

Service Manual

Compact excavators

2503 3003
3503 3703



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The cover features the machine with possible optional equipment.



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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

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PRODUCT HISTORY

This overall lists the main technical modifications of the excavator type

Neuson **2503**

Step	Excavator code	Fabr.No.:	Modification / Part group
Production start	2503 RD	AB00001	
		(SNews 47/01)	- Rear counterweight opening mechanism
		AB00806	- Diode ignition lock (SNews53)
		(SNews 50/01)	- Relays dozer blade function
		AC00307	- Lower windscreen seal modification (SNews 61/01)
		AC00351	- Fuel tank version plastic (SNews 70/02)
		AC00901	- Swivel unit new (SNews 72/02)
Version	2503 „AD“	AD00001	- Diesel engine Yanmar (SNews 73/02)
		(SNews 72/02)	- Joystick console short (IV)
		(SNews 74/02)	- Joystick console (IV) hardening cover
			- Sticker design
			- Wiring and instrument panel changed
			- Diesel engine maintenance intervals extension possible (SNews 71/02)
		AD00029	- Fuel tank ventilation filter (SNews 70)
Version	2503-02	AD01502	- Engine changeover EPA2
Version	2503, Edition 2.0	AG00597	- Engine changeover EPA3

Neuson **3003**

Step	Excavator code	Fabr.No.:	Modification / Part group
Production start	3003 RD	AB00001	
		(SNews 47/01)	- Rear counterweight opening mechanism
		AB00806	- Diode ignition lock (SNews53)
		(SNews 50/01)	- Relays dozer blade function
		AC00307	- Lower windscreen seal modification (SNews 61/01)
		AC00351	- Fuel tank version plastic (SNews 70/02)
		AC00901	- Swivel unit new (SNews 72/02)
Version	3003 „AD“	AD00001	- Diesel engine Yanmar (SNews 73/02)
		(SNews 72/02)	- Joystick console short (IV)
		(SNews 74/02)	- Joystick console (IV) hardening cover
			- Sticker design
			- Wiring and instrument panel changed
			- Diesel engine maintenance intervals extension possible (SNews 71/02)
		AD00029	- Fuel tank ventilation filter (SNews 70)
Version	3003-02	AD01820	- Engine changeover EPA2



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PRODUCT HISTORY

This overall lists the main technical modifications of the excavator type

Neuson **3503**

Step	Excavator code	Fabr.No.:	Modification / Part group
Production start	3503 RD	AB00001	(SNews 47/01) - Rear counterweight opening mechanism
		AB00806	- Diode ignition lock (SNews53)
		(SNews 50/01)	- Relays dozer blade function
		AC00307	- Lower windscreen seal modification (SNews 61/01)
		AC00413	- Fuel tank version plastic (SNews 70/02)
		AC00901	- Swivel unit new (SNews 72/02)
Version	3503 „AD“	AD00001	- Diesel engine Yanmar (SNews 73/02)
			- Hydraulic pump new
			- Exhaust pipe behind the rear window
		(SNews 72/02)	- Joystick console short (IV)
		(SNews 74/02)	- Joystick console (IV) hardening cover
			- Sticker design
			- Wiring and instrument panel changed
			- Diesel engine maintenance intervals extension possible (SNews 71/02)
Version	3503-02	AD00029	- Fuel tank ventilation filter (SNews 70)
		AD01553	- Engine changeover EPA2
Version	3503, Edition 2.0	AG00593	- Engine changeover EPA3



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PRODUCT HISTORY

This overall lists the main technical modifications of the excavator type

Neuson **3703**

Step	Excavator code	Fabr.No.:	Modification / Part group
Production start	3703 RD	AB00001	
		(SNews 47/01)	- Rear counterweight opening mechanism
		AB00806	- Diode ignition lock (SNews53)
		AB01031	- Release hose tilt cylinder (SNews 59/01)
		(SNews 50/01)	- Relays dozer blade function
		AC00307	- Lower windscreen seal modification (SNews 61/01)
		AC00413	- Fuel tank version plastic (SNews 70/02)
		AC00901	- Swivel unit new (SNews 72/02)
Version	3703 „AD“	AD00001	- Diesel engine Yanmar (SNews 73/02)
			- Hydraulic pump new (SNews 73/02)
			- Exhaust pipe behind the rear window
		(SNews 72/02)	- Joystick console short (IV)
		(SNews 74/02)	- Joystick console (IV) hardening cover
			- Sticker design
			- Wiring and instrument panel changed
			- Diesel engine maintenance intervals extension possible (SNews 71/02)
		AD00029	- Fuel tank ventilation filter (SNews 70)
Version	3703-02	AD01554	- Engine changeover EPA2
Version	3703, Edition 2.0	AG00580	- Engine changeover EPA3



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CHAPTER A:

Technical data

(Neuson Service Manual 2503 - 3703)





A.1 Dimensions model 2503

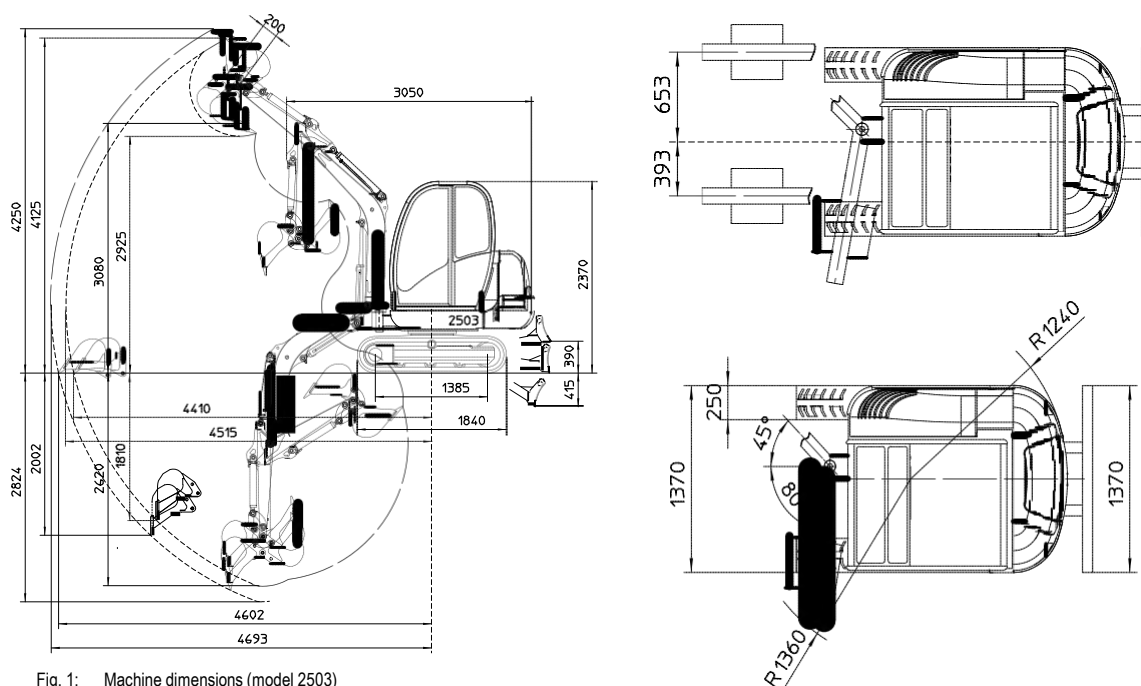


Fig. 1: Machine dimensions (model 2503)

Main data	Model 2503
Service weight with cab/canopy	2620 / 2525 kg 5776 / 5567 lbs
Height	2370 mm / 7'9"
Width	1370 mm / 4'6"
Transport length	4410 mm / 14'6"
Max. digging depth	2620 mm / 8'7"
Stick length (standard)	mm
Stick length (long version)	mm
Max. digging depth for long stick (+ 300 mm/11.8")	2825 mm / 9'3"
Max. vertical digging depth	1810 mm / 5'11"
Max. vertical digging depth (long stick)	2000 mm / 6'7"
Max. digging height	4125 mm / 13'6"
Max. digging height (long stick)	4250 mm / 13'11"
Max. dump height	2925 mm / 9'7"
Max. dump height (long stick)	3080 mm / 10'1"
Max. digging radius	4515 mm / 14'10"
Max. digging radius (long stick)	4693 mm / 15'5"
Max. reach at ground level	4410 mm / 14'6"
Max. reach at ground level (long stick)	4602 mm / 15'1"
Max. breakout force at bucket tooth	20 kN / 4496 lbf
Max. tearout force (standard stick)	13 kN / 2923 lbf
Max. tearout force (long stick)	kN
Min. tail end slewing radius	1240 mm / 4'1"
Max. tail end lateral projection (90° rotation of upper carriage)	mm
Max. boom displacement to bucket centre (right-hand side)	653 mm / 2'2"
Max. boom displacement to bucket centre (left-hand side)	393 mm / 1'3"



A.2 Dimensions model 3003

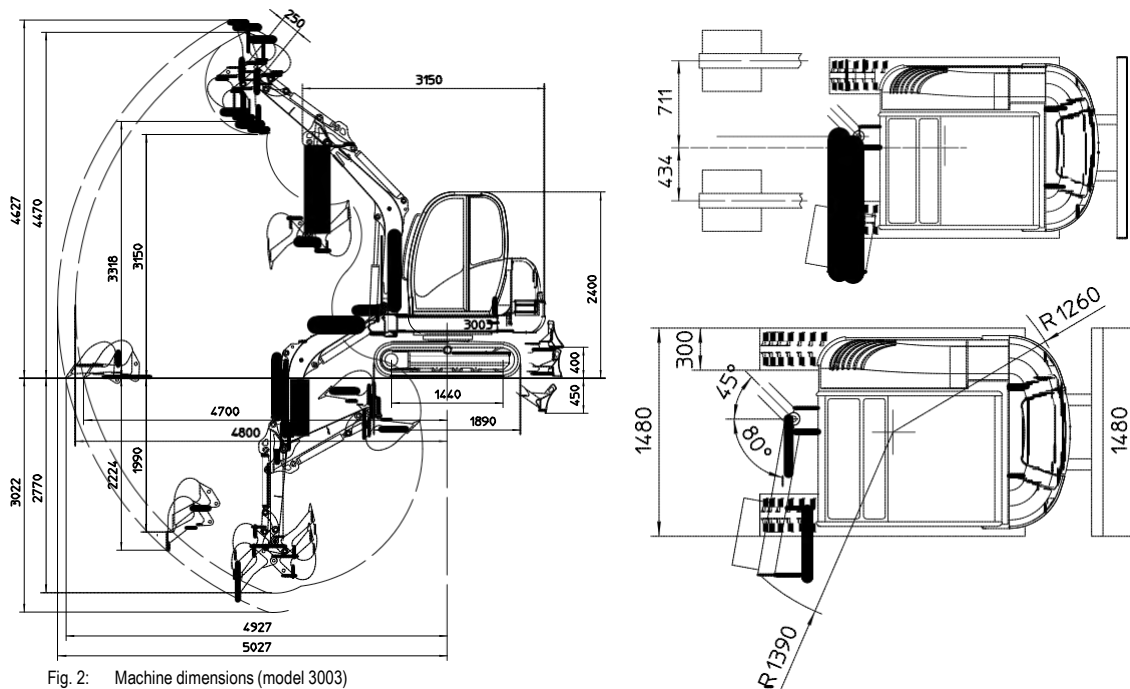


Fig. 2: Machine dimensions (model 3003)

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 / 3642 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"



A.3 Dimensions model 3503

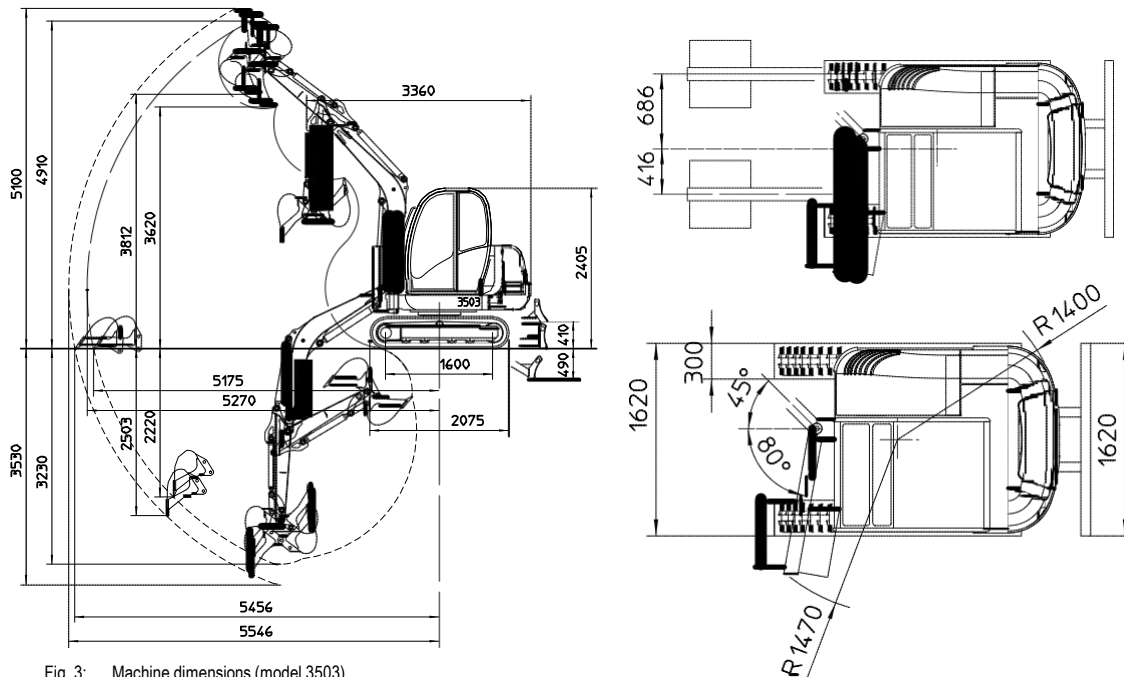


Fig. 3: Machine dimensions (model 3503)

Main data	Model 3503	Vario 3503
Service weight with cab/canopy	3500 / 3405 kg (7716 / 7507 lbs)	3775 / 3680 kg (8322 / 8113 lbs)
Height	2405 mm / 7'11"	2508 mm / 8'3"
Width	1620 mm / 5'4"	1620 mm / 5'4"
Transport length	5170 mm / 16'11"	5170 mm / 16'11"
Max. digging depth	3230 mm / 10'7"	3127 mm / 10'3"
Stick length (standard)	mm	mm
Stick length (long version)	mm	mm
Max. digging depth for long stick (+ 300 mm / 11.8")	3503 mm / 11'6"	3427 mm / 11'3"
Max. vertical digging depth	mm	mm
Max. vertical digging depth (long stick)	2500 mm / 8'2"	2396 mm / 7'10"
Max. digging height	4910 mm / 16'1"	5013 mm / 16'5"
Max. digging height (long stick)	5100 mm / 16'9"	5211 mm / 17'1"
Max. dump height	3620 mm / 11'10"	3723 mm / 12'3"
Max. dump height (long stick)	3810 mm / 12'6"	3923 mm / 12'10"
Max. digging radius	5270 mm / 17'3"	5100 / 5440** (16'9" / 17'10" **)
Max. digging radius (long stick)	5546 mm / 18'2"	5296 / 5796** (17'5" / 19'0" **)
Max. reach at ground level	5175 mm / 17'0"	5005 / 5345 (16'5" / 17'6")
Max. reach at ground level (long stick)	5456 mm / 17'11"	5206 / 5706** (17'1" / 18'9")
Max. breakout force at bucket tooth	30.3 kN / 6812 lbf	30.3 kN / 6812 lbf
Max. tearout force (standard stick)	20.6 kN / 4631 lbf	20.6 kN / 4631 lbf
Max. tearout force (long stick)	16.8 kN / 3777 lbf	16.8 kN / 3777 lbf
Min. tail end slewing radius	1400 mm / 4'7"	1400 mm / 4'7"
Max. tail end lateral projection (90° rotation of upper carriage)	590 mm / 1'11"	420 / 760** mm (1'5" / 2'6" **)
Max. boom displacement to bucket centre (right-hand side)	685 mm / 2'3"	855** mm / 2'10" **
Max. boom displacement to bucket centre (left-hand side)	415 mm / 1'4"	585** mm / 1'11" **



A.4 Dimensions model 3703

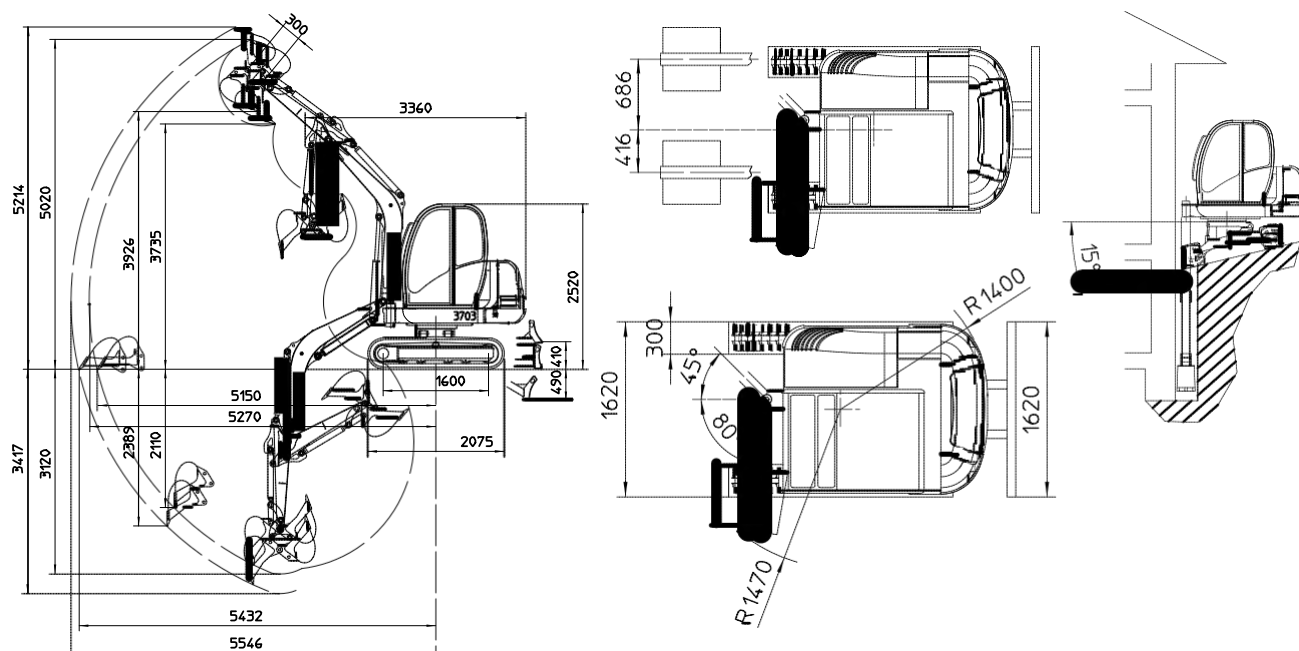


Fig. 4: Machine dimensions (model 3703)

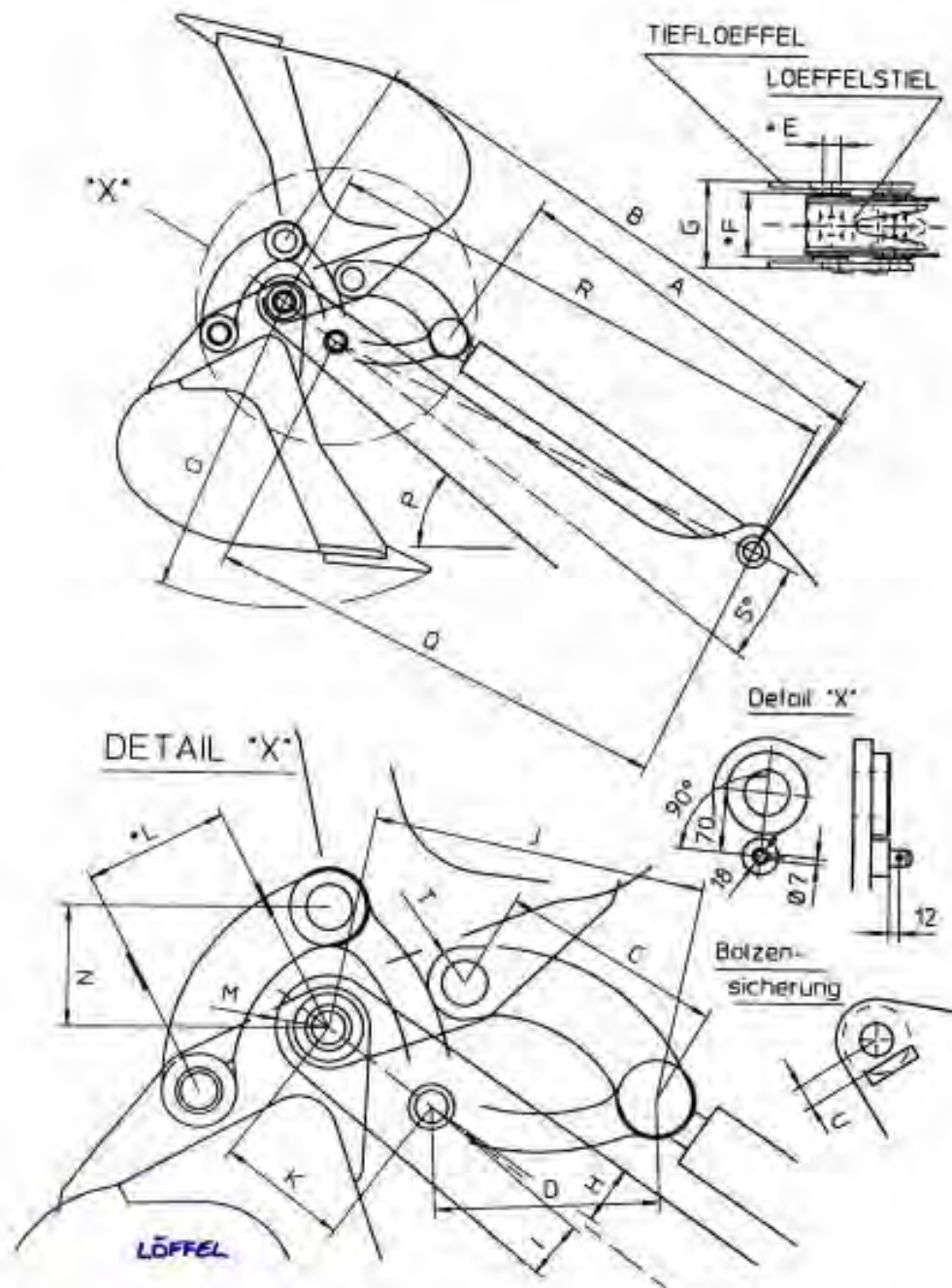
Main data	Model 3703
Service weight with cab/canopy	3734 / 3639 kg 8232 / 8023 lbs
Height	2520 mm / 8'3"
Width	1620 mm / 5'4"
Transport length	5170 mm / 17'0"
Max. digging depth	3120 mm / 10'3"
Stick length (standard)	mm
Stick length (long version)	mm
Max. digging depth for long stick (+ 300 mm / 11.8")	3417 mm / 11'3"
Max. vertical digging depth	2105 mm / 6'11"
Max. vertical digging depth (long stick)	2385 mm / 7'10"
Max. digging height	5020 mm / 16'6"
Max. digging height (long stick)	5220 mm / 17'2"
Max. dump height	3735 mm / 12'3"
Max. dump height (long stick)	3935 mm / 12'11"
Max. digging radius	5270 mm / 17'3"
Max. digging radius (long stick)	5546 mm / 18'2"
Max. reach at ground level	5150 mm / 16'11"
Max. reach at ground level (long stick)	5432 mm / 17'10"
Max. breakout force at bucket tooth	30.4 kN / 6834 lbf
Max. tearout force (standard stick)	20.6 kN / 4631 lbf
Max. tearout force (long stick)	16.8 kN / 3777 lbf
Min. tail end slewing radius	1400 mm / 4'7"
Max. tail end lateral projection (90° rotation of upper carriage)	590 mm / 1'11"
Max. boom displacement to bucket centre (right-hand side)	686 mm / 2'3"
Max. boom displacement to bucket centre (left-hand side)	416 mm / 1'4"



2. KINEMATIC

Tab.: Kinematic

		Unit	2503	3003	3503	3703
E	Bolt diameter	mm	32	40		
F	Dipper stick width	mm	118	140		
L	Bolt distance Bucket carrier	mm	129,5	180		



Tab.: K nematic Overa

Kine matic		Un t	1200 - 1501 RO 1302 - 1502 RO	2100 - 2700 RO	1702 - 2201 RO 1702 - 2202 RO
E	Bolt diameter	mm	30		32
F	Dipper stick width	mm	108	118	
L	Bolt distance Buc ket carrier	mm	108	268	129,5

		Un t	2600 - 2800 RO 2702 - 2902 RO	3000 - 3200 RO 3402 - 3602 RO	3800 WO 3802 WO	5000,5001 RO 5501 WO
E	Bolt diameter	mm	40			50
F	Dipper stick width	mm	140			195
L	Bolt distance Buc ket carrier	mm	155,5			236

		Un t	1403	1503	1903	2203
E	Bolt diameter	mm	32			
F	Dipper stick width	mm	118			
L	Bolt distance Buc ket carrier	mm	129,5			

		Un t	2503	3003	3503	3 03
E	Bolt diameter	mm	32	40		
F	Dipper stick width	mm	118	140		
L	Bolt distance Buc ket carrier	mm	129,5	180		

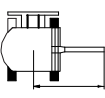
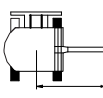
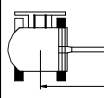
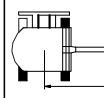
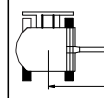
		Un t	5002	00 2	50 2	00 2	12002
E	Bolt diameter	mm	50		50	55	60
F	Dipper stick width	mm	195		195	170	220
L	Bolt distance Buc ket carrier	mm	236		236	300	445





A.1 Lift capacity table 2503

All table indications in kg (lbs) and horizontal position on firm ground without bucket.

A			3.5 m (11'6")		3.0 m (9'10")		2.5 m (8'2")		2.0 m (6'7")	
B										
3.0 m (9'10")	415* (915*)	415* (915*)			400* (882*)	400* (882*)				
2.0 m (6'7")	410* (904*)	350 (772)	410* (904*)	380 (838)	420* (926*)	420* (926*)	460* (1014*)	460* (1014*)		
1.0 m (3'3")	425* (937*)	310 (683)	460* (1014*)	365 (805)	540* (1190*)	460 (1014)	670* (1477*)	595 (1312)	1000* (2205*)	815 (1797)
0.0 m (0'0")	450* (992*)	315 (694)	505* (1113*)	355 (783)	635* (1400*)	440 (970)	835* (1841*)	560 (1235)	1210* (2668*)	770 (1698)
-1.0 m (-3'3")	475* (1047*)	380 (838)			580* (1279*)	435 (959)	790* (1742*)	560 (1235)	1030* (2271*)	775 (1709)
-2.0 m (-6'7")	445* (981*)	445* (981*)							435* (959*)	435* (959*)

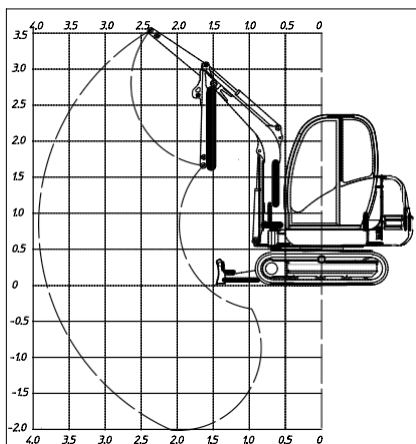


Fig. 1: Lift capacity table (model 2503)

max	Admissible load on extended stick
A	Reach from live ring centre
B	Load hook height
*	Lift capacity limited by hydraulics

	With the stabiliser blade in driving direction
	Without the stabiliser blade, 90° to driving direction

If equipped with a bucket or other attachments, lift capacity or tilt load is reduced by bucket or attachment dead weight.

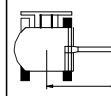
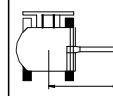
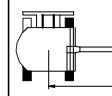
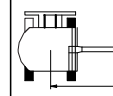
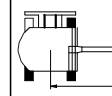
Calculation basis: according to ISO 10567

The track excavator's lift capacity is restricted by the settings of the pressure limiting valves and the hydraulic system's stabilising features.

Neither 75 % of the static tilt load nor 87 % of the hydraulic lift capacity is exceeded.

A.2 Lift capacity table 3003

All table indications in kg (lbs) and horizontal position on firm ground without bucket.

A			3.5 m (11'6")		3.0 m (9'10")		2.5 m (8'2")		2.0 m (6'7")	
B										
3.0 m (9'10")	760* (1676*)	455 (1003)			725* (1598*)	570 (1257)	700* (1543*)	700 (1543)		
2.0 m (6'7")	760* (1676*)	345 (761)	770* (1698*)	430 (948)	825* (1819*)	550 (1213)	950* (2094*)	735 (1620)		
1.0 m (3'3")	790* (1742*)	310 (683)	900* (1984*)	405 (893)	1055* (2326*)	510 (1124)	1330* (2932*)	660 (1455)	1990* (4387*)	900 (1984)
0.0 m (0'0")	825* (1819*)	320 (705)	1000* (2205)	390 (860)	1225* (2701*)	480 (1058)	1615* (3560*)	620 (1367)	2300* (5071*)	865 (1907)
-1.0 m (-3'3")	860* (1896*)	380 (838)			1145* (2524*)	480 (1058)	1505* (3318*)	620 (1367)	1975* (4354*)	875 (1929)
-2.0 m (-6'7")	825* (1819*)	690 (1521)							1075* (2370*)	915 (2017)

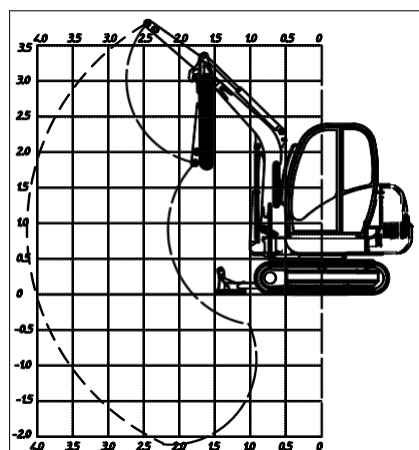
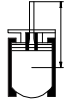
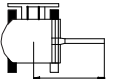


Fig. 2: Lift capacity table (model 3003)

max	Admissible load on extended stick
A	Reach from live ring centre
B	Load hook height
*	Lift capacity limited by hydraulics

	With the stabiliser blade in driving direction
	Without the stabiliser blade, 90° to driving direction

If equipped with a bucket or other attachments, lift capacity or tilt load is reduced by bucket or attachment dead weight.

Calculation basis: according to ISO 10567

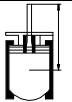
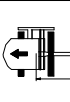
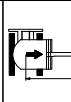
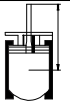
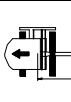
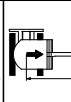
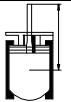
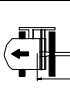
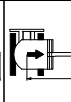
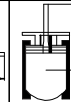
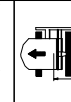
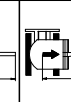
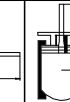
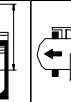
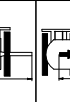
The track excavator's lift capacity is restricted by the settings of the pressure limiting valves and the hydraulic system's stabilising features.

Neither 75 % of the static tilt load nor 87 % of the hydraulic lift capacity is exceeded.



A.3 Lift capacity table 3003 Vario

All table indications in kg (lbs) and horizontal position on firm ground without bucket.

A				3.5 m (11'6")			3.0 m (9'10")			2.5 m (8'2")			2.0 m (6'7")		
B															
3.0 m (9'10")	760* (1676*)	635 (1400)	360 (794)				725* (1598*)	795 (1753)	455 (1003)	700* (1543*)	1080 (2381)	620 (1367)			
2.0 m (6'7")	760* (1676*)	480 (1058)	275 (606)	770* (1698*)	600 (1323)	345 (761)	825* (1819*)	770 (1698)	440 (970)	950* (2094*)	1030 (2271)	590 (1301)			
1.0 m (3'3")	790* (1742*)	435 (959)	250 (551)	900* (1984*)	570 (1257)	325 (717)	1055* (2326*)	715 (1576)	410 (904)	1330* (2932*)	925 (2039)	530 (1168)	1990* (4387*)	1260 (2778)	720 (1587)
0.0 m (0'0")	825* (1819*)	445 (981)	255 (562)	1000* (2205*)	545 (1202)	310 (683)	1225* (2701*)	675 (1488)	385 (849)	1615* (3560*)	870 (1918)	500 (1102)	2300* (5071*)	1210 (2668)	690 (1521)
-1.0 m (-3'3")	860* (1896*)	535 (1179)	305 (672)				1145* (2524*)	670 (1477)	380 (838)	1505* (3318*)	870 (1918)	495 (1091)	1975* (4354*)	1225 (2701)	700 (1543)
-2.0 m (-6'7")	825* (1819*)	965 (2127)	550 (1213)										1075* (2370*)	1280 (2822)	730 (1609)

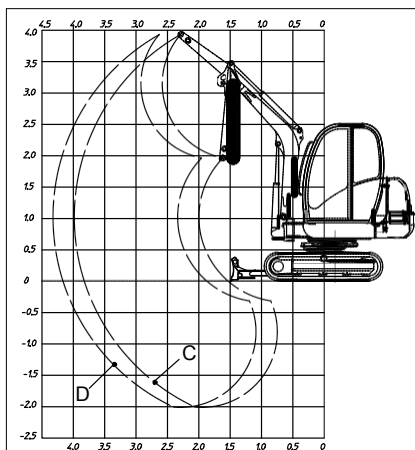
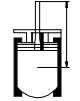


Fig. 3: Lift capacity table (model 3003 Vario)

max	Admissible load on extended stick
A	Reach from live ring centre
B	Load hook height
*	Lift capacity limited by hydraulics

	With the stabiliser blade in driving direction
	Without the stabiliser blade 90° in driving direction Upper carriage shifted to the rear with Vario option Characteristic curve C
	Without the stabiliser blade 90° in driving direction Upper carriage shifted to the front with Vario option Characteristic curve D

If equipped with a bucket or other attachments, lift capacity or tilt load is reduced by bucket or attachment dead weight.

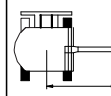
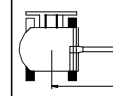
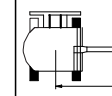
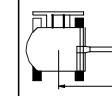
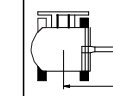
Calculation basis: according to ISO 10567

The track excavator's lift capacity is restricted by the settings of the pressure limiting valves and the hydraulic system's stabilising features.

Neither 75 % of the static tilt load nor 87 % of the hydraulic lift capacity is exceeded.

A.4 Lift capacity table 3503

All table indications in kg (lbs) and horizontal position on firm ground without bucket.

A			4.5 m (14'9")		3.5 m (11'6")		2.5 m (8'2")		1.5 m (4'11")	
B										
3.0 m (9'10")	800* (1764*)	545 (1202)			745* (1642*)	685 (1510)				
2.0 m (6'7")	840* (1852*)	480 (1058)			870* (1918*)	660 (1455)	1110* (2447*)	1105 (2436)		
1.0 m (3'3")	890* (1962*)	415 (915)	900* (1984*)		1100* (2425*)	620 (1367)	1795* (3957*)	1000 (2205)		
0.0 m (0'0")	955* (2105*)	420 (926)	955* (2105*)		1300* (2866*)	595 (1312)	2130* (4696*)	930 (2050)		
-1.0 m (-3'3")	1045* (2304*)	475 (1047)			1310* (2888*)	590 (1301)	2100* (4630*)	950 (2094)	4200* (9259*)	2295 (5060)
-2.0 m (-6'7")	1150* (2533*)	675 (1488)					1700* (3748*)	975 (2150)	3300* (7275*)	2345 (5170)

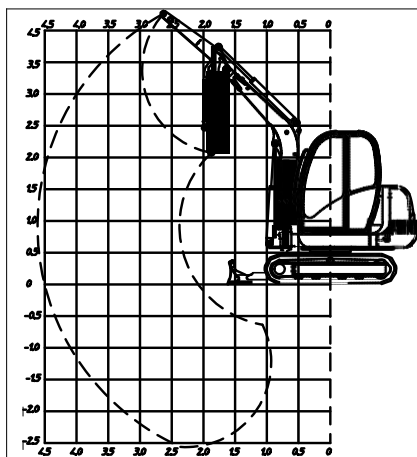
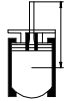
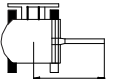


Fig. 4: Lift capacity table (model 3503)

max	Admissible load on extended stick
A	Reach from live ring centre
B	Load hook height
*	Lift capacity limited by hydraulics

	With the stabiliser blade in driving direction
	Without the stabiliser blade, 90° to driving direction

If equipped with a bucket or other attachments, lift capacity or tilt load is reduced by bucket or attachment dead weight.

Calculation basis: according to ISO 10567

The track excavator's lift capacity is restricted by the settings of the pressure limiting valves and the hydraulic system's stabilising features.

Neither 75 % of the static tilt load nor 87 % of the hydraulic lift capacity is exceeded.



A.5 Lift capacity table 3503 Vario

All table indications in kg (lbs) and horizontal position on firm ground without bucket.

A				4.5 m (14'9")			3.5 m (11'6")			2.5 m (8'2")			1.5 m (4'11")		
B															
3.0 m (9'10")	800* (1764*)	760 (1676)	435 (959)				745* (1642*)	745* (1642*)	545 (1202)						
2.0 m (6'7")	840* (1852*)	670 (1477)	385 (849)				870* (1918*)	870* (1918*)	530 (1168)	1110* (2447*)	1110* (2447*)	885 (1951)			
1.0 m (3'3")	890* (1962*)	580 (1279)	335 (739)	900* (1984*)	600 (1323)	345 (761)	1100* (2425*)	870 (1918)	500 (1102)	1795* (3957*)	1395 (3075)	800 (1764)			
0.0 m (0'0")	955* (2105*)	590 (1301)	335 (739)	955* (2105*)	590 (1301)	335 (739)	1300* (2866*)	835 (1841)	475 (1047)	2130* (4696*)	1330 (2932)	760 (1675)			
-1.0 m (-3'3")	1045* (2304*)	670 (1477)	380 (838)				1310* (2888*)	825 (1819)	470 (1036)	2100* (4630*)	1330 (2932)	520 (1146)	4200* (9259*)	3215 (7088)	1835 (4045)
-2.0 m (-6'7")	1150* (2533*)	940 (2072)	540 (1190)							1700* (3748*)	1365 (3009)	780 (1720)	3300* (7275*)	3280 (7231)	1875 (4134)

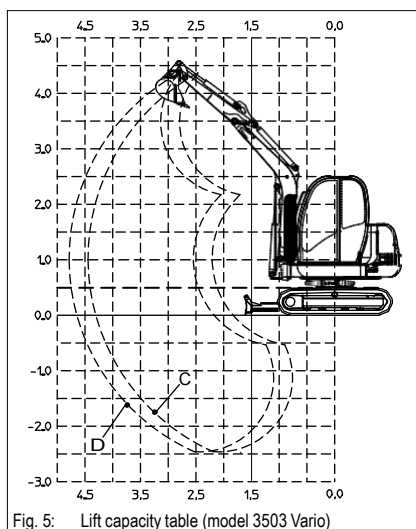


Fig. 5: Lift capacity table (model 3503 Vario)

max	Admissible load on extended stick
A	Reach from live ring centre
B	Load hook height
*	Lift capacity limited by hydraulics

	With the stabiliser blade in driving direction
	Without the stabiliser blade 90° in driving direction Upper carriage shifted to the rear with Vario option Characteristic curve C
	Without the stabiliser blade 90° in driving direction Upper carriage shifted to the front with Vario option Characteristic curve D

If equipped with a bucket or other attachments, lift capacity or tilt load is reduced by bucket or attachment dead weight.

Calculation basis: according to ISO 10567

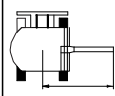
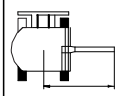
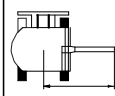
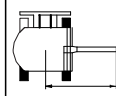
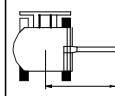
The track excavator's lift capacity is restricted by the settings of the pressure limiting valves and the hydraulic system's stabilising features.

Neither 75 % of the static tilt load nor 87 % of the hydraulic lift capacity is exceeded.



A.6 Lift capacity table 3703

All table indications in kg (lbs) and horizontal position on firm ground without bucket.

A			4.5 m (14'9")		3.5 m (11'6")		2.5 m (8'2")		1.5 m (4'11")	
B										
3.0 m (9'10")	800* (1764*)	650 (1433)			750* (1653*)	550* (1213*)				
2.0 m (6'7")	845* (1863*)	350 (772)			900* (1984*)	530 (1168)	1210* (2668*)	890 (1962)		
1.0 m (3'3")	900* (1984*)	340 (750)	900* (1984*)	340 (750)	1125* (2480*)	500 (1102)	1850* (4079*)	800 (1764)		
0.0 m (0'0")	955* (2105*)	340 (750)	955* (2105*)	340 (750)	1300* (2866*)	460 (1014)	2150* (4740*)	750 (1653)		
-1.0 m (-3'3")	1050* (2315*)	395 (871)			1300* (2866*)	450 (992)	2080* (4586*)	750 (1653)	4200* (9259*)	1855 (4090)
-2.0 m (-6'7")	1150* (2536*)	575 (1268)					1650* (3638*)	790 (1742)	3150* (6945*)	1910 (4211)

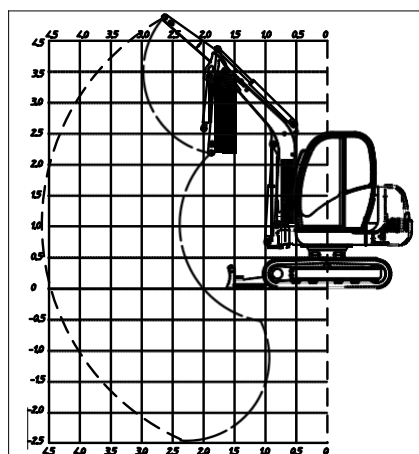
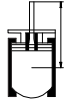


Fig. 6: Lift capacity table (model 3703)

max	Admissible load on extended stick
A	Reach from live ring centre
B	Load hook height
*	Lift capacity limited by hydraulics

	With the stabiliser blade in driving direction
	Without the stabiliser blade, 90° to driving direction

If equipped with a bucket or other attachments, lift capacity or tilt load is reduced by bucket or attachment dead weight.

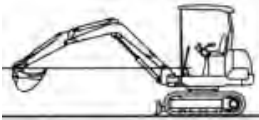
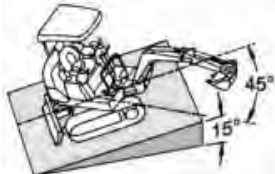
Calculation basis: according to ISO 10567

The track excavator's lift capacity is restricted by the settings of the pressure limiting valves and the hydraulic system's stabilising features.

Neither 75 % of the static tilt load nor 87 % of the hydraulic lift capacity is exceeded.



4. CYCLE COURSES

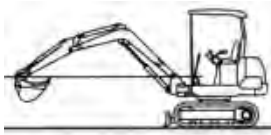
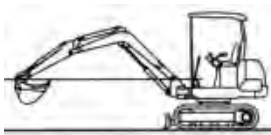
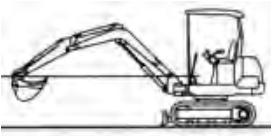
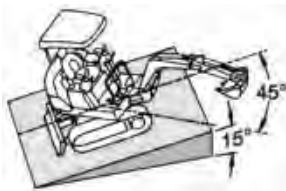
Machine model				Neuson 2503		Neuson 3003	
Classification	Item	Check conditions	Unit	Value		Value	
				normal	allowed	normal	allowed
UPPER FRAME ROTATION	Braking angle	Max. extension of the equipment, without load  > Engine speed: Max. > Hydraulic oil temperature: 45 - 55 °C > Mark the outer rings of the thrust bearings with centering notches. Make the upper frame rotate of 360° and then release the hand grip. Measure the distance between the notches after the stop.	degrees		---		---
	Time required to start the rotation	Max. extension of the equipment, without load  > Engine speed: Max. > Hydraulic oil temperature: 45 - 55 °C > Calculate the time required for 90° and 180° rotations after the control has been operated.	90°		---		---
			180°		---		---
	Time required for the rotation	Max. extension of the equipment, without load  > Engine speed: Max. > Hydraulic oil temperature: 45 - 55 °C > Calculate the time required to perform 5 turns after a first settling turn.	sec.		---		---
	Swing gearmotor hydraulic drift	Position for the check  > Engine off > Hydraulic oil temperature: 45 - 55 °C > Stop the machine on a 15° plane with the boom at 45° with respect to the axis of the track frame. > Mark the position between the upper and track frame on the thrust bearing. > Measure the shift after 15 minutes. > Max. outreach > Weigh in the bucket:	degrees				

Hue 115



Cycle courses - excavators

Hueman I 25. April 03

Machine model				Neuson 3503		Neuson 3703	
Classification	Item	Check conditions	Unit	Value		Value	
				normal	allowed	normal	allowed
UPPER FRAME ROTATION	Braking angle	Max. extension of the equipment, without load  > Engine speed: Max. > Hydraulic oil temperature: 45 - 55 °C > Mark the outer rings of the thrust bearings with centering notches. Make the upper frame rotate of 360° and then release the hand grip. Measure the distance between the notches after the stop.	degrees		---		---
	Time required to start the rotation	Max. extension of the equipment, without load  > Engine speed: Max. > Hydraulic oil temperature: 45 - 55 °C > Calculate the time required for 90° and 180° rotations after the control has been operated.	90°		---		---
			180°		---		---
	Time required for the rotation	Max. extension of the equipment, without load  > Engine speed: Max. > Hydraulic oil temperature: 45 - 55 °C > Calculate the time required to perform 5 turns after a first settling turn.	sec.		---		---
	Swing gearmotor hydraulic drift	Position for the check  > Engine off > Hydraulic oil temperature: 45 - 55 °C > Stop the machine on a 15° plane with the boom at 45° with respect to the axis of the track frame. > Mark the position between the upper and track frame on the thrust bearing. > Measure the shift after 15 minutes. > Max. outreach > Weight in the bucket:	degrees				

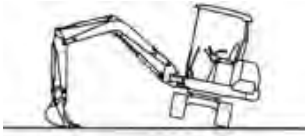
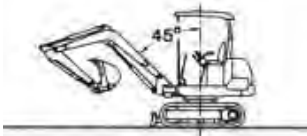
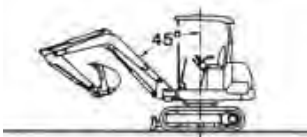
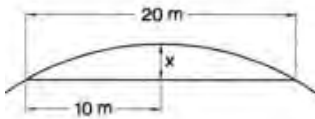
Hue 115



neuson

Cycle courses - excavators

Hueman | 25. Apr | 03

Machine model				Neuson 2503		Neuson 3003	
Class f - cat on	Item	Check cond tions	Un t	Value		Value	
				normal	allow ed	normal	allow ed
Upper frame rotat on	Sw ng gearmotor dra nage	> Eng ne speed: Max. > Hydraul c o l temperature: 45 - 55 °C > Check the o l capac ty of the dra nage c rcu t > Max. pressure > Stop rotat on	cm³/m n				
TRAVEL	O l dra nage from the sw vel jo nt (each outlet)	> Hydraul c o l temperature: 45 - 55 °C > Br ng the pressure to the max. value n the c rcu t to be checked		---		---	
	Travel speed (1)	Pos t on for the check  > Eng ne speed: Max. > Hydraul c o l temperature: 45 - 55 °C > Low er the bucket to the ground and ra se one track; mark a pos t on; > Make one turn w th the track and then calculate the t me necessary to have the track make 5 turns. > Repeate w th the second track	sec.				
	Travel speed (2)	Pos t on for the check  > Eng ne speed: Max. > Hydraul c o l temperature: 45 - 55 °C > Make the mach ne travel on a level surface long at least 10m; calculate the t me necessary to cover 20 meters.					
	Oev at on dur ng w ork	Pos t on for the check  > Eng ne speed: Max. > Hydraul c o l temperature: 45 - 55 °C > Make the mach ne travel on a level surface, long 20m, and measure the dev at on. > The surface must be compact and hor zontal  > Measure d mens on X	mm				

Hue 2 | 5



neuson

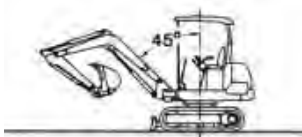
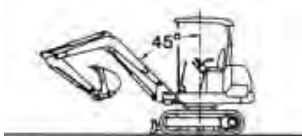
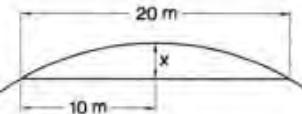
SERVICE MANUAL

2503 - 3703

Technical data

Cycle courses - excavators

Human | 25. Apr | 03

Machine model				Neuson 3503		Neuson 3703	
Classification	Item	Check conditions	Unit	Value		Value	
				normal	allowed	normal	allowed
Upper frame rotation	Swing gearmotor drainage	> Engine speed: Max. > Hydraulic oil temperature: 45 - 55 °C > Check the oil capacity of the drainage circuit > Max. pressure > Stop rotation	cm³/min				
TRAVEL	Oil drainage from the swivel joint (each outlet)	> Hydraulic oil temperature: 45 - 55 °C > Bring the pressure to the max. value in the circuit to be checked		---		---	
	Travel speed (1)	Position for the check  > Engine speed: Max. > Hydraulic oil temperature: 45 - 55 °C > Lower the bucket to the ground and raise one track; mark a position; > Make one turn with the track and then calculate the time necessary to have the track make 5 turns. > Repeat with the second track	sec.				
	Travel speed (2)	Position for the check  > Engine speed: Max. > Hydraulic oil temperature: 45 - 55 °C > Make the machine travel on a level surface long at least 10m; calculate the time necessary to cover 20 meters.					
	Deviation during work	Position for the check  > Engine speed: Max. > Hydraulic oil temperature: 45 - 55 °C > Make the machine travel on a level surface, long 20m, and measure the deviation. > The surface must be compact and horizontal  > Measure dimensions on X	mm				

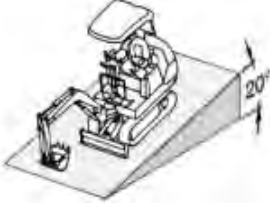
Hue 2 | 5



neuson

Cycle courses - excavators

Hueman I 25. April 03

Machine model				Neuson 2503		Neuson 3003	
Class f - cation	Item	Check cond tions	Un t	Value		Value	
				normal	allowed	normal	allowed
TRAVEL	Travel motor hydraulic drift	Pos t on for the check  > Eng ne off > Hydraul c o l temperature: 45 - 55 °C > Mach ne st ll on a plane w th 20° ncl nat on. > Measure the sh ft after 5 mnutes.	mm				
	Travel motor dra nage	> Eng ne speed: Max. > Hydraul c o l temperature: 45 - 55 °C > Lock the track and measure the del very.	cm³l/mn				
WORK EQUIPMENT (Hydraulic drift)	Com ple te work equipm ent (Lower ng of the bucket teeth pont)	Pos t on for the check 	mm				
	Boom cylinde r (cylnder retract on)	> In th s pos t on t s poss ble to measure the extens on or the retract on of each cylnder and the leaks w th the load appld to the bucket teeth end.					
	dippe r stick cylinde r (cylnder extens on)	> Plane, level surface. > Bucket: rated load > Lever: neutral > Eng ne off					
	Buck et cylinde r (cylnder retract on)	> Hydraul c o l temperature: 45 - 55 °C > Take the measures as soon as the eng ne stops. > Measure the dra nage every 5 mnutes and check the total dra nage after 15 mnutes.					
	doze r blade (check of the blade edge lower ng)	> () : bucket w thout load \$ For the blade, raise and after 15 mnutes measure the y elds due to leaks.			---		---
	Boom offs et sw ing	> Eng ne off > Hydraul c o l temperature: 45 - 55 °C > In the same pos t on nd cated above, stop the mach ne on a plane w th 15° ncl nat on and pos t on the upper frame at 90° Measure the extens on and retract on of the cylnder after 15 mnutes. > () : bucket w thout load					
	Ora nage from each cylnder	> Hydraul c o l temperature: 45 - 55 °C > Introduce the max. pressure n the cylnder to be checked	cm³l/mn	---		---	

Hue 3 I 5



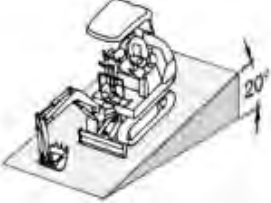
SERVICE MANUAL

2503 - 3703

Techn ca data

Cycle courses - excavators

Hueman | 25. Apr | 03

Machine model				Neuson 3503		Neuson 3703	
Class f - cation	Item	Check cond tions	Un t	Value		Value	
				normal	allowed	normal	allowed
TRAVEL	Travel motor hydraulic drift	Pos t on for the check  > Eng ne off > Hydraul c ol temperature: 45 - 55 °C > Mach ne st ll on a plane w th 20° ncl nat on. > Measure the sh ft after 5 mnutes.	mm				
	Travel motor dra nage	> Eng ne speed: Max. > Hydraul c ol temperature: 45 - 55 °C > Lock the track and measure the del very.	cm³l/mn				
WORK EQUIPMENT (Hydraulic drift)	Com ple te work equipm ent (Lower ng of the bucket teeth po nt)	Pos t on for the check 	mm				
	Boom cylinde r (cylnder retract on)	> In th s pos t on t s poss ble to measure the extens on or the retract on of each cylnder and the leaks w th the load appl ed to the bucket teeth end. > Plane, level surface. > Bucket: rated load					
	dippe r stick cylinde r (cylnder extens on)	> Lever: neutral > Eng ne off					
	Buck et cylinde r (cylnder retract on)	> Hydraul c ol temperature: 45 - 55 °C > Take the measures as soon as the eng ne stops. > Measure the dra nage every 5 mnutes and check the total dra nage after 15 mnutes.					
	dozer blade (check of the blade edge lower ng)	> () : bucket w thout load § For the blade, ra se and after 15 mnutes measure the y elds due to leaks.			---		---
	Boom offs et swing	> Eng ne off > Hydraul c ol temperature: 45 - 55 °C > In the same pos t on nd cated above, stop the mach ne on a plane w th 15° ncl nat on and pos t on the upper frame at 90° Measure the extens on and retract on of the cylnder after 15 mnutes. > () : bucket w thout load					
Ora nage from each cylnder		> Hydraul c ol temperature: 45 - 55 °C > Introduce the max. pressure n the cylnder to be checked	cm³l/mn		---		---

Hue 3 | 5



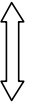
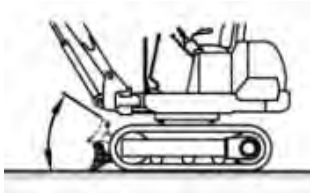
neuson

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 d.No.: 9707748
 Ed t on: Jan 03

Cycle courses - excavators

Hueman I 25. Apr I 03

Machine model					Neuson 2503		Neuson 3003	
Class f - cat on	Item	Check cond tions		Un t	Value		Value	
					normal	allow ed	normal	allow ed
WORK EQUIPMENT (Speed)	Boom	Pos t on for the check without load	RAISING	sec.		---		---
	Bucket teeth onto the ground 	 > Eng ne speed: Max. > Hydraul c o l temperature: 45 - 55 °C				---		---
	Cyl nder completely extended		LOWERING			---		---
	Dipper stick	Pos t on for the check without load	IN	sec.		---		---
	Cyl nder completely retracted 	 > Eng ne speed: Max. > Hydraul c o l temperatur: 45 - 55 °C				---		---
	Cyl nder completely extended		OUT			---		---
	Buck et	Pos t on for the check without load	LOADING	sec.		---		---
	Cyl nder completely retracted 	 > Eng ne speed: Max. > Hydraul c o l temperature: 45 - 55 °C				---		---
	Cyl nder completely extended		OUNPING			---		---
	Dozer blade	Pos t on for the check	RAISING	sec.		---		---
	Blade onto the ground 	 > Eng ne speed: Max. > Hydraul c o l temperature: 45 - 55 °C				---		---
	Blade ra sed at the max. he ght		LOWERING			---		---
	Boom offs et sw ing	Pos t on for the check	RIGHT	sec.		---		---
	Cyl nder completely retracted 	 > Eng ne speed: Max. > Hydraul c o l temperature: 45 - 55 °C				---		---
	Cyl nder completely extended		LEFT			---		---

Hue 4 I 5



neuson

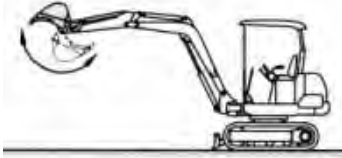
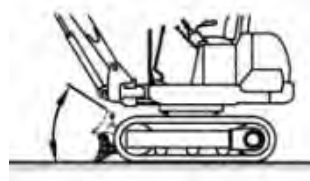
SERVICE MANUAL

2503 - 3703

Technical data

Cycle courses - excavators

Hueman I 25. Apr I 03

Mach ne model				Neuson 3503		Neuson 3 03		
Class f - cat on	Item	Check cond tions	Un t	Value		Value		
				normal	allow ed	normal	allow ed	
WORK EQUIPMENT (Speed)	Boom	Pos tion for the check without load	RAISING	sec.				
	Bucket teeth onto the ground				---	---		
			LOWERING	sec.		---	---	
	Cyl nder completely extended	> Eng ne speed: Max. > Hydraul c o l temperature: 45 - 55 °C						
	Dippe r stick	Pos tion for the check without load	IN	sec.			---	
	Cyl nder completely retracted					---	---	
		Cyl nder completely extended	> Eng ne speed: Max. > Hydraul c o l temperatur: 45 - 55 °C	OUT	sec.		---	---
	Bucket	Pos tion for the check without load	LOADING	sec.				
	Cyl nder completely retracted					---	---	
		Cyl nder completely extended	> Eng ne speed: Max. > Hydraul c o l temperature: 45 - 55 °C	OUMPING	sec.		---	---
Doze r blade	Pos tion for the check	RAISING	sec.					
Blade onto the ground					---	---		
	Blade ra sed at the max. he ght	> Eng ne speed: Max. > Hydraul c o l temperature: 45 - 55 °C	LOWERING	sec.		---	---	
Boom offs et sw ing	Pos tion for the check	RIGHT	sec.					
Cyl nder completely retracted					---	---		
	Cyl nder completely extended	> Eng ne speed: Max. > Hydraul c o l temperature: 45 - 55 °C	LEFT	sec.		---	---	

Hue 4 I 5



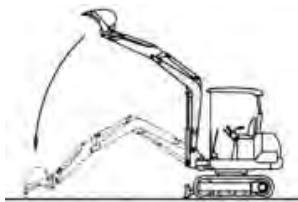
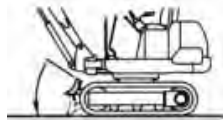
neuson

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 d.No.: 9707748
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Hueman I 25. Apr I 03

Machine model				Neuson 2503		Neuson 3003	
Class f - cat on	Item	Check cond tions	Un t	Value		Value	
				normal	allow ed	normal	allow ed
WORK EQUIPMENT (Response time)	Boom	Pos t on for the check  > Eng ne speed: Min. Hydraul c ol temperature: 45 - 55 °C > Retract the d pper st ck and bucket cyl nders completely . > Low er the boom from ts max mum he ght and meas ure the t me from the moment n w h ch the bucket touches the ground to the moment n w h ch the mach ne starts lft ng.	sec.		---		---
	Dipper stick	Pos t on for the check  > Eng ne speed: Min. Hydraul c ol temperature: 45 - 55 °C > Move the boom to the hor zontal pos t on > Retract the d pper st ck cyl n der completely and then extend t . > Measure the t me from the moment n w h ch t starts mov ng aga n.	sec.		---		---
	Bucket	Pos t on for the check  > Eng ne speed: Min. Hydraul c ol temperature: 45 - 55 °C > Move the boom to the hor zontal pos t on > Retract the bucket cyl n der completely , then extend t . > Measure the t me from the moment n w h ch the bucket stops at the dead center and the moment n w h ch t starts mov ng aga n.	sec.		---		---
	Doze r blade	Pos t on for the check  > Eng ne speed: Min. Hydraul c ol temperature: 45 - 55 °C > Ra se the blade to the max mum he ght and then low er t . > Measure the t me from the moment n w h ch the blade touches the ground and the moment n w h ch the mach ne starts lft ng.	sec.		---		---

Hue 5 I 5



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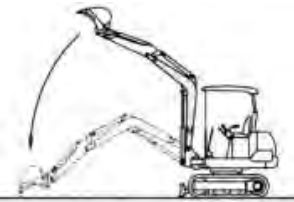
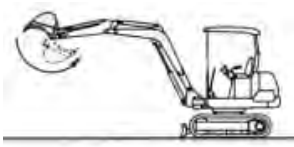
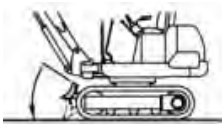
SERVICE MANUAL

2503 - 3703

Technical data

Cycle courses - excavators

Hueman | 25. Apr | 03

Machine model				Neuson 3503		Neuson 3703	
Classification	Item	Check conditions	Unit	Value		Value	
				normal	allowed	normal	allowed
WORK EQUIPMENT (Response time)	Boom	Position for the check  > Engine speed: Min. Hydraulic oil temperature: 45 - 55 °C > Retract the dipper stick and bucket cylinders completely. > Lower the boom from its maximum height and measure the time from the moment in which the bucket touches the ground to the moment in which the machine starts lifting.	sec.		---		---
	Dipper stick	Position for the check  > Engine speed: Min. Hydraulic oil temperature: 45 - 55 °C > Move the boom to the horizontal position > Retract the dipper stick cylinder completely and then extend it. > Measure the time from the moment in which it starts moving again.	sec.		---		---
	Bucket	Position for the check  > Engine speed: Min. Hydraulic oil temperature: 45 - 55 °C > Move the boom to the horizontal position > Retract the bucket cylinder completely, then extend it. > Measure the time from the moment in which the bucket stops at the dead center and the moment in which it starts moving again.	sec.		---		---
	Dozer blade	Position for the check  > Engine speed: Min. Hydraulic oil temperature: 45 - 55 °C > Raise the blade to the maximum height and then lower it. > Measure the time from the moment in which the blade touches the ground and the moment in which the machine starts lifting.	sec.		---		---

Hue 515



neuson

5. HYDRAULIC SYSTEM

Tab.: Hydraulic settings

Excavator type	Unit	2503		3003	
Started with Fabr.No.:		AB00001	AD00001	AB00001	AD00001

HYDRAULIC PUMP

1	Type		Var able I gear pump 252 402	Var able I gear pump 302 402
2	System		S ngle var able pump w th 2 press. ports + 1 gear pump	
3	Vers on A		PVO-0B-24P-8G-4900A	PVO-1B-29P-10G-4903F
4	Vers on B			
5	O I flow rate - vers on. A	l/m n	26,4+26,4+17,6	36,5+36,5+26,3
6	O I flow rate - vers on. B	l/m n		

DRUCKEINSTELLUNG

7	Main pressure limiting valve Pump P1, P2	(2)	bar	240 +3 l -3	240 +3 l -3	225 +3 l -3	225 +3 l -3
8	Main pressure limiting valve Pump P3	(2)	bar	210 +2 l -3	210 +2 l -3	210 +2 l -3	210 +2 l -3
9	Plot oil pressure		bar	35 +4 l -0	35 +4 l -0	35 +4 l -0	35 +4 l -0
10	Secondary press. limit valve Main valve block	(3)	bar	2 5 +5 l -0	2 5 +5 l -0	2 5 +5 l -0	2 5 +5 l -0
11	Secondary press. limit valve Oozer blade valve	(3)	bar	N	N	N	N
13	Swivel motor (SPLV) (Measured at the motor)			200 +2 l -4	200 +2 l -4	200 +2 l -4	200 +2 l -4
14	Orve motor Internal press. limit valve		bar	245 +5 l -5	245 +5 l -5	245 +5 l -5	245 +5 l -5
15	Check valve Boom offset cylinder		bar	2 5 +5 l -5	2 5 +5 l -5	2 5 +5 l -5	2 5 +5 l -5

For correct settings :

- (1)...General - Hydraulic oil temperature: 45 - 50°C
- (2)...Settings at max. engine rpm (see chap. Maintenance)
- (3)...Settings at min. engine rpm (see chap. Maintenance)

QUANTITIES

16	Hydraulic oil tank	Liter	27	27	27	27
17	System filling	Liter	42	42	42	42

Explanation:

N...Not enclosed / not available



SERVICE MANUAL

2503 - 3703

Technical data

Tab.: Hydraulic settings

Excavator type	Unit	3503		3703	
Started with Fabr.No.:		AB00001	AD00001	AB00001	AD00001

HYDRAULIC PUMP

		Variable gear pump 352 402	Variable gear pump 440 302	Variable gear pump 352 402	Variable gear pump 440 302
1 Type					
2 System		Single variable pump with 2 press. ports + 1 gear pump			
3 Version A		PVO-1B-32P-10G- 4904F	PVO-2B-44P-12G- 4713F	PVO-1B-32P-10G- 4904F	PVO-2B-44P-12G- 4713F
4 Version B					
5 Oil flow rate - version A	l/min				
6 Oil flow rate - version B	l/min	39,2+39,2+25,7	45,1+45,1+25,5	39,2+39,2+25,7	45,1+45,1+25,5

DRUCKEINSTELLUNG

7	Main pressure limit valve Pump P1, P2	(2)	bar	240 +3 l -3	240 +3 l -3	240 +3 l -3	240 +3 l -3
8	Main pressure limit valve Pump P3	(2)	bar	210 +2 l -3	210 +2 l -3	210 +2 l -3	210 +2 l -3
9	Plot oil pressure		bar	35 +4 l -0	35 +4 l -0	35 +4 l -0	35 +4 l -0
10	Secondary press. limit valve Main valve block	(3)	bar	2 5 +5 l -0	2 5 +5 l -0	2 5 +5 l -0	2 5 +5 l -0
11	Secondary press. limit valve Booster blade valve	(3)	bar	N	N	N	N
12	Swivel motor (SPLV) (Measured at the motor)			200 +2 l -4	200 +2 l -4	200 +2 l -4	200 +2 l -4
13	Orbital motor Internal pressure limit valve		bar	235 - 1. Speed 255 - 2. Speed +5 l -5	235 - 1. Speed 255 - 2. Speed +5 l -5	235 - 1. Speed 255 - 2. Speed +5 l -5	235 - 1. Speed 255 - 2. Speed +5 l -5
14	Check valve		bar	2 5 +5 l -5	2 5 +5 l -5	2 5 +5 l -5	2 5 +5 l -5
15	Boom offset cylinder		bar				

For correct settings:

- (1)...General - Hydraulic oil temperature: 45 - 50°C
- (2)...Settings at max. engine rpm (see chap. Maintenance)
- (3)...Settings at min. engine rpm (see chap. Maintenance)

QUANTITIES

16	Hydraulic oil tank		Liter	50	50	50	50
17	System filling		Liter	75	75	75	75

Explanation:

N...Not enclosed / not available



Service News 73/02:
Theme: New hydraulic pump 35-3703 starting with
these engine Yanmar type (setting!)
Fabr.Nr.: AD00001 and higher



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Tab. Pressure controlled oil flow - auxiliary hydraulic

AUXILIARY HYDRAULIK

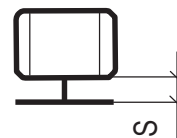
1	Excavator	2503 Pump 2528402	3003 Pump 3028402	3503 3703 Pump 3528402
---	-----------	-----------------------------	-----------------------------	------------------------------------

Pressure controlled oil flow - auxiliary hydraulic (L/min)						
Pressure (bar)	P2 + P3	P2	P2 + P3	P2	P2 + P3	P2
12	44,0	25,0	58,0	35,0	62,0	37
25	44,0	25,0	58,0	35,0	62,0	37
60	41,0	24,0	57,0	33,0	60,0	36
90	38,0	23,0	55,0	31,0	55,0	35
120	34,0	22,0	49,0	30,0	49,0	34
150	30,0	21,0	44,0	29,0	42,0	32
180	24,0	19,0	38,0	28,0	36,0	30

Conditions:

- Oil flow is valid for Fabr.No.: AB00001 - AC09999
- Tolerance of the listed settings: +1 | -2 L/min
- Pressure = Pressure setting at the tool (bucket)
- Values measured directly at the couplings at the dipperstick

Tab.: Clearance - Hose burst protection valves (ns de hose versions)



Id.No.*	Excavator	assembled at the	Screw size	Clearance S
1108384	12002	Triple boom cyl.	3/4"	2,2 mm
1208728	1402-2202	Oozer blade cyl.	3/8"	0,7 mm
1428449	1403-2203	Oozer blade cyl.	3/8"	1 mm
2208301	2203	Tilt cylinder	1/4"	0,4 mm
2528478	2503	Oozer blade cyl.	3/8"	0,8 mm
3028434	3003	Oozer blade cyl.	3/8"	1,8 mm
3528434	3507, 3703	Oozer blade cyl.	1/2"	1,0 mm
3808632	2702-3602, 3802 WO	Oozer blade cyl.	3/8"	1,2 mm
4508563	5002	Oozer blade cyl.	1/2"	1,2 mm
3408571	6002	Oozer blade cyl.	1/2"	1,5 mm
5508607	6502	Oozer blade cyl.	3/8"	1,5 mm
7008563	8002, 12002	Oozer blade cyl.	1/2"	3,4 mm

* Attention: Neuson reserves changes (09.07.02)

Please, see the item No. From the actual spare parts books !. Hglhue



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6. DIESEL ENGINE

Version KUBOTA

Tab.: Diesel engine settings - (Fabr.No.: AB00001 - AC09999)

Excavator type	Unit	Neuson 2503	Neuson 3003	Neuson 3503	Neuson 3703
----------------	------	-------------	-------------	-------------	-------------

SPECIFICATION:

1	Oesel eng ne model		Kubota D 1403-B(E)	Kubota D 1 03-B(E)
2	Started wth Neuson Fabr.No.:		AB00001	
3	Type		Vert cal, 4-cycle water cooled d esel eng ne	
4	Suct on system		Natural suct on	
5	Combust on system		Spec al swrl pre-combust on chamber	
6	Glow system		Glow plugs ns de the pre.comb. Chamber	
7	O rect on of rotat on		Counterclock wse (v ewed from flywheel)	
8	Governor		Mechan cal centr fugal governor	
9	Lubr cat on system		Pressured lubr cat on	
10	Start ng system		Electr cal	
11	Cool ng system		Water cooled I Suct on van	

DATA:

12	Max. revolut on speed (no load)	rpm	2320 +0 l -50	2515 +0 l -50		
13	Max. rev.speed with load	rpm	F	F	F	F
14	Revolut on speed	rpm	2200 +50 l -50	2450 +50 l -50		
15	M n. revolut on speed (no load)	rpm	1100 +50 l -50			
16	O splacement (Bore x Stroke)	ccm	1393 (80x92,4)	1647 (87x92,4)		
17	Output (at rev. Speed 14)	KW (PS)	18,0 (24,5)	23,3 (31,7)		
18	Max. eng ne output	KW (PS)	21,6 (29,4)	25,7 (35,0)		
19	No. of cyl nder	pcs	3			
20	Valve clearance (IN=OUT)	mm	0,18 - 0,22 (kalt)			
21	Compress on rat o		23,0			
22	Fuel nject on t m ng	deg	18 +l-1			
23	Fuel nject on pressure	bar	140 - 150			
24	Compress on pressure	bar	36 - 38 at 250 rpm (L m t: 26 bar)			
25	Eng ne o l pressure (rev. speed level)	bar	3,0 - 4,0			
26	Pressure swtch eng ne o l pump	bar	0,5 - 1,0			
27	Thermostat open ng temperature	°C	69,5 - 72,5			
28	Thermostat open total	°C	85			
29	Thermo swtch On l Out	°C	118 l ?			
30	F r ng order		1-2-3			
31	Generator power (Standard)	A l V	30 l 12			
32	Battery	V l Ah	12 l 70			
33	V-Belt measur ngs	mm				



neuson

Techn ca data

SERVICE MANUAL 2503 - 3703

Tab.: Diesel engine settings - (Fabr.No.: AB00001 - AC09999)

KUBOTA

Excavator type	Unit	Neuson 2503	Neuson 3003	Neuson 3503	Neuson 3703
----------------	------	----------------	----------------	----------------	----------------

TIGHTENING TORQUES:

34	Cylinder head bolt	Nm	93,1 - 98,0 (M11x1,25)		
35	Bonnet screw nut	Nm	6,9 - 8,8 (M8x1,25)		
36	Connection rod bolt	Nm	44,1 - 49,0 (M8x1,0)		
37	Metal cap clamping bolt	Nm	196,1 - 215,8 (M30x1,5)		
38	Flywheel clamping bolt	Nm	98,0 - 107,8 (M12x1,25)		
39	Glow plug	Nm	19,6 - 24,5 (M10x1,25)		

QUANTITIES

40	Fuel tank	Liter	41	52
41	Engine oil - oil pan (Max.Effect)	Liter	7,0 5,6	
42	Cooling water content (without cooler)	Liter	2,7	

QUALITY

43	Engine oil	Quality	MIL-L-2104C	
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neuson

SERVICE MANUAL

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Technical data

6. DIESEL ENGINE

Version YANMAR

Tab.: Diesel engine settings - (Fabr.No.: AD00001 and higher)

	Excavator type	Un t	Neuson 2503	Neuson 3003	Neuson 3503	Neuson 3 03
SPECIFICATION:						
1	O esel eng ne model		Yanm ar 3TNE -ENSR 1	Yanm ar 3TNE -ENSR 2	Yanm ar 4TNE -ENSR	
2	Started wth Neuson Fabr.No.:		AD00001			
3	Type		Vert cal, 4-cycle water cooled d esel eng ne			
4	Suct on system		Natural suct on			
5	Combust on system		O rect nject on system			
6	Glow system		Preheater, t me relay controlled			
7	O rect on of rotat on		Counterclockwse (v ewed from flywheel)			
8	Governor		Mechan cal centr fugal governor			
9	Lubr cat on system		Forced lubr cat on wth trocho d pump			
10	Start ng system		Electr cal			
11	Cool ng system		Water cooled l Suct on van			
DATA:						
12	Max. revolut on speed (no load)	rpm	23 5 +50 l -50	2 50 +50 l -50	2000 +50 l -50	
13	Max. rev.speed wth load	rpm	105 +25 l -25	100 +25 l -25	300 +25 l -25	
14	Revolut on speed	rpm	2200 +25 l -25	2500 +25 l -25	1900 +25 l -25	
15	M n. revolut on speed (no load)	rpm	1100 +50 l -50			
16	O splacement (Bore x Stroke)	ccm	1642 (88x90)		2190 (88x90)	
17	Output (at rev. Speed 14)	KW (PS)	19,5 (26,1)	22,1 (29,6)		
18	Max. eng ne output	KW (PS)	27,1 (36,3)		36,0 (48,0)	
19	No. of cyl nder	pcs	3		4	
20	Valve clearance (IN=OUT)	mm	0,15 - 0,25			
21	Compress on rat o		18,0			
22	Fuel nject on t m ng	deg	12 +l-1		14 +l-1	
23	Fuel nject on pressure	bar	220 - 230			
24	Compress on pressure	bar	35 +l-1 at 250 rpm			
25	Eng ne o l pressure (rev. speed level)	bar	3,0 - 4,0			
26	Pressure swtch eng ne o l pump	bar	0,4 - 0,6			
27	Thermostat open ng temperature	°C				
28	Thermostat open total	°C				
29	Thermo swtch On l Out	°C	107-113 l 100 and more			
30	F r ng order		1-3-2-1		1-3-4-2 (Nr.1- Zyl.Schwungradset)	
31	Generator power (Standard)	A l V				
32	Battery	V l Ah	12 l 71		12l88	
33	V-Belt measur ngs	mm	12,5 x 1000		12,5 x 1000	



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Techn ca data

SERV CE MANUAL 2503 - 3703

Tab.: D esel eng ne sett ngs - (Fabr.No.: AD00001 and h gher)

YANMAR

Excavator type	Un t	Neuson 2503	Neuson 3003	Neuson 3503	Neuson 3 03
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TIGHTENING TORQUES:

34	Cyl nder head bolt	Nm	87,0 - 93,0 (M10x1,25)		
35	Bonnet screw nut	Nm	N		
36	Connect on rod bolt	Nm	45 - 55 (M9x1,0)		
37	Metal cap clamp ng bolt	Nm	98,0 - 102,0 (M12x1,5)		
38	Flywheel clamp ng bolt	Nm	85,0 - 90,0 (M10x1,25)		
39	Glow plug	Nm	N		

QUANTITIES

40	Fuel tank	L ter	75		
41	Eng ne o l - o l pan (Max.IEffect)	L ter	7,5 l 4	7,5 l 4	7,5 l 4
42	Cool ng water content (w thout cooler)	L ter	6	6	6

QUALITY

43	Eng ne o l	Qual ty	API grade CC Klasse or h gher		
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Service News 73/02:

Theme: New d ese eng ne type Yanmar for
2503-3703 (sett ngs !)

