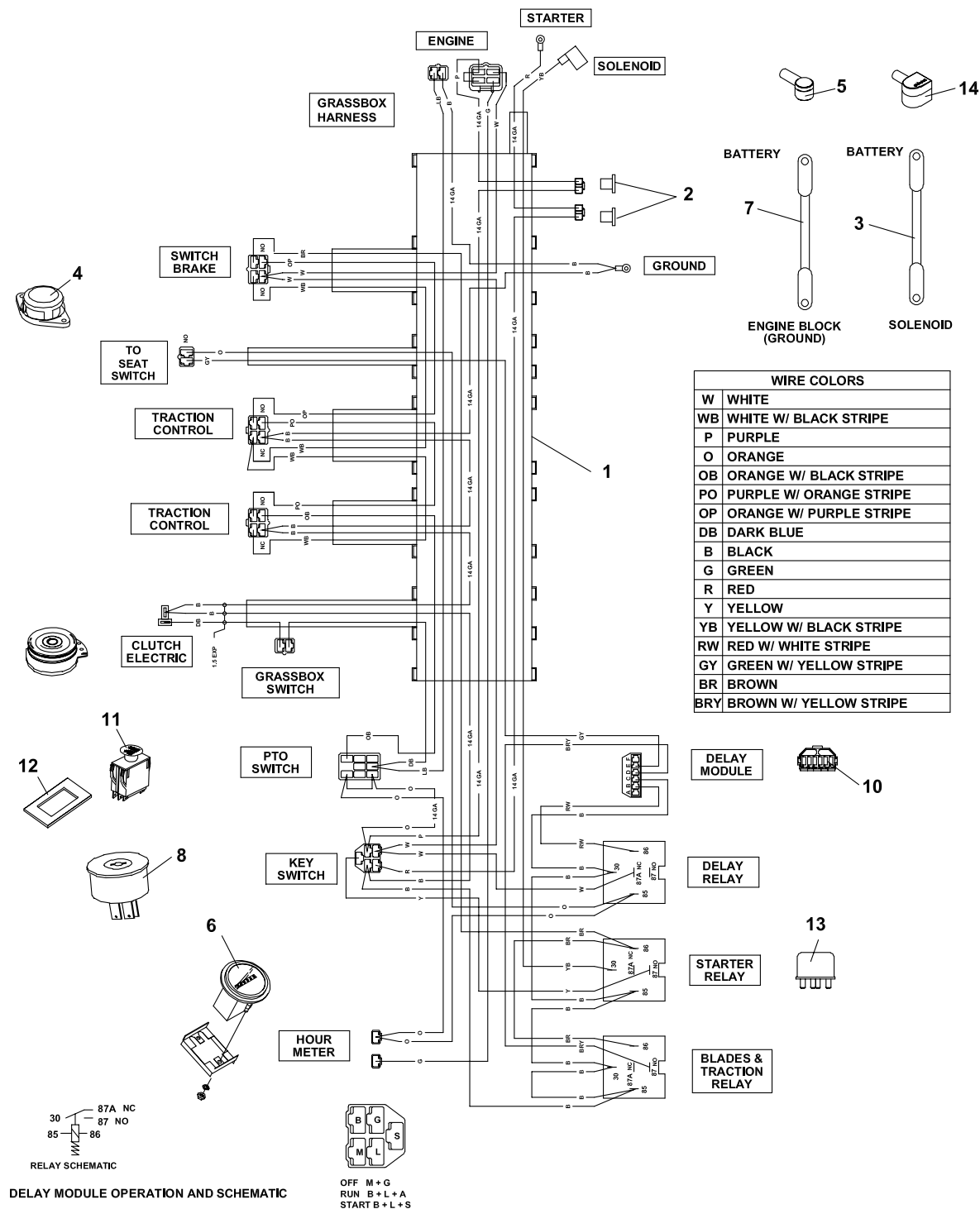


FIGURE 10

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	2228060	HARNESS-WIRE 100 KHLR	1				
2	148082-20	FUSE 20 AMP	2				
3	108061-10	CABLE-BATTERY 49 RED	1				
4	158135-01	SWITCH-SEAT, NO	1				
5	2308095	COVER-TERMINAL	1				
6	48030N	HOUR METER ASSEMBLY	1				
7	108061-14	CABLE-BATTERY 45 BLK	1				
8	2228044	SWITCH-IGNITION	1				
9 *	2228044-01	KEY-IGNITION	1				
10	2188154	MODULE-DELAY	1				
11	2721505	SWITCH, PTO	1				
12	2188178	SWITCH-RETAINER	1				
13	2722325	RELAY	3				
14	112386	BOOT,BAT TERM POS	1				

***NOT ILLUSTRATED**

FIGURE 11

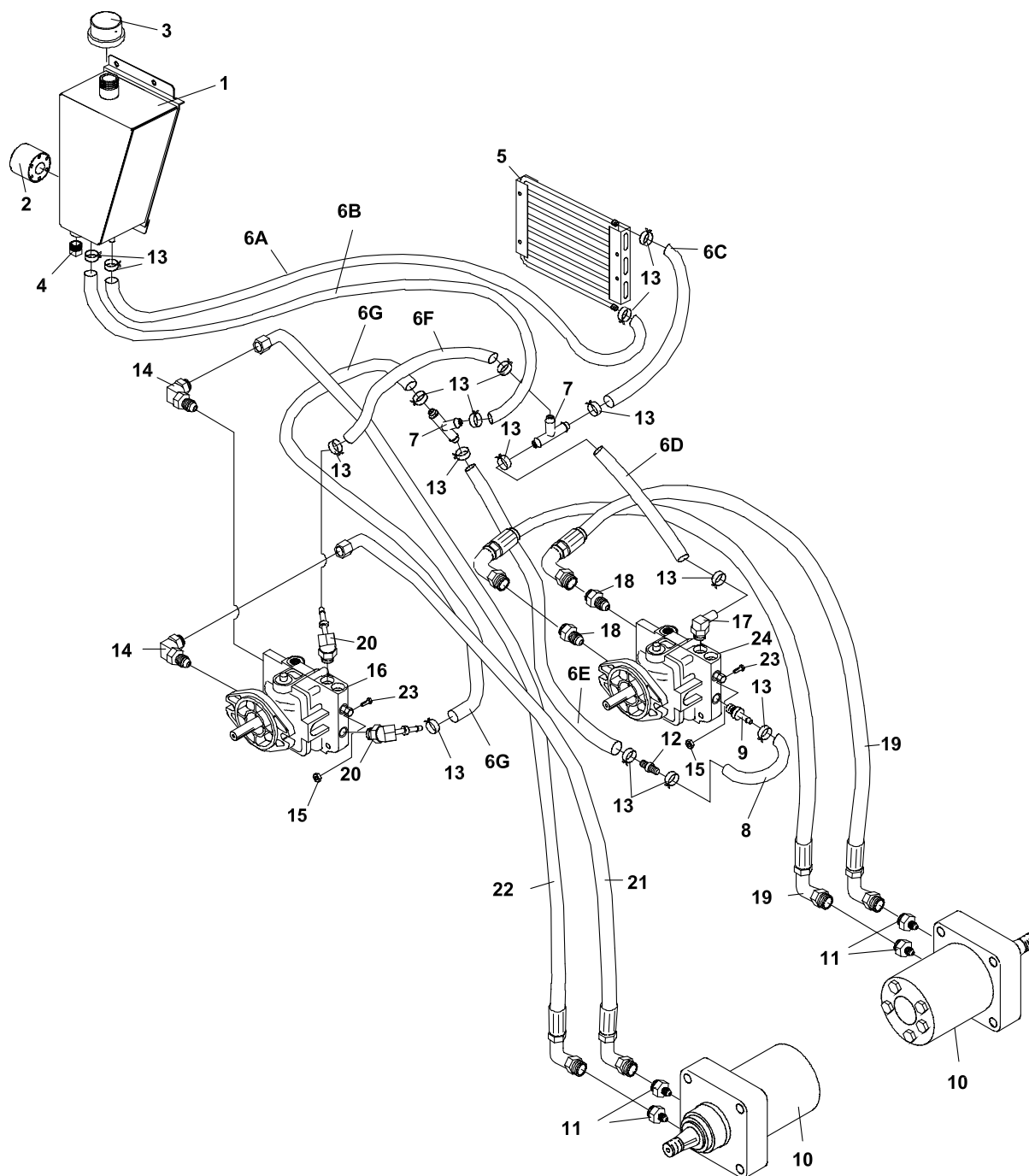


FIGURE 11

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	2226015.7	WLDMT-RESERVOIR W/LAB	1				
2	2720396	FILTER 25 MICRON	1				
3	69216.7	CAP-RESERVOIR	1				
4	108029	PLUG-MAGNETIC	1				
5	2188173	COOLER-OIL	1				
(69053-05 IS A SERVICEABLE LENGTH OF 55")							
6A	69053-05	3/8 HIGH TEMP HSE 49"	1				
6B	69053-05	3/8 HIGH TEMP HSE 25"	1				
6C	69053-05	3/8 HIGH TEMP HSE 20"	1				
6D	69053-05	3/8 HIGH TEMP HSE 8.5"	1				
6E	69053-05	3/8 HIGH TEMP HSE 8"	1				
6F	69053-05	3/8 HIGH TEMP HSE 2.50"	1				
6G	69053-05	3/8 HIGH TEMP HSE 2.25"	1				
7	58026-01	3 WAY CONNECTOR 3/8	2				
8	2228085	HOSE-FORMED 3/8 ID	1				
9	69060-01	FTG, BARB 9/16X3/8 ST	1				
10	4117905-01	MOTOR-WHEEL	2				
11	48089-02	FTG-STR 10 ORB X 8 JIC	4				
12	2228172	CONNECTOR-3/8 STRAIGHT	1				
13	88042-04	CLAMP-HOSE 5/8	16				
14	108035-01	ELBOW ADJUSTABLE3/4-16	2				
15	64229-01	LOCKNUT-NYLON 1/4-20	2				
16	4121333	PUMP-HYDRO BDP-10A-440	1				
17	158058-04	FITTING-BARB 90, ADJ	1				
18	48089-03	FTG-ST 8 ORB X 8 JIC	2				
19	2692274-03	HOSE-1/2 90 37/90 37 18.0	2				
20	2690030-01	FTG-9/16-18 ORBX3/8 BARB	2				
21	2692274-05	HOSE-1/2 90 37/90 37 22.0	1				
22	2692274-04	HOSE-1/2 90 37/90 37 25.0	1				
23	64123-60	BOLT-1/4-20 X 2 HEX	2				
24	4121332	PUMP-HYDRO BDP-10A-439	1				

FIGURE 12

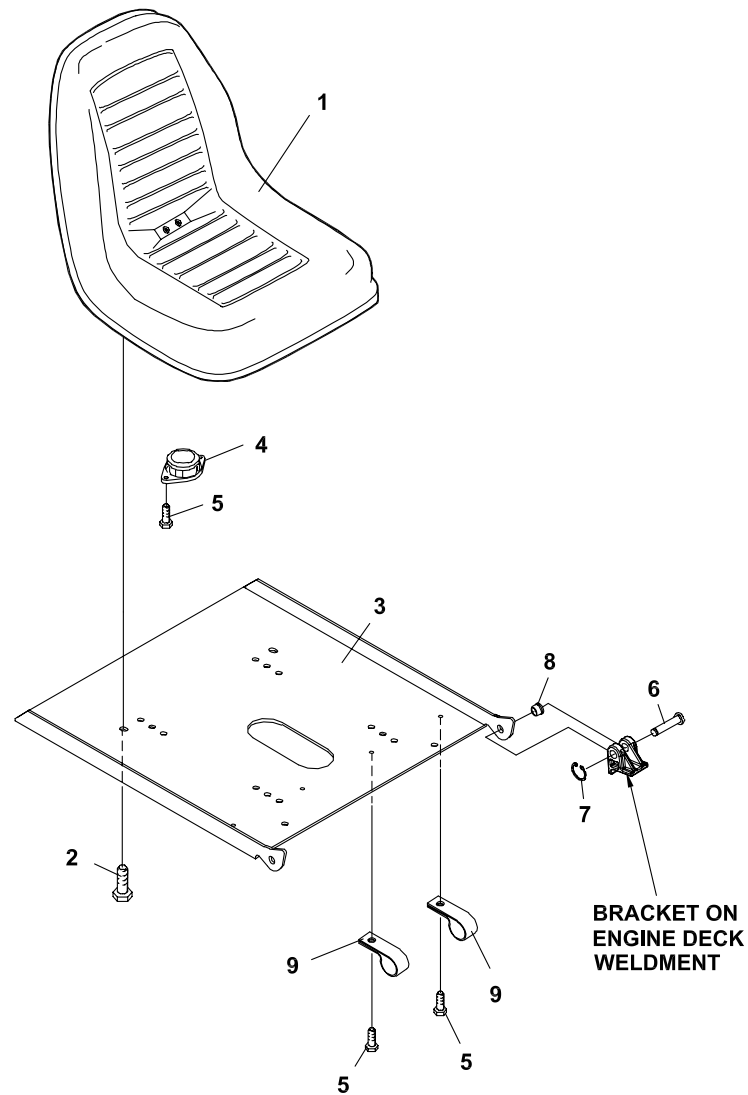


FIGURE 12

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	198057	SEAT	1				
2	64139-16	BOLT-WLF 5/16-18X5/8	4				
3	4126808.7	PLATE-SEAT	1				
4	158135-01	SWITCH-SEAT, NO	1				
5	64152-23	1/4-20X3/8 LG SP SCR	4				
6	33138-09	PIN-CLEVIS GRVD .38x1.31	2				
7	64144-30	SNAP RING .375	2				
8	38371-01	BRG-NYLINER 3/8	2				
9	48228A	CABLE CLIP-INSULATED	2				

FIGURE 13

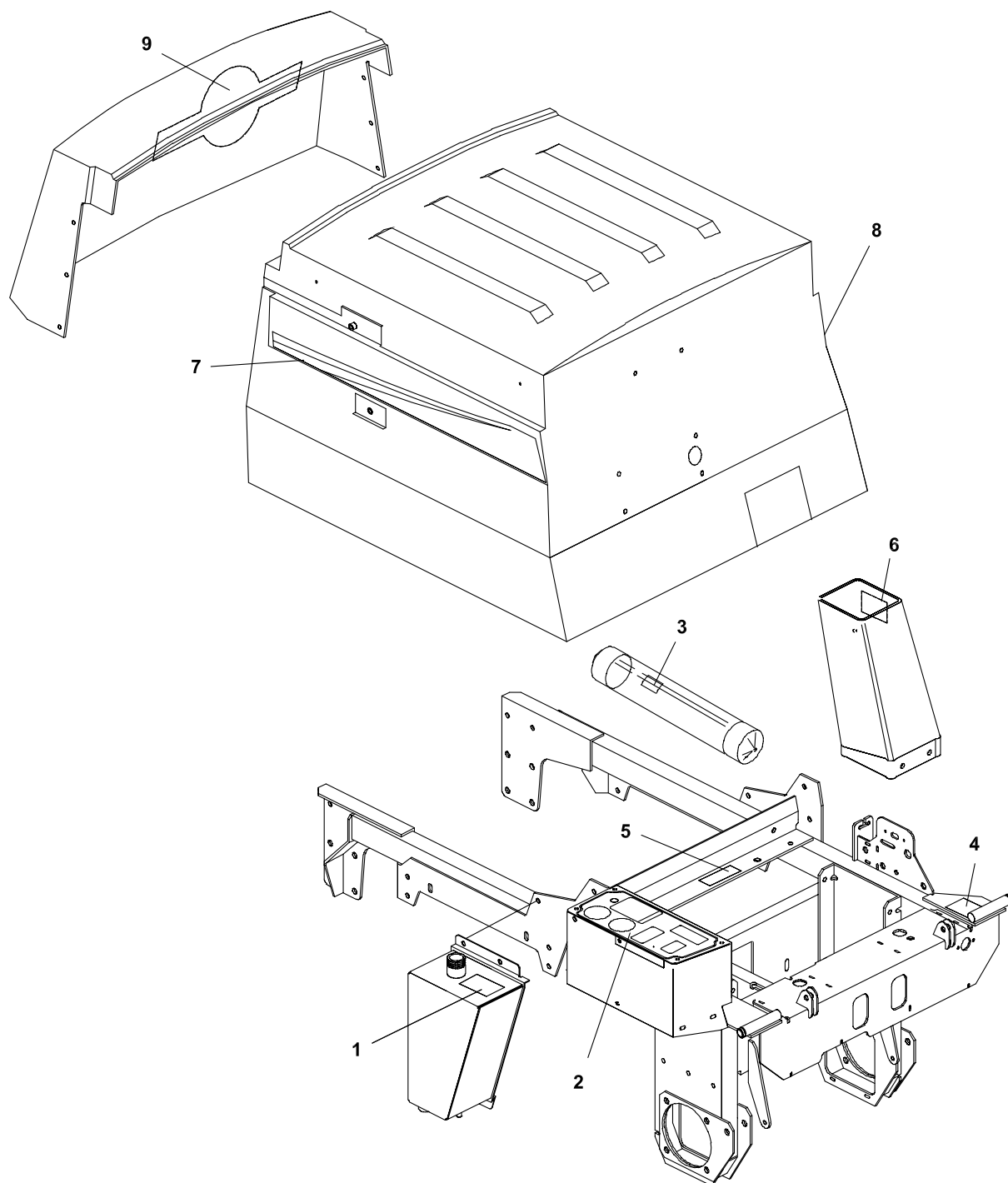


FIGURE 13

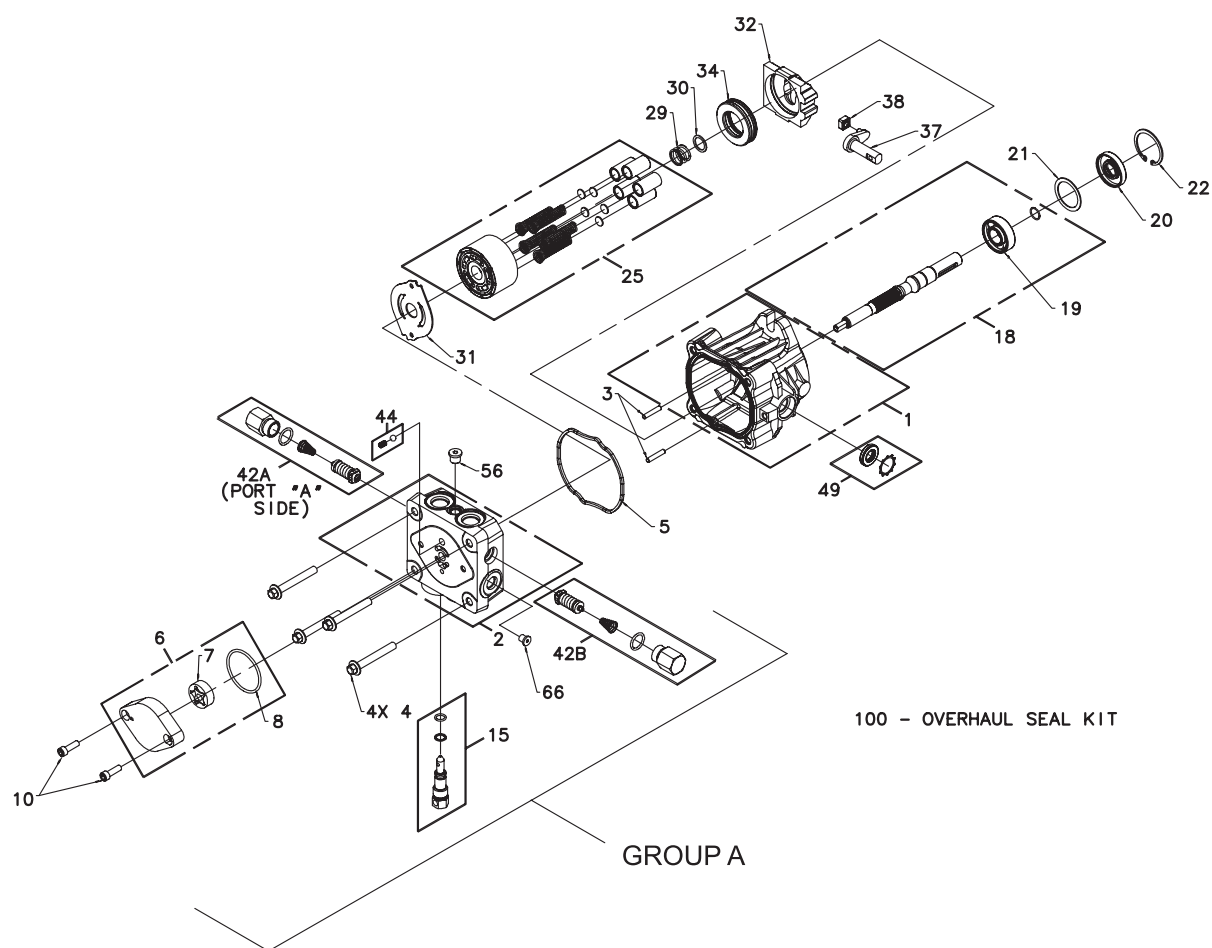
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	2000691	LBL - HYDR OIL FILL	1				
2	4124228	LABEL-CONTROL PANEL	1				
3	2000735	LABEL-OPER MAN	1				
4	2000774	LABEL-PARK BRAKE	1				
5	2000590	LABEL, WARN BATTERY	1				
6	2000775	LABEL-DANGER	1				
7	4136745	LABEL-GRASSBOX, RH ZTM	1				
8	4136746	LABEL-GRASSBOX, LH ZTM	1				
9	4128372	LABEL-STEINER DIECUT	1				



FIGURE 14

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	2222153	PADDLE-FILL INDICATOR	1				
2	64215-02	RIVET-POP IFI# 44	2				
3	2228057	SWITCH-POLARITY	1				
4	2228055	BLOCK-MOTOR ADAPTOR	1				
5	64229-01	LOCKNUT-NYL 1/4-20	3				
6	64123-60	BLT-HEX 1/4-20X2	1				
7	64123-114	BLT-HEX 1/4-20X1	2				
8	2228058	MOTOR-WIPER	1				
9	2228061	HARNESS-FILL INDICATOR	1				
10	64152-46	SCR-SLT HH 10-24X1/2	3				
11	64002-02	LOCKWSHR-TTH,EXT,#10	1				
12	2222166.7	BRACKET-PADDLE MTG	1				
13	64025-15	NUT-HEX #10-24	3				
14	64123-68	BOLT-HEX 5/16-18X1	7				
15	64163-55	WASHER	11				
16	64229-02	LOCKNUT-NYL 5/16-18	7				
17	2222160.7	BRACKET-MOTOR MTG	1				
18	2228059	ALARM-AUDIBLE	1				
19	48228-07	CLIP-CABLE INSULATED	5				
20	64163-03	WASHER	2				
21	48228-3A	CABLE CLIP 1/8	1				
22	2222165	PLATE-PADDLE ADJ	1				
23	64215-04	RIVET-POP	2				
24	65286-4A	TIE,CABLE 11-5/8	3				

FIGURE 15



4121332 PUMP-HYDRO LH ILLUSTRATED AS SHOWN EXCEPT "GROUP A" IS ROTATED 180° AROUND THE CENTERLINE OF THE PUMP AND THE POSITION OF "42A" & "42B" ARE REVERSED.

4121333 PUMP-HYDRO RH ILLUSTRATED AS SHOWN EXCEPT "GROUP A" IS ROTATED 180° AROUND THE CENTERLINE OF THE PUMP.

ITEM	HYDROGEAR PART NO.	TEXTRON PART NO.	DESCRIPTION	QTY
1	70516	----	HOUSING KIT	1
2	70517	----	END CAP KIT	1
3	50641	----	STRAIGHT HEADLESS PIN	2
4	50969	2721615-01	FLANGE BOLT M8-1.25 X 60	4
5	51232	2721615-02	HOUSING O-RING	1
6	2513027	38345-06	CHARGE PUMP KIT	1
7	50273	38345-07	STD GEROTOR ASSEMBLY	1
8	9004101-1340	38345-08	O-RING	1
10	50095	38345-10	SOCKET SCREW M6-1.0 X 20	2
15	2513030	----	BYPASS VALVE KIT (BLANK)	1
18	70521	2721615-07	PUMP SHAFT KIT	1
19	50315	----	BALL BEARING 17 X 40 X 12	1
20	51161	----	LIP SEAL 17 x 40 x 12	1
21	50951	----	SPACER	1
22	50329	----	RETAINING RING	1
25	70331	38345-12	CYLINDER BLOCK KIT	1
29	2003014	----	BLOCK SPRING	1
30	2003017	----	BLOCK THRUST WASHER	1
31	51246	2721615-09	VALVE PLATE	1
32	2003087	188059-11	SWASH PLATE	1
34	50551	2721615-11	BALL THRUST BEARING	1
37	2003005	188059-15	ARM-TRUNNION	1
38	2000015	2721615-13	SLOT GUIDE	1
42A	70743	4121354	SHOCK VALVE KIT (.031")	1
42B	70741	4121355	SHOCK VALVE KIT (BLANK)	1
44	70403	2721615-16	CHARGE RELIEF VALVE KIT	1
49	2513043	2721615-17	TRUNNION SEAL/RTNR KIT	1
56	9005110-4400	----	STRAIGHT THREAD PLUG	1
66	9005110-3100	----	5/16 SAE PLUG	1
100	70525	2721615-18	OVERHAUL SEAL KIT	1

