

*The*  
**PATHFINDER**  
*Rotary*  
**MOWER**  
MODEL 24A



**OPERATION & PARTS MANUAL**

**MODEL 24 A**

**ROOT MANUFACTURING COMPANY**

# Your **PATHFINDER** Mower

In designing and building the Pathfinder Power Mower we had these SEVEN features in mind:

1. To cut clean and smooth with as little effort as possible.
2. Operational safety.
3. Easy starting.
4. Trims as well as cuts.
5. Balanced streamlined design.
6. Not limited to lawn mowing.
7. Replacement availability in your town.

The cutting device, which is the heart of any mower, is a rotor disc with SIX replaceable sickle sections. This rotor is driven 1623 or lower r.p.m. for normal grass cutting. It cuts a swath 24" wide.

The normal speed at which a person will push the mower is THREE miles per hour, or 264 feet per minute. As effective cutting is done within 2 inches of the tip of the blades and these blades are moving at 1623 r.p.m., each effective cutting edge passes over the same blade of grass 6 times at normal walking speed. This cutting speed not only effects a smooth even lawn surface, but produces a fine oatmeal mulch to enrich the lawn.



This type of mower makes a clean cut through the grass stem, rather than the mashed and bruised ends left on grass by a mower of the reel type which actually pinches off the grass rather than cutting.

As in any cutting device, the edges of the blades will become dull, even though we use the best type of mower blade made. It is well to remember that dull blades will not only make mowing more difficult but do not cut clean.

As safety is of prime importance, this mower is designed for safety to the operator and to itself. The main body or frame extends  $\frac{1}{2}$  inch below the rotor disc at the rear to protect the operator and at the side to protect bystanders.

The sides and ends of the body angle down and outward to deflect stones, sticks, etc., that may be on the grass. The front or cutting side of the machine is guarded by a bumper rod which protects shrubbery and trees from the moving blades. This guard will not stop a stick or stone that is low enough to be struck by the rotor.

Easy starting is of prime importance. These small  $1\frac{1}{2}$  h.p. aircooled gasoline engines are easy to start when not loaded. Your Pathfinder Mower is so designed that the engine is started without load. The engine can be engaged or disengaged at will by a simple lever on the mower handle.

This mower cuts in any direction. As the cutting rotor moves in a clockwise direction it is advisable to move around the yard in a counter-clockwise direction. When cutting heavy grass, this will throw the windrow in the clear. As the wheels on the left side of the machine are inside the line of the blades, you can trim along foundations and curbs.

Streamlined design and balance places most of the machine's weight on the main rubber tired wheels, with only a small amount on the leveling wheels. No downward pressure need be placed on the handle. The small leveling wheels prevent gouging of smooth lawns. The machine is easily turned in any direction when light pressure on the handle is used to tilt the front end.

Each wheel on the mower is adjustable individually for height of desired cut from ground level to 5 inches above ground.

In designing this mower, we endeavored to use standard bearings, bolts and nuts and standard sections on the rotary disc so that the owner can easily secure replacement parts if required.

Rotor, rotor housing and driving cone are balanced at factory to produce smooth running.

Refer to the following pages for parts and prices.

# OPERATION

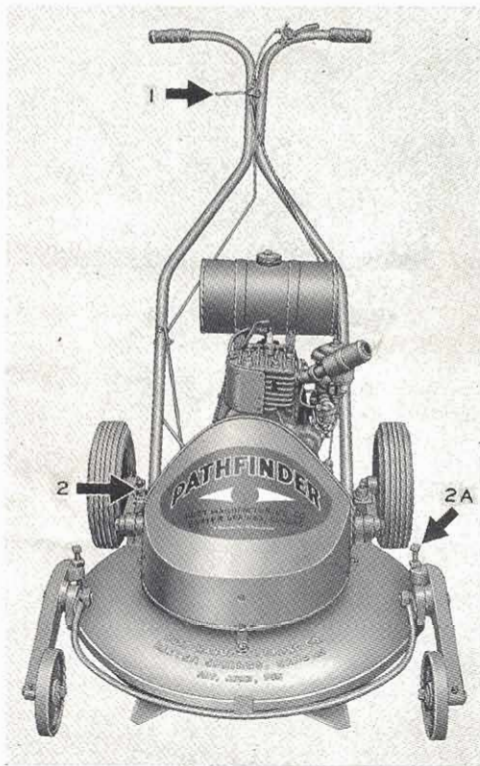
Instructions for preparing engine for operation and starting are attached to it.

