PARTS & SERVICE NEWS

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SUBJECT: REPAIR OF INJECTION PIPE CLAMP ON S,SA(A)6D140E-2, S(D)A12V140 ENGINE

PURPOSE: To introduce modification procedures to improve the clamps for the fuel injection pipings for the S,SA(A)6D140E-2 and S(D)A12V140 engines

APPLICATION: Refer to pages 13 thru 15.

FAILURE CODE: A7J104

DESCRIPTION:

1. Introduction
Since it has been found out that there is a fear of occurrence of loosening of the fuel injection piping clamp mounting bolts while the machines are in operation to let the clamp fall damaging the fuel injection piping for the S,SA(A)6D140E-2 and S(D)A12V140 engines, make the modification following the procedures outlined in this Service News to replace these clamps and relevant parts with the improved parts.

2. List of parts

Part No.	Part Name	Purpose of part	Q'ty	Remarks
For the S,SA(A)6D140E-2 engines				
6210-71-5512 (6210-71-5511)	Clamp (Clamp)	Replacement	2 (2)	
6210-71-5522 (6210-71-5520)	Clamp (Clamp)		2 (2)	
6215-71-5282 (6162-73-5510)	Clamp (Clamp)		4 (4)	
6215-71-5292 (6162-73-5520)	Clamp (Clamp)		4 (4)	
01010-30630 (01010-80625)	Bolt (Bolt)		4 (4)	
01643-30623 (01640-20610)	Washer (Washer)		12 (12)	

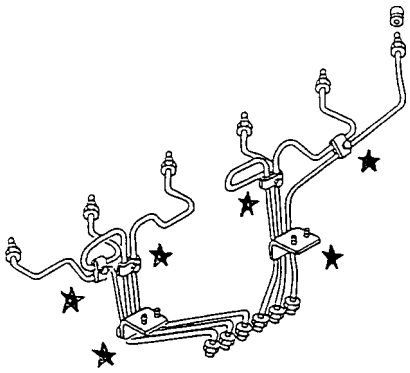
Part No.	Part Name	Purpose of part	Q'ty	Remarks
For the SA12V140 engines (Mechanical governor spec.)				
6215-71-5282 (6215-71-5280)	Clamp (Clamp)	Replacement	12 (12)	
6215-71-5292 (6215-71-5290)	Clamp (Clamp)		12 (12)	
6215-71-4351 (6215-71-4350)	Clamp (Clamp)		4 (4)	
6215-71-5371 (6215-71-5370)	Clamp (Clamp)		4 (4)	
01010-80630 (01010-80625)	Bolt (Bolt)		12 (12)	
01643-30623	Washer	Addition	20	
For the S(D)A12V140 engines (Electric engine throttle controller spec.)				
6215-71-5282 (6215-71-5280)	Clamp (Clamp)	Replacement	10 (10)	
6215-71-5292 (6215-71-5290)	Clamp (Clamp)		10 (10)	
6215-71-4351 (6215-71-4350)	Clamp (Clamp)		4 (4)	
6215-71-5371 (6215-71-5370)	Clamp (Clamp)		6 (6)	
01010-80630 (01010-80625)	Bolt (Bolt)		14 (14)	
01643-30623	Washer	Addition	22	
6210-71-5512 (6210-71-5510)	Clamp (Clamp)	Replacement	2 (2)	

3. Contents of the modification

Since washers were not used for the fuel injection piping clamp mounting bolts for the engines of the serial numbers listed on page 15, permanent setting can occur on the bearing surface to the bolt head to cause loosening of the mounting bolt and, in worst case, the clamp can fall to damage the fuel injection piping (With the 12V140 engines)
Also, the rigidity of the clamp was insufficient and the clamp tended to be deformed when the clamp mounting bolt was tightened to cause loosening of the bolt.

We have modified the structure of the clamp to prevent occurrence of loosening of the mounting bolts as explained below.

1) We supplemented washers to the clamp mounting bolts. (With the 12V140 engines)
2) To prevent occurrence of deformation of the clamp when the mounting bolt is tightened, we have supplemented a stopper inside the clamp. Also, the heat resistance of the rubber material has been improved as well.



(In case of the 6D140 engine)

Clamps being used at the ★ marked sections in the schematic diagram indicated at left have been improved.

- Improved clamps equipped with the stopper
- Washers have been supplemented (for the 12V140 engine fuel pipings).
- The washers (for the 6D140 engine fuel pipings) have been changed from 01640-20610 to 01643-30623.

Before the modification	After the modification
Permanent setting can occur on the bearing surface to the bolt head since washer was not used: ↓ More tending to cause loosening of the mounting bolt	We supplemented a washer here.
The rigidity of the clamp was insufficient and the clamp tended to be deformed when the clamp mounting bolt was tightened to cause loosening of the bolt.	We have supplemented a stopper (the hatched part) inside the clamp to prevent occurrence of deformation of the clamp when the mounting bolt is tightened.

* We made the modification under the same concept for the multi-clamp to fasten three fuel injection tubes altogether.

Inspections to check if the fuel injection piping clamps are not noose and if the rubber material is not hardened

Inspect the fuel injection piping clamps every 4,000 hours and replace them when deemed necessary.
Make visual checks or finger touching checks to inspect if the clamps are not loose, the clamp mounting bolts are not loose or the rubber sections are not hardened or cracked.
When they are found to be loose or when their rubber sections are found hardened, it is necessary to replace them with new parts.

Caution: If the engine is kept in operation with these clamps loosened, with their rubber sections hardened or with the clamps having fallen down, the contacting sections of the fuel injection pipings may wear quickly or they may be broken by vibrations.
Consequently, be sure to operate the machine with the proper fuel injection piping clamps being installed securely.

