



AUTOGUIDE EQUIPMENT



Auto-Roller 3ft

Part No 35094
(Hatz Engine)

Operating/Fitting Instructions and Parts Manual

Autoguide Equipment Ltd
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Heddington, Calne,
Wiltshire, UK,
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AUTO-ROLLER



EC Declaration of Conformity

Manufacturer's Name: Autoguide Equipment Ltd

Manufacturer's Address: Stockley Road
Heddington
Nr Calne
Wiltshire. SN11 0PS
United Kingdom

Declares that this product: 3FT 'Auto-Roller' model 3ARH

Description of Equipment: 9 BHP Hatz Single Cylinder Air Cooled Diesel Powered Roller

Conforms to the following Directives: Outdoor Noise Directive:
2000/14/EC Annex VI Procedure 2

Measured Sound Power Level: dB L_{wa} - 95.5 dB

Guaranteed Sound Power Level: dB L_{wa} - 98 dB

Net Installed Power: 7 kW

Contact Details for Manufacturers: Tel: 44(0)1380 850885
Fax: 44(0)1380 850010

Notified Body: AV Technology Limited
Arkle Avenue
Stanley Green Trading Estate
Handforth
Cheshire. SK9 3RW
United Kingdom

**Place of Declaration:
(and location of Technical File)** Autoguide Equipment Ltd
Stockley Road
Heddington
Nr Calne
Wiltshire. SN11 0PS
United Kingdom

Date: 24/02/2010

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 'Hatz' 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 IDENTIFICATION

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. Some of the following are present on this machine.



Pictogram to indicate **Alert Warning**.



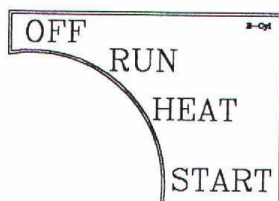
Pictogram to indicate
Read the Product Manual.



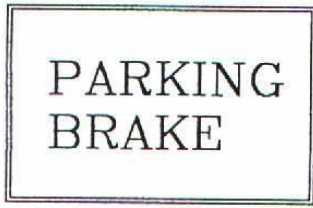
Pictogram to indicate **Lifting Hook location**.



Label to indicate **Apply Grease Here**.

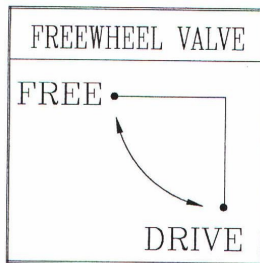


Label to indicate **Ignition Key Position**.

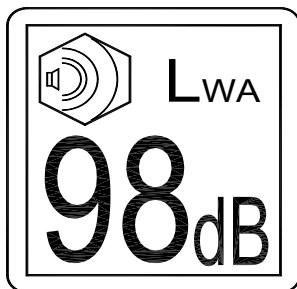


Label to indicate **Parking Brake**.

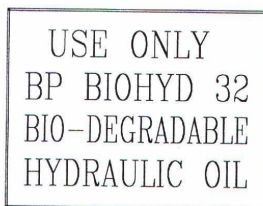
Label to indicate **Engine Speed & Direction Control Lever positions**.



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



Label to indicate 'Guaranteed Sound Power Level'



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.

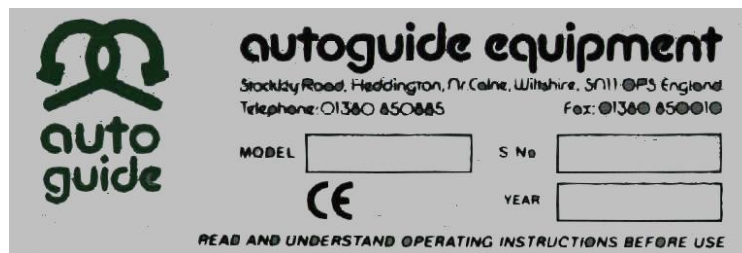


Fig. 1

HANDLING OF THE MACHINE

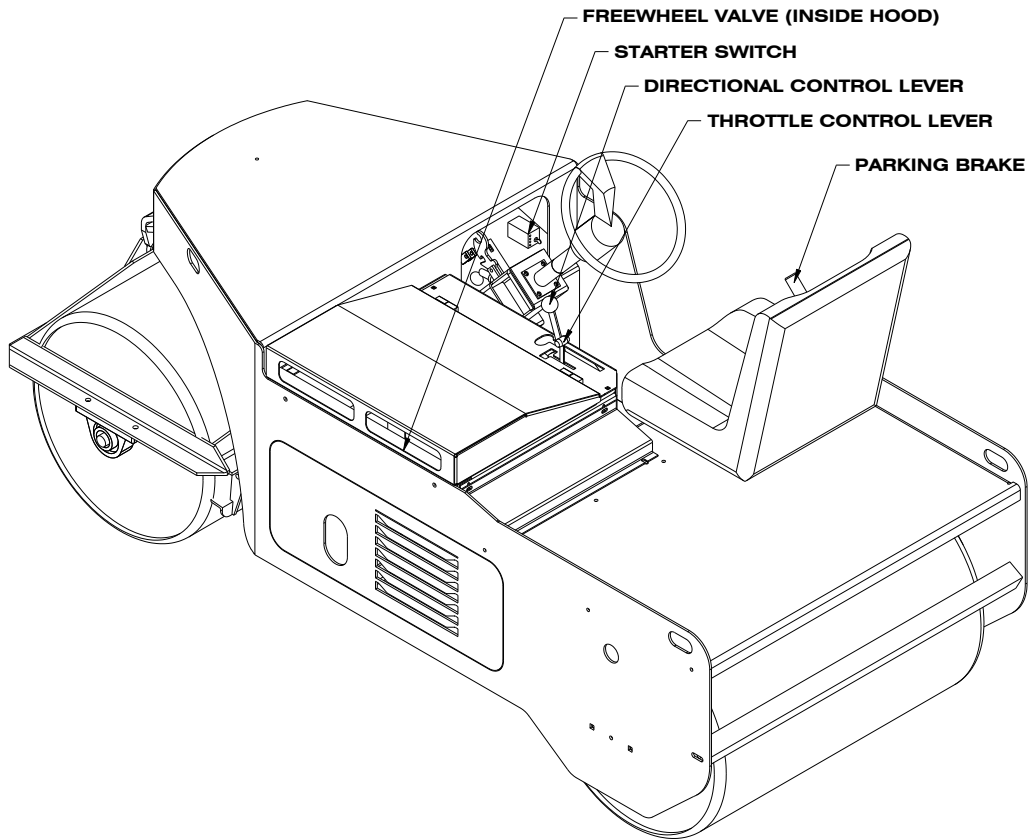


Always lift machine from the lift points marked with the pictogram.

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

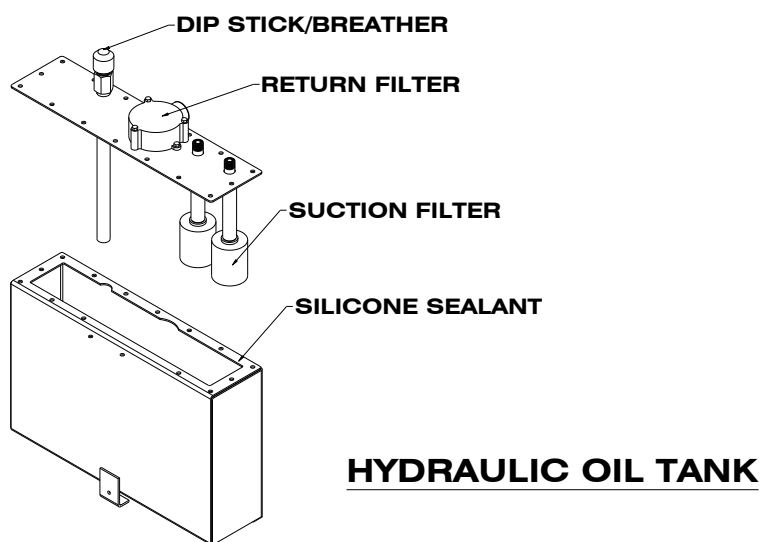
To operate, place the lever in the FREEWHEEL position. Having carried out any repairs this lever **MUST** then be returned to the DRIVE position. Note 'engine braking' does not work when 'freewheel' is selected.

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.



