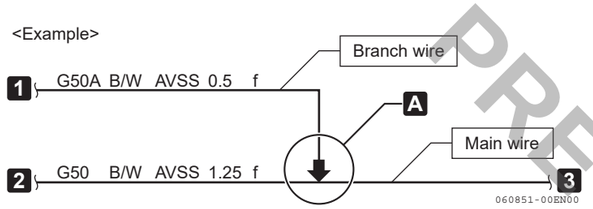
2-9 Wiring Diagram

■ How to Read Wiring Diagrams

● Intersections and Wire Connections

<Example>



The point of arrow **A** on the main wire shown in the figure above represents an intersection of the branch wire and the main wire.
The direction of the arrow indicates which one is the branch wire (the arrowed line represents the branch wire) and also shows the division between the branch wire and the main wire.

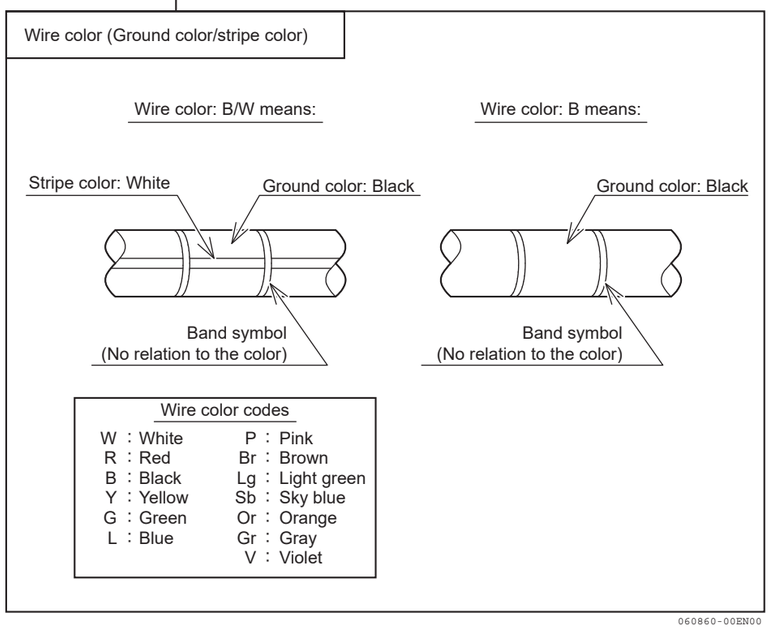
In the example above, the wires are divided as follows.

1 to the point of arrow **A** : Branch wire G50A B/W AVSS 0.5 f
2 to **3** : Main wire G50 B/W AVSS 1.25 f

● How to Read Wiring Symbols

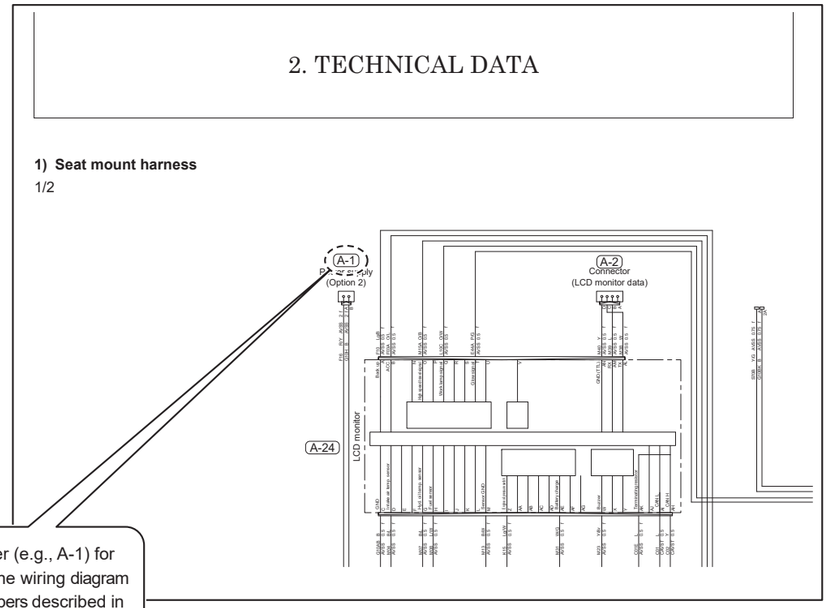
G50 B/W AVSS 1.25 f

- G50: Circuit symbol
- AVSS 1.25 f: Wire type and size
- B/W: Wire color (Ground color/stripe color)

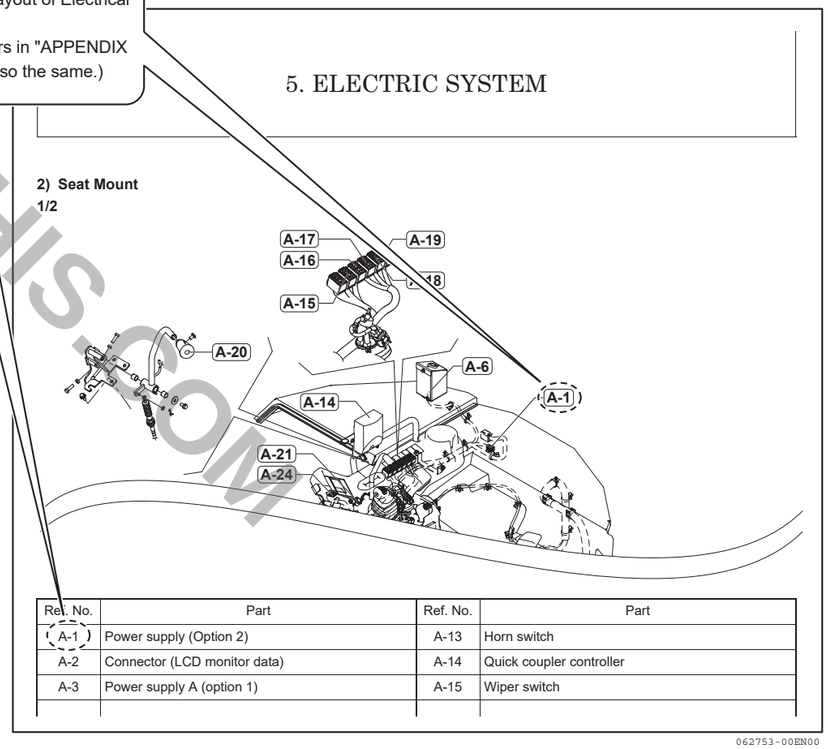


● Reference numbers

<Example>



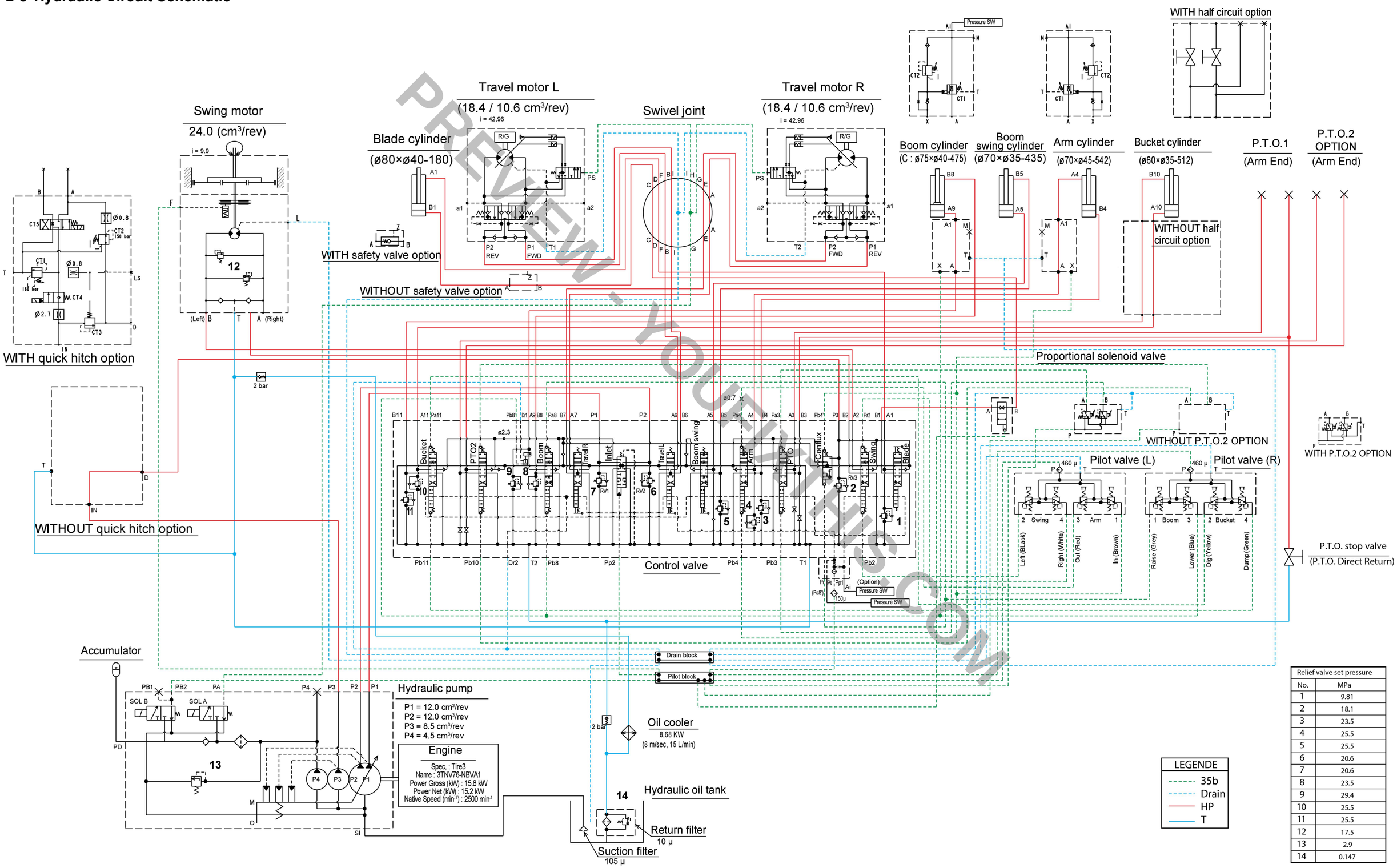
Each reference number (e.g., A-1) for electric equipment in the wiring diagram corresponds to the numbers described in Section "5-1-1 Parts Layout of Electrical Equipment".
(The reference numbers in "APPENDIX Wiring Diagram" are also the same.)



Ref. No.	Part	Ref. No.	Part
A-1	Power supply (Option 2)	A-13	Horn switch
A-2	Connector (LCD monitor data)	A-14	Quick coupler controller
A-3	Power supply A (option 1)	A-15	Wiper switch

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

2-8 Hydraulic Circuit Schematic



Relief valve set pressure	
No.	MPa
1	9.81
2	18.1
3	23.5
4	25.5
5	25.5
6	20.6
7	20.6
8	23.5
9	29.4
10	25.5
11	25.5
12	17.5
13	2.9
14	0.147

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

4-2-4 Cylinder Head

Cylinder Head Components

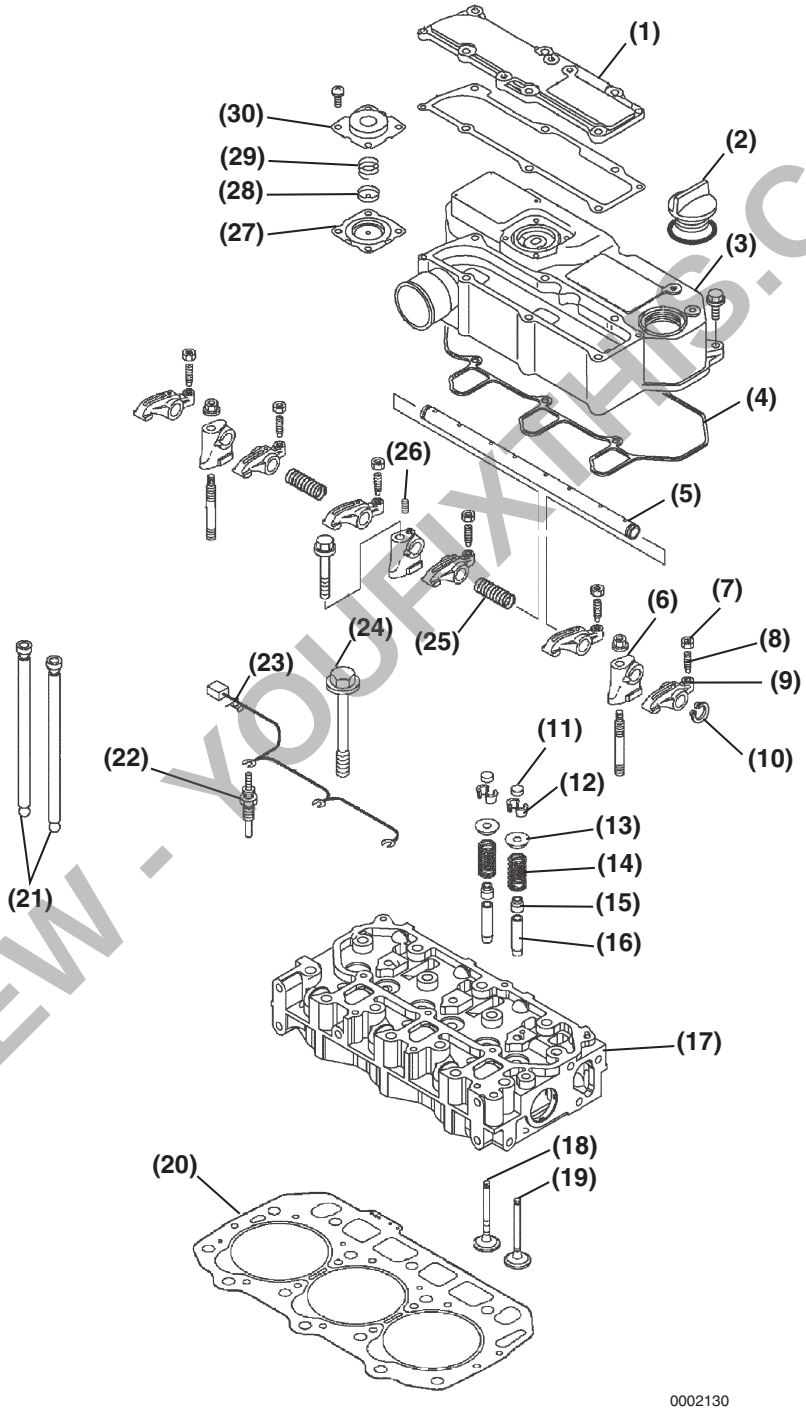


Figure 4-2-1

PREVIEW - YOUFIXTHIS.COM

3-7 List of Tightening Torque

3-7-1 Machine

Applicable model			ViO27-6		
Equipment No		Tightening part	Thread size	Tightening torque N•m	Adhesive
Engine & Electrical equipment					
	1	Engine mount vibroisolating rubber	Nut 10	24,5 to 32,3	
	2	Engine × Engine mount (Front Left)	M10×25	67 to 79	ThreeBond 1324
	3	Engine × Engine mount (Front Right)	M10×25	67 to 79	ThreeBond 1324
	4	Engine × Engine mount (Rear Left)	M10×25	67 to 79	ThreeBond 1324
	5	Engine × Engine mount (Rear Right)	M10×25	67 to 79	ThreeBond 1324
	6	Engine mount × Stopper (Rear Left)	M10×25	67 to 79	ThreeBond 1324
	7	Engine mount × Stopper (Front Right)	M10×25	67 to 79	ThreeBond 1324
	8	Air cleaner	M8×20	23 to 27	
	9	Air cleaner intake hose	Hose clip 60	2,6 to 2,7	
	10	Cooling water hose	Hose clip 25 & 35	2,5 to 3,5	
	11	Oil cooler hose	Hose clip 19	2,5 to 3,5	
	12	Fuel level gauge unit	M5×12 (Pan head screw)	1,2 to 1,5	
	13	Fuel level gauge hose	Hose band 14	2,5 to 3,5	
	15	Fuel oil tank holding band	Nut 8	2,5 to 3 <Tank holding side>	23 to 27 <Lock nut side>
	16	Battery holding bracket	M8x16	23 to 27	
	17	Wire harness × Starter motor terminal	Nut 8	5,9 to 11,8	
	18	LCD monitor × Panel cover	M6×20	3	
	19	Panel cover (lower) × Panel cover (upper)	M6x16	9,5 to 11,5	
	20	Safety switch (Cut-off lever)	Locknut (Fine thread) 20	19,6 to 24,5	
	21	Accelerator dial (holding nut)	Nut (Fine thread) M9	1,3 to 1,5	

PREVIEW - YOUFIXTHIS.COM

5-4 Error Code List

Error code	Classification	Error description	Detection condition	Causes	Corrective measures
00 000091.00	Caution	Accelerator sensor malfunction: above normal operating range (SAEJ1843)	Sensor voltage is 4.6 V or more, or 0.2 V or less.	• Connection failure of connectors • Harness wiring failure (engine control dial wiring disconnected or short circuited to GND) • Defective accelerator sensor • Engine ECU internal circuit failure	Check the connectors, harnesses and engine control dial. Turn the starter switch to the “OFF” position and then to the “ON” position to check if the error code is displayed again.
00 000091.01	Caution	Accelerator sensor failure: below normal operating range (SAEJ1843)	Sensor voltage is 4.6 V or more, or 0.2 V or less.	• Connection failure of connectors • Harness wiring failure (engine control dial wiring disconnected or short circuited to GND) • Defective accelerator sensor • Engine ECU internal circuit failure	Check the connectors, harnesses and engine control dial. Turn the starter switch to the “OFF” position and then to the “ON” position to check if the error code is displayed again.
00 000091.02	Caution	Accelerator sensor malfunction: intermittent failure	Sensor voltage is 4.6 V or more, or 0.2 V or less.	• Connection failure of connectors • Harness wiring failure (nearly broken wiring of sensor signal line, sensor 5 V line or sensor GND line) • Defective accelerator sensor • Engine ECU internal circuit failure	Check the connectors, harnesses and accelerator sensor. Turn the starter switch to the “OFF” position and then to the “ON” position to check if the error code is displayed again.
00 000091.03	Caution	Accelerator sensor malfunction: short circuit to high voltage side	Sensor voltage is 4.6 V or more, or 0.2 V or less.	• Connection failure of connectors • Harness wiring failure (sensor GND line disconnected or sensor signal line short circuited to power supply) • Defective accelerator sensor • Engine ECU internal circuit failure	Check the connectors, harnesses and accelerator sensor. Turn the starter switch to the “OFF” position and then to the “ON” position to check if the error code is displayed again.
00 000091.04	Caution	Accelerator sensor malfunction: short circuit to low voltage side	Sensor voltage is 4.6 V or more, or 0.2 V or less.	• Connection failure of connectors • Harness wiring failure (sensor signal line disconnected or short circuited to GND, or sensor 5V line disconnected or short circuited to GND) • Defective accelerator sensor • Engine ECU internal circuit failure	Check the connectors, harnesses and accelerator sensor. Turn the starter switch to the “OFF” position and then to the “ON” position to check if the error code is displayed again.
00 000091.15	Caution	Accelerator sensor malfunction: disabled (SAEJ1843)	Sensor voltage is 4.6 V or more, or 0.2 V or less.	Engine ECU map data setting fault	Turn the starter switch to the “OFF” position and then to the “ON” position to check if the error code is displayed again.
00 000100.01	Warning	Abnormal engine oil pressure	Engine oil pressure switch is on after engine has started.	• Low engine oil pressure • Defective engine oil system • Harness wiring failure (engine oil pressure switch wiring short circuited to GND) • Defective engine oil pressure switch • Engine ECU internal circuit failure	Inspect the engine oil system. Check the harnesses and engine oil pressure switch. Turn the starter switch to the "OFF" position and then to the "ON" position to check if the error code is displayed again.
00 000100.04	Warning	Engine oil pressure switch failure	Engine oil pressure switch is off while engine is stopped with starter switch in the "ON" position.	• Connection failure of connectors • Harness wiring failure (engine oil pressure switch wiring disconnected or short circuited to power supply) • Defective engine oil pressure switch • Engine ECU internal circuit failure	Check the connectors, harnesses and engine oil pressure switch. Turn the starter switch to the "OFF" position and then to the "ON" position to check if the error code is displayed again.
00 000110.00	Warning	Engine coolant temperature sensor malfunction: too high	Sensor voltage is 4.8 V or more.	• Engine overheating • Insufficient amount of engine coolant • Defective engine cooling system • Defective coolant temperature sensor system	Inspect the engine cooling system. Check the connectors, harnesses and coolant temperature sensor. Turn the starter switch to the “OFF” position and then to the “ON” position to check if the error code is displayed again.
00 000110.02	Warning	Engine coolant temperature sensor malfunction: intermittent failure	Error undefined is detected 10 times.	• Connection failure of connectors • Harness wiring failure (nearly broken wiring of sensor signal line, sensor 5 V line or sensor GND line) • Defective coolant temperature sensor • Engine ECU internal circuit failure	Check the connectors, harnesses and coolant temperature sensor. Turn the starter switch to the “OFF” position and then to the “ON” position to check if the error code is displayed again.
00 000110.03	Warning	Engine coolant temperature sensor malfunction: short circuit to high voltage side	Sensor voltage is 4.8 V or more.	• Connection failure of connectors • Harness wiring failure (sensor signal line disconnected or short circuited to power supply, or sensor GND line disconnected) • Defective coolant temperature sensor • Engine ECU internal circuit failure	Check the connectors, harnesses and coolant temperature sensor. Turn the starter switch to the “OFF” position and then to the “ON” position to check if the error code is displayed again.

PREVIEW - YOUFIXTHIS.COM

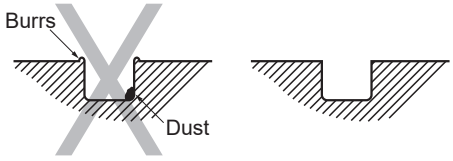
Download full manual at youfixthis.com

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

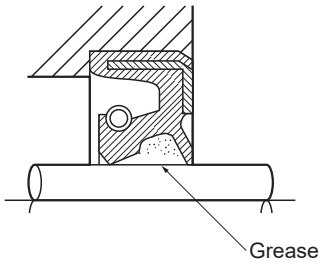
1-7 Cautions for Handling Seals

(1) Clean out grooves of O-rings. Remove burrs or dust if any.



(2) Take care not to twist O-rings. Correct by your finger if it is twisted.
(3) Take care not to damage seals when inserting.
(4) Handling of floating seals :
- Completely wipe off all the oil from the O-ring and housing after detaching the floating seals.
- Before installing, apply a little gear oil to the matching face of the housing.
- Turn the seals two or three times after installation to break them in.

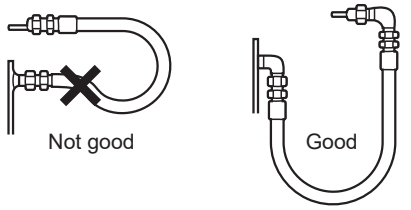
(5) Apply grease to the lip of the oil seals to prevent wear.



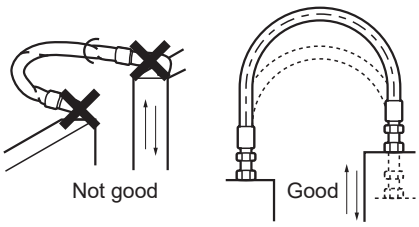
1-8 Correct Installation of Hydraulic Hose

In order to mount the hydraulic hose most effectively and economically, observe the following cautions.

(1) When a hose is used at the minimum bending radius, use elbows to avoid sharp bending.



(2) To prevent twisting, the hose should be bent in the same direction as it moves.



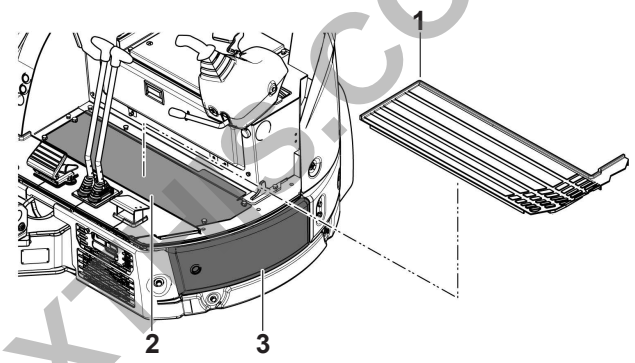
PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

4) Adjustment Procedure

The pressure of the hydraulic circuit sets through the primary relief valve of the control valve.

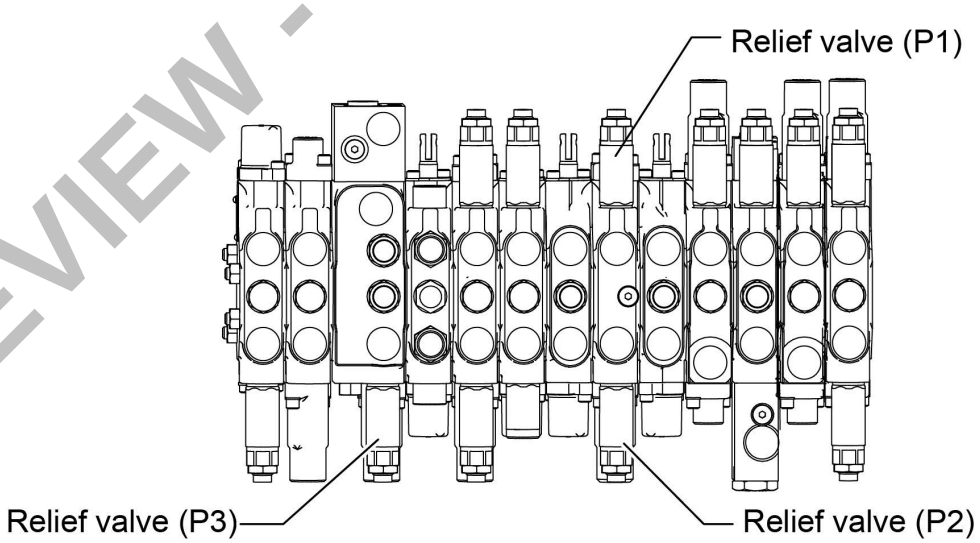
WARNING
The pressure is factory setting, all necessary adjustment must be done by YANMAR dealer.

(1) Remove floor mat **1**, floor **2** and open control valve cover **3**.



(2) To check the pressure of the system relief valve (P1) in the control valve, retract the bucket cylinder to its stroke end, hold the lever and read the gauge. Adjust the pressure if necessary.
(3) To check the pressure of the system relief valve (P2), retract or extend the arm cylinder to its stroke end, hold the lever and read the gauge. Adjust the pressure if necessary.
(4) To check the pressure of the system relief valve (P3), extend the blade cylinder to its stroke end, hold the lever and read the gauge. Adjust the pressure if necessary.

System relief valve



PREVIEW - YOUFIXTOOLS.COM

2. TECHNICAL DATA

2. Technical Data

2-1 Specifications

Item				Unit	ViO27-6
Main specifications of machine					
Dimensions					
Overall length -Transportation position (Std Arm / Long Arm)				mm	4110 / 4120
Cabin	Overall height		Transportation position	mm	2530
			Traveling position	mm	2530
	Overall width		Full machine width	mm	1500
Canopy	Overall height		Transportation position	mm	2520
			Traveling position	mm	2520
	Overall width		Full machine width	mm	1500
Tumbler center distance (Steel track / rubber track)				mm	1590
Track gauge				mm	1250
Minimum ground clearance				mm	320
Traveling performance					
Travel speed	Steel track		Low speed (Forward/Reverse)	km/hr	2,8
			High speed (Forward/Reverse)	km/hr	4,5
	Rubber track		Low speed (Forward/Reverse)	km/hr	2,8
			High speed (Forward/Reverse)	km/hr	4,5
Permissible water depth limit				mm	500
Work performance					
Bucket	Width (Standard)			mm	400
	[Standard. JIS heaped capacity]			cm^3	0,06
	Number of teeth / Installation method			pcs.	3 / Bolt lock type
Work range					
Maximum digging depth	With blade raised (Std Arm / Long Arm)			mm	2490 / 2740
	With blade on the ground (Std Arm / Long Arm)			mm	2690 / 2940
Maximum depth of vertically digging (Std Arm / Long Arm)				mm	1150 / 1290
Maximum dumping height (Std Arm / Long Arm)				mm	2830 / 2985
Minimum front swing radius (with boom in front center)			Cabin (Std Arm / Long Arm)	mm	1950 / 1990
			Canopy (Std Arm / Long Arm)	mm	
Minimum front swing radius (with boom in full swing)			Cabin (Std Arm / Long Arm)	mm	1650 / 1680
			Canopy (Std Arm / Long Arm)	mm	

PREVIEW - YOUFIXTHIS.COM

4. Engine

4-1 Safety

4-1-1 Safety Statements

Yanmar is concerned for your safety and your machine's condition. Safety statements are one of the primary ways to call your attention to the potential hazards associated with Yanmar TNV engine operation. Follow the precautions listed throughout the manual before operation, during operation and during periodic maintenance procedures for your safety, the safety of others and to protect the performance of your engine. Keep the labels from becoming dirty or torn and replace them if they are lost or damaged. Also, if you need to replace a part that has a label attached to it, make sure you order the new part and label at the same time.



This safety alert symbol appears with most safety statements. It means attention, become alert, your safety is involved! Please read and abide by the message that follows the safety alert symbol.

⚠ DANGER

Danger (the word "DANGER" is in white letters with a red rectangle behind it) - indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. Danger is limited to the most extreme situations.

⚠ WARNING

Warning (the word "WARNING" is in black letters with an orange rectangle behind it) – indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

Caution (the word "CAUTION" is in black letters with a yellow rectangle behind it) – indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTICE

Caution without the safety alert symbol indicates a potentially hazardous situation that can cause damage to the machine, personal property and / or the environment or cause the machine to operate improperly.

PREVIEW - 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 1-8

CHAPTER 2
TECHNICAL DATA

2-1 Specifications 2-1-1
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
2-5 Specifications for Attachment 2-5-1
2-6 Periodic Inspection and Servicing 2-6-1
2-7 Fuel, Lube Oil and Grease Recommended 2-7-1
2-8 Hydraulic Circuit Schematic 2-8-1
2-9 Wiring Diagram 2-9-1

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 Track Specifications 3-3-1
3-3-2 Steel Track Specifications 3-3-2
3-3-3 Common Specifications of Steel & Rubber Crawlers 3-3-4
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
3-7 List of Tightening Torque 3-7-1
3-7-1 Machine 3-7-1
3-7-2 Engine 3-7-5
3-7-3 Tightening Torque for General Bolts and Nuts 3-7-6
3-7-4 Hydraulic Fitting 3-7-7
3-8 Pressure Adjustment 3-8-1
3-8-1 Relief Valves 3-8-1
3-8-2 Swing Brake Valve 3-8-4

PREVIEW - YOUFIXTHIS.COM

2-6 Periodic Inspection and Servicing

Supply ○ Check/Adjust ◇ Clean □ Oil and grease ■ Replace ● Oil sample ♦

Check & Service items			Daily	Every 50h	Every 100h	Every 250h	Every 500h *	Every 1000h *	Every 2000h **
General	Missing or broken parts		◇						
	Tightening of nuts and bolts		◇						
	Engine condition, exhaust and inlet hoses		◇						
	Machine overall		□						
	Operation manual			◇(1)			◇	◇	◇
Greasing	Greasing points		◇/■						
	Swing gear and crown			■	■	■	■	■	■
	Bearing rollers and bearings, idler wheels		◇			■(2)	■	■	■
Engine	Diesel filter			●(1)		●	●	●	●
	Water separator	Drain	◇						
		Bowl (if equipped)					□	□	□
	Oil		◇/○	♦(1)			●	●	●
	Oil filter			●(1)			●	●	●
	Cooling fluid & leakage		◇/○						●
	Radiator fins		◇/□						
	Belt			◇					●
	Fuel hose, coolant hose								◇/●
	Performance of engine control and engine speed			◇(1)			◇	◇	◇
	Governor lever and accelerator device			◇(1)			◇	◇	◇
	Air cleaner	External air cleaner element	□(3)			●(3)	●	●	●
		Safety cartridge element (if equipped)					●	●	●
	Intake and exhaust valves								◇
	Injectors and injection pressure								◇/□
	Crankcase breather system								◇
	Engine silent-bloc & bracket			◇					
Travel	Oil for travel gears			●(1)	◇(2)	◇/●(2)	◇/●	◇/●	◇/●
	Tracks, rubber tracks & pads		◇						
	Track tension		◇						
	Play of travel lever			◇(1)			◇	◇	◇
	Performance of travel			◇(1)			◇	◇	◇
Hydraulic	Oil		◇	♦(1)			♦/●(4)	●	●
	Aspiration filter					●(4)	□	□	□
	Hydraulic oil return filter			●(1)		●(4)	●	●	●
	Accumulator			◇(1)			◇	◇	◇
	Pump pressure			◇(1)			◇	◇	◇
	Play of control lever			◇(1)			◇	◇	◇
	Low pressure			◇(1)			◇	◇	◇
	Blade control			◇(1)			◇	◇	◇
	Boom swing			◇(1)			◇	◇	◇
	Boom			◇(1)			◇	◇	◇
	Arm			◇(1)			◇	◇	◇
	Bucket			◇(1)			◇	◇	◇
	Options			◇(1)			◇	◇	◇
Electric	Time counter		◇	◇			◇	◇	◇
	Wire breakage, short circuits, loosened terminals		◇	◇			◇	◇	◇
	LCD monitor		◇	◇			◇	◇	◇
	Battery			◇(1)			◇	◇	◇
Final	Sign inspection card and return to YANMAR			◇ (1)		◇	◇	◇	◇

* or annualy first time occurs

** or two years

(1) First time 50-80h visit

(2) If machine does lot of digging line during one day (fiber, drop pipe, drainage…).

(3) If machine is used at dusty worksites.

(4) If a hydraulic hammer is used.

PREVIEW - YOUFIXTHIS.COM

1. Every 500h / Every year

Applicable model			ViO27-6		
Equipment			Thread size	Tightening torque N•m	Adhesive
	No	Tightening part			
Implement					
	1	Boom fulcrum pin lock plate	M12×25 (10.9T)	116 to 138	ThreeBond 1324
	2	Arm fulcrum pin lock plate	M12×25 (10.9T)	116 to 138	ThreeBond 1324
	3	Boom cylinder rod end pin lock plate	M12×25 (10.9T)	116 to 138	ThreeBond 1324
	4	Boom swing cylinder bottom end pin lock plate	M10×20 (10.9T)	67 to 79	ThreeBond 1324
	5	Boom swing cylinder rod end pin lock plate	M12×25 (10.9T)	116 to 138	ThreeBond 1324
	6	Arm cylinder bottom end pin lock plate	M12×25 (10.9T)	116 to 138	ThreeBond 1324
	7	Arm cylinder rod end pin lock plate	M12×25 (10.9T)	116 to 138	ThreeBond 1324
	8	Bucket cylinder bottom end pin lock plate	M12×25 (10.9T)	116 to 138	ThreeBond 1324
	9	Blade fulcrum pin lock plate	M10×25 (10.9T)	67 to 79	ThreeBond 1324
	10	Blade cylinder pins lock plates	M12×35 (10.9T)	116 to 138	ThreeBond 1324
	12	PTO tube bracket × Boom	M12×35 (10.9T)	116 to 138	ThreeBond 1324
	13	PTO tube clamp × PTO tube bracket	M8x40	23 to 27	ThreeBond 1324
	14	PTO tube clamp x Boom	M8x40	23 to 27	ThreeBond 1324
	15	Slide plate	CHC M8x20 (10.9T)	34 to 40	ThreeBond 1324

PREVIEW - YOUFIXTHIS.COM

Inspection of Intake and Exhaust Valves

Visually inspect the intake and exhaust valves. Replace any valves that are obviously discolored, heavily pitted or otherwise damaged.

Valve Stem Diameter

Use a micrometer to measure the valve stem diameter. Measure the valve stem near the combustion end and near the opposite end **(Figure 4-2-16, (1))**. Record the measurements. *See "3-2 Engine Service Standard" section for the service limit.*

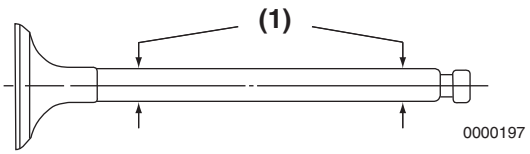


Figure 4-2-16

Valve Stem Bend

Place the valve stem on a flat inspection block or layout bed. Roll the valve until a gap can be observed between a portion of the valve stem and the surface of the block or bed. Use a feeler gauge to measure the gap **(Figure 4-2-17)**. Record the measurements. *See "3-2 Engine Service Standard" section for the service limit.*

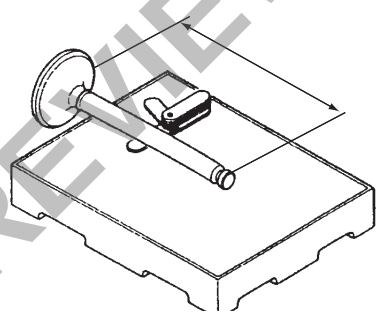


Figure 4-2-17

Valve Recession

Note: The valve guides must be installed to perform this check.

Insert the valves into their original locations and press them down until they are fully seated. Use a depth micrometer **(Figure 4-2-18)** to measure the difference between the cylinder head gasket surface and the combustion surface of each exhaust and intake valve **(Figure 4-2-19)**. Record the measurements. *See "3-2 Engine Service Standard" section for the service limit.*

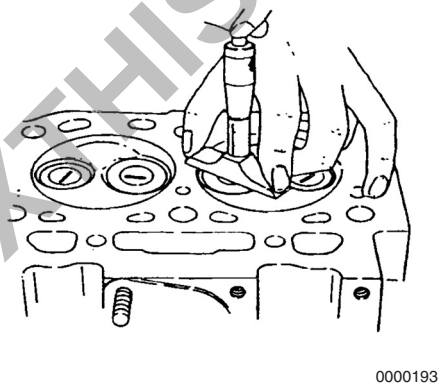


Figure 4-2-18

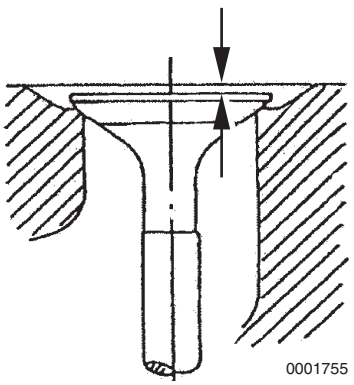


Figure 4-2-19

PREVIEW - YOUFIXTHIS.COM

4-3 Fuel System

4-3-1 Before You Begin Servicing

Before performing any service procedures within this section, read the following safety information and review the *Safety* section on page *4-1-1*.

PREVIEW - YOUFIXTHIS.COM

Cleaning and Inspection

Wash the oil pump cover, the oil pressure regulator valve, the oil pump cavity and the inner and outer rotors. Inspect the parts for wear or damage. Replace as necessary.

Note: If the oil pump cavity is damaged, the gear case cover must be replaced.

NOTICE

If any oil pump component clearance exceeds its limit, the oil pump must be replaced as an assembly.

Check Outer Rotor Outside Clearance

1. Reinstall the outer and inner rotors. The dots on the rotor faces must face “up.” Make sure that the pilot on the back of the inner rotor fits into the bore of the oil pump cavity and the top surface of the inner rotor is flush with the top surface of the outer rotor.
2. Determine the outside clearance of the outer rotor. Insert a feeler gauge between the outer rotor **(Figure 4-5-7, (1))** and the gear case oil pump cavity **(Figure 4-5-7, (2))**.

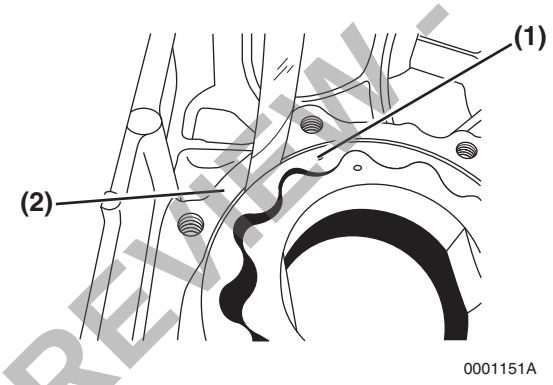


Figure 4-5-7

Record the measurement.

Outer Rotor to Inner Rotor Tip Clearance

Determine the outer rotor to inner rotor tip clearance. Insert a feeler gauge between the top of an inner rotor tooth **(Figure 4-5-8, (1))** and the top of an outer rotor tooth **(Figure 4-5-8, (2))** and measure the clearance.

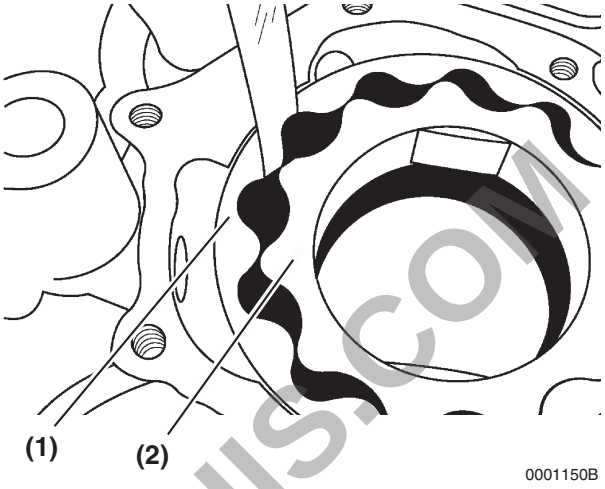


Figure 4-5-8

Record the measurement.

Check Outer Rotor Side Clearance

Determine the side clearance of the outer rotor across the pump cavity. While pressing down on the outer rotor, measure the depression using a depth micrometer **(Figure 4-5-9)**.

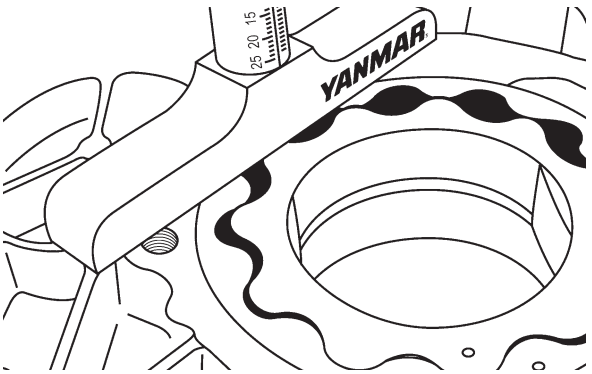


Figure 4-5-9

Record the measurement.

PREVIEW - YOUFIXTHIS.COM

Trouble Symptom / Cause		Starting Problem				Insufficient Engine Output			Poor Exhaust Color		High Knocking Sound During Combustion	Abnormal Engine Sound	Uneven Combustion Sound	Engine Surging		Excessive Engine Vibration	Difficulty in Returning to Low Speed	Excessive Fuel Consumption	Engine Oil				Excessive Blow-by Gas	Engine Coolant		Air Intake		Exhaust Temperature Rise	Corrective Action	Reference Page
		Engine Does Not Start.	Engine Starts But Stops Soon. Exhaust Smoke None	Engine Starts But Stops Soon. Exhaust Smoke Little	Engine Starts But Stops Soon. Exhaust Smoke Much	Exhaust Color Ordinary	Exhaust Color White	Exhaust Color Black	During Work White	During Work Black				During Idling	During Work Operation				Excessive Oil Consumption	Dilution by Diesel Fuel	Oil with Water	Low Oil Pressure		Overheat	Low Water Temperature	Pressure Drop	Pressure Rise			
Engine System - Continued	Reverse Assembly of Piston Rings						O		O										O				O						Reassemble Correctly.	*See Reassembly of Pistons on page 4-2-40*
	Worn Crankpin and Journal Bearing					O						O		O	O	O						O							Measure and Replace.	*See Inspection of Crankshaft and Camshaft Components on page 4-2-32*
	Loose Connecting Rod Bolt											O				O						O							Tighten to the Specified Torque.	*See "3-7-2 Engine Tightening Torque" section for tightening torque.*
	Foreign Matter Trapped in Combustion Chamber	O										O							O				O						Disassemble and Repair.	*See Disassembly of Cylinder Block Components on page 4-2-23*
	Excessive Gear Backlash											O																	Adjust Gear Meshing.	*See Checking Timing Gear Backlash on page 4-2-24*
	Worn Intake/Exhaust Valve Guide						O												O				O						Measure and Replace.	*See Inspection of Valve Guides on page 4-2-12*
	Governor Adjusted Incorrectly		O											O	O	O	O												Make Adjustment.	
	Improper Open/Close Timing of Intake/ Exhaust Valves	O					O	O	O	O		O																		Adjust the Valve Clearance.	*See Measuring and Adjusting Valve Clearance on page 4-2-20*

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

6-1-1 Control Valve Operation

1) Oil Flow from Hydraulic Pump

(1) Piston pump P1

The oil from the piston pump P1 is fed to the right travel motor, the boom, P.T.O 2 and bucket cylinders through the port P1 of the inlet section, the travel (R), boom and bucket sections.

(2) Piston pump P2

The oil from the piston pump P2 is fed to the left travel motor, the boom swing and arm cylinders and the P.T.O. through the port P2 of the inlet section, the travel (L), boom swing, arm and P.T.O. sections.

(3) Gear pump P3

The oil from the gear pump P3 flows through the port P3 of the parallel-flow divider to the blade and swing sections, and also to the arm and P.T.O. sections in combination with the oil from piston pump P2, and to the boom, P.T.O. 2 and bucket sections in combination with the oil from piston pump P1.

2) Simultaneous Operation of Boom and Bucket

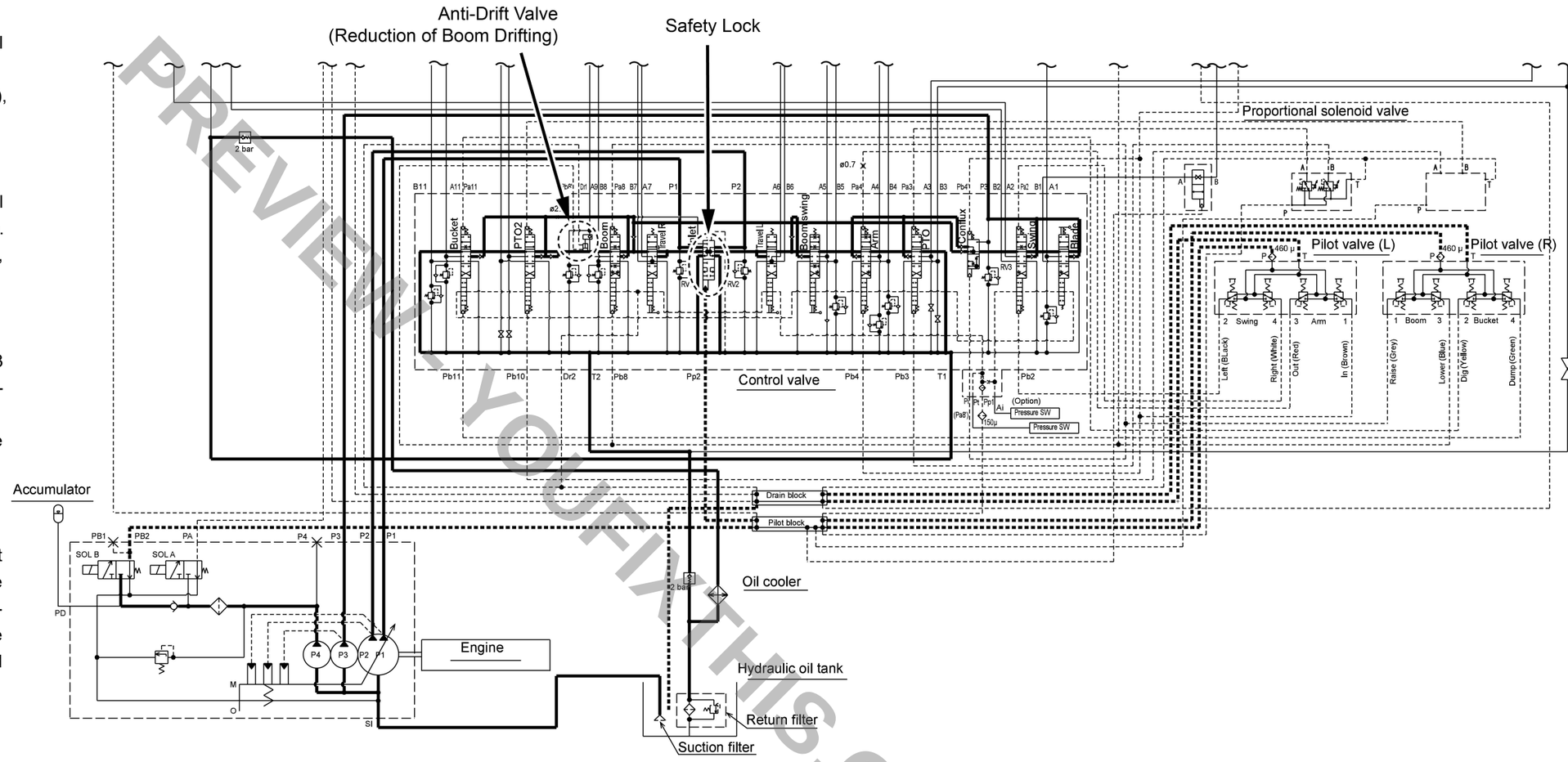
A parallel passage is provided for the boom and bucket sections. The parallel passage has a throttle in the bucket section, so that the oil can flow to the boom section more smoothly than to the bucket section when the boom is given a heavier load. Therefore, the boom and the bucket can be operated simultaneously.

3) Anti-Drift Valve (Reduction of Boom Drifting)

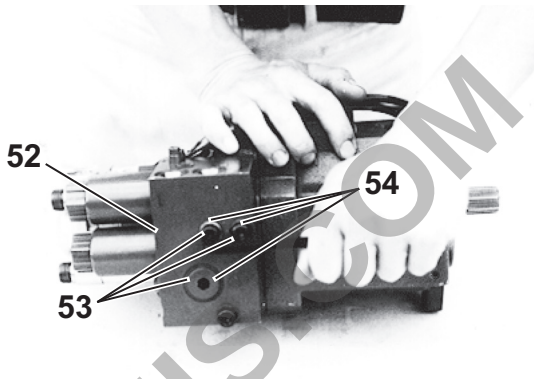
The anti-drift valve is installed in the boom section to reduce the boom drifting.

4) Safety Lock

When the lock lever is set to the "LOCK" position, the spool of the inlet section is in the neutral position, so that the oil from the piston pumps P1 and P2 flows back to the hydraulic oil tank through the return passage. Therefore, the implement does not operate and the machine does not travel even when the control or travel lever is operated.



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

Procedure	
(2) Install the valve block assembly **52** onto the piston pump kit with the three hexagon socket head bolts **53** (M8×75) and the spring washers **54**. Tool : Hexagon bar wrench 6 Tightening torque: 20.6 to 25.5 N•m	

9. Operation check after reassembly After the above reassembly, rotate the drive shaft by hand to check the smooth operation of it.	

PREVIEW - YOUFIXTHIS.COM

3)-2. Disassembly of load check valve

[1] Remove the check valve retainer **4** from the central part of the upper surface of the valve with an open end wrench or socket wrench (19 mm).

Note :

*The check valve can difficult to loosen due to the O-ring **3** caught in the thread part. In that time, do not force it loosen, but retighten and loosen it again.*

[2] Remove the check valve spring **2** and the check valve **1** in the bore, which the check valve retainer has been removed from, with tweezers or a magnet.

[3] The other valve sections can be disassembled in the same procedure.

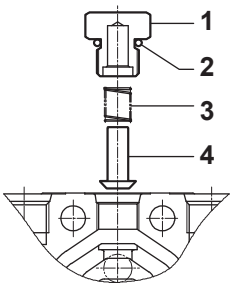


Fig.1 Check valve section (Blade, Swing, Arm, Boom Swing, Boom and Bucket Sections)

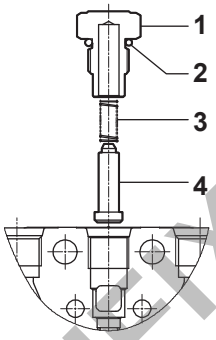


Fig. 2 Check valve section (Parallel flow divider, Travel, and Anti-drift Valve Sections)

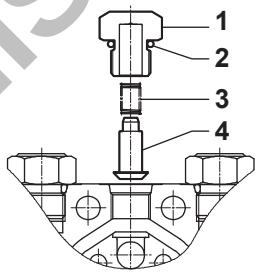


Fig. 3 Check valve section (P.T.O. Section)

051404-00EN00

No.	Part
1	Check valve
2	Check valve spring
3	O-ring
4	Check valve retainer

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

3. Fundamental Rules

1) General Information Concerning Pilot Control Unit Connection

When removing the pilot control unit, all openings must be plugged immediately to prevent any contamination of the hydraulic system.

When replacing the pilot control unit, remove the plastic plugs from the openings and lines just before making the connections.

Do not tighten connectors to a torque greater than that specified in the assembly instructions.

Check the hydraulic installation's oil quality and filtration capacity during all servicing/maintenance operations.

The use of teflon tape, hemp and joint filler is prohibited.

Hydraulic lines and connections must not be under any strain whatsoever.

4. Removal / Installation of the Pilot Control Unit Connection

1) General Recommendations

CAUTION :

Before removing the pilot control unit from the machine, the block and its surroundings must be thoroughly cleaned with a high-pressure cleaner.

No impurities must enter the hydraulic system. Plastic plugs are to be fitted on lines and orifices immediately following their removal.



Wear protective clothing and use suitable equipment to prevent accidents, particularly concerning the hydraulic fluid.

Set all actuators connected to the machine in neutral position (on the ground, at lower limit...) to avoid accidents which could result from uncontrolled movements of the equipment when the hydraulic system is disconnected.

With the machine off, release the pressure remaining in the system by manipulating all of the distribution spools. This is performed by moving the handle in all directions.

2) Pilot Control Unit Removal

Immediately after disconnecting the lines from the control device, fit the sealing plugs. Make sure to collect any pos-sible oil leakage in a suitable receptacle.

Unscrew the mounting screws and remove the control device.

3) Installation of the Hydraulic Pilot Control Unit

Contact faces must be perfectly clean.

Check the evenness of the support area on the machine (tolerance : 0.5 mm).

Check the condition of the line connector seals.

Clean the pilot control unit if it has been in storage for a long period of time.

Correctly place and secure the pilot control unit onto the machine with the mounting screw (maxi torque : 10 N·m).

Connect the lines to the control unit as per the connecting diagram and tighten to the torque specification (maxi torque : 30 N·m).

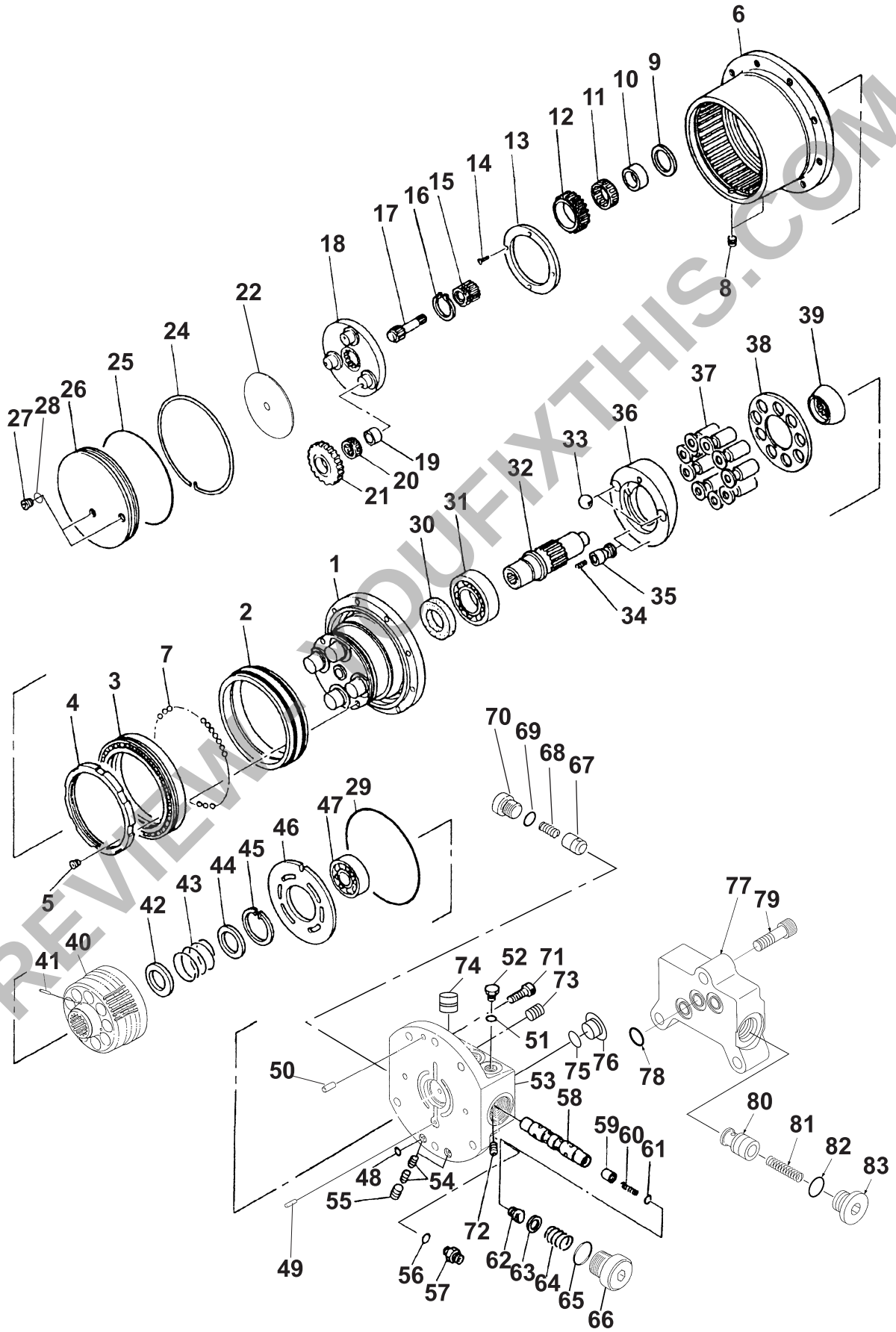
Ensure that the hoses are not twisted or rubbed.

Once correctly installed, the unit can be placed into operation.

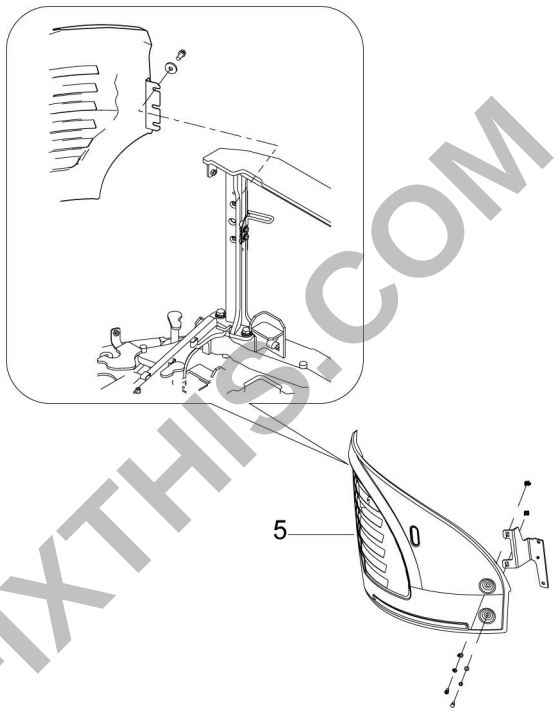
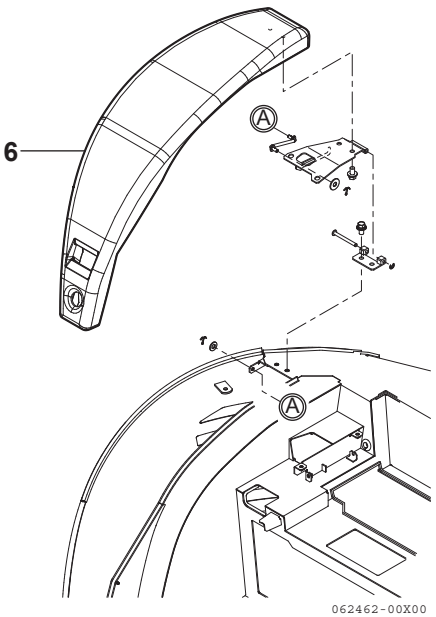
PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

3. Exploded View and Parts Comprised



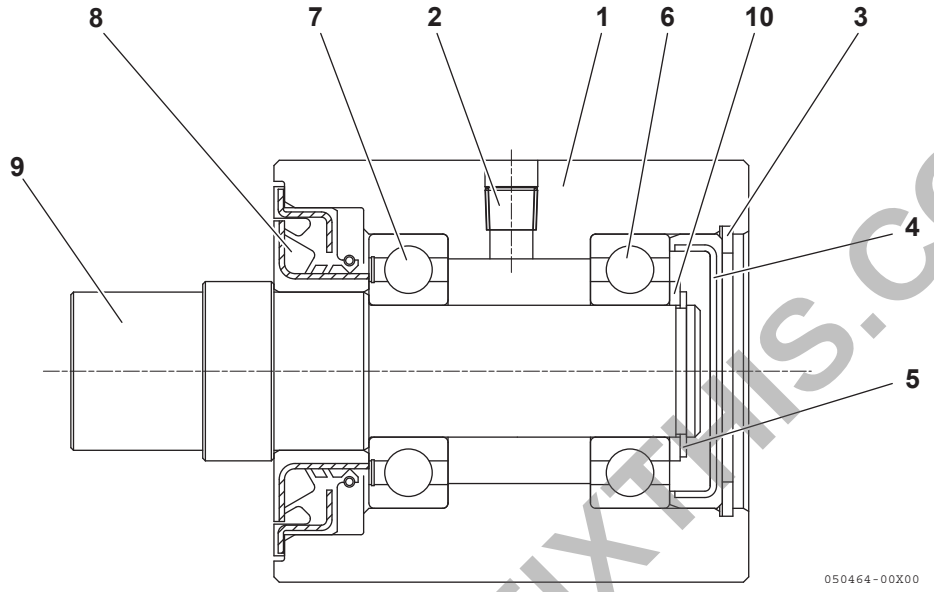
PREVIEW ONLY FIXTHIS.COM

Procedure	
(4) Remove right bonnet **5**.	
(5) Remove bonnet B **6**.	

PREVIEW - YOUFIXTHIS.COM

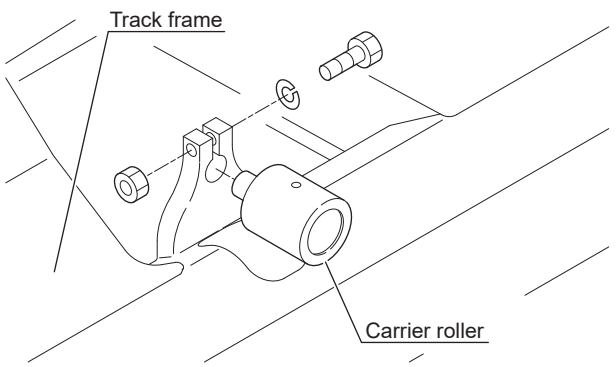
7-2-9 Disassembly and Reassembly of Carrier Roller

1) Structure

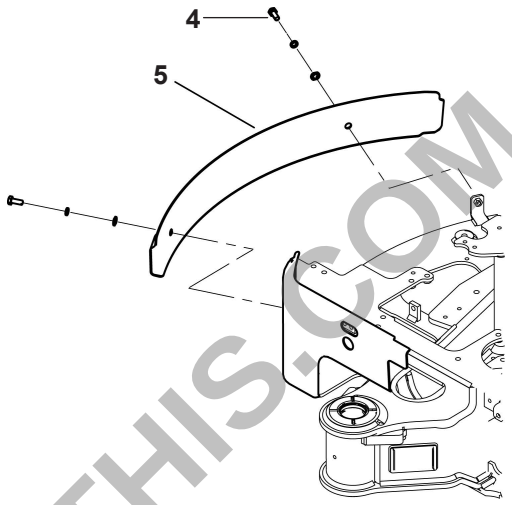
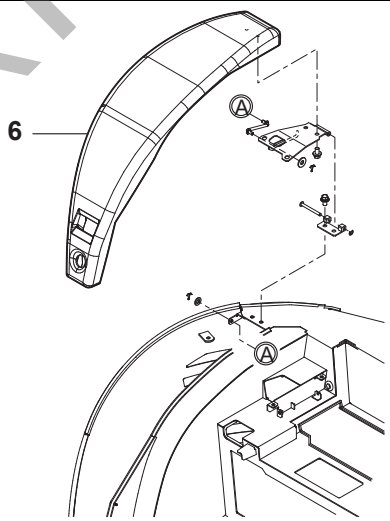
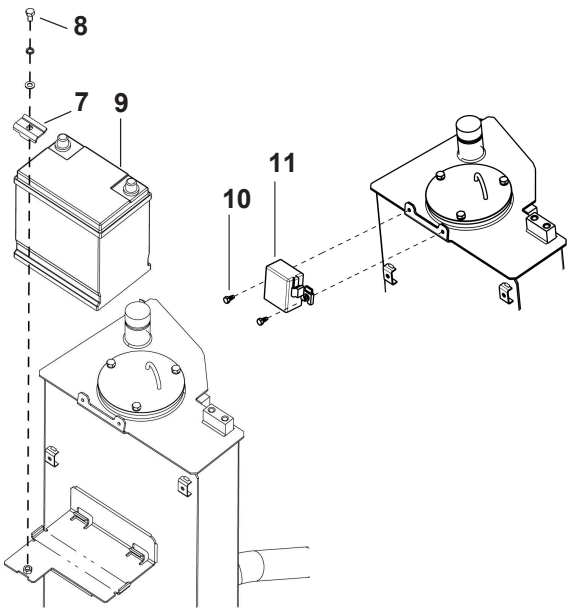


No.	Part	Q'ty	No.	Part	Q'ty
1	Carrier roller	1	6	Bearing (6205)	1
2	Screw plug R 1/8	1	7	Bearing (6205U)	1
3	Internal snap ring C (52)	1	8	Oil seal	1
4	Plug (52)	1	9	Shaft	1
5	External snap ring C (25)	1	10	Collar	1

2) Disassembly

Procedure	
(1) Loosen tightening bolt for carrier roller assembly to remove roller from track frame. ***Note:*** *Put a wedge into slit in bracket to remove roller smoothly.*	

PREVIEW - YOUFIXTHIS.COM

Procedure	
(4) Loosen the bolts **4** to remove frame guard R **5**.	
(5) Remove bonnet B **6**.	
(6) Disconnect the battery and loosen the bolt holding battery bracket **7** and then loosen the battery bolt **8** to remove the battery **9**. (7) Loosen bolts **10** to remove the fuse box **11** (included in the harness A) mounted on hydraulic oil tank.	

PREVIEW - YOUFIXTHIS.COM

PREVIEW ONLY

You're viewing 25 of 529 pages

The full manual includes:

- All 529 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

Yanmar ViO27-6 Service Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual