



IM25 INFIELD MOWER OWNER'S MANUAL

NATIONAL MOWER CO. 700 Raymond Ave., P.O. Box 14299, St. Paul, Minnesota 55114-0299, U.S.A.
Phone (651) 646-4079 – Fax (651) 646-2887
www.nationalmower.com

JANUARY – 2000

Specifications

Engine:	3.5 hp Briggs & Stratton I/C 4 cycle w/gear reduction of 6:1
Width of cut:	25"
Height of cut:	1/2" to 2"
Weight:	270 lbs. without fuel
Dimensions:	65" length w/basket x 32" width x 39-1/2" height
Gas tank :	4 quart capacity
Fuel:	Unleaded regular gasoline

Safety Precautions

- Allow only responsible persons that are familiar with the controls to operate this equipment.
- Always operate with all guards and front-throw basket in place.
- Never attempt to remove or replace the basket when reel is engaged.
- Inspect rollers, reel and drive for debris or foreign object and remove before starting to mow.
- Follow engine manufacturers recommendations for proper gas, oil and maintenance procedures.
- Be alert when mowing for objects in the mowing path.
- Never attempt to adjust cables or cutting height when engine is running.
- Use protective eyewear when mowing.
- Use extreme caution when handling gasoline, it is highly flammable.

Introduction

This machine has been designed with professional quality components to specifically mow baseball infield turf. Other uses include golf courses and turf contractors. National welcomes your comments.

Additional information will gladly be furnished by calling, writing or e-mailing the company. Please furnish us with the model number, serial number and date of purchase when contacting us about your machine.

Designations of right, left, front and rear are used in the position of the operator when mowing.

Assembly Instructions

Carefully inspect your machine and crate for damage that could have occurred during shipment. If damages or shortages are noted, have the transportation company representative indicate this on the bill of lading. Claims for shipping damages must be noted by the consignee at the point of designation and filed with the transportation company.

1. Carefully uncrate the machine.
2. Attach the lower Handle Bar Assembly (1, Fig. B) to the Handle Bar Brackets (2, Fig. A) with pivot pins, flat washers and cotter pins from the loose parts bag.
3. Insert Handle Adjustment Rods (3, Fig. A) into Lower Handle Bar Assembly and Adjustment Brackets (4, Fig. A) on countershaft assembly and secure with flat washers and cotter pins from the loose parts bag. Use the front holes in the adjustment brackets for the highest handle position and the rear holes for the lowest position.
4. Pivot Upper Handle Bar Assembly (5, Fig. A & B) to align with holes in the lower handle bar assembly and fasten with four 5/16"-24 x 1-1/2" cap screws and hex nuts.
5. Hook Brake Rod Spring (6, Fig. B) to attaching tab on the mower top plate.
6. Set attachment pins of Grass Basket (7, Fig. A) in grooves of Basket Brackets (8, Fig. A).

Initial Starting Procedure

1. Engine crankcase oil has been installed at the factory. However, it is recommended that the engine be inspected for presence of oil at the proper level (see engine manual) before starting.
2. Fill engine gas tank with unleaded regular gasoline.
3. Engage Parking Brake (9, Fig. A) by pulling lever back and over center to lock.

Starting Instructions

1. Turn the red Fuel Valve (10, Fig. A), located on the right side of the engine, 1/4 turn clockwise to switch fuel supply to "On".
2. Press Ignition Switch (11, Fig. B), located on the front of the engine to the "On" position.
3. Slide Choke (12, Fig. A) which is the white lever at the back of the engine, to the right or "On" position.
4. Set Throttle Control (13, Fig. A) half way between fast (full forward) and slow (full back).
5. Pull Rope Start Handle (14, Fig. A) sharply and start engine.

CAUTION

Do not pull back Drive Bail Handle (15, Fig. A) or move Clutch Handle (16, Fig. A) forward when starting engine.

6. Move choke lever left to the "Off" position as soon as the engine starts.

Operating Instructions

1. Unlock Parking Brake (9, Fig. A) by moving lever forward.
2. Pull Drive Bail (15, Fig. A) slowly back to handle to move forward. CAUTION: Make sure your path is clear before moving forward.
3. Adjust Throttle Control to desired mowing speed.
4. Engage Reel Drive Lever (16, Fig. A and B) to start mowing.
5. Release drive bail slightly from handle to disengage reel.
6. Release drive bail completely to stop the mower forward movement.
7. To shut off mower, pull throttle control all the way back to "slow", push ignition switch to "off" and engage parking brake.

Maintenance

GENERAL

1. Empty basket of clippings periodically to prevent spilling.
2. After each mowing session, clean clippings out of basket, off reel and all other surfaces to prevent corrosion.
3. Inspect reel and bearing surfaces for foreign material that might prevent reel from rotating freely and clean as necessary.
4. Follow engine manufacturer's recommendations carefully to prolong engine life.

LUBRICATION

There are Zerk Grease fittings (17, Fig. B) on each end of the reel and on each Roller Adjuster (18, Fig. C). Use a lithium base type grease at these locations every 8 hours of operation. Use a light machine oil at all pivot points every 30 hours of operation.

Adjustments

CONTROLS

Adjustment of control cables have been made at the factory before shipment. If additional adjustment is needed, move adjusting nuts at the machine end of the cables.

HEIGHT OF CUT

Cutting height should be preset by the dealer according to ordering instructions prior to delivery. If a change in cutting height is required, the following procedure must be followed:

1. There are two positions available for the Rear Roller Assembly (19, Fig. A). The bearings for the rear roller shaft must be located in the lower position if the cutting height is over 1" and the upper position if the cutting height is 1" or less. Disassembly of the rear roller assembly is necessary to change the bearing location. See Figure 4 for reference.

DANGER !

Reel blades are sharp! Never attempt to adjust cutting height of reel to bed knife while the engine is running.

2. Adjust cutting height by loosening the top and bottom Adjusting Nuts (20, Fig. C) which hold roller adjusters for the Front Roller (21, Fig. B). It is important to get roller adjusted the same height on each end so that there will be uniform cutting the entire width of the mower. Do not adjust by sight.
3. After loosening adjusting nuts on each side, place a board or gauge plate of the desired height under bed knife back bar and then tighten nuts.

REEL TO BED KNIFE

The Reel Adjustment Bolt (22, Fig. C) regulates the distance from the bed knife. To reduce the distance, turn the locking hex nut on each side of the reel up. Proceed slowly and do not over adjust. Turn about 1/8 of a turn to start with. Do not get the reel so tight that it is hard to turn by hand. A too tight reel will cause excessive wear. The reel should "wipe" or lightly touch the bed knife. Check to see that the blades are cutting the paper all the way across. Tighten lock nuts.

DANGER !

Use heavy gloves and be careful—blades are sharp.

REEL END PLAY ADJUSTMENT

As the reel is used, normal wear of the reel bearings will cause end play. This condition could cause uneven wear to moving parts and uneven cutting of turf.

Test for end play periodically by trying to move the reel from side to side in the frame. If there is any movement, adjust by loosening the lock nut (23, Fig. B) on the adjustment bolt, located inside the right end of the reel. Turn adjustment bolt "in" one half turn or less. Do not over tighten as this will cause excessive bearing wear. Test again for end play. If reel is rotating freely and no end play can be detected, retighten the lock nut on the adjusting bolt.

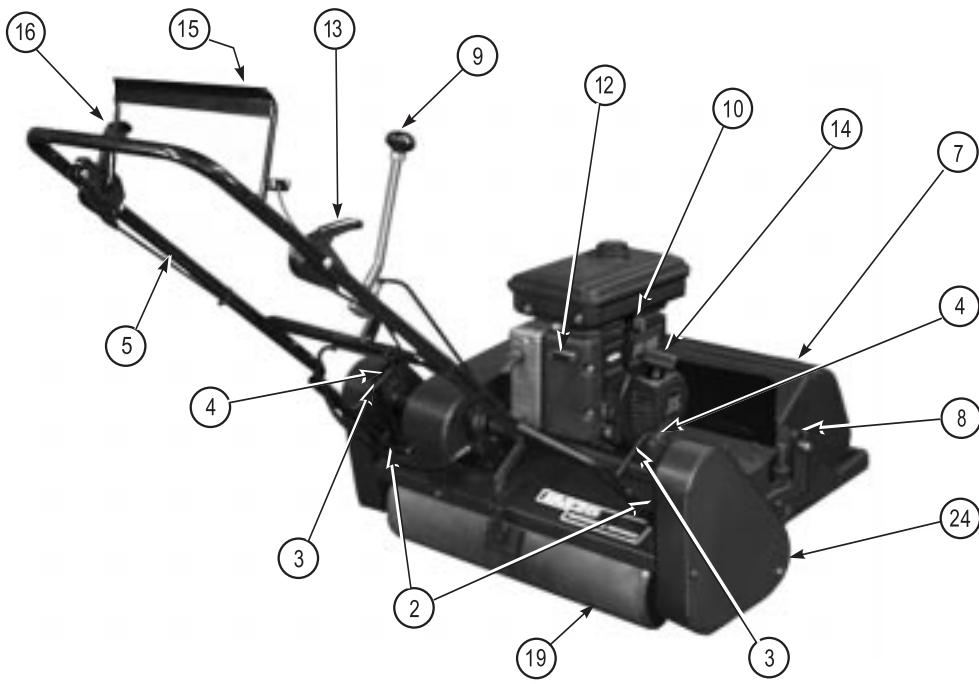


FIGURE A

FIGURE B

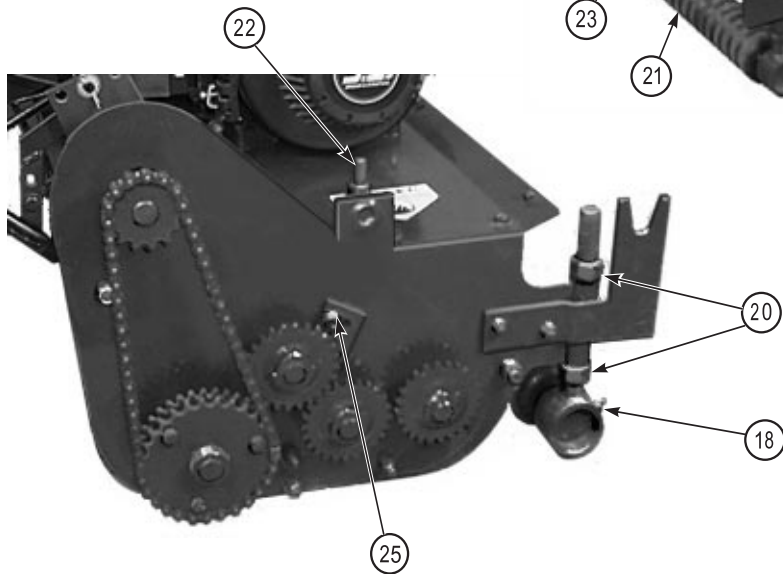
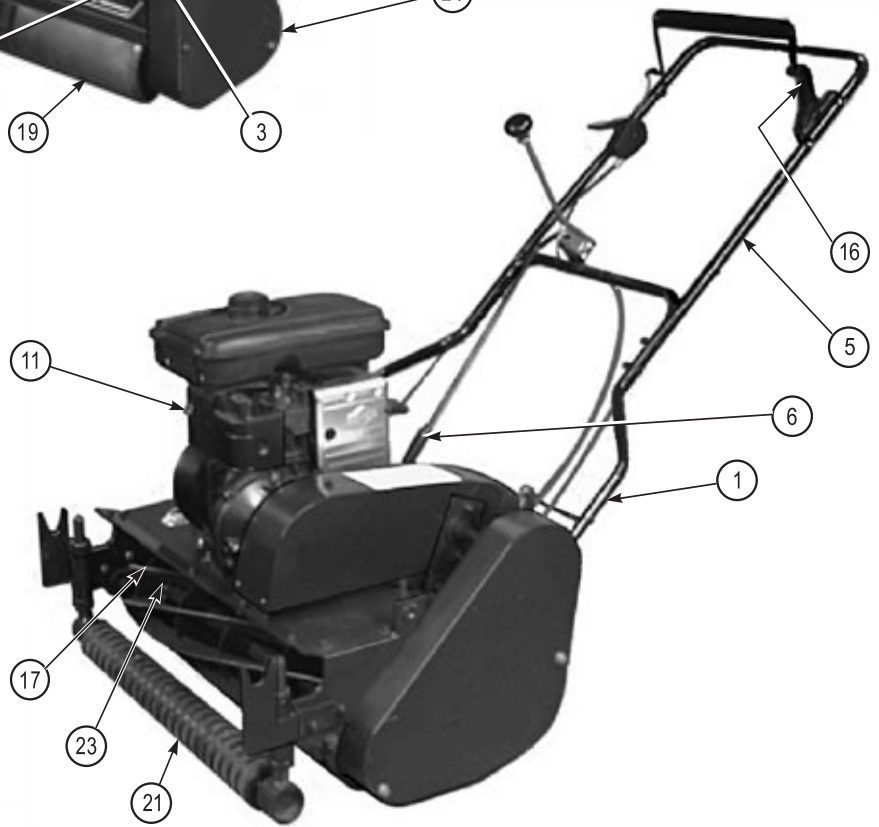


