



**AUTOGUIDE EQUIPMENT**



# Universal Auto-Roller Re-Power Kit

Part No 35114  
(Hatz Engine)

## Operating/Fitting Instructions and Parts Manual

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**AUTO-ROLLER**





## Dear Customer,

Thank you for purchasing an Autoguide Auto-Roller Re-power Pack.

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 Re-power Pack' conforms to Autoguide's policy of quality, the machine cannot be expected to withstand abuse caused by misuse and/or 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 '**Auto-Roller Re-power Pack**' has been designed to give older '**Auto-Rollers**' a new lease of life. The unit is fitted with a 9hp, single cylinder air cooled 'Hatz' diesel engine together with a hydrostatic transmission system providing a stepless speed control facility in either direction. The complete transmission is contained within an enclosure to reduce the possibility of oil spillage in the unlikely event of a hydraulic system failure. However Biodegradable hydraulic oil is used throughout the system, which will not harm grass.

'**Power steering**' and '**electric start**' are fitted as an integral part of the 'Power Pack'.

## Contents

<b>INTRODUCTION</b> .....	<b>3</b>
<b>CONTENTS</b> .....	<b>3</b>
<b>PICTOGRAMS &amp; SAFETY DECALS</b> .....	<b>4</b>
<b>REMOVAL OF OLD POWER UNIT</b> .....	<b>6</b>
<b>INSTALLATION PROCEDURE &amp; INSTRUCTIONS</b> .....	<b>6</b>
<b>POWER STEERING</b> .....	<b>7</b>
<b>LIST OF FASTENERS</b> .....	<b>8</b>
<b>MAINTAINING THE RE-POWER PACK</b> .....	<b>9</b>
<b>MAINTENANCE SCHEDULE</b> .....	<b>10</b>
<b>PARTS ILLUSTRATIONS</b> .....	<b>13</b>

## SPECIFICATION

Length	Width	Height	Weight	Ground Pressure	Speed
2460mm	1080mm	1250mm	1150kg unballasted 1560kg ballasted	6.5kg/cm <sup>2</sup> unballasted 8.7kg/cm <sup>2</sup> 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**.



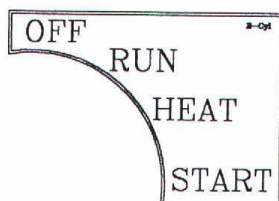
Pictogram to indicate  
**Read the Product Manual**.



Pictogram to indicate **Lifting Hook location**.



Label to indicate **Apply Grease Here**.

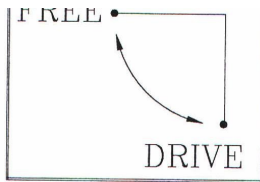


Label to indicate **Ignition Key Position**.

PARKING  
BRAKE

Label to indicate **Parking Brake**.

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



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

◀ PARKING  
BRAKE

◀ HEAT

◀ OIL

◀ IGN

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.

USE ONLY  
BP BIOHYD 32  
BIO-DEGRADABLE  
HYDRAULIC OIL

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

## **Installing your Re-power Pack**

The following instructions are meant as a guide for the safe installation of your new re-power pack. Please note - it should not be necessary to loosen any of the hydraulic components in order to ensure correct routing, however if you feel that this may be necessary, please contact your local dealer or Autoguide Equipment before proceeding, to avoid damaging the pack or injuring yourself.

### **Power-pack contents**

The pack is fully assembled, run and pressure tested before supply, and contains the following items:

- Re-power pack.
- Steering ram assembly, mounts and safety guard.
- Steering column, mounts and hydraulic components.
- Drive motor, mounts and guards.
- Adapter plate to refit seat.
- Additional right and left hand covers and guards.
- All fittings and fasteners. (See list on page 7)

### **Auto-Roller Re-power pack fitting instructions**

**Prior to the fitting of the re-power pack it is recommended that certain preparations are made:**

- The machine must be made secure on level ground and blocked to stop it rolling.  
As the unit contains fuel and oils, the appropriate health and safety precautions should be taken when handling the old power unit and transmission, and when re-fitting the new unit.

**It is advisable to have the following equipment to hand:**

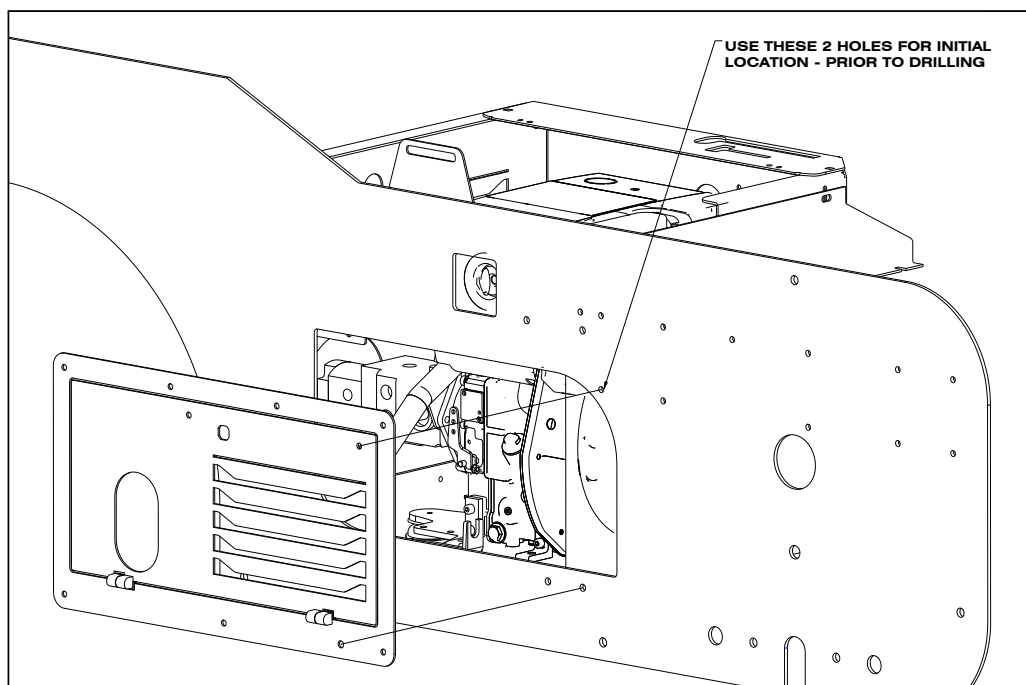
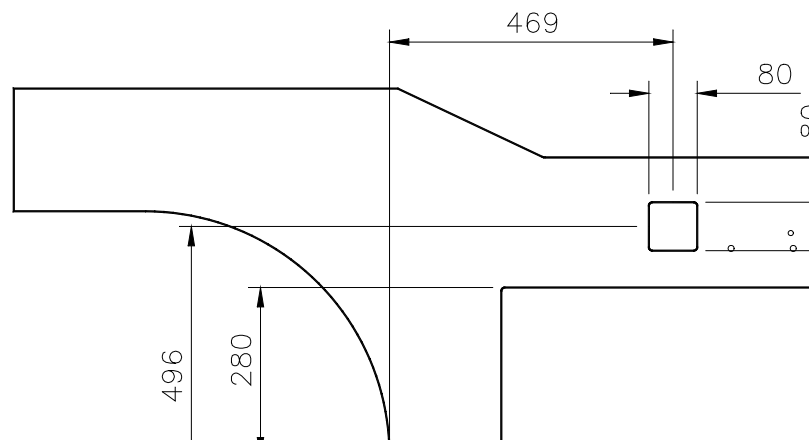
- A suitable lifting device, used for the removal and replacement of the power unit. This must have a safe working load in excess of 250 kg.
- Hand-held power drill with 8mm, 10mm and 12mm bits.
- Steam cleaner.
- 4" Angle Grinder with thin cutting discs.
- Protective items: gloves, goggles, steel toe-cap boots, ear protectors and strong clothing.

### **Removal of the old power unit, transmission and steering**

- Remove the seat assembly.
- Using the lifting device where necessary, remove all of the old transmission and power unit components. Remove all the chain and shaft drives, and small guards and covers.
- Remove the wide inner guard that covers the rear roll from inside the engine bay.
- Remove the steering column and mountings and unbolt the serrated steering segment from the quadrant on the king pin.
- Clean the floor of the engine bay.

## Fitting of the Re-power pack

- Unpack the power-pack from the crate and remove the top cover of the unit. Sling the unit from secure parts of the casing. When the unit is lifted it will be necessary to support the drive motor and the steering assembly as it is manoeuvred into position.
- Lower the unit into the left side of the engine bay.
- Remove the bolt and spacers from the top left hand side of the casing.
- Slide the unit to the left as close as you can to the side plate.
- Align the unit so the exhaust is inline with one of the holes in the side plate.
- For ease of servicing it is advised that a portion of the side panel be cut away as shown and the louvred panel (supplied) fitted over the opening. (Dimensions are in mm).
- **IMPORTANT** If using an angle grinder to enlarge the side openings; goggles, gloves & ear protection must be worn. Remove sharp edges on completion.
- **Note:** Side panels of old rollers may vary! Check positioning of openings before commencing work.



## **Fixing Power Pack to chassis**

- Drill the 8mm hole for the retaining bolt and fit the bolt with the spacers between the unit and the side plate.
- Drill the two 10mm holes through the right hand mounting bracket and through the floor of the machine.
- Offer up the drive motor to the chain and mark the two holes through the slotted holes in the mounting bracket. Mark them at the forward end of the slot to allow them to be used to tension the chain in future. It may be advisable to drill pilot holes from the inside and then finish the holes from the outside. Bolt up the drive motor.
- Drill and bolt up the lower mount hole and fit the new chain drive cover.
- Depending on model it may be possible to re-fit the wide inner panel over the rear roller but it may need to be modified.

## **Power steering**

- Re fit the driver seat in a central position in the drivers compartment.
- Mount the hydraulic ram assembly onto the steering quadrant and fit its anchor point.
- With an operator in the drivers seat offer up the steering column and find a comfortable central position. Mark up the position, drill the 3, 10mm holes and fit the steering column.
- It may be necessary to slightly adjust some of the hydraulic hose positions to ensure the correct hose routing.
- Ensure all bolts and fixings are secure.
- Re-fit the engine cover, check the fuel and oil levels and the unit is ready to start.
- After the first 5 hours of operation check all fittings and ensure that there are no oil leaks on the unit.

### **\*Note:**

In order to align steering correctly it may be necessary to use packer plates under the steering ram (supplied). If the packer plates are used, then use M10 x 40 bolts, and if they are NOT used then use M10 x 35 bolts.



## **Fastener list**

Detailed below is a list of fasteners supplied with your re-power pack, and their locations for your reference.

### Steering ram assembly to top bulkhead:

- 6 off M10 x 35 hex head bolt\*
- 6 off M10 x 40 hex head bolt\*
- 12 off M10 flat washer
- 6 off M10 Nyloc nut

### Sprocket guard:

- 3 off M8 x 25 hex head bolt
- 6 off M8 flat washer
- 3 off M8 Nyloc nut

### Quadrant Plates:

- 3 off M10 x 65 hex head bolt
- 6 off M10 flat washer
- 3 off M10 Nyloc nut

### Louvered side plate guards:

- 8 off M8 x 25 hex head bolt
- 16 off M8 flat washer
- 8 off M8 Nyloc nut

### Steering wheel assembly base plate to chassis:

- 3 off M10 x 30 hex head bolt
- 6 off M10 flat washer
- 3 off M10 Nyloc nut

### Quadrant guard:

- 3 off M8 x 20 hex head bolt
- 3 off M8 flat washer
- 3 off M8 spring washer.

### Drive motor mounting bracket to main chassis:

#### Side plate:

- 2 off M12 x 35 hex head bolt
- 4 off M12 flat washer
- 2 off M12 Nyloc nut

#### Base plate:

- 1 off M12 x 30 hex head bolt
- 2 off M12 flat washer
- 1 off M12 Nyloc nut

#### Top adjuster bracket:

- 2 off M10 x 30 hex head bolt
- 4 off M10 flat washer
- 2 off M10 Nyloc nut

### Chain guard:

- 2 off M6 x 20 hex head bolt
- 4 off M6 flat washer
- 2 off M6 Nyloc nut

### Base plate bracket to main chassis:

- 2 off M10 x 40 hex head bolt
- 4 off M10 flat washer
- 2 off M10 Nyloc nut

### Power pack side plate through roller side plate:

- 2 off M8 x 40 hex head bolt
- 4 off M8 flat washer
- 2 off M8 Nyloc nut

### Seat adapter plate:

- 4 off M8 x 25 hex head bolt
- 8 off M8 flat washer
- 4 off M8 Nyloc nut

# 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.

**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.

**GREASE**

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

### 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.

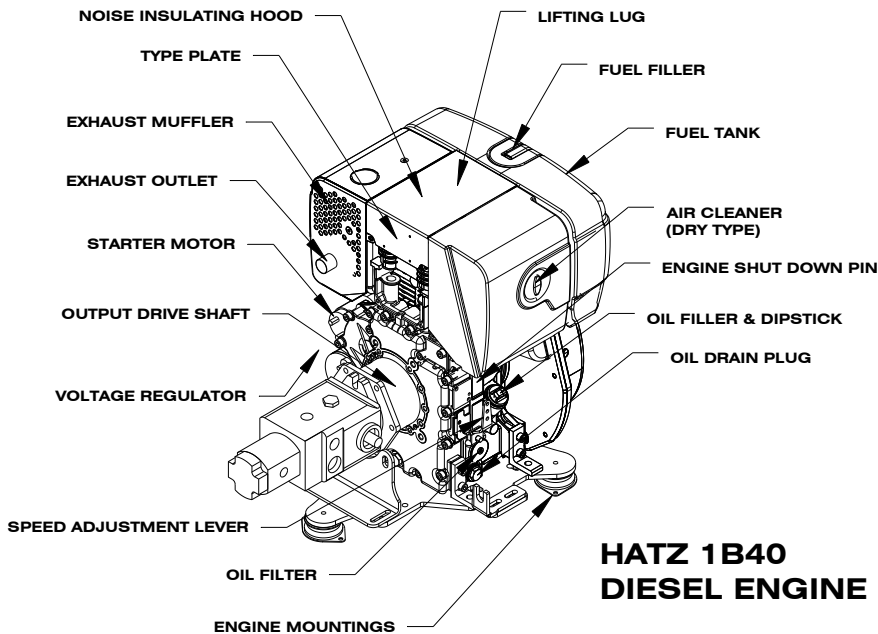
Items marked with this symbol † should only be carried out by a suitably qualified mechanic/engineer or by your local Hatz dealer, as specialist tools and skills are required. Failure to perform these operations correctly will result in SEVERE engine damage.

### 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)

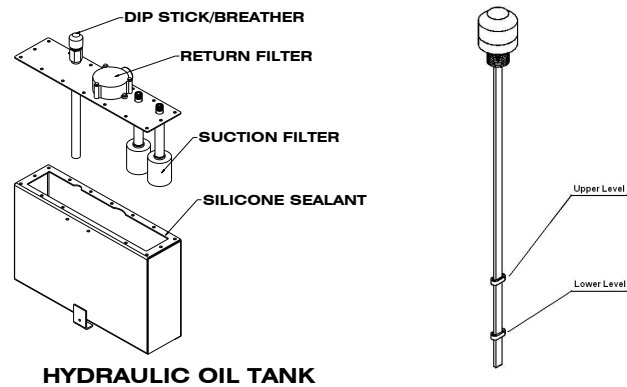
**HATZ 1B40  
DIESEL ENGINE**

**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.

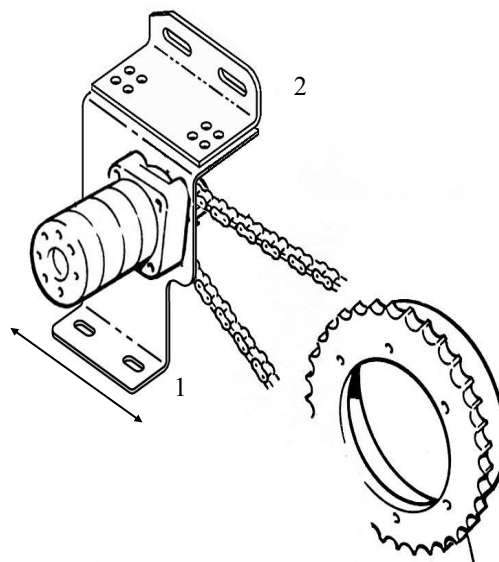
*Non engine parts:*

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

## 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.



**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.**



**NOTE - ALWAYS STOP ENGINE BEFORE REFILLING**

## **RECOMMENDED PROCEDURES:**

### **HYDRAULIC TANK RETURN FILTER:**

- 1) REMOVE PANELS IF NECESSARY TO UNCOVER TOP OF HYDRAULIC TANK.
- 2) UNDO THREE RETAINING BOLTS ON TOP OF RETURN FILTER HOUSING AND REMOVE COVER.
- 3) REMOVE AND REPLACE FILTER ELEMENT TAKING CARE TO AVOID CONTACT BETWEEN SKIN AND HYDRAULIC OIL.
- 4) REPLACE FILTER COVER AND BOLT SECURELY IN PLACE.
- 5) IT IS RECOMMENDED TO WRITE THE DATE ON THE FILTER HOUSING OR LID FOR REFERENCE.
- 6) REPLACE PANELS.