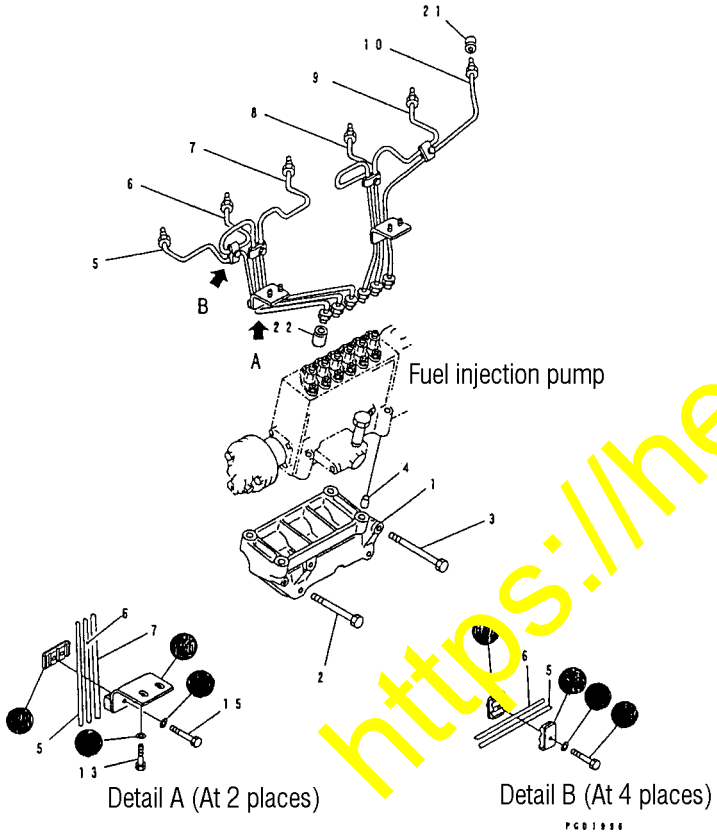
4. Modification procedures

1) S,SA6D140E-2 and SAA6D140E-2 engines

A) Removing the parts which need to be removed for this modification

Remove the parts marked ● in the schematic diagram indicated below. When any of the clamps has fallen down, check the fuel injection pipings for cracks and the tapped holes in the bracket for damages.

If they are cracked or damaged, replace them with new parts.

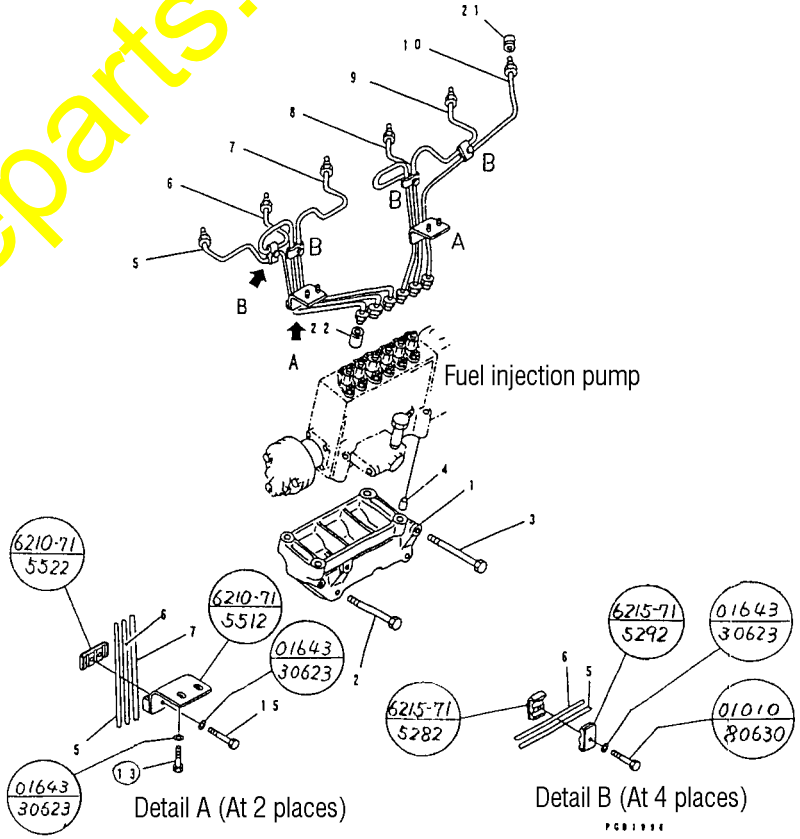


B) Installing the improved parts

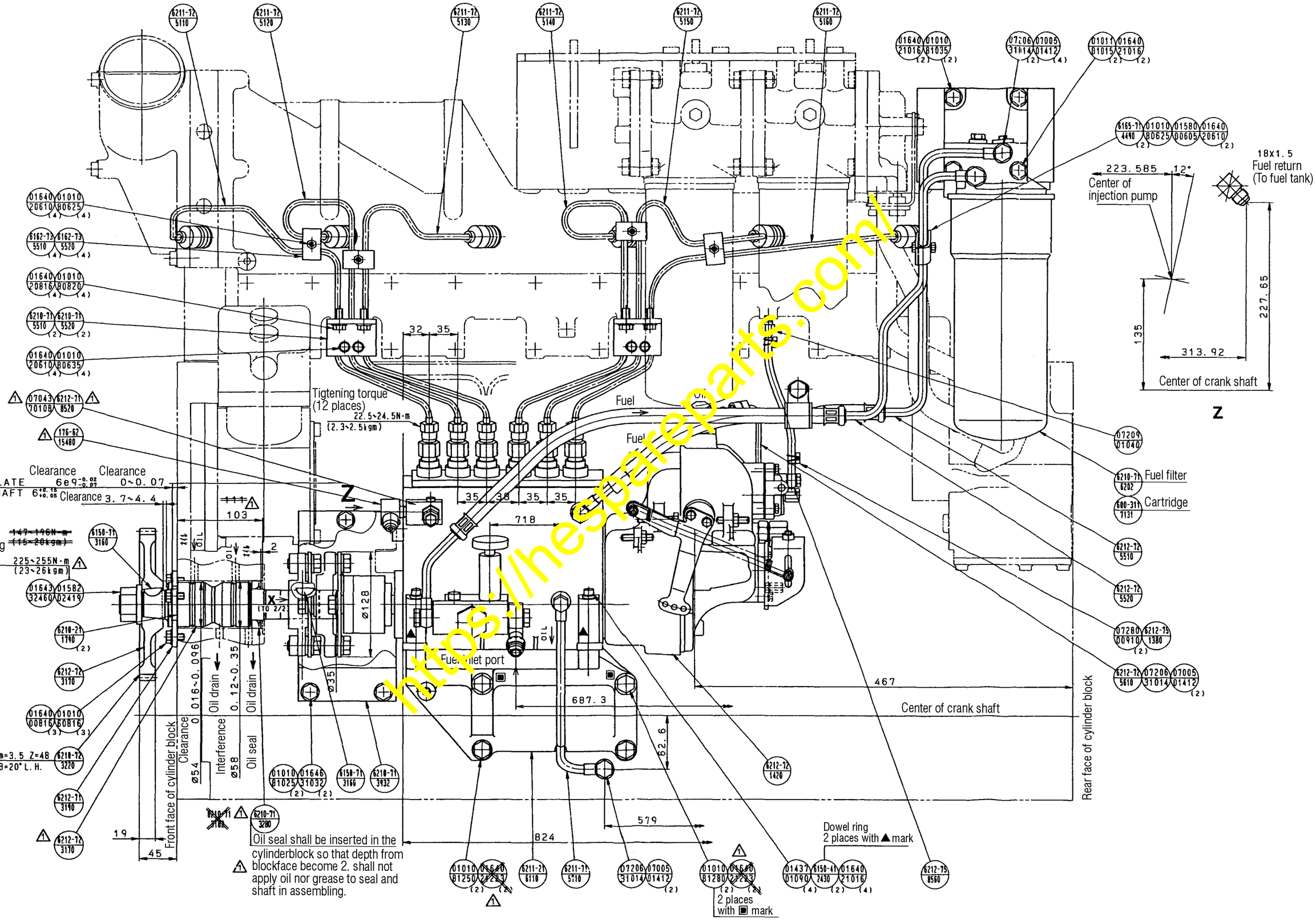
Install the improved parts according to the instructions given in the schematic diagrams indicated below. Tighten respective mounting bolts at the tightening torque designated below.

(The width has been changed from the current width of 22 to the new width of 18.)

Refer to the next page (page 6) regarding the detailed locations of these clamps.



- Clamp mounting bolt tightening torque: 8.9 – 14.7 Nm (0.9 – 1.5 kgm)
- No. 13 bolt tightening torque: 34 – 74 Nm (3.5 – 7.5 kgm)



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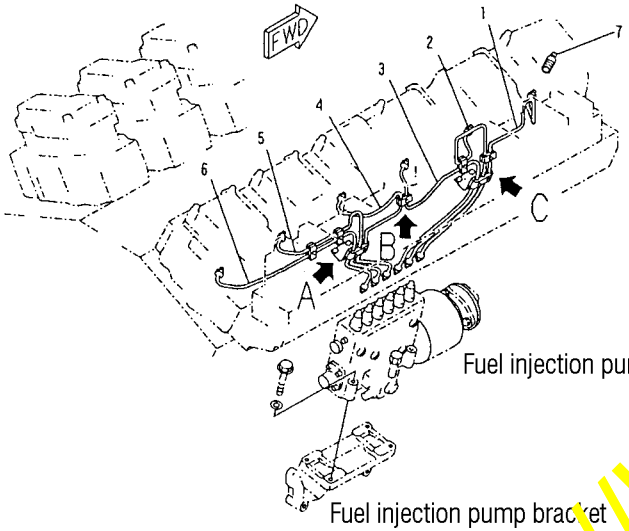
2) S(D)A12V140 engines RH-bank

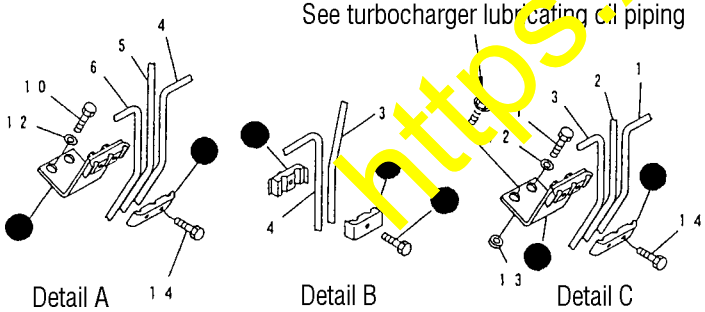
A) Removing the parts which need to be removed for this modification

Remove the parts marked ● in the schematic diagram indicated below. When any of the clamps has fallen down, check if the fuel injection pipings are not cracked and if the tapped holes in the bracket are not damaged.

If they are cracked or damaged, replace them with new parts.



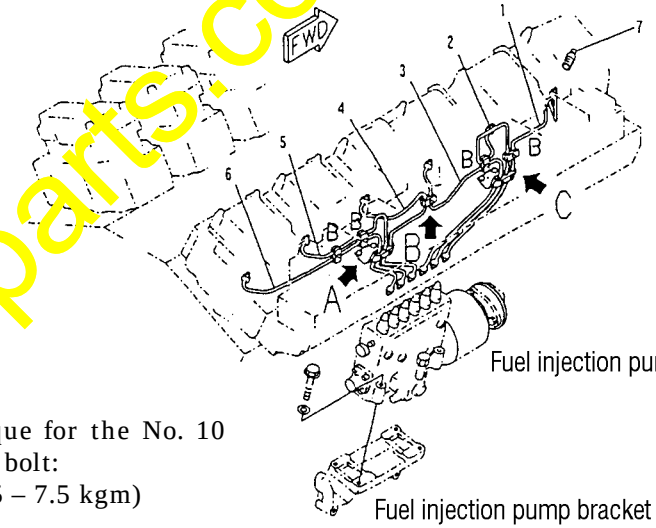
See turbocharger lubricating oil piping



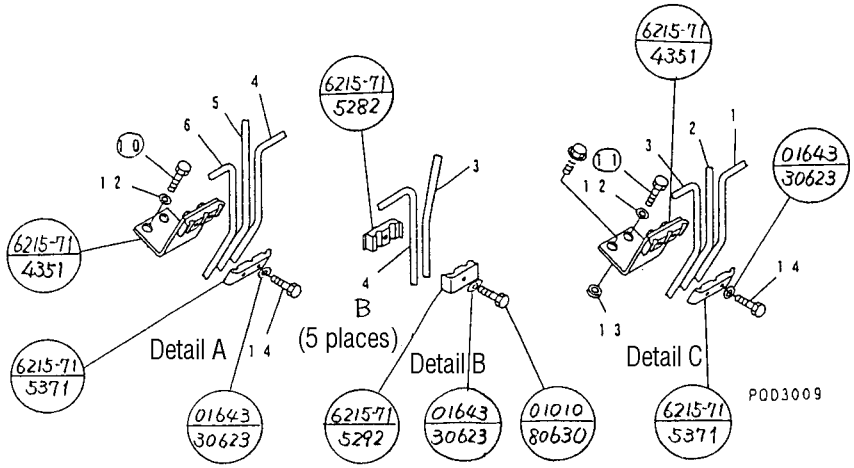
B) Installing the improved parts

Install the improved parts according to the instructions given in the schematic diagrams indicated below. Tighten respective mounting bolts at the tightening torque designated below.