Fabr.Nr.: AD00001 and h gher



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Specifications 3TNV 88 – 4TNV 88 (supplement)

Chassis

Sturdy steel sheet chassis, rubber-mounted engine

3 TNV88 engine

Engine	Model 2503	
	Tier 2	Tier 3A
Product	Yanmar diesel engine	
Type	3TNV88-SNS	3TNV88-BSNS
Design	Water-cooled 4 stroke diesel engine	
No. of cylinders	3	
Fuel injection system	Direct injection	
Aspiration	Natural aspiration	
Cooling system	Water-cooled/aspirating fan	
Lubrication system	Force-feed lubrication with trochoidal pump	
Displacement	1642 cm ³ (100.2 cu in)	
Nominal bore and stroke	88 x 90 mm (3.46 x 3.54")	
Output	19.4 kW (26 hp) at 2200 rpm	
Max. torque	107.3 Nm at 1320 rpm (79.14 lbf ft)	
Max. engine speed without load	2400 ± 50 rpm	
Idling speed	1100 ± 50 rpm	
Valve clearance (intake = outlet)	0.15 – 0.25 mm (0.006 – 0.01") cold	
Compression	34.3 ± 1 bar at 250 rpm (497.5 ± 14.5 psi at 250 rpm)	33.3 – 35.3 bar at 250 rpm (483 – 512 psi at 250 rpm)
Engine oil pressure	3 – 4 bar (43.5 – 58 psi)	3.5 – 5.0 bar (51 – 73 psi)
Pressure switch for engine oil pump	0.5 ± 0.1 bar (7.25 ± 1.45 psi)	
Thermostat opening temperature	69.5 – 72.5 °C (157.1 – 162.5 °F)	
Thermal switch	107 – 113 °C (224.6 – 235.4 °F)	
Firing order	1 – 3 – 2	
Direction of rotation	Counterclockwise (as seen from the flywheel)	
Starting aid	Intake manifold preheating (preheating time 10 – 15 sec)	Glow elements (preheating time 10 – 15 seconds)
Max. inclined position (engine no longer supplied with oil):	30° in all directions 35° no longer than 3 minutes!	
Specific fuel consumption	257 g/kWh (0.423 lb/hph)	252 g/kWh (0.414 lb/hph)
Exhaust values according to	97/68/EC Tier 2 EPA Tier 2	97/68/EC Tier 3A EPA Tier 4 interim

Specifications


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Fuel injection pump

Type	YPD-MP2	
	Tier 2	Tier 3A
Design	Single piston distributor injection pump	
Injection pressure	216 – 226 bar (3133 – 3278 psi)	196 – 206 bar (2843 – 2988 psi)
Revs control	Mechanical	
Lubrication system	Engine oil lubrication	

Engine capacities

Capacities	Model 2503	
	Tier 2	Tier 3A
Fuel tank	44 l (11.624 gal)	
Engine oil	7.1 l (1.877 gal)	
Coolant (without radiator)	2 l (0.53 gal)	
Radiator	3.5 l (0.93 gal)	5.5 l (1.45 gal)
Expansion tank	0.84 l (0.22 gal)	

Overview of capacities: – [see Supplement to engine/machine fluids and lubricants 3TNV 88 – 4TNV 88](#) on page B-5

Engine tightening torques

Tightening torques	Model 2503 Nm/lbf ft
Cylinder-head bolt	85.3 – 91.1 / 62.9 – 67.2 (M10x1.25)
Connecting rod bearing screw	44.1 – 49.0 / 32.5 – 36.1 (M9x1)
Main bearing screw	93.2 – 98.1 / 68.7 – 72.4 (M12x1.5)
Flywheel screw	83.3 – 88.2 / 61.4 – 65.1 (M10x1.25)

Hydraulic system

Hydraulics	Model 2503 Tier 3A
Pump	Double variable displacement pump + 1 gear pump 2 x 12 + 8 cm ³ (2 x 0.73 + 0.49 cu in) PVD-0B-24P-8G-4900Z
Flow rate	2 x 28.8 + 19.2 l/min (2 x 7.6 + 5.1 gpm) at 2400 rpm
Control valve	11 sections/12 sections (3rd control circuit)
Main pressure limiting valve for pumps P1, P2	240 ^{±3} bar (3481 ^{±44} psi)
Main pressure limiting valve for pump P3	210 ^{±3} bar (3046 ^{±44} psi)
Secondary pressure limiting valve for main valve block	275 ^{-0/+0.5} bar at 20 l/min
Main pressure limiting valve for pilot control pressure	35 ^{±1} bar (508 ^{±15} psi)
Main pressure limiting valve for swivel unit engine pressure restriction	210 ^{±3} bar (3046 ^{±44} psi)
Hydraulic oil cooler	Standard
Hydraulic tank capacity	45 l (11.9 gal)
2nd speed shift pressure	180 bar (2611 psi)
Gear motor braking deceleration time	3.7 ^{-1.2/+1.2} s at 50 °C (122 °F) oil temperature
Circulation pressure P1, P2	15.5 bar (225 psi) / 1 2.5 bar (181 psi)
Circulation pressure P3	18 bar (261 psi)

Engine 4TNV 88

Engine	Models 3503 – 3703	
	Tier 2	European tier 3A Tier IV interim
Product	Yanmar diesel engine	
Type	4TNV88-WNS	4TNV88-BWNS
Design	Water-cooled 4 stroke diesel engine	
No. of cylinders	4	
Fuel injection system	Direct injection	
Aspiration	Natural aspiration	
Cooling system	Water-cooled/aspirating fan	
Lubrication system	Force-feed lubrication with trochoidal pump	
Displacement	2190 cm ³ (133.6 cu in)	
Nominal bore and stroke	88 x 90 mm (3.46 x 3.54")	
Output	23.7 kW (31.8 hp) at 2000 rpm	
Max. torque	143 Nm (105 lbf ft) at 1200 rpm	
Max. engine speed without load	2025 ± 25 rpm	
Idling speed	1100 ± 25 rpm	
Valve clearance (intake = outlet)	0.15 – 0.25 mm/(0.0059 – 0.0098") cold	
Compression	33.3 – 35.3 bar (483 – 512 psi) at 250 rpm	
Engine oil pressure	2.9 – 3.9 bar (42 – 57 psi)	3.2 – 4.7 bar (46 – 68 psi)
Pressure switch for engine oil pump	0.5 ± 0.1 bar (7.3 ± 1.5 psi)	
Thermostat opening temperature	69.5 – 72.5 °C (157.1 – 162.5 °F)	
Thermal switch	107 – 113 °C (224.6 – 235.4 °F)	
Firing order	1 – 3 – 4 – 2	
Direction of rotation	Counterclockwise (as seen from the flywheel)	
Starting aid	Intake manifold preheating (preheating time 10 – 15 sec)	Glow plug (preheating time 10 – 15 seconds)
Max. inclined position (engine no longer supplied with oil):	30° in all directions	
Fuel consumption	6.3 l/h (1.7 gal/h) (without air conditioning) ¹	5.9 l/h (1.6 gal/h) (without air conditioning) ¹
	6.3 l/h (1.7 gal/h) (with air conditioning) ¹	5.9 l/h (1.6 gal/h) (with air conditioning) ¹
Specific fuel consumption	264 g/kWh (0.434 lb/hph)	249 g/kWh (0.409 lb/hph)
Exhaust values according to	97/68/EC Tier 2 EPA Tier 2	97/68/EC Tier 3A EPA Tier 4 interim

1. Values based on an average 70 % load of the excavator and a diesel fuel density of 0.83 kg/dm³ and cannot be used for comparison with competitors. Specific fuel consumption should be used for this. The air conditioning system has been taken into account with 100 % operating time.

Specifications


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Fuel injection pump

Type	YPD-MP2	
	Tier 2	Tier 3A
Design	Single piston distributor injection pump	
Injection pressure	215 – 225.5 bar (3118 – 3271 psi)	196 – 206 bar (2843 – 2988 psi)
Revs control	Mechanical	
Lubrication system	Engine oil lubrication	

Engine capacities

Capacities	Models 3503 – 3703
Fuel tank	83 l (22 gal)
Engine oil (max./effect.)	7.4 l / 3.4 l (2.0 gal / 0.9 gal)
Coolant (without radiator)	2.7 l (0.7 gal)
Radiator	3.5 l (0.9 gal)
Expansion tank	0.45 l (0.1 gal)

Overview of capacities: – see *Supplement to engine/machine fluids and lubricants 3TNV 88 – 4TNV 88* on page B-5

Engine tightening torques

Tightening torques	Model 3503 – 3703 Nm / lbf ft
Cylinder-head bolt	85.3 – 91.1 / 62.96 – 67.20 (M10x1.25)
Connecting rod bearing screw	44.1 – 49.0 / 32.5 – 36.1 (M9x1)
Main bearing screw	93.2 – 98.1 / 68.7 – 72.4 (M12x1.5)
Flywheel screw	83.3 – 88.2 / 61.4 – 65.1 (M10x1.25)

Hydraulic system

Hydraulics		Models 3503 – 3703
Pump	Tier 3A	Double variable displacement pump + 1 gear pump 2 x 22.0 + 12.4 cm ³ (2 x 1.34 + 0.76 cu in) PVD-2B-44P-12G-4713G
Flow rate	Tier 3A	2 x 44.5 + 25.1 l/min (2 x 11.8 + 6.6 gpm) at 2025 rpm
Control valve		10 sections / 11 sections (3rd control circuit)
Main pressure limiting valve for pumps P1, P2		240 ^{-0/+5} bar (3481 ^{-0/+73} psi)
Main pressure limiting valve for pump P3		210 ^{±3} bar (3046 ^{±44} psi)
Secondary pressure limiting valve for main valve block		275 ^{-0/+0.5} bar (3989 ^{-0/+7.3} psi) at 20 l/min (5.3 gpm)
Main pressure limiting valve for pilot control pressure		35 ^{±1} bar (508 ^{±15} psi)
Main pressure limiting valve for swivel unit engine pressure restriction		215 ^{±3} bar/3118 ^{±44} psi (at idling speed)
Hydraulic oil cooler		Standard
Hydraulic tank capacity		80 l (21.1 gal)
2nd speed shift pressure		180 bar (2611 psi)
Gear motor braking deceleration time		3.7 ^{-1.2/+1.2} s at 50 °C (122 °F) oil temperature
Circulation pressure P1, P2		15.5 bar (225 psi)/12.5 bar (181 psi)
Circulation pressure P3		18 bar (261 psi)

7. TIGHTENING TORQUES

Tightening torque
for hydraulic joints and dry assembling



Metric hose joints for hydraulic assembling

Light version (DKOL)				
DN	RA	Screw	Tool	Torque
05	6L	M12x1,5	SW 14	15 Nm
06	8L	M14x1,5	SW 17	20 Nm
08	10L	M16x1,5	SW 19	40 Nm
10	12L	M18x1,5	SW 22	50 Nm
12	15L	M22x1,5	SW 27	75 Nm
16	18L	M26x1,5	SW 32	85 Nm
20	22L	M30x2	SW 36	100 Nm
25	28L	M36x2	SW 41	180 Nm
32	35L	M45x2	SW 55	220 Nm

Quelle: Fa. Schaffer

Heavy type (DKOS)				
DN	RA	Screw	Tool	Torque
05	8S	M16x1,5	SW 19	40 Nm
06	10S	M18x1,5	SW 22	50 Nm
08	12S	M20x1,5	SW 24	60 Nm
10	14S	M22x1,5	SW 27	75 Nm
12	16S	M24x1,5	SW 30	90 Nm
16	20S	M30x2	SW 36	100 Nm
20	25S	M36x2	SW 41	180 Nm
25	30S	M42x2	SW 50	270 Nm
32	38S	M52x2	SW 60	400 Nm

Quelle: Fa. Schaffer

Surface galvanic coated and dry (O-Ring oiled). Tolerance torque -10 %



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Tightening torques for hydraulic screw joints and dry assembling

Screws with different seal types for hydraulic use

Light version						
	Screw	GE mit Seal washer	Einschraub zapfen ED-Seal	O-Ring	RHV with ED-seal	outside bore-Ø
Metric screw	M10x1,0	9 Nm	18 Nm	15 Nm	18 Nm	10 mm
	M12x1,5	20 Nm	25 Nm	25 Nm	25 Nm	12 mm
	M14x1,5	35 Nm	45 Nm	35 Nm	35 Nm	14 mm
	M16x1,5	45 Nm	55 Nm	40 Nm	50 Nm	16 mm
	M18x1,5	55 Nm	70 Nm	45 Nm	70 Nm	18 mm
	M22x1,5	65 Nm	125 Nm	60 Nm	125 Nm	22 mm
	M27x2,0	90 Nm	180 Nm	100 Nm	145 Nm	27 mm
	M33x2,0	150 Nm	310 Nm	160 Nm	210 Nm	33 mm
	M42x2,0	240 Nm	450 Nm	210 Nm	360 Nm	42 mm
	M48x2,0	290 Nm	540 Nm	260 Nm	540 Nm	48 mm
Whitworth screw	G 1/8A	9 Nm	18 Nm	15 Nm	18 Nm	9,73 mm
	G 1/4A	35 Nm	35 Nm	30 Nm	35 Nm	13,16 mm
	G 3/8A	45 Nm	70 Nm	45 Nm	50 Nm	16,66 mm
	G 1/2A	65 Nm	90 Nm	55 Nm	65 Nm	20,96 mm
	G 3/4A	90 Nm	180 Nm	100 Nm	140 Nm	26,44 mm
	G 1A	150 Nm	310 Nm	160 Nm	190 Nm	33,25 mm
	G 1 1/4A	240 Nm	450 Nm	210 Nm	360 Nm	41,91 mm
	G 1 1/2A	290 Nm	540 Nm	260 Nm	540 Nm	47,80 mm

Die angegebenen Werte sind als Richtwerte anzuwenden

Heavy version						
	Screw	GE mit Seal washer	Einschraub zapfen ED-Seal	O-Ring	RHV with ED-seal	outside bore-Ø
Metric screw	M12x1,5	20 Nm	35 Nm	35 Nm	35 Nm	12 mm
	M14x1,5	35 Nm	55 Nm	45 Nm	45 Nm	14 mm
	M16x1,5	45 Nm	70 Nm	55 Nm	55 Nm	16 mm
	M18x1,5	55 Nm	90 Nm	70 Nm	70 Nm	18 mm
	M20x1,5	55 Nm	125 Nm	80 Nm	100 Nm	20 mm
	M22x1,5	65 Nm	135 Nm	100 Nm	125 Nm	22 mm
	M27x2,0	90 Nm	180 Nm	170 Nm	135 Nm	27 mm
	M33x2,0	150 Nm	310 Nm	310 Nm	210 Nm	33 mm
	M42x2,0	240 Nm	450 Nm	330 Nm	360 Nm	42 mm
	M48x2,0	290 Nm	540 Nm	420 Nm	540 Nm	48 mm
Whitworth screw	G 1/4A	35 Nm	55 Nm	45 Nm	45 Nm	13,16 mm
	G 3/8A	45 Nm	80 Nm	60 Nm	60 Nm	16,66 mm
	G 1/2A	65 Nm	115 Nm	75 Nm	100 Nm	20,96 mm
	G 3/4A	90 Nm	180 Nm	170 Nm	145 Nm	26,44 mm
	G 1A	150 Nm	310 Nm	310 Nm	260 Nm	33,25 mm
	G 1 1/4A	240 Nm	450 Nm	330 Nm	360 Nm	41,91 mm
	G 1 1/2A	290 Nm	540 Nm	420 Nm	540 Nm	47,80 mm

Toleranz der Drehmomente: - 10% ; Gegenwerkstoff: Stahl | Aluminium

Die angegebenen Werte sind als Richtwerte anzuwenden

Technical data

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Tightening torque for high quality screws



Tightening torque M_A for high quality screw joints

with Standard screw					
Size	Screw with OIN 912, OIN 931, OIN 933, usw.			Screws OIN 7984	
		10.9	12.9		10.9
M5	5,5 Nm	8 Nm	10 Nm	5 Nm	7 Nm
M	10 Nm	14 Nm	17 Nm	8,5 Nm	12 Nm
M	25 Nm	35 Nm	42 Nm	20 Nm	30 Nm
M10	45 Nm	65 Nm	80 Nm	40 Nm	59 Nm
M12	87 Nm	110 Nm	147 Nm	69 Nm	100 Nm
M14	135 Nm	180 Nm	230 Nm	110 Nm	160 Nm
M1	210 Nm	275 Nm	350 Nm	170 Nm	250 Nm
M1	280 Nm	410 Nm	480 Nm	245 Nm	345 Nm
M20	410 Nm	570 Nm	690 Nm	340 Nm	490 Nm
M22	550 Nm	780 Nm	930 Nm	460 Nm	660 Nm
M24	710 Nm	1000 Nm	1190 Nm	590 Nm	840 Nm
M2	1040 Nm	1480 Nm	1770 Nm	870 Nm	1250 Nm
M30	1420 Nm	2010 Nm	2400 Nm	1200 Nm	1700 Nm

Quelle: KB-Vorgaben / Kramer Werkzeu

with fine screw					
Size	Screws with OIN 912, OIN 931, OIN 933, usw.			Screws OIN 7984	
		10.9	12.9		10.9
M x1,0	25 Nm	37 Nm	43 Nm	22 Nm	32 Nm
M10x1,0	50 Nm	75 Nm	88 Nm	43 Nm	65 Nm
M10x1,25	49 Nm	71 Nm	83 Nm	42 Nm	62 Nm
M12x1,25	87 Nm	130 Nm	150 Nm	75 Nm	110 Nm
M12x1,5	83 Nm	125 Nm	145 Nm	72 Nm	105 Nm
M14x1,5	135 Nm	200 Nm	235 Nm	120 Nm	175 Nm
M1 x1,5	210 Nm	310 Nm	360 Nm	180 Nm	265 Nm
M1 x1,5	315 Nm	450 Nm	530 Nm	270 Nm	385 Nm
M20x1,5	440 Nm	630 Nm	730 Nm	375 Nm	530 Nm
M22x1,5	590 Nm	840 Nm	980 Nm	500 Nm	710 Nm
M24x2,0	740 Nm	1070 Nm	1250 Nm	630 Nm	900 Nm
M2 x2,0	1100 Nm	1550 Nm	1800 Nm	920 Nm	1300 Nm
M30x2,0	1500 Nm	2150 Nm	2500 Nm	1300 Nm	1850 Nm

Quelle: KB-Vorgaben / Kramer Werkzeu

OIN 912

Allen Werten l egt e n Re bungskoeff z ent von $\alpha = 0,12$ zugrunde und s nd al s R chwert e anzuwenden.



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Type relativ tighte ning torques for high quality screw joints



Tighte ning torque M_A for screw joints at Neuson 2503 - 3 03

	2503 RD		3003 RD		3503 RD		3 03 RD	
Turn table	M12 10.9	120 Nm*	M16 10.9 M14 10.9	299 Nm 180 Nm	M16 10.9 M14 10.9	299 Nm 180 Nm	M16 10.9 M14 10.9	299 Nm 180 Nm
Track rolle r	M14 10.9	180 Nm*	M14 10.9	180 Nm*	M14 10.9	180 Nm*	M14 10.9	180 Nm*
Swivel joint	M10 10.9	64 Nm*	M10 10.9	64 Nm*	M10 10.9	64 Nm*	M10 10.9	64 Nm*
Sprocke t	M12 10.9	123 Nm*	M12 10.9	123 Nm*	M12 10.9	123 Nm*	M12 10.9	123 Nm*
Drive unit	M12 10.9	123 Nm*	M12 10.9	123 Nm*	M12 10.9	123 Nm*	M12 10.9	123 Nm*
Swivel unit	M12 10.9	120 Nm	M12 10.9	120 Nm	M12 10.9	120 Nm	M12 10.9	120 Nm
Cab screws	M12 10.9	120 Nm*	M12 10.9	120 Nm*	M12 10.9	120 Nm*	M12 10.9	120 Nm*
	M10 8.8	50 Nm	M10 8.8	50 Nm	M10 8.8	50 Nm	M10 8.8	50 Nm
Engine carrier	M14 8.8	138 Nm	M14 8.8	138 Nm	M14 8.8	138 Nm	M14 8.8	138 Nm
	M12 8.8	87 Nm	M12 8.8	87 Nm	M12 8.8	87 Nm	M12 8.8	87 Nm
	M10 8.8	50 Nm	M10 8.8	50 Nm	M10 8.8	50 Nm	M10 8.8	50 Nm
Engine frame bearings	M10 10.9	64 Nm	M10 10.9	64 Nm	M10 10.9	64 Nm	M10 10.9	64 Nm
	M8 8.8	25,5 Nm	M8 8.8	25,5 Nm	M8 8.8	25,5 Nm	M8 8.8	25,5 Nm
Pump carrier	M10 8.8	50 Nm	M10 8.8	50 Nm	M10 8.8	50 Nm	M10 8.8	50 Nm
Pump	M12 8.8	79 Nm	M12 8.8	79 Nm	M12 8.8	79 Nm	M12 8.8	79 Nm

Quelle: KB-Vorgaben / Neuson Ersatzteilbücher

Atte ntion: Neuson reserves changes - please always check the actual torque from your spare parts book

Techn ca data

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CHAPTER 8 :

Maintenance

(Neuson Service Manual 2503 - 3703)



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B.1 Maintenance plan 3TNV88 – 4TNV88 (overview)	Maintenance plan/service hours (s/h)						
	Maintenance work (once a day)	Every 50 s/h	Every 500 s/h	Every 1000 s/h once a year	Every 1500 s/h	Customer	Authorised workshop
Work description							
For service and maintenance work on the attachment, please refer to the operation and maintenance manual of the attachment manufacturer as well.							
Fluid and filter changes ()::							
Carry out the following oil and filter changes (check oil levels after test run):							
• Engine oil ¹		●	●				●
• Engine oil filter ²		●	●				●
• Fuel filter ³		●	●				●
• Air filter element as indicated by telltale						●	
• Coolant				●			●
• Hydraulic oil filter insert ⁴		●	●				●
• Hydraulic oil				●			●
• Hydraulic oil tank breather				●			●
• Gearbox oil ^{5,6}		●		●			●
Inspection work ()::							
Check the following material. Refill if necessary:							
• Engine oil	●					●	
• Engine coolant	●					●	
• Hydraulic oil	●					●	
• Gearbox oil		●					●
Clean water ducts ⁷				●			●
Check engine/hydraulic oil radiator and air conditioning for contamination. Clean if necessary	●					●	
Check cooling systems, heating and hoses for leaks and pressure (visual check)	●					●	
Check the joystick/drive valve pilot control filter for dirt, clean it if necessary ⁸				●			
Replace cab filter for heating and air conditioning			●				●
Air filter (damage)	●					●	
Prefilter with water separator: drain water	●					●	
• Clean			●				●
Check V-belt condition and tension	●					●	
Check exhaust system for damage and condition	●					●	
Check valve clearance. Adjust if necessary				●			●



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Maintenance

B.1 Maintenance plan 3TNV88 – 4TNV88 (overview)

Work description

For service and maintenance work on the attachment, please refer to the operation and maintenance manual of the attachment manufacturer as well.

Maintenance plan/service hours (s/h)

	Maintenance work (once a day)	Every 50 s/h	Every 500 s/h	Every 1000 s/h once a year	Every 1500 s/h	Customer	Authorised workshop
Clean and adjust the fuel injection pump ⁹				●			●
Check and adjust the injection pressure of the injection nozzles, clean the injection needles/nozzles					●		●
Check and adjust injection time ¹⁰				●			
Empty diesel fuel tank			●				●
Check battery electrolyte. Fill up with distilled water if necessary		●	●			●	
Check alternator, starter and electric connections, bearing play and function			●				●
Check preheating system and electric connections			●				●
Check correct function of air filter contamination gauge			●				●
Pressure check of primary pressure limiting valves		●	●				●
Check chains for cracks and cuts	●					●	
Check chain tension. Retighten if necessary	●					●	
Check bearing play of tread rollers, track carrier rollers, front idlers			●				●
Check piston rods for damage	●					●	
Check screws for tightness		●	●				●
Check pin lock	●					●	
Check line fixtures	●					●	
Check telltales for correct function		●	●				●
Check cab tilt lock, cables and cable holders for damage and correct function		●	●				●
Couplings, dirt pile-up on hydraulic system dust caps	●					●	
Check insulating mats in the engine compartment for damage/condition		●	●				●
Ensure grease supply of central lubrication system (option)	●					●	
Check labels and Operator's Manual for completeness and condition		●	●				●
Check function of engine cover gas strut	●					●	
Lubrication service ():							
Lubricate the following assemblies/components – see <i>Abschmierarbeiten</i> on page 3-42:							
• Stabiliser blade	●					●	
• Swivelling console	●					●	



B.1 Maintenance plan 3TNV88 – 4TNV88 (overview)	Maintenance plan/service hours (s/h)						
	Maintenance work (once a day)	Every 50 s/h	Every 500 s/h	Every 1000 s/h once a year	Every 1500 s/h	Customer	Authorised workshop
Work description							
For service and maintenance work on the attachment, please refer to the operation and maintenance manual of the attachment manufacturer as well.							
• Boom	●					●	
• Stick	●					●	
• Attachments	●					●	
• Grease strip on chassis – see <i>Schmierleiste</i> on page 3-44	●					●	
Air conditioning ():							
Carry out the following maintenance and inspection work:							
• Air conditioning function		●	●				●
Replace cab filter			●				●
Check dehumidifier for corrosion, condensation and air bubbles		●					●
Replace dehumidifier					●		●
Compressor oil ¹¹					●		●
Check the coolant level			●				
Functional check ():							
Check the function of the following assemblies/components. Rectify if necessary:							
• Lights, signalling system, acoustic warning system		●					●
• Heating function		●	●				●
Leakage check ():							
Check for tightness, leaks and chafing: pipes, flexible lines and screw connections of the following assemblies and components. Rectify if necessary:							
• Visual check	●					●	
 Engine and hydraulic system	●					●	
 Cooling and heating circuit	●					●	
 Travelling drive	●					●	

1. Drain engine oil the first time after 50 s/h, then every 500 s/h
2. Replace the engine oil filter the first time after 50 s/h, then every 500 s/h
3. Replace the fuel filter the first time after 50 s/h, then every 500 s/h
4. Replace the hydraulic oil filter insert the first time after 50 s/h, then every 500 s/h
5. Drain the gearbox oil the first time after 50 s/h, then every 1000 s/h
6. The Q8 T55 SAE 85W-90 gearbox oil is no longer produced. The Q8 T55 SAE 80W-90 gearbox oil is used from 10/2006 onwards. Do not mix both gearbox oils!
7. Clean the water ducts every other 1000 s/h servicing
8. Coarse dirt causes malfunctions and can even destroy the filter screen!
9. Clean and adjust the fuel injection pump
10. Check and adjust injection time every other 1000 s/h servicing
11. Replace the compressor oil every other 1500 s/h servicing



Supplement to engine/machine fluids and lubricants 3TNV 88 – 4TNV 88

Component/ applica- tion	Engine/machine fluid	Specification	Season/temper- ature	Capacities ¹
Diesel engine	Engine oil	SAE10W-40 ² ; API: CD, CF, CF-4, CI-4 ACEA: E3, E4, E5 JASO: DH-1	-20 °C (-4 °F) +40 °C (104 °F)	7.1 l (1.8 gal) 7.8 l (2.1 gal)
Travelling drive	Gearbox oil ³	Q8 T 55, SAE 85W-90 ⁴	Year-round	About 1.3 l (0.3 gal) each
		Q8 T 55, SAE 80W-90 ⁵		
		FINA PONTONIC GLS, SAE85W-90		
Hydraulic oil tank	Hydraulic oil	HVLP46 ⁶	Year-round	45 l (11.9 gal) 80 l (21.1 gal)
	Biodegradable oil ⁷	PANOLIN HLP Synth 46		
		FINA BIOHYDRAN SE 46		
		BP BIOHYD SE-46		
Grease	Roller and friction bear- ings ⁸	FINA Energrease L21M	Year-round	As required
	Open gear ⁹ (live ring gears)	BP Energrease MP-MG2	Year-round	As required
Grease nipples	Multipurpose grease ¹⁰	FINA Energrease L21 M	Year-round	As required
Battery terminals	Acid-proof grease ¹¹	FINA Marson L2	Year-round	As required
Fuel tank	Diesel fuel	2-D ASTM D975 – 94 (USA)		44 l (11.6 gal) 78 l (20.6 gal)
		1-D ASTM D975 – 94 (USA)		
		EN 590 : 96 (EU)		
		ISO 8217 DMX (International)		
		BS 2869 – A1 (GB)	Summer or winter diesel depending on outside tem- peratures	
		BS 2869 – A2 (GB)		
Radiator	Coolant	Soft water + antifreeze ASTM D4985	Year-round	5.5 l (1.5 gal) 7.0 l (1.8 gal)
		Distilled water + antifreeze ASTM D4985		
Air conditioning	Refrigerating agent	R134a ¹²	Year-round	~ 950 g (2.1 lbs)
	Compressor oil	Sanden SP20	Year-round	122 cm ³ (7.45 cu in) Tier 2 90 cm ³ (5.5 cu in) Tier 3A
Washer system	Cleaning agent	Water + antifreeze	Year-round	1.2 l (0.32 gal)

1. The capacities indicated are approximative values; the oil level check alone is relevant for the correct oil level

2. According to DIN 51502

3. Hypoid gearbox oil based on basic mineral oil (SAE85W-90 according to DIN 51502), (API GL-4, GL5)

4. The Q8 T55 SAE 85W-90 gearbox oil is no longer produced.

5. The Q8 T55 SAE 80W-90 gearbox oil is used from 10/2006 onwards. Do not mix both gearbox oils!

6. According to DIN 51524 section 3

7. Hydraulic ester oils (HEES)

8. KF2K-25 according to DIN 51502 multipurpose lithium grease with MoS² additive

9. KP2N-20 according to DIN 51502 EP multipurpose calcium sulphonate complex grease

10. KF2K-25 according to DIN 51502 multipurpose lithium grease with MoS² additive

11. Standard acid-proof grease

12. According to DIN 8960



Oil grades for the diesel engine, depending on temperature

Engine oil grade	Ambient temperature (C°)														
	°C	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	
		SAE 10W													
				SAE 20W											
		SAE 10W-30													
	SAE 10W-40														
	SAE 15W-40														
API CD, CF, CF-4, CI-4															
ACEA: E3, E4, E5															
JASO: DH-1						SAE 20									
								SAE 30							
										SAE 40					
	°F	-4	5	14	23	32	41	50	59	68	77	86	95	104	

Additional oil change and filter replacement (hydraulics)

**Caution!**

An additional oil change and filter replacement can be required depending on how the machine is used. Failure to observe these replacement intervals can cause damage to hydraulic components.

☞ *Observe the following intervals*

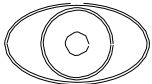
Application		Hydraulic oil	Hydraulic oil filter insert
Normal work (excavation work)		Every 1000 s/h	Replace the first time after 50 s/h, then every 500 s/h
Percentage of hammer work	20 %	Every 800 s/h	300 s/h
	40 %	Every 400 s/h	
	60 %	Every 300 s/h	100 s/h
	Over 80 %	Every 200 s/h	

**Important!**

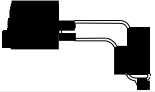
Please refer to the maintenance plan on page [B-1](#) for additional maintenance work.

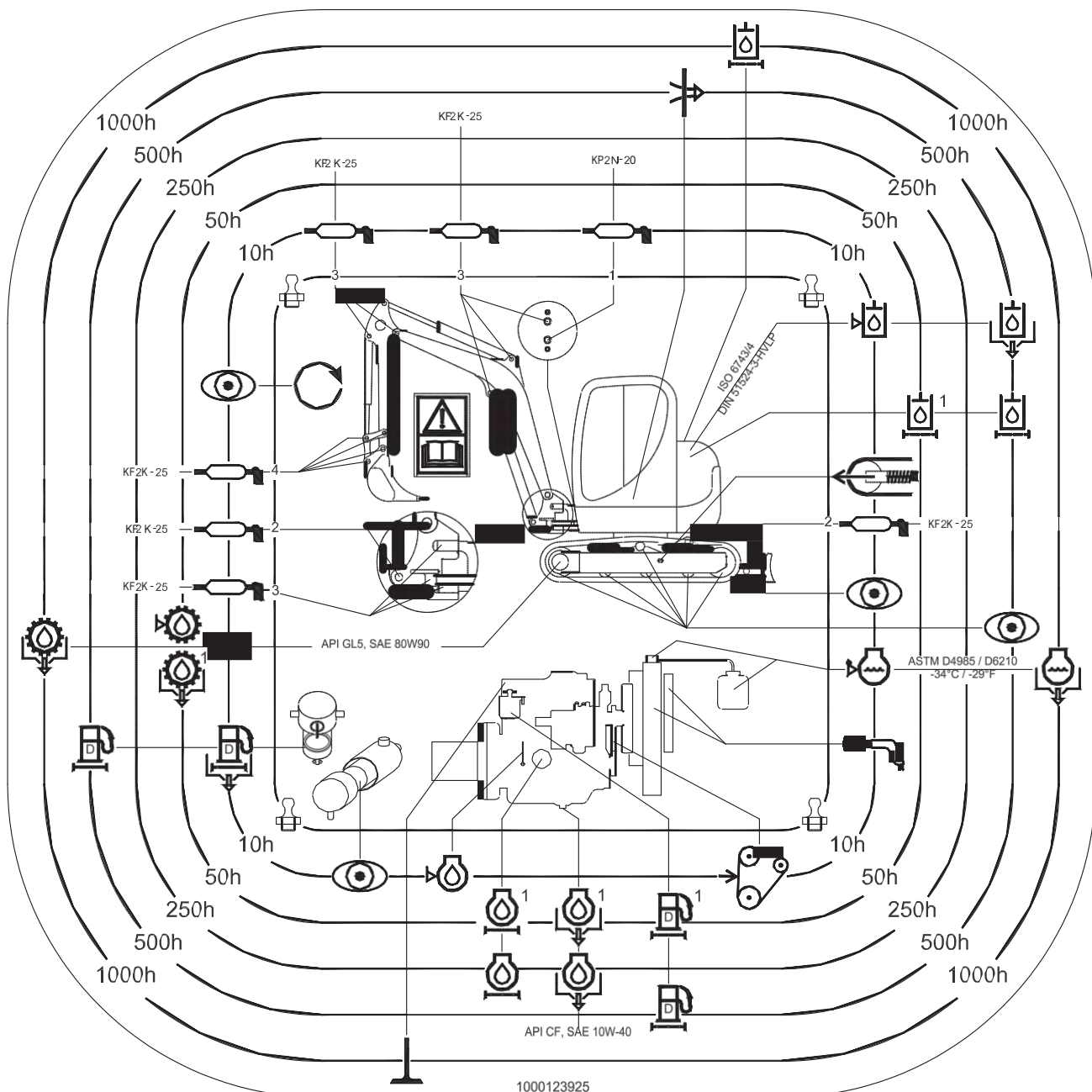
B.1 Maintenance label

Explanation of symbols on the maintenance label

Symbol	Assembly	Explanation
	General	Visual check
	General	Grease instructions
	Fuel system	Drain condensation water
	Fuel system	Replace the fuel filter, clean the fuel prefilter
	Radiator	Check the coolant level
	Radiator	Drain and fill in new coolant
	Engine	Check valve clearance. Adjust if necessary
	Engine	Check the engine oil level
	Engine	Change engine oil
	Engine	Replace the oil filter
	Engine	Check V-belt tension
	Travelling drive	Change oil
	Travelling drive	Check oil
	Undercarriage	Check chain tension
	Hydraulic system	Check oil level
	Hydraulic system	Change hydraulic oil
	Hydraulic system	Replace the hydraulic oil filter, replace the breather filter



Symbol	Assembly	Explanation
	Radiator fins	Clean
	Heating, air conditioning	Change cab air filter



3. HYDRAULIC SYSTEM

3.1 General Prerequisites:

- Before each pressure test the device must be run up! - Hydraulic oil temperature at least 40°C.
- For hydraulic settings please refer to chapter Technical Data.
Primary pressure limiting valves must be adjusted at max. engine speed
(see chapter Technical Data).

3.2 Pressure Test of Variable Displacement Pump P1

Functions: bucket, boom, driving left

- a) Apply manometer at measuring port MP 1.
- b) Move bucket cylinder to stop (bottom and rod side).
- c) Check pressure and/or adjust it at pressure reducing valve PRV 1 at the main valve block.
- d) Check the functions boom driving left by following items a - c.

3.3 Pressure Test of Variable Displacement Pump 2

Functions: dipper stick, driving right, auxiliary hydraulics

- a) Apply manometer at measuring port MP 2.
- b) Move dipper stick to stop (bottom and rod side).
- c) Check pressure and/or adjust it at pressure reducing valve PRV 2 at the main valve block.
- d) Check the functions driving right and auxiliary hydraulics by following items a - c.

3.4 Pressure Test of Gear Pump P3

Functions: swivelling, dozer blade, auxiliary hydraulics I boom offset

- a) Apply manometer at measuring port MP 3.
- b) Move dozer blade to stop (bottom and rod side).
- c) Check pressure and/or adjust it at pressure reducing valve PRV 3 at the main valve block.
- d) Check the function auxiliary hydraulics by following items a - c.
- e) The swivelling function is supplied by pump 3 though the operating pressure is limited by the secondary pressure limiting valve at the swivel motor! - See secondary pressures of swivel motor.

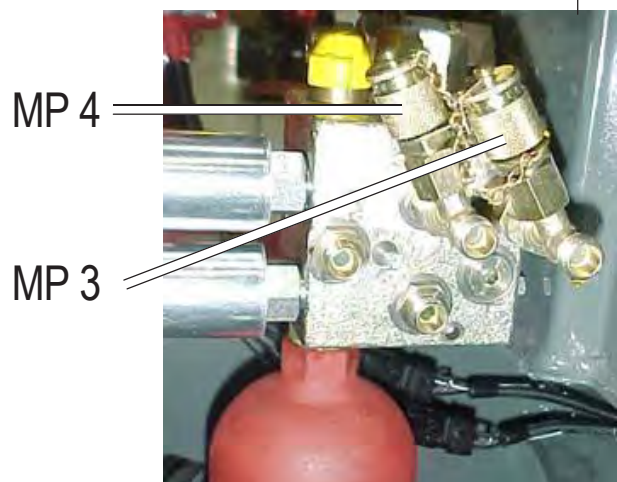
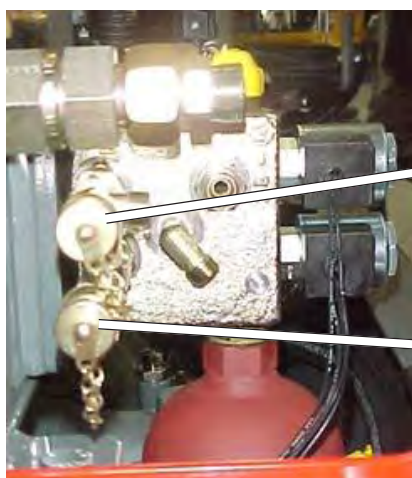
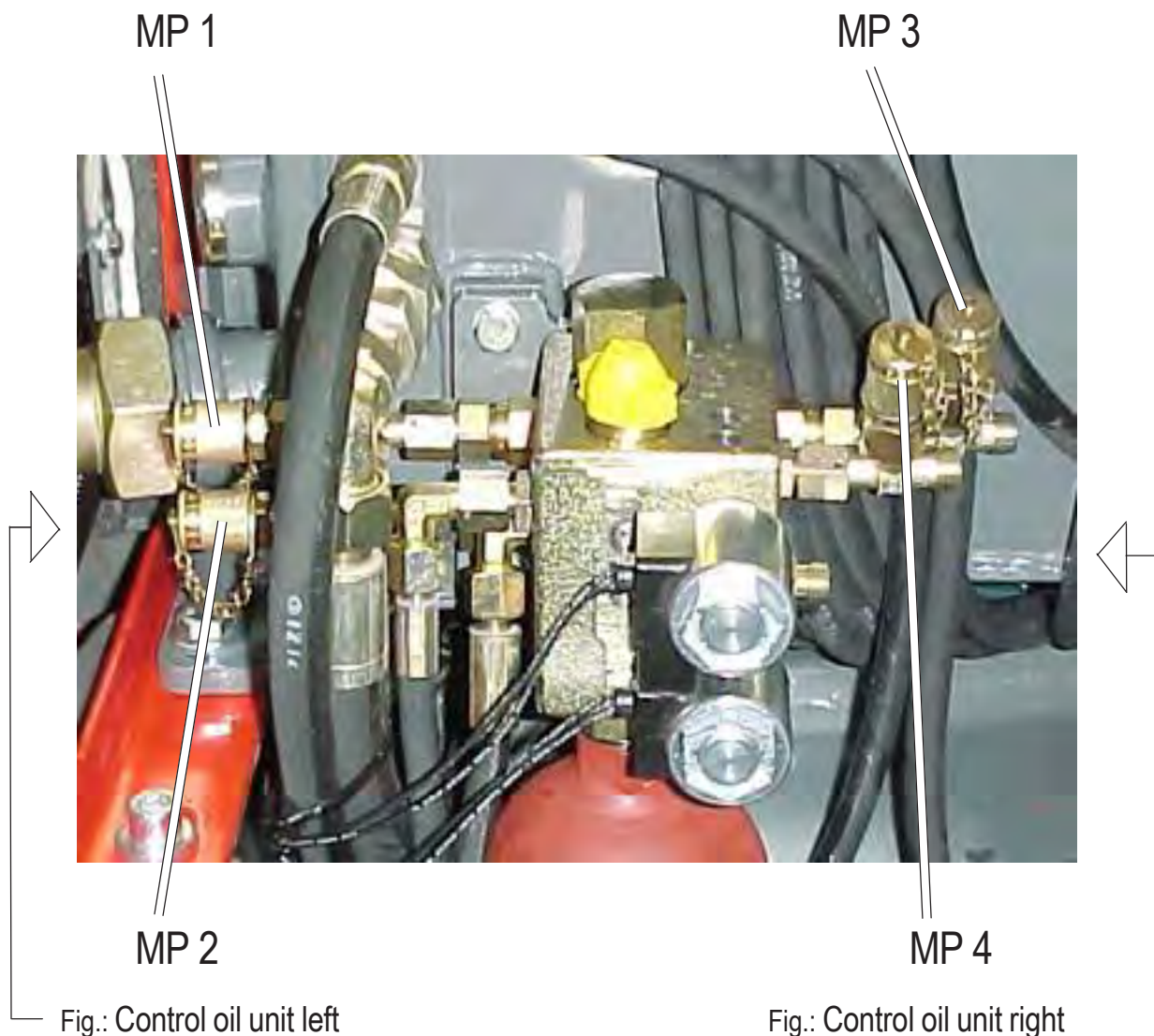
3.5 Pilot Pressure Test:

Functions: hydraulic pilot control

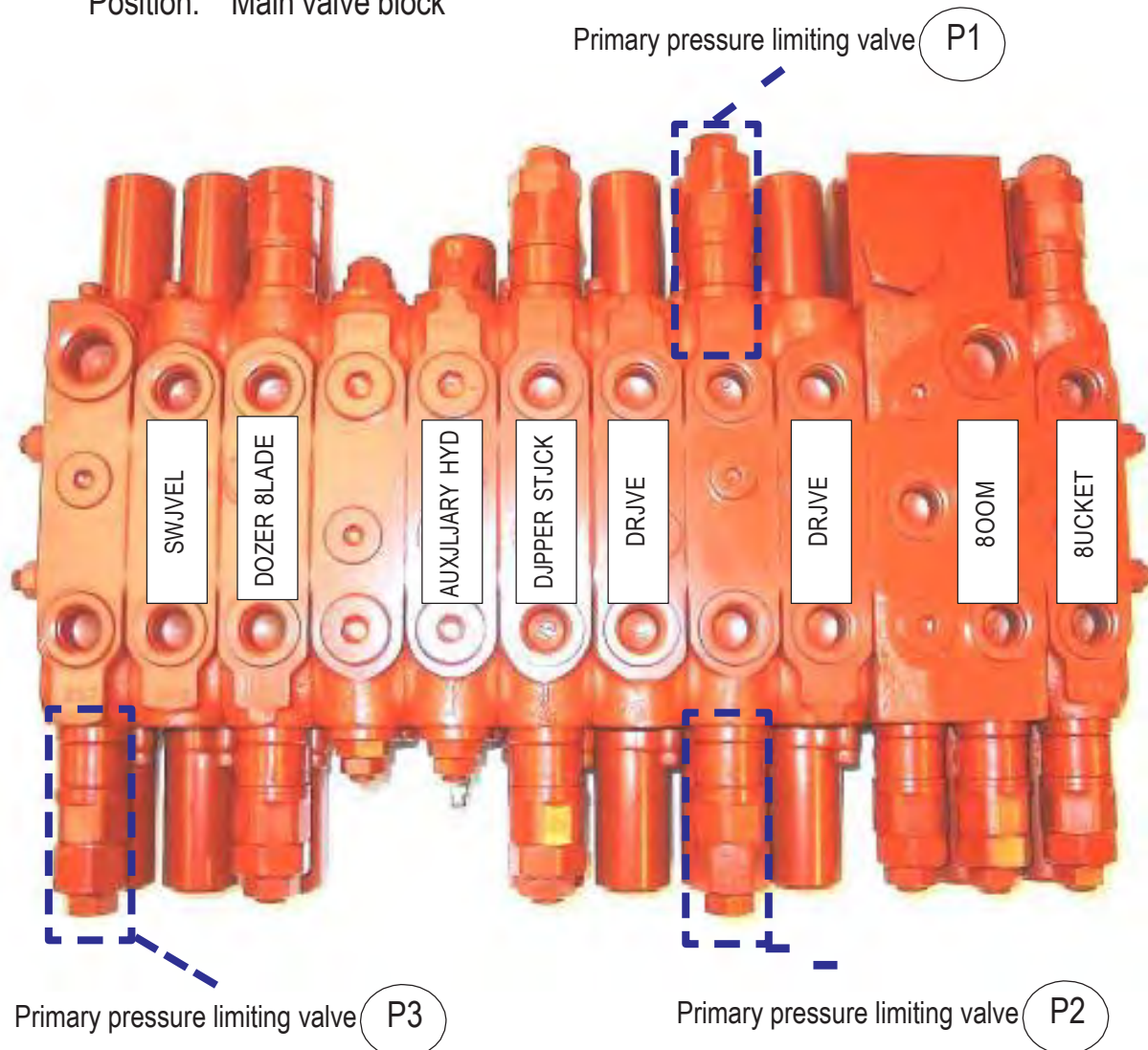
- a) Apply manometer at measuring port MP 4.
- b) Actuate joystick.
- c) Check pressure and/or adjust it at the pressure reducing valve at the control oil unit.



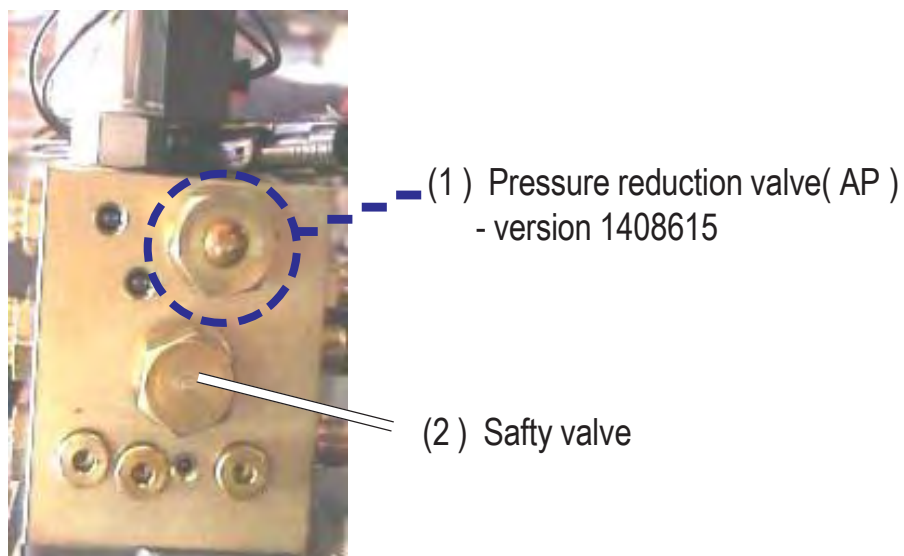
Fig.: Measuring ports at the control oil unit



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



Pict.: Pilot oil supply unit 1408615



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Maintenance

Pict.: Pressure checklist - example 2503 Fabr.No.: A800502 (settings not binding)

- V Pressure limiting valve RV Pressure reducing valve
 1 Notice) pressure settings correspond with the abr Nr of your excavator !
 A ways compare with the pressure setting in chapter "Technica data" !
 3 Notice) setting on y correct without secondary pressure limiting valves !
 4 function wive) see chapter "Technica data" and "Maintenance"
 see chapt "Technica data") different settings

No
ta

2503 NEUSON		abr No) Work hrsIDat Checked by)		AB 0050 50 Huemer Andreas		PRESSURE CHECKLIST Neuson Excavators		
unction	Motion	ymbo	ress imit va ve	Measuring point	ettings 1	Check ed	OK?	
UM 1								X
Boom	U		Primary pressure limiting valve V 1 Main valve block	Measuring point M 1 Main valve block	40 bar	+/- 3	>	
	DOWN				4 bar		>	
Bucket	OUT				40 bar	+/- 3	>	
	IN				4 bar		>	
Drive left	FORWARD				40 bar	+/- 3	>	
	BACKWARD				4 bar		>	
UM								X
Dipper stick	OUT		Primary pressure limiting valve V Main valve block	Measuring point M Main valve block	40 bar	+/- 3	>	
	IN				4 bar		>	
Drive right	FORWARD				40 bar	+/- 3	>	
	BACKWARD				4 bar		>	
Auxiliary hydraulics	A				40 bar	+/- 3	>	
	B				4 bar		>	



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Neuson 503	abr No) AB 0050	Date) 0 anuary 003		RE URE CHECK I
	Work hrs) 50	Checked by) Andreas Huemer		
UM 3				X

Dozer b ade	U				etting	10	bar	+/- 3	>		
	DOWN				a	0	bar		>		
Auxi iary hydrau ics	A		rimary pressure imiting va ve V 3 Main va ve b ock	Measuring point M 3 Main va ve b ock	ett)	10	bar	+/- 3	>		
	B				a)	0	bar		>		
Boom offset	E T				ett)	10	bar	+/- 3	>		
	RIGHT				a)	0	bar		>		
wive motor	E T		econdary pressure imiting va ve V 4 wive motor !	I wive motor 3 	etting	10	bar	+/- 3	>		
	RIGHT				a	0	bar		>		
					ett 4)	00	bar	+/- 5	>		
					a	N	bar		>		
					ett 4)	00	bar	+/- 5	>		
					a	N	bar		>		

Notice

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oystick	A		ress Reduc va ve RV 5	Measuring point M 4	etting	35	bar	+/-		
			i ot oi supp y unit	i ot oi supp y unit	a	N	bar			

- V ressure imiting va ve RV ressure reducing va ve
- 1 Notice) pressure settings correspond with the abr Nr. of your excavator !
A ways compare with the pressure setting in chapter "Technica data" !
Notice) etting on y correct without secondary pressure imiting va ves !
- 3 unction wive) see chapter "Technica data" and "Maintenance"
- 4 ee chapt "Technica data") different settings

Maintenance

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8id: Druckprufprotokoll - Beispiel 2503 Fabr.Nr.: A800502 (Einstellwerte unverbindlich)

SERVICE MANUAL

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Maintenance

- V ressure imiting va ve RV ressure reducing va ve
 1 Notice) pressure settings correspond with the abr Nr of your excavator !
 A ways compare with the pressure setting in chapter "Technica data" !
 Notice) etting on y correct without secondary pressure imiting va ves !
 3 unction wive)see chapter "Technica data" and "Maintenance"
 4 ee chapt "Technica data") different settings

No)H
tand

NEUSON 2503-3703		abr No) Work hrs IDat Checked by)		Motion		ress imit va ve		Measuring point		etting 1		Checked		OK?	
PRESSURE CHECKLIST Neuson Excavators															
UM 1															
Boom	U	DOWN		primary pressure imiting va ve V 1 Main va ve b ock	Meas uring point M 1 Main va ve b ock	etting a)	bar	^							
Buck et	OUT	IN				etting a	bar	^							
Drive eft	OREWARD	BACKWARD				etting a	bar	^							
UM															
Dipper stick	OUT	IN		primary pressure imiting va ve V Main va ve b ock	Measuring point M Main va ve b ock	etting a	bar	^							
Drive right	ORWARD	BACKWARD				etting a	bar	^							
Auxiliary hydraulics	A	B				ett a)	bar	^							



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Type)		Date)		RE	URE	CHECK I
	Work hrs)	Checked by)				
UM 3						X

Dozer blade	U		Primary pressure limiting valve V 3 Main valve block	Measuring point M 3 Main valve block	etting		bar		>	
	DOWN				a		bar		>	
Auxiliary hydraulics	A				etting		bar		>	
	B				a		bar		>	
Boom offset	E T			I live motor 3	ett)		bar		>	
	RIGHT				a)		bar		>	
live motor	E T		Secondary pressure limiting valve V 4 live motor !		etting		bar		>	
	RIGHT				a		bar		>	
					ett 4		bar		>	
					a		bar		>	
					ett 4		bar		>	
					a		bar		>	

Notice

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Joystick	A		Pressure Reducing valve RV 5 Hydraulic supply unit	Measuring point M 4 Hydraulic supply unit	etting		bar			
					a		bar			

- V Pressure limiting valve RV Pressure reducing valve
- 1 Notice) pressure settings correspond with the label Nr. of your excavator !
Always compare with the pressure setting in chapter "Technical data" !
- Notice) setting on y correct without secondary pressure limiting valves !
- 3 function live) see chapter "Technical data" and "Maintenance"
- 4 see chapter "Technical data") different settings

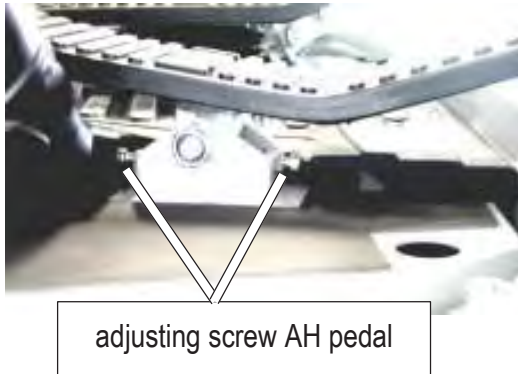
Maintenance

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4. AUXILIARY HYDRAULICS

> PILOT PEDAL

Fig.: Pedal auxiliary hydraulic system



> CHECK of activation of auxiliary hydraulic system :

It must be ensured that the piston of the auxiliary hydraulic system (operated mechanically via cable pull) can be operated fully in both directions. Otherwise the hydraulic system may be overheated!.

> ADJUST

a) Adjustment of cable pull in both operating directions:

- 1) Actuate pedal by hand and drive cylinder fully in the main valve block.
If pedal stop is limited by the adjusting screws - turn out adjusting screws.

Warning: Actuate pedal only by hand! - Maladjustment of the pedal might lead to kinking of the cable because of excessive pedal forces (thrust) !

- 2) Screw in adjusting screw to stop while the pedal is actuated.
- 3) Subsequently the adjusting screw must be turned out again half a turn (stop clearance).
- 4) Fix adjusting screw by means of lock nut.
- 5) Check activation.

This adjustment must be done for both adjusting screws.

Warning: Check of activation - subject to maintenance (see maintenance schedule).

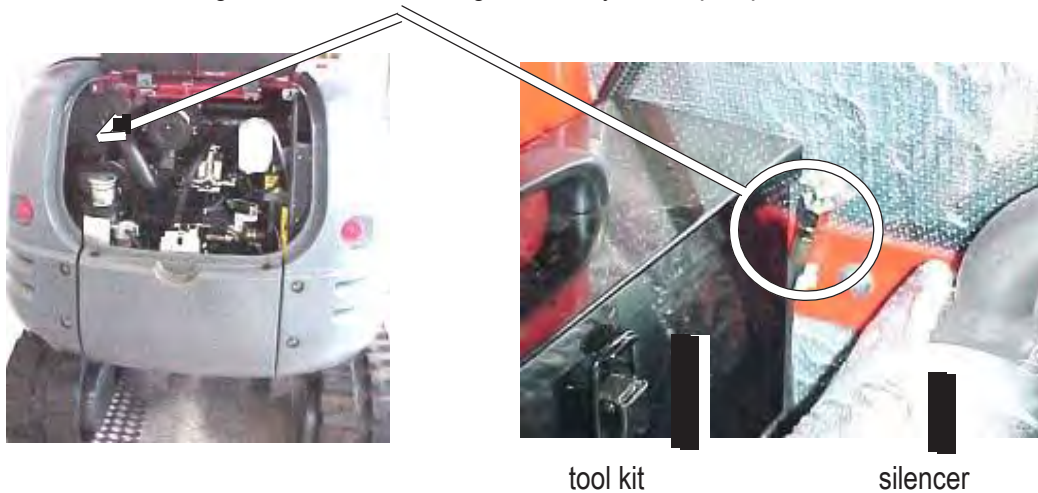
b) The pedal must not rest on the floor carpet!

5. HYDRAULIC PUMP

> BLEED

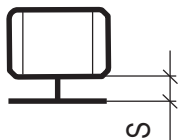
- Shut down device.
- Open breathing/bleeding filter.
- Open stopper of bleeding hose.
- Drain a small amount of hydraulic oil via the bleeding hose (hose down).
- Lift the bleeding hose a little above the level of the hydraulic pump drain a small amount of hydraulic oil and reseal the bleeding hose.
- Fix bleeding hose again at the rear wall of the engine compartment.

Fig.: Position of bleeding hose of hydraulic pump



6. HOSE BURST PROTECTION VALVES

> GAP DIMENSION CHECK



The European Safety Regulations provide for the installation of hose burst protection facilities in dozer blade cylinders and in tilting cylinders. If such valves are missing there will be liability problems in case of an excavator accident.

> SETTING of GAP DIMENSION " S " :

1. Loosen the two nuts.
2. Adjust the gap S by means of a gauge for the relevant type of excavator (see Chapt. Technical Data).
3. Tighten the nuts lightly by hand and fix them cautiously against each other.

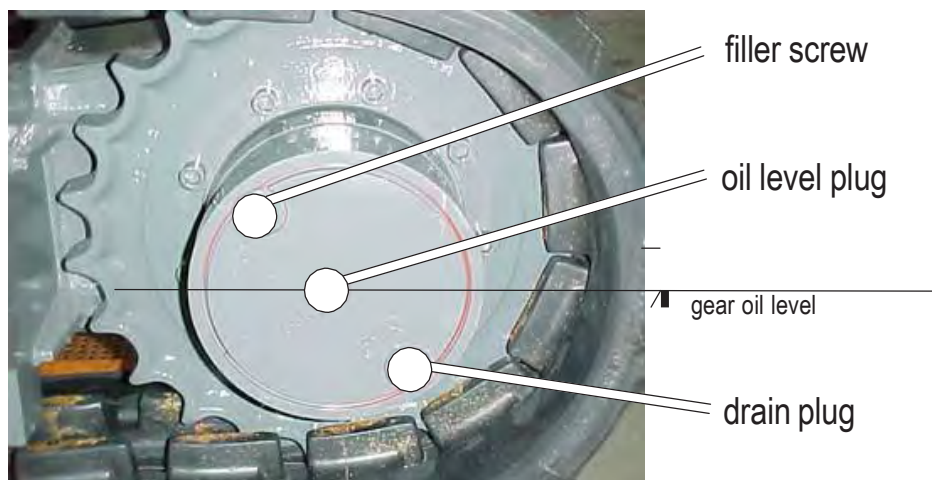
7. DRJVE UNJT

GEAR80X_____.

