

Cub Cadet

Power Equipment

Service Manual

RIDERS



Model Numbers

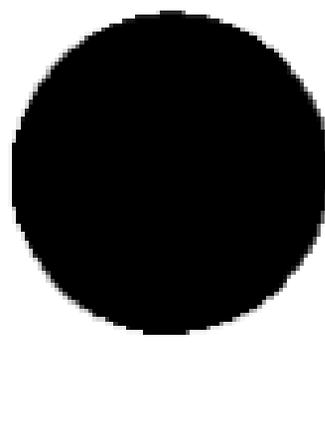
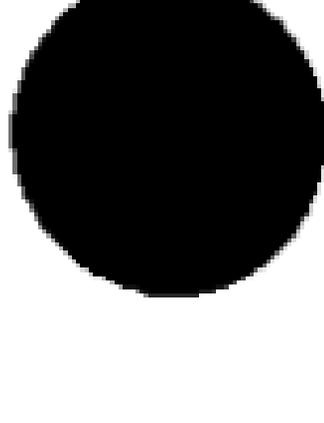
YEAR	MODEL NO.	HOME MAINTENANCE NO.	DECK SIZE
1986	526	136-511-100	26"
1986	830	136-514-100	30"
1986	1136	136-518-100	36"
1987	802	137-513-100	30"
1987	804	137-517-100	32"
1987	1106	137-519-100	38"
1988	804	138-517-100	32"
1988	1106	138-519-100	38"

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PRINTED IN U.S.A.

FORM NO. 772-3874



**Section
1**

**SEAT, BATTERY AND
ENGINE REMOVAL**

**Section
2**

PULLEYS AND IDLERS

**Section
3**

TRANSAXLE

**Section
4**

BRAKES

**Section
5**

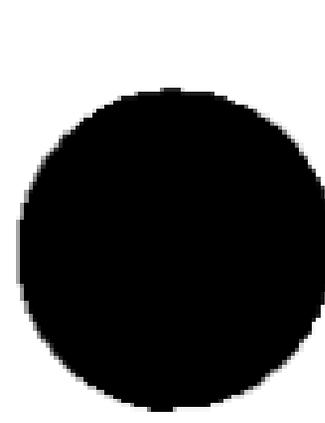
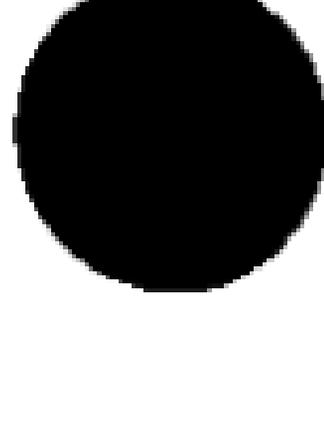
DECKS

**Section
6**

ELECTRICAL

**Section
7**

STEERING & FRONT AXLES



[REDACTED]

SEAT, BATTERY AND ENGINE

Contents

S
E
C
T
I
O
N
1

Seat Removal	1-2
Battery Removal	1-2 and 1-3
Engine Removal	1-3

SEAT AND BATTERY REMOVAL

1. Pivot the seat up and forward.
2. Disconnect the seat safety switch wire connection. See figure 1.
3. Remove one hex bolt, two belleville washers and one hex center lock nut on each side of seat and seat mounting bracket. See figure 2.
4. To remove the battery, remove two wing nuts. See figure 3.

NOTE

The battery hold-down rods will drop down through the rider frame onto the deck or floor.

5. Remove the battery cover after wing nuts, by lifting cover off battery and out of rider frame.

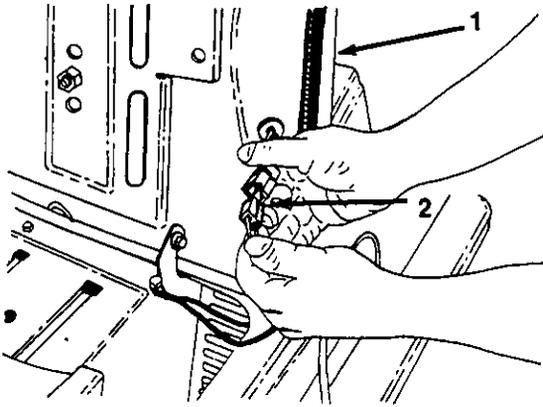


FIGURE 1.

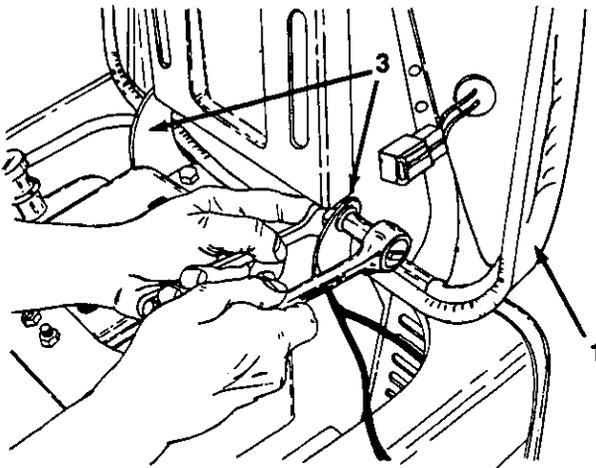


FIGURE 2.

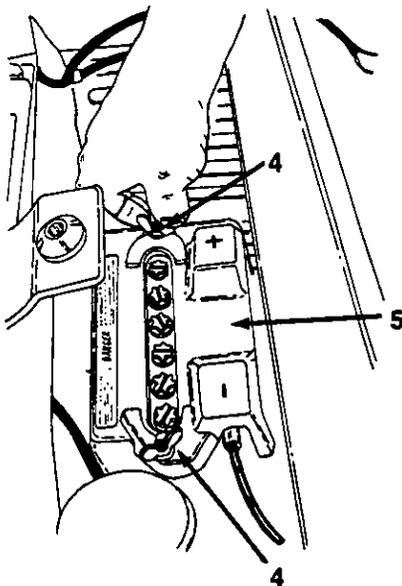


FIGURE 3.

1	Seat Assembly
2	Safety Seat Switch
3	Seat Mounting Bracket
4	Wing Nuts (2)
5	Battery Cover

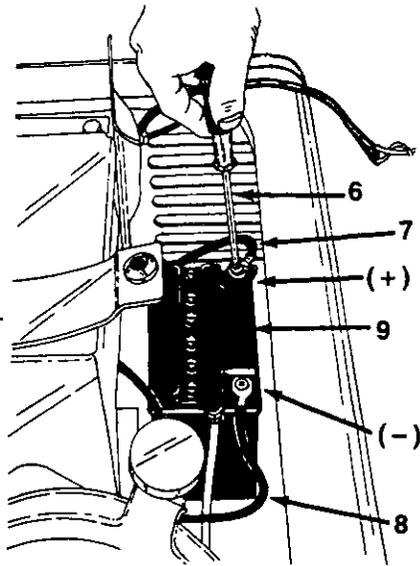


FIGURE 4.

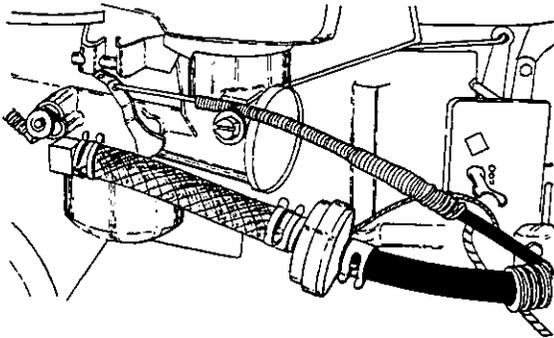


FIGURE 5.

6. Remove the negative (-) cable (black) on battery first. See figure 4. Use a phillips head screwdriver.

7. Remove the positive (+) cable (red) on battery second. See figure 4.

8. Lift the battery out of the rider, being careful not to pull off the battery drain tube.

6 Phillips Head Screwdriver
7 Positive Battery Cable (+)
8 Negative Battery Cable (-)
9 12V Battery

ENGINE REMOVAL

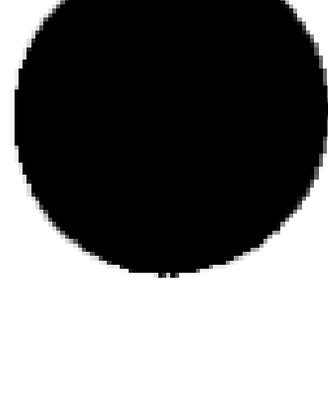
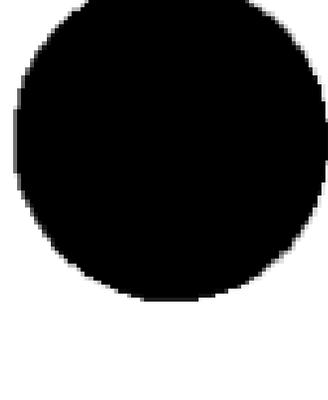
1. Remove the seat and battery, refer to page 12 of this manual.

2. Disconnect the fuel line at engine and drain the gasoline. See figure 5.

3. Disconnect the throttle control cable and choke control cable at engine, by loosening the screw and casing clamp. See figure 5.

4. Remove the engine pulley and drive belt, refer to page 2-3 of this manual.

5. Remove the four self-tapping screws from the engine and engine mounting plate, then lift engine out.



Section 2

PULLEYS AND IDLERS

Contents

S
E
C
T
I
O
N
2

	Page
Pulleys and Idlers	2-2
Drive Belt Removal and Replacement	2-3 thru 2-5

PULLEYS AND IDLERS

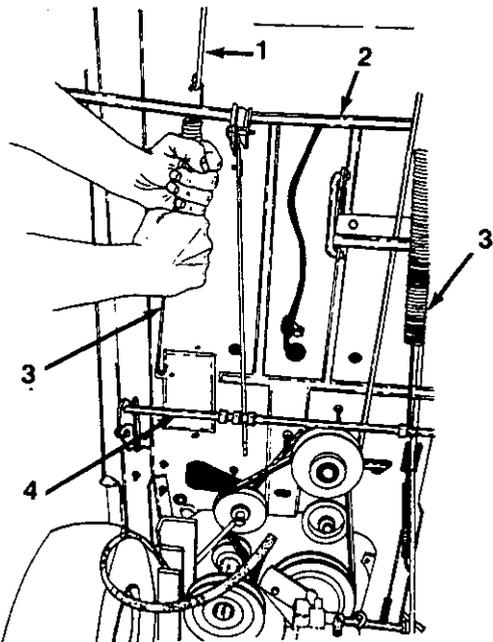


FIGURE 1.

1. Unhook one end of extension spring from deck link assembly rear and unhook the other end from spring hook. See figures 1 and 2.

2. Unhook one end of extension spring from deck link assembly rear and unhook the other end from blade engagement lever assembly. See figures 1 and 2.

3. Remove one hex lock nut at idler pulley and unhook extension spring from idler. See figure 2.

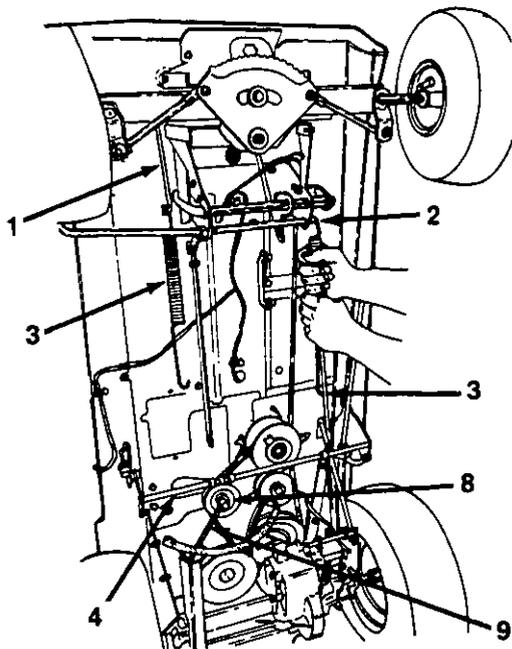


FIGURE 2.

4. With a $\frac{3}{4}$ " socket head wrench, remove the hex bolt holding the variable speed pulley. See figure 3.

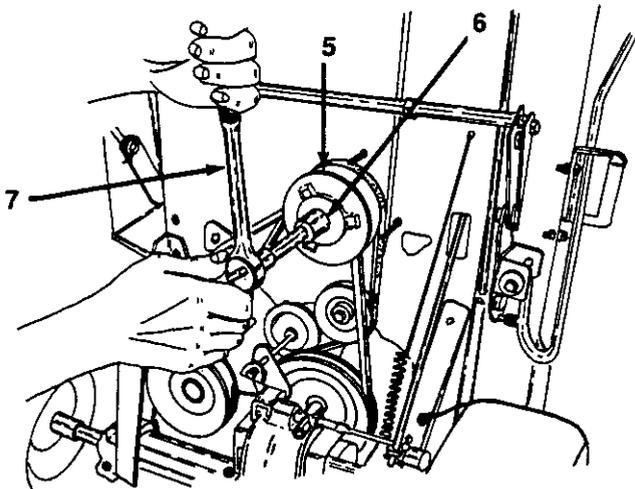


FIGURE 3.