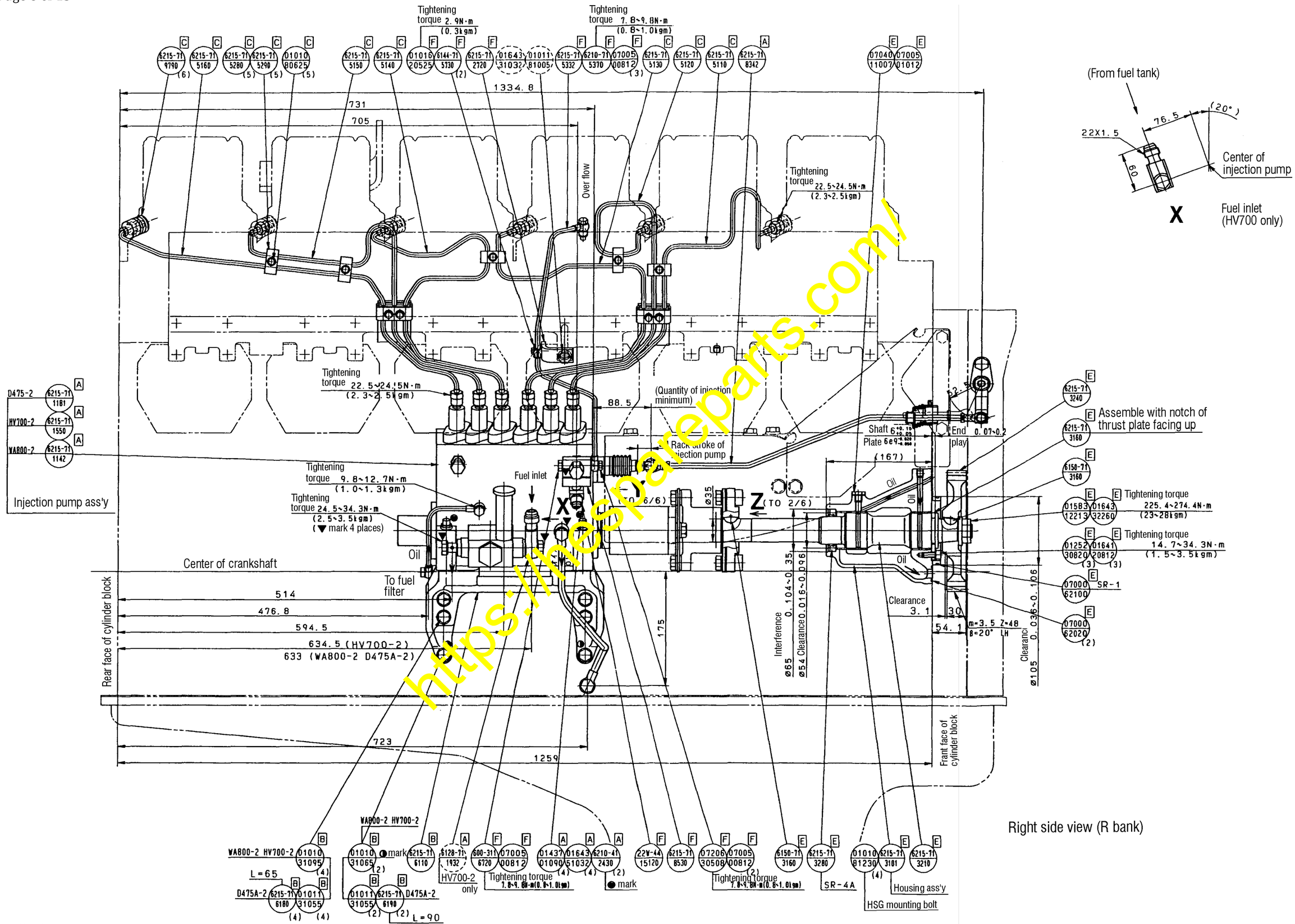
Refer to the next page (page 8) regarding the detailed locations of clamps.



• Tightening torque for the No. 10 bolt and No. 11 bolt:
34 – 74 Nm (3.5 – 7.5 kgm)



• Clamp mounting bolt tightening torque: 8.9 – 14.7Nm (0.9 – 1.5 kgm)



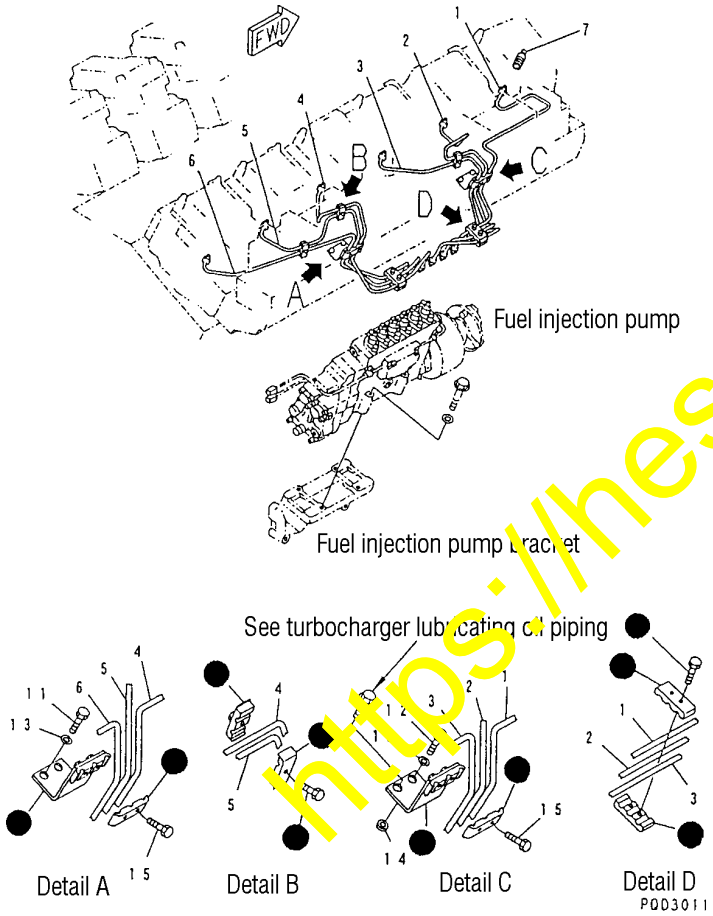
Right side view (R bank)

3) S(D)A12V140 engines (Electric engine throttle controller spec.) RH-bank

A) Removing the parts which need to be removed for this modification

Remove the parts marked ● in the schematic diagram indicated below. When any of the clamps has fallen down, check if the fuel injection pipings are not cracked and if the tapped holes in the bracket are not damaged.

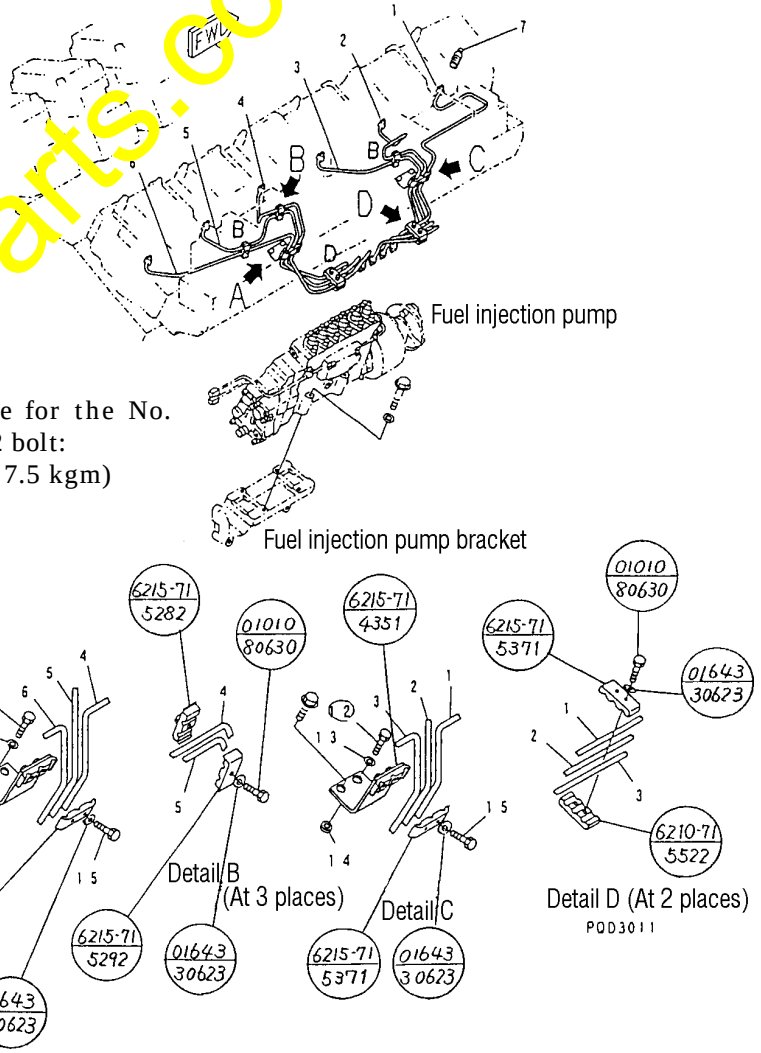
If they are cracked or damaged, replace them with new parts.

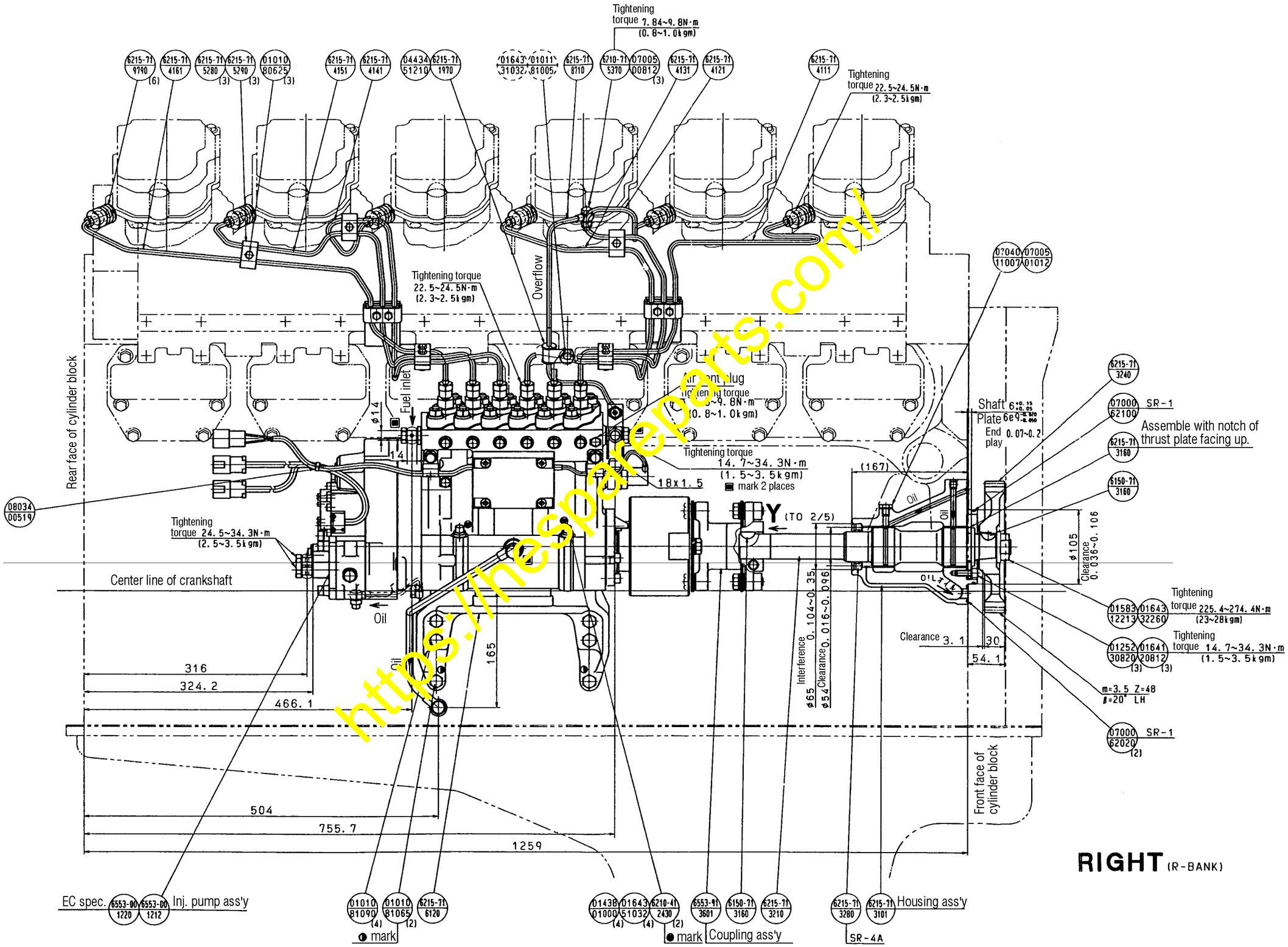


B) Installing the improved parts

Install the improved parts according to the instructions given in the schematic diagrams indicated below. Tighten respective mounting bolts at the tightening torque designated below.

Refer to the next page (page 10) regarding the detailed locations of clamps.



