CASE

SERVICE MANUAL

COMPACT WHEEL LOADER

21E
121E
221E
321E
SERIES 3
TIER 3

87734636A NA

Issued 01May 08

MidWestTech | Case 21E, 121E, 221E, 321E Series 3 Tier 3 Compact Wheel Loader Service Manual | Publication 87734636A

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3. TECHNICAL SPECIFICATIONS

FRONT AXLE CA147195 (21E)

Model	28.16
Differential type	limited slip
Dry weight	230 kg (506 lb)
Bevel gear reduction ratio	2.90 / 1
Reduction gear ratio	6.00 / 1
Total reduction ratio	17.45 / 1
Input rotation direction	clockwise
Bevel gear play	0.17 ÷ 0.24 mm (0.006 ÷ 0.009 in)
Pinion bearing preload (measured on D = 34.5 mm (1.35 in) without seal rings)	P = 9.2 ÷ 13.7 daN (P = 20.68 ÷ 30.80 lbf)
Ring gear-pinion bearing total preload (measured on D = 34.5 mm (1.35 in) without seal rings)	T = (P + 3.1) ÷ (P + 4.7) daN T = (P + 6.96) ÷ (P + 10.56) lbf
Maximum service pressure	55 bar (797 psi)
Differential oil capacity	7.5 litres (2 gal)
Reduction gear oil capacity (each side)	0.7 litres (0.18 gal)

FRONT AXLE CA150144 (121E, 221E, 321E)

Model	28.25
Differential type	limited slip
Dry weight	318 kg (700 lb)
Bevel gear reduction ratio	3.667 / 1
Reduction gear ratio	6.00 / 1
Total reduction ratio	22.00 / 1
Input rotation direction	clockwise
Bevel gear play	0.17 ÷ 0.24 mm (0.006 ÷ 0.009 in)
Pinion bearing preload (measured on D = 34.5 mm (1.35 in) without seal rings)	P = 9.2 ÷ 13.7 daN (P = 20.68 ÷ 30.80 lbf)
Ring gear-pinion bearing total preload (measured on D = 34.5 mm (1.35 in) without seal rings)	T = (P + 2.5) ÷ (P + 3.8) daN T = (P + 5.62) ÷ (P + 8.54) lbf
Maximum service pressure	55 bar (797 psi)
Differential oil capacity	8 litres (2.10 gal)
Reduction gear oil capacity (each side)	0.6 litres (0.20 gal)

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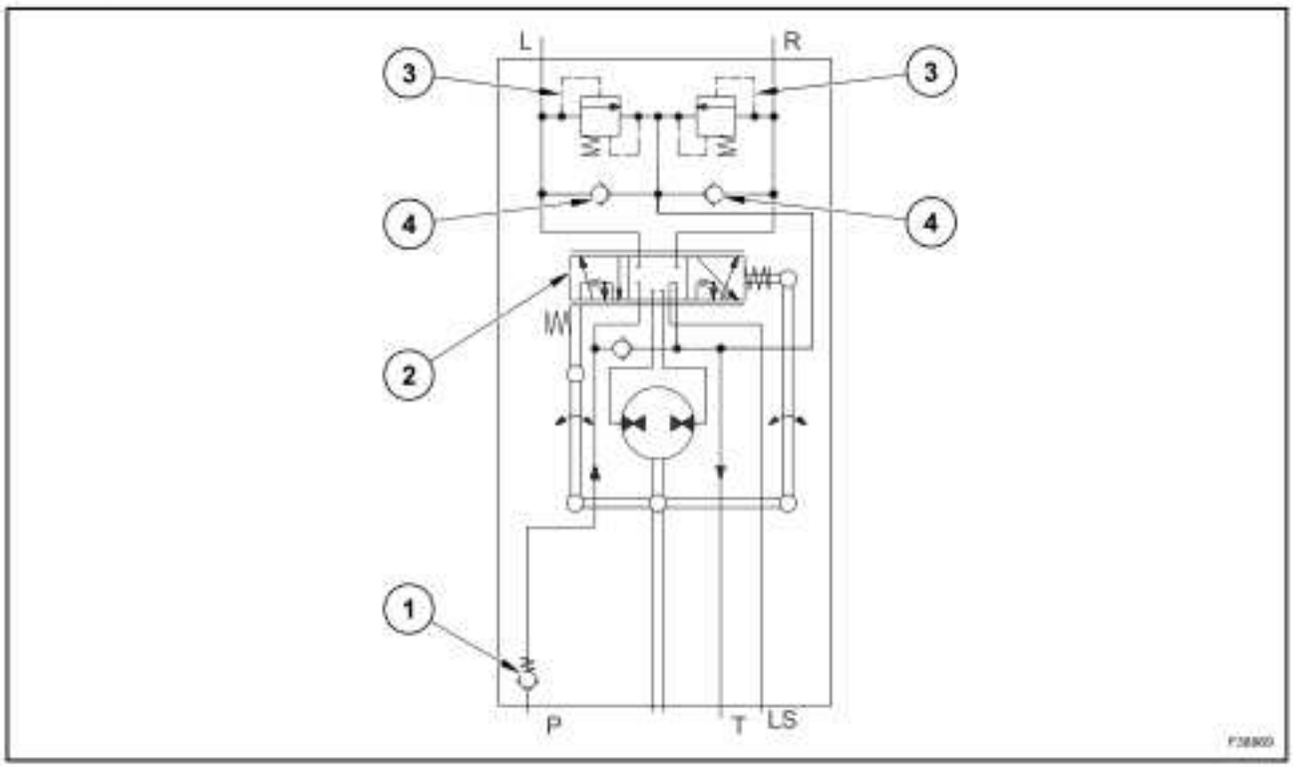
2.1 TECHNICAL SPECIFICATIONS

	21E - 121E - 221E	321E
Model	OSPC 200 LS	OSPC 315 LS
Displacement	200 cm^3/rev (12.20 in^3/rev)	315 cm^3/rev (19.22 in^3/rev)
Rated oil flow	20 l/min (5.30 gal/min)	32 l/min (8.40 gal/min)
Weight	5.8 kg (13 lb)	6.2 kg (14 lb)
Relief valve adjustment	240 bar (3480 psi)	240 bar (3480 psi)

TIGHTENING TORQUES

Steering wheel nut	55 Nm (40.56 lbf·ft)
Steering column bracket	23 Nm (16.96 lbf·ft)
End cover	30 Nm (22.12 lbf·ft)
Connector	45 Nm (33.19 lbf·ft)
Adaptors	55 Nm (40.56 lbf·ft)
Check valve	30 Nm (22.12 lbf·ft)

HYDRAULIC DIAGRAM



1. Check valve
2. Power steering control valve
3. High pressure valve 240 bar (3480 psi)
4. Anticavitation valve

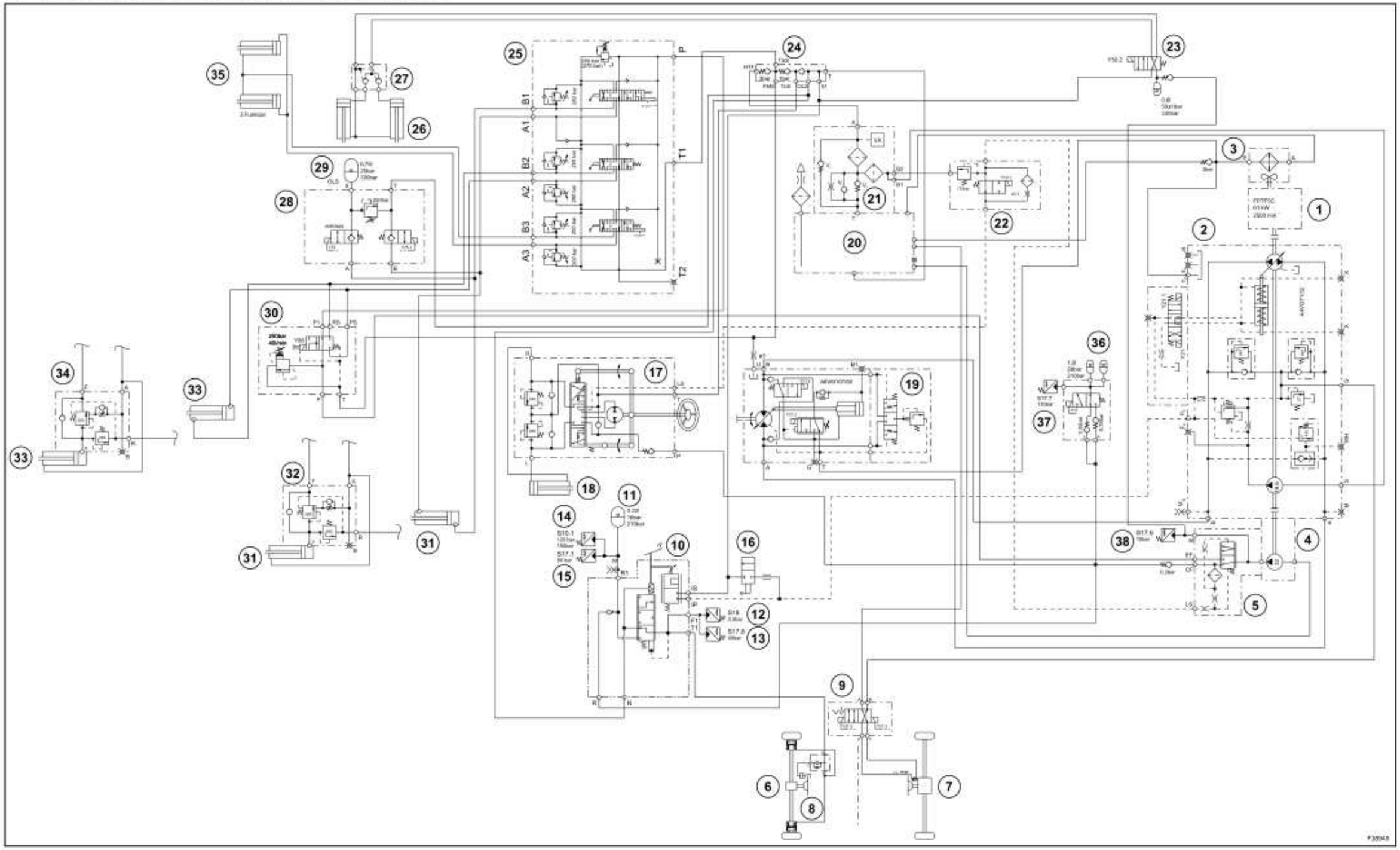
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4. TROUBLESHOOTING

FAULT	CAUSE	ACTION
Steering wheel hard.	Pump drive coupling defective.	Consult your Dealer.
Steering wheel hard to turn when travelling on level ground.	Oil level too low.	Refill.
	Pressure too low.	Consult your Dealer.
	Limited-slip differential or steering mechanics sluggish.	Consult your Dealer.
Steering wobbly, permanent tread correction necessary.	Air in hydraulic system.	Purge system of air.
	Internal leaks in steering valve.	Repair or replace.
Steering wheel easy to turn at stopper.	Internal leaks in steering valve.	Repair or replace.
During fast steering action, wheel turns fast for a short time (steering catching up).	Air in hydraulic system.	Purge system of air.
	Internal leaks in steering valve.	Repair or replace.
	Oil supply rate insufficient.	Consult your Dealer.
The steering wheel when released still turns.	Steering valve jams.	Consult your Dealer.

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1.8 HYDRAULIC DIAGRAM FOR 321E WITH OPTIONAL OUTFITS



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