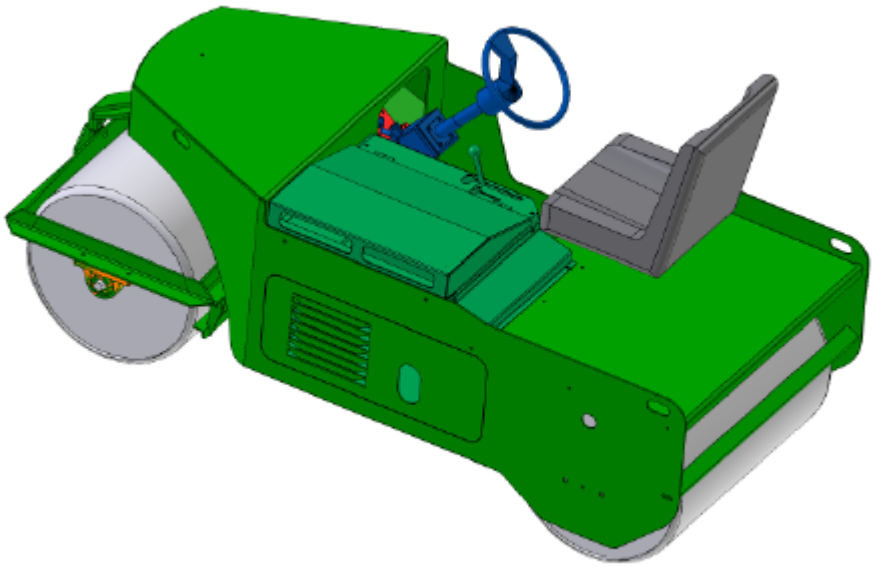
PRODUCT MANUAL

Auto-Roller

3 Ft

AUTOGUIDE



NOTE: IN ORDER TO ENSURE THE SAFE USE, AND TO ACHIEVE THE BEST PERFORMANCE, IT IS ESSENTIAL THAT THIS PRODUCT MANUAL IS CAREFULLY READ BEFORE THE AUTO-ROLLER IS USED

MANUAL 33801
ISSUE B—Nov 2008

EC DECLARATION OF CONFORMITY

We, Autoguide Equipment Ltd.
Of :Stockley Road, Heddington, Calne
Wiltshire, England, SN11 0PS.

Hereby declare that the product :

SINGLE CYLINDER 3FT AUTO-ROLLER

MODEL SERIAL NUMBER SERIES

Conforms to the Essential Health & Safety Requirements of **EEC Directive 89/392/EEC,** as amended by **91/368/EEC,93/44/EEC,** and **93/68/EEC.**

To effect the correct application of the safety requirements stated in the EEC Directives, the following standards and / or technical specification has been used:

BS EN 292-1 : 1991 Safety of machinery - Basic concepts, general principals for design - Basic terminology, methodology.

BS EN 292-2 : 1991 Safety of machinery - Basic concepts, general principals for design - Technical principals and specifications.

BS EN 294 : 1992 Safety of Machinery - Safety distances to prevent danger zones being reached by the upper limbs.

BS 5401 : 1990 Guide to information content and presentation of operators manuals provided for tractors and machinery for agriculture and forestry.

Date of issue : _____.

Place of issue :Heddington

Name and Job Function of Authorised Person :

Richard E Robinson
Managing Director

Signature  .

Dear Customer,

Thank you for purchasing an Autoguide Auto-Roller.

Autoguide have produced this product manual in line with the relevant Health & Safety regulations to help you achieve the very best from your machine without harm to yourself. You should be aware that any other person operating the machine with your permission must be given adequate guidance and information to allow him or her to use the machine safely.

Whereas every effort has been made to ensure that the Auto-Roller conforms to Autoguide's policy of quality, the machine cannot be expected to withstand abuse caused by misuse and negligence by the operator.

INTRODUCTION

The Auto-Roller has been developed over 70 years to produce the unique finish demanded by the world's top groundsmen and was the world's first purpose built cricket pitch roller. Each Auto-Roller has been individually built with great emphasis on quality, strength and simplicity of design, and with routine care will give many years of trouble free operation.

The 3 Ft Auto-Roller is fitted with a 9hp single cylinder air cooled 'Robin' diesel engine. A hydrostatic transmission system gives a stepless speed control in either direction. The complete transmission is contained within an enclosure to reduce the possibility of oil spillage, in the unlikely event of hydraulic system failure. In addition to this biodegradable hydraulic oil is used throughout the system, which will not harm grass.

Rolling width is 3ft (915mm) and power steering and electric start are fitted as standard to all machines.

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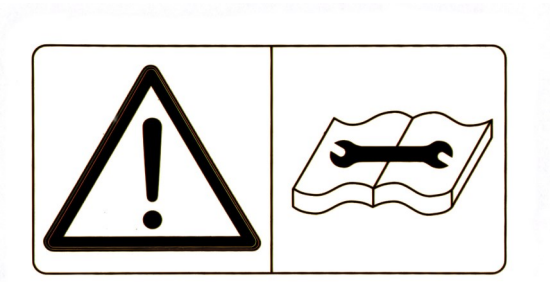
SPECIFICATION

Length	Width	Height	Weight	Ground Pressure	Speed
2460mm	1080mm	1250mm	1150kg unballasted 1560kg ballasted	6.5kg/cm^2 unballasted 8.7kg/cm^2 ballasted	7.5mph (12.5km/hr) forwards & reverse

SAFETY PICTOGRAM / LABEL IDENTIFIACTION

Whenever possible, warning pictograms (labels with no words), or warning labels are used on both the machine near the area of danger and in the product manual near the relevant instructions.

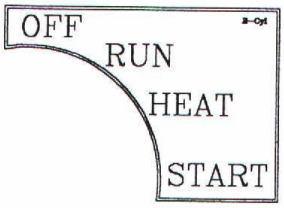
Pictogram to indicate **Alert Warning**.



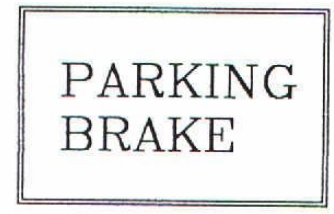
Pictogram to indicate
Read the Product Manual.

Pictogram to indicate **Lifting Hook location**.

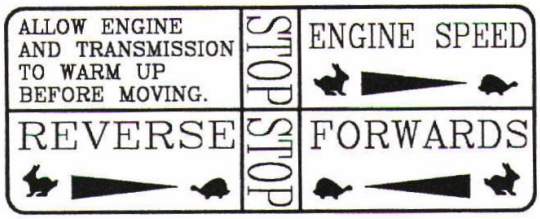
Label to indicate **Apply Grease Here**.



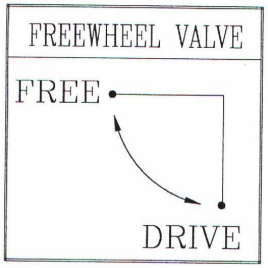
Label to indicate **Ignition Key Position**.



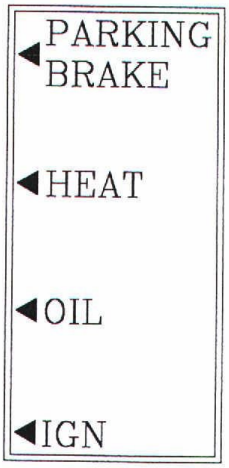
Label to indicate **Parking Brake**.



Label to indicate **Engine Speed & Direction Control Lever positions**.



Label to indicate **Free Wheel Valve Position**.



Label to indicate **RED Parking Brake** light.

Label to indicate **ORANGE Glow Plug** light.

Label to indicate **GREEN Oil Pressure** light.

Label to indicate **RED Ignition** light.

Label to indicate **Recommended Oil Type** to be used in this location.

SAFETY RULES

1. Always comply with the safety rules as set out in the pictograms and detailed in this product manual.
2. No bystanders allowed in the working area.
3. Before any adjustments or maintenance is carried out, the Parking Brake must be applied, the engine stopped, and the ignition key removed.
4. The operator only may use the Auto-Roller, and he must remain in the driver's seat during the operation of the machine.
5. Keep all guards and safety devices in place.
6. Do not operate the machine with guards removed.
7. Keep hands, feet and loose clothing away from moving parts.
8. If the machine is left unattended ensure that it is locked or disabled to prevent use by untrained personnel.
9. Never dismount from the machine without applying the handbrake, stopping the engine and removing the ignition key.

POSSIBLE DANGEROUS USE OF THE MACHINE

Do not carry miscellaneous material or people on the machine.

IDENTIFICATION OF THE MACHINE

A makers plate located within the offside main body identifies the Auto-Roller, see Fig. 1.

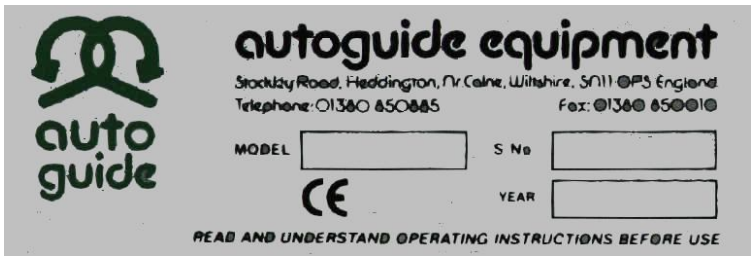


Fig. 1

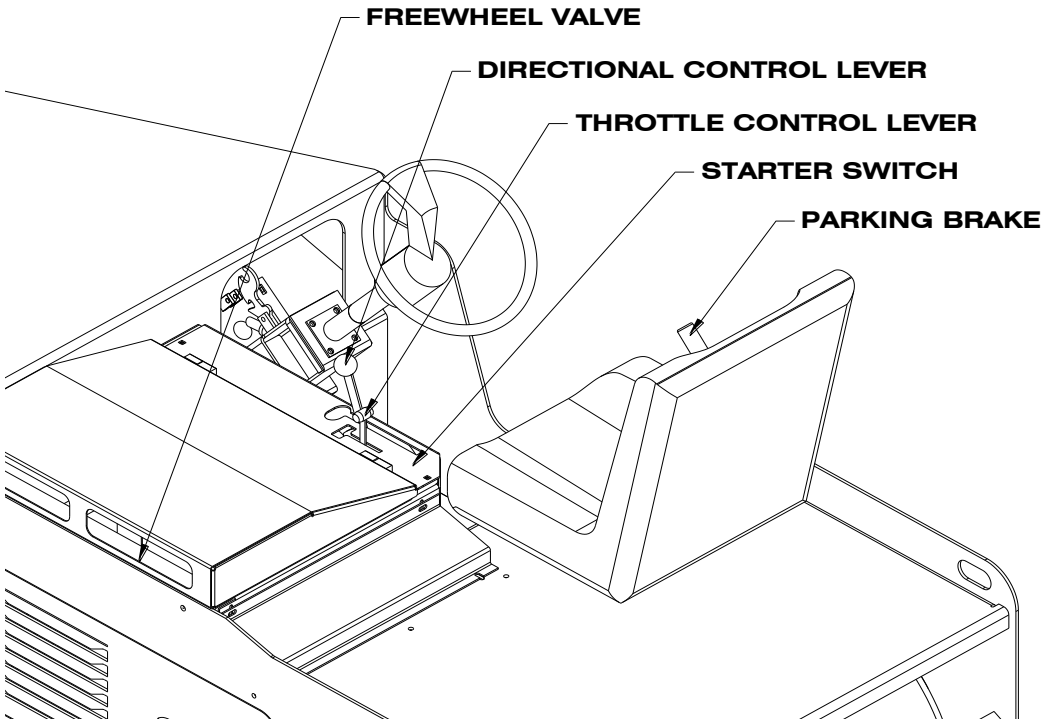
HANDLING OF THE MACHINE

Always lift machine from the lift points marked with the pictogram.

PREPARATION FOR WORK

Before operating your Auto-Roller you must carry out daily maintenance (see MAINTENANCE OF THE MACHINE on page 10).

CONTROL SYSTEM



SAFE USE OF THE MACHINE

STARTING PROCEDURE

CAUTION : Engine starting procedures are covered by the manufacturer's handbook, a copy of which is supplied with your roller.

1. The Parking Brake (Ref. 1 Fig. 2) must be applied (ON) before the engine will start. The directional control lever must be in the central (neutral) position.
2. The Free Wheel Valve (Ref. 6 Fig. 2) must be positioned in the drive position.
3. If the engine is cold, use the full throttle position before starting. As soon as the engine runs, return to half throttle. If the engine is warm, use a quarter throttle.
4. Turn the ignition key clockwise to start the engine.

8. In order to move off, release the hand brake by moving the handle to the horizontal position.
9. With the engine running at the desired RPM, slowly move the directional control lever in the direction in which you wish to travel. The roller will now begin to move. Speed in either direction is directly proportional to the position of the control lever (i.e. the further you move the lever the faster you will travel). See DRIVING TECHNIQUE below on how to correctly operate the hydrostatic transmission.

IMPORTANT :	So as not to spin the rear roller section it is important to **ALWAYS** move off and stop with a slow and smooth operation of the directional control lever.

CAUTION : To prevent damage to the roller, bring the roller to a complete stop before changing from forward to reverse.

NOTE :	A governor is fitted to the engine, linked to a hand throttle control lever. Having set the engine to the desired speed by use of the hand lever, the governor will automatically correct for any variation in engine load caused by differing ground conditions.

DRIVING TECHNIQUE

The driving technique is quite different with a hydrostatic driven roller and it is most important that the following procedure is followed:

1. The hand throttle (Ref. 5 Fig. 2) must be set at a constant engine speed and the direction control lever (Ref. 2 Fig. 2) used for varying forward / reverse speeds.
2. When the roller approaches an upward slope it will begin to slow down, move the Directional Control Lever (Ref. 2 Fig. 2) towards neutral to reduce the load on the engine. This movement is equivalent to changing down a gear on a conventional gearbox.

NOTE :	Moving the Directional Control Lever (Ref. 2 Fig. 2) away from neutral will result in the engine stalling or labouring excessively.

3. When the roller approaches a downward slope DO NOT APPLY THE PARKING BRAKE. Move the Directional Control Lever (Ref. 2 Fig. 2) BACKWARD to reduce forward speed as required.
4. When turning tightly on the headland, reduce the forward speed by moving the Directional Control Lever (Ref. 2 Fig. 2) towards neutral. This will prevent the rear roll from skidding as the machine turns.
5. Avoid driving with the engine at 'tickover' (idle). Select a speed which doesn't cause the engine to 'labour' when travelling. The power to move the roller will vary with the gradient and moisture content of the pitch. Excessive load may damage the engine!

PARKING THE ROLLER

When parking the roller with the engine off you must apply the parking brake. The parking brake lever is situated on the right hand side next to the driver's seat. This is an external brake band acting on the rear roller.

CAUTION :	Only exit the roller when the Parking Brake has been applied, the engine stopped, and the ignition key removed

NOTE :	Hydrostatic braking is only available while the engine is running, therefore you must apply the parking brake when the roller is stationary and before leaving the seat.

BALLASTING THE ROLLER

Water ballast can be added to both front roller sections and the single rear roller section. This will increase the weight of your roller by up to 10 cwt (509kg) approx. This procedure should be conducted in the following manner:

1. Position the roller on level ground with the square headed screw-in plug at the top of one of the roller sections.
2. Remove the plug using the spanner provided within the tool kit.
3. Fill the roller section using a hosepipe.
4. Repeat for both front roller sections.
5. The filler plug for the rear roller is situated on the chain wheel side (off side).
6. To fill, follow the same procedure as for the front rollers.
7. Drain all roller sections of water during the winter period.

IMPORTANT :	If the water is to remain in the roller over the winter period it is recommended that automotive anti-freeze is added at the correct dilution to prevent the water from freezing. Full frost protection is obtained by adding 25 litres (5.5 gallons) of ethylene glycol to each of the front rollers and 50 litres (11 gallons) to the rear roller section.

TRANSPORTATION OF THE MACHINE

In the event of engine or hydraulic failure the roller transmission will lock up. If repairs cannot be carried out in position it will be necessary to tow the roller. To allow for this a hand operated freewheel valve (Ref. 6 Fig. 2), has been fitted into the hydraulic system of your roller which when operated will bypass the hydraulic motor and allow the rear roll to rotate.

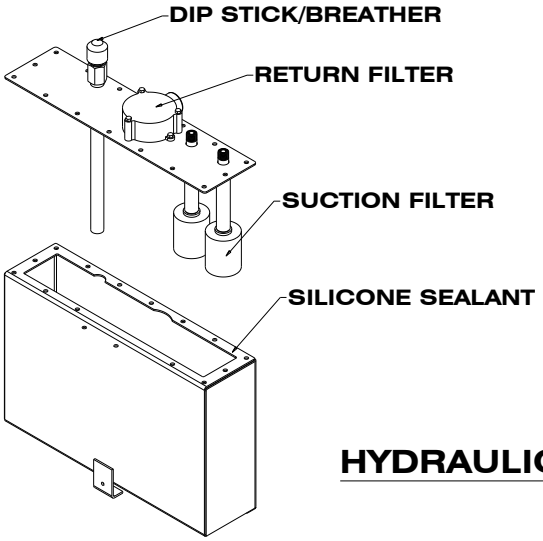
To operate, place the lever in the FREEWHEEL position. Having carried out any repairs this lever **MUST** then be returned to the DRIVE position. Note 'engine braking' does not work when 'freewheel' is selected.

IMPORTANT :	This is for emergencies only. Do not push or tow the roller more than is necessary.

MAINTENANCE OF THE MACHINE

DAILY

1. For engine maintenance please refer to manufacturers handbook provided with your Auto-Roller.
2. Check hydraulic oil level on dipstick on top of Hydraulic Tank and top up as required to the green marker line.



HYDRAULIC OIL TANK

3. Remove any build up of material from the machine.
4. Check for any hydraulic leaks and worn or chaffing hydraulic hoses.

NOTE :	It is recommended that the oil be checked regularly for contamination of water due to condensation or other contaminants. If contamination has occurred, the oil on the dipstick will appear whitish and emulsified.
NOTE :	BP Biohyd oil (Biodegradable) is recommended for use in your roller's hydraulic system. Approximately 20 litres is required for a full oil change.

WEEKLY

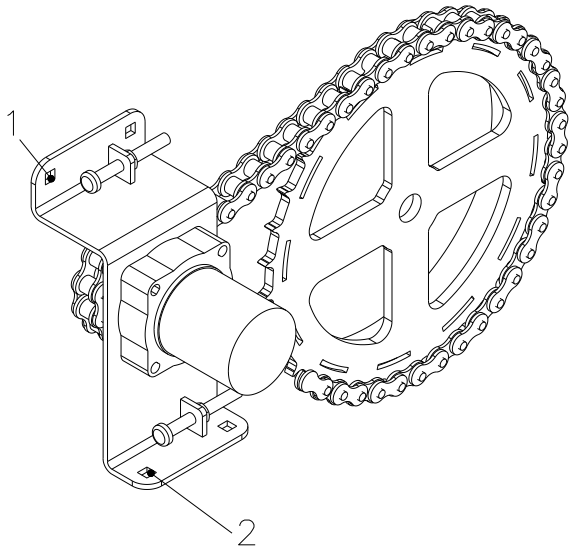
1. For engine maintenance please refer to manufacturers handbook provided with your

GREASE	Grease all points illustrated by pictograms on machine with high a pressure grease gun. Mobil-grease EAL 102 biodegradable synthetic grease is recommended.

2. Check all hydraulic hoses and components for wear and leakage.
3. Check all fasteners are tight.

MONTHLY

1. For engine maintenance please refer to manufacturers handbook provided with this roller.
2. Check the final drive chain tension and make adjustments as required in the following manner:
    a. Slacken the 4 bolts securing motor bracket on the Auto-Roller (Ref Fig 1) with a 19mm spanner.
    b. Using a 19mm socket spanner, turn tensioning screws (Ref Fig 2) clockwise to tension chain.
    c. Chain is at correct tension when the midpoint of the bottom span can be deflected by approximately 20mm (3/4") up and down.



12 MONTHLY - It is recommended that your Auto-Roller has a full service every 12 months. This will include:

Engine maintenance as stated in the manufacturers handbook.

Hydraulic Oil return filter change.

NOTE - Failure to adhere to correct service regime may result in a decrease in efficiency of the hydraulic systems and will invalidate your 12 month warranty.

18 – 24 MONTHS

For engine maintenance please refer to manufacturers handbook provided with this roller.

Change Hydraulic Oil and Hydraulic Oil Return Filter. Inspect hydraulic suction filters and replace as necessary.

NOTE :	BP Biohyd oil (Biodegradable) is recommended for use in your roller's hydraulic system. Approximately 20 litres is required for a full oil change.

Engine Power Pack

Recommendations

Maintaining your Engine Power Pack

The following is a guide to the routine maintenance that should be carried out in order to keep your re -power pack working efficiently. Please note that all engine maintenance should be carried out in accordance with the engine manual supplied with this pack - if any discrepancy is found between the information in this guide and the information in the engine manual, the guide should be disregarded.

CAUTION:

As with all mechanical operations there are hazards to be aware of whilst working on your Re-power pack. These include:

Hot Engine / Hydraulic oil: During operation, the oils in your Re-power pack will become very hot. Care must be taken to avoid scalding when handling them. Also, please ensure all oils and filters are dispose of correctly.

Corrosive / harmful liquids: When handling used hydraulic oil or battery electrolyte take great care to avoid contact with the skin or eyes. It is recommended that suitable gloves and eye protection be worn when performing these operations.

Items marked with this symbol † should only be carried out by a suitably qualified mechanic/engineer

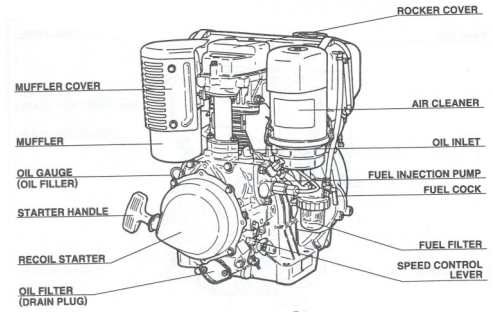
Recommended Lubricants & Parts

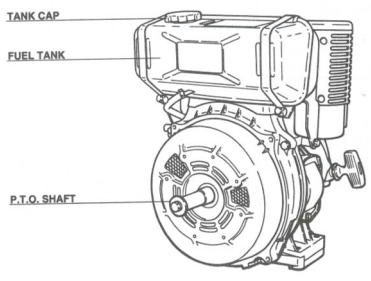
It is recommended that only the following parts and lubricants be used with your Re-power kit:

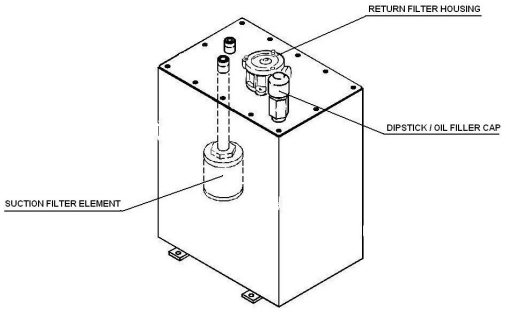
- Hydraulic Oil: BP ByoHyd Biodegradable Oil.
- Hydraulic Return Filter Element: Autoguide Part Number 05739
- Hydraulic Suction Filter: Autoguide Part Number RH447
- Engine Oil: 15W-30 Multigrade Oil
- Engine Oil Filter Element: Autoguide Part Number 09037
- Fuel Filter Element: Autoguide Part Number 02271
- Air Filter Element: Autoguide Part Number 09225

NOTE - Each time the hydraulic tank lid is removed, it must be re-sealed using silicone sealant.

Engine Components



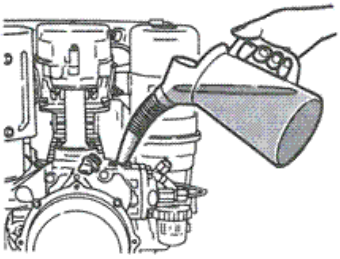


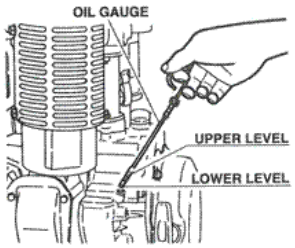


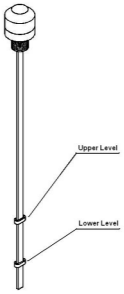
MAINTENANCE SCHEDULE:

DAILY

- Check engine oil level and top up as necessary using the recommended oil.
- Check hydraulic oil level and top up as necessary using the recommended oil. Note - if the oil on the dipstick appears whitish in colour and/or emulsified, water has contaminated the hydraulic system and the oil must be changed immediately. DO NOT use the machine if the hydraulic system is contaminated.
- Check for any leaks and worn/chaffing hydraulic hoses.
- Check for broken or loose fasteners.

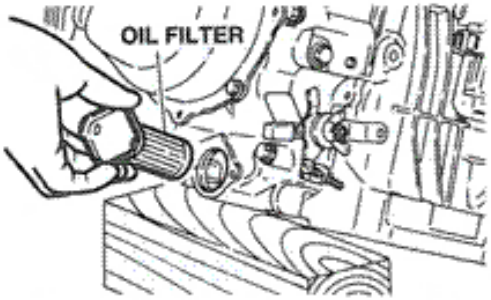


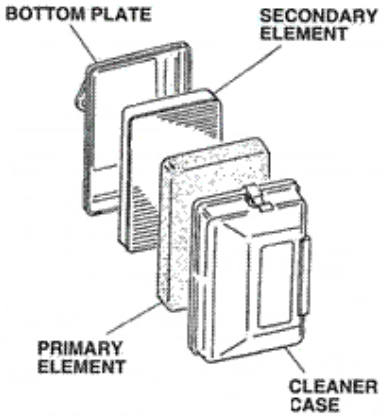




MONTHLY OR EVERY 100 HOURS - In addition to the recommended daily inspections, carry out the following:

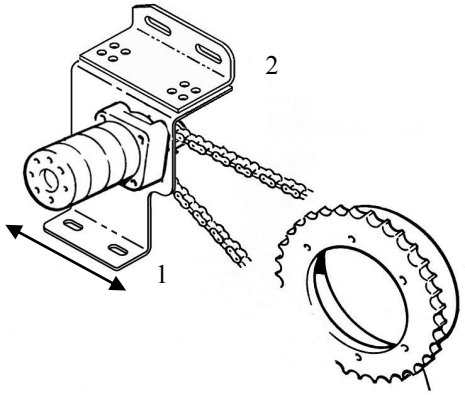
- Change engine oil and clean oil filter element using a suitable solvent (ensuring element is dry before refitting). Note - if the filter element is damaged then it must be replaced.
- Inspect and clean air filter elements. DO NOT wash elements in paraffin, petrol or oil. It is recommended that the elements be washed in a mild detergent and rinsed thoroughly with water. Elements must be dry before refitting. Replace air filter elements if they have become damaged.
- Check drive chain tension and adjust as required. (See diagram)
- Check battery electrolyte levels and top up as necessary with de-ionised water.





CHAIN TENSIONNING PROCEDURE
(without jockey wheel):

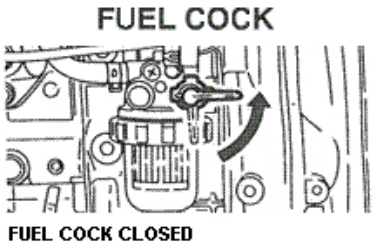
- Loosen the bolts located at each side of the motor bracket (1&2).
- Slide motor bracket in direction of arrow to tension or slacken chain.
- Chain tension is correct when the midpoint of the bottom span of the chain can be moved up and down by approximately 20mm (3/4")
- Please ensure all bolts are tight before using the machine.

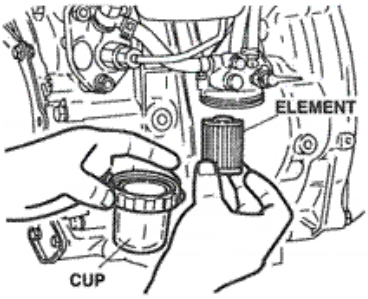


If the original tensioning jockey wheel was retained during the fitting of the re-power kit, then the chain can be tensioned either by using the jockey wheel, or as described above.

ANNUALLY OR EVERY 300 HOURS - In addition to the recommended monthly service, carry out the following:

- Ensure fuel cock is in the "off" position and remove fuel filter cup.
- Clean fuel filter element using a suitable solvent and remove any water or other contamination from the trap. Ensure element and bowl are dry before refitting.
- Bleed fuel system. (See section marked *)
- Change hydraulic return filter element.
- Check engine valve clearance. †





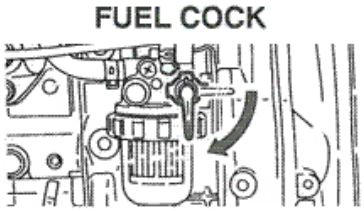
NOTE - IT IS RECOMMENDED THAT THE RE-POWER KIT BE SERVICED ANNUALLY. FAILURE TO DO THIS COULD INVALIDATE YOUR WARRANTY.

BI-ANNUALLY OR EVERY 1000 HOURS - In addition to the recommended annual service, carry out the following:

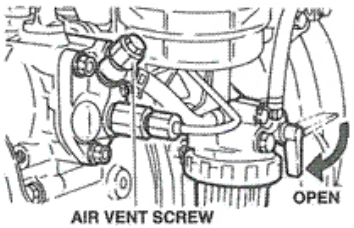
- Turn fuel cock to the "off" position and remove fuel filter cup.
- Replace fuel filter element.
- Bleed fuel system. (See section marked *)
- Change hydraulic oil and inspect and clean suction filters using a suitable solvent. Replace filters as necessary.
- Check valve seat condition. †

PROCEDURE FOR BLEEDING FUEL SYSTEM. - After cleaning/changing the fuel filter, or if the fuel tank is run dry, the fuel system must be bled as follows:

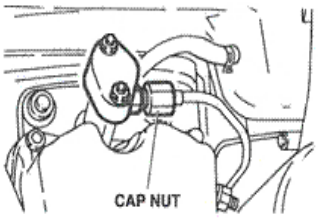
- Turn fuel cock to "on" position.
- Loosen air vent screw on injector pump and allow fuel to flow out until there are no air bubbles in the fuel. Tighten the air vent screw.
- Set the speed control lever to "high" and loosen the cap nut on the side of the injector nozzle. Pull the recoil start handle SLOWLY until sufficient fuel has been injected. Retighten cap nut.
- Start engine as normal.



FUEL COCK OPEN



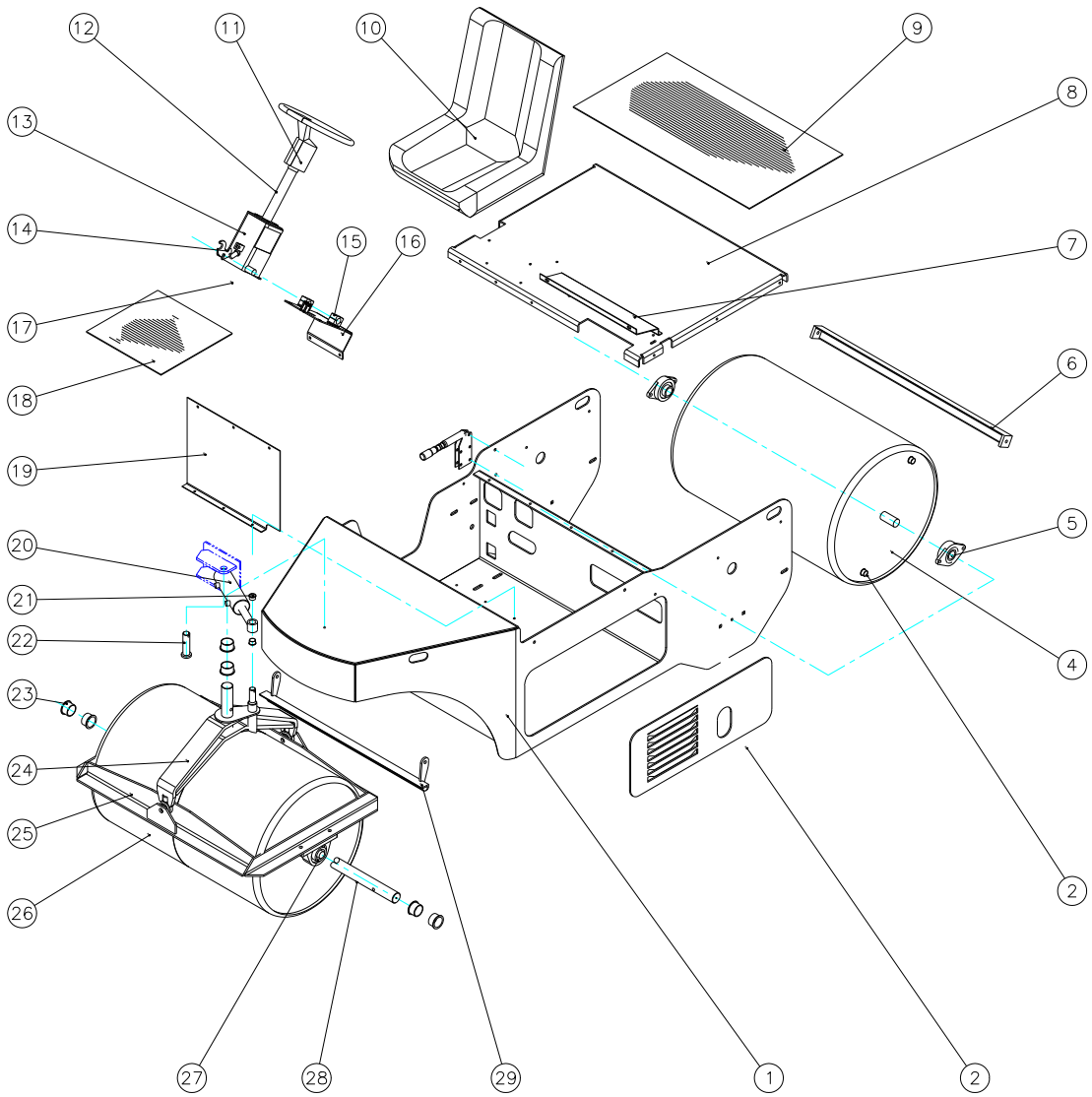
AIR VENT SCREW



NOTE - ALWAYS STOP ENGINE BEFORE REFILLING FUEL

Parts Illustrations

MAIN BODY PARTS



SP4119

PARTS LIST

SP4119

MAIN BODY PARTS

NO.	QTY.	PART NO.	DESCRIPTION
1	1	33569	BODY W/A 2007
2	2	33676	HINGE ASSY – JAGGER
3	6	02243	DRAIN PLUG
4	1	33370	3FT ROLLER REAR ROLL MACHINED
5	2	10289	FLANGE BEARING SFT35
6	1	32847	W/A REAR SCRAPER 3FT
7	1	33545	RECOIL COVER PLATE W/A
8	1	33566	DECK PLATE 2007
9	1	33677	DECK MAT – 3FT ROLLER 2007
10	1	02511	SEAT
11	1	08994	STEERING WHEEL
12	1	08993	STEERING COLUMN
13	1	30076	STEERING BOX W/A 2003
14	1	25216	REEL CATCH
15	2	01818	CLAMP STAUFF M025 SINGLE
16	1	33592	STEERING MOUNTING BRACKET
17	1	08992	STEERING VALVE
18	1	33678	FLOOR MAT – 3FT ROLLER 2007
19	1	33568	MOTOR COVER
20	1	07418	D/A RAM 703/1
21	2	02784	DX BUSH 14DX12 PM
22	1	32772	STEERING PIN
23	6	10286	IGUS BUSH GFM–4550–30
24	1	33560	FRONT YOKE W/A 2007
25	1	32779	ROLLER FRAME W/A – 3FT
26	2	33369	3FT ROLLER FRONT ROLL MACHINED
27	2	10290	BEARING PILLOW BLOCK SL45
28	1	32843	FRONT ROLLER SHAFT DIA 45
29	1	32844	W/A FRONT SCRAPER 3FT

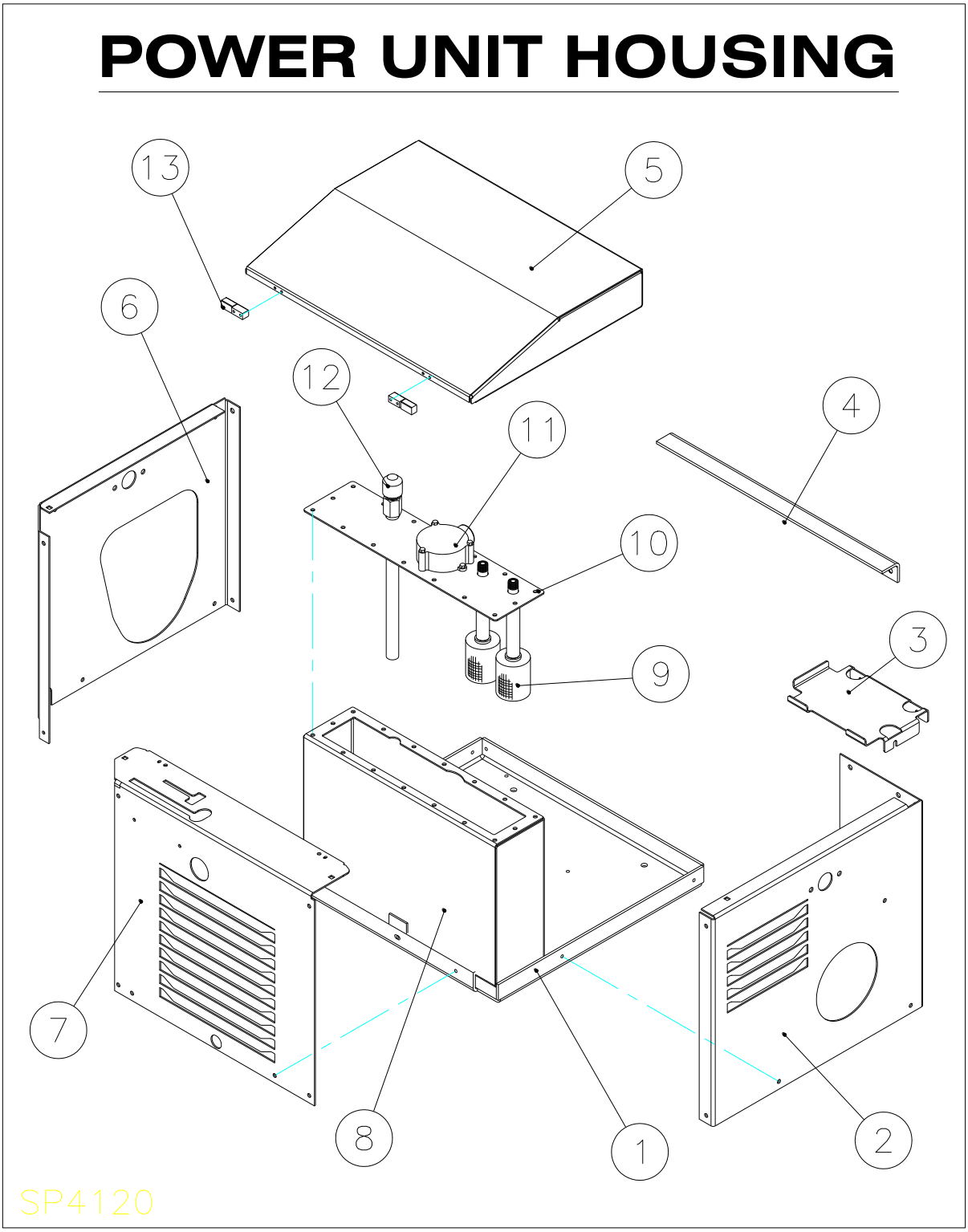


Fig. 7

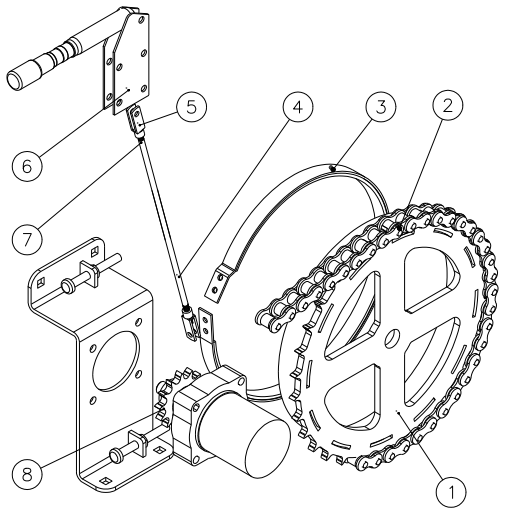
PARTS LIST

SP4120

POWER UNIT HOUSING

NO.	QTY.	PART NO.	DESCRIPTION
1	1	33539	BASE PLATE
2	1	33536	FRONT PANEL
3	1	30199	BATTERY TRAY (3FT)
4	1	33543	BRACE BAR – REPOWER
5	1	33540	REPOWER ENGINE COVER W/A
6	1	33538	REAR PANEL
7	1	33537	RH PANEL
8	1	30194	OIL TANK RECTANGULAR (3FT)
9	2	RH447	SUCTION FILTER
10	1	31043	OIL TANK LID W/A (3FT) 2007
11	1	04628	RETURN FILTER
12	1	28218	PLASTIC DIPSTICK– UCC DIP 207
13	2	05518	HINGE PIN ASSY

DRIVE SPROCKET & PARKING BRAKE



SP4121

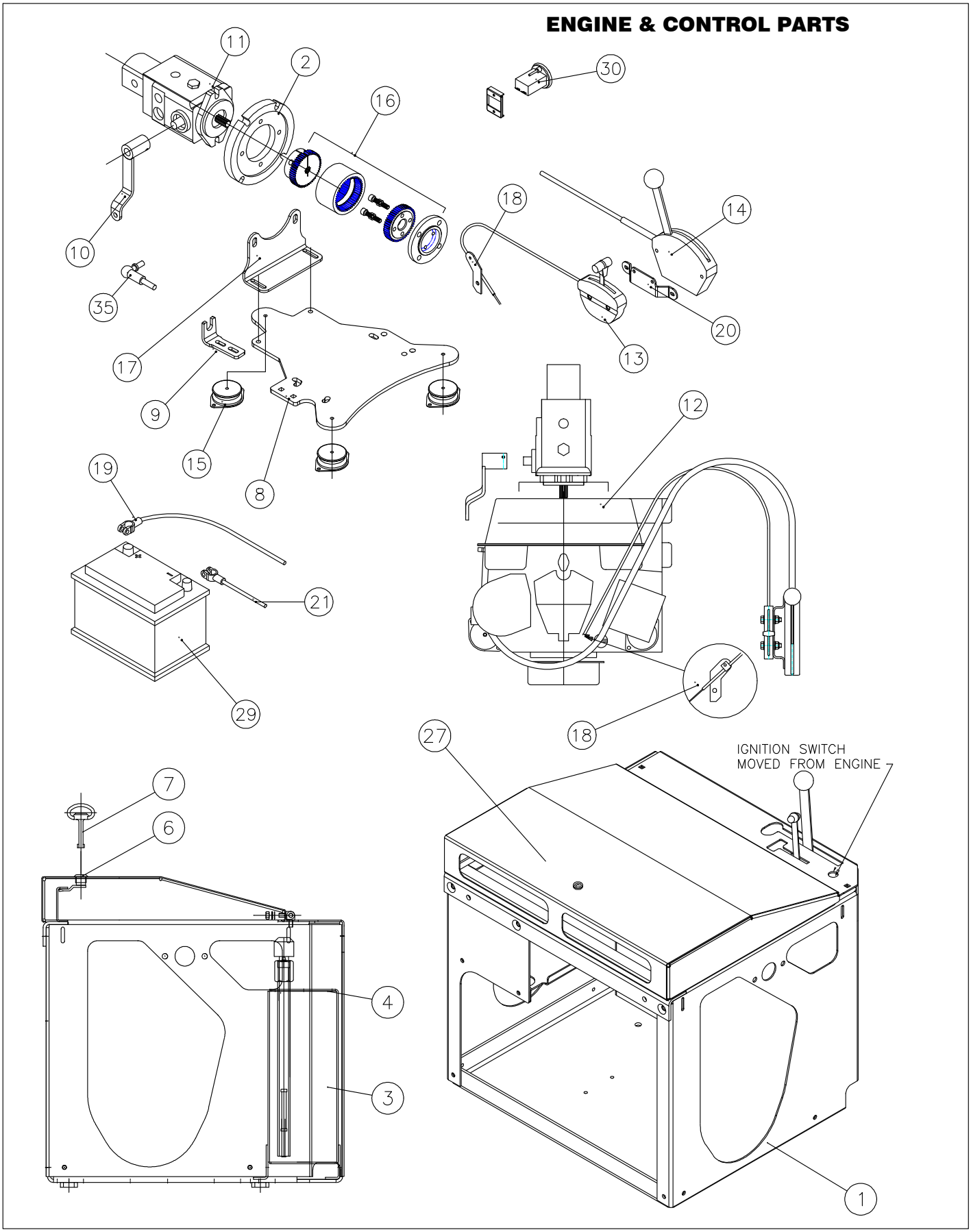
SPROCKET/BRAKE ASSY

NO.	QTY.	PART NO.	DESCRIPTION
1	1	32841	SPROCKET\BRAKE BAND W/A
2	1	32861	ROLLER CHAIN 3/4INBS – 88 LINKS
3	1	24719	BRAKE BAND ASSY
4	1	24703	BRAKE ROD
5	2	02384	CLEVIS M008
6	1	RH417	PARKING BRAKE
7	2	02520	NUT M008 FULL
8	1	32808	SPROCKET 3/4IN – 13T MACHINED

Fig. 8

PARTS LIST

ENGINE & CONTROL PARTS



PA

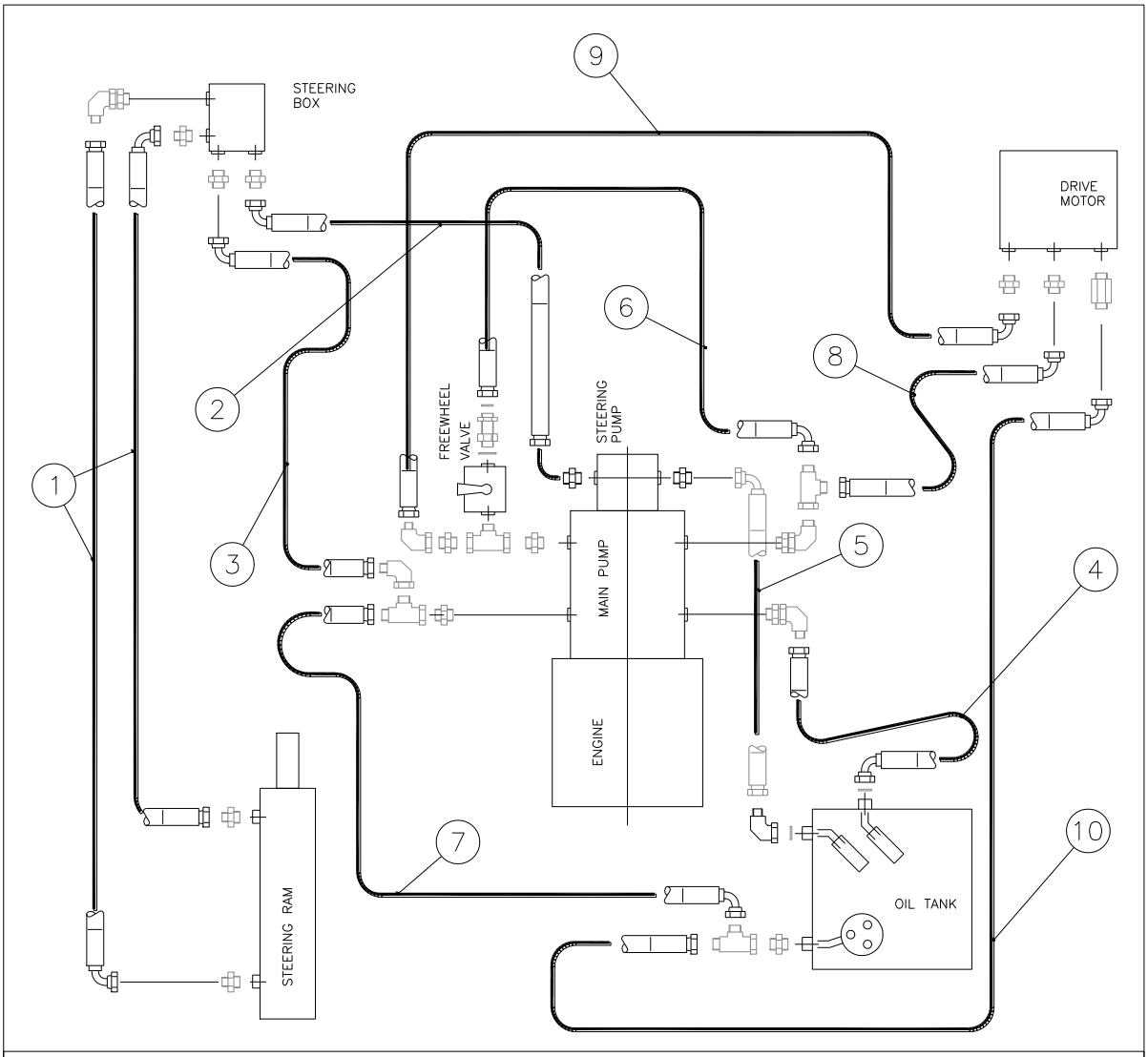
Parts List

Code	Description
33600	**BASE UNIT ASSY REPOWER - 2009**

No.	Code	Description	QTY
1	33544	REPOWER HOUSING ASSEMBLY	1
2	28899	COUPLING FLANGE	1
3	30194	HYDRAULIC TANK W/A 3FT	1
4	31043	HYD TANK - LID W/A 3FT	1
5	-		0
6	05516	HOOD LOCK	1
7	05517	SPANNER KEY	1
8	28867	ENGINE MOUNTING PLATE	1
9	33690	CONTROL CABLE SUPPORT	1
10	28915	PUMP SWASH LEVER - ROBIN	1
11	05463	PUMP	1
12	08797	ROBIN ENGINE	1
13	04834	THROTTLE CONTROL CABLE	1
14	24690	SPEED CONTROLLER	1
15	07709	ENGINE MOUNT	3
16	34608	ROBIN COUPLING ASSEMBLY	1
17	30014	PUMP SUPPORT ANGLE	1
18	28913	THROTTLE CLAMP PLATE - REPO KIT	1
19	04005	BATTERY LEAD POSITIVE 48IN	1
20	30197	THROTTLE BRACKET - 3FT	1
21	05468	BATTERY LEAD	1
22	-		0
23	RH448	VALVE HANDLE	1
24	01158	BOLT M010 X 030 SET	4
25	02525	WASHER M010 SPR REC	4
26	02702	WASHER M010 FLAT FORM C	4
27	08852	12MM SELF-ADHESIVE INSULATION	1
28	26209	BATTERY CLAMP	1
29	09135	BATTERY 065	1
30	09785	HOUR METER	1
31	-		0
32	05651	CABLE CLAMP C/W SCREW	1
33	32007	REPOWER WIRING (HOUR METER)	1
34	03785	CABLE CLIP	3
35	07614	BALL 10MM & SOCKET KIT	1

28 July 2009

HYDRAULIC ASSEMBLY



34228

Parts List

Code Description

34228 **GENERIC HOSE KIT REPOWER**

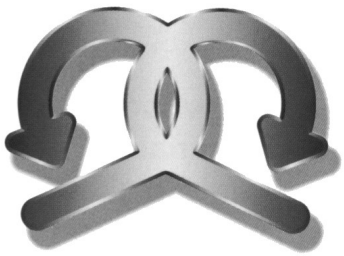
No.	Code	Description	QTY
1	34678	HOSE 8 - 1/4IN 700 LONG	2
2	34231	HOSE - 3/8IN 1050 LONG	1
3	34232	HOSE - 3/8IN 1500 LONG	1
4	34233	HOSE - 1/2IN 380 LONG	1
5	34234	HOSE - 3/8IN 380 LONG	1
6	34679	HOSE - 3/8IN 680 LONG	1
7	34236	HOSE - 3/8IN 200 LONG	1

Code	Description
34229	**MOTOR HOSE KIT 3FT REPOWER**

No.	Code	Description	QTY
1	34237	HOSE - 1/2IN 825 LONG	1
2	34238	HOSE - 1/2IN 1200 LONG	1
3	34239	HOSE - 3/8IN 900 LONG	1

Item No.	Part No.	Description	Quantity
2	09154	FITTING 3/8” BSP TO 9/16” ORFS	3
3	09155	ELBOW 3/8” BSP TO 9/16” ORFS	1
4	08943	FITTING 3/8” BSP TO 11/16” ORFS	3
5	09460	ELBOW 3/8” BSP TO 11/16” ORFS	2
6	09394	ELBOW 11/16” ORFS	1
7	09283	TEE 11/16” ORFS	1
8	09296	TEE 13/16” ORFS	2
9	09461	FITTING 3/4” BSP TO 13/16” ORFS	1
10	09371	TEE 13/16” ORFS	2
11	09704	ELBOW 3/8” BSP TO 13/16” ORFS	1
12	09705	ELBOW 13/16” ORFS	2
13	09400	FITTING 7/8” UNF TO 13/16” ORFS	2
14	09402	FITTING 7/8” UNF TO 11/16” ORFS	1
15	08945	FITTING 1/2” BSP TO 13/16” ORFS	1
16	31089	FITTING BULKHEAD 3/8” BSP TO 11/16” ORFS 28 LONG	1
17	01812	3/8” DOWTY SEAL	1
18	09403	11/16” ORFS O-RING	1
19	09405	13/16” ORFS O-RING	2

FITTINGS



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