



RANSOMES[®]

SETUP, PARTS & MAINTENANCE MANUAL ZT220D SERIES

Model:

942236D ZT220D W/61 REAR DISCHARGE



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.

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.

ZT 220D Series

IMPORTANT MESSAGE

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

Ransomes 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 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.

**OPERATION TRAINING VIDEO:**

Part Number	Description
2810594	VIDEO-BOBCAT 100/200



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
- Ratchets: 3/8"
- Sockets: 3/8", 1/2", 17 mm
- Wrenches: 13 mm, 15 mm, 17 mm, 18 mm, 1-1/16", 1-1/8"
- Straight edge
- Tire pressure gauge
- Blocks (for deck leveling)

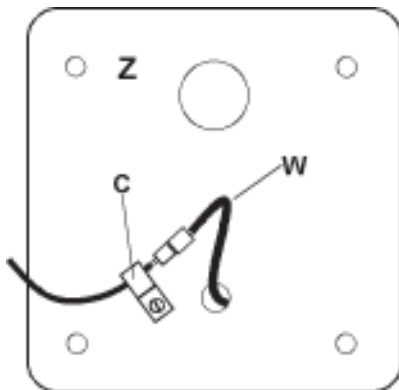
NOTE: All references below to the “right” or “left” are with respect to an operator at the controls.

1. UNCRATE UNIT

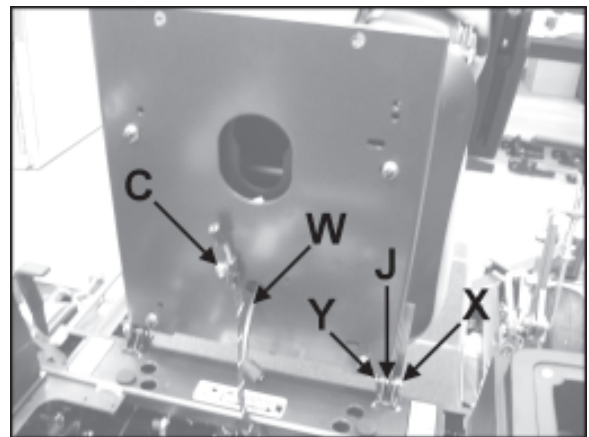
- Remove crate top and sides, discard packing materials.

2. INSTALL SEAT

- Install bushings **J** in seat plate **Z**.
- Install seat assembly onto the unit using (2) pins **X** and (2) E-clips **Y**.
- Secure seat wire **W** on the bottom of the seat plate with clip **C** and a 1/4-20 X 3/8 thread forming screw.
- Connect the tractor harness to the seat wire.



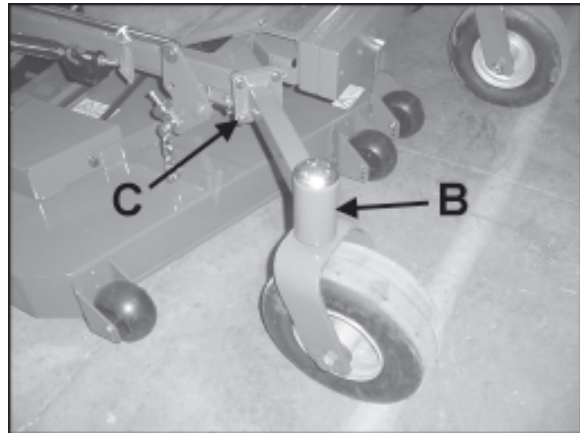
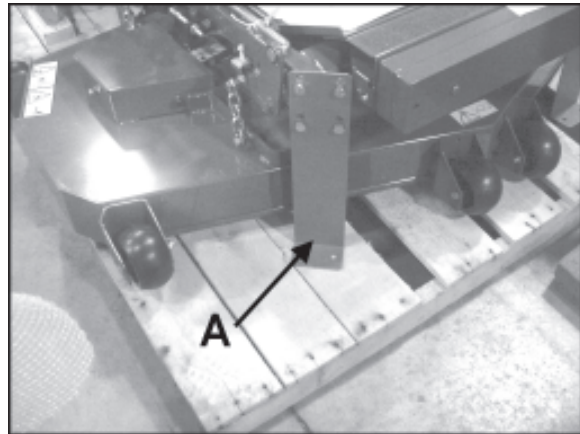
Bottom of seat plate **Z** showing clip **C**



- Set tire pressures to 1.0 kg/cm² (14 lbs/in²). Tires are overinflated for shipping.

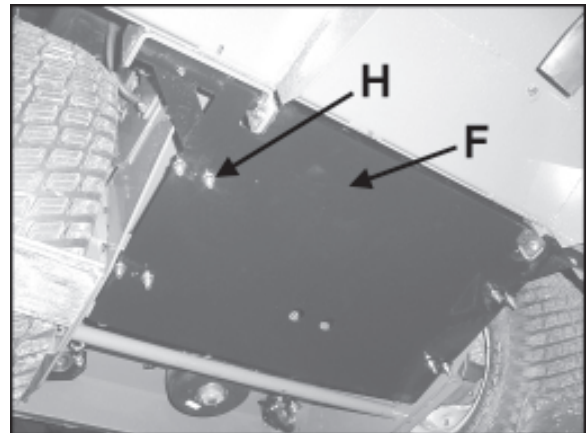
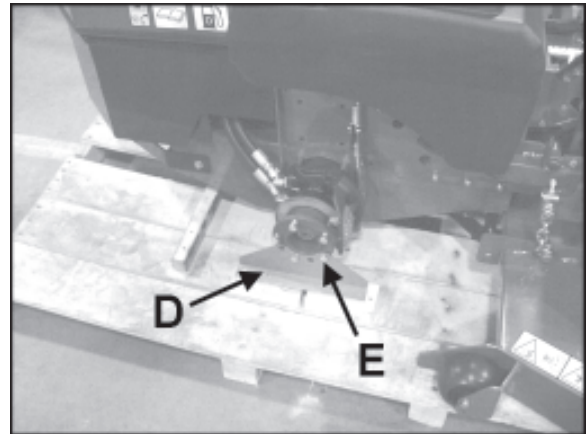
4. INSTALL FRONT CASTER WHEELS

- a) Remove caster wheel assemblies bolted to the pallet.
- b) Support the cradle assembly with jackstands or a hoist.
- c) Remove the shipping brackets **A** from the crate and cradle.
- d) Install the (2) caster wheel assemblies **B** to the cradle with (8) M12 X 30 bolts **C** and (8) M12 nylock nuts.
- e) Remove jackstands or hoist.



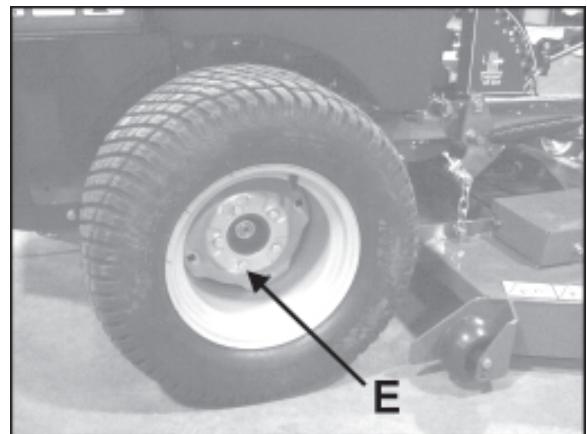
5. INSTALL GRASS DEFLECTOR

- a) Support the rear of the tractor with jackstands or a hoist.
- b) Remove the rear shipping brackets **D** from the drive wheel hubs. Retain the wheel bolts **E** for later wheel attachment.
- c) Raise the rear of the tractor, support with jackstands or a hoist.
- d) Install the discharge deflector **F** to the pusharms using (4) U-bolts, (4) U-bolt spacers, and (8) 5/16-18 nylock nuts. The formed edge of the deflector faces upward in front of the pusharm mounting pin. Tighten the 5/16-18 nylock nuts **H** until backing plates flex; do not overtighten.



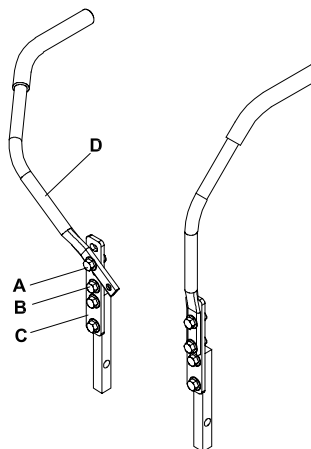
6. INSTALL REAR WHEELS

- a) Install rear wheels to tractor wheel hubs using (10) wheel bolts **E**, raising the rear of tractor if necessary.
- b) Remove jackstands or hoist and lower rear of tractor.



7. TRACTION LEVERS

- Loosen bolt **A** and remove bolt **B**.
- Rotate traction lever **D** into position and secure with bolts **A** and **B**. Repeat for the other lever.
- Tighten all fasteners.
- Sit on the machine. Levers may be adjusted in bracket **C** for a more comfortable reach, or moved to upper set of holes for a better operator fit.



8. DECK LEVELING

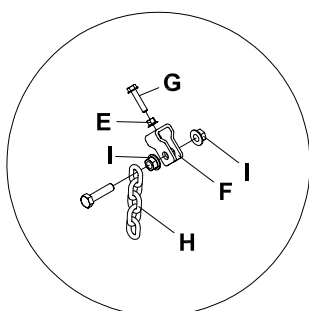
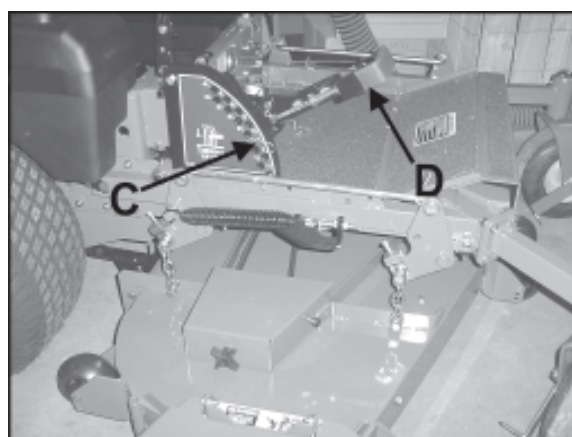
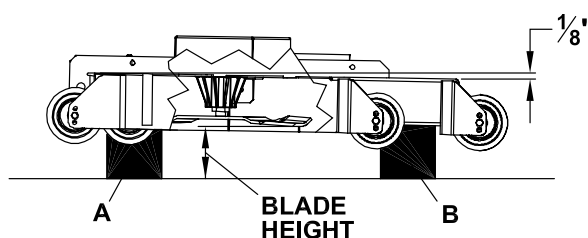
- Park the machine on a smooth, level surface. Raise the deck to the transport position.
- Lower the deck onto a set of equal height blocks **A** under the rear corners of the deck. Place another set of blocks **B** under the front of the deck so that the deck top is pitched forward 1/8".

NOTE: The front and rear of the deck are at different heights.

- Measure the height of the blade cutting edge above the ground. Remove pin **C** and set the height of cut lever **D** to that height.
- Loosen nuts **I** at all four corners of the deck.

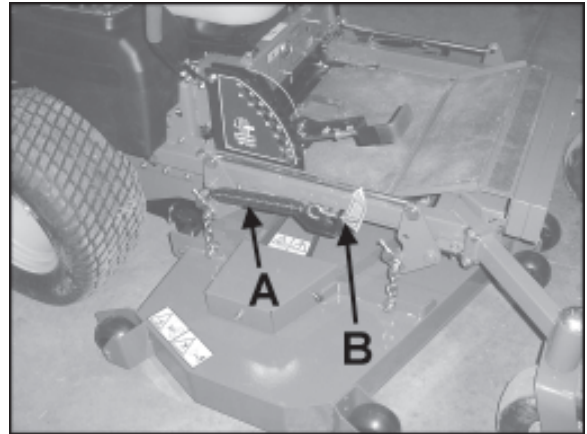
NOTE: This will relieve tension on chains **H**.

- Loosen the jam nuts **E** on the height of cut clips **F** and adjusting screws **G**. Turn the adjusting screws **G** until the play is taken out of the chains **H** at all four corners. Tighten the jam nuts **E** against the clips **F** and at the adjusting screws **G**. Retighten nuts **I** at this time.



9. COUNTERBALANCE SPRINGS

- a) Raise the cutterdeck all the way.
- b) Adjust the spring **A** with nut **B**:
61" cutterdecks to a length of 9-9/16" (242 mm)
The springs may be tightened or loosened from this point according to personal preference.



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.



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

ZT 220D Series

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/Top Off Engine Coolant Level (Where Applicable)		X					
Check/Top Up Oil Level		X					
Check For Leaks		X					
Clean Air Intake Screen		X					
Clean Air Cleaner Precleaner			X*				
Clean Air Cleaner Element					X	X**	
Clean Cooling Fins					X		
Change Oil And Filter	X	See engine manufacturer's manual					
* N/A IF EQUIPPED WITH HEAVY DUTY CYCLONIC AIR CLEANER							
**IF EQUIPPED WITH HEAVY DUTY CYCLONIC AIR CLEANER							
HYDRAULICS							
Check For Leaks		X					
Check/Top Up 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			

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

NOTE: After first 5 hours of operation replace engine oil, hydraulic oil and both filters.

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 lock 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 lock. Also, make sure engine coolant temperature gauge light flashes upon turning key to the **ON** position.

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 lock 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 lock 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 traversing rough terrain.)

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

Fuel System

Check filter bulb for water accumulation.

Radiator and Oil Cooler

Check for debris build up and clean if necessary

BATTERY

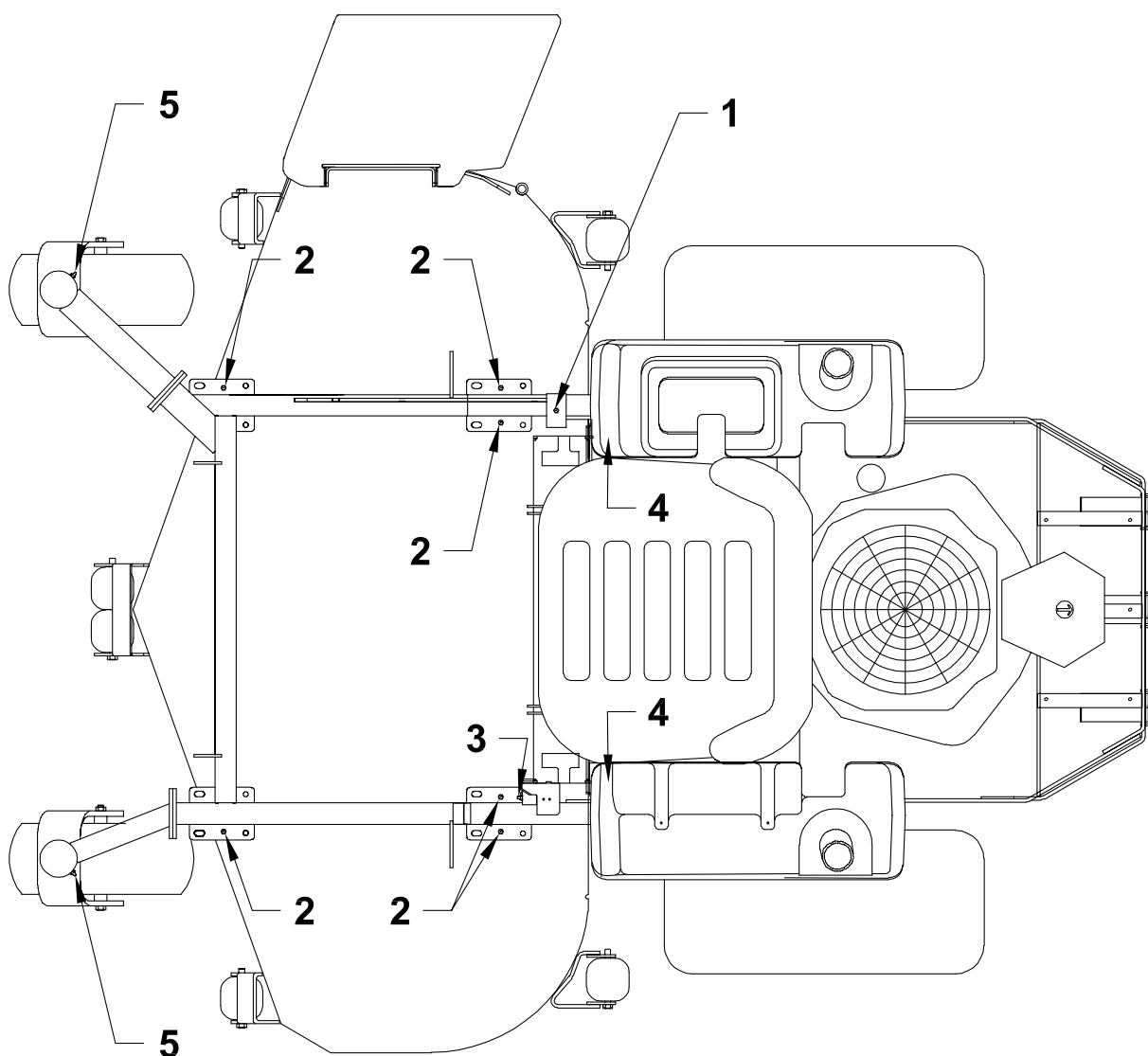
⚠ WARNING Battery acid is caustic and fumes are explosive and can cause serious injury or death.

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.



LUBRICATION

Every 50 hours of operation, lubricate the following points (1-4) with grease:

1. Deck lift rockshaft (1 point)
2. Deck lift pivots (6 points)
3. Brake lever pivot (1 point)
4. Push arms (2 points located at rear of cutterdeck under each fuel tank)
5. Caster wheel pivots (2 points)
(Lubricate every 500 hours or once a year)

NOTE ON BLADE SPINDLES - The blade spindles on these machines use a superior sealed bearing that does not require relubrication.

HYDRAULIC SYSTEM

Fluid level in the hydraulic system should be checked after the first 5 hours of operation, and every 100 hours thereafter, 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 discharge deflector **F**, (4) U-bolts with (8) nuts **H**.
2. Remove plug **N** to drain hydraulic reservoir. Dispose of used oil in accordance with local requirements.
3. Clean and replace the plug.
4. Change hydraulic oil filter **G**.
5. Fill the reservoir with fresh oil to the bottom of the reservoir filler tube, using an oil from the list above. Do not overfill.
6. Replace discharge deflector **F**, (4) U-bolts with (8) nuts **H**.

PERIODIC OIL CHANGES

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

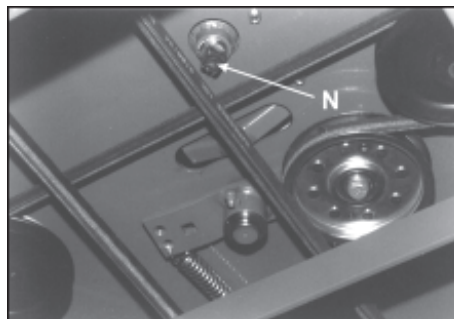
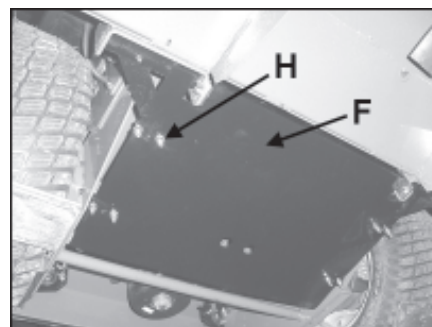
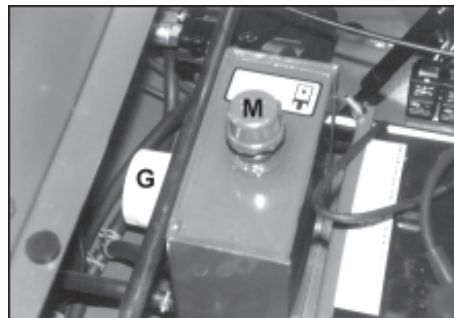
NOTES:

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 sealant 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.