FIGURE C

Backlapping

Backlapping is a very important step in maintaining sharp reel blades on the mower. This procedure should be performed when the reel blades and bed knife become slightly rounded and the turf is not cut cleanly after a slight bed knife adjustment. Also, after grinding the bed knife and reel, backlapping should be done to establish a perfect match between the bed knife and the reel blades. The reel must run in a reverse direction to be backlapped.

1. Make sure to adjust the reel to the bed knife so that the reel is level with the bed knife and light contact is maintained.
2. Remove the Right Side Guard (24, Fig. A).
3. Raise the mower up off the ground until the rear roller clears the ground as shown in Figure D.
4. Loosen Hex Nut (25, Fig. C) on the back lap assembly, pivot assembly rearward and tighten hex nut as shown in Figure D.
5. Start engine and run at half throttle. Engage drive clutch.
6. With reel running, apply lapping compound to the reel with a 2" or 3" brush. Apply compound evenly to the moving blades.

DANGER !

Be extremely careful not to let the brush, your fingers or your clothing get caught in the reel. Use approved safety glasses and gloves to protect you from flying particles and abrasives.

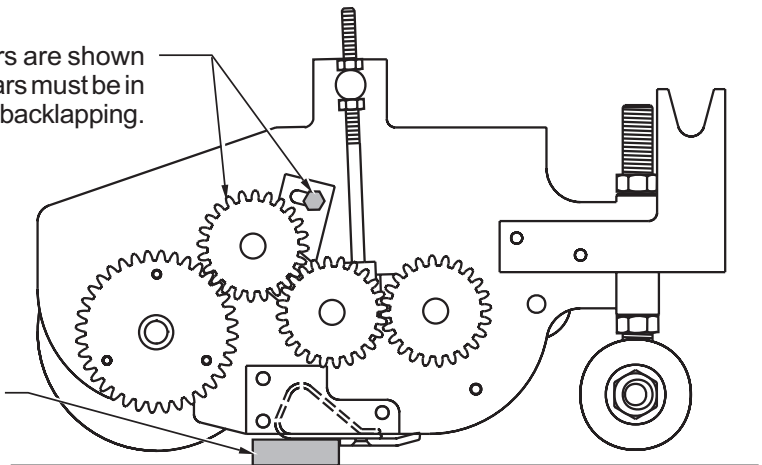
Many types of compounds are available for lapping. We recommend a good pre-mixed water soluble compound. Pre-mixed compound saves time required to mix, eliminates abrasive waste, rinses off with water and is available in all grit ranges from course to fine.

7. Stop the reel and examine both the bed knife and reel blades to see that the cutting edges uniformly sharp. If not, gradually tighten reel adjuster bolts (see Reel To Bed Knife Adjustment) and then repeat Step 6 above until achieving the proper sharpness.
8. Rinse off the compound thoroughly with water to remove all abrasive.
9. Loosen the hex nut on the backlap assembly and pivot assembly forward to disengage rear roller. Tighten nut in the position shown in Figure E.
10. Lower machine to the ground and replace right side guard.

Backlapping gears are shown engaged. The gears must be in this position when backlapping.

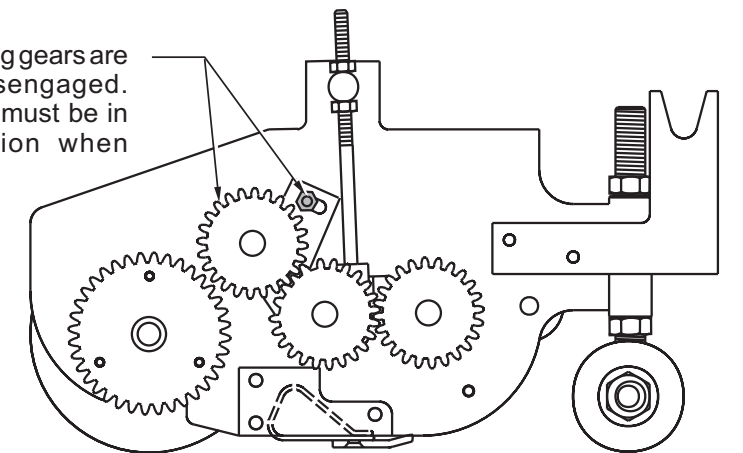
FIGURE D

Raise mower up until drive roller clears the ground.



Backlapping gears are shown disengaged. The gears must be in this position when mowing.

FIGURE E



PARTS LIST

Note: For your records and future ordering, fill in the following information.

DATE PURCHASED	MODEL NO.	SERIAL NO.

ORDERING INFORMATION

When ordering replacement parts, always furnish:

1. Your complete name, address and phone number.
2. Model Number and Serial Number (located on the rear side of the top plate).
3. Part Number (it is recommended that the correct number be verified with a current Master Price List).
4. The full Description of the part.
5. Quantity desired (quantity shown is the total number of parts contained in the particular view shown).

If the Part Number and the Description of your order do not agree, the Part Number will be used to fill your order.

FIGURE 1

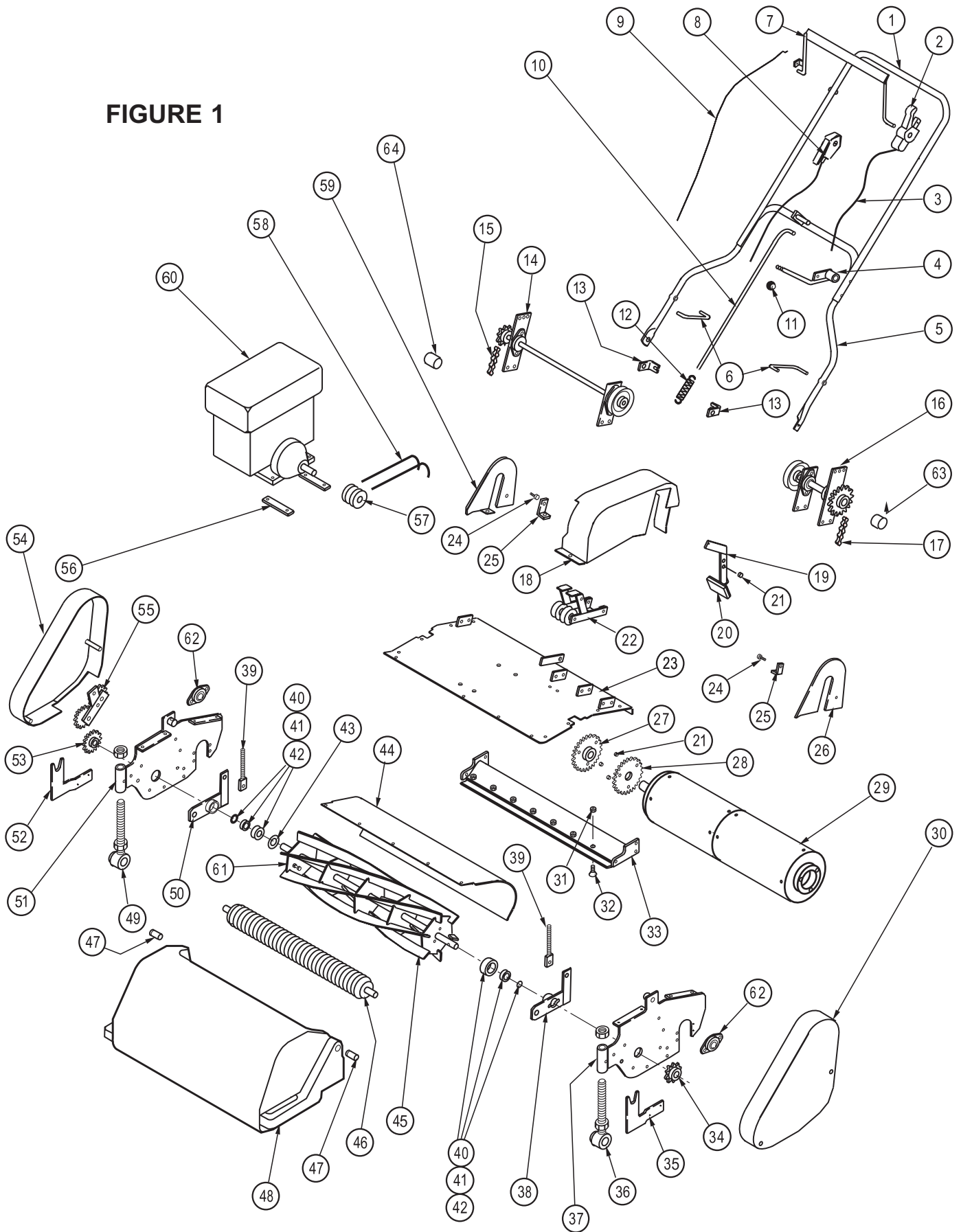


FIGURE 1 — MAIN ASSEMBLY

Item	Part No.	Description	Qty.
1	400115	HANDLE BAR, Upper	1
2	09201	CONTROL, Reel	1
3	09200	CONTROL CABLE, Reel	1
4	200509	LEVER, Brake	1
5	400114	HANDLE BAR, Lower	1
6	08083	ADJUSTMENT ROD, Handle Bar	2
7	400201	BAIL	1
8	09198	CONTROL, Throttle	1
9	09199	CONTROL, Drive	1
10	08085	ROD, Brake	1
11	07024	KNOB, Brake Lever	1
12	04520	SPRING, Brake Rod	1
13	400069	RETAINER, Clutch Cable	1
14	400040	COUNTERSHAFT, See Figure 2	1
15	07503	CHAIN, Roller	1
16	400041	COUNTERSHAFT, See Figure 3	1
17	07502	CHAIN, Reel	1
18	400205	GUARD, Clutch	1
19	400024	PIVOT, Brake	1
20	400017	BRAKE	1
21	200676	BUSHING	4
22	400100	CLUTCH, See Figure 5	1
23	400102	PLATE, Top	1
24	05002	PIN, Handle Bar	2
25	400117	BRACKET, Handle Bar Pin	2
26	400319	GUARD, Left Inside	1
27	400093	GEAR, Roller, 36 Tooth	1
28	400092	SPROCKET, Roller, 28 Tooth	1
29	400038	ROLLER ASSEMBLY, Rear, See Figure 4	1
30	400070	GUARD, Left Side	1
31	201802	NUT, Bed Bar	8
32	02109	SCREW, Bed Bar	8
33	302311	BED BAR, with Bedknife	1
	302310	BEDKNIFE, Only	1
34	03114	SPROCKET, Reel, 11 Tooth	1
35	400029	BRACKET, Basket, Left Side	1
36	302846	ADJUSTER, Roller, Left	1
37	400061	SIDE PLATE, Left	1
38	400035	CARRIER, Reel, Left	1
39	400008	ADJUSTER, Reel	2
40	06102	BEARING, Tapered Roller	2
41	06121	RACE, Tapered Roller	2
42	03508	SEAL, Reel Carrier	2
43	201437	TAKE-UP, Reel Bearing	2
44	400094	SHIELD, Front Throw	1
45	302491	REEL, 6 Blade	1
	302738	REEL, 8 Blade	1
46	400322	ROLLER, Shallow Groove	1
	400442	ROLLER, Deep Groove	1
47	400460	PIN, Basket	2
48	07338	BASKET	1
49	302847	ADJUSTER, Roller, Right	1
50	400034	CARRIER, Reel, Right	1
51	400075	SIDE PLATE, Right	1
52	400030	BRACKET, Basket, Right	1
53	400078	GEAR, Reel, 24 Tooth	1
54	400071	GUARD, Right	1
55	400104	BACKLAP GEARS, See Figure 6	1
56	400471	ADJUSTING PLATE, Engine	1
57	03638	PULLEY, Engine, Inside	1
58	03939	BELT, Gates #6832	2
59	400320	GUARD, Right Inside	1
60	07513	ENGINE, Briggs & Stratton, 3.5 H.P.	1
61	200256	ADJUSTING SCREW & NUT	1
62	06136	BEARING	6

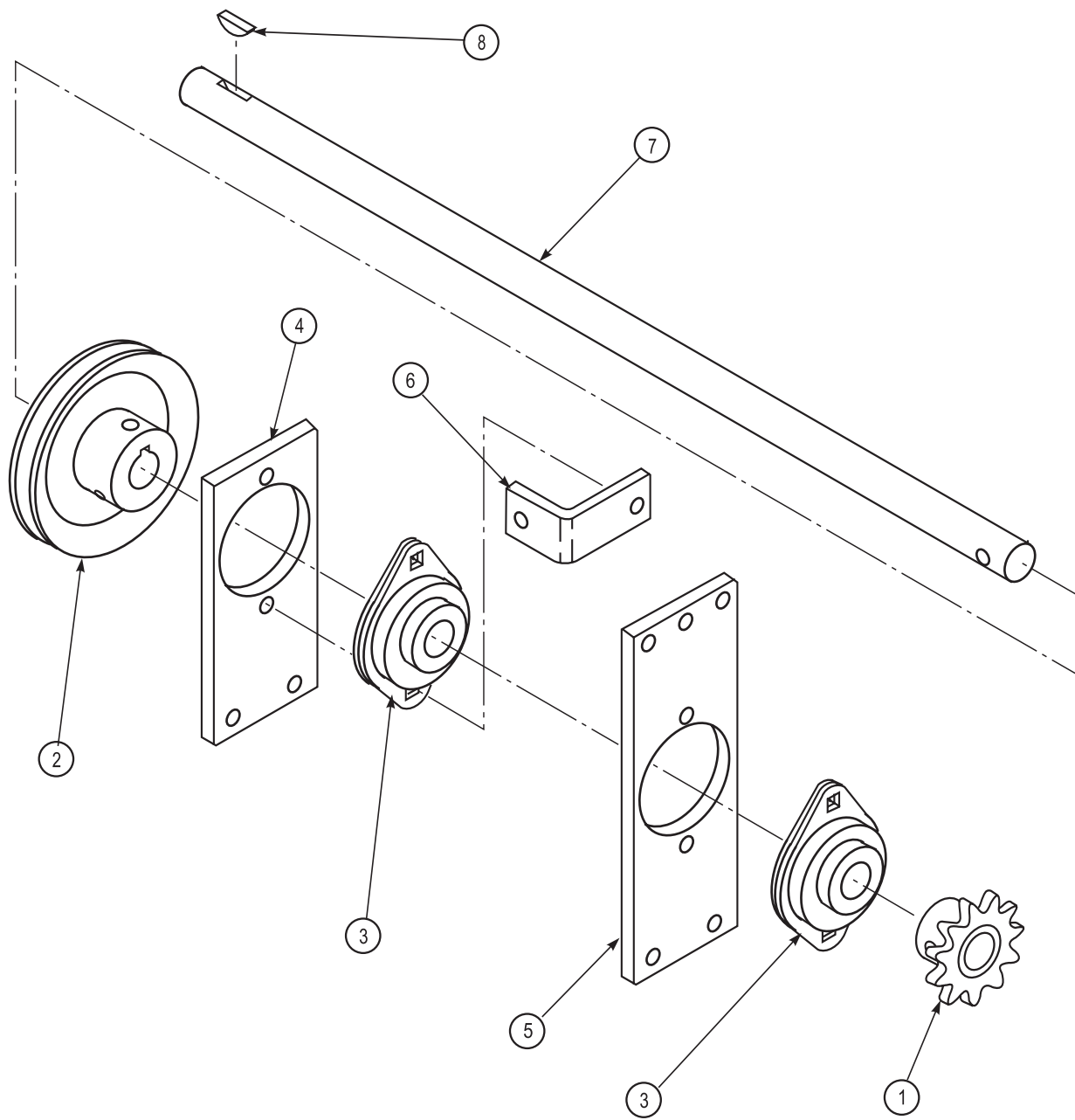


FIGURE 2—GROUND DRIVE COUNTERSHAFT ASSEMBLY, 400040

Item	Part No.	Description	Qty.
1	03117	SPROCKET, 14 Tooth	1
2	03634	PULLEY	1
3	06136	BEARING	2
4	400020	PLATE, Bearing Carrier, Short	1
5	400063	PLATE, Bearing Carrier, Long	1
6	400069	RETAINER, Clutch Cable	1
7	400095	COUNTERSHAFT, Roller Drive	1
8	202436	Key, #9 Woodruff	1

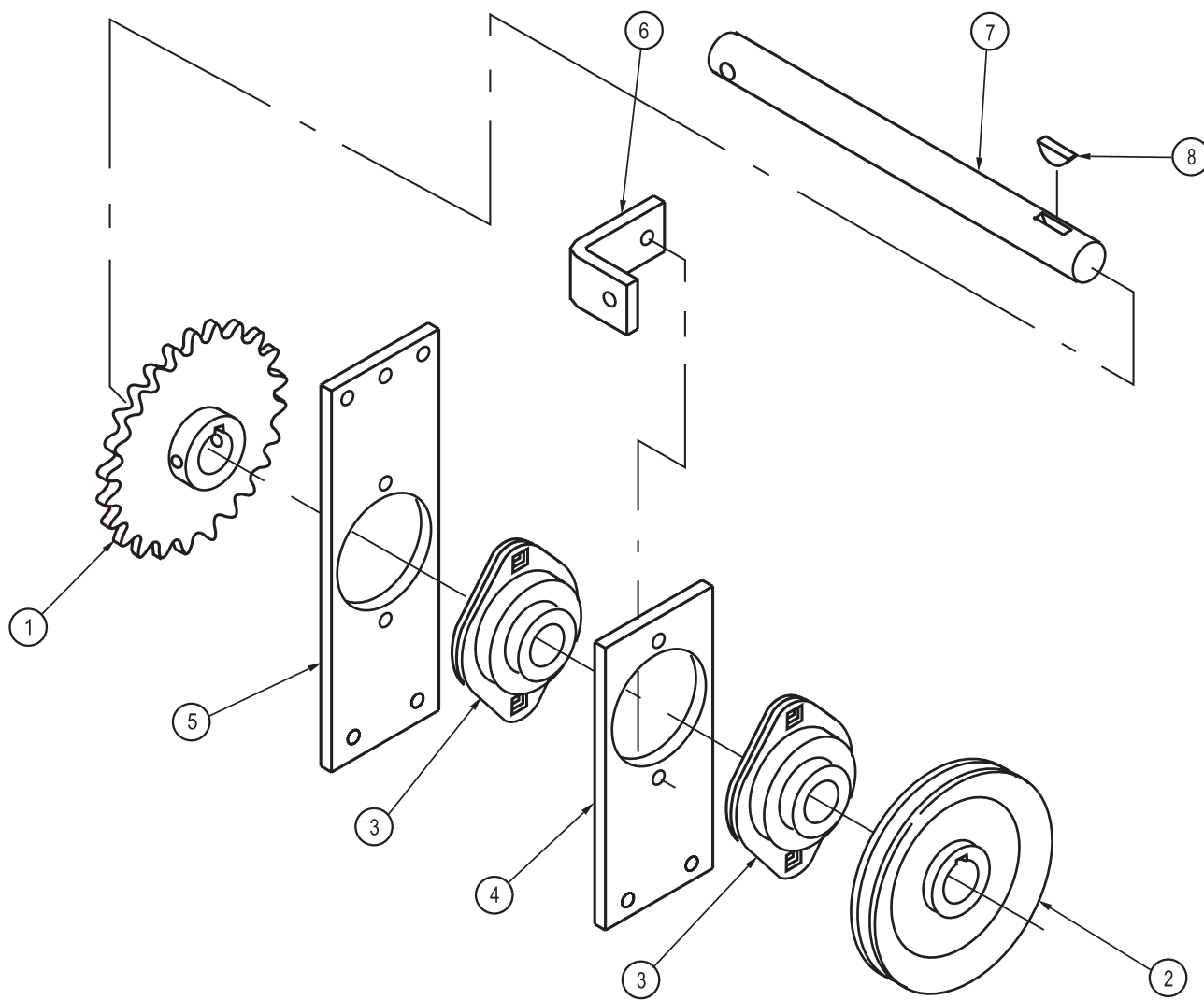


FIGURE 3—REEL DRIVE COUNTERSHAFT, 400041

Item	Part No.	Description	Qty.
1	202839	SPROCKET, 24 Tooth	1
2	03634	PULLEY	1
3	06136	BEARING	2
4	400020	PLATE, Bearing Carrier, Short	1
5	400063	PLATE, Bearing Carrier, Long	1
6	400069	RETAINER, Clutch Cable	1
7	400096	COUNTERSHAFT, Reel Drive	1
8	202436	KEY, #9 Woodruff	1

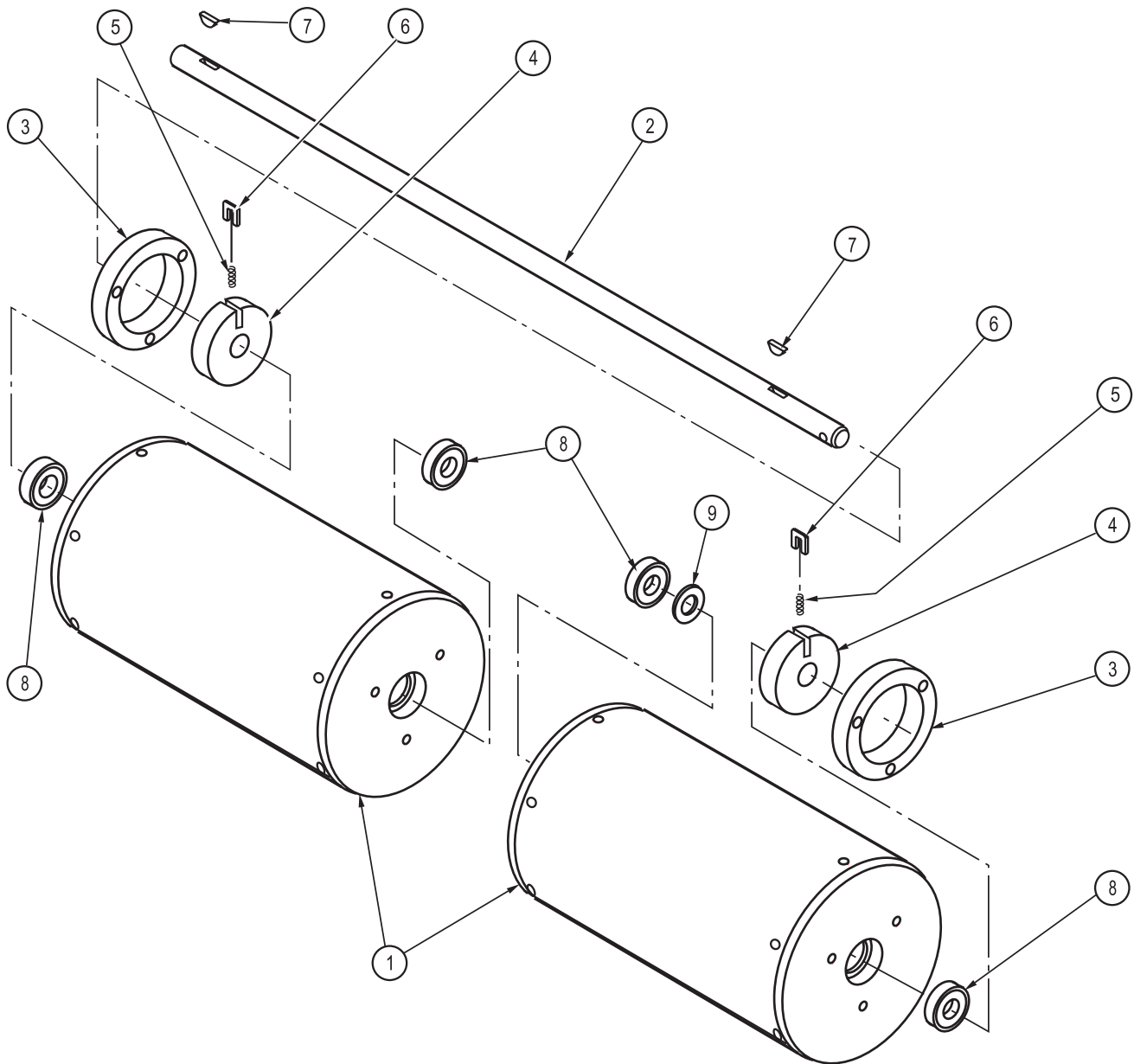


FIGURE 4—REAR ROLLER ASSEMBLY, 400038

Item	Part No.	Description	Qty.
1	400037	TUBE, Roller	2
2	400097	SHAFT, Roller	1
3	400013	RING, Pinion	2
4	400014	RETAINER, Pinion	2
5	04531	SPRING, Pinion Pawl	2
6	09077	PAWL, Pinion	2
7	202436	KEY, #9 Woodruff	2
8	06140	BEARING	4
9	02502	WASHER	1

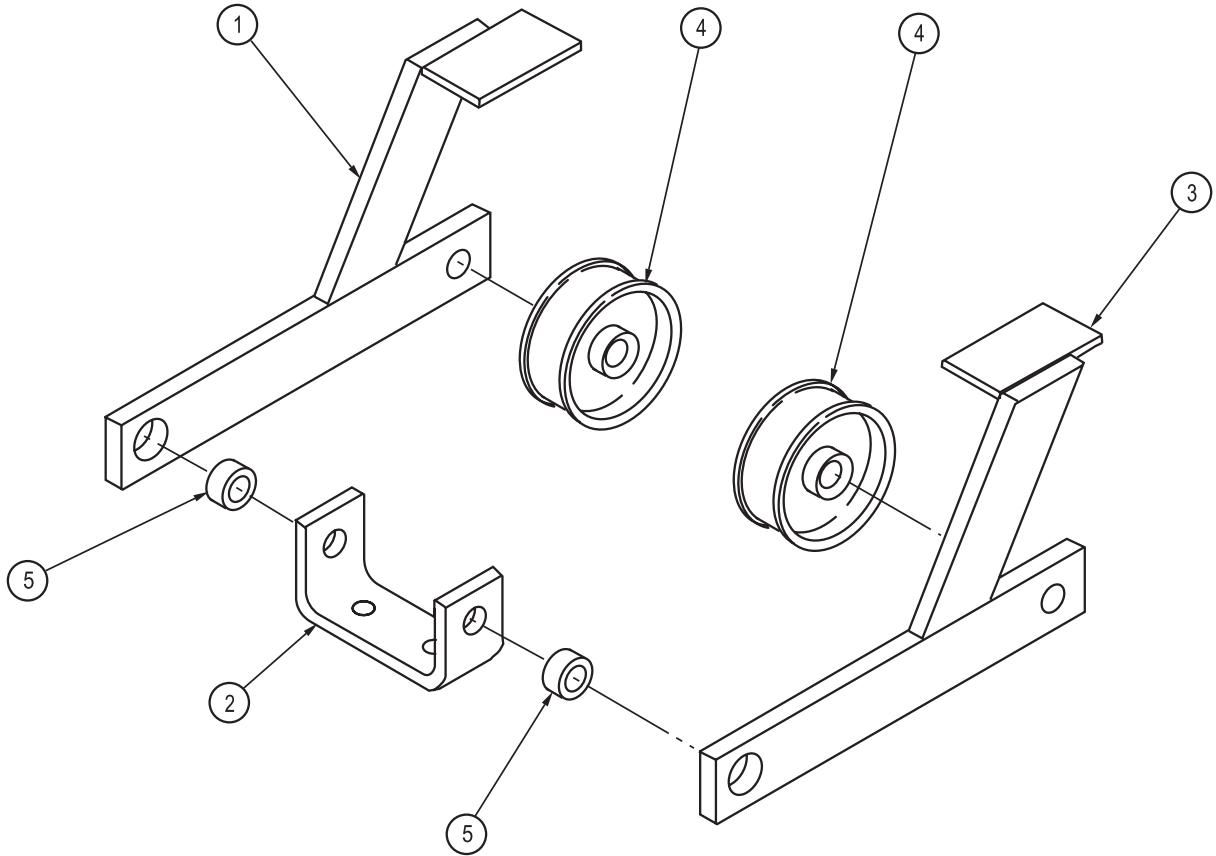


FIGURE 5—CLUTCH ASSEMBLY, 400100

Item	Part No.	Description	Qty.
1	400044	BRACKET, Mowing Clutch	1
2	400099	BRACKET, Clutch Mount	1
3	400080	BRACKET, Transport Clutch	1
4	03608	PULLEY	2
5	200676	BUSHING	2

