

**PARTS & SERVICE  
NEWS**

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**SUBJECT:** IMPROVEMENT OF AIR INTAKE VALVE ON 170 ENGINE

**PURPOSE:** To introduce improved air intake valves for use with  $\phi$  170 type engines

**APPLICATION:** See page 3 thru 5

**FAILURE CODE:** A4A0CA

**DESCRIPTION:**

## 1. Introduction

In order to improve the wear resistance of the air intake valve and air intake valve seat, we have modified the air intake valve to a new part to which a gas nitriding treatment has been added.

When it becomes necessary to replace the air intake valves at times of scheduled maintenance such as of the overhauling, replace the valves following the modification procedures outlined in this Service News.

## 2. List of parts

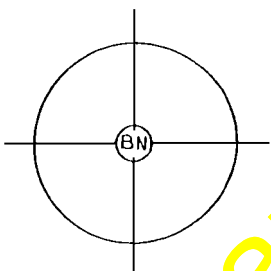
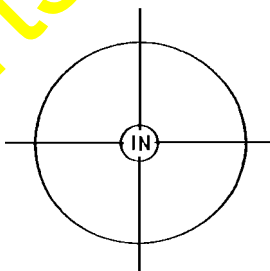
Part No.	Part Name	Qty		Remarks
		D170	12V170	
6162-43-4111 (6162-43-4110)	Valve, in (Valve, in)	12 (12)	24 (24)	Wear resistance has been improved by the gas nitriding treatment

### 3. Contents of the modification

To improve the wear resistance of the air intake valve, we have supplemented a gas nitriding treatment as the surface treatment method.

This will work to widen the margin against wears of the air intake valve and air intake valve seat.

Table 1. Contents of the modification

	New part	Current part
Part numbers of the air intake valve	6162-43-4111	6162-43-4110
Surface treatments	Gas nitriding treatment all over the surfaces after applying thermal refining of the material.	Thermal refining of the material only
Identification method	<p>Stamping reading "BN" on the valve head surface</p> 	<p>Stamping reading "IN" on the valve head surface</p> 

### 4. Modification procedures

- (1) Remove the cylinder head assembly and disassemble the air intake valve assembly from the cylinder head assembly referring to the Shop Manual of the modifying machine model.
- (2) Replace the air intake valve with the improved one.
- (3) In the above assembly state, check the sunk depth of the valve and, when it has been found off-specification (wear of the air intake valve seat also is extensive), replace the valve seat as well.
- (4) Replace the consumable parts such as O-rings and gaskets with new parts. Also, carefully check other relevant parts (such as valves, cotter pins, rocker arms and push rods) and if any of them has been found abnormal, replace them with new parts.

### 5. Note

As for the air intake valves for use with the "stationary service generators SA6D170A-G1-1" which are usually used under severer conditions in regard to wear, replacement has already been suggested by the previous issue of Service News "AT99062".

This Service News is being issued to encourage the use of the improved air intake valves for other models as well.

List of engines/machines to be modified according to this Service News and those already modified by Immediate Design Change

Current part number → New part number  
(Part number change: 6162-43-4110 → 6162-43-4111)

No.	Applicable models	Serial numbers of the applicable engines		Serial numbers of the applicable machines		Modification incorporated on
		Already shipped engines (Applicable to this modification)	Engines newly shipped from the factory (Already modified)	Already shipped machines (Applicable to this modification)	Machines newly shipped from the factory (Already modified)	
1	HD465-3	10001 – 14371	14372 and up	10001 – 2435	2436 and up	
2	HD465-3C	10001 – 14371	14372 and up	10001 – 2435	2436 and up	
3	WA700-1	10001 – 18778	18779 and up	10001 – 10139	10140 and up	
4	6M170A-1	Up to 10017	10018 and up	—	—	
5	EM680A-1	Up to 10017	10018 and up	—	—	
6	6M170B-1	Up to 10017	10018 and up	—	—	
7	SA6D170A-M-1	Up to 19909	19910 and up	—	—	
8	D155-A-1B		From the next production		From the next production	
9	D275A-2	10001 – 19541	19542 and up	10001 – 10308	10309 and up	Mar.9
10	D355A-3B		From the next production		From the next production	
11	D375A-1		From the next production		From the next production	
12	D375A-2	10001 – 17665	17666 and up	10001 – 16660	16681 and up	
13	EG480-1	Up to 19618	19619 and up	—	—	
14	EG480-L-2	Up to 19618	19619 and up	—	—	
15	EG480A-L-2	Up to 19618	19619 and up	—	—	
16	EG480B-1	Up to 19618	19619 and up	—	—	
17	EG480B-L-2	Up to 19618	19619 and up	—	—	
18	EG500-1	Up to 19618	19619 and up	—	—	
19	EG500B-1	Up to 19618	19619 and up	—	—	
20	EG500BS-1	Up to 19618	19619 and up	—	—	
21	EG580-1	Up to 19618	19619 and up	—	—	
22	EG580B-1	Up to 19618	19619 and up	—	—	
23	EG580B-L-1	Up to 19618	19619 and up	—	—	
24	EG600-1	Up to 19634	19635 and up	—	—	
25	EG600B-1	Up to 19634	19635 and up	—	—	
26	EG600BS-1	Up to 19634	19635 and up	—	—	
27	EPSA6D170-A-1	Up to 19519	19520 and up	—	—	
28	EPSA6D170-B-1	Up to 19519	19520 and up	—	—	
29	J6D170AE-GD-1	Up to 19737	19738 and up	—	—	
30	J6D170BE-GD-1	Up to 19737	19738 and up	—	—	

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		Already shipped engines (Applicable to this modification)	Engines newly shipped from the factory (Already modified)	Already shipped machines (Applicable to this modification)	Machines newly shipped from the factory (Already modified)	
31	PC1000-1	10001 – 18612	18613 and up	10001 – 10461	10462 and up	
32	SAA6D170-G3-1	Up to 19892	19893 and up	—	—	
33	SA6D170-A-1	Up to 19634	19635 and up	—	—	
34	SA6D170-B-1	Up to 19634	19635 and up	—	—	
35	SA6D170-C2-1	Up to 19618	19619 and up	—	—	
36	SA6D170A-C2-1	Up to 19634	19635 and up	—	—	
37	SA6D170A-GA-1	Up to 19634	19635 and up	—	—	
38	SA6D170A-GD-1	Up to 19634	19635 and up	—	—	
39	SA6D170A-GH-1	Up to 19634	19635 and up	—	—	
40	SA6D170A-GN-1	Up to 19634	19635 and up	—	—	
41	SA6D170A-G2-1	Up to 19634	19635 and up	—	—	
42	SA6D170A-G3-1	Up to 19634	19635 and up	—	—	
43	SA6D170A-P-1	Up to 19634	19635 and up	—	—	
44	SA6D170B-C2-1	Up to 19618	19619 and up	—	—	
45	SA6D170B-GA-1	Up to 19618	19619 and up	—	—	
46	SA6D170B-GD-1	Up to 19618	19619 and up	—	—	
47	SA6D170B-GH-1	Up to 19618	19619 and up	—	—	
48	SA6D170B-G1-1	Up to 19618	19619 and up	—	—	
49	SA6D170B-G2-1	Up to 19618	19619 and up	—	—	
50	SA6D170B-G3-1	Up to 19618	19619 and up	—	—	
51	SA6D170B-P-1	Up to 19618	19619 and up	—	—	
52	S6D170B-R-1	Up to 19618	19619 and up	—	—	
53	S6D170-G2-1	Up to 19618	19619 and up	—	—	
54	S6D170-G3-1	Up to 19618	19619 and up	—	—	
55	WA600-1	10001 – 18898	18900 and up	10001 – 11596	11597 and up	
56	WD600-1	10001 – 19319	19320 and up	10001 – 10139	10140 and up	Mar. 4
57	BR1600JG-1		From the next production		From the next production	
58	D375A-3	10001 – 19587	19588 and up	10001 – 17540	17541 and up	Feb. 25
59	PC1100-6	10001 – 19662	19663 and up	10001 – 10120	10121 and up	Mar. 2
60	PC1100-HA-6	10001 – 19627	19628 and up	10001 – 10120	10121 and up	Mar.5

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61	WA600-3	10001 – 19615	19616 and up	10001 – 50127	50128 and up	Feb. 25
62	WA700-3	10001 – 19659	19660 and up	10001 – 50010	50011 and up	Mar. 2
63	SA6D170A-GT-1	Up to 19634	19635 and up	—	—	
64	SA6D170A-G1-1	Up to 19634	19635 and up	—	—	
65	SA6D170B-GT-1	Up to 19618	19619 and up	—	—	
66	SA6N170-G1-1	Up to 19634	19635 and up	—	—	
67	6N170-G1-1	Up to 19634	19635 and up	—	—	
68	D575A-2	10001 – 10178	10179 and up	10001 – 10042	10043 and up	Apr. 28
69	EG1100-1	Up to 10176	10177 and up	—	—	
70	SA12V170-G2-1	Up to 10176	10177 and up	—	—	
71	SA12V170-G3-1	Up to 10176	10177 and up	—	—	
72	D12V170-G1-1	Up to 10176	10177 and up	—	—	
73	SA12V170-GT-1	Up to 10176	10177 and up	—	—	
74	SA12V170-G1-1	Up to 10176	10177 and up	—	—	
75	SA12V170-G1-1	Up to 10176	10177 and up	—	—	
76	EM680A-1	Up to 10017	10018 and up	—	—	
77	6M170B-1	Up to 10017	10018 and up	—	—	
78	EM680A-A-00	Up to 10017	10018 and up	—	—	
79	SA12V170-P-1	Up to 10175	10176 and up	—	—	
80	SDA12V170-R-1	Up to 10175	10176 and up	—	—	
81	BE-D355A-1	CKD		—	—	
82	BE-D355A-3	CKD		—	—	
83	BE-PC1000-1	CKD		—	—	
84	BE-SA170AG-1	CKD		—	—	