FIAT
Trattori

45-66 V 45-66 DTV
55-66 V 55-66 DTV
55-66 F 55-66 DTF
60-66 F 60-66 DTF
70-66 F 70-66 DTF
80-66 F 80-66 DTF

WORKSHOP MANUAL

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SERVIZI TECNICI DI ASSISTENZA

PRINTED IN ITALY

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IDENTIFICATION DATA

Marketing Code	45-66V 45-66DTV	55-66V 55-66DTV	60-66V 55-66DTF	70-66V 60-66DTF	80-66V 70-66DTF	80-66DTF
— Two wheel drive						
— Four wheel drive						
Engineering code:						
— 12-speed, two-wheel drive	674.106.001	674.106.000	674.108.000	670.108.000	671.108.000	672.108.000
— 12-speed, two-wheel drive with mechanical reverser	—	—	—	670.108.000 var.720.110	671.108.000 var.720.110	672.108.000 var.720.110
— 20-speed, two-wheel drive	674.106.001 var.720.111	674.106.000 var.720.111	674.108.000 var.720.111	670.108.000 var.720.111	671.108.000 var.720.111	672.108.000 var.720.111
— 12-speed, four-wheel drive	674.114.001	674.114.000	674.113.000	670.113.000	671.113.000	672.113.000
— 12-speed, four-wheel drive with mechanical reverser	674.114.001 var.720.110	674.114.000 var.720.110	674.113.000 var.720.110	670.113.000 var.720.110	671.113.000 var.720.110	672.113.000 var.720.110
— 20-speed, four-wheel drive	674.114.001 var.720.111	674.114.000 var.720.111	674.113.000 var.720.111	670.113.000 var.720.111	671.113.000 var.720.111	672.113.000 var.720.111
Engine tupe (common to all versions)	FIAT 8.035.06.320 C.A.V. pump 8.035.06.220 BOSCH pump	FIAT 8.035.06.322 C.A.V. pump 8.035.06.222 BOSCH pump	FIAT 8.035.06.322 C.A.V. pump 8.035.06.222 BOSCH pump	FIAT 8.035.05.308 C.A.V. pump 8.035.05.208 BOSCH pump	FIAT 8.045.06.308 C.A.V. pump 8.045.06.208 BOSCH pump	FIAT 8.045.05.308 C.A.V. pump 8.045.05.208 BOSCH pump

WEIGHTS

Operating weight (including lift, implement attachment, tow hook)	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb
— Two-wheel drive	1530	3366	1530	3366	1490	3278	1940	4268	2040	4488	2160	4752
— Four-wheel drive	1730	3806	1730	3806	1665	3663	2135	4697	2255	4961	2320	5104

SPECIFICATIONS

ENGINE

	45-66V 45-66DTV	55-66V 55-66DTV	55-66F 55-66DTF	60-66F 60-66DTF	70-66F 70-66DTF	80-66F 80-66DTF
Diesel cycle	4-stroke, naturally aspirated					
Iniection system	direct					
No. of cylinders	3			4		
Barrel liners	Dry, press-fitted in engine block					
Bore x stroke	100×115 (3.4×3.5 in)			104×115 (4×4.5 in)	100×115 (3.4×4.5 in)	104×115 (4×4.5 in)
Total piston displacement	2710			2931	3613	3908
Compression ratio	17:1					
Max power (DGM/DIN)	33.1 (45 HP)	40.5 (55 HP)	40.5 (55 HP)	44 (60 HP)	51.5 (70 HP)	58.9 (90 HP)
Max power speed rating	2500 RPM					
Max torque speed rating	1500 RPM					
Main bearings	4				5	
Sump	cast iron					
Balancer	—				Flyweights engine sump	
Valve Gear	Overhead, pushrod operated					
Intake Opens: BTDC	3°					
Intake Closes: ABDC	23°					
Exhaust Opens: BBDC	48°30'					
Exhaust Closes: ATDC	6°					
Valve clearance:						
— For timing checks	0.45 (0.018 in)					
— For normal operation (both cold and hot)						
— Intake	0.25 (0.010 in)					
— Exhaust	0.35 (0.014 in)					

	45-66V 45-66DTV	55-66V 55-66DTV	55-66F 55-66DTF	60-66F 60-66DTF	70-66F 70-66DTF	80-66F 80-66DTF
Fuel System						
Air cleaner	Dry, automatic drain, centrifugal pre-cleaner cap					
Fuel filtration	Single, cartridge type, integral with water separator				Two, in series, replaceable paper cartridge (the first w/ integral water separator)	
Fuel lift pump	double diaphragm type					
— Operation	by cam					
Injection pump	rotary distributor, w/incorporated governor/advance variator					
— Type — BOSCH	VE3/11F 1250 L 163-2 4804867	VE3/11F 1250 L 163-1 4794587/ 4800682	VE3/11F 1250 L 163-1 4794587/ 4800682	VE3/11F 1250 L 163 4794586	VE4/11F 1250 L 164-1 4794589	VE4/11F 1250 L 164 4794588
— Type — CAV	DPS 8522A 020A 4806879	DPS 8522A 010A 4797414	DPS 8522A 010A 4797414	DPS 8522A 000A 4797413	DPS 8520A 100A 4797416	DPS 8520A 090A 4797415
Integral all-speed governor	flyweights, centrifugal					
Integral advance variator	hydraulic					
Pump timing BTDC						
— BOSCH	6° ± 1°	6° ± 1°	6° ± 1°	6° ± 1°	4° ± 1°	4° ± 1°
— CAV	0° ± 1°	0° ± 1°	0° ± 1°	0° ± 1°	0° ± 1°	0° ± 1°
Injectors	4-orifice			3-orifice	4-orifice	3-orifice
— Type	see page 10, Sect. 10 - Mods. 55-66/60-66/70-66/80-66					
— Release pressure	230 to 238 bar (235 to 243 kg/cm^2 or 3271 to 3385 psi)					
Injection order	1-2-3				1-3-4-2	
Lubrication System	forced feed, gear pump					
Pump drive	Camshaft					
Oil filters	Strainer on pump inlet and full-flow on outlet					
Pressure relief valve	in pump body					
— Lube oil pressure rating at governed speed (max power)	2.9 to 3.9 bar (3 to 4 kg/cm^2 or 42.6 to 55.5 psi)					
Cooling System	water circulated by centrifugal pump					
Radiator	3 or 4 deep, vertical tubes					
Fan mounteed on water pump pulley	Suction, steel					
Temperature control	Wax thermostat					
Tractor Meter	incorporated in panel instrument cluster					
— Drive	off oil pump gear					
— Hourmeter activation speed	1800 RPM					
Meter drive ratio	1:2					

POWER TRAIN

Clutch

LUK or VALEO type, twin dry single plate, size 10 in (Mods. 45-66V/55-66V/55-66V) or 11 in (Mods. 60-66F/70-66F/80-66F) with separate controls: pedal for transmission clutch and hand lever for PTO clutch.
Clutch facings material: organic.

Transmission

Constant-mesh, helical gears, with all-speed synchromesh shift.
Range splitter, 3 forward speeds and 1 reverse speed ranges providing 12 speeds forward and 4 reverses.
In the crawler gear version, speeds available are 20 forward and 8 reverses.
In the mechanical reverser version, speeds available are 12 forward and 12 reverses.
Transmission and splitter control by two separate hand levers.
Crawler or reverser control by hand lever on LH side.

Central bevel gear on differential.

Differential of the two pinion type, with differential lock.

Side final drives of the epicyclic, three planetary gear design.

BRAKES

Service

Axle shaft mounted, oil bath disc type.
Mechanically controlled through two separate pedals (latchable for one foot operation).

Parking/Emergency

Acting on service brakes, mechanically operated by hand lever.

STEERING

Hydrostatic power steering with independent circuits.
Sealed for life control rod linkages.

FRONT AXLE

Center swing, telescoping inverted-U beam axle.
Sliding axle end track adjustments:
— Mods. 45-66V/55-66V/55-66F . . . . . 2 settings
— Mods. 60-66F/70-66F/80-66F . . . . . 4 settings

LIVE FRONT AXLE

Full-floating, center-swing, articulations and drive shaft on tractor centerline (with universal joints for Mods. 45-66DTV/55-66DTV or unjointed for Mods. 55-66DTF/60-66DTF/70-66DTF/80-66DTF). Two-pinion differential and planetary epicyclic final drives in wheel hubs (Mods. 55-66DTF/60-66DTF/70-66DTF/80-66DTF).

REAR WHEELS

Track width adjustments by relative re-positioning of Disc/Rim/Hub.:
— Mods. 45-66V/55-66V/55-66F . . . . . 6 settings
— Mods. 60-66F/70-66F/80-66F . . . . . 7 settings

POWER TAKE-OFF

Fully Independent

(540 or 540-1000 RPM)

Shaft	540 RPM	1 3/8" - 6 spline
	1000 RPM	1 3/8" - 21 spline
Control		mechanical, by hand lever

Standard speed selection by hand lever.
Engine speed w/PTO at standard speeds:

— 540	2000 RPM
— 1000	2380 RPM
Rotation (seen from rear)	clockwise

Ground speed

Drive shaft and rotation same as fully independent PTO.
Shaft drive ratios (synchronized w/transmission):

— 540	45-66V/55-66V-66V/55-66F	6.7 revs per wheel turn
	60-66F/70-66F/80-66F	7.7 revs per wheel turn
— 1000	45-66V/55-66V-66V/55-66F	11.5 revs per wheel turn
	60-66F/70-66F/80-66F	13.1 revs per wheel turn

HYDRAULIC LIFT

Draft and position or combined control.
Draft control lower links through sensing bar
Sensitivity adjustment (Vario-speed) by 4-position lever on control valve housing.
Response adjustment by knob on control valve housing.
Button operated automatic link raise/lower device (LIFT-O-MATIC).
Engine valve gear-driven gear pump.
Control oil drawn from rear drive housing.
Implement attachment:
— 45-66V/55-66V . . . . . Cat. I
— 55-66F/60-66F/70-66F/80-66F . . . . Cat. I and II

Remote Control Valves

One, two or three valves may be used.
— Single - and double-acting, convertible.
— Double-acting, float position.

TOWING ATTACHMENTS

Drilled crossmember (except vineyard mods)
Rigid rear tow hook, height adjustable.
Lemoine rear tow hook.
Rockinger rear tow hook.
Front pull hook.

FRONT AXLE BALLASTING

Mods.45-66V/55-66V/55-66F - Three 30 kg (66 lb) cast iron plates for a total of 90 kg (198 lb).
Mods. 60-66F/70-66F/80-66F - Two or three 45 kg (99 lb) cast iron plates for a total of 90 or 135 kg (198 or 297 lb).

BODY

One-piece, forward-tilting hood.
Conventional Operator's compartment.
Partly wrap-around fenders.
Diesel fuel tank: either in front of radiator (Mods. 45-66V/55-66V/55-66F) or behind Operator's seat (Mods. 60-66F/70-66F/80-66F).
Operator's seat padded, with parallelogram plus hydraulic damper suspension; adjustable ride and position.
Dashborad consisting of a multi-function instrument cluster and a controls console.

ELECTRICAL SYSTEM

Voltage 12V
Alternator with integral electronic voltage regulator.
Makes:
BOSCH or MARELLI or LUCAS or ISKRA.

Starter motor Makes: MARELLI or BOSCH or LUCAS.
Battery: located ahead of radiator; capacity ratings (net or dry charge):
- Mods. 45-66V/55-66V/55-66F/60-66F: 88 Ah
- Mods. 70-66F/80-66F: 110 Ah

Alternative batteries: sealed, maintenance-free . . .90 Ah or 110 Ah

Lighting Equipment

Two High/asymmetric low beam headlamps, 45-40 W power.
Two front lights:
— Parking 5W
— Turn signal 21W
Two tail lights:
— Parking 5W
— Turn signal 21W
— Stop 21W
— License plate

Instruments and Accessories

Multi-function instrument cluster.
Control console.
Flood (work) light 35W
Rear power outlet DIN, seven-pole.
Dash power outlet, Single pole.
Horn.
Thermostart.
Fuses: 8 in all.
Hazard warning lights for tractor and trailers.

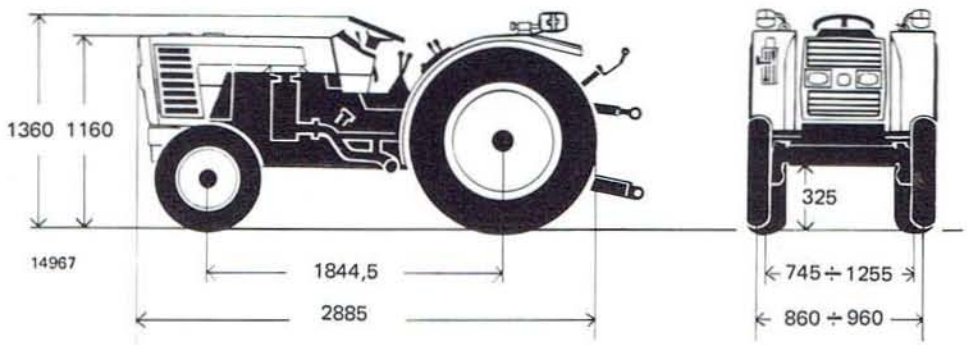
TIRE SIZES

	45-66V	55-66V	55-66F	60-66F	70-66F	80-66F
Front	4.00-15 5.00-15	4.00-15 5.00-15	5.00-15 5.00-16 6.00-16	5.50-16 6.00-16 6.50-16	5.50-16 6.00-16 6.50-16	5.50-16 6.00-16 6.50-16
Rear	9.5/ 9-28 11.2/10-24 11.2/10-28	9.5/ 9-28 11.2/10-24 11.2/10-28	11.2/10-28 12.4/11-24 12.4/11-28 13.6/12-24	12.4/11-28 14.9/13-24 13.6/12-28 13.6/12-24 14.9/13-28	12.4/11-28 14.9/13-24 13.6/12-28 13.6/12-24 14.9/13-28	12.4/11-28 14.9/13-24 13.6/12-28 13.6/12-24 14.9/13-28
	45-66DTV	**55-66DTV**	**55-66DTF**	**60-66DTF**	**70-66DTF**	**80-66DTF**
Front	6.00-16 (1) 6.00-16 (2) 7.00-12 (3)	6.00-16 (1) 6.00-16 (2) 7.00-12 (3)	6.00-16 (1) 6.50-16 (2) (4) 7.50-16 (3)	7.50-18 (1) (2) 7.50-20 (3) 8.25-16 (4)	7.50-18 (1) (2) 7.50-20 (3) 8.25-16 (4)	7.50-18 (1) (2) 7.50-20 (3) 8.25-16 (4)
Rear	12.4/24 (1) 11.2/28 (2) 12.4/24 (3)	12.4/24 (1) 11.2/28 (2) 12.4/24 (3)	11.2/10-24 (1) 12.4/11-24 (2) 13.6/12-24 (3) 11.2/10-28 (4)	14.9/13-24 (1) 12.4/11-28 (2) 13.6/12-28 (3) 13.6/12-24 (4)	14.9/13-24 (1) 12.4/11-28 (2) 13.6/12-28 (3) 13.6/12-24 (4)	14.9/13-24 (1) 12.4/11-28 (2) 13.6/12-28 (3) 13.6/12-24 (4)

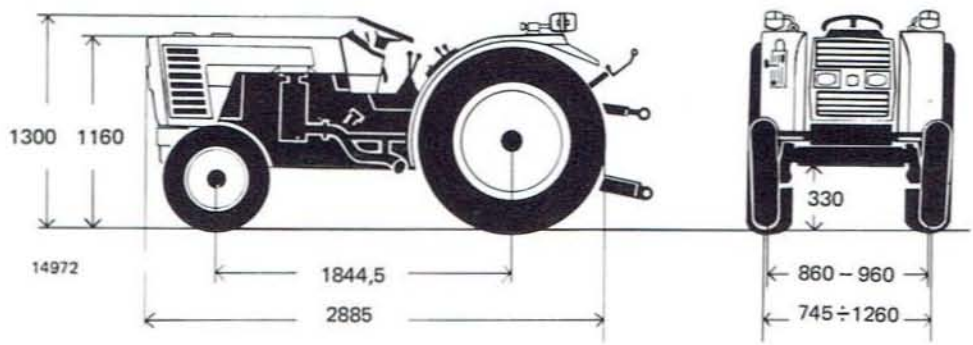
(1) (2) (3) (4). Tire matching references.

SPECIFICATIONS

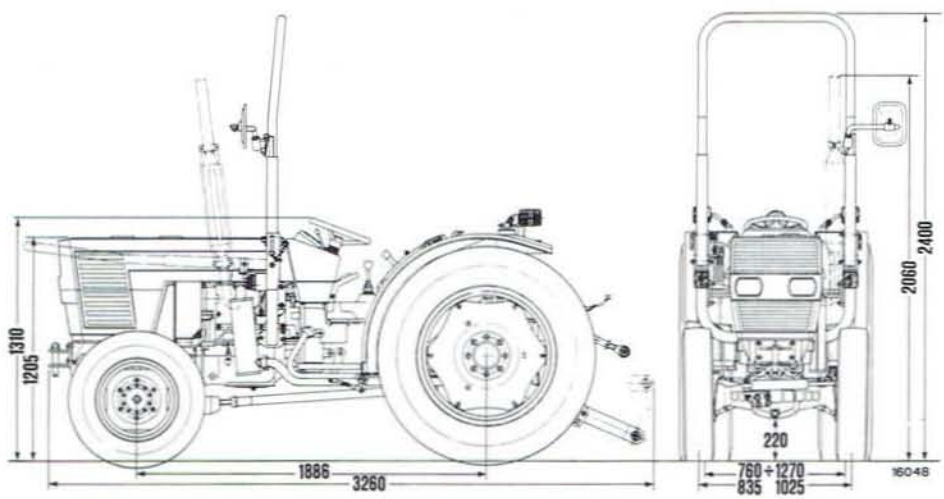
MAIN DIMENSIONS (mm)



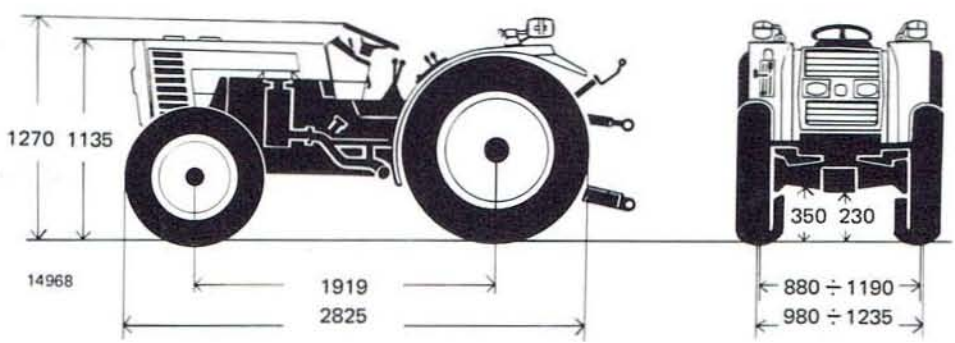
Mods. 45-66V/55-66V
(Tyre sizes: 4.00-15 front and 9.5/9-28 rear)



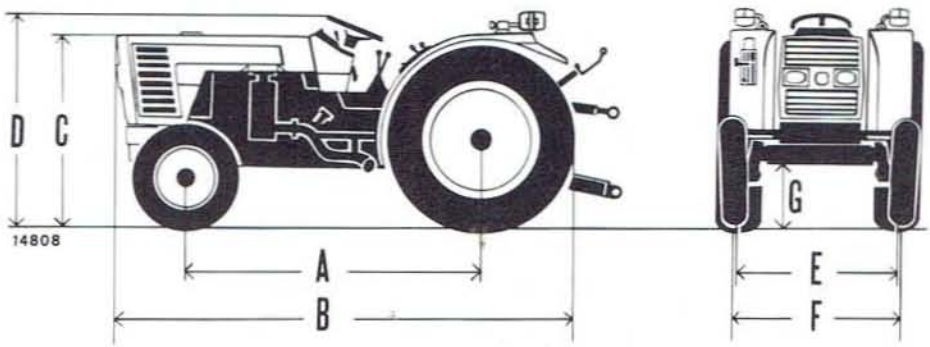
Mod. 55-66F
(Tyre sizes: 5.00-15 front and 11.2/10-24 rear)



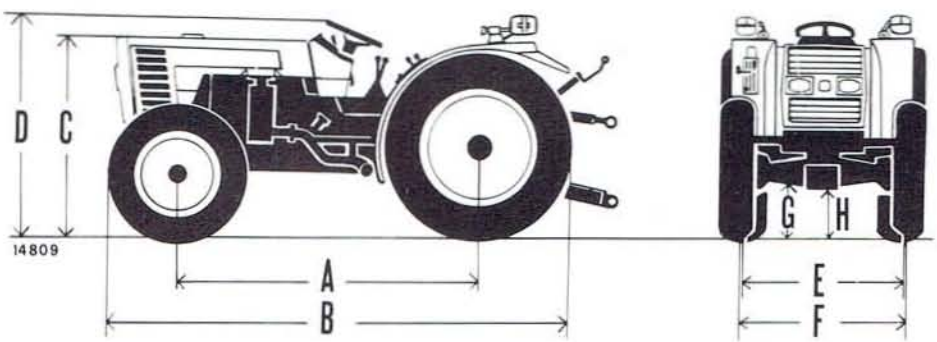
Mods. 45-66DTV/55-66DTV
(Tyre sizes: 6.00-16 front and 11.2/28 rear)



Mod. 55-66DTF
(Tyre sizes: 6.00-16 front and 11.2/10-24 rear)



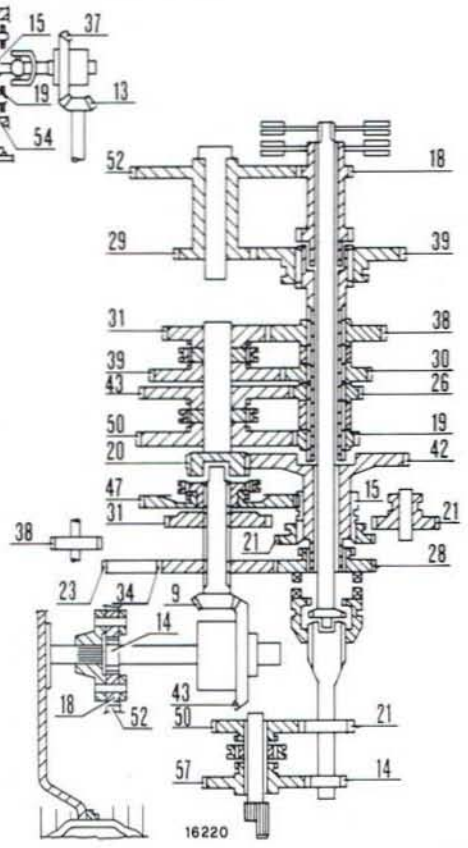
Models	A	B	C	D	E	F	G
66-66F Tyre sizes: 5.50-16 front 12.4/11-28 rear	1886 mm (74 in)	2950 mm (116 in)	1225 mm (48 in)	1360 mm (53.5 in)	1185/1485 mm (46.5/58.5 in)	995/1600 mm (39/63 in)	425 mm (16.7 in)
70-66F Tyre sizes: 6.00-16 front 13.6/12-28 rear	2001 mm (78.8 in)	3090 mm (122 in)	1230 mm (48.5 in)	1365 mm (53.7 in)	1185/1485 mm (47.5/58.5 in)	1000/1510 mm (39.4/59.5 in)	435 mm (17 in)



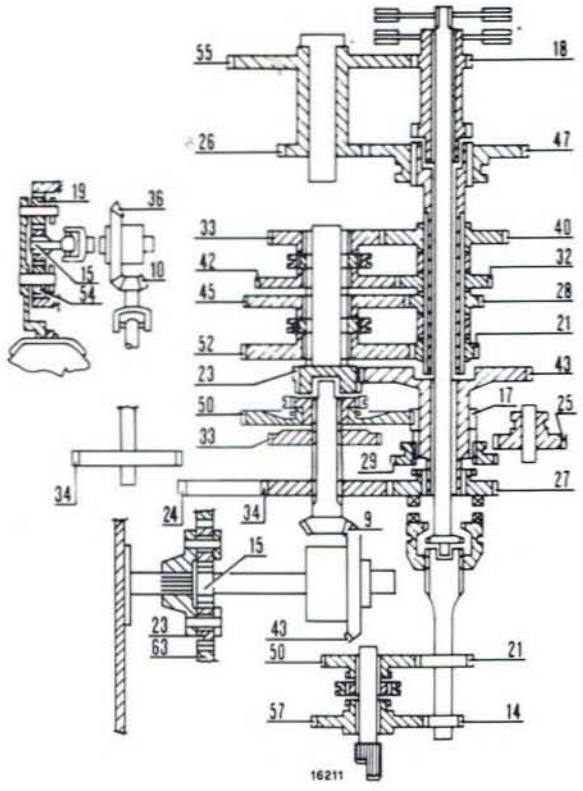
Models	A	B	C	D	E	F	G	H
66-66DTF Tyre sizes: 7.50-18 front 12.4/11-28 rear	1996 mm (78.6 in)	3050 mm (120 in)	1225 mm (48.3 in)	1360 mm (53.5 in)	1100/1275 mm (43/50 in)	995/1600 mm (39/63 in)	425 mm (16.7 in)	280 mm (11 in)
70-66DTF Tyre sizes: 7.50-20 front 13.6/12-28 rear	2111 mm (83 in)	3210 mm (126 in)	1245 mm (49 in)	1380 mm (54 in)	1220/1420 mm (48/56 in)	1000/1510 mm (39.4/59.5 in)	435 mm (17 in)	300 mm (11.8 in)

POWER TRAIN SCHEMATICS

Mod. 55-66 DTF with creeper



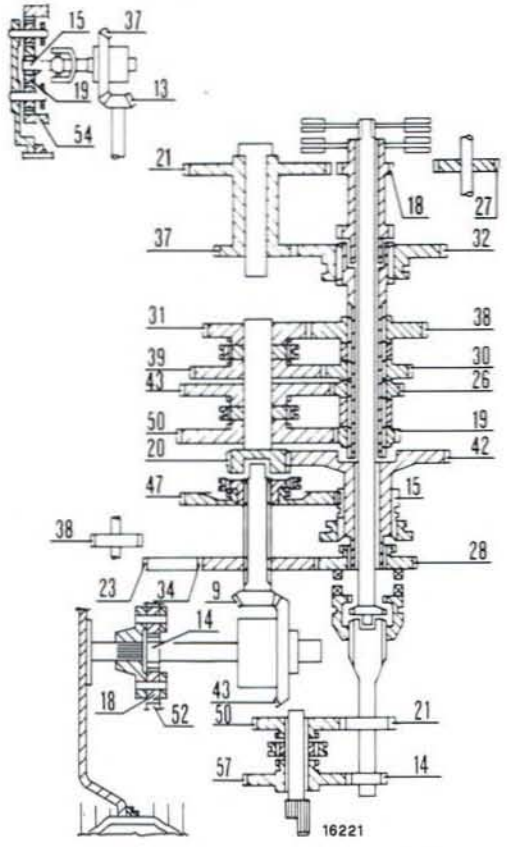
Mods. 60-66DTF/70-66DTF/80-66DTF with creeper



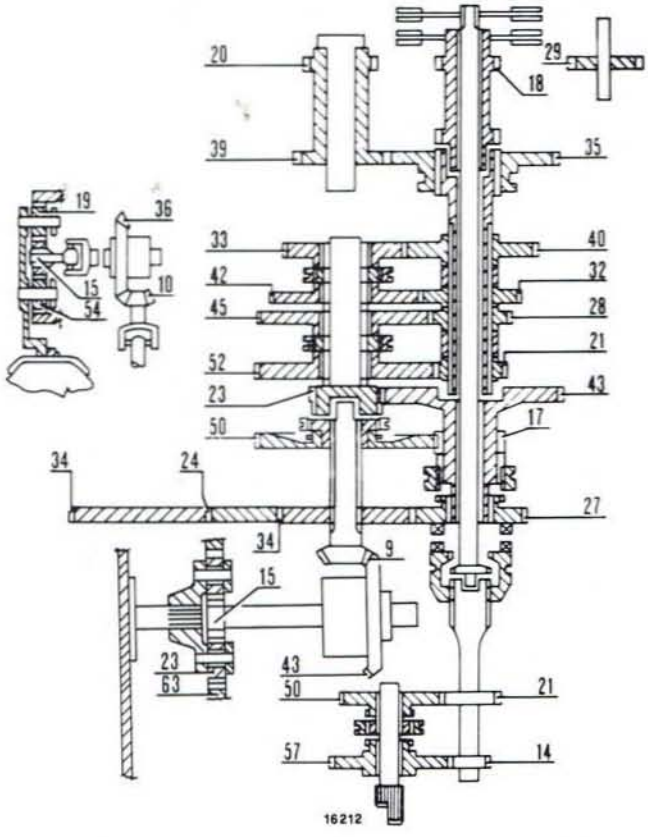
Tractor road speeds, engine at max power RPM and rear wheel tyres as indicated																								
GEARS	Mods. 45-66V/55-66V						Mod. 55-66F										Mods. 60-66F/70-66F/80-66F							
	9.5/9-28		11.2/10-24		11.2/10-28		11.2/10-24		11.2/10-28		12.4/11-24		13.6/12-24		12.4/11-28		13.6/12-24		12.4/11-28 14.9/13-24		13.6/12-28		14.9/13-28	
	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph
1st creeper low	0.25	0.4	0.2	0.3	0.25	0.4	0.2	0.3	0.25	0.4	0.25	0.4	0.25	0.4	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3
2nd creeper low	0.3	0.5	0.3	0.5	0.3	0.5	0.3	0.5	0.3	0.5	0.3	0.5	0.3	0.5	0.4	0.6	0.25	0.4	0.3	0.5	0.3	0.5	0.3	0.5
3rd creeper low	0.45	0.7	0.4	0.6	0.45	0.7	0.4	0.6	0.45	0.7	0.45	0.7	0.45	0.7	0.45	0.7	0.3	0.5	0.4	0.6	0.4	0.6	0.4	0.6
4th creeper low	0.7	1.1	0.6	1.0	0.7	1.1	0.6	1.0	0.7	1.1	0.7	1.1	0.7	1.1	0.7	1.1	0.5	0.9	0.5	0.9	0.6	1.0	0.6	1.0
1st creeper norm	0.55	0.9	0.5	0.8	0.55	0.9	0.5	0.8	0.55	0.9	0.55	0.9	0.55	0.9	0.55	0.9	0.4	0.6	0.45	0.7	0.45	0.7	0.45	0.7
2nd creeper norm	0.9	1.4	0.8	1.3	0.9	1.4	0.8	1.3	0.9	1.4	0.9	1.4	0.9	1.4	0.95	1.5	0.6	1.0	0.7	1.1	0.7	1.1	0.7	1.1
3rd creeper norm	1.1	1.8	1.0	1.7	1.1	1.8	1.0	1.7	1.1	1.8	1.0	1.7	1.1	1.8	1.2	1.9	0.7	1.2	0.8	1.3	0.9	1.4	0.9	1.4
4th creeper norm	1.7	2.8	1.6	2.6	1.8	2.9	1.6	2.6	1.8	2.9	1.7	2.8	1.8	2.9	1.9	3.0	1.2	2.0	1.3	2.1	1.4	2.2	1.4	2.2
1st low	0.8	1.3	0.7	1.2	0.8	1.3	0.7	1.2	0.8	1.3	0.8	1.3	0.8	1.3	0.9	1.4	0.9	1.5	1.0	1.6	1.1	1.7	1.1	1.8
2nd low	1.3	2.1	1.2	2.0	1.4	2.2	1.2	2.0	1.4	2.2	1.3	2.1	1.3	2.1	1.4	2.3	1.4	2.4	1.5	2.5	1.6	2.6	1.7	2.7
3rd low	1.7	2.7	1.5	2.5	1.7	2.7	1.5	2.5	1.7	2.7	1.6	2.6	1.7	2.7	1.8	2.9	1.8	2.9	1.9	3.1	2.0	3.2	2.1	3.3
4th low	2.6	4.2	2.5	4.0	2.7	4.4	2.5	4.0	2.7	4.4	2.6	4.2	2.7	4.3	2.9	4.6	2.9	4.7	3.0	4.9	3.1	5.1	3.3	5.3
1st normal	2.1	3.4	2.0	3.2	2.2	3.5	2.0	3.2	2.2	3.5	2.1	3.4	2.2	3.5	2.35	3.7	2.3	3.6	2.4	3.8	2.5	4.0	2.6	4.2
2nd normal	3.35	5.4	3.2	5.1	3.5	5.6	3.2	5.1	3.5	5.6	3.3	5.3	3.4	5.5	3.45	5.8	3.5	5.6	3.7	5.9	3.8	6.2	4.0	6.4
3rd normal	4.3	6.9	4.0	6.5	4.4	7.1	4.0	6.5	4.4	7.1	4.2	6.8	4.4	7.1	4.65	7.5	4.3	6.9	4.45	7.2	4.6	7.5	4.8	7.8
4th normal	6.8	11.0	6.4	10.3	7.0	11.3	6.4	10.3	7.0	11.3	6.7	10.8	6.9	11.2	7.3	11.8	6.8	10.9	7.1	11.5	7.5	12.0	7.7	12.5
1st high	5.4	8.7	5.1	8.2	5.6	9.0	5.1	8.2	5.6	9.0	5.3	8.6	5.5	8.9	5.8	9.4	5.3	8.6	5.6	9.0	58	9.4	6.0	9.8
2nd high	8.6	13.8	8.0	13.0	8.9	1.43	8.0	13.0	8.9	14.3	8.5	13.7	8.8	14.2	9.3	14.9	8.2	13.2	8.6	13.9	9.0	14.5	9.4	15.1
3rd high	10.9	17.5	10.3	16.6	11.3	18.2	10.3	16.6	11.3	18.2	10.8	17.4	11.2	18.0	11.8	19.0	10.0	16.2	10.6	17.0	11.0	17.8	11.5	18.5
4th high	17.3	27.9	16.4	26.4	18.0	29.0	16.4	26.4	18.0	29.0	17.2	27.7	17.8	28.7	18.8	30.3	15.9	25.7	16.8	27.1	17.3	28.3	18.3	29.4
1st low reverse	0.55	0.9	0.55	0.9	0.55	0.9	0.55	0.9	0.55	0.9	0.55	0.9	0.55	0.9	0.6	1.0	0.45	0.7	0.5	0.8	0.5	0.8	0.5	0.8
2nd low reverse	0.95	1.5	0.9	1.4	0.95	1.5	0.9	1.4	0.95	1.5	0.9	1.4	0.95	1.5	1.0	1.6	0.7	1.1	0.7	1.2	0.7	1.2	0.8	1.3
3rd low reverse	1.2	1.9	1.0	1.7	1.2	1.9	1.0	1.7	1.2	1.9	1.1	1.8	1.2	1.9	1.2	1.9	0.9	1.4	0.9	1.4	0.95	1.5	1.0	1.6
4th low reverse	1.9	3.0	1.7	2.8	1.9	3.1	1.7	2.8	1.9	3.1	1.8	2.9	1.9	3.1	2.0	3.2	1.4	2.2	1.4	2.3	1.4	2.4	1.5	2.5
1st high reverse	2.3	3.6	2.1	3.4	2.35	3.7	2.1	3.4	2.35	3.7	2.2	3.5	2.35	3.7	2.4	3.9	2.5	4.0	2.6	4.2	2.7	4.4	2.75	4.3
2nd high reverse	3.5	5.7	3.35	5.4	3.7	5.9	3.35	5.4	3.7	5.9	3.5	5.7	3.7	5.9	3.8	6.2	3.8	6.2	4.0	6.5	4.2	6.8	4.4	7.1
3rd high reverse	4.5	7.3	4.3	6.9	4.65	7.5	4.3	6.9	4.65	7.5	4.45	7.2	4.65	7.5	4.9	7.9	4.7	7.6	4.9	8.0	5.2	8.4	5.4	8.7
4th high reverse	7.2	11.6	6.8	11.0	7.5	12.0	6.8	11.0	7.5	12.0	7.1	11.5	7.4	11.9	7.8	12.6	7.5	12.1	7.9	12.7	8.2	13.3	8.6	13.8

POWER TRAIN SCHEMATICS

Mods. 45-66DTV/55-66DTV with mechanical reverser



Mods. 60-66DTF/70-66DTF/80-66DTF with mechanical reverser



Tractor road speeds, engine at max power RPM and rear wheel tyres as indicated																				
FORWARD GEARS	**Mods. 45-66V/55-66V**						**Mod. 55-66F**								**Mods. 60-66F/70-66F/80-66F**					
	9.5/9-28		11.2/10-24		11.2/10-28		11.2/10-24		11.2/10-28		12.4/11-24		13.6/12-24		13.6/12-24		12.4/11-28 14.9/13-24		13.6/12-28		14.9/13-28	
	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph
1st low	0.8	1.3	0.7	1.2	0.8	1.3	0.7	1.2	0.8	1.3	0.8	1.3	0.8	1.3	0.9	1.5	1.0	1.6	1.1	1.7	1.1	1.8
2nd low	1.3	2.1	1.2	2.0	1.4	2.2	1.2	2.0	1.4	2.2	1.3	2.1	1.3	2.1	1.4	2.4	1.5	2.5	1.6	2.6	1.7	2.7
3rd low	1.7	2.7	1.5	2.5	1.7	2.7	1.5	2.5	1.7	2.7	1.6	2.6	1.7	2.7	1.8	2.9	1.9	3.1	2.0	3.2	2.1	3.3
4th low	2.6	4.2	2.5	4.0	2.7	4.4	2.5	4.0	2.7	4.4	2.6	4.2	2.7	4.3	2.9	4.7	3.0	4.9	3.1	5.1	3.3	5.3
1st normal	2.1	3.4	2.0	3.2	2.2	3.5	2.0	3.2	2.2	3.5	2.1	3.4	2.2	3.5	2.3	3.6	2.4	3.8	2.5	4.0	2.6	4.2
2nd normal	3.4	5.4	3.1	5.1	3.5	5.6	3.1	5.1	3.5	5.6	3.3	5.3	3.4	5.5	3.5	5.6	3.7	5.9	3.8	5.2	4.0	6.4
3rd normal	4.3	6.9	4.0	6.5	4.4	7.1	4.0	6.5	4.4	7.1	4.2	6.8	4.4	7.1	4.3	6.9	4.5	7.2	4.7	7.5	4.8	7.8
4th normal	6.8	10.9	6.4	10.3	7.0	11.3	6.4	10.3	7.0	11.3	6.7	10.8	6.9	11.2	6.8	10.9	7.1	11.5	7.5	12.0	7.7	12.5
1st high	5.4	8.7	5.1	8.2	5.6	9.0	5.1	8.2	5.6	9.0	5.3	8.6	5.5	8.9	5.3	8.6	5.6	9.0	5.8	9.4	6.0	9.8
2nd high	8.6	13.9	8.0	13.0	8.9	14.3	8.0	13.0	8.9	14.3	8.5	13.7	8.8	14.2	8.2	13.2	8.6	13.9	9.0	14.5	9.4	15.1
3rd high	10.9	17.5	10.3	16.6	11.3	18.2	10.3	16.6	11.3	18.2	10.8	17.4	11.2	18.0	10.0	16.2	10.6	17.0	11.0	17.8	11.5	18.5
4th high	17.3	27.9	16.4	26.4	18.0	29.0	16.4	26.4	18.0	29.0	17.2	27.7	17.8	28.7	15.9	25.7	16.8	27.1	17.6	28.3	18.3	29.4
REVERSE GEARS																						
	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph	mph	kph
1st low	0.8	1.3	0.7	1.2	0.8	1.3	0.7	1.2	0.8	1.3	0.8	1.3	0.8	1.3	1.0	1.6	1.0	1.6	1.1	1.7	1.1	1.8
2nd low	1.3	2.1	1.2	1.9	1.3	2.1	1.2	1.9	1.3	2.1	1.2	2.0	1.3	2.1	1.4	2.4	1.5	2.5	1.6	2.6	1.7	2.7
3rd low	1.6	2.6	1.5	2.5	1.7	2.7	1.5	2.5	1.7	2.7	1.6	2.6	1.7	2.7	1.8	2.9	1.9	3.1	2.0	3.2	2.1	3.4
4th low	2.6	4.2	2.5	4.0	2.7	4.3	2.5	4.0	2.7	4.3	2.6	4.2	2.7	4.3	2.9	4.7	3.0	4.9	3.2	5.2	3.4	5.4
1st normal	2.1	3.4	2.0	3.2	2.2	3.5	2.0	3.2	2.2	3.5	2.1	3.3	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.0	2.6	4.2
2nd normal	3.3	5.3	3.1	5.0	3.4	5.5	3.1	5.0	3.4	5.5	3.3	5.3	3.4	5.5	3.5	5.6	3.7	5.9	3.8	6.2	4.0	6.4
3rd normal	4.2	6.8	4.0	6.4	4.3	7.0	4.0	6.4	4.3	7.0	4.1	6.7	4.3	7.0	4.3	7.0	4.5	7.3	4.7	7.6	4.9	7.9
4th normal	6.8	10.9	6.4	10.3	6.9	11.2	6.4	10.3	6.9	11.2	6.7	10.8	6.9	11.1	6.8	11.0	7.2	11.6	7.5	12.0	7.7	12.5
1st high	5.3	8.6	5.0	8.1	5.5	8.9	5.0	8.1	5.5	8.9	5.3	8.5	5.5	8.8	5.3	8.6	5.6	9.0	5.8	9.4	6.0	9.8
2nd high	8.4	13.6	8.0	12.9	8.7	14.1	8.0	12.9	8.7	14.1	8.4	13.5	8.7	14.0	8.2	13.2	8.6	13.9	9.0	14.5	9.4	15.1
3rd high	10.8	17.4	10.2	16.4	11.2	18.0	10.2	16.4	11.2	18.0	10.7	17.2	11.0	17.8	10.0	16.2	10.6	17.1	11.0	17.8	11.5	18.5
4th high	17.2	27.7	16.3	26.2	17.8	28.7	16.3	26.2	17.8	28.7	17.0	27.4	17.6	28.4	16.0	25.8	16.9	27.2	17.6	28.3	18.4	29.5

FLUID CAPACITIES

DESCRIPTION	RECOMMENDED FIAT PRODUCT	CAPACITY									INTERNATIONAL DESIGNATION
		45-66V/55-66V/55-66F			60-66F			70-66F/80-66F			
		dm^3 (litri)	Imp. Gals	kg	dm^3 (litri)	Imp. Gals	kg	dm^3 (litri)	Imp. Gals	kg	
Cooling system	Water and FIAT ***«PARAFLU 11»***	12	$2\frac{2}{3}$	—	12	$2\frac{2}{3}$	—	14	3	—	—
Fuel tank	Decanted and filtered diesel fuel	50	11	—	50	11	—	50	11	—	—
Sump and filter	***oliofiat AMBRA SUPER***	7,3	$1\frac{2}{3}$	6,6	7,3	$1\frac{2}{3}$	6,6	11,7	$2\frac{3}{4}$	10,5	Diesel engine oil meeting MIL-L-2104D and API CD service specs
Sump only		6.7	$1\frac{1}{2}$	6,0	6,7	$1\frac{1}{2}$	6,0	10,5	$2\frac{1}{3}$	9,5	
			Imp. Pts			Imp. Pts			Imp. Pts		
Power steering system		1,7	3	1,5	1,9	$3\frac{2}{3}$	1,7	1,9	$3\frac{2}{3}$	1,7	
Live front axle 4WD. models — Axle housing		3,9(1)	$6\frac{4}{5}$	3,5(1)	4,1	$7\frac{1}{5}$	3,7	4,1	$7\frac{1}{5}$	3,7	
Live front axle 4WD. models — Side final drives (each)		1,2(1)	2	1,1(2)	1,2	2	1,1	1,2	2	1,1	
			Imp. Gals			Imp. Gals			Imp. Gals		
Rear drive housing (transm., bevel gear, side final drives and brakes) plus lift:	***oliofiat TUTELA MULTI F***										Transmission, drives, oil bath brakes and hydraulic lift oils meeting Massey Ferguson MF 1135 and Ford M2C86A specs.
— 2 WD		24,4	$5\frac{1}{3}$	22	42,2	$9\frac{1}{3}$	38	42,2	$9\frac{1}{3}$	38	
— 4 WD		25	$5\frac{1}{2}$	22,5	42,7	$9\frac{1}{3}$	38,5	42,7	$9\frac{1}{3}$	38,5	
Front wheel hubs	***grassofiat TUTELA G9***	—	—	—	—	—	—	—	—	—	Lithium-calcium base grease with NLGI No. 2 consistency
Grease fittings		—	—	—	—	—	—	—	—	—	

(1) Indicated quantity applies to mod. 55-66DTF only. For mods. 45-66DTV/55-66DTV the quantity of ***TUTELA MULTI F*** required is 5.5 dm^3 — 5 kg or $1\frac{1}{5}$ u.s. Gals

(2) Indicated quantity applies to mod. 55-66DTF only. Front axle epicyclic side final drives on mods. 45-66DTV/55-66DTV need no oil but, during servicing, shall be packed with ***TUTELA G9 grease*** as instructed in the applicable Section.

POWER TRAIN

	45-66V/55-66V/55-66F	60-66F/70-66F/80-66F
Clutches LUK 10"/10" or VALEO 10"/10"	See page 1, Sect. 20, mod. 45-66	—
Clutches LUK 11"/11" or VALEO 11"/11" or OMG 11"/11"	—	See page 1 and 2, Sect. 20 Mods. 55-66LP/60-66LP/70-66LP
Transmission and splitter	See pages 1 and 2, Mod. 45-66	See page 2, Sect. 20 Mods. 55-66/60-66/70-66/80-66
Creeper	See page 2, Sect. 20, Mod. 45-66	See page 4, Sect. 20, Mods. 466/566/666/766
Reverser	—	See page 4, Sect. 20, Mods. 466/566/666/766
Rear bevel drive and differential	See page 3, Sect. 20 Mod. 45-66	See page 2, Sect. 20, Mods. 55-66/60-66/70-66/80-66
Brakes	See page 3, Sect. 20, Mod. 45-66	See pages 5 and 6, Sect. 20, Mods. 466/566
Parking brake on drive train	—	—
Side final drives		
— Type	Epicyclic, 3-planets, straight spur gears	
— Reduction ratios	14 to (14+52) = 1 to 4.7	15 to (15+63) = 1 to 5.2
— Planet carrier adjusting ring thickness range . . . mm	3.5-3.6-3.7-3.8-3.9-4.0-4.1-4.2-4.3-4.4-4.5-4.6-4.7-4.8	
. . . . . in	0.138-0.142-0.146-0.150-0.154-0.158-0.162-0.166-0.170-0.174-0.178-0.182-0.186-0.190	
Power Take Off	See page 4, Sect. 20, Mod. 45-66 except as follows:	See page 3, Sect. 20, Mods. 55-66/60-66/70-66/80-66 except as follows:
Ground speed PTO rotation:		
— 540 RPM . . . . . revs/wheel turn	6.7	7.7
— 1000 RPM . . . . . revs/wheel turn	11.5	13.1

TORQUE DATA: MODELS 60-66F/70-66F/80-66F

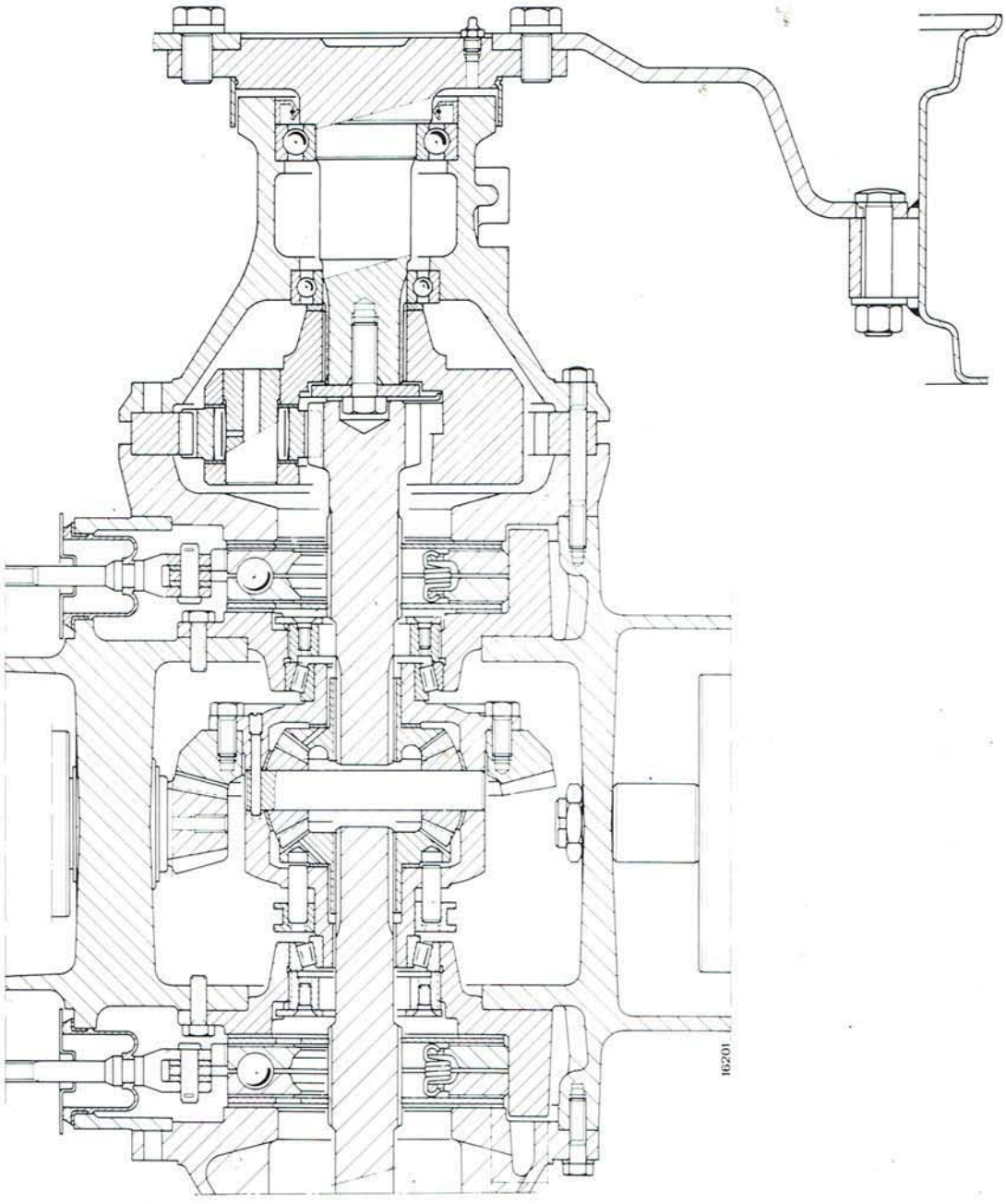
Refer to page 2, Sect. 20, Mods. 55-66LP/60-66LP/70-66LP.

TORQUE DATA: MODELS 45-66V/55-66V/55-66F

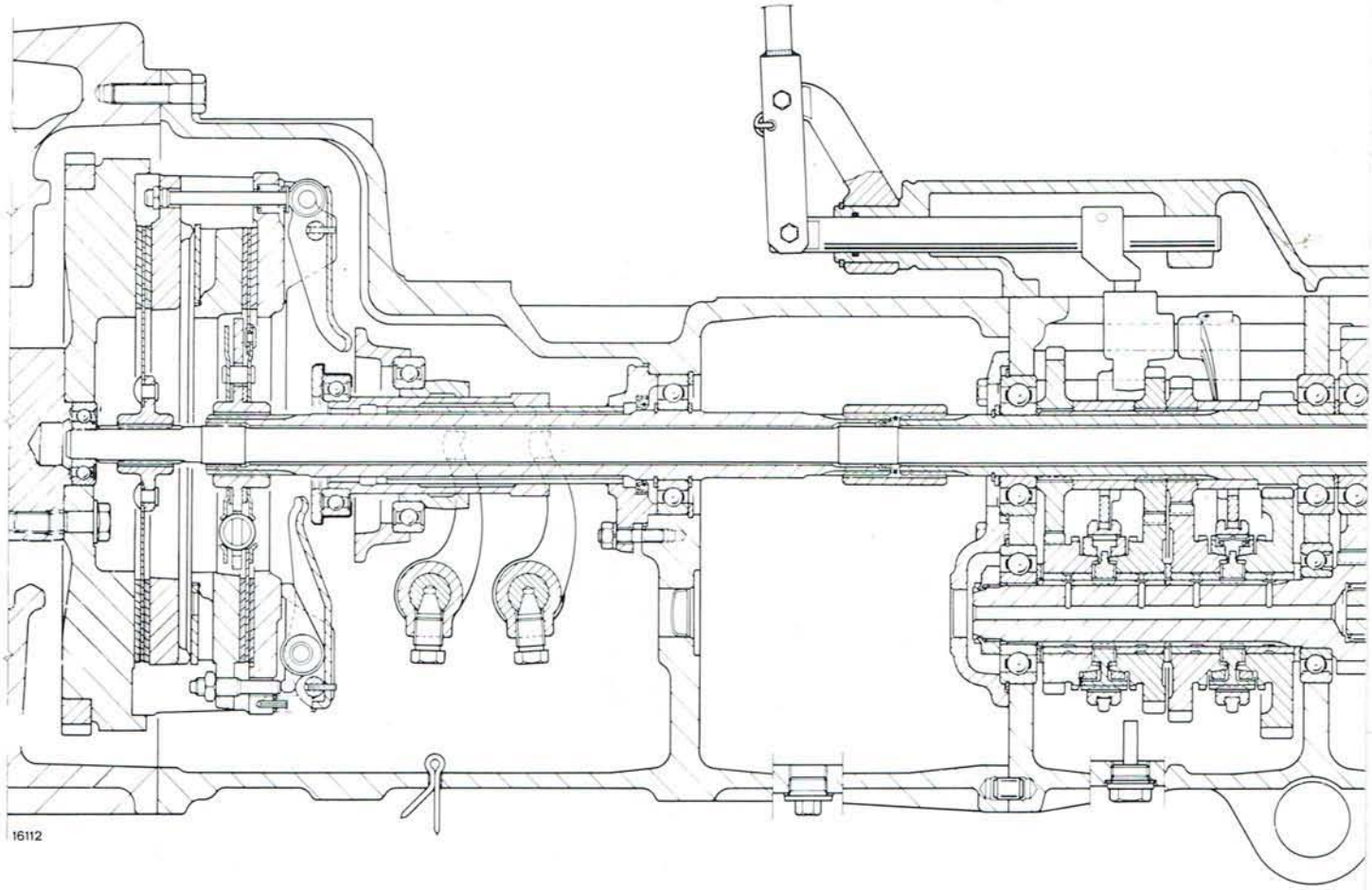
Refer to page 5, Sect. 20, Mod. 45-66 except for items listed below.

