



MF 600 Series Tractor  
Workshop Service Manual



# MF600 SERIES TRACTOR WORKSHOP SERVICE MANUAL

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## INTRODUCTION

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**INTRODUCTION**

The purpose of this manual is to assist dealers and distributors in the efficient repair and maintenance of Massey-Ferguson farm machinery. Carrying out the procedures as detailed, together with the use of special tools where appropriate, will enable the operations to be completed within the time stated in the repair time schedule.

**NOTE—To assist with locating information, each division of the manual is preceded by a contents page listing the operation in numerical order.**

**Each instruction within an operation has a sequence number, and to complete the operation in the minimum time it is essential that these instructions are performed in numerical sequence commencing at 1 unless otherwise stated. When applicable, these sequence numbers identify the components in the appropriate illustration. Where performance of an operation requires the use of a special tool, the tool number is quoted under the operation heading and is repeated in, or following, the instruction involving its use.**

**INDEXING**

For convenience the manual is divided into parts and sections, each page bearing a part and section number. The sections are subdivided into numbered operations.

Example:—7A—01—15—would be—  
Part 7 Section A Operation 01 Page 15

This simplifies cross referencing and enables the subject to be found easily.

**SPECIAL TOOLS**

Where the use of a special tool is specified in an

operation the tool number will be shown under the operation heading and also following the instruction requiring its use.

The use of the special tools mentioned in the text contributes to a safe, efficient and profitable repair. Some operations are impracticable without their use, for example the assembly of the differential unit. Distributors are therefore urged to check their tools against the list provided. Where necessary, tools may be ordered from: V. L. Churchill & Co. Ltd., London Road, Daventry, England.

**REPAIRS AND REPLACEMENTS**

When service parts are required it is essential that only genuine Massey-Ferguson replacements are used.

Attention is particularly drawn to the following points concerning repairs and the fitting of replacement parts and accessories.

Safety features embodied in the tractor may be impaired if other than genuine parts are fitted.

In certain territories, legislation prohibits the fitting of parts not to the tractor manufacturers specification. Torque wrench setting figures given in the Workshop Manual must be strictly adhered to. Locking devices where specified must be fitted. If the efficiency of a locking device is impaired during removal it must be renewed.

The tractor warranty may be invalidated by the fitting of other than genuine Massey-Ferguson parts. All Massey-Ferguson replacements have the full backing of the manufacturers warranty. Massey-Ferguson Distributors and Dealers are obliged to supply only genuine service parts.

## INTRODUCTION

### REPAIR TIME SCHEDULE

The operations listed in the Repair Time Schedule refer to those described in this manual. The time set against each operation in the schedule is established by performing the actual operations on standard machines using special tools where applicable. The Repair Time Schedule for use with this manual is issued as a separate publication.

**NOTE—Repair Time Schedules are issued to Massey-Ferguson Distributors and Dealers only and are not for general publication.**

### AMENDMENTS

Under normal conditions revised pages are issued carrying the same number as the existing pages requiring amendment. The new pages are inserted in place of the existing ones. The old pages should then be discarded.

In some cases additional pages or completely new sections may be issued. These pages are to be inserted immediately following the page carrying the next lowest page number, or section number as appropriate.

Where new pages are required to be positioned between existing pages, the new page numbers will contain a suffix letter—

Example:—New page number 7A—16a.

This page is inserted after existing page number 7A—16 and before page number 7A—17. Correspondingly a further new page numbered 7A—16b would be positioned after 7A—16a but before 7A—17. To assist in identifying amendments on revised pages, two asterisks (\*\*) will be inserted at the beginning and at the end of the amended paragraph, section, instruction or illustration.

To ensure that a record of amendments to this manual is readily available, the list of amendments will be re-issued with each set of revised pages, quoting the amendment number, date of issue, appropriate instructions and revised page numbers.

**NOTE—Service Bulletins and Amendment Sheets are issued to the Massey-Ferguson Distributors and Dealers only and are not for general publication.**

Amendment No.	Date	Page Issued

**INTRODUCTION**

Amendment No.	Date	Page Issued

## INTRODUCTION

### GENERAL INSTRUCTIONS

#### SAFETY

Your safety and that of others is always the first consideration when working around machines. Safety is a matter of thoroughly understanding the job to be done, the correct use of tools and equipment, and the application of good common sense.

#### SYSTEM FAULTS

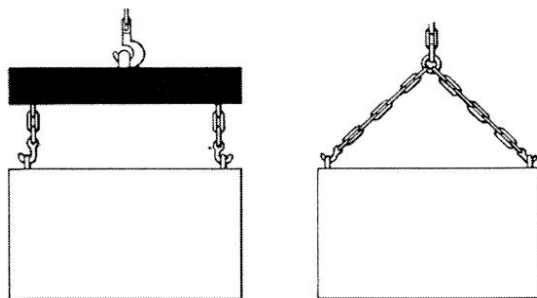
The following procedure combined with the information contained in the workshop manual will be helpful in tracing system faults accurately. It consists of following a number of logical steps to locate and correct the problem.

1. Determine the problem.
2. List possible causes.
3. Devise checks.
4. Conduct checks in logical order to determine cause.
5. Consider remaining service life against cost of parts and labour.
6. Make necessary repair.
7. Recheck.

#### HANDLING OF HEAVY COMPONENTS

Unless otherwise specified, all removals should be accomplished using an adjustable lifting beam and hoisting equipment. All supporting chains or cables should be parallel to each other and as near vertical as possible in relation to the object being lifted.

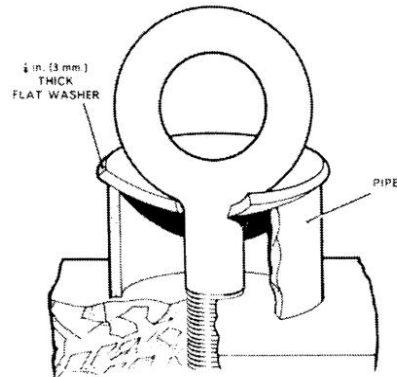
When removing a component on an angle remember that the capacity of an eyebolt diminishes as the angle between the supporting members and the object becomes less than 90° (Fig. 1).



Correct and incorrect method of lifting a component

Eyebolts and brackets should never be bent and should only have stress in tension. A length of pipe and a washer can be used to help relieve these stresses on eyebolts (Fig. 2). In some cases special lifting fixtures are available to obtain correct balance and provide for safe handling. If in doubt consult relevant section of workshop manual.

**WARNING—If a part resists removal check to be certain all nuts and bolts have been removed and that an adjacent part is not interfering.**



Forged eyebolt support

#### REMOVAL AND INSTALLATION OF COMPONENT PARTS

##### Cleanliness

The most important single item in preserving the long life of the machine is to keep dirt out of vital working parts. Precautions have been taken to safeguard against this. Enclosed compartments, seals and filters have been provided to keep the supply of air, fuel and lubricants clean. These safeguards must be maintained.

Whenever hydraulic, fuel, lubricating oil or air lines are disconnected, clean the point of disconnection as well as the adjacent area. As soon as the disconnection is made, cap, plug or tape the line or opening to prevent entry of foreign material. The same recommendations for cleaning and covering apply when access covers or inspection plates are removed.

Clean and inspect all parts. Be sure all passages and holes are open. Cover all parts to keep them clean. Be sure parts are clean when they are installed. Leave new parts in their containers until ready for assembly.

##### Assembly

When reassembling a machine, complete each step in turn. Do not partially assemble one part and start assembling some other part. Make all adjustments as recommended. Always check the job after it is completed to see nothing has been overlooked.

Recheck the various adjustments before returning the machine to the job.

**NOTE—Clean the rust preventative compound from all machined surfaces of new parts before installing them.**

##### Lubrication

Where applicable, fill the compartments of the components serviced with the amount, type and grade of lubricant recommended in the Regular Maintenance Section (1B) of this Manual.

##### Shims

When shims are removed, tie them together and identify them as to location. Keep shims clean and flat until they are reinstalled.

##### Gaskets

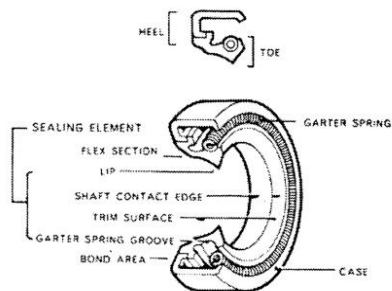
Be sure the holes in the gaskets correspond with the lubricant passages in the mating parts. If gaskets are to be made, select material of the proper type and thickness. Be sure to cut holes in the right places. Blank gaskets can cause serious damage.

## INTRODUCTION

**Lip Type Rubber Seals**

Lubricate the lips of lip-type rubber seals before installation. Use petroleum jelly. Do not grease on any seal except a grease seal.

The main parts of a lip-type seal are the case, sealing element, and garter spring. The picture below illustrates the construction of a simple lip-type seal. The cross section at the top shows the terms "heel" and "toe" used to identify the sides of a single element seal. With few exceptions, the toe of an oil seal with one lip is next to the lubricant that is sealed. Some seals have a second auxiliary lip, which does not carry a garter spring.



Lip-type seal construction

If, during installation, the seal lip must pass over a shaft that has splines, a keyway, rough surface or a sharp edge, the lip can be easily damaged. Always use a seal protector, when one is provided.

**Cables and Wires**

When removing or disconnecting a group of cables or wires, tag each one to assure proper assembly.

**Bearing Bushes and Press Fits**

**Do not install bearing bushes with a hammer.**

Use a press if possible and be sure to apply the pressure directly in line with the bore. If necessary, drive on a bearing using a bearing driver or a bar with a smooth flat end. If a sleeve bearing has an oil hole, align it with the oil hole in the mating part.

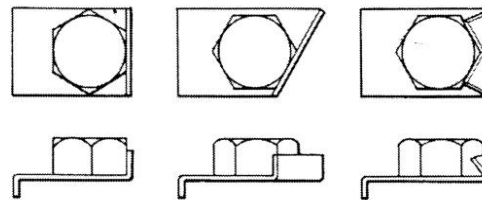
When one part is pressed into another lubricate the mating surfaces.

Assemble tapered parts dry. Before assembling, be sure the tapers are clean, dry and free from burrs.

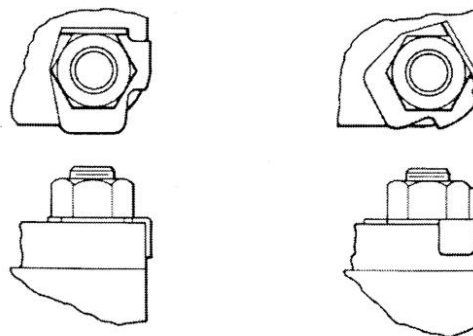
**Use of Bolts in Blind Holes**

Use bolts of the correct length. A bolt which is too long may "bottom" before the head is tight against the part it is to hold. The threads can be damaged when a "long" bolt is removed.

If a bolt is too short, there may not be enough threads engaged to hold the part securely.



Correct and incorrect methods of installing flat metal locks.



Correct and incorrect method for lock positioning and bending.

**Locking Devices**

Lockwashers, flat metal locks or cotter pins are used to lock nuts and bolts.

Flat metal locks must be installed properly to be effective. Bend one end of the lock around the edge of the part. Bend the other end against one flat surface of the nut or bolt head.

Always install new locks in compartments which house moving parts.

When installing lockwashers on housings made of aluminium, use a flat washer between the lockwasher and the housing.

**INTRODUCTION****PRESSURE (KN/m<sup>2</sup> to lbf/m<sup>2</sup>, lbf/in<sup>2</sup> to KN/m<sup>2</sup>)**

KN/m <sup>2</sup>		lbf/in <sup>2</sup>	KN/m <sup>2</sup>		lbf/in <sup>2</sup>	KN/m <sup>2</sup>		lbf/in <sup>2</sup>
6 8948	1	0.1450	234 423	34	4 9300	461 952	67	9 7150
13 7896	2	0.2900	241 318	35	5 0750	468 846	68	9 8600
20 6844	3	0.4350	248 213	36	5 2200	475 741	69	10 0050
27 5792	4	0.5800	255 108	37	5 3650	482 636	70	10 1500
34 4740	5	0.7250	262 002	38	5 5100	489 531	71	10 2950
41 3688	6	0.8700	268 898	39	5 6550	496 426	72	10 4400
48 2636	7	1.0150	275 792	40	5 8000	503 320	73	10 5850
55 1584	8	1.1600	282 687	41	5 9450	510 215	74	10 7300
62 0532	9	1.3050	289 582	42	6 0900	517 110	75	10 8750
68 9480	10	1.4500	296 476	43	6 2350	524 005	76	11 0200
75 8428	11	1.5950	303 371	44	6 3800	530 899	77	11 1650
82 7376	12	1.7400	310 266	45	6 5250	537 794	78	11 3100
89 6324	13	1.8850	317 161	46	6 6700	544 689	79	11 4550
96 5272	14	2.0300	324 056	47	6 8150	551 584	80	11 6000
103 422	15	2.1750	330 950	48	6 9600	558 479	81	11 7450
110 317	16	2.3200	337 845	49	7 1050	565 374	82	11 8900
117 212	17	2.4650	344 740	50	7 2500	572 268	83	12 0350
124 106	18	2.6100	351 635	51	7 3950	579 163	84	12 1800
131 001	19	2.7550	358 529	52	7 5400	586 058	85	12 3250
137 896	20	2.9000	365 424	53	7 6850	592 953	86	12 4700
144 791	21	3.0450	372 319	54	7 8300	599 848	87	12 6150
151 686	22	3.1900	379 214	55	7 9750	606 742	88	12 7600
158 580	23	3.3350	386 109	56	8 1200	613 637	89	12 9050
165 475	24	3.4800	393 004	57	8 2650	620 532	90	13 0500
172 370	25	3.6250	399 898	58	8 4100	627 427	91	13 1950
179 265	26	3.7700	406 793	59	8 5550	634 322	92	13 3400
186 159	27	3.9150	413 688	60	8 7000	641 216	93	13 4850
193 054	28	4.0600	420 583	61	8 8450	648 111	94	13 6300
199 949	29	4.2050	427 478	62	8 9900	655 006	95	13 7750
206 844	30	4.3500	434 372	63	9 1350	661 901	96	13 9200
213 739	31	4.4950	441 267	64	9 2800	668 796	97	14 0650
220 634	32	4.6400	448 162	65	9 4250	675 690	98	14 2100
227 528	33	4.7850	455 057	66	9 5700	682 585	99	14 3550

**TORQUE (Nm to lbf/ft, lbf/ft to Nm)**

Nm		lbf/ft	Nm		lbf/ft	Nm		lbf/ft
1 3558	1	0 7376	46 0972	34	25 0784	90 8386	67	49 4912
2 7116	2	1 4752	47 4530	35	25 8160	92 1944	68	50 1568
4 0674	3	2 2128	48 8088	36	26 5536	93 5502	69	50 8944
5 4232	4	2 9504	50 1646	37	27 2912	94 9060	70	51 6320
6 7790	5	3 6880	51 5204	38	28 0288	96 2618	71	52 3696
8 1348	6	4 4256	52 8762	39	28 7664	97 6176	72	53 1072
9 4906	7	5 1632	54 2320	40	29 5040	98 9734	73	53 8448
10 8464	8	5 9008	55 5878	41	30 2416	100 3292	74	54 5824
12 2022	9	6 6384	56 9436	42	30 9792	101 6850	75	55 3200
13 5580	10	7 3760	58 2994	43	31 7168	103 0408	76	56 0576
14 9138	11	8 1136	59 6552	44	32 4544	104 3966	77	56 7952
16 2696	12	8 8512	61 0110	45	33 1920	105 7524	78	57 5328
17 6254	13	9 5888	62 3668	46	33 9296	107 1082	79	58 2704
18 9812	14	10 3264	63 7226	47	34 6672	108 4640	80	59 0080
20 3370	15	11 0640	65 0784	48	35 4048	109 8200	81	59 7456
21 6928	16	11 8016	66 4342	49	36 1424	111 1760	82	60 4832
23 0486	17	12 5392	67 7900	50	36 8800	112 5318	83	61 2208
24 4044	18	13 2768	69 1458	51	37 6176	113 8876	84	61 9584
25 7602	19	14 0144	70 5016	52	38 3552	115 2434	85	62 6960
27 1160	20	14 7520	71 8574	53	39 0928	116 6000	86	63 4336
28 4718	21	15 4896	73 2132	54	39 8304	117 9566	87	64 1712
29 8276	22	16 2272	74 5690	55	40 5680	119 3132	88	64 9088
31 1834	23	16 9648	75 9248	56	41 3056	120 6698	89	65 6464
32 5392	24	17 7024	77 2806	57	42 0432	122 0264	90	66 3840
33 8950	25	18 4400	78 6364	58	42 7808	123 3830	91	67 1216
35 2508	26	19 1776	79 9922	59	43 5184	124 7396	92	67 8592
36 6066	27	19 9152	81 3480	60	44 2560	126 0962	93	68 5968
37 9624	28	20 6528	82 7038	61	44 9936	127 4528	94	69 3344
39 3182	29	21 3904	84 0596	62	45 7312	128 8094	95	70 0720
40 6740	30	22 1280	85 4154	63	46 4688	130 1660	96	70 8096
42 0298	31	22 8656	86 7712	64	47 2064	131 5226	97	71 5472
43 3856	32	23 6032	88 1270	65	47 9440	132 8792	98	72 2848
44 7414	33	24 3408	89 4828	66	48 6816	134 2358	99	73 0224



