1.6 Machine overview



Fig. 14 Machine overview

Pos.	Description	Pos.	Description
1	Stabilizer blade	13	Triple articulation boom
2	Chassis	14	Shovel arm
3	Tracks	15	Bucket
4	Stabilizer blade lifting eyes	16	Cab
5	Mirrors	17	Tie-down points
6	Chassis working lights	18	One-piece boom lifting eye
7	Rocker cover	19	Handhold
8	Rotating beacon	20	Door handle
9	Auxiliary hydraulics	21	Door arrester
10	Air conditioning	22	Exhaust
11	Boom	23	Engine cover
12	One-piece boom	24	Roof light

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

2 Technical data

2.1 Deutz engine

Engine	ET90 DOC	ET90 DPF
Manufacturer	Deutz	
Type	TCD 2.9 DOC only	TCD 2.9 DOC + DPF
Design	Water-cooled 4-cylinder diesel engine	
Number of cylinders	4	
Intake system	Turbo-charging, charge air cooling	
Cooling system	Water cooled/suction fan	
Fuel injection system	Common rail direct injection	
Engine management	--	Electronic
Displacement	2925 cm³ (178 in^3)	
Nominal bore and stroke	92 x 110 mm (3.6 x 4.3 in)	
Rated output at rated speed	55.4 kW at 2300 rpm (74.3 hp at 2300 rpm)	
Output (ECO mode)	52 kW at 1650 rpm (70 hp at 1650 rpm)	
Output (Power mode)	55 kW at 1850 min^{-1} (73.8 hp at 1850 rpm)	
Max. torque	300 Nm at 1600 rpm (221 ft.lbs at 1600 rpm)	
Max. engine speed without load	1850 +/− 25 rpm	
Idling speed	900 +/− 25 rpm	
Starting aid	Glow plugs[1]	
Exhaust Aftertreatment	Diesel oxidation catalyst	Diesel oxidation catalyst + closed particulate filter
Exhaust values according to	97/68 EG (2012/46/EG), 97/68 EC (2012/46/EC)	
	from 2019: EU Stage 3B, US EPA 40 CFR Part 1039	
Fuel tank	85 liters (22.4 gal)	
Valve clearance	0.20 mm (0,007 in)	
Compression ratio	1:17,8	
Engine oil pressure	1.4 bar (20.3 psi)	
Thermostat opening temperature Fully open	86°C – 90°C (187°F – 194°F) 99°C – 102°C (210°F – 216°F)	
Firing order	1-3-4-2	
Direction of rotation	Anticlockwise (as seen from the flywheel)	

1. Preheating time controlled by engine control unit.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

2.13 Tightening torques

Model-specific tightening torques ET90

ET90	Thread	Torque Nm (ft.lbs.)
Live ring	M16 10.9	140 (103)[1] *
Track roller	M12 10.9	110 (81) *
Drive pinion	M14 10.9	180 (133) *
Travel drive	M16 10.9	275 (203) *
Swivel unit	M16 10.9	275 (203) *
Angled engine bracket	M12 10.9 M10 8.8	110 (81)
Engine bearing	M10 8.8	110 (81)
Coupling	M8 8.8	35 (26) *
Pump base	M10 10.9	65 (48) *
Hydraulic pump	M16 10.9	250 (184)
Swivel joint	M10 10.9	65 (48) *
Bumper/additional counter-weight	M 30 10.9	2010 (1482) *

1. The screws must be rotated further by 60° +/-5°.

(*) All connections with an * must be glued with Loctite S2420 or VaryBond 12-43.

Model-specific tightening torques ET65

ET65	Thread	Torque Nm (ft.lbs.)
Live ring	M16 10.9	275 (203) *
Track roller	M16 10.9	275 (203) *
Drive pinion	M14 12.9	230 (170) *
Travel drive	M14 12.9	230 (170) *
Swivel unit	M16 10.9	290 (214) *
Angled engine bracket	Z3/8" UNC x1" M14 10.9	46 (34) 180 (133)
Engine bearing	M12 10.9	87 (64)
Coupling	Z5/16” UNC x 3/4” FKL12	25 (18) *

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

3.2 Special tools

Information

For information on available special tools, visit the online portal at https://portal.wackerneuson.com/wiki.

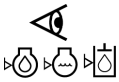
3.3 Fluids and lubricants ET90

Application	Fluid/lubricant	Specification	Season/ temperature	Capacities [1]
Engine	Diesel fuel	EN 590 (EU)[2]	Year-round[3]	85 Liter (22.5 gal)
		ASTM D975 grade 1D S15 (USA)[4]		
		ASTM D975 grade 2D S15 (USA)[4]		
		BS 2869 Class A2		
	Coolant	Distilled water and antifreeze ASTM D3306 or ASTM D4985[5]	Year-round	11 liters (3 gal)[6]
	Coolant (904J-E28T)	Distilled/de-ionized water and antifreeze ASTM (American Society for Testing & Materials (ASTM)) D3306	Year-round	13.2 liter (3.5 gal)[7]
	Engine oil[8]	API CJ-4; ACEA E9; ECF-3	– see *Engine oil types* on page 3-6	7.5 liters (2 gal)
	Engine oil [9] (904J-E28T)	API CJ-4; ACEA E9; Perkins DEO-ULS		8.5 - 9.8 Liter (2.3 - 2.6 gal)
Hydraulic oil reservoir	Hydraulic oil	Eurolub HVLP 46[10]	Year-round[11]	92 liters (24.3 gal)
	Biodegradable hydraulic oil[12]	Panolin HLP Synth 46		
		BP BIOHYD SE-S 46		
Traveling drives	Gearbox oil	SAE 80W-90, SAE 10W-40 GL-4, GL-5	Year-round	1.5 liters (0.4 gal)
Drives ET90 904J-E28T	Gearbox oil	SAE 30-CF, SAE 10W-40 GL-4, GL-5	Year-round	1.5 liters (0.4 gal)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

3.6 Maintenance plan

Daily maintenance (operator)		
Symbol	**Inspection work** (Check the following fluids and lubricants, check the oil levels after a test run and add oil if necessary)	Page
	Check the fluids and lubricants (engine oil, engine coolant, hydraulic oil)	--
	Check the radiator and hydraulic oil cooler for dirt, clean them if necessary	--
	Check the charge-air cooler for contaminants, clean it if necessary (ET90/ ET65 404F-E22TA)	
	Check the diesel cooler for dirt, clean it if necessary (ET90/ET65 404F-E22TA and ET90 904J-E28T)	
	Lubricate the vehicle according to the lubrication schedule	--
	Check the water separator (pre-filter) and fuel filter on sight glass; drain water if necessary (ET65/EZ80 and ET90 904J)	--
	Water separator (prefilter) and fuel filter: drain water according to indicating element (not ET90 904J and EZ80/ET65 404J)	
	Check the track tension and retension the tracks if necessary	--
	Check the engine air intake	--
	Check the pin locks	--
	Check line fixtures	--
	Check the indicator lights and acoustic warning devices	--
	Check the swivel unit brake for correct function	--
	Check the hydraulic couplings for dirt	--
	Check the threaded fittings of the protective structures (for example the cabin) for tightness	--
	Clean the lights/light system, signaling systems	--

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Loading the vehicle

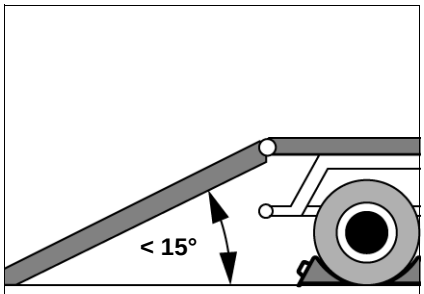


Fig. 33 Access ramp on an incline

1. Ensure that the vehicle can be loaded safely - See *chapter "Towing, loading and transporting"* in the vehicle's operator's manual.
2. Secure the transport vehicle with chocks to prevent it from rolling.
3. Install access ramps at the smallest possible angle. Ensure that the grade does not exceed 15° (27%).
4. Use access ramps and transport surfaces with an anti-skid surface only.
5. Ensure that the loading area is clear and access to it is not obstructed, for example by superstructures.

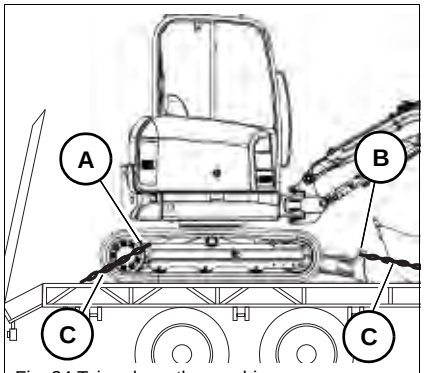


Fig. 34 Tying down the machine

6. Start the engine.
7. Raise the boom and the stabilizer blade to avoid touching the access ramps.
8. Carefully drive the vehicle onto the middle of the transport vehicle.
9. Move the vehicle to transport position:
   - Position the boom straight ahead at the center of the vehicle.
   - Lower the boom and the stabilizer blade.
10. Stop the engine.
11. Raise the control lever base.
12. Remove the starting key and carry it with you.
13. Leave the cabin, close and lock all doors, windows and covers.
14. Firmly fasten the vehicle on the loading area with tie-downs **A** and **B** with slings **C** of appropriate size. Observe legal rules and regulations.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Engine lubrication system

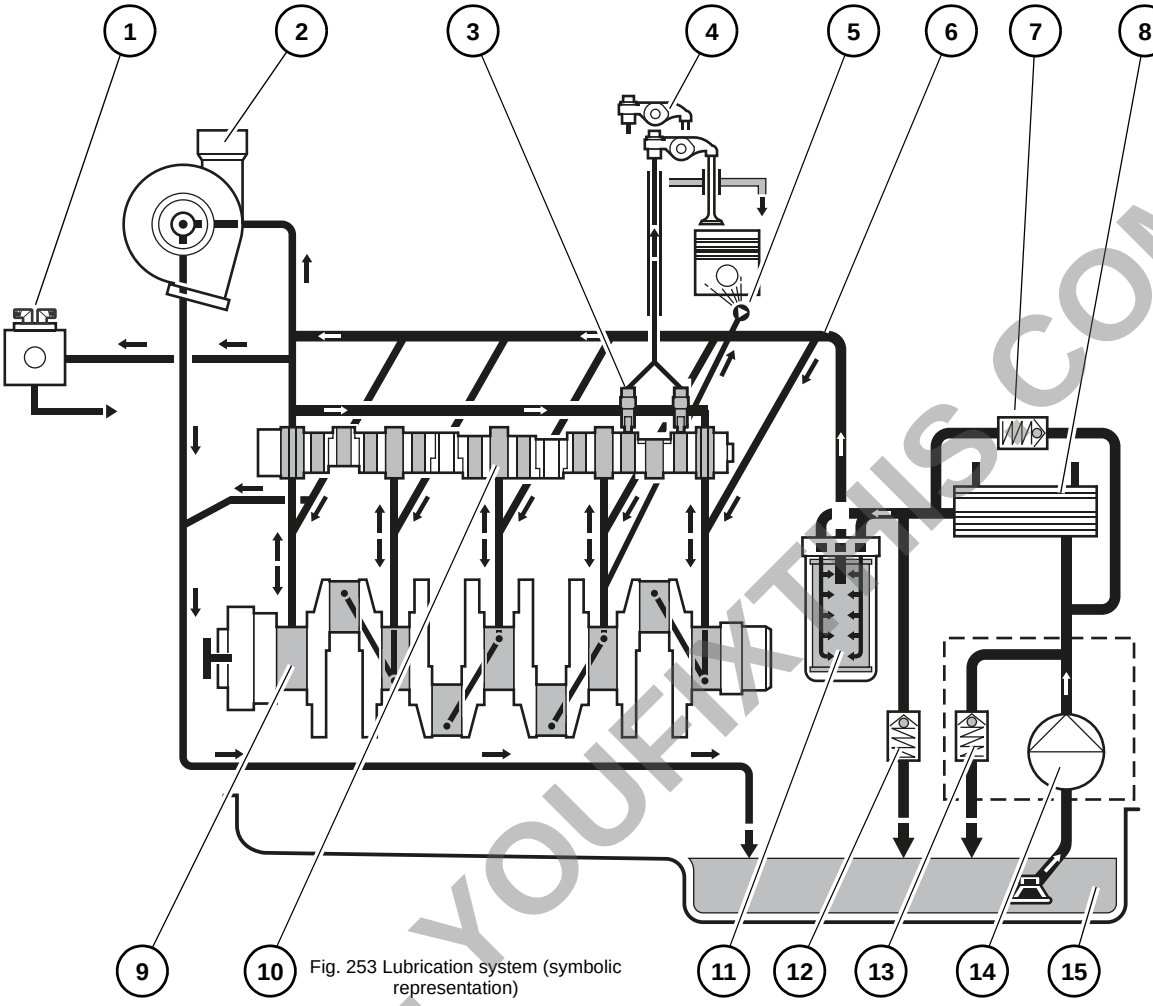


Fig. 253 Lubrication system (symbolic representation)

Pos.	Description
1	Hydraulic pump (option)
2	Exhaust turbocharger
3	Hydraulic tappet
4	Rocker arm
5	Piston cooling nozzle
6	Main lube oil channel
7	Bypass valve
8	Engine oil cooler

Pos.	Description
9	Crankshaft bearing
10	Camshaft bearing
11	Engine oil filter
12	Pressure regulating valve
13	Pressure limiting valve
14	Engine oil pump
15	Engine oil sump