### **HYDRAULIC OIL AND SUCTION FILTERS:**

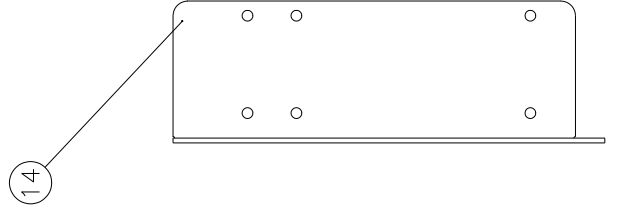
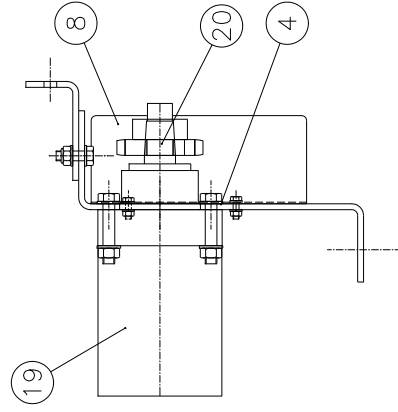
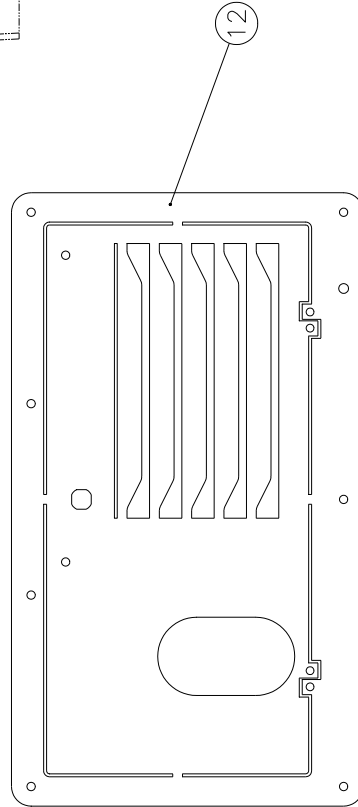
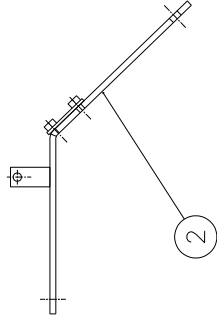
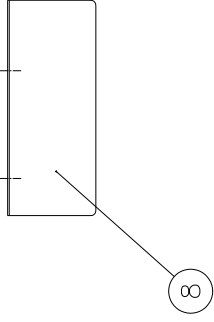
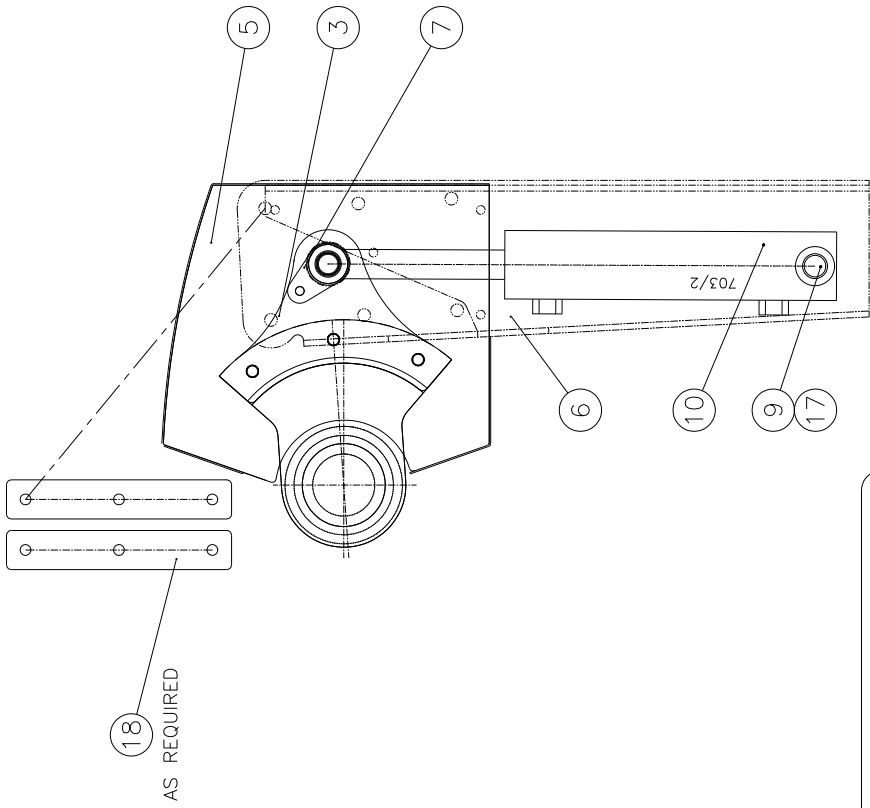
NOTE - ONLY REPLACE SUCTION FILTERS IF THEY APPEAR DAMAGED. OTHERWISE IGNORE INSTRUCTIONS REFERRING TO THESE PARTS.

