YANMAR

SERVICE MANUAL

EXCAVATOR

B7-5B

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

CONTENTS

CHAPTER 1
GENERAL CAUTIONS FOR MAINTENANCE WORK

1-1 Correct Work 1-1
1-2 Safety Precautions 1-1
1-3 Preparations 1-1
1-4 Cautions for Disassembly and Reassembly 1-1
1-5 Cautions for Removal and Installation of Hydraulic Equipment 1-2
1-6 Cautions for Removal and Installation of Hydraulic Piping 1-2
1-7 Cautions for Handling Seals 1-3
1-8 Correct Installation of Hydraulic Hose 1-3
1-9 Specifications of Hydraulic Hose 1-6
1-10 Air Release of Hydraulic Equipment 1-11

CHAPTER 2
TECHNICAL DATA

2-1 Specifications 2-1-1
2-1-1 Machine Body 2-1-1
2-1-2 Engine 2-1-6
2-2 Outline Drawing and Working Area 2-2-1
2-3 Weight List of Main Parts 2-3-1
2-4 Lifting Capacity List 2-4-1

CHAPTER 3
SERVICE STANDARDS

3-1 Machine Performance 3-1-1
3-2 Engine 3-2-1
3-3 Undercarriage 3-3-1
3-3-1 Rubber Crawler Specifications 3-3-1
3-3-2 Steel Crawler Specifications 3-3-2
3-3-3 Common Specifications of Steel & Rubber Crawlers 3-3-3
3-4 Controls 3-4-1
3-5 Hydraulic Equipment 3-5-1
3-5-1 Hydraulic Cylinders 3-5-1
3-6 Implement 3-6-1
3-6-1 Front Attachments 3-6-1
3-6-2 Blade Moving Device 3-6-2
3-6-3 Bucket Teeth 3-6-2
3-7 List of Tightening Torque 3-7-1
3-7-1 Machine 3-7-1
3-7-2 Engine 3-7-4
3-7-3 Tightening Torque for General Bolts and Nuts 3-7-5

CHAPTER 4
ENGINE

4-1 Engine 4-1-1
4-1-1 Safety Precautions 4-1-1
4-1-2 Introduction 4-1-18

PREVIEW - YOUFIXTHIS.COM

2. TECHNICAL DATA

2. Technical Data

2-1 Specifications

2-1-1 Machine Body

Item					Unit	B7-5B
Main Specifications of Machine						
	Dimensions					
		Overall length (Transportation position)			in. (mm)	227.56 (5780)
		Cabin	Overall height	Transportation position	in. (mm)	106.10 (2695)
				Traveling position	in. (mm)	111.57 (2834)
			Overall width	Full machine width	in. (mm)	89.37 (2270)
		Canopy	Overall height	Transportation position	in. (mm)	-
				Traveling position	in. (mm)	-
			Overall width	Full machine width	in. (mm)	-
		Tumbler center distance		Rubber	in. (mm)	90.08 (2288)
				Steel	in. (mm)	89.65 (2277)
		Track gauge			in. (mm)	73.62 (1870)
		Minimum ground clearance			in. (mm)	14.96 (380)
	Traveling performance					
		Travel speed	Steel crawler	Low speed (Forward / Reverse)	MPH (km / h)	1.55 (2.5)
				High speed (Forward / Reverse)	MPH (km / h)	2.80 (4.5)
			Rubber crawler	Low speed (Forward / Reverse)	MPH (km / h)	1.68 (2.7)
				High speed (Forward / Reverse)	MPH (km / h)	2.92 (4.7)
		Climbing ability			degrees	–
		Permissible water depth limit			in. (mm)	19.69 (500)
	Work performance					
		Bucket	Width (Standard) (Including side cutter)		in. (mm)	29.53 (750)
			(Standard. JIS heaped capacity) / [Old JIS]		cu.ft. (cu.m)	9.89 (0.28) / [8.83 (0.25)]
			Number of teeth / Installation method		pcs.	4 / Rubber pin lock
		Maximum digging depth	With blade raised		in. (mm)	171.26 (4350)
			With blade on the ground		in. (mm)	177.17 (4500)
		Maximum depth of vertically digging			in. (mm)	148.42 (3770)
		Maximum dumping height			in. (mm)	216.14 (5490)
		Minimum front swing radius (with boom in front)			in. (mm)	47.24 (1200)
		Minimum front swing radius (Boom offset)		Left	in. (mm)	68.27 (1734)
				Right	in. (mm)	74.53 (1893)
		Rear end swing radius			in. (mm)	44.49 (1130)

PREVIEW - YOUFIXTHIS.COM

3-7 List of Tightening Torque

3-7-1 Machine

Applicable model			B7-5B		
Equipment			Thread size	Tightening torque ft•lbf (N•m)	Adhesive
	No.	Tightening part			
Engine / Electrical equipment					
	1	Engine mount vibroisolating rubber	M16 (10.9T)	151.9 to 173.6 (205.9 to 235.4)	Three Bond 1324
	2	Engine × Engine mount (Flywheel side)	M10 (11T)	61.5 (83.4)	Three Bond 1324
	3	Engine × Engine mount (Radiator side)	M12 (10.9T)	79.6 to 94.0 (107.9 to 127.5)	Three Bond 1324
	4	Clamp	M10 Nut 10	18.1 to 23.9 (24.5 to 32.4)	
	5	Air cleaner	M8	14.5 to 16.7 (19.6 to 22.6)	
	6	Air cleaner intake hose	Hose clip 70	1.5 to 2.1 (2.0 to 2.9)	
	7	Air cleaner intake hose	Hose clip 80	1.5 to 2.1 (2.0 to 2.9)	
	8	Air cleaner intake hose (suction side)	Hose clip 80	0.7 to 1.5 (1.0 to 2.0)	
	9	Cooling water hose	Hose band 50	2.1 (2.9)	
	10	Fuel gauge unit	Pan-head machine screw M5	0.7 to 1.5 (1.0 to 2.0)	
	11	Fuel gauge hose	Hose band 14	0.7 to 1.5 (1.0 to 2.0)	
	12	Fuel tank	M16	123.0 to 151.9 (166.7 to 205.9)	Three Bond 1324
	13	Buttery holding rod	Nut M8	2.1 (2.9)	
	14	Radiator bracket R	M16	195.3 to 224.2 (264.8 to 304.0)	Three Bond 1324
	15	Radiator mount vibroisolating rubber	Nut M8	9.4 to 12.3 (12.7 to 16.7)	
	16	Radiator mount vibroisolating rubber	Nut M10	18.1 to 23.9 (24.5 to 32.4)	
	17	Exhaust duct vibroisolating rubber	Nut M10	18.1 to 23.9 (24.5 to 32.4)	
	18	Heater hose	Hose clip 22	1.5 to 2.1 (2.0 to 2.9)	
	19	Starter switch	Fine lock nut M18	21.7 to 25.3 (29.4 to 34.3)	
	20	Safety switch	Fine lock nut M16	21.7 to 25.3 (29.4 to 34.3)	

