



AUTOGUIDE EQUIPMENT



Auto-Roller 4ft

Part No 24646
(Twin Cylinder Kubota
Diesel Engine)

Operating/Fitting Instructions and Parts Manual

Autoguide Equipment Ltd
Stockley Road,
Heddington, Calne,
Wiltshire, UK,
SN11 0PS
+44(0)1380 850885
www.autoguide.co.uk

AUTO-ROLLER



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M013
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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: **4 FT 'Auto-Roller' model 4ARH**

Description of Equipment: **16 BHP Kubota Twin Cylinder Water 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 dB**

Guaranteed Sound Power Level: **dB L_{wa} - 97 dB**

Net Installed Power: **12 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 Auto-Roller is fitted with a 16hp twin cylinder water cooled Kubota diesel engine. A hydrostatic transmission system gives an infinitive control of speed in either direction. The complete transmission is contained within a tank to reduce the possibility of oil spillage in the unlikely event of hydraulic system failure. In addition to this biodegradable oil is used throughout the hydraulic system, which will not harm grass.

Rolling width is 4' (1220mm) 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
2500mm	1400mm	1260mm	1560kg unballasted 2100kg ballasted	6.5kg/cm ² unballasted 8.7kg/cm ² ballasted	7.5mph (12.5km/hr) forwards & reverse

SAFETY PICTOGRAM / LABEL IDENTIFIATION

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**.



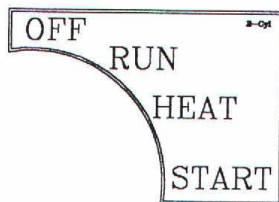
Pictogram to indicate **Read the Product Manual**.



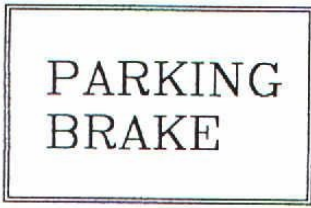
Pictogram to indicate **Lifting Hook location**.



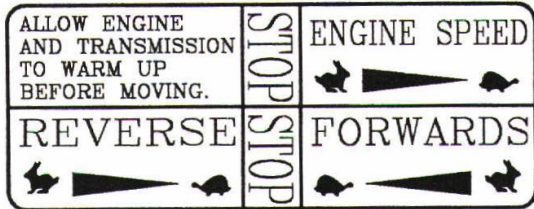
Label to indicate **Apply Grease Here**.



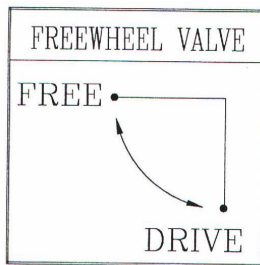
Label to indicate **Ignition Key Position**.



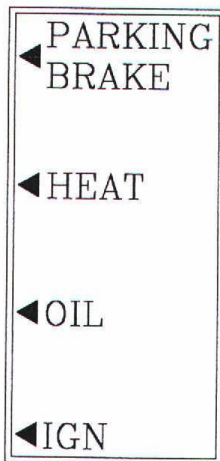
Label to indicate **Parking Brake**.



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



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

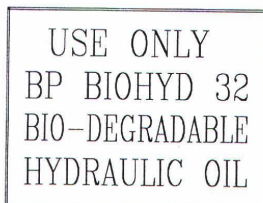


Label to indicate **RED Parking Brake** light.

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.
1. The operator only may use the Auto-Roller, and he must remain in the driver's seat during the operation of the machine.
2. Keep all guards and safety devices in place.
3. Do not operate the machine with guards removed.
4. Keep hands, feet and loose clothing away from moving parts.
5. If the machine is left unattended ensure that it is locked or disabled to prevent use by untrained personnel.
1. 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.