- 1) REMOVE ENGINE ENCLOSURE RH PANEL TO UNCOVER TOP OF HYDRAULIC TANK.
- 2) UNDO EIGHT BOLTS RETAINING HYDRAULIC TANK LID. NOTE - IT IS NOT NECESSARY TO UNBOLT THE ELECTRICAL SWITCH BOX FROM THE TANK LID. REMOVE LID TAKING CARE TO AVOID EXCESSIVE STRAIN ON HYDRAULIC PIPES OR WIRING.
- 3) TAKING CARE TO AVOID SKIN CONTACT, SIPHON OLD HYDRAULIC OIL OUT OF TANK INTO A CONTAINER, AND UNSCREW TWO SUCTION FILTERS FROM BOTTOMS OF SUCTION TUBES WELDED INTO LID.
- 4) FIRMLY HAND TIGHTEN NEW SUCTION FILTERS ONTO SUCTION PIPES.
- 5) REFILL TANK WITH APPROXIMATELY 18L (4 GAL) OF HYDRAULIC OIL BEFORE REPLACING LID. OIL LEVEL CAN BE TOPPED UP TO CORRECT LEVEL SUBSEQUENTLY.
- 6) REPLACE HYDRAULIC TANK GASKET (OR SEALANT) AND REFIT LID, TAKING CARE THAT GASKET IS SEATED CORRECTLY, AND THAT HYDRAULIC PIPES AND WIRING ARE NOT OVER STRETCHED. TIGHTEN EIGHT LID RETAINING BOLTS.
- 7) CHECK OIL LEVEL AND TOP UP AS REQUIRED. IF TANK IS OVER FULL, OIL MUST BE REMOVED TO THE CORRECT LEVEL.
- 8) IT IS RECOMMENDED TO WRITE DATE ON TANK LID FOR REFERENCE.
- 9) REPLACE REAR ENGINE BAY PLATE.

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



**Parts Illustrations**



※※ NOTE: CHOOSE EITHER ITEM 15 OR 16 TO SUIT WIDTH OF ROLLER BEING MODIFIED.

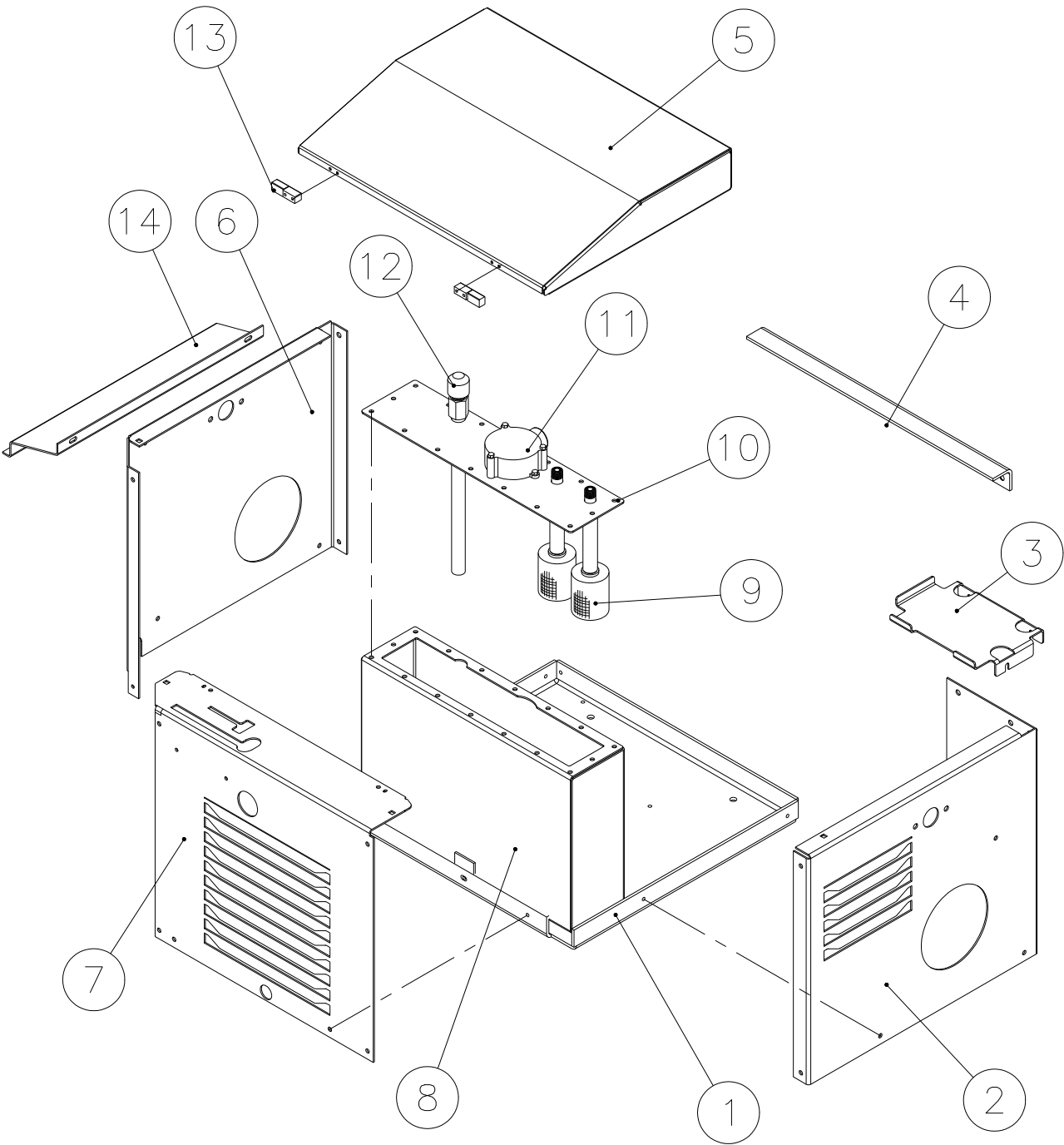
# SPECIFIC PARTS FOR HATZ REPOWER KIT



## Parts List

Code 35115		Description	
		<b>SPECIFIC PARTS - REPOWER KIT</b>	
No. Drawing	Code	Description	QTY
1	-		0
2	28791	STEERING COLUMN MTG W/A	1
3	33872	STEERING ARM W/A	2
4	30037	MOTOR BRACKET - ADJUSTABLE	1
5	28874	STEERING ARM GUARD W/A	1
6	28878	CYLINDER BOX W/A	1
7	28881	RAM PIN W/A	1
8	30045	SPROCKET GUARD - REPOWER	1
9	28885	RAM PIN LONG	1
10	02794	STEERING RAM 703/2	1
11	05450	NUT 5/16 UNF FULL NUT	4
12	37635	HINGED LOUVERED SIDE COVER	1
13	34228	GENERIC HOSE KIT REPOWER UNITS	1
14	34095	HOLD-DOWN BRACKET 2008	1
15	34229	MOTOR HOSE KIT 3FT REPOWER	1
16	34230	MOTOR HOSE KIT 4FT REPOWER	1
17	02784	BUSH GLACIER -14DX12	4
18	30035	PACKER PLATE - REPOWER	2
19	05458	MOTOR	1
20	24834	SPROCKET 10T - ROLLER	1
21	31096	SPACER 16 X 8.5 X 17.8	2
22	33190	4FT ROLLER REPOWER KIT DECAL	1
23	31908	ROLLER MAINTENANCE DECALS	1