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

5 Hydraulic system

5.1 Overview of components

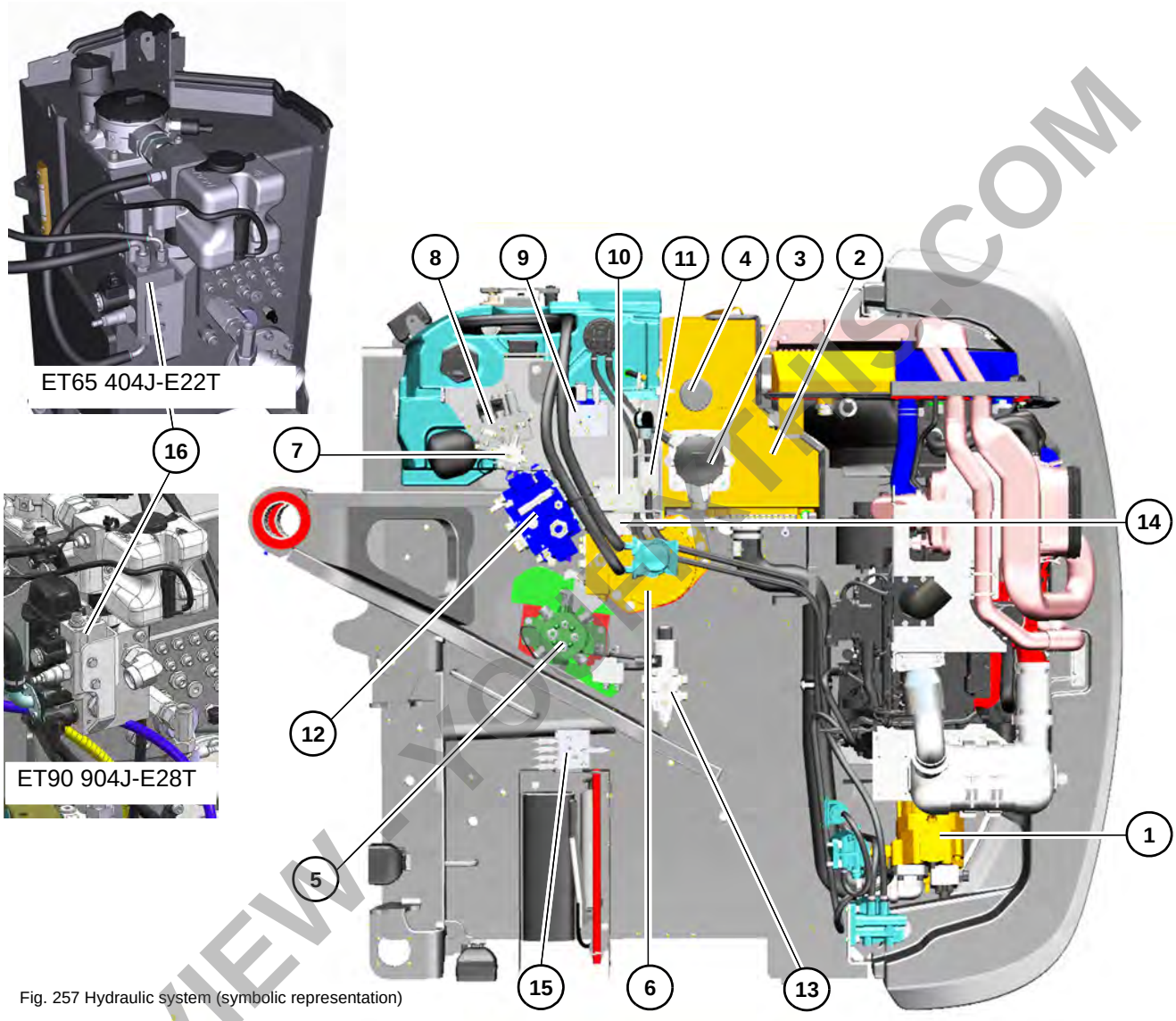


Fig. 257 Hydraulic system (symbolic representation)

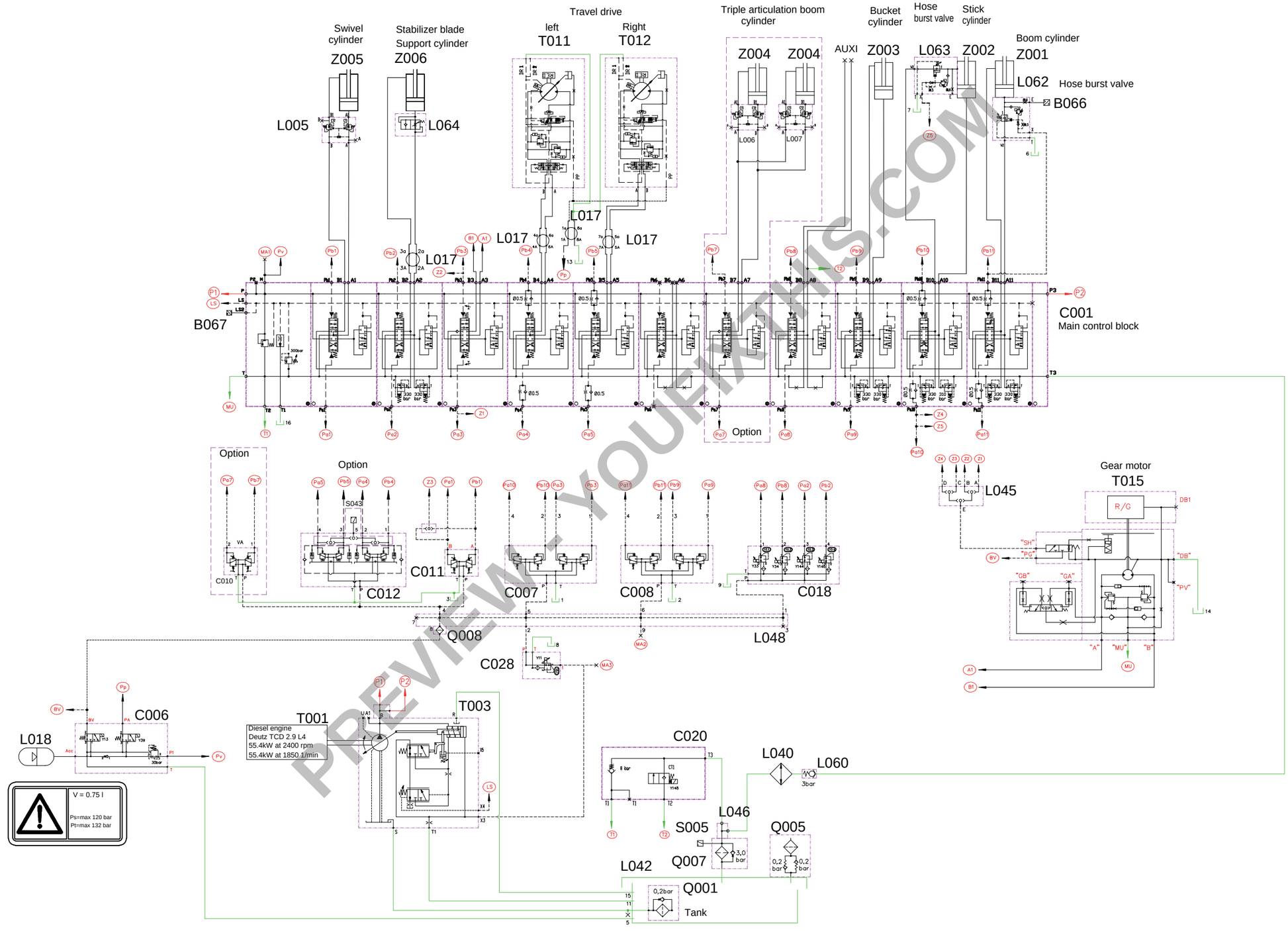
Pos.	Description
1	Hydraulic pump[1]
2	Hydraulic oil reservoir
3	Hydraulic oil filter
4	Breather filter
5	Swivel joint
6	Swivel unit
7	Distributor unit 1
8	Pilot oil supply unit

Pos.	Description
9	Quickhitch valve
10	Proportional valve 1
11	Proportional valve 2
12	Main control block
13	ISO/SAE changeover valve
14	Proportional valve 3
15	Shuttle valve block
16	Thermo-management valve (only 404J-E22T and 904J-E28T)