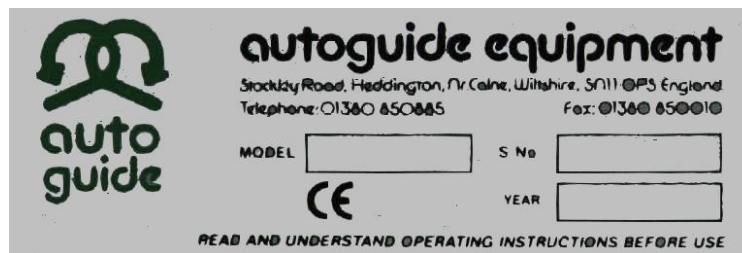


Fig. 1

HANDLING OF THE MACHINE

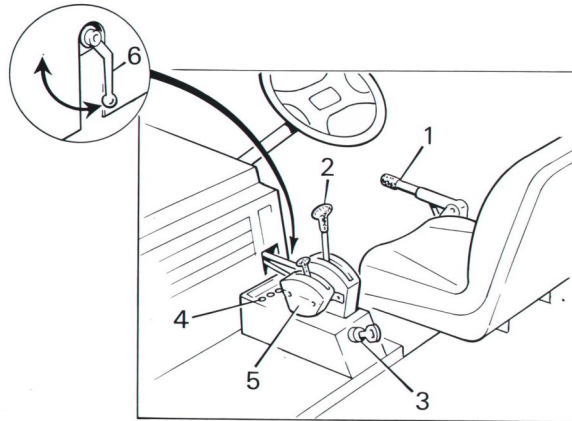


Always lift machine from the lift points marked with the pictogram.

PREPARATION FOR WORK

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

CONTROL SYSTEM



1. PARKING BRAKE
2. DIRECTIONAL CONTROL LEVER
3. IGNITION
4. ENGINE HEATING WARNING LIGHTS
5. THROTTLE
6. FREE WHEEL VALVE

Fig. 2

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. A red indicator light will flash to confirm that the Parking Brake is on.
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 heat the glow plug. (The ORANGE light will be illuminated.)
1. The orange light will go out when ready, at which point turn the key further clockwise to crank the engine.
2. If the engine fails to start in 20 seconds, return to the glow plug position and try again.
3. When the engine is running, check that the red ignition light and green oil pressure light are extinguished.

8. In order to move off, release the hand brake by moving the handle to the horizontal position. The flashing red light should no longer be illuminated.
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, therefore move the Directional Control Lever (Ref. 2 Fig. 2) BACKWARDS to reduce the load on the engine. This movement imitates changing down a gear on a conventional gearbox.

NOTE :	Moving the Directional Control Lever (Ref. 2 Fig. 2) in a FORWARD direction will result in the engine stalling.
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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) BACKWARDS. This will prevent the rear roll from skidding as the machine corners.

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 :

Only apply the Parking Brake when the roller is stationary. Do not operate the Parking Brake when the roller is moving.

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 34 litres (7.5 gallons) of ethylene glycol to each of the front rollers and 68 litres (15 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.

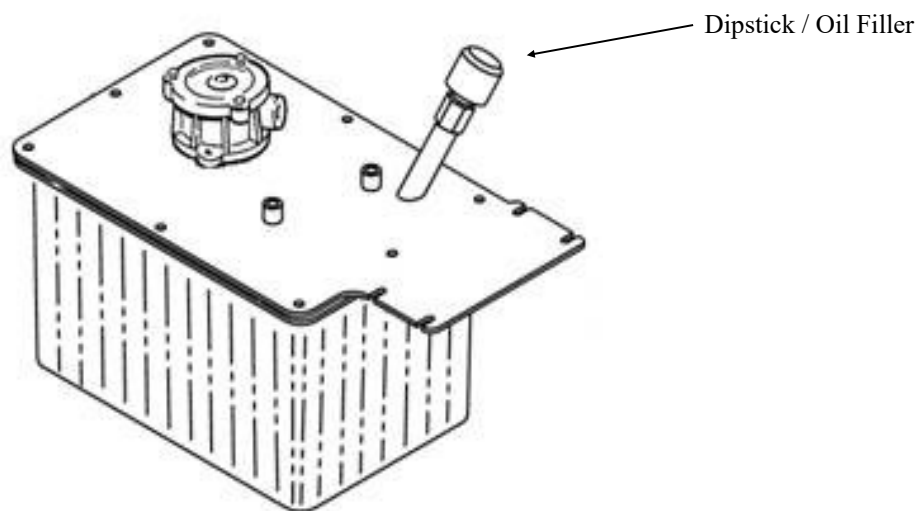
To operate, place the lever in the FREEWHEEL position. Having carried out any repairs this lever **MUST** then be returned to the DRIVE position.

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 Auto-Roller.

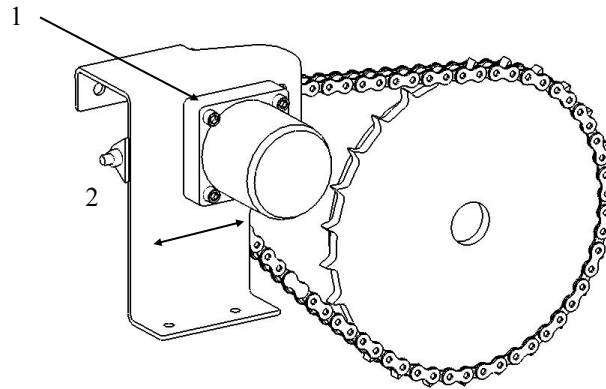
GREASE

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 the drive motor to the motor bracket on the Auto-Roller (Ref Fig 1) with a 10mm Allen key.
 - b. Using a 19mm spanner, turn tensioning nut (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.
 - d. Please ensure bolts are tightened before operating the machine.



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.

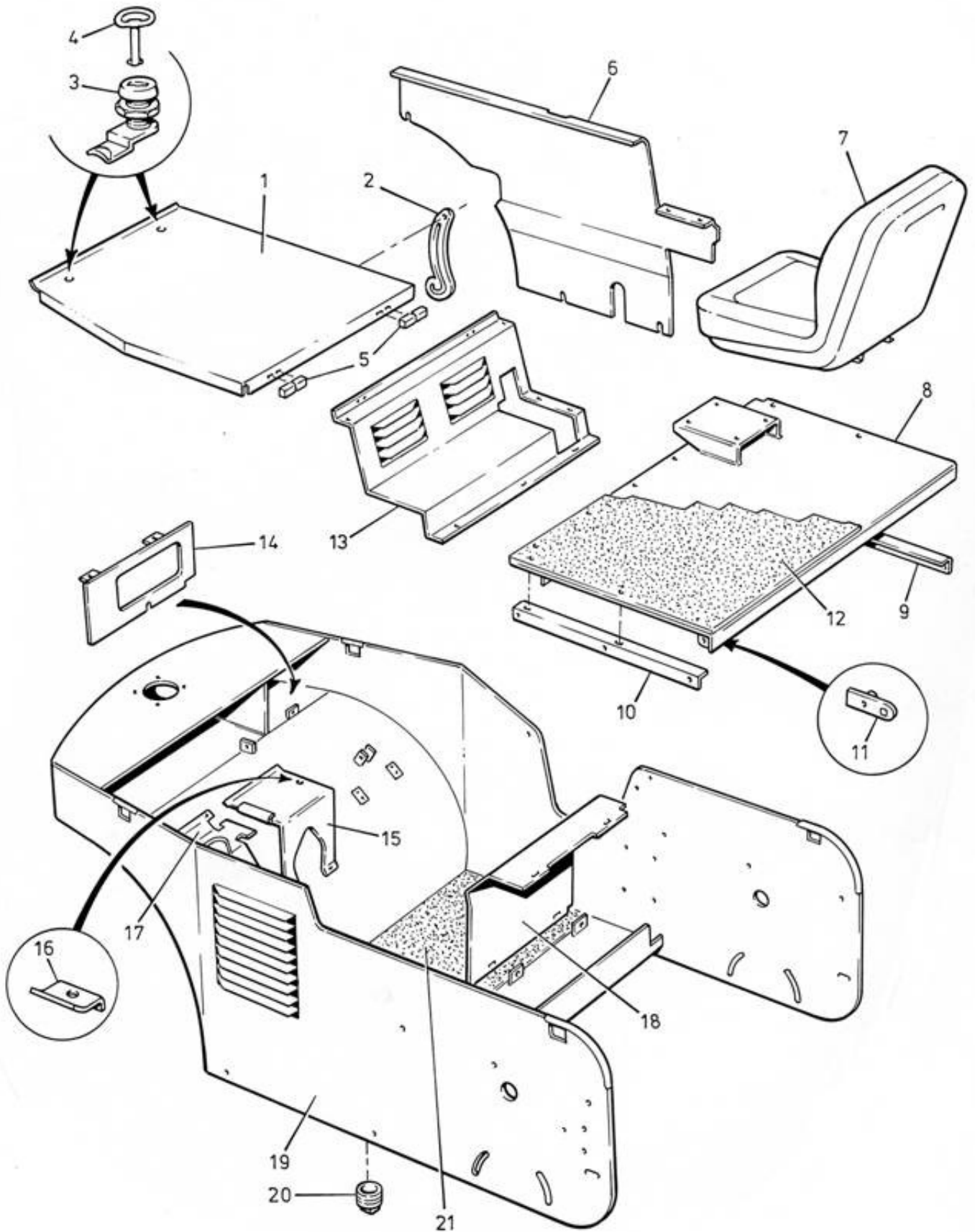
Change Hydraulic Oil and Hydraulic Oil Return Filter. Inspect hydraulic suction filters and replace as necessary.

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.

Parts Illustrations

CHASSIS AND PANELS



PARTS LIST

Item No.	Part No.	DESCRIPTION	Qty.
1	24694	ENGINE COVER	1
2	24707	COVER STAY	1
3	05516	LOCK	2
4	05517	KEY	1
5	05518	HINGE	2
6	24708	PARTITION	1
7	02511	SEAT	1
8	24676	DECK PLATE	1
9	24680	DECK SIDE ANGLE (R.H)	1
10	24679	DECK SIDE ANGLE (L.H)	1
11	24691	PIVOT PLATE	2
12	04543	RUBBER MAT	1
13	24710	ENGINE REAR COVER	1
14	24728	FACIA PLATE	1
15	24711	BATTERY SUPPORT	1
16	26209	BATTERY CLAMP	1
17	24714	FUEL TANK SUPPORT	1
18	24709	MOTOR COVER	1
19	28921	BODY WELD ASSEMBLY	1
20	05776	PLUG	1
21	04542	RUBBER FLOOR MAT	1

FRONT ROLLER AND STEERING

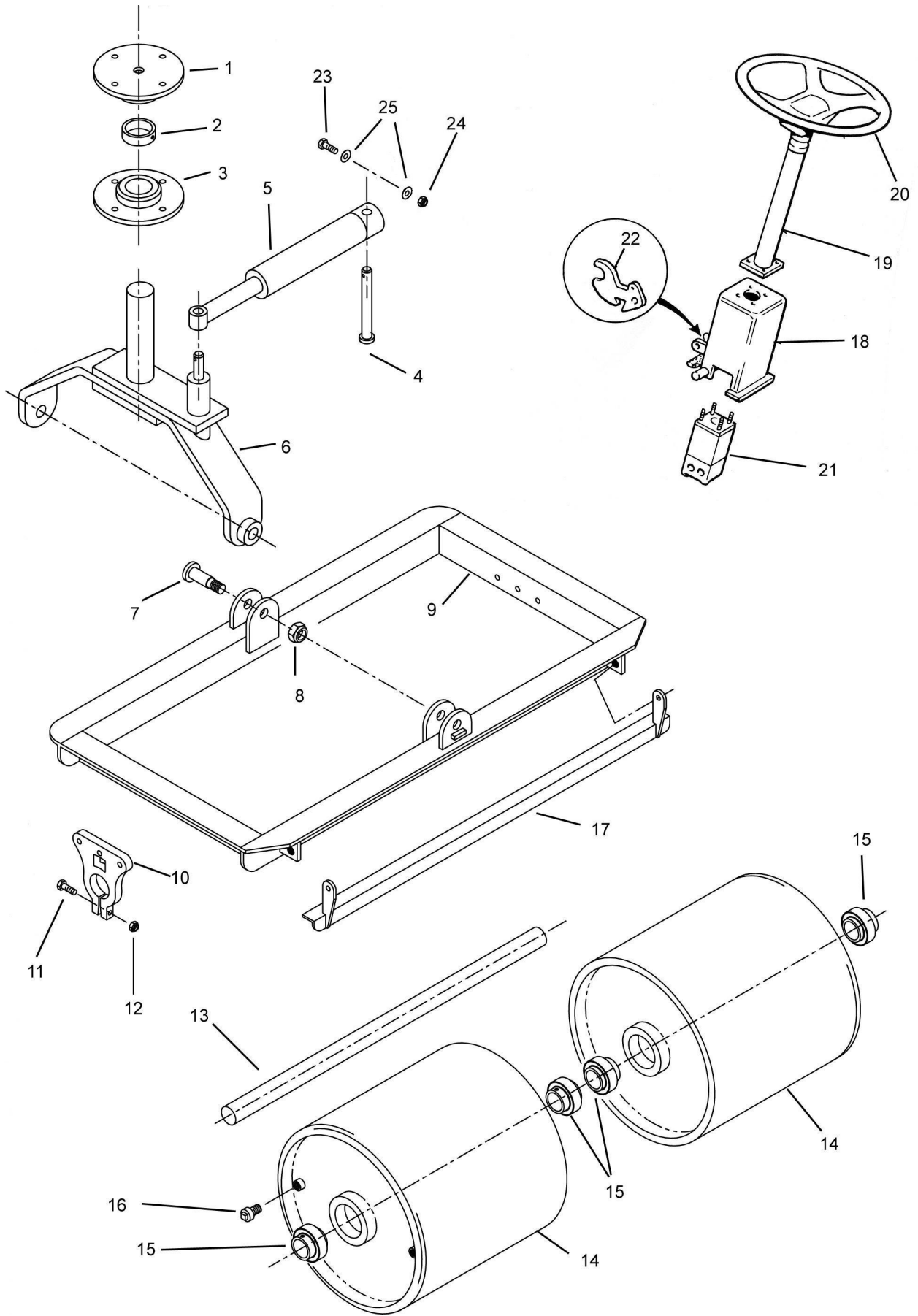


Fig. 7

PARTS LIST

Item No.	Part No.	Description	Qty.
1	26121	UPPER BUSH	1
2	08841	RETAINING COLLAR	1
3	26122	LOWER BUSH	1
4	26167	RAM ANCHOR PIN	1
5	33950	STEERING RAM C/W SPACER	1
6	28932	STEERING YOKE	1
7	26180	SWIVEL PIN	2
8	04180	1" UNF NUT	2
9	26185	ROLLER FRAME	1
10	28179	AXLE CLAMP	2
11	01207	CLAMP BOLT	2
12	08160	FLANGED NUT	2
13	28177	FRONT ROLL SHAFT	1
14	28483	FRONT ROLL	2
15	28406	BEARING INSERT	4
16	02243	DRAIN PLUG	4
17	26208	FRONT SCRAPER	1
18	30076	STEERING BOX	1
19	08993	STEERING COLUMN	1
20	08994	STEERING WHEEL	1
21	08992	STEERING UNIT	1
22	25216	RELEASE CATCH	1
23	04295	RAM PIN RETAINING BOLT	1
24	05905	NUT	1
25	02977	WASHER	2

ENGINE AND OIL TANK ARRANGEMENT

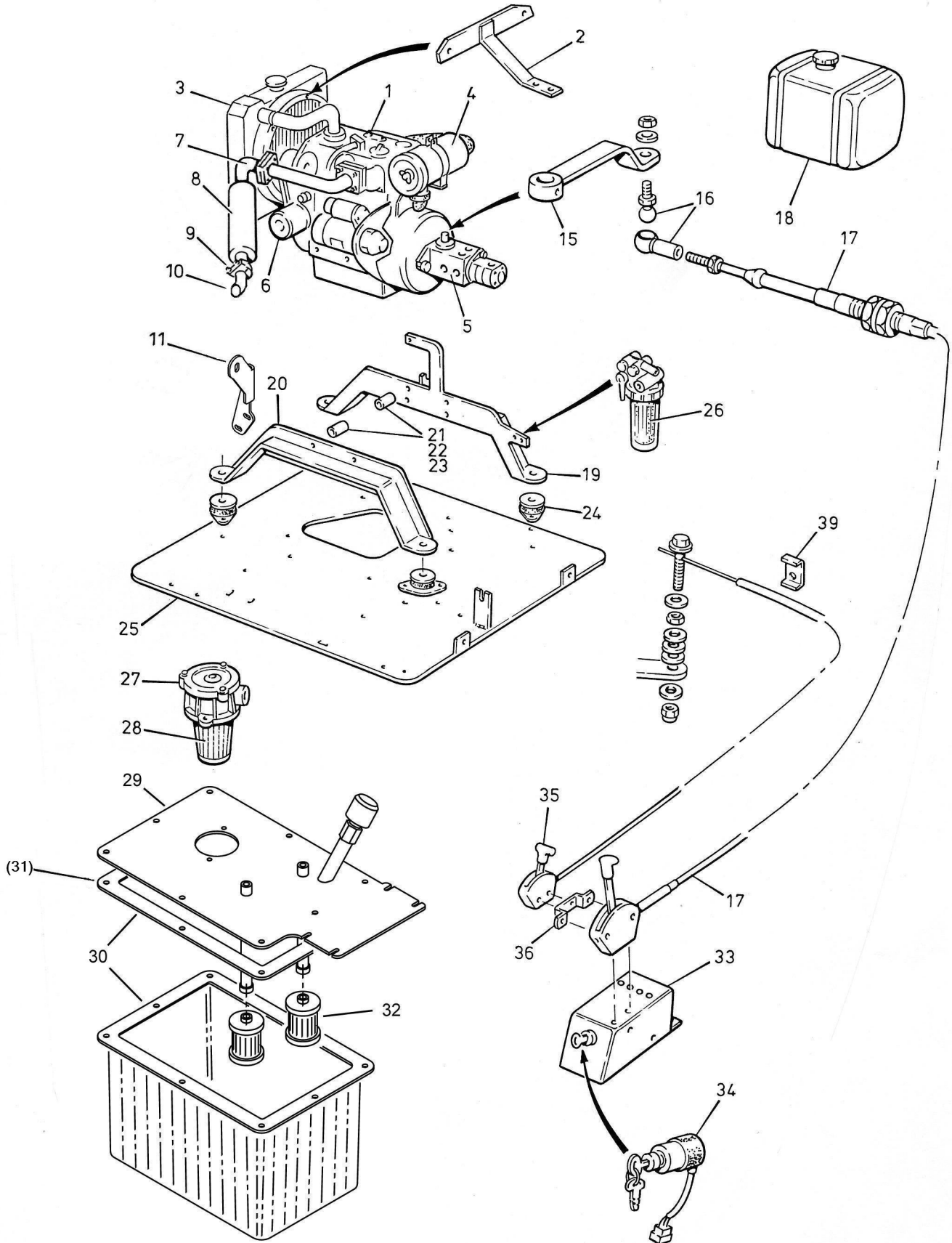


Fig. 8

PARTS LIST

Item No.	Part No.	Description	Quantity
1	10259	ENGINE Z602	1
2	24717	RADIATOR SUPPORT BRACKET (NO LONGER FITTED)	1
3	08706	RADIATOR	1
4	09758	AIR FILTER ELEMENT	1
5	05463	PUMP	1
6	06165	OIL FILTER	1
7	32855	EXHAUST PIPE	1
8	08912	SILENCER	1
9	R317	EXHAUST CLAMP	1
10	30158	TAIL PIPE	1
11	31112	EXHAUST BRACKET	1
15	24832	PUMP SWASH LEVER	1
16	37003	10MM END JOINT (MODIFIED 07614)	1
17	24690	SPEED CONTROLLER	1
18	08913	FUEL TANK	1
19	24733	FRONT MOUNTING BRACKET	1
20	24737	REAR MOUNTING BRACKET	4
21	24760	SPACER	4
22	24761	SPACER	3
23	24762	SPACER	1
24	07709	ANTI VIBRATION MOUNTING	4
25	24695	ENGINE MOUNTING PLATE	1
26	06166	FUEL FILTER (ELEMENT)	1
27	04628	RETURN FILTER ASSY	1
28	05739	RETURN FILTER ELEMENT	1
29	31041	COVER	1
30	05307	OIL TANK C/W GASKET	1
(31)	(06182)	(OIL TANK GASKET)	(1)
32	RH447	SUCTION FILTER	2
33	24712	SWITCH CONTROL BOX	1
34	06302	IGNITION SWITCH ASSY	1
35	04834	THROTTLE CONTROL CABLE	1
36	24718	THROTTLE BRACKET	1
39	05651	CLAMP BRACKET	1

REAR ROLLER, DRIVE AND BRAKE

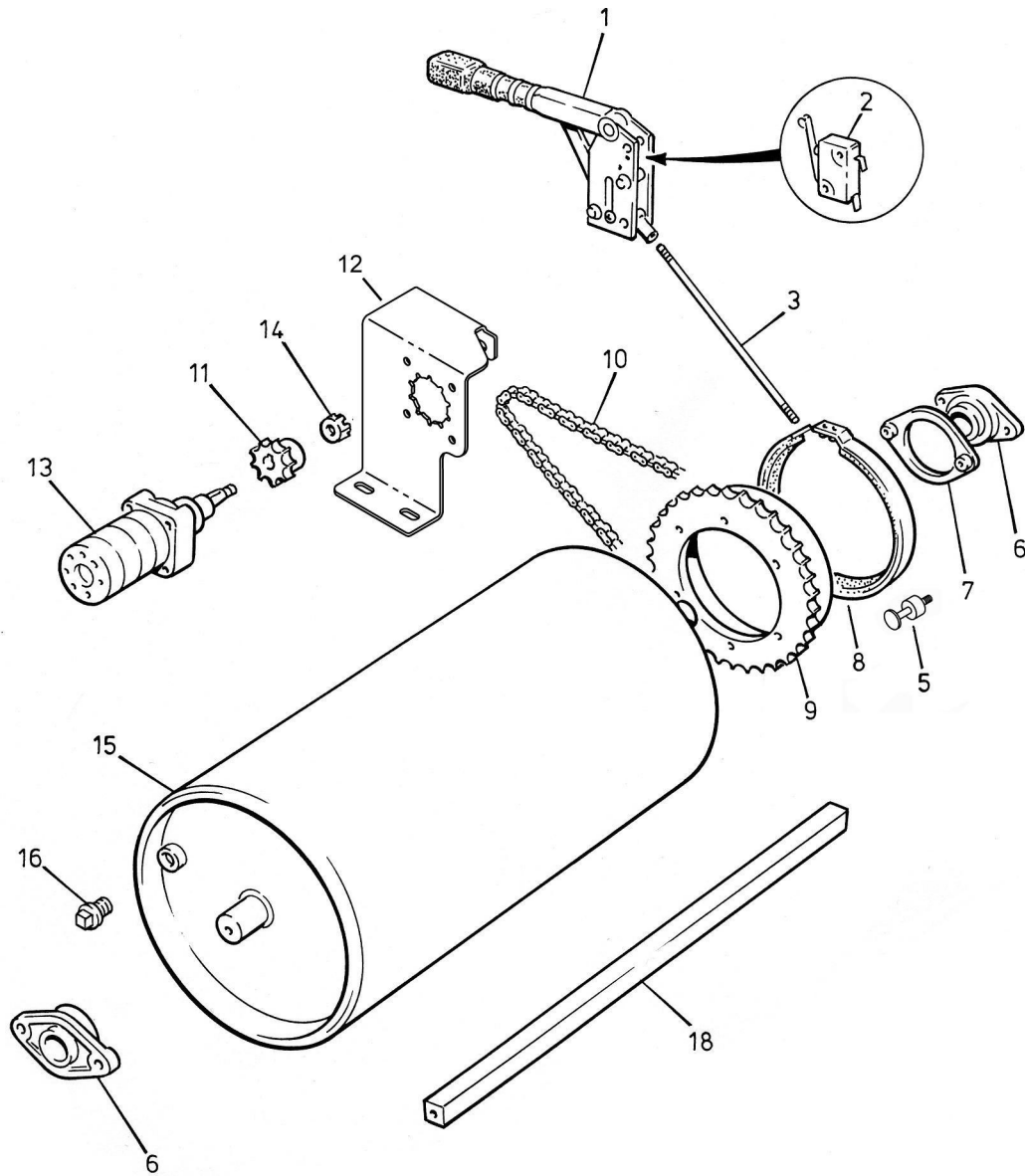


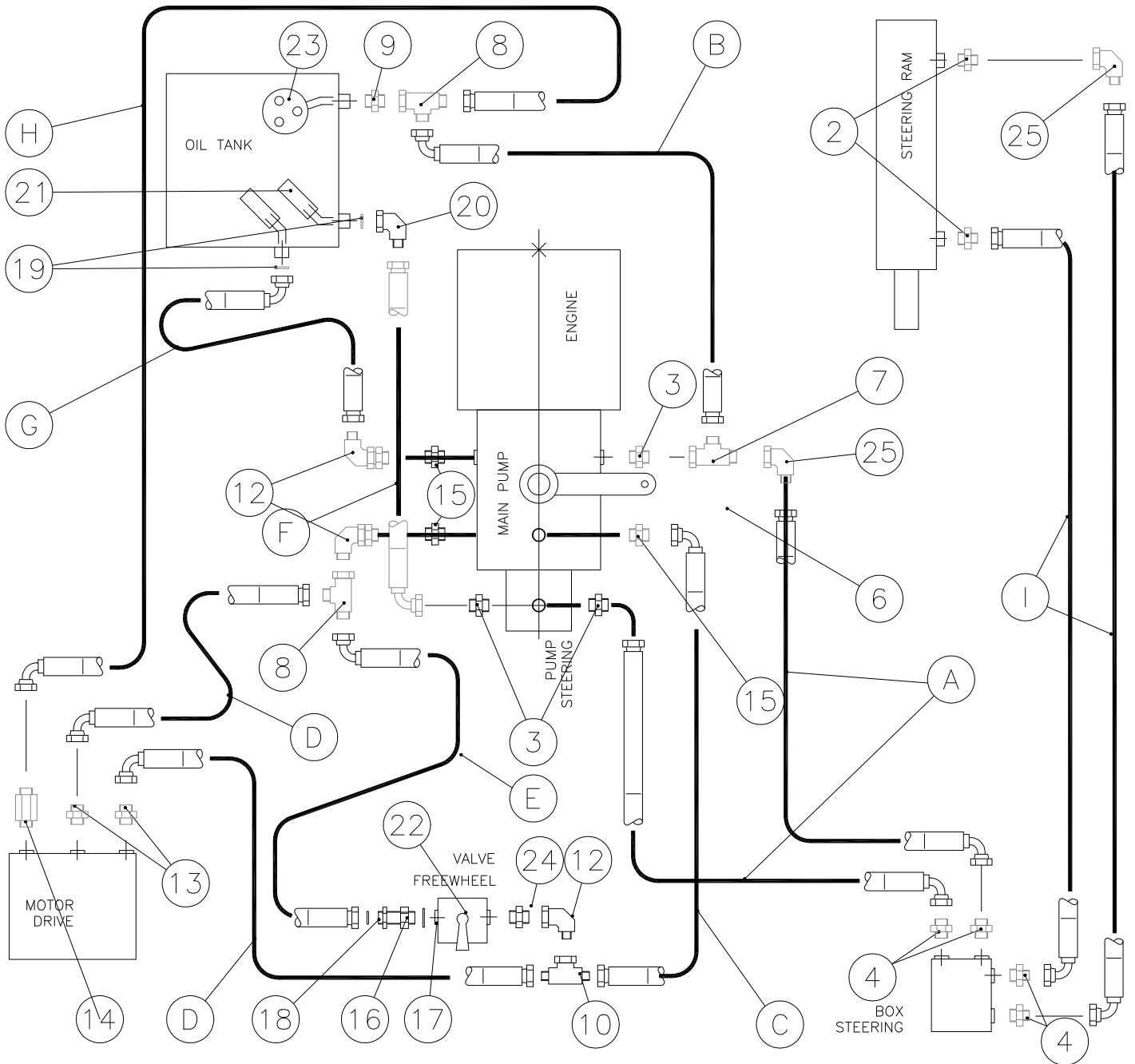
Fig. 9

PARTS LIST

Item no.	Part No.	Description	Quantity
1	RH417	PARKING BRAKE	1
2	03170	MICRO SWITCH	1
3	24703	BRAKE ROD	1
5	24704	BRAKE BAND RETAINER	2
6	RH425	BEARING	2
7	24763	BEARING RETAINER	1
8	24719	BRAKE BAND ASSY	1
10	31921	DRIVE CHAIN C/W SPLIT LINK	1
11	24834	DRIVE SPROCKET	1
12	28953	MOTOR BRACKET	1
13	05458	DRIVE MOTOR	1
14	05650	CASTELLATED NUT	1
15	28486	REAR ROLL COMPLETE	1
16	02243	DRAIN PLUG	2
18	26205	REAR SCRAPER	1

Addendum

Item no.	Part No.	Description	Quantity
9	35858	BRAKE DRUM / SPROCKET SPECIAL	1



HYDRAULIC CIRCUIT 08/09

FITTINGS

Code 31930		Description HYD. KIT - TWIN ROLLER 2009	
No.	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

HOSES

Code 31931		Description ROLLER HOSE KIT 2009	
Item.	Code	Description	QTY
A	31937	HOSE 1700 X 3/8IN	2
B	31938	HOSE 730 X 3/8IN	1
C	31939	HOSE 520 X 1/2IN	1
D	31948	HOSE 800 X 1/2IN	2
E	31949	HOSE 450 X 3/8IN	1
F	31951	HOSE 480 X 3/8IN	1
G	31952	HOSE 450 X 1/2IN	1
H	31954	HOSE 950 X 3/8IN	1
I	34690	HOSE 1030 X 1/4IN	2



AUTOGUIDE *EQUIPMENT*



Stockley Road, Heddington,
Nr. Calne, Wiltshire, SN11 0PS England
Tel : +44 (0) 1380 850885
e-mail: sales@autoguide.co.uk