

**PARTS & SERVICE
NEWS**

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SUBJECT: REPAIR OF TURBOCHARGER ON SA(A)6D140 ENGINE**PURPOSE:** To introduce improved parts to shorten the oil feed delay time to the turbocharger of the SA(A)6D140 series engines**APPLICATION:** SA(A)6D140 Engines, Serial Nos. is refer to pages 4 and 5.**FAILURE CODE:** A900FR**DESCRIPTION:**

1. Introduction

With the SA(A)6D140 series engines, when the engine is started under low atmospheric temperature, oil feed to the turbocharger bearing may become delayed to cause possible seizure of the turbocharger. To prevent occurrence of the seizure, the thermo-valve for installation into the oil cooler has been improved to shorten the oil feed delay time to the turbocharger.

Therefore, make the modification being introduced in this Service News to prevent the aforementioned seizure trouble.

2. List of parts

Part No.	Part Name	Purpose of part	Q'ty	Remarks
6218-61-2610 (6212-65-2610)	Valve (Valve)	} Replacement	1 (1)	
6218-61-2620 (6150-61-2141)	Sleeve (Sleeve)		1 (1)	
(6150-61-2540)	(Seal)	} Not used	(1)	
(6150-61-2150)	(Plate)		(1)	
07000-61-042	O-ring	Replacement	1	

3. Contents of the modification

- 1) The oil cooler thermo-valve for the SA(A)6D140 series engines is positioned on the upstream side of the oil cooler as shown in Fig. 1.
- 2) Normally, the oil will flow through both of the element and the bypass circuit under low atmospheric temperature to reduce the passage resistance.
- 3) While under high atmospheric temperature, the thermo-valve operates to close the bypass circuit to let the oil flow through the element totally, thus making it possible to cool the oil efficiently.
- 4) If oil of a higher viscosity is used under low atmospheric temperature (like when #30 oil is used under -10°C), the high viscosity of the oil may let the thermo-valve operate to close the bypass circuit.
- 5) If the bypass circuit is closed under low atmospheric temperature, the passage resistance increases.
- 6) The above increase of the passage resistance will cause delay in the building up time of the feeding oil pressure to the turbocharger.
- 7) If an operation to raise the engine revolution is made before the feeding oil pressure to the turbocharger builds up, the turbocharger bearing may be seized.
- 8) To solve the above problem, the thermo-valve has been improved as shown in Fig. 2 so that the bypass circuit will not be closed, even when oil of a higher viscosity is used under low atmospheric temperature, by the high viscosity of the oil.
- 9) By this improvement of the thermo-valve, the oil feed delay time to the turbocharger has been shortened.
- 10) Thus occurrence of the seizure accident of the turbocharger bearing has been prevented.

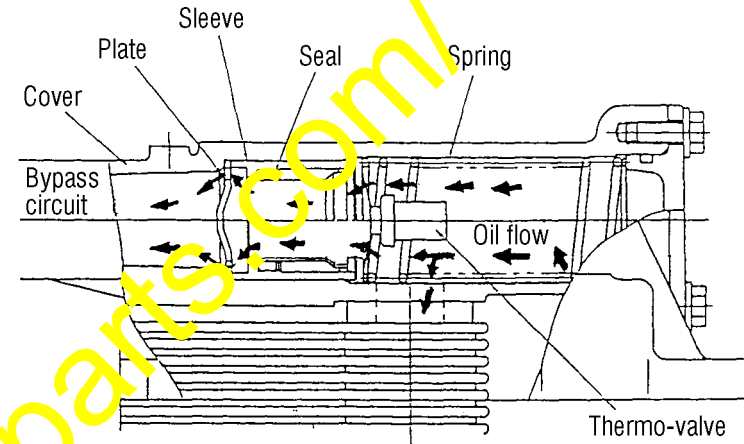


Fig. 1 Current thermo-valve

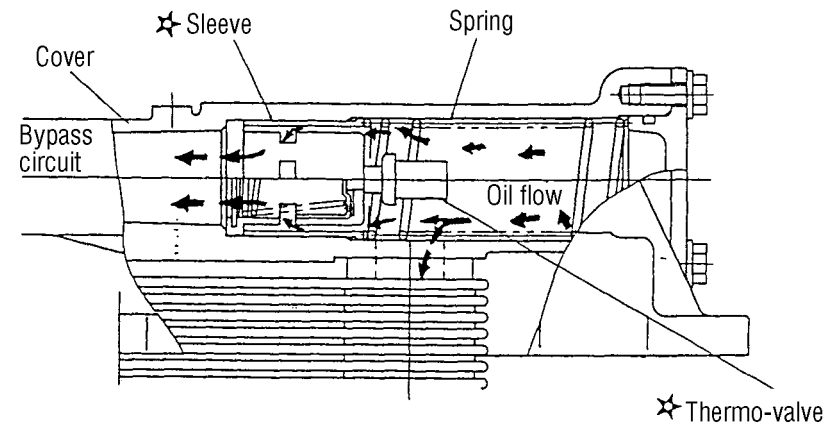


Fig. 2 Improved thermo-valve

4. Modification procedure

When carrying out a repair of a turbocharger, check the part number of the turbocharger on the subject machine referring to the Parts Book and replace the turbocharger referring to the Shop Manual.

This Service News describes the modification procedure of the thermo-valve.

1. Disassembly procedure

- 1) Loosen the two mounting bolts (13) for the cover (6) of the oil cooler to remove the cover.
- 2) Remove the spring (12), thermo-valve (8), seal (9), collar (11) and plate (10) from the oil cooler.

At this time, remember that removal of the plate (10) is apt to be forgotten.

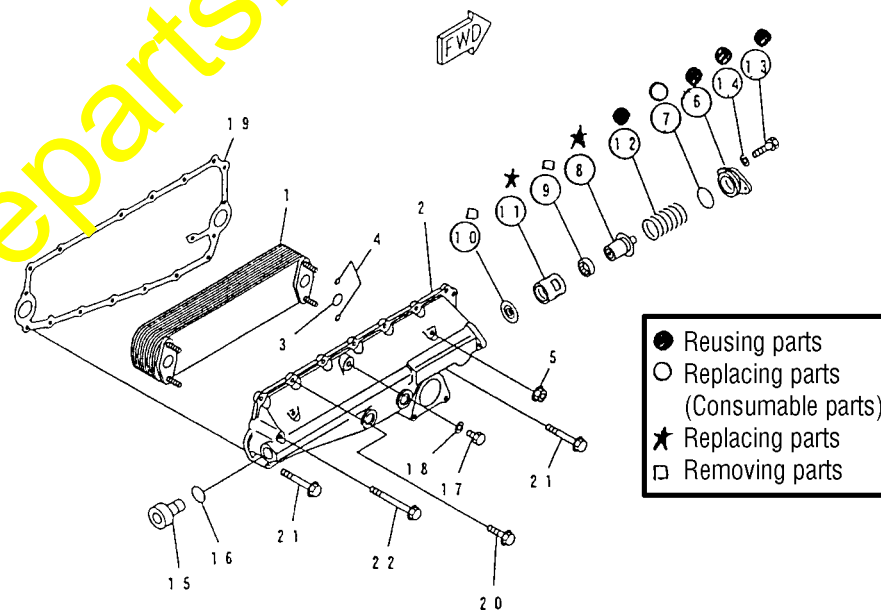
2. Reassembly procedure

- 1) Insert the newly prepared improved thermo-valve (8), improved collar (11) and the current spring (12) which was removed while disassembly was being made, in the given order.

The seal (9) and plate (10) will become unnecessary.

- 2) While inserting the thermo-valve, it may stop at the stepped section. Be sure to insert it to the end of the depth securely.
- 3) Confirm if the thermo-valve has been inserted to the end of the depth securely by the fact that the spring is projecting from the end face of the oil cooler by 25 mm after it is installed and when it is in free state.
- 4) If the spring is projecting from the end face of the oil cooler by more than 25 mm, it means that the thermo-valve has not been inserted to the end of the depth. Repeat insertion of the thermo-valve once again to install it properly.
- 5) Change the O-ring (7) to a new part and tighten the cover (6).
Tightening torque: 27 - 34 Nm (2.8 - 3.5 kgm)

3. Finally, start the engine and check and confirm if oil leakage is not occurring.



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

All the serial numbers given below start from the serial number of the 1st production.

No.	Applicable machine and engine models	Serial numbers of the engines		Serial numbers of the machines	
		Already shipped engines	Factory shipment already modified engines	Already shipped machines	Factory shipment already modified machines
1	D275AX-5	—	#110578 –	—	#20001 –
2	CS360-2	– #29525	#29777 –	– #11087	#11088 –
3	D155A-2A	– #29695	#29706 –	– #57199	#57200 –
4	D155AX-3	– #29693	#29696	– #61276	#61277 –
5	D155AX-5	– #29656	※1	– #75077	※1
6	D155AX-5A	– #110529	#110533 –	– #75097	#75098 –
7					
8	GC380F-2	– #29687	※1	– #12068	#12069 –
9	GD825A-2	– #29421	※1	– #12104	#12105 –
10	GS360-2	– #28966	※1	– #12080	#12081 –
11	HD325-6	– #28799	※1	– #5960	※1
12	HD325-6E	– #110530	#110537 –	– #6055	#6056 –
13	HM350-1	—	※2		※2
14	HM400-1	– #110424	#110533 –	– #1019	#1020 –
15	HV3000-1	– #29670	#29712 –	– #1006	#1007 –
16	J6D140E-KC-2	– #29611	※1	—	—
17	J6D140E-W2-2	—	※1	—	—
18	LW500-1	– #29671	※1	– #10046	#10047 –
19	PC1600SP-1F	– #29612	※1	– #10139	#10140 –
20	PC1600SP-1R	– #29613	※1	– #10139	#10140 –
21	PC1800-6F	– #29502	#29709 –	– #10015	※1
22	PC1800-6R	– #29503	#29710 –	– #10015	※1
23	PC1800E-6F	– #110134	※1	– #10011	※1
24	PC1800E-6R	– #110135	※1	– #10011	※1
25	PC600-6	– #110494	※1	– #11062	#11063 –
26	PC600-KU-6	– #110518	※1	—	—
27	PC750-6	– #29586	#29705 –	– #10359	#10360 –
28	PC750-6E	– #110532	#110542 –	– #11006	#11007 –
29	PC750-KU-6	– #29552	#29726 –	—	—
30	PC750-KU-6E	– #110461	※1	—	—
31	T6D140E-W2-2	– #24724	※1	—	—
32	WA500-3	– #29654	※1	– #51032	#51033 –
33	WA500-3E	– #110516	#110536 –	– #52014	#52015 –
34	WA500-AC-3	– #110528	#110543 –	—	—
35	WA500-DZ-3	– #29457	※1	—	—
36	WA500-HH-3	– #110492	※1	—	—
37	HD405-6E	– #110448	#110537 –	– #2028	#2029 –
38	PC800-6E	– #110507	#110554 –	– #31023	#31024 –
39	WT800E-1	– #110508	※1	– #1002	#1003 –
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※1: Next production and after

※2: The first production and after

Check table for the serial numbers of the applicable engines

All the serial numbers given below starts from the serial number of the 1st production.

No.	Applicable machine and engine models	Serial numbers of the engines		Serial numbers of the machines	
		Already shipped engines	Factory shipment already modified engines	Already shipped engines	Factory shipment already modified engines
1	6M132A-2	- #22250	※1		
2	6M140A-2	- #22286	※1		
3	S6D140-G1-1	- #27230	※1		
4	S6D140-G2-1	- #29581	※1		
5	S6D140-G3-1	- #23384	※1		
6	S6D140-GD-1	- #29582	※1		
7	S6D140-GH-1	- #26744	※1		
8	S6D140-GN-1	- #25047	※1		
9	S6D140-P-1	- #22031	※1		
10	S6D140-PGA-1	- #23741	※1		
11	SA6D140-A2-1	- #29688	#29730 -		
12	SA6D140A-G1-1	- #29524	※1		
13	SA6D140A-G2-1	- #29675	#29731 -		
14	SA6D140A-G3-1	- #29209	※1		
15	SA6D140A-GA-1	- #29688	#29730 -		
16	SA6D140A-GB-1	- #29449	※1		
17	SA6D140A-GD-1	- #29449	※1		
18	SA6D140A-GH-1	- #21611	※1		
19	SA6D140A-GJ-1	- #29524	※1		
20	SA6D140A-GN-1	- #29276	※1		
21	SA6D140A-M-1	- #29385	※1		
22	SA6D140A-P-1	- #29524	※1		
23	SA6D140A-W1-1	- #28954	※1		
24	SA6D140B-1	- #29083	#29730 -		
25	SA6D140B-A1-1	- #15007	※1		
26	SA6D140B-G1-1	- #29615	※1		
27	SA6D140B-G2-1	- #29676	※1		
28	SA6D140B-G3-1	- #22039	※1		
29	SA6D140B-GA-1	- #22082	※1		
30	SA6D140B-GN-1	- #26449	※1		
31	SA6D140B-C-1	- #29449	※1		
32	SA6D140H-GJ-1	- #27904	※1		
33	SA6D140H-R-1	- #29512	※1		
34	SA6D140-M-1	- #29577	※1		
35	SA6D140-P-1	- #29688	#29730 -		
36	SA6D140-W1-1	- #25688	※1		
37	SAA6D140-G1-1	- #29653	※1		
38	SAA6D140-G3-1	- #29691	#29757 -		
39					
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※1: Next production and after