

# ***WORKSHOP SERVICE MANUAL***

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# **1 . INTRODUCTION**

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**1 A01 INTRODUCTION**





## ***Introduction***

### *1 A01 Introduction*

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## Introduction

### A . Using the manual

#### General

The purpose of this manual is to assist Distributors and Dealers in the efficient installation, maintenance and repair of MASSEY FERGUSON 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.

#### Page numbering

Example : 7C01-3

This manual is divided into parts and sections. Each page contains the following information :

7 = Section

C = Part

01 = Sequence number within the Part

3 = Page number within the Part

The issue number and the date are indicated at the bottom of the page.

#### Using the manual

To assist with locating information, each section of the manual is preceded by an index listing the Parts contained in that section.

The preliminary operations to be carried out in order to reach the item involved are listed at the beginning of each Part.

Items are indicated by means of identification marks (circles, squares, triangles).

#### Meaning of identification marks

circle ○ (..) identifies part only

square □ [..] identifies part and indicates an adjustment

triangle △ /.. identifies part and indicates an important point to be noted during removal or refitment

#### Amendments

Amended pages will be issued carrying the same page number as previous pages : only the issue number and the date will change.

Old pages should be destroyed.

#### Special tools

Where the use of a special tool is necessary in an operation, the tool number is shown following the instruction requiring its use.

#### Repairs and replacements

When parts have to be replaced, it is essential that only genuine MASSEY FERGUSON parts 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 manufacturer's specification.

Torque wrench setting figures given in the Workshop Manual must be strictly adhered to. Locking devices must be fitted where specified. 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 replacement parts have the full backing of the manufacturer's warranty. MASSEY FERGUSON Distributors and Dealers are obliged to supply only genuine service parts.

#### Repair time schedule

The sections in the repair time schedule are identical to those in the workshop manual. The Repair Time Schedule is available, under publication number 3378043M1.



## Introduction

### B . Specifications

#### Engine

Characteristics	MF 6110	MF 6120	MF 6130	MF 6140	MF 6150	MF 6160	MF 6170	MF 6180	MF 6190
PERKINS Model	4.41	4.41	1004.4TLR	1004.4T2	1004-4THR2	1006-6 HR4	1006-6.HR3	1006-6TLR2	1006-THR2
Number of cylinders	4	4	4	4	4	6	6	6	6
Turbocharger	-	-	yes	yes	yes	-	-	yes	yes
Bore, (mm.)	101.1	101.1	100	100	100	100	100	100	100
Stroke, (mm.)	127	127	127	127	127	127	127	127	127
Cubic capacity (litre)	4100	4100	4000	4000	4000	6000	6000	6000	6000
Maxi. engine power DIN (KW)	51.5	58,9	62,6	66,2	69,9	73,5	81	88,3	95,6
P.T.O. power DIN (KW)	47	53	57	59,8	64	68	74	82,3	88,3
At engine speed of rev/min	2200	2200	2200	2200	2200	2200	2200	2200	2200
Maximum torque (Nm)	265	286	325	359	386	403	440	490	530
Engine speed at maximum torque	1400	1400	1400	1400	1200	1200	1200	1400	1400
Idling speed rev/min	750	750	750	850	850	850	850	850	1000
Maximum rated speed rev/min	2200	2200	2200	2200	2200	2200	2200	2200	2200
Maximum no load speed rev/min	2350	2350	2310	2310	2310	2310	2310	2310	2310
Permissible front P.T.O. power at 2200 rev/min (kW)	All the engine power						75		
Maximum torque							328		
Lubrication	Gear type pump - strainer on suction side and external canister type filter(s).								
Valves	Overhead, push-rod operated								
Valves clearance (Cold)									
- Inlet - mm (in)	0.30 (0.012)			0.20 (0.008)					
- Exhaust - mm (in)	0.30 (0.012)			0.45 (0.018)					
Engine oil cooler	no	no	yes	yes	yes	no	no	yes	yes

#### Fuel system and air cleaner

Supply pump	ACDELCO			
Fuel filter with sediment bowl	Yes			
Number of elements	1		2	
Injection pump	CAV	Lucas		Stanadyne
Injectors and nozzle holders	Lucas		CAV	Stanadyne
Cold weather starting	Thermostart			
Air Cleaner: Two-stage air filter with removable elements for servicing, with centrifugal prefilter and clogging indicator (warning lamp).				



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## 6100 SERIES TRACTORS



# Introduction

### Electrical system

Voltage:	12 volts negative earth.
Batteries:	2 maintenance free batteries.
Safety start:	operated by the clutch pedal.
Headlights:	European code 40/45 W
Sidelights:	5 W
Rear/brake lights:	21/5 W
Direction indicators:	21 W
Number plate light:	10 W
Work lamps:	55 W - iodine type H3
Instrument panel lighting and warning lights:	3 W - 2 W - 1.2 W
Roof light:	10 W

### Cooling

Operation:	Centrifugal pump and pressurised radiator, regulated by thermostat Opening temperature : 82° C (179.2° F) controlled by thermostat.
Fan:	6110/6120/6130/6140/6150 : belt drive 6150: viscostatic 6160/6170/6180/6190 : viscostatic model gear driven water pump.
Belt deflection: (on the longest span)	19 mm (4 cyl. engine), 10 mm (6 cyl. engine).



### Transmission

Clutch :	Spring-loaded multiple-disc clutch of oil bath type - 4 discs Pressure-loaded multiple-disc clutch of oil bath type - 5 discs
6110/6120/6130/6140/6150/6160 6170/6180/6190	- 16 or 32 speeds
Gearbox :	- 16 forward speeds - 16 reverse speeds - reverse shuttle (synchronised)
Without Dynashift :	Ratio 4 to 1 Ratio 7.8 to 1
Creeper gear (option) Super creeper gear (option) Dynashift gearbox :	- 32 front speeds - 32 rear speeds - four selectable ratios without declutching - reverse shuttle (synchronised)





# Introduction

Road speeds at 2200 rev/min  
6110/6120/6130/6140 - 16.9 - 34 tyres

Speed	Range	Speed-shift	16 SPEED 30 KPH				16 SPEED 40 KPH			
			FORWARD		REVERSE		FORWARD		REVERSE	
			KPH	MPH	KPH	MPH	KPH	MPH	KPH	MPH
1	LOW 	Slow	1.91	1.19	1.86	1.16	2.45	1.52	2.38	1.48
		Fast	2.45	1.52	2.38	1.48	3.10	1.92	3.01	1.87
2		Slow	2.93	1.82	2.85	1.77	3.70	2.30	3.59	2.23
		Fast	3.70	2.30	3.59	2.23	4.68	2.91	4.55	2.83
3		Slow	4.05	2.52	3.94	2.45	5.12	3.18	4.97	3.09
		Fast	5.12	3.18	4.97	3.09	6.48	4.03	6.30	3.91
4		Slow	5.87	3.65	5.70	3.54	7.42	4.61	7.21	4.48
		Fast	7.42	4.61	7.21	4.48	9.38	5.83	9.12	5.67
5	HIGH 	Slow	7.78	4.83	7.56	4.70	9.83	6.11	9.55	5.94
		Fast	9.83	6.11	9.55	5.94	12.43	7.72	12.08	7.51
6		Slow	11.75	7.30	11.42	7.10	14.86	9.28	14.48	8.97
		Fast	14.85	9.23	14.43	8.97	18.77	11.67	18.25	11.34
7		Slow	16.26	10.10	15.80	9.82	20.56	12.79	19.98	12.42
		Fast	20.56	12.79	19.98	12.42	25.98	16.15	25.26	15.70
8		Slow	23.55	14.64	22.89	14.23	29.76	18.50	28.92	17.97
		Fast	29.76	18.50	28.92	17.97	37.62	23.38	36.57	22.72

6150/6160/6170 -16.9 - 38 tyres

Speed	Range	Speed-shift	16 SPEED 30 KPH				16 SPEED 40 KPH			
			FORWARD		REVERSE		FORWARD		REVERSE	
			KPH	MPH	KPH	MPH	KPH	MPH	KPH	MPH
1	LOW 	Slow	1.92	1.19	1.86	1.16	2.43	1.51	2.36	1.46
		Fast	2.43	1.51	2.36	1.46	3.07	1.91	2.98	1.85
2		Slow	2.90	1.81	2.81	1.74	3.67	2.28	3.57	2.21
		Fast	3.67	2.28	3.57	2.21	4.64	2.88	4.51	2.80
3		Slow	4.01	2.50	3.90	2.42	5.08	3.16	4.94	3.07
		Fast	5.08	3.16	4.94	3.07	6.42	3.99	6.24	3.88
4		Slow	5.81	3.62	5.64	3.50	7.35	4.57	7.15	4.44
		Fast	7.35	4.57	7.15	4.44	9.29	5.78	9.03	5.61
5	HIGH 	Slow	7.71	4.80	7.49	4.66	9.74	6.06	9.47	5.90
		Fast	9.74	6.06	9.47	5.90	12.31	7.66	11.96	7.43
6		Slow	11.64	7.24	11.31	7.03	14.72	9.15	14.31	8.89
		Fast	14.72	9.15	14.31	8.89	18.60	11.56	18.08	11.23
7		Slow	16.11	10.02	15.66	9.73	20.37	12.66	19.80	12.30
		Fast	20.37	12.66	19.80	12.30	25.74	16.00	25.02	15.55
8		Slow	23.33	14.50	22.67	14.09	29.49	18.33	28.66	17.81
		Fast	29.49	18.33	28.66	17.81	37.27	23.17	36.22	22.51







# 6100 SERIES TRACTORS





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## Introduction

Road speeds at 2200 rev/min  
6180/6190 - 20.8 - 38 tyres

Speed	Range	Speed-shift	16 SPEED 30 KPH				16 SPEED 40 KPH			
			FORWARD		REVERSE		FORWARD		REVERSE	
			KPH	MPH	KPH	MPH	KPH	MPH	KPH	MPH
1	LOW 	Slow	2.54	1.57	2.53	1.57	2.54	1.57	2.53	1.57
		Fast	3.22	2.00	3.20	1.99	3.22	2.00	3.20	1.99
2		Slow	3.84	2.38	3.82	2.37	3.84	2.38	3.82	2.37
		Fast	4.86	3.02	4.83	3.00	4.86	3.02	4.83	3.00
3		Slow	5.32	3.30	5.29	3.28	5.32	3.30	5.29	3.28
		Fast	6.73	4.18	6.69	4.18	6.73	4.18	6.69	4.15
4		Slow	7.71	4.42	7.66	4.76	7.71	4.42	7.66	4.76
		Fast	9.74	6.05	9.69	6.02	9.74	6.05	9.69	6.02
5	HIGH 	Slow	10.22	6.35	10.16	6.31	10.22	6.35	10.16	6.31
		Fast	12.91	8.02	12.84	7.98	12.91	8.02	12.84	7.98
6		Slow	15.43	9.59	15.34	9.53	15.43	9.59	15.34	9.53
		Fast	19.51	12.12	19.39	12.05	19.51	12.12	19.39	12.05
7		Slow	21.36	13.27	21.23	13.19	21.36	13.27	21.23	13.19
		Fast	27.00	16.78	26.84	16.68	27.00	16.78	26.84	16.68
8		Slow	30.92	19.21	30.74	19.10	30.92	19.21	30.74	19.10
		Fast					39.09	24.29	38.86	24.15

Road speeds "Dynashift" at 2200 rev/min -  
6110 to 6140 - 13.6R38 tyres

RATIO		FORWARD		REVERSE		
		KPH	MPH	KPH	MPH	
	1	A	2.04	1.27	2.06	1.28
		B	2.39	1.49	2.41	1.50
		C	2.82	1.75	3.10	1.93
		D	3.30	2.05	3.33	2.07
	2	A	3.47	2.16	3.50	2.18
		B	4.06	2.52	4.10	2.55
		C	4.79	2.98	4.83	3.00
		D	5.61	3.49	5.66	3.52
	3	A	4.57	2.84	4.61	2.87
		B	5.34	3.32	5.39	3.35
		C	6.31	3.92	6.37	3.96
		D	7.38	4.59	7.45	4.63
	4	A	6.18	3.84	6.24	3.88
		B	7.23	4.49	7.30	4.54
		C	8.54	5.30	8.62	5.36
		D	9.99	6.21	10.08	6.27
	1	A	7.65	4.76	7.72	4.80
		B	8.96	5.57	9.05	5.63
		C	10.57	6.57	10.67	6.64
		D	12.38	7.69	12.50	7.78
	2	A	13.00	8.08	13.13	8.17
		B	15.22	9.46	15.36	9.55
		C	17.97	11.16	18.14	11.28
		D	21.03	13.07	21.23	13.21
	3	A	17.12	10.64	17.28	10.75
		B	20.03	12.45	20.22	12.58
		C	23.65	14.69	23.88	14.85
		D	27.68	17.20	27.94	17.38
	4	A	23.16	14.39	23.38	14.54
		B	27.11	16.84	27.37	17.02
		C	32.00	19.88	32.31	20.10
		D	37.45	23.27	37.81	23.52

**Introduction****Road speeds "Dynashift" at 2200 rev/min - 6150 to 6170 - 16.9R38 tyres**

RATIO	FORWARD		REVERSE		
	KPH	MPH	KPH	MPH	
<b>1</b>	A	2.04	1.27	2.06	1.28
	B	2.39	1.48	2.41	1.50
	C	2.82	1.75	3.10	1.93
	D	3.30	2.05	3.33	2.07
<b>2</b>	A	3.47	2.15	3.50	2.18
	B	4.06	2.52	4.10	2.55
	C	4.79	2.98	4.83	3.00
	D	5.60	3.48	5.65	3.51
<b>3</b>	A	4.56	2.83	4.60	2.86
	B	5.34	3.32	5.39	3.35
	C	6.30	3.92	6.36	3.96
	D	7.38	4.58	7.45	4.63
<b>4</b>	A	6.17	3.84	6.22	3.87
	B	7.22	4.49	7.29	4.53
	C	8.53	5.30	8.61	5.36
	D	9.98	6.20	10.07	6.26
<b>1</b>	A	7.65	4.75	7.72	4.80
	B	8.95	5.56	9.04	5.62
	C	10.56	6.56	10.66	6.63
	D	12.36	7.68	12.48	7.76
<b>2</b>	A	12.99	8.07	13.12	8.16
	B	15.20	9.45	15.34	9.54
	C	17.95	11.15	18.12	11.27
	D	21.00	13.05	21.20	13.19
<b>3</b>	A	17.10	10.62	17.26	10.74
	B	20.01	12.43	20.20	12.56
	C	23.62	14.68	23.84	14.83
	D	27.65	17.18	27.92	17.37
<b>4</b>	A	23.14	14.38	23.36	14.53
	B	27.08	16.83	27.34	17.01
	C	31.96	19.86	32.26	20.07
	D	37.41	23.25	37.77	23.49

**Road speeds "Dynashift" at 2200 rev/min - 6180/6190 - 18.4R38 tyres**

RATIO	FORWARD		REVERSE		
	KPH	MPH	KPH	MPH	
<b>1</b>	A	2.09	1.30	1.97	1.23
	B	2.45	1.52	2.31	1.44
	C	2.89	1.80	2.72	1.69
	D	3.38	2.10	3.19	1.98
<b>2</b>	A	3.55	2.21	3.35	2.08
	B	4.16	2.58	3.92	2.44
	C	4.91	3.05	4.63	2.88
	D	5.75	3.57	5.42	3.37
<b>3</b>	A	4.68	2.91	4.41	2.74
	B	5.47	3.40	5.16	3.21
	C	6.46	4.01	6.85	4.26
	D	7.56	4.70	7.13	4.43
<b>4</b>	A	6.33	3.93	5.97	3.71
	B	7.41	4.60	6.99	4.35
	C	8.74	5.43	8.24	5.13
	D	10.23	6.36	9.65	6.00
<b>1</b>	A	7.84	4.87	7.39	4.60
	B	9.17	5.70	8.65	5.38
	C	10.83	6.73	10.21	6.35
	D	12.67	7.88	11.95	7.43
<b>2</b>	A	13.32	8.28	12.56	7.81
	B	15.59	9.69	14.70	9.14
	C	18.50	11.43	17.35	10.79
	D	21.54	13.38	20.31	12.63
<b>3</b>	A	17.53	10.89	16.53	10.28
	B	20.52	12.75	19.35	12.04
	C	24.22	15.05	22.84	14.21
	D	28.35	17.61	26.73	16.63
<b>4</b>	A	23.72	14.74	22.37	13.91
	B	27.76	17.25	26.18	16.28
	C	32.77	20.36	30.90	19.22
	D	38.36	23.83	36.17	22.50



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# Introduction

### Final reduction units

Reduction units :	epicyclic, in the rear axle housings.
Reduction ratios :	6110/6120/6130/6140 (normal duty) 4.714 to 1
	6150/6160/6170 (heavy duty) 5.077 to 1
	6180/6190 5.571 to 1

### Power take-off

Independent power take-off (IPTO)  
P.T.O. ratio

Proportional to the engine speed. Hydraulic clutch.  
540 rev/min at 1980 engine rev/min  
1000 rev/min at 2000 engine rev/min

Speed changing  
(according to model)

Either by changing shafts :  
- 540 rev/min shaft, 35 mm (1<sup>3</sup>/<sub>8</sub> in) diameter, 6 splines.  
- 1000 rev/min shaft, 35 mm (1<sup>3</sup>/<sub>8</sub> in) diameter, 21 splines  
Or by external selection lever on rear L.h.s.  
- shaft 35 mm - 6 splines

"Economy" independant power  
take-off (optional extra)

The normal 540 and 1000 rev/min p.t.o. speeds can be  
obtained at the above stated engine speeds or at 1550  
engine rev/min by selecting the "economy" ratio.  
Lever in the cab.

Control

Ground speed P.T.O.  
(optional extra)

An addition to the independent P.T.O.

Control

Lever in the cab.

Speed : MF 6110/6120/6130/6140

- 540 rev/min - 7.87 revolutions of the p.t.o. shaft for 1 turn of  
the wheel axle.  
- 1000 rev/min - 14.83 revolutions of the p.t.o. shaft for 1 turn  
of the wheel axle.

Speed : MF 6150/6160/6170

- 540 rev/mn - 8.48 revolutions of the p.t.o. shaft for 1 turn of  
the wheel axle.  
- 1000 rev/mn - 15.54 revolutions of the p.t.o. shaft for 1 turn  
of the wheel axle.

Speed : MF 6180/6190

- 540 rev/mn - 8.23 revolutions of the p.t.o. shaft for 1  
revolution of the wheel.  
- 1000 rev/mn - 15.08 revolutions of the p.t.o. shaft for 1  
revolution of the wheel.

Front power take-off (optional extra)

Control

Hydraulic clutch mechanism controlled by a button in  
the cab.

Ratio

1000 rev/min at 2040 engine rev/min. - 2.04. : 1

### Four-wheel drive front axle

Clutch mechanism  
Differential Lock

Hydraulic, electrically actuated by push button in the cab  
Front and rear differential lock-hydraulic with electrical control.



# Introduction

## Hydraulics

Two stage gear pump, driven directly by the engine, supplies :

### 1st Stage

This circuit supplies 29 l/min (6.4 Imp. gal/min) (7.6 US gal/min) at maximum engine speed.  
Maximum pressure : 17 bar

1. Hydrostatic steering
  - Hare/Tortoise range gear
  - Differential lock (rear and front)
  - I.P.T.O. clutch
  - P.T.O. brake
  - Front P.T.O. (if fitted)
  - Four-wheel drive (if fitted)
  - Top up of brake master cylinder and clutch master cylinder
  - Clutch control valve (pressure loaded)
  - Lubrication of gearbox, P.T.O. and rear axle
  - Gearbox front unit (Speedshift or Dynashift)
  - Electro-hydraulic reverse shuttle (if fitted)

### 2nd Stage

This circuit supplies 50 l/min (11 Imp. gal/min) (13.2 US gal/min)  
Maximum pressure : 185 bar

2. Trailer brake supply
  - Auxiliary hydraulic system
  - Hydraulic lift.

### Filtration

External 150-micron throwaway, canister type suction strainer.  
External 15 micron High pressure filter.

## Hydraulic lift

Type : 3-point, Category 2or 3, with fixed, telescopic or quick attach hook type ball ends (according to model).  
Rams : 2. Lifting force (see charts)

**MF 6110/6120/6130/6140** - Rams Ø 57 mm (2.24 in)

Position of lift rod on lower links mm (in)	Length of lift rods mm (in)	Lower links horizontal Kg (Lb)	Lower links fully raised Kg (Lb)
508 (20)	565 (22.2) 765 (30.1)	2885 (6360) 3010 (6636)	3825 (8433) 3165 (6977)
608 (24)	565 (22.2) 765 (30.1)	- 3430 (7562)	4190 (9237) 3485 (7683)

**MF 6150/6160/6170** - Rams Ø 66 mm (2.59 in)

Position of lift rod on lower links mm (in)	Length of lift rods mm(in)	Lower links horizontal Kg (Lb)	Lower links fully raised Kg (Lb)
550 (21.6)	595 (23.4) 827 (32.5)	4350 (9590) 4276 (9427)	5194 (11451) 4308 (9497)
650 (25.6)	595 (23.4) 827 (32.5)	5740 (12654) 4788 (10556)	5689 (12541) 4703 (10368)

**MF 6150/6160** - Rams Ø 57 mm (2.24 in)

Position of lift rod on lower links mm (in)	Length of lift rods mm (in)	Lower links horizontal Kg (Lb)	Lower links fully raised Kg (Lb)
550 (21.6)	595 (23.4) 827 (32.5)	3192 (7037) 3138 (6918)	3812 (8404) 3162 (6971)
650 (25.6)	595 (23.4) 827 (32.5)	4213 (9286) 3514 (7747)	4175 (9204) 3452 (7610)

**MF 6180/6190** - Rams Ø 73 mm (2.87 in)

Position of lift rod on lower links mm (in)	Length of lift rods mm (in)	Lower links horizontal Kg (Lb)	Lower links fully raised Kg (Lb)
550 (21.6)	595 (23.4) 827 (32.5)	5425 (11960) 5000 (11023)	6510 (14352) 5087 (11215)
650 (25.6)	595 (23.4) 827 (32.5)	8090 (17835) 5717 (12604)	7117 (15690) 5595 (12335)



1A01.10

## 6100 SERIES TRACTORS



# Introduction

### Brakes

Type : Oil immersed single disc per wheel, 343 mm (13.50 in), outside diameter. Inside diameter of lining :  
 6110/6120/6130/6140 : 296 mm (11.65 in)  
 6150/6160/6170/6180/6190 : 274,5 mm (10.81 in)

Operation : Hydraulic, from two master cylinders, automatic adjustment.

Handbrake : Operates on the rear axle bevel gear.

Trailer brake : According to model by an hydraulic valve.

### Differential lock - Rear axle

Type : Positive clutch

Control : Hydraulic, with electrical control.

### Steering

Type : Hydrostatic fixed or tiltable telescopic steering column. One double action central ram

Theoretical turning circle	6110/20/30/40	6150	6160	6170/80/90
Tyres *	13.6-24	13.6-28	13.6-28	14.9-28
- 2 WD	•	•	•	•
- 4 WD	•	•	•	•
Track adjustments (m)	- 1,75	- 1,85	1,85	2,05
Angle	57°	55°	55°	55°
Radius tyres (outer)				
- without braking (m)	- 4,37	- 4,60	4,94	4,94

\* with front axle disengaged

### Wheels

FRONT 2-wheel drive pressed steel  
 4-wheel drive pressed steel

REAR pressed steel with manual adjustment or cast with power adjust variable track (P.A.V.T.), or manual adjustment.



