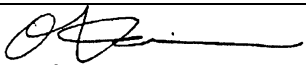




# SERVICE BULLETIN

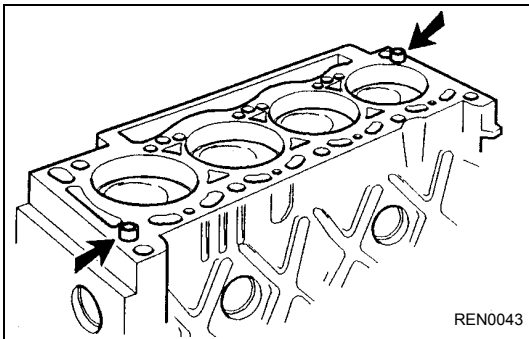
PUBLICATION GROUP, AFTER SALES SERVICE DEP.  
MITSUBISHI MOTOR SALES EUROPE BV

<b>SERVICE BULLETIN</b>		No.: ESB-98E11-001																					
		Date: 1998-12-15	<b>&lt;Model&gt;</b> (EC,EXP) CARISMA																				
<b>Subject:</b> CHANGE IN CYLINDER HEAD BOLTS TIGHTENING DUE TO CYLINDER HEAD GASKET CHANGE		<b>&lt;M/Y&gt;</b> 98-10																					
<b>Group:</b> ENGINE																							
<b>CORRECTION</b>		 O. Kai - E.V.P. & G.M. After Sales Service Dept.																					
<b>1. Description:</b> (1) The cylinder head for the F8QT engine has been changed in its gasket from fibrous gasket to stainless steel gasket. Accordingly, the cylinder head bolts tightening procedure has been changed. (2) The F8QT engine cylinder head bolts have been changed from those of female torx head shape to those of male torx head shape. Accordingly, "NOTE" has been added.																							
<b>2. Applicable Manuals:</b> <table border="1"> <thead> <tr> <th>Manual</th> <th>Pub. No.</th> <th>Language</th> <th>Page(s)</th> </tr> </thead> <tbody> <tr> <td rowspan="7">ENGINE F8QT Workshop Manual</td> <td>PWEE9602</td> <td>(English)</td> <td rowspan="7">11A-1-6, 11A-12-3</td> </tr> <tr> <td>PWES9603</td> <td>(Spanish)</td> </tr> <tr> <td>PWEF9604</td> <td>(French)</td> </tr> <tr> <td>PWEG9605</td> <td>(German)</td> </tr> <tr> <td>PWED9606</td> <td>(Dutch)</td> </tr> <tr> <td>PWEW9607</td> <td>(Swedish)</td> </tr> <tr> <td>PWEI9602</td> <td>(Italian)</td> </tr> </tbody> </table>				Manual	Pub. No.	Language	Page(s)	ENGINE F8QT Workshop Manual	PWEE9602	(English)	11A-1-6, 11A-12-3	PWES9603	(Spanish)	PWEF9604	(French)	PWEG9605	(German)	PWED9606	(Dutch)	PWEW9607	(Swedish)	PWEI9602	(Italian)
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<b>3. Interchangeability:</b> Interchangeable																							
<b>4. Effective Date:</b> (1) Cylinder head gasket: From September 1996 (Effective engine No.: C004943 and up) (2) Cylinder head bolt: From February 1997 (Effective engine No.: C015990 and up)																							

Items	Nm
<b>Rocker cover and cylinder head</b>	
Rocker cover nut	5
Cylinder head bolt	<del>30 + 50° ± 4° + fully slacken + 25 + 213° ± 2° + (warm up) 120° ± 7°</del>
<b>Camshaft, intake and exhaust valves</b>	
Camshaft bearing cap bolt (M6)	10
Camshaft bearing cap bolt (M8)	20
Glow plug	22.5
Fuel injection nozzle	70
<b>Vacuum pump</b>	
Vacuum pump bolt	22
Vacuum hose union nut	22
<b>Oil cooler and oil filter</b>	
Thermostat housing nut	60
Plug	35
Oil cooler nut	60
<b>Oil pan, oil pump and oil jets</b>	
Oil drain plug	15
Oil pan bolt	13
Oil pump cover bolt	12
Oil pump body bolt	22
Oil jet	20
<b>Intermediate shaft and intermediate shaft bearings</b>	
Intermediate shaft sprocket bolt	50
Intermediate shaft cover bolt	15
Intermediate shaft lockplate bolt	15
Cover bolt	15
<b>Fuel injection nozzle</b>	
Injection pipe union nut	22.5
Nozzle body	70
Retaining nut	70

**<New>**

30 + 50° ± 4° + fully slacken + 25 + 213° ± 7° + (warm up) 120° ± 7°: Fibrous cylinder head gasket  
 30 + 50° ± 4° + fully slacken + 25 + 213° ± 7°: Stainless steel cylinder head gasket

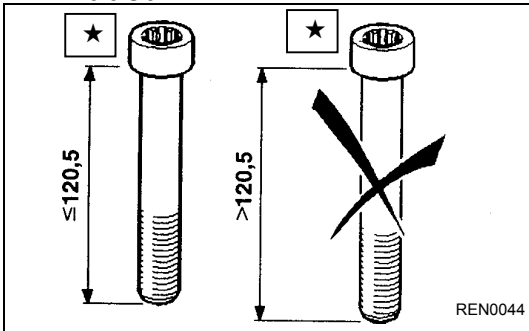


### ► B ◀ CYLINDER HEAD INSTALLATION

- (1) Select a suitable cylinder head gasket 11.
- (2) Rotate the crankshaft so that the piston of No.1 cylinder is positioned a quarter-stroke past TDC.
- (3) Fit the cylinder head over the locating dowels.

&lt;Added&gt;

&lt;Added&gt;



### ► C ◀ CYLINDER HEAD BOLT INSTALLATION

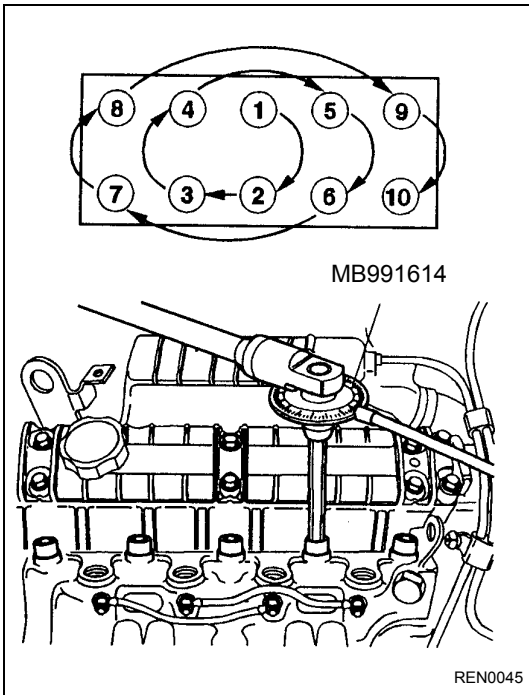
- (1) When installing the cylinder head bolts, check that the length of the shank of each bolt (without the washer) is within the limit value. All the cylinder head bolts must be renewed as soon as any of them exceeds the permitted length.

Limit: max. 120.5 mm

&lt;Added&gt;

#### NOTE

The cylinder head bolt marked ★ has been changed from that of female torx head shape to that of male torx head shape. These bolt illustrations show only a bolt of female torx head shape.



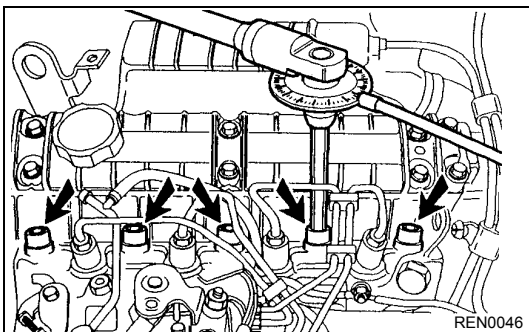
- (2) Fit the washers.
- (3) Lubricate the bolt threads and washers with engine oil.
- (4) Insert the cylinder head bolts and fasten them finger-tight. The cylinder head bolts should be torque-tightened in three stages.
  - first to 30 Nm;
  - Then angle-tighten to  $50^\circ \pm 4^\circ$  in a single uninterrupted movement.

#### NOTE

Wait at least three minutes to allow the head gasket to bed down properly.

- (5) Now slacken all the bolts completely.
- (6) Then tighten to the second stage torque:
  - first to 25 Nm;
  - then angle-tighten the bolts to  $213^\circ \pm ^\circ$  in a single uninterrupted movement.

&lt;Only fibrous cylinder head gasket&gt; &lt;Added&gt;



- (7) The cylinder head can only be retorqued after letting the engine warm up to its operating temperature.
- (8) Tightening torque for the third stage:
  - let the engine warm up (engine cooling fan starts to turn);
  - then angle-tighten the cylinder head bolts to  $120^\circ \pm 7^\circ$  in a single uninterrupted movement.

• Wait for the engine to return to ambient temperature.

&lt;Added&gt;