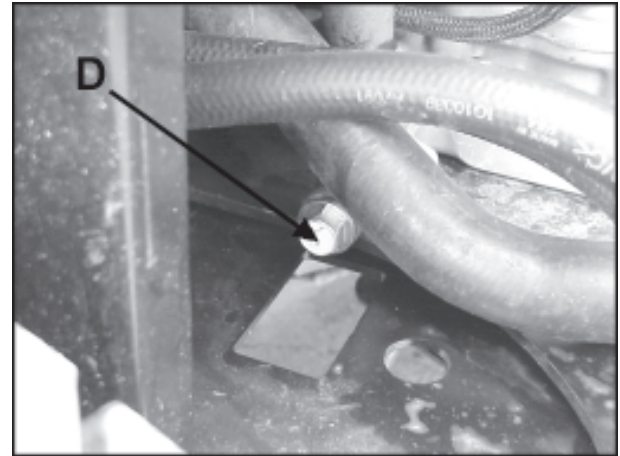
ENGINE OIL

Do not perform engine maintenance without the engine off and PTO disengaged.

AFTER FIRST FIVE (5) HOURS

While the engine is warm:

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

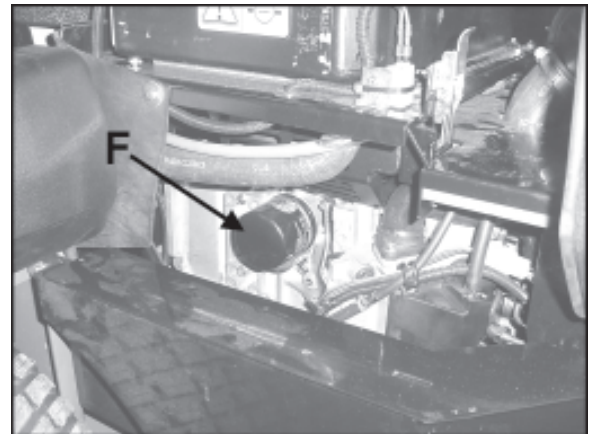


DAILY

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.



AIR CLEANER

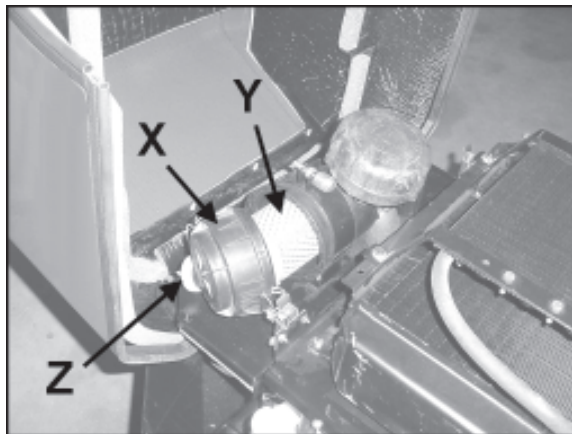
The air cleaner with this engine has a high density paper air cleaner cartridge. It should be inspected regularly and maintained. Uneven running, lack of power or black exhaust fumes may indicate a dirty air cleaner.

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.

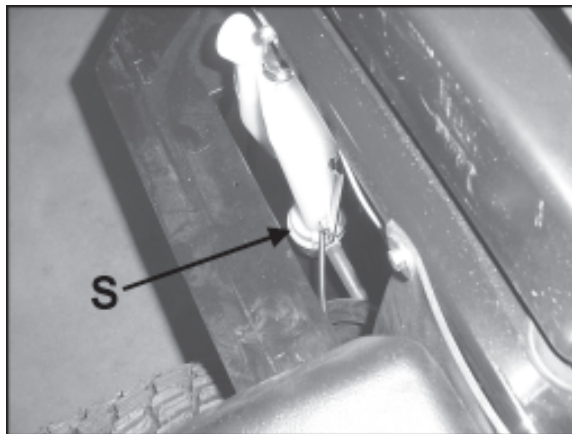
Every 100 hours (more often under very dusty or dirty conditions), check the paper cartridge.

- 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.



FUEL FILTER

An in-line fuel filter **S** is located at the right side of the engine. Inspect at every oil change to make sure fuel filter is clean and unobstructed. Replace if dirty or after 400 hours of use.



ENGINE COOLING

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

Perform the following steps daily or when fins become clogged.

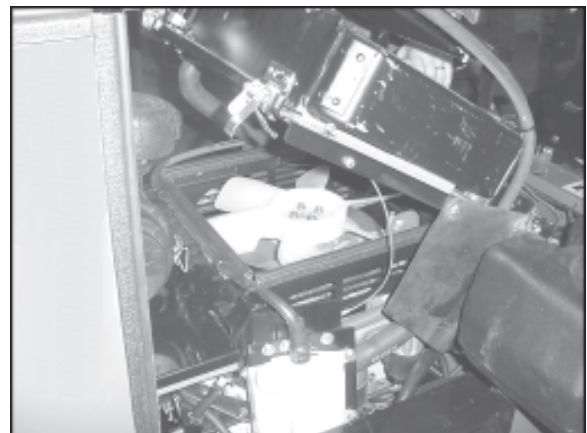
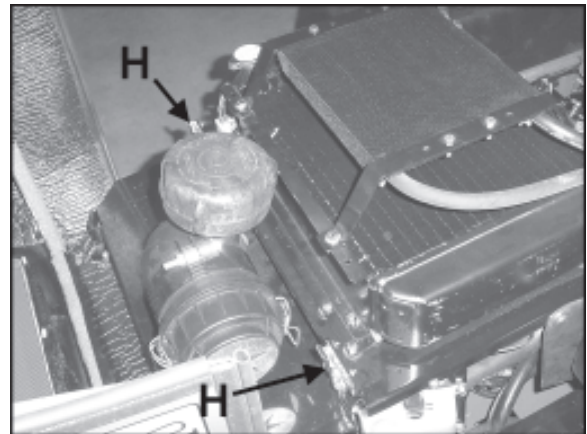
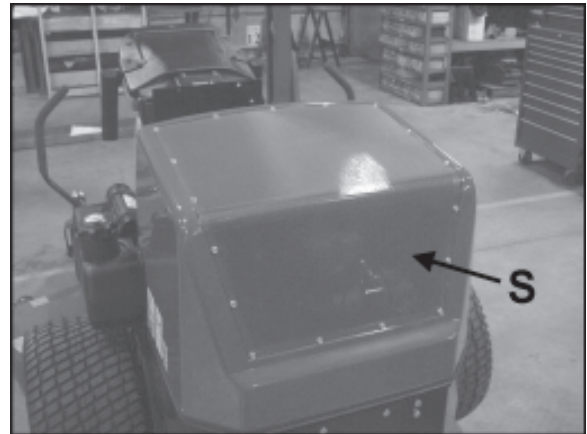
DAILY

1. Clean air intake screen **S**.
2. Clean oil cooler and radiator fins by opening latch **L** and rotating screen **S** forward.
3. Wipe or brush off accumulated debris.
4. Unclamp and raise radiator by opening latch **H**. Using compressed air, blow debris from fins directing air away from the engine.

NOTE: Do not use pressurized water or other liquid.

5. When completed, clamp the radiator and screen back into place.

NOTE: Engine will not crank unless radiator is securely clamped into place.



BLADE REMOVAL

Follow these instructions to prevent injury during blade removal:

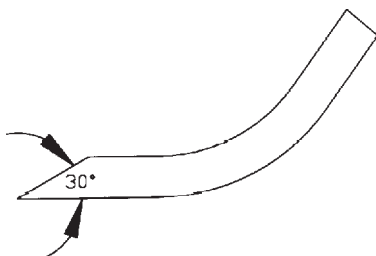
1. Loosen with a box wrench or a socket and long breaker bar. To gain additional leverage, slip a long pipe or thick-walled tube over breaker bar or wrench.
2. Insert wood block **A** as shown, with grain perpendicular to blade, to prevent blade from turning when loosening.
3. Wear thickly padded gloves. 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 Ransomes blades. Use of another manufacturer's blades may be dangerous.



BLADE BALANCE

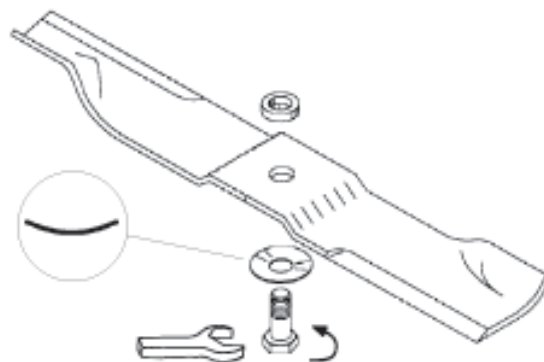
Blade balance must be maintained at 5/8 oz-in (19.4 g-cm) or less. Failure to keep blades balanced causes excess vibration, wear, and shortened life of most components of the machine.

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.



SPECIFIC TORQUES

BLADE BOLT TORQUE: 70 FT-LBS (95 Nm)
 WHEEL HUB NUTS: 175 FT-LBS (237 Nm)
 ENGINE CRANKSHAFT BOLT: 50 FT-LBS (68 Nm)

SYMPTOMS	PROBABLE CAUSE	CHECK FOR	SOLUTION
Engine will not start.	Safety interlock not activated.	Radiator mounting clamp loose.	Latch clamps.
		PTO Switch engaged.	Shut off PTO.
		Parking brake disengaged.	Engage parking brake or adjust parking brake switch.
	Battery discharged. (See Page 8 for charging instructions.)	Position of traction control levers.	Place levers in neutral lock position or adjust traction control switch.
		Loose or corroded cable terminals.	Clean and tighten cable terminal fasteners.
		Charger relay function.	Remove and check charge relay switching. Replace relay if necessary.
		Electrical continuity.	Repair as necessary.
Engine cranks but will not start.	Cold ambient temp.	Glow plug chart. (See chart in engine owners manual.)	Use glow plugs per recommendations.
		No fuel.	Add clean fresh fuel.
	No fuel.	Lever position of shut off/tank select valve.	Direct lever toward tank containing fuel.
		Air in fuel line. Air must be purged from fuel line after running out of fuel.	Purge air from fuel line. (See engine owners manual.)
	Fuel solenoid not activated.	Electrical continuity. (Solenoid should "click" when keyswitch is turned on.)	Check and tighten all terminals as required.
		Blown 30 Amp fuse.	Check fuel solenoid relay. Replace relay if necessary. Replace fuse. determine cause for burned fuse and repair as required.

SYMPTOMS	PROBABLE CAUSE	CHECK FOR	SOLUTION
Engine starts but runs unevenly.	Fuel line not bled after running out of fuel.	Air in fuel line.	Purge air from fuel line. (See engine owners manual.)
	Water in fuel or plugged fuel filter.	Water in fuel bowl. Dirty fuel filter.	Replace fuel filter.
	Engine air intake restricted.	Dirty air filter.	Clean or replace air filter.
Engine overheating	Air flow through radiator restricted.	Plugged air screen.	Clean screen.
		Plugged radiator core.	Clean radiator core. (See instructions on Page 15.)
	Low coolant.	Coolant level in surge tank.	See engine manual.
		Collapsed or leaking hose between surge tank and radiator.	Repair as required.
Cutterdeck shuts down without being turned off.		Damaged radiator hose.	Replace hose.
	Engine overheating.	See engine overheating of troubleshooting section.	See engine overheating of troubleshooting section.
	Open wiring circuit.	Blown 20 Amp fuse.	Replace fuse/ determine cause for burned fuse and repair as required.
Engine shuts down immediately when operator raises from seat.	Time delay module, fuel shut off timer.	Loose wire harness terminals/ module/timer.	Check and tighten all terminals/delay module/timer.
Gauges/Indicators not functioning.	Open wiring circuit.	Loose wiring terminals or damaged electrical wiring.	Check and tighten all terminals.
		Blown 10 amp fuse.	Replace fuse/ determine cause for burned fuse and repair as required.
		Burned out bulbs.	Replace bulbs
Tractor does not respond to movement of control levers.	Hydraulic oil bypassing pumps.	Open tow valve(s).	
	Low level of hydraulic oil.	Level of hydraulic oil in reservoir.	

DECK LEVELING

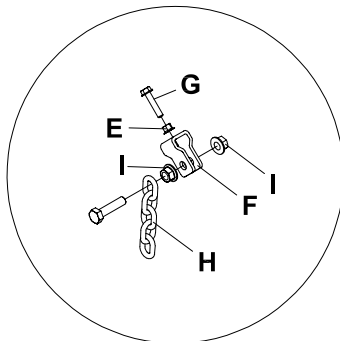
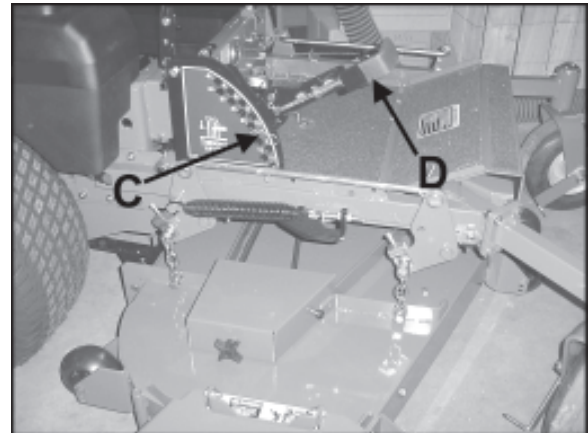
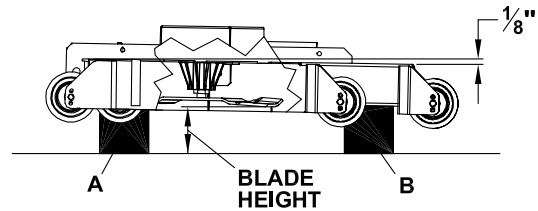
- Park the machine on a smooth, level surface. Raise the deck to the transport position.
- Lower the deck onto a set of equal height blocks **A** under the rear corners of the deck. Place another set of blocks **B** under the front of the deck so that the deck top is pitched forward 1/8".

NOTE: The front and rear of the deck are at different heights.

- Measure the height of the blade cutting edge above the ground. Remove pin **C** and set the height of cut lever **D** to that height.
- Loosen nuts **I** at all four corners of the deck.

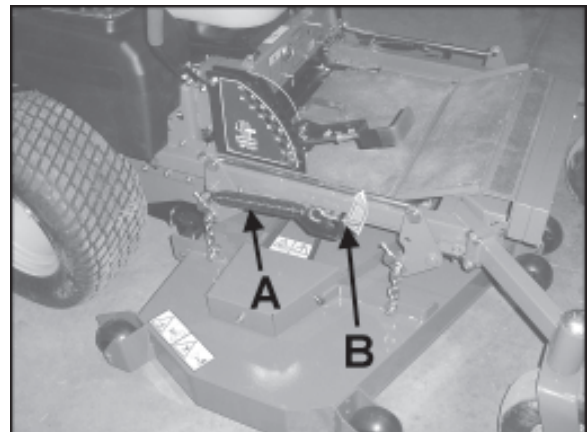
NOTE: This will relieve tension on chains **H**.

- Loosen the jam nuts **E** on the height of cut clips **F** and adjusting screws **G**. Turn the adjusting screws **G** until the play is taken out of the chains **H** at all four corners. Tighten the jam nuts **E** against the clips **F** and at the adjusting screws **G**. Retighten nuts **I** at this time.



COUNTERBALANCE SPRINGS

- Raise the cutterdeck all the way.
- Adjust the spring **A** with nut **B**:
61" cutterdecks to a length of 9-9/16" (242 mm)
The springs may be tightened or loosened from this point according to personal preference.



HEIGHT OF CUT

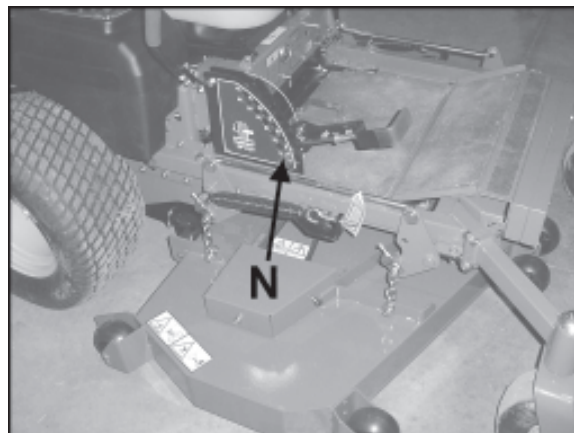
The height of cut is set by moving height of cut pin **N** to the hole designated for the height of cut desired.

To change the height of cut:

1. Lift the deck to the highest position.
2. Move pin **N** to the selected hole.
3. Lower the deck until the lift lever is stopped by the pin.

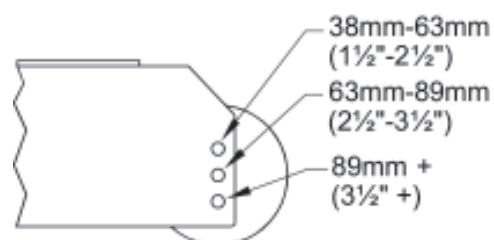
NOTES:

- Height of cut may vary due to the amount of tread on the tires, tire diameter or inflation pressure.
- For best results, adjust the rear deck rollers for the height of cut to be used (see below).



REAR DECK ROLLERS

The rear outside deck rollers are adjustable up and down to provide improved deck flotation and scalping protection at various heights of cut. They are not intended to ride continuously on the ground. Adjust no closer than 10mm (3/8") to the ground.



Height of cut ranges for roller adjustment

CONTROL LEVERS

There are two mounting positions for the control levers, upper and lower. The lower position works well for most people. Taller operators may need the upper position.

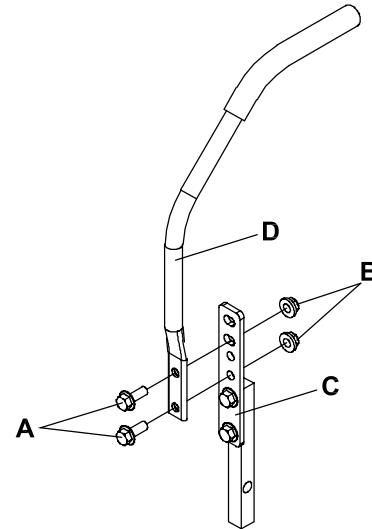
To adjust the height of the control levers:

- Remove bolts **A** and nuts **B**.
- Align holes in control lever **D** with appropriate holes in traction lever bracket **C**.
- Install bolts **A** and nuts **B**.

The upper mounting hole for the control levers is slotted to allow fore-aft adjustment and to allow alignment of the levers.

To adjust or align the control levers:

- Loosen nuts **B**.
- Adjust control lever position.
- Tighten nuts **B**.

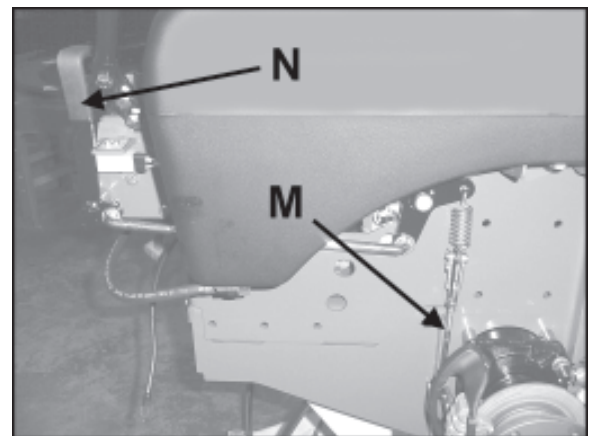


PARKING BRAKE

Start with parking brake **N** in the OFF position.

1. Disconnect one end of rods **M** (at brakes on both sides of the machine).
2. Move the parking brake lever to the ON position.
3. Adjust rods **M** on each brake to be 3/4" short of connecting to the spring when all the slack is taken out of the brake linkage and brake lever **N**.
4. Move the parking brake to the OFF position and reconnect rods **M**.

This adjustment will cause the brake springs to stretch 3/4" when the brake is in the ON position to provide the correct parking brake force without overloading the brake.



Parking brake assembly (tire and deck not shown for clarity - brake in ON position).

