



World-class turf maintenance equipment

OPERATING INSTRUCTIONS

VEEMO Mk. 2 series 2

MACHINE REFERENCE	VM0/2
SERIAL NUMBER
CN CODE	8432 29 10
FS NUMBER	FS1014



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A division of Howardson Ltd. - a proudly British company
Company reg no 641526 - Vat No GB 345 9918 12

EC DECLARATION OF CONFORMITY

We the undersigned

SISIS EQUIPMENT (Macclesfield) LTD

Certify that the

Scarifier

Make

SISIS

Type

Veemo

Series

2

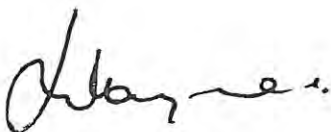
Conforms to EC Directives
and amendments

89/392

Standard

BS7370

**This certificate applies only to NEW equipment supplied
by SISIS or our authorised dealer.**



J.W. Hargreaves
Director

Certificate Number

CEFS1014

We want you to obtain the best performance from this machine. If after reading the following instructions you have any problems please contact SISIS or your local SISIS Territory Manager or SISIS Dealer.

The SISIS Hydraulic Veemo Mk. 2 is a large volume thatch removal machine, designed to be mounted on a tractor 3 point linkage. We recommend for stability, that a minimum tractor size of 25hp is used and that front weights and stabilisers are fitted.

POWER SUPPLY

Power is transmitted from the tractor PTO shaft at 540rpm to the pump and gearbox assembly. The pump supplies high pressure oil to each of the three hydraulic motors which direct drive the tine reels. A pressure relief valve is fitted to the pump. This is factory set and should not be altered. Oil is returned to tank through a filter.

CONNECTING TO THE TRACTOR

photo 1



Mount the machine on the tractor 3 point linkage. Adjust the stabilizers and ensure tractor weights are fitted if required. Adjust the top link so that the main frame is vertical. Raise the machine and retract the jockey wheel, (photos 1 and 2) ensuring that the retaining pin is securely fitted.

photo 2



photo 3



Lower the machine to the float position and fit the gearbox and pump assembly on to the tractor PTO shaft.

photo 4



If the pump catches on the guard a PTO extension will be required, SISIS ref F21024 (photo 3) Ensure that the pump plate fits over the tractor drawbar to stop the pump/gearbox rotating. (photo 4)

IMPORTANT do not use speeds higher than 540rpm as damage could be caused to PUMP-MOTORS-GEARBOX

DO NOT immediately engage the PTO. Transport the machine to the work site. Lower the machine into the float position and, with the tractor engine turned off, adjust the required height of cut on each unit. (photo 5) To do this lift the lock gate clear of the screw adjuster and turn the adjuster clockwise to raise the tines and anti clockwise to lower the tines to the ground. Depth will be determined by ground conditions. In general the tines will be set to go into the base of the grass sward without soil contact. In deep thatch conditions it will be necessary to slow the forward speed of the tractor.



photo 5

NOTE going too deep will cause premature blade wear and can overheat the oil in the hydraulic system which can cause damage to motors-pump-gearbox. It will also leave too much debris on the surface. It is much better to remove the thatch layer by scarifying little and often.

overheat the oil in the

On very undulating ground the rear unit arm may be left in a float position. Remove the pin (item 48) and stow the pin in the spare hole in the arm. (photo 6)



photo 6

SAFETY HINTS

Always disengage the PTO and stop the engine before leaving the tractor seat. Never adjust the units with the tractor engine running.

Do not make tight turns with the machine on the ground. The machine is designed to follow gentle fairway contours.

GEARBOX OIL LEVEL

Check gearbox oil level BEFORE use

MAINTENANCE and LUBRICATION

Check the oil tank level before use. Ensure that the oil level at the centre of the top sight glass. Due to oil expanding when warm it is essential this inspection is carried out before the machine is used. Use only clean, new hydraulic oil.



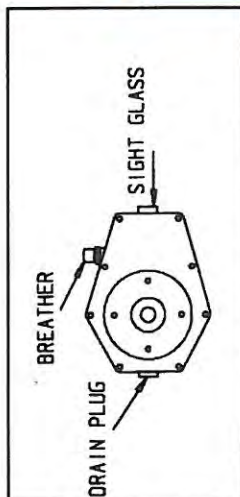
photo 7

WEEKLY

apply oil or grease to adjusters and pivot points (photo 7 & 8)



photo



check the oil level in the gearbox by ensuring that the level is maintained at the middle of the sight glass. (photo 9) If not - top up with SAE90 oil or the equivalent.

check all nuts and bolts for tightness

check for hydraulic leaks

check tines for wear

HYDRAULIC OIL

We recommend the following types of hydraulic oil



photo 9

should be used.