Never start the engine or work on the mower while the engine is running.

Do not run the engine faster than is necessary to cut the grass; to do so will waste gasoline and reduce engine life and do a poor job of cutting. Also at high speeds the rotor acts as a fan to blow the grass away from the cutting edges. Keep the blade sections sharp to cut clean at normal speed,

rather than clubbing the grass off with dull blades at high speeds.

To disengage or engage the engine to rotor cone move the adjusting lever—Arrow 1—on mower handle; pull toward the operator to disengage—push forward *slowly* to engage. If engaged rapidly the engine may stall and undue wear is produced on the drive and cone. Let rotor disk reach cutting momentum before starting to cut grass.



Each wheel is adjustable individually for height of desired cut. The rear or main wheels are mounted on the end of cantilever and the frame is swung from a T bolt in the center of the lever. To raise the machine for a higher cut, slightly loosen the clamp bolt—Arrow 2—at the center of the lever and run the nuts down on the T bolt in the center of the lever until the desired height is reached; next slightly loosen the clamp nuts

on the leveling arm lever and run the set screw—Arrow 2A—down at the rear of this lever until the front center of the main frame is  $1\frac{5}{8}$ " higher than the rear center of the main frame, there being  $1\frac{5}{8}$ " difference in the height of the front and rear of the frame when the rotor disk is level. The machine is adjustable from ground level to 5 inches above ground.

When used for extremely heavy cutting, do not try to crowd the machine to the point where the drive slips, as this will cause the drive to burn out and eventually require the purchase of a new drive unit.

While the engine is controlled by a governor to maintain maximum

speed, lower speeds can be obtained by operation of throttle—Arrow 4.

Proper care of your Pathfinder will add much to its life and usefulness.

## MAINTENANCE

The rotor drive is attached to the drive shaft by means of a dowel center and 4 cap screws. When one side of the rotor blades have become dull, tilt the mower back—engine not running—remove the 4 screws and turn the rotor disk over, replace the cap screws and you are ready to cut with a sharp blade. After both sides are dull grind or replace blade sections.



The mower handles are adjustable to a comfortable height, See Arrow 3. The throttle is conveniently located on the left handle grip, See Arrow 4.

To remove cutting sections, when blade replacement is necessary, we suggest you grind off the rivets on the section side or place a weight against the heel of the section to be removed and cut the rivet head off with a cold chisel, striking the chisel in direction of the weight backing up the shock of the chisel to keep from distorting the holes in the rotor disk. Use a small punch not over  $\frac{1}{8}$  inch diameter to drive the rivet out of the hole, and if nothing else is available, suggest using one of the half inch nuts from the machine with the hole in the nut around the rivet, and the nut placed on something solid so it can be used as an anvil.

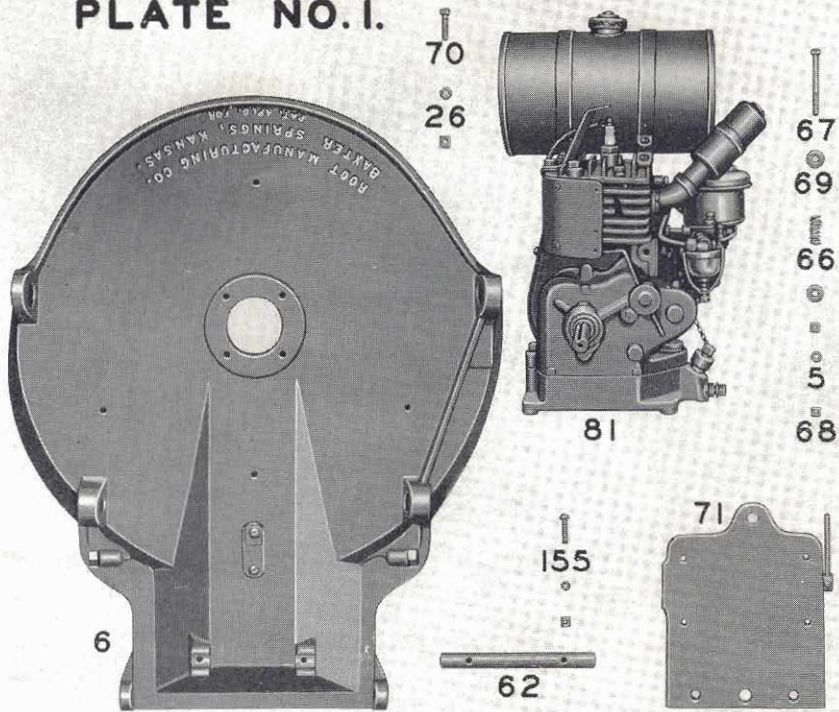
It will prolong the life of your mower and improve its operation if wheel bearings are greased *after* each use of mower. By greasing after use, any grass juice is forced out and the mower is stored with a protective coating of grease on the bearings. It is a known fact that the juice of grass is detrimental to the life of bearings.

In designing this machine we endeavored to use standard bearings, standard bolts and nuts and standard sections on our rotary disk to aid the customer should a condition arise that would require any of these parts to be replaced. The bearings in the drive cone are interchangeable with any make of 205 shielded bearing. The sections we use are McCormick-Deering MB 333 mower sections which can be purchased from any implement dealer. The rivet is a standard section rivet #  $6 \times \frac{3}{8}$ .

Be sure to follow the engine instruction manual for operation and maintenance.

If your mower has a lubricator fitting on the rotor housing, under the hood, it should be greased once a year. If mower is not equipped with lubricator fitting do not try to grease.

# PLATE NO. I.



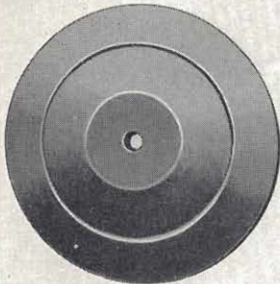
## ENGINE, ENGINE MOUNT AND MAIN HOUSING

Part No.	No. Req.	NAME OF PART	Price Each
81	1	Engine (Briggs & Stratton Model N).....	\$49.60
		Engine (Clinton Model 700-A).....	70.00
<b>ENGINE MOUNT</b>			
5	2	Engine Hinge Plate Rod Bolt L. W. ....	.05
5	1	Engine Hinge Plate Spring Bolt L. W. ....	.05
26	4	Engine to Hinge Plate Bolt L. W. ....	.05
62	1	Engine Hinge Plate Rod .....	.30
66	1	Engine Hinge Plate Spring .....	.10
67	1	Engine Hinge Plate Spring Bolt .....	.05
68	1	Engine Hinge Plate Spring Bolt Nut .....	.05
69	2	Engine Hinge Plate Spring Bolt Washer .....	.05
70	4	Engine to Hinge Plate Bolt .....	.05
71	1	Engine Hinge Plate and Cam Lever Assembly .....	7.85
155	2	Engine Hinge Plate Rod Bolt .....	.05
<b>HOUSING ASSEMBLY</b>			
5	2	Main Housing Cam Plate Bolt L. W. ....	.05
6	1	Main Housing and Cam Plate Assembly .....	28.10

Be Sure to Give Serial Number When Ordering Parts

# PLATE NO. 2

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- 48
- 47



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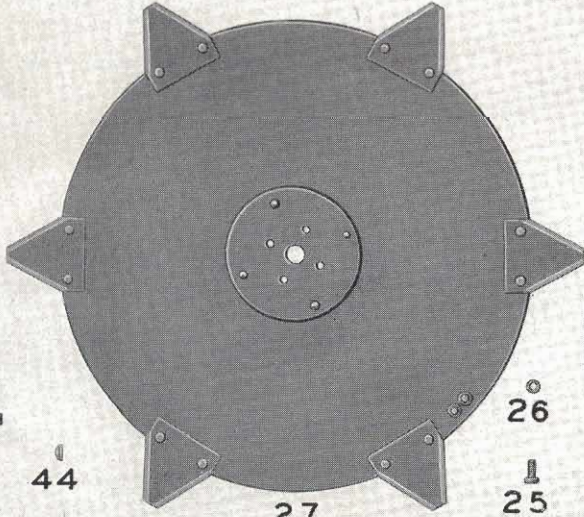
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# ROTOR ASSEMBLY, ROTOR HOUSING ASSEMBLY and DRIVING CONE ASSEMBLY

Part No.	No. Req.	NAME OF PART	Price Each
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## ROTOR ASSEMBLY

23	6	Cutter Blades .....	.07
24	16	Rivets .....	.05
25	4	Cap Screws .....	.05
26	4	Cap Screws L. W. ....	.05
27	1	Rotor Assembly (See Exchanges Back Page) .....	10.25

## ROTOR HOUSING ASSEMBLY

5	4	Rotor Housing to Main Housing Bolt L. W. ....	.05
7	4	Rotor Housing to Main Housing Bolts .....	.05
41	1	Rotor Housing .....	6.80
42	2	Rotor Housing Bearing .....	2.15
43	1	Rotor Housing Shaft .....	6.30
44	1	Rotor Housing Shaft Key .....	.05
45	1	Rotor Housing Lubricator .....	.10
46	1	Rotor Housing Driven Cone .....	4.60
47	1	Rotor Housing Driven Cone Lower Washer .....	.20
48	1	Rotor Housing Driven Cone L. W. ....	.05
49	1	Rotor Housing Driven Cone Nut .....	.06
50	1	Rotor Housing, Shaft and Cone Assembly .....	23.15

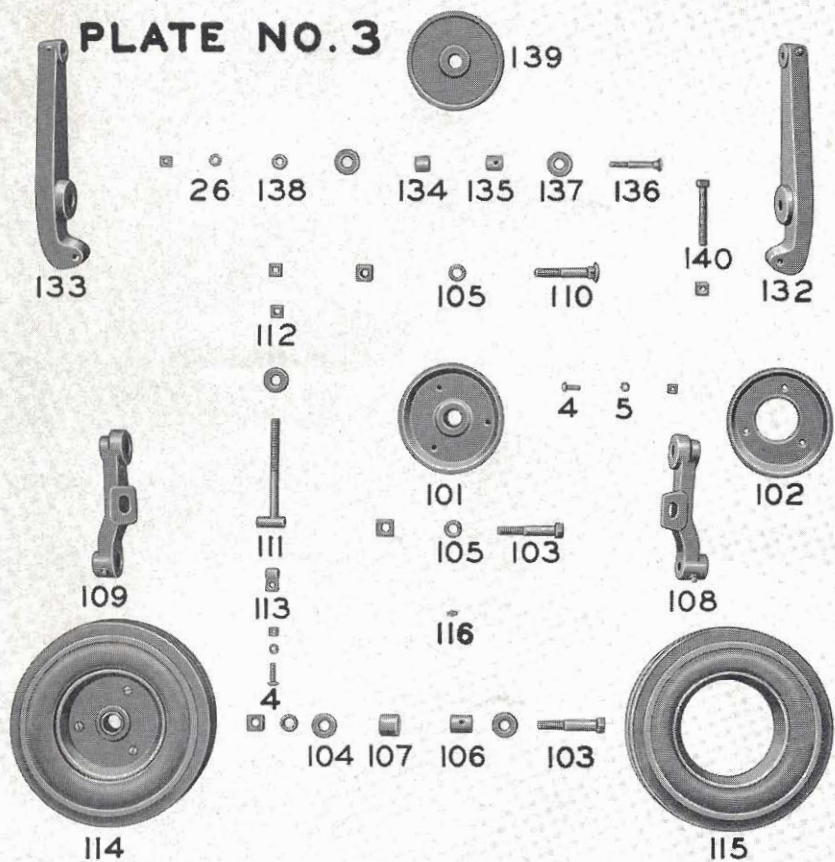
(See Exchanges Back Page)

## DRIVING CONE ASSEMBLY

5	6	Driving Cone Bolt L. W. ....	.05
51	1	Driving Cone Assembly (See Exchanges Back Page) .....	7.71
52	1	Driving Cone Hub .....	1.60
53	1	Driving Cone .....	5.00
54	1	Driving Cone Washer .....	.20
55	6	Driving Cone Bolts .....	.05
56	1	Driving Cone Key .....	.10
57	1	Driving Cone Hub Set Screw .....	.05

Be Sure to Give Serial Number When Ordering Parts

# PLATE NO. 3



## WHEEL ASSEMBLY

Part No.	No. Req.	NAME OF PART	Price Each
4	2	Wheel Arm T. Bolt Clamp Stove Bolt.....	.05
4	6	Wheel Bolts.....	.05
5	2	Wheel Arm T Bolt Clamp Stove Bolt L. W.....	.05
5	6	Wheel Bolt L. W.....	.05
101	2	Wheel Hub.....	1.80
102	2	Wheel Hub Rim.....	.90
103	2	Wheel to Arm Bolts.....	.08
103	2	Wheel Arm Bolts.....	.08
104	4	Wheel Bolt Washers.....	.05
105	2	Wheel Bolt L. W.....	.05
105	2	Wheel Arm Bolt L. W.....	.05
106	2	Wheel Bolt Bushing.....	.50
107	2	Wheel Bolt Bearing.....	1.30
108	1	Wheel Arm R. H.....	4.25

Be Sure to Give Serial Number When Ordering Parts

Part No.	No. Req.	NAME OF PART	Price Each
109	1	Wheel Arm L. H. ....	4.25
111	2	Wheel Arm T Bolts .....	.40
112	2	Wheel Arm T Bolt Nuts .....	.05
112	2	Wheel Arm T Bolt Jam Nuts .....	.05
113	2	Wheel Arm T Bolt Clamp .....	.10
114	2	Wheel and Tire Assembly .....	6.38
115	2	Tire .....	3.00
116	2	Lubricator Fittings .....	.10

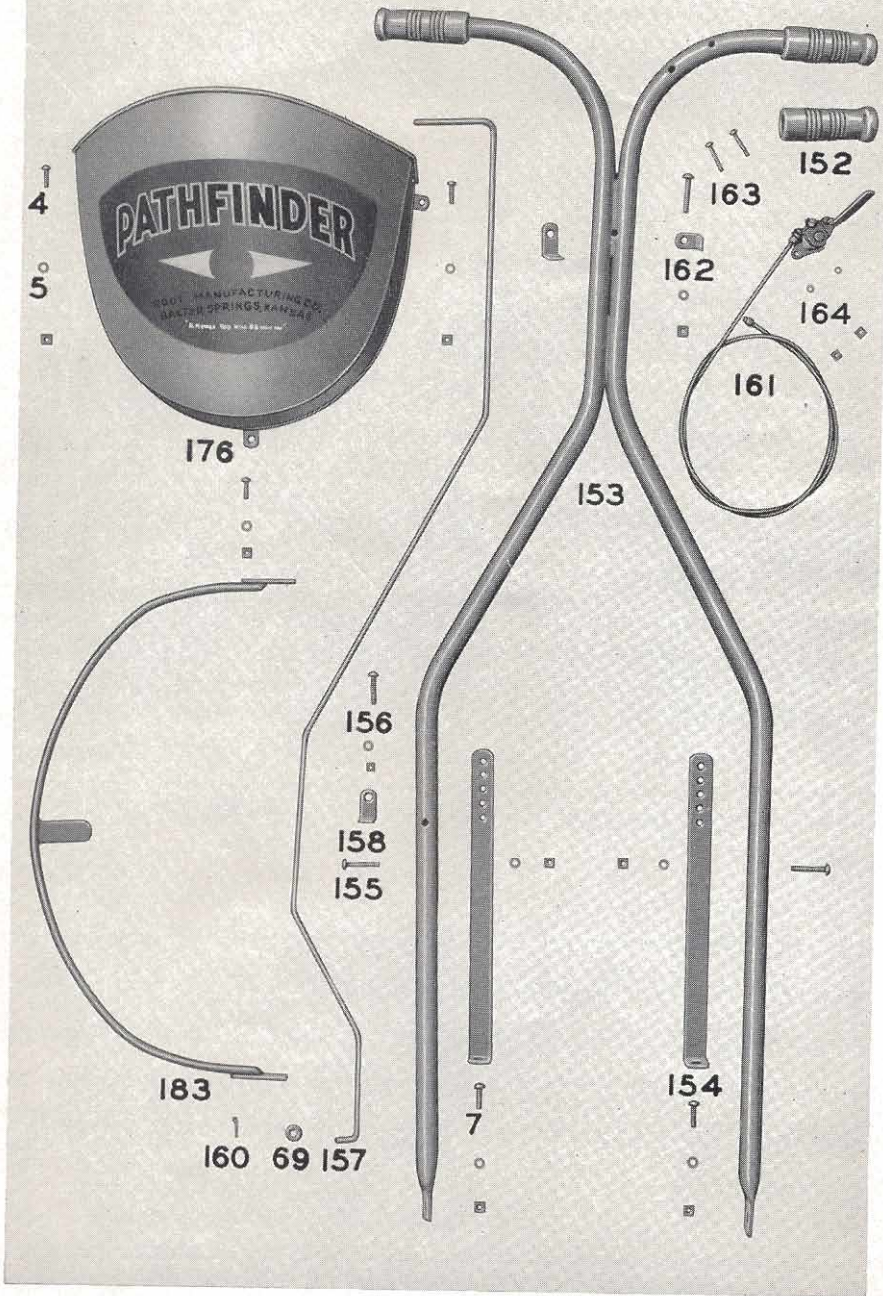
## LEVELING WHEEL

Part No.	No. Req.	NAME OF PART	Price Each
26	2	Leveling Wheel Bearing Bolt L. W. ....	.05
105	2	Leveling Wheel Arm Bolt L. W. ....	.05
110	2	Leveling Wheel Arm Bolts .....	.08
116	2	Lubricator Fittings .....	.10
132	1	Leveling Wheel Arm R. H. ....	5.87
133	1	Leveling Wheel Arm L. H. ....	5.87
134	2	Leveling Wheel Bearings .....	.40
135	2	Leveling Wheel Bearing Bushing .....	.40
136	2	Leveling Wheel Bearing Bolt .....	.05
137	4	Leveling Wheel Bearing Bolt Washers .....	.05
138	2	Leveling Wheel Bearing Bolt Washers .....	.05
139	2	Leveling Wheel and Bearing Assembly .....	2.00
140	2	Leveling Wheel Arm Adj. Screw .....	.10

**Be Sure to Give Serial Number When Ordering Parts.**

*It will prolong the life of your mower and improve its operation if wheel bearings are greased after each use of mower. By greasing after use, any grass juice is forced out and the mower is stored with a protective coating of grease on the bearings. It is a known fact that the juice of grass is detrimental to the life of bearings.*

# PLATE NO. 4



# HANDLE, ENGINE CONTROL ROD THROTTLE, HOOD AND GUARD

Part No.	No. Req.	NAME OF PART	Price Each
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## HANDLE

5	2	Handle to Frame Brace Bolts L. W. ....	.05
5	2	Handle to Frame Brace Frame Bolts L. W. ....	.05
7	2	Handle to Frame Brace Frame Bolts .....	.05
152	2	Grip .....	.15
153	1	Handle Assembly .....	5.00
154	2	Handle to Frame Brace .....	.80
155	2	Handle to Frame Brace Bolts .....	.05

## ENGINE HINGE PLATE CONTROL ROD

5	2	Control Rod Bracket to Handle Bolt L. W. ....	.05
69	1	Control Rod Washer .....	.05
155	1	Control Rod Bracket to Handle Bolt .....	.05
156	1	Control Rod Bracket to Handle Bolt .....	.05
157	1	Control Rod .....	1.10
158	2	Control Rod Bracket .....	.30
160	1	Control Rod Cotter .....	.05

## THROTTLE

161	1	Throttle Assembly .....	1.30
162	1	Throttle Rod Clamp .....	.10
163	2	Throttle Assembly to Handle Bolts .....	.05
164	2	Throttle Assembly to Handle Bolts L. W. ....	.05

## HOOD

4	3	Hood Clamp Bolts .....	.05
5	3	Hood Clamp Bolt L. W. ....	.05
176	1	Hood Assembly .....	4.50

## GUARD

183	1	Guard Assembly .....	2.00
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Be Sure to Give Serial Number When Ordering Parts

## When Ordering Replacement Parts

When it becomes necessary to secure a new part for your Pathfinder Mower, we recommend that you use only genuine replacement parts which we have in stock ready for quick shipment.

When ordering parts be sure to give mower serial number. Then list the part as described in the preceding pages by Number, Name and Price, instructing your Dealer to ship by parcel post or express.

Certain units of the Pathfinder Mower may be replaced through our Exchange Service, as described below.

Part #27 ROTOR EXCHANGE—This exchange includes straightening of old disc, six new knives mounted on old disc, disc balanced same as when new.

Total price less transportation ..... \$ 3.00

Part #50 ROTOR HOUSING, SHAFT & CONE ASSEMBLY—This exchange includes dismantling, checking bearings, new driving cone in balance, assembly, after eliminating any defective parts.

Total price less transportation ..... \$10.00

Part #51 DRIVING CONE ASSEMBLY—This exchange includes new driving cone part #53, assembled and turned true with hub.

Total price less transportation ..... \$ 5.00

*All prices subject to change without notice.*

If at any time you have a question concerning the operation or maintenance of your Pathfinder Mower, Consult your Dealer who will be delighted to help you.

*Customers Service Department*

# ROOT MANUFACTURING COMPANY

127 EAST ELEVENTH STREET  
BAXTER SPRINGS, KANSAS

# WARRANTY

We guarantee goods of our own manufacture against defects in material and workmanship, under normal use and service, for a period of three months from the date the same are first put in operation and for not more than one year after the date of shipment from our plant, to the extent that we will furnish new parts, without charge, to replace any parts, which, within said period of time, our investigation shows were defective when shipped, provided written notice has been given us immediately upon the discovery of such defect; and we reserve the right of requiring the return of the defective parts (transportation and insurance prepaid) before any claim is recognized.

Goods, or parts thereof, not manufactured by us are guaranteed only in accordance with the manufacturer's guaranty, and then only to the extent that we are able to enforce it. No claims for labor, transportation, special, indirect or consequential damages will be allowed.

## Root Manufacturing Co.