## INTRODUCTION

## CAPACITY (Imp. gall to litre, litre to Imp. gal)

Imp. gal		litre	Imp. gal		litre	Imp. gal		litre
0-2199	1	4-5459	7-4766	34	154-561	14-733	67	304-575
0-4398	2	9-0918	7-6965	35	159-107	14-9532	68	309-121
0-6597	3	13-6377	7-9164	36	163-652	15-1731	69	313-667
0-8796	4	18-1836	8-1363	37	168-198	15-393	70	318-213
1-0995	5	22-7295	8-3562	38	172-744	15-6129	71	322-769
1-3194	6	27-2754	8-5761	39	177-290	15-8328	72	327-305
1-5393	7	31-8213	8-7960	40	181-836	16-0527	73	331-851
1-7592	8	36-3672	9-0159	41	186-382	16-2726	74	336-397
1-9791	9	40-9131	9-2358	42	190-929	16-4925	75	340-943
2-1990	10	45-4590	9-4557	43	195-474	16-7124	76	345-488
2-4189	11	50-0049	9-6756	44	200-019	16-9323	77	350-034
2-6388	12	54-5508	9-8955	45	204-566	17-1522	78	354-580
2-8587	13	59-0967	10-1154	46	209-111	17-3721	79	359-126
3-0786	14	63-6426	10-3353	47	213-657	17-5920	80	363-672
3-2985	15	68-1885	10-5552	48	218-203	17-8119	81	368-218
3-5184	16	72-7344	10-7751	49	222-749	18-0318	82	372-764
3-7383	17	77-2803	10-995	50	227-295	18-2517	83	377-310
3-9582	18	81-8262	11-2149	51	231-841	18-4716	84	381-856
4-1781	19	86-3721	11-4348	52	236-387	18-6915	85	386-402
4-3980	20	90-9180	11-6547	53	240-933	18-9114	86	390-947
4-6179	21	95-4639	11-8746	54	245-479	19-1313	87	395-493
4-8378	22	100-009	12-0945	55	250-025	19-3512	88	400-039
5-0577	23	104-556	12-3144	56	254-570	19-5711	89	404-585
5-2776	24	109-102	12-5343	57	259-116	19-7910	90	409-131
5-4975	25	113-648	12-7542	58	263-662	20-0109	91	413-677
5-7174	26	118-193	12-9741	59	268-209	20-2308	92	418-223
5-9373	27	122-739	13-1940	60	272-754	20-4507	93	422-769
6-1572	28	127-285	13-4139	61	277-299	20-6706	94	427-315
6-3771	29	131-831	13-6338	62	281-846	20-8905	95	431-861
6-5970	30	136-377	13-8537	63	286-392	21-1104	96	436-406
6-8169	31	140-923	14-0736	64	290-938	21-3303	97	440-952
7-0368	32	145-469	14-2935	65	295-483	21-5502	98	445-498
7-2567	33	150-015	14-5134	66	300-029	21-7701	99	450-044

## CAPACITY (Imp. pt. to litres, litres to Imp. pt.)

Imp. pt.		litres	Imp. pt.		litres	Imp. pt.		litres
1-7599	1	0-5682	59-8366	34	19-3188	117-913	67	38-0694
3-5198	2	1-1364	61-5965	35	19-8870	119-673	68	38-6376
5-2797	3	1-7046	63-3564	36	20-4552	121-433	69	39-2058
7-0396	4	2-2728	65-1163	37	21-0234	123-193	70	39-7740
8-7995	5	2-8400	66-8762	38	21-5916	124-953	71	40-3422
10-5594	6	3-4902	68-6361	39	22-1598	126-713	72	40-9104
12-3193	7	3-9774	70-3960	40	22-7280	128-473	73	41-4786
14-0792	8	4-5456	72-1559	41	23-2962	130-233	74	42-0468
15-8391	9	5-1138	73-9158	42	23-8644	131-993	75	42-6150
17-5990	10	5-6820	75-6757	43	24-4326	133-752	76	43-1832
19-3589	11	6-2502	77-4356	44	25-0008	135-512	77	43-7514
21-1188	12	6-8184	79-1955	45	25-5690	137-272	78	44-3196
22-8787	13	7-3866	80-9554	46	26-1372	139-032	79	44-8878
24-6386	14	7-9548	82-7153	47	26-7054	140-792	80	45-456
26-3985	15	8-5230	84-4752	48	27-2736	142-552	81	46-0242
28-1854	16	9-0912	86-2351	49	27-8418	144-312	82	46-5924
29-9183	17	9-6594	87-9950	50	28-4100	146-072	83	47-1606
31-6782	18	10-2276	89-7549	51	28-9782	147-832	84	47-7288
33-4381	19	10-7958	91-5148	52	29-5464	149-592	85	48-2970
35-1980	20	11-3640	93-2747	53	30-1146	151-351	86	48-8652
36-9579	21	11-9322	95-0346	54	30-6828	153-111	87	49-4334
38-7178	22	12-5004	96-7945	55	31-2510	154-871	88	50-0016
40-4770	23	13-0686	98-5544	56	31-8192	156-631	89	50-5698
42-2376	24	13-6368	100-314	57	32-3874	158-391	90	51-1380
43-9975	25	14-2050	102-074	58	32-9556	160-151	91	51-7062
45-7574	26	14-7732	103-834	59	33-5238	161-912	92	52-2744
47-5173	27	15-3414	105-594	60	34-0920	163-671	93	52-8426
49-2772	28	15-9096	107-354	61	34-6602	165-431	94	53-4108
51-0371	29	16-4778	109-114	62	35-2284	167-191	95	53-9790
52-7970	30	17-0460	110-874	63	35-7966	168-950	96	54-5472
54-5569	31	17-6142	112-634	64	36-3648	170-710	97	55-1154
56-3168	32	18-1824	114-394	65	36-9330	172-470	98	55-6836
58-0767	33	18-7506	116-153	66	37-5012	174-230	99	56-2518

**INTRODUCTION****LENGTH (m to ft, ft to m)**

m		ft	m		ft	m		ft
0.3048	1	3.2808	10.3632	34	111.549	20.4216	67	219.816
0.6096	2	6.5617	10.6680	35	114.829	20.7264	68	223.097
0.9144	3	9.8425	10.9728	36	118.110	21.0312	69	226.378
1.2192	4	13.1234	11.2776	37	121.391	21.3360	70	229.659
1.5240	5	16.4042	11.5824	38	124.672	21.6408	71	232.940
1.8288	6	19.6850	11.8872	39	127.953	21.9456	72	236.220
2.1336	7	22.9659	12.1920	40	131.234	22.2504	73	239.501
2.4384	8	26.2467	12.4968	41	134.514	22.5552	74	242.782
2.7432	9	29.5276	12.8016	42	137.795	22.8600	75	246.063
3.0480	10	32.8084	13.1064	43	141.076	23.1648	76	249.344
3.3528	11	36.0892	13.4112	44	144.357	23.4696	77	252.625
3.6576	12	39.3701	13.7160	45	147.638	23.7744	78	255.906
3.9624	13	42.6509	14.0208	46	150.919	24.0792	79	259.186
4.2672	14	45.9318	14.3256	47	154.199	24.3840	80	262.467
4.5720	15	49.2126	14.6304	48	157.480	24.6888	81	265.748
4.8768	16	52.4934	14.9352	49	160.761	24.9936	82	269.029
5.1816	17	55.7743	15.2400	50	164.042	25.2984	83	272.310
5.4864	18	59.0551	15.5448	51	167.323	25.6032	84	275.591
5.7912	19	62.3360	15.8496	52	170.604	25.9080	85	278.871
6.0960	20	65.6168	16.1544	53	173.885	26.2128	86	282.152
6.4008	21	68.8976	16.4592	54	177.165	26.5176	87	285.433
6.7056	22	72.1785	16.7640	55	180.446	26.8224	88	288.714
7.0104	23	75.4593	17.0688	56	183.727	27.1272	89	291.995
7.3152	24	78.7402	17.3736	57	187.008	27.4320	90	295.276
7.6200	25	82.0210	17.6784	58	190.289	27.7368	91	298.556
7.9248	26	85.3018	17.9832	59	193.570	28.0416	92	301.837
8.2296	27	88.5827	18.2880	60	196.850	28.3464	93	305.118
8.5344	28	91.8635	18.5928	61	200.131	28.6512	94	308.399
8.8392	29	95.1444	18.8976	62	203.412	28.9560	95	311.680
9.1440	30	98.4252	19.2024	63	206.693	29.2608	96	314.961
9.4488	31	101.706	19.5072	64	209.974	29.5656	97	318.241
9.7536	32	104.987	19.8120	65	213.255	29.8704	98	321.522
10.0584	33	108.268	20.1168	66	216.535	30.1752	99	324.803

**WEIGHT (Kg to lb, lb to Kg)**

Kg		lb	Kg		lb	Kg		lb
0.4536	1	2.2046	15.4224	34	74.9564	30.3912	67	147.708
0.9072	2	4.4092	15.8760	35	77.1610	30.8448	68	149.913
1.3608	3	6.6138	16.3296	36	79.3656	31.2984	69	152.117
1.8144	4	8.8184	16.7832	37	81.5702	31.7520	70	154.322
2.2680	5	11.0230	17.2368	38	83.7748	32.2056	71	156.527
2.7216	6	13.2276	17.6904	39	85.9794	32.6592	72	158.731
3.1752	7	15.4322	18.1440	40	88.1840	33.1128	73	160.936
3.6288	8	17.6368	18.5976	41	90.3886	33.5664	74	163.140
4.0824	9	19.8414	19.0512	42	92.5932	34.0200	75	165.345
4.5360	10	22.046	19.5048	43	94.7978	34.4736	76	167.549
4.9896	11	24.2506	19.9584	44	97.0024	34.9272	77	169.754
5.4432	12	26.4552	20.4120	45	99.2070	35.3808	78	171.958
5.8968	13	28.6598	20.8656	46	101.412	35.8344	79	174.163
6.3504	14	30.8644	21.3192	47	103.616	36.2880	80	176.368
6.8040	15	33.0690	21.7728	48	105.821	36.7416	81	178.573
7.2576	16	35.2736	22.2264	49	108.025	37.1952	82	180.777
7.7112	17	37.4782	22.6800	50	110.230	37.6488	83	182.982
8.1648	18	39.6828	23.1336	51	112.435	38.1024	84	185.186
8.6184	19	41.8874	23.5872	52	114.639	38.5560	85	187.391
9.0720	20	44.0920	24.0408	53	116.844	39.0096	86	189.596
9.5256	21	46.2966	24.4944	54	119.048	39.4632	87	191.800
9.9792	22	48.5012	24.9480	55	121.253	39.9168	88	194.005
10.4328	23	50.7058	25.4016	56	123.458	40.3704	89	196.209
10.8864	24	52.9104	25.8552	57	125.662	40.8240	90	198.414
11.3400	25	55.115	26.3088	58	127.867	41.2776	91	200.619
11.7936	26	57.3196	26.7624	59	130.071	41.7312	92	202.823
12.2472	27	59.5242	27.2160	60	132.276	42.1848	93	205.028
12.7008	28	61.7288	27.6696	61	134.481	42.6384	94	207.232
13.1544	29	63.9334	28.1232	62	136.685	43.0920	95	209.437
13.6080	30	66.1380	28.5768	63	138.889	43.5456	96	211.642
14.0616	31	68.3426	29.0304	64	141.094	43.9992	97	213.846
14.5152	32	70.5472	29.4840	65	143.299	44.4528	98	216.051
14.9688	33	72.7518	29.9376	66	145.504	44.9064	99	218.255

INTRODUCTION

CONVERSION TABLES

Inches	Decimals	Milli- metres	Inches to Millimetres		Millimetres to Inches		Fahrenheit and Centigrade				
			Inches	Milli- metres	mm	inches	°F	°C	°C	°F	
1/32	1/64	.015625	.3969		0.001	.000039	-20	-28.9	-30	-22	
		.03125	.7937		0.002	.000079	-15	-26.1	-28	-18.4	
1/16	3/64	.046875	1.1906		0.003	.000118	-10	-23.3	-26	-14.8	
		.0625	1.5875	.0001	.00254	0.004	.000157	-5	-20.6	-24	-11.2
3/32	5/64	.078125	1.9844	.0002	.00508	0.005	.000197	0	-17.8	-22	-7.6
		.09375	2.3812	.0003	.00762	0.006	.000236	1	-17.2	-20	-4
1/8	7/64	.109375	2.7781	.0004	.01016	0.007	.000276	2	-16.7	-18	-0.4
		.125	3.1750	.0005	.01270	0.008	.000315	3	-16.1	-16	3.2
5/32	9/64	.140625	3.5719	.0006	.01524	0.009	.000354	4	-15.6	-14	6.8
		.15625	3.9687	.0007	.01778	0.01	.00039	5	-15.0	-12	10.4
3/16	11/64	.171875	4.3656	.0008	.02032	0.02	.00079	10	-12.2	-10	14
		.1875	4.7625	.0009	.02286	0.03	.00118	15	-9.4	-8	17.6
7/32	13/64	.203125	5.1594	.001	.0254	0.04	.00157	20	-6.7	-6	21.2
		.21875	5.5562	.002	.0508	0.05	.00197	25	-3.9	-4	24.8
1/4	15/64	.234375	5.9531	.003	.0762	0.06	.00236	30	-1.1	-2	28.4
		.25	6.3500	.004	.1016	0.07	.00276	35	1.7	0	32
9/32	17/64	.265625	6.7469	.005	.1270	0.08	.00315	40	4.4	2	35.6
		.28125	7.1437	.006	.1524	0.09	.00354	45	7.2	4	39.2
5/16	19/64	.296875	7.5406	.007	.1778	0.1	.00394	50	10.0	6	42.8
		.3125	7.9375	.008	.2032	0.2	.00787	55	12.8	8	46.4
11/32	21/64	.328125	8.3344	.009	.2286	0.3	.01181	60	15.6	10	50
		.34375	8.7312	.01	.254	0.4	.01575	65	18.3	12	53.6
3/8	23/64	.359375	9.1281	.02	.508	0.5	.01969	70	21.1	14	57.2
		.375	9.5250	.03	.762	0.6	.02362	75	23.9	16	60.8
13/32	25/64	.390625	9.9219	.04	1.016	0.7	.02756	80	26.7	18	64.4
		.40625	10.3187	.05	1.270	0.8	.03150	85	29.4	20	68
7/16	27/64	.421875	10.7156	.06	1.524	0.9	.03543	90	32.2	22	71.6
		.4375	11.1125	.07	1.778	1	.03937	95	35.0	24	75.2
15/32	29/64	.453125	11.5094	.08	2.032	2	.07874	100	37.8	26	78.8
		.46875	11.9062	.09	2.286	3	.11811	105	40.6	28	82.4
1/2	31/64	.484375	12.3031	.1	2.54	4	.15748	110	43.3	30	86
		.5	12.7000	.2	5.08	5	.19685	115	46.1	32	89.6
17/32	33/64	.515625	13.0969	.3	7.62	6	.23622	120	48.9	34	93.2
		.53125	13.4937	.4	10.16	7	.27559	125	51.7	36	96.8
9/16	35/64	.546875	13.8906	.5	12.70	8	.31496	130	54.4	38	100.4
		.5625	14.2875	.6	15.24	9	.35433	135	57.2	40	104
19/32	37/64	.578125	14.6844	.7	17.78	10	.39370	140	60.0	42	107.6
		.59375	15.0812	.8	20.32	11	.43307	145	62.8	44	112.2
5/8	39/64	.609375	15.4781	.9	22.86	12	.47244	150	65.6	46	114.8
		.625	15.8750	1	25.4	13	.51181	155	68.3	48	118.4
21/32	41/64	.640625	16.2719	2	50.8	14	.55118	160	71.1	50	122
		.65625	16.6687	3	76.2	15	.59055	165	73.9	52	125.6
11/16	43/64	.671875	17.0656	4	101.6	16	.62992	170	76.7	54	129.2
		.6875	17.4625	5	127.0	17	.66929	175	79.4	56	132.8
23/32	45/64	.703125	17.8594	6	152.4	18	.70866	180	82.2	58	136.4
		.71875	18.2562	7	177.8	19	.74803	185	85.0	60	140
3/4	47/64	.734375	18.6531	8	203.2	20	.78740	190	87.8	62	143.6
		.75	19.0500	9	228.6	21	.82677	195	90.6	64	147.2
25/32	49/64	.765625	19.4469	10	254.0	22	.86614	200	93.3	66	150.8
		.78125	19.8437	11	279.4	23	.90551	205	96.1	68	154.4
13/16	51/64	.796875	20.2406	12	304.8	24	.94480	210	98.9	70	158
		.8125	20.6375	13	330.2	25	.98425	215	100.0	75	167
27/32	53/64	.828125	21.0344	14	355.6	26	1.02362	220	101.7	80	176
		.84375	21.4312	15	381.0	27	1.06299	225	104.4	85	185
7/8	55/64	.859375	21.8281	16	406.4	28	1.10236	230	107.2	90	194
		.875	22.2250	17	431.8	29	1.14173	235	110.0	95	203
29/32	57/64	.890625	22.6219	18	457.2	30	1.18110	240	112.8	100	212
		.90625	23.0187	19	482.6	31	1.22047	245	115.6	105	221
15/16	59/64	.921875	23.4156	20	508.0	32	1.25984	250	118.3	110	230
		.9375	23.8125	21	533.4	33	1.29921		121.1	115	239
31/32	61/64	.953125	24.2094	22	558.8	34	1.33858				
		.96875	24.6062	23	584.2	35	1.37795				
	63/64	.984375	25.0031	24	609.6	36	1.41732				
				25	635.0	37	1.45669				
				26	660.4	38	1.49606				
						39	1.53543				
						40	1.57480				

## INTRODUCTION

### Torque Loading

Apply proper torque values to all bolts and nuts when re-assembling equipment. When a specific value is required, the value is quoted in the text. All other nuts, bolts and taperlock studs should be tightened to the values detailed in the Standard Torque loading Chart.

NOMINAL SIZE (diameter)	WRENCH SETTING Nm (lbf-ft)	
	A	B
$\frac{1}{4}$ in	6.78 to 8.13 (5 to 6)	10.85 to 13.55 (8 to 10)
$\frac{5}{16}$ in	13.55 to 16.27 (10 to 12)	20.34 to 24.40 (15 to 18)
$\frac{3}{8}$ in	25.76 to 29.82 (19 to 22)	40.67 to 47.45 (30 to 35)
$\frac{7}{16}$ in	44.74 to 51.52 (33 to 38)	67.79 to 74.57 (50 to 55)
$\frac{1}{2}$ in	63.72 to 71.86 (47 to 53)	103.04 to 115.24 (76 to 85)
$\frac{9}{16}$ in	88.13 to 98.97 (65 to 73)	155.92 to 169.47 (115 to 125)
$\frac{5}{8}$ in	135.58 to 169.47 (100 to 125)	200.05 to 230.48 (155 to 170)
$\frac{3}{4}$ in	237.26 to 271.16 (175 to 200)	271.16 to 406.74 (270 to 300)

### Standard Torque Loadings

#### COLUMN A

#### Non-Rigid Joints

Column "A" specifies the spanner torques to be used with non-rigid joints where extrusion, deformity or other damage would result when higher clamping forces are used.

#### Limited Strength Nuts

The torque values in column "A" are also the maximum recommended for weld nuts, slotted nuts or other limited strength nuts.

#### Standard Nuts with Lock Washers

When lock washers are used under the nut, the torque values in column "A" should be applied. Laboratory tests indicate that lock washers substantially reduce the friction under the nut. This is especially true if the bolt nut and lock washer are oiled. Due to this reduction in friction, proper bolt elongation is obtained by use of the torque in column "A". Column "B" torques may cause failure of the nut or bolt during assembly.

#### COLUMN B

Column "B" is the wrench torque to be used for assembly of rigid joints where extrusion, deformity or other damage will not result, and it is desirable to obtain more elastic elongation of the bolt or stud to ensure that it remains tight.

## SPECIAL TOOLS

Tool No.	Description	Tool No.	Description
<b>ENGINE</b>			
<b>PD.1D</b>	Valve Guide Remover and Replacer (Main Tool)	<b>MF.264</b>	Front Axle and Steering Bush Reamer (Main Tool)
<b>PD.1D-1A</b>	Adaptor for PD.1	<b>MF.264-2/1</b>	Reamer and Pilot
<b>PD.1D-4</b>	Adaptor for PD.1	<b>MF.264-2/2</b>	Reamer and Pilot
<b>4RL</b>	Torque Wrench	<b>MF.268A</b>	Steering Wheel Remover
<b>No. 13</b>	Torque Wrench	<b>MF.322</b>	Front Axle Pivot Pin Bush Remover and Replacer
<b>No. 8</b>	Piston Ring Compressor	<b>MF.332</b>	Power Steering Pump Oil Seal Protector
<b>PD.41B</b>	Piston Height and Valve Depth Gauge	<b>MF.334</b>	Steering Pivot Pin Bush Remover (Use with PD.1D)
<b>MS.73</b>	Adjustable Valve Seat Cutter Kit	<b>6312B</b>	Steering Drop Arm Remover
<b>MS.76</b>	Handle for 35° Valve Seat Cutters	<b>MF.402</b>	Steering Drop Arm Puller
<b>PD.137</b>	Valve Guide Reamer (.015" o/s)	<b>REAR AXLE</b>	
<b>PD.138</b>	Valve Guide Reamer (.030" o/s)	<b>MF.9A</b>	Differential Housing Holder
<b>PD.145</b>	Crankshaft Rear Oil Seal Replacer	<b>MF.10</b>	Bench Plate
<b>PD.145-2</b>	Oil Seal Pilot	<b>MF.26A</b>	Handle
<b>PD.150A</b>	Cylinder Liner Remover and Replacer (Main Tool)	<b>MF.26B</b>	Axle Shaft Bearing Remover (Main Tool)
<b>PD.150-1B</b>	Adaptors for PD.150A	<b>MF.197</b>	Wheel Axle Outer Bearing Cone and Differential Cone Replacer (Main Tool)
<b>PD.150-7A</b>	Adaptors for PD.150A	<b>MF.197-2</b>	Differential Carrier-Plate Bearing Cone Replacer Adaptor
<b>MS.150-8</b>	Pilot for 35° Valve Seat Cutter	<b>MF.200-2</b>	Drive Cover Assembly and Bearing Remover
<b>PD.155B</b>	Basic Puller	<b>MF.200-3</b>	Differential Carrier Plate Bearing Cone Remover Adaptor
<b>PD.155-1</b>	Adaptor for PD.155B	<b>MF.200-22</b>	Differential Bearing Remover Adaptor
<b>335</b>	Con Rod Jig and Master Arbor	<b>MF.200-23</b>	Driving Pinion Bearing and Pilot Bearing Remover/Replacer Adaptor
<b>PD.336-102</b>	Arbor Adaptor Used with 335	<b>MF.200-24</b>	Epicyclic Hub Inner Bearing Cone Remover Adaptor
<b>102</b>	Diesel Compression Tester	<b>MF.202A</b>	Rear Drive Shaft Needle Bearing Remover
<b>109</b>	Injector Extractor	<b>MF.203A</b>	Rear Drive Shaft Needle Bearing Replacer and P.t.o. Remover/Replacer
<b>111</b>	Injector Tester	<b>MF.245D</b>	Rear Axle Preload Gauge
<b>6118B</b>	Valve Spring Compressor	<b>MF.245D-1</b>	Straight Edge
<b>PD.6118-3</b>	Adaptor for 6118B	<b>MF.257A</b>	Differential Bearing Cone Holder
<b>PD.6118-4</b>	Adaptor for 6118B	<b>MF.258</b>	Differential Housing Holder
<b>7600</b>	Bearing Remover	<b>MF.265A</b>	Planetary Carrier Assembly Remover
<b>7066</b>	Circlip Pliers	<b>MF.266B</b>	Planetary Carrier Bush Inner Coil Seal Bearing Cone and Unit Replacer
<b>MF.200-26</b>	Water Pump Overhaul Kit	<b>MF.267A</b>	Epicyclic Hub Pre-load Gauge
<b>MS.690</b>	Exhaust Valve Seat Cutter for 35° Seat	<b>MF.295B</b>	Wheel Guide Pilots
<b>MS.695</b>	Inlet Valve Seat Cutter for 35° Seat	<b>MF.366</b>	Wheel Guide Pilots
<b>MS.67B</b>	Static Timing Tool	<b>MF.555-2A</b>	Differential Coupling Bearing Cone Remover
<b>PD.67B-1</b>	Adaptor	<b>MF.1105-2A</b>	Differential Bearing Cup Remover/Replacer
<b>FRONT AXLE AND STEERING</b>			
<b>MF.19A</b>	King Pin Bush Reamer	<b>MF.1105-7A</b>	Differential Bearing Cup Remover/Replacer Adaptor
<b>MS.62A/63</b>	Danfoss Oil Seal and Spring Plate Kit	<b>MF.1105-8</b>	Epicyclic Hub Inner Bearing Cup Remover/Replacer Adaptor
<b>MF.147-7</b>	Power Steering Adaptor	<b>MF.1105-11</b>	Rear Axle Shaft Oil Seal Remover and Replacer
<b>MF.195-4</b>	Front Axle Pivot Pin Bush Remover/Replacer and P.t.o. Bush Remover/Replacer		
<b>MF.263A</b>	Front Axle and Steering Bush Remover (Main Tool)		
<b>MF.263-1/1</b>	Front Axle and Steering Bush Remover Adaptor (Tap-1½ in)		
<b>MF.263-1/2</b>	Front Axle and Steering Bush Replacer, Adaptor		
<b>MF.263-1/3</b>	Front Axle and Steering Bush Remover, Adaptor (Collar)		
<b>MF.263-2/1</b>	Front Axle and Steering Bush Replacer		
<b>MF.263-2</b>	Front Axle and Steering Bush Remover/Replacer Adaptors (1½ in)		
<b>MF.263-3</b>	Front Axle and Steering Bush Remover/Replacer Adaptors (1⅞ in)		

**SPECIAL TOOLS**

Tool No.	Description	Tool No.	Description
<b>CLUTCH &amp; TRANSMISSION</b>			
<b>MF.159A</b>	Single-and Dual Clutch Centraliser and Sleeve	<b>MF.260-5</b>	Multi-Power Pump Flow Adaptor
<b>MF.178</b>	P.t.o. Main Drive Shaft Pilot	<b>MF.269</b>	Response Plunger Adjusting Wrench
<b>MF.179</b>	Transmission and P.t.o. Pinion Oil Seal Replacer	<b>MF.270B</b>	Dashpot Piston Wedge
<b>MF.200-25</b>	Multi-Purpose Bearing Remover	<b>MF.271B</b>	Roller Assembly Tool and Draft Control Rod Gauge
<b>MF.215</b>	Secondary Clutch Setting Gauge	<b>MF.272</b>	Ram Arm Gauge Fixture
<b>MF.218A</b>	Front P.t.o. Housing Replacer (Main Tool)	<b>MF.273</b>	Hydraulic Control Lever Setting Fixture
<b>MF.218A-2</b>	Front P.t.o. Housing Replacer Adaptor	<b>MF.333</b>	Draft Control Rod Gauge (Increased Tension Range)
<b>MF.255B</b>	Multi-Power Pinion Oil Seal Replacer and Assembly Sleeve	<b>MF.355</b>	Hydraulic Pump Overhaul Kit Comprising:— MF.349, 350, 351, 352, 353 and 354
<b>MF.256A</b>	Multi-Power Pinion Assembly Inner Oil Seal Replacer	<b>MF.349</b>	Valve Seal Forming Tool
<b>MF.314</b>	Lever Fulcrum Height Setting Gauge	<b>MF.350</b>	Valve Circlip Replacer
<b>MF.407</b>	Lever Fulcrum Height-Setting Gauge	<b>MF.351</b>	Valve Plug Remover and Replacer
<b>MF.315A</b>	Main Drive Shaft Retainer Needle Bearing and Seal Remover/Replacer	<b>MF.352</b>	Control Valve Spring Retainer
<b>MF.331</b>	Transmission Input Shaft Oil Seal Replacer	<b>MF.353</b>	Control Valve Body 'O' Ring Guide
<b>MF.414/1</b>	ZF. Synchromesh Hub Centralising Pin	<b>MF.354</b>	Control Valve Body Replacer
<b>MF.414/2</b>	Clamp Bolt	<b>MF.360</b>	Hydraulic Pump Adjusting Kit Comprising:— MF.356, 357A, 359
<b>MF.414/3</b>	Locating Peg	<b>MF.356</b>	Position and Draft Control Setting Gauge
<b>MF.415</b>	ZF. Synchromesh Hub Assembly Ring	<b>MF.357A</b>	Dummy Bolt and Screwdriver Adjuster
<b>MF.415/2</b>	ZF. Synchromesh Hub Assembly Plate	<b>MF.359</b>	Pressure Control Bleed Pipe
<b>KMF.1004/1</b>	Mainshaft Oil Seal Protector Sleeve	<b>MF.417</b>	Quadrant Lever Retaining Tool
<b>KMF.1004/2</b>	Guide—Protector	<b>MF.364</b>	Oil Seal Replacer (P.t.o.)
<b>KMF.1004/3</b>	Guide—Protector	<b>810</b>	Hydraulic Pressure and Flow Test Fixture (Main Tool)
<b>MF.421</b>	Needle Roller Bearing and Seal Replacer	<b>MF.810-1</b>	Adaptor
<b>MF.422</b>	Needle Roller Bearing and Seal Remover	<b>MF.810-4</b>	Multi-Power Pump Flow Adaptor
<b>7600B</b>	Flywheel Spigot Bearing Remover (Main Tool)	<b>MF.810-6</b>	I.p.t.o. Pressure Gauge Adaptor
<b>MF.7600-1</b>	Flywheel Spigot Bearing Remover Adaptor	<b>MULTI-PURPOSE &amp; MISCELLANEOUS TOOLS</b>	
<b>P.T.O. &amp; HYDRAULICS</b>			
<b>MF.163</b>	Spring Retainer Nut Wrench	<b>13</b>	Torque Wrench
<b>MF.166</b>	Hydraulic Adaptor for Lift Cover	<b>MF.148A</b>	Hydraulic Pressure Test Equipment (Main Tool)
<b>MF.167</b>	P.t.o. Oil Seal Pilot	<b>MF.195A</b>	Bearing Cups Remover/Replacer (Main Tool)
<b>MF.168</b>	P.t.o. Shaft Oil Seal Remover	<b>MF.200</b>	Hand Press (Main Tool)
<b>MF.195-5A</b>	P.t.o. Needle Bearing Remover/Replacer	<b>MF.260</b>	Low Pressure Hydraulic Test Set (Main Tool)
<b>MF.195-6</b>	Two Speed P.t.o. Shaft Needle Bearing Remover/Replacer	<b>MF.278</b>	Dial Test Indicator Gauge
<b>MF.418</b>	Hydraulic Lift Cover Remover/Replacer	<b>MS.2700</b>	Tractor Splitting Kit
<b>MF.260-1</b>	Multi-Power Hydraulic Test Adaptor	<b>MS.2700-1</b>	Rails
<b>MF.260-3</b>	Multi-Power Hydraulic Adaptor	<b>MS.2700-2</b>	Fixed Stand
<b>MF.260-4</b>	Multi-Power Pressure Test Adaptor	<b>MS.2700-3</b>	Mobile Stand
<b>MF.419</b>	Zero Leak Piston Seal Replacer	<b>MS.2700-4</b>	Height Adjusting Handle
		<b>550</b>	Driver Handle (Main Tool)
		<b>555</b>	Three Leg Adjustable Puller (Main Tool)
		<b>MF.1105</b>	Bearing Remover (Main Tool)
		<b>7065M</b>	Heavy Duty Circlip Pliers
		<b>7065MP</b>	Circlip Plier Points
		<b>7066</b>	Circlip Pliers
		<b>MF.6312B</b>	Universal Puller
		<b>T.4062A</b>	Universal Pre-load Gauge
		<b>MF.365</b>	Cab Lifting Jack and Support Stand
		<b>MF.365-2</b>	Cab Stand Adaptors

**MF 600 SERIES TRACTOR**  
**WORKSHOP SERVICE MANUAL**  
**PART 1**

**Publication No. 1856 274 M1**

comprising

- A GENERAL SPECIFICATION
- B REGULAR MAINTENANCE
- C PRE-DELIVERY AND INSTALLATION

## SPECIFICATION

## Part 1 — Section A

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## SPECIFICATION

### ENGINE

**Make:** Perkins, to MF specification  
**Type and Model:** Four-stroke, direct injection diesel A4.236  
**Number of Cylinders:** Four  
**Bore:** 98,4 mm (3.875 in)  
**Stroke:** 127 mm (5 in)  
**Capacity:** 3,86 litre (236 in<sup>3</sup>)  
**Compression Ratio:** 16:1  
**Firing Order:** 1, 3, 4, 2  
**Horsepower:** 66 PS (48,5 kW) at 2000 rev/min. (DIN 70020)  
 69 hp at 2000 rev/min (B.S. AU 141: 1967 Ambient Conditions)  
**Maximum Torque** (at 1300 rev/min): 255 Nm (188 lbf ft) (DIN 70020)  
**Lubrication:** Throwaway, cannister type full flow external filter  
**Valves:** Overhead, pushrod operated  
**Valve Tip Clearance** (Inlet and Exhaust): 0,30 mm (0.012 in) cold, 0,25 mm (0.010 in) hot

### FUEL SYSTEM AND AIR CLEANER

**Fuel Lift Pump:** A.C. Delco with hand primer  
**Fuel Filter:** C.A.V. filter, with transparent sediment bowl  
**Injection Pump:** C.A.V. Distributor type, with mechanical governor  
**Engine Speeds** (no load): Idling: 700 to 750 rev/min  
 Maximum: 2160 rev/min  
**Injection Timing:** 23° B.T.D.C.  
**Injectors:** C.A.V. type nozzles and nozzle holders  
 Initial setting pressure: 17,73 N/mm<sup>2</sup> (175 Atmosphere). Working Pressure: 17,23 N/mm<sup>2</sup> (170 Atmosphere)  
**Easy Starting Aid:** C.A.V. Thermostart  
**Air Cleaner:** Two stage, dry element, removable for cleaning with warning light or oil bath air cleaner

### ELECTRICAL SYSTEM

**Voltage:** 12 volt. NEGATIVE EARTH  
**Battery:** Normal Duty 96 Ah, Heavy Duty 125 Ah  
**Starter Motor:** Lucas M50 with a solenoid engaged pinion. Safety device operated by the dual range selector.  
**Alternator:** UK. Lucas 23 ACR or Motorola 55 Amp  
 France: Motorola 55 Amp  
**Light Bulb Sizes:**  
 Headlights 45/40W  
 Side Lights 5W  
 Rear Lights 5W, 21W  
 Brake Lights 21W  
 Number Plate Lights 5W  
 Plough Light Halogen 55W  
 Panel Lights 2-2W  
 Interior Light 5W

### Fuses—Instrument Panel Fuse Box:

		Continuous Rate
Plough Light RH Side/Tail	20A	8A
Panel Illumination	20A	8A
Cigar Lighter Illumination		
LH Side/Tail		
Dip Beam Headlights	20A	8A
Main Beam Headlights	20A	8A
Stop Lights	20A	8A
Flashers	20A	8A

Air Cleaner Warning Light		
Gauges and Warning Lights	20A	8A
Cigar Lighter and Horn	20A	8A
Thermostart	40A	16A
Hazard Warning	40A	16A

### Fuses—Cab Roof Fuse Box

Roof Work Lights	20A	8A
Radio	20A	8A
Interior Light	20A	8A
Wiper	20A	8A
Heater Control Illumination	20A	8A
Heater Blower	20A	8A

**Trailer Socket** 7 pin

**Fresh Air Blower:** Three speed blower drawing fresh air through a paper filter element

### COOLING SYSTEM

**Type:** Thermostat controlled with centrifugal pump to assist circulation. Four bladed fan driven by a belt from the crankshaft.

**Fan Belt Deflection** (Total): 19 mm ( $\frac{3}{4}$  in) midway between the fan pulley and the crankshaft pulley.

### TRANSMISSION

**Clutch:** l.p.t.o. Tractors 305 mm (12 in) split torque  
 Live P.t.o. and cold climate: 254×12 in) dual clutch

**Twelve Speed Gear Box** (Synchro 12): The twelve speed gearbox has twelve forward speeds and four reverse speeds. This is achieved by using a three forward speed and one reverse speed gear box with synchromesh on second and third gears. This is compounded by a High/Low manual shift range with synchromesh and a High/Low epicyclic range

**Eight Speed Mk I Gear Box:** The eight speed Mk I gear box has eight forward speeds and two reverse speeds. This is achieved by using a four forward and one reverse speed gearbox with synchromesh on third and fourth gear, compounded by an epicyclic unit.

**Mk I or II Multi-Power Gearbox:** The Multi-Power Gear Box has twelve forward speeds and four reverse speeds. This is achieved by using a three forward and one reverse speed gearbox with synchromesh on second and third gears. This is compounded by an epicyclic unit and an additional set of high ratio constant mesh gears actuated by a hydraulic clutch.

**Gearbox Epicyclic Reduction:** 4:1

**Final Drive:** Bevel drive with epicyclic final hub reduction giving an overall ratio of 3.14:1

### POWER TAKE OFF

**Live Power Take-off:** Engine speed drive is engaged by a lever to the left of the operator's seat.

**Independent Power Take-off:** Engine speed i.p.t.o. is engaged by a lever to the left of the operator's seat. The i.p.t.o. clutch is a multi-plate, wet clutch.

**Reduction Ratio:** 540 rev/min 3.15:1 } High Flow  
 1000 rev/min 1.69:1 } Pump

**P.t.o. Speeds:** 540 rev/min at 1688 engine rev/min  
 1000 rev/min at 1690 engine rev/min

**Power Take-off Shaft:** Six spline (540 rev/min), 21 spline (1000 rev/min), 35 mm (1.38 in) diameter, with annular groove for securing p.t.o. couplings.

## SPECIFICATION

**HYDRAULIC SYSTEM**

**Ferguson Pump:** Four cylinder, scotch yoke type pump driven from the forward end of the p.t.o. shaft, supplies oil, under pressure to the ram cylinder and four external take-off points.