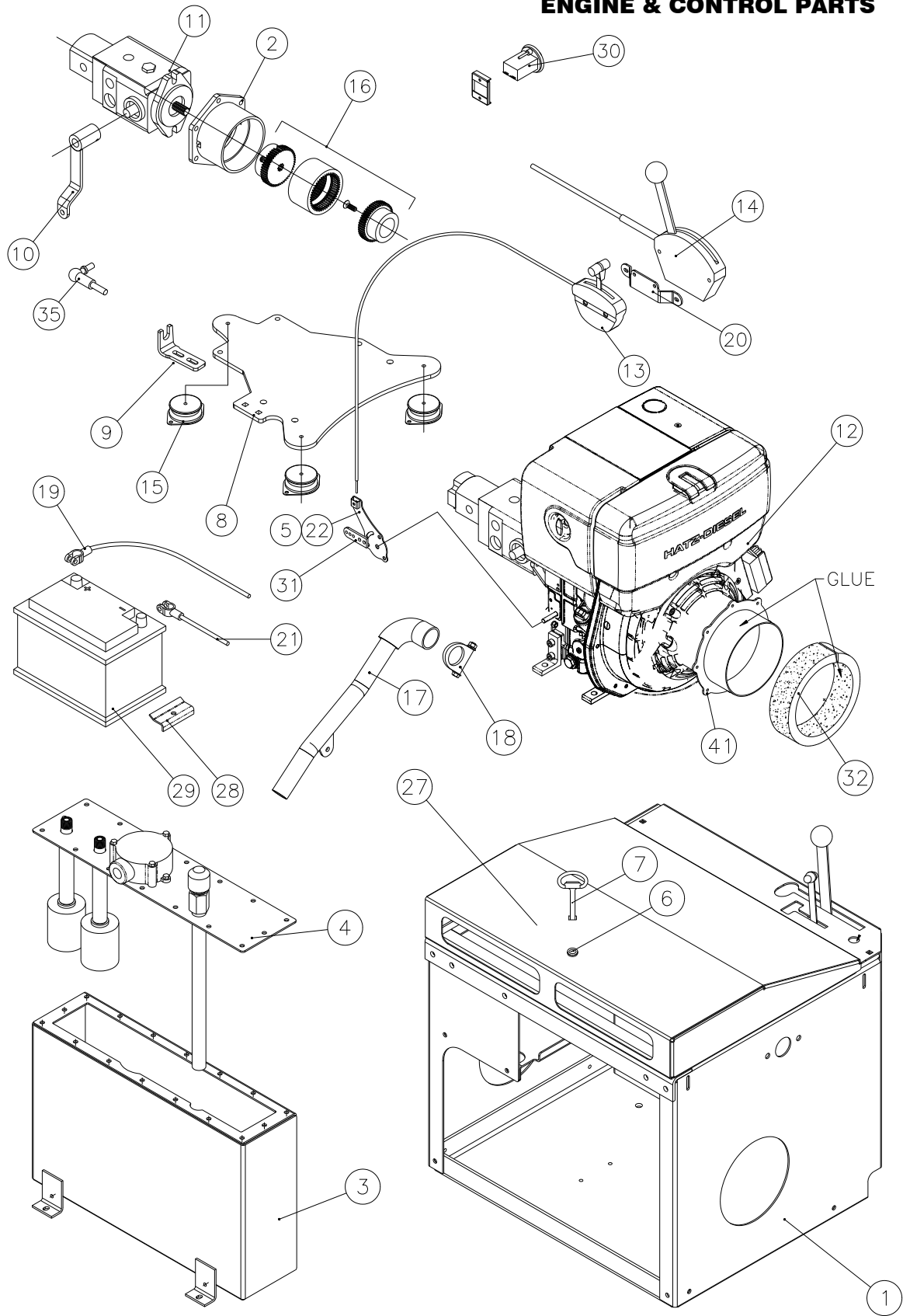
# POWER UNIT HOUSING



## Parts List

	Code	Description	
	34993	REPOWER HOUSING HATZ 2010	
No. Drawing	Code	Description	QTY
1	33539	BASE PLATE HATZ	1
2	33536	FRONT PANEL	1
3	30199	BATTERY TRAY	1
4	35070	BRACE BAR W/A	1
5	33540	REPOWER ENGINE COVER	1
6	34992	REAR PANEL	1
7	33537	RH PANEL	2
8	30194	OIL TANK	1
9	RH447	SUCTION FILTER	2
10	31043	OIL TANK LID W/A	1
11	04628	RETURN FILTER	1
12	28218	PLASTIC DIPSTICK	1
13	33676	HINGE PIN ASSEMBLY	2
14	33546	RECOIL COVER	1

# ENGINE & CONTROL PARTS

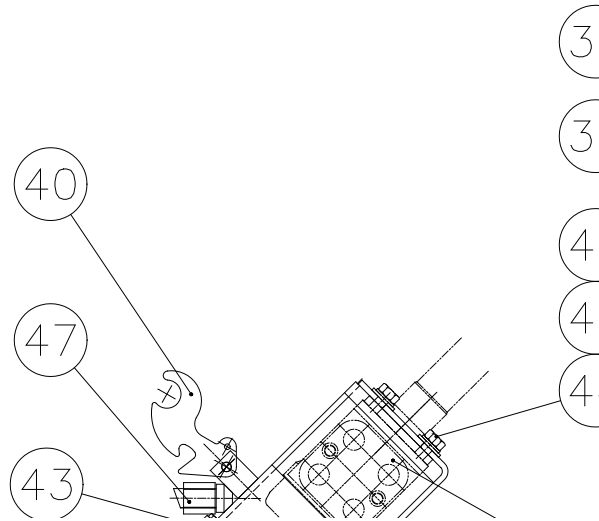


**Fig. 9**

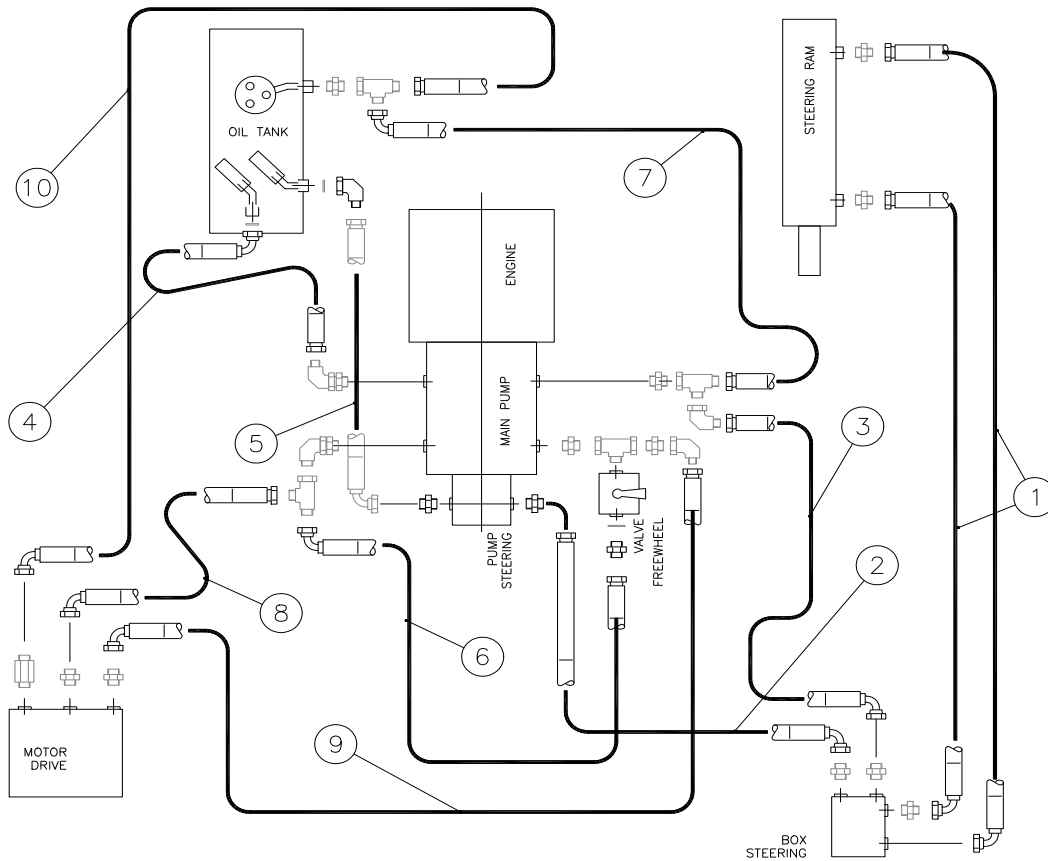
## Parts List

Code <b>35090</b>		Description <b>BASE UNIT + COMMON PARTS - 2010</b>	
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	37003	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



## Parts List

### 34228

### GENERIC HOSE KIT 3FT & 4FT 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

### 35153

### MOTOR HOSE KIT 3FT REPOWER

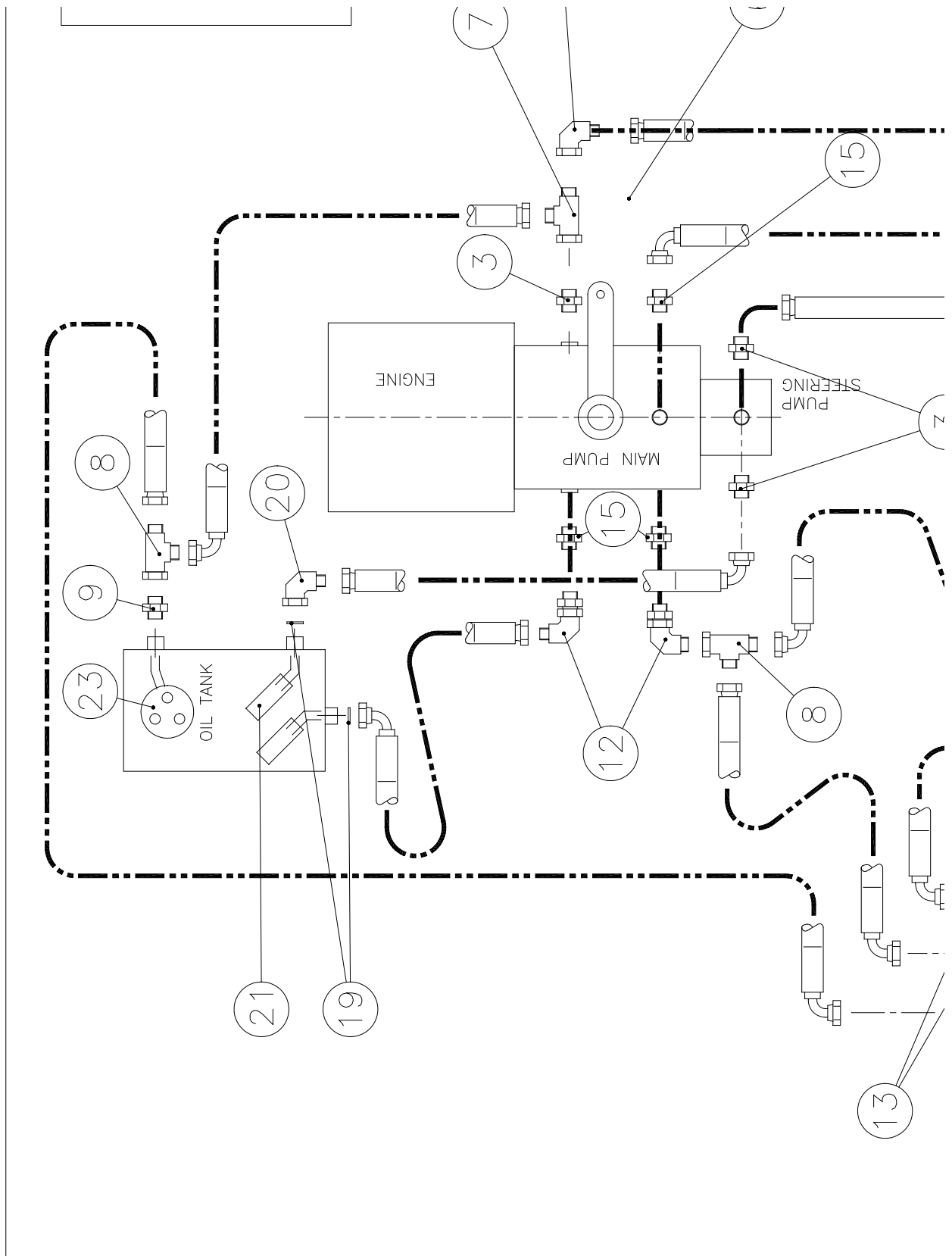
No.	Code	Description	QTY
8	35154	HOSE - 1/2IN 1100 LONG	1
9	35155	HOSE - 1/2IN 1450 LONG	1
10	35156	HOSE - 3/8IN 900 LONG	1

### 34230

### MOTOR HOSE KIT FOR 4FT REPOWER

No.	Code	Description	QTY
8	34240	HOSE - 1/2IN 1275 LONG	1
9	34241	HOSE - 1/2IN 1650 LONG	1
10	34242	HOSE - 3/8IN 1350 LONG	1

# Hydraulic Fittings



**Schematic Diagram**



## Parts List

Code 31930		Description HYD. KIT (Subject to change)	
No. Drawing	Code	Description	QTY
1	31931	ROLLER HOSE KIT	1
2	09154	FITTING 3/8IN TO 9/16IN ORFS	2
3	08943	3/8IN X 11/16IN ADAPTOR ORFS	3
4	09156	FITTING 1/2IN TO 11/16IN ORFS	5
5	-	-	0
6	09394	ELBOW 11/16IN ORFS M/F	1
7	09283	TEE 11/16 ORFS MMF	1
8	09296	TEE 13/16IN ORFS MMF	2
9	09461	FITTING 3/4IN TO 13/16IN ORFS	1
10	09397	TEE 13/16IN ORFS MFM	1
11	-	-	0
12	09395	13/16 ORFS ELBOW M/F	3
13	09400	FITTING 7/8IN UNF 13/16IN ORFS	2
14	09402	FITTING 9/16IN UNF 11/16IN ORFS	1
15	08945	FITTING 1/2IN TO 13/16IN ORFS	3
16	31089	FITTING B/HEAD 3/8IN BSP 11/16IN	1
17	01812	3/8IN DOWTY SEAL	1
18	09403	11/16IN ORFS O-RING	1
19	09405	13/16IN ORFS O-RING	2
20	09395	ELBOW 13/16IN ORFS M/F	1
21	RH447	SUCTION FILTER	2
22	RH448	GATE VALVE	1
23	04628	RETURN FILTER C/W ELEMENT	1
24	08944	3/8 BSP X 13/16 ORFS M/M	1
25	09646	ADAPTOR 90 DEG ELBOW	2
08			



**AUTOGUIDE EQUIPMENT**



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