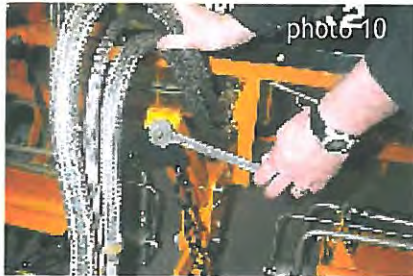
JD303
Texaco TL2009

Mobile fluid 300
Ford Motors M2 C-33F

GEARBOX

Only use SAE90 oil or equivalent (gear lube)

TO REPLACE WORN TINE BLADES



Take off chain (photo 10)



Detach unit from lower pivot point and pull away (photo 11)



Disconnect pipe clamp (photo 12) This enables you to remove the motor without disconnecting pipes.



Remove cap head screws (qty 4) from motor (photo 13).



Remove motor (photo 14).



Tip unit so blades are visible.



Remove blanking plates on both sides. (figure 15)



Remove 2 bolts from 1 end bearing (non drive motor end) (photo 16). Remove drive motor end plate with 17mm socket. 2 bolts (photo 17)

Tine unit can now be removed.



The rear unit tines can only be changed from the opposite end to where motor is fitted.

Remove end cap (photo 18)



Having removed end cap, slacken grub screws in bearing (photo 19). Remove bearing from end of shaft (photo 20).



Remove split pin from shaft. Remove worn blades and spacers (item 21).

When replacing, move the blades 1 flat square each time, so blades are offset. Use the tine reel compression tool when replacing blades.



If the tine compression tool is put onto the shaft the wrong way it will cover the split pin hole. It must be used as photo 22. (photo 22). Compress tines and rubber spacers until split pin hole is visible (photo 23). Replace split pin.



SPECIFICATIONS

Tractor requirement	18.5kw
PTO Speed	540rpm maximum
Overall width	2.3 mtrs
Working width	2 mtrs
Length	2.67m
Height	1.03m
Weight	352kg
Oil tank capacity	43 litres
Oil pressure (pressure relief valve)	180 bar (2600psi)
Oil flow rate	53L/min
Tines	2mm tipped fitted as standard Part no 36560 57 per machine
Spacing of tines	standard 36mm variable by other spacers
Tine Option	1mm tipped tine part no 36653 57 per machine
Approx. ground coverage at 9.5km/h	26.300 m ² /h

ASSEMBLY INSTRUCTIONS FOR SISIS VEEMO Mk. 2



Figure 1
Showing pivot point for main wheels (one each side)



Figure 2
Assemble wheels by inserting shaft through casting. Secure wheel in place by securing top bearing with grub screw. Check for free movement



Figure 3
Centre wheel in storage position. Lower to transport position and insert pin



Figure 4
Centre wheel in transport position. (This wheel should be lifted and stored when machine is in



Figure 5
Showing disconnected rear cutting unit



Figure 6

Connect rear cutting unit via the lower arm with ball joint. Check ball is free to move. Fit firmly into "U" bracket on the cutting head. Secure with nut and bolt provided. Check for movement. Connect chain to top arm



Figure 7

Showing disconnected front cutting heads. Check ball joint is free to move. Place arm into "U" bracket on cutting head. Secure using nut and bolt provided. Check for free movement.

