VISIBLE - RESULTS

MF6200 SERIES

Workshop service manual

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1 . INTRODUCTION

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A . Using the manual

General

The purpose of this manual is to assist Distributors and Dealers in the efficient installation, maintenance and repair of AGCO 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 divid–
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

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 AGCO 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 AGCO parts. All AGCO replacement parts have the full backing of the manufacturer's warranty. AGCO 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.

B . Specifications

Engine

Caracteristic	6235*	6245*	6255*	6260	6265	6270	6280	6290
Perkins Motor	1004-40T	1004-40T	1004-40T	1004-40	1004-40T	1006-60T	1006-60T	1006-60T
Number of cylinders	4	4	4	6	4	6	6	6
Turbocharger	yes	yes	yes	no	yes	yes	yes	yes
Bore (mm)	100	100	100	100	100	100	100	100
Stroke (mm)	127	127	127	127	127	127	127	127
Cubic capacity (mm)	4	4	4	6	4	6	6	6
Nominal power (ISO Kw)	55,2	62,5	69,9	77,2	77,2	84,6	91,9	99,3
At engine speed of rev/min	2200	2200	2200	2200	2200	2200	2200	2200
Maximum torque (ISO Nm)	316	347	385	417	396	463	503	547
Engine speed at maximum torque	1400	1400	1400	1400	1400	1400	1400	1400
Idling speed	1000	1000	1000	1000	1000	1000	1000	1000
Maximum rated speed rev/min	2200	2200	2200	2200	2200	2200	2200	2200
Maximum no load speed rev/min	2354	2354	2354	2354	2354	2354	2354	2354
Lubrication	Gear type pump, strainer on suction side and external canister type filter(s)							
Valves	Overhead, push-road operated							
Valves clearance (cold) - Inlet (mm) - Exhaust (mm)	 0,20 0,45	 0,20 0,45	 0,20 0,45	 0,20 0,45	 0,20 0,45	 0,20 0,45	 0,20 0,45	 0,20 0,45
Engine oil cooler	yes	yes	yes	yes	yes	yes	yes	yes

Fuel system and air cleaner

Caracteristic	6235*	6245*	6255*	6260	6265	6270	6280	6290
Fuel filter with sediment bowl	yes	yes	yes	yes	yes	yes	yes	yes
Number of elements	1	1	1	2	1	2	2	2
Fuel injection pump	Lucas							
Injectors and nozzle holders	Lucas							
Cold weather starting	Thermostart							
Air cleaner : two-stage, dry element with blockage indicator								

* For all models ; standard and steep nose

Road speeds at 2200 rev/min "Speedshift" and creeper gear. Tyres 16.9R34

Range	FORWARD (Kph / Mph) Speedshift	Creeper 1/4	REVERSE (Kph / Mph) Speedshift		Creeper 1/4	
	Mechanical reverse and Power shuttle		Mechanical	Power shuttle	Mechanical	Power shuttle
1	2.45 (1.52)	0.61 (0.38)	2.38 (1.48)	2.45 (1.52)	0.60 (0.38)	0.61 (0.38)
2	3.10 (1.93)	0.78 (0.48)	3.01 (1.87)	3.10 (1.93)	0.75 (0.47)	0.78 (0.48)
3	3.70 (2.30)	0.93 (0.58)	3.60 (2.24)	3.70 (2.30)	0.90 (0.56)	0.93 (058)
4	4.68 (2.91)	1.17 (0.73)	4.55 (2.83)	4.68 (2.91)	1.14 (0.71)	1.17 (0.73)
5	5.13 (3.19)	1.28 (0.80)	4.98 (3.10)	5.13 (3.19)	1.25 (0.78)	1.28 (0.80)
6	6.48 (4.03)	1.62 (1.01)	6.30 (3.92)	6.48 (4.03)	1.57 (0.98)	1.62 (1.01)
7	7.42 (4.61)	1.86 (1.16)	7.21 (4.48)	7.42 (4.61)	1.80 (1.12)	1.86 (1.16)
8	9.38 (5.83)	2.35 (1.46)	9.12 (5.67)	9.38 (5.83)	2.28 (1.42)	2.35 (1.46)
9	9.84 (6.12)		9.56 (5.94)	9.84 (6.12)		
10	12.43 (7.73)		12.08 (7.51)	12.43 (7.73)		
11	14.86 (9.24)		14.44 (8.97)	14.86 (9.24)		
12	18.78 (11.67)		18.25 (11.34)	18.78 (11.67)		
13	20.56 (12.78)		19.98 (12.42)	20.56 (12.78)		
14	25.99 (16.15)		25.25 (15.69)	25.99 (16.15)		
15	29.77 (18.50)		28.92 (17.97)	29.77 (18.50)		
16	37.62 (23.38)		36.56 (22.72)	37.62 (23.38)		

Road speeds at 2200 rev/min "Speedshift" and creeper gear. Tyres16.9R38

Range	FORWARD (Kph/ Mph) Speedshift	Creeper 1/4	REVERSE (Kph / Mph) Speedshift		Creeper 1/4	
	Mechanical reverse and Power shuttle		Mechanical	Power shuttle	Mechanical	Power shuttle
1	2.43 (1.51)	0.61 (0.38)	2.36 (1.47)	2.43 (1.51)	0.59 (0.37)	0.61 (0.38)
2	3.07 (1.91)	0.77 (0.48)	2.98 (1.85)	3.07 (1.91)	0.75 (0.47)	0.77 (0.48)
3	3.67 (2.28)	0.92 (0.57)	3.57 (2.22)	3.67 (2.28)	0.89 (0.55)	0.92 (0.57)
4	4.64 (2.88)	1.16 (0.72)	4.51 (2.80)	4.64 (2.88)	1.13 (0.70)	1.16 (0.72)
5	5.08 (3.16)	1.27 (0.79)	4.94 (3.07)	5.08 (3.16)	1.23 (0.76)	1.27 (0.79)
6	6.42 (3.99)	1.61 (1.00)	6.24 (3.88)	6.42 (3.99)	1.56 (0.97)	1.61 (1.00)
7	7.35 (4.57)	1.84 (1.14)	7.15 (4.44)	7.35 (4.57)	1.79 (1.11)	1.84 (1.14)
8	9.30 (5.78)	2.32 (1.44)	9.03 (5.61)	9.30 (5.78)	2.26 (1.40)	2.32 (1.44)
9	9.75 (6.06)		9.47 (5.89)	9.75 (6.06)		
10	12.32 (7.66)		11.97 (7.44)	12.32 (7.66)		
11	14.72 (9.15)		14.30 (8.89)	14.72 (9.15)		
12	18.61 (11.57)		18.08 (11.24)	18.61 (11.57)		
13	20.37 (12.66)		19.79 (12.30)	20.37 (12.66)		
14	25.75 (16.00)		25.02 (15.55)	25.75 (16.00)		
15	29.49 (18.33)		28.66 (17.81)	29.49 (18.33)		
16	37.28 (23.17)		36.22 (22.51)	37.28 (23.17)		

Road speeds at 2200 rev/min "Speedshift" and creeper gear. Tyres 18.4R38

Range	FORWARD (Kph / Mph) Speedshift	Creeper 1/4	REVERSE (Kph / Mph) Speedshift		Creeper 1/4	
	Mechanical reverse and Power shuttle		Mechanical	Power shuttle	Mechanical	Power shuttle
1	2.51 (1.56)	0.63 (0.39)	2.44 (1.52)	2.51 (1.56)	0.61 (0.38)	0.63 (0.39)
2	3.17 (1.97)	0.79 (0.49)	3.08 (1.91)	3.17 (1.97)	0.77 (0.48)	0.79 (0.49)
3	3.79 (2.36)	0.95 (0.59)	3.68 (2.29)	3.79 (2.36)	0.92 (0.57)	0.95 (0.59)
4	4.79 (2.98)	1.20 (0.75)	4.65 (2.89)	4.79 (2.98)	1.16 (0.72)	1.20 (0.75)
5	5.24 (3.26)	1.31 (0.81)	5.09 (3.16)	5.24 (3.26)	1.27 (0.79)	1.31 (0.81)
6	6.62 (4.11)	1.66 (1.03)	6.43 (4.00)	6.62 (4.11)	1.61 (1.00)	1.66 (1.03)
7	7.59 (4.72)	1.90 (1.18)	7.37 (4.58)	7.59 (4.72)	1.84 (1.84)	1.90 (1.18)
8	9.59 (5.96)	2.40 (1.49)	9.32 (5.79)	9.59 (5.96)	2.33 (1.45)	2.40 (1.49)
9	10.05 (6.25)		9.77 (6.07)	10.05 (6.25)		
10	12.71 (7.90)		12.35 (7.68)	12.71 (7.90)		
11	15.18 (9.43)		14.75 (9.17)	15.18 (9.43)		
12	19.19 (11.93)		18.65 (11.59)	19.19 (11.93)		
13	21.01 (13.06)		20.42 (12.69)	21.01 (13.06)		
14	26.56 (16.51)		25.80 (16.03)	26.56 (16.51)		
15	30.42 (18.91)		29.56 (18.37)	30.40 (18.91)		
16	38.45 (23.90)		37.36 (23.22)	38.45 (23.90)		

Road speeds at 2200 rev/min "Speedshift" and creeper gear. Tyres 20.8R38

Range	FORWARD (Kph / Mph) Speedshift	Creeper 1/4	REVERSE (Kph / Mph) Speedshift		Creeper 1/4	
	Mechanical reverse and Power shuttle		Mechanical	Power shuttle	Mechanical	Power shuttle
1	2,55 (1,58)	0,64 (0,40)	2,53 (1,57)	2,55 (1,58)	0,63 (0,39)	0,64 (0,40)
2	3,22 (2,00)	0,81 (0,50)	3,20 (1,99)	3,22 (2,00)	0,80 (0,50)	0,81 (0,50)
3	3,85 (2,39)	0,96 (0,60)	3,83 (2,38)	3,85 (2,39)	0,96 (0,60)	0,96 (0,60)
4	4,87 (3,03)	1,22 (0,76)	4,84 (3,01)	4,87 (3,03)	1,21 (0,75)	1,22 (0,76)
5	5,33 (3,31)	1,33 (0,83)	5,30 (3,29)	5,33 (3,31)	1,32 (0,82)	1,33 (0,83)
6	6,73 (4,18)	1,68 (1,04)	6,69 (4,16)	6,73 (4,18)	1,67 (1,04)	1,68 (1,04)
7	7,71 (4,79)	1,93 (1,20)	7,67 (4,77)	7,71 (4,79)	1,92 (1,19)	1,93 (1,20)
8	9,75 (6,06)	2,44 (1,52)	9,69 (6,02)	9,75 (6,06)	2,42 (1,50)	2,44 (1,52)
9	10,22 (6,35)		10,16 (6,31)	10,22 (6,35)		
10	12,92 (8,03)		12,94 (7,98)	12,92 (8,03)		
11	15,44 (9,60)		15,35 (9,54)	15,44 (9,60)		
12	19,51 (12,13)		19,40 (12,06)	19,51 (12,13)		
13	21,36 (13,28)		21,24 (13,20)	21,36 (13,28)		
14	27,00 (16,78)		26,84 (16,68)	27,00 (16,78)		
15	30,93 (19,22)		30,75 (19,11)	30,93 (19,22)		
16	39,09 (24,29)		38,86 (24,15)	39,09 (24,29)		

Road speed forward at 2200 rev/min "Dynashift" and creeper gear

Range	FORWARD (Kph / Mph) Mechanical reverse shuttle and Power shuttle							
Tyres	16.9R34	Creeper 1/4	16.9R38	Creeper 1/4	18.4R38	Creeper 1/4	20.8R38	Creeper 1/4
1	2.05 (1.27)	0.51 (0.32)	2.03 (1.26)	0.51 (0.32)	2.10 (1.31)	0.52 (0.32)	2.13 (1.32)	0.53 (0.33)
2	2.40 (1.49)	0.60 (0.37)	2.38 (1.48)	0.59 (1.48)	2.45 (1.52)	0.61 (0.38)	2.50 (1.55)	0.62 (0.39)
3	2.83 (1.76)	0.71 (0.44)	2.81 (1.75)	0.70 (0.44)	2.90 (1.80)	0.72 (0.45)	2.95 (1.83)	0.74 (0.46)
4	3.32 (2.06)	0.83 (0.52)	3.29 (2.04)	0.82 (0.51)	3.39 (2.11)	0.85 (0.53)	3.45 (2.14)	0.86 (0.53)
5	3.49(2.17)	0.87 (0.54)	3.45 (2.14)	0.86 (0.53)	3.56 (2.21)	0.89 (0.55)	3.62 (2.25)	0.91 (0.57)
6	4.08 (2.54)	1.02 (0.63)	4.04 (2.51)	1.01 (0.63)	4.17 (2.59)	1.04 (0.65)	4.24 (2.64)	1.06 (0.66)
7	4.82 (3.00)	1.20 (0.75)	4.77 (2.96)	1.19 (0.74)	4.92 (3.06)	1.23 (0.76)	5.01 (3.11)	1.25 (0.78)
8	5.64 (3.51)	1.41 (0.88)	5.59 (3.47)	1.40 (0.87)	5.76 (3.58)	1.44 (0.89)	5.86 (3.64)	1.46 (0.91)
9	4.59 (2.85)	1.15 (0.71)	4.55 (2.83)	1.14 (0.71)	4.69 (2.91)	1.17 (0.73)	4.77 (2.96)	1.19 (0.74)
10	5.37 (3.34)	1.34 (0.83)	5.32 (3.31)	1.33 (0.83)	5.49 (3.41)	1.37 (0.85)	5.58 (3.47)	1.40 (0.87)
11	6.34 (3.94)	1.58 (0.98)	6.28 (3.90)	1.57 (0.98)	6.48 (4.03)	1.62 (1.01)	6.59 (4.10)	1.65 (1.03)
12	7.42 (4.61)	1.86 (1.16)	7.35 (4.57)	1.84 (1.14)	7.58 (4.71)	1.90 (1.18)	7.71 (4.79)	1.93 (1.20)
13	6.21 (3.86)	1.55 (0.96)	6.15 (3.82)	1.54 (0.96)	6.35 (3.95)	1.59 (0.99)	6.45 (4.01)	1.61 (1.00)
14	7.27 (4.52)	1.82 (1.13)	7.20 (4.47)	1.80 (1.12)	7.43 (4.62)	1.86 (1.16)	7.55 (4.69)	1.89 (1.17)
15	8.58 (5.33)	2.14 (1.33)	8.50 (5.28)	2.13 (1.32)	8.77 (5.45)	2.19 (1.36)	8.92 (5.54)	2.23 (1.39)
16	10.04 (6.24)	2.51 (1.56)	9.95 (6.18)	2.49 (1.55)	10.26 (6.38)	2.57 (1.60)	10.44 (6.49)	2.61 (1.62)
17	7.69 (4.78)		7.62 (4.74)		7.86 (4.89)		7.99 (4.97)	
18	9.00 (5.59)		8.92 (5.54)		9.20 (5.72)		9.36 (5.82)	
19	10.63 (6.61)		10.53 (6.54)		10.86 (6.75)		11.04 (6.86)	
20	12.44 (7.73)		12.32 (7.66)		12.71 (7.90)		12.92 (8.03)	
21	13.07 (8.12)		12.95 (8.05)		13.36 (8.30)		13.58 (8.44)	
22	15.29 (9.50)		15.16 (9.42)		15.63 (9.71)		15.90 (9.88)	
23	18.05 (11.22)		17.89 (11.12)		18.45 (11.47)		18.76 (11.66)	
24	21.13 (13.13)		20.94 (13.01)		21.60 (13.42)		21.96 (16.65)	
25	17.20 (10.69)		17.04 (10.59)		17.58 (10.93)		17.88 (11.11)	
26	20.13 (12.51)		19.95 12.40)		20.57 (12.78)		20.92 (13.00)	
27	23.76 (14.77)		23.55 (14.64)		24.29 (15.10)		24.70 (15.35)	
28	27.81 (17..28)		27.56 (17.13)		28.42 (17.66)		28.90 (17.96)	
29	23.27 (14.46)		23.06 (14.33)		23.79 (14.79)		24.19 (15.03)	
30	27.24 (16.93)		26.99 (16.77)		27.84 (17.30.		28.31 (17.59)	
31	32.15 (19.98)		31.86 (19.80)		32.86 (20.42)		33.42 (20.77)	
32	37.64 (23.39)		37.29 (23.18)		38.46 (23.90)		39.11 (24.31)	

Road speed reverse at 2200 rev/min "Dynashift"

Range	REVERSE (Kph / Mph)							
	Mechanical reverse shuttle	Power shuttle	Mechanical reverse shuttle	Power shuttle	Mechanical reverse shuttle	Power shuttle	Mechanical reverse shuttle	Power shuttle
Tyres	**16.9R34**		**16.9R38**		**18.4R38**		**20.8R38**	
1	1,93 (1,20)	2,05 (1,27)	1,91 (1,19)	2,03 (1,26)	1,97 (1,22)	2,10 (1,31)	1,94 (1,21)	2,13 (1,32)
2	2,26 (1,40)	2,40 (1,49)	2,24 (1,39)	2,38 (1,48)	2,31 (1,44)	2,45 (1,52)	2,27 (1,41)	2,50 (1,55)
3	2,67 (1,66)	2,83 (1,76)	2,64 (1,64)	2,81 (1,75)	2,73 (1,70)	2,90 (1,80)	2,68 (1,67)	2,95 (1,83
4	3,12 (1,94)	3,32 (2,06)	3,09 (1,92)	3,29 (2,04)	3,19 (1,98)	3,39 (2,11)	3,14 (1,95)	3,45 (2,14)
5	3,28 (2,04)	3,49 (2,17)	3,25 (2,02)	3,45 (2,14)	3,35 (2,08)	3,56 (2,21)	3,30 (2,05)	3,62 (2,25)
6	3,84 (2,39)	4,08 (2,54)	3,81 (2,37)	4,04 (2,51)	3,92 (2,44)	4,17 (2,59)	3,86 (2,40)	4,24 (2,64)
7	4,53 (2,82)	4,82 (3,00)	4,49 (2,79)	4,77 (2,96)	4,63 (2,88)	4,92 (3,06)	4,56 (2,83)	5,01 (3,11)
8	5,31 (3,30)	5,64 (3,51)	5,26 (3,27)	5,59 (3,47)	5,42 (3,37)	5,76 (3,58)	5,34 (3,32)	5,86 (3,64)
9	4,32 (2,68)	4,59 (2,85)	4,28 (2,66)	4,55 (2,83)	4,41 (2,74)	4,69 (2,91)	4,34 (2,70)	4,77 (2,96)
10	5,05 (3,14)	5,37 (3,34)	5,01 (3,11)	5,32 (3,31)	5,17 (3,21)	5,49 (3,41)	5,08 (3,16)	5,58 (3,47)
11	5,97 (3,71)	6,34 (3,94)	5,91 (3,67)	6,28 (3,90)	6,10 (3,79)	6,48 (4,03)	6,00 (3,73)	6,59 (4,10)
12	6,98 (4,34)	7,42 (4,61)	6,92 (4,30)	7,35 (4,57)	7,14 (4,44)	7,58 (4,71)	7,02 (4,36)	7,71 (4,79)
13	5,84 (3,63)	6,21 (3,86)	5,79 (3,60)	6,15 (3,82)	5,97 (3,71)	6,35 (3,95)	5,88 (3,65)	6,45 (4,01)
14	6,84 (4,25)	7,27 (4,52)	6,78 (4,21)	7,20 (4,47)	6,99 (4,34)	7,43 (4,62)	6,88 (4,28)	7,55 (4,69)
15	8,07 (5,02)	8,58 (5,33)	8,00 (4,97)	8,50 (5,28)	8,25 (5,13)	8,77 (5,45)	8,12 (5,05)	8,92 (5,54)
16	9,45 (5,87)	10,04 (6,24)	9,36 (5,82)	9,95 (6,18)	9,66 (6,00)	10,26 (6,38)	9,50 (5,90)	10,44 (6,49)
17	7,23 (4,49)	7,69 (4,78)	7,17 (4,46)	7,62 (4,74)	7,39 (4,59)	7,86 (4,89)	7,28 4,52)	7,99 (4,97)
18	8,47 (5,26)	9,00 (5,59)	8,39 (5,21)	8,92 (5,54)	8,65 (5,38)	9,20 (5,72)	8,52 (5,30)	9,36 (5,82)
19	9,99 (6,21)	10,63 (6,61)	9,90 (6,15)	10,53 (6,54)	10,21 (6,35)	10,86 (6,75)	10,06 (6,25)	11,04 (6,86)
20	11,70 (7,27)	12,44 (7,73)	11,59 (7,20)	12,32 (7,66)	11,95 (7,43)	12,71 (7,90)	11,77 (7,32)	12,92 (8,03)
21	12,29 (7,64)	13,07 (8,12)	12,18 (7,57)	12,95 (8,05)	12,56 (7,81)	13,36 (8,30)	12,37 (7,69)	13,58 (8,44)
22	14,39(8,94)	15,29 (9,50)	14,25 (8,86)	15,16 (9,42)	14,70 (9,14)	15,63 (9,71)	14,48 (9,00)	15,90 (9,88)
23	16,98 (10,55)	18,05 (11,22)	16,83 (10,46)	17,89 (11,12)	17,35 (10,78)	18,45 (11,47)	17,09 (10,62)	18,76 (11,66)
24	19,87 (12,35)	21,13 (13,13)	19,69 (12,24)	20,94 (13,01)	20,31 (12,62)	21,60 (13,42)	20,00 (12,43)	21,96 (13,65)
25	16,18 (10,06)	17,20 (10,69)	16,03 (9,96)	17,04 (10,59)	16,53 (10,27)	17,58 (10,93)	16,28 (10,12)	17,88 (11,11)
26	18,93 (11,77)	20,13 (12,51)	18,76 (11,66)	19,95 (12,40)	19,35 (12,03)	20,57 (12,78)	19,06 (11,85)	20,92 (13,00)
27	22,35 (13,89)	23,76 (14,77)	22,15 (13,77)	23,55 (14,64)	22,84 (14,20)	24,29 (15,10)	22,49 (13,98)	24,70 (15,35)
28	26,16 (16,26)	27,81 (17,28)	25,92 (16,11)	27,56 (17,13)	26,73 (16,61)	28,42 (17,66)	26,33 (16,36)	28,90 (17,96)
29	21,89 (13,60)	23,27 (14,46)	21,69 (13,48)	23,06 (14,33)	22,37 (13,90)	23,79 (14,79)	22,03 (13,69)	24,19 (15,03)
30	25,62 (15,92)	27,24 (16,93)	25,39 (15,78)	26,99 (16,77)	26,19 (16,28)	27,84 (17,30)	25,79 (16,03)	28,31 (17,59)
31	30,24 (18,79)	32,15 (19,98)	29,97 (18,63)	31,86 (19,80)	30,91 (19,21)	32,86 (20,42)	30,44 (18,92)	33,42 (20,77)
32	35,40 (22,00)	37,64 (23,39)	35,07 (21,80)	37,29 (23,18)	36,18 (22,49)	38,46 (23,90)	35,63 (22,14)	39,11 (24,31)

Road speed reverse at 2200 rev/min "Dynashift" and creeper gearbox

Range	REVERSE (Kph / Mph)							
	Mechanical reverse shuttle	Power shuttle	Mechanical reverse shuttle	Power shuttle	Mechanical reverse shuttle	Power shuttle	Mechanical reverse shuttle	Power shuttle
Tyres	**16.9R34**		**16.9R38**		**18.4R38**		**20.8R38**	
1	0,48 (0,30)	0,51 (0,32)	0,48 (0,30)	0,51 (0,32)	0,49 (0,30)	0,52 (0,32)	0,49 (0,30)	0,53 (0,33)
2	0,57 (0,35)	0,60 (0,37)	0,56 (0,35)	0,59 (0,37)	0,58 (0,36)	0,61 (0,38)	0,57 (0,35)	0,62 (0,39)
3	0,67 (0,42)	0,71 (0,44)	0,66 (0,41)	0,70 (0,44)	0,68 (0,42)	0,72 (0,45)	0,67 (0,42)	0,74 (0,46)
4	0,78 (0,48)	0,83 (0,52)	0,77 (0,48)	0,82 (0,51)	0,80 (0,50)	0,85 (0,53)	0,79 (0,49)	0,86 (0,53)
5	0,82 (0,51)	0,87 (0,54)	0,81 (0,50)	0,86 (0,53)	0,84 (0,52)	0,89 (0,55)	0,83 (0,52)	0,91 (0,57)
6	0,96 (0,60)	1,02 (0,63)	0,95 (0,59)	1,01 (0,63)	0,98 (0,61)	1,04 (0,65)	0,97 (0,60)	1,06 (0,66)
7	1,13 (0,70)	1,20 (0,75)	1,12 (0,70)	1,19 (0,74)	1,16 (0,72)	1,23 (0,76)	1,14 (0,71)	1,25 (0,78)
8	1,33 (0,83)	1,41 (0,88)	1,31 (0,81)	1,40 (0,87)	1,36 (0,85)	1,44 (0,89)	1,33 (0,83)	1,46 (0,91)
9	1,08 (0,67)	1,15 (0,71)	1,07 (0,67)	1,14 (0,71)	1,10 (0,68)	1,17 (0,73)	1,09 (0,68)	1,19 (0,74)
10	1,26 (0,78)	1,34 (0,83)	1,25 (0,78)	1,33 (0,83)	1,29 (0,80)	1,37 (0,85)	1,27 (0,79)	1,40 (0,87)
11	1,49 (0,93)	1,58 (0,98)	1,48 (0,92)	1,57 (0,98)	1,52 (0,94)	1,62 (1,01)	1,50 (0,93)	1,65 (1,03)
12	1,75 (1,09)	1,86 (1,16)	1,73 (1,08)	1,84 (1,14)	1,78 (1,11)	1,90 (1,18)	1,76 (1,09)	1,93 (1,20)
13	1,46 (0,91)	1,55 (0,96)	1,45 (0,90)	1,84 (0,96)	1,49 (0,93)	1,59 (0,99)	1,47 (0,91)	1,61 (1,00)
14	1,71 (1,06)	1,82 (1,13)	1,69 (1,05)	1,80 (1,12)	1,75 (1,09)	1,86 (1,16)	1,72 (1,07)	1,89 (1,17)
15	2,02 (1,26)	2,14 (1,33)	2,00 (1,24)	2,13 (1,32)	2,06 (1,28)	2,19 (1,36)	2,03 (1,26)	2,23 (1,39)
16	2,36 (1,47)	2,51 (1,56)	2,34 (1,45)	2,49 (1,55)	2,41 (1,50)	2,57 (1,60)	2,38 (1,48)	2,61 (1 ,62)

Electrical system

Voltage :	12 volts negative groung.
Batteries:	2 maintenance free batteries.
Alternator :	70/120 Amp. according to model
Safety start :	Operated by the cluch pedal.
Lamps :	European code 40/45 W
Sidelights :	5 W
Direction indicators :	21 W
Number plate light :	10 W
Work lamps :	55 W - H3
Instrument panel lighting and warning lights :	3 W - 2 W - 1,2 W
Rooflight :	10 W

Cooling

Operation :	Centrifugal pump pressurised radiator, regulated by opening tem perature : 82° C (179,2° F) controlled by thermostat.
Fan :	Viscostatic model gear driven water pump.
Belt deflection on the longest span	19 mm (4 cylinders) 10 mm (6 cylinders)

Transmission

Gearbox :	- 16 or 32 forward speeds
• Without Dynashift :	- 16 forward speeds. - 16 reverse speeds. - Reverse shuttle synchronised
• With Dynashift gearbox :	- 32 forward speeds - 32 reverse speeds - Four selectable ratios without declutchin - Reverse shuttle synchronised.
• Creeper gearbox 4/1 ratio :	- 8 or 16 creeper
• Clutch :	- Wet clutch with spring loaded 4 disc. - Wet clutch 5 disc.
• Filtration :	1 strainer 150 micron on suction located to the left of the trans mission housing. External main high-pressure filter, 15 micron, to the right of the housing.
• Reverse power shuttle 6235 to 6260	Driven by clutch 4 discs in forward, 3 discs in reverse.
• Reverse power shuttle 6260 to 6290	Driven by clutch 5 discs in forward, 4 discs in reverse.
• Filtration :	1 strainer 60 micron.