FIGURE 16

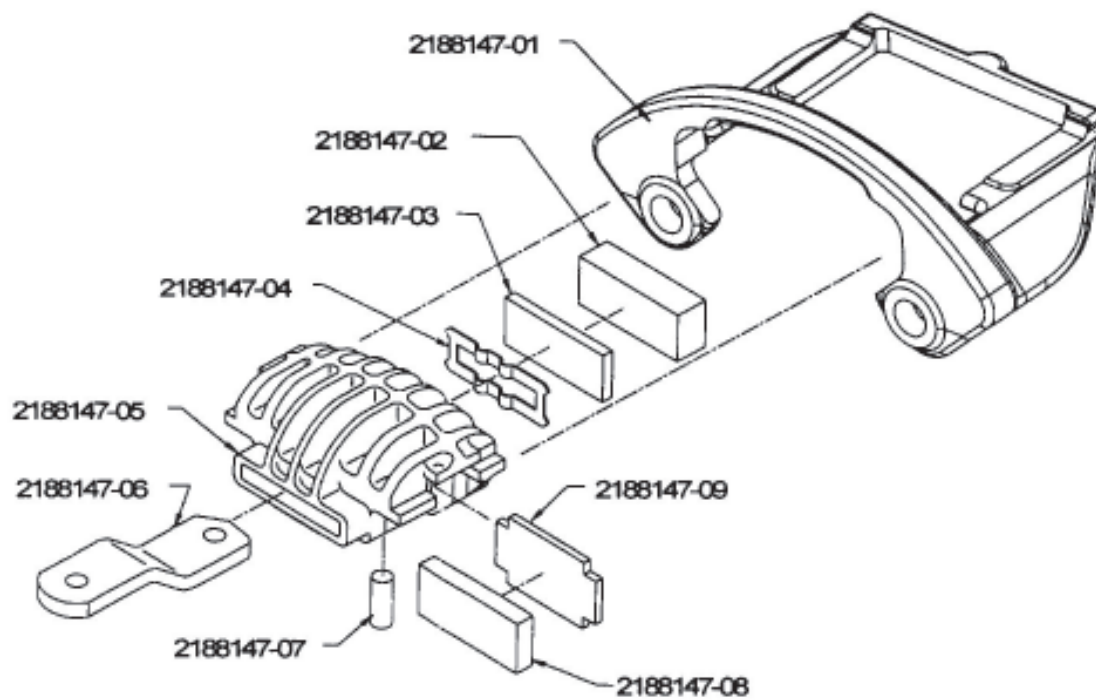


FIGURE 16

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
SERVICE PARTS FOR 2188147 AND 2188148 BRAKE ASSEMBLIES							
2188147-01		BRACKET-MACHINED	1				
2188147-02		PAD-CAM SIDE	1				
2188147-03		PAD-SUPPORT	1				
2188147-04		SPRING-LEVER RETAINER	1				
2188147-05		HOUSING	1				
2188147-06		CAM LH	1				
2188147-07		PIVOT PIN	1				
2188147-08		PAD-CARRIER SIDE	1				
2188147-09		PAD-SUPPORT	1				
2188147-09		PAD-SUPPORT	1				
2188148-01		CAM RH	1				

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Equipment from Jacobsen, a Textron company, is built to exacting standards ensured by ISO 9001 and ISO 14001 registration at all our manufacturing locations.

A worldwide dealer network and factory-trained technicians backed by Textron Parts Xpress provide reliable, high-quality product support.



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