

**PARTS & SERVICE
NEWS**

REF NO.	AT01157
DATE	Nov. 2, 2001

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SUBJECT: OIL COOLER ELEMENT STUD BOLT BREAKAGE ON SA12V140 FOR HD785/985/D475A/WA800, 900

PURPOSE: To introduce modification procedures to repair or prevent breakage failure of the stud bolt fastening the oil cooler element and the cover of the oil cooler ass'y being installed to the SA12V140 engines on HD785, HD985, D475A, WA800 and WA900

APPLICATION: Refer to page 5

FAILURE CODE: A62AFM

DESCRIPTION:

1. Introduction

It has been found out that there may be a breakage failure with the stud bolt fastening the oil cooler element and the cover of the oil cooler ass'y being installed to the SA12V140 engines being used on the HD785, HD985, D475A, WA800 and WA900.

As the flatness of the mating flange surface to the cover of the oil cooler element has been improved, make the modification being introduced in this Service News when the above failure occurs.

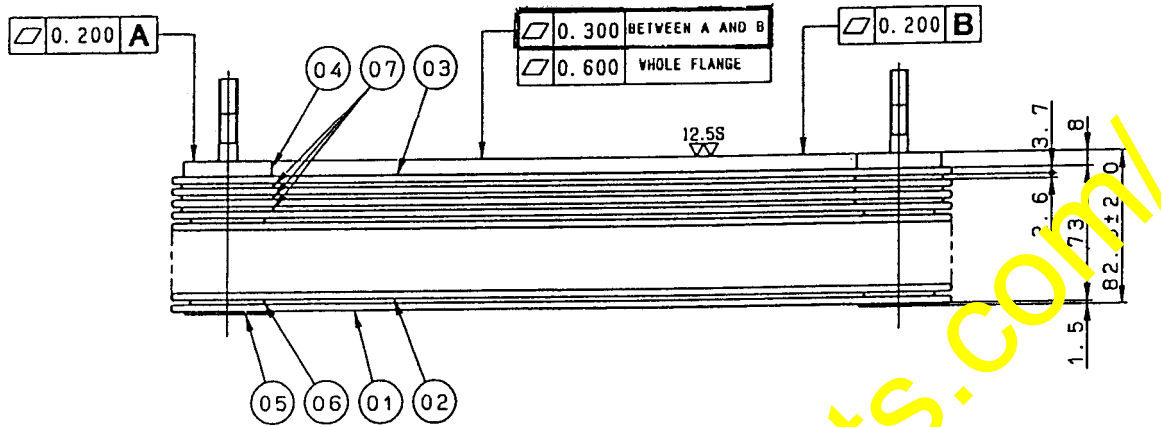
2. List of parts

Part No.	Part Name	Purpose of part	Q'ty	Remarks
6215-61-2101	Oil cooler	} Replacement		} The part number remains the same since this is a case of defective part.
6212-61-2112	Element			

3. Details of the failure

Regarding the surface of the mating flange of the oil cooler element to the cover, the flange with insufficient co-relative flatness resulting from thermal influence occurring while in-furnace brazing process for the part was being made.

In the above case, fretting occurs on the flange surface to apply excessive stress to the stud bolt leading to possible breakage of the stud bolt.



4. The installation jig to use for the in-furnace brazing process has been improved to secure the necessary flatness of the flange surface.

5. Modification procedures

5-1. Removing the fuel injection pump

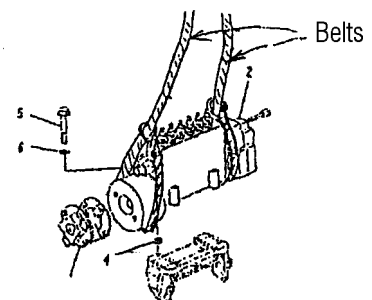
(1) Parts and tools which need to be prepared before starting this modification work

- ① Belt: Two belts with the length of about 3 m and with the width of about 50 mm.
- ② Bolt: Two 01011-81050 bolts (with the length under neck of 150 mm)
- ③ Lever block
- ④ Four dowel rings (6210-41-2431)

(2) Removal work (Two persons should attend to this work since this work is dangerous.)

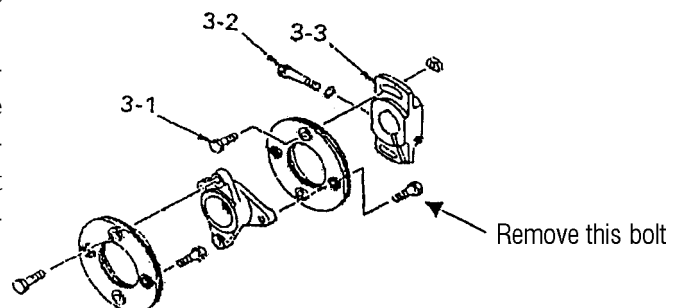
- ① Remove the fuel injection pipe, fuel hose, etc. referring to the Shop Manual.
- ② Engage the belts with the pump as shown in the schematic diagram shown below and engage the belts to the upper frame. Also, fasten these belts to the under frame using the lever block.

Since this removal work of the fuel injection pump from the engine requires to separate the pump and bracket altogether and, the weight of the pump being about 50 kg, their removal will be difficult if simple removal is tried to make. Therefore, follow the procedures described at left.



③ When separating the fuel injection pump from the drive shaft, remove the coupling bolt.

★ Meanwhile, before separating them, make appropriate marking to clarify the positioning. (In order not to let the fuel injection timing deviate.)



- ④ Remove the upper bolts (2 bolts) fastening the fuel injection pump bracket and tighten the prepared bolts (01011-81050) in replacement. Meanwhile, screw-in the bolts by more than 10 mm (by more than 7 turns).
- ⑤ Remove the remaining bolts (4 bolts) which are fastening the bracket.
- ⑥ Move the pump toward this side prying it by use of a crowbar, etc. (In a state where the pump is supported by the upper two bolts of the bracket.)
- ⑦ When the pump comes off the cylinder block, remove the upper two bolts.

5-2. Removal and reinstallation of the oil cooler

Remove the oil cooler referring to the Shop Manual (13-010) for the SA12/14 engine. Then, remove the element from the cover and install the new element in replacement before reinstalling the oil cooler back to its original position.

★ Tightening torque to fasten the element and the cover (Tightening of the stud by use of the nut):

27.44 Nm – 37.24 Nm (2.8 – 3.8 kg-m)

5-3. Reinstalling the fuel injection pump

- ① Reinstall the fuel injection pump in the reverse procedure to the procedure of the above Section 3-1.
- ② Insert the dowel rings on the cylinder block side.
- ③ Before tightening the pump bracket mounting bolts check and make sure that the dowel rings are being inserted properly (engaging properly) to the bracket.

★ Tightening torque for the bolt:

M8 bolts: 27.5 – 34.3 Nm (2.8 – 3.5 kg-m)

M10 bolts: 58.8 – 73.5 Nm (6 – 7.5 kg-m)

Joint bolts (M14): 24.5 – 34.3 Nm (2.5 – 3.5 kg-m)

Air compressor intake port: 68.6 - 93.1 Nm (7 – 9.5 kg-m)

Unloader takeout port: 22.6 – 29.4 Nm (2.3 – 3 kg-m)

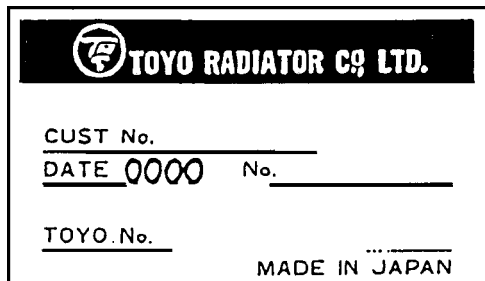
When installation work is finished, re-check the fuel injection timing.

6. Identification of the oil cooler which may have the failure

(1) In case of the oil cooler ass'y

Identify the oil cooler which may have the failure, by the indication "DATE. ****" on the oil cooler ass'y part number plate:

※ Applicable numbers: 4088 – 2100



(2) In case of the oil cooler element

Identify the oil cooler element which may have the failure, by the first 2 digits of the "4 digit marking numbers" stamped on the square shaped plate located in the lower section of the element.

※ Applicable numbers: 8D** – 0L**

The stamping is made on either one of the two plates



7. Identification method for the new oil cooler with improved flatness

(1) In case of the oil cooler ass'y

Identify the improved oil cooler by the indication "DATE. ****" on the oil cooler ass'y part number plate:

※ Applicable numbers of the improved oil coolers: 1010 and after

(2) In case of the oil cooler element proper

Identify the improved oil cooler element by the first 2 digits of the "4 digit marking numbers" stamped on the square shaped plate located in the lower section of the element.

※ Applicable numbers of the improved oil cooler elements: 1A** and after

Check table for the serial numbers of the applicable engines and machines

	Applicable machine and vehicle models	Serial numbers of the applicable engines		Starting from	Serial numbers of the applicable machines and vehicles	
		Already improved at factory new engines	Already improved at factory new machines and vehicles		Already shipped machines and vehicles	Factory shipment new machines and vehicles
1	HD785-5	#10001 – 12810	#12816 –		#1001 – 4206	#4207 –
2	HD985-5	#10001 – 12780	Next production		#1001 – 1053	#1054 –
3	WA800-3	#10001 – 12760	#12890 –		#1001 – 50021	#50022 –
4	WA900-3	#10001 – 12795	#12924 –		#1001 – 50017	#50018 –
5	D475A-3	#10001 – 12799	#12814 –		#1001 – 10685	#10686 –

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