**Tapping Point Thread Sizes:** Top:  $\frac{3}{8}$  N.P.S.M.  
Side:  $\frac{3}{8}$  N.P.T.F. (Two—one each side)

**Pressure Control System:** The Pressure Control system operates from 10.0 to 214 bar (145 to 3100 lbf/in)

**Pump Maximum Output:** 26.2

**High Flow Pump:** 26,2 litre min (5.76 Imp. gal/min) at 2200 engine rev/min

**Standard Flow Pump:** 15,10 litre/min (3.32 Imp. gal/min) at 2200 engine rev/min

**Pump Maximum Pressure:** 20,7 N/mm<sup>2</sup> (3000 lbf/in<sup>2</sup>)

**Linkage:** Heavy Duty Category II rear linkage with inter-changeable Cat. I and II ball ends  
A barrel turnbuckle type adjustable top link is fitted, plus check chain

**Position Control lever:** A remote position control lever is provided, located externally on the right-hander fender valance.

**Levelling Lever:** An extension to the levelling lever is provided within the cab, so that linkage adjustments can be made from the tractor seat.

**Maximum Lift Capacity** (Lower Link ends—Links Horizontal): 1796 kg (3964 lb)  
With assistor ram fitted 2688 kg (5933 lb)

**AUXILIARY HYDRAULICS**

**Auxiliary Pump:** Gear type pump with separate gear train and output for Multi-Power and i.p.t.o. supply

**Pump Output:** To auxiliaries 36.0 litre/min (7.92 Imp. gal/min)  
To Multi-Power/i.p.t.o.: 19.0 litre/min (4.16 Imp. gal/min)

**Relief Valve Pressure:** Auxiliaries: 17.2 to 19,3 N/mm<sup>2</sup> (2500 to 2800 lbf/in<sup>2</sup>)  
Multi-Power/i.p.t.o.: 4,8 to 6,9 N/mm<sup>2</sup> (700 to 1000 lbf/in<sup>2</sup>)

**Multi-Power/i.p.t.o. Pump:** Gear type pump

**Pump Output:** 19,0 litre/min (4.16 Imp. gal/min)

**Relief Valve Pressure:** 4,8 to 6,9 N/mm<sup>2</sup> (700 to 1000 lbf/in<sup>2</sup>)

**Transmission, Auxiliary Hydraulic Pump and Multi-Power Pump Oil Filter:** 40 Micron filter externally mounted under centre housing with woven stainless element which can be removed, washed and refitted

Standard Flow Ferguson Pump				
Applica- tion	Output at 2200 engine rev/min (664 p.t.o. rev/min)			
	litre/min	Imp. gal/min	Hydraulic PS	Hydraulic hp
Ferguson Pump Only	15,10	3.32	5,7	5.57
Auxiliary Pump Only	36,0	7.92	11,3	11.1
Combined Flow	51,0	11.25	15,9	15.75

High Flow Ferguson Pump				
Applica- tion	Output at 2200 engine rev/min (1157 p.t.o. rev/min)			
	litre/min	Imp. gal/min	Hydraulic PS	Hydraulic hp
Ferguson Pump Only	26,2	5.76	9,70	9.64
Auxiliary Pump Only	36,0	7.92	11,3	11.1
Combined Flow	62,20	13.66	19,2	19.16

**BRAKES**

**Type:** Hydraulically operated. Oil immersed 222,4 mm (8.75 in) five plate disc brakes, operated together or independently to assist steering.

**Parking Brake:** Operates on both rear brakes independently of foot brake.

**Trailer Brakes:** Hydraulically operated by the foot brake pedals

**STEERING**

**Type:** Orbital Hydrostatic, with a gear pump integral reservoir and filter

**Toe-in:** 6,35 mm ( $\frac{1}{4}$  in)

**Turns Lock to Lock:** 4

**FRONT AXLE**

**Type:** Three section heavy duty adjustable for track width

**Wheel Camber:** 4°

**Wheel Castor:** H.D. 0  
N.D. 4° 56'

**TRACK ADJUSTMENTS**

All adjustments are in 102 mm (4 in) increments.

**Front Track:**

7.50—16 Tyres	Normal duty std. clearance 1245 to 1854 mm (49 to 73 in)
7.50—18 Tyres	1245 to 1854 mm (49 to 73 in)
6.00—19 Tyres	1219 to 1829 mm (48 to 72 in)
	Heavy duty high clearance
7.50—16 Tyres	1372 to 1778 mm (54 to 70 in)
7.50—18 Tyres	1346 to 1763 mm (53 to 69 in)
6.00—19 Tyres	1321 to 1727 mm (52 to 68 in)

**Rear Track:** 1524 to 2235 mm (60 to 88 in)

**Seat:** Gramner DS 85/H4

**WHEELS AND TYRES**

**Front:** 4.50×19 Wheels fitted with 6.00-19 4 or 6 ply tyres.

5.50×16 Wheels fitted with 7.50-18 6 or 8 ply tyres.

5.50×18 Wheels fitted with 7.50-18 6 ply tyres

**Rear:** 16×30 Pressed steel fitted with 14-30 6 ply tyres.

14×30 Pressed steel fitted with 14-30 6 ply tyres.

14×34 Pressed steel fitted with 14-34 6 ply tyres.

10×36 Pressed steel fitted with 11 or 12-36 6 ply tyres.

11×38 Pressed steel fitted with 12-38 6 ply tyres.

**WHEEL WEIGHTS**

**Front:** (Two half weights per wheel):

6.00-16 tyre each weight 21 kg (46 lb) Total 84 kg (185 lb)

**SPECIFICATION**

6.00-19 tyre, each weight 34 kg (75 lb) Total 136kg (300 lb)  
 (Inner and Outer wheel weights)  
 7.50-16 tyre, Outer 32,2 kg (71 lb)  
 Inner 32,7 kg (72 lb)  
 Total four weights 130 kg (286 lb)

**Rear:** First weight—43 kg (95 lb)  
 Three further weights per wheel of 54 kg (119 lb)  
 Total 411 kg (907 lb)

**Water Ballasting:** (Rear) Additional weight for each rear tyre:—  
 14-30 Tyres: 266 kg (587 lb)  
 14-34 Tyres: 308 kg (680 lb)  
 12-36 Tyres: 143 kg (315 lb)  
 12-38 Tyres: 222 kg (490 lb)  
 11-36 Tyres: 159 kg (351 lb)

**CAPACITIES**

**Fuel Tank:** 77,28 litre (135 Imp. pt)  
**Cooling System:** 14,2 litre (25 Imp. pt) plus heater  
**Engine Sump (inc. filter):** 7,1 litre (13 Imp. pt)  
**Transmission:** 32,4 litre (57 Imp. pt) *39 - 69*  
 Multi-Power 31,8 litre (56 Imp. pt) *39 - 69*  
 Eight Speed 40 litre (70 Imp. pt) *39 - 69*  
**Epicyclic Hubs:** 1,71 litre (3 Imp. pt)  
**Power Steering Reservoir:** 1,2 litre (2 Imp. pt)  
**P.t.o. Pulley (H.D.):** 1,14 litre (2 Imp. pt)

**GENERAL DIMENSIONS (Fig. 1)**

**A. Overall Height** (over exhaust) 2720 mm (107 in)  
**Note:** A1 When roof escape hatch is open in the ventilator position the overall height is increased to 2921 mm (115 in).

**B. Overall Width:** 1850 mm (73 in)  
**C. Overall Length:** 3778 mm (149 in)  
**D. Wheelbase** 2250 mm (89 in)

**Ground Clearance:**

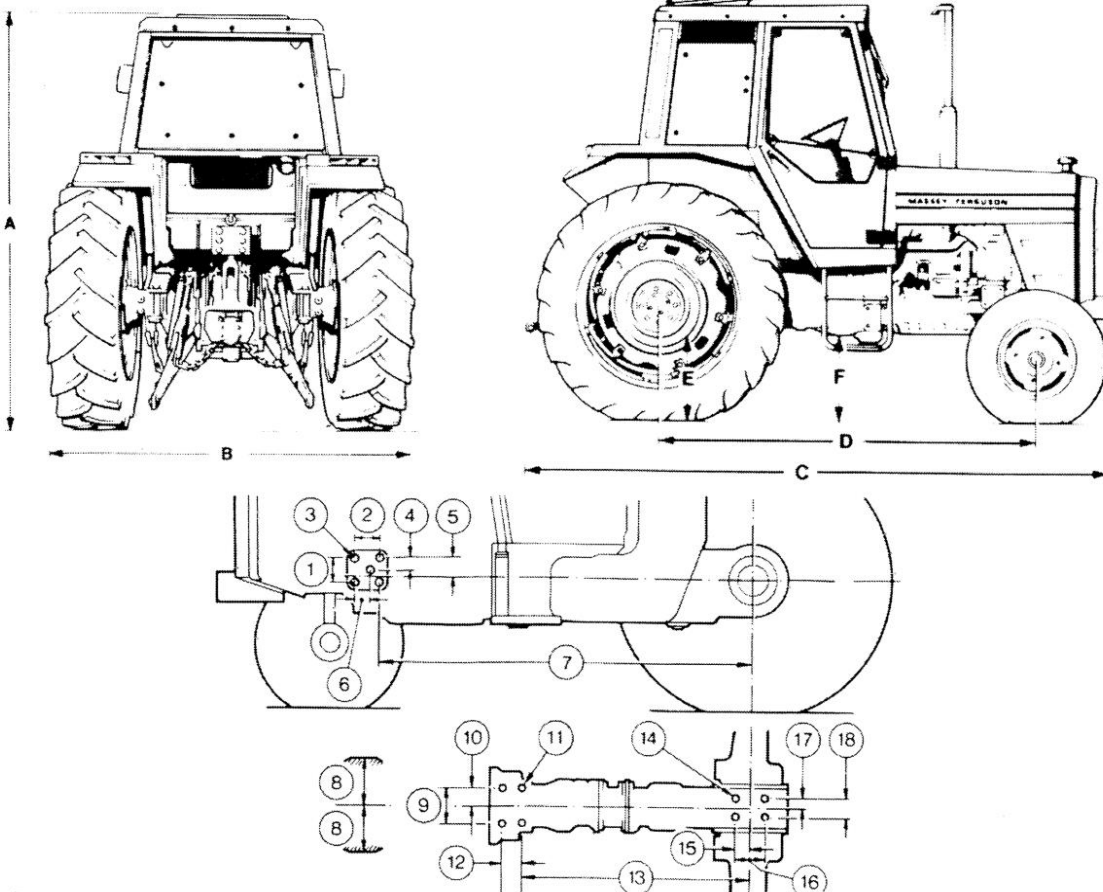
**E. Under Drawbar Frame:** 394 mm (15 in)  
**F. Under Clutch Housing:** 480 mm (19 in)

**Turning Circle:** 8357 mm (27 ft)

**Weight** (with fuel, oil and water) 2893 kg (6386 lb)  
 Total Possible maximum weight with Ballasted Tyres—  
 Maximum recommended wheel weights and front weights—

**Mounting Points (Fig 2)**

1. 102 mm (4 in)
2. 102 mm (4 in)
3. 10 holes (5 each side) tap  $\frac{3}{8}$  in 10 UNC 2B×32 mm (1 $\frac{1}{4}$  in)
4. 57 mm (2.25 in)
5. 73 mm (2.87 in)
6. 260 mm (10.25 in)
7. 2052 mm (80.8 in)
8. 154 mm (6 in)
9. 184 mm (7.25 in)
10. 92 mm (3.62 in)
11. 4 holes tap  $\frac{3}{8}$  in 11 UNC 3B×32 mm (1 $\frac{1}{4}$  in)
12. 102 mm (4 in)
13. 1243 mm (49 in)
14. 4 holes tap  $\frac{3}{8}$  in 10 UNC 3B×27 mm (1 $\frac{1}{8}$  in)
15. 76 mm (3 in)
16. 152 mm (6 in)
17. 43 mm (1.69 in)
18. 86 mm (3.38 in)



## SPECIFICATION

**ENGINE****Make:** Perkins, to MF specification**Type and Model:** Four-stroke, direct injection diesel A4.248**Number of Cylinders:** Four**Bore:** 100,96 mm (3-975 in)**Stroke:** 127 mm (5 in)**Capacity:** 4,06 litre (248 in<sup>3</sup>)**Compression Ratio:** 16:1**Firing Order:** 1, 3, 4, 2**Horsepower:** 75 PS (56 kW) at 2200 rev/min (DIN 70020)

79 hp at 2200 rev/min (B.S. AU 141: 1967 Ambient Conditions)

**Maximum Torque** (at 1400 rev/min): 275 Nm (202.5 lbf ft) (DIN 70020)

287 Nm (212 lbf ft) (B.S. AU 141: 1967 Ambient Conditions)

**Lubrication:** Throwaway, cannister type full flow external filter**Valves:** Overhead, pushrod operated**Valve Tip Clearance** (Inlet and Exhaust): 0,30 mm (0-012 in) cold, 0,025 mm (0-010 in) hot**FUEL SYSTEM AND AIR CLEANER****Fuel Lift Pump:** A.C. Delco, with hand primer**Fuel Filter:** C.A.V. filter, with sediment bowl**Injection Pump:** C.A.V. Distributor type, with mechanical governor**Engine Speeds** (No load): Idling: 700 to 750 rev/min  
Maximum: 2350 rev/min**Injection Timing:** 24° B.T.D.C.**Injectors:** C.A.V. type nozzles and nozzle holders**Easy Starting Aid:** C.A.V. Thermostat Mark III C**Air Cleaner:** Two stage, dry element, removable for cleaning with warning light, or oil bath air cleaner**ELECTRICAL SYSTEM****Voltage:** 12 volt. NEGATIVE EARTH**Battery:** Normal Duty 96 Ah, Heavy Duty 125 Ah**Starter Motor:** Lucas M50 with a solenoid engaged pinion. Safety device operated by the dual range selector.**Alternator:** UK: Lucas 23 ACR or Motorola 55 Amp  
France: Motorola 55 Amp**Light Bulb Sizes:**

Headlights 45/40W

Side Lights 5W

Rear Lights 5W, 21W

Brake Lights 21W

Number Plate Lights 5W

Plough Light Halogen 55W

Panel Lights 2-2W

Interior Light 5W

**Fuses—Instrument Panel Fuse Box:**

		Continuous Rate
Plough Light RH Side/Tail	20A	8A
Panel Illumination	20A	8A
Cigar Lighter Illumination LH Side/Tail		
Dip Beam Headlights	20A	8A
Main Beam Headlights	20A	8A
Stop Lights	20A	8A
Flashers		
Air Cleaner Warning Light		
Gauges and Warning Lights	20A	8A
Cigar Lighter and Horn	20A	8A

Thermostat	40A	16A
Hazard Warning	40A	16A

**Fuses—Cab Roof Fuse Box**

Roof Work Lights	20A	8A
Radio	20A	8A
Interior Light	20A	8A
Wiper	20A	8A
Heater Control Illumination	20A	8A
Heater Blower	20A	8A

**Trailer Socket:** 7 pin**Fresh Air Blower:** Three speed blower drawing fresh air through a paper filter element.**COOLING SYSTEM****Type:** Thermostat controlled with centrifugal pump to assist circulation. Six bladed fan driven by a belt from the crankshaft.**Fan Belt Deflection** (Total): 19 mm ( $\frac{3}{4}$  in) midway between the fan pulley and the crankshaft pulley.**TRANSMISSION****Clutch** i.p.t.o. Tractors: 305 mm (12 in) split torque.  
Live P.t.o. and cold climate: 254×305 mm (10×12 in) dual clutch**Twelve Speed Gearbox** (Synchro 12): The twelve speed gear box has twelve forward speeds and four reverse speeds. This is achieved by using a three forward speed and one reverse speed gear box with synchromesh on second and third gears. This is compounded by a High/Low manual shift range with synchromesh and a High/Low epicyclic range.**Eight Speed Mk II Gear Box:** The eight speed Mk II gear box has eight forward speeds and two reverse speeds. This is achieved by using a four forward and one reverse speed gearbox with synchromesh on third and fourth gear, compounded by an epicyclic unit.**Multi-Power Mk II Gearbox:** The Multi-Power Mk II gear box has twelve forward speeds and four reverse speeds. This is achieved by using a three forward and one reverse speed gearbox with synchromesh on second and third gears. This is compounded by an epicyclic unit and an additional set of high ratio constant mesh gears actuated by a hydraulic clutch.**Gearbox Epicyclic Reduction:** 4:1**Final Drive:** Bevel drive with epicyclic final hub reduction giving an overall ratio of 4:24:1**POWER TAKE OFF****Live Power Take-off:** Engine speed drive is engaged by a lever to the left of the operator's seat.**Independent Power Take-off:** Engine speed i.p.t.o. is engaged by a lever to the left of the operator's seat. The i.p.t.o. clutch is a multi-plate, wet clutch.**Reduction Ratio:**

540 rev/min 3-3125:1 Standard pump

1000 rev/min 1-9:1 High flow pump

**P.t.o. Speeds:** High flow pump, 540 rev/min at 1893 engine rev/min. Standard pump 540 rev/min at 1789 engine rev/min.

1000 rev/min at 1900 engine rev/min.

**Power Take-off Shaft:** Six spline (540 rev/min), 21 spline (1000 rev/min), 35 mm (1-38 in) diameter, with an annular groove for securing p.t.o. couplings.

## SPECIFICATION

### HYDRAULIC SYSTEM

**Ferguson Pump:** Four cylinder, scotch yoke type pump driven from the forward end of the p.t.o. shaft, supplies oil, under pressure to the ram cylinder and four external take-off points

**Tapping Point Thread Sizes:** Top  $\frac{3}{8}$  N.P.S.M.  
Side:  $\frac{3}{8}$  N.P.T.F. (Two—One each side)

**Pressure Control System:** The Pressure Control system operates from 0.35 to 21.4 N/mm<sup>2</sup> (200 to 3100 lbf/in<sup>2</sup>)

**Pump Maximum Output:** High flow pump, 25.9 litre/min (5.7 Imp. gal/min) at 2200 engine rev/min.  
Standard flow pump, 16 litre/min (3.5 Imp. gal/min) at 2200 engine rev/min

**Pump Maximum Pressure:** 20.7 N/mm<sup>2</sup> (3000 lbf/in<sup>2</sup>)

**Linkage:** Heavy Duty Category II rear linkage with hook type quick release inter-changeable Cat. I and II ball ends is fitted and is equipped with one assistor ram  
A barrel turnbuckle type adjustable top link is fitted, plus check chains.

**Position Control Lever:** A remote position control lever is provided, located externally on the right-hand fender valance.

**Levelling Lever:** An extension to the levelling lever is provided within the cab, so that linkage adjustments can be made from the tractor seat.

**Maximum Lift Capacity (Lower Link ends—Links Horizontal):** with 1 Assistor Ram—2227kg (4916 lb)

### AUXILIARY HYDRAULICS

**Auxiliary Pump:** Gear type pump with separate gear train and output for Multi-Power and i.p.t.o. supply.

**Pump Output:** To auxiliaries 35.1 litre/min (7.72 Imp. gal/min)  
To Multi-Power/i.p.t.o.: 19.0 litre/min (4.16 Imp. gal/min)

**Relief Valve Pressure:** Auxiliaries 17.3 to 19.3 N/mm<sup>2</sup> (2500 to 2800 lbf/in<sup>2</sup>)  
Multi-Power/i.p.t.o.: 4.8 to 6.9 N/mm<sup>2</sup> (700 to 1000 lbf/in<sup>2</sup>)

**Multi-Power/ i.p.t.o. Pump:** Gear Type pump

**Pump Output:** 19.0 litre/min (4.16 Imp. gal/min)

**Relief Valve Pressure:** 4.8 to 6.9 N/mm<sup>2</sup> (700 to 1000 lbf/in<sup>2</sup>)

**Transmission, Auxiliary Hydraulic Pump and Multi-Power Pump Oil Filter:** 40 Micron filter externally mounted under centre housing with woven stainless steel element which can be removed, washed and refitted

Standard Flow Ferguson Pump				
Applica- tion	Output at 2200 engine rev/min (664 p.t.o. rev/min)			
	litre/min	Imp. gal/min	Hydraulic PS	Hydraulic hp
Ferguson Pump Only	14.36	3.16	4.7	5.77
Auxiliary Pump Only	39.0	8.58	12.0	11.66
Combined Flow	54.5	12.0	17.0	16.32

### High Flow Ferguson Pump

Applica- tion	Output at 2200 engine rev/min (1157 p.t.o. rev/min)			
	litre/min	Imp. gal/min	Hydraulic PS	Hydraulic hp
Ferguson Pump Only	25.9	5.7 (6.1)	9.6	9.63
Auxiliary Pump Only	35.1	7.72	11.0	10.8
Combined Flow	60.5	13.33 (13.8)	18.9	18.6

### BRAKES:

**Type:** Oil immersed 222.4 mm (8.75 in) hydraulically operated five plate disc-brakes, operated together or independently to assist steering.

**Parking Brake:** Operates on both rear brakes independently of foot brake.

**Trailer Brakes:** Hydraulically operated by the foot brake pedals.

### STEERING

**Type:** Orbitrol Hydrostatic, with a gear pump integral reservoir and filter.

**Toe-in:** 6.35 mm ( $\frac{1}{4}$  in)

**Turns Lock to Lock:** 3:3

### FRONT AXLE..

**Type:** Three section heavy duty adjustable for track width.

**Wheel Camber** 3° 30'

**Wheel Castor** 0°

### TRACK ADJUSTMENTS

All adjustments are in 102 mm (4 in) increments.

#### Front Track:

7.50—13 Tyres 1346 to 1753 mm (53 to 69 in)

7.50—16 Tyres 1372 to 1778 mm (54 to 70 in)

#### Rear Track:

P.A.V.T. 1422 to 2388 mm (56 to 94 in)

Pressed steel wheels 1524 to 2388 mm (60 to 94 in)

**Seat:** Gramner DS 85/H4

### WHEELS AND TYRES

**Front:** 5.50×18 Wheels fitted with 7.50-18 8 ply tyres.  
5.50×16 Wheels fitted with 7.50-16 8 ply or 6 ply.

**Rear:** 14×30 P.A.V.T. cast centre wheels fitted with 14.30 or 15.30 6 ply tyres. 12×38 pressed steel or P.A.V.T. cast centre wheels fitted with 12.38 or 14.38 6 ply tyres.

14×34 pressed steel or P.A.V.T. cast centre wheels fitted with 14.34 or 15.34 6 ply tyres.

### WHEEL WEIGHTS

**Front:** 2 outer weights 32.2 kg (71 lb). 2 Inner weights 32.7 kg (72 lb). Total 130 kg (286 lb)

**Rear:** Up to 4 weights per side, each weight 54 kg (119 lb) Total 453 kg (953 lb)

**Water Ballasting (100%)** Additional weight for each rear tyre:—

12-38 Tyres: 266 kg (587 lb)

14-34 Tyres: 352 kg (777 lb)

14-30 Tyres: 339 kg (748 lb)

15-34 Tyres: 430 kg (949 lb)

15-30 Tyres: 408 kg (900 lb)

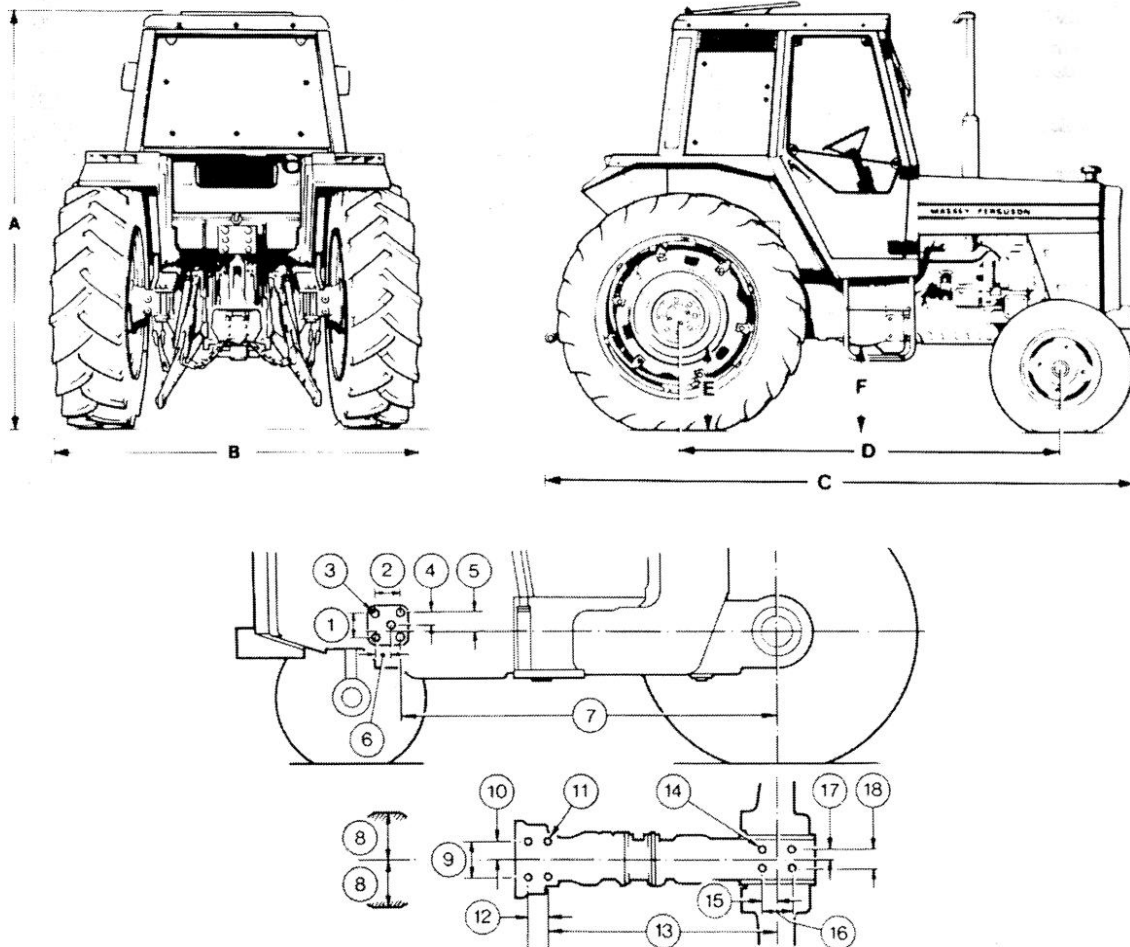
**CAPACITIES****Fuel Tanks:** 145 litre (32 Imp. gal)**Cooling System:** 14,2 litre (25 Imp. pt.) Plus heater**Engine Sump (inc. filter):** 8 litre (14 Imp. pt)**Transmissions**

Twelve Speed: 39 litre (69 Imp. pt)

Multi-Power: 39 litre (69 Imp. pt)

**Epicyclic Hubs:** 3,1 litre (5.4 Imp. pt)**Power Steering Reservoir:** 1,2 litre (2 Imp. pt)**P.t.o. Pully (H.D.)** 1,14 litres (2 Imp. pt)**GENERAL DIMENSIONS (Fig. 1)****A.** Overall Height (over exhaust) 2720 mm (107 in)**Note:** A1 When roof escape hatch is open in the ventilator position the overall height is increased to 2921mm (115 in).**B.** Overall Width 2050 mm (81 in)**C.** Overall Length 3750 mm (148 in)**D.** Wheelbase 2286 mm (90 in)**Ground Clearance:****E.** Under Drawbar Frame 390 mm (154 in)**F.** Under Clutch Housing 510 mm (20 in)**Turning Circle:** 8,36 m (27.4 ft)**Weight (with fuel, oil and water)** 3515 kg (7760 lb)**Note:** The above dimensions are for a tractor fitted with 7-50-18 8 ply front tyres and 12-38 Rear. Front track setting 1422 mm (56 in).**Mounting Points (Fig. 2)**

1. 102 mm (4 in)
2. 102 mm (4 in)
3. 10 holes (5 each side) tap  $\frac{3}{8}$  in 10 UNC 2B×32 mm (1 $\frac{1}{4}$  in)
4. 57 mm (2.25 in)
5. 73 mm (2.87 in)
6. 60 mm (2.38 in)
7. 2052 mm (80.8 in)
8. 254 mm (10 in)
9. 184 mm (7.25 in)
10. 92 mm (3.62 in)
11. 4 holes tap  $\frac{3}{8}$  in 11 UNC 3B×32 mm (1 $\frac{1}{4}$  in)
12. 102 mm (4 in)
13. 1243 mm (49 in)
13. 4 holes tap  $\frac{3}{8}$  in 10 UNC 3B×27 mm (1 $\frac{1}{8}$  in)
15. 76 mm (3 in)
16. 152 mm (6 in)
17. 43 mm (1.69 in)
18. 86 mm (3.38 in)



## SPECIFICATION

### ENGINE

**Make:** Perkins, to MF specification  
**Type and Model:** Four-stroke, direct injection diesel A4.318.2 (Revised)  
**Number of Cylinders:** Four  
**Bore:** 114 mm (4.5 in)  
**Stroke:** 127 mm (5 in)  
**Capacity:** 5.21 litres (318 in<sup>3</sup>)  
**Compression Ratio:** 16.5:1  
**Firing Order:** 1, 3, 4, 2  
**Horsepower:** 88 hp (67.7 kw) at 2000 rev/min.  
**Maximum Torque** (at 1300 rev/min): 340 Nm (254 lbf ft)  
**Lubrication:** Throwaway, cannister type full flow external filter  
**Valves:** Overhead—Pushrod operated  
**Valve Tip Clearance** (Inlet and Exhaust): 0.30 mm (0.012 in) cold, 0.25 mm (0.010 in) hot

### FUEL SYSTEM AND AIR CLEANER

**Fuel Lift Pump:** C.A.V.  
**Fuel Filter:** C.A.V. filter, with twin elements  
**Injection Pump:** C.A.V. Distributor type, with mechanical governor  
**Engine Speeds** (no load): Idling 700 to 750 rev/min  
 Maximum: 2000 rev/min  
**Injection Timing:** 28° B.T.D.C.  
**Injectors** C.A.V. type nozzles and nozzle holders  
 Initial setting pressure: 18,74 N/mm<sup>2</sup> (185 Atmosphere). Working pressure: 17,23 N/mm<sup>2</sup> (170 Atmosphere)  
**Easy Starting Aid:** C.A.V. Thermostart Mark III C  
**Air Cleaner:** A.C. Delco. Two stage, dry element, removable for cleaning with warning light.

### COOLING SYSTEM

**Type:** Thermostat controlled with centrifugal pump to assist circulation. Five bladed fan driven by a belt from the crankshaft.  
**Fan Belt Deflection** (Total): 19 mm ( $\frac{3}{4}$  in) midway between the fan pulley and the crankshaft pulley.

### ELECTRICAL SYSTEM

**Voltage:** 12 volt. NEGATIVE EARTH.  
**Battery:** Normal Duty 125 Ah, Heavy Duty 180 Ah  
**Starter Motor:** Lucas with a solenoid engaged pinion. Safety device operated by the dual range selector.  
**Alternator:** UK: Lucas or Motorola 55 Amp  
 France: Motorola 55 Amp

### Light Bulb Sizes

Headlights 45/50W  
 Side Lights 5W  
 Rear Lights 5W, 21W  
 Brake Lights 21W  
 Number Plate Lights 5W  
 Plough Light Halogen 55W  
 Panel Lights 2.2W  
 Interior Light 5W

### Fuses—Instrument Panel Fuse Box:

		Continuous Rate
Plough Light RH Side/Tail	20A	8A
Panel Illumination	20A	8A
Cigar Lighter		
LH Side/Tail		
Dip Beam Headlights	20A	8A
Main Beam Headlights	20A	8A
Stop Lights	20A	8A
Flashers		
Air Cleaner Warning Light		
Gauges and Warning Lights	20A	8A
Cigar Lighter and Horn	20A	8A
Thermostart	40A	16A
Hazard Warning	40A	16A

### Fuses—Cab Roof Fuse Box

Roof Work Lights	20A	8A
Radio	20A	8A
Interior Light	20A	8A
Wiper	20A	8A
Heater Control		
Illumination	20A	8A
Heater Blower	20A	8A

**Trailer Socket:** 7 pin

**Fresh Air Blower:** Three speed blower drawing fresh air through a paper filter element

**Eight Speed Mk II Gearbox:** The eight speed Mk II gearbox has eight forward speeds and two reverse speeds. This is achieved by using a four forward and one reverse speed gearbox with synchromesh on third and fourth gear, compounded by an epicyclic unit

**Multi-Power Mk II Gearbox** The Multi-Power Mk II Gearbox has twelve forward speeds and four reverse speeds. This achieved by using a three forward and one reverse speed gearbox with synchromesh on second and third gears. This is compounded by an epicyclic unit and an additional set of high ratio constant mesh gears actuated by a hydraulic clutch

### TRANSMISSION

**Clutch:** 330 mm (13 in) split torque

**Twelve Speed Gearbox** (Synchro 12): The twelve speed gearbox has twelve forward speeds and four reverse speeds. This is achieved by using a three forward speed and one reverse speed gearbox with synchromesh on second and third gears. This is compounded by a High/Low manual shift range with synchromesh and a High/Low epicyclic range.

**Gearbox Epicyclic Reduction:** 4:1

**Final Drive:** Bevel drive with epicyclic final hub reduction giving an overall ratio of 4.24:1.

### POWER TAKE OFF

**Independent Power Take-off:** Engine speed i.p.t.o. is engaged by a lever to the left of the operator's seat. The i.p.t.o. clutch is a multi-plate wet clutch.

**Reduction Ratio:** 540 rev/min 3.51:1  
 1000 rev/min 1.69

**P.t.o. Speeds:** 540 rev/min at 1700 engine rev/min.  
 1000 rev/min at 1690 engine rev/min.

**Power Take-off Shaft:** Six spline (540 rev/min), 21 spline (1000 rev/min), 35 mm (1.38 in) diameter, with annular groove for securing p.t.o. couplings.

## SPECIFICATION

### HYDRAULIC SYSTEM

**Ferguson Pump:** Four cylinder, scotch yoke type pump driven from the forward end of the p.t.o. shaft, supplies oil, under pressure to the ram cylinder and four external take-off points.

**Tapping Point Thread Sizes:** Top:  $\frac{3}{8}$  N.P.S.M. Side:  $\frac{3}{8}$  N.P.T.F. (Two—One each side)

**Pressure Control System:** The Pressure Control system operates from 0.35 to 21.4 Nm<sup>2</sup> (200 to 3100 lbf/in<sup>2</sup>)

**Pump Maximum Output:** 26.2 litre/min (5.76 Imp. gal/min) at 1183 engine rev/min.

**Pump Maximum Pressure:** 20.7 N/mm<sup>2</sup> (3000 lbf/in<sup>2</sup>)

**Linkage:** Heavy Duty Category II rear linkage with hook type quick release inter-changeable Cat. I and II ball ends is fitted and is equipped with one or two assistor rams.

A barrel turnbuckle type adjustable top link is fitted, plus check chains

**Position Control Lever:** A remote position control lever is provided, located externally on the right-hand fender valance.

**Levelling Lever:** An extension to the levelling lever is provided within the cab, so that linkage adjustments can be made from the tractor seat.

**Maximum Lift Capacity** (Lower Link ends— Links Horizontal): with 1 Assistor Ram— 2781 kg (6130 lb) with 2 Assistor Rams— 3275 kg (7220 lb)

### AUXILIARY HYDRAULICS

**Auxiliary Pump:** Gear type pump with separate gear train and output for Multi-Power and i.p.t.o. supply.

**Pump Output:** To auxiliaries: 36 litre/min (8 Imp. gal/min). To Multi-Power/i.p.t.o.: 21.3 litre/min (4.7 Imp. gal/min)

**Relief Valve Pressure:** Auxiliaries: 17.3 to 19.3 N/mm<sup>2</sup> (2500 to 2800 lbf/in<sup>2</sup>). Multi-Power/i.p.t.o.: 4.8 to 6.9 N/mm<sup>2</sup> (700 to 1000 lbf/in<sup>2</sup>)

**Multi-Power/i.p.t.o. Pump:** Gear type pump.

**Pump Output:** 19.0 litre/min (4.1 Imp. gal/min)

**Relief Valve Pressure:** 4.8 to 6.9 N/mm<sup>2</sup> (700 to 1000 lbf/in<sup>2</sup>)

**Transmission, Auxiliary Hydraulic Pump and Multi-Power Pump Oil Filter:** 40 Micron filter externally mounted under centre housing with woven stainless steel element which can be removed, washed and refitted.

Applica- tion	Output at 1183 engine rev/min (1000 p.t.o. rev/min)			
	litre/min	Imp. gal/min	Hydraulic PS	Hydraulic hp
Ferguson Pump Only	26,2	5.76	9,3	9.21
Auxiliary Pump Only	36,0	7.92	11,0	10.8
Combined Flow	60,5	13.33	19,9	19.6

### BRAKES

**Type:** Oil immersed 222,4 mm (8.75 in) hydraulically operated five plate disc brakes, operated together or independently to assist steering.

**Parking Brake:** Operates on both brakes independently of foot brake.

**Trailer Brakes:** Hydraulically operated by the foot brake pedals

### FRONT AXLE

**Type:** Three section, adjustable heavy duty for track width

**Wheel Camber:** 5° 20'

**Wheel Castor:** 0°

### STEERING

**Type:** Orbitrol hydrostatic, with a gear pump and integral reservoir and filter

**Toe-in:** 6,35 mm ( $\frac{1}{4}$  in)

**Turns Lock to Lock:** 3.3

### TRACK ADJUSTMENTS

All adjustments are in 102 mm (4 in) increments

#### Front Track:

7.50—18 Tyres	1406—1914 mm (55 to 75 in)
7.50—20 Tyres	1400—1908 mm (55 to 75 in)
9.00—16 Tyres	1454—1962 mm (57 to 78 in)
10.00—16 Tyres	
11.00—16 Tyres	1483—1990 mm (58 to 78 in)

#### Rear Track:

P.A.V.T. Wheels	1420—2440 mm (56 to 96 in)
Pressed Steel Wheels	1626—2362 mm (64 to 93 in)

**Seat:** Grammer DS 85/H4

### WHEELS AND TYRES

**Front:** 5.50×18 Wheels fitted with 7.50-18 8 ply tyres.  
5.50×20 Wheels fitted with 7.50-20 8 ply tyres.  
8.00×16 heavy duty fitted with 9.00-16 10 ply tyres.  
10.00-16 8 ply tyres for 1.00-16 8 ply tyres.

**Rear:** 11×38 P.A.V.T. Wheels fitted with 12-38 8 ply tyres.  
12×38 pressed steel wheels fitted with 12-38 8 ply tyres.  
14×38 pressed steel or P.A.V.T. wheels fitted with 14-38 8 ply tyres or 15-34 8 ply tyres.

### WHEEL WEIGHTS

**Front:** 2 Outerweights 45 kg (99 lb) 2 Inner weights 45 kg (99 lb). Total 180 kg (396 lb)

**Rear:** Up to 4 weights per side, each weight 32.5 kg (72 lb) Total 260 kg (574 lb)

**Water Ballasting (100%)** Additional weight for each rear tyre:—

12-38 Tyres:	326 kg (720 lb)
14-34 Tyres:	434 kg. (958 lb)
14-38 Tyres:	481 kg (1061 lb)
15-34 Tyres:	486 kg (1072 lb)

### CAPACITIES

**Fuel Tank:** 145 litre (32 Imp. gal)

**Cooling System:** 15,9 litre (28 Imp pt) Plus heater

**Engine Sump** (in. filter): 9,7 litre (17 Imp pt)

#### Transmissions

Twelve Speed 36 litre (63 Imp pt)  
Eight Speed 40 litre (70 Imp pt)  
Multi-Power 36 litre (63 Imp. pt)

**Epicyclic Hubs:** 3.1 litre (5.4 Imp. pt)

**Power Steering Reservoir:** 2.8 litre (5 Imp. pt)

**P.t.o. Pulley (H.D.):** 1,14 litres (2 Imp. pt)



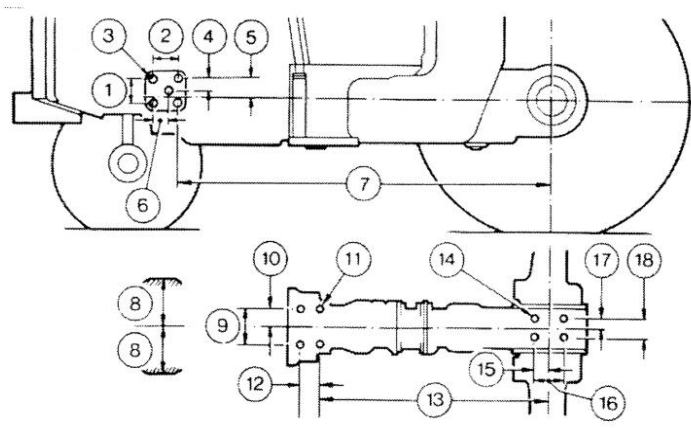
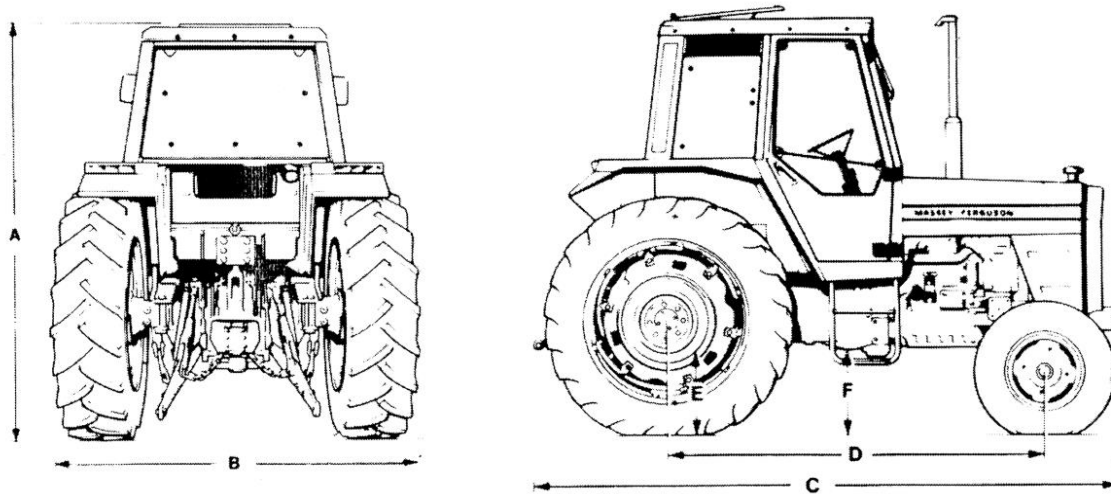
**SPECIFICATION**

**GENERAL DIMENSIONS (Fig. 1)**

- A. Overall Height** (over exhaust) 2769 mm (109 in)  
**Note:** When the roof escape hatch is open in the ventilator position the overall height is increased to 2872 mm (117 in)
- B. Overall Width:** 2016 mm (80 in)
- C. Overall Length:** 4077 mm (160 in)
- D. Wheelbase:** 2432 mm (96 in)
- Ground Clearance:**
- E. Under Drawbar Frame:** 432 mm (17 in)
- F. Under Clutch Housing:** 476 mm (19 in)
- Turning Circle:** 7,96 mm (26 ft)
- Weight** (with fuel oil and water) 3787 kg (8359 lb)
- Total possible maximum weight with**  
 Ballasted Tyres—  
 Maximum recommended wheel weights—  
 Front weights and swinging drawbar— 5940 kg (258 c.w.t)

**MOUNTING POINTS (Fig. 2)**

- 1. 102 mm (4 in)
- 2. 102 mm (4 in)
- 3. 10 holes (5 each side) tap  $\frac{3}{8}$  in 10 UNC 2B  $\times$  32 mm (1  $\frac{1}{8}$  in)
- 4. 57 mm (2.25 in)
- 5. 73 mm (2.87 in)
- 6. 60 mm (2.38 in)
- 7. 2052 mm (80.8 in)
- 8. 254 mm (10 in)
- 9. 184 mm (7.25 in)
- 10. 92 mm (3.62 in)
- 11. 4 holes tap  $\frac{3}{8}$  in 11 UNC 3B  $\times$  32 mm (1  $\frac{1}{8}$  in)
- 12. 102 mm (4 in)
- 13. 1243 mm (49 in)
- 14. 4 holes tap  $\frac{3}{8}$  in 10 UNC 3B  $\times$  27 mm (1  $\frac{1}{8}$  in)
- 15. 76 mm (3 in)
- 16. 152 mm (6 in)
- 17. 43 mm (1.69 in)
- 18. 86 mm (3.38 in)



**MAINTENANCE****Part 1—Section B**

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250 HOUR FREE SERVICE	02
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**GENERAL**

This section has been compiled to enable the reader to ascertain quickly what action is necessary at any maintenance period. Also detailed is the 'Running-in' procedure and the obligatory maintenance specified in the 50 and 250 Hour Free Service Vouchers. These recommended services will safeguard the life of the tractor when properly carried out.

**RUNNING-IN**

The following precautions should be taken during the running in period:

1. Diesel engines require a different type of running in from petrol engines. Experience has shown that usage of the tractor, during its first 50 hours of operation, can have a marked difference on the performance and life of the engine. From new the tractor should be engaged in work which will load the engine as near to full conditions as possible.
2. Use a low gear when pulling heavy loads.
3. During the running in period, check frequently the tightness of all screws, bolts, nuts, etc.
4. To ensure proper clutch life, care must be taken to bed-in the friction plates properly. During the first 15 hours of the tractor's life, frequently, but carefully engage and disengage the clutch(es). During the first 50 hours a careful watch must be kept on the clutch pedal free travel, which should be adjusted as soon as the pedal travel increases.
5. Do not forget your free service entitlement, which entails changing oil and filters.

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**MAINTENANCE**

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**50 HOUR FREE SERVICE****To be carried out after 50 hours running****Engine**

Change the engine oil.  
Change the engine oil filter.  
Check and adjust the engine slow running speed.

**Fuel System and Air Cleaner**

Change the primary fuel filter element.  
Check the dry air cleaner hoses and unloader valve.

**Cooling System**

Check the radiator coolant level and replenish if necessary.  
Check the alternator/fan belt tension and adjust if necessary.

**Electrical System**

Check the battery electrolyte level and replenish if necessary.  
Wipe the battery top and smear the terminals with petroleum jelly.  
Check the alternator/fan belt tension and adjust if necessary.  
Check the tightness of all cable clips and terminals and check all wiring for chafing.  
Check the safety start switch for correct operation.  
Check all lights for operation.

**Steering**

Check the front hub adjustment and adjust if necessary.  
Check the power steering oil level and replenish if necessary.  
Change the power steering pump filter element.  
Change the power steering oil.

**Transmission and Hydraulics**

Change the transmission oil.  
Clean the hydraulic pump oil strainer.  
Change the transmission oil filter element.  
Check the oil level in the epicyclic hubs and replenish if necessary.  
Check the operation of all hydraulics.

**Clutch and Brakes**

Check the clutch pedal free travel and adjust if necessary.  
Check the live p.t.o. clutch setting and adjust if necessary.  
Check the brakes and adjust if necessary.

**Cab**

Check the screenwasher bottle level and replenish if necessary.  
Clean the cab air filter.  
Check the torque of the cab securing bolts and tighten if necessary.

**Miscellaneous**

Check the torque of the wheel nuts and tighten if necessary.  
Check the tyre pressures and adjust if necessary.  
Lubricate all points with grease or oil where necessary.  
Examine for external leaks, generally check all other nuts, bolts, clips and hoses for tightness.  
Road test the tractor, checking the instruments and services for correct functioning.

**250 HOUR FREE SERVICE****To be carried out before 250 hours of running****Engine**

Change the engine oil.  
Change the engine oil filter.  
Check and adjust the engine slow running speed.

**Fuel System and Air cleaner**

Change the primary fuel filter element.  
Check the dry air cleaner hoses and unloader valve.

**Cooling System**

Check the radiator coolant level and replenish if necessary.  
Check the alternator/fan belt tension and adjust if necessary.

**Electrical System**

Check the battery electrolyte level and replenish if necessary.  
Wipe the battery top and smear the terminals with petroleum jelly.  
Check the alternator/fan belt tension and adjust if necessary.  
Check the safety start switch for correct operation.  
Check all lights for operation.

**Steering**

Check the front hub adjustment and adjust if necessary.  
Check the power steering oil level and replenish if necessary.

**Transmission and Hydraulics**

Check the transmission oil level and replenish if necessary.  
Change the transmission oil filter element.  
Check the oil level in the epicyclic hubs and replenish if necessary. Not MF 550 tractors.  
Check the operation of all hydraulics.

**Clutch and Brakes**

Check the clutch pedal free travel and adjust if necessary.  
Check the live p.t.o. clutch setting and adjust if necessary.  
Check the brakes and adjust if necessary.  
Check the brake fluid reservoir and replenish if necessary.

**Cab**

Check the screenwasher bottle level and replenish if necessary.  
Clean the cab air filter.  
Check the torque of the cab securing bolts and tighten if necessary.

**Miscellaneous**

Check the torque of the wheel nuts and tighten if necessary.  
Check the tyre pressures and adjust if necessary.  
Lubricate all points with grease or oil where necessary.  
Examine for external leaks, generally check all other nuts, bolts, clips and hoses for tightness.  
Road test the tractor, checking the instruments and services for correct functioning.

## MAINTENANCE

## MAINTENANCE PERIODS

Carry out operation below when Tachometer reads—	10	100	200	250	300	400	500	600	700	750	800	900	1000
<b>GREASING</b>	O	O	O	O	O	O	O	O	O	O	O	O	O
<b>ENGINE</b> Check the engine oil level and replenish if necessary Change the engine oil—See note 2 Change the engine oil filter—See note 2 Check the tappets and adjust if necessary Clean the engine breather pipe	O	O	O	O	O	O	O	O	O	O	O	O	O
<b>FUEL SYSTEM AND AIR CLEANER</b> Inspect the fuel filter glass bowl and drain off any water Renew the fuel filter element Service the injectors Drain clean and refill the fuel tank Check the dry air cleaner hoses and unloader valve Replace the dry air cleaner elements—See note 3	O	O	O	O	O	O	O	O	O	O	O	O	O
<b>COOLING SYSTEM</b> Check the radiator coolant level and replenish if necessary Clean the radiator and oil cooler fins Drain flush and refill the cooling system	O	O	O	O	O	O	O	O	O	O	O	O	O
<b>ELECTRICAL SYSTEM</b> Check the battery electrolyte level and replenish if necessary Wipe the battery top and smear the terminals with petroleum jelly Check the alternator fan belt tension and adjust if necessary Examine the alternator	O	O	O	O	O	O	O	O	O	O	O	O	O
<b>STEERING</b> Check the power steering oil level and replenish if necessary Change the power steering pump filter element Check the front hub adjustment and adjust if necessary Check the front wheel alignment and adjust if necessary	O	O	O	O	O	O	O	O	O	O	O	O	O
<b>TRANSMISSION AND HYDRAULICS</b> Check the transmission oil level and replenish if necessary Change the transmission oil Clean the transmission and hydraulic pump filter Change the transmission oil filter element Check the oil level in the epicyclic hubs and replenish if necessary Change the oil in the epicyclic hubs	O	O	O	O	O	O	O	O	O	O	O	O	O
<b>CLUTCH AND BRAKES</b> Check the clutch pedal free travel and adjust if necessary* Check the brake fluid reservoir and replenish if necessary Check the brakes and adjust if necessary* *See note 4	O	O	O	O	O	O	O	O	O	O	O	O	O
<b>SAFETY CAB</b> Check the screenwasher bottle level and replenish if necessary Clean the cab air filter Replace the cab air filter Check the torque of the cab securing bolts and tighten in necessary	O	O	O	O	O	O	O	O	O	O	O	O	O
<b>MISCELLANEOUS</b> Check the differential lock and adjust if necessary Check the torque of the wheel nuts, bolts and tighten if necessary Check the tyre pressures and adjust if necessary	O	O	O	O	O	O	O	O	O	O	O	O	O

## NOTES

- All operations marked X are to be carried out by your Massey-Ferguson Distributor or Dealer.
- The oil change period at 250 hours assumes proper maintenance of the engine and auxiliaries (i.e. air cleaner and lubrication filter) and that the fuel and oil used have been of the approved type and specification. If inadequate maintenance, or inferior oils have been used, engine oil changes must be more frequent.
- The dry air cleaner elements must be renewed every 1000 hours, or yearly or after a maximum of ten washings of the main element.
- If heavy work is involved the clutch and brake adjustments must be made more frequently.

## MAINTENANCE

## APPROVED LUBRICANTS—ALL TERRITORIES

UNIT	Capacity		Temperature		BP	CASTROL	ESSO	GULF
	litre	Imp. pt.	°C	°F				
ENGINE	8	14	Below - 1	Below 30	BP Vanellus M 10W; BP Vanellus C3 10W	Deusol CRB 10W; Deusol CRI 10W	Essolube HDX 10W; Essolube HDX/Plus 10W Esso Uniform	Gulflube Motor Oil XHD 10W
			- 1 to 27	30 to 80	BP Super Tractor Oil Universal, BP Vanellus M20W; BP Tractor Oil Universal	Agricastrol MP; Agricastrol Multiuse; Castrol Deusol CRB 20W	Tractorlube Universal; Essolube HDX 20W; Essolube HDX Plus 20W; Esso Uniform	Multi-Purpose Tractor Fluid 20W 30; Gulflube Motor Oil XHD 20W/20; Gulflube Motor Oil XHD 20W 30
			27	Above 80	BP Super Tractor Oil Universal, BP Vanellus M30; BP Vanellus C3 30	Agricastrol MP; Agricastrol Multiuse; Castrol Deusol CRB 30	Essolube HDX/ Plus 20W 50; Essolube HDX 30; Esso Uniform	Multi-Purpose Tractor Fluid 20W 30; Gulflube Motor Oil XHD 30
TRANSMISSION Twelve Speed	34	60	Below - 1	Below 30	BP Super Tractor Oil Universal, BP Tractran 9*	Agricastrol MP; Agricastrol MD*	Torque Fluid 62; Torque Fluid 56*; Esso Uniform	Multi-Purpose Tractor Fluid 20W 30; Universal Tractor Fluid*
Multi-Power	34	60	Above - 1	Above 30	BP Super Tractor Oil Universal	Agricastrol MP; Agricastrol AS Special	Torque Fluid 62; Esso Uniform	Multi-Purpose Tractor Fluid 20W 30
EPICYCLIC HUBS AND 4WD AXLE	3.1	5.4						
POWER STEERING	1.2	2	All Temperatures		BP Autran DX, BP Tractor Transmission Fluid	Agricastrol A.T.F.; Deusol T.F.A.; Deusol T.F.A. Dexron	Automatic Transmission Fluid	Automatic Transmission Fluid T.A.S.A.; Automatic Transmission Fluid Dexron
BRAKE FLUID			All Temperatures			Castrol Girling Brake & Clutch Fluid	Esso Brake Fluid	Gulf Super Heavy Duty Brake & Clutch Fluid H B P
GREASE			All Temperatures		BP Energrease Universal	Agricastrol Multiuse Grease	Multipurpose Grease H	Crown Grease No 2
					MOBIL	SHELL	TEXACO	TOTAL
ENGINE	8	14	Below - 1	Below 30	Mobiland Universal 10W 30, Delvac 1210	Rotella SX 10W, Rotella TX 10W	Ursa Oil Extra Duty SAE 10W, Ursatex SAE 10W	HD1-B 10W, Multigr 10W 30, Rubia H 10W
			- 1 to 27	30 to 80	Mobiland Universal 20W 30, Delvac 1220, Mobiland Super Universal	Universal Farm Oil, Shell Agroma Tractor Oil Universal, Rotella SX 20W 20, Rotella TX 20W 20	Universal Tractor Oil, Ursa Oil Extra Duty 20W 40, Ursatex SAE 20-20W	Super Universal Tractor Oil, Multigr TM, Multigr 20W 40; HD1-B 20W 20
			Above 27	Above 80	Mobiland Universal 20W 40, Delvac 1230, Mobiland Super Universal	Universal Farm Oil, Shell Agroma, Tractor Oil Universal, Rotella SX 30, Rotella TX 30	Universal Tractor Oil/ Ursa Oil Extra Duty SA 30, Ursa Oil Extra Duty 20W 40	Super Universal Tractor Oil, Multigr TM, HD2-M 20W 50; HD1-B 30
TRANSMISSION Twelve Speed	34	60	Below - 1	Below 30	Mobiland Super Universal, Mobilfluid 423*	Universal Farm Oil; Shell Agroma, Donax TT, Donax TO*	AS Transmission Oil; Universal Tractor Oil, TDH Oil*	Super Universal Tractor Fluid, Multigr TM; Equivis MF; Equivis JD*
Multi-Power	34	60	Above - 1	Above 30	Mobil Super Universal	Universal Farm Oil; Shell Agroma; Donax TT	AS Transmission Oil; Universal Tractor Oil	Super Universal Tractor Fluid, Multigr TM, Equivis MF
EPICYCLIC HUBS AND 4WD AXLE	3.1	5.4						
POWER STEERING	1.2	2	All Temperatures		ATF 200, ATF 220	Donax TM; Dexron II	Texmatic Fluid 9226	Dexron
BRAKE FLUID			All Temperatures		Hydraulic Brake Fluid 550	Donax B	Texaco Brake Fluid	Total Brake Fluid
GREASE			All Temperatures		Mobilplex 48	Farm Grease Universal; Alvania Grease R2	Marfak All Purpose Grease	Grease Multis; Multis 2

\*For exceptionally cold climates

**PRE-DELIVERY AND INSTALLATION****Part 1—Section C**

Table of Contents	Page Number
GENERAL	01
PRE-DELIVERY CHECK	01
TRACTOR INSTALLATION	02
TRACTOR STORAGE	02
PREPARING THE TRACTOR PRIOR TO RETURN TO WORK	03
TRACTOR WATERPROOFING	04

**GENERAL**

To ensure the regular maintenance of the tractor during the 12 month Warranty period, two free services must be carried out by the supplying Distributor or Dealer.

The two Free Service Vouchers, detailing the servicing to be carried out, cover the first 50 and 250 hours running of the tractor.

The timing of these two services has been calculated to provide maximum tractor efficiency throughout the Warranty period thus safeguarding the subsequent life of the tractor.

**PRE-DELIVERY CHECK**

The following items must be checked by the Distributor before delivery to a Dealer and by the Dealer before delivery to an Owner or Operator.

1. Check and replenish the battery electrolyte level. Clean the battery top and smear the terminals with petroleum jelly. Charge the battery if necessary.
2. Check all electrical connections, cable clips and lights.
3. Check and replenish the levels in the following:
  - Hydro-Static steering reservoir
  - Engine sump
  - Centre housing
  - Epicyclic hubs.
4. Lubricate all greasing points.
5. Check and adjust the alternator/fan belt tension.
6. Except when an anti-freeze solution is provided, flush the cooling system and refill with soft water.
7. Remove the clutch pedal keeper and check the clutch adjustment.
8. Check that the correct fuel is in the tank and the content is sufficient.
9. Check the torque of the cylinder head, inlet and exhaust manifold nuts and bolts.
10. Check and adjust the tappets and inspect the valve springs.
11. Check the injectors, de-aerate the fuel system and tighten all fuel pipe connections.
12. Check the security of the engine air cleaner hoses.
13. Fit the lower and top links and free the linkage joints.
14. Start the engine.
15. Check the instruments and warning lights for efficient operation.
16. Check the engine governor with the foot and hand linkage and the tachometer.
17. Attach an implement and check the tractor hydraulics for efficient operation.
18. Check and adjust the tyre pressures.
19. Check the security of all nuts, bolts, plugs, unions and clips.
20. Check all hoses for chafing and leaks.
21. Check the headlamp alignment.
22. Road test the tractor, checking the brakes, instruments and services for efficient operation.

## PRE-DELIVERY AND INSTALLATION

### TRACTOR INSTALLATION

Instructions are to be given to the Owner or Operator on the items listed below:

1. Safety Precautions.
2. Location and Significance of Tractor and Engine Serial Numbers.
3. Instruments and Controls.
4. Running In.
5. Starting and Stopping Procedures.
6. Gear Selection and danger of changing gear on the move.
7. Coasting and Towing.
8. Use of Multi-Power.
9. Use and Adjustment of Brakes and Interlock Latch.
10. Use and Adjustment of Clutch.
11. Use and Adjustment of Differential Lock.
12. P.t.o. Speed and Usage.
13. Operation of Hydraulic Lift System.
14. Attaching and Detaching Implements.  
(Danger of towing from Top Link).
15. Lubrication and Grease Points.
16. Changing of Factory Fill Oils.
17. Engine and Transmission Filter Replacements.
18. Operation of Fuel System, De-aeration and Air Cleaner.
19. Cooling System, Frost Precautions and Alternator/Fan Belt Adjustment.
20. Maintenance of Electrical Equipment. Negative Earth System.
21. Power Steering.
22. Wheel Track Settings.
23. Tyre Pressures.
24. Security of all Nuts and Bolts.
25. Fuel Handling and Storage.
26. Use and Attachment of Auxiliary Hydraulic Equipment.
27. Fill in the Serial No. etc., details in the Operator Instruction Book.

### TRACTOR STORAGE

#### General

When preparing a tractor for storage, comply with the following recommendations to ensure that the tractor is in good condition when required for use. Thoroughly clean the tractor, giving particular attention to the greasing points and oil filler plugs. Park the tractor in a dry, level and covered area away from the weather and livestock with easy exit in case of fire.

When the tractor has to be stored in the open air, park it on level ground in the shelter of a building or wall and completely cover it with a good tarpaulin.

#### Tyres

1. Jack up the tractor and position wooden blocks under the axles to relieve the tyres of all weight.
2. Inflate the tyres a little above the normal pressure and chalk that pressure on the tyre wall. Protect the tyres from direct sunlight.
3. When ballasted tyres are not filled with calcium chloride, deflate the tyres, empty out the water and re-inflate with air.
4. When wheel weights are fitted, remove, clean and paint any bare metal and refit.

### Hydraulic Lift System

1. Check and replenish the transmission oil level in the centre housing to the high mark on the response cover dipstick.
2. Using the tractor hydraulics, with the response control in "FAST", raise and lower the linkage several times.
3. Engage the p.t.o. for a short period to obtain the maximum circulation of transmission oil around the centre housing.
4. Raise the linkage to the "Transport" position and support the two lift arms in this position with wooden props.
5. Leave the two quadrant levers in the 'Transport' position i.e., the "Draft" control (outer) lever past the "UP" and the "Position" control (inner) lever in "TRANSPORT". Do NOT MOVE the quadrant control levers from these positions.

### Hydro-Static Steering

1. Remove the filler plug from the reservoir and add the approved oil to the bottom of the oil filler plug hole. Refit the filler plug.
2. Clean and coat the exposed steering rams with grease.

### Engine

1. Drain the engine sump, when hot if possible.
2. Change the filter element.
3. Refill the engine sump with an approved grade of oil.
4. Seal the crankcase breather, exhaust and air cleaner pipes with adhesive tape.
5. Clean the dry air cleaner unit.

### Cooling System

1. Drain the radiator and cylinder block, when hot if possible and leave the taps in the open position.
2. Rest the radiator cap on the filler neck.

### Fuel System

1. Clean the fuel filler bowls, renew the elements and drain the fuel tank.
2. Adding a rust inhibitor, refill the fuel tank and bleed the fuel system of air.
3. Start the engine and run at half speed for 15 minutes to circulate the fuel through the lift and distributor pumps, filters, pipework and ejectors.
4. Top-up the fuel tank completely to prevent condensation forming on the unfilled portion of the tank thus resulting in rust and water contaminating the fuel. Rust if permitted to form in any large quantity can cause filter blockage.
5. Seal the gap between the sides of the fuel filler cap and pipe.
6. Remove the injectors and spray approximately 18 ccs (1/32 pt) of engine oil into each cylinder bore. Using new joint washers, refit the injectors and slowly rotate the crankshaft one complete revolution. Do not bleed the fuel system of air.
7. Lubricate the foot and hand throttle control linkage.

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**PRE-DELIVERY AND INSTALLATION**


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**Clutch**

Fully depress the clutch pedal and hold down with a wooden keeper or wedge. The clutch friction plates (main and p.t.o.) will not then bond themselves to the flywheel or pressure plates.

**Battery**

1. Remove the battery from the tractor.
2. Check the electrolyte level and top up as necessary.
3. Clean the battery top and coat the terminals with petroleum jelly.
4. Fully charge the battery from an external source.
5. Repeat the external charge every month during the storage period and top up the electrolyte as necessary.
6. Store the battery in a cool, dry, dust free location but not directly on a concrete or metal surface. There must be no possibility of freezing.

**Alternator and Starter Motor**

1. Smear the alternator terminals with petroleum jelly.
2. Smear the starter motor and solenoid terminals with petroleum jelly.

**Sheet Metal, Exposed Castings and Bright Metal Components**

1. All rusty, scratched or bare patches of castings and/or sheet metal must be cleaned with abrasive papers and repainted. Matching colours are available for all M.F. Tractors.
2. The bright metal components and surfaces must be cleaned and/or degreased and the protectives sprayed or brushed on.

**Cab**

1. Empty the windscreen washer bottle.
2. Remove and exclude the windscreen wiper blade from daylight.
3. Remove and store the rear view mirrors, free and lubricate all hinges and locking devices.
4. Close the cab side and rear windows.
5. Wash and dry the inside and outsides of the cab windscreen, side and rear windows with soap and water.
9. Cover the windscreen, side and rear windows.
7. Lock the cab door, note the number of the door key. Store the key in a known spot in case of fire.

**PREPARING THE TRACTOR PRIOR TO RETURN TO WORK****Cab**

1. Remove the covers and wash the cab windscreen, side and rear windows.
2. Refit the windscreen wiper blade.
3. Refit the rear view mirrors.
4. Fill the windscreen washer bottle.

**Sheet Metal and Bright Metal Components**

1. Clean off the protective from the bright metal parts and surrounding sheet metal.
2. Wash the sheet metal.

**Alternator and Starter Motor**

1. Clean the petroleum jelly from the alternator terminals.
2. Clean the petroleum jelly from the starter motor and solenoid terminals.

**Battery**

1. Check that the battery is fully charged. Do not check the electrolyte strength immediately after adding distilled water.
2. Check that the electrolyte is at the correct level.
3. Clean the battery top and smear the terminals with petroleum jelly.
4. Refit the battery to the tractor.

**Clutch**

Remove the wooden keeper or wedge from the clutch pedal linkage.

**Fuel System**

1. Remove the adhesive tape seal from the fuel filler cap and pipe.
2. Check the level in the fuel tank: investigate any loss and eliminate the cause.
3. Bleed the fuel system of air.

**Cooling System**

1. Close the taps in the cylinder block and radiator.
2. Refill the cooling system slowly with clean rain or soft water.
3. In winter, refill the cooling system with an anti-freeze solution.
4. Check all connections and joints for leaks.
5. After the engine has been run for fifteen minutes, see 'Starting the Engine', permit the radiator to cool, check the coolant level and replenish as necessary.

**Engine**

1. Remove the adhesive tape seals from the crankcase breather, exhaust and air cleaner pipes.
2. Check the engine oil level, investigate any loss and eliminate the cause.

**Hydro-static Steering**

1. Check the hydro-static steering reservoir oil level, investigate any loss and eliminate the cause.
2. Clean the steering rams of grease and leave clean and dry.

**Hydraulic Lift System**

1. Check the centre housing transmission oil level, investigate any loss and eliminate the cause.
2. Remove the two wooden props from the lift arms.

**Tyres**

1. Check the tyre pressures, investigate any loss and eliminate the cause.
2. Adjust the tyre pressures or deflate the tyres, replace the ballast as before and re-inflate as necessary.
3. Jack up the axles and remove the wooden blocks.

**Fuel Gauge and Warning Lights**

Turn the starter key to '...' and check that the fuel gauge begins to register and all warning lights glow. Investigate any mal-function and eliminate the cause.

**Starting the Engine**

1. Start the engine and run on a light load.
2. Check that the tachometer and fuel gauge register and all warning lights become extinguished. Investigate any mal-function and eliminate the cause.
3. Continue to run the engine for no more than 15 minutes, check all system for correct function. Investigate any mal-function and eliminate the cause.



## PRE-DELIVERY AND INSTALLATION

### TRACTOR WATERPROOFING

#### General

Before working in water, such as in Paddy Fields or flooded areas, certain waterproofing modifications must be made to the tractor.

Ideally, only tractors with disc brakes should be used in water as little can be done to ensure the efficiency of drum brakes when the water depth exceeds 600 mm (24 in).

In addition, two extra maintenance services are required.

### ELECTRICAL EQUIPMENT

#### 'VYPATCH' Putty and 'VYCOAT'

The 'VYPATCH' Putty and 'VYCOAT' recommended for sealing the starter motor and solenoid assembly is available from:

Products Division,  
Plastic Coatings Ltd.  
Trading Estate,  
Farnham,  
Surrey,  
England.

#### Starter Motor and Solenoid Assembly

1. Remove the starter motor and solenoid assembly.
2. Thoroughly clean the exterior of the starter motor and solenoid assembly.
3. Blank off the drive end bracket.
4. Seal all the openings in the starter motor and solenoid assembly with 'VYPATCH'.
5. Apply a thick coating of grease to the starter motor and solenoid terminals and ensure that the drive end bracket is blanked off.
6. Spray the exterior of the starter motor and solenoid assembly with a thick coat of 'VYCOAT'.
7. Dry for at least 10 minutes and spray the exterior of the starter motor and solenoid assembly with a second thick coat of 'VYCOAT'.
8. Let the 'VYCOAT' harden and clean the grease coating from the starter motor and solenoid terminals and remove the blank from the drive end bracket.
9. Refit the starter motor and solenoid assembly to the engine.
10. Reconnect the wiring harness.

#### Battery

Clean the battery top and smear the battery terminals with petroleum jelly.

#### Engine

##### Engine Breather Pipe

**NOTE:** The engine breather pipe is of a critical length and after modification it can be longer but **NEVER** shorter. When refitted it must point generally in a downward direction without 'U' bends or restrictions to trap liquid or dirt.

1. Shorten the existing breather pipe by approximately 200 mm (8 in).
2. Attach a 225 mm (9in) length of rubber piping to the shortened engine breather pipe.
3. Route the rubber piping to the front of the engine and secure it to one of the timing case bolts with a suitable clip.

#### Engine Dipstick

1. Remove the engine dipstick and store in the tool box.
2. Fit a tapered rubber plug to the engine dipstick tube.

#### Transmission

##### Clutch Housing Drain Hole

1. Discard the split pin in the drain hole in the clutch housing.
2. Enlarge the drain hole, tap and fit a screwed plug.

##### Clutch Housing Cover Plate Gasket

1. Remove the four bolts and the cover plate beneath the clutch housing.
2. Refit the cover plate to the clutch housing with the gasket (part No. 180 481 M1) between and the four original bolts.

##### Clutch Pedal Cross-shaft

1. Drill and tap the two bosses from which the pedal cross-shaft protrudes.
2. Fit two grease nipples to the tappings. Should the grease nipples foul the pedal cross-shaft, fit small fibre washers to the threaded shank.
3. Grease the cross-shaft until the grease just exudes from around the pedal cross-shaft but do not over grease.

##### P.T.O. Shaft Cap

1. Remove the p.t.o. cap.
2. Grease both threads.
3. Refit the p.t.o. cap and screw it fully home.

##### Centre Housing Dipstick

1. Remove the centre housing dipstick from the response control cover and store in the dipstick.
2. Fit a tapered rubber plug to the response control cover.

#### Brakes

##### Pedal Cross-shaft

1. Drill and tap the two bosses from which the pedal and cross-shaft protrudes.
2. Fit two grease nipples to the tappings. Should the grease nipples foul the pedal cross shaft, fit small fibre washers to the threaded shanks.
3. Grease the two nipples until the grease just exudes from around the pedal cross shaft.

#### Extra Maintenance

##### Every 10 hours or Daily

Charge all grease points with an approved grease until it exudes from the seals or shafts.

##### Every 50 hours or Weekly

1. Remove the clutch housing, drain plug, permit any water to drain away and refit the drain plug.
2. Ensure that the engine breather pipe is unobstructed.

**MF 600 SERIES TRACTOR  
WORKSHOP SERVICE MANUAL  
PART 2**

**Publication No. 1856 274 M1**

comprising

- A SHEET METAL
- B CAB AND FITTINGS

## SHEET METAL

## Part 2—Section A

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<del>2A-05-03</del>	<del>AIR CLEANER (OIL BATH) Removal and Refitment</del>	<del>03</del>
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**SHEET METAL****GENERAL**

The hood, grille and front side panels are shown. The sheet metal components are easily removed and refitted, and provide protection for the tractor.

The tractor must not be operated with any of these panels removed, except for the power take off guard, which has to be removed when certain implements are used.

To prevent corrosion, always keep the sheet metal clean, respraying the metal as soon as possible when any parts become chipped.

