Shop Manual

CEBM002603

KOMATSU®

SA12V140Z-1 SERIES
SAA12V140ZE-2 SERIES
DIESEL ENGINE

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September 2008

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DYNAMOMETER WORKSHEET

Date:	Repair Order No.:	Operator:
ESN:	CPL:	Fuel Pump Code:
Complaint:		SC Code:

PARAMETER	CODE SPECIFICATIONS	ACTUAL READING
Fuel Rate (lb/hr)		
Intake Mfd. Pressure (in.Hg)	See Fuel Pump Code	
Intake Mfd. Temperature		
*Intake Air Restriction	25 in H2O Maximum	
*Exhaust Air Restriction	3 in Hg, Maximum	
*Fuel Inlet Restriction	8 in Hg (Dirty Filter), Maximum	
*Fuel Drain Line Restriction	3 psi, Maximum	
Engine Blowby	See Tables	
* - Recorded at Maximum horsepower speed and full load		

Road Speed Limit				**Engine High Speed Limit**		
Check Oil Level	Low	High	OK	**Fuel Quality**	OK	Not OK

Engine Speed	Fuel *Rate/Press		Fuel Temp	Turbo Inlet Air Temp	Intake Manifold Temp/Press		Coolant Temp/Press		Engine Blowby	Lube Oil Press	HP or Torque
* Be sure that the fuel rate is corrected for temperature.											

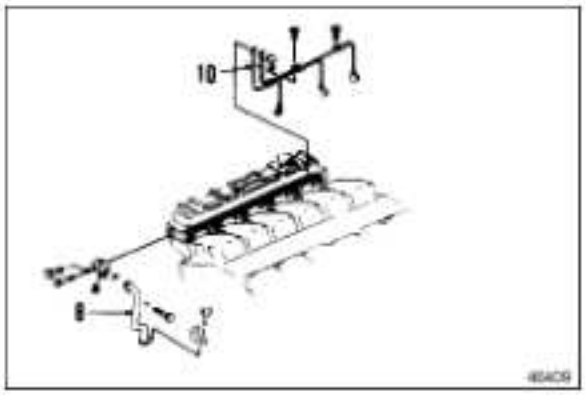
Fuel Temperature	Correction for Flow Rate
Less than 7°C (45°F)	Flow meter **not** accurate
7 to 13°C (45 to 55°F)	Subtract 2% from flow rate reading
13.0 to 20.0°C (55 to 68°F)	Subtract 1% form flow rate reading
20.0 29°C (68 to 85°F)	No correction
29 to 42°C (85 to 108°F)	Add 1% to flow rate reading
42 to 56°C (108 to 132°F)	Add 2% to flow rate reading
56°C above (132°F)	Flow meter **not** accurate

Pressure Conversions
1 in. H_2O = 0.074 in. Hg = 0.036 psi
1 in. Hg = 13.514 in. H_2O = 0.491 psi
1 psi = 2.036 in. Hg = 27.7 in. H_2O

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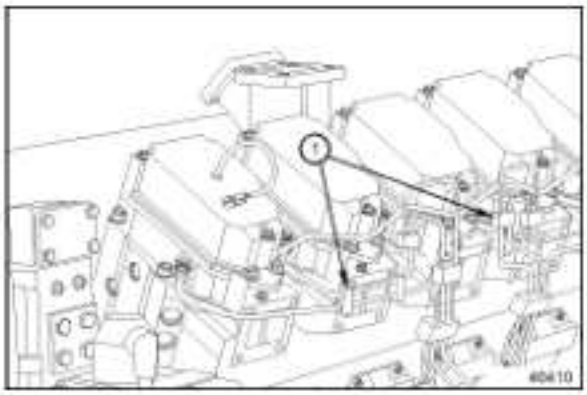
3. Right bank

A) Install electrical intake air heater wiring (10).
B) Fit O-ring and install tube (8).

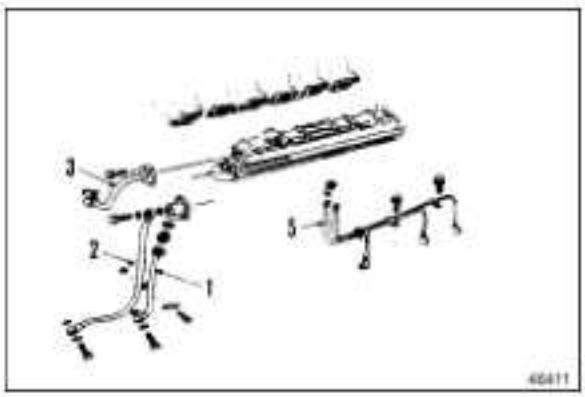


4. Left bank

A) Install clamp (1) of fuel injection tubes and secure injection tubes.



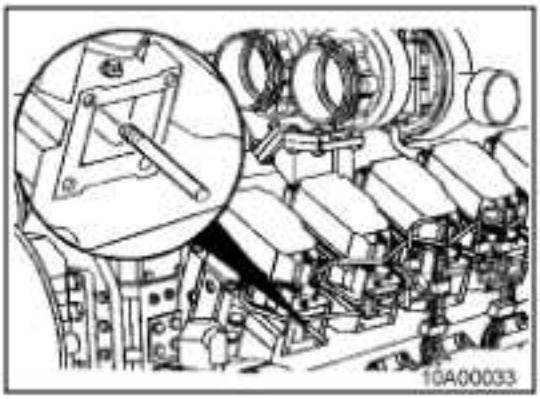
B) Install heater relay wiring (5).
C) Install tube (3) for aftercooler.
D) Install tubes (1) and (2) for air compressor.
E) Install harness supports, ground connections, and connect sensors.



Intake manifold, aftercooler assembly for SAA12V140ZE-2 Engine

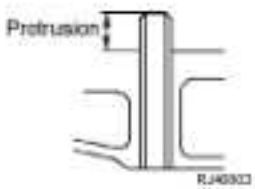
Left and Right Banks:

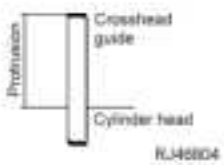
★ The spacers or grid heaters are installed with the part number facing the aftercooler and arrow pointing toward the cylinder head.
★ Use guide studs long enough to protrude beyond the installed part.



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Unit: mm

<table>
<tr><th>Symbol</th><th>Inspection item</th><th>Judgement standards</th><th>Remedy</th></tr>
<tr><td>G</td><td></td><td>• Check if head has become concave
• Check for cracks or pitting of valve seat contact surface
• Airtightness test
• Check for play in cotter pin when new cotter pin is inserted in cotter groove.
• Check for uneven wear or curvature of valve stem</td><td>Replace</td></tr>
<tr><td></td><td></td><td>• Check for hollow in tip of valve stem</td><td>Correct</td></tr>
<tr><td>H</td><td>Outside diameter of valve stem</td><td>• Outside diameter
<table><tr><th>Valve</th><th>Standard size</th><th>Standard value</th><th>Repair limit</th></tr><tr><td>Intake valve</td><td>10</td><td>9.940 – 9.955</td><td>–</td></tr><tr><td>Exhaust valve</td><td>10</td><td>9.911 – 9.926</td><td>–</td></tr></table></td><td>Replace</td></tr>
<tr><td>E</td><td>Sinking of valve (both intake and exhaust)</td><td><table><tr><th>Value</th><th>Standard size</th><th>Standard value</th><th>Repair limit</th></tr><tr><td>Intake valve</td><td>10</td><td>9.989 – 10.011</td><td>–</td></tr><tr><td>Exhaust valve</td><td>10</td><td>9.989 – 10.011</td><td>–</td></tr></table></td><td rowspan="3">Replace</td></tr>
<tr><td>J</td><td>Protrusion of valve guide</td><td>

Permissible range: 23 ± 0.2</td></tr>
<tr><td>K</td><td>Outside diameter of cross head guide</td><td><table><tr><th>Standard size</th><th>Standard value</th><th>Repair limit</th></tr><tr><td>11</td><td>11.000 – 11.011</td><td>10.95</td></tr></table></td></tr>
<tr><td>L</td><td>Protrusion of cross head guide</td><td>

Permissible range: 49 ± 0.25</td><td>Correct</td></tr>
</table>

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