BELTS

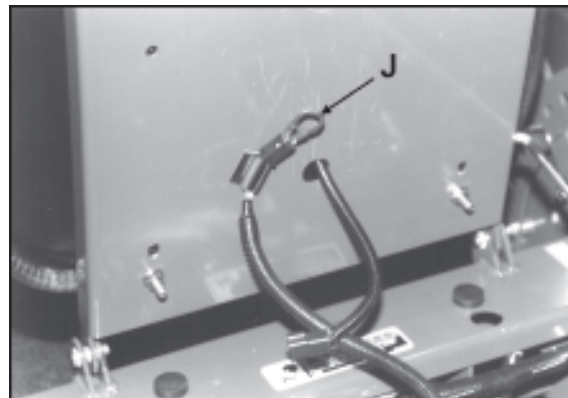
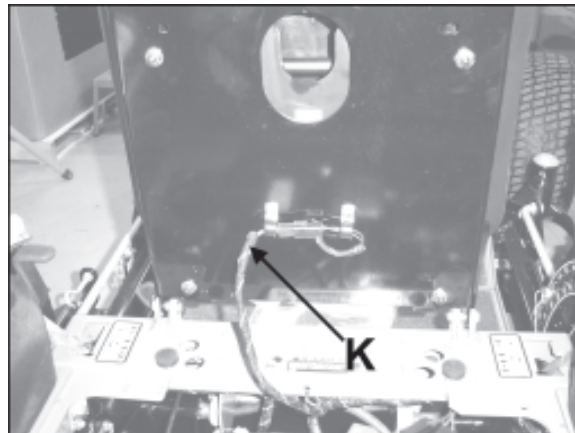
All belts are tensioned by spring loaded idlers. No adjustment is required.

HYDROSTAT ADJUSTMENTS

A turnbuckle-style hydrostat neutral adjustment is provided.

Neutral:

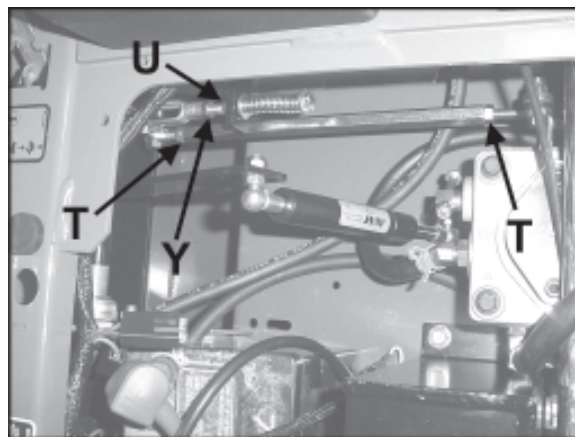
1. Support the machine with the rear wheels off the ground. Use jackstands or equivalent support. Do not rely only on mechanical or hydraulic jacks.
2. Move the traction levers out into the neutral lock position and raise the seat.
3. Disconnect the seat switch wire **K** and temporarily connect the two terminals with jumper wire **J** as shown.
4. Start the engine and run at low speed.
5. Loosen jam nuts **T** at both ends of the turnbuckle.
6. Rotate the turnbuckle until the corresponding wheel stops turning. Lock the turnbuckle jam nuts. Run the engine up to high idle to check the adjustment. Readjust if necessary.
7. Repeat steps 5 and 6 for the opposite side.
8. Remove the jumper wire and reconnect the seat switch.



Reverse Return:

1. Move traction levers out to the neutral lock position and raise the seat.
2. Locknut **U** should be run on the bolt as far as it will go.
3. Loosen jam nut **Y**. Adjust the clevis yoke by turning the head of the bolt until the clevis pin just makes contact with the rear of the slot in the lever it connects with. Tighten jam nut **Y**.
4. Repeat steps 2 and 3 for the opposite side.

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.



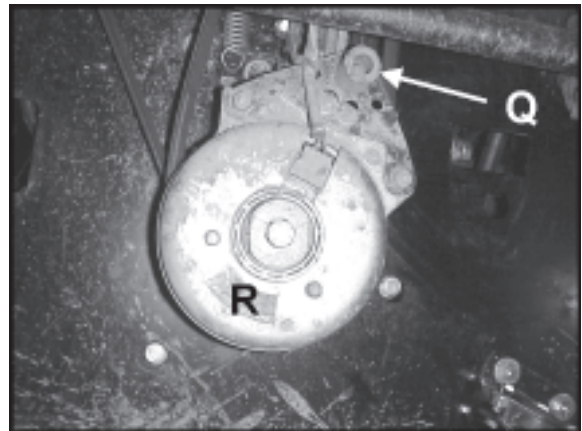
Right side adjustments
(wiring harness and seat rod removed for clarity)

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

ENGINE-CUTTERDECK (PTO) BELT

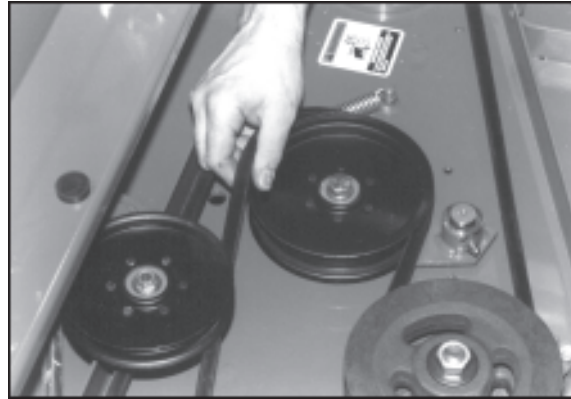
1. Set the cutterdeck in the lowest height-of-cut position.
2. Attach a short extension to a 3/8" drive ratchet. Insert the ratchet extension into the square hole in the idler arm and use the ratchet to rotate the idler assembly enough to remove the belt. Remove the belt from the idlers and center cutterdeck pulley. Push belt back under engine deck.
3. Remove old belt from the machine.
4. Install a new belt by performing the these steps in reverse order.

NOTE: If clutch and torque restraint are ever removed for maintenance, make sure when reinstalling carriage bolts securing torque restraint **Q** to clutch **R** to put the carriage bolts in facing the ground first through the clutch and then through the torque restraint and secure them with the nuts as shown.



CUTTERDECK BELT

1. Set the cutterdeck in the lowest height-of-cut position.
2. Remove the engine-cutterdeck belt from the deck idlers and pulley (see engine-cutterdeck belt replacement). Push it aside but don't remove it from the machine.
3. Run the cutterdeck belt off the idler as shown. Remove it from the deck.
4. Install the new belt by performing these steps in reverse order. Take care to get the new belt on the correct side of the belt guides.
5. Re-install engine-cutterdeck belt (see engine-cutterdeck belt replacement).



PUMP-DRIVE BELT

1. Remove discharge deflector under engine deck.
2. Remove engine-cutterdeck belt (see engine-cutterdeck belt replacement).
3. Attach an extension to a 3/8" drive ratchet. Insert the ratchet extension in the square hole of the pump drive idler arm. Use the ratchet handle to rotate it enough to remove the pump drive belt.
4. Install a new pump drive belt in the same manner as it was removed.
5. Reinstall engine-cutterdeck belt (see engine-cutterdeck belt replacement).
6. Reinstall discharge deflector under engine deck.



POWER UNITS

ENGINE:

Construction: Aluminum block with cast-in sleeves. Cast Iron, metal gasket.

Configuration: 4-stroke, vertical shaft, V-twin cylinder, overhead valve, liquid-cooled indirect injection diesel. Deck cuts out if engine overheats.

DRIVE SYSTEM:

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

Pump: Hydrogear BDP-10A with shock valves 10cc variable displacement piston pump.

Motors: Parker/Ross 15 cu.in. displacement MB series. Direct drive 31.8mm (1-1/4") diameter output shaft.

Turn Radius: True Zero

OPERATOR PRESENCE

INTERLOCK SYSTEM:

Start: The PTO (blades) must be off, traction levers in neutral lock, 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 lock 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 lock 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 lock position. A time delay eliminates annoying engine cutout from operation over rough terrain.

WEIGHT:

605 kg (1335 lbs)

CONTROLS:

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

FUEL SYSTEM:

One tank on each side of operator, each with a shutoff (1/4 turn). Total capacity 40 liters (9-1/2 gallons). Fuel selector/shutoff switch on front panel (1/4 turn). Replaceable fuel filter.

MAXIMUM GROUND SPEEDS:

Forward: 8.5 mph (13.7 km/h)

Reverse: 4 mph (6.4 km/h)

WHEELS & TIRES:

Drive wheels:

942236D: 24 X 12.00-12 4-Ply Turf
Tread Tires

Casters: 13 X 5.00-6 4-Ply Smooth Tread Tires

Pressure: 1 kg/cm² (14 p.s.i.)

BRAKING:

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

SEAT:

High back, foam padded full suspension seat with standard armrests. Fore and aft adjusters, hinged for easy tilt-up access to pumps and battery. Internally mounted seat switch.

ENGINE	
MODEL NUMBERS	942236D
MANUFACTURER	Yanmar
MODEL	2V78
CYLINDERS	2
COOLING	Liquid
BORE/STROKE	3.07 X 3.09 (78 X78.4mm)
DISPLACEMENT	46 cu.in. (749 cc)
COMPRESSION	23:1
OUTPUT POWER	20 hp (14.95 kw) Gross @ 3600 rpm
OUTPUT TORQUE	32.5 ft-lb (44 J) @ 2400 rpm
LUBRICATION	FULL PRESSURE
GOVERNOR	Mechanical
AIR CLEANER	Dry Type with Evacuator Valve
CHARGING SYSTEM	20 amp, regulated
BATTERY	BCI group U1
FUSES	Three, 10, 20 , 30 amp blade
FUEL CONSUMPTION @ MAX LOAD/ SPEED	1.20 gal./hr (4.6l/hr)

FLUID CAPACITIES	QUANTITY	TYPE	FILTER
FUEL	9.5 gal. (40 l)	DIESEL	REPLACEABLE
ENGINE OIL	2.4 qts (2.27 l) YANMAR	SEE ENGINE MANUFACTURER'S MANUAL	SPIN-ON REPLACEABLE
HYDRAULIC OIL	2.6 qts (2.46 l)	SAE 15W40 MOTOR OIL, SAE 20W50 MOTOR OIL, 15W50 SYNTHETIC	25 MICRON SPIN-ON REPLACEABLE
COOLANT (Where Applicable)	1.48 qts (1.4 l)	50/50 MIX OF WATER AND ETHYLENE GLYCOL	N/A

CUTTERDECK	
MODEL NUMBER	942236D
TYPE	Rear Discharge
CUTTING WIDTH	61" (155 cm)
OVERALL WIDTH	62" (157 cm)
BLADE	One low lift blade
NUMBER OF BLADES	3
BLADE LENGTH	21" (53 cm)
BLADE THICKNESS	0.25" (6.35 mm)
TIP SPEED	18850 ft/min 5745 m/min @ 3500 Engine RPM
DAILY PRODUCTION (8 hr @ 6 mph)	Up to 29.5 acres (11.9 ha)

CONSTRUCTION:

Fabricated and welded or bolted 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 to center spindle of cutterdeck. No twists in drive belt.

SPINDLES:

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

ANTI-SCALP ROLLERS:

61" Cutterdecks - 6 Rollers

CUTTING HEIGHT & PRODUCTION:

Height: Spring assisted lift lever allows easy setting of cut heights from 1-1/2" to 4-1/2" in 1/4" increments. "Set and forget" feature allows height of cut to be set and returned to without searching from operator position.

SPECIFIC TORQUES

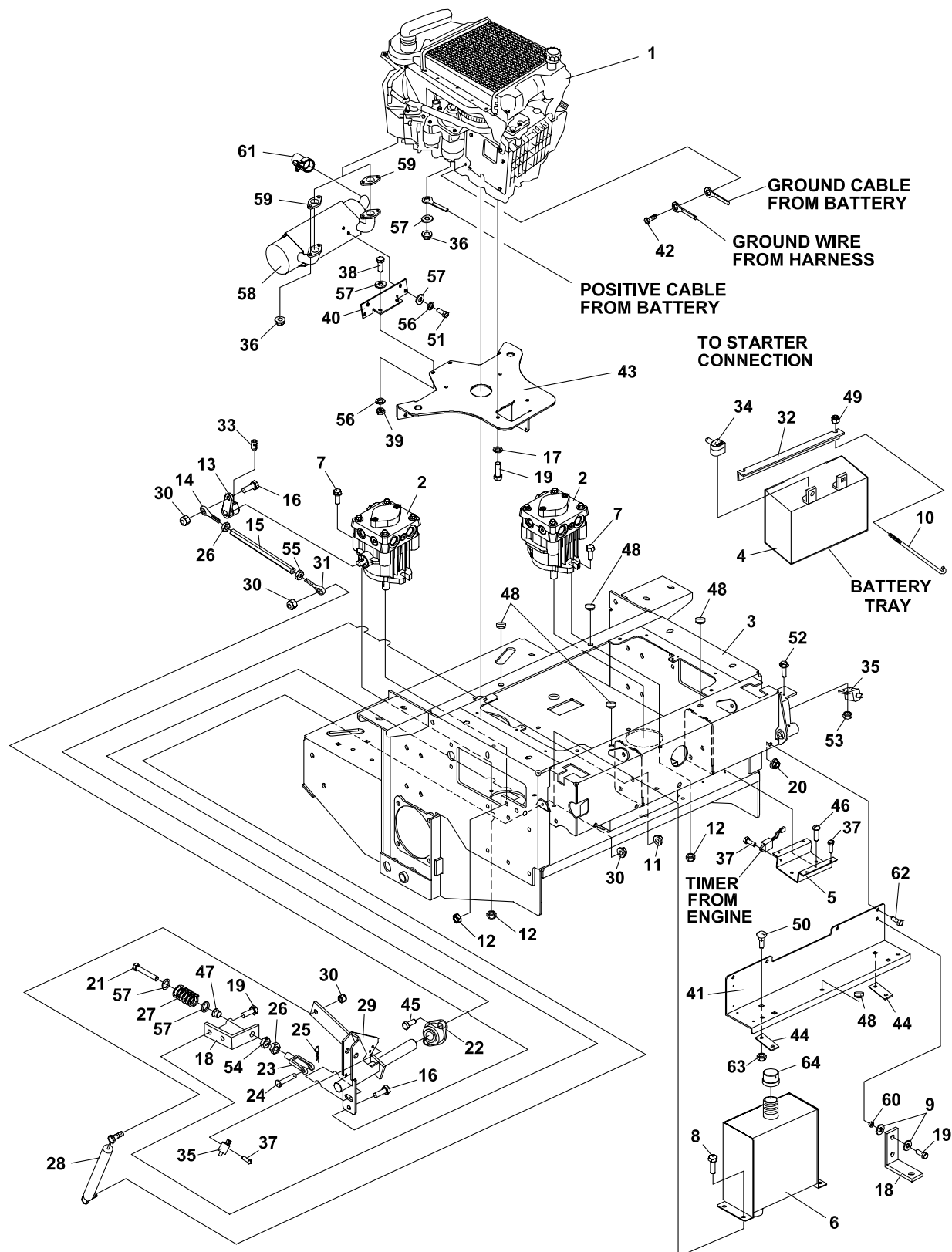
BLADE BOLT TORQUE: 70 FT-LBS (95 Nm)
WHEEL HUB NUTS: 225 FT-LBS (237 Nm)
ENGINE CRANKSHAFT BOLT: 40 FT-LBS (57 Nm)

PARTS SECTION

UPPER ENGINE DECK ASSY

**ZT 220D
Series**

FIGURE 1



ZT 220D Series

UPPER ENGINE DECK ASSY

FIGURE 1

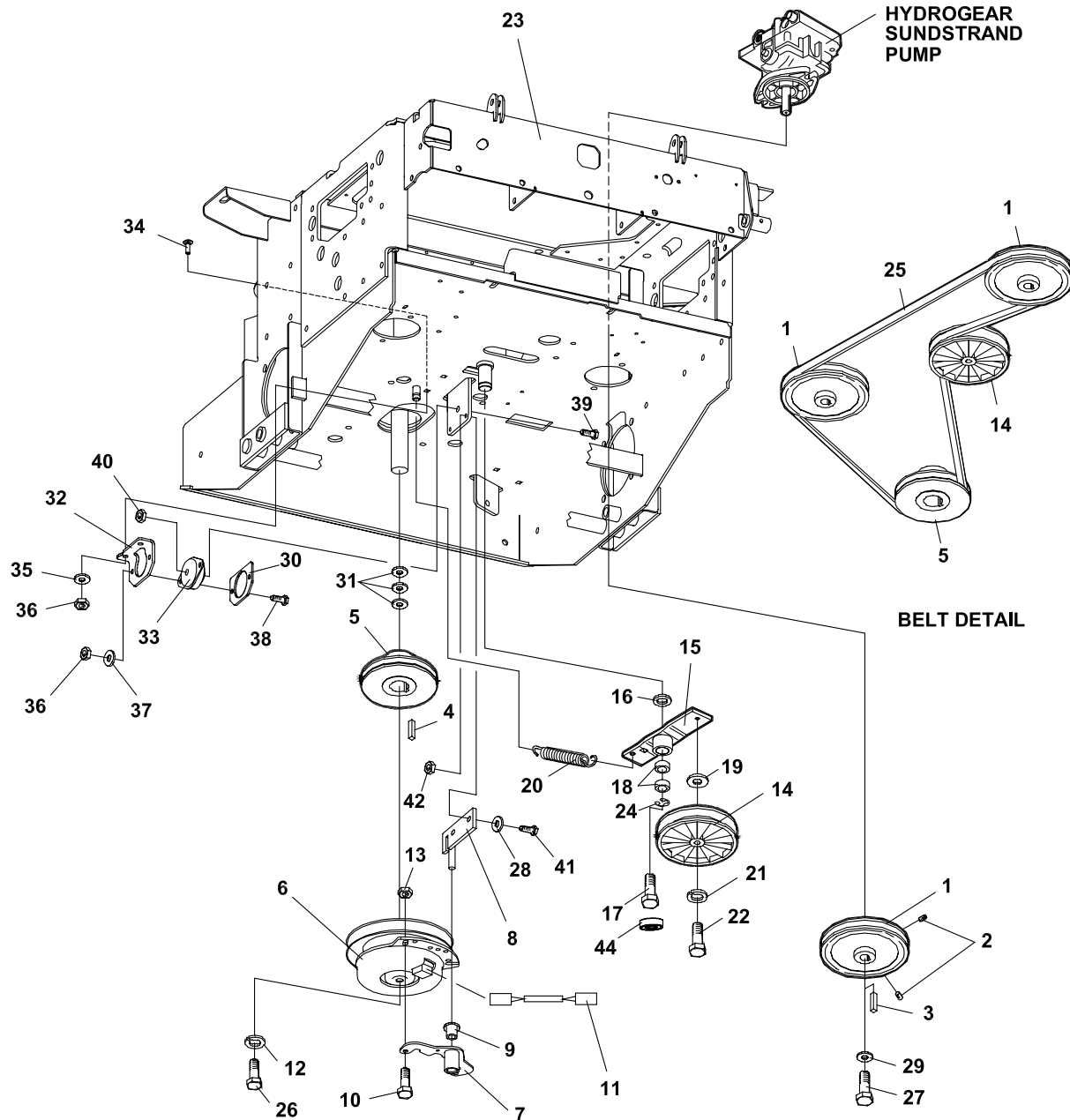
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1-1	4139023	ENG-YANMAR DIESEL 20HP1 (SERVICE MANUAL YANMAR #49961-101251)		1-42	64205-007	BLT-M10-1.5 X 20	1
	2720883-01	FILTER-FUEL	1	1-43	2720865.7	PLATE-ENGINE MOUNT	1
	2720883-02	FILTER-ENGINE OIL	1	1-44	2188146	STRIP, WEAR	2
1-2	4121333	PUMP-HYDRO BDP-10A-440 2 (SEE FIGURE 9 FOR BREAKDOWN)	2	1-45	64123-15	BLT-HEX 3/8-16 X 3/4	8
1-3	4136779	S-ENGINE DECK W\LABS	1	1-46	64152-23	SCREW 1/4-20X3/8	2
1-4	33-015	BATTERY	1	1-47	38304-02	S BRG FLGD PLASTIC	2
1-5	2721530.7	BRACKET-RELAY	1	1-48	810149	BUMPER-RUBBER	7
1-6	4123382	S HYD RESERVOIR W/LAB	1	1-49	64229-02	LOCKNUT-NYLON 5/16-18	2
1-7	64263-013	BLT-FLG HD M10-1.5 X 30	4	1-50	64018-23	BLT-CRG 3/8-16X3/4 SHRT	4
1-8	64197-016	BLT-TR 3/8-16X1 1/2	4	1-51	64205-001	BLT-MET M8-1.25 X 20	4
1-9	64251-004	WSHR-M10	2	1-52	64152-46	SCR-SLT HH #10-24	2
1-10	806953	BOLT-BATTERY HOOK	2	1-53	64025-15	NUT-HEX #10-24 KEPS	2
1-11	64141-4	NUT-WLF 3/8-16	8	1-54	64229-08	LOCKNUT-NYLON 5/16-24	2
1-12	64237-03	LOCKNUT-NYLON M10-1.5	8	1-55	64025-33	NUT- 5/16-24 LH	2
1-13	4118430	ARM-PUMP	2	1-56	64006-02	LOCKWSHR-HELICAL 5/16	6
1-14	38369-02	ROD END BALL JOINT	2	1-57	64163-55	WSHR .328X.75X14 GA	12
1-15	2188140	TURNBUCKLE	2	1-58	4116742	MUFFLER-YANMAR 2V78	1
1-16	64205-003	BLT-MET M8-1.25 X 30	4	1-59		GASKET-MUFFLER	2
1-17	800488	LOCKWASHER M10	4			(OBTAIN THROUGH YANMAR DEALER)	
1-18	2182405.7	BRKT-REVERSE RETURN	3	1-60	64250-01	INSERT-M10	1
1-19	A1104057	BLT-M10-1.50 X 25	9			(USE INSERT TOOL 2196248)	
1-20	64246-03	WIZ NUT-MET M10-1.5	4	1-61	4116743	EXTENSION-EXHAUST	1
1-21	64123-205	BLT-HEX 5/16-24 X 4	2	1-62	64263-011	BOLT-FLG HD M10-1.5 X 20	4
1-22	2188145	BEARING-SELF ALIGNED	4	1-63	64268-03	NUT-FL NYLON LCK 3/8-16	4
1-23	38020N	CLEVIS-YOKE PLATE	2	1-64	69216.7	CAP-RESERVOIR	1
1-24	64188-02	PIN-CLEVIS 5/16 X 1	2				
1-25	64168-2	HAIRPIN COTTER	2				
1-26	64025-03	NUT-HEX 5/16-24	4				
1-27	2188139	SPRING-COMPRESSION	2				
1-28	2721246	DAMPENER	2				
1-29	4112105.7	WLDMT-MTN CTRL RH	1				
*	4112104.7	WLDMT-MTN CTRL LH	1				
1-30	64237-05	LOCKNUT-NYLON M8-1.25	8				
1-31	38369-01	ROD END BALL JOINT	2				
1-32	2182427.7	HOLD DOWN, BATTERY	1				
1-33	64192-06	SETSCR SQHD 5/16-18X3/4	2				
1-34	48037A	BOOT-BATTERY TERMINAL	1				
1-35	108208	SWITCH, DBL POLE	3				
1-36	64246-02	NUT-WLF M8-1.25	5				
1-37	64197-015	BLT-TDFM #10-32X1/2 TRX	9				
1-38	A1103051	BOLT-M8-1.25 X 25	2				
1-39	64207-01	NUT-M8-1.25	2				
1-40	2720867.7	BRACKET MUFFLER	1				
1-41	2182404.7	PLATE, KICK	1				

