



PROTEA TURF EQUIPMENT
Manufacturers of Industrial Lawnmowers, Scarifiers & Sodcutters

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

PROTEA SEMI INDUSTRIAL CYLINDER MOWERS

SI355, SI430, SI510, SI630

PETROL AND ELECTRIC



OPERATING INSTRUCTIONS AND SPARE PARTS MANUAL

P.O. Box 1673
Bedfordview
2008

www.proteamachines.com

32 Shaft Rd
Knights, Germiston
Tel: +2711 828 9935



PROTEA TURF EQUIPMENT

Manufacturers of Industrial Lawnmowers, Scarifiers & Sodcutters

Reg. No. CK 1989/023716/23

Vat Reg. No. 4830119907

32 Shaft Rd, Knights, Germiston
P.O. Box 1673, Bedfordview, 2008

Tel: 011 828 9935

www.proteamachines.com

CONTACT DETAILS:

Contact Numbers

Tel: +2711 828 9935

Mobile: +2782 458 7257

Postal Address

P.O. Box 1673
Bedfordview
2008
Gauteng
South Africa

Physical Address

32 Shaft Road
Knights
Germiston
Gauteng
South Africa

Email: spares@proturf.co.za

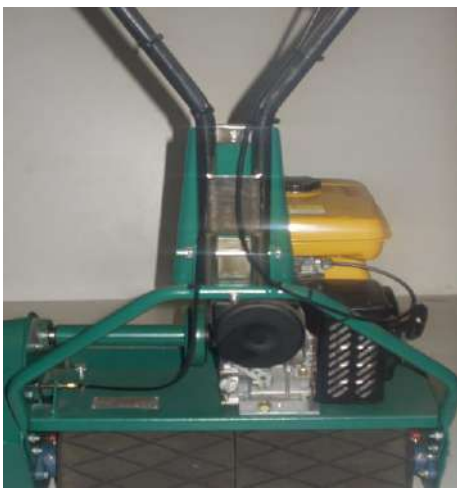
Email: sales@proturf.co.za

Email: sean@proturf.co.za

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

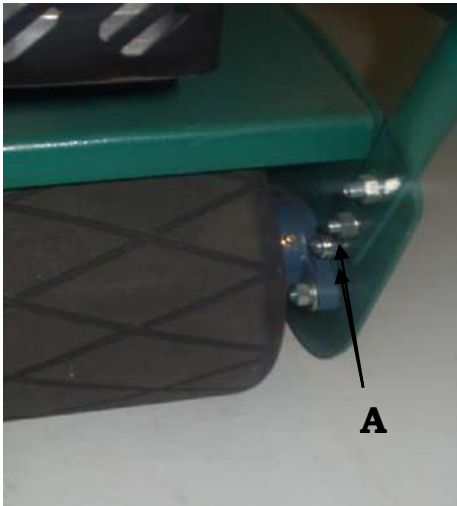
LAWNMOWER SAFETY PRECAUTIONS

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.



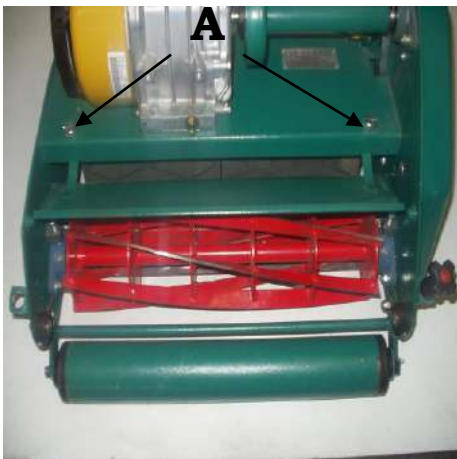
BEFORE USE

When the mower is removed from the carton the upper handle will be in a folded position, therefore it will be necessary to pivot the handle into the upright position. Secure the handle in this position with the clamp screw & nut provided. When folding handle for storage, use extreme care not to permanently bend clutch and throttle cables.



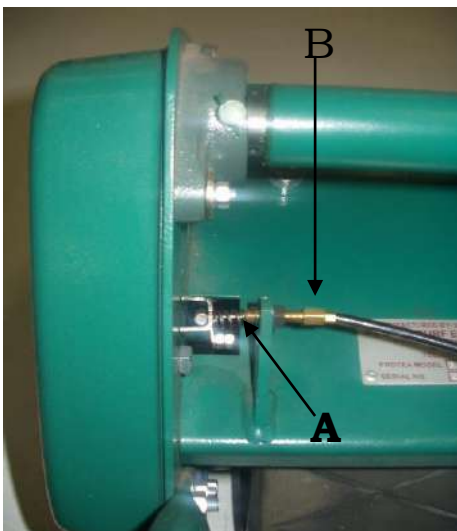
HANDLE ADJUSTMENT

Slacken 4 nuts (A) sufficiently to allow handle to be moved up and down. Re-tighten with handle in selected position.



DEFLECTOR

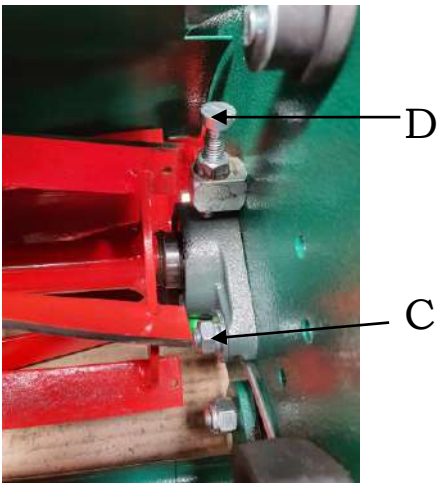
Depending on cutting conditions – for example wet grass, dry grass, high wind velocity etc. it may be necessary to alter the angle of deflection into the grass box. This is affected by loosening the thumb screws (A) on each side of the machine and moving the deflector plate in the desired direction – move upwards to throw the grass higher and longer, or downwards to throw the grass lower and shorter. Be sure to re-tighten the screws after adjustment.



CLUTCH CABLE ADJUSTMENT

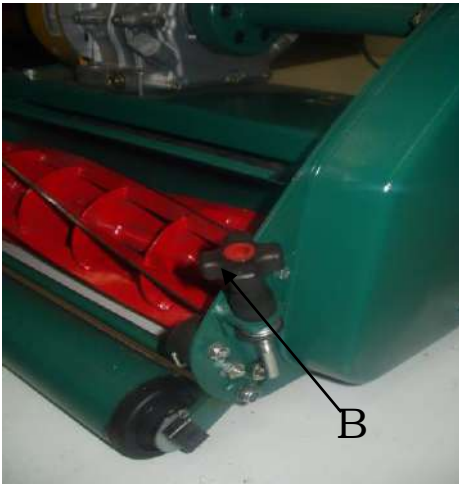
The clutch operating pressure can be increased by releasing the lock nut (A) and screwing the threaded adjuster (B) outwards a few turns and re-tightening lock nut. This is necessary only in the unlikely event that clutch slippage with loss of propulsion should occur.