1	Spring Hook
2	Blade Engagement Lever Ass'y.
3	Extension Spring 13.89 Lg. (2)
4	Deck Link Assembly Rear
5	Variable Speed Pulley
6	Hex Bolt 3/8-16 x 4.5" Long
7	$\frac{3}{4}$ " Socket Head Wrench
8	Hex Lock Nut 3/8-24 Thread
9	Extension Spring 6.37" Long

DRIVE BELT REMOVAL AND REPLACEMENT

NOTE

It is recommended that the entire instructions on belt removal and replacement be read before changing the belts.

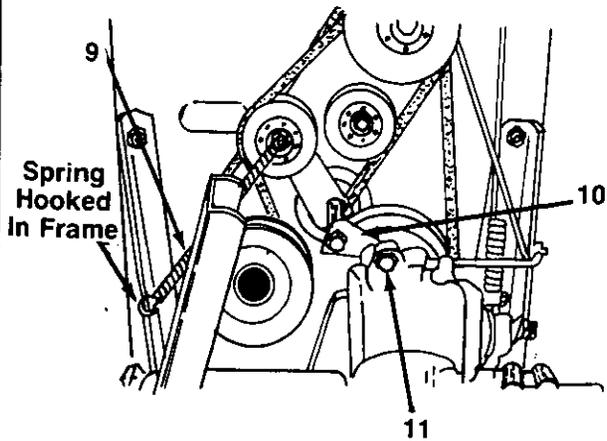


FIGURE 4.

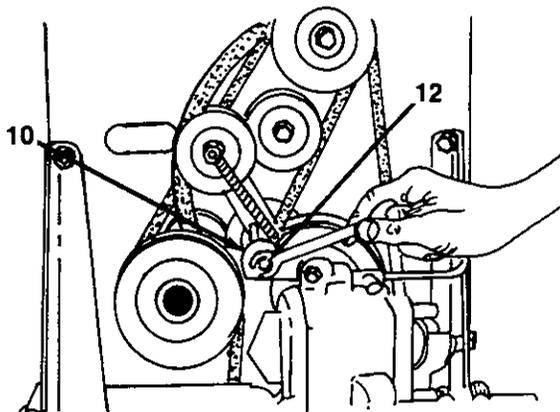


FIGURE 5.

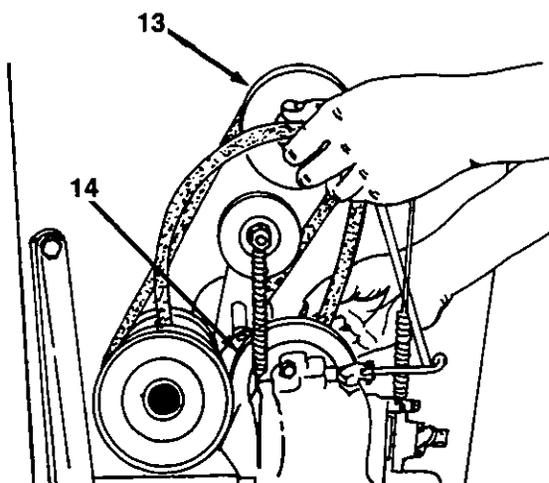


FIGURE 6.

1. Remove the battery from the unit.
2. To prevent gasoline from leaking from the engine, remove the fuel tank cap, place a piece of thin plastic over the neck of the fuel tank and screw on the cap.
3. Disconnect the spark plug wire and ground it against the engine.
4. Remove the deck as described in section 5 of this manual.
5. Unhook the idler spring from the rider frame. See figure 4.
6. Remove the hex bolt, nut and lock washer at the torque rod bracket and transaxle. See figure 4.
7. Remove the hex bolt which holds the torque rod bracket to the torque rod, and remove bracket. See figure 5.
8. Slip the "V"-belt off the variable speed pulley and transaxle pulley. See figure 6.

9 Extension Spring 6.37" Long

10 Torque Rod Bracket

11 Hex Bolt, Nut and Lock Washer

12 Hex Bolt $\frac{3}{4}$ " Long

13 Variable Speed Pulley

14 Transaxle Pulley

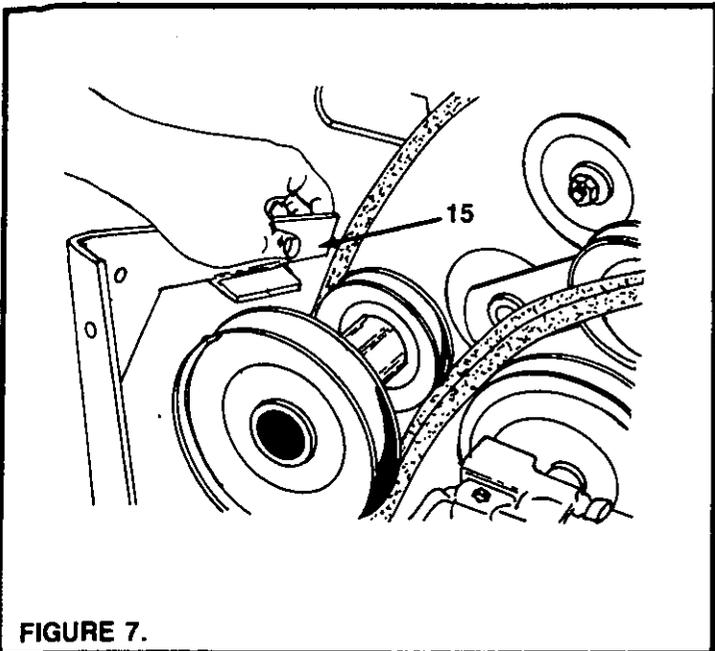


FIGURE 7.

9. Remove two hex bolts, nuts and lock washers from the engine pulley belt guard at rider frame to allow the engine pulley belt guard to drop down out of the way. See figure 7.

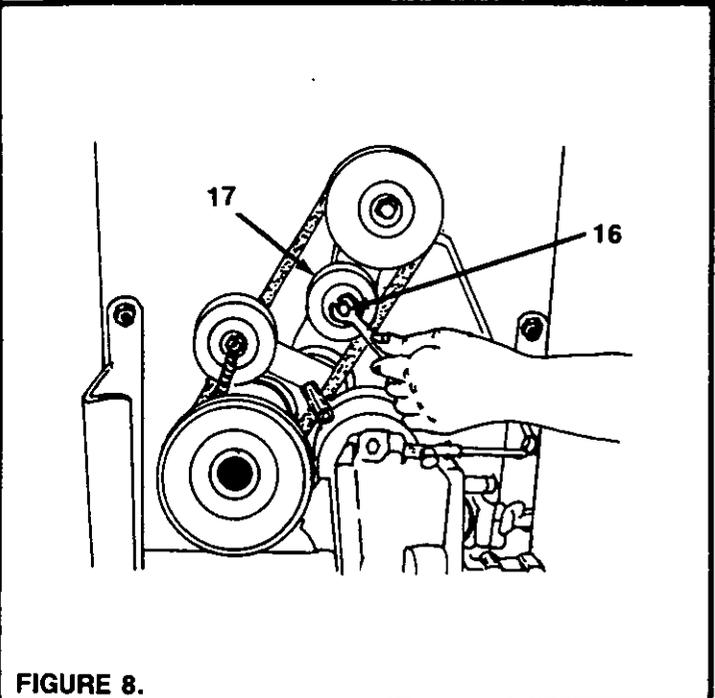


FIGURE 8.

10. Remove the idler pulley by removing the hex lock nut. See figure 8.

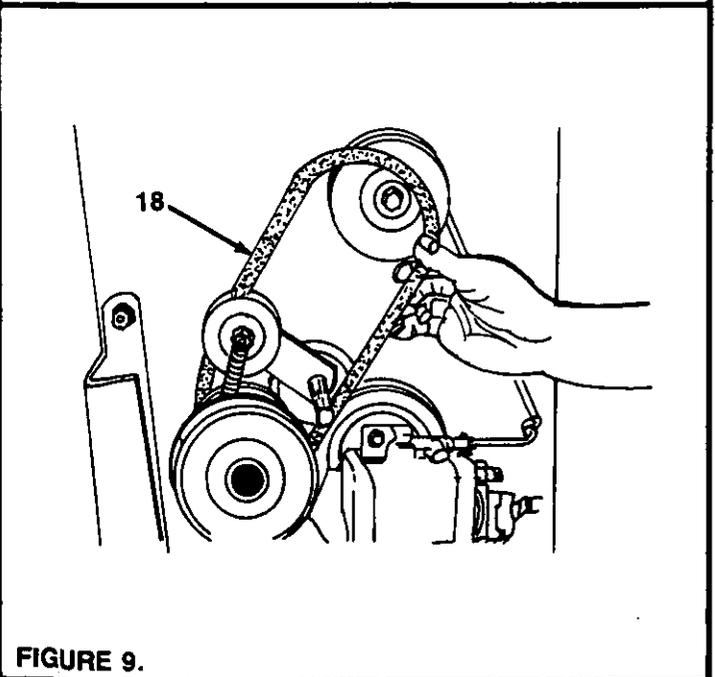


FIGURE 9.

11. Remove and replace the "V"-belt. See figure 9.

15	Engine Belt Guard
16	Hex Lock Nut
17	Idler Pulley
18	Drive Belt

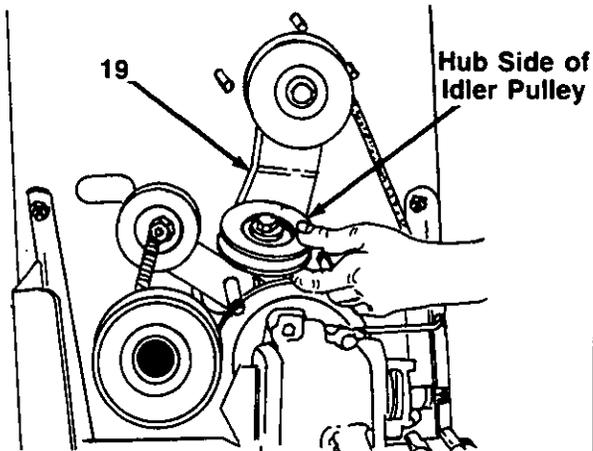


FIGURE 10.

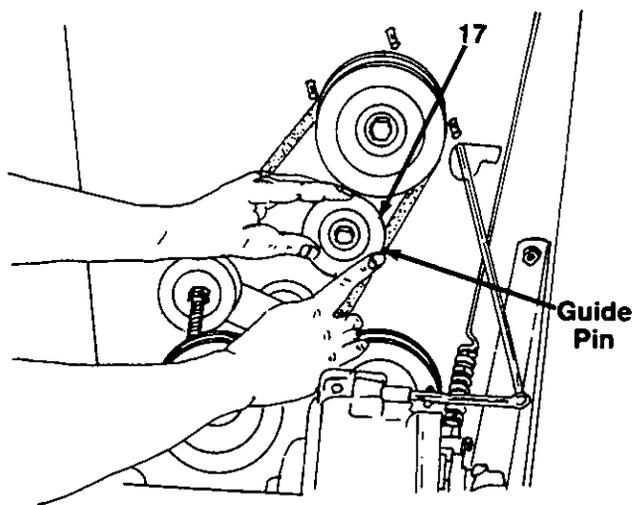


FIGURE 11.

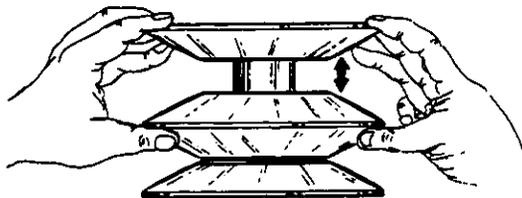


FIGURE 12.

12. Upon reassembly of idler pulley, be certain the hub side of idler goes against the idler bracket. See figure 10.
13. When sliding the idler pulley on the idler bracket, be certain the belt is between the pulley and guide pin. See figure 11.
14. Reverse the above steps (paying close attention to steps 12 and 13) when reassembling the new belts.

NOTE

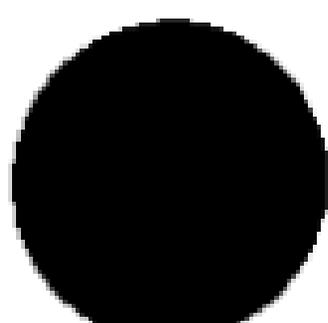
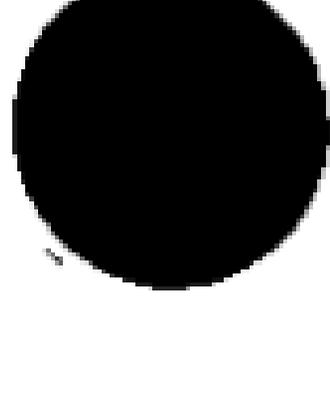
Be certain all belts are inside belt guards and keepers. Also, be sure to reassemble the safety wire (orange) at the deck chute.

NOTE

Idler brackets must pivot freely. A sluggish idler bracket can cause belt failure. Check all nuts and bolts for proper tightness and back off if necessary for free movement. Lubrication is important; use of a light grease or light oil is recommended upon reassembly.

15. The variable speed pulley is especially important in movement and lubrication. Simply check the center sheave by sliding it up and down and lubricate. See figure 12. If variable speed pulley does not work freely, replace it.

17 Idler Pulley
19 Idler Bracket



Section 3 TRANSAXLE

Contents

	Page
Removal of Transaxle from Rider	3-2
Disassembly	3-3 thru 3-8
Reassembly	3-8

REMOVAL OF TRANSAXLE FROM RIDER

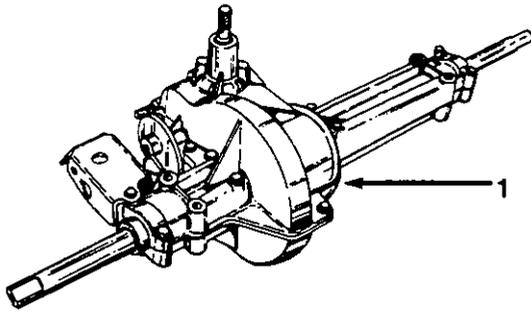


FIGURE 1.

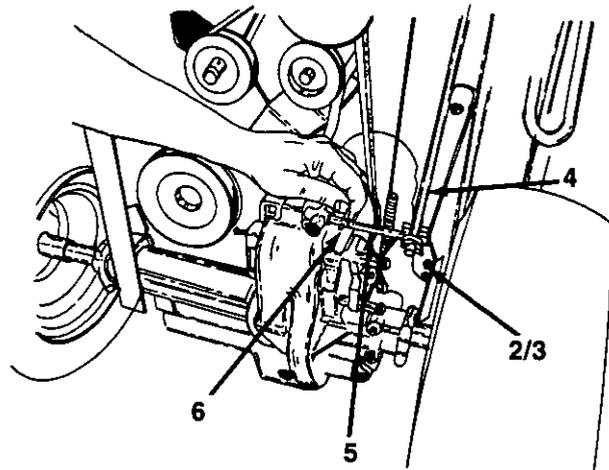


FIGURE 2.

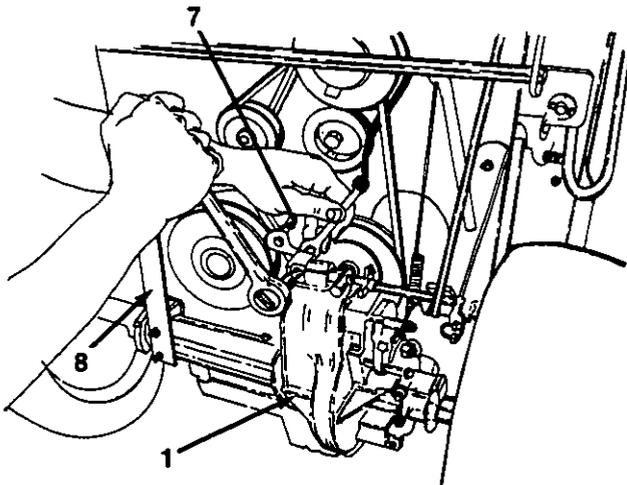


FIGURE 3.

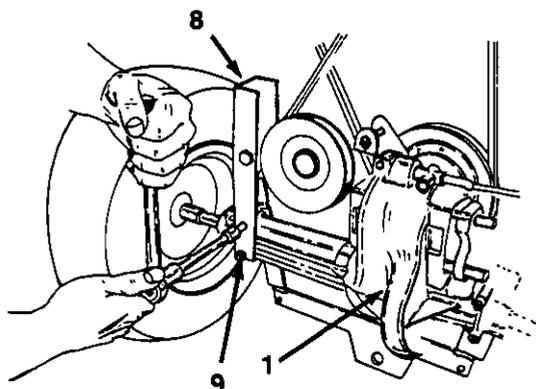


FIGURE 4.

1. Remove the deck, refer to section 4 of this service manual.
2. Remove the belt and brake spring, refer to section 1 of this service manual.
3. Remove the cotter pin and flat washer on bottom end of shift lever assembly, at the shift lever support bracket. See figure 2.
4. Remove cotter pin shift rod at the shift fork assembly located on the left hand side of transaxle. See figure 2.
5. Remove the torque rod bracket located on the top, front of transaxle, held by one hex bolt, lock washer and hex nut. See figure 3.
6. Remove four hex bolts 3/8-16 x 2.50" long from transaxle and transaxle support. See figure 4.
7. Remove the rear wheels, by removing one hex bolt 5/16-24 x .75" long and belleville washer per wheel.

1	Transaxle
2	Cotter Pin
3	Flat Washer
4	Shift Lever Assembly
5	Shift Rod
6	Cotter Pin
7	Torque Rod Bracket
8	Transaxle Support
9	Hex Bolt 3/8-16 x 2.50" Long

DISASSEMBLY OF TRANSAXLE

1. Remove the shift lever support bracket from the transaxle, by removing one self-tap screw on top of transaxle and two hex bolts on side of transaxle at brake. See figures 5 and 6.

NOTE

The brake yoke, two spacers and brake puck will drop out of transaxle housing at this time.

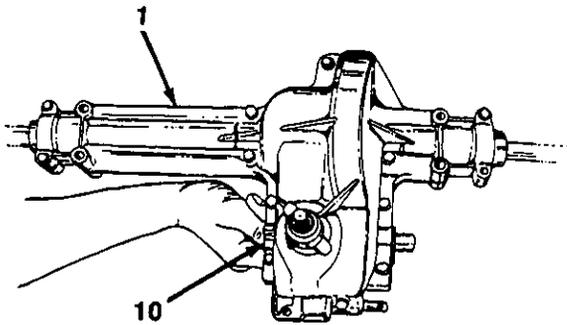


FIGURE 5.

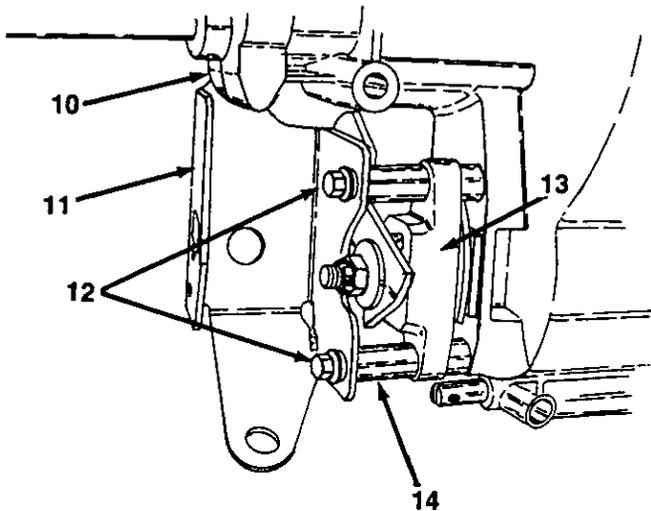


FIGURE 6.

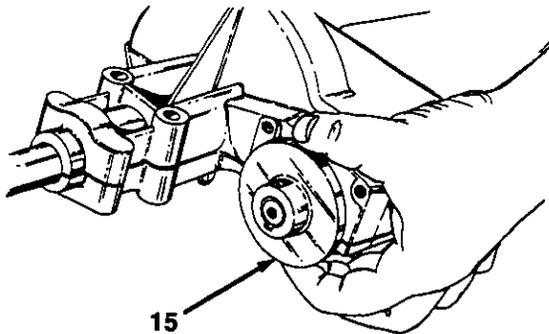


FIGURE 7.

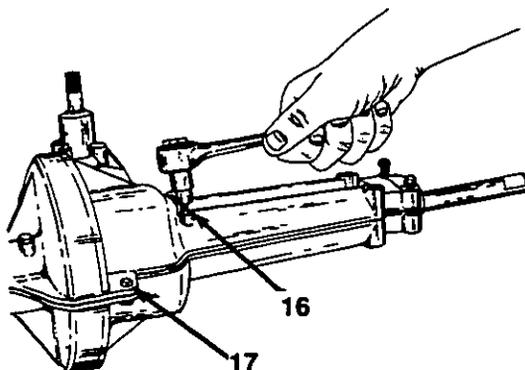


FIGURE 8.

2. Remove the brake disc from the drive shaft, by simply sliding it off shaft. See figure 7.

3. Remove four $\frac{1}{4}$ -20 x 1.75" long bolts from housing, located at the center of transaxle. See figure 8.

4. Remove one hex bolt $\frac{1}{4}$ -20 x .88" long and hex nut $\frac{1}{4}$ -20 thread at rear of transaxle housing. See figure 8.

5. Remove one hex bolt $\frac{1}{4}$ -20 x 1.00" long, from front of transaxle housing.

10 Self-Tap Mach. Screw
11 Shift Lever Support Brkt.
12 Hex Bolts (2)
13 Brake Yoke
14 Spacers (2)
15 Brake Disc
16 Hex Bolt (4)
17 Hex Bolt and Hex Nut

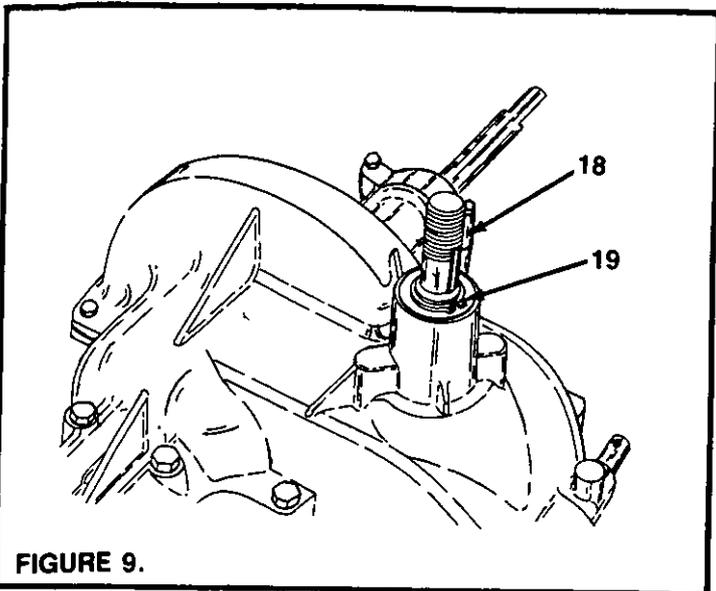


FIGURE 9.

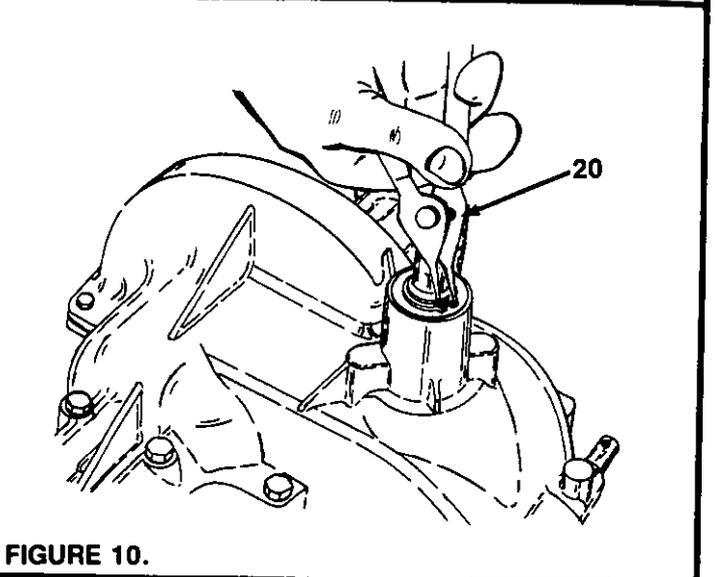


FIGURE 10.

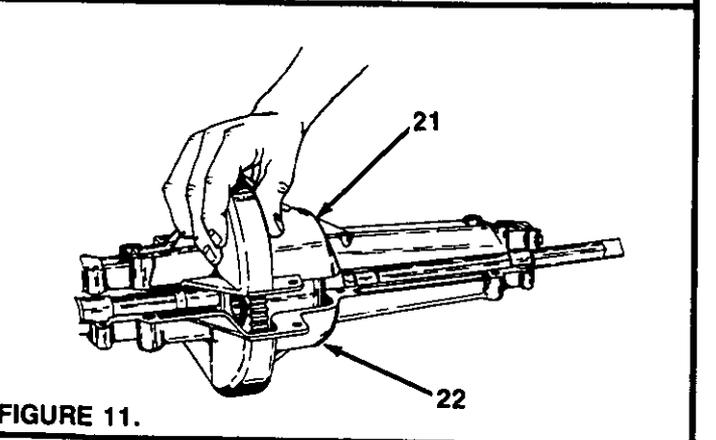


FIGURE 11.

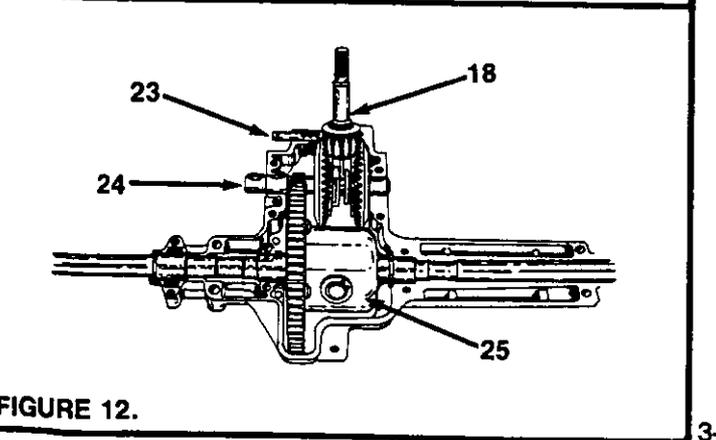


FIGURE 12.

6. Remove the snap ring from input shaft (see figures 9 and 10), using a pair of snap ring pliers.

7. Now you can lift off the top transaxle housing. See figure 11.

NOTE

There is (or was) 10 ounces of grease in this transaxle.

8. Figure 12 illustrates internal parts, less the grease.

9. As you disassemble the rest of the transaxle you will want to wash each part with a solvent to clean and inspect for wear or damage.

18	Input Shaft
19	Snap Ring
20	Snap Ring Pliers
21	Transaxle Housing (Top)
22	Transaxle Housing (Bottom)
23	Shift Yoke Assembly
24	Drive Shaft
25	Differential Assembly

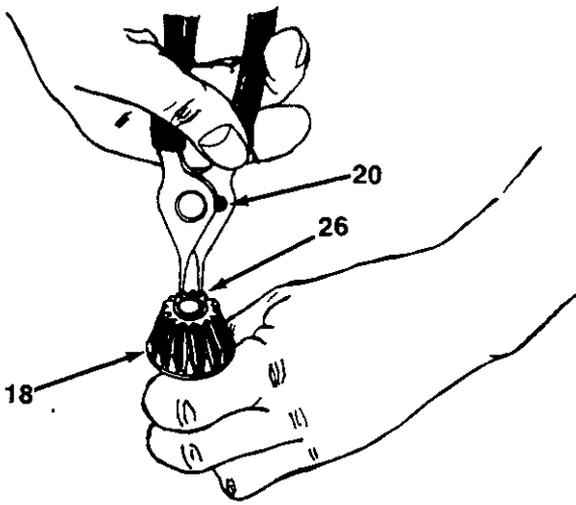


FIGURE 13.

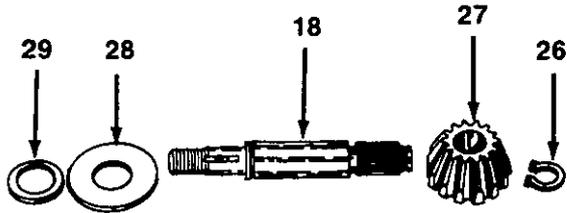


FIGURE 14.

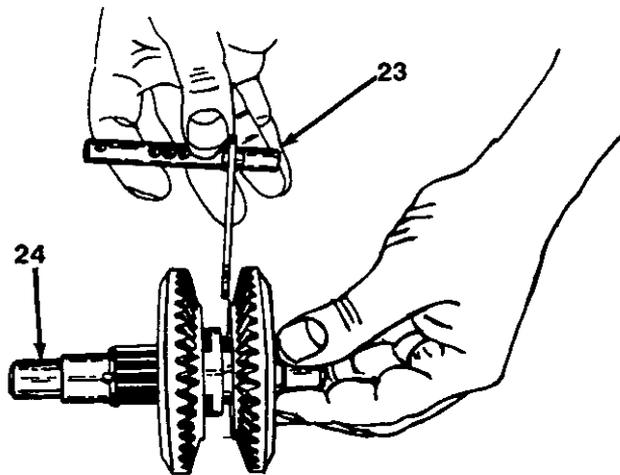


FIGURE 15.

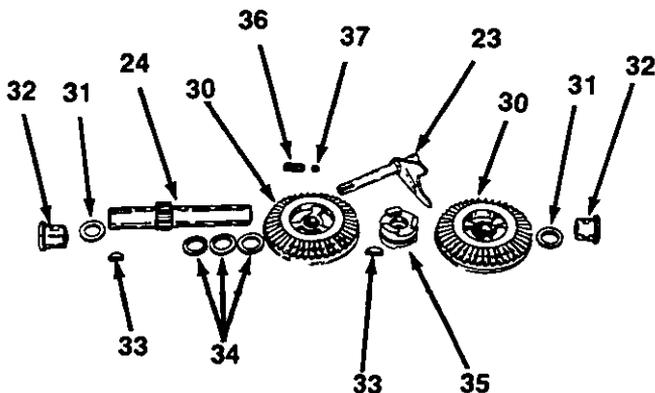


FIGURE 16.

10. Lift the input shaft out first. See figures 12 and 13.
11. With a pair of snap ring pliers, remove the snap ring on the end of input shaft. See figure 13.
12. Disassemble the input shaft and inspect parts. See figures 14.
13. Lift the drive shaft and shift yoke assembly out of housing. See figure 15.

NOTE

Upon sliding the shaft yoke assembly out of the housing, the detent ball and spring will pop out; take care in not losing them. See figure 16.

14. Disassemble the drive shaft and inspect parts. See figure 16.

18	Input Shaft
20	Snap Ring Pliers
23	Shift Yoke Assembly
24	Drive Shaft
26	Snap Ring
27	Pinion Input 14T
28	Thrust Washer 5/8" I.D. x 1.25" O.D.
29	Square Seal 5/8" I.D.
30	Bevel Gear 12T (2)
31	Shim Washers (Vary in Thk.)
32	Flange Bearing (2)
33	Woodruff & Hi-Pro Keys
34	Shim Washers (Vary in Thk.)
35	Clutch Collar
36	Detent Spring
37	Detent Ball

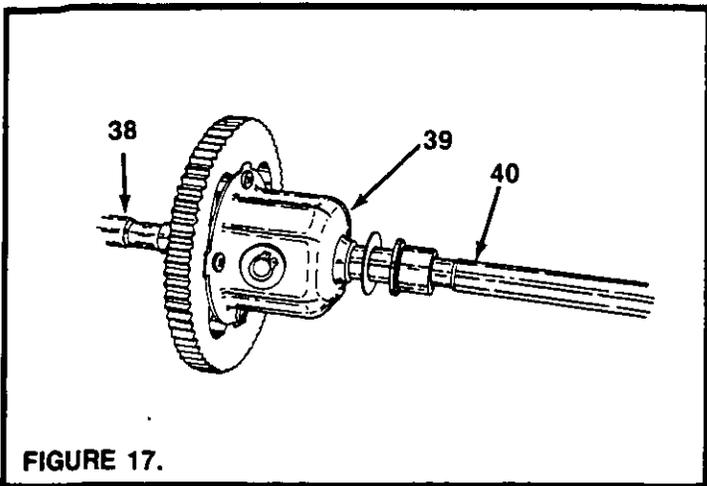


FIGURE 17.

15. Lift out the differential assembly and two axles. See figure 17.

16. With a phillips screwdriver, remove four screws from differential housing at differential gear 72 tooth. See figure 18.

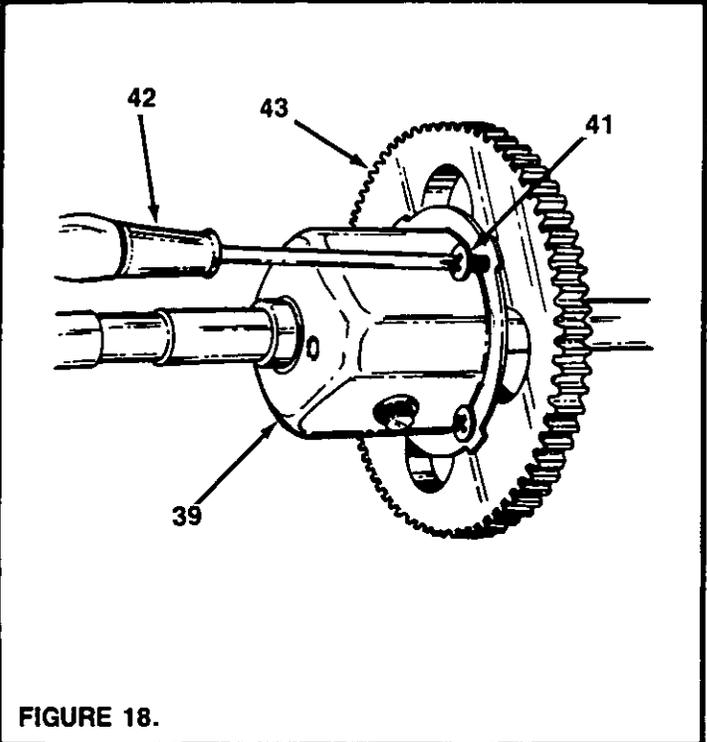


FIGURE 18.

17. Separate the differential gear from differential housing. See figure 19.

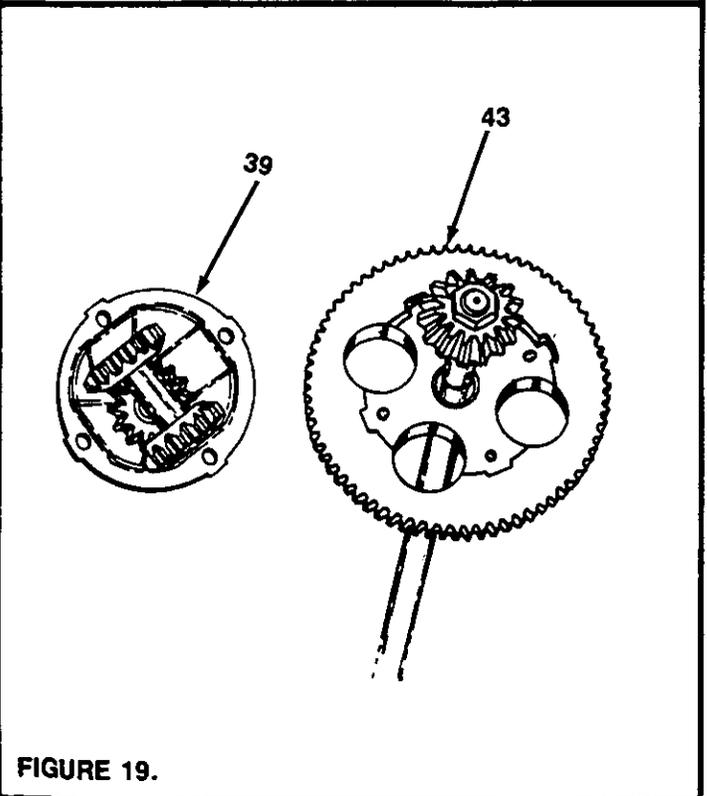


FIGURE 19.

38	Axle Left Hand
39	Differential Housing
40	Axle Right Hand
41	Phillips Head Screws (4)
42	Phillips Screwdriver
43	Differential Gear 72T

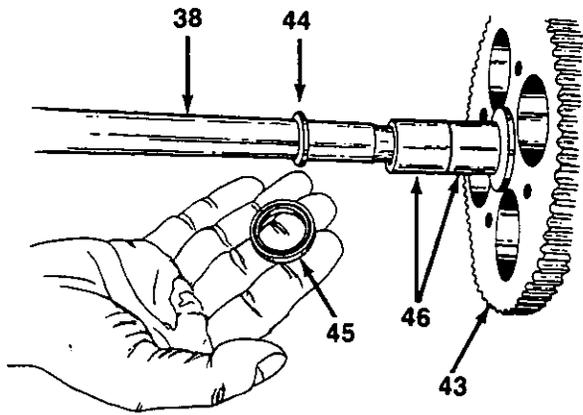


FIGURE 20.

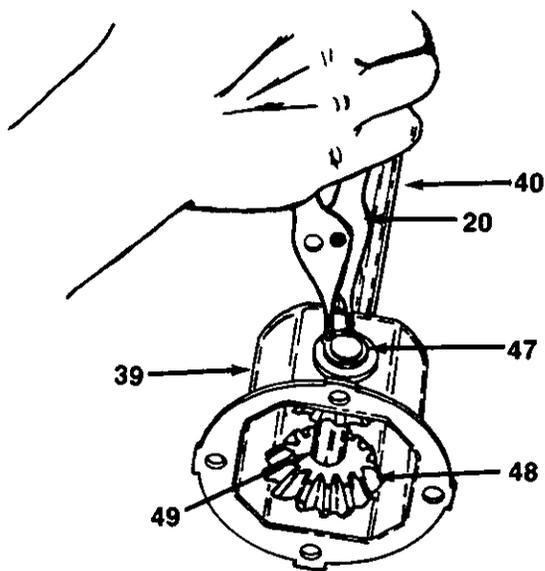


FIGURE 21.

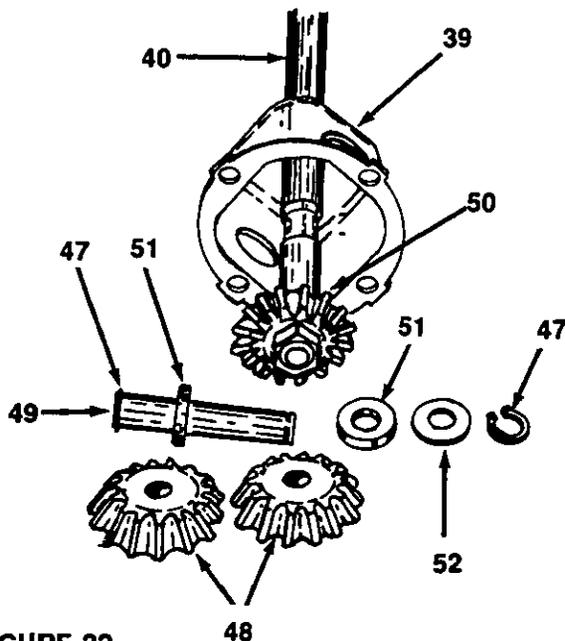


FIGURE 22.

18. Remove the oil seal, flat washer and two sleeve bearings from the left hand axle. See figure 20.

19. Inspect the differential gear, 72 tooth, for wear or damaged teeth, remove and replace if necessary.

20. To complete disassembly of differential, remove the snap ring on one end of cross shaft; this will allow you to remove the miter gears on cross shaft. See figures 21 and 22.

20	Snap Ring Pliers
38	Axle Left Hand
39	Differential Housing
40	Axle Right Hand
43	Differential Gear 72T
44	Flat Washer .760" I.D. x 1.49" O.D.
45	Oil Seal 3/4" I.D.
46	Sleeve Bearing (2)
47	Snap Ring (2)
48	Miter Gear 15T (2)
49	Cross Shaft
50	Miter Gear 15T (2) Splined
51	Thrust Bearing (2)
52	Flat Washer

21. Remove hex lock nuts on end of each axle to remove the miter (splined) gear. See figure 23.

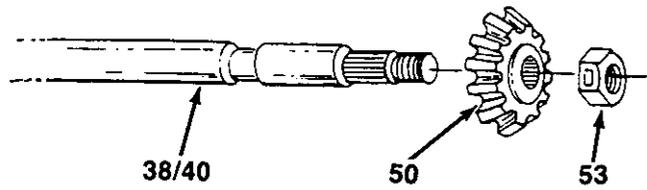


FIGURE 23.

REASSEMBLY OF TRANSAXLE

1. Reverse the disc assembly instruction on pages 3-3 through 3-8.

38 Axle Left Hand
40 Axle Right Hand
50 Miter Gear 1st (Splined)
53 Hex Lock Nut

Section 4

BRAKES

Contents

	Page
Brake Adjustment	4-2
Brake Disassembly	4-3

BRAKE ADJUSTMENT

1. The brake is located by the left rear wheel inside the frame. During normal operation of this machine, the brake is subject to wear and will require periodic examination and adjustment. See figure 1.

2. To adjust the brake, remove the cotter pin. Adjust the castle nut so the brake starts to engage when the brake lever is $\frac{1}{4}$ " to $\frac{5}{16}$ " away from the axle housing.

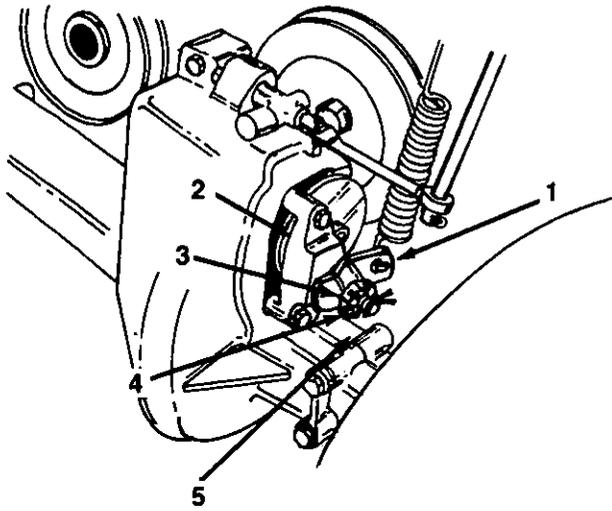


FIGURE 1.

NOTE

Figure 1 is shown with the unit tipped up on rear wheels for clarity only.

1 Brake Lever
2 Brake Disc
3 Castle Nut
4 Cotter Pin
5 Axle Housing

DISASSEMBLY OF BRAKES

(See Figure 2.)

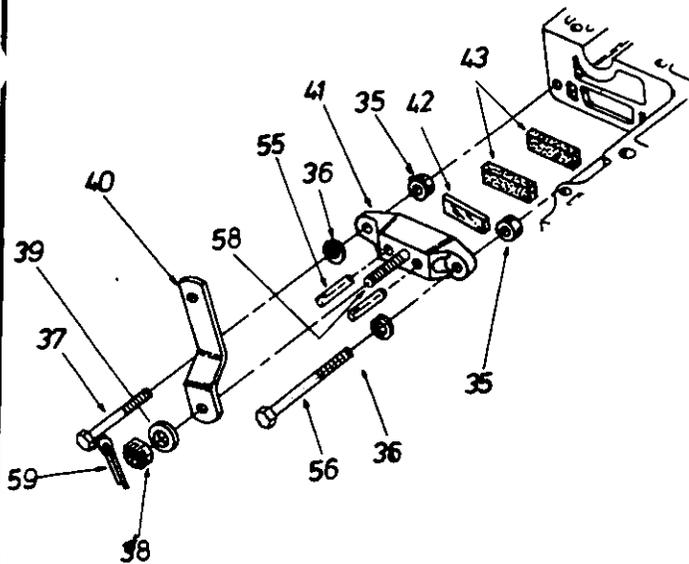


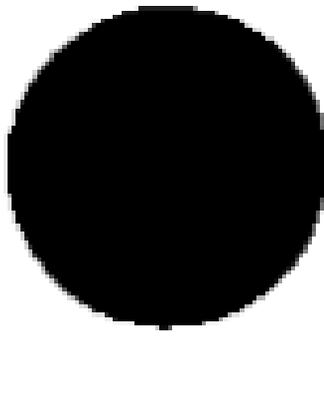
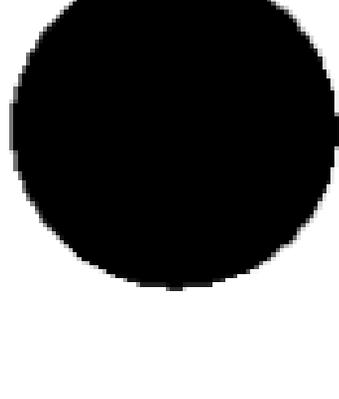
FIGURE 2.

1. Remove cotter pin, Ref. 59.
2. Remove castle nut, Ref. 38 and flat washer, Ref. 39.

NOTE: This will allow the brake lever, Ref. 40, and tow actuating pins, Ref. 55, to be removed.

3. Remove hex bolts, Ref. 37 and 56, and lock washers, Ref. 36.
4. Remove the brake yoke, Ref. 41, two spacers, Ref. 35, puck plate, Ref. 42 and two brake pucks, Ref. 43.
5. Inspect brake pucks for wear or damage replace if necessary.
6. Reverse steps 1 through 5 for reassembly.

35 Spacer (2 Req'd.)
36 Lock Washer (2 Req'd.)
37 Hex Bolt ¼-20 x 1.50" Lg.
38 Castle Nut
39 Flat Washer
40 Brake Lever
41 Brake Yoke
42 Puck Plate
43 Brake Puck (2 Req'd.)
55 Actuating Pin (2 Req'd.)
56 Hex Bolt ¼-20 x 2.50" Lg.
59 Cotter Pin



Section 5

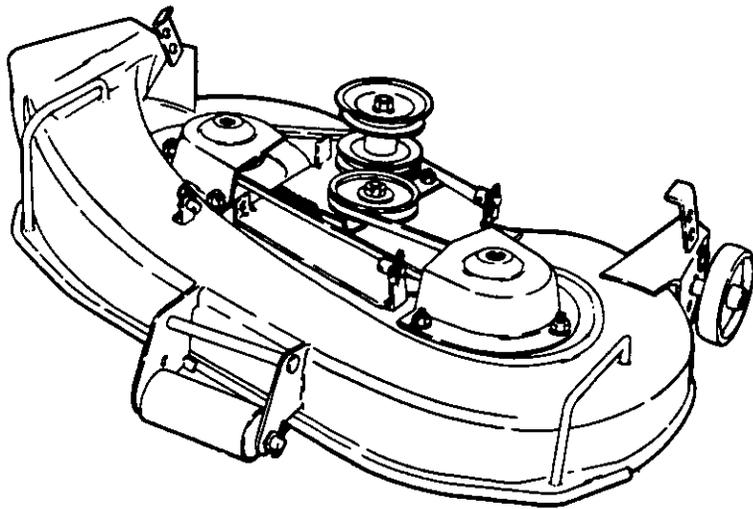
DECKS

Contents

	Page
Deck Chart	5-2
Deck Belts—Removal and Replacement	5-3 and 5-4
Removing the Deck	5-5 and 5-6
Leveling Deck	5-7
Front and Rear Adjustment	5-7
Attaching the Chute Deflector	5-8
Cutting Blade	5-9

DECK CHART

YEAR	MODEL NO.	HOME MAINTENANCE NO.	DECK SIZE
1986	526	136-511-100	26"
1986	830	136-514-100	30"
1986	1136	136-518-100	36"
1987	802	137-513-100	30"
1987	804	137-517-100	32"
1987	1106	137-519-100	38"
1988	804	138-517-100	32"
1988	1106	138-519-100	38"



DECK BELTS—REMOVAL AND REPLACEMENT

1. Disconnect the spark plug wire and ground it against the engine.
2. Lower the deck to its lowest position.
3. Move the blade engagement lever to the disengaged position.
4. Remove one hex bolt and lock washer at the front of lower outside belt guard. A 1/2" wrench is required. See figure 1.
5. Loosen (do not remove) the second bolt. See figure 1.

NOTE

Rear wheel was removed for clarity only. It is not necessary to remove the wheel when replacing the deck belts.

6. Pivot the lower outside belt guard out and away from the engine pulley. See figure 2.
7. Remove the front hex bolt from the lower inside belt guard as shown in figure 3.
8. Loosen the second bolt (do not remove), then pivot the guard downward, and slip the upper deck belt off the engine pulley. See figure 3.

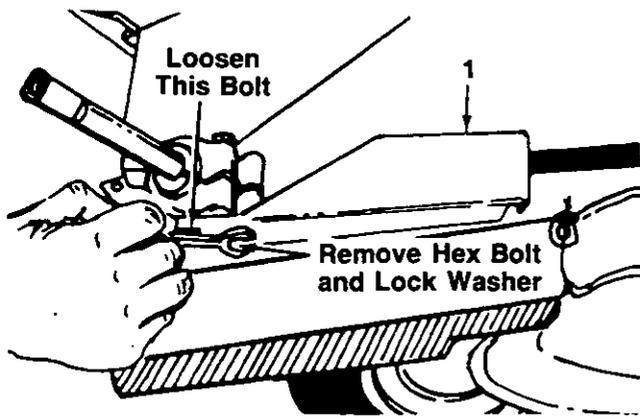


FIGURE 1.

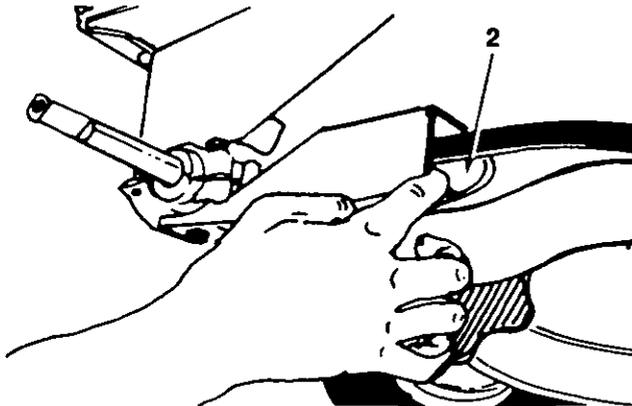


FIGURE 2.

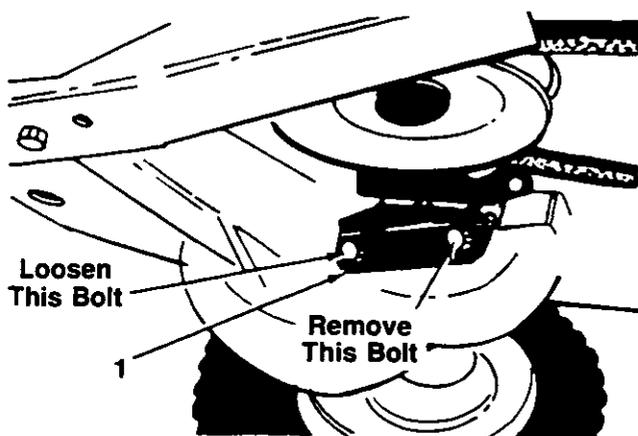


FIGURE 3.

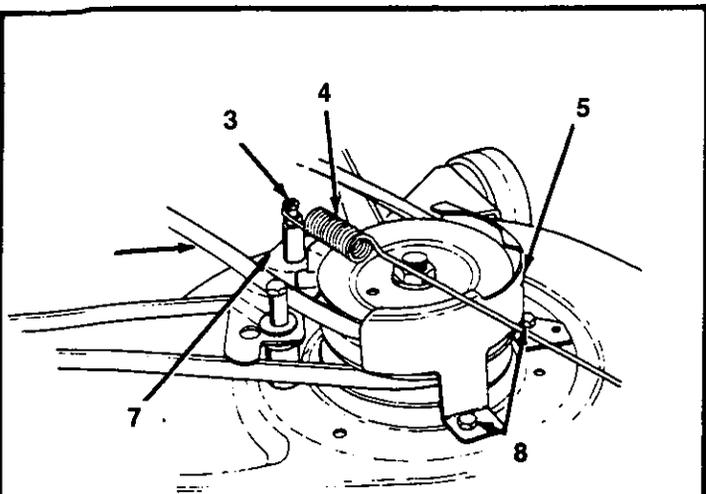


FIGURE 4.

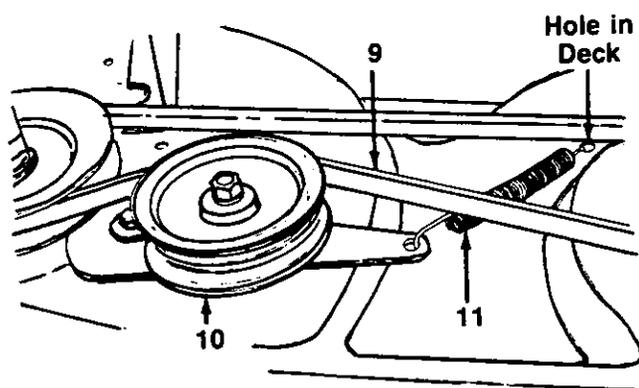


FIGURE 5.

9. Remove the top hex lock nut from the bolt on the deck brake bracket assembly, and remove the spring from the bolt. See figure 4.

10. Remove the left-hand belt guard by removing the hex bolts, lock washers and hex nuts. See figure 4. Remove the upper belt from the top pulley.

11. Disconnect the spring on the idler bracket from the hole in the deck shown in figure 5. Slip the lower belt over the idler pulley. Roll the belt off the deck pulleys.

12. To replace the belts, first reattach the spring on the idler bracket to the hole in the deck. Work the lower belt over the two deck pulleys, and then around the idler pulley as shown in figure 5. To complete reassembly, follow steps 1 through 10 in reverse order.

3	Hex Lock Nut
4	Spring
5	Left-Hand Belt Guard
6	Upper Belt
7	Deck Brake Bracket Assembly
8	Hex Bolt, Lock Washer and Nut (2)
9	Lower Belt
10	Idler Pulley
11	Idler Spring

REMOVING THE DECK

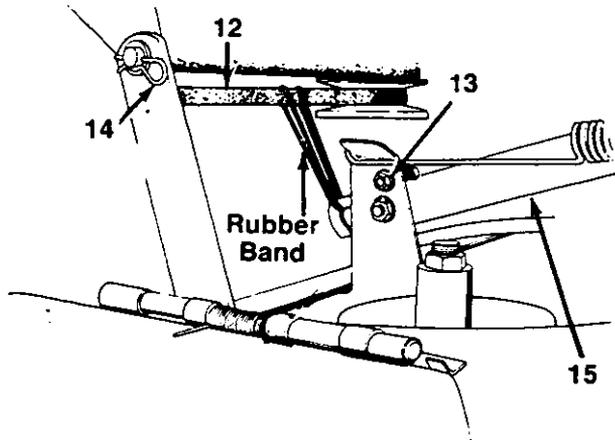
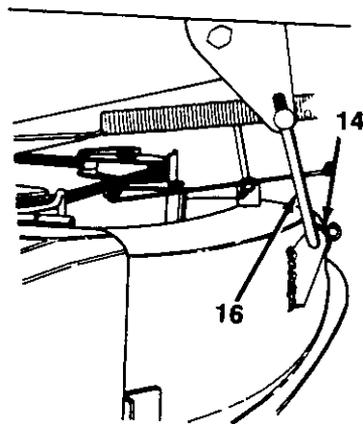


FIGURE 6.



(38" DECK)

FIGURE 7.

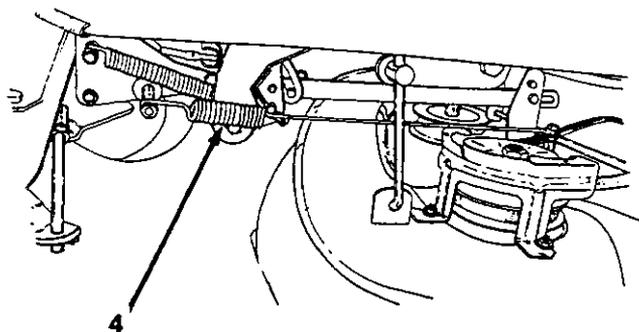


FIGURE 8.

1. Disconnect the spark plug wire and ground it against the engine.
2. Lower the deck to its lowest position.
3. Move the blade engagement lever to the engaged position.
4. Remove the top nut from the bolt on the deck brake bracket assembly, and remove spring from the bolt. Refer to figure 4 (page 5-4) and figure 8.
5. Follow steps 3 through 8 of "Deck Belts—Removal and Replacement" (preceding section).
6. Remove the hex bolt, lock washer and hex nut from the top hole in the deck engagement bracket. See figure 6.
7. Loop a rubber band around and over the variable speed belt, and hook both ends of the rubber band over the slot on the deck drive control bracket as shown in figure 6.
8. Move the blade engagement lever to the engaged position.
9. Disconnect the deck drive control bracket as follows. Push the front of the deck backwards. Pivot the deck drive control bracket off the shoulder bolt on the deck engagement bracket.
10. Remove the two hairpin cotters and flat washers which hold the stabilizer shaft assembly to the deck lift brackets on the rider. See figures 6, 10 and 11.
11. Remove the two hairpin cotters and flat washers which secure the J-bolts to the front of the deck. See figures 7 and 9.
12. Slide the deck from beneath the rider.

12	Variable Speed Belt
13	Hex Bolt, Lock Washer and Nut
14	Hairpin Cotter and Flat Washer
15	Deck Drive Control Bracket
16	"J"-Bolt

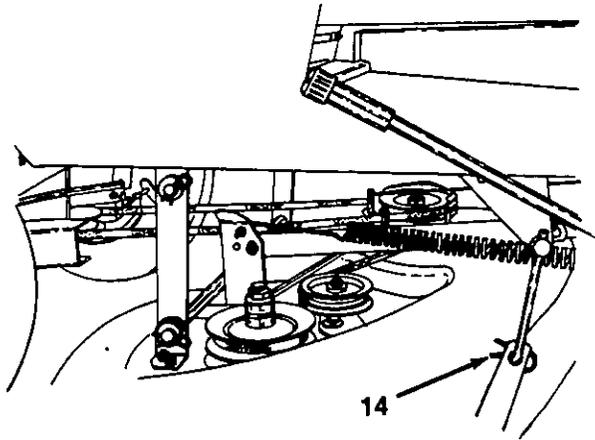


FIGURE 9. (32" DECK)

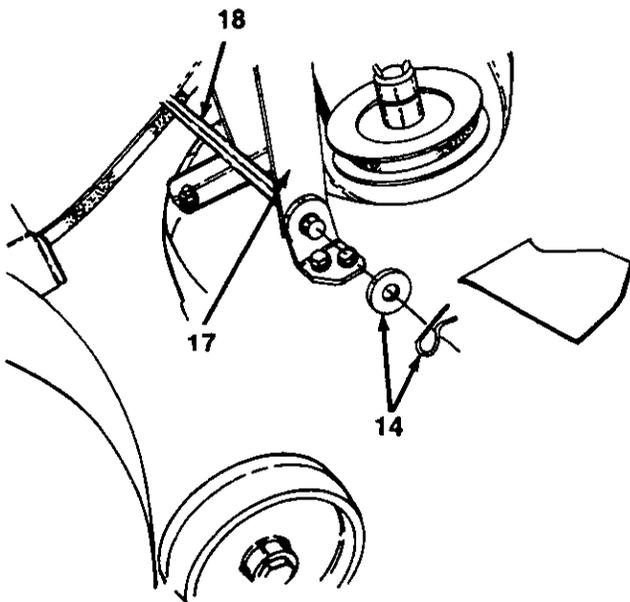


FIGURE 10. (32" DECK)

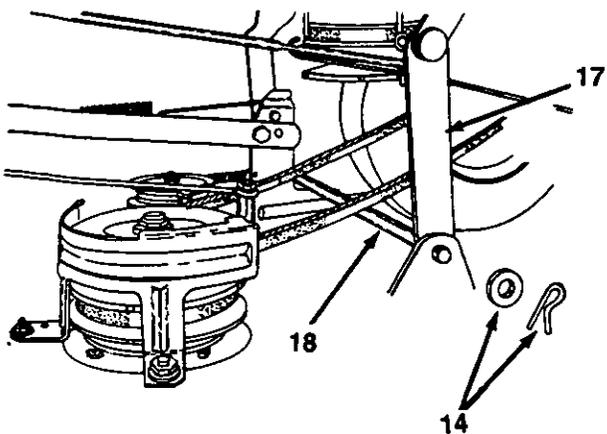


FIGURE 11. (38" DECK)

14 Hairpin Cotter and Flat Washer
17 Deck Lift Brackets
18 Stabilizer Shaft Assembly

LEVELING THE DECK

If an uneven cut is obtained, the deck may be adjusted as follows.

NOTE

Make certain tire pressure is 15 p.s.i. in all tires before adjusting the deck.

Side to Side Adjustment

1. Raise the deck to its highest position.
2. With the unit on a hard, level surface, measure the distance from the bottom edge of both the left rear and right rear of deck to the ground.
3. If adjustment is needed, loosen the hex nut on the adjusting screw, located under the right side of the frame. See figure 12. Move the adjusting screw inward to lower the right side of the deck, or outward to raise the right side of the deck.
4. Remeasure the deck as described in step 2, and readjust if necessary. Tighten the hex nut to secure the adjusting screw when the deck is level.

Front to Rear Adjustment

To obtain the best cut, the front of the deck should be between 1/4" and 3/8" lower than the rear of the deck

1. Make the side to side adjustment as instructed above.
2. Measure the distance from the bottom edge of the front and right rear of deck to the ground.
3. If the front is not between 1/4" and 3/8" lower than the rear, remove the hairpin cotters and flat washers which secure the J-bolts to the front of the deck, both right and left sides. See figure 13. Thread the J-bolts into or out of the ferrules as necessary.
4. Reassemble J-bolts and recheck the adjustment. Readjust as necessary. Secure with flat washers and hairpin cotters when adjustment is correct.

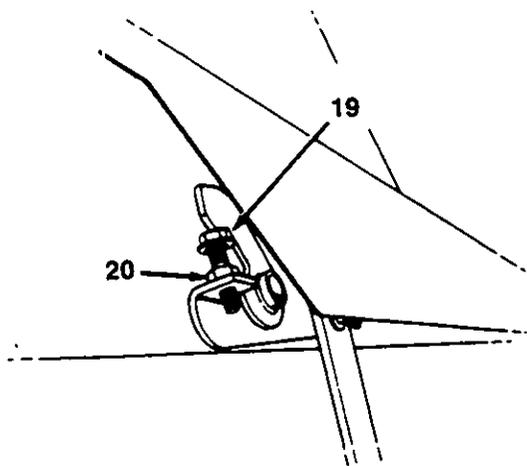


FIGURE 12.

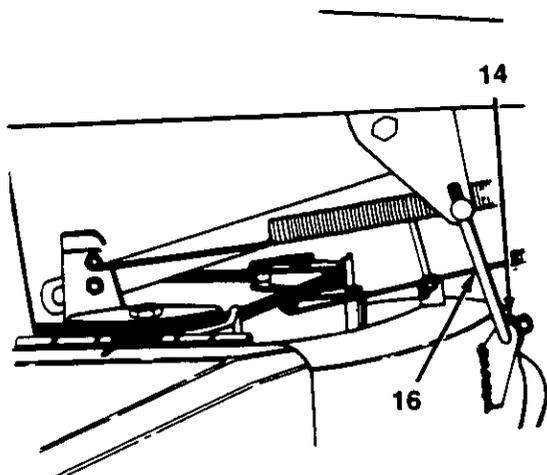


FIGURE 13.

14 Hairpin Cotter and Flat Washer
16 "J"-Bolt
19 Adjusting Screw
20 Hex Nut

ATTACHING THE CHUTE DEFLECTOR

(If Unassembled)

If the chute deflector has not been assembled on your unit, remove the truss machine screws, lock washers and hex jam nuts which are attached to the deck next to the chute opening. See figure 14.

Place the chute deflector in position as shown in figure

1. Secure with hardware just removed.

WARNING

Do not operate your unit unless the chute deflector has been properly installed.

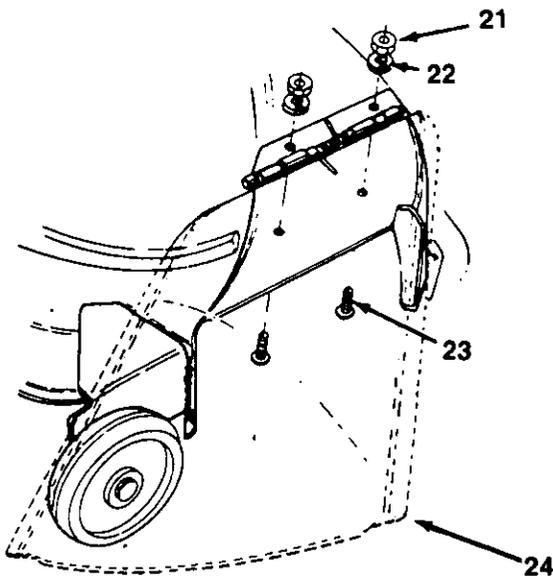


FIGURE 14.

21 Hex Nuts (2 Req'd.)
22 Lock Washers (2 Req'd.)
23 Truss Machine Screws (2 Req'd.)
24 Chute Deflector

CUTTING BLADE

A. Removal for Sharpening or Replacement



Be sure to disconnect and ground the spark plug wire before working on the cutting blade to prevent accidental engine starting. Protect hands by using heavy gloves or a rag to grasp the cutting blade.

1. Remove the large bolt and lock washer which holds the blade and adapter to the blade spindle. See figure 15.
2. Remove the blade and adapter from the spindle.
3. If the blade or blade adapter needs replacing, remove the two small bolts, lock washers and nuts which hold the blade to the adapter. See figure 15.

B. Sharpening

Remove the cutting blade by following the directions of the preceding section.

When sharpening the blade, follow the original angle of grind as a guide. It is **extremely important** that each cutting edge receives an equal amount of grinding to prevent an unbalanced blade. An unbalanced blade will cause excessive vibration when rotating at high speeds, may cause damage to the mower and could break, causing personal injury.

The blade can be tested for balance by balancing it on a round shaft screwdriver. Remove metal from the heavy side until it balances evenly.

NOTE

It is recommended that the blade always be removed from the adapter for the best test of balance.

C. Reassembly

Before reassembling the blade and the blade adapter to the unit, lubricate the spindle and the inner surface of the blade adapter with light oil. Lubricating the bolt holes, bolts and inner surface of the nuts with light oil is also recommended. A 4 oz. plastic bottle of light oil lubricant is available. Order part number 737-0170. Engine oil may also be used.

When replacing the blade, be sure to install the blade with the side of the blade marked "Bottom" (or with part number) facing the ground when the mower is in the operating position.

Blade Mounting Torque

3/8" Dia. Bolt 375 in. lb. min., 450 in. lb. max.
5/16" Dia. Bolt 150 in. lb. min., 250 in. lb. max.

NOTE

To insure safe operation, ALL nuts and bolts must be checked periodically for correct tightness.

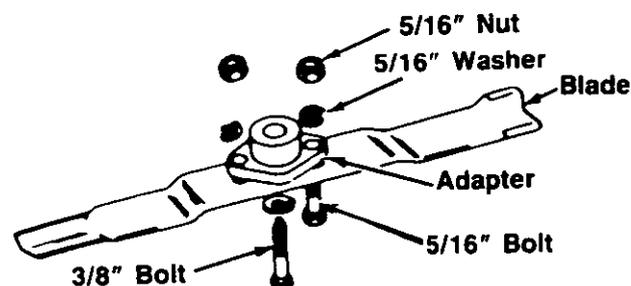
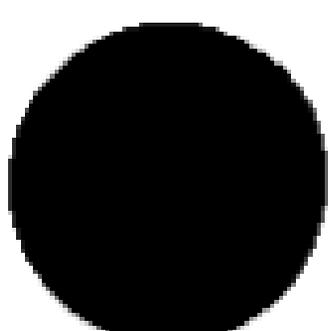
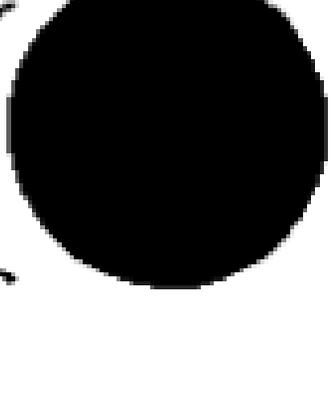


FIGURE 15.





ELECTRICAL

Contents

	Page
Trouble Shooting Chart	6-2 and 6-3
Parts List for Electrical System	6-3
Battery Maintenance	6-4
Battery Storage	6-4
Common Causes for Battery Failure	6-4

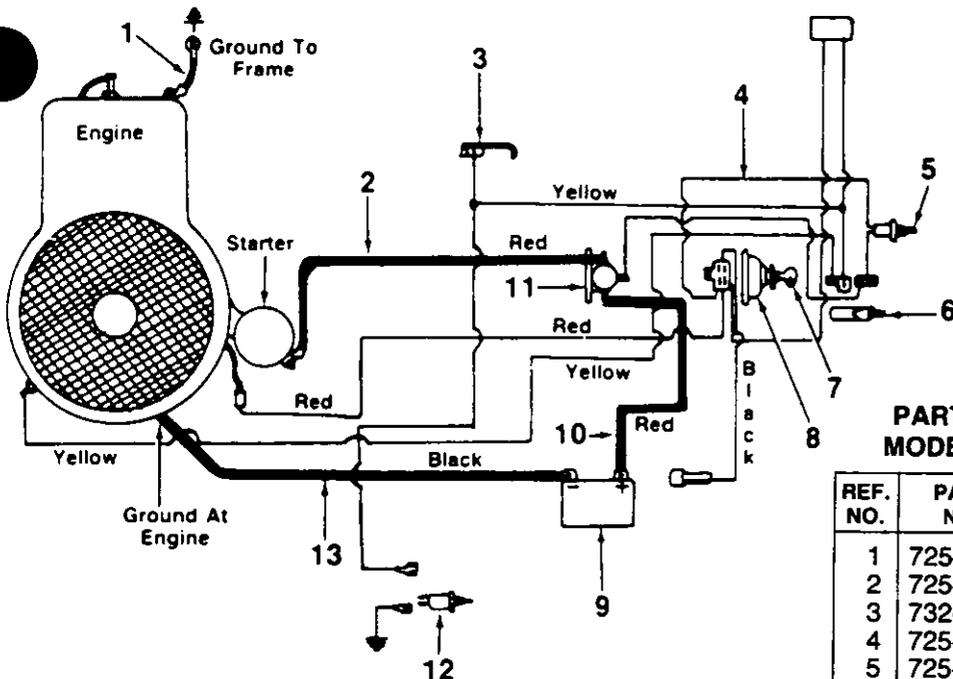
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TROUBLE SHOOTING CHART FOR ELECTRIC START MODELS

TROUBLE	LOOK FOR	REMEDY
Engine will not crank	Battery installed incorrectly	The battery must be installed with the negative terminal, identified at the terminal post by (Neg, N or -), grounded. The positive terminal (Pos, P or +) attaches to the large cable from the solenoid. The small red wire from the fuse holder or circuit breaker is also attached to the positive terminal.
	Blown fuse or circuit breaker	Replace fuse with 7½ amp. fuse ¼ x 1¼" lg. Circuit breaker will reset itself when it cools off. Fuses or circuit breakers seldom open or fail without a reason. The problem must be corrected. Check for loose connections in the fuse holder. Replace fuse holder if necessary. A dead short may be in the cranking or charging circuit where the insulation may have rubbed through and exposed the bare wire. Replace the wire or repair with electrician's tape if the wire strands have not been damaged. Note: Look for a wire pinched between body panels, burned by the exhaust pipe or muffler or rubbed against a moving part.
	Battery is dead or weak	<p>Use a hydrometer to check the condition of the battery. The Specific Gravity (s.g.) should be 1.265 at 80°F. (1.215 s.g. minimum needed for cranking engine). The reason for the battery failing must be determined. (1) Defective battery. Battery will not accept or hold a full charge. (2) Short circuit. Check for grounded wire. (3) Charging system not working.</p> <p>The charging system is an alternator located under the flywheel. It is unregulated and rated 3 amp. at 3600 r.p.m. A diode (rectifier) is located in the output lead just before the wire harness plug on the engine side.</p> <div style="text-align: center;"> </div> <p>The diode changes A.C. to D.C. to charge the battery. A bad diode can either fail to charge the battery or discharge the battery if the alternator is shorted as well as the diode. To test: (1) Disconnect charger lead from the battery (small red wire). (2) Connect 12 V small test lamp between the 3 amp. D.C. charge lead and the positive terminal of the battery. (3) With the engine off, the lamp should not light. If it does, the diode and possibly the alternator should be replaced. (4) Start the engine. The lamp should light. If it does not, the alternator (stator) or lead wire is bad and should be replaced.</p>
Mechanical failure (Wires and switches)	The interlock system includes two mechanical activated switches which are wired in series in the circuit used to energize the starter solenoid. While testing the interlock system, you will make the mower temporarily unsafe by permitting the engine to be started with the blade and clutch engaged. WARNING: While testing, disengage the clutch, shut off the blade control, set the parking brake and place the gear shift lever in neutral. Attach a wire (minimum 18 gauge) to the positive terminal of the battery and touch the other end to the small terminal on the solenoid. If the engine does not crank: (1) There is a loose connection or poor ground. (2) The solenoid may be bad. The solenoid can be checked by using a heavy wire (#8 gauge minimum) and jumping between the two large terminals. If the engine cranks, the solenoid is bad. (3) If the engine does not crank when you jump the solenoid, have the starter motor tested by an authorized engine dealer. If the engine does crank, the problem is with one of the safety switches, ignition switch or the wire between the fuse holder (or circuit breaker) and the small terminal on the solenoid. Note: Look for a poor connection at the switches or a defective switch. Replace if necessary.	
Engine cranks but will not start	Throttle or choke not in starting position	Check owner's guide for correct position for throttle control and choke for starting.

TROUBLE SHOOTING CHART FOR ELECTRIC START MODELS

TROUBLE	LOOK FOR	REMEDY
	No spark to spark plug	Spark plug lead disconnected. Connect lead. Hold spark plug lead away from engine block about 1/8". Crank engine. There should be a spark. If not, have engine repaired at authorized engine service dealer. Faulty spark plug. To test, remove spark plug. Attach spark plug lead to spark plug. Ground the spark plug body against the engine block. Crank the engine. The spark plug should fire at the electrode. Replace if it does not.
	No fuel to the carburetor	Gasoline tank empty. Fill. Fuel line or in-line fuel filter plugged. Remove and clean fuel line. Replace filter if necessary.
	Air filter dirty	If the air cleaner is dirty, the engine may not start. Clean or replace as recommended by the engine manufacturer.
Engine smokes	Engine loses crankcase vacuum	Dipstick not seated or broken. Replace defective part. Engine breather defective. Replace.
Excessive vibration	Bent or damaged blade spindle	Stop engine immediately. Check all pulleys, blade adapters, keys and bolts for tightness and damage. Tighten or replace any damaged parts.
	Bent blade	Stop engine immediately. Replace damaged blade. Only use original equipment blades.
Mower will not discharge grass or leaves uncut strips	Engine speed low Transmission selection Blades short or dull	Throttle must be set between 3/4 and full throttle. Use lower transmission speed. The slower your ground speed, the better the quality of cut. Sharpen or replace blades (uncut strip problem only).



**PARTS LIST FOR ELECTRICAL SYSTEM
MODELS 804 AND 1106 RIDING MOWERS**

REF. NO.	PART NO.	DESCRIPTION
1	725-0977	Elec. Wire 8 Ga. x 9.0" Lg.
2	725-0424	Elec. Wire
3	732-0420	Spring Switch—Reverse
4	725-1143	Wire Harness
5	725-0268	Safety Switch—Black N.O.
6	725-0819	Safety Switch
7	725-0201	Ignition Key
8	725-0267	Ignition Switch
9	725-0514	Battery 12V
10	725-0927	Elec. Wire Red w/Boot
11	725-0771	Solenoid
12	725-0269	Safety Switch Red N.C.
13	725-0975	Elec. Wire 8 Ga. x 9.0" Lg.
14	725-0765	Elec. Wire
15	725-0977	Elec. Wire 11.5" Lg.

BATTERY MAINTENANCE

1. Check periodically (every two weeks or before and after charging) to be sure electrolyte level is above the lowest line on battery. Add only distilled water or good quality drinking water. NEVER add additional acid or other chemicals to battery after initial activation.
2. The battery should be checked with a hydrometer after every 25 hours of operation. If the specific gravity is less than 1.225, remove battery and recharge.
3. Coat the terminals and exposed wiring with a thin coat of grease or petroleum jelly for longer service and protection against electrolyte corrosion.
4. The battery should be kept clean. Any deposits of acid should be neutralized with soda and water. Be careful not to get this solution in the cells.

BATTERY STORAGE

1. Charge battery using normal methods. NEVER store discharged battery as it will not recover.
2. When storing battery for extended periods, disconnect battery cables. Removing battery from unit is recommended.
3. Store in cold, dry place.
4. Recharge battery whenever the specific gravity is less than 1.225, before returning to service, or every two months, whichever occurs first.

COMMON CAUSES FOR BATTERY FAILURE ARE:

1. Overcharging
2. Undercharging
3. Lack of water
4. Loose hold downs and/or corroded connections
5. Excessive loads
6. Battery electrolyte substitutes
7. Freezing of electrolyte

NOTE

THESE FAILURE DO NOT CONSTITUTE WARRANTY.

[REDACTED]

STEERING AND FRONT AXLES

Contents

Removal of Steering	7-2 and 7-3
Front Axles	7-4 and 7-5

REMOVAL OF STEERING

1. Remove the steering wheel cap, by prying cap off with a screwdriver. See figure 1.

2. Remove the hex center lock nut and belleville washer at top of steering shaft at steering wheel. See figure 2. A 1/2" wrench is required.

3. Next, remove the steering wheel from steering shaft by tapping upward with a rubber mallet or hammer. The steering wheel is fitted over a double "D" shaft and has been seated by torquing down the hex center lock nut.

4. Remove four self-tapping screws (3/8" wrench required), located on the sides of the steering gear cover. See figure 3.

5. Remove the hex center lock nut, flat washer and pinion gear on bottom end of steering shaft. See figure 4. A 1/2" wrench is required.

FIGURE 1.

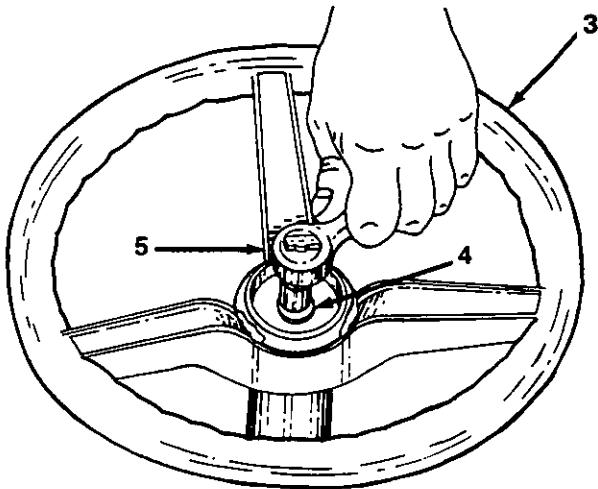


FIGURE 2.

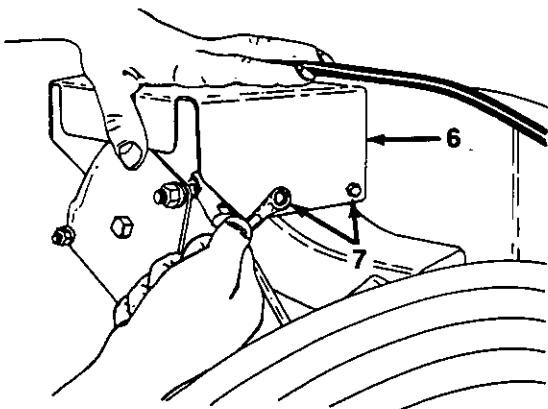


FIGURE 3.

1	Screwdriver
2	Steering Cap
3	Steering Wheel
4	Hex Center Lock Nut and Belleville Washer
5	1/2" Wrench
6	Steering Gear Cover
7	3/8" Self-Tapping Screws (4)
8	Hex Center Lock Nut and Flat Washer
9	Steering Shaft

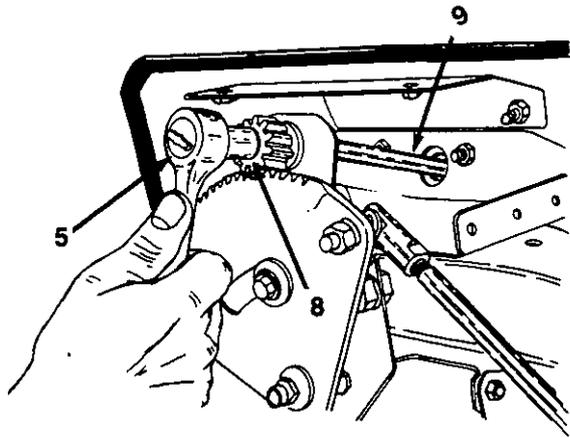


FIGURE 4.

NOTE

The pinion gear and steering shaft are splined and may require a little pressure for separation.

6. Upon removal of pinion gear from steering shaft, the steering shaft can now be pulled from the top of the rider out of rider.

NOTE

Upon sliding the steering shaft out of rider, there is a white plastic bushing at the top of the pivot bar and a hex plastic bushing at the bottom of shaft that will fall out.

7. Inspect steering shaft on both ends for damage on wear on threads and spline. Replace if necessary.
8. Inspect the pinion gear and steering gear segment for wear or damage. Replace if necessary.

FRONT AXLES

1. Remove one lock washer and hex nut at ball joint and steering gear segment. See figure 6.

2. Remove the cotter pin and flat washer on end of the rod at axle assembly. See figure 6.

3. Remove the speed nut on top of axle assembly at the pivot bar. See figures 5 and 6.

4. Drop axle assembly and wheel out of pivot bar.

5. Remove hub cap, cotter pin and flat washer on axle to remove wheel. See figure 6.

6. Inspect axle, hex flange bearings for wear or damage, replace if necessary.

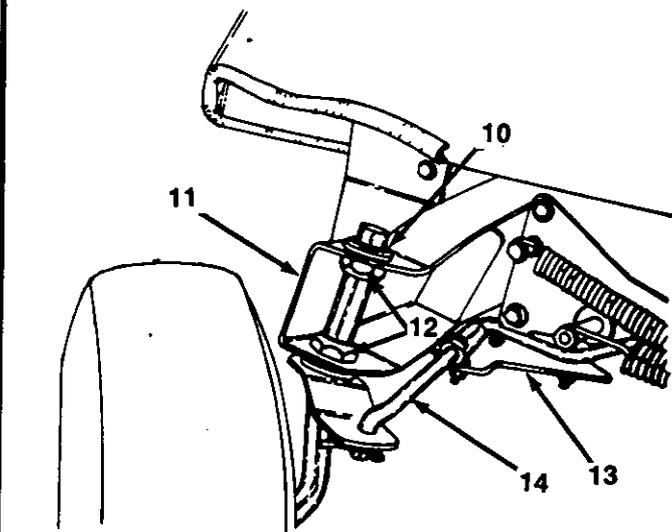


FIGURE 5.

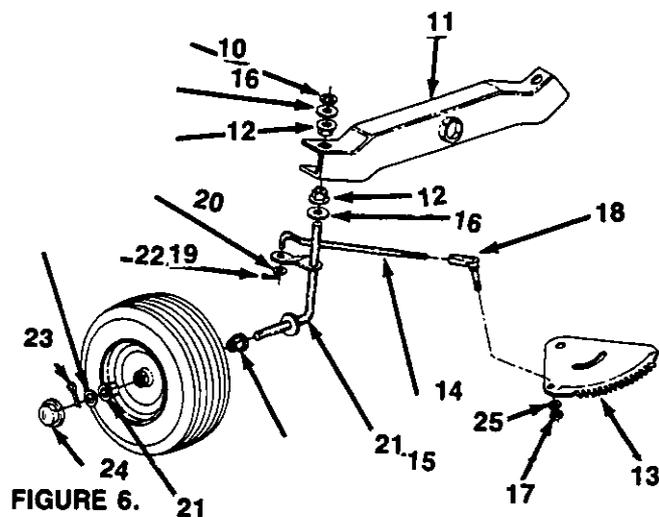


FIGURE 6.

NOTE

Before removing front wheels or axles, block up front of rider, or lift front of unit up with a hoist.

10	Speed Nut
11	Pivot Bar
12	Hex Flange Bearing
13	Steering Gear Segment
14	Tie Rod
15	Axle Assembly
16	Flat Washer .635" I.D. x 1.12" O.D. (2)
17	Hex Nut 3/8-24 Thread
18	Ball Joint Assembly
19	Cotter Pin 1/8" x 1.00" Long
20	Flat Washer .385" I.D. x .87" O.D.
21	Flange Bearings (2)
22	Flat Washer
23	Cotter Pin 1/8" x 1.25" Long
24	Hub Cap
25	Lock Washer 3/8" I.D.

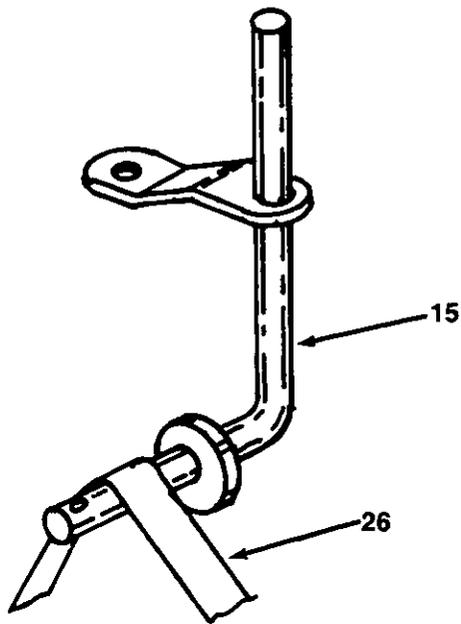


FIGURE 7.

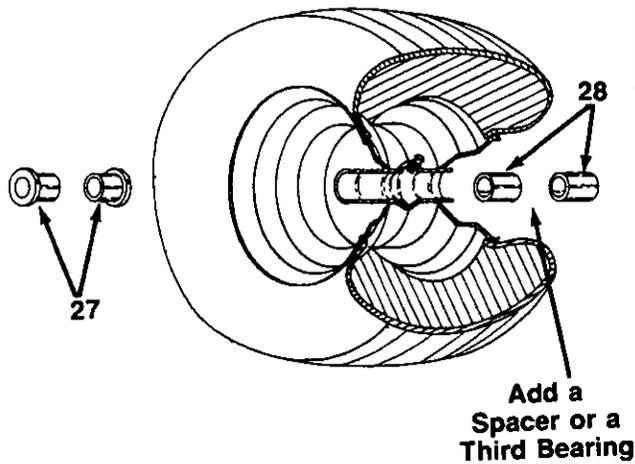


FIGURE 8.

7. Before reassembling the axle(s), they should be cleaned and polished with emery cloth (fine). See figure 7.
8. On front wheel bearings, units may be equipped with flange bearings or needle bearings. See figure 8.
9. If rider has flange bearings, check for wear and replace if necessary. See figure 8.
10. If rider has needle bearings, you will need to add a third needle bearing between bearings, or make a spacer to go between two needle bearings. See figure 8.
11. If needle bearings are not holding up, then replace with flange bearings, part number 741-0313.

15 Axle Assembly
26 Emery Cloth (Fine)
27 Flange Bearings (Plastic)
28 Needle Bearings

