SERVICE MANUAL

E80BSR

ROPS Tier III

Mid Crawler Excavator

Print No. 84483639A

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NEW HOLLAND CONSTRUCTION

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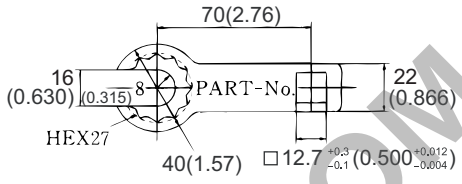
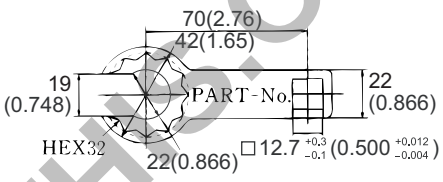
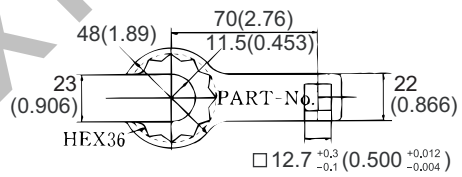
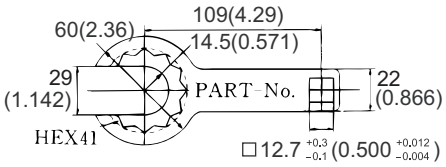
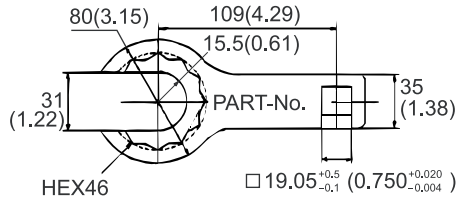
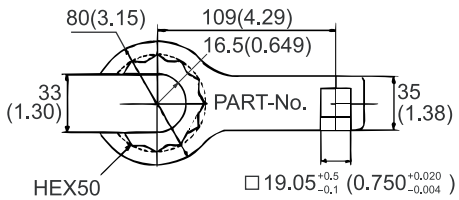
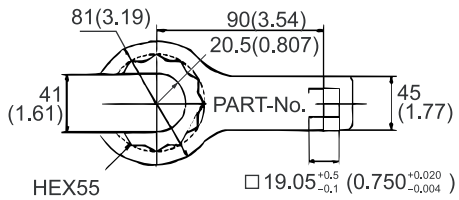
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11.6 SPECIAL SPANNER FOR TUBE

Applicable tube diameter mm (in)	Part No.	HEX (mm)	Drawing of a special spanner mm (in)
15 (0.591)	2421T160	27	
18 (0.709)	2421T138	32	
22 (0.866)	2421T130	36	
28 (1.10)	2421T115	41	
28 (1.10)	2421T231	46	
32 (1.26)	2421T232	50	
35 (1.38)	2421T314	55	

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PREFACE

(1) Working Conditions

1. Workers:
   More than one worker shall be 1st class service technician (having five years or more of field experience and having received training in the operation).
2. Equipment:
   Jigs, tools, apparatuses and testers used in field service work shall be available commercially. The maintenance plant shall be equipped with a service shop, a crane and inspection apparatuses necessary for specific self inspection activities.
3. Place:
   A flat land where work may be performed and to which a service car or a truck crane is accessible.

(2) Range of standard maintenance time

1. Standard maintenance time = Direct maintenance time + Preparation time
2. Direct maintenance time: Net time actually spent for maintenance
3. Spare time:
   Time needed to move machines for service, prepare safety operations, discuss work, and process the needs of the body.

(3) Extra time (not included in the standard service time)

1. Repair time:
   Machining, sheet metal, welding, melt cutting, folding and extracting bolts, servicing parts, and painting.
2. tems excluded from service time because of uncertainty in time:
   Receiving a vehicle into shop, transfer, delivery, inspection on completion, investigation of causes of faults, diagnosis, and inspection.
3. Indirect time:
   Time for; field work, preparation of necessary parts before leaving for work, return for field work, waiting time because of user's convenience in the field, paper work after returning to shop, and preparation of bills.
4. Special time: Work at early morning, at midnight and on holidays are to be calculated separately.
5. Separate calculation: The operating time for service cars, trucks with a crane and crane trucks.

(4) Applicable machine for estimation of standard maintenance time

1. Standard machine
2. A well maintained and controlled machine with a standard combination of attachments which is used in a general environment.

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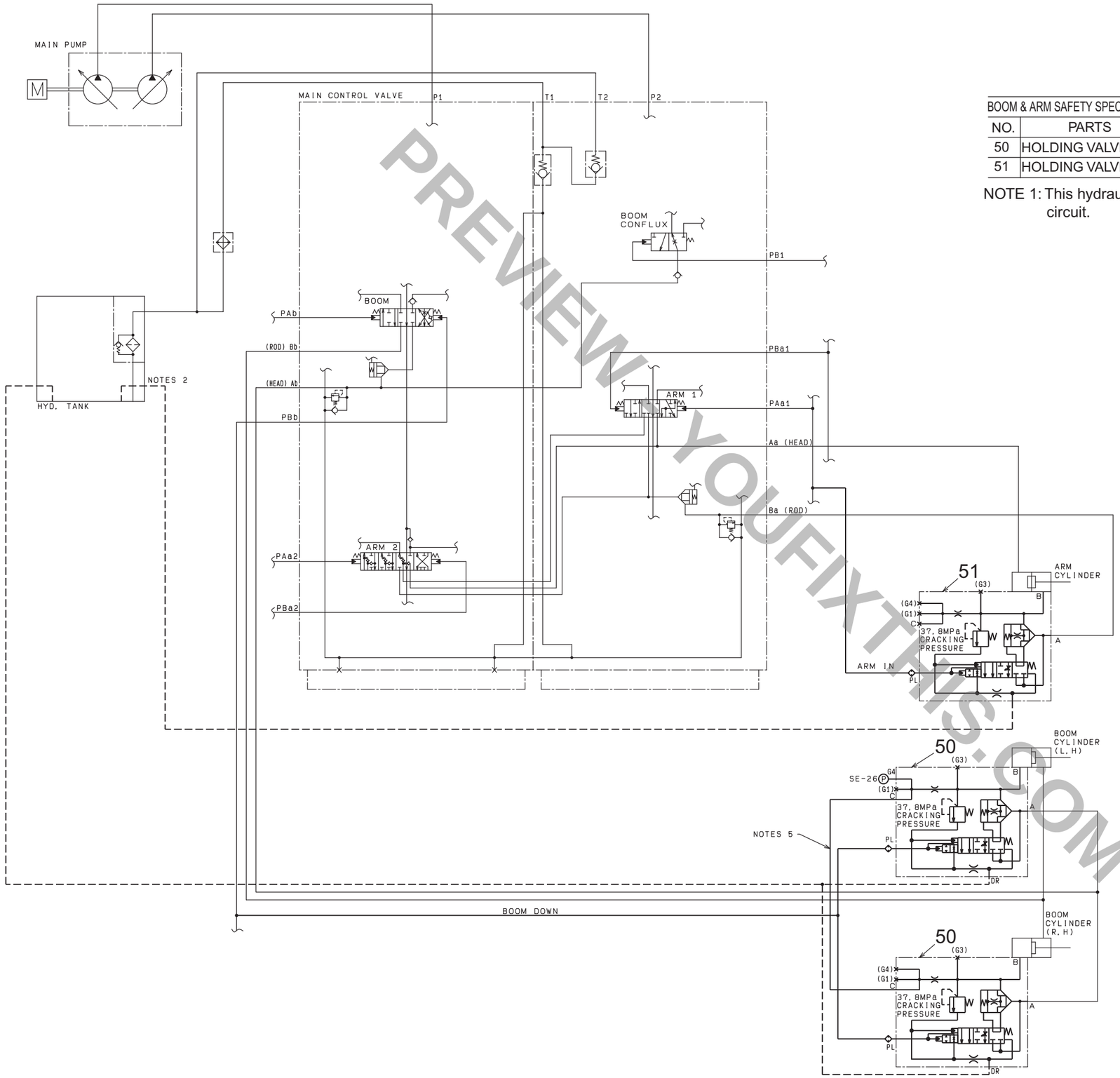
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22.2.3 BOOM & ARM SAFETY SPECIFICATION



BOOM & ARM SAFETY SPECIFICATION		YY01Z00086P1	
NO.	PARTS	PART No.	MODEL No.
50	HOLDING VALVE	YB28V00009F2	KHCV20P
51	HOLDING VALVE	YB28V00010F2	KHCV20P

NOTE 1: This hydraulic circuit is used to add to standard circuit.