**FRONT GRILLE****Removal and Refitment**

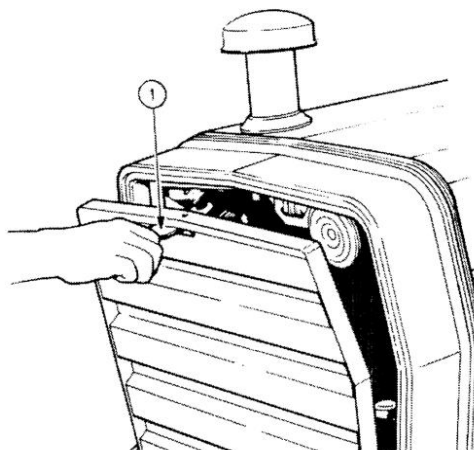
2A—01—02

**Removal**

1. Pull the front grille release catch forward.
2. Pull the grille forward.
3. Remove the grille lifting it upward.

**Refitment**

4. Reverse procedures 1 to 3.

**HOOD****Removal and Refitment**

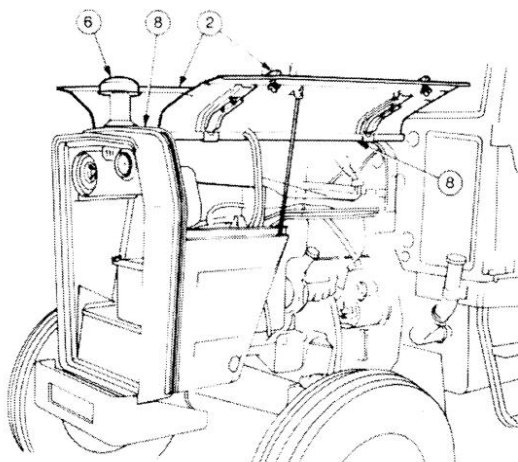
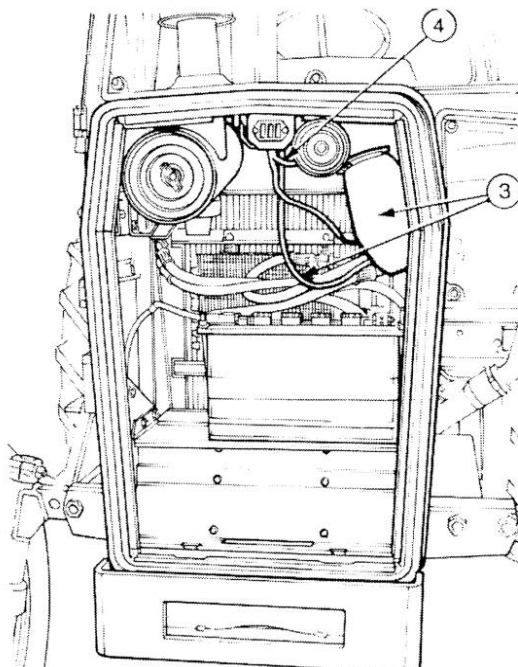
2A—02—02

**Removal**

1. Remove the front grille. Operation 2A—01—02.
2. Undo hand clamps, raise each side of hood and support in the open position using the props attached to the inside of hood.
3. Remove the wires attached to the screen washer bottle, situated on the inside of nose. Remove tube and lift out washer bottle.
4. Remove wires from the horn and headlight contact switch.
5. Pull harness rearward through hood inner panel.
6. Remove the air cleaner pre-cleaner from front end of hood.
7. Slacken two clamp nuts on the exhaust silencer and remove the silencer.
8. From the underside of hood, remove the two bolts at the front and the two at the rear. Lift the hood clear.

**Refitment**

9. Reverse procedures 1 to 8 ensuring the hood seats correctly on the front rubber seal when clamped in position.



**SIDE PANEL****Removal and Refitment**

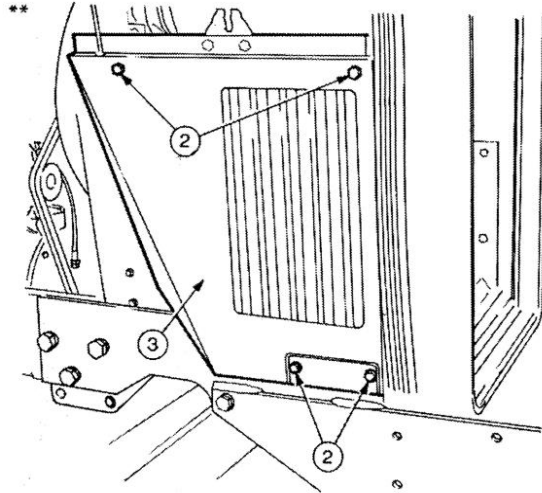
2A-03-03

**Removal**

1. Undo the hand clamp, raise the hood and support in the open position using the prop attached to the inside of hood, but do not use hole in the top of side panel for location.
2. Remove the four bolts.
3. Lift panel clear.

**Refitment**

4. Reverse procedures 1 and 2 tightening the bolts to a torque of 20 Nm (15lbf ft).

**AIR CLEANER (DRY)****Removal and Refitment**

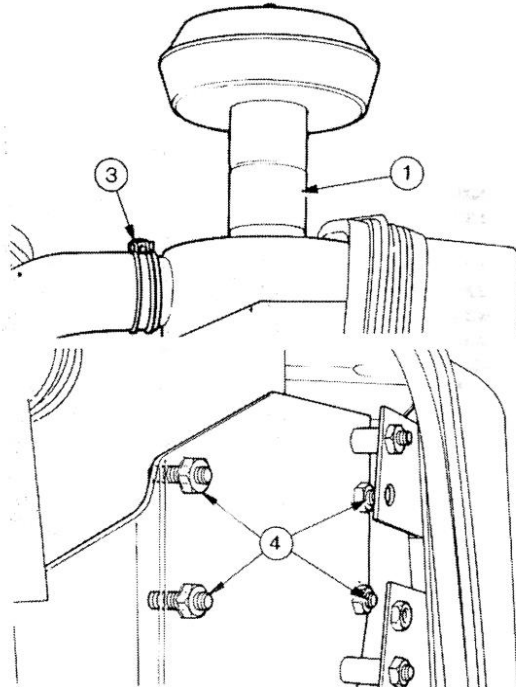
2A-04-03

**Removal**

1. Remove the pre-cleaner from the top of the air cleaner.
2. Undo the hand clamps, raise the right hand side of the hood and support in the open position using the prop attached to the inside of the hood.
3. Undo the hose clip.
4. Remove the four bolts securing it to the side panel and lift it clear.

**Refitment**

5. Reverse procedures 1 to 4.



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**2A—04**

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**SHEET METAL STONEGUARD**

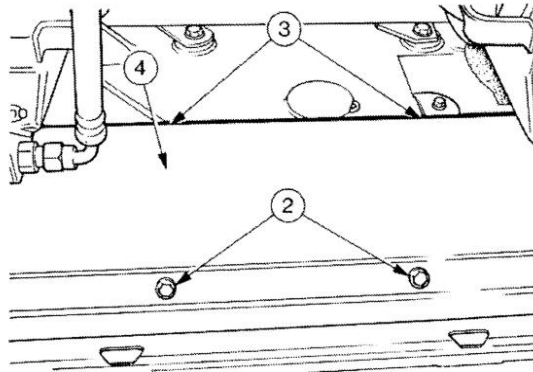
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**STONE GUARD—LOWER****\*\* Removal and Refitment****2A—06—04****Removal**

1. Remove front grille. Operation 2A—01—02.
2. Remove the two front bolts and washers.
3. Remove the rear bolts and washers.
4. Lift out the cover.

**Refitment**

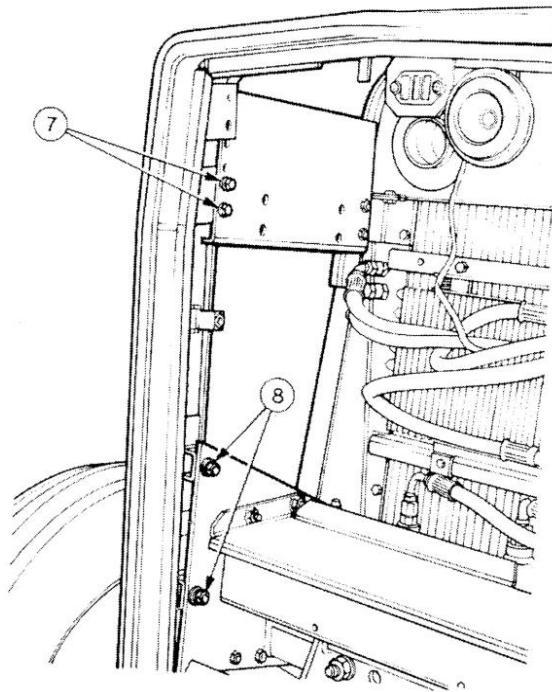
5. Reverse procedures 1 to 4.

**NOSE****Removal and Refitment****2A—07—04****Removal**

1. Remove the front grille. Operation 2A—01—02.
2. Remove the hood. Operation 2A—02—02.
3. Remove the side panels. Operation 2A—03—03.
4. Remove the air cleaner. Operation 2A—04—03 or operation 2A—05—03.
5. Remove the battery. Operation 9A—02—05.
6. Remove the lower stoneguard. Operation 2A—06—04.
7. Remove the two bolts securing the air-cleaner side plate to the top of the nose.
8. Remove the two bolts from each side of the nose, which secure it to the two lower side plates.
9. Lift the nose clear.

**Refitment**

10. Reverse procedures 1 to 9 tightening the four lower bolts.



**BATTERY TRAY****Removal and Refitment**

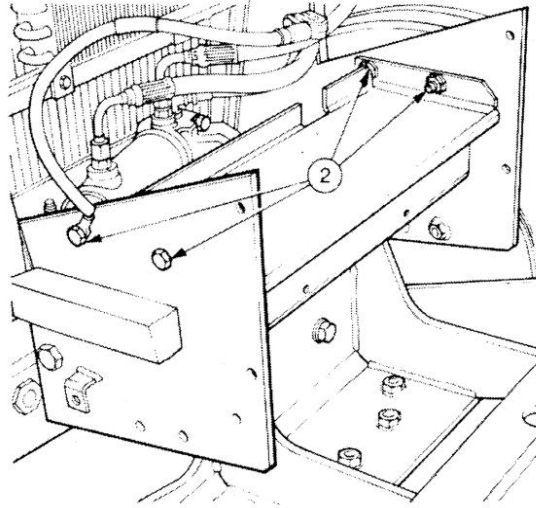
2A-08-05

**Removal**

1. Remove the stone guard lower. Operation 2A-06-04.
2. Remove the four bolts securing it to each of the two side panels.
3. Lift the tray clear, together with the negative battery cable attached to one of the R.H. bolts.

**Refitment**

4. Reverse procedures 1 to 3.

**STONE GUARD-UPPER****Removal and Refitment**

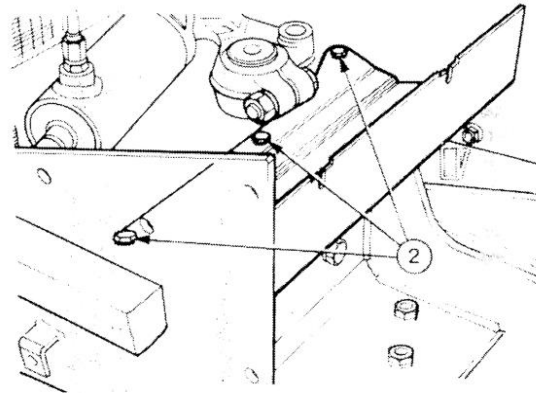
2A-09-05

**Removal**

1. Remove the battery tray. Operation 2A-08-05.
2. Remove the three bolts securing it to the top face of the front support.
3. Lift guard clear.

**Refitment**

4. Reverse procedures 1 to 3.

**AIR CLEANER SIDE PLATE****Removal and Refitment**

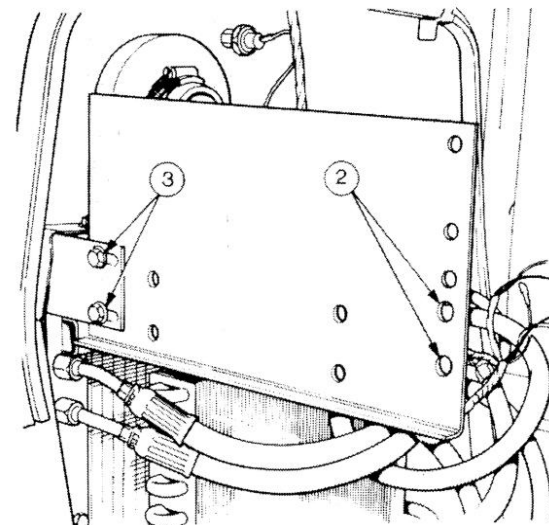
2A-10-05

**Removal**

- \*\* 1. Remove the air cleaner. Operation 4C-01-02.
2. Remove the two bolts securing it to the top right hand side of the nose.
3. Remove the two bolts securing it to the bracket attached to the top right hand side of the radiator side panel.
4. Lift the plate clear.

**Refitment**

5. Reverse procedures 1 to 4.



**SHEET METAL**

**NOSE SUPPORT BRACKET AND WEIGHT FRAME**

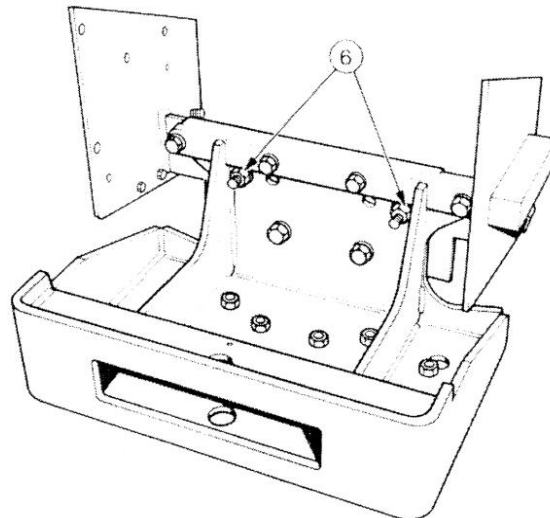
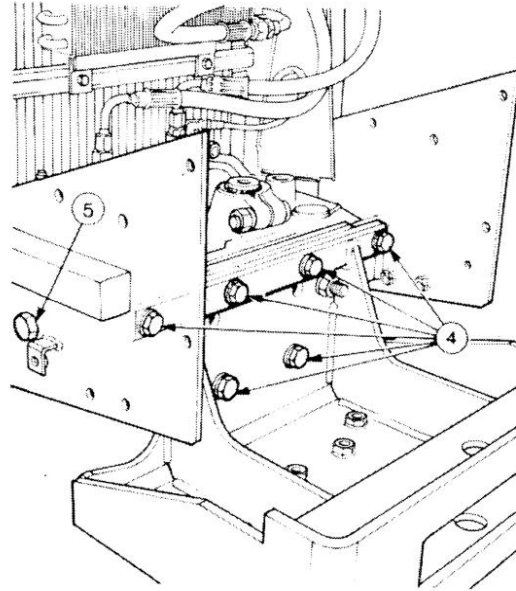
**Removal and Refitment**                      **2A-11-06**

**Removal**

1. Remove the nose. Operation 2A-07-04
2. Remove the stone guard upper. Operation 2A-09-06.
3. Suitably support the weight frame from underneath.
4. Remove the six bolts securing the weight frame and nose support bracket to the front support.
5. Remove the bolt from each side that secures the assembly to the side of the front support and lift the assembly clear.
6. Remove the two nuts and bolts that secure the weight frame and support bracket together.

**Refitment**

7. Reverse procedures 1 to 6 tightening all the bolts





**\*\* RADIATOR SUPPORT FRAME, TOP PANEL AND SIDE PANEL 2WD MODELS**

**Removal and Refitment**

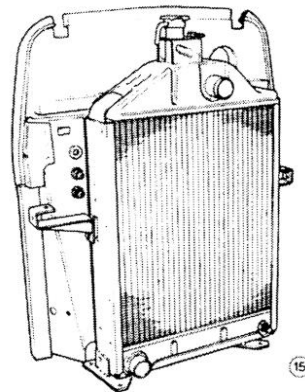
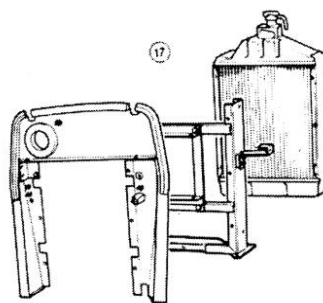
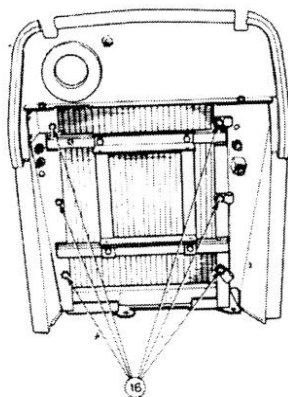
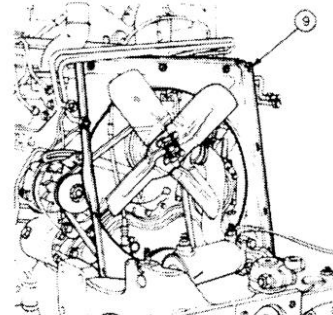
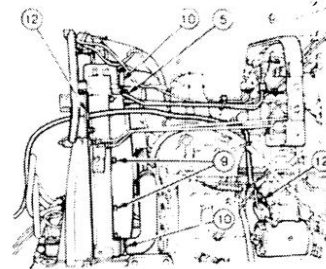
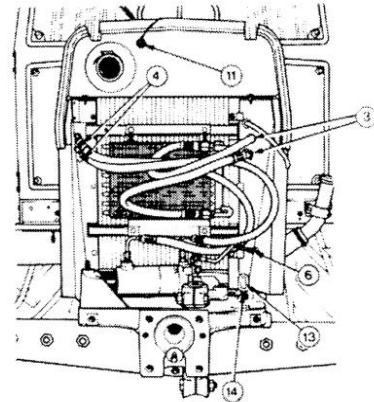
**2A-12-07**

**Removal**

1. Remove the nose assembly. Operation 2A-07-04.
2. Drain the radiator.
3. Disconnect the transmission oil cooler hoses and bundy pipes from the two connectors on the left hand side panel. Remove the oil cooler by lifting it against its springs, and prising forward.
4. Disconnect the two power steering ram hoses and the bundy pipes from the two connectors on the right hand side panel.
5. Remove the bundy pipe clamp from the radiator top panel.
6. Disconnect the power steering ram grease pipe from the connector on the bottom of left hand side panel.
7. Remove the alternator guard from the right hand side of radiator frame.
8. Remove the fan guard from the left hand side of radiator frame.
9. Remove the screws securing the fan cowl to each side of the radiator frame and push cowl backwards over fan.
10. Disconnect the radiator inlet and outlet hoses.
11. Disconnect the wire from the air cleaner sensor fitted to the top panel.
12. Disconnect the positive battery lead from the starter motor and pull it forwards through the grommet in the left hand side panel.
13. Remove the grommet in the bottom of the left hand side panel.
14. Remove the four bolts that secure the radiator frame to the front support.
15. Lift the radiator complete with the support frame, side and top panels, clear of the tractor.
16. Remove the six bolts securing the side and top panels to the radiator frame and lift them away from the radiator and frame.
17. Lift the radiator upwards clear of the frame.

**Refitment**

18. Reverse procedures 1 to 7.



**Thank you very much  
for your reading.**

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Information.**