

RANSOMES
A Textron Company

MODELS:

933308G

**36 HYDRO Z-CONTROL MID-FS541V KAW SIDE DISCHARGE
SELF PROPELLED WALK BEHIND MOWER**

933309G

**36 HYDRO Z-CONTROL MID-FS541V KAW REAR DISCHARGE
SELF PROPELLED WALK BEHIND MOWER**



MAN 4166157
Rev. A 04-2013

OPERATOR'S MANUAL 4166158

PARTS MANUAL

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 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.

Ransomes dealer for any service or parts needed. Ransomes service ensures that you continue to receive the best results possible from Ransomes 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.

Textron Golf, Turf & Specialty Products
Ransomes Way
Ipswich, England, IP3 9QG

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NOTICE !!!

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

Ransomes strongly warns against, rejects and disclaims any modifications, add-on accessories or product alterations that are not designed, developed, tested and approved by Ransome's Engineering Department. Any Ransomes 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 Ransomes will result in the Ransomes 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 Ransomes will be considered the responsibility of the individual(s) or company designing and/or making such changes. Ransomes 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 Ransomes 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 a hazardous situation which, if not avoided, **WILL** result in death or serious injury.

WARNING

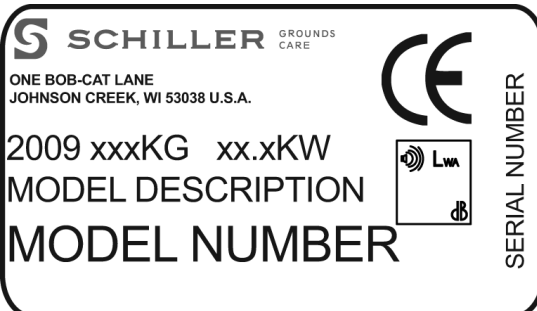
WARNING indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **COULD** 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.

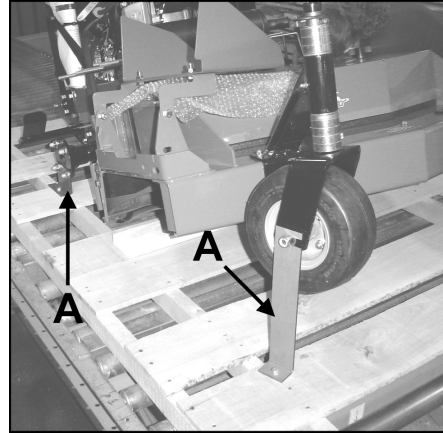
SERIAL NUMBER: This number appears only on your mower. It contains the model number followed consecutively by the serial number. Use this number when ordering parts or seeking warranty information.

Located at engine deck top left hand side.

GENERAL NOTE: FRONT, REAR, RIGHT HAND AND LEFT HAND REFERENCES BELOW ARE WITH RESPECT TO AN OPERATOR AT THE CONTROLS.

1. UNCRATE - Place shipping crate on a level surface and remove sides and top.

2. Remove screws securing shipping brackets **A** to pallet. Remove 2 front shipping brackets and tighten front axle bolts.



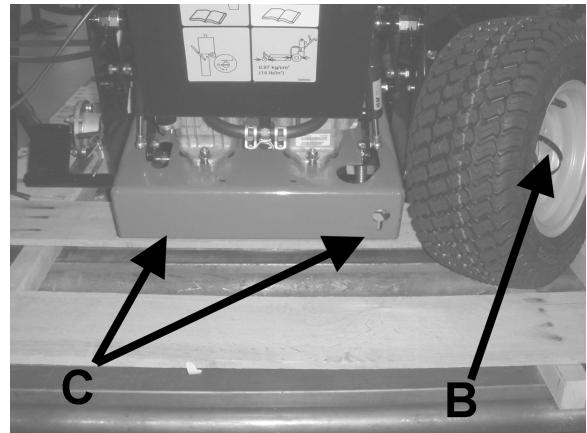
3. Remove wire ties **B** securing tires, upper handle and rods.

Raise rear of machine and support at location **C** on jackstands. Remove rear shipping brackets. Keep nuts. Install drive wheels using the nuts removed from the shipping brackets. Torque to 85 ft/lbs.

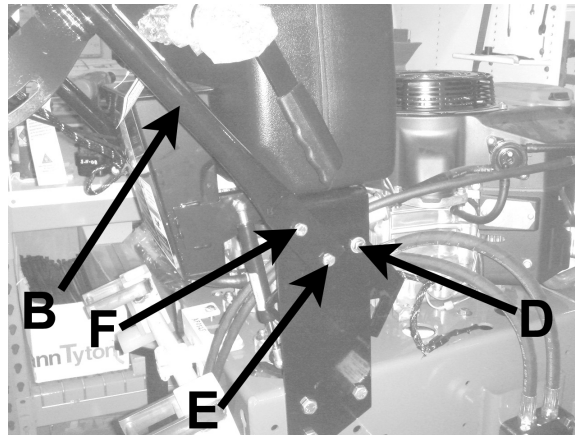
NOTE: One side of the wheel is dished deeper than the other.

On 36" units install with the deep dish to the inside.

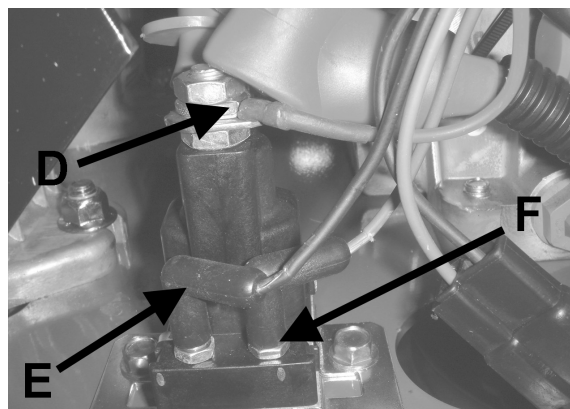
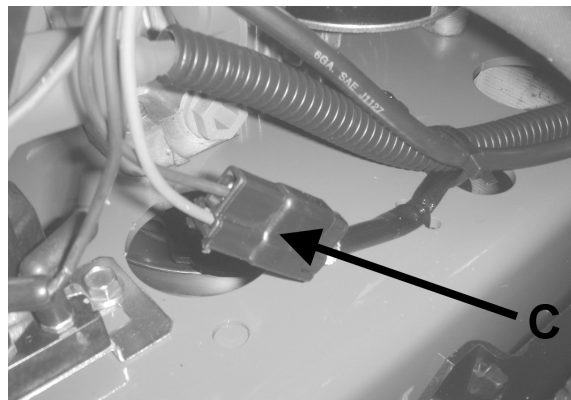
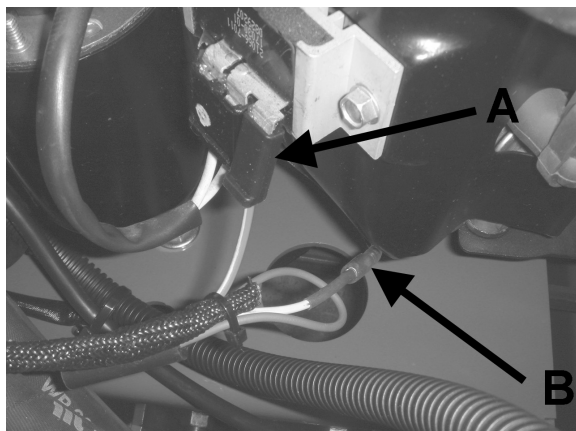
Tighten wheel nuts securely. Torque to 85 ft./lbs.



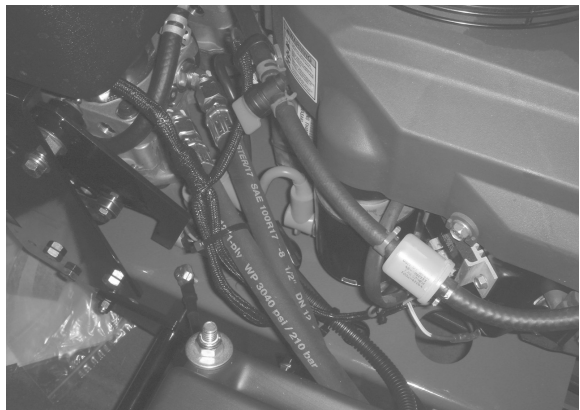
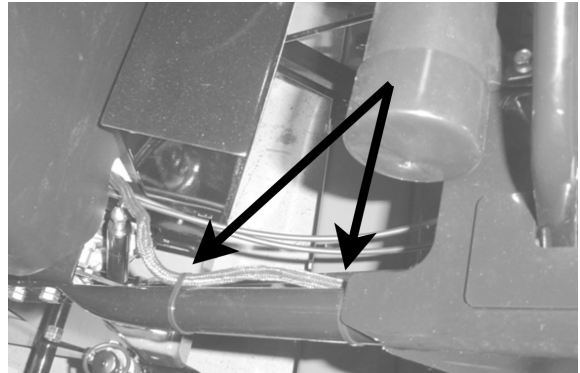
4. Install upper handle **B** to lower handle **D** using (2) 3/8-16 X 1-1/2" bolts and (2) 3/8-16 serrated flange nuts through upper holes **F** and also installing (2) 3/8-16 X 1" bolts and (2) 3/8-16 nylon lock nuts through holes **E** in the upper handle and one of the three hold available to give the desired handle height.



5. Attach wire harness. Place red wire **A** and white wire **B** into engine plug ins. Place Plug in with blue and black wire **C** into clutch. Place red wire **D**, plug in wire **E** and **F** as shown.

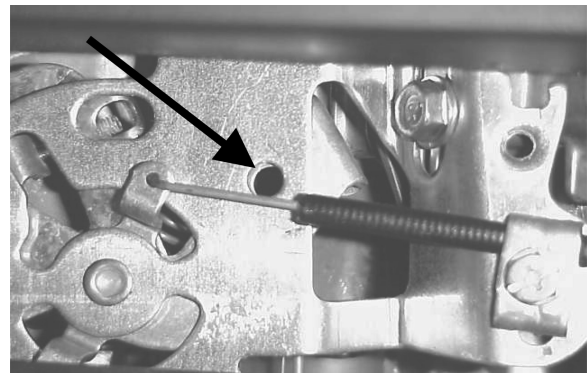


6. Route cables and wires as shown, and tie harness to upper handles as shown.

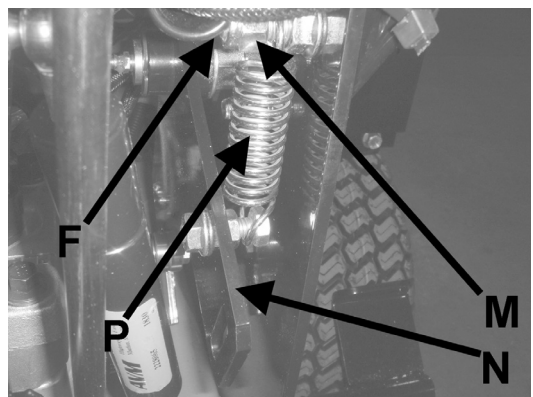


7. After installing handles, make sure to check the throttle and choke setting are correct.

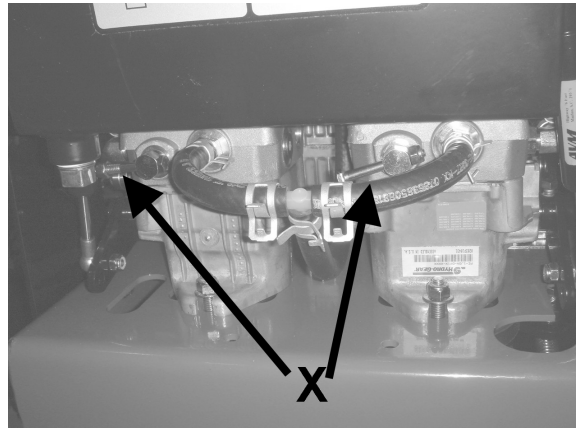
With the throttle in the high idle position, the holes should be aligned as shown.



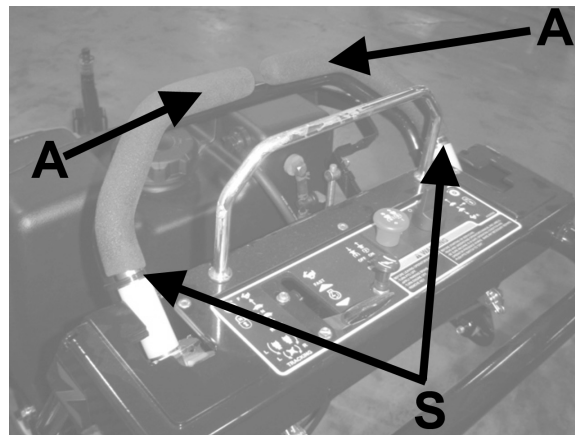
8. Install (2) springs **P** and (2) 3/8-16 nylon locknuts **M** from parts bag onto bolt **F** on each side of the machine. Attach springs to bolts on neutral return brackets **N** as shown.



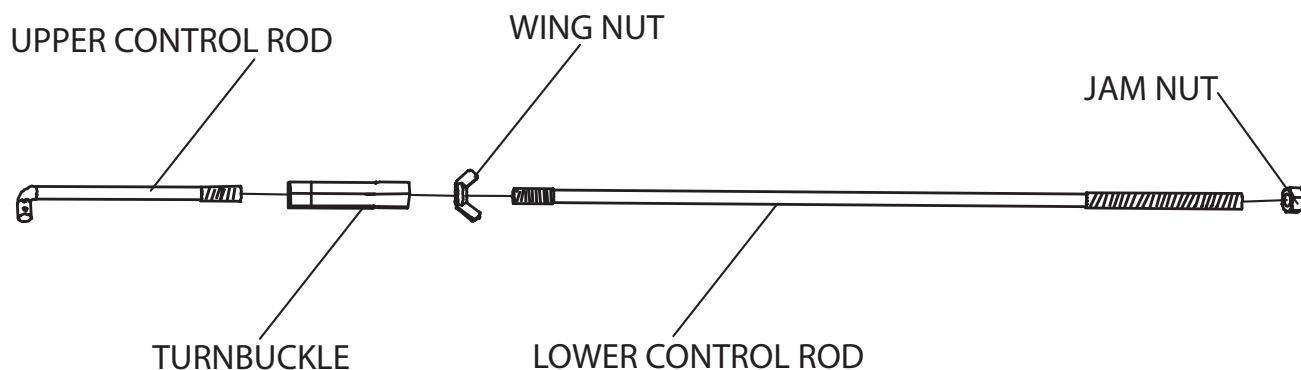
9. Open the bypass valves **X** on each pump by rotating handle counter-clockwise two revolutions.



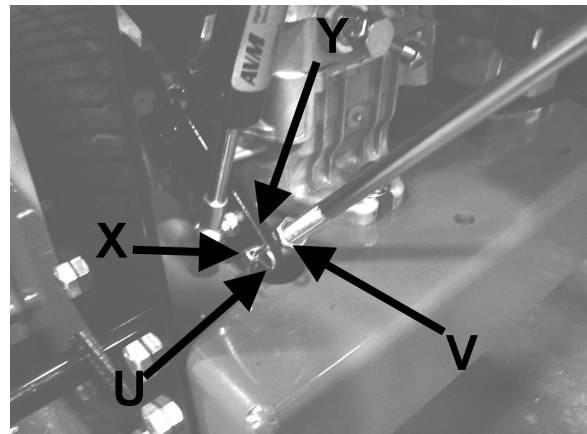
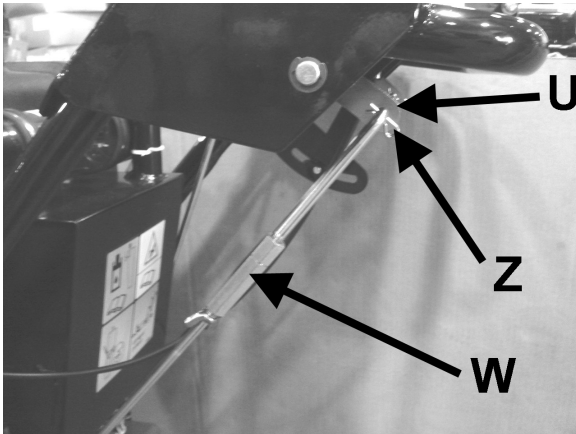
10. Cut and remove wire ties **S** from the control levers **A**. Place the control levers in the neutral position in the control panel.



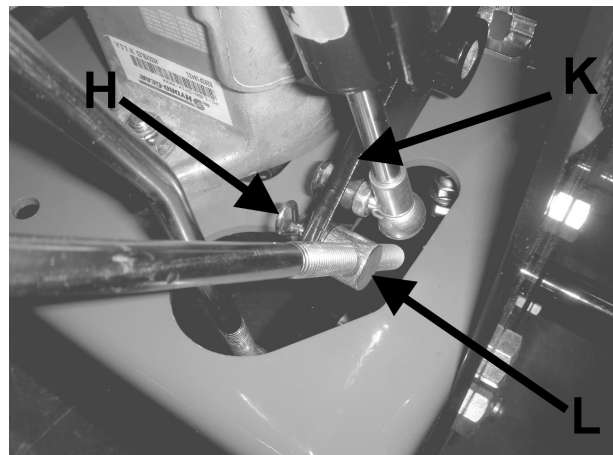
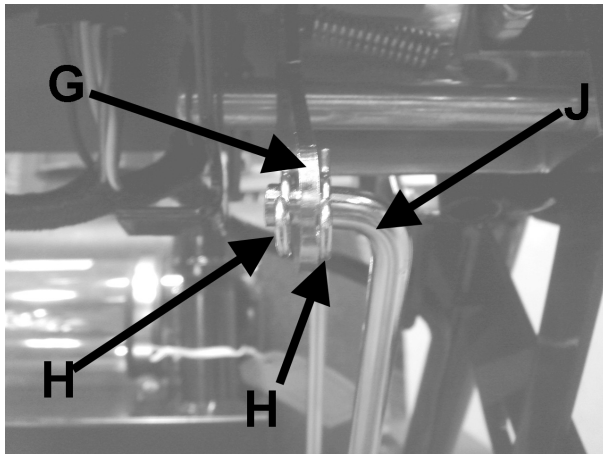
11. Assemble tracking control rod assembly. Run wing nut and jam nut all the way on the lower control rod. Thread both the lower and upper rods 1/2 way into the turnbuckle.



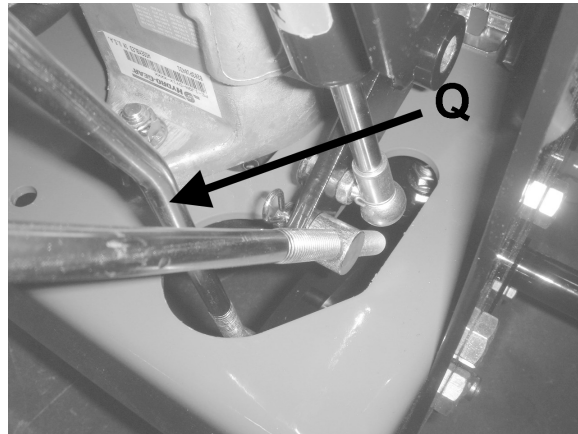
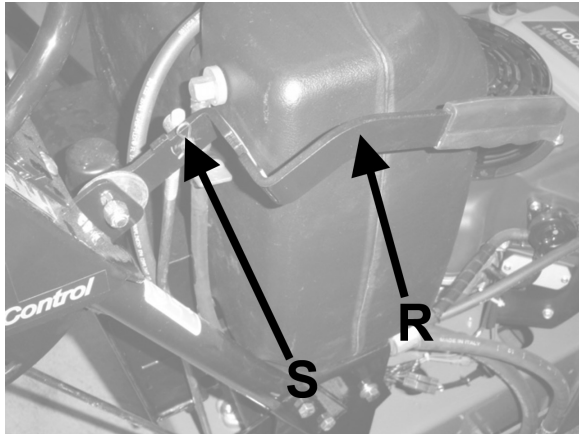
12. Attach swivel to bottom of control rod and thread on 2 in. Install the left tracking control assembly **W** into the left hand control **Z** using pin **U**. Adjust swivel **X** to align with pump arm **Y**. Install pin **U** and tighten jam nut **V**.



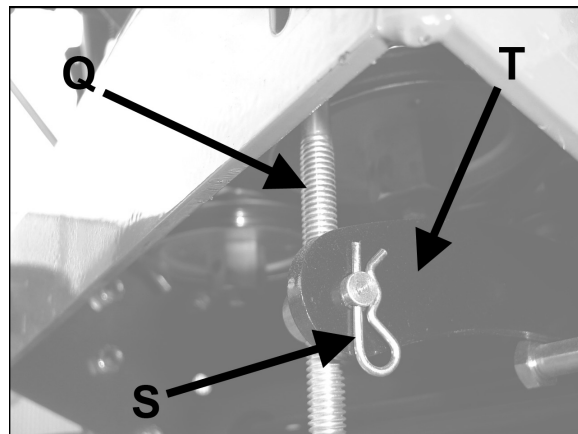
13. Attach swivel to bottom of control rod and thread 1-3/4 in. Install the right hand control rod **J**, the shorter of the remaining rods into the right hand control **G** secure secure with cotter pins **H**. Adjust swivel **L** to align with pump arm **K**. Secure with pin **H**.



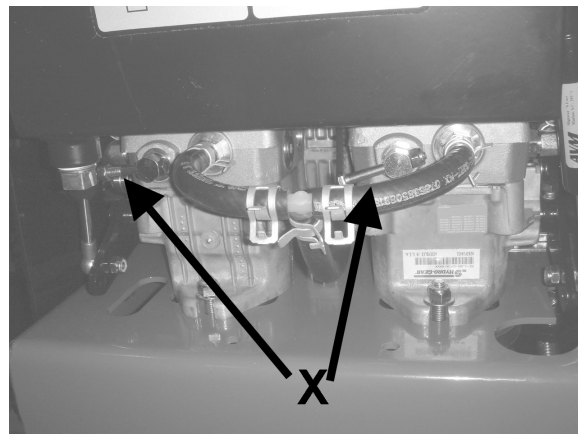
14. Insert threaded end of brake rod **Q** through the slot on the engine deck and attach the other end to the brake control arm **R** and secure in place with hairpin **S** as shown.



15. Connect swivel on threaded end of brake rod **Q** to the brake arm **T** and secure in place with hairpin **S** as shown. Adjust swivel to provide adequate braking when the brake control arm is engaged. See adjustment section of this manual.



16. Close bypass valves **X** by rotating clockwise until firmly seated.

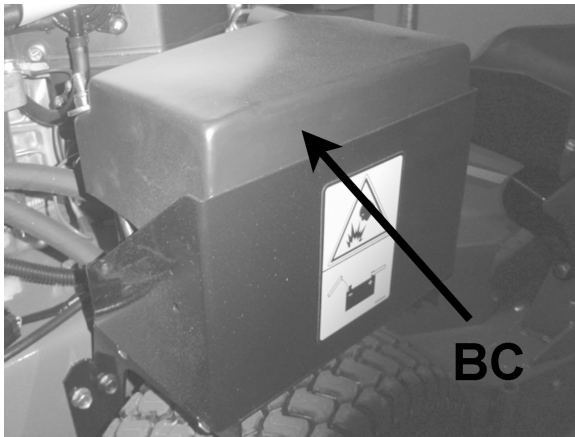


17. On Electric Start Models

Obtain battery locally.

Batteries come with acid. Check level and charge before startup.

If necessary, fill the battery to the bottom of the vent wells with electrolyte and trickle charge for several hours. Place the battery in the machine and make the connections, red to positive first, then black (ground) to negative. Install battery cover **BC** and secure with battery rod and attached hardware.



Batteries Produce Explosive Gases

- Keep sparks and flame away.
- Disconnect negative terminal first.
- Reconnect negative terminal last.

18. Fill engine with oil. (See engine manual for specifications.)

19. Fill fuel tank with clean, fresh unleaded fuel.



PETROL (GASOLINE) IS HIGHLY FLAMMABLE!

- Fill fuel tank with good quality, clean, regular unleaded Petrol (gasoline).
- Do not use hi-test fuel.
- Do not smoke.
- Do not spill fuel.
- Fill outdoors.
- Do not overfill. Fill to 1" below bottom of filler neck to allow room for expansion.
- USE A FUNNEL TO FILL GAS TANK

20. Check oil level in hydraulic oil reservoir and adjust as necessary. Oil level should be at the bottom of fill tube.

21. Adjust tire pressure in drive wheels to 14 psi (1 kg/cm²).

22. Before attempting to start the mower, read and understand all sections of the Operation & Safety manual.

23. Check that all safety circuits function properly.

NOTICE: Special setup instructions.

- Before engaging the cutterdeck, run the engine for five minutes at full RPM. This is recommended for new engine installation to permit complete engine lubrication prior to load.
- Do not engage the cutterdeck at full throttle. Set the throttle half way between the highest and lowest engine speed, engage the PTO switch and increase the engine speed to full before cutting.



Do not use this machine without an approved grasscatcher, grass discharge chute or mulching plate(s) correctly fitted.

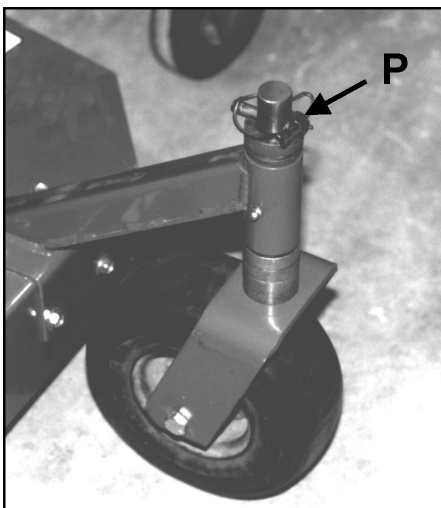
Make all adjustments with the engine shut off, spark plug wire disconnected and mower drive disengaged.

FIXED CUTTERDECK HEIGHT OF CUT

The cutting height is determined by the position of the blades in relation to the wheels. Variation to this height may be made at THREE points. (See Height of Cut Charts below).

1. THE CASTER WHEELS

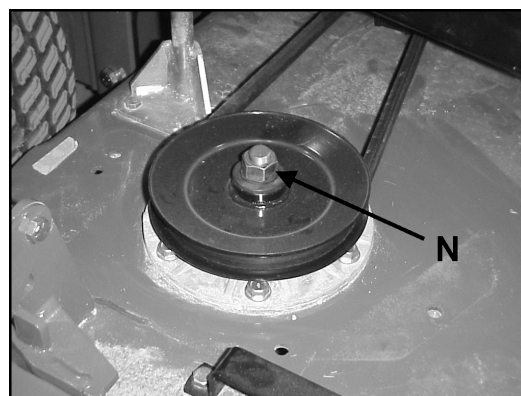
1. Remove the quick pin **P** from the top of the caster wheel pivot spindle.
2. Place required spacers above or below wheel support bracket and replace the quick pin **P**.



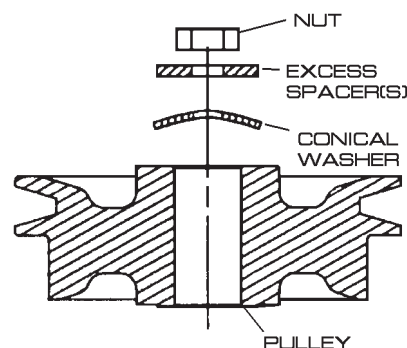
2. CUTTERDECK BLADE SPINDLES

NOTE: See MAINTENANCE section of the Setup, Parts & Maintenance manual for blade removal and replacement procedures.

1. Remove belt cover.
2. Remove nut **N** from the top of the cutter spindle bolt.
3. Withdraw the cutterdeck spindle bolt (from bottom) complete with washer, blade and spacers
4. Place the required number of spacers (no more than 2) on the cutterdeck spindle bolt below the cutterdeck, between blade and spindle shaft.
5. Fit any excess spacers on the cutterdeck spindle bolt above the deck, between the conical washer and the nut. Replace nut and tighten to 70 ft-lbs.



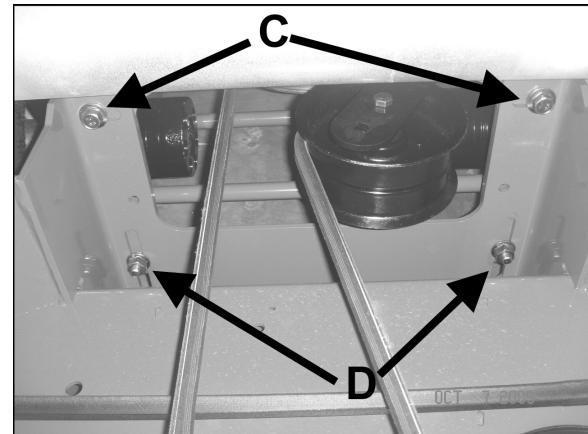
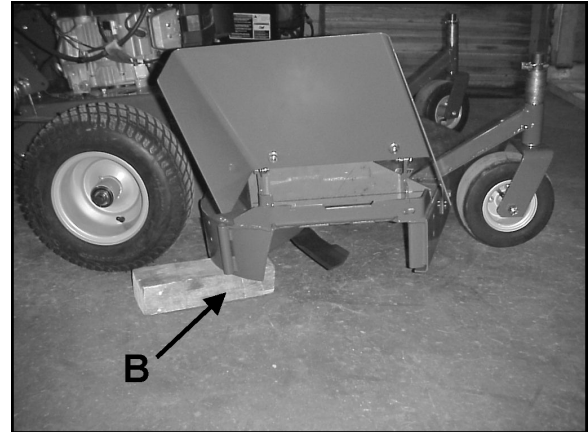
CUTTING HEIGHT		A(1/8") B(1/4") C(1/2")			UPPER BOLT POSITION		NUMBER OF SPACERS BETWEEN SPINDLE AND BLADE (1/4" THICK)	
IN	MM	A	B	C				
1.375	35	1	1	0	5		2	
1.625	41	1	1	0	5		1	
1.875	48	1	1	0	5		0	
2.125	54	1	0	2	4		2	
2.375	60	1	0	2	4		1	
2.625	67	1	0	2	4		0	
2.875	73	1	1	3	3		2	
3.125	79	1	1	3	3		1	
3.375	86	1	1	3	3		0	
3.625	92	1	0	5	2		2	
3.875	98	1	0	5	2		1	
4.125	105	1	0	5	2		0	
4.375	111	1	1	6	1		2	
4.625	118	1	1	6	1		1	



SETTING CUTTERDECK HEIGHT CUTTERDECK POSITION

1. Support rear of power unit.
2. Place blocks under both outside edges of cutter-deck at **B**. See Block chart below.

CUTTING HEIGHT	HOLE POSITION ON ENGINE DECK*	BLOCK HEIGHT AT REAR OF DECK (B)
1.375" - 1.625"	5	1.25"
1.875" - 2.375"	4	2.00"
2.625" - 3.125"	3	2.75"
3.375" - 3.875"	2	3.50"
4.125" - 4.625"	1	4.25"
* Position 1 is the highest hole on the engine deck.		



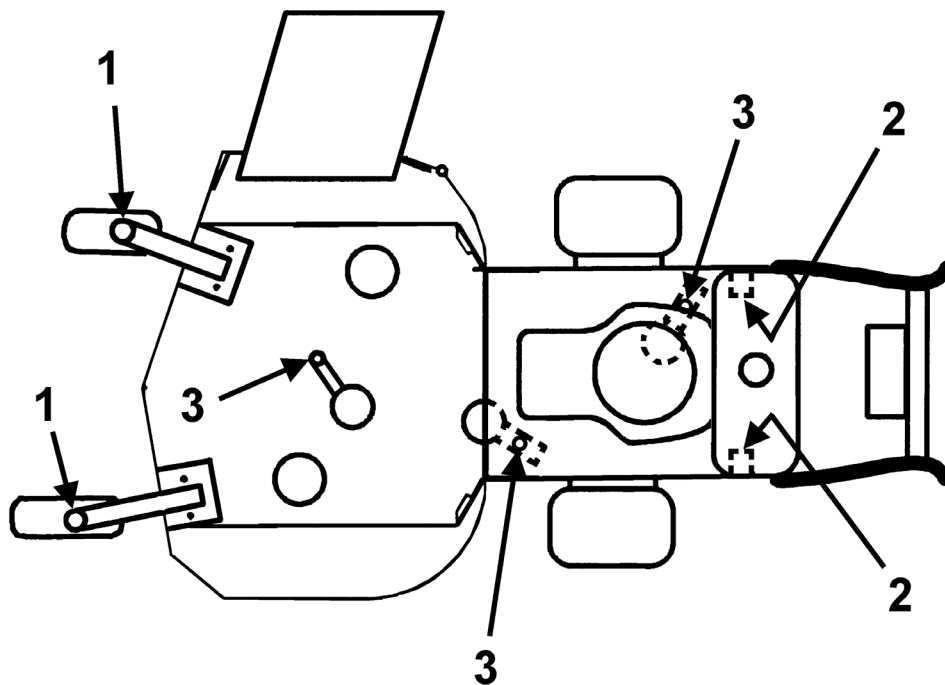
3. Remove (2) upper deck mounting bolts **C**.
4. Loosen (2) lower deck mounting bolts **D** several turns. Loosen enough to allow easy movement of the rear of cutterdeck. Allow deck to set down on blocks or if deck is being raised, allow the front casters to sit on the floor.
5. Reinstall upper deck mounting bolts **C** according to the chart for the cut height desired.
6. Tighten all bolts and reinstall belt cover.
7. Remove rear support and blocks under the deck.
8. Your side discharge mower will give you the best cut if the very tip of the front blade is 1/8" to 1/4" lower than the rear of the rear blade.

MACHINE LUBRICATION

Every 50 Working Hours - Lubricate the following points with grease:

- 1) Caster wheel pivots (2 points)
- 2) Neutral eccentric pin (2 points)
- 3) Idler pivot bearings:
 - a) Engine to cutterdeck belt tensioner
 - b) Cutterdeck belt tensioner
 - c) Hydro drive belt tensioner

NOTE: The spindles used on these machines use a superior sealed bearing which does not require relubrication.



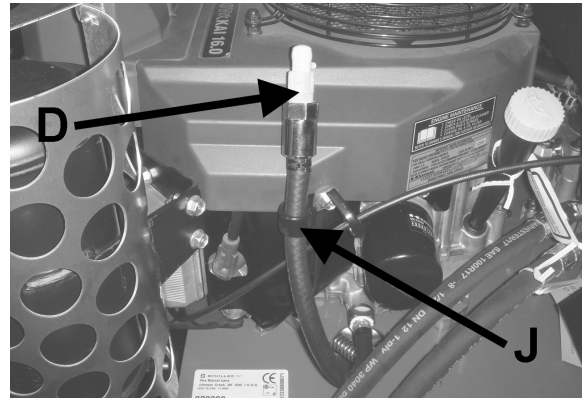
ENGINE OIL

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. Release the oil drain hose assembly from the engine clip **J**. Lay hose assembly over the frame edge.
2. Remove the rubber cap **D** from the tip of the hose assembly and turn the drain valve to allow oil to drain from the engine. Dispose of used oil in accordance with local requirements.
3. Clean drain valve and tighten the plastic portion of the drain valve back into the metal portion of the valve. Replace rubber cap over the tip of the valve. Replace hose assembly back into engine clip.
4. Change oil filter.
5. 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

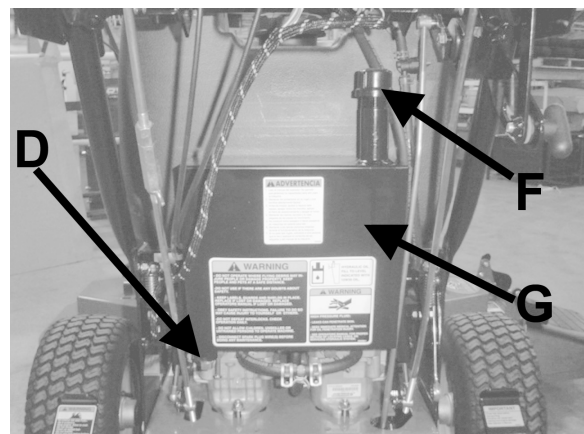
1. See engine manual for oil and filter change intervals after the break-in period.
2. Follow instructions for first oil change, above.

HYDRAULIC RESERVOIR CHECK, DRAIN AND FILL

Check level every 100 hours or when a leak has occurred. To check level: Remove reservoir cap. Add 10W30 oil until the oil level reaches the bottom of the filler tube. Do not overfill.

EVERY 500 HOURS:

Change hydraulic oil and filter. Remove plug **D** to drain reservoir. Remove and replace filter. Filter is located on front of tank at **G**. Reinstall plug and fill with 10W30 oil to the bottom of the filler tube **F**.



ENGINE - KAWASAKI

The maintenance schedule detailed is for average operating conditions. Under extreme conditions (dusty, dirty or more than 8 hrs continuous use) maintain more frequently.

Cooling Fins and Air Intake screen (daily)

Ensure that the cooling fins and air intake screen **W** are cleaned daily. Continued operation with a clogged cooling system will cause severe overheating and result in engine damage.

Air Cleaner

Dual element air cleaners have a paper air cleaner element **Z** with an oiled, foam precleaner element **V** on the dirty side of the paper element. Both should be inspected regularly and maintained.

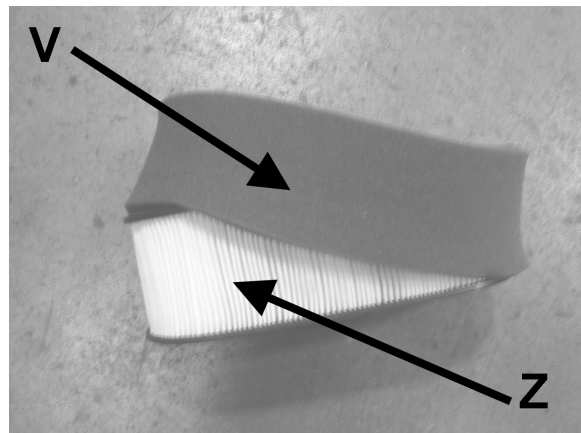
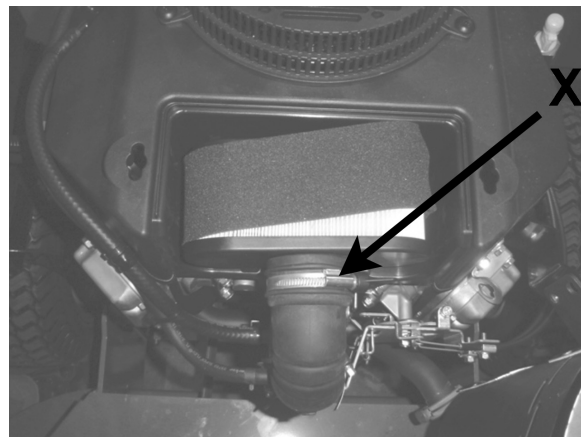
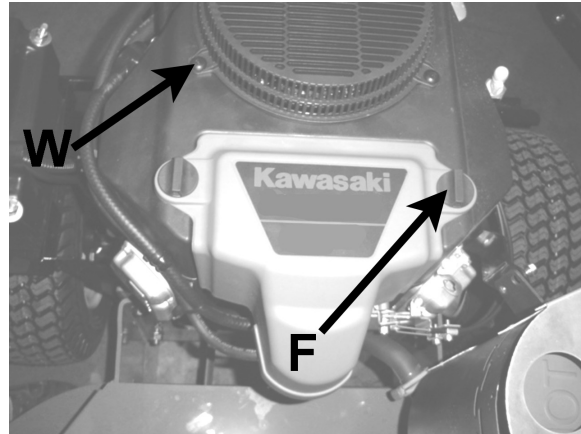
Clean and re-oil precleaner element every 25 hours (more often under dusty conditions).

1. Turn knobs **F** counter-clockwise to remove air cleaner cover.
2. Loosen clamps **X** to remove air cleaner assembly.
3. Remove and wash precleaner **V** with kerosene or liquid detergent and water.
4. Wrap precleaner **V** in a cloth and squeeze to remove excess cleaning agent.
5. Saturate precleaner **V** with new engine oil and squeeze to remove excess oil.

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

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

6. Reinstall precleaner **V** over paper cartridge **Z**, reinstall air cleaner assembly, tighten clamp **X**, and reinstall cover by tightening knobs **F**.



Blade Sharpening

Blades may be sharpened by filing or grinding, but with either method the balance of the blades must be maintained at 5/8 oz/in or less. Failure to maintain balance causes excess vibration, wear and shortened life of not only the blades, but most all components of the machine. To balance a blade after sharpening: attach 1/8 oz of weight 5" from center on the light end. This should make the light end the heavy end. If it does not: File or grind the heavy end until the addition of weight makes the light end the heavy end.

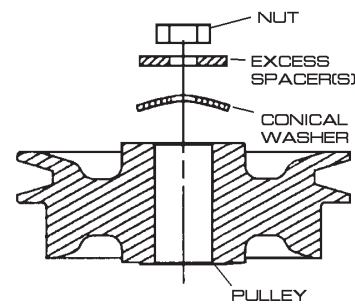
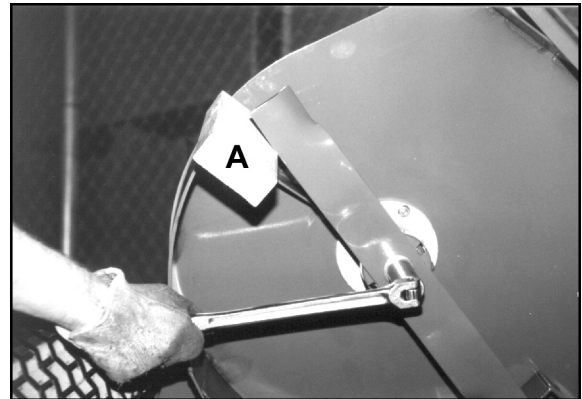
NOTE:

- Do not overheat or weaken the blades.
- Do not straighten bent blades. Replace with new Ransomes blades.
If lift portion of blade is worn thin replace with a new Ransomes blade.
- ALWAYS replace with Ransomes blades—do not use another manufacturer's blades as this could be dangerous.
- Replace cracked or bent blades.

BLADE REMOVAL

NOTE: Follow these instructions to prevent injury when bolt releases.

1. Use a box wrench or socket with a long breaker bar to remove spindle bolt under cutterdeck.
2. Slip tube over breaker bar or wrench if necessary to gain leverage.
3. Keep hands clear as blades may rotate when bolt releases.
4. When changing blades, wear thickly padded gloves.
5. Block blades from turning by using a piece of wood.



Cutterdeck Pulley Assembly

NOTE: To prevent blade from turning, place block of wood at **A**, with grain perpendicular to blade.

BLADE RE-INSTALLATION

1. Place the desired number of spacers (no more than 2) on the spindle bolt below the cutterdeck between the blade and spindle shaft.
2. Insert the cutter spindle bolt (from bottom) complete with washer, blade and spacers.
3. Place remaining spacer(s) on the spindle bolt above the cutterdeck between the conical washer and nut (as shown). Replace nut and tighten to 70 ft-lbs.

SPARK PLUG

- Remove plug and check condition.
- Good operating conditions are indicated if the plug has a light grey or tan deposit. A white blistered coating may indicate overheating. A black coating usually means an "over rich" fuel mixture caused by a clogged air cleaner or improper carburetor adjustment. Do not sandblast, wire brush or otherwise try to clean a dirty plug. Best results are obtained with a new plug.
- See engine manufacturers manual for proper spark plug gap.

SERVICE CHART

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NOTE: CHANGE ENGINE OIL AND FILTER AFTER FIRST 5 HOURS OF OPERATION.

SERVICE OPERATION	FIRST 5 HOURS	DAILY	EVERY 25 HOURS	EVERY 50 HOURS	EVERY 100 HOURS	EVERY 500 HOURS
ENGINE						
Check Oil Level		X				
Check for Oil & Air Leaks		X				
Clean Air Intake		X				
Clean Air Cleaner		X				
Change Oil & Filter*	X	SEE ENGINE MANUFACTURER'S MANUAL *				
Clean Fuel Sediment Bowl				X		
Replace/Adjust Spark Plug	SEE ENGINE MANUFACTURER'S MANUAL					
HYDRAULIC OIL RESERVOIR						
Check Oil Level		X				
Change Hydraulic Oil						X
MACHINE						
Check Tire Pressures		X				
Lubricate All Points				X		

Consult the manufacturer's manual for your engine for further information and instructions.

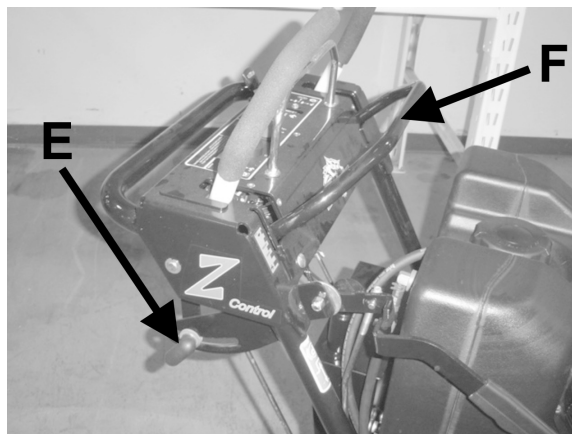
This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

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

NOTE: Make all adjustments with the engine shut off, spark plug wire disconnected and mower drive disengaged.

Speed Control Bar

The speed control bar **F** is held by friction pads. If the setting will not hold, tighten knob **E** to increase friction on speed control bar **F**.



PARKING BRAKE

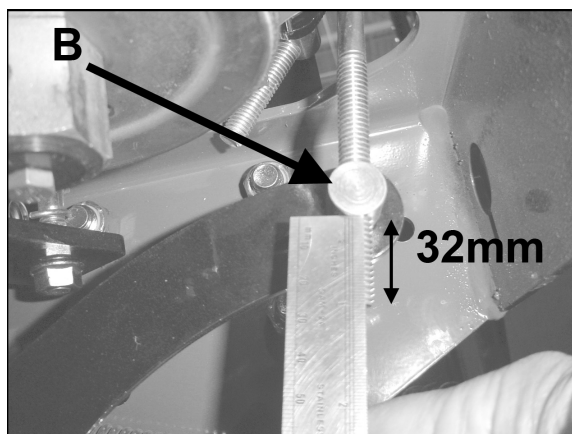
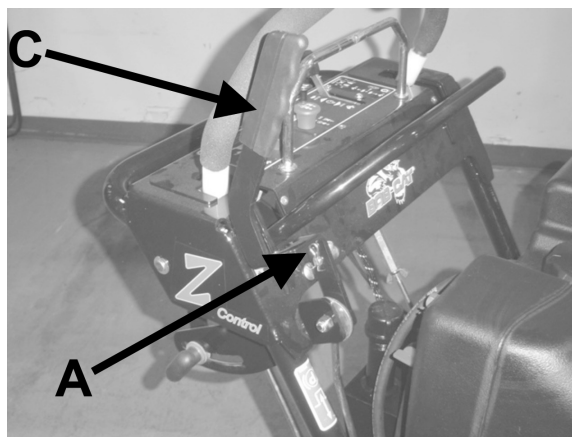
Apply parking brakes and open the bypass valves on the hydraulic pumps. Try to push the machine forward. If wheels rotate, adjust brakes as follows.

TO ADJUST:

1. Remove the hairpin cotter **A** from the brake rod at the brake lever **C** as shown.
2. Slide the brake rod out of the brake lever and turn the rod in or out of the brake swivel **B** as needed.

NOTE: The brake should initially be adjusted so that the brake rod extends through swivel **B** 32mm as shown. If more brake pressure is required adjust as necessary.

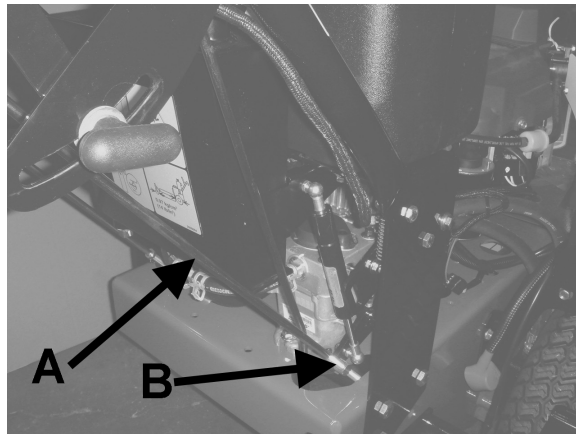
3. Reassemble brake rod to the brake lever using hairpin **A** removed in Step 1.
4. Apply parking brakes and try to push the machine forward. If wheels rotate, readjust brakes.
5. Close bypass valves on the hydraulic pumps.



TRACTION DRIVE HYDROSTAT ADJUSTMENTS: The following adjustments must be done in order.

STEP 1 - Set Neutral

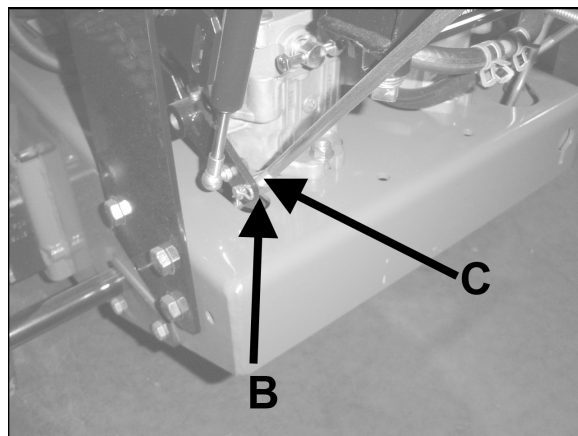
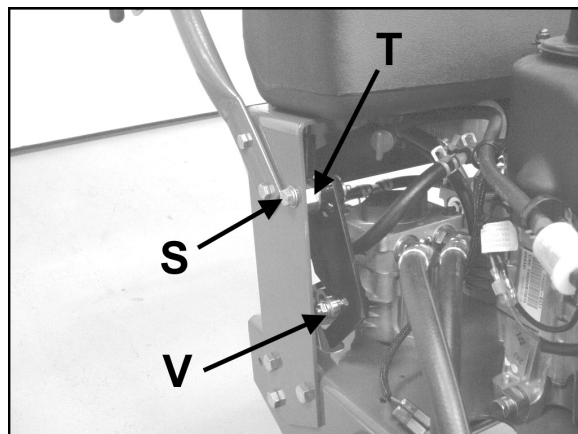
Neutral is set at the factory. If it should require adjustment, raise the wheels off the ground by supporting the machine on jackstands or blocks. Disconnect the control rod **A** at each pump end. Loosen bolt **S** securing the neutral plate eccentric shaft just enough to turn the shaft. Start the engine and run at low speed. Turn eccentric shaft **T** to raise or lower the point at which the follower bearing is held in the center of the "V" until the wheels stop turning. Tighten the eccentric shaft bolt. Increase the throttle setting and check the adjustment. Readjust if necessary. Shut the engine off before proceeding to Step 2.



STEP 2 - Adjust Control Rods

First adjust neutral, as outlined in Step 1. Set control levers to neutral. Adjust swivels **B** on lower ends of control rods **A** so they just go into the holes on the pump arm control plates.

After adjusting swivel **B** on left side, tighten jam nut **C**.

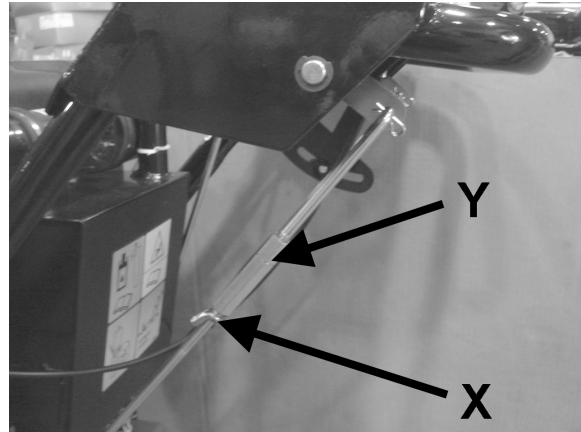


TRACKING ADJUSTMENT TURNBUCKLE

The tracking adjustment turnbuckle provides tracking control to correct for any hydraulic circuit or linkage differences from one side to the other.

To correct tracking:

1. Loosen wing nut **X**.
2. Rotate the tracking adjustment turnbuckle **Y** to the right to make the machine track to the right.
3. Rotate the tracking adjustment turnbuckle **Y** to the left to make the machine track to the left.
4. Tighten wing nut **X**.



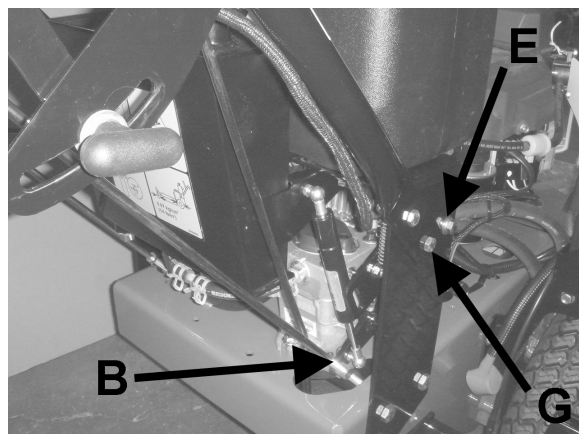
CONTROL LEVERS

The control levers are controlled by spring tension, and require no adjustment.



HANDLE BAR HEIGHT ADJUSTMENT

To adjust handle bar height: Remove swivel **B** at each pump control arm and the parking brake rod. Remove bolts **G** and loosen bolts **E** on each side of handlebars. Raise or lower as required. Reposition upper handle and reinsert bolts at location **G** into appropriate hole in lower handle and tighten. Readjust control rods and swivels and reinstall. Readjust parking brake and rod.



TRACK WIDTH ADJUSTMENT

The track width originally set from the factory can be increased an additional 3-1/4" overall by performing the following steps.

1. Loosen wheel lug nuts on both drive tires.
2. Raise rear of unit so that drive tires are off the ground. Support the unit with jack stands.
3. Remove wheel lug nuts and wheels. Reattach wheels with the tires rotated so the wheel offset is the opposite of when they were previously installed. Install and tighten lug nuts until they are snug
4. Lower machine off of the jack stands and torque wheel lug nuts to 85 ft-lbs.



TIRE PRESSURE ADJUSTMENT

Tire pressures should be maintained at 14 psi (1.0 kg/cm²).



PTO BELT

1. Rotate idler arm using a 3/8" ratchet or breaker bar and remove belt.



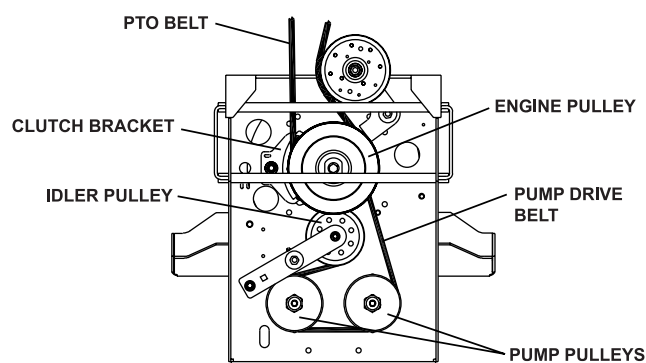
CUTTERDECK BELT

1. Remove PTO belt.
2. Rotate idler arm using a 3/8" ratchet or breaker bar and remove belt.
3. Replace in the reverse order.



PUMP-DRIVE BELT

1. Remove PTO belt from the engine clutch.
2. Disconnect the clutch wire harness.
3. Unbolt clutch bracket from clutch and rotate the clutch to allow enough clearance to remove the clutch bracket.
4. Rotate idler arm using a 3/8" ratchet or breaker bar inserted into the square hole in the idler arm.
5. Remove pump-drive belt.
6. Replace by following steps in reverse order.



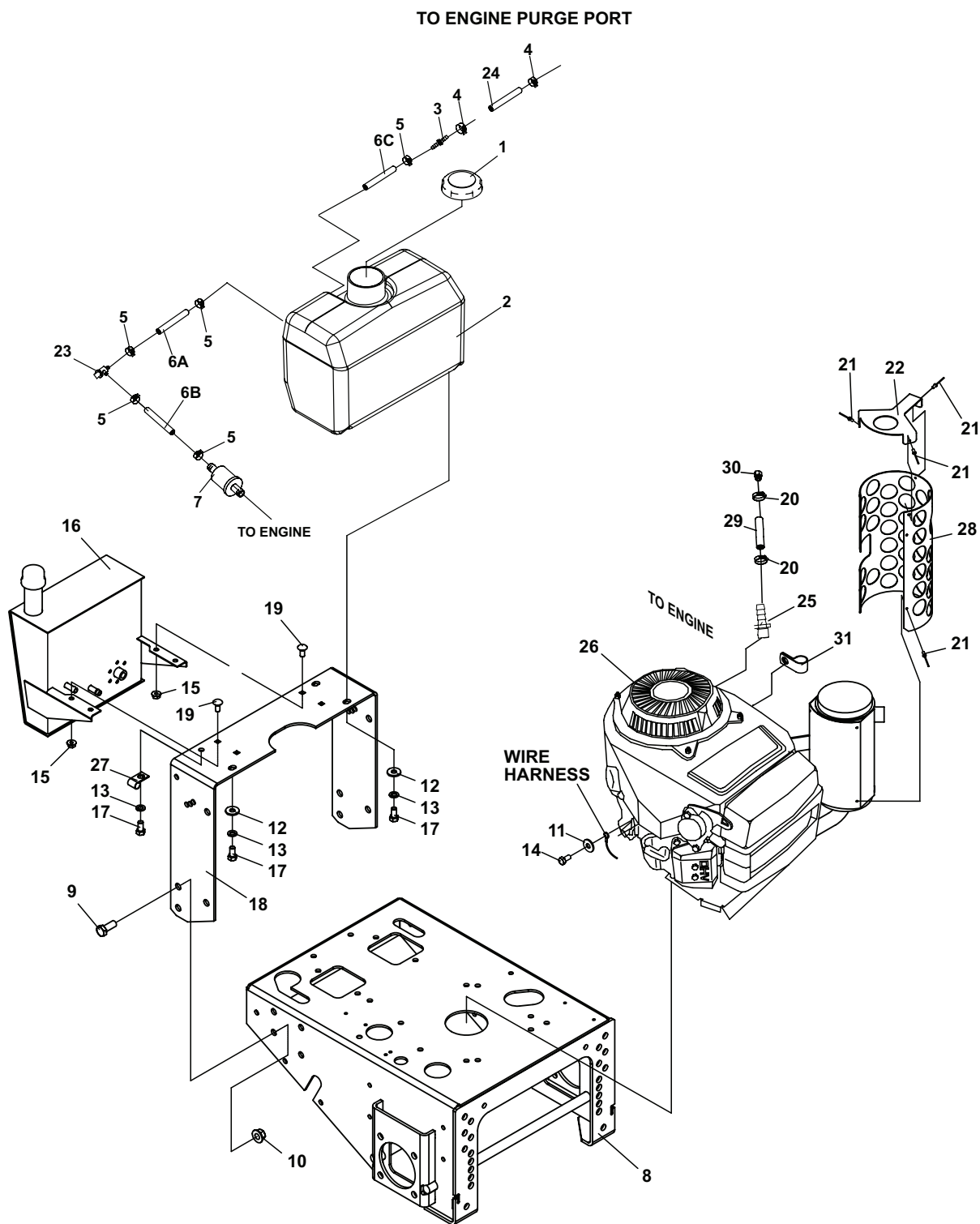
View under engine deck

PARTS SECTION

UPPER ENGINE DECK ASSY

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FIGURE 1



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UPPER ENGINE DECK ASSY

FIGURE 1

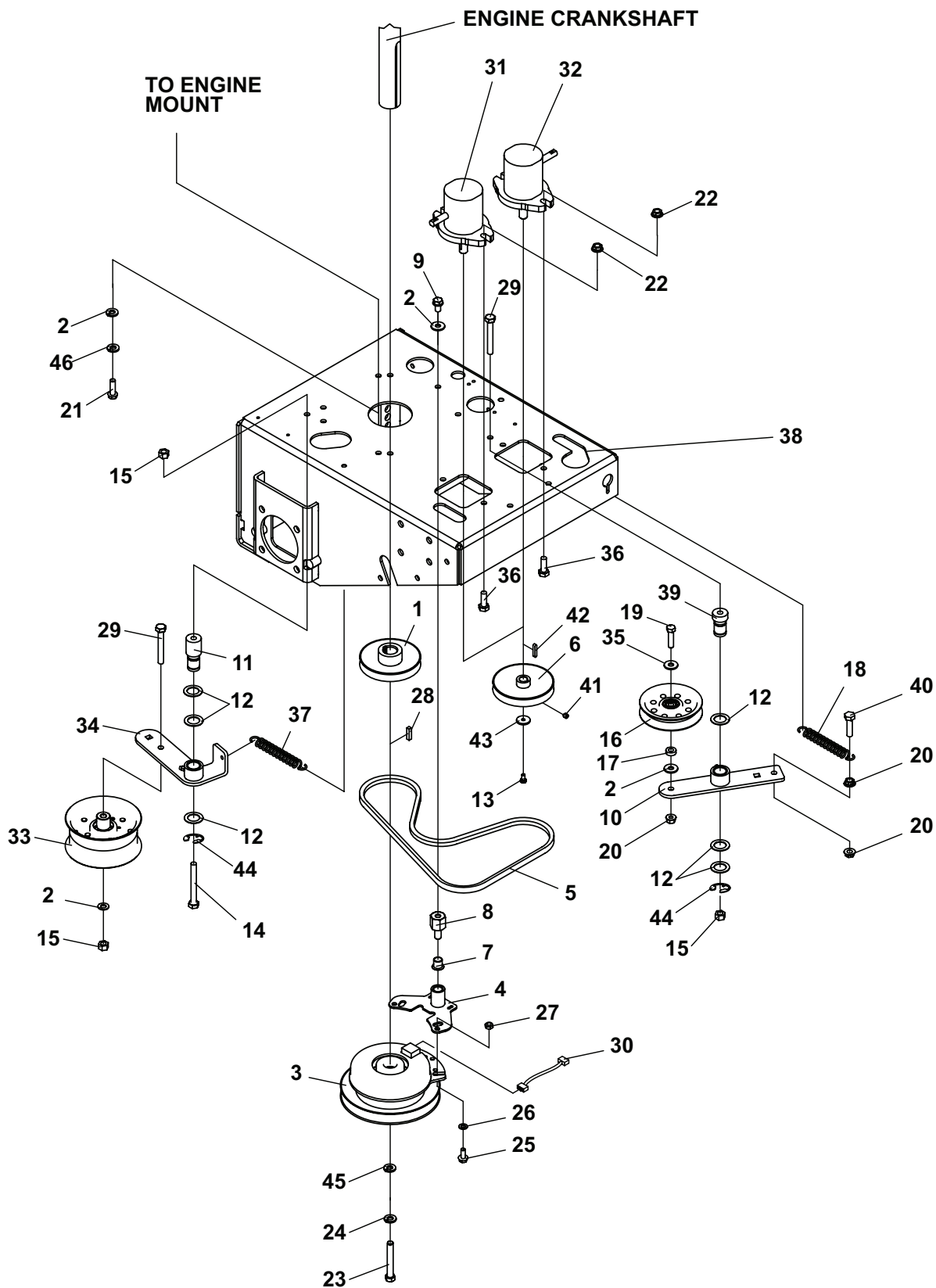
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	4167989	CAP-FUEL GASOLINE 3.5	1				
2	4165561-1	TANK-FUEL	1				
3	4165864	VALVE-INLINE FUEL	1				
4	88042-1	CLAMP-HOSE 3/16	2				
5	88042N	HOSE CLAMP	A/R				
6	4162977-001	HOSE,FUEL LINE	1				
		6A CUT TO 2" LONG					
		6B CUT TO 18.5"					
		6C CUT TO 36.5"					
7	4168368	FILTER, FUEL	1				
8	4131068.2	WLDMT-DECK ENG HYDRO	1				
9	64123-39	BOLT-HEX 1/2-13X1-1/4	6				
10	64229-05	LOCKNUT, 1/2-13 NYLON	6				
11	64002-04	LOCKWASHER, EXT. 5/16	1				
12	64163-31	WASHER, 25/64X1X12	4				
13	64006-03	LOCKWSHR-HELICAL 3/8	4				
14	64205-018	BLT MET M8-1.25 X 15	1				
15	64229-02	LOCKNUT-NYLON 5/16-18	4				
16	2306127	S-HYD RESEVOIR W/LABS	1				
17	64123-15	BLT-HEX 3/8-16X3/4	4				
18	4164391.7	HANDLE-LOWER, Z-CNTRL	1				
19	64018-9	BLT-CRG 5/16-18 X 3/4	4				
20	88042-03	CLAMP-HOSE 5/8	2				
21	64215-04	RIVET-POP IFI#42	7				
22	4166788	COVER-MUFFLER, TOP	1				
23	4163016	VALVE-FUEL	1				
24	4162989-01	HOSE-FUEL	1				
25	4164252-001	FTG-3/8 NPT-3/8 BARB	1				
26	4166463	ENGINE-FS541V KAW EU	1				
	2722214	FILTER-OIL					
	4164535	FILTER-AIR					
	4164536	FILTER-PRE					
	4166758	MUFFLER-KAW EU					
27	88042-03	CLAMP-HOSE	2				
28	4166787	MUFFLER-GUARD	1				
29	69053-03	HOSE-HYDR 3/8X17"	1				
30	4164251	VALVE-OIL DRAIN	1				
31	48412	CLIP-J, CABLE	1				

*AVAILABLE THROUGH KAWASAKI DEALER

LOWER ENGINE DECK ASSY/CLUTCH

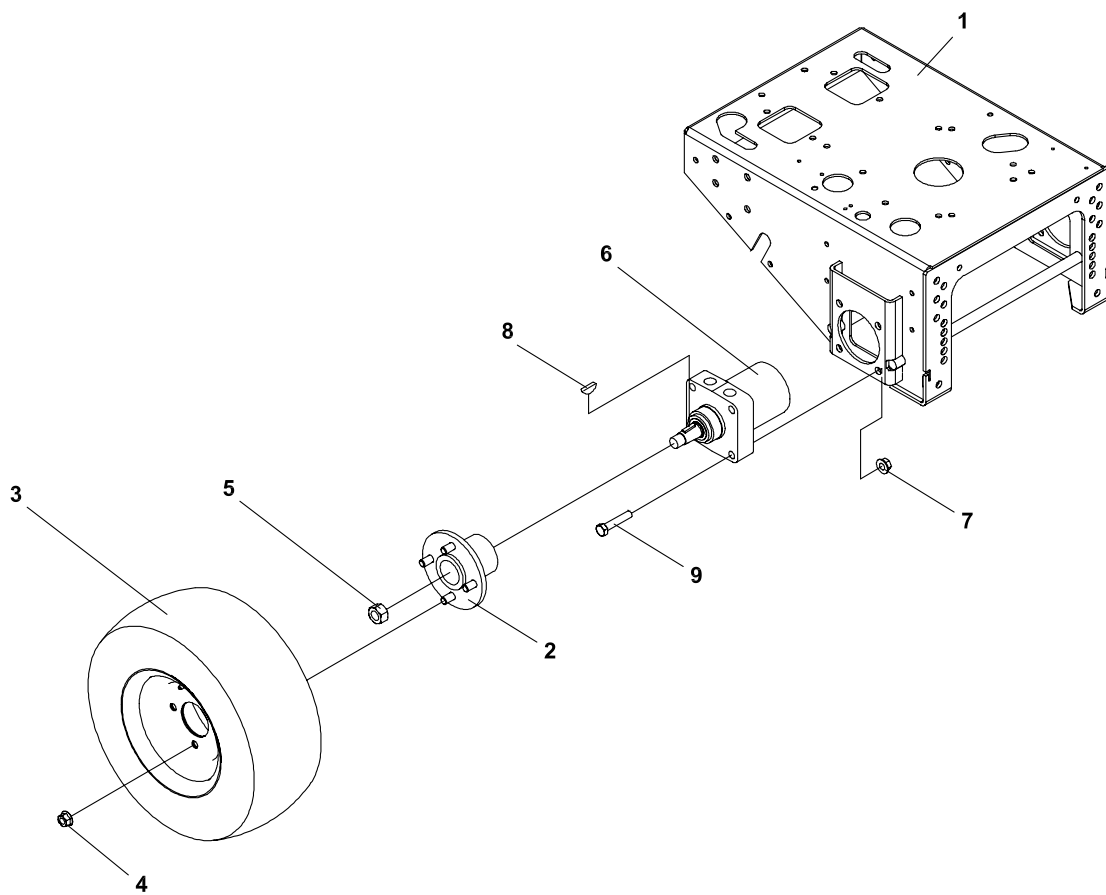
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FIGURE 2



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	2721647	PULLEY-4.50E.O.D.	1				
2	64163-31	WASHER, 25/64 X 1 X 12	7				
3	2721110	CLUTCH-ELECTRIC	1				
4	2721331.7	WLDMT-CLUTCH STOP MID	1				
5	2721642	BELT-HA 49.0	1				
6	2722244	PULLEY- A SECTION 4.50	2				
7	38304-03	BRG-FLANGED PLASTIC	1				
8	4121540	PIN-CLUTCH	1				
9	64123-15	BLT-3/8-16 X 3/4	1				
10	2721641.7	WLDMT-IDLER	1				
11	4116712	PIN-PIVOT	1				
12	64163-65	WASHER-.890X1.375X18GA	6				
13	64205-013	BLT-MET M6-1 X 12	2				
14	64123-138	BLT-HEX 3/8-16X3-3/4	1				
15	64229-03	LOCKNUT-NYLON 3/8-16	7				
16	2308000	PULLEY-IDLER 4.00 EOD	1				
17	33148-01	SPACER	1				
18	38219	SPRING-TENSION	1				
19	64123-87	BLT-HEX 3/8-16 X 1-3/4	1				
20	64141-4	NUT-WLF 3/8-16	3				
21	64123-16	BLT-HEX 3/8-16X1-1/4	4				
22	64268-03	NUT-FLG NYL LK 3/8-16	4				
23	64123-155	BLT-HEX 7/16-20 X 3	1				
24	64006-06	LOCKWSHR-HELICAL 7/1	1				
25	64123-54	BOLT, 5/16-18X3/4 HEX	2				
26	64163-55	WSHR-.328ID X.75DX14GA.	2				
27	64229-02	LOCKNUT-NYLON 5/16-18	2				
28	64164-12	1/4X1/4X1 SQ END KEY	1				
29	64123-75	BOLT, 3/8-16X3 HEX	2				
30	2720949	ASSY-CLUTCH WIRE	1				
31	4163316	PUMP-HYDRO LH	1				
32	4163317	PUMP-HYDRO RH	1				
33	2721541	PULLEY-IDLER 5 IN	1				
34	2721401.7	WLDMT-IDLER ARM	1				
35	64163-61	WSHR .81X.406X16GA	1				
36	64123-16	BLT-HEX 3/8-16X1-1/4	4				
37	2188131	SPRING-EXTENSION	1				
38	4131068.2	WLDMT-DECK ENG HYDRO	1				
39	4116691	PIN-PIVOT	1				
40	64123-70	BOLT-HEX 3/8-16X1-1/2	1				
41	64044-6	SCREW-SET 5/16-18 X 1/4	4				
42	64238-03	KEY-MET 5MM SQ X 28	2				
43	64209-09	WASHER-CONICAL SPRING	2				
44	64221-04	E-RING.875	2				
45	64163-51	WSHR.453X1.38X7GA	1				
46	64006-03	LOCKWSHR-3/8 HELICAL	4				

FIGURE 3



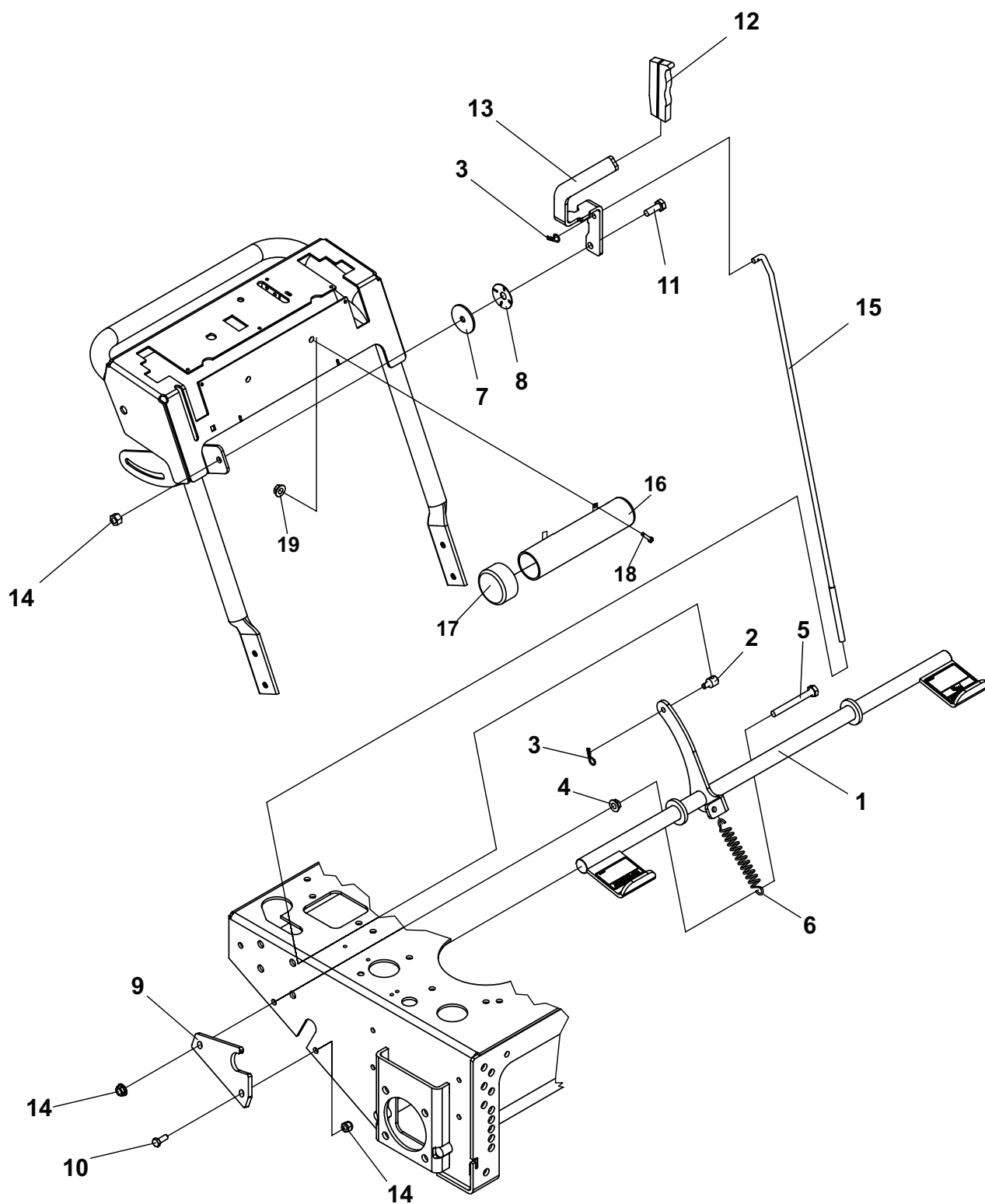
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DRIVE WHEELS

FIGURE 3

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	4131068.2	WLDMT-DECK ENG HYDRO	1				
2	2721620	WLDMT-HUB	2				
3	2721956	ASSY-WHEEL 16 X 7.50 X 8	2				
	2721956-01	TIRE-16X7.50X8 MLTI TRC	1				
	2721956-02	WHEEL W/ DUAL VALVES	1				
4	64267-01	NUT-HEX FLANGED 1/2-20	8				
5	64025-06	NUT-HEX 3/4-16 2A	2				
6	2308051	MOTOR-WHEEL ROSS MF	2				
7	64141-13	NUT WLF 1/2-13	8				
8	64164-28	KEY-WOODRUFF	2				
9	64123-72	BLT-HEX 1/2-13X2-1/2	8				

FIGURE 4

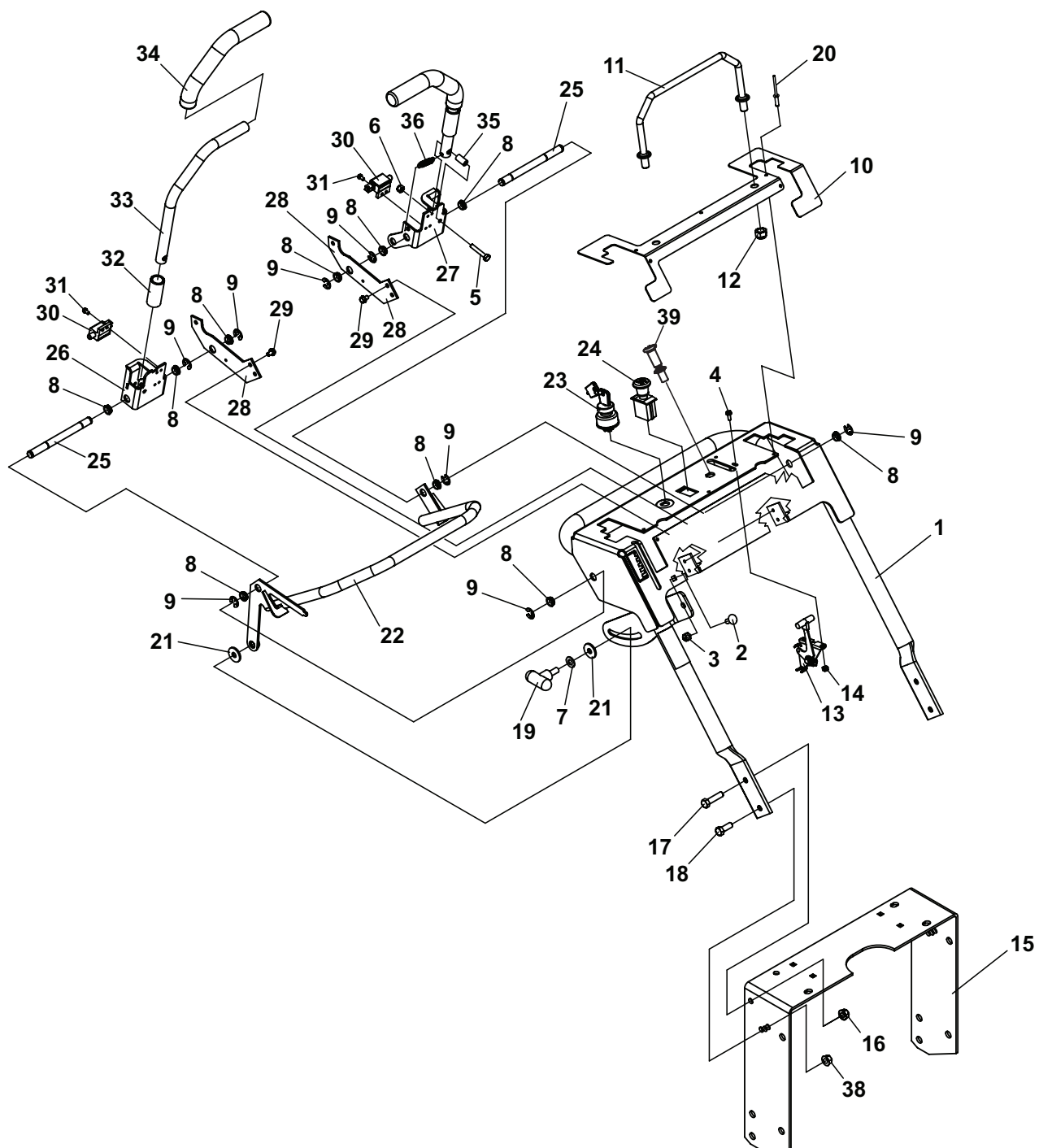


ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	4131746	S-BRAKE SHAFT WLDMT	1				
2	33103	SWIVEL	1				
3	64168-2	COTTER-HAIRPIN.08X1.19	2				
4	64001-6	NUT-HEX JAM 3/8-16	1				
5	64123-138	BLT-HEX 3/8-16X3-3/4	1				
6	2188131	SPRING-EXTENSION	1				
7	64163-17	25/64 X 2 X 11GA WASHR	1				
8	64171-2	WAVE WASHER	1				
9	4131072.7	PLATE-BRK SHFT RETNR	2				
10	64123-50	BOLT-HEX 3/8-16X1	3				
11	64123-16	BLT-HEX 3/8-16X1-1/4	1				
12	38404-01	GRIP,CONTROL LEVER	1				
13	4116495.7	LEVER-BRAKE ARM	1				
14	64229-03	LOCKNUT-NYLON 3/8-16	5				
15	4135058	ROD-BRAKE	1				
16	4160281	TUBE-DOCUMENT	1				
17	38061A	CAP-DOCUMENT TUBE	1				
18	64262-003	BLT-BLT-FLG HD 1/4-20 X 1	2				
19	64229-01	NUT-NYLON LOCK 1/4-20	2				

START UPPER HANDLE

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FIGURE 5



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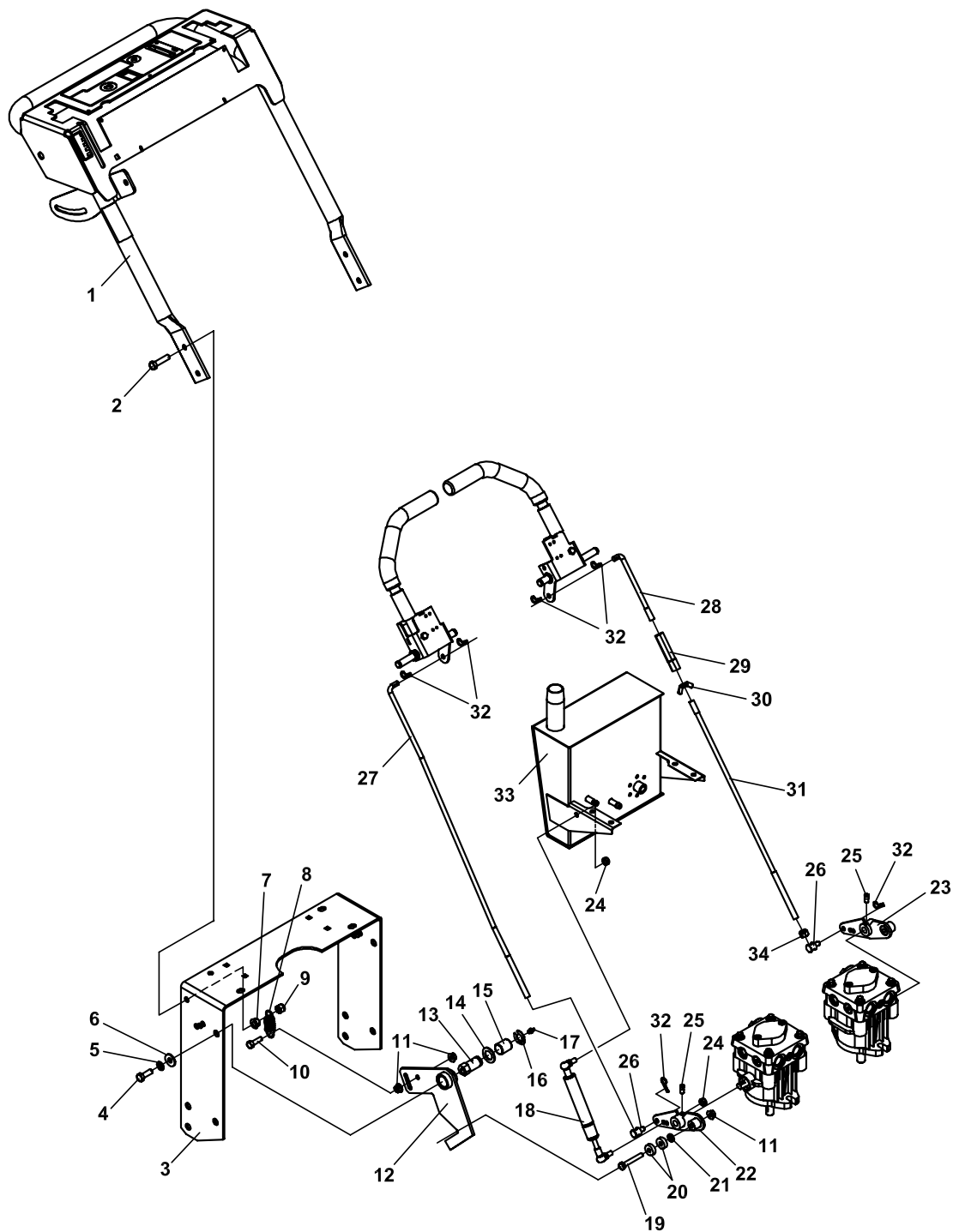
START UPPER HANDLE

FIGURE 5

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	4166800	S-UP HNDLE W/ LABELS	1				
2	64018-15	BLT-CRG 5/16-18X1	1				
3	64229-02	LOCKNUT-NYLON 5/16-18	1				
4	64152-46	SCREW-SLT HH 10-24X1/2	2				
5	64123-07	BOLT, 1/4-20X1-1/2 HEX	2				
6	64229-01	LOCKNUT-NYLON 1/4-20	2				
7	64163-61	WSHR .81X.406X16GA	1				
8	4116398	BSHG-IGUS, .50 IDX.13 THK	10				
9	64221-05	E-CLIP, .328 ID	8				
10	4118586.7	PANEL-COVER, HYDRO	1				
11	4118392	ROD-REVERSE ASSIST	1				
12	64229-05	LOCKNUT, 1/2-13 NYLON	2				
13	38357-04	CONTROL-THROTTLE	1				
14	64025-15	NUT-HEX #10-24 KEPS	2				
15	4164390.7	HANDLE-LOWER, HYDRO	1				
16	64141-4	NUT-WLF 3/8-16	4				
17	64123-70	BOLT-HEX 3/8-16X1-1/2	2				
18	64123-50	BOLT-HEX 3/8-16X1	2				
19	4114727	KNOB-SPEED CONTROL	1				
20	64215-05	RIVET-POP IFI# 64	5				
21	2308066	WSHR-FRICTION	2				
22	4116405.7	WLDMT-SPEED CONTROL	1				
23	128010	SWITCH-ENGINE STOP	1				
24	2721505	SWITCH-PTO	1				
25	4116374	BAR-HYDRO CONTROL	2				
26	4116404	WLDMT-RH CNTRL, HYDRO	1				
27	4116403	WLDMT-LH CNTRL, HYDRO	1				
28	4116953.7	PLATE-PIVOT SHAFT	2				
29	64152-23	1/4-20X3/8 LG SP SCREW	6				
30	2308094	SWITCH-NCNC DBL POLE	2				
31	64197-015	BLT-TDFM 10-32X1/2 TORX	4				
32	4119625	BHSG-CONTROL LEVER	2				
33	4116376	TUBE-CONTROL	2				
34	4117741	GRIP-MOTION LVR, MIDSZE	2				
35	4116380	SPACER-CONTROL	2				
36	4118378	SPRING-EXTENSION	2				
37*	2722325	RELAY-40 AMP SEALDED	1				
38	64268-03	NUT-FL NYLON LK 3/8-16	2				
39	108009-03	CHOKE-CONTROL	1				

*NOT ILLUSTRATED

FIGURE 6



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TRACTION CONTROLS

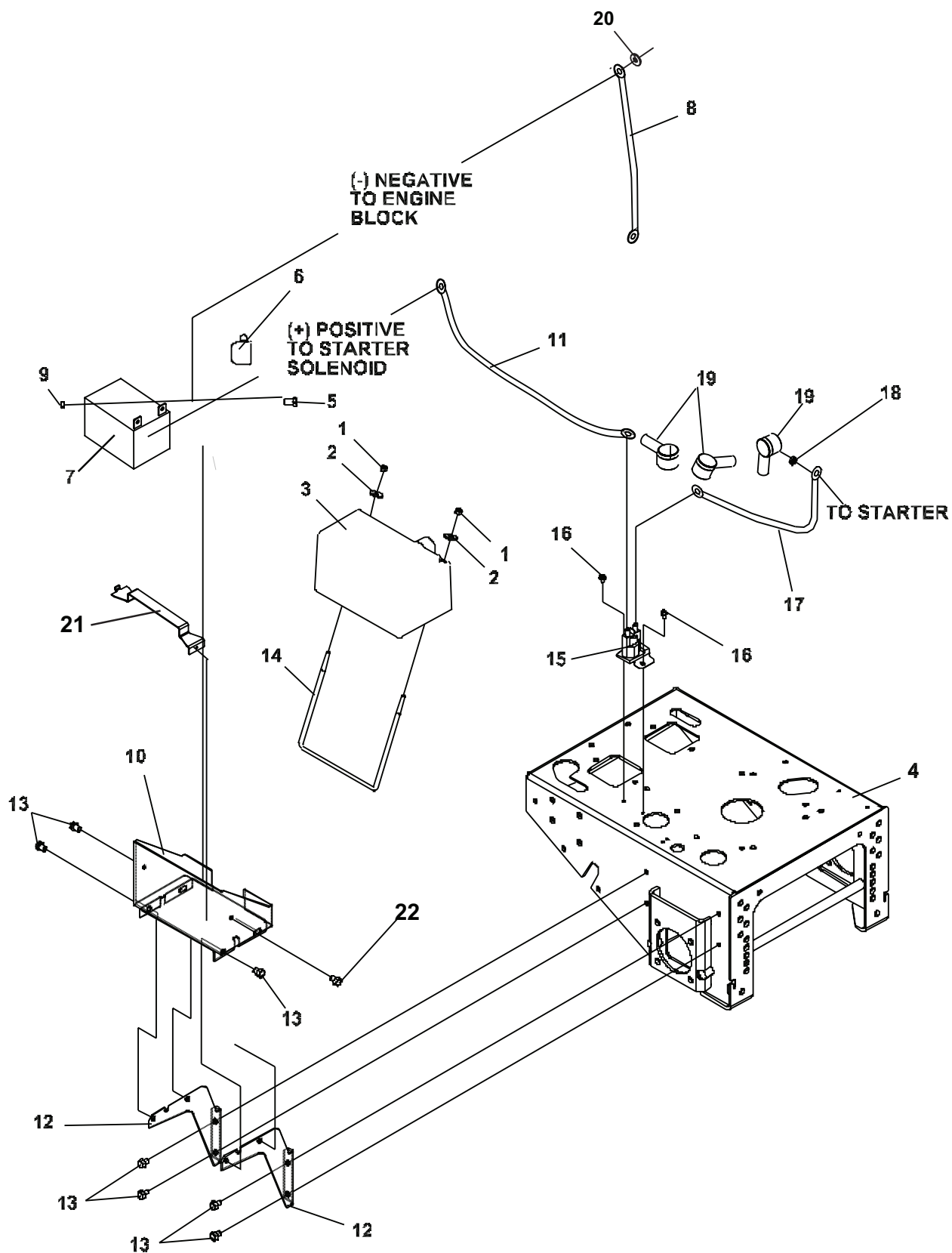
FIGURE 6

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	4166800	S-HANDLE UPR RS W/CHK	1				
2	64123-70	BOLT-HEX 3/8-16X1-1/2	2				
3	4164390.7	HANDLE-LOWER, HYDRO	1				
4	64123-02	BLT-HEX 3/8-24X1	2				
5	64006-03	WSHR, 3/8 HELICAL LOCK	2				
6	64163-61	WSHR .81X.406X16GA	2				
7	64141-4	NUT-WLF 3/8-16	2				
8	4119746	SPRING-NEUTRAL RETURN	2				
9	64229-03	LOCKNUT-NYLON 3/8-16	2				
10	64123-68	BOLT-HEX 5/16-18X1	2				
11	64141-6	NUT, 5/16-18	6				
12	2721617.7	WLDMT-SPEED CONTROL	2				
13	2303058	SHAFT-ECCENTRIC (HEX)	2				
14	64163-06	WASHER	2				
15	2308076-02	BEARING-PLASTIC	2				
16	64144-16	RING,CLIP-.75X.062	2				
17	85010N	ZERK, 1/4-28 STR SLFTHRD	2				
18	2228065	DAMPENER	2				
19	64123-56	BLT-HEX 5/16-18X2	2				
20	38372	BEARING-BALL	4				
21	64163-02	WSHR-.321X.593X11GA	2				
22	4114742.7	WLDMT-RH PUMP CNTRL	1				
23	4114745.7	WLDMT-LH PUMP CNTRL	1				
24	64229-02	NUT-NYLON LOCK 5/16-18	4				
25	64192-04	SET SCREW SQ 5/16-18X5/8	2				
26	33103	SWIVEL	2				
27	4121937	ROD-RH CONTROL	1				
28	4121897	ROD-LH CONTROL, UPPER	1				
29	4121898	TURNBUCKLE-3/8-16	1				
30	64214-02	NUT-WING 3/8-16	1				
31	4121896	ROD-LH CONTROL, LOWER	1				
32	64168-2	COTTER-HAIRPIN.08X1.19	7				
33	2306127	S HYD RESERVOIR W/LABS	1				
34	64001-6	NUT-HEX JAM,3/8-16	1				

ELECTRIC START BATTERY

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FIGURE 7



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ELECTRIC START BATTERY

FIGURE 7

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	64229-02	LOCKNUT-NYLON 5/16-18	2				
2	64163-29	WASHER	2				
3	128035	COVER-BATTERY	1				
4	4131068.2	DECK-ENGINE HYDRO	1				
5	64262-002	BLT-FLG 1/4-20 X 3/4	2				
6	112386	BOOT-BATTERY TERM POS	1				
7	4167215	BATTERY	1				
8	108061-16	CABLE-BTTRY 31.5 BLACK	1				
9	64025-01	NUT-HEX 1/4-20	2				
10	4113741	S-TRAY, BATTERY	1				
11	2722227-03	CABLE-BTTRY W/CONDUIT	1				
12	2722202.7	SUPPORT-BATT TRAY	2				
13	64197-016	BLT-TDFM 3/8-16X1/2	8				
14	4168907	ROD,BATTERY HLD DWN	1				
15	38665	SOLENOID	1				
16	64152-23	1/4-20X3/8 LG SP SCREW	2				
17	108061-15	CABLE-BATTERY 6.5 RED	1				
18	64141-2	NUT-WLF 1/4-20	1				
19	2308095	COVER, TERMINAL	3				
20	64163-03	WSHR-.256X.62X18GA	2				
21	4168764.7	STRAP-BATTERY	1				
22	64152-56	SCREW-HS STAP #12 X 1/2	1				

FIGURE 8

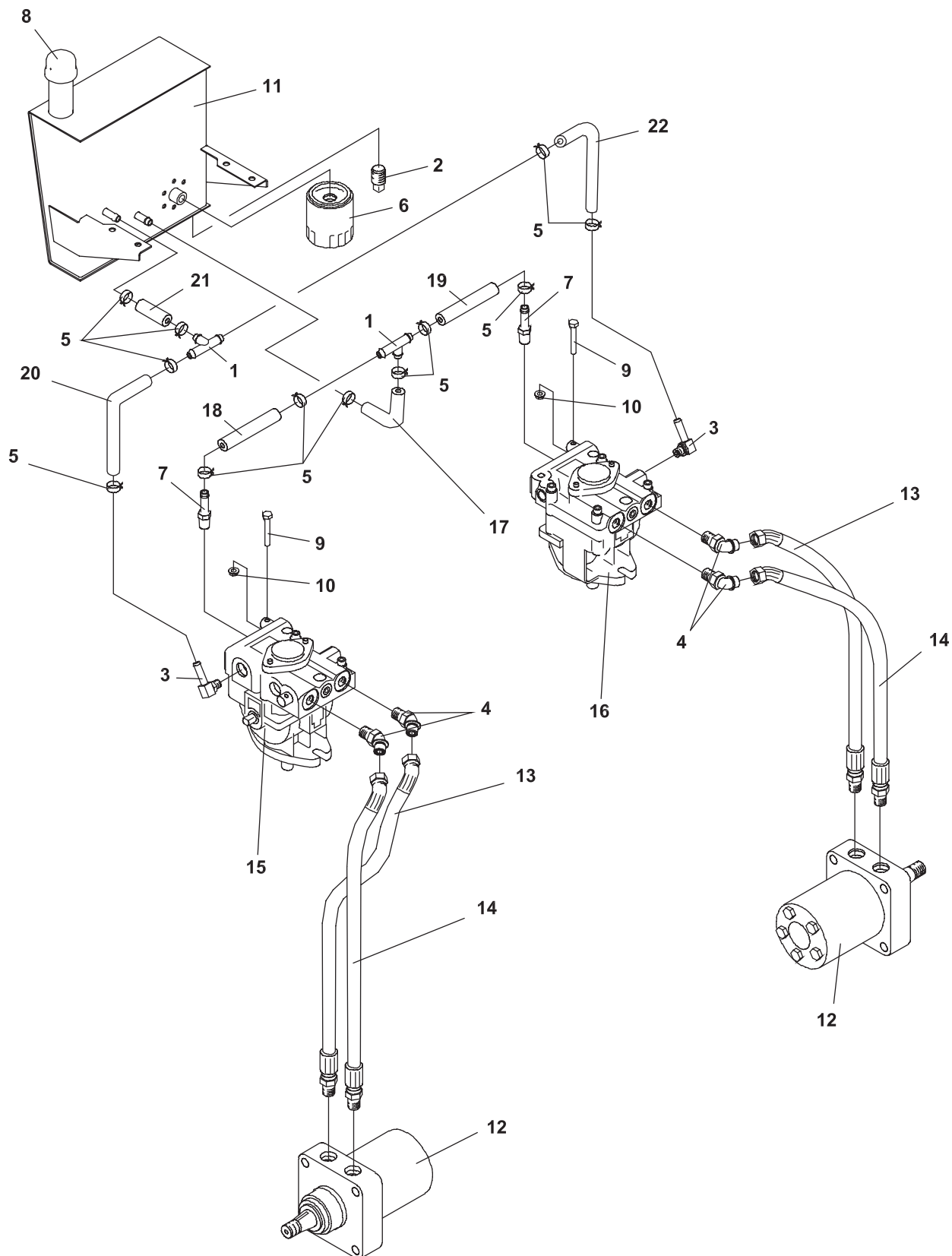


FIGURE 8

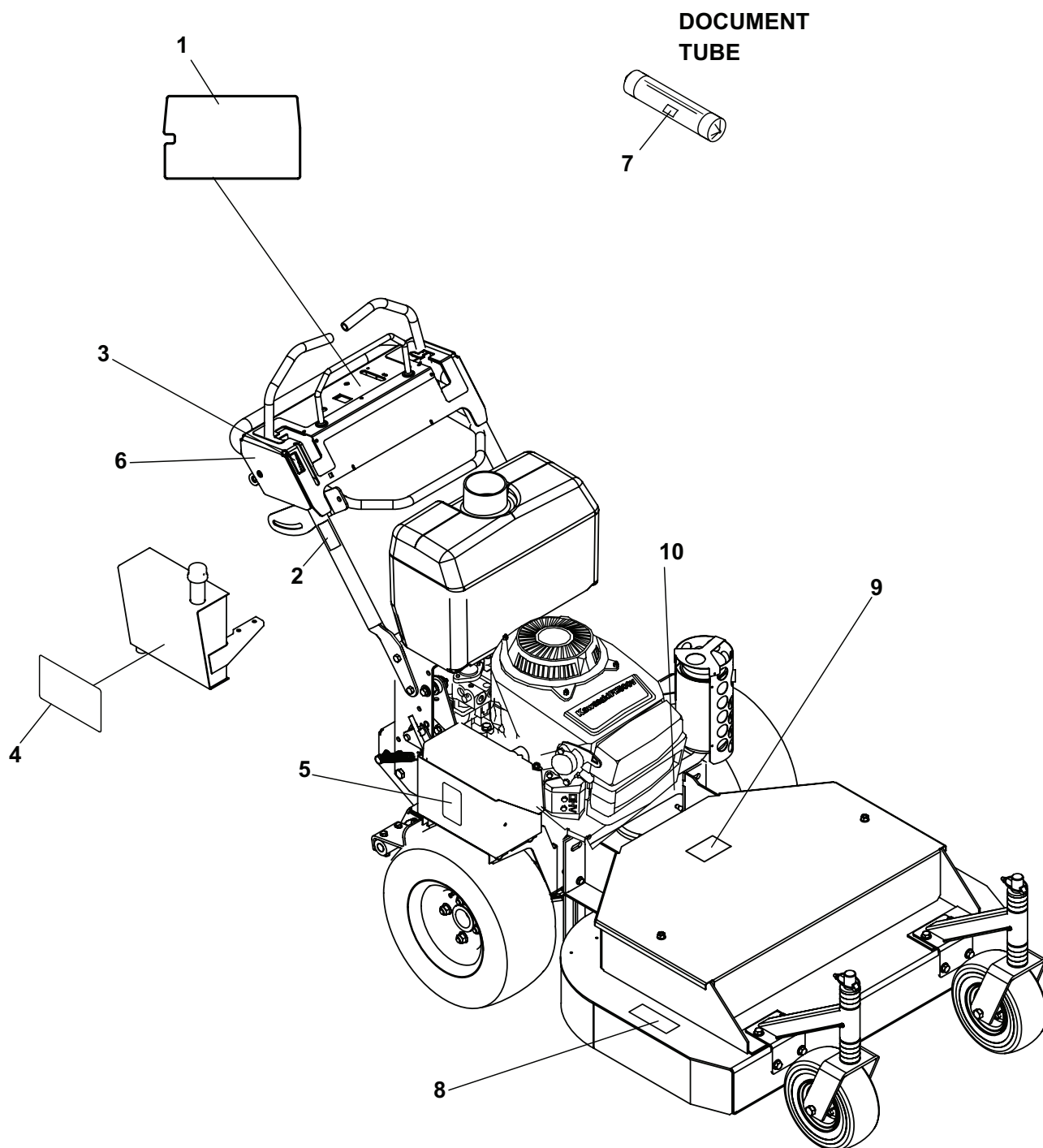
ITEM	PART NO.	DESCRIPTION	QTY
1	58026-01	3-WAY CONNECTOR	2
2	108029	PLUG, MAGNETIC	1
3	158058-04	FITTING-90 BARB, ADJ.	2
4	108205-02	ELBW-MALE 45 8X8 37-ORB	4
5	88042-04	CLAMP-HOSE 5/8"	12
6	2720396	FLTR, 25 MCRN SM CAM	1
7	69060-01	FTG-BARB 9/16 X 3/8 ST	2
8	69216.7	CAP-RESERVOIR	1
9	64123-60	BOLT, 1/4-20X2 HEX	2
10	64229-01	LOCKNUT-NYLON 1/4-20	2
11	2306127	S HYD RESER W/LABS	1
12	2308051	MOTOR WHEEL ROSS	2
13	2692300-01	HOSE-1/2 37/ORB X 18.5 LG	2
14	2692300-02	HOSE-1/2 37/ORB X 18.5 LG	2
15	4163317	PUMP-HYDRO RH (SEE FIG 16 FOR PARTS BREAKDOWN)	1
16	4163316	PUMP-HYDRO LH (SEE FIG 16 FOR PARTS BREAKDOWN)	1
(69053-05 IS A SERVICEABLE LENGTH OF 55")			
17	69053-05	3/8 HI TEMP HOSE 17.0"	1
18	69053-05	3/8 HI TEMP HOSE 5.0"	1
19	69053-05	3/8 HI TEMP HOSE 5.0"	1
20	69053-05	3/8 HI TEMP HOSE 7.5"	1
21	69053-05	3/8 HI TEMP HOSE 6.8"	1
22	69053-05	3/8 HI TEMP HOSE 12.0"	1

SERVICEABLE HYDRAULIC O-RINGS

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

NOTE:
DO NOT use sealant tape on any hydraulic fittings. Use a liquid pipe sealant.

FIGURE 9



EC Hydro Midsize

DECALS

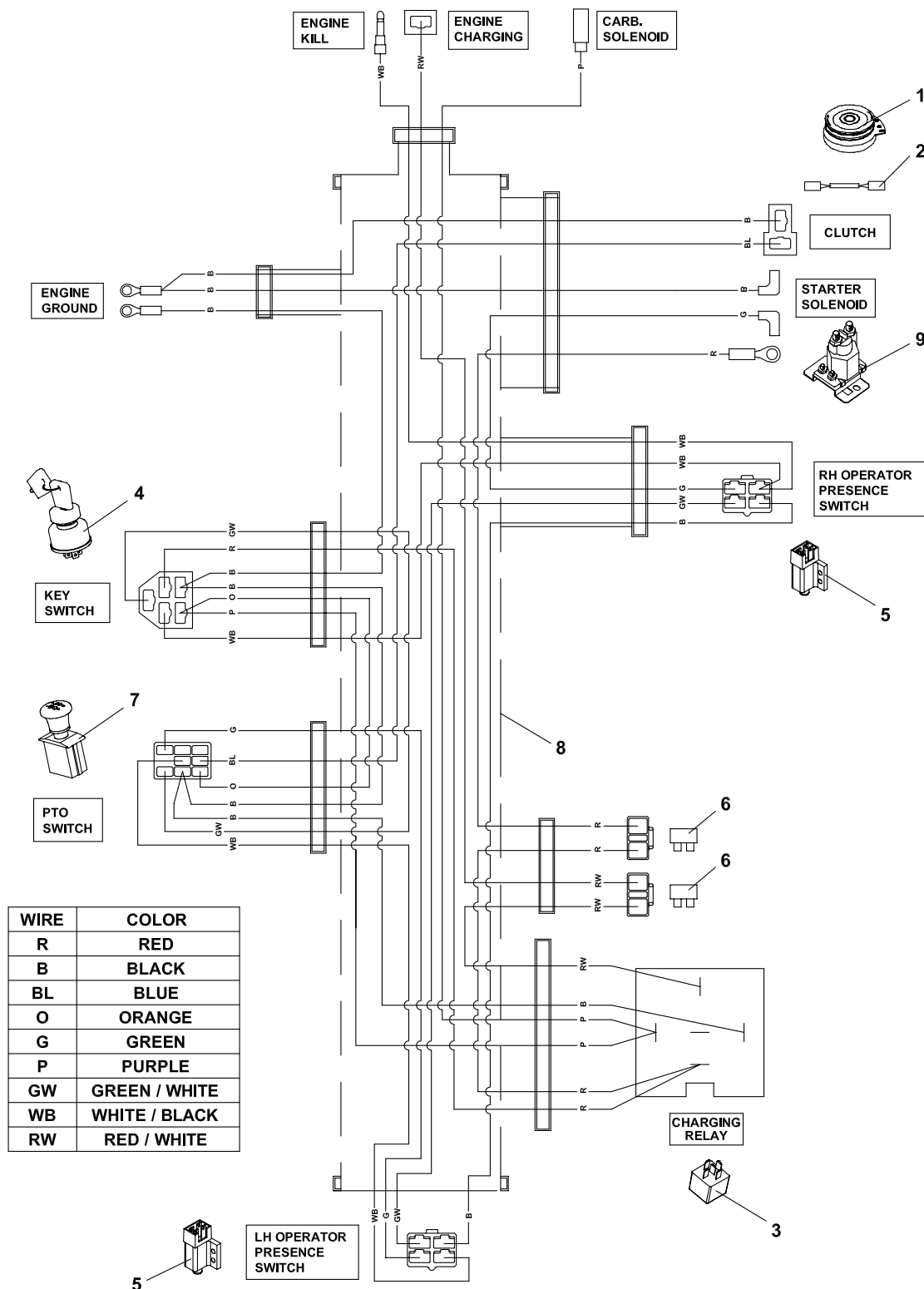
FIGURE 9

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	4166695	LABEL-CTRL PNL	1				
2	2000672	LABEL-PARKING BRAKE	1				
3	4120215	LABEL-SPEED CONTROL	1				
4	2000664	LABEL-HYDRAULIC MS EEC	1				
5	2000650	LABEL-IMPORTANT	1				
6	4166105	LABEL-Z CONTROL	1				
7	2000655	LABEL-READ OPERATORS EEC	1				
8	2000760	LABEL-DANGER/WARNING	1				
9	2000638	LABEL-ROT PRTS/B-WSHR (LOCATED UNDER BELT COVER)	2				
10	4165666	LABEL-MIDSIZE PATENT	1				

WIRE DIAGRAM-ELECTRIC START

EC
Hydro
Midsize

FIGURE 10



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	2721110	CLUTCH-ELECTRIC (INCLUDES ITEM 2)	1				
2	2720949	ASSY-CLUTCH WIRE	1				
3	2722325	RELAY-40AMP SEALED	1				
4	128010	KEY SWITCH	1				
5	2308094	SWITCH-NCNC DBL POLE	2				
6	148082-20	FUSE 20 AMP	2				
7	2721505	SWITCH-PTO	1				
8	4166693	HARNESS, HYDRO ES (INCLUDES QTY OF 2 OF ITEM 6)	1				
9	38665	SOLENOID-STARTER	1				
10*	108061-15	CABLE-BATTERY 6.5 RED (FROM STARTER SOLENOID TO STARTER)	1				
11*	2722227-03	CABLE-BTTRY W/CONDUIT (FROM (+) POSITIVE BATTERY TERMINAL TO STARTER SOLENOID)	1				
12*	108061-16	CABLE-BTTRY 31.5 BLACK (FROM (-) NEGATIVE BATTERY TERMINAL TO ENGINE BLOCK)	1				

*** NOT ILLUSTRATED**

WIRING SCHEMATIC-ELECTRIC START

FIGURE 11

EC
Hydro
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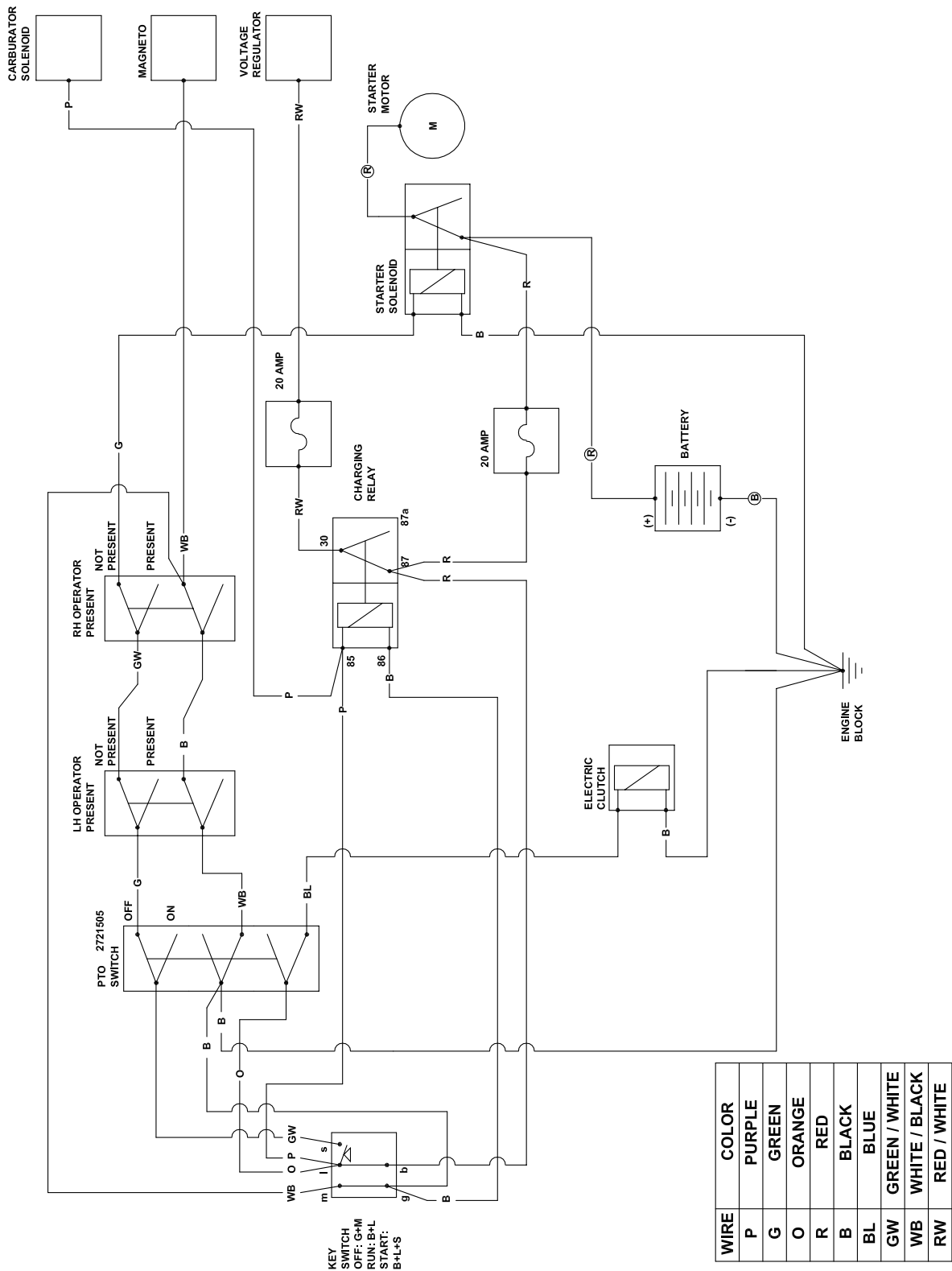


FIGURE 12

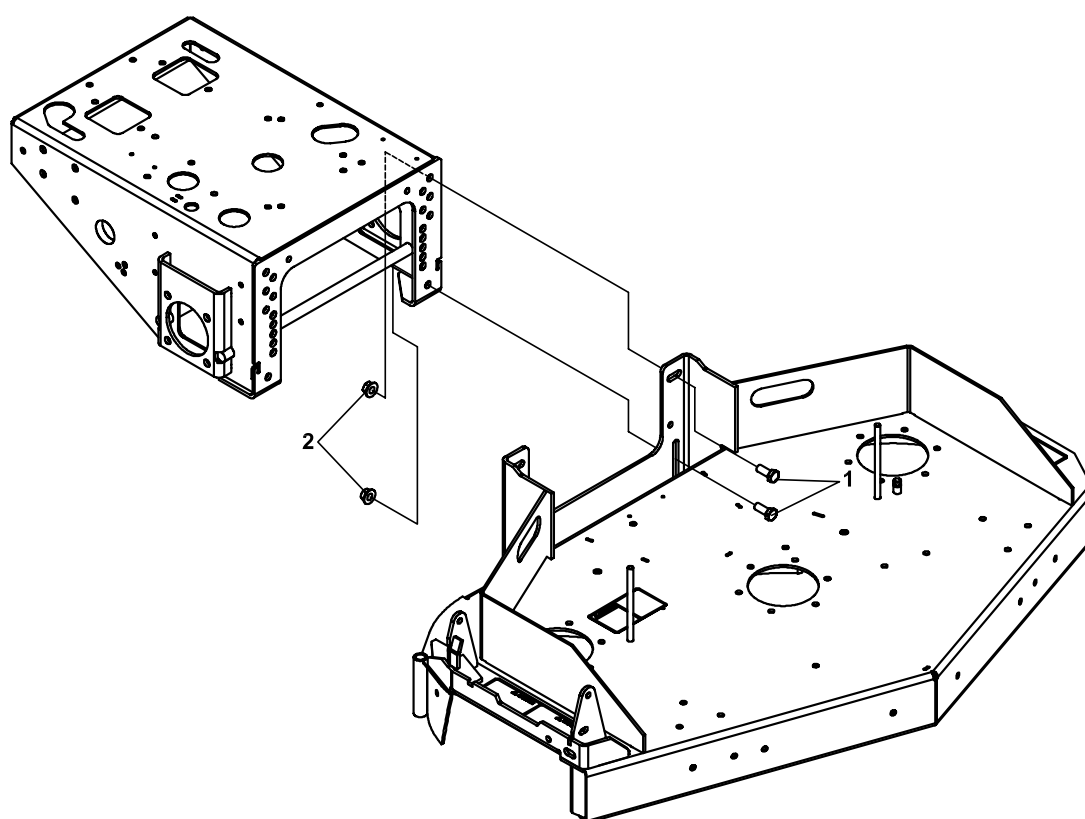
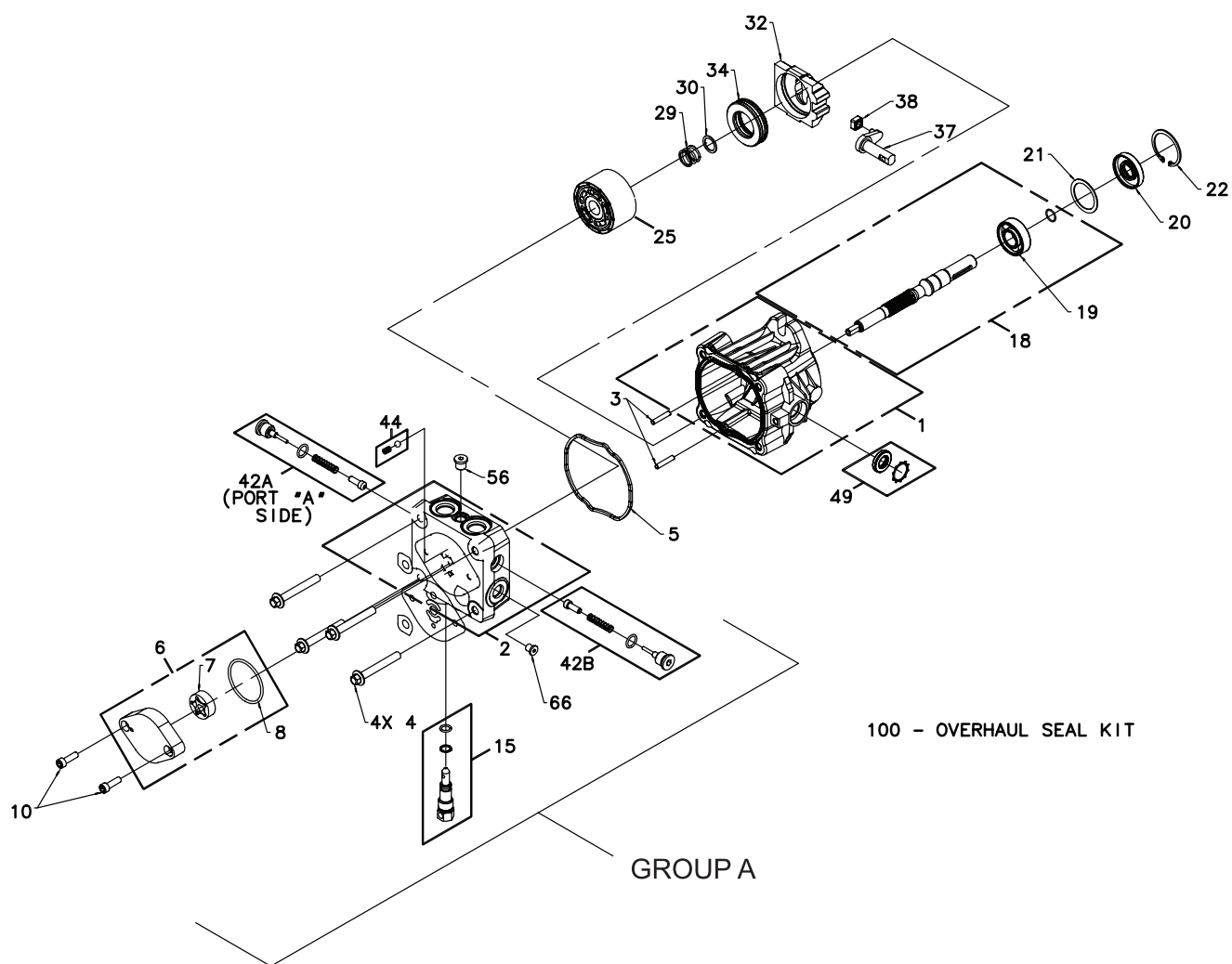


FIGURE 11

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	64263-018	BLT-FLG HD M12-1.75 X 30	4				
2	64246-04	NUT-WHIZ M12-1.75	4				

FIGURE 13

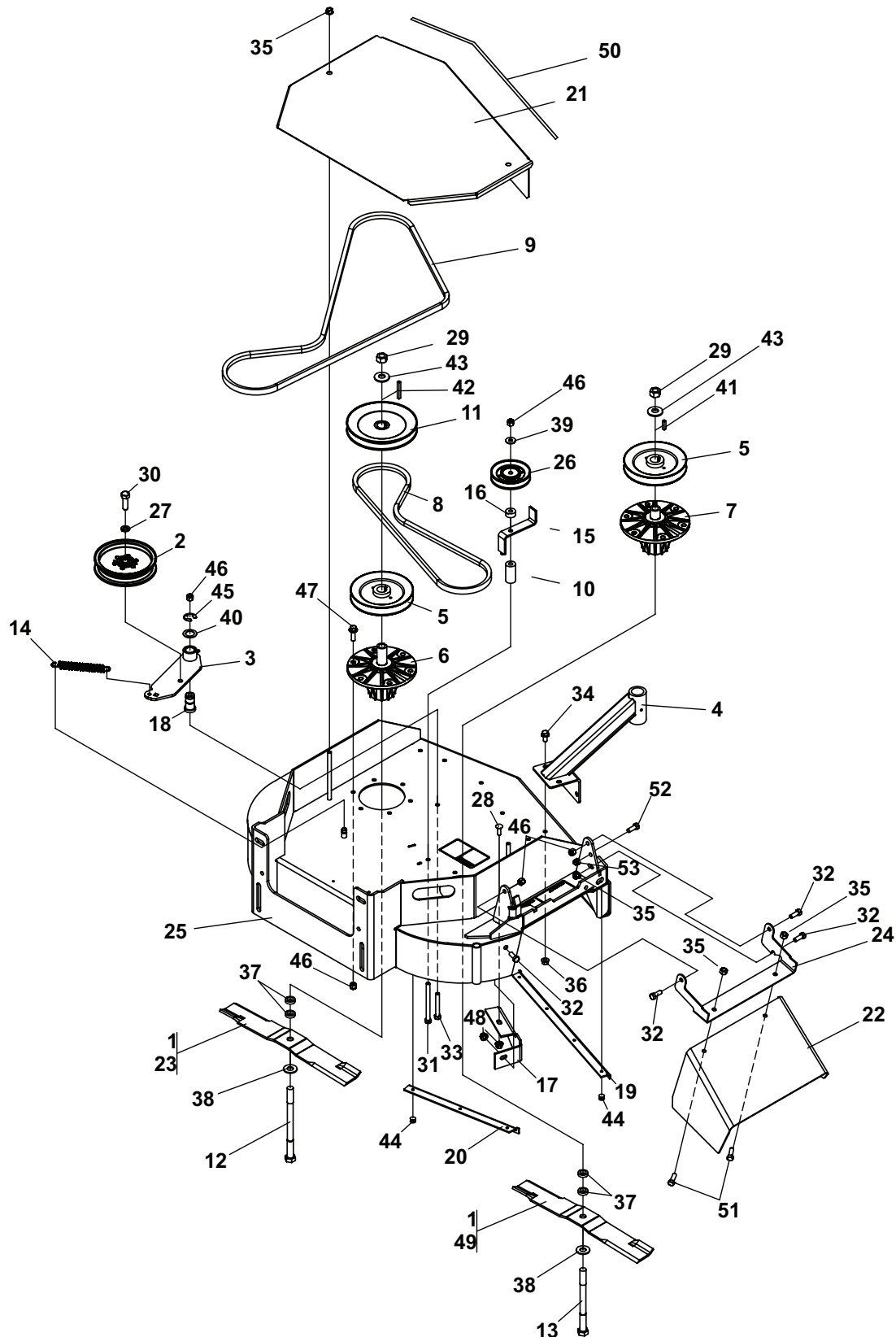


ITEM	HYDRO P/N	RANSOMES P/N	DESCRIPTION	QTY
1	70516	----	HOUSING KIT	1
2	*70517	----	END CAP KIT	1
	^71615	----	END CAP KIT	1
3	50641	----	STRAIGHT HEADLESS PIN	2
4	50969	2721615-01	FLANGE BOLT M8-1.25 X 60	4
5	*51232	2721615-02	HOUSING O-RING	1
	^52629	4163316-01	HOUSING O-RING	1
6	2513027	2721615-03	CHARGE PUMP KIT (STD)	1
7	50273	2721615-04	STD GEROTOR ASSEMBLY	1
8	9004101-1340	2721615-05	O-RING	1
10	*50095	2721615-06	SOCKET HEAD M6-1.0 X 20	2
	^50975	4163316-02	SOCKET HEAD 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
	^70723	4163316-03	CYLINDER BLOCK KIT	1
29	2003014	----	BLOCK SPRING	1
30	2003017	----	BLOCK THRUST WASHER	1
31	51246	2721615-09	VALVE PLATE	1
32	2003087	2721615-10	SWASHPLATE	1
34	50551	2721615-11	BALL THRUST BEARING	1
37	2003005	2721615-12	TRUNNION ARM	1
38	2000015	2721615-13	SLOT GUIDE	1
42A	2510027	2721615-14	CHECK VALVE KIT (.031")	1
42B	2510050	2721615-15	CHECK VALVE KIT (BLANK)	1
44	*70403	2721615-16	CHARGE RELIEF VALVE KIT	1
	^70402	4163316-04	CHARGE RELIEF VALVE KIT	1
49	2513043	2721615-17	TRUNNION SEAL/RETAINER 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

36" EC SIDE DISCHARGE DECK

EC
Hydro
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FIGURE 14



EC Hydro Midsize

36" EC SIDE DISCHARGE DECK

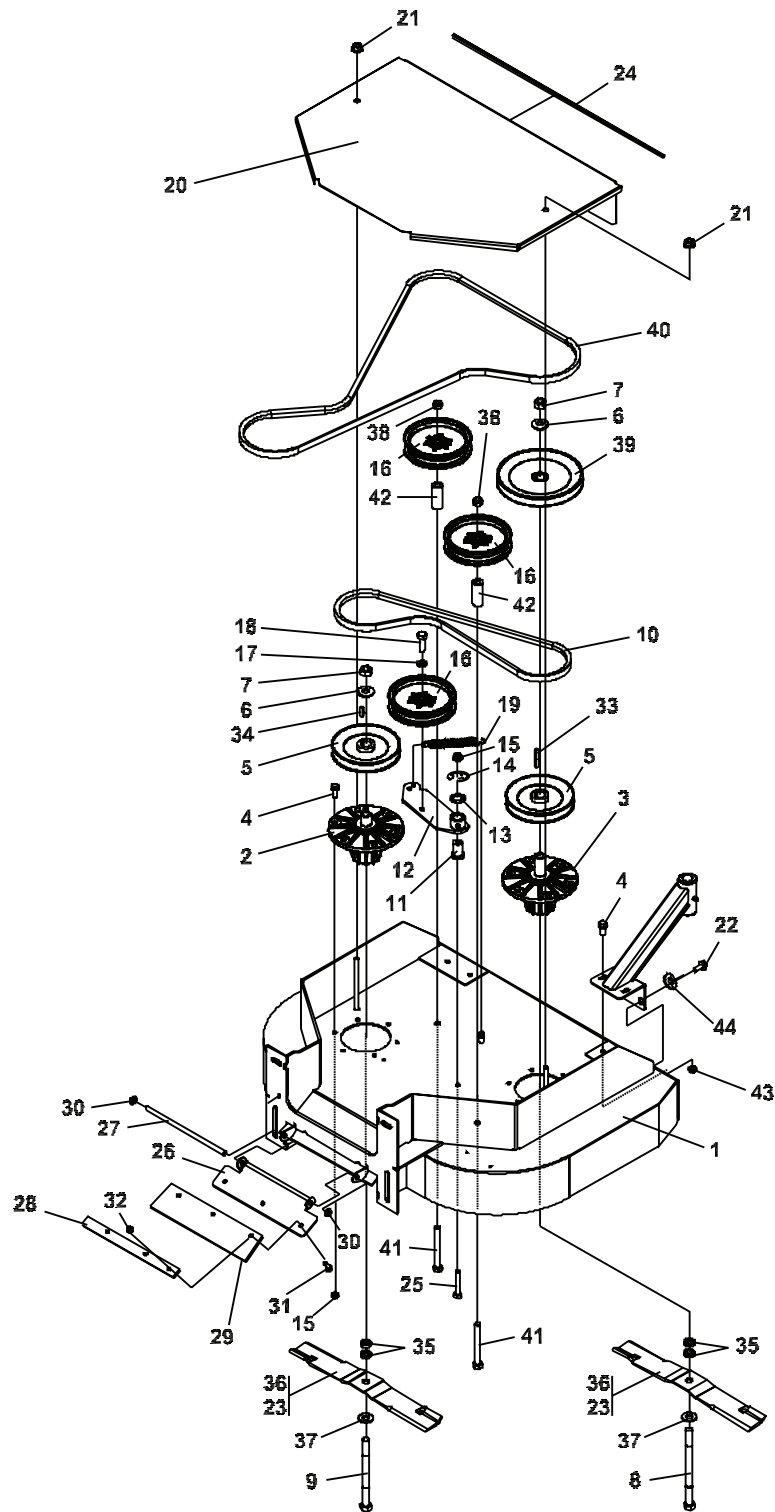
FIGURE 14

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	112243-02	BLADE 18.00 OFFST	2	41	64164-12	KEY-1/4X1/4X1 SQ END	1
2	128169	PULLEY, IDLER 5.50	1	42	64164-13	1/4X1/4X2 SQ KEY	1
3	4163871.7	WLDMT-DECK IDLER	1	43	64209-03	SPRING WASHER.67 ID	2
4	2306029	S CASTER SUPPORT	2	44	64215-12	RIVET-POP IFI #86	7
5	2308140	PULLEY-ENGINE	2	45	64221-04	E-RING.875	1
6	2721097	S-ASSY SPNDL 6 LNG	1	46	64229-03	LOCKNUT-NYLON 3/8-16	16
7	2721323	S-ASSY SPNDL 6 SHRT	1	47	64262-012	BLT-FLG HD 3/8-16 X 1-1/4	12
8	2721477	BELT-HB 56.75	1	48	64268-03	NUT-FL NYLON LOCK 3/8-16	3
9	2721478	BELT-HB 85.25	1	49	2722543-02	BLADE-18.00 ELIMINATOR	2
10	2721485	SPACER-IDLER	1		(OPTIONAL)		
11	2722161	PULLEY-6.75 EOD	1	50	108074-17	S-CHANNEL FLEX TRIM 26"	1
12	64123-77	BLT-HEX 5/8-18X8 1/2	1	51	64139-24	BLT-FLG HD 3/8-16 X 1	2
13	64123-265	BLT-HEX HD 5/18-18X7 1/2	1	52	64123-89	BLT-HEX 1/4-20X3/4	1
14	38219	SPRING-TENSION	1	53	64141-2	NUT-WLF 1/4-20	1
15	4115420.7	GUIDE-BELT	1				
16	4115424	SPCR-10.31 X 25.4 X 12.0	1				
17	4115864.7	BAFFLE-DISCHARGE	1				
18	4116661	PIN-PIVOT	1				
19	4119062.2	BRKT-EC FRONT DECK, RH	1				
20	4119063.2	BRKT-EC FRONT DECK, LH	1				
21	4119064.2	COVER-BELT, 36 FIXED	1				
22	4147115	CHUTE-DECK, 32-54 SD	1				
23	2722543-02	BLADE-18.00 ELIMINATOR	2				
24	4165130.7	BRKT-CHUTE SUPPORT EC	1				
25	4127209	S-36 DECK SD W/LABS EC	1				
26	4135265	PULLEY-V IDLER	1				
27	64006-05	LOCKWSHR-HELICAL 1/2	1				
28	64018-3	BOLT-3/8-16X1 CARRIAGE	1				
29	64025-16	NUT-HEX 5/8-18	2				
30	64123-05	BLT-HEX 1/2-20X1-1/2	1				
31	64123-173	BLT-HEX 3/8-16X4-1/2	1				
32	64123-50	BOLT-HEX 3/8-16X1	5				
33	64123-88	BOLT, 3/8-16X2-3/4 HEX	1				
34	64262-010	BLT-FLG HD 3/8-16 X 3/4	8				
35	64268-03	NUT-FL NYLON LOCK 3/8-16	5				
36	64141-4	NUT-WLF 3/8-16	8				
37	64163-12	.635/.640X1.0X.25 WASH	4				
38	64163-16	WASHER-41/64 X 1, 3/8 X 12	2				
39	64163-31	WASHER, 25/64X1X12	1				
40	64163-65	WASHER-.890X1.375X18	1				

36" EC REAR DICHARGE DECK

EC
Hydro
Midsize

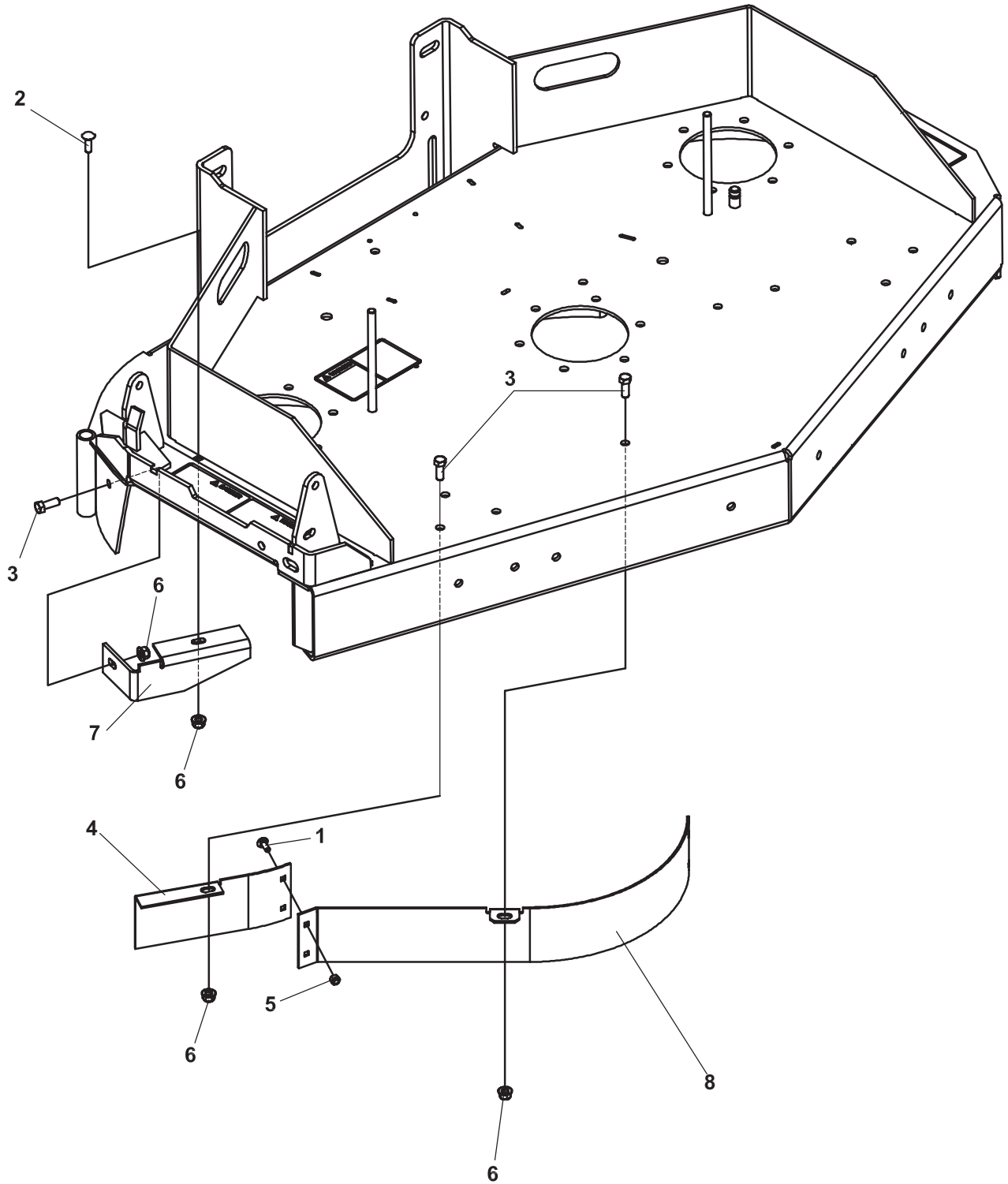
FIGURE 15



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	4166116	S-36 DECK RD W/LABS EC	1	36	112243-02	BLADE 18.00 OFFST LLFT	2
2	2721323	ASSY-SPINDLE SHORT (SEE FIGURE 5 FOR COMPONENTS)	1	37	64163-16	WASHER	2
3	2721097	ASSY-SPINDLE LONG (SEE FIGURE 5 FOR COMPONENTS)	1	38	64229-05	LOCKNUT, 1/2-13 NYLON	2
4	64262-012	BLT-FLGHD 3/8-16X1-1/4	16	39	2722161	PULLEY-6.75 EOD	1
5	2308140	PULLEY-ENGINE	2	40	2720815	BELT-PTO 48	1
6	64209-03	SPRING WASHER 0.67 ID	2	41	64123-74	BLT-HEX 1/2-13 X 4-1/2	2
7	64025-16	NUT-HEX 5/8-18	2	42	4115379	SPACER	2
8	64123-77	BLT-HEX 5/8-18X8 1/2	1	43	64141-4	NUT-WLF 3/8-16	4
9	64123-265	BLT-HEX HD 5/18-18X7 1/2	1	44	64163-31	WSHR 25/64X1X12	2
10	2721477	BELT-HB 56.75	1	45*	64268-03	NUT-FL NYLON LOCK 3/8-16 2	
11	4116661	PIN-PIVOT	1				
12	4163871.7	WLDMT-DECK IDLER	1				
13	64163-65	WSHR.890 X 1.375 X 18GA	1				
14	64221-04	E-RING.875	1				
15	64229-03	LOCKNUT-NYLON 3/8-16	13				
16	128169	PULLEY, IDLER 5.50	3				
17	64006-05	LOCKWSHR-HELICAL 1/2	1				
18	64123-05	BLT-HEX 1/2-20X1-1/2	1				
19	38219	SPRING-TENSION	1				
20	4114377.2	COVER-BELT 36RD	1				
21	64268-03	NUT-FL NYLON LOCK 3/8-16 2	2				
22	64123-15	BLT-HEX 3/8-16X3/4	2				
23	2722543-02	BLADE-18.00 ELIMINATOR (OPTIONAL)	2				
24	108074-17	S-CHANNEL FLEX TRIM 27" (108074-17 IS A SERVICE LENGTH OF 38.6")	1				
25	64123-88	BLT-HEX HP 3/8-16X2 3/4	1				
26	4114466.2	DEFLECTOR 36RD	1				
27	4114464	ROD-HINGE 36RD	1				
28	4114476.2	RETAINER-FLAP	1				
29	4114465	FLAP-DEFLECTOR 36RD	1				
30	64175-04	PUSHNUT 3/8 DIA	2				
31	64018-15	BLT-CRG 5/16-18 X 1	3				
32	64229-02	LOCKNUT-NYLON 5/16-18	3				
33	64164-13	1/4X1/4X2 SQ KEY	1				
34	64164-12	KEY-1/4X1/4X1 SQ END	1				
35	64163-12	.635/.640X1.0X.25 WASH	4				

*** NOT ILLUSTRATED**

FIGURE 16



EC Hydro Midsize

BAFFLES

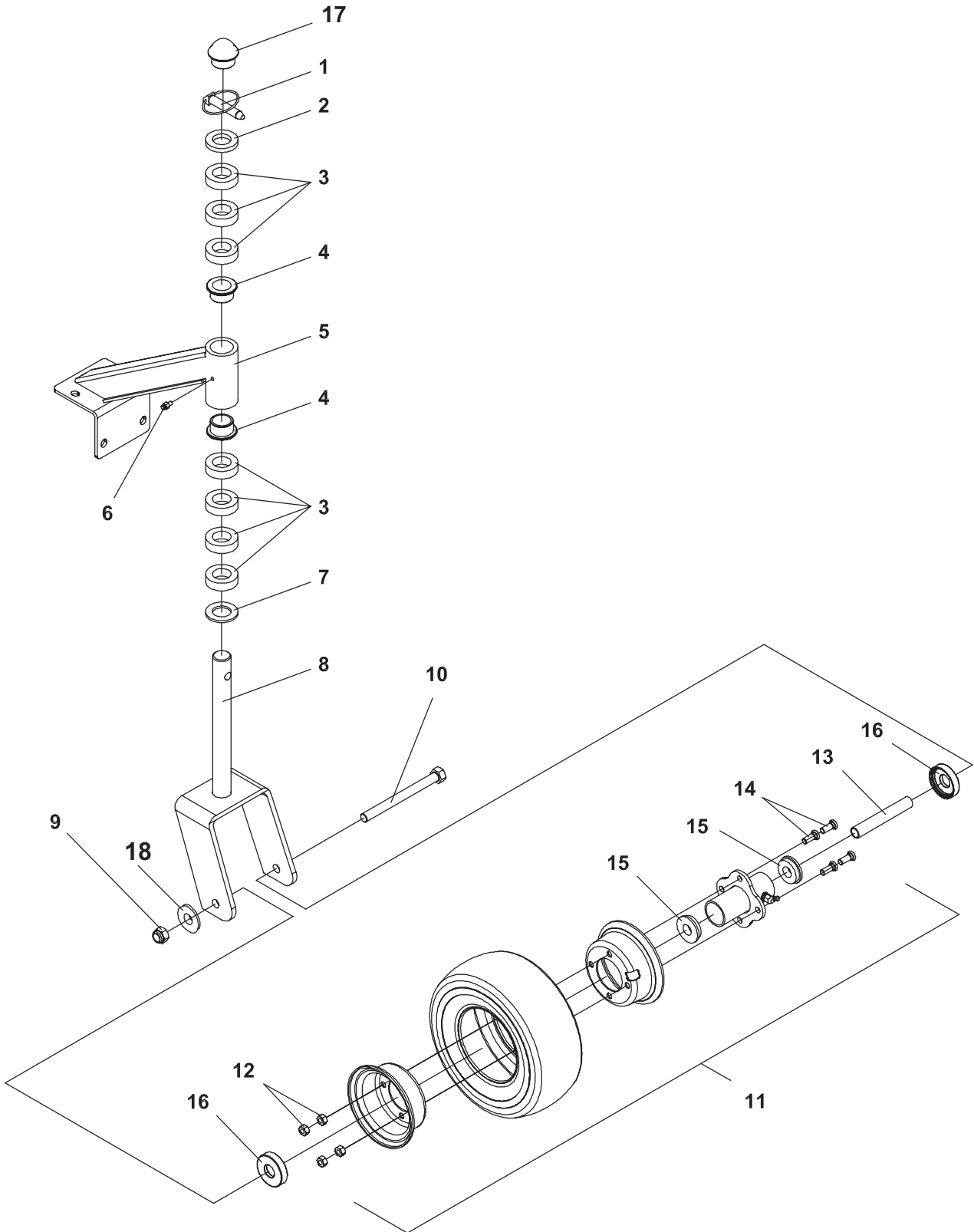
FIGURE 16

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	64018-2	BLT-CRG 1/4-20X3/4	2				
2	64018-3	BLT-CRG 3/8-16X1	1				
3	64123-50	BOLT-HEX 3/8-16X1	5				
4	4134343.7	BAFFLE-RIGHT FRONT	1				
5	64229-01	LOCKNUT-1/4-20 NYLON	2				
6	64268-03	NUT-FL NYLON LOCK 3/8-16	6				
7	4115864.7	BAFFLE-DISCHARGE	1				
8	4147035.7	BAFFLE-FRONT DECK	1				

CASTER ASSY

EC
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FIGURE 17



EC Hydro Midsize

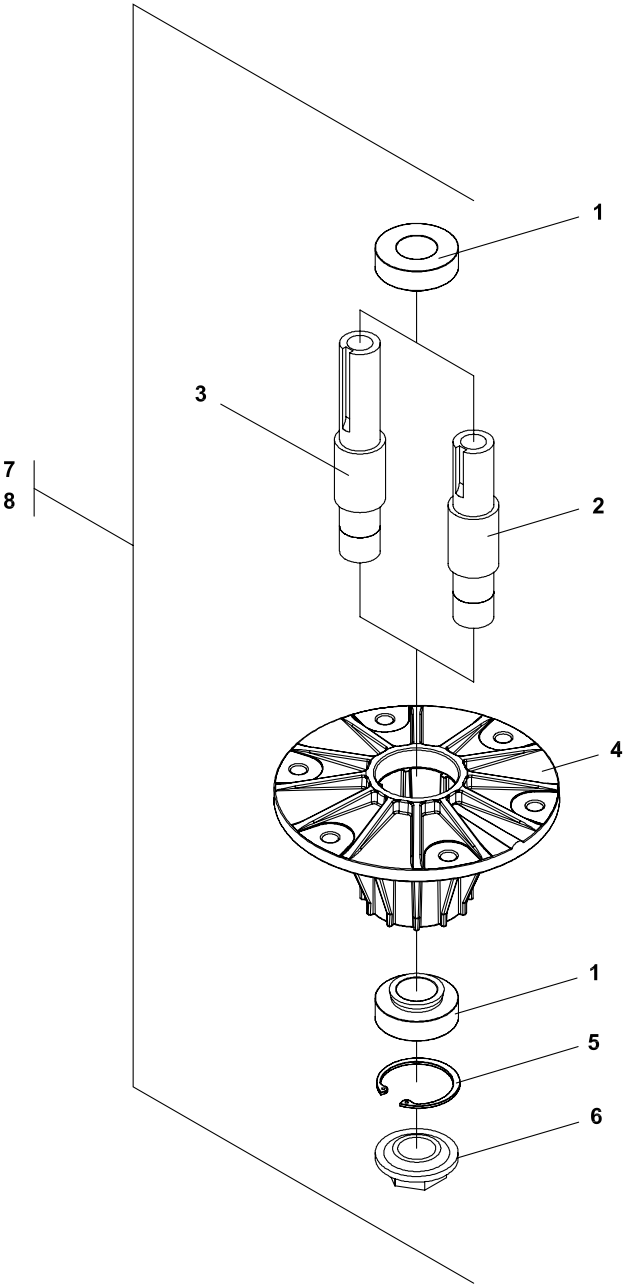
CASTER ASSY

FIGURE 17

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
	4115465	ASSY-CASTER 9IN EC	2				
		(INCLUDES ITEMS 1-3, 7-11 & 13 QTYs LISTED)					
		(NOTE 2 ASSYS REQUIRED PER MACHINE)					
1	64173-04	QUICK PIN	1				
2	64163-07	1-1/32X1-3/4X1/4 WASH	1				
3	64163-22	1-1/32X1-3/4X1/2 WASHR	7				
4	4129801	BUSHING-FLANGED	2				
5	2306029	S CASTER SUPPORT	1				
		(INCLUDES ITEMS 4 & 6, QTYs LISTED)					
6	85010N	ZERK GREASE FITTING	1				
7	64163-84	WSHR-1.015 X 1.75 X .125	1				
8	2721484.7	WLDMT-CASTER YOKE	1				
9	64229-05	LOCKNUT-NYLON 1/2-13	1				
10	64123-166	BLT-HEX 1/2-13X5-1/2	1				
11	4165543	WHEEL-ASSY,9X3.5-4 NO FLAT	1				
		(CONTAINS ITEM 15)					
12	64141-1	NUT-WLF 5/16-24	4				
13	2722230-04	SPANNER	1				
14	64123-01	BLT-HEX 5/16-24X3/4	4				
15	2722682	BEARING-9" WHEEL	2				
16	2722591	SPACER-3/4 INCH BRG	2				
17	4137004	END-CAP	1				
18	64251-005	WSHR-M12	1				

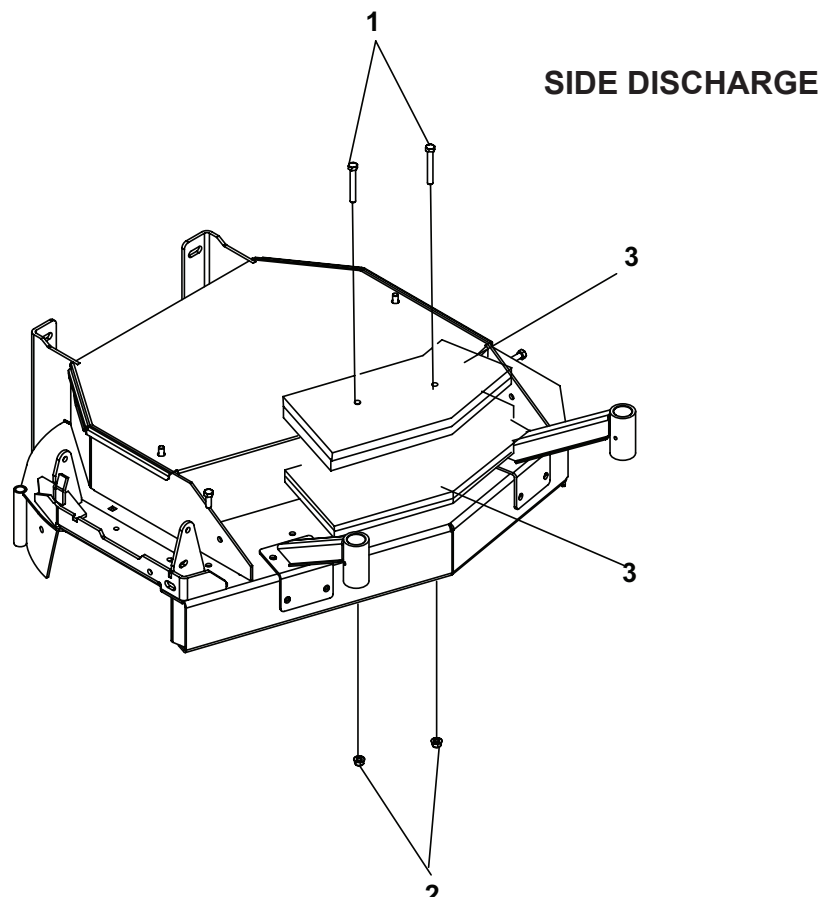
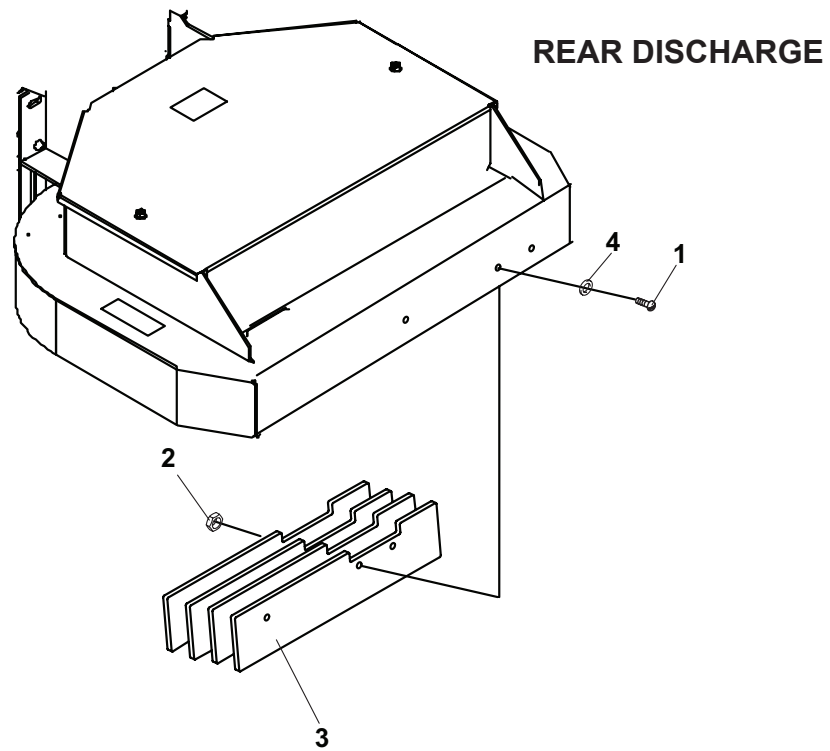
* NOT ILLUSTRATED

FIGURE 18



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	38348-01	BEARING-SPINDLE SEALED	2				
2	33179-02	SPINDLE-SHORT (USED IN ITEM 8)	1				
3	33179-01	SPINDLE-LONG (USED IN ITEM 7)	1				
4	2721096	HOUSING-SPINDLE 6 HOLE	1				
5	64144-38	SNAP-RING	1				
6	38315	NUT-SPINDLE	1				
7	2721097	ASSY-SPINDLE LONG (INCLUDES ITEMS 1, 3, 4-6)	1				
8	2721323	ASSY-SPINDLE SHORT (INCLUDES ITEMS 1, 2, 4-6)	1				

FIGURE 19



EC Hydro Midsize

WEIGHTS

FIGURE 19

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	64123-79	BOLT, 3/8-16X3 1/4HEX (QTY 2 USED ON SIDE DISCHARGE) (QTY 3 USED ON REAR DISCHARGE)					
2	64268-03	NUT-FLG LOCK 3/8-1 (QTY 2 USED ON SIDE DISCHARGE) (QTY 3 USED ON REAR DISCHARGE)					
3	4163960.7	COVER-36 SD WEIGHT (USED ON SIDE DISCHARGE ONLY)	6				
	4165716.7	COVER-36 RD WEIGHT (USED ON REAR DISCHARGE ONLY)	4				
4	64163-31	WASHER, 25/64X1X12 (USED ON REAR DISCHARGE ONLY)	3				

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