Service Manual

Dumper

4001



Machine models	**4001/4001 speed**
Edition	**1.0**
Language	**English**
Item no.	**1000159454**

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

Table of contents

Operation
Important information on this service manual ... 1-1
Identification of warnings and dangers ... 1-2
Designated use and exemption from liability ... 1-3
Type labels and component numbers ... 1-4
Machine: overview ... 1-6
Machine overview: legend ... 1-6
Operating equipment: overview ... 1-7
Operating equipment: legend ... 1-7
Maintenance prop ... 1-8
Centre pivot prop ... 1-8

Specifications
Chassis ... 2-1
Engine ... 2-1
Engine capacities ... 2-2
Engine tightening torques ... 2-2
Travelling drive ... 2-2
Brakes ... 2-2
Steering system ... 2-2
Work hydraulics ... 2-3
Loader unit ... 2-3
Drive specifications ... 2-3
Electric system ... 2-4
Fuse box ... 2-4
Relays ... 2-4
Tyres ... 2-5
Noise levels ... 2-5
Coolant compound table ... 2-5
General tightening torques ... 2-6
Tightening torques for hydraulic screw connections (dry assembly) ... 2-6
Tightening torques for high-resistance screw connections ... 2-8
Tightening moments for Nordlock lock washers ... 2-9
Dimensions model 4001 ... 2-10

Maintenance
Fluids and lubricants ... 3-1
Maintenance plan (overview) ... 3-2
Service package ... 3-7
Introduction ... 3-7
Fuel system ... 3-8
Specific safety instructions ... 3-8
Refuelling ... 3-8
Stationary fuel pumps ... 3-9
Diesel fuel specification ... 3-9
Bleeding the fuel system ... 3-9
Fuel prefilter with water separator ... 3-10
Replacing the fuel filter ... 3-11
Engine lubrication system ... 3-12
Checking the oil level ... 3-12
Filling up engine oil ... 3-13
Changing engine oil ... 3-14
Replacing the engine oil filter cartridge ... 3-15
Cooling system ... 3-16
Specific safety instructions ... 3-16
Checking/filling up coolant ... 3-17

MidWestTech | Wacker Neuson 4001 Dumper Service Manual | Publication 1000159454
Order the manual at mid-west-tech.com >

Draining coolant ... 3-18
Air filter ... 3-19
Check once a week of air filter contamination ... 3-19
Replacing the filter ... 3-20
Functional check once a week of the dust valve ... 3-21
V-belt ... 3-22
Checking V-belt tension ... 3-22
Retightening the V-belt ... 3-23
Hydraulic system ... 3-24
Specific safety instructions ... 3-24
Checking the hydraulic oil level ... 3-25
Filling up hydraulic oil ... 3-25
Changing hydraulic oil ... 3-26
Monitoring the hydraulic oil reflux filter ... 3-26
Replacing the hydraulic oil reflux filter ... 3-26
Checking hydraulic pressure lines ... 3-27
Lubrication points ... 3-28
Tyre maintenance ... 3-29
Checks once a day ... 3-29
Checks once a week ... 3-29
Changing wheels ... 3-30
Disassembly ... 3-30
Fitting the wheels ... 3-30
Electric system ... 3-31
Specific safety instructions ... 3-31
Service and maintenance work at regular intervals ... 3-31
Instructions concerning specific components ... 3-32
Alternator ... 3-32
Battery ... 3-33
Battery master switch ... 3-34
General maintenance work ... 3-35
Cleaning ... 3-35
General instructions for all areas of the machine ... 3-35
Screw connections and attachments ... 3-35
Pivots and hinges ... 3-35

Engine

4TNV88-KNSV engine: overview ... 4-2
Fuel system ... 4-4
Checking and adjusting valve tip clearance ... 4-5
Tightening order for cylinder head bolts ... 4-6
Checking the injection nozzles ... 4-7
Pressure check ... 4-7
Checking the nozzle jet ... 4-7
Injection time ... 4-8
Adjusting engine revs ... 4-9
Compression ... 4-9
Checking the coolant thermostat ... 4-10
Checking the thermal switch ... 4-10
Oil pressure switch ... 4-11
Checking the coolant circuit ... 4-11
Clutch ... 4-12
Engine trouble ... 4-12

Travelling drive

Variable displacement pump A4VG40DA ... 5-1
Variable displacement pump: diagram ... 5-3
Variable displacement pump: design ... 5-4

MidWestTech | Wacker Neuson 4001 Dumper Service Manual | Publication 1000159454 Order the manual at mid-west-tech.com >

Travelling drive: overview 5-5
Connecting plate with valves 5-6
Hydraulic motor A6VM80HA 5-7
Travelling drive: overview 5-8
Towing and transporting the machine 5-9
Safety instructions 5-9
Towing 5-9
Opening the high-pressure circuit 5-9
Test instruction 5-10
High pressure check 5-10
Check: boost pressure 5-11
Check: setting pressure 5-12
Adjustment 5-13
Setting: control initiation 5-13

Axles
Axle type label 6-1
Drain, fill and check plug 6-2
Tightening torque 6-3
Wheel screws 6-3
General tightening torques (Nm) 6-3
Transfer gearbox 6-5
Semiaxles 6-7
Wheel hub 6-9
Front axle brake 6-11
Differential 6-15
Cardan shaft 6-21

Brakes
Brake circuit 7-1

Steering
Steering circuit 8-1
Steering unit: diagram 8-2
Function 8-2
Steering unit connections 8-3
Steering unit: overview 8-4
Priority valve: overview 8-4
Priority valve: legend 8-4
Steering unit 8-5
Steering unit: legend 8-6

Hydraulic system
Manual spool connections: overview 9-1
Differential lock valves 9-2
Check valve 9-2
Dumping the skip: hydraulic diagram 9-3
Swivelling the skip: hydraulics diagram 9-4
Test instructions 9-5
Check: work hydraulics 9-5
Diagram A4 9-6
Diagram: legend 9-7
Hydraulics diagram A3 9-9

Electric system
Ohm's Law (current, voltage, resistance); power 10-1
Measuring equipment, measuring methods 10-1
Relays 10-2
Use, mode of function 10-2

MidWestTech | Wacker Neuson 4001 Dumper Service Manual | Publication 1000159454
Order the manual at mid-west-tech.com >

2.14 Dimensions model 4001

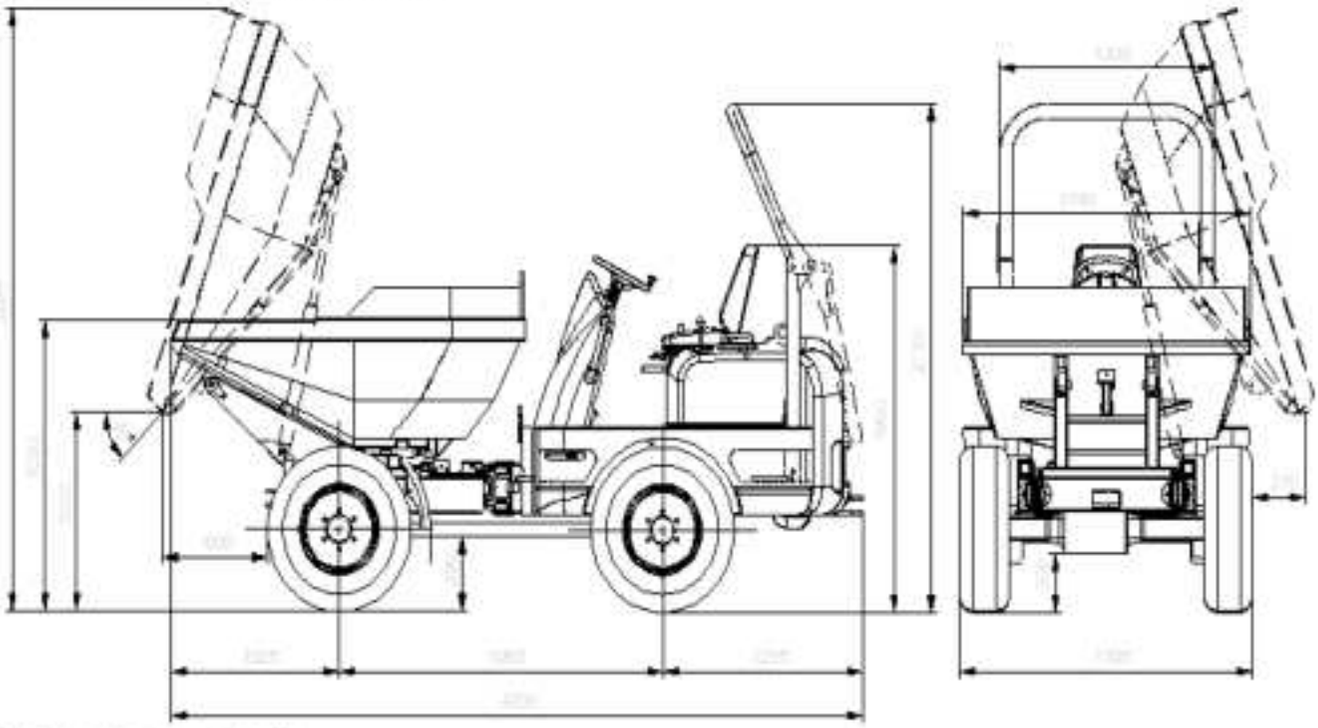


Fig. 5: Machine dimensions (model 4001)

Main data	Model 4001	Model 4001 speed
Dead weight	2730 kg	2695 kg
Overall height	2700 mm	
Overall height with rollbar folded down	1930 mm	
Overall height without rollbar	1930 mm	
Overall width	1795 mm	1770 mm
Ground clearance	300 mm	
Wheelbase	1960 mm	
Outside turning radius	3730 mm	
Hill climbing ability	50 % theoretically	
Safe authorised inclination	25 % in all drive positions left/right	

MidWestTech | Wacker Neuson 4001 Dumper Service Manual | Publication 1000159454 Order the manual at mid-west-tech.com >

4.9 Clutch



Fig. 15: Fastening the clutch

Fastening material:
3 off ISK M12 x 20 – DIN 912
3 off M12 Schnorr washers

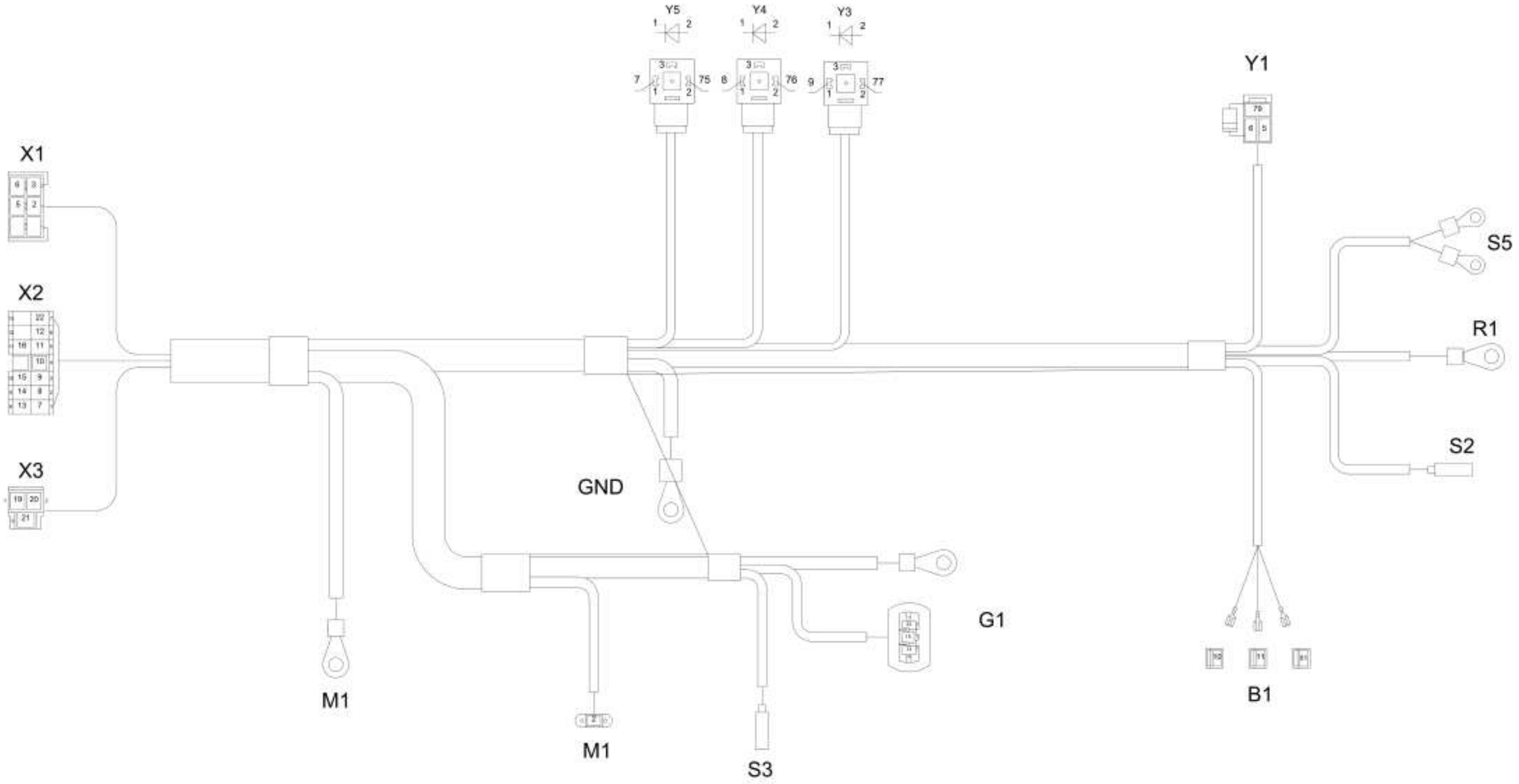
Fasten the clutch by gluing the screws with Loctite and then tightening them to 86 Nm.

4.10 Engine trouble

Problem	Possible causes
Engine does not start or is not easy to start	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 tip 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 tip clearance
	Injection line leaks
	Defective fuel injector

MidWestTech | Wacker Neuson 4001 Dumper Service Manual | Publication 1000159454 Order the manual at mid-west-tech.com >

10.15 Wiring harness 1000115414: engine wiring harness



MidWestTech | Wacker Neuson 4001 Dumper Service Manual | Publication 1000159454

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

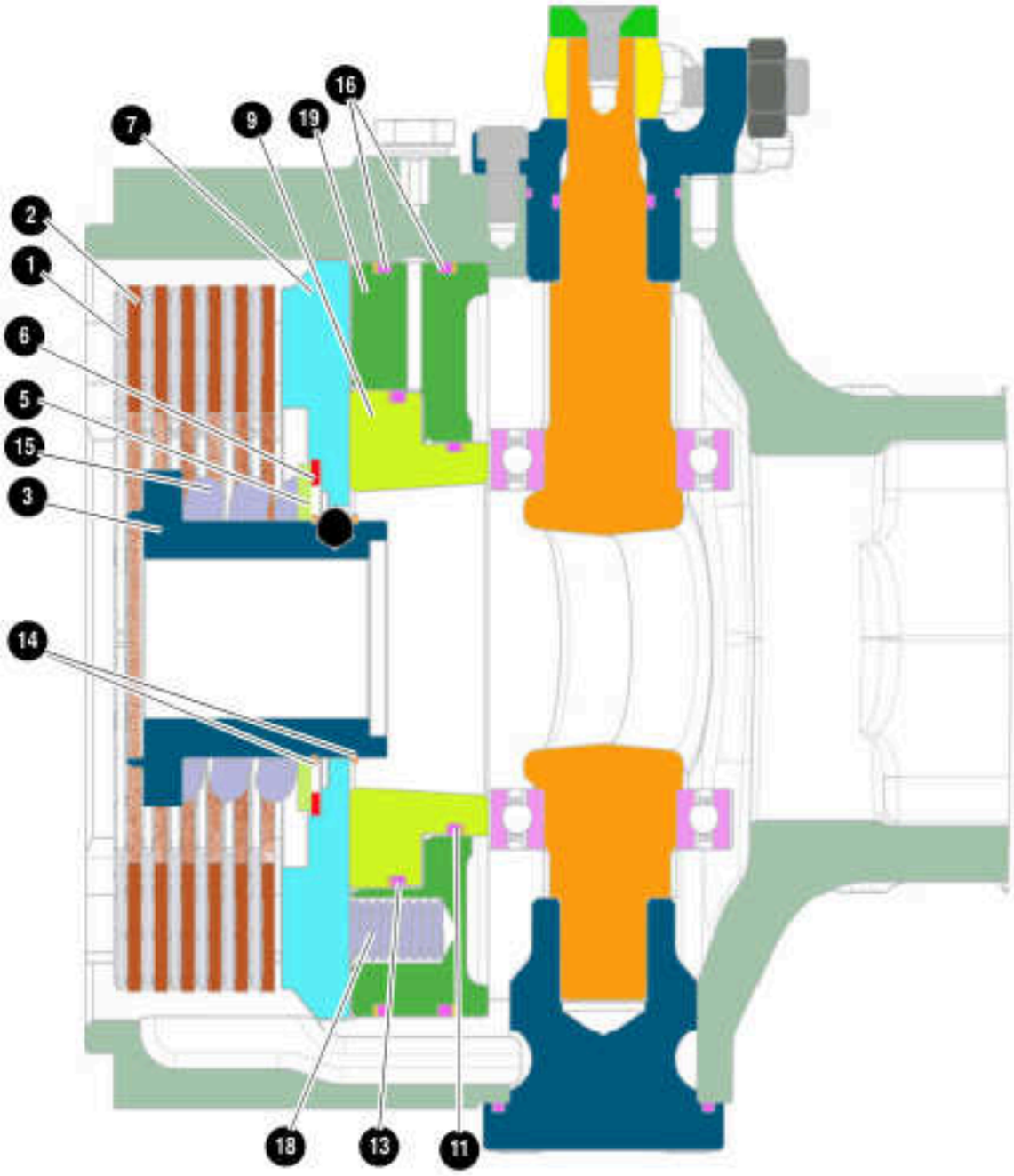


Pos.	Description
5	Control cartridge
6	Inching valve
7	High-pressure valve
8	High pressure Ma

MidWestTech | Wacker Neuson 4001 Dumper Service Manual | Publication 1000159454

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

Brake diagram



MidWestTech | Wacker Neuson 4001 Dumper Service Manual | Publication 1000159454
Order the manual at mid-west-tech.com >

10.12 Wiring harness 1000115009 (legend): main wiring harness

No.	From	Up to	Description	Colour	mm²	No.	From	Up to	Description	Colour	mm²
1	X1	F7		wht/blk	1	32A	K7	F2	+12 V/30	red	4
2	X1	K7	Starting motor 50	wht	2.5	33	M9	GND	Earth	blk	1
3	X1	GND	Earth	blk	2.5	33A	M9	S10	Earth	blk	1
5	X1	K9	Cutoff solenoid switching relay	wht/red	2.5	34	S1	K7.1	Start the engine	wht	1
6	X1	F11	Holding contact cutoff solenoid	blu/blk	1.5	34 A	K6	K7.1	Start the engine	wht	1
7	X2	D1	Forwards driving	brn/wht	1	35	S1	F9	+12 V/15	blu	2.5
7A	X2	X7/2	Forwards driving	brn/wht	1	35A2	S1	X7/1	+12 V/15	blu	2.5
8	X2	X8	Reverse driving	gry/blk	1	36	S1	F13	+12 V/15	blu	2.5
8A	X2	X7/2	Reverse driving	gry/blk	1	37	X6	S11	Handbrake	yel/red	1
8B	D1	X8	Reverse driving	gry/blk	1	37A2	X6	S10	Handbrake	yel/red	1
9	X2	K29	Fast driving	vio/grn	1	38	X6	K6	Preheating telltale	brn/blk	1
10	X2	X6	Empty tank	pkn/wht	1	39	X6	D1	Charge telltale	pkn/yel	1
11	X2	X6	Fuel level indicator	vio	1	40	X8	F6	High beam	grn	1
12	X2	D1	Fouled hydraulic oil filter	org/wht	1	41	X7/1	F6	High beam	grn	1
12A2	X2	X6	Fouled hydraulic oil filter	org/wht	1	42	X7/1	X6	High beam telltale	grn	1
13	X2	D1	Engine temperature	grn/blk	1	43	X6	K10	Turn indicator telltale	ltblu/grn	1
13A2	X2	X6	Engine temperature	grn/blk	1	44	X6	X7/2	Low-speed telltale	vio/wht/vio	1
14	X2	D1	Charge telltale	pkn	1	44A2	X6	K29	Slow driving	vio/wht/vio	1
15	X2	F11	Alternator excitation	ltblu/red	1	45	X7/1	F5	Low beam	gry/blk	1
15 A	X2	M9	Feed pump	ltblu/red	1	46	X8	F5	Low beam	gry	1
16	X2	X6	Engine oil pressure	wht	1	47	X7/1	B2	Horn	org	1
17	X2	D1	Hydraulic oil temperature	wht/blk/wht	1	48	X8	F4	Parking light	yel/blk	1
17A2	X2	X6	Hydraulic oil temperature	wht/blk/wht	1	49	X7/2	S11	+12 V drive	gry/blk	1
18	X2	D1	Fouled air filter	gry/blk/gry	1	50	S11	K29	+12 V drive	org/blu	1
18A2	X2	X6	Fouled air filter	gry/blk/gry	1	51	F8	K29	+12 V drive	org/blu	1
19	X3	F1	+12 V/30	red	6	51 A	F8	X7/2	+12 V drive	org/blu	1
20	X3	F2	+12 V/30	red	6	52	X8	S9	Brake lights	red	1
21	X3	S1	Preheating system	brn	4	53	F12	B2	+12 V horn, brake lights	org/blk	1
21A	S1	S1	Preheating system	brn	2.5	54	B2	S9	+12 V horn, brake lights	org/blk	1
21B	X3	K6	Preheating system	brn	1	55	X8	GND	Earth	blk	1.5
22	X2	K7	Revs signal	blu/blk	1	56	K29	GND	Earth	blk	1
23	X7/1	X6	Parking light	yel/blk	1	56 A	K29	K7	Earth	blk	1
23A2	X7/1	F4	Parking light	yel/blk	1	57	S11	GND	Earth	blk	1
24	X7/1	GND	Earth	blk	1	58	K8	GND	Earth	blk	1
24A2	X7/1	X6	Earth	blk	1	58A	K8	K6	Earth	blk	1
24B	X6	X6	Earth	blk	1	59	B14	F9	+12 V relay	ltblu/blk	1
25	S19	F13	+12 V/15 turn indicators/displays	blu/red	1	59 A	B14	K8	+12 V relay	ltblu/blk	1
25A2	S19	X6	+12 V/15 turn indicators/displays	blu/red	1	59B	K7	K8	+12 V relay	ltblu/blk	1
26	S19	X8	Turn indicators (right)	ltblu	1	60	K8	K9	Cutoff solenoid timer	yel	1
26A2	S19	X7/1	Turn indicators (right)	ltblu	1	61	K8	K9	Cutoff solenoid timer	wht/red	1
27	S19	X8	Turn indicators (left)	blu	1	62	K7	K7.1	Start the engine	wht/grn	1
27A2	S19	X7/1	Turn indicators (left)	blu	1	64	D1	B14	Warning buzzer	gry/yel	1
28	S19	K10	Turn indicators	blu/blk	1	65	D1	K7.1	Start interlock	pkn/yel	1
28A2	S19	X7/1	Turn indicators	blu/blk	1	66	D1	K7.1	Start interlock	brn/grn	1
29	S19	K10	Turn indicators +12 V	blu/yel	1	67	F9	F8	+12 V/15	blu	2.5
30	S19	F3	+12 V/30 turn indicators	red/yel	1	68	F7	F8	+12 V/15	blu	2.5
31	S1	F1	+12 V/30	red	6	69	F7	F11	+12 V/15	blu	2.5
31A2	F3	F1	+12 V/30	red	2.5	70	F12	F11	+12 V/15	blu	2.5
31B	F3	F10	+12 V/30	red	2.5	71	F12	F11	+12 V/15	blu	2.5
32	K9	F2	+12 V/30	red	4						

MidWestTech | Wacker Neuson 4001 Dumper Service Manual | Publication 1000159454

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