## Introduction

### Tyres

Compatibility of front/rear tyres of 4-wheel drive tractors same make and model.

Tyres	Front	Rear	Front	Rear	Front	Rear
	11.2R28	13.6R38	13.6R28	16.9R38	420-70R24	520-70R34
		16.9R34		18.4R34	440-65R28	540-65R38
		18.4R30	14.9R24	13.6R38	420-70R28	520-70R38
(1) 12.4R24	13.6R38	16.9R30		18.4R34	480-65R28	520-70R38
		18.4R30	14.9R28	18.4R38		600-65R38
	13.6R24	13.6R38	(1) 380-70R24	480-70R34		
		16.9R34	380-70R28	480-70R38		

**NOTE :** The data in this table is not binding. Ask your dealer for further information on other possible choices.

(1) 6110/6120/6130/6140/6150 only

### Water Ballasting (75° fill)

Front tyres	Rim	Litre	Imp. gal.	US gal.	Kg	lb
11.2R28	W9 x 28	98	21.56	25.9	98	216
13.6R24	W12 x 24	139	30.60	36.7	139	306
13.6R28	W11 or W12 x 28	150	33.00	39.6	150	330
14.9R24	W12 x 24	178	39.20	47.0	178	392
14.9R28	W12 x 28	200	44.00	52.8	200	440
380-70R24	W12 x 24	161	35.40	42.5	161	354
380-70R28	W12 x 28	174	38.30	45.9	174	383
440-65R28		202	44.44	52.52	202	444
420-70R24	W12 x 24	192	42.20	50.7	192	423
420-70R28	W12 x 28	214	47.10	56.5	214	471
480-65R28	W12 x 28	255	56.10	67.3	255	561

Rear tyres	Rim	Litre	Imp. gal.	US gal.	Kg	lb
13.6R38	W11 or W12 x 38	184	40.50	48.6	184	405
16.9R30	W14 x 30	260	57.20	68.7	260	472
16.9R34	W14 or W15 x 34	285	62.70	75.3	285	627
16.9R38	W14 or W15 or W16 x 38	304	66.80	80.3	304	669
18.4R30	W14 or W15 or W16 x 30	304	66.80	80.3	304	669
18.4R34	W15 or W16 x 34	345	75.90	91.1	345	760
18.4R38	W15 or W16 x 38	386	84.90	102.0	386	850
480-70R34	W15 x 34	349	76.70	92.2	349	768
480-70R38	W15 x 38	375	82.50	99.0	375	826
520-70R34	W15 x 34	424	93.29	112.0	424	934
520-70R38	W15 x 38	452	99.45	119.4	452	995
540-65R38	W14, 15 or 16 x 38	386	84.92	100.36	386	849
600-65R38	W15 or W16 x 38	521	115.00	135.46	521	1146



1A01.12

# 6100 SERIES TRACTORS



## Introduction

### Capacities

Fuel tank : .....	6110/6120/6130/6140 :	130 l (28.60 Imp. gal.) (34.34 US gal.)
.....	6150/6160/6170/6180/6190 :	160 l (35.20 Imp. gal.) (42.27 US gal.)
Cooling system : .....	6110/6120/6130/6140/6150 :	17 l (3.74 Imp. gal.) (4.49 US gal.)
.....	6160/6170/6180/6190 :	25 l (5.50 Imp. gal.) (6.60 US gal.)
Engine sump : .....	6110/6120/6130/6140/6150 :	7,4 l (1.63 Imp. gal.) (1.95 US gal.)
.....	6160/6170/6180/6190 :	14,8 l (3.26 Imp. gal.) (3.91 US gal.)
Transmission/rear axle :* .....	6110/6120/6130/6140/6150/6160 :	62 l (13.66 Imp. gal.) (16.4 US gal.)
.....	6170/6180/6190 :	68 l (15 Imp. gal.) (18 US gal.)
Front axle assembly : .....	6110/6120/6130/6140/6160/6170/6180 :	6 l (1.32 Imp. gal.) (1.58 US gal.)
.....	6150 :	9 l (1.98 Imp. gal.) (2.38 US gal.)
.....	6190 :	6,7 l (1.47 Imp. gal.) (1.77 US gal.)
Front final reduction units (each) : .....	6110/6120/6130/6140 :	1 l (0.22 Imp. gal.) (0.26 US gal.)
.....	6150/6160 :	1,2 l (0.26 Imp. gal.) (0.32 US gal.)
.....	6170/6180/6190 :	2 l (0.44 Imp. gal.) (0.53 US gal.)

\* When working on steep slopes 10 l (2.2 Imp. gal.) (2.7 US gal.) of oil can be added.

### Front and rear static axle load limits - Kg (lb) at 1,5 bar (21.77 PSI) pressure

Type	Front		Rear	
	Kg (lb)	mm (in)	Kg (lb)	mm (in)
<b>2 WD</b> Normal duty				
6110/6120/6130/6140/6150	3800 (8377)	track 1,383 (54.45)	6340 (13977)	track 1,772 (69.76)
Heavy duty				
6150/6160/6170	4350 (9590)	track 1,484 (58.42)	6340 (13977)	track 1,772 (69.76)
6180/6190	4350 (9590)	track 1,484 (58.42)	7600 (16755)	track 1,835 (72.25)
<b>4 WD</b>				
6110/6120/6130/6140/6150	4000 (8818)	track 1,650 (64.96)	6340 (13977)	track 1,772 (69.76)
6160/6170	5000 (11023)	track 1,800 (70.87)	6340 (13977)	track 1,772 (69.76)
6180	5000 (11023)	track 1,800 (70.87)	7600 (16755)	track 1,835 (72.25)
6190	6000 (13228)	track 1,920 (75.60)	7600 (16755)	track 1,835 (72.25)