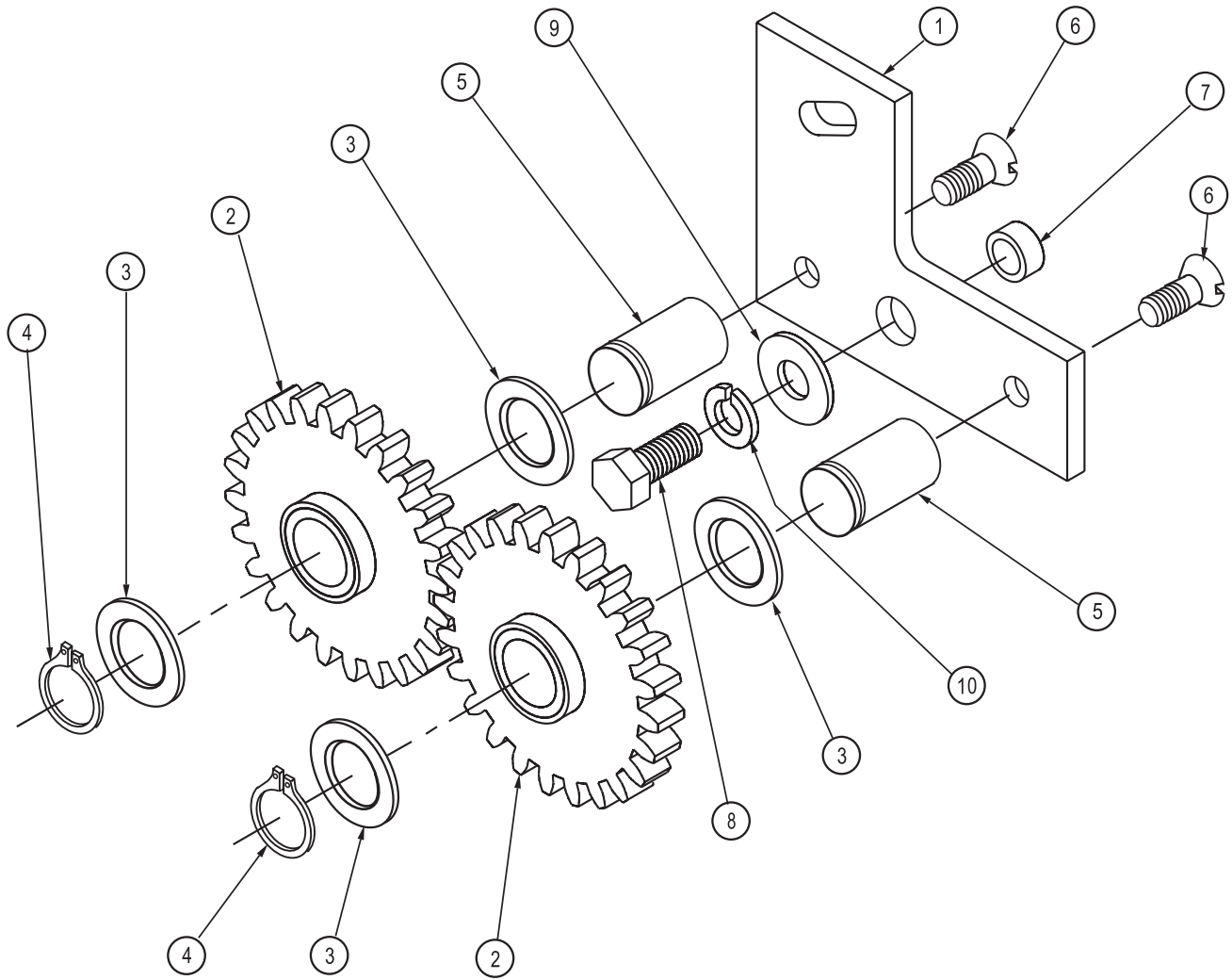


FIGURE 6—BACKLAP GEAR ASSEMBLY, 400104

Item	Part No.	Description	Qty.
1	400106	BRACKET	1
2	400105	GEAR, with Bushing, 24 Tooth	2
3	02502	WASHER	4
4	04020	LOCKRING, 3/4"	2
5	400109	PIN, Gear	2
6	02148	SCREW, Flat Head Slotted, 5/16"—18 X 3/4"	2
7	200676	BUSHING	1
8	02034	CAPSCREW, 3/8"—16 X 3/4"	1
9	02403	WASHER, Flat, 3/8"	1
10	02303	LOCKWASHER, 3/8"	1

NATIONAL MOWER COMPANY

**ONE YEAR
LIMITED WARRANTY**

For the period of one year from the date of purchase (45 days if the product is used for rental purposes), National Mower Company will repair or replace free of charge, for the original purchaser, any part or parts found by inspection to be defective by our Factory Authorized Service Station or by the Factory at St. Paul, Minnesota to be defective in material or workmanship or both. All transportation charges on parts submitted for repair or replacement under this warranty shall be paid for by the purchaser.

This warranty does not include engines, engine parts or tires which are covered under separate warranties furnished by their manufacture or supplier.

All service under this warranty will be furnished and performed by our Factory Authorized Service Stations.

-THERE IS NO OTHER EXPRESS WARRANTY-

IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE YEAR FROM PURCHASE OR 45 DAYS IF THE PRODUCT IS RENTED AND TO THE EXTENT PERMITTED BY LAW, ANY AND ALL IMPLIED WARRANTIES ARE EXCLUDED. THE ABOVE REMEDY OF REPAIR AND REPLACEMENT OF DEFECTIVE PARTS IS THE PURCHASER'S EXCLUSIVE REMEDY FOR ANY DEFECT, MALFUNCTION OR BREACH OF WARRANTY. LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES UNDER ANY AND ALL WARRANTIES IS EXCLUDED TO THE EXTENT PERMITTED BY LAW.

NATIONAL MOWER COMPANY

700 Raymond Avenue, St. Paul, Minnesota 55414, U.S.A.