1. The hydraulic pump 1 with pressure, flow and power compensator is directly flanged to the diesel engine.

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

8.6 Hydraulics diagram ET90 (up to serial no. WNCE1404CPAL00474)



PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-1	+FR1	/5.E1		
-02	+CB1	/4.E1		
-10	+FR8	/4.B1		1000324173
-12V15	+CBW1	/5.D6		1000364917
-12V15-1	+CBW1	/5.D4		1000364917
-12V15-1	+FR8	/4.B1		1000324173
-12V15-1	+FRW1	/5.B4		1000099150
-12V30	+CBW1	/5.D4		1000364917
-12V30	+FR8	/4.B1		1000324173
-12V30	+FRW1	/5.B4		1000099150
-12V30-1	+CBW1	/5.D7		1000096859
-12V30-1	+FR8	/4.B1		1000324173
-12V30-1	+FRW1	/5.B6		1000099150
A	+FR1			1000175333
A	+FR1			1000175333
A	+FR1			1000175333
A	+FR1			1000175333
A	+FR2		Arbeitspumpe	1000175333
-A001	+CB2	/24.C6	Radio	1000258408
-A001.1	+CBW2		Radio	1000104902
-A001.2	+CBW2		Radio	1000104903
B	+FR1			1000175333
B	+FR1			1000175333
B	+FR1			1000175333
B	+FR1			1000175333
B	+FR2		Arbeitspumpe	1000175333
-B	+CB2	/24.E6	Lautsprecher	1000068958
-B001	+FR1	/12.D6	Kraftstoffmessgerät	1000308978
-B001	+FRW1	/12.D6	Kraftstoffmessgerät	1000051989
-B002	+FR1	/27.D5	Signalhorn	1000027049
-B002.1	+FRW1	/27.C5	Signalhorn	1000027435

PREVIEW - YOUFIXTHIS.COM

WACKER NEUSON
Wacker Neuson Linz GmbH
Flughafenstraße 7 / A- 4063 Hörsching
Tel.: +43 / (0)7221 63000
Fax: +43 / (0)7221 63000-6000

Diese Zeichnung darf ohne unsere ausdrückliche Genehmigung weder vervielfältigt, noch dritten Personen oder Mitbewerbern im Original oder als Kopie ausgehändigt werden. Eigentums- und Urheberrecht vorbehalten.

	Datum	Name
Bearb.		Inzleibg
Gepr.		
Freigabe		

Betriebsmittelverzeichnis
-

Mat.-Nr. 1000345074 | Doc.-Nr. 2060040587

Revision | Ersetzt Version | Gewicht in [kg]

-/61

A3

Download full manual at youfixthis.com

+EN8
-N5.1

ECM 904-2.8

Connector ECM J2

PIN	NOTE	DESCRIPTION 1	Ref-PAGE	DESCRIPTION 2
3	HS	Injector 1	/16.A1	
4	LS			
1	HS	Injector 2	/16.A1	
2	LS			
8	HS	Injector 3	/16.A2	
9	LS			
6	HS	Injector 4	/16.A2	
7	LS			
38	Signal	Fuel Temperature sensor	/16.A2	
41	Return			
25	Signal	Rail pressure	/16.A2	
32	Return			
66	Supply			
16	LS	Fuel Pump Control Valve	/16.A3	
11	HS			
78	Signal	Crankshaft speed	/16.A3	
57	Return			
65	Supply			
79	Signal	Camshaft speed	/16.A3	
58	Return			
72	Supply			
44	Signal	engine oil pressure	/16.A4	
31	Return			
24	Signal	Temperature Coolant	/16.A4	
43	Return			
40	SigTemp	Inlet Mainfold Air	/16.A4	
28	SigPress			
56	Return			
67	Supply	input Throttle valve	/16.A5	
54	Return			
35	Position			
17	HS			
18	LS			
64	Supply	NRS Valve	/16.A5	
53	Return			
30	Position			
19	HS			
20	LS			
29	Absolute	NRS Pressure	/16.A5	
34	Delta			
36	SigPre	NRS Temperature	/16.A6	
69	SigPost			

PIN	NOTE	DESCRIPTION 1	Ref-PAGE	DESCRIPTION 2
10				
13				
15				
76	CAN H	DOC DPF Temperature	/17.A2	
75	CAN L			
12				
48				
55				
14	LS	Start relay	/13.E2	
52		Senor Return	/14.A3	
47			/17.A1	
21				
22				
23				
45				
48				
51				
55				
68				
73				
39				

Connector ECM J1

PIN	NOTE	DESCRIPTION 1	Ref-PAGE	DESCRIPTION 2
1		Battery +	/11.F4	
2				
3				
4		Battery -	/38.C2	
5				
6				
7	Low	CAN A	/18.A2	
8	High			
29	Absolute	DPF Printed	/16.A7	
28	Delta			
36	Signal	Intake air Temperature	/17.A4	
45	Ground			
42				
41		Speed controller 1		
30				
35				
38		Speed controller 2		
22				
9		ignition	/12.F1	
11		Main relay	/11.F1	
17		relay fuel pump	/11.F6	
18	HS	control unit Start relay	/13.A2	
33		Preheating relais	/11.A6	
32		Motor Start	/13.E1	
39		Sensor Supply		
43		ATAAC Temperature		
23	Signal	water separator	/14.A2	
31				
13				
24				
25				
37				
15				
16				
26				
12				
27				
44				
34				
40			/17.A1	
47				
21				

PREVIEW - YOUFIXTHIS.COM

project:	ED E14_ST5_01		
active Option:			
replace for Mat.-Nr:			
Version SAP:	00	Version DS:	

Wacker Neuson Group
Wacker Neuson Linz GmbH
4063 Hörsching
AUSTRIA

We reserve all rights in this document and in the information contained therein. Reproduction, use or disclosure to third parties without express authority is strictly forbidden.

	date	name
User	31.8.2018	LNZGrosl
Proved	31.8.2018	LNZPenzp

Diesel engine overview
circuit diagram E14

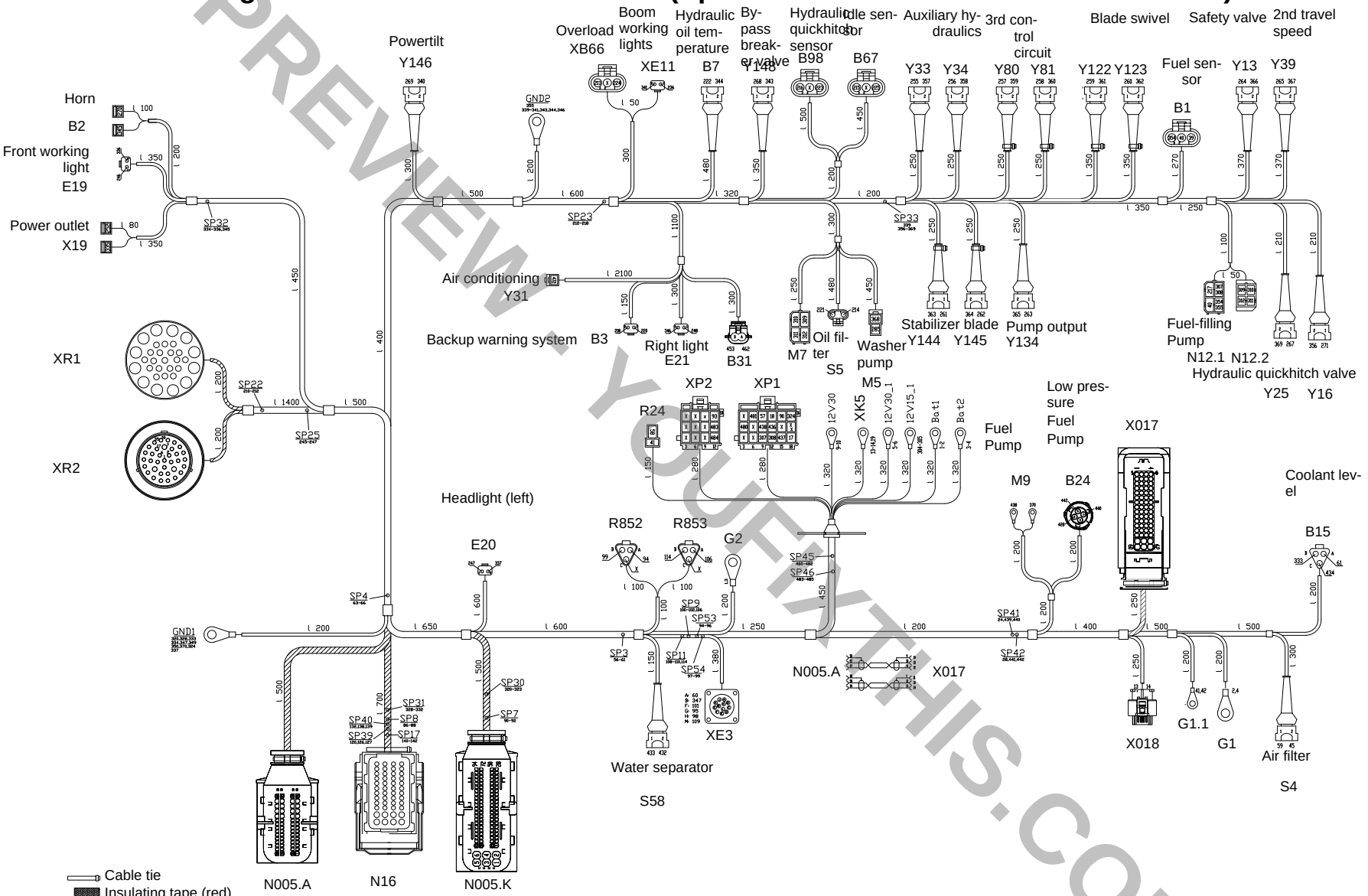
Mat. -Nr. 1000345076 | Doc. -Nr. 2060040589

Revision:	00
replace for Rev.	
Message No	6
	A3

Download full manual at youfixthis.com

1591106422

7.10 Chassis wiring harness E14 Deutz 2.9 DOC (up to serial no. WNCE1404PPAL00289)



PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Module N16 does not respond (no power supply)	-	19		

Engine – Perkins/Deutz			**Also refer to Electronics N**	
Engine error (diesel engine electronics)	N005	27-6000		
Contact the technical support for detailed engine failure information (SPN)!				
Sensors, signal transmitters (electrical system)	**B**	**517000-517399**		
Fuel indicator	B001	517000		
Horn	B002	517001		
Reversing warning system	B003	517002		
Front axle steering sensor	B004	517003		
Rear axle steering sensor	B005	517004		
Engine temperature sensor	B006	517005		
Hydraulic oil temperature sensor	B007	517006		
Load sensor – strain gage	B008	517007		
Speed sensor	B009	517008		
Diesel engine speed	B010	517009		
Loudspeaker	B011	517010		
Loudspeaker	B012	517011		
Proximity switch	B013	517012		
Engine preheating system temperature sensor	B014	517013		
Coolant level sensor	B015	517014		
Fan control temperature sensor	B016	517015		
Gearbox input speed transmitter	B017	517016		
Buzzer	B018	517017		
Quickhitch buzzer	B019	517018		
Camshaft speed	B020	517019		
Charge air sensor (temperature/pressure)	B021	517020		
Rail/fuel pressure sensor	B022	517021		
Engine oil pressure sensor	B023	517022		
Fuel low pressure sensor	B024	517023		
Crankshaft speed	B025	517024		
Telescopic boom sensor (extended, rear)	B026	517025		
Telescopic boom sensor (extended, middle)	B027	517026		
Position pickup for bucket repositioning	B028	517027		
Automatic bucket reverse angle of rotation sensor		517137		
Particulate filter temperature sensor	B029	517028		
Particulate filter temperature sensor	B030	517029		
Outside temperature sensor	B031	517030		
Cabin temperature sensor	B032	517031		
Air duct temperature sensor	B033	517032		
Fan control temperature sensor	B034	517033		
Pressure sensor (exhaust gas back pressure after turbocharger)	B035	517034		
Exhaust gas mass flow sensor	B036	517035		

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Engine malfunctions

Problem	Possible causes
Engine turns, but does not start	Malfunctioning glow plugs
	Error in the fuel system
	Malfunctioning compression
	Malfunctioning speed sensor and reference mark transmitter
	Malfunctioning air-intake and exhaust system
	Malfunctioning components (visual damage)
	Glow plug relay
	Leaks in oil or fuel system
	Clogged air filter
	Damage of lines and hoses
	Malfunctioning cylinder-head gasket
	Fuel level too low
	Air in fuel system
Engine does not turn	Malfunctioning starter/starter solenoid coil, or error in starter circuit
	Power supply error
	Internal engine error
	Battery lead and/or battery

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Service manual

Track excavator

ET 65
ET 90





Machine models	**E14-01/E14-04**
Issue	**1.6**
Language	**en**
Document order number	**1000353762**

WACKER NEUSON

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Table of Contents

1 Operation
1.1 Notices on this service manual ... 1-1
1.2 Identification of warnings and dangers ... 1-2
1.3 Explanation of symbols and abbreviations ... 1-3
1.4 Warranty and liability ... 1-6
1.5 Labels ... 1-7
1.6 Machine overview ... 1-11
1.7 Overview of the engine compartment ET90 ... 1-12
1.8 Overview of the engine compartment ET90 904J_E28T ... 1-13
1.9 Overview of the engine compartment ET65 ... 1-14
1.10 Overview of the engine compartment ET65 404F-E22TA ... 1-15
1.11 Overview of the engine compartment ET65 404J-E22T ... 1-16
1.12 Overview of valve compartment ET90 ... 1-17
1.13 Overview of the valve compartment ET90 904J-E28T ... 1-18
1.14 Overview of valve compartment ET65 ... 1-19
1.15 Overview of the valve compartment ET65 404F-E22TA ... 1-20
1.16 Overview of the valve compartment ET65 404J-E22T ... 1-21
1.17 Battery master switch ... 1-22
1.18 Towing the vehicle ... 1-23
1.19 Loading the vehicle ... 1-24
1.20 Transporting the vehicle ... 1-29

2 Technical data
2.1 Deutz engine ... 2-1
2.2 Perkins engine ... 2-2
2.3 Travel drive ... 2-6
2.4 Brakes ... 2-6
2.5 Tracks / ground pressure / ground clearance ... 2-6
2.6 Steering system ... 2-7
2.7 Work hydraulics ... 2-7
2.8 Maximum speed ... 2-9
2.9 Electrics ... 2-10
2.10 Bulbs ... 2-15
2.11 Auxiliary hydraulics performance measurement ... 2-15
2.12 Payload/stability ... 2-15
2.13 Tightening torques ... 2-16
2.14 Hose identification code ... 2-22
2.15 Coolant ... 2-23
2.16 Powertilt ... 2-23
2.17 Noise emission ... 2-24
2.18 Vibrations ... 2-24
2.19 Weight ... 2-25
2.20 Excavator forces ... 2-26
2.21 Dimensions ... 2-27
2.22 Kinematics ET90 ... 2-35
2.23 Kinematics ET65 ... 2-36
2.24 Overload setting ... 2-37

3 Maintenance
3.1 Information on maintenance ... 3-1
3.2 Special tools ... 3-2
3.3 Fluids and lubricants ET90 ... 3-2
3.4 Fluids and lubricants ET65 ... 3-4

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Index

Numerisch
3rd control circuit 5-23
4-fold proportional valve 5-22

A
Adding coolant 3-54
Adding engine oil 3-48
Adding hydraulic oil 3-92
Air conditioning
Filling 3-61
Air intake 3-67
Air-suspension comfort seat 11-1
Auxiliary hydraulics performance measurement ..2-15, 5-37