Final reduction units

Reduction units :	Epicyclic, in the rear axle housings.
Reduction ratios :	6235/45/55 : (ND) 4.714:1. 6260/65/70 : (HD) 5.077:1. 6280/90 : (SHD) 5;571:1.

Power take-off

Power take-off (IPTO) :	Proportional to the engine speed. Hydraulic clutch
P.T.O. ratio :	540 rev/min shaft, 1980 engine rev/min, 1000 rev/min shaft, 2000 engine rev/min,
Speed changing (according to model) :	Or by changing shafts : - 540 rev/min shaft, 35 mm (1"3/8 in) diameter, 6 splines. - 1000 rev/min shaft, 35 mm (1"3/8 in) diameter, 21 splines. - 1000 rev/min shaft, 44 mm (1"3/8 in) diameter, 21 splines. Or by external selection lever on rear L.h.s (according to country).
"Economy" independant power take-off (optional extra)	The normal 540 and 1000 rev/min p.t.o. speeds can be obtained : - or the above stated engine speeds - or at 1550 engine rev/min by selecting the "economy" ratio.
Control :	Lever in the cab..

Four-wheel drive front axle

Clutch mechanism :	Hydraulic, electrically actuated by push button in the cab.
Differential lock :	Front and rear differential lock-hydraulic with electrical control.
Reduction ratios :	AG85 (18,975), AG105 (20,7), AG125(20,87), AG155 (20,872).

Hydraulics (according to model)

Open center hydraulic system :

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

1st Stage (Flow. 32.7 l/min (5 Imp. gal/min) (5.9 US gal/min) at maximum engine speed, pressure 17 bar (246.5 lbf/in^2) ensures :

- Hydrostatic steering
- Differential lock
- High/Low range gear
- I.P.T.O. clutch
- P.T.O. brake
- Front P.T.O. (if fitted)
- Four-wheel drive (if fitted)
- Hydraulic brakes
- Clutch
- Lubrication of gearbox and PTO

2nd Stage (Flow. 57 l/min (12.5 Imp. gal/min) (15 US gal/min) at maximum engine speed, pressure :185 bar (2684 lbf/in²) 6290 : 200 bar (2902 lbf/in2) ensures :
- Auxiliary hydraulic system, trailer brake supply, hydraulic lift.

Filtration : External 150-micron throw away, canister type suction strainer.
External 15 micron High pressure filter.

Closed centre hydraulic system with flow and pressure control (optional)
Primary booster system (Max. flow 164.5 l/mn at 2.200 rpm (36.19 imp.gal - 43.42 US gal) ensures :
- constant boost pressure of 5 bar from variable displacement pump, lubrication of the gearbox, cooling system, boost pressure of master cylinders.

High-pressure system (Max. flow > 90 or 110 l/mn (19.8 or 24.2 imp.gal - 23.7 or 29 US gal) at 2.200 rpm maxi pressure 200 bar) ensures :
- hydrostatic steering, trailer brake, 17 bar valve, auxiliary spool valve, linkage

Filtration : 1 strainer, 150 micron, on suction, located to the left of the transmission housing.
External main high-pressure filter, 15 micron, to the right of the housing

Hydraulic lift

Rear

Type : 3-point, Category 2or 3, with fixed, telescopic or quick attach hook type ball ends (according to model)

6235/6245/6255/6260/6265/6270..... Rams : Ø 66 - Qty 2 - Lifting force at ball end : 5850 kg (12893 Lb)*
6235/6245/6255/6260/6265/6270..... Rams : Ø 73 - Qty 2 - Lifting force at ball end : 6500 kg (14326 Lb)*
6280/6290 ..... Rams : Ø 75 - Qty 2 - Lifting force at ball end : 7100 kg (15648 Lb)*

Front

Type : TE 2200
6235/6245/6255/6265/6270/6280/6290 Lifting force at ball end : 2860 kg (6303 Lb)

* Maximum capacity according to lift rod position and linkage model.

Brakes

Type : Oil immersed single disc per wheel, 343 mm (13.50 in), outside diameter. Inside diameter of lining.
6235/6245 : 296 mm (11.65 in)
6255 à 6290 : 290 mm (11.41 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.

Theroritical turning circle	**6235/6245**	**6255/6265**	**6260**	**6270/80**	**6290**
Tyres	13.6R24	13.6R28	13.6R28	14.9R28	16.9R28
2 WD 4 WD	• •	• •	•	•	•
Track adjustments Angle	1,75 57 ° 55 °	1,85 57 ° 55 °	1,85 55 °	2,05 55 °	2,17 55 °
Radius tyres outer* Without brake (m)	4,37	4,60	4,94	4,94	4,94

* with front axle disengaged

Introduction

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.

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 16.9R34 18.4R30	13.6R28	16.9R38 18.4R34	380-70R28 420-70R24 440-65R28	480-70R38 520-70R34 540-65R38
	12.4R24	13.6R38 16.9R30 18.4R30	14.9R24 14.9R28	13.6R38 18.4R34 18.4R38	420-70R28 480-65R28	520-70R38 520-70R38 600-65R38
	13.6R24	13.6R38 16.9R34	16.9R28 380-70R24	20.8R38 480-70R34	480-70R28 540.65R28	580.70R38 650.65R38

Nota : The data in this table is not all inclusive. Ask your dealer for further information on other possible choices.

Capacities

Fuel tank:	6235/6245	130 l	(28.6 Imp. gal.)	(34.34 Us gal.)
	6255/6265/6260/6270/6280/6290	160 l	(35.20 Imp. gal.)	(47.27 Us gal.)
Additional fuel tank:	6235/6245/6255/6265/6260/70/80	67 l	(14.71 Imp. gal.)	(17.9 Us gal.)
	6290	65 l	(14.30 Imp. gal.)	(17.17 Us gal.)
Cooling system:	6235/6245/6255/6265	16.6 l	(3.65 Imp. gal.)	(4.38 Us gal.)
	6255/6265/6260/6270/6280	25 l	(5.50 Imp. gal.)	(6.60 Us gal.)
	6290	28.5 l	(6.30 Imp. gal.)	(7.40 Us gal.)
Engine sump:	6235/6245/6255/6265	7.4 l	(1.62 Imp. gal.)	(1.954 Us gal.)
	6260/6270/6280	14.8 l	(3.26 Imp. gal.)	(3.91 Us gal.)
	6290	15.6 l	(3.40 Imp. gal.)	(4.00 Us gal.)
Transmission/rear axle:	6255/6265/6260	68.5 l	(15 Imp. gal.)	(18 Us gal.)
	6270/6280	71 l	(15.6 Imp. gal.)	(18.75 Us gal.)
	6290	70 l	(15.4 Imp. gal.)	(18.5 Us gal.)
Front axle assemby	6235/6245	5.8 l	(1.27 Imp. gal.)	(1.53 Us gal.)
	6255/6265/6260	6.8 l	(1.49 Imp. gal.)	(1.79 Us gal.)
	6270/6280	7.0 l	(1.53 Imp. gal.)	(2.69 Us gal.)
	6290	10.2 l	(2.23 Imp. gal.)	(2.69 Us gal.)
Front final reduction units (each)	6235/6245	0.9 l	(0.20 Imp. gal.)	(0.24 Us gal.)
	6255/6265/6260	1.1 l	(0.24 Imp. gal.)	(0.29 Us gal.)
	6270/6280	1.5 l	(0.33 Imp. gal.)	(0.40 Us gal.)
	6290	1.6 l	(0.35 Imp. gal.)	(0.42 Us gal.)

Tightening torque

Wheel nuts

	DISC ON HUB		RIM ON DISC	
		P.A.V.T. Wheels	Fixed cast wheel	Steel wheels
Front axle				
2 WD	200 to 260 lbf-ft	-	-	-
4 WD	400 to 450 lbf-ft	-	-	200 to 260 lbf-ft
Rear axle				
Flanged shaft	400 to 450 lbf-ft	180 to 250 lbf-ft		-
Straight shaft	350 to 460 lbf-ft	180 to 250 lbf-ft		-

Miscellaneous

Power take-off ..... 100 - 130 Nm (74 to 96 lbf-ft)
Axle outer ram ..... 400 - 600 Nm (293 to 440 lbf-ft)
Steering rams ..... 75 - 80 Nm (55 to 59 lbf-ft)
Engine oil drain plug ..... 35 Nm (25 lbf-ft)
Fuel tank drain plug ..... 15 Nm - 18 Nm (11 to 13 lbf-ft)

Dimensions and weights

C . Chassis dimensions and mounting points

D. Safety precautions

See Operation Book Instructions, ref. 3378164M1.

Introduction

E . Practical advice

Safety

Your safety and that of others must always be the first consideration when working around machines of any type.
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.

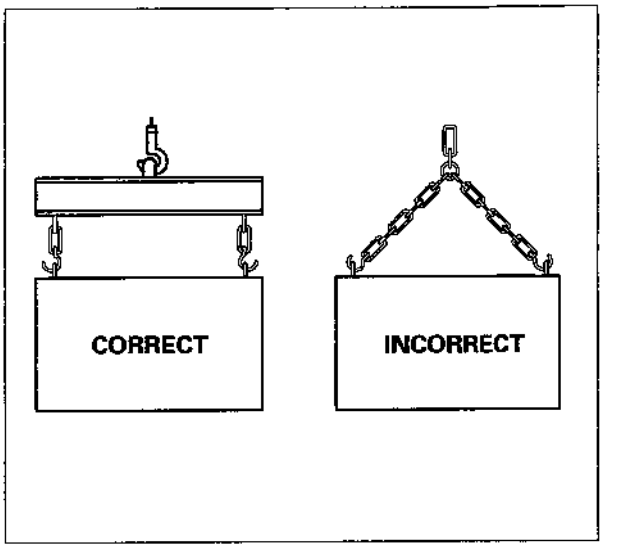
Trouble-shooting

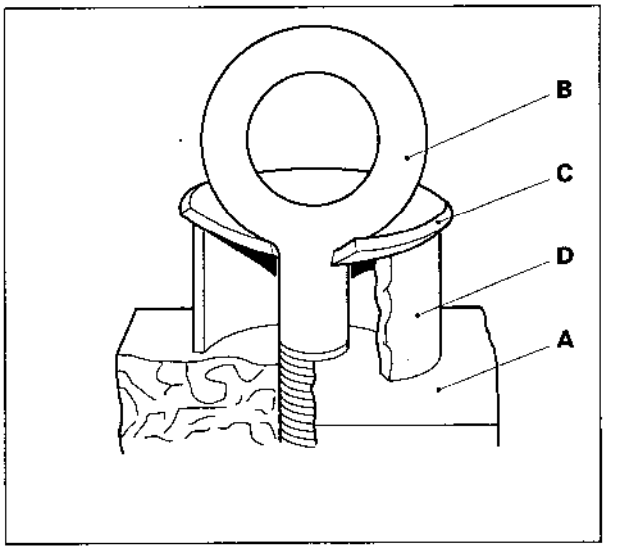
The following procedure, combined with the information contained in the workshop manual will be helpful in tracing faults accurately.
It consists of following a number of logical steps to locate and correct the problem.

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

Handling of heavy components

Unless otherwise specified, all removals should be accomplished using adjustable lifting equipment. All supporting slings must be parallel to each other and as near vertical as possible in relation to the object being lifted. However, where slings are of a far greater capacity than the weight of the load to be lifted, a triangular lifting arrangement may be used (2, 3 or 4 strands from a single ring beneath the hoist hook). When removing a component at an angle, remember that the capacity of an eyebolt is reduced when the angle between the supporting members and the object becomes less than 90° (correct and incorrect method of lifting).
Eyebolts and brackets must never be bent and must only work under tension. A length of pipe and a washer may be used to reduce tension on eyebolts.





Forged eyebolt support

A Load - B Lifting shackle - C Shackle retaining plate (3 mm thick) - D Sleeve (may or may not be welded to plate)
In some cases, special lifting fixtures are available to obtain correct balance and provide for safe handling. Consult the relevant section of the Workshop Manual.

Warning

If a part resists removal, check that all nuts and bolts have been removed and that there is no interference from adjacent parts.

Introduction

Cleanliness

To ensure long life of a machine, it is important to keep dirt and foreign material out of its vital working components. Precautions must be taken to safeguard against this. Enclosed compartments, seals and filters have been provided to keep the supply of air, fuel and lubricant clean. These protective devices must not be removed.

Whenever hydraulic fluid, fuel, lubricating oil or air lines are disconnected, clean the point of disconnection and the surrounding area. As soon as a line has been disconnected, cap, plug or tape the line or opening to prevent the ingress of foreign material.

The same cleaning and covering precautions should be taken when access covers or inspection plates are removed.

Clean and inspect all parts. Make sure that all passages and holes are clear. Cover all parts to keep them clean. Make sure parts are clean when they are reassembled. Leave new parts in their wrapping until they are actually needed for reassembly.

Assembly

When reassembling a machine, complete each step in sequence. Never partially assemble one part then start to assemble another. Make all recommended adjustments. Always check the job on completion to ensure that nothing has been overlooked.

Recheck the various adjustments before putting the machine back into service.

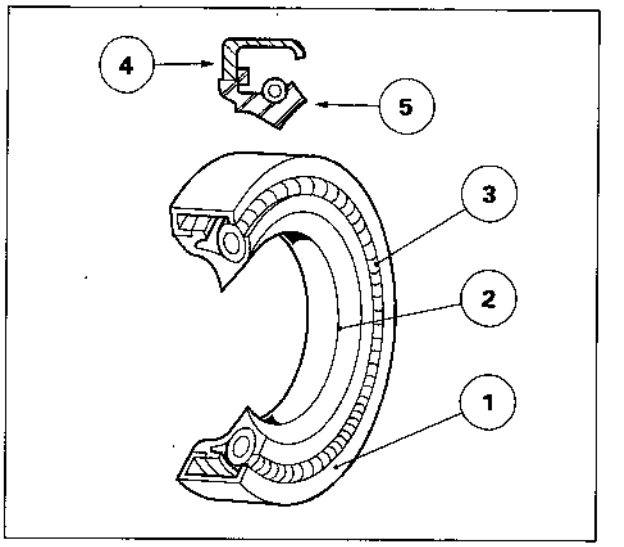
Note : Before fitting new parts, remove rust preventative compound from all machined surfaces (usually «peel-off» substances).

Lubrication

Where applicable, fill the compartments of repaired or renewed components with the quantity, type and grade of clean lubricant recommended in the routine maintenance section of the Operation Instruction Book.

Shims

When shims are removed, tie them together and identify their location. Keep shims clean and take care not to bend them before refitting them.



Gaskets

Make sure that the holes in gaskets line up with lubricating oil passages in the mating parts. If gaskets have to be made, use material of the correct type and thickness. Make sure that holes are punched in the right places.

Incorrectly punched gaskets can cause serious damage.

"SPY" lip type rubber seals.

Lubricate the lips of "SPY" lip type seals with oil before fitment. Do not use grease on seals, except for grease seals. The main parts of a "SPY" lip type seal are the case (1), the sealing element (2) and the ring spring (3). The figure shows the construction of a simple "SPY" lip type seal. The cross section shows the «heel» (4) and the «toe» (5), used to identify the sides of a single element seal. With a few exceptions, the toe of a single-lip seal is located on the lubricant side. Some seals have a second auxiliary lip which has no spring.

Cables and wires

When removing or disconnecting a group of cables or wires, each one should be identified and labelled in order to ensure that they are correctly refitted.

Nut and bolt locking devices

The loosening of nuts and bolts is prevented by using lockwashers, tab washers and cotter pins. In addition to these mechanical means, locking agents of the Loctite type are also used.

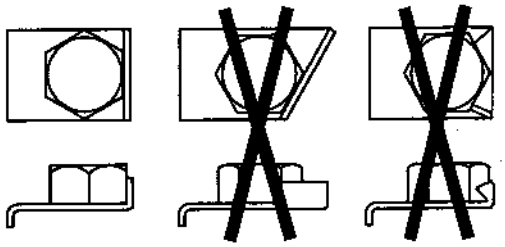
Flat retainers must be correctly installed in order to be effective. Bend one end of the retainer against the edge of the part. Bend the other end against one of the flats on the nut or bolt head.

Always fit new retainers in compartments which house moving parts. When fitting lockwashers on aluminium housing, place a flat washer between the lockwasher and the housing.

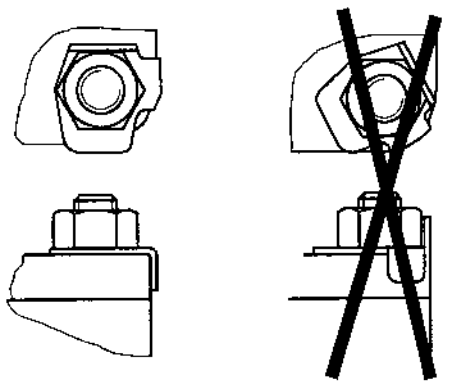
Note:

1) Never insert a lock washer (of the Grower, shake-proof toothed or spring type, etc.) under a nut or a bolt head if a specific tightening torque must be applied (see section H).

2) When using locking products such as Loctite, always degrease the parts before applying the product.



Correct and incorrect uses of sheet metal retainers



Correct and incorrect methods of fitting and bending locking tabs

Lubrication bushes and press fits

Bushes must never be fitted with a hammer alone. Use a suitable fitting tool and a hammer or, better still, a press if possible.

When using a press, ensure that pressure is applied directly in line with the bore. When a lubrication bush has an oil hole, that hole should be aligned with the hole in the mating part.

When press fitting a part into another part, lubricate the mating surfaces. Tapered parts should be assembled dry. Before assembly, check that the tapers are dry, clean and free from burrs.

Fitting bolts in blind holes

Use bolts of the correct length. A bolt which is too long may "bottom" before the head comes into contact with the part it is intended to hold. This will cause damage to the threads.

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

F. Installation instructions

General

In order to ensure regular servicing of the tractor during the 12-month, the supplying AGCO Distributor or Dealer must carry out the 50-hour and 250-hour servicing operations.
The definition of this operation is designed to provide the tractor with maximum efficiency during the whole warranty period, thus ensuring that it gives reliable service after that period.

Pre-delivery check

The performance of the following operations must be ensured by the Distributor before delivery to a Dealer and by the Dealer before delivery to an owner or operator.

1. General installation

- Clean the tops of batteries and smear the terminals with petroleum jelly.
- Charge the batteries, if necessary.
- Check all electrical connections, and cables, ducting and light attachments.
- Check and top up the oil levels in the engine and transmission housings.
- Lubricate all grease points.
- Check and adjust belt tensions, as required (alternator, fan, auxiliary pump and air-conditioning compressor).
- Unless it contains an antifreeze compound, flush the cooling system and refill with soft water.
- Check that the fuel tank contains enough fuel of the correct type.
- Check that the cylinder head attaching nuts and bolts are tightened to the required torque. Check that the inlet pipe and exhaust manifold attaching nuts and bolts are correctly tightened.
- Check and adjust the clearance between the valves and rockers and visually check the valve springs.
- Check the injectors, bleed the fuel system and tighten all fuel line connections.
- Check that the engine air filter hoses are secure.
- Check that the engine control linkages are correctly adjusted and operate freely.
- Start the engine.
- Check that the instruments and warning lights operate correctly.
- Check the engine speed on the tachometer with both the hand and foot-operated throttles.
- Hitch up a mounted implement and check that the tractor's hydraulic accessories operate correctly.
- Check and adjust the tyre pressures (road or field work).
- Check the tightness of all nuts, bolts, studs, pipe unions and attachment fittings.
- Check all pipes and hoses for leaks.
- Check that the headlights are correctly adjusted.
- Road test the tractor, checking the correct operation of the brakes and all instruments and accessories.

2 . Electronic systems

- Check that the electronic lifting system operates correctly. Carry out the quick check procedure described in section 11C01.
- Check all the Autotronic functions, following the test procedure in section 11A01 ou 11B01 according to version.
- Check the on-board computer installation in accordance with procedure 11D01.

3 . Tightening torques

- Check the tightening torque on the attaching nuts and bolts on the various chassis attachment points:
  . Front axle/engine,
  . Engine/gearbox,
  . Gearbox/rear axle
  . Trumpet sections/rear axle.
- Check the tightening torque of the attaching nuts and bolts on wheels and wheel bodies.

Instructions to driver

Instructions on items listed below must be given to the owner or operator.

1. Safety precautions when starting the engine.
2. Location and significance of tractor and engine serial numbers.
3. Controls and instruments.
4. Running-in.
5. Starting and stopping the engine.
6. Selection of gears and use of gearshift and reverse shuttle levers.
7. Danger of towing down the hill without engine braking and correct use of gearbox.
8. Use and adjustment of brakes and brake pedal latch.
9. Use of the vehicle's clutch.
10. Use of the hydraulic differential lock device.
11. Use of the hydraulic PTO - Clutch and brake.
12. Operation of hydraulic lift system.
13. Hitching and unhitching of towed implements.
14. Grease points.
15. Changing of oil grades.
16. Replacement of engine and transmission filter elements.
17. Operation of fuel system - Bleeding of fuel and injection system - Air filter - Clogging indicator.
18. Cooling system. Frost precautions. Tension of both fan belts.
19. Maintenance of electrical equipment (batteries). System with negative earth.
20. Adjustment of front and rear track.
21. Tyre pressures.
22. Tightness of nuts, bolts and screws.
23. Fuel storage and handling.
24. Use of auxiliary hydraulic equipment.
25. Filling in of tractor and engine serial numbers in the operator instruction book.
26. Reading of the operator instruction book.

G. Conversion tables

Pressure units

1 PSI = 1 lbf/in² = 0.0689 bar

1 bar = 14.512 lbf/in² = 14.512 PSI

Bar	lbf / in²	Bar	lbf / in²	Bar	lbf / in²
0.5	7.256	9.5	137.9	35	508
1	14.51	10	145	40	588
1.5	21.77	11	159.6	45	653
2	29	12	174	50	726
2.5	36.28	13	189	60	871
3	43.54	14	203	70	1029
3.5	50.8	15	218	80	1161
4	58	16	232	90	1306
4.5	65.3	17	247	100	1451
5	72.6	18	261	200	2903
5.5	79.8	19	276	300	4354
6	87.1	20	290	400	5805
6.5	94.3	21	309	500	7257
7	101.6	22	319	600	8708
7.5	108.8	23	334	700	10160
8	116.1	24	348	800	11611
8.5	123.4	25	368	900	13235
9	130.6	30	435	1000	14514

Torque units

1 Nm = 0.7376 lbf/ft
1 lbf/ft = 1.3558 Nm

Nm		lbf/ft	Nm		lbf/ft	Nm		lbf/ft
1.3558	1	0.7376	46.0972	34	25.0784	90.8396	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	100.329	74	54.5824
12.2022	9	6.6384	56.9436	42	30.9792	101.685	75	55.3200
13.5580	10	7.3760	58.2994	43	31.7168	103.041	76	56.0576
14.9138	11	8.1136	59.6552	44	32.4544	104.397	77	56.7952
16.2696	12	8.8512	61.0110	45	33.1920	105.752	78	57.5328
17.6254	13	9.5888	62.3668	46	33.9296	107.108	79	58.2704
18.9812	14	10.3264	63.7226	47	34.6672	108.464	80	59.0080
20.3370	15	11.0640	65.0784	48	35.4048	109.820	81	59.7456
21.6928	16	11.8016	66.4342	49	36.1424	111.176	82	60.4832
23.0486	17	12.5392	67.7900	50	36.8800	112.531	83	61.2208
24.4044	18	13.2768	69.1458	51	37.6176	113.887	84	61.9584
25.7602	19	14.0144	70.5016	52	38.3552	115.243	85	62.6960
27.1160	20	14.7520	71.8574	53	39.0928	116.600	86	63.4336
28.4718	21	15.4896	73.2132	54	39.8304	117.955	87	64.1712
29.8276	22	16.2272	74.5690	55	40.5680	119.310	88	64.9088
31.1834	23	16.9648	75.9248	56	41.3056	120.666	89	65.6464
32.5392	24	17.7024	77.2806	57	42.0432	122.022	90	66.3840
33.8950	25	18.4400	78.6364	58	42.7808	123.378	91	67.1216
35.2508	26	19.1776	79.9992	59	43.5184	124.734	92	67.8592
36.6066	27	19.9152	81.3480	60	44.2560	126.089	93	68.5968
37.9624	28	20.6528	82.7038	61	44.9936	127.445	94	69.3344
39.3182	29	21.3904	84.0596	62	45.7312	128.801	95	70.0720
40.6740	30	22.1280	85.4154	63	46.4688	130.157	96	70.8096
42.0298	31	22.8656	86.7712	64	47.2064	131.513	97	71.5472
43.3856	32	23.6032	88.1270	65	47.9440	132.868	98	72.2848
44.7414	33	24.3408	89.4828	66	48.6816	134.224	99	73.0224

Capacity units

1 litre = 0.2199 imp. gallon.
1 imp. gallon = 4.5459 litres

Note:
1 US gallon = 3.79 litres

Imp. gal.		Litres	Imp. gal.		Litres	Imp. gal.		Litres
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	15.3930	70	318.213
1.0995	5	22.7295	8.3562	38	172.744	15.6129	71	322.759
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	10.9950	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 units

1 litre = 1.7599 imp. pints
1 imp. pint = 0.5682 litre

Note:
1 litre = 2.113 US pints

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	45.4560
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
57.5173	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 units
1 m = 3.2808 ft
1 ft = 0.3048 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	61	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	101.7060	19.5072	64	209.974	29.5656	97	318.241
9.7536	32	104.9870	19.8120	65	213.255	29.8704	98	321.522
10.0584	33	108.2680	20.1168	66	216.535	30.1752	99	324.803

Introduction

Weight units

1 kg = 2.2046 lb
1 lb = 0.4536 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	22.0460	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	99.207	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	24.9489	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	55.1150	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
16.9688	33	72.7518	29.9376	66	145.504	44.9064	99	218.255

Conversion table

	LENGTHS 1 inch = 25.4 mm						TEMPERATURE			
Fractions of inches	Decimals	mm	Inches to mm		mm to inches		Fahrenheit to Celsius			
			Inches	mm	mm	Inches	°F	°C	°C	°F
1/64	.015625	0.3969					- 20	- 28.9	- 30	- 22
1/32	.031250	0.7937					- 15	- 26.1	- 28	- 18.4
3/64	.468750	1.1906					- 10	- 23.3	- 26	- 14.8
1/16	.062500	1.5875	0.0001	0.00254	0.004	0.00015	- 5	- 20.6	- 24	- 11.2
5/64	.078125	1.9844	.0002	.00508	0.005	.00019	0	- 17.8	- 22	- 7.6
3/32	.093750	2.3812	.0003	.00762	0.006	.00023	1	- 17.2	- 20	- 4
7/64	.109375	2.7781	.0004	.01016	0.007	.00027	2	- 16.7	- 18	- 0.4
1/8	.125000	3.1750	.0005	.01270	0.008	.00031	3	- 16.1	- 16	3.2
9/64	.140625	3.5719	.0006	.01524	0.009	.00035	4	- 15.6	- 14	6.8
5/32	.156250	3.9687	.0007	.01778	0.01	.00039	5	- 15.0	- 12	10.4
11/64	.171875	4.3656	.0008	.02032	0.02	.00079	10	- 12.2	- 10	14
3/16	.187500	4.7625	.0009	.02286	0.03	.00118	15	- 9.4	- 8	17.6
13/64	.203125	5.1594	.001	.0254	0.04	.00157	20	- 6.7	- 6	21.2
7/32	.218750	5.5562	.002	.0508	0.05	.00197	25	- 3.9	- 4	24.8
15/64	.234375	5.9531	.003	.0762	0.06	.00236	30	- 1.1	- 2	28.4
1/4	.250000	6.3500	.004	.1016	0.07	.00276	35	1.7	0	32
17/64	.265625	6.7469	.005	.1270	0.08	.00315	40	4.4	2	35.6
9/32	.281250	7.1437	.006	.1524	0.09	.00354	45	7.2	4	39.2
19/64	.296875	7.5406	.007	.1778	0.10	.00394	50	10.0	6	42.8
5/16	.312500	7.9375	.008	.2032	0.20	.0078	55	12.8	8	46.4
21/64	.328125	8.3344	.009	.2286	0.30	.01181	60	15.6	10	50
11/32	.343750	8.7312	.01	.254	0.40	.01575	65	18.3	12	53.6
23/64	.359375	9.1281	.02	.508	0.50	.01969	70	21.1	14	57.2
3/8	.375000	9.5250	.03	.762	0.60	.02362	75	23.9	16	60.8
25/64	.390625	9.9219	.04	1.016	0.70	.02756	80	26.7	18	64.4
13/32	.406250	10.3187	.05	1.270	0.80	.03149	85	29.4	20	68
27/64	.421875	10.7156	.06	1.524	0.90	.03543	90	32.2	22	71.6
7/16	.437500	11.1125	.07	1.778	1	.03937	95	35.0	24	75.2
29/64	.453125	11.5094	.08	2.032	2	.07874	100	37.8	26	78.8
15.32	.468750	11.9062	.09	2.286	3	.11811	105	40.6	28	82.4
31/64	.484375	12.3031	.10	2.540	4	.15748	110	43.3	30	86
1/2	.500000	12.7000	.20	5.080	5	.19685	115	46.1	32	89.6
33/64	.515625	13.0969	.30	7.620	6	.23622	120	48.9	34	93.2
17/32	.53125	13.4937	.40	10.160	7	.27559	125	51.7	36	96.8

Introduction

LENGTHS 1 inch = 25.4 mm							TEMPERATURE			
Fractions of inches	Decimals	mm	Inches to mm		mm to inches		Fahrenheit to Celsius			
			Inches	mm	mm	Inches	° F	° C	° C	° F
35/64	.546875	13.8906	0.5	12.70	8	0.31496	130	54.4	38	100.4
9/16	.562500	14.2875	.6	15.24	9	.35433	135	57.2	40	104
37/64	.578125	14.6844	.7	17.78	10	.39370	140	60.0	42	107.6
19/32	.593750	15.0812	.8	20.32	11	.43307	145	62.8	44	112.2
39/64	.609375	15.4781	.9	22.86	12	.47244	150	65.6	46	114.8
5/8	.6250	15.8750	1	25.4	13	.51181	155	68.3	48	118.4
41/64	.640625	16.2719	2	50.8	14	.55118	160	71.1	50	122
21/32	.656250	16.6687	3	76.2	15	.59055	165	73.9	52	125.6
43/64	.671875	17.0656	4	101.6	16	.62992	170	76.7	54	129.2
11/16	.687500	17.4625	5	127	17	.66929	175	79.4	56	132.8
45/64	.703125	17.8594	6	152.4	18	.70866	180	82.2	58	136.4
23/32	.718750	18.2562	7	177.8	19	.74803	185	85.0	60	140
47/64	.734375	18.6531	8	203.2	20	.78740	190	87.8	62	143.6
3/4	.7500	19.05	9	228.6	21	.82677	195	90.6	64	147.2
49/64	.765625	19.4469	10	254	22	.86614	200	93.3	66	150.8
25/32	.781250	19.8437	11	279.4	23	.90551	205	96.1	68	154.4
51/64	.796875	20.2406	12	304.8	24	.94480	210	98.9	70	158
13/16	.812500	20.6375	13	330.2	25	.98425	212	100.0	75	167
53/64	.828125	21.0344	14	355.6	26	1.02362	215	101.7	80	176
27/32	.843750	21.4312	15	381	27	1.06299	220	104.4	85	185
55/64	.859375	21.8281	16	406.4	28	1.10236	225	107.2	90	194
7/8	.875000	22.2250	17	431.8	29	1.14173	230	110.0	95	203
57/64	.890625	22.6219	18	457.2	30	1.18110	235	112.8	100	212
29/32	.906250	23.0187	19	482.6	31	1.22047	240	115.6	105	221
59/64	.921875	23.4156	20	508	32	1.25984	245	118.3	110	230
15/16	.937500	23.8125	21	533.4	33	1.29921	250	121.1	115	239
61/64	.953125	24.2094	22	558.8	34	1.33858				
31/32	.968750	24.6062	23	584.2	34	1.37795				
63/64	.984375	25.0031	24	609.6	36	1.41732				
1	1.00	25.40	25	635	37	1.45669				
			26	660.4	38	1.49606				
					39	1.53543				
					40	1.57480				

H. Locking compounds and sealants

The Loctite compounds mentioned in this manual are referred to by their industrial names.
For the purposes of repairs, use their commercial names or the corresponding AGCO references as per the following chart.

Loctite industrial name	Commercial	AGCO reference
242 - 241 - 542	Lock and Seal	1 633 266 M1
270	Stud lock	1 633 267 M1
510 - 221	Instant Gasket Retainer	1 633 270 M2
638 - 648	Superflex sealant.	1 633 268 M1
Silicomet	R.T.V. silicone sealant (clear)	3 405 423 M1

Note: Use the product "Form A gasket 2" when sealing between plastic material and iron (or steel).
Examples: PTO sensor, vehicle speed sensor, etc..

These products can be ordered from the following address:
FRAMET
10 Avenue Eugène Gazeau
Zone Industrielle
60304 - SENLIS
FRANCE

Application method for Loctite products

1. Remove all traces of previous sealants and corrosion
   - by mechanical process: wire brush or emery cloth,
   - by chemical action: "DECAPLOC 88".
   Leave the product to take effect and then wipe clean.
2. Degrease the components with dry solvent
   - preferably, use "LOCTITE 706 Dry Super Solvent".
3. Allow the solvents to evaporate.
4. Apply the recommended type of LOCTITE sealant on the parts:
   - For blind tapped holes: apply a quantity of product on the last threads at the bottom of the hole.
   - For cylindrical fitting components, apply compound on both mating surfaces with a clean brush.
   - For gasket faces, apply a bead on one of the two faces, passing around the holes, and then tighten as quickly as possible.

Note:
a) Do not use too much of the compound in order to avoid locking adjacent parts.
b) Do not attempt to retighten after 5 minutes of curing in order to avoid breaking the film of compound.
c) If the ambient temperature is less than +10°C, and to ensure quicker setting of Loctite compounds (except for SILICOMET), use LOCTITE T 747 activator on at least one of the two parts.
Excess sealant outside the joint will not harden (anaerobic curing of compound - i.e. curing occurs only in absence of oxygen).

Grease

When grease is used in components which are in contact with transmission oil, use a grease which is miscible with oil to avoid clogging the hydraulic filters.
Use "Amber Technical" grease supplied by WITCO company, 76320 Saint-Pierre des Elfes, France.

I. Tightening torques

When tightening nuts and bolts, use the recommended tightening torques as per the charts:
- **1** and **2** : for metric threads,
- **3** and **4** : for inch threads.

When a specific torque is required, it is mentioned in the text.
Charts 1 and 3 specify the standard tightening torque values applicable to zinc-plated threaded elements with standard nuts with coarse or fine thread, with or without flat washers or lockwashers, and weld nuts deeper than 0.8 d.
Charts 2 and 4 specify the reduced tightening torque values applicable to threaded fasteners in assemblies with self-locking zinc-plated nuts, phosphated nuts or bolts, shallow nuts and weld nuts shallower than 0.8 d.
These values are applicable to dry assemblies. If the threads are oiled, reduce the tightening torques.
Note: Read the strength classification on the bolt head and determine the required torque loading.
Example:

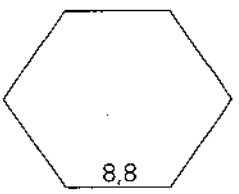


Chart 1
Tightening torque values: zinc-plated metric threads

Nominal dimension d.	Strength classification ISO 8.8 (SAE 5, BS S) Torque Nm		Strength classification ISO 10.9 (SAE 8, BS V) Torque Nm	
	Max.	Min.	Max.	Min.
M3	1.7	1.3	2.4	1
M4	4.1	3.1	5.7	4
M5	8	6	11.5	8
M6	14	10	20	14
M8	35	25	46	36
M10	70	50	96	72
M12	120	90	160	120
M16	260	200	400	300
M20	560	420	800	600
M24	960	720	1300	1000
M30	1800	1400	2800	2100
M36	3300	2500	4800	3600

Chart 2
Reduced tightening torque values: metric threads

Nominal dimension d.	Strength classification ISO 8.8 (SAE 5, BS S) Torque Nm		Strength classification ISO 10.9 (SAE 8, BS V) Torque Nm	
	Max.	Min.	Max.	Min.
M3	1.4	1	1.9	1
M4	3.3	2.5	4.6	3
M5	6.4	4.8	9.2	6
M6	11	8	16	12
M8	28	20	37	29
M10	56	40	77	57
M12	96	72	130	100
M16	210	160	320	240
M20	450	340	640	480
M24	770	570	1040	800
M30	1400	1100	2200	1700
M36	2600	2000	3800	2900

Chart 3
Tightening torque values: zinc-plated threads in inches

Nominal dimension d.	Strength classification SAE 5 (ISO 8.8 BS S) Torque Nm		Strength classification SAE 8 (ISO 10.9 BS V) Torque Nm	
	Max.	Min.	Max.	Min.
#6	2.4	1.8	3.3	2
#8	4.4	3.4	6.3	4
#10	6.3	4.7	8.9	6
1/4	15	11	22	16
5/16	30	22	43	31
3/8	53	39	75	55
7/16	86	64	120	90
1/2	130	100	180	140
5/8	260	200	370	280
3/4	460	350	660	490
7/8	760	560	1060	800
1	1120	840	1600	1200
1 1/8	1390	1050	2200	1700
1 1/4	2000	1500	3200	2400
1 1/2	3400	2600	5400	4100

Chart 4
Reduced tightening torque values: zinc-plated threads in inches

Nominal dimension d.	Strength classification SAE 5 (ISO 8.8 BS S) Couple Nm		Strength classification SAE 8 (ISO 10.9 BS V) Couple Nm	
	Max.	Min.	Max.	Min.
#6	1.9	1.5	2.6	2
#8	3.5	2.7	5	3
#10	5	3.8	7.1	5
1/4	12	8.8	18	13
5/16	24	18	34	25
3/8	42	31	60	44
7/16	69	51	96	72
1/2	104	80	140	110
5/8	210	160	300	220
3/4	370	280	530	390
7/8	610	450	850	640
1	900	670	1280	960
1 1/8	1100	840	1760	1360
1 1/4	1600	1200	2560	1920
1 1/2	2700	2100	4320	3280

2 . SPLITTING THE TRACTOR

Contents

2 A01 Engine / Gearbox splitting

CONTENTS

A . Uncoupling

Remark

This section give a general splitting procedure. By reason of all option available on the 6200 range, we explain only how to disconnect the main circuits. For these reasons check the last connection between the fixed and themobil element.

1. Immobilize the tractor:
   . tighten the handbrake
   . wedge between the frame and the front axle (Fig. 1)
2. Disconnect the two front differential blocking control hoses (4 WD). Stop up pipes.
3. Remove the safety device and the transmission shaft 4 WD.
4. Remove the panelling and the silencer.
5. Disconnect batteries (earth cables only).
6. Remove the hard top rear support (if fixed hard top) and the steps if necessary.

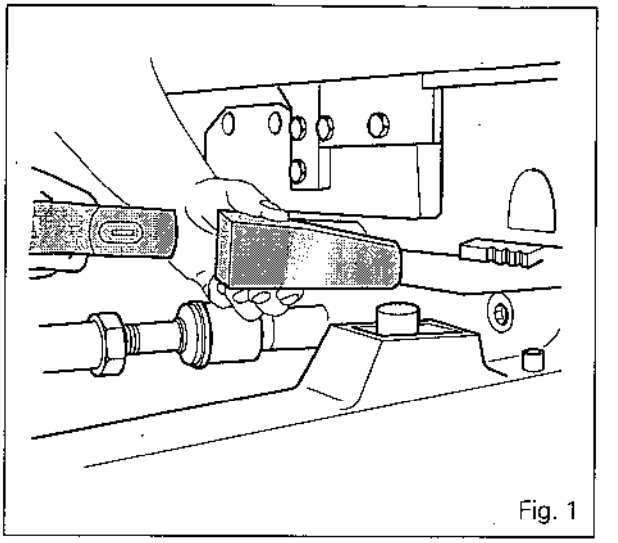


Fig. 1

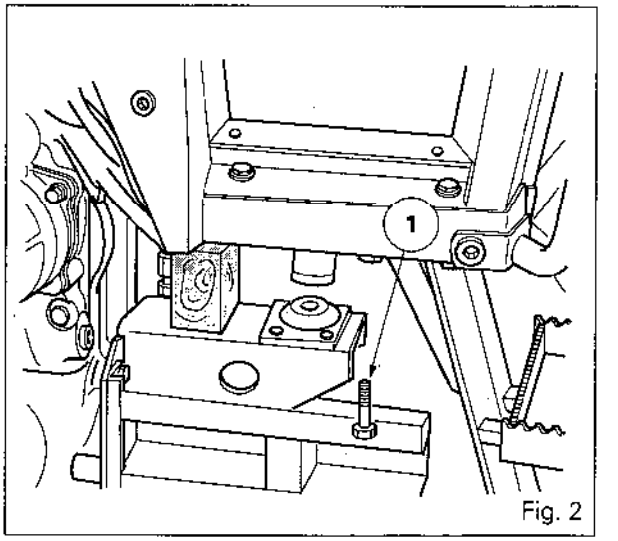


Fig. 2

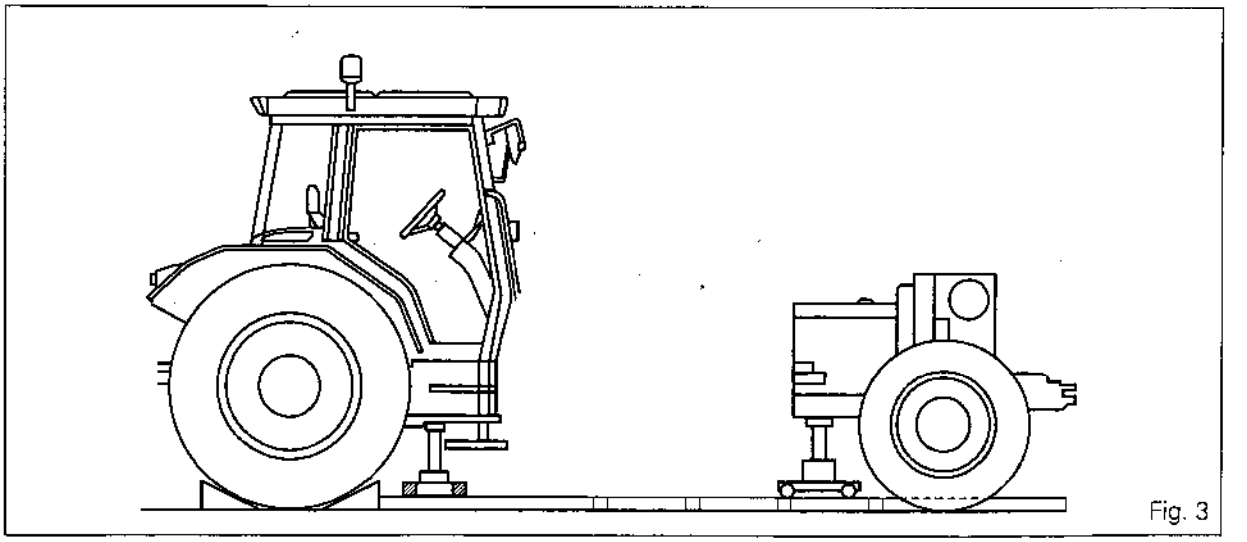


Fig. 3

7. Disconnect and stop up:
   . the two steering cylinder hoses on the Orbitrol (identify the positions).
   . the two air conditioning connectors using plugs No. 3376935M91 (§ C) (according to version) and remove the support.
   . the fuel return hose.
   . the two cooler hoses on the 17 bar valve (hydraulic open center), identify the positions.
   . the brake booster hose.
   . the accelerator control on the injection pump.
   . the flowmeter harness (if mounted).
   . the main harness connections above the engine.
   . the heating pipes. Block pipes to prevent complete draining of the cooling circuit.
   . the harness of fuses 7.5A et 10A by disconnecting the connector mounted between the cab and the engine.
   . the fuel supply hose.
8. Position the uncoupling unit (Fig. 3 and § C).
9. Remove the tool box and two screws (**1**) from the silent block on the right and left cab supports. Slightly lift the cab and wedge (4 cylinder engine) (Fig. 2).
10. Loosen the engine attachment screws on the gearbox.
11. Separate the assemblies, with the help of an assistant.

Note : As a safety step and to prevent the engine from tipping, remove the front weights or put a removable stand under the weight carrier.

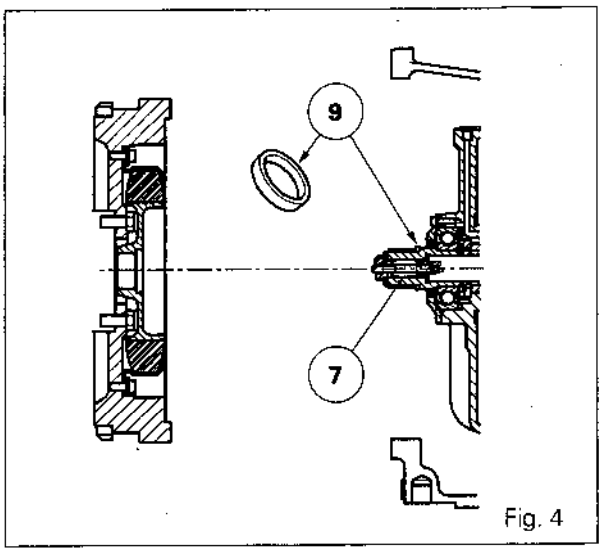


Fig. 4

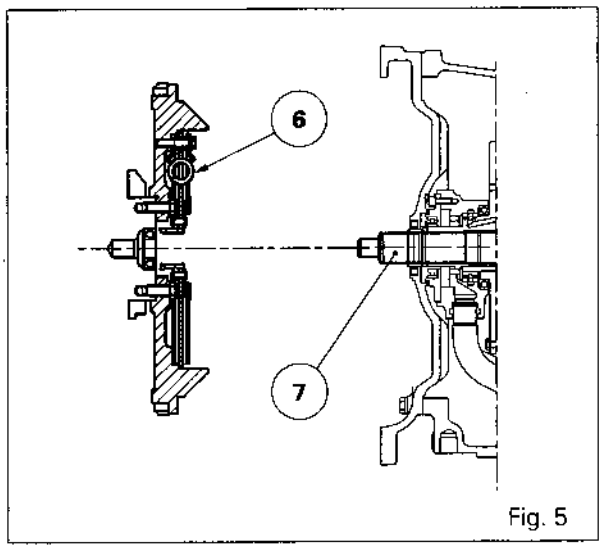


Fig. 5

B . Coupling

Note : *6200* Series *tractors are fitted with a Spring loaded clutch incorporating a damper (Fig. 4), different from the damped (6)* mounted on 6200 Series tractors fitted with a Pressure loaded clutch and those fitted with power shuttle (6) (Fig. 5)

12. Fit two studs (made locally) diametrically opposite each other on the gearbox.
13. Slightly lubricate the splines of shaft (**7**) (Fig. 4 - 5) (grease type GN + Molykote) and slide bush (**9**) on the shaft as per Fig. 4 (tractor with Spring loaded clutch and spacer between the engine/gearbox).
14. Check that the two locating pin are fitted on the engine.
15. Assemble the engine with the gearbox turning the ring gear of the flywheel by hand with a screwdriver.

16. With 6 cylinder engines, coat screws with Loctite 270. Tighten screws (Fig. 6 and 7):
4 cylinder engines
- 1 to 15: 100 - 130 Nm.

6 cylinder engines
- 1 - 3 - 4 - 11 - 12 : 120 - 160 Nm.
- 2 - 5 - 10 - 13 - 14 - 15 : 300 - 400 Nm.
- 9 - 6 - 7 - 8 - : 600 - 800 Nm.

17. Put the cab on its supports. Fit screws (**1**) on the silent block (Fig. 2) and tighten them to a torque of 200 - 270 Nm, Loctite 270.
18. Reverse operations 3 to 9.
19. Top up the radiator.
20. Reinstall the 4 WD transmission shaft, the safety device and connect the differential blocking control hoses.
21. Check adjustment of accelerator control.
22. Verify :
- sealing of hydraulic circuits,
- operation of electrical circuits.

23. Reinstall the panelling and the silencer.
24. Carry out road test.

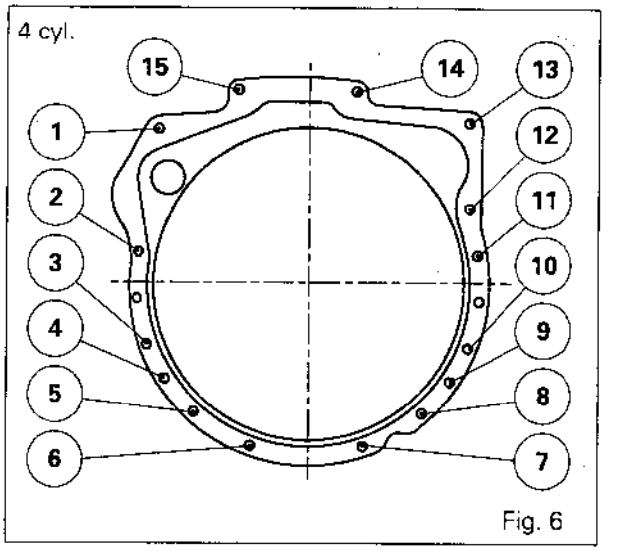


Fig. 6

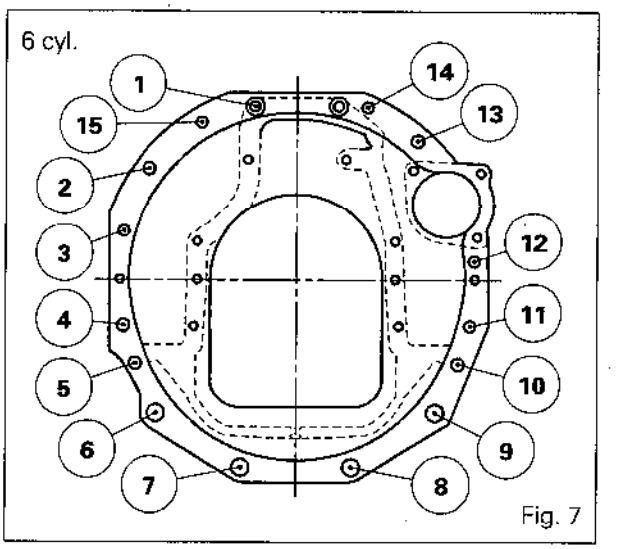


Fig. 7

C . Service tools

3376935M91 - Set of plugs for air conditioning couplings (Fig. 8)
3378152M11 - Uncoupling tools (Fig. 9)

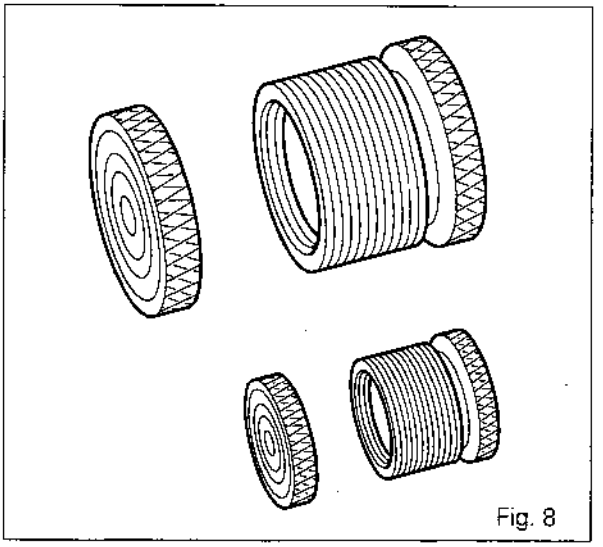


Fig. 8

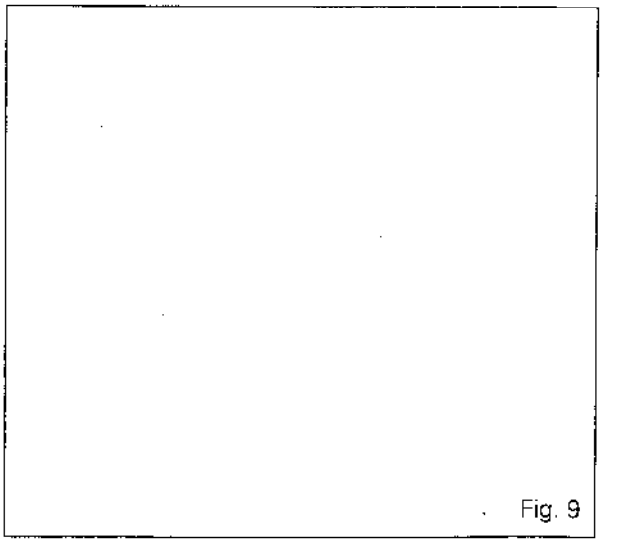


Fig. 9

2 B01 Splitting the tractor between the gearbox and the rear axle (cab integral with rear axle)

CONTENTS

A. Uncoupling

Remark

This section give a general splitting procedure. By reason of all option available on the 6200 range, we explain only how to disconnect the main circuits. For these reasons check the last connection between the fixed and themobil element.

1. Immobilise the tractor. Apply the handbrake. Fit wedges between the frame and the front axle (Fig. 1).
2. Disconnect the front differential lock (4WD) control hoses and plug the pipe connections.
3. Remove the guard and the 4WD drive.
4. Remove the sheet metal panels and the exhaust pipe.
5. Disconnect the earth cables only from the batteries.
6. Remove the hood rear bracket (if fixe bracket).
7. Remove the right and left foot step.
8. Drain the additionnal tank (if fitted), disconnect and mark the hoses gauge. Disconnect the gauge harness. Remove the tank.
9. Disconnect and plug :
   - the two Orbitrol steering ram hoses (and mark their position),
   - the two air conditioning connections using plugs No. 3376935M91 (Section C), (according to option fitted), and remove the bracket,
   - the diesel fuel return hose,
   - the two cooler hoses on the 17-bar valve (hydrualic open center, mark their positions),
   - the charge brake hose,
   - the accelerator control on the injection pump,
   - the flowmeter harness (if fitted),
   - the main wiring harness connections above the engine,
   - the diesel fuel supply hose,
10. Disconnect the heating hose and plug the openings to avoid draining the cooling system completely.
11. Drain the oil from the gearbox and the rear axle.
12. Disconnect and plug the following tubes or hoses:
    - the power take-off clutch lubricating tube,
    - the gearbox lubricating hose, the return hose (according to hydraulic version),
    - the engine clutch lubricating hose from the master cylinder to the control valve (pressure-loaded type) or to the gearbox (spring-loaded type) (mechanical reverse shuttle type).
13. Remove the earth braid from the right-hand cab support.

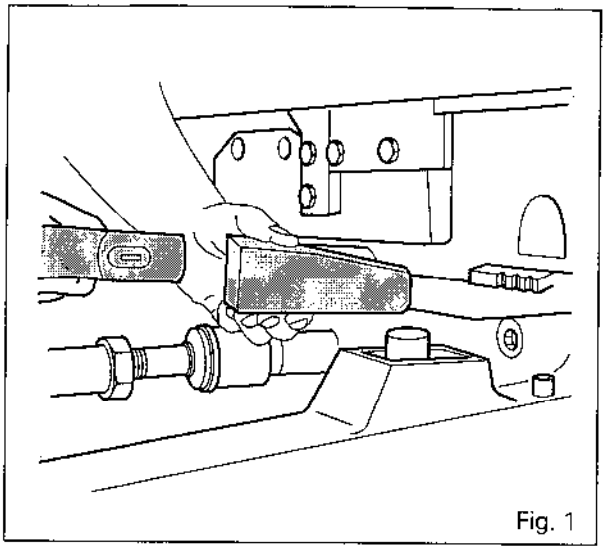


Fig. 1

14. Disconnect :
    - the wire from the radar (Datatronic),
    - the harness on the solenoid valve or valves on the Speedshift, Dynashift unit or power shuttle (according to version),
    - the solenoid valves harness on the right-hand hydraulic cover (brake and clutch, PTO, differential lock, 4WD and Hare/Tortoise),
15. Remove the control gear and mechanical reverse levers (if fitted) from the selector cover and remove the harnesses (earth, temperature probe (if fitted) and Hare/Tortoise).
16. Remove the main filter (15 micrometres).
17. Remove the engine clutch(s) (according version) lubricating tube mounted on the lower covers of the centre housing and on the gearbox.

18. Disconnect the creeper gear control (if fitted) and then remove the bolt (**1**) and pull the rod (**2**) towards the outside to release the finger from the fork (Fig. 2).

19. Place stands :
- under the rear axle housing,
- to the rear of the hitch hook,
- to the rear of the gearbox.

20. Remove the bolts (**1**) from the right-hand and left-hand cab supports (Fig. 3). Raise the cab and fit wedges.

21. Loosen the bolts attaching the gearbox to the rear axle.

22. Separate the gearbox from the rear axle (Fig. 4).

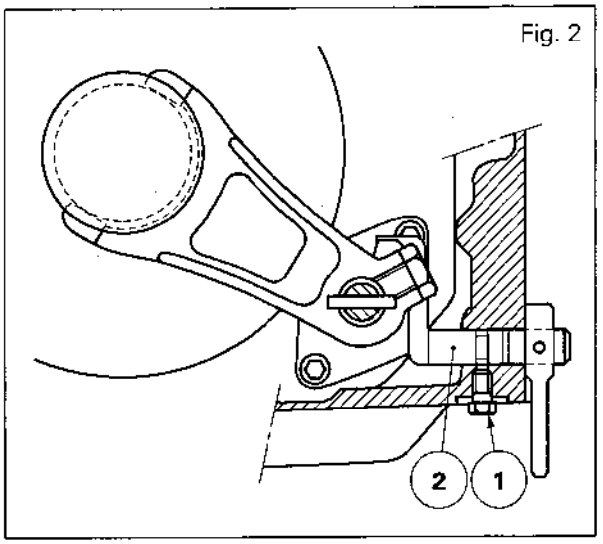


Fig. 2

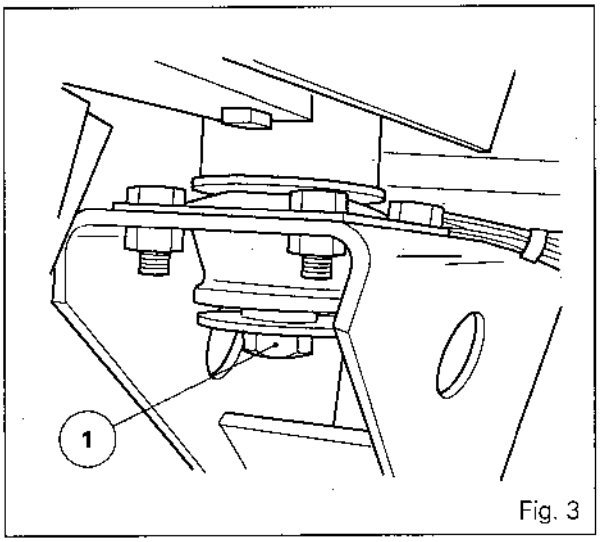


Fig. 3

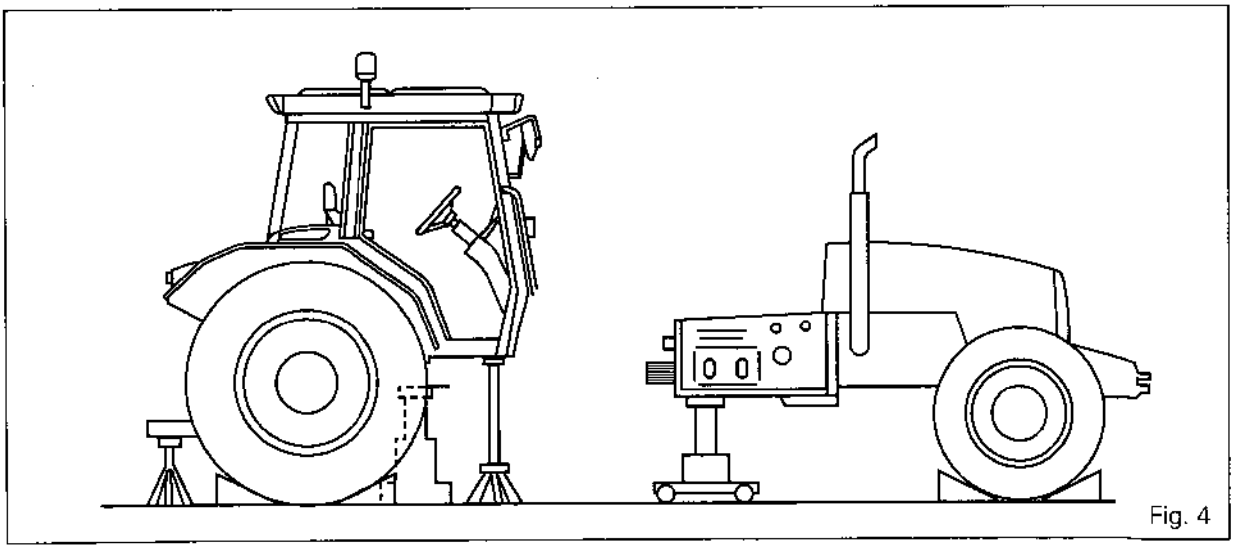


Fig. 4

B. Recoupling

22. Clean the mating faces on the gearbox and the rear axle housing.

On the rear axle

23. Position:
- the shaft (**1**) assembled with the sleeves (**2**) and (**7**) by means of double pins (**5**) and (**6**) (for gearbox without creeper gears) on the drive gear (**3**) (Fig. 5a),
- the shaft (**1**) assembled with the sleeve (**2**) by means of the double pin (**5**) (for gearbox with creeper gears) on the drive gear ( ) (Fig. 5b).

Note : The long part between the pin (5) and the sleeve extremity (2) towards the differential ring gear (4) (Fig. 5).

24. Check that the spring (**1**) is in place in the power take-off clutch and that the locating pins (**2**) are fitted (Fig. 6).

25. Check that the control finger "**D**" is in the forward direction (for gearbox with creeper gears) (Fig. 7).

26. Coat the mating face on the axle housing with Loctite 510 or an equivalent sealing compound.

27. Screw the two guide studs "**G**" on the housing (Fig. 6).

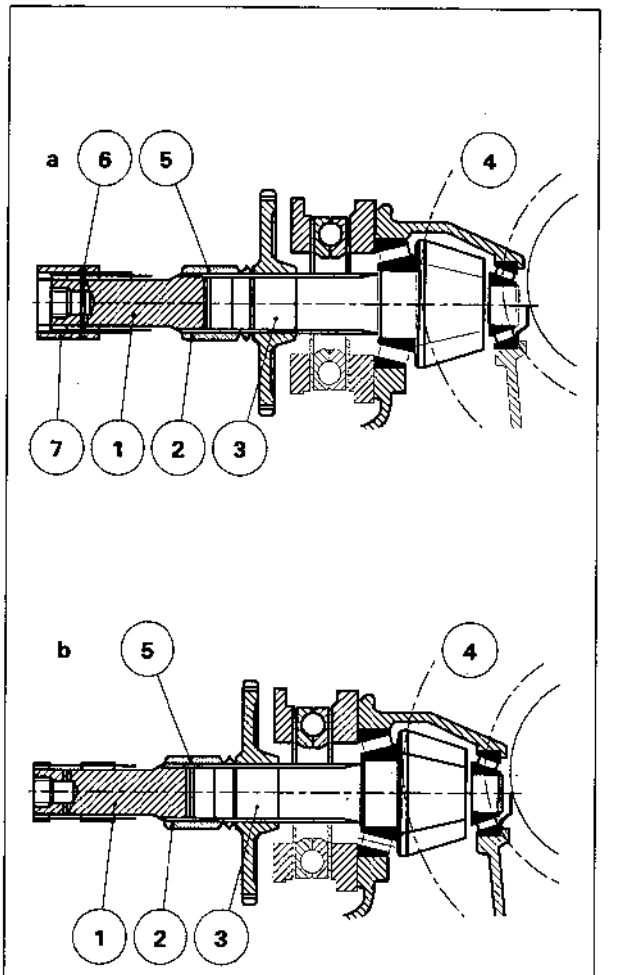


Fig. 5

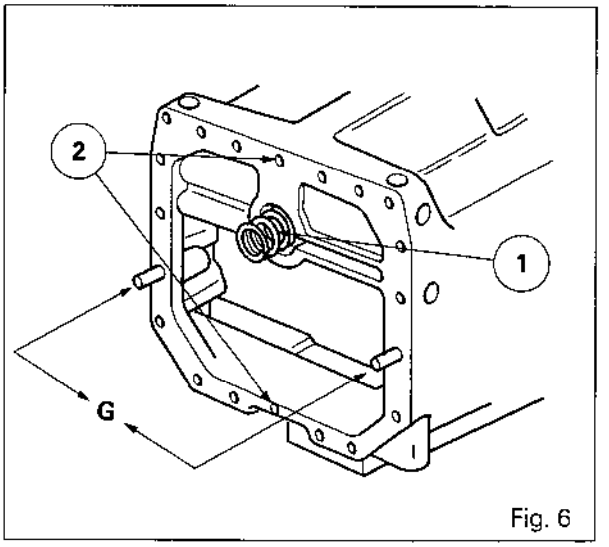


Fig. 6

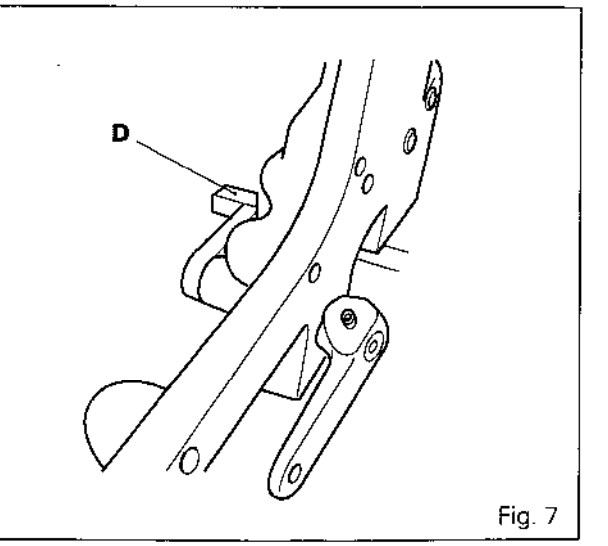


Fig. 7

On the gearbox

29. Replace the O'rings (**1**) on the Hare/Tortoise lines (Fig. 8).

30. Check that the PTO shaft is installed (see section 7E01). Recouple the tractor between the gearbox and the rear axle. Tighten the bolts to a torque of 155 to 195 Nm.

31. Lower the cab, fit the bolts on the shock absorbers (**1**) (Fig. 3) and tighten them to a torque of 200 to 270 Nm.

32. Remove the stand.

33. Turn and push the rod (**2**) in order to engage the finger in the fork. Tighten the bolt (**1**) after coating it with Loctite 241 (Fig. 2).

34. Check that the rod operates correctly. Reconnect and adjust the creeper gear control cable (see Section 5H01).

35. Reconnect the controls, harnesses, hoses, tubes and flexible couplings.

36. Top up the centre housing with oil.

37. Fit the 4WD drive shaft and the guard.

38. Reconnect the front differential lock control hoses (4WD).

39. Reconnect the batteries.

40. Bleed the clutch or the control valve (according to version) (see section 9G01 or 9V01).

41. Check the hydraulic unions for leaks and the correct operation of the electric circuits.

42. Reinstall the protective guard, the sheet metal panels and the exhaust pipe.

43. Remove the wedges between the frame and the front axle. Release the handbrake.

44. Carry out road test on the controls for :
- clutch,
- mechanical reverser shuttle or power shuttle (according to version),
- creeper gears (if fitted).

45. Check for leaks on the mating face between the gearbox and the rear axle.

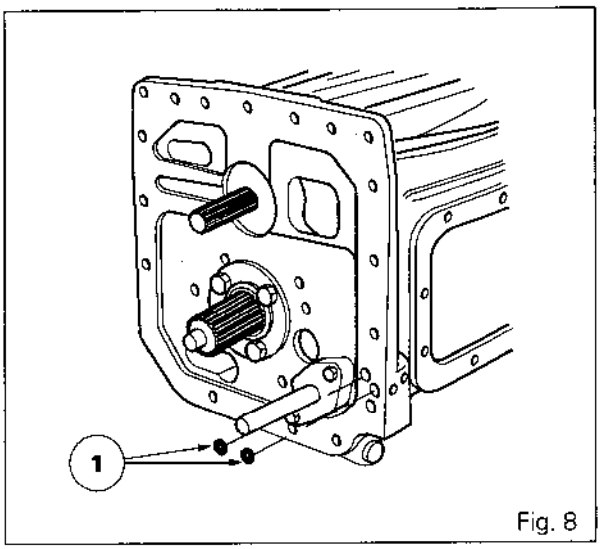


Fig. 8

C. Service tools

- **3376935M91 - Set of plugs for air conditioning couplings (Fig. 9)**
- **3378152M11 - Splitting tools (Fig. 10)**

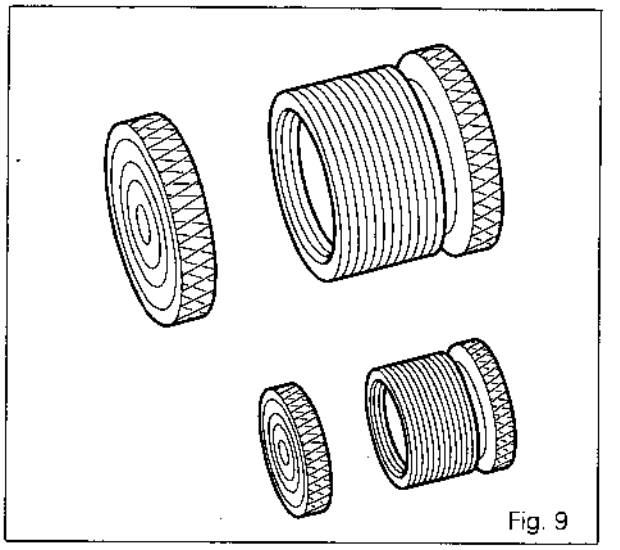


Fig. 9

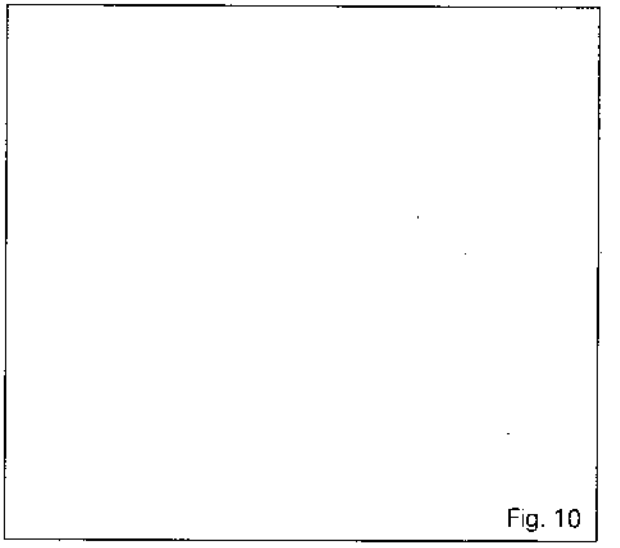


Fig. 10

2 C01 Splitting the tractor between the front frame and the engine

CONTENTS

A. Uncoupling

Remark

This section give a general splitting procedure. By reason of all option available on the 6200 range, we explain only how to disconnect the main circuits. For these reasons check the last connection between the fixed and themobil element.

1. Disconnect the two 4WD front axle control hoses.
2. Remove the guard and the 4WD drive shaft.
3. Remove the lateral sheet metal panels. Release the front latch and lift the bonnet open or remove the lateral sheet metal panels, the bonnet and the exhaust pipe (according to option).
4. Disconnect the earth cables only from the batteries.
5. Disconnect and mark the positions of hoses and flexible connections, as follows :
   - the two Orbitrol steering hoses,
   - the hose from the cooler on the 17-bar valve (hydraulic open center, repair the position),
   - the hoses from the fuel cooler (if fitted),
   - the harness for the flowmeter and its three hoses located to the left of the fuel filter (if fitted),
   - the connectors for the front light and the vaccum switch,
   - the positive cable on the starter,
   - the inlet sleeve between the turbocharger (if fitted) and the air filter,
   - the suction pipe between the air filter and the exhaust pipe.

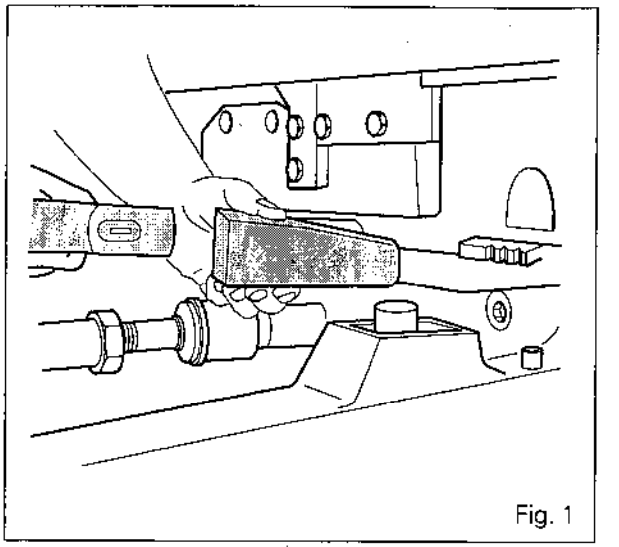


Fig. 1

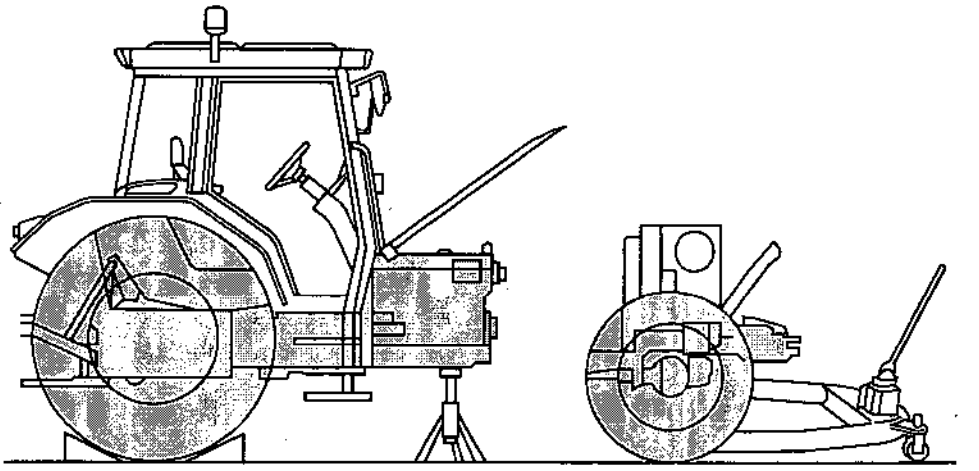


Fig. 2

6. Drain the cooling system. Disconnect the lower and upper hoses from the radiator and the hose from the expansion tank.
7. Remove the upper attachment on the radiator (according to fitting).
8. Remove the air conditioning compressor and bracket assembly and tilt it forwards with its two hoses (according to option fitted).
9. Remove the front weights.
10. Immobilise the tractor. Apply the handbrake. Position wedges between the frame and the front axle (Fig. 1).
11. Loosen the bolts attaching the engine to the front frame.
12. Support the tractor under the frame using a trolley jack or the splitting tools 3378152M11 and separate the engine from the frame (Fig. 2).

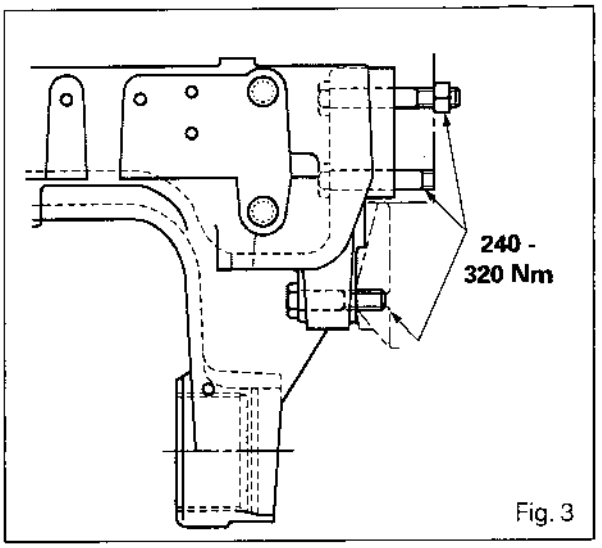


Fig. 3

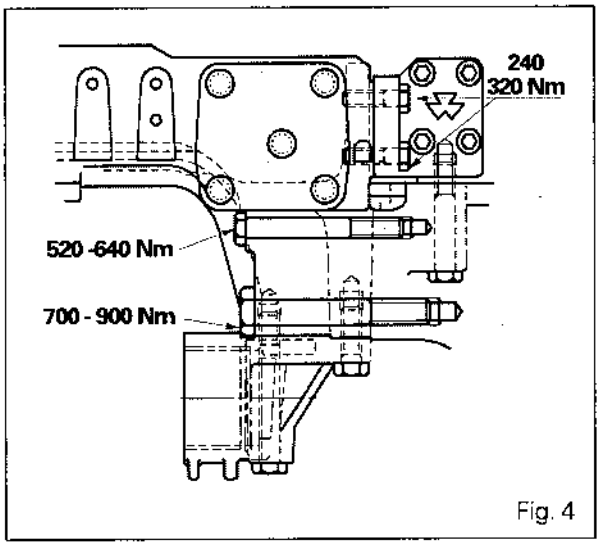


Fig. 4

B. Recoupling

13. Screw two guide stud (locally manufactured) into diametrically opposite positions on the front frame.
14. Fit the frame to the engine.
15. Install the bolts and tighten to the specified torques:
    - 4-cylinder engines : see Fig. 3
    - 6-cylinder engines : see Fig. 4.
16. Refit the air conditioning compressor and bracket assembly and the upper attachment on the radiator (according to fitting).
17. Reconnect the inlet sleeve, suction pipe, harnesses, hoses, flexible connections, and pipes.
18. Reinstall the front weights.
19. Top up the cooling system.
20. Reconnect the batteries.
21. If the tractor is equipped with a flowmeter, purge the injection pump supply system.
22. Start the engine and check :
    - the hydraulic systems for any leaks,
    - the correct operation of the electrical systems.
23. Close and latch the bonnet, refit the lateral sheet metal panels or refit the bonnet, the lateral sheet metal panels and the exhaust pipe (according to option), the drive shaft and the 4WD guard
24. Reconnect the front axle control hoses.
25. Carry out road test.

C . Option with Carraro front axle

Remarks

- The 6260 and 6270 to 6990 tractors (6-cylinder engine) can be equipped with a fixed or suspended Carraro front axle.
- The splitting procedure is on the whole similar to that applied for Dana front axle. Some changes are to be noted concerning the position and number of components to be removed.
- The front frame, also called axle support, is listed in the spare parts catalogue under a different reference than the one created for Dana front frame.

Preliminary operations

Remark

- Depending on the fitting, the batteries can be situated either in the nose assembly or on the right-hand side of the tractor.

26. Disconnect the cables leading to the negative pole of the batteries.

27. Remove the front weights.

28. Remove the guards (**2**) (**2A**) and the universal 4WD drive shaft (see section 8F02).

29. Unlock partially the side panels.

30. Release the bonnet latch in front.
Tip up and attach the bonnet and the panels together in the opening position.
Remove the attachments of the release jacks.

31. Disconnect hoses and pipes while noting carefully their positions:

Fixed front axles

- *right side of the engine*: steering pipe
- *left side of the engine*: the pipes (steering and differential lock)

Suspended front axles

- *right side of the engine*: the pipes (steering and differential lock)
- *left side of the engine*: the hydraulic bloc pipes (return, LS and pressure)

Fixed and suspended front axles

- the oil and gas oil cooler hoses within the nose assembly
- the electrical harness (road lights, vacuum gauge and hydraulic block for suspended front axle)
- the connector above the radiator.

32. Clear the periphery of the radiator with the following operations:

- Remove the air filter and surrounding components,
- Tip over the air-conditioning condenser without disconnecting the hoses (according to option),
- Remove the protection grille on both sides of the ventilator,
- Drain the radiator of the cooling circuit.
  Remark : The drain plug is located in front in the lower part of the radiator.
- Remove the lower and higher hoses and also the one connected to the radiator tank.
- Disconnect the suction duct between the exhaust pipe and the air filter.

Splitting the tractor - Front frame / engine

Uncoupling

33. Immobilise the tractor. Put on the handbrake. Chock the axle between the frame and the front axle. (Fig. 5. fixed version).

34. Partially loosen attachment bolts (**1**) to (**3**) between the engine and the front frame (Fig.6).

35. Start the uncoupling operation using a trolley jack or the separating assembly, ref.3378152M11, placed under the frame.

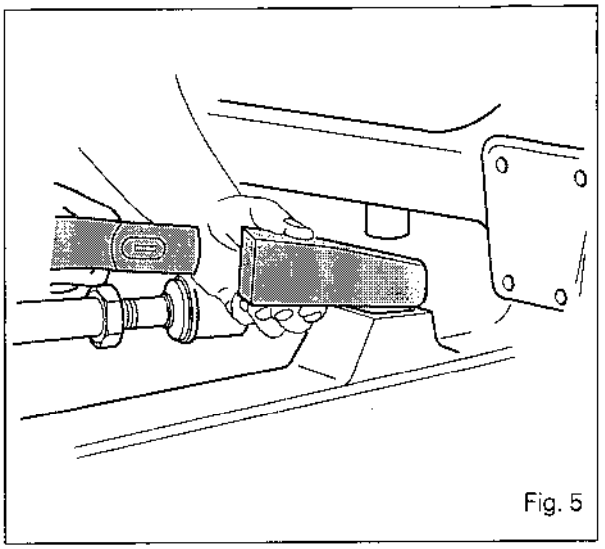


Fig. 5

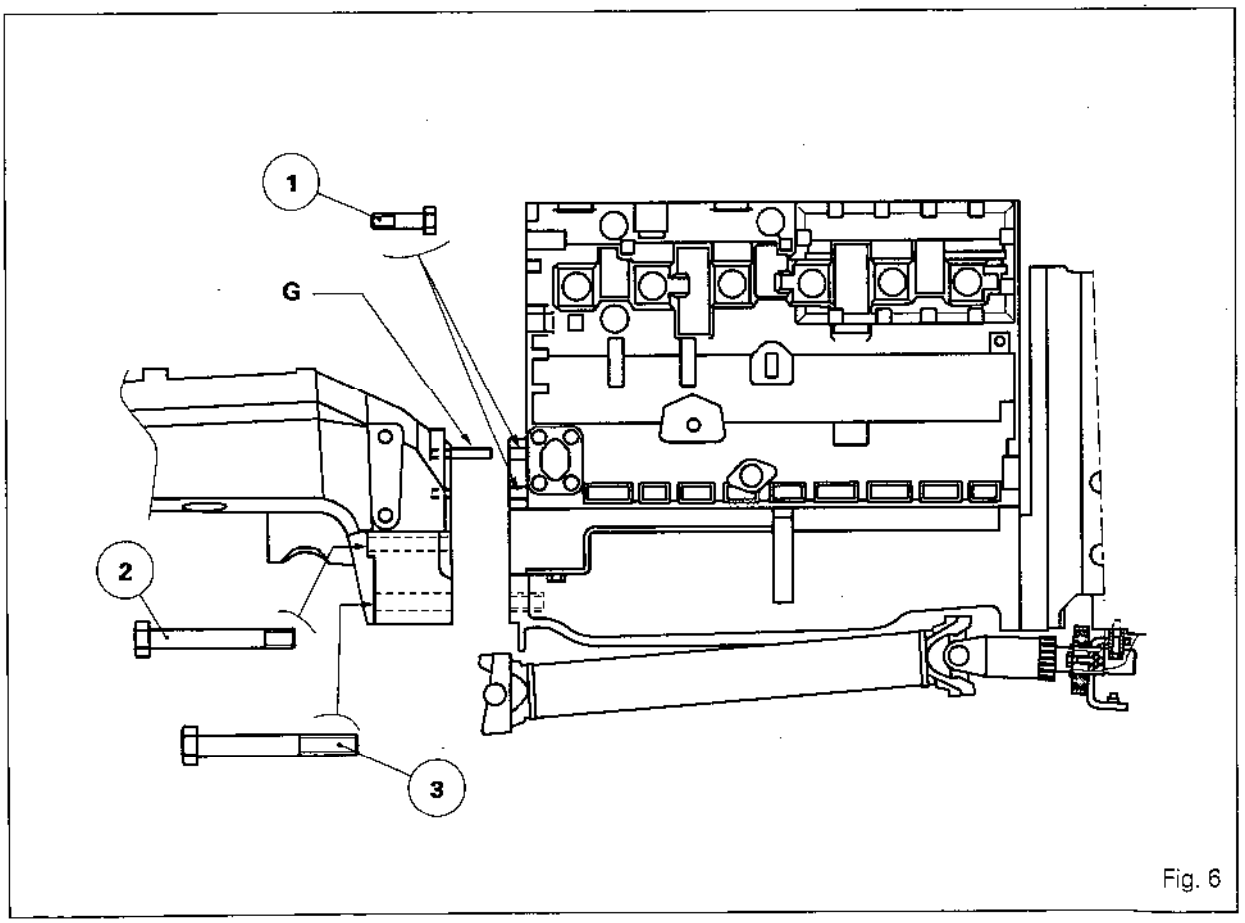


Fig. 6

36. Completely remove the attachment bolts. Separate the assemblies (Fig. 6 - 7).

Remark

- If the tractor is equipped with a front Power Take Off, its drive shaft is integral with the engine pulley, when the frame moves.

Safety point

- The tractor may be equipped with a belly weight (110 Kg) housed in the frame. In this case and to avoid a possible tipping over of the assembly to be uncoupled, sling the front of the frame to restore the balance (Fig.7).

Coupling

37. Make two guide studs "**G**" (Fig. 5) and fix them diametrically opposite on the front frame.

38. Assemble the frame with the engine, following the same safety procedures as those applied during uncoupling (Fig.7).

. Tighten the bolts to the torque shown (Fig. 6):

- bolt (**1**) : 240 - 320 Nm
- bolt (**2**) : 540 - 640 Nm
- bolt (**3**) : 670 - 900 Nm

Final operations

40. Couple the tractor parts. Reverse the uncoupling sequence and refer to the special points given below.

Special points

- In the final phase, start the engine. Check the proper functioning of the electric components and check also for the oil tightness of:
  . hydraulic seals and hoses
  . hoses

Suspended front axles

- Operate the front axle several times up and down to check its proper operatoin and detect any possible leaks.

Fixed or suspended front axles

41. Carry out a road test.

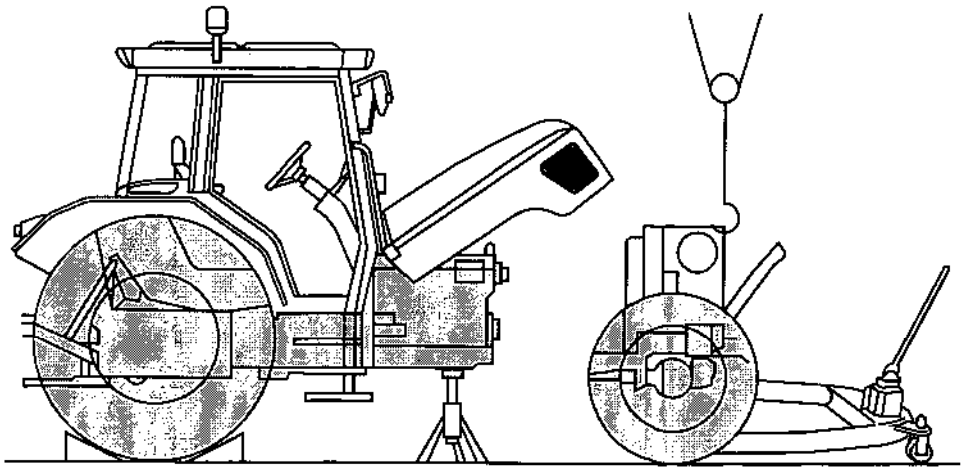


Fig. 7

D. Service tool

- **3376935M91 - Set of plugs for air conditioning couplings (Fig. 8)**
- **3378152M11 - Splitting tools (Fig. 9)**

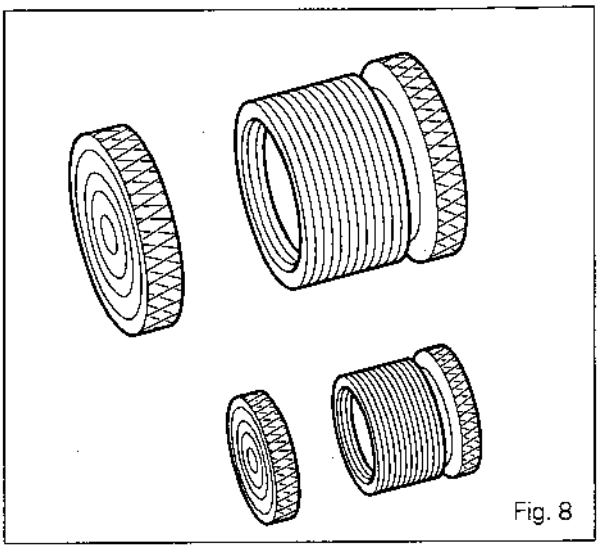


Fig. 8

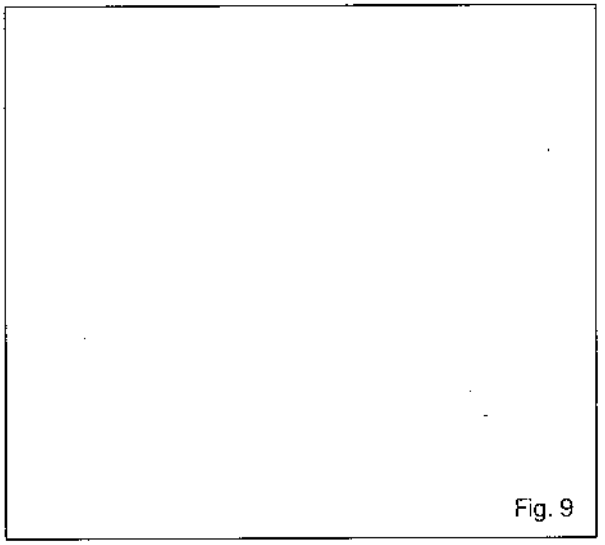


Fig. 9

3 . ENGINE

Contents

3 A01 General

CONTENTS

A . Introduction

This section is limited to providing general information on the engines fitted in the 6200 range.

To obtain all information about technical data, adjustments, disassembly and assembly procedures, refer to the following publications:

1 . Perkins engines

- Workshop manual covering all Perkins diesel engines in the 4, 41, 900 and 1000 series for all Massey Ferguson tractors and published by AGCO with the following reference numbers:
  . 1857075 M1 in English
  . 1857076 M1 in French
  . 1857077 M1 in Spanish
  . 1857078 M1 in German
  . 1857243 M1 in Italian

B . Main characteristics

	6235 Sloping bonnet	6235 Standard
Type of engine	1004-40T	1004-40T
Perkins engine list no.	AK31398	AK31304
No. of cylinders	4	4
Bore (mm)	100	100
Stroke (mm)	127	127
Capacity (litre)	4	4
Compression ratio	17,25 / 1	17,25 / 1
DIN (kw) output at 2200 rpm	75 (55,1)	75 (55,1)
Max. torque (Nm)	316	316
at (rpm)	1400	1400
Idle speed (rpm)	950	950
Nominal speed (rpm)	2200	2200
Max. speed (rpm) at no load	2354	2354
Injection pump		
Make and type	Lucas DP200	Lucas DP200
Boost control	No	No
Reference	8920A503G	8920A503G
Code	2644F031	2644F031
Pump code letter	NG	NG
Governing spring code	1	1
Rotation	Clockwise	Clockwise
Static timing angle	8°	8°
Engine position	TDC	TDC
Engine check angle	Timing (using a measuring gauge)	Timing (using a measuring gauge)
Pump check angle	Timing (using a measuring gauge)	Timing (using a measuring gauge)
Injectors		
Make	Lucas	Lucas
Code	KF	KF
Nozzle-holder	2645A311	2645A311
Nozzle	2645A628	2645A628
New and service calibration (atm)	295	295
Suction system	Turbo	Turbo
Min. boost pressure at 2200 rpm at full load (mm Hg)	825	825
(Kpa)	110	110
(PSI)	16,0	16,0
Valve spring	Single	Single
Valve seat insert (inlet / exhaust)	Yes	Yes
Valve angle (degree) (in / ex)	30 / 30	30 / 30
Rocker arm clearance (mm) (in / ex)	0,20 / 0,45	0,20 / 0,45
Oil cooler	Yes	Yes
No. of temperature switches	1	1
Opening temp. (begin / full)	82 / 96	82 / 96
Fan	Viscostatic	Viscostatic
Piston cooling nozzle	Yes	Yes
Oil filter	1	1
Fuel filter	1	1

Engine - General

	6245	
	Sloping bonnet	**Standard**
Type of engine	1004-40T	1004-40T
Perkins engine list no.	AK31399	AK31305
No. of cylinders	4	4
Bore (mm)	100	100
Stroke (mm)	127	127
Capacity (litre)	4	4
Compression ratio	17,25 / 1	17,25 / 1
DIN (kw) output at 2200 rpm	85 (62,5)	85 (62,5)
Max. torque (Nm)	347	347
at (rpm)	1400	1400
Idle speed (rpm)	950	950
Nominal speed (rpm)	2200	2200
Max. speed (rpm) at no load	2354	2354
Injection pump		
Make and type	Lucas DP200	Lucas DP200
Boost control	No	No
Reference	8920A344T	8920A344T
Code	2644C737	2644C737
Pump code letter	CG	CG
Governing spring code	1	1
Rotation	Clockwise	Clockwise
Static timing angle	7,5°	7,5°
Engine position	TDC	TDC
Engine check angle	Timing (using a measuring gauge)	Timing (using a measuring gauge)
Pump check angle	Timing (using a measuring gauge)	Timing (using a measuring gauge)
Injectors		
Make	Lucas	Lucas
Code	KF	KF
Nozzle-holder	2645A311	2645A311
Nozzle	2645A628	2645A628
New and service calibration (atm)	295	295
Suction system	Turbo Wastegate	Turbo Wastegate
Min. boost pressure at 2200 rpm at full load (mm Hg)	675	675
(Kpa)	90	90
(PSI)	13,1	13,1
Valve spring	Single	Single
Valve seat insert (inlet / exhaust)	Yes	Yes
Valve angle (degree) (in / ex)	30 / 30	30 / 30
Rocker arm clearance (mm) (in / ex)	0,20 / 0,45	0,20 / 0,45
Oil cooler	Yes	Yes
No. of temperature switches	1	1
Opening temp. (begin / full)	82 / 96	82 / 96
Fan	Viscostatic	Viscostatic
Piston cooling nozzle	Yes	Yes
Oil filter	1	1
Fuel filter	1	1

Engine - General

	6255	
	Sloping bonnet	**Standard**
Type of engine	1004-40T	1004-40T
Perkins engine list no.	AK31354	AK31306
No. of cylinders	4	4
Bore (mm)	100	100
Stroke (mm)	127	127
Capacity (litre)	4	4
Compression ratio	17,25 / 1	17,25 / 1
DIN (kw) output at 2200 rpm	95 (69,9)	95 (69,9)
Max. torque (Nm)	385	385
at (rpm)	1400	1400
Idle speed (rpm)	950	950
Nominal speed (rpm)	2200	2200
Max. speed (rpm) at no load	2354	2354
Injection pump		
Make and type	Lucas DP200	Lucas DP200
Boost control	Yes	Yes
Reference	8920A344T	8920A344T
Code	2644C735	2644C735
Pump code letter	BG	BG
Governing spring code	1	1
Rotation	Clockwise	Clockwise
Static timing angle	7°	7°
Engine position	TDC	TDC
Engine check angle	Timing (using a measuring gauge)	Timing (using a measuring gauge)
Pump check angle	Timing (using a measuring gauge)	Timing (using a measuring gauge)
Injectors		
Make	Lucas	Lucas
Code	KN	KN
Nozzle-holder	2645A315	2645A315
Nozzle	2645A635	2645A635
New and service calibration (atm)	290	290
Suction system	Turbo Wastegate	Turbo Wastegate
Min. boost pressure at		
2200 rpm at full load (mm Hg)	750	750
(Kpa)	100	100
(PSI)	14,5	14,5
Valve spring	Single	Single
Valve seat insert (inlet / exhaust)	Yes	Yes
Valve angle (degree) (in / ex)	45 / 45	45 / 45
Rocker arm clearance (mm) (in / ex)	0,20 / 0,45	0,20 / 0,45
Oil cooler	Yes	Yes
No. of temperature switches	1	1
Opening temp. (begin / full)	82 / 96	82 / 96
Fan	Viscostatic	Viscostatic
Piston cooling nozzle	Yes	Yes
Oil filter	1	1
Fuel filter	1	1

Engine - General

		6265	6260
		Standard	Standard
Type of engine		1004-40T	1006-60
Perkins engine list no.		AM31307	YG31427
No. of cylinders		4	6
Bore (mm)		100	100
Stroke (mm)		127	127
Capacity (litre)		4	6
Compression ratio		17,25 / 1	17,25 / 1
DIN (kw) output at 2200 rpm		105 (77,2)	105 (77,2)
Max. torque (Nm)		417	396
at (rpm)		1400	1400
Idle speed (rpm)		950	950
Nominal speed (rpm)		2200	2200
Max. speed (rpm) at no load		2354	2354
Injection pump			
Make and type		Lucas DP200	Lucas DP200
Boost control		Yes	Yes
Reference		8920A372T	8921A294T
Code		2644C738	2644D134
Pump code letter		FG	CH
Governing spring code		1	1
Rotation		Clockwise	Clockwise
Static timing angle		6,5°	9,5°
Engine position		TDC	TDC
Engine check angle		Timing (using a measuring gauge)	Timing (using a measuring gauge)
Pump check angle		Timing (using a measuring gauge)	Timing (using a measuring gauge)
Injectors			
Make		Lucas	Lucas
Code		KR	KE
Nozzle-holder		2645A315	2645A311
Nozzle		2645K608	2645A627
New and service calibration (atm)		290	290
Suction system		Turbo Wastegate Intercooler	Atmospheric
Min. boost pressure at 2200 rpm at full load	(mm Hg)	937,5	
	(Kpa)	125	
	(PSI)	18,1	
Valve spring		Single	Single
Valve seat insert (inlet / exhaust)		Yes	Yes
Valve angle (degree) (in / ex)		30 / 30	30 / 30
Rocker arm clearance (mm) (in / ex)		0,20 / 0,45	0,20 / 0,45
Oil cooler		Yes	Yes
No. of temperature switches		1	1
Opening temp. (begin / full)		82 / 96	82 / 96
Fan		Viscostatic	Viscostatic
Piston cooling nozzle		Yes	No
Oil filter		1	1
Fuel filter		1	2

Engine - General

	6270	6280
	Standard	Standard
Type of engine	1006-60T	1006-60T
Perkins engine list no.	YH31428	YH31429
No. of cylinders	6	6
Bore (mm)	100	100
Stroke (mm)	127	127
Capacity (litre)	6	6
Compression ratio	17,25 / 1	17,25 / 1
DIN (kw) output at 2200 rpm	115 (84,6)	125 (92)
Max. torque (Nm)	463	503
at (rpm)	1400	1400
Idle speed (rpm)	950	950
Nominal speed (rpm)	2200	2200
Max. speed (rpm) at no load	2354	2354
Injection pump		
Make and type	Lucas DP200	Lucas DP200
Boost control	No	No
Reference	8921A571T	8921A940T
Code	2644D131	2644D136
Pump code letter	AH	EH
Governing spring code	1	1
Rotation	Clockwise	Clockwise
Static timing angle	7°	7,5°
Engine position	TDC	TDC
Engine check angle	Timing (using a measuring gauge)	Timing (using a measuring gauge)
Pump check angle	Timing (using a measuring gauge)	Timing (using a measuring gauge)
Injectors		
Make	Lucas	Lucas
Code	KG	KF
Nozzle-holder	2645A314	2645A311
Nozzle	2645A629	2645A628
New and service calibration (atm)	300	295
Suction system	Turbo	Turbo
Min. boost pressure at		
2200 rpm at full load (mm Hg)	937,5	1012,5
(Kpa)	125	135
(PSI)	18,1	19,6
Valve spring	Single	Single
Valve seat insert (inlet / exhaust)	Yes	Yes
Valve angle (degree) (in / ex)	30 / 30	30 / 30
Rocker arm clearance (mm) (in / ex)	0,20 / 0,45	0,20 / 0,45
Oil cooler	Yes	Yes
No. of temperature switches	1	1
Opening temp. (begin / full)	82 / 96	82 / 96
Fan	Viscostatic	Viscostatic
Piston cooling nozzle	Yes	Yes
Oil filter	1	1
Fuel filter	2	2

6290

	Standard
Type of engine	1006-60T
Perkins engine list no.	YH31430
No. of cylinders	6
Bore (mm)	100
Stroke (mm)	127
Capacity (litre)	6
Compression ratio	17,25 / 1
DIN (kw) output at 2200 rpm	135 (99,3)
Max. torque (Nm)	547
at (rpm)	1400
Idle speed (rpm)	950
Nominal speed (rpm)	2200
Max. speed (rpm) at no load	2354

Injection pump

Make and type	Lucas DP200
Boost control	Yes
Reference	8921A750T
Code	2644K721
Pump code letter	MH
Governing spring code	1
Rotation	Clockwise
Static timing angle	7,5°
Engine position	TDC
Engine check angle	Timing (using a measuring gauge)
Pump check angle	Timing (using a measuring gauge)

Injectors

Make		Lucas
Code		KF
Nozzle-holder		2645A311
Nozzle		2645A628
New and service calibration (atm)		295
Suction system		Turbo
Min. boost pressure at		
2200 rpm at full load	(mm Hg)	1162,5
	(Kpa)	155
	(PSI)	22,5

Valve spring	Single
Valve seat insert (inlet / exhaust)	Yes
Valve angle (degree) (in / ex)	30 / 30
Rocker arm clearance (mm) (in / ex)	0,20 / 0,45
Oil cooler	Yes
No. of temperature switches	1
Opening temp. (begin / full)	82 / 96
Fan	Viscostatic
Piston cooling nozzle	Yes
Oil filter	1
Fuel filter	2

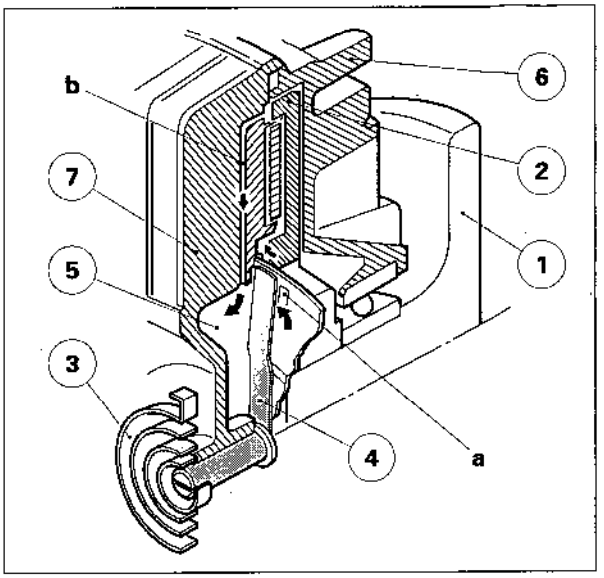
C . Viscostatic fan

Description

The engines are fitted with a cooling fan equipped with a viscostatic coupling. This device permits a gain in power in the order of 2 to 3 horsepower.

The viscostatic coupling comprises three main parts:
- The driving part driven by the engine and composed of a shaft (**1**) integral with a plate (**2**) fitted with annular grooves;
- The driven part constituted by a hub (**6**) receiving the fan and the body (**7**) and equally fitted with annular grooves;
- The regulating section comprising a thermostatic spring (**3**) that controls valve (**4**).

The centre of the device contains a tank (**5**) filled with a viscous silicone fluid.



Operation

When the temperature of the air passing through the radiator reaches a predetermined value, thermostatic spring (**3**) acts upon valve (**4**) which opens port **a**. The liquid is directed by centrifugal force to the annular throats of hub (**2**) and body (**7**). The torque is transmitted through the internal friction of the extremely viscous liquid and its adherence to the inner walls. The fan is thus driven and permits a better air cooling of the radiator.

The speed of the fan varies across the whole range of regulation in relation to the temperature.

When the temperature of the air passing through the radiator drops, the spring closes the valve and stops the liquid from reaching the friction area. The fluid gradually returns to the tank (**5**) via channel **b**, the fan thus becomes de-clutched, leaving only a residual torque resistance.

3 B01 Flywheel and dampers

CONTENTS

General

The 6200 series tractors are fitted with a vibration damper (**6**) that has a different profile according to the model. Its function however remains identical.
This damper, mounted on the engine flywheel and interlocked with the main shaft by splines, ensures a flexible link between the engine and the transmission.
This system is fitted to Dynashift or Speedshift models on tractors equipped with either 4- or 6-cylinder engines.
On tractors fitted with a pressure loaded clutch or a power shuttle, the main shaft is supported by a sealed bearing (**10**) inserted into the flywheel (**1**) (4-cylinder engine) or the crankshaft (6-cylinder engine) (Fig. 2 - 3).
On tractors fitted with a spring loaded clutch, the movement of the damper is limited by a spacer (**3**) of different lengths (depending on the engine model) (Fig. 1) that is inserted into the flywheel (**1**) and by a bush (**9**) of a different width (Fig. 1).

Special points

Version with spring loaded clutch (Fig. 1)

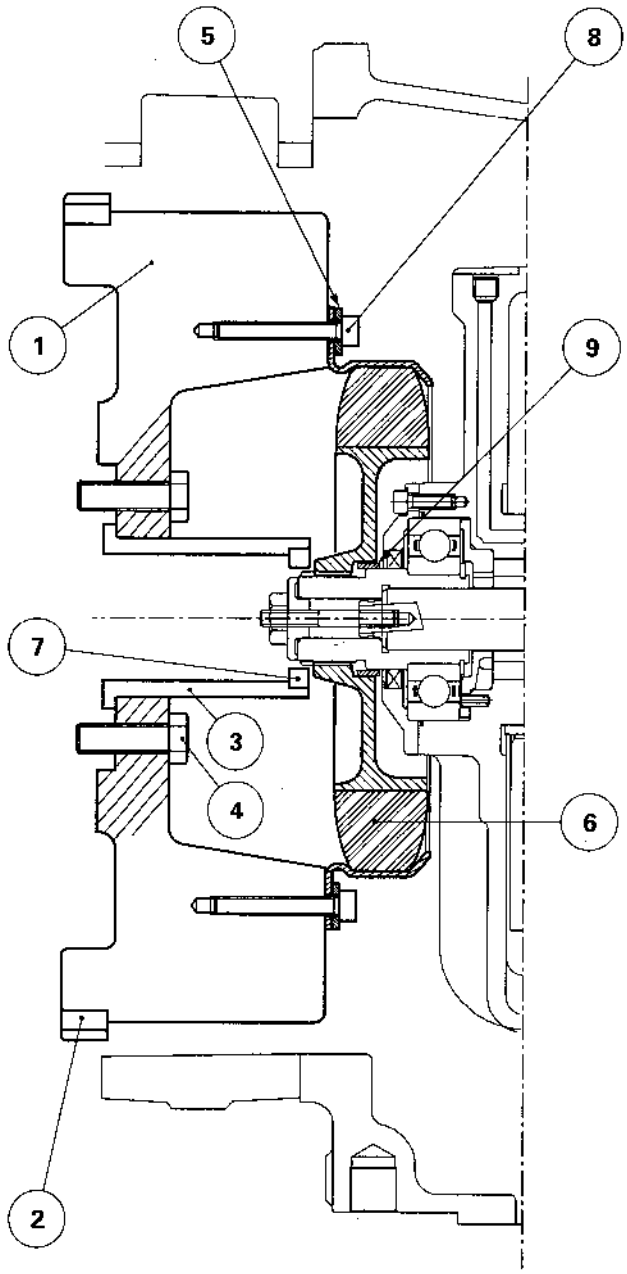
- Tight fitting of the washer (**7**) in the spacer (**3**).
- Before coupling the tractor between the engine and the gearbox, check for the presence of the bush (**9**).
- 4-cylinder model: long spacer (**3**), short bush (**9**).
- 6-cylinder model: (6260 only): short spacer (**3**), long bush (**9**).

Version with pressure loaded clutch or power shuttle (Fig. 2 - 3).

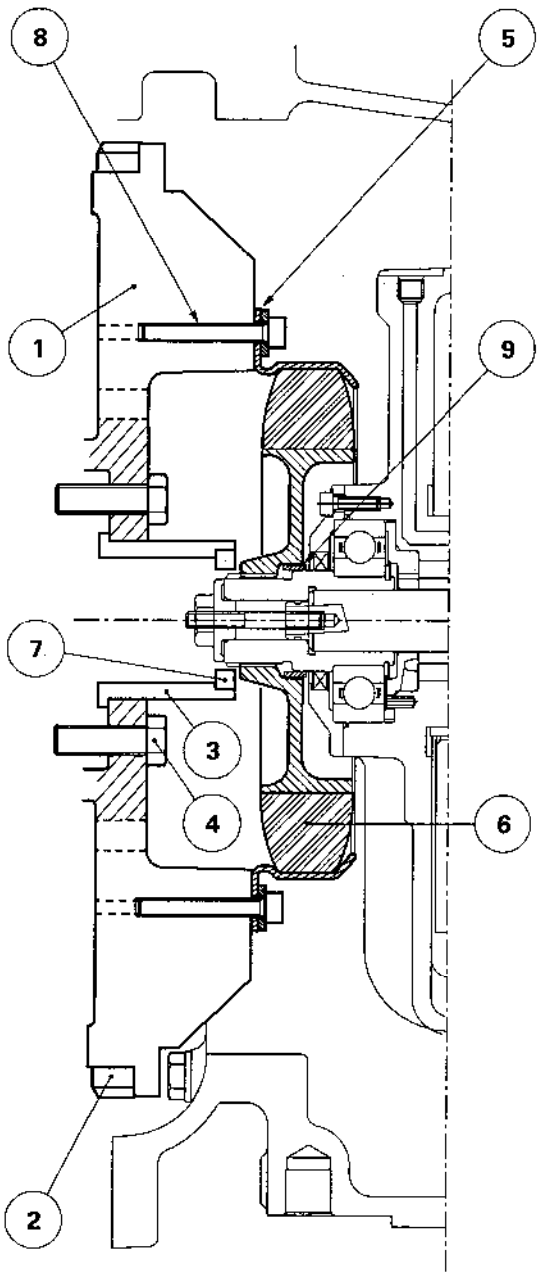
- Fit the damper, with the long offset "**D**" of the hub facing the bearing (**10**).

Version with Spring loaded clutch
(gearbox with mechanical reverse shuttle)

4-cylinder engine
6235 to 6255



6-cylinder engine
6260

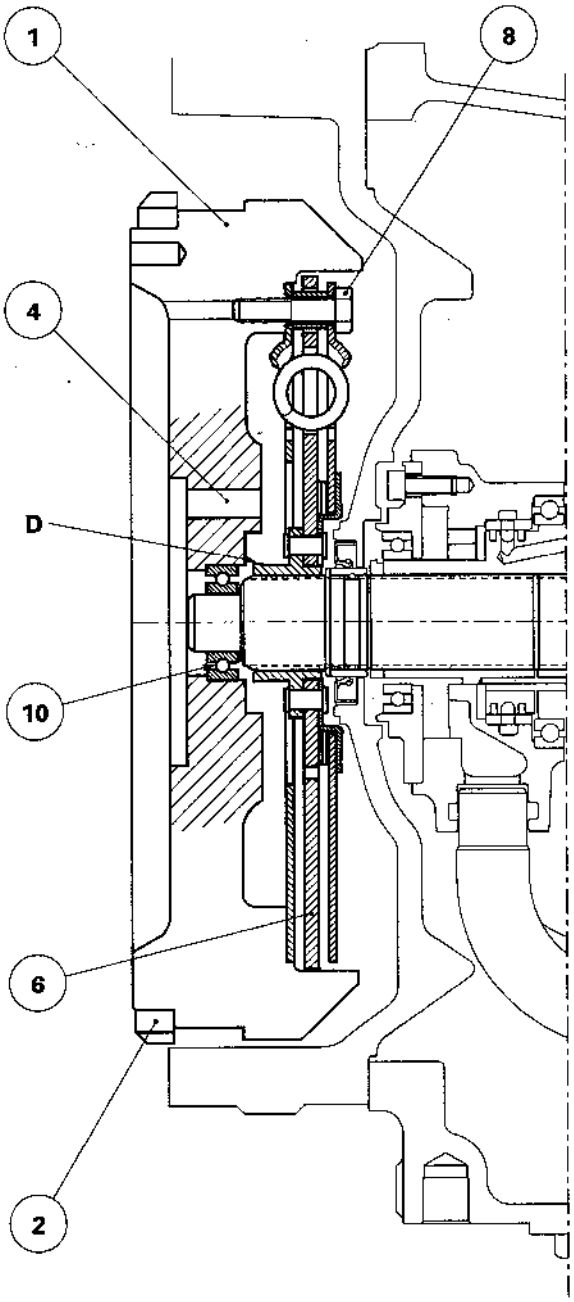


(1) Flywheel
(2) Starter crown
(3) Spacer
(4) Bolt
(5) Washer
(6) Damper
(7) Washer
(8) Bolt
(9) Bush

Fig. 2
Fig. 3
Fig. 1

Version with Pressure loaded clutch
(gearbox with mechanical reverse shuttle)

4-cylinder engine
6265



6-cylinder engine
6270 to 6290

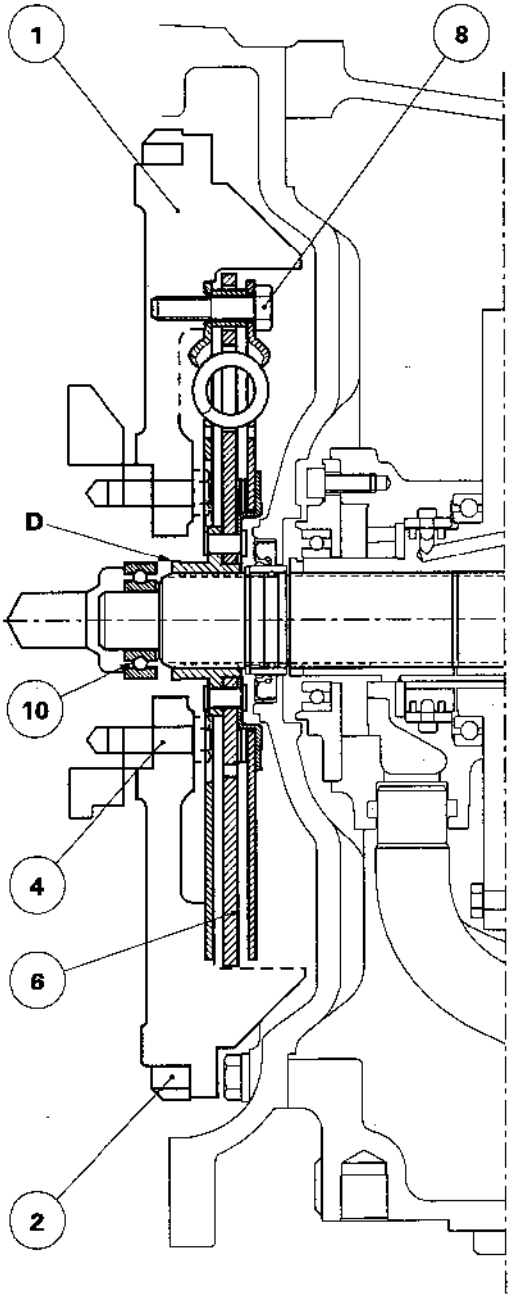


Fig. 1

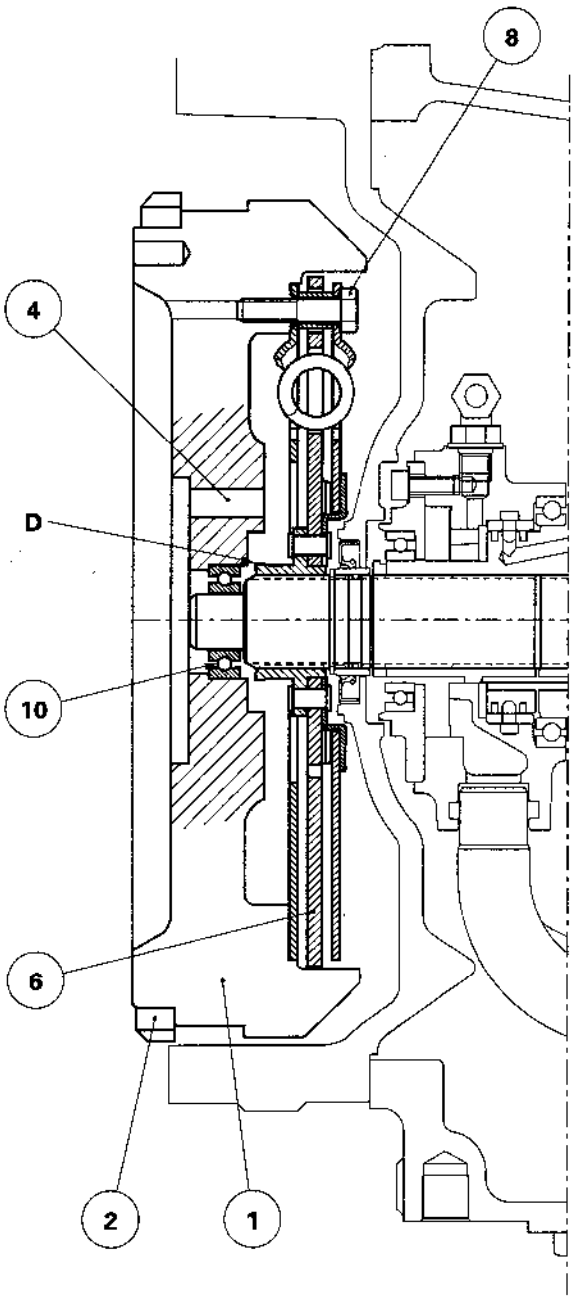
Fig. 3

(1) Flywheel
(2) Starter crown
(4) Bolt
(6) Damper
(8) Bolt
(10) Sealed bearing

Fig. 2

Power shuttle version

4-cylinder engine
6235 to 6255 and 6265



6-cylinder engine
6260 and 6270 to 6290

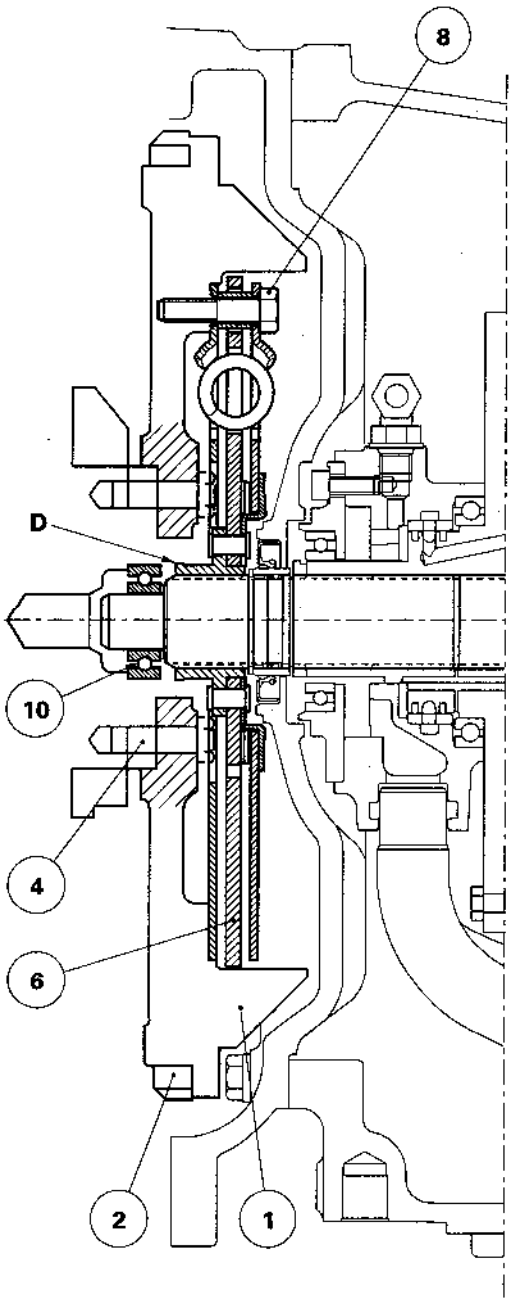


Fig. 1

Fig. 2

Fig. 3

A. Removal, refitting of the damper

1. Uncouple the tractor between the engine and the gearbox (see section 2A01).

Spring loaded clutch version (Fig. 1)

Removal

2. Recover the bush (**9**).
3. Block the engine flywheel (**1**).
4. Remove the bolts (**8**) and the washers (**5**). Remove the damper (**6**).

Refitting

5. Refit the damper. Fit the bolts (**8**) with the washers (**5**), lightly smear with Loctite 270 and tighten to a torque of 29 - 37 Nm.

Pressure loaded clutch and power shuttle versions (Fig. 2 - 3)

Removal

6. Block the engine flywheel (**1**).
7. Remove the bolts (**8**). Take off the damper (**6**).

Refitting

8. Refit and centre the damper (**6**) on the flywheel using tool 3378112M1 (see § E and Fig 4) turning the long offset "**D**" of the hub towards the bearing (**10**). Fit the bolts (**8**) (Fig. 4) lightly smeared with Loctite 270 and tighten them to a torque of 68 - 92 Nm.
9. Couple the tractor between the engine and the gearbox (see section 2A01).

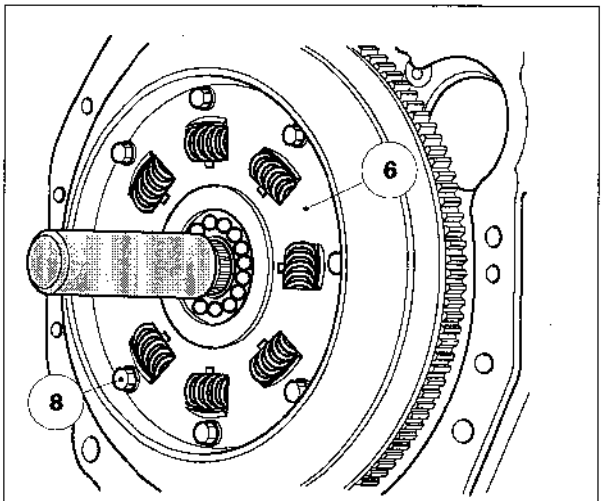


Fig. 4

B. Removal, refitting of the flywheel (Fig. 1)

Version embrayage à engagement mécanique (Spring loaded) (Fig. 1)

Removal

10. Remove the damper (see § A).
11. Block the engine flywheel.
12. Remove the bolts (**4**).
13. Screw two guide studs in diametrically opposed positions on the crankshaft.
14. Remove the flywheel with the spacer (**3**).
15. Separate the spacer from the flywheel.

Refitting

16. Slide the spacer fitted with the washer (**7**) into the bore of the flywheel according to the model:
- 4-cylinder: long spacer (**3**) - short bush (**9**)
- 6-cylinder: (6260 only): short spacer (**3**) - long bush (**9**).

17. Clean the flywheel and its mating face with the crankshaft.
18. Slide the flywheel along the previously mounted guide studs.
19. Fit and partially tighten the two bolts (**4**) previously smeared with Loctite 270.
20. Remove the guide studs. Smear the remaining bolts with the previously stated Loctite. Fit and tighten all the bolts to a torque of 110 - 140 Nm after first blocking the flywheel.
21. Refit the damper.

Pressure loaded clutch and power shuttle versions (Fig. 2 - 3)

Removal

22. Remove the damper (see § A).
23. Block the flywheel.
24. Remove the bolts (**4**).
25. Screw two diametrically opposed guide studs onto the crankshaft.
26. Remove the flywheel fitted with its sealed bearing (**10**) (4 cylinder engine only).

Refitting

27. Clean the flywheel and its mating face with the crankshaft.
28. Slide the flywheel along the previously mounted guide studs.
29. Fit and partially tighten the two bolts (**4**) previously smeared with Loctite 270.
30. Remove the guide studs. Smear the remaining bolts with the previously stated Loctite, fit and tighten all the bolts to a torque of 110 - 140 Nm, after first blocking the flywheel.
31. Refit the damper.

C. Replacement of the starter crown

Removal

32. Remove the damper (see § A).

33. Remove the engine flywheel (see § B).

Replacement

34. Drill a hole (Ø 5 mm, depth 16 mm). Split the crown using a chisel by striking it as shown in Fig. 5. Wear eye protection against metal splinters.

35. Heat a new starter crown to 245 °C, only use an oven for this purpose.

36. Place the crown (**2**) on the flywheel (**1**) (Fig. 1 to 3), with the leading edge of the teeth facing the engine. Swiftly push the starter crown fully home. Leave it to cool slowly.

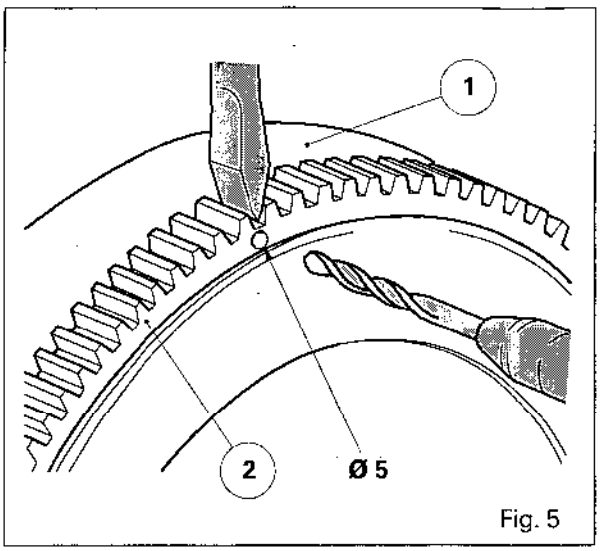


Fig. 5

D. Replacement of the sealed bearing (10) (Fig. 2-3)

Removal

37. Take off the damper (see § A).

38. Using an inertia tool, extract the bearing (**10**) (Fig. 6).

Refitting

39. Clean the bearing cavity at the rear end of the crankshaft.

40. Before inserting the bearing (**10**) into the crankshaft (Fig. 6) or the engine flywheel (**1**) (Fig. 7) depending on the case, check that the inside bearing bush slides freely on the front end "**E**" of the main shaft (Fig. 7).

41. Insert the bearing flush against the shoulder on the crankshaft (6-cylinder engine, Fig. 6) or engine flywheel (4-cylinder engine, Fig. 7) by using an appropriate tool that bears only on the outer cage.

42. Refit the damper (see § A).

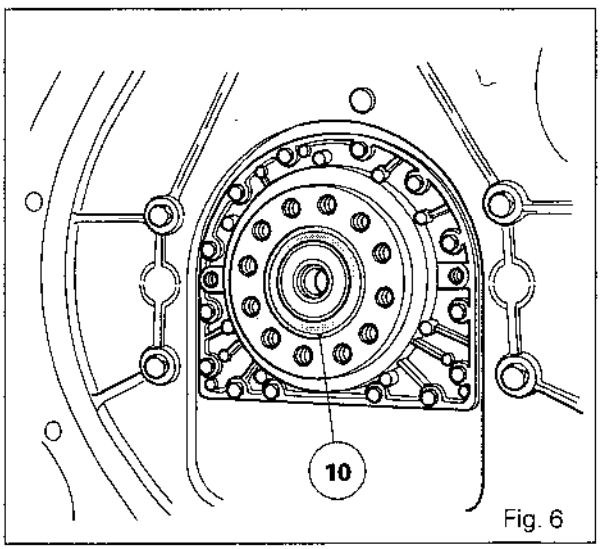


Fig. 6

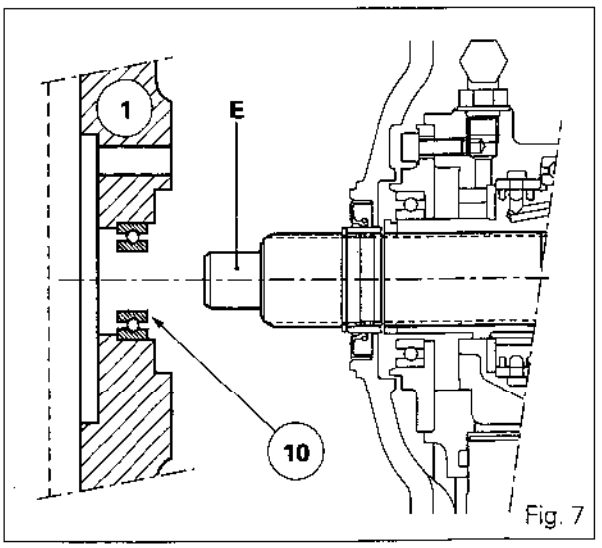


Fig. 7

E. Service tool

Tool available from the AGCO network

3378112M1 - Damper centering tool (Fig. 8)

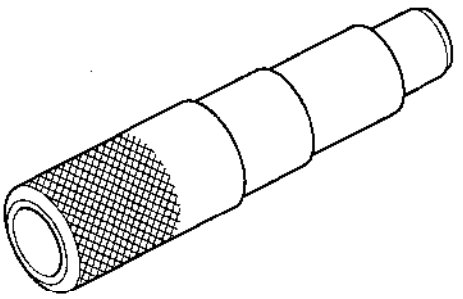


Fig. 8

3 C01 Spacers - Spring loaded clutch

CONTENTS

A . Spacer (4 cylinder engine)

Tractors 6235 to 6255 are fitted with a "1004 type" engine and may incorporate a mechanical reverse shuttle with a Spring loaded clutch or a power shuttle (see section 3C03).
These tractors are fitted with an 89 mm thick spacer (**4**) (Fig. 1) mounted between the engine and the gearbox. Attachment at the bottom is with studs of different lengths screwed into the gearbox housing.

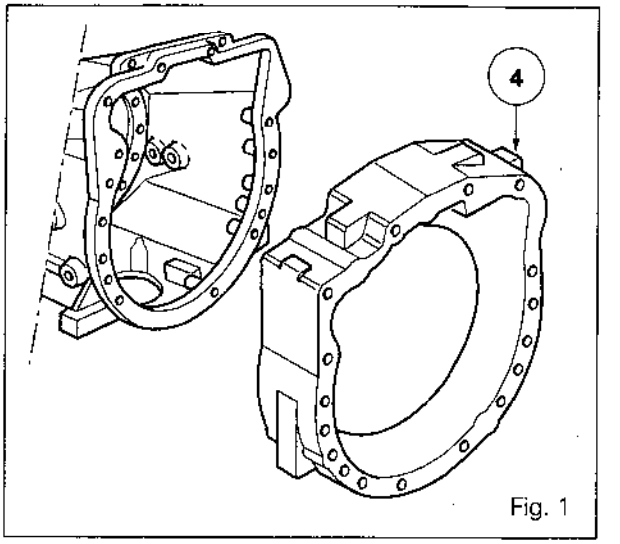


Fig. 1

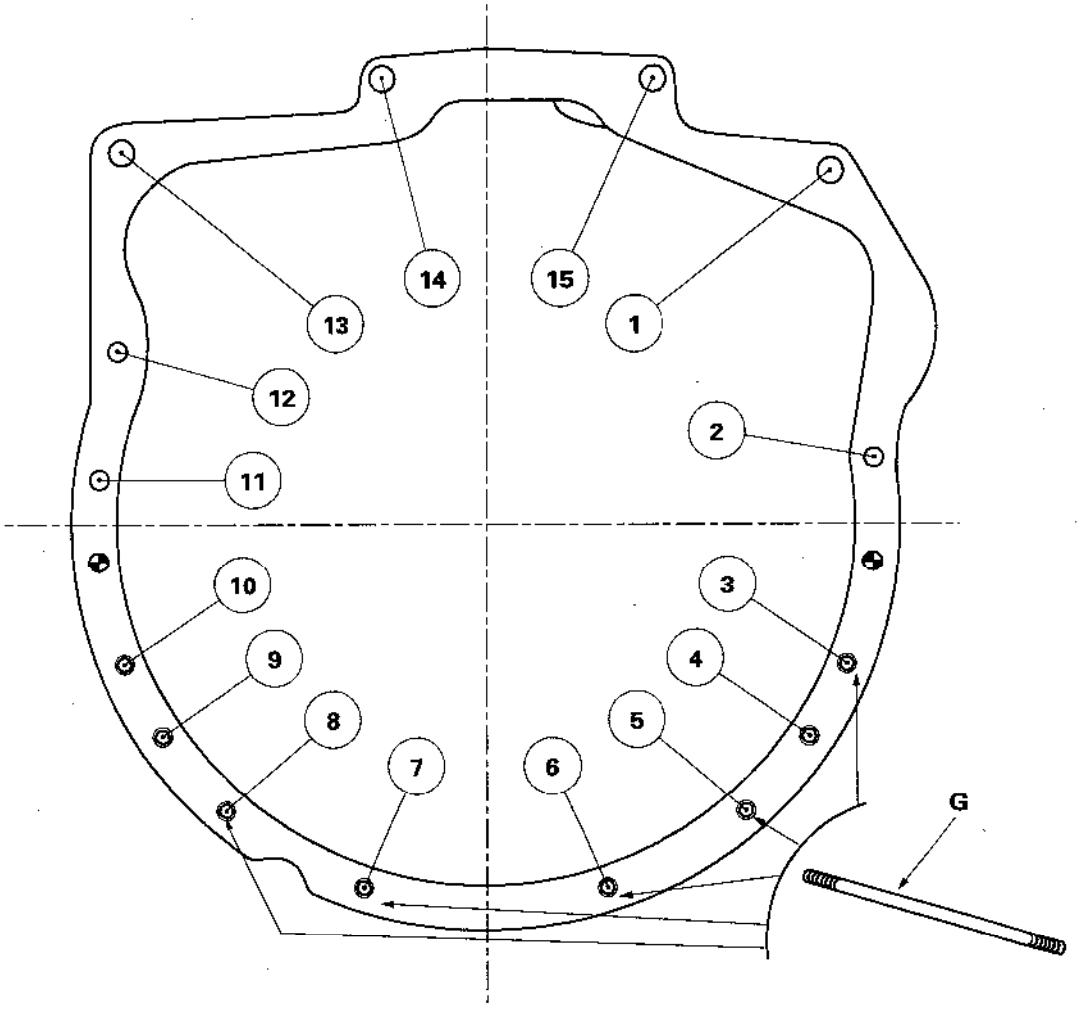
Removal

1. Split the tractor between the engine and the gearbox (see section 2A01).
2. Remove the spacer.
3. If necessary, extract studs from the gearbox.

Installation

4. Clean the mating faces on the spacer and the gearbox.
5. If removed and depending on their length, screw and block studs "**G**" (Fig. 2) in the gearbox. Beforehand, coat the short threaded part with Loctite 270.
6. Couple the tractor between the engine and the gearbox (see section 2A01).

Tightening torque
(1) to **(15)** = 100 - 130 Nm



Stud length (mm)
(3) = 145
(5) (8) = 155
(6) (7) = 130

Fig. 2

B . Spacer (6 cylinder engine)

Tractors 6260 are fitted with a 1006 type engine. They may be fitted with a mechanical reverse shuttle incorporating a Spring loaded clutch or a power shuttle (see section 3C03).

The spacer (**4**) (Fig. 3) fitted between the engine and the gearbox is different from the one fitted to tractors 6235 to 6255.

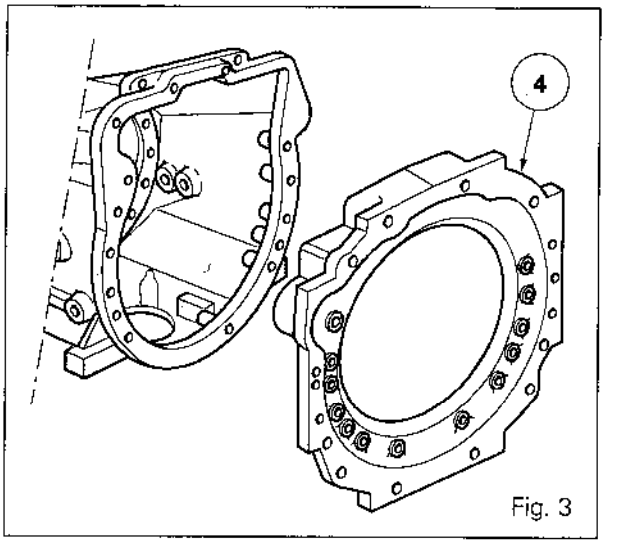


Fig. 3

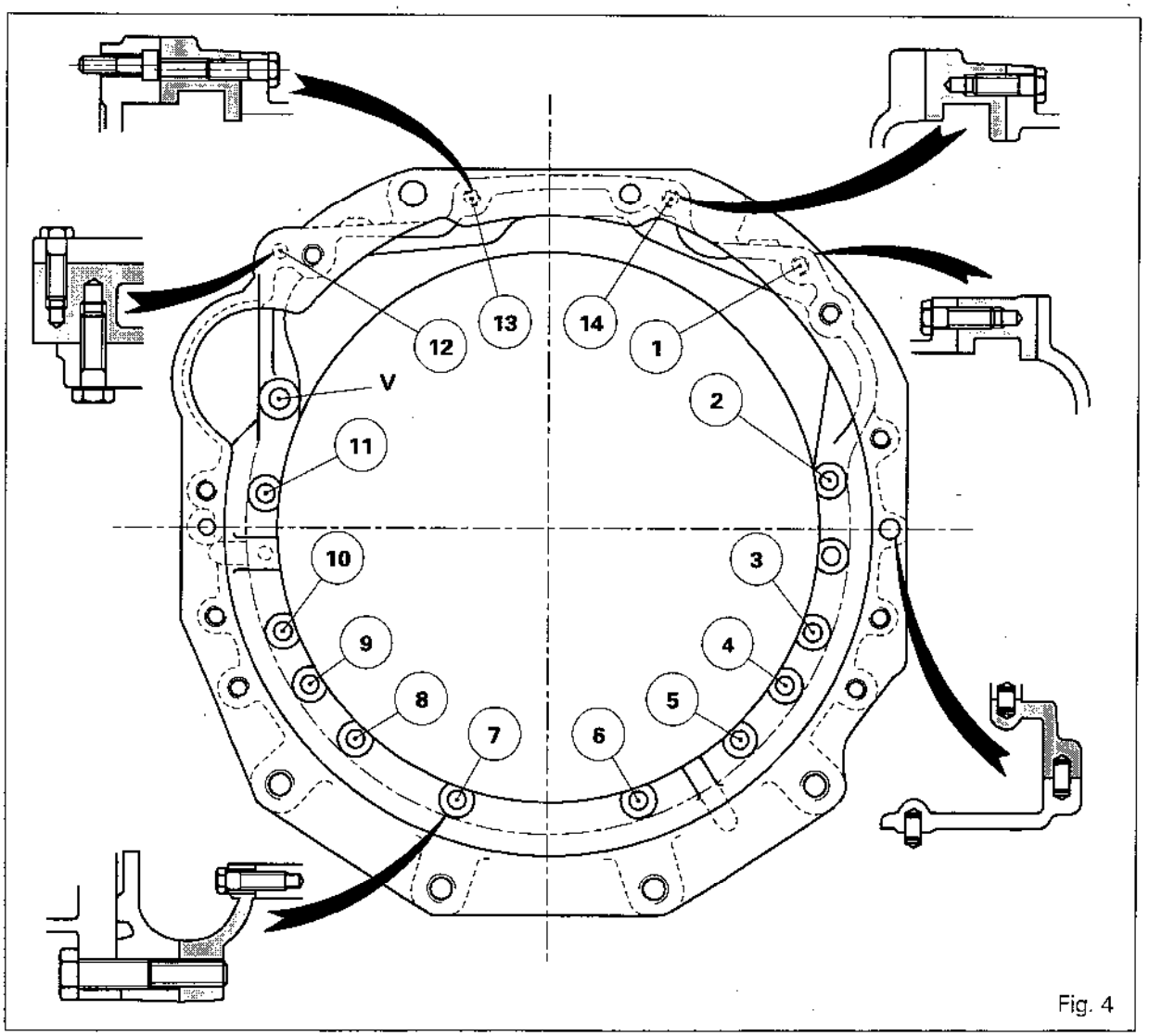


Fig. 4

Engine - Spacers

Removal

7. Remove the tool box.
8. Split the tractor between the engine and the gearbox (see section 2A01).
9. Remove two attachment screws (**3**) (**11**) (Fig. 4) in the spacer and replace with two guide studs.
10. Remove the remaining screws.
11. Separate and remove the spacer.

Installation

12. Clean the mating faces of the spacer and the gearbox.
13. Install or check that locating pins are fitted.
14. Install the spacer. Remove the guide studs. Tighten screws (**1**) to (**14**) to 100 - 130 Nm (Fig. 4), previously coated with Loctite 270, making sure that the **"V"** countersunk head screw is in the right place (no Loctite, Fig. 4).
15. Couple the engine to the gearbox (see section 2A01).
16. Carry out road test.

3 C02 Spacers - Pressure loaded clutch

CONTENTS

General

Tractors 6265 are fitted with a 1004 type Perkins engine (4 cylinders) and may incorporate a mechanical reverse shuttle with a Pressure loaded clutch or a power shuttle (see section 3C03).
These tractors are fitted with an 89 mm thick spacer (**4**) (Fig. 1) fitted between the engine and the gearbox.
Attachment at the bottom of this spacer is with studs of different lengths fitted into the gearbox housing.

Tractors 6270 to 6290 are fitted with a 1006 type engine (6 cylinders). As with the 6265 tractors, they may be fitted with a mechanical rreverse shuttle incorporated in a Pressure loaded clutch or a power shuttle.
The thickness of spacer (**4**) (Fig. 2) is different (53 mm).

Each spacer acts as a partition between the engine flywheel and the clutch.

Sealing between the input shaft (**19**) and the spacer (**4**) is provided by a lip seal (**10**) (Fig. 3).

The mating face of the spacer on the gearbox is coated with Loctite 510 or similar.

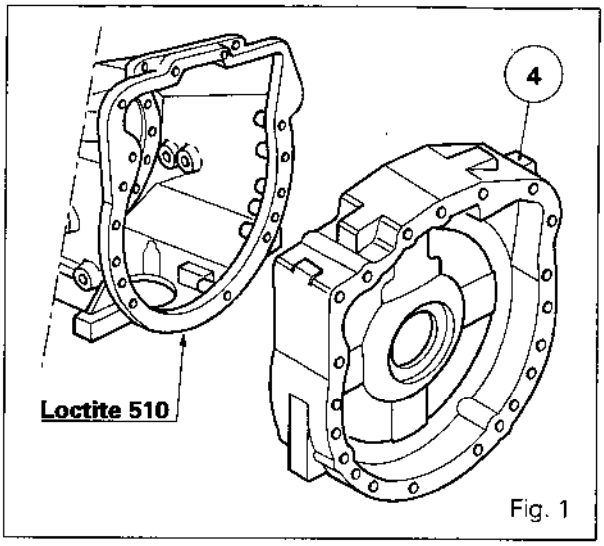


Fig. 1

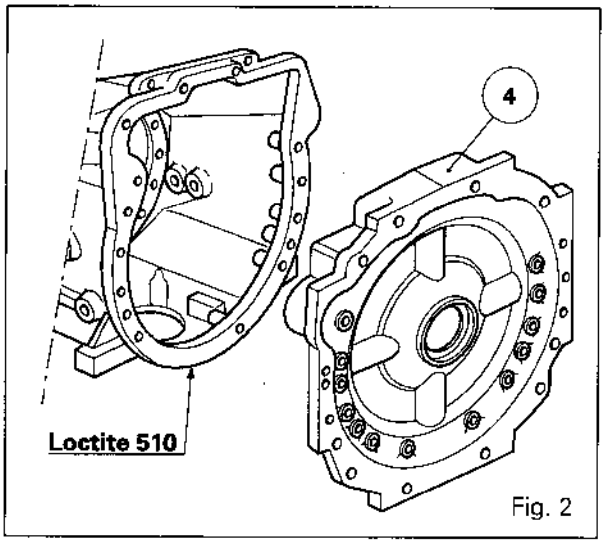


Fig. 2

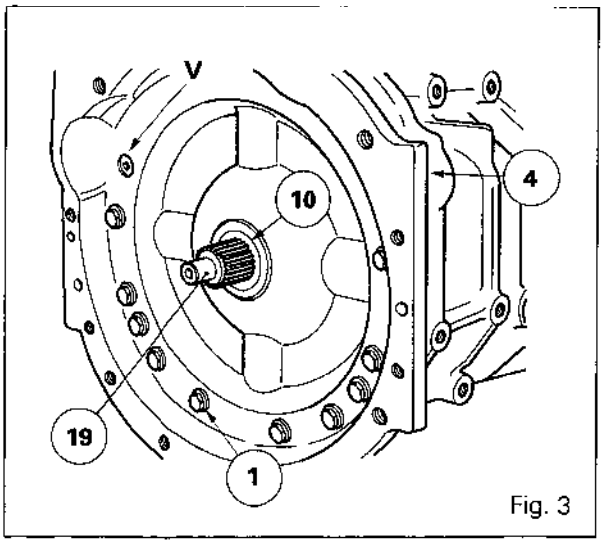


Fig. 3

A . Preliminaries operations

1. Split the tractor between the engine and the gearbox (see section 2A01).
2. Drain the gearbox.

B. Removal, installation of the spacer

Note : Replacement of the spacer requires resetting of the clutch unit (see section 4B01).

Removal

4 cylinder engine

3. Remove 4 "**V**" screws fitted in spot-faced holes on the front side of the spacer (Fig. 4).
4. Fit protector 3378012M2 (see § E) on the input shaft.
5. Separate and slide the spacer on the lower studs. Remove the spacer.
6. If necessary, extract the studs in the gearbox housing.

6 cylinder engine

7. Remove two attachment screws in the spacer and replace with two guide studs fitted on opposite sides in the gearbox.
8. Fit protector 3378012M2 (see § E) on the input shaft.
9. Remove the remaining screws.
10. Remove and separate the spacer.

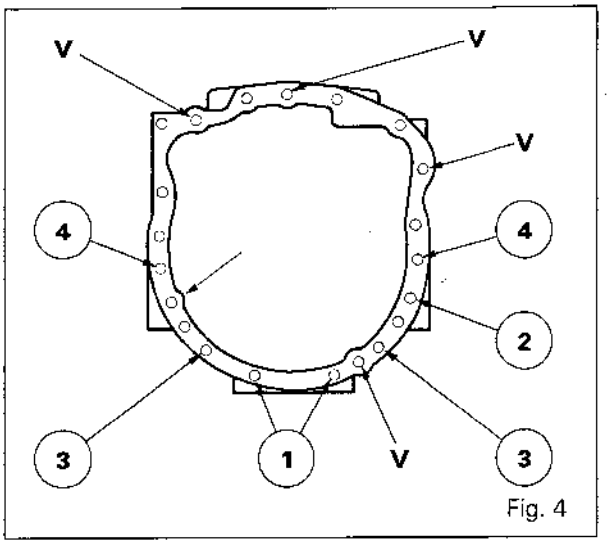


Fig. 4

Figure 4 Front view - Parts list
(**1**) 130 mm
(**2**) 145 mm
(**3**) 155 mm
(**4**) Locating pin

Installation

11. Clean the mating face of the spacer and the gearbox.
12. Coat the mating face of the gearbox with Loctite 510 or similar (Fig. 1 and 2).
13. Position or verify that locating pin are fitted (**4**) (Fig. 4).

4 cylinder engine

14. If removed and depending on their length, fit and block studs (**1**) (**2**) (**3**) (Fig. 4) in the gearbox. Beforehand, coat the short threaded part with Loctite 270.
15. Fit the protector on the input shaft.
16. Check that shims (**3**) (Fig. 5) are installed.
17. Slide the spacer on the studs.

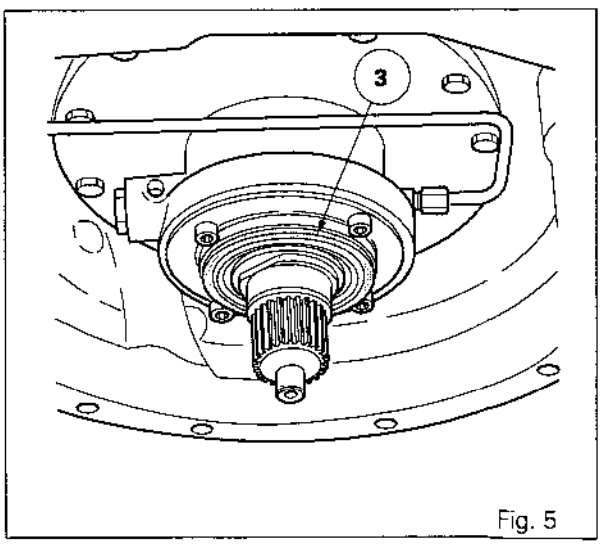


Fig. 5

18. Lightly coat the thread of "**V**" screws (Fig. 4) with Loctite 270 and tighten to a torque of 120 to 160 Nm. Remove the protector.
Note : When the Loctite 510 is dry and to ensure future satisfactory sealing of the mating plane between the gearbox and the spacer, temporarily fit a fifth "V" screw (no Loctite, tightening torque same as previously indicated) in the arrowed hole (Fig. 4). This screw will be removed before coupling the engine and the gearbox.

6 cylinder engine

19. Screw two guide studs on opposite sides into the gearbox.
20. Fit the protector on the input shaft.
21. Check that shims (**3**) (Fig. 5) are installed.
22. Install the spacer. Remove guide studs. Tighten screws (**1**) (Fig. 3) smeared with Loctite 270 to a torque of 100 to 130 Nm. Coat beforehand with Loctite 270. Make sure that the "**V**" countersunk head screw is fitted in the correct location (no Loctite, Fig. 3).

C . Removal, installation of the seal (Fig. 3)

Removal

23. Remove the spacer, depending on the version (see § A and B).
24. Extract the lip seal (**10**).

Installation

25. Clean the location of the lip seal on the spacer.
26. Force fit the seal using a press and an appropriate tool.
27. Install spacer (see § B).

D . Final operations

28. Couple the engine to the gearbox (see section 2A01).
29. Top up housing with oil and check using the dipstick located to the rear of the center housing.
30. Carry out road test.
31. Check the leaks of seals and hydraulic couplings.

E . Service tools

Tool available from the AGCO network
3378012M2 - Oil seal protector (Fig. 6)

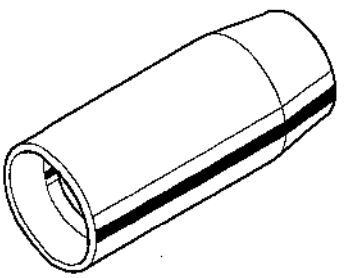


Fig. 6

3 C03 Spacers - Power shuttle

CONTENTS

General

6235 to 6255 and 6265 series tractors are fitted with a 1004 type Perkins engine (4 cylinders) and may incorporate a power shuttle.
These tractors are fitted with an 89 mm thick spacer (**4**) (Fig. 1) fitted between the engine and the gearbox.
Attachment at the bottom of this spacer is with studs of different lengths fitted into the gearbox housing.

6260, 6270 to 6290 series tractors are fitted with a 1006 type Perkins engine (6 cylinders). As with tractors 6235 to 6255 and 6265, they may be fitted with a power shuttle.
The thickness of the spacer (**4**) (Fig. 2) is different (53 mm).

Each spacer acts as a partition between the engine flywheel and the clutch.

Sealing between the input shaft (**19**) and the spacer (**4**) is provided by a lip seal (**10**) (Fig. 3).

The mating face of the spacer on the gearbox is coated with Loctite 510 or similar.

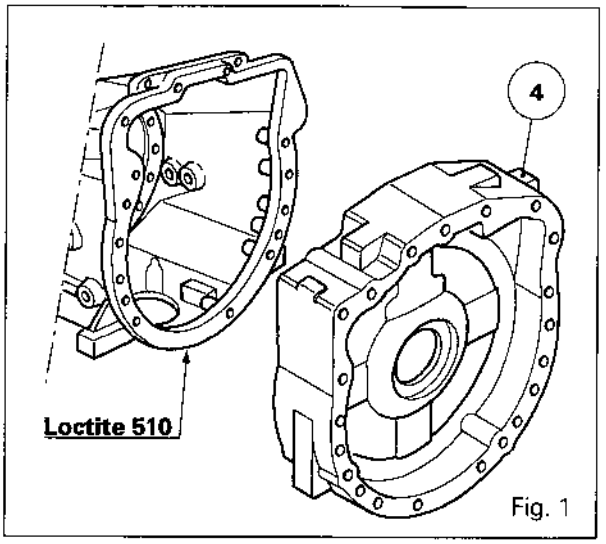


Fig. 1

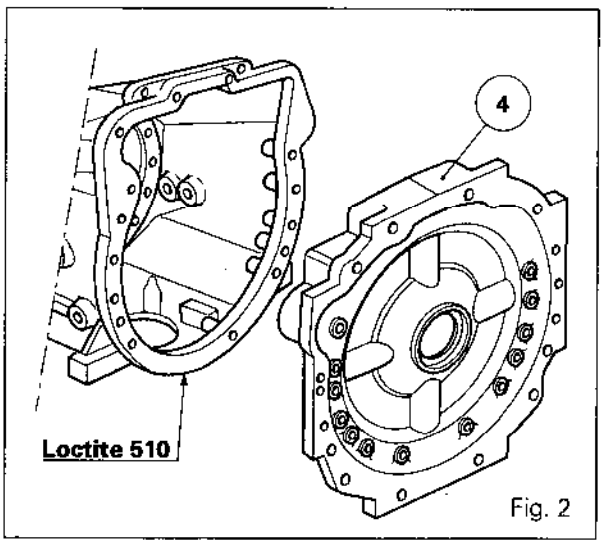


Fig. 2

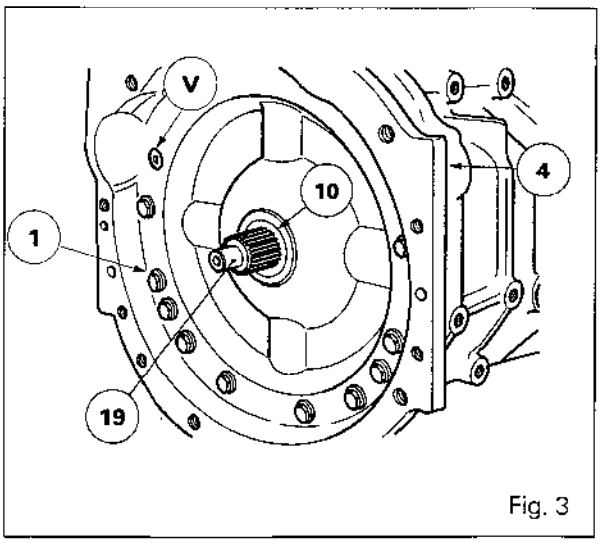


Fig. 3

A . Preliminaries operations

1. Split the tractor between the engine and the gearbox (see section 2A01).
2. Drain the gearbox.

B. Removal, installation of the spacer

Note : Replacement of the spacer requires resetting of the clutch unit (see section 5B07).

Removal

4 cylinder engine

3. Remove four **"V"** screws fitted in spot-faced holes on the front side of the spacer (Fig. 4).
4. Fit protector 3378012M2 (see § E) on the input shaft.
5. Separate and slide the spacer on the lower studs. Remove the spacer.
6. If necessary, extract the studs in the gearbox housing.

6 cylinder engine

7. Remove two attachment screws in the spacer and replace with two guide studs fitted on opposite sides in the gearbox.
8. Fit guard 3378012M2 (see § E) on the input shaft.
9. Remove the remaining screws.
10. Remove and separate the spacer.

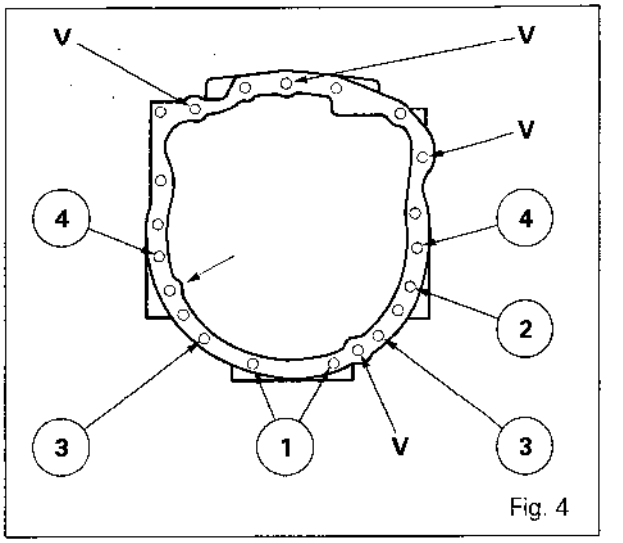


Fig. 4

Figure 4 Front view - Parts list
(1) 130 mm
(2) 145 mm
(3) 155 mm
(4) Locating pin

Installation

11. Clean the mating face of the spacer and the gearbox.
12. Coat the surface of the gearbox with Loctite 510 or similar (Fig. 1 and 2).
13. Position or verify that locating pins are fitted **(4)** (Fig. 4).

4 cylinder engine

14. If removed and depending on their length, fit and block studs **(1)** **(2)** **(3)** (Fig. 4) in the gearbox. Beforehand, coat the short threaded part with Loctite 270.
15. Fit the protector on the input shaft.
16. Check that shims **(3)** (Fig. 5) are installed.
17. Slide the spacer on the studs.

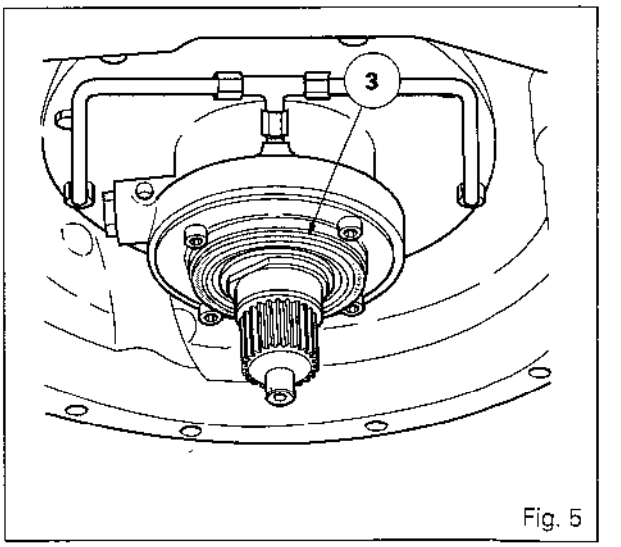


Fig. 5

18. Lightly coat thread of **"V"** screws (Fig. 4) with Loctite 270 and tighten of a torque to 120 to 160 Nm. Remove the protector.

Note : During Loctite drying and to secure a good tighteness of the mating face between the gearbox and the spacer, tighten temporarily "V" screw at 120 to 160 Nm in the arrow hole (Fig. 4). This screw is removed before coupling the gearbox and the engine.

6 cylinder engine

19. Screw two guide studs on opposite sides into the gearbox.
20. Fit protector on the input shaft.
21. Check that shims (**3**) (Fig. 5) are installed.
22. Install the spacer. Remove guide studs. Tighten screws (**1**) (Fig. 3) to 100 - 130 Nm. Coat beforehand with Loctite 270. Make sure that the **"V"** countersunk head screw is fitted in the correct location (no Loctite, Fig. 3).

C . Removal, installation of the seal (Fig. 3)

Removal

23. Remove the spacer, depending on the version (see § A and B).
24. Extract the lip seal (**10**).

Installation

25. Clean the location of the lip seal on the spacer.
26. Force fit the seal using a press and an appropriate tool.
27. Install spacer (see § B).

D . Final operations

28. Couple the engine to the gearbox (see section 2A01).
29. Top up housing with oil and check using the dipstick located to the rear of the center housing.
30. Carry out road test.
31. Check the leaks of seals and hydraulic couplings.

E . Service tools

Tool available from the AGCO network

3378012M2 - Oil seal protector (Fig. 6)

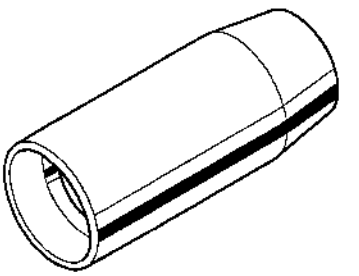


Fig. 6

4 . CLUTCH

Contents

4 A01 Spring loaded clutch

CONTENTS

Clutch - *Spring loaded*

Clutch - Spring loaded

General

Tractors 6235 to 6260 incorporating a mechanical reverse shuttle are fitted with a multidisk oil bath clutch with mechanical spring-operated clutching (Belleville washers). The system offers the following advantages :

- better reliability
- good progressiveness
- towing possible
- no rotating seals

The clutched position is obtained by the pressure provided by the Belleville washers. This mechanical action enables the clutch to remain engaged, engine shut down, even without any hydraulic pressure.

Hydraulic pressure is only used for declutching. As this pressure is generated by the clutch master cylinder, it is possible to declutch when the engine is stopped.

Construction

The clutch is mounted between the engine flywheel and the primary shaft of the Speedshift or of the Dynashift. The clutch is housed in a sealed housing secured to the input unit cover. A hole in the top side of the cover (**13**) enables oil flow between the clutch and the main housing. This housing is partially filled with oil by a gear pump which is part of the clutch. The oil returns to the gearbox housing by a tube mounted under the clutch. The input shaft (**7**) is driven by the engine flywheel by means of a damper. It carries ball bearing (**55**) and is held secure by the splines of the shaft comprising the welded pressure plate (**41**). This unit drives the lubrication pump and the clutch comprises two Belleville washers (**4**) moving forward cover (**23**) , four disks (**44**) and the four intermediate plates (**45**) against the pressure plate (**41**). A smaller Belleville washer (**6**) is mounted between the pressure plate (**41**) and the first intermediate plate (**45**) to ensure progressiveness. The unit is fully compressed when the clutch is engaged and completely released in declutched position. The maximum travel of the progressive washer (**6**) is limited by the first intermediate plate to reduce "drag" effect.

Declutching

When the clutch pedal is pressed, the master cylinder sends pressurized oil to the stop piston (**46**) via a hose connected to the left side of the gearbox, an internal pipe and a channel in the clutch housing. The clutch thrust washer (**46**) pushes cover (**23**) which moves backwards and compresses two Belleville washers (**4**) against plate (**41**) thus releasing disks (**44**).

Clutch

When the clutch pedal is released, the Belleville washers (**4**) move cover (**23**) forward. The disks and the intermediate plates are compressed against plate (**41**) and the rear side of the box (**39**). The clutch thrust washer (**46**) is held in contact by a low oil pressure from the filling circuit by means of the master cylinder. The Belleville washer load is adjusted by shims (**52**) fitted in the recess of cover (**23**).

Clutching

When the pedal is released, box (**39**) moves forward and comes into contact with the disks. Contact of disks and intermediate plates is dampened by a progressive washer (**6**). The clutch can then transmit a low torque while ensuring clutching progressiveness. The total clutching force is provided by two Belleville washers (**4**).

Clutch - Spring loaded

Parts list

(1) O-ring
(2) Housing
(3) O-rings
(4) Belleville washers
(5) Screw
(6) Progressive washer
(7) Input shaft
(8) O-ring
(9) Cover
(10) Pipe
(11) Pump cover
(12) Stud
(13) Cover
(14) O-ring
(15) O-ring
(16) O-ring
(17) Pipe
(18) Screw
(19) Flange
(20) Pipe
(21) Spacer Housing
(22) Screw
(23) Clutch cover
(24) Pin
(25) Flange
(26) Screw
(27) Dust protector
(28) O-ring
(29) O-ring
(30) Suction unit
(31) Screw
(32) Power take-off shaft
(33) Primary shaft
(34) Circlips
(35) Washer
(36) Bearing
(37) Drive hub
(38) Screw
(39) Housing
(40) Bearing
(41) Pressure plate
(42) Pipe
(43) Circlips
(44) Disks
(45) Intermediate plates
(46) Clutch thrust bearing
(47) Clutch unit
(48) Quadring seal
(49) Quadring seal
(50) Nut
(51) Pipe
(52) Shims
(53) Lubrication pump
(54) Screw
(55) Bearing
(56) Coupling
(57) Oil seal
(58) Bulkhead connector
(59) Spacer
(60) Screw
(61) Cover
(62) Strainer
(63) O-ring
(64) Coupling
(65) Pipe
(67) Cap
(72) Bleed connector
(74) Plug
(75) Screw
(76) Dynashift supply pipe

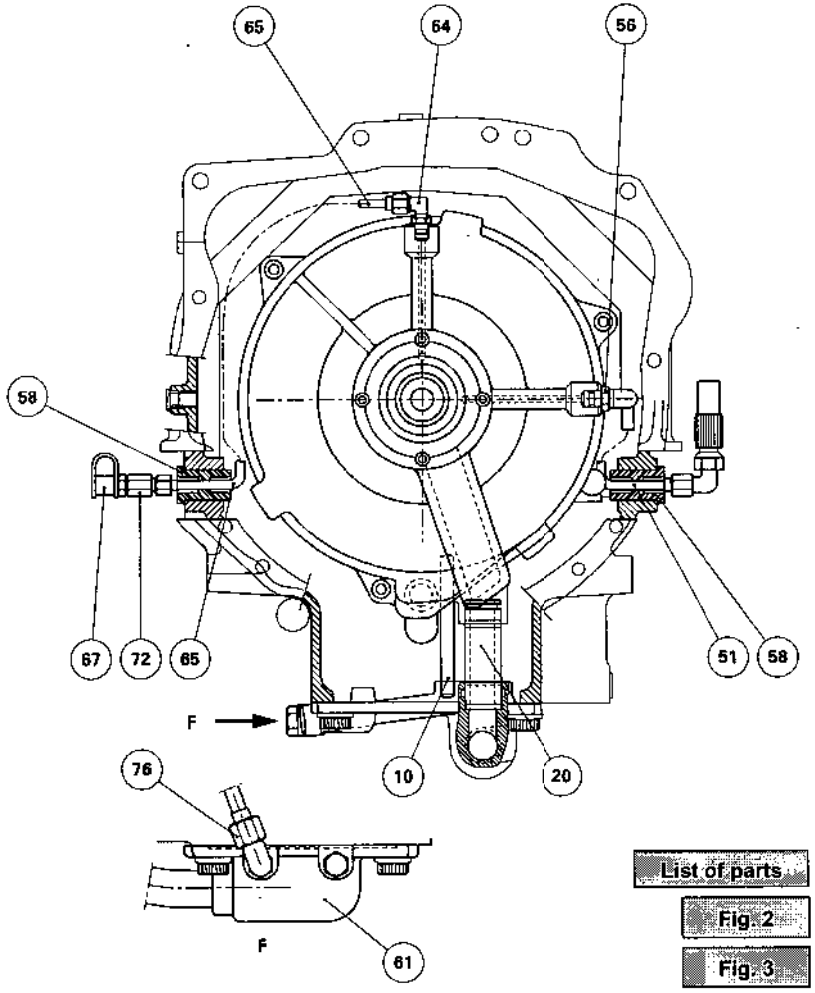
Fig. 1

Fig. 2

Fig. 3

Fig. 4

Clutch - Mechanical clutching



List of parts

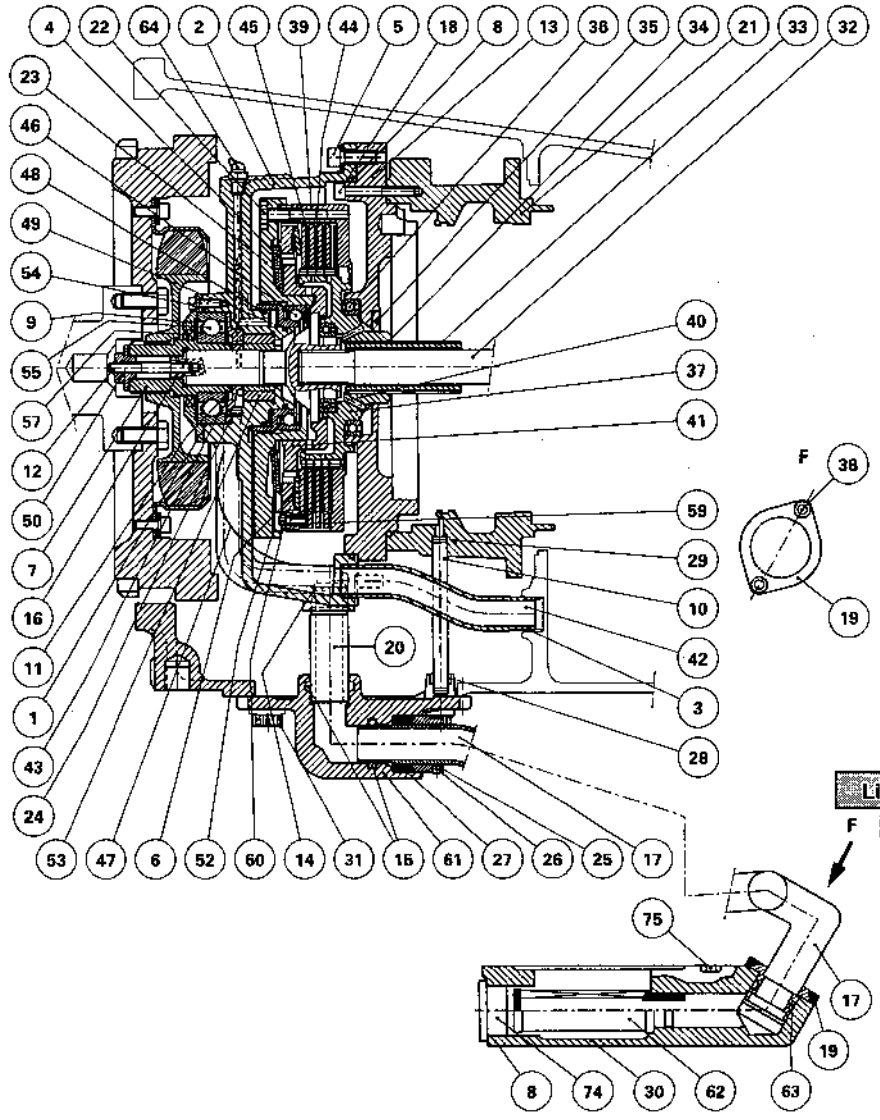
Fig. 2

Fig. 3

Fig. 4

Fig. 1

Overall view



List of parts

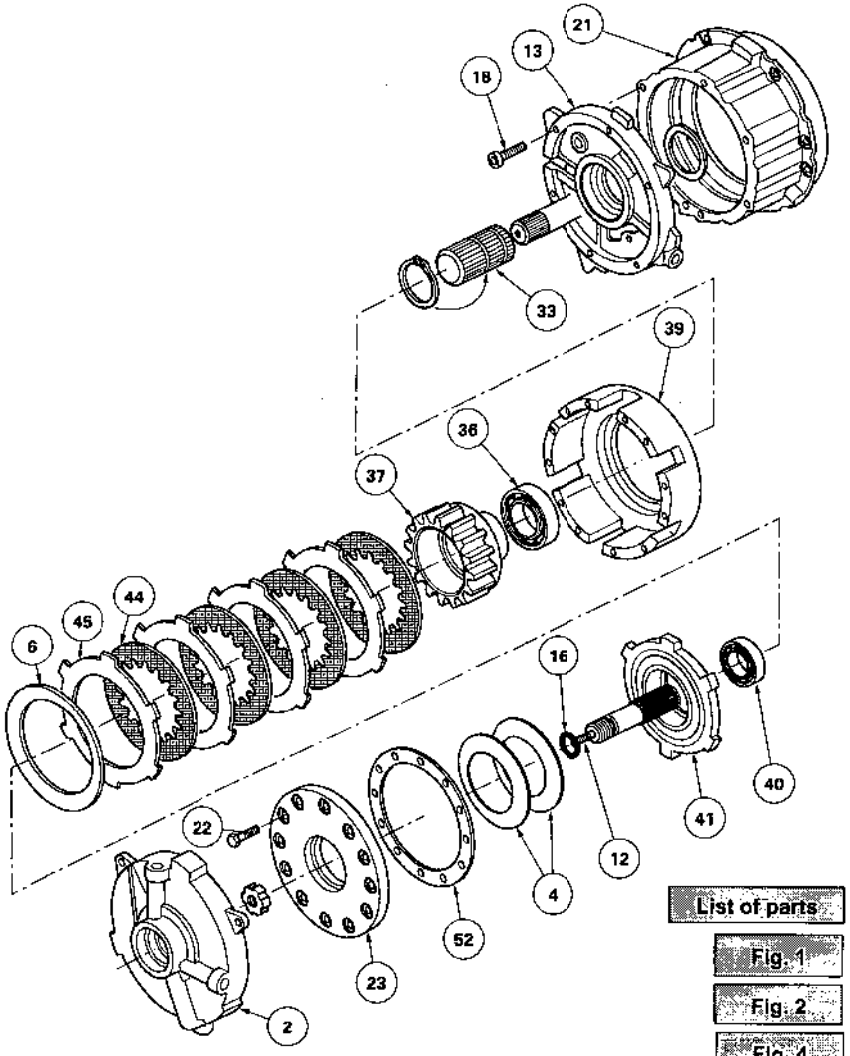
Fig. 1

Fig. 3

Fig. 4

Fig. 2

Exploded view



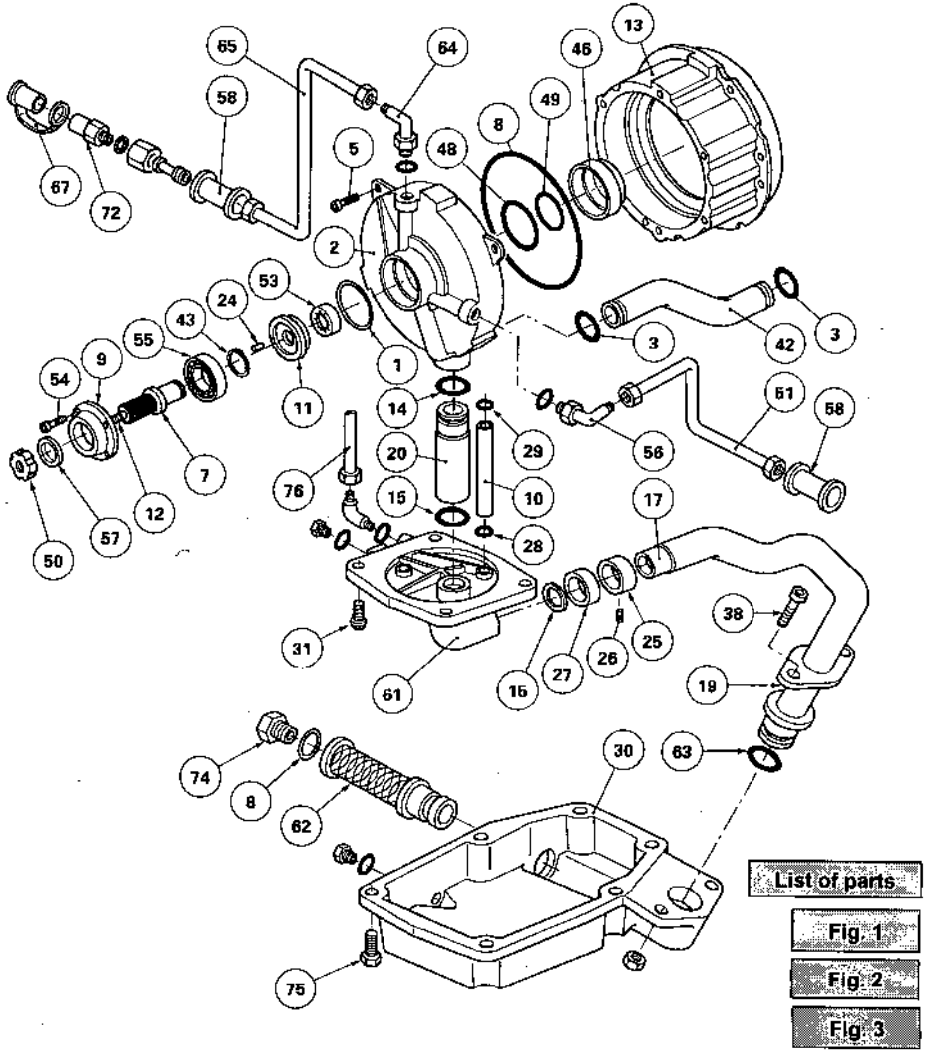
List of parts

Fig. 1

Fig. 2

Fig. 4

Fig. 3



List of parts

Fig. 1

Fig. 2

Fig. 3

Fig. 4

A. Removal, installation of the gasket (57) and of the O'ring (1)

Removal

1. Split the tractor between the engine and the gearbox (see section 2 A01).
2. Fit protector No. 3378052M1 (see § G) on shaft (**7**). Remove screws (**54**). Remove cover (**9**) and O'ring (**1**).
3. Extract oil seal (**57**) (Fig. 5).

Refitting

4. Force fit the oil seal using a press and an appropriate tool. Fit the O'ring. Lubricate the lip of oil seal (**57**). Fit the protector. Install the cover. Mandatorily torque screws (**54**) previously coated with Loctite 5206 to 14-20 Nm using a torque wrench to prevent any possible distortion.
5. Re-assemble the tractor between the engine and the gearbox.

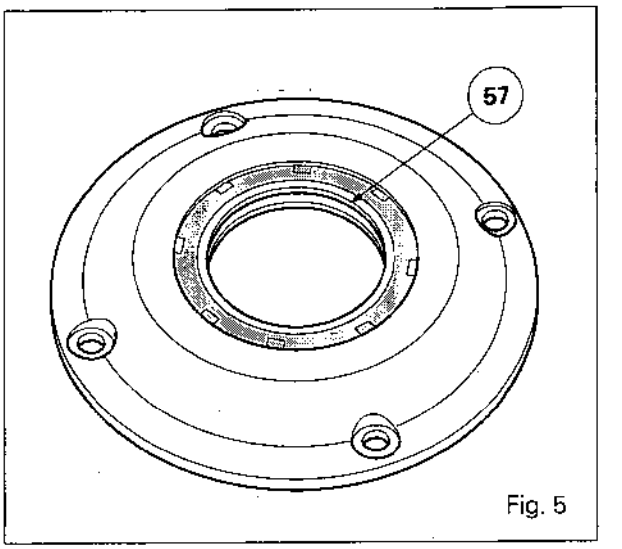


Fig. 5

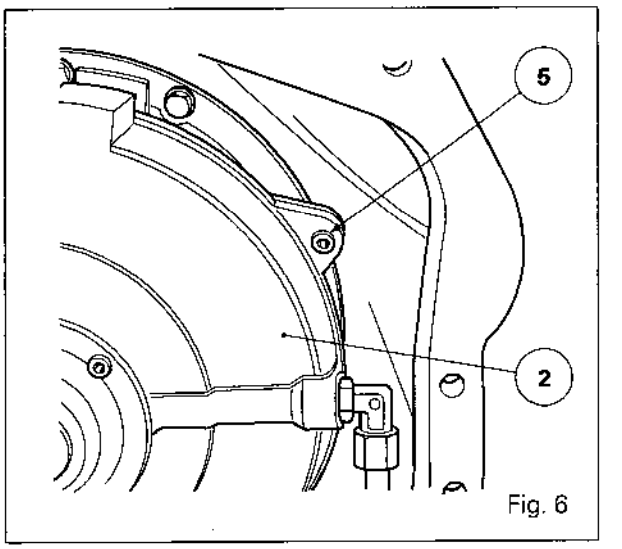


Fig. 6

B. Removal, installation of housing (2)

Removal

6. Split the tractor between the engine and the gearbox (see section 2A01).
7. Drain the gearbox and the rear axle.
8. Remove pipe (**76**). Separate and remove cover (**61**), flange (**19**) and pipe (**17**).
9. Remove bulkhead connectors (**58**), pipes (**10**) (**20**) (**65**) (**51**) and couplings (**56**) (**64**).
10. Secure the input shaft (**7**) using hub (No. 3712141M1, see spare parts book) adapted locally and remove nut (**50**).

11. Fit sleeve made locally (see § G) on shaft (**7**) (Fig. 7) (if necessary). Remove screws (**5**) (Fig. 6). Clean the location of screws. Replace screws and fit three M14 screws in the tapped holes of housing (**2**).
    Tighten screws evenly and alternately to extract the housing of the clutch unit (**47**) (Fig. 7).
12. Remove pipe (**42**). If necessary, remove the clutch and mark its position and remove the power take-off shaft.

Installation

13. If removed, install the power take-off shaft (as per the position marked during the previous operation, then the clutch).
14. Replace O'rings (**3**) (**8**) (**14**) (**29**).
15. Reinstall pipe (**42**) (fig. 7).
16. Fit three guide studs "**G**" in cover (**13**) (Fig. 8). Install housing (**2**). Remove guide studs. Use screws (**5**) to help in guiding the housing (**2**) on cover (**13**). Guide pipe (**42**) to facilitate its fitting in housing (**2**) (Fig. 7). When assembly is completed, check that it is correctly mounted without any friction.

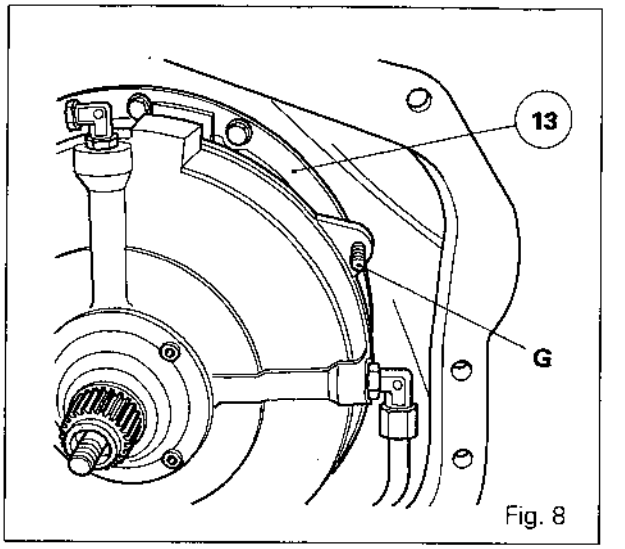


Fig. 8

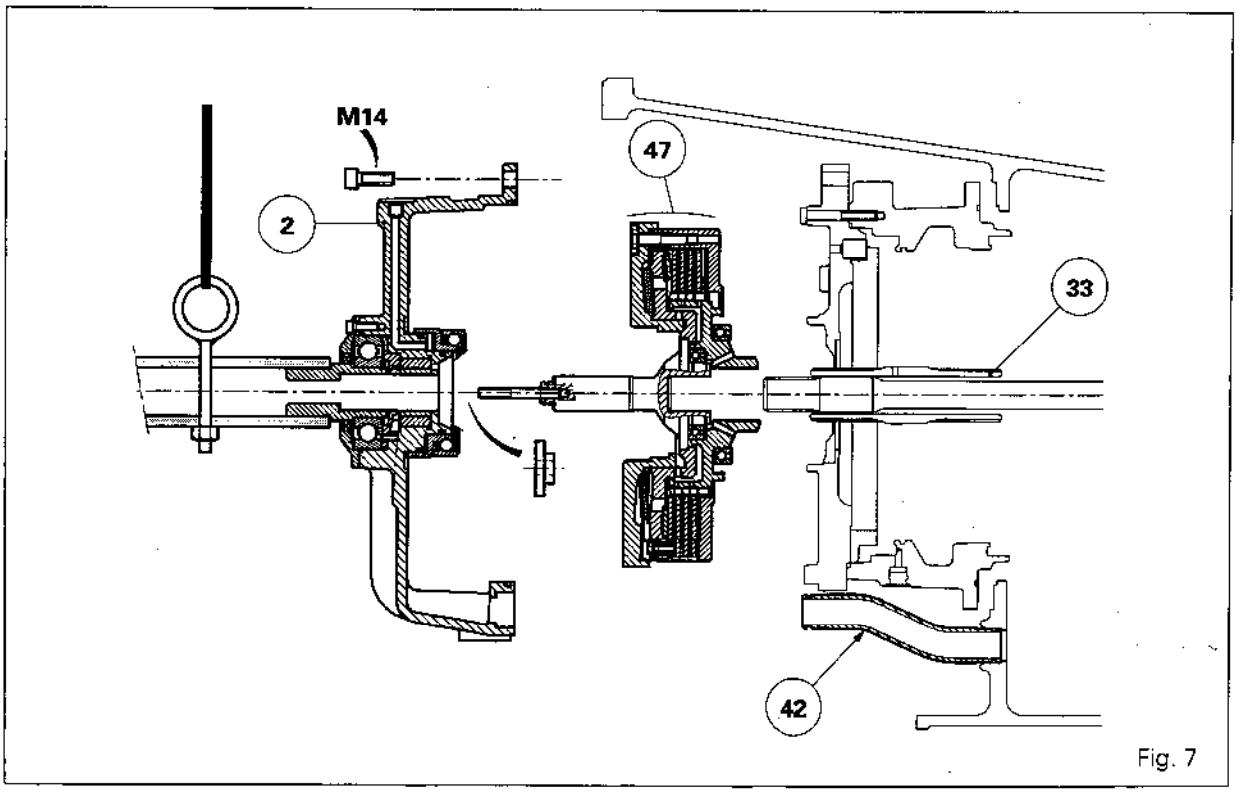


Fig. 7

Thank you very much for your reading.

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