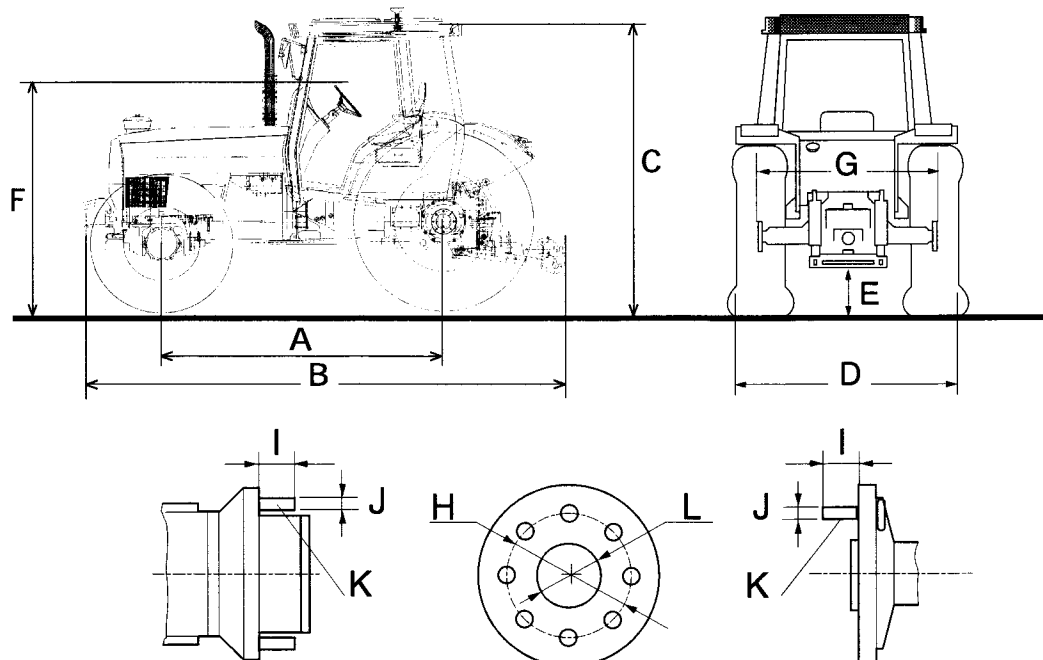
# Introduction

## Dimensions and weights

CHARACTERISTICS mm (in) - Kg (lb)	6110		6120/6130/6140		6150		6160/6170		6180		6190	
	2WD	4WD	2WD	4WD	2WD	4WD	2WD	4WD	2WD	4WD	2WD	4WD
A Wheelbase	2371 (93.34)	2375 (93.35)	2371 (93.34)	2375 (93.35)	2549 (100.35)	2553 (100.51)	2696 (106.10)	2699 (106.25)	2696 (106.10)	2699 (106.25)	2696 (106.10)	2699 (106.25)
B Overall length with drawbar	3995 (117.9)	4069 (160.2)	3995 (117.9)	4069 (160.2)	4137 (162.87)	4137 (162.87)	4320 (170)	4472 (176)	4402 (173.3)	4402 (173.3)	4527 (178.2)	4527 (178.2)
C Height to roof (cab tractor)	2627 (103.4)	2627 (103.4)	2627 (103.4)	2627 (103.4)	2724 (107.2)	2724 (107.2)	2755 (108.5)	2755 (108.5)	2768 (109)	2768 (109)	2908 (114.5)	2908 (114.5)
D Overall width (1)	2570 (101.2)	2570 (101.2)	2570 (101.2)	2570 (101.2)	2570 (101.2)	2570 (101.2)	2570 (101.2)	2570 (101.2)	2733 (107.6)	2733 (107.6)	2832 (111.5)	2832 (111.5)
E Ground clearance (under drawbar Frame)	385 (15.2)	385 (15.2)	385 (15.2)	385 (15.2)	385 (15.2)	385 (15.2)	445 (17.5)	445 (17.5)	442 (17.4)	442 (17.4)	502 (19.8)	502 (19.8)
F Height to steering wheel	1971 (77.6)	1971 (77.6)	1971 (77.6)	1971 (77.6)	2023 (79.6)	2023 (79.6)	2068 (81.4)	2068 (81.4)	2110 (83)	2110 (83)	2250 (88.6)	2250 (88.6)
Total weight (with full tank, without extra weight steel wheels)	3565 (7859)	3840 (8465)	3565 (7859)	3840 (8465)	4120 (9080)	4400 (9698)	4440 (9800)	4675 (10320)	4190 (9249)	4590 (10132)	4805 (10607)	5040 (11126)
Rear tyres dimensions	16.9-34		16.9-34		16.9-34		18.4-38		16.9-38		20.8-38	

G Distance between flanges	Rear axle		Front axle		
			AG85	AG105	AG125
* Normal duty axle housing shaft Ø 82	1774 (69.84)		1669 (67)	1800 (70.86)	1800 (70.86)
* Shaft straight shaft Ø 82	1835 (72.34)				
	2230 (87.79)				
H Stud distance	Ø 82 shafts (3.23)				
L Centring diameter	203,20 (8.00)		275 (10.8)		335 (13.20)
I Stud length	149,35 (5.88)				280,8 (11.04)
Wheel with steel hub	41 (1.61)		43 (1.70)	43 (1.70)	55 (2.16)
Wheel with cast iron hub	66 (2.60)				
J Stud diameter	M 18 x 1,5		M 18 x 1,5		M 22 x 1,5
K Number of studs	8		8		10

(1) These dimensions are applicable for tractors adjusted for max. track  
\* 6180/6190 only







1A01.14

## 6100 SERIES TRACTORS

**Introduction****C . Chassis dimensions and mounting points**

Ref.	6110/6130 6140	6150	6160/6170	6180/6190	Ref.	6110/6130 6140	6150	6160/6170	6180/ 6190
1	301,50	301,50	301,50	301,50	37	155	155	155	155
2	20,00	20,00	20,00	20,00	38	125	125	125	125
3	101,60	101,60	61,60	61,60	39	125	125	125	125
4	44,45	44,45	-	-	40	52	52	52	52
5	60,32	60,32	-	-					
6	101,60	101,60	-	-	41	52	52	52	52
7	481,00	570,00	621,40	621,40	42	79,5±2	79,5±2	79,5±2	96,5±2
8	112,40	201,40	49,60	49,60	43	46	46	46	46
9	25,25	25,25	6,27	6,27	44	190	190	190	190
10	70,00	70,00	101,60	101,60	45	100	100	100	100
					46	226	226	226	226
11	-	-	44,45	44,45	47	92	92	92	123
12	-	-	60,27	60,27	48	Ø149,35	Ø149,35	Ø149,35	Ø149,35
13	-	-	101,60	101,60	49	371,12	371,12	371,12	371,12
14	698,00	787,00	736,80	736,80					
15	340,05	429,05	370,60	370,60	50	320	320	320	320
16	571,75	571,75	771,50	771,50	51	110	110	110	110
17	896	896	896	896	52	130	130	130	130
18	890	890	890	890	53	65	65	65	65
19	567	567	567	567	54	142,75	142,75	142,75	142,75
20	-	-	94	94	55	20	20	20	20
					56	817	817	817	817
21	267	267	267	267	57	310	310	310	310
22	127,07	127,07	127,07	127,07	58	142,75	142,75	142,75	142,75
23	53	53	53	53	59	223	223	223	223
24	101,60	101,60	101,60	101,60	60	315	315	315	324
25	31,40	31,40	31,40	31,40					
26	101,60	101,60	101,60	101,60	61	100	100	100	
27	100	100	100	161	62	65	65	65	
28	260	260	260	280	63	65	65	65	
29	43	43	43	43	64	40 or 66	40 or 66	40 or 66	40 or 66
30	106	106	106	106	65	-	-	-	323,90
					66	-	-	-	76,20
31	224	224	224	224	67	-	-	-	120,60
32	128	128	128	128	68	-	-	-	241,30
33	1774	1774	1774	1835	69	3056	3231	3388	3388
34	-	-	-	2228					
35	-	-	-	2870	70	Ø203,2±0,3	Ø203,2±0,3	Ø203,2±0,3	Ø203,2±0,3
36	155	155	155	155	71		89		

A : 6 holes M20 through  
 B : 8 holes M20 x 38 deep  
 C : 12 holes M20 x 38 deep  
 D : 2 holes M20 through  
 E : 6 holes M16 x 31 deep  
 E' : 2 holes M16 x 25 deep  
 F : 2 holes diam. 37 - 37.16

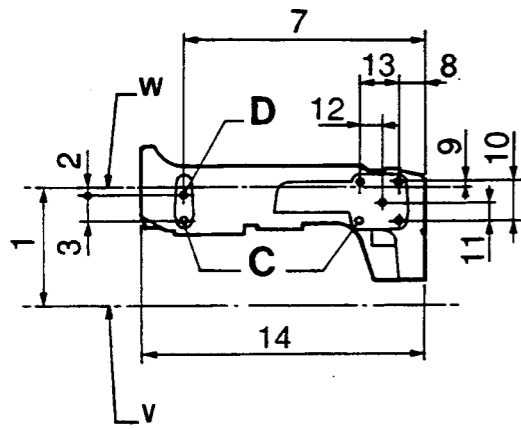
G : 8 holes M18 x 31 deep  
 H : 8 studs M18 - 1.5  
 I : 4 holes M16 x 25 deep  
 J : 5 holes M20 x 35 deep  
 K : 4 holes M16 x 30 deep  
 L : 4 holes diam. 20.70 ± 0.12 through

v : 4 WD centerline  
 w : Crankshaft centerline  
 x : Differential centerline  
 y : Trumpet centerline  
 z : PTO centerline

