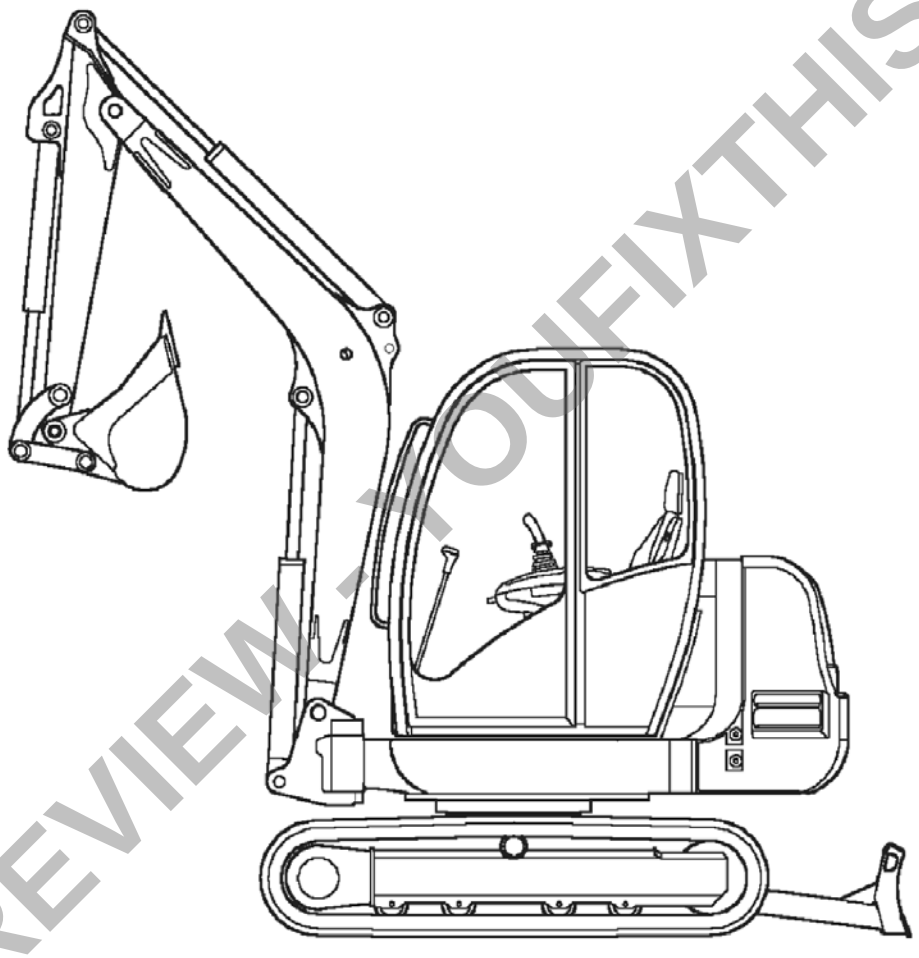
Form No.
918157
Revision A

502/602/652
Compact Excavators



SERVICE MANUAL

GEHL®

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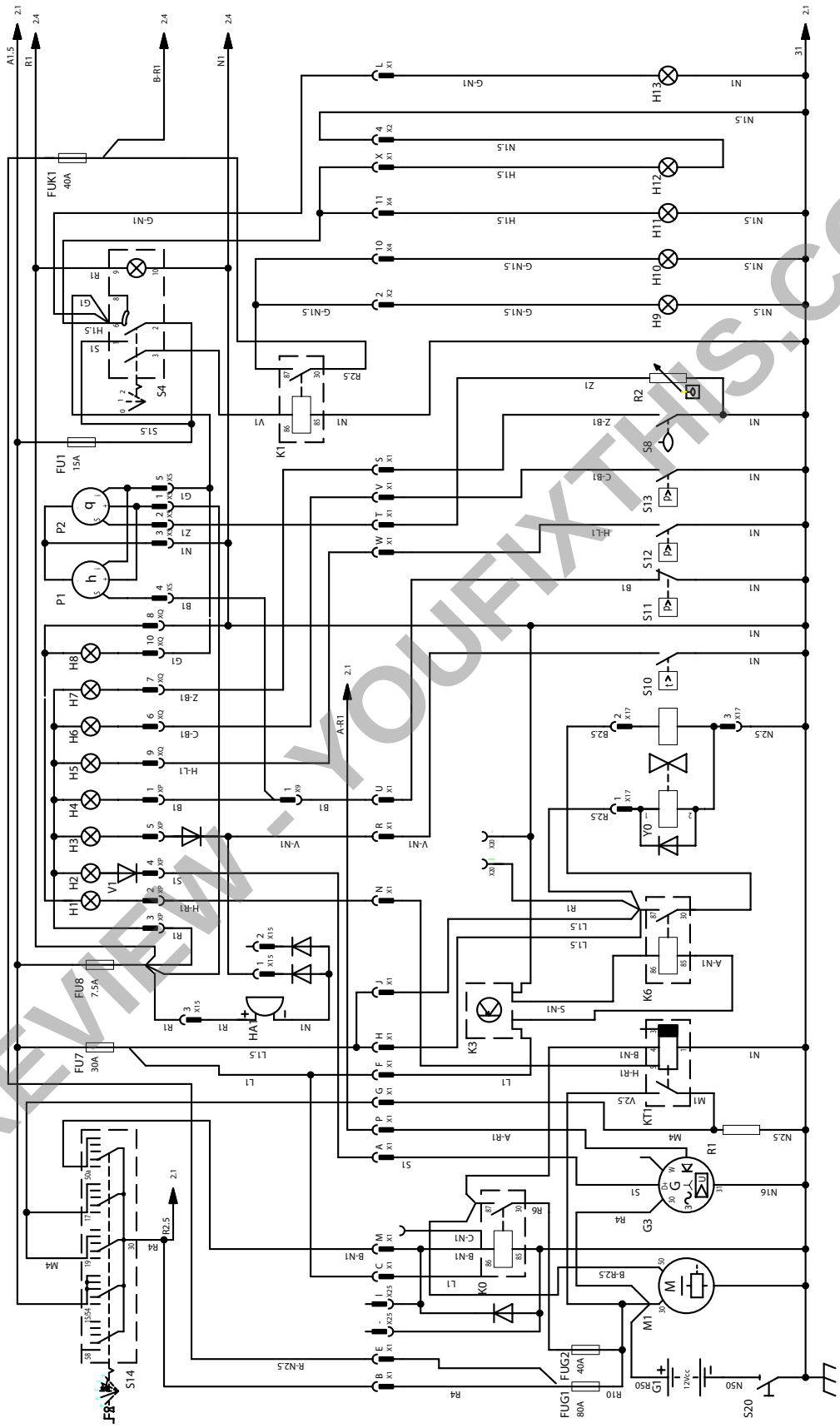
TABLE OF CONTENTS :

Chapter		Page
	Table of contents	
A	**Technical data**	
	Dimensions	A2
	Bucket and Geometry	A4
	Lift capacity charts	A6
	Hydraulic settings	A12
	Auxiliary hydraulics	A13
	Diesel engine settings	A14
B	**Maintenance**	
	Maintenance schedule	B2
	Maintenance - general	B5
	Lubricants	B6
	Lubrication chart	B8
	Hydraulic system	B9
	Hydraulic pump	B20
	Hose burst protection valve	B21
	Drive unit	B22
	Swivel unit	B23
	Diesel engine	B24
	Undercarriage	B35
	Hydraulic oil tank	B36
C	**Hydraulic**	
	Hydraulic system / diagrams	C2
	Position of components	C6
	Hydraulic pump	C9
	Pilot oil supply unit	C12
	Main valve block	C17
	Pilot control valves	C32
	Swivel unit	C38
	Shuttle valve block	C44
	Drive unit	C47
	Swivel joint	C50
	Switch valve	C51
	Tank	C52
D	**Diesel Engine**	
	Diesel engine specifications	D2
	Fuel line diagram	D3
	Battery	D4
	Radiator	D5
	Cylinder head bolt tightening / loosening order	D5

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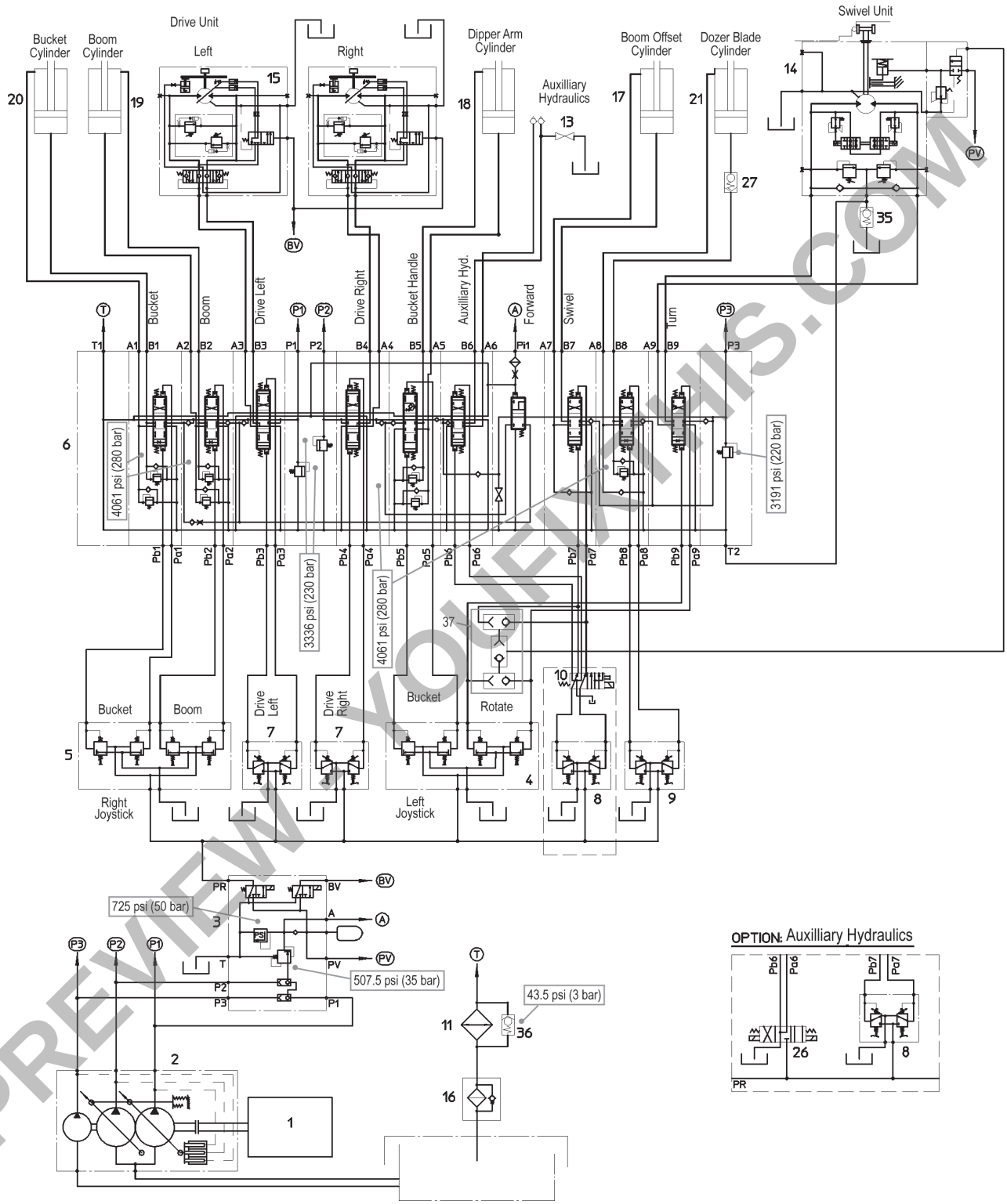
Electrical diagram (up to Serial No.: AB00472)



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Model **502**

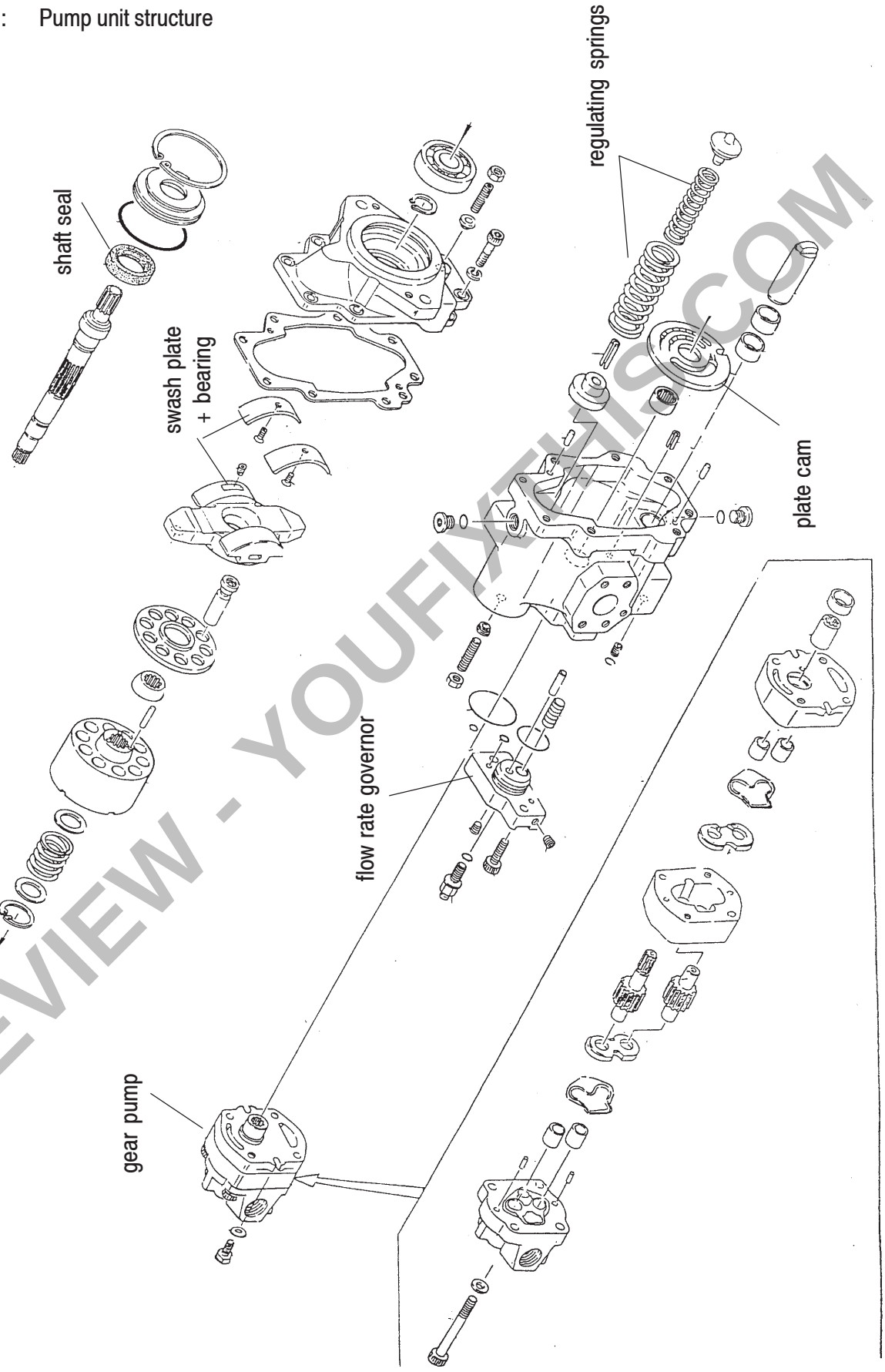


P1 – 3336 psi (230 bar), 13.9 gpm (52.8 L/min)
P2 – 3336 psi (230 bar), 13.9 gpm (52.8 L/min)
P3 – 3191 psi (220 bar), 7.9 gpm (29.8 L/min)
n = 2100min-1

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Fig.: Pump unit structure



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TORQUE SPECIFICATIONS

Note: Use these torque values when tightening hardware (excluding: locknuts and self-tapping, thread forming and sheet metal screws) unless specified otherwise.

Hydraulic fittings with various seals (light application). All torque values are in lb.-ft. (Nm) unless marked otherwise.

Thread	Straight pipe fitting with thread and screwed plug (GE)			Non-return valve with elastic seal	Identification aid outside Ø
	Sealing washer	Elastic seal	O-ring		
M10X1.0	7 (9)	13 (18)	11 (15)	13 (18)	0.4 in. (10 mm)
M12X1.5	15 (20)	18 (25)	18 (25)	18 (25)	0.5 in. (12 mm)
M14X1.5	26 (35)	33 (45)	26 (35)	26 (35)	0.6 in. (14 mm)
M16X1.5	33 (45)	41 (55)	30 (40)	37 (50)	0.6 in. (16 mm)
M18X1.5	41 (55)	52 (70)	33 (45)	52 (70)	0.7 in. (18 mm)
M22X1.5	48 (65)	92 (125)	44 (60)	92 (125)	0.9 in. (22 mm)
M27X2.0	66 (90)	133 (180)	74 (100)	107 (145)	1.0 in. (27 mm)
M33X2.0	111 (150)	229 (310)	118 (160)	155 (210)	1.3 in. (33 mm)
M42X2.0	177 (240)	332 (450)	155 (210)	266 (360)	1.7 in. (42 mm)
M48X2.0	214 (290)	398 (540)	192 (260)	398 (540)	1.9 in. (48 mm)
G1/8A	7 (9)	13 (18)	11 (15)	13 (18)	0.4 in. (9.73 mm)
G1/4A	26 (35)	26 (35)	22 (30)	26 (35)	0.5 in. (13.16 mm)
G3/8A	33 (45)	52 (70)	33 (45)	37 (50)	0.7 in. (16.66 mm)
G1/2A	48 (65)	66 (90)	41 (55)	48 (65)	0.8 in. (20.96 mm)
G3/4A	66 (90)	133 (180)	74 (100)	103 (140)	1.0 in. (26.44 mm)
G1A	111 (150)	229 (310)	118 (160)	140 (190)	1.3 in. (33.25 mm)
G1 1/4A	177 (240)	332 (450)	155 (210)	266 (360)	1.7 in. (41.91 mm)
G1 1/2A	214 (290)	398 (540)	192 (260)	398 (540)	1.9 in. (47.80 mm)

Hydraulic fittings with various seals (heavy application). All torque values are in lb.-ft. (Nm) unless marked otherwise.

Thread	Straight pipe fitting with thread and screwed plug (GE)			Non-return valve with elastic seal	Identification aid outside Ø
	Sealing washer	Elastic seal	O-ring		
M12X1.5	15 (20)	26 (35)	26 (35)	26 (35)	0.5 in. (12 mm)
M14X1.5	26 (35)	41 (55)	33 (45)	33 (45)	0.6 in. (14 mm)
M16X1.5	33 (45)	52 (70)	41 (55)	41 (55)	0.6 in. (16 mm)
M18X1.5	41 (55)	66 (90)	52 (70)	52 (70)	0.7 in. (18 mm)
M20X1.5	41 (55)	92 (125)	59 (80)	74 (100)	0.8 in. (20 mm)
M22X1.5	48 (65)	100 (135)	74 (100)	92 (125)	0.9 in. (22 mm)
M27X2.0	66 (90)	133 (180)	125 (170)	100 (135)	1.0 in. (27 mm)
M33X2.0	111 (150)	229 (310)	229 (310)	155 (210)	1.3 in. (33 mm)
M42X2.0	177 (240)	332 (450)	243 (330)	266 (360)	1.7 in. (42 mm)
M48X2.0	214 (290)	398 (540)	310 (420)	398 (540)	1.9 in. (48 mm)
G1/8A	26 (35)	41 (55)	33 (45)	33 (45)	0.5 in. (13.16 mm)
G1/4A	33 (45)	59 (80)	44 (60)	44 (60)	0.7 in. (16.66 mm)
G3/8A	48 (65)	85 (115)	55 (75)	74 (100)	0.8 in. (20.96 mm)
G1/2A	66 (90)	133 (180)	125 (170)	107 (145)	1.0 in. (26.44 mm)
G3/4A	111 (150)	229 (310)	229 (310)	192 (260)	1.3 in. (33.25 mm)
G1A	177 (240)	332 (450)	243 (330)	266 (360)	1.7 in. (41.91 mm)
G1 1/4A	214 (290)	398 (540)	310 (420)	398 (540)	1.9 in. (47.80 mm)

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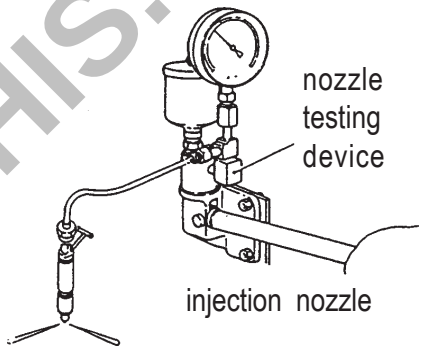
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Injection Nozzles

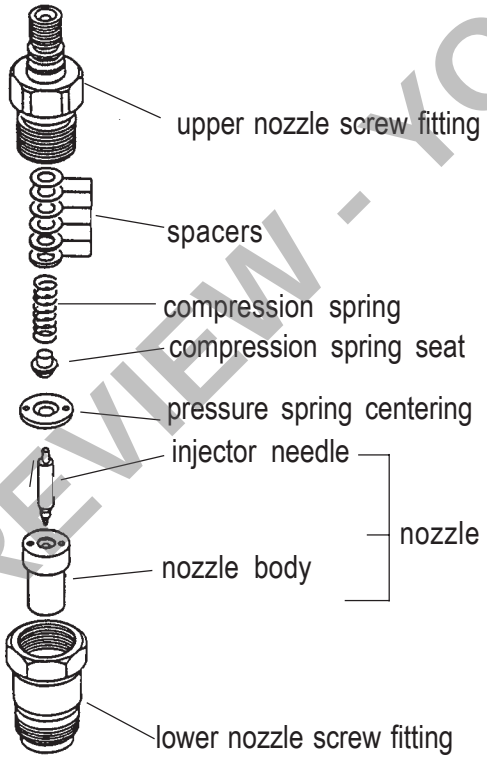
> PRESSURE TEST

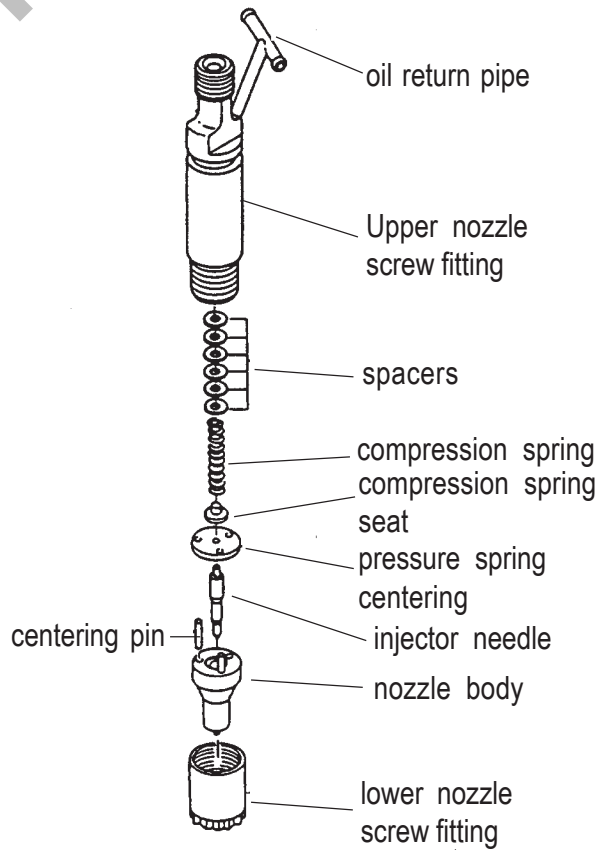
1. Remove the fuel injection lines and injection nozzles.
2. Connect the injection nozzle to the high-pressure line of nozzle tester.
3. Slowly increase pressure until the nozzle ejects fuel and read the pressure on the pressure gauge. Injection pressure should be 3191 - 3336 psi (220 - 230 bar).
4. If the injection pressure is too low, replace spacers in the nozzle with thicker ones; if the injection pressure is too high, replace spacers in the nozzle with thinner ones.

Indirect injection system: increase adjusting washer thickness by 0.004" (0.1 mm) = 101.5 - 145 psi (7 - 10 bar)
Direct injection system: increase adjusting washer thickness by 0.004" (0.1 mm) = 275.6 psi (19 bar)



Nozzle setup:
Indirect injection





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1. HYDRAULIC SYSTEM

Legend - hydraulic diagram **502**

1	diesel engine
2	variable displacement + gear pump unit
3	pilot oil supply unit
4	joystick (pilot control valve) left
5	joystick (pilot control valve) right
6	main valve block
7	pilot control valves - drive
8	pilot control valve - auxiliary hydraulics
9	pilot control valve - dozer blade
10	switch valve
11	oil cooler
13	ball-type stop valve
14	swivel unit
15	drive unit
16	hydraulic oil return filter
17	boom offset cylinder
18	dipper stick cylinder
19	boom cylinder
20	bucket cylinder
21	dozer blade cylinder
27	hose burst protection valve
35	non-return valve
36	non-return valve
37	shuttle valve block

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Primary dimensions / Performance

		502	602
>> Starting with Serial No.		0000989/98	0000771/98
Dimensions (H x W x L)		8'-0" (2435 mm) / 6'-1" (1850 mm) / 12'-0" (3665 mm)	8'-0" (2435 mm) / 6'-1" (1850 mm) / 12'-6" (3800 mm)
Axle distance		6'-7" (2000 mm) / F	6'-7" (2000 mm) / F
Transport length		18'-7" (5653 mm)	19'-0" (5803 mm)
Boom swing angle	Left / right	80° / 45°	80° / 45°
Front boom swing radius	min	6'-1" (1880 mm)	6'-4" (1920 mm)
Tilt angle uppercarriage		N	N
Ground clearance	max	1'-1" (340 mm)	1'-1" (340 mm)
Undercarriage width		6'-1" (1850 mm)	6'-1" (1850 mm)
Track width	Standard	1'-4" (400 mm)	1'-4" (400 mm)
Max. Dump height	Standard	13'-1" (4000 mm)	13'-5" (4095 mm)
Max. Dump height / Option	Dipper arm long	13'-9" (4200 mm)	14'-1" (4295 mm)
Max. Dig height	Standard	18'-0" (5480 mm)	18'-4" (5580 mm)
Max. Dig height / Option	Dipper arm long	18'-8" (5680 mm)	19'-0" (5780 mm)
Max. Dig radius	Standard	19'-9" (6010 mm)	20'-7" (6160 mm)
Max. Dig radius / Option	Dipper arm long	20'-6" (6290 mm)	21'-2" (6460 mm)
Max. vertical dig depth	Standard	5'-1" (1549 mm)	6'-7" (2000 mm)
Max. vertical digging depth / Opt.	Dipper arm long		7'-3" (2221 mm)
Max. dig depth	Standard	12'-2" (3710 mm)	12'-8" (3860 mm)
Max. dig depth / Option	Dipper arm long	13'-2" (4010 mm)	13'-8" (4160 mm)
Min. tail swing radius		4'-10" (1470 mm)	5'-3" (1590 mm)
Dozer blade dimensions (W x H)	Standard	6'-1" (1850 mm) / 1'-5" (425 mm)	6'-1" (1850 mm) / 1'-5" (425 mm)
Dozer blade max. lift ... Ground	above / below	1'-3" (390 mm) / 1'-4" (400 mm)	1'-4" (400 mm) / 1'-5" (435 mm)
Dipperstick length	Standard	4'-11" (1500 mm)	5'-5" (1650 mm)
Dipperstick "long "	Option	5'-11" (1800 mm)	6'-5" (1950 mm)
Track rollers / guide rollers	per side	5 / 1	5 / 1
Operation weight with	Cab	10,913 lbs. (4960 kg)	12,566 lbs. (5700 kg)
Ground pressure	Standard	3.8 psi (0.27 kg/cm^2)	4.3 psi (0.3 kg/cm^2)
Ground pressure	Option	400mm Tracks	400mm Tracks
Gradability		30° / 58%	30° / 58%
Sound level	LWA	98 dB (A)	99 dB (A)
Sound level	LPA	75 dB (A)	74 dB (A)
Travel speed	Drive	1.5 mph (2.5 km/h) / 2.8 mph (4.5 km/h)	1.9 mph (3.0 km/h) / 3.4 mph (5.5 km/h)
Tear out force per	Bucket tooth	481 psi (3316 kp)	533 psi (3672 kp)
Max. dipper stick tear out force	Standard	349 psi (2405 kp)	360 psi (2482 kp)
Slew (swivel-) speed	Uppercarriage	8.5 rpm	9 rpm
Tractive effort	Undercarriage	12.70 lbs (5.8 kg)	13.4 lbs (6.10 kg)

Explaination:

O... Option

N... No / Not

F... Missing information

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1. MAINTENANCE SCHEDULE Gehl **502 - 602**

Servicing activity component	every 10 h (daily)	every 50 h (weekly)	every 250 h (6 months)	every 500 h (12 months)	every 1000 h (18 months)	annual
Diesel engine						
Oil level	O					
Fuel level	O					
Leakage	O					
Visual check	O					
Air filter	O/X			<>		<>
Seating of mounting bolts		O				
Coolant	O					
Engine speed regulation			O			
Exhaust system			O			
Engine oil	O	<>(1)	<>			<>
Oil filter		<>(1)	<>			<>
V-belt: condition and tension		O				
Cooler fins		X				
Valve clearance		O			O	
Generator, starter					O	
Fuel tank					X	
Water pump					O	
Fuel filter		O	<>			<>
Cooling system and hoses				O		
Electrical connections				O		
Pre-heat glow system				O		
Coolant thermostat				O		
Battery fluid		O				

O - Check
X - Clean
<> - Change/Replace
<> (1) - Change/Replace the first time

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Chapter Page

E Electrical

Electrical system diagrams E2
Electrical system component positions E6
Electrical system diagrams E12
Electrical connections E21
Fuse box E27

F Operating Elements

Machine overview F2
Component description F3
Cab equipment and controls F4
Lifting the excavator F10

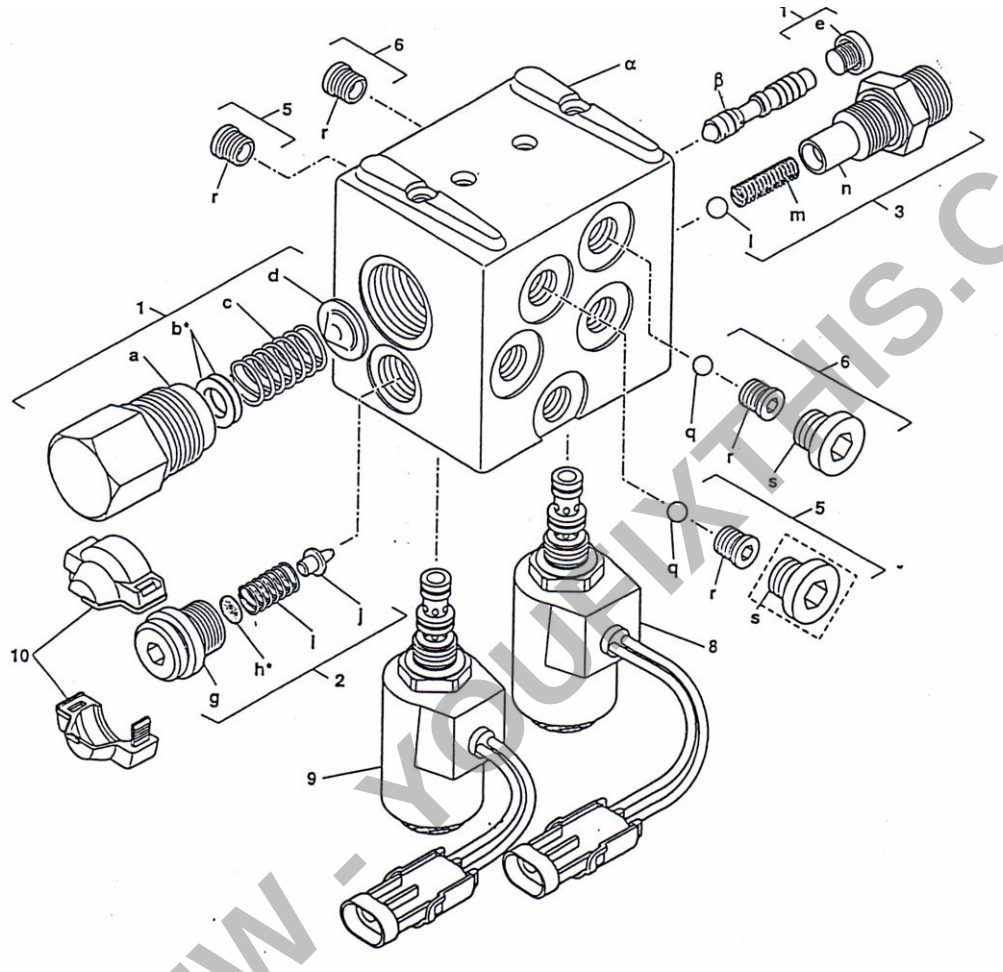
Abbreviations:

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

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Fig.: **Setup** of control oil unit
(**1408610**)



1... **pressure reducing valve unit (AP)** * adjusting washers
2... safety valve (preset to 725 psi (50 bar) with plastic seal
3... connecting subassembly - accumulator bag
5 - 6 shuttle valve subassembly
8 - 9 solenoid valves

Tightening torques:

1a... 111 ft-lbs. (150 Nm)
1e... 7.3 ft-lbs. (10 Nm)
2g... 74 ft-lbs. (100 Nm)
3n... 74 ft-lbs. (100 Nm)
5r... 7.3 ft-lbs. (10 Nm)
5s, 6s 2.2 ft-lbs. (30 Nm)
8, 9 11 ñ 14.8 ft-lbs. (15 ñ 20 Nm)

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