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# ***Simplicity***®

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## **OWNER'S MANUAL**

MFG. NO. 422 36" ROTARY MOWER

SIMPLICITY MANUFACTURING COMPANY,



SER. FORM - OP40  
LITHO IN U.S.A.

1620

## PROTECT YOURSELF AND OTHERS

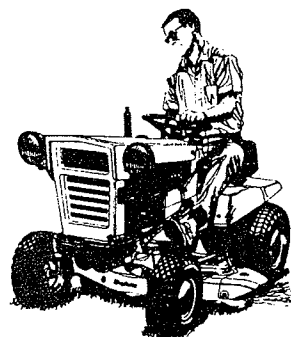
- Know the controls and how to stop quickly -- READ THE OWNER'S MANUAL.
  - Do not allow children or young teenagers to operate vehicle or adults to operate it without proper instruction.
  - Do not carry passengers. Keep children and pets a safe distance away.
  - Clear work area of objects which might be picked up and thrown.
  - Disengage all clutches and shift into neutral before starting engine.
  - Disengage power to implement (s) and stop engine before leaving operator position.
  - Disengage power to implement (s) and stop engine before making any repairs or adjustments.
  - Disengage power to implement (s) when transporting or not in use.
  - Take precautions, such as disengaging power take-off, lowering implements, shifting into neutral, setting parking brake, stopping engine and removing key when leaving vehicle unattended.
  - Don't stop or start suddenly when going uphill or downhill.
  - Reduce speed on slopes and in sharp turns to prevent tipping or loss of control.
  - Stay alert for holes in terrain and other hidden hazards.
  - Use care when pulling loads or using heavy equipment.
    - A. Use only approved drawbar hitch points.
    - B. Limit loads to those you can safely control.
    - C. Don't turn too sharp, and use care when backing.
    - D. Use counterweight (s) or wheel weights when suggested in owner's manual.
- Watch out for traffic when crossing or near roadways.
- When using any attachments, never direct discharge of material toward bystanders nor allow anyone near vehicle while in operation.
  - Handle gasoline with care -- it is highly flammable.
    - A. Use approved gasoline container.
    - B. Never remove cap or add gasoline to a running or hot engine or fill fuel tank indoors. Wipe up spilled gasoline.
    - C. Replace gasoline cap securely.
    - D. Open doors if engine is run in garage -- exhaust gasses are dangerous.
  - Keep vehicle and attachments in good operating condition and keep safety devices in place. Use guards as instructed in owner's manual.
  - Do not operate equipment when barefoot or wearing open sandals. Always wear substantial footwear.
  - Do not put hands or feet near or under rotating parts. Keep clear of discharge opening at all times.
  - Before cleaning, inspecting, adjusting, or repairing the tractor or any attachments stop the engine, remove the ignition key (electric start models) and be sure all blades and other moving parts have stopped.
  - Stop blade (s) when crossing gravel drive, walks or roads.
  - After striking a foreign object stop the mower and remove the ignition key. Thoroughly inspect the mower for any damage, and repair the damage before restarting and operating the mower.
  - If your equipment should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
  - Do not run the engine indoors.
  - Look to be sure that children are not behind the tractor, before backing up.
  - When mowing with a tractor mounted mower, mow up-and-down on slopes, never across or horizontally. To prevent the danger of overturning, exercise extreme caution when stopping, starting or changing direction.
  - Check blade and engine mounting bolts for proper tightness at frequent intervals.
  - Keep all nuts, bolts, and screws tight to be sure equipment is in safe working condition.
  - Never store equipment with gasoline in the tank inside of a building where fumes may reach an open flame or spark. Allow engine to cool before storing in any enclosure.
  - To reduce fire hazard keep engine free of grass, leaves or excessive grease.
  - Never operate any attachment without all guards, deflectors, and other protective covering in place.
  - Keep the area of operation clear of all persons, particularly small children, and pets.
  - Thoroughly inspect the area where the equipment is to be used and remove all stones, sticks, wire, bones and other foreign objects.
  - Check fuel before starting engine. Do not fill gasoline tank when engine is running or while engine is still hot. Wipe off any spilled gasoline before starting engine. Do not smoke when fueling engine or around open gasoline containers.
  - Mow only in daylight or in good artificial light.
  - Do not change engine governor, settings or overspeed engine.

# ROTARY MOWER

Mfg. No. 422, 36" for use on BROADMOOR tractor.

## RECOMMENDED ACCESSORIES

Two rear wheel weight Mfg. No. 449 when moving across slopes between 20% and 40% grade and one front weight Mfg. No. 466 when moving up slopes between 20% and 40% grade.



## INSTALLATION

1. If the deflector (vacuum collector adapter if you are using the vacuum collector) is not already on your mower, install it using the appropriate hardware. **NEVER OPERATE THE MOWER WITHOUT THE DEFLECTOR OR VACUUM COLLECTOR ADAPTER IN PLACE.**
2. Turn the tractor wheels all the way to the right.
3. Slide the mower under the tractor from the left side of the tractor and straighten the wheels.
4. Attach the mower hitch arms to the ears on the tractor front axle. Use two pins and spring clips, placing them through the front holes in the ears and the hole at the end the hitch arms. (See Figure 1).

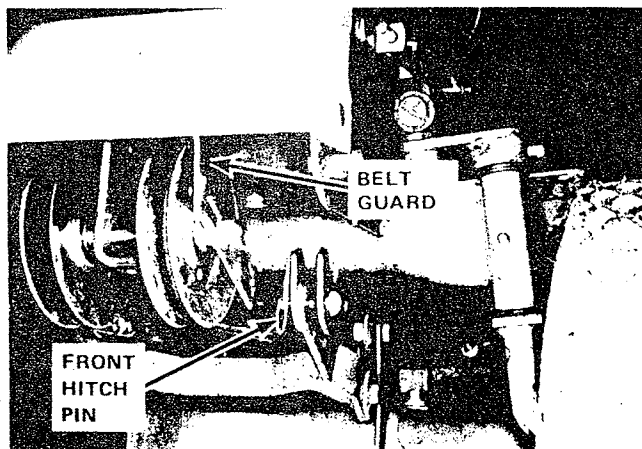


FIGURE 1

5. Place the tractor lift lever in the back position and attach the lift chain to the lift lever using the pin and spring clip. (See Figure 2).
6. Feed one end of the belt over the tractor axle, through the belt guard and place it over the large engine pulley. Place the belt over the two front idler pulleys and under the axle to fasten the other end around the mower pulley. (See Figure 1).

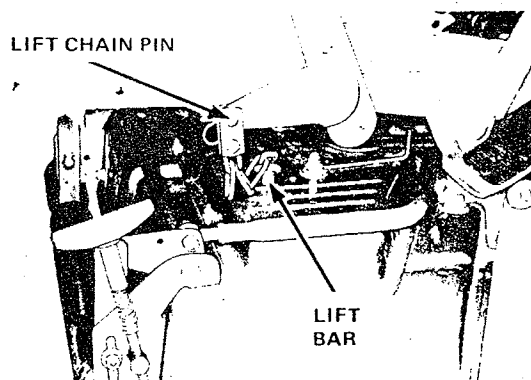
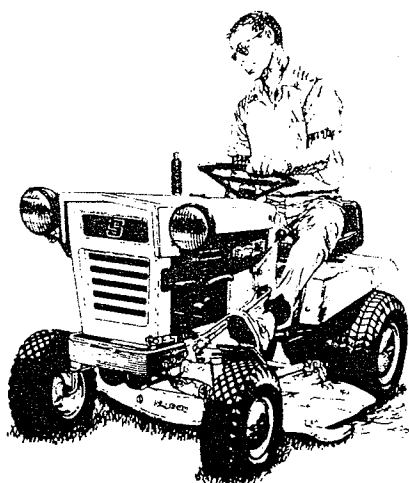


FIGURE 2



# OPERATION

## MOWER OPERATION

1. Lower the mower to operating position by grasping the lift lever handle, depressing the thumb button to free the latch and moving the lever back. **NEVER OPERATE THE MOWER IN THE RAISED POSITION.**

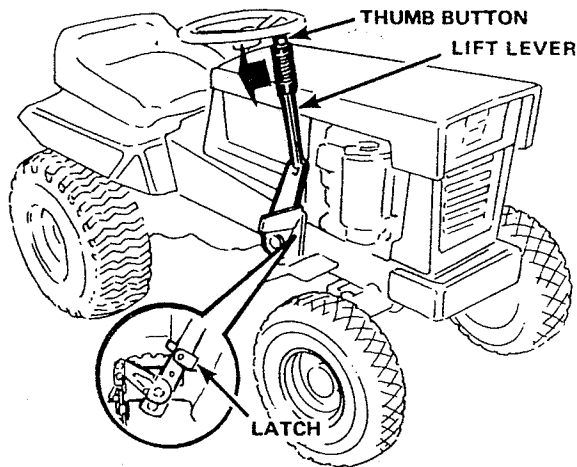


FIGURE 3

2. So that the engine will absorb the additional load, move the engine speed control lever up so the engine runs at three-fourths to full speed.

3. Engage the mower by pushing the power take-off lever forward and down all the way. (See Figure 4).

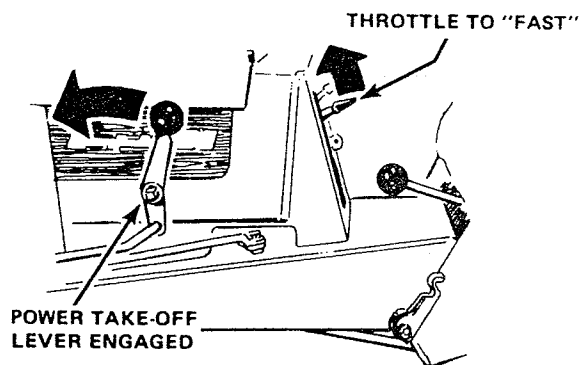


FIGURE 4

## HEIGHT ADJUSTMENT

Before starting the engine, the mower height should be checked. To adjust the mower for height of cut, turn the height adjusting handle at the right rear of the mower, clockwise to raise the blades and counter-clockwise to lower them. (See Figure 5).

Most lawns should be mowed to keep the grass approximately two to three inches high. For your first use of the mower set the height at 2½ inches. Best results are obtained by cutting often and not too short. To keep a green lawn,

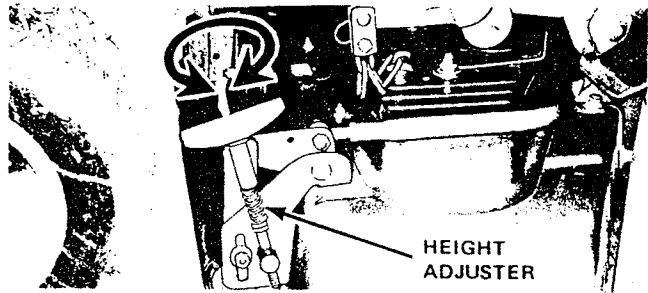


FIGURE 5

never mow more than one third off the height of the grass or a maximum of one inch in one mowing. For extremely tall grass, set the cutting height at maximum for the first mowing then reset to the desired height and mow again. Allow the grass to grow to three inches, then cut off only the top inch.

## MOWER SPEED

The engine speed control should always be set at three-fourths to full engine speed when mowing. Choose the transmission gear according to the type of grass to be cut and the terrain. The operator will learn with experience what gear to use in various conditions, but you may find these guidelines helpful:

**Very Tall, Thick, Wet or Rough Lawns:** You should use first gear where the grass is very tall, thick or wet or the ground is so rough as to cause the mower to bounce at higher speeds.

**Normal Lawns:** In second gear, the mower will do an excellent job of cutting dry grass of normal thickness and height as recommended above under "height adjustment".

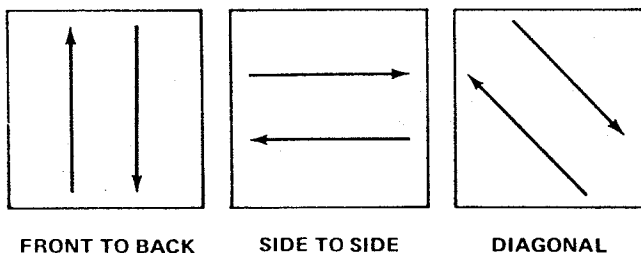
**Light Grass:** Mowing less than one inch, you may use third gear where the grass is not heavy and the ground is smooth.

## MOWING PATTERN

Guide the right side of the mower along trees, post or other obstacles and follow the contour as closely as possible.

**Dispersal:** If the clippings are to remain on the lawn, mow with the discharge side toward the area already cut. If the clippings will be raked up later and the grass is at a normal height of three inches or less, it is practical to disperse the clippings into the un-cut area. There they will be concentrated in the center of the lawn for minimum raking.

**Wet, Thick or Heavy Grass:** Start at the outer edge of the area and mow clockwise so that clippings are always deposited on cut grass. Less engine power is required and a more even cut free of streaks will result. Change patterns occasionally to eliminate matting, graining and a corrugated appearance. See diagrams below.



### MOWING HINTS

On thick or springy grass or soft ground, the mower wheels may sink in the ground giving too low a cut. Adjust the cutting height to get the desired height of cut. For best appearance, grass should be cut in the afternoon or evening when it is free of moisture.

### TROUBLE SHOOTING

**IF BELT SLIPPAGE OCCURS,** check the following:

1. Belt may be stretched or excessively worn.
2. Pulleys may be greasy or oily. (See "Maintenance".)
3. Insufficient belt tension due to a worn or broken tension spring on clutch rod or mower idler pulley, or an improperly adjusted idler pulley (See "Adjustments").
4. If the belt jumps off the mower pulley when the power take-off is engaged, there may be too much belt slack or the mower pulley belt stops are out of position. (See "Adjustments").

**IF A BELT BREAKS,** check the following:

1. Look for sharp edges or rough spots on pulleys.
2. Pulleys may be misaligned.
3. Belt tension may be too tight.
4. Mower front to rear height adjustment incorrect.

**IF AN UNEVEN CUT RESULTS,** check the following:

1. Mower may not be adjusted properly.
2. Mower housing may be bent or damaged
3. Blade arbor tubes may be bent.
4. Front tractor tires may not be properly inflated.

**IF A POOR OR ROUGH LOOKING CUT RESULTS,** check the following:

1. Blades may need sharpening.
2. Grass may be too high or gone to seed.
3. Drive belt may be slipping.
4. Mower may not be level from side to side.
5. Front to rear height adjustment may be incorrect.
6. Engine speed must be at three-fourths to full throttle.

**IF VIBRATION OCCURS,** check the following:

1. Arbor shaft or tube (or both) may be bent.
2. Blade may be unbalanced.
3. Drive pulley may be bent or misaligned.

## ADJUSTMENTS

**Front to rear height adjustment:** With the mower properly attached to the tractor, move the tractor onto a flat, smooth surface. Check tractor tires for proper pressure.

1. Rotate all three blades so that the tips are pointed directly toward front and rear. (See Figure 6).
2. Use the height adjusting handle to obtain a height of two inches at point B. Then rotate all blades so that the tips just measured point to the front. (See Figure 7).

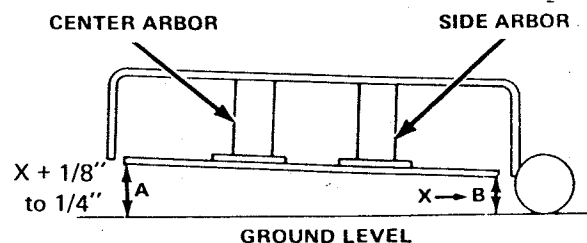


FIGURE 6

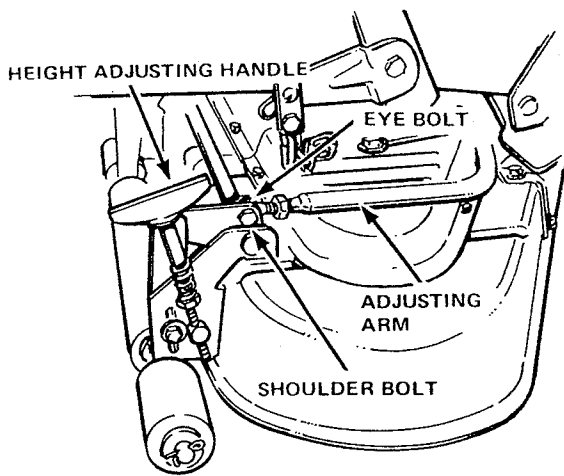


FIGURE 7

3. Remove the shoulder bolts which hold the adjusting rod eyebolts to the roller brackets. Note that the shoulder bolt heads are toward the inside, the nuts on the outside. Adjust the eyebolts to obtain a height of 2-1/8 to 2-1/4 inches at point A. To raise the front of the mower, turn the two eyebolts IN, CLOCKWISE on the adjusting arms. To lower the front of the mower, turn the eyebolts OUT, COUNTER-CLOCKWISE. After obtaining the correct height at point A, be sure to recheck point B. (See Figure 6)

#### Cross Drive Belt Adjustment:

The mower belt idler pulley bracket is spring-loaded to automatically keep the cross-drive belt tight. No adjustment is necessary.

#### BELT STOP ADJUSTMENT

The belt guard on the tractor idler pulleys should be positioned as shown in Figure 8.

The mower belt stops should be positioned so there is one-

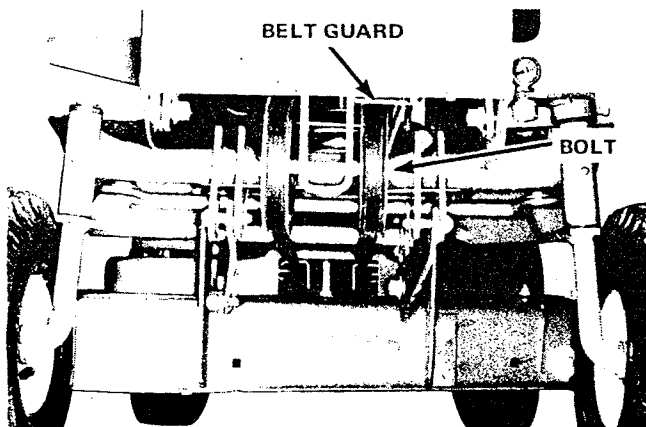


FIGURE 8

sixteenth to one-eighth inch clearance between the guard and the belt when the tractor power take-off is engaged. To adjust, loosen the belt stop bolt; move the belt stop to the correct position and retighten the bolt. Check the adjustment after tightening the bolt. (See Figure 9).



FIGURE 9

#### POWER TAKE-OFF ADJUSTMENT

Should an attachment fail to drive properly, the power take-off clutch may need adjusting. The power take-off

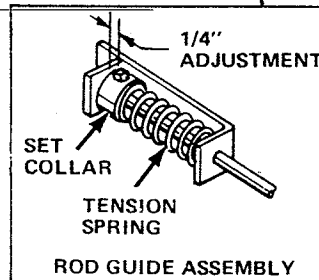
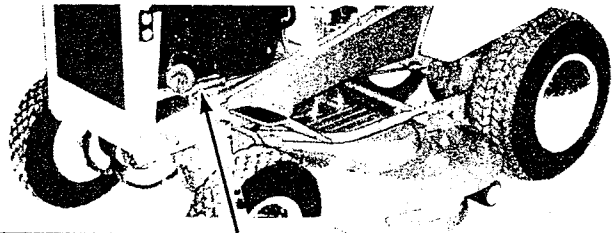


FIGURE 10

clutch is normally in proper adjustment when there is one-fourth inch clearance between the set collar and the end of the bracket when engaged. If more tension is needed or re-adjustment is necessary, disengage the power take-off lever, loosen the collar set screw and slide the collar back slightly.

Tighten the set collar screw. Engage the lever and check the belt tension. Only enough tension to drive the mower without belt slippage is necessary. Excess tension may cause premature failure of belts and pulley bearings. (See Figure 10).

# MAINTENANCE

## AFTER EACH USE

Clean the under side of the deck of grass clippings to prevent a build-up from hampering the efficiency of the mower. Remove the mower from the tractor to clean it thoroughly.

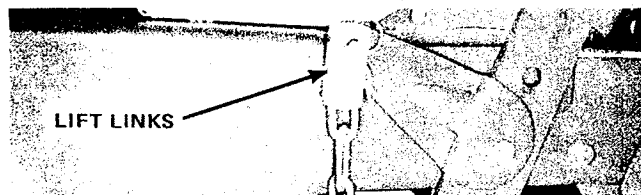


FIGURE 11

## EVERY 25 HOURS

Place a few drops of light engine oil on all pivot points of

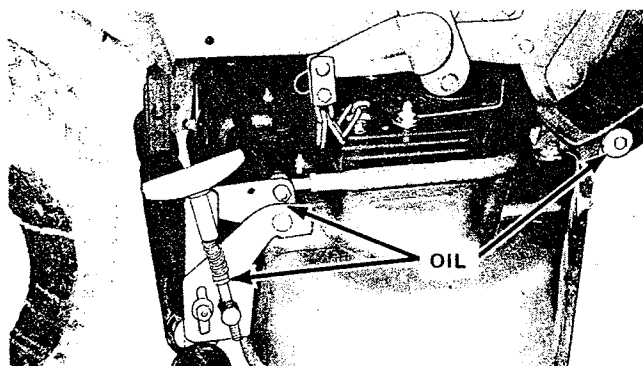


FIGURE 12

the mower. Be careful not to get oil on the belts.

## EVERY 50 HOURS or ONCE EACH SEASON

Remove paint and dirt from the zerks on the arbors and put five shots of grease in each one. DO NOT OVER GREASE AS EXCESS GREASE MAY BE FORCED THROUGH THE UPPER SEAL AND GET ON THE BELT CAUSING SLIPPAGE. (See Figure 13).

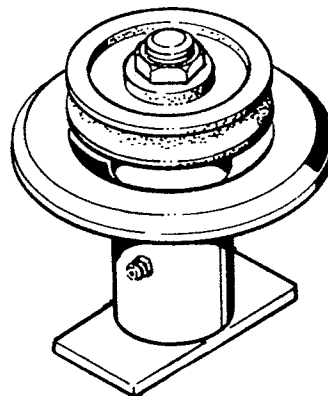


FIGURE 13

## BLADE REPLACEMENT

Do not attempt to remove the blades until you have the correct size box, socket or open end wrenches for the blade mounting bolts.

Note: DO NOT remove the arbors. Remove the blades from the arbors. To sharpen a blade yourself, clamp it in a vise and use a 10 inch file along the original bevel. File to a razor edge. To balance, insert a knife blade or small rod through the center hole to see if blade rests with both ends balancing evenly. File heavy side until even.

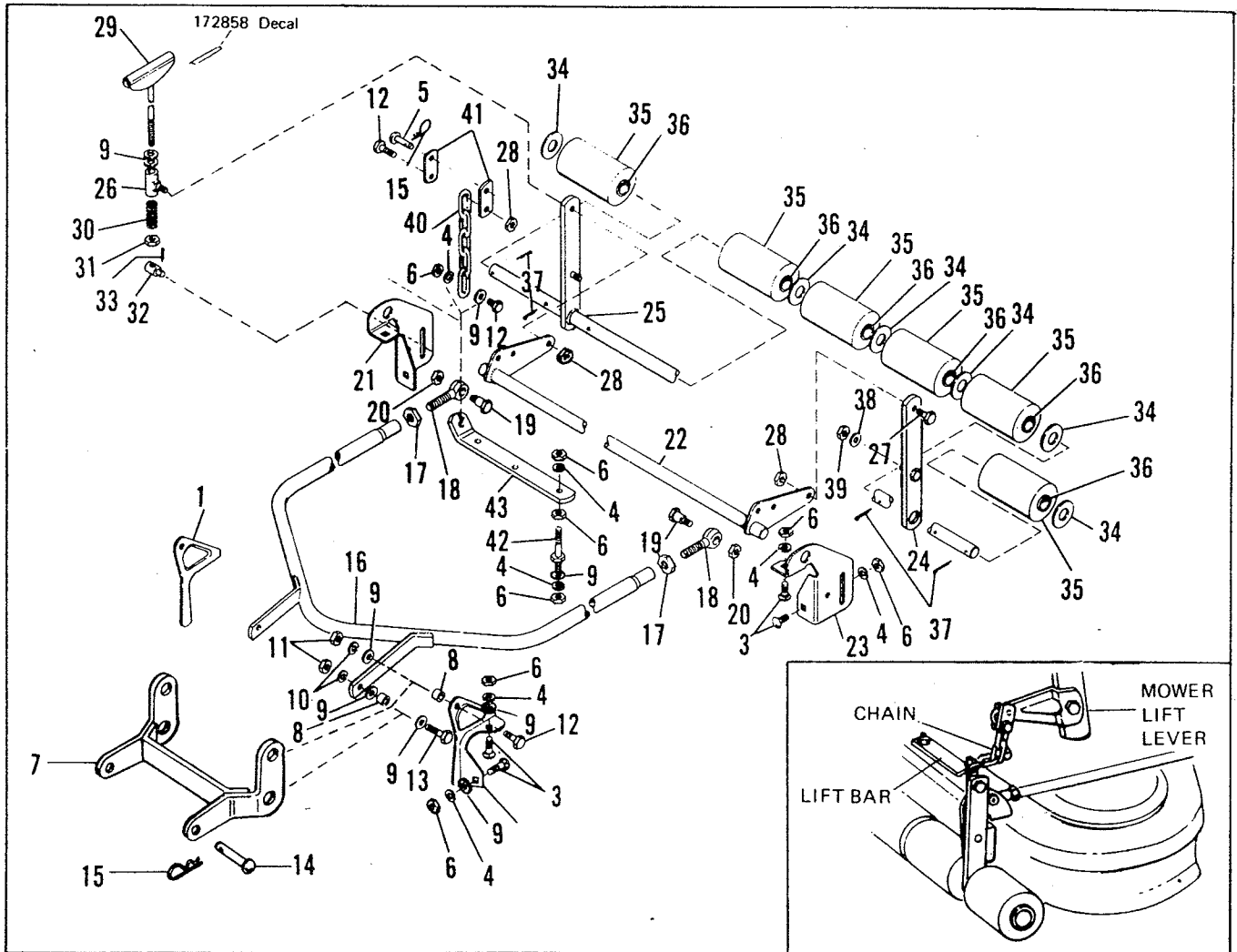
Caution: ALWAYS HANDLE BLADES WITH CARE TO AVOID INJURY.

Carefully clean the blade and arbor. Install the new or sharpened blade with the lift tabs toward the top. Install the two blade mounting screws and tighten the bolts alternately two turns at a time to 30 ft. lbs. torque. Use a block or wedge to keep the blade from turning while tightening bolts. Rotate the blades by hand slowly to see that the ends clear the housing all around and the tips are running true. If the mower is properly adjusted and in apparent good condition, but seems to require excess engine power, it may be that an arbor shaft or sleeve has been damaged by hitting an obstruction. Check the blade drive system. The rotor spindles should turn with one or two lbs. pull on the blade with the drive belt removed. If the pull pressure exceeds two lbs., the unit is robbing power from the engine. Tight bearings, a bent arbor shaft or spindle housing can be repaired or replaced by your Simplicity dealer.

### MFR'S. NO. 422 - 36" ROTARY MOWER SPECIFICATIONS

<b>ROTARY MOWER MFR'S. NO. 422</b>	MOUNTING	2 Pins to Front Axle, 1 Pin to Lift Lever
	CUTTING WIDTH	36 Inches
	CUTTING HEIGHT	1-5/8 to 3-1/8 Inches, Infinitely Adjustable by Single "T" Handle
	CUTTING RATE	Up to 1.4 Acres Per Hour
	NO. OF BLADES	Three
	SPINDLE MOUNTING	Sealed Rolling Contace Bearings
	DRIVE	Cushioning V-Belt, Idler Controlled
	REAR SUPPORT	Full Width Rubber Rollers
	HOUSING	MATERIAL: One-Piece Drawn Steel
		LOWER EDGE: 1/4 Inch Below Blade
		DISCHARGE LOWER EDGE: 1/4 Inch Above Blade
	DIMENSIONS	OVERALL LENGTH: 25 Inches
		OVERALL WIDTH: 37-5/8 Inches (with Deflector)
		SHIPPING WEIGHT: 96 Lbs.

# HITCH & ROLLERS



Ref. No.	Part No.	Description	Qty. Req'd
1	108484	R.H. Front Bracket	1
2	108483	L.H. Front Bracket	1
3	703004	Carriage Bolt	8
4	720002	Lock Washer	13
5	153058	Pin, 3/8" x 1"	1
6	717003	Full Hex Nut	14
7	108796	Rocker Arm Assembly	1
8	153073	Spacer	4
9	719001	Plain Washer, 3/8"	13
10	720002	Lock Washer	4
11	717003	Full Hex Nut	4
12	705005	Hex Cap Screw	4
13	705016	Hex Cap Screw	2
14	156306	Pin	2
15	8161045	Spring Clip	2
16	108487	Bail Assembly	1
17	717016	Hex Jam Nut	2
18	157215	Eye Bolt	2
19	108412	Shoulder Bolt	2
20	717510	Hex Lock Nut, Full	2
21	108489	R.H. Rear Bracket	1
22	108160	Rear Lever Assembly	1

Ref. No.	Part No.	Description	Qty. Req'd
23	108488	L.H. Rear Bracket	1
24	108256	Roller Bar Assembly	1
25	170282	Roller Bar & Shaft Assembly	1
26	108166	Crank Socket Assembly	1
27	705005	Hex Cap Screw	1
28	717510	Hex Full Lock Nut	2
29	108415	Adj. Screw Assembly	1
30	108360	Spring	1
31	717013	Hex Jam Nut	1
32	108172	Pivot	1
33	722001	Cotter Pin	1
34	116001	Washer	6
35	108431	Roller Assembly w/Bushings	6
36	108419	Bushing	12
37	722011	Cotter Pin	2
38	719002	Plain Washer, 5/16"	2
39	717510	Hex Nut, 3/8"-16	2
40	107031	Chain	1
41	108199	Mower Lift Link	2
42	108372	Stud	2
43	108375	Lift Bar	1

Ref. No	Part No.	Description	Qty. Req'd.
1	103097	Arbor Tube Assembly	3
2	1081341	Backing Ring	3
3	108250	Arbor Assembly	2
4	108181	Washer	9
5	108202	Ball Bearing	6
6	108257	Washer	3
7	108472	Washer	3
8	108201	Spacer	3
9	108139	Flinger	3
10	108142	Pulley	3
11	725006	Woodruff Key	3
12	717517	Hex Jam Nut	3
13	108369	Drive Arbor Assembly	1
14	108371	Spacer	1
15	108246	Cross Drive Pulley	1
16	108481	Housing	1
17	705004	Hex Cap Screw, 3/8"-16 x 3/4"	8
18	720002	Lock Washer	9
19	717003	Full Hex Nut	9
20	108493	Lever Assembly	1
21	108372	Stud	1
22	719002	Plain Washer	2
23	720002	Lock Washer	1
24	717003	Full Hex Nut	1
25	717510	Full Hex Lock Nut	1
26	108386	Idler Pulley	1
27	108497	Special Screw	1
28	719002	Plain Washer	1
29	720002	Lock Washer	1
30	717003	Full Hex Nut	1
31	154369	Tension Spring	1
32	156131	Stud	1
33	108505	"V" Belt	1
34	108491	R'H. Half Housing Cover	1
35	108490	L.H. Half Housing Cover	1
36	714007	Recessed Hex. Screw	4
37	703003	Carriage Bolt	2
38	719003	Plain Washer	2
39	161080	Belt Stop	2
40	719002	Plain Washer	2
41	720002	Lock Washer	2
42	717003	Full Hex Nut	2
43	108500	Mower Baffle	1
44	714012	Recessed Hex Screw	2
45	720003	Lock Washer	4
46	717005	Full Hex Nut	4
47	108186	Baffle Clip	2
48	715018	Hex Cap Screw, 1/4"-20 x 5/8"	2
49	719006	Plain Washer	2
50	108508	"V" Belt	1
51	108504	Deflector	1
52	703004	Carriage Bolt, 3/8"-16 x 3/4"	1
53	8161199	Special Washer	1
54	720002	Lock Washer, 3/8"	1
55	717003	Hex Nut, 3/8"-16	1
56	703005	Carriage Bolt, 5/16"-18 x 3/4"	2
57	8161199	Special Washer	1
58	719002	Plain Washer, 5/16"	1
59	720001	Lock Washer, 5/16"	2
60	717001	Hex Nut, 5/16"-18	2
61	103031	Decal, Safety	1
62	108507	Decal, Safety	1
63	155061	Decal, Simplicity	1
64	108501	Blade	3
65	715024	Hex Capscrew, 3/8"-16 x 5/8"	6
66	720002	Lock Washer, 3/8"	6
67	108822	Arbor Assembly w/Bearings and Hardware	3
68	727014	Grease Fitting	3

## ARBOR & HOUSING