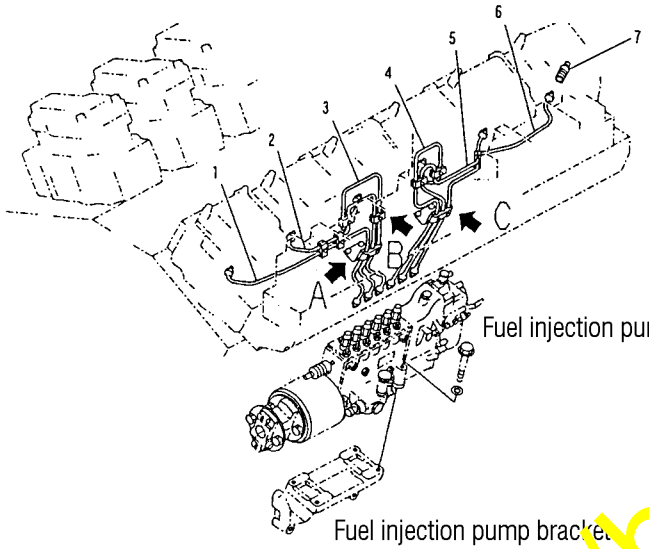


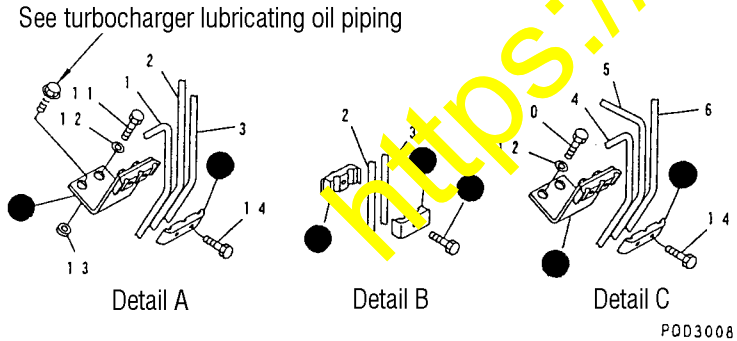
4) S(D)A12V140 engines (Electric engine throttle controller spec.)
LH-bank

A) Removing the parts which need to be removed for this modification

Remove the parts marked ● in the schematic diagram indicated below. When any of the clamps has fallen down, check if the fuel injection pipings are not cracked and if the tapped holes in the bracket are not damaged.

If they are cracked or damaged, replace them with new parts.

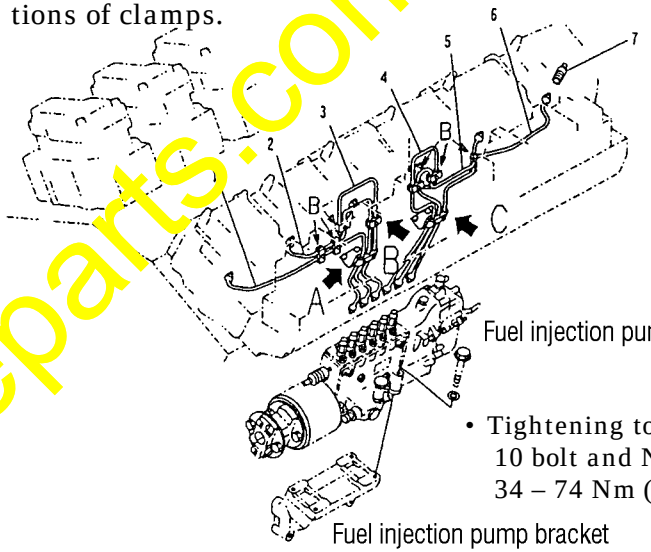




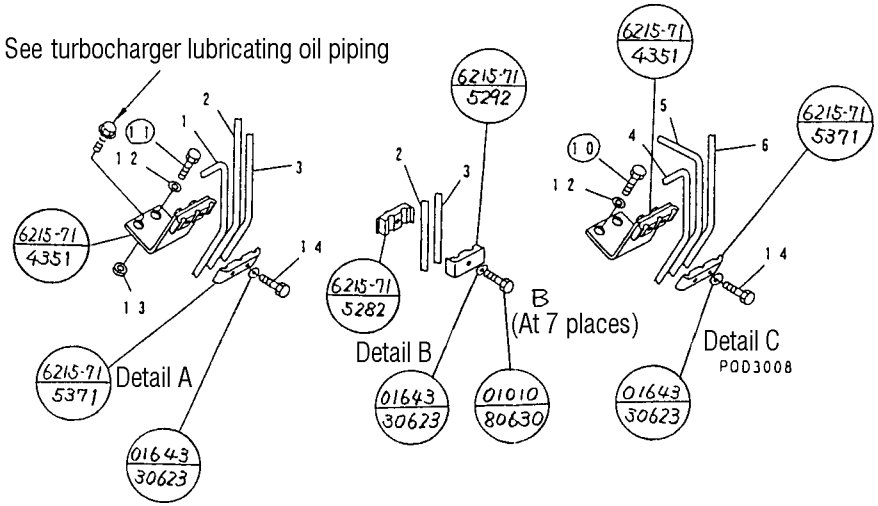
B) Installing the improved parts

Install the improved parts according to the instructions given in the schematic diagrams indicated below. Tighten respective mounting bolts at the tightening torque designated below.

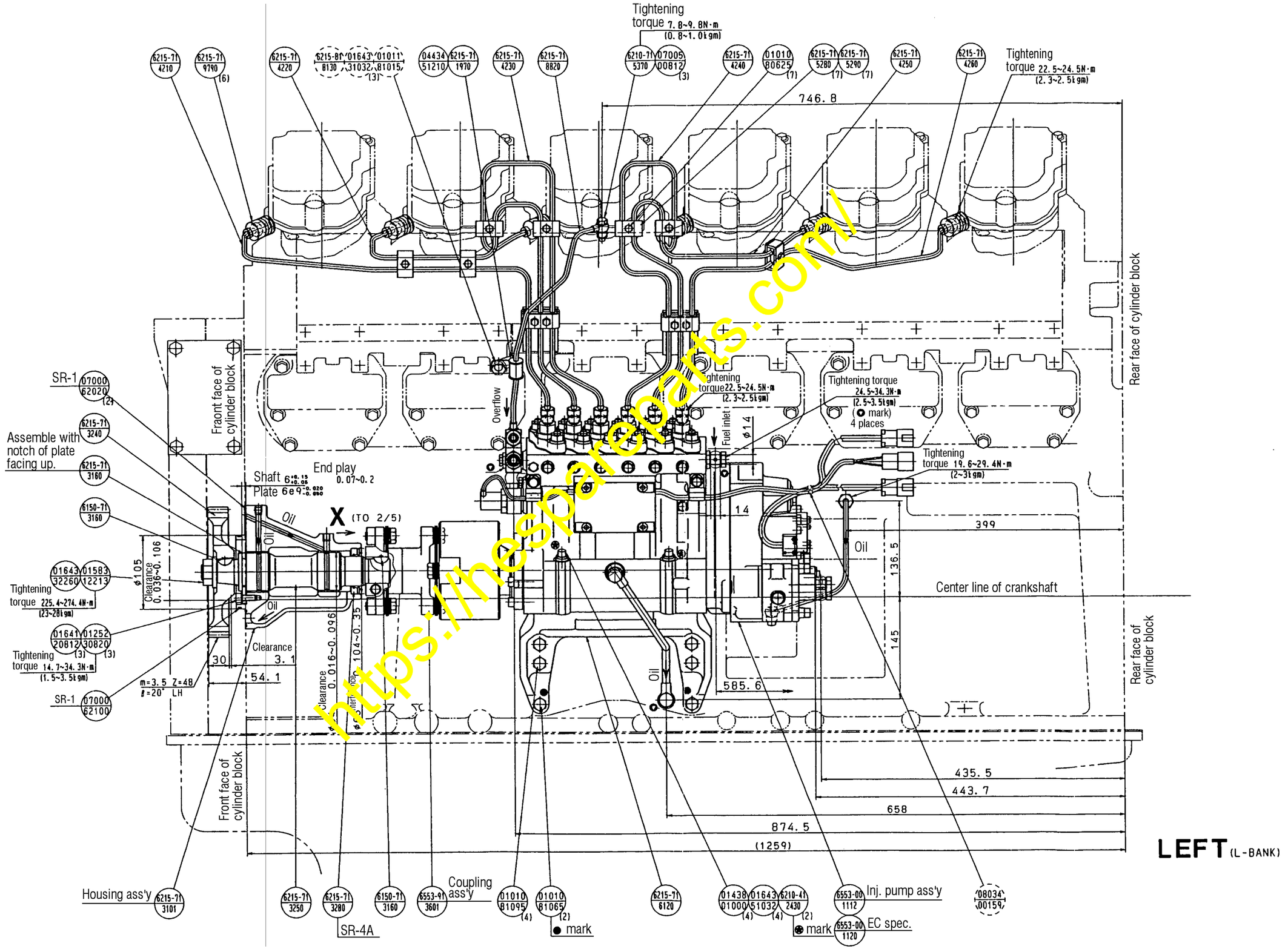
Refer to the next page (page 12) regarding the detailed locations of clamps.



• Tightening torque for the No. 10 bolt and No. 11 bolt: 34 – 74 Nm (3.5 – 7.5 kgm)



• Clamp mounting bolt tightening torque: 8.9 – 14.7Nm (0.9 – 1.5 kgm)



5. List of serial numbers of the applicable engines and machines

1) S(A)(A)6D140 (No. 1)

No.	Applicable models	Serial No. of the applicable engines		Serial No. of the applicable machines	
		Already shipped engines	Factory shipment new engines	Already shipped machines	Factory shipment new machines
1	HD325-5	#10185–#27982	Next shipment and after	#2001–#4293	#4294–
2	HD325-6	#17983–#28710	#28711–	#5001–#5960	#5961–
3	HD405-6	#22653–#28710	#28711–	#1001–#1185	#1186–
4	CS360-2	#11455–#28515	Next shipment and after	#11002–#11084	#11085–
5	GS360-2	#11455–#28515	Next shipment and after	#12001–#12076	#12077–
6	GC380F-2	#21744–#28699	#28769–	#12001–#12060	#12061–
7	KE190-2	#12585–#26628	Next shipment and after	#47–#79	Next shipment and after
8	GD825A-1	#13806–#24091	Next shipment and after	#10049–#11001	Next shipment and after
9	GD825A-2	#23352–#28360	#28721–	#11002–#12097	#12098–
10	D135A-2	#14959–#26574	Next shipment and after	#10001–#22334	Next shipment and after
11	D155A-2A	#27560–#28713	#28714–	#57001–#57035	#57036–
12	D155A(X)-3	#22537–#28623	Next shipment and after	#60001–#61145	Next shipment and after
13	D155AX-5	#25887–#28695	#28723–	#70001–#70277	#70278–
14	D355C-3	#25748	Next shipment and after	#14263	Next shipment and after
15	WA500-1	#16439–#28568	Next shipment and after	#10001–#21259	Next shipment and after
16	WA500-3	#23227–#28094	#28718–	#50001–#50883	#50884–
17	WF550A-3	#27478–#28709	Next shipment and after	#50001	Next shipment and after
18	WF600T-1	#16439–#27965	Next shipment and after	#10001–#10010	Next shipment and after
19	WS16S-3	#11233–#23356	Next shipment and after	#3001–#3030	Next shipment and after
20	WS23-2	#10522–#17328	Next shipment and after	#2001–#2004	Next shipment and after
21	WS23S-2	#10428–#16256	Next shipment and after	#3001–#3018	Next shipment and after
22	LW500-1	#25136–#28712	Next shipment and after	#10001–#10030	#11031–
23	PC650(SE,LC)-3	#11978–#15218	Next shipment and after	#10665–#11119	Next shipment and after
24	PC650(SE,LC)-5	#17739–#27359	Next shipment and after	#20001–#20334	Next shipment and after
25	PC710(SE)-5	#17739–#27989	Next shipment and after	#10001–#10226	Next shipment and after
26	PC750(SE,LC)-6	#22885–#28696	#28726–	#10001–#10337	#10338–
27	PC800(SE,LC)-6	#22885–#28696	#28726–	#30001–#30244	#30255–
28	PC1600(SP)-1	#11399–#28697	#28727–	#10001–#10125	#10126–
29	PC1800-6	#27372–#28422	#28828–	#10001–#10007	#10008–
30	EG300-5	#13126–#25273	Next shipment and after		
31	EG300L-5	#20240–#20289	Next shipment and after		
32	EG300B-5	#13126–#25273	Next shipment and after		
33	EG300BS-5	#77383	Next shipment and after		
34	EG350A-L-1	#14659–#17951	Next shipment and after		
35	EG350B-L-1	#14639–#22082	Next shipment and after		
36	EG400-2	#12599–#23633	Next shipment and after		
37	EG400B-2	#12599–#23633	Next shipment and after		
38	EG400B-L-2	#12599–#23633	Next shipment and after		
39	EG400BS-2	#13433–#26280	Next shipment and after		
40	J6D140E-GD-2	#23474–#28534	#28755–		
41	J6D140E-G1-2	#28185–#70013	#70014–		
42	J6D140E-KC-2	#28211	#28737–		
43	SAA6D140-G1-1	#28574–#28575	#28784–		
44	SAA6D140-G3-1	#22451–#28693	Next shipment and after		
45	SA6D140-A2-1	#10010–#28683	#28700–		

1) S(A)(A)6D140 (No. 2)

No.	Applicable models	Serial No. of the applicable engines		Serial No. of the applicable machines	
		Already shipped engines	Factory shipment new engines	Already shipped machines	Factory shipment new machines
46	SA6D140-C2-1	#12919–#28732	Next shipment and after		
47	SA6D140-P-1	#10010–#28683	#28700–		
48	SA6D140-W1-1	#19181–#25688	Next shipment and after		
49	SA6D140A-1	#11717–#28609	#28610–		
50	SA6D140A-A1-1	#22954–#28112	Next shipment and after		
51	SA6D140A-GA-1	#10010–#28683	#28700–		
52	SA6D140A-GB-1	#12919–#28732	Next shipment and after		
53	SA6D140A-GD-1	#10010–#28683	#28700–		
54	SA6D140A-GH-1	#16055–#21611	Next shipment and after		
55	SA6D140A-GN-1	#23258–#27934	Next shipment and after		
56	SA6D140A-GT-1	#22954–#28112	Next shipment and after		
57	SA6D140A-G1-1	#22954–#28112	Next shipment and after		
58	SA6D140A-G2-1	#11717–#28609	#28610–		
59	SA6D140A-G3-1	#16398–#28685	Next shipment and after		
60	SA6D140A-P-1	#10010–#28112	Next shipment and after		
61	SA6D140B-1	#10010–#28683	#28700–		
62	SA6D140B-A1-1	#11976–#15007	Next shipment and af		
63	SA6D140B-GA-1	#14659–#17951	Next shipment and after		
64	SA6D140B-GN-1	#15000–#26449	Next shipment and after		
65	SA6D140B-G1-1	#21705–#28614	Next shipment and after		
66	SA6D140B-G2-1	#21056–#28405	Next shipment and after		
67	SA6D140B-G3-1	#10951–#22039	Next shipment and after		
68	S6D140-1	#10524–#17773	Next shipment and after		
69	S6D140-GD-1	#12578–#28216	Next shipment and after		
70	S6D140-GH-1	#14450–#26244	Next shipment and after		
71	S6D140-GN-1	#15919–#23496	Next shipment and after		
72	S6D140-G1-1	#22389–#27230	Next shipment and after		
73	S6D140-G2-1	#10429–#28384	Next shipment and after		
74	S6D140-G3-1	#10524–#23384	Next shipment and after		
75	S6D140-P-1	#21851–#22031	Next shipment and after		
76	S6D140-PGA-1	#21851–#27965	Next shipment and after		
77	T6D140E-W2-2	#24724	Next shipment and after		
78	SA6D140A-GJ-1	#22954–#28112	Next shipment and after		
79	6M132A-1	#14068–#21659	Next shipment and after		
80	6M132A-2	#21810–#22250	Next shipment and after		
81	6M132A-3	#10001–#10063	Next shipment and after		
82	6M140A-1	#15753–#23374	Next shipment and after		
83	6M140A-2	#21818–#22279	Next shipment and after		
84	6M140A-3	#10001–#10080	#10082–		
85	6M140B-2	#22275	#22276–		
86	6M137A-1	#10001–#10089	Next shipment and after		
87	6M137A-1Y	#100001–#100133	Next shipment and after		
88	EM665A-00	#11829–#15427	Next shipment and after		
89	SA6D140A-M-1	#12600–#28587	#28751–		
90	SA6D140H-GJ-1	#27904	Next shipment and after		
91	SA6D140H-R-1	#19319–#28687	#28706–		

2) SA12V140

No.	Applicable models	Serial No. of the applicable engines		Serial No. of the applicable machines	
		Already shipped engines	Factory shipment new engines	Already shipped machines	Factory shipment new machines
1	HD785-3	#10034–#12454	Next shipment and after	#2001–#2574	Next shipment and after
2	HD785-5	#11755–#12743	#12744–	#4001–#4177	#4178–
3	HD985-3	#10034–#12454	Next shipment and after	#1001–#1020	Next shipment and after
4	HD985-5	#11801–#12743	#12744–	#1021–#1051	#1052–
5	HV700-2	#10701–#10815	Next shipment and after	#1001–#1010	Next shipment and after
6	WA800-2	#10001–#12732	Next shipment and after	#10502–#10737	Next shipment and after
7	WA800-3	#11645–#12740	#12760–	#50001–#50020	#50021–
8	WA900-3	#11668–#12745	#12749–	#50001–#50016	#50017–
9	WD900-3	#11668–#12745	#12749–	#50001–#50005	#50006–
10	HV700-2	#10701–#10815	Next shipment and after	#1001–#1010	Next shipment and after
11	D475A-2	#10100–#12546	Next shipment and after	#10001–#10486	Next shipment and after
12	D475A-3	#10001–#12746	Next shipment and after	#10602–#10680	#10681–
13	SA12V140-W1-1	#10430–#11627	#12401–		
14	SA12V140-C2-1	#10921–#11627	#11822–		
15	SA12V140-GA-1	#10183–#11041	Next shipment and after		
16	SA12V140-G2-1	#10761–#11784	#11863–		
17	SA12V140-G3-1	#10763–#11256	Next shipment and after		
18	SA12V140-GH-1	#10761–#11784	#11863–		
19	SA12V140-GD-1	#10930–#11786	#11827–		
20	SA12V140-GT-1	#10193–#11263	#11282–		
21	SA12V140-A2-1	#10857–#11132	Next shipment and after		
22	SA12V140-P-1	#10922–#11766	#11776–		
23	J12V140E-GD-1	—	#12510–		
24	EG750A-L-1	#10183–#11041	Next shipment and after		
25	EG750B-L-1	#10187–#11041	Next shipment and after		
26	EPSA12V140-1	#10535–#10594	Next shipment and after		
27	A12V140-G3-1	#11285–#11696	#11874–		
28	J12V140E-G1-1	#60001–#60004	#60005–		
29	SA12V140-G1-1	#10922–#11766	#11776–		
30	SA12V140-M-1	#10187–#10765	Next shipment and after		
31	12M140A-1	#10517–#11061	#11062–		