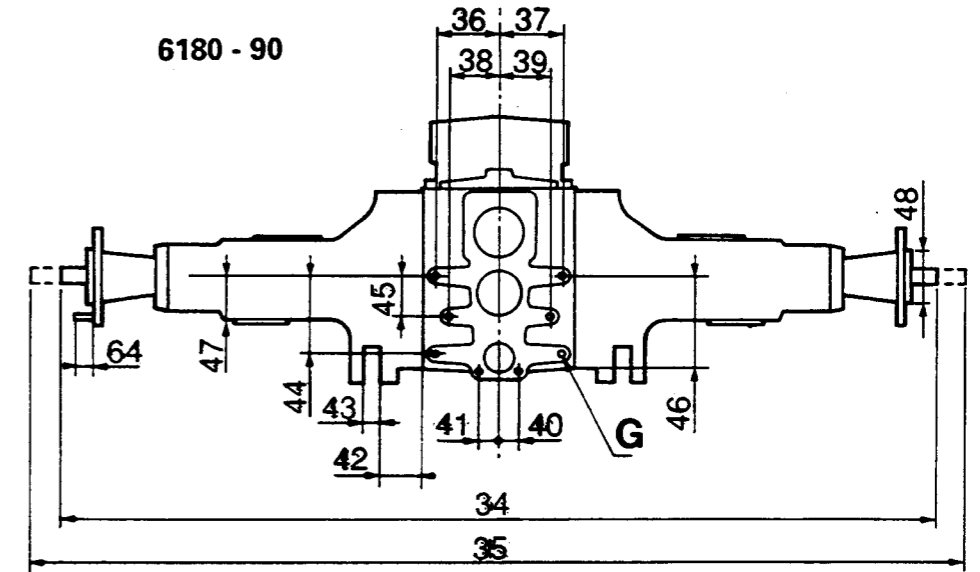
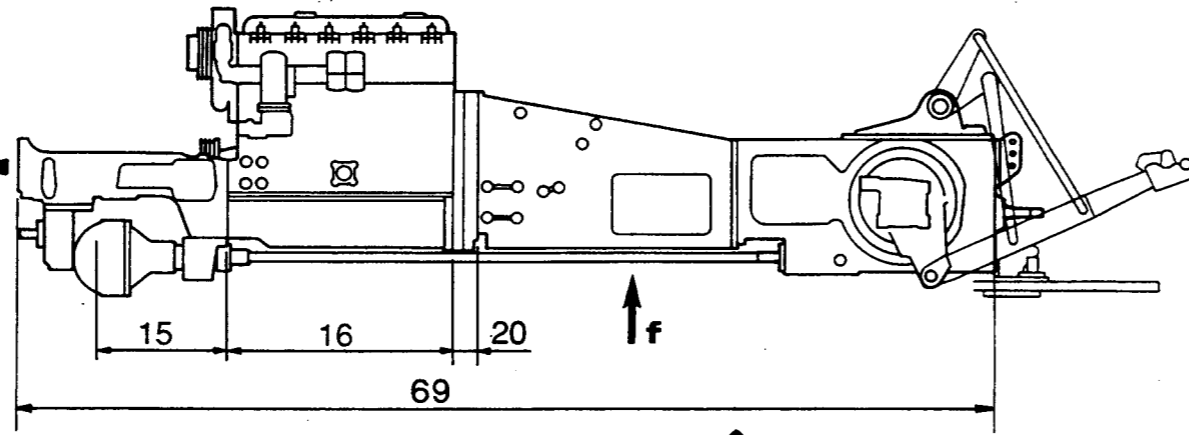


# Introduction

**6 CYL.**

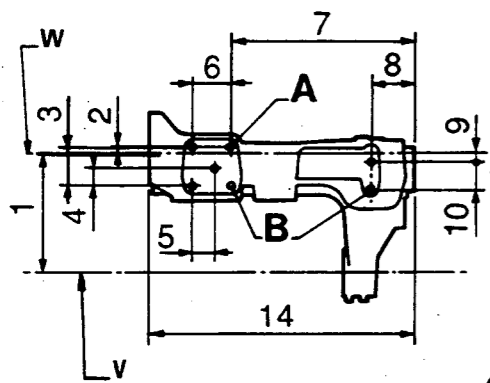


6160 - 70 - 80 - 90

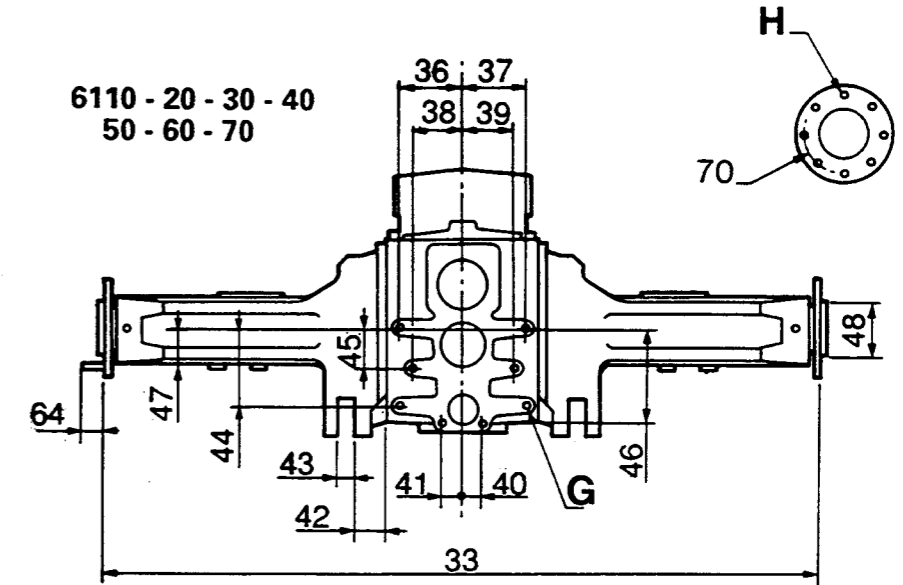
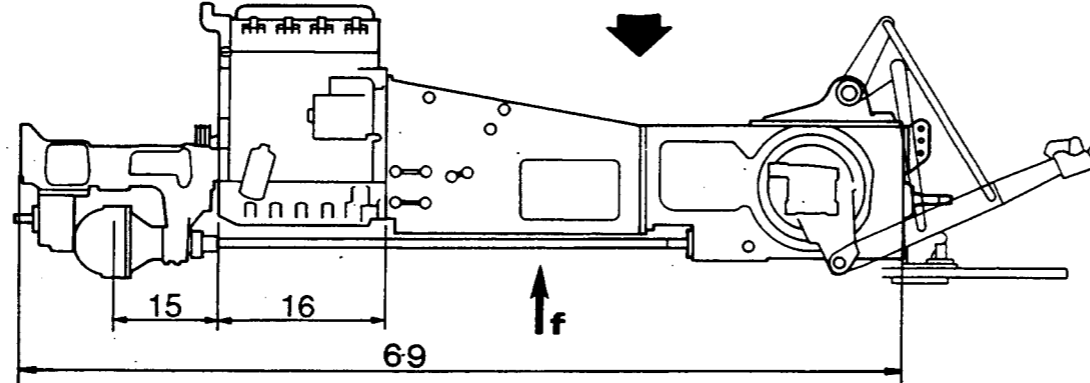


6180 - 90

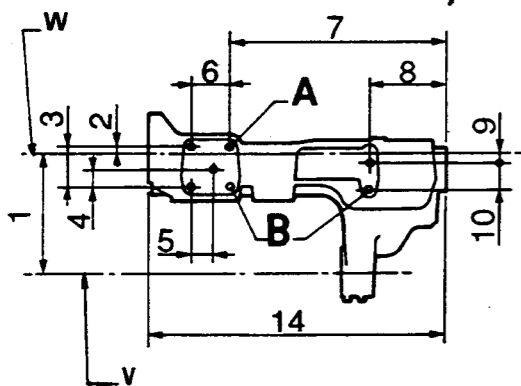
**4 CYL.**



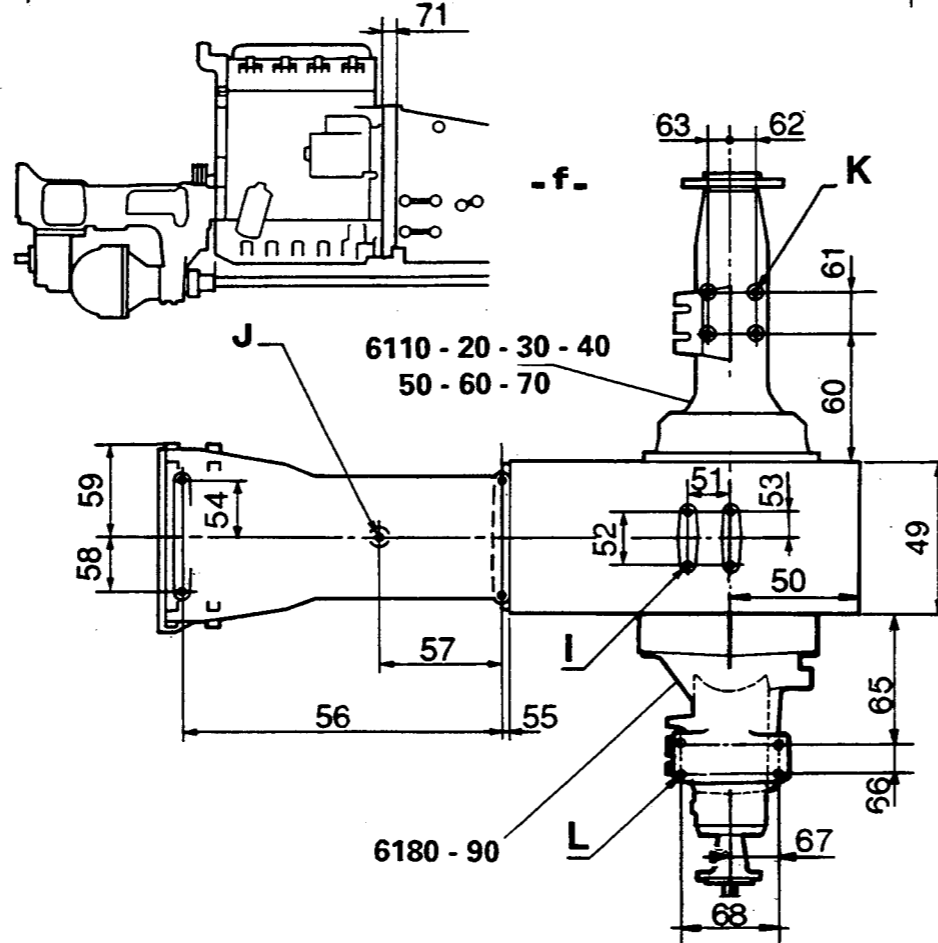
6110 - 20 - 30 - 40



6110 - 20 - 30 - 40  
50 - 60 - 70

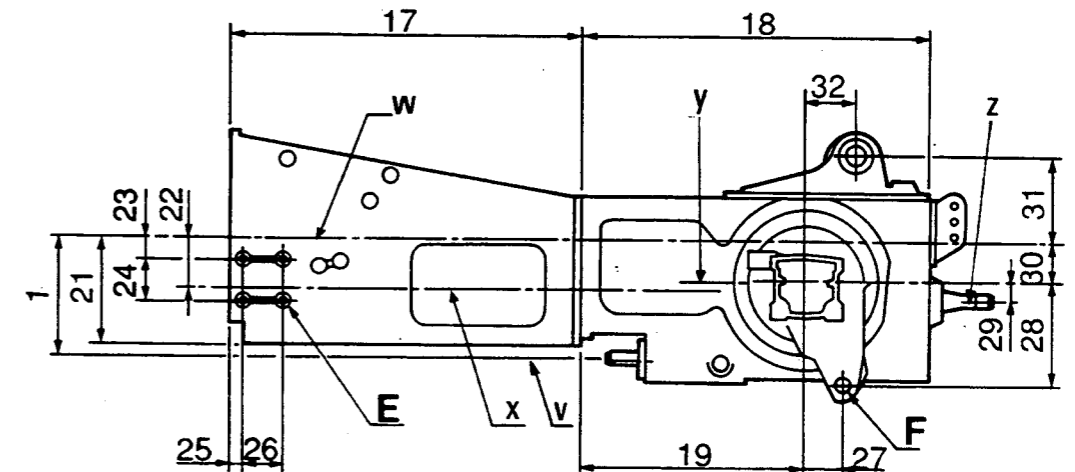


6150



6110 - 20 - 30 - 40  
50 - 60 - 70

6180 - 90



AA




# Introduction

## D. Safety precautions

When replacing a tractor part bearing a safety decal (yellow) a new safety sticker MUST be affixed onto the replacement part. A full list of the locations for all safety decals are specified below.

**G.B. CAUTION**



Before operating, read operator's instruction book thoroughly.  
Do not start engine until everyone is a safe distance from tractor and equipment.  
Keep all shields, covers and guards in place while engine is running.  
Keep hands, feet and clothing away from power driven or moving parts.

Always drive with due care and attention.


If differential lock does not disengage automatically, depress clutch pedal.  
Brake pedals must always be coupled together when independent brakes are not being used.

Before leaving tractor, apply parking brake, lower equipment, stop engine and remove key from starter switch.

When attaching equipment check operator's instruction book for front and rear axle load limits.  
Put the gears lever (1-2-3-4) in neutral position and put the reverse/forward lever in forward position or reverse position in order to use the external lift controls.  
Ensure that all wheel and rim nuts are tightened as specified in operator's instruction book.  
On public roads, use SMV emblem and flashing warning lights where required by law.


DO NOT REMOVE OR OBSCURE DECAL 3580321 M3

**WARNING**



Gears lever (1-2-3-4) must be in his neutral position and the reverse/forward lever in forward position or reverse position:  
- In order to use the external lift controls.  
- When the driver is not in his seat.


**WARNING**



When the tractor is stationary, it is imperative to fully apply the handbrake because leaving the tractor in gear will not prevent movement.  
When attempting to start the engine using a slave battery, ensure that the gear lever (1, 2, 3, 4) is in neutral.  
Never connect a slave battery directly to the starter motor

DO NOT REMOVE OR OBSCURE DECAL 3713705 M1




**G.B. WARNING**



High pressure steam and hot water.  
Remove filler cap with extreme care.


DO NOT REMOVE OR OBSCURE DECAL 3595685 M1

**G.B. WARNING**


DO NOT REMOVE OR OBSCURE DECAL

**G.B. WARNING**



Before working on the tractor, disconnect negative leads to all batteries.


**WARNING**



Before removing any battery, disconnect all negative leads before positive leads.

DO NOT REMOVE OR OBSCURE DECAL 3595679 M1

**G.B. CAUTION**



Keep all shields, covers and guards fastened in place while engine is running.


**WARNING**



Beware hot parts

DO NOT REMOVE OR OBSCURE DECAL 3595678 M1


**G.B. CAUTION**



TO AVOID POSSIBLE TRACTOR OVERTURN, PULL ONLY FROM DRAWBAR OR LOWER LINKS OF THREE POINT HITCH

2752579 M1


**G.B. WARNING**



Always disengage PTO and stop engine before attaching or detaching PTO shafts or working on PTO driven equipment.

Always fit PTO cover when PTO is not in use.

**CAUTION**



Do not stand between tractor and equipment when operating controls.

Tow only with MF approved tractor drawbar or hitch

DO NOT REMOVE OR OBSCURE DECAL 3581563 M1


**CAUTION**



Belt for use only on tractors with safety structures.

DO NOT REMOVE OR OBSCURE DECAL 523784 M3

**G.B. WARNING**



Before working on the tractor or removing this cover, disconnect negative leads to all batteries.

**CAUTION**



Use seat belt at all times.  
Keep belt adjusted snugly.

DO NOT REMOVE OR OBSCURE DECAL 3580316 M1


**CAUTION**



Voir Manuel d'Utilisation. See Operator Instruction Book. Vedere Libretto d'Uso. Siehe Betriebsanleitung Ver Manual del Operator

3617574 M1


**CAUTION**




Do not short across starter terminals to start engine.  
Never start engine while standing on the ground.  
Start engine only with start key from operator's seat, ensuring that gearbox and PTO are in neutral with parking brake applied.

DO NOT REMOVE OR OBSCURE DECAL 3596432 M1

**G.B. WARNING**




If tractor is overturning, hold onto steering wheel.  
Do not leave seat



DO NOT REMOVE OR OBSCURE DECAL 3580315 M1

**CAUTION**



IT IS IMPERATIVE TO USE THE TRANSMISSION OIL RECOMMENDED IN THE OPERATING MANUAL

3713699M1

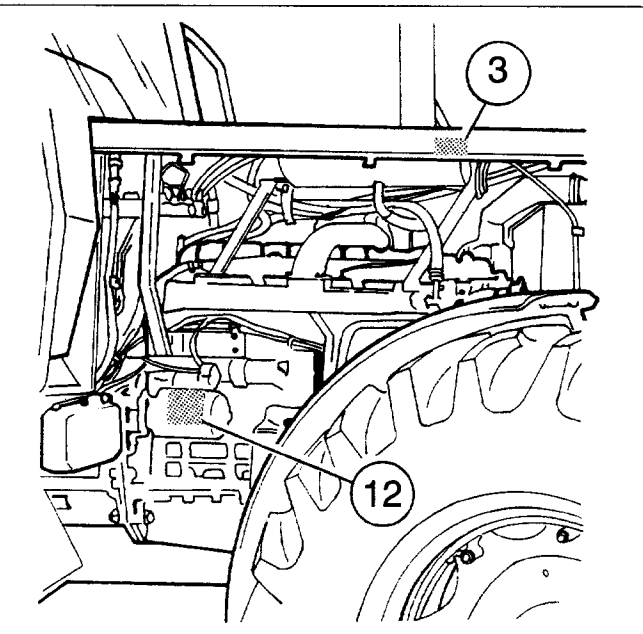
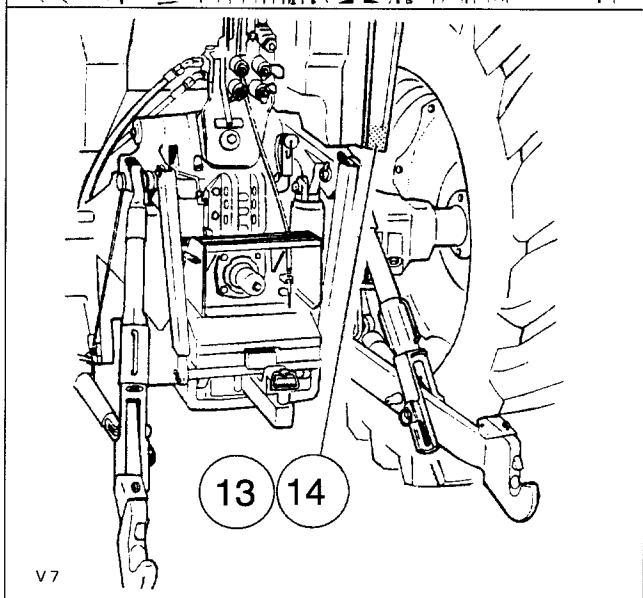
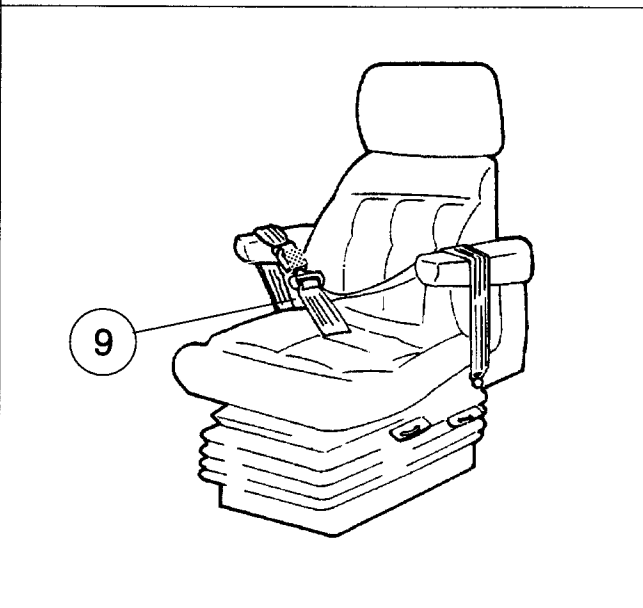
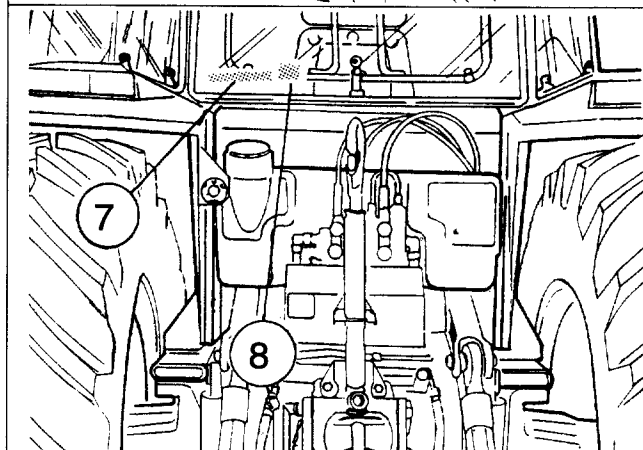
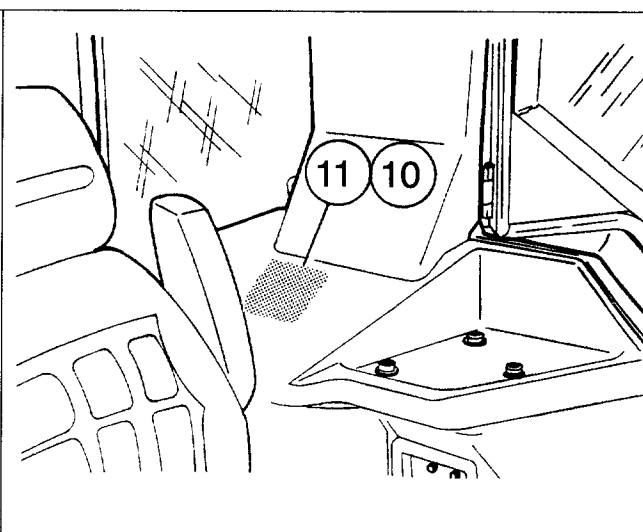
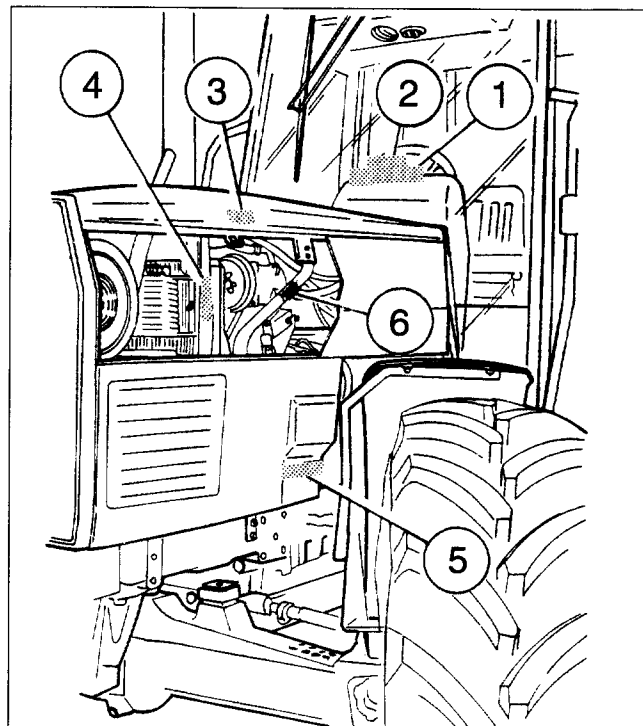


1A01.18

# 6100 SERIES TRACTORS



## Introduction



v7