B
Battery master switch 1-17
Bulbs 2-15

C
Cabin fuse box 3-25
Cabin wiring harness (legend) 7-90
CAN-Bus 6-12
Chassis wiring harness 404F-E22TA 7-100
Checking EGR valve 3-86
Checking the air intake 3-66
Checking the engine-oil level 3-48
Checking the fluid level 3-67
Checking the water separator 3-37
Cleaning the engine compartment 3-132
Cleaning the exterior of the machine 3-132
Cleaning the seat belt 3-132
Cold starter 3-32
Coolant compound table 2-23
Crane-lifting 1-27

D
Dehumidifier 9-4
Deutz engine TCD 2.9 DOC/DPF 4-23
Cooling system 4-28
Engine control 4-29
Exhaust-gas treatment system 4-25
Fuel system 4-27
Turbocharger 4-30
Diagnosis code list (SPN) 16-1
Diesel fuel specification 3-34
Driving Speed 2-10

E
Electrical components 2-10
Electrical system 6-1
Alternator 6-3
Control equipment 6-4
Relays 6-2
Sensors 6-7
Starter 6-3
Empty the water separator (main filter) 3-40
Excavator forces 2-26

F
Fire extinguisher 3-31
FOPS type label 1-9
Fuel-filling pump 10-1
Fuses 2-13
Fuses and relays 3-127

H
Hose burst valve 5-25, 14-1
Hydraulic oil reservoir 5-2
Hydraulic pump ET65 5-5
Hydraulic pump ET90 5-3
Hydraulics diagram – options ET65 8-17
Hydraulics diagram – options ET90 8-9
Hydraulics diagram ET65 8-13
Hydraulics diagram ET90 8-7
Hydraulics diagram legend ET90 and ET65 8-2

I
Information regarding operation with biodegradable oil 3-9
Interlocks 3-31

J
Joysticks 5-26

L
Lifting eyes 1-27
Loading 1-24
Loading the vehicle 1-24
Load-retaining valve 5-24

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

3.5 Important information regarding operation with biodegradable oil ... 3-9
3.6 Maintenance plan ... 3-11
3.7 Parking the vehicle ... 3-19
3.8 Maintenance accesses ... 3-19
3.9 Cabin ... 3-31
3.10 General engine information ... 3-32
3.11 Fuel system ... 3-34
3.12 Engine lubrication system ... 3-48
3.13 Cooling system ... 3-53
3.14 Air filter ... 3-64
3.15 Washer system ... 3-67
3.16 V-belt ... 3-68
3.17 Crankcase vent ... 3-80
3.18 Exhaust system ... 3-82
3.19 Hydraulic system ... 3-88
3.20 Checking the hydraulic system pressure ... 3-96
3.21 Test report ET90 ... 3-105
3.22 Test report ET65 ... 3-106
3.23 Traveling drive ... 3-109
3.24 Tracks ... 3-110
3.25 Measuring live ring tolerance ... 3-114
3.26 Maintenance of attachments ... 3-115
3.27 Lubrication work ... 3-116
3.28 Electrical system ... 3-126
3.29 Cleaning and maintenance ... 3-130
3.30 Resetting the maintenance meter ... 3-133

4 Engine
4.1 Perkins engine 404F-22T/404D-22T ... 4-1
4.2 Perkins 404F-E22TA engine ... 4-8
4.3 Perkins 404J-E22T engine ... 4-11
4.4 Perkins 904J-E28T engine ... 4-14
4.5 Deutz engine TCD 2.9 DOC/+ DPF (diesel particulate filter) ... 4-23

5 Hydraulic system
5.1 Overview of components ... 5-1
5.2 Hydraulic oil reservoir ... 5-2
5.3 Hydraulic pump ET90 ... 5-3
5.4 Hydraulic pump ET65 ... 5-5
5.5 Pilot oil supply unit ... 5-8
5.6 Main control block ... 5-10
5.7 Power train ... 5-13
5.8 Swivel joint ... 5-15
5.9 Input segment ... 5-17
5.10 Swivel unit ET90 ... 5-20
5.11 Swivel unit ET65 ... 5-21
5.12 4-fold proportional valve ... 5-22
5.13 3rd control circuit ... 5-23
5.14 Hose burst valve 3 (load-retaining valve on dozer blade without loss) ... 5-24
5.15 Hose burst valve ... 5-25
5.16 Joysticks left and right ... 5-26
5.17 Pedals ... 5-27
5.18 Proportional valve 3 (non-pressurized tank return line) ... 5-28
5.19 Shuttle valve block ... 5-29
5.20 Thermo-management valve (C048) ... 5-30
5.21 Hydraulic quickhitch valve ... 5-31
5.22 Auxiliary hydraulics performance measurement ... 5-37

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

2. Open the valve cover. – *see* *Valve cover* on page 3-20.
3. Open the filler cap.

Refueling with the fuel-filling pump

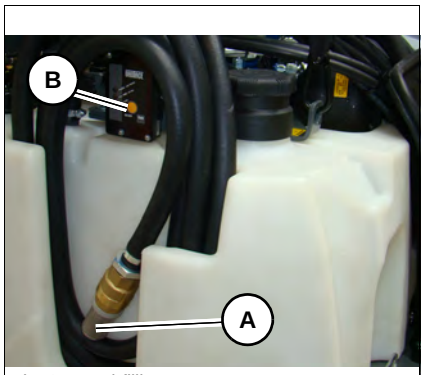


Fig. 91 Fuel-filling pump

1. Turn the starting key to position **1**.
2. Insert the hose of fuel-filling pump **A** into the container with the fuel.
3. Press switch **B** to switch on the fuel filling pump.
   - ➥ The green LED illuminates during refueling. The red LED indicates pumping has begun.
   - ➥ The tank sensor screwed into the fuel tank automatically switches off the fuel-filling pump.
   - ➥ Once refueling is over, the green LED (ON/OFF) and the yellow LED (FULL TANK/NO FUEL) illuminate.
4. Press switch **B** to switch off the fuel filling pump.
   - ➥ About one minute after the last work step, the fuel-filling pump goes into standby mode.
5. Close the filler cap.

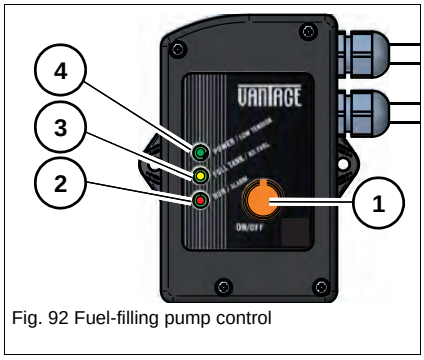


Fig. 92 Fuel-filling pump control

Pos.	Description	Function	LED
1	ON/OFF	Start/stop refueling	-
2	RUN/ALARM	– The red LED indicates pumping has begun. – Displays several alarm conditions	Red
3	FULL TANK/NO FUEL	The reservoir is full, the yellow LED illuminates permanently.	Yellow
4	POWER/LOW TENSION	– The fuel-filling pump is operational. – Displays several alarm conditions	Green

Stationary fuel pumps

Even the smallest particles of dirt can cause increased engine wear, malfunctions in the fuel system and reduced effectiveness of the fuel filters.

Refueling from barrels

If refueling from barrels cannot be avoided, note the following points:

Barrels must neither be rolled nor tilted before refueling.

Protect the suction pipe opening of the barrel pump with a fine-mesh screen.

Immerse the suction pipe opening down to a max. 15 cm (5.85 in) above the bottom of the barrel.

Only fill the tank using refueling aids (funnels or filler pipes) with an integral microfilmer.

Keep all refueling containers clean.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Fuel injection system

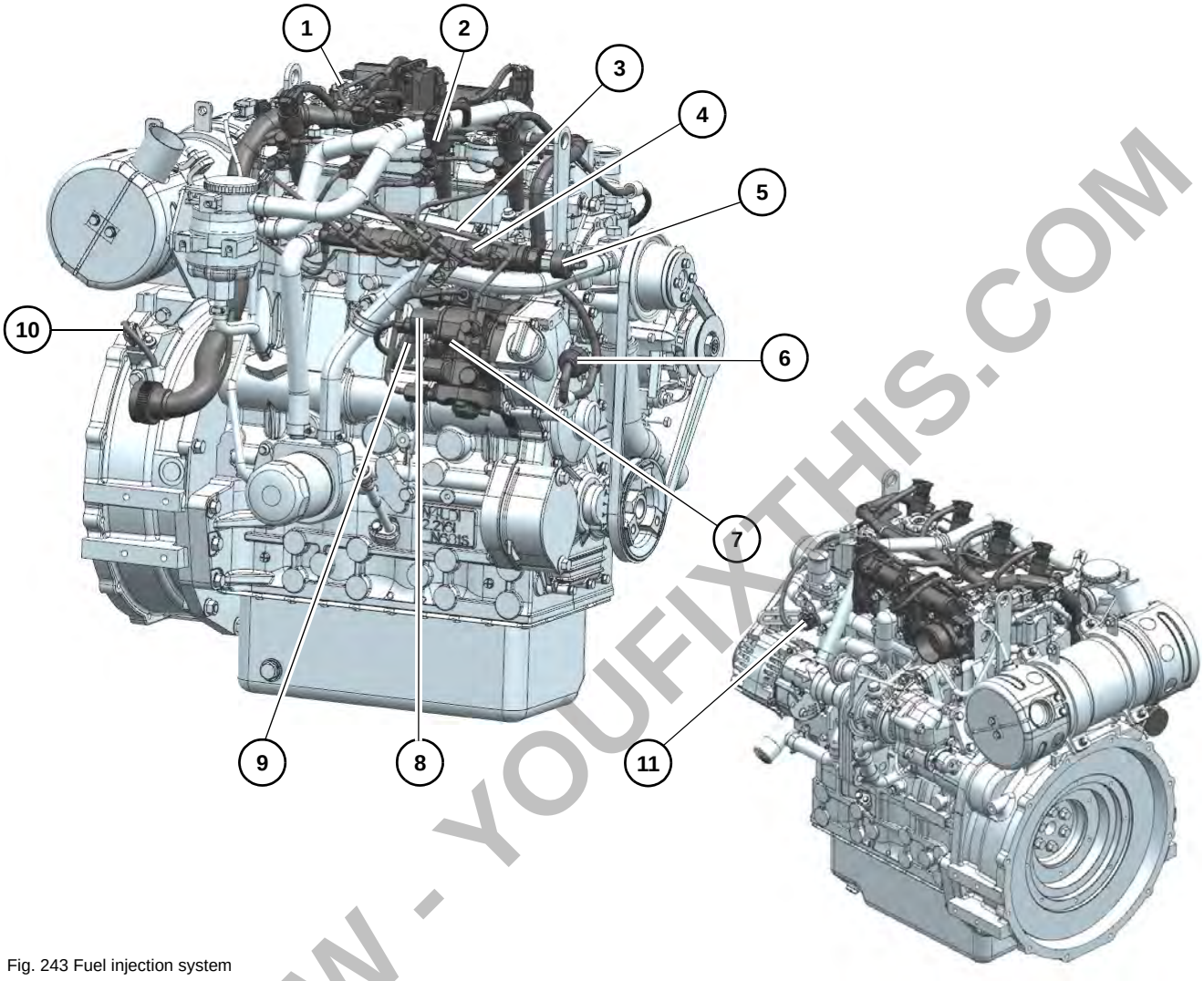


Fig. 243 Fuel injection system

Pos.	Description
1	Intake manifold boost pressure sensor
2	Electronically controlled injection nozzle
3	Leak oil line
4	Fuel filter distributor unit
5	Fuel pressure sensor
6	Camshaft speed/ignition time sensor

Pos.	Description
7	High-pressure fuel pump
8	Fuel metering solenoid valve
9	Fuel temperature sensor
10	Crankshaft speed/ignition time sensor
11	Coolant temperature sensor

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

246	SP25	E19/1	1	vt	Working light (left)
247	SP25	E20/1	1	vt	Working light (left)

nr.	From	To	mm²	Color	Function
330	N16/L4	SP31	1	bk	Ground
331	N16/M3	SP31	1	bk	Ground
332	N16/M4	SP31	1	bk	Ground
333	GND1	B15/B	1	bk	Ground
334	GND1	SP32	1.5	bk	Ground
335	X19	SP32	1.5	bk	Ground
336	E19/2	SP32	1	bk	Ground
337	E20/2	GND1	1	bk	Ground
339	GND2	SP33	1.5	bk	Ground
340	Y146/2	GND2	1	bk	Ground
341	XE11/2	GND2	1	bk	Ground
343	Y148/2	GND2	1	bk	Ground
344	B7/2	N16/F3	1	ye-bn	Ground sensor
345	B2	SP32	1	bk	Ground
346	E21/2	GND2	1	bk	Ground
347	GND1	XE3/B	1	bk	Ground
349	GND1	XR1/I	1.5	bk	Ground
350	GND1	XR1/J	1.5	bk	Ground
354	B1/3	N12.1/2	1	bk	Ground
355	GND2	N12.1/2	1	bk	Ground
356	SP33	Y16/2	1	bk	Ground
357	SP33	Y33/2	1	bk	Ground
358	SP33	Y34/2	1	bk	Ground
359	SP33	Y80/2	1	bk	Ground
360	SP33	Y81/2	1	bk	Ground
361	SP33	Y122/2	1	bk	Ground
362	SP33	Y123/2	1	bk	Ground
363	SP33	Y144/2	1	bk	Ground
364	SP33	Y145/2	1	bk	Ground
365	SP33	Y134/2	1	bk	Ground
366	SP33	Y13/2	1	bk	Ground
367	SP33	Y39/2	1	bk	Ground

328	GND1	SP31	1.5	bk	Ground
329	N16/L3	SP31	1	bk	Ground

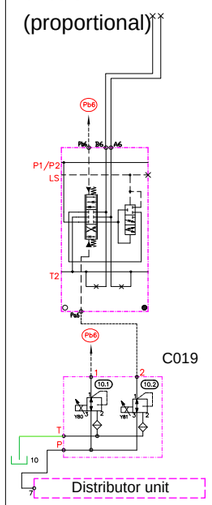
nr.	From	To	mm²	Color	Function
370	GND1	M9.2	1.5	bk	Ground
418	N005.A/5	X017/20	1.5	pk	Actuator MPROP
419	N005.A/4	X017/19	1.5	pk	Actuator MPROP
420	N005.A/33	X017/62	1.5	pk	Injector 1
421	N005.A/16	X017/35	1.5	pk	Injector 1
422	N005.A/46	X017/40	1.5	pk	Injector 2
423	N005.A/3	X017/41	1.5	pk	Injector 2
424	N005.A/32	X017/38	1.5	pk	Injector 3
425	N005.A/2	X017/61	1.5	pk	Injector 3
426	N005.A/48	X017/42	1.5	pk	Injector 4
427	N005.A/18	X017/37	1.5	pk	Injector 4
428	N005.K/61	B24/2	0.75	pk	Fuel low pressure
429	N005.K/82	X017/51	0.75	pk	Exhaust gas valve
430	N005.K/85	X017/46	0.75	pk	Exhaust gas valve
432	N005.K/64	S58/2	0.75	pk	GND sensor
433	N005.K/57	S58/1	0.75	pk	Water-in-fuel switch
434	N005.K/13	B15/C	0.75	pk	Coolant level
436	N005.K/90	XP1/11	0.75	pk	Fuel pump relay
437	N005.K/26	XP1/15	0.75	pk	Fuel pump relay
438	M9.1	XP1/8	1.5	pk	Fuel pump
439	N005.A/24	SP41	0.75	pk	Sensor supply
440	B24/1	SP41	0.75	pk	Sensor supply
441	N005.A/29	SP42	0.75	pk	Sensor supply
442	B24/4	SP42	0.75	pk	Sensor supply
443	N005.K44	X017/50	0.75	pk	5 V sensor
453	B31/B	XR2/33	0.75	ye-bn	GND sensor
462	B31/A	XR2/32	0.75	bn	Outside temperature sensor
472	Y31	XR2/11	1	bn	Air conditioning
473	N16/G1	XR2/9	1	bn	Fan relay 1
474	N16/C1	XR2/10	1	bn	Fan relay 2
480	SP45	XP1/2	1.5	rd	F4 12 V 30
481	SP45	XP1/4	1.5	rd	F4 12 V 30

PREVIEW - YOUFIXTHIS.COM

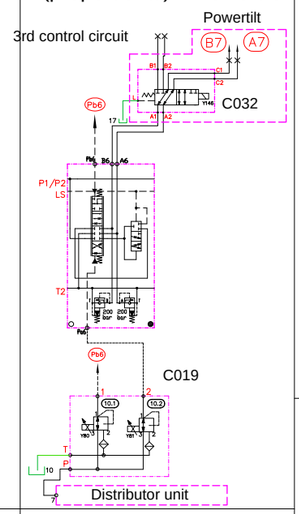
Download full manual at youfixthis.com

8.16 Hydraulics diagram – options ET65

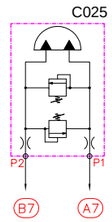
Option: 3rd control circuit (proportional)



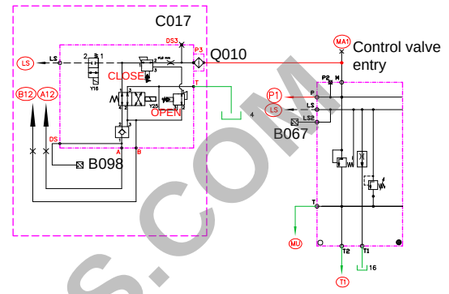
Option: 3rd control circuit (proportional) + Powertilt



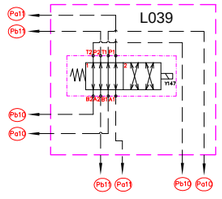
Option: Powertilt



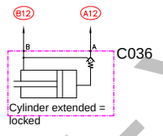
Option: Easy Lock preparation



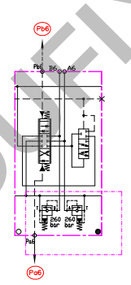
Option: SAE changeover



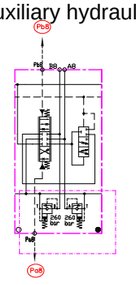
Option: quickhitch



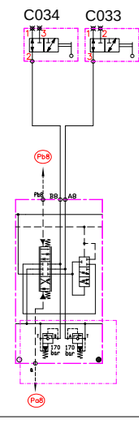
Option: pressure limiting valve 3rd control circuit



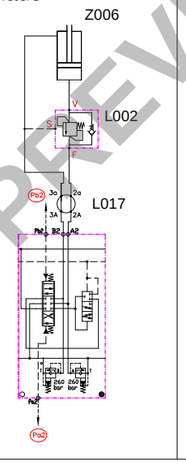
Option: pressure limiting valve Auxiliary hydraulics



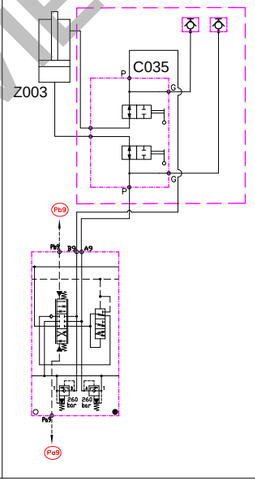
Option: hydraulic thumbs



Option: Loss-free dozer blade



Option: grab



PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

BMK	Ort	Position	Identifier_Text	SAP_ArticleNumber
-Y123	+FRW2	/25.D6	Magnetventil Planierschild schwenken	1000027359
-Y144	+FRW2	/25.D4	Magnetventil Planierschild	1000027359
-Y145	+FRW2	/25.D5	Magnetventil Planierschild	1000027359
-Y146	+FR1		Magnetventil Umschaltung Powertilt	
-Y146	+FRW2	/27.C4	Magnetventil Umschaltung Powertilt	1000027359
-Y147	+CB1		Magnetventil Umschaltung ISO/SAE	
-Y147	+CBW1	/26.D7	Magnetventil Umschaltung ISO/SAE	1000027410
-Y148	+FR1		Magnetventil Tankrücklauf	
-Y148	+FRW2	/26.D8	Magnetventil Tankrücklauf	1000000455

PREVIEW - YOUFIXTHIS.COM

WACKER NEUSON
Wacker Neuson Linz GmbH
Flughafenstraße 7 / A- 4063 Hörsching
Tel.: +43 / (0)7221 63000
Fax: +43 / (0)7221 63000-6000

Diese Zeichnung darf ohne unsere ausdrückliche Genehmigung weder vervielfältigt, noch dritten Personen oder Mitbewerbern im Original oder als Kopie ausgehändigt werden. Eigentums- und Urheberrecht vorbehalten.

	Datum	Name
Bearb.		Inzleibg
Gepr.		
Freigabe		

Betriebsmittelverzeichnis
-

Mat.-Nr. 1000345074 Doc.-Nr. 2060040587

Revision
Ersetzt Version
Gewicht in [kg]

-/62

A3

Download full manual at youfixthis.com

8.21 Wiring diagrams ET65 Tier IV

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Electronics circuit diagram E14

ET65/EZ80 404J-E22T

Version: 00

created: lnzgrosl

date: 04.11.2019

AVW: 700015543/700015544





PREVIEW YOUFIXTHIS.COM

project:	ED E14_ST5_01				
active Option:					
replace for Mat.-Nr:					
Version SAP:	00	Version DS:			

Wacker Neuson Group
Wacker Neuson Linz GmbH
4063 Hörsching
AUSTRIA

We reserve all rights in this document and in the information contained therein. Reproduction, use or disclosure to third parties without express authority is strictly forbidden.

	date	name
User	31.8.2018	LNZGrosl
Proved	31.8.2018	LNZPenzp

Deckblatt el
Schaltplan E14

Mat.-Nr. 1000345076 | Doc.-Nr. 2060040589

Revision:	00
replace for Rev.	
Message No	1
	A3

Download full manual at youfixthis.com

1578563210

PREVIEW ONLY

You're viewing 25 of 871 pages

The full manual includes:

- All 871 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

Wacker Neuson ET65, ET90, E14-01, E14-04 Service Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual