TORO

1956

OWNER'S OPERATING AND PARTS MANUAL

TORO—20" WHIRLWIND S.P.

SERIES V – SERIAL NOS. 23316 – 101 AND UP

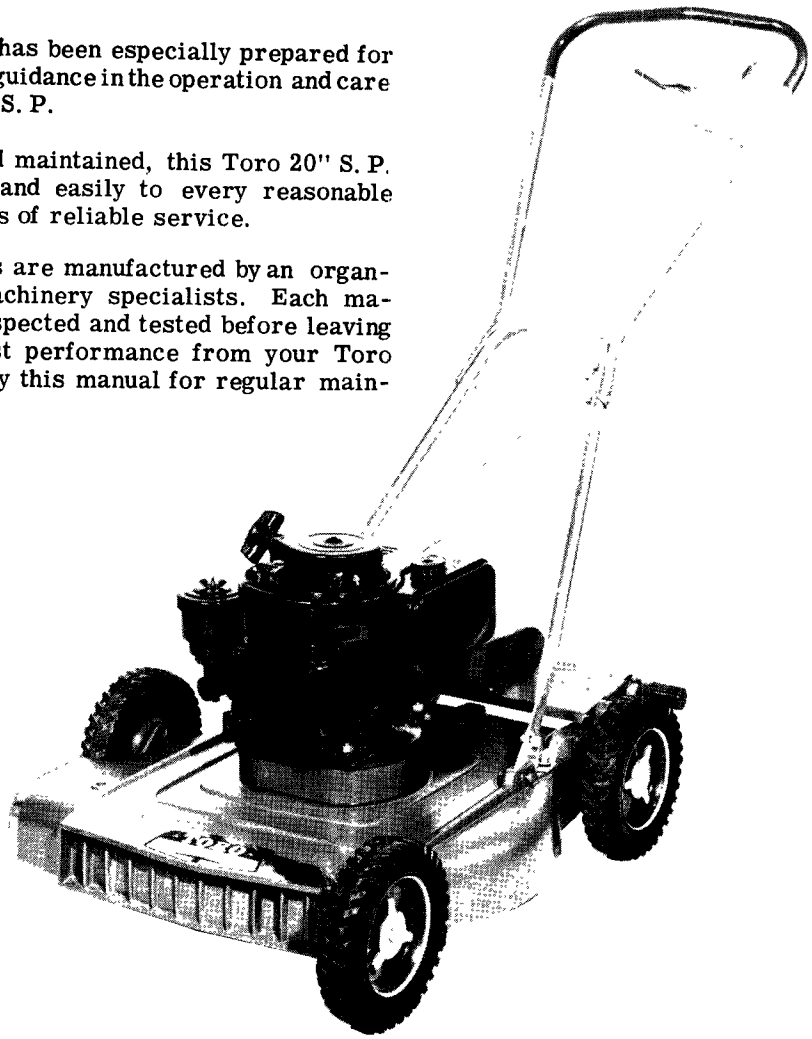
Price 25 cents

To The TORO Owner

This Owner Manual has been especially prepared for your information and guidance in the operation and care of your new Toro 20" S. P.

Properly operated and maintained, this Toro 20" S. P. will respond quickly and easily to every reasonable demand and give years of reliable service.

Toro 20" S.P. mowers are manufactured by an organization of mowing machinery specialists. Each machine is carefully inspected and tested before leaving the factory. For best performance from your Toro 20" S. P. mower, study this manual for regular maintenance procedures.



Warranty

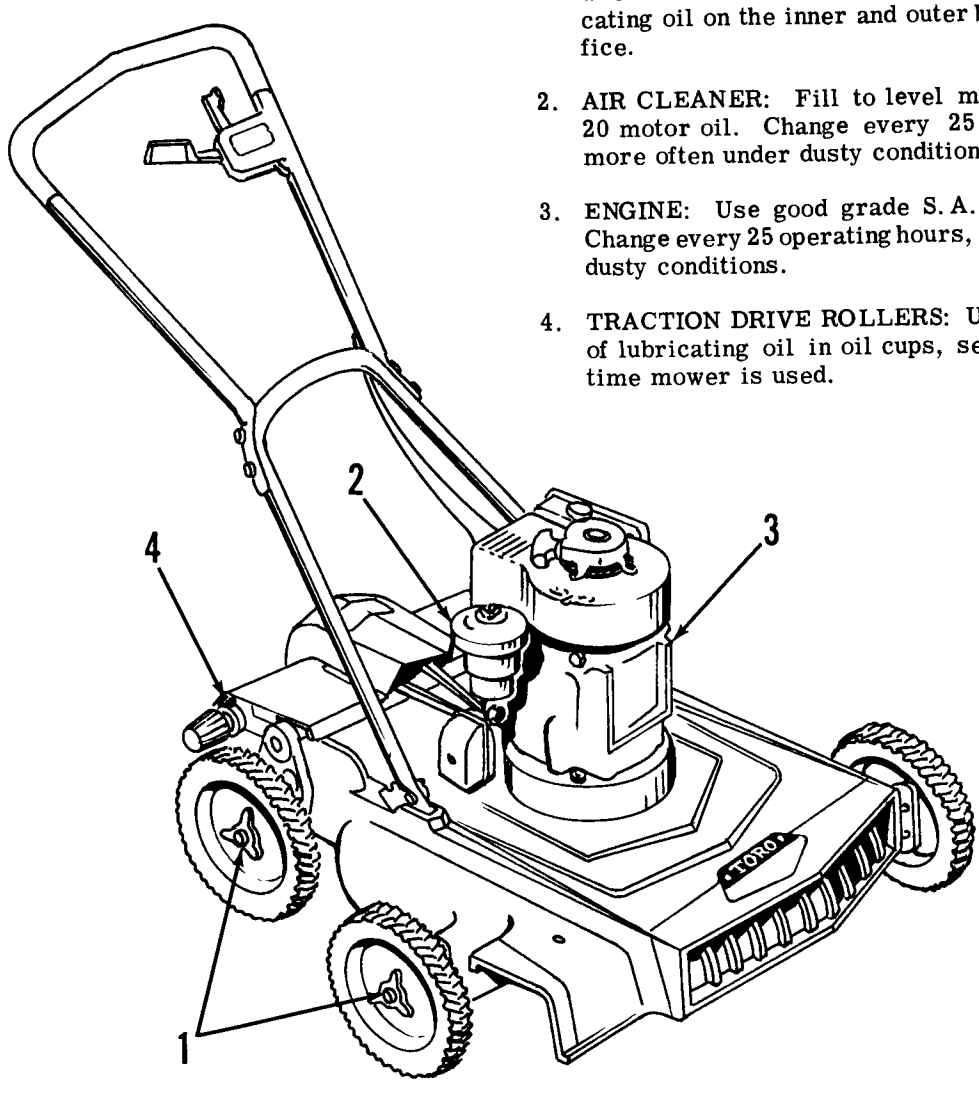
Every piece of equipment is in perfect working condition before leaving the factory and will, when properly operated, perform the work for which it has been recommended.

Should any parts, within three months from date of purchase, prove defective, new parts will be furnished, free of charge, f. o. b. factory, if the broken parts are returned to us for inspection.

We reserve the right to make improvements and changes in the machine in this manual without notice.

Lubrication Chart

1. WHEELS: The wheels are packed with grease at the factory and should require no further care. If wheels should become noisy a few drops of lubricating oil on the inner and outer bearings will suffice.
2. AIR CLEANER: Fill to level mark using S. A. E. 20 motor oil. Change every 25 operating hours, more often under dusty conditions.
3. ENGINE: Use good grade S. A. E. 20 motor oil. Change every 25 operating hours, more often under dusty conditions.
4. TRACTION DRIVE ROLLERS: Use a good grade of lubricating oil in oil cups, several drops each time mower is used.



