Service Manual

Compact excavators

2503 3003
3503 3703



Machine models	**2503 – 3703**
Edition	**2.0**
Language	**English**
Article number	**1000081433**

Order the manual at mid-west-tech.com >

neuson

TABLE OF CONTENT :

Chapter		Page
O	Table of content / Product history	
A	**Technical data**	
1	Dimensions	A2
2	Kinematic	A7
3	Lift capacities	A9
4	Cycle courses	A16
5	Hydraulic settings	A26
6	Diesel engine settings	A29
	Speci cations	A33
7	Tightening torques	A37
B	**Maintenance**	
1	Maintenance schedule	B1
2	Lubricants	B4
	Maintenance label	B6
3	Hydraulic system	B8
4	Auxiliary hydraulics	B15
5	Hydraulic pump	B16
6	Hose burst protection valve	B16
7	Drive unit	B17
8	Swivel unit	B17
9	Hydraulic oil tank	B18
10	Diesel engine	B18
11	Cabin	B20
12	Undercarriage	B21
C	**Hydraulic**	
1	Hydraulic diagram A4	C1
	Hydraulic diagram A3	C3
2	Component positions	C5
3	Hydraulic pump	C7
4	Pilot oil supply unit	C12
5	Main valve block	C17
6	Pilot control valves	C33
7	Swivel unit	C36
8	Drive unit	C42
9	Swivel joint	C55
10	Switch valves	C58
11	Way valve (Vario)	C61
12	Pressure limiting valve (Vario)	C62
13	Hydraulic oil tank	C63

MidWestTech | Wacker Neuson 2503, 3003, 3503, 3703 Compact Excavator Service M... Order the manual at mid-west-tech.com >



neuson®

Chapter		Page
D	Diesel engine	
	Engine overview	D2
	Generator	D3
	Engines	D5
	Fuel supply systems	D11
	Kubota settings	D17
	Yanmar settings	D21
	Tightening order for cylinder head bolts	D23
	Checking the injection nozzles	D24
	Injection time	D26
	Replacement of fuel injection pump	D30
	Adjusting engine revs	D32
	Compression	D32
	Checking the coolant thermostat	D33
	Checking the thermal switch	D33
	Oil pressure switch	D34
	Checking the coolant circuit	D34
	Engine trouble	D35
E	Elektric	
F	Operation elements	
G	Attachment	

Abbreviations:

AP	...	Adjustment point
MP	...	Measuring point
PPLV	...	Primary - pressure limiting valve
SPLV	...	Sekondary - pressure limiting valve
TT	...	Tightening torque
Pb1	...	Port code at the hydraulic diagram

Edition January 2003, Copyright Neuson Baumaschinen
Neuson reserves changes.

MidWestTech | Wacker Neuson 2503, 3003, 3503, 3703 Compact Excavator Service M... Order the manual at mid-west-tech.com >

A.2 Dimensions model 3003

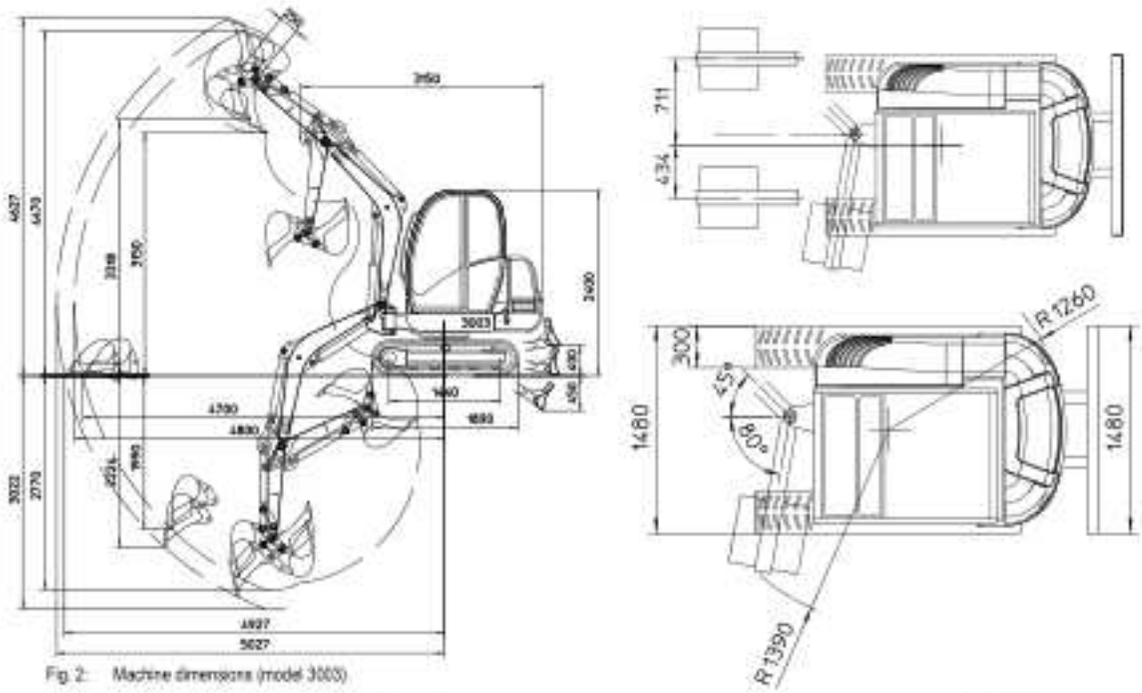


Fig. 2: Machine dimensions (model 3003)

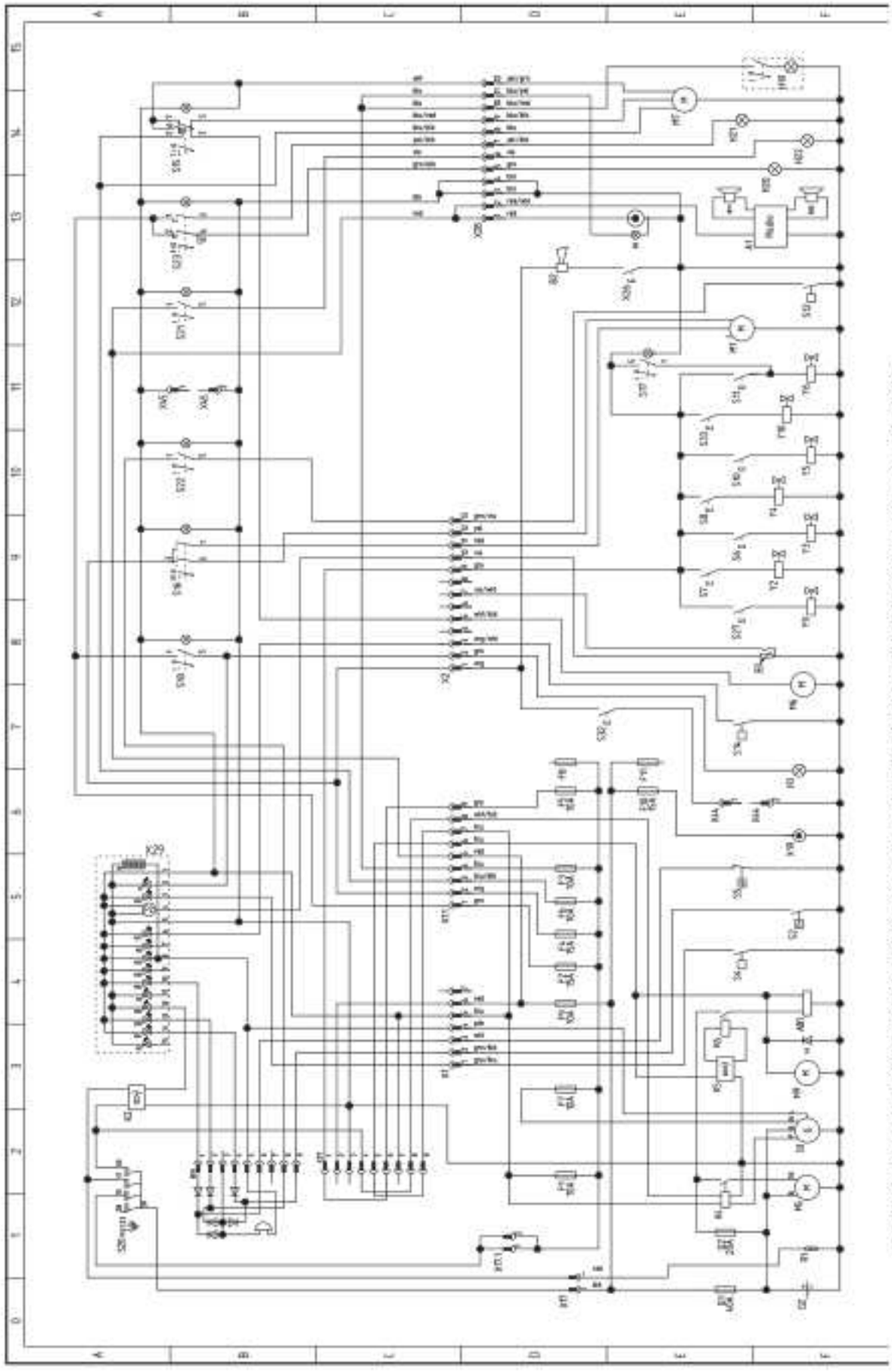
Main data	Model 3003	3003 Vario
Service weight with cab/canopy	3120 / 3025 kg 6879 / 6669 lbs	3388 / 3293 kg 7469 / 7260 lbs
Height	2400 mm / 7'10"	2503 mm / 8'3"
Width	1480 mm / 4'10"	1480 mm / 4'10"
Transport length	4695 mm / 15'5"	4695 mm / 15'5"
Max. digging depth	2770 mm /9'1"	2667 mm / 8'9"
Stick length (standard)	mm	
Stick length (long version)	mm	
Max. digging depth for long stick (+ 300 mm / 11.8")	3025 mm / 9'11"	2922 mm / 9'7"
Max. vertical digging depth	1990 mm / 6'6"	1887 mm / 6'2"
Max. vertical digging depth (long stick)	mm	
Max. digging height	4470 mm / 14'8"	4573 mm / 15'0"
Max. digging height (long stick)	4603 mm / 15'1"	
Max. dump height	3150 mm / 10'4"	3253 mm / 10'8"
Max. dump height (long stick)	3325 mm / 10'11"	
Max. digging radius	4800 mm / 15'9"	4630 / 4970* mm 15'2" / 16'4" *
Max. digging radius (long stick)	mm	
Max. reach at ground level	4700 mm / 15'5"	4530 / 4870 mm 14'10" / 16'0"
Max. reach at ground level (long stick)	mm	
Max. breakout force at bucket tooth	27.5 kN / 6182 lbf	27.5 kN / 6182 lbf
Max. tearout force (standard stick)	16.2 kN /3 642 lbf	16.2 kN / 3642 lbf
Max. tearout force (long stick)	13.4 kN / 3012 lbf	13.4 kN / 3012 lbf
Min. tail end slewing radius	1260 mm /4'2"	1260 mm / 4'2"
Max. tail end lateral projection (90° rotation of upper carriage)	520 mm / 1'8"	350 / 690 mm 1'2" / 2'3"
Max. boom displacement to bucket centre (right-hand side)	710 mm / 2'4"	880 mm / 2'11"
Max. boom displacement to bucket centre (left-hand side)	434 mm / 1'5"	605 mm / 2'0"

MidWestTech | Wacker Neuson 2503, 3003, 3503, 3703 Compact Excavator Service M... Order the manual at mid-west-tech.com >

Problem		Possible causes
Engine does not run on all cylinders		Injection line leaks
		Defective fuel injector
Insufficient or no engine oil pressure		Oil level too low
		Defective engine oil pump
		Machine inclination too high
		Clogged engine oil intake filter
		Wrong SAE grade of engine lubrication oil
Engine oil consumption too high		Oil level too high
		Machine inclination too high
Engine smoke	Blue	Oil level too high
		Machine inclination too high
		Engine oil combustion (defective cylinder-head gasket)
	White	Engine starting temperature too low
		Fuel grade does not comply with specifications
		Defective fuel injector
		Wrong valve clearance
		Coolant combustion (defective cylinder-head gasket)
		Extreme misalignment of injection time
	Black	Dirty air filter
		Wrong valve clearance
		Defective fuel injector (drips)
		Wrong fuel injection pump setting

MidWestTech | Wacker Neuson 2503, 3003, 3503, 3703 Compact Excavator Service M... Order the manual at mid-west-tech.com >

E.5 Wiring diagram A4



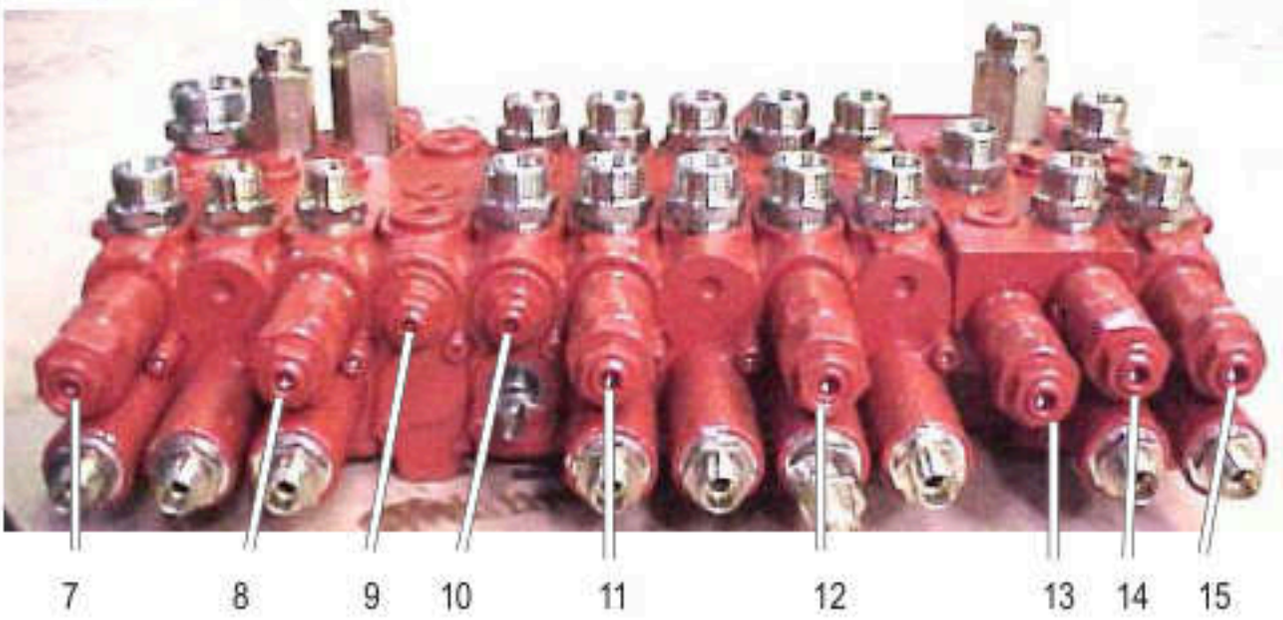
2503: from serial no. AD03580 **3003:** from serial no. AD03552 **3503 / 3703:** from serial no. AD03525

MidWestTech | Wacker Neuson 2503, 3003, 3503, 3703 Compact Excavator Service M... Order the manual at mid-west-tech.com >

Fig.: Valves - view A



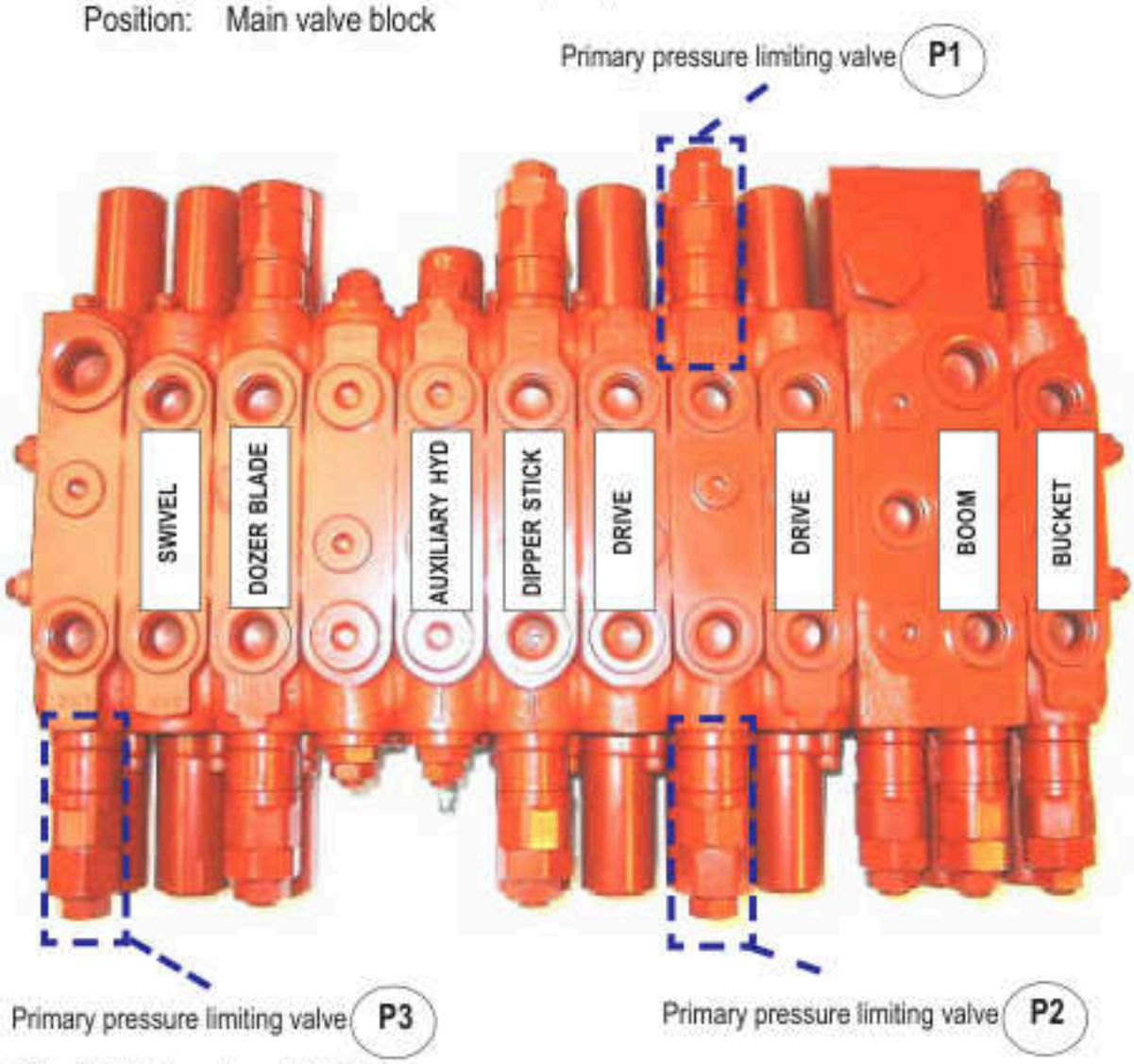
Fig.: Valves - view B



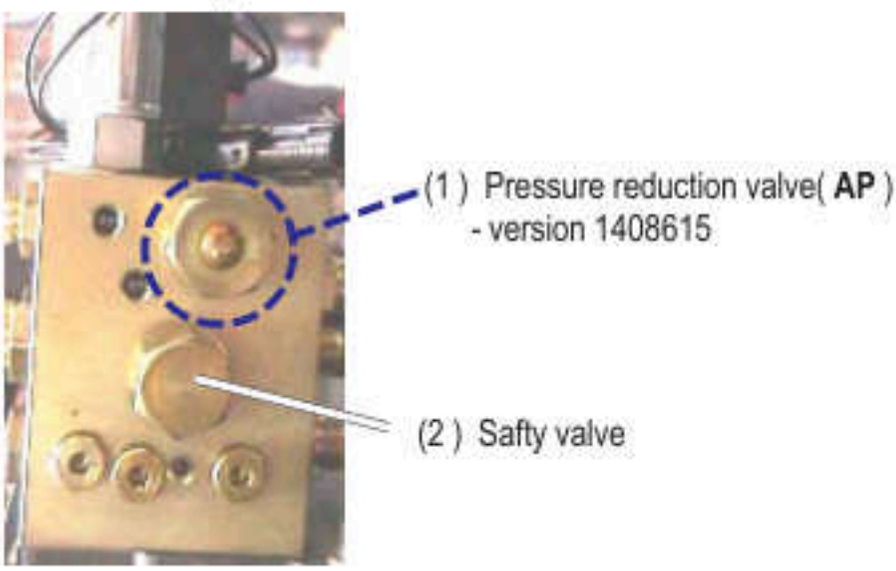
1	sec. pressure limiting valve bucket bottom side	9	flow rate adjusting screw AH
2	primary pressure limiting valve P1	10	stopper (option sec. press. lim. val. AH)
3	sec. pressure limiting valve dipper stick rod side	11	sec. press. lim. val. dipper stick bottom side
4	stopper auxiliary hydraulics (option PLV)		
5	flow rate adjusting screw auxiliary hydraulics	12	primary pressure limiting valve P2
6	stopper	13	sec. press. lim. val. boom bot. side
7	primary pressure limiting valve P3	14	sec. press. lim. val. boom rod side
8	sec. press. limiting valve dozer blade bottom side	15	sec. press. lim. val. bucket rod side

MidWestTech | Wacker Neuson 2503, 3003, 3503, 3703 Compact Excavator Service M... Order the manual at mid-west-tech.com >

Pict.: **Primary - Pressure limiting valves** (AP) -
Position: Main valve block

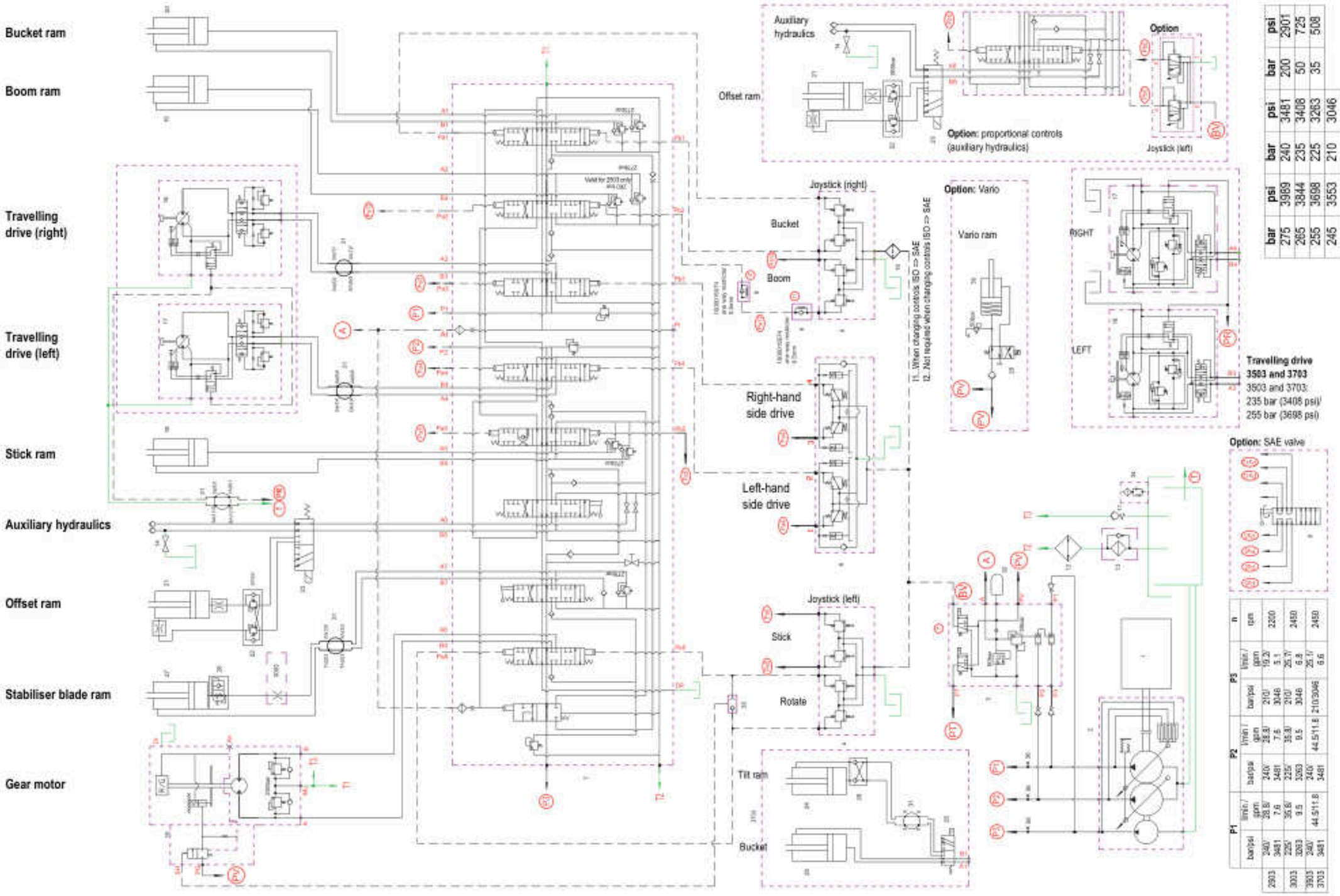


Pict.: Pilot oil supply unit 1408615



MidWestTech | Wacker Neuson 2503, 3003, 3503, 3703 Compact Excavator Service M... Order the manual at mid-west-tech.com >

C.3 Hydraulics diagram 2503 – 3703 A3



bar	psi
275	3989
265	3844
255	3698
245	3553

bar	psi
240	3481
235	3408
225	3263
210	3046

bar	psi
200	2901
50	725
35	508

		P1			P2			P3		n
		l/min / gpm	bar/psi		l/min / gpm	bar/psi		l/min / gpm	bar/psi	rpm
2503		38.8/ 7.6	240/ 3481		38.8/ 7.6	240/ 3481		19.2/ 5.1	210/ 3046	2200
3003		35.6/ 9.5	225/ 3263		35.8/ 9.5	225/ 3263		25.7/ 6.8	210/ 3046	2450
3503	3703	44.5/11.8	240/ 3481		44.5/11.8	240/ 3481		25.7/ 6.8	210/3046	2450

MidWestTech | Wacker Neuson 2503, 3003, 3503, 3703 Compact Excavator Service Manual | Publication 1000081433

Order the manual at mid-west-tech.com >