- > CHECK:
- Open the oil level plug.
 - The oil level must be at the oil level inspection orifice.
- > CHANGE:
- Open the oil filler and drain plug.
 - Drain oil and collect it in an appropriate vessel.
 - Close drain plug and open oil level plug.
 - Fill in fresh oil via the filler orifice until gear oil emerges from the inspection orifice.
 - Close oil level plug and filler orifice.

Warning: It is recommended as specified in the maintenance schedule to check leakage and thus the filling level in the drive unit continually.
Dispose of waste oil as provided by environmental laws.

For gear oil quality - see List of Lubricants (Chapt. Technical Data)



8. SWJVEL UNJT

As described in chapter Hydraulic System - Swivel Unit the gear box is "maintenance free" (as lubricated with hydraulic oil).

9. HYDRAULIC OIL TANK

> HYDRAULIC OIL CHANGE

The hydraulic oil shall be changed only when warm (approx. 40°C)
Before changing the oil withdraw all hydraulic cylinders.
Turn uppercarriage by 90°.

Fig.: Oil drain hose



- 1) Open breather filter (width across 36) to unpressurize tank (tank pressurized).
- 2) Open drain hose of oil tank carefully (access from below - chassis floor).
- 3) Drain oil into collecting vessel.
- 4) Check hydraulic oil tank for contamination and clean it if necessary.
- 5) Replace filter according to maintenance instructions.
- 6) Close screw plug of drain hose properly again.
- 7) Fill in clean hydraulic oil via filter station (filtering 10 mJ).
- 8) Vent hydraulic pump (see chapt. Hydraulic Pump).
- 9) Close hydraulic oil tank properly.
- 10) Let machine run idle for several minutes.
Dispose of old oil as provided by environmental laws.

10. DIESEL ENGINE

Type: Yanmar



Service News 71 / 02:
Theme: Maintenance intervals - diesel engine!
Solution: Extension possible (Yanmar)

Maintenance intervals "500" (Extension as described in SNews T 71 I02)

- > Affected parts: Engine oil / filter
> Affected excavators: 2503 - 12002 - only possible if the following points are fulfilled:

To save costs - Neuson can offer an extension for the maintenance intervals of the excavator diesel engine oil and oil filter up to 500 work hours !

The customer can choose between the standard and the extended interval solution.

		First		
		Exchange	--->	then every
Standard:	Engine oil / filter	50 hrs.		125 - 250 hrs.
NEW - "500 hrs"	Engine oil / filter	50 hrs.		500 hrs.

Notice the following qualifications for the interval extension:



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Overall prerequisite to extend the engine intervals up to "500hrs"

Excavator	Diese engine type	Yanmar Engine No)	Neuson abr No)	
1403	NOT O I B E !			
1503				
1903				
03				
503	Yanmar 3TNE 88 EN R1	NA	starting with AD00001	
3003	Yanmar 3TNE 88 EN R			
3503	Yanmar 4TNE 88 EN R			
3703				
500	Yanmar 4TNE 88 EN W	starting 44 48	NA	
600	Yanmar 4TNE 98 N R	starting 956		
650				
800				
1 00	Yanmar 4TNE 106 TN	Every		

70 orce	Yanmar 3TNE 88 EN R	starting 3817	NA
90 orce			
340 orce	Yanmar 4TNE 88 EN R	starting 44 09	
360 orce			

Detailed explanation - see page

NA Not available

To extend the maintenance interval of the diesel engine oil / -filter up to 500 hours - the following points have to be fulfilled !: (see SNews 71/02)

- A) For every excavator:
- In case of extreme working conditions (high dust concentration high temperature hydraulic hammer) the maintenance still has to be done with the standard schedule.
 - The first exchange of the engine oil and - filter still has to be done after 50 work hours.
 - The engine oil and - filter have to be exchanged min. once a year !

8) Excavator Neuson 2503 3003 3503 and 3703

The extended maintenance interval up to 500 hrs. is only valid for excavators with Yanmar engines (started with Fabr.No.: AD00001)!. Further the following points have to be fulfilled:

- First exchange of the engine oil and - filter after 50 hrs.
- No modifications at the diesel engine or its cooling system.
- Only original Neuson filters with Item No.: 2525409 are accepted (See new overall) !.
- Engine oil of quality API-CD API-CE or API-CF has to be used

If the "old" engine oil filters are used the standard maintenance interval schedule is required.

Listed filter part numbers can be changed - see spare part list

For the excavator types 1403 - 2203 - NO INTERVAL EXTENSION can be offered.



11. CA8JN

> REMOVAL.

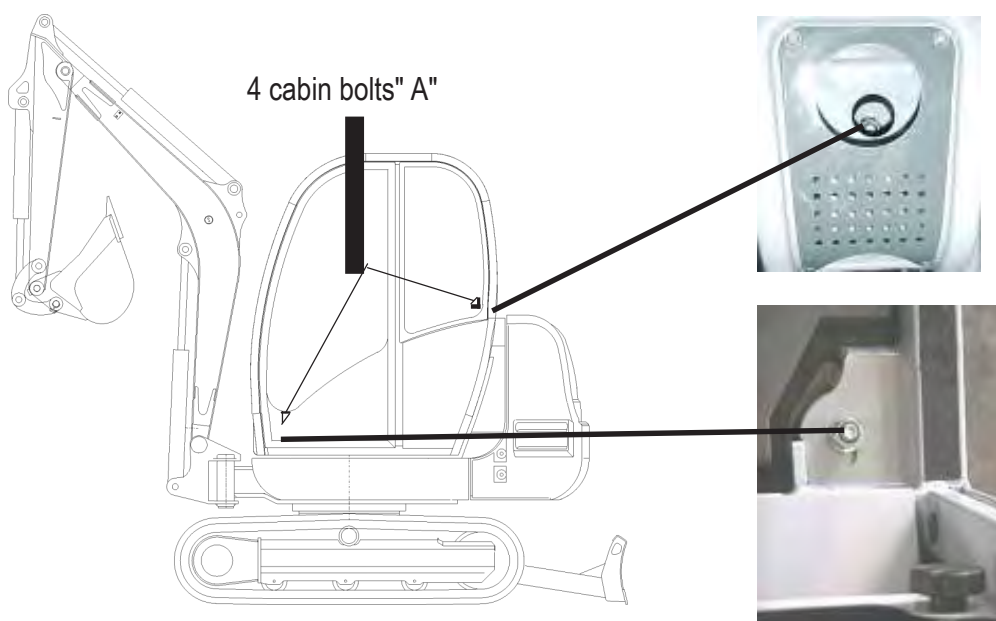
Feature: Simple removal of frame of driver's cabin by opening the 4 cabin bolts and the central connector.

The device functions remain active the cabin cable system is disabled.

Removal:

- Open cabin bolts A.
- Loosen washing container hose at non-return valve (valve compartment).
- Loosen cabin connector (right beside the seat).
- Lift the cabin at the lugs provided for this purpose.

Tightening torque of cabin bolts A : M12 10.9 - 120 Nm (glued in with Loctite S2420) !

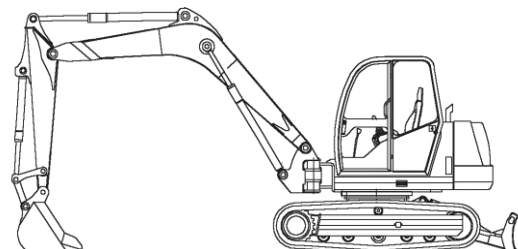


12. UNDERCARRIAGE

> CRAWLER TENSION

Lift crawler excavator by means of dozer blade and excavator boom.

The crawlers should no longer rest on the ground
If necessary support the excavator additionally (secure it against tilting).

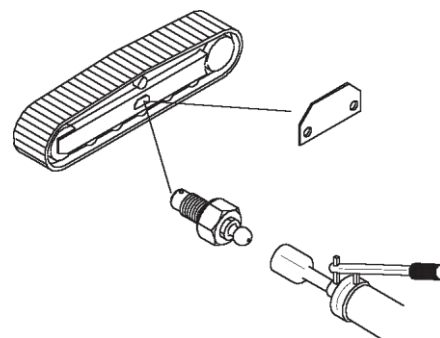


When tightened the crawler must not lift from the track rollers by more than 15 - 20 mm .

NOTE: As far as possible the adjusted dimension should be equal for both crawlers.

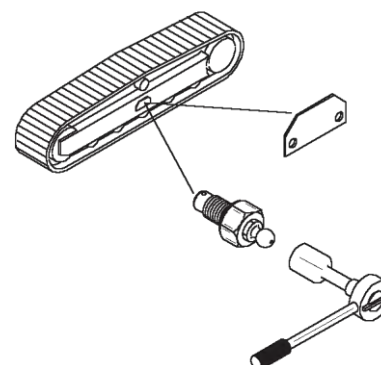
> Tightening of crawler

- 1) Take off protective cover (1).
- 2) Tighten crawler by means of grease gun (2).



> Release of crawler tension

- 1) Take off protective cover (1).
- 2) Screw out non-return valve (3) (width across 22).
- 3) Drain grease slowly until the unit is fully depressurized.





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CHAPTER C:

Hydraulic

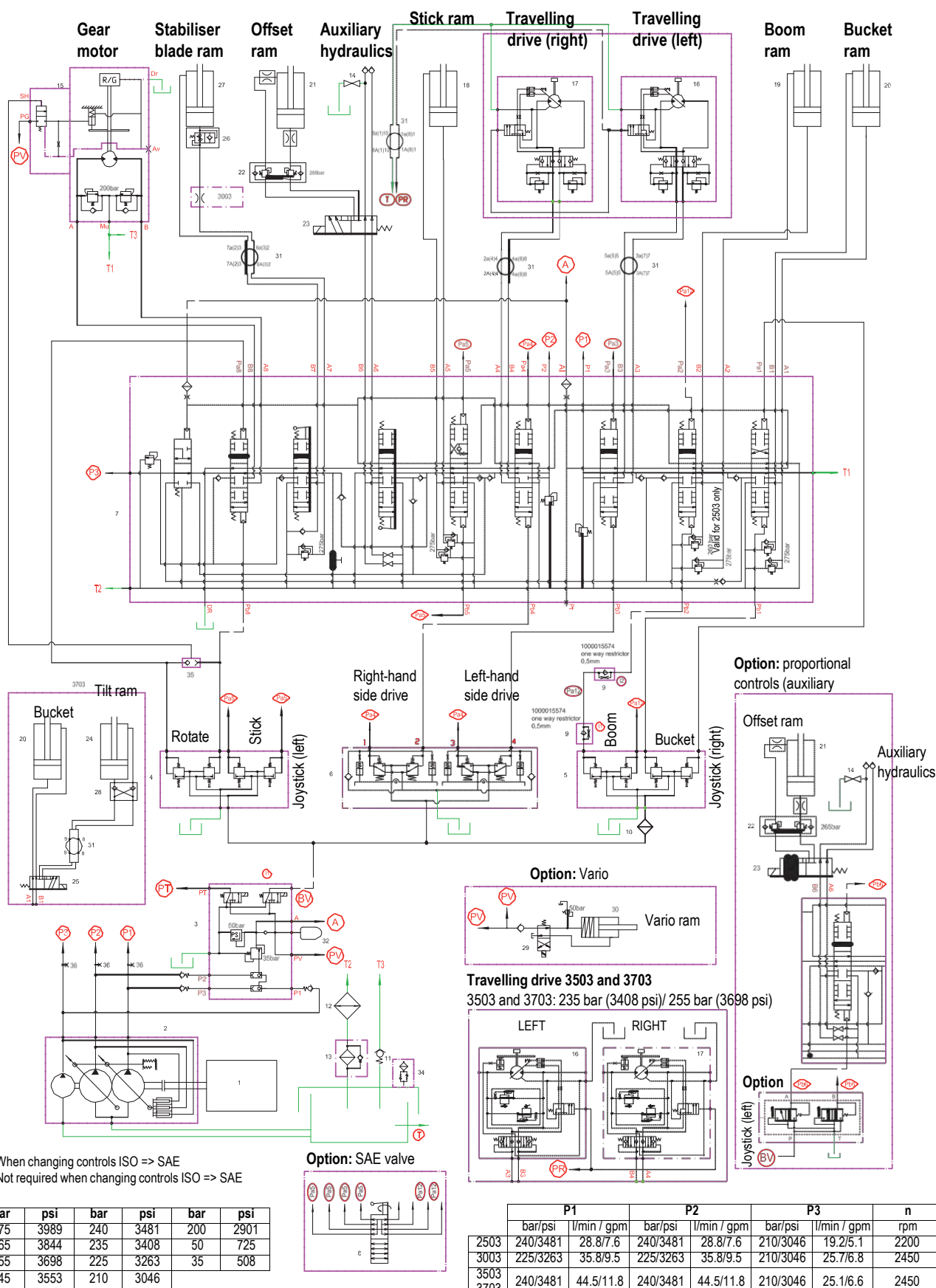
(Neuson Service Manual 2503 - 3703)



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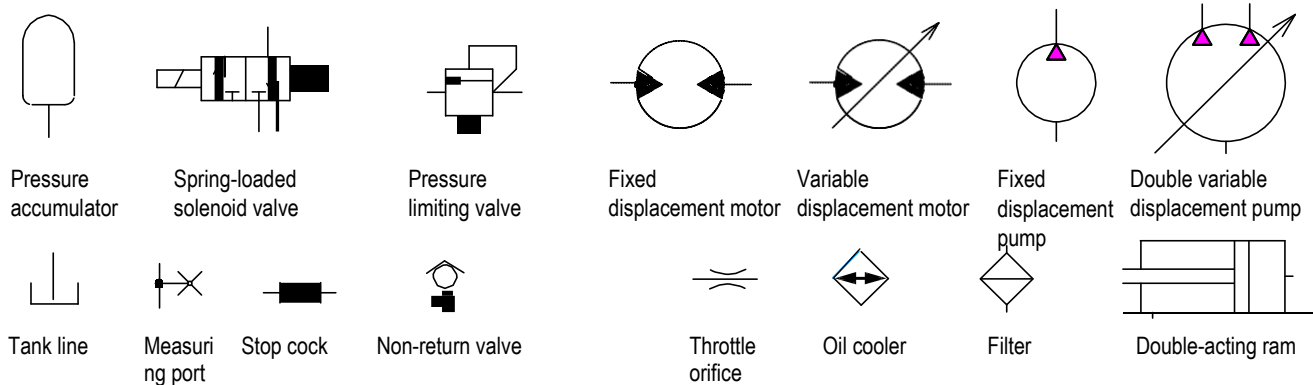


C.1 Hydraulics diagram A4

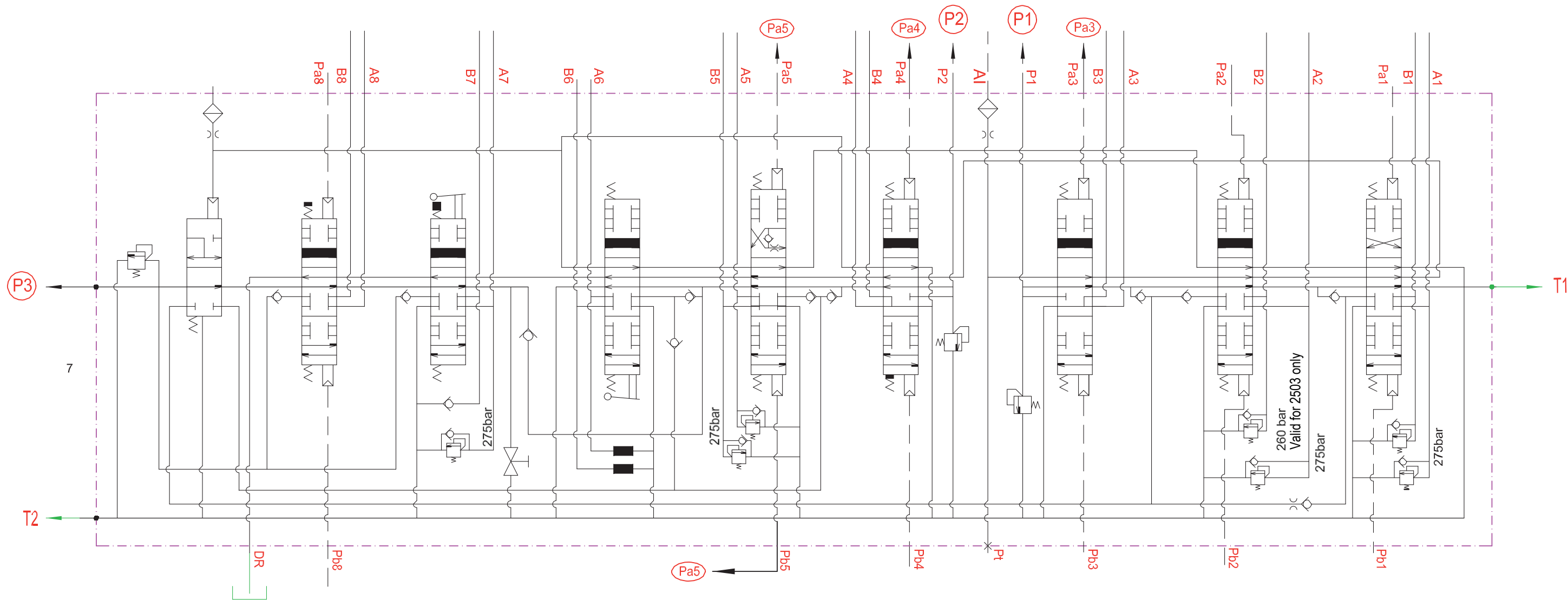


C.2 Hydraulics diagram (legend)

Pos.	Description
1	Diesel engine
2	Variable displacement pump + gear pump
3	Pilot oil supply unit
4	Left-hand side joystick pilot valve
5	Right-hand side joystick pilot valve
6	Pilot valve (driving)
7	Main valve block
8	8/2 electric directional valve
9	Throttle non-return valve
10	Pilot control filter
11	Non-return valve
12	Oil cooler
13	Oil filter
14	Ball-type cock
15	Swivel unit
16	Travelling drive (left)
17	Travelling drive (right)
18	Stick ram
19	Boom ram
20	Bucket ram
21	Offset ram
22	Counterbalance valve
23	Changeover valve: boom swivel/auxiliary hydraulics
24	Tilt ram
25	6/2 electric directional valve (3703)
26	Hose burst valve
27	Stabiliser blade ram
28	Unlockable non-return valve
29	4/2 directional valve (Vario ram)
30	Vario ram
31	Swivel joint
32	Pressure accumulator
33	Auxiliary hydraulics
34	Breather filter
35	Shuttle valve
36	Measurement ports



C.2 Main valve block diagram 38Z3 A3



Pilot control lines

Port	Legend	Controlled via
Pa1, Pb1	Bucket control	Joystick (right)
Pa2, Pb2	Boom control	Joystick (right)
Pa3, Pb3	Left-hand side drive control	Drive pedal (left)
Pa4, Pb4	Right-hand side drive control	Drive pedal (right)
Pa5, Pb5	Stick control	Joystick (left)
Pa6, Pb6	Additional hydraulics/boom swivel control	Switch on joystick + pedal
Pa7, Pb7	Stabiliser blade control	Stabiliser blade lever
Pa8, Pb8	Rotation control	Joystick (left)

Main control lines

Port	Legend
A1, B1	Bucket ram
A2, B2	Boom ram
A3, B3	Drive unit (left) via swivel joint
A4, B4	Drive unit (right) via swivel joint
A5, B5	Stick ram
A6, B6	Auxiliary hydraulics/offset ram
A7, B7	Stabiliser blade ram
A8, B8	Swivel unit

Pump/tank lines

Port	Legend
P1	Pump 1 port
P2	Pump 2 port
P3	Pump 3 port
T1	Tank line via non-return valve and filter in tank
T2	Tank line via oil cooler and filter in tank

2. POSITION OF HYDRAULIC COMPONENTS

Fig.: Valve bonnet right

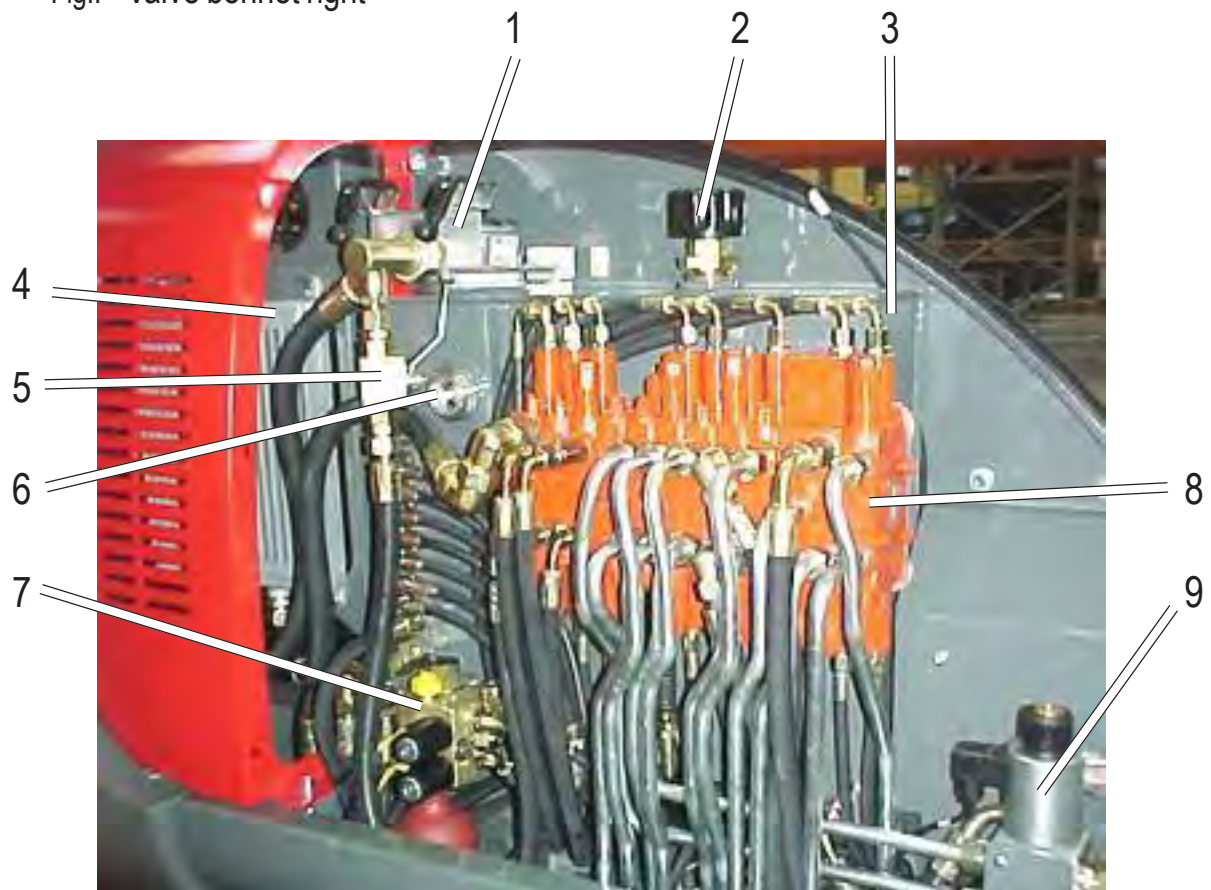
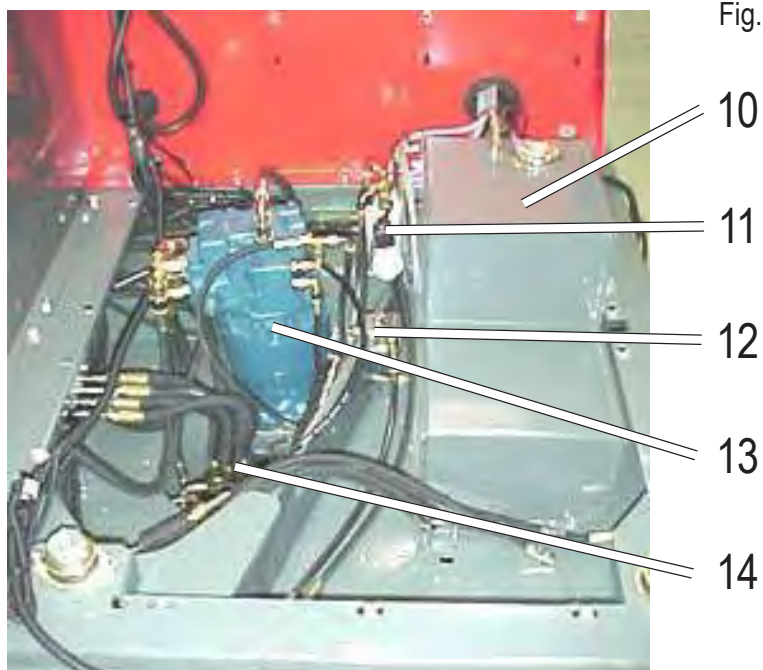


Fig. C003: Area below the cabin



Legend - position of hydraulic components

- 1 return filter
- 2 breathing/bleeding filter (0.2 bar)
- 3 hydraulic oil tank
- 4 hydraulic oil cooler
- 5 reversing valve auxiliary hydraulics (unpressurized return)
- 6 inspection glass hydraulic oil tank
- 7 control oil unit
- 8 main valve block
- 9 switch valve (boom offset I auxiliary hydraulics)
- 10 fuel tank
- 11 switch valve (boom I dozer blade cylinder)
3703 > additional switch valve (bucket I tilting cylinder)
- 12 manifold block pilot control oil
- 13 swivel unit
- 14 swivel joint



3. HYDRAULIC PUMP

Neuson 2503 | 3003 | 3503 | 3703 :

Pump:	Neuson 2503	> 2528402 (PVD-0B-24P)
	Neuson 3003	> 3028402 (PVD-1B-29P)
	Neuson 3503 / 3703	> 3528402 (PVD-1B-32P) - Fabr.No.: AB00001 - AC09999
		> 4408302 (PVD-2B-44P) - Fabr.No.: AD00001 and higher



Service News

Service News 73102:
Theme: New hydraulic pump type starting with
diesel engine Yanmar type (setting !)
Fabr.Nr.: AD00001 and higher

Fig.: Double axial and gear pump (pressure side view)

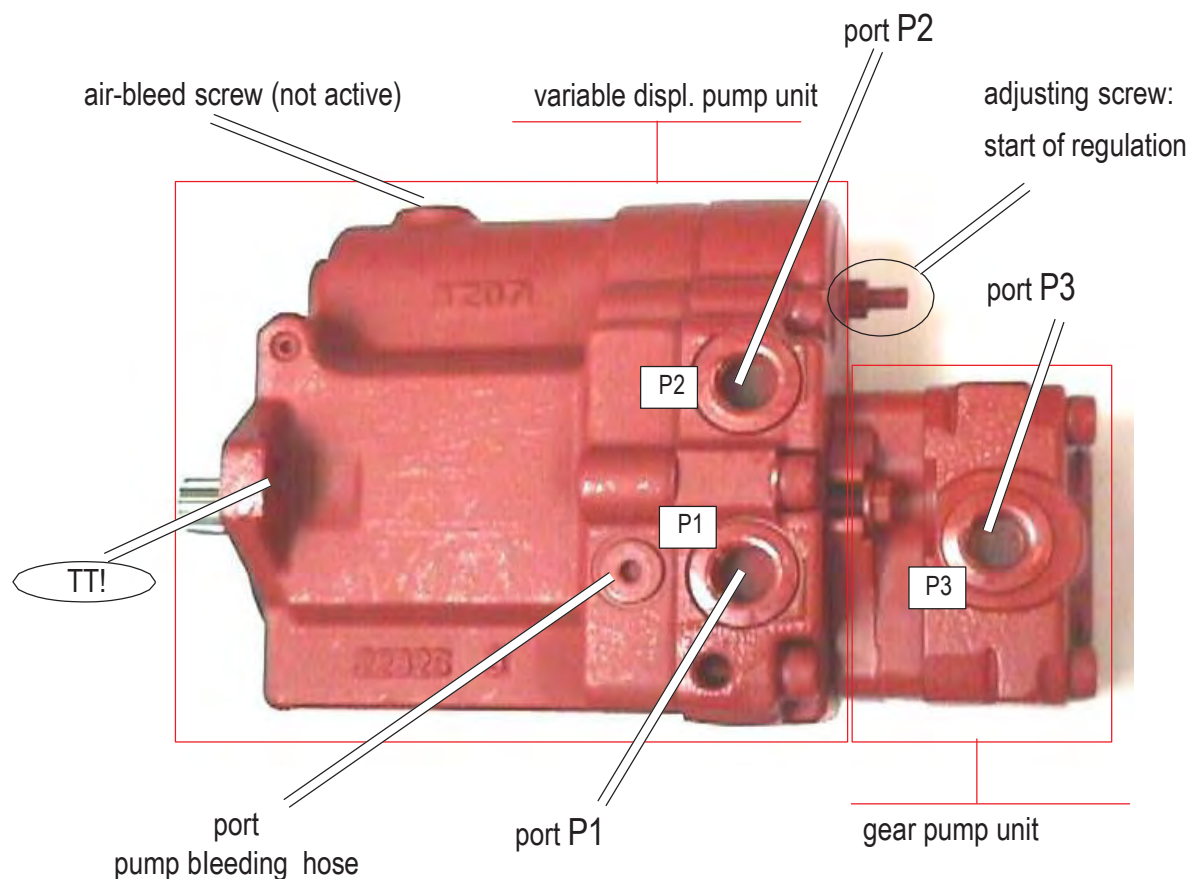
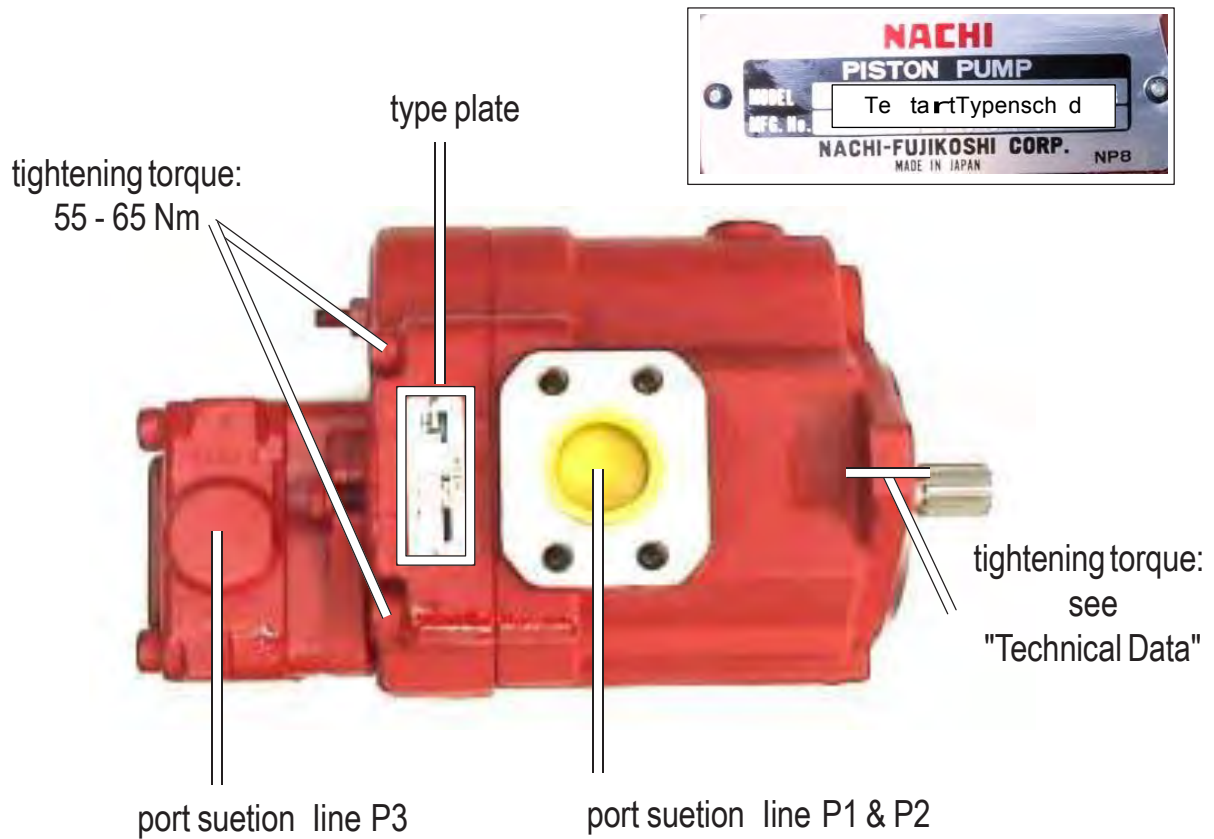
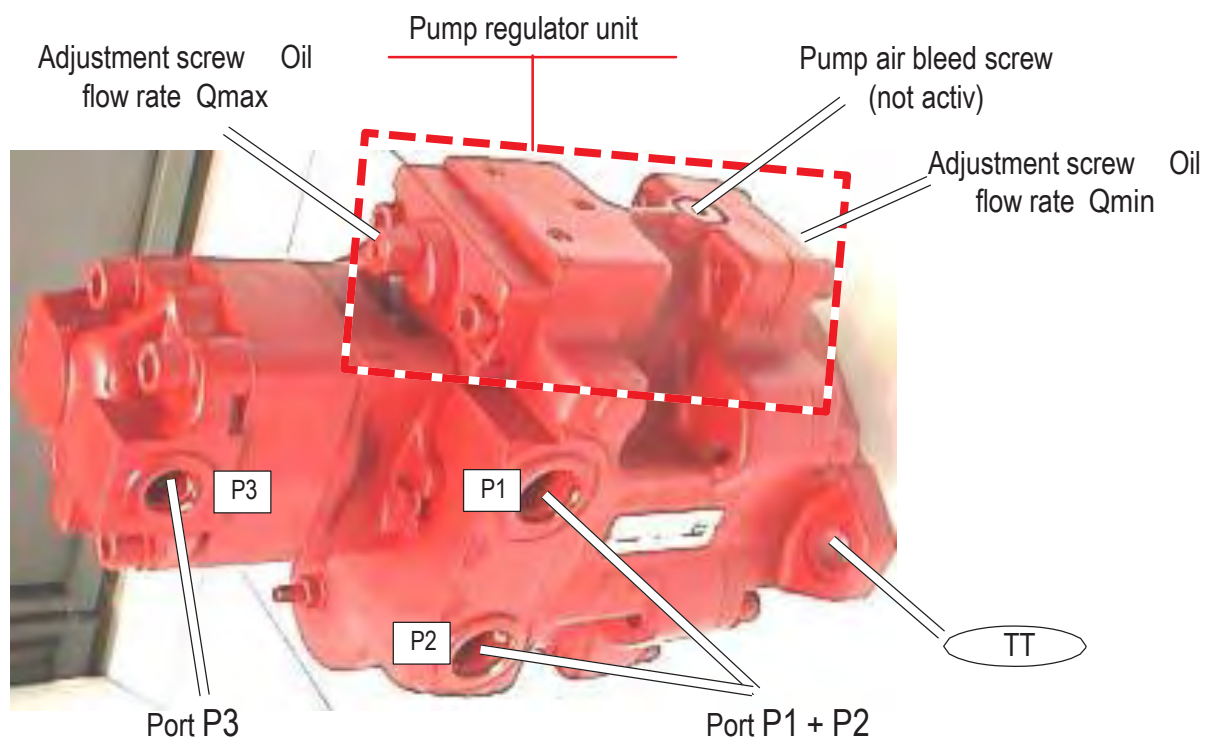


Fig.: Double axial and gear pump (suction side view)



Pict.: Hydraulic pump 4408302



SERVICE MANUAL

2503 - 3703

Hydraulic

Legend: Double variable displacement and gear pump 2503 (PVD - OB)

1	case	42	stopper
2	case cover	44	screw
3	primary shaft	49	stopper
4	cylinder drum	56	dowel pin
5	distribution plate	60	screw
6	piston	61	hexagon nut
7	sliding blocks	65	gear pump
8	sliding block bracket	66	coupling
9	centering ring	67	ring
11	spacer pins	68	screw
14	spring	70	washer
24	spacer ring	73	pilot control case
35	Seeger circlip ring	76	solenoid valve
10	swash plate	77	solenoid valve
12	ball	74	screw
13	sealing	75	washer
32	shaft sealing ring		
39	O-ring		
40	O-ring		
62	packing ring		
69	O-ring		
71	O-ring		
72	O-ring		
15	spring		
18	spring receptacle		
19	spring guide		
20	centering pin		
21	pin		
25	piston		
26	piston		
27	centering pin		
30	ball bearing		
31	needle bearing		
33	spacer ring		
34	Seeger circlip ring		
36	Seeger circlip ring		



Fig. Exploded view -double axial and gear pump 2503
Feature 1 governing spring-linear pump regulation

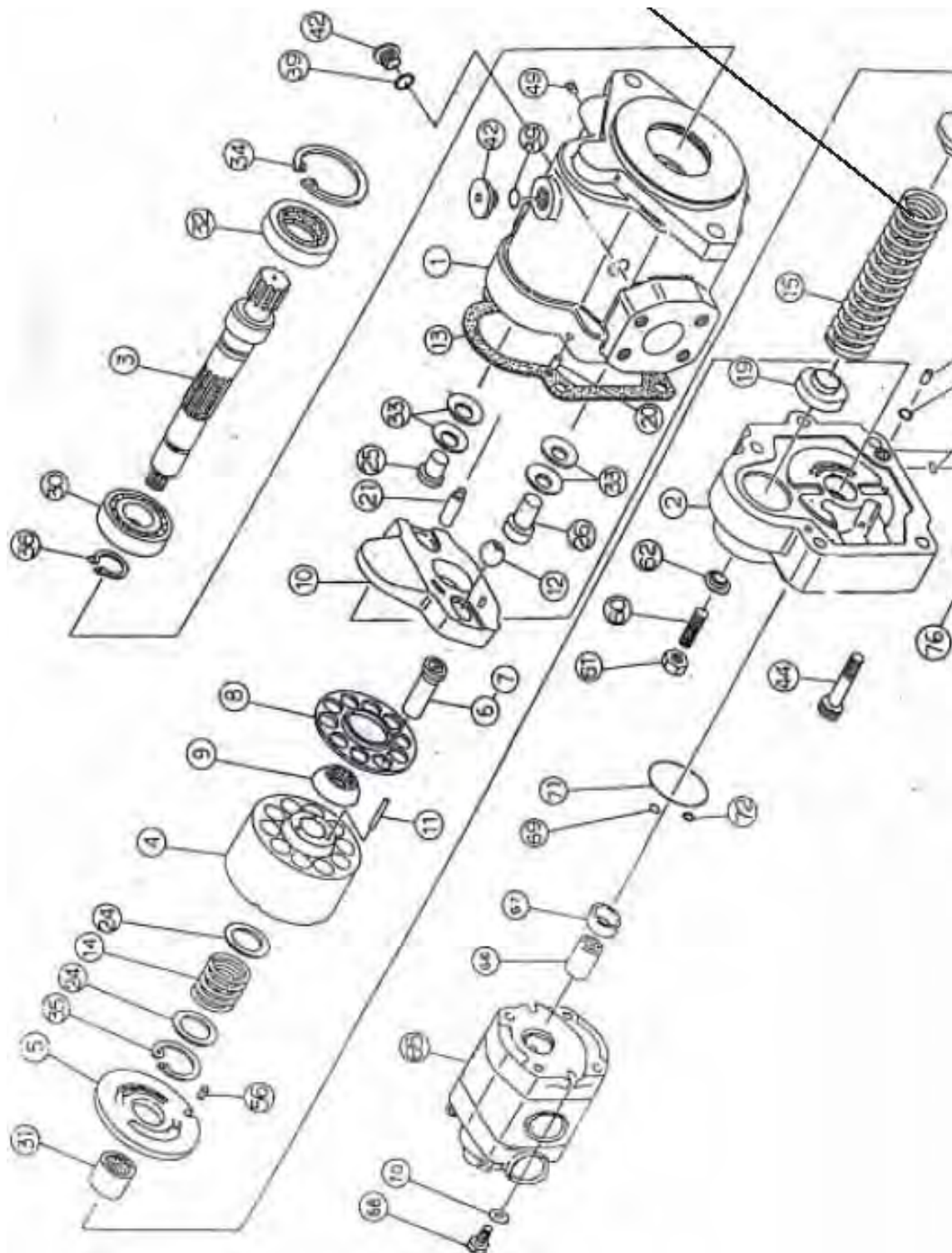
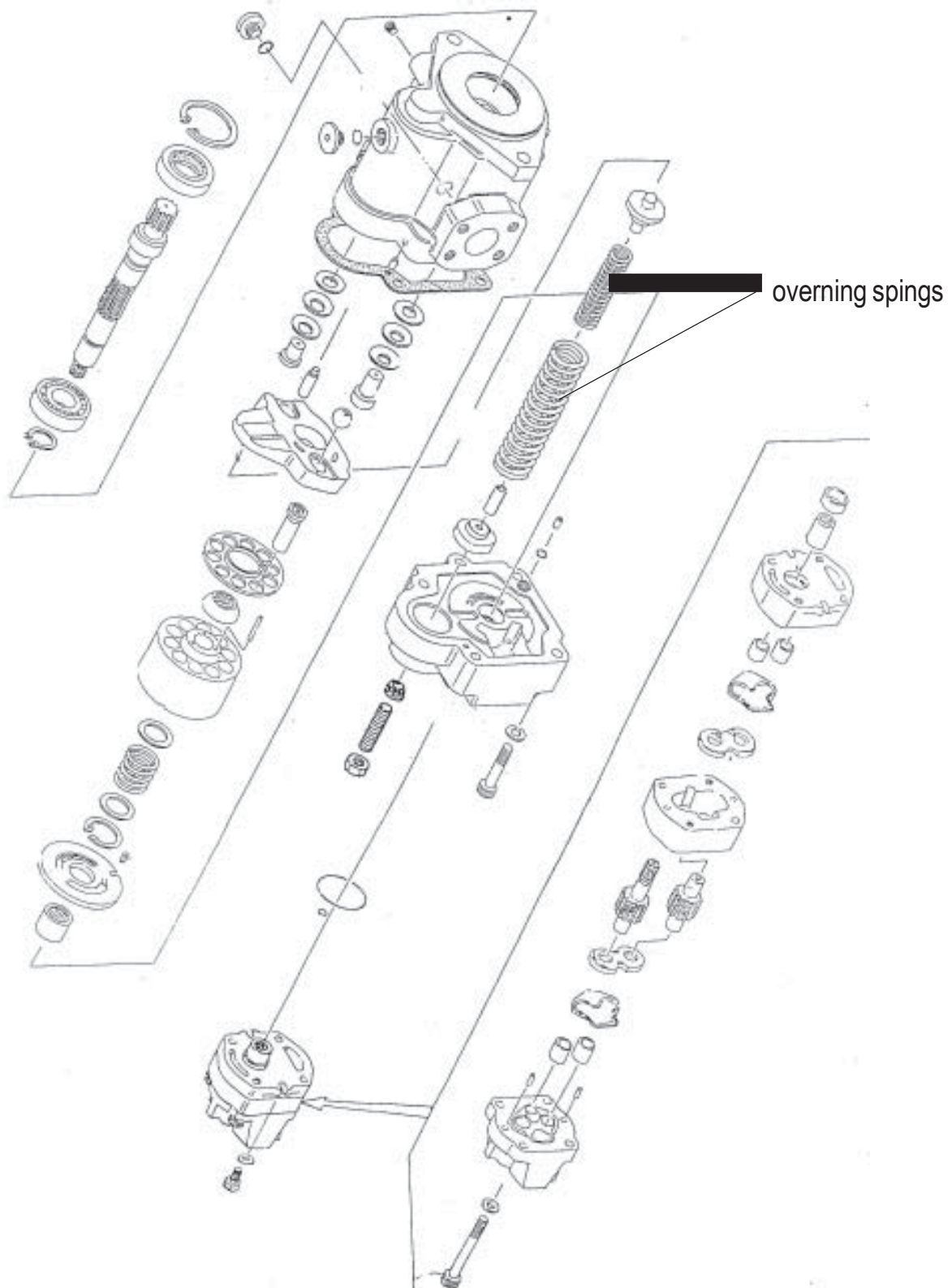


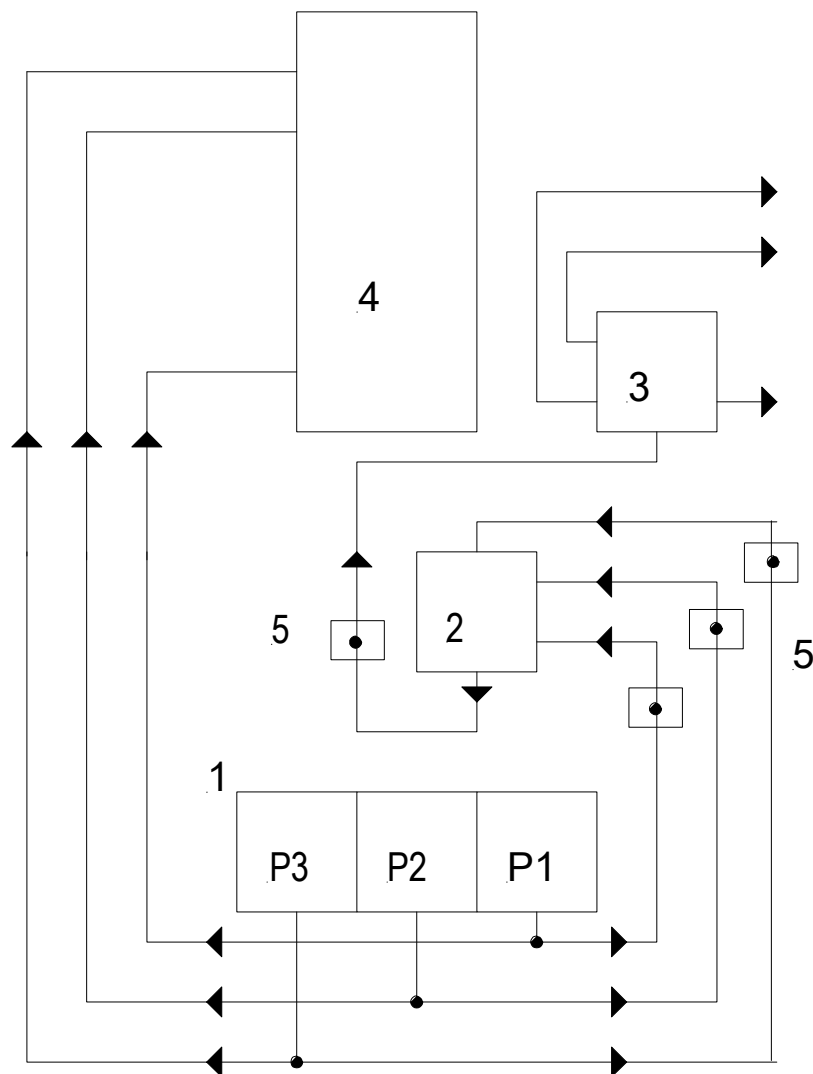
Fig.: Exploded view - double axial and gear pump 3003 · 3703
Feature: 2 governing springs - non-linear pump regulation



4. PILOT OIL SUPPLY UNIT

Neuson 2503 / 3003 / 3503 / 3703 :

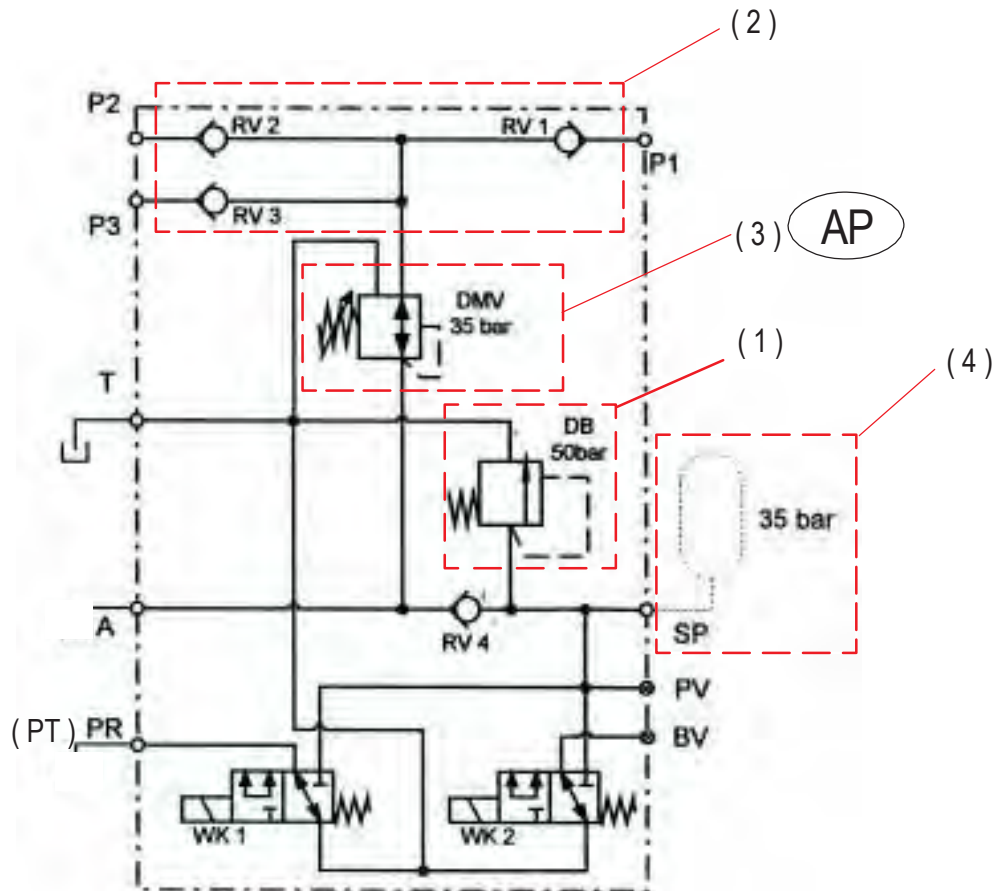
Fig.: Schematic of pilot control circuit:



- 1 pump unit
- 2 control oil unit
- 3 manifold block
- 4 main valve block
- 5 measuring ports



Fig.: Control oil unit 2503 · 3703



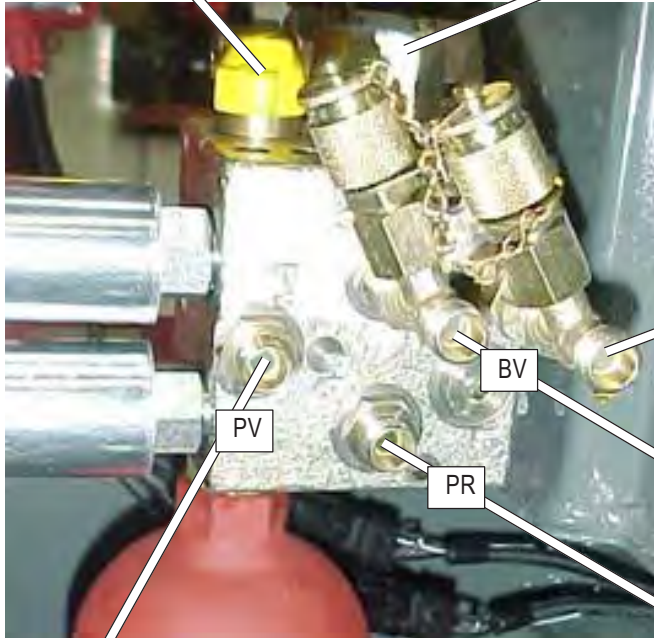
- port P1: >> gear pump P3
 port P2: >> variable displacement pump P2
 port P3: >> variable displacement pump P1
 port T : >> tank
 port A : >> driving counterbalancing system (main valve block)
 port PR: >> 2nd driving stage (drive units)
 valve WK1 - in combination with pushbutton at driving lever
 (formerly port PT - control oil unit 1408610)
 port BV: >> pilot control valves (joystick ..) via the safety solenoid valve
 in combination with the sensitive micro-switches in the arm rests (WK2).
 port PV: >> supply of setting chamber to swivel motor - brake release.

- (1) ... safety valve 50 bar - protects the control oil unit in case of defective pressure reducing valve
 (2) ... shuttle valves - always accept the highest pump pressure for control oil pressure
 (3) ... pressure reducing valve pilot control pressure (PRV) - ADJUSTMENT POINT (AP)
 (4) ... accumulator

Fig.: Port assignment of control oil unit 2503 - 3703
(version 1408610 | 1408615)

(1) safety valve

(3) pressure reducing valve (AP)
- version 1408615 :
metal cap with ring -
see page C15



to gear pump

P1

BV

safety solenoid valve function

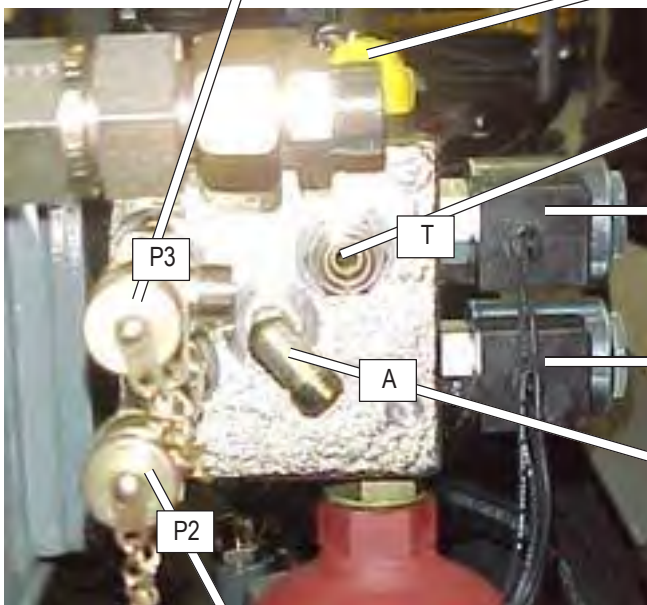
PR

port PR (PT) >> 2nd driving stage

port PV

to variable displacement pump P1

(1) safety valve



port T - tank

WK 2

WK 1

port A

P3

T

A

P2

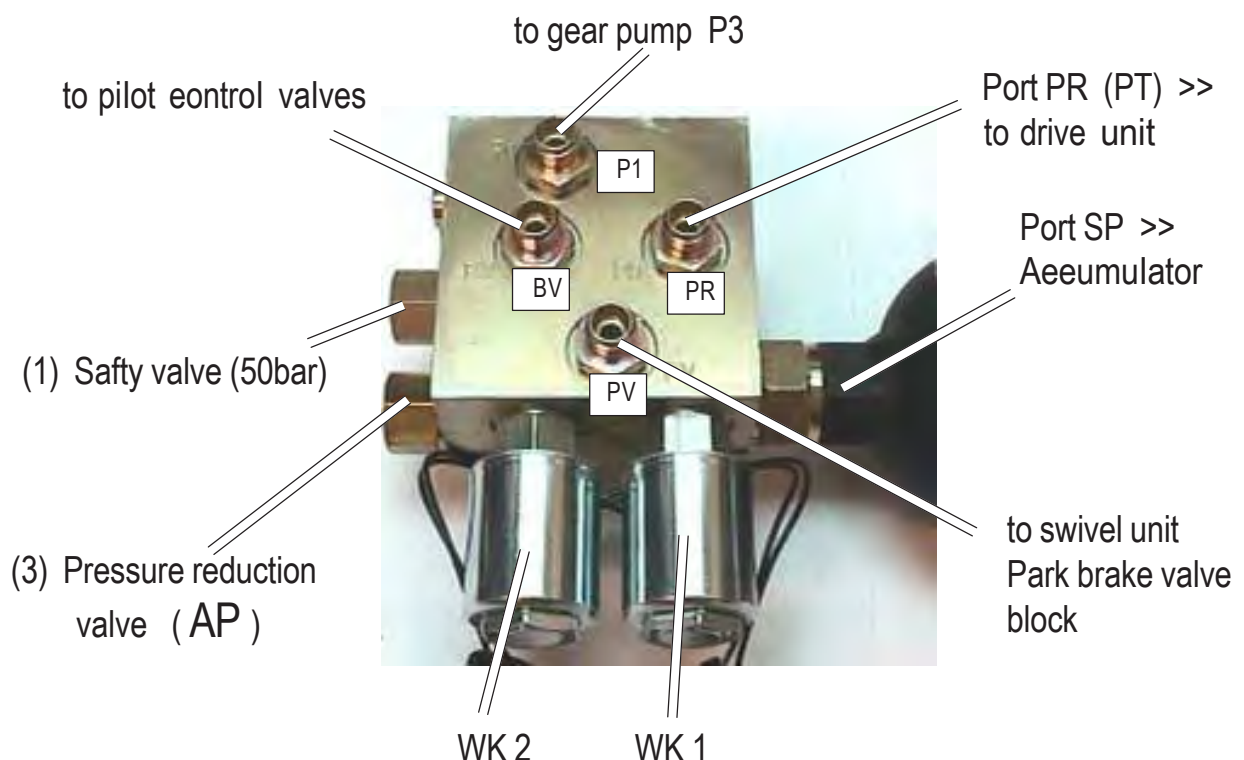
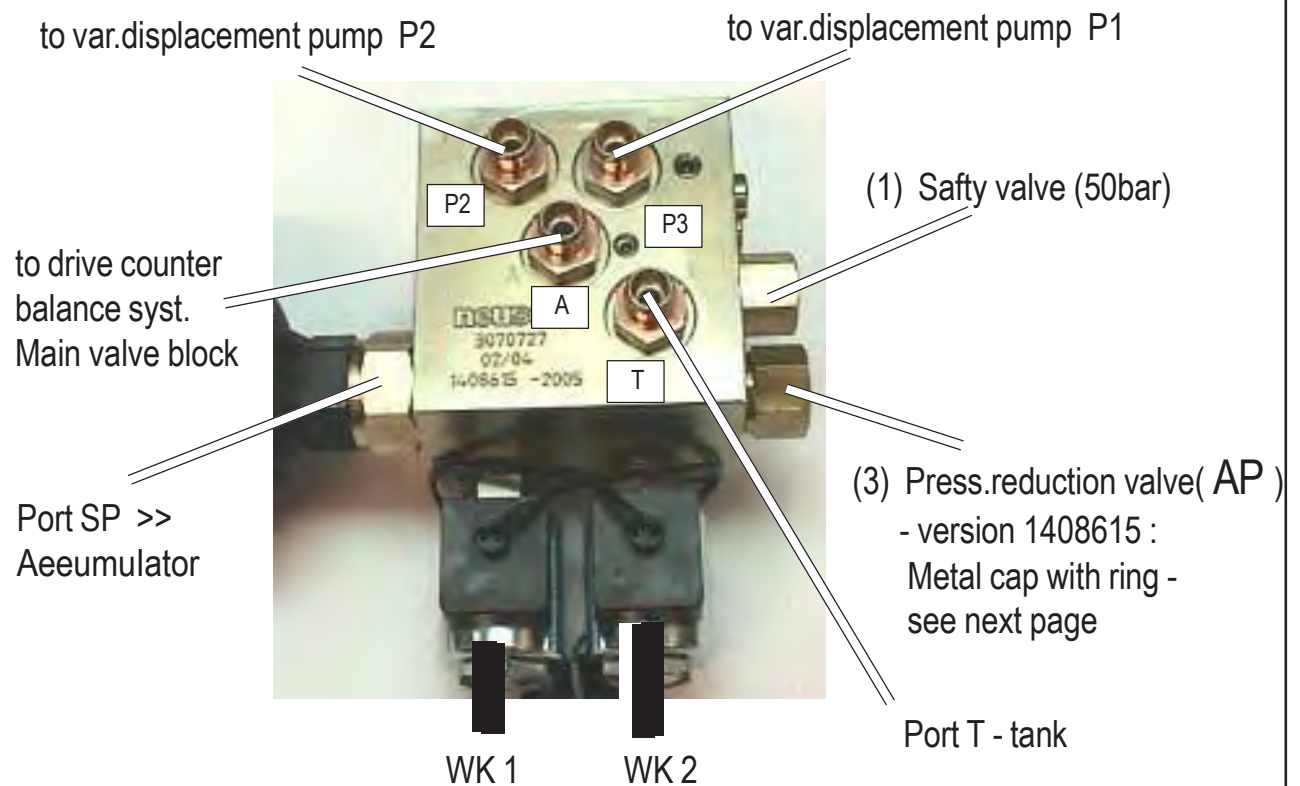
to variable displacement pump P2

SERVICE MANUAL

2503 - 3703

Hydraulic

Pict.: Port position pilot oil supply unit 2503 - 3703
(version 1408615)



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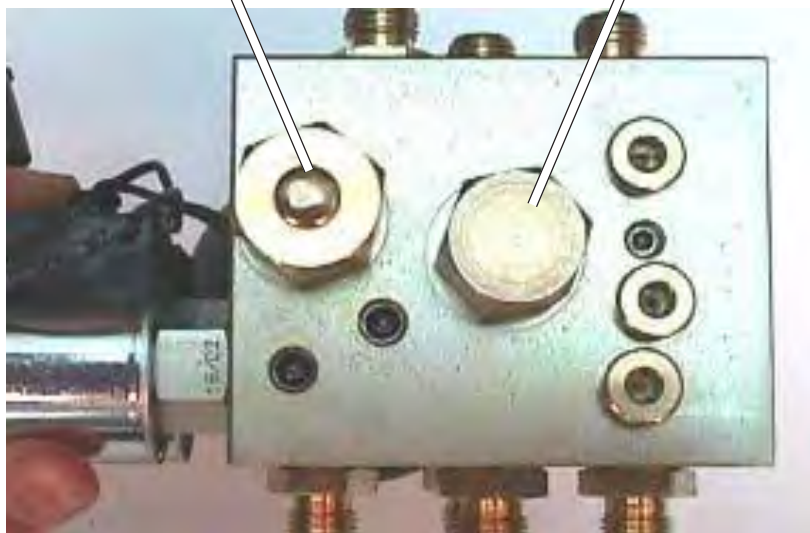
Page c15

Id.No.: 9707748
Edition: Jan 03

Pict.: Port position pilot oil supply unit 1408615 (5002 - 6002)

(3) Pressure reduction valve
(AP)

(1) Safty valve

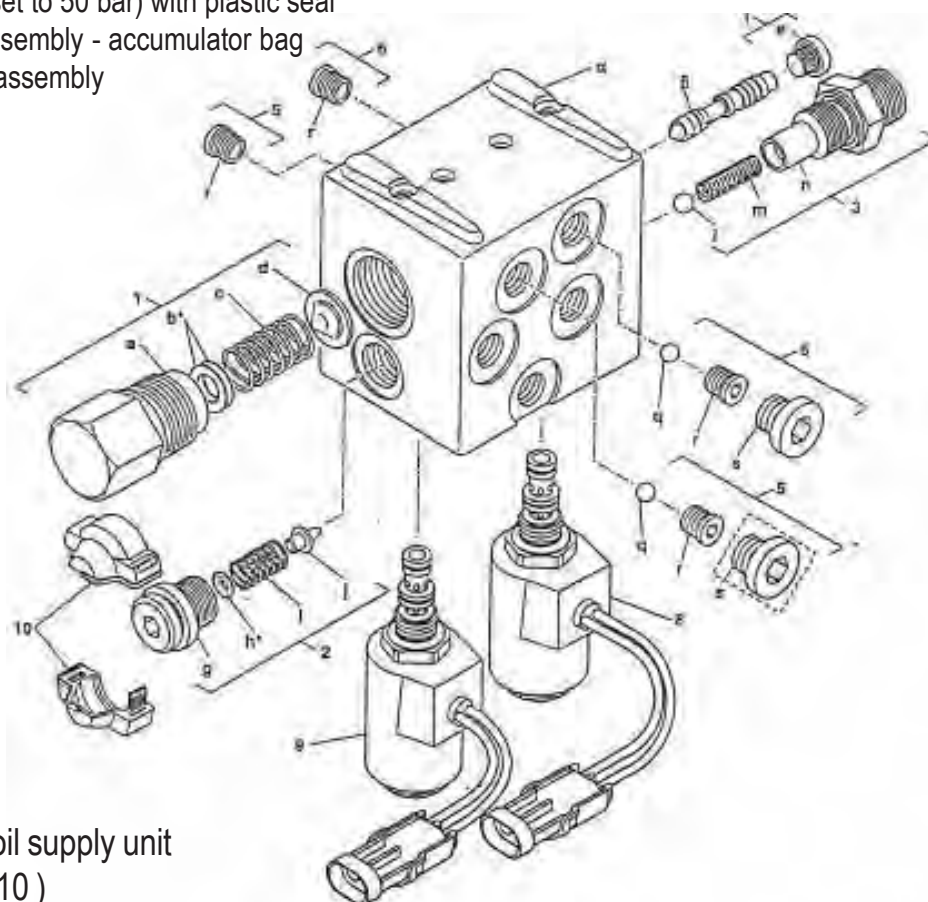


- 1... pressure reducing valve unit (AP) * adjusting washers
- 2... safety valve (preset to 50 bar) with plastic seal
- 3... connecting subassembly - accumulator bag
- 5 - 6 shuttle valve subassembly
- 8 - 9 solenoid valves

Fig.: Version 1408610

Tightening torques:

- 1a... 150 Nm
- 1e... 10 Nm
- 2g... 100 Nm
- 3n... 100 Nm
- 5r... 10 Nm
- 5s 6s 30 Nm
- 8 9 15 - 20 Nm



Pict.: Structure pilot oil supply unit
(version 1408610)



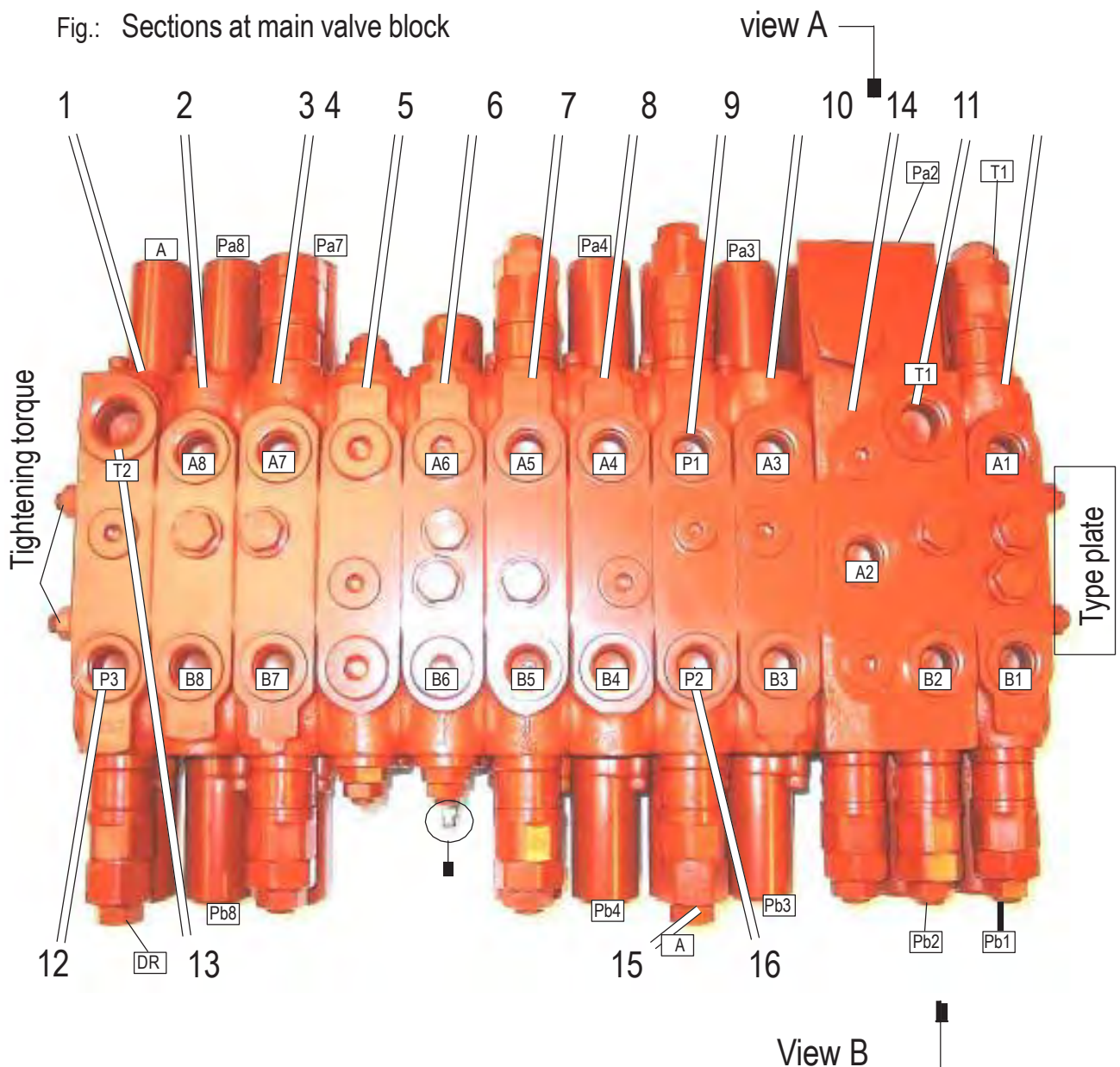
5. MAIN VALVE BLOCK

Neuson 2503 | 3003 | 3503 | 3703 :

Type: Neuson KVSE-36-9 identical design for 2503 -3703 - different piston valve!
(see different item.No.)