* NOT ILLUSTRATED

LOWER ENGINE DECK ASSY

**ZT 220D
Series**

FIGURE 2



**TORQUE CRANKSHAFT BOLT 26
TO 40 FT/LBS (57Nm) +/-10%**

ZT 220D Series

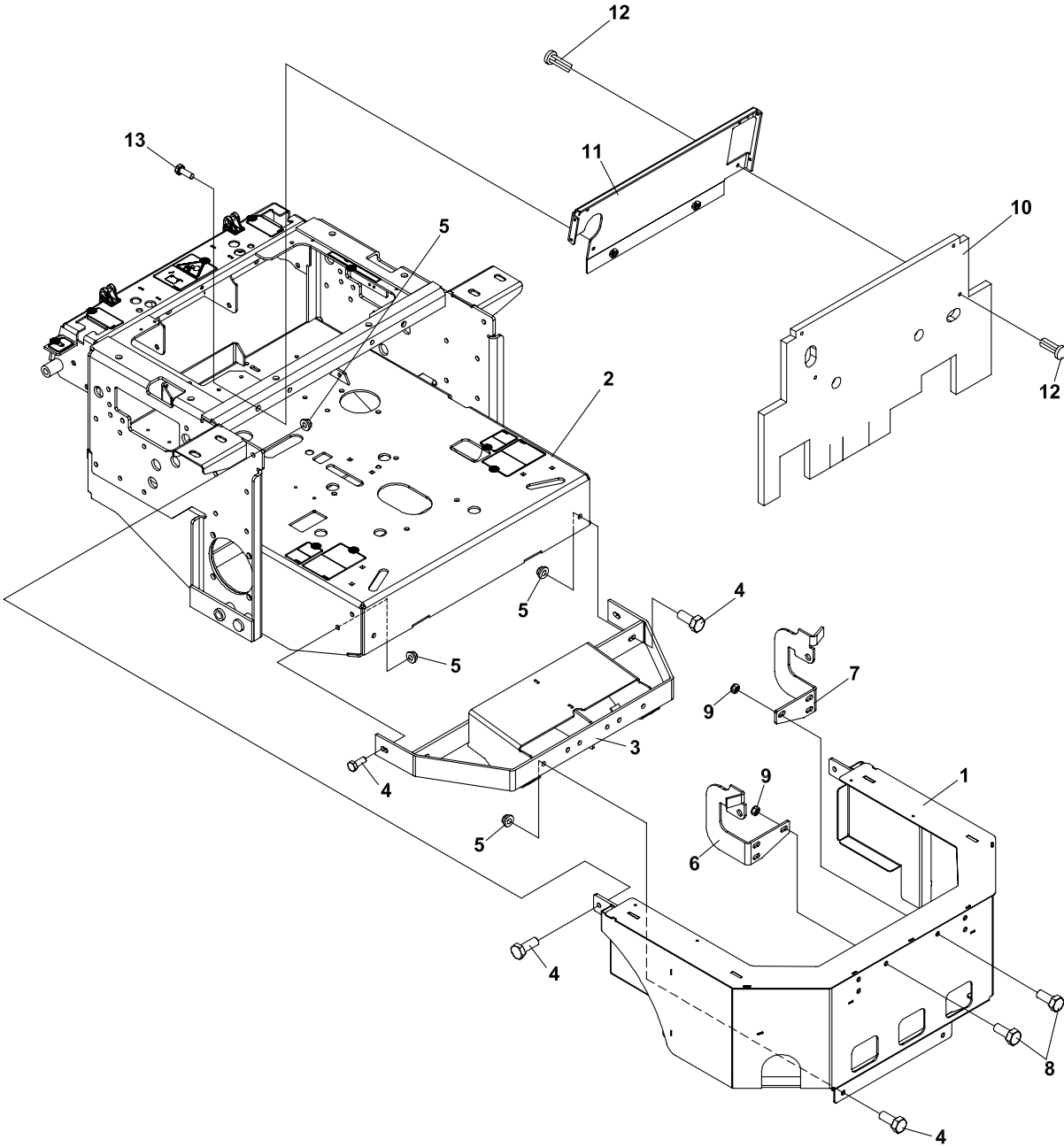
LOWER ENGINE DECK ASSY

FIGURE 2

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
2-1	2722382	PUMP-PULLEY	2	2-31	64163-44	WASHER	3
2-2	64044-18	SCREW-SET 5/16-18 X 5/16 (LOCTITE SET SCREWS IN PLACE)	4	2-32	2722303.7	BRKT-ISO MOUNT	3
				2-33	2720863	MOUNT-ISO	3
2-3	64238-03	KEY-MET 5mm SQ X 28mm	2	2-34	64018-15	BLT-CRG 5/16-18X1	6
2-4	64164-12	1/4X1/4X1 SQ END KEY	1	2-35	64163-29	21/64X1X11GA.WASHER	6
2-5	2188188	PULLEY-4.25 ENGINE	1	2-36	64229-02	LOCKNUT-NYLON 5/16-18	12
2-6	2721337	CLUTCH-ELECTRIC (INCLUDES ITEM 11 & 43)	1	2-37	64163-55	WASHER .328X.75X14 GA	6
				2-38	64123-107	BLT-HEX 5/16-18X7/8	6
2-7	2721338.7	WLDMT-CLUTCH STOP	1	2-39	64205-052	BLT-MET M10-1.50 X 50	3
2-8	2720868.7	WLDMT-CLUTCH BRACKET	1	2-40	64237-03	LOCKNUT-NYLON M10-1.5	3
2-9	38304-03	BEARING-PLASTIC	1	2-41	64205-025	BLT-MET M6-1.00X25	2
2-10	64205-001	BLT-MET M8-1.25X20	2	2-42	64237-02	LOCKNUT-NYLON M6-1.00	2
2-11	2720949	ASSY-CLUTCH WIRE	1	2-43	*4121560	KIT-BRAKE POLE RPLCMNT	1
2-12	800488	LOCKWSHR-HELICAL M10	1	2-44	4128002	END CAP	1
2-13	64265-04	NUT-FL NYL LOCK M8-1.25	2				
2-14	2308000	PULLEY-IDLER 4.00 E.O.D.	1				
2-15	4128923	S-ASSY-IDLER ARM PUMP (INCLUDES ITEMS 16, 18 & 24)	1				
2-16	4127999	SEAL	1				
2-17	64270-01	BOLT-MET HEX M10-1.5x30	1				
2-18	4128004	BEARING	2				
2-19	33148-01	SPACER	1				
2-20	38219	SPRING-TENSION	1				
2-21	64006-03	LOCKWSHR-HELICAL 3/8	1				
2-22	64123-21	BLT-HEX 3/8-24X1 1/4	1				
2-23	4136779	S-ENGINE DECK W/LABS	1				
2-24	64144-40	SNAP RING	1				
2-25	4124830	BELT-PUMP DRIVE	1				
2-26	64205-019	BLT-MET M10-1.50 X 80	1				
2-27	64205-013	BLT-MET M6-1X12	2				
2-28	64163-34	WSHR.256/.267X1X11GA	2				
2-29	64209-09	WASHER-CONICAL SPRING	2				
2-30	2722304.7	PLATE-CLAMPING	3				

* NOT ILLUSTRATED

FIGURE 3



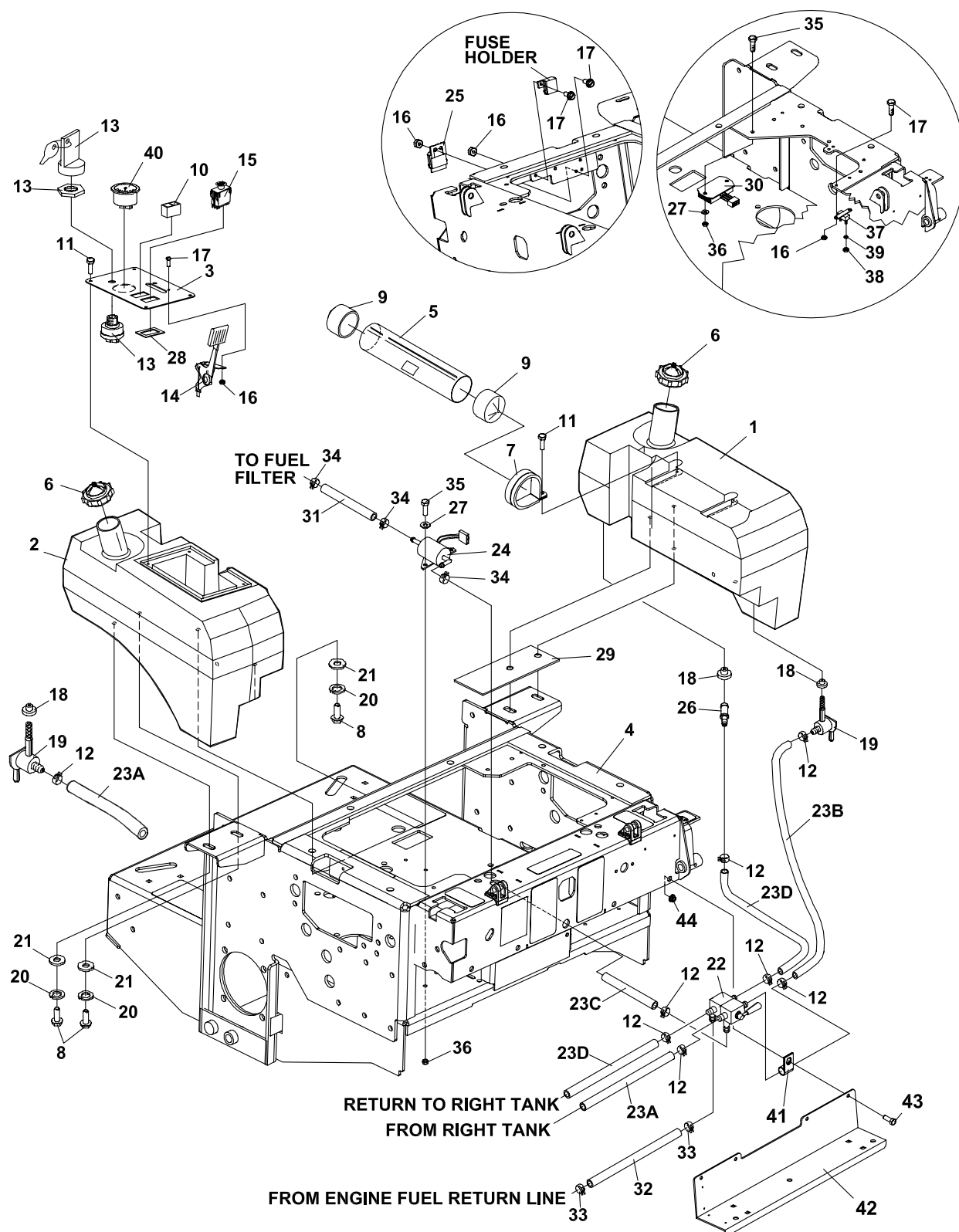
ZT 220D Series

BUMPER

FIGURE 3

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
3-1	4117296.7	WLDMT-LOWER SHROUD	1				
3-2	4136779	S-ENG DECK W/LABS	1				
3-3	2721324.7	WLDMT-BUMPER	1				
3-4	64263-013	BLT-FLG HD M10-1.5 X 30	8				
3-5	64265-05	NUT-FL NYL LOCK M10-1.5	8				
3-6	4115657.7	HINGE-LOWER LH	1				
3-7	4115660.7	HINGE-LOWER RH	1				
3-8	A1104057	BOLT-M10-1.50x25	6				
3-9	64246-03	NUT-WHIZ M10-1.50	6				
3-10	4116747	BARRIER-FRONT	1.				
3-11	4125007.7	PANEL-HOOD SUPPORT	1				
3-12	4117726	RIVET-PLASTIC RATCHET	8				
3-13	64263-013	BLT-FLG HD M10-1.5 X 30	2				

FIGURE 4



ZT 220D Series

FUEL TANKS/CONTROL PANEL

FIGURE 4

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
4-1	4122493	LH FUEL TANK W/RET (INCLUDES ITEMS 18,19 & 26)	1	4-37	48524	CIRCUIT BREAKER (INCLUDES ITEMS 38 & 39)	1
4-2	4122492	RH FUEL TANK W/RET (INCLUDES ITEMS 18,19 & 26)	1	4-38	64025-14	NUT-HEX #10-32	2
4-3	4123383	S-CONTROL PANEL W/LAB	1	4-39	446118	LOCKWASHER-#10	2
4-4	4136779	S-ENG DECK W/LABS	1	4-40	2721531	TEMPERATURE GAUGE	1
4-5	2206184	S-DOC TUBE W/LABS	1	4-41	48228-2A	CLAMP-3/4 CLIP	1
4-6	2721806	CAP-FUEL TANK	2	4-42	2182404.7	PLATE-KICK	1
4-7	38542	CLAMP-DOC TUBE	2	4-43	64263-011	BLT-FLG HD M10-1.5 X 20	4
4-8	64205-007	BLT-MET M10-1.5 X 20	8	4-44	64246-03	NUT-WHIZ M10-1.50	4
4-9	38061A	SPINDLE-SHIELD	2				
4-10	2721894	CLUSTER-WARNING LIGHT	1				
4-11	64263-001	BLT-FLG HD M6-1.0 X 12	6				
4-12	88042N	HOSE CLAMP	9				
4-13	2721126	KEY-SWITCH W/BEZEL (INCLUDES KEY, BEZEL, NUT & WASHER)	1				
4-14	118020-15	CONTROL-THROTTLE	1				
4-15	2721505	SWITCH-PTO	1				
4-16	64025-15	NUT-HEX #10-24 KEPS	9				
4-17	64152-46	SCR.-SLT HH #10-24 X 1/2	9				
4-18	4132325	GROMMET-FUEL TANK	4				
4-19	38540	S-FUEL SHUTOFF VALVE	2				
4-20	800488	LOCKWASHER M10	8				
4-21	64251-004	WASHER-M10	8				
4-22	2721911	VALVE-TANK SELECTOR	1				
		(48016-17 IS A SERVICEABLE LENGTH OF 68")					
4-23A	48016-17	HOSE 1/4IDX1/2OD X 28"	1				
4-23B	48016-17	HOSE 1/4IDX1/2OD X 22"	1				
4-23C	48016-17	HOSE 1/4IDX1/2OD X 15"	1				
4-23D	48016-17	HOSE 1/4IDX1/2OD X 36"	2				
4-24		FUEL PUMP	1				
		(AVAILABLE THROUGH YANMAR DEALER)					
4-25	2188154	MODULE-DELAY	1				
4-26	2722090	FTG-FUEL 1/4 STRAIGHT	2				
4-27	64163-03	WSHR-FLT 0.256ID X 18 GA	4				
4-28	2188178	SWITCH-RETAINER	1				
4-29	4114777.7	COVER-ROPS HOLE	2				
4-30		RECTIFIER	1				
		(AVAILABLE THROUGH YANMAR DEALER)					
4-31	148263-10	HOSE-FUEL 5/16-27"	1				
4-32	148264-10	HOSE-FUEL 3/16-42"	1				
4-33	88042-01	CLAMP-HOSE 3/16	2				
4-34	88042-02	CLAMP-HOSE 5/16	3				
4-35	64205-025	BLT-MET M6-1.00 X 25	4				
4-36	64237-02	LOCKNUT-NYLON M6-1.00	4				

FIGURE 5

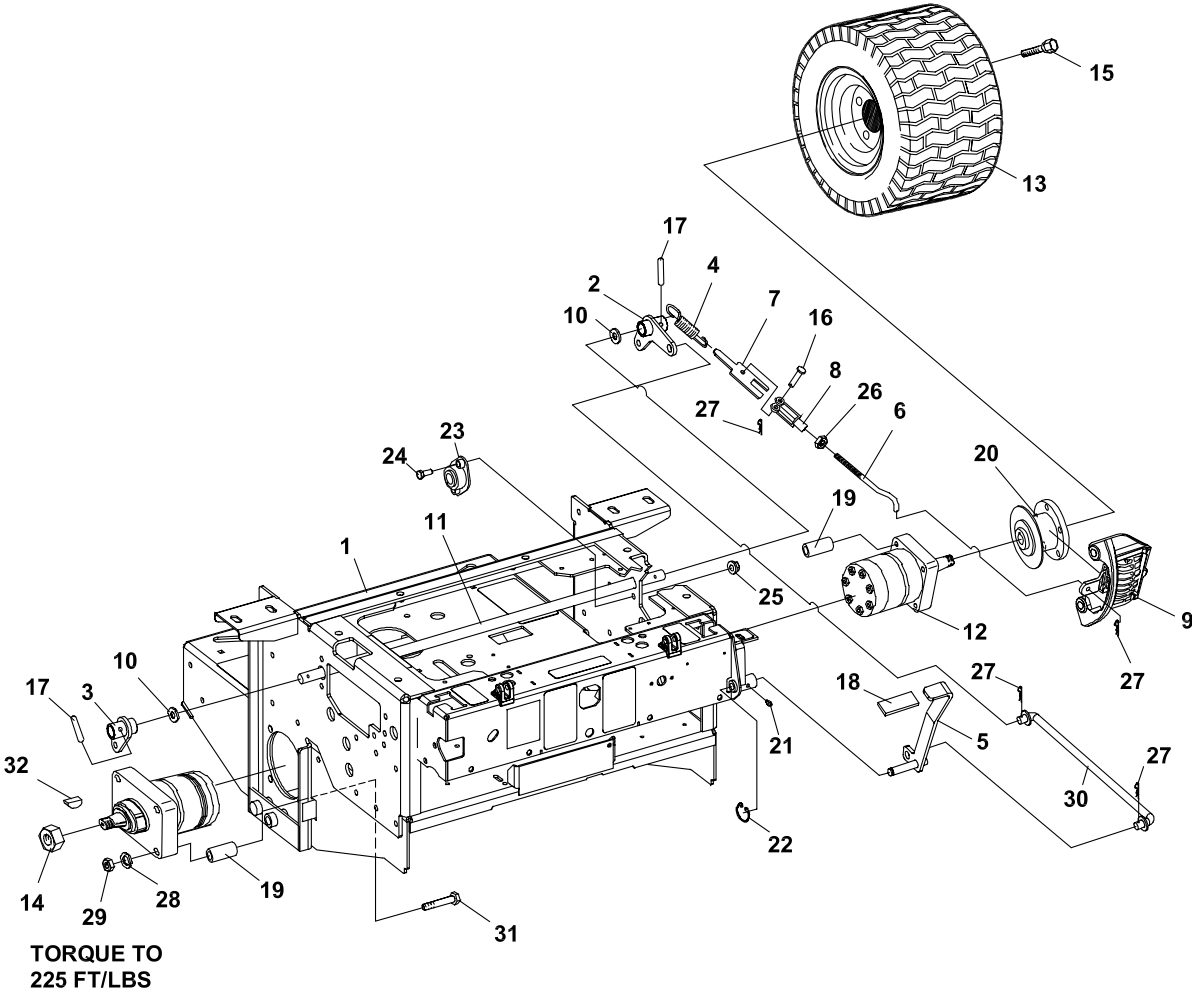


FIGURE 5

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
5-1	4136779	S ENGINE DECK W/LABS	1	5-26	64025-03	NUT-HEX 5/16-24	2
5-2	4113527.7	WLDMT-BRAKE ARM LH	1	5-27	64168-2	HAIRPIN COTTER	6
5-3	4113529.7	WLDMT-BRAKE ARM RH	1	5-28	64006-05	LOCKWASHR-HELICAL 1/2	8
5-4	128102	SPRING-EXTENSION	2	5-29	64207-07	NUT-HEX M12-1.75	8
5-5	4113518.7	WLDMT-BRAKE ARM	1	5-30	4113530	ROD, BRAKE	1
5-6	33213	ROD-SPD CTRL UPPER	2	5-31	450767	CAPSCRW M12-1.75X110	8
5-7	2182387.7	GUIDE-SPRING	2	5-32	64164-08	S-KEY / WHEEL MOTOR	2
5-8	38020N	CLEVIS-YOKE PLATE	2				
5-9	2188147	ASSY BRAKE CW (LH)	1				
*	2188148	ASSY BRAKE CCW (RH)	1				
5-10	64163-06	WSHR-.768-.756 IDX14	A/R				
5-11	2183056	SHAFT-BRAKE	1				
5-12	2188126-01	MOTOR-ASSY HYDRAULIC (INCLUDES ITEMS 14 & 32)	2				
5-13	2722001-01	RIM ASSY W/VALVE STEM	2				
	2722001-02	TIRE 24 X 12.0 X 12	2				
5-14	64025-31	NUT1-20 UNSLOTTED TRW	2				
5-15	64220-02	BOLT-WHEEL 7/16-20	10				
5-16	64188-02	PIN-CLEVIS 5/16X1	2				
5-17	64061-25	ROLL-PIN 1/4X1 1/4	2				
5-18	2188155	GRIP, 1/4X1X4 1/2	1				
5-19	2183063-01	SPACER, 32MM LONG	8				
5-20	2188149	HUB-WHL & DISC	2				
5-21	85010N	STRAIGHT ZERK FITTING	1				
5-22	64144-34	SNAP RING .50	1				
5-23	2188145	BRG-.75ID BRNZ SLF ALIGN	2				
5-24	64123-15	BOLT-3/8-16X3/4 HEX	4				
5-25	64141-4	NUT-WLF 3/8-16	4				

**SERVICE PARTS FOR 2188147 AND 2188148
BRAKE ASSEMBLIES QTY/ASSY**

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
2188148-01	*CAM RH	1

* NOT ILLUSTRATED

BRAKE ASSEMBLY BREAKDOWN

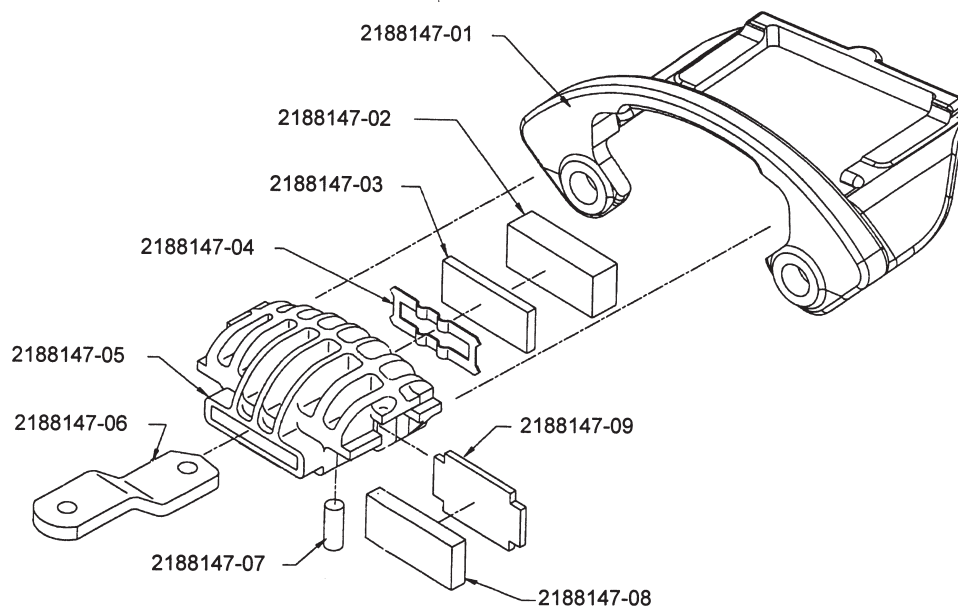
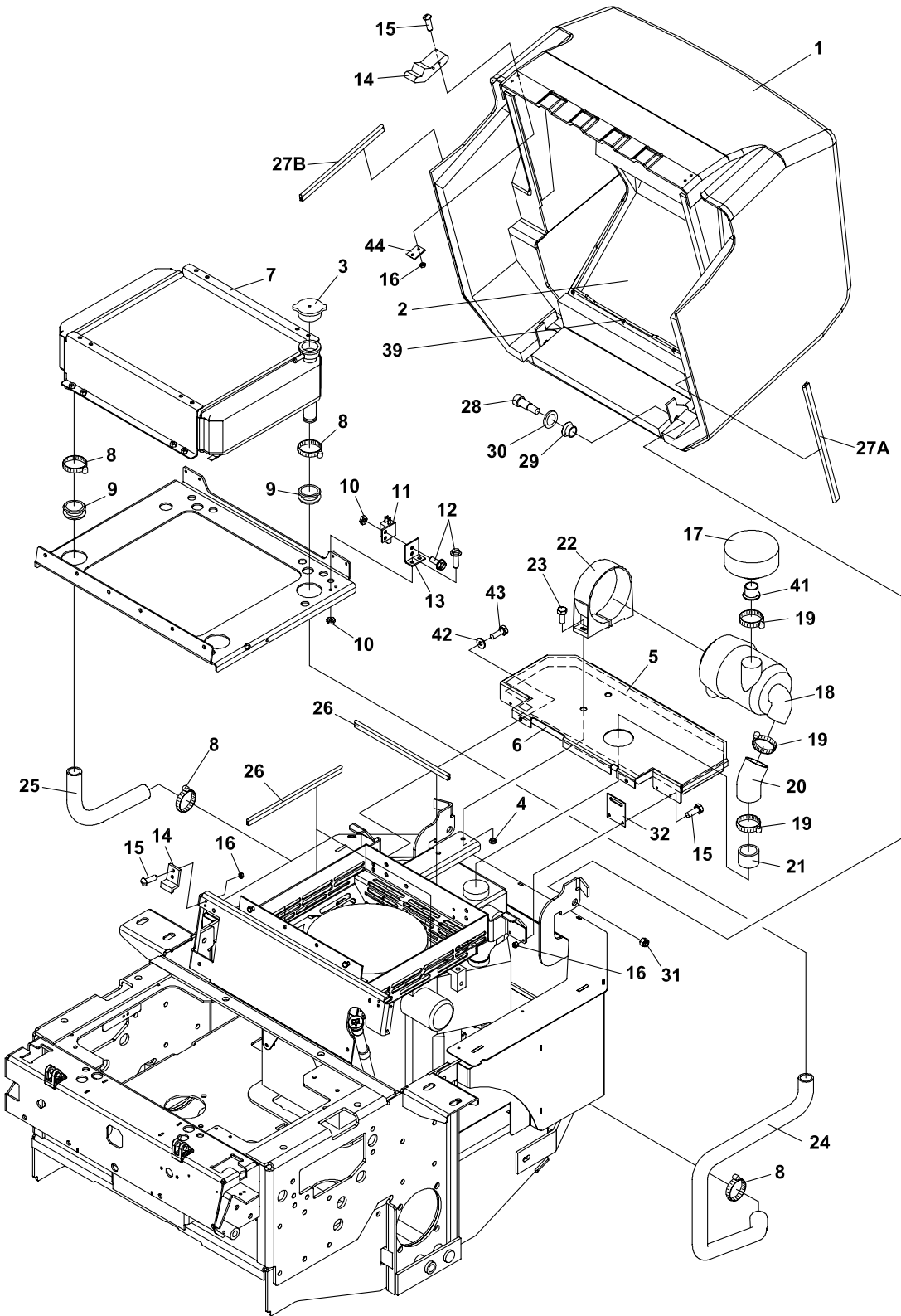


FIGURE 6



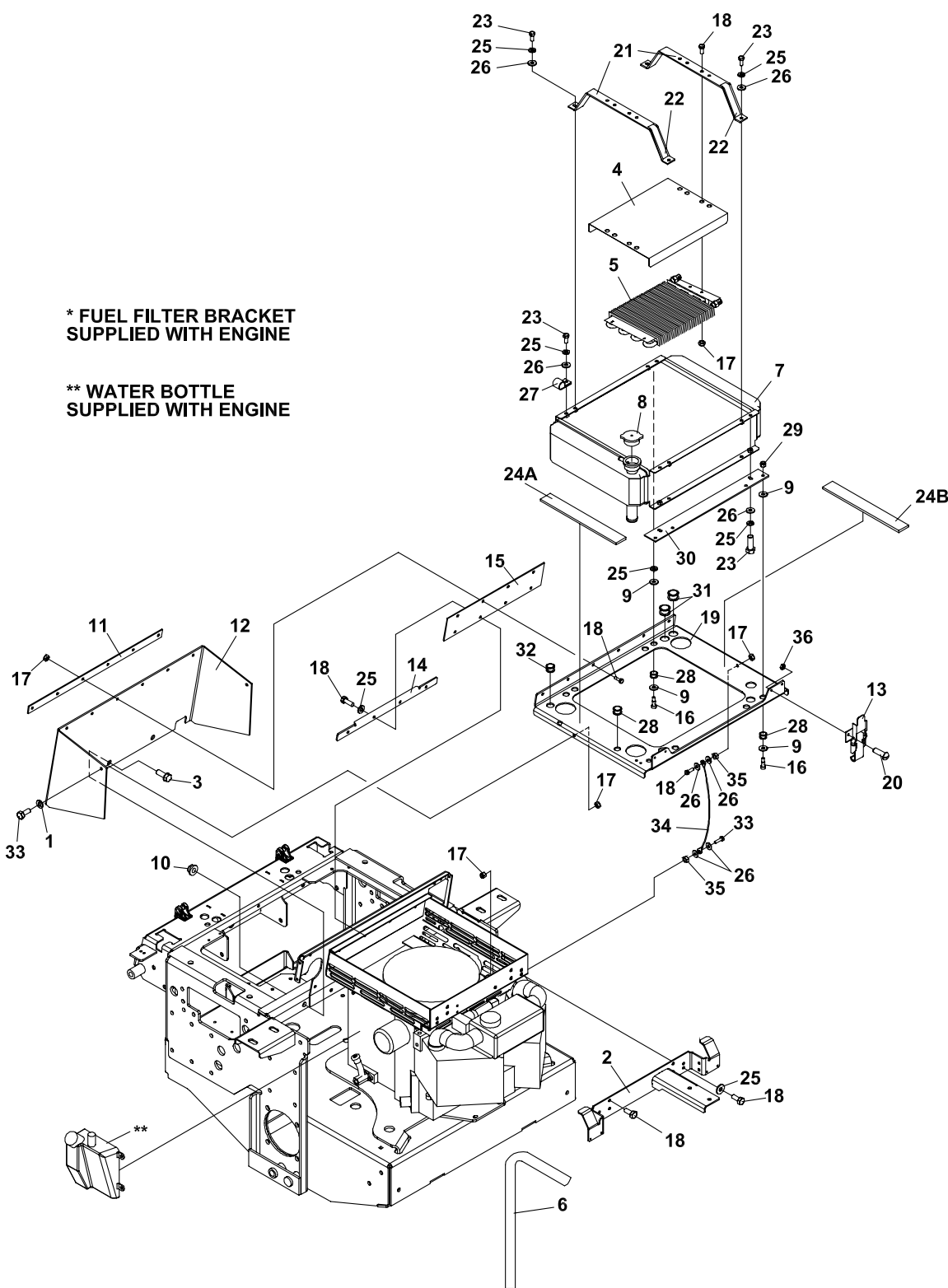
ZT 220D Series

RADIATOR SCREEN & AIR FILTER

FIGURE 6

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
6-1	4117841	HOOD-WITH FOAM ZT (INCLUDES ITEMS 2, & 33-40)	1	6-33	* 4116835	FOAM-FRONT & TOP	1
6-2	4115661.2	SCREEN-ZT DIESEL	1	6-34	* 4116832	FOAM-LOWER LH	1
6-3	2198238-01	S-RADIATOR CAP	1	6-35	* 4116833	FOAM-LOWER RH	1
6-4	64237-05	LOCKNUT-NYLON M8-1.25	2	6-36	* 4116834	FOAM-LOWER REAR	1
6-5	2721442.7	COVER-AIR BOX	1	6-37	* 4116836	FOAM-UPPER RH	1
6-6	4116840	FOAM-AIR BOX COVER	1	6-38	* 4116837	FOAM-UPPER LH	1
6-7	4123384	S RADIATOR W/LABS	1	6-39	64152-09	1/4-15X.810 S.T. SCREW	17
6-8	108094-01	CLAMP-HOSE SAE20	4	(4123266-01 IS A SERVICABLE LENGTH OF 96.0")			
6-9	148034-10	GROMMET-2 X 1-1/2 X 3/8	2	6-40A	* 4123266-01	FOAM-.75"x1.00"x9.0"	2
6-10	64025-15	NUT-HEX #10-24 KEPS	4	6-40B	* 4123266-01	FOAM-.75"x1.00"x16.0"	2
6-11	38382	SWITCH-N.O.	1	6-41	2720885-01	BUSHING	1
6-12	64152-46	SCR-SLT HH 10-24 X 1/2	4	6-42	64163-03	WSHR-.256 X.62 X 18 GA.	2
6-13	2721624	BRKT-RADIATOR SWITCH	1	6-43	64205-038	BLT-MET M6-1.00X20	2
6-14	2198112	LATCH-HOOD	2	6-44	2720071	PLATE-LATCH	2
6-15	64152-20	8-32X1/2 MACH SCREW	12	* NOT ILLUSTRATED			
6-16	64025-29	NUT-HEX #8-32 KEPS	12				
6-17	2720885	PRECLEANER-AIR FILTER	1				
6-18	1985039	AIR CLEANER	1				
	1985039-01	S ELEMENT	1				
	1985039-02	S DUST VALVE	1				
	1985039-03	S COVER	1				
	1985039-04	S CLIP	1				
	(SUPPLIED WITH AIR CLEANER)						
6-19	48383	CLAMP-HOSE SAE32	3				
6-20	2721630	HOSE-AIR CLEANER	1				
6-21	364152	BUSHING-1.378X1.750X1.00	1				
6-22	2720022	BRACKET-AIR CLEANER	1				
6-23	64205-001	BLT-MET M8-1.25 X 20	2				
6-24	2720872	HOSE-RADIATOR LOWER	1				
6-25	2720871	HOSE-RADIATOR UPPER	1				
(108194-13 IS A SERVICABLE LENGTH OF 41.0")							
6-26	108194-13	FLEX TRIM 13.0"	3				
(108194-23 IS A SERVICABLE LENGTH OF 120.0")							
6-27A	108194-23	FLEX TRIM 60.0"	1				
6-27B	108194-23	FLEX TRIM 12.5"	2				
6-28	PL5013	BOLT-SHOULDER	2				
6-29	366877	BEARING, NYLINER	2				
6-30	454025	WASHER, SPRING	2				
6-31	64229-03	LOCKNUT-NYLON 3/8-16	2				
6-32	4115110.7	PLATE-LATCH	2				