SPECIFICATIONS

ENGINE: Briggs & Stratton Model 8 BHA.
FUEL TANK CAPACITY: 1 quart.
CUTTER BLADE: 19-7/8" long. Hardened high carbon steel, attached with slip clutch.
TRACTION DRIVE: "O" section V-belt from 1.25 P.D. pulley on engine camshaft to 2.4 to 3.4 P.D. variable pitch pulley on traction shaft. 1.92:1 minimum reduction - 2.72:1 maximum reduction. Two 1 1/8"Diameter straight grooved cast iron drive rollers engaging 8" Diameter rear wheels (7.1:1) reduction.
Reduction Engine to Wheels: 38.6:1 maximum-27.2 minimum (including 2:1 reduction in engine.
WHEELS: #18 Ga. Steel discs w/oil impregnated bronze bearings.
TIRES: Semi-pneumatic, 8 x 1.75 Chevron thread.
GROUND SPEED: Minimum 1.96 at 3200 engine R.P.M. Maximum 2.8 M. P. H. at 3290 engine R. P. M.
HEIGHT OF CUT: 1" to 3" by moving wheels
WIDTH OF CUT: 20"
HOUSING: Permanent molded aluminum alloy, front right hand discharge.
HANDLE: 3/4" O. S. x #16 Ga. welded steel tubing in separable halves. Plastic tubing grips.
DIMENSIONS: Width 24"
Length 32" w/o handle, wheels at 2" cut
Height 17"
WEIGHT: 75 pounds.
STANDARD EQUIPMENT: Leaf mulcher.
OPTIONAL EQUIPMENT: Electric starter.

Operating Instructions

ATTACHING THE HANDLE

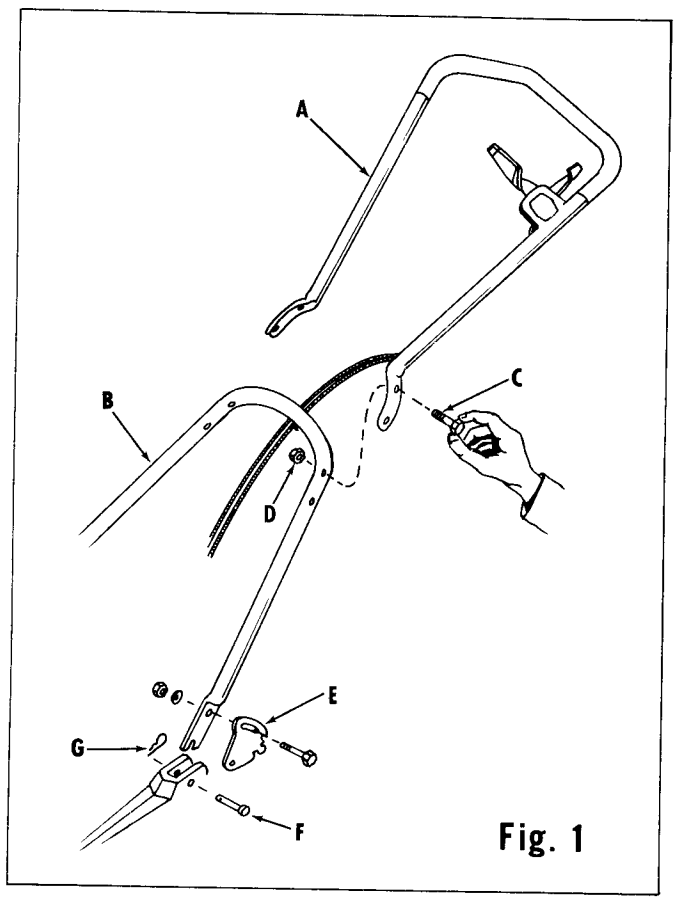


Fig. 1

The handle is shipped in two halves, an upper half (A) (see Figure 1) and a lower half (B). Before mounting handle to the mower, join the halves securely with the bolt (C) and the nut (D) found in the envelope. Next install the handle quadrants (E) in the mower frame and fasten with the clevis pin (F) and hairpin cotter (G). Then mount the handle in position loosely with the handle quadrants (E) on the outside. Adjust the handle to the most convenient height by raising or lowering it. Then tighten all mounting bolts securely.

Be sure that handle is tightened securely on both sides, so that there is an equal amount of pressure on both handle quadrants.

The traction and throttle controls are connected in their proper places. They are installed in this manner at the factory.

HEIGHT OF CUT

The height of cut is determined by the position of the wheels in the main frame. There are, in the main frame, five threaded holes provided for each wheel corresponding to the following height starting from the top (see Figure 2) (A-1") (B-1$\frac{1}{2}$") (C-2") (D-2$\frac{1}{2}$") (E-3").

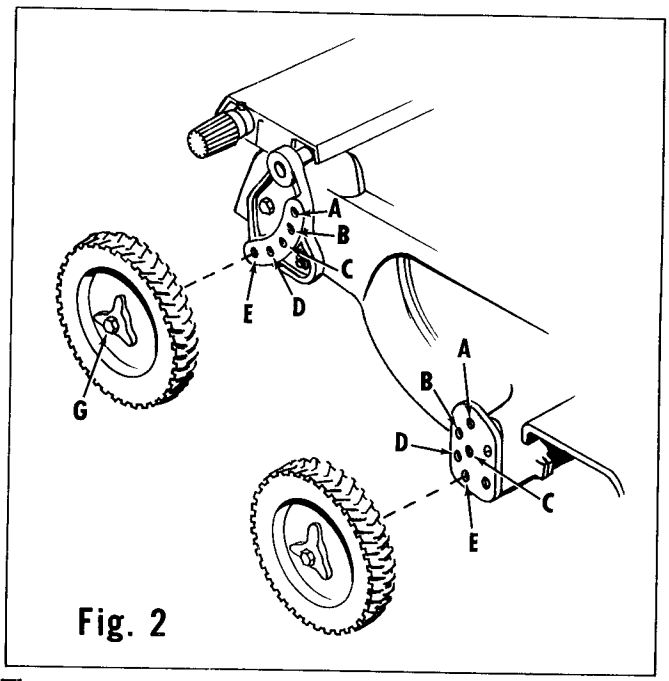


Fig. 2

The mower is shipped without the wheels secured in position. The wheel axle bolts are placed in each wheel and are locked in with a retaining ring. When ready to mount wheels, remove retaining ring and insert axle bolt in desired cutting height. To change the cutting height, remove the wheel screw (G) and move it to the hole corresponding to the desired setting. ALL WHEELS MUST BE ATTACHED IN THE SAME RELATIVE HOLE. Be sure to tighten the axle screws securely.

CONTROLS

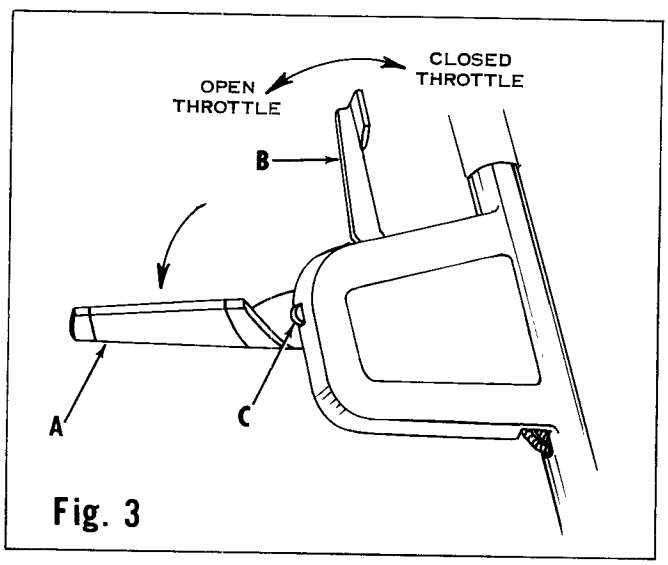


Fig. 3

The traction and throttle controls (A & B) (see Figure 3) are installed in place at the factory.

To propel mower forward, push traction control lever (A) down and forward into slot (C). To stop mower

push traction lever down from slot and pull backwards. Figure 3 shows traction lever in proper position for forward motion.

Throttle control (B) is shown in Figure 3 in the open position. Move in direction of arrow to close.

MOWING SUGGESTIONS

A little practice with the mower will soon show you the best way to use it to obtain the most efficient results.

The following suggestions are offered to help you get acquainted more quickly with the many possibilities of this very versatile machine.

The Toro Mower cuts on either forward or backward travel, so it is not necessary to turn it around when mowing in corners. Simply move it back and forth, changing its direction as necessary to cover the area to be cut. In cutting along the edge of a flower bed, approach the edge head-on and, keeping the mower level, allow it to project a little beyond the edge. The suction of the blades will lift the overhanging grass up into the path of the blades. When cutting around a post, tree or other similar obstruction, bring the left side of the mower up to the object and follow contour of the object being trimmed.

If mowing is to be done on unfamiliar terrain, rough ground, or for cutting weeds, it is generally better to use 2" or 3" for the first cut. For subsequent cuts, a lower height can be used as desired.

When mowing open lawn areas, cut in areas 10 or 12 feet wide if possible, completing each one before starting another. Avoid straddling ridges or humps. This applies especially to the ridge or crown at the top of a terrace. It is generally best to mow a terrace up from the bottom at right angles to the crown, allowing the mower to roll back down the slope to the starting position. When mowing uneven terrain be sure that the front and rear wheels of one side pass over the high point of the undulation. By doing so, you avoid "scalping". A little experimenting will soon show which method is best suited to your particular lawn.

When cutting heavy growth or on rough ground, raise front wheels of ground by bearing down on handle. This will make pushing easier.

CARE OF THE CUTTER BAR

If the cutter bar should hit a stone or any immovable object, shut off the engine and examine the ends for possible injury to the edges, and resharpen them if necessary.

As the bulk of the mowing is done by the outer portion of the cutter bar, it is best to pay special attention to this part of the edge and keep it in good mowing condition at all times. Remember that the sharper the cutter bar, the better the cutting will be.

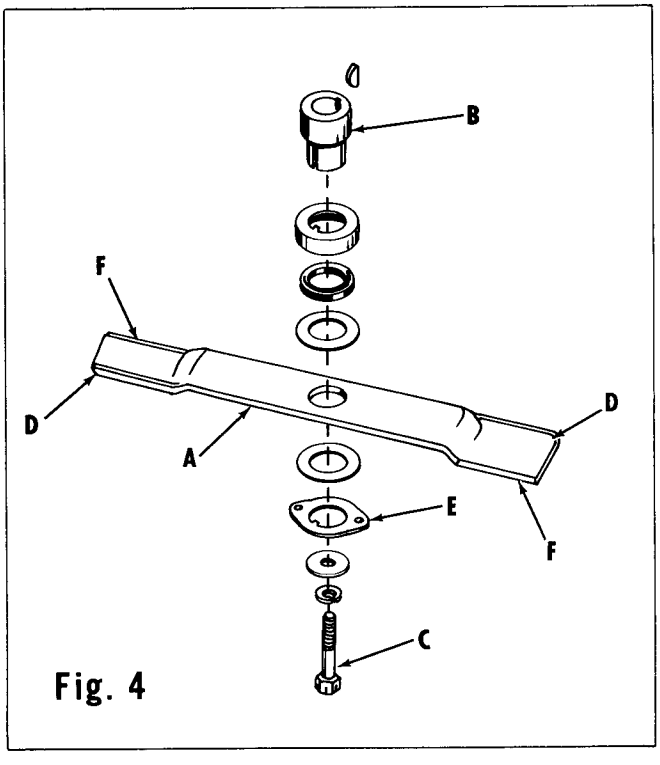


Fig. 4

The cutter bar (A) is attached to the shaft by means of a blade hub (B) (see Figure 4). To remove the cutter bar for sharpening, loosen the cutter bar screw (C) and remove from shaft. To assist in removing the cutter bar, insert a nail or other similar rod through the hub washer (E) in the holes provided, allowing it to bear against the cutter bar for easier removal.

All the various cutter bar parts are loose on the shaft and can be easily removed. When reassembling cutter bar (A) after sharpening, be sure suction ends (D) are pointed upwards, also make sure all parts are reassembled as shown in Figure 4. Be sure cutter bar screw (C) is tight before mower is put in operation.

For sharpening the cutter bar, a good quality 10 inch mill-bastard file is recommended. In filing the ends of the bar (F), maintain the original bevel as closely as possible. It is not necessary to file out all the nicks that may have appeared in the cutting edge as long as a general sharpness of the edge is obtained. TO PREVENT UNBALANCE, BOTH ENDS MUST BE SHARPENED BY REMOVING SAME AMOUNT OF METAL FROM EACH.

The Toro 20" S.P. is equipped with a heat treated cutter bar designed to produce the most satisfactory results. IMPORTANT: Use no substitute cutter bars as they are dangerous. Use only GENUINE TORO CUTTER BARS for perfect balance and safety.

Service Instructions

ADJUSTMENTS

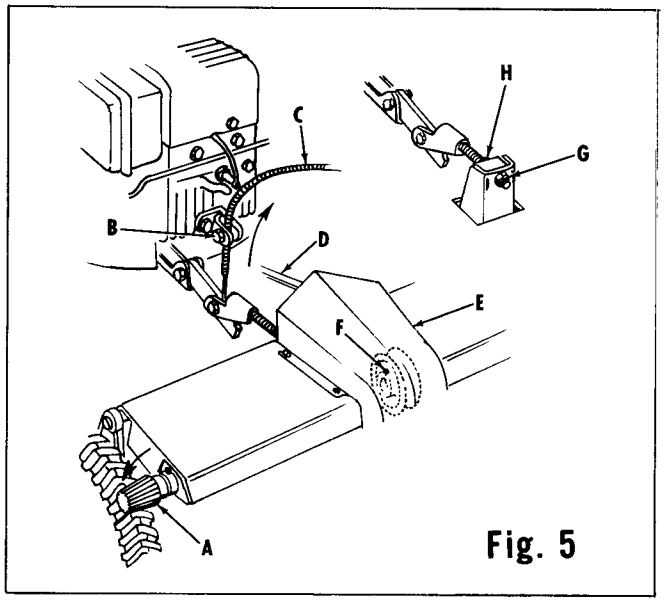


Fig. 5

TRACTION DRIVE

When the traction drive rollers (A) (see Figure 5), become worn or loose on tires, make the following adjustments:

If the drive rollers do not engage properly because the tires have worn smooth, we recommend before making any adjustments that you try changing the front tires on the corresponding side and move them to the rear. If this doesn't correct the problem, do the following:

Remove guard (E), then loosen nut (G) one or two turns and next tighten nut (H) the same amount of turns. Repeat this procedure until drive rollers depress tires approximately 3/16" of an inch.

BELT ADJUSTMENT

It will be necessary to adjust the belt (D) to proper tension after it has become worn from continuous use. To make this adjustment, remove guard (E) and by loosening the setscrew (F) on the pulley, the pulley half with the large hub will rotate on pulley shaft. Rotate this pulley half until setscrew (F) will bear on a flat surface of pulley shaft. This will require either half or full turns. Do Not tighten setscrew on threads.

When replacement of your "V" belt becomes necessary, we recommend that you bring your mower to your Toro distributor or one of his authorized service dealers for this service.

ENGINE

The engine comes to you tested and adjusted to the proper speed. Follow carefully the instructions as to the kind of oil to use and also the frequency of changing it. These instructions will be found on a plate attached to the engine. Keep oil up to the indicated level in the oil cleaner. When the cleaner becomes dirty, remove and wash in kerosene and put in fresh oil. For further engine information, see engine maintenance manual supplied with the mower.

The cooling fan will suck in cut grass and some will become lodged between cooling fins. This must be removed to prevent damage to engine from overheating.

STORING MOWER

When mower is to be stored over winter or any long period of time, it should be blocked up to remove weight from the tires.

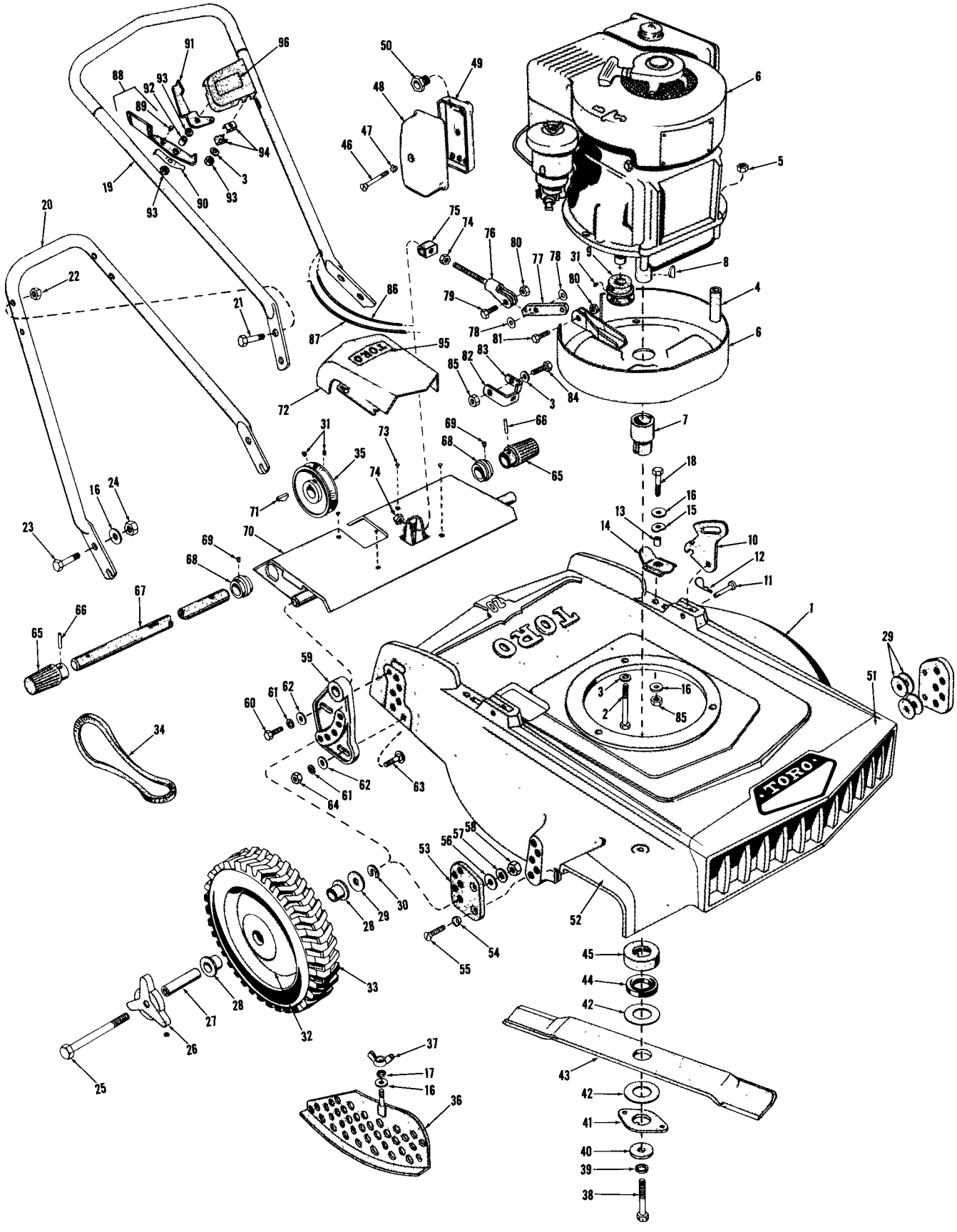
Loosen screw (Item 38) to release tension on pressure pad (Item 44).

LEAF MULCHER

To install the 20" Leaf Mulcher to your mower, please study the following instructions:

1. Insert the mulcher in the mower frame, by lining it up in the two slots and hole in the discharge opening.
2. Fasten the mulcher with the wing nut and washers provided in the cloth bag attached to the mulcher.
3. Before starting engine, check mulcher clearance by turning cutter bar by hand to see if bar clears the mulcher. Disconnect spark plug lead wire before performing this operation. When this has been accomplished mulcher is properly installed, and ready for use.
4. The height of cut recommended for use with the mulcher is 2" or more, depending on the amount of the leaves and height of grass. Using a cut of less than 2" tends to clog the mulcher and reduces its efficiency.

CAUTION: Do not attempt to work on machine while engine is running. We also recommend that you disconnect spark plug lead wire when changing or working on the cutter bar.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PARTS LIST

Ref. No.	Part No.	Description	No. Used
1	2-1300	Housing	1
2	3210-14	Screw, 5/16" N. F. x 3 1/4"	3
3	3256-23	Washer, 5/16" S. A. E.	5
4	2-1780	Spacer	3
5	3296-30	Nut, 5/16" N. F.	3
6	2-1970	Engine Support	1
7	2-1800	Blade Hub	1
8	3257-3	Key	1
9	244-45	Pulley	1
10	WA-103	Handle Quadrant	2
11	2-1380	Clevis Pin	2
12	3290-255	Hair Pin Cotter	2
13	WA-102	Spacer	2
14	WA-104	Handle Stop Lever	2
15	3290-213	Spring Washer	2
16	3256-2	Washer, 1/4" Cut	7
17	3253-4	Lockwasher, 1/4" Reg.	3
18	3210-7	Screw, 5/16" N. F. x 1 1/4"	2
19	1-3269	Upper Handle Assy.	1
20	WA-106	Lower Handle	1
21	329-7	Screw, 1/4" N. F. x 1 1/4"	4
22	3296-3	Nut, 1/4" N. F. Elastic Stop	4
23	3210-3	Screw, 5/16" N. F. x 3/4"	2
24	3296-4	Nut, 5/16" N. F. Elastic Stop	2
25	2-1150	Wheel Screw	4
26	2-1140	Hub Cap	4
27	2-1120	Wheel Spindle	4
28	256-73	Bushing	8
29	3256-4	Washer, 3/8" Cut	8
30	32120-23	Snap Ring	4
31	3246-3	Set Screw	3
32	WBK-380	Wheel Assembly	4
33	234-13	Tire	4
34	271-67	Belt	1
35	244-46	Pulley	1
36	2-1330	Leaf Mulcher	1
37	32103-2	Wing Nut	1
38	2-1940	Special Capscrew	1
39	3253-6	Lockwasher, 7/16" Reg.	1
40	WA-15A	Washer	1
41	WB-249	Blade Hub Washer	1
42	WB-248	Friction Disc	2
43	WB-68A	Cutter Bar	1
44	WB-245	Pressure Pad	1
45	WB-247	Cup	1
46	32108-29	Screw, 5/16"-18 x 2 1/2 "	1
47	3255-12	Lockwasher, 5/16" Shakeproof Ctsk.	1
48	2-1810	Muffler, Free Side	1
49	2-1880	Muffler Weldment	1
50	2-1410	Nipple, Muffler	1
51	2-1340	Name Plate Decal	1
52	2-1350	Chute Decal	1
53	2-1230	Wheel Bracket	2
54	3255-13	Lockwasher, 7/16" External-Ctsk.	4
55	3289-9	Screw, 7/16" - 14 x 7/8"	4
56	3256-25	Washer, 7/16" S. A. E.	2
57	3254-3	Lockwasher, 7/16" Internal	2
58	3218-4	Nut, 7/16" - 14 Jam	2
59	2-1922	Wheel Mounting Plate, Right	1
*	2-1921	Wheel Mounting Plate, Left	1
60	323-5	Screw, 3/8" N. C. x 7/8"	2
61	3253-21	Lockwasher, 3/8" Reg.	4
62	3256-24	Washer, 3/8" S. A. E.	4
63	3231-2	Bolt, 3/8" N. C. x 1"	2
64	3217-7	Nut, 3/8" N. C. Full	2
65	2-2010	Drive Roller	2
66	32121-16	Roll Pin	2
67	2-1790	Traction Shaft	1
68	2-2320	Bearing	2
69	301-1	Oil Cup	2
70	2-2150	Drive Housing	1
71	3257-23	Key, #9 Hi-Pro	1
72	2-2020	Belt Guard	1
73	32104-24	Screw, 10-24 x 1/2 Truss Hd.	4
74	3296-34	Nut, 7/16" - 14 Nylok	2
75	2-1890	Toggle Spacer	1
76	2-1840	Clevis-Stud	1
77	2-1870	Toggle Link	1
78	2-2210	Washer	2
79	3211-4	Screw, 3/8" N. F. x 1"	1
80	3296-32	Nut, 3/8" N. F. Stop	2
81	3211-2	Screw, 3/8" N. F. x 3/4"	1
82	2-1980	Control Bracket	1
83	2-2200	Engine Cable Clamp	1
84	3210-5	Screw, 5/16" N. F. x 1"	1
85	3296-30	Nut, 5/16" N. F. Lock	3
86	2-2090	Traction Wire Assembly	1
87	2-2100	Throttle Wire Assembly	1
88	1-3219	Traction Lever Assembly	1
89	2-2220	Latch Pin	1
90	2-2270	Flat Spring	1
91	2-2240	Throttle Lever	1
92	2-2330	Stud Sleeve	1
93	32128-5	Nut, 5/16" N. C. Gripco-Jam	3
94	2-2190	Clamp	2
95	2-2300	Guard Decal	1
96	2-2280	Control Panel Decal	1

* Not Illustrated

IMPORTANT ORDERING INSTRUCTIONS

Repair parts are available from your TORO distributor or service dealer.

To insure getting correct parts without delay, please furnish the following information:

1. Serial number of your mower as shown on the name plate.
2. Part number, description and quantity of each part required.
3. State whether parts should be shipped by mail or express. All repair parts are shipped F. O. B. factory.
4. Name and address where parts are to be shipped.
5. Do not order by reference number; use part number only.