

Perkins 2300 Series

Model 2306C-E14

WORKSHOP MANUAL

6 cylinder turbocharged diesel engines for industrial applications

Publication TSD3455E, Issue 1

© Proprietary information of Perkins Engines Company Limited, all rights reserved.

The information is correct at the time of print.

Published in September 2002 by Technical Publications,
Perkins Engines Company Limited, Shrewsbury SY1 3NX, England

Chapters

- 1 General information**
- 2 Specifications**
- 3 Cylinder head assembly**
- 4 Piston and connecting rod assemblies**
- 5 Crankshaft assembly**
- 6 Gear case and drive assembly**
- 7 Crankcase and cylinder liners**
- 8 Engine timing and electronic controls**
- 9 Aspiration system**
- 10 Lubrication system**
- 11 Fuel system**
- 12 Cooling system**
- 13 Flywheel and housing**
- 14 Electrical equipment**
- 15 Auxiliary equipment**
- 16 Special tools**

The pages which follow contain a detailed table of contents

Contents

1 General information

Introduction	1
Safety precautions	2
Viton seals	4
Welding	4
Environmental protection	4
Engine views	5
Engine identification	6
Engine lift equipment	6

2 Specifications

Basic engine data - 2306 engine	7
Basic engine data - 2806 engine	7
Rocker assemblies	8
Valves	9
Valve guides	10
Valve springs	10
Valve seat inserts	11

Cylinder head	12
Camshaft and bearings	12
Pistons and connecting rods - 2306 engine	13
Pistons and connecting rods - 2806 engine	14
Crankshaft, main bearings and flywheel	15
Crankshaft damper	15
Crankcase and cylinder liners	16
Lubricating oil pump	18
Coolant pump	19
Recommended torque figures	20

3 Cylinder head assembly

General information	27
----------------------------	----

Rocker cover

Operation 3-1 To remove and to fit	28
------------------------------------	----

Rocker lever and rocker shaft assemblies

Operation 3-2 To remove and to fit	29
Operation 3-3 To dismantle and to assemble	30
Operation 3-4 How to check/adjust the tappet clearances	32

Cylinder head assembly

Operation 3-5 To remove and to fit	35
------------------------------------	----

Valve springs

Operation 3-6 To remove and to fit	39
------------------------------------	----

Valves

Operation 3-7 To remove and to fit	41
------------------------------------	----

Valve seals

Operation 3-8 To renew	42
------------------------	----

Valve guides

Operation 3-9 To remove and to fit	43
------------------------------------	----

Camshaft

Operation 3-10 To remove and to fit	45
Operation 3-11 How to set the backlash for the camshaft gear	50

Electronic injector units

Operation 3-12 To remove and to fit	51
Operation 3-13 To check and to adjust	53

Injector sleeves

Operation 3-14 To remove and to fit	54
---	----

4 Pistons and connecting rod assemblies

General information	57
--------------------------------------	----

Pistons and connecting rod assemblies

Operation 4-1 To remove and to fit	58
Operation 4-2 To dismantle and assemble	60

Piston cooling jets

Operation 4-3 To remove and to fit	62
--	----

5 Crankshaft assembly

General information	63
--------------------------------------	----

Crankshaft

Operation 5-1 To remove and to fit	64
--	----

Crankshaft front seal and wear sleeve

Operation 5-2 To renew	66
----------------------------------	----

Crankshaft rear seal and wear sleeve

Operation 5-3 To renew	68
----------------------------------	----

Crankshaft vibration damper

Operation 5-4 To remove and to fit	70
--	----

6 Gear case and drive assembly

General information	73
--------------------------------------	----

Gear case cover

Operation 6-1 To remove and to fit	74
--	----

Timing gears	
Operation 6-2 To remove and to fit	75
Operation 6-3 How to check the position of the timing gears	78
Gear case	
Operation 6-4 To remove and to fit	79
7 Crankcase and cylinder liners	
General information	81
Front engine support	
Operation 7-1 To remove and to fit	82
Cylinder liners	
Operation 7-2 To remove and to fit	83
Operation 7-3 To check and to adjust the protrusion of the cylinder liners	84
8 Engine timing and electronic controls	
General information	87
Electronic control module	
Operation 8-1 To remove and to fit	88
Engine timing	
Operation 8-2 To check	89
9 Aspiration system	
General information	91
Exhaust manifold	
Operation 9-1 To remove and to fit	92
Turbocharger	
Operation 9-2 To remove and to fit	93
Operation 9-3 To dismantle and to assemble	94

10 Lubrication system

General information	95
Oil filter and oil filter header	
Operation 10-1 To remove and to fit	96
Oil filter header	
Operation 10-2 To dismantle and to assemble	98
Sump	
Operation 10-3 To remove and to fit	99
Oil pump	
Operation 10-4 To remove and to fit	101
Operation 10-5 To dismantle and to assemble	102

11 Fuel system

General information	103
Fuel priming pump	
Operation 11-1 To remove and to fit	104
Fuel transfer pump	
Operation 11-2 To remove and to fit	105
Operation 11-3 To test	106
Drive for the fuel transfer pump	
Operation 11-4 To remove and to fit	107
Fuel filter header	
Operation 11-5 To remove and to fit	108
Low pressure fuel system	
Operation 11-6 How to eliminate air from the fuel system	109

12 Cooling system

General information	111
Cooling system	
Operation 12-1 To inspect	112
Operation 12-2 Leakage test	113

Coolant filler cap	
Operation 12-3 To test	114
Radiator	
Operation 12-4 To remove and to fit	115
Fan	
Operation 12-5 To remove and to fit	116
Fan drive assembly	
Operation 12-6 To remove and to fit	117
Fan drive belts	
Operation 12-7 To check and to adjust the tension	118
Operation 12-8 To renew	119
Engine oil cooler	
Operation 12-9 To remove and to fit	120
Thermostats and thermostat housing	
Operation 12-10 To remove and to fit	121
Operation 12-11 To test the thermostats	123
Coolant temperature sensor	
Operation 12-12 To test	124
Coolant pump	
Operation 12-13 To remove and to fit	125
Operation 12-14 To dismantle and to assemble	126
Operation 12-15 To test the pressure of the coolant pump	128

13 Flywheel and housing

General information	129
Flywheel	
Operation 13-1 To remove and to fit	130
Flywheel housing	
Operation 13-2 To remove and to fit	131

14 Electrical equipment

General information	133
Starter motor	
Operation 14-1 To remove and to fit	134
Alternator	
Operation 14-2 To remove and to fit	135
Operation 14-3 To check and to adjust the tension of the alternator belt	136
Operation 14-4 To renew the alternator belt	137

15 Auxiliary equipment

General information	139
Oil sample valve	139

16 Special tools

List of special tools	141
------------------------------------	-----

Perkins 2300 Series Workshop Manual

Full download: <http://manualplace.com/download/perkins-2300-series-workshop-manual/>

2300
