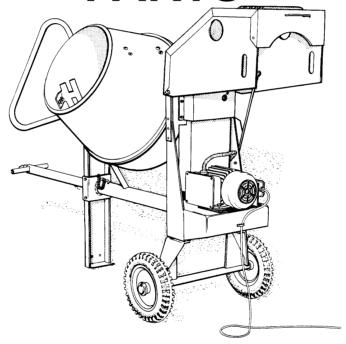


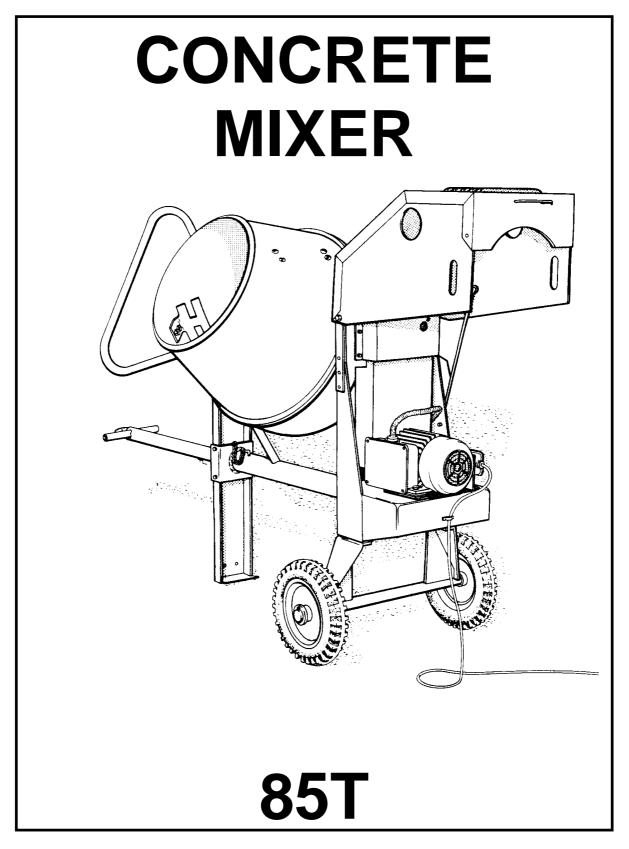
OPERATION, MAINTENANCE & SPARE PARTS



85T CONCRETE MIXER

WINGET LIMITED
PO BOX 41
EDGEFOLD INDUSTRIAL ESTATE
PLODDER LANE
BOLTON
LANCS
BL4 OLS

TEL: ++ 44 (0) 1204 854650 FAX: ++ 44 (0) 1204 854663 service@winget.co.uk parts@winget.co.uk www.winget.co.uk



The contents of this Handbook, although correct at the time of publication, may be subject to alteration by the Manufacturers without notice.

Winget Limited operate a policy of continuous product development. Therefore, some illustrations or text within this publication may differ from your machine

INTRODUCTION

II

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THE HANDBOOK

WARNING

The operator must read all the Handbook and fully understand its contents before attempting to operate the machine.

THE HANDBOOK MUST NOT BE REMOVED FROM THE MACHINE.

The Handbook must be kept clean and in good condition. Additional copies of the Handbook can be obtained from your Distributor.

The contents of this Operator's Handbook are designed as a guide to the machine's controls, operation, working capacities and maintenance. It is *not* a training manual.

Only trained operators should use this machine. Contact the C.I.T.B. or equivalent body for advice on training.

In this Handbook are WARNING notes. They are preceded by this symbol:



WARNING



These notes are used to indicate the procedure being described in the Handbook must be followed to avoid serious injury or death to yourself or to others; or damage to the machine.

The warnings are also used to protect the machine from unsafe servicing practices.

Pay particular attention to the warnings given in the Handbook.

If you have any doubts about any aspect of the machine's capability or servicing procedures, you must consult the manufacturer.

WARRANTY TERMS & CONDITIONS

The Manufacturer assures you that if any part of the machine becomes defective due to faulty manufacture or materials within 12 months from the date of purchase, the part will be repaired or replaced under warranty free of charge by any authorised Winget Distributor. Warranty repairs *must* be carried out by Winget Distributors.

This Warranty is given to the first owner and may be transferred to subsequent owners for the balance of the Warranty period.

The Manufacturer's liability only extends to the costs of repair or replacement of the faulty parts and necessary labour charges involved in the repairs. The Company accepts no liability for any consequential loss, damage or injury, resulting directly or indirectly from any defect in the goods.

Items not covered by Warranty and considered to be the customer's responsibility include normal maintenance services; replacement of service items and consumables; replacement required due to abuse, accident, misuse or improper operation; replacement of wearable items e.g. pins, bushes, brake linings, clutch linings etc.

The Warranty will not apply where the equipment is modified, converted, or used for purposes other than those for which it was designed, unless clearance for the modifications etc. have been granted by the Manufacturer, in writing.

The Pre-Delivery Inspection and Warranty Registration Document must be completed correctly and returned to the Manufacturer within 7 days of sale date. Failure to do so may result in the claim being subsequently rejected.

Tyres and tubes are not covered by Warranty, but are covered by the tyre manufacturer's own warranty system which provides against defects in material or workmanship. Engines are covered separately by the engine manufacturers, and engine warranty repairs must be handled by the relevant engine manufacturers' distributors.

No claim will be considered if other than genuine Winget Limited parts, which must be obtained from Winget Limited via an authorised Distributor, are used to effect a repair, or if lubricants other than those recommended by Winget Limited are used.

The equipment must be serviced in accordance with the service schedules laid down by Winget Limited. Evidence that these have been complied with may be required before Warranty Claims are reimbursed.

The Manufacturer's policy is one of continuous improvement. Winget Limited reserve the right to change specifications without notice. No responsibility will be accepted for discrepancies which may occur between specification of machines and the descriptions contained in publications.

SAFE WORKING 1.1

Safety is the responsibility of the persons working with this machine. Think "safety" at all times. Read and remember the contents of this Handbook.

MACHINE MODIFICATION

WARNING



Any modifications to the machine will affect its working parameters and safety factors. Refer to the Manufacturers before fitting any non-standard equipment or parts.

The manufacturers accept no responsibility for any modifications made after the machine has left the factory, unless previously agreed by the Manufacturers in writing. The Manufacturers will accept no liability for damage to property, personnel or the machine if failure is brought about due to such modifications, or fitment of spurious parts.

OPERATION

WARNING

Only trained operators should use this machine.



Always be aware of local and national regulations governing the use of the machine.

Always ensure that all guards are in position and correctly fitted.

Electrically driven mixers: Always ensure that the power supply has been correctly connected by a qualified electrician.

Electrical cables must be of a suitably armoured type. Ensure that they are protected from damage and not liable to be tripped over.

Do not connect to a household socket!

Use only with an RCD protected supply. Only connect via special feeding point (e.g. power distribution panel on building site with fault-current-breaker).

Only authorised persons should be allowed to operate the mixer, or be in the immediate area.

Never add fuel or lubricant to the machine while it is running.

Keep the area around the machine clear of obstructions which could cause persons to fall onto moving Never add Never add fuel or lubricant to the machine while it is running.

Keep the body and clothing clear of all moving and hot parts.

Always ensure that during operation the mixer is standing on stable and level ground and that the wheels are chocked.

Keep the engine/motor housing lid closed when the engine or electric motor are running.

The towing speeds of *Fast Tow* mixers, when used on public highways, may be subject to local or national road traffic regulations.

ENGINE

WARNING



Starting any diesel engine can be dangerous in the hands of inexperienced people. Operators must be instructed in the correct procedures before attempting to start any engine.

Always obtain advice before mixing oils; some oils are not compatible. If in doubt, drain and refill.

The materials used in the manufacture and treatment of some filters and elements may cause irritation or discomfort if they come into contact with the eyes or mouth and they may give off toxic gases if they are burnt.

Engine lifting eyes must not be used to lift the complete machine.

Ether based cold start aids in aerosol cans must not be used under any circumstances.

EXHAUST GASES CONTAIN CARBON MONOXIDE WHICH IS A COLOURLESS, ODOURLESS AND POISONOUS GAS THAT CAN CAUSE UNCONSCIOUSNESS AND DEATH.

ELECTRICAL SYSTEMS

WARNING



Starting engines that are fitted with charge windings which have been disconnected from the battery will cause irreparable damage unless the stator leads from the rectifier/regulator have been removed.

The following points must be strictly observed when charge windings are fitted otherwise serious damage can be done.

Never remove any electrical cable while the battery is connected in the circuit.

Only disconnect the battery with the engine stopped and all switches in the OFF position.

Always ensure that cables are fitted to their correct terminals. A short circuit or reversal of polarity will ruin diodes and transistors.

Never connect a battery into the system without checking that the voltage and polarity are correct.

Never flash any connection to check the current flow.

Never experiment with any adjustments or repairs to the system.

The battery and charge windings must be disconnected before commencing any electric welding when a pole strap is directly or indirectly connected to the engine.

BATTERIES CONTAIN SULPHURIC ACID WHICH CAN CAUSE SEVERE BURNS AND PRODUCE EXPLOSIVE GASES. If the acid has been splashed on the skin, eyes or clothes flush with copious amounts of fresh water and seek immediate medical aid.

SERVICING & MAINTENANCE

MARNING No. 11 and 11 a

WARNING Never allow unqualified personnel to attempt to remove or replace any part of the machine, or anyone to remove large or heavy components without adequate lifting equipment.

Before maintenance work is begun, ensure that the engine is stopped, or that the electric motor is switched off, and isolated from the mains.

Always conform to service schedules except when an emergency calls for immediate action, or adverse conditions necessitate more frequent servicing.

Always report any defect at once, before an accident or consequential damage can occur.

On completion of maintenance, check that the machine functions correctly, and that all guards are correctly fitted.

Disposal of waste oil. Dispose of waste oil into waste oil storage tanks. If storage tanks are not available, consult your Distributor or local authority for addresses of local designated disposal points. It is illegal to dispose of waste oil into drains or water courses, or to bury it.

Always remove the starting handle to prevent unauthorised use of the machine at the end of the working day or whenever the machine is unattended.

Always isolate the electricity supply to electrically powered machines at the end of the working day or whenever the machine is unattended.

OPERATION 2.1

INSTALLATING THE MIXER ON SITE TRANSPORTING

For normal site to site transporting the usual method of loading on to a pick-up truck should be used. However, if it is necessary to lad to the mixer into a more confined space, the overall height can be reduced from 4'-11" (1500mm) to 3'-8" (1120mm) by removing the axle carrier and front leg support.

WARNING

For mixer weights, see "Specifications



Never carry mixers by their lifting points on public roads.

Do not tow four wheeled mixers across uneven ground.

The ground on which the mixer stands must be level and stable. Ensure that the wheels are chocked.

Electrically driven mixers:

Always ensure that the power supply is correctly connected or disconnected by a qualified electrician.

Electrical cables must be of a suitably armoured type. Ensure that they are protected from damage and are not liable to be tripped over.

Do not connect to a household socket! Use only with an ROD protected supply. Only connect via special feeding point (e.g. power distribution panel on building site with fault-current-breaker).

ENGINE OPERATION



As soon as the engine has started the mixing drum will begin to rotate.

Before starting the engine:

Ensure the engine is free to turn without obstruction or that the rope is in good condition.

Check that the lubricating oil level is correct. The oil slump must be filled to the 'full' mark on the dipstick; do not overfill.

Check that the fuel supply is adequate and the system is primed.

ENGINE SAFETY



Before attempting to start any engine the operator should read the 'Safe Working' section of this handbook and be conversant with the operating instructions issued by the engine manufacturer and the correct use of the engine controls.

Starting any engine can be dangerous in the hands of inexperienced people.

ETHER BASED COLD START AIDS IN AEROSOL CANS MUST NOT BE USED UNDER ANY CIRCUMSTANCES.

EXHAUST GASES CONTAIN CARBON MONOXIDE WHICH IS A COLOURLESS, ODOURLESS AND POISONOUS GAS THAT CAN CAUSE UNCONSCIOUSNESS AND DEATH. 2.2 OPERATION

MAINFRAME AND PORTABILITY

The mainframe is fabricated from welded steel tube and plate, the single main tube offering maximum access to either side of the mixer for discharging concrete as well as housing the telescopic drawbar.

The basic mixer is fitted within 13" x 3" cushion tyred wheels. The slow towing model is fitted with pneumatic tyred wheels 16" x 4" and a wide axle unit, but retains the same mainframe as the basic model.

On the fast towing model the drawbar is fitted with an overrun and parking brake which is rod operated to the wheels. Two 16" x 14" 4-ply rating pneumatic tyres are fitted as standard. All machines are fitted with engine housings which hinge from the back top edge. A stay is fitted to retain the housing when in the open position.

DRUM TILTING

A tubular tilting handle gives easy and positive control to position the drum in anyone of the five pre-set positions. To locate any of the drum positions the tilting handle is pulled outwards away from the machine, this releases the locking pin of the tilting handle, allowing the drum to be moved into the required MIX DISCHARGE positions. The two MIX positions are arranged for the mixing of concrete and mortar which are clearly identified on the machine. The fifth position is intended for placing the drum in a central stowed position when the mixer is not in use.

TRANSMISSION

The drive from the engine is taken by roller chain to a short shaft passing through the engine and trunnion bearing. From this shaft the drive is again taken by roller chain to the bevel pinion shaft, mounted between the two horizontal members of the trunnion, which in turn drives the bevel gear attached to the drum shaft attached to the trunnion. All drive shafts are supported on ball bearings.

The drive chains and gears attached to the trunnion are protected by sheet metal guards, easily detachable for maintenance.

MIXING

Before Mixing

The operator must calculate the correct percentages of water and aggregates to be mixed.





Cements can cause skin irritation, wear protective clothing.

Mixing Materials

Turn the drum to *Charge and Mix* position (refer to general arrangement diagram).

With the mixer running; charge the drum with the correct percentages of water and aggregates, then allow mixing to continue for about two minutes.

Ensure that a suitable container has been positioned by the side of the mixer to catch the discharging load.

Turn the drum to *Discharge* (refer to general arrangement diagram), and allow the load to run into the container.

SERVICING 3.1

SERVICE SCHEDULE

(See also the relevant Engine Workshop manual)

Every Day

Links & hinges:	Lubricate.
Shafts & bearings:	Lubricate.
Engine: (see Engine Manual)	Check fuel and lubricating oil levels. Check for oil and fuel leaks. Clean/replace air cleaner element under very dusty conditions.

Every week (or 50 hours running) The above and following items

Nuts, bolts and keys (for first month):	Tighten.
Drive chains:	Lubricate.
Drive chains:	Check tension.

Every 125 hours. The above and following items

Engine:	Clean/replace conditions.	air	cleaner	element	under	moderately	dusty
Battery (where fitted):	Check condition	n.					

Every 250 hours. The above and following items

Nuts, bolts & keys:	Tighten
Engine:	Change lubricating oil (and filter on AA1 engines only). Check valve clearance. (see Engine Manual) Clean/replace injectors if exhaust is dirty. (see Engine Manual) Renew fuel filter element if the fuel is not perfectly clean.

Every 500 hours: The above and following items

Е	ingine:	Replace air cleaner element.
		Check exhaust and induction for leaks, damage or restrictions.
		Renew fuel filter element.
		Check battery charge winding system. (see Engine Manual)

Every 1000 hours.: The above and following items

Engine:	Decarbonise if the engine performance has deteriorated.
(see Engine Manual)	Clean cylinder barrel and head fins.
	Clean restrictor banjo union at the cylinder head end of the oil
	feed pipe.
	Flush and refill fuel tank.

Every 5000 hours. The above and following items

Engine:	Major overhaul, if necessary. (see Engine Manual	

3.2 SERVICING

SERVICING PROCEDURE

Greasing and lubrication

WARNING

Every day

It is essential that oils and grease used for servicing do not become contaminated with sand or cement dust.

Apply a little engine oil to pins, joints and hinges etc. to ensure that they move easily and are free from corrosion.

Shafts and bearings fitted with grease nipples must be greased using a good quality medium grease.

Bearings must not be allowed to run dry. When greasing it is better to give a little frequently rather than a lot at long intervals.

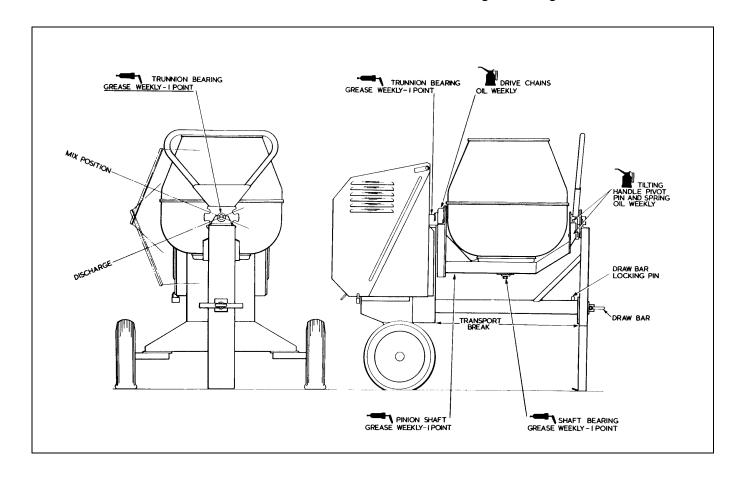
Drum Drive

Every week (or 50 hours running)

Lubricate drive chains (A) with a little engine oil. (Do not oil the belts of electrically driven machines).

Check the tension of the chains and adjust if necessary as follows:

- 1. On the slack side of the chain there should be free movement equal to the length of one pitch of the chain. i.e. If the pitch of the chain is 20mm, then the movement on the slack side should be 20mm.
- 2. Never over-tighten the chain as this will put excessive strain on engine bearings causing vibration and wear.



3.3 SERVICING

Mixer Drum Assembly

The drum is manufactured in two halves joined together by a drum clip. This allows either half to be replaced separately.

Some export machines are delivered with the drum cone and blades detached. This is to aid shipping.

There are two methods of reassembling the two halves of the drum, they are:

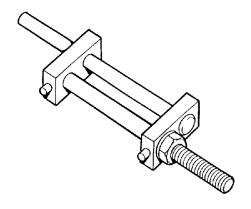
1. Assembling drum using special clamping tool.
(The special clamping tool, part

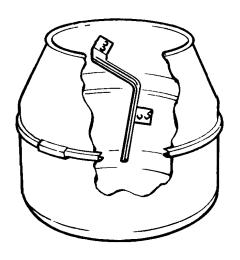
(The special clamping tool, pan number 513204000, can be obtained from any Winget distributor).

- A. Bolt the two blades into the drum base. Tighten the bolts with fingers only.
- B. Smear silicone sealer around the mating flanges of the cone and drum base. (see 'Specifications' for mixer drum sealant)

WARNING: When applying silicone sealer, prevent contact with skin by wearing suitable gloves.

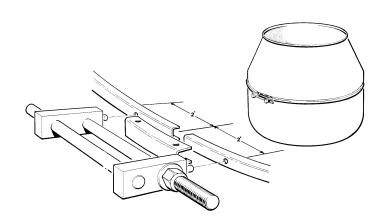
- C. Lift the cone over the blades and position it on the drum base.
- D. Turn the cone until the holes at the top of each blade align with the holes in the cone. Fit bolts and tighten with fingers only.
- E. Smear silicone sealer around the inside face of the drum clip (leave 150mm each end of the clip clear of sealant to avoid risk of fire when welding).
- F. Locate the drum clip around the periphery of the drum base and cone flange.





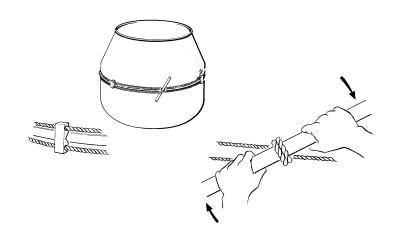
SERVICING 3.4

- G. Locate the clamping tool into the two holes of the drum clip. Tighten the tool securely using a suitable spanner.
- H. Centralise the bridge piece on the drum clip between the jaws of the clamping tool.
- I. Weld the bridge piece to the drum clip.
- J. Tighten securely all of the blade fixing bolts.



2. Assembling drum using a tourniquet

- A. If the special clamping tool is not available, a tourniquet can be used as illustrated, by looping a length of rope through four blocks of wood, each block having a vee cut, and two holes to take the rope.
- B. Twist the rope around a bar to tighten the drum clip.
- C. All other aspects of the assembly are the same as "Assembling the drum using special clamping tool".



3.5 SERVICING

Pinion Adjustment

Adjustment of the pinion to correct mesh must only be done by using the adjusting screws located in the base of the trunnion.

Tightening screws will increase back-lash slackening screws will decrease back-lash.

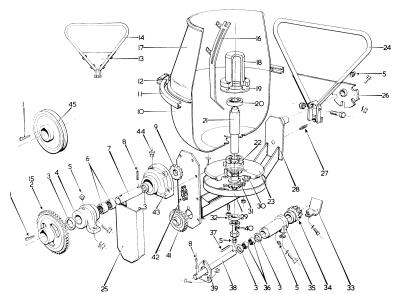
To set up pinion mesh, allow complete engagement between gear and pinion with adjusting screws just contacting spacer (Ref. B1-31). Then release special setscrew (Ref. B1-40) and screw up adjusting screws by half to one turn each to obtain the required back-lash, tighten locknuts on adjusting screws and finally tighten special set-screw (Ref. B1-40).

Tyre Pressures

If pneumatic wheels are fitted check tyre pressure regularly and set at 2.81 Kg/cm³ (40 p.s.i.).

Check the tyres for wear, damage and deterioration.

Check tyre pressures only when the tyres are cold.



TECHNICAL INFORMATION

4.1

Lubricants

Mixers are factory filled with the following TOTAL oils.

Engine, lubricating oil	Rubia B 10"/30	
Note: In cold weather engines are to be	filled with 10W oil to aid starting.	
Electric Motor bearing	Multis EP2	
Drive chains	Rubia B 20W/30	
Bevel gears	Open gear fluid	
Drum shaft	Anti-seize compound	
Grease Nipples	Multis EP 2	
Linkages and hinges	Rubia B 20W/30	

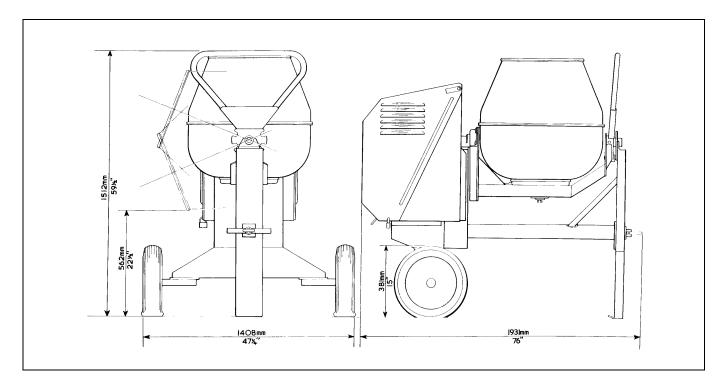
Tyre pressures

Mixer drum sealant

Two wheeled ("Fast tow") mixers: 40 lb in ²	Silicone sealant	Pt. No. V2000772
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TECHNICAL INFORMATION

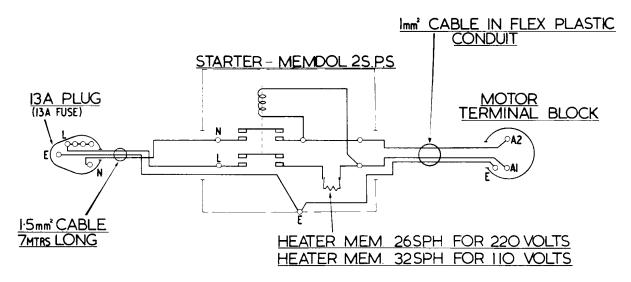
DIMENSIONS



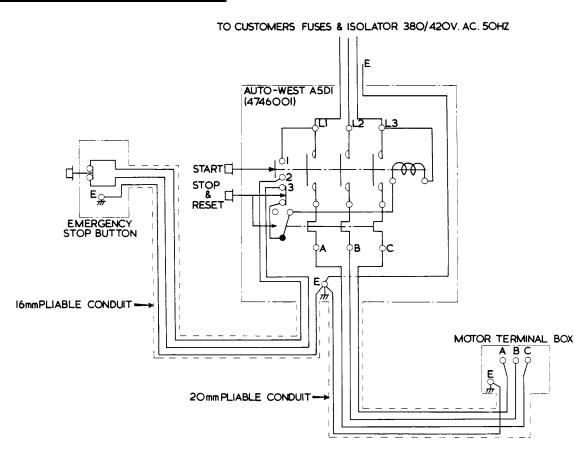
ELECTRICALLY DRIVEN MIXERS WIRING CIRCUIT

Electrical connections must only be made by a suitably qualified electrician.

1PH ELECTRICAL WIRING DIAGRAM



3PH ELECTRICAL WIRING DIAGRAM

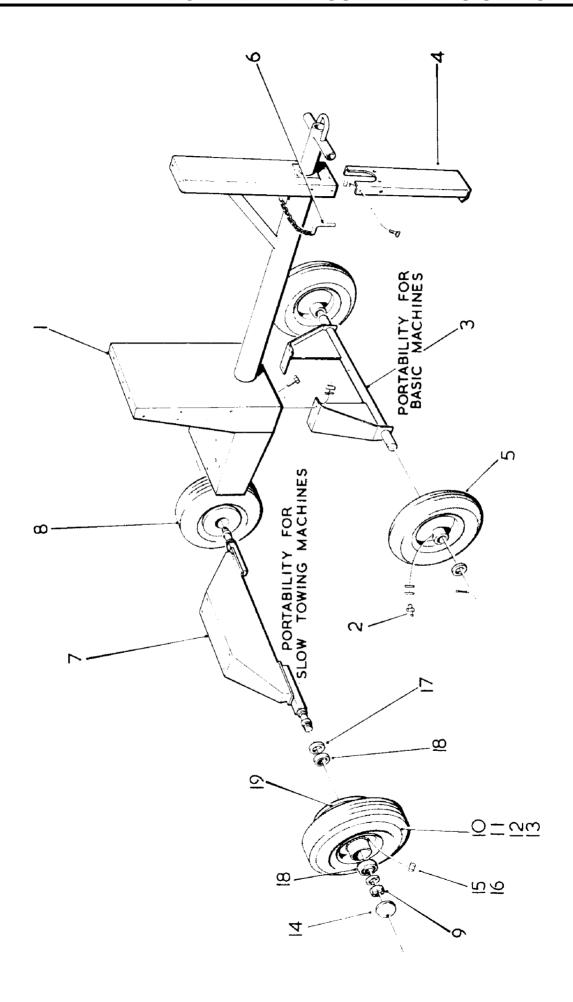


PARTS

When using the following pages to order parts, please quote:

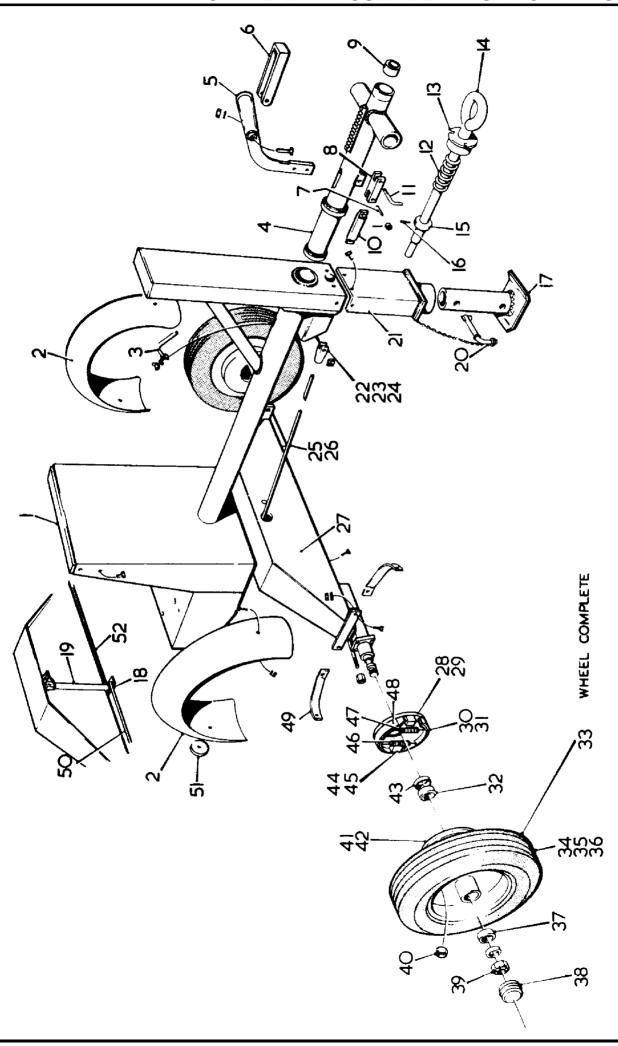
The full serial number of your machine.
The engine model and number of your machine.
The page number on which your item appears.
The item number of the part you require.

CONTENTS	PAGE
PORTABILITY ASSEMBLY BASIC MACHINE	A1
PORTABILITY ASSEMBLY FAST TOW MACHINE	A2
DRUM & TRUNNION ASSEMBLY	B1
DRIVE ASSEMBLY, BRIGGS & STRATTON/HONDA	C1
GUARDS ASSEMBLY, BRIGGS & STRATTON/HONDA	C2
PETTER AA1 GUARDS & DRIVE ASSEMBLY	C3
LISTER LT1 GUARDS & DRIVE ASSEMBLY	C4
ELECTRIC 3PH GUARDS & DRIVE ASSEMBLY	C5
ELECTRIC 1PH GUARDS & DRIVE ASSEMBLY	C6
VILLIERS GUARDS & DRIVE ASSEMBLY	C7
PETTER AC1ZS GUARDS & DRIVE ASSEMBLY	C8
LISTER LD1 & LR1 GUARDS & DRIVE ASSEMBLY	C9



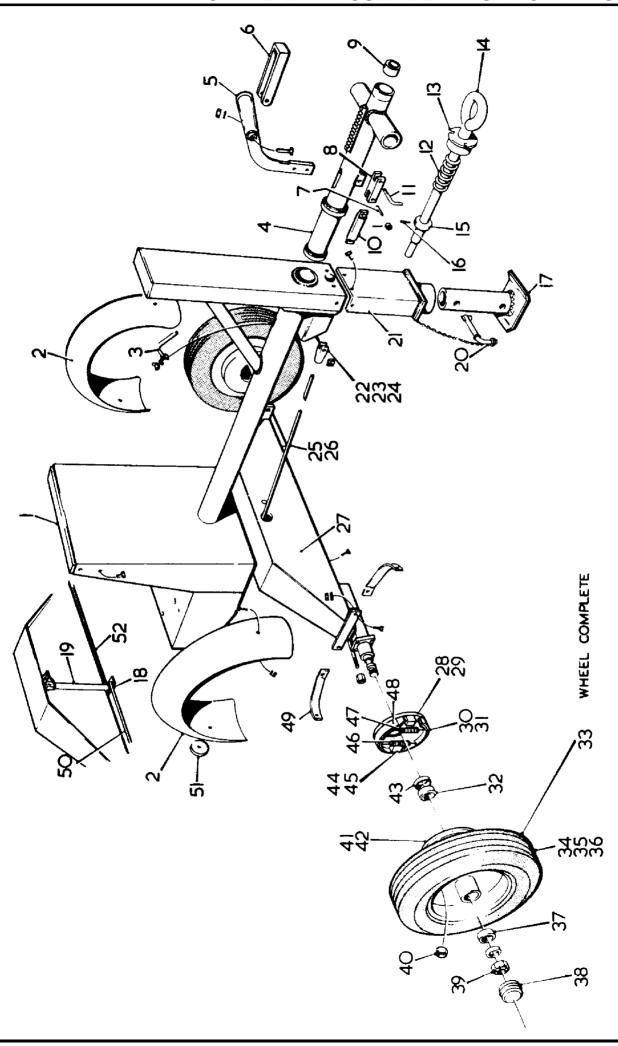
PORTABILITY ASSEMBLY BASIC MACHINE

Item	n Part no	Serial no	Description	Qty
1	Mainframe			
	513 1651 00		Petter AA1	1
	513 1651 00		Lister LT1	1
	513 1650 00		Briggs & Stratton	1
	513 1650 00		1-Phase Electric Motor (Metric)	1
	513 1650 00		3-Phase Electric Motor (Metric)	1
2	131S06		Grease Nipple, 1/4" x 28 UNF	1
3	513 2049 00		Axle	1
3A	69S03E		Bolt	4
3B	192S03		Nut, Binx	4
3C	10S14		Washer, flat	4
4	513 2087 00		Front Leg	1
4A	69S03E		Bolt	4
4B	104S03		Nut	4
4C	41S05		Washer, spring	4
5	475 1120 00		Wheel	2
5A	10S65		Washer, flat	2
5B	44S05J		Pin, split	2
6	513 1652 12		Locking pin and chain	1
7	513 2377 00		Axle (slow tow)	1
7A	69S03E		Bolt	4
7B	192S03		Nut, Binx	4
7C	10S14		Washer, flat	4
8	475 1180 00		Wheel complete (slow tow)	2
9	475 1170 20		Slotted nuts	2
9A	353308014		Pin, split	2
9B	10S05		Washer, flat	2
10	475 1170 09		Wheel Pressing	2
11	475 1170 07		Tyres	2
12	475 1170 08		Tubes	2
13	475 1170 21		Tyre and Rim Complete	2
14	475 1170 04		Hub Caps	2
15	475 1170 02		Cone Seated Wheel Nuts	8
16	475 1170 03		Knurled Wheel Studs	8
17	475 1170 19		Oil Seal	2
18	475 1170 05		Taper Roller Bearing	4
19	475 1180 01		Wheel Hub Complete	2
20	332 1190 00		Triangle Reflector (not illustrated)	1
20A	82S03F		Bolt	3
20B	83S03		Nut 2BA	3
20C	41S02		Washer, Spring	3

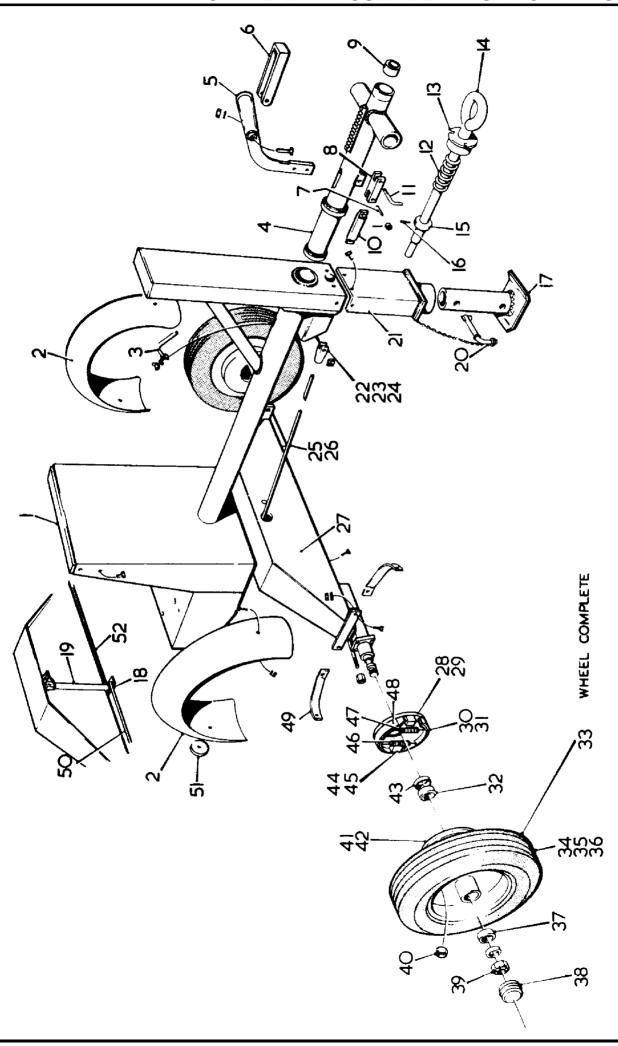


PORTABILITY ASSEMBLY FAST TOW MACHINE

Item	n Part no	Serial no	Description	Qty
1	Mainframe			
-	513 1705 00		Petter AA1	1
	513 1705 00		Lister LT1	1
	513 1706 00		1-Phase Electric Motor (Metric)	1
	513 1706 00		3-Phase Electric Motor (Metric)	1
	513 1706 00		Briggs & Stratton	1
2	513 1420 00		Mud Guard	2
2A	220S04G		Bolt, round head	4
2B	104S03		Nut	4
2C	41S05		Washer, spring	4
3	513 1408 00		Towbar Retaining Pin with Jack Chain	1
3A	217S04		Nut, wing	1
3B	41S05		Washer, spring	1
4	513 1399 00		Towbar	1
4A	66S01BB		Screw set	2
4B	41S03		Washer, spring	2
5	504 5560 00		Parking Handbrake Lever	1
5A	69S03J		Bolt	1
5B	104S03		Nut	1
5C	41S05		Washer, spring	1
6	504 5562 00		Hinge Lever	1
6A	69S03L		Bolt	1
6B	104S03		Nut	1
6C	41S05		Washer, spring	1
7	513 1407 00		Pin for Brake Gear Shackle	1
7A	353304008		Pin, split, 1/8" x 1"	2
7B	10S14		Washer, flat	2
8	513 1406 00		Fork End for Brake	1
9	501 3549 00		Stop for Spring	1
10	502 1070 00		Connector	1
11	501 3553 00		Pin	1
12	501 3623 00		Compressor Spring	1
13	513 1354 70		End Cap	1
14	513 1401 00		Towing Rod	1
15	501 3862 00		Collar	1
16	352 4100 12		Mills Pin	1
17	513 1403 00		Jack Tube	1
18	513 2106 00		Compensator Pin	1
18A	353304010		Pin, split	1
18B	10S05		Washer, flat	1
19	513 2105 00		Compensator	1
19A	353304008		Pin, split, 1/8" x 1"	1
19B	10S04		Washer, flat	1
20	513 1402 00		Jack Tube Pin	1
20A	66S01BB		Screw set	1
20B	10S01		Washer, flat	1



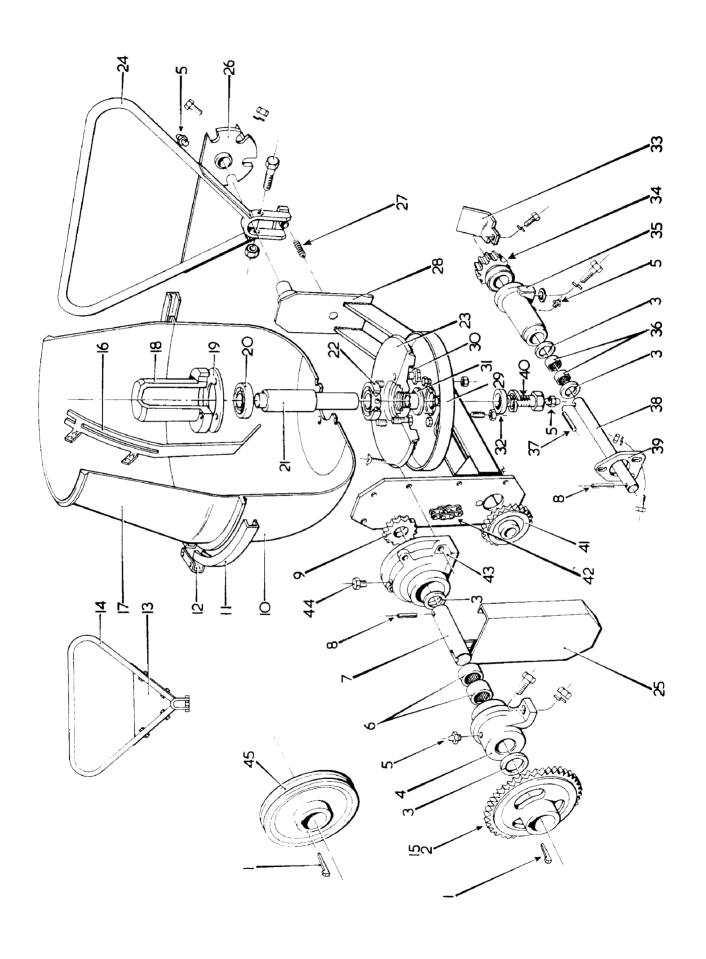
Item	Part no	Serial no	Description	Qty
21	513 1400 00		Front Leg	1
21A	69S03C		Bolt	4
21B	104S03		Nut	4
21C	41S05		Washer, spring	4
22	224 4090 00		Fork End	1
23	353 2820 00		Pin	1
24	132 1290 00		Clip	1
25	513 2111 00		Main Brake Rod (Diesel Machines)	1
26	513 2112 00		Main Brake Rod (All machines except Di	
27	513 2377 00		Axle	1
27A	69S03E		Bolt	4
27B	192S03		Nut, Binx	4
27C	192303 10S14		Washer, flat	4
28	475 1170 12		Back Plate R.H. 4561-117	1
				-
29	475 1170 13 475 1170 10		Back Plate L.H. 4561-118	1 1
30			Brake Assembly R.H. 4611-221	
31	475 1170 11		Brake Assembly L.H. 4611-222	1
32	475 1170 06		Taper Roller Bearing	2
33	475 1170 00		Complete Wheel with Brake	2
34	475 1170 07		Tyres	2
35	475 1170 08		Tubes	2
36	475 1170 09		Wheel Pressing	2
37	475 1170 05		Taper Roller Bearing	2
38	475 1170 05		Hub Caps	2
39	475 1170 20		Slotted Nuts	2
39A	353308014		Pin, split	2
39B	10S05		Washer, flat	2
40	475 1170 02		Cone Seated Wheel Nuts	8
41	475 1170 01		Wheel Hub and Brake Drum	2
42	475 1170 03		Knurled Wheel Nuts	8
43	475 1170 19		Oil Seal	2
44	475 1170 17		Expander Assembly R.H.	1
45	475 1170 18		Expander Assembly L.H.	1
46	475 1170 14		Pull Off Spring	2
47	475 1170 15		Pull Off Spring	2
48	475 1170 16		Brake Shoe Set	2
49	513 1409 00		Mud Guard Bracket	4
49A	69S03E		Bolt	4
49B	104S03		Nut	4
49C	41S05		Washer, spring	4
50	513 2373 00		Brake Rod - Nearside	1
50A	9S02		Nut	3
50B	10S02		Washer, flat	3
50C	353303006		Pin, split	3
51	386 1020 00		Reflector	2



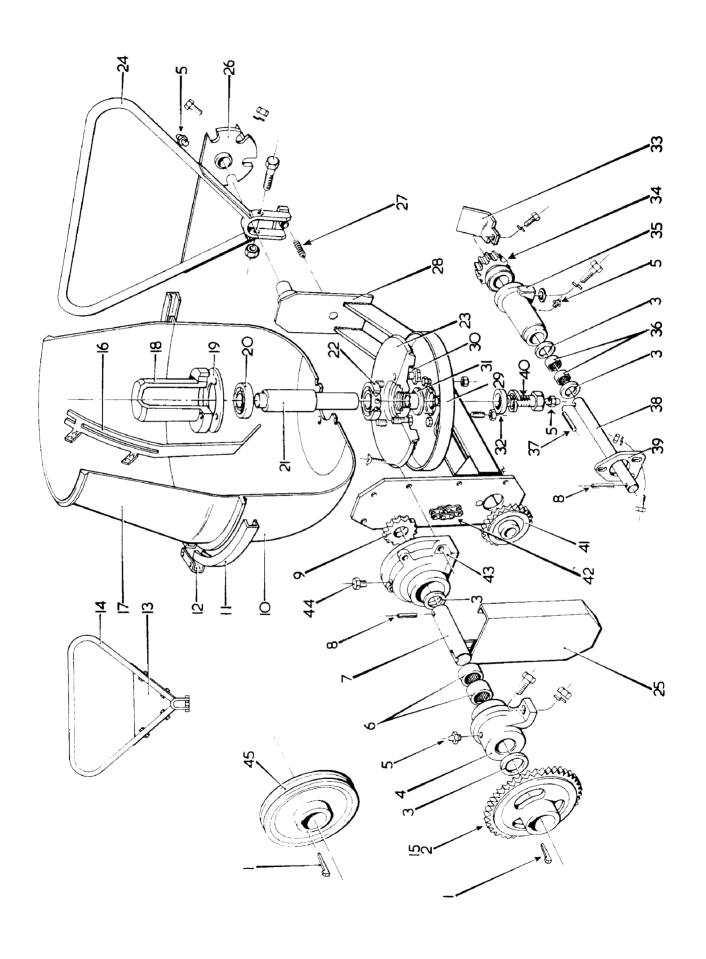
PORTABILITY ASSEMBLY FAST TOW MACHINE

A - 2

Item	Part no	Serial no	Description	Qty
52	513 2374 00		Brake Rod - Offside	1
53	332 1190 00		Triangle Reflector (not illustrated)	1
53A	82S03F		Bolt	3
53B	83S03		Nut, 2BA	3
53C	41S02		Washer, spring	3

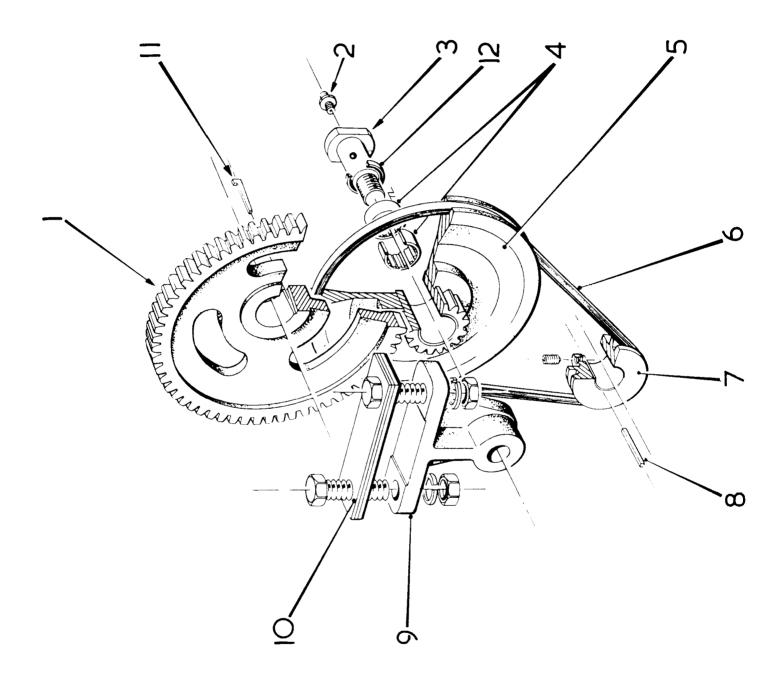


Item	Part no	Serial no	Description	Qty
1	300 2040 12		Gib Head Key	1
2	Chain Wheel		Chain Wheel	
	513 1231 00		Petter AA1	1
	513 1231 00		Lister LT1	1
3	513 1245 00		Thrust Washer	4
4	513 1293 00		Trunnion Bearing (Drive End)	1
4A	66S05C		Bolt	2
4B	104S05		Nut	2
4C	41S07		Washer, spring	2
5	333 1020 20		Grease Nipple	4
6	113 1340 00		Needle Bearing	2
7	513 1248 00		Drive Shaft	1
8	353 8053 20		Spirol Pin	2
9	513 1294 00		Driving Sprocket	1
10	513 1640 10		Drum Base	1
11	513 2037 00		Drum Clip	1
12	513 2057 00		Bridge Piece	1
13	513 2031 00		Tilting Arm (Export)	1
13A	69S03F		Bolt	4
13B	104S03		Nut	4
13C	41S05			4
			Washer, spring	_
14	513 1645 10		Tilting Arm Handle (Export)	1
	28S07R		Bolt, 5/8"UNF x 31/4"	1
14B	87S07		Nut, Binx	1
15	513 1237 00		Chain Wheel (3 Ph. E/Motor & Villiers)	1
16	513 1297 00		Mixing Blades	2
16A	200S03E		Screw, Round Head	8
16B	104S03		Nut	8
16C	41S05		Washer, spring	8
17	513 1640 20		Drum Cone	1
18	513 1239 00		Drum Base Centre	1
19	513 2560 00		Gasket	1
20	102 2100 00		Bearing	1
21	513 1234 00		Centre Shaft	1
22	102 2120 00		Bearing	1
23	513 1646 00		Drum Bevel Gear	1
23A	69S05G		Bolt 1/2" x 11/2" UNC	4
24	513 1644 00		Tilting Arm (Home)	1
	28S07R		Bolt, 5/8"UNF x 31/4"	1
24B	87S07		Nut, Binx	1
25	513 1657 00		Chain Guard	1
25A	332 7019 00		Latching Nut	4
25B	66S01CC		Screw set	4
26	413 1269 00		Trunnion Bearing (Tilting End)	1
26A	66S05A		Bolt 1/2" x 1" UNC	2
26B	104S05		Nut	2
26C	41S07		Washer, spring	2



DRUM & TRUNNION ASSEMBLY

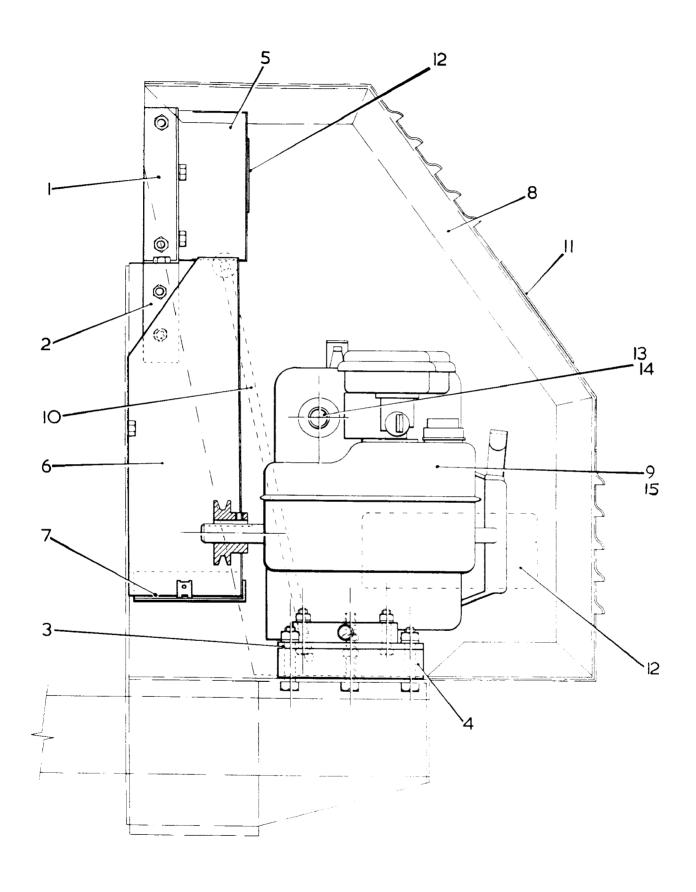
Item	Part no	Serial no	Description	Qty
27	425 7094 80		Compression Spring	1
28	513 1638 00		Trunnion	1
28A	195S04K3		Screw Grub 3/8" x 1 1/4" UNF	2
28B	95S03		Nut, lock	2
29	513 1235 00		Bevel Gear Guard	1
29A	69S03C		Bolt	4
29B	104S03		Nut	4
29C	41S05		Washer, spring	4
30	513 1997 00		Tab Washer	2
31	513 1642 00		Spacer	1
32	513 1658 00		Retaining Washer	1
33	513 1631 00		Bevel Pinion Guard	1
33A	66S03AA		Screw set	1
33B	41S05		Washer, spring	1
34	513 1643 00		Bevel Pinion	1
35	513 1241 00		Bevel Pinion Shaft Bearing	1
35A	66S03A		Screw set	2
35B	41S05		Washer, spring	2
35C	10S14		Washer, flat	As req'd
36	113 1280 00		Needle Bearing	2
37	353 8052 60		Spirol Pin	1
38	513 1236 00		Bevel Pinion Shaft	1
39	513 1246 00		Adjusting Plate	1
39A	66S02A		Screw set	2
39B	104S02		Nut	2
39C	41S04		Washer, spring	2
39D	10S02		Washer, flat	2
40	513 2314 00		Special Setscrew	1
40A			Washer, spring	1
41	513 1243 00		Drive Sprocket	1
42	134 1050 52		Chain	1
43	513 1238 00		Trunnion Swivel Bracket	1
43A	208S03D		C.sunk Skt. Hd	4
44	315 8031 00		Lubrication Plug	1
45	513 2467 00		Drive Pulley 1-Phase Electric	1



C - 1

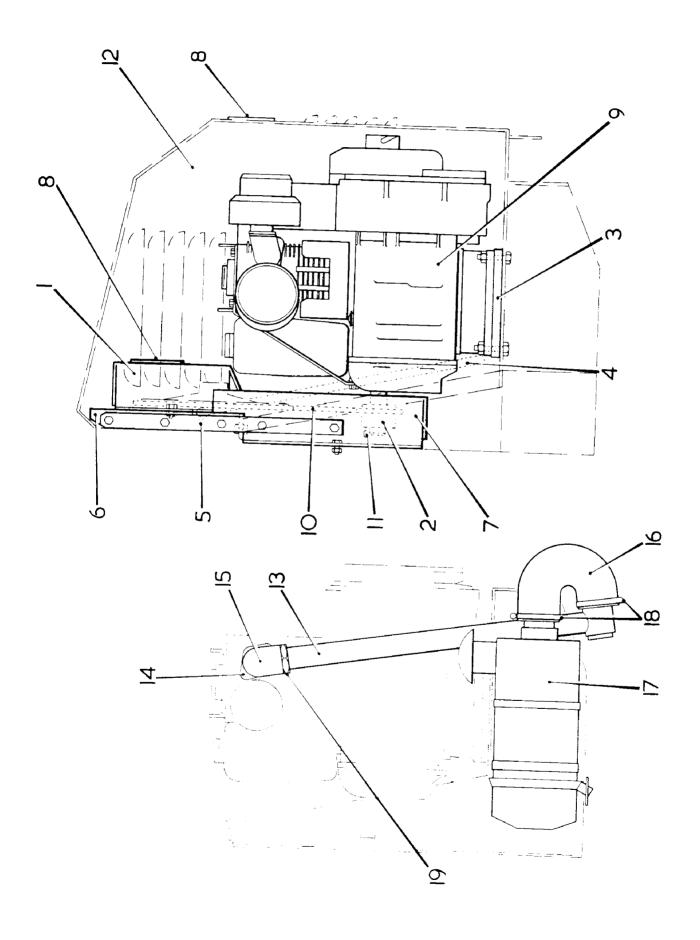
BRIGGS & STRATTON & HONDA DRIVE ASSEMBLY

Item	Part no	Serial no	Description	Qty
1	513 2521 00		Driven Gear	1
2	333 1130 00		Grease Nipple	1
3	513 2526 00		Pinion Shaft	1
4	113 1730 00		Needle Bearing	2
5	513 2523 00		Pulley and Drive Pinion	1
6	397 4760 00		Wedge Belt	1
7	513 2529 00		Drive Pulley	1
7A	57S04D1		Screw grub M6	1
8	304 4031 00		Parallel Key	1
9	513 2521 00		Pinion Bracket	1
9A	69S05K		Bolt	2
9B	104S05		Nut	2
9C	41S07		Washer, spring	2
10	513 2525 00		Shims	1 set
11	300 2041 20		Gib Head Key	1
12	417 7043 00		Seal	2



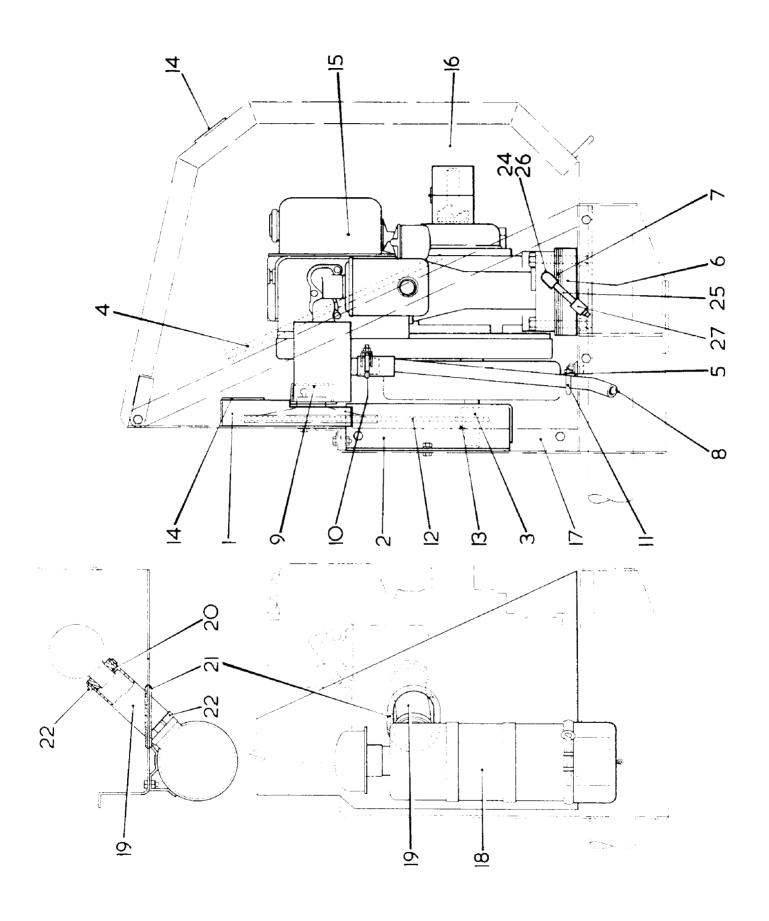
BRIGGS & STRATTON & HONDA GUARDS ASSEMBLY

Item	Part no	Serial no	Description	Qty
1	513 1289 00		Back Plate	1
1A	69S02D		Bolt	2
1B	104S02		Nut	2
1C	41S04		Washer, spring	2
2	513 1292 00		Back Plate Retainer	1
2A	208S02E		Screw, countersunk	2
2B	104S02		Nut	2
2C	41S04		Washer, spring	2
2D	69S02C		Bolt	4
2E	104S02		Nut	4
2F	41S04		Washer, spring	4
3	513 2533 00		Engine Base Plate	1
3A	66S03K		Screw set	1
3B	192S03		Nut, lock	2
4	513 2532 00		Pivot Bracket	1
4A	69S03L		Bolt	2
4B	104S03		Nut	2
4C	41S05		Washer, spring	2
5	513 1635 00		Chain Guard	1
5A	66S02BB		Screw set	4
5B	104S02		Nut	4
5C	41S04		Washer, spring	4
6	513 2530 00		Belt Guard	1
6A	66S02BB		Screw set	2
6B	104S02		Nut	2
6C	41S04		Washer, spring	2
7	513 2531 00		Belt Guard Bottom	1
7A	332 7130 00		Latching Nut	2
7B	66S01CC		Screw set	2
8	513 2531 00		Engine Housing Lid	1
8A	66S02BB		Screw set	2
8B	192S02		Nut lock	2
9	354 0670 00		Briggs & Stratton Engine	1
9A	69S02G		Bolt	4
9B	104S02		Nut	4
9C	41S04		Washer, spring	4
10	513 3019 00		Engine Housing Stay	1
10A	10S02		Washer, flat	1
10B	44S01B		Pin, split, 1/16" x 5/8"	1
11	504 6946 00		Safety Warning Label	1
12	504 6009 00		Warning Label	3
13	242 9080 00		Close Taper Nipple	1
14	241 9040 00		Equal Socket	1
15	354 0725 00		Honda Petrol Engine	1



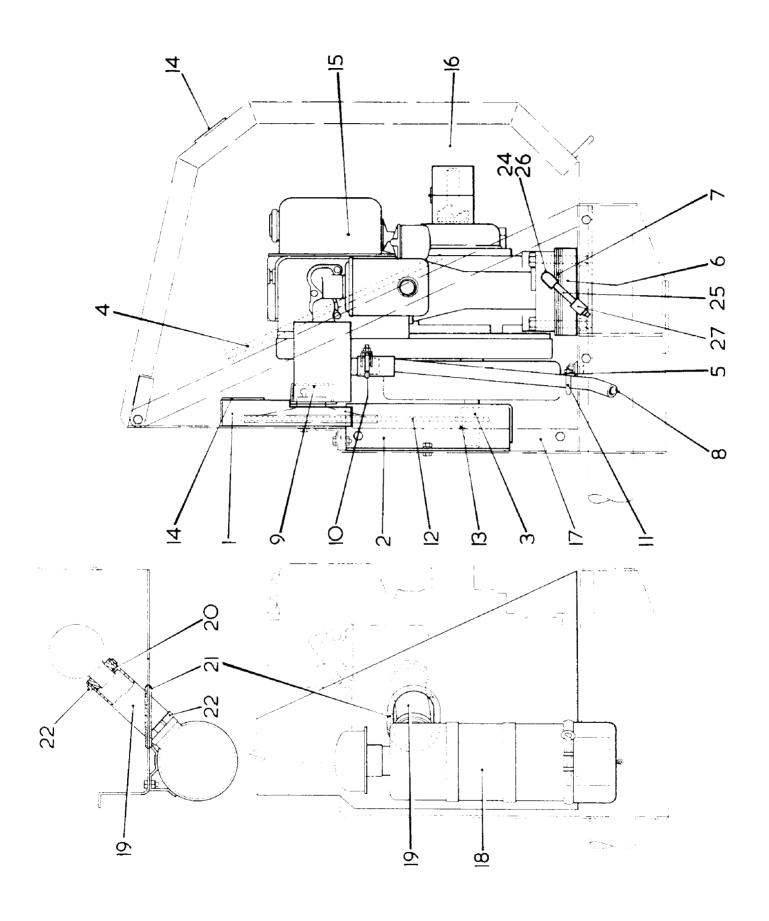
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Item	Part no	Serial no	Description	Qty
1	513 1634 00		Drive Chain Guard	1
1A	69S02A		Bolt	4
1B	104S02		Nut	4
1C	41S04		Washer, spring	4
2	513 1466 00		Engine Sprocket	1
3	513 1467 00		Packers	1 Set
4	513 3019 00		Engine Housing Stay	1
4A	10S02		Washer, flat	1
4B	44S01B		Pin, Split	1
5	513 1469 00		Side Strip	2
5A	69S02C		Bolt	8
5B	104S02		Nut	8
5C	41S04		Washer, spring	8
6	513 1464 00		Backplate	1
6A	69S03E		Bolt	2
6B	104S03		Nut	2
6C	41S05		Washer, spring	2
7	513 2061 00		Guard Over Sprocket	1
8	504 6009 00		Warning Label	2
9	354 0630 00		Petter AA1 Engine	1
9A	6S03F		Bolt	4
9B	87S03		Nut, binx	4
9C	10S14		Washer, flat	4
10	134 1040 82		Roller Chain	1
11	300 2041 60		Gib Head Key	1
12	513 1666 00		Engine Housing Lid	1
	69S02G		Bolt	2
12B	104S02		Nut	2
	41S04		Washer, spring	2
12D			Washer, flat	2
13*			Inlet Pipe	1
	513 1850 00		Inlet Manifold	1
	411905009		Studs, 5/16" UNC x 11/8" long	1
15* 16*			Elbow	1
	555 2045 00 220 2290 00		Rubber Hose	1
17* 17^*	69S03M		Cyclopac Air Cleaner Bolt	4
	104S03		Nut	4
	41S05			
	132 1030 00		Washer, spring Jubilee Clip	4
19*			Backnut	1
20			Warning Label (not illustrated)	1
		HSIVE HSE ONLY	WHEN CYCLOPAC AIR CLEANER IS	ı
		LOGIVE GOE, CINET	WITE WOLDEN AUTOLEANLINE	



C4 LISTER LT1 GUARD & DRIVE ASSEMBLY

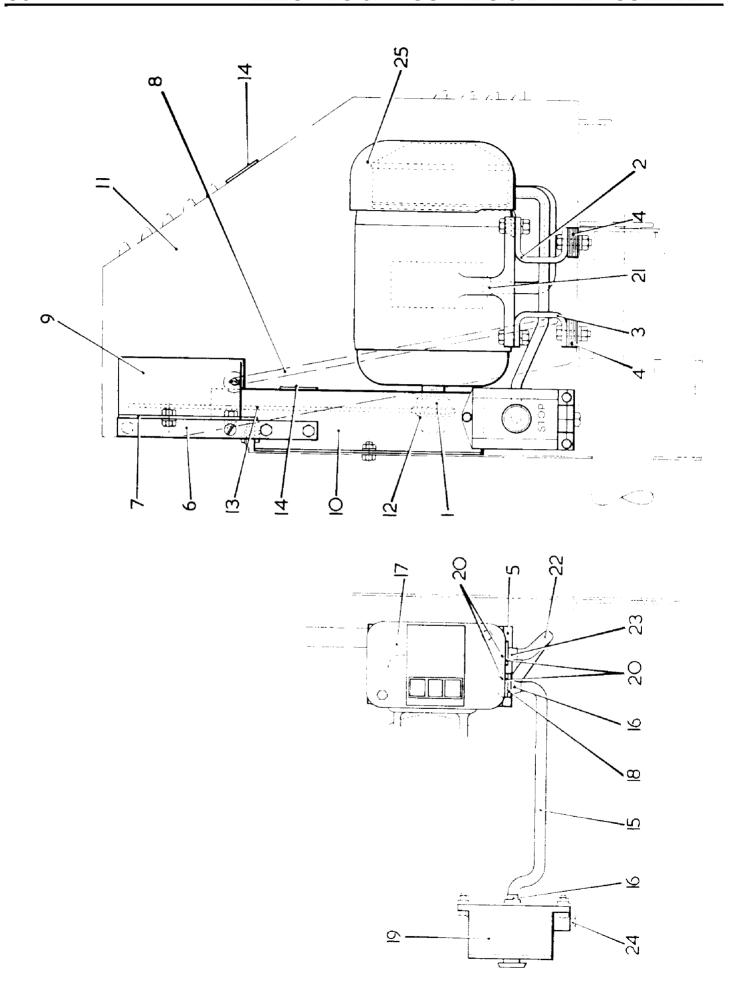
Item	n Part no	Serial no	Description	Qty
1	513 2558 00		Drive Chain Guard	1
1A	69S02C		Bolt	2
1B	104S02		Nut	2
1C	41S04		Washer, spring	2
2	513 2499 00		Guard over Sprocket	1
2A	69S02C		Bolt	2
2B	104S02		Nut	2
2C	41S04		Washer, spring	2
3	513 2500 00		Engine Sprocket	1
4	513 3019 00		Engine Housing Stay	1
4A	44S01B		Pin, split	1
4B	10S02		Washer, flat	1
5	513 2482 00		Securing Bracket	1
5A	69S03C		Bolt	1
5B	104S03		Nut	1
5C	41S05		Washer, spring	1
6	513 2501 00		Clearance Packers	2
7	513 2502 00		Engine Packers	1 Set
8	513 2586 00		Exhaust Pipe	1
9	354 0510 04		Protection Plug	1
10	354 0510 05		Exhaust Clamp	1
11	354 0510 03		Exhaust Clamp	1
11A	10S02		Washer, flat	2
12	134 1040 82		Roller Chain	1
13	300 2041 20		Gib Head Key	1
14	504 6009 00		Warning Label	2
15	354 0510 00		List LT1 Engine	1
15A	6S03M		Bolt	4
15B	87S05		Nut, Binx	4
15C	10S04		Washer, flat	4
16	513 1641 00		Engine Housing Lid	1
16A			Screw set	2
16B	192S02		Nut	2
17	513 1648 00		Engine Housing	1
17A	69S02C		Bolt	8
17B	104S02		Nut	8
17C	41S04		Washer, spring	8
17D	69S02B		Bolt	2
17E	104S02		Nut	2
17F	41S04		Washer, spring	2



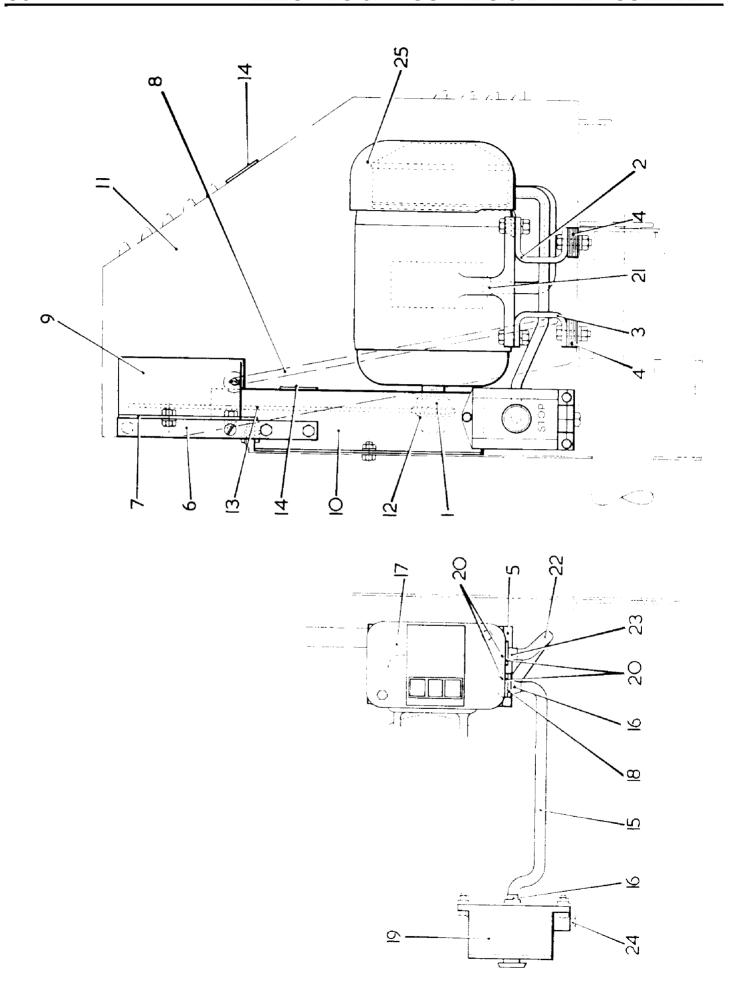
C4 LISTER LT1 GUARD & DRIVE ASSEMBLY

Item	Part no	Serial no	Description	Qty
40*	000 0000 00		0 1 4: 01	4
18*	220 2360 00		Cyclopac Air Cleaner	1
18A*	69S02B		Bolt	4
18B*	104S02		Nut	4
18C*	41S04		Washer, Spring	4
18D*	353304008		Pin, split	1
19*	260 5160 00		Hose	1
20*	354 0510 01		Rubber Hose	1
21*	394 4110 00		Rubber Strip	1
22*	132 1200 20		Jubilee Clip	2
23	504 6946 00		Warning Label (not illustrated)	1
24	513 2565 00		Drain Pipe (Short)	1
25	513 2583 00		Drain Pipe (Long)	1
26	241 1020 00		Equal Elbow	1
27	241 9020 00		Equal Socket	1

^{*} NOTE: Refs. 18 - 22 inclusive, use only when Cyclopac Air Cleaner is fitted.



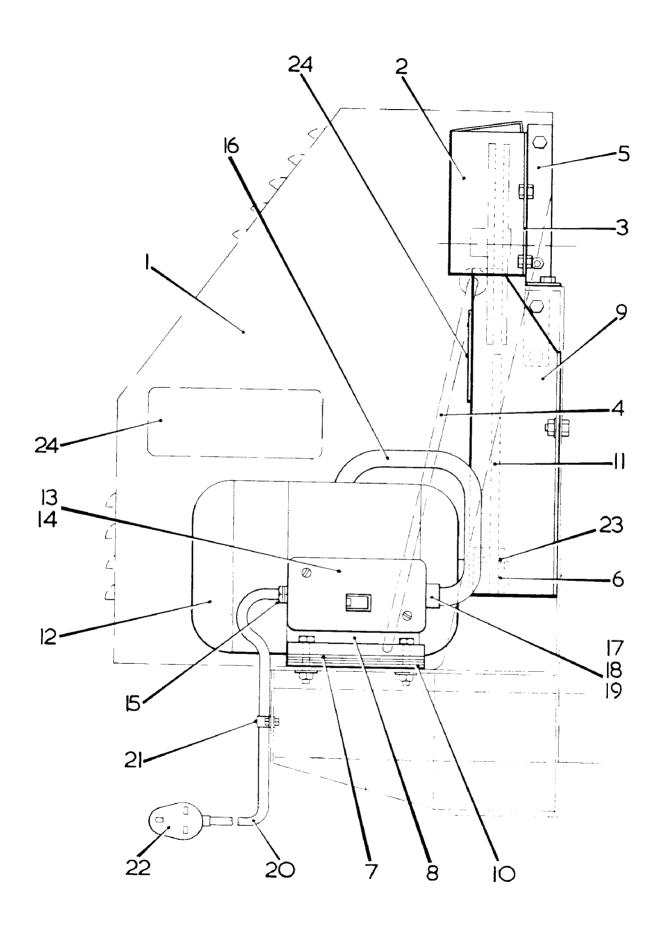
Iter	n Part no	Serial no	Description	Qty
1	513 1970 00		Motor Sprocket	1
1A	188S03C2		Screw Grub	1
2	513 1972 00		Motor Mounting (Rear)	1
2A	6S03D		Bolt	2
2B	9S03		Nut	2
2C	41S05		Washer, spring	2
3	513 1973 00		Motor Mounting (Front)	1
3A	6S03D		Bolt	2
3B	9S03		Nut	2
3C	41S05		Washer, spring	2
4	513 1971 00		Packers	1 Set
5	513 1974 00		Start Mounting Bracket	1
6	513 1292 00		Back Plate Retainer	2
6A	6S02C		Bolt	4
6B	9S02		Nut	4
6C	41S04			4
6D	183S02D		Washer, spring Screw countersunk	2
6E	9S02			2
o⊏ 6F			Nut	2
	41S04		Washer, spring	
7	513 1289 00		Back Plate	1
8	513 3019 00		Engine Housing Stay	1
A8	10S02		Washer, flat	1
8B	44S01B		Pin split	1
9	513 1635 00		Chain Guard	1
9A	6S02EE		Bolt	4
9B	9S02		Nut	4
9C	41S04		Washer, spring	4
10	513 2059 00		Guard Over Sprocket	1
10A			Bolt	2
10B	6S02CC		Bolt	2
10C			Nut	4
10D			Washer, spring	4
11	413 1633 00		Housing Lid	1
11A			Screw set	2
11B			Nut, lock	2
12	304 7080 25		Parallel Key	1
13	134 1040 76		Roller Chain	1
14	504 6009 00		Warning Label	2
15	131 7050 02		Conduit	1
16	131 6660 10		Coupling	2
17	474 6001 00		Starter	1
17A	28S03E		Bolt	2
17B	197S09G		Screw set	2
17C	239S04		Nut	2
17D	9S03		Nut	2
17E	41S05		Washer, spring	2
17F	41S02		Washer, spring	2
111	7100Z		vvasiici, spillig	



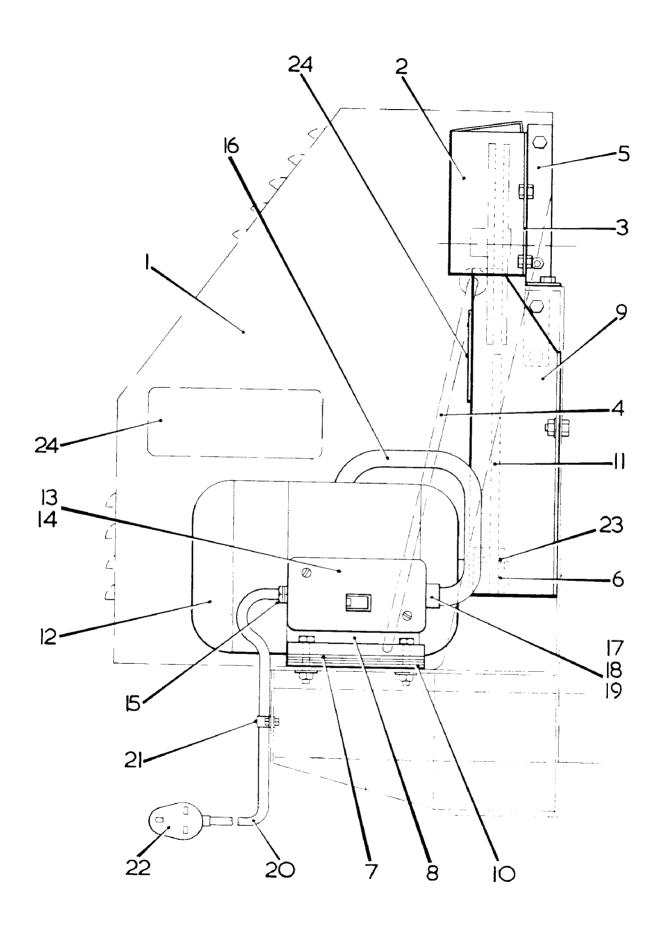
C - 5

C5 ELECTRIC 3 PHASE GUARD & DRIVE ASSEMBLY

Item	Part no	Serial no	Description	Qty
18	131 5700 16		Reducing Socket	1
19	208 8700 00		Stop Button	1
20	133 2700 00		Locknet	4
21	131 4700 00		Brass Bush	2
22	131 7310 00		Conduit	1
23	131 2060 10		Coupling	2
24	133 4700 00		Stopping Plug	1
25	202 4840 00		3 Phase Electric Motor (Metric)	1
25A	6S03C		Bolt	4
25B	9S03		Nut	4
25C	41S05		Washer, spring	4
26	504 9646 00		Warning Label (not illustrated)	1



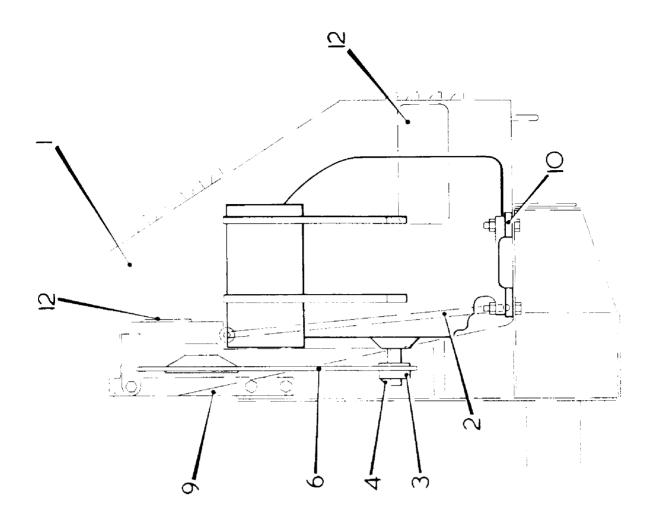
1 513 1633 00 Engine Housing Lid 1 1A 66S02B Screw set 2 1B 192S02 Nut lock 2 2 513 1635 00 Chain Guard 1 2A 6S02EE Bolt 4 2B 9S02 Nut 4 2B 9S02 Nut 4 2D 183S02D Screw countersunk 2 2E 9S02 Nut 2 2F 41S04 Washer, spring 2 3 513 1289 00 Back Plate 1 4 513 3019 00 Engine Housing Stay 1 4A 10S02 Washer, flat 1 4A 10S02 Washer, flat 1 4B 44S01B Pin, split 1 5 513 1292 00 Back Plate Retainer 2 5A 6S02C Bolt 4 5B 9S02 Nut 4 5D 183S02D	Iten	n Part no	Serial no	Description	Qty
1A 66S02B Screw set 2 1B 192S02 Nut lock 2 2 513 1635 00 Chain Guard 1 2A 6S02EE Bolt 4 2B 9S02 Nut 4 2D 183S02D Screw countersunk 2 2E 9S02 Nut 2 2F 41S04 Washer, spring 2 2F 41S04 Washer, spring 2 3 513 1289 00 Back Plate 1 4 513 3019 00 Engine Housing Stay 1 4A 10S02 Washer, flat 1 4B 44S01B Pin, split 1 5 513 1292 00 Back Plate Retainer 2 5A 6S02C Bolt 4 5B 9S02 Nut 4 5C 41S04 Washer, spring 4 5D 183S02D Screw countersunk 2 5E 9S02<	1	513 1633 00		Engine Housing Lid	1
2 513 1635 00 Chain Guard 1 2A 6S02EE Bolt 4 2B 9502 Nut 4 2C 41S04 Washer, spring 4 2D 183S02D Screw countersunk 2 2E 9S02 Nut 2 2F 41S04 Washer, spring 2 3 513 1289 00 Back Plate 1 4 513 3019 00 Engine Housing Stay 1 4A 10S02 Washer, flat 1 4B 44S01B Pin, split 1 5 6302C Bolt 4 5B 9S02 Nut 4 5A 6802C Bolt 4 5B 9S02 Nut 4 5D 183S02D Screw Countersunk 2 5C 41S04 Washer, spring 4 5D 183S02D Screw Countersunk 2 5E 9S02 Nut 2 5F 41S04 Washer, spring 2 6 513 2463 00 Motor Palley 1 7 513 2464 00 Motor Packers 1 Set <td>1A</td> <td>66S02B</td> <td></td> <td></td> <td>2</td>	1A	66S02B			2
2A 6S02EE Bolt 4 2B 9S02 Nut 4 2C 41S04 Washer, spring 4 2D 183S02D Screw countersunk 2 2E 9S02 Nut 2 2F 41S04 Washer, spring 2 3 513 1289 00 Back Plate 1 4 513 3019 00 Engine Housing Stay 1 4A 10S02 Washer, flat 1 4B 44S01B Pin, split 1 5 513 1292 00 Back Plate Retainer 2 5A 6502C Bolt 4 5B 9S02 Nut 4 5C 41S04 Washer, spring 4 5D 183S02D Screw countersunk 2 5E 9S02 Nut 2 5F 41S04 Washer, spring 2 6 513 2463 00 Motor Pulley 1 6 513 2464	1B	192S02		Nut lock	2
2B 9S02 Nut 4 2C 41504 Washer, spring 4 2D 183S02D Screw countersunk 2 2E 9S02 Nut 2 2F 41S04 Washer, spring 2 3 513 1289 00 Back Plate 1 4 513 3019 00 Engine Housing Stay 1 4A 10S02 Washer, flat 1 4B 44S01B Pin, split 1 5 513 1292 00 Back Plate Retainer 2 5A 6S02C Bolt 4 5B 9S02 Nut 4 5C 41S04 Washer, spring 4 5D 183S02D Screw countersunk 2 5E 9S02 Nut 2 5F 41S04 Washer, spring 2 6 513 2463 00 Motor Pulley 1 6A 188S02B1 Screw Grub 1 7	2	513 1635 00		Chain Guard	1
2C 41504 Washer, spring 4 2D 183S02D Screw countersunk 2 2E 9S02 Nut 2 2F 41504 Washer, spring 2 3 513 1289 00 Back Plate 1 4 513 3019 00 Engine Housing Stay 1 4A 10S02 Washer, flat 1 4B 44501B Pin, split 1 5 513 1292 00 Back Plate Retainer 2 5A 6S02C Bolt 4 5B 9S02 Nut 4 5C 41804 Washer, spring 4 5D 183S02D Screw countersunk 2 5E 9S02 Nut 2 5F 41S04 Washer, spring 2 6 513 2463 00 Motor Pulley 1 6 513 2464 00 Motor Packers 1 Set 8 513 2464 00 Motor Packers 1 Set	2A	6S02EE		Bolt	4
2D 183S02D Screw countersunk 2 2E 9S02 Nut 2 2F 41S04 Washer, spring 2 3 513 1289 00 Back Plate 1 4 513 3019 00 Engine Housing Stay 1 4A 10S02 Washer, flat 1 4B 44S01B Pin, split 1 5 513 1292 00 Back Plate Retainer 2 5A 6S02C Bolt 4 5B 9S02 Nut 4 5C 41804 Washer, spring 4 5D 183802D Screw countersunk 2 5E 9S02 Nut 2 5F 41S04 Washer, spring 2 6 513 2463 00 Motor Pulley 1 6 513 2464 00 Motor Packers 1 Set 8 513 2464 00 Switch Bracket 1 8 513 2464 00 Switch Bracket 1	2B	9S02		Nut	4
2D 183S02D Screw countersunk 2 ZE 9S02 Nut 2 ZF 41S04 Washer, spring 2 3 513 1289 00 Back Plate 1 4 513 3019 00 Engine Housing Stay 1 4A 10S02 Washer, flat 1 4B 44801B Pin, split 1 5 513 1292 00 Back Plate Retainer 2 5A 6S02C Bolt 4 5B 9S02 Nut 4 5C 41804 Washer, spring 4 5D 183802D Screw countersunk 2 5E 9S02 Nut 2 5F 41S04 Washer, spring 2 6 513 2463 00 Motor Pulley 1 6 513 2464 00 Motor Packers 1 Set 8 513 2464 00 Switch Bracket 1 8 513 2464 00 Switch Bracket 1	2C	41S04		Washer, spring	4
2F 41504 Washer, spring 2 3 513 1289 00 Back Plate 1 4 513 3019 00 Engine Housing Stay 1 4A 10502 Washer, flat 1 4B 44501B Pin, split 1 5 513 1292 00 Back Plate Retainer 2 5A 6802C Bolt 4 5B 9802 Nut 4 5C 41504 Washer, spring 4 5D 183502D Screw countersunk 2 5E 9802 Nut 2 5F 41504 Washer, spring 2 6 513 2463 00 Motor Pulley 1 6A 188502B1 Screw Grub 1 7 513 2464 00 Motor Packers 1 Set 8 513 2464 00 Switch Bracket 1 8A 28903D Bolt 2 8C 41505 Washer, spring 2 9 513 2462 00 Belt Guard 1 9A 6902EE </td <td>2D</td> <td>183S02D</td> <td></td> <td></td> <td>2</td>	2D	183S02D			2
3 513 1289 00 Back Plate 1 4 513 3019 00 Engine Housing Stay 1 4A 10S02 Washer, flat 1 4B 44S01B Pin, split 1 5 513 1292 00 Back Plate Retainer 2 5A 6S02C Bolt 4 5B 9S02 Nut 4 5C 41S04 Washer, spring 4 5D 183S02D Screw countersunk 2 5E 9S02 Nut 2 5F 41S04 Washer, spring 2 6 513 2463 00 Motor Pulley 1 6 513 2463 00 Motor Pulley 1 7 513 2464 00 Switch Bracket 1 8 513 2464 00 Switch Bracket 1 8 513 2464 00 Switch Bracket 1 8C 41505 Washer, spring 2 9 513 2462 00 Belt Guard 1	2E	9S02		Nut	2
3 513 1289 00 Back Plate 1 4 513 3019 00 Engine Housing Stay 1 4A 10S02 Washer, flat 1 4B 44S01B Pin, split 1 5 513 1292 00 Back Plate Retainer 2 5A 6S02C Bolt 4 5B 9S02 Nut 4 5C 41S04 Washer, spring 4 5D 183S02D Screw countersunk 2 5E 9S02 Nut 2 5F 41S04 Washer, spring 2 6 513 2463 00 Motor Pulley 1 6A 188S02B1 Screw Grub 1 7 513 2464 00 Motor Packers 1 Set 8 513 2464 00 Switch Bracket 1 8A 28503D Bolt 2 8C 41S05 Washer, spring 2 9 513 2462 00 Belt Guard 1 9A 6502EE Bolt 2 9B 9S02 <	2F	41S04		Washer, spring	2
4A 10S02 Washer, flat 1 4B 44S01B Pin, split 1 5 513 1292 00 Back Plate Retainer 2 5A 6S02C Bolt 4 5B 9S02 Nut 4 5C 41S04 Washer, spring 4 5D 183S02D Screw countersunk 2 5E 9S02 Nut 2 5F 41S04 Washer, spring 2 6 513 2463 00 Motor Pulley 1 6A 188S02B1 Screw Grub 1 7 513 2464 00 Motor Packers 1 Set 8 513 2464 00 Switch Bracket 1 8 513 2464 00 Switch Bracket 1 8 9803 Nut 2 8C 41S05 Washer, spring 2 9 513 2462 00 Belt Guard 1 9 513 2465 00 Bolt 2 9B	3	513 1289 00		Back Plate	1
4A 10S02 Washer, flat 1 4B 44S01B Pin, split 1 5 513 1292 00 Back Plate Retainer 2 5A 6S02C Bolt 4 5B 9S02 Nut 4 5C 41S04 Washer, spring 4 5D 183S02D Screw countersunk 2 5E 9S02 Nut 2 5F 41S04 Washer, spring 2 6 513 2463 00 Motor Pulley 1 6A 188S02B1 Screw Grub 1 7 513 2464 00 Motor Packers 1 Set 8 513 2464 00 Switch Bracket 1 8 513 2464 00 Switch Bracket 1 8 513 2462 00 Bolt 2 8 9S03 Nut 2 9 513 2462 00 Belt Guard 1 9 513 2462 00 Belt Guard 1 10	4	513 3019 00		Engine Housing Stay	1
5 513 1292 00 Back Plate Retainer 2 5A 6802C Bolt 4 5B 9802 Nut 4 5C 41S04 Washer, spring 4 5D 183S02D Screw countersunk 2 5E 9802 Nut 2 5F 41S04 Washer, spring 2 6 513 2463 00 Motor Pulley 1 6A 188S02B1 Screw Grub 1 7 513 2464 00 Motor Packers 1 Set 8 513 2464 00 Switch Bracket 1 8A 28S03D Bolt 2 8B 9803 Nut 2 8C 41S05 Washer, spring 2 9 513 2462 00 Belt Guard 1 9A 6802EE Bolt 2 9B 9802 Nut 2 9C 41S04 Washer, spring 2 10 513 2465	4A	10S02		0 0	1
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5C 41S04 Washer, spring 4 5D 183S02D Screw countersunk 2 5E 9S02 Nut 2 5F 41S04 Washer, spring 2 6 513 2463 00 Motor Pulley 1 6A 188S02B1 Screw Grub 1 7 513 2464 00 Motor Packers 1 Set 8 513 2464 00 Switch Bracket 1 8A 28S03D Bolt 2 8B 9S03 Nut 2 8C 41S05 Washer, spring 2 9 513 2462 00 Belt Guard 1 9A 6S02EE Bolt 2 9B 9S02 Nut 2 9C 41S04 Washer, spring 2 10 513 2465 Motor Packers 2 11 397 4114 00 Belt 1 12 202 4920 00 1 Phase Electric Motor (Metric) 1 12A 6S03C Bolt 4 12B 9S03 Nu	5A	6S02C		Bolt	4
5D 183S02D Screw countersunk 2 5E 9S02 Nut 2 5F 41S04 Washer, spring 2 6 513 2463 00 Motor Pulley 1 6A 188S02B1 Screw Grub 1 7 513 2464 00 Motor Packers 1 Set 8 513 2464 00 Switch Bracket 1 8A 28S03D Bolt 2 8B 9S03 Nut 2 8C 41S05 Washer, spring 2 9 513 2462 00 Belt Guard 1 9A 6S02EE Bolt 2 9B 9S02 Nut 2 9C 41S04 Washer, spring 2 10 513 2465 Motor Packers 2 11 397 4114 00 Belt 1 12 202 4920 00 1 Phase Electric Motor (Metric) 1 12A 6S03C Bolt 4 12B		9S02		Nut	4
5D 183S02D Screw countersunk 2 5E 9S02 Nut 2 5F 41S04 Washer, spring 2 6 513 2463 00 Motor Pulley 1 6A 188S02B1 Screw Grub 1 7 513 2464 00 Motor Packers 1 Set 8 513 2464 00 Switch Bracket 1 8A 28S03D Bolt 2 8B 9S03 Nut 2 8C 41S05 Washer, spring 2 9 513 2462 00 Belt Guard 1 9A 6S02EE Bolt 2 9B 9S02 Nut 2 9C 41S04 Washer, spring 2 10 513 2465 Motor Packers 2 11 397 4114 00 Belt 1 12A 6S03C Bolt 4 12B 9S03 Nut 4 12A 4S05 W	5C	41S04		Washer, spring	4
5E 9S02 Nut 2 5F 41S04 Washer, spring 2 6 513 2463 00 Motor Pulley 1 6A 188S02B1 Screw Grub 1 7 513 2464 00 Motor Packers 1 Set 8 513 2464 00 Switch Bracket 1 8A 28S03D Bolt 2 8B 9S03 Nut 2 8C 41S05 Washer, spring 2 9 513 2462 00 Belt Guard 1 9A 6S02EE Bolt 2 9B 9S02 Nut 2 9C 41S04 Washer, spring 2 10 513 2465 Motor Packers 2 11 397 4114 00 Belt 1 12 202 4920 00 1 Phase Electric Motor (Metric) 1 12A 6S03C Bolt 4 12B 9S03 Nut 4 12B 9S03<					
5F 41S04 Washer, spring 2 6 513 2463 00 Motor Pulley 1 6A 188S02B1 Screw Grub 1 7 513 2464 00 Motor Packers 1 Set 8 513 2464 00 Switch Bracket 1 8A 28S03D Bolt 2 8B 9S03 Nut 2 8C 41S05 Washer, spring 2 9 513 2462 00 Belt Guard 1 9A 6S02EE Bolt 2 9B 9S02 Nut 2 9C 41S04 Washer, spring 2 10 513 2465 Motor Packers 2 11 397 4114 00 Belt 1 12 202 4920 00 1 Phase Electric Motor (Metric) 1 12A 6803C Bolt 4 12B 9S03 Nut 4 12C 41S05 Washer, spring 4 13	5E	9S02		Nut	
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7 513 2464 00 Motor Packers 1 Set 8 513 2464 00 Switch Bracket 1 8A 28S03D Bolt 2 8B 9S03 Nut 2 8C 41S05 Washer, spring 2 9 513 2462 00 Belt Guard 1 9A 6S02EE Bolt 2 9B 9S02 Nut 2 9C 41S04 Washer, spring 2 10 513 2465 Motor Packers 2 11 397 4114 00 Belt 1 12 202 4920 00 1 Phase Electric Motor (Metric) 1 12A 6S03C Bolt 4 12B 9S03 Nut 4 12C 41S05 Washer, spring 4 13 208 3033 01 Starter (110 volts) 1 13A 14S02G Screw, countersunk 2 13B 7S09 Nut 2 14B 7S09 Nut 2 14C 17S10 Washer, spr	6	513 2463 00			1
8 513 2464 00 Switch Bracket 1 8A 28S03D Bolt 2 8B 9S03 Nut 2 8C 41S05 Washer, spring 2 9 513 2462 00 Belt Guard 1 9A 6S02EE Bolt 2 9B 9S02 Nut 2 9C 41S04 Washer, spring 2 10 513 2465 Motor Packers 2 11 397 4114 00 Belt 1 12 202 4920 00 1 Phase Electric Motor (Metric) 1 12A 6S03C Bolt 4 12B 9S03 Nut 4 12B 9S03 Nut 4 12C 41S05 Washer, spring 4 13 208 3033 01 Starter (110 volts) 1 13A 14S02G Screw, countersunk 2 13B 7S09 Nut 2 14A 14S02G Screw, countersunk 2 14B 7S09 Nut	6A	188S02B1		•	1
8A 28S03D Bolt 2 8B 9S03 Nut 2 8C 41S05 Washer, spring 2 9 513 2462 00 Belt Guard 1 9A 6S02EE Bolt 2 9B 9S02 Nut 2 9C 41S04 Washer, spring 2 10 513 2465 Motor Packers 2 11 397 4114 00 Belt 1 12 202 4920 00 1 Phase Electric Motor (Metric) 1 12A 6S03C Bolt 4 12B 9S03 Nut 4 12C 41S05 Washer, spring 4 13 208 3033 01 Starter (110 volts) 1 13A 14S02G Screw, countersunk 2 13B 7S09 Nut 2 14A 14S02G Screw, countersunk 2 14B 7S09 Nut 2 14C 17S10 Washer, spring 2 Washer, spring 2	7	513 2464 00		Motor Packers	1 Set
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8C 41S05 Washer, spring 2 9 513 2462 00 Belt Guard 1 9A 6S02EE Bolt 2 9B 9S02 Nut 2 9C 41S04 Washer, spring 2 10 513 2465 Motor Packers 2 11 397 4114 00 Belt 1 12 202 4920 00 1 Phase Electric Motor (Metric) 1 12A 6S03C Bolt 4 12B 9S03 Nut 4 12C 41S05 Washer, spring 4 13 208 3033 01 Starter (110 volts) 1 13A 14S02G Screw, countersunk 2 13B 7S09 Nut 2 14 208 3033 00 Starter (220 volts) 1 14A 14S02G Screw, countersunk 2 14B 7S09 Nut 2 14C 17S10 Washer, spring 2 14C 17S10 Washer, spring 2	A8	28S03D		Bolt	2
8C 41S05 Washer, spring 2 9 513 2462 00 Belt Guard 1 9A 6S02EE Bolt 2 9B 9S02 Nut 2 9C 41S04 Washer, spring 2 10 513 2465 Motor Packers 2 11 397 4114 00 Belt 1 12 202 4920 00 1 Phase Electric Motor (Metric) 1 12A 6S03C Bolt 4 12B 9S03 Nut 4 12C 41S05 Washer, spring 4 13 208 3033 01 Starter (110 volts) 1 13A 14S02G Screw, countersunk 2 13B 7S09 Nut 2 14 208 3033 00 Starter (220 volts) 1 14A 14S02G Screw, countersunk 2 14B 7S09 Nut 2 14C 17S10 Washer, spring 2 14C 17S10 Washer, spring 2	8B	9S03		Nut	2
9 513 2462 00 Belt Guard 1 9A 6S02EE Bolt 2 9B 9S02 Nut 2 9C 41S04 Washer, spring 2 10 513 2465 Motor Packers 2 11 397 4114 00 Belt 1 12 202 4920 00 1 Phase Electric Motor (Metric) 1 12A 6S03C Bolt 4 12B 9S03 Nut 4 12C 41S05 Washer, spring 4 13 208 3033 01 Starter (110 volts) 1 13A 14S02G Screw, countersunk 2 13B 7S09 Nut 2 14 208 3033 00 Starter (220 volts) 1 14A 14S02G Screw, countersunk 2 14B 7S09 Nut 2 14C 17S10 Washer, spring 2 14C 17S10 Washer, spring 2	8C	41S05		Washer, spring	
9B 9S02 Nut 2 9C 41S04 Washer, spring 2 10 513 2465 Motor Packers 2 11 397 4114 00 Belt 1 12 202 4920 00 1 Phase Electric Motor (Metric) 1 12A 6S03C Bolt 4 12B 9S03 Nut 4 12C 41S05 Washer, spring 4 13 208 3033 01 Starter (110 volts) 1 13A 14S02G Screw, countersunk 2 13B 7S09 Nut 2 14 208 3033 00 Starter (220 volts) 1 14A 14S02G Screw, countersunk 2 14B 7S09 Nut 2 14C 17S10 Washer, spring 2 Washer, spring 2	9	513 2462 00			1
9B 9S02 Nut 2 9C 41S04 Washer, spring 2 10 513 2465 Motor Packers 2 11 397 4114 00 Belt 1 12 202 4920 00 1 Phase Electric Motor (Metric) 1 12A 6S03C Bolt 4 12B 9S03 Nut 4 12C 41S05 Washer, spring 4 13 208 3033 01 Starter (110 volts) 1 13A 14S02G Screw, countersunk 2 13B 7S09 Nut 2 14 208 3033 00 Starter (220 volts) 1 14A 14S02G Screw, countersunk 2 14B 7S09 Nut 2 14C 17S10 Washer, spring 2 Washer, spring 2	9A	6S02EE		Bolt	2
10 513 2465 Motor Packers 2 11 397 4114 00 Belt 1 12 202 4920 00 1 Phase Electric Motor (Metric) 1 12A 6S03C Bolt 4 12B 9S03 Nut 4 12C 41S05 Washer, spring 4 13 208 3033 01 Starter (110 volts) 1 13A 14S02G Screw, countersunk 2 13B 7S09 Nut 2 14 208 3033 00 Starter (220 volts) 1 14A 14S02G Screw, countersunk 2 14B 7S09 Nut 2 14C 17S10 Washer, spring 2 Washer, spring 2	9B	9S02		Nut	
11 397 4114 00 Belt 1 12 202 4920 00 1 Phase Electric Motor (Metric) 1 12A 6S03C Bolt 4 12B 9S03 Nut 4 12C 41S05 Washer, spring 4 13 208 3033 01 Starter (110 volts) 1 13A 14S02G Screw, countersunk 2 13B 7S09 Nut 2 13C 17S10 Washer, spring 2 14 208 3033 00 Starter (220 volts) 1 14A 14S02G Screw, countersunk 2 14B 7S09 Nut 2 14C 17S10 Washer, spring 2	9C	41S04		Washer, spring	2
12 202 4920 00 1 Phase Electric Motor (Metric) 1 12A 6S03C Bolt 4 12B 9S03 Nut 4 12C 41S05 Washer, spring 4 13 208 3033 01 Starter (110 volts) 1 13A 14S02G Screw, countersunk 2 13B 7S09 Nut 2 13C 17S10 Washer, spring 2 14 208 3033 00 Starter (220 volts) 1 14A 14S02G Screw, countersunk 2 14B 7S09 Nut 2 14C 17S10 Washer, spring 2	10	513 2465		Motor Packers	2
12A 6S03C Bolt 4 12B 9S03 Nut 4 12C 41S05 Washer, spring 4 13 208 3033 01 Starter (110 volts) 1 13A 14S02G Screw, countersunk 2 13B 7S09 Nut 2 13C 17S10 Washer, spring 2 14 208 3033 00 Starter (220 volts) 1 14A 14S02G Screw, countersunk 2 14B 7S09 Nut 2 14C 17S10 Washer, spring 2	11	397 4114 00		Belt	1
12B 9S03 Nut 4 12C 41S05 Washer, spring 4 13 208 3033 01 Starter (110 volts) 1 13A 14S02G Screw, countersunk 2 13B 7S09 Nut 2 13C 17S10 Washer, spring 2 14 208 3033 00 Starter (220 volts) 1 14A 14S02G Screw, countersunk 2 14B 7S09 Nut 2 14C 17S10 Washer, spring 2	12	202 4920 00		1 Phase Electric Motor (Metric)	1
12C 41S05 Washer, spring 4 13 208 3033 01 Starter (110 volts) 1 13A 14S02G Screw, countersunk 2 13B 7S09 Nut 2 13C 17S10 Washer, spring 2 14 208 3033 00 Starter (220 volts) 1 14A 14S02G Screw, countersunk 2 14B 7S09 Nut 2 14C 17S10 Washer, spring 2	12A	6S03C		Bolt	4
13 208 3033 01 Starter (110 volts) 1 13A 14S02G Screw, countersunk 2 13B 7S09 Nut 2 13C 17S10 Washer, spring 2 14 208 3033 00 Starter (220 volts) 1 14A 14S02G Screw, countersunk 2 14B 7S09 Nut 2 14C 17S10 Washer, spring 2	12B	9S03		Nut	4
13A 14S02G Screw, countersunk 2 13B 7S09 Nut 2 13C 17S10 Washer, spring 2 14 208 3033 00 Starter (220 volts) 1 14A 14S02G Screw, countersunk 2 14B 7S09 Nut 2 14C 17S10 Washer, spring 2	12C	41S05		Washer, spring	4
13B 7S09 Nut 2 13C 17S10 Washer, spring 2 14 208 3033 00 Starter (220 volts) 1 14A 14S02G Screw, countersunk 2 14B 7S09 Nut 2 14C 17S10 Washer, spring 2	13	208 3033 01		Starter (110 volts)	1
13C 17S10 Washer, spring 2 14 208 3033 00 Starter (220 volts) 1 14A 14S02G Screw, countersunk 2 14B 7S09 Nut 2 14C 17S10 Washer, spring 2	13A	14S02G		Screw, countersunk	2
14 208 3033 00 Starter (220 volts) 1 14A 14S02G Screw, countersunk 2 14B 7S09 Nut 2 14C 17S10 Washer, spring 2	13B	7S09		Nut	2
14A 14S02G Screw, countersunk 2 14B 7S09 Nut 2 14C 17S10 Washer, spring 2	13C	17S10		Washer, spring	2
14A 14S02G Screw, countersunk 2 14B 7S09 Nut 2 14C 17S10 Washer, spring 2	14	208 3033 00			1
14B 7S09 Nut 2 14C 17S10 Washer, spring 2	14A			,	2
14C 17S10 Washer, spring 2					
				Washer, spring	
	15	250 1700 01			1

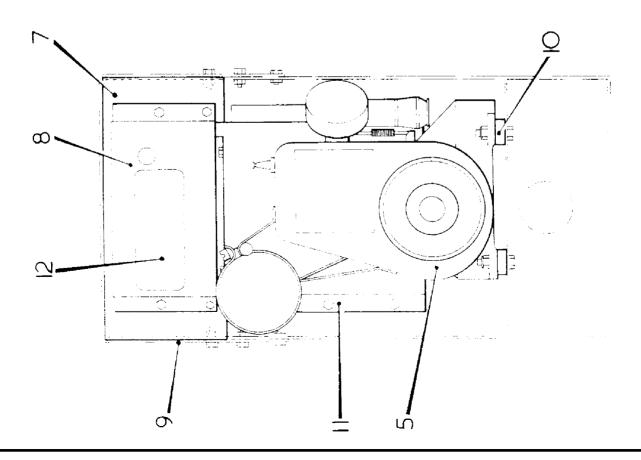


C - 6

C6 ELECTRIC SINGLE PHASE GUARD & DRIVE ASSY

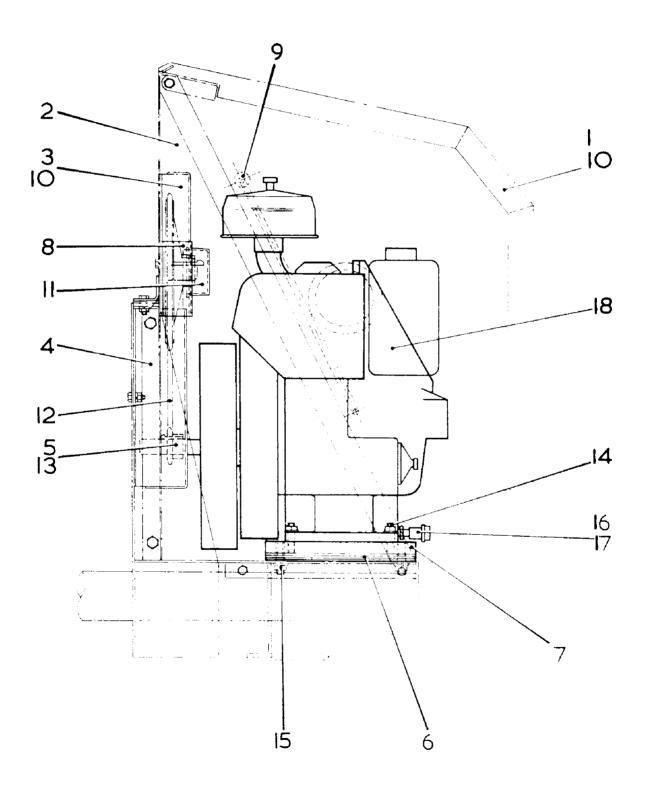
Item	Part no	Serial no	Description	Qty
16	131 7050 02		Conduit	1
17	131 2530 00		Male Ends	2
18	131 5701 63		Reducers	2
19	133 3120 40		Locknuts	3
20	144 1830 00		Cable	1
21	143 2870 00		Brass Clip	1
21A	219S02E		Screw, pan head	2
21B	7S10		Nut	2
21C	17S01		Washer, spring	2
22	205 3730 00		Plug (220 Volts Only)	1
23	304 7080 25		Parallel Key	1
24	504 6009 00		Warning Label	3
25	504 6946 00		Warning Label (not illustrated)	1





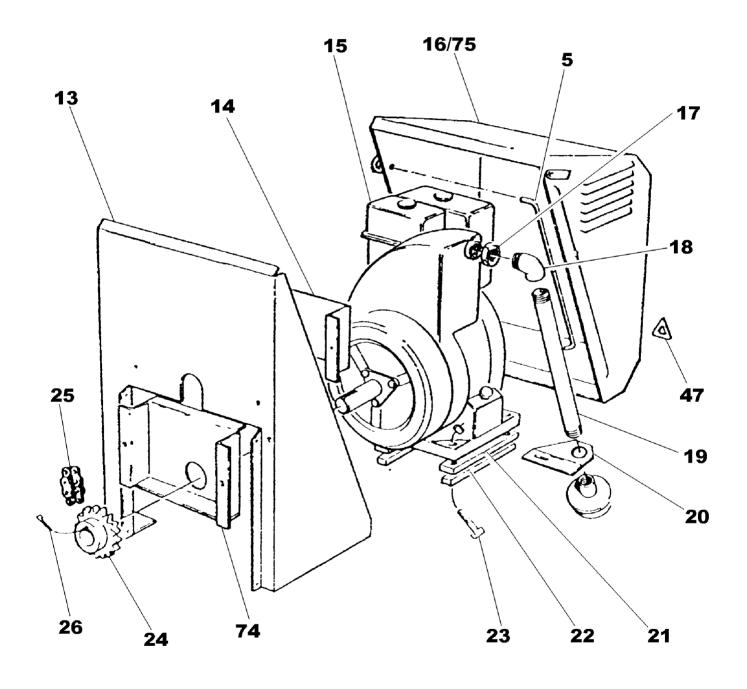
C7 VILLIERS ENGINE GUARDS & DRIVE ASSEMBLY C - 7

1A 66S02B Screw set 2 1B 192S02 Nut lock 2 2 513 3019 00 Engine Housing Stay 1 2A 82S03F Bolt 1 2B 10S02 Washer, flat 1 3 501 9366 00 Engine Sprocket 1 4 300 2031 20 Gib Head Key 1 5 354 0600 00 Villiers MK12 (C12-02-22) 1 Petrol Engine, 3:1 reduction @12 o' clock 5 5A 6S03E Bolt 4 5B 95503 Nut, lock 4 6 134 1047 50 Chain 1 7 513 1289 00 Back Plate 1 7A 183S02D Screw Countersunk 2 7B 9S02 Nut 2 7C 41S04 Washer, spring 2 8 513 1635 00 Chain Guard 1 8B 9S02 Nut 4 8C 41S04 Washer, spring 4 9 513 1292 00 Back Pla	Item	Part no	Serial no	Description	Qty
5 354 0600 00 Villiers MK12 (C12-02-22) 1 Petrol Engine, 3:1 reduction @12 o' clock 4 5A 6S03E Bolt 4 5B 95S03 Nut, lock 4 6 134 1047 50 Chain 1 7 513 1289 00 Back Plate 1 7A 183S02D Screw Countersunk 2 7B 9S02 Nut 2 7C 41S04 Washer, spring 2 8 513 1635 00 Chain Guard 1 8A 183S02D Screw Countersunk 4 8B 9S02 Nut 4 8C 41S04 Washer, spring 4 9 513 1292 00 Back Plate Retainer 2 9A 69S02C Bolt 4 9B 104S02 Nut 4 9C 41S04 Washer, spring 4 10 513 1275 00 Engine Packers 1 Set 11 513 2059 00 Guard Over Sprocket 1	1 1A 1B 2 2A 2B 3	513 1633 00 66S02B 192S02 513 3019 00 82S03F 10S02 501 9366 00	Serial 110	Engine Housing Lid Screw set Nut lock Engine Housing Stay Bolt Washer, flat Engine Sprocket	1 2 2 1 1 1 1 1 1 1 1
5A 6S03E Bolt 4 5B 95S03 Nut, lock 4 6 134 1047 50 Chain 1 7 513 1289 00 Back Plate 1 7A 183S02D Screw Countersunk 2 7B 9S02 Nut 2 7C 41S04 Washer, spring 2 8 513 1635 00 Chain Guard 1 8A 183S02D Screw Countersunk 4 8B 9S02 Nut 4 8C 41S04 Washer, spring 4 9 513 1292 00 Back Plate Retainer 2 9A 69S02C Bolt 4 9B 104S02 Nut 4 9C 41S04 Washer, spring 4 10 513 1275 00 Engine Packers 1 Set 11 513 2059 00 Guard Over Sprocket 1				Villiers MK12 (C12-02-22)	1 1
11B 69S02B Bolt 2 11C 104S02 Nut 4	5B 6 7 7A 7B 7C 8 8A 8B 8C 9 9A 9B 9C 10 11 11A 11B 11C	95S03 134 1047 50 513 1289 00 183S02D 9S02 41S04 513 1635 00 183S02D 9S02 41S04 513 1292 00 69S02C 104S02 41S04 513 1275 00 513 2059 00 69S02C 69S02B 104S02		Bolt Nut, lock Chain Back Plate Screw Countersunk Nut Washer, spring Chain Guard Screw Countersunk Nut Washer, spring Back Plate Retainer Bolt Nut Washer, spring Engine Packers Guard Over Sprocket Bolt Bolt Nut Nut	4 4 1 1 2 2 1 4 4 4 4 1 Set 1 2 2 4 4



C8 PETTER AC1ZS GUARD AND DRIVE ASSEMBLY

Item	n Part no	Serial no	Description	Qty
1	513 2846 00		Mod. To Engine Housing Lid	1
1A	66S02A		Screw set	2
1B	192S02		Nut lock	2
2	513 1648 00		Engine Housing	1
2A	66S02BB		Screw set	8
2B	104S02		Nut	8
2C	41S04		Washer, spring	8
2D	66S02BB		Screw set	2
2E	104S02		Nut	2
2F	41S04		Washer, spring	2
3	513 2558 00		Drive Chain Guard	1
3A	66S02BB		Screw set	2
3B	104S02		Nut	2
3C	41S04		Washer, spring	2
4	513 2847 00		Guard Over Sprocket	1
4A	66S02BB		Screw set	2
4B	104S02		Nut	2
4C	41S04		Washer, spring	2
5	513 2500 00		Engine Sprocket	1
6	513 1453 00		Engine Packers	1 Set
7	513 2848 00		Mounting Block	2
8	513 2849 00		Blanking Plate	1
9	513 3019 00		Engine Housing Stay	1
9A	10S02		Washer, flat	1
9B	44S01B		Pin split	1
10	504 6009 00		Label - Engine Housing Lid Warning	2
11	354 0510 04		Plug	1
12	134 1048 20		Roller Chain	1
13	300 2041 20		Gib Head Key	1
14	411411035		Studs	4
14A	10S65		Washer, flat	4
14B	61S04		Nut Binx	4
15	411411235		Studs	4
15A	267S07		Washer, flat	4
15B	61S05		Nut Binx	4
16	243 9020 10		Hex Nipple	1
17 10	241 9020 00		Socket	T 4
18	354 0741 50		Petter AC1ZS Diesel Engine	1



Item	Part no	Serial no	Description	Qty
5	513 1355 00		Engine Housing Stay	1
5A	66S02C		Bolt	1
5B	104S02		Nut	1
5C	41S04		Washer, spring	1
13	513 1352 00		Engine Housing Back Plate	1
13A	66S02BB		Screw set	14
13B	104S02		Nut	14
13C	41S04		Washer, spring	14
14	513 1636 00		Guard Over Chain	1
14A	66S02BB		Screw set	4
14B	104S02		Nut	4
14C	41S04		Washer, spring	4
15			Engine, Lister LD1/LR1	1
16	513 1354 00		Engine Housing Lid	1
16A	66S02C		Screw set	2
16B	104S02		Nut	2
16C	41S04		Washer, spring	2
17	72S04		Nut, Back Exhaust Pipe	1
18	240708000		Elbow	1
19	513 1630 00		Pipe, Exhaust	1
20	513 1637 00		Bracket, Support Exhaust	1
21	513 1453 00		Packers, Engine	1set
22	502783500		Clearance, Packers Engine	2
23	11S05L		Screw set	4
23A	61S05		Nut, binx	4 8
23B	267S07 513 1335 00		Washer, flat	_
24 25	134104082		Sprocket, Engine, 17 teeth Chain	1
26	300107160		Key	1
47	332 1190 00		Reflector, warning	1
47A	82S03F		Screw set	3
47B	83S03		Nut	3
47C	41S02		Washer, spring	3
74	513 2060 00		Guard Over Chain	1
74A	66S02BB		Screw set	4
74B	104S02		Nut	4
74C	41S04		Washer, spring	4
75	513 1353 00		Hinge Strip, Housing Lid	2
75A	66S02A		Bolt	6
75B	104S02		Nut	6
75C	41S04		Washer, spring	6
	504 5009 00		Engine Warning Label (not illustrated)	3
	504 6964 00		Safety Warning Label (not illustrated)	1

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm