Service Manual

Dumper

3001



Machine models	**3001/3001 Speed**
Edition	**2.0**
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Engine capacities

Capacities	Model 3001
Fuel tank	40 l (11 gal)
Engine oil (max./min. fill)	6.7 l/3.9 l (1.8/1.0 gal)
Coolant (without radiator)	2.0 l (0.5 gal)
Radiator	5.36 l (1.42 gal)
Expansion tank	0.84 l (0.22 gal)

Overview of capacities: – see *Fluids and lubricants* on page 3-1

Engine tightening torques

Tightening torques	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)

2.3 Travelling drive

Variable displacement pump	Model 3001
Design	Axial piston pump
Displacement	45 cm³/rev (2.75 cu in/rev)
Flow rate	126 l/min (33 gpm)
Max. service pressure	360 bar (5221 psi)
Boost pump (integrated in variable displacement pump)	
Design	Gear pump
Displacement	8.4 cm³ (0.5 cu in)
Charging/boost pressure	25 bar (363 psi)

2.4 Brakes

Service brake/parking brake	Model 3001
Design	Multiple disc brakes
Location	Brake discs in front axle
Effect	Hydraulic service brake, mechanical parking brake

2.5 Steering system

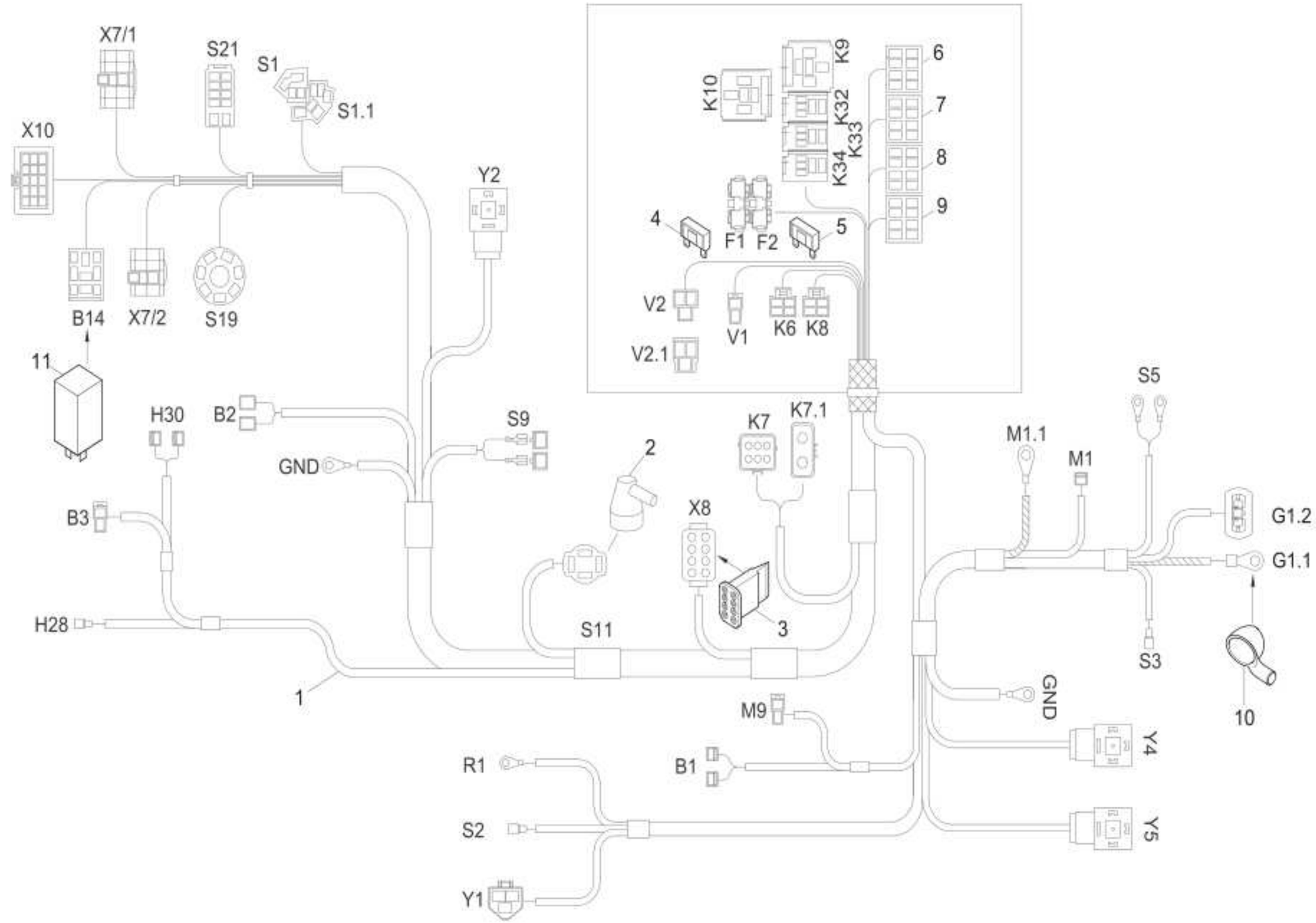
Steering system	Model 3001
Design	Hydrostatic
Steering mode	Chassis articulation steering

