SEN05537-01

Shop Manual

ENGINE

114E -5 SERIES

MidWestTech | Komatsu 114E-5 Series Engine Service Manual | Publication SEN05537-01

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

Index (ALL-0310-001-A-00-A)

00 Index and foreword 00-1
Index 00-2
Foreword, safety and general information 00-5
Important safety notice 00-5
How to read the shop manual 00-12
Explanation of terms for maintenance standard 00-14
Handling equipment of fuel system devices 00-16
Handling of intake system parts 00-17
Handling of hydraulic equipment 00-18
Method of disconnecting and connecting of push-pull type coupler 00-20
Handling of electrical equipment 00-23
How to read electric wire code 00-31
Precautions when performing operation 00-34
Standard tightening torque table 00-39
List of abbreviation 00-45
Conversion table 00-50
01 Specification 01-1
Table of contents 01-2
General information 01-3
Exhaust gas regulation 01-3
Specifications 01-6
Applicable machines 01-6
Specifications 01-7
General view 01-10
Engine performance curve 01-6
10 Structure and function 10-1
Table of contents 10-2
Components layout 10-3
Components layout drawing 10-3
Intake and exhaust system parts 10-5
Intake and exhaust system layout drawing 10-5
Intake and exhaust system circuit diagram 10-6
Air cleaner 10-8
KVGT 10-9
Aftercooler 10-16
EGR system piping drawing 10-17
EGR system circuit diagram 10-19
EGR valve 10-21
EGR cooler 10-23
KCCV layout drawing 10-25
KCCV ventilator 10-28
KDPF 10-32
Engine main body parts 10-36
Cylinder head 10-36
Cylinder block 10-38
Main moving parts 10-40
Vibration damper 10-43
Timing gear 10-44
Front cover 10-45
Valve system 10-46
Flywheel 10-47
Lubrication system 10-48
Lubrication system parts layout drawing 10-48
Lubrication system circuit diagram 10-50
Oil pump 10-51
Boost oil pump 10-52
Oil filter 10-53
Oil cooler 10-54

MidWestTech | Komatsu 114E-5 Series Engine Service Manual | Publication SEN0553... Order the manual at mid-west-tech.com >

Regulator valve 10-55
Safety valve 10-56
Oil pan 10-57
Fuel system 10-58
Fuel system parts layout drawing 10-58
Fuel system circuit diagram 10-60
Supply pump 10-64
Pre-filter 10-68
Main filter 10-69
Cooling system 10-70
Cooling system parts layout drawing 10-70
Cooling system circuit diagram 10-71
Drive pulley 10-73
Water pump 10-77
Thermostat 10-78
Electrical equipment 10-80
Alternator 10-80
Starting motor 10-84
Intake air heater 10-88
Engine wiring harness 10-89
Engine controller 10-91
Sensor 10-97
20 Standard value tables 20-1
Table of contents 20-2
Standard service value table 20-3
Standard value table for engine 20-3
Running-in standard and performance test standard 20-9
50 Disassembly and assembly 50-1
Table of contents 50-2
Related information on disassembly and assembly 50-3
How to read this manual 50-3
Coating materials list 50-5
Special tool list 50-9
Sketch of special tool 50-11
Disassembly and assembly 50-12
General disassembly of engine 50-12
General assembly of engine 50-31
Removal and installation procedure of supply pump unit alone 50-70
Engine front oil seal replacement procedure 50-74
Engine rear oil seal replacement procedure 50-77
60 Maintenance standard 60-1
Table of contents 60-2
Intake and exhaust system parts 60-3
KVGT 60-3
Engine main body parts 60-4
Cylinder head 60-4
Cylinder block 60-6
Cylinder liner 60-8
Crankshaft 60-10
Piston 60-12
Connecting rod 60-13
Vibration damper 60-15
Timing gear 60-16
Camshaft 60-17
Valve and valve guide 60-19
Rocker arm 60-21
Flywheel 60-23
Lubrication system 60-25
Oil pump 60-25

MidWestTech | Komatsu 114E-5 Series Engine Service Manual | Publication SEN0553... Order the manual at mid-west-tech.com >

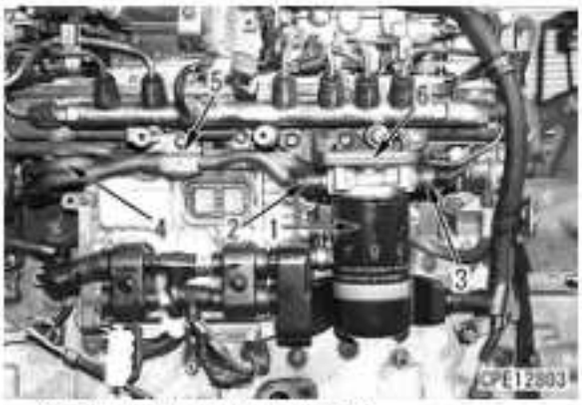
Dimensions table (ENG114-2110-2A4-A-00-A)

★ These dimensions are given for reference when the engine is set on a test bench.

Unit: mm

Engine	Machine model	Dimension of each part			
		A	B	C	D
SAA6D114E-5	D65EX-17 D65PX-17 D65WX-17	1,215.1	1,614.6	396.9	949.8
	PC360LC-10	1,647	1,530	444	981
	HB335–1 HB335LC–1 HB365–1 HB365LC–1	1,614	1,625	500	993

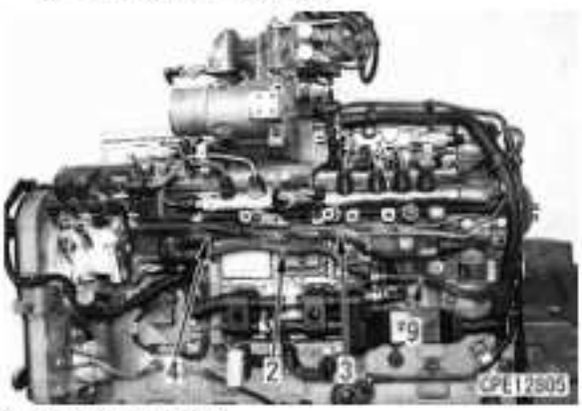
MidWestTech | Komatsu 114E-5 Series Engine Service Manual | Publication SEN0553...
Order the manual at mid-west-tech.com >



4) Disconnect tube clamp (7).
5) Disconnect tube (8).



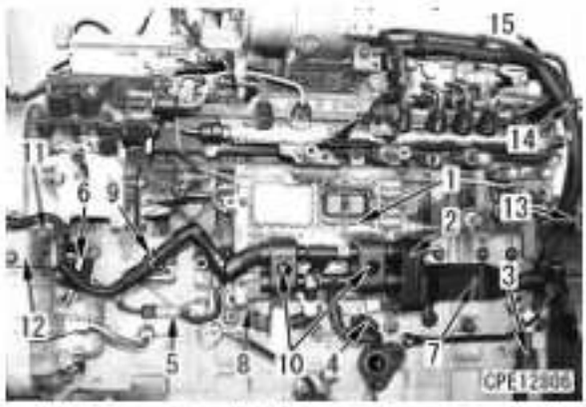
6) Remove fuel hose (2).
7) Remove fuel hose (3).
8) Remove fuel hose (4).
9) Remove fuel hose (9).



4. Engine controller
   1) Disconnect Ne (crankshaft) speed sensor connector (3).
   2) Disconnect engine oil pressure switch connector (4).
   3) Disconnect fuel lift pump connector (5).
   4) Disconnect Bkup (cam) speed sensor connector (6).
   5) Remove bolt (7) for wiring harness (2).
   6) Disconnect wiring harness (2) from bracket (8).
   7) Disconnect clamp (9) for wiring harness (2).
   8) Disconnect wiring harness (2) from engine controller (1).

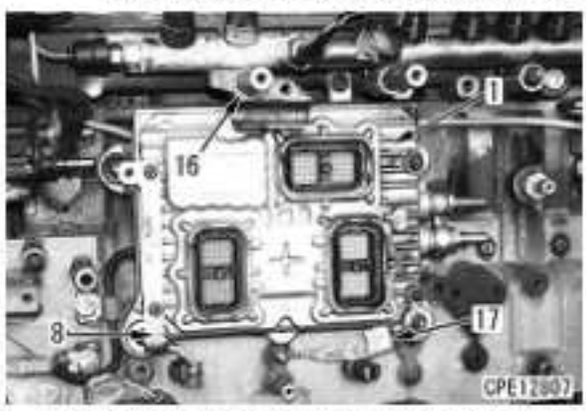
      ★ Wiring harness (2) is locked with hexagonal socket head bolt (10) (4 mm).
   9) Disconnect clamp (11) securing wiring harness (2) together with bracket (12).
   10) Disconnect clamp (13) securing wiring harness (2).
   11) Disconnect clamp (14) securing wiring harness (2).

      ★ Wiring harness (2) is tightened together with the clamp of blowby hose (15).



   12) Remove bracket (8) on engine controller (1).
   13) Remove bracket (16).
   14) Remove engine controller (1).

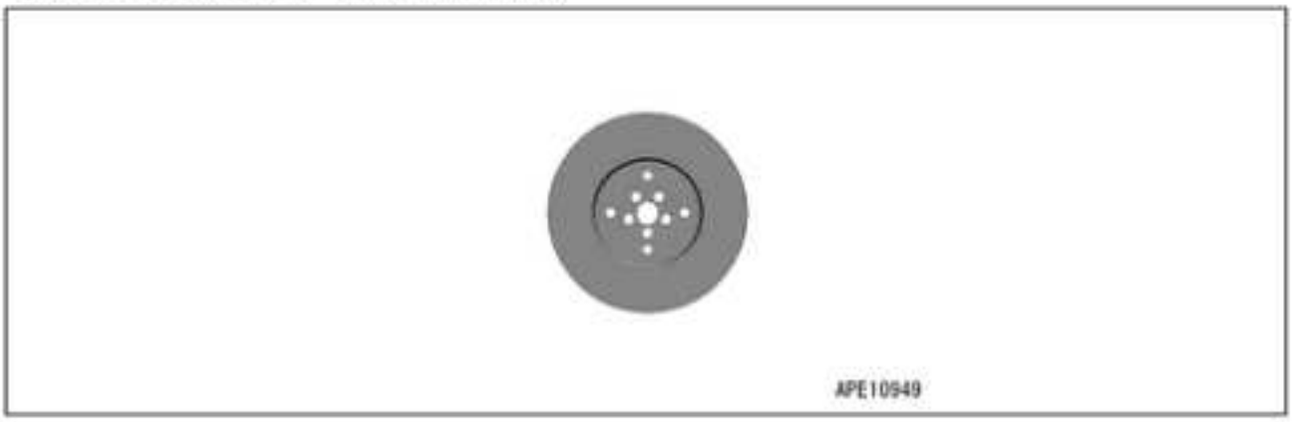
      ★ Ground cable (17) is tightened together with the engine controller mounting bolt.



5. Engine controller cooling plate and fuel lift pump
   1) Remove engine controller cooling plate (2) and bracket (1).
   2) Remove fuel lift pump (3) on the back side of engine controller cooling plate (2).
   3) Remove ground (3) and oil pressure switch connector (4).

MidWestTech | Komatsu 114E-5 Series Engine Service Manual | Publication SEN0553... Order the manual at mid-west-tech.com >

Vibration damper (ENG114-A5E0-034-K-00-A)



Unit: mm

No.	Item	Criteria	Remedy
—	Tightening torque of vibration damper	Target (Nm {kgm})	Tighten and retighten
		200 {20.4}	
—	Convex and concave of vibration damper	Free from convex and concave	Replace

MidWestTech | Komatsu 114E-5 Series Engine Service Manual | Publication SEN0553... Order the manual at mid-west-tech.com >