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

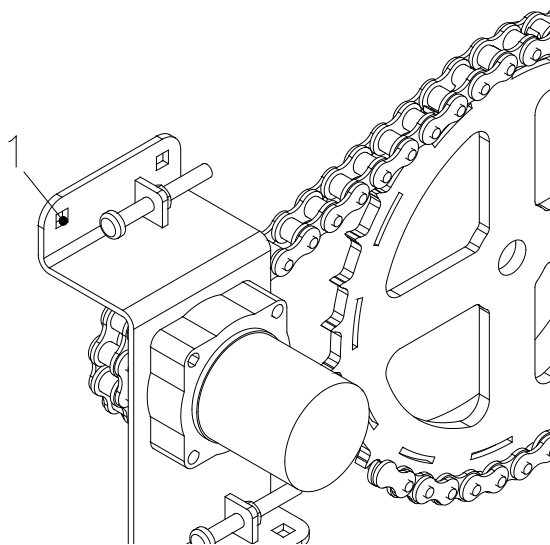
GREASE

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.
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Engine Power Pack

Recommendations

(For detailed information, see 'Hatz Engine Manual')

Maintaining your Roller 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 **Hatz** 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. It is recommended that the engine manual is consulted before using your re-power pack.

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 disposed 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.

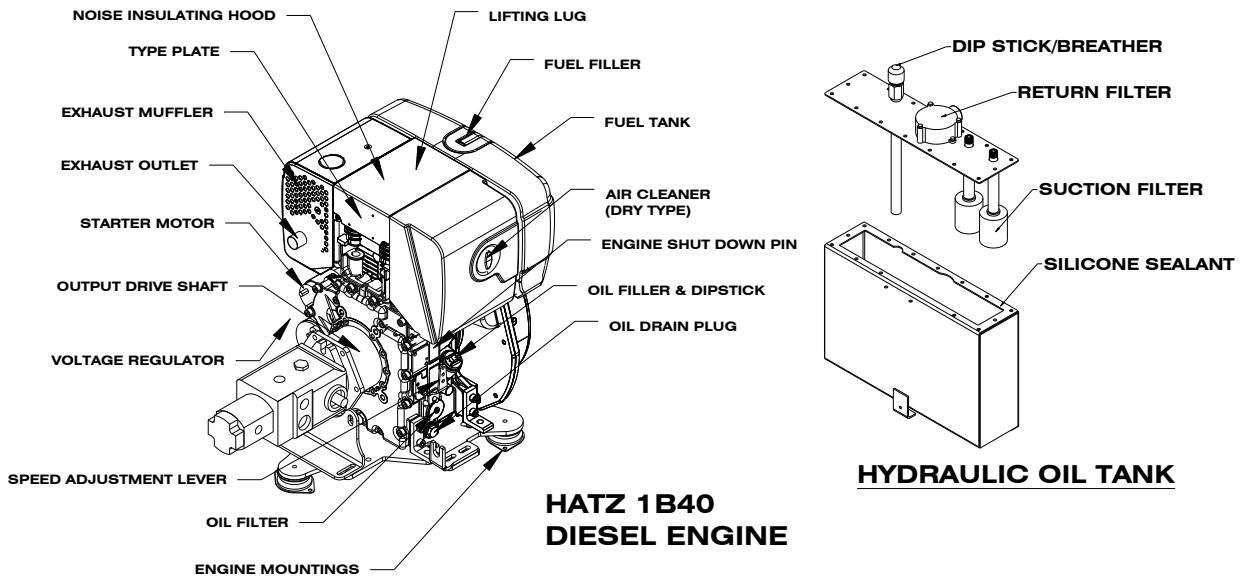
Items marked with this symbol † should only be carried out by a suitably qualified mechanic/engineer or by your local Hatz dealer, as specialist tools and skills are required. Failure to perform these operations correctly will result in SEVERE engine damage.

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 |
| • Fuel Filter Cartridge: | Autoguide Part Number 03399 |
| • Air Filter Element: | Autoguide Part Number 03392 |

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



Engine Components (See also Hatz Manual)

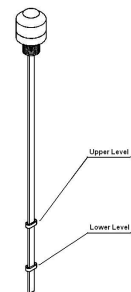
MAINTENANCE SCHEDULE:

DAILY

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

Non engine parts:

- 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:

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

Non engine parts:

- Check drive chain tension and adjust as required. (See diagram)
- Check battery electrolyte levels and top up as necessary with de-ionised water.

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

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

Non engine parts:

- Change hydraulic return filter element.

EVERY 500 HOURS - or when maintenance lamp lights at maximum revs:

*For engine maintenance please refer to **Hatz** handbook regarding air filter & fuel filter servicing.*

Air cleaner maintenance—additional information.

In order to gain access to the filter cartridge, it is necessary to remove the support rail from the Left Hand side of the engine housing. Once this is removed, unscrew the centre retaining screw from the filter housing and lift the cover vertically out. Pull off the filter, clean the area and refit the new filter. Replace the cover and refit the centre screw. DO NOT overtighten.

- Replace the housing top rail.

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

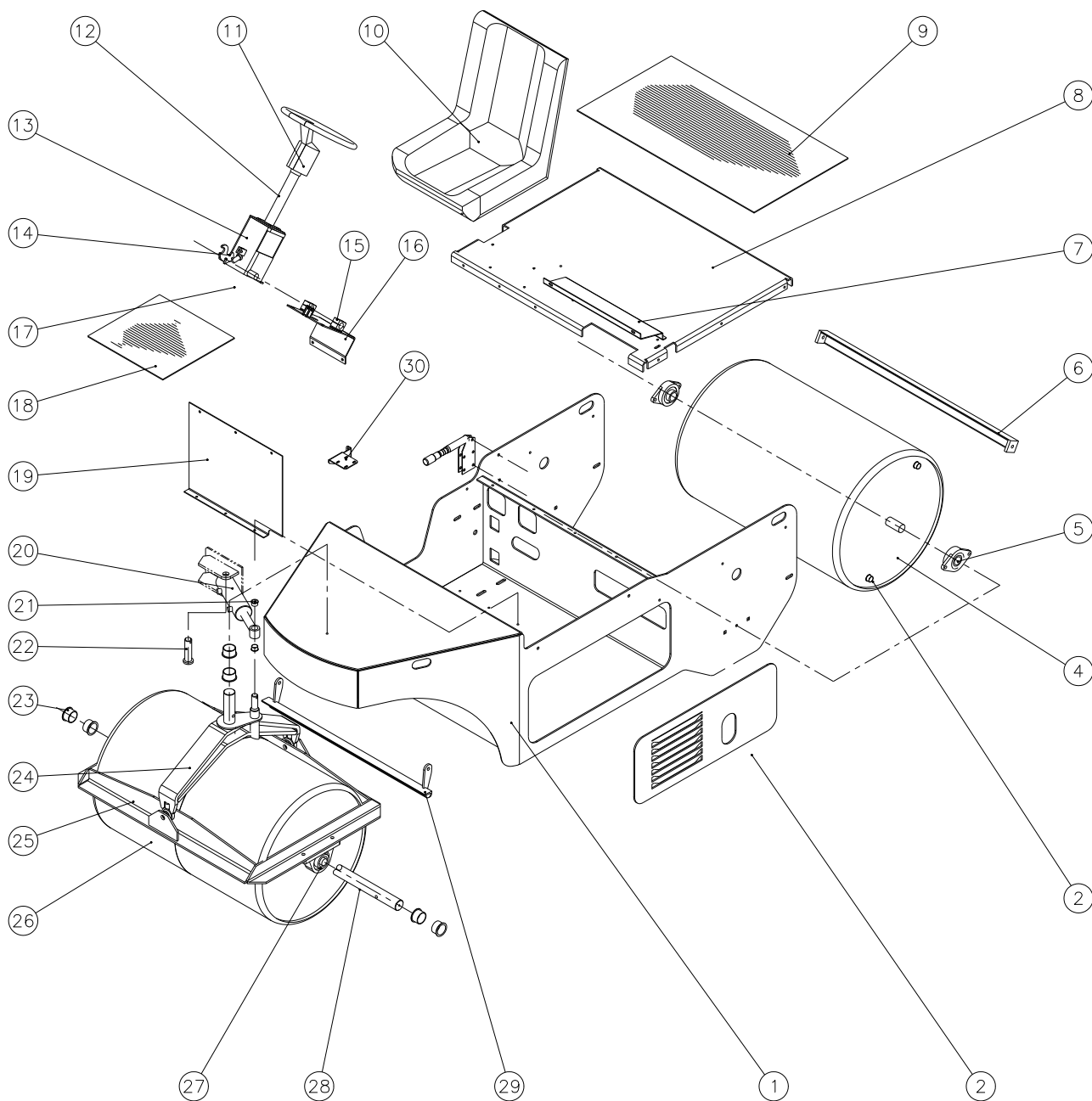
BI-ANNUALLY OR EVERY 1000 HOURS - In addition to the recommended annual service, carry out the following:

*For engine maintenance please refer to **Hatz** handbook regarding oil filter servicing.*

NOTE - ALWAYS STOP ENGINE BEFORE REFILLING FUEL

Parts Illustrations

MAIN BODY PARTS



SP4119

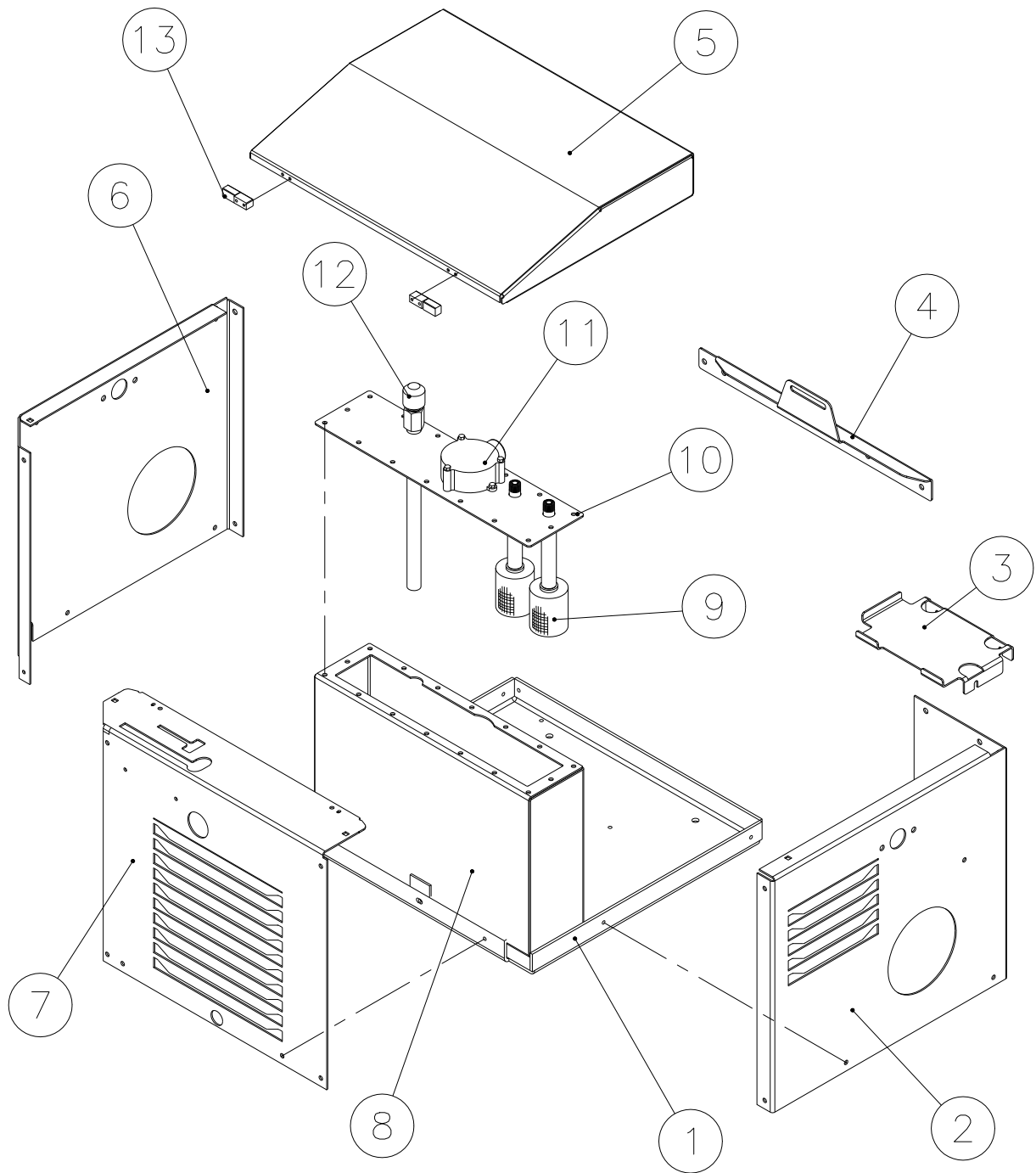
PARTS LIST

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
30	1	35075	CONTROL BOX BRACKET

POWER UNIT HOUSING



SP4120

Fig. 7

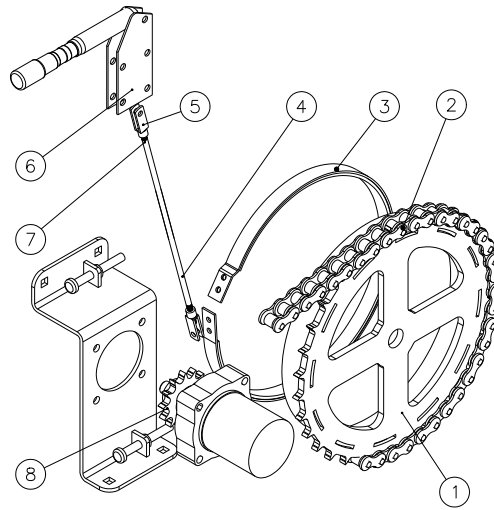
PARTS LIST

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	35070	BRACE BAR W/A- REPOWER
5	1	33540	REPOWER ENGINE COVER W/A
6	1	34992	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	33676	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

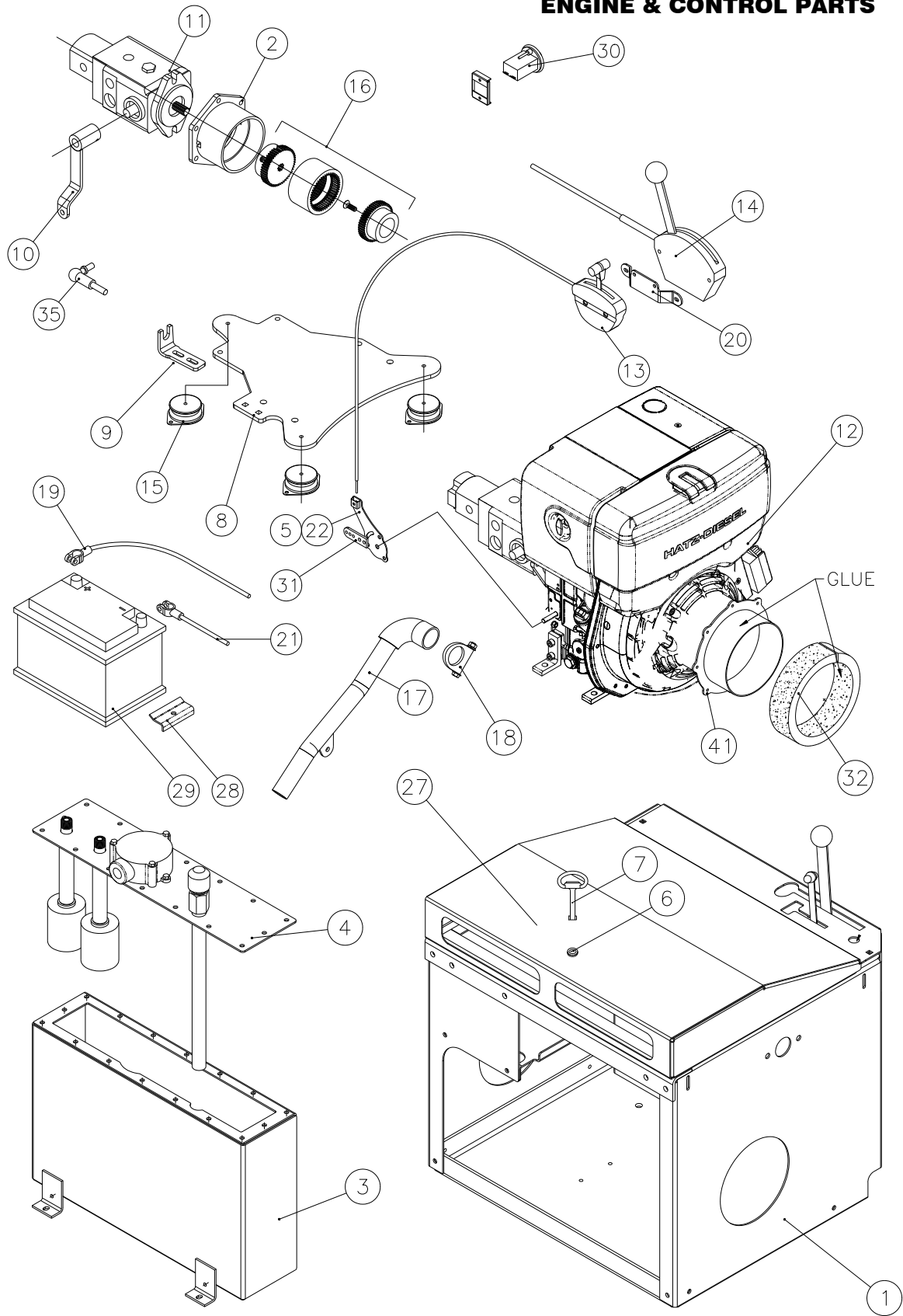
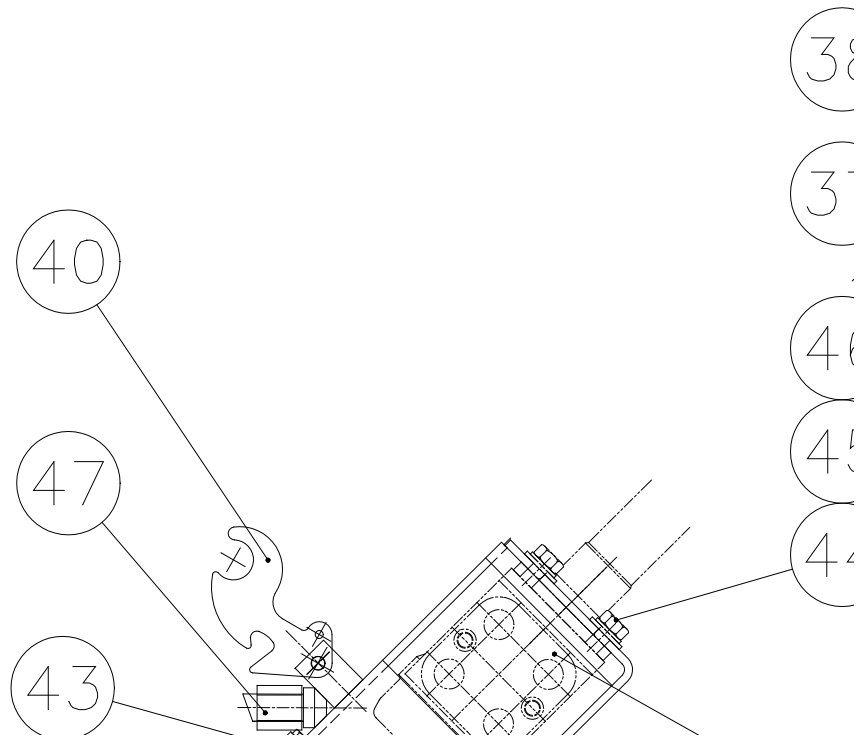


Fig. 9

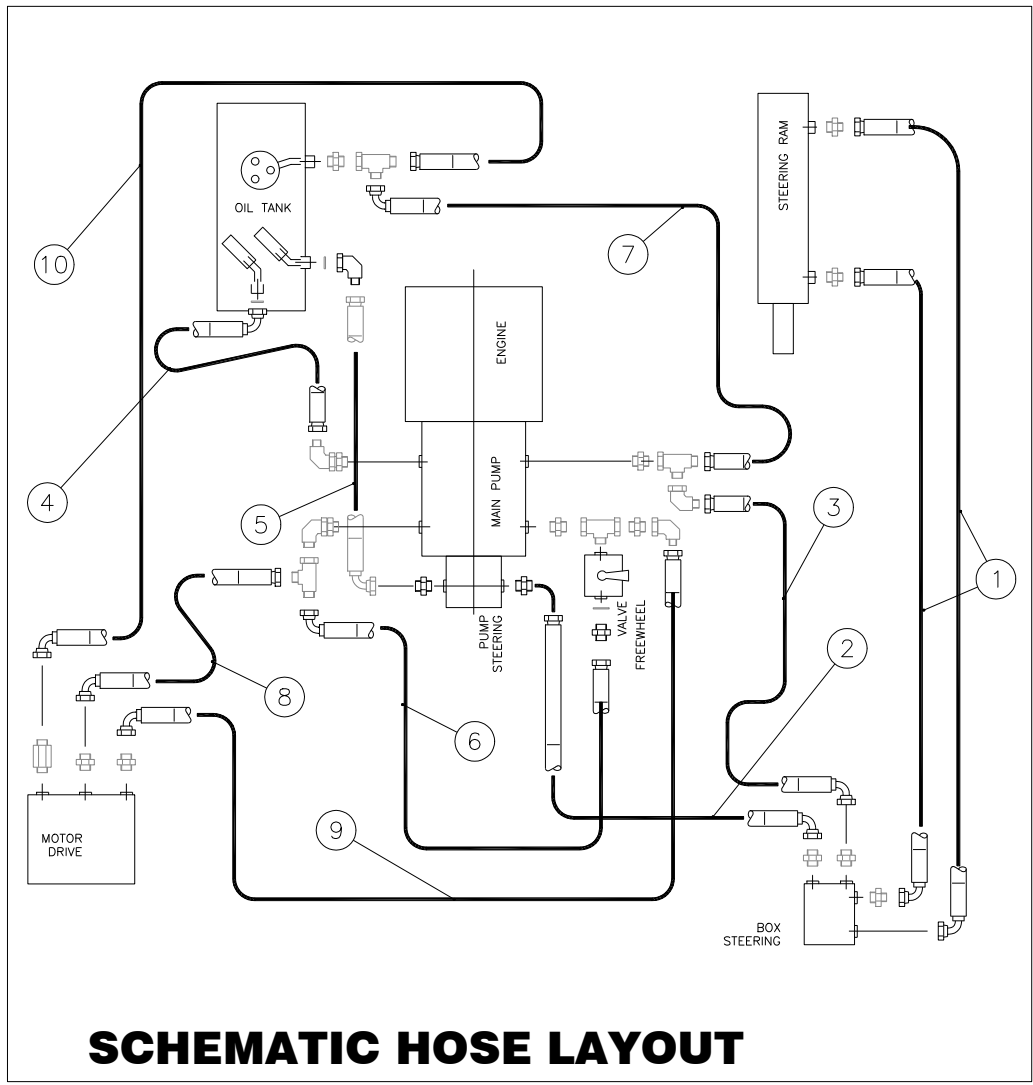
Parts List

Code 35090		Description BASE UNIT + COMMON PARTS - 2010	
No. Drawing	Code	Description	QTY
1	34993	REPOWER HOUSING HATZ 2010	1
2	35009	DRIVE HOUSING W/A	1
3	30194	HYDRAULIC TANK W/A 3FT	1
4	31043	HYD TANK - LID W/A 3FT	1
5	05651	CLAMP CABLE C/W SCREW	1
6	05516	HOOD LOCK	1
7	05517	SPANNER KEY	1
8	34988	ENGINE MOUNTING PLATE HATZ	1
9	33690	CONTROL CABLE SUPPORT	1
10	28915	PUMP SWASH LEVER - ROBIN	1
11	05463	PUMP	1
12	10285	ENGINE HATZ IB40	1
13	04834	THROTTLE CONTROL CABLE	1
14	24690	SPEED CONTROLLER	1
15	07709	ENGINE MOUNT	3
16	35057	COUPLING ASSEMBLY HATZ	1
17	35069	EXHAUST W/A	1
18	10189	EXHAUST CLAMP %%C45	1
19	04005	BATTERY LEAD POSITIVE 48IN	1
20	30197	THROTTLE BRACKET - 3FT	1
21	05468	BATTERY LEAD	1
22	35096	THROTTLE BACKPLATE HATZ	1
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	35095	THROTTLE ARM EXTENSION HATZ	1
32	25272	FOAM BLOCK	1
33	32007	REPOWER WIRING (HOUR METER)	1
34	03785	CABLE CLIP	3
35	07614	BALL 10MM & SOCKET KIT	1

04 March 2010



No. Drawing	Code	Description	QTY
36	08992	125CC STEERING VALVE	
37	08993	STEERING COLUMN	1
38	08994	STEERING WHEEL	1
39	30076	STEERING BOX - ROLLER	1
40	25216	REEL CATCH	1
41			
42			
43	01818	STAUFF CLAMPS	2
44	01158	BOLT M010 X 030 SET	4
45	02525	WASHER M010 SPR REC	4
46	02702	WASHER M010 FLAT FORM C	4
47	24157	RUBBER BUSH	1



SCHEMATIC HOSE LAYOUT

Parts List

Code	Description	
34228	GENERIC HOSE KIT POWERPACK	
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
35153	MOTOR HOSE KIT 3FT POWERPACK	
No.	Code Description	QTY
8	35154 HOSE - 1/2IN 1100 LONG	1
9	35155 HOSE - 1/2IN 1450 LONG	1
10	35156 HOSE - 3/8IN 900 LONG	1

FITTINGS

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



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