Features: regenerating function of dipper stick drive counterbalancing system standard functions

Fig.: Sections at main valve block

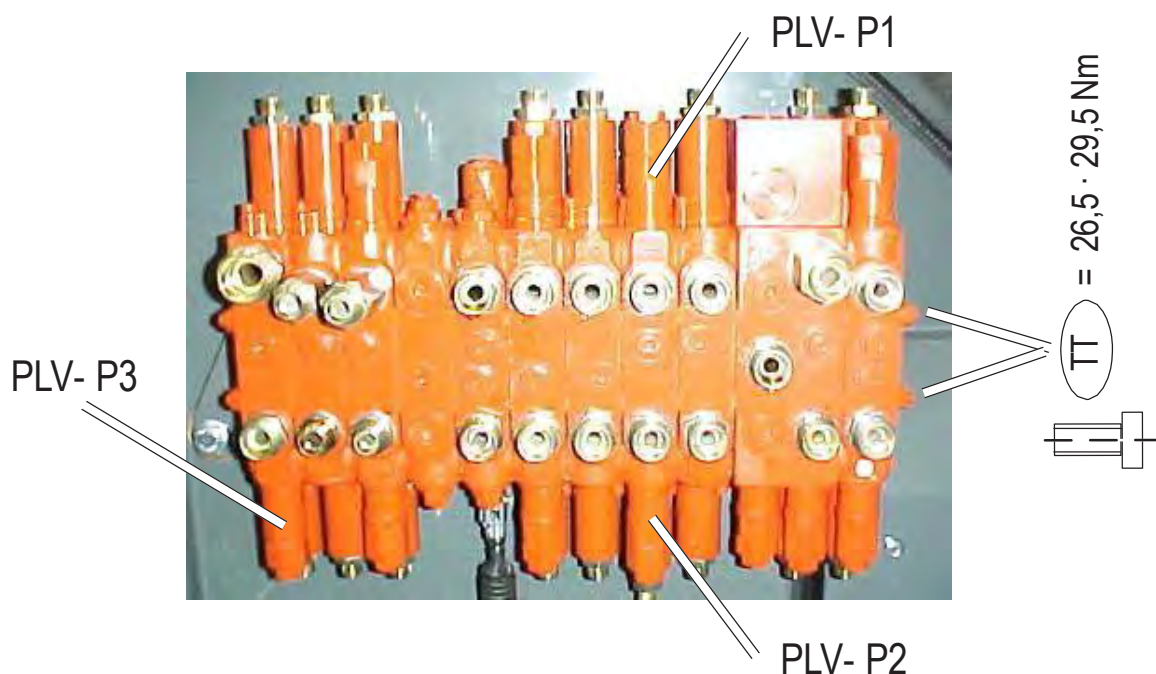


Hydraulic

SERVICE MANUAL 2503 - 3703

- | | | | |
|----|---|----|------------------------------------|
| 1 | counterbalancing system (port A control oil unit) | 11 | bucket |
| 2 | swivel unit | 12 | port gear pump P3 |
| 3 | dozer blade | 13 | hydraulic oil cooler (tank-T2) |
| 4 | flow rate adjustment of auxiliary hydraulics | 14 | suction hose T1 swivel motor |
| 5 | auxiliary hydraulics mechanically driven | 15 | port A (counter balancing) |
| 6 | dipper stick | 16 | port variable displacement pump P2 |
| 7 | driving right | | |
| 8 | variable displacement pump P1 | | |
| 9 | driving left | | |
| 10 | boom | | |

Fig.: Primary pressure limiting valves (PLV) - (AP)



- | | | |
|----|------------------------------|----------------|
| 11 | section bueket | supplied by P1 |
| 10 | section boom | |
| 9 | section driving left | |
| 7 | section driving right | supplied by P2 |
| 6 | section dipper stiek | |
| 5 | section auxiliary hydraulies | |
| 4 | section flow rate AH | supplied by P3 |
| 3 | section dozer blade | |
| 2 | section swivelling drive | |
| 1 | section counterbalancing | |



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Fig.: Valves - view A

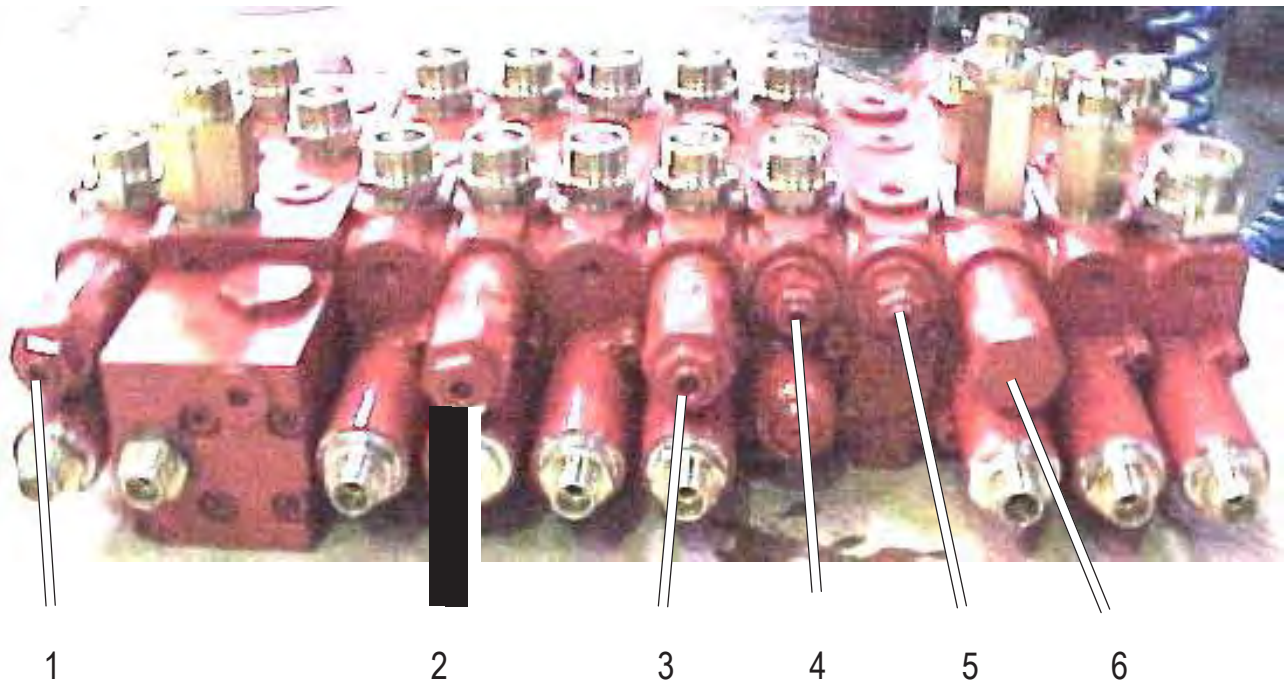
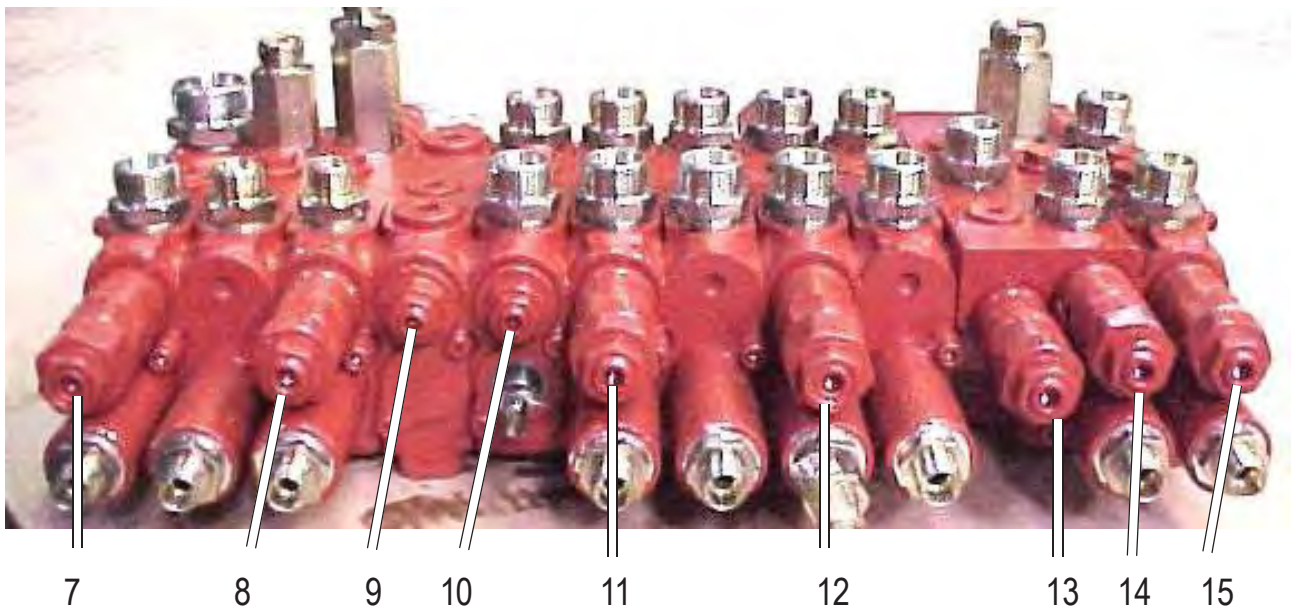


Fig.: Valves - view B



- | | | | |
|---|--|----|--|
| 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) | 12 | primary pressure limiting valve P2 |
| 5 | flow rate adjusting screw auxiliary hydraulics | 13 | sec. press. lim. val. boom bot. side |
| 6 | stopper | 14 | sec. press. lim. val. boom rod side |
| 7 | primary pressure limiting valve P3 | 15 | sec. press. lim. val. bucket rod side |
| 8 | sec. press. limiting valve dozer blade bottom side | | |

Fig.: Hydraulic circuit diagram - main valve block

section bucket

section boom

section driving left

section driving right

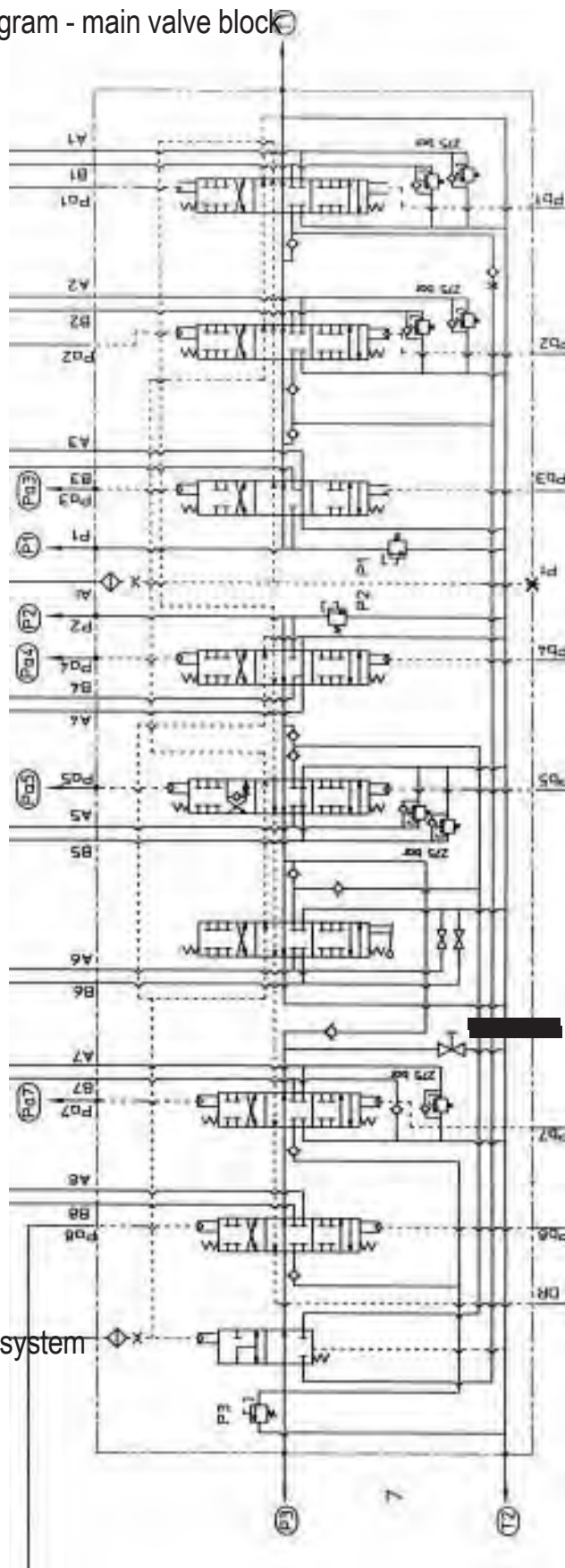
section dipper stick

section aux. hydraulics
and boom offset

section dozer blade

section swivelling

section counterbalancing system



flow rate
adjustment
aux. hydraulics

Function Drive Counterbalaneing System

General:

Without counterbalancing: If an arm function is activated during driving the device leaves its track! (P1 P2 supply one drive unit each).

All Neuson 2503·3703 are equipped with drive eounterbalaneing function!

If an arm function is activated when driving straight the deviee keeps traek - the driving speed remains constant. The drive counterbalancing system is activated only if both driving valves are active.

Function:

- Both piston valves for driving and one arm function must be actuated.
- The valve (V1) of the drive counterbalancing system is activated because of an increased banking-up pressure.
- P3 - assumes the supply of arm functions.
- Section auxiliary hydraulics

Switching pressure of valve V1:

Fig.: Hose piping of drive counterbalancing system

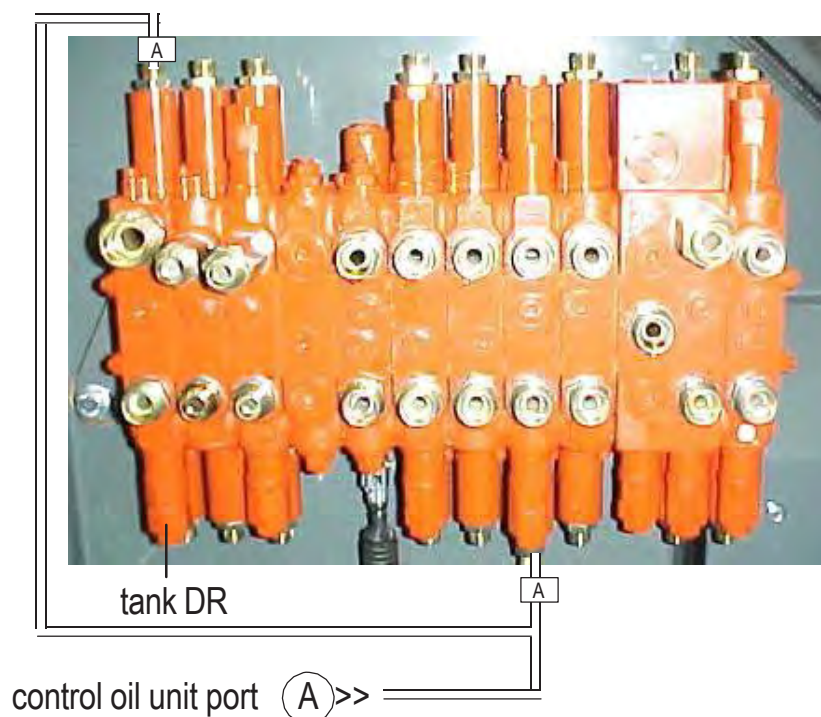
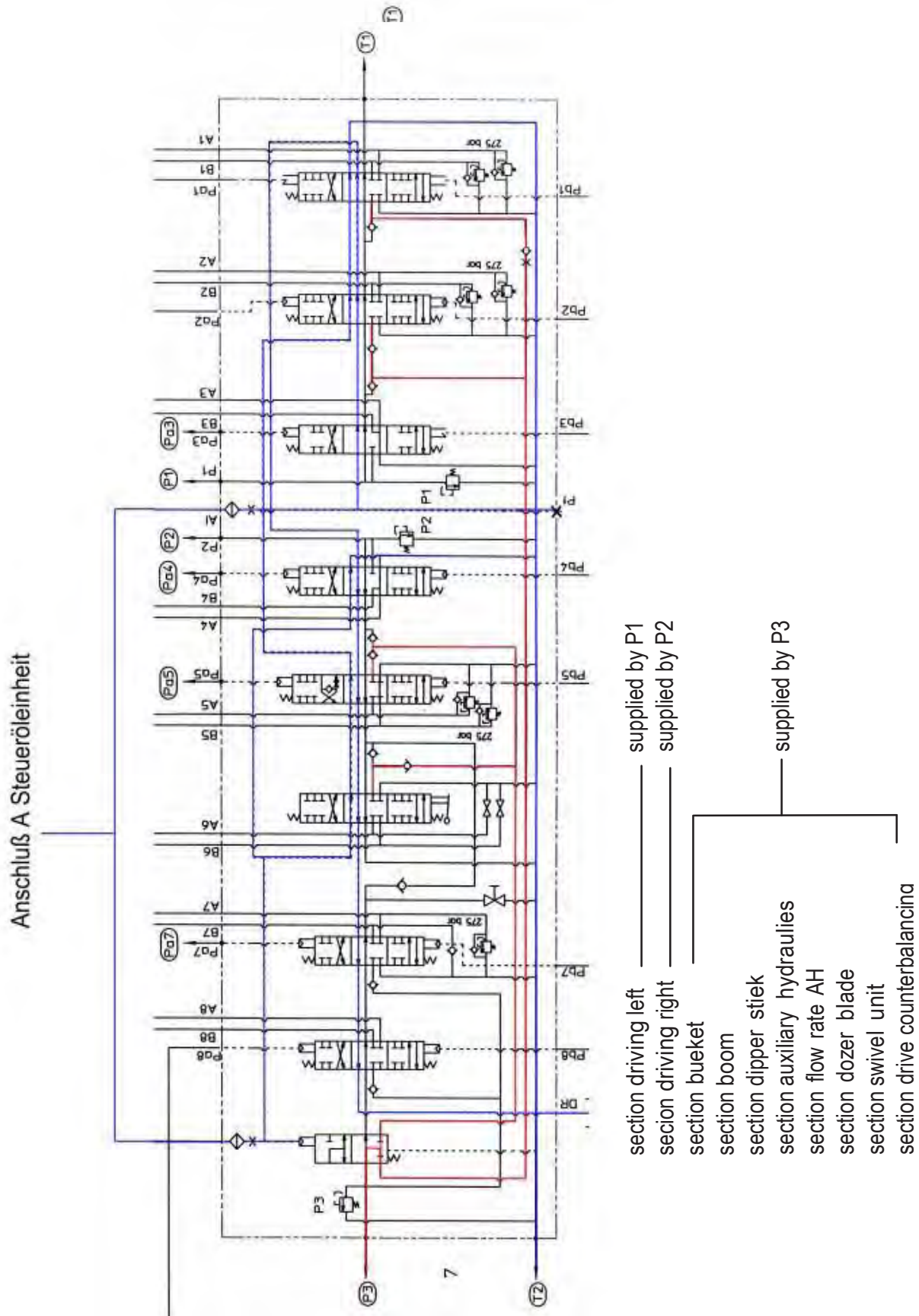


Fig.: Circuit diagram of drive counterbalancing system



A

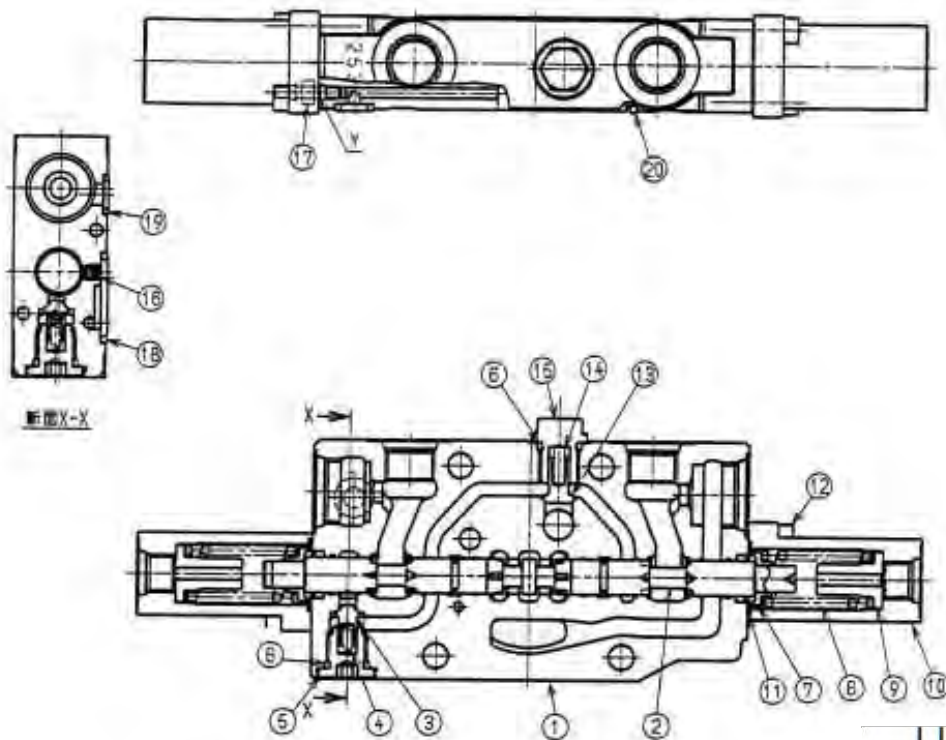
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Edition: Jan 03

Function Regeneration - Section Dipper Stick

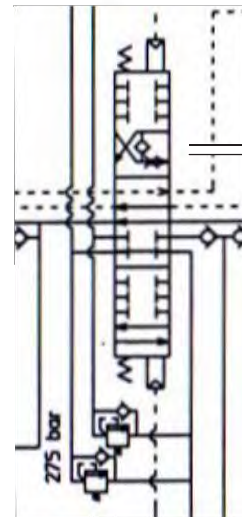
Situation: Because of heavy loads at the dipper stick the dipper stick cylinder may become "evacuated" on the bottom side which might lead to a dipper stick standstill in vertical position.

Solution: Regeneration of the rod-side dipper stick cylinder oil to the cylinder bottom side. To this end the spool valve is provided with a non-return valve.

Fig.: Section dipper stick



- | | | | |
|----|-------------------|----|--------------|
| 1 | case | 11 | O-ring |
| 2 | spool valve | 12 | screws |
| 3 | spring collar | 13 | valve head |
| 4 | centering spring | 14 | spring |
| 5 | stopper | 15 | stopper |
| 6 | O-ring | 16 | stopper plug |
| 7 | spring collar | 17 | stopper |
| 8 | spring | 18 | O-ring |
| 9 | spring collar | 19 | O-ring |
| 10 | pilot control cap | 20 | O-ring |



regener.



Function Oil Flow Adjusting Serews · Auxiliary Hydraulics (AH)

- 1 case
- 2 spool valve
- 3 O-ring
- 4 supporting ring
- 5 cover of case
- 6 screw
- 7 stopper
- 8 stopper

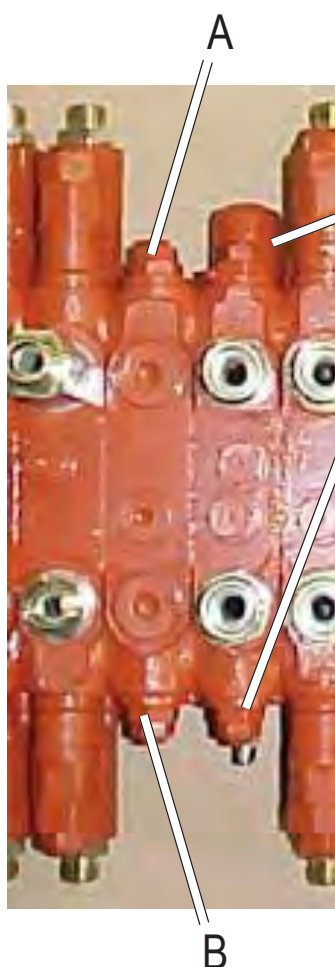
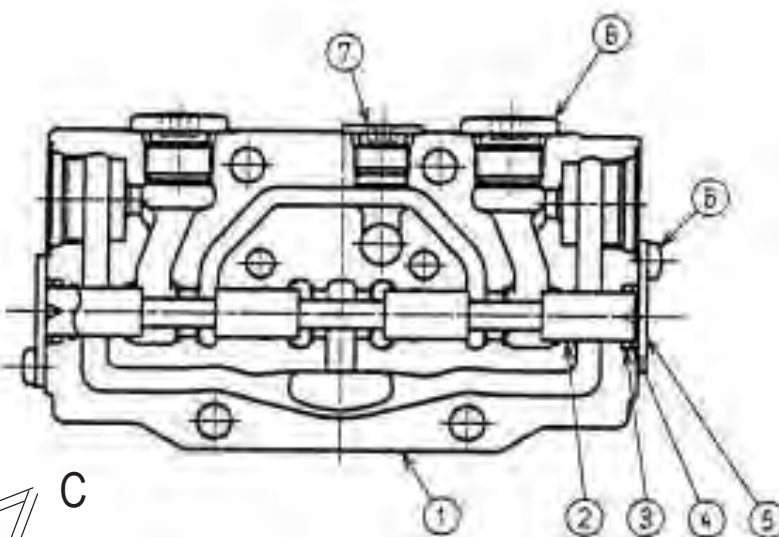
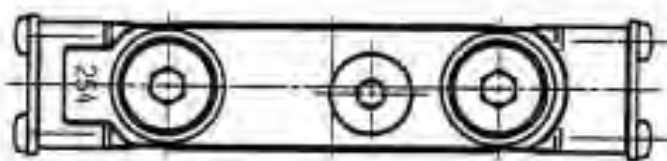


Fig.: Adjustment of flow rate AH

To reduce the flow rate of the auxiliary hydraulic system the stoppers A andlor B must be turned out each by 2 turns.

Warning: No intermediate position - overheating !

Stoppers A and B - elosed (factory setting)

>> supply AH: P2 + P3

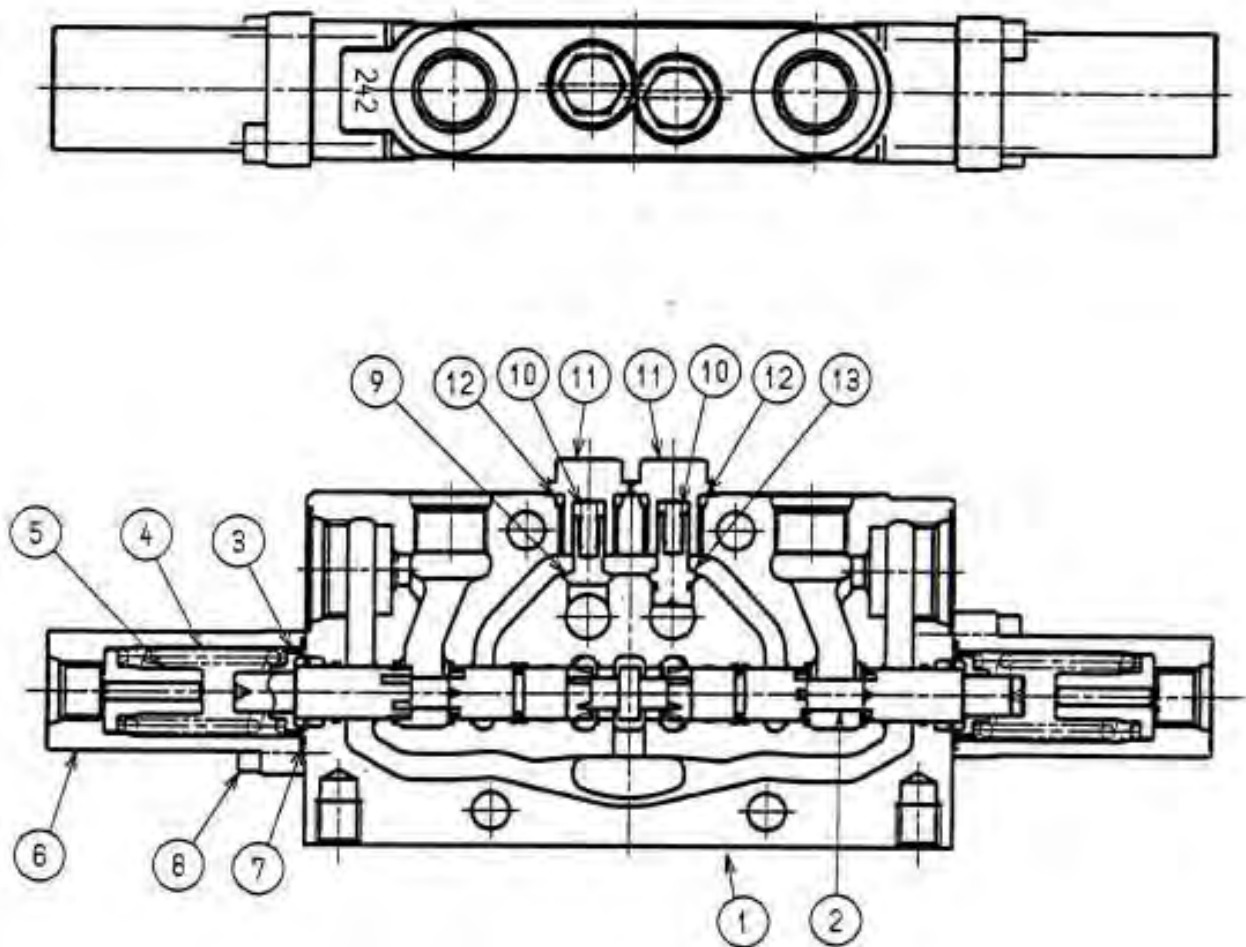
Stoppers A and B - turned out 2 turns

>> supply AH : P2

For pressure-related flow rates of AH - see chapt. Technical Data.

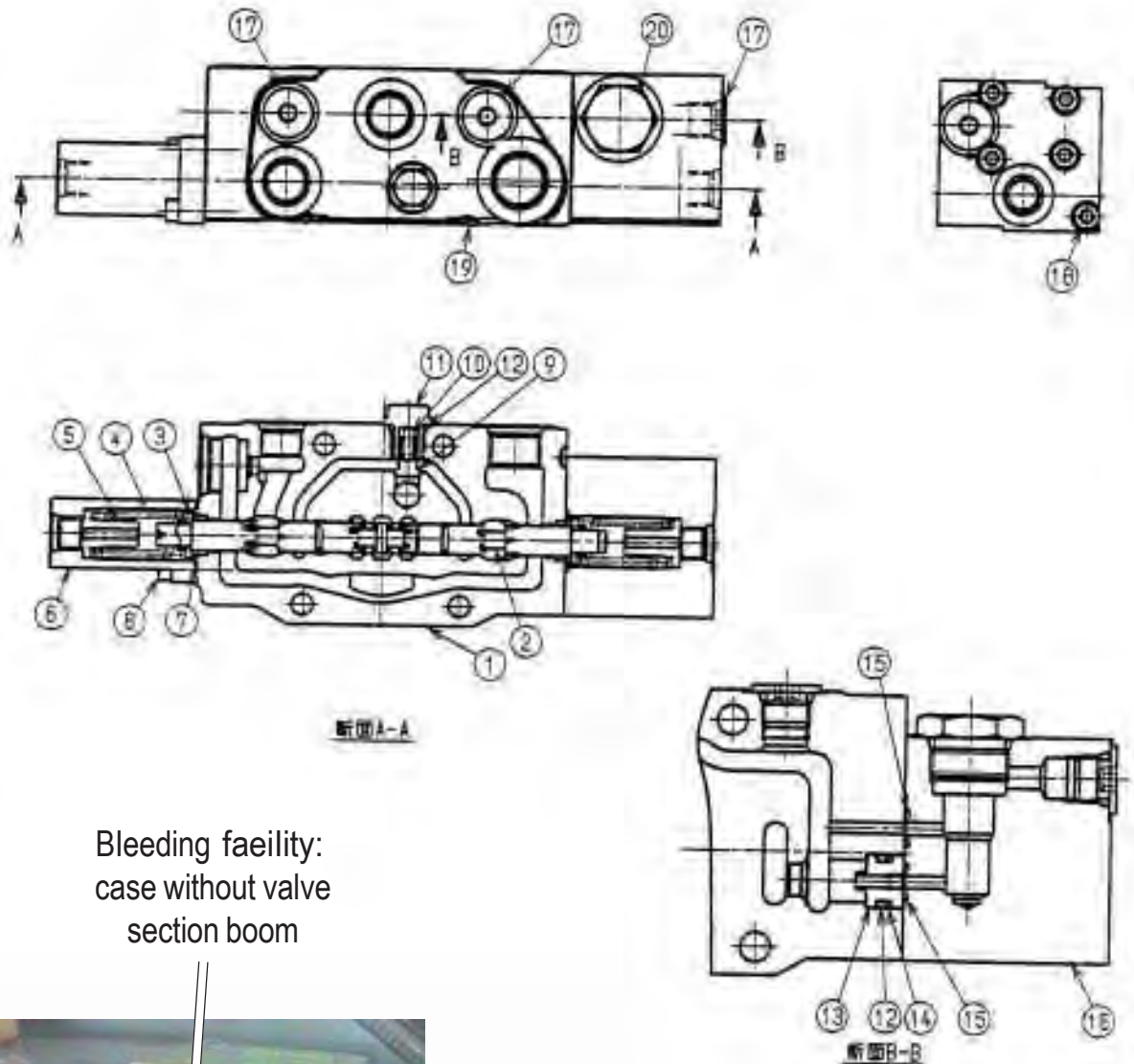
Stopper C - receptacle option sec. press. limit. valve - AH

Function Bueket



- 1 case
- 2 spool valve
- 3 spring collar
- 4 centering spring
- 5 spring collar
- 6 pilot control cap
- 7 O-ring
- 8 screw
- 9 valve head
- 10 spring
- 11 stopper
- 12 O-ring
- 13 valve head

Function Boom

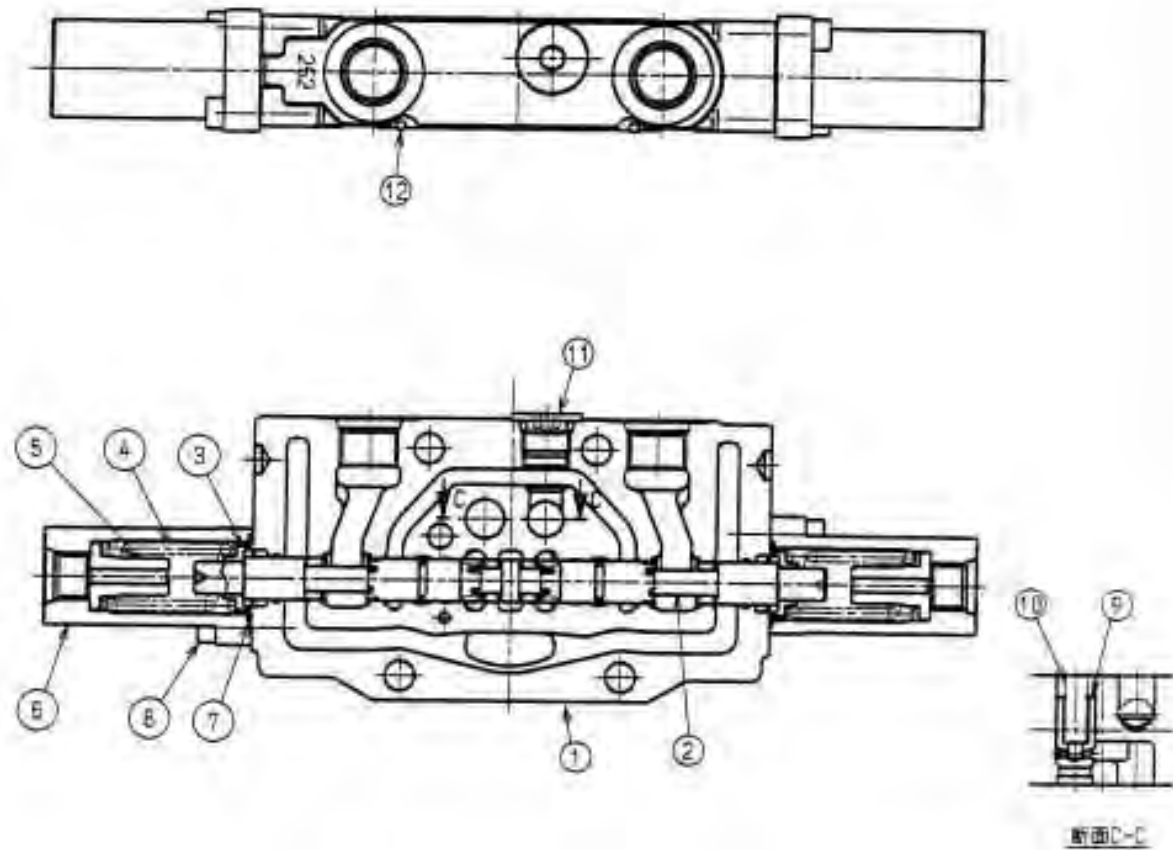


Bleeding faeility:
case without valve
section boom



- | | | | |
|----|-------------------|----|-----------------|
| 1 | case | 14 | supporting ring |
| 2 | spool valve | 15 | O-ring |
| 3 | spring collar | 16 | case |
| 4 | centering spring | 17 | stopper |
| 5 | spring collar | 18 | screw |
| 6 | pilot control cap | 19 | O-ring |
| 7 | O-ring | 20 | stopper |
| 8 | screw | | |
| 9 | valve head | | |
| 10 | spring | | |
| 11 | stopper | | |
| 12 | O-ring | | |
| 13 | bush | | |

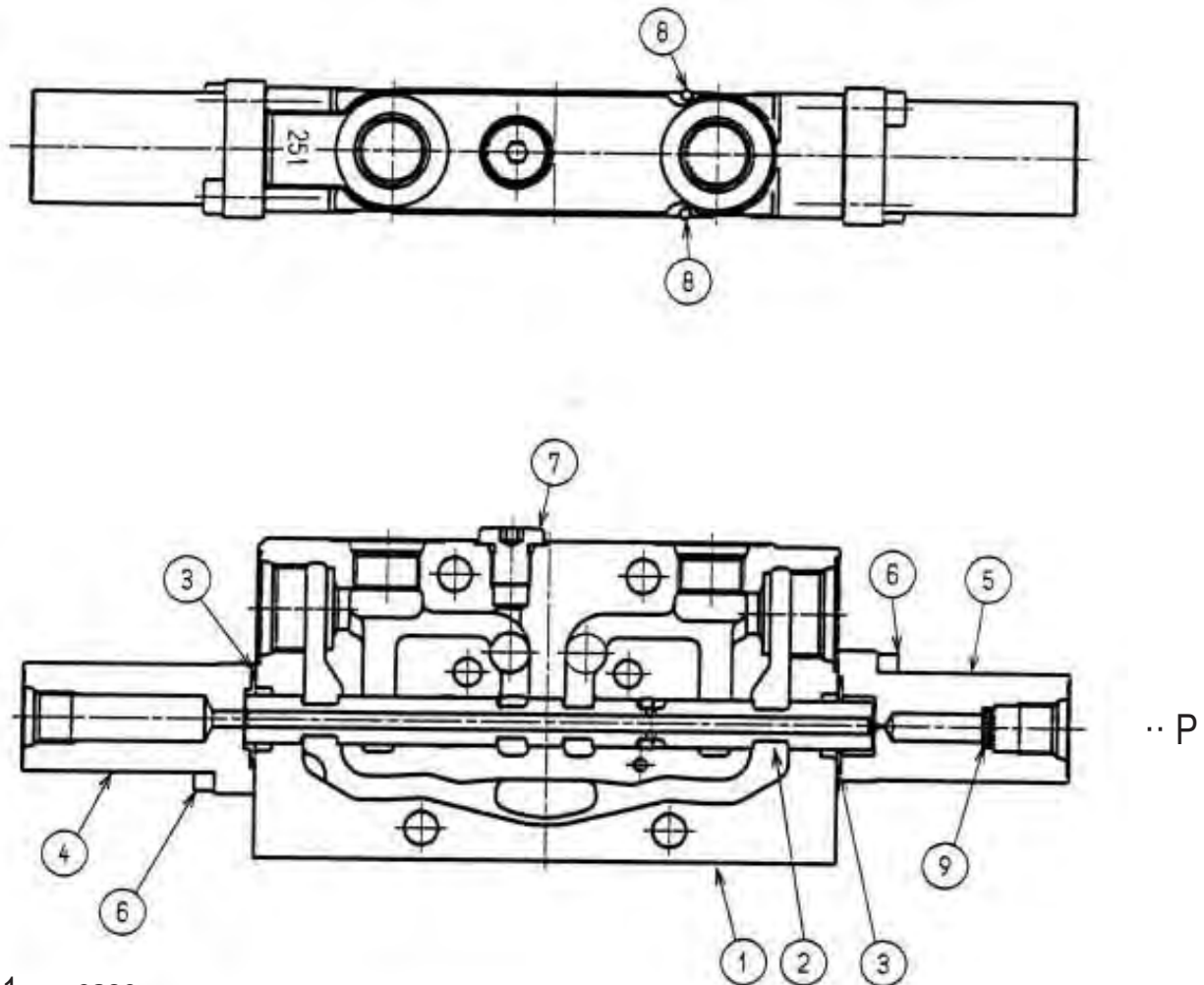
Section Drive (Left | Right)



- 1 case
- 2 spool valve
- 3 spring collar
- 4 centering spring
- 5 spring collar
- 6 pilot control cap
- 7 O-ring
- 8 screw
- 9 valve head
- 10 spring
- 11 stopper
- 12 O-ring

Section Input (P1 | P2)

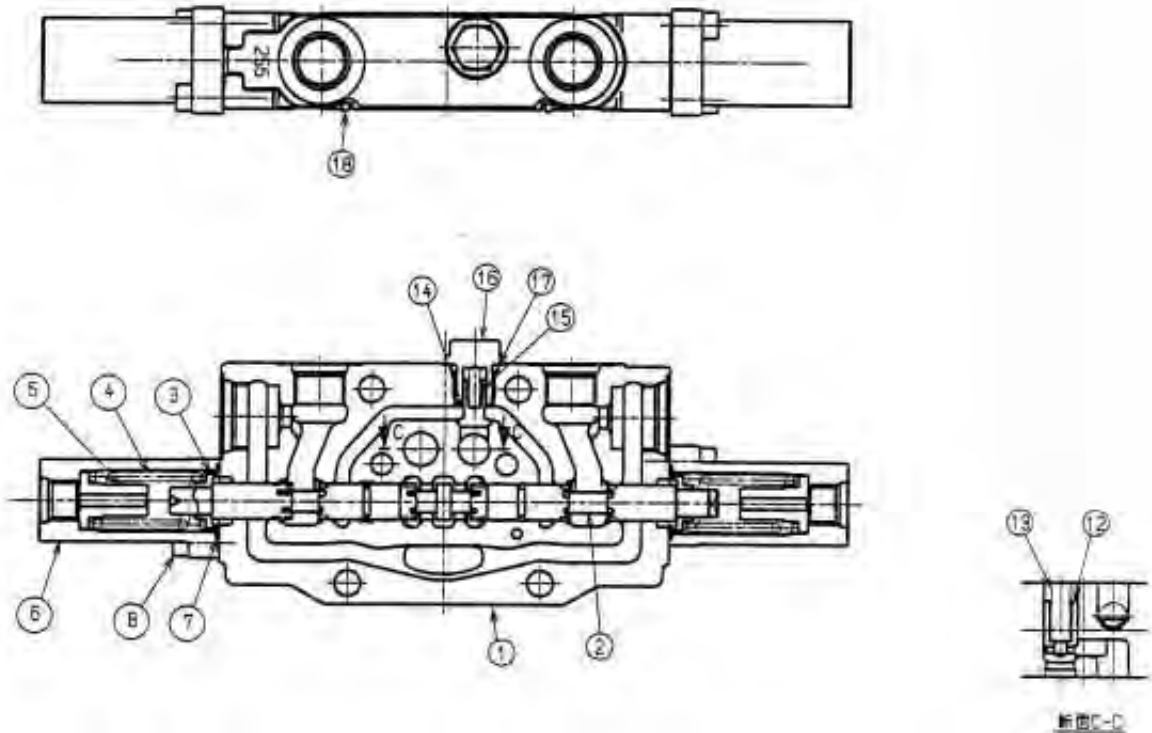
- with primary pressure limiting valves P1 and P2 (AP)



- 1 case
- 2 spool valve
- 3 O-ring
- 4 pilot control cap
- 5 pilot control cap
- 6 screws
- 7 stopper
- 8 O-ring
- 9 metal filter

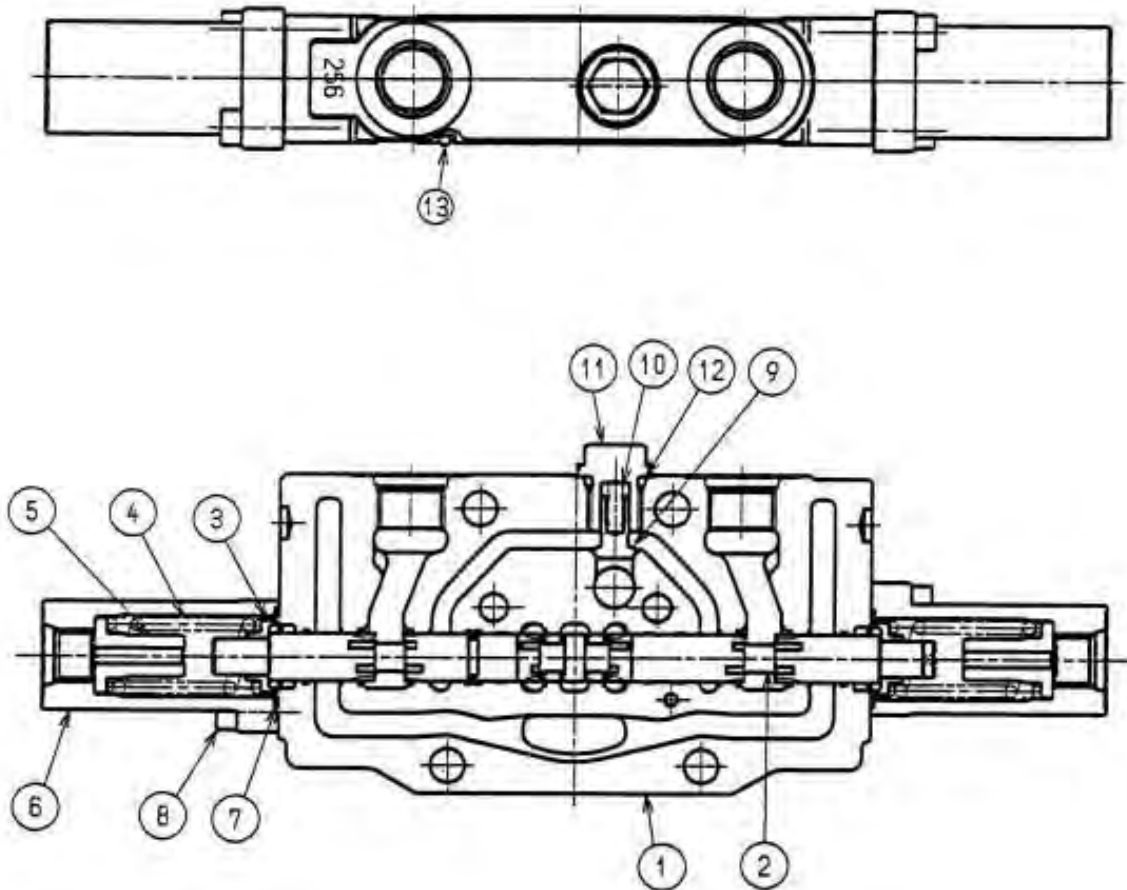
« P... port counterbalancing system coming from the control oil unit

Section Dozer Blade



- 1 case
- 2 spool valve
- 3 spring collar
- 4 centering spring
- 5 spring collar
- 6 pilot control cap
- 7 O-ring
- 8 screw
- 9 valve head
- 10 spring
- 11 stopper
- 12 O-ring
- 13 O-ring

Section Swivel Unit



- 1 case
- 2 spool valve
- 3 spring collar
- 4 centering spring
- 5 spring collar
- 6 pilot control cap
- 7 O-ring
- 8 screw
- 9 valve head
- 10 spring
- 11 stopper
- 12 O-ring
- 13 O-ring

6. PILOT CONTROL VALVES

Type: Neuson 2528415 2708313 (4TH5)

Features:

- progressive hydraulic pilot control device
- operation: directly controlled pressure reducing valve

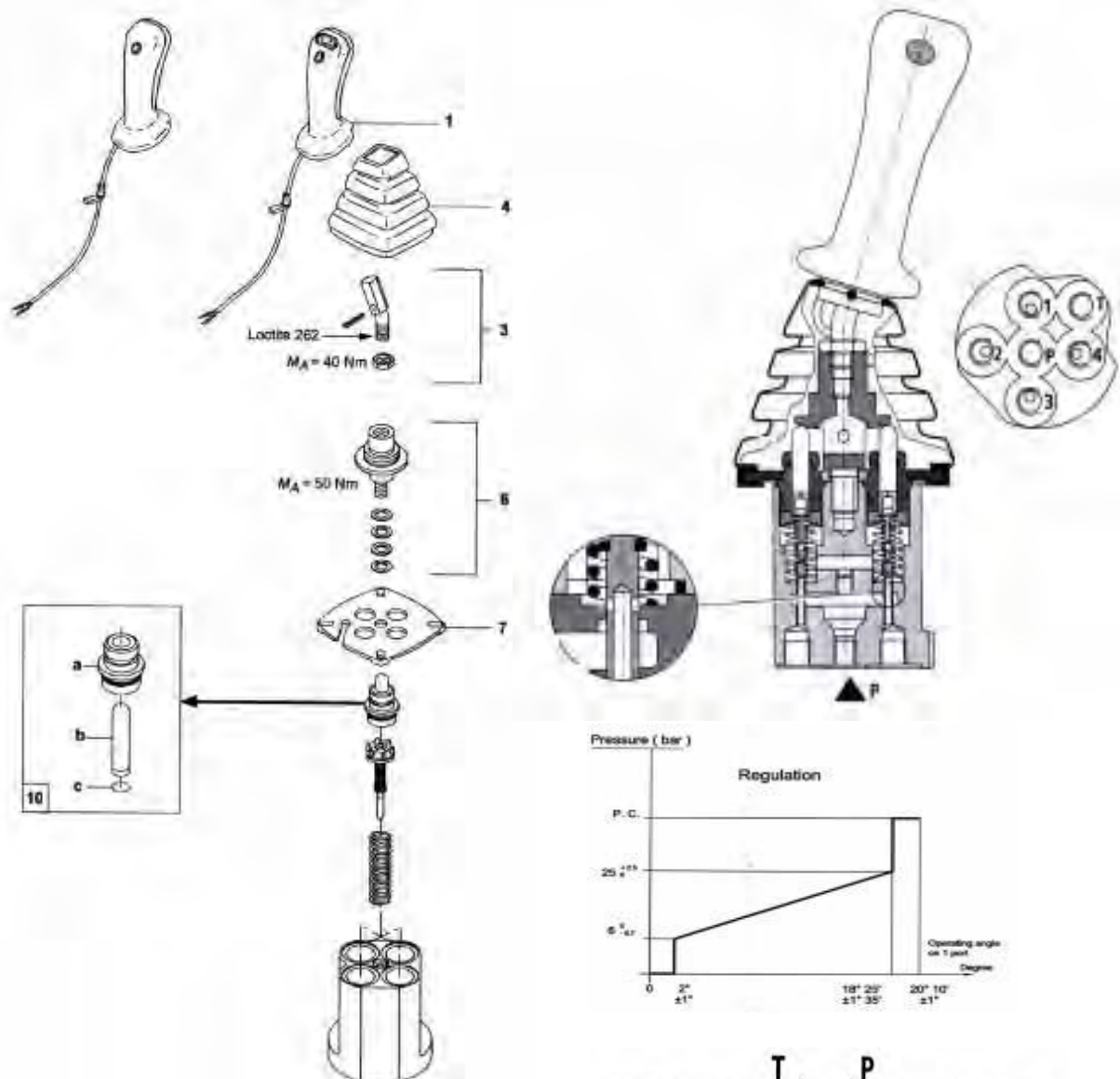
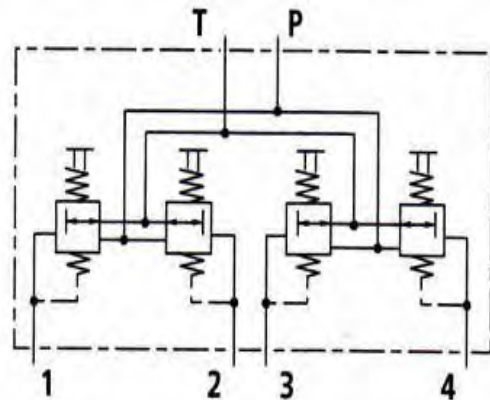


Fig.: Manual control valve (joystick)

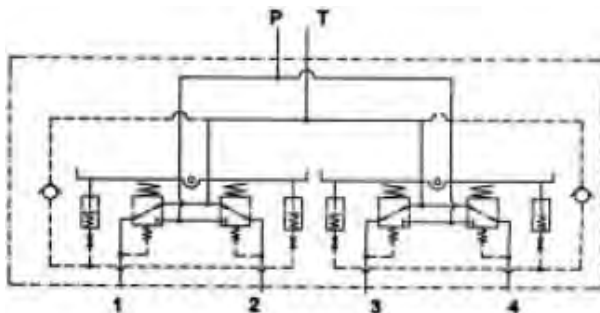
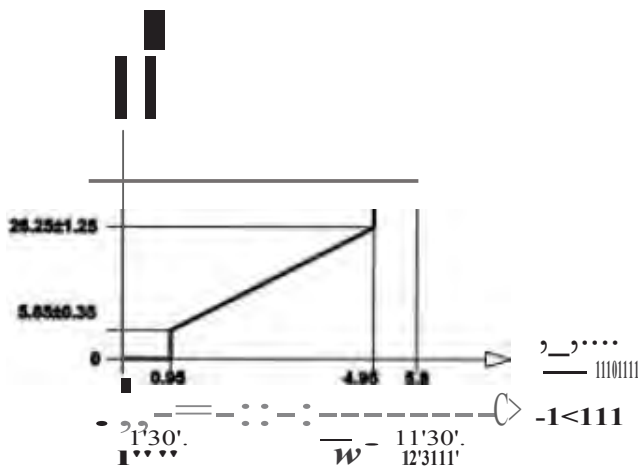
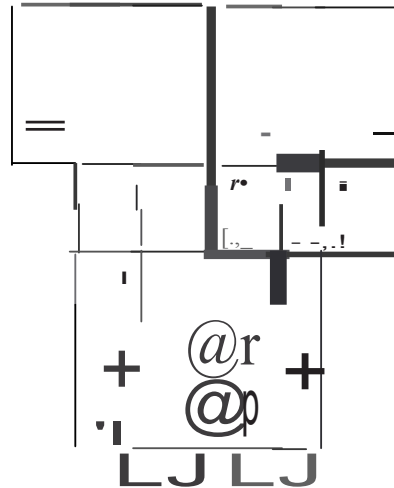
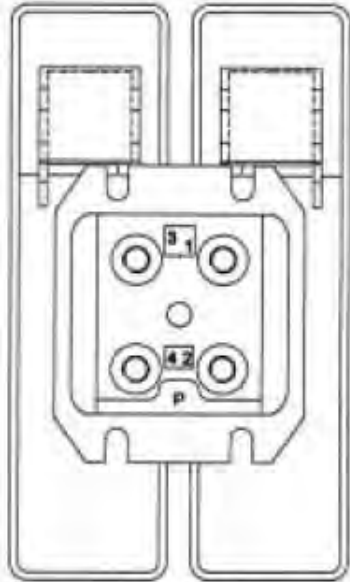
- 1 control lever
- 3 rod assembly
- 4 rubber collar
- 6 joint
- 7 guide plate
- 10 tappet



Hydraulic

SERVICE MANUAL 2503- 3703

Fig Driving pedal with hydraulic damper
Type Neuson 2528409 (4TH6NR)



SERVICE MANUAL

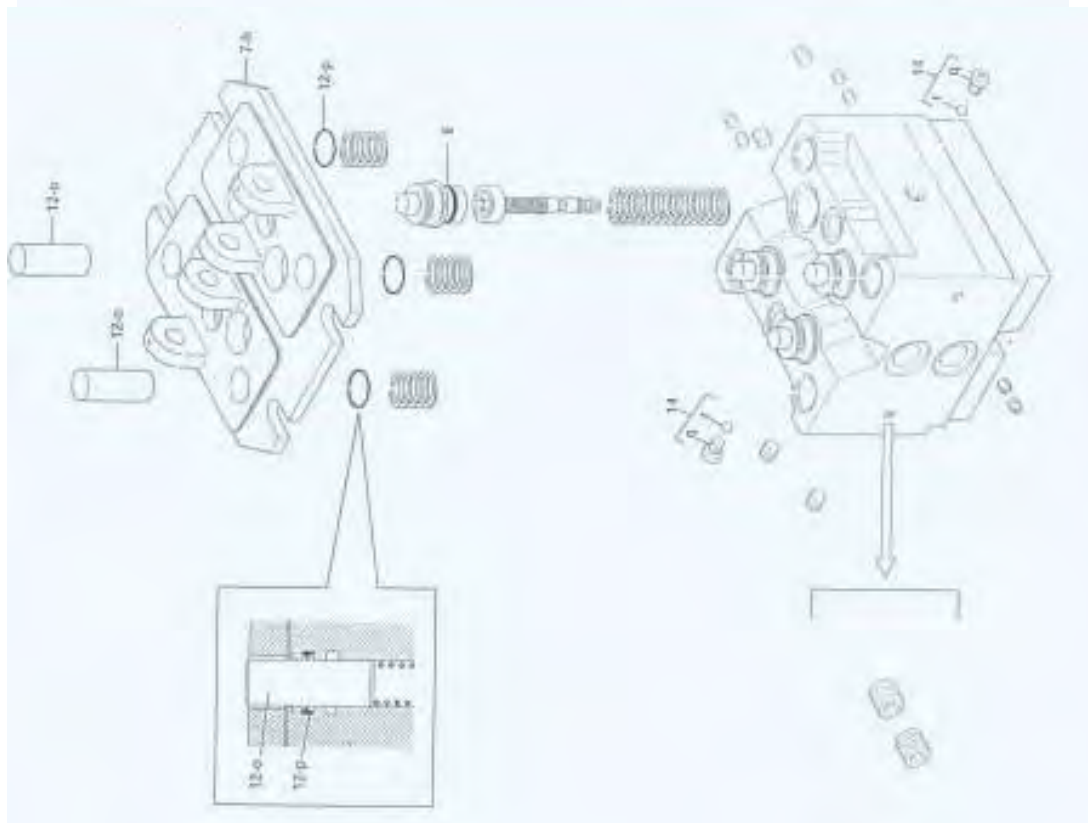
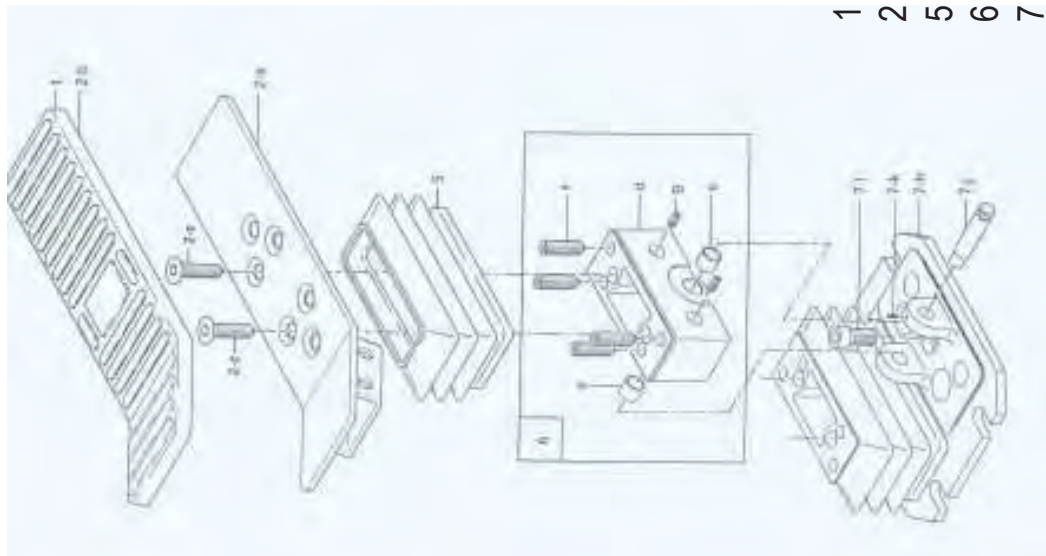
2503 - 3703

Hydraulic

Fig.: Driving pedal with hydraulic damper
Type: Neuson 2528409 (4TH6NR)

foot rest
pedal assembly
expansion bellows
indexing table
plate assembly
tappet assembly
damping assembly
non-return valve assembly

1 2 5 6 7 8 12 14



neuson

Page c35

Id.No.: 9707748
Edition: Jan 03

7. SWIVEL UNIT

Neuson 2503 / 3003 / 3503 / 3703 :

Type:Neuson 2503 > 2528401 2528490 (Fabr.Nr.: AC00901 and higher)
Neuson 30 - 3703 > 3028401 3028490 (Fabr.Nr.: AC00904 and higher)



Service News 72102:
Theme: New swivel unit 2503-3703 (Type 490")
Fabr.No.: See list
Swivel gear box still free of maintenance !

Features: - Maintenance-free gear box (swivel motor lubricated by hydraulic oil)
Warning: Use only the specified hydraulic oil !
- Mech. motor brake (multiple-disk brake) hydr. driven
- Swash-plate piston motor

Fig.: Port assignment · swivel unit 2528401 3028401

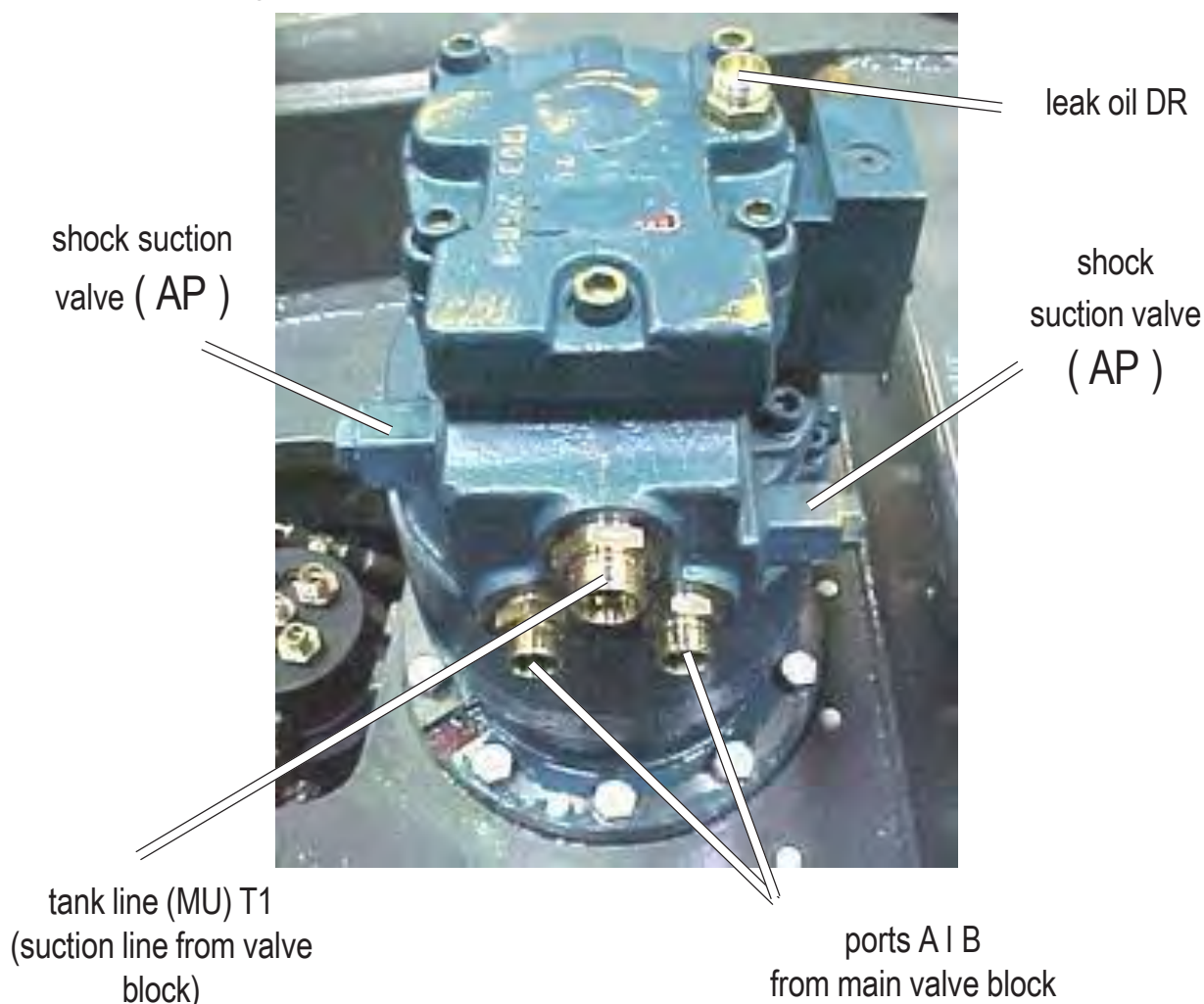


Fig.: Port assignment · swivel unit 2528401 3028401

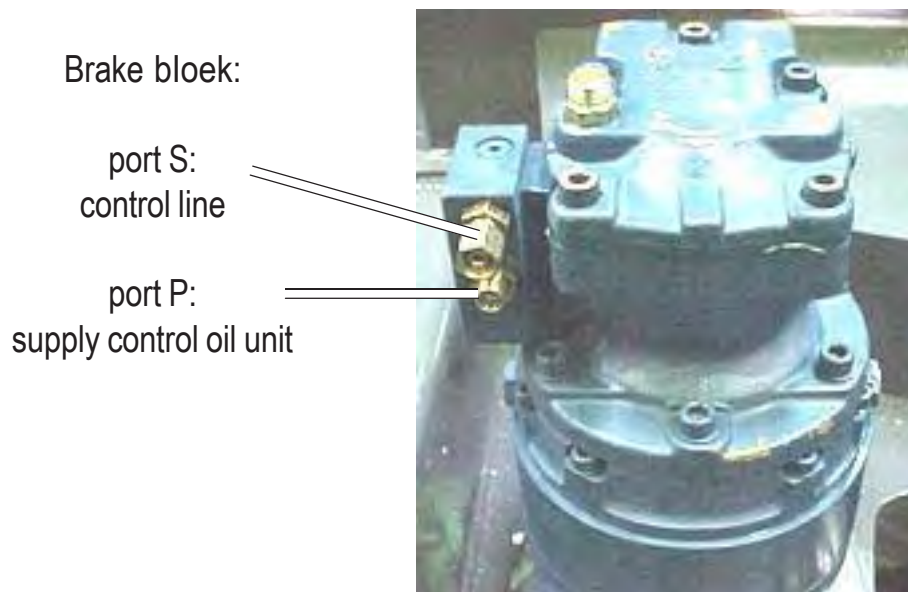


Fig.: Hydraulie diagram · swivel unit 2528401 3028401

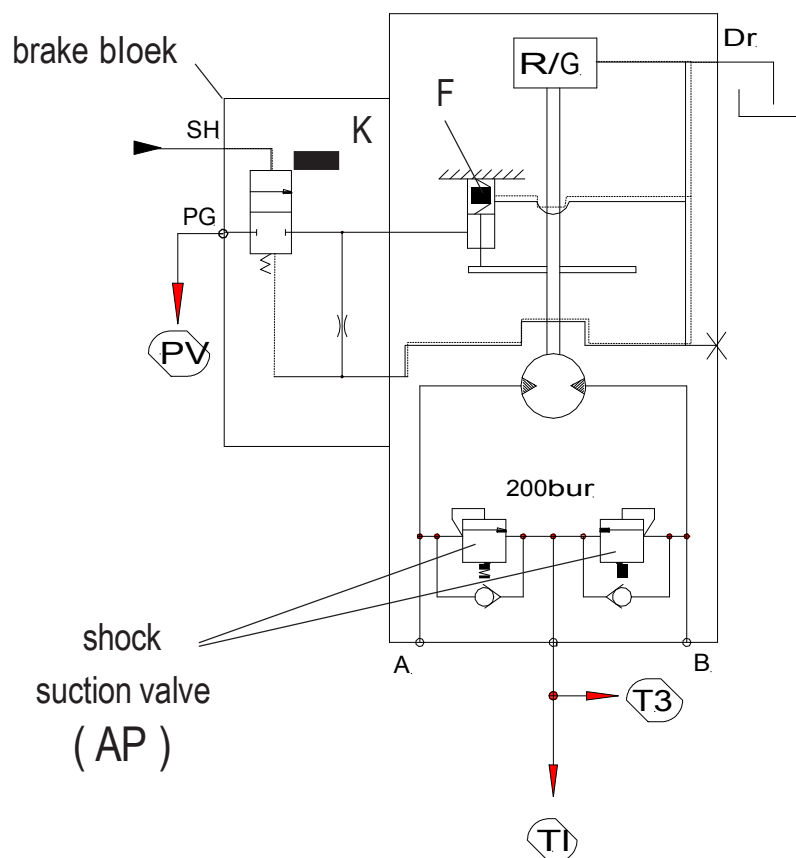
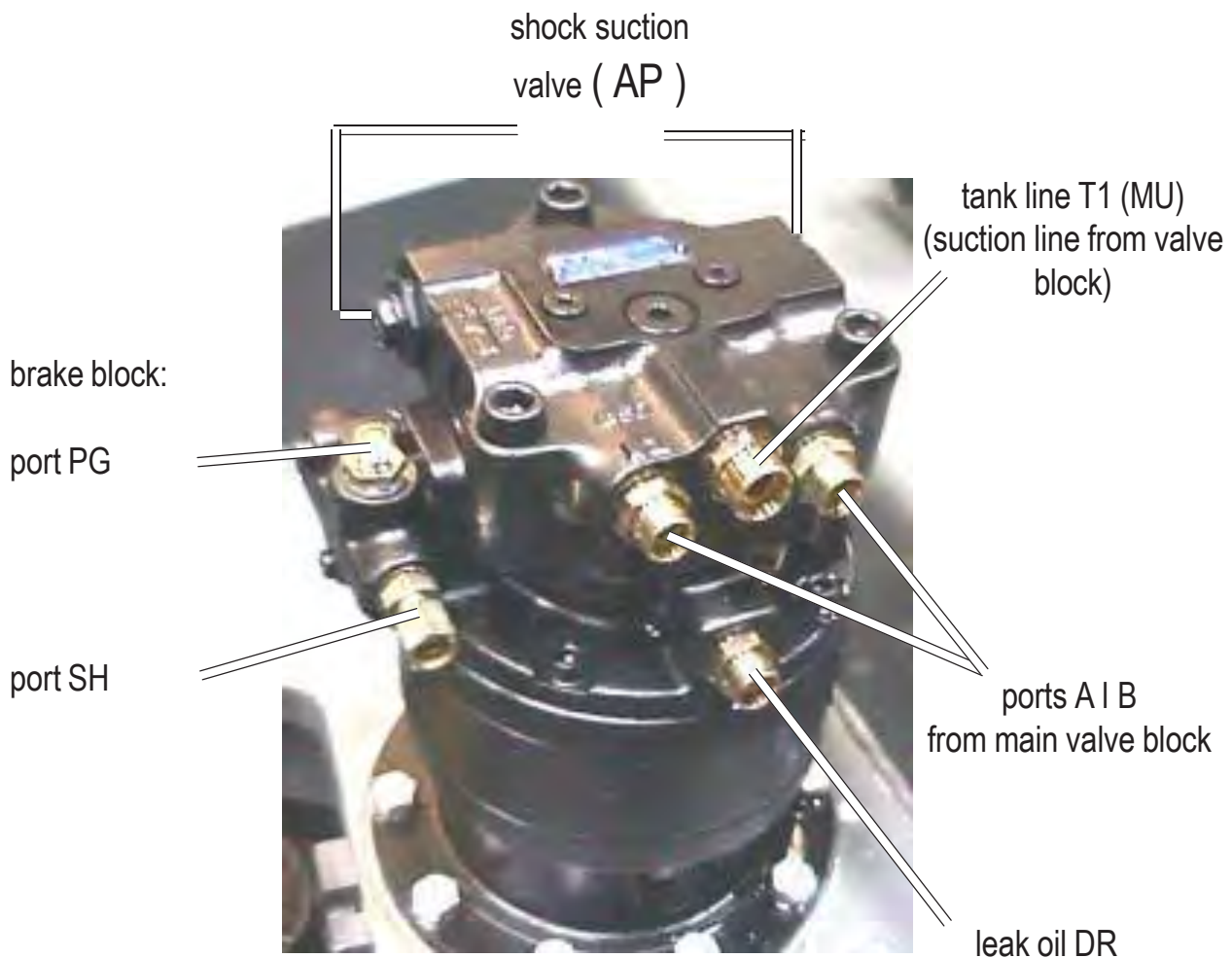


Fig.: Port assignment · swivel unit 2528490 3028490



Function: Mechanical parking brake

Opening the brake (release) :

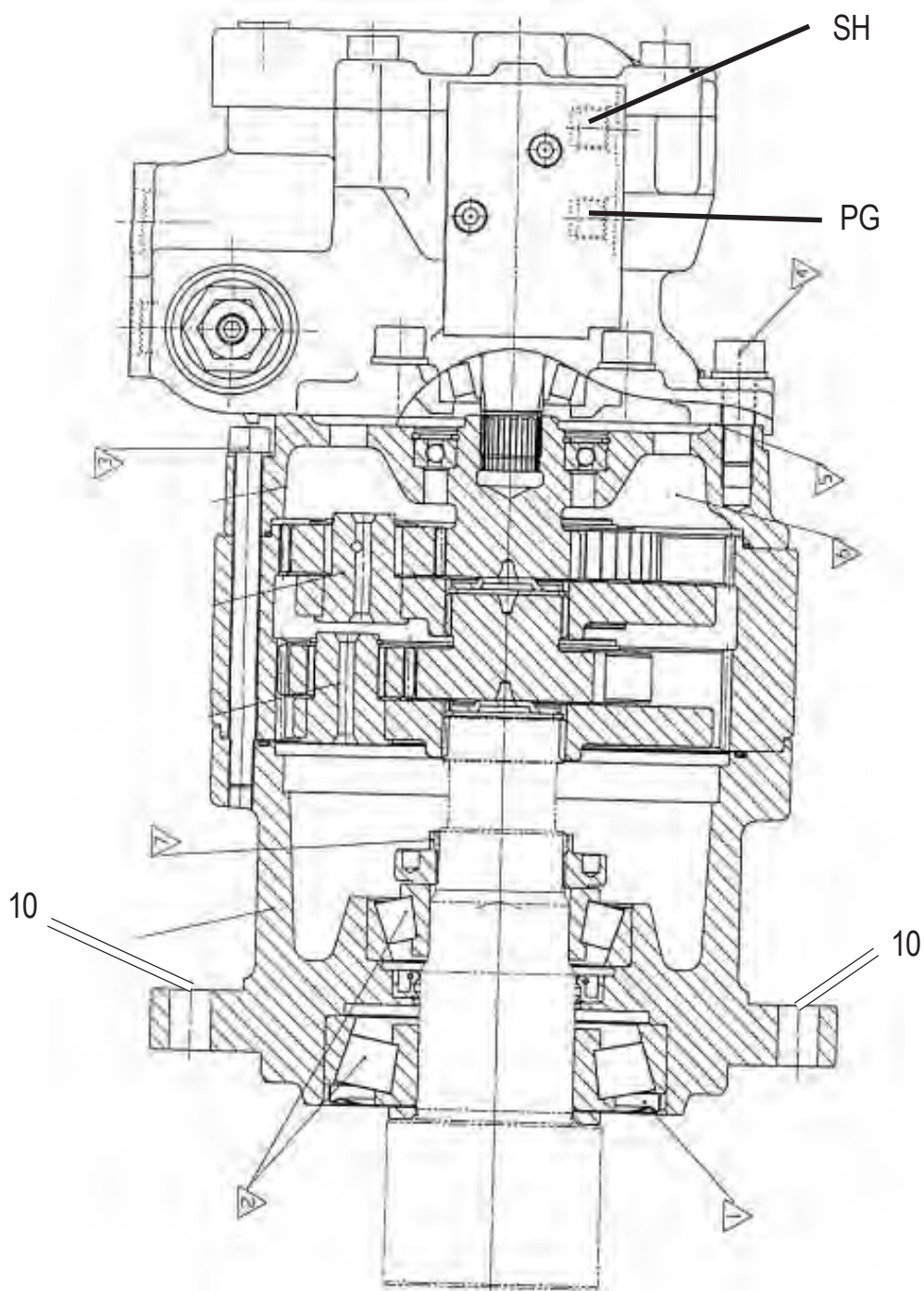
This is effected via the pilot control pressure of the function swivelling left and/or right via port S (SH). As soon as pressure is applied to this port the piston (K) is displaced and via port P (PG) the pilot control pressure gets to the brake cylinder and opens it against spring force (F).

Closing the brake:

As soon as the pressure of port S drops the piston (K) is moved to its original position by spring force and the brake cylinder chamber is no longer supplied; application of the brake is effected via restrictor (B) at a certain delay of approx. 8 sec when at operating temperature.



Fig.: Swivel unit 2528401 3028401



Tightening torques:

No. 3	25 Nm
No. 4	50 Nm
No. 10	120 Nm

Fig.: Swivel unit 2528490 - gear box

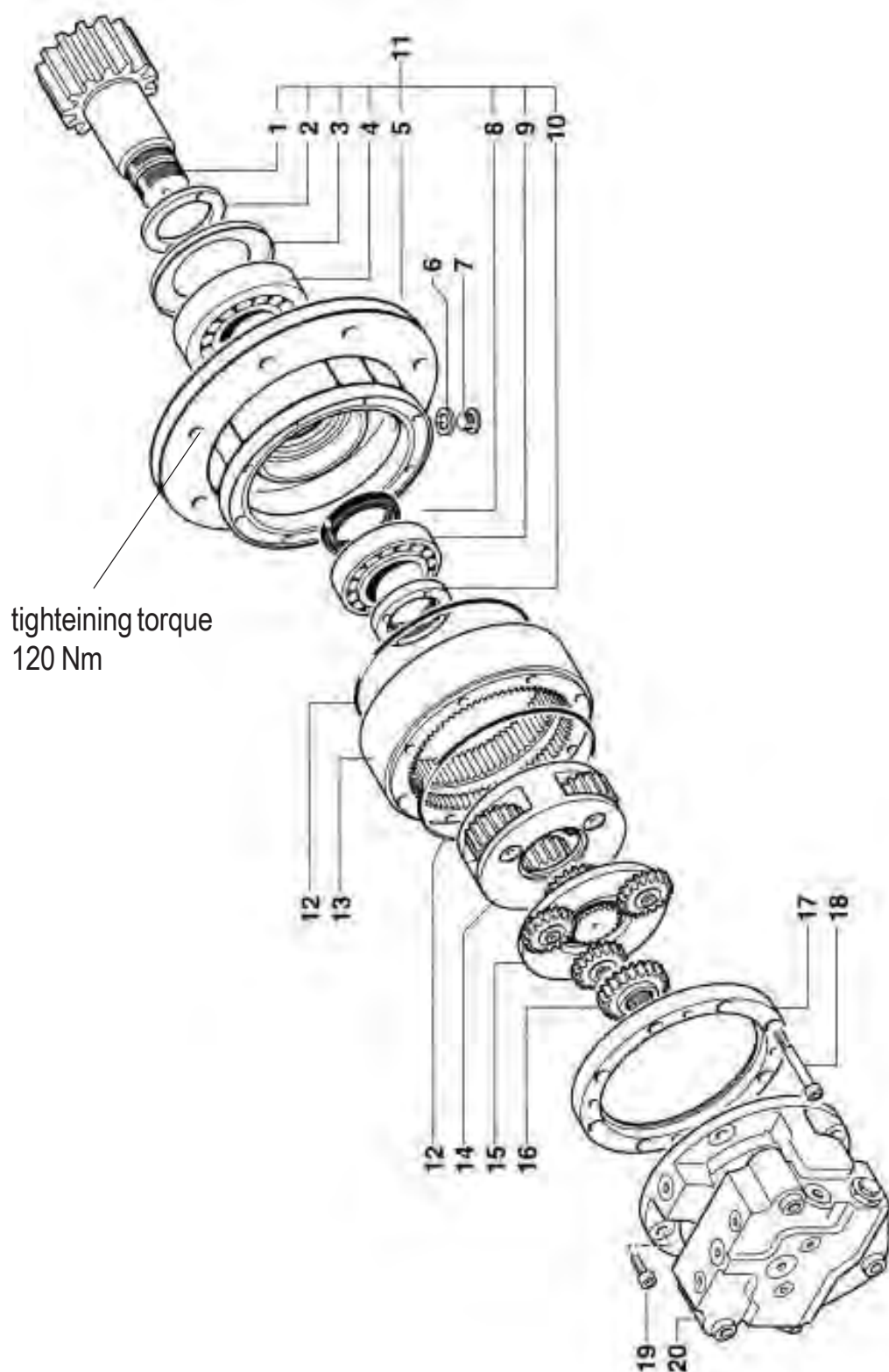
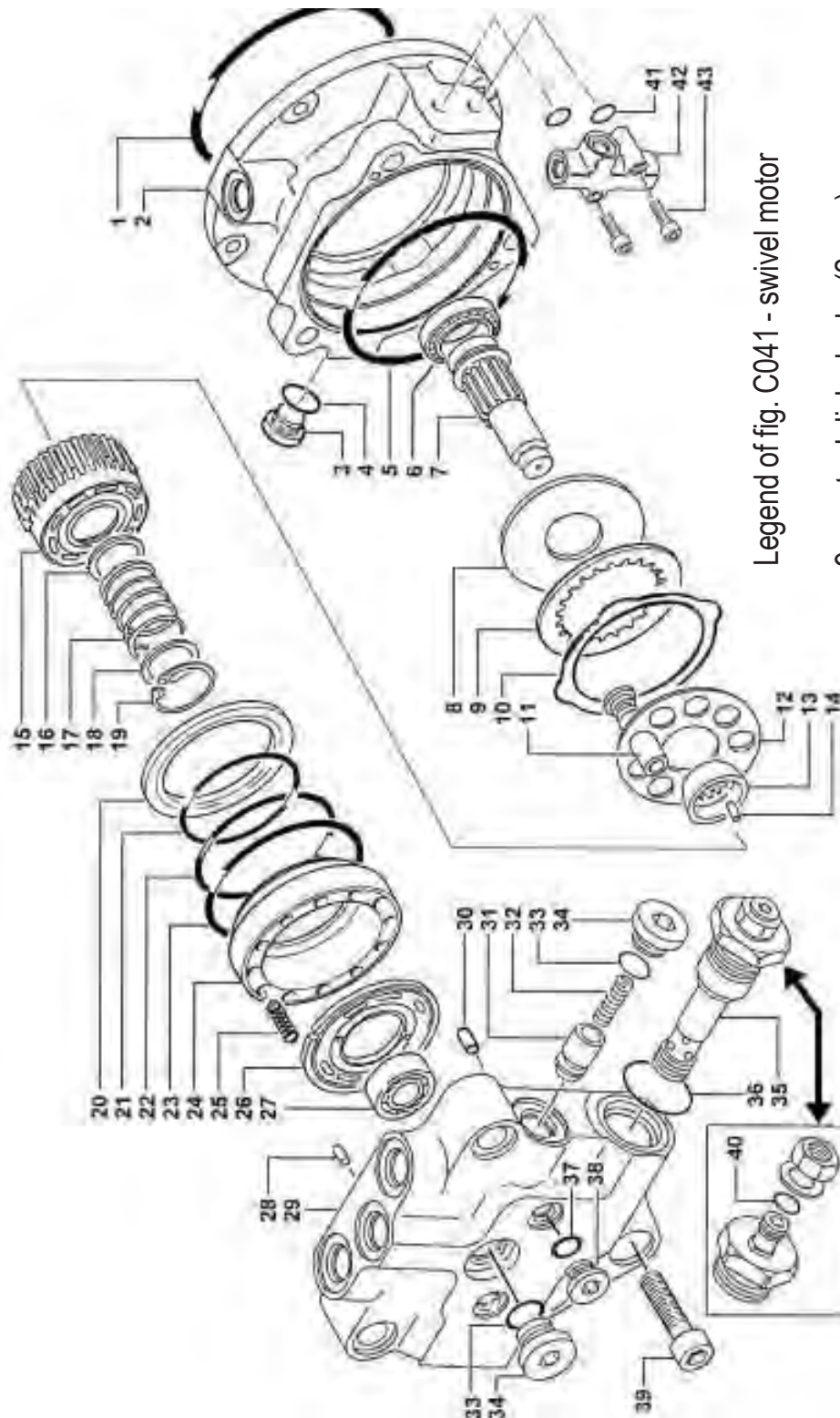


Fig.: Swivel Unit 2528490 - swivel motor



Legend of fig. C041 - swivel motor

- 9 steel disk - brake (2 pcs.)
- 10 brake disk (2 pcs.)
- 24 brake piston
- 31 suction valve
- 35 pressure reducing valve (secondary)
- 42 brake block (valve)



8. DRIVE UNIT

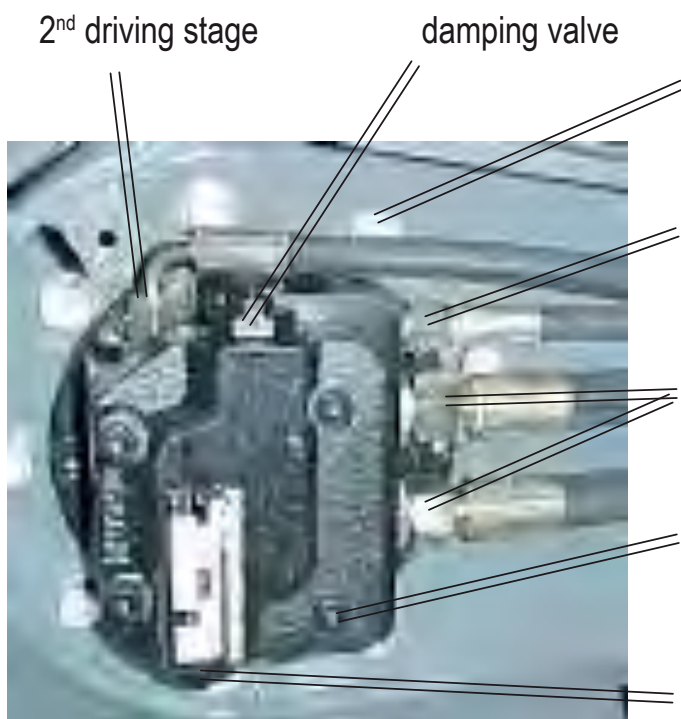
Neuson **2503 / 3003 :**

- Features:
- swash-plate piston motor, 2 positions for absorption capacity
 - maintenance intervals - see chapter Maintenance
 - no mechanical motor brake

Neuson **3503 / 3703 :**

- Features:
- like 2503 - 3003, with mech. motor brake (multiple-disk brake), hydr.

Attention: Traction drive down only up to serial number AE01100, starting from AE01101 traction drive 1000125872 inserted which is described afterwards.



tightening torque
(TT) : 123 Nm, glued in

leak oil
(always connect on top for
better venting of motor)

A and B - driving motor ports

hydraulic brake piston

damping valve

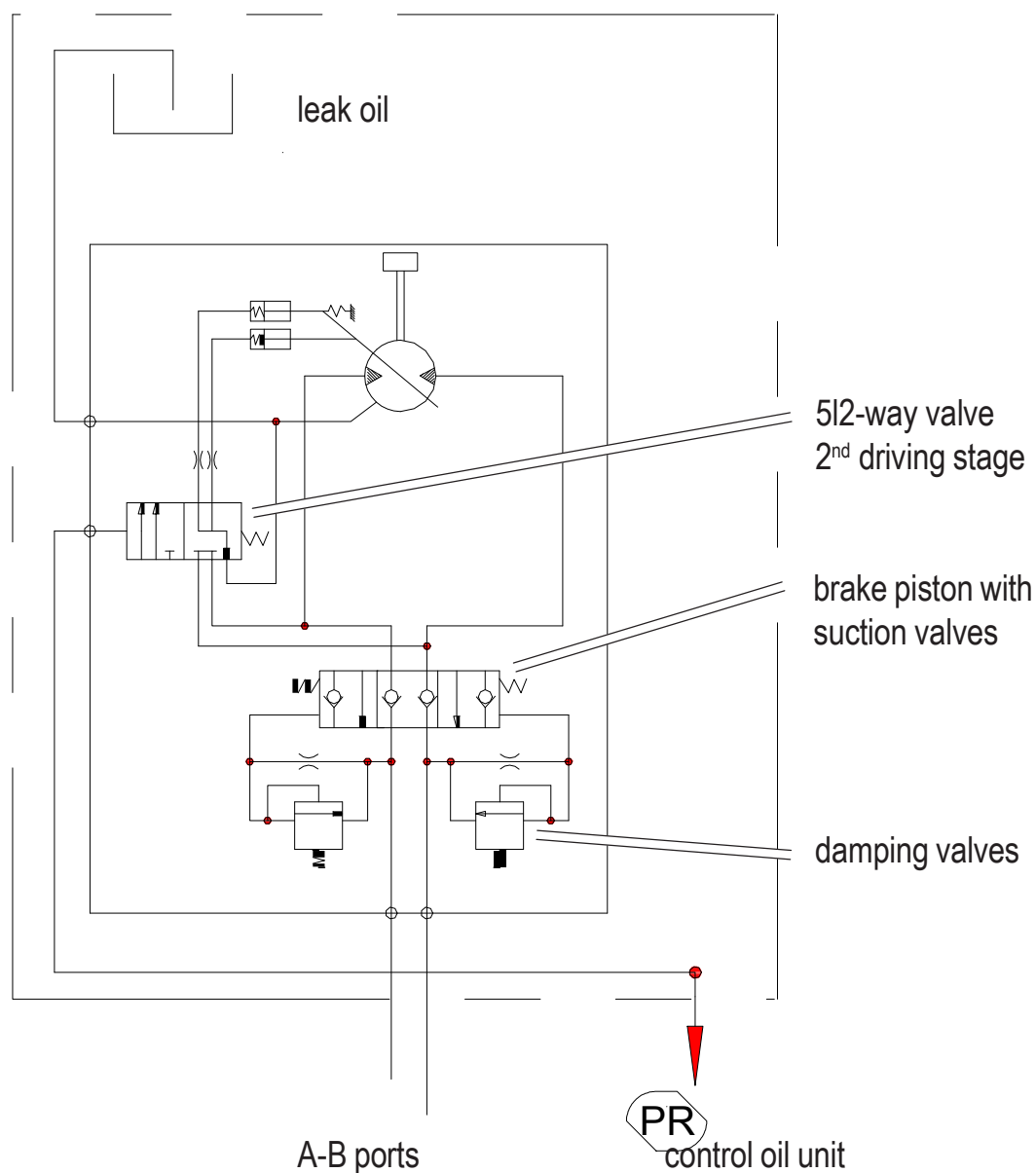
Fig.: Port assignment of driving motor



Fig.: Schematic diagram of driving motor without meehanial parking brake

Neuson 2503 - version 2528403

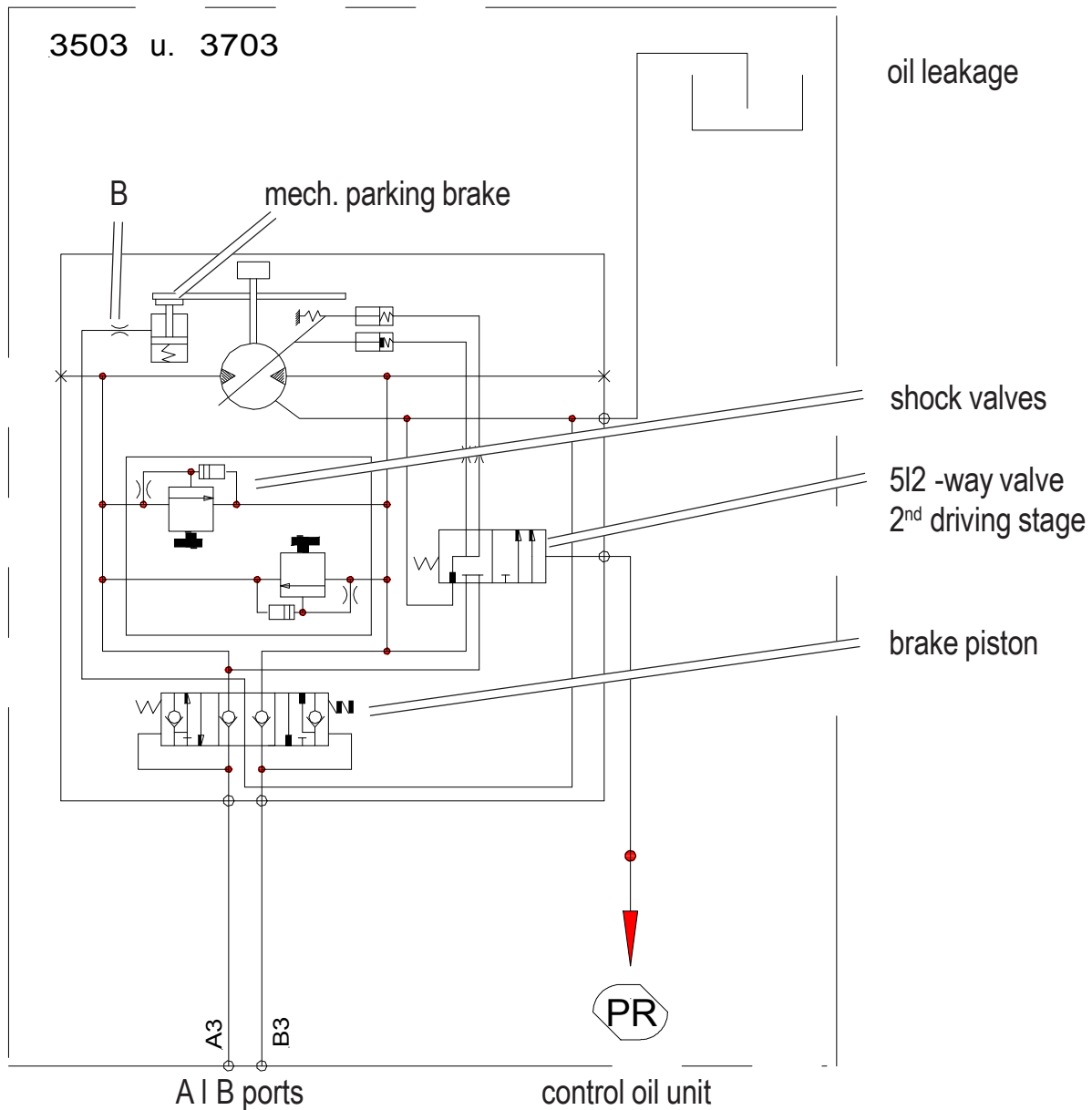
Neuson 3003 - version 3028403



Function - Hydraulic Brake Piston:

The hydraulic brake piston prevents overspeeding of the motor and keeps speed constant when driving downhill by blocking the relevant return flow. The damping valves prevent jerking motions to avoid any building up of vibrations.

Fig.: Circuit diagram of driving motor with meehanial parking brake
Neuson 3503 3703 - design 2608505



Function - Meehanieal Parking Brake:

The brake is released automatically via high-pressure from the brake piston; as soon as the brake piston goes back to neutral position the brake is applied via a restrictor (B) at a certain time delay to avoid damage to the brake linings.



This exploded view diagram illustrates the assembly of a mechanical component, likely a pump or valve. The parts are numbered as follows:

- Top Section (Cover/Head):** Includes parts 102, 130, 132, 133, 131, 129, 116, 109, 122, 126, 111, 121, 107, 127, 115, 108, 104, 125, and 123.
- Intermediate Section (Body/Flange):** Includes parts 101, 119, 124, 119, 118, 117, 117, 118, and 114.
- Bottom Section (Base/Mounting):** Includes parts 137, 135, 139, and 134.

The diagram shows the relative positions and assembly sequence of these components, with arrows indicating the direction of assembly.

Fig. Drilling motor- drive unit 2503-3)03
Subassembly 25284æ,30284æ

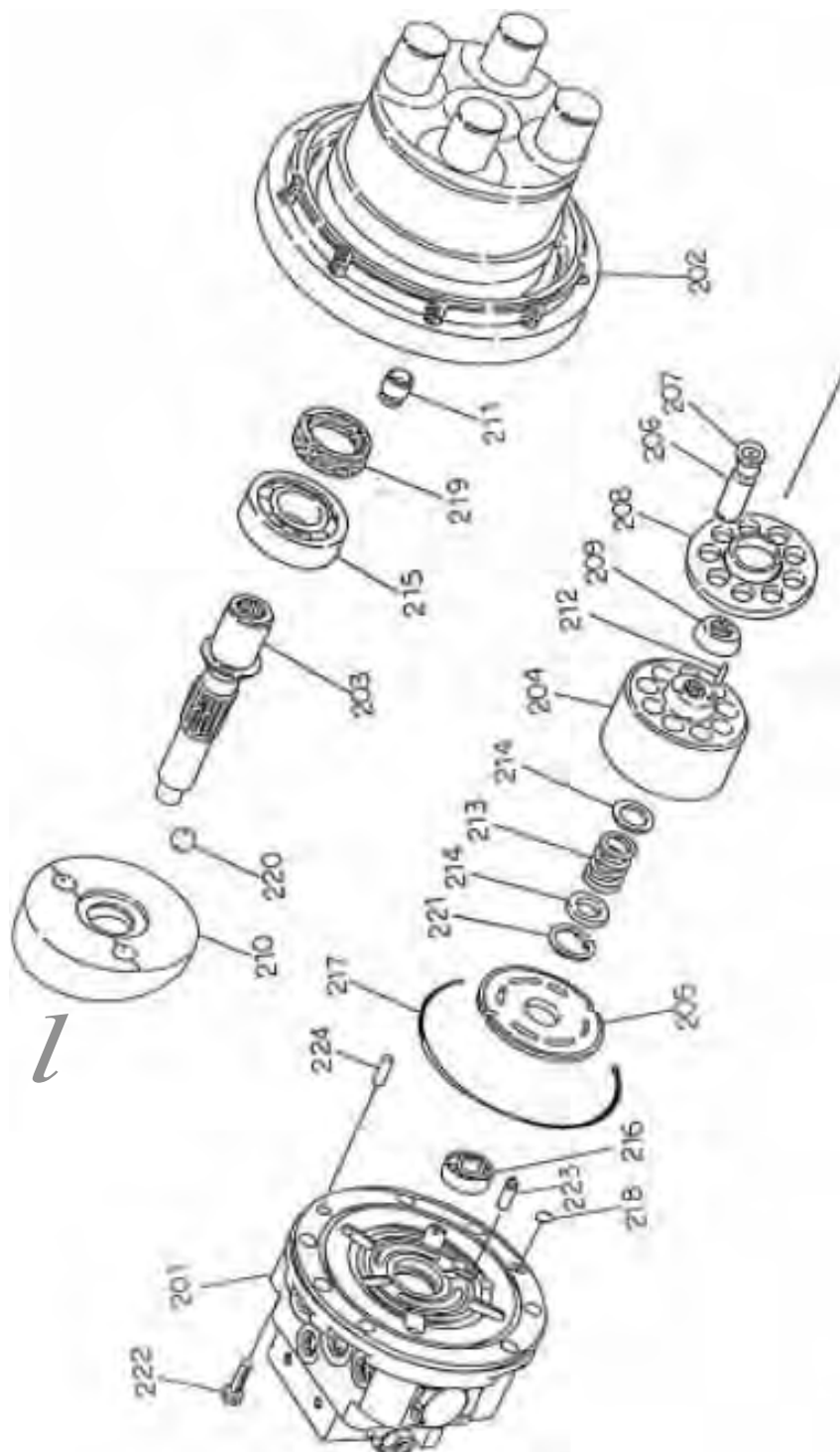


Fig. Brakevalveblock- drive unit 2503 / 3003
Subassembly 25284æ, 30284æ

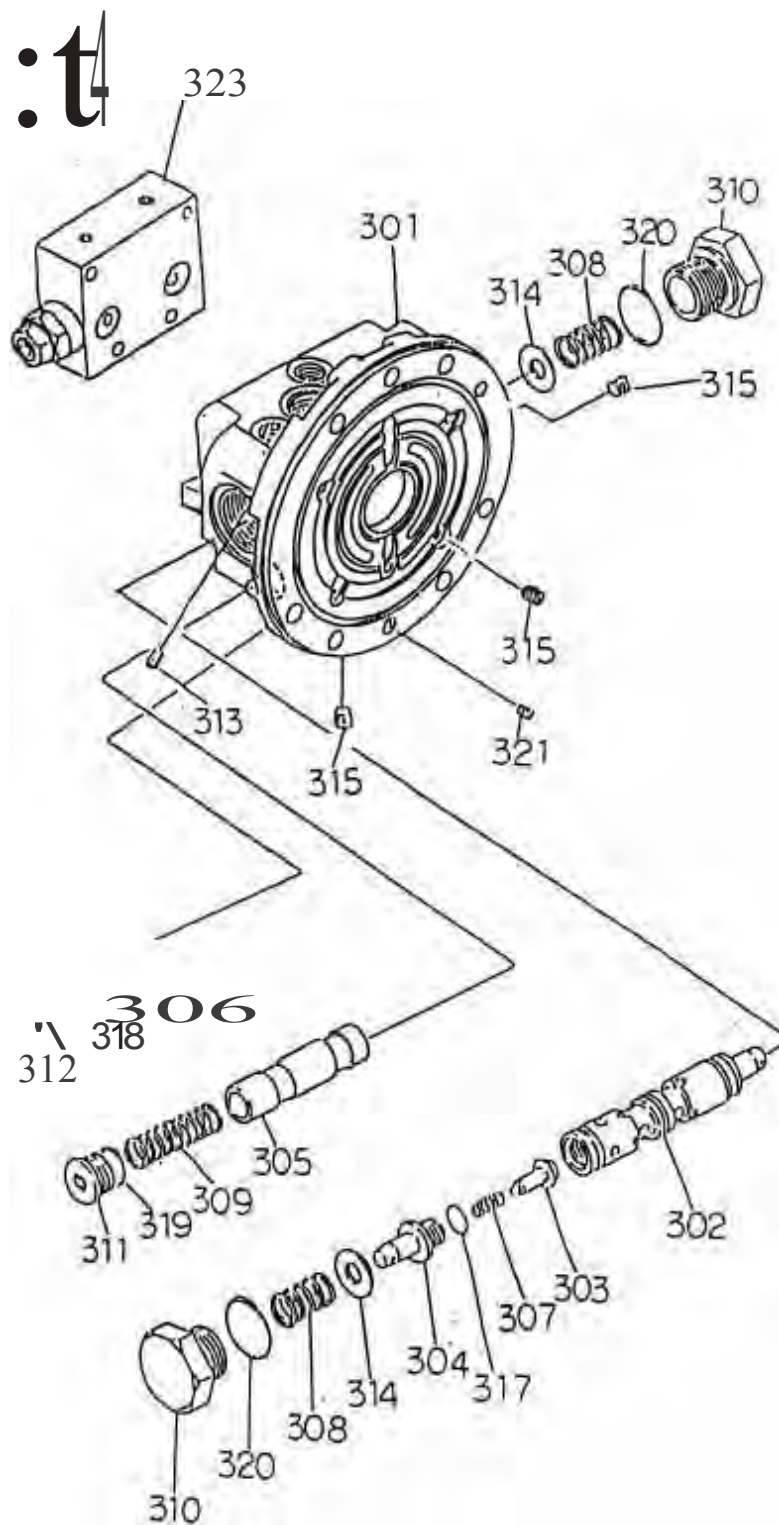
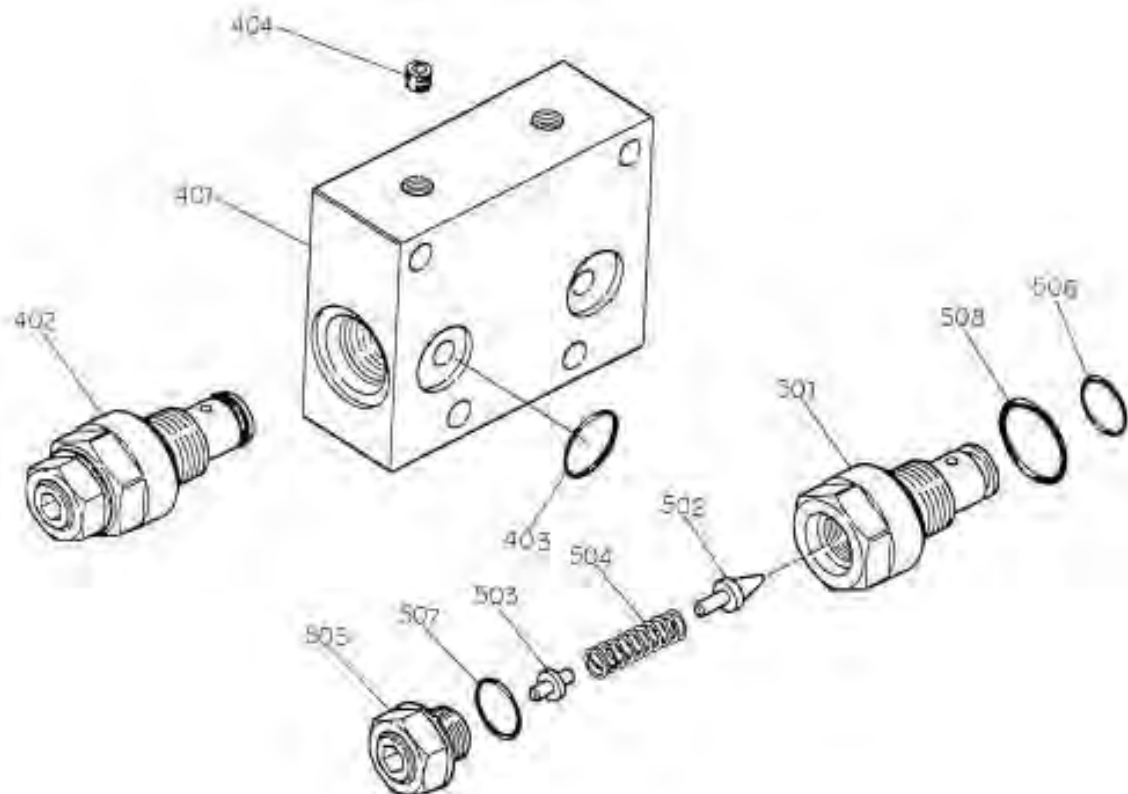


Fig.: Shoek valve bloek - drive unit 2503 I 3003
Subassembly 2528403 3028403



Legend: drive unit complete 2503 - 3003

117	118	lifetime sealing
134		hydraulic motor
204		cylinder drum
205		distribution plate
206	207	motor piston sliding block
210		swash plate
211		setting piston of swash plate
219		oil sealing
220		swash plate bearing
302		brake piston
303		non-return valve I check valve
305		piston - 2 nd driving speed
306		shuttle spool valve
402		damping valves (shock valve cartridge)

Fig.: Brake valve block - drive unit 3503 | 3703
Subassembly 2608505

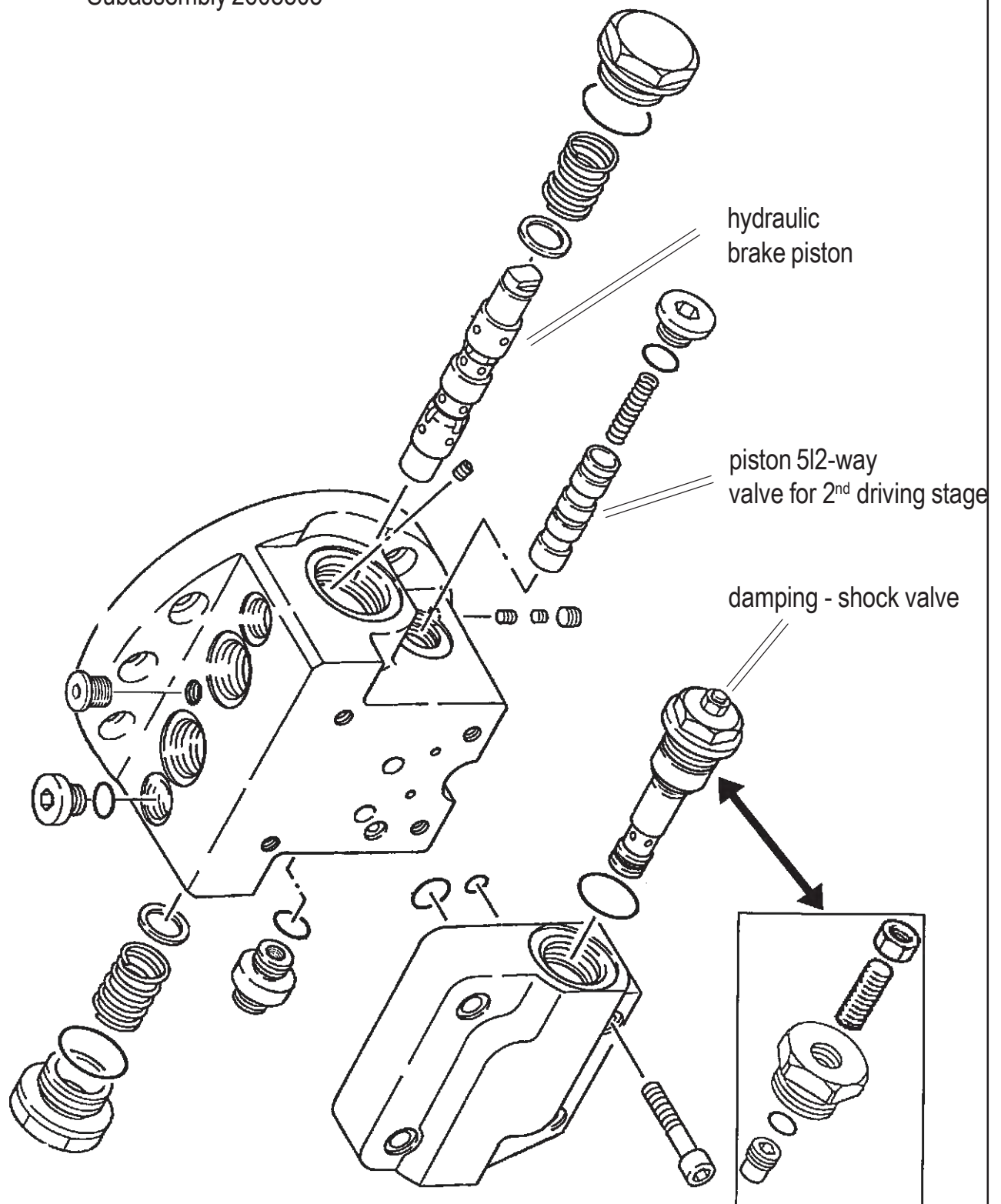


Fig.: Driving motor - drive unit 3503 | 3703
Subassembly 2608505

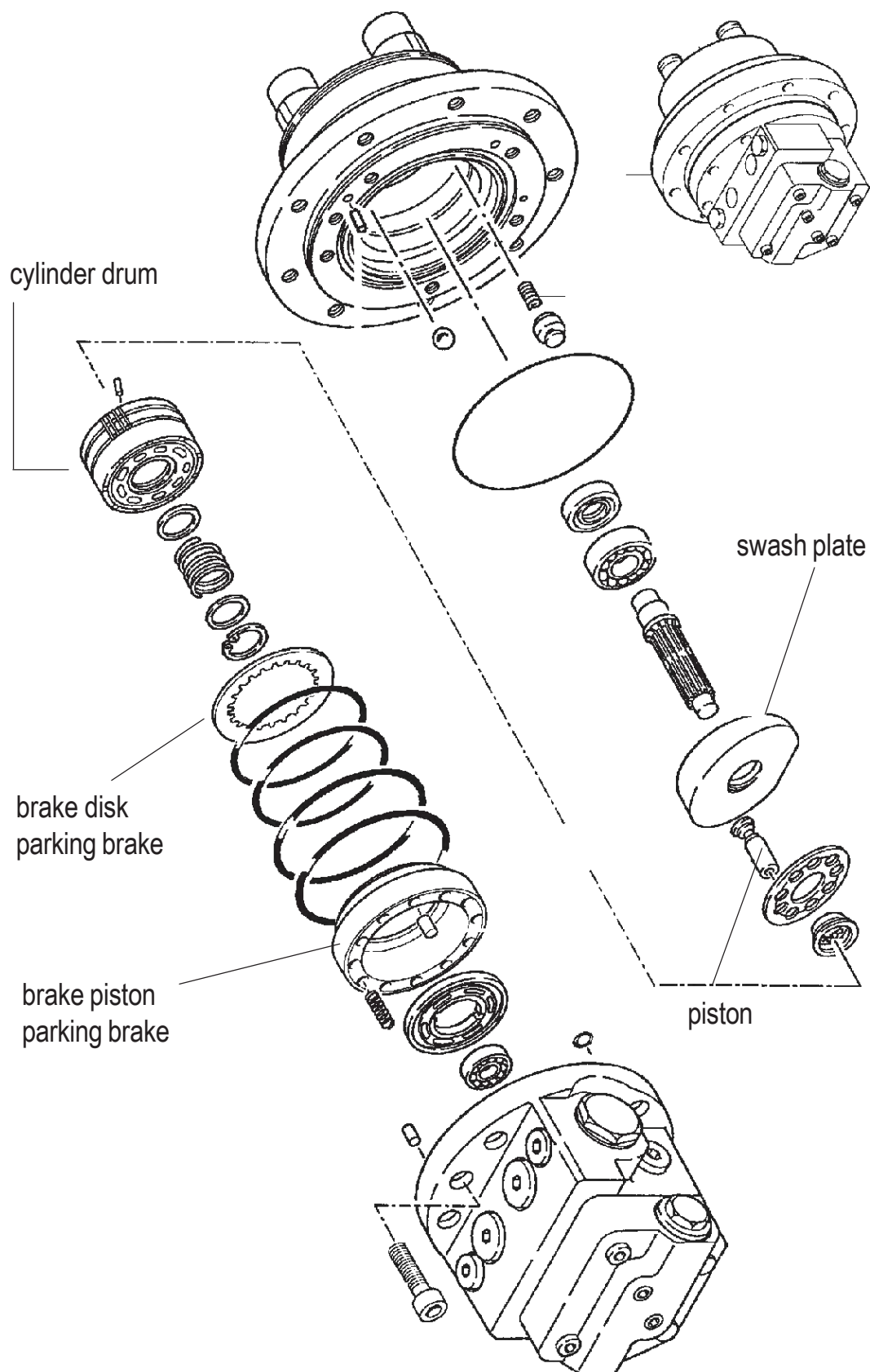
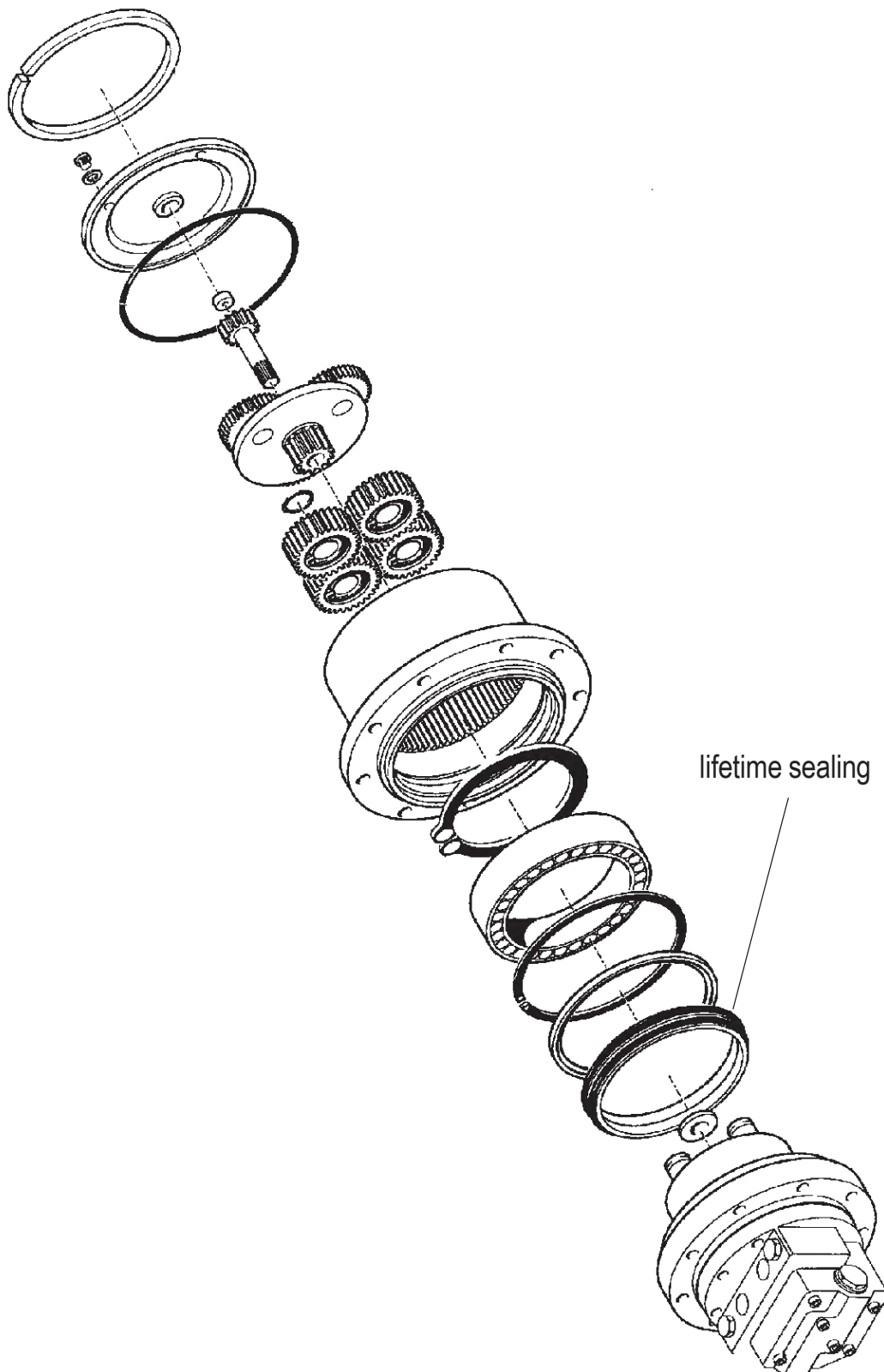
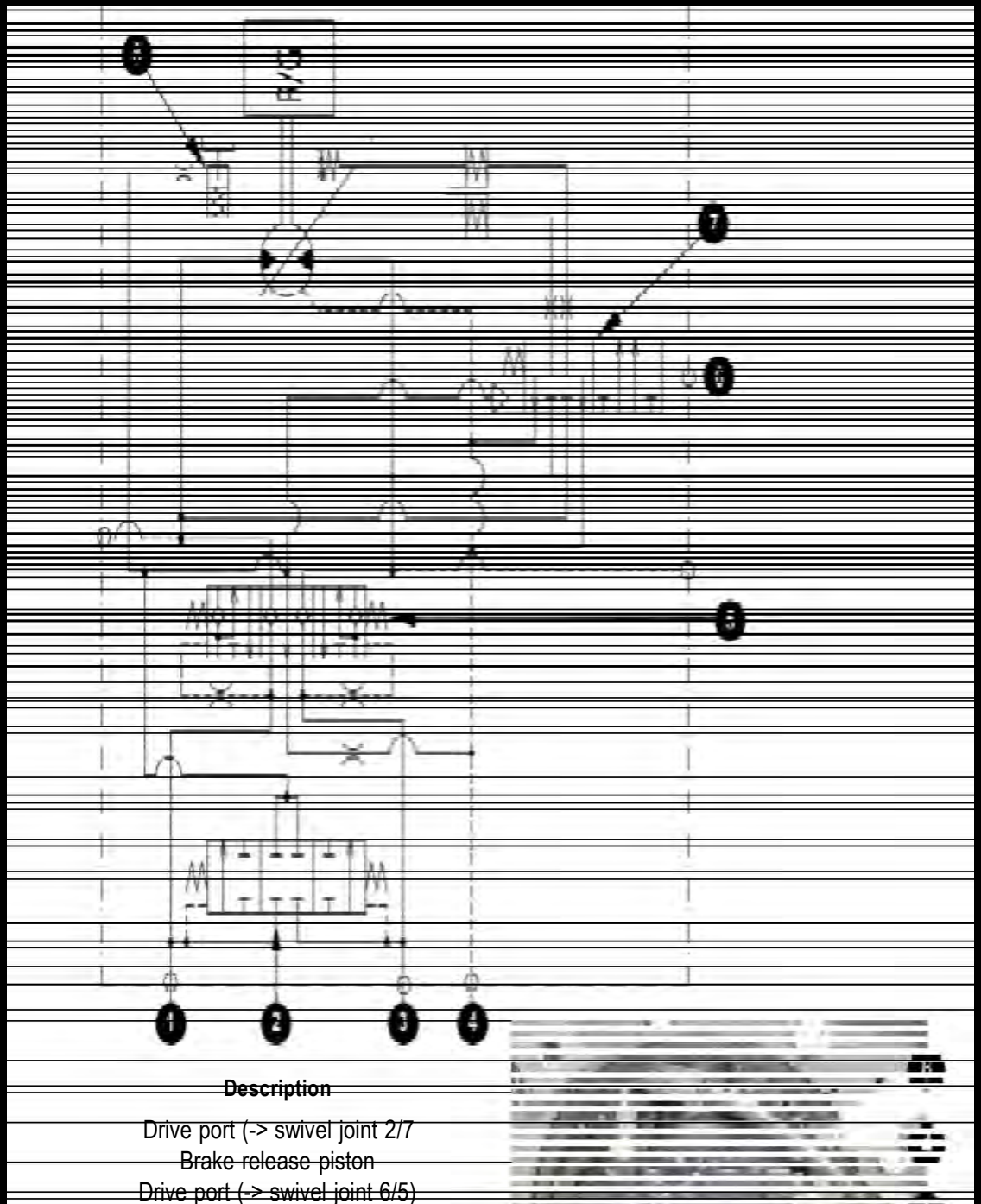


Fig. : Gear box - drive unit 2608505





Description

Drive port (-> swivel joint 2/7)

Brake release piston

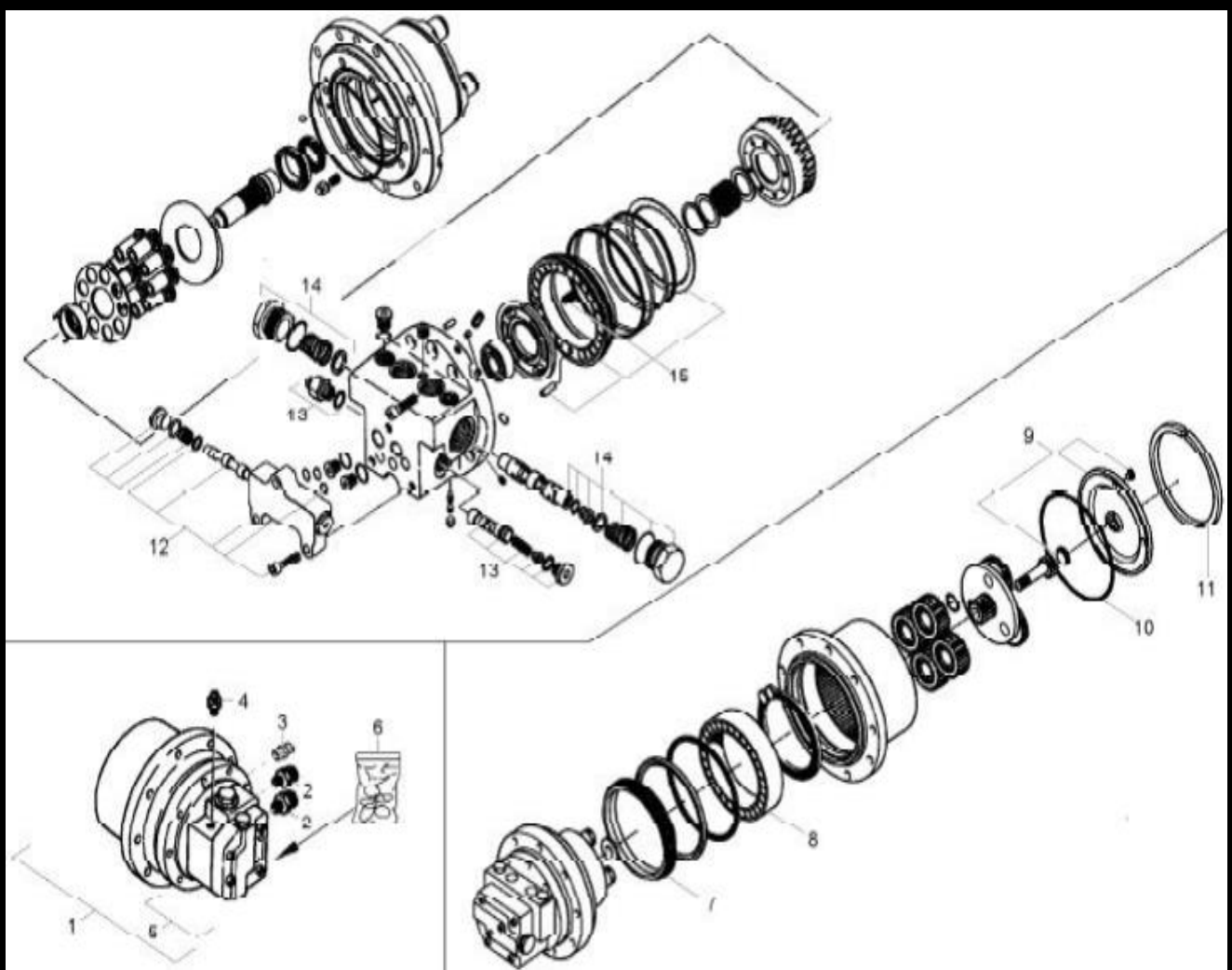
Drive port (-> swivel joint 6/5)



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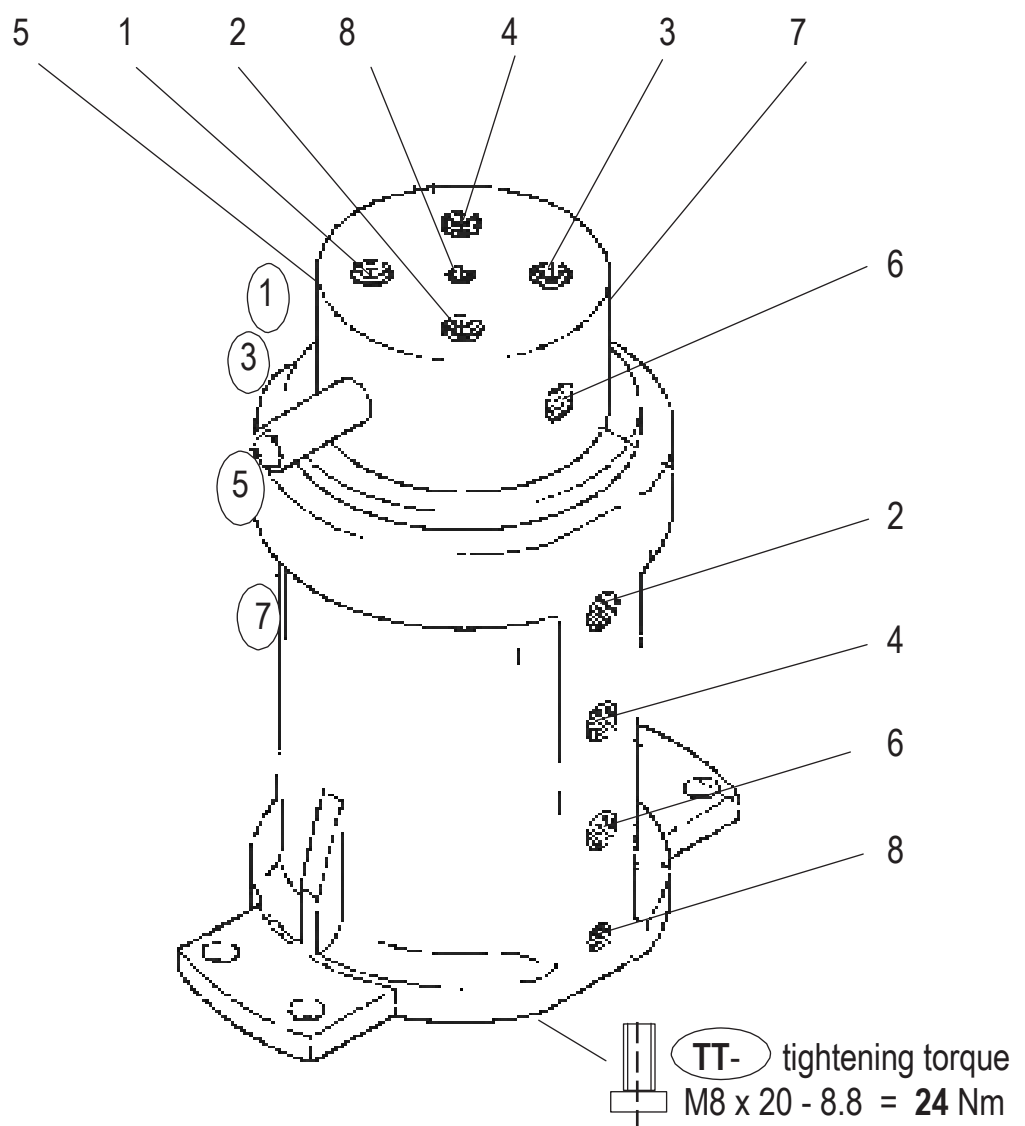
neuson®



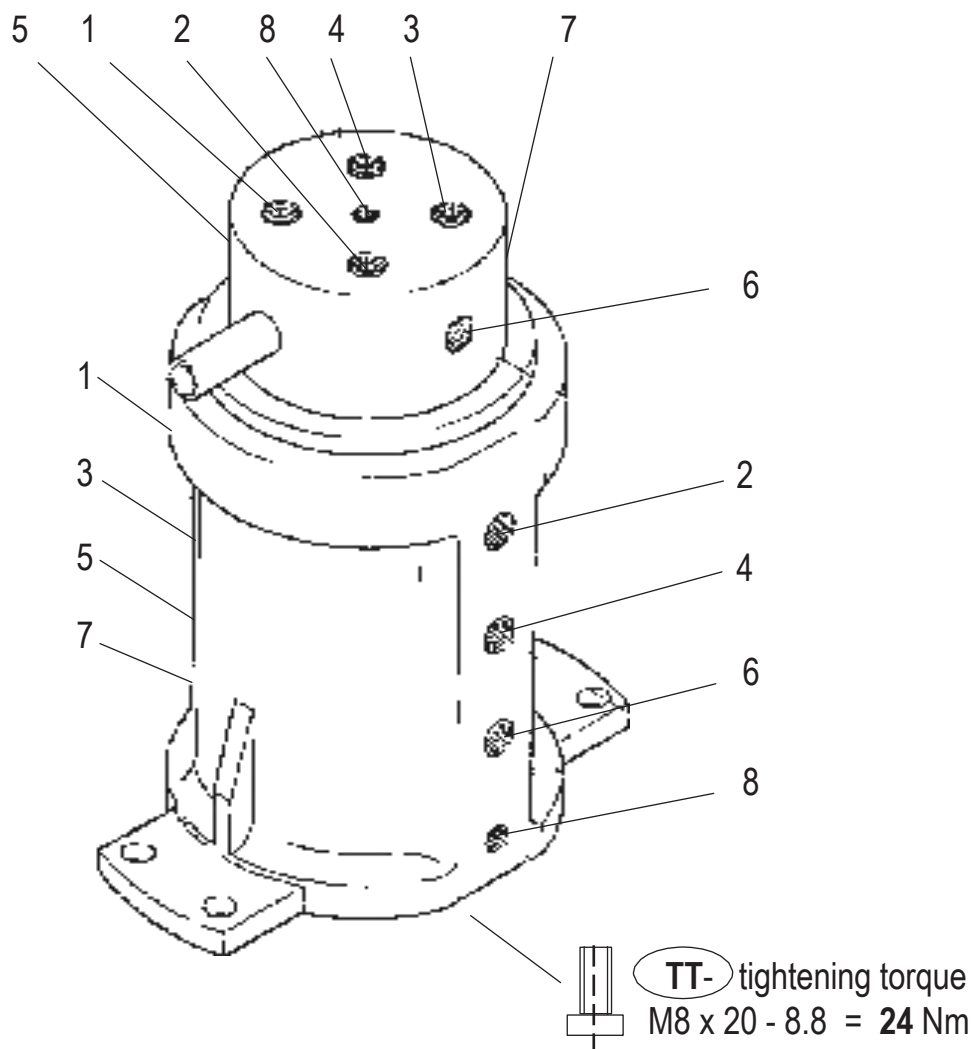
9. SWIVEL JOINT

Types:	Neuson 2503	- 8-port swivel joint
	Neuson 3003, 3503	- 8-port swivel joint
	Neuson 3703	- 10-port swivel joint

Fig.: **Swivel joint** 1408050 - port assignment 2503



Port		Port	
1	driving motor left top	2	driving motor right top
3	driving motor left bottom	4	driving motor right bottom
5	dozer blade cyl. rod side	6	dozer blade cylinder bottom sid
7	2 nd driving stage	8	leak oil duct

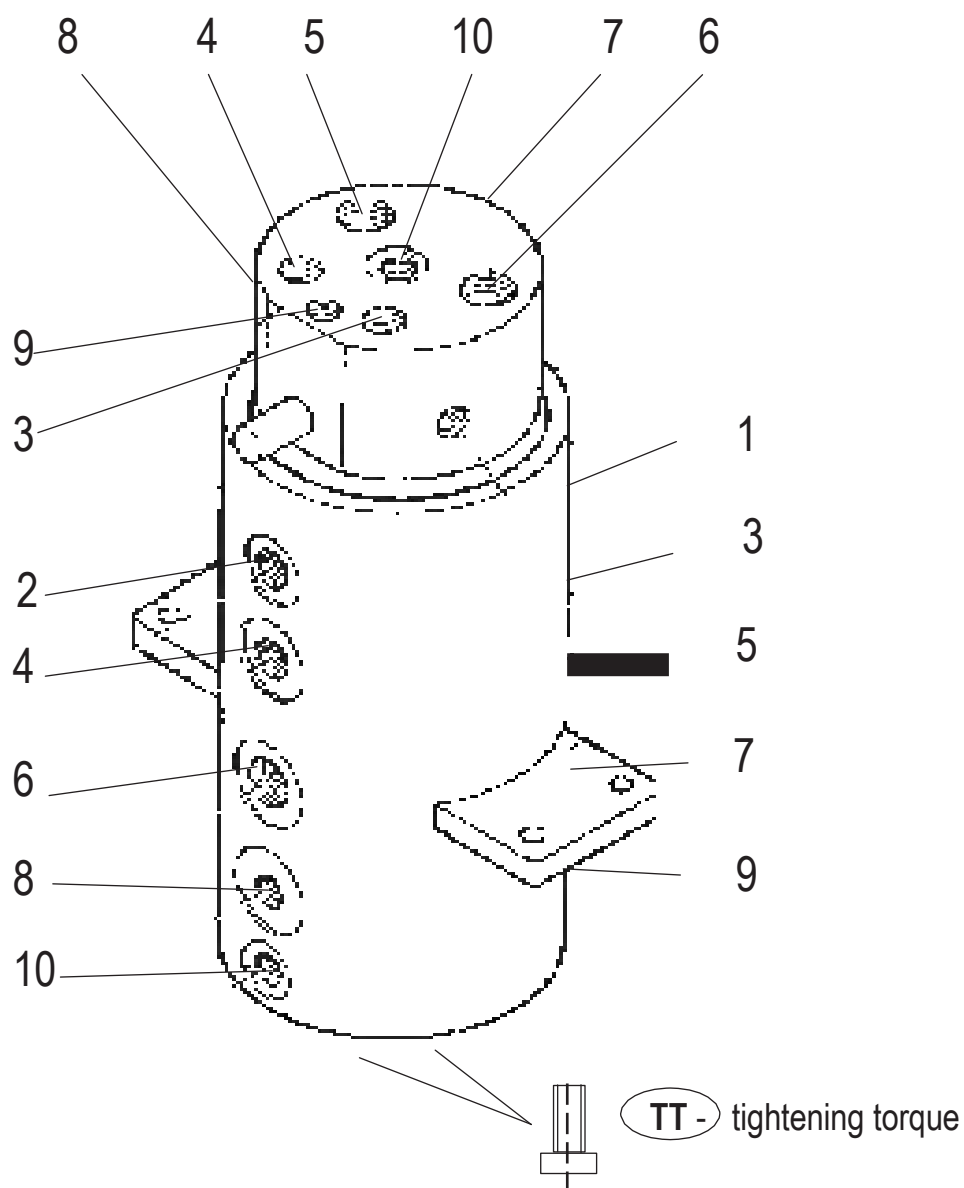
Fig.: **Swivel joint 2608500 - port assignment 3003 - 3503**

Port

- 1 leak oil
3 dozer blade cyl. bottom side
5 driving motor left top
7 driving motor left bottom

Port

- 2 dozer blade cyl. rod side
4 driving motor right top
6 driving motor right bottom
8 2nd driving stage

Fig.: **Swivel joint 2808510 - port assignment 3703**

Port	
1	2 nd driving stage
3	dozer blade cyl. rod side
5	driving motor left top
7	driving motor left bottom
9	tilting cylinder bottom side

Port	
2	dozer blade cyl. bottom side
4	driving motor right top
6	driving motor right bottom
8	tilting cylinder rod side
10	leak oil



10. SWITCH VALVE

Neuson **2503 / 3003 / 3503 :**

Features: - switch valve controlled electrically via pushbutton at the joystick,
neutral - de-energized

Function: - switch valve **A**: auxiliary hydraulics <<>> boom offset
- switch valve **B**: boom <<>> dozer blade

(SNews 50/01!)

Neuson **3703 :**

Additional - switch valve **C**: bucket <<>> tilting of uppercarriage

> Fig. C055,C056: **SWITCH VALVE A** : (additional hydraulics <<>> boom offset)

offset cylinder



secondary
pressure limiting
valves

auxiliary
hydraulics



main valve block section
auxiliary hydraulics



position of switch valve A





> Fig. : **SWITCH VALVE B** : (boom cylinder<>> boom offset)

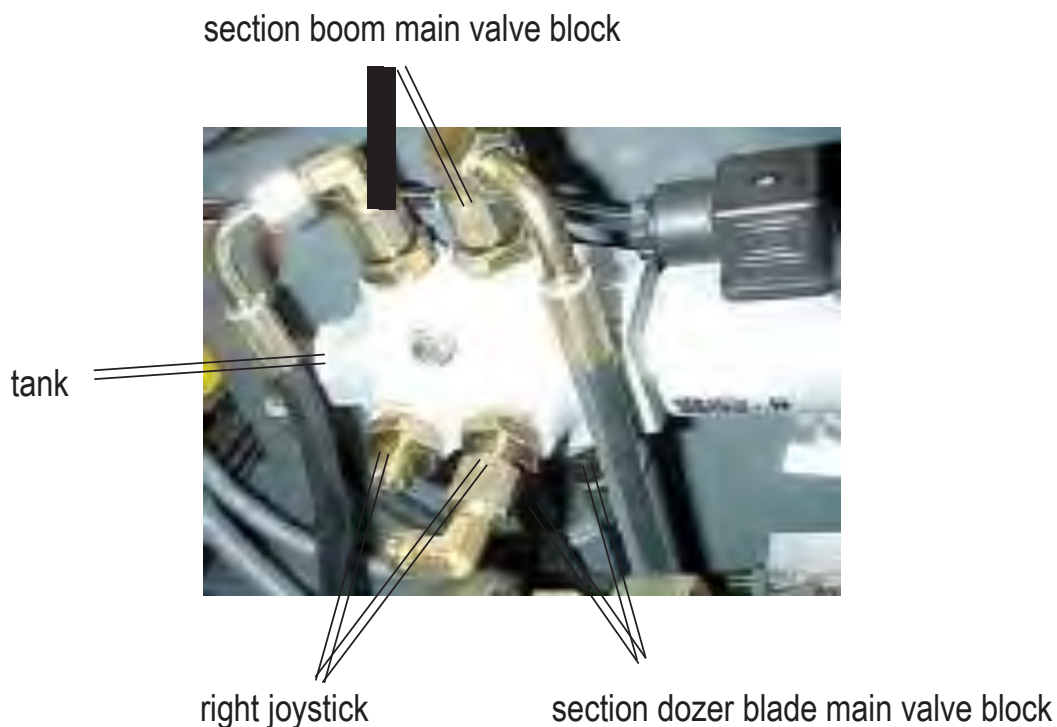


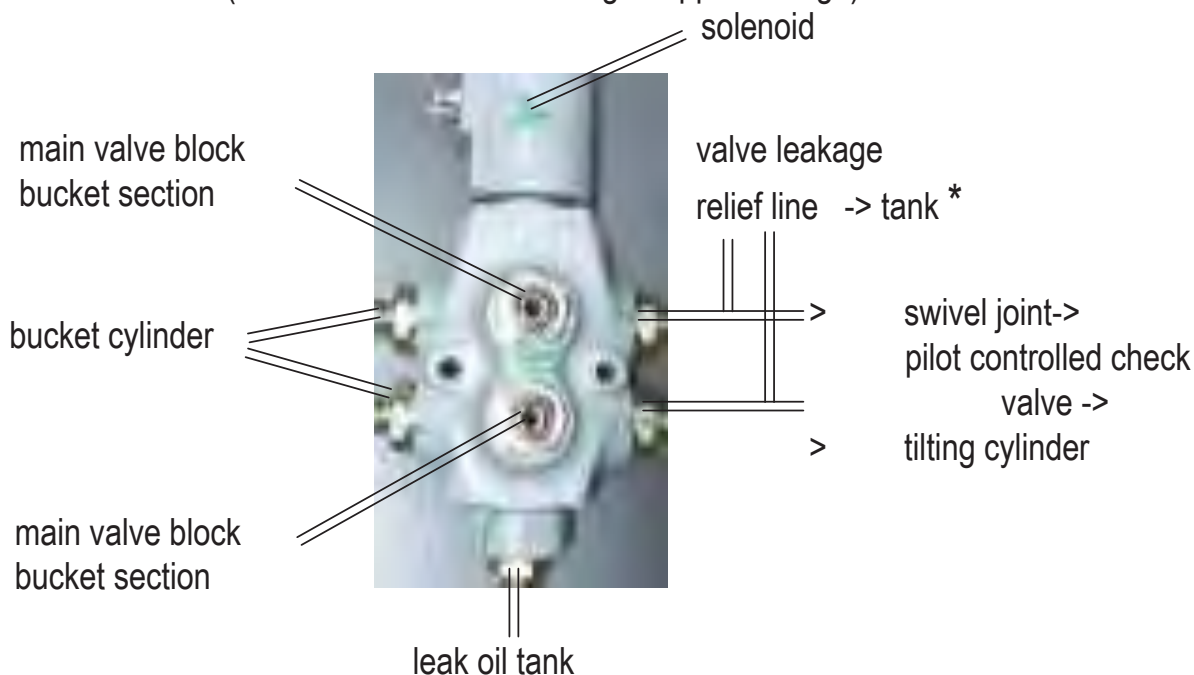
Fig. : Position of switch valve B

Access: > via covering of seat bracket





> Fig.: **SWITCH VALVE C - Neuson 3703 :**
(function bucket <<>> tilting of uppercarriage)



position of switch valve C



Service News

Service News **59/01:**

Theme: Switch valve leakage- tiltcylinder pos.
Solution: Release hose - tilt cylinder (valve C)

Possible problem:

Due to the leakage of the switch valve (C), the tilt cylinder can't hold its position

Solution: (starting with Fabr.No.: AB01031 modified by Neuson!)

Neuson uses a release hose and a check valve to connect the pressure line (switch valve-check valve block) to tank.





11. WAY VALVE

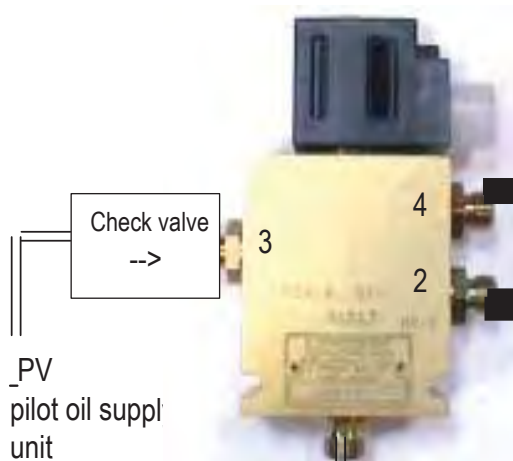
Option: **Vario**

Type: Neuson 3808610

Function: The 4/2 wayvalve is piloted by the two front bottoms at the joysticks

The wayvalve operates the vario cylinder in the vario plate

Feature: 4/2 Way valve, elektrical pilote

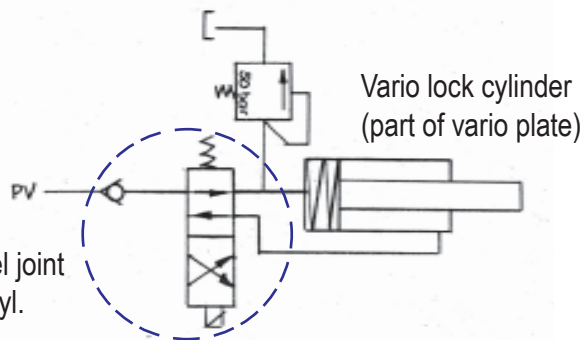


PV
pilot oil suppl
unit

Tank
(Collectiong panel)

to Swivel joint
/ Vario cyl.

to sec. pressure limiting valve
vario cylinder
(cabin bottom)



Valve position Neuson 3003



Valve position Neuson 3503

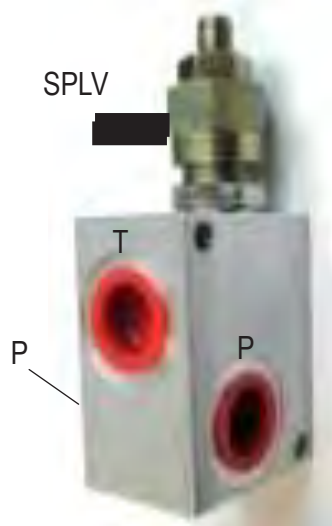




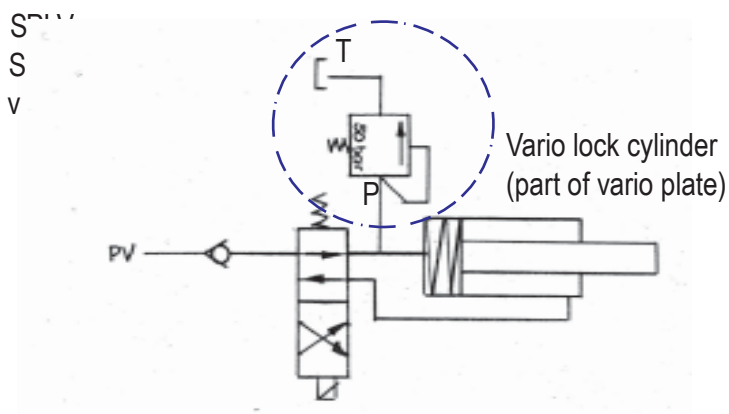
12. PRESSURE LIMITING VALVE

Option: **Vario**

Type: Neuson 7008713
Function: 50 bar Secondary pressure limiting valve for vario cylinder



P... Pressure line to the Vario lock cylinder
T... Tank



SPLV alve position



13. **OIL TANK - hydraulic**A) **Breather filter**

>>see also chapt. Maintenance

The breather provides the following **functions**:

- **Pressure compensation** in the hydraulic tank (varying oil level) by sucking and pressing air in and out of the tank - protection of oil tank against swelling
- **Pressurizing** the oil tank to the defined overpressure -> to support intake of the variable displacement pump
- **Filtering** of intake air

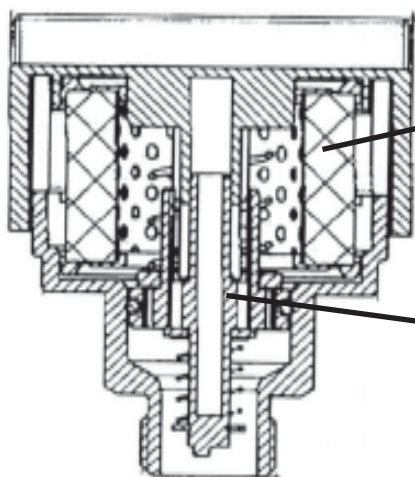
initial pressure: 0.4 bar



return filter hydraulic tank

breather 5001161
(hydraulic tank)

Fig. C063: Hydraulic oil tank



filter cloth

breather valve

Fig. : Breather





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CHAPTER 0 :

Diesel engine

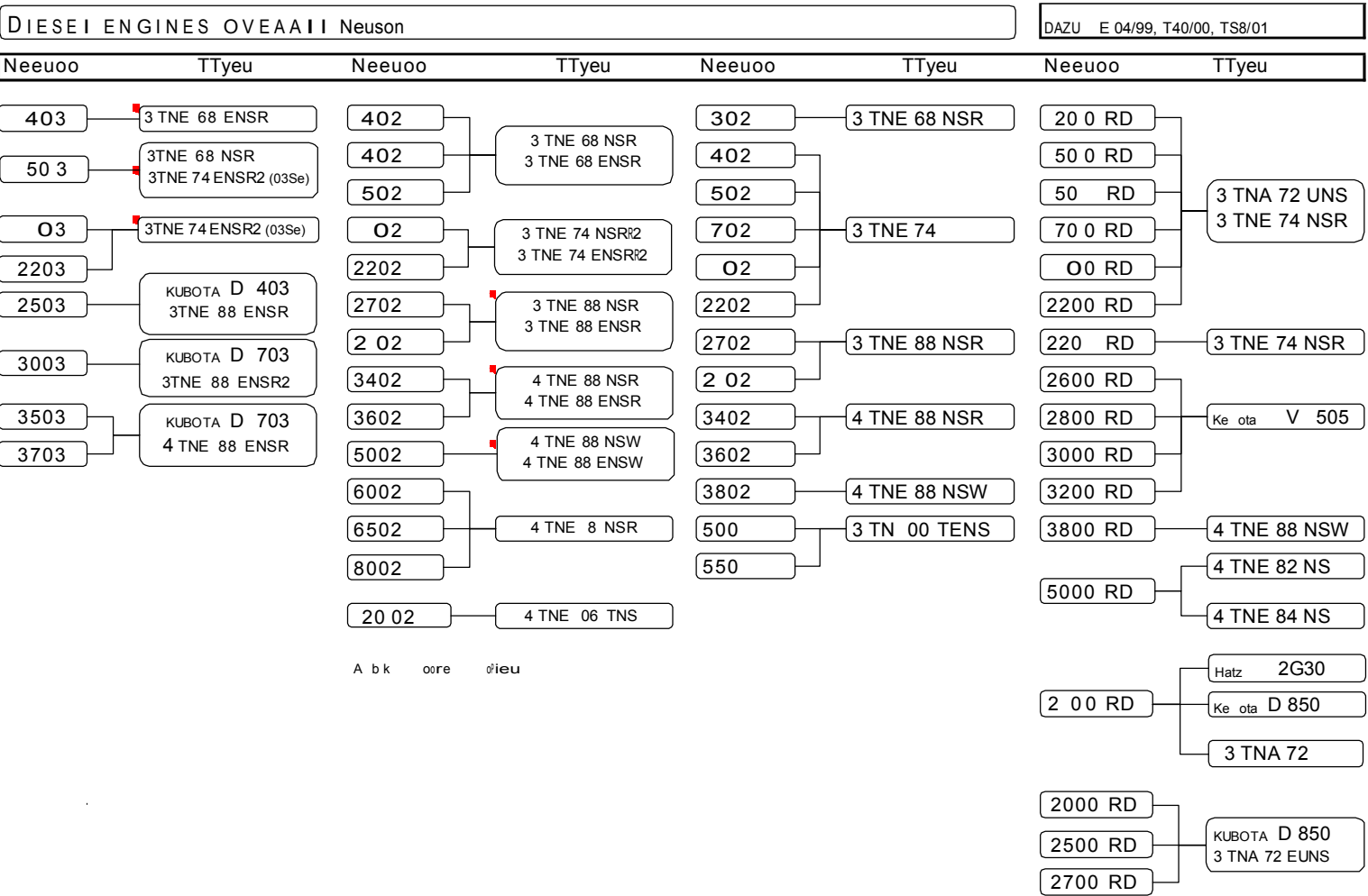
(Neuson Service Manual 2503 - 3703)



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Fg.: Diesel engine overall



Service News 73/02:
Theme: New diesel engine type Yanmar for
2503-3703 (settings !)
Fabr.No.: AD00001 and higher

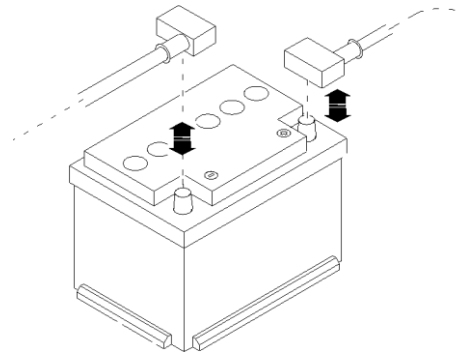
A) GENERATOR

Valid: Kubota Diesel engine type - Neuson Fabr.No.: AB00001 to AC09999
Disassembling - Type 2525520

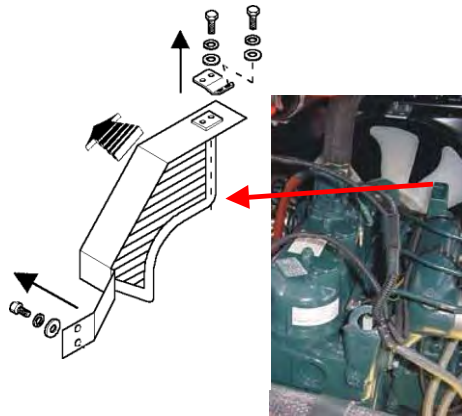
Prepare:

- Side rear counter weight - right open,
- Maintenance cover generator exists !!
(Right position next the driver's seat, under the seat on mat !)

1) Remove battery



2) Disassemble the engine fan cover



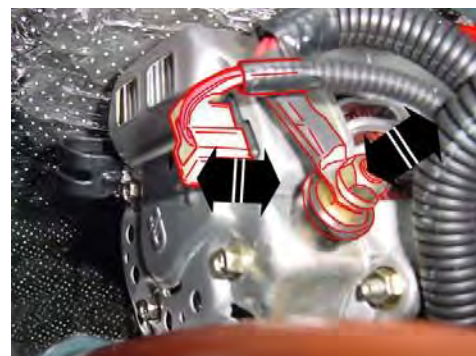
3) Remove the air filter and the air filter suction hose



4) Remove the exhaust



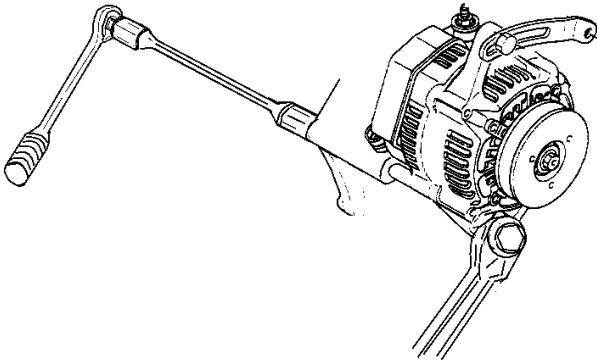
5) Remove the wiring of the generator



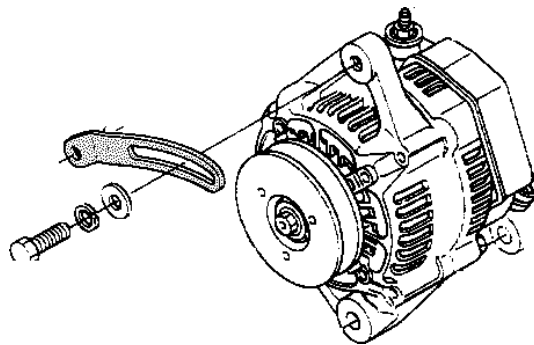
A) GENERATOR

Disassembling - Type 2525520

6) Open fixing screw generator



7) Remove the tension adjuster



Assembling - Type 2525520

Assemble the generator by reversed steps

B) STARTER

Disassembling - Type 2525519 :

Prepare: Open the side - rear counter weights left/right

- 1) Disconnect wiring of the starter
- 2) Remove tool box
- 3) Remove exhaust silencer (muffler)
- 4) Remove the starter via the left rear side counter weight area

Assembling - Type 2525519 :

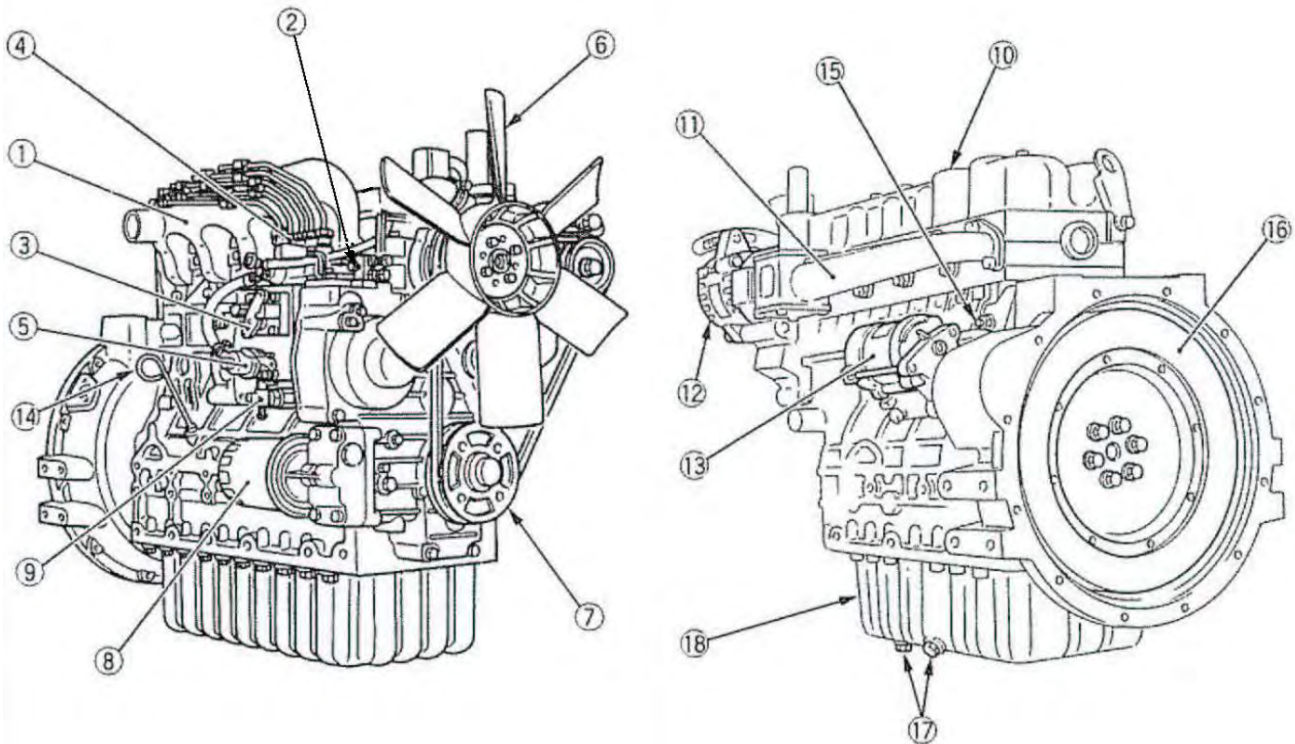
Assemble the starter by reversed steps



DEngine

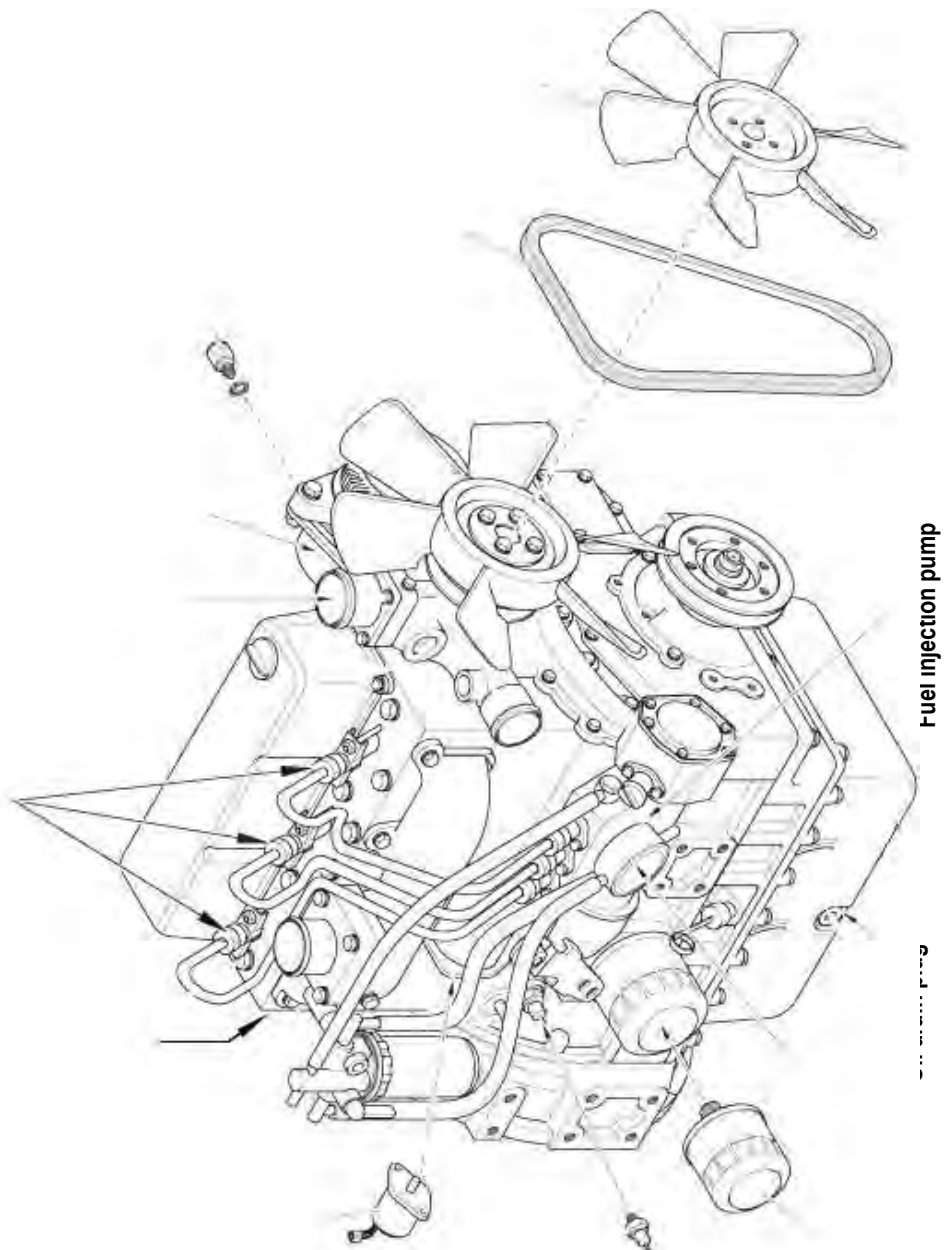
D.1 Engine overview

Kubota D2503-3703



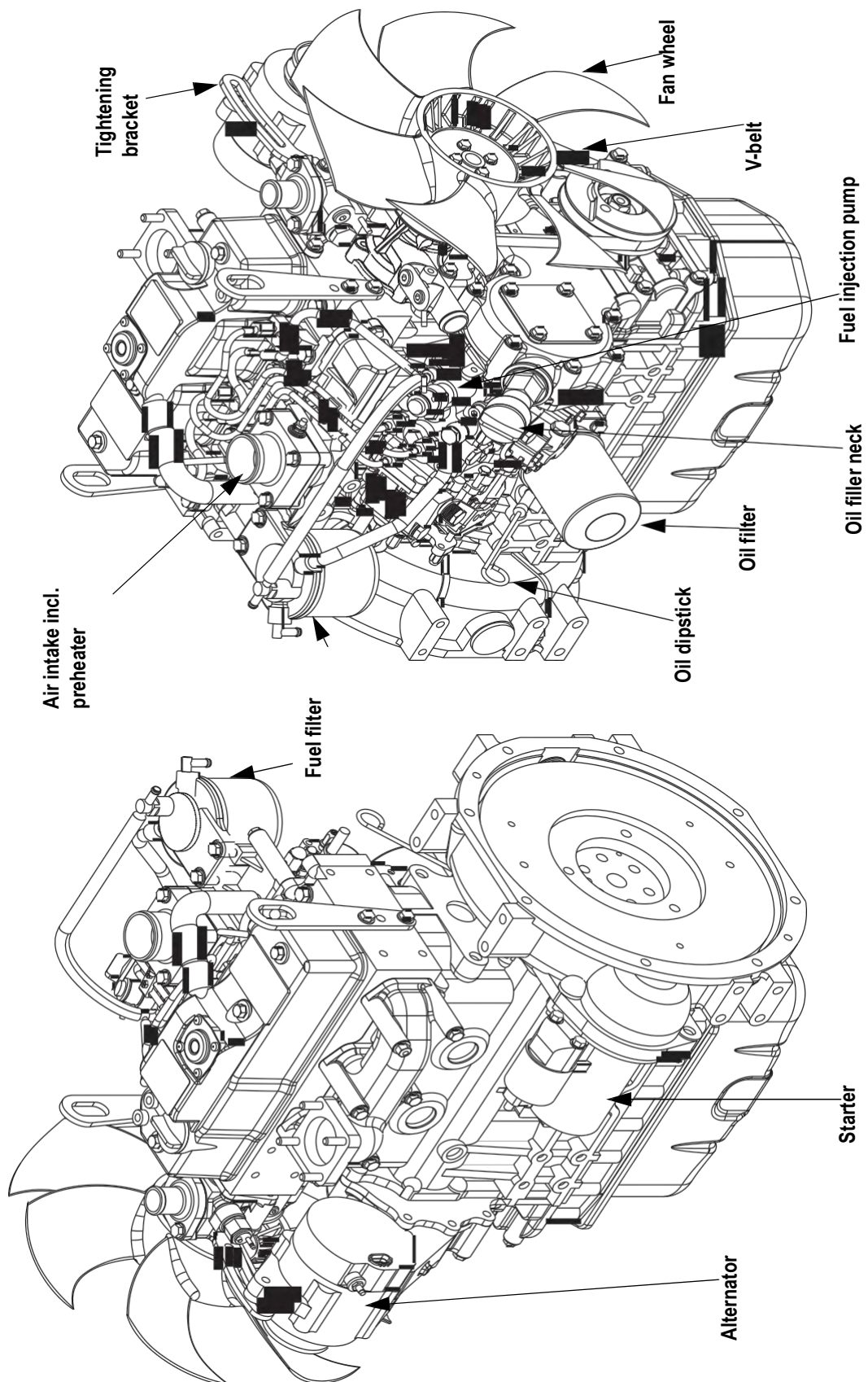
- 1 Intake manifold
- 2 Speed regulation lever
- 3 Engine stop lever
- 4 Fuel injection pump
- 5 Fuel pump
- 6 Fan
- 7 V-belt pulley (crankshaft pulley)
- 8 Oil filter insert
- 9 Water drain cock
- 10 Oil fill cover
- 11 Exhaust manifold
- 12 AC alternator
- 13 Starter
- 14 Oil dipstick
- 15 Oil pressure switch
- 16 Flywheel
- 17 Oil drain plug
- 18 Oil sump

Engine overview 3TNE-88

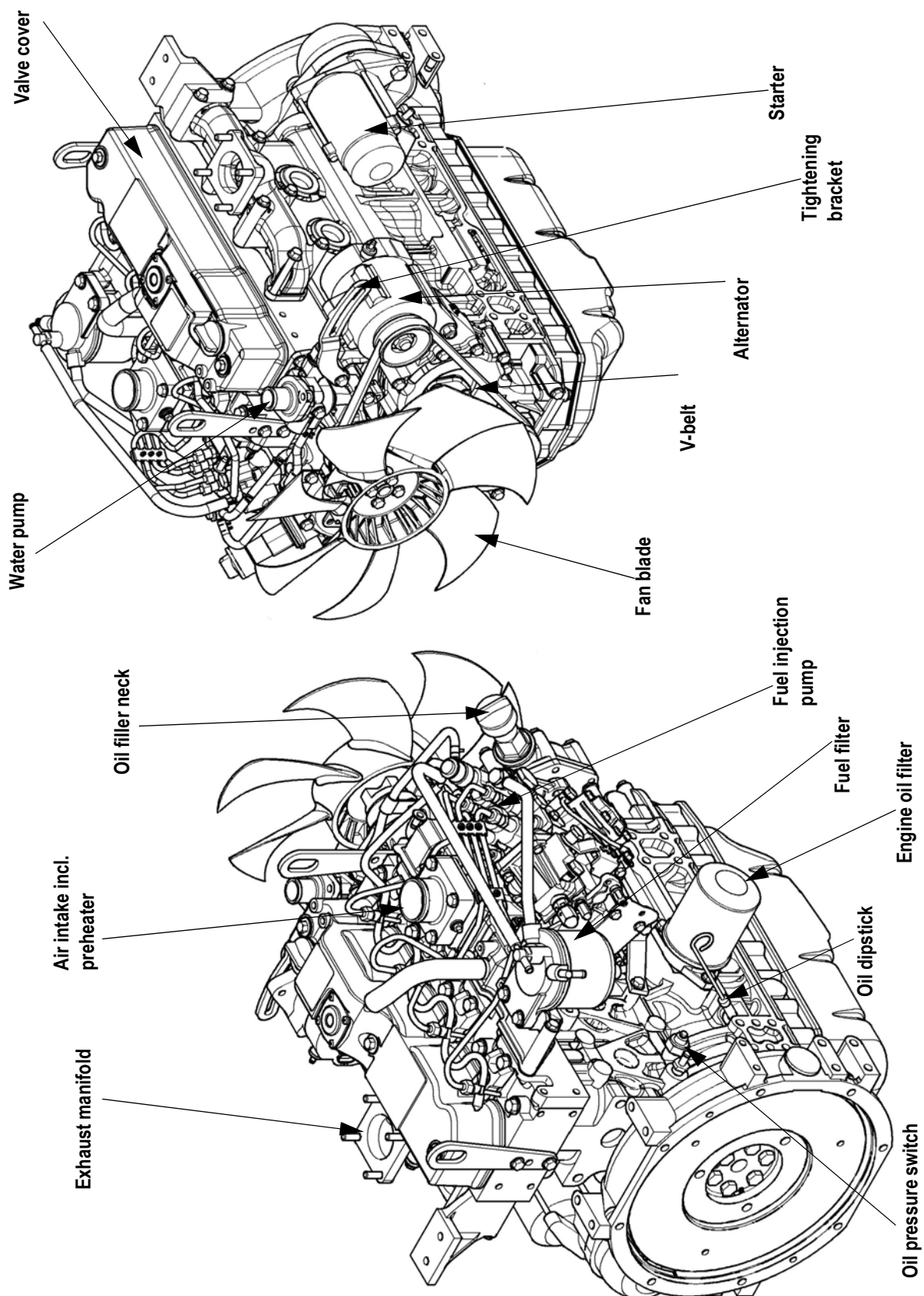




Engine overview 3TNV88 (Tier 2 – up to serial no.: 2503 = AE02833)

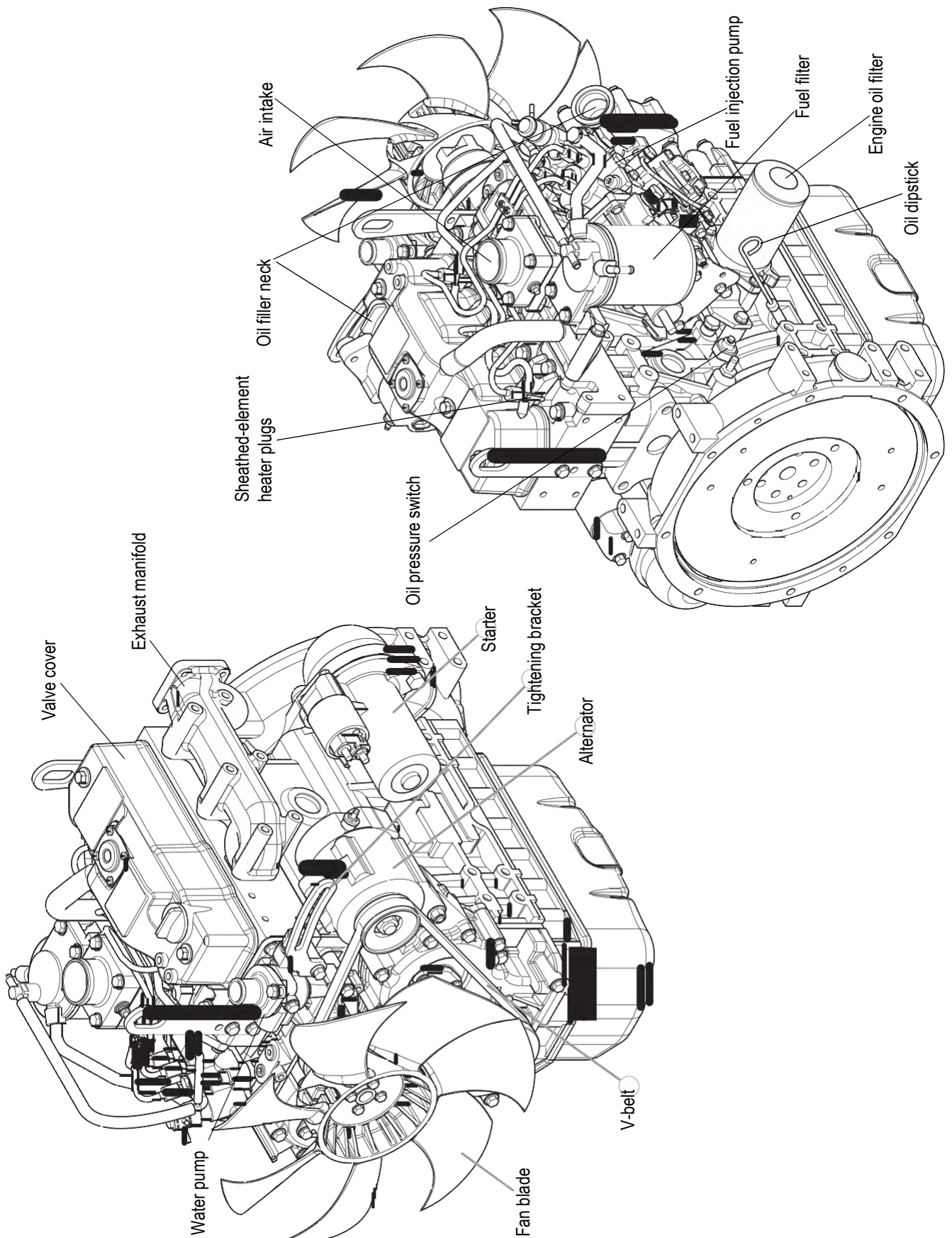


Overview 4TNV 88 (Tier 2 – up to serial no.: 3503 = AE02832/3703 = AE02799)



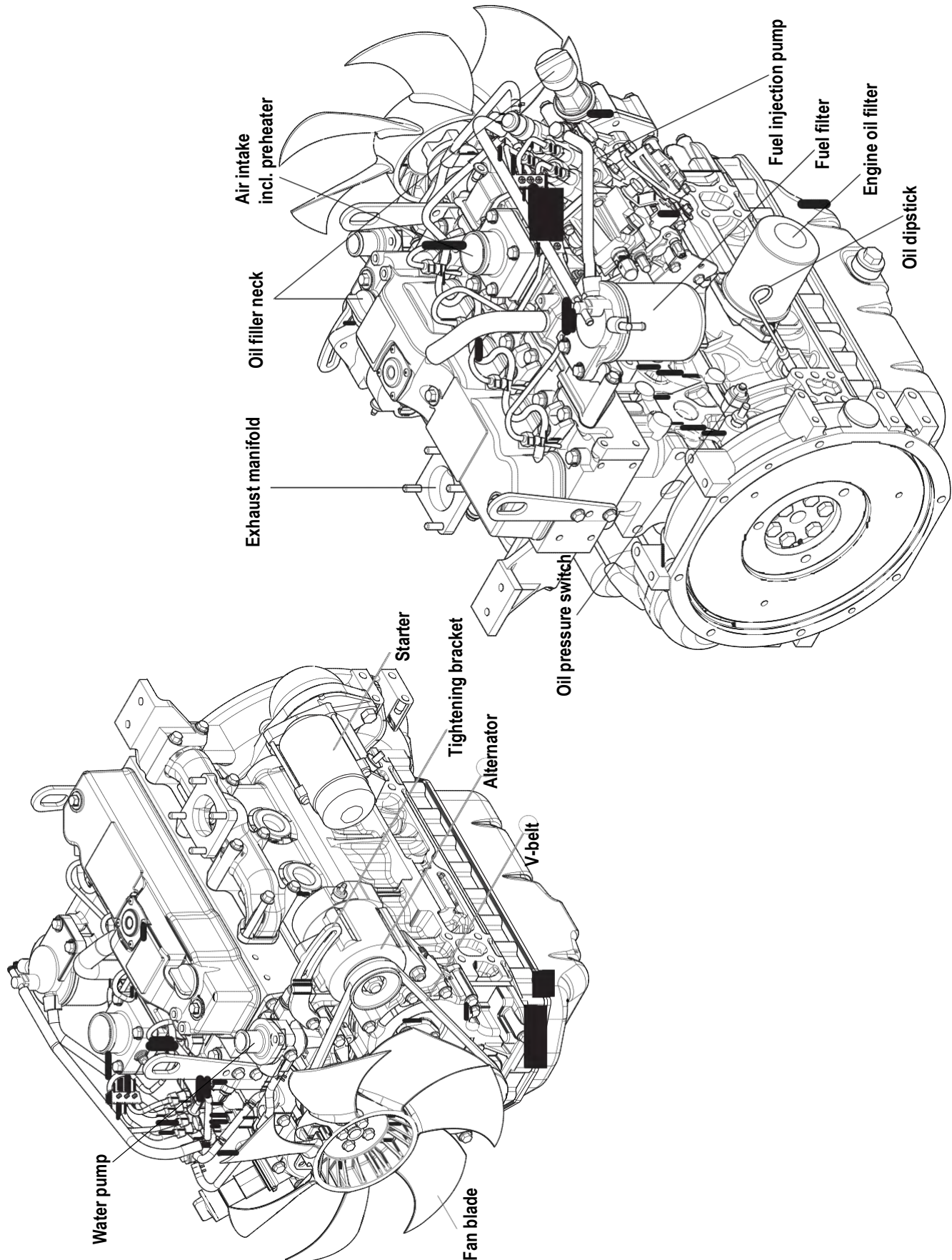


Overview 3TNV 88 (Tier 3 – from serial no.: 2503 = AG00597)





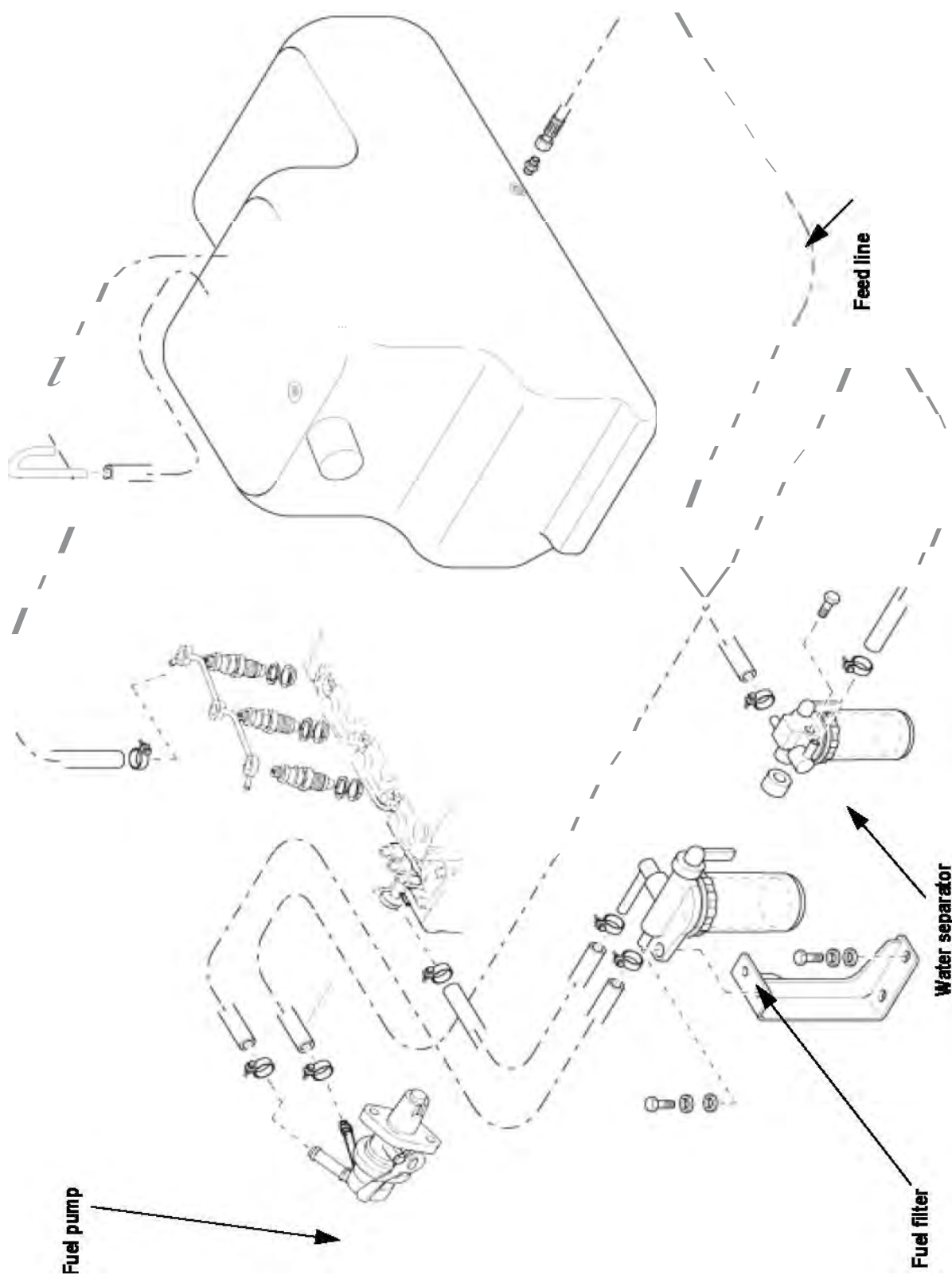
Overview 4TNV 88 (Tier 3 – from serial no.: 3503 = AG00593/3703 = AG00580)



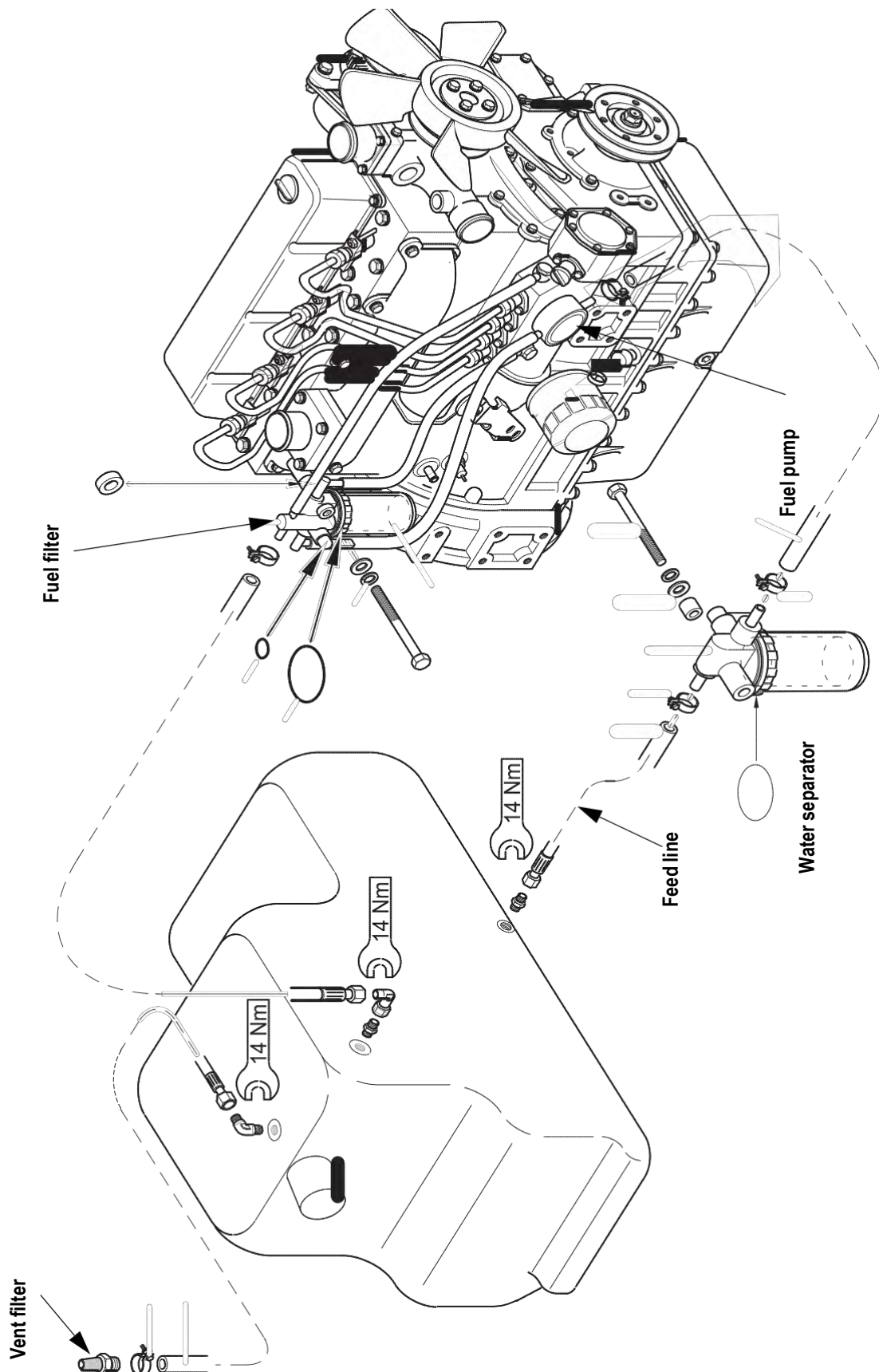


0.2 Fuel supply systems

Kubota 2503-3703

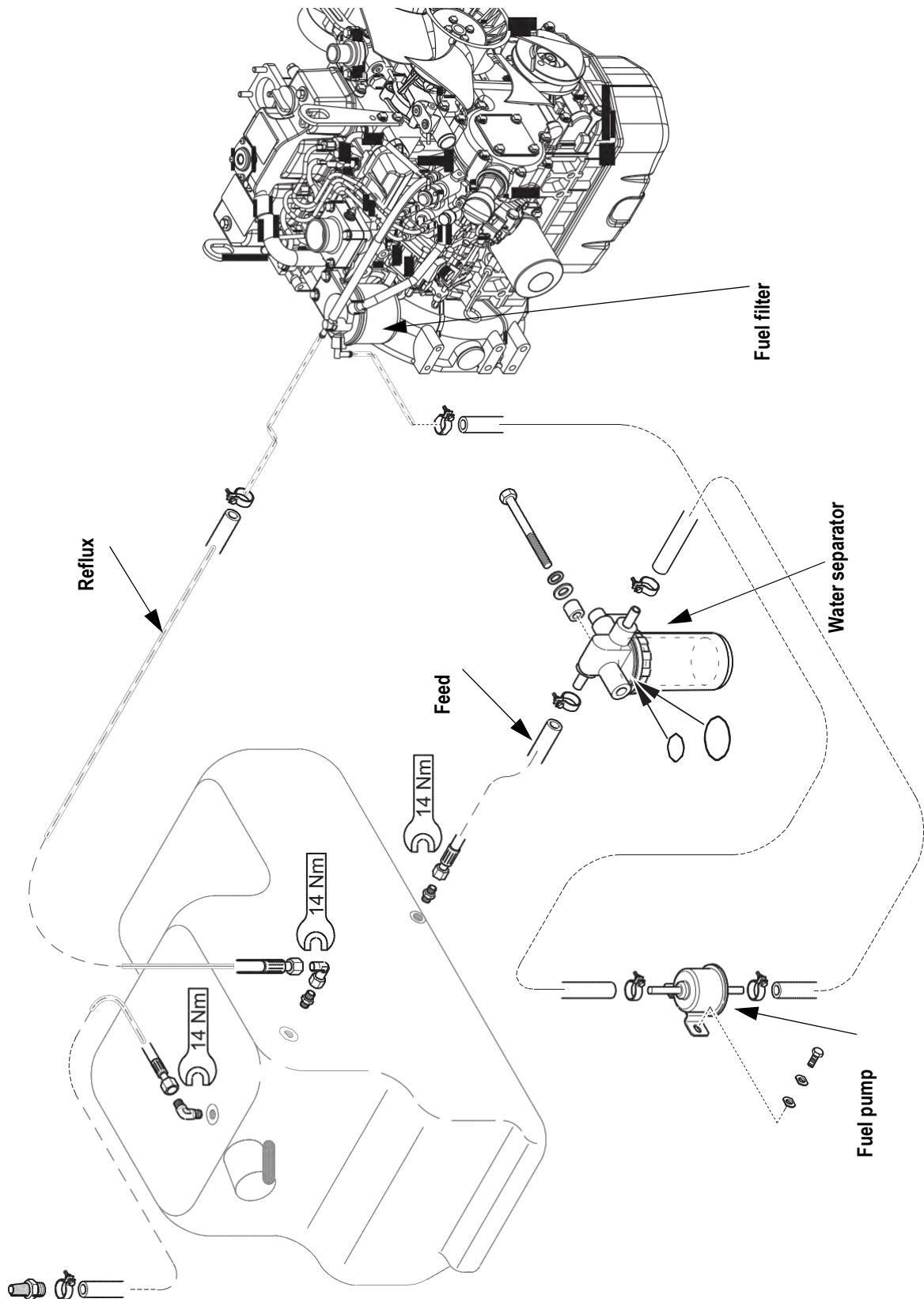


Yanmar 3TNE engine

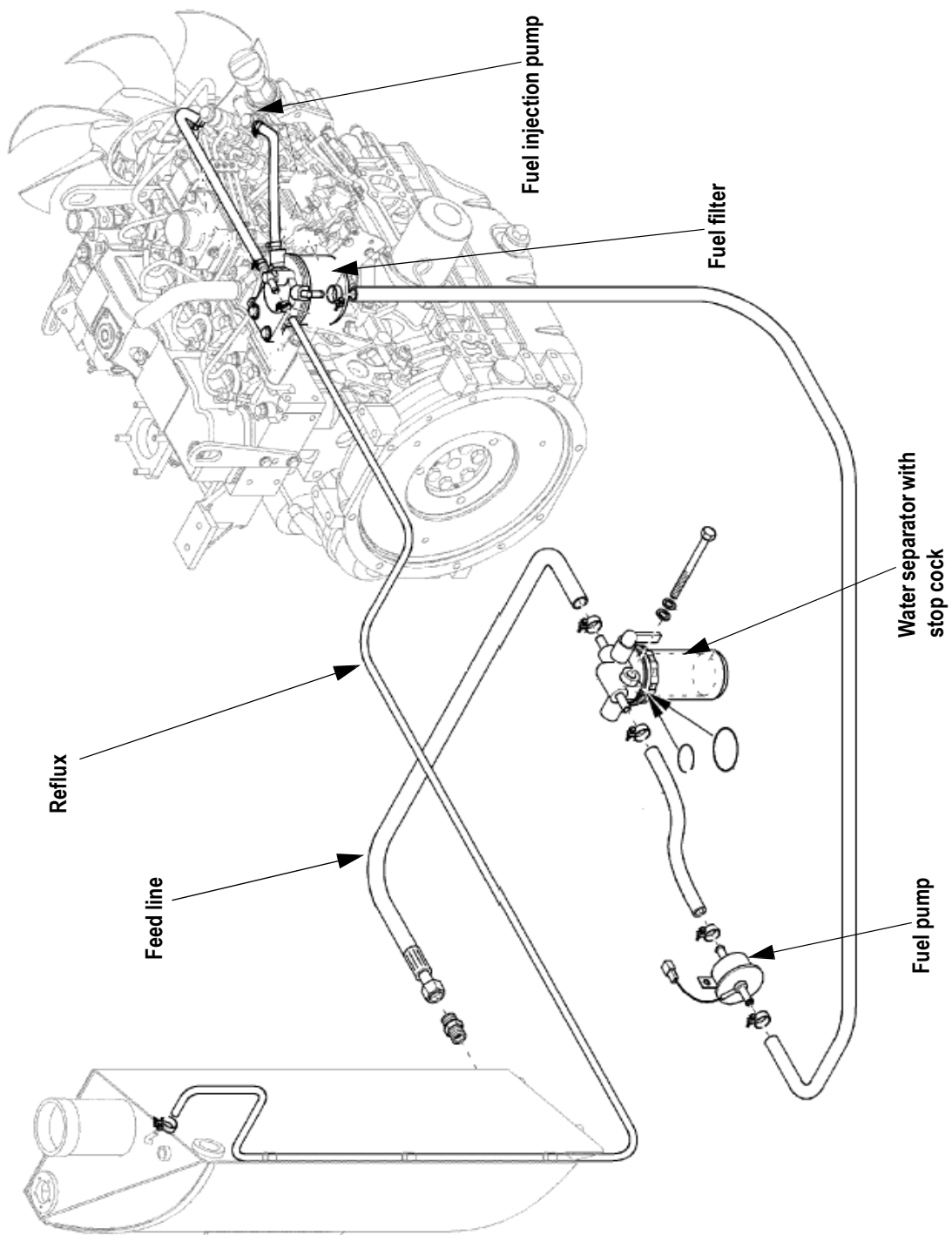




Yanmar 3 TNV engine (Tier 2 – up to serial no.: 2503 = AE02833)

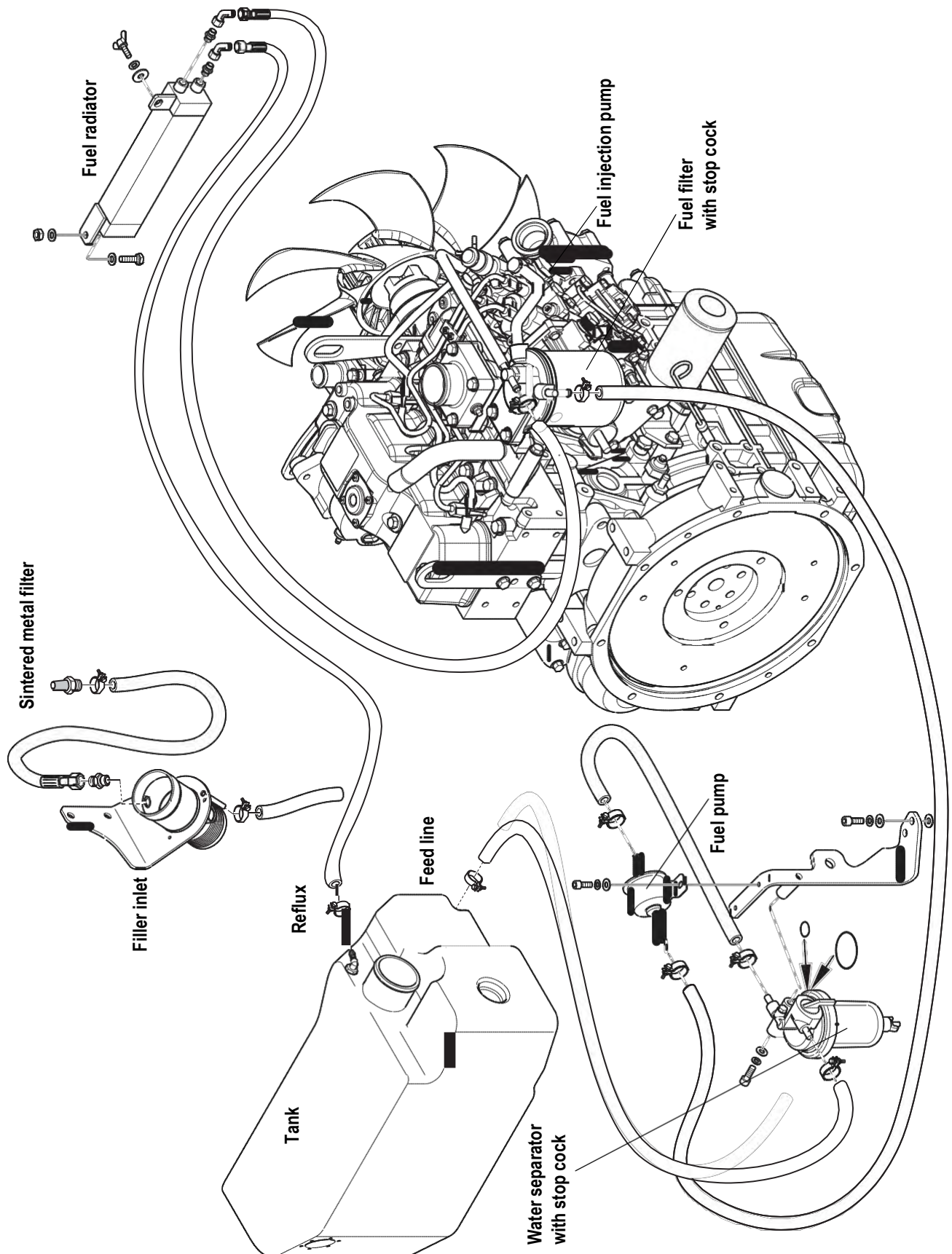


Yanmar 4TNV 88 (Tier 2 – up to serial no.: 3503 = AE02832/3703 = AE02799)

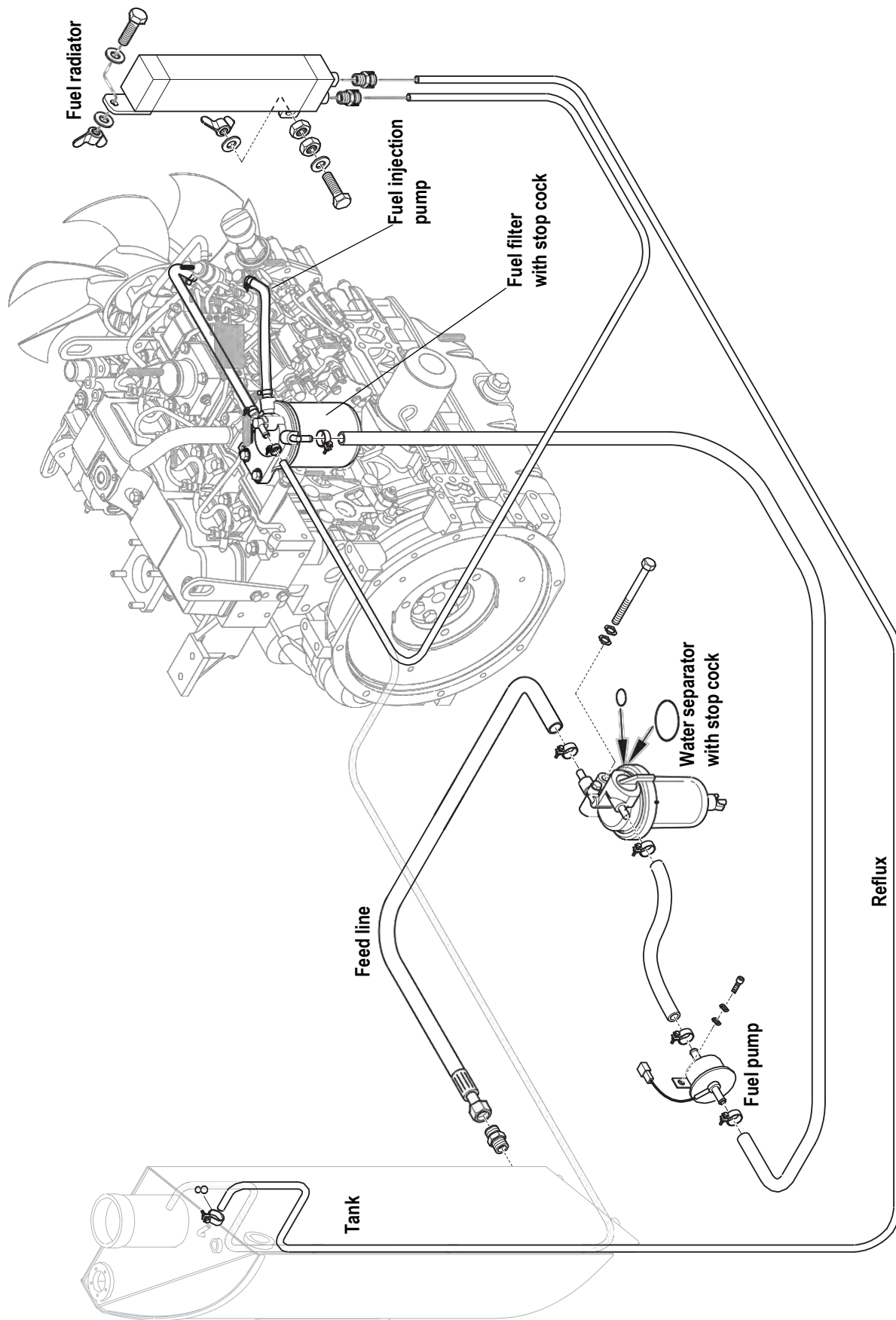




Yanmar 3 TNV engine (Tier 3 – from serial no.: 2503 = AG00597)



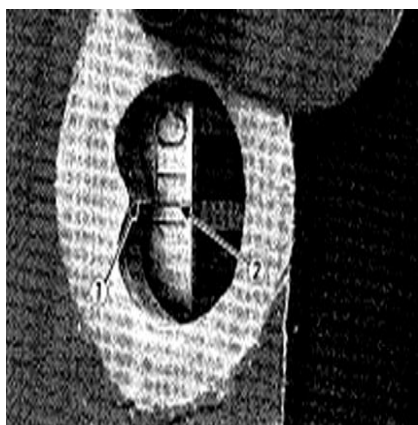
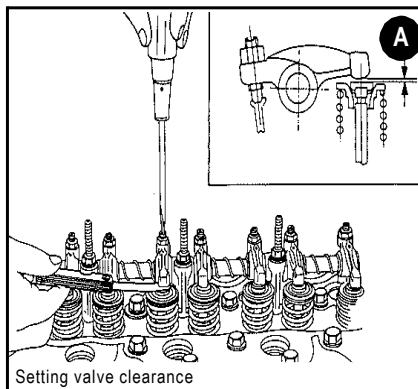
Yanmar 4 TNV engine (Tier 3 – from serial no.: 3503 = AG00593/3703 = AG00580)





D.3 Kubota settings

Checking and adjusting valve clearance



Setting valve clearance



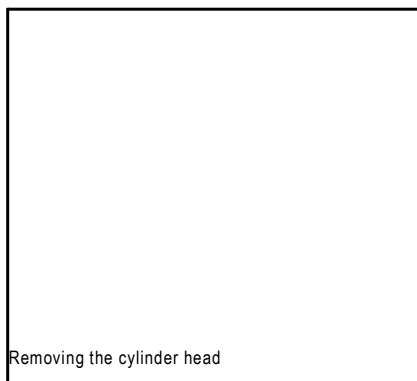
Important!

Always measure and set valve clearance on a cold engine.

- Remove the valve cover
- Align the TDC mark on the flywheel with the mark on the edge of the flywheel housing so that the first piston is in the TDC compression position (both rocker arms on the 1st cylinder can be moved).
- Measure valve clearance with a feeler gauge (A) according to the table below.
 - ➡ Valve clearance 0.18 – 0.22 mm (0.007" – 0.009")
- Adjust valve clearance with the set screw if the values do not coincide with the specified values.
- After setting the first group, turn the engine to overlapping TDC (both rocker arms on the first cylinder are firm), then check and if necessary, set the remaining valve clearances.
- Mount the valve cover back on again

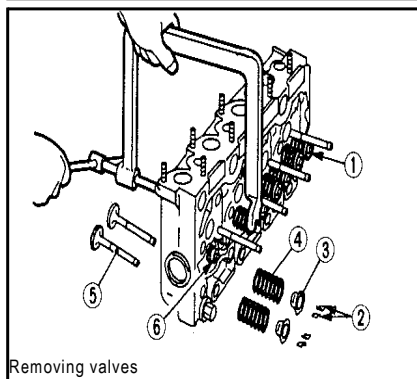
The TDC mark on the flywheel applies to the first cylinder only. The other cylinders have no TDC marks.

Cylinder	1		2		3	
	Inlet	Exhaust	Inlet	Exhaust	Inlet	Exhaust
1 cylinder compression TDC	X	X		X	X	
1 cylinder overlapping TDC			X			X



Removing the cylinder head

- ☞ Remove the injection lines and the overflow line.
- ☞ Remove the glow plug cables and the glow plugs.
- ☞ Remove nozzle holder (1) and copper washer (2).
- ☞ Remove heat seal (3).
- ☞ Remove the valve cover.



Removing valves

- ☞ Remove valve cap (1)
- ☞ Remove spring retaining rings (2) with a valve spring lifter
- ☞ Remove valve spring cap (3), valve spring (4) and valves (5)

Installing the valves

- ☞ Clean the valve rods and valve guides, and apply sufficient engine oil.
- ☞ Once you have installed the valve retaining rings, ensure the correct seat of the valve rods by applying slight blows with a plastic hammer

Installing the cylinder head back on again

- ☞ Check the gasket of the valve cover for damage
- ☞ Check whether you have inserted the heat seal.

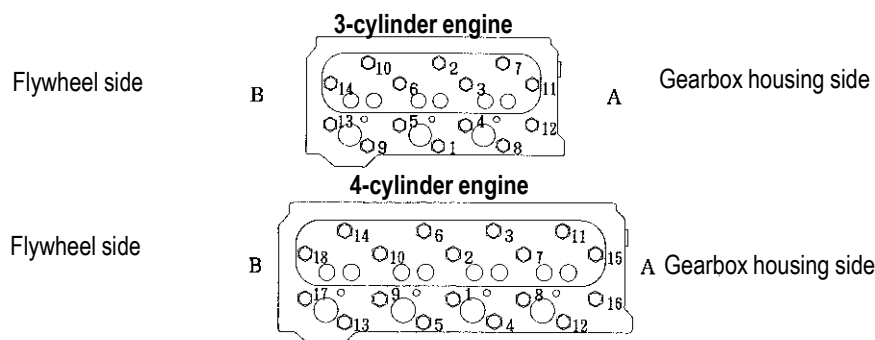
Tightening order for cylinder head bolts



Caution!

Tighten the cylinder-head bolts consecutively, in the order from (1) to (14; 18; 22). Apply engine oil first.
Tight the cylinder-head bolts again after you have run the engine for 30 minutes.

☞ Tightening torques see page A-29

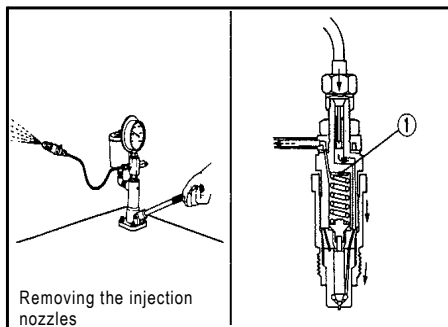




Important!

Mark the number of the cylinder on the tappet to avoid mistakes.
Always carry out work on the cylinder head on a cold engine!

Checking the injection nozzles



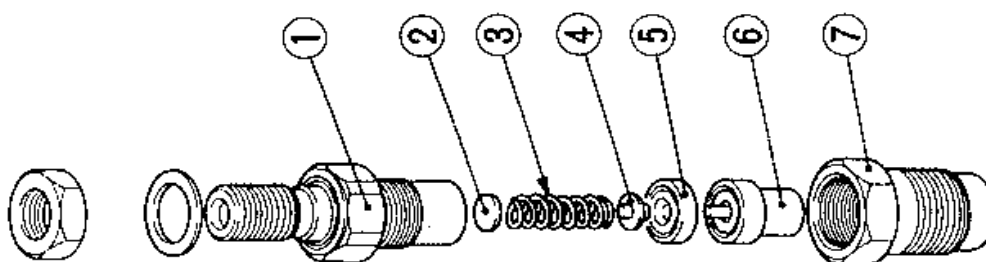
- ☞ Connect the fuel injection pump to a nozzle tester.
 - ☞ Move the handle slowly to measure the pressure at which the fuel starts to flow out.
 - ☞ If the measurement does not provide results within the manufacturer's specifications, dismantle the injection nozzle and replace spacer (1).
- ➡ Injection pressure: 137 – 147 bar (1987 – 2132 psi)



Important!

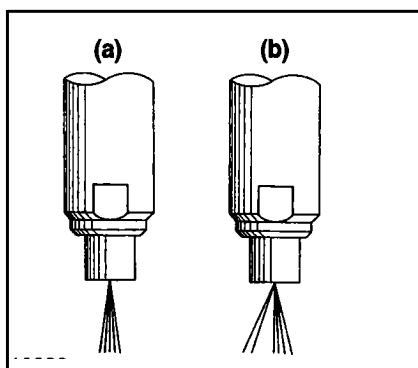
A difference of 0.025 mm (0.001") in spacer thickness modifies the pressure by 5.9 bar (85.6 psi).

Fuel injection pump: design



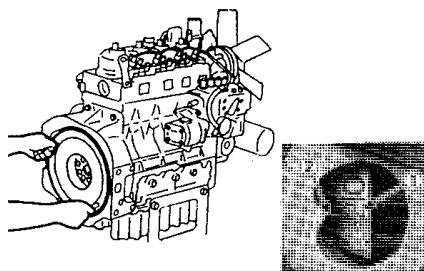
- 1 Nozzle holder
- 2 Adjusting washer
- 3 Nozzle spring
- 4 Push rod
- 5 Spacer
- 6 Nozzle element
- 7 Nozzle lock nut

Checking the nozzle jet



- ☞ Connect the nozzle to a nozzle tester and check the injection output of the nozzle
 - ☞ Replace the nozzle element if injection output is not satisfactory
- ➡ -a; OK
- ➡ -b; poor

Adjusting injection



Important!

Make sure the fuel injection pump is positioned correctly to ensure the prescribed injection time. Make sure the marks of the fuel injection pump and the gear housing are aligned.

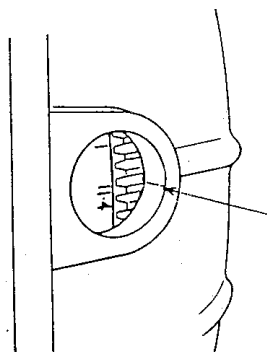
- ☞ Remove the injection lines.
- ☞ Set the throttle to maximum fuel feed position.
- ☞ Turn the flywheel counterclockwise until fuel fills the bore of the feed valve bracket of the 1st cylinder.
- ☞ Continue turning the flywheel until the fuel overflows and then determine the injection time.
- ☞ With the help of the TDC mark and the auxiliary marks, calculate the angle and if necessary, add or remove a spacer to adjust the angle.

Rated value: 9° to 17° (depending on engine type)



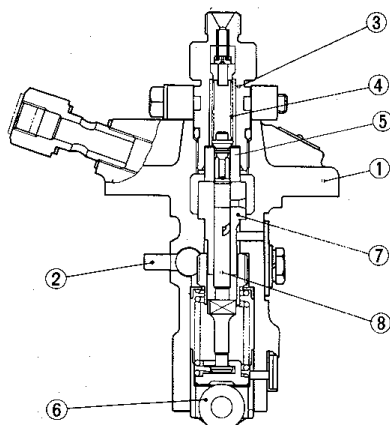
Important!

The flywheel has a TDC mark and 4 lines in steps of 5° for indicating the crankshaft angle in a range of 10° to 25°.



Adding or removing a spacer (0.15 mm / 0.006") modifies the angle by 1.5° and results in an earlier or later injection setting. A combination of these spacers (0.15 – 0.3 mm / 0.006 – 0.012") can be used too.

Removing and installing



Important!

Adjust the injected fuel quantity on a test bench (in compliance with requirements) as you replace the pump element.

1. Pump housing
2. Control rack
3. Pressure valve housing
4. Pressure valve spring
5. Pressure valve
6. Push roller
7. Cylinder
8. Piston



D.4 Settings: Yanmar 3TNE 88, 3TNV 88, 4TNV 88

Valve clearance (Tier 2)

☞ Standard setting of valve clearance is possible:

➡ On a cold engine

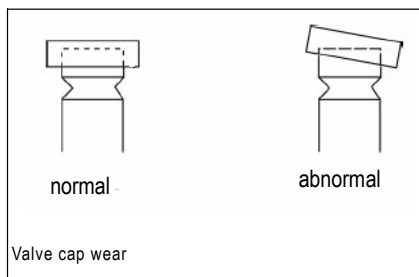
Procedure

☞ Remove the valve cover

☞ Turn the engine until the cylinder reaches the top dead centre of the compression cycle.

➡ Valve overlapping (both rocker arms move freely)

☞ Check the valve cap for abnormal wear



☞ Check valve clearance **A** with a feeler gauge

➡ Valve clearance: 0.15 – 0.25 mm (0.006 – 0.01")

☞ Set the valve clearance on the cylinder by turning set screw **B**.

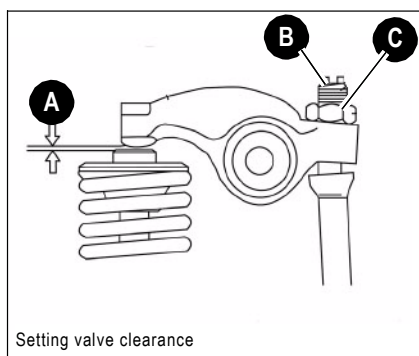
☞ Tighten locknut **C**.

➡ Check the setting again with the feeler gauge.

☞ Repeat the procedure for each cylinder

☞ Put the valve cover gasket in place

☞ Mount the valve cover



Order for setting valve clearance on 3-cylinder engine

Cylinder	1		2		3	
	Inlet	Exhaust	Inlet	Exhaust	Inlet	Exhaust
1 cylinder TDC compression	X	X	X			X
1 cylinder overlapping TDC				X	X	

Order for setting valve clearance on 4-cylinder engine

Cylinder	1		2		3		4	
	Inlet	Exhaust	Inlet	Exhaust	Inlet	Exhaust	Inlet	Exhaust
1 cylinder compression TDC	X	X	X			X		
4 cylinder overlapping TDC				X	X		X	X

Valve clearance (Tier 3)

Removing the valve cover



Important!

In order to avoid damage to the glow elements, remove them before removing the cylinder head.

Remove as follows:

- ☞ Remove all dirt on the engine with a lint-free cloth
- ☞ Unscrew all hoses and fuel injection lines from the valve cover
- ☞ Remove the air intake and the exhaust manifold
- ☞ Unscrew and remove the valve cover

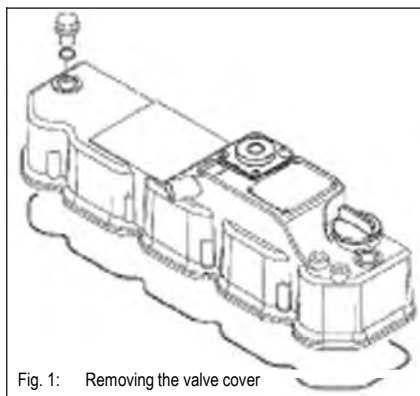


Fig. 1: Removing the valve cover

Checking and adjusting valve clearance

- ☞ Standard setting of valve clearance is possible:
 - ➔ On a cold engine
- ☞ Turn the engine with a screwdriver (as described in "Injection time" from page D-24) until the cylinder reaches the top dead centre of the compression cycle.
 - ➔ Valve overlapping
- ☞ Check the valve cap for abnormal wear
- ☞ Check valve clearance **2/A** with a feeler gauge
 - ➔ Valve clearance: 0.15 – 0.25 mm (0.006 – 0.01")
- ☞ Repeat the procedure for each cylinder
- ☞ Put the valve cover gasket in place
- ☞ Mount the valve cover

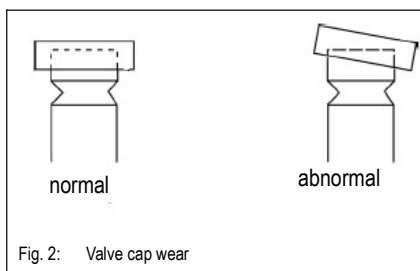


Fig. 2: Valve cap wear

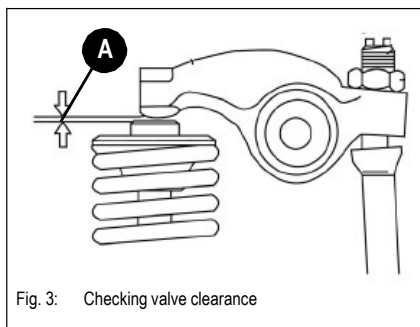


Fig. 3: Checking valve clearance



Tightening order for cylinder head bolts

3 cylinders

☞ Order for removing the cylinder-head bolts



Oil the threads and the contact surfaces of the cylinder-head bolts before mounting them!

☞ Mount the cylinder-head bolts

➡ Tightening torques:

		Tier 3
• 1st pass	41.1 – 46.9 Nm (30.3 – 34.6 lbf ft)	42.6 – 45.5 Nm (31.4 – 33.6 lbf ft)
• 2nd pass	85.3 – 91.1 Nm (62.9 – 67.2 lbf ft)	85.3 – 91.1 Nm (62.9 – 67.2 lbf ft)



Caution!

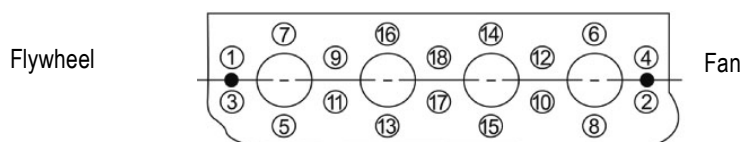
Bear in the mind the order for tightening the cylinder-head bolts!

☞ See figure

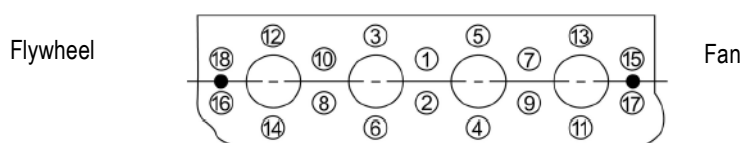


4 cylinders

☞ Order for removing the cylinder-head bolts



☞ Order for mounting the cylinder-head bolts

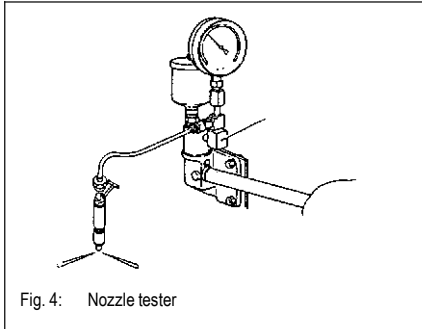




Important!

Always carry out work on the cylinder head on a cold engine!

Checking the injection nozzles

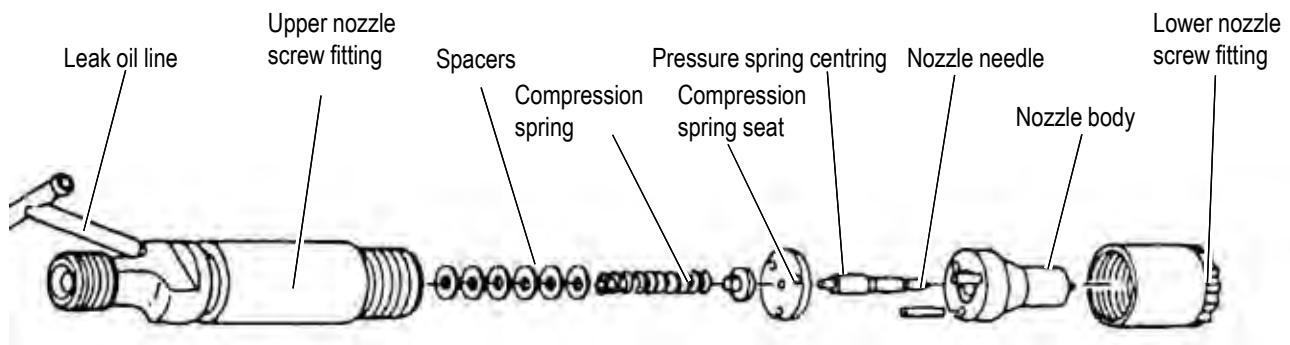


Pressure check

- ☞ Remove the injection line and the injection nozzle
- ☞ Connect the injection nozzle with the high pressure line of the nozzle tester
- ☞ Slowly increase pressure until the nozzle ejects fuel and read the pressure off the pressure gauge
- ☞ If the injection pressure is too low, replace the spacer in the nozzle by a thicker one. If the pressure is too high, replace the spacer by a thinner one.

➡ Injection pressure: **216 – 226 bar / 3133 – 3278 psi (Tier 2)**
196 – 206 bar / 2843 – 2988 psi (Tier 3)

- Spacer thickness of 0.1 mm (0.004") corresponds to modification by 19 bar (276 psi)
- Check the injection nozzle for drips after it has ejected fuel
- ☞ Create a pressure of about 20 bar (290 psi) below injection pressure and check whether fuel escapes from the nozzle





Checking the nozzle jet

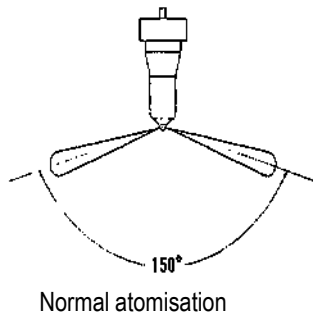
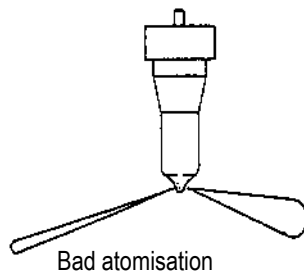
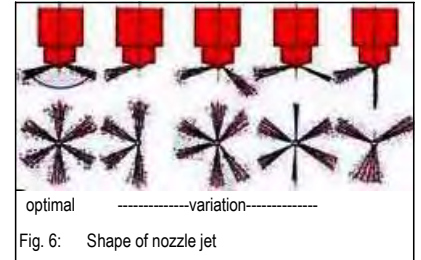


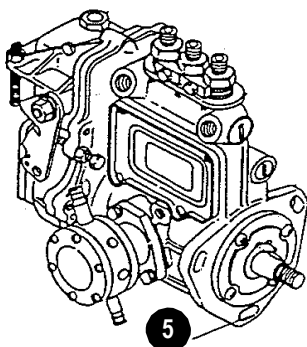
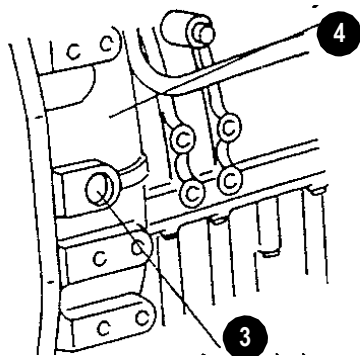
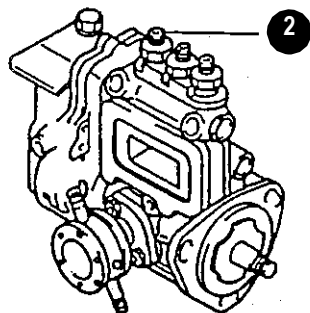
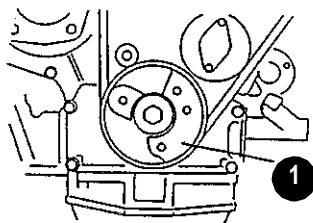
Fig. 5: Nozzle jet



- ☞ Remove the injection lines and the injection nozzles
- ☞ Connect the injection nozzle with the high pressure line of the nozzle tester
- ☞ Quickly create pressure until the nozzle ejects fuel (ejection 3 – 4 times)
- ☞ Hold a white sheet of paper about 30 cm (12") away from the nozzle and let the nozzle eject fuel
- ☞ The nozzle jet must create a shape on the paper as shown in **fig. 6/left**



3TNE injection time



Checking and adjusting

☞ Preparatory work: remove the injection lines, set the engine to full-load position

☞ Turn crankshaft pulley (1) of the engine counterclockwise.

As you turn the engine, the fuel level in the bore of the 1st cylinder of the fuel injection pump rises.

Turn the engine until the fuel starts overflowing at the fuel injection pump.

Determine the fuel injection time on cylinder 1 (2) by means of the mark on the flywheel sight hole (3) and compare it with the engine data.

➡ -9°-17°. Depending on engine type.

- Modify the injection time by turning the fuel injection pump on the engine if the values do not coincide with the specified values. Slacken lock screws (5) on the fuel injection pump to do so.

➡ If injection time is too late, turn the fuel injection pump away from the engine.

➡ If injection time is too early, turn the fuel injection pump towards the engine.

☞ Retighten the lock screws and install the injection lines.

Injection time 3TNV88, 4TNV88 (Tier 2)

Checking injection time



Fig. 7: Measuring equipment



Fig. 8: Top dead centre indentation and 10° before top dead centre

Setting injection time

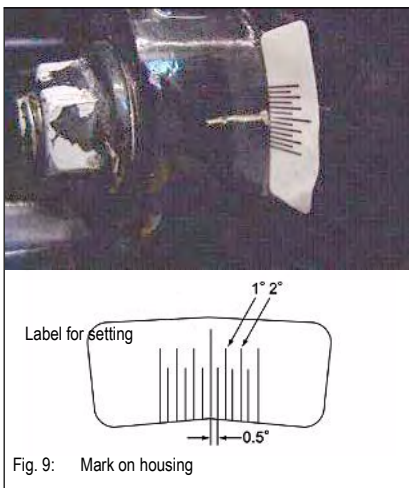


Fig. 9: Mark on housing

• Preparatory work:

- ☞ Remove all dirt on the engine with a lint-free cloth
- ☞ Remove the injection lines from the fuel injection pump
- ☞ Remove plug 7/1 from the piston
- ☞ Mount the sleeve (no. 1000158805) and the extension (no. 1000158806) onto the dial gauge (no. 1000158807) and fasten them with a clamp (no. 1000083308).
- ☞ Install a dial gauge in the piston bore as shown in fig. 7

• Measurement

- ☞ Remove the rubber cover from the flywheel housing
- ☞ Turn the crankshaft (ring gear on flywheel) until the piston in the fuel injection pump reaches the lowest point (pay no attention to the position of the cylinders)
- ☞ Set the measuring equipment to "0"
- ☞ Use a suitable tool to turn the flywheel on the ring gear counterclockwise (i.e. in the direction of rotation of the engine) until the piston of the fuel injection pump has a stroke of 2.5 mm (0.1").
- ☞ Read the degrees before top dead centre by means of the indentations on the flywheel
 - Indentations "1", "2" and "3" stand for the top dead centre of the respective cylinders
 - Scaling: 12°/15°/20°/25° before top dead centre
 - ➔ Rated value: 25° ± 1° before TDC (fourth indentation depends on the engine type)

- Variations outside the tolerance range can be corrected by turning the fuel injection pump.
- ☞ Mark the initial position on the pump and wheel case housing before setting the fuel injection pump – see fig. 9
- ☞ Rotate the pump in the required direction, and tighten one of the screws before you check the setting
 - ➔ Rotated towards the engine: earlier injection time
 - ➔ Rotated away from the engine: later injection time
- ☞ Tighten the flange screws on the fuel injection pump (see fig. 7, page D-22).
- ☞ Bend each of the injection lines before you mount them so they are not subject to tension once they are mounted, then mount and tighten them.
- ☞ Check injection time again

Injection time 3TNV88, 4TNV88 (Tier 3A)

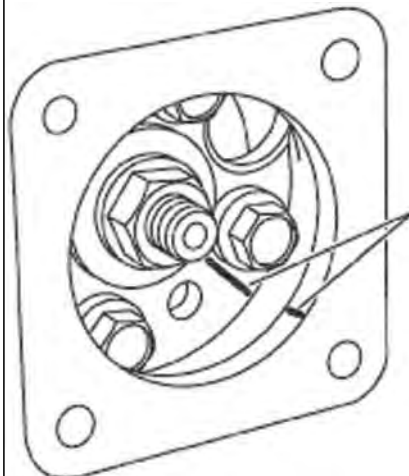
Checking injection time



Fig. 10: Measuring equipment



Fig. 11: Top dead centre indentation and 10° before top dead centre



• Preparatory work:

- ☞ Remove all dirt on the engine with a lint-free cloth
- ☞ Remove the high pressure fuel injection lines
- ☞ Remove plug 10/1 from the piston
- ☞ Mount the sleeve (no. 1000158805) and the extension (no. 1000158806) onto the dial gauge (no. 1000158807) and fasten them with a clamp (no. 1000083308).
- ☞ Screw the dial gauge into the bore of the piston as shown in Fig. 10

• Measurement:

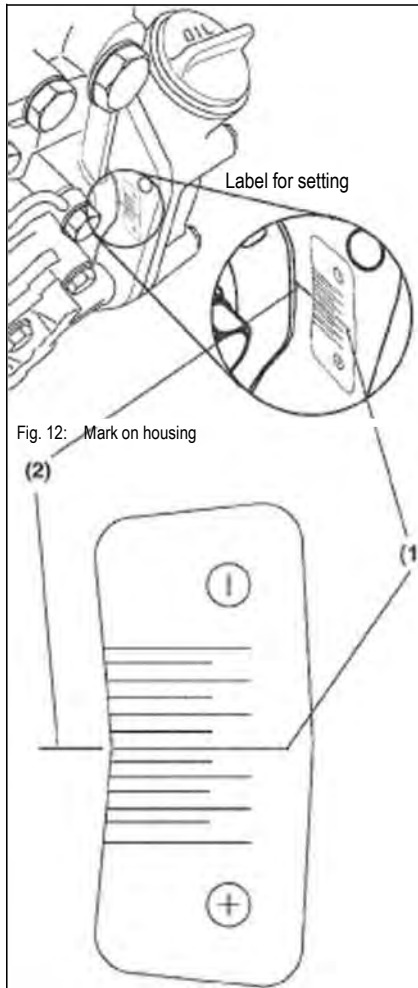
- ☞ Remove the rubber cover from the flywheel housing
- ☞ Turn the crankshaft (ring gear on flywheel) until the piston in the fuel injection pump reaches the lowest point (pay no attention to the position of the cylinders)
- ☞ Set the measuring equipment to "0"
- ☞ Use suitable equipment (at the ring gear) to turn the flywheel to the top until the piston of the fuel injection pump reaches a stroke of 2.5 mm (0.1").
- ☞ Read the degrees before top dead centre by means of the indentations on the flywheel
 - Indentations "1/4" and "3/2" stand for the top dead centre of the respective cylinders
 - Scaling: 12°/15°/20°/25° before top dead centre

➡ Rated value: calculation according to Yanmar manual:

value on injection pump (here: 6.8 see Fig. 18) x 2 + FIR



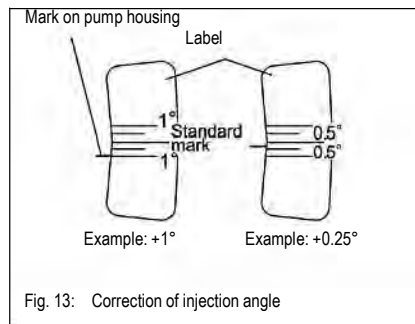
Setting injection time



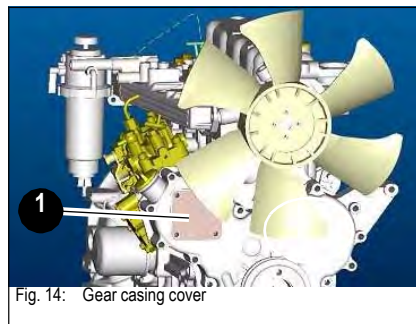
- Variations outside the tolerance range can be corrected by turning the fuel injection pump.
- ☞ Mark the initial position on the pump and wheel case housing before setting the fuel injection pump – see [Fig. 12](#)
- ☞ Remove all injection lines on the fuel injection pump and slacken the 4 flange screws by about ½ a revolution (do not unscrew completely)
- ☞ Rotate the pump in the required direction, and tighten one of the screws before you check the setting
 - Rotated towards the engine: later injection time
 - Rotated away from the engine: earlier injection time
- ☞ Bend each of the injection lines before you mount them so they are not subject to tension once they are mounted
- ☞ Check injection time again
- ☞ Adhesive label number 1000158808

Replacement of fuel injection pump (Tier 2)

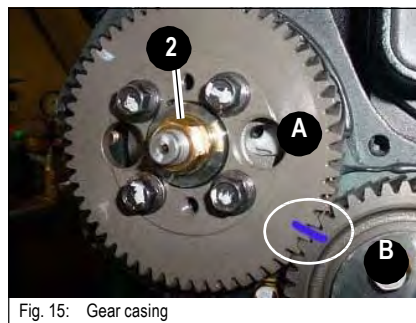
(valid for Yanmar engines after November 2004)



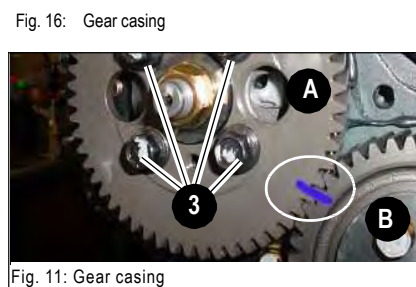
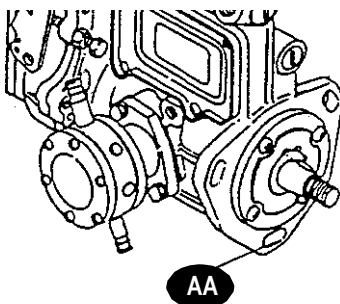
- ✎ Remove gear casing cover **14/1** of the fuel injection pump
- ✎ Turn the engine until the marks on the gear of fuel injection pump **A** and on the flywheel gear **B** are opposite, see fig. **15** (ignition time of 1st cylinder)
- ✎ Before removing the fuel injection pump, mark its position by affixing the label onto the wheel case housing (see fig. 13).
- Ensure the exact position opposite the groove mark on the fuel injection pump!
- ✎ Completely slacken lock nut **15/2** of the drive pinion
- ✎ Slacken screws (**AA**) on the fuel injection pump



- ✎ Remove the fuel injection pump
 - ✎ Read off the injection angle on the pump
 - ✎ Read off the injection angle on the new pump
 - ➔ Read off the imprint on the engine side of the fuel injection pump

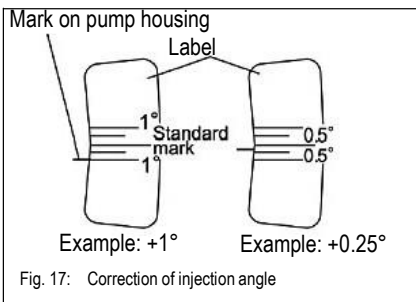


- ✎ Difference of "Angle of new pump" – "Angle of old pump" gives you the mounting angle of the new fuel injection pump
 - ➔ Positive value: later injection time (away from the engine)
 - ➔ Negative value: earlier injection time (towards the engine)
- ✎ Install the fuel injection pump
 - ✎ Check the marked position of the drive pinion of the fuel injection pump (fig. 15)
- ✎ Screw on and tighten nut 15/2
- ✎ Tighten screws (**AA**) on the fuel injection pump
- ✎ Check injection time
- ✎ Mount gear casing cover **14/1** of the fuel injection pump



Important!

Do not slacken screws **3** of the drive pinion of the fuel injection pump. These screws specify the precision setting of the fuel injection pump set by the manufacturer!

Replacement of fuel injection pump (Tier 3)

☞ Mark the initial position on the pump and wheel case housing before removing the fuel injection pump – see Fig. 17

☞ Remove gear casing cover **18/1** of the fuel injection pump

☞ Turn the engine until the indents on the gears coincide

☞ Completely slacken lock nut **19/2** of the drive pinion

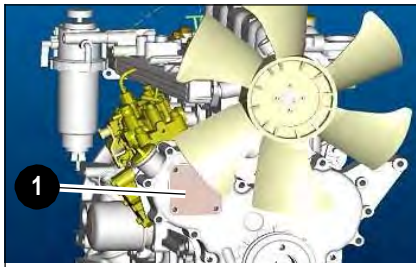
☞ Adhesive label number 1000158808

☞ Remove the fuel injection pump

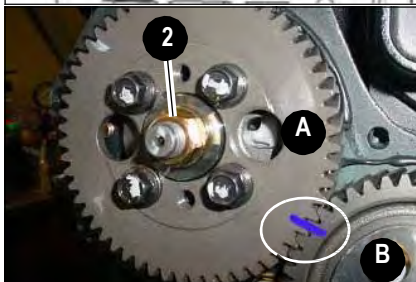
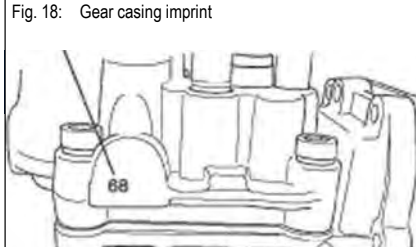
☞ Read off the injection angle on the pump

☞ Read off the injection angle on the new pump

➡ Read off the imprint on the engine side of the fuel injection pump



• Tightening torque: 23 – 28 Nm (17 – 21 lbf ft)



☞ Difference of “Angle of new pump” – “Angle of old pump” gives you the mounting angle of the new fuel injection pump

➡ Positive value: earlier injection time (towards the engine)

➡ Negative value: later injection time (away from the engine)

☞ Install the new fuel injection pump

☞ Check the marked position of the drive pinion of the fuel injection pump (fig. 19)

☞ Screw on and tighten nut 19/2 (tightening torque: 23 – 28 Nm / 17 – 21 lbf ft)

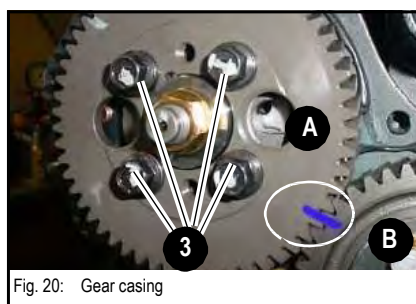
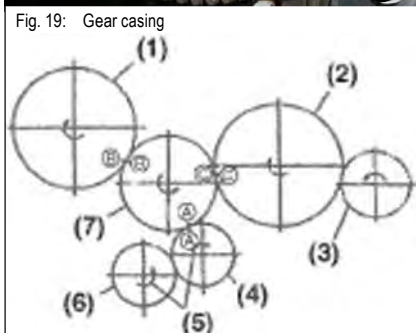
☞ Check injection time

☞ Mount gear casing cover 18/1 of the fuel injection pump

• Tightening torque: 78 – 88 Nm (57.5 – 65 lbf ft)

• If a front housing cover is installed, the drive wheel of the injection pump is adapted to the running wheel by means of marks A,B,C (see Fig. 19):

- | | |
|------------------------------------|----------------------------------|
| 1...Injection pump drive wheel | 2...Camshaft drive wheel |
| 3...Auxiliary drive wheel (option) | 4...Crankshaft drive wheel |
| 5...Direction of rotation | 6...Fuel pump drive wheel (4TNV) |
| 7...Running wheel | |

**Important!**

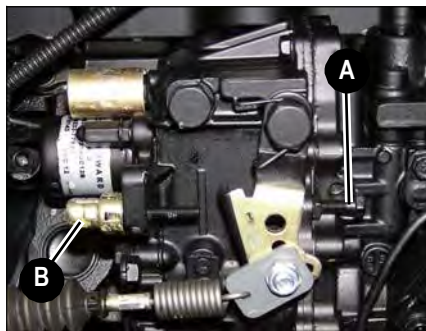
Do not slacken screws **20/3** of the drive pinion of the fuel injection pump. These screws specify the precision setting of the fuel injection pump set by the manufacturer!

Adjusting engine revs (all engines)



Important!

The maximum engine revs are set and sealed by the manufacturer without the hydraulic pump and may not be modified!



Adjusting engine revs

Adjust engine revs without load!

- ☞ Run the diesel engine until it reaches operating temperature
- ☞ Check idling speed **A**, all machine functions in neutral position
 - ➔ Idling speed is indicated in the specifications for each engine type.
- ☞ Adjust as shown if values differ.

Caution: Only idling speed is allowed to be set!

Compression (all engines)

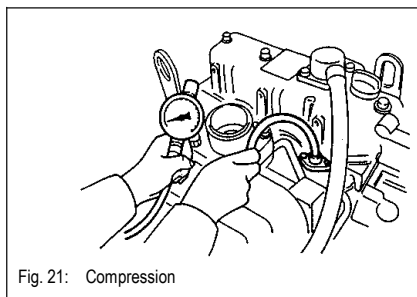


Fig. 21: Compression

- ☞ Remove the injection lines and the injection nozzles
- ☞ Set the fuel injection pump to zero delivery (remove the plug for the cutoff solenoid)
- ☞ Turn the engine
- ☞ Mount the compression gauge on the cylinder you want to measure
- ☞ Turn the engine with the starter and read the pressure off the pressure gauge

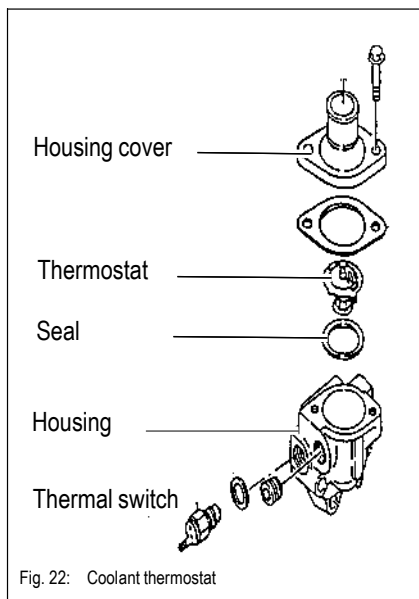
Tier 2

- ➔ Specified value: **34.3 ± 1 bar (497.5 ± 14.5 psi) at 250 rpm**
- ➔ Threshold value: **28 ± 1 bar (406 ± 14.5 psi) at 250 rpm**

Tier 3A

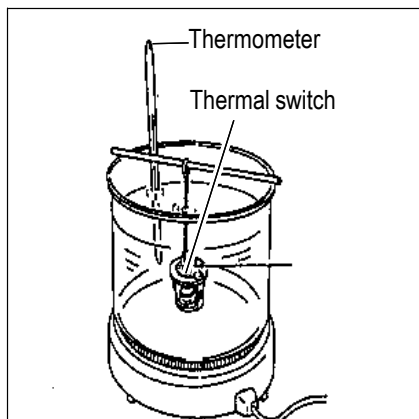
- ➔ Specified value: **33.3 – 35.3 bar (483 – 512 psi) at 250 rpm**
- ➔ Threshold value: **26.5 – 28.5 bar (384 – 413 psi) at 250 rpm**

Checking the coolant thermostat (all engines)



☞ *Remove the thermostat*

- ➡ The thermostat is located on the water pump
- see [Engine overview 3TNE-88](#) on page D-6

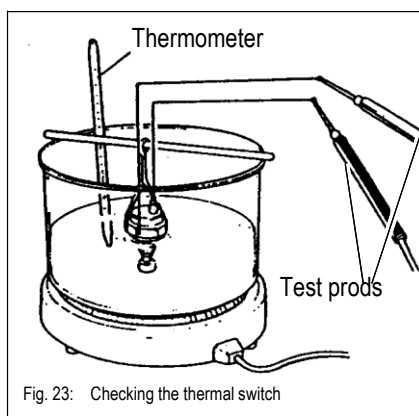


☞ *Warm up the thermostat in a container with water*

☞ *Check whether the thermostat opens at the specified temperature (check with a temperature gauge)*

- ➡ Thermostat opening temperature: **69.5 – 72.5 °C (157.1 – 162.5 °F)**
- (the thermostat opens fully from **85 °C / 185 °F** onwards only)

Checking the thermal switch (all engines)



☞ *Remove the thermal switch*

☞ *Warm up the thermal switch in a container with coolant*

☞ *Measure the resistance of the thermal switch as shown by means of an ohmmeter.*

- ➡ The switch must allow the coolant to pass at a temperature of **107 – 113 °C (224.6 – 235.4 °F)**

Oil pressure switch (all engines)

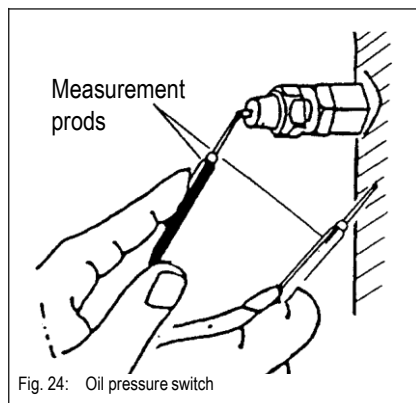


Fig. 24: Oil pressure switch

- ☞ Remove the cable connection from the oil pressure switch (in the area of the cutoff solenoid)
- ☞ Start the diesel engine
- ☞ Measure the resistance of the oil pressure switch as shown by means of an ohmmeter.
 - ➔ Oil pressure switch OK: infinite resistance
 - ➔ The oil pressure switch is defective if the oil can pass

Checking the coolant circuit (all engines)

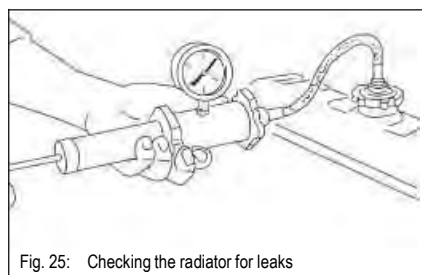


Fig. 25: Checking the radiator for leaks

Leakage check

- ☞ Fill up the radiator completely
- ☞ Mount an adapter on the radiator as shown
- ☞ Increase the pressure in the cooling system by means of a hand pump to about **1 bar (15 psi)**
 - ➔ Check the lines and the connections for leaks if the pressure drops at the pressure gauge

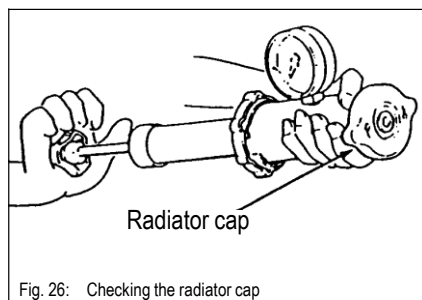


Fig. 26: Checking the radiator cap

Checking the radiator cap

- ☞ Remove the radiator cap and mount it onto the adapter as shown
- ☞ Increase the pressure to about 1 bar / 15 psi (stamped onto the radiator cap) with the hand pump
 - ➔ The radiator cap must open



D.5 Engine trouble

Problem	Possible causes
Engine does not start or is not easy to start	No fuel
	Air in fuel system
	Wrong SAE grade of engine lubrication oil
	Fuel grade does not comply with specifications
	Defective or flat battery
	Loose or oxidised cable connections in starter circuit
	Defective starter, or pinion does not engage
	Wrong valve clearance
	Defective fuel injector
	Defective starting relay
	Defective glow plug
	Defective solenoid switch
	Cutoff solenoid does not attract
	Cutoff solenoid without current
	High pressure created immediately in the hydraulic system
Engine starts, but does not run smoothly or faultless	Fuel grade does not comply with specifications
	Wrong valve clearance
	Injection line leaks
	Defective fuel injector
	Air in fuel system
Engine overheats. Temperature warning system responds	Oil level too low
	Damaged water pump
	Oil level too high
	Dirty air filter
	Dirty cooler fins
	Defective fan, torn or loose V-belt
	Defective thermostat
	Resistance in cooling system too high, flow capacity too low
	Defective fuel injector
Insufficient engine output	Oil level too high
	Fuel grade does not comply with specifications
	Dirty air filter
	Wrong valve clearance
	Air in fuel system
	Injection line leaks
	Defective fuel injector



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



CHAPTER E:

Electric

(Neuson Service Manual\ 2503 - 3703)





Neuson Baumaschinen

Erstellt, Michael Keplinger 12.09.00

Name Beschreibung

AB1	Abstellmagnet	513	Otdruckschalter
81	Batteria	514	WassertemperaturOhler
G1	Lichtmaschine	515	Druckschalter Luftfilter verschmutz
		516	<i>Option Oberlastwameinrichtung einschalten</i>
		517	<i>Option Ruckfahrscheinwerfer Kabine</i>
H1	Armscheinwerfer	518	<i>Option Dachscheinwerfer Kabine</i>
H2	<i>Option Dachscheinwerfer</i>	519	ZOndschlofl.
H3	<i>Option Dachscheinwerfer</i>	520	Lichtschalter Armscheinwerfer
H4	<i>Option Drehleuchte</i>	521	Schnellfahrschalter
H5	<i>Option Arbeits / Ruckfahrscheinwerfer</i>	522	HeizungsiOfterschalter
H6	Innenbeleuchtung Kabine	523	Scheibenwischer / Scheibenwaschanlage
HA1	Horn	Si1	Hauptsicherung 1: 50 A
		Si2	Hauptsicherung 2: 20 A
K1	VorgiOhrelais	Vgl	GIOhkerzen
K2	Abstellrelais	X1	Hauptstecker Motorkabelbaum 8 polig
		X2	Masse Motorkabelbaum 1polig
M1	Starter	X3	Starter / Abstellmagnet Motorkabelbaum 2 polig
M2	HeizungsiOfter	X4	Hauptplus, VorgiOheinrichtung Motorkabelbaum 2 polig
M3	Scheibenwaschanlage	X5	Hauptstecker Chassiskabelbaum 13 polig
M4	Scheibenwischer	X6	Masse Chassiskabelbaum 1 polig
		X7	Hauptstecker Kabine 12 polig
51	Taster Hupe	X8	Steckdose / ZigarettenanzOnder Kabine
52	Taster Schnellfahren	X9	<i>Option Ruckfahrwamscheinwerfer</i>
53	Sicherheitsschalter ==> Vorsteuerdruck ein	X10	Steckdose Motorraum
54	Taster Hubarm schwenken	X11	<i>Option Motorraumbeleuchtung (15)</i>
55	<i>Option Zusatzhydraulik</i>	Y1	Schnellfahrventil
56	<i>Option Zusatzhydraulik</i>	Y2	Sicherheitsventil
57	Taster Hubarm / Planierschild	Y3	Wechselventil Hubarm / Planierschild
58	<i>Option Titt Taster</i>	Y4	Wechselventil Schwenken / Zusatzhydraulik
59	<i>Option Druckschalter Oberlastwameinrichtung</i>	Y5	<i>Option Zusatzhydraulik: 3. Steuerkreis</i>
510	<i>Option Druckschalter ROckfahrwameinrichtung</i>	Y6	<i>Option Zusatzhydraulik: 3. Steuerkreis</i>
511	Tankniveau auf Minimum	Y7	<i>Option Tiltventil</i>
512	Druckschalter Hydraulikolfilter verschmutzt		



Neuson Baumaschinen

Erstellt, Michael Keplinger 12.09.00

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bn
gn
viol
ge
or
bl
gr
rosa
gr / bl
gnlsw
rt / sw
blirt
gr / rt
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hbl / rt
-gelsw
violw
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or / sw
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bn /w
gn /w
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blsw
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w / sw /w

Deutsch

schwarz
rot
weiß
braun
grün
violett
gelb
orange
blau
grau
rosa
grau / blau
grün / schwarz
rot / schwarz
blau / rot
grau / rot
weiß / schwarz
blau / schwarz
hellblau / rot
gelb / schwarz
violett / weiß
orange / weiß
orange / schwarz
braun / schwarz
braun /weiß
grün /weiß
blau.f gelb
violett / grün
blau / schwarz
rot / schwarz gepunktet
weiß / schwarz gepunktet

Englisch

black
red
white
brown
green
violet
yellow
orange
blue
grey
pink
grey / blue
green / black
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blue / red
grey / red
white / black
blue / black
lightblue / red
yellow / black
violet / white
orange / white
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brown / black
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Bagger
Serie 25-30-35

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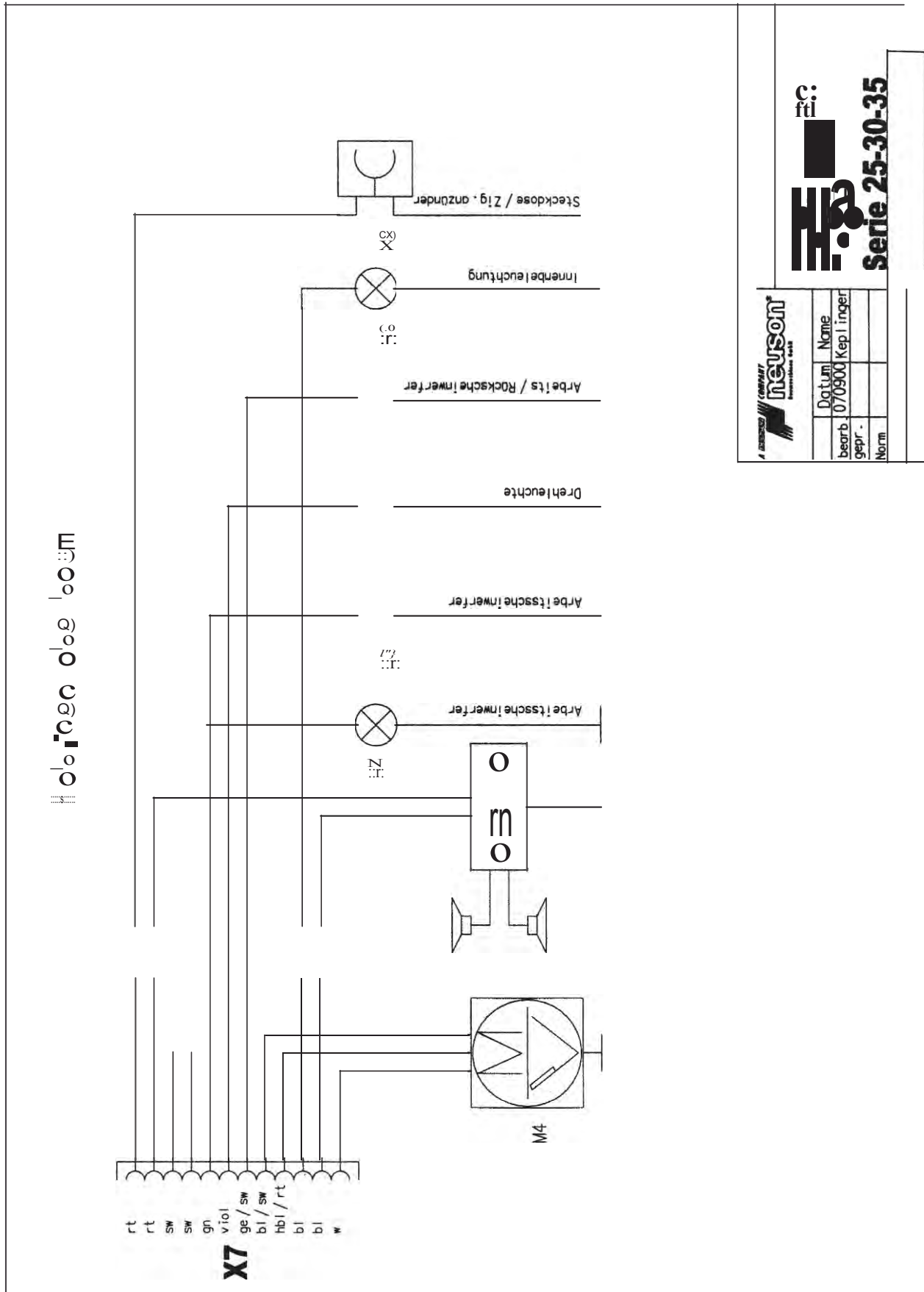
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SERVICE MANUAL

2503- 3703

Electric

Fig.: Electric wiring diagram 2503- 3703 (valid: Fabr.No.: AB00001 - AC09999)



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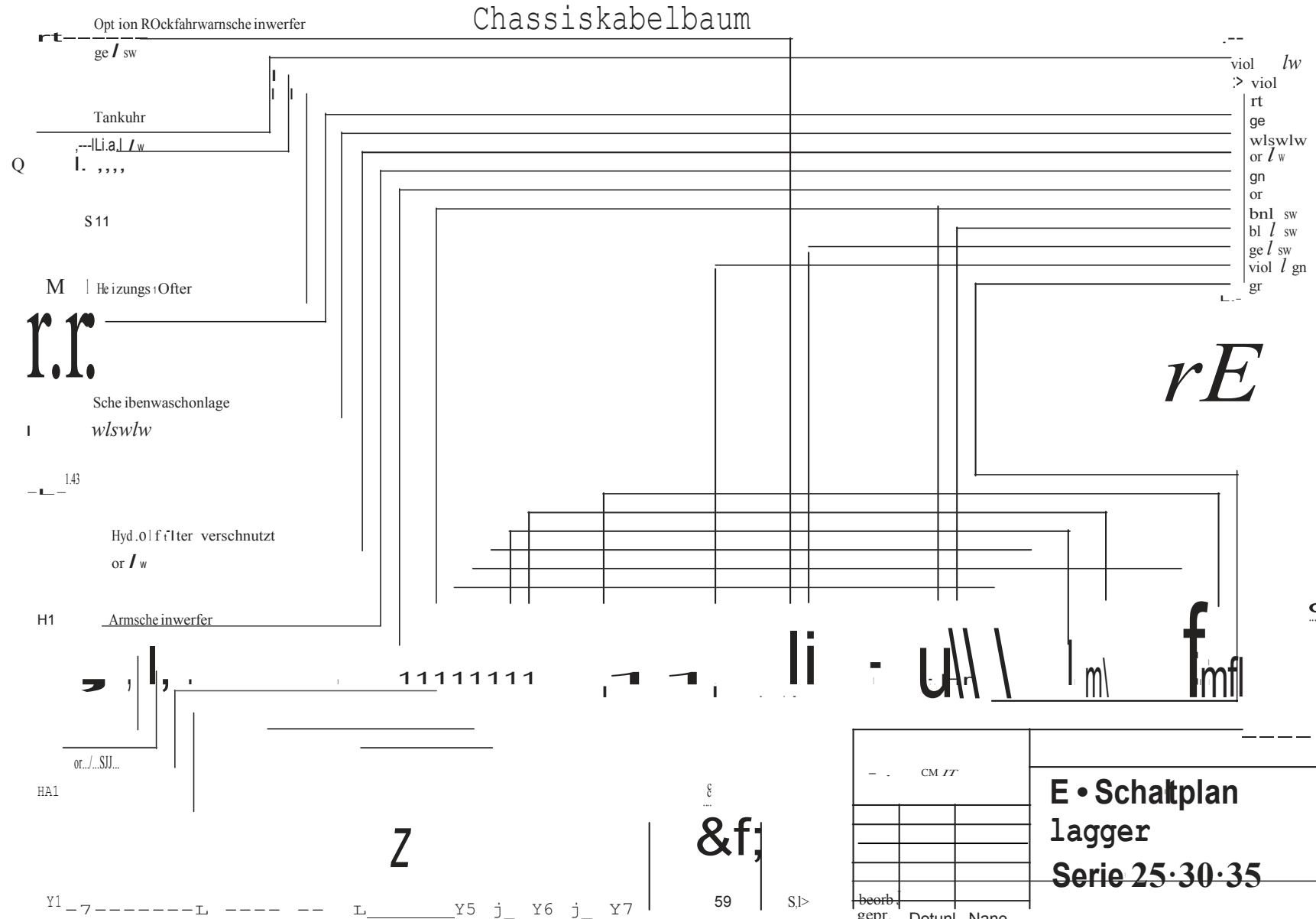


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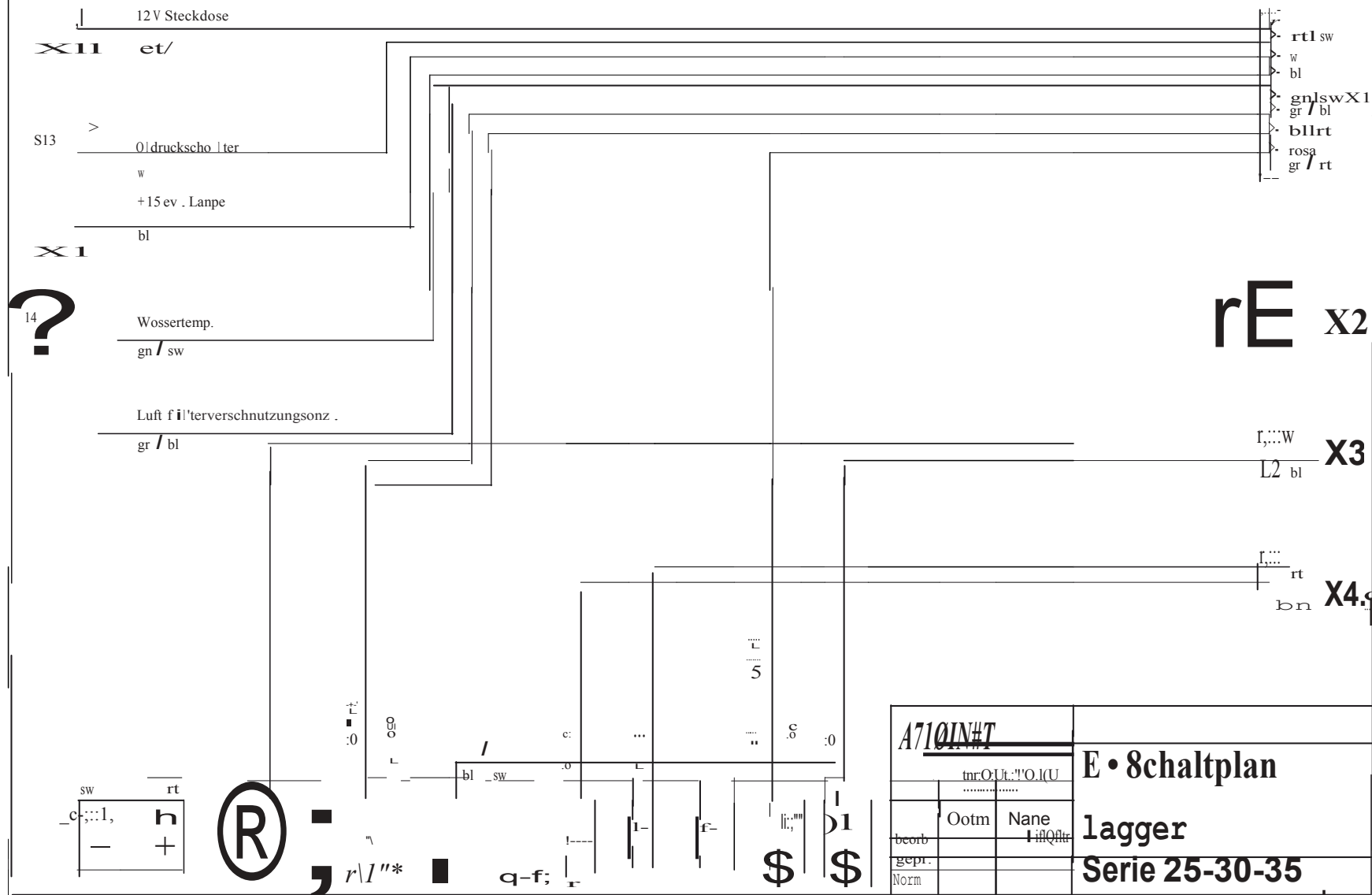
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Serie 25-30-35

1. DIAGRAM

for Yanmar Dieselmotoren I starting Fabr.No. AD00001

Komponenten ste | Legend e electr c d agram 3-3 3

	horn	upe
3	ue eve sensor	o ese tank geber

G	a ternator	L chtmasch ne
---	------------	---------------

3	arm ght	Armsche nwer er
	contro amp preheat ng	Kontro ampe Vorg iDhen
3	contro amp oad contro	Kontro ampe Ladek onto e
	contro amp eng ne temperature	Kontro ampe Motortemperatur
	contro amp eng ne o pressure	Kontro ampe Mоторo druck
	contro amp a r ter c ogged	Kontro ampe Lu t terverschmutzung
	contro amp hhdrau c o ter c ogged	Kontro ampe hhdrau ko terverschmutzung
	contro amp over oad warn ng	Kontro ampe Ober astwarnung
	ndoor ght ng	nnenbe euchtung
	cab n roo ght ront	oachsche nwer er vome
	cab n roo ght back	oachsche nwer er h nten
	rotat ng amp	oreh euchte

K	t mer preheat ng sec	T mer Vorg iDhen sec
K	start ng re a s	Startre a s
K	so eno d eng ne stop t mer	Ze tre a s Abste magnet
K	so eno d eng ne stop	Re a s Abste magnet Z ehkontak t

M	heat ng van	e zungs iD ter
M	starter	Starter
M	wndscreen wper	Sche benw schermotor
M	wndscreen washer	Sche benwaschpumpe

S	a ternator speed p ck up	orehzah s gna L chtmasch ne
S	water temperature swtch	Wassertemperaturscha ter
S	a r ter s c ogged	Scha ter Lu t ter verschmutzt
S	eng ne o pressure	Mоторo druck
S	3rd hhdrau k c rcu t button	Taster 3 Steuerkre s
S	boom sw ng l extended hhdrau c button	Taster ZusatzhhdriSchwenken
S	3rd hhdrau k c rcu t button	Taster 3 Steuerkre s
S	sa eth swtch e t	S cherhe tsscha ter rechts
S	ast speed swtch	Schne ahrscha ter
S	pressure swtch over oad warn dev ce	oruckscha ter Ober astwarne nr chtung
S	hhdrau ko ter s c ogged	hhdrau ko ter st verschmutzt
S	wndscreenw per l washer	Sche benw scher l wascher
S	heat ng van swtch	Scha ter e zung
S	ast speed swtch	Schne ahrscha ter
S	arm ght swtch	Armsche nwer er Scha ter
S	start ng swtch	ZiDndsch oss
S	rotat on ght swtch	Scha ter oreh euchte
S	swtch over oad warn dev ce	Scha ter Ober astwarne nr chtung



Komponenten ste | Legend e electr c d agram 3-3 3

S 3	switch roof light	Schalter Dachschneider
S	switch shield boom	Taster Hubarm I P anersch d
S3	pressure switch back drive warn-s gna	Druckschalter Rückfahr Warn-S gna
S33	switch t t valve	Taster T t-Vent

R	preheat ng	Vorg idhan age
---	------------	----------------

X	cigarette lighter	Zigarettenanz iDnder
X	main connector engine cab e tree	auptstecker Motorkabe baum
X	main connector engine cab e tree	auptstecker Motorkabe baum
X	some engine relays	enge Motorre a s
X	alternator load control	Lichtmaschine Ladekontrol elErregung
X	alternator main plus	Lichtmaschine auptplus
X	starter main plus	Starter auptplus
X	starter solenoid	Starterrr tze Spule
X	main connector armrest cab e tree	auptstecker Armlehnenkabe baum
X	ground	Masse
X	socket	Steckdose
X	connector to horn button	Stecker upentaster
X	connector ant theft device	Stecker o ebstah s cherung
X	cab n connector	Kab nenstecker
X	connector instrument panel	Stecker Anze ge nstrument

	boom swing extended hydraulic valve	Armschwenk Zusatzhydraulik Vent
3	3 rd hydraulic circuit	3 Steuerkre s
	3 rd hydraulic circuit	3 Steuerkre s
	safety valve	Sicherheitsvent
	fast speed valve	Schnellfahrvent
	shut up down	P anersch d au ab
	t t valve	T t Vent

	switch lights, control amps	Schalterbeleuchtung, Kontrollampen, Motorre a s
	lights arm, cab n	eleuchtung Hubarm, Dachschneider
3	V Cab n	VI Kab ne
	heating fan, horn	heizung, upe
	valves	Vent e
	windscreen wiper, cab n	Scheibenwischer, Kab ne
	alternator	Erregung Lichtmaschine
	res	res
	rotating light, cab n, ant theft device	orehleuchte, Rad o, Zigarettenanz , o ebstah s ch
	socket	Steckdose
	res	res

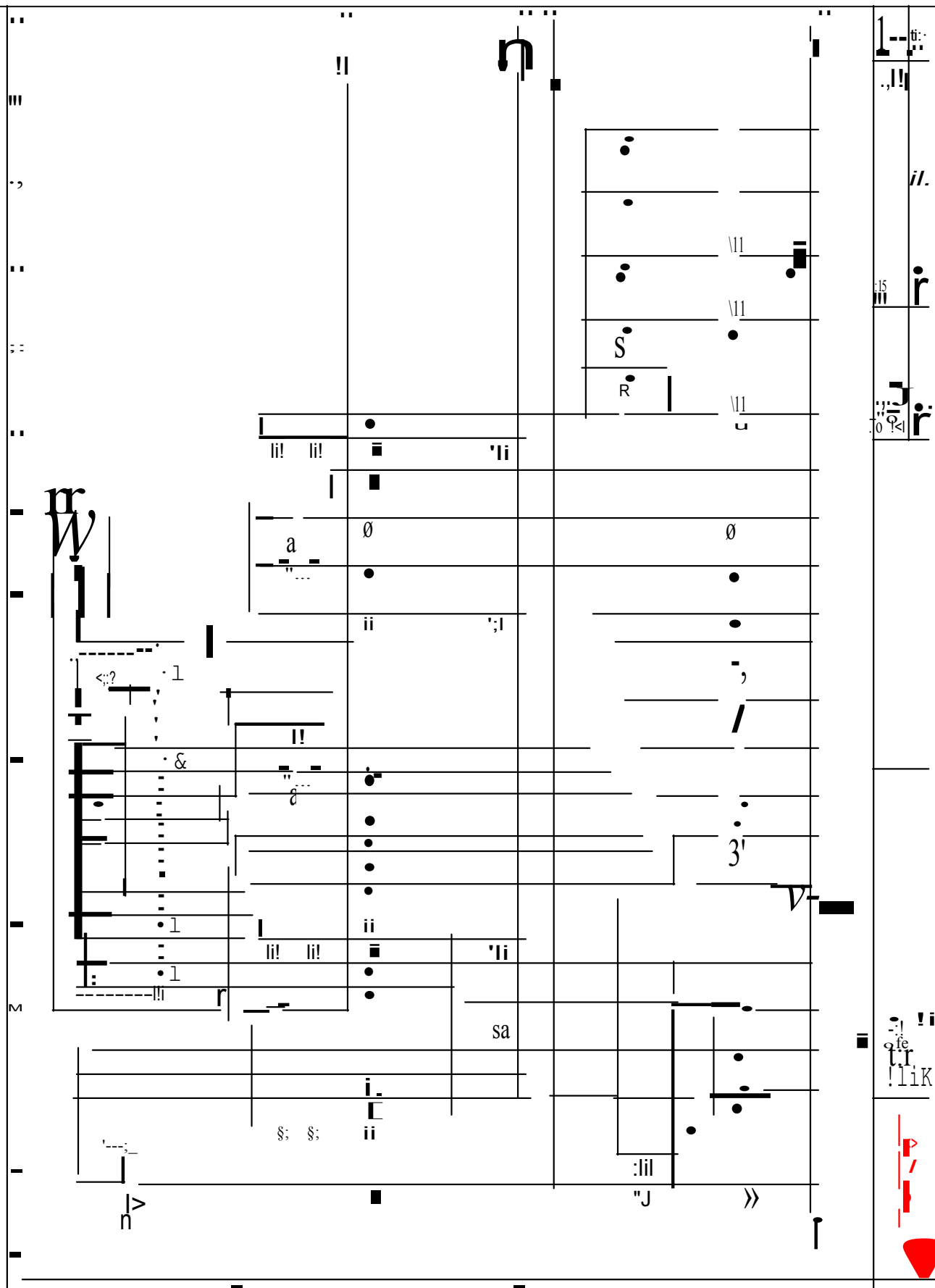
Q	main use	auptcherung
Q	main use	auptcherung



Electric

SERVICE MANUAL 2503- 3703

Fig. Electric wiring diagram 2503- 3703 (valid Fabr.No. A0:J0001 and higher)



This image displays a page from a musical score, likely for a 12-part ensemble. The score is written on 12 staves, each with a unique clef and key signature. The notation is highly complex, featuring a variety of note values, rests, and dynamic markings. The instruments and parts are labeled as follows:

- Flute 1 (Fl 1):** Treble clef, key signature of one sharp (F#).
- Flute 2 (Fl 2):** Treble clef, key signature of one sharp (F#).
- Oboe (Ob):** Treble clef, key signature of one sharp (F#).
- Clarinet 1 (Cl 1):** Treble clef, key signature of one sharp (F#).
- Clarinet 2 (Cl 2):** Treble clef, key signature of one sharp (F#).
- Bassoon (Bsn):** Treble clef, key signature of one sharp (F#).
- Double Bassoon (Dbn):** Treble clef, key signature of one sharp (F#).
- Trumpet 1 (Tr 1):** Treble clef, key signature of one sharp (F#).
- Trumpet 2 (Tr 2):** Treble clef, key signature of one sharp (F#).
- Trumpet 3 (Tr 3):** Treble clef, key signature of one sharp (F#).
- Trombone 1 (Tbn 1):** Bass clef, key signature of one sharp (F#).
- Trombone 2 (Tbn 2):** Bass clef, key signature of one sharp (F#).
- Trombone 3 (Tbn 3):** Bass clef, key signature of one sharp (F#).
- Baritone (Bar):** Bass clef, key signature of one sharp (F#).
- Bass (B):** Bass clef, key signature of one sharp (F#).

The score includes a variety of musical notations, including notes, rests, and dynamic markings. The notation is highly complex, featuring a variety of note values, rests, and dynamic markings. The instruments and parts are labeled as follows:

- Flute 1 (Fl 1):** Treble clef, key signature of one sharp (F#).
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- Baritone (Bar):** Bass clef, key signature of one sharp (F#).
- Bass (B):** Bass clef, key signature of one sharp (F#).

Electric

SERVICE MANUAL 2503 - 3703

Pict : Relais position



Pict: Position relais + main fuse



Tab: Fuse box

The fuses are integrated into the instrument panel.
The main fuse 50 amps for ignition, glow plug

No.	Capacity (A)	Application
1	10	switch lights
2	15	lights arm, cabin
3	10	12V/15 cabin
4	15	Heating, horn
5	10	Valves
6	10	Windshield wiper and washer
7	10	Generator
8	reserve	reserve
9	10	12V/30 cabin
10	10	socket
11	10	reserve

4		8
	11	
3		7
	10	
2		6
	9	
1		5



neuson



Wiring harnesses: overview

Wiring diagrams include all options.

E.1 Wiring diagram A4 legend

No.	Description	Section
B2	Horn	(2) E4
B3	Fuel level sensor	(1) F8
G1	Alternator	(1) F3
H3	Arm light	(1) F9
H12	Control lamp preheating	(1) A4
H13	Control lamp load control	(1) A4
H14	Control lamp engine temperature	(1) A4
H15	Control lamp engine oil pressure	(1) A4
H16	Control lamp air filter clogged	(1) A4
H17	Control lamp hydraulic oil filter clogged	(1) A5
H18	Control lamp overload warning	(1) A5
H19	Indoor lighting	(2) E6
H20	Cabin roof light front	(1) F9
H21	Cabin roof light back	(1) F10
H22	Rotating lamp	(2) E8
K2	Timer preheating 10 sec.	(1) B3
K4	Starting relais	(1) E2
K5	Solenoid engine stop timer	(1) E4
K6	Solenoid engine stop	(1) F4
M1	Heating van	(2) E3
M5	Starter	(1) F2
M6	Windscreen washer	(2) E3
M7	Windscreen wiper	(2) E2
M9	Dieselpump	(1) F5
S1	Alternator speed pick up	
S2	Water temperature switch	(1) F5
S4	Air filter is clogged	(1) F7
S5	Engine oil pressure	(1) F6
S6	3rd hydraulic circuit button	(1) E13
S7	Boom swing / extended hydraulic button	(1) E12
S8	3rd hydraulic circuit button	(1) E13
S10.2	Safety switch left	(1) E12
S11	Fast speed switch	(1) E11
S12	Pressure switch overload warn device	(1) F8
S14	Hydraulic oil filter is clogged	(1) F7
S15	Windscreen wiper / - washer	(2) B1
S16	Heating van switch	(2) B3
S17	Fast speed switch	(1) E11

No.	Description	Section
S18	Arm light switch	(1) B9
S20	Starting switch	(1) A1
S21	Rotation light switch	(2) B8
S22	Switch overload warn device	(1) B6
S23	Switch roof light	(1) B9
S27	Switch shield / boom	(1) E14
S32	Pressure switch back drive warn-signal	(2) D4
S33	Switch tilt valve	(1) E14
R1	Preheating	(1) F2
X0	Cigarette lighter	(2) E/F6
X1	Main connector engine cable tree	
X2	Main connector engine cable tree	
X4	Some engine relays	
X5	Alternator load control	
X6	Alternator main plus	
X9	Starter main plus	
X10	Starter solenoid	
X17	Main connector armrest cable tree	
X18	Ground	
X19	Socket	(2) E/F9
X26	Connector to horn button	(2) E/F4
X27	Connector anti theft device	
X28	Cabin connector	
X29	Connector instrument panel	(1) B3-7
Y2	Boom swing / extended hydraulic valve	(1) F12
Y3	3rd hydraulic circuit	(1) F13
Y4	3rd hydraulic circuit	(1) F13
Y5	Safety valve	(1) F12
Y6	Fast speed valve	(1) F11
Y9	Shiel up / down	(1) F14
Y10	Tilt valve	(1) F14
F1	Switch lights, control lamps	(1) D4
F2	Light arms, cabin	(1) D8
F3	12V / 15 Cabin	(2) D5
F4	Heating van, horn	(2) D3
F5	Valves	(1) D10
F6	Windscreen wiper, cabin	(2) D1
F7	Alternator	(1) D3

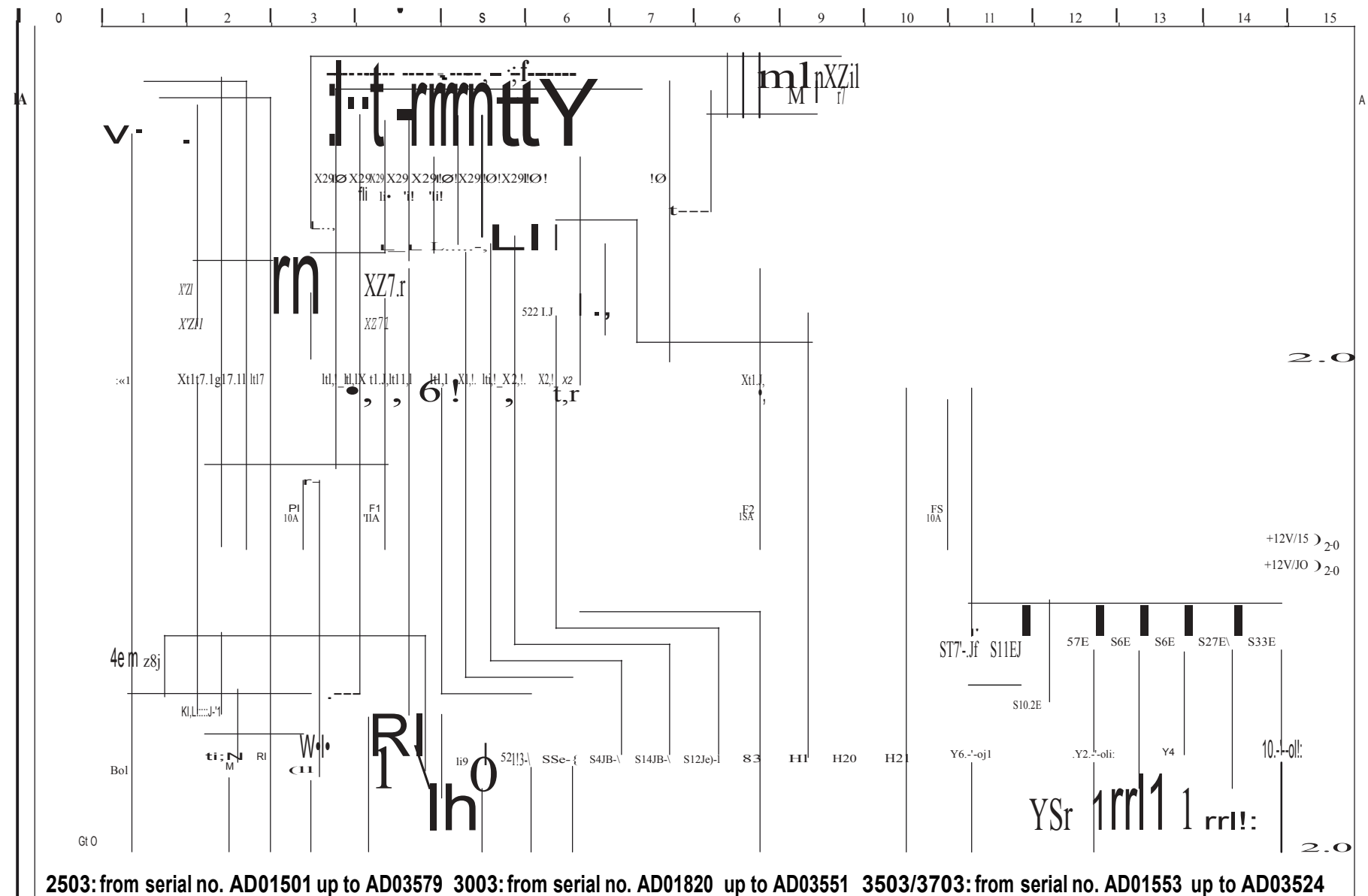
No.	Description	Section
F8	res	(2) D10
F9	Rotating light, cabin, anti theft device	(2) D7
F10	Socket	(2) D9
F11	res	(2) D10/11
Q1	Main fuse	(1) E1
Q2	Main fuse	(1) E1

2503: from serial no. AD01501 up to AD03579

3003: from serial no. AD01820 up to AD03551

3503/3703: from serial no. AD01553 up to AD03524

2 Wiring diagram A4 (1)



$$\frac{\mathbf{m}}{\mathbf{c}}^{(1)} - \frac{\mathbf{3}}{\mathbf{c}}^{(1)}$$


E.4 Wiring diagram A4 legend

No.	Description	Section
B2	Horn	D12
B3	Fuel level sensor	F8
G1	Alternator	F2
H3	Arm light	F6/7
H12	Control lamp preheating	A4
H13	Control lamp load control	A4
H14	Control lamp engine temperature	A4
H15	Control lamp engine oil pressure	A4
H16	Control lamp air filter clogged	A4
H17	Control lamp hydraulic oil filter clogged	A5
H18	Control lamp overload warning	A5
H19	Indoor lighting	F15
H20	Cabin roof light front	F14
H21	Cabin roof light back	F14
H22	Rotating lamp	F14
K2	Timer preheating 10 sec.	A3
K4	Starting relais	E1
K5	Solenoid engine stop timer	E3
K6	Solenoid engine stop	E3
M1	Heating van	E12
M5	Starter	F1/2
M6	Windscreen washer	F7
M7	Windscreen wiper	E14
M9	Dieselpump	F3
S1	Alternator speed pick up	
S2	Water temperature switch	F5
S4	Air filter is clogged	E4
S5	Engine oil pressure	E5
S6	3rd hydraulic circuit button	E9
S7	Boom swing / extended hydraulic button	E9
S8	3rd hydraulic circuit button	E10
S10.2	Safety switch left	
S11	Fast speed switch	E11
S12	Pressure switch overload warn device	F12
S14	Hydraulic oil filter is clogged	E7
S15	Windscreen wiper / - washer	B14
S16	Heating van switch	B9
S17	Fast speed switch	E11

No.	Description	Section
S18	Arm light switch	B8
S20	Starting switch	A1
S21	Rotation light switch	B12
S22	Switch overload warn device	B10
S23	Switch roof light	B13
S27	Switch shield / boom	E8
S32	Pressure switch back drive warn-signal	D/E7
S33	Switch tilt valve	E11
R1	Preheating	F1
X0	Cigarette lighter	E13
X1	Main connector engine cable tree	C3
X2	Main connector engine cable tree	C8
X4	Some engine relays	
X5	Alternator load control	
X6	Alternator main plus	
X9	Starter main plus	
X10	Starter solenoid	
X17	Main connector armrest cable tree	D0
X18	Ground	
X19	Socket	F6
X26	Connector to horn button	E12
X27	Connector anti theft device	
X28	Cabin connector	D13
X29	Connector instrument panel	A3-5
Y2	Boom swing / extended hydraulic valve	F9
Y3	3rd hydraulic circuit	F9
Y4	3rd hydraulic circuit	F10
Y5	Safety valve	F10
Y6	Fast speed valve	F11
Y9	Shiel up / down	F8
Y10	Tilt valve	F11
F1	Switch lights, control lamps	D2
F2	Light arms, cabin	D4
F3	12V / 15 Cabin	D5
F4	Heating van, horn	D4/5
F5	Valves	D6
F6	Windscreen wiper, cabin	D5
F7	Alternator	D3

No.	Description	Section
F8	res	D6/7
F9	Rotating light, cabin, anti theft device	D4
F10	Socket	E6
F11	res	E6/7
Q1	Main fuse	E0
Q2	Main fuse	E1

2503: from serial no. AD03580

3003: from serial no. AD03552

3503 / 3703: from serial no. AD03525

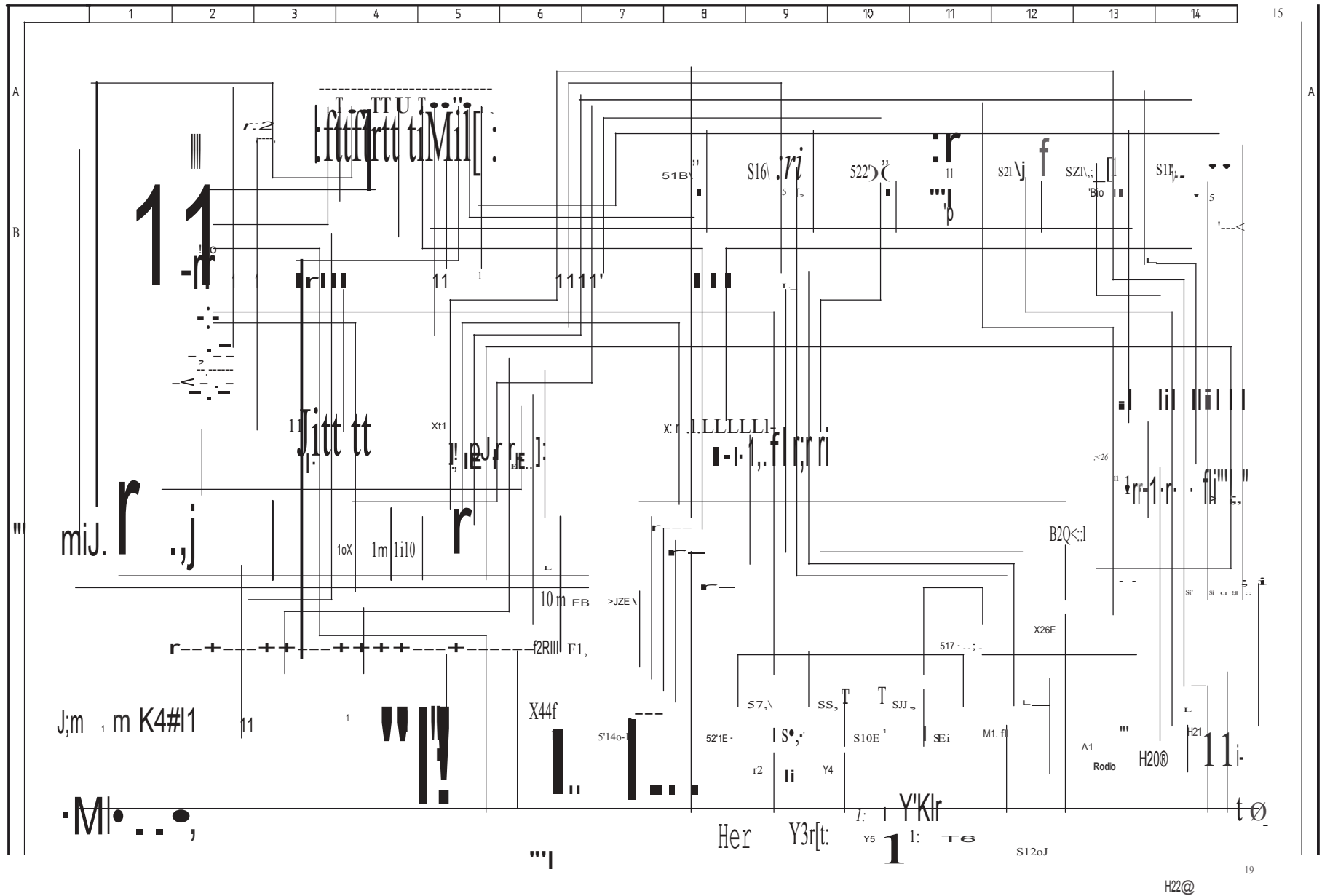


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Electric system

T E.5 Wiring diagram A4

CD



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

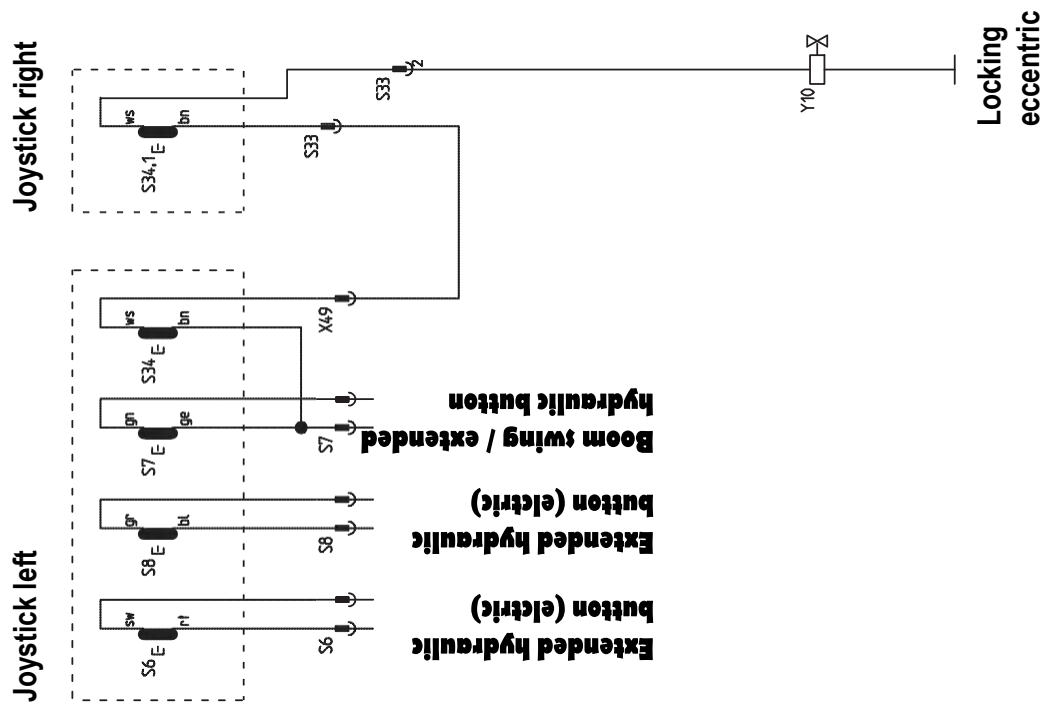
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15
W
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w
s:

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(3)
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C
U



E.6 Wiring diagram 3503 Vario (option)





Wiring harnesses: overview

Wiring diagrams include all options.

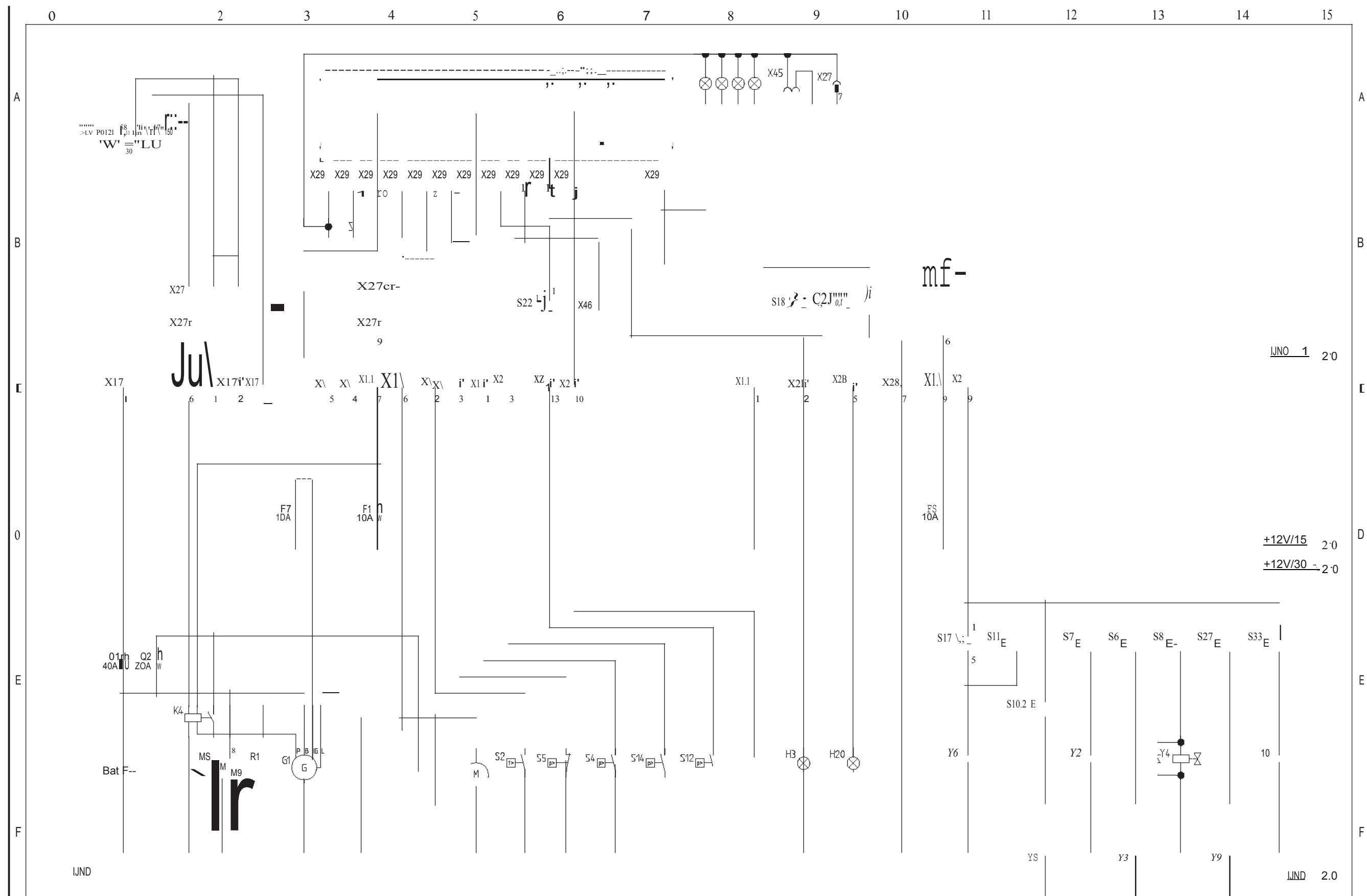
E.1 Wiring diagram A3 legend

No.	Description	Section
B2	Horn	(2) E4
B3	Fuel level sensor	(1) F8
G1	Alternator	(1) F3
H3	Arm light	(1) F9
H12	Control lamp preheating	(1) A4
H13	Control lamp load control	(1) A4
H14	Control lamp engine temperature	(1) A4
H15	Control lamp engine oil pressure	(1) A4
H16	Control lamp air filter clogged	(1) A4
H17	Control lamp hydraulic oil filter clogged	(1) A5
H18	Control lamp overload warning	(1) A5
H19	Indoor lighting	(2) E6
H20	Cabin roof light front	(1) F9
H21	Cabin roof light back	(1) F10
H22	Rotating lamp	(2) E8
K2	Timer preheating 10 sec.	(1) B3
K4	Starting relais	(1) E2
K5	Solenoid engine stop timer	(1) E4
K6	Solenoid engine stop	(1) F4
M1	Heating van	(2) E3
M5	Starter	(1) F2
M6	Windscreen washer	(2) E3
M7	Windscreen wiper	(2) E2
M9	Dieselpump	(1) F5
S1	Alternator speed pick up	
S2	Water temperature switch	(1) F5
S4	Air filter is clogged	(1) F7
S5	Engine oil pressure	(1) F6
S6	3rd hydraulic circuit button	(1) E13
S7	Boom swing / extended hydraulic button	(1) E12
S8	3rd hydraulic circuit button	(1) E13
S10.2	Safety switch left	(1) E12
S11	Fast speed switch	(1) E11
S12	Pressure switch overload warn device	(1) F8
S14	Hydraulic oil filter is clogged	(1) F7
S15	Windscreen wiper / - washer	(2) B1
S16	Heating van switch	(2) B3
S17	Fast speed switch	(1) E11

No.	Description	Section
S18	Arm light switch	(1) B9
S20	Starting switch	(1) A1
S21	Rotation light switch	(2) B8
S22	Switch overload warn device	(1) B6
S23	Switch roof light	(1) B9
S27	Switch shield / boom	(1) E14
S32	Pressure switch back drive warn-signal	(2) D4
S33	Switch tilt valve	(1) E14
R1	Preheating	(1) F2
X0	Cigarette lighter	(2) E/F6
X1	Main connector engine cable tree	
X2	Main connector engine cable tree	
X4	Some engine relays	
X5	Alternator load control	
X6	Alternator main plus	
X9	Starter main plus	
X10	Starter solenoid	
X17	Main connector armrest cable tree	
X18	Ground	
X19	Socket	(2) E/F9
X26	Connector to horn button	(2) E/F4
X27	Connector anti theft device	
X28	Cabin connector	
X29	Connector instrument panel	(1) B3-7
Y2	Boom swing / extended hydraulic valve	(1) F12
Y3	3rd hydraulic circuit	(1) F13
Y4	3rd hydraulic circuit	(1) F13
Y5	Safety valve	(1) F12
Y6	Fast speed valve	(1) F11
Y9	Shiel up / down	(1) F14
Y10	Tilt valve	(1) F14
F1	Switch lights, control lamps	(1) D4
F2	Light arms, cabin	(1) D8
F3	12V / 15 Cabin	(2) D5
F4	Heating van, horn	(2) D3
F5	Valves	(1) D10
F6	Windscreen wiper, cabin	(2) D1
F7	Alternator	(1) D3

No.	Description	Section
F8	res	(2) D10
F9	Rotating light, cabin, anti theft device	(2) D7
F10	Socket	(2) D9
F11	res	(2) D10/11
Q1	Main fuse	(1) E1
Q2	Main fuse	(1) E1

Wiring diagram (legend)**2503:** from serial no. AD01501 up to AD03579**3003:** from serial no. AD01820 up to AD03551**3503/3703:** from serial no. AD01553 up to AD03524


E.2 Wiring diagram A3 (1)


2503: from serial no. AD01501 up to AD03579 3003: from serial no. AD01820 up to AD03551 3503/3703: from serial no. AD01553 up to AD03524



Electric system

E.4 Wiring diagram A3 legend

No.	Description	Section
B2	Horn	D12
B3	Fuel level sensor	F8
G1	Alternator	F2
H3	Arm light	F6/7
H12	Control lamp preheating	A4
H13	Control lamp load control	A4
H14	Control lamp engine temperature	A4
H15	Control lamp engine oil pressure	A4
H16	Control lamp air filter clogged	A4
H17	Control lamp hydraulic oil filter clogged	A5
H18	Control lamp overload warning	A5
H19	Indoor lighting	F15
H20	Cabin roof light front	F14
H21	Cabin roof light back	F14
H22	Rotating lamp	F14
K2	Timer preheating 10 sec.	A3
K4	Starting relais	E1
K5	Solenoid engine stop timer	E3
K6	Solenoid engine stop	E3
M1	Heating van	E12
M5	Starter	F1/2
M6	Windscreen washer	F7
M7	Windscreen wiper	E14
M9	Dieselpump	F3
S1	Alternator speed pick up	
S2	Water temperature switch	F5
S4	Air filter is clogged	E4
S5	Engine oil pressure	E5
S6	3rd hydraulic circuit button	E9
S7	Boom swing / extended hydraulic button	E9
S8	3rd hydraulic circuit button	E10
S10.2	Safety switch left	
S11	Fast speed switch	E11
S12	Pressure switch overload warn device	F12
S14	Hydraulic oil filter is clogged	E7
S15	Windscreen wiper / - washer	B14
S16	Heating van switch	B9

No.	Description	Section
S17	Fast speed switch	E11
S18	Arm light switch	B8
S20	Starting switch	A1
S21	Rotation light switch	B12
S22	Switch overload warn device	B10
S23	Switch roof light	B13
S27	Switch shield / boom	E8
S32	Pressure switch back drive warn-signal	D/E7
S33	Switch tilt valve	E11
R1	Preheating	F1
X0	Cigarette lighter	E13
X1	Main connector engine cable tree	C3
X2	Main connector engine cable tree	C8
X4	Some engine relays	
X5	Alternator load control	
X6	Alternator main plus	
X9	Starter main plus	
X10	Starter solenoid	
X17	Main connector armrest cable tree	D0
X18	Ground	
X19	Socket	F6
X26	Connector to horn button	E12
X27	Connector anti theft device	
X28	Cabin connector	D13
X29	Connector instrument panel	A3-5
Y2	Boom swing / extended hydraulic valve	F9
Y3	3rd hydraulic circuit	F9
Y4	3rd hydraulic circuit	F10
Y5	Safety valve	F10
Y6	Fast speed valve	F11
Y9	Shiel up / down	F8
Y10	Tilt valve	F11
F1	Switch lights, control lamps	D2
F2	Light arms, cabin	D4
F3	12V / 15 Cabin	D5
F4	Heating van, horn	D4/5
F5	Valves	D6

No.	Description	Section
F6	Windscreen wiper, cabin	D5
F7	Alternator	D3
F8	res	D6/7
F9	Rotating light, cabin, anti theft device	D4
F10	Socket	E6
F11	res	E6/7
Q1	Main fuse	E0
Q2	Main fuse	E1

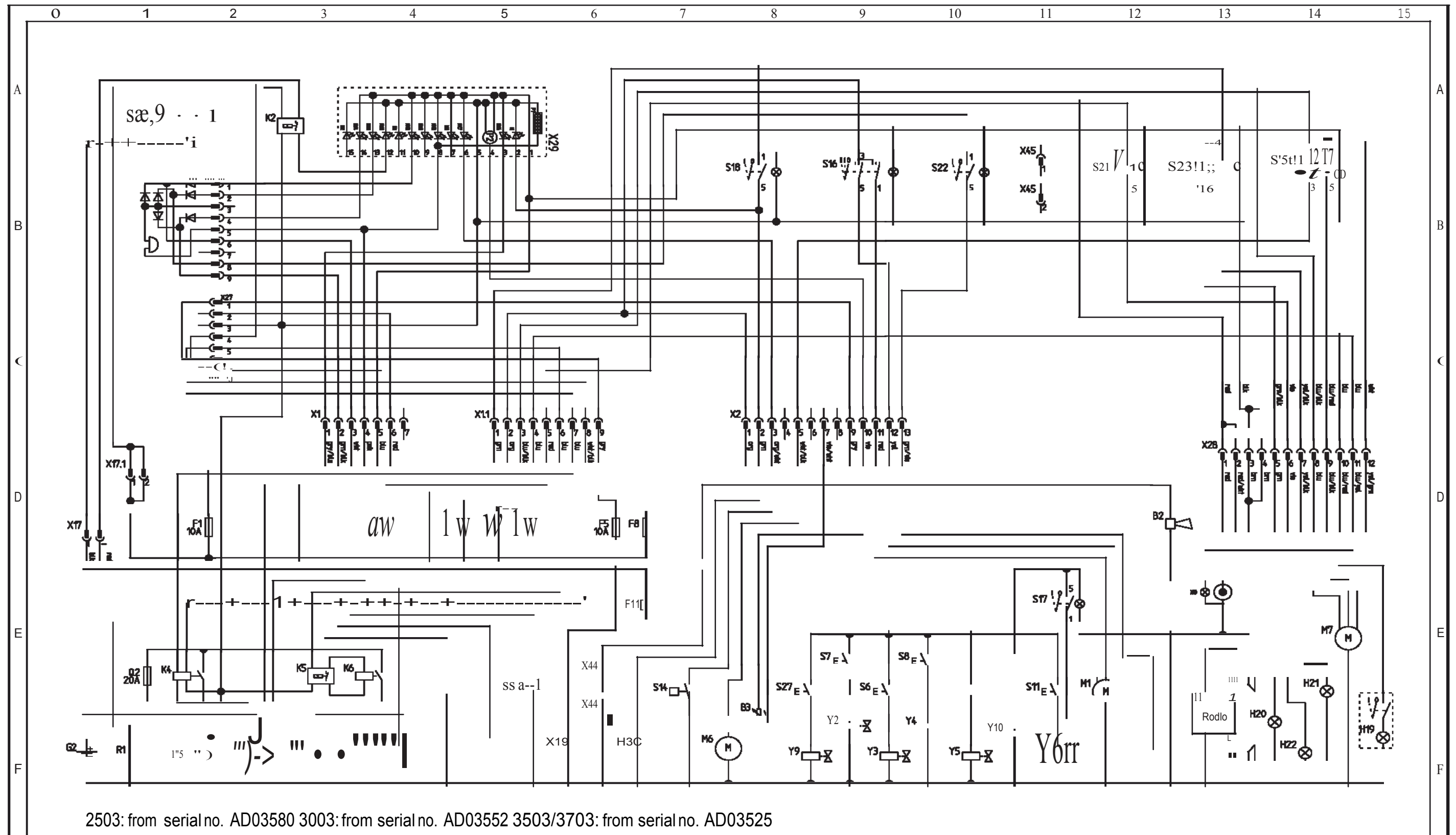
Wiring diagram (legend)

2503: from serial no. AD03580

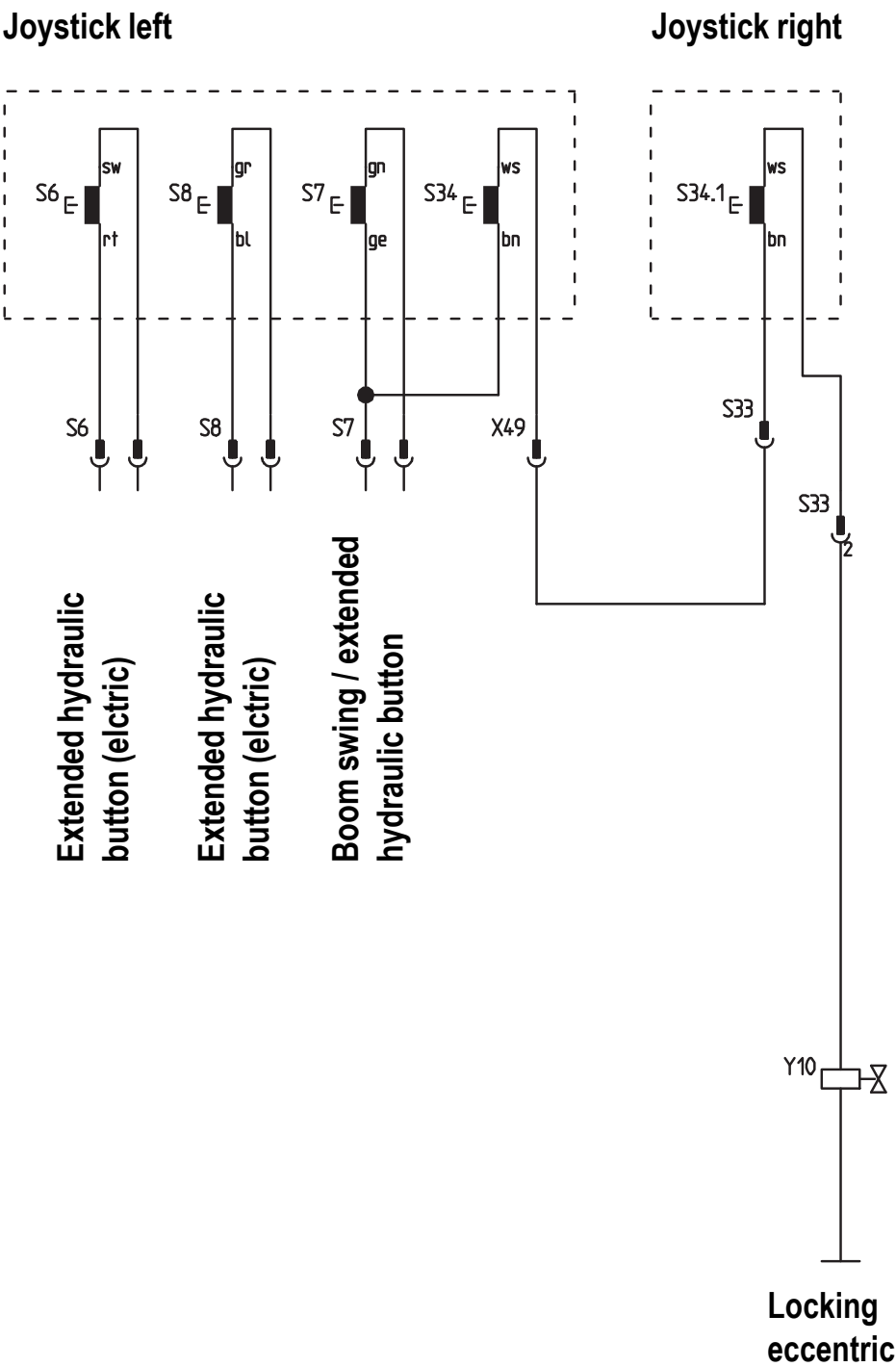
3003: from serial no. AD03552

3503 / 3703: from serial no. AD03525

E.5 Wiring diagram A3



E.6 Wiring diagram 3503 Vario (option)





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CHAPTER F:

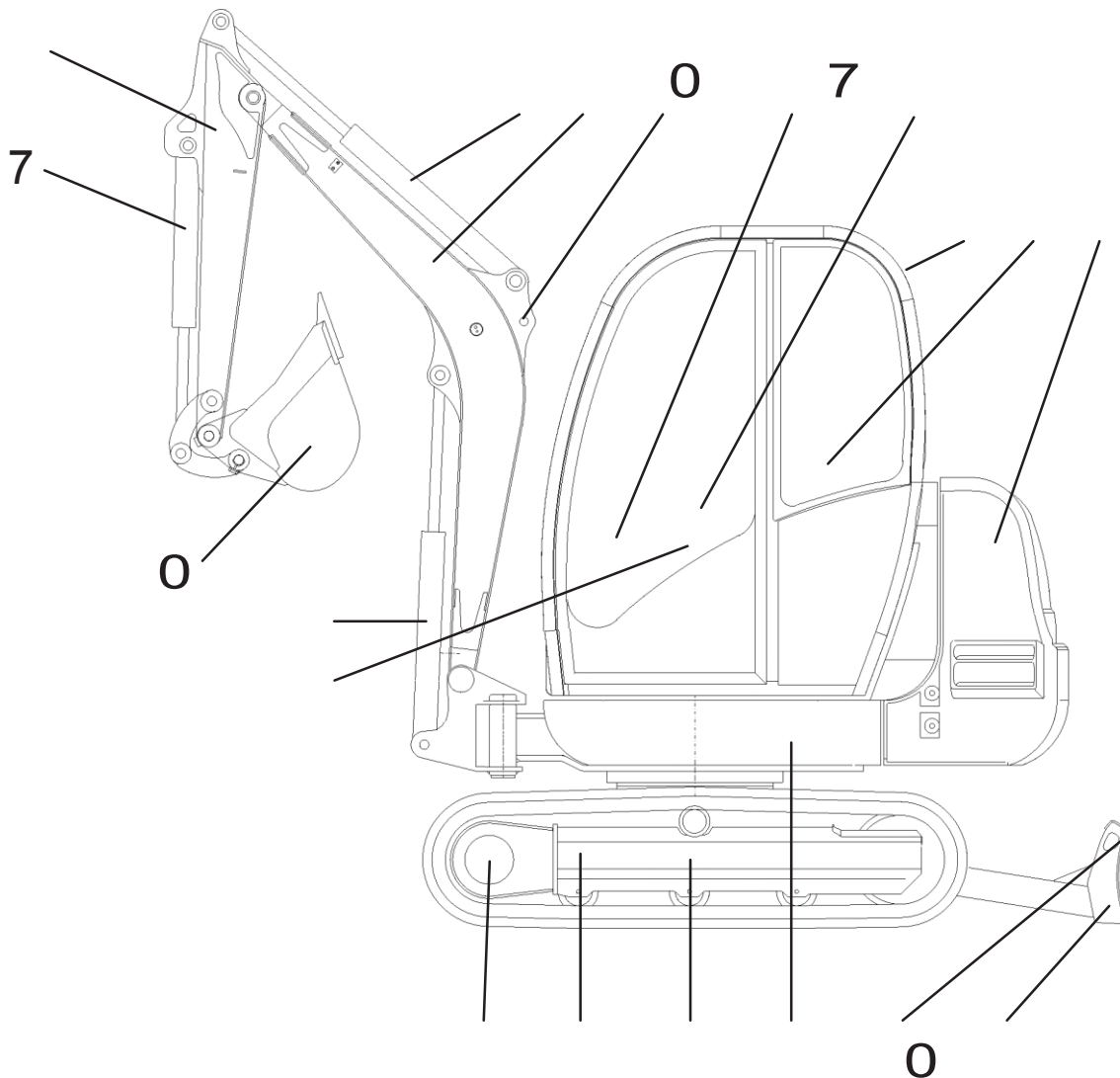
Operating elements

(Neuson Service Manual 2503 - 3703)



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Pict.: Major components



- 1 Bucket stick
- 2 Bucket stick cylinder
- 3 Boom
- 4 Cab
- 5 Driver's seat
- 6 Engine cover
- 7 Bucket cylinder
- 8 Left control lever
- 9 Right control lever
- 10 Bucket

- 11 Boom cylinder
- 12 Steering control console
- 13 Dozer blade
- 14 Under carriage
- 15 Chassis
- 16 Left drive lever
- 17 Right drive lever
- 18 Drive unit
- 19 Protective cover for track tensioner
- 20 Lifting eye



Cab equipment and controls

- 1 Drive pedals and levers with overdrive switch
- 2 Pedal for auxilliary hydraulic and arm-swing (by pressing the button on the left joystick)
- 3 Heating vents
- 4 Cigarette-ignitor
- 5 Lever to fold back the left armrest (Safety function: All hydraulic controlled functions are switched off, if the armrest is in back position)
- 6 Left Joystick
- 7 Instruments
- 8 Right Joystick (SNews 50/01- Step relay function boom/dozerblade)
- 9 Cables for opening the engine- and side valve bank cover
- 10 Switches and ignition lock

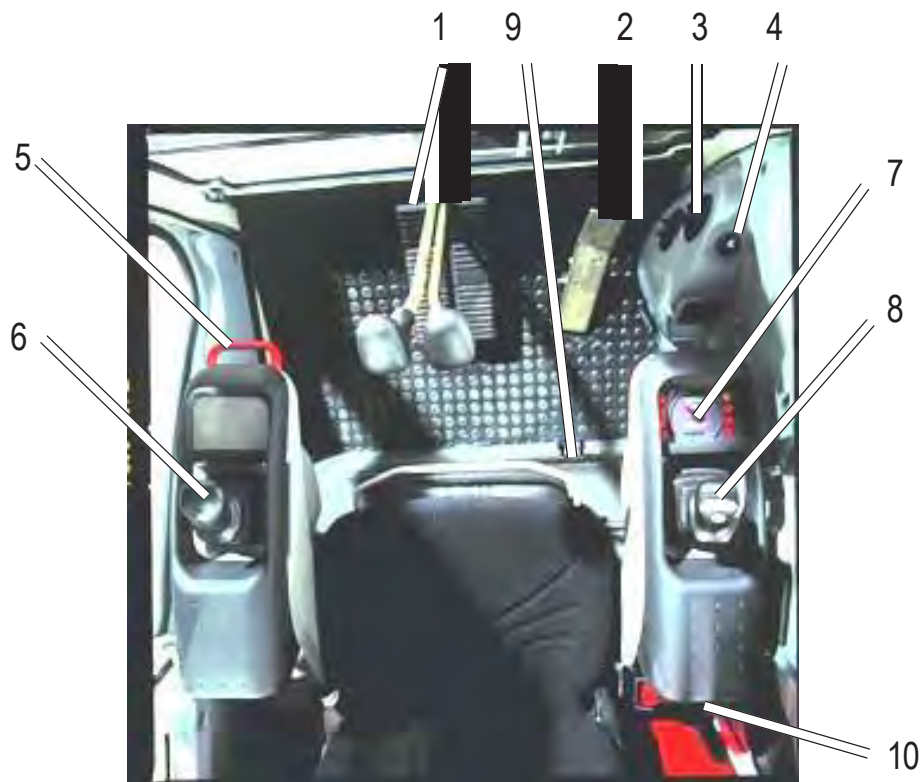
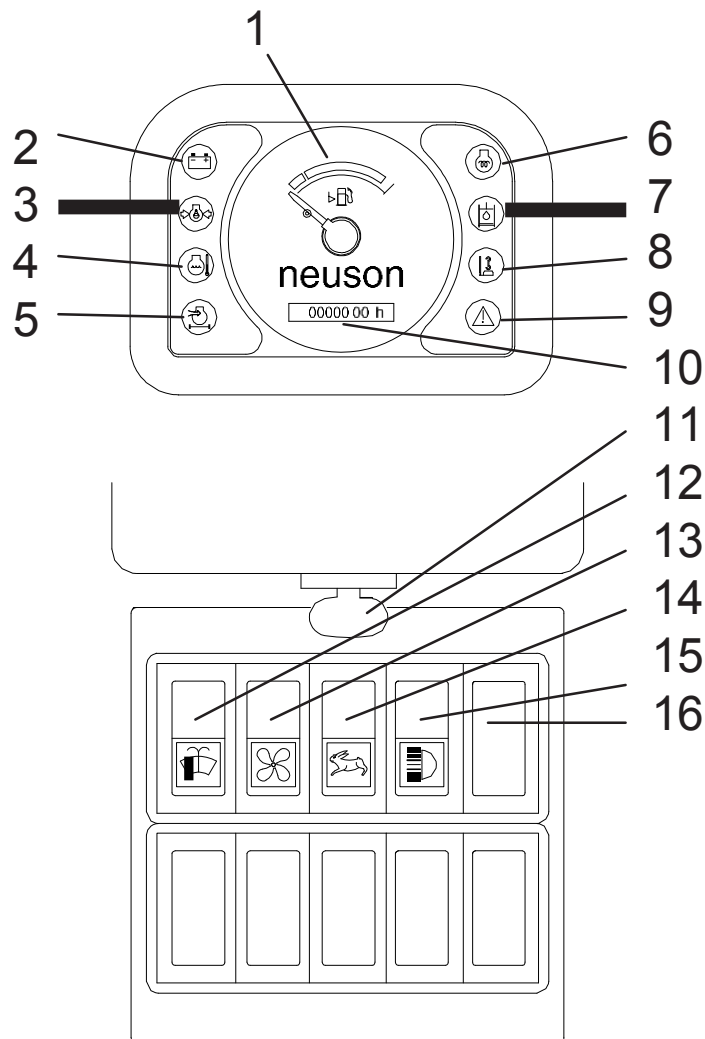


Bild F002: Betriebseinrichtungen

Pict.: Instrument Panel Functions

- | | |
|------------------------------------|-----------------------------------|
| 1 Fuel gauge | 8 Over load warning signal |
| 2 Charge indicator | 9 free |
| 3 Engine oil pressure | 10 Operating hours counter |
| 4 Water temperature warning signal | 11 Ignition lock |
| 5 Clogged air filter | 12 Windshield wiper/washer switch |
| 6 Glow plug indicator | 13 Fan switch |
| 7 Clogged hydraulic filter | 14 Overdrive |
| | 15 Light switch |
| | 16 Free |

Pict.: Instrument Panel functions





Pict.: Joystick consol right

Gas lever

Ignition lock

Switch panel

Fuse box

Pict.: Bowdenzug - operation inside the cabine



Side valve cover

Engine bonnet

Pict.: Canopy version

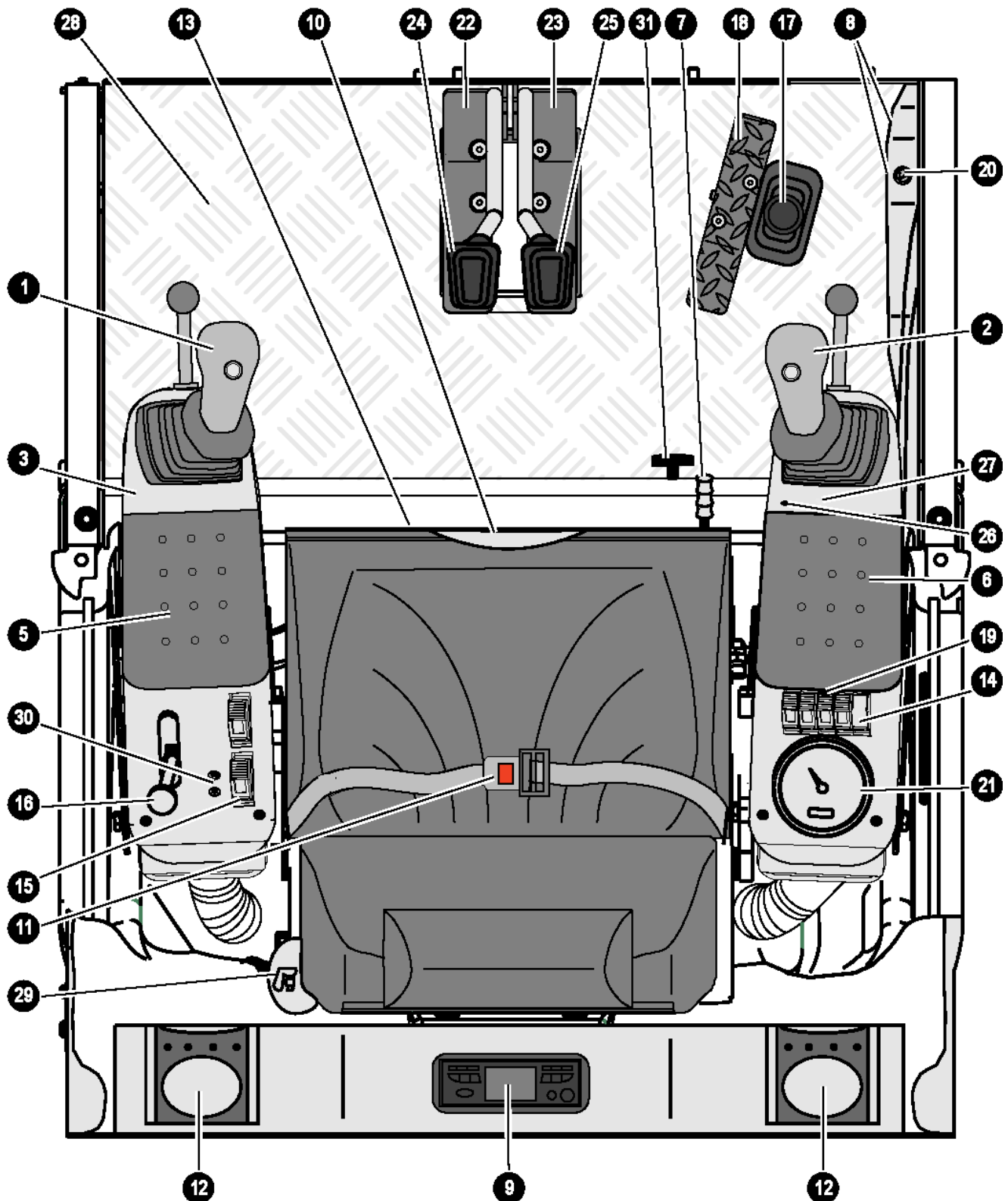


Side valve cover

Safety lock

Engine bonnet

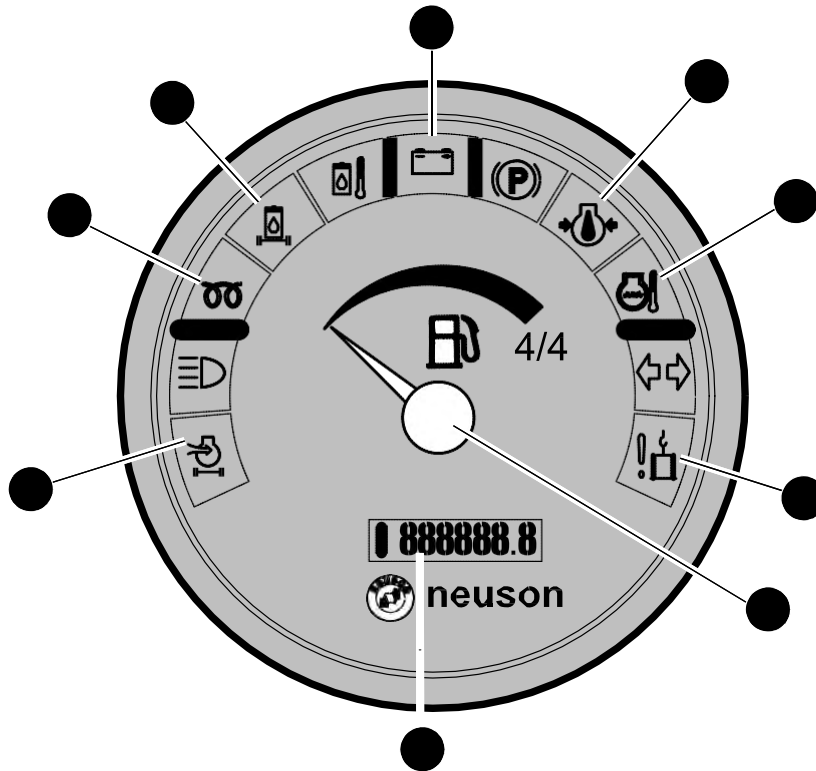
Cab overview



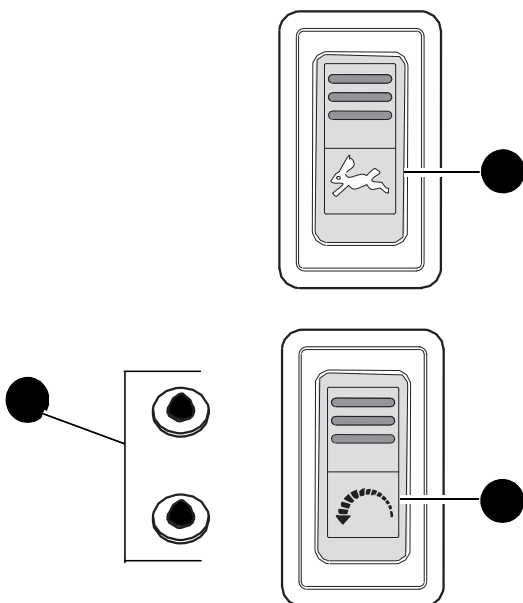


Pos.	Description	For more information see page
1	Control lever (left)	
2	Control lever (right)	
3	Control lever base (left)	
4	Control lever base (right)	
5	Armrest (left)	
6	Armrest on the right (not shown)	
7	Lever (horizontal seat adjustment)	F-7
8	Air vents	F-7
9	Radio (option)	
10	Seat (backrest adjustment)	F-7
11	Seat belt (lock)	F-7
12	Cup holder	
13	Document storage (underneath the seat console)	
14	Right-hand side switch panel	F-7
15	Left-hand side switch panel	F-7
16	Throttle	
17	Stabiliser blade lever	F-7
18	Auxiliary hydraulics pedal	F-7
19	Preheating start switch	
20	Cigarette lighter	
21	Round display element	F-8
22	Drive pedal (left)	F-7
23	Drive pedal (right)	F-7
24	Drive lever (left)	F-7
25	Drive lever (right)	F-7
26	Drive interlock status indicator (option)	
27	Drive interlock emitter/receiver unit	
28	Changeover valve for SAE/ISO controls (option, underneath the base plate)	
29	Weight adjustment for seat	
30	Proportional controls indicator (option)	
31	Lever for engine and valve cover	

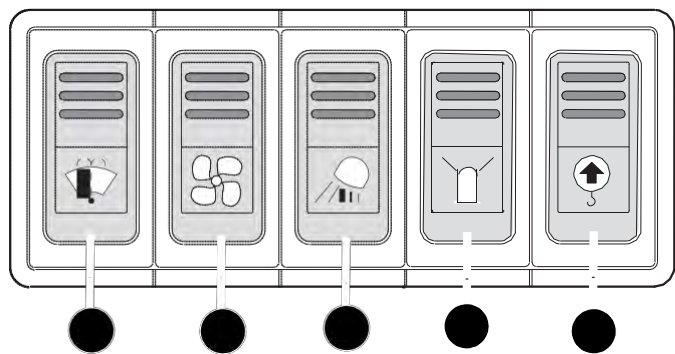
Instrument panel overview



Left-hand side control elements



Right-hand side control elements



Pos.	Description
32	Hydraulic oil filter telltale (red)
33	Telltale (red) – alternator charge function
34	Telltale (red) – engine oil pressure
35	Coolant temperature telltale (red)
36	Cold starter telltale (yellow)
37	Telltale (red) – safe load indicator (option)
38	Fuel level indicator
39	Hour meter
40	High speed
41	Ventilation
42	Safe load indicator (option)
43	Proportional control status indicator (option)
44	Washer system
45	Working light
46	Rotating beacon (option)
47	Automatic revs setting (option)
48	Indicator for air filter contamination

Automatic revs setting (option)

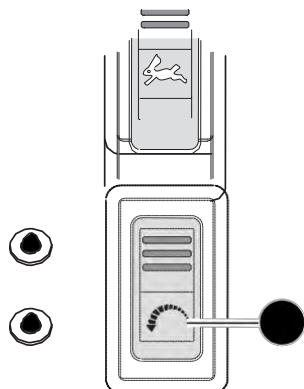


Fig. 1: Automatic revs setting from serial number

From serial number AG00580/AG00593/AG00597

Diesel engine revs are automatically reduced to idling after 5 seconds if no hydraulic functions are carried out and if the automatic revs setting (option) is enabled.

As soon as a hydraulic function is carried out with the control levers, diesel engine revs are automatically increased again to the engine speed adjusted with the throttle.

Automatic revs setting (option)		
ON	➡ Press switch 47 down	➡ Telltale in switch 47 comes on
OFF	➡ Press switch 47 up	➡ Telltale in switch 47 goes out

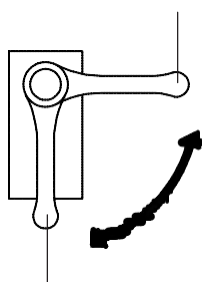
Hydraulic connections for additional attachments

Hydraulic connections for supplying additional attachments are located at the end of the bucket sticket.

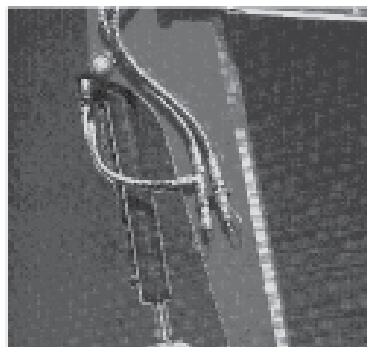
The hydraulics supply for additional attachments can be activated by turning the levers on the bucket stick and in the main hydraulic valve area.

Lever on bucket stick

Pict. 014: Position for use of grab

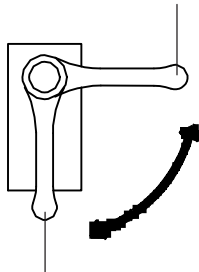


Position for use of bucket



The lever is positioned under side valve bank cover

Pict. 015: Position for auxiliary hydraulics



Position for use of hammer

Brakes and swivel lock mechanism

The brakes (3503 and 3703) and swivel lock are automatically activated when the excavator is at a complete stop (no pilot control pressure).

The brakes only release when a drive or control lever is activated (pressure builds up).



Tilting the superstructure

In order to facilitate vertical digging on a slope, the superstructure of the Crawler Excavator 3703 can be tilted hydraulically 15° by means of a lever. This helps keep the chassis horizontal.

Pict.: Tilting cylinder 3703

Hydraulic cylinder for
tilting superstructure



Covers for maintenance



Pict.: Rear counter weight:

1. Open engine cover
2. Loosen the screws for the counter weight (4 screws each side)
3. Swing out the counter weights

Attention:

On the new generation the rear counter weights opens with loosening both side and the inner upper screws

They are mounted on sliding rails, on which it's possible to pull them out

More space for working on the hydraulic pump and diesel engine



Pict. 018: Side valve bank cover:

1. To open the cover, use the bowdenzug inside the cabin

Following components are located:

Main valve bank, hydraulic tank- and filter, pilot valve, change over valve for swing-arm and aux. hydraulic.



CHAPTER G:

Attachment

(Neuson Service Manual 2503 - 3703)





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SERV CE NEWS 5210 T

BUCKET L ST 2503

BUCKETS	W h	Volume	Par No	Usab e tor
BUCKET 2503 van age more Bucke volume han he 02 genera on	260 mm	36	2526025	2503 902 I 2202 excep 700 mm - oo heavy
	300 mm	43	252600	
	400 mm	59	25260 3	
	500 mm	75	2526009	
	600 mm	9	25260 7	
	700 mm	07	25260 8	
BUCKET 902 I 2202	260 mm	33	2206053	2503 bu ess bucke volume 902 I 2202
	300 mm	39	2206054	
	400 mm	54	2206055	
	500 mm	69	2206056	
	600 mm	84	2206057	
BUCKET for quick hitch co. 2503 van age more bucke volume ha he 02 genera on	260 mm	36	2526037	2503 902 I 2202 excep 700 mm - oo heavy
	300 mm	43	2526036	
	400 mm	59	2526035	
	500 mm	75	2526034	
	600 mm	9	2526033	
	700 mm	07	2526032	
BUCKET for quick hitch coupler 902 I 2202	260 mm	33	706 34	2503 ess bucke volume 902 I 2202
	300 mm	39	706 35	
	400 mm	54	706 36	
	500 mm	69	706 37	
	600 mm	84	706 38	
QUICK HITCH COUPLER 902 I 2202	706 49			2503 902 I 2202
0 TCH NG BUCKET 902 I 2202	850 mm	69	2206058	2503 902 I 2202
	000 mm	82	2206059	
0 TCH NG BUCKET for quick hitch co 902 I 2202	850 mm	68	706 25	2503 902 I 2202
	000 mm	80	706 26	
T LT NG BUCKET hy r 902 I 2202	850 mm	73	2206060	2503 902 I 2202
	000 mm	87	220606	
T LT NG BUCKET hy r tor quick hitch coupler 902 I 2202	850 mm	73	706 47	2503 902 I 2202
	000 mm	87	706 48	

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SERVICE MANUAL

2503 - 3703

Attachment



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SERV CE NEWS 5210 T

BUCKET L ST 3003 I 3503 I 3703

BUCKET	W h	Vo ume	Par No	Usab e tor
--------	-----	--------	--------	------------

BUCKET 3003 I 3503 I 3703	300 mm	50	3026003	3003 3503 3703
	400 mm	69	3026005	
	500 mm	88	3026007	
	600 mm	07	3026009	
	700 mm	27	30260	

BUCKET 2702 I 3402	300 mm	50	3006045	2702 I 3402 Neuson 3003 on yusea be w h bucke connec ng nk Par No 3027033 3503 u 3703 on yusab e w h bucke connec ng nk Par No 3527045
	400 mm	69	3006048	
	500 mm	88	3006046	
	600 mm	07	3006300	
	700 mm	27	3006047	

BUCKET tor qu ck h ch coup er 2702 I 3402	300 mm	50	3006 63	3003 3503 3703 2702 3402
	400 mm	69	3006 37	
	500 mm	88	3006 6	
	600 mm	07	3006 92	
	700 mm	27	3006 62	

QU CK H TCH COUPLER komp 3003 I 3503 I 3703	30260 4	3003 3503 3703
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QU CK H TCH COUPLER komp 2702 I 3402	3006 82	2702 I 3402 Neuson 3003 on yusab e w h bucke connec ng nk Par No 3027033 3503 u 3703 on yusab e w h bucke connec ng nk Par No 3527045
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O TCH NG BUCKET 3003 I 3503 I 3703	000 mm	7	30260 5	3003 3503 3703
	400 mm	66	30260 7	

O TCH NG BUCKET 2702 I 3402	000 mm	7	3006200	2702 I 3402 Neuson 3003 on yusab e w h bucke connec ng nk Par No 3027033 3503 u 3703 on yusab e w h bucke connec ng nk Par No 3527045
	400 mm	66	300620	

O TCH NG BUCKET 2702 I 3402	000 mm	6	3006 66	3003 I 3503 I 3703 2702 I 3402
	400 mm	64	3006 72	

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Attachment

SERVICE MANUAL
2503 - 3703

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BUCKET L ST 3003 I 3503 I 3703

BUCKET	W h	Volume	Par No	Usab e tor
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T LT NG BUCKET hy r 3003 I 3503 I 3703	000 mm		302640	3003 3503 3703
	400 mm	58	3026402	

T LT NG BUCKET hy r For qu ck h ch coup er 2702 I 3402	000 mm		3006 89	3003 I 3503 I 3703 2702 I 3402
	400 mm	58	3006 90	

NOT CE

Neuson 2503

Usab y

- + Bucke s OLO see >> tor >> excava or - 03Genera on
s poss b e o use he bucke s trom excava or 700 I 900 I 90 I 902 I 2200 I 220 I
2202 tor he new Neuson 2503
- + Bucke s 03-Gen >> tor >> excava or OLO see
Can be assemb e bu co s on - bucke I boom poss b e

Neuson 3003 I 3503 I 3703

Usab y

- + Bucke OLO s ehe B >> tor >> excava or - 03Genera on
O er bucke s wh ch were use by he ypes B> 2600 I 2702 I 2800 I 2902 I 3000 I 3200 I
3402 I 3602 I 3800 I 3802 can a so be use tor he 3003 I 3503 I 3703

Theretore he bucke connec ng nk mus be change tor he orgna o a mo te vers on
See Par No n he s s

- + Bucke 03-Gen >> tor >> excava ors OLO see B
s no poss b e o use h s 03-Genera on "new" bucke s on he s e o mo es ot excava ors B

For e a e ntorma on - pease check he enc ose s s

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Changes possible.



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