YY01Z00086P1 01

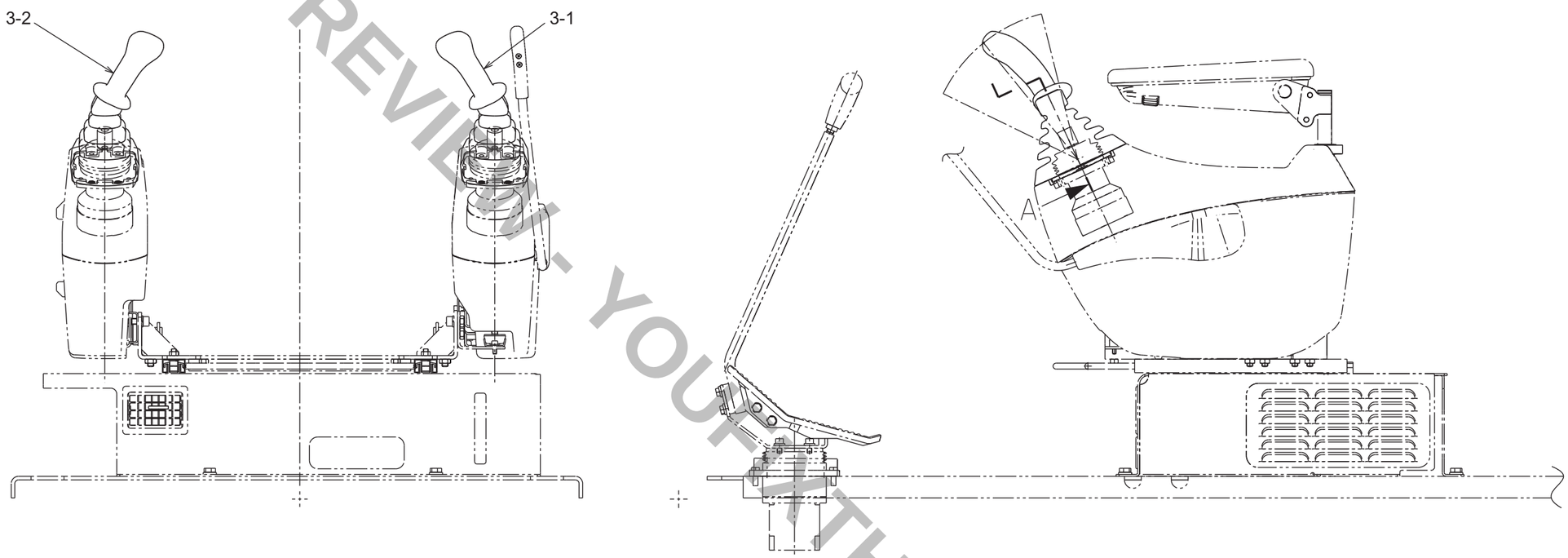
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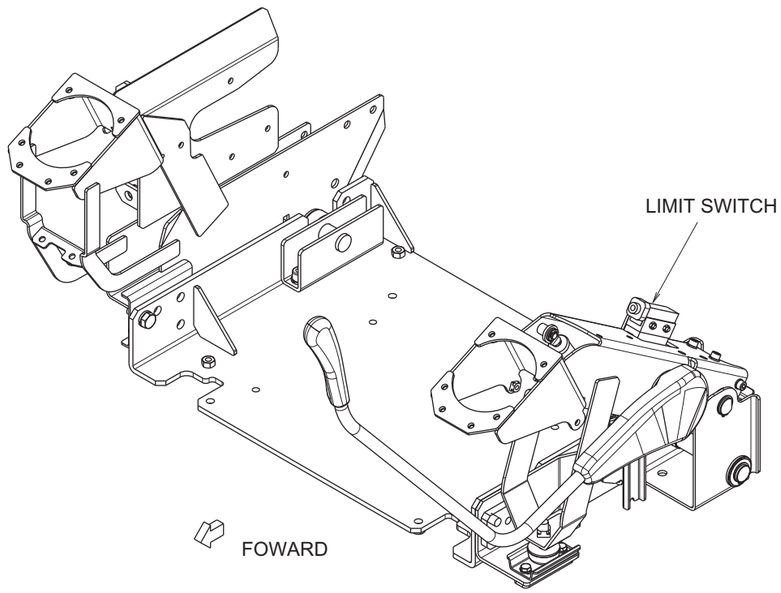
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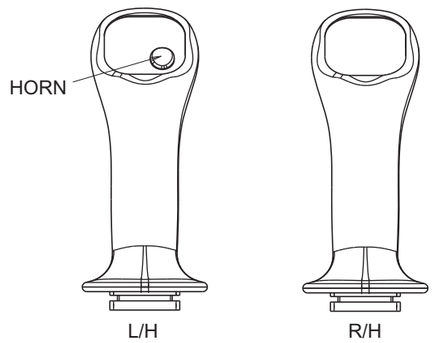
OPERATORS CONTROLS		YY03M00282F1	(01)	
ITEM	PART NAME	PART No.	Q'TY	REMARKS
2	CONTROL BOX ASSY	YY03M00276F1	–	(05)
3	GRIP ASSY	YT03M01290F1	–	(02)
3-1	GRIP ASSY	YN03M02123F2	1	L/H HORN
3-2	GRIP ASSY	YT03M01291F1	1	R/H HORN

T=TIGHTENING TORQUE

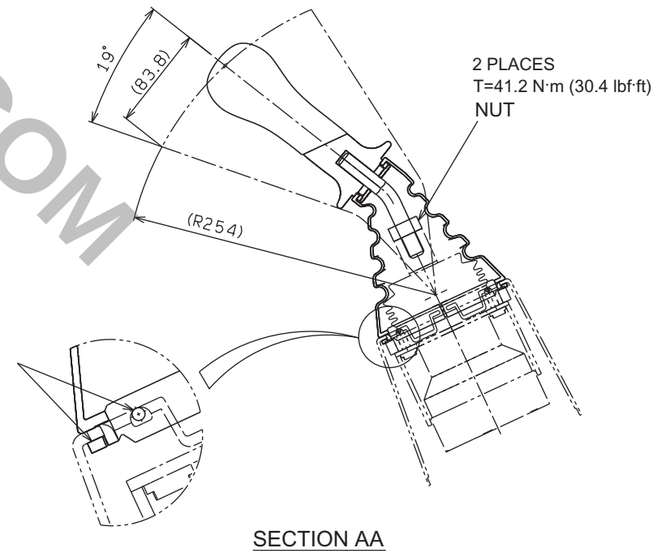


CASE OF B122 ROPS, B128SRH ROPS.