ITEM	Thread size	Torque		
		Nm	kgm	ft lb
Side Final Drives - Sect. 206				
Nuts, final drive case studs (C_1, p. 1)	M10x1.25	73	7.5	54.2
Screw, driving wheel shaft (C_2)	M18x1.5	250	25.5	197

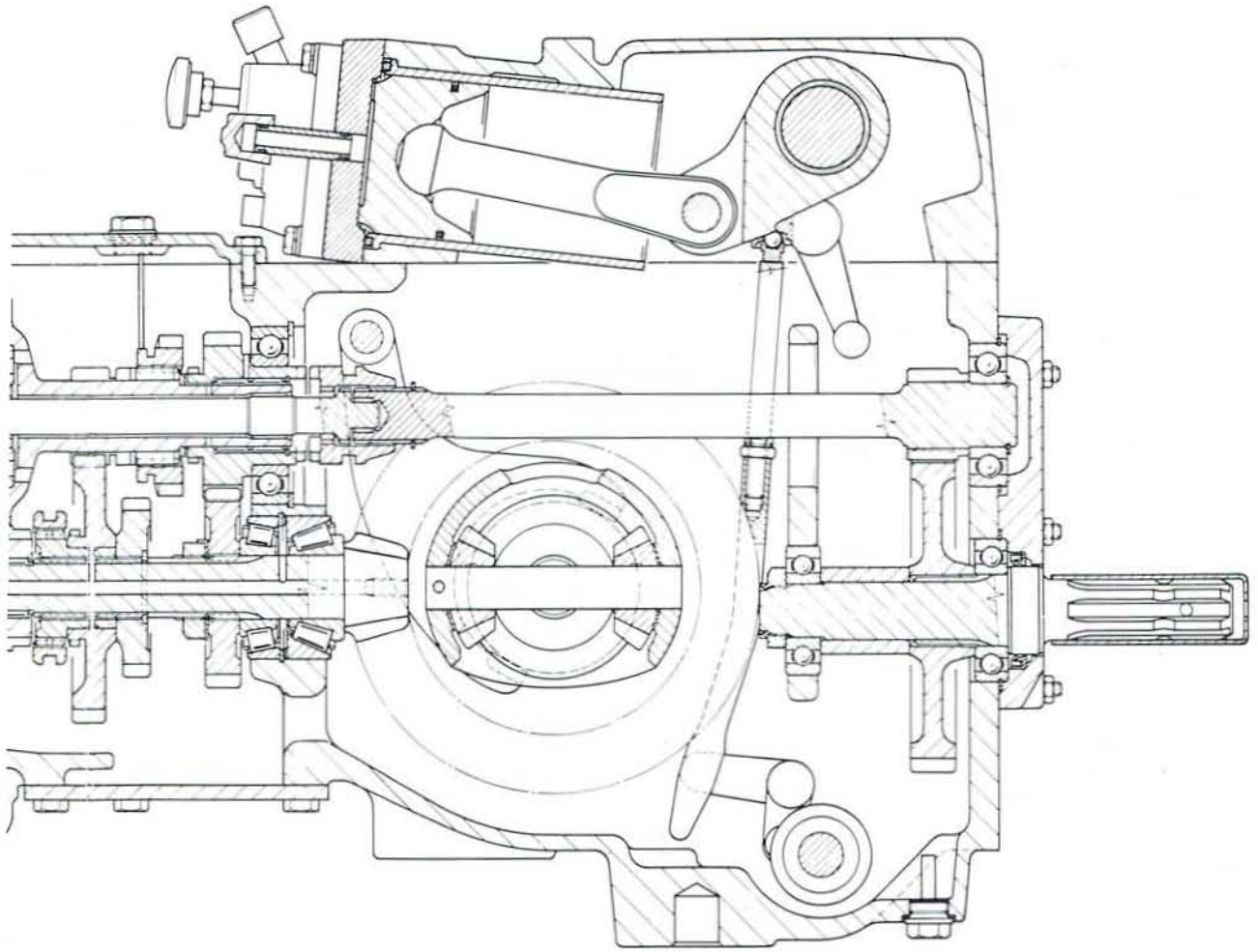
POWER TRAIN:
Specifications and data

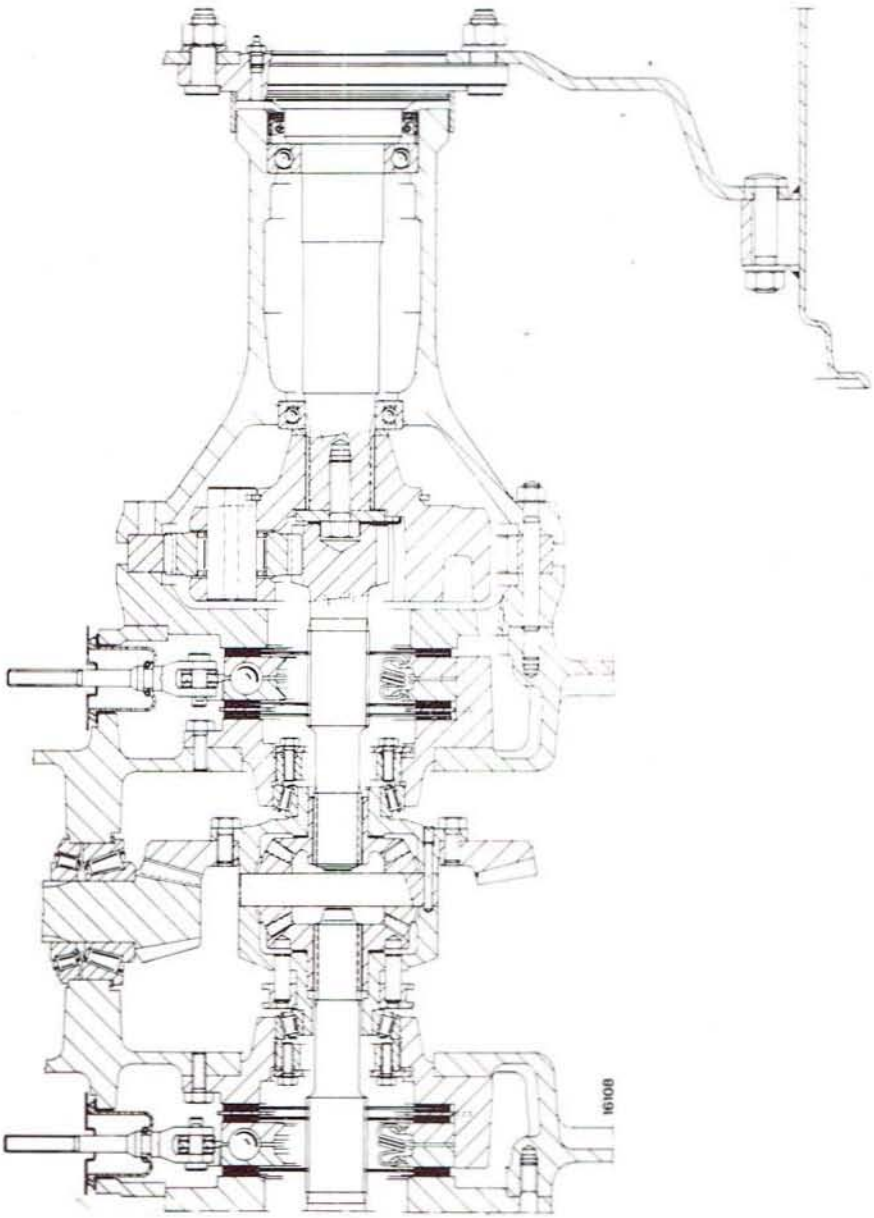


Power train cross section - Mods. 45-66V/55-66V/55-66F



Power train longitudinal section - Mods. 45-66V/55-66V/55-66F

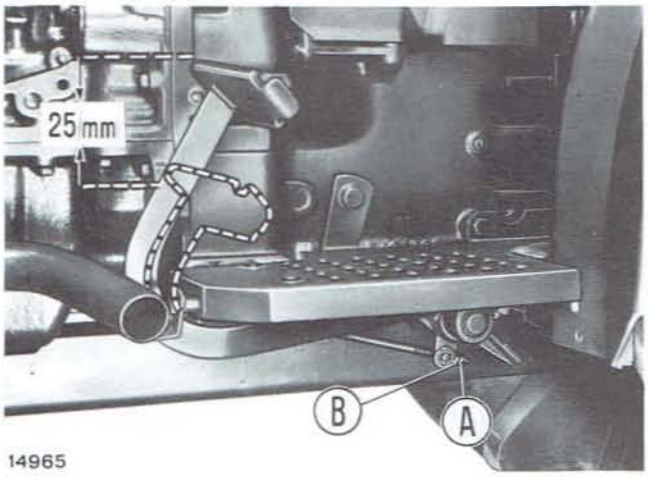




Power train cross section - Mods. 60-66F/70-66F/80-66F

SERVICING - VALEO 10''/10'' CLUTCH (Mods. 45-66V/55-66V/55-66F)
Refer to the descriptions and illustrations on pages 2, 3, 4 and 5, Sect. 201, Model 45-66.

ADJUSTMENT - VALEO 10''/10'' CLUTCH (Mods. 45-66V/55-66V/55-66F)
Refer to the descriptions and illustrations on pages 5 and 6, Sect. 201, Mods. 45-66.



Transmission clutch pedal free travel adjustment (Mods. 45-66V/55-66V/55-66F).

A. Jam nut - B. Adjusting nut.

TRANSMISSION CLUTCH CONTROL LINKAGE ADJUSTMENT (Mods. 45-66V/55-66V/55-66F)

Check that clutch pedal free travel is approximately 25 mm (1 in) before clutch releases. Once it reduces to 15 mm (0.6 in) adjust clutch as follows:

— Unlock jam nut (A) and screw in nut (B) (Each full turn of nut B is equivalent to about 12 mm (1/2 in) pedal travel displacement).

— Lock jam nut (A).

— Make sure pedal free travel is now 25 mm (1.0 in) as specified.

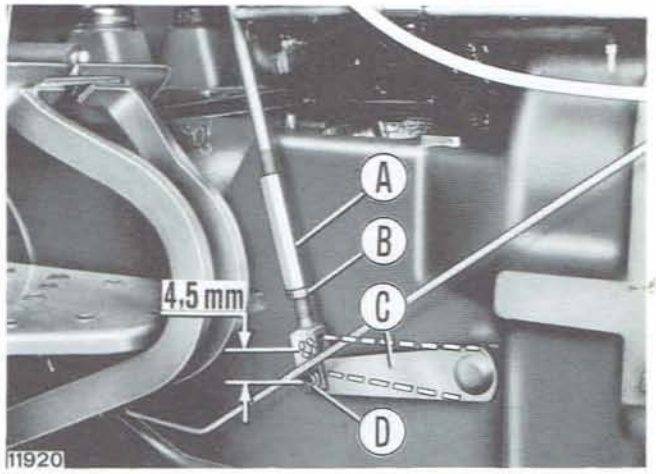
PTO CLUTCH CONTROL LINKAGE ADJUSTMENT (Mods. 45-66V/55-66V/55-66F)

Shift lever (C) in rest position (all down) then check that lever free travel - at pin (D) - is 4.5 mm (0.18 in) before clutch begins to release.

Once lever free travel is reduced to 2.5 mm (0.10 in) adjust as follows:

SERVICING - LUK 10''/10'' CLUTCH (Mods. 45-66V/55-66V/55-66F)
Refer to the descriptions and illustrations on pages 6, 7 and 8, Sect. 201, for Mod. 45-66.

ADJUSTMENT - LUK 10''/10'' CLUTCH (Mods. 45-66V/55-66V/55-66F)
Refer to the descriptions and illustrations on pages 8 and 9, Sect. 201, for Mod. 45-66).



PTO clutch control hand lever free travel adjustment (Mods. 46-55V/55-66V/55-66F).

A. Adjuster sleeve - B. Jam nut - C. Idle lever - D. Pin.

— Unlock jam nut (B) and turn sleeve (A) clockwise about 3/4 turn (at every full turn pin (D) shifts 3 mm - 0.12 in).

— Lock jam nut (B).

— Make sure lever free travel is 4.5 mm (0.18 in).

SERVICING - VALEO 11''/11'' CLUTCH (Mods. 60-66F/70-66F/80-66F)
Refer to the descriptions and illustrations on pages 1 thru 4, Sect. 201, for Mods. 55-66/60-66/70-66/80-66.

ADJUSTMENT - VALEO 11''/11'' CLUTCH (Mods. 60-66F/70-66F/80-66F)
Refer to the descriptions and illustrations on pages 4, 5 and 6, for Mods. 55-66/60-66/70-66/80-66.

SERVICING - LUK 11''/11'' OR O.M.G. 11''/11'' CLUTCHES (Mods. 60-66/70-66F/80-66F)
Refer to the descriptions and illustrations on pages 6 thru 9, Sect. 201 for Mods. 466/566/666/766.
Note - The LUK 11''/11'' and O.M.G. 11''/11'' clutch

sections shown on page 5, Sect. 201 in Mods. 55-66/60-66/70-66/80-66 Manual replace their counterparts shown on page 8, Sect. 201 in Mods. 466/566/666/766 Manual.

ADJUSTMENT - LUK 11''/11'' OR O.M.G. 11''/11'' CLUTCHES (Mods. 60-66F/70-66F/80-66F)

Refer to the descriptions and illustrations on pages 10 and 11, Sect. 201, in Mods. 466/566/666/766 Manual.

TRANSMISSION CLUTCH CONTROL LINKAGE ADJUSTMENT (Mods. 60-66F/70-66F/80-66F)

Check that clutch pedal free travel is approximately 25 mm (1 in) before clutch releases. Once it reduces to 15 mm (0.6 in) adjust clutch as follows:

— Unlock jam nut (A) and screw in nut (B). (Each full turn of nut B is equivalent to 12 mm (1/2 in) pedal travel displacement).

— Lock jam nut (A).

— Make sure pedal free travel is now 25 mm (1 in) as specified.

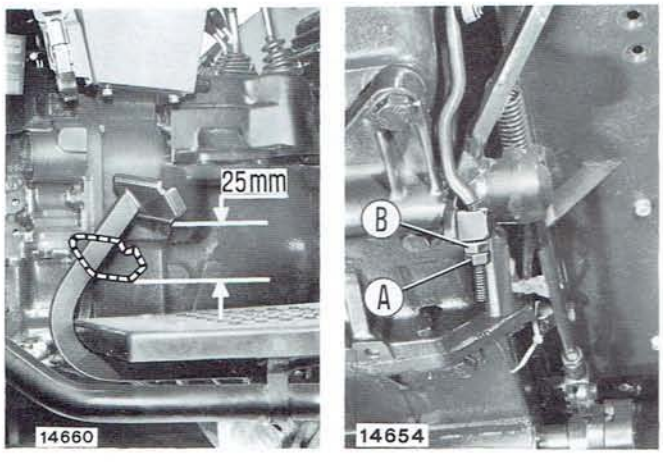
PTO CLUTCH CONTROL LINKAGE ADJUSTMENT (Mods. 60-66F/70-66F/80-66F)

Shift lever (C) in rest position (all down) then check that lever free travel - at pin (D) - is 4.5 mm (0.18 in) before clutch begins to release.

Once lever free travel is reduced to 2.5 mm (0.10 in) adjust as follows:

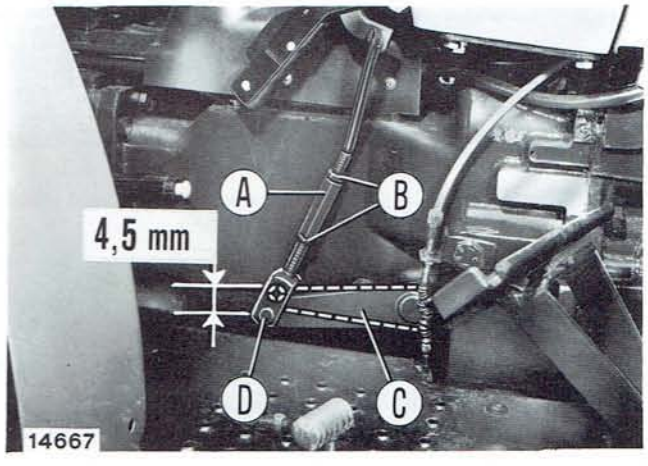
— Unlock jam nut (B) and turn sleeve (A) clockwise about 3/4 turn (at every full turn pin D shifts 3 mm - 0.12 in).

— Make sure lever free travel is 4.5 mm (0.18 in).



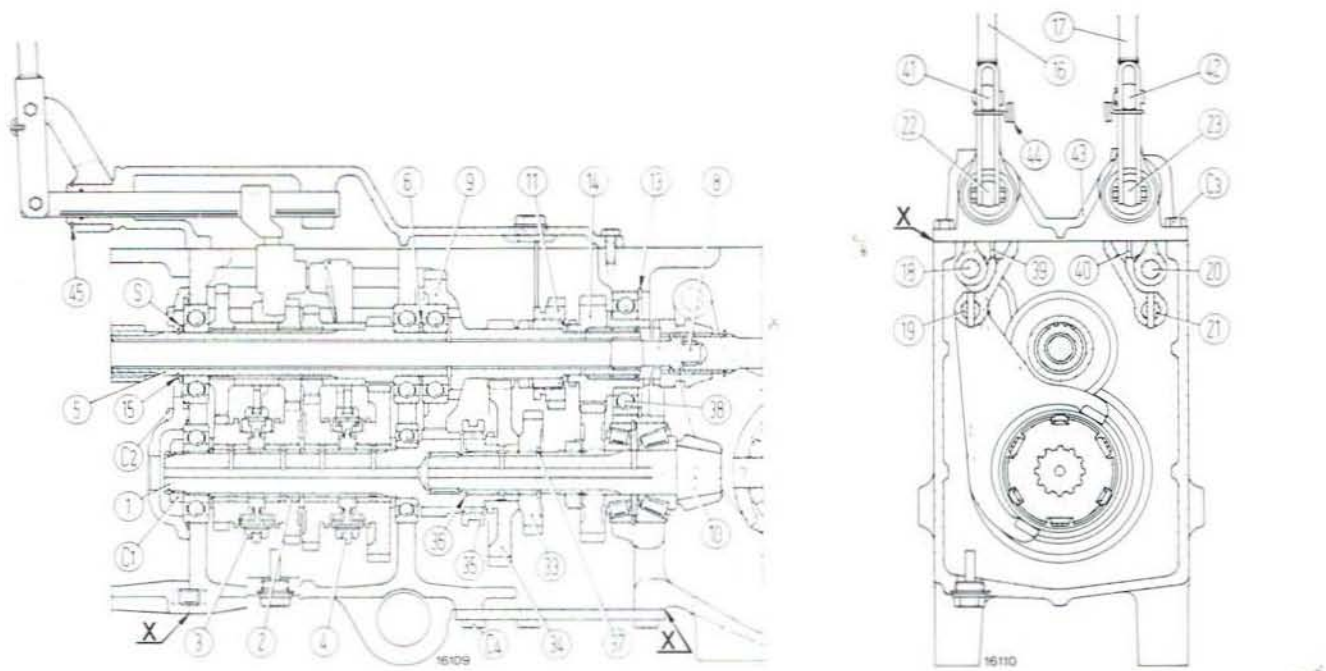
Transmission clutch pedal free travel adjustment (Mods. 60-66F/70-66F/80-66F).

A. Jam nut - B. Adjusting nut.



PTO clutch control hand lever free travel adjustment (Mods. 60-66F/70-66F/80-66F).

A. Adjuster sleeve - B. Jam nuts - C. Idle lever - D. Pin.



Longitudinal and cross sections through transmission and splitter - Mods. 45-66V/55-66V/55-66F.

C_1. Driven gear drive shaft lock nut - C_2. Bearing cover retaining screws - C_3. Top cover retaining screws - C_4. Bottom cover retaining screws - S. Drive shaft bearing shim - 1. Transmission driven shaft - 2. Transmission driven gear support bushings - 3. 3rd/4th sliding sleeve - 4. 1st/2nd sliding sleeve - 5. Transmission drive shaft - 6. Washer - 8. PTO shaft - 9. Direct drive and low range drive shaft - 10. Bevel drive pinion shaft - 11. Reverse and Normal range sliding gear - 13. - 15. - 36. - 45. Retaining rings - 14. Normal range drive gear - 16. Transmission shift lever - 17. Splitter shift lever - 18. 1st/2nd speed striker rod - 19. 3rd/4th striker rod - 20. Low/High range striker rod - 21. Normal/Reverse range striker rod - 22. Transmission shift control horizontal relay bar. - 23. Splitter shift control horizontal relay bar - 33. Reverse gear - 34. Low range driven gear - 35. Low range/Direct drive sliding sleeve - 37. Rings - 38. Bearings - 39. Transmission shift plunger - 40. Splitter shift plunger - 41. Transmission shift lever fulcrum support - 42. Splitter shift lever fulcrum support - 43. Transmission housing cover - 44. Spring.

Note - Upon reassambly, apply jointing compound to mating surfaces **X** as instructed on page 6, Sect. A, for Mods. 466/566/666/766.

REMOVAL - INSTALLATION

⚠ CAUTION ⚠

Lift and handle all heavy parts using a suitable hoist. Ensure that units or parts are supported by suitable slings or hooks. Ensure that no one is in the vicinity of load to be lifted.

Drain transmission-rear drive housing oil and proceed as follows:

- Disconnect battery negative lead and electrical leads of power point and fender-mounted signal lights from their connections.
- Disconnect lift lines, transmission clutch control link from outer control lever and accelerator control link from pedal.
- For DT models, remove front axle drive shaft and associated guard.
- Remove fenders (complete with fuel tank, Mods. 60-66F/70-66F/80-66F) footboards and lift.
- Install a mechanical stand under rear of drive housing and remove wheels, final drives, brake units and transmission/splitter control lever plastic board.
- Connect transmission housing to hoist through lift hook **291517.**
- Install mechanical stand under clutch housing, remove screws securing transmission-rear drive housing to clutch housing and remove transmission-rear drive assy.

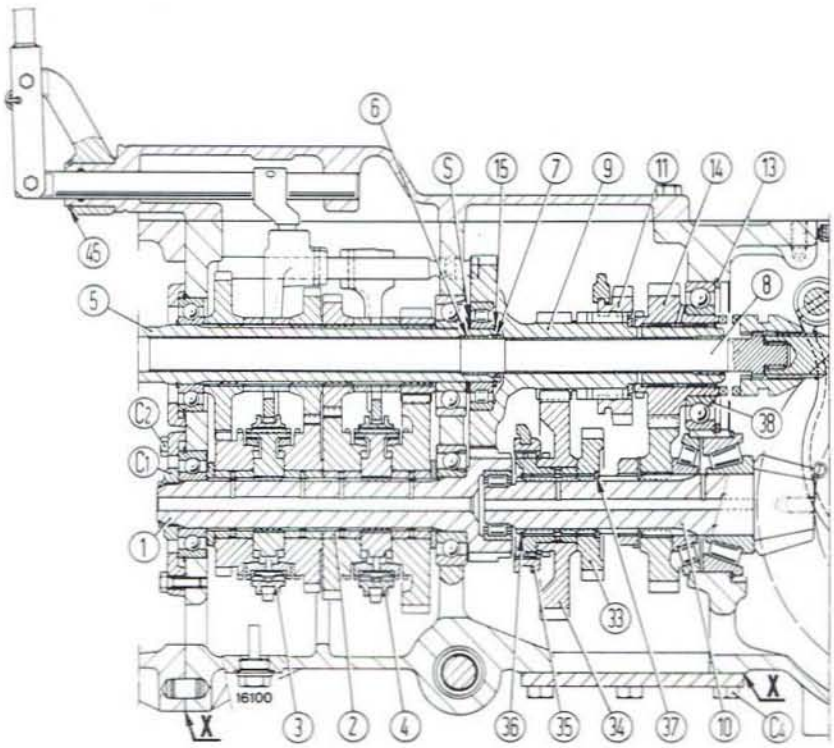
Before installing transmission housing on clutch housing after overhaul, thoroughly clean and degrease mating surfaces and apply 2 mm (0.08 in), bead jointing compounds as indicated in figure on page 1, Sect. 202, for Mod. 45-66.

Jointing compound types to be used are indicated on page 6, section A for Mods. 466/566/666/766.

TRANSMISSION REMOVAL - INSTALLATION: MODS. 45-66V/55-66V/55-66F

Refer to the descriptions and illustrations shown on pages 1 thru 6, Sect. 202 for Mod. 45-66.

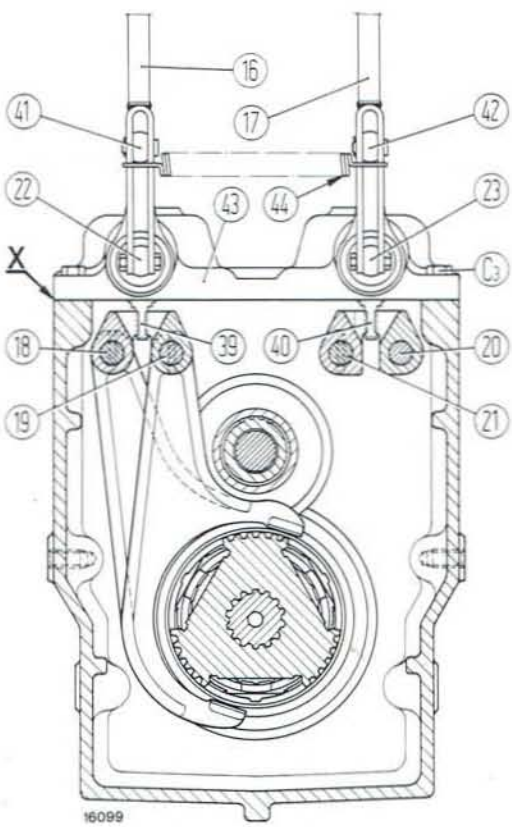
The figures published on this page replace their counterparts given on page 4, Sect. 202 for Mod. 45-66.



Longitudinal and cross sections through transmission and splitter - Mods. 60-66F/70-66F/80-66F.

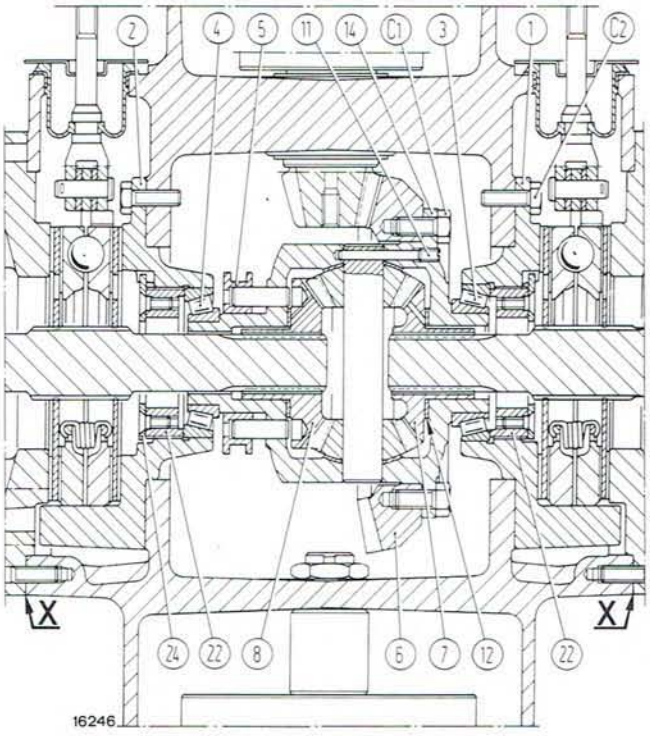
C_1. Driven gear drive shaft lock nut - C_2. Bearing cover retaining screws - C_3. Top cover retaining screws - C_4. Bottom cover retaining screws - S. Drive shaft bearing shim - 1. Transmission driven shaft - 2. Transmission driven gear support bushings - 3. 3rd/4th sliding sleeve - 4. 1st/2nd sliding sleeve - 5. Transmission drive shaft - 6. PTO shaft bush - 7. Seal - 8. PTO shaft - 9. Direct drive and low range drive shaft - 10. Bevel drive pinion shaft - 11. Reverse/Normal range sliding gear - 13.-15.-36.-45. Retaining rings - 14. Normal range drive gear - 16. Transmission shift lever - 17. Splitter shift lever - 18. 1st/2nd speed striker rod - 19. 3rd/4th striker rod - 20. Low/HIgh range striker rod - 21. Normal/Reverse range striker rod - 22. Transmission shift control horizontal relay bar - 23. Splitter shift control horizontal relay bar - 33. Reverse gear - 34. Low range driven gear - 35. Low range/Direct drive sliding sleeve - 37. Rings - 38. Bearings - 39. Transmission shift plunger - 40. Splitter shift plunger - 41. Transmission shift lever fulcrum support - 42. Splitter shift lever fulcrum support - 43. Transmission housing cover - 44. Spring.

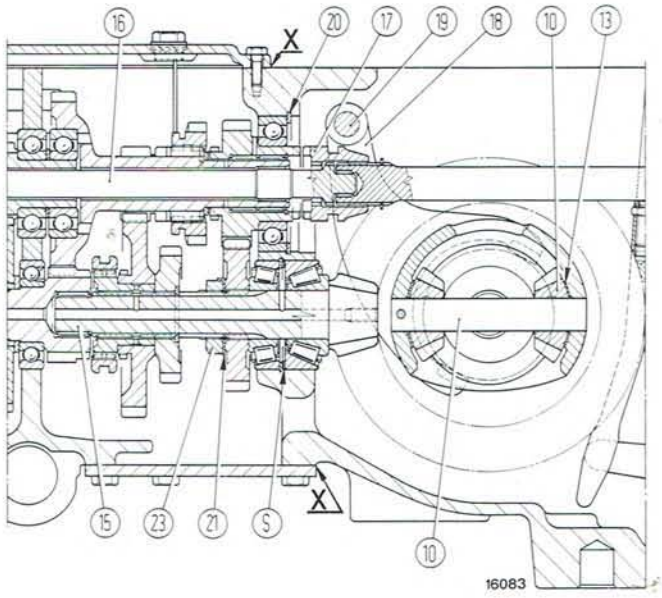
Note - Upon reassembly, apply jointing compound to mating surfaces **X** as instructed on page 6, Sect. A, for Mods. 466/566/666/766.



TRANSMISSION REMOVAL-INSTALLATION: MODS. 60-66F/70-66F/80-66F

Refer to the descriptions and illustrations shown on pages 1 thru 4, Sect. 202 for Mods. 55-66/60-66/70-66/80-66. The Figures published on this page replace their counterparts given on page 1, Sect. 202, for Mods. 55-66/60-66/70-66/80-66.





Longitudinal and cross sections through bevel drive and differential Mods. 45-66V/55-66V/55-66F.

C_1. Bevel ring gear retaining screws - C_2. Differential support retaining screws - S. Bevel pinion positioning shims - 1 and 2. Differential supports - 3 and 4. Taper roller bearings - 5. Differential lock sleeve - 6. Bevel ring gear - 7. and 8. Side gears - 9. Differential pinion - 10. Journal - 11. Differential pinion journal retaining screw - 12 and 13. Shims - 14. Differential carrier - 15. Bevel pinion shaft - 16. P.T.O. shaft - 17. P.T.O. control sleeve - 18. Fork - 19. Differential lock shaft - 20. Retaining ring - 21. Lockwasher - 22. Differential bearing adjuster ring - 23. Bevel pinion shaft bearing adjuster nut - 24. Lock washers.

Note - On assembly, thoroughly clean and degrease mating surfaces **X** and apply one of the jointing compounds indicated on page 6, Sect. A, for Mods. 466/566/666/766.

BEVEL DRIVE - DIFFERENTIAL REMOVAL

Proceed as follows:
- Drain drive housing oil.
- Disconnect battery negative lead, power point wiring and lift lines.
- Remove ROPS frame, fenders (complete with fuel tank on Mods. 60-66F/70-66F/80-66F) and remote control valves, when fitted.
- Remove Operator's seat, lift with control levers and transmission housing top cover with levers.
- Position a support stand under rear drive housing, then remove wheels, side final drives, brake units, sensing bar support and PTO (Mods. 45-66V/55-66V/55-66F) or PTO housing (Mods. 60-66F/70-66F/80-66F)
- Take off bearing supports and remove bevel drive/differential unit from top of rear drive housing (Mods. 45-66V/55-66V/55-66F) or from rear end of same (Mods. 60-66F/70-66F/80-66F).

BEVEL PINION SHAFT REMOVAL

Proceed as follows:
- For Mods. 45-66V/55-66V/55-66F - as instructed on page 1, Sect. 204, for Mod. 45-66.
- For Mods. 60-66F/70-66F/80-66F - as instructed on pages 1 and 2, Sect. 204, for Mods. 55-66/66-66/70-66/80-66.

BEVEL DRIVE ADJUSTMENT

Bevel pinion position adjustment and shim thickness determination. Pinion shaft bearing adjustment.
- Mods. 45-66V/55-66V/55-66F - Proceed as instructed on pages 1, 2 and 3, Sect. 204, for Mod. 45-66.
- Mods. 60-66F/70-66F/80-66F - Proceed as instructed on pages 2, 3 and 4, Sect. 204, for Mods. 55-66/60-66/70-66/80-66.

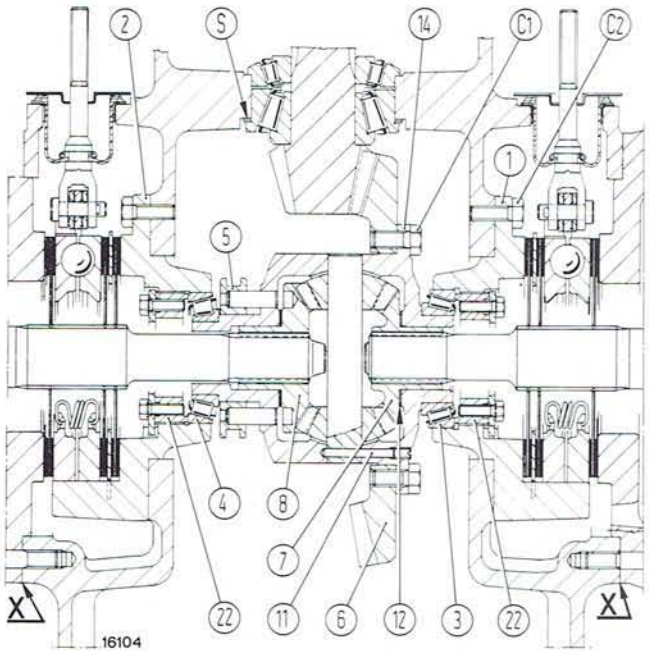
Differential bearing adjustment and bevel drive backlash check
- Mod. 45-66V/55-66V/55-66F - Proceed as instructed on pages 3, 4 and 5, Sect. 204, for Mod. 45-66.
- Mods. 60-66F/70-66F/80-66F - Proceed as instructed on pages 7 and 8, Sect. 204, for late Mods. 466/566/666/766.

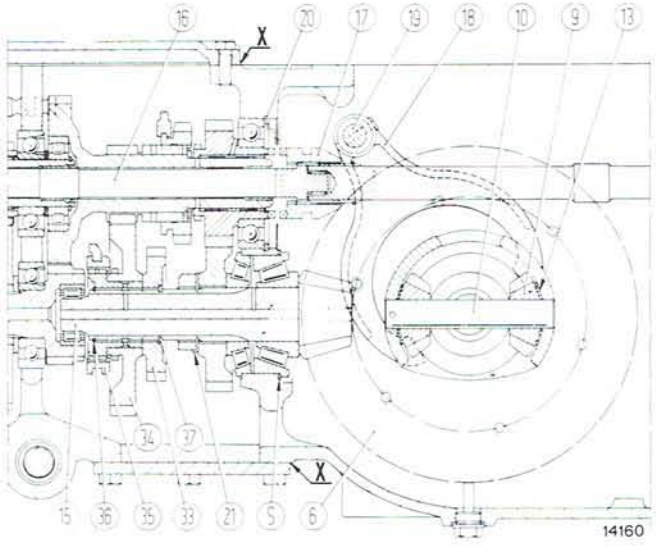
DIFFERENTIAL PINION AND SIDE GEAR BACKLASH ADJUSTMENT

Refer to text and illustrations on pages 8 and 9, Sect. 204, Mods. 466/566/666/766.

DIFFERENTIAL LOCK INSTALLATION AND ADJUSTMENT

Assemble differential lock components using tool **293452**





Longitudinal and cross sections through bevel drive and differential Mods. 40-66F/70-66F/80-66F.

C_1. Bevel ring retaining screws - C_2. Differential support retaining screws - S. Bevel pinion positioning shims - 1 and 2. Differential supports - 3 and 4. Taper roller bearings - 5. Differential lock sleeve - 6. Bevel ring gear - 7 and 8. Side gears - 9. Differential pinion - 10. Journal - 11. Differential pinion journal retaining screw - 12 and 13. Shims - 14. Differential carrier - 15. Bevel pinion shaft - 16. P.T.O. shaft - 17. P.T.O. control sleeve - 18. Fork - 19. Differential lock shaft - 20. Retaining ring - 21. Lockwasher - 22. Differential bearing adjuster rng nut - 33. Reverse gear - 34. Creeper driven gear - 35. Creeper and DD engagement sleeve - 36. Retaining ring - 37. Shims.

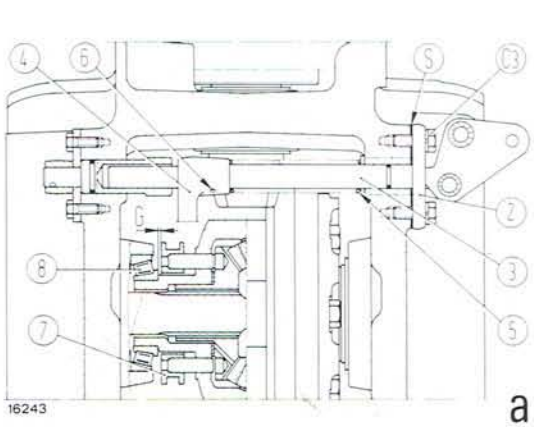
Note - On assembly, thoroughly clean and degrease mating surface **X** and apply one of the jointing compounds indicated on page 6, section A, for Mods. 466/566/666/766.

to compress return spring (5) and to introduce the fork (4) to-shaft roll pin (6).

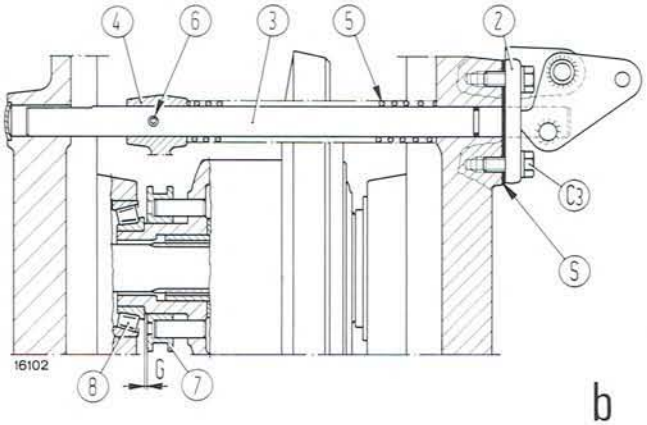
Install bevel ring gear-differential unit on supports.

Using a fleeler gauge, check that clearance (G) between sleeve (7) and R.H. differential bearing is 2 mm (0.08 in).

Adjust clearance by changing shims (S) between support (2) and drive housing.



a



b

Installing and adjusting differential locks.

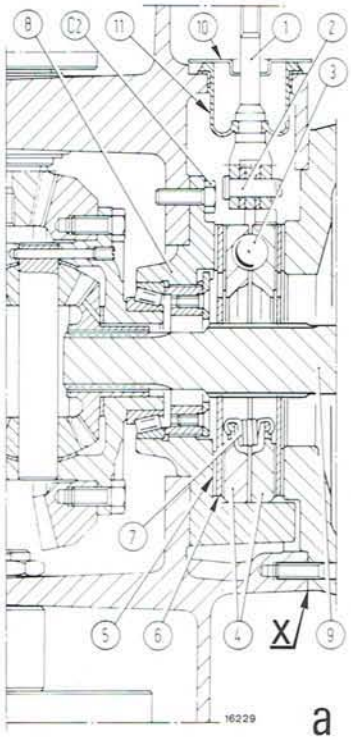
a. Mods. 45-66V/55-66V/55-66F - b. Mods. 60-66F/70-66F/80-66F - C_3. Screws - G = 2 mm (0.08 in). Clearance between sleeve (7) and bearing (8) - S. Sleeve positioning shims - 2. Lever support - 3. Fork shaft - 4. Fork - 5. Spring - 6. Roll pin - 7. Differential lock sleeve - 8. Differential bearing.

Sections through brake unit.

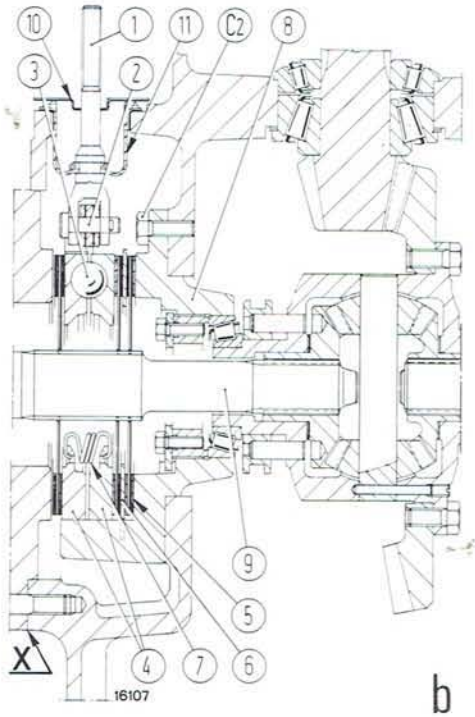
a. Models 45-66V/55-66V/55-66F - b. Models 60-66F/70-66F/80-66F - C_2. Differential support screws - 1. Brake link - 2. Pin - 3. Ball - 4. Brake actuator - 5. Brake discs - 6. Back-up disc - 7. Actuator pull-off spring - 8. Differential support - 9. Axle shaft - 10. Boot cover plate - 11. Boot.

Note - On assembly, apply jointing compound to surfaces **X** as directed in notes and in diagram on page 2, Sect. 205, Mods. 55-66LP/60-66LP/70-66LP.

Important - New brake discs **must be** soaked for at least **2 hours,** and preferably for 5 to 6 hours, in TUTELA MULTI F oil before installation.



a



b

BRAKE UNIT REMOVAL AND INSTALLATION

⚠ CAUTION ⚠

Lift and handle all heavy components using a suitable hoist. Ensure that units or parts are supported by suitable slings or hooks. Ensure that no one is in the vicinity of the load to be lifted.

Disassamble brake unit as follows:

— Drain rear drive housing oil.

— Position a support stand under drive housing, unscrew retaining stud nuts (C_1, page 1, Sect. 206) and remove splitter housing.

— Remove cotter pin and pin (2) securing brake pedal to link (1).

— Back off link (1) from spring side and remove complete brake unit.

— Check actuator (4) and brake discs (5) for wear. Replace discs when sintered material is almost worn out.

On brake unit installation, use driver **293847** as shown to position boot (11) correctly on brake link (1).

Before installing side final housing on drive housing, thoroughly clean and degrease mating surfaces and apply a 2 mm (0.08 in) bead of jointing compound as shown in Figure on page 2, Sect. 205, for Mods. 55-66LP/60-66LP/70-66LP.
Jointing compound types are indicated on page 6, Sect. A for Mods. 466/566/666/766.

BRAKE PEDAL ADJUSTMENT (Mods. 45-66V/55-66V/55-66F)

Check that free travel is the same for both pedals and does not exceed 70 mm (2.75 in).

To adjust, proceed as follows:

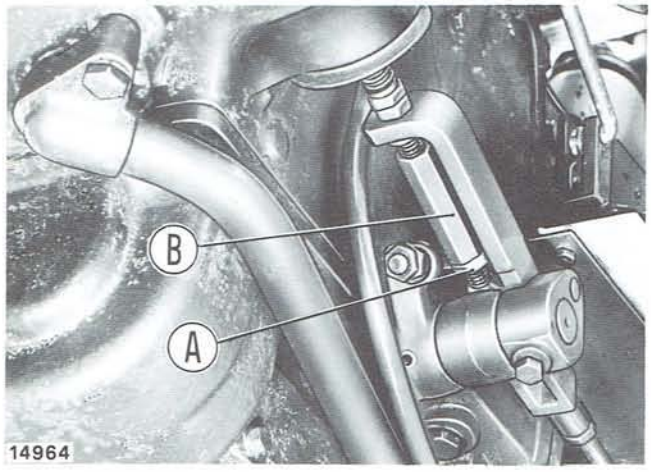
— Move brake lock lever downwards.

— Back off jam nuts (A, page 2) (one on either side) and turn sleeves (B) (one on either side) until free travel is 40 mm (1.57 in).

— Lock jam nuts (A).

PARKING BRAKE HAND LEVER ADJUSTMENT (Mods. 45-66V/55-66V/55-66F)

From its position of rest, the drive train hand brake lever shall move by four clicks to fully restrain the tractor.
For re-adjustments, unscrew jam nut (A, page 2) which is LH threaded, and turn nut (B) until the hand lever free travel is again set to 4 clicks on ratchet, then lock by jam nut (A).



Brake pedal adjustment (Mods. 45-66V/55-66V and 55-66F).

A. Jam nuts - B. Adjuster sleeves.

BRAKE PEDAL ADJUSTMENT (Mods. 60-66F/ 70-66F/80-66F).

Check that pedal free travel is the same for both pedals and does not exceed 80 mm (3.15 in).

To adjust, proceed as follows:

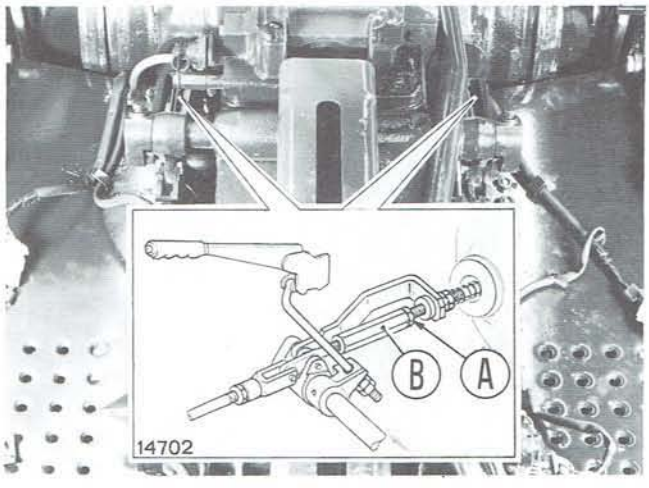
— Move brake lock lever downwards.

— Back off jam nuts (A) and turn sleeves (B) until free travel is 45 mm (1.77 in).

— Lock jam nuts (A).

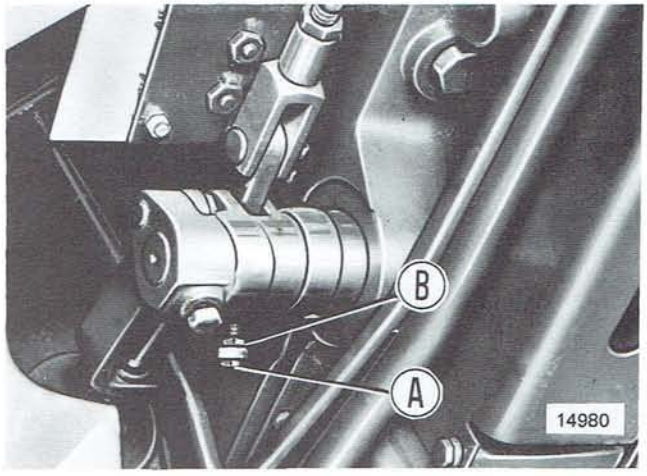
PARKING BRAKE HAND LEVER ADJUSTMENT (Mods. 60-66F/70-66F/80-66F)

After re-setting brake pedal free travel, check hand brake control on either side for correct adjustment, proceeding as follows:



Brake pedal adjustment (Mods. 60-66F/70-66F/80-66F).

A. Jam nuts - B. Adjuster sleeves.



Parking brake hand lever adjustment (Mods. 45-66V/55-66V/55-66F).

A. Jam nut - B. nut.

— Back off jam nut (C).

— Turn adjuster sleeve (D) into contact with bracket (E).

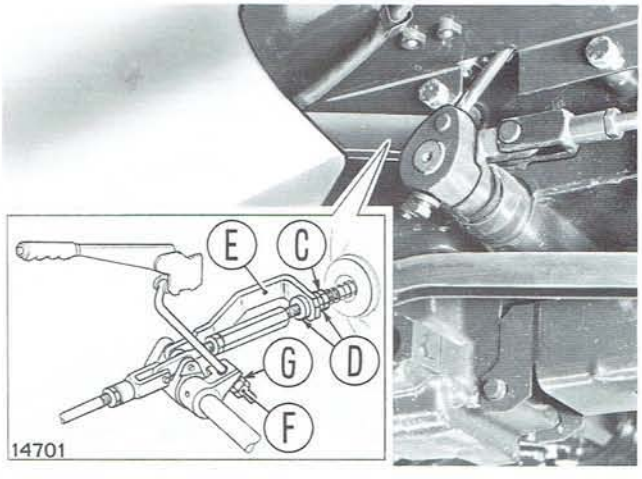
— Lock jam nut (C).

Next, re-set brake hand lever travel by operating on RH rod, as follows:

— Back off jam nut (F) which is LH threaded.

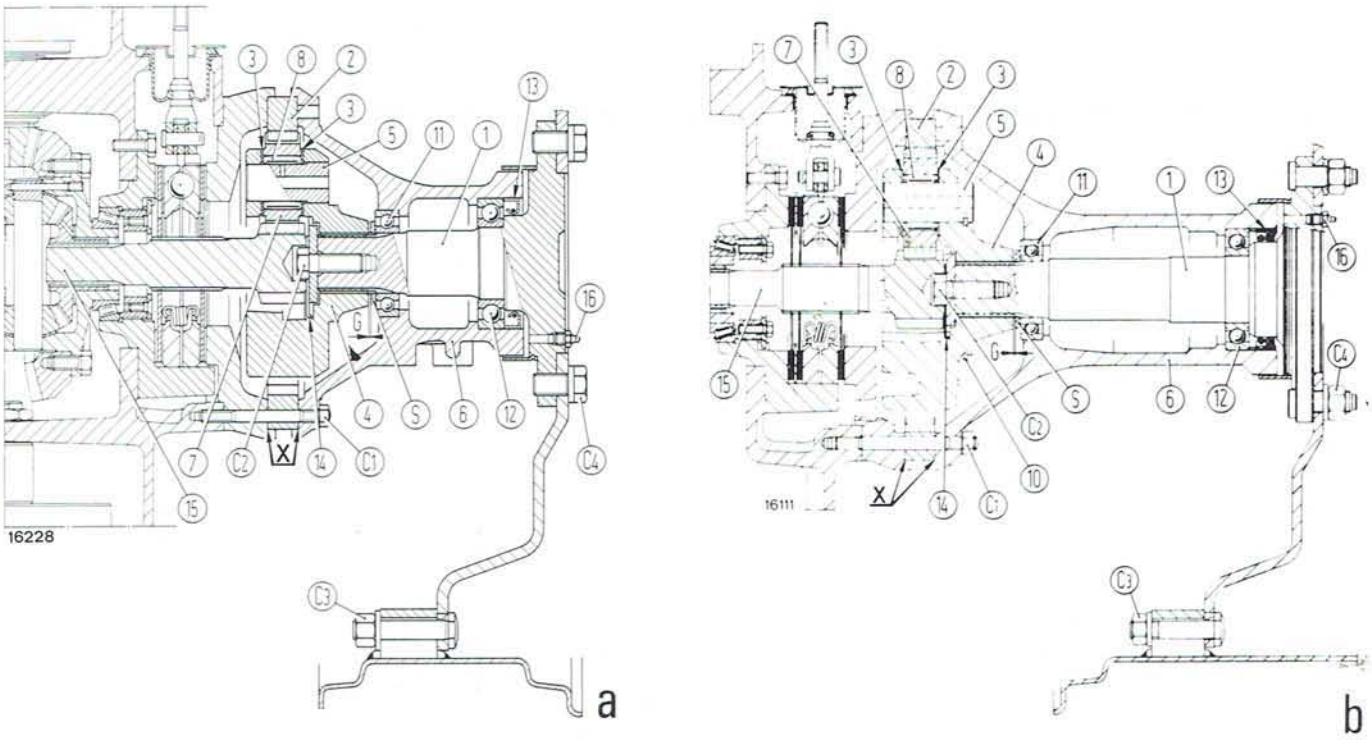
— Turn in or out nut (G) as required checking at the same time that lever «locks» at the 4th click on ratchet.

— Lock jam nut (F).



Parking brake hand lever adjustment (Mods. 60-66F/70-66F/80-66F).

C. Jam nut - D. Adjuster sleeve - E. Bracket - F. Jam nut - G. Nut.



RH Final Drive longitudinal section.

a. Mods. 45-66V/55-66V/55-66F - b. Mods. 60-66F/70-66F/80-66F - C_1. Nuts, final drive housing studs - C_2. Lock screw, wheel drive shaft - C_3. Nut, sheet metal disc-to-driving wheel rim screw - C_4. Screw, sheet metal disc to driving wheel hub - G. = 0.2 to 0.4 mm (0.0078 to 0.0157 in) Planet gear carrier end play - S. Shims, end play (G) adjustment - 1. Wheel drive shaft - 2. Ring gear - 3. Thrust washers - 4. Planet gear carrier, epicyclic final drives - 5. Planet gear journal - 6. Final drive housing - 7. Planet gear - 8. Needle roller bearing - 10. Retaining ring, planet gear journals - 11 and 12. Ball bearings - 13. Seal - 14. Lock washer, screw (C_2) - 15. RH sun gear shaft - 16. Grease fitting.

Note - On assembly, apply jointing compound to surfaces **X** as instructed on page 6, Sect. A, for Mods. 466/566/666/766.

REMOVAL

⚠ CAUTION ⚠

Raise and handle all heavy components using a suitable hoist. Ensure that units or parts are supported by suitable slings or hooks. Ensure that no one is in the vicinity of the load to be lifted.

Remove final drives as follows:

— Drain oil from rear drive housing.

— Position a support stand under drive housing, take out nuts (C_1) and remove final drive housing assy.

DISASSEMBLY - ASSEMBLY

⚠ CAUTION ⚠

Handle all parts with extreme care. Do not put hands and fingers between parts. Wear safety items such as goggles, gloves and shoes.

Disassemble and reassemble final drives according to the instructions and illustrations provided on pages 1 and 2, Sect. 206, for Mods. 55-66LP/60-66LP/70-66LP.

DEAD FRONT AXLE

	45-66V	655-66V	55-66F	60-66F	70-66F	80-66F
Type	inverted U beam, telescoping, center pivoting					
Track settings .mm	965-1050(1)		985-1085(2)	1185-1285-1385-1485		
in	(38-41)		(38.8-42.7)	(46.6-50.6-54.5-58.5)		
Axle articulation						
Pivot pin diameter mm	29,967 to 30.000			37.961 to 38.000		
in	(1.1798 to 1.1811)			(1.4945 to 1.4960)		
Press-fitted bushing bore mm	30.100 to 30.150			38.050 to 38.140		
in	(1.1850 to 1.1870)			(1.4980 to 1.5015)		
Kingpin-to-bushing clearance mm	0.100 to 0.183			0.050 to 0.179		
in	(0.0039 to 0.0072)			(0.0589 to 0.0070)		

HYDROSTATIC POWER STEERING

	45-66V	55-66V	55-66F	60-66F	70-66F	80-66F
Type	Hydrostatically controlled					
Make	DANFOSS					
Hydraulic system	independent oil supply from hydraulic pump					
Oil tank	transparent plastic located on engine RH side					
Oil filter	metal cartridge, incorporated in oil tank					
Hydraulic pump						
Type	gear					
Model	C 25 (3) or A18 (4)					
Make	FIAT					
Drive	from engine valve gear (3) or from engine crankshaft (4)					
Rotation (viewed from drive end)	clockwise (3) or anti-clockwise (4)					
Engine/Pump drive ratio	0.931 to 1 (3) or 1 to 1 (4)					
Rated speed (at engine governed speed)	26.4 l/min (46 pints/min) (3) or 20.5 l/min (36 pints/min) (4)					
On-bench output at 1450 rpm and 68.5 bar (70 kg/cm², 993 psi):						
— New or reconditioned pump	15.3 l/min (27 pints/min) (3) or 11 l/min (19 pints/min) (4)					
— Used pump	10.7 l/min (19 pints/min) (3) or 7.7 l/min (13 pints/min) (4)					

(1) 865-965 mm (34-38 in) w/size 4.00-15 tyres
(2) 1040-1140 mm (41-45 in) w/size 6.00-16 tyres.
(3) 45-66V, 45-66DTV, 55-66V, 55-66DTV, 55-66F, 55-66DTF, 60-66F, 70-66F and 80-66F tractors.
(4) 60-66DTF, 70-66DTF and 80-66DTF tractors.

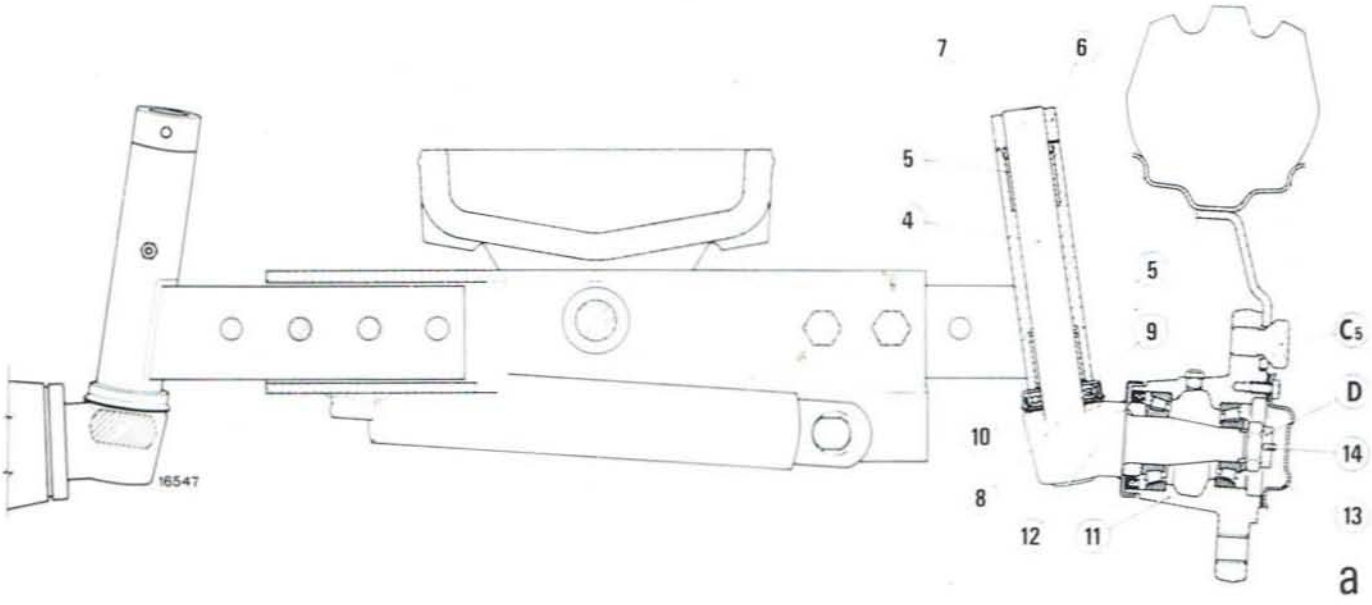
FRONT AXLE-STEERING: Specifications and Data

HYDROSTATIC POWER STEERING

	45-66V	655-66V	55-66F	60-66F	70-66F	80-66F
Pump C25 mechanical data	Data on pages 1 and 2, Sect. 30, for Mods. 55-66/60-66/70-66/80-66					
Pump A18 mechanical data	Data on pages 3 and 4, Sect. 30, for Mods. 466/566/666/766 (C 18X)					
Rotary contro valve						
Make	DANFOSS					
Design	Steering post-controlled rotary valve: steering is possible also in case of pump failure					
Identification Code	OSPC 100					
Pressure relief valve setting	100 bar (102 kg/cm² or 1450 psi)					
Power cylinder overload valve setting	200 bar (204 kg/cm² or 2845 psi)					

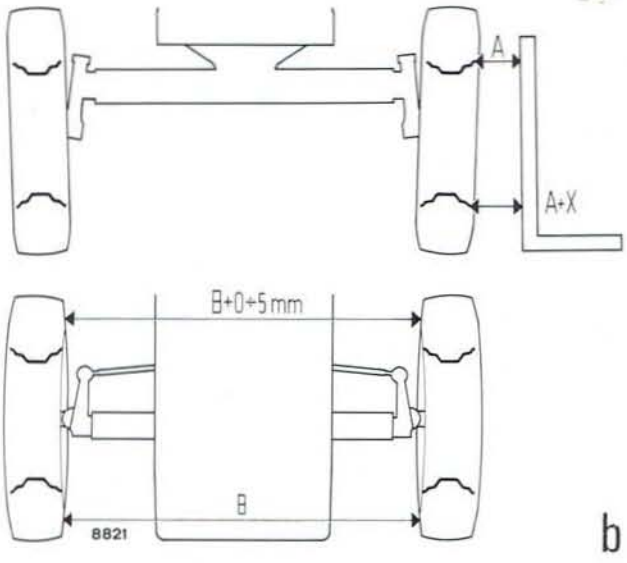
TORQUE DATA: MODS 45-66V/55-66V/55-66F

ITEM	THREAD SIZE	TORQUE		
		Nm	kgm	ft lb
Front Axle - Sect. 301				
Nut, axle support to engine	M16x1.5	220	22.6	162.7
Screw, axle articulation pivot pin	M10x1.5	59	6	43.4
Nut, axle end screw	M16x1.5	211	21.5	153
Screw, wheel to hub (C_5, page 1)	M20x1.5	216	22	159
Nut, drag link/track rod articulation end fittings	M14x1.5	134	14	101.3
Nut, RH/LH steering knuckle arms	M10x1.25	49	5	36



Front axle section - Mods. 45-66V/55-66V-55-66F.

C_5. Screw, steering wheel rim to hub - D. Nut, wheel bearing adjustments - 4. Steering knuckle kingpin - 5. Bushings - 6. Ring, steering knuckle - 7. Seal - 8. Ball bearing - 9. Bearing cup - 10. O-ring - 11. Wheel hub - 12. Seal - 13. Hub cover - 14. Split pin.



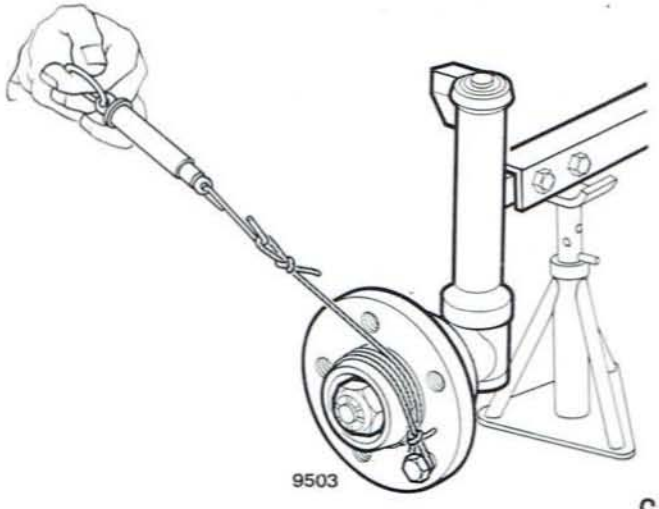
FRONT WHEEL GEOMETRY CHECKS Mods. 45-66V/55-66V/55-66F

Proceed as follows:

— In straightahead drive position front wheel camber shall be 3°, equivalent to a difference of approximately 20 mm (7.87 in) between rim top and bottom edge centers - see detail (a) in illustration.

A slight front end toe-in is allowed up to 0.5 mm (0.1968 in) max - see detail (b) in illustration.

— If toe-in adjustments are needed, turn in ord out as required the adjustable ends of track rods.



FRONT WHEEL HUB TAPER ROLLER BEARING ADJUSTMENTS Mods. 45-66V/55-66V/55-66F

After assembly, tighten nut (D) gradually until a revolving torque of 0.2-0.3 Nm (0.02 to 0.03 kgm or 0.145 to 0.217 ft lb) is obtained.

This torque is equivalent to a spring balance (dynamometer) force of 6 to 8 N (0.6 to 0.85 kg or 1.3 to 1.9 lb) as determined with a string wround around hub as shown in detail (C).

After adjustments, secure nut (D) by split pin (14).

LIVE FRONT AXLE

	45-66DTV, 55-66DTV	55-66DTF	60-66DTF, 70-66DTF, 80-66DTF
Design	Steering, full-floating, center pivotting		
Axle input drive ratio	15 to 29 = 1 to 1.933	—	—
Bevel Drive and Differential			
Bevel drive ratio	8 to 35 = 1:4.375	13 to 37 = 1:2.846	10 to 36 = 1:3.6
Bevel drive backlash	0.15 to 0.20 mm (0.006 to 0.008 in)		
Bevel pinion bearing shim thickness (S_1, pages 3 and 5, Sect. 402)	—	2.50-2.55-2.60-2.65-2.70-2.75-2.80-2.85-2.90 2.95-3.00-3.05-3.10-3.15-3.20-3.25-3.30-3.35 3.40-3.45-3.50-3.55-3.60-3.65-3.70 (0.098-0.100-0.102-0.104-0.106-0.108-0.110 0.112-0.114-0.116-0.118-0.120-0.122-0.124 0.126-0.128-0.130-0.132-0.134-0.136-0.138 0.140-0.142-0.144-0.146 in)	
Bevel pinion spacer thickness (S_1, page 6, Sect. 402)	39.50-39.60-39.70-39.80-39.90-40-40.10-40.20-40.30-40.40 mm (1.555-1.559-1.563-1.567-1.571-1.575-1.579-1.583-1.587-1.591 in)	—	
Bevel pinion shim thickness (S_2)	0.20-0.25-0.30 mm (0.0078-0.0098-(0.0118 in)	2.5-2.6-2.7-2.8-2.9-3-3.1-3.2-3.3-3.4-3.5-3.6-3.7 mm (0.098-0.102-0.106-0.110-0.114-0.118-0.122-0.126-0.130-0.134-0.138-0.142-0.146 in)	
Differential pinion and side gear backlash	0.18 mm	0.15 mm (0.006 in)	
Side gear thrust washer thickness (7, page 3, 5 and 6, Sect. 402)	2 mm (0.08 in)	1.470 to 1.530 mm (0.0579 to 0.0602 in)	
Differential side gear thrust washer thickness	2 mm (0.08 in)	1.50-1.60 mm (0.0590-0.0630 in)	
Differential pinion journal dia	17.982 to 18.000 mm (0.7079 to 0.7086 in)	21.939 to 21.960 mm (0.0864 to 0.865 in)	
Differential pinion journal bore dia	18.050 to 18.071 mm (0.7106 to 0.7114 in)	22.040 to 22.061 mm (0.868 to 0.869 in)	
Differential pinion journal clearance in pinion bore	0.050 to 0.089 mm (0.00197 to 0.00350 in)	0.080 to 0.122 mm (0.003 to 0.006 in)	
Axle Shafts and Joints			
Axle shaft journal diameter (5, page 3, 5, 6, Sect. 402)	37.975 to 38.000 mm (1.4950 to 1.4960 in)	29.914 to 29.935 mm (1.178 to 1.179 in)	
Axle bushing fitted I.D. (14)	38.050 to 38.089 mm (1.4980 to 1.4995 in)	30.050 to 30.105 mm (1.183 to 1.185 in)	
Axle shaft running clearance in bushing	0.050 to 0.114 mm (0.00197 to 0.00449 in)	0.115 to 0.191 mm (0.004 to 0.007 in)	
Bushing interference fit in housing	0.009 to 0.059 mm (0.00035 to 0.00232 in)	0.064 to 0.129 mm (0.003 to 0.005 in)	
King pin bearing shim thickness (S_3, page 3, 5, 6 Sect. 402)	0.20-0.25-0.50 mm (0.008-0.010-0.020 in)	0.10-0.15-0.20-0.25-0.30 mm (0.004-0.006-0.008-0.010-0.012 in)	
Planetary Final Drives			
Reduction ratio	—	15 to (15+54) = 1 to 4.6	
Driven gear thrust washer thickness (18, page 3, 5, 6, Sect. 402)	—	0.77 to 0.83 mm (0.030 to 0.033 in)	

LIVE FRONT AXLE

	45-66DT, 55-66DTV	55-66DTF	60-66DTF, 70-66DTF, 80-66DTF
Center Pivot			
Center pivot O.D.	29.967 to 30.000 mm (1.1798 to 1.1811 in)	—	
Center pivot bushing fitted I.D.	30.010 to 30.015 mm (1.1815 to 1.1817 in)	—	
Pivot working clearance in bushing	0.010 to 0.048 mm (0.0004 to 0.0019 in)	—	
Centre pivot diameter	—	52.652 to 52.671 mm (2.0729 to 2.0737 in)	
Centre pivot front bushing fitted I.D.	—	52.720 to 52.790 (1) mm (2.0756 to 2.0783 in)	
Centre pivot working clearance in bushing	—	0.049 to 0.138 mm (0.0019 to 0.0054 in)	
Rear bevel pinion carrier spigot O.D.	—	99.040 to 99.072 mm (3.8992 to 3.9005 in)	
Rear bushing fitted I.D.	—	99.146 to 99.221 (1) mm (3.9033 to 3.9063 in)	
Spigot fitted clearance in bushing	—	0.074 to 0.181 mm (0.0029 to 0.0071 in)	
Axle thrust washer thickness	3.925 to 4.000 mm (0.1545 to 0.1575 in)	4.95 to 5.00 mm (0.1949 to 0.1968 in)	

(1) Not reamed

AXLE DRIVE

	45-66DT, 55-66DTV	55-66DTF	60-66DTF, 70-66DTF, 80-66DTF
Reduction ratio	34/24x18/40 = 1 to 1.57	34/25x25/38 = 1 to 1.12	34/24x24/34 = 1 to 1
Relay lever pad width	7.978 to 8.000 mm (0.3141 to 0.3149 in)		
Pad seat width in driven gear	8.280 to 8.370 mm (0.3260 to 0.3295 in)		
Pad clearance in seat	0.280 to 0.392 mm (0.0110 to 0.054 in)		
Relay lever pivot diameter	15.973 to 16.000 mm (0.6288 to 0.6299 in)		
Pivot housing bore in casing	16.016 to 16.059 mm (0.6305 to 0.6322 in)		
Pivot clearance in housing	0.016 to 0.086 mm (0.0006 to 0.0034 in)		
Relay lever detent spring length			
— Free	24.5 mm (0.9646 in)		
— Under 178.2 to 197.8 N (18.17 to 20.17 kg or 40 to 44 lb)	19.3 mm (0.7598 in)		

DRIVE SHAFT

	45-66DT, 55-66DTV	55-66DTF	60-66DTF, 70-66DTF, 80-66DTF
Front drive sleeve adjustment	—	See page 1, Sect. 402, Mods. 466-566/666/766	
Front drive sleeve shim thickness (S_5, page 5-6, Sect. 402)	—	2.2-2.5-2.8-3-3.3-3.7-4-4.3 mm (0.087-0.098-0.101-0.118-0.130-0.146-0.158-0.170 in)	

REMOVAL

⚠ CAUTION ⚠

Lift and handle all heavy parts using a suitable hoist. Ensure that units or parts are supported by suitable slings or hooks. Ensure that no one is in the vicinity of the lifted load.

Mods. 55-66DTF/60-66DTF/70-66DTF/80-66DTF - proceed as instructed on page 1, Sect. 401 for Mods. 466DT/566DT/666DT/766DT.

Mods. 45-66DTF and 55-66DTF - Proceed as follows:

— Remove the two drive shaft guards.

— Backoff the two bolts securing U-jointed drive shaft to bevel pinion and to splined input shaft; next, turn in U-jointed drive shaft until it uncouples from axle bevel pinion.

— Remove power steering cylinder and articulation pins; place a hydraulic jack centrally under housing and remove wheels.

— Place a stand under engine sump at front, remove front and rear axle pivots and, lowering jack, separate assy from tractor.

— Secure axle assy to universal stand, disconnect track rod then remove and drain oil from axle housing.

DISASSEMBLY

⚠ CAUTION ⚠

Handle all parts carefully. Do not put hands and fingers between parts. Wear safety goggles, shoes and gloves.

Servicing - Epicyclic final drives, wheel hubs and steering knuckles - Mods. 55-66DTF/60-66DTF/70-66DTF/80-66DTF.
Proceed as instructed in text and illustrations on pages 1 and 2, Sect. 401 for Mods. 466DT and 566DT.

Servicing-wheel, hub and steering knuckle Mods. 45-66DTV and 55-66DTV.
Overhaul may also be carried out with axle installed on tractor.
In this case, lock parking brake and place a stand at the center of axle housing.

Disassemble parts in the following order:

— Remove wheel hub side cover.

— Straighten lockwasher tab and backout hub bearing ring nut.

— Remove wheel hub.

— Remove steering knuckle bearings and knuckle carrier.

Replace worn bearings using suitable punches and universal pullers. Check seal efficiency.
Assemble axle parts referring to Figures on page 4, Sect. 402 for correct positioning and note the following:

⚠ CAUTION ⚠

Use suitable tools to align holes. DO NOT USE FINGERS OR HANDS.

— Before installing knuckle carrier, introduce the articulated wheel drive shaft in axle housing sleeve and lubricate bore of bushing (14, page 6) with **FIAT TUTELA MULTI F oil.**

— Adjust steering knuckle bearing pre-load as instructed in the applicable Section.

— Upon wheel hub assembly, pack all pockets with **Fiat TUTELA G9 grease;** finally, fit back the side cover.

Kingpin bearing adjustments - Mods. 55-66DTF/60-66DTF/70-66DTF/80-66DTF.
Proceed as instructed in text and illustrations on pages 2 and 3, Sect. 401 for Mods. 466 and 566.

Kingpin bearing adjustments - Mods. 45-66DTV and 55-66DTV
Proceed as follows:

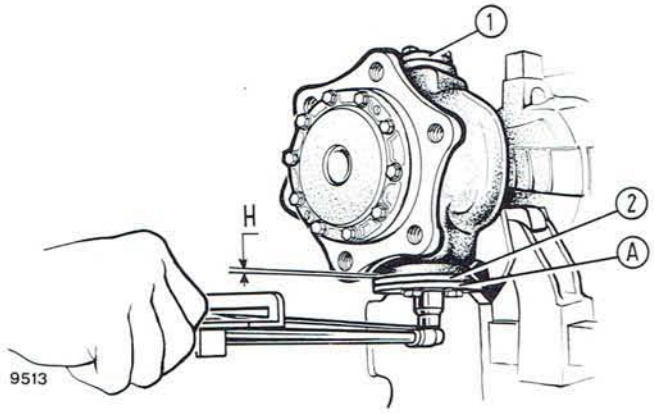
— Check bearing outer races fitted in axle housing and associated seals for wear; pack with **Fiat TUTELA G9 grease.**

— Remove lubricators from top and bottom covers.

— Install top cover (1, page 2) deprived of shims and tighten screws to specified torque.

— Install bottom cover (2, page 2) deprived of shims using three screws lubricated with engine oil.

— Tighten bottom cover screws in alternate sequence until the torque required to swing the knuckle carrier - checked with torque wrench applied to tool



Steering knuckle kingpin bearing pre-load adjustment shim thickness (S_3, page 4, Sect. 402) - Mods. 45-66DTV/and 55-66 DTV.

A. Tool **292220/3** for knuckle carrier swing torque check - H. Specified clearance between carrier and bottom cover - 1. Top cover - 2. Bottom cover.

292220/3 (A, page 2) is 18 to 22 Nm (1.8 to 2.2 kgm or 13 to 16 ft lb).

— Using a feeler gauge, measure the gap (H) between bottom cover and carrier alongside the screws.

— The arithmetical average of readings taken will provide the shim pack thickness (S_3, page 4, Sect. 402) to be fitted under bottom cover.

Partially slacken bottom cover screws, insert the shims and tighten screws to specified torque.

Swing carrier several times for proper bedding; then, using a torque wrench applied to tool **292220/3** (A) check that the torque required to swing the carrier is 18 to 22 Nm (1.8 to 2.2 kgm or 13 to 16 ft lb).
Add or remove shims if torque is higher or lower than specified, respectively.
Fit back lubricators in top and bottom covers and inject grease as required.

Wheel hub bearings adjustment - Mods. 55-66DTF/60-66DTF/70-66DTF/80-66DTF

Proceed as instructed in text and illustrations on pages 4 and 5, Sect. 401 for Mods. 466DT and 566DT.

Bevel drive differential unit servicing - Mods. 55-66DTF/60-66DTF/70-66DTF/80-66DTF

Proceed as instructed in text and illustrations on pages 7 and 8, Sect. 401 for Mods. 466DT and 566 DT.

Bevel drive gear adjustment - Mods. 55-66DTF/60-66DTF/70-66DTF/80-66DTF

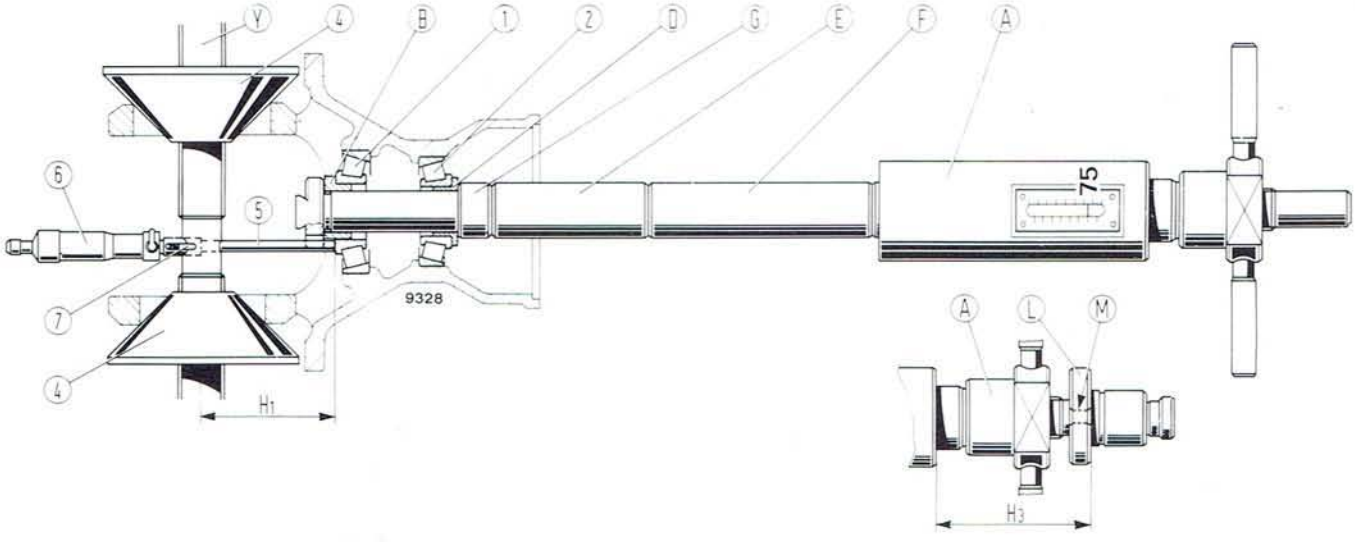
Proceed as instructed in text and illustrations on pages 8 thru 13, Sect. 401 for Mods. 466DT and 566DT.

Bevel drive gear adjustment - Mods. 45-66DTV and 55-66DTV

1. Bevel drive pinion assembly position adjustment and determination of associated shim thickness (S_2 page 4, Sect. 402) using universal gauge 293510 (Mods. 45-66DTV and 55-66DTV)

Proceed as follows:

— Install: bushings **293632** (B) and **293633** (D); also spacers **293625** (G) and **293619** (E) and **293620**



Thickness determination: bevel pinion bearing spacer (S_1, page 4, Sect. 401) and positioning shim (S_2), using universal gauge 293510 - Mods. 45-66DTV/55-66DTV.

A. Universal gauge **293510** - B. Bushing **293632** - D. Bushing **293633** - E. Spacer **293619** - F. Spacer **293620** - G. Spacer **293625** - H_1-H_3. Dimensions to be measured using depth gauge - L. Register **293624** - M. Register holes - Y. 4, 5, 6 and 7. Fixture **293400/1** - 1.-2. Taper roller bearings.

(F, page 2) on universal gauge **293510** (A). Fit gauge in pinion bearing cage complete with taper roller bearings (1 and 2) already lubricated with engine oil.

— Turn gauge handwheel to bring pointer gradually to 75 kg (165 lb) on scale; at the same time, rotate gauge to bed in the bearings.

— Fit universal gauge **293400** (Y) on differential cages (without bearings).

— Operate on cones (4) until spindle (5) lines up with slot in item (B) and, consequently, bearing inner race (1).

Note - On depth gauge (6) fit spindle marked «75-100».

— Gradually tighten cones (4) - either manually or using ring nut spanner **293446 -** and lock fixture in position by eliminating any end play.

— Lock gauge with screw (7) and measure dimension (H_1).

— Establish correct nominal dimension (H_2) between ring gear centerline and pinion back end:

$$H_2 = 98 \text{ mm} \pm C$$

where:
98 mm = Nominal distance from ring gear centerline to back of pinion.
C = Correction factor marked on pinion, in mm, and preceded by + or — if other than 0, to be added to or subtracted from the nominal dimension (98 mm) according to the indicated sign.

— Thickness of shim (S_2, page 4, Sect. 402) is given by:

$$S_2 = H_1 - H_2$$

where:
H_1 = Dimension read on depth gauge.
H_2 = Corrected nominal distance from ring gear centerline to back of pinion.

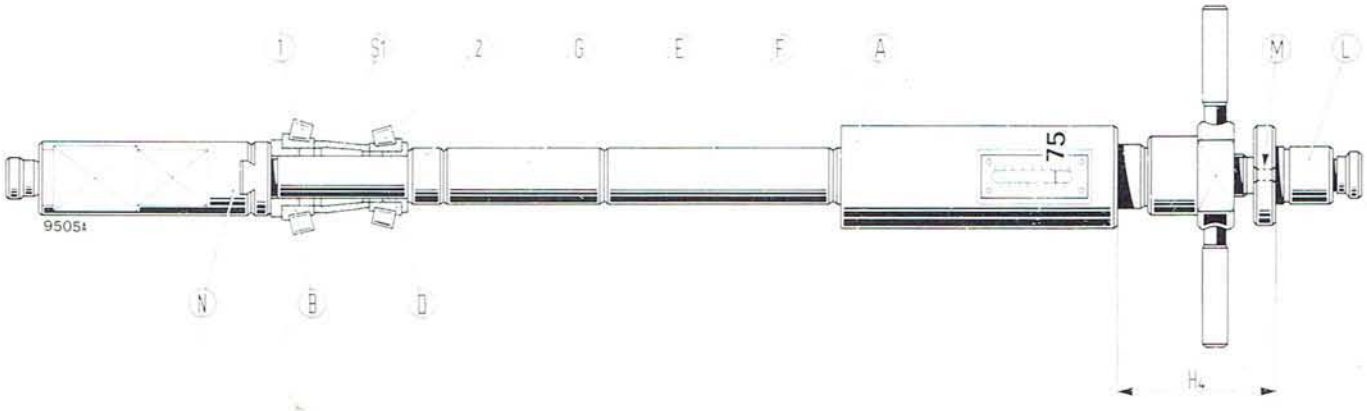
Example:
Depth gauge reading for H_1 = 98.5 mm
Nominal dimension for H_1 = 98 mm
Correction factor C = + 0.2 mm, then,
Corrected nominal dimension H_2 = 98 + 0.2 mm
Shim thickness S_2 = 98.5 — 98.2 = 0.3 mm
If Correction factor C = — 0.2 mm, then,
Corrected nominal dimension H_2 = 98 — 0.2 = 97.8 mm
Actual shim thickness S_2 = 98.5 — 97.8 = 0.7 mm
If correction factor C = 0 mm, then,
Corrected nominal dimension H_2 = 98 mm
Actual shim thickness S_2 = 98.5 — 98 = 0.5 mm

2. Bevel drive pinion bearing adjustment and determination of associated shim thickness S_1, page 4, Sect. 402) using universal gauge 293510 (Mods. 45-66DTV and 55-66DTV)

Proceed as follows:

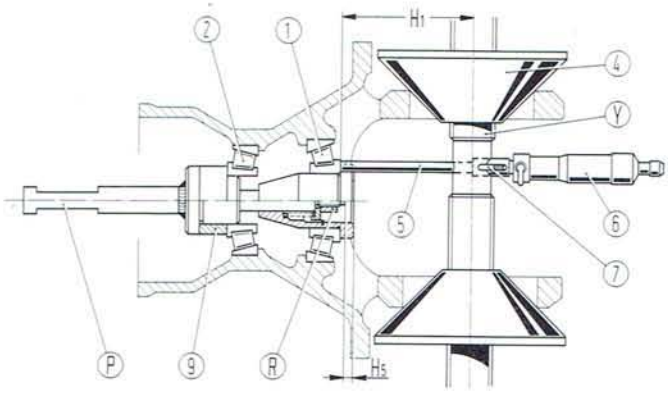
— After having determined shim thickness (S_2) install on universal gauge (A, page 2) register **293624** (L) and line up holes (M) with flats on handwheel (detail a).

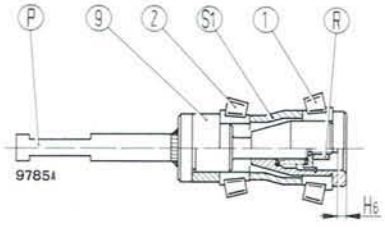
— Using a depth gauge, measure dimension (H_2) thus obtained.



Determining bevel pinion bearing spacer thickness (S_1 page 4, Sect. 402) using universal gauge 293510.

A. Universal gauge **293510 -** B. Bushing **293632** - D. Bushing **293633** - E. Spacer **293610** - F. Spacer **293620** - G. Spacer **239625 -** H_4. Dimension to be measured using depth gauge - L. Register **293624** - M. Register holes - N. Vise adapter **293617** - S. Spacer, bearing adjustment - 1 and 2. Bearing cones.





Thickness determination: bevel pinion bearing spacer (S_1, page 4, Sect. 402) and positioning shim using special purpose tool 293752 - Mods. 45-66DTV and 55-66DTV.

H_1, H_5, H_6. Dimensions to be measured using depth gauge - P. Special purpose tool **293752** - R. Tool nut - S_1. Bearing adjustment spacer - Y., 4., 5., 6., and 7. Fixture **2934001/1** - 1. and 2. Taper roller bearings - 9. Spacer for tool **293752**.

— Remove universal gauge (A, page 2), from pinion bearing cage and assemble on test bench, adding adapter **293617** (N, page 3) for fixing in vise; insert spacer (S_1) on bevel drive pinion and bearing inner races (1 and 2), locating them as shown in Fig. on page 3.

— Bring gauge scale pointer back to 75 kg (165 lb) and, proceeding as directed earlier, determine dimension (H_4, page 3).

— Bevel drive pinion bearing adjustment spacer thickness will be given by:

$$\text{Spacer thickness} = H_4 - H_3 + S_2$$

where:

S_2 = Bevel pinion positioning shim thickness established earlier.

If necessary, round off to the nearest 0.1 mm (0.004 in) up.

3. Bevel drive pinion positioning/bearing adjustment and associated shim (S_1 and S_2, page 4, Sect. 402) thickness determination, using special purpose tool 293752 - Mods. 45-66DTV and 55-66DTV.

Proceed as follows:

— Install tool **293752** (P) with spacer (9) on pinion cage complete with taper roller bearings (1 and 2) already lubricated with some engine oil.

— Fully tighten nut (R) at same time turning the gauge to ensure proper bearing bedding.

— Fit universal gauge **293400** (Y) on differential carrier deprived of bearings.

— Turn in or out as required the gauge cones (4) to position spindle (5) in the direction of bearing inner race (1) thus eliminating any end play between cones (4) and differential bearing caps.

Note - On depth gauge (6) fit spindle marked 75 to 100.

— Lock gauge with screw (7) and measure dimension (H_1).

— Establish correct nominal dimension (H_2) between ring gear centerline and pinion back end.

$$H_2 = 98 \pm C$$

where:

98 mm = Nominal distance from ring gear centerline to back of pinion.

C = Correction factor marked on pinion, in mm, and preceded by + or — if other than 0, to be added to or subtracted from the nominal dimension (98 mm) according to the indicated sign.

— Thickness of shim (S_2, page 4, Sect. 402) is given by:

$$S_2 = H_1 - H_2$$

where:

H_1 = Dimension read on depth gauge.

H_2 = Corrected nominal distance from ring gear centerline to back of pinion.

— After having determined thickness of shim (S_2), using a depth gauge measure also distance (H_5, page 4) from top face to tool (P) plunger end.

Next, proceed as follows:

— Remove tool (P, page 4) from bevel pinion bearing cage and assemble on test bench adding adjustment spacer (S_1, page 4) on bevel pinion and adjustment shims for bearings (1 and 2) located as shown in Figure on page 4..

— Tighten nut (R, page 4) fully in then measure (distance H_6) with depth gauge.

— Bevel drive pinion bearing adjustment spacer thickness will be:

$$\textbf{Spacer thickness} = H_5 - H_6 + S_2$$

where:

S_2 = Bevel pinion positioning shim thickness established earlier.

If necessary, round off to the nearest 0.1 mm (0.004 in) up.

4. Differential bearing adjustments and bevel drive backlash check

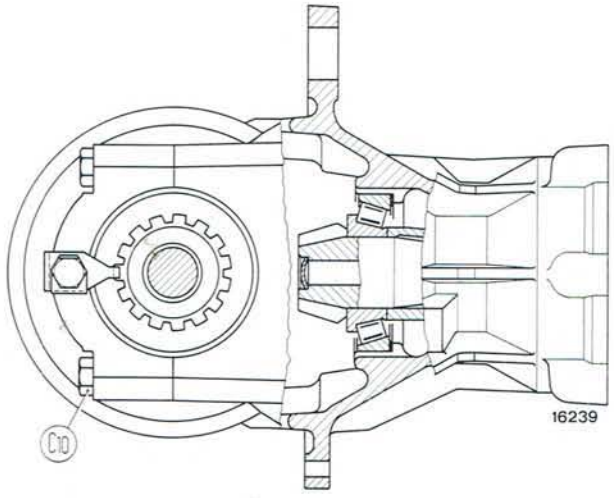
Proceed as follows:

— With assembled bevel pinion, install differential unit in carrier making sure that ring gear does not force on pinion, tighten bearing cap screws (C_{10}) to 59 Nm (6 kgm or 43.4 ft lb), then slacken and re-tighten to 20 Nm (2 kgm or 14.5 ft lb).

— Lubricate ring gear bearings, rotate bevel drive set while tightening LH ring nut (Gs, page 6, Sect. 402) using special spanner **293544** until a torque of 1.8-2.3 Nm (0.18 to 0.24 kgm or 13 to 17 ft lb) is obtained: check this condition by winding a string around ring gear retaining screws and pulling with a spring balance (dynamometer). The specified revolving torque is equivalent to a force of 24 to 34 Nm (2.5 to 3.5 kg or 5.5 to 7.7 lb) read on balance.

— Determine ring gear backlash by applying a dial gauge (reading to 1/100) perpendicularly to the outer face of a ring gear tooth.

— Repeat the measurement in other two offset positions, 120° apart, and compare the average value of the three readings taken with the specified nominal value of 0.15 to 0.20 mm (0.06 to 0.008 in) averaging 0.18 mm (0.007 in).



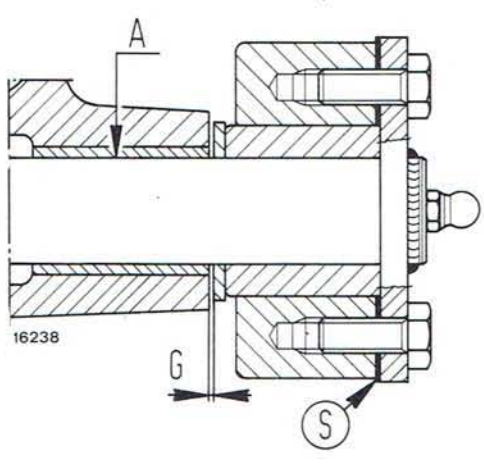
Differential bearing adjustment and bevel drive backlash checks.

C_{10}. Differential carrier bearing cap screws.

If backlash value falls outside the specified tolerance range, back off one ring nut and turn in the other by the same amount to restore axial pre-load and obtain specified backlash.

Axle center swing pivot pin installation - Mods. 45-66DTV and 55-66DTV.

Upon installation of axle articulation pivot, lubricate inner surfaces (A) of bushings press fitted in axle housing with **Fiat TUTELA MULTI F oil.** Fit shim packs (S) under retaining screw heads as required to provide the specified clearance (G) of 0.6 to 0.8 mm (0.024 to 0.031 in).



Axle center swing pivot pin installation - Mods. 45-66DTV and 55-66DTV.

A. At assembly, lubricate bush bore surfaces with **Fiat TUTELA MULTI F oil** - G. = 0.6 to 0.8 mm or 0.024 to 0.031 in) - S. Shim packs (single shim thickness = 0.2 mm 0.008 in).

DRIVE SHAFT

Removal

Mods. 45-66DTV and 55-66DTV

For U-jointed drive shaft removal, proceed as follows:

— Take off the two shaft guards.

— Back off the two screws securing shaft to the axle bevel drive pinion and to axle drive splined input shaft, then turn in the U-jointed shaft until it uncouples from axle bevel pinion.

Mods. 55-66DTF/60-66DTF/70-66DTF/80-66DTF

For drive shaft removal, proceed as follows:

— Back off center bearing screws (C_{12}, page 1, Sect. 402, for mods. 55-66DT/60-66DT/70-66DT/80-66DT) remove retaining rings (28 and 31) from their seats and pull out drive shaft (30), shifting splined sleeves (27 and 33) inwards.

Installation

Mods. 45-66DTV and 55-66DTV

For U-jointed shaft installation, proceed as follows:

— Fit shaft rear end first on axle drive housing driven shaft then the shaft front end onto the front axle bevel pinion.

— Turn in shaft to adjust its length which is correct when the two retaining bolts (31 and 32, page 4) fit exactly into their respective seats in bevel pinion and in axle drive input shaft.

Mods. 45-66DTF/60-66DTF/70-66DTF/80-66DTF

Re-install drive shaft in respective seats and adjust as follows:

— Bring axle housing into full contact with axle pivot rear support (25, Sect. 402, for Mods. 55-66DT/60—66DT/70-66DT/80-66DT) to take up any support end play; position front splined sleeve (27) against retaining ring (28). Using a feeler gauge, measure the gap formed between sleeve and retaining ring (26), then install shim (S_5) to provide a sleeve end play (L) of 1 to 1.5 mm (0.04 to 0.06 mm).

AXLE DRIVE

Removal

For axle drive removal from tractor, proceed as follows.

— Remove the drive shaft as instructed in previous paragraph.

— Drain oil from rear drive housing and, preferably, also from front axle drive housing.

— Disconnect vertical link from outer lever, back off screws (C_{13}) and take down axle drive housing.

Disassemble the drive unit on bench as follows:

— Remove roll pin (45) using a suitable punch, pull out intermediate shaft (46) and remove associated gear (48) along with needle roller bearing (47) and thrust washers.

— From outside of axle drive housing remove dust ring (38), seal (39), retaining ring (40) and driven shaft (43) with attached ball bearing and oil slinger.

— From axle drive housing, take out FWD control sleeve (50) driven gear (42) complete with thrust washers.

— Take out ball bearing (44) by first removing axle drive housing rear cover (Mods. 45-66DTV and 55-66DTV) or by using a suitable slide hammer puller (Mods. 55-66DTF/60-66DTF/70-66DTF/80-66DTF). Check ball bearing efficiency and thrust washers for wear.

If necessary, scrap and replace seal (39) using protector **293836** during installation.

Installation

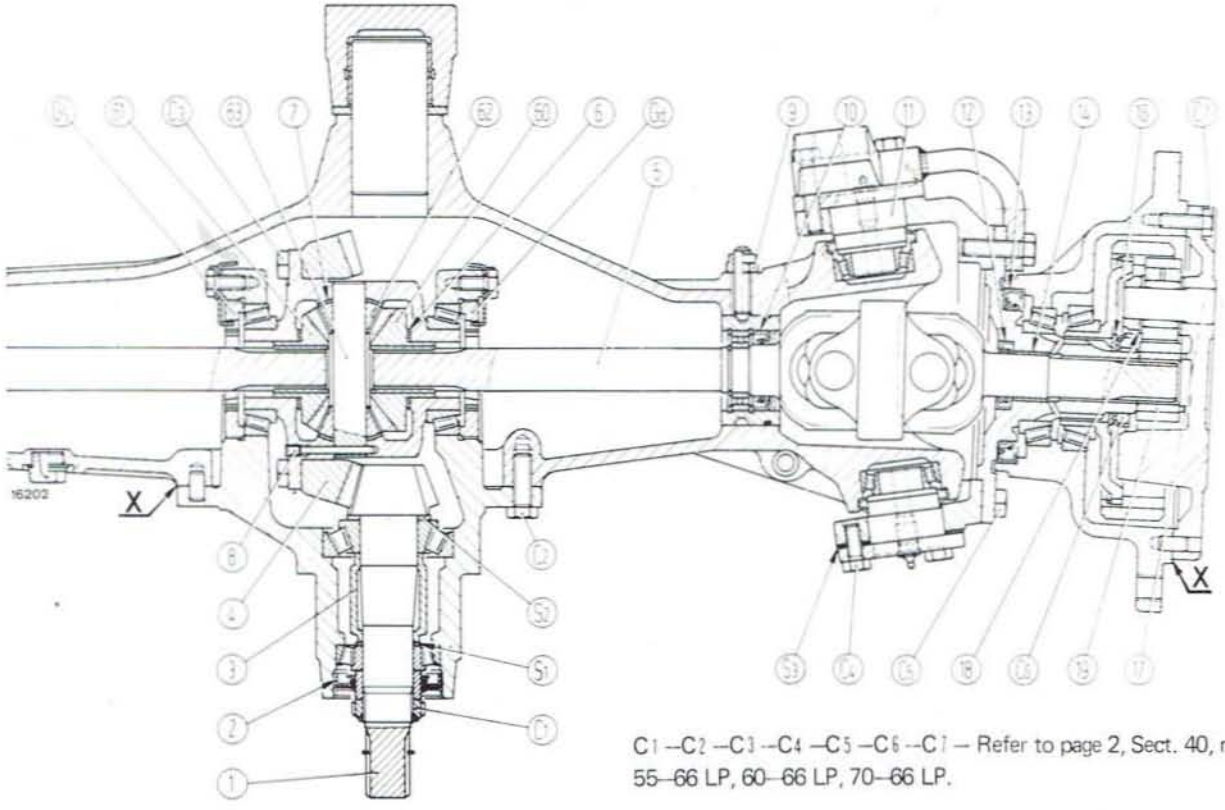
Reverse the removal procedure sequence and refer to the Figures on pages 2, 3 and 4.

Preferably fit a new dust ring (38) taking care to prevent distortion during assembly.

Before front axle drive housing installation on rear drive housing, accurately clean and degrease mating faces and apply a 2 mm (0.08 in) thick bead of jointing compound as shown in Figure on page 1, Sect. 402 for Mods. 466/566/666/766.

For jointing compound grades, refer to page 6, Sect. A - Mods. 466/566/666/766.

FRONT WHEEL DRIVE: Sections



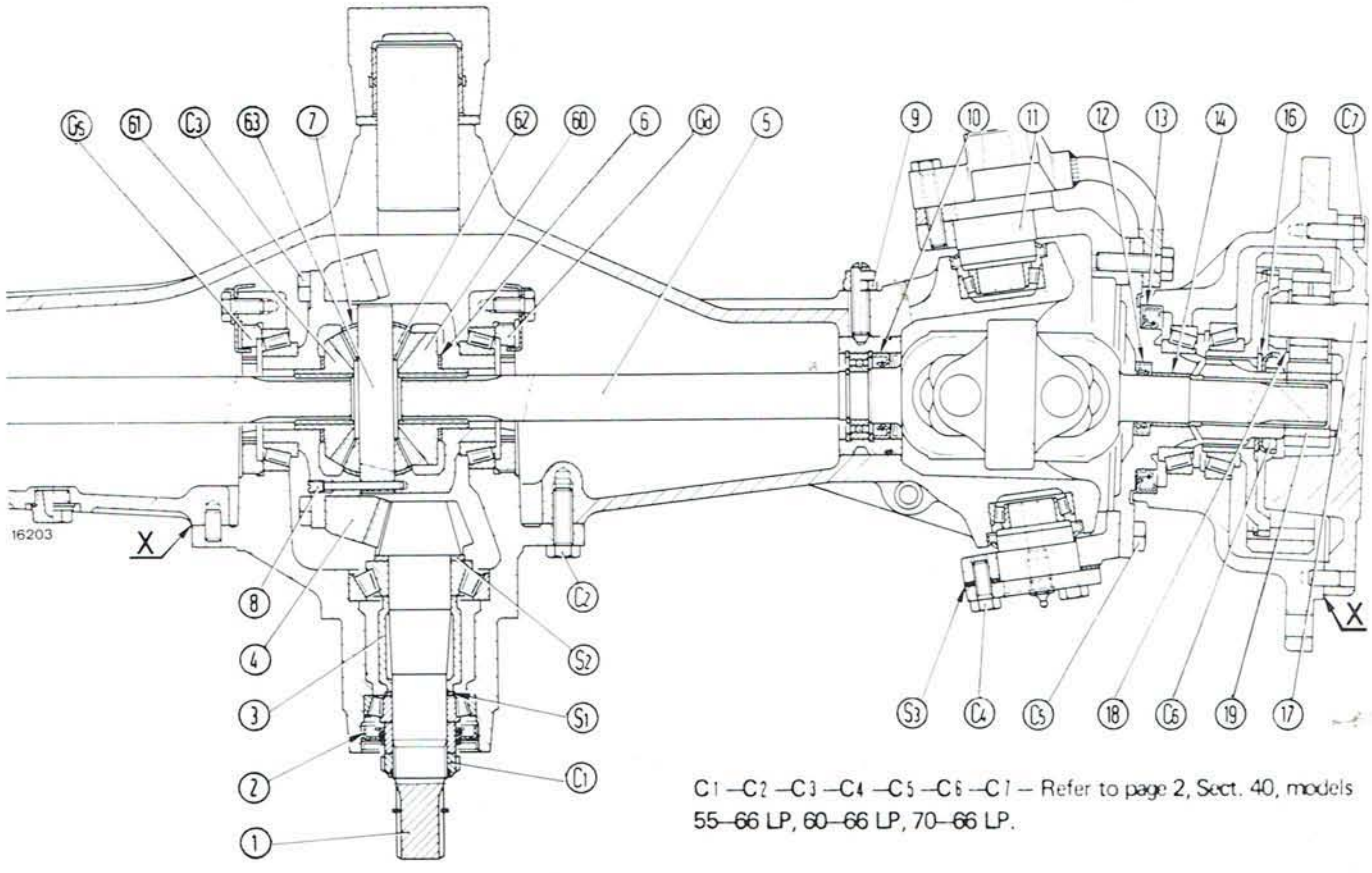
C1 –C2 –C3 –C4 –C5 –C6 –C7 – Refer to page 2, Sect. 40, models 55–66 LP, 60–66 LP, 70–66 LP.

Live front axle section - Mod. 55-66 DTF.

Note - On assembly, thoroughly clean and degrease mating faces **X** and apply one of jointing compounds listed on page 6, Sect. A, for Mods. 466/566/666/766.

Important - For front axle center swing pivot section refer to illustration and legend on page 1, Sect. 402 for Mods. 55-66DT/60-66DT/70-66DT/80-66DT. For axle drive assy section refer to illustration and legend on page 2, Sect. 402, for Mod. 45-66.

C_1. Bevel pinion bearing ring nut - C_2. Differential carrier screw - C_3. Bevel ring gear screw - C_4. King pin screws - C_5. Steering knuckle screw - C_6. Wheel hub bearing ring nut - C_7. Final drive housing screw - Gd and Gs. R.H. and L.H. differential bearing ring nuts - S_1. Bevel pinion bearing shim - S_2. Bevel pinion position shim - 1. Bevel pinion - 2. Seal - 3. Bevel pinion bearing spacer - 4. Ring gear - 5. Axle shaft with universal joint - 6. Side gear washers - 7. Differential pinion washers - 8. Differential pinion journal screw - 9. Bearing cage screw - 10. Seal - 11. King pin bearing - 12 and 13. Seals - 14. Axle shaft bushings - 16. Thrust washer - 17. Final drive planet wheel journals - 18. Final drive planet wheel shims - 19. Final drive sun gear - 60./61. Differential side gears - 62. Differential pinion - 63. Differential pinion journal.



C1 –C2 –C3 –C4 –C5 –C6 –C7 – Refer to page 2, Sect. 40, models 55–66 LP, 60–66 LP, 70–66 LP.

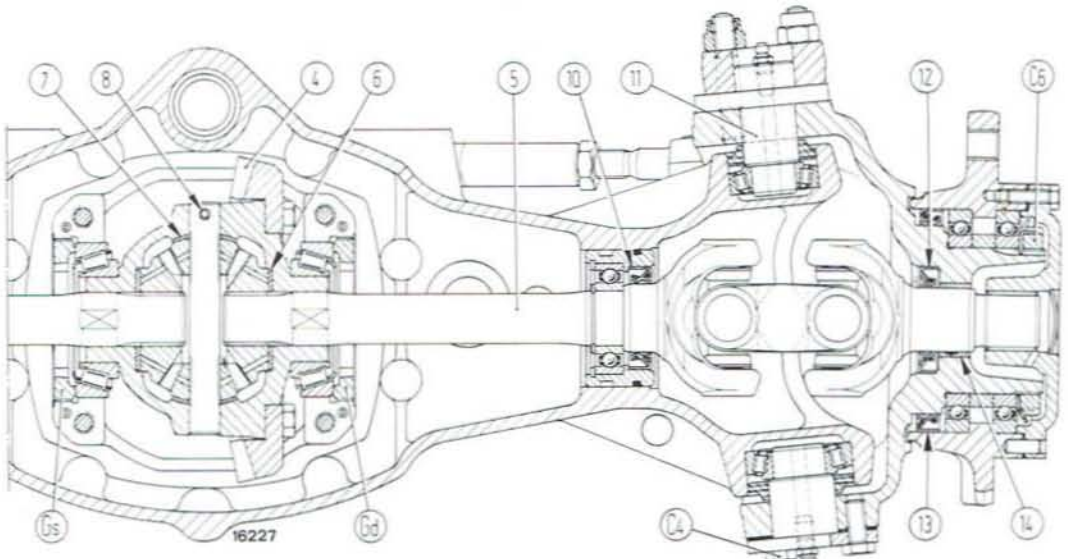
Live front axle section - Mods. 60-66DTF/70-66DTF/ 80-66DTF.

Note - On assembly, thoroughly clean and degrease mating faces **X** and apply one of the jointing compounds listed on page 6, Sect. A, for Mods. 466/566/666/766.

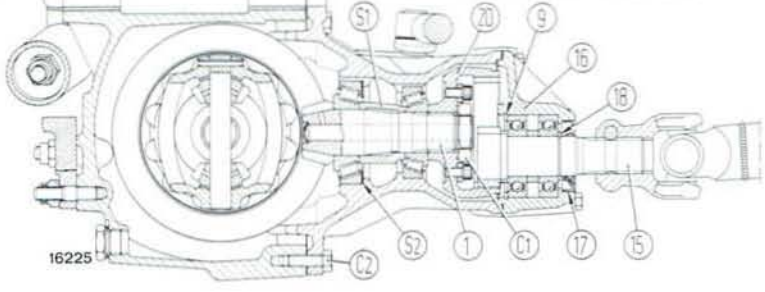
Important - For the sections through front axle center swing pivot, axle drive housing and axle drive shaft, refer to illustration and legend on page 1, Sect. 402, for Mods. 55-66DT/ 60-66DT/70-66DT/80-66DT.

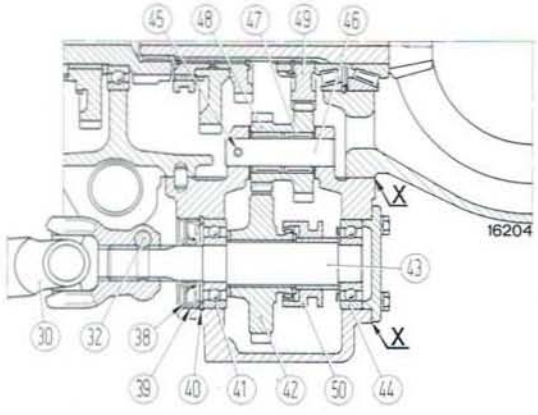
C_1. Bevel pinion bearing ring nut - C_2. Differential carrier screw - C_3 Bevel ring gear screw - C_4. King pin screws - C_5. Steering knuckle screw - C_6. Wheel hub bearing ring nut - C_7. Final drive housing screw - Gd./Gs. RH and LH differential bearing ring nuts - S_1. Bevel pinion bearing shim - S_2. Bevel pinion positioning shim - 1. Bevel pinion - 2. Seal - 3. Bevel pinion bearing spacer - 4. Bevel ring gear - 5. Axle shaft with universal joint - 6. Side gear washers - 7. Differential pinion washers - 8. Differential pinion journal to case screw - 9. Bearing cage screw - 10. Seal - 11. King pin bearing - 12. and 13. Seals - 14. Axle shaft bushings - 16. Thrust washer - 17. Final drive planet wheel journals - 18. Final drive planet wheel shims - 19. Final drive sun gear - 60./61. Differential side gears - 62. Differential pinion - 63. Differential pinion journal.

FRONT WHEEL DRIVE: Sections



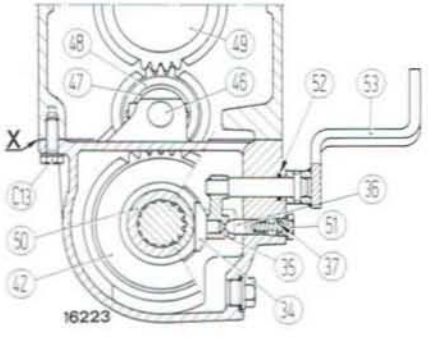
C1 – M 30 x 1,5 – 245 Nm (25 kgm)
C2 – M 10 x 1,5 – 40 Nm (4,1 kgm)
C3 – M 10 x 1,25 – 61 Nm (6,2 kgm)
C4 – M 10 x 1,5 – 40 Nm (4,1 kgm)
C5 – M12 x 1,75 – 65 Nm (6,7 kgm)
C6 – M 85 x 2 – 392 Nm (40 kgm)





Longitudinal sections through live front axle, center swing pivot, axle drive and drive shaft - Mods. 45-66DTV and 55-66DTV.

Note - On assembly, thoroughly clean and degrease mating faces **X** and apply one of the jointing compounds listed on page 6, Sect. A, for Mods. 466/566/666/766.



C_1. Bevel pinion bearing ring nut - C_2. Differential carrier screw - C_3. Bevel ring gear screw - C_4. King pin screws - C_6. Wheel hub bearing ring nut - Gd/Gs. RH and LH differential bearing ring nuts - S_1. Bevel pinion bearing adjustment spacer - S_2. Bevel pinion positioning shim - S_3. King pin bearing shims - 1. Bevel pinion - 4. Bevel ring gear - 5. Axle shaft with universal joint - 6. Side gear washers - 7. Differential pinion washers - 8. differential pinion journal to case screw - 10. Seal - 11. King pin bearing - 12. and 13. - Seals - 14. Axle shaft bushings - 15. Final drive pinion - 16. Flange - 17. Seal - 18. and 19. Retaining rings - 20. Final drive ring gear - 30. U-jointed drive shaft - 31. and 32. Bolts - 34. Shoe - 35. Inner relay lever - 36. Plunger - 37. Spring - 38. Dust ring - 39. Seal - 40. Retaining ring - 41. Ball bearing - 42. Driven gear - 43. Splined driven shaft - 44. Ball bearing - 45. Roll pin - 46. Intermediate shaft - 47. Needle roller bearing - 48. Intermediate gear - 49. Drive gear keyed on bevel pinion - 50. FWD engagement sleeve - 51. Plug - 52. O-ring - 53. Axle drive control lever - 60./61. Side gears - 62. Differential pinion - 63. Differential pinion journal.

LIFT ADJUSTMENTS - MODS. 45-66V/55-66V/ 55-66F

The following adjustments refer to a lift deprived of its hydraulic control valve and installed on a work bench or secured to a rotary service stand through a suitable bracket.

If carried out, adjustments must follow the description order.

With lift installed on tractor, only lift arm upward travel adjustments are possible.

1. Position control adjustment - Mods. 45-66V/ 55-66V/55-66F.

Proceed as follows:

— Locate outer position control lever (5) fully forward against limit spacer.

— Rotate cross shaft to bring inner arm in contact with lift body.

— Using wrench **293844/1** (C) slacken associated jam nut (10) and back off travel adjusting screw (6) until screw is no longer in contact with control valve lever (7).

— Install tool **293846** (A) on lift body.

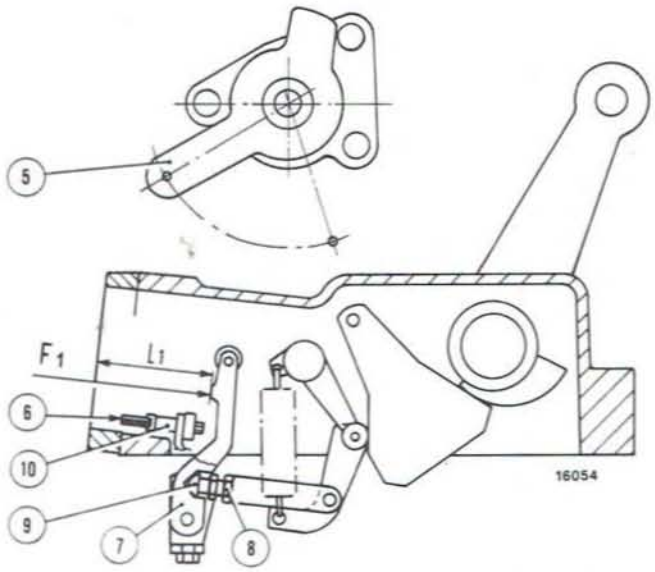
— Using two wrenches, unscrew jam nut (8) and turn in or out adjustable link rod (9) so that plunger (P) is perfectly in line with outer register (R_1) of tool (A).

Note - This condition corresponds to a gap (L_1) of 82 to 82.1 mm (3.22 to 3.23 in) between lever (7) and lift body front face measured by applying a force (F_1) of 4 to 4.5 daN (kg) (9 to 10 lb) to lever end.

— Tighten jam nut (8).

— Rotate cross shaft to bring piston fully forward and check that plunger (P_1) of tool **293846** is retracted by 1.3 to 1.7 mm (0.0512 to 0.0670 in) with respect to register (R_2) of same tool.

Note - This condition corresponds to a gap (L_1) of 86.3 to 86.7 mm (3.398 to 3.413 in) between lever end and lift body front face, measured by applying a force of 4 to 4.5 daN (kg) (9 to 10 lb) to lever end.



Lift position control adjustment - Mods. 45-66V/55-66V/ 55-66F.

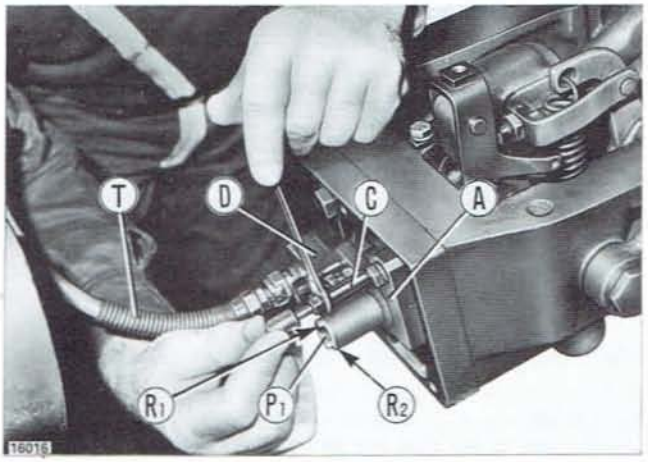
F_1 = 4 to 4.5 daN (kg) (9 to 10 lb). Force appied by tool **293846** on lever (7) - L_1. Distance between end of lever (7) and lift body front face - 5. Outer position control lever - 6. Travel limit adjusting screw - 7. Control valve lever - 8. Jam nut - 9. Adjustable link rod - 10. Travel limit adjusting screw socket head jam nut.

2. On-bench max lift arm travel adjustment - Mods. 45-66V/55-66V/55-66F

Proceed as follows:

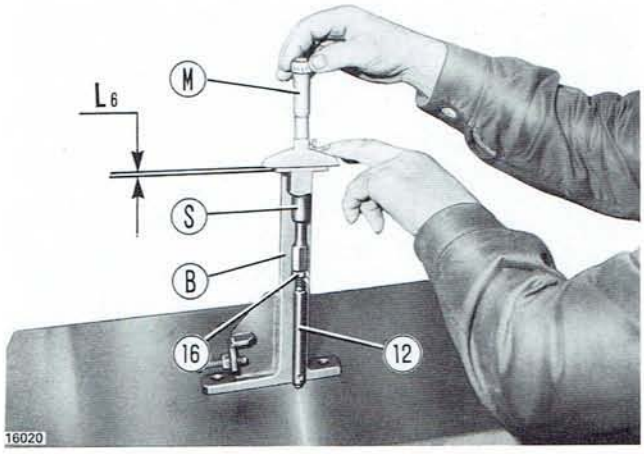
— With tool **293846** (A) installed on lift body, fit connection **293872** (D).

— Locate outer position control lever (5) fully forward against limit spacer.



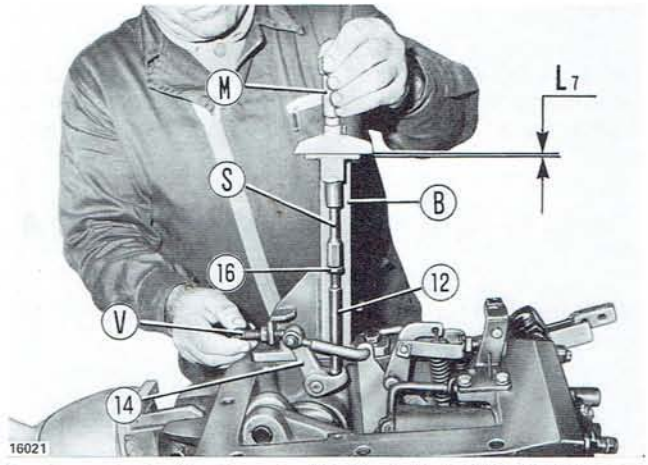
On-bench adjustment of max lift arm travel - Mods. (45-66V/55-66V/55-66F).

A. Tool **293846** - C. Wrench **293844/1** - D. Connection **293872** - P_1. Plunger of tool (A) - R_1. Outer register, tool (A) - R_2. Inner register tool (A) - T. Compressed air line.



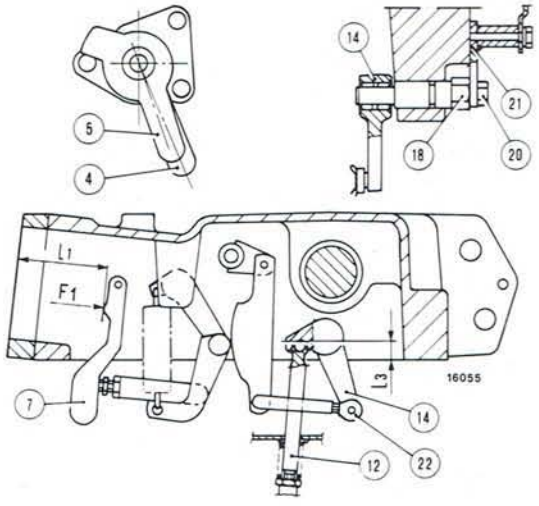
Zeroing tool 292541 (B) for draft control adjustment - Mods. 45-66V/55-66V/55-66F.

L_6. Gap between top of spindle (S) and depth gauge support face - M. Depth gauge - S. Spindle for tool **292541** - 12. Draft control rod - 16. Jam nut.



Draft control adjustment - Mods. 45-66V/55-66V/55-66F.

B. Tool **292541** - L_7. Gap between spindle top face and tool face resting on depth gauge - M. Depth gauge - S. Spindle, tool **292541** - V. Screw, tool **292541** - 12. Draft control rod - 14. Draft control inner lever - 16. Jam nut.



Draft control adjustment - Mods. 45-66V/55-66V/55-66F.

F_1. 4 to 4.5 daN (kg) (9 to 10 lb). Force applied to lever (7) by tool **293846** - L_1 = 81.9 to 82.1 mm (3.22 to 3.23 in). Distance between end of lever (7) and lift body front face - L_3 = 22.9 to 23.1 mm (0.901 to 0.909 in). Distance between lift body mating face at drive housing and face of rod (12) in contact with lever (14) - 4. Draft control outer lever - 5. Position control outer lever - 7. Control valve actuating lever - 12. Draft control rod - 14. Draft control inner lever - 18. Cam pin - 20. Screw - 21. Bracket - 22. Draft control adjustable link.

— Rotate cross shaft to bring inner arm in contact with lift body.

— Couple connection **293872** (D, page 1) to Shop compressed air source (T) and introduce air in cylinder barrel so that piston is forced to move its full lift stroke and maintain air pressure to hold piston in this position.

— Using wrench **293844/1** (C) turn in screw (6, page 1) until the end of plunger (P_1) is retracted by 1.3 to 1.7 mm (0.0512 to 0.0670 in) with respect to register (R_2, page 1) of tool **293846** (A).

Note - This condition corresponds to a gap (L_1) of 86.3 to 86.7 mm (3.398 to 3.413 in) between end of lever (7) and lift body front face.

— Lock socket head jam nut (10).

3. Draft control adjustment - Mods. 45-66V/55-66V/55-66F

Proceed as follows:

— Remove end piece of draft control rod (12) and fit on spindle (S) of tool **292541** and secure by jam nut (16).

— Place tool **292451** (B) complete with its spindle (S) and end piece of draft control rod (12) on a surface plate and measure gap (L_6) between spindle top face and face of depth gauge resting on tool (always turn in rod 12 onto spindle so that the spindle face is in all cases retracted a few mm with respect to the depth gauge resting face).

— With tool **293846** (A, page 1) installed on lift body and disconnected from Shop compressed air source, move both draft control and position control outer levers (4 and 5, page 2) fully back against respective limit spacers.

Next:

— Locate cam pin (18, page 2) securing the draft control inner lever, in a horizontal position with cam side facing lift body rear end.

— Install tool **292541** (B, page 2) on lift body and secure to two housing holes as shown (see Fig. on page 2). Turn screw (V) to move draft control inner lever (14) until the end of plunger (P_1, page 1) is located as near as possible to inner register (R_2) of tool **293846** (A).

— Rotate slightly cam pin (18, page 2) to retract as far back as possible the end of the plunger of tool **293846.**

— By means of screw (V, page 2) operate on draft control inner lever (14) until the end of plunger is brought in line with inner register (R_2) of tool **293846** (A, page 1).

— Finally, turn cam pin (18, page 2) some more until the end of plunger is located in line with outer register (R_1, page 1).

— Insert the spindle of tool **292541** (B, page 2) in the seat provided in draft control inner lever (14).

— With plunger of tool **293846** set in line with outer register (R_1) turn as required the adjustable link (22, page 2) then measure with depth gauge (M, page 2) distance (L_7) between spindle top face and gauge face resting on tool **292541**.

— Distance (L_7, page 2) shall be:

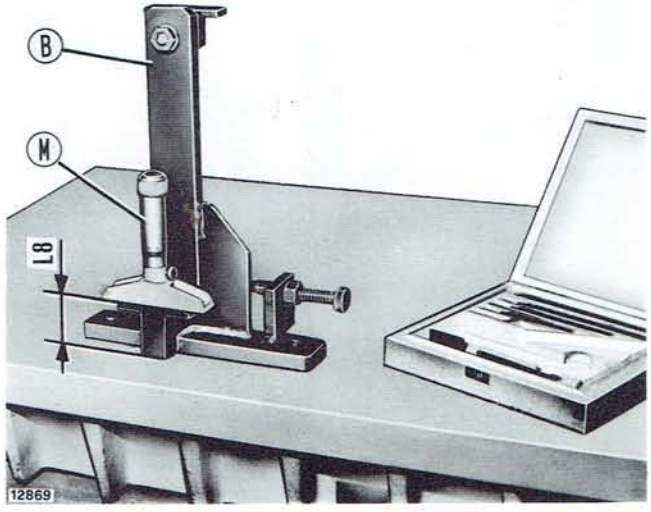
$$L_7 = L_6 + L_3$$

where:

L_6 = Distance measured with tool **292541** on a surface plate.

L_3 = **22.9 to 23.1 mm (0.901 to 0.090 in)**. Distance between lift body mating face at drive housing and face of rod (12, page 2) in contact with lever (14).

Note - This condition corresponds to a distance (L_1, page 2) of 81.9 to 82.1 mm (3.22 to 3.23 in) between end of lever (7) and lift body front face, measured by applying a force of 4 to 4.5 daN (9 to 10 lb) to lever (7).



Zeroing tool 292541 (B) for draft control adjustment - Mods. 45-66V/55-66V/55-66F.

L_8. Distance between tool rest face on surface plate and depth gauge rest face on tool (this dimension shall be marked on tool) - M. Depth gauge.

IMPORTANT - Check that with plunger (P_1) exactly in line with outer register (R_1) of tool **293846** (A) distance (L_7, page 2) is as follows:

$$L_7 = L_6 + L_3$$

where:

L_6 = Distance measured with tool **292541** on a surface plate.

L_3 = **22.9 to 23.1 mm (0.901 to 0.903 in).** Distance between lift body mating face at drive housing and face of rod (12) in contact with lever (14).

Should these conditions fail to check, turn as required cam pin (18, page 2) and knurled screw (V) of tool **292541** until specified conditions are met.

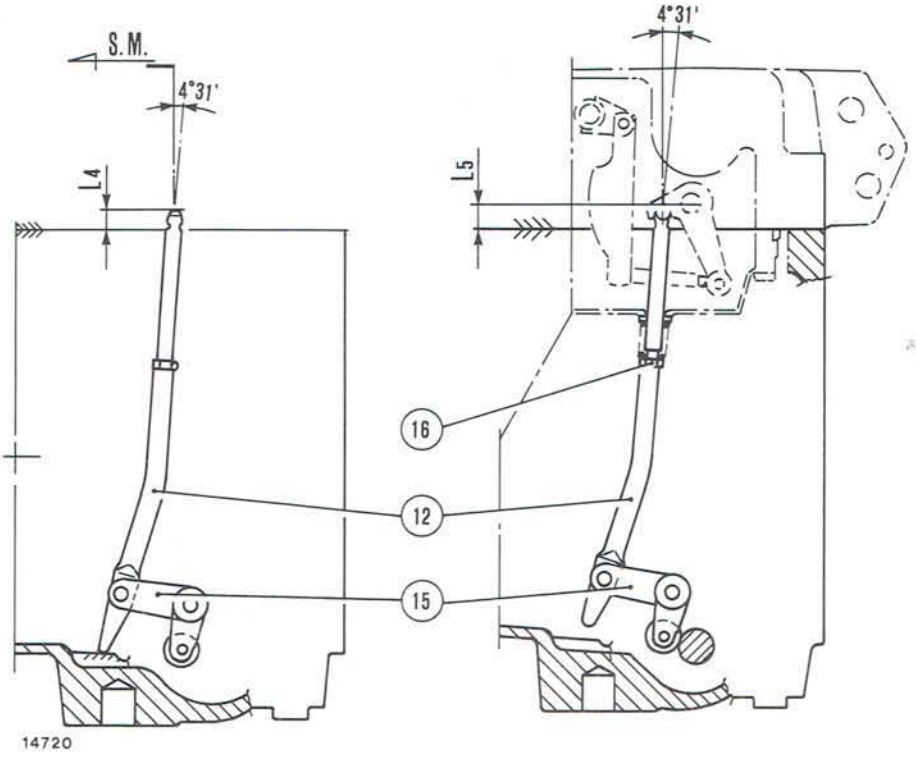
— Turn in screw (20, page 2) so that cam pin (18) is locked with bracket (21).

— Remove tools **293846** and **292541** and fit hydraulic control valve on lift body.

Next, install lift unit on tractor, proceeding as described in the following paragraphs.

IMPORTANT - First place tool **292541** on a surface plate and, using depth gauge (M), measure distance (L_8) between tool rest face on plate and depth gauge rest face on tool.
This dimension (L_8) shall be marked on tool.

HYDRAULIC LIFT UNIT: Lift



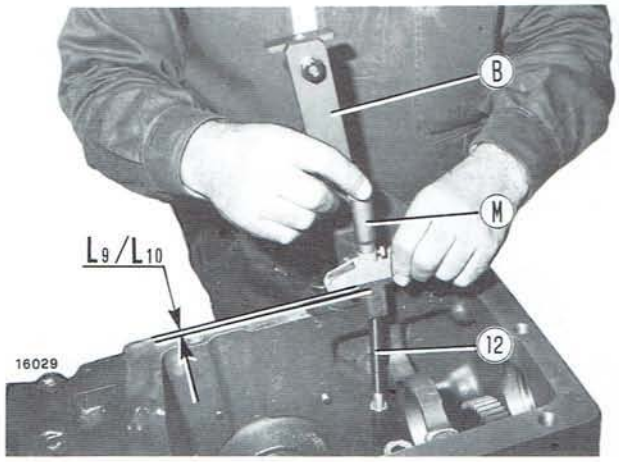
Draft control adjustment - Mods. 45-66V/55-66V/55-66F.

L_4. Proudness of rod (12) top end over drive housing top face (sensing bar removed) - L_5. Proudness of rod (12) top end over drive housing top face (sensing bar installed) - S.M. Travel direction - 12. Draft control rod - 15. Draft control relay lever - 16. Jam nut.

— Install relay lever (15, page 8) with draft control rod (12) on rear drive housing.

— Rest relay lever (15) on the stop provided in rear drive housing, then install tool **292541** securing it to two housing holes in such a way that draft control rod (12) fits perfectly into hole on tool as shown below.

— Using depth gauge (M) measure distance (L_9) between top of rod (12) and face of depth gauge resting on tool.



Draft control adjustment.

B. Tool **293541** - L_9. Distance from top of rod (12) to depth gauge face resting on tool (sensing bar removed) - L_{10}. Distance from top of rod (12) to depth gauge face resting on tool (with sensing bar installed) - M. Depth gauge - 12. Draft control rod.

Note - Proudness (L_4) of rod (12) top end over drive housing top face (with sensing bar removed) will be given by:

$$L_4 = L_8 - L_9$$

where:

L_8 and L_9 = Dimensions measured with tool **252541** placed on surface plate (L_8, page 3) or on drive housing (L_9).

— Install the sensing bar and measure the new distance (L_{10}) between rod (12) top end and face of depth gauge resting on tool.

Note - Proudness (L_5) of rod (12) top end over drive housing top face (with sensing bar installed) will be given by:

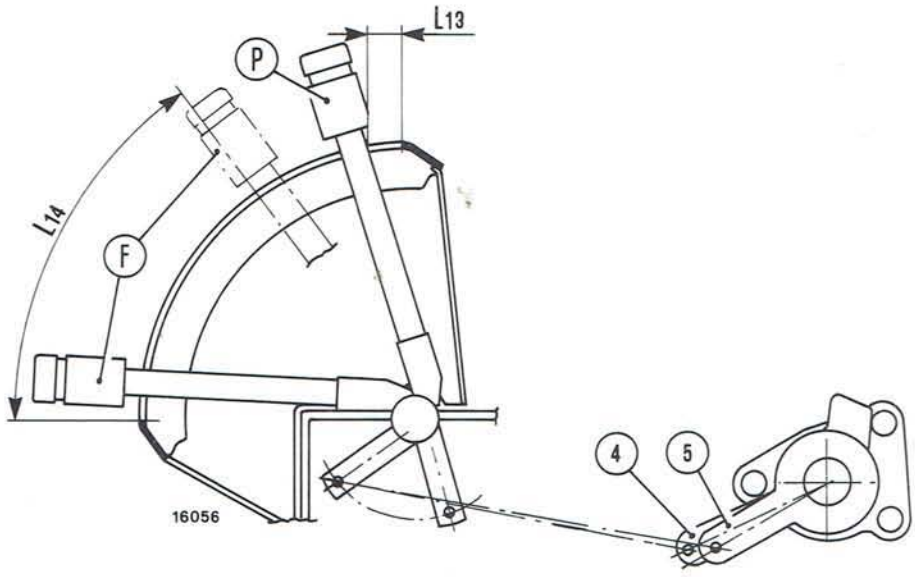
$$L_5 = L_8 - L_{10}$$

where:

L_8 and L_{10} = Dimensions measured with tool **292541** placed on surface plate (L_8, page 3) or on drive housing (L_{10}).

— Check that dimension (L_5) exceeds (L_4) by not less than 5 mm (0.20 in).

— Slacken jam nut (16) and adjust the length of draft control rod to obtain a new proudness (L_5) determined on tool **292541** - over drive housing top face as follows:



Adjusting position and draft control rod linkage - Mods. 45-66V/55-66V/55-66F.

F. Draft control lever - L_{13} = 15 mm (0.59 in). Clearance between end of quadrant slot and stalk rearmost edges of levers (F and P) - L_{14} = 165 to 175 mm (6.5 to 6.9 in). Clearance between slot front end and front most edge of lever (F) - Position control lever - h. Draft control outer relay lever - 5. Position control outer relay lever.

$$L_5 = L_8 - L_{11}$$

where:

L_8 = Dimension measured with tool **292541** placed on surface plate.

L_{10} = **18.3 to 18.5 mm (0.720 to 0.728 in).** Proudness of rod end (12, page 8) above drive housing top face.

— Tighten jam nut (16) and install lift unit on tractor.

Position control rod linkage adjustment - Mods. 45-66V/55-66V/55-66F

Proceed as follows:

— Set position control lever (P) upright on quadrant and check clearance (L_{13}) to be 15 mm (0.59 in) between stalk rearmost edge and slot end.

— Locate position control outer relay lever (5) fully forward against its limit spacer.

— Connect link rod and adjust its length by turning in or out as required its end pieces.

— Lock the jam nuts.

Draft control rod linkage adjustment - Mods. 45-66V/55-66V/55-66F

Proceed as follows:

— Move position control lever (P) fully forward on quadrant (all down).

— Move outer relay lever (4) fully forward against limit spacer.

— Position draft control lever (F) at a clearance (L_{13}) of 15 mm (0.59 in) from slot end to lever stalk rearmost edge.

— Connect draft control link rod.

— Start engine and keep running at average speed.

— Then, without applying any load to lift arms, check that lifting under draft control begins at a travel (L_{14}) of 165 to 175 mm (6.5 to 6.9 in) between start of slot and lever stalk front edge. If this does not check, operate on cam pin (18, page 2) until the specified value is ensured.
Lock screw (20, page 2).

LIFT-O-MATIC adjustment - Mods. 45-66V/55-66V/55-66F

Proceed as follows:

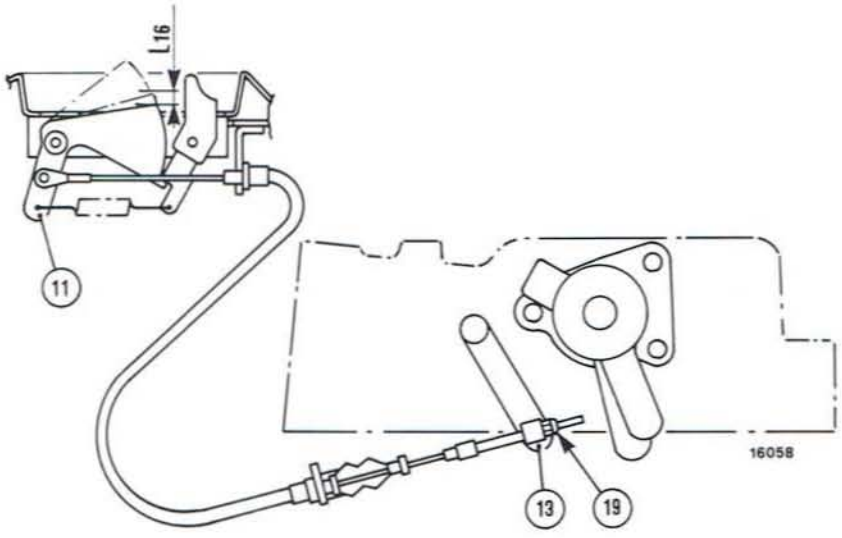
— Locate draft and position control levers (F and P, respectively) fully forward on quadrant.

— Connect cable to pushbutton (11, page 6) then secure the LIFT-O-MATIC device on mudguard.

— Start engine and accelerate to averate speed.

— Connect cable to lever (13, page 6) adjusting its length so that, upon actuation of button (11) lift arms start to lower when button is still short of its full stroke by a distance L_{16} of 9 to 12 mm (0.35 to 0.47 in).

HYDRAULIC LIFT UNIT: Lift



LIFT-O-MATIC adjustment - Mods. 45-66V/55-66V/55-66F.

L_{16} = 9 to 12 mm (0.35 to 0.47 in). Button (11) residual stroke - 11. Lift-O-Matic control button - 13. Lift-O-Matic control lever - 19. Control cable end piece.

4. On-Tractor max lift arm travel adjustment - Mods. 45-66V/55-66V/55-66F.

Proceed as instructed in text and illustrations on page 11, Sect. 501 for Mod. 45-66.

LIFT ADJUSTMENTS FOR TRACTOR MODS. 60-66F/70-66F/80-66F.

The following adjustments refer to a lift deprived of its hydraulic control valve and installed on a work bench or secured to a rotary service stand through a suitable bracket.

If carried out, adjustments must follow the description order.

With lift installed on tractor, only lift arm upward travel adjustments are possible.

Throughout operations, the Lift-O-Matic device shall be excluded (outer control lever locked in vertical position) unless otherwise stated.

1. Position control adjustment - Mods. 60-66F/70-66F/80-66F

Proceed as instructed in text and illustrations on pages 2 and 3, Sect. 501 for Mods. 55-66LP/60-66LP/70-66LP.

2. On-bench max lift arm travel adjustment - Mods. 60-66F/70-66F/80-66F

Proceed as instructed in text and illustrations on page 2, Sect. 501 for Mods. 55-66LP/60-66LP/70-66LP.

3. Draft control adjustment - Mods. 60-66F/70-66F/80-66F

Proceed as instructed in text and illustrations on pages 3 thru 6, Sect. 501 for Mods. 55-66LP/60-66LP/70-66LP.

4. Position control rod linkage adjustment - Mods. 60-66F/70-66F/80-66F

Proceed as follows:

— Set position control lever (P, page 7) upright on quadrant and check clearance (L_{12}) to be 11 mm (0.43 in) between stalk rearmost edge and slot top end.

— Locate position control outer relay lever (37, page 7) fully forward against its limit spacer.

— Connect link rod and, if necessary, adjust its length to obtain distance (L_{12}, page 7) of 11 mm (0.43 in).

— Lock rod in position by the jam nuts.

5. Draft control rod linkage adjustment - Mods. 60-66F/70-66F/80-66F

Test conditions:

— No additional load on lift arms.

— Engine accelerated to medium rpm rate.

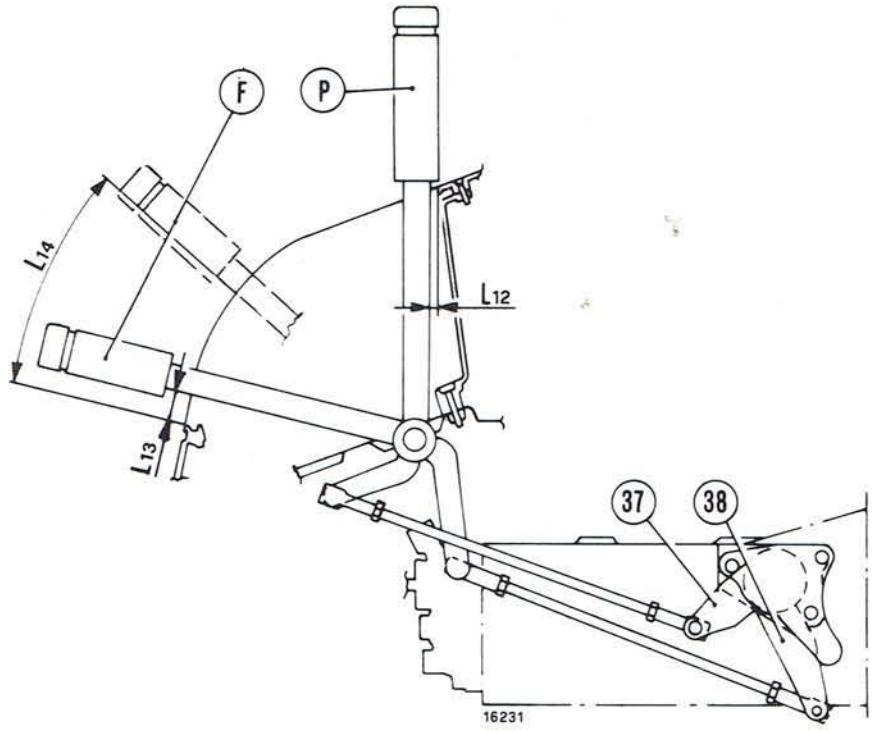
Next, proceed as follows:

— Move position control lever (P, page 7) fully forward on quadrant (all down).

— Move draft control outer relay lever (38, page 7) all back against its limit spacer.

— Set draft control lever (F, page 7) at a distance (L_{13}) of 12 mm (0.47 in) from slot start to lever stalk frontmost edge.

— Connect draft control link rod; if necessary, adjust its length and make sure that distance (L_{13}) equals 12 mm (0.47 in) as specified.



Adjusting position (P) and draft (F) control levers.

F. Draft control lever - L_{12}. = 11 mm (0.43 in). Distance between position control lever (P) and beginning of quadrant slot - L_{13} = 12 mm (0.47 in). Distance between draft control lever (F) and beginning of quadrant slot - L_{14} = 165 to 175 mm (6.5 to 6.9 in). Distance between beginning of quadrant slot (bottom end) and stalk front edge of lever (F) - P. Position control hand lever - 37. Position control outer relay lever on lift unit - 38. Draft control outer relay lever on lift unit.

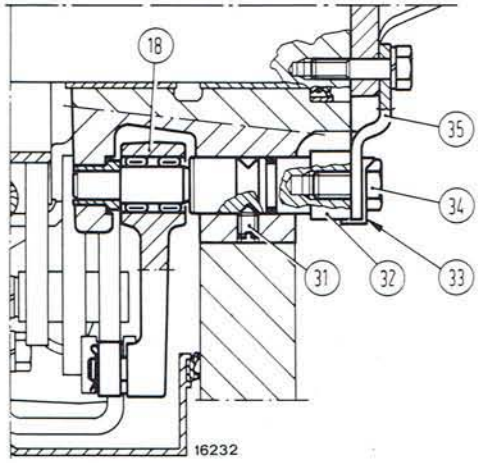
— Set draft control lever (F) at a distance L_{14} = 165 to 175 mm (6.5 to 6.9 in) from beginning of quadrant slot. Check that with lever set in this position, full lifting of arms begins.

— If this does not occur, operate on cam pin (32) as required to obtain the specified distance.

— Lock cam pin (32) by threaded dowel (31) and lock washer (33).

6. LIFT-O-MATIC adjustment - Mods. 60-66F/70-66F/80-66F

Proceed as instructed in text and illustrations on pages 7 and 8, Sect. 501 for Mods. 55-66LP/60-66LP/70-66LP.

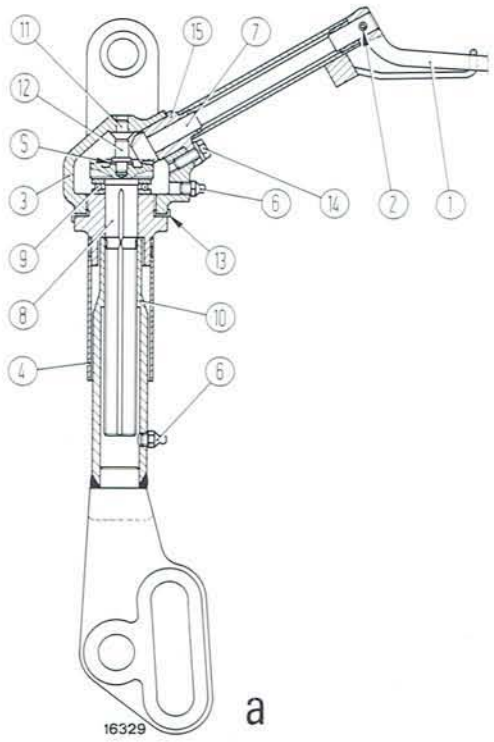


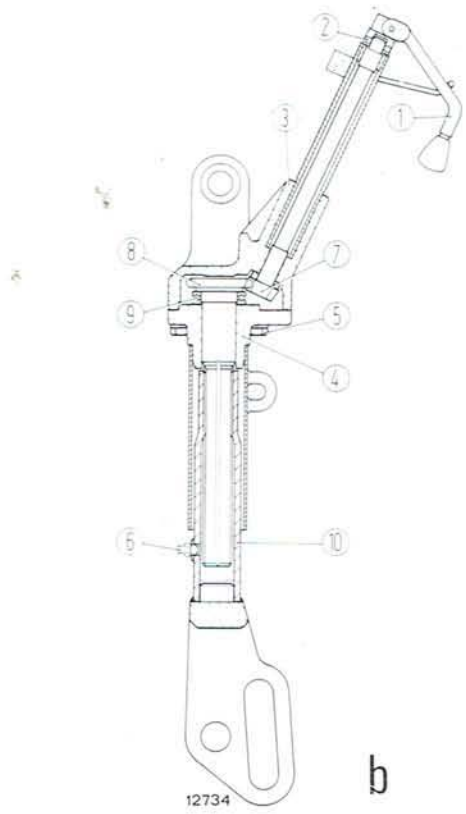
Section through draft control inner lever (18) pivot point.

31. Threaded dowel pin - 32. Campin, for lever (18) - 33. Lock washer - 34. Screw - 35. Bracket.

7. On-tractor max lift arm travel adjustment - Mods. 60-66F/70-66F/80-66F.

Proceed as instructed in text and illustrations on page 8, Sect. 501 for Mods. 55-66LP/60-66LP/70-66LP.





Section through RH lifting rod.

a. Mods. 45-66V/55-66F - b. Mods. 60-66F/70-66F/80-66F - S. End float shims - 1. Levelling box handle - 2. Roll pin - 3. Upper housing - 4. Cover - 5. Cover screws - 6. Grease fitting - 7. Drive pinion - 8. Driven gear - 9. Thrust bearing - 10. Lower housing - 11. Fixed pin - 12. Driven gear pin - 13. Lock washer - 14. Drive pinion support screws - 15. Drive pinion support.

Right-hand lifting rod

To remove the RH lifting rod on Mods. 45-66V/55-66V/55-66F proceed as follows:

— Straighten the tab of lockwasher (13) unscrew cover (4) with attached driven gear (8).

— Back out screw (14), remove support (15) with drive pinion (7).

— Back off lower housing (10) then remove driven gear and thrust bearing (9).

— Take off roll pin (2) and remove handle (1) and drive pinion.

At assembly, pack with **Fiat TUTELA G9 or other approved grease** the pockets in upper and lower housings; next, insert shims (S) between pin (12) and driven gear (8) to obtain an end float of 0.1 to 0.3 mm (0.004 to 0.012 in). Measure end float by introducing a feeler gauge between pins (11) and (12).

To remove the RH lifting rod on Mods. 60-66F/70-66F/80-66F proceed as follows:

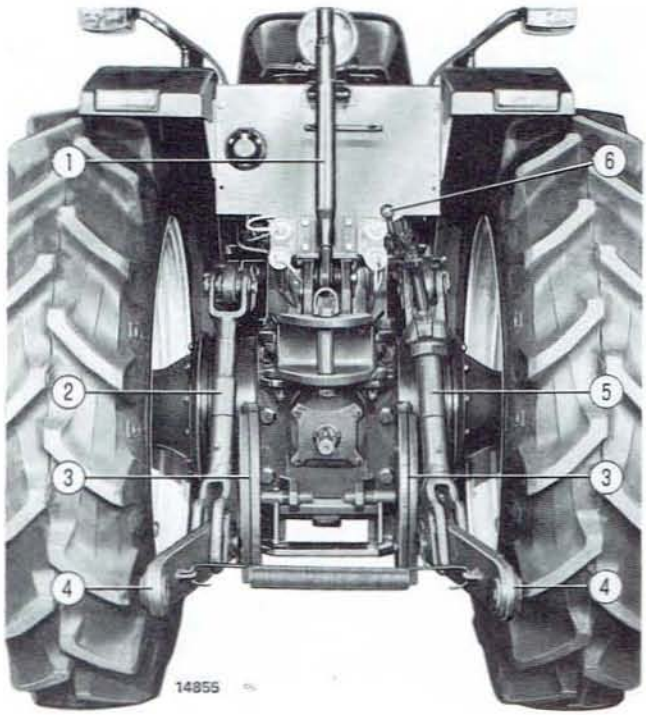
— Remove screws (5) and take off cover (4) together with driven gear (8).

— Back off lower housing (10) and remove driven gear and thrust bearing (9).

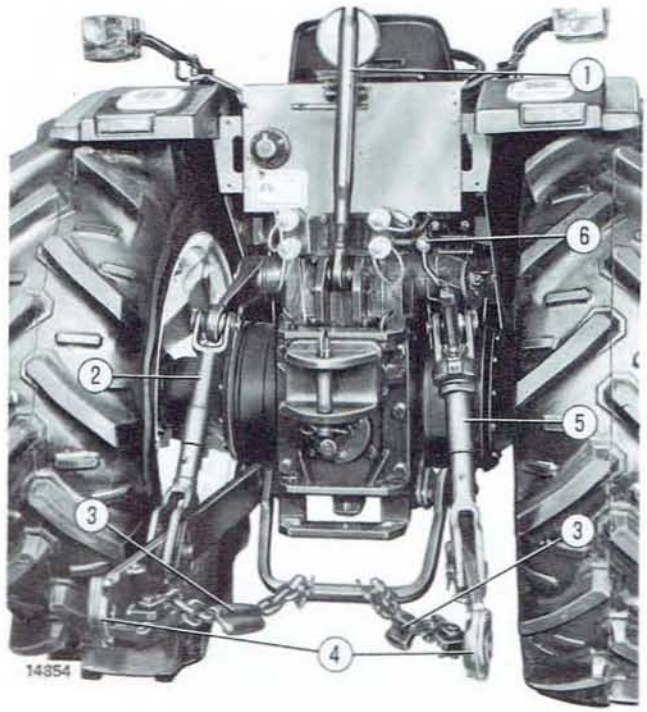
— Take off roll pin (2) and remove handle (1), followed by the drive pinion.

At assembly, pack with **Fiat TUTELA G9 or other approved grease** the pockets in upper and lower housings.

HYDRAULIC LIFT UNIT: Implement Attachment



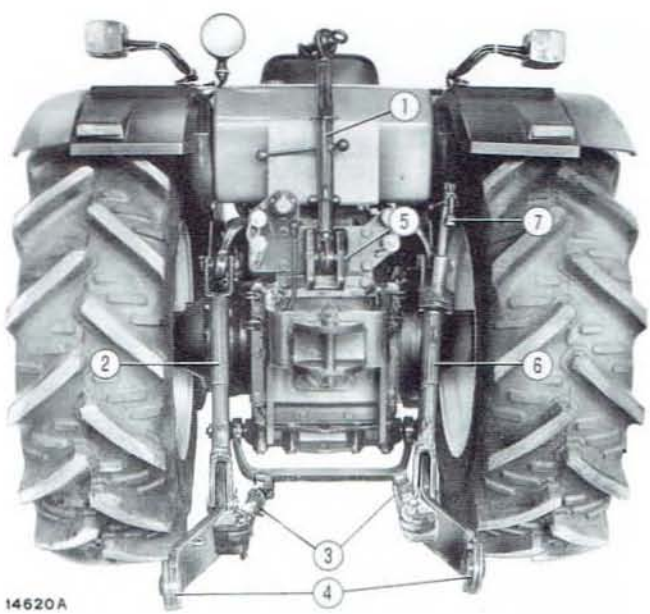
a



b

Lift and implement attachment.

a. Mods. 56-66V/55-66V (Cat. 1) - b. Mod. 55-66F (Cat. 1-2) - 1. Adjustable top link - 2. LH lifting rod - 3. Lower link sway limiting blocks (Mods. 45-66V/55-66V - Fig. a) or chains (Mod. 55-66F - Fig. b) - with implements attached - 4. Lower links - 5. R.H. lifting rod - 6. RH lifting rod levelling box handle and spring.



Lift and implement attachment.

1. Adjustable top link - 2. L.H. lifting rod - 3. Lower links sway limiting rod (with implements attached) - 4. Lower links - 5. Pin, top link to support - 6. R.H. lifting rod - 7. RH lifting rod levelling box handle and spring.

BATTERY CHARGE SYSTEM

Refer to text on page 1, Sect. 60, for Mods. 55-66/60-66/70-66/80-66.

MARELLI OR BOSCH STARTER MOTORS

See page 2, Sect. 60, for Mods. 55-66 and 60-66.

BATTERY

Voltage	12 Volts
Nominal capacity (at 20-hr discharge rate)	88 Ah for normal or dry charge units Alternative: 90 Ah w/sealed units

FUSES

Six 8 Amp and two 16 Amp fuses, housed in box.

Fuses	PROTECTED CIRCUITS	Amp
1	Engine stopping solenoid.	8
2	Turn signal and stop lights (tractor and trailer) with indicators, water temperature gauge, fuel gauge, air cleaner restriction indicator, battery charge indicator, low engine oil pressure indicatori, parking brake indicator and sending unit, horn.	8
3	Front R.H. parking light, rear L.H. parking light, license plate light, trailer L.H. parking light, parking light indicator.	8
4	Front L.H. parking light, rear R.H. parking light, trailer R.H. parking light, rear work light, instrument panel light.	8
5	Low beams	8
6	High beams and indicator.	8
7	Hazard warning indicator and flasher, power point.	16
8	Thermostarter.	16

STARTER SWITCH - See Table on page 2, Sect. 60, for Mods. 55-66/60-66/70-66/80-66.

LIGHTING SWITCH - See Table on page 14, Sect. 60, for Mods. 466/566/666/766.

TRACTOR AND TRAILER TURN SIGNAL LIGHT SWITCH - See Table on page 14, Sect. 60, for Mods. 466/566/666/766.

INSTRUMENT PANEL - See illustration and legend on page 3, Sect. 60, for Mods. 55-66/60-66/70-66/80-66.

ELECTRICAL SYSTEM: Wiring Diagram

WIRING DIAGRAM
TRACTOR RS 45-66V/55-66V/55-66F
WITH ACCESSORIES

Note - *Detail shows installation of the optional thermostarter.*

● *To starter switch connection 15/54.*

1. Headlamps, high/asymmetric low beams

2. Battery.

3. Alternator.

4. Low engine oil pressure sending unit.

5. Horn.

6. Dry air cleaner restriction sending unit.

7. Fuel gauge sending unit.

8. Starter.

9. Hazard warning and turn signal electronic flasher.

10. Multi-function instrument panel:
- **a.** Battery charge indicator (red).
- **b.** Low engine oil pressure indicator (red).
- **c.** Dry air cleaner restriction indicator (red, optional).
- **d.** Parking brake indicator (red).
- **e.** Spare.
- **f.** Parking lights indicator (green).
- **g.** High beam indicator (blue).
- **h.** Tractor turn signal indicator (green).
- **i.** 1st trailer turn signal indicator (green)
- **l.** 2nd trailer turn signal indicator (green)
- **m.** Water temperature gauge.
- **n.** Fuel gauge.

11. Water temperature gauge sending unit.

12. Starter switch.

13. Turn signal switch.

14. Lighting switch and horn button.

15. Engine stopping solenoid.

16. Parking brake flasher with indicator.

17. Hazard warning switch with indicator.

18. Single-conductor power point.

19. Fuse box.

20. Front parking and turn signal lights.

21. Starter inhibitor switch.

22. Parking brake indicator sending unit.

23. Stop light switch.

24. Rear parking, turn signal and stop lights.

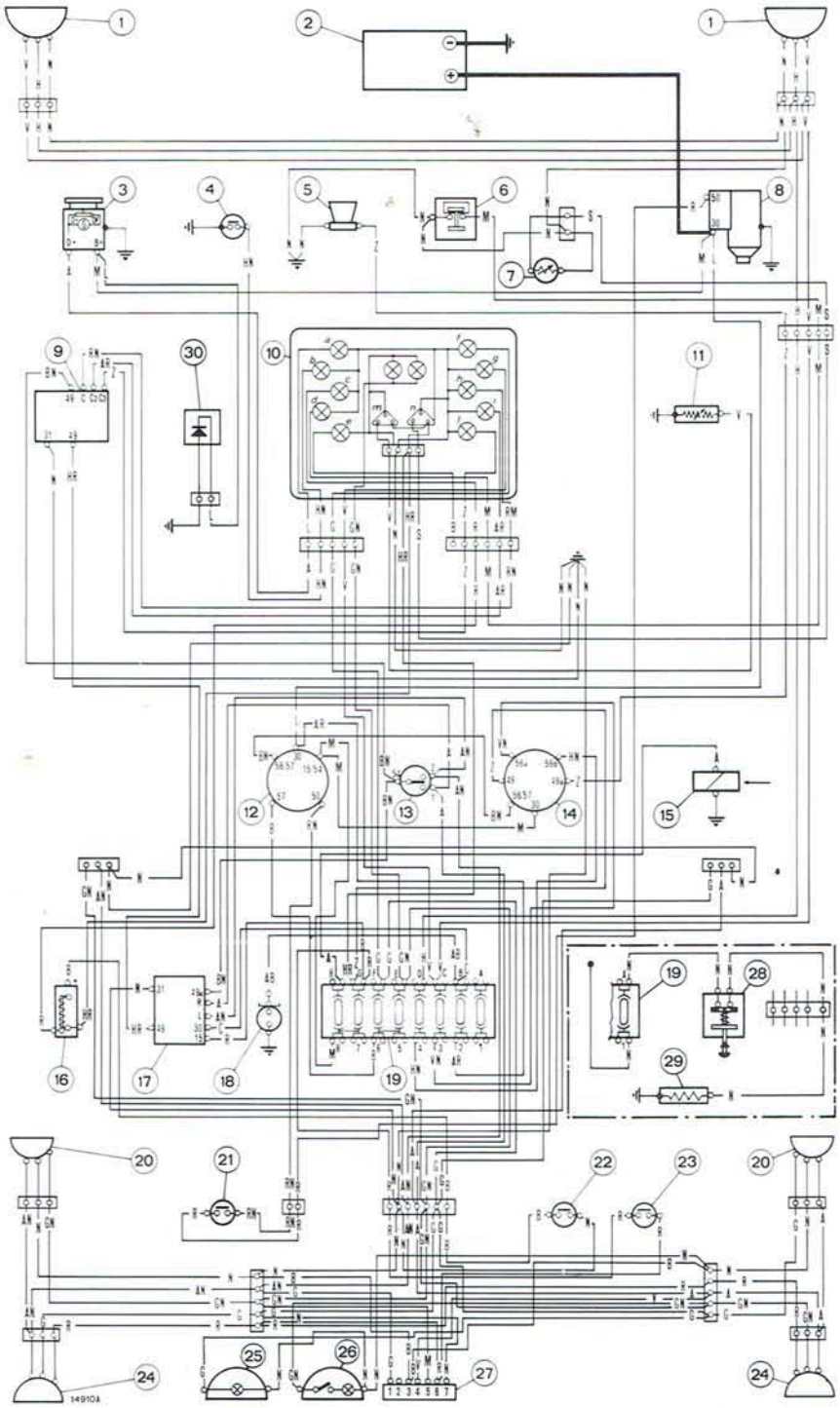
25. License plate light.

26. Rear work light and switch.

27. Seven conductor power point.

28. Thermostarter control button (optional).

29. Thermostarter (optional).



CABLE COLOUR CODE

A = Light blue	**M** = Brown
B = White	**N** = Black
C = Orange	**R** = Red
G = Yellow	**S** = Pink
H = Grey	**V** = Green
L = Dark blue	**Z** = Mauve

10 - ENGINE

100 - Removal - Installation - Bench test.

101 - Engine block - Cylinder head.

102 - Valve Gear

103 - Crank Gear

104 - Fuel system

106 - Cooling system

● **Mod. 45-66V:** Tools listed on pages 1 and 2, Sect. 90 fr Mod. 45-66 apply.

● **Mods. 55-66V/55-66F/60-66F/70-66F/80-66F:** Tools listed on pages 1 and 2, Sect. 90, for Mods. 55-66/60-66/70-66/80-66 apply.

20 - POWER TRAIN

201 - Clutch

202 - Transmission and Splitter

204 - Bevel gear and differential

205 - Brakes

206 - Final Drives

207 - Power Take Off

● **Mods. 45-66V/55-66V/55-66F:** Tools listed on page 2, Sect. 90, for Mod. 45-66 apply.

● **Mods. 60-66F/70-66F/80-66F:** Tools listed on page 2, Sect. 90, for Mods. 55-66/60-66/70-66/80-66 apply.

30 - FRONT AXLE - STEERING

303 - Hydrostatic power steering
Tools listed on page 3, Sect. 90, for Mods. 55-66/60-66/70-66/80-66 apply.

40 - FRONT WHEEL DRIVE

401 - Live front axle

● **Mods. 45-66DTV and 55-66DTV**

293460 (322215)	Service stand, front axles.
293836	Protector, drive shaft seal installation.
293743	Support, differential bevel pinion housing.
293651	Guard, final drive shaft seal.
293400/1	Fixture, bevel pinion position checks (use with items **293732** or **293510**).
293510	Universal gauge, bevel pinion shaft bearing adjustments.
293752	Tool, special purpose, bevel pinion shaft bearing adjustments.
293544	Spanner, special, differential cage bearings adjustments.
293655	Spanner, special, front wheel hub bearings ring nut.
292220/3	Tool steering knuckle carrier swing torque checks.

● **Mods. 55-66DTF/60-66DTF/70-66DTF/80-66DTF**

293782	Tool, retainer, bevel drive pinion (use with item **293785**)
293785	Spanner, special, bevel drive pinion ring nut (use with item **293782**).
293743	Support, bevel drive pinion housing.
293460 (322215)	Service stand, front axles.
293836	Protector, drive shaft seal installation.
293520/2	Wrench, bevel pinion bearing ring nut and rolling torque checks.
293400/1	Fixture, bevel pinion position checks (use with **293732** or **293510**).
293510	Universal gauge, bevel pinion shaft bearing adjustments.
293438/2	Adjuster, bevel pinion bearing.
293544	Spanner, special, differential bearing ring nut.
293837	Spanner, special, wheel shaft bearing ring nut.
292220/3	Tool, steering knuckle carrier swing torque checks.
291525	Locating pins, side final drive cover installation.
293812	Locating pins, front wheel installation.

50 - HYDRAULIC LIFT UNIT

501 - Lift

● **Mods. 45-55V/55-66V/55-66F -** Tools listed on page 3, Sect. 90, for Mod. 45-66 apply.

● **Mods. 60-66F/70-66F/80-66F -** Tools listed on pages 3 and 4, Sect. 90, for Mods. 55-66 and 60-66 apply.

502 - Hydraulic pump.
Tools listed on page 4, Sect. 90, for Mods. 55-66/60-66/70-66/80-66 apply.

504 - Remote control valves.
Tools listed on page 4, Sect. 90, for Mods. 55-66/60-66/70-66/80-66 apply.

60 - ELECTRICAL SYSTEM
Tools listed on page 4, Sect. 90, for Mods. 55-66/60-66/70-66/80-66 apply.