

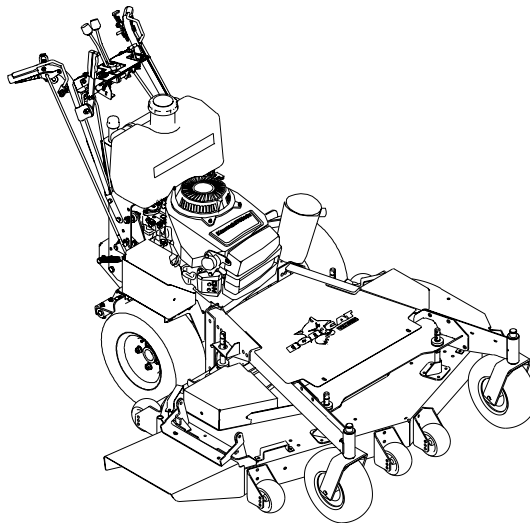


BOB-CAT[®]

SETUP, PARTS & MAINTENANCE MANUAL HYDRO MIDSIZE

Power Unit Models:

930322 Power Unit 15HP Kawasaki Hydro
930323 Power Unit 17HP Kawasaki Hydro
930324 Power Unit 21HP Kawasaki Hydro ES
930328 Power Unit 17HP Kawasaki Hydro ES
(Operation & Safety Manual: 2721733)



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.

BOB-CAT

TEXTRON

GOLF, TURF & SPECIALTY PRODUCTS

2721734 REV C

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.



IMPORTANT MESSAGE

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

Bob-Cat 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
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.

Textron Golf, Turf & Specialty Products strongly warns against, rejects and disclaims any modifications, add-on accessories or product alterations that are not designed, developed, tested and approved by Textron Golf, Turf & Specialty Products Engineering Department. Any Textron Golf, Turf & Specialty Products 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 Textron Golf, Turf & Specialty Products—will result in the Textron Golf, Turf & Specialty Products 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 Textron Golf, Turf & Specialty Products will be considered the responsibility of the individual(s) or company designing and/or making such changes. Textron Golf, Turf & Specialty Products 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 Textron Golf, Turf & Specialty Products 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



SERIAL TAG

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

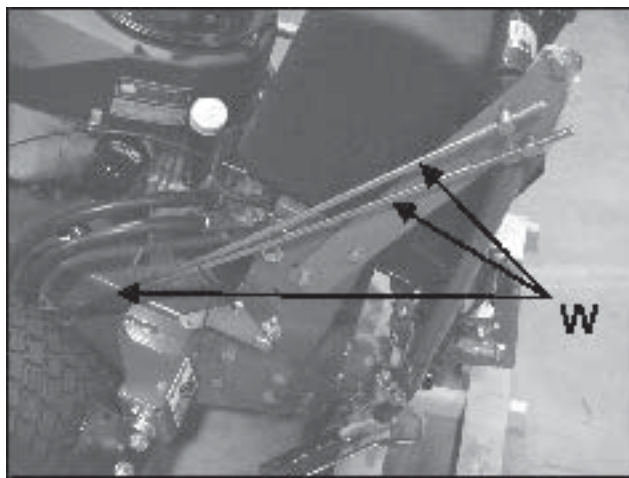
SERIAL NUMBER: This number appears only on your mower. It contains the model number followed consecutively by the serial number. Use this number when ordering parts or seeking warranty information.



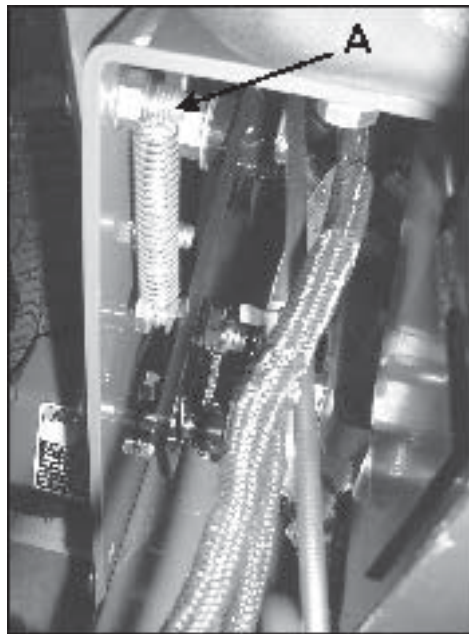
GENERAL NOTE: FRONT, REAR, RIGHT HAND AND LEFT HAND REFERENCES BELOW ARE WITH RESPECT TO AN OPERATOR AT THE CONTROLS.

1. UNCRATE - Place both power unit and cutterdeck crates on a level surface. Remove sides and top from both the power unit and cutterdeck crates.

2. Remove three rods **W** on left and two rods **W** on the right from the upper handle shipping bracket and set them aside for later use.

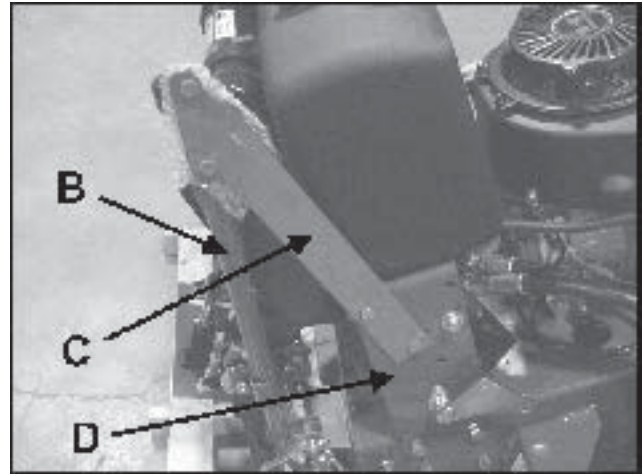


3. Remove spring from bolt **A**. Repeat for other side.

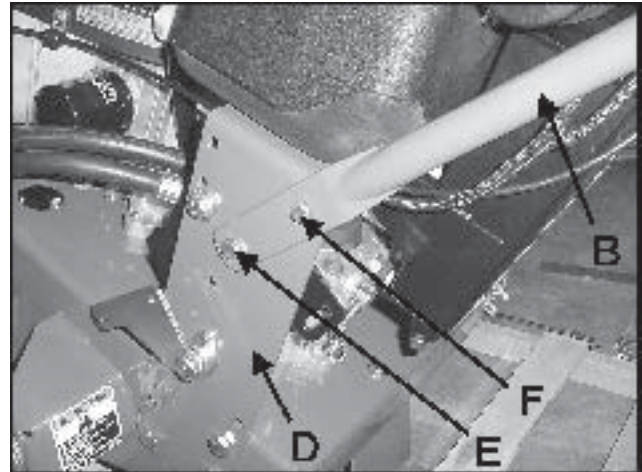




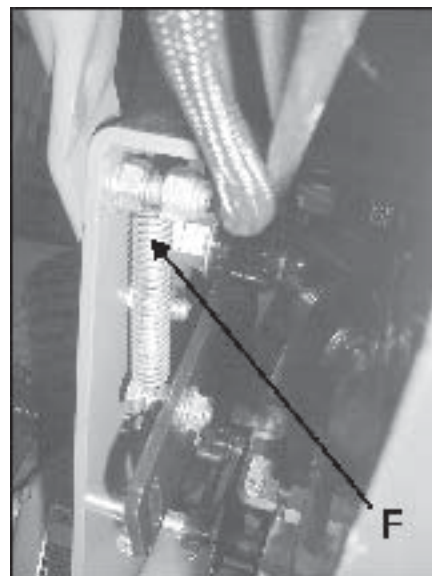
4. Unbolt upper handle **B** from shipping bracket **C**.
Unbolt shipping bracket **C** from lower handle **D**.
Retain fasteners removed for later use.



5. Bolt upper handle **B** to lower handle **D** with
(2) 3/8-16 X 1" bolts and nuts at location **E** using
fasteners removed in the previous step and
(2) 3/8-16 X 1-1/2" bolts and nuts at location **F**.

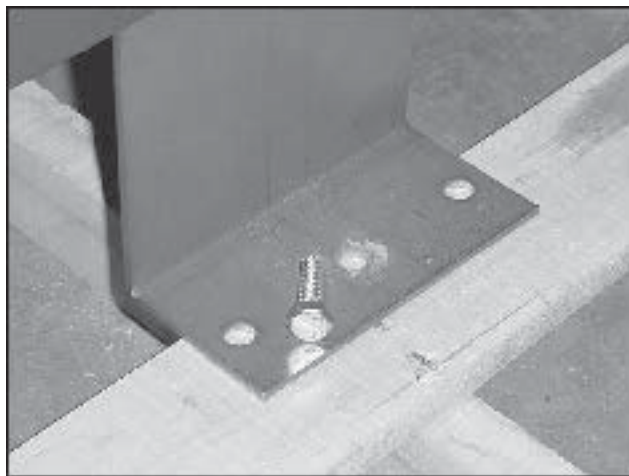


6. Reinstall spring **F** to bolt on both sides. Install
3/8-16 nylon locknut to end of bolt on both sides
as shown.

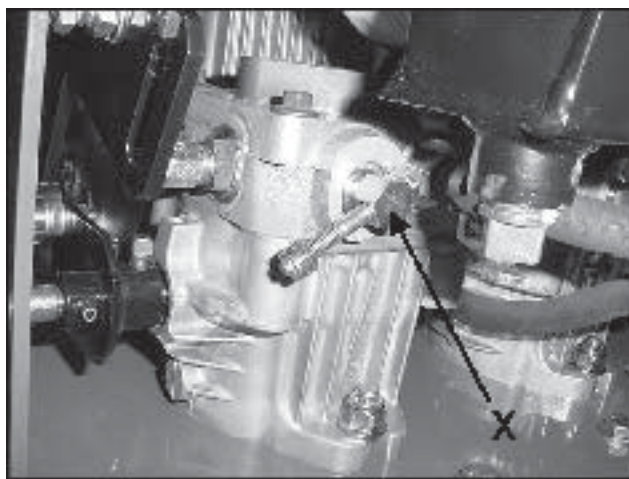




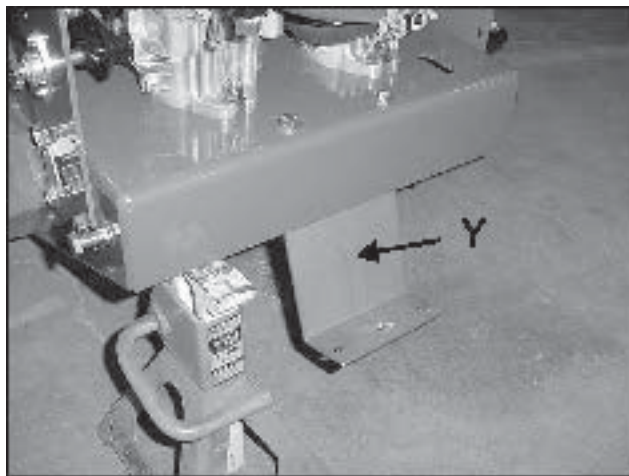
7. Unbolt shipping bracket from crate.



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

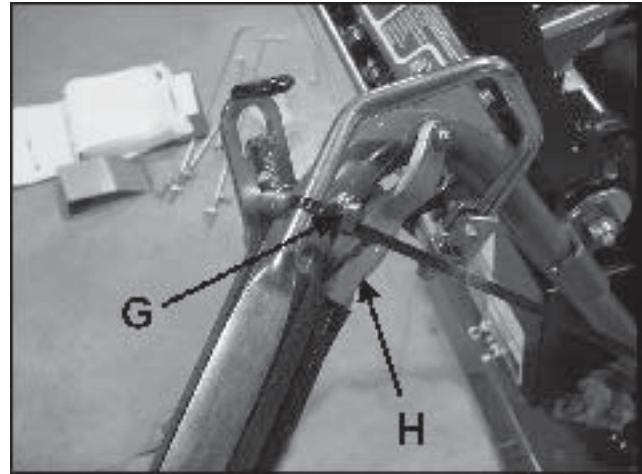


9. Remove the power unit from the crate and support the rear of the power unit with a jack stand.
10. Unbolt shipping bracket **Y** from power unit and discard.

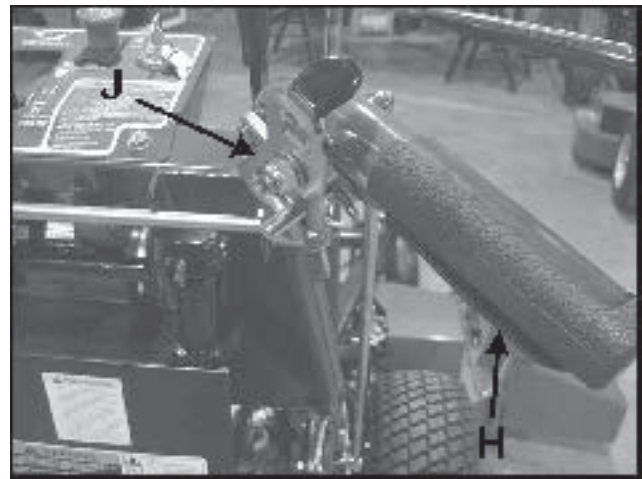




11. Cut and remove tie wrap **G** from the traction control lever **H**.

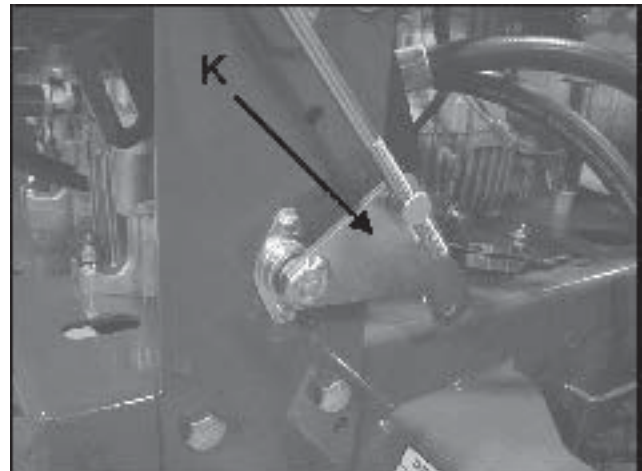


12. Locate the two longest rods removed in Step 2. Install the two traction control rods through the traction control lever **H**, flatwasher and traction lock **J** and secure with hairpin. Repeat on other side of upper handle.



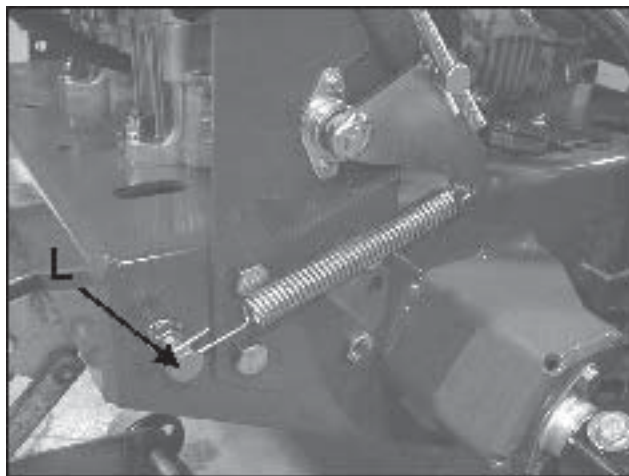
13. With the traction locks **J** in the neutral position, apply tension to the traction control rod to remove any slack and align swivel on traction control rod with the hole in pump arm **K**. Repeat for other side.

NOTE: The pump arm has some rotational play. Adjust the swivel on the traction control rod to the center of this play and secure to the pump arm with a flatwasher and hairpin as shown.

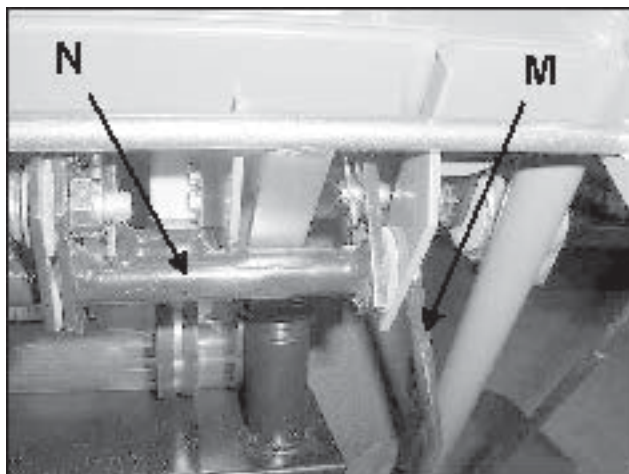




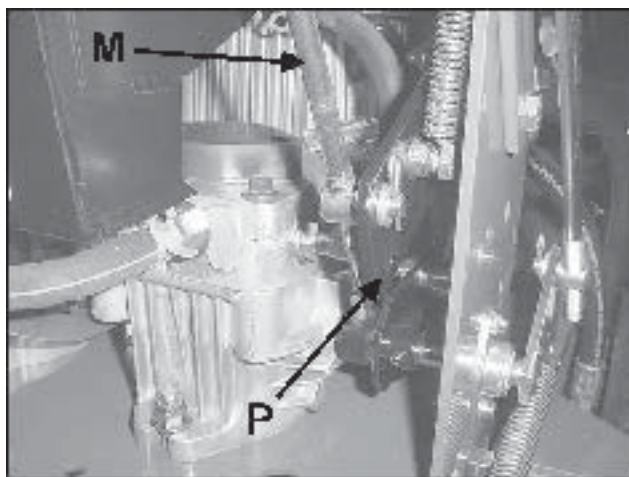
14. Attach spring to pump arm and then to bolt **L**. Repeat for other side.



15. Connect speed control rod **M** to the speed control levers **N** and secure with hairpin. Repeat for other side.

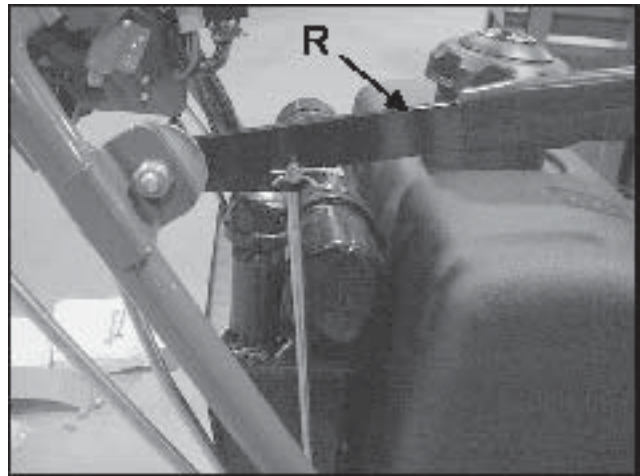
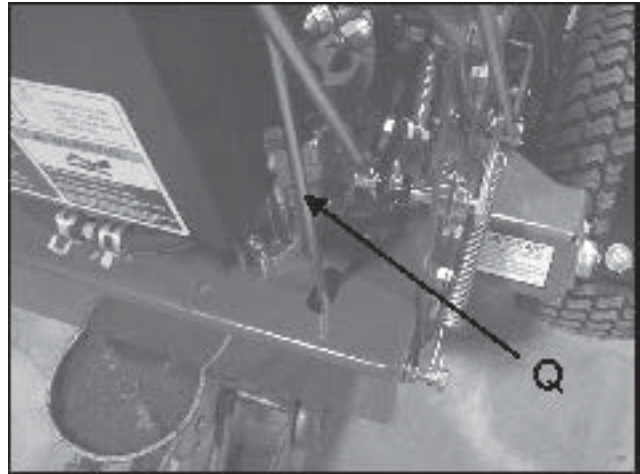


16. Set the speed control levers to neutral and adjust the swivel on the lower end of the speed control rod **M** so they engage the very top of the slot on the neutral plates **P** and secure with flatwasher and hairpin as shown. Repeat for other side.

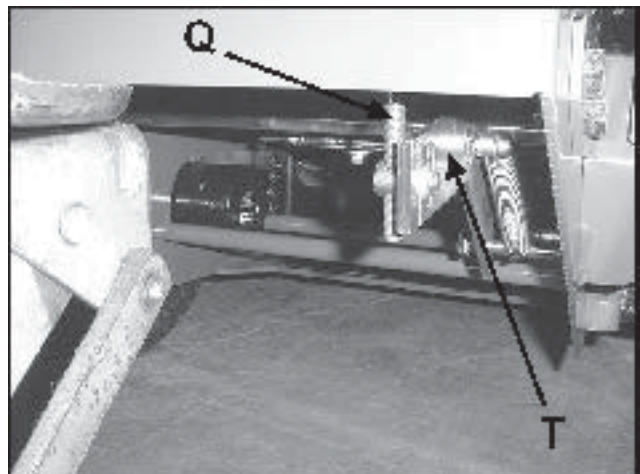




17. Insert threaded end of brake rod **Q** through the slot on the engine deck and attach the other end to the brake control arm **R** and secure in place with hairpin as shown.

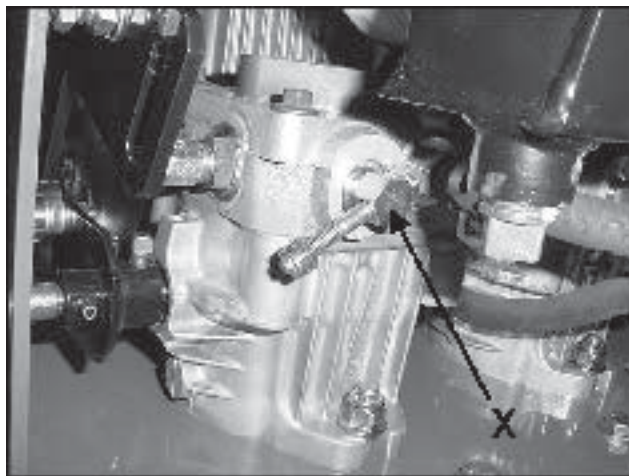


18. Connect swivel on threaded end of brake rod **Q** to the brake arm **T** and secure in place with flatwasher and hairpin as shown. Adjust swivel to provide adequate braking when the brake control arm **R** is engaged. See adjustment section of this manual.



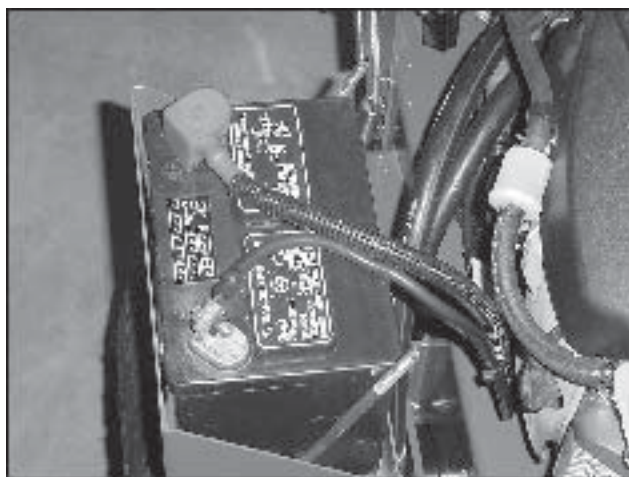


19. Close bypass valve **X** by rotating clockwise until firmly seated.



20. On Electric Start Models Only

Remove the battery cover and the battery from the machine. Fill the battery to the bottom of the vent wells with electrolyte and trickle charge for several hours. Replace the battery in the machine and make the connections, red to positive first, then black (ground) to negative. Install battery cover and secure with previously removed nuts.



	<p>WARNING</p> <p>SPARKS OR FLAME CAN START EXPLOSION. DISCONNECT (-)NEGATIVE TERMINAL FIRST. RECONNECT (-)NEGATIVE TERMINAL LAST.</p> <p>2000590</p>
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21. Attach cutterdeck per the instructions on the following pages then return to Step 22 of this section.

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

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

▲ WARNING GASOLINE IS HIGHLY FLAMMABLE!

- Fill fuel tank with good quality, clean, regular unleaded 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

24. Check oil level in hydraulic oil reservoir and adjust as necessary.

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

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

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.

▲ WARNING

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



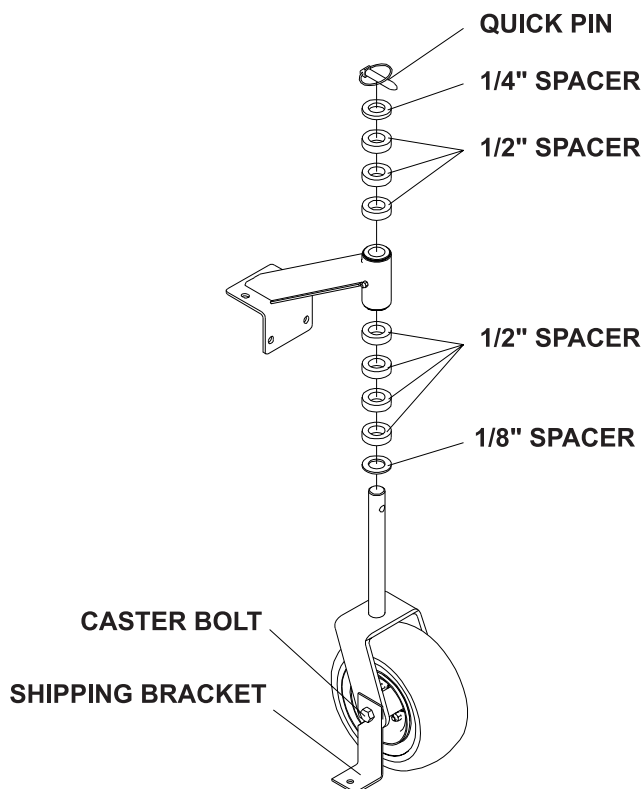
CUTTERDECK ATTACHMENT: Two types of cutterdeck mounting systems are available, fixed and floating. Fixed mounting rigidly attaches the cutterdeck to the power unit. Floating mounting allows the cutterdeck to move independent of the power unit providing a more uniform cut. Follow the appropriate instructions below for the type of cutterdeck being attached to the power unit.

FIXED CUTTERDECK ATTACHMENT

1. Remove the cutterdeck from the crate.
2. Unbolt the caster wheels and the shipping brackets from the crate.
3. Remove the shipping bracket from the caster wheel by loosening the caster bolt and sliding the shipping bracket off and retighten caster bolt.
4. Remove quick pin and remove the appropriate number of spacers for the desired height of cut. See height of cut chart below.

NOTE: Height of cut chart is also located on bottom of belt cover or in the Operation & Safety Manual.

5. Repeat for other caster wheel assembly.



CUTTING HEIGHT		A (1/8") B (1/4") C (1/2")			DECK PIN POSITION		4109861 NUMBER OF SPACERS BETWEEN SPINDLE AND BLADE (1/4" THICK)
IN	MM	A	B	C			
1.375	35	1	0	1	5		2
1.625	41	1	0	1	5		1
1.875	48	1	0	1	5		0
2.125	54	1	1	2	4		2
2.375	60	1	1	2	4		1
2.625	67	1	1	2	4		0
2.875	73	1	0	4	3		2
3.125	79	1	0	4	3		1
3.375	86	1	0	4	3		0
3.625	92	1	1	5	2		2
3.875	98	1	1	5	2		1
4.125	105	1	1	5	2		0
4.375	111	1	0	7	1		2
4.625	118	1	0	7	1		1

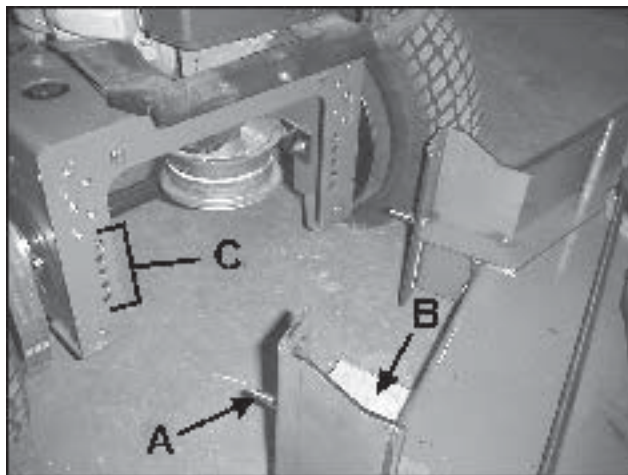
ASSEMBLY/SET-UP INSTRUCTIONS

Hydro
Midsize

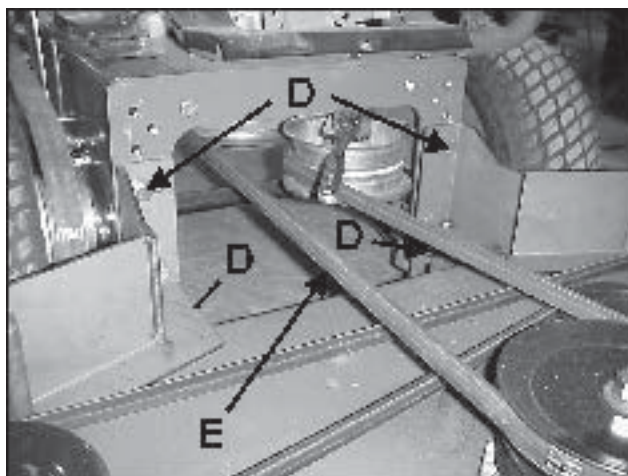


6. Remove belt cover and set aside.
7. Block the rear of the cutterdeck with the appropriate height block for the desired height of cut **B**. See Support Block Chart below.

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.		



8. Position the power unit behind the cutterdeck.
9. Move the power unit towards the cutterdeck until the guide pins **A** engage the appropriate hole **C** on the power unit for the desired height of cut. Fasten with (4) M12-1.75 X 30 bolts at **D**.
10. Loop the PTO belt **E** around the electric clutch pulley. Using a 3/8" ratchet wrench or 3/8" breaker bar rotate the PTO belt idler while looping the PTO belt around the cutterdeck pulley.



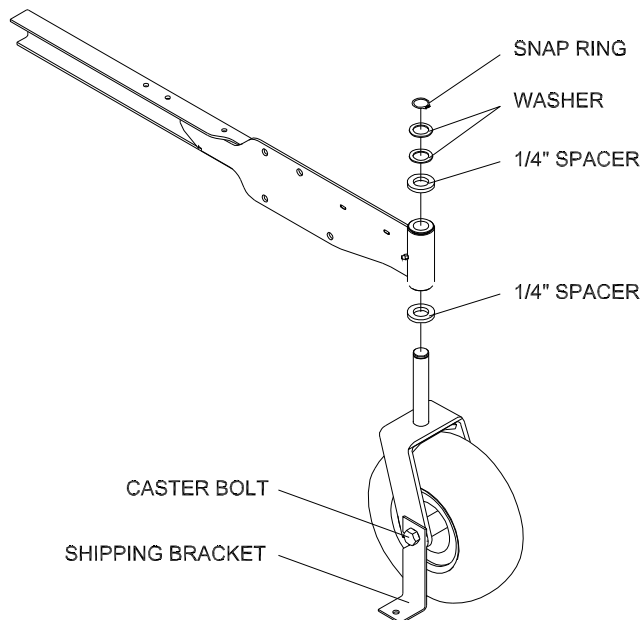
11. Reinstall belt cover and fasten in place with knobs **F**.
12. Remove support block from the rear of cutterdeck.
13. Remove support from the rear of the power unit.



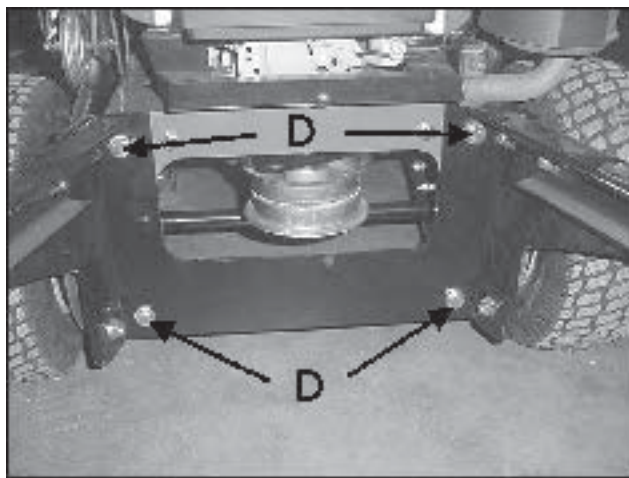
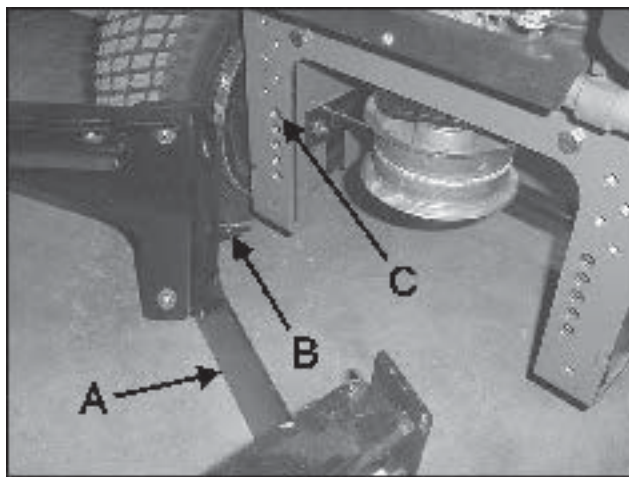


FLOATING CUTTERDECK ATTACHMENT

1. Unbolt the caster wheels and the shipping brackets from the crate.
2. Remove the shipping bracket from the caster wheel by loosening the caster bolt and sliding the shipping bracket off and retighten caster bolt.
3. Remove snap ring, (2) washers and (1) 1/4" spacer from one caster wheel assembly.
4. Insert caster yoke through cradle bushing from the bottom up and place (2) washers and (1) 1/4" spacer removed in Step 3 back onto the shaft above the cradle bushing and secure using the snap ring removed in Step 3 as shown.
5. Repeat for other caster wheel assembly.



6. Remove belt cover from cutterdeck cradle.
7. Remove the cutterdeck cradle **A** from the crate and insert guide pins **B** into top hole **C** in power unit.
8. Attach cutterdeck cradle to power unit using (4) M12-1.75 X 35 bolts at **D** and tighten securely.
9. Remove support from rear of power unit.



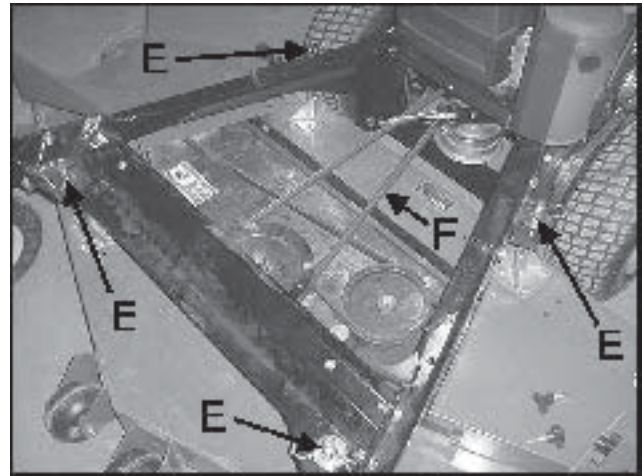


10. Position power unit behind the crate and cutterdeck.
11. With the cradle raised above the cutterdeck, roll the front of the cradle and power unit up and over the cutterdeck and crate.
12. Align height of cut pins **E** on cutterdeck with the bushings on the cradle and lower the cradle so pins pass through bushings.

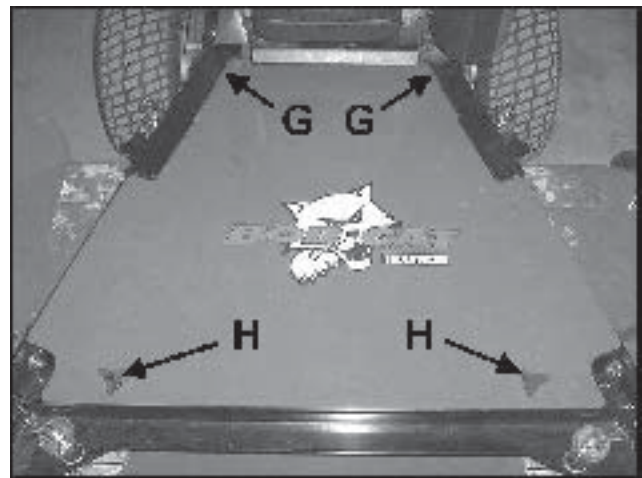
13. Install washers and hairpins through the height of cut pins at the appropriate hole for the desired height of cut.

NOTE: Height of cut chart is located under the belt cover on the cutterdeck or in the Operation & Safety Manual.

14. Loop the PTO belt **F** around the electric clutch pulley. Using a 3/8" ratchet wrench or 3/8" breaker bar rotate the PTO belt idler while looping the PTO belt around the cutterdeck pulley.



15. Install belt cover by inserting tabs at the rear of the belt cover underneath the side rails at **G** and fasten with knobs **H**.



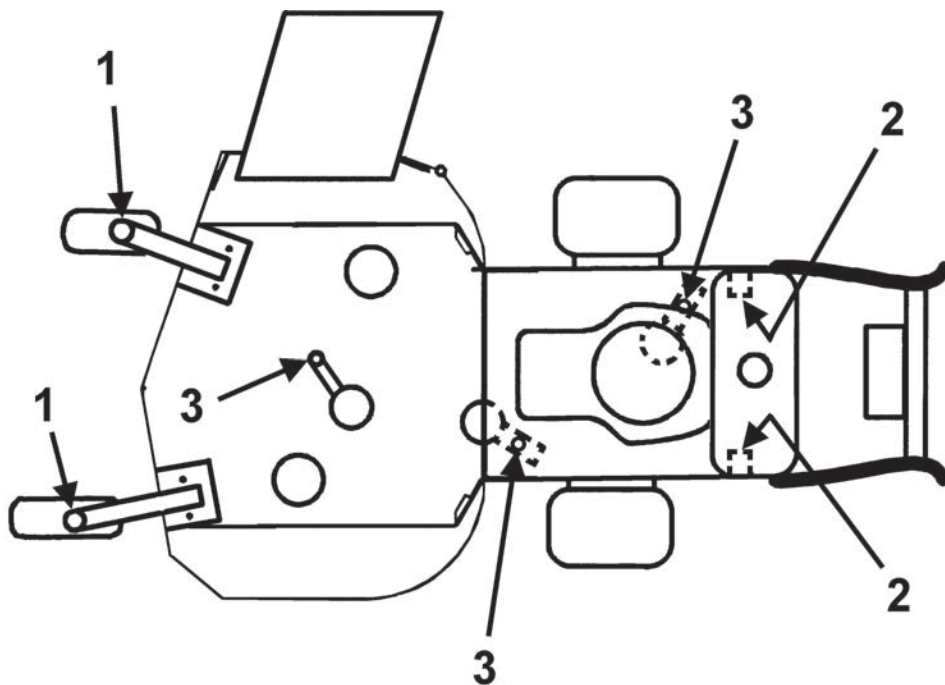


MACHINE LUBRICATION

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

DAILY

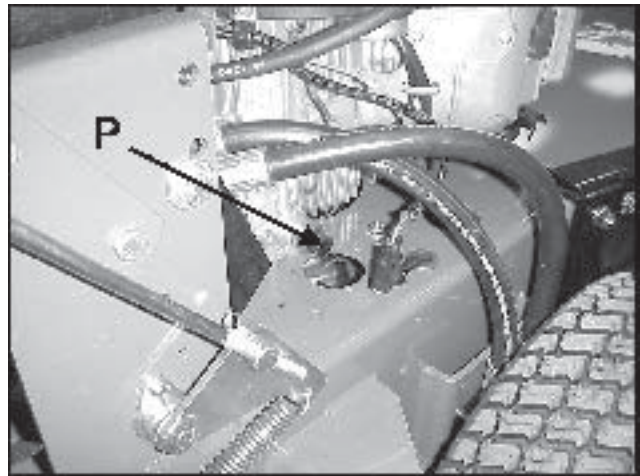
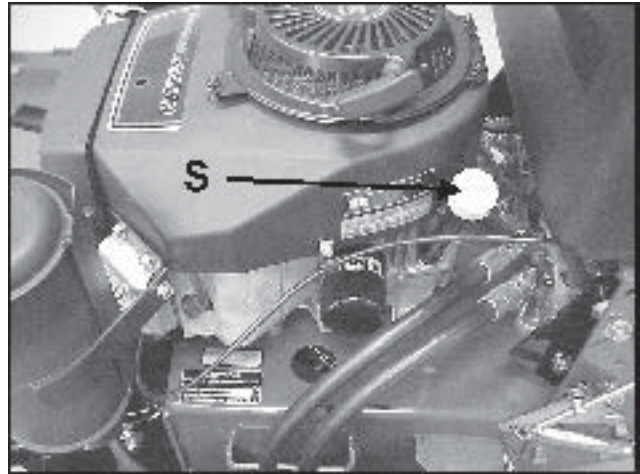
Remove the dipstick **S** and check that the oil level reaches the full mark. If necessary, top off with fresh oil. To obtain the correct oil level, the machine must be level. See engine manufacturer's manual for proper oil viscosity and grade.
DO NOT OVER FILL!

AFTER THE FIRST 5 WORKING HOURS

While the engine is warm, remove the drain plug **P** and drain the crankcase. Replace oil filter. Clean and replace the plug. Fill the crankcase through the filler hole with fresh oil to the full mark. See engine manufacturers manuals for oil and filter change intervals.

Engine operator's manuals are shipped with each machine. Shop manuals for the engines are available from your local engine dealer/distributor.

- For Kawasaki FH641V, order: 99924-2045-03.
- For Kawasaki FH500V, order: 99924-2045-03.
- For Kawasaki FH451V, order: 99924-2045-03.





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

Engine (daily)

Check the engine for oil leaks.

Cooling Fins and Air Intake screen (daily)

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

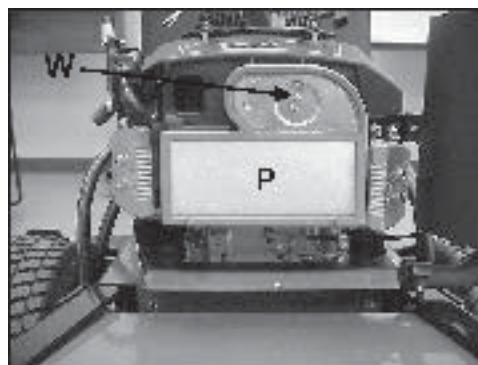
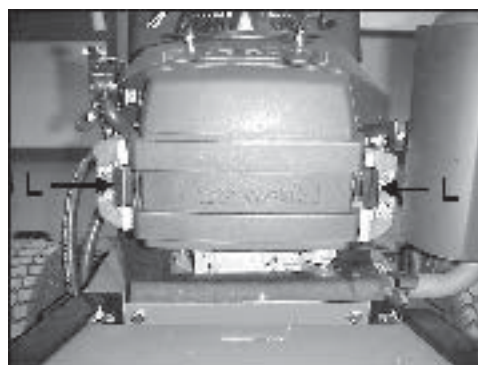
Air Cleaner (every 25 hours)

Service more frequently if operating in very dusty or dry conditions. Extensive damage will result from operating with a dirty air cleaner.

1. Remove the air cleaner cover by releasing latches **L**.
2. Remove the foam precleaner **P** by sliding it off the paper cartridge. Wash in kerosene or detergent and water. Dry thoroughly. Saturate in engine oil. Squeeze to remove excess oil.
3. Reinstall all parts.

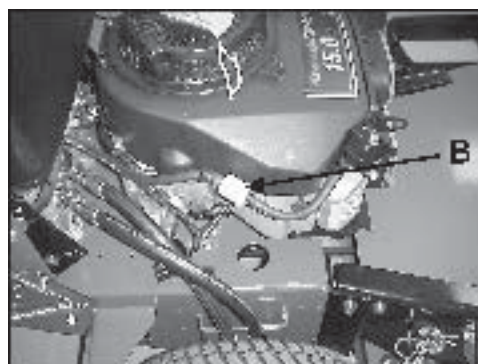
NOTES:

- Every 50 hours remove the paper element by loosening wing nut **W**. If dirty, replace.
- DO NOT use petroleum solvents to clean the paper element. They may cause it to deteriorate.
- DO NOT use pressurized air to clean or dry element.
- See the Setup, Parts & Maintenance manual for service part numbers.



In-Line Fuel Filter

When required, the fuel filter **B** may be replaced. See the Setup, Parts & Maintenance manual for service part numbers.





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

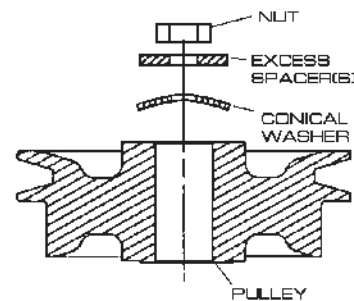
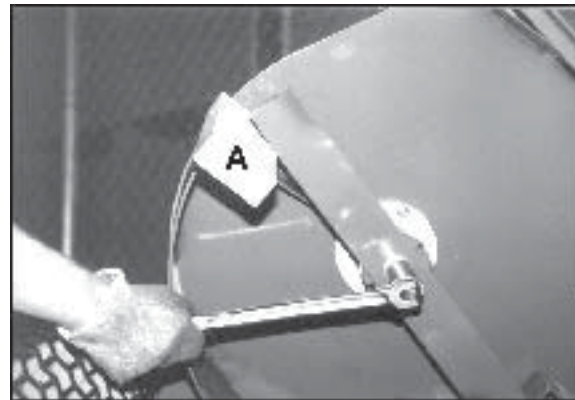
BLADE REMOVAL

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.
6. Follow these instructions to prevent injury when bolt releases.

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.



Cutterdeck Pulley Assembly

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.

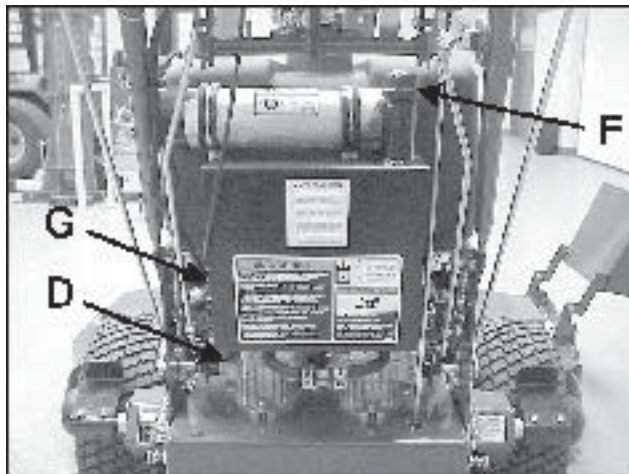


HYDRAULIC RESERVOIR CHECK, DRAIN AND FILL

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**.



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 RESEVOIR						
Check Oil Level					X	
MACHINE						
Check Tire Pressures		X				
Check Belt Tensions	CHECK AFTER FIRST 1/2 HR AND AFTER FIRST 4 HRS			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 run 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.

ADJUSTMENTS

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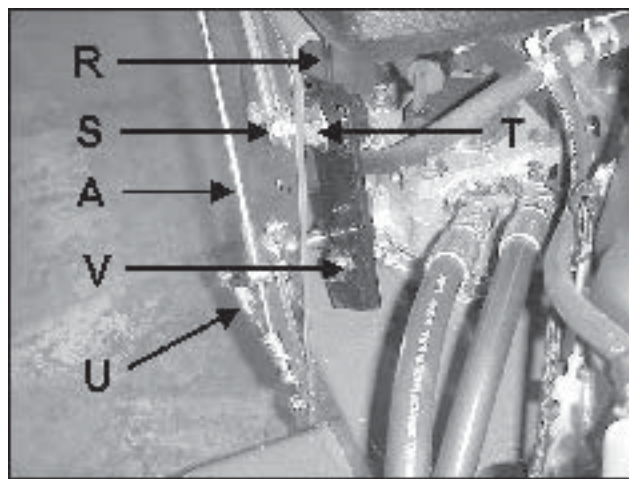


NOTE: Make all adjustments with the engine shut off, spark plug wire disconnected and mower drive disengaged.

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

STEP 1 - Set Neutral

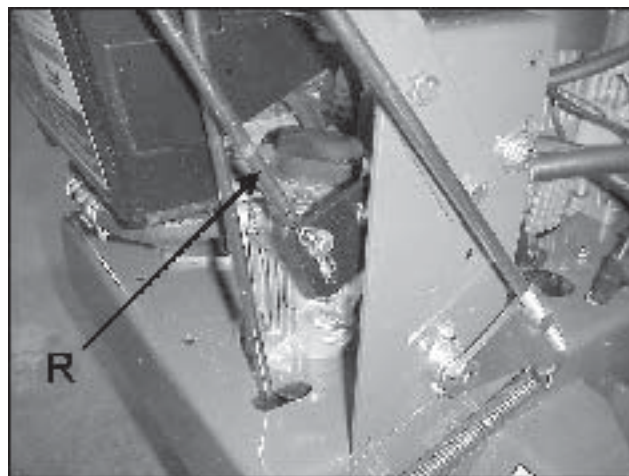
Neutral is set at the factory. If it should require adjustment, raise the wheels off the ground by setting the machine on jackstands or blocks. Disconnect the traction control rod **A** and speed control rod **R** at each pump end. Disconnect pump arm spring **U** from bolt on engine deck. Loosen bolt **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 steps 2 and 3.



STEP 2 - Adjust Speed Control Rods

First adjust neutral, as outlined in Step 1. Set speed control levers to neutral. Adjust swivels on lower ends of speed control rods **R** so they just go into the slots on the neutral plates.

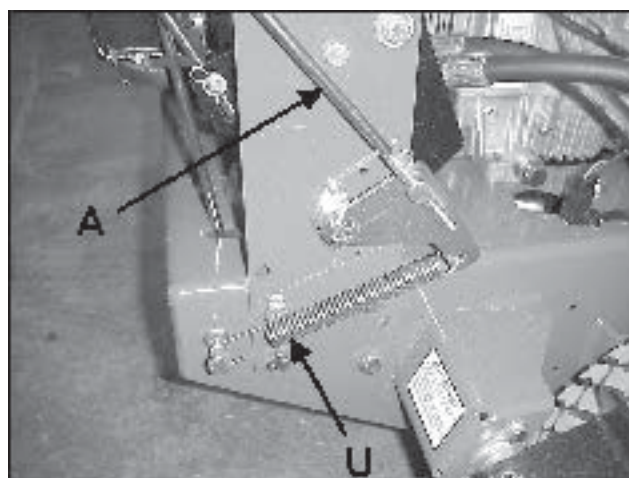
NOTE: If the speed control levers do not have adequate tracking adjustment, the swivel on one of the rods needs to be turned 1 turn.



STEP 3 - Adjust Traction Levers

Set neutral and adjust speed control rods as outlined in Steps 1 and 2. Set traction locks in the neutral position. Grasp traction rod **A** and pull down on it to take out any slack. The pump control arm has some back and forth play. Adjust the swivel to the center of the control arm play. Connect the swivel to the control arm. Reattach pump arm spring **U** to bolt on engine deck.

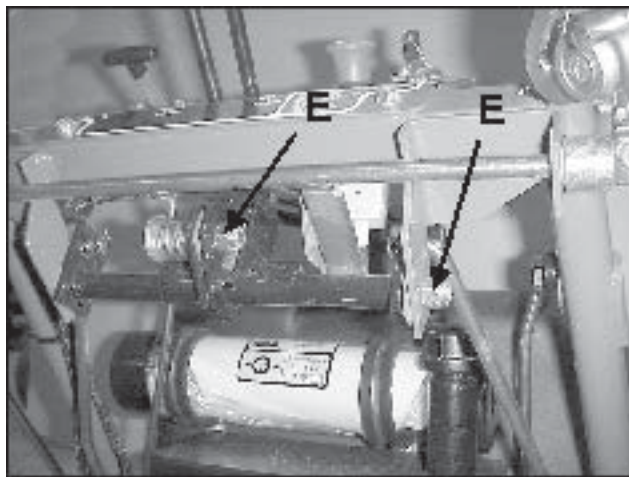
NOTE: More reverse speed may be gained by adjusting the swivel to the rear of the control arm play. A minimum of 1/16" play is required so the traction controls can be put in neutral without the machine backing up.





Speed Control Lever Friction

The speed control lever is held where set by friction pads. If the setting will not hold, tighten nuts **E** to increase friction on the speed control lever.



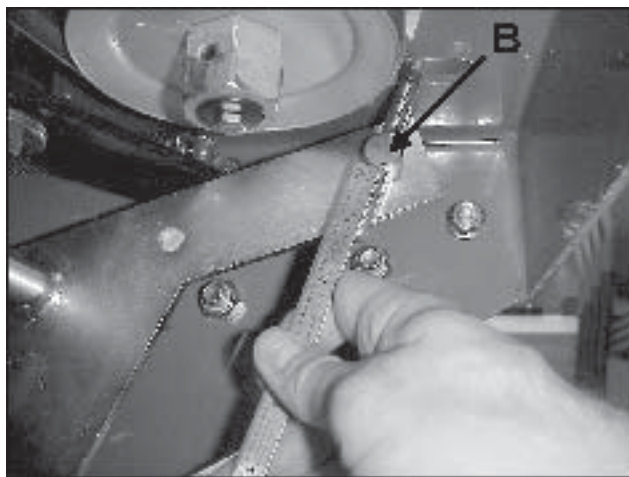
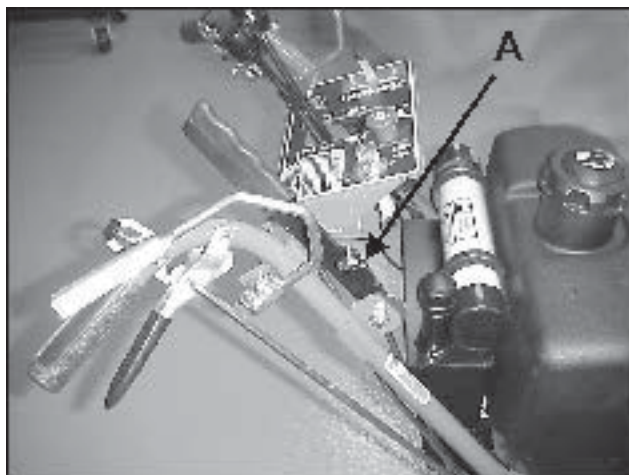
PARKING BRAKE - Apply parking brakes and open the bypass valves on the hydraulic pumps. Try to push the machine forward. If wheels rotate, adjust brakes as follows.

TO ADJUST:

1. Remove the hairpin cotter **A** from the brake rod at the brake lever 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** 1-1/4" as shown. If more brake pressure is required adjust as necessary.

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



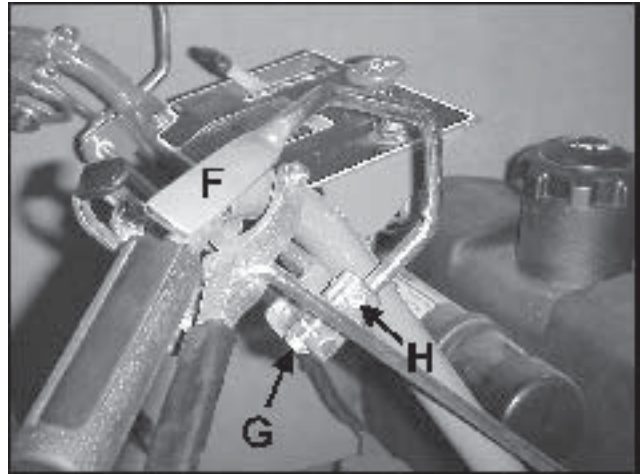


OPERATOR PRESENT CONTROLS

The operator present (OP) controls should be adjusted to control the operation of the plunger of the operator present switch (located under the right side of the control panel). Depressing OP levers **F** should depress the plunger; releasing the levers should extend it.

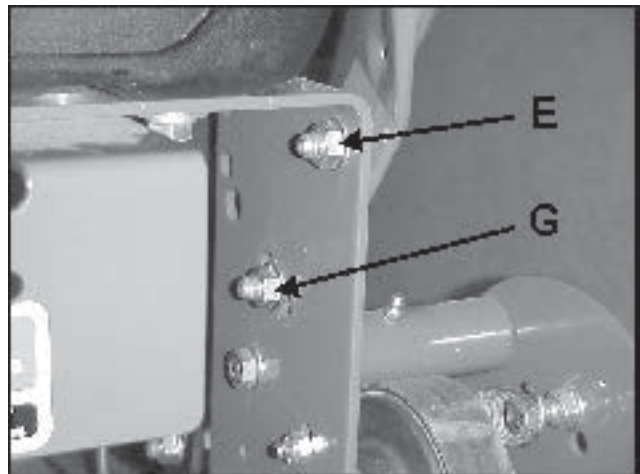
TO ADJUST:

1. Loosen clamp bolts on both ends **G** so clamps can rotate on shaft. Loosen clamps bolts **H** so OP levers are free to move in clamps.
2. Hold OP levers to handles and adjust to fit. Tighten bolts **H**.
3. Rotate actuator lever to depress switch plunger. Keep OP levers against handles and tighten bolts **G**.
4. When released, the OP levers should rise and the actuator lever should rotate away from the switch, allowing the switch plunger to extend completely.



HANDLE BAR HEIGHT ADJUSTMENT

To adjust handle bar height: Remove bolts **G** and loosen bolts **E** on each side of handlebars. Raise or lower as required. Reposition upper handle and reinsert bolts **G** into appropriate hole in lower handle and tighten. Readjust traction control rods, parking brakes and speed control rods.

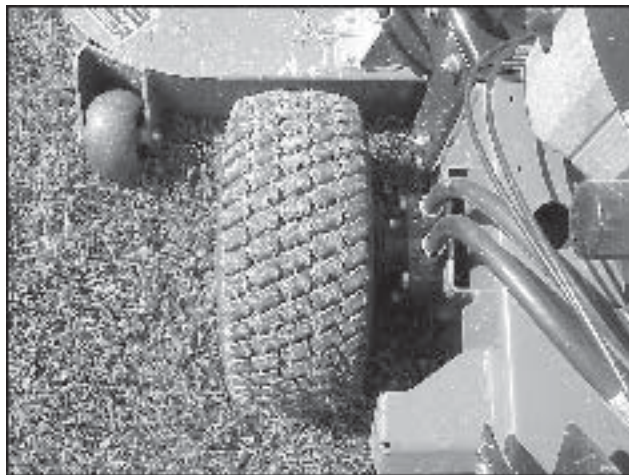




TRACK WIDTH ADJUSTMENT

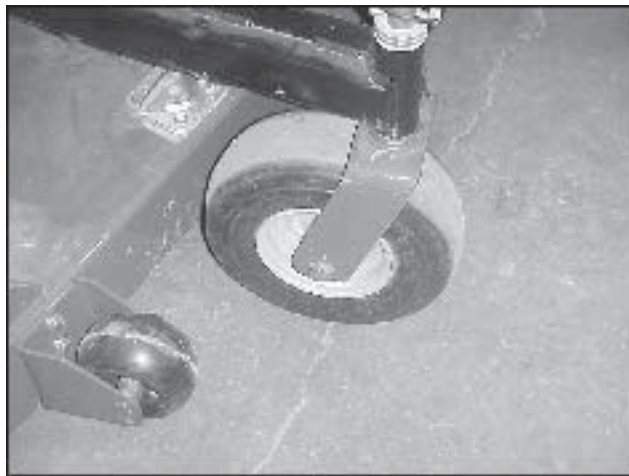
The track width originally set from the factory can be increased an additional 3-1/4" overall by performing the following steps.

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. Reinstall 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.



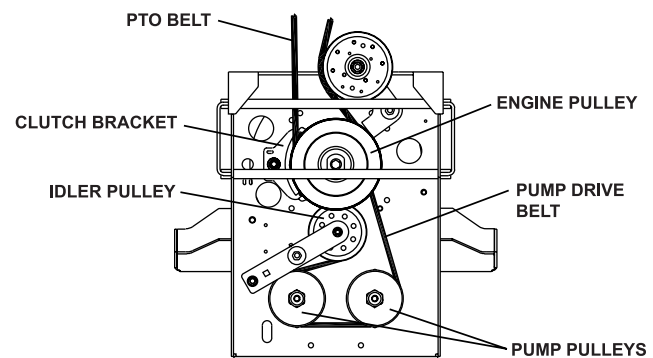
CUTTERDECK BELT

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



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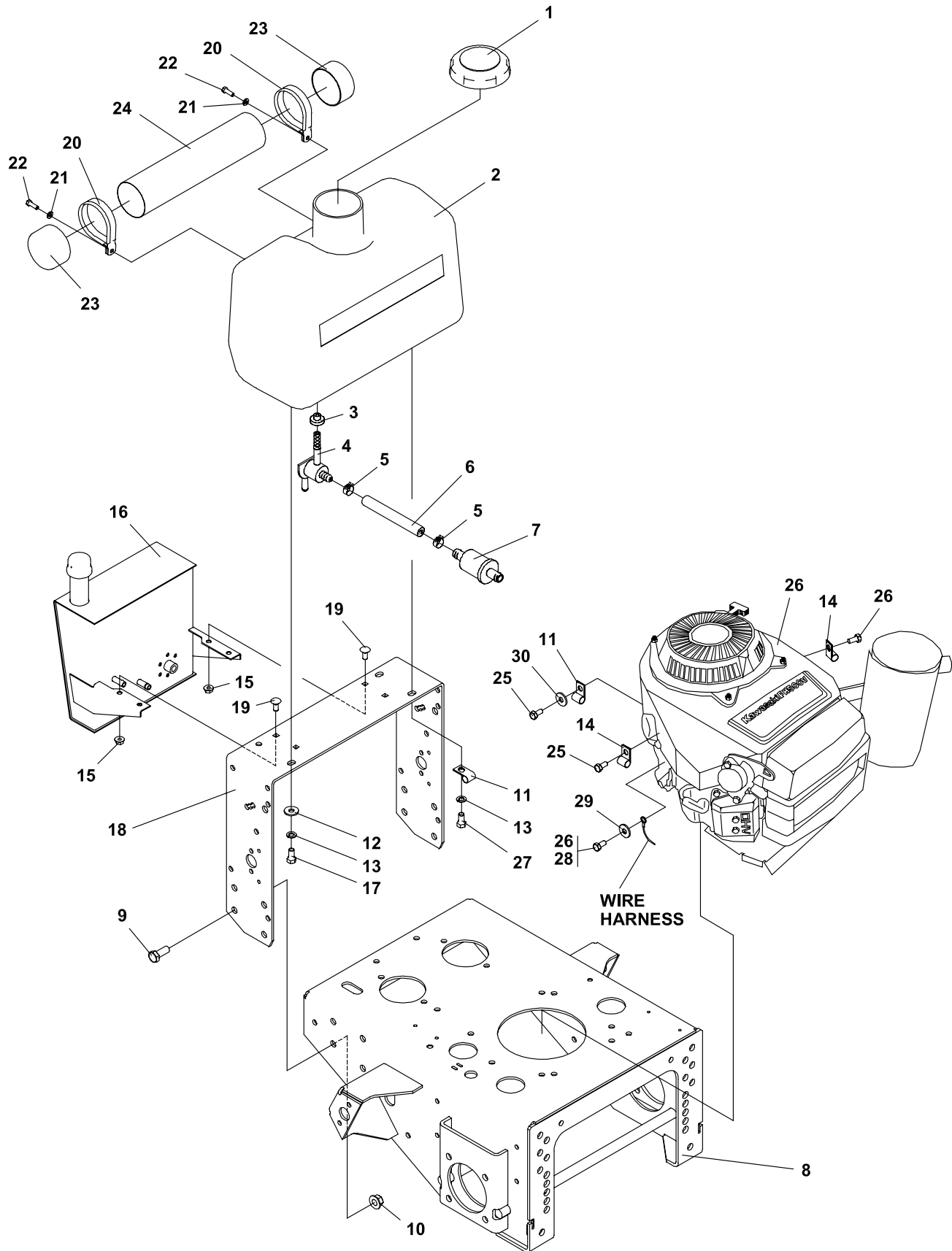
PARTS SECTION

PARTS SECTION

UPPER ENGINE DECK ASSY



FIGURE 1





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2721734-01

UPPER ENGINE DECK ASSY

FIGURE 1

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1-1	2721520	CAP-FUEL GASOLINE 3.5	1	1-27	64123-50	BLT-HEX 3/8-16 X 1	1
1-2	2721525	TANK-FUEL MID (INCLUDES ITEMS 3 & 4)	1	1-28	64205-018	BLT METRIC M8-1.25 X 15 (USED ON RECOIL START MODELS ONLY)	1
1-3	48310	S BUSHING,FUEL TANK	1	1-29	64002-04	L'WSHER, EXT. 5/16	1
1-4	38540	S FUEL SHUT-OFF VALV	1	1-30	64163-03	WSHR-.256ID X.62OD	1
1-5	88042N	HOSE CLAMP	2				
1-6	48016-4A	HOSE,.25ID X.50OD X 22"L LENGTH ON 15 HP & 17HP MODELS LENGTH ON 21HP MODELS	16.5" 17.6"				
1-7	38666	FILTER, FUEL	1				
1-8	4113609	S-ENGINE DECK W/LABELS	1				
1-9	A1105061	BOLT-M12-1.75 X 30	8				
1-10	64237-06	LOCKNUT-NYLON M12-1.75	8				
1-11	48228-2A	CABLE CLIP 3/4 W/INSTN	2				
1-12	64163-31	WASHER	3				
1-13	64006-03	LOCKWSHR-HELICAL 3/8	4				
1-14	48228A	CABLE CLIP-INSULATED	2				
1-15	64229-02	LOCK NUT-NYLON 5/16-18	4				
1-16	2306127	S-HYD RESEVOIR W/LABS	1				
1-17	64123-15	BLT-HEX 3/8-16X3/4	3				
1-18	2722269.2	HANDLE-LOWER HYD	1				
1-19	64018-9	BLT-CRG 5/16-18 X 3/4	4				
1-20	38542	CLAMP-DOCU TUBE	2				
1-21	64006-01	LOCKWSHR-HELICAL 1/4	2				
1-22	64123-89	BLT-HEX 1/4-20 X 3/4	2				
1-23	38061A	COVER	2				
1-24	2306144	S DOCU TUBE W/LAB	1				
1-25	A1102966	BOLT-M6-1.00X16	2				
1-26	2721377	ENG-15HP KAW W/CHARG	1				
	2721378	ENG-17HP KAW W/CHARG	1				
	4117020	ENGINE-17HP KAW ES	1				
	2722214	FILTER-OIL					
	2722207	FILTER-AIR					
	2722208	FILTER-PRE					

* (SERVICE MANUAL 15 HP & 17 HP KAW
#99924-2045-03)

2721379	ENG-21HP KAW W/CHARG	1
2722214	FILTER-OIL	
2722212	FILTER-AIR	
2722213	FILTER-PRE	

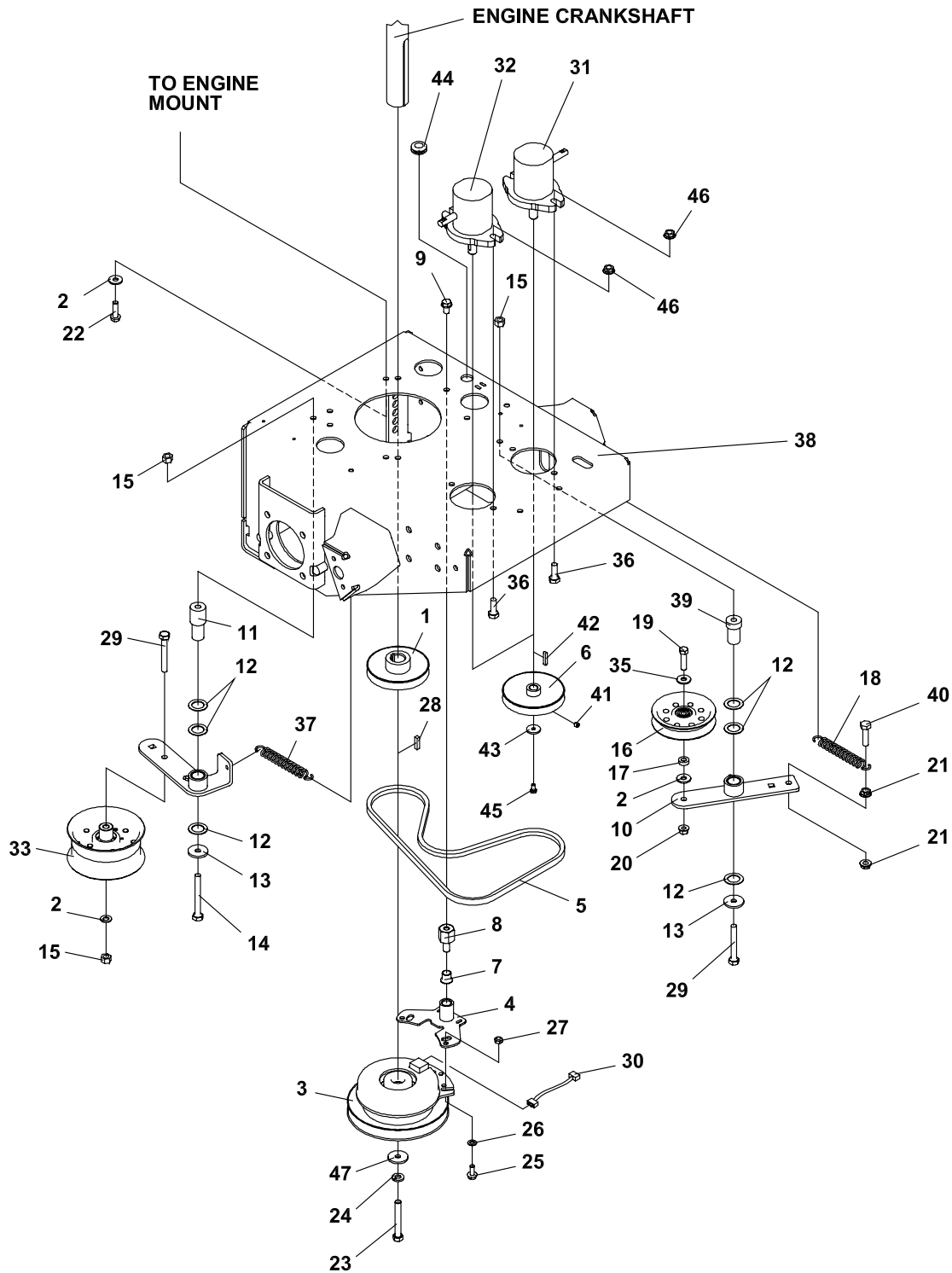
* (SERVICE MANUAL 21 HP KAW #99924-2045-03)

* AVAILABLE THROUGH KAWASAKI DEALER

LOWER ENGINE DECK ASSY/CLUTCH



FIGURE 2





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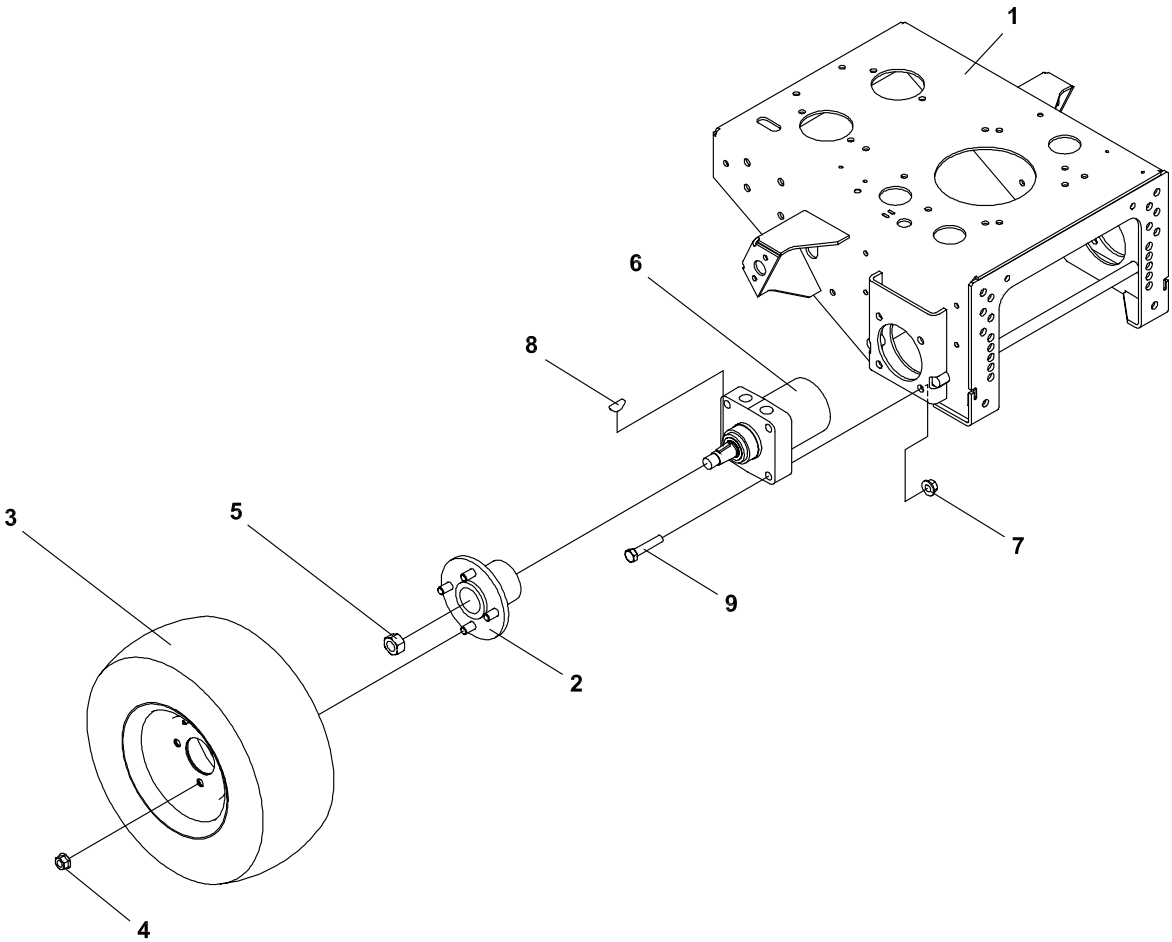
LOWER ENGINE DECK ASSY/CLUTCH

2721734-02

FIGURE 2

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
2-1	2721647	PULLEY-4.50E.O.D.	1				
2-2	64163-31	WASHER, 25/64 X 1 X 12	6				
2-3	2721110	CLUTCH-ELECTRIC	1				
2-4	2721331.7	WLDMT-CLUTCH STOP MID	1				
2-5	2721642	BELT-HA 49.0	1				
2-6	2722244	PULLEY- A SECTION 4.50	2				
2-7	38304-03	BRG-FLANGED PLASTIC	1				
2-8	2721398	PIN-CLUTCH	1				
2-9	64264-01	BLT-WLF M10-1.5 X 16	1				
2-10	2721641.7	WLDMT-IDLER ARM	1				
2-11	2721652	PIN-PIVOT	1				
2-12	64163-65	WASHER 0.890 X 1.375	6				
2-13	64163-82	WSHR-FLAT.406X1.44X9GA	2				
2-14	64205-012	BLT-METRIC M10-1.50 X 90	1				
2-15	64237-03	LOCKNUT-NYLON M10-1.5	3				
2-16	2308000	PULLEY-IDLER 4.00 EOD	1				
2-17	33148-01	SPACER	1				
2-18	38219	SPRING-TENSION	1				
2-19	64123-87	BLT-HEX 3/8-16 X 1-3/4	1				
2-20	64141-4	NUT-WLF 3/8-16	1				
2-21	64246-03	NUT-WHIZ M10-1.50	2				
2-22	64197-005	BLT-TDFM 3/8-16X1-1/4	4				
2-23	64123-155	BLT-HEX 7/16-20 X 3	1				
2-24	64006-06	LOCKWSHR-HELICAL 7/1	1				
2-25	64205-001	BLT-METRIC M8-1.25 X 20	2				
2-26	64251-003	WHSR-M8	2				
2-27	64237-05	LOCKNUT-NYLON M8-1.25	2				
2-28	64164-12	1/4X1/4X1 SQ END KEY	1				
2-29	64205-17	BLT-METRIC M10-1.50 X 75	2				
2-30	2720949	ASSY-CLUTCH WIRE	1				
2-31	2721615	PUMP-HYDRO LH	1				
2-32	4112782	PUMP-HYDRO RH	1				
2-33	2721541	PULLEY-IDLER 5 IN	1				
2-34	2721401.7	WLDMT-IDLER ARM	1				
2-35	64163-61	WSHR .81X.406X16GA	1				
2-36	64205-036	BLT-METRIC M10-1.50 X 35	4				
2-37	2188131	SPRING-EXTENSION	1				
2-38	4113609	S-ENGINE DECK W/LABELS	1				
2-39	2721723	PIN-PIVOT	1				
2-40	64205-011	BLT-METRIC M10-1.50 X 40	1				
2-41	64044-6	SCREW-SET 5/16-18X1/4	4				
2-42	64238-03	KEY-METRIC 5MM SQ X 28	2				
2-43	64209-09	WASHER-CONICAL SPRING	2				
2-44	148034-08	INSUL. GROMMET 1.125OD	1				
2-45	64205-013	BLT-METRIC M6-1 X 12	2				
2-46	64265-05	NUT-FL NYLOCK M10-1.5	4				
2-47	64163-51	WSHR.453 X 1.38 X 7GA	1				

FIGURE 3





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2721734-03

DRIVE WHEELS

FIGURE 3

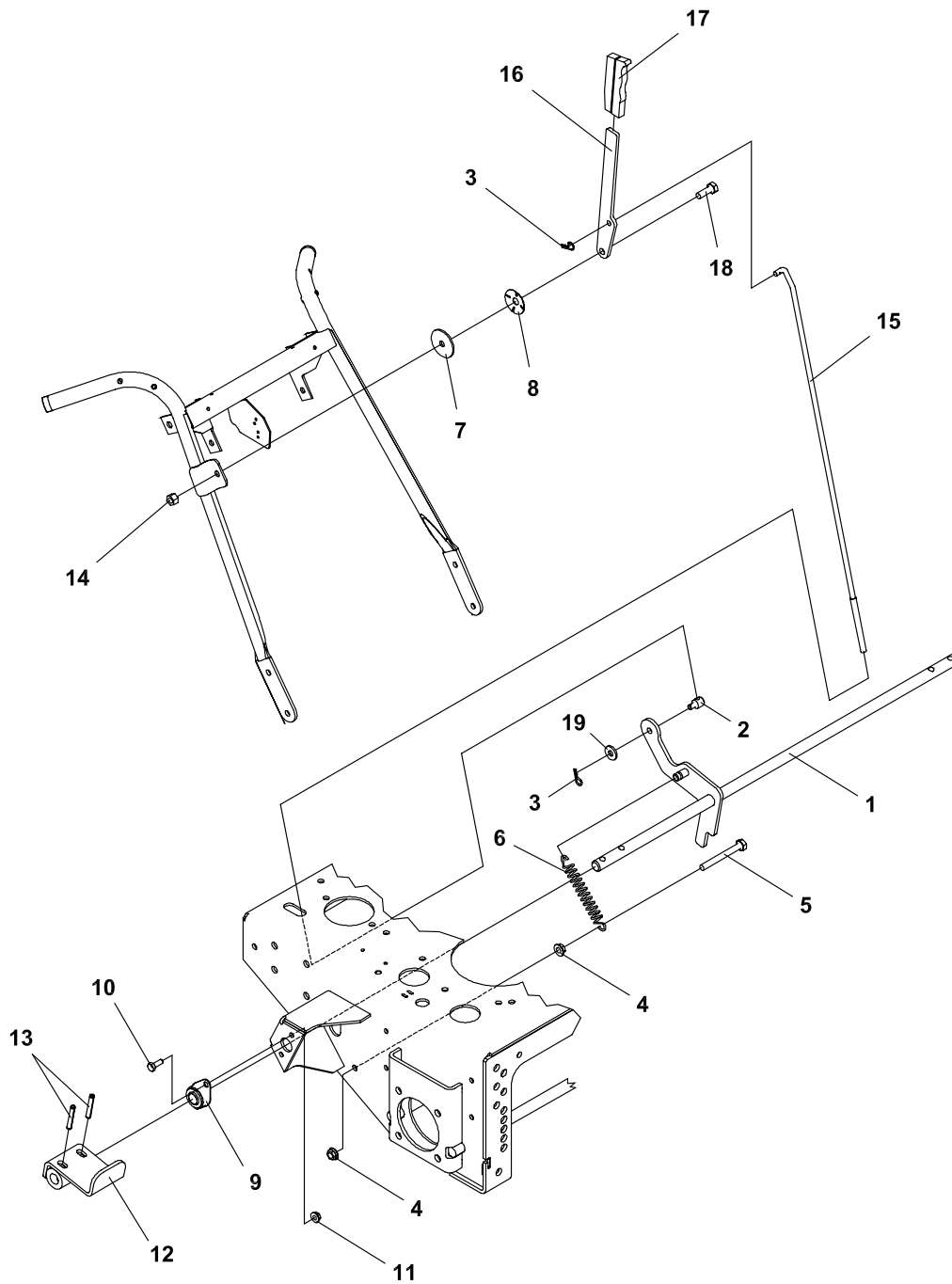
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
3-1	4113609	S-ENGINE DECK W/LABELS	1				
3-2	2721620.7	WLDMT-HUB	2				
3-3	2721956	ASSY-WHEEL 16 X 7.50 X 8	2				
	2721956-01	TIRE-16X7.50 X 8 MLTI TRC	1				
	2721956-02	WHEEL W/ DUAL VALVES	1				
3-4	64267-01	NUT-HEX FLANGED 1/2-20	8				
3-5	64025-06	NUT-HEX 3/4-16 2A	2				
3-6	2308051	MOTOR-WHEEL ROSS MF	2				
3-7	64246-04	NUT-WHIZ M12-1.75	8				
3-8	64164-28	#808 WOODRUFF KEY	2				
3-9	64205-028	BLT-METRIC M12-1.75 X 60	8				

PARKING BRAKE

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FIGURE 4





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PARKING BRAKE

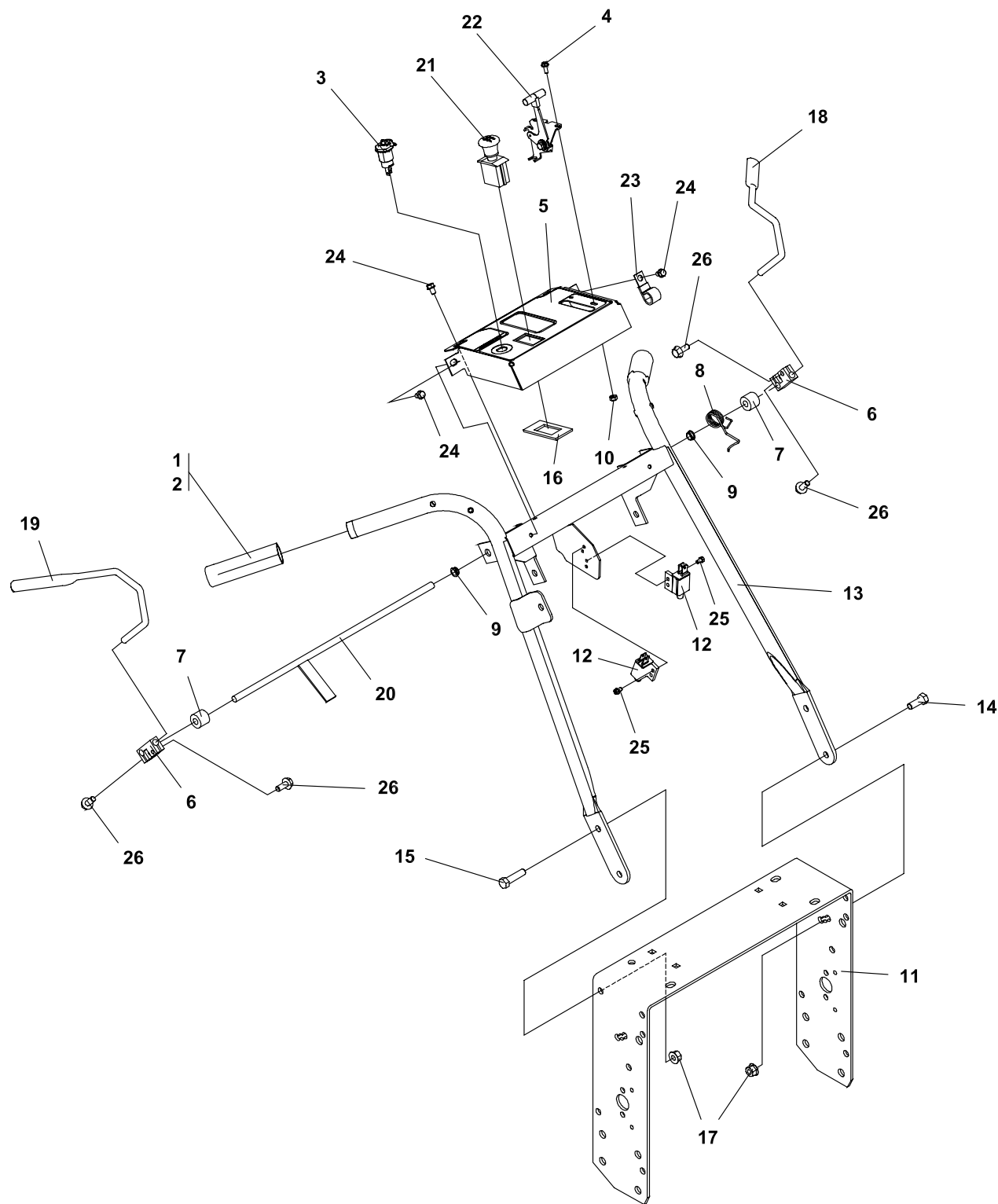
FIGURE 4

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
4-1	2721637	WLDMT-BRAKE SHAFT	1				
4-2	33103	SWIVEL	1				
4-3	64168-2	COTTER-HAIRPIN.08X1.19	2				
4-4	64246-03	NUT-WHIZ M10-1.50	2				
4-5	64205-012	BLT-METRIC M10-1.50 X 90	1				
4-6	2188131	SPRING-EXTENSION	1				
4-7	64163-17	25/64 X 2 X 11GA WASHR	1				
4-8	64171-2	WAVE WASHER	1				
4-9	2188145	BEARING-.75ID SELF ALIGN	2				
4-10	64205-001	BLT-METRIC M8-1.25 X 20	4				
4-11	64246-02	NUT-WLF M8-1.25	4				
4-12	2721725.7	WLDMT-SCRUBBER	2				
4-13	64061-09	ROLL PIN-3/8 X 2	4				
4-14	64237-03	LOCKNUT-NYLON M10-1.5	1				
4-15	2721726	ROD-BRAKE	1				
4-16	2721632.7	LEVER-BRAKE	1				
4-17	38404-01	GRIP-CONTROL LEVER	1				
4-18	A110406	BOLT-M10-1.5 X 30	1				
4-19	64163-02	WSHR-.325 X .596 X 11GA	1				

RECOIL START UPPER HANDLE



FIGURE 5





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RECOIL START UPPER HANDLE

2721734-05

FIGURE 5

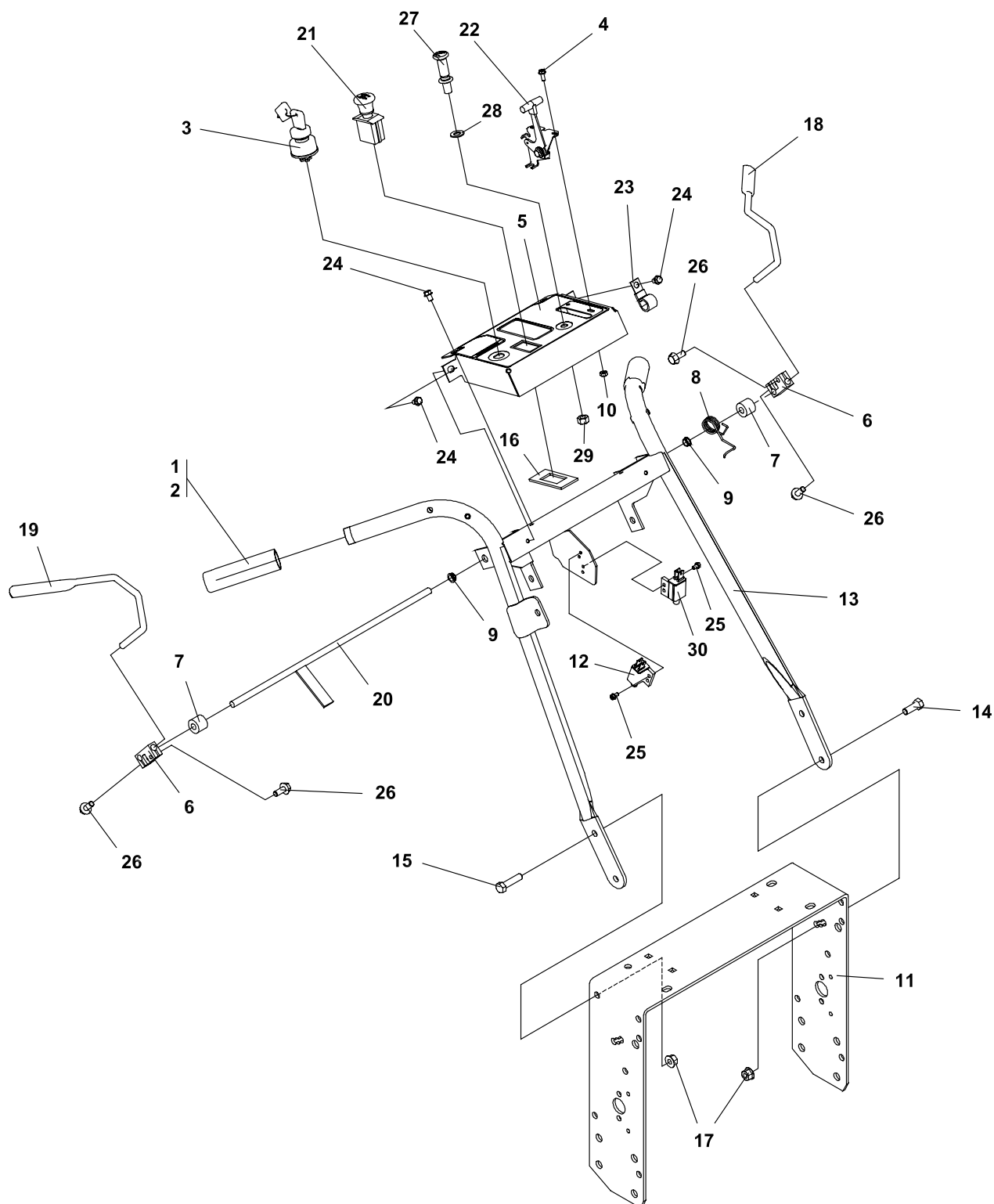
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
5-1	38360	GRIP-RECESSED 1 IN	2				
5-2	*2308121	ADHESIVE-3 GRAM TUBE (USE WITH 38360 GRIP)	1				
5-3	38148	SWITCH-ENGINE STOP	1				
5-4	64152-46	SCR-SLT HH 10-24X1/2	2				
5-5	4113484	S-PNL CNTRL HYD	1				
5-6	2303023	CONNECTOR-OP	2				
5-7	33030-09	IDLER-BUSHING	2				
5-8	2308037	SPRING, TORSION OP	1				
5-9	38371-01	BRG-NYLINER 3/8	2				
5-10	64025-15	NUT-HEX #10-24 KEPS	2				
5-11	2722269.2	HANDLE-LOWER	1				
5-12	38383	SWITCH-N.C.	2				
5-13	2721583.2	WLDMT-HYD UPR HANDLE	1				
5-14	64123-50	BOLT, 3/8-16X1 HEX	2				
5-15	64123-70	BLT-HEX 3/8-16X1-1/2	2				
5-16	2188178	SWITCH-RETAINER	1				
5-17	64141-4	NUT-WLF 3/8-16	4				
5-18	2308152	LEVER-OP LH	1				
5-19	2308153	LEVER-OP RH	1				
5-20	2306097	WLDMT-ACTUATOR-PLATD	1				
5-21	2721505	SWITCH-PTO	1				
5-22	38357-04	CONTROL-THROTTLE	1				
5-23	48412	CLIP-CABLE 5/8 J X 8.74	1				
5-24	64152-23	1/4-20X3/8 LG SP SCREW	4				
5-25	64197-015	BLT-TDFM 10-32X1/2 TORX	4				
5-26	64197-002	BLT-TDFM 1/4-20X3/4	4				

*** NOT ILLUSTRATED**

ELECTRIC START UPPER HANDLE



FIGURE 6





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ELECTRIC START UPPER HANDLE

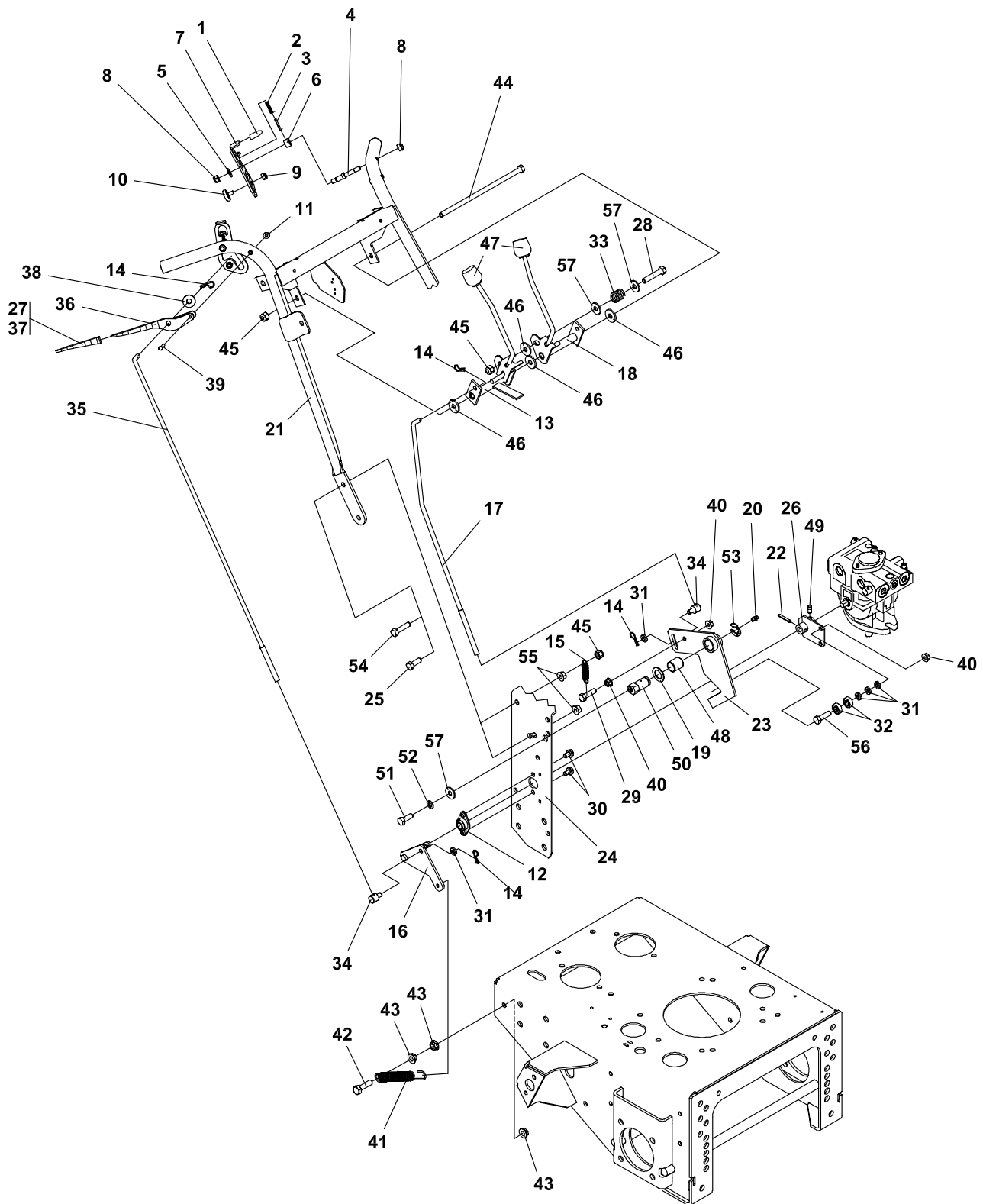
2721734-06

FIGURE 6

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
6-1	38360	GRIP-RECESSED 1 IN	2				
6-2	*2308121	ADHESIVE-3 GRAM TUBE (USE WITH 38360 GRIP)	1				
6-3	128010	KEY SWITCH	1				
6-4	64152-46	SCR-SLT HH 10-24X1/2	2				
6-5	4113523	S-PNL CNTRL HYD W/CHK (USED ON 930324 ONLY)	1				
	4113484	S-PANEL, CNTRL HYD (USE ON 930328)	1				
6-6	2303023	CONNECTOR-OP	2				
6-7	33030-09	IDLER-BUSHING	2				
6-8	2308037	SPRING, TORSION OP	1				
6-9	38371-01	BRG-NYLINER 3/8	2				
6-10	64025-15	NUT-HEX #10-24 KEPS	2				
6-11	2722269.2	HANDLE-LOWER	1				
6-12	2308094	SWITCH-NCNC DBL POLE	1				
6-13	2721583.2	WLDMT-HYD UPR HANDLE	1				
6-14	64123-50	BOLT, 3/8-16X1 HEX	2				
6-15	64123-70	BLT-HEX 3/8-16X1-1/2	2				
6-16	2188178	SWITCH-RETAINER	1				
6-17	64141-4	NUT-WLF 3/8-16	4				
6-18	2308152	LEVER-OP LH	1				
6-19	2308153	LEVER-OP RH	1				
6-20	2306097	WLDMT-ACTUATOR-PLATD	1				
6-21	2721505	SWITCH-PTO	1				
6-22	38357-04	CONTROL-THROTTLE	1				
6-23	48412	CLIP-CABLE 5/8 J X 8.74	1				
6-24	64152-23	1/4-20X3/8 LG SP SCREW	4				
6-25	64197-015	BLT-TDFM 10-32X1/2 TORX	4				
6-26	64197-002	BLT-TDFM 1/4-20X3/4	4				
	(ITEMS 27-29 USED ON 930324 ONLY)						
6-27	108009-03	CONTROL-CHOKE 51	1				
6-28	64163-61	WSHR .81X.406 X 16GA	1				
6-29	64025-04	NUT-3/8-24 HEX	1				
6-30	108208	SWITCH DBL POLE	1				

*** NOT ILLUSTRATED**

FIGURE 7





ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
7-1	2722426	GRIP-TRACTION LOCK	2	7-48	2308076-02	BEARING-PLASTIC	2
7-2	38189	SPRING-COMPRESSION	2	7-49	64192-04	SCREW 5/16-18	2
7-3	64061-37	ROLL PIN-1/8 X 1.00 SS	2	7-50	2303058	ECCENTRIC SHAFT W/ZRK	2
7-4	33288	STUD-DOUBLE ENDED	2	7-51	64123-02	BLT HEX 3/8-24 X 1	2
7-5	62464-5A	WASHER, THRUST 5/16X3/4	2	7-52	64006-03	LOCKWASHER 3/8	2
7-6	33243	SPACER	2	7-53	64144-16	SNAP RING	2
7-7	2722242	TRACTION LOCK LH	1	7-54	64123-70	BLT-HEX 3/8-16X1-1/2	2
	*2722243	TRACTION LOCK RH	1	7-55	64141-4	NUT-WLF 3/8-16	4
7-8	64229-02	5/16-18 NYLON LOCKNUT	4	7-56	64123-69	BOLT-5/16-18X1-1/2 HEX	2
7-9	64229-01	LOCK NUT NYL 1/4-20	2	7-57	64163-61	WSHR .81 X .406 X 16GA	2
7-10	2308002	BRG-RADIAL W/THD STUD	2				
7-11	64175-01	PUSH NUT	2				
7-12	2308080	BEARING SELF ALIGNED	2				
7-13	2306083.7	WLDMT SPEED CNTRL RH	1				
7-14	64168-2	HAIRPIN COTTER	8				
7-15	2308065	SPRING EXTENSION	2				
7-16	2721660	WLDMT-PUMP ARM RH	1				
	* 2721622	WLDMT-PUMP ARM LH	1				
7-17	2722305	ROD-SPEED CONTROL	2				
7-18	2306084.7	WLDMT SPEED CNTRL LH	1				
7-19	64163-06	WSHR.768/.756X1.25X14GA	2				
7-20	85010N	ZERK, 1/4-28 STR	2				
7-21	2721583.2	WLDMT-HYD UPPER HNDL	1				
7-22	64061-28	ROLL PIN 3/16 X 1 1/4	2				
7-23	2721617.7	WLDMT-SPEED CONTROL	2				
7-24	2722269.2	HANDLE-LOWER	1				
7-25	64123-50	BOLT, 3/8-16X1 HEX	2				
7-26	2306081.7	WLDMT PUMP ARM	2				
7-27	*2308121	ADHESIVE	1				
	(USE WITH 38009N GRIP)						
7-28	64123-67	BLT-HEX 3/8-16X2	1				
7-29	64123-68	BLT-HEX 5/16-18 X 1	2				
7-30	64139-13	BLT-WLF 5/16-18X1/2	4				
7-31	64163-02	WSHR 21/64X19/32X11 GA	10				
7-32	38372	BEARING BALL	4				
7-33	35011A	SPRING CNTRL DETENT	1				
7-34	33103	SWIVEL	4				
7-35	33286	ROD TRACTION CNTRL	2				
7-36	31032	LEVER TRACTION CNTRL	2				
7-37	38009N	GRIP TRACTION CNTRL	2				
7-38	64163-31	WASH 25/64X1X12 GA	4				
7-39	64188-34	PIN-CLEVIS .19 WHOLE	2				
7-40	64141-6	NUT-WLF 5/16-18	6				
7-41	4117212	SPRING EXTENSION	2				
7-42	64205-011	BLT-METRIC M10-1.50 X 40	2				
7-43	64246-03	NUT-WHIZ M10-1.50	6				
7-44	64123-202	BLT-HEX 3/8-16 X 9	1				
7-45	64229-03	NUT-NYLOCK 3/8-16	4				
7-46	2308066	FRICTION WASHER	4				
7-47	68156A	HANDLE KNOB BLACK	2				

TRACTION LOCK ASSY'S ARE ALSO AVAILABLE

4113565 S-TRCTN LOCK ASSY RH 1
(INCLUDES ITEMS 1-4, 6, 7, 9-12)

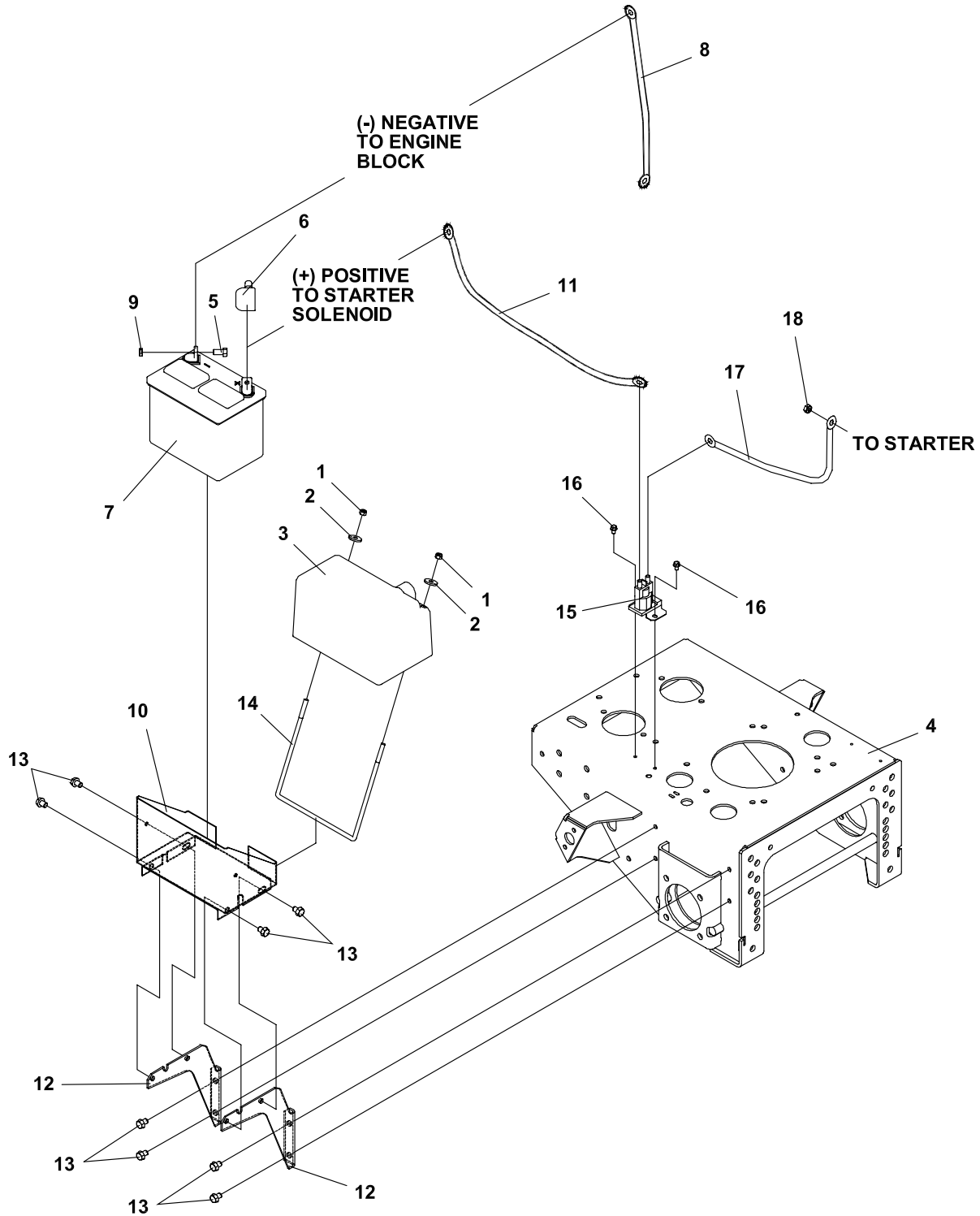
4113564 S-TRCTN LOCK ASSY LH 1
(INCLUDES ITEMS 1-4, 6, 7, 9-12)

*** NOT ILLUSTRATED**

ELECTRIC START BATTERY



FIGURE 8





**Hydro
Midsize**

ELECTRIC START BATTERY

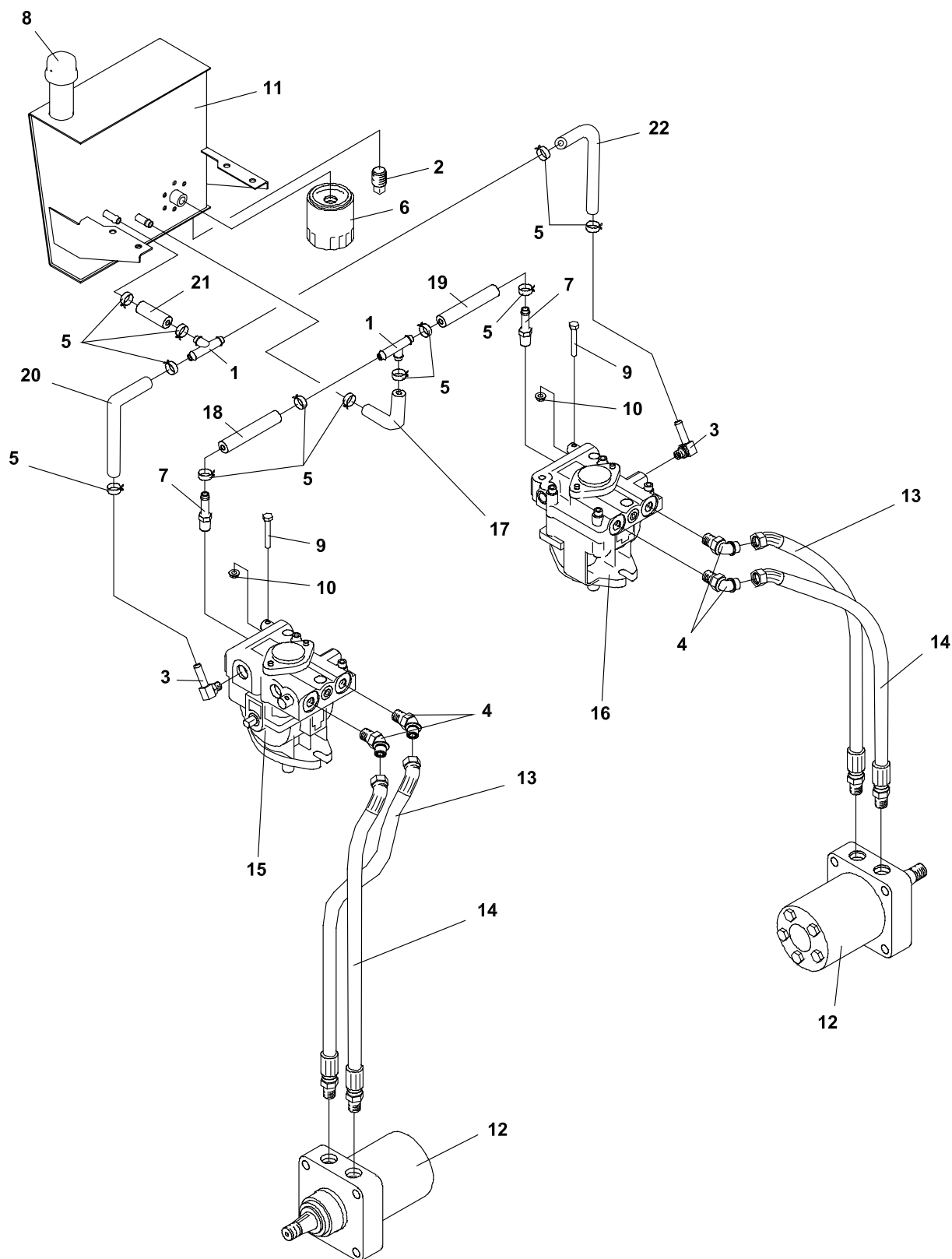
2721734-08

FIGURE 8

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
8-1	64229-02	LOCK NUT-NYLON 5/16-18	2				
8-2	64163-29	WASHER	2				
8-3	128035	COVER-BATTERY	1				
8-4	4113609	S-ENGINE DECK W/LABELS	1				
8-5	64123-54	BOLT, 5/16-18X3/4 HEX	2				
8-6	112386	BOOT-BATTERY TERM POS	1				
8-7	108055	BATTERY	1				
8-8	108061-16	CABLE-BTTRY 31.5 BLACK	1				
8-9	64025-02	NUT-HEX 5/16-18	2				
8-10	4113741	S-TRAY, BATTERY	1				
8-11	2722227-03	CABLE-BTTRY W/CONDUIT	1				
8-12	2722202.7	SUPPORT-BATT TRAY	2				
8-13	64197-016	BLT-TDFM 3/8-16X1/2	8				
8-14	123026	ROD,BATTERY HLD DWN	1				
8-15	38665	SOLENOID	1				
8-16	64152-23	1/4-20X3/8 LG SP SCREW	2				
8-17	108061-15	CABLE-BATTERY 6.5 RED	1				
8-18	64141-2	NUT-WLF 1/4-20	1				



FIGURE 9





ITEM	PART NO.	DESCRIPTION	QTY
9-1	58026-01	3-WAY CONNECTOR	2
9-2	108029	PLUG, MAGNETIC	1
9-3	158058-04	FITTING-90 BARB, ADJ.	2
9-4	108205-02	ELBW-MALE 45 8X8 37-ORB	4
9-5	88042-04	CLAMP-HOSE 5/8"	12
9-6	2720396	FLTR, 25 MCRN SM CAM	1
9-7	69060-01	FTG-BARB 9/16 X 3/8 ST	2
9-8	69216.7	CAP-RESERVOIR	1
9-9	64123-60	BOLT, 1/4-20X2 HEX	2
9-10	64229-01	LOCK NUT-NYLON 1/4-20	2
9-11	2306127	S HYD RESER W/LABS	1
9-12	2308051	MOTOR WHEEL ROSS	2
9-13	2692300-01	HOSE-1/2 37/ORB X 18.5 LG	2
9-14	2692300-02	HOSE-1/2 37/ORB X 18.5 LG	2
9-15	4112782	PUMP-HYDRO LH	1
(SEE FIG 16 FOR PARTS BREAKDOWN)			
9-16	2721615	PUMP-HYDRO RH	1
(SEE FIG 16 FOR PARTS BREAKDOWN)			
(69053-05 IS A SERVICEABLE LENGTH OF 55")			
9-17	69053-05	3/8 HI TEMP HOSE 17.0"	1
9-18	69053-05	3/8 HI TEMP HOSE 5.0"	1
9-19	69053-05	3/8 HI TEMP HOSE 5.0"	1
9-20	69053-05	3/8 HI TEMP HOSE 7.5"	1
9-21	69053-05	3/8 HI TEMP HOSE 6.8"	1
9-22	69053-05	3/8 HI TEMP HOSE 12.0"	1

SERVICEABLE HYDRAULIC O-RINGS

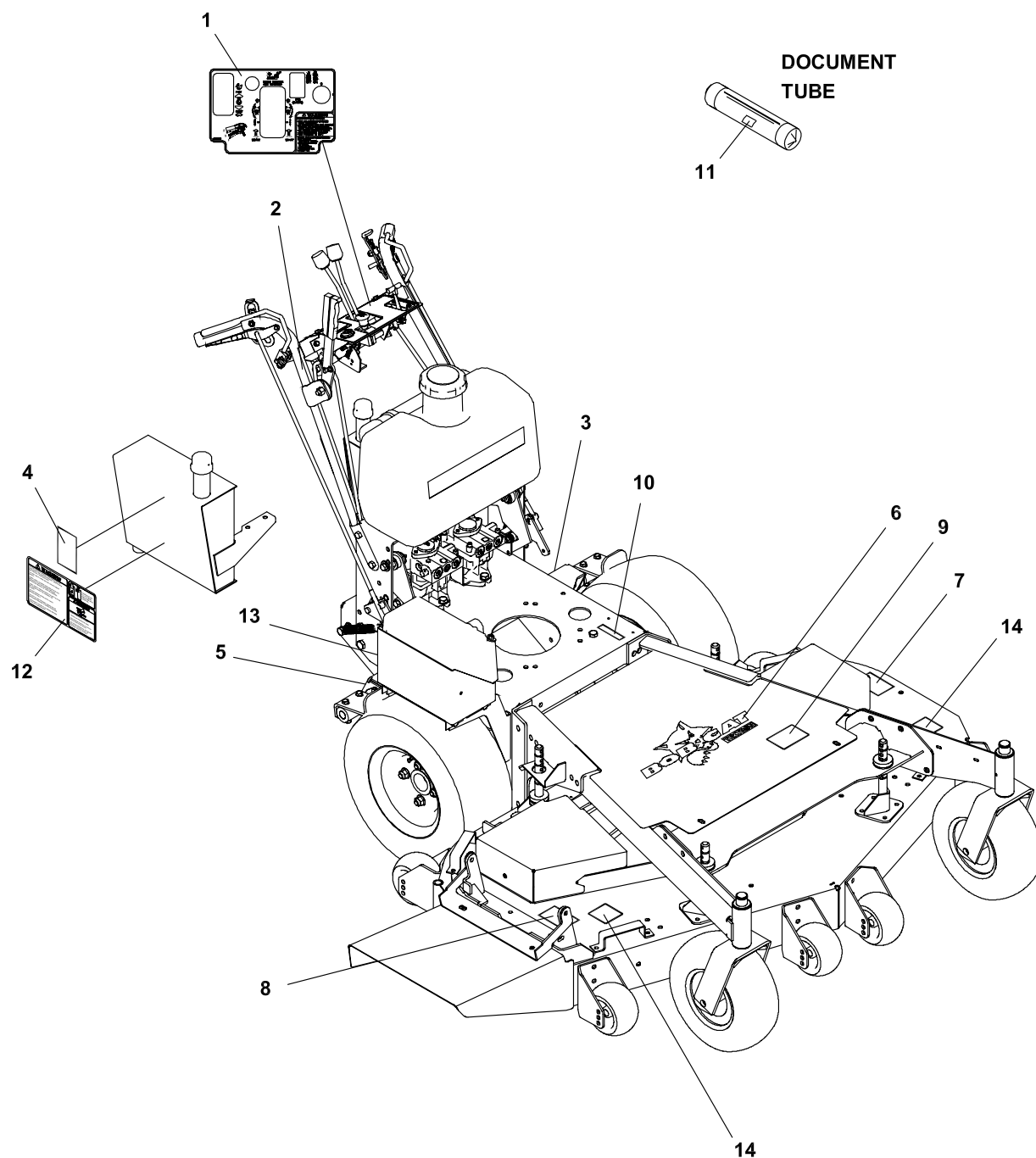
SAE PORT 'O' RING		
PART NUMBER	THREAD SIZE	AS-568#
158061-10	9/16-18	-906
158061-11	3/4-16	-908
158061-12	7/8-14	-910
158061-13	1-1/16-12	-912
158061-14	1-5/16-12	-916
158061-16	1-5/8-12	-920
158061-03	1-7/8-12	-924

NOTE:

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



FIGURE 10





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2721734-10

DECALS

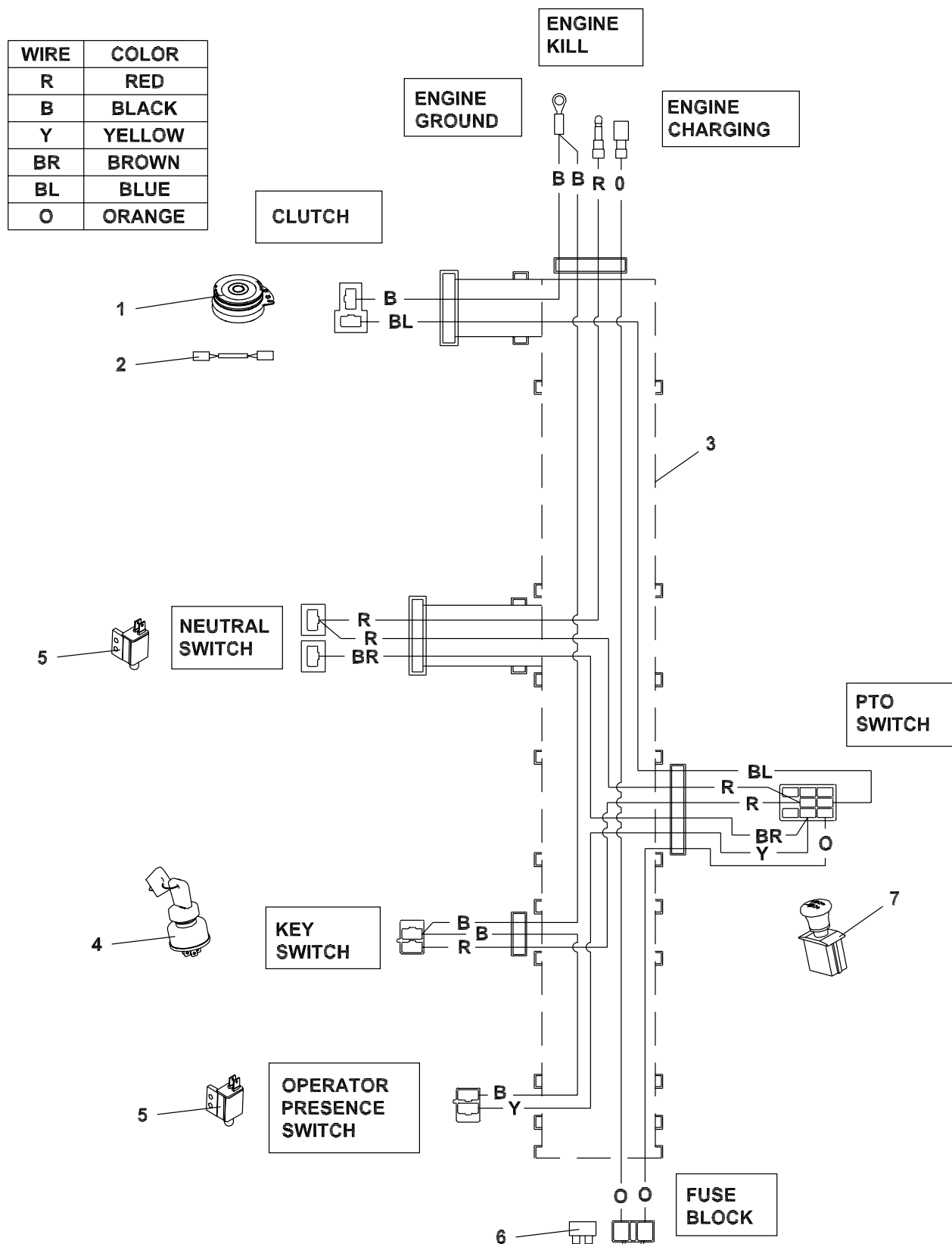
FIGURE 10

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
10-1	2721728	LABEL-CTRL PNL HYD (USED ON MODELS 930322, 930323, 930328)	1				
	2722250	LABEL-CTRL PNL W/CHK (USED ON MODELS 930324 ONLY)	1				
10-2	2000672	LABEL-PARKING BRAKE	1				
10-3	2000570	LABEL-WARN FUEL PICT	1				
10-4	340830	DECAL-CAUTION SPANISH	1				
10-5	2000571	LABEL-IMPORTANT	1				
10-6	2721882	LABEL-BOBCAT TEXTRON	1				
10-7	2000572	LABEL-WARNING BLADES	1				
10-8	2000677	LABEL-DANGER/WARNING	1				
10-9	2000678	LABEL-ROT PRTS/B-WSHR (LOCATED UNDER BELT COVER)	1				
10-10	2000704	LABEL-MIDSIZE PATENT	1				
10-11	2000673	DECAL - OP MAN/TIRES	1				
10-12	2000661	LABEL-HYD TANK WARN	1				
10-13	2000590	LABEL-WARNING BATTERY (USED ON ELECTRIC START MODELS ONLY)	1				
10-14	4109863	LABEL-H.O.C. FLOATING	2				

WIRE DIAGRAM-RECOIL START



FIGURE 11





**Hydro
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WIRE DIAGRAM-RECOIL START

2721734-11

FIGURE 11

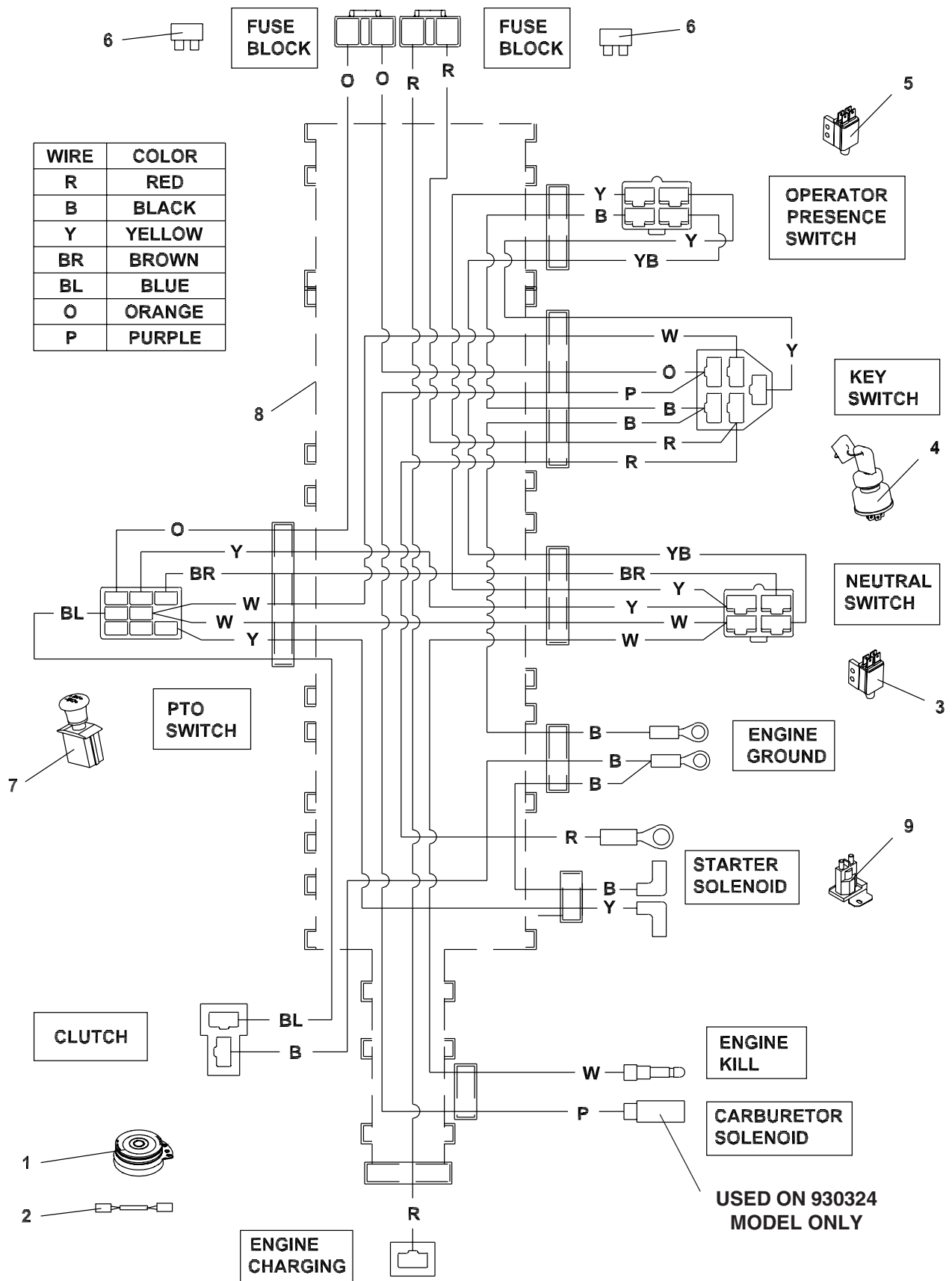
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
11-1	2721110	CLUTCH-ELECTRIC (INCLUDES ITEM 2)	1				
11-2	2720949	ASSY-CLUTCH WIRE	1				
11-3	2721801	HARNESS-GEAR DRIVE (INCLUDES ITEM 6)	1				
11-4	38148	SWITCH-ENGINE STOP	1				
11-5	38383	SWITCH-N.C.	2				
11-6	148082-10	FUSE 10 AMP	1				
11-7	2721505	SWITCH-PTO	1				

WIRE DIAGRAM-ELECTRIC START

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FIGURE 12





**Hydro
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WIRE DIAGRAM-ELECTRIC START

2721734-12

FIGURE 12

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
12-1	2721110	CLUTCH-ELECTRIC (INCLUDES ITEM 2)	1				
12-2	2720949	ASSY-CLUTCH WIRE	1				
12-3	108208	SWITCH DBL POLE	1				
12-4	128010	KEY SWITCH	1				
12-5	2308094	SWITCH-NCNC DBL POLE	1				
12-6	148082-20	FUSE 20 AMP	2				
12-7	2721505	SWITCH-PTO	1				
12-8	2721727	HARNESS-HYDRO MAIN (INCLUDES QTY OF 2 OF ITEM 6)	1				
12-9	38665	SOLENOID-STARTER	1				
12-10	*108061-15	CABLE-BATTERY 6.5 RED (FROM STARTER SOLENOID TO STARTER)	1				
12-11	*2722227-03	CABLE-BTTRY W/CONDUIT (FROM (+) POSITIVE BATTERY TERMINAL TO STARTER SOLENOID)	1				
12-12	*108061-16	CABLE-BTTRY 31.5 BLACK (FROM (-) NEGATIVE BATTERY TERMINAL TO ENGINE BLOCK)	1				

*** NOT ILLUSTRATED**

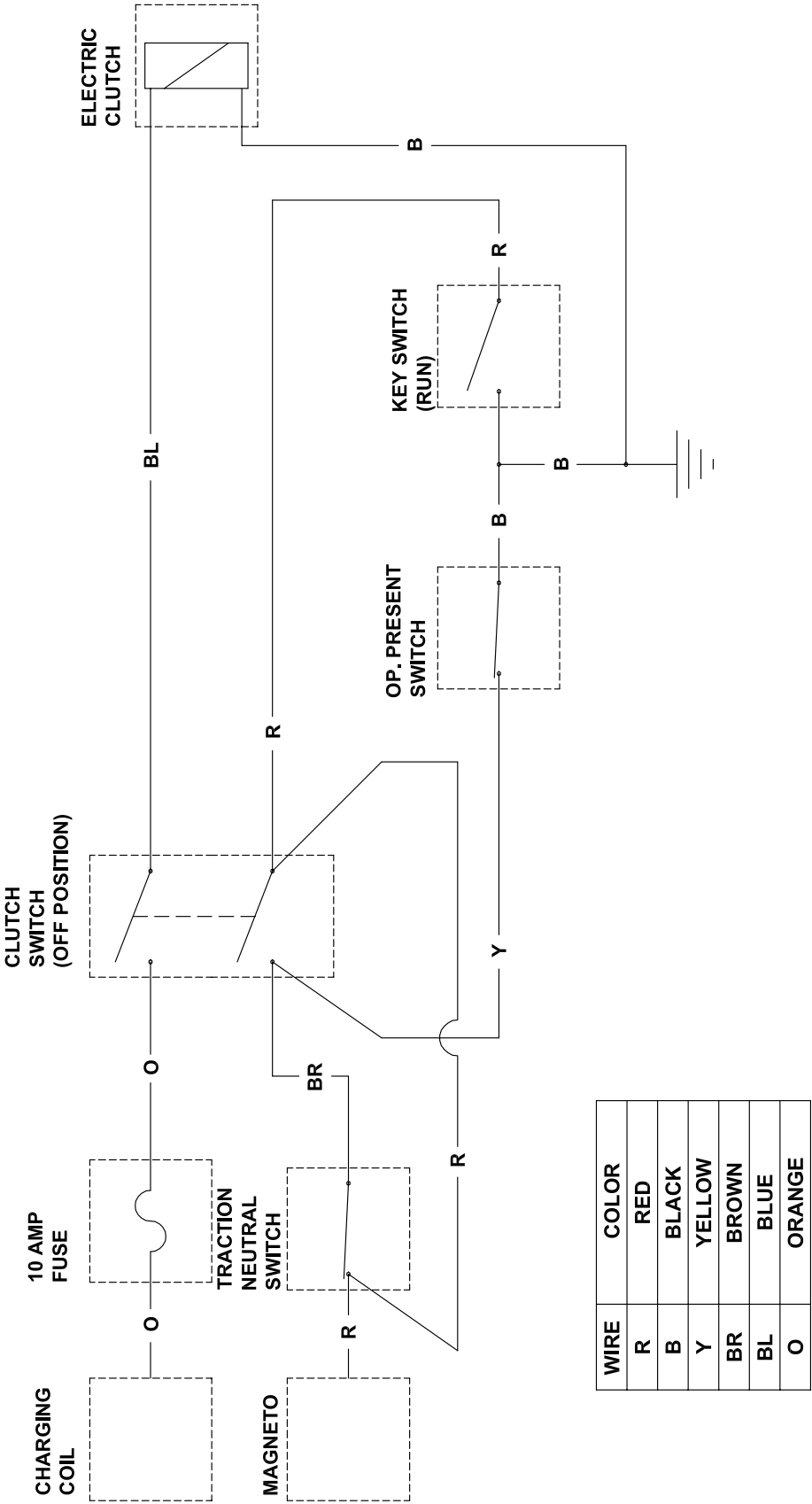
WIRING SCHEMATIC-RECOIL START



FIGURE 13

REF. 4115548

2721850-13



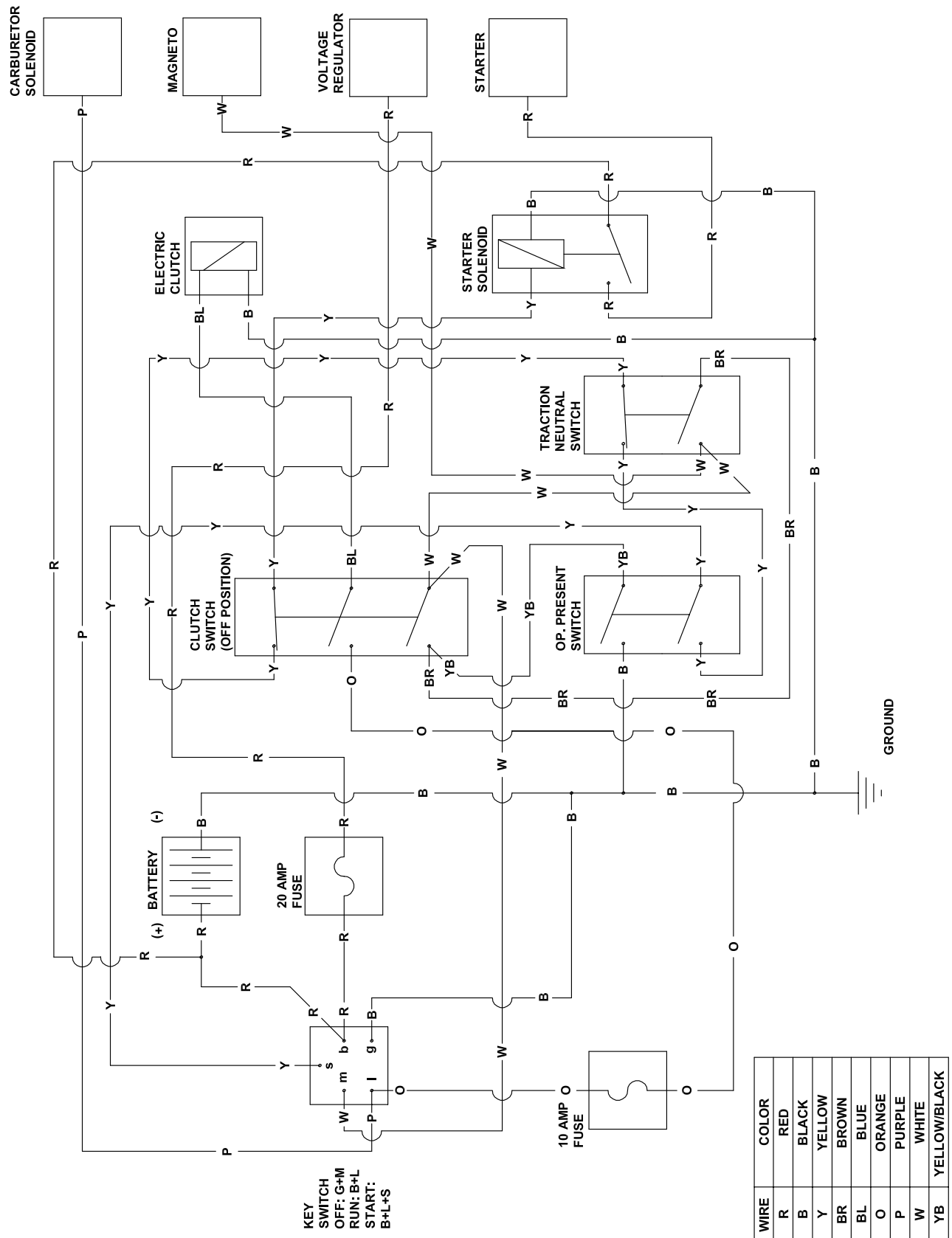
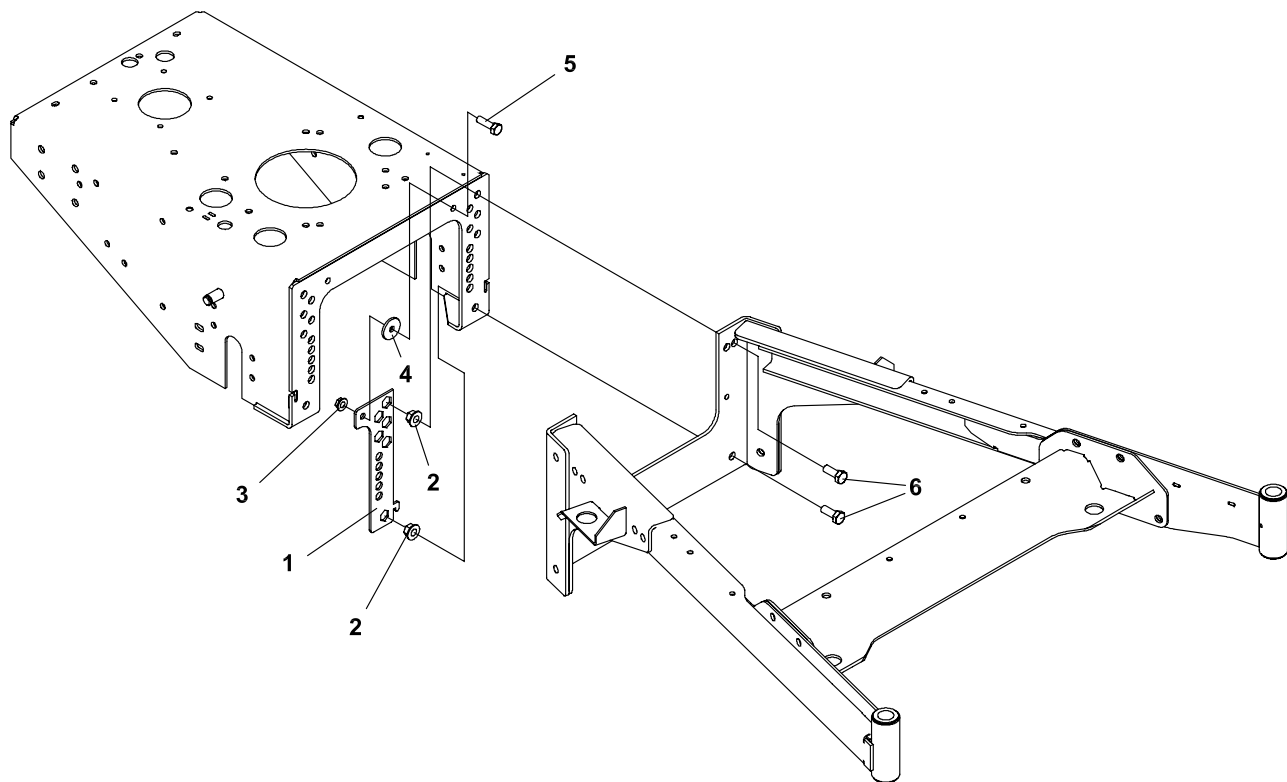


FIGURE 15





**Hydro
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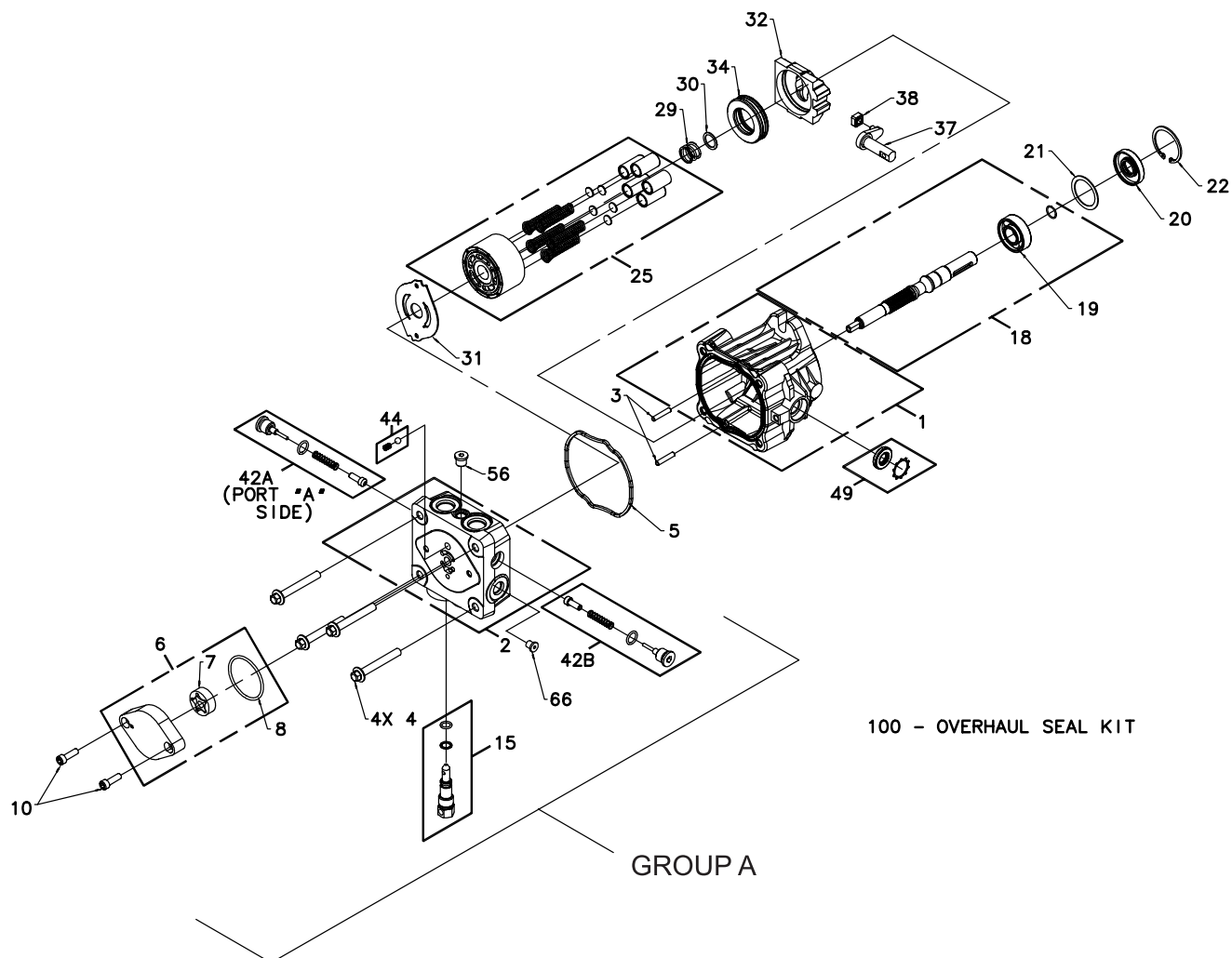
CUTTERDECK MOUNTING

2721693-10

FIGURE 15

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
15-1	2721991.7	PLATE-NUT	2				
15-2	64246-04	NUT-WHIZ M12-1.75	12				
15-3	64246-03	NUT-WHIZ M10-1.50	2				
15-4	64163-82	WSHR-FLAT.406X1.44X9GA	2				
15-5	A1104057	BLT-METRIC M10-1.50X25	2				
15-6	64263-018	BLT-FLG HD M12-1.75 X 30	4				

FIGURE 16





**Hydro
Midsize**

HYDROGEAR PUMP

2721734-14

FIGURE 16

4112782 PUMP-HYDRO LH ILLUSTRATED AS SHOWN
2721615 PUMP-HYDRO RH ILLUSTRATED AS SHOWN EXCEPT GROUP A IS ROTATED 180°
AROUND THE CENTERLINE OF THE PUMP.

ITEM	HYDROGEAR PART NO.	TEXTRON PART NO.	DESCRIPTION	QTY
16-1	70516	----	HOUSING KIT	1
16-2	70517	----	END CAP KIT	1
16-3	50641	----	STRAIGHT HEADLESS PIN	2
16-4	50969	2721615-01	FLANGE BOLT M8-1.25 X 60	4
16-5	51232	2721615-02	HOUSING O-RING	1
16-6	2513027	2721615-03	CHARGE PUMP KIT (STD)	1
16-7	50273	2721615-04	STD GEROTOR ASSEMBLY	1
16-8	9004101-1340	2721615-05	O-RING	1
16-10	50095	2721615-06	SOCKET HEAD M6-1.0 X 20	2
16-15	2513030	----	BYPASS VALVE KIT (BLANK)	1
16-18	70521	2721615-07	PUMP SHAFT KIT	1
16-19	50315	----	BALL BEARING 17 X 40 X 12	1
16-20	51161	----	LIP SEAL 17 x 40 x 12	1
16-21	50951	----	SPACER	1
16-22	50329	----	RETAINING RING	1
16-25	70331	2721615-08	CYLINDER BLOCK KIT	1
16-29	2003014	----	BLOCK SPRING	1
16-30	2003017	----	BLOCK THRUST WASHER	1
16-31	51246	2721615-09	VALVE PLATE	1
16-32	2003087	2721615-10	SWASHPLATE	1
16-34	50551	2721615-11	BALL THRUST BEARING	1
16-37	2003005	2721615-12	TRUNNION ARM	1
16-38	2000015	2721615-13	SLOT GUIDE	1
16-42A	2510027	2721615-14	CHECK VALVE KIT (.031")	1
16-42B	2510050	2721615-15	CHECK VALVE KIT (BLANK)	1
16-44	70403	2721615-16	CHARGE RELIEF VALVE KIT	1
16-49	2513043	2721615-17	TRUNNION SEAL/RETAINER KIT	1
16-56	9005110-4400	----	STRAIGHT THREAD PLUG	1
16-66	9005110-3100	----	5/16 SAE PLUG	1
16-100	70525	2721615-18	OVERHAUL SEAL KIT	1



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