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Problem		Possible causes
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
Engine overheats. Temperature warning system responds		Oil level too low
		Oil level too high
		Dirty air filter
		Dirty oil cooler fins
		Defective fan, torn or loose V-belt
		Resistance in cooling system too high, flow capacity too low
		Defective thermostat
		Defective fuel injector
Insufficient engine output		Oil level too high
		Fuel grade does not comply with specifications
		Dirty air filter
		Defective air filter maintenance switch or gauge
		Wrong valve clearance
		Injection line leaks
		Defective fuel injector
Engine does not run on all cylinders		Injection line leaks
		Defective fuel injector
Insufficient or no engine oil pressure		Oil level too low
		Machine inclination too high (max. 25°)
		Wrong SAE grade of engine lubrication oil
Engine oil consumption too high		Oil level too high
		Machine inclination too high (max. 25°)
Engine smoke	Blue	Oil level too high
		Machine inclination too high (max. 20°)
		Engine oil combustion (defective cylinder-head gasket)
	White	Engine starting temperature too low
		Fuel grade does not comply with specifications
		Wrong valve clearance
		Defective fuel injector
		Coolant combustion (defective cylinder-head gasket)
	Black	Dirty air filter
		Defective air filter maintenance switch or gauge
		Wrong valve clearance
		Defective fuel injector

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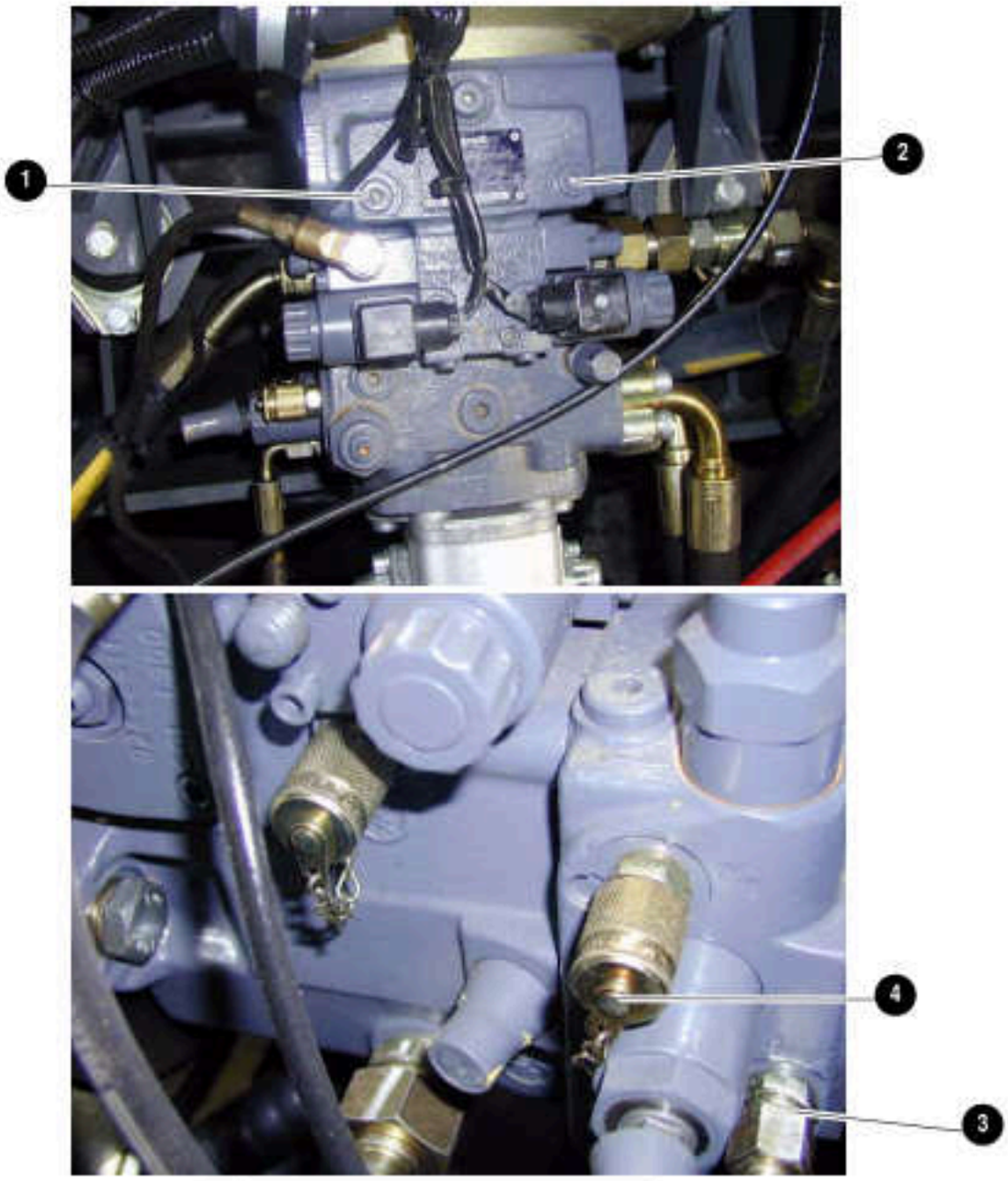
10.12 Wiring harness 1000173558 main wiring harness starting AC



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5 Travelling drive

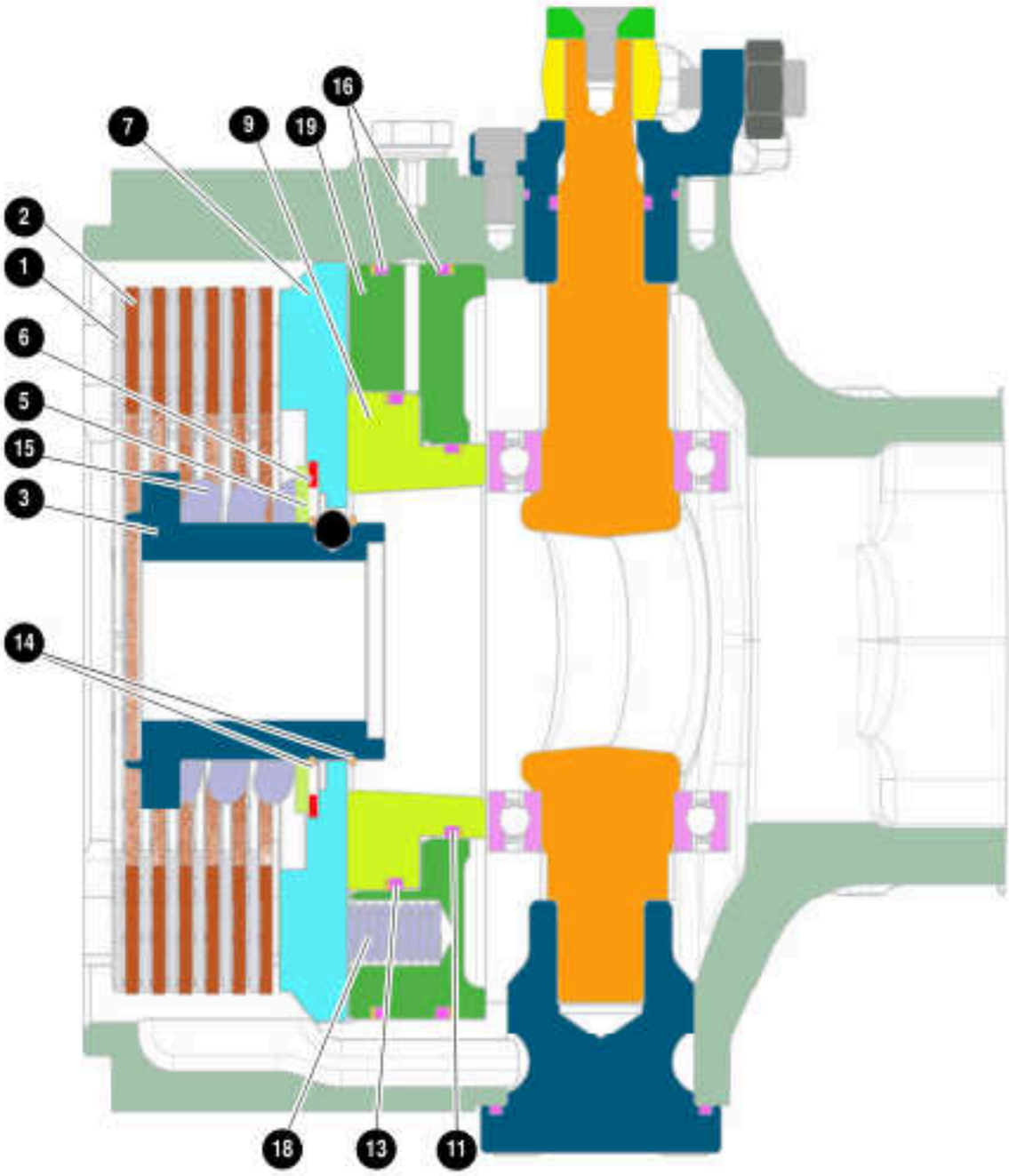
5.1 Variable displacement pump A10VG45DA



Pos.	Description
1	X2 pressure in control piston
2	X1 pressure in control piston
3	Boost pressure – G
4	High pressure Mb

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6.11 Brake diagram



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10.11 Wiring harness 1000173558 main wiring harness starting AC (legend)

No.	From	Up to	Description	Colour	mm^2	No.	From	Up to	Description	Colour	mm^2
1	G1.1	M1.1	12 V/30	red	10	57	X10.2	X7/1.4	Position lights	yel/blk	1
2	M1.1	F1	12 V/30	red	4	58	X8.1	F9.7	Position lights	yel/blk	1
3	M1.1	F1	12 V/30	red	4	66	X7/1.2	K33.86	Low beam	yel	1
4	G1.1	F2	12 V/30	red	4	67	X10.11	X7/1.9	High beam telltale	grn	1
5	G1.1	F2	12 V/30	red	4	68	X7/1.9	K34.86	High beam	grn	1
6	S1.1	F1.2	12 V/30	red	6	69	F8.6	K33.30	Low beam	yel/red	1
7	F10 H	F1.2	12 V/30	red	4	70	X8.3	K33.87	Low beam	yel/red	1
8	F2.2	K9.30	12 V/30	red	4	72	F7.5	K34.30	High beam	grn/red	1
9	K7 A	F2.2	12 V/30	red	4	73	X8.2	K34.87	High beam	grn/red	1
10	S1.5	F4.2	12 V/15	blu	4	75	S19.3	F10.8	Turn indicators 12 V/30	red	1
11	S1.6	F7.5	12 V/15	blu	4	76	S19.1	F6.4	Turn indicators 12 V/15	blu	1
12	K7 B	M1	Starter	wht/red	2.5	77	S19.4	K10+	Turn indicators +	blu/wht	1
13	Y1.1	K9.87	Cutoff solenoid pick-up contact	wht	4	78	X7/1.5	S19.5	Turn indicators COM	blu/yel	1
14	S1.3	R1	Preheating	brn	4	79	S19.5	K10 C	Turn indicators COM	blu/yel	1
15	S1.4	S1.8	Preheating	brn	4	80	X10.15	K10 P	Turn indicator telltale	gry/red	1
16	S1.9	K6	Preheating	brn	1	81	X7/1.1	S19.7	Right-hand side turn indicators	gry/grn	1
17	X10.1	F3.1	12 V/15 indicating instrument/relays	blu	1	82	S19.7	X8.8	Right-hand side turn indicators	gry/grn	1
20	F3.1	V1	Cutoff solenoid/fuel feed pump	blu/red	1	86	X7/1.6	S19.6	Left-hand side turn indicators	gry/yel	1
21	M9	V1	Fuel pump	blu/red	1	87	S19.6	X8.7	Left-hand side turn indicators	gry/yel	1
22	Y1.2	M9	Holding contact cutoff solenoid	blu/red	1	91	S9	F5.3	12 V brakes/horn	org/blk	1
23	F3.1	K8	Cutoff solenoid timer	blu/red	1	92	B2	S9	12 V brakes/horn	org/blk	1
24	K7.1	K8	12 V/15 starting relay	blu/red	1	96	Y2.1	S21.5	High speed	brn/blk	1
25	G1.2 2	F3.1	12 V/15 indicating instrument/relays	blu	1	97	X8.6	S9	Brake lights	red/blk	1
26	K8	K9.86	Cutoff solenoid relay	blu/blk	1	99	K7.5	S11	Parking brake telltale	red/wht	1
27	K8	K9.85	Cutoff solenoid relay	pnk/blk	1	100	X10.9	S11	Parking brake telltale	red/wht	1
28	B14.5	G1.2 1	Charge telltale	pnk	1	101	X10.12	K6	Preheating telltale	gry/red	1
29	X10.8	B14.5	Charge telltale	pnk	1	102	V2.3	K32.86	Start interlock	wht/red	1
30	B14.6	S2	Engine oil pressure	wht/grn	1	104	H28	F7.5	Rotating beacon	vio	1
31	X10.10	B14.1	Engine oil pressure	wht/grn	1	105	B2	X7/1.7	Horn	org	1
32	B14.9	S3	Engine temperature	blk/grn	1	110	K8	K6	Earth	blk	1
33	X10.14	B14.4	Engine temperature	blk/grn	1	111	V1	K6	Earth	blk	1
34	X10.6	S5	Hydraulic oil filter	org/wht	1	112	V1	K34.85	Earth	blk	1
35	X10.4	B1	Fuel sensor	vio/blk	1	113	K33.85	K34.85	Earth	blk	1
36	K7.6	G1.2 3	Revs signal	blk/blu	1	114	K33.85	K32.85	Earth	blk	1
39	S1.7	K6	Starter	wht/blk	1	115	K10.31	K32.85	Earth	blk	1
40	K32.30	K6	Starter	wht/blk	1	116	K10.31	GND	Earth	blk	1
41	K7.3	K32.87a	Starter	wht/blk	1	117	Y2.2	GND	Earth	blk	1
42	S11	F4.2	12 V drive	gry	1	118	GND	S11	Earth	blk	1
43	S11	X7/2.2	12 V drive	gry	1	119	X8.4	GND	Earth	blk	1.5
44	S21.1	X7/2.2	12 V drive	gry	1	120	B3	GND	Earth	blk	1
45	S21.1	S21.9	12 V drive	gry	1	121	H30	B3	Earth	blk	1
47	X7/2.4	S11	Drive	gry/blu	1	124	X10.5	X7/1.8	Earth	blk	1
48	X7/2.1	V2.1	Forwards driving	brn/wht	1	125	S21.10	X7/1.8	Earth	blk	1
49	Y5.1	V2.1	Forwards driving	brn/wht	1	126	S21.10	GND	Earth	blk	1
50	X7/2.3	X8.5	Reversing light	gry/blk	1	127	GND	GND2	Earth	blk	2.5
51	X7/2.3	V2.2	Reverse driving	gry/blk	1	128	S5	GND2	Earth	blk	1
52	Y4.1	V2.2	Reverse driving	gry/blk	1	129	Y4.2	GND2	Earth	blk	1
53	B3	V2.2	Backup warning system	gry/blk	1	130	Y5.2	GND2	Earth	blk	1
54	H30	B3	Reversing light	gry/blk	1	131	GND2	M9	Earth	blk	1
55	X7/1.3	S1.5	12 V/15 lights	blu	1.5	132	B1	M9	Earth	blk	1
56	X7/1.4	F9 G	Position lights	yel/blk	1	133	GND2	Y1.3	Earth	blk	1

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