DETAIL OF GRIP

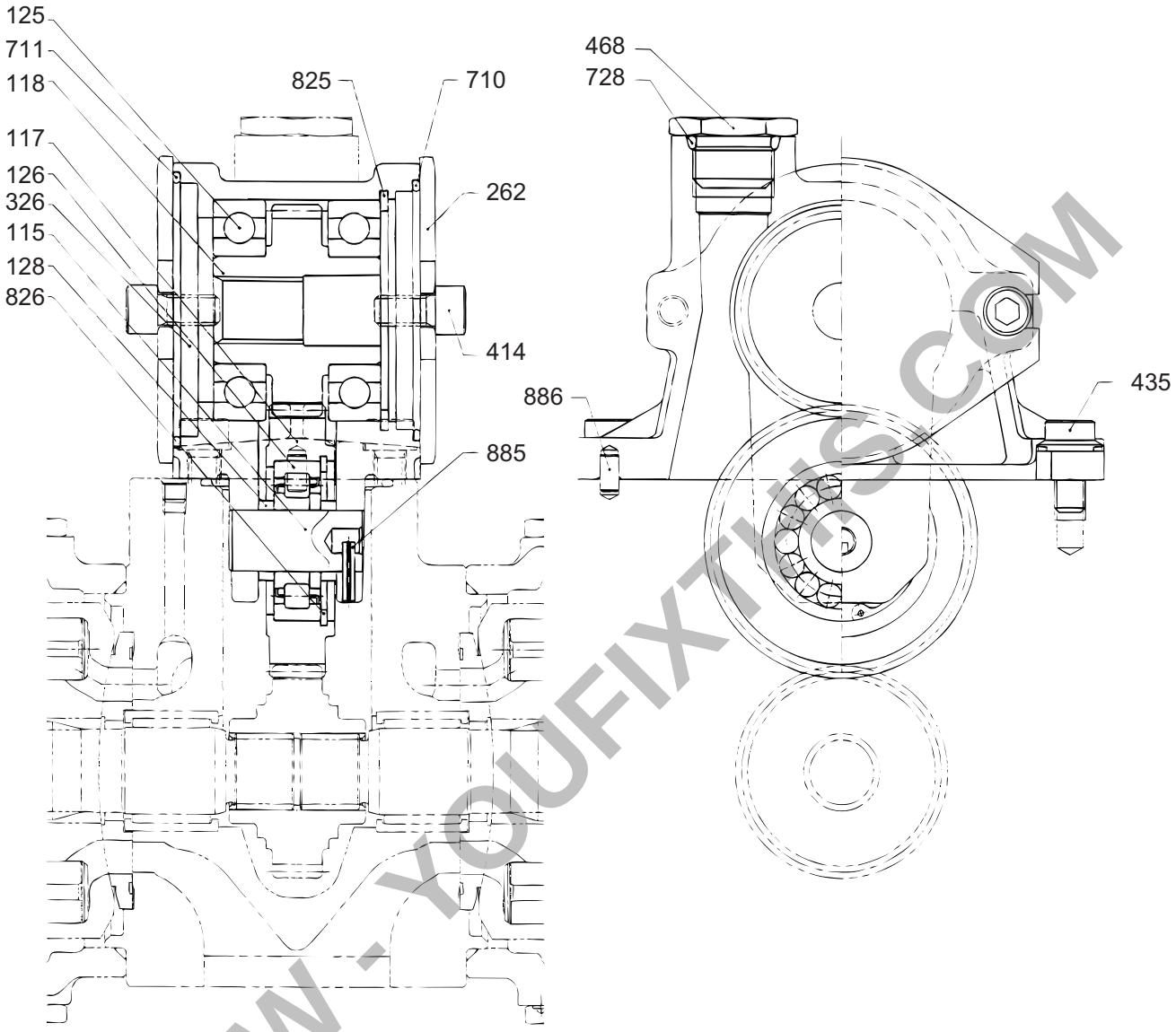


SECTION AA

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(3) PTO gear case



No.	Parts	Q'TY	No.	Parts	Q'TY
115	Idle shaft	1	435	Flange socket; M10X20	4
117	2nd gear	1	468	VP plug; PF3/4	1
118	3rd gear	1	710	O-ring; 1B G80	1
125	Ball bearing	2	711	O-ring; 1B G85	1
126	Roller bearing	1	728	O-ring; 1B P24	1
128	Bearing spacer	2	825	Snap ring	1
262	Cover	2	826	Snap ring	1
326	Gear case	1	885	Sprig pin	1
414	Capscrew; M10X20	4	886	Pin	2

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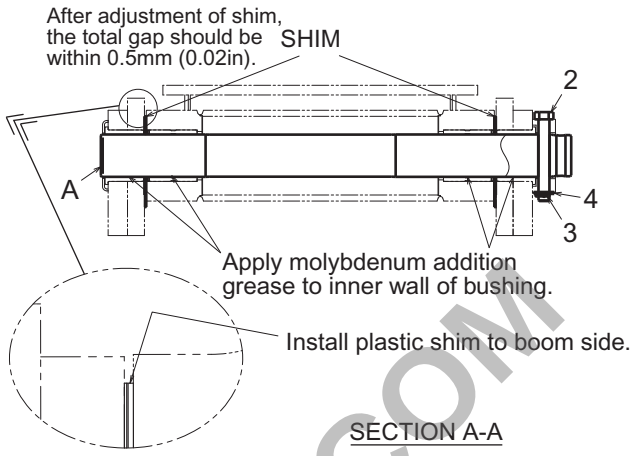
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(7)
Removing boom foot pin (A)
1. Loosen nut (3) or washer (4) and remove capscrew (2) M20X175.

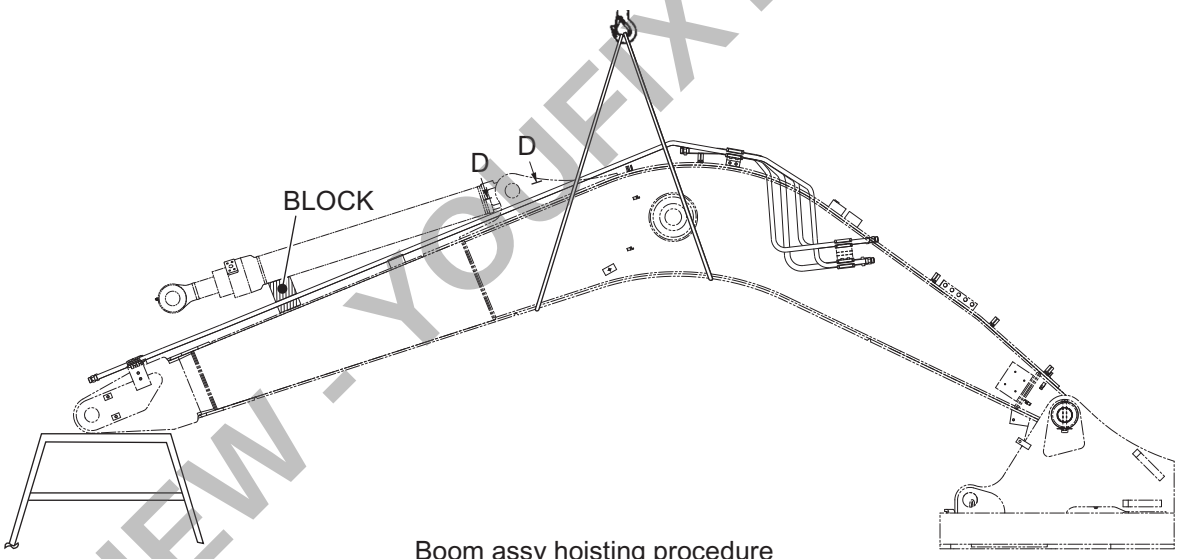
2. Draw out pin (A).



Details of boom foot pin (A) section

(8)
Hoisting boom assy
Hoist and remove boom assy.

Weight of single boom : 1,256 kg (2,770 lbs)



Boom assy hoisting procedure

(9)
Completion of removal of front attachments
When the removing and attaching of cylinder are not required, the work is finished.

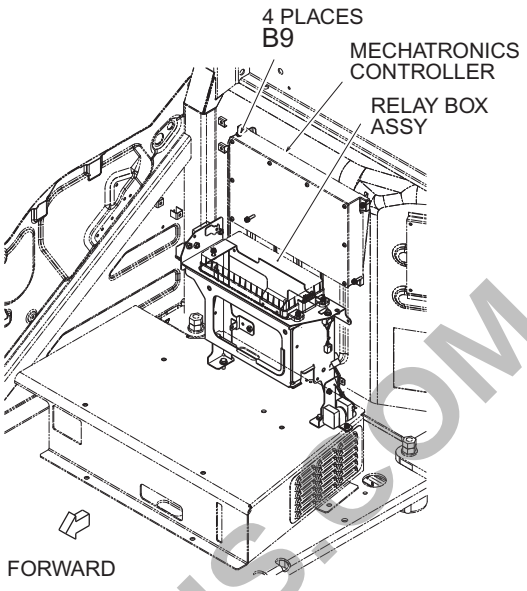
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(7) Removal of mechatro-controller

1.
Loosen 4 sems bolts (B9) M6X25.

2.
With harnesses are connected condition, remove mechatro-controller, and place it in front of it temporally.



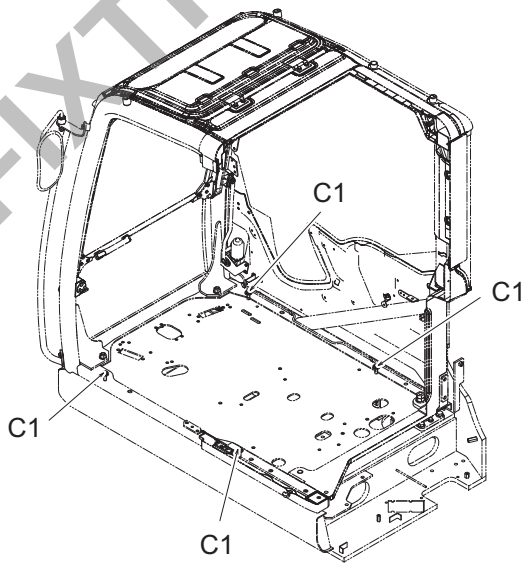
Removal of mechatro-controller

(8) Removal of cab attaching bolts

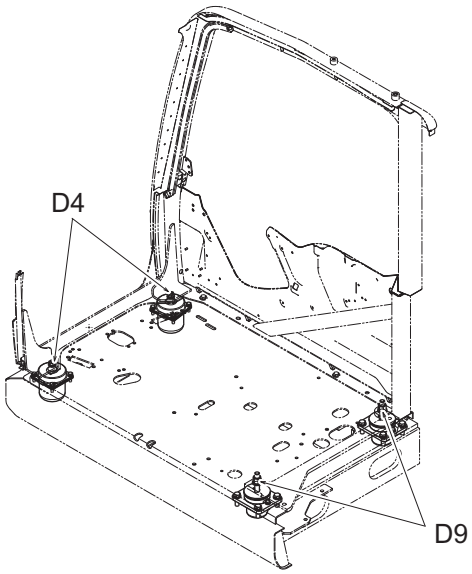
1.
Loosen 4 capscrews (C1) M12X35.

2.
Loosen 2 nut (D4) M16.

3.
Loosen 2 nut (D9) M20.



Removing and installing cab mounting bolts



Removing and installing cab mounting bolts

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Issue	Date of Issue	Applicable Machines	Remarks
First Edition	July, 2010	E135BSRLC : YH06-08001~	S5YY4615E01 (NHK-EUR)
↑	↑	SK140SRLC : YH06-08001~	↑ (NA)

Preface

Troubleshooting provides process locating for the cause of trouble in the order that trouble occurred. This manual describes how to solve the specific phenomenon systematically as early as possible. For troubleshooting concerning the inside of equipment, refer to troubleshooting for each manual of equipment.



Attending the field to verify actual thing.

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48.1 TROUBLE DIAGNOSIS MODE

The trouble diagnosis mode is used to automatically specify the failed sections for the troubles which can not be detected by auto diagnosis function (the trouble can be specified by error code) like disconnection, abnormal output.

(1) Function

There are two types of trouble diagnosis mode.

1. Trouble diagnosis mode 1: Used to diagnose unload system, pump system, travel straight system and engine system.
2. Trouble diagnosis mode 2: Used to diagnose pilot system.
   In any mode, with the attachment not operated, both selector valve and proportional valve are automatically actuated, the sensor detects the machine condition and the mechatro controller identifies the normal condition or failed condition of the system.

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SERVICE MANUAL

MITSUBISHI DIESEL ENGINE

D04FR-TAA

for KOBELCO CONSTRUCTION MACHINERY CO.,LTD.

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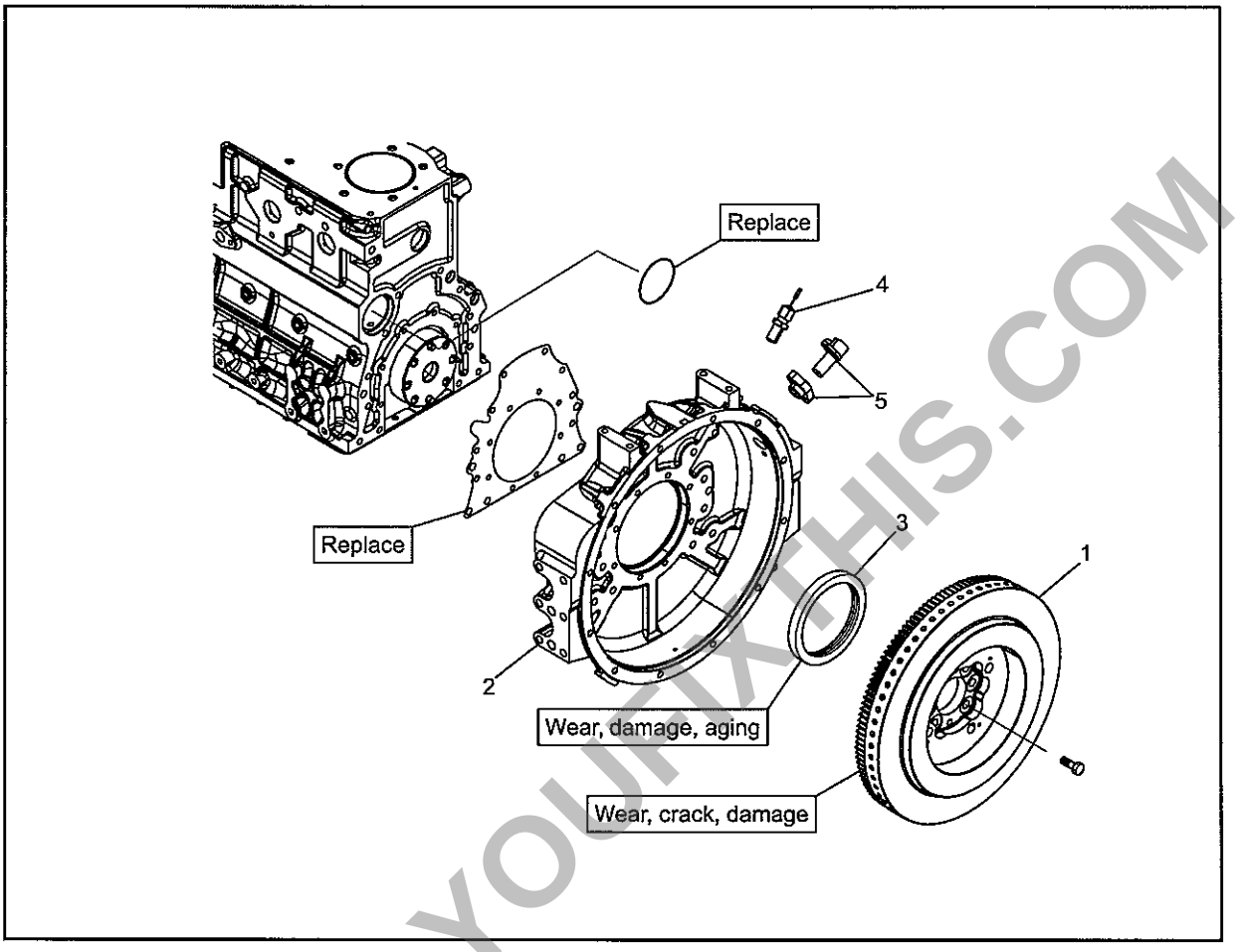
July 2008

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Pub. No. 99616-21120

2. Disassembling and inspecting flywheel



Disassembling and inspecting flywheel

Disassembling sequence

1 Flywheel
2 Flywheel housing
3 Oil seal
4 Pick up
5 Speed/timing sensor (crankshaft side), sensor bracket

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Fuel system

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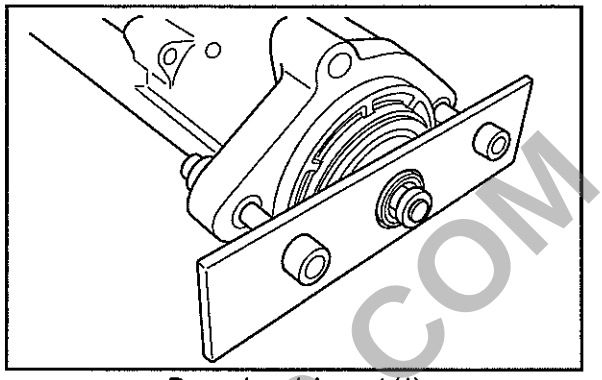
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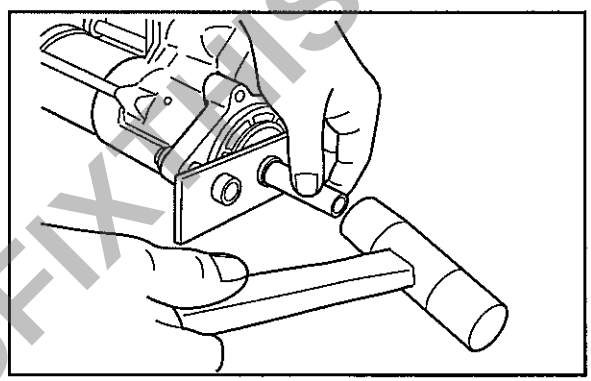
2.1.1 Removing pinion set

(1) Install the jig to hold the pinion.



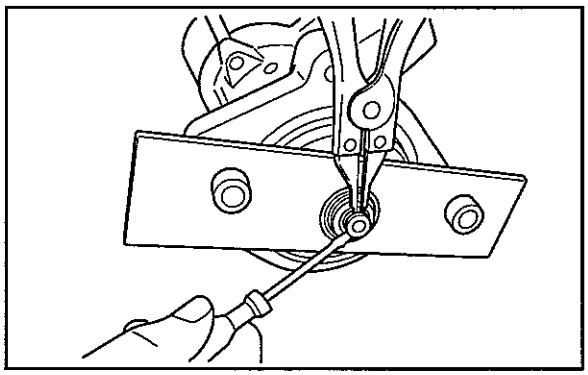
Removing pinion set (1)

(2) Place an appropriate tube on the pinion stopper.
Hit the tube with a hammer to push the pinion stopper down.



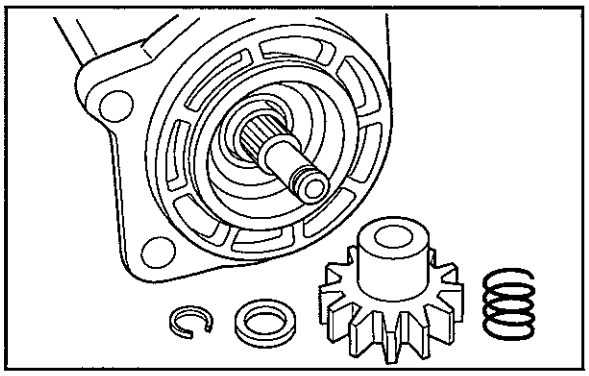
Removing pinion set (2)

(3) Remove the clip ring using snap ring plier.
Note: Do not reuse the clip ring for reassembly.



Removing pinion set (3)

(4) Remove the pinion stopper, pinion, spring.
Note: Check the pinion for wear and damage.



Removing pinion set (4)

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TO THE READER

- This manual has been written for a skilled technician, in order to give him the information necessary to repair this machine.

  Read this manual carefully for correct information about repair procedures.

For any question or comment, or in case you notice a mistake in this manual content, please contact:

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ADDITIONAL REFERENCE MANUALS

- In addition to this Workshop Manual, refer also to the following:

  Operation and maintenance instruction manual

  Spare parts catalog

DESCRIPTION OF THE WORKSHOP MANUAL

- This repair manual consists of one single volume, identified with:

  E135BSR - Workshop Manual "Hydraulic exavator"

- The "Hydraulic exavator" Workshop Manual contains the technical information necessary for machine service and repair, the service equipment, the information on maintenance standards, the removal and installing procedures, and the disassembly and assembly procedures.

- The complete Workshop Manual for the model *E70SR* consists of the following volume identified by print number as shown herebelow:

VOLUME	MACHINE TYPE	PRINT No.
Workshop Manual - "Hydraulic exavator"	**E135BSR**	**84396007A**

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33.1.12.3 INSTALLATION

(1) Installing is done in the reverse order of removing. And removed clips of hose should be clamped at original position.

(2) Install radiator assy

Place a wire sling in the lifting eyes of the radiator and move it to original position temporally. And install hydraulic hose, radiator hose and hose of inter-cooler. Regarding Inserting width of hose. (See Fig."Allow ance of hose in sertion")

(3) Radiator attaching bolt

Apply Loctite #262 on 4 sems bolts (B3) M12X25.

Tools: Socket: 19 mm

Tightening torque : 121 N-m (89 lbf-ft)

(4) Installing radiator stays (B1), (B4)

Install radiator stays (B1), (B4) with 4 sems bolts (B2) M12X30.

Tighten circular hole side of stay (B1) to upper frame.

(5) Adjust the clearance between the fan and the radiator shroud all around the circumference, as below :

Circumferential direction:

15 to 25mm (0.6 in to 1.0 in)

27 to 37mm (1.1 in to 1.5 in)

(6) Clean the plastering area of the insulation thoroughly before plastering it.

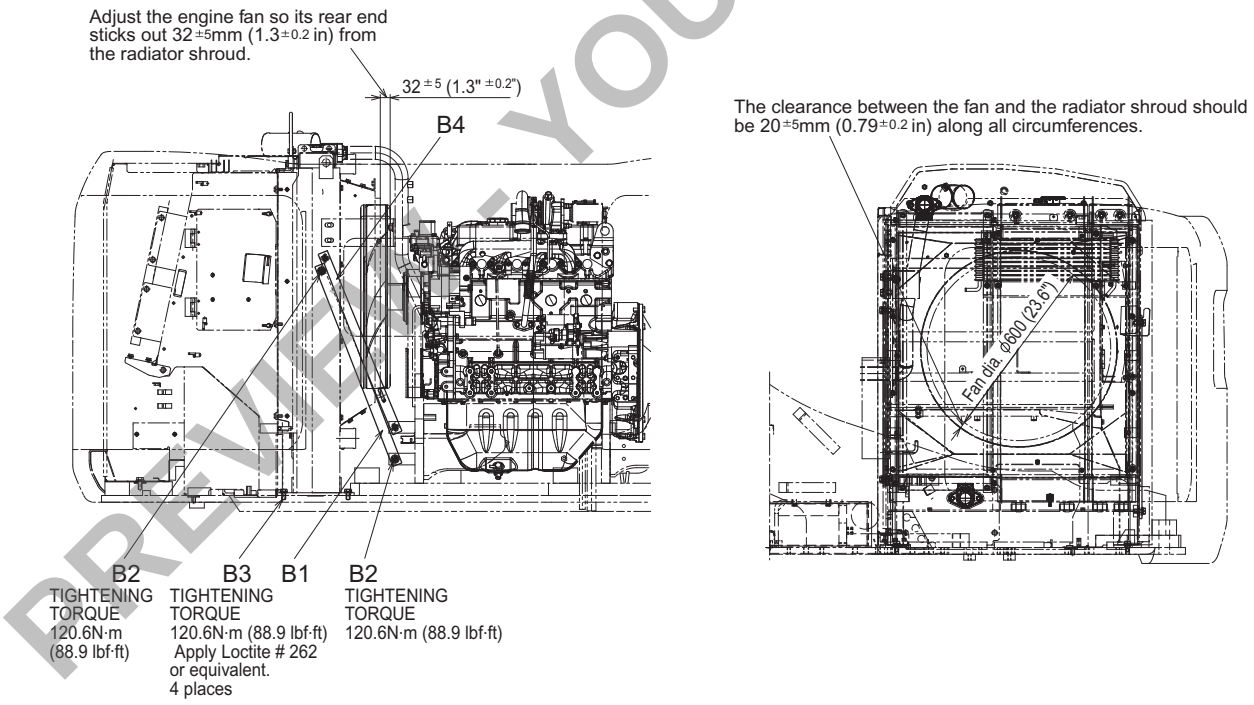
(7) Making up hydraulic oil and LLC (Long Life Coolant)

After completion of other installation, make up hydraulic oil and water.

Coolant volume of engine body : 6 L (1.6 gal)

Coolant capacity of radiator : 6.6 L (1.7 gal)

Hydraulic oil capacity of oil cooler : 2.1 L (0.55 gal)



Adjusting position of radiator

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Table 46-25

Error code		B064		
Trouble		Bucket dump pressure sensor's power source is shortcut.		
Judging condition		The input voltage from bucket dump pressure sensor is 4.7V or more.		
Symptom		All operation speed slows down.		
Control in the event of failure		Set proportional valve output rate of P1 and P2 pumps to constant current. (Current value in all operation is neutral.) Set output of P1 unload proportional valve to 0mA. (Valve emergency mode)		
Returned in normal condition		It returns automatically in normal condition.		
Service diagnosis checking screen		Screen No.	5	B-6 BUCKET DUMP
		Screen No.		
		Screen No.		
Checking object				Checking contents and remedy
1	-Bucket dump pressure sensor SE-2			When B064 is cancelled and other error occurs by turning starter switch on after exchanging the connector with other sensor. Check sensor unit for possible failure. If failure found, replace it.
2	-Wiring between bucket dump pressure sensor and controller CN-125F CN-101F			When B064 is displayed after turning the starter switch on after the connector is exchanged with other sensor. Check wiring for possible failure according to the wiring checking procedure and repair it if necessary.
3	-Mechatro controller			Check that the error is corrected after replacement of controller.

Table 46-26

Error code		B072		
Trouble		Swing pressure sensor outputs error		
Judging condition		After starter switch ON and engine does not start yet. And the input voltage from the swing pressure sensor after starter switch ON is in the range of 1.4V or more to less than 4.7V.		
Symptom		The swing operability becomes poor.		
Control in the event of failure		Normal control		
Returned in normal condition		Not returned automatically under normal condition. Switch the power OFF once and turns on it again.		
Service diagnosis checking screen		Screen No.	6	B-7 SWING
		Screen No.		
		Screen No.		
Checking object				Checking contents and remedy
1	-Swing pressure sensor SE-5			When B072 is cancelled and other error occurs by turning starter switch on after exchanging the connector with other sensor. Check sensor unit for possible failure. If failure found, replace it.
2	-Wiring between swing pressure sensor and controller CN-169F CN-103F			When B072 is displayed after turning the starter switch on after the connector is exchanged with other sensor. Check wiring for possible failure according to the wiring checking procedure and repair it if necessary.
3	-Mechatro controller			Check that the error is corrected after replacement of controller.

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