PREVIEW - YOUFIXTHIS.COM

4-1-5 Cylinder Head

Cylinder Head Components

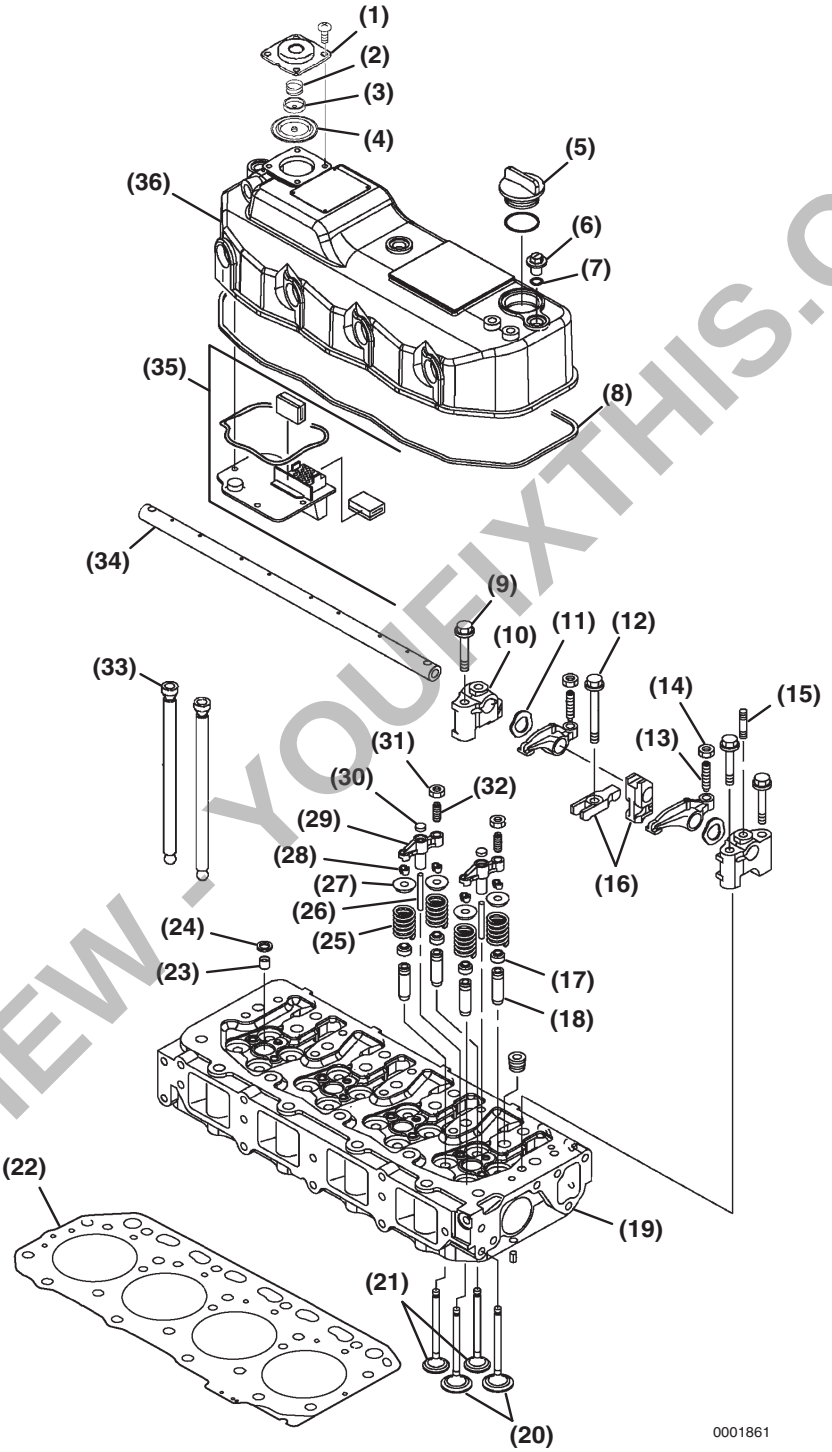
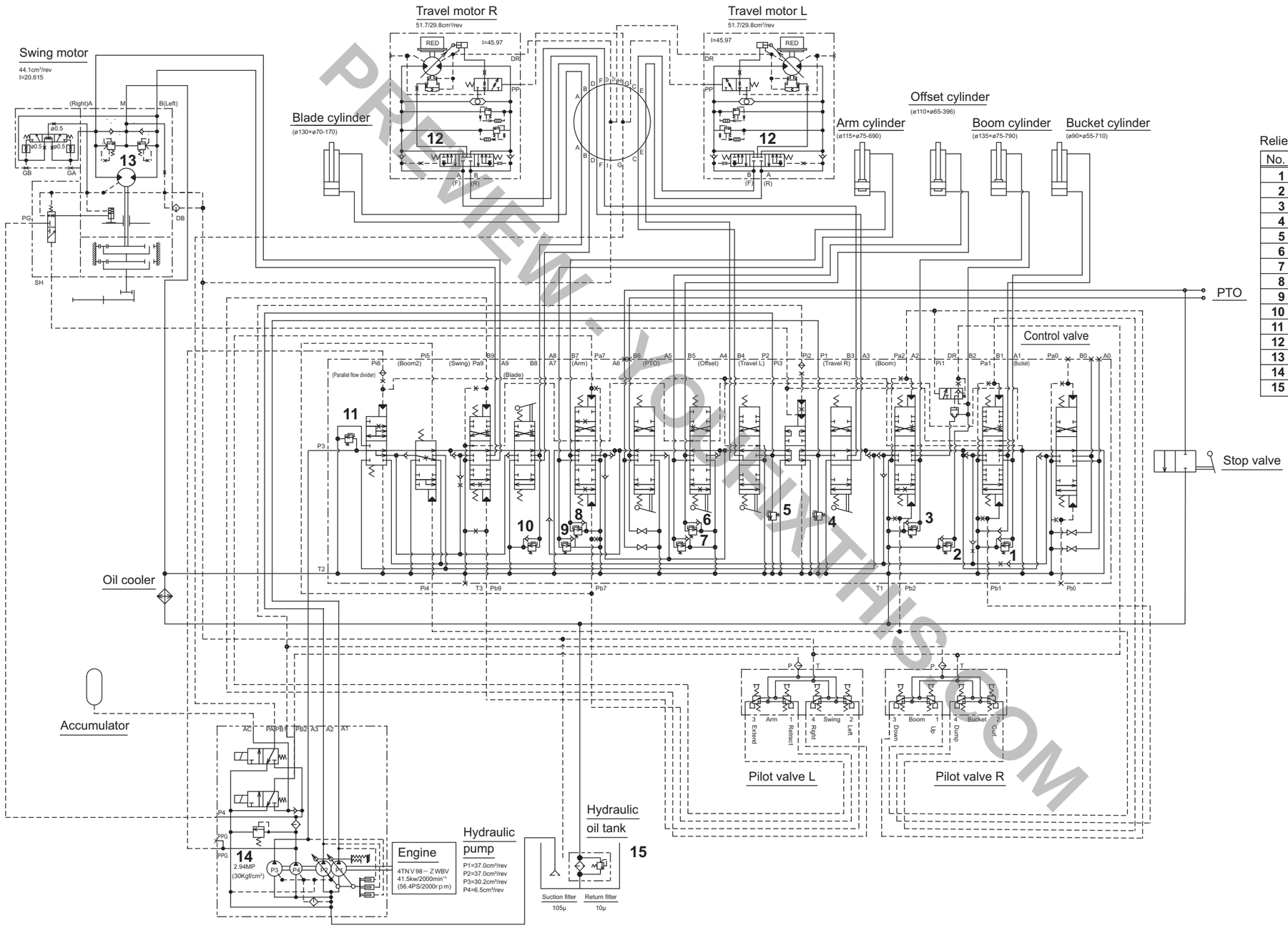


Figure 4-1-1

PREVIEW - YOUFIXTHIS.COM

5. HYDRAULIC SYSTEM

5-2 Hydraulic Circuit Schematic



Relief valve set pressure

No.	PSI	MPa
1	3981.6	27.5
2	4266.0	29.4
3	3981.6	27.5
4	3555.0	24.5
5	3555.0	24.5
6	3981.6	27.5
7	3981.6	27.5
8	3981.6	27.5
9	3981.6	27.5
10	2133.0	14.7
11	2986.2	20.6
12	3555.0	24.5
13	2986.2	20.6
14	426.6	2.94
15	21.3	0.147

077169-05EN00

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

If the valve or seat require grinding, lap the valve after grinding. Lap the valve face to the valve seat using a mixture of valve lapping compound and engine oil.

Be sure to thoroughly wash all parts to remove all grinding powder or compound.

Inspection of Valve Springs

Inspect the valve springs. If damage or corrosion is seen, or if measurements exceed the specified limits, replace the springs.

Fractures

Check for fractures on the inside and outside portions of the springs. If the valve spring is fractured, replace the valve spring.

Corrosion

Check for corrosion of spring material caused by oxidation.

Squareness

Use a flat surface and a square to check each spring for squareness **(Figure 4-1-24)**. *See "3-2 Engine Service Standard" section for the service limit.*

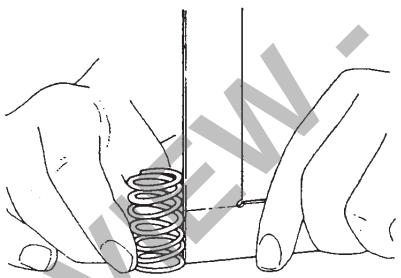


Figure 4-1-24

Free Length

Use a caliper to measure the length of the spring **(Figure 4-1-25)**.*See "3-2 Engine Service Standard" section for the service limit.*

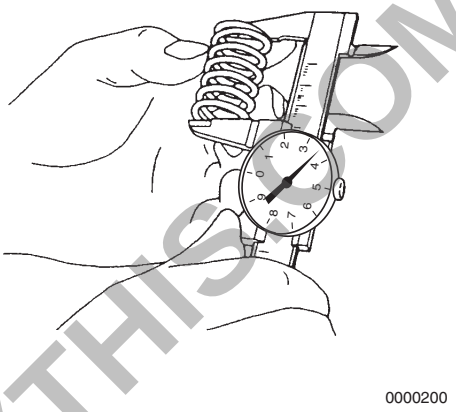


Figure 4-1-25

Inspection of Valve Bridges

Visually inspect the contact surface at both ends of the valve bridge **(Figure 4-1-26, (2))** for excessive wear or mushrooming.

Remove and inspect the seat **(Figure 4-1-26, (1))**.

Measure the diameter of the valve bridge guide pin bore in the valve bridge and guide pin **(Figure 4-1-26, (3))**. *See "3-2 Engine Service Standard" section for the service limit.*

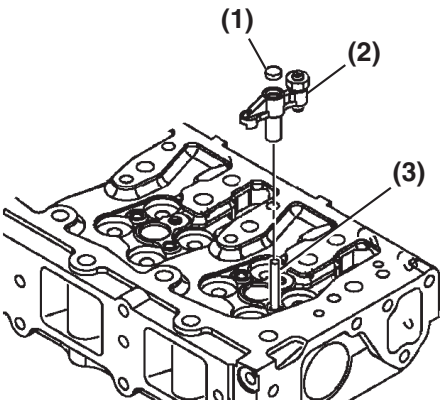
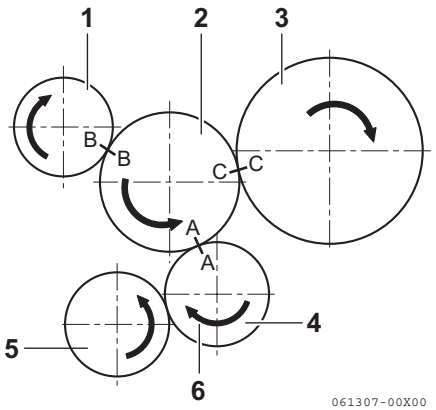


Figure 4-1-26

PREVIEW - YOUFIXTHIS.COM



1 – Fuel injection pump drive gear
2 – Idler gear
3 – Camshaft drive gear
4 – Crankshaft gear
5 – Oil pump drive gear
6 – Direction of rotation

Figure 4-1-48

Measuring Idler Gear-to-Crankshaft Gear Backlash

1. Install a dial indicator as shown in **Figure 4-1-49**.

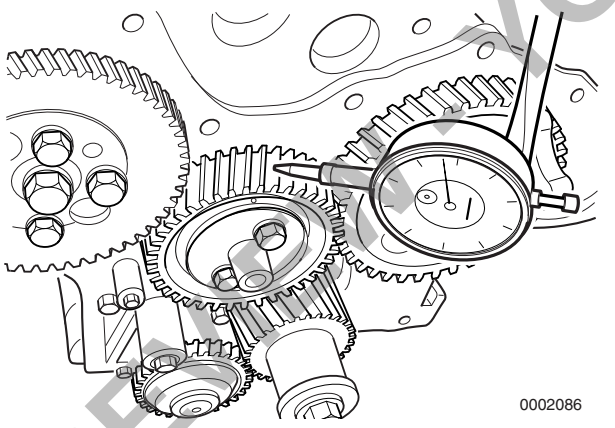


Figure 4-1-49

2. Rotate the idler gear back and forth to check the idler gear-to-crankshaft gear backlash. The total indicator reading is the backlash. Record the measurement.

Measuring Idler Gear-to-Camshaft Gear Backlash

1. Drive a small wooden wedge between the crankshaft gear and idler gear to prevent the idler gear from rotating.
2. Install the dial indicator to read the camshaft gear backlash. Rotate the camshaft drive gear against the idler gear to measure the backlash. Record the measurement.
3. Check the idler gear-to-fuel injection pump drive gear backlash in the same manner as the camshaft drive gear. Record the measurement.

Removal of Timing Gears

1. Remove the bolts from the idler gear shaft **(Figure 4-1-50, (1))**. Remove the idler gear shaft, idler gear **(Figure 4-1-50, (2))** and bushing **(Figure 4-1-50, (3)).**

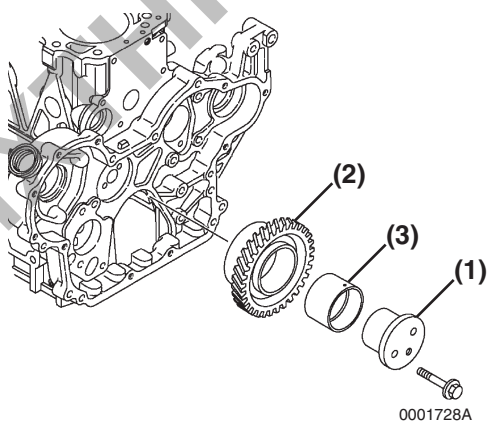


Figure 4-1-50

2. Do not remove the crankshaft gear unless it is damaged and requires replacement. If the gear must be removed, remove it using a gear puller.
3. Removal of the camshaft gear requires the camshaft be removed and placed in a press. Do not remove the camshaft gear unless it or the camshaft is damaged and requires replacement. *See Removal of Camshaft.*

PREVIEW YOUFIXTHIS.COM

1 – Crankcase breather cover
2 – Diaphragm spring
3 – Diaphragm cup
4 – Crankcase breather diaphragm
5 – Oil fill cap
6 – valve cover nut
7 – valve cover nut O-ring
8 – Valve cover gasket
9 – Support bolt
10 – Rocker arm shaft support
11 – Wave washer
12 – Fuel injector retainer bolt
13 – Valve adjusting screw (primary)
14 – Valve adjusting screw lock nut (primary)
15 – Rocker arm shaft aligning stud
16 – Fuel Injector retainer
17 – Valve stem seal
18 – Valve guide
19 – Cylinder head
20 – Intake valve
21 – Exhaust valve
22 – Cylinder head gasket
23 – Fuel Injector nozzle protector
24 – Fuel Injector nozzle seat
25 – Valve spring
26 – Valve bridge guide
27 – Spring retainer
28 – Valve keepers
29 – Valve bridge
30 – Valve bridge seat
31 – Valve adjusting screw lock nut (secondary)
32 – Valve adjusting screw (secondary)
33 – Push rod
34 – Rocker arm shaft
35 – Crankcase breather components
36 – Valve cover

Disassembly of Cylinder Head

Prepare a clean, flat working surface on a workbench large enough to accommodate the cylinder head assembly. Discard all gaskets, O-rings and seals. Use new gaskets, O-rings and seals on reassembly of the cylinder head.

1. Drain the coolant from the engine into a suitable container.

CAUTION

Identify all parts and their location using an appropriate method. It is important that all parts are returned to the same position during the reassembly process.

0000080en

2. Remove the high pressure fuel injection lines **(Figure 4-1-2, (1))**. *See Removal of Fuel Injectors.*

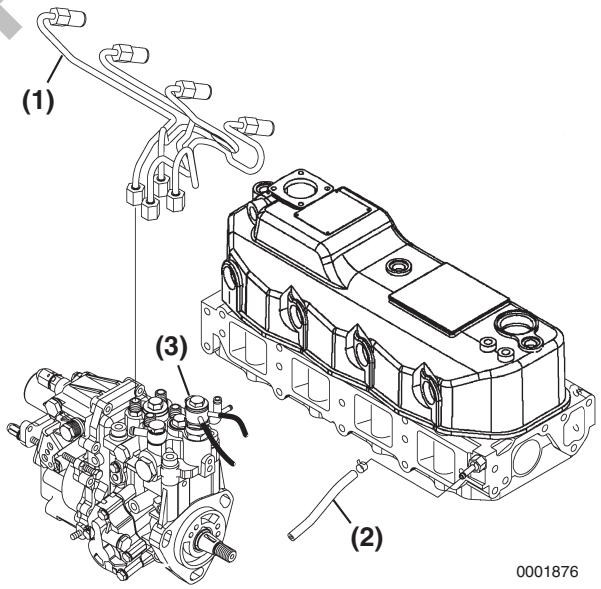


Figure 4-1-2

PREVIEW - YOUFIXTHIS.COM

7-5-2 Removal and Reinstallation of Control Valve 7-5-6
7-5-3 Removal and Reinstallation of Swing Motor 7-5-9
7-5-4 Removal and Reinstallation of Swivel Joint 7-5-11
7-5-5 Disassembly and Reassembly of Swivel Joint 7-5-13
7-5-6 Disassembly and Reassembly of Hydraulic Cylinder 7-5-16
7-5-7 Hydraulic Oil Tank 7-5-20
7-5-8 Piping Layout 7-5-23
7-6 Work Implements 7-6-1
7-6-1 Removal and Reinstallation of Work Implements 7-6-1

CHAPTER 8
PERIODIC INSPECTION AND SERVICING

8-1 List of Periodic Inspection and Servicing 8-1-1

CHAPTER 9
FUEL, LUBE OIL AND GREASE RECOMMENDED

9. Fuel, Lube Oil and Grease Recommended 9-1

CHAPTER 10
TROUBLESHOOTING

10-1 Non-breakdowns 10-1-1
10-1-1 Natural Release of Bucket 10-1-1
10-1-2 Discontinuous Arm Movement 10-1-1
10-1-3 Extension or retraction of Boom Offset Cylinder when Excavating 10-1-2
10-1-4 Thermal Shock of Travel Motor 10-1-3
10-1-5 Time Lag on Travel Speed Switching 10-1-4
10-1-6 Fluctuation in Oil Level of Hydraulic Oil Tank due to Temperature Change 10-1-5
10-2 Troubleshooting 10-2-1
10-2-1 Machine and Engine 10-2-1
10-2-2 Electrical Equipment on Panel 10-2-22

CHAPTER 11
REFERENCE DATA

11-1 Specifications for Attachment 11-1-1
11-2 Standard Bucket Specifications 11-2-2

PREVIEW - YOUFIXTHIS.COM

CAUTION

New Engine Break-in:

- **On the initial engine start-up, allow the engine to idle for approximately 15 minutes while you check for proper engine oil pressure, diesel fuel leaks, engine oil leaks, coolant leaks, and for proper operation of the indicators and / or gauges.**
- **During the first hour of operation, vary the engine speed and the load on the engine. Short periods of maximum engine speed and load are desirable. Avoid prolonged operation at minimum or maximum engine speeds and loads for the next four to five hours.**
- **During the break-in period, carefully observe the engine oil pressure and engine temperature.**
- **During the break-in period, check the engine oil and coolant levels frequently.**

0000011en

CAUTION

- **NEVER attempt to modify the engine's design or safety features such as defeating the engine speed limit control or the fuel injection quantity control.**
- **Failure to comply may impair the engine's safety and performance characteristics and shorten the engine's life. Any alterations to this engine may affect the warranty coverage of engine.**

0000044enTNVDISM

CAUTION

Protect the air cleaner and electric components from damage when you use steam or high-pressure water to clean the engine.

0000014en

CAUTION

NEVER use high-pressure water or compressed air at greater than 28 psi (193 kPa; 19 686 mmAq) or a wire brush to clean the radiator fins. Radiator fins damage easily.

0000016en

CAUTION

NEVER attempt to adjust the low or high idle speed limit screw. This may impair the safety and performance of the machine and shorten its life.

0000017en

CAUTION

The tightening torque in the Standard Torque Chart *(see 3-7-3 Tightening Torque for General Bolts and Nuts)* should be applied only to the bolts with a "7" head. (JIS strength classification: 7T)

- **Apply 60% torque to bolts and nuts that are not listed.**



- **Apply 80% torque when tightened to aluminum alloy.**

0000023enTNVDISM

PREVIEW - YOUFIXTHIS.COM

4-1-7 Crankshaft and Camshaft Components

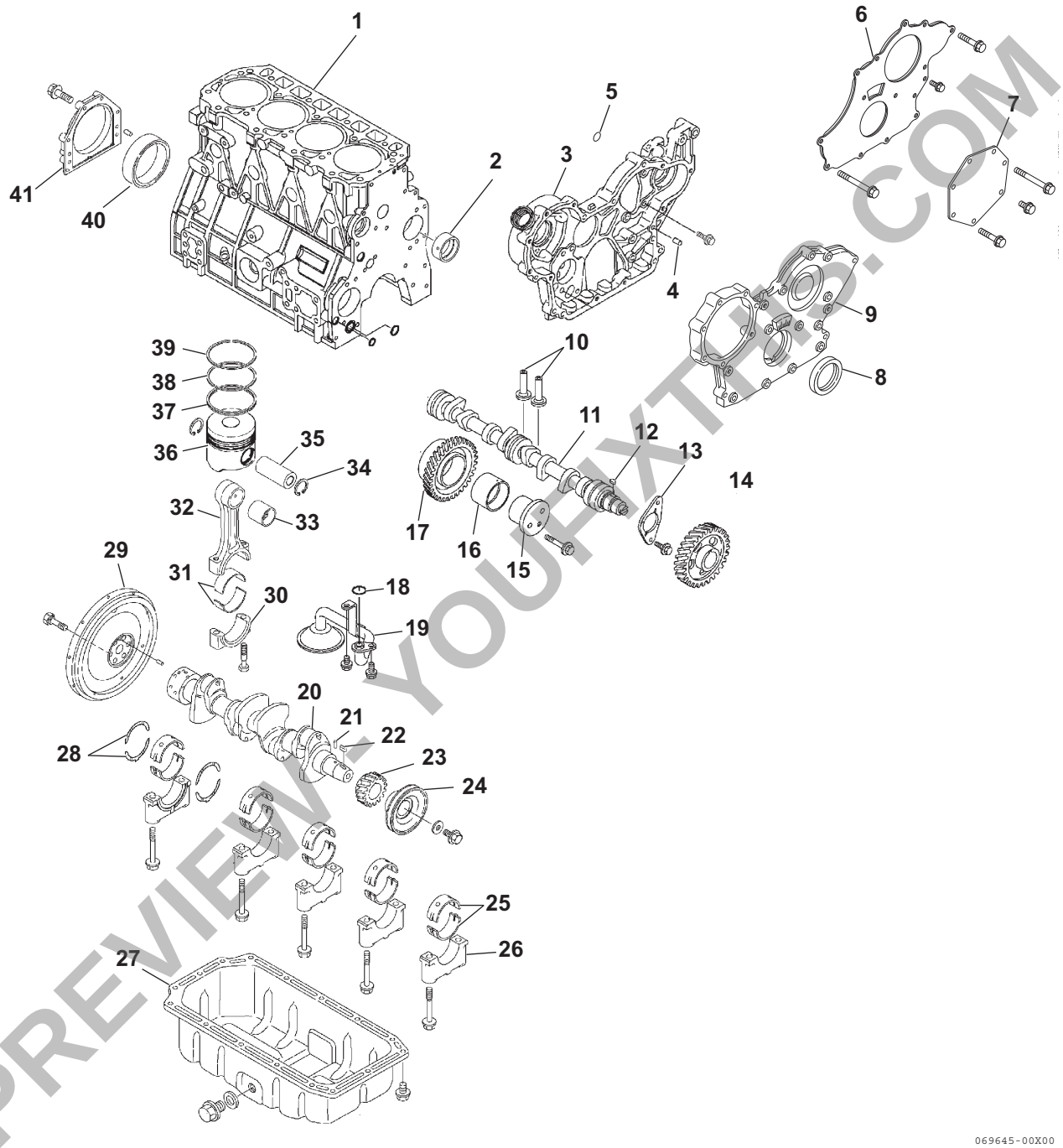


Figure 4-1-46

PREVIEW - YOUFIXTHIS.COM

Installation of Fuel Injection Pump

⚠ WARNING

- **Replacing the fuel injection pump involves rewriting the fuel injection data in the E-ECU.**
  Failure to rewrite the fuel injection data before replacing the fuel injection pump will void the engine warranty.
- **Improper use or misuse of the E-ECU may result in death or serious injury due to an abrupt and unexpected increase in engine speed.**

9999997en

IMPORTANT

If installing a new or recalibrated fuel injection pump, locate and record the timing index number located on the pump housing boss on the engine side of the new or recalibrated fuel injection pump ***(Figure 4-2-22, (1))****. This number will be used to calculate and adjust the final fuel injection timing.*

Note: If either or both of the fuel injection pumps do not have a timing index number, note the injection pump ID (example: XK42) on the injection pump ID label.

To locate the timing index number for the engine being serviced use the Timing Index Chart under “FIE Specs” on the Yanmar Distributor Website (http://distributor.yanmar.co.jp).

Note: Treat the timing index number as if it has a decimal point (68 = 6.8).

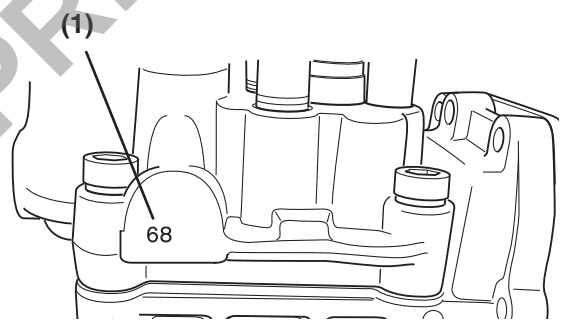


Figure 4-2-19

1. Align the pump drive gear with the idler gear using the reference marks made earlier. **(Figure 4-2-20, (1))**.

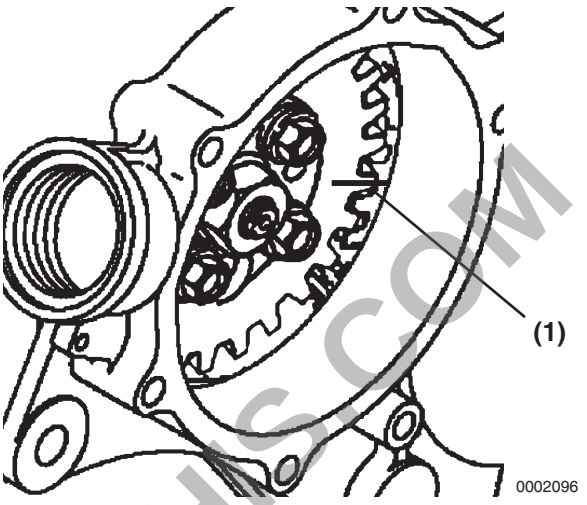
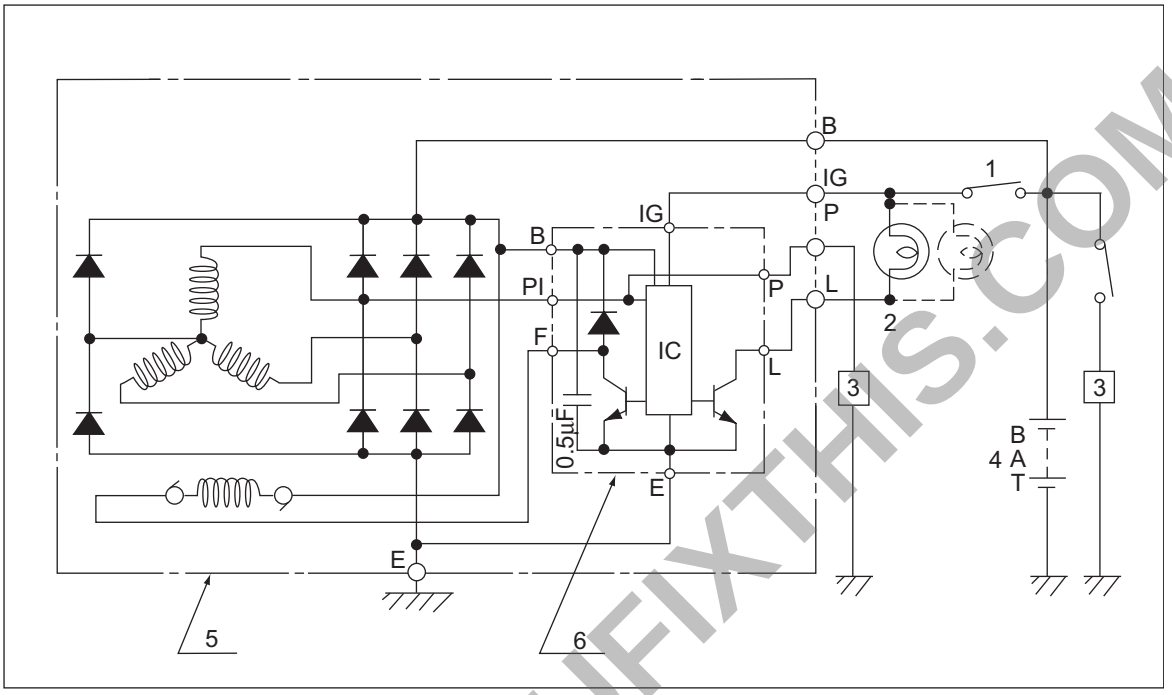


Figure 4-2-20

2. If installing the fuel injection pump on an engine with the front gear case cover removed, the fuel injection pump drive gear can be aligned with the idler gear by aligning the stamped marks **(A, B, C)** on the fuel injection pump drive gear, idler gear, and crankshaft drive gear. Ensure all three timing marks **(Figure 4-2-21, (A, B, C)) are aligned.**

PREVIEW - YOUFIXTHIS.COM

4-6-6 Alternator Wiring Diagram



1 – Key switch
2 – Charge lamp (3.4 Watts Max.)
3 – Load
4 – Battery
5 – Alternator assembly
6 – IC Regulator assembly

Figure 4-6-2

CAUTION

Do not short-circuit the charging system between alternator terminals IG and L. Damage to the alternator will result.

0000035en

CAUTION

Do not connect a load between alternator terminals L and E. Damage to the alternator will result.

