



BOB-CAT[®]

SETUP, PARTS & MAINTENANCE

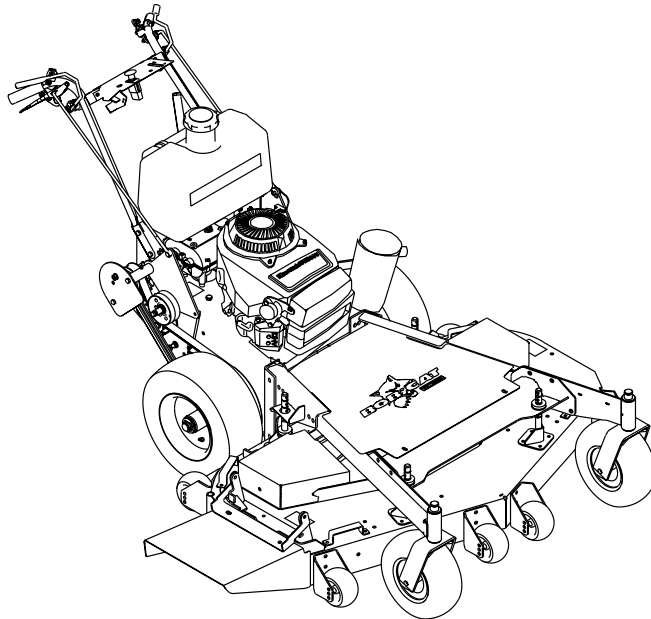
MANUAL GEAR DRIVE MIDSIZE

Power Unit Models:

930022 Power Unit 15HP Kawasaki Gear Drive

930023 Power Unit 17HP Kawasaki Gear Drive

(Operation & Safety Manual: 2721692)



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

2721693 REV D

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.



Gear Drive Midsize

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.



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.



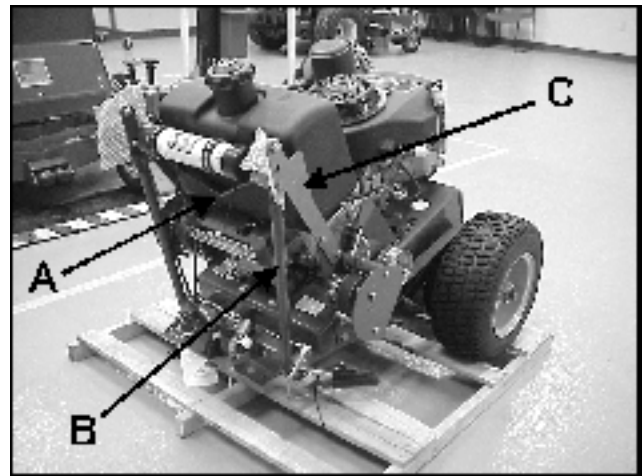
Gear Drive Midsize

ASSEMBLY/SET-UP INSTRUCTIONS

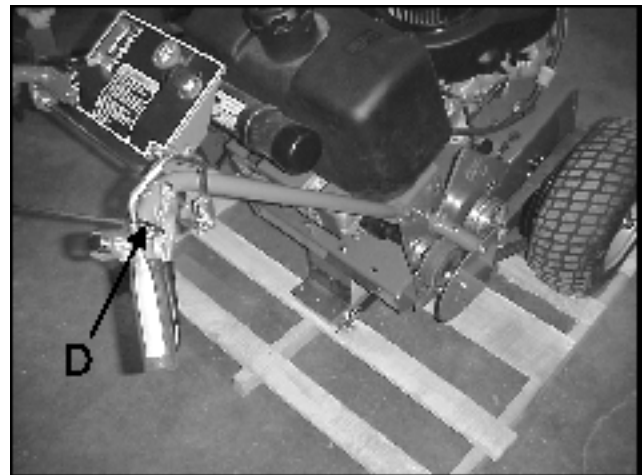
GENERAL NOTE: FRONT, REAR, RIGHT HAND AND LEFT HAND REFERENCES BELOW ARE WITH RESPECT TO AN OPERATOR AT THE CONTROLS.

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 gear selector handle **A** from the power unit and set aside for later use.
3. Unbolt the upper handle **B** from shipping brackets **C**.
4. Unbolt the shipping brackets **C** from the lower handle.



5. Attach the upper handle to the lower handle using the 3/8"-16 X 1" bolts and 3/8"-16 nuts removed in Step 3 as shown.
6. Remove tie wrap **D** from the traction control lever.



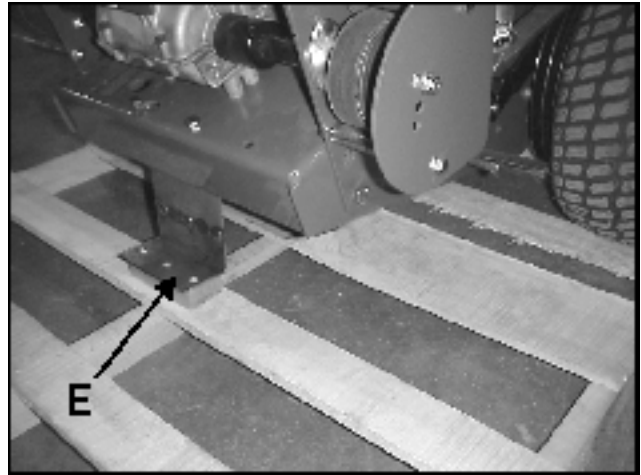
ASSEMBLY/SET-UP INSTRUCTIONS

**Gear
Drive
Midsize**



7. Unbolt shipping bracket **E** from the crate.

NOTE: It will be necessary to support the rear of the power unit and level it for attachment to the cutterdeck.



8. Remove the power unit from the crate and support the rear of the power unit using a jackstand.

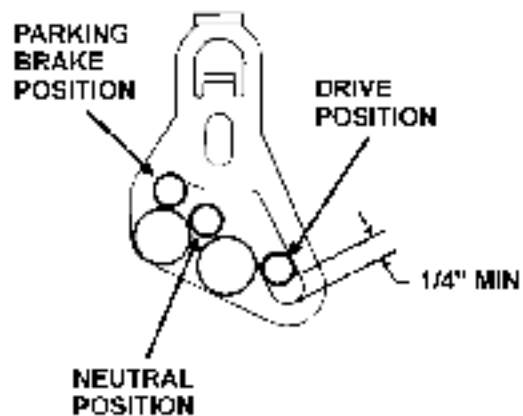
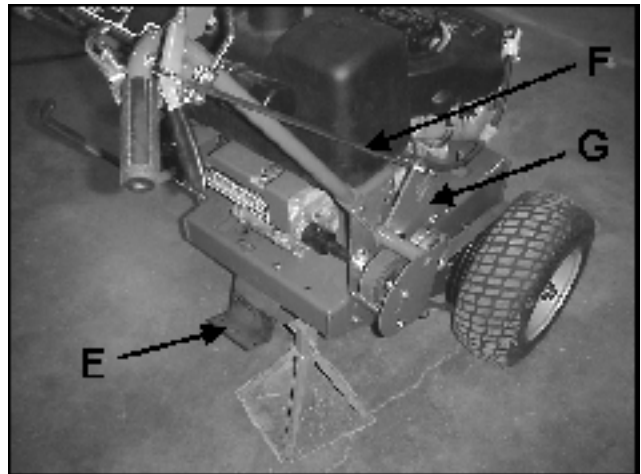
9. Remove shipping bracket **E**.

10. Attach traction control rods **F** by inserting the swivel through the upper hole in the bellcranks **G** and the other end of the traction control rods through the traction control lever on the handlebar. Secure with washers and hairpins.

11. To adjust traction control rods, remove the traction control rod swivel and the brake rod from the bellcrank **G** and adjust swivel up or down the control rod so that once reinstalled there is a 1/4" (6.35mm) gap between the bottom of the rod and the bottom of the traction lock.

12. To adjust the brakes, remove the brake rod from the bottom of bellcrank **G** and set the traction lever in the neutral position. Adjust the brake rod by turning it in or out of the swivel in the brake arm until it just goes into the hole on the bellcrank. Secure with hairpin.

NOTE: The machine should not move with the traction levers in the parking brake position. If machine moves in the parking brake position, readjust brake rod length. Verify that machine can be moved easily when the traction levers are placed in the neutral position.



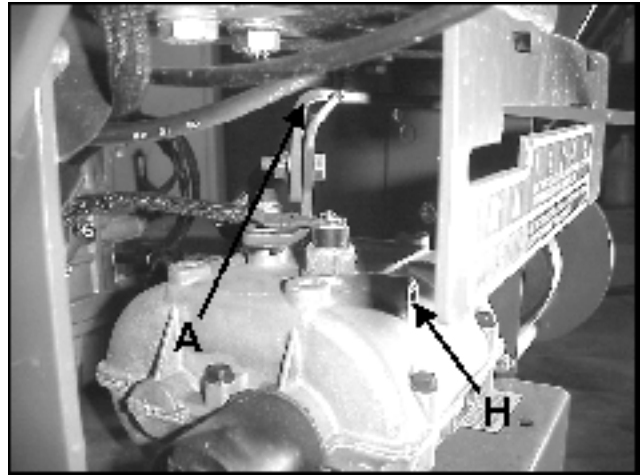


Gear Drive Midsize

ASSEMBLY/SET-UP INSTRUCTIONS

13. Attach gear shift lever **A** removed in Step 2 to the lower shift arm with (1) M8-1.25 X 25 Bolt and (1) M8-1.25 whizlock nut. Shift the lever to the neutral position and verify that the lever is centered side to side in the slot. If not, loosen the M8 bolt and reposition lever. Retighten bolt.

GEARBOX ADJUSTMENT NOTE: The detents between gears and at neutral may be made more positive by turning set screw **H** clockwise. Do not turn set screw more than two turns below flush with the housing.



14. Attach cutterdeck per the instructions on the following pages then return to Step 15 of this section.

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

16. 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

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

18. 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.

ASSEMBLY/SET-UP INSTRUCTIONS

Gear Drive Midsize



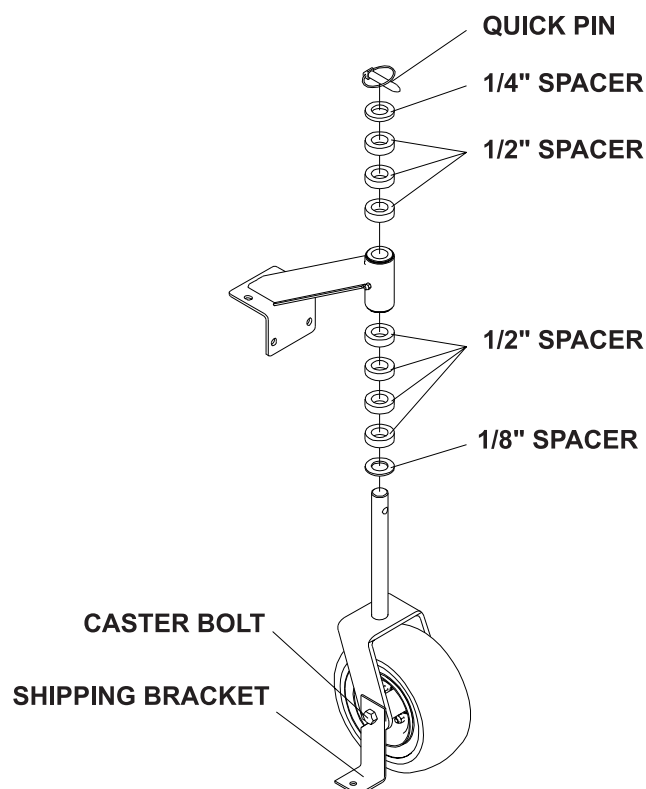
CUTTERDECK ATTACHMENT: Two types of cutterdeck mounting systems are available, fixed and floating. Fixed mounting rigidly attaches the cutterdeck to the power unit. Floating mounting allows the cutterdeck to move independent of the power unit providing a more uniform cut. Follow the appropriate instructions 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		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	6		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	5	1		2
4.625	118	1	1	5	1		1

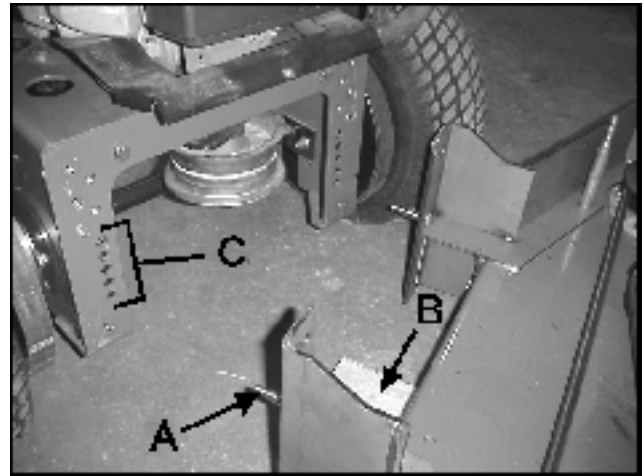


Gear Drive Midsize

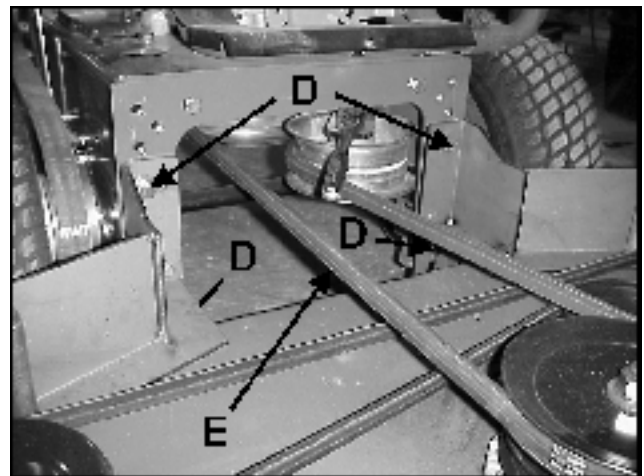
ASSEMBLY/SET-UP INSTRUCTIONS

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.

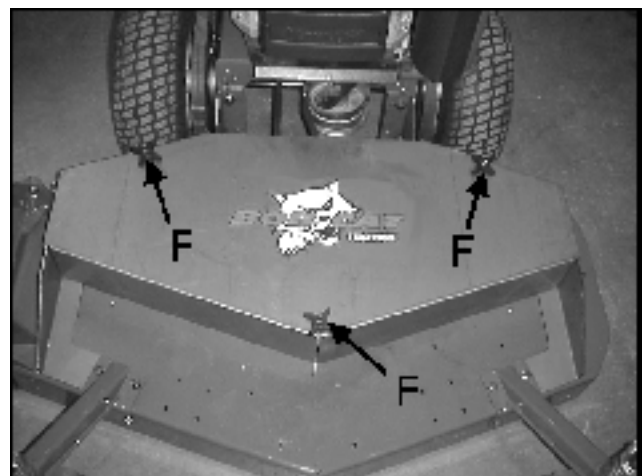
CUTTING HEIGHT	HOLE POSITION ON ENGINE DECK*	BLOCK HEIGHT AT REAR OF DECK (B)
1.375" - 1.625"	5	1.25"
1.875" - 2.375"	4	2.00"
2.625" - 3.125"	3	2.75"
3.375" - 3.875"	2	3.50"
4.125" - 4.625"	1	4.25"
* Position 1 is the highest hole on the engine deck.		



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.



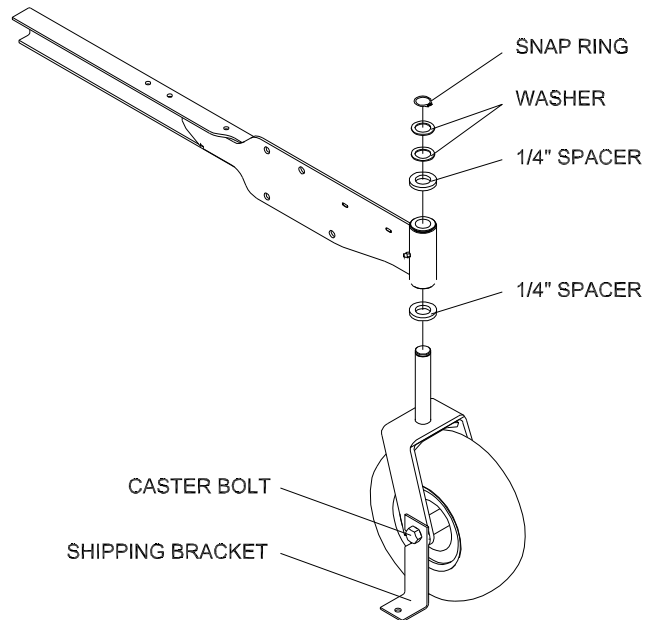
11. Reinstall belt cover and fasten in place with knobs **F**.
12. Remove support block from the rear of cutterdeck.
13. Remove support from the rear of the power unit.



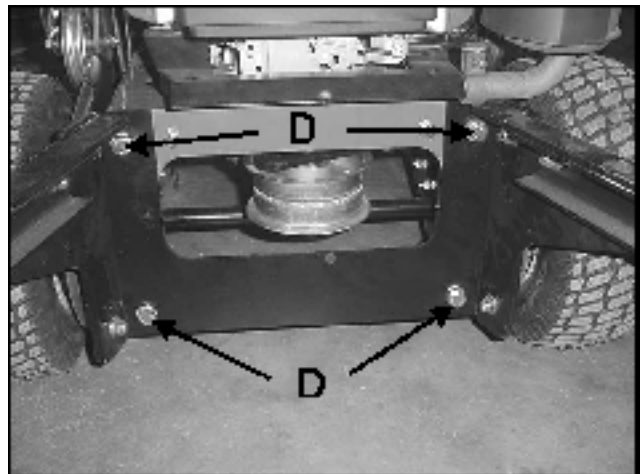
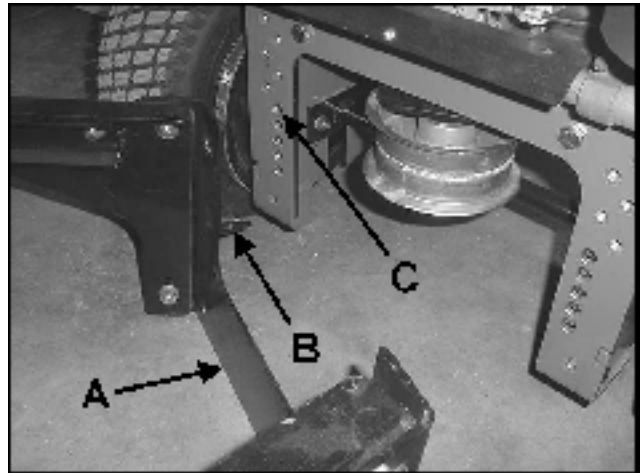


FLOATING CUTTERDECK ATTACHMENT

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.





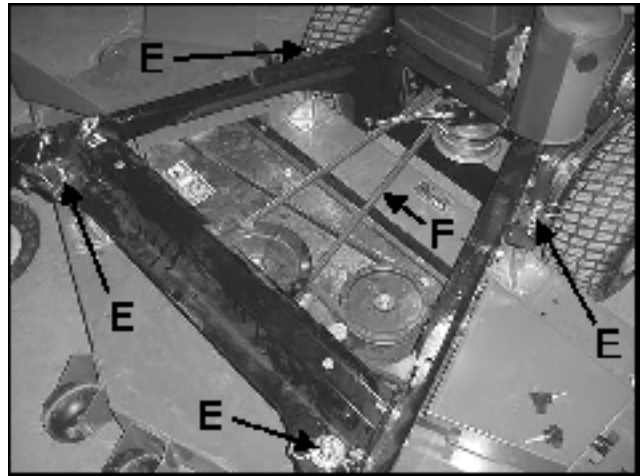
Gear Drive Midsize

ASSEMBLY/SET-UP INSTRUCTIONS

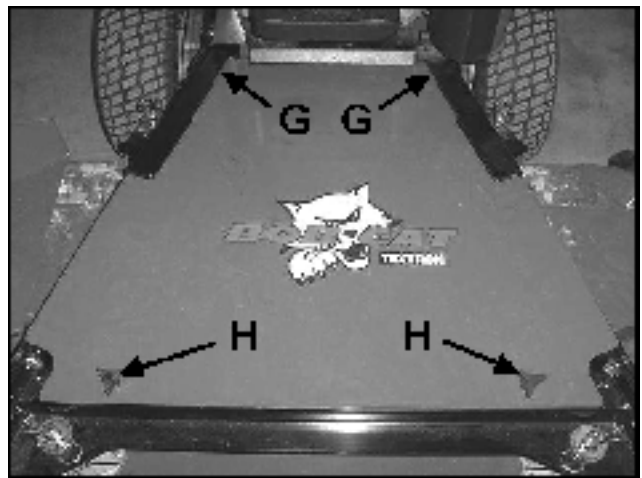
5. Position power unit behind the crate and cutterdeck.
6. With the cradle raised above the cutterdeck, roll the front of the cradle and power unit up and over the cutterdeck and crate.
7. Align height of cut pins **E** on cutterdeck with the bushings on the cradle and lower the cradle so pins pass through bushings.
8. 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 on each side of the cutterdeck or in the Operation & Safety Manual.

9. 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.



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

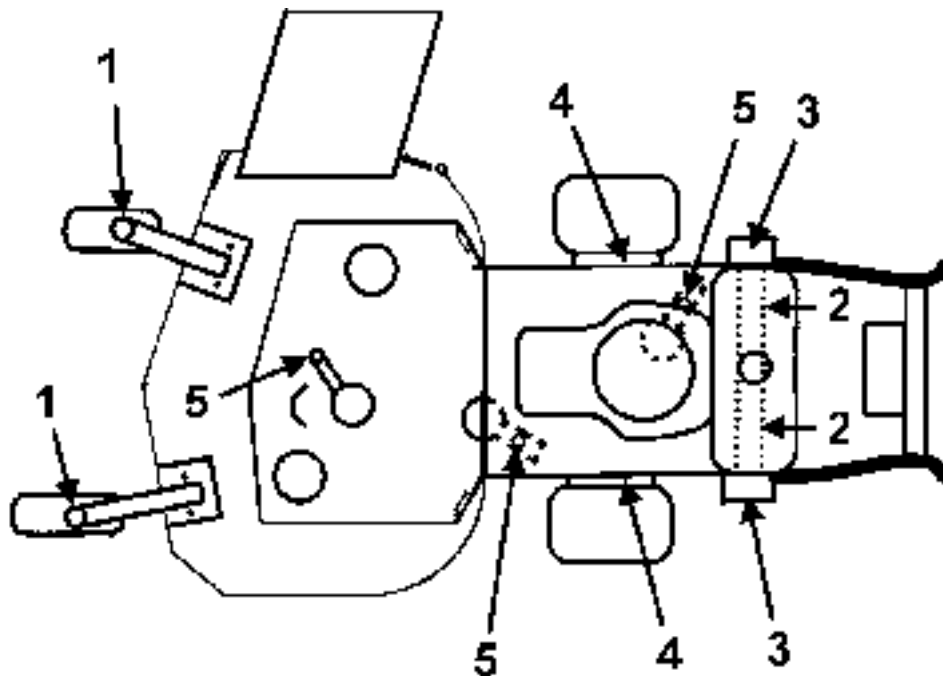




MACHINE LUBRICATION

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

- 1) Caster wheel pivots (2 points)
- 2) Caster wheel bearings on wheel hub (2 points)
- 3) Drive Wheel Bellcranks (2 points)
- 4) Brake Levers (2 points)
- 5) Idler pivot bearings:
 - a) Engine to cutterdeck belt tensioner
 - b) Cutterdeck belt tensioner
 - c) Transmission drive belt tensioner
- 6) Shaft Couplers (2 points)





Gear Drive Midsize

LUBRICATION

ENGINE

DAILY

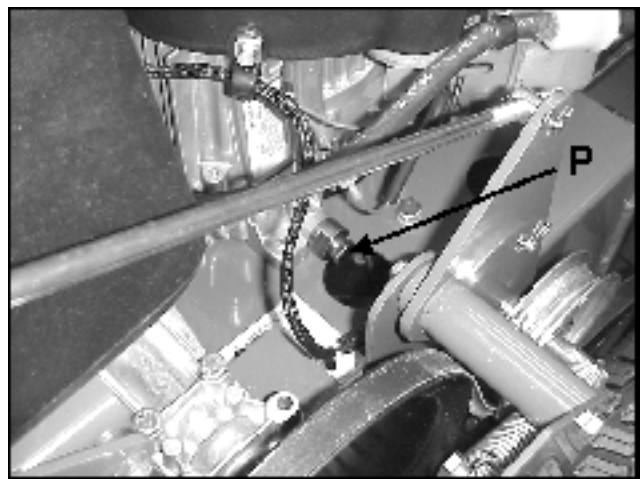
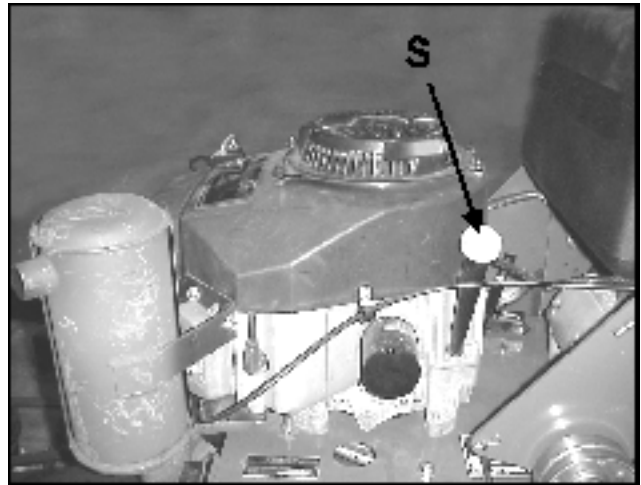
Remove the dipstick **S** and check that the oil level reaches the full mark. If necessary, top off with fresh oil. To obtain the correct oil level, the machine must be level. See engine manufacturer's manual for proper oil viscosity and grade. **DO NOT OVER FILL!**

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.

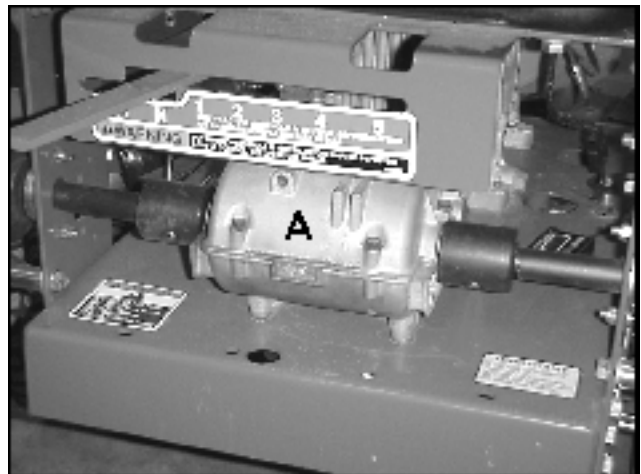
Engine operator's manuals are shipped with each machine. Shop manuals for the engines are available from your local engine dealer/distributor.

- For Kawasaki FH500V, order: 99920-2129-03.
- For Kawasaki FH451V, order: 99920-2129-03.



GEARBOX

Check every 500 hours to ensure proper lubrication. 12 oz. is capacity of gearbox. To check level: Remove top cover(A), 12 oz. of grease will fill 1/3-1/2 of the bottom 1/2 of gearbox. Only add Bentonite grease-available from your Peerless dealer. Lubricate each grease fitting on either side of gearbox.





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.

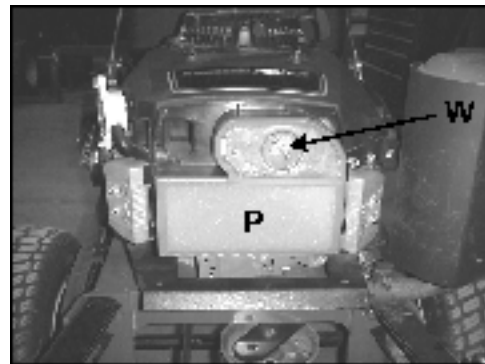
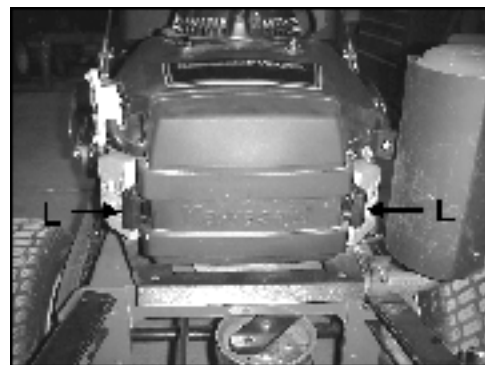
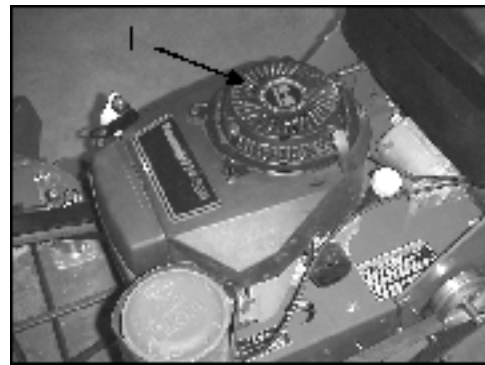
Air Cleaner (every 25 hours)

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 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.

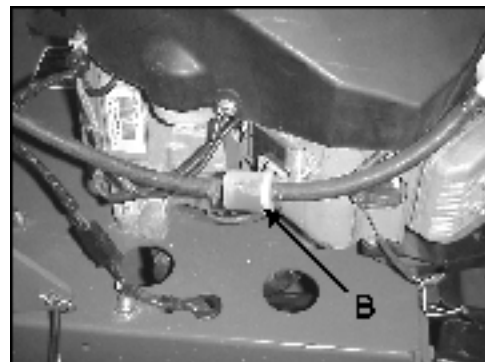
NOTES:

- 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.

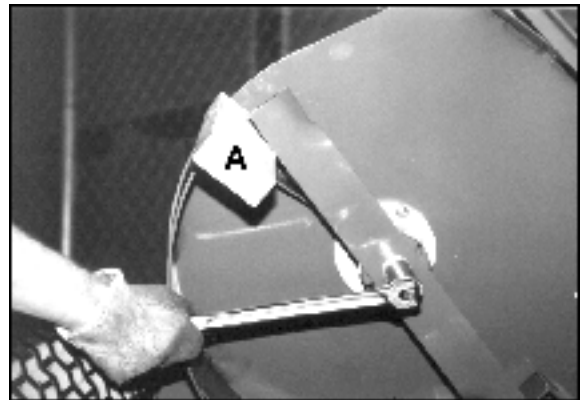
NOTE:

- 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

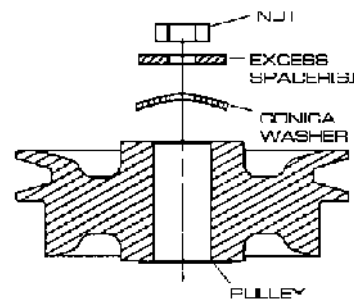
1. Use a box wrench or socket with a long breaker bar to remove spindle bolt under cutterdeck.
2. Slip tube over breaker bar or wrench if necessary to gain leverage.
3. Keep hands clear as blades may rotate when bolt releases.
4. When changing blades, wear thickly padded gloves.
5. Block blades from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

SERVICE CHART



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					
GEARBOX						
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.



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



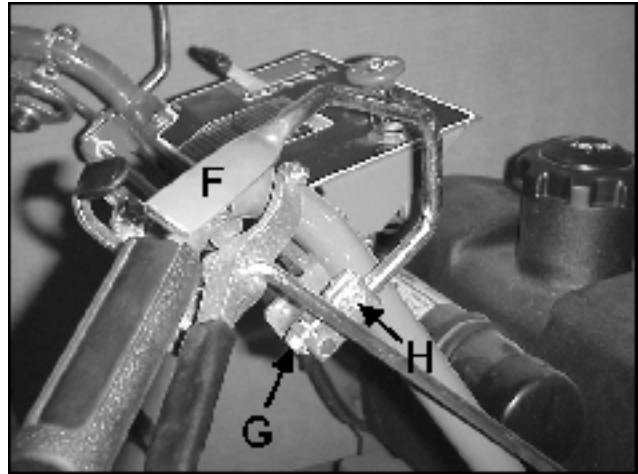
Make all adjustments with the engine shut off, spark plug wire disconnected and mower drive disengaged.

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.

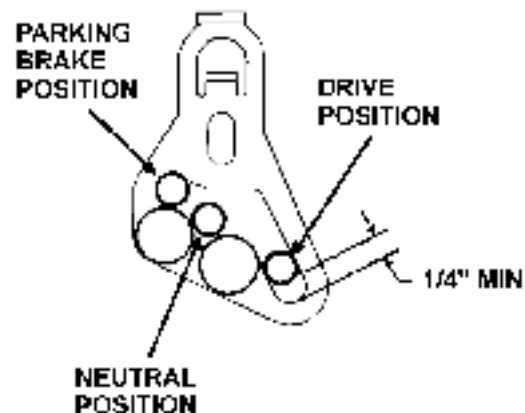


TRACTION RODS AND WHEEL BELT TENSION -

There should be a 1/4" minimum gap between the traction control rod and the bottom of the neutral latch slot when the drive is engaged. If there is no gap the rod will hold the wheel belt idler up and the belt may slip. Too much gap makes it difficult to get adequate braking and free-wheeling neutral when traction lever locks are in the neutral position. The gap may be increased from 1/4" as long as the machine will free wheel in neutral. Increasing the gap reduces the reach to the traction lever.

TO ADJUST:

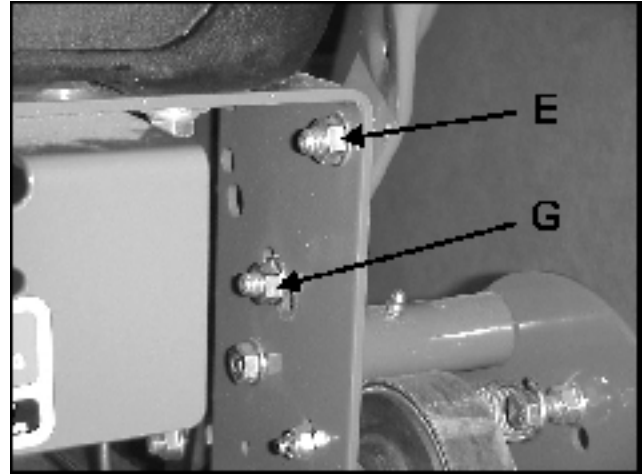
1. Disconnect the brake rod.
2. Remove hairpin cotter from the traction control rod next to the traction control lever.
3. Lift out the rod and turn in or out of the turnbuckle in the required direction.
4. Refit the rod to the lever and replace the hairpin.
5. Check the gap. If it is still not 1/4", repeat the procedure until an approximate 1/4" gap is obtained.





HANDLE BAR HEIGHT ADJUSTMENT

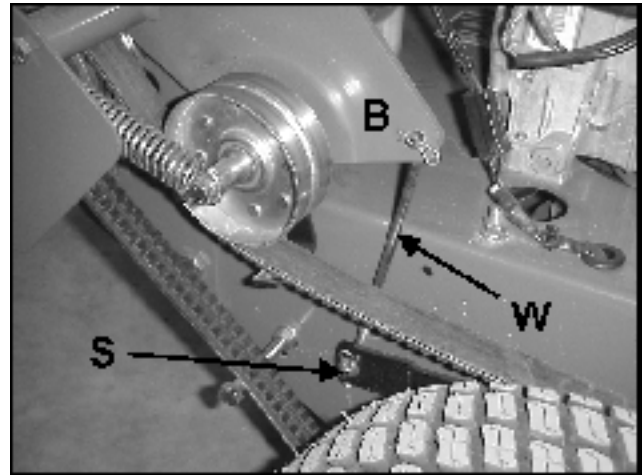
To adjust handle bar height: Remove bolts **G** and loosen bolts **E** on each side of handlebars. Raise or lower as required. Reposition upper handle and reinsert bolts **G** into appropriate hole in lower handle and tighten. Readjust traction control rods, brakes and parking brakes.



TRACTION BRAKES/PARKING BRAKES - With the traction rods properly adjusted, apply both parking brakes and try to push the machine forward. If one or both wheels rotate, adjust the corresponding brake(s).

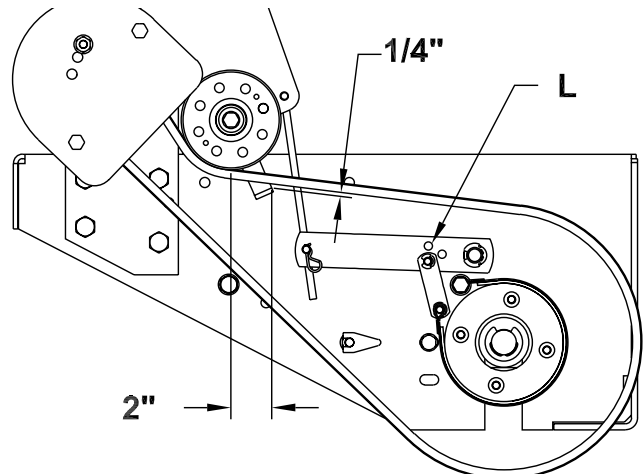
TO ADJUST:

1. Remove the hairpin cotter from the brake rod **W** on idler bellcrank **B**.
2. Slide the brake rod out of the bellcrank and turn the rod in or out of brake end swivel **S** as needed.
3. Reassemble the brake rod to the bellcrank.
4. Check the adjustment. **DO NOT OVER ADJUST**. If necessary, repeat the procedure until the correct adjustment is achieved.
5. If adequate adjustment can not be achieved with the brake rod, the links between the brake arm and brake band may be moved to a different hole **L** in the brake arm.
6. Adjust drive idler belt guide so that with the traction lever in the drive position the guide is a 1/4" from the underside of the belt and 2" from the point where the belt exits the idler pulley as shown.



When the brakes are properly adjusted the machine can be freely maneuvered with the traction levers in the neutral position. If not, the brakes have been over-adjusted and have to be backed off.

NOTE: Clean inner groove of wheel drive pulley daily for better drive and neutral. Accumulation of grass, mud or other debris in pulley groove can affect declutching. Set mud scraper at each wheel drive pulley to angle down to catch debris.

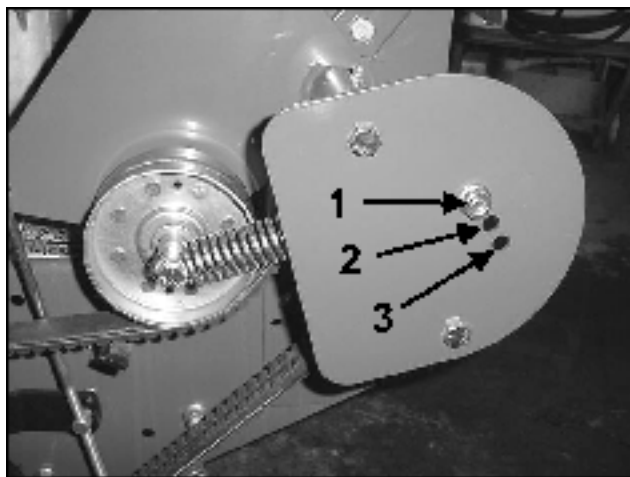




DRIVE BELT TENSION ADJUSTMENT

Drive belt tension can be adjusted to one of three settings to account for various mowing conditions.

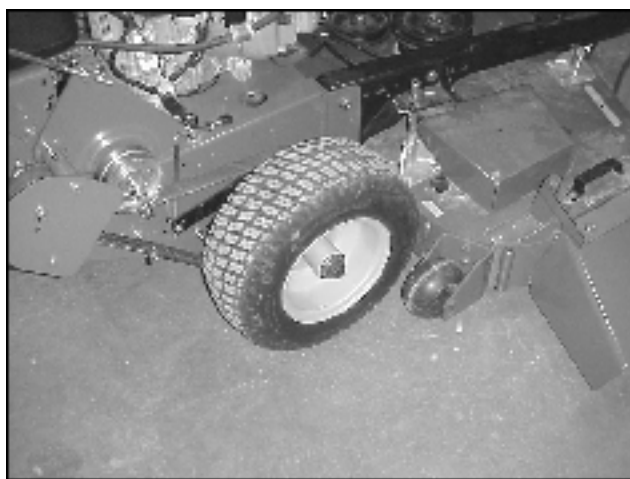
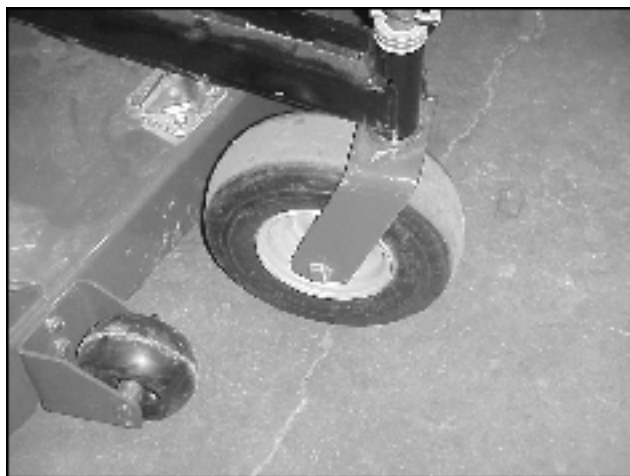
1. Adjust by moving the spring anchor bolt to position 1, 2 or 3.
- Position 1 will provide the least amount of hand effort and wheel traction.
 - Position 3 will provide the highest amount of hand effort and wheel traction.



TIRE PRESSURE ADJUSTMENT

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

NOTE: Adjusting tire pressure slightly can improve tracking. Increase pressure on the side the machine tracks toward and decrease it on the other side.





PTO BELT

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



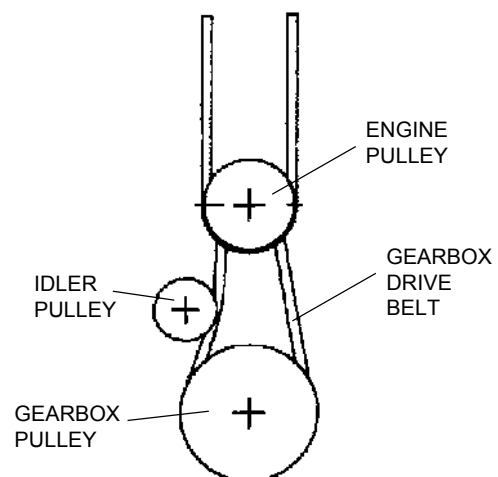
CUTTERDECK BELT

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.



GEARBOX DRIVE BELT

1. Remove PTO belt from engine clutch.
2. Unbolt clutch stop pin.
3. Rotate idler arm using a 3/8" ratchet or breaker bar.
4. Remove gearbox drive belt.
5. Replace by following steps in reverse order.



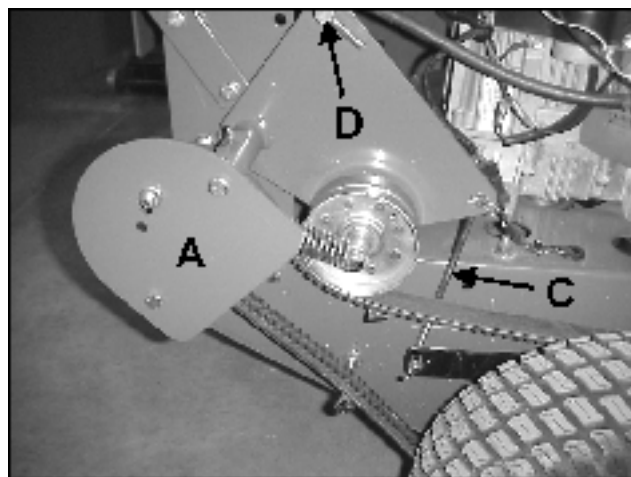
View under engine deck

BELT REPLACEMENT

**Gear
Drive
Midsize**



WHEEL DRIVE BELT - Remove brake rod **C** and traction control rod **D** from bellcrank. Remove bottom bolt and spacer from fender **A** and loosen the other bolt that holds bellcrank. Rotate bellcrank and idler up and out of the way. The wheel drive belt will be slack enough to be removed from its pulleys and passed over the drive wheel. Replace in the reverse order, readjust traction control rod and brake rod. (Also see Traction Rods and Wheel Belt Tension in ADJUSTMENTS section.)





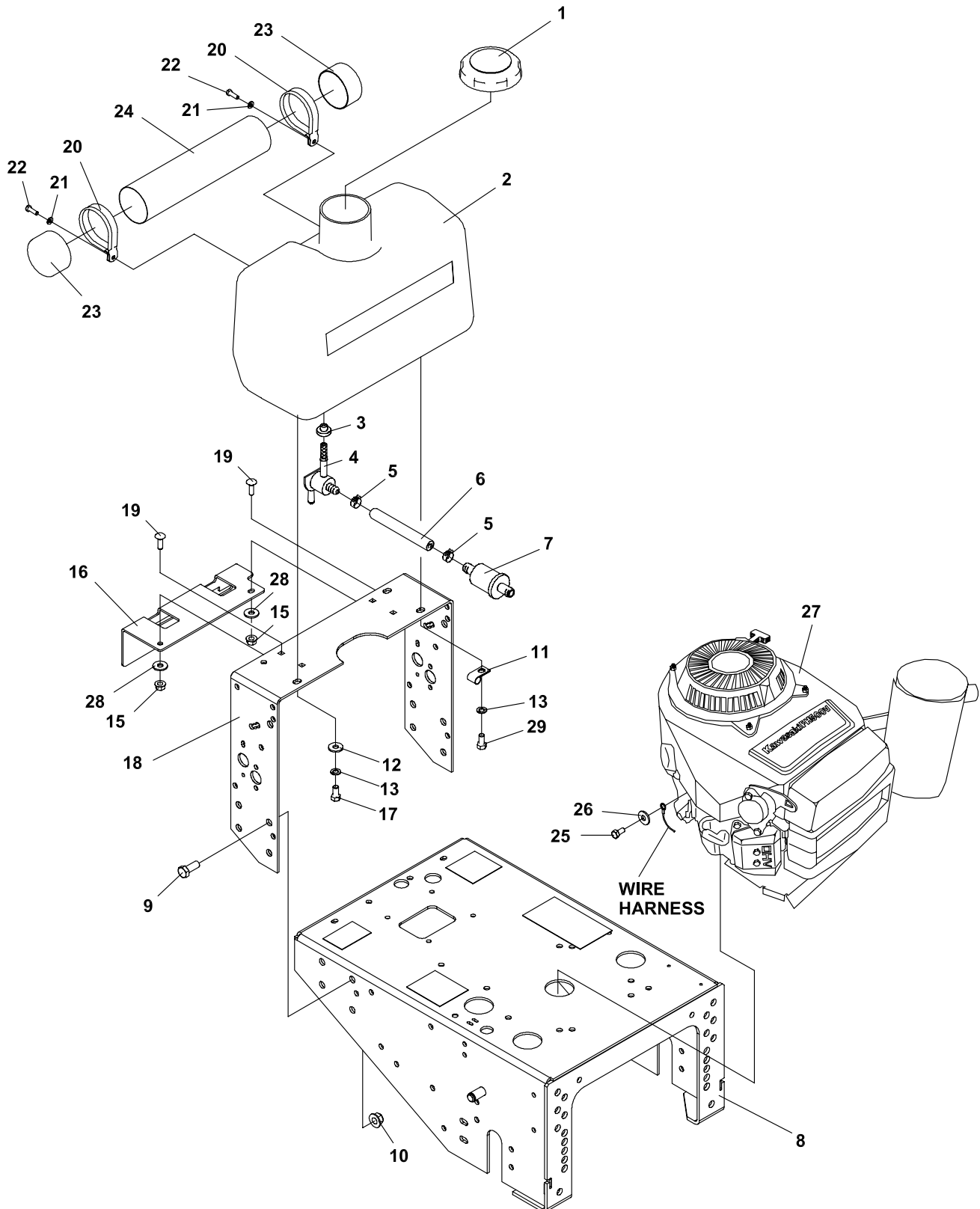
**Gear
Drive
Midsize**

PARTS SECTION

UPPER ENGINE DECK ASSY



FIGURE 1





Gear Drive Midsize

2721693-01

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				
1-2	2721525	TANK-FUEL MID	1				
		(INCLUDES ITEMS 3 & 4)					
1-3	48310	S BUSHING,FUEL TANK	1				
1-4	38540	S FUEL SHUT-OFF VALV	1				
1-5	88042N	HOSE CLAMP	2				
1-6	48016-10A	HOSE-25ID X .50OD X 13"	12"				
1-7	38666	FILTER, FUEL	1				
1-8	2722622	S-ENGINE DECK W/LABELS	1				
1-9	64123-39	BOLT-HEX 1/2-13X1-1/4	8				
1-10	64229-05	LOCKNUT, 1/2-13 NYLON	8				
1-11	48228-2A	CABLE CLIP 3/4 W/INSTN	1				
1-12	64163-31	WASHER	3				
1-13	64006-03	LOCKWSHR-HELICAL 3/8	4				
1-14	64123-50	BLT-HEX 3/8-16 X 1	1				
1-15	64229-02	LOCKNUT-NYLON 5/16-18	2				
1-16	2722621	S-GEAR SELECT PLATE	1				
1-17	64123-15	BLT-HEX 3/8-16X3/4	3				
1-18	2721394.2	HANDLE-LOWER	1				
1-19	64018-15	BLT-CRG 5/16-18 X 1	2				
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	64205-018	BLT MET M8-1.25 X 15	1				
1-26	64002-04	LOCKWSHR-TOOTH 5/16	1				
1-27*	2721377	ENG-15HP KAW W/CHARG	1				
	*2721378	ENG-17HP KAW W/CHARG	1				
	2722214	OIL FILTER					
	2722207	AIR FILTER PAPER ELEMENT					
	2722208	FILTER FOAM PRECLEANER					
(SERVICE MANUAL 15 HP & 17 HP KAW #99920-2129-03)							
1-28	64163-29	21/64X1X11GA.WASHER	2				

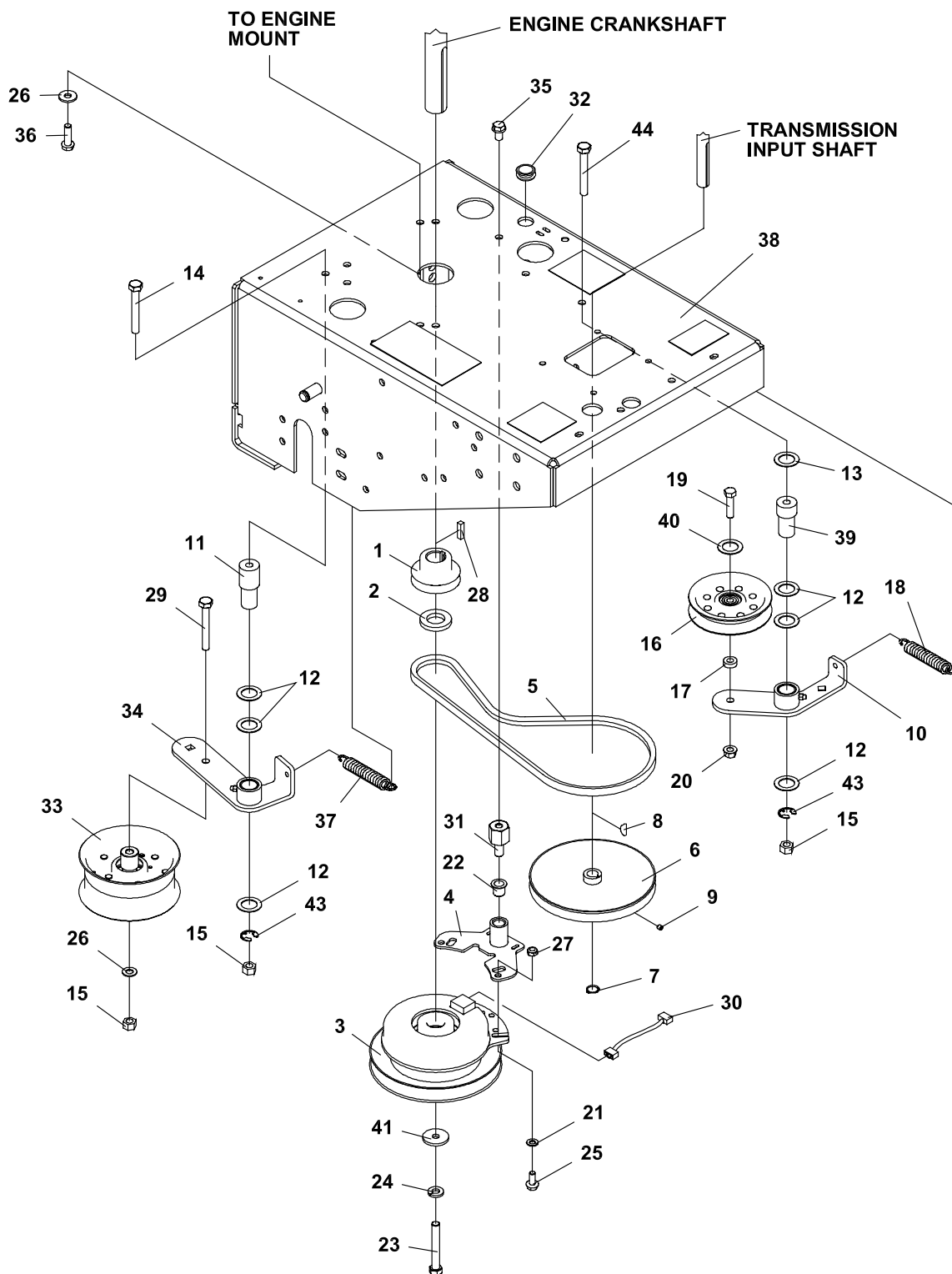
* AVAILABLE THROUGH KAWASAKI DEALER.

LOWER ENGINE DECK ASSY/CLUTCH

**Gear
Drive
Midsize**



FIGURE 2





Gear Drive Midsize

2721693-02

LOWER ENGINE DECK ASSY/CLUTCH

FIGURE 2

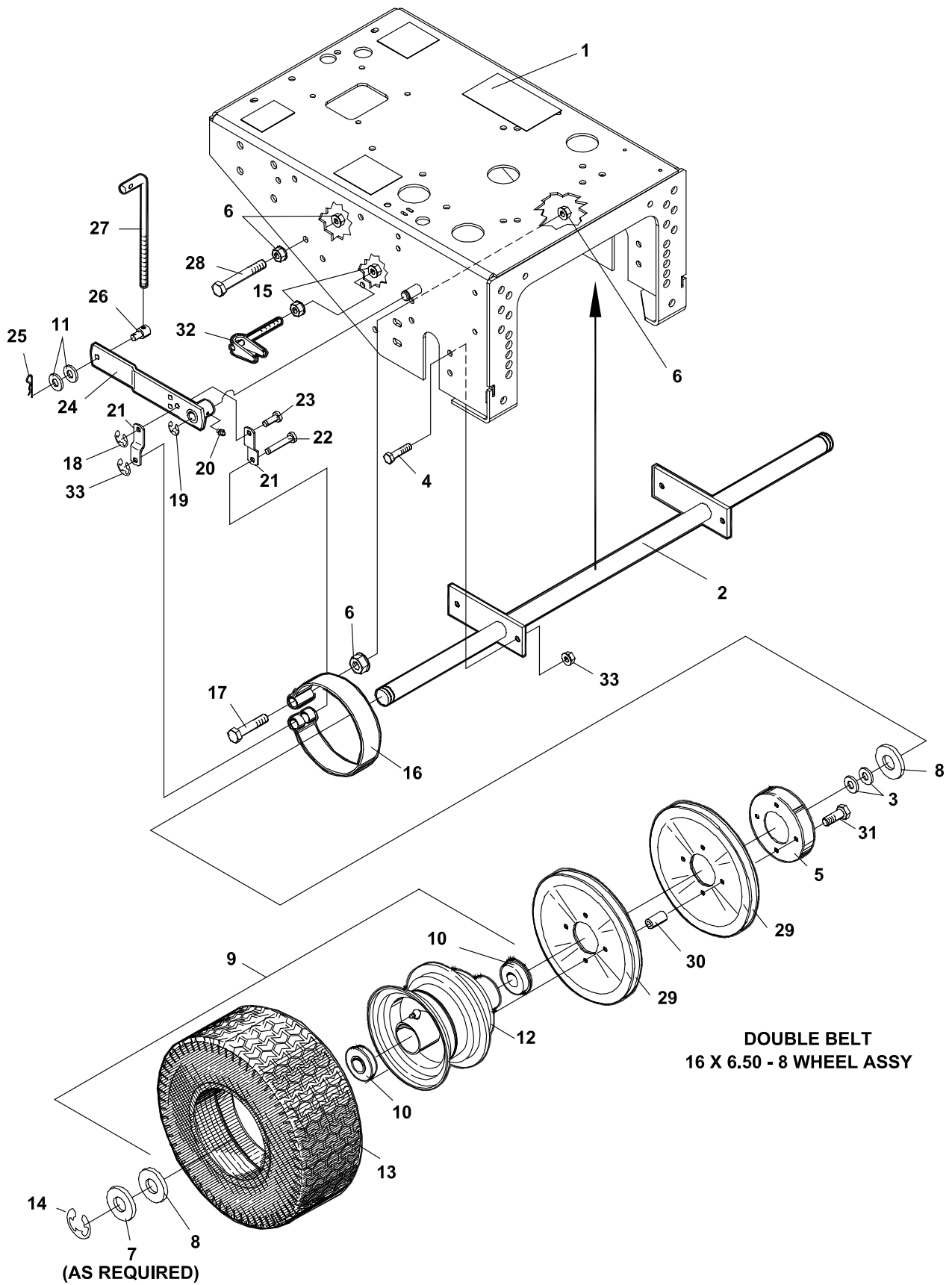
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
2-1	38460	PULLEY-ENGINE	1				
2-2	64163-07	1-1/32X1-3/4X1/4 WASH	1				
2-3	2721110	CLUTCH-ELECTRIC	1				
	(INCLUDES ITEM 30)						
2-4	2721331.7	WLDMT-CLUTCH STOP MID	1				
2-5	2721410	BELT-HA 41.00	1				
2-6	128175	PULLEY-SNGL GRV 7 ED	1				
2-7	64144-01	SNAP RING 5/8	1				
2-8	64164-19	KEY WOODRUFF.19X.75 #9	1				
2-9	64044-1	SCREW-SET 1/4-20X1/4	2				
2-10	2721403.7	WLDMT-IDLER ARM	1				
2-11	4116712	PIN-PIVOT	1				
2-12	64163-65	WASHER 0.890 X 1.375	6				
2-13	64163-82	WSHR-FLAT .406X1.44X9	1				
2-14	64123-138	BLT-HEX 3/8-16X3-3/4	1				
2-15	64229-03	LOCKNUT-NYLON 3/8-16	3				
2-16	2308000	PULLEY-IDLER 4.00 EOD	1				
2-17	33148-01	SPACER	1				
2-18	38219	SPRING-TENSION	1				
2-19	64123-70	BLT-HEX 3/8-16X1-1/2	1				
2-20	64141-4	NUT-WLF 3/8-16	1				
2-21	64163-55	WASHER .328X.75X14	2				
2-22	38304-03	BRG-FLANGED PLASTIC	1				
2-23	64123-155	BLT-HEX 7/16-20 X 3	1				
2-24	64006-06	LOCKWSHR-HELICAL 7/1	1				
2-25	64123-54	BOLT, 5/16-18X3/4 HEX	2				
2-26	64163-31	WASHER .25/64 X 1 X 12 GA5	1				
2-27	64229-02	LOCKNUT-NYLON 5/16-18	2				
2-28	64164-12	1/4X1/4X1 SQ END KEY	1				
2-29	64123-75	BOLT, 3/8-16X3 HEX	1				
2-30	2720949	ASSY-CLUTCH WIRE	1				
2-31	4121540	PIN-CLUTCH	1				
2-32	148034-08	GROMMET 1.125OD 0.625ID	1				
2-33	2721541	PULLEY-IDLER 5 IN	1				
2-34	2721401.7	WLDMT-IDLER ARM	1				
2-35	64139-21	BLT-WLF 3/8-16X3/4	1				
2-36	64197-005	BLT-TDFM 3/8-16X1-1/4	4				
2-37	2188131	SPRING-EXTENSION	1				
2-38	2722622	S-ENGINE DECK W/LABELS	1				
2-39	4116691	PIN-PIVOT	1				
2-40	64163-61	WASHER .81 X .406 X 16GA	1				
2-41	64163-51	WSHR.453X1.38X7GA	1				
2-42*	4121560	KIT-BRAKE POLE RPLCMNT	1				
2-43	64221-04	E-RING.875	2				
2-44	64123-79	BLT-HEX 3/8-16X3-1/4	1				

* NOT ILLUSTRATED

DRIVE WHEELS & BRAKES



FIGURE 3





Gear Drive Midsize

2721693-03

DRIVE WHEELS & BRAKES

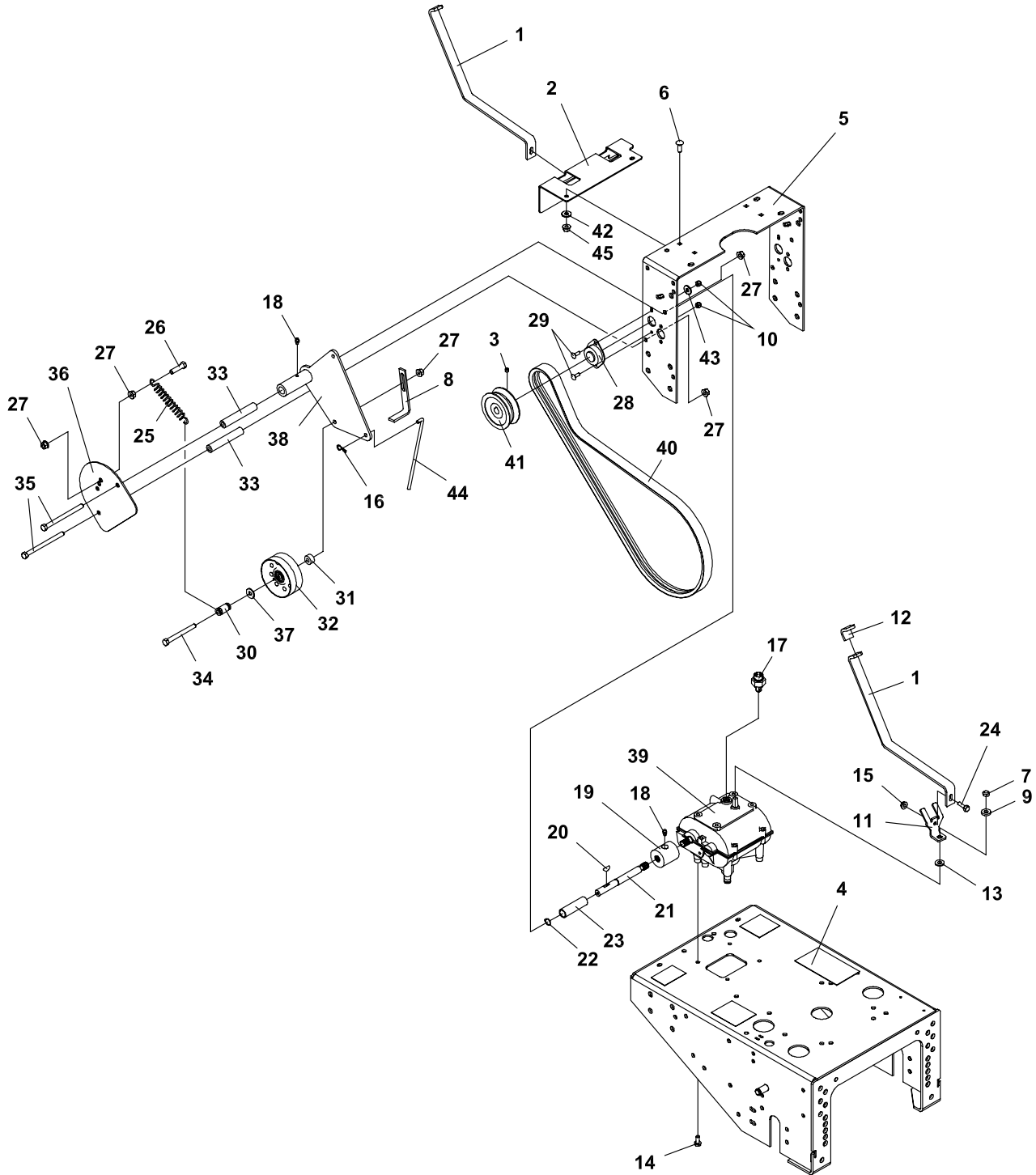
FIGURE 3

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
3-1	2722622	S-ENGINE DECK W/LABELS	1				
3-2	2722491.7	WLDMT-AXLE GD	1				
3-3	64163-07	WASHER	4				
3-4	64197-005	BLT-TDFM 3/8-16X1-1/4	4				
3-5	4122115	BRAKE-DRUM	2				
3-6	64246-03	NUT-WHIZ M10-1.50	8				
3-7	64163-64	WASHER	2				
3-8	64163-25	WASHER	4				
3-9	2721432	WHL ASSY-4PLY 16 X 6.5-8	2				
	(INCLUDES ITEMS 10, 12 & 13)						
3-10	2721432-3	S BALL BRG 1.00	2				
3-11	64163-02	WASHER-11GA	4				
3-12	2721432-2	S RIM ASSY	1				
3-13	2721432-1	S TIRE 16 X 6.5 - 8 4 PLY	1				
3-14	64221-1	E CLIP	2				
3-15	64141-4	NUT-WLF 3/8-16	4				
3-16	38534	BAND-BRAKE	2				
3-17	64205-034	BLT-MET M10-1.50 X 45	2				
3-18	64144-31	SNAP RING	4				
3-19	64144-36	SNAP RING	2				
3-20	85010N	ZERK, 1/4-28 STR SLFTHRD	2				
3-21	4117094	LINK-BRAKE	4				
3-22	33138-07	PIN-CLVS GRVD .38 X 1.25	2				
3-23	33138-01	PIN, CLEVIS .47	2				
3-24	36853.7	WLDMT BRAKE ARM	2				
3-25	64168-2	HAIRPIN COTTER	2				
3-26	33004A	SWIVEL	2				
3-27	33135-01	ROD-BRAKE	2				
3-28	64205-012	BLT-MET M10-1.50 X 90	2				
3-29	2721532	PULLEY-A BELT 11.00 IN	4				
3-30	103044	SPACER, F.R. BEARING	8				
3-31	64197-011	BLT-TDFM 5/16-18X1 1/2	8				
3-32	36896	SCRAPER	2				
3-33	64144-30	SNAP RING.375	2				

TRANSMISSION DRIVE



FIGURE 4





Gear Drive Midsize

2721693-04

TRANSMISSION DRIVE

FIGURE 4

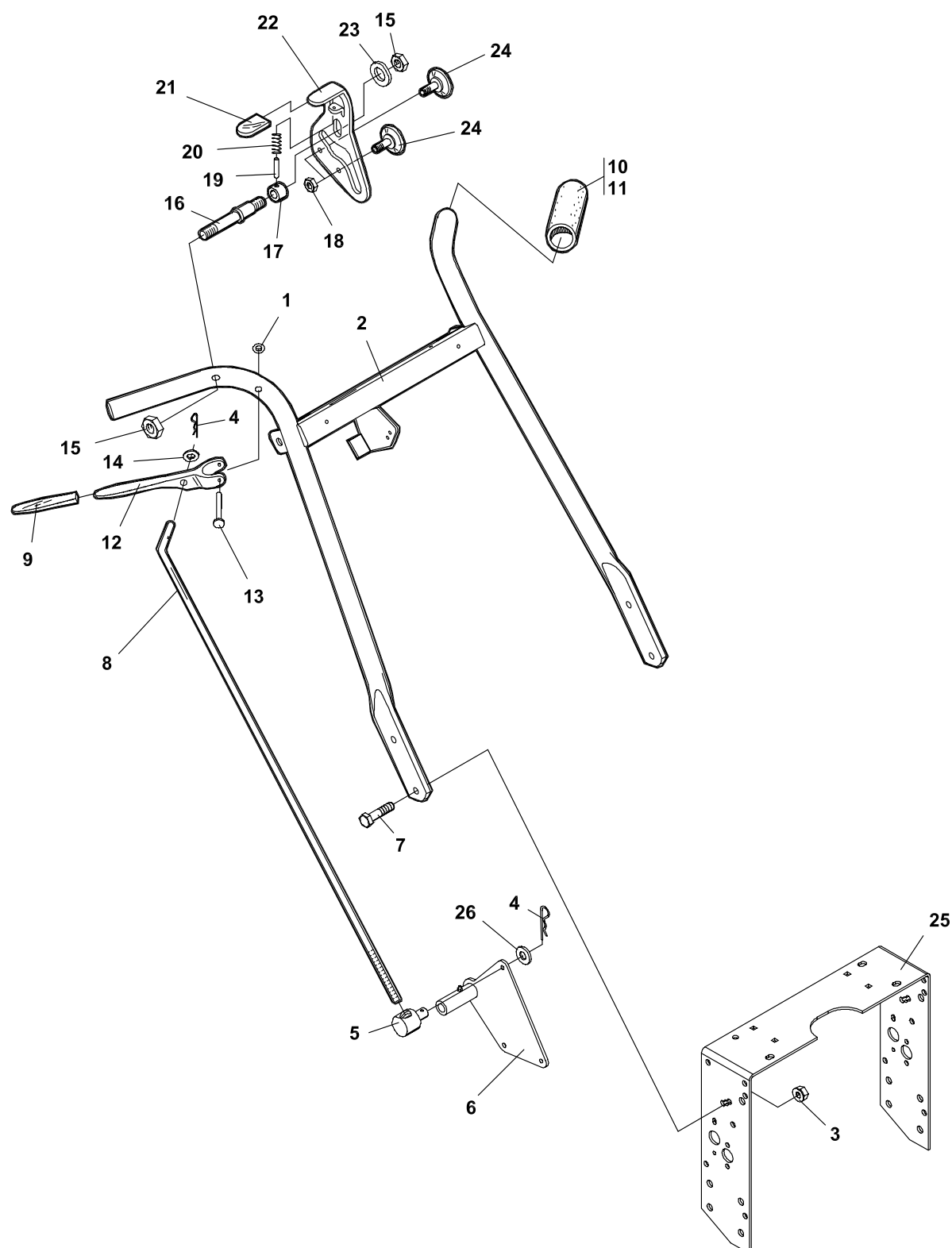
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
4-1	2721382.7	LEVER-SHIFT	1	4-42	64163-29	21/64X1X11GA.WASHER	2
4-2	2722621	S-GEAR SELECTOR PLATE	1	4-43	64251-003	WASHER-M8	2
4-3	64044-2	SCREW-SET 5/16-18X3/8	2	4-44	33135-01	ROD-BRAKE	2
4-4	2722622	S-ENGINE DECK W/LABELS	1	4-45	64229-02	LOCKNUT-NYLON 5/16-18	2
4-5	2721394.2	LOWER-HANDLE	1				
4-6	64018-15	BLT-CRG 5/16-18X1	2				
4-7	64151-3	3/8-24 HH LOCK NUT	1				
4-8	2722031.7	GUIDE-BELT	2				
4-9	64163-46	WSHR.383/.393X.88X7GA	1				
4-10	64229-01	LOCKNUT-NYLON 1/4-20	4				
4-11	2721381.7	LEVER-SHIFT LOWER	1				
4-12	2188155	GRIP-1/4X1X4-1/2	1				
4-13	128108	WASHER PEERLESS	1				
4-14	64139-08	BLT-WLF 5/16-18X3/4	4				
4-15	64246-02	NUT-WLF M8-1.25	1				
4-16	64168-2	COTTER-HAIRPIN .08X1.19	2				
4-17	2722033	SWITCH-NEUTRAL	1				
4-18	85010N	ZERK, 1/4-28 SELF THREAD	4				
4-19	2308135	COUPLER	2				
4-20	64164-19	KEY WOODRUFF.19X.75 #9	2				
4-21	2308134	SHAFT-CONNECTOR	2				
4-22	64144-01	SNAP RING 5/8	2				
4-23	35033-5A	JACKSHAFT SHLD 3	2				
4-24	A1103051	BOLT-M8-1.25X25	1				
4-25	2308133	SPRING-EXTENSION	2				
4-26	64123-70	BLT-HEX 3/8-16X1-1/2	2				
4-27	64141-4	NUT-WLF 3/8-16	10				
4-28	38213	BEARING-JACKSHAFT	2				
4-29	64123-89	BLT-HEX 1/4-20 X 3/4	4				
4-30	2303056	SPACER-SPRING	2				
4-31	33030-07	BUSHING-IDLER	2				
4-32	38184-2	IDLER PULLEY-FLAT-4.0	2				
4-33	2721684	SPACER-10.31X18.54X108	4				
4-34	64123-138	BLT-HEX 3/8-16X3-3/4	2				
4-35	64123-93	BLT-HEX 3/8-16X5	4				
4-36	2721369.2	COVER-BELT BOBCAT	2				
4-37	64163-31	WASH.25/64X1X12 GA	2				
4-38	2721364.2	WLDMT-BELLCRANK RH	1				
	*2721365.2	WLDMT-BELLCRANK LH	1				
4-39	2308136	TRNSMSN-5 SPD W/ REV	1				
		(SEE FIGURE 8 FOR PARTS BREAKDOWN)					
4-40	2721409	BELT-HA DOUBLE 59.75	2				
4-41	38669	PULLEY-HA DOUBLE	2				
		(INCLUDES ITEM 3)					

* NOT ILLUSTRATED

UPPER HANDLE/ROLLER LATCH



FIGURE 5





Gear Drive Midsize

2721693-05

UPPER HANDLE/ROLLER LATCH

FIGURE 5

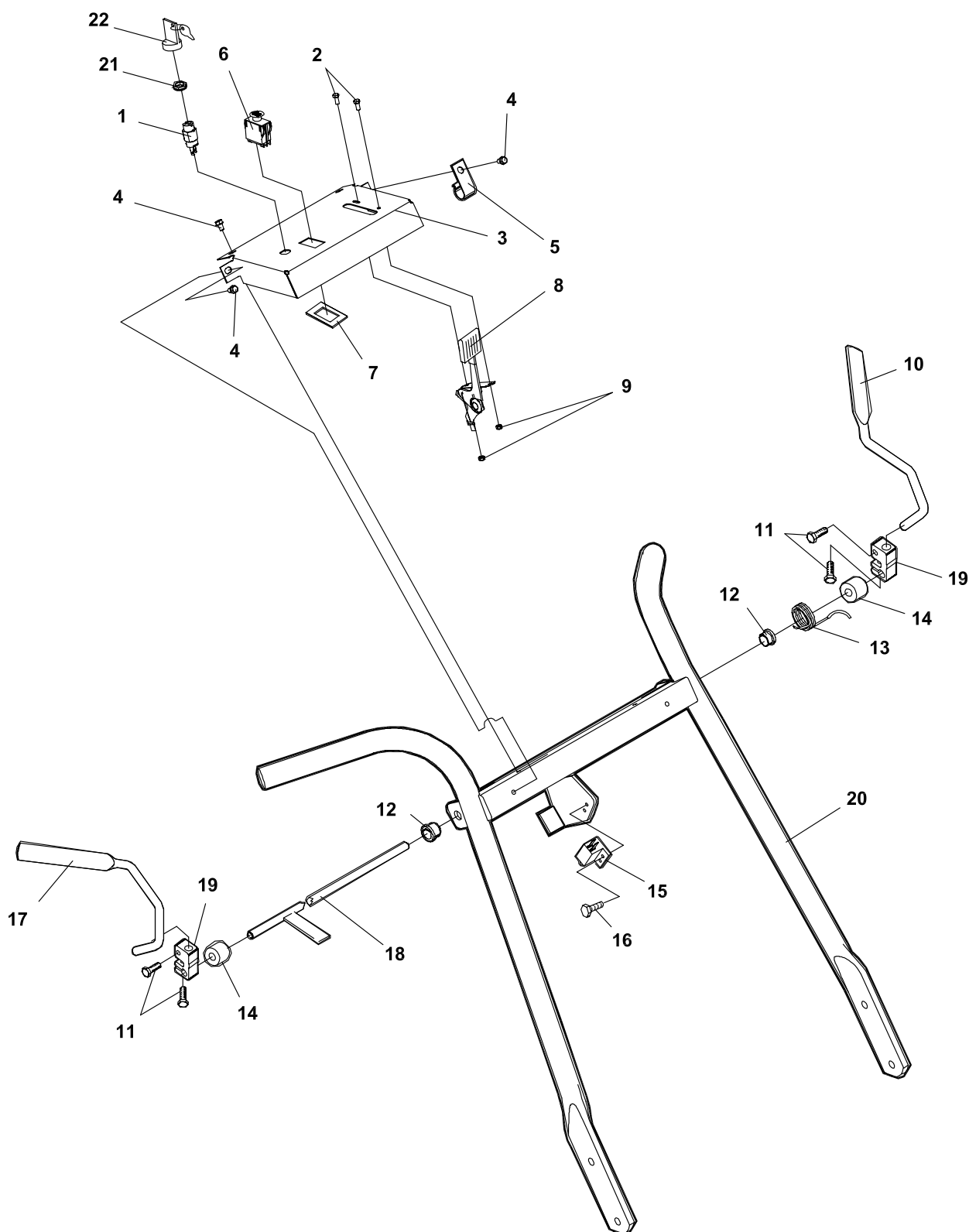
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
5-1	64175-01	PUSHNUT-3/16 ROD	2				
5-2	2721495.2	WLDMT-UPPER HANDLE	1				
5-3	64141-4	NUT-WLF 3/8-16	4				
5-4	64168-2	HAIRPIN COTTER	4				
5-5	33103	SWIVEL	2				
5-6	2721364.2	WLDMT-BELLCRANK RH	1				
	*2721365.2	WLDMT-BELLCRANK LH	1				
5-7	64123-50	BLT-HEX 3/8-16 X 1	4				
5-8	2721650	ROD-TRACTION CNTRL GD	2				
5-9	38009N	GRIP, TRACTION CNTRL	2				
5-10	38360	GRIP-RECESSED 1 IN	2				
5-11*	2308121	ADHESIVE-3 GRAM TUBE	1				
	(USE WITH 38360 GRIP)						
5-12	31032	LEVER,TRACTION CNTRL	2				
5-13	64188-34	PIN-CLEVIS 3/16 X 2	2				
5-14	64163-31	WASHER	2				
5-15	64229-02	LOCKNUT-NYL 5/16-18	4				
5-16	33288	STUD-DOUBLE ENDED	2				
5-17	33243	SPACER	2				
5-18	64229-01	LOCKNUT NYL 1/4-20	4				
5-19	64061-37	PIN-ROLL	2				
5-20	38189	SPRING COMPRESSION	2				
5-21	2722426	GRIP-TRACTION LOCK	2				
5-22	2722722	LATCH-ROLLER RH GD	1				
	*2722721	LATCH-ROLLER LH GD	1				
5-23	62464-5A	WASHER THRUST 5/16	2				
5-24	2308002	BRG-RADIAL W/THD STD	4				
5-25	2721394.2	LOWER-HANDLE	1				
5-26	64251-003	WASHER-M8	2				

*** NOT ILLUSTRATED**

TRACTION LOCK ASSY'S ARE ALSO AVAILABLE
P/N **2722685** RH & P/N **2722684** LH
(INCLUDES ITEMS 15-24)



FIGURE 6





Gear Drive Midsize

2721693-06

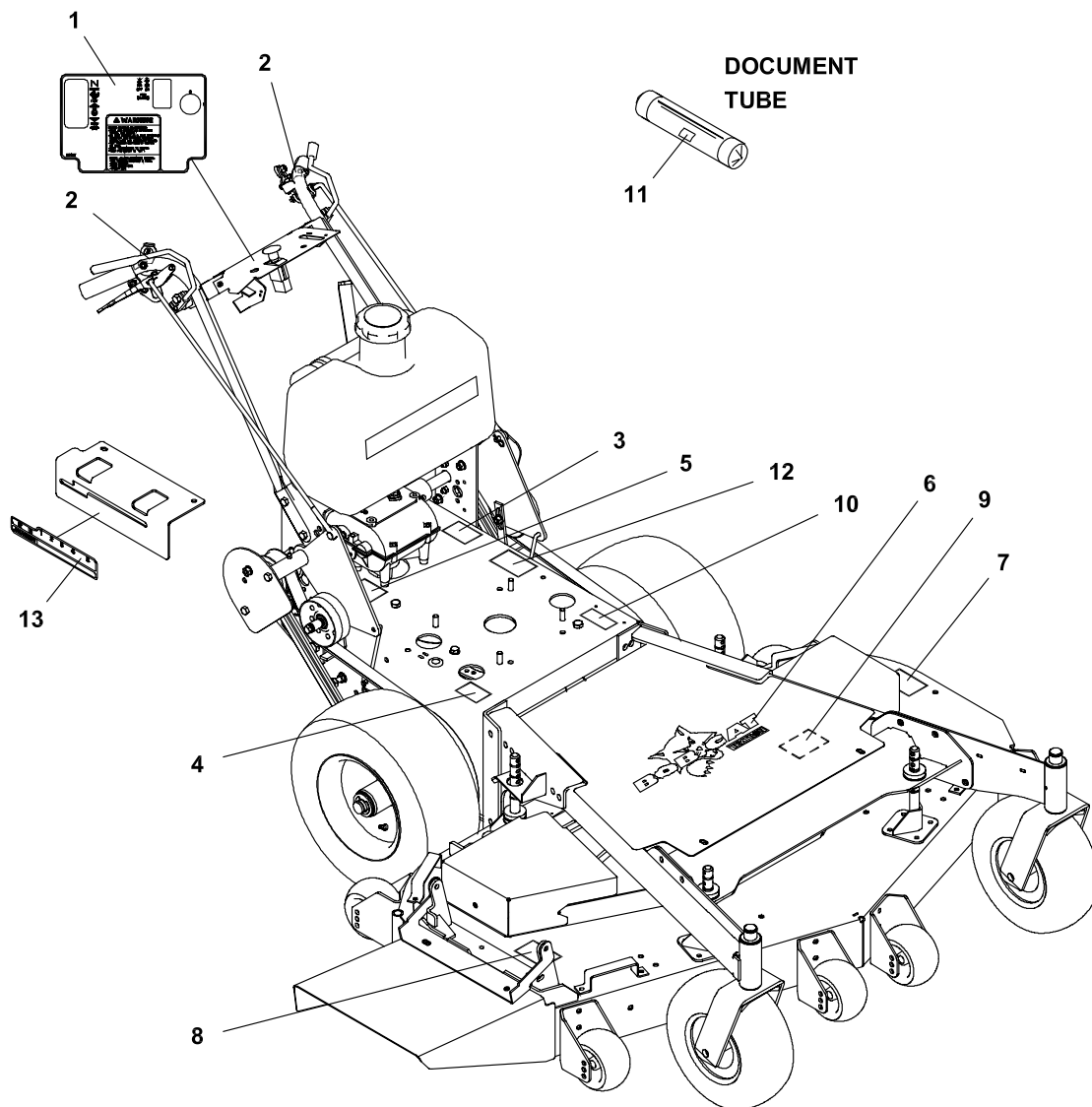
OPERATOR PRESENT

FIGURE 6

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
6-1	38148	SWITCH-ENGINE STOP	1				
6-2	64152-10	10-24X3/4 MACH SCREW	2				
6-3	2722705	S-CONTROL PNL W/LAB	1				
6-4	64152-23	1/4-20X3/8 LG SCREW	4				
6-5	48412	CLIP-CABLE	1				
6-6	2721505	SWITCH-PTO	1				
6-7	2188178	SWITCH-RETAINER	1				
6-8	38357-04	CONTROL-THROTTLE	1				
6-9	64025-15	NUT-HEX #10-24 KEPS	2				
6-10	2308152	LEVER OP LH	1				
6-11	64197-002	BLT-TR 1/4-20 X 3/4	4				
6-12	38371-01	BRG-NYLINER 3/8	2				
6-13	2308037	SPRING TORSION	1				
6-14	33030-09	IDLER BUSHING	2				
6-15	38383	SWITCH-NORM CLOSED	1				
6-16	64197-015	BLT-THD FRM 10-32 X 1/2	2				
6-17	2308153	LEVER OP RH	1				
6-18	2306097	WLDMT-ACTUATOR	1				
6-19	2303023	CONNECTOR OP	2				
6-20	2721495.2	WLDMT-UPPER HANDLE	1				
6-21	128010-01	S-KEY SWITCH NYLON NUT	1				
6-22	128010-03	S-COVERED KEY	1				



FIGURE 7





Gear Drive Midsize

2721693-07

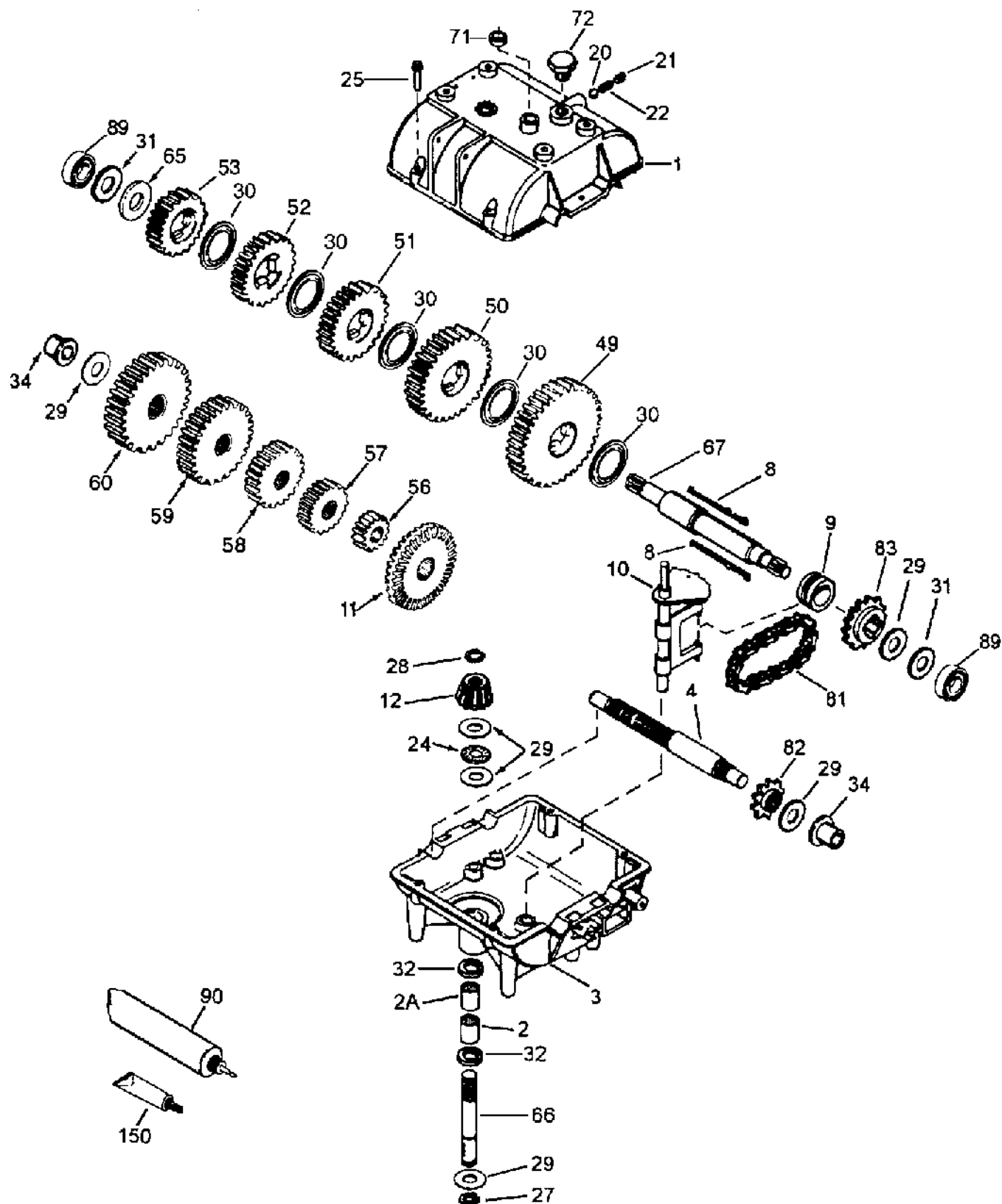
DECALS

FIGURE 7

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
7-1	2721683	LABEL-CNTRL PNL GD	1				
7-2	2000569	LABEL-PARK/NEUTRAL	2				
7-3	2000570	LABEL-WARN FUEL PICT	1				
7-4	340830	DECAL-CAUTION SPANISH	1				
7-5	2000571	LABEL-IMPORTANT	1				
7-6	2721882	LABEL-BOBCAT TEXTRON	1				
7-7	2000572	LABEL-WARNING BLADES	1				
7-8	2000677	LABEL-DANGER/WARNING	1				
7-9	2000678	LABEL-ROT PARTS/WSHR	1				
7-10	2000704	LABEL-MIDSIZE PATENT	1				
7-11	2000673	DECAL - OP MAN/TIRES	1				
7-12	2000575	LABEL-WARNING	1				
7-13	2000676	LBL(DBL)-GEAR SEL/WARN	1				



FIGURE 8





Gear Drive Midsize

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PEERLESS TRANSMISSION

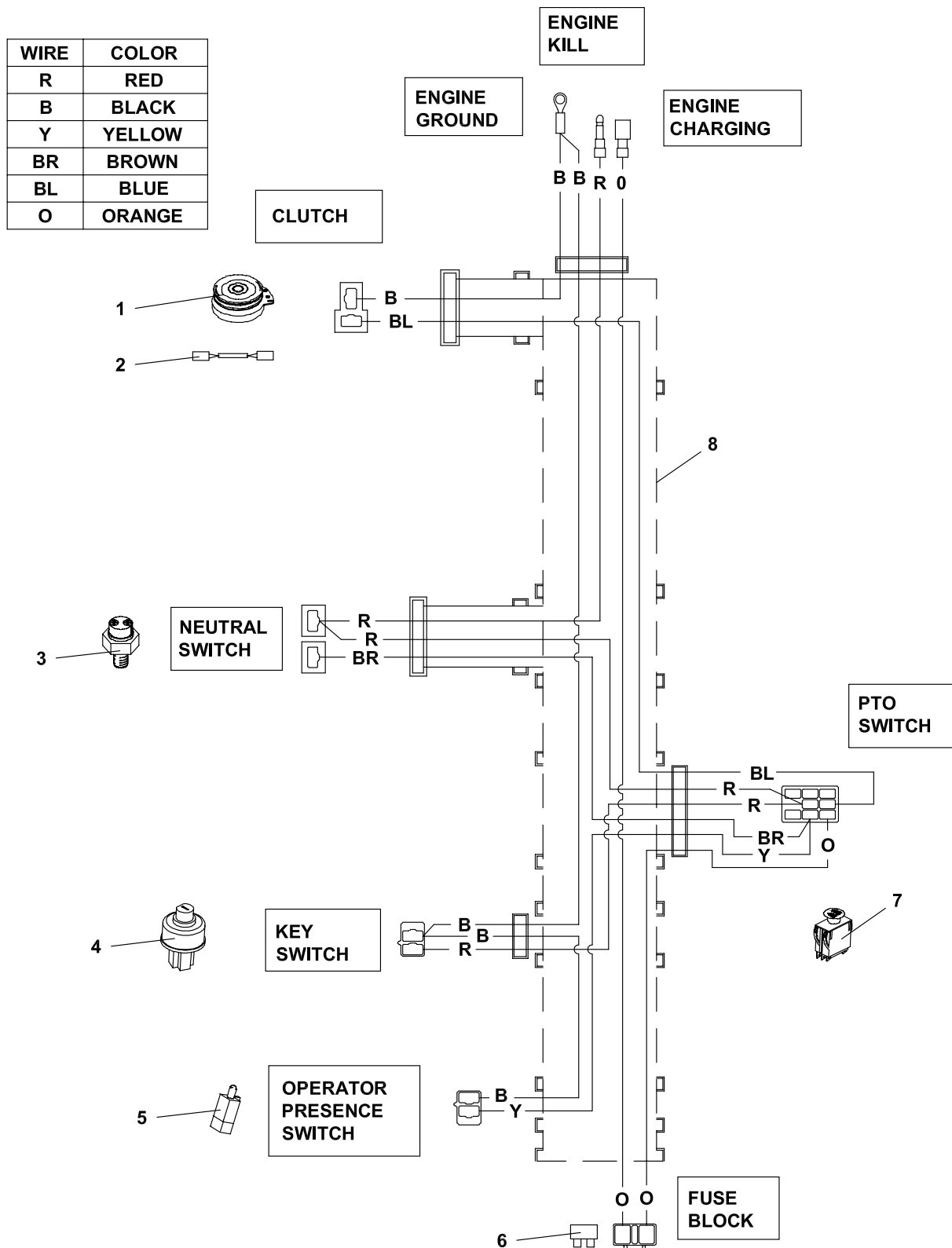
FIGURE 8

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
2308136 PEERLESS TRANS MODEL 700-078 (COMPLETE UNIT AVAILABLE THRU TEXTRON)				8-81	786081	CHAIN,ROLLER #41	1
(INDIVIDUAL COMPONENTS AVAILABLE THROUGH PEERLESS 1-800-558-5402)				8-82	786082	SPROCKET (9 TEETH)	1
8-1	772099A	COVER,TRANSMISSION	1	8-83	786083	SPROCKET (18 TEETH)	1
8-2	780086A	BEARING,NEEDLE	1	8-89	780092	BALL BEARING	2
8-2A	780142	BEARING,NEEDLE	1	8-90	788067B	GREASE (32 OZ BENTONITE)	
8-3	770090A	CASE,TRANSMISSION	1	8-150	510334	GASKET ELIMINATOR (LOK TITE #515)	
8-4	776134	COUNTERSHAFT	1	* (NOT ILLUSTRATED)			
8-8	792089A	SHIFT KEY	4	SEE YOUR PEERLESS DEALER FOR REPLACEMENT PARTS.			
8-9	784266	COLLAR,SHIFT	1				
8-10	784376	ROD & FORK ASSY,SHIFT	1				
8-11	778154	GEAR,BEVEL (42 TEETH)	1				
8-12	778176	PINION,BEVEL (14 TH ST)	1				
8-20	792077A	BALL,STEEL,5/16"	1				
8-21	792078	SET SCREW,3/8-16 X 3/8	1				
8-22	792079	SPRING	1				
8-24	780071	BEARING,THRUST	1				
8-25	792073A	SCREW,1/4-20 X 1-1/4	6				
8-27	792035	RING,RETAINING	1				
8-28	788040	RING,RETAINING	1				
8-29	780072	WASHER	6				
8-30	780108	WASHER	5				
8-31	780065	WASHER	2				
8-32	792001	"O" RING	2				
8-34	780105A	BUSHING,FLANGED	2				
8-45	*2308007	NEUTRAL SWITCH NC	1				
8-49	778146A	GEAR,SPUR (37 TEETH)	1				
8-50	778125	GEAR,SPUR (35 TEETH)	1				
8-51	778239A	GEAR,SPUR (32 TH ST)	1				
8-52	778124A	GEAR,SPUR (30 TEETH)	1				
8-53	778250	GEAR,SPUR (27 TEETH)	1				
8-56	778145	GEAR,SPUR (12 TH ST)	1				
8-57	778151	GEAR,SPUR (15 TEETH)	1				
8-58	778240	GEAR,SPUR (18 TH ST)	1				
8-59	778126A	GEAR,SPUR (20 TEETH)	1				
8-60	778249	GEAR,SPUR (23 TEETH)	1				
8-65	780139	WASHER,THRUST	1				
8-66	776135	SHAFT,INPUT (3-11/16")	1				
8-67	776421	SHIFTER & BRAKE SHAFT	1				
8-71	788069	SEAL,SQUARE CUT	1				
8-72	792074	THREADED PLUG	1				

ELECTRICAL DIAGRAM



FIGURE 9





Gear Drive Midsize

2721693-09

ELECTRICAL DIAGRAM

FIGURE 9

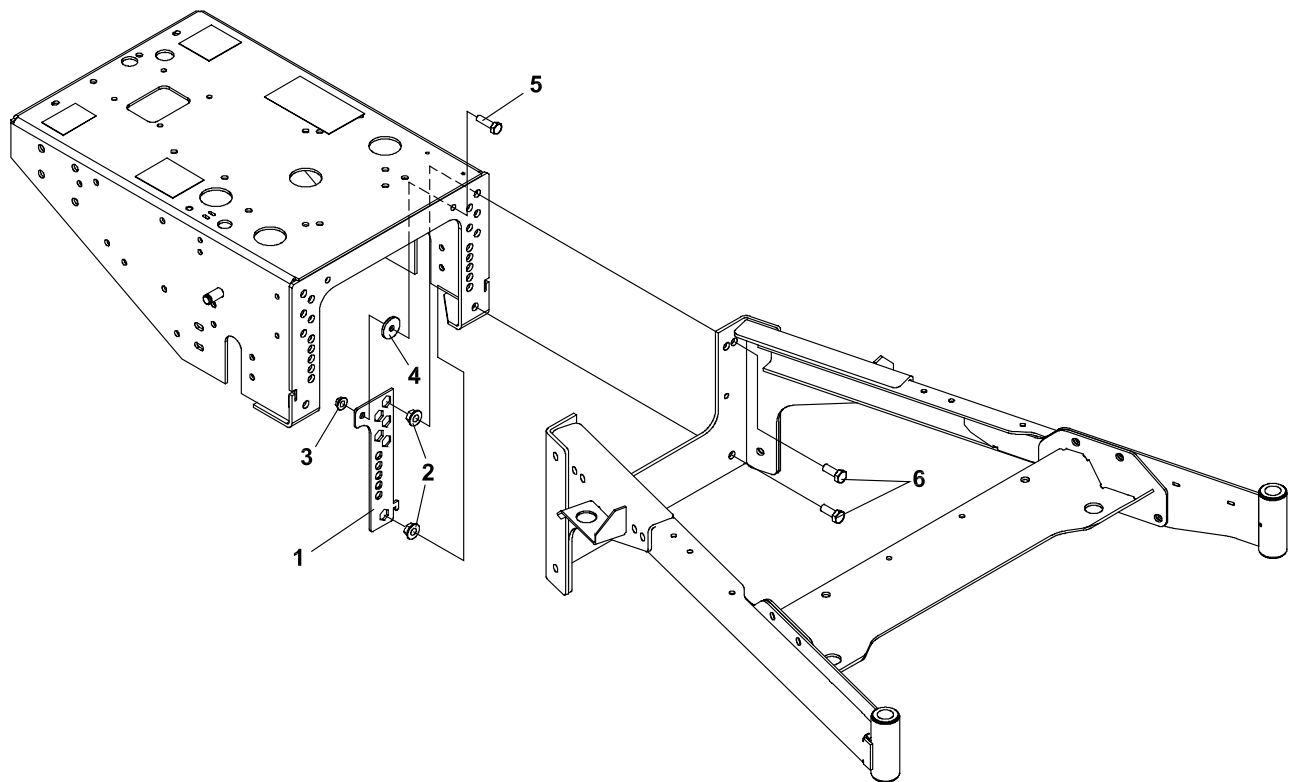
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
9-1	2721110	CLUTCH-ELECTRIC (INCLUDES ITEM 2)	1				
9-2	2720949	ASSY-CLUTCH WIRE	1				
9-3	2722033	SWITCH-NEUTRAL	1				
9-4	38148	SWITCH-ENGINE STOP	1				
9-5	38383	SWITCH-N.C.	1				
9-6	148082-10	FUSE 10 AMP	1				
9-7	2721505	SWITCH-PTO	1				
9-8	4118008	HARNESS-GEAR DRIVE (INCLUDES ITEM 6)	1				

CUTTERDECK MOUNTING

**Gear
Drive
Midsize**



FIGURE 10





Gear Drive Midsized

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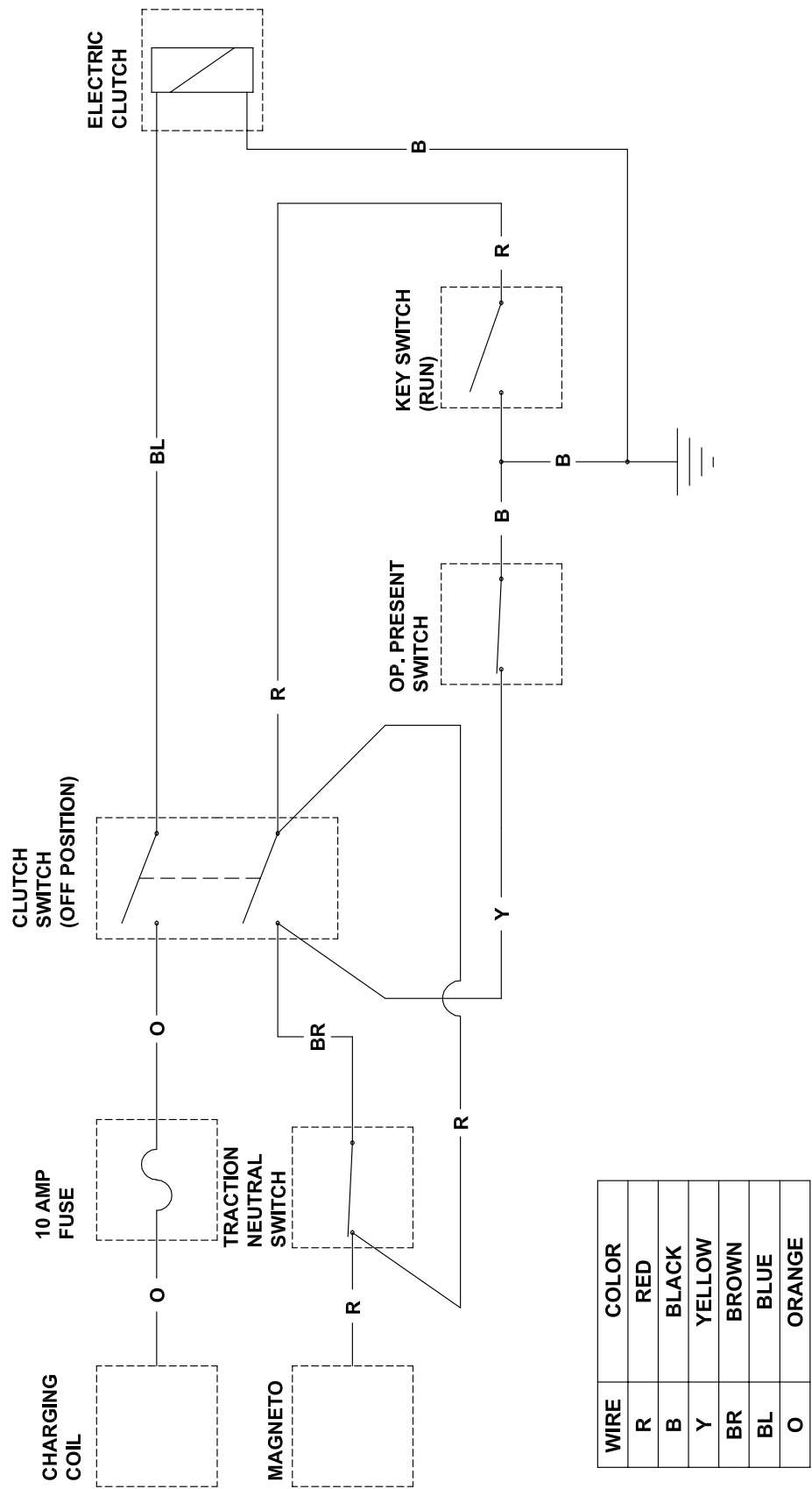
CUTTERDECK MOUNTING

FIGURE 10

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
10-1	2721991.7	PLATE-NUT	2				
10-2	64246-04	NUT-WHIZ M12-1.75	12				
10-3	64246-03	NUT-WHIZ M10-1.50	2				
10-4	64163-82	WASHER-.406 X 1.44 X 9GA	2				
10-5	A1104057	BOLT-M10-1.50 X 25	2				
10-6	64263-018	BLT-FLG HD M12-1.75 X 30	4				

FIGURE 11

2721693-11





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