CUTTER SETTING



The cutter is set correctly when it is lightly touching the bottom blade along its **FULL** length. Hard bearing of uneven setting causes excessive or uneven wear on cutting edges and also places undue load on the engine. Before adjusting, lay the machine back with the handles on the ground; making sure the petrol tap is “off”. To adjust the cutting cylinder, release clamp nuts (C), on both sides of the mower. Cutter is set closer to the bottom blade by turning down (clockwise) the adjusting screws on each side of the cutter (D) until the cutter blades make light contact with the bottom blade. If the cutter bears too hard on the bottom blade turn the adjusting screws back at least a full turn and again carefully screw down until correctly adjusted. Be sure to re-tighten the clamping nuts.

HEIGHT OF CUT



The cutting height is raised by turning the adjusting knob (B) in a clockwise direction. To cut lower, reverse procedure. When adjusting for low cutting, do not set mower so low that the weight of the machine is resting on the bottom blade instead of the front roller. This would affect cutting as well as creating excessive load on the engine.

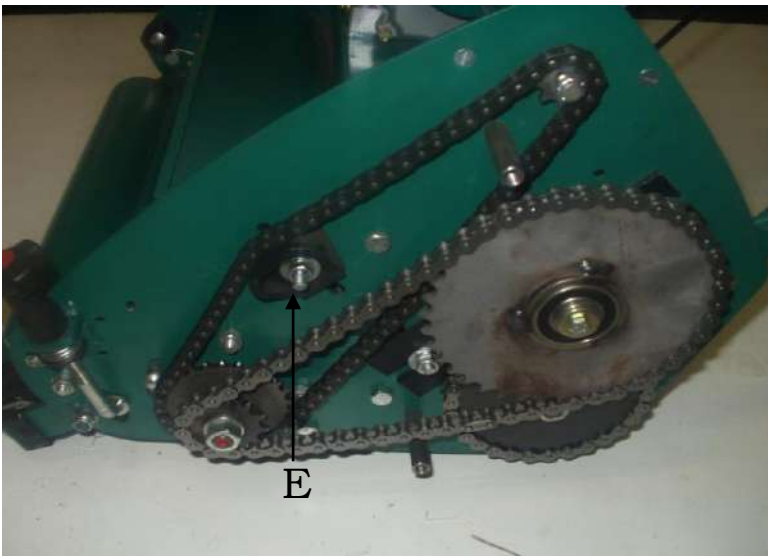
WARNING: Before carrying out adjustments to the cutter or chains, remove spark plug cable to avoid accidentally starting the engine.

CUTTER CHAIN ADJUSTMENT

Slacken nut (E). Move nylon chain adjuster to give correct chain tension and retighten nut. When correctly adjusted chain should be slightly slack and not tightly stretched.

IMPORTANT: Check the chain tensioner every time the cutting cylinder gets adjusted.

Please Note: This does not apply to newer machines that feature the Automatic Cutter Chain Adjuster (as per Fig. 4 of the Manual), as the chain will automatically adjust to the correct tension.



CLUTCH AND DRUM CHAINS

Both chains are adjusted by loosening two nuts (G) and moving the 41T sprocket upwards which tightens both chains simultaneously. After re-tightening nuts, some slackness should be felt in each chain.

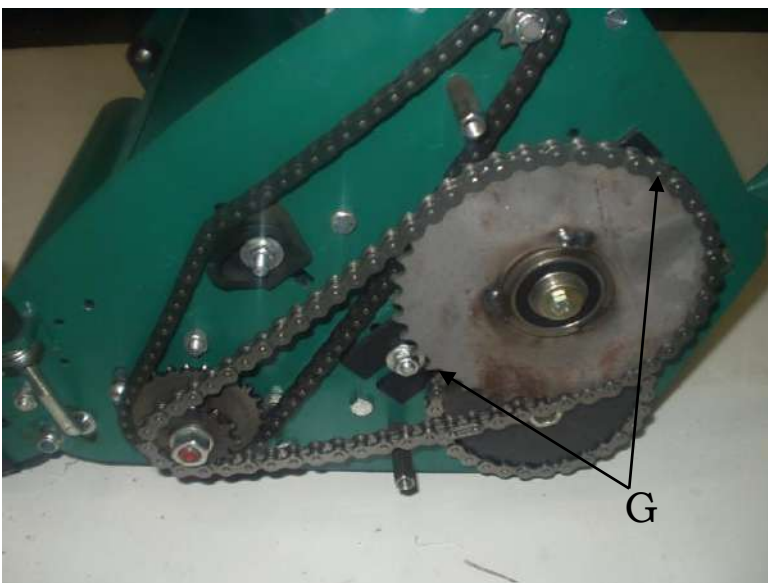
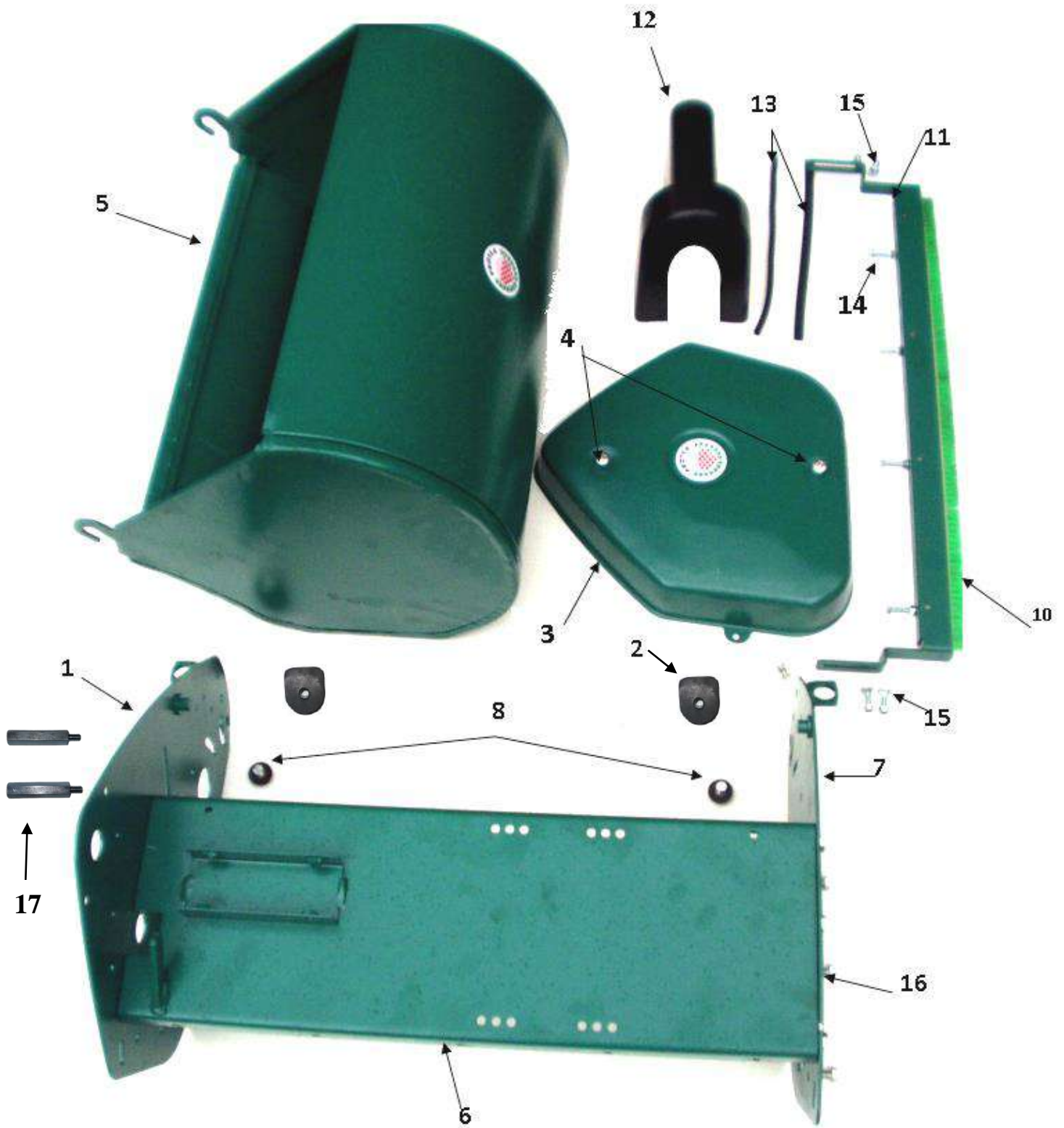


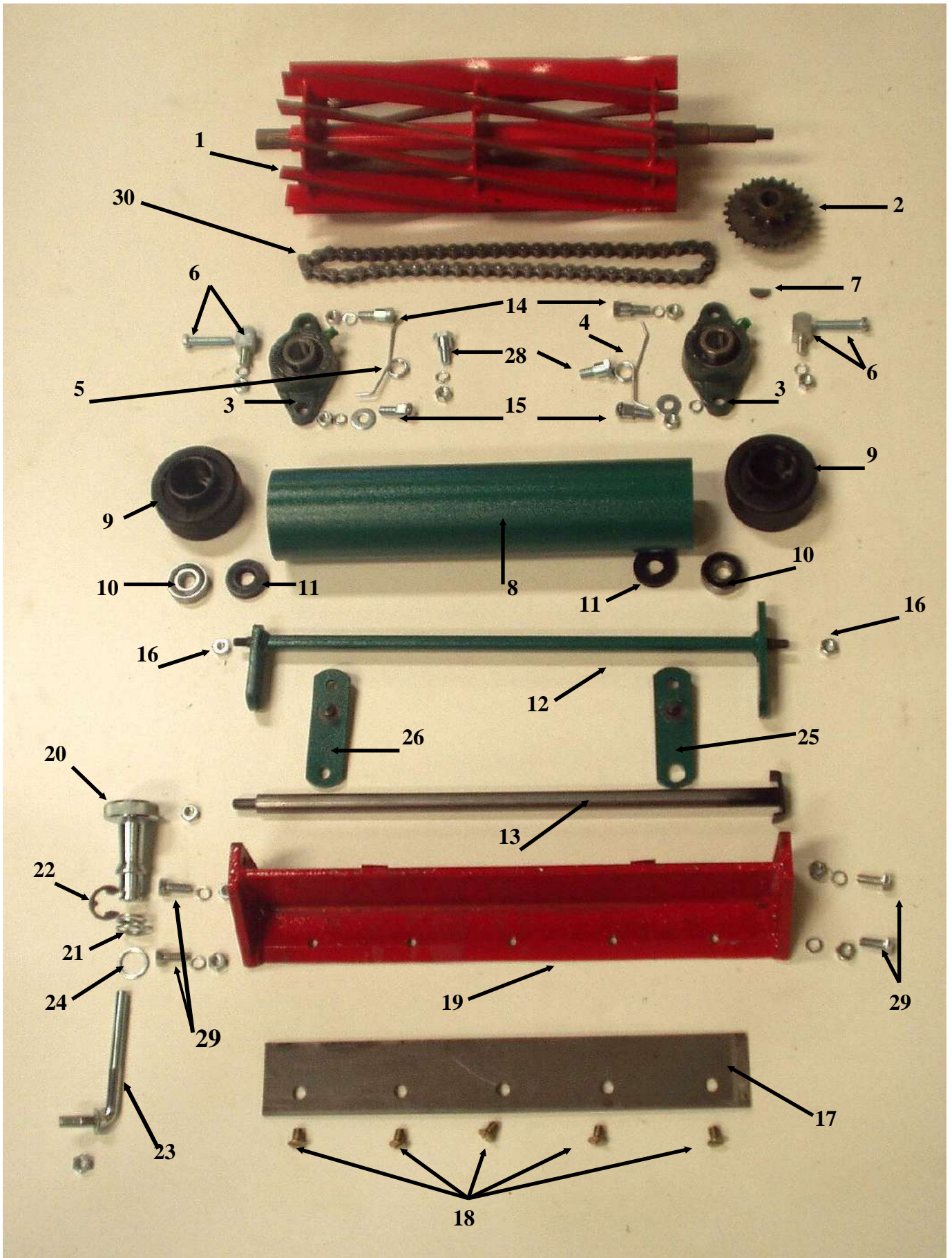
FIGURE 1



REFER FIG. 1

<u>ILLUS. NO</u>	<u>DESCRIPTION</u>	<u>PART NO</u>
1	MOWER FRAME LH	455697
2	GRASSBOX SUPPORT RUBBER	453085
3	CHAIN COVER	455777
4	CHAIN CASE MOUNTING SCREWS	1191908
5	SI630 GRASSBOX ASSY	458065
5	SI510 GRASSBOX ASSY	451290
5	SI430 GRASSBOX ASSY	454459
5	SI355 GRASSBOX ASSY	458021
6	SI630 ENGINE TABLE	458056
6	SI510 ENGINE TABLE	451338
6	SI430 ENGINE TABLE	451520
6	SI355 ENGINE TABLE	455521
7	MOWER FRAME RH	455700
8	GRASSBOX ANTIVIBRATION MOUNTS	458085
10	SI630 TEASING BRUSH (optional extra)	458142
10	SI510 TEASING BRUSH (optional extra)	458141
10	SI430 TEASING BRUSH (optional extra)	458140
11	SI630 TEASING BRUSH BRACKET (optional extra)	458108
11	SI510 TEASING BRUSH BRACKET (optional extra)	458109
11	SI430 TEASING BRUSH BRACKET (optional extra)	458110
12	CLUTCH COVER (optional extra)	3500500
13	CLUTCH COVER SEAL (optional extra)	458150
14	TEASING BRUSH - M6x25 CSK SCREWS & M6 NUTS	STANDARD
15	TEASING BRUSH BRKT. - M6x20 CUP SQUARE BOLTS & M6 NYLOK NUTS	STANDARD
16	FRAME - M8x20 SCREWS & M8 NUTS	STANDARD
17	CHAIN COVER STUD	458170

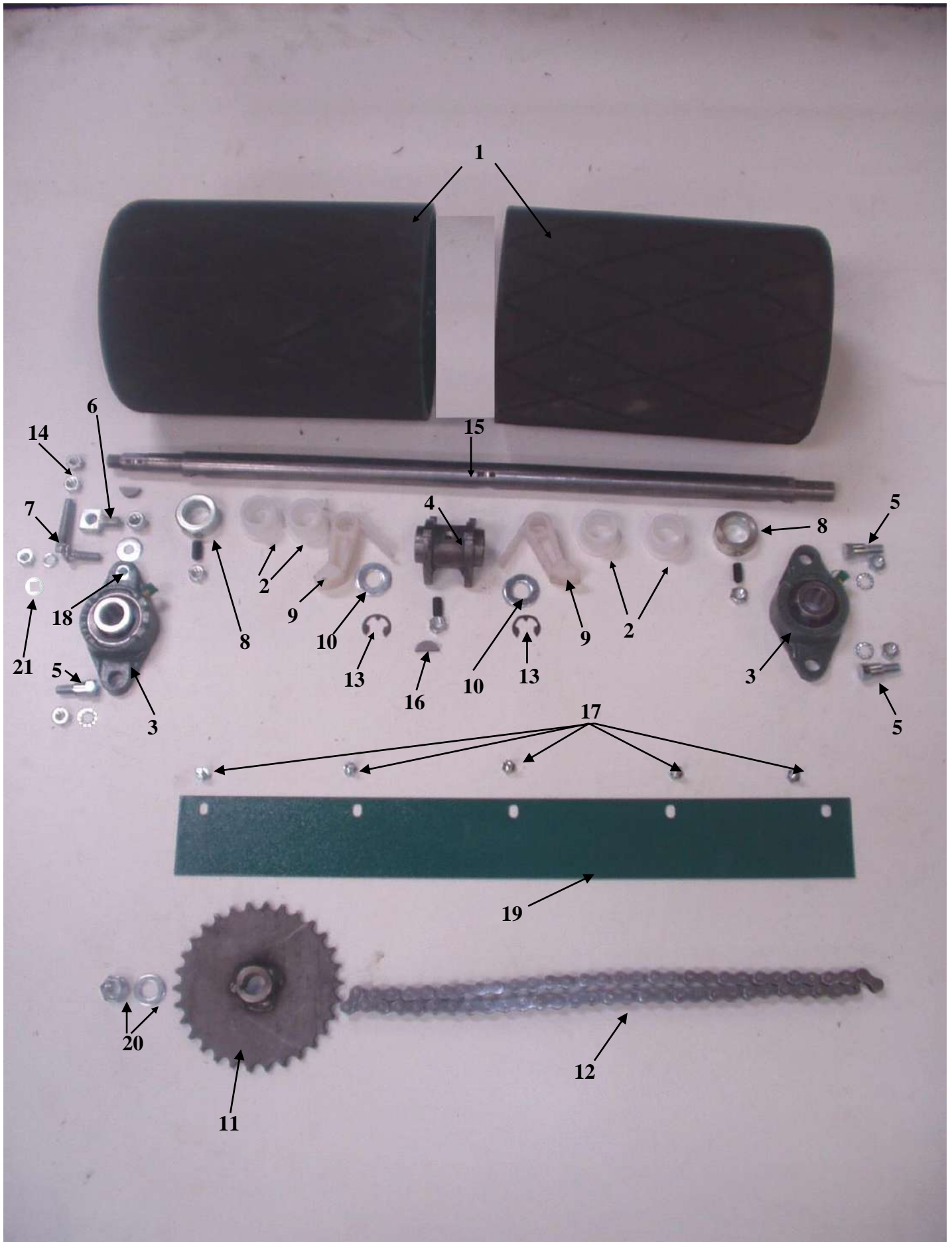
FIGURE 2



REFER FIG. 2

ILLUS. NO	DESCRIPTION	PART NO
1	SI630 CUTTING CYLINDER x 12 BLADED	458077
1	SI630 CUTTING CYLINDER x 6 BLADED	458075
1	SI630 CUTTING CYLINDER x 9 BLADED	458076
1	SI510 CUTTING CYLINDER x 6 BLADED	456251
1	SI510 CUTTING CYLINDER x 9 BLADED	456253
1	SI510 CUTTING CYLINDER x 12 BLADED	456252
1	SI430 CUTTING CYLINDER x 6 BLADED	456351
1	SI430 CUTTING CYLINDER x 9 BLADED	456353
1	SI430 CUTTING CYLINDER x 12 BLADED	456352
1	SI355 CUTTING CYLINDER x 6 BLADED	458025
2	CUTTING CYLINDER SPROCKET	451485
3	CUTTING CYLINDER FLANGE BEARING	1129100
4	CUTTING CYLINDER SPRING LH	457305
5	CUTTING CYLINDER SPRING RH	457306
6	CUTTING CYLINDER ADJUSTER BLOCK c/w SCREW + M8 NUT	457300
7	WOODRUFF KEY NO.6	3802051
8	SI630 FRONT ROLLER TUBE	458097
8	SI510 FRONT ROLLER TUBE	451040
8	SI430 FRONT ROLLER TUBE	454281
8	SI355 FRONT ROLLER TUBE	458022
9	FRONT ROLLER END CAP	451042
10	FRONT ROLLER BEARINGS 6202	1122225
11	FRONT ROLLER SEALS (35x15x7)	2724500
12	SI630 FRONT ROLLER ADJUSTER BRACKET	458063
12	SI510 FRONT ROLLER ADJUSTER BRACKET	455911
12	SI430 FRONT ROLLER ADJUSTER BRACKET	455930
12	SI355 FRONT ROLLER ADJUSTER BRACKET	458024
13	SI630 FRONT ROLLER SHAFT + 3/8 UNF NUT	458098
13	SI510 FRONT ROLLER SHAFT + 3/8 UNF NUT	451048
13	SI430 FRONT ROLLER SHAFT + 3/8 UNF NUT	454303
13	SI355 FRONT ROLLER SHAFT + 3/8 UNF NUT	458030
14	CUTTER BEARING HOUSING PIVOT BOLT (BACK) + M8 NUT/SPRINGWASHER	457301
15	CUTTER BEARING HOUSING CLAMPING BOLT (FRONT) + M8 NUT	457302
16	FRONT ROLLER BRACKET NUT M8 NYLOC NUT	STANDARD
17	SI630 BOTTOM BLADE L.C. (9 HOLES)	458092
17	SI630 BOTTOM BLADE H.C.	458093
17	SI510 BOTTOM BLADE LC (7 HOLES)	392041
17	SI510 BOTTOM BLADE H.C.	392042
17	SI430 BOTTOM BLADE L.C. (6 HOLES)	391700
17	SI430 BOTTOM BLADE H.C.	391701
17	SI355 BOTTOM BLADE (5 HOLES)	458031
18	BOTTOM BLADE SCREWS	2071924
19	SI630 SOLE PLATE	458060
19	SI510 SOLE PLATE	453309
19	SI430 SOLE PLATE	454379
19	SI355 SOLE PLATE	458032
20	SI STEEL HAND NUT (OLD TYPE)	454693
20	SI PLASTIC HAND NUT (NEW TYPE) (NOT SHOWN)	454694
21	HAND NUT SPRING	454707
22	HAND NUT CIRCLIP	454723
23	FRONT ROLLER ADJUSTER SCREW + 3/8 UNF NUT	454678
24	HAND NUT WASHER	459210
25	DOUBLE ADJUSTER BRACKET: LH (optional extra)	457307
26	DOUBLE ADJUSTER BRACKET: RH (optional extra)	457303
28	SPRING PIVOT BOLT WITH M8 NUT	453261
29	SOLEPLATE M8x25 BOLT, M8 NUT, M8 SPRING WASHER	STANDARD
30	CUTTER CHAIN 3/8" 06B 81 ROLLERS 12/26 T. (for 12T keywayed engine Sprocket)	2984806
30	CUTTER CHAIN 3/8" 06B 79 ROLLERS 9/26 T. (for 9T threaded engine Sprocket)	2984501

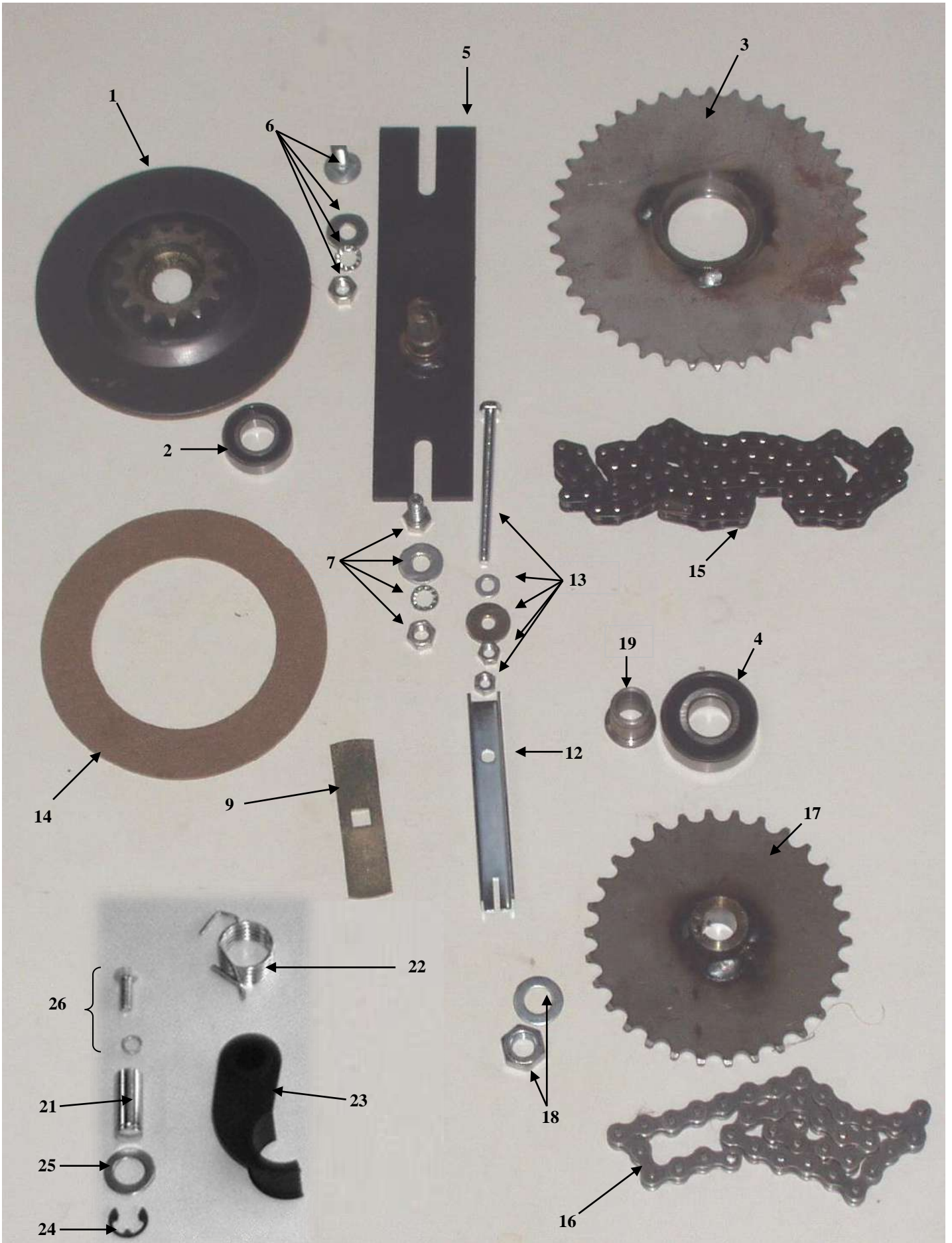
FIGURE 3



REFER FIG. 3

<u>ILLUS. NO</u>	<u>DESCRIPTION</u>	<u>PART NO</u>
1	SI630 RUBBERISED DRUM	458055
1	SI630 SMOOTH STEEL DRUM	459155
1	SI510 RUBBERISED DRUM	458006
1	SI510 SMOOTH STEEL DRUM	459150
1	SI430 RUBBERISED DRUM	458007
1	SI430 SMOOTH STEEL DRUM	458167
1	SI355 RUBBERISED DRUM (INCLUDES SHAFT)	458013
2	DRUM BUSHES	458000
3	BEARING FOR BACK DRUM	1129110
4	RATCHET FOR SMOOTH STEEL DRUM	459198
4	RATCHET FOR RUBBERISED DRUM	458002
5	BEARING HOUSING PIVOT BOLT	457301
6	PURCHASE BLOCK + 3/8 UNF NYLOK NUT	301727
7	DRUM ADJUSTER BOLT + M8 NUT & M8 SPRING WASHER	457304
8	DRUM COLLAR + M8x20 GRUB SCREW & M8 LOCKNUT	201404
9	DRUM PAWL	458001
10	STAINLESS STEEL 14mm DRUM WASHER	3651247
11	DRUM SPROCKET	451207
12	CHAIN (CLUTCH/DRUM) 38R 083 (1/2")	2981385
13	PAWL CIRCLIP	1502474
14	M8 NUT	STANDARD
15	SI630 DRUM SHAFT	458090
15	SI510 DRUM SHAFT	458003
15	SI430 DRUM SHAFT	458004
16	WOODRUFF KEY NO.6	3802051
17	REAR ROLLER SCRAPER BOLT M6x15	STANDARD
18	SPACER FOR BACK DRUM BEARING	458015
19	SI630 REAR ROLLER SCRAPER (optional extra)	458070
19	SI510 REAR ROLLER SCRAPER (optional extra)	458071
19	SI430 REAR ROLLER SCRAPER (optional extra)	458072
20	M12 NUT & WASHER	STANDARD
21	DRUM ADJUSTER SQUARE WASHER	459457

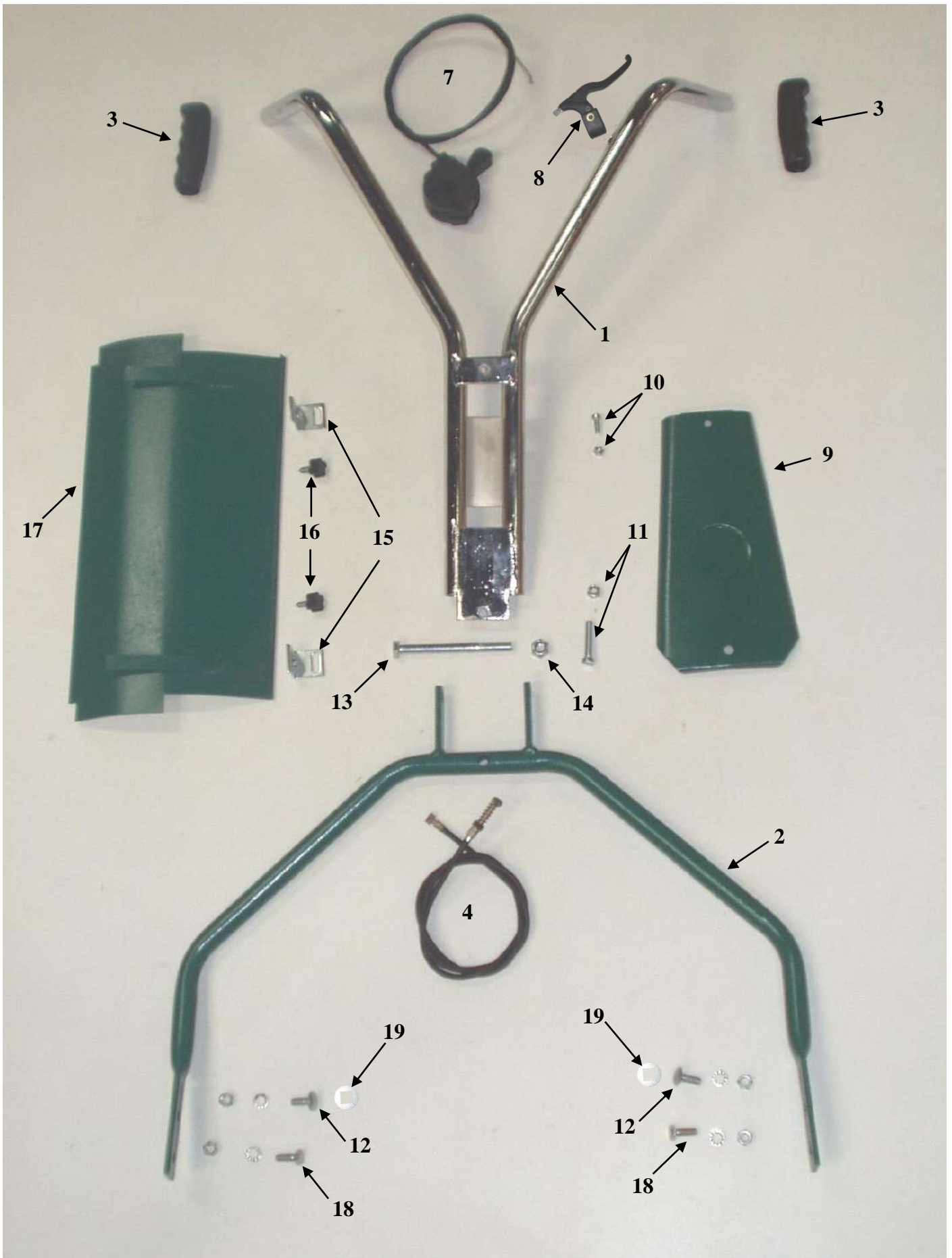
FIGURE 4



REFER FIG. 4

<u>ILLUS. NO</u>	<u>DESCRIPTION</u>	<u>PART NO</u>
1	SMALL INTERMEDIATE SPROCKET ASSY	451231
2	SMALL INTERMEDIATE SPROCKET BEARING (6003)	1126037
3	LARGE INTERMEDIATE SPROCKET ASSY (41T)	459245
4	LARGE INTERMEDIATE SPROCKET BEARING (6204)	1122422
5	INTER. ADJUSTMENT BRACKET ASSY	451215
6	M8x20 CUP SQUARE BOLT, NUT, SPRING WASHER, M8x20 FLAT WASHER	STANDARD
7	M8x20 SET SCREW, NUT, SPRING WASHER, M8x20 FLAT WASHER	STANDARD
9	SMALL SLOT COVER	458200
12	OPERATING LEVER RELEASE	453560
13	M6x80 CLUTCH BOLT, 2xM6 NUT, M6x20 FLAT WASHER, M6 FLAT WASHER	STANDARD
14	SI CLUTCH LINING	333032
15	CHAIN (CLUTCH/CUTTER) 61R 083 (1/2")	2981590
16	CHAIN (CLUTCH/DRUM) 38R 083 (1/2")	2981385
17	DRUM SPROCKET	451207
18	M12 NUT, M12 FLAT WASHER (for DRUM SPROCKET)	STANDARD
19	CLUTCH SLEEVE WITH SHEAR PIN	454790
21	CHAIN ADJUSTER PIN	459130
22	CHAIN ADJUSTER SPRING	459131
23	CHAIN TENSIONER - SELF ADJUSTING	455770
24	CHAIN TENSIONER CIRCLIP	1502474
25	5/8" FLAT WASHER	143271
26	M8x20 SET SCREW + M8 SPRING WASHER	STANDARD

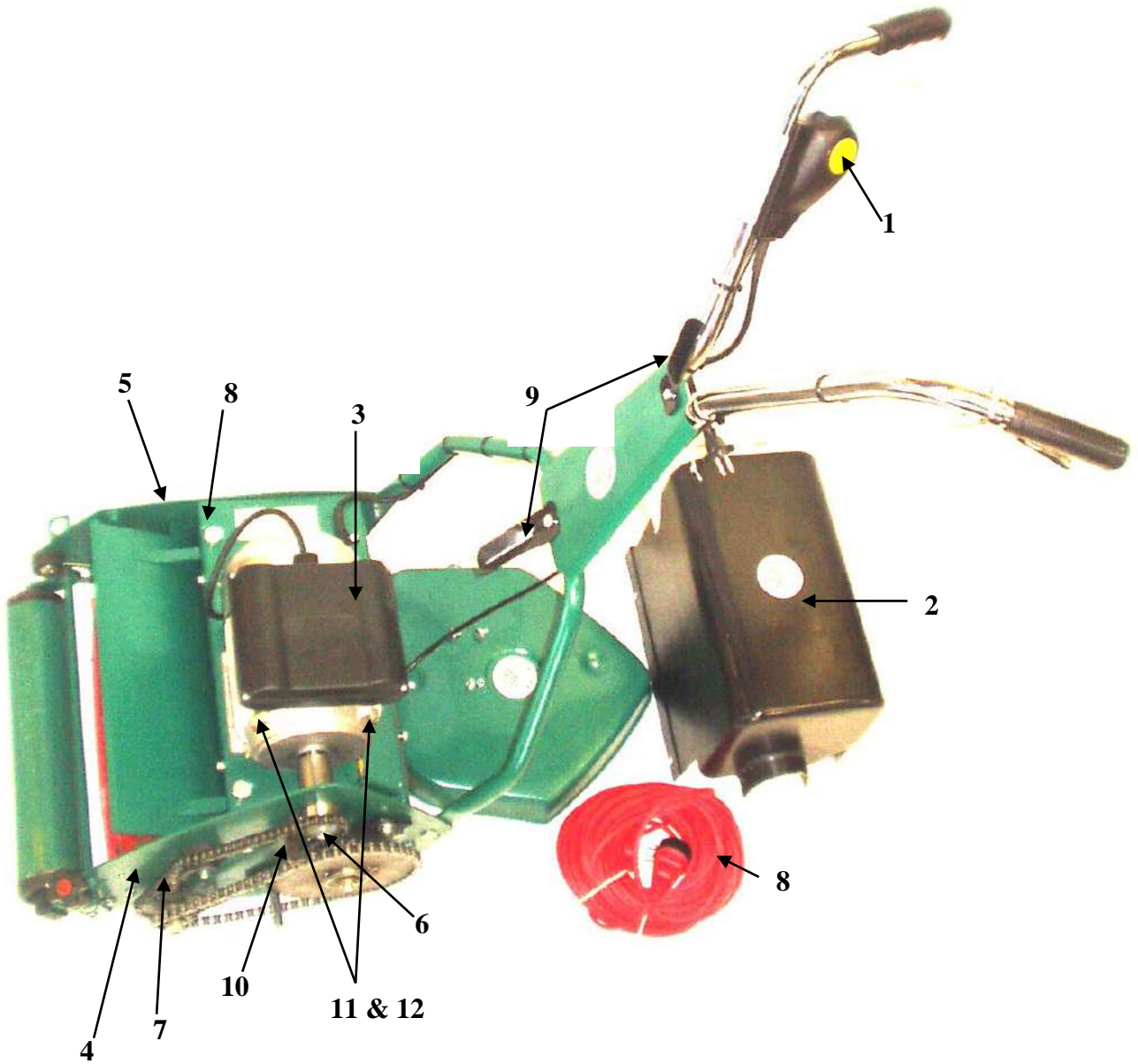
FIGURE 5



REFER FIG. 5

<u>ILLUS. NO</u>	<u>DESCRIPTION</u>	<u>PART NO</u>
1	TOP HANDLE (BENT TYPE) - OLD	456374
1	TOP HANDLE (STRAIGHT TYPE) - NEW (NOT SHOWN)	456375
2	SI630 BOTTOM HANDLE	458095
2	SI510 BOTTOM HANDLE	458026
2	SI430 BOTTOM HANDLE	459468
2	SI355 BOTTOM HANDLE	458023
3	HANDLE GRIP (sold in sets)	1851071
4	CLUTCH CABLE (for plastic lever)	451242
7	THROTTLE CABLE	656720
8	PLASTIC CLUTCH LEVER	403012
9	HANDLE COVER PLATE	453739
10	COVER PLATE TOP SCREW M6x15 + M6 NYLOK NUT	STANDARD
11	COVER PLATE BOTTOM SCREW M8x40 + M8 NYLOK NUT	STANDARD
12	M8x30 CUP SQUARE BOLT	STANDARD
13	TOP HANDLE PIVOT BOLT M10x110	1216946
14	M10 NYLOK NUT	STANDARD
15	DEFLECTOR CLAMP	451143
16	DEFLECTOR CLAMP SCREW	432428
17	SI630 DEFLECTOR	458068
17	SI510 DEFLECTOR	451135
17	SI430 DEFLECTOR	454387
17	SI355 DEFLECTOR	458020
18	M8x20 SET SCREW	STANDARD
19	M8 SQUARE HOLE SHIM WASHER	459457

FIGURE 6: ELECTRIC



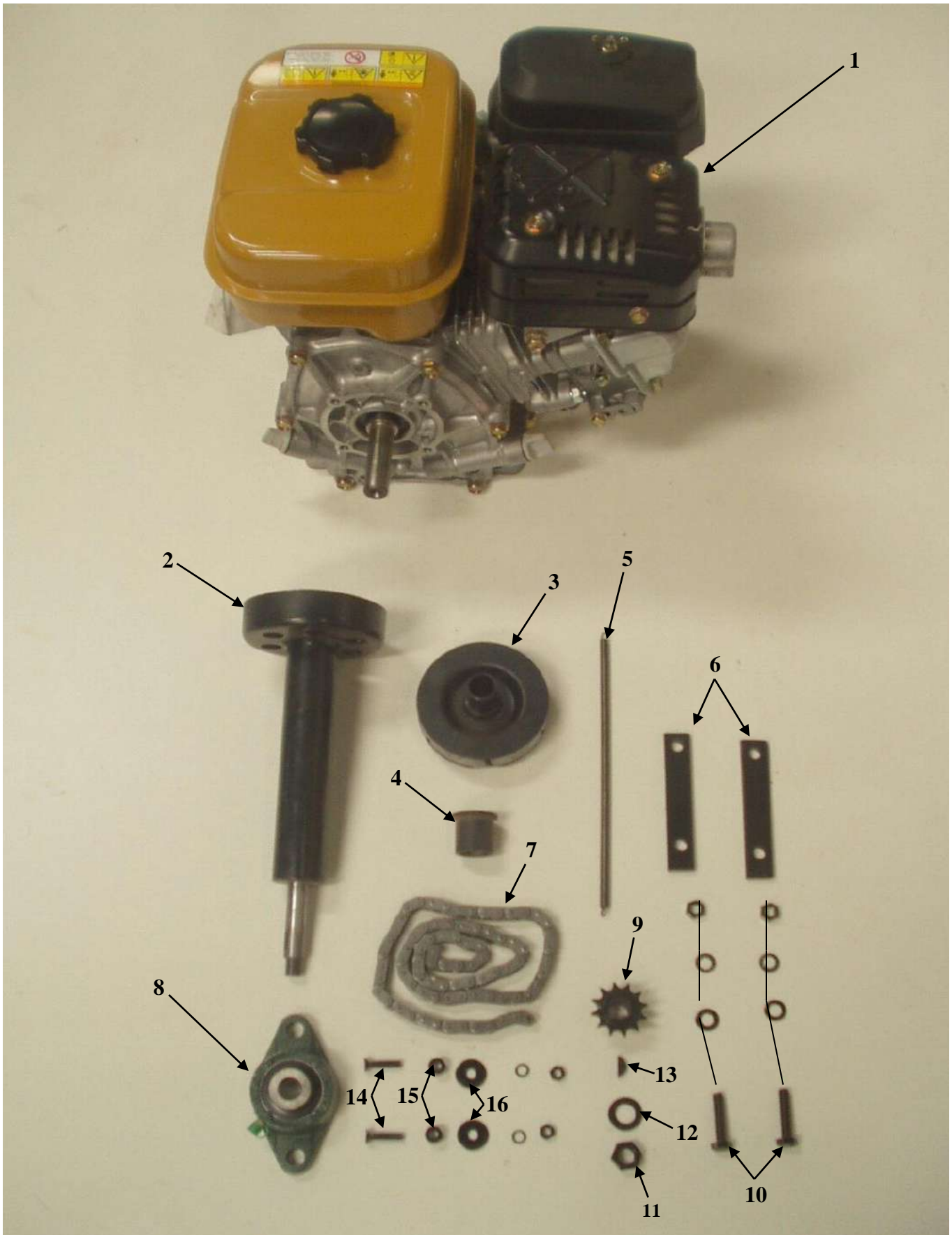
REFER FIG. 6

<u>ILLUS. NO</u>	<u>DESCRIPTION</u>	<u>PART NO</u>
1	LEVER TYPE SWITCH	1671702
2	MOTOR COVER (only available for SI355 & SI430)	3500045
3	MOTOR 3/4HP for SI355 & SI430 - 1 PHASE	1671700
3	MOTOR 1 1/2HP for SI510 & SI630 - 1 PHASE	1671710
4	LH SIDEFAME FOR SI355 & SI430	458005
4	LH SIDEFAME FOR SI510 & SI630	459175
5	RH SIDEFAME	455700
6	16T TEFLON MOTOR SPROCKET Ø19mm BORE	458008
6	16T TEFLON MOTOR SPROCKET Ø24mm BORE	458101
7	MOTOR/CUTTING CYLINDER CHAIN for SI355 & SI430 (78 ROLLERS - 06B)	2984501
7	MOTOR/CUTTING CYLINDER CHAIN for SI510 & SI630 (80 ROLLERS - 06B)	2984806
8	EXTENSION CABLE	1661240
9	EXTENSION CABLE BRACKETS	458012
10	CHAIN COVER BRACKET	458045
11	STARTING CAPACITOR FOR 3/4HP MOTOR	1674502
12	RUNNING CAPACITOR FOR 3/4HP MOTOR	1674500

PLEASE NOTE:

THE BALANCE OF THE COMPONENTS ARE IDENTICAL TO THE PETROL VERSION

FIGURE 7



REFER FIG. 7

<u>ILLUS. NO</u>	<u>DESCRIPTION</u>	<u>PART NO</u>
1	5HP ENGINE for SI510 / SI630	6200302
1	4HP ENGINE for SI355 / SI430	6200305
2	CLUTCH SHAFT for SI430 / SI510 / SI630 (for 12T keywayed Sprocket)	458037
2	CLUTCH SHAFT for SI355 (for 12T keywayed Sprocket)	458038
2	CLUTCH SHAFT for SI430 / SI510 / SI630 (for 9T threaded Sprocket)	458168
2	CLUTCH SHAFT for SI355 (for 9T threaded Sprocket)	458169
3	CENTRIFUGAL CLUTCH BODY WITH SPRING	6200450
4	CLUTCH SHAFT OILITE BUSH	3115997
5	CENTRIFUGAL CLUTCH TENSION SPRING	458040
6	ENGINE PACKING (for Robin EY20)	458102
7	CUTTER CHAIN 3/8" 06B 81 ROLLERS 12/26 T. (for 12T keywayed engine Sprocket)	2984806
7	CUTTER CHAIN 3/8" 06B 79 ROLLERS 9/26 T. (for 9T threaded engine Sprocket)	2984501
8	BEARING FOR CLUTCH SHAFT	1121200
9	12T KEYWAYED CLUTCH SHAFT SPROCKET	453990
9	9T THREADED CLUTCH SHAFT SPROCKET	453989
10	SET SCREW M8X45 + M8 FLAT WASHER + M8 SPRING WASHER + M8 NUT	STANDARD
11	M12 NUT FOR 12T KEYWAYED CLUTCH SHAFT	STANDARD
11	3/8" UNF NYLOK NUT FOR 9T THREADED CLUTCH SHAFT	STANDARD
12	M12 FLAT WASHER	STANDARD
13	WOODRUFF KEY NO.6	3802051
14	M6x25 COUNTERSUNK SCREWS + M6 SPRING WASHER + M6 NUT	STANDARD
15	PILLOW BLOCK BEARING SPACER	458048
16	M6x22 FLAT WASHER	STANDARD