Service Manual

Track excavator

8003



Machine model	**8003**
Edition	**2.0**
Language	**English**
Article number	**1000132826**

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

Table of contents

Operation

Important information on this service manual ... 1-1
Abbreviations/symbols ... 1-1
Identification of warnings and dangers ... 1-2
Designated use and exemption from liability ... 1-3
Type labels and component numbers ... 1-4
Serial number ... 1-4
Cab number ... 1-4
Engine number ... 1-4
Hydraulic pump number ... 1-5
Control valve number ... 1-5
Travelling drive number ... 1-5
Swivel unit number ... 1-5
Machine overview ... 1-6
Cab overview ... 1-7
Cab (legend) ... 1-9
Instrument panel overview ... 1-10
Instrument panel (legend) ... 1-12
Engine compartment up to serial no. AD07187 (overview) ... 1-13
Engine compartment from serial no. AH00611 (overview) ... 1-14
Chassis overview ... 1-15
Tilting the cab ... 1-16
Summer/winter operation ... 1-18
Turning the auxiliary hydraulics/boom swivel pedal around ... 1-19

Specifications

Chassis ... 2-1
Engine ... 2-1
Hydraulic system ... 2-4
Undercarriage and swivel unit ... 2-5
Stabiliser blade ... 2-5
Electric system ... 2-5
Noise levels ... 2-7
Vibration ... 2-7
Coolant compound table ... 2-8
Model-specific tightening torques ... 2-8
General tightening torques ... 2-8
Dimensions model 8003 ... 2-13
Lift capacity table 8003 ... 2-14
Lift capacity table 8003 with long stick ... 2-15
Lift capacity table 8003 with counterweight ... 2-16
Lift capacity table 8003 with long stick and counterweight ... 2-17
Lift capacity table 8003 Vario (option) ... 2-18
Kinematics ... 2-19

Maintenance

Fluids and lubricants ... 3-1
Maintenance label ... 3-3
Maintenance plan (overview) ... 3-5
Service package ... 3-9
Introduction ... 3-9
Fuel system ... 3-10
General ... 3-11
Refuelling from barrels ... 3-11
Engine lubrication system ... 3-14
Checking the oil level ... 3-14

MidWestTech | Wacker Neuson 8003 Track Excavator Service Manual | Publication 10... Order the manual at mid-west-tech.com >

Cooling system 3-18
Checking the coolant level 3-19
Filling up coolant 3-20
Air filter 3-21
V-belt 3-24
Pressure check 3-27
Test report 3-32
Hydraulic system 3-35
Travelling drive 3-40
Chains 3-41
Lubrication work 3-43
Electric system 3-46
Cab 3-49
General maintenance work 3-50
When using washing solvents 3-50
When using compressed air 3-50
When using a high-pressure cleaner or steam jet 3-50
When using volatile and easily flammable anticorrosion agents and sprays: 3-50
Cleaning the seat belt: 3-51

Engine

Engine 4TNV98-VNS (up to serial no. AD07187 American Tier 2) 4-1
Fuel system 4-3
Removing the valve cover 4-4
Checking and adjusting valve clearance 4-4
Tightening order for cylinder head bolts 4-6
Checking the injection nozzles 4-7
Checking the nozzle jet 4-7
Injection time 4-8
Adjusting engine revs 4-10
Compression 4-10
Checking the coolant thermostat 4-10
Checking the thermal switch 4-11
Oil pressure switch 4-11
Checking the coolant circuit 4-12
Engine 4TNV98-ZVNS from serial no. AH00611 4-13
Fuel system 4-15
Removing the valve cover 4-16
Checking and adjusting valve clearance 4-16
Tightening order for cylinder head bolts 4-18
Checking the injection nozzles 4-19
Checking the nozzle jet 4-19
Injection time 4-20
Compression 4-23
Checking the coolant thermostat 4-23
Checking the thermal switch 4-24
Oil pressure switch 4-24
Checking the coolant circuit 4-24
Engine trouble 4-25
Electronic engine control (E-ECU) 4-27
Engine error codes 4-28
Error diagnosis 4-32
Automatic revs setting 4-90
Automatic revs setting enabled 4-90

Hydraulic system

Hydraulic pump AP2D36LV3RS6-874-P 5-1
Main valve block 5-6

MidWestTech | Wacker Neuson 8003 Track Excavator Service Manual | Publication 10... Order the manual at mid-west-tech.com >

Drive counterbalancing system ... 5-13
Boom raise summation ... 5-15
Boom check valve (load retaining valve) ... 5-16
Stick ram summation ... 5-17
Stick check valve (load retaining valve) ... 5-18
Pilot valves ... 5-19
Valves ... 5-25
Pressure cutoff valve ... 5-27
Travelling drive up to serial no. AC 02956 ... 5-32
Auto2Speed drive from serial no. AC 02957 ... 5-34
Swivel unit ... 5-37
Swivel joint ... 5-43
Breather filter ... 5-44
Troubleshooting in the hydraulic system ... 5-45
Hydraulics diagram A4 ... 5-46
Hydraulics diagram (legend) ... 5-47
Hydraulics diagram ... 5-48
Options diagram 1 ... 5-49
Options diagram 2 ... 5-50
Main valve block diagram ... 5-51

Electric system

Ohm's Law (current, voltage, resistance); power ... 6-1
Measuring equipment, measuring methods ... 6-1
Cable colour coding ... 6-3
Relays ... 6-3
Electric units ... 6-4
Fuse box on the instrument panel up to serial no. AD07187 ... 6-4
Main fuse box with relays up to serial no. AD07187 ... 6-4
Relays up to serial no. AD07187 ... 6-5
Fuse box on the instrument panel from serial no. AH00611 ... 6-5
Main fuse box with relays from serial no. AH00611 ... 6-6
ECU from serial no. AH00611 ... 6-7
Socket ... 6-7
Joystick tip switches ... 6-8
Instrument panel overview ... 6-9
Switches: overview ... 6-10
Alternator ... 6-11
Starter ... 6-11
Wiring diagram A4 up to serial no. AD07187 (legend) ... 6-13
Wiring diagram A4 up to serial no. AD07187 ... 6-14
Wiring diagram A4 from serial no. AH00611 (legend) ... 6-15
Wiring diagram A4 (1) from serial no. AH00611 ... 6-16
Wiring diagram A4 (2) from serial no. AH00611 ... 6-17
Engine – chassis A4 wiring harness 1000116497 up to serial no. AD07187 (legend) ... 6-18
Engine – chassis A4 wiring harness 1000116497 up to serial no. AD07187 ... 6-19
Engine – chassis A4 wiring harness 1000173970 from serial no. AH00611 (legend) ... 6-20
Engine – chassis A4 wiring harness 1000173970 from serial no. AH00611 ... 6-21
Wiring harness 1000125106 switches A4 (legend) ... 6-22
Wiring harness 1000125106 switches A4 ... 6-23
Wiring harness 1000109629: cab roof ... 6-24
Wiring harness 1000109628: armrest ... 6-25
Wiring harness 1000116138: boom working light ... 6-26
Wiring diagram A3 up to serial no. AD07187 (legend) ... 6-29
Wiring diagram A3 up to serial no. AD07187 ... 6-30

MidWestTech | Wacker Neuson 8003 Track Excavator Service Manual | Publication 10... Order the manual at mid-west-tech.com >

2.13 Lift capacity table 8003

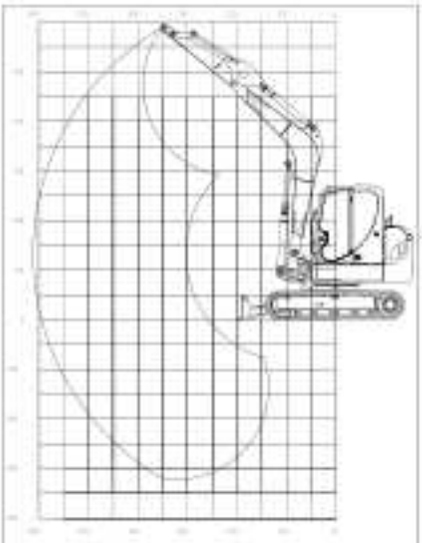
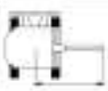


Fig. 6: Lift capacity table (model 8003)

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

A	max		5.0 m (16'5")		4.0 m (13'1")		3.0 m (9'10")		2.0 m (6'7")	
B										
5.0 m (16'5")	2000* (4409*)	1510 (3329)			1955* (4310*)	1950 (4299)				
4.0 m (13'1")	1920* (4233)	1165 (2568)	1915* (4222*)	1330 (2932)	2010* (4431*)	1930 (4255)				
3.0 m (9'10")	1895* (4178*)	985 (2172)	2020* (4453*)	1300 (2866)	2315* (5104*)	1845 (4068)	2925* (6449*)	2920 (6437)		
2.0 m (6'7")	1905* (4200*)	920 (2028)	2205* (4861*)	1245 (2745)	2750* (6063*)	1730 (3814)	4070* (8973*)	2620 (5776)		
1.0 m (3'3")	1930* (4255*)	890 (1962)	2380* (5247*)	1185 (2612)	3120* (6878*)	1620 (3571)	4770* (10516*)	2400 (5291)		
0.0 m (0'0")	1960* (4321*)	910 (2006)	2455* (5412*)	1145 (2524)	3260* (7187*)	1550 (3417)	4750* (10472*)	2335 (5148)		
-1.0 m (-3'3")	1975* (4354*)	990 (2183)	2345* (5170*)	1130 (2491)	3135* (6911*)	1530 (3373)	4375* (9645*)	2330 (5137)	6305 (13900)	4830 (10648)
-2.0 m (-6'7")	1940* (4277*)	1180 (2601)			2690* (5930*)	1545 (3406)	3675* (8102*)	2365 (5214)	5230* (11530*)	4900 (10803)
-3.0 m (-9'10")	1700* (3748*)	1700* (3748*)					2385* (5258*)	2385* (5258*)		

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.

MidWestTech | Wacker Neuson 8003 Track Excavator Service Manual | Publication 10... Order the manual at mid-west-tech.com >

NG	Replace the preheating relay.
OK	With the preheating relay and the wiring harness connected, check the relay coil resistance. -> Next: [2. Check the relay coil resistance value (relay + wiring harness side):]

2. Check the relay coil resistance value (relay + wiring harness side):

- Connect the preheating relay onto the wiring harness.
- Disconnect the E-ECU from the wiring harness.
- Measure the resistance between E-ECU connectors E44 and B00 with a multimeter.

*See above, "Coil resistance value of standard Yanmar preheating relay".

NG	Check the wiring harness for continuity. -> Next: [3. Check the wiring harness for continuity:]
OK	Check the movement of the preheating relay with the diagnosis tool. -> Next: [4. Check the relay for movement:]

3. Check the wiring harness for continuity:

- Disconnect the preheating relay and the E-ECU from the wiring harness.
- Check the wiring harness for continuity by means of a multimeter.

Clamp	Continuity	Status
Relay coil (input side) E44 [between E-ECU and sensor connector]	Yes	OK: normal
	No	NG: open wiring harness
Relay coil (output side) B00 [between E-ECU and sensor connector]	Yes	OK: normal
	No	NG: open wiring harness
Between E33 and GND/E28/E45/E47	No	OK: normal
	Yes	NG: wiring harness short-circuited to GND
Between E44 and E43/E48	No	OK: normal
	Yes	NG: wiring harness short-circuited with power supply

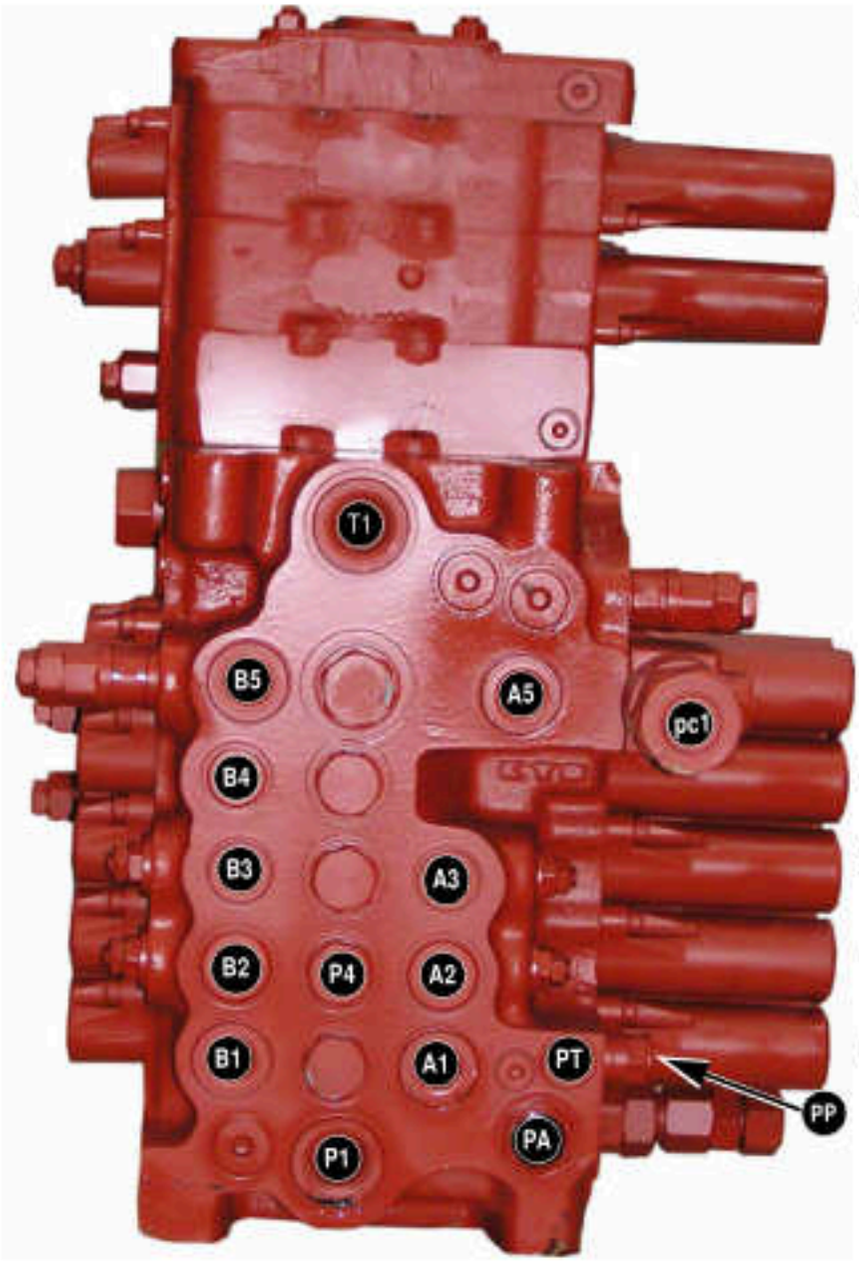
NG	• Check whether the wiring harness is damaged, or whether the wiring is correct. • Replace the wiring harness.
OK	Check the movement of the proportional solenoid relay of the injection pump with the diagnosis tool. -> Next: [4. Check the relay for movement:]

MidWestTech | Wacker Neuson 8003 Track Excavator Service Manual | Publication 10... Order the manual at mid-west-tech.com >

5.16 Troubleshooting in the hydraulic system

Problem	Possible causes
Hydraulic system without function	Defective safety switch on control lever base
	Wrong setting of safety switch on control lever base
	Defective solenoid valve on pilot oil supply unit
	Contaminated solenoid valve on pilot oil supply unit
	Hydraulic oil level too low
	Defective valve fuses
	Defective/interrupted plug and socket connection towards solenoid valve
Hydraulic hammer does not work correctly.	Quickhitch couplings not connected correctly
	Hydraulic oil quantity too high/too low
	Hydraulic oil pressure too high/too low
Excavator runs in 1st speed only.	Defective switch for 2nd speed range
	Defective solenoid valve on pilot oil supply unit
	Contaminated solenoid valve on pilot oil supply unit
	Defective valve fuses
	Defective/interrupted plug and socket connection towards solenoid valve
	Counterpressure in travelling drive does not drop below control pressure

MidWestTech | Wacker Neuson 8003 Track Excavator Service Manual | Publication 10... Order the manual at mid-west-tech.com >



Rotating the upper§

Stabiliser blade

Stick

Boom summation

Swivel boom

Auxiliary

Left-hand side

MidWestTech | Wacker Neuson 8003 Track Excavator Service Manual | Publication 10... Order the manual at mid-west-tech.com >

Boom lubrication points



Fig. 50: Boom lubrication points

☞ *Apply grease to lubrication points **D** on the boom.*

Lubrication points on the stick

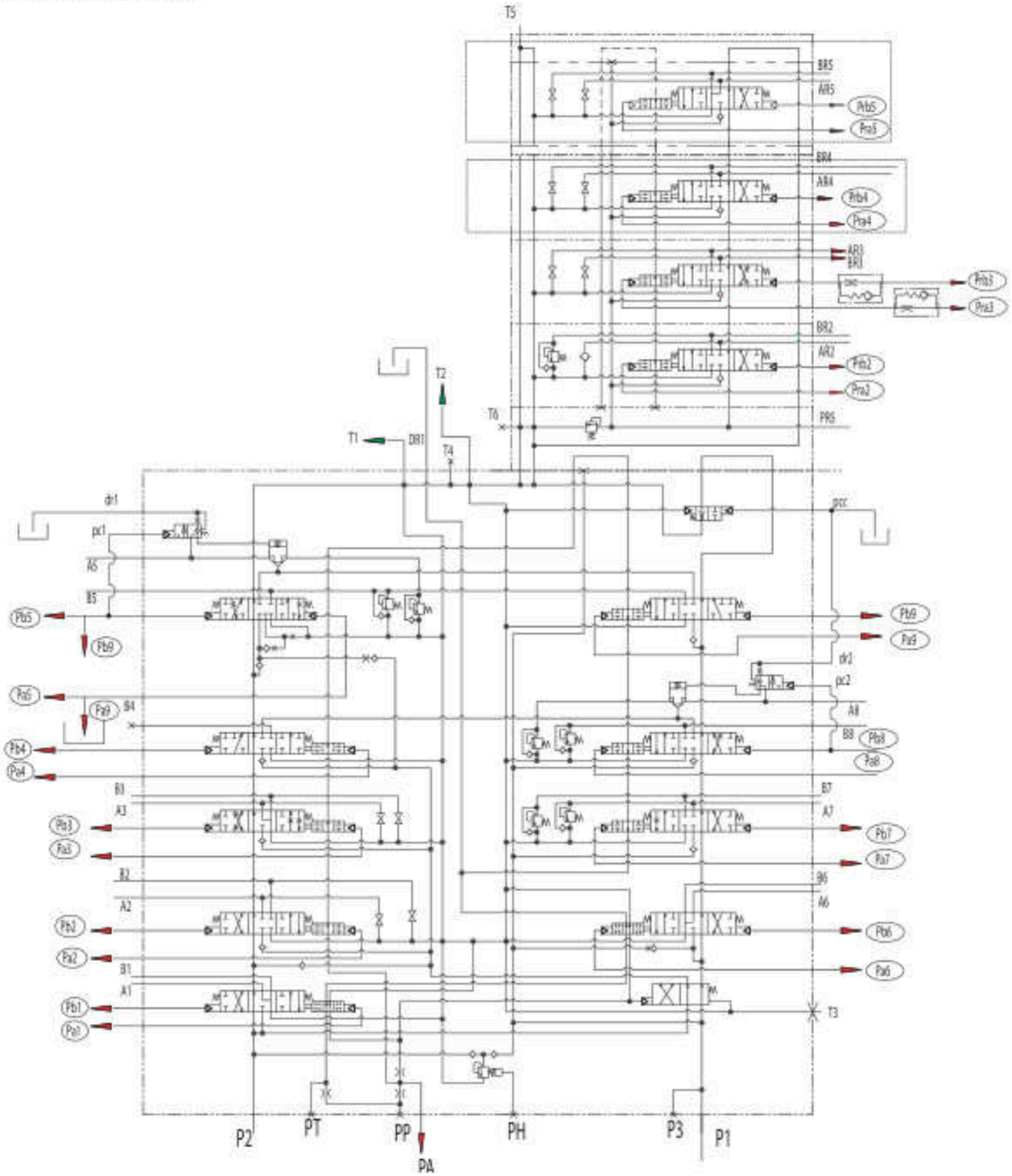


Fig. 51: Lubrication points on the stick

☞ *Apply grease to lubrication points **E** on the stick.*

MidWestTech | Wacker Neuson 8003 Track Excavator Service Manual | Publication 10... Order the manual at mid-west-tech.com >

5.22 Main valve block diagram



Main control lines

Port	Legend
A1, B1	Travelling drive (left)
A2, B2	Auxiliary hydraulics
A3, B3	Offset ram
A4, B4	Boom ram summation
A5, B5	Stick ram
A6, B6	Drive (right)
A7, B7	Bucket ram
A8, B8	Boom ram
A9, B9	Stick ram summation
AR2, BR2	Stabiliser blade ram
AR3, BR3	Gear motor
AR4, BR4	3rd control circuit (optional)
AR5, BR5	Triple articulation boom (option)

Pilot control lines

Port	Legend	Controlled via
Pa1, Pb1	Left-hand side drive control	Drive pedal (left)
Pa2, Pb2	Auxiliary hydraulics control	Auxiliary hydraulics pedal
Pa3, Pb3	Boom swivel control	Auxiliary hydraulics pedal
Pa4, Pb4	Boom summation control	Joystick (right)
Pa5, Pb5	Stick control	Joystick (left)
Pa6, Pb6	Right-hand side drive control	Drive pedal (right)
Pa7, Pb7	Bucket control	Joystick (right)
Pa8, Pb8	Boom control	Joystick (right)
Pa9, Pb9	Stick summation control	Joystick (left)
Pra2,Prb2	Stabiliser blade control	Stabiliser blade pedal
Pra3, Prb3	Upper carriage rotation control	Joystick (left)
Pra4, Prb4	3rd control circuit control (option)	- see 3rd control circuit option, page 7-28
Pra5, Prb5	Triple articulation boom control (option)	– see Triple articulation boom option, page 7-29

Pump/tank lines

Port	Legend
P1	Pump 1 port
P2	Pump 2 port
PR5	Pump 3 + 4 port
PA	Pilot oil supply unit port
T1	Tank line via non-return valve and filter in tank
T2	Tank line via oil cooler and filter in tank
DR1, DR2	Tank lines for boom summation

MidWestTech | Wacker Neuson 8003 Track Excavator Service Manual | Publication 1000132826

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