FIGURE 7



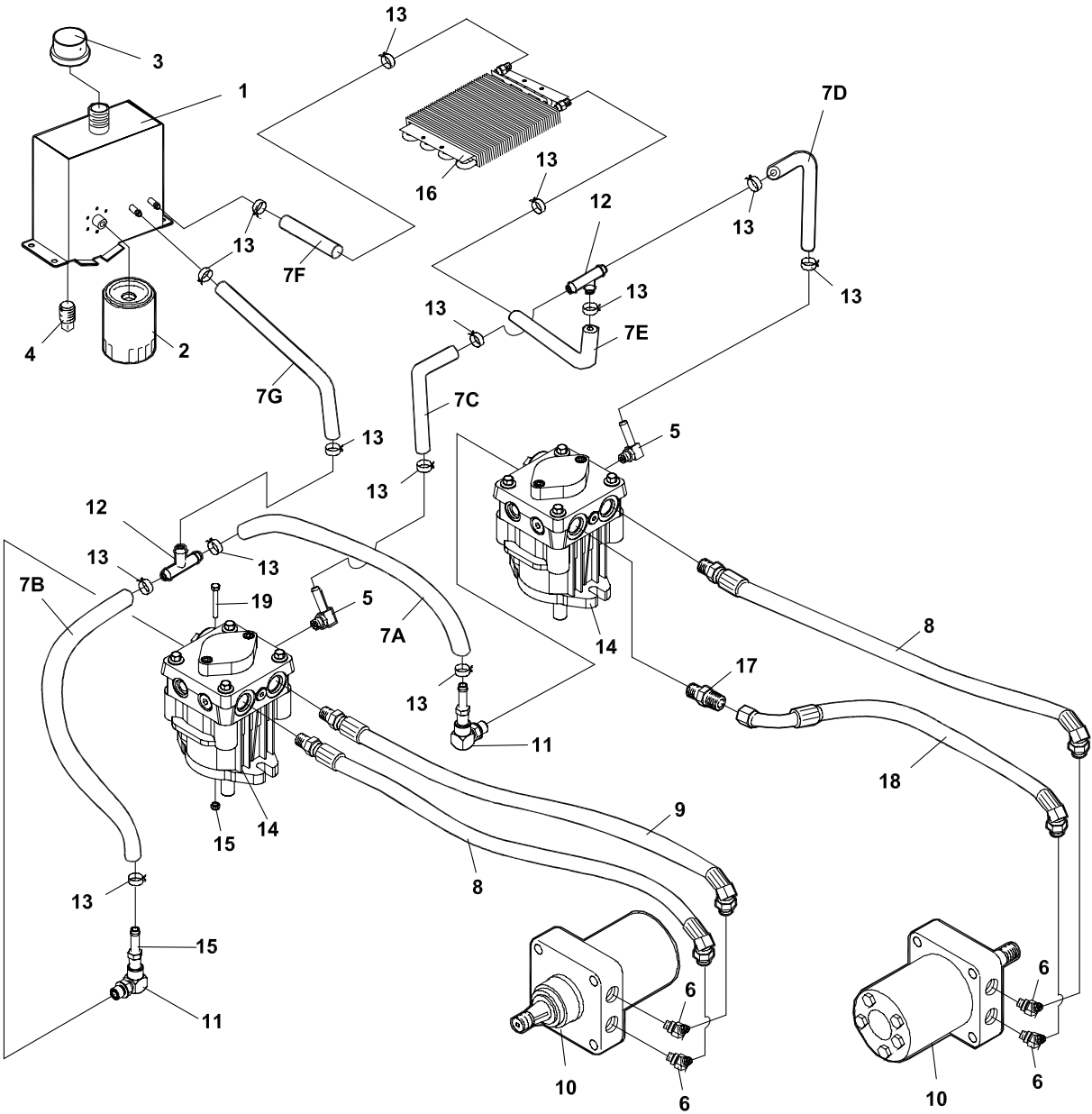
ZT 220D Series

OIL COOLER & RADIATOR

FIGURE 7

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
7-1	64163-34	WASHER	2				
7-2	4120936.7	WLDMT-SUPPORT BRKT	1				
7-3	64263-013	BLT-FLG HD M10-1.5 X 30	2				
7-4	2720891.7	SCREEN-OIL COOLER	1				
7-5	2188173	COOLER-OIL	1				
7-6	2721576-01	TUBE-RAD OVERFLOW-30"	1				
7-7	4123384	S RADIATOR W/LABS (INCLUDES ITEM 22)	1				
7-8	2198238-01	CAP-RADIATOR	1				
7-9	64163-55	WASHER	16				
7-10	64265-05	NUT-FL NYL LOCK M10-1.5	2				
7-11	4122046.7	PLATE-BACKING	1				
7-12	2722380	BARRIER-AIR FLOW	1				
7-13	2218076	LATCH-OVER CENTER	2				
7-14	2721355.7	STRAP-RADIATOR HINGE	1				
7-15	2721450	BELTING-HINGE	1				
7-16	64166-6	BLT-SHLDR 5/16X1/2-1/4-20	8				
7-17	64237-02	LOCKNUT-NYLON M6-1.00	8				
7-18	64205-038	BLT-MET M6-1.00 X 20	18				
7-19	4122045.7	PLATE-RADIATOR MTG	1				
7-20	64152-20	MACHINE SCREW 8-32X1/2	4				
7-21	2720878.7	SUPPORT-OIL COOLER	2				
7-22	4116847	LABEL-EC COOLANT PRS	2				
7-23	64123-89	BLT-HEX 1/4-20 X 3/4	7				
(4123266-01 IS A SERVICABLE LENGTH OF 96.0")							
7-24A	4123266-01	FOAM-.75"x1.00"x8.0"	2				
7-24B	4123266-01	FOAM-.75"x1.00"x10.0"	2				
7-25	64006-01	LOCKWSHR-HELICAL 1/4	21				
7-26	64163-03	WASHER-1/4	14				
7-27	48228A	CABLE CLIP-INSULATED	1				
7-28	148034-09	GROMMET-7/8 X 3/8 X 3/8	9				
7-29	64151-8	1/4-20 HEX LOCK NUT	4				
7-30	2721931.7	BRKT-RADIATOR SUPPORT	1				
7-31	148034-08	GROMMET 1.125OD 0.625ID	2				
7-32	148034-06	GROMMET 0.5 ID	1				
7-33	64205-025	BLT-MET M6-1.00 X 25	2				
7-34	2720882	LANYARD	1				
7-35	64207-06	NUT-HEX M6-1	2				
7-36	64025-29	NUT-HEX #8-32 KEPS	4				

FIGURE 8



ZT 220D Series

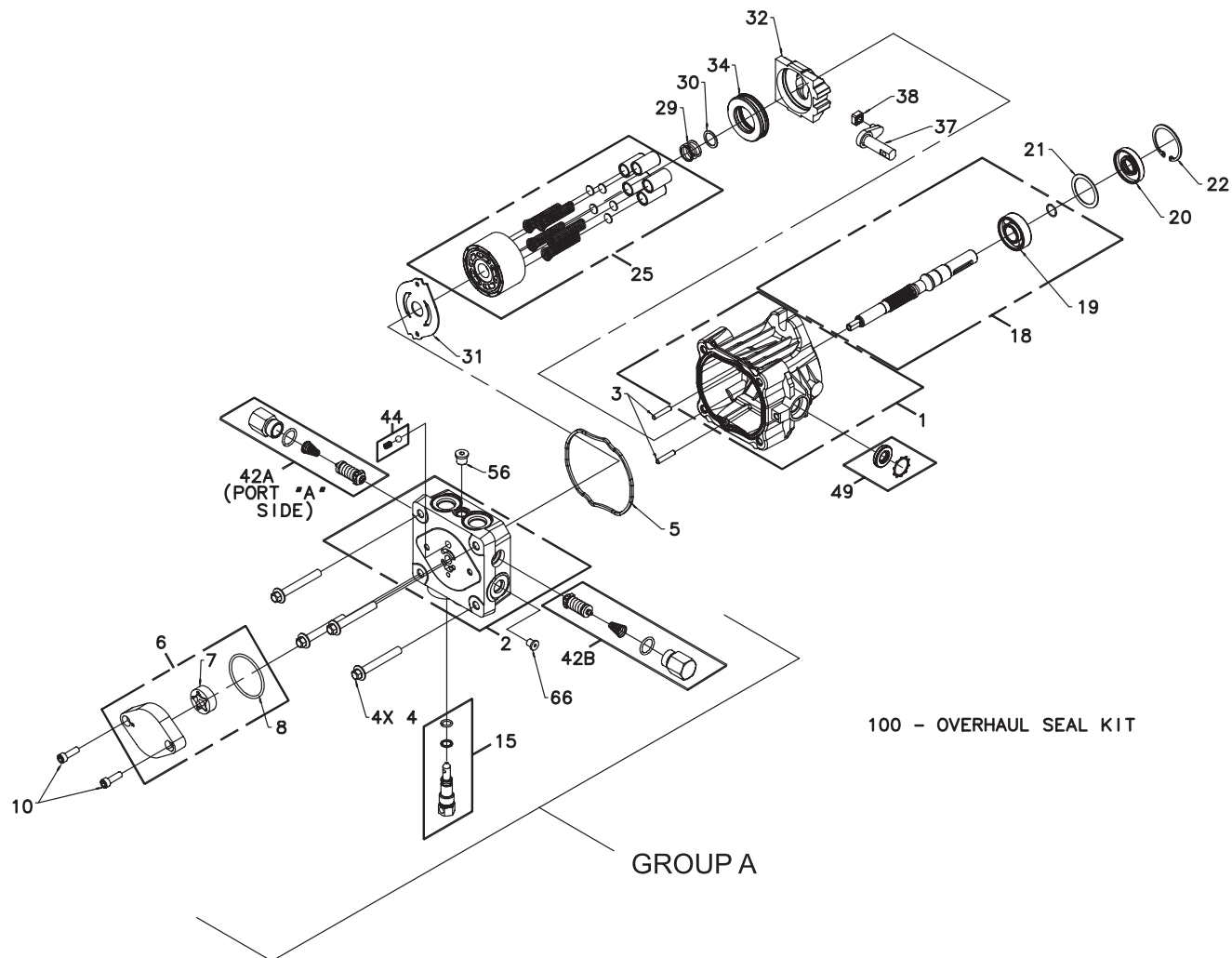
HYDRAULICS

FIGURE 8

ITEM	PART NO.	DESCRIPTION	QTY
8-1	4123382	S HYD RESERVOIR W/LAB	1
8-2	2720396	FILTER 25 MICRON	1
8-3	69216.7	CAP-RESERVOIR	1
8-4	108029	PLUG-MAGNETIC	1
8-5	158058-04	FTG-90 BRB 9/16-18X.38	2
8-6	108205-03	ELBOW-MALE 45 37-ORB	4
(69053-05 IS A SERVICEABLE LENGTH OF 55")			
8-7A	69053-05	3/8 HIGH TEMP HSE 23"	1
8-7B	69053-05	3/8 HIGH TEMP HSE 19.5"	1
8-7C	69053-05	3/8 HIGH TEMP HSE 6.5"	1
8-7D	69053-05	3/8 HIGH TEMP HSE 15.5"	1
8-7E	69053-05	3/8 HIGH TEMP HSE 26"	1
8-7F	69053-05	3/8 HIGH TEMP HSE 36"	1
8-7G	69053-05	3/8 HIGH TEMP HSE 6"	1
8-8	2188157-01	HOSE HYD ORB 37-22.38	2
8-9	2188157-02	HOSE HYD ORB 37-25.00	1
8-10	2188126-01	MOTOR-ASSY HYD	2
8-11	2690030-01	FTG 9/16-18 ORB X 3/8	2
8-12	58026-01	3 WAY CONNECTOR 3/8	2
8-13	88042-04	CLAMP-HOSE 5/8	14
8-14	4121333	PUMP-HYDRO BDP-10A-440	2
8-15	64229-01	LOCKNUT-NYL 1/4-20	2
8-16	2188173	OIL COOLER	1
8-17	48089-03	FTG-STRGHT 8 ORB X 8 JIC	1
8-18	2720320-01	HOSE-1/2 37/45 37 26.25	1
8-19	64123-60	BOLT, 1/4-20X2 HEX	2

SAE PORT 'O' RING		
PART NUMBER	THREAD SIZE	AS-568#
158061-10	9/16-18	-906
158061-11	3/4-16	-908
158061-12	7/8-14	-910
158061-13	1-1/16-12	-912
158061-14	1-5/16-12	-916
158061-16	1-5/8-12	-920
158061-03	1-7/8-12	-924

FIGURE 9



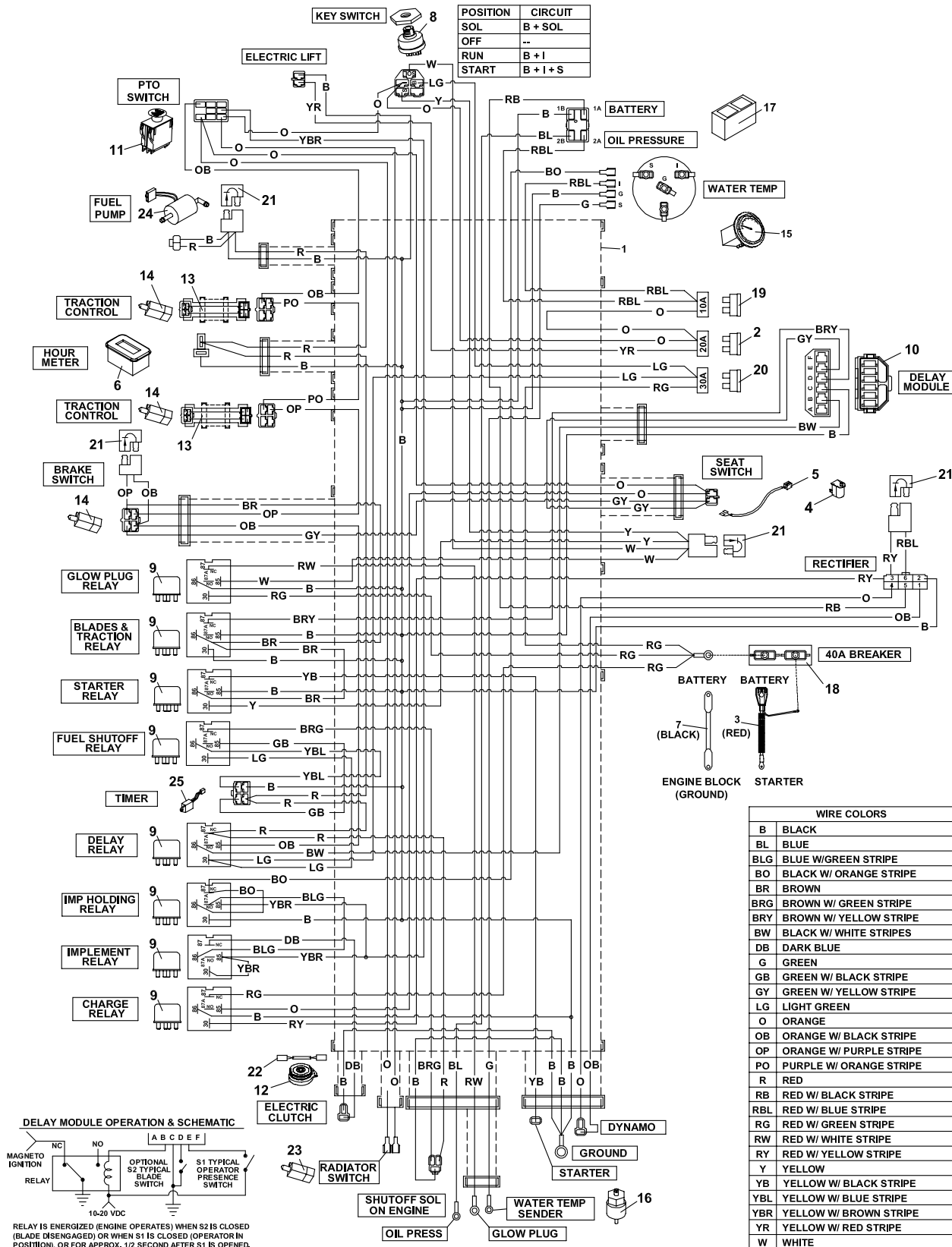
ZT 220D Series

HYDROGEAR PUMP

FIGURE 9

ITEM	HYDROGEAR PART NO.	TEXTRON PART NO.	DESCRIPTION	QTY
9-1	70516	----	HOUSING KIT	1
9-2	70517	----	END CAP KIT	1
9-3	50641	----	STRAIGHT HEADLESS PIN	2
9-4	50969	2721615-01	FLANGE BOLT M8-1.25 X 60	4
9-5	51232	2721615-02	HOUSING O-RING	1
9-6	2513027	38345-06	CHARGE PUMP KIT	1
9-7	50273	38345-07	STD GEROTOR ASSEMBLY	1
9-8	9004101-1340	38345-08	O-RING	1
9-10	50095	38345-10	SOCKET SCREW M6-1.0 x 20	2
9-15	2513030	----	BYPASS VALVE KIT (BLANK)	1
9-18	70521	2721615-07	PUMP SHAFT KIT	1
9-19	50315	----	BALL BEARING 17 X 40 X 12	1
9-20	51161	----	LIP SEAL 17 x 40 x 12	1
9-21	50951	----	SPACER	1
9-22	50329	----	RETAINING RING	1
9-25	70331	38345-12	CYLINDER BLOCK KIT	1
9-29	2003014	----	BLOCK SPRING	1
9-30	2003017	----	BLOCK THRUST WASHER	1
9-31	51246	2721615-09	VALVE PLATE	1
9-32	2003087	188059-11	SWASH PLATE	1
9-34	50551	2721615-11	BALL THRUST BEARING	1
9-37	2003005	188059-15	ARM-TRUNION	1
9-38	2000015	2721615-13	SLOT GUIDE	1
9-42A	70743	4121354	SHOCK VALVE KIT (.031")	1
9-42B	70741	4121355	SHOCK VALVE KIT (BLANK)	1
9-44	70403	2721615-16	CHARGE RELIEF VALVE KIT	1
9-49	2513043	2721615-17	TRUNNION SEAL/RETAINR KIT	1
9-56	9005110-4400	----	STRAIGHT THREAD PLUG	1
9-66	9005110-3100	----	5/16 SAE PLUG	1
9-100	70525	2721615-18	OVERHAUL SEAL KIT	1

FIGURE 10



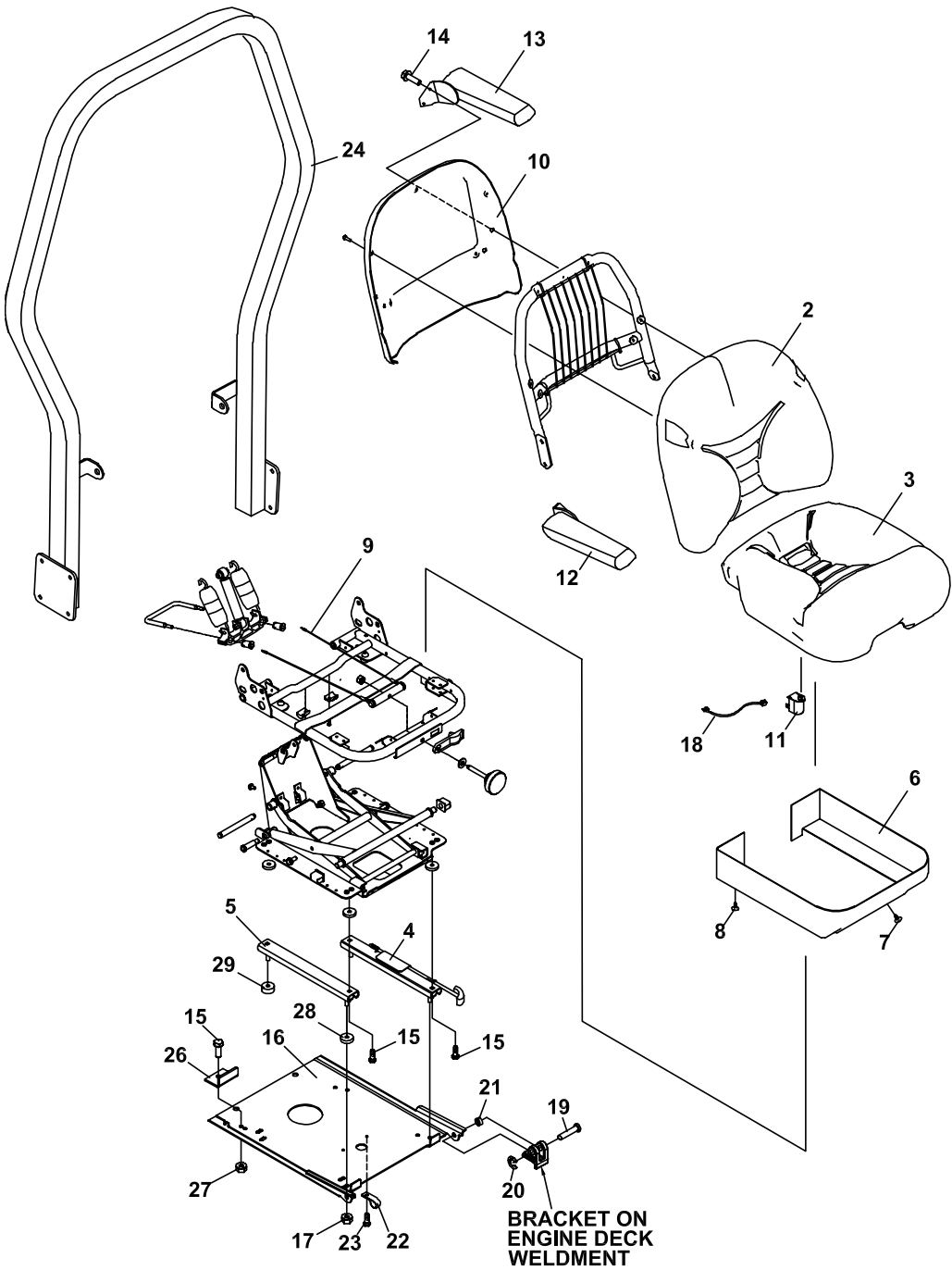
ZT 220D Series

YANMAR WIRE HARNESS

FIGURE 10

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
10-1	4136790	HARNESS-WIRING (INCLUDES ITEMS 2, 19, 20 & 21)	1				
10-2	148082-20	FUSE-20 AMP	1				
10-3	2722287-01	CABLE-BATTERY POSITIVE	1				
10-4	4124009	SWITCH-SEAT, NO	1				
10-5	4143068	WIRE-SEAT SWITCH	1				
10-6	4136792	METER-HOUR	1				
10-7	2198092	CABLE-GROUND	1				
10-8	2721126	KEY-SWITCH W/BEZEL	1				
10-9	2722325	RELAY-40 AMP SEALED	8				
10-10	2188154	MODULE-DELAY	1				
10-11	2721505	SWITCH-PTO	1				
10-12	2721337	CLUTCH (INCLUDES ITEM 22)	1				
10-13	2188172	HARNESS-JUMPER	2				
10-14	108208	SWITCH-DBL POLE	3				
10-15	2721531	TEMP-GAUGE	1				
10-16	2720887	TEMP-SENDER	1				
10-17	2721894	CLUSTER-WARNING LIGHT	1				
10-18	48524	CIRCUIT BREAKER	1				
10-19	148082-10	FUSE-10 AMP	1				
10-20	148082-30	FUSE-30 AMP	1				
10-21	555846	DIODE	4				
10-22	2720949	WIRE-ASSEMBLY CLUTCH	1				
10-23	38382	SWITCH-NO	1				
(ITEMS 24 & 25 AVAILABLE THROUGH YANMAR DEALER)							
10-24		FUEL PUMP	1				
10-25		TIMER	1				

FIGURE 11



ZT 220D Series

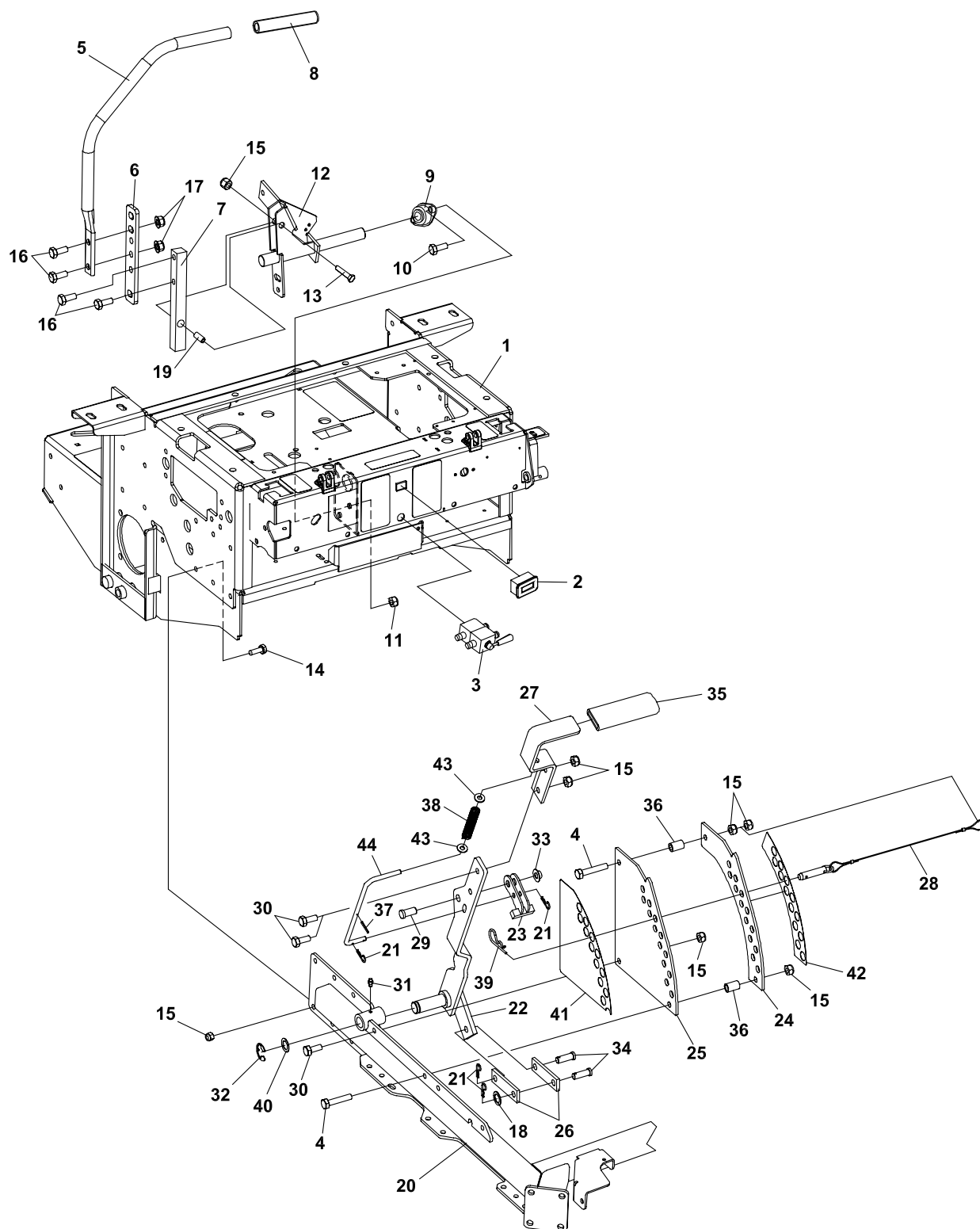
SEAT ASSEMBLY & ROPS

FIGURE 11

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
11-1	4122479	SEAT-SUSPENSION (INCLUDES ITEMS 2-15)	1				
11-2	4122479-01	CUSHION-SEAT BACK	1				
11-3	4122479-02	CUSHION-SEAT BOTTOM	1				
11-4	4122479-03	SLIDE RAIL-ADJUSTER	1				
11-5	4122479-04	SLIDE RAIL-SLAVE	1				
11-6	4122479-05	SKIRT-SEAT ASSY	1				
11-7	4122479-06	CLIP-SMALL XMAS TREE	3				
11-8	4122479-07	CLIP-LARGE XMAS TREE	4				
11-9	4122479-08	ASSY-CABLE	1				
11-10	4122479-09	BACK PANEL-SEAT	1				
11-11	4124009	SWITCH-SEAT NO	1				
11-12	4122481	ARMREST-RH	1				
11-13	4122480	ARMREST-LH	1				
11-14	64123-68	BOLT-HEX 5/16-18X1	4				
11-15	64123-54	BOLT, 5/16-18X3/4 HEX	5				
11-16	4121386.7	PLATE-SEAT	1				
11-17	64141-6	NUT-WLF 5/16-18	4				
11-18	4143068	WIRE-SEAT SWITCH	1				
11-19	33138-09	PIN-CLEVIS GRVD .38X1.31	2				
11-20	64144-30	SNAP RING .375	2				
11-21	38371-01	BRG-NYLINER 3/8	2				
11-22	48228A	CABLE CLIP-INSULATED	2				
11-23	64152-23	SCREW 1/4-20X3/8	2				
OPTIONAL ROPS:							
11-24	970162	ATT-ROPS (INCLUDES ITEM 22)					
11-25	*2208260	S-SEAT BELT	1				
11-26	4122434.7	STOP-SEAT	1				
11-27	64229-02	LOCKNUT-NYLON 5/16-18	1				
11-28	2720975-07	SPACER-NYLON 3/8"	2				
11-29	2720975-09	SPACER-NYLON 1/4"	2				

* NOT ILLUSTRATED

FIGURE 12



ZT 220D Series

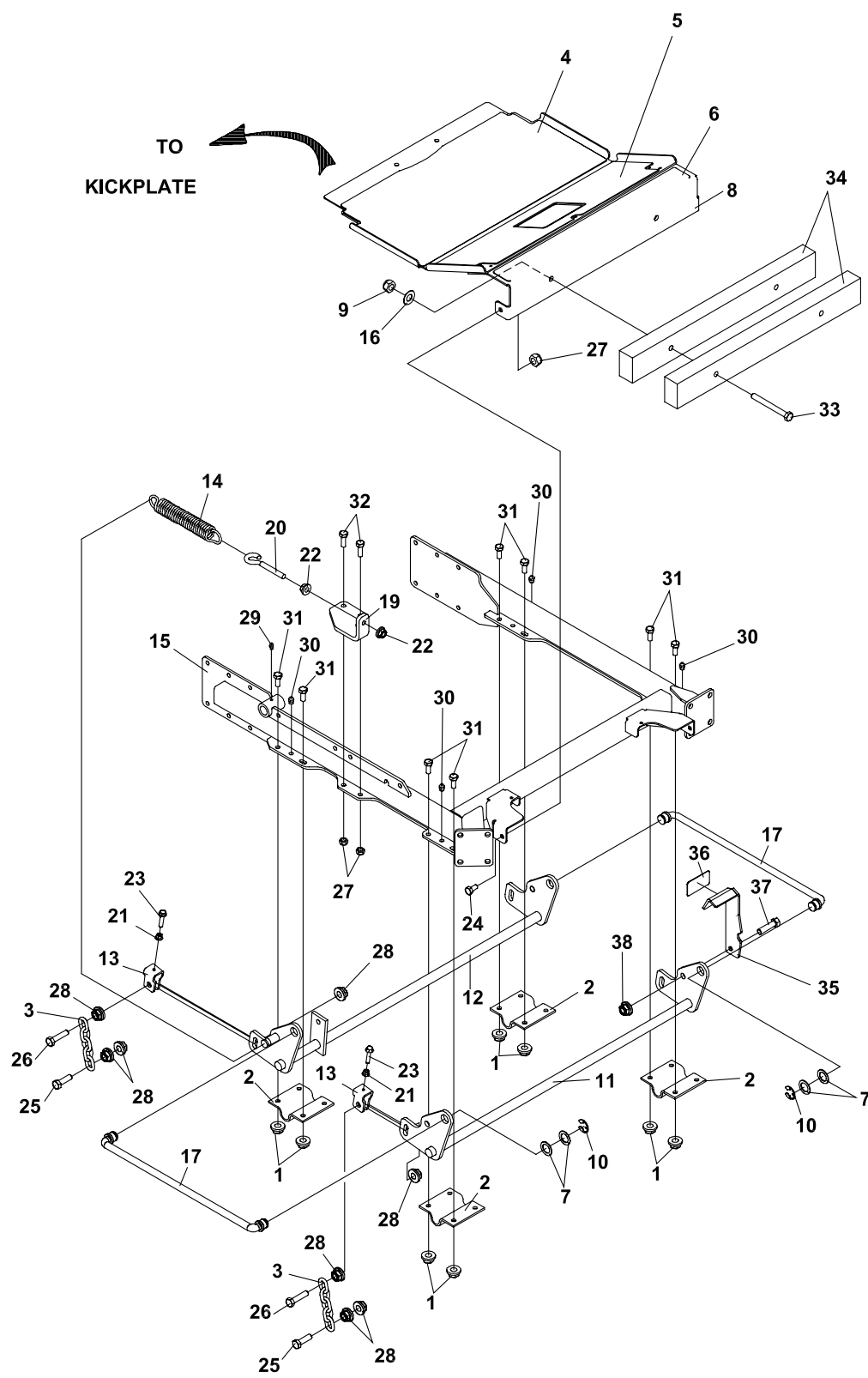
STEERING/DECK LIFT

FIGURE 12

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
12-1	4136779	S ENGINE DECK W/LABS	1				
12-2	4136792	METER-HOUR	1				
12-3	2721911	VALVE-TANK SELECTOR	1				
12-4	64205-008	BLT-MET M10-1.50X55	2				
12-5	4122172.7	LEVER-TRACTION CNTRL	2				
12-6	4122173.7	BRKT-TRACTION LEVER	2				
12-7	2183074	BRKT-HANDLE	2				
12-8	2188144	GRIP-.75 IDX12	2				
12-9	2188145	BEARING-.75ID SELF ALIGN	4				
12-10	64123-15	BOLT-3/8-16X3/4 HEX	8				
12-11	64141-4	NUT-WLF 3/8-16	8				
12-12	4112105.7	WLDMT-MTN CONTRL RH	1				
	* 4112104.7	WLDMT-MTN CONTRL LH	1				
12-13	64205-011	BLT-MET M10-1.50X40	2				
12-14	A110406	SCREW,M10X1.5X30 HH	12				
12-15	64237-03	LOCKNUT-NYLON M10-1.5	20				
12-16	64263-013	BLT-FLG HD M10-1.5 X 30	8				
12-17	64265-05	NUT-FL NYL LOCK M10-1.5	4				
12-18	64163-43	WSHR.443/.454X1X11GA	1				
12-19	2183073	SPACER	2				
12-20	2722723.7	WLDMT-CRADLE	1				
12-21	64168-2	COTTER-HAIRPIN.08X1.19	4				
12-22	2720551.7	WLDMT-DECK LIFT LEVER	1				
12-23	2720511.7	WLDMT-LVR STOP LATCH	1				
12-24	2720517.7	BRKT-INNER DECK LIFT	1				
12-25	2720516.7	BRKT-OUTER DECK LIFT	1				
12-26	4116590.7	BRACKET-LIFT LINK	2				
12-27	2720501.7	HANDLE-LIFT ARM	1				
12-28	2188141	ASSY, PIN & LANYARD	1				
12-29	64188-53	PIN-CLEVIS 1/2X1.0	1				
12-30	A1104057	BOLT-M10-1.50X25	3				
12-31	85010N	ZERK, 1/4-28 STR SELF TH	1				
12-32	64221-04	E-RING .875	1				
12-33	64175-05	NUT-PUSH 1/2	1				
12-34	64188-36	PIN, CLEVIS 7/16X1-1/4	2				
12-35	2188143	GRIP	1				
12-36	2183071-03	SPACER-15.88X10.32X24	2				
12-37	64061-37	ROLL PIN-1/8X1.00 SS	1				
12-38	2720544	SPRING-COMPRESSION	1				
12-39	64168-1	COTTER-HAIRPIN.12X2-3/8	1				
12-40	64163-65	WSHR .890X1.375X18GA	3				
12-41	2720742	LBL-ZT200 HT CUT OUTER	1				
12-42	2720743	LBL-ZT200 HT CUT INNER	1				
12-43	64163-29	WASHER-21/64 X 1 X 11GA	2				
12-44	2720503	ROD-LIFT STOP	1				

* NOT ILLUSTRATED

FIGURE 13



ZT 220D Series

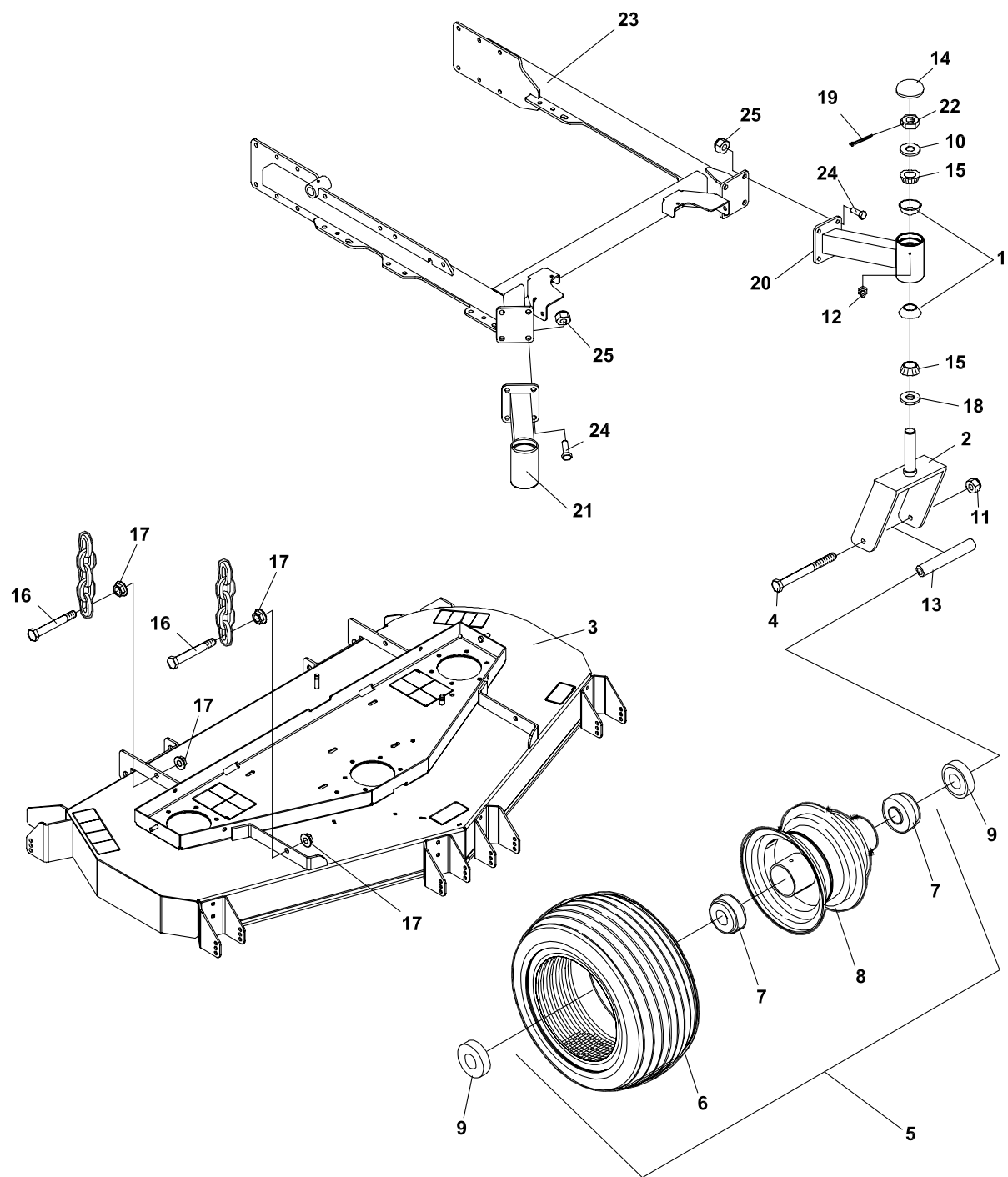
CRADLE ASSEMBLY

FIGURE 13

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
13-1	64265-05	NUT-FL NYL LOCK M10-1.5	15				
13-2	2182356.7	BRKT-SHAFT HANGER	4				
13-3	2188127	CHAIN-6.35 5 LINKS	4				
13-4	4139065	MAT-FOOT PLATE LOWER	1				
13-5	4129955	MAT-FOOT PLATE MIDDLE	1				
13-6	2721861	MAT-FOOT PLATE UPPER	1				
13-7	64163-65	WSHR.890X1.375X18GA	8				
13-8	4124754	S-FOOT PLATE	1				
		(INCLUDES 4-6, 9 & 16)					
13-9	64229-03	LOCKNUT-NYLON 3/8-16	2				
13-10	64221-04	E-RING.875	4				
13-11	2722558.7	WLDMT-DECK LIFT, FRONT	1				
13-12	2722559.7	WLDMT-DECK LIFT, REAR	1				
13-13	2722630	CLIP-DECK HEIGHT ADJ	4				
13-14	2722719	SPRING-DECK LIFT	2				
13-15	2722723.7	WLDMT-CRADLE	1				
13-16	64163-31	WASHER, 25/64X1X12	2				
13-17	4109960	ROD-DECK LIFT	2				
13-18 *	4111842.7	BRKT-SPRING ANCHOR, LH	1				
13-19	4111843.7	BRKT-SPRING ANCHOR, RH	1				
13-20	4113682	ROD-SPRING MOUNT	2				
13-21	64141-2	NUT-WLF 1/4-20	4				
13-22	64141-4	NUT-WLF 3/8-16	4				
13-23	64197-020	BLT-TDFM 1/4-20X1-1/2	4				
13-24	64205-007	BLT MET M10-1.50X20	2				
13-25	64205-029	BLT-MET M12X1.75X40	4				
13-26	64205-060	BLT-MET M12-1.75X50	4				
13-27	64237-03	LOCKNUT-NYLON M10-1.5	6				
13-28	64246-04	NUT-WHIZ M12-1.75	16				
13-29	85010N	ZERK, 1/4-28	1				
13-30	85051	ZERK-1/8 PIPE	6				
13-31	64263-013	BLT-FLG HD M10-1.5 X 30	16				
13-32	A110406	SCREW,M10X1.5X30 HH	4				
13-33	64123-138	BLT-HEX 3/8-16X3-3/4	2				
13-34	4124615.2	WEIGHT-FRONT ZT220D	2				
13-35	4139784.7	LEVER-FOOT LIFT	1				
13-36	4139785	MAT-FOOT LIFT	1				
13-37	64123-39	BOLT-HEX 1/2-13X1-1/4	1				
13-38	64141-13	NUT-WLF 1/2-13	1				

***NOT ILLUSTRATED**

FIGURE 14



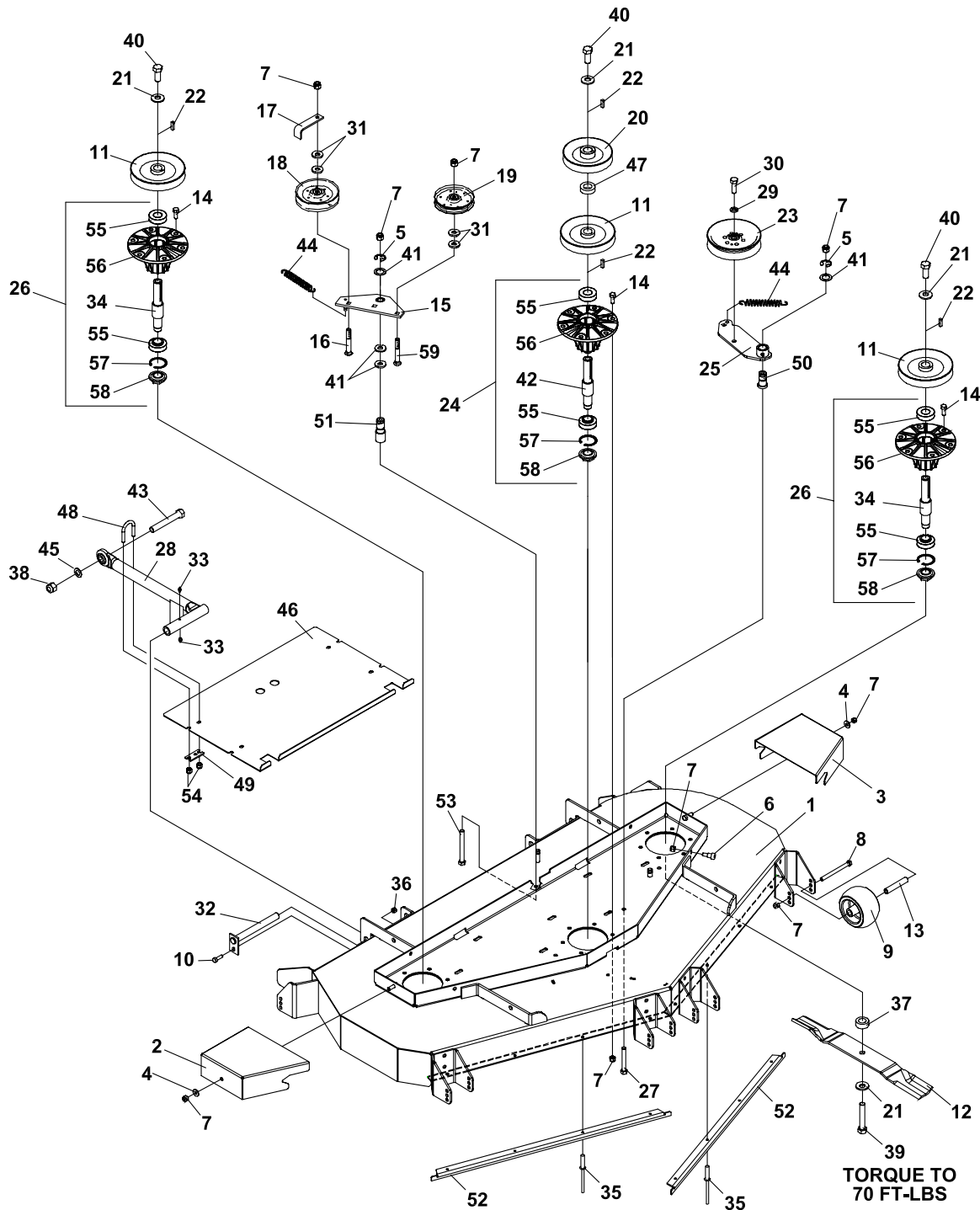
ZT 220D Series

CRADLE & CASTER ASSEMBLY

FIGURE 14

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
14-1	48043-03C	CUP, OUTER BEARING	4				
14-2	2722452.7	WLDMT-CASTER YOKE	2				
14-3	4123386	DECK/W LABS	1				
14-4	64123-230	BOLT-HEX 3/4-10 X 10	2				
14-5	2722326	WHEEL-13X5.00-6 ASSY (INCLUDES ITEMS 6-8)	2				
14-6	2722326-01	TIRE-13X5.00-6 SMOOTH	1				
14-7	2722228-03	BEARING	2				
14-8	2722326-02	RIM-13"ASSY W/VALVE	1				
14-9	2722231	SPACER-END	4				
14-10	64163-26	WASHER,.766 ID X 1.625	2				
14-11	64229-07	LOCKNUT-NYLON 3/4-10	2				
14-12	85010N	ZERK, 1/4-28 STR SLF THD	2				
14-13	2722230-23	SPANNER-13" WHEEL	2				
14-14	2188135	DUST COVER	2				
14-15	48043-04C	CONE, OUTER BEARING	4				
14-16	64205-029	BLT-MET M12X1.75X40	4				
14-17	64246-04	NUT-WHIZ M12-1.75	8				
14-18	48480	SEAL CR 12411	2				
14-19	64140-5	COTTER PIN	2				
14-20	4113901.7	WLDMT-CASTER ARM 61LH1					
14-21	4113902.7	WLDMT-CASTER ARM 61RH1					
14-22	64025-20	NUT-HEX 3/4-16 SLOT U	2				
14-23	2722723.7	WLDMT-CRADLE	1				
14-24	A1105061	BOLT-M12-1.75X30	8				
14-25	64237-06	LOCKNUT-NYLON M12-1.75	8				

FIGURE 15



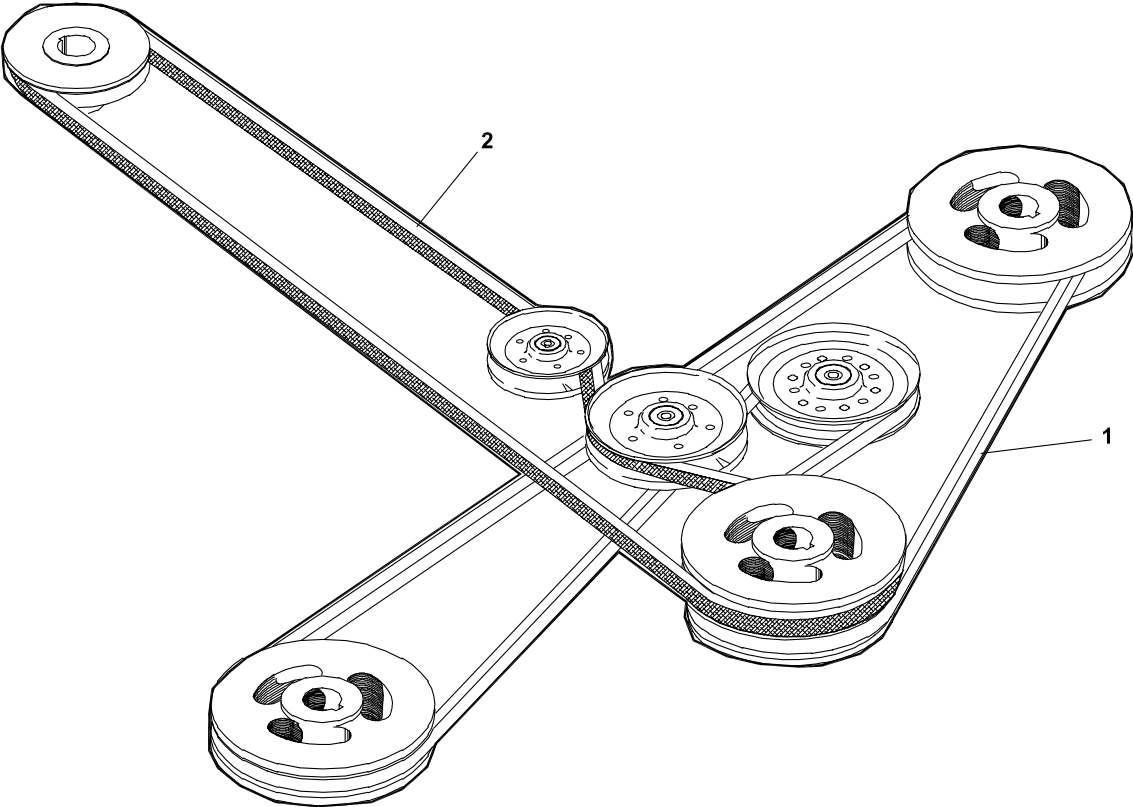
ZT 220D Series

61" REAR DISCHARGE

FIGURE 15

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
15-1	4123386	S-61INCH DECK W/LABELS	1	15-43	64123-152	BLT-HEX 5/8-11X5	2
15-2	2182352.2	BELT COVER RH	1	15-44	2188131	SPRING-EXTENSION	2
15-3	2182351.2	BELT COVER LH	1	15-45	64163-73	WSHR-.625IDX1.12ODX.06A/R	
15-4	64163-61	WSHR .81X.406X16GA	2	15-46	4117831.7	PLATE-GRASS DEFLECTOR1	
15-5	64221-04	E-RING.875	2	15-47	64163-84	WASHER-1.015 X 1.75 X.1251	
15-6	64166-17	BLT-SHLDR 3\8-16X1.12	4	15-48	64225-05	U-BOLT, 5/16-18X1 3/8	4
15-7	64229-03	LOCKNUT NYLON 3/8-16	34	15-49	4116605.7	SPACER-U-BOLT	4
15-8	64123-217	BLT-HEX 3/8-16X4-1/4	6	15-50	4116661	PIN-PIVOT	1
15-9	2721512	ROLLER-5X2.75 CENTERED6		15-51	4116712	PIN-PIVOT	1
15-10	64123-68	BOLT-HEX 5/16-18X1	2	15-52	4116714.2	BRKT-EC FRONT DECK	2
15-11	2308140	PULLEY ENGINE	3	15-53	64123-138	BOLT-HEX 3/8-16X3-3/4	1
15-12	112243-03	BLADE 21.00 OFFST LLFT	3	15-54	64268-02	NUT-FL NYL N LCK 5/16-18	8
15-13	2720685	SPACER-ROLLER	6				
15-14	64262-012	BLT-FLG HD 3/8-16 X 1-1/4	18	15-55	38348-01	BEARING-SPINDLE SEALED6	
15-15	4121584.7	WLDMT-PTO IDLER	1	15-56	2721096	HOUSING-SPINDLE 6 HOLE 3	
15-16	64018-18	BOLT-CARRIAGE 3/8-16X2	1	15-57	64144-38	SNAP RING	3
15-17	2302125.7	GUIDE-BELT	1	15-58	38315	NUT-SPINDLE	3
15-18	48393	PULLEY, V IDLER	1	15-59	64018-5	BLT-CRG 3/8-16X1-3/4	1
15-19	38297	IDLER, 5.0 OD FLNGD	1				
15-20	4116867	PULLEY	1				
15-21	64209-03	SPRING WSHR .67 ID	6				
15-22	64164-12	1/4X1/4X1 SQ END KEY	4				
15-23	128169	PULLEY, IDLER 5.50	1				
15-24	4115849	S-ASSYSPNDL ZT200 CNTR 1 (INCLUDES ITEMS 55-58 & 42)					
15-25	2186138.7	WLDMT-DECK IDLER	1				
15-26	4115850	S-ASSYSPNDL ZT200 OUT 2 (INCLUDES ITEMS 55-58 & 34)					
15-27	64123-88	BOLT, 3/8-16X2-3/4 HEX	1				
15-28	4133155.7	WLDMT-PUSH ARM ZT2	2				
15-29	64006-05	LOCKWSHR-HELICAL 1/2	1				
15-30	64123-05	BLT-HEX 1/2-20X1-1/2	1				
15-31	64163-46	WSHR.383/.393X.88X7GA	4				
15-32	2186125	WLDMT-LOCK, PUSHBAR	2				
15-33	85010N	ZERK, 1/4-28 STR SLF THD	4				
15-34	2183070-02	SHAFT-SPINDLE 2 (USED ON 4115850 OUTER SPINDLE ONLY)					
15-35	64215-07	RIVET-POP IFI #84	8				
15-36	64229-02	LOCKNUT-NYLON 5/16-18	2				
15-37	4118314	SPACER-BLADE 16MM	3				
15-38	64229-06	LOCKNUT, NYLON 5/8-11	2				
15-39	64123-187	BLT-HEX 5/8-18X3.75	3				
15-40	64123-208	BLT-HEX 5/8-18X1.5	3				
15-41	64163-65	WASHER-.890X1.375X18GA	4				
15-42	2183070-01	SHAFT-SPINDLE LONG 1 (USED ON 4115849 CENTER SPINDLE ONLY)					

FIGURE 16



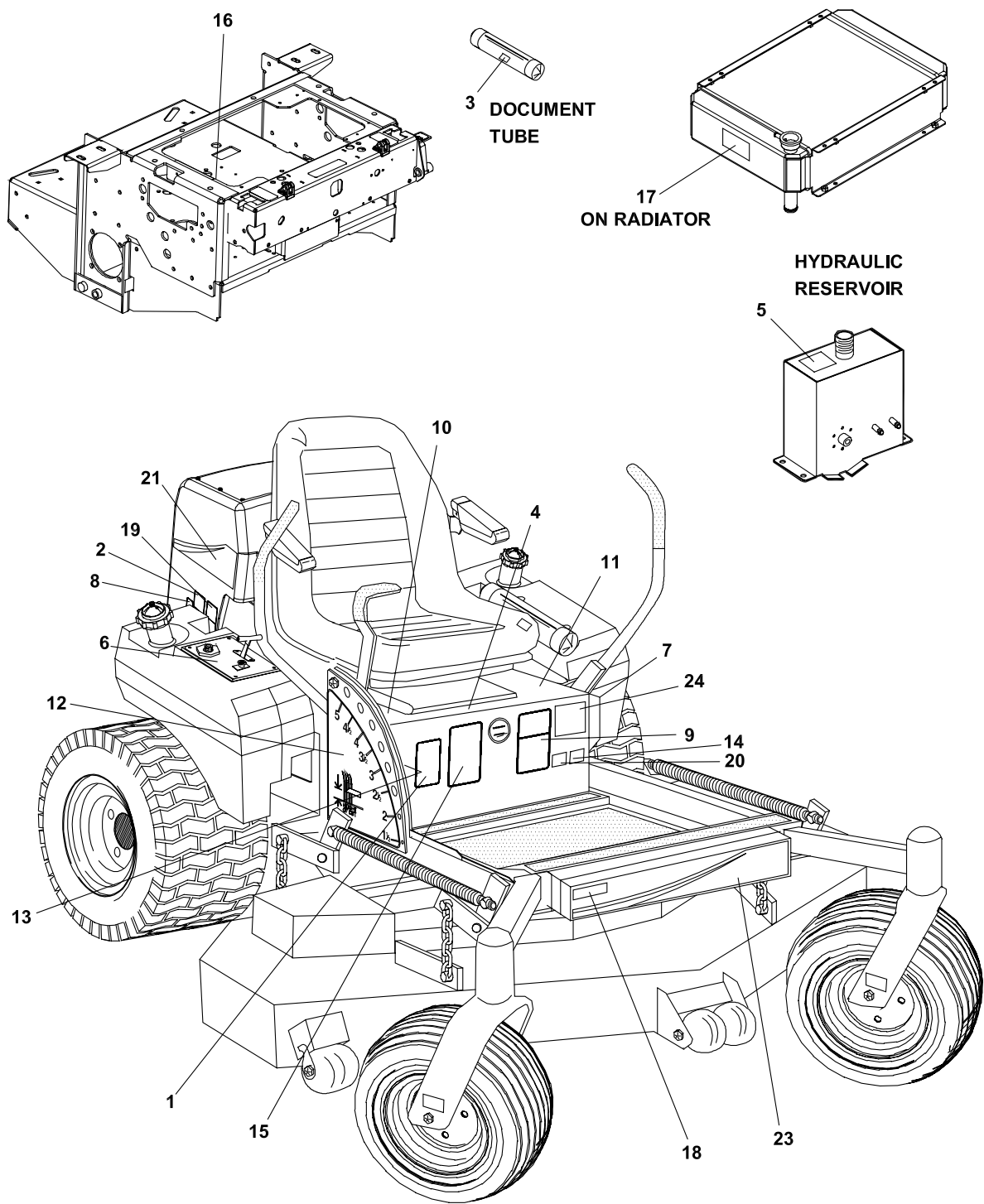
ZT 220D Series

BELTS-CUTTERDECK

FIGURE 16

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
16-1	128003	BELT-CUTTERDECK	1				
16-2	4117531	BELT-61 REAR DECK DRIVE1					

FIGURE 17



ZT 220D Series

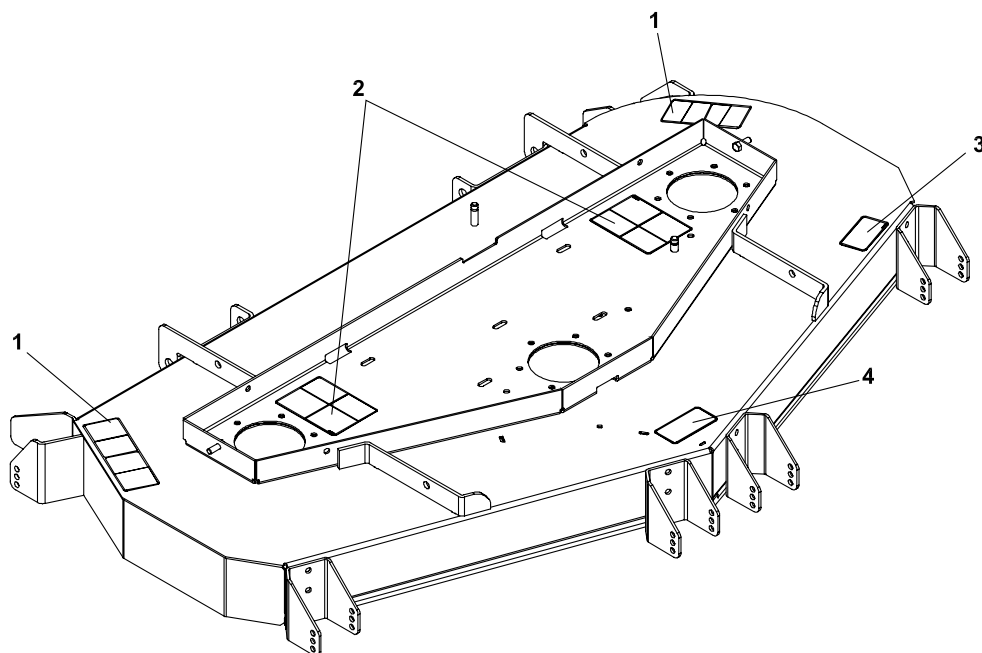
DECALS

FIGURE 17

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
17-1	4122661	LABEL-SLOPE ANGLE EC	1				
17-2	2000652	LABEL-DIESEL FUEL EEC	2				
17-3	2000655	LABEL-READ OPER EEC	1				
17-4	2000650	LABEL-BATTERY EEC	1				
17-5	4122659	LABEL-HYDR OIL FILL EC	1				
17-6	4122656	LABEL-CNTRL PNL 220D EC	1				
17-7	4122658	LABEL-PARK BRAKE EC	1				
17-8	2000641	LABEL-EXPLSN FUEL EEC	2				
17-9	4122662	LABEL-TIRES/ROLLERS	1				
17-10	2000700	LABEL - RH TRACTION	1				
17-11	2000701	LABEL - LH TRACTION	1				
17-12	2720742	LABEL-HT CUT OUTER	1				
17-13	2720743	LABEL-HT CUT INNER	1				
17-14	2000646	LABEL-CE	1				
17-15	4122657	LABEL-DIESEL FUEL EC	1				
17-16	2721099	LABEL-FUSE	1				
17-17	4116847	LABEL-EC COOLANT PRES	1				
17-18	4127903	LABEL-ZT 220D	1				
17-19	2000653	LBL-HIGH PRESS LEAK EC	2				
17-20	009034770	LABEL-CE 105DB LWA	1				
17-21	4127900	LABEL-HOOD, RH, ZT220D	1				
17-22*	4127901	LABEL-HOOD, LH, ZT220D	1				
17-23	4127921	LABEL-FRONT, ZT220D	1				
17-24	4116761	LABEL-MADE IN USA	1				

***NOT ILLUSTRATED**

FIGURE 18



ZT 220D Series

DECALS-CUTTERDECKS

FIGURE 18

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
18-1	2000760	LABEL-HANDS/ROCKS EC	2				
18-2	2000765	LABEL-PLY/CON WSHR EC	2				
18-3	4122660	LABEL-BLADE INSTALL CE	1				
18-4	2000655	LABEL-READ OPER EEC	1				

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