SEN05641-03

Shop Manual

ENGINE

140E -6 SERIES

MidWestTech | Komatsu 140E-6 Series Engine Service Manual | Publication SEN05641-03

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
Machine model 01-6
Specifications 01-7
General view 01-10
Weight table 01-23
Engine performance curve 01-24
10 Structure and function 10-1
Table of contents 10-2
Components layout 10-4
Components layout drawing 10-4
Intake and exhaust system parts 10-7
Intake and exhaust system layout drawing 10-7
Intake and exhaust system circuit diagram 10-9
Air cleaner 10-11
KVGT 10-12
Aftercooler 10-18
EGR system piping drawing 10-19
EGR system circuit diagram 10-21
EGR valve 10-22
EGR cooler 10-24
Mixing connector 10-26
KCCV layout drawing 10-27
KCCV ventilator 10-29
KDPF 10-33
Engine main body parts 10-37
Cylinder head 10-37
Cylinder block 10-39
Main moving parts 10-41
Timing gear 10-44
Front cover 10-45
Valve system 10-46
Flywheel and flywheel housing 10-48
Lubrication system 10-49
Lubrication system parts layout drawing 10-49
Lubrication system diagram 10-50
Oil pump 10-51
Boost oil pump 10-53
Oil filter 10-55

MidWestTech | Komatsu 140E-6 Series Engine Service Manual | Publication SEN0564... Order the manual at mid-west-tech.com >

Oil cooler 10-56
Oil cooler thermo-valve 10-58
Oil pan 10-59
Fuel system 10-60
Fuel system parts layout drawing 10-60
Fuel system circuit diagram 10-62
Outline of CRI system 10-65
Fuel system 10-65
Various controls 10-66
Structure and operation of CRI system 10-68
Structure and operation of component parts 10-69
Fuel dozing 10-79
Dozing piping drawing 10-79
Pre-filter 10-82
Main filter 10-83
Cooling system 10-84
Cooling system parts layout drawing 10-84
Cooling system circuit diagram 10-85
Water pump 10-86
Thermostat 10-88
Electrical equipment 10-90
Alternator 10-90
Alternator mounting 10-93
Starting motor 10-94
Fuel feed pump 10-96
Fuel feed pump switch 10-97
Engine wiring harness 10-98
Engine controller 10-100
Sensor 10-106
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 tools list 50-9
Sketches of special tools 50-11
Disassembly and assembly 50-14
General disassembly of engine 50-14
General assembly of engine 50-29
Removal and installation of supply pump 50-61
Procedures for replacing engine front oil seal 50-65
Procedures for replacing engine rear oil seal 50-68
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 60-5
Cylinder liner 60-7
Crankshaft 60-8
Cam follower and push rod 60-9
Piston 60-10
Connecting rod 60-12

MidWestTech | Komatsu 140E-6 Series Engine Service Manual | Publication SEN0564...
Order the manual at mid-west-tech.com >

Timing gear 60-14
Camshaft 60-16
Valve and valve guide 60-17
Rocker arm 60-19
Crosshead and guide 60-20
Flywheel 60-21
Cooling system 60-23
Oil cooler 60-23
Water pump 60-25
Index 1

MidWestTech | Komatsu 140E-6 Series Engine Service Manual | Publication SEN0564...
Order the manual at mid-west-tech.com >

Dimensions table (ENG140-2110-2A4-A-00-A)

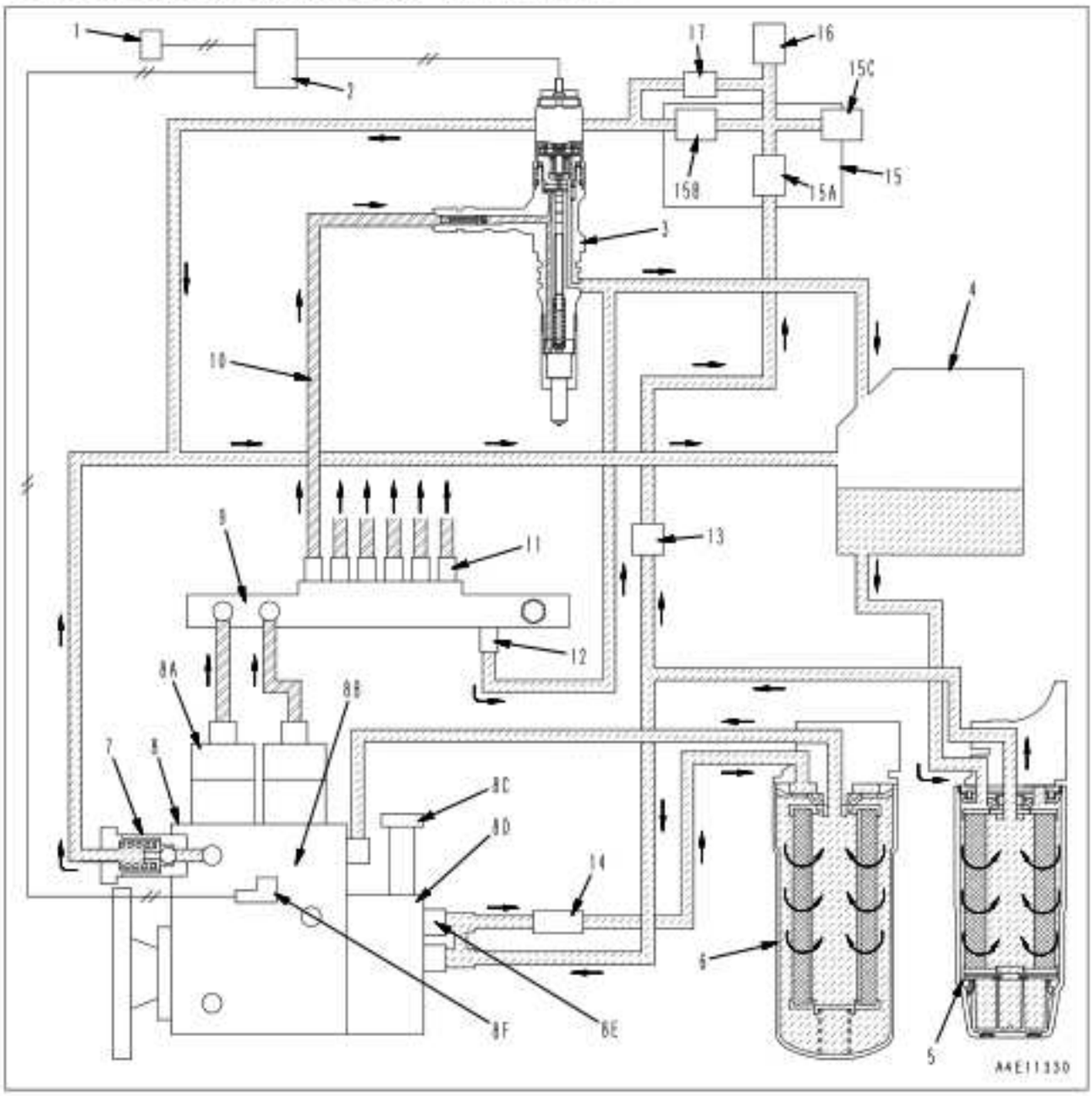
★ These dimensions are given for reference when the engine is set on a test bench.

Unit: mm

Engine	Machine model	Dimension of each part			
		A	B	C	D
SAA6D140E-6	HM400-3	1,498	1,527	542	1,091
	D155AX-7	1,513	1,838	420	1,193
	WA500–7	1,572	1,793	407	1,105

MidWestTech | Komatsu 140E-6 Series Engine Service Manual | Publication SEN0564... Order the manual at mid-west-tech.com >

Fuel system circuit diagram (ENG140-AD00-052-K-00-A)

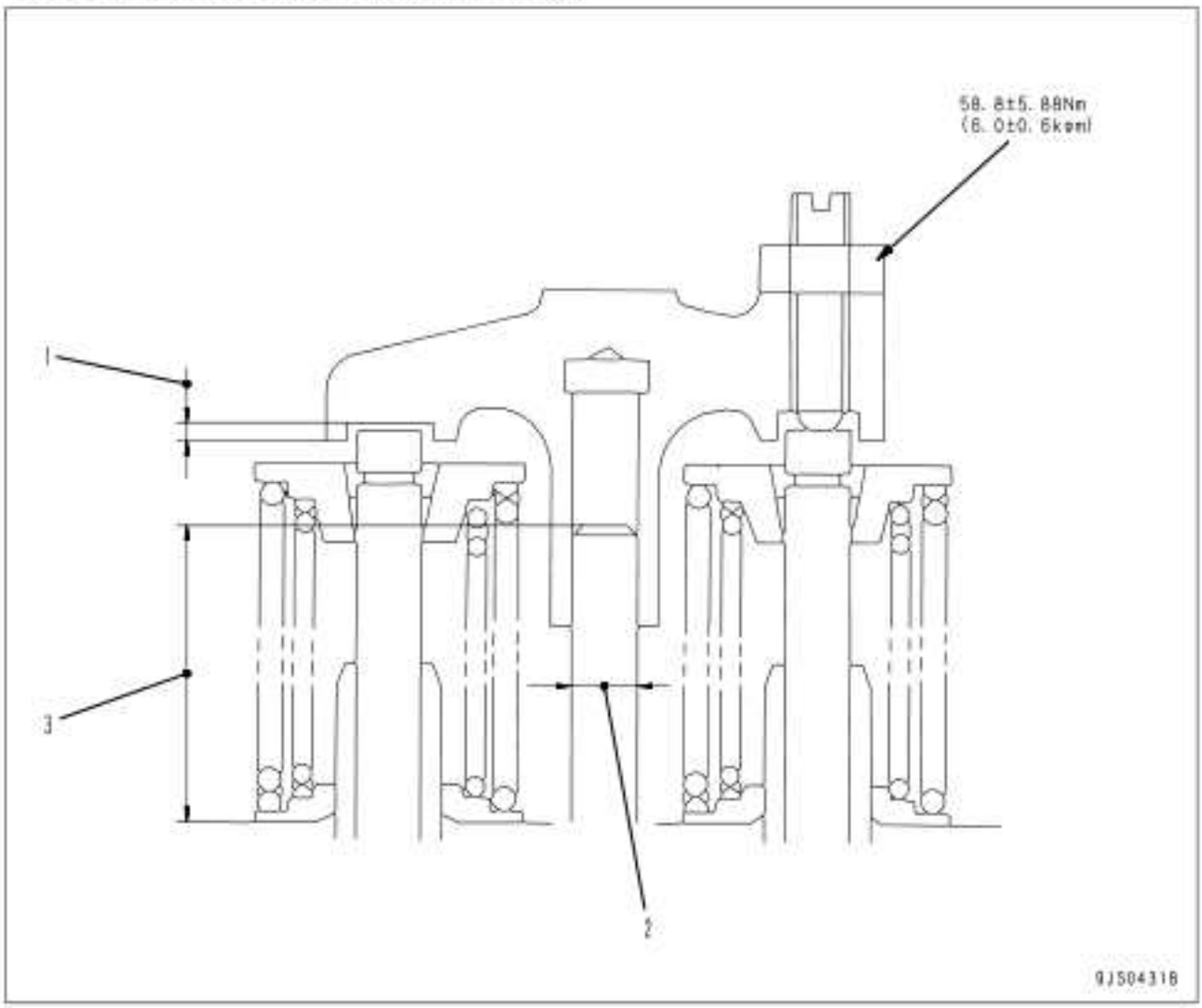


1. NE speed sensor
2. Engine controller
3. Injector
4. Fuel tank
5. Pre-fuel filter
6. Main fuel filter
7. Overflow valve
8. Supply pump

8A. PCV
8B. High-pressure pump
8C. Priming pump (sub)
8D. Feed pump
8E. Relief valve

MidWestTech | Komatsu 140E-6 Series Engine Service Manual | Publication SEN0564... Order the manual at mid-west-tech.com >

Crosshead and guide (ENG140-A790-034-K-00-A)



Unit: mm

No.	Item	Criteria			Remedy
		Standard size	Tolerance	Repair limit	
1	Depth of crosshead stem receiver	6.2	+0.3 0	6.61	Replace
2	Inside diameter of crosshead	11.04	±0.02	11.17	Replace
	Outside diameter of crosshead guide	11	+0.011 0	10.95	
3	Projection of crosshead guide	49.0	±0.25	–	Correct

MidWestTech | Komatsu 140E-6 Series Engine Service Manual | Publication SEN0564... Order the manual at mid-west-tech.com >