



PROTEA TURF EQUIPMENT
Manufacturers of Industrial Lawnmowers, Scarifiers & Sodcutters

Reg. No. CK 1989/023716/23
Vat Reg. No. 4830119907

PROTEA SOD CUTTER MODEL 460



OPERATING INSTRUCTIONS AND SPARE PARTS MANUAL



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For further information on any Protea products, please visit our website www.proteamachines.com

LAWNMOWER SAFETY PRECAUTIONS

1. Know your controls. Read the owner's manual carefully. Learn how to stop engine quickly in the event of an emergency.
2. Ensure the lawn is clear of sticks, stones, wire and debris. They could be thrown by the blade.
3. Stop the engine and disconnect the spark plug wire before checking or working on the mower.
4. Before use, always visually inspect to see that the blade bolts and cutter assembly are not worn or damaged. Replace worn or damaged blades and bolts in sets to preserve balance.
Damaged blades and worn bolts are a major hazard.
5. Check all nuts, bolts and screws often. Always ensure the mower is in a safe operating condition. Use only replacement parts made and guaranteed by the original manufacturer of your mower.
6. Add fuel **BEFORE** starting engine. Avoid spilling gasoline and do not fill the tank while the engine is running or while you are smoking.
7. Do not mow whilst people, especially children or pets, are in the mowing area.
8. Never use the mower unless the grass catcher, or guards provided by the manufacturer, are in position.
9. Do not mow barefoot or in open sandals. Wear long trousers and heavy shoes.
10. Disengage all blade and drive clutches before starting.
11. Start the engine carefully with feet well away from the blades.
12. Do not operate the engine in a confined space where exhaust fumes (carbon monoxide) can collect.
13. Stop the engine whenever you leave the mower unattended, even for a moment.
14. Stop the engine before pushing the mower across gravel drives, walks or roads.
15. Do not allow children or people unfamiliar with these instructions operate the mower.
16. On slopes or wet grass, be extra careful of your footing.
17. Never cut grass by pulling the mower towards you.
18. Never use an electrically powered mower in the rain or when the grass is wet.
19. Be extremely careful when using a ride on mower on slopes.
20. Never leave wind-up starters in a wound condition.
21. Do not over speed the engine or alter governor settings. Excessive speed is dangerous and shortens mower life.
22. It is advisable to wear suitable eye protection when operating a mower.
23. Turn the fuel off at the conclusion of mowing and reduce the throttle setting during engine run-out.
24. Store fuel in a cool place in a container specifically designed for the purpose.
25. Never pick up or carry a mower when it is operating.

SODCUTTER MODEL 460

TO OPERATE TURF CUTTER AND ATTACHMENTS

Start motor by using choke and throttle lever. Lift Sodcutter by the handle and adjust depth of cut. Have motor running about 2000 revolutions per minute. Engage cutter bar so that it oscillates, then engage drive wheels, and lower Sodcutter slowly on to the grass. The cutter blade will automatically dig into the earth as you move. At the end of the run, disengage both cutter and drive and then lift blade clear off ground by lifting machine. The Sodcutter blade is adjustable for hard, soft and normal (center position) soil conditions.

MAINTENANCE INSTRUCTIONS FOR SOD CUTTER

- Keep drive belts adjusted firmly, using adjustable tensioning screws
- Grease countershaft every three (3) months
- Grease wheel bearing every six (6) months
- Grease conrod bushes (120223) and bearings (1124440) daily
- Check machine regularly for loose bolts
- To sharpen turf cutter blade, re-grind top and sides
- Operating conditions should be taken into account when determining maintenance intervals
- **Important:** Maintain strong camshaft V belt (3602060 / 3602061) tensioning at all times. As soon as the tension slackens off, drop the camshaft (120200) downwards into the next slotted hole – both sides. Finer adjustments can be made with the adjuster screw (120153) on the tensioner assembly.

SPECIFICATIONS

ENGINES

- Honda GX240HX (8HP) Petrol
Driven with 6:1 reduction gear box
- Kohler CH395 (9HP) Petrol
Driven with 6:1 reduction gear box

ADJUSTMENTS

Blade depth of cut: by pin-in-hole adjuster
“V” Belts: jacking bolts/sliding bearings
Width of cut: 460mm (18 inch)
Cutting Depth: 6-100mm (1/4 – 4 inch)

TRANSMISSION

- A) Three (3) “V” Belts to crank arm
- B) Three (3) V Belts to drive rollers
- C) One (1) “V” Belt from motor to counter shaft

CUTTING TIME

Approximately 1500-2000 square meters per day, depending on soil condition

BEARINGS

Selected ball and pillar block bearings

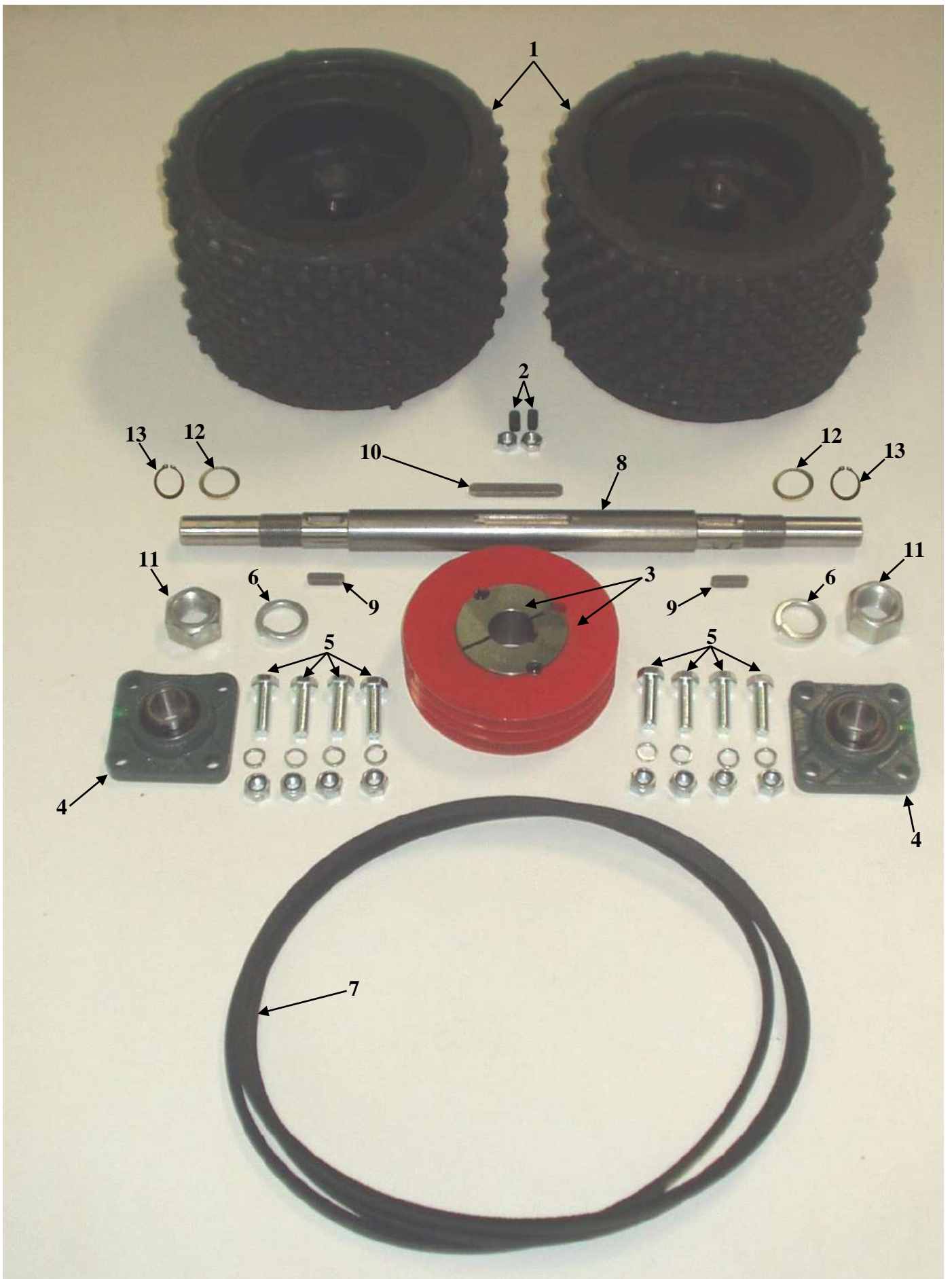
CUTTING BLADE

Heavy-duty precision machined, the material is high tensile, hardened tempered

PLEASE NOTE: SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE

SPARE PARTS

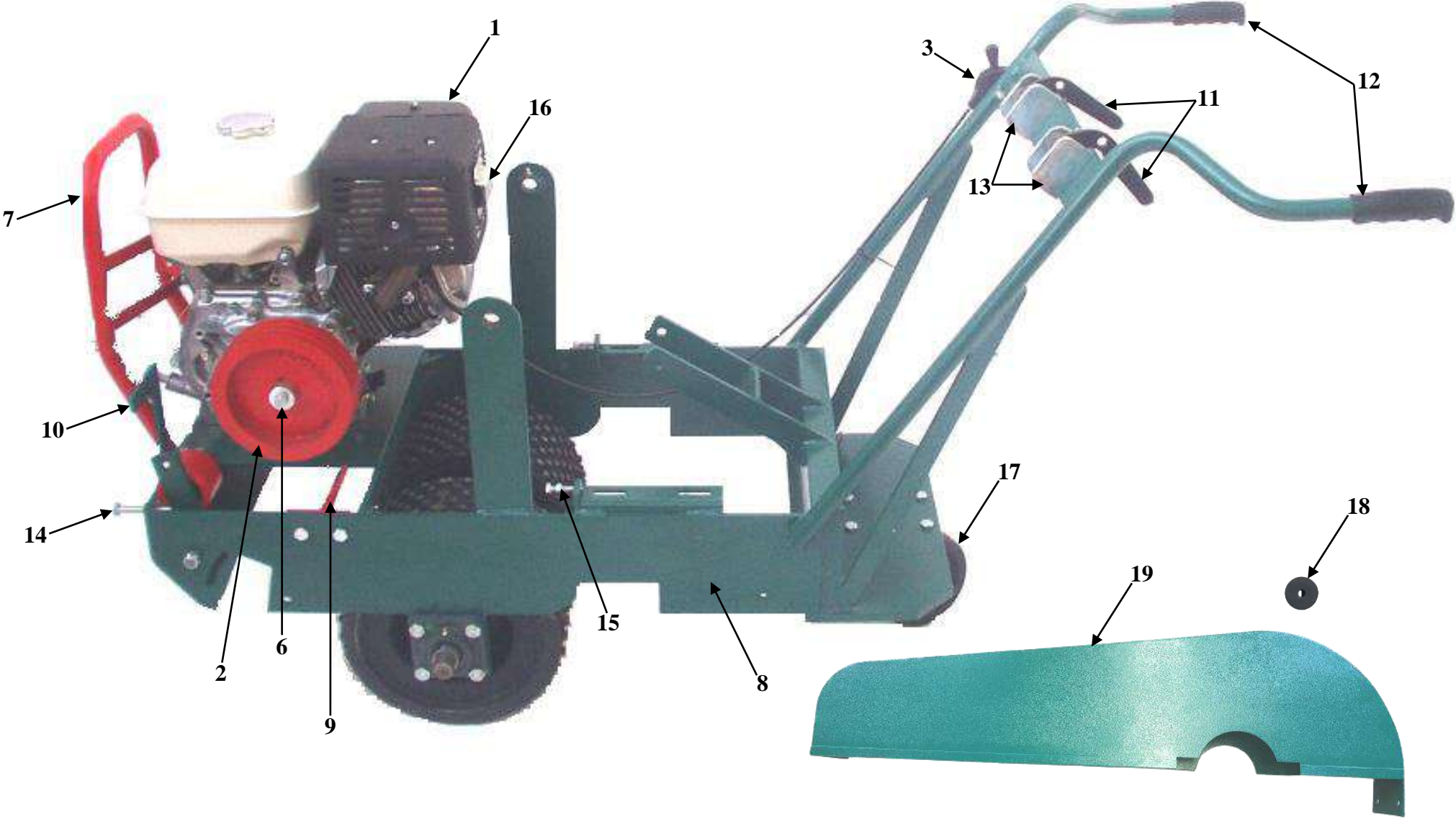
FIGURE 1: FRONT WHEEL ASSEMBLY



REFER FIG. 1

| <u>ILLUS. NO</u> | <u>DESCRIPTION</u> | <u>PART NO</u> |
|------------------|--|----------------|
| 1 | FRONT WHEEL (EACH) | 120340 |
| 2 | M10x20 GRUB SCREW + M10 NUT | STANDARD |
| 3 | FRONT WHEEL PULLEY (COMES WITH TAPER LOCK) | 120155 |
| 4 | FRONT WHEEL BEARING | 120446 |
| 5 | M12x40 SET SCREW + M12 SPRING WASHER + M12 NYLOC NUT | STANDARD |
| 6 | M30 FRONT WHEEL SPRING WASHER | STANDARD |
| 7 | "V" BELT - FRONT WHEEL (3 PER MACHINE) | 3602050 |
| 8 | FRONT WHEEL SHAFT | 120341 |
| 9 | FRONT WHEEL KEY (2 PER MACHINE) | 120514 |
| 10 | FRONT WHEEL PULLEY KEY | 120515 |
| 11 | 1 1/8" FRONT WHEEL LOCKNUT | STANDARD |
| 12 | SHAFT WASHER | 120585 |
| 13 | 25mm EXTERNAL CIRCLIP | 1501052 |

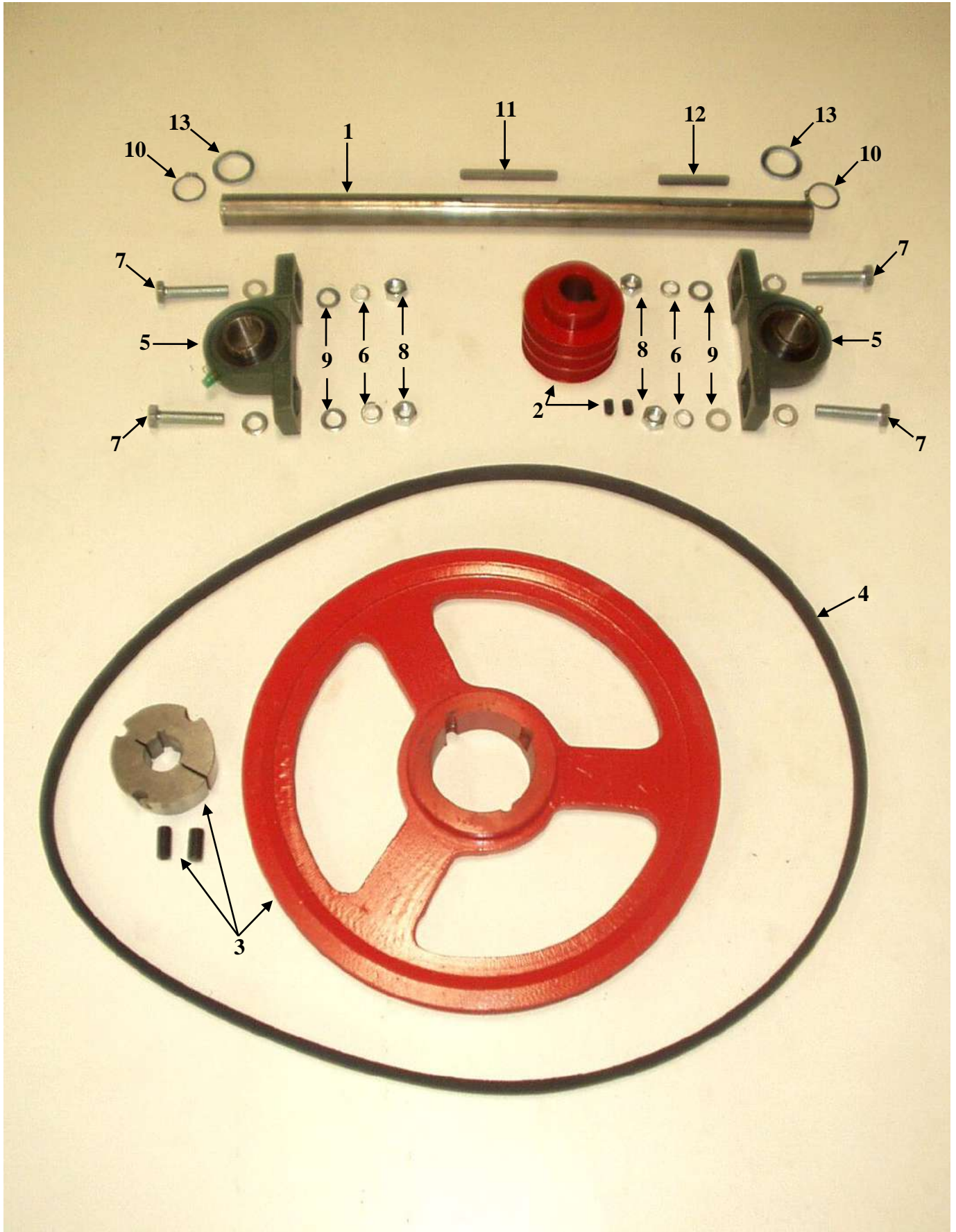
FIGURE 2: MAIN FRAME ASSEMBLY



REFER FIG. 2

| <u>ILLUS. NO</u> | <u>DESCRIPTION</u> | <u>PART NO</u> |
|------------------|--|----------------|
| 1 | HONDA GX240HX - 6:1 REDUCTION | 6200500H |
| 1 | KOHLER CH395 - 6:1 REDUCTION | 6200500K |
| 2 | ENGINE PULLEY: HONDA | 120151 |
| 2 | ENGINE PULLEY: KOHLER | 120150 |
| 3 | THROTTLE CABLE | 656720 |
| 4 | M8x25 ENGINE PULLEY GRUB SCREW (NOT SHOWN) | STANDARD |
| 5 | ENGINE PULLEY KEY (NOT SHOWN) | 120516 |
| 6 | ENGINE PULLEY CAP & BOLT | 120154 |
| 7 | ENGINE GUARD: HONDA | 120191 |
| 7 | ENGINE GUARD: KOHLER | 120192 |
| 8 | MAIN FRAME | 120230 |
| 9 | "V" BELT GUIDE | 120519 |
| 10 | BELT GUARD BRACKET | 120555 |
| 11 | BELT TENSIONER LEVER | 120152 |
| 12 | HANDLE GRIPS (SET) | 1851069 |
| 13 | BELT TENSIONER LEVER BRACKET | 120509 |
| 14 | M10x70 SET SCREW + M10 NUT | STANDARD |
| 15 | M8x40 SET SCREW + M8 NUT | STANDARD |
| 16 | EXHAUST DEFLECTOR | 658362 |
| 17 | SWIVEL CASTOR WHEEL | 6361800 |
| 18 | BELT GUARD RUBBER | 120497 |
| 19 | BELT GUARD | 120495 |

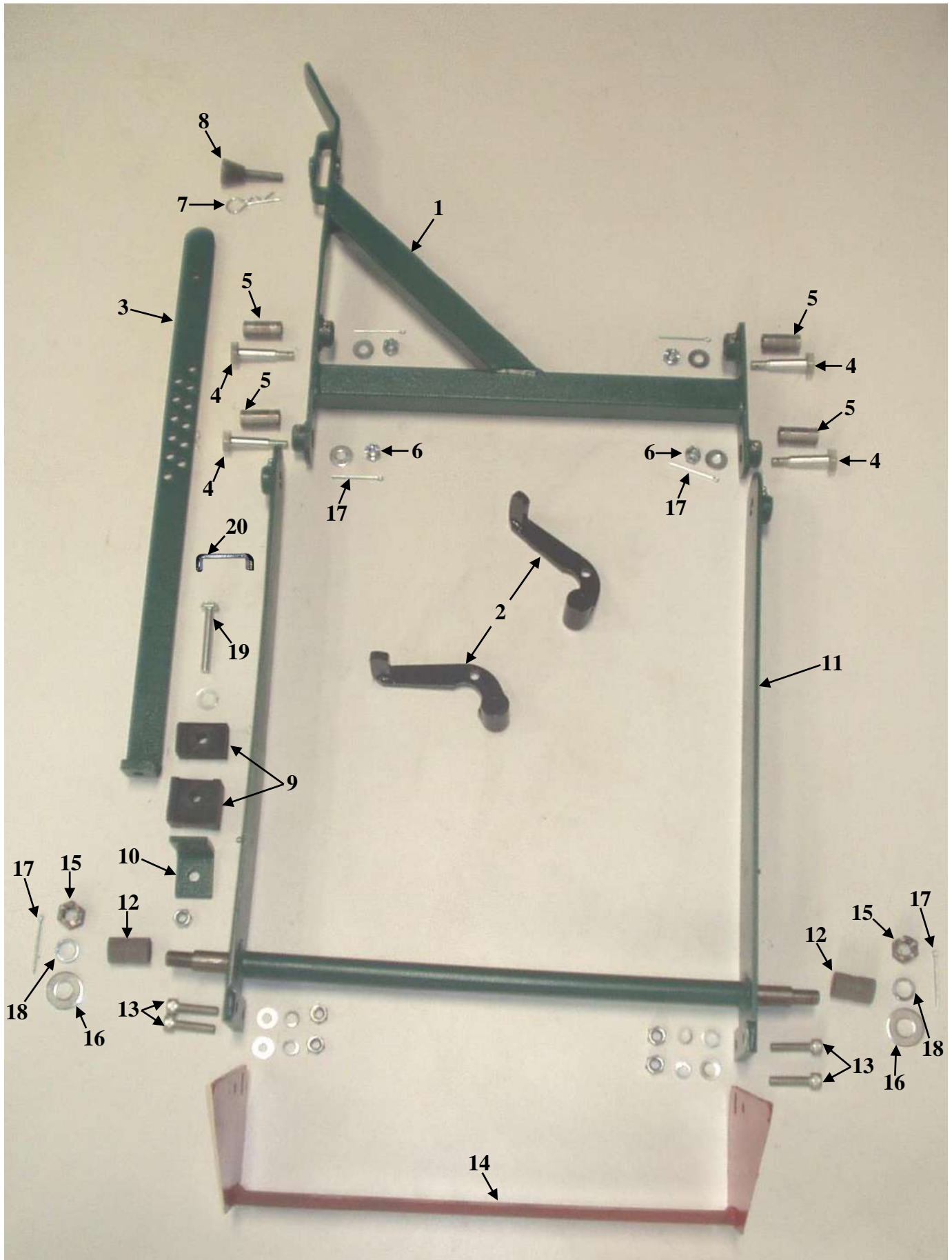
FIGURE 3: COUNTERSHAFT ASSEMBLY



REFER FIG. 3

| <u>ILLUS. NO</u> | <u>DESCRIPTION</u> | <u>PART NO</u> |
|------------------|---|----------------|
| 1 | COUNTERSHAFT | 120331 |
| 2 | COUNTERSHAFT PULLEY: 3 GROOVES (COMES WITH GRUB SCREWS) | 120330 |
| 3 | COUNTERSHAFT PULLEY: 1 GROOVE (COMES WITH TAPERLOCK) | 120332 |
| 4 | "V" BELT - COUNTERSHAFT (1 PER MACHINE) | 3602040 |
| 5 | COUNTERSHAFT BEARINGS | 1125550 |
| 6 | M12 SPRING WASHER | STANDARD |
| 7 | M12x40 SET SCREW | STANDARD |
| 8 | M12 NUT | STANDARD |
| 9 | M12 FLAT WASHER | STANDARD |
| 10 | 25mm EXTERNAL CIRCLIP | 1501052 |
| 11 | COUNTERSHAFT KEY (LONG) | 120512 |
| 12 | COUNTERSHAFT KEY (SHORT) | 120513 |
| 13 | SHAFT WASHER | 120585 |

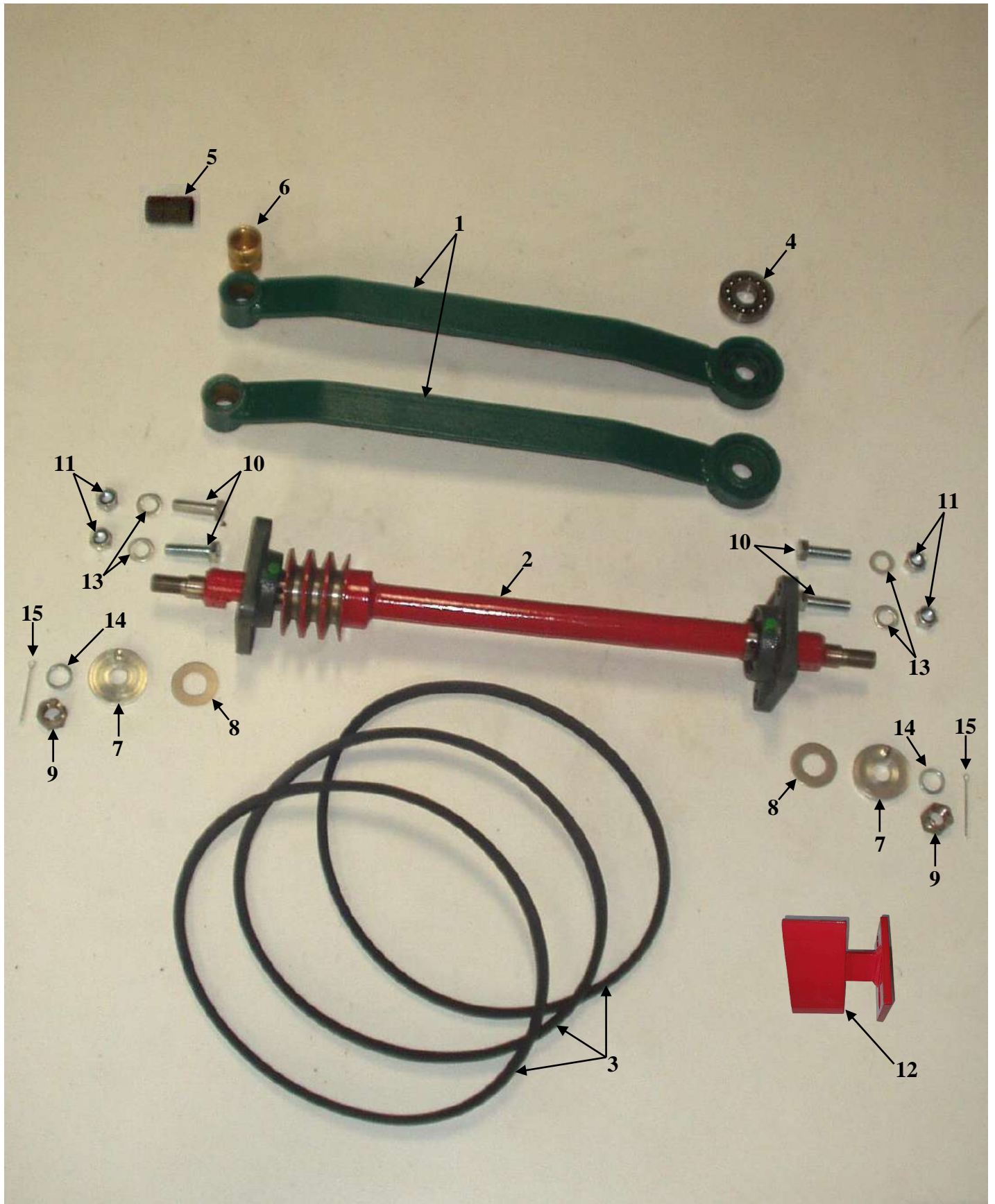
FIGURE 4: HEIGHT ADJUSTER LEVER ASSEMBLY



REFER FIG. 4

| <u>ILLUS. NO</u> | <u>DESCRIPTION</u> | <u>PART NO</u> |
|------------------|--|----------------|
| 1 | HEIGHT ADJUSTER LEVER | 120020 |
| 2 | BELT TENSIONER LEVER | 120152 |
| 3 | HEIGHT ADJUSTER ARM | 120201 |
| 4 | HEIGHT ADJUSTER LEVER PIVOT BOLT | 120212 |
| 5 | PIVOT SLEEVE | 120211 |
| 6 | M10 CASTLE NUT | 2641303 |
| 7 | HEIGHT ADJUSTER CLIP | 120203 |
| 8 | HEIGHT ADJUSTMENT PIN | 120202 |
| 9 | HEIGHT ADJUSTER RUBBERS (SET) | 120510 |
| 10 | HEIGHT ADJUSTER SUPPORT ANGLE | 120511 |
| 11 | SIDE ARM | 120210 |
| 12 | SIDE ARM BUSH | 120213 |
| 13 | M10x40 CAP SCREW + FLAT WASHER + SPRING WASHER + NYLOC NUT | STANDARD |
| 14 | SOD CUTTER BLADE | 120174 |
| 15 | 5/8" UNF CASTLE NUT | 2641300 |
| 16 | SIDE ARM GREASE COVER | 120590 |
| 17 | M3x50 SPLIT PIN | STANDARD |
| 18 | M16 SPRING WASHER | STANDARD |
| 19 | M10x70 SET SCREW + M10 FLAT WASHER + 2xM10 NUTS | STANDARD |
| 20 | HEIGHT ADJUSTER REINFORCING PLATE | 120700 |

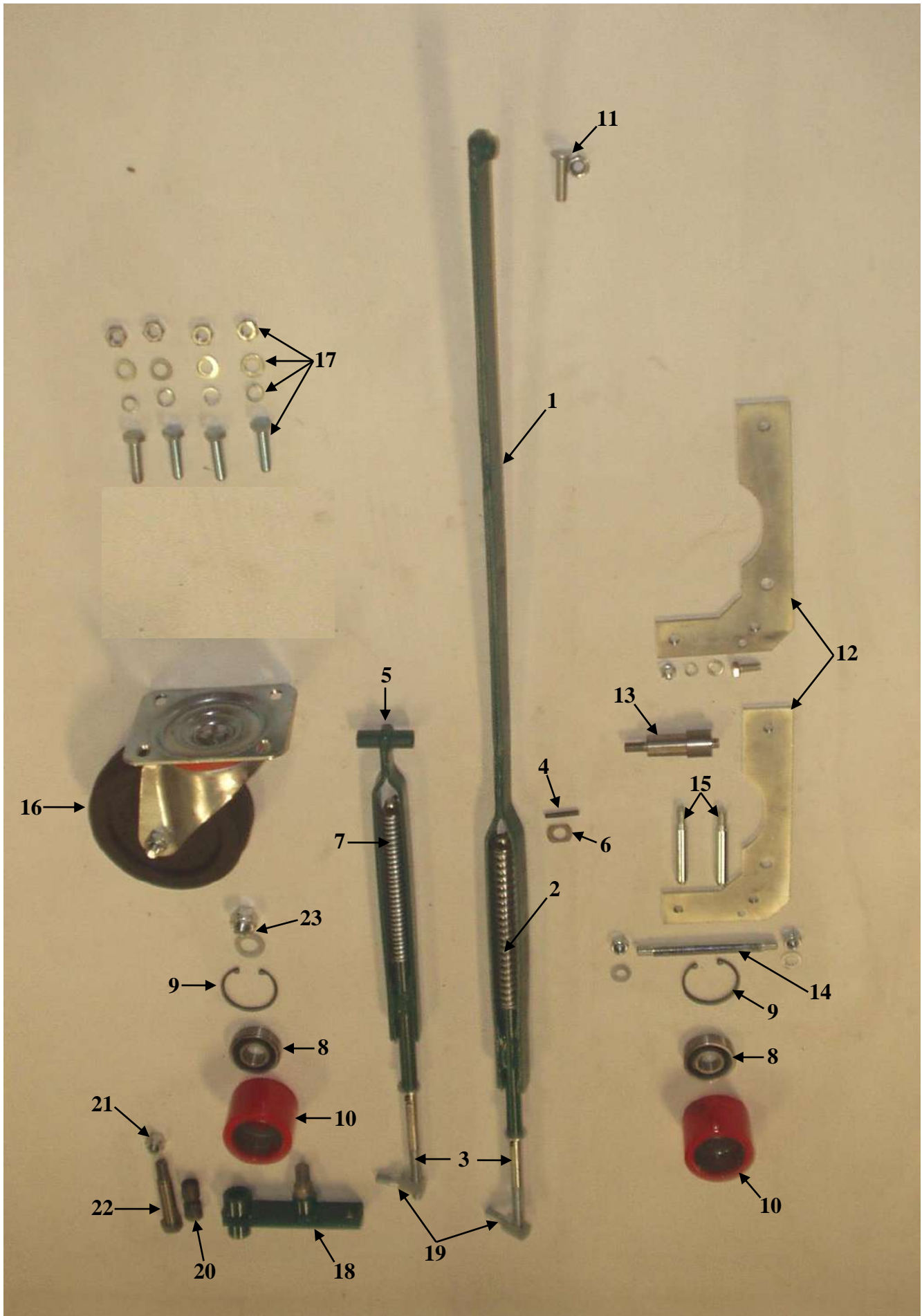
FIGURE 5: CONROD AND CAMSHAFT ASSEMBLY



REFER FIG. 5

| <u>ILLUS. NO</u> | <u>DESCRIPTION</u> | <u>PART NO</u> |
|------------------|--|----------------|
| 1 | CONROD ASSY (C/W BEARING (1124440) & BRONZE BUSH (120223)) | 120220 |
| 2 | CAMSHAFT ASSY | 120200 |
| 3 | CAMSHAFT "V" BELTS - STANDARD (3 PER MACHINE) | 3602060 |
| 3 | CAMSHAFT TRUEBLUE "V" BELTS - HEAVY DUTY (3 PER MACHINE) | 3602061 |
| 4 | CONROD SWIVEL BEARING | 1124440 |
| 5 | SIDE ARM INNER BUSH FOR BRONZE BUSH | 120213 |
| 6 | CONROD BRONZE BUSH | 120223 |
| 7 | OUTER GREASE COVER | 120570 |
| 8 | INNER GREASE COVER | 120225 |
| 9 | 5/8" UNF CASTLE NUT | 2641300 |
| 10 | M12x40 SET SCREW | STANDARD |
| 11 | M12 NYLOC NUT | STANDARD |
| 12 | CAMSHAFT "V" BELT GUIDE | 120519 |
| 13 | M12 FLAT WASHER | STANDARD |
| 14 | M16 SPRING WASHER | STANDARD |
| 15 | M3x50 SPLIT PIN | STANDARD |

FIGURE 6: BELT TENSIONERS



REFER FIG. 6

| <u>ILLUS. NO</u> | <u>DESCRIPTION</u> | <u>PART NO</u> |
|------------------|--|----------------|
| 1 | ENGINE PULLEY TENSIONER COMPLETE ASSEMBLY (LONG) | 120181 |
| 2 | ENGINE PULLEY TENSIONER SPRING | 120560 |
| 3 | SPRING ROD | 120179 |
| 4 | 1/8" x 1" SELLOCK PIN | STANDARD |
| 5 | FRONT WHEEL PULLEY TENSIONER COMPLETE ASSEMBLY (SHORT) | 120180 |
| 6 | TENSIONER WASHER | 120575 |
| 7 | FRONT WHEEL PULLEY TENSIONER SPRING | 120562 |
| 8 | 6304 JOCKEY PULLEY BEARING | 1123423 |
| 9 | 52mm INTERNAL CIRCLIP | 1502520 |
| 10 | JOCKEY PULLEY | 120182 |
| 11 | M10x40 COUNTERSUNK SCREW + M10 NYLOC NUT | STANDARD |
| 12 | FRONT WHEEL BELT TENSIONER SIDE PLATES (EACH) | 120185.1 |
| 13 | FRONT WHEEL BELT TENSIONER BEARING SHAFT | 120185.4 |
| 14 | FRONT WHEEL BELT TENSIONER PIVOT BAR | 120550 |
| 15 | FRONT WHEEL BELT TENSIONER STUD | 120185.2 |
| 16 | SWIVEL CASTOR WHEEL | 6361800 |
| 17 | M10x30 SET SCREW + FLAT WASHER + SPRING WASHER + NUT | STANDARD |
| 18 | JOCKEY PULLEY BRACKET | 120021 |
| 19 | ADJUSTER SCREW | 120149 |
| 20 | JOCKEY PULLEY BRACKET BUSH | 3111030 |
| 21 | 1/2" UNF NYLOC NUT | STANDARD |
| 22 | JOCKEY PULLEY PIVOT BOLT | 120190 |
| 23 | 5/8" UNF NYLOC NUT + M16 FLAT WASHER | STANDARD |