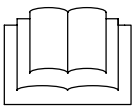
PARTS AND MAINTENANCE MANUAL

JR. SODCUTTER™

Models: **544844C**
544845C
544944
544945

Part No. 524781 Rev. 2

GENERAL INFORMATION



IMPORTANT!

THIS MANUAL WILL AID YOU IN THE SAFE OPERATION AND PROPER MAINTENANCE OF YOUR EQUIPMENT. READ MANUAL THOROUGHLY BEFORE ATTEMPTING OPERATION. IF ANY PORTION IS NOT CLEARLY UNDERSTOOD, CONTACT AN AUTHORIZED DEALER FOR CLARIFICATION.

To make sure you are fully aware of safety and service information, the following two symbols are used throughout this manual.

This symbol is used throughout the manual to alert you to information about unsafe actions or situations, and will be followed by the word DANGER, WARNING, or CAUTION. DANGER indicates immediate hazards that may result in severe injury or death. WARNING indicates unsafe actions or situations that may cause severe injury, death and/or major equipment or property damage. CAUTION indicates unsafe actions or situations that may cause injury, and/or minor equipment or property damage.

NOTICE This symbol appears next to information or instructions which will help you operate and maintain your equipment the right way.

WARNING

The information and instructions included in this manual alert you to certain things you should do very carefully. If you do not, you could:

- **hurt yourself or others**
- **hurt the next person who operates the equipment**
- **damage the equipment.**

This manual contains essential operation and safety information and must remain with the unit at all times, within easy access of any operator.

Additional manuals are available through your dealer.

IMPORTANT!

THIS EQUIPMENT SHOULD NOT BE MODIFIED OR ADDED TO WITHOUT THE MANUFACTURER'S AUTHORIZATION.

WARNING

Altering this equipment in any manner which adversely affects the equipments operation, performance, durability or use, may cause hazardous conditions.

Direct any inquiries to:

Textron Turf Care and Specialty Products
Attn: Chief Engineer
P.O. Box 82409
Lincoln, NE 68501–2409 USA

SPECIFICATION INFORMATION

All information contained in this manual is the latest available at the time of printing. Textron Turf Care and Specialty Products reserves the right to make changes at any time without notice.

Whenever a name brand product is specified, an equivalent product may be used unless stated otherwise.

CHANGE OF OWNERSHIP OR ADDRESS

Textron Turf Care and Specialty Products makes every effort to keep owners informed of all safety related information. Therefore, changes in ownership and/or address should be reported to the manufacturer.

Your dealer has REGISTRATION CHANGE FORMS which will be filled out and filed by the dealer for his records, and a copy will be sent to the manufacturer.

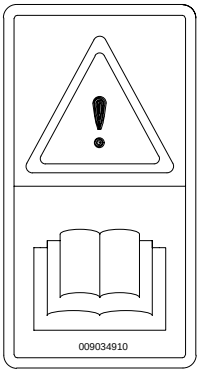
DEALER INFORMATION

For your nearest dealer location write to:

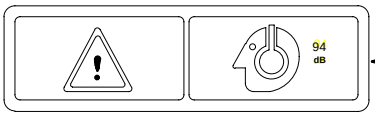
Textron Turf Care and Specialty Products
Attn: Sales Coordinator
P.O. Box 82409
Lincoln, NE 68501–2409 USA

In the USA and Canada call 1–800–228–4444 (dealer information only).

PICTORIAL DECALS



This decal instructs the operator to read and understand the operators manual. To prevent injury, they must be familiar with the operation of this product and is fully aware of safe operating procedures.

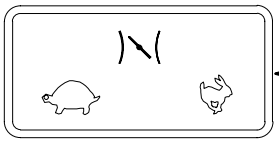


This decal informs the operator that hearing protection should be worn if operating the Jr. Sodcutter for extended periods of time (longer than four hours).

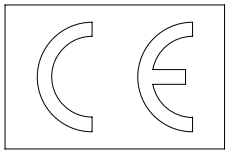
This top symbol shows fingers or hands being cut or severed. DO NOT place hands or fingers under Jr. Sodcutter while operating the unit.

This middle symbol shows toes and feet being cut or severed. DO NOT place feet or toes under Jr. Sodcutter while operating the unit.

The symbols used in the lower part of the decal are used to inform the operator and/or bystanders to keep a safe distance away from machinery. If you do not keep hands and feet a safe distance from the machinery, personal injury could occur.



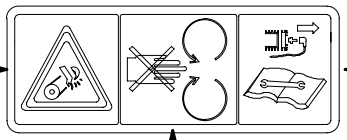
The throttle control decal uses the turtle to represent slower engine speeds, the rabbit represents faster engine speeds.



This decal indicates the unit is certified for use for the European community.

PICTORIAL DECALS

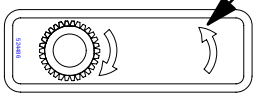
The left symbol is used to show the possible result of working on machinery with safety shields removed. Hands and fingers may become entangled in belts. DO NOT operate the unit without safety shields in place.



The right symbols instruct the operator to read the service section of the operators manual. Disable the engine (disconnect spark plug wire) before performing any service or maintenance on the unit.

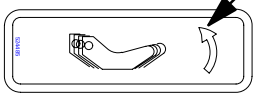
The center symbols warns the operator and/or bystanders to keep hands out of moving components.

Direction of handle engagement.

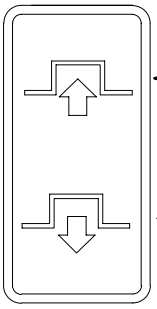


This decal shows the direction of lever movement used to engage the drive wheels of the Jr. Sodcutter. Movement in opposite direction will stop drive wheels.

Direction of handle engagement.



This decal shows the direction of lever movement used to engage cutter blade. Movement in opposite direction will stop the blade.



Push lever forward to engage drive belt.

Pull lever rearward to disengage drive belt.

EQUIPMENT IDENTIFICATION

544844C . . . . . Jr. Sodcutter – 12 inch (305 mm)
544845C . . . . . Jr. Sodcutter – 18 inch (457 mm)
544944 . . . . . Jr. Sodcutter – 12 inch (305 mm)
544945 . . . . . Jr. Sodcutter – 18 inch (457 mm)

INDEX

SPECIFICATIONS

MODELS: 544844C, 544845C

Engine . . . 4 cycle 6 H.P. B&S Vanguard, Model 117432, Type 0530, Trim E1, 11.1 cu. in. (182 cc) w/recoil starter. Governor set at 3600 ± 100 rpm, no load.

Noise Level Sound pressure level –88 dB(A) (pressure based) Sound power level – 99 dB(A) (power based)

Vibration . Handlebar vibration level in z–axis 29.4 meters per second squared

Clutch . . . . Spring loaded belt tightener type.

Reduction Engine to blade 2.94:1 Engine to drive wheels 55.8:1

Wheels . . . Drive: 8” (203 mm) dia. w/knobby tread vulcanized to hub. Rear: 8 x 1.75 semi–pneumatic w/pre–packed ball bearings.

Drive . . . . . “A” section belt from engine to gear case, roller chain in gear case to drive shaft and blade drive.

Gear Case Lubrication: EP140 Gear Lube Capacity: 3 1/2 Pints (1.7L)

Cutting width . . . . . 11 3/4” (298 mm) 18” (457 mm)

Blade speed . . . . . 1225 oscillations/min. at 3600 rpm

Blade pitch Hand lever adjustment, variable from 0 to 9 degrees

Weight . . . . 269 lb. (122.1 Kg) 327 lb. (148.5 Kg)

Dimensions Width: 24” (600 mm) Height: 33” (838 mm) Length: 49” (1,244 mm) Wheelbase: 19” (483 mm)

Standards Conforms to European Community (EC) standard 89/392 and amend–ments 91/368 and 93/44. CARB, EPA.

MODELS: 544944, 544945

Engine . . . . . 4 cycle 5.5 H.P. Honda GX160 OHV, Model GX160–K1QX2 9.9 cu. in. (163 cc) w/recoil starter. Governor set at 3600 ± 100 rpm, no load.

Noise Level . . . Sound pressure level –92 dB(A) (pressure based) Sound power level – 105 dB(A) (power based)

Vibration . . . . . Handlebar vibration level in z–axis 32.4 meters per second squared

Clutch . . . . . Spring loaded belt tightener type.

Reduction . . . . Engine to blade 2.94:1 Engine to drive wheels 55.8:1

Wheels . . . . . Drive: 8” (203 mm) dia. w/knobby tread vulcanized to hub. Rear: 8 x 1.75 semi–pneumatic w/pre–packed ball bearings.

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TOUCH–UP PAINT

Ransomes Green

16 oz. (0.5L) spray can, order Part No. 838140

1 qt. (0.95L) can, order Part No. 838141

SERIAL NUMBER AND MODEL NUMBER PLATE

The serial number and model number plate on the Jr. Sodcutter is pictured below. The plate is located on top the gearcase to the rear of the unit, just in front of the han-dlebar mounting location.

FIGURE 1

1. Serial Number/Model Number Plate

CONTROLS

Clutch Control Lever — Engages or releases drive belt and applies brake action to drive belt when pulled FIRMLY to rear. See Figure 2, item 1.

Throttle Control — Speeds up or slows down engine. See Figure 2, item 2.

Engine Switch — Turn to “ON” position to start engine. Turn to “OFF” position to stop engine.

Operator Presence Control — With clutch control engaged, engine will stop if operator presence lever is not depressed. See Figure 2, item 3.

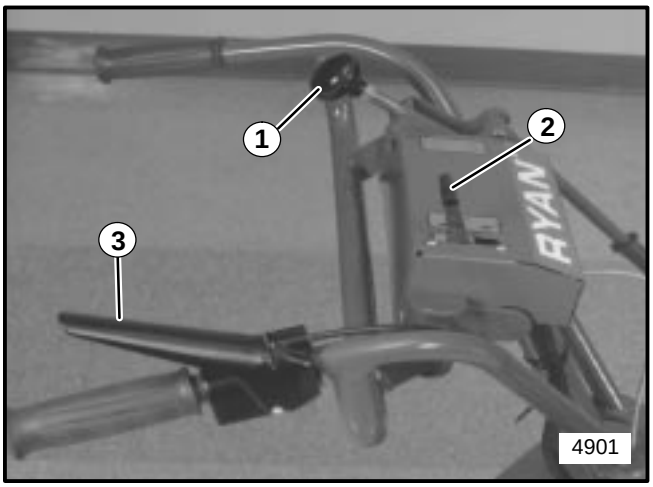


FIGURE 2

1. Clutch Control Lever
2. Throttle Control
3. Operator Presence Control

Blade Depth Control Lever — Raises or lowers cutting blade. See Figure 3, item 1.

Blade Angle Locking Lever — Adjusts cutting angle of blade. See Figure 3, item 3.

Blade Depth Control Locking Lever — Locking lever holds blade depth control lever in desired position. See Figure 3, item 2.

Depth Gauge — Allows resetting of blade depth to the previous cutting height.

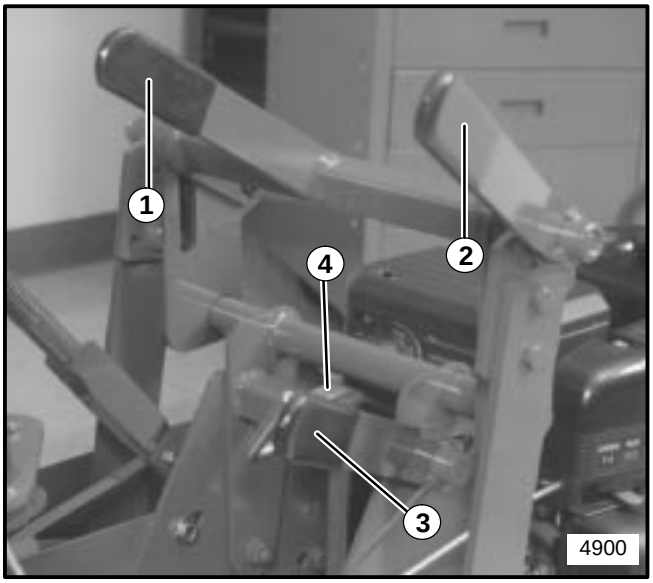


FIGURE 3

1. Blade Depth Control Lever
2. Blade Depth Control Locking Lever
3. Blade Angle Control Locking Lever
4. Depth Gauge

Blade and wheel Shifter Handles — Engage and disengage blade for cutting and gears for driving Sodcutter. Refer to Figure 4.

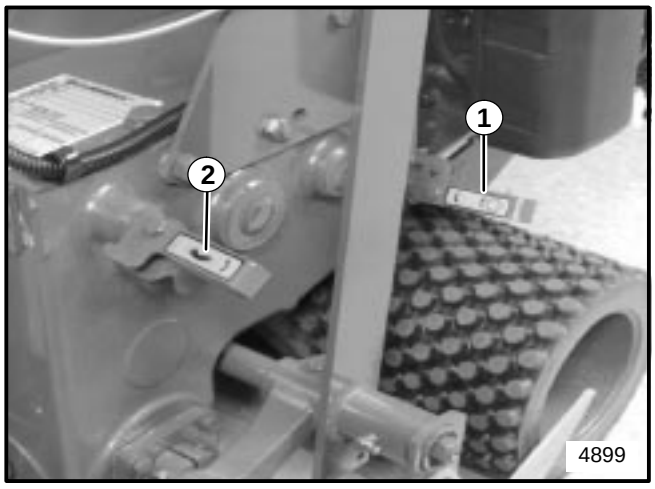


FIGURE 4
1. Wheel Shifter
2. Blade Shifter

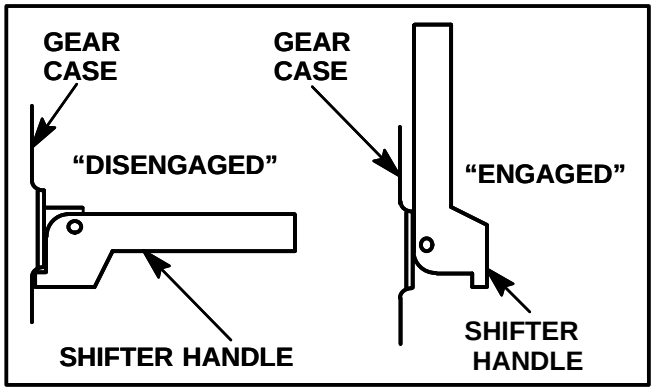


FIGURE 5

Moving of Unit

To move unit without running blade:

- Place blade shifter handle in "disengaged" position (handle will point straight out from unit). Refer to Figure 5.
- Set engine speed at slow speed.
- Engage drive shifter handle.
- Depress operator presence control.
- Engage operator presence control.
- Engage clutch control lever.
- Adjust throttle to desired walking speed.

To move unit **without running engine,** put drive shifter handle and clutch control lever in "Disengaged" position.

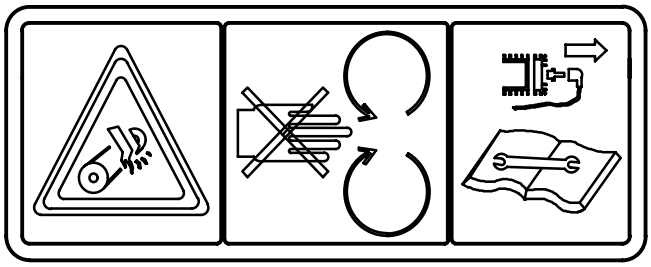
Transporting Unit

When transporting unit on trailer or truck, shut fuel valve "OFF" beneath fuel tank.

SERVICE

WARNING

- **To prevent possible malfunction and/or injury to the operator and/or bystanders, use only genuine RYAN parts or parts with equivalent characteristics including, type, strength and material when replacement parts are needed.**
- **Carbon monoxide present in the exhaust is an odorless and deadly gas. Never start or run the engine inside where exhaust fumes can collect. Provide enough fresh air to keep fumes from getting too strong.**
- **When replacing engine, be sure to replace sound level warning decal (Part No. 524538).**
- **Any warning decal that becomes illegible should be replaced immediately.**



- **"Stop" engine and disconnect spark plug wire before servicing or making adjustments to unit. The preceding decal shows what could happen if the engine is not stopped or disabled before removing safety covers. Hands may become entangled in moving belts, gears, chains or other parts.**
- **Use adequate lifting device (i.e., hoist, fork lift, etc.) to raise unit.**
- **Use adequate supports when unit is raised for servicing.**
- **Wear protective eye equipment when using hammers, chisels and punches.**

To keep the Sodcutter in good operating condition, perform the following:

- Check engine oil level and air filter daily.
- Check gear case oil level daily.
- Check for loose hardware and connections.
- Lubricate in accordance with instructions shown in lubrication section of this manual.
- Check belt for fraying, wear and proper adjustment. Refer to belt adjustment section.
- Sharpen cutting blade following directions below.
- Change engine oil following recommendations of engine manufacturer.

Blade Sharpening

Hand file bottom blade at 45° angle until no flat remains. See Figure 6. To keep cutting edge less than 1/16" on 45° angle, grind milled surface back at 15° to less than 1/16".

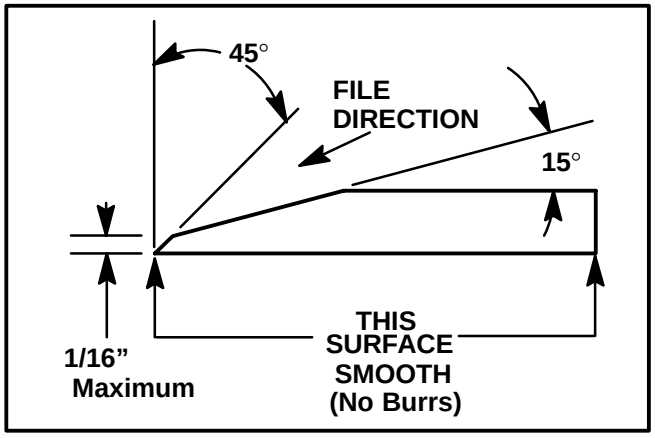


FIGURE 6

Hand file side blades at 45° until no flat remains. See figure 7. To keep cutting edge less than 1/16" on 45° angle, grind milled surface back at 15° to less than 1/16".

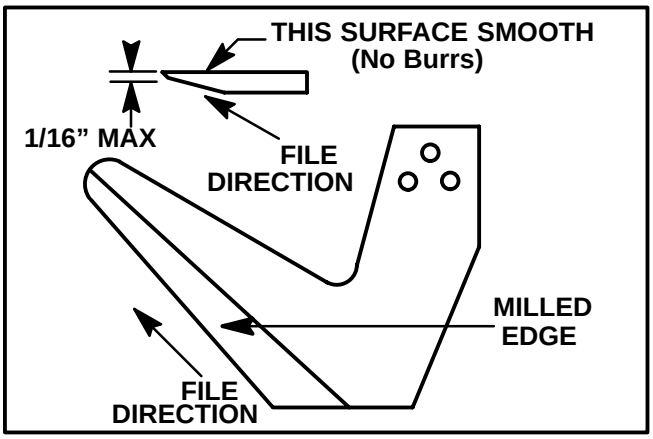


FIGURE 7

Drive Belt Adjustment

Keep belt free of oil and dirt, and adjusted to proper tension at all times.

Belt tension is adjusted by loosening four (4) engine mounting screws and shifting engine on the base.

The belt should be taut when the clutch lever is pushed forward (engaged) and the idler wheel is 1" (25.4 mm) from the engine mount plate.

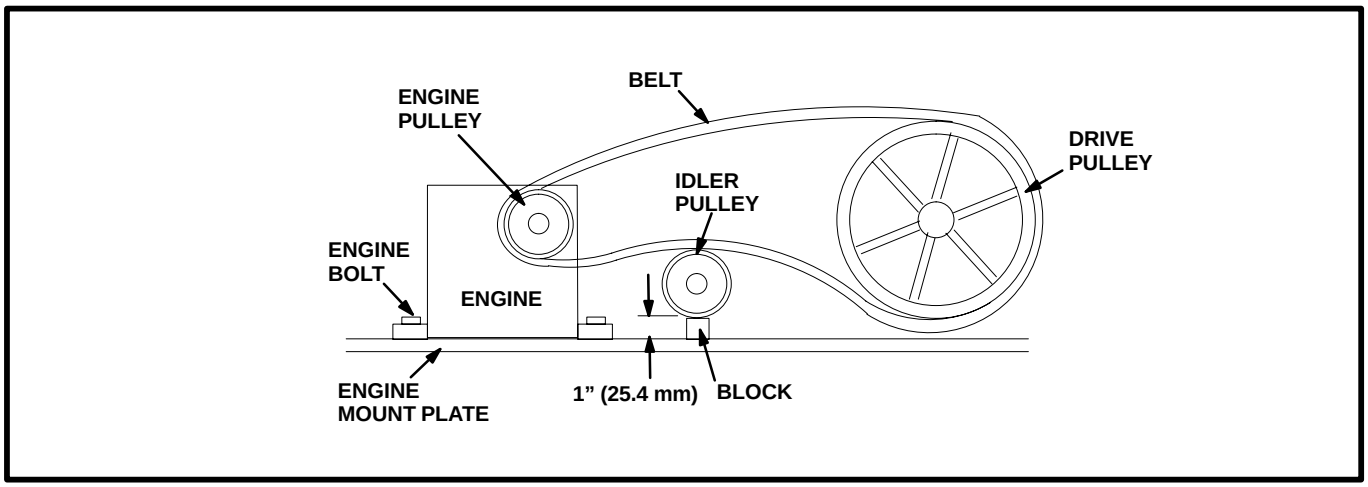


FIGURE 8

Belt Replacement

1. Remove shield on left side of unit.
2. Remove nut securing brake band to clutch control rod.
3. Remove cotter pin on outside of guard support rod and move brake band over to nut on rod.
4. Loosen two (2) screws securing belt guide to provide clearance when removing belt. See Figure 9.

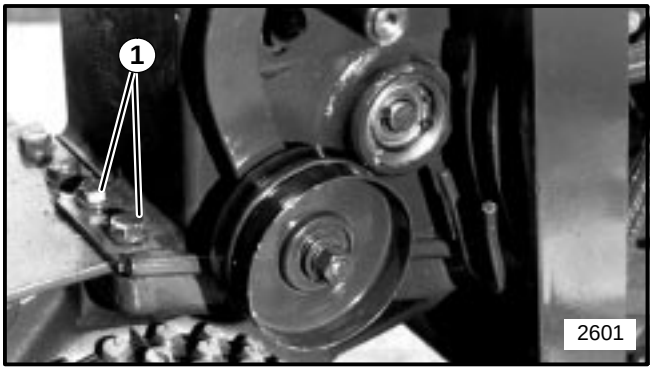


FIGURE 9
1. Belt Guide Screws

5. Install new belt in reverse procedure. Route the belt as shown in Figure 10.

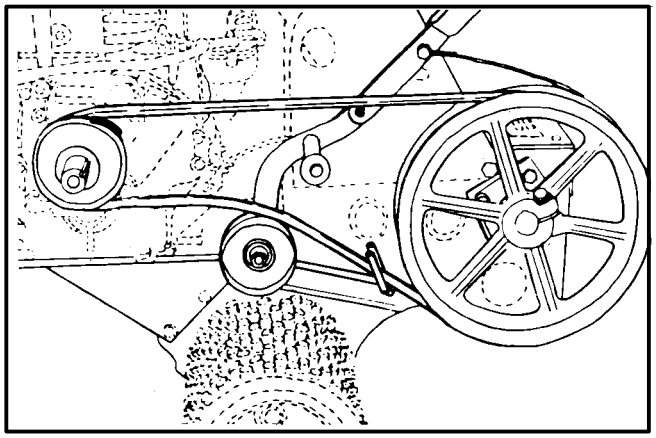


FIGURE 10

Drive Chain Removal

1. Raise unit, place on adequate supports and remove belt guard.
2. Remove four (4) screws securing cover.
3. Remove throttle cable from engine and lay behind cam case.
4. Remove dipstick from cover.
5. Remove screw, flat washer, nut and bushing from right lower side of “H” frame.
6. Using a screwdriver, lift cover to break sealant bond and remove cover.
7. Drain oil out of front cavity on case, and turn drive wheels until master link is on top of sprocket.
8. Remove master link and continue rotating drive wheels until chain is off bottom sprocket.
9. Install new chain in reverse procedure. Clean mating surfaces on case and cover. Apply 3M Scotch Grip 847 or an equivalent adhesive to case cover before installation.

Chain Replacement

NOTICE

- To prevent small components from falling down into oil cavities and causing damage to unit, cover opening with clean rags, cardboard, etc.

Blade Drive Chain

1. Follow steps 1 thru 6 in drive chain removal.
2. Remove bottom screw on bearing cage to drain oil from rear cavity.
3. Rotate pulley shaft until master link is to front of top sprocket. Remove master link.
4. Rotate blade drive shaft until chain is free.
5. Install new chain in reverse procedure. Use 3M Scotch Grip 847 or an equivalent adhesive on case cover and bearing retainer screw.

Gear Replacement and Identification

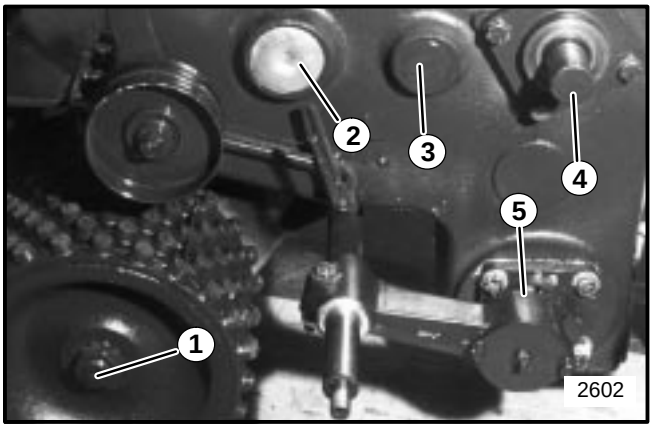


FIGURE 11
1. Drive Wheel Chain Sprocket Shaft
2. Upper Drive Sprocket Shaft
3. Idler Gear Shaft
4. Pulley Shaft
5. Blade Sprocket Shaft

Upper Drive Sprocket & Shaft

1. Remove drive chain according to steps 1 thru 6 in drive chain removal section.
2. Remove master link from chain. Chain does not need to be removed from lower sprocket.
3. Remove drive shifter assembly from gear case.
4. Remove blade and side arms from pivot brackets for easier access.
5. Remove plugs on both ends of shaft.
6. Remove snap rings from left bearing. See Figure 12.

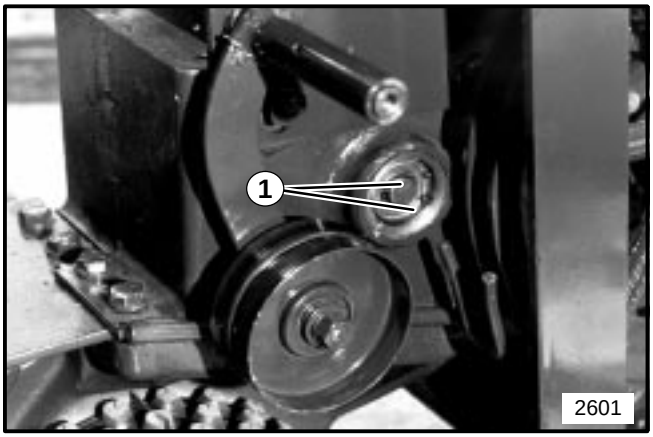


FIGURE 12
1. Bearing Snap Rings

7. Using a punch and soft hammer (lead, leather, etc.), drive shaft out left side of unit and remove large gear.
8. Using a bearing puller or slide hammer, remove bearing. Shaft is now removable through cam case cover opening.
9. Dog clutch half is removable from gear by removing snap ring.
10. Assemble in reverse procedure.

11. After installing blade shifter assembly, adjust dog clutch to provide .015” (0.39 mm) clearance between clutch faces. See Figure 13.

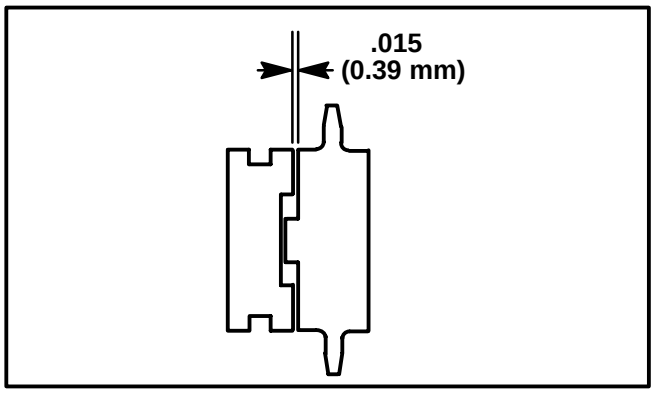


FIGURE 13

12. Apply 3M Scotch Grip adhesive or an equivalent to gear case cover before installation.

Drive Wheel Chain Sprocket Shaft

1. Follow steps 1 thru 7 in drive chain removal section.
2. Remove master link and remove chain from top sprocket.
3. Remove both drive wheels and axle keys.
4. Remove seal in case and snap ring retaining bearing in case.
5. Install axle nut on end of shaft, opposite the side of snap ring previously removed.
6. Using a soft hammer (lead, brass, etc.), drive shaft out of case. Sprocket can now be removed by lifting up on chain.
7. Top sprocket and chain should be checked for wear and replaced if necessary.
8. Reassemble in reverse procedure using new seals and gaskets.

Adjusting Blade Angle

Loosen blade angle control locking lever and move H–frame forward or backward until blade is at desired angle of pitch. Tighten blade angle control locking lever. See Figure 3.

Adjusting Depth of Cut

1. Make a trial run in turf. Set depth to cut approximately 3/4” of soil.
2. Loosen depth gauge handle (see Figure 3). Adjust depth gauge to contact bottom on depth control lever.
3. Loosen depth control locking lever and lower depth control until it rests on depth gauge.
4. Tighten depth control locking lever.

NOTICE

- Numbers on depth gauge do not necessarily represent thickness of sod being cut.

Blade Angle (Pitch)

Under normal operating conditions, blade angle (Figure 14) is minimal (blade bottom is flat). In extremely hard soil or when cutting with a dull blade, the blade may want to ride out of the ground. It may then help to adjust blade angle downward (see **Adjusting Blade Angle** above). A short trial run will indicate which is the best blade angle.

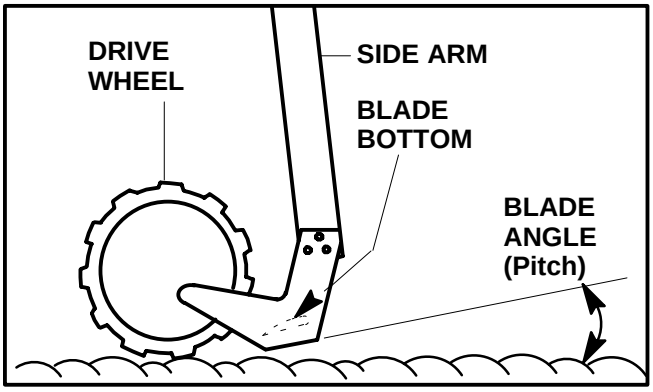


FIGURE 14

ADJUSTING OPERATOR PRESENCE CONTROL

1. To adjust operator presence cable, pull clutch control handle rearward as far as possible.
2. Press operator presence handle (right handlebar) down as far as possible.
3. Adjust cable until the pivot arm contacts the arm extending from the operator presence switch (see Figure 15).
4. Tighten cable clamp to secure cable. Check for proper operation.

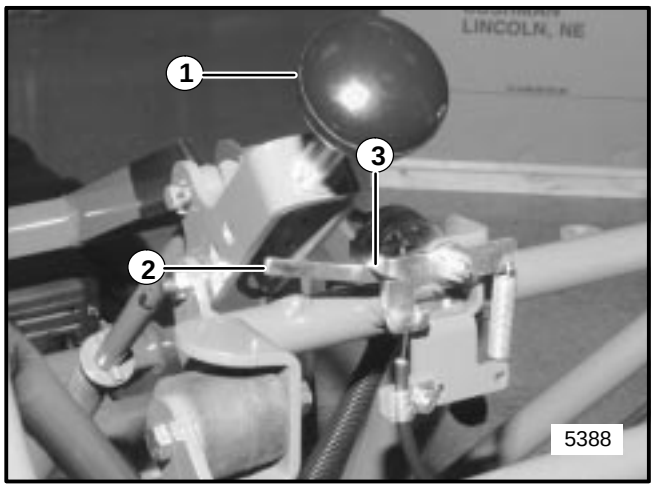


FIGURE 15
1. Clutch Control Handle
2. Operator Presence Switch Arm
3. Pivot Arm

Pulley Shaft

1. Follow steps 1 thru 4 in belt replacement section and steps 2 thru 6 in drive chain removal section.
2. Remove blade from unit and remove left side arm. See Figure 16.

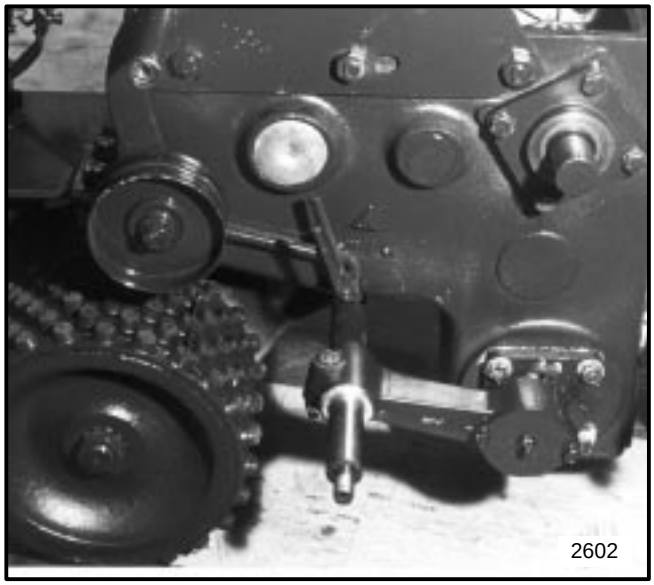


FIGURE 16

3. Remove blade shifter assembly.
4. Turn pulley until master link is on top of sprocket. Remove chain from top sprocket.
5. Remove belt pulley and key.
6. Remove four (4) bearing cage screws and pull gears out left side of unit. Dog clutch and double sprocket will slide off as shaft is removed.
7. To remove gear and bearing, remove snap ring, slide gear off shaft and remove key. Remove bearing snap ring and remove bearing.
8. Assemble in reverse procedure. After blade shifter assembly is installed, adjust dog clutch to provide .015” (0.39 mm) clearance between clutch faces. Refer to Figure 13.
9. Apply 3M Scotch Grip 847 adhesive or equivalent to gear case cover before installation.

Blade Sprocket Shaft

1. Follow steps 1 thru 6 in pulley shaft section.
2. Loosen clamp screw on left pitman arm and remove from shaft. Refer to Figure 17.

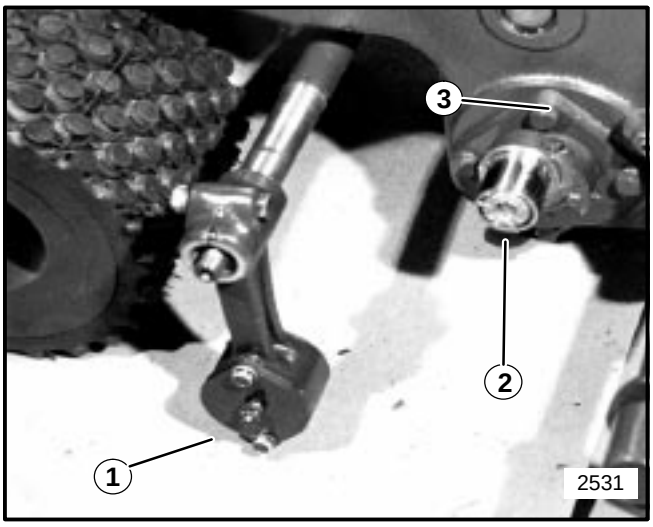


FIGURE 17
1. Pitman Arm
2. Eccentric
3. Bearing Cage

3. Loosen clamp screw in eccentric assembly and remove. Refer to Figure 17.
4. Remove two (2) top screws securing the other side arm assembly. Side arm, shaft and pitman arm, are now removable by pulling side arm out.
5. Remove eccentric and both bearing cages. Put a pan under rear portion of case to catch oil from case cavity.
6. Push shaft to left of case, lift right end of shaft out of case with bearings and sprocket intact.
7. To remove sprocket, press bearing from shaft, and slide sprocket off.

NOTICE

- End play on shaft must not exceed .005 (.127 mm) clearance and should rotate freely when bearing cages are tightened.

8. Assemble in reverse procedure. Adjust dog clutch as shown in Figure 13. Apply 3M Scotch Grip 847 adhesive or an equivalent to gear case cover before installation.

Idler Gear Shaft

1. Remove belt guards.
2. Follow steps 2 thru 6 in drive chain removal section.
3. Remove plug from right side of unit.
4. Remove snap ring from groove by small gear to left end of shaft.
5. Move small gear to left side (from operators position) of case.

6. Move shaft out right side of case until large gear clears shaft for removal. See Figure 18.

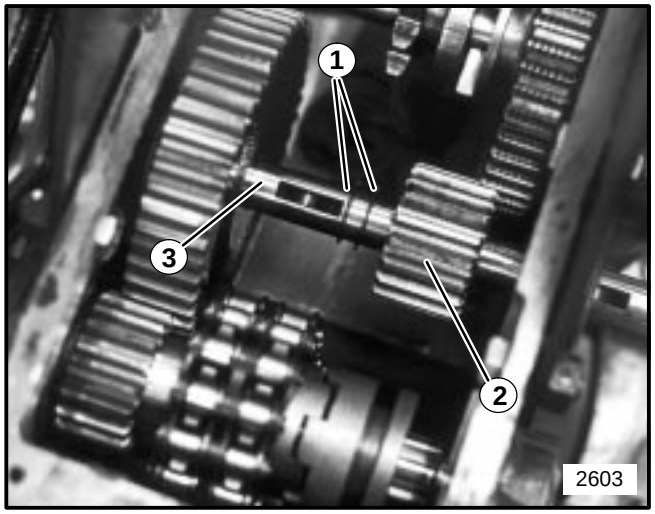


FIGURE 18

1. Snap Rings
2. Small Gear
3. Idler Shaft

7. Remove key from shaft and slide snap rings off end of shaft.
8. Small gear will slide off as shaft is removed from gear case.
9. Assemble in reverse procedure. Apply 3M Scotch Grip 847 adhesive or equivalent to gear case cover before installation.

LUBRICATION

The gear case is initially filled with 3 1/2 pints (1.7 L) of EP 140 Gear Lube. Do not add to this amount unless oil is changed or lost through leakage.

On all pressurized lubrication fittings use a good grade of Lithium Based lubricant.

The Jr. Sodcutter has 6 lubrication fittings. Lubricate pitman arms (1 each side) and side arms (1 each side) after every 4 hours of use.

Lubricate side arm pivots (1 each side – top of unit) after every 8 hours of use.

Check gear case lubricant level using dipstick located on top of gear case. Check lube with dipstick sitting on threads, do not screw in.

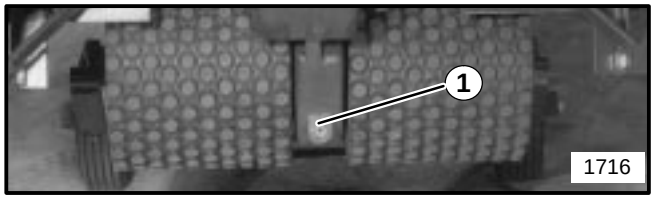


FIGURE 19

1. Gear Case Drain Plug

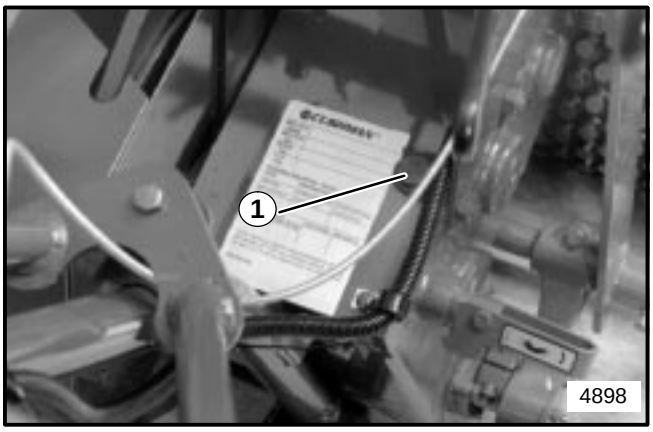


FIGURE 20

1. Gear Case Dipstick

Brake Band Replacement And Adjustment

1. Remove belt guard.
2. Remove old brake band from Jr. Sodcutter. Retain all hardware.
3. Install new brake band with the large loop and hardware at the lower mounting point (on guard support rod).
4. Loosen the lock nut and the adjustment screw on the new brake band. Activate the brake lever and tighten the adjustment screw until the brake band is pulled snug against the belt. Tighten the lock nut on brake adjustment screw. Make a test run. Stop engine and re–adjust brake band if necessary. See Figure 21.

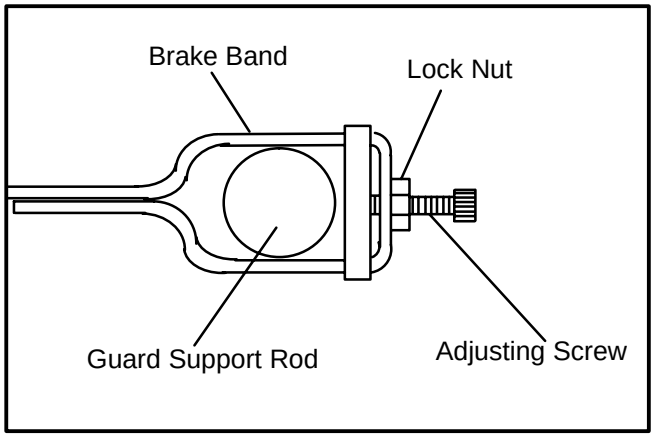


FIGURE 21

5. Re–install belt guard using original hardware.

NOTICE

- Make sure that cotter pin does not interfere with drive belt.
- Routine brake band adjustment is necessary as the band and belt wear.
- If brake band is not correctly attached to clutch control link, idler arm will rotate backward away from belt and no drive will occur.

STORAGE INSTRUCTIONS

WARNING

To prevent possible explosion or ignition of vaporized fuel, DO NOT store equipment with fuel in tank or carburetor in enclosure with open flame (Example: Furnace or water heater pilot light).

Daily Storage

- Check engine oil level and air filter element daily.
- Check oil level in gear case. Refer to Figure 20.
- Close fuel valve at bottom of fuel tank.
- Clean cutting blade (grass, dirt, etc.).

Extended Storage

Before the equipment is put into storage for any period exceeding 30 days, the following steps should be taken:

1. Drain all fuel from fuel tank and lines (use a hose or fuel line, routed from fuel tank shut–off to proper container).
2. Start engine and run until all fuel is used from the carburetor float bowl.
3. While engine is warm, drain the crankcase oil and replace with the proper weight of oil corresponding to the season when the equipment will next be used.
4. Remove the spark plug and squirt a small quantity of engine oil into the cylinder. Turn the engine over a few times to distribute the oil.
5. Lubricate all lubrication fittings.
6. Clean and oil cutting blade to prevent rust.

To put equipment into operation after an extended storage:

- Fill fuel tank with clean fresh fuel.
- Check crankcase oil level, and start engine.
- Check fuel system for fuel leaks.

TROUBLE SHOOTING CHART

POSSIBLE PROBLEM	PROBABLE CAUSE	REMEDY
Blade will not stay in ground	A. Bottom of blade is rounded off. B. Blade angle is not properly set.	A. Blade should be sharpened or replaced. See Fig. 6. B. Adjust blade angle per instructions on Page 8.
Root hair pinning on side or bottom of blade	A. Some types of turf and soil make this a problem.	A. Keep the blade extra sharp and ground back at a low angle.
Belt jumps off	A. Wrong type of belt construction. B. Too much slack when belt tightener is disengaged.	A. Use only the special Ryan factory belt. B. Slide engine forward and re–adjust control rod.
Locking levers not tight when pulled to limit of travel	A. Thread wear on locking nut, or nut not properly adjusted.	A. Tighten locking nut on opposite end of tie rod.
Belt grabs in pulleys and unit creeps when clutch is not engaged	A. Belt is old and frayed, or is not the type sent out with unit. B. Rust or paint in pulley grooves. C. Engine set too far forward.	A. Belt should be replaced with factory construction belt, designed for belt tightener clutches. B. Clean and polish pulleys. C. Move engine back.
Idler does not engage belt when clutch lever is moved forward.	A. Brake band is not attached to clutch link or is broken.	A. Re–attach upper end of brake band to clutch link or replace brake band.

TORQUE SPECIFICATIONS
HEX HEAD CAP SCREWS

The torque values shown should be used as a general guideline when specific torque values are not given.

U.S. Standard Hardware

Grade		**Shank Size** (Diameter in inches, fine or coarse thread)													
		1/4	**5/16**	**3/8**	**7/16**	**1/2**	**9/16**	**5/8**	**3/4**	**7/8**	**1**	**1 1/8**			
SAE grade 5 *	ft.-lbs.	9	18	31	50	75	110	150	250	378	583	782			
	N·m	12	24	42	68	102	150	203	339	513	790	1060			
SAE grade 8 **	ft.-lbs.	13	28	46	75	115	165	225	370	591	893	1410			
	N·m	18	38	62	108	156	224	305	502	801	1211	1912			
Flangelock Screw w/ Flangelock Nut	ft.-lbs.		24	40											
	N·m		33	54											

* Grade 5 marking –  Minimum commercial quality (Lower quality not recommended).

** Grade 8 marking – 

Metric Standard Hardware

Grade		**Shank Size** (Diameter in millimeters, fine or coarse thread)												
		M4	**M5**	**M6**	**M7**	**M8**	**M10**	**M12**	**M14**	**M16**	**M18**	**M20**	**M22**	**M24**	**M27**
Grade 8.8*	ft.-lbs.	1.5	3	5.2	8.2	13.5	24	43.5	70.5	108	142	195	276	353	530
	N·m	2	4	7	11	18	32	58	94	144	190	260	368	470	707
Grade 10.9**	ft.-lbs.	2.2	4.5	7.5	12	18.8	35.2	62.2	100	147	202	275	390	498	747
	N·m	3	6	10	16	25	47	83	133	196	269	366	520	664	996
Grade 12.9 ***	ft.-lbs.	2.7	5.2	8.2	15	21.8	43.5	75	119	176	242	330	471	596	904
	N·m	3.6	7	11	20	29	58	100	159	235	323	440	628	794	1205

* Grade 8.8 marking – 

** Grade 10.9 marking – 

*** Grade 12.9 marking – 

PARTS ILLUSTRATIONS

WARNING

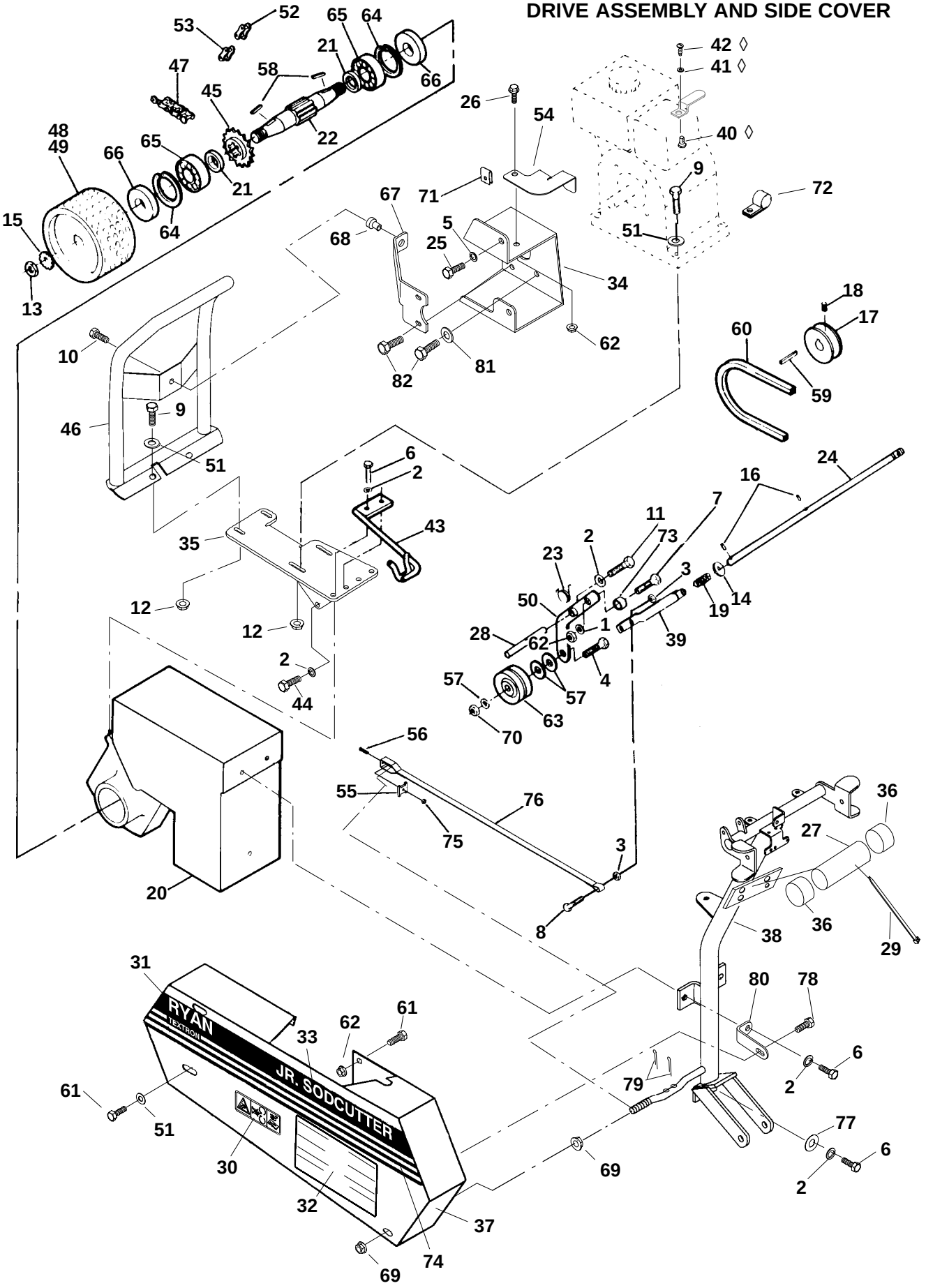
- **When replacement parts are required, use genuine RYAN parts or parts with equivalent characteristics including type, strength and material. Failure to do so may result in product malfunction and possible injury to the operator and/or bystanders.**
- **Illustrations in this manual are a reference guide for parts identification only. Since these illustrations may not depict actual positioning of component parts, they should not be used as an assembly diagram. Doing so may result in improper assembly leading to sudden failure.**

Textron Turf Care and Specialty Products, reserves the right to make changes at any time, without notice, in specifications and models and also to discontinue models and the accessories designed to be used on these models. The right is also reserved to change specifications or parts at any time without incurring any obligation to equip same on models manufactured prior to date of such change.

While the information contained in this parts manual is based on the latest product information available at the time of publication, the continuing accuracy of this parts manual cannot be guaranteed.

After you identify a part by the reference number and the six digit part number, (some part numbers may differ on the amount of digits) ***always*** read the description of the part to make sure it is the part you need.

DRIVE ASSEMBLY AND SIDE COVER



DRIVE ASSEMBLY AND SIDE COVER

Ref. No.	Part No.	Description	No. Req'd.
1	103867	Washer, 5/16	1
2	120177	Lockwasher, 3/8	13
3	130728	Nut, jam, 1/4–20	2
4	131794	Screw, 3/8–16 x 2	1
5	306325	Lockwasher, 5/16	4
6	306414	Screw, 3/8–16 x 1	12
7	306416	Screw, 5/16–18 x 1	5
8	306418	Screw, 1/4–20 x 1 1/8	1
9	306423	Screw, 5/16–18 x 1 3/4	4
10	548902	Screw, 5/16–18 x 1 1/4	1
11	306834	Screw, 3/8–16 x 3/4	1
12	548911	Nut, flangelock, 5/16–18	4
13	307665	Nut, jam, 3/4–16	2
14	308091	Washer, 1/2	2
15	309799	Lockwasher, 3/4	2
16	316938	Pin, spirol, 3/16" x 1"	2
17	517137	Pulley, 4" (102 mm)	1
18	548201	•Screw, set, 5/16–18 x 5/16	2
19	518535	Spring	1
20	520671	Gearcase	1
21	520722	Spacer	2
22	520723	Shaft	1
23	520785	Spring	1
24	521062	Rod	1
25	306369	Screw, 5/16–24 x 3/4	4
26	548971	Screw, 5/16–18 x 5/8	1
27	38541	Tube, document	1
28	521087	Shaft	1
29	823549	Tie, cable 15.5" (394 mm)	2
30	840697	Decal, warning	1
31	524281	Decal, RYAN 1" (25 mm)	1
32	524487	Decal, operation	1
33	524355	Decal, Jr. Sodcutter	1
34	524436	Bracket, belt guard	1
35	524473	Plate, engine mount	1
36	38061A	Cap, vinyl	2
37	540200	Guard	1
38	540212	Handlebar, mount	1
39	545247	Clevis	1
40◊	831888	Swivel	1
41◊	831889	Washer, swivel	1
42◊	831890	Screw, swivel	1
43	545380	Guide, belt	1
44	551094	Screw, 3/8–16 x 1 3/4	2
45	545626	Sprocket	1
46	540244	Guard, front	1
47	547398	Chain, #50 roller (47 links w/connector)	1
48	547408	Wheel, drive, 12" (305 mm)	2
49	547424	Wheel, drive, 18" (457 mm)	2
50	547428	Arm, idler	1
51	548155	Washer, 5/16	8
52	548480	Link, half	As Req'd
53	548481	Link, connector	As Req'd
54	524610	Bracket, belt guide	1
55♦	524574	Nut, brake band	1
56♦	800888	Set Screw, #10–32 x 1	1
57	548164	Washer, 3/8"	5
58	548365	Key, 1/4" x 1/4" x 1 1/4"	2
59	548366	Key, 3/16" x 3/16" x 1 1/4"	1
60	524582	V–belt, 66" (1676 mm)	1
61	548971	Screw, 5/16–18 x 5/8	5
62	548911	Nut, flangelock, 5/16–18	7
63	548942	Pulley, 3 1/4" (83 mm)	1
64	548952	Ring, retaining	2
65	548953	Bearing, ball	2
66	548954	Seal, oil	2
67	524773	Brace, guard	1
68	524800	Nut, isolation	1
69	800379	Nut, flangelock, 1/2–13	2
70	800698	Nut, crownlock, 3/8–16	5
71	800889	Nut, speed, 5/16–18	2
72	809092	Clamp	3
73	819337	Bushing	1
74	838494	Decal, stripe, 2.38" x 20' (60mm x 6.1M)	As Req'd
75♦	132520	Nut, #10–32	1
76♦	524573	Band, brake	1
77	548164	Washer, 3/8	1
78	548901	Screw, 5/16–18 x 1/2	1
79	306956	Pin, cotter, 1/8 x 3/4	2
80	520773	Bracket	1
81	548155	Washer, 5/16	1
82	548824	Screw, 5/16 x 3/4	4
*	524775	Filter, air cleaner, square, 6.0 Briggs & Stratton	1
*	524776	Filter, air pre–cleaner, square, 6.0 Briggs & Stratton	1
*	540385	Kit, spark arrestor, 6.0 Briggs & Strattion	1
*	524777	Filter, air , Honda, w/pre–cleaner	1
*	540374	Spark arrestor, Honda, w/M4 x 6 mtg screw	1

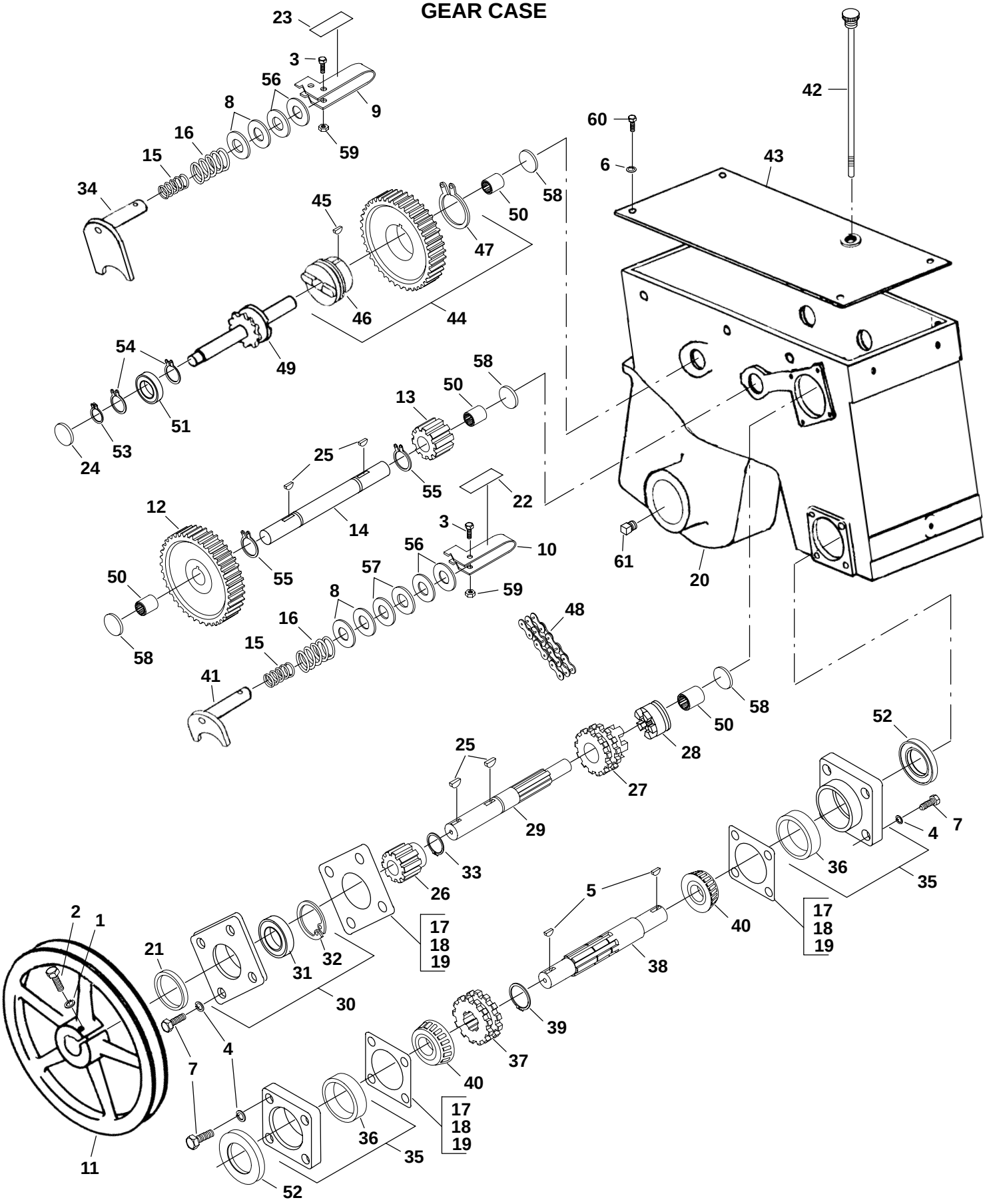
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN PRECEDING ASSEMBLY.

* Not illustrated.

◊ Honda Engines Only.

♦ Available in Brake Band Kit, Part No. 540274.

GEAR CASE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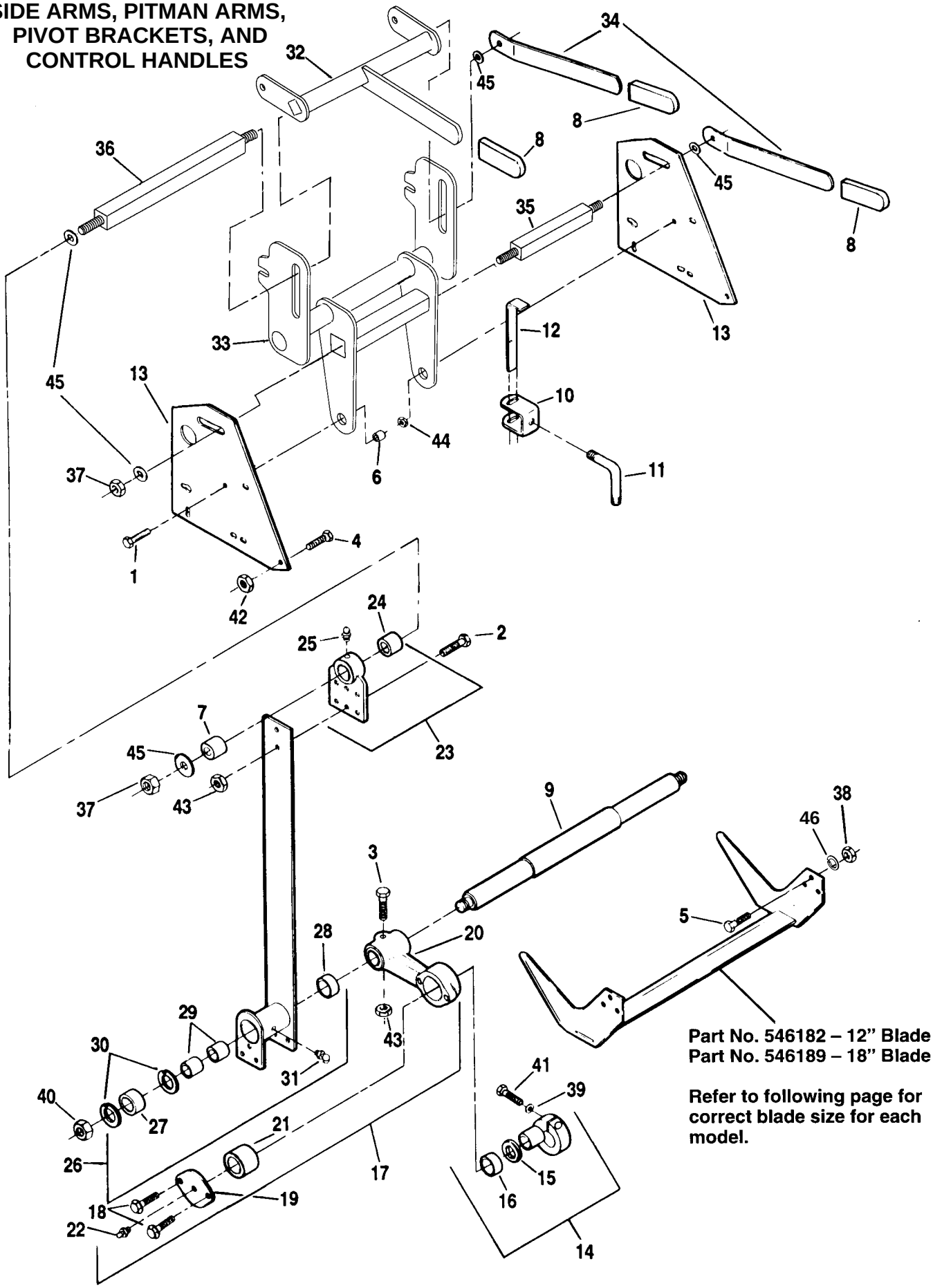
GEAR CASE

Ref. No.	Part No.	Description	No. Req'd.
1	120177	Lockwasher, 3/8"	1
2	131794	Screw, 3/8–16 x 2"	1
3	302030	Screw, 1/4–20 x 1 1/4"	2
4	306325	Lockwasher, 5/16"	12
5	306367	Key, #9 woodruff	2
6	306396	Lockwasher, 1/4"	4
7	306416	Screw, 5/16–18 x 1 1/4"	12
8	515891	Spacer, .010 (.254 mm)	4
9	515896	Handle, wheel shifter	1
10	515897	Handle, blade shifter	1
11	515901	Pulley	1
12	516145	Gear	1
13	516150	Gear	1
14	516156	Shaft, idler	1
15	516194	Spring, inner	2
16	516196	Spring, outer	2
17	520238	Shim, .005 (.13mm)	As Req'd
18	520239	Shim, .010 (.25mm)	As Req'd
19	520240	Shim, .020 (.51mm)	As Req'd
20	520671	Case, gear	1
21	521941	Spacer	1
22	524485	Decal, blade shifter	1
23	524486	Decal, wheel shifter	1
24	548931	Plug, expansion	1
25	515016	Key, woodruff (special)	4
26	516151	Gear, w/spacer	1
27	516162	Sprocket	1
28	516172	Clutch	1
29	516173	Shaft	1
30	544215	Cage, bearing	1
31	548131	•Bearing	1
32	548326	•Ring, lock	1
33	548327	Ring, lock	1
34	544217	Shifter	1
35	545050	Cage, bearing	1
36	814474	•Cup, taper bearing	1
37	516160	Sprocket	1
38	521253	Shaft	1
39	548336	Ring, lock	1
40	814473	Bearing, cone	2
41	545710	Shaft	1
42	546033	Dipstick	1
43	546037	Cover, case	1
44	546214	Gear	1
45	306367	•Key, 3/16" x 3/4"	1
46	516222	•Hub	1
47	548329	•Ring, lock	1
48	546937	Chain, complete, #50 double strand	1
	548483	•Link, connector	1
49	547427	Sprocket and shaft, complete	1
50	548080	Bearing, needle	4
51	548096	Bearing, ball	1
52	548272	Seal, oil	2
53	548321	Ring, lock	1
54	548323	Ring, lock	2
55	548324	Ring, lock	2
56	548477	Spacer, .060 (1.58 mm)	4
57	548478	Spacer, .030 (.793 mm)	5
58	548482	Plug, expansion	4
59	548597	Nut, 1/4–20 lock	2
60	548726	Screw, 1/4–20 x 3/4", rd. head	4
61	548775	Plug, 1/4–18 NPT, socket head	1

• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN PRECEDING ASSEMBLY

SIDE ARMS, PITMAN ARMS, PIVOT BRACKETS, AND CONTROL HANDLES



Part No. 546182 – 12" Blade
Part No. 546189 – 18" Blade

Refer to following page for correct blade size for each model.

SIDE ARMS, PITMAN ARMS, PIVOT BRACKETS, AND CONTROL HANDLES

Ref. No.	Part No.	Description	No. Req'd.
1	306414	Screw, 3/8–16 x 1"	2
2	306416	Screw, 5/16–18 x 1"	4
3	306423	Screw, 5/16–18 x 1 3/4"	2
4	515008	Screw, 7/16–20 x 1"	6
5	515011	Screw, 5/16–24 x 1" (grade 8)	6
6	515729	Bushing	2
7	516067	Bushing	2
8	521144	Cover, handle	3
9	521435	Shaft, lower	1
10	521469	Clamp, saddle	1
11	521470	Handle, locking	1
12	521471	Gauge, depth	1
13	521472	Bracket, pivot	2
14	545436	Eccentric, complete	2
15	521424	•Ring	1
16	548814	•Race, inner	1
17	545437	Arm, pitman, complete	2
18	112050	•Screw, 1/4–20 x 5/8" tapping	2
19	521425	•Plate, cover	1
20	521427	•Arm, pitman	1
21	521428	•Bearing, needle	1
22	548226	•Fitting, lubrication	1
23	545443	Bracket, pivot, complete	2
24	521429	•Bearing, bronze	1
25	548224	•Fitting, lubrication, 1/4–28	1
26	545445	Arm, side, complete	2
27	521436	•Bearing, ball	1
28	521438	•Seal, oil	1
29	548138	•Bearing, needle	2
30	548340	•Ring, lock	2
31	831405	•Fitting, lubrication, 1/4–28, 90°	1
32	540209	Lever, depth control, complete	1
33	540210	Frame, "H", complete	1
34	545449	Handle, complete	2
35	524549	Rod, tie, 8 3/16" (208 mm)	1
36	524550	Rod, tie, 14 3/4" (375 mm)	1
37	548051	Nut, 1/2–13 centerlock	2
38	548079	Nut, 5/16–24,	6
39	548183	Lockwasher, 5/16" spring	2
40	800198	Nut, 1/2–20 crownlock	2
41	800513	Screw, 5/16–18 x 1 1/4" (grade 8)	2
42	548061	Nut, 7/16–20 lock	6
43	800697	Nut, 5/16–18 crownlock flange	6
44	800698	Nut, 3/8–16 crownlock flange	5
45	830287	Washer, special	6
46	306325	Lockwasher, 5/16	6

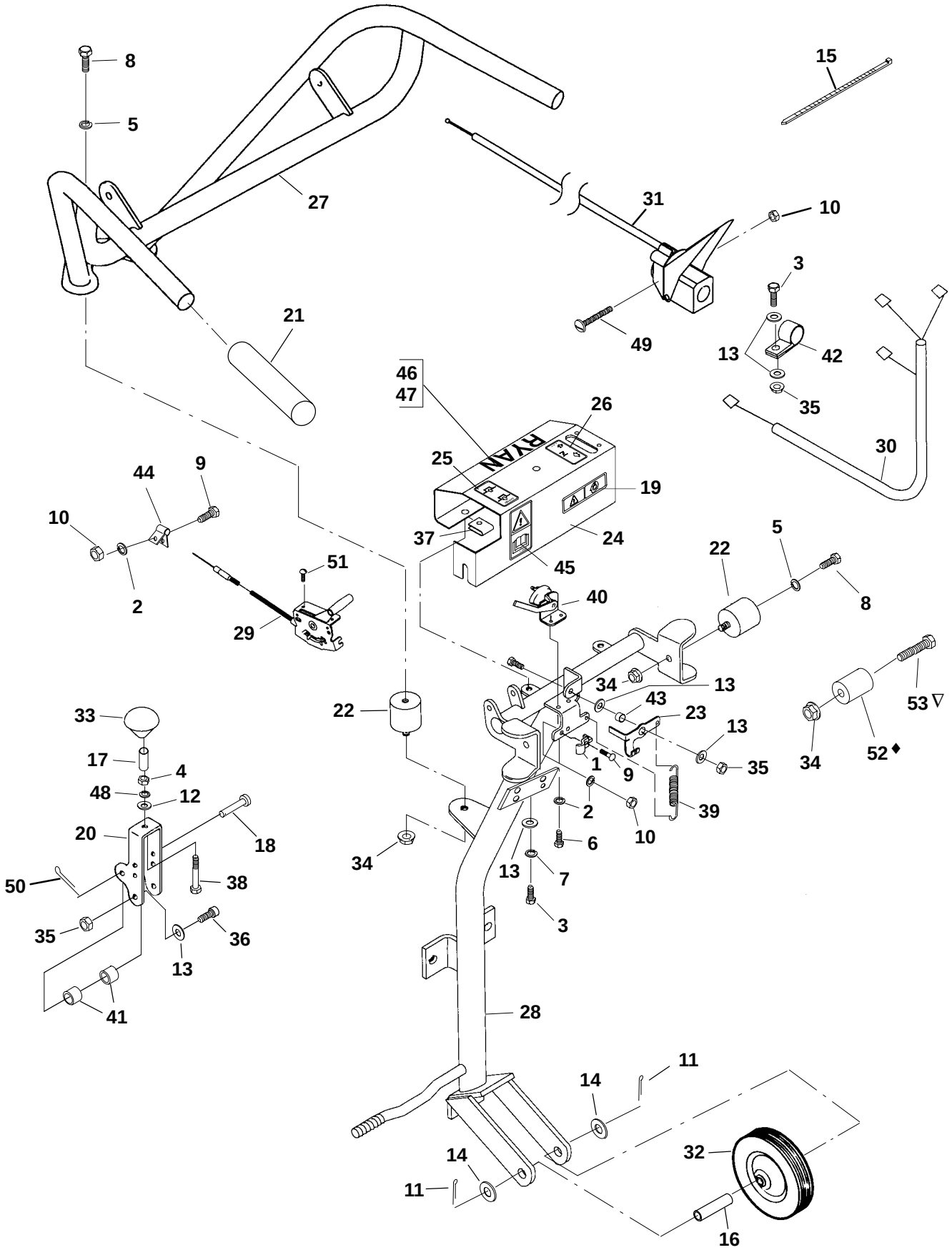
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN PRECEDING ASSEMBLY

STANDARD BLADES

For all types of sod. Designed especially for cutting the finest turf whether in warm or cool season grasses. Can also be used to advantage in hard ground or where rocky conditions prevail.

Blade Size	Blade Part No.	Model Used On
12"	546182	544844C 544944
18"	546189	544845C 544945

HANDLEBAR ASSEMBLY



HANDLEBAR ASSEMBLY

Ref. No.	Part No.	Description	No. Req'd.
1	111898	Clamp, cable	1
2	120052	Lockwasher, #10	3
3	300646	Screw, 1/4–20 x 3/4"	3
4	306319	Nut, 3/8–24	1
5	306325	Lockwasher, 5/16"	2
6	306391	Screw, #10–32 x 3/8"	2
7	306396	Lockwasher, 1/4"	2
8	306450	Screw, 5/16–18 x 3/4"	3
9	306514	Screw, #10–24 x 1/2"	5
10	306531	Nut, #10–24	3
11	306956	Pin, cotter, 1/8" x 3/4"	4
12	120177	Lockwasher, 3/8"	1
13	308090	Washer, 1/4"	6
14	308091	Washer, 1/2"	2
15	320107	Tie, wire, 7 1/2" (191 mm)	3
16	515726	Shaft	1
17	516544	Bushing	1
18	516634	Pin, clevis, 3/8" x 1 1/4"	1
19	524538	Decal, sound level warning	1
20	522585	Handle, control	1
21	522727	Grip, handle	2
22	829148	Mount, rubber isolation	3
23	524472	Arm, pivot	1
24	540347	Cover, control	1
25	524480	Decal, clutch control	1
26	524481	Decal, throttle control	1
27	540211	Handlebar	1
28	540212	Support, handlebar	1
29	540326	Control, throttle	1
30	540229	Wire	1
31	540232	Control, operator presence	1
32	546140	Wheel	1
33	548171	Knob	1
34	548911	Nut, flangelock, 5/16–18	3
35	800059	Nut, centerlock, 1/4–20	1
36	800492	Screw, 1/4–20 x 5/8"	1
37	800495	Nut, speed, 1/4–20	2
38	800883	Screw, 3/8–24 x 2 1/4"	1
39	805421	Spring, extension	1
40	806800	Switch, electric	1
41	524577	Bushing	2
42	809092	Clamp	3
43	814585	Bushing	1
44	515755	Clip	1
45	00934910	Decal, warning, read operators manual	1
46	524281	Decal, RYAN, 1" (25mm)	1
47	838494	*Decal, stripe, 2.38" x 20' (60mm x 6.1M)	As Req'd
48	306981	Washer, 3/8	1
49	800896	Screw, #10–25 x 3/4", tapping	1
50	306328	Pin, cotter, 3/32" x 3/4"	1
51	800452	Screw, #8–16 x 7/32, tapping	2
52	524551	♦Spacer, steel	3
53	306464	∇Screw, 5/16–18 x 2 1/2	3

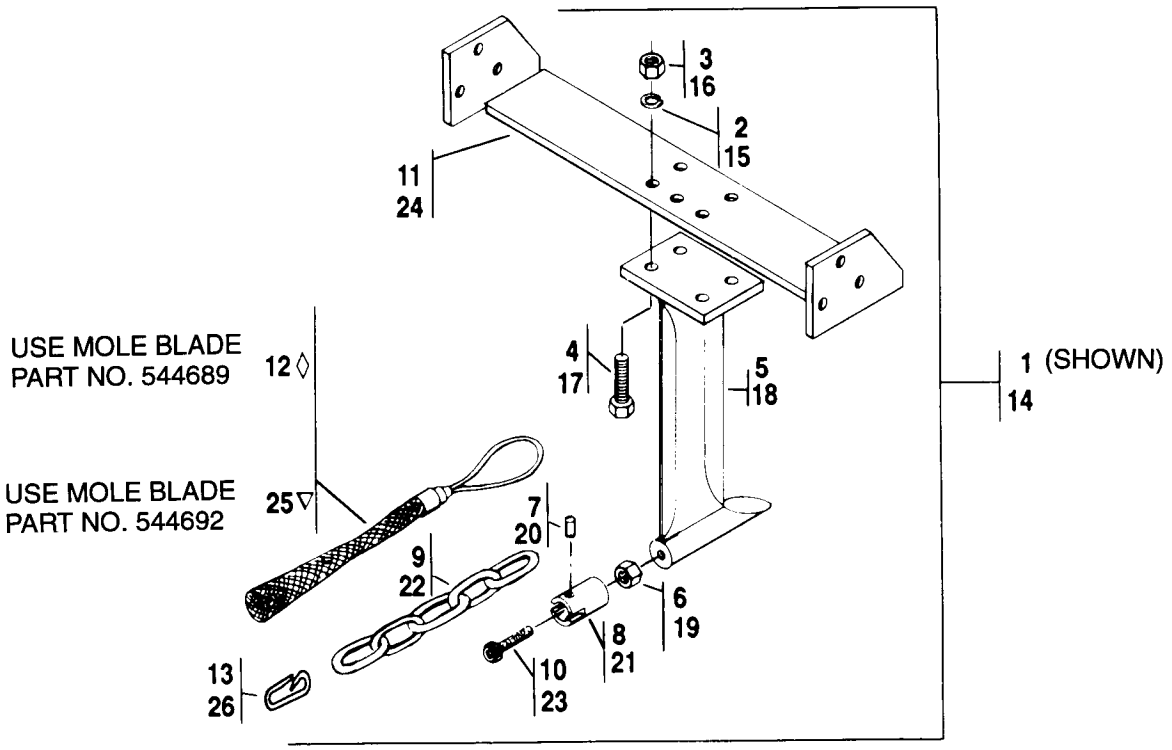
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN PRECEDING ASSEMBLY.

* Not Illustrated

♦ May be used in place of the rubber isolation mount.

∇ Used to attach spacer, part no. 524551.

MOLE BLADE KIT
ACCESSORY



Ref. No.	Part No.	Description	No. Req'd.	Ref. No.	Part No.	Description	No. Req'd.
1	544670	Kit, mole blade, 3/4" dia. (19 mm) 12" Sodcutter	1	14	544673	Kit, mole blade, 1 1/4" dia. (32 mm) 12" Sodcutter	1
*	544725	Kit, mole blade, 3/4" dia. (19 mm) 18" Sodcutter	1	*	544728	Kit, mole blade, 1 1/4" dia. (32 mm) 18" Sodcutter	1
2	120177	•Lockwasher, 3/8"	4	15	120177	•Lockwasher, 3/8"	4
3	306319	•Nut, 3/8–24	4	16	306319	•Nut, 3/8–24	4
4	306866	•Screw, 3/8–24 x 1 1/4"	4	17	306866	•Screw, 3/8–24 x 1 1/4"	4
5	544689	•Blade, mole, 3/4" dia. (19 mm)	1	18	544692	•Blade, mole, 1 1/4" dia. (32 mm)	1
6	306932	••Nut, 5/16–18	1	19	306932	••Nut, 5/16–18	1
7	316943	••Pin, spirol, 1/4" x 3/4"	1	20	316943	••Pin, spirol 1/4" x 3/4"	1
8	515691	••Swivel	1	21	515691	••Swivel	1
9	547052	••Chain	1	22	547052	••Chain	1
10	800513	••Screw, 5/16–18 x 1 1/4" grade 8	1	23	800513	••Screw, 5/16–18 x 1 1/4" grade 8	1
11	546089	•Bracket, mounting, 12" (305 mm)	1	24	546089	•Bracket, mounting, 12" (305 mm)	1
*	546092	•Bracket, mounting, 18" (458 mm)	1	*	546092	•Bracket, mounting, 18" (458 mm)	1
12	548613	◊•Grip, kellem, 3/4" dia. (19.05 mm)	1	25	548616	∇•Grip, kellem, 1 1/4" dia. (32 mm)	1
13	808222	•Link, chain connector	1	26	808222	•Link, chain connector	1

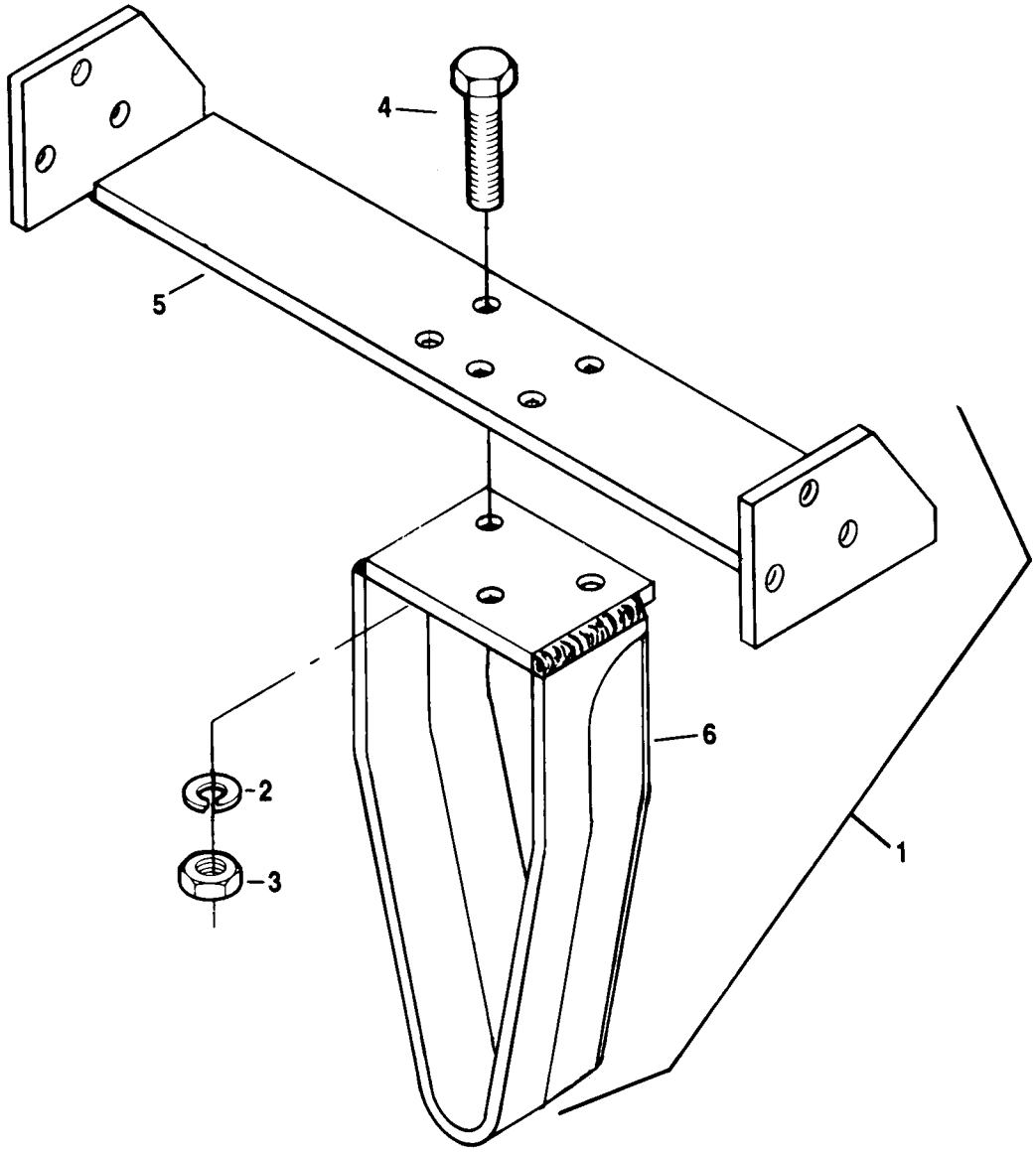
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN PRECEDING ASSEMBLY

* Not Illustrated

◊ Use with 3/4" mole blade

∇ For use with 1 1/4" mole blade

TRENCHING BLADE ACCESSORY
FOR MODEL 544844B, 544844C, 544944

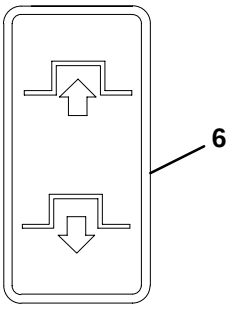


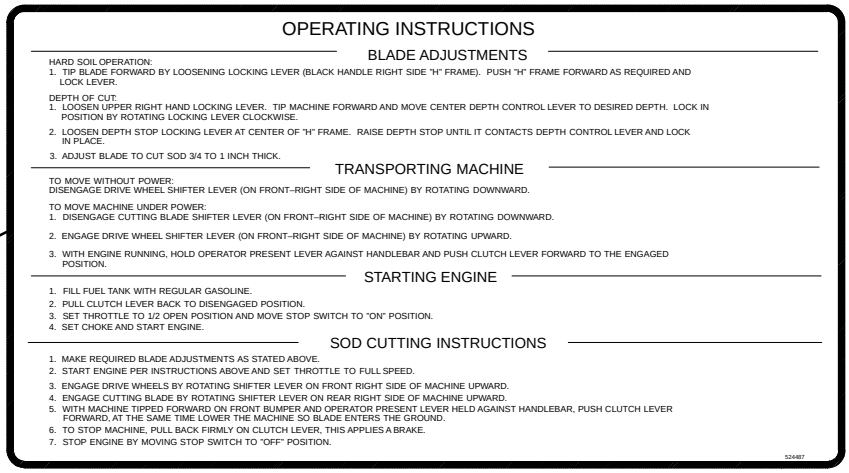
Ref. No.	Part No.	Description	No. Req'd.
1	546199	Blade set, trenching, complete	1
2	120177	•Lockwasher, 3/8"	3
3	306319	•Nut, 3/8–24	3
4	306866	•Screw, 3/8–24 x 1 1/4"	3
5	546089	•Bracket, mounting, 12" (305 mm)	1
6	546198	•Blade, trenching	1

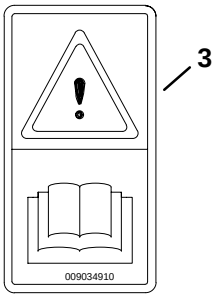
• INDENTED PART NAMES INDICATE THESE PARTS ARE INCLUDED IN PRECEDING ASSEMBLY

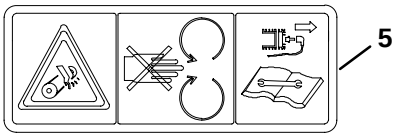
Note: The trenching blade set includes parts for installation on earlier model sodcutters. Discard any parts not required for installation on model 544844B and newer.

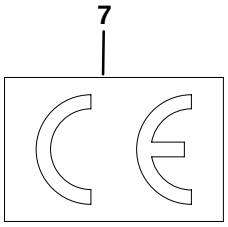
DECALS

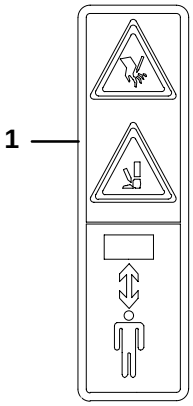


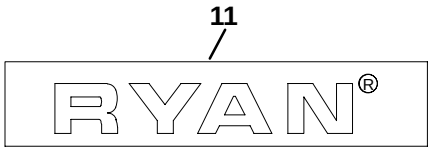


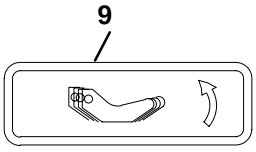


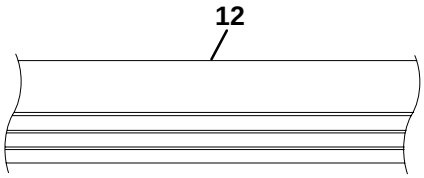


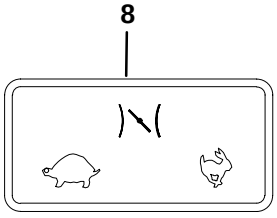


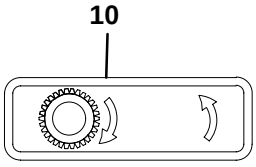












Ref. No.	Part No.	Description	No. Req'd.
1	524541	Decal, warning, hands and feet	1
2	524487	Decal, operating instructions .	1
3	009034910	Decal, warning, read operators manual	1
4	524538	Decal, warning, hearing	1
5	840697	Decal, warning, hands in belt .	1
6	524480	Decal, clutch control	1
7	009039290	Decal, E.C.	1

Ref. No.	Part No.	Description	No. Req'd.
8	524481	Decal, throttle control	1
9	524485	Decal, blade shifter	1
10	524486	Decal, wheel shifter	1
11	524281	Decal, RYAN, 1"	1
12	838494	Decal, stripe, 2.38" x 20' (60mm x 6.1M)	As Req'd
13	524355	Decal, Jr. Sod Cutter	1

NOTES

NOTES