Your SISIS Veemo Mk. 2 is addressed and ready to go



PARTS LIST & DRAWINGS

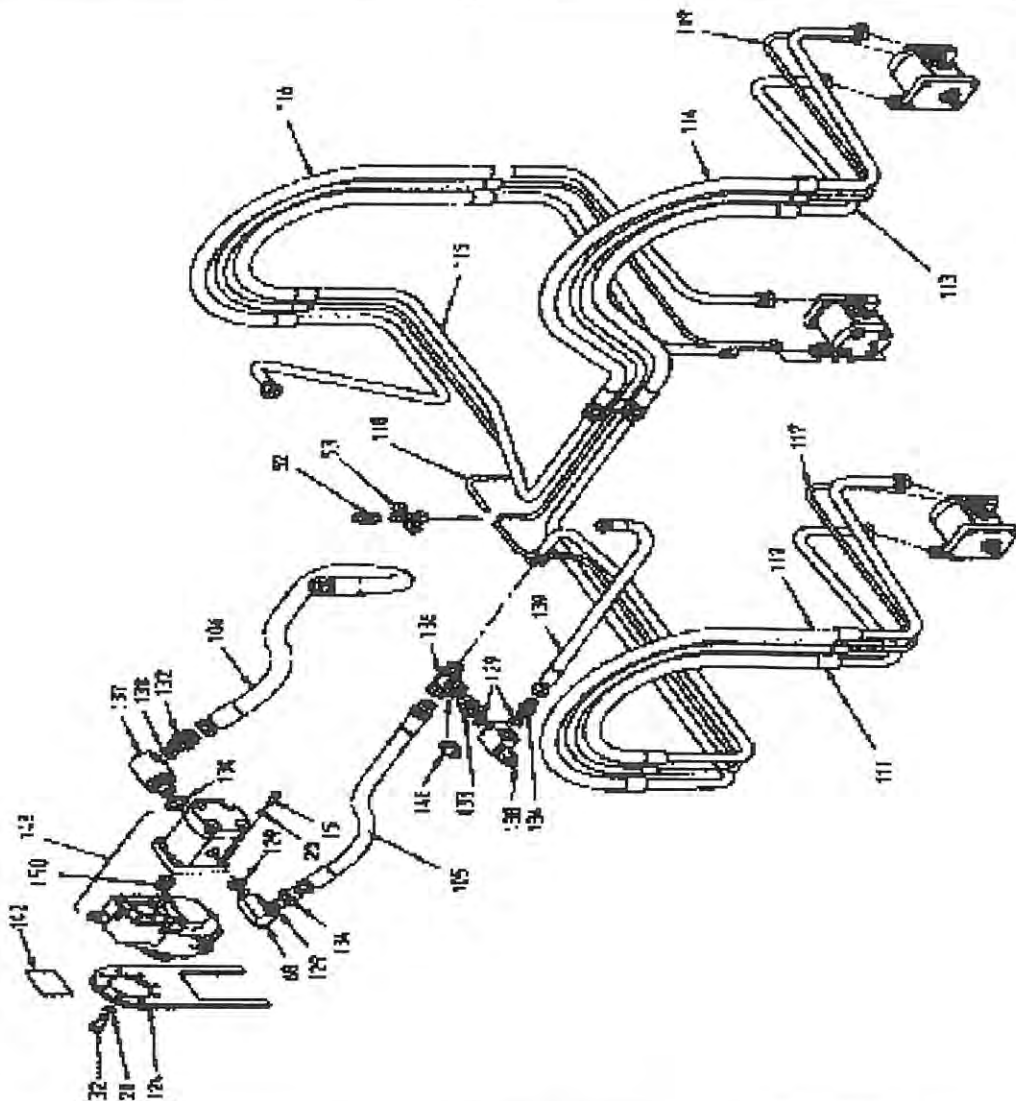
VEEMO Mk. 2 series 2

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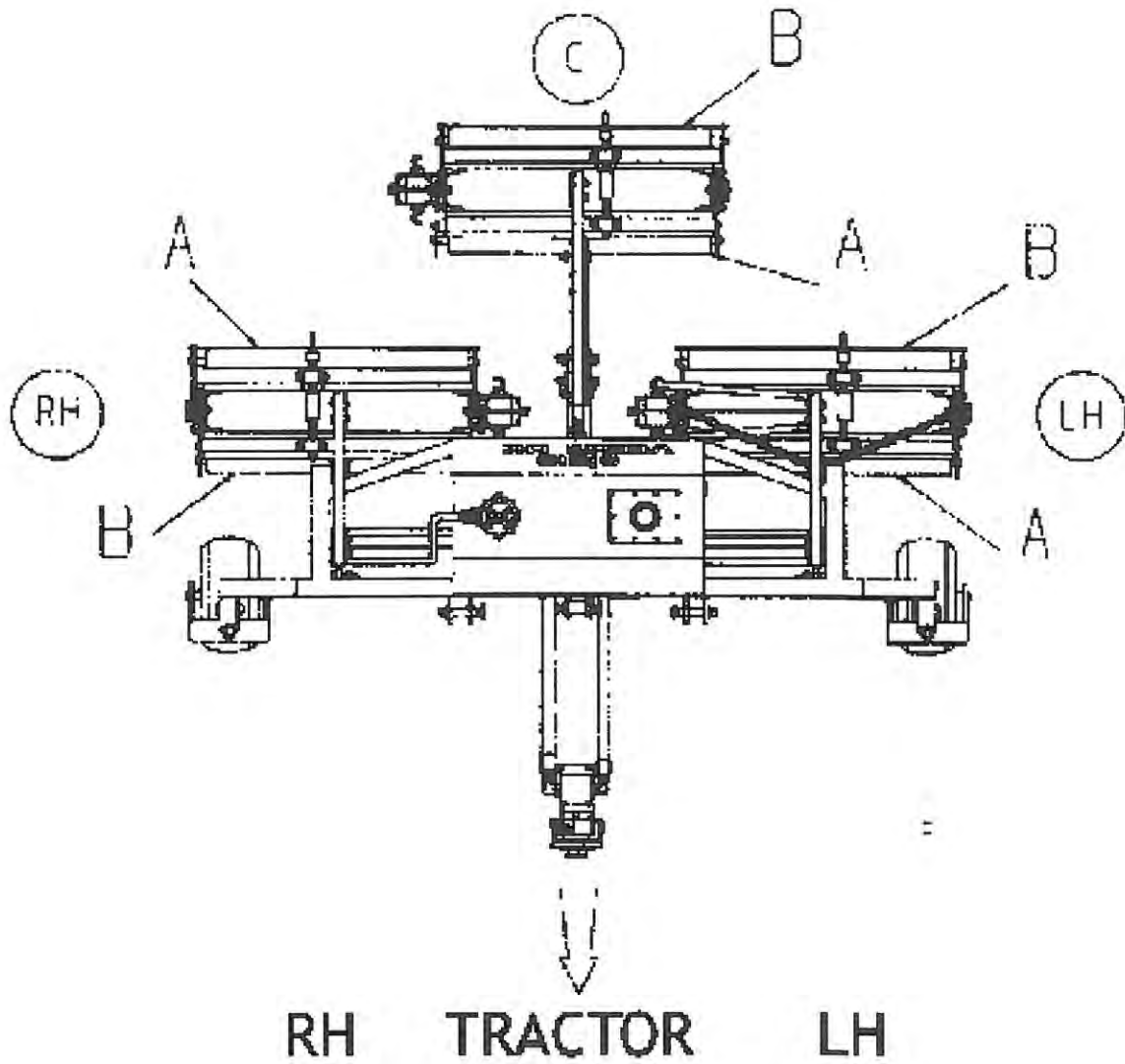
SALES/SPARES 01625 503030
Website www.sisis.com

<i>item</i>	<i>part</i>	<i>description</i>	<i>qty</i>	<i>item</i>	<i>part</i>	<i>description</i>	<i>qty</i>
1	1921	bearing	3	57	21477	filler cap	1
2	1949	setscrew	10	58	21513	banjo bolt	3
3	1952	setscrew	12	59	21733	hydraulic motor	3
4	1974	grubscrew	3	60	21745	coupling	1
5	1989	grubscrew	6	61	21852	flanged oilite	4
6	3051	square bore washer	3	62	21853	cap head bolt	3
7	5247	rubber tine spacer	54				
8	5622	split pin	3	64	21939	cap head bolt	6
9	6650	ferrule	3	65	21940	wheel and tyre	2
10	8227	bonded washer	1	66	21941	elbow	6
11	8326	linch pin	3	67	21945	toothed lock washer	1
12	8468	plug	1	68	22035	swivel	1
13	8492	bonded washer	6	69	21952	U bolt	1
14	8617	top link pin	1	70	21969	oilite bush	12
15	8729	cap head screw	4	71	21981	bolt	4
16	8858	bonded washer	1	72	32103	rear link	3
17	1/1039	setscrew	10	73	32708	spacer	3
18	1/1060	spring washer	10	74	33061	jockey wheel shaft	1
19	1/1061	spring washer	12	75	36000	standard nameplate	1
20	1/1062	spring washer	18	76	36097	wheel axle	2
21	1/1063	spring washer	8	77	36098	spacer	2
22	1/1065	spring washer	25	78	36449	tine shaft	3
23	1/1071	plain washer	12	79	36450	motor spacer	3
24	1/1072	plain washer	18	80	36451	left hand unit	2
25	1/1081	plain washer	12	81	36452	right hand unit	1
26	1/1083	plain washer	2	82	36453	pipe support	3
27	1/1094	setscrew	12	83	36454	pipe clamp	9
28	1/1097	setscrew	2	84	36455	front roller frame	3
29	1/1105	setscrew	6	85	36456	rear roller frame	3
30	1/1112	bolt	4	86	36457	adjuster swivel	3
31	1/1114	bolt	2	87	36458	adjuster swivel	3
32	1/1118	setscrew	16	88	36459	adjuster	3
33	1/1119	setscrew	4	89	36460	handle	3
34	1/1150	bolt	3	90	36461	adjuster lock	3
35	1951	setscrew	6	91	36462	ferrule	12
36	1/1154	setscrew	3	92	36463	roller	6
37	1/1160	bolt	6	93	36464	tank mount	1
				94	36465	roller scraper	6
39	1/1175	setscrew	6	95	36468	roller pivot	6
40	1/1208	coach bolt	6	96	36490	wheel frame	2
41	1/1218	nyloc nut	8	97	36491	frame assembly	1
42	1/1220	nyloc nut	32	98	36492	oil tank	1
43	1/1223	nyloc nut	6	99	36493	wheel frame	1
44	1/1228	nyloc nut	14	100	36494	lift arm	1
45	1/1231	nyloc nut	12	101	36495	lifting chain	3
46	1/1578	bolt	3	102	36535	infill	3
47	1/1796	bolt	8	103	36536	infill	3
48	20274	locking pin	2	104	36537	collar	2
49	20350	adaptor	1	105	36540	hose	1
50	20413	fluid level glass	2	106	36541	hose	1
51	20623	bearing and cap	3	107	36542	pipe stay	1
52	20696	stud standpipe	1	108	36560	tipped tine	57
53	20698	cross	1	109	36561	decal	1
54	20708	tank top filter	1	110	36637	pipe packer	3
55	20726	6in wheel	1	111	36641	pipe assembly 1	1
56	20995	D shackle	6	112	36642	pipe assembly 2	1

item	part	description	qty	item	part	description	qty
113	36643	pipe assembly 3	1	133	20353	adaptor	1
114	36644	pipe assembly 4	1	134	20520	adaptor	2
115	36645	pipe assembly 5	1				
116	36646	pipe assembly 6	1	136	37052	tee	1
117	36647	pipe assembly 7	1	137	22036	swivel	1
118	36648	pipe assembly 8	1	138	22038	pressure relief valve	1
119	36649	pipe assembly 9	1	139	36845	hose	1
120	HU60112	cover plate	1	140	36860	decal	1
121	HU60113	tank gasket	1	141	22003	cap head bolt	6
122	HUFJY610	washer	2	142	36872	decal	1
				143	22125	pump assembly	1
124	HURM110	long pump plate	1	144	36880	depth gauge	3
125	HURM218	lower link pin	2	145	36881	mounting angle	6
126	HURM296	tank strainer	1	146	36882	locking plate	6
				147	1/1227	locknut	6
129	8385	bonded washer	4	148	20496	test point	1
130	20024	bonded washer	2	149	37069	spacer	3
				150	22065	splined adaptor	1
132	20193	adaptor	1				



IDENTIFICATION OF VEEMO 2 ROLLER FRAMES



A = F36455

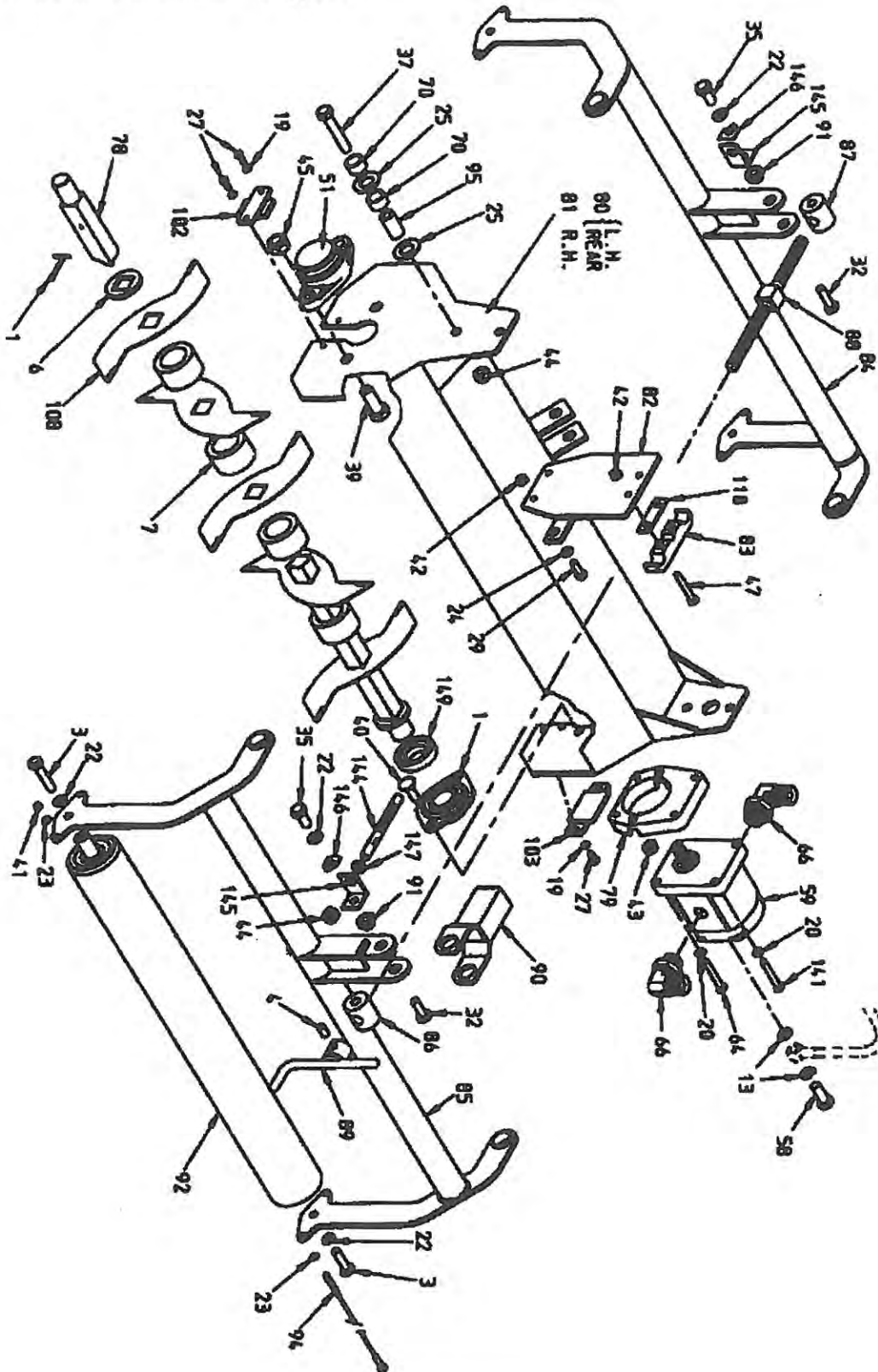
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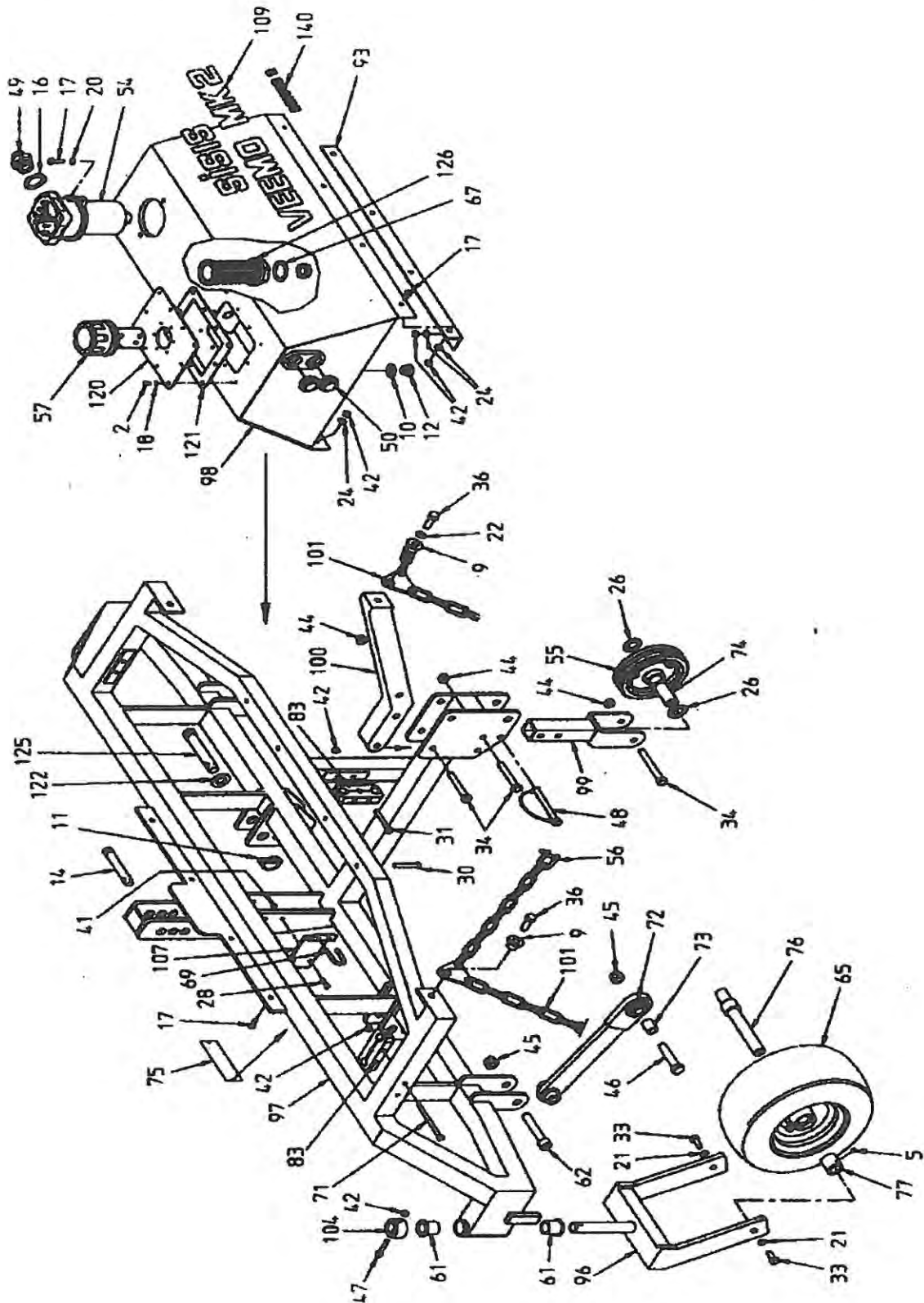
CUTTING UNIT ASSEMBLY

Drawn as left hand unit (2 off)

Right hand is opposite (1 off)

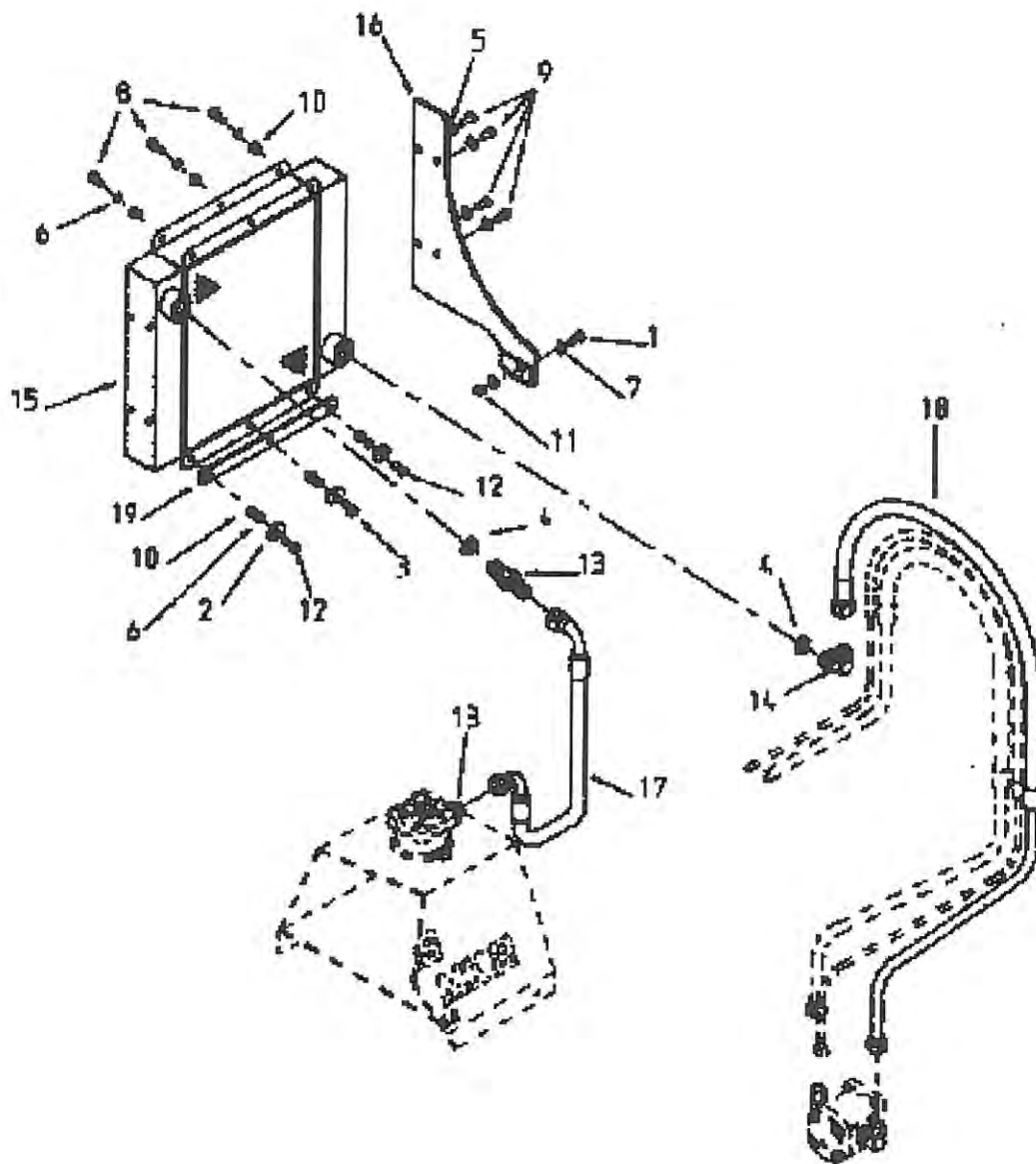
Right hand unit roller frames are opposite





OIL COOLER KIT FS1132

item	part	description	qty	item	part	description	qty
1	8099	bolt	1	11	1/1220	nyloc nut	1
2	8442	washer	3	12	1/1752	bolt	2
3	8643	hexagon headed bolt	2	13	20350	adaptor	2
4	8858	dowty seal	2	14	21942	positional elbow	1
5	1/1062	spring washer	4	15	22384	oil cooler Veemo Mk. 2	1
6	1/1071	plain washer	13	16	37531	coller steady	1
7	1/1072	plain washer	6	17	37532	hydraulic pipe	1
8	1/1096	hexagon setscrew	3	18	37533	hydraulic pipe	1
9	1/1105	hexagon setscrew	2	19	37534	clamp bar	1
10	1/1218	nyloc nut	11	20	37610	fan loom	1



FITTING A OIL COOLER TO A VEEMO Mk. 2 kit number FS1132

- 1 Fit 90° elbow to bottom of oil cooler and tighten facing upwards. Figure 3
- 2 Remove 3 off, 6mm nuts and bolts from bottom of oil cooler
- 3 Place oil cooler over box section to the left of the oil tank (Note : on early machines the tank may need to be loosened and moved 10-12mm to the right). Figure 1
- 4 On early machines the holes will require drilling. Mark the position of the holes and drill through the box section with 8.5mm drill. Figure 1
- 5 Put the flat bar with 3 holes in between the oil cooler and the box section on the far side to fill the gap. Now fit the bolts through the oil cooler/spacer bar/ box section with the longer bolt in the centre. (These bolts should have the nuts facing the tractor). Figure 1
- 6 Fit the side bracket to the oil cooler with the 4 bolts/washers and spring washer provided. Then fit the bolt through the side box section. (On early machines this will need to be drilled 8.5mm). Figure 2
- 7 Fit new braided hose to bottom of oil cooler onto the 90° elbow with elbow facing upwards and tighten. Figure 3
Fit rubber hydraulic hose to top of oil cooler and twist so that opposite end fits to tank top filter. Tighten both ends. Figure 4
- 8 Connect wiring to side lights of tractor 7 pin plug or



Figure 1



Figure 2



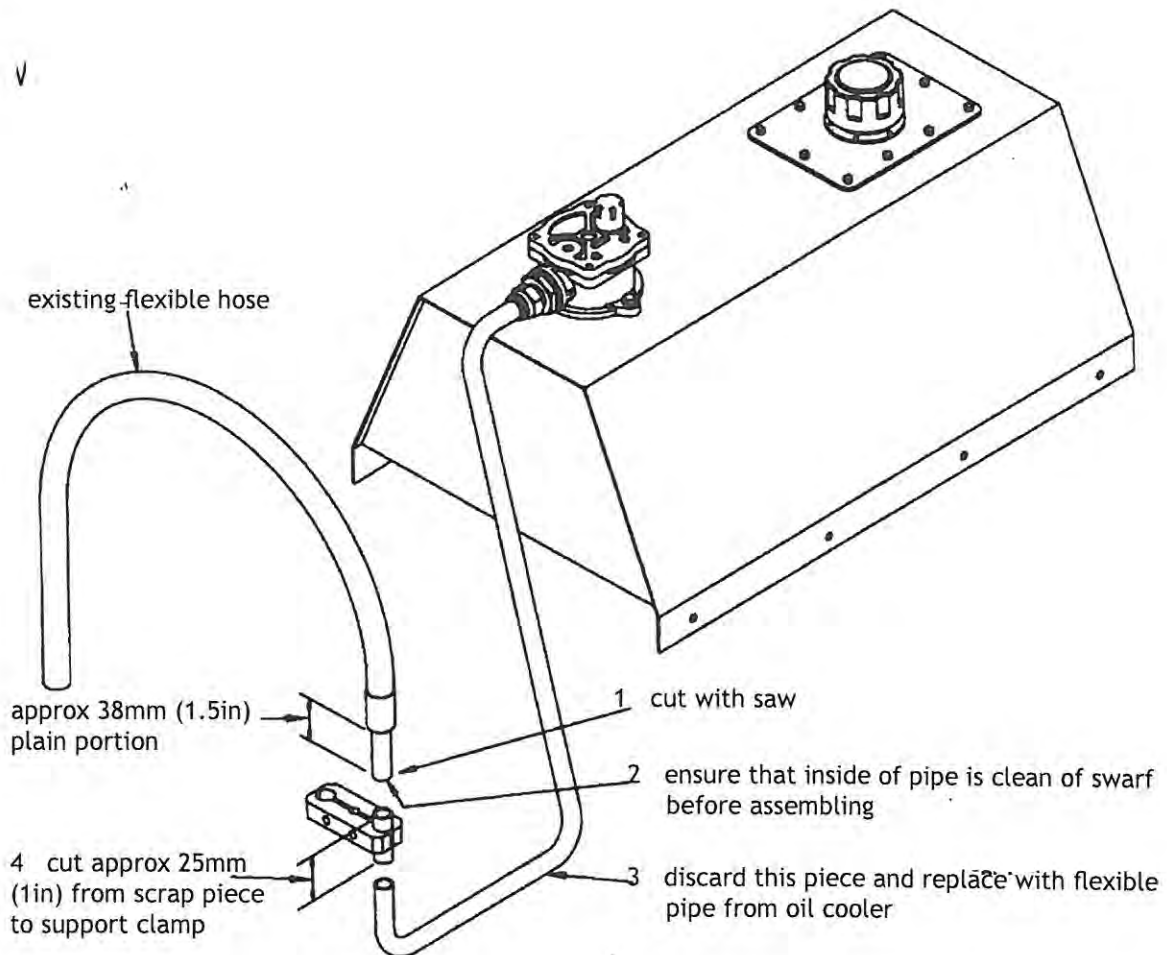
Figure 3



Figure 4

FITTING OIL COOLER TO A VEEMO Mk. 2 (using existing parts)

modification required to add an oil cooler to existing machines



connect oil cooler wire to the 7pin plug on tractor.
red wire to terminal 5 or 7
and
black to terminal 3