0000036en

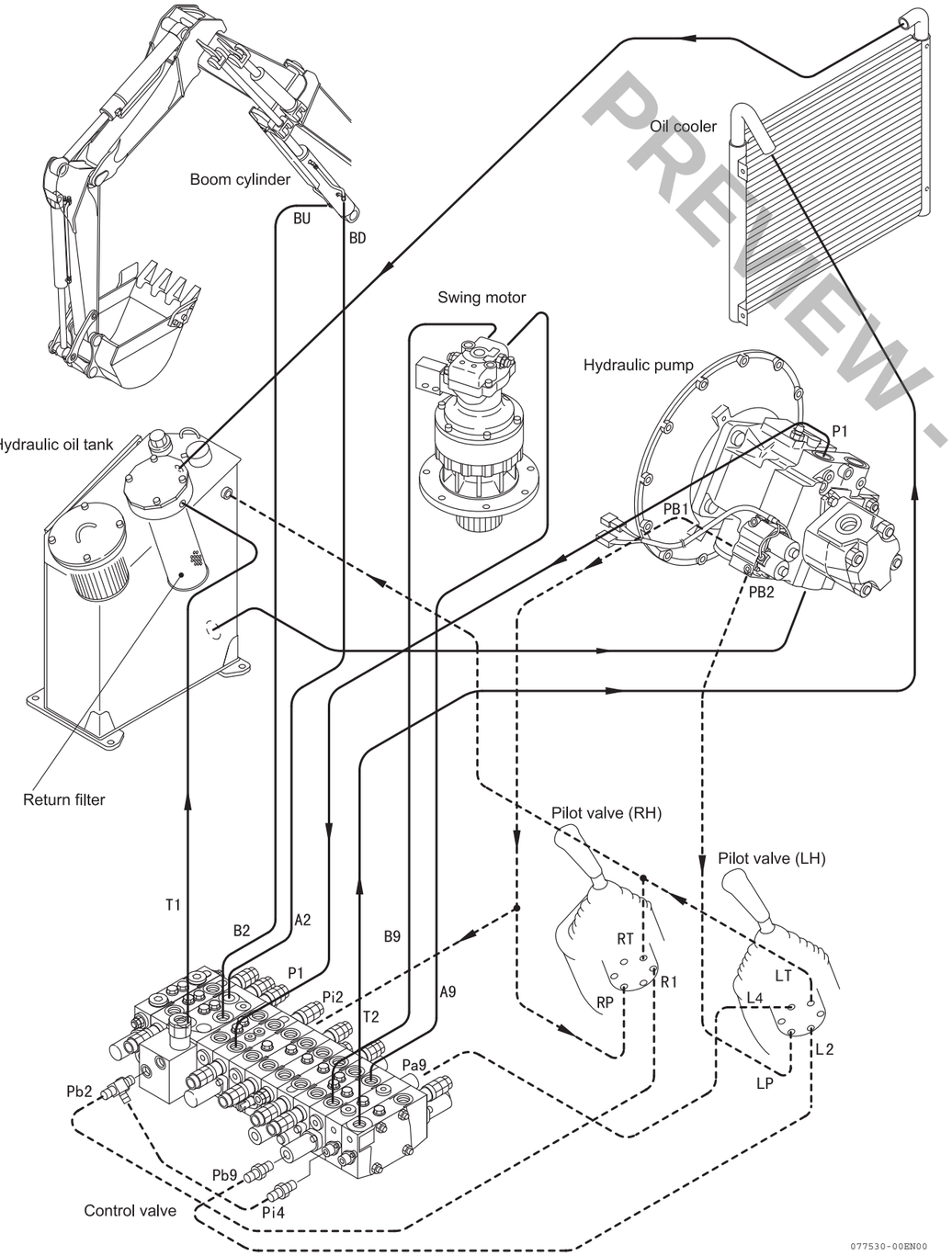
CAUTION

Do not remove the positive (+) battery cable from alternator terminal B while the engine is operating. Damage to the alternator will result.

0000037en

PREVIEW - YOUFIXTHIS.COM

5. HYDRAULIC SYSTEM



Download full manual at youfixthis.com
PREVIEW - YOUFIXTHIS.COM

Trouble	Case	Inspection	Measure
4. Overloading when static load is applied.	(1) Horsepower setting of pump has risen.	Check the engine noise and the work speed of implement.	Listening to engine noise, reset with a wrench.
	(2) Control device malfunction.	Check for foreign substances caught in moving parts of the control device.	Repair or replace the part.
	(3) Mechanical loss of bearing, etc.	Check for the abnormal heat and noise in the housing around the bearing.	Replace the damaged part or the pump.
5. Rev. speed drop when dynamic load is applied.	(1) Development of peak pressure due to decreased relief valve sensitivity. (2) Decreased sensitivity of control devices.	Check for abnormal vibrations in the circuit, and measure pressure. • Check for foreign substances caught in pilot line. • Check for foreign substances caught in the moving parts of control devices.	Replace the relief valve. • Remove foreign substances. • Repair or replace the part.
6. Abnormal heat.	(1) Increased oil leakage from pump.	Measure actuator speed.	Replace the pump.
	(2) Mechanical loss of bearing, etc.	Check parts that are unusually hot or noisy.	Replace the damaged part or pump.
	(3) Seizure of moving parts.	Check the source of heat.	Replace the damaged part or pump.
7. Oil leakage.	(1) O-ring or packing damaged.	Find where the oil leaks and check for abnormal pressure.	Replace the seal.
	(2) Damaged oil seal.	Check for damage due to foreign substances, and for abnormal pressure.	Replace the seal.
	(3) Oil seal contact area of input shaft is worn.	Check for foreign substance deposits and abnormal pressure.	Replace the input shaft or pump.
	(4) Plugs came loose.	Find where the oil leaks.	Tighten or replace seal.

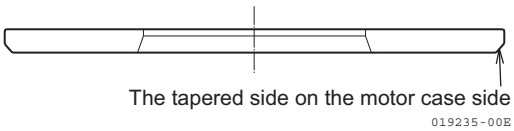
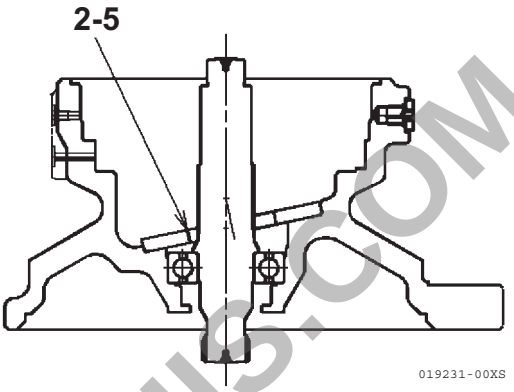
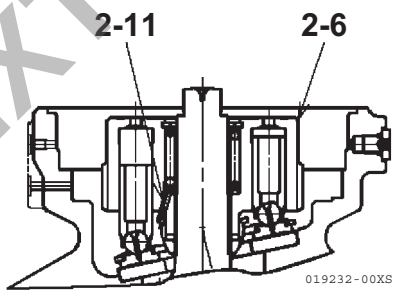
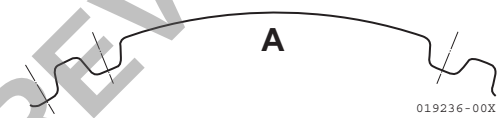
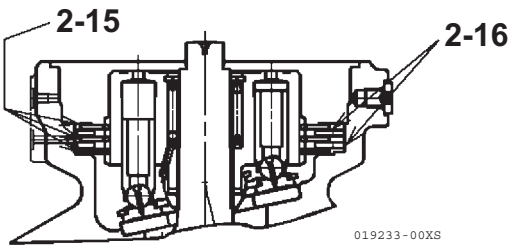
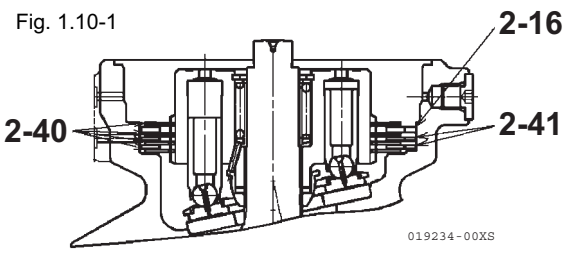
PREVIEW - YOUFIXTHIS.COM

6. Troubleshooting

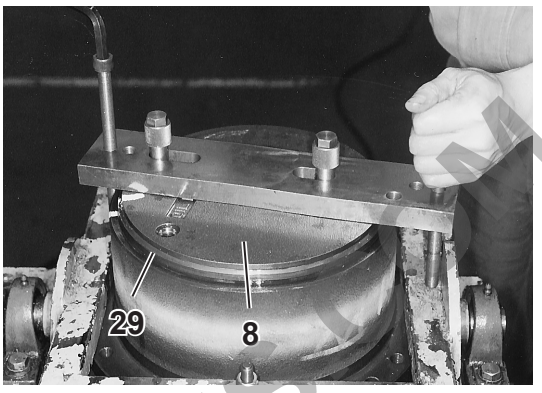
1) Control valve

Trouble	Cause	Measure
1. Spool does not move.	(1) Excessive oil temperature rise	Remove resistance to oil flow in pipe
	(2) Contamination of oil	Replace hydraulic oil and also clean circuit.
	(3) Too tight joint of piping port	Check tightening torque.
	(4) Distortion of valve housing installed	Loosen bolts for housing to check it.
	(5) Too high pressure	Put pressure gauge on pump port and actuator port.
	(6) Distortion of spool	Replace whole valve assembly.
	(7) Damaged return spring	Replace damaged part.
	(8) Shifted spring or cap	Loosen cap to center spring and tighten cap.
	(9) Non-uniform temperature distribution in valve	Warm up whole circuit.
	(10) Dust coughed in valve	Flush valve to remove dust.
	(11) Insufficient of pilot pressure	Check pilot valve and pilot relief pressure
2. Implements cannot keep load.	(1) Oil leak from cylinder	Check seal portion of cylinder
	(2) Oil bypassed from spool	Check spool for flaws.
	(3) Oil leak from overload relief valve	Clean seat portions of valve housing and relief valve.
	(4) Oil leak from anti-drift valve	• Disassemble anti-drift valve and clean the seat portion of each part. • If seat portion is damaged, replace poppet or lap poppet and seat portion. • If anti-drift valve spool is faulty, replace spool and sleeve engaged with spool together.
3. Load falls down when spool is moved from neutral position.	(1) Dust in load check valve	Disassemble check valve and clean it.
	(2) Damaged poppet or seat portion of check valve	Replace poppet or lap poppet and seat portion.

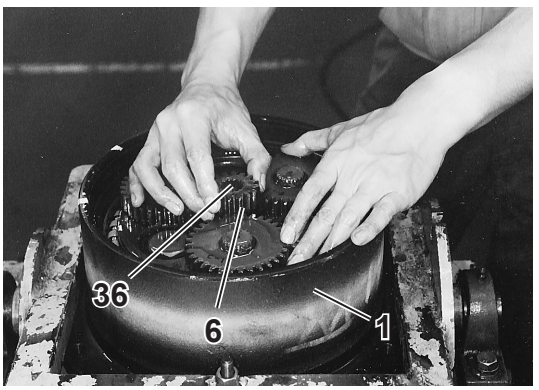
PREVIEW - YOUFIXTHIS.COM

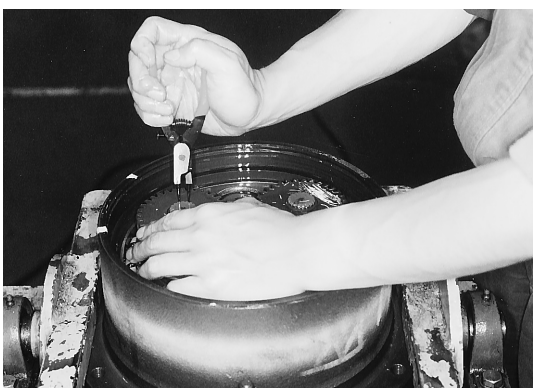
Procedure	
(8) Apply grease to the back side of the thrust plate **2-5** and assemble it. ***Note :*** *The thrust plate must be assembled in the correct direction.*  	
(9) Assemble the cylinder block **2-6** and other associated parts. ***Note :*** *During assembly, be sure that the pin **2-11** will not come out.*	
(10) (*Parking brake spec. only) Assemble the disk **2-15**, the friction plate **2-16**. ***Note :*** *Pay attention to the position of the friction plate and disk.* ***Note :*** *"**A**" of each disk are placed some position.*  	
* Regarding high parking brake torque spec. Assemble the disk **2-40**, the friction plate **2-16**, **2-41**. (Refer to Fig. 1.10-1)	Fig. 1.10-1 

PREVIEW - YOUFIXTHIS.COM

Procedure	
(8) Remove the O-ring **29** from the cover **8**. ***Note :*** *Do not reuse the O-ring **29** which has been removed.*	

5. Input gear removal (1) Remove the snap ring **24** from the shaft **15**.	

(2) Remove the input gear **6**, from the shaft **15**. (3) Remove the steel ball **36** from shaft **15**. (4) Remove the shaft **15** from the spindle **2**.	

6. Spur gears removal (1) Remove snap rings **25** (3 rings) from crankshaft **9**. ***Caution :*** *Take notice when taking off the snap ring by the top with a plier the snap ring will spring out of the snap rings hole.*	

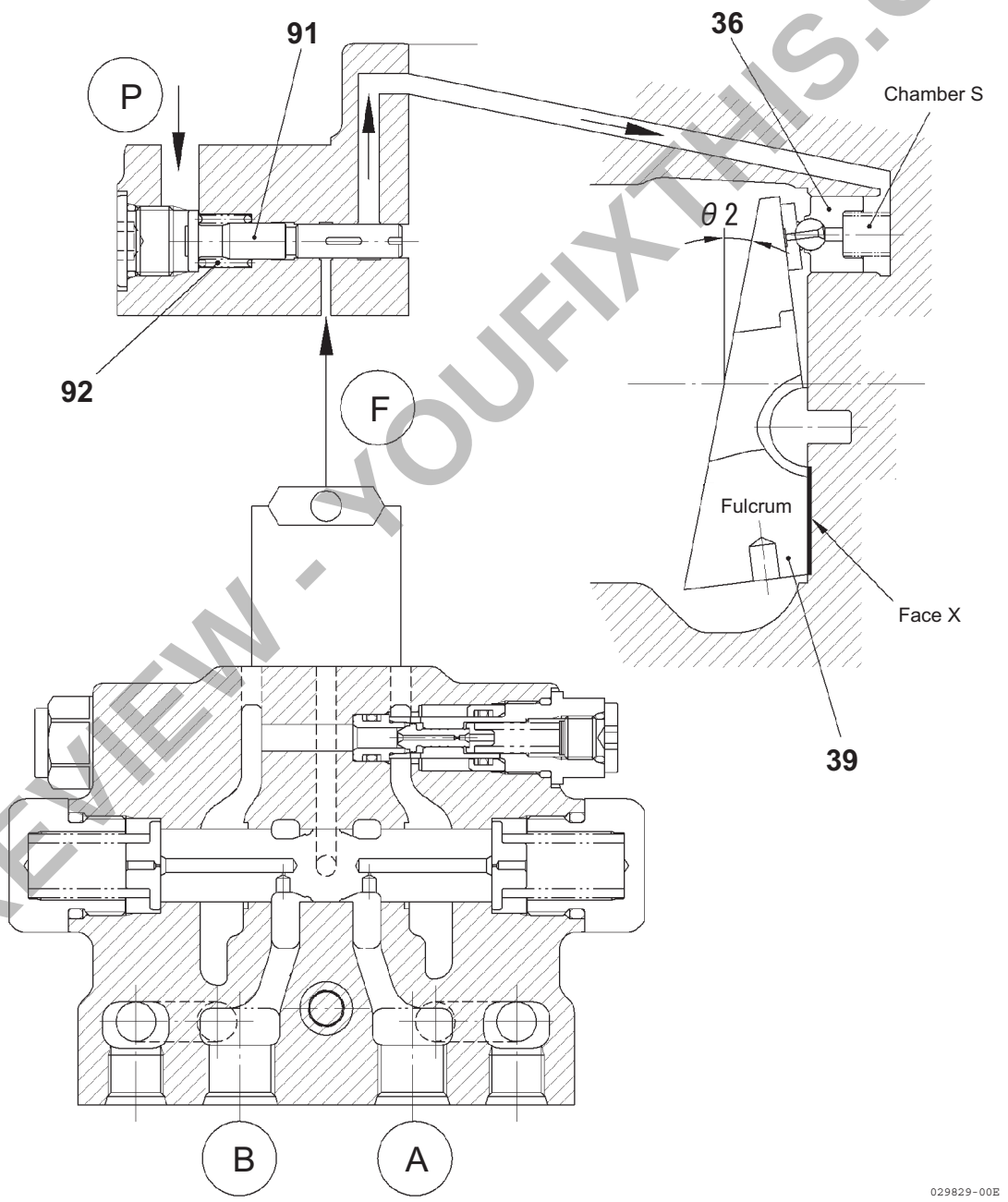
PREVIEW - YOUFIXTHIS.COM

(2) High speed

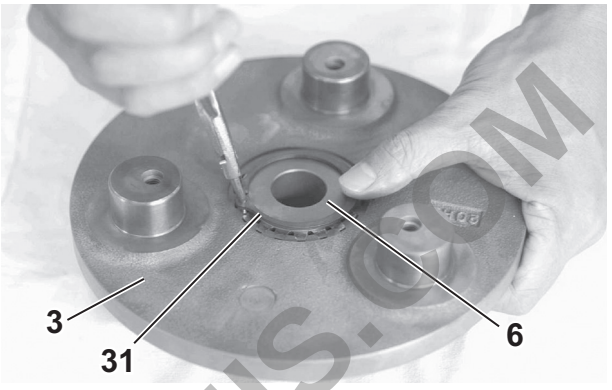
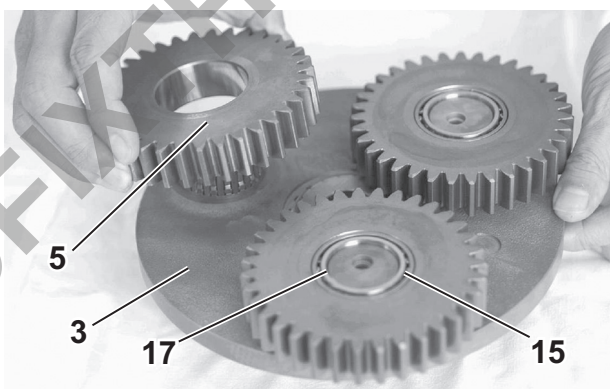
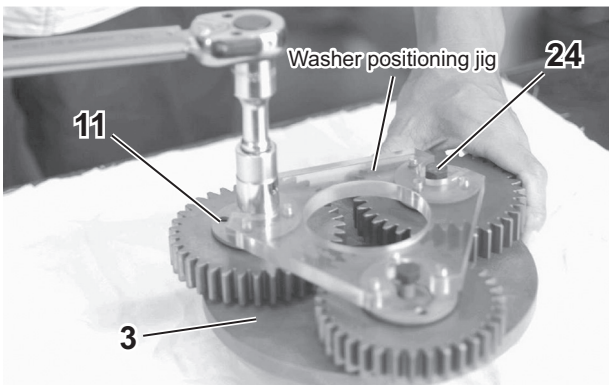
When a pilot pressure of 284 to 995 PSI (1.96 to 6.86 MPa) is supplied through port **P**, the pilot pressure overcomes the force of the spring **92** and the spool **91** is pressed against the right side.

In this state, the pressurized oil at port **F** flows through the spool **91** into chamber **S**. The pressurized oil in chamber **S** causes the thrust of the piston **36** to increase. The piston **36** pushes up the swash plate **39** until it comes into contact with face **X** and holds it in that position.

At this time, the swash plate **39** is at the minimum angle of inclination (θ2). This means that the hydraulic motor is at minimum displacement and runs at high speed.



PREVIEW - YOUFIXTHIS.COM

Procedure	
12. Reassembly of carrier assembly (1) Install sun gear (2) **6** to carrier **3** and fit external snap ring **31** into the snap ring groove in sun gear (2) **6**.	
(2) Install three bearing inner rings **17**, three needle roller bearings with retainers **15**, three planetary gears (1) **5** and three thrust washers **11** in this order to the shaft portions of carrier **3**. ***Note :*** • *Remove any adhesive remaining in the tapped holes in the three shaft portions of carrier **3** by passing a M8 P1.25 tap through the holes. After that, clean and degrease the tapped holes, then, blow air to remove the cleaner.* • *If the adhesive remaining in the tapped holes is not removed, it may cause insufficient axial force of bolts, resulting in loosened bolts.*	
(3) Install three thrust washers (3) **11** to the shaft portions of carrier **3** using a washer positioning jig. (4) Fasten three thrust washers (3) **11** to the shaft portions of the carrier with three hexagon head bolts **24** at the specified tightening torque. **Tightening torque: 20.9 to 28.2 ft•lbf** **(28.4 to 38.2 N•m)** ***Note :*** *If not using the washer positioning jig, be careful not to allow thrust washer (3) **11** to be rotated when tightening the hexagon head bolt. After tightening three hexagon head bolts, check that planetary gears (1) **5** rotate smoothly.* [Completion of carrier assembly]	

PREVIEW - YOUFIXTHIS.COM

7-2-8 Disassembly and Reassembly of Carrier Roller

1) Disassembly

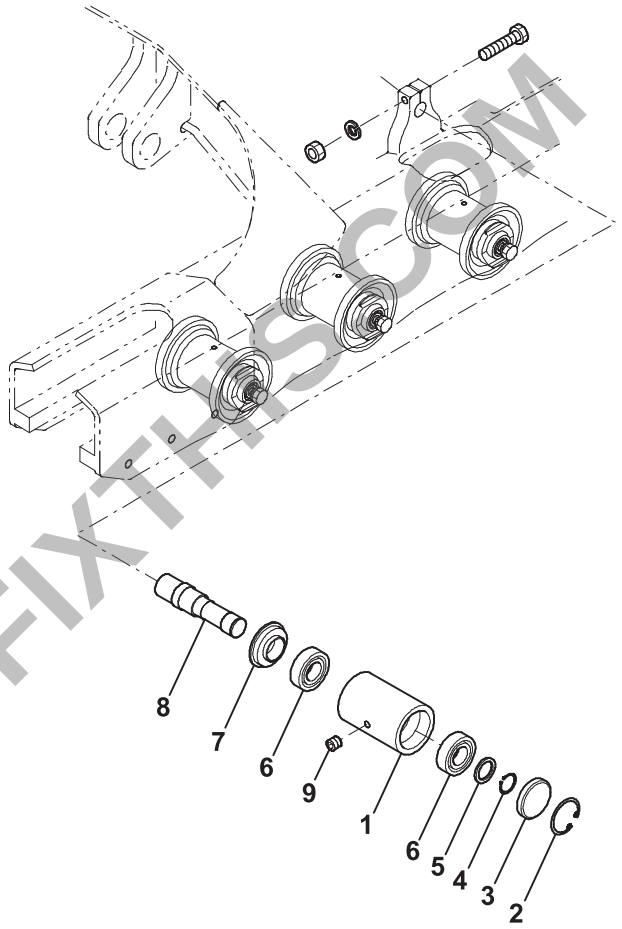
(1) Remove internal snap ring **2** from carrier roller **1** and then, remove cap **3**, external snap ring **4** and washer **5**.
(2) Pull out shaft **8** from carrier roller **1**.
(3) Remove seal **7** from carrier roller **1**.
(4) Remove bearing **6** from carrier roller **1**.

2) Reassembly

(1) Clean all the parts except the seals.
(2) Press-fit bearing **6** and seal **7** in this order into carrier roller **1**.
(3) Press-fit shaft **8** into carrier roller **1** with bearing **6** and seal **7**.
(4) Press-fit bearing **6** into carrier roller **1**, and install washer **5** and external snap ring **4** on it.
(5) Remove plug **9** and pour grease into the carrier roller.
- Grease type : Albania EP2
- Quantity of grease : 0.063 Qts (0.06 L)

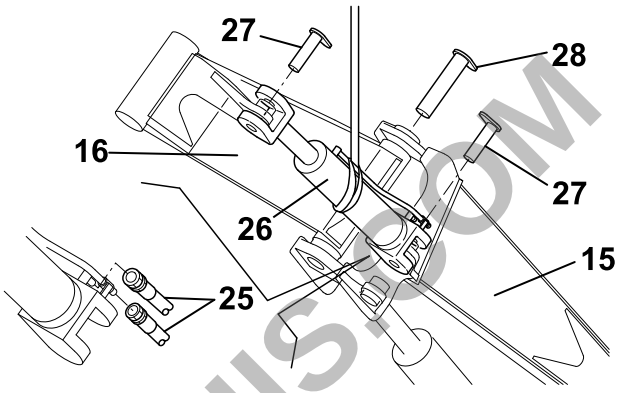
(6) Install plug **9** into carrier roller **1**.
(7) After completing the reassembly, make sure that the carrier roller rotates smoothly.
- Apply adhesive : Loctite 572 or its equivalent
- Tightening torque : 6.51 to 7.23 ft•lbf (8.8 to 9.8 N•m)

(8) After press-fitting cap **3** to carrier roller **1**, install internal snap ring **2**.



No.	Part	Q'ty
1	Carrier roller	1
2	Internal snap ring 62	1
3	Cap	1
4	External snap ring 30	1
5	Washer	1
6	Bearing 6206Z	2
7	Seal	1
8	Shaft	1
9	Plug R (PT) 1/8	1

PREVIEW - YOUFIXTHIS.COM

Procedure	
(19) Remove two hoses **25** from boom offset cylinder **26**. (20) Lift boom offset cylinder **26** up temporarily to remove pins **27** on the rod and bottom sides, and remove boom offset cylinder **26**. (21) Lift boom B **16** up with a rope temporarily to remove pin **28** connecting boom A **15** and boom B **16**, and remove boom B **16**.	

PREVIEW - YOUFIXTHIS.COM

PREVIEW ONLY

You're viewing 23 of 725 pages

The full manual includes:

- All 725 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

Yanmar B7-5B Service Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual