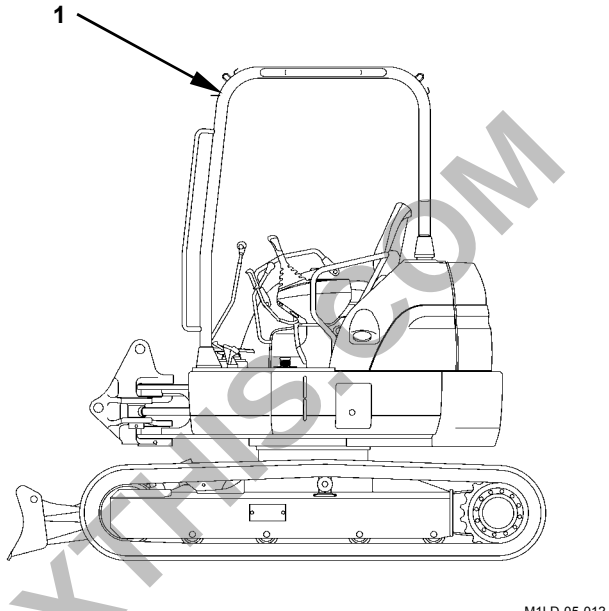
REMOVE AND INSTALL CANOPY

Removal

CAUTION: Canopy weight: 74 kg (160 lb)

1. Remove bolts (2) (2 used), washers (3) (2 used) and plugs (4) (2 used) from the frame.
2. Remove bolts (5) (2 used), washers (3) (2 used) from the frame.
   Lift canopy (1) off the frame.

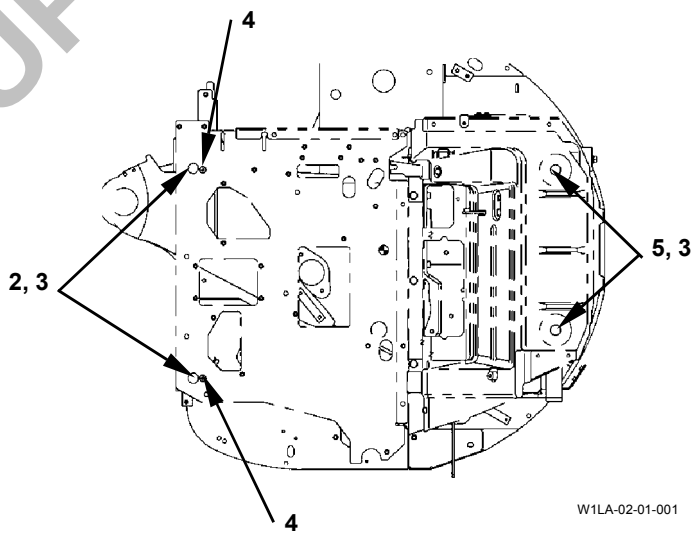


M1LD-05-012

Installation

CAUTION: Canopy weight: 74 kg (160 lb)

1. Lift the canopy (1) and put it on the frame. Install canopy (1) to the frame with bolts (2) (2 used), bolts (5) (2 used), washers (3) (4 used) and plugs (4) (2used).
   : 24 mm
   : 210 N·m (21.5 kgf·m, 155 lbf·ft)



W1LA-02-01-001

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

TIGHTENING TORQUE SPECIFICATIONS

No.	Descriptions		Bolt Dia. mm	Q'ty	Wrench Size mm	Torque		
						N·m	(kgf·m)	(lbf·ft)
1.	Engine cushion rubber mounting bolt		12	4	19	88	(9)	(65)
2.	Engine bracket mounting bolt (Front)		10	8	17	49	(5)	(36)
	Engine bracket mounting bolt (Rear)		10	6	17	49	(5)	(36)
3.	Hydraulic oil tank mounting bolt		12	4	19	88	(9)	(65)
4.	Fuel tank mounting nut		10	2	17	20	(2)	(15)
5.	Metal face seal fitting for hydraulic hoses and piping		PF 1/8		19	29.5	(3)	(22)
			PF 3/8		22	39	(4)	(29)
			PF 1/2		27	64	(6.5)	(47)
	ORS fitting for hydraulic hoses and piping		9/16 UNF		19	44	(4.5)	(32)
			11/16 UNF		22	74	(7.5)	(55)
			13/16 UNF		27	103	(10.5)	(76)
6.	Pump mounting bolt		12	2	19	88	(9)	(65)
7.	Pump cover mounting bolt	ZX27U	10	6	17	49	(5)	(36)
		ZX30U, ZX35U	10	8	17	49	(5)	(36)
8.	Control valve mounting bolt		10	4	17	49	(5)	(36)
	Control valve base mounting bolt		10	4	17	49	(5)	(36)
9.	Swing device mounting bolt		14	6	22	137	(14)	(101)
10.	Battery mounting nut		6	2	10	5	(0.5)	(3.5)
11.	Canopy mounting bolt		16	4	24	205	(21)	(152)
12.	Cab mounting bolt		16	4	24	205	(21)	(152)
13.	Swing bearing mounting bolt to upperstructure		12	24	19	108	(11)	(80)
	Swing bearing mounting bolt to undercarriage		12	20	19	108	(11)	(80)
14.	Travel device mounting bolt	ZX27U	12	18	19	108	(11)	(80)
		ZX30U, ZX35U	12	24	19	108	(11)	(80)
15.	Sprocket mounting bolt	ZX27U	12	18	19	108	(11)	(80)
		ZX30U, ZX35U	12	24	19	108	(11)	(80)
16.	Upper roller mounting bolt		16	2	24	235	(24)	(173)
17.	Lower roller mounting bolt		14	16	22	175	(18)	(130)
18.	Cover mounting bolt		6		10	5	(0.5)	(3.5)
			8		13	9.8	(1)	(7)
			10		17	49	(5)	(36)
19.	Counterweight mounting bolt		22	2	32	540	(55)	(398)
20.	Front pin-retaining bolts		10		17	49	(5)	(36)
			12		19	88	(9)	(65)
			14		22	137	(14)	(101)
			16		24	205	(21)	(152)
			18		27	390	(40)	(290)
21.	Side-cutter mounting bolts		14	6	22	175	(18)	(130)

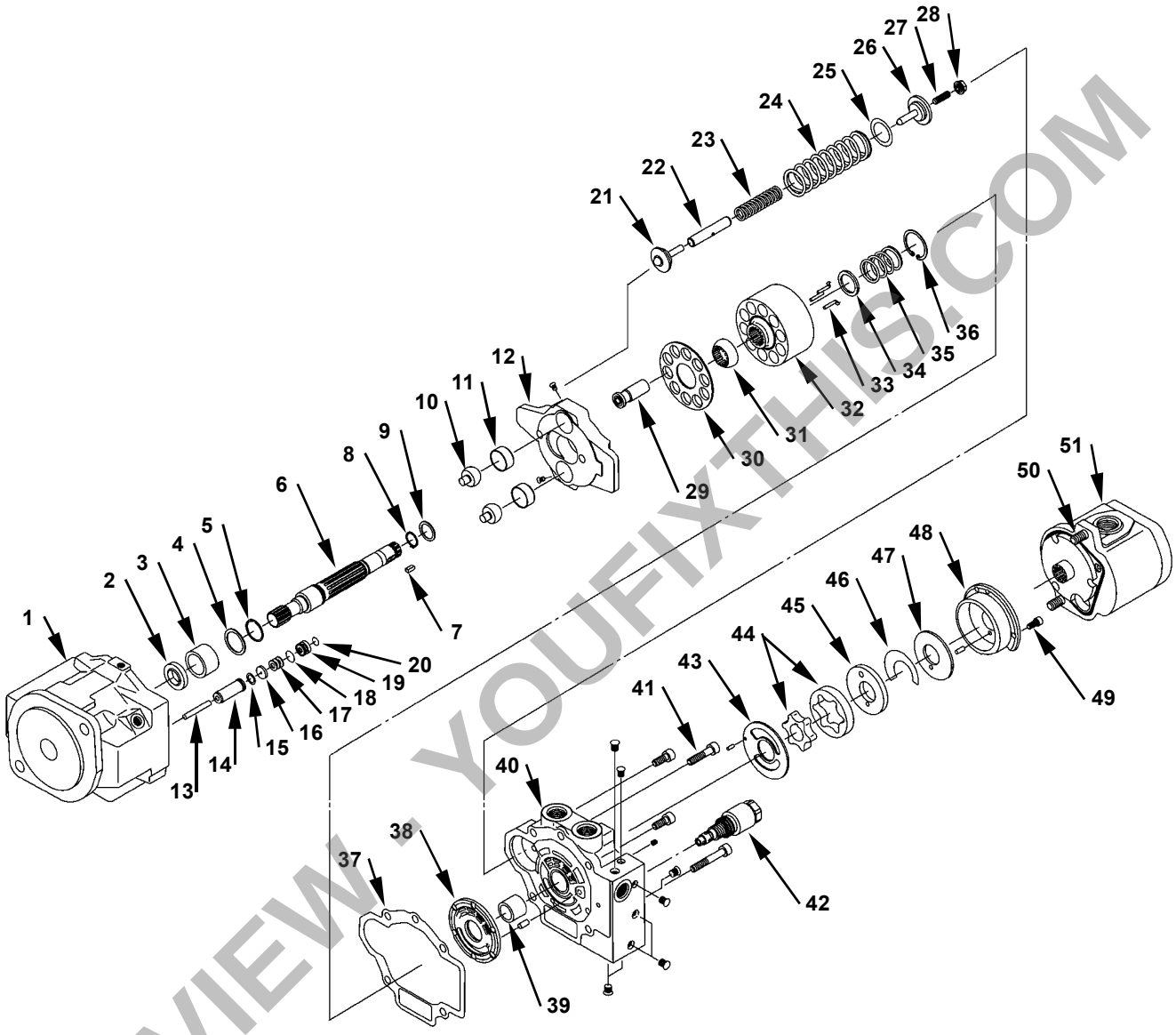
NOTE: (1) Apply lubricant (i.e. white zinc B dissolved into spindle oil) to reduce their friction coefficients.

(2) Remove rust, dirt, and dust before installing fasteners.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

DISASSEMBLE PUMP DEVICE (ZAXIS27U)



W574-02-03-003

1 - Case
2 - Oil Seal
3 - Bearing
4 - Shim
5 - Ring
6 - Shaft
7 - Key
8 - Retaining Ring
9 - Shim
10 - Guide (2 Used)
11 - Bushing (2 Used)
12 - Swash Plate
13 - Pin
14 - Sleeve
15 - Shim
16 - Distance Piece
17 - Coned Disc Spring
18 - O-Ring
19 - Piston
20 - O-Ring
21 - Spring Seat
22 - Guide
23 - Spring
24 - Spring
25 - Shim
26 - Spring Seat
27 - Set Screw
28 - Nut
29 - Plunger (10 Used)
30 - Retainer
31 - Holder
32 - Cylinder Block
33 - Pin (3 Used)
34 - Washer
35 - Spring
36 - Retaining Ring
37 - Packing
38 - Valve Plate
39 - Bearing
40 - Cover
41 - Socket Bolt (5 Used)
42 - Relief Valve
43 - Side Plate
44 - Gear
45 - Side Plate
46 - O-Ring
47 - Plate
48 - Case
49 - Socket Bolt (3 Used)
50 - Socket Bolt (2 Used)
51 - Gear Pump

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Manual No. : KM-1LAE
Vol. No. : W1LA-E-01

Workshop Manual

ZAXIS
27U
30U
35U
Excavator

Serial No. 007001 and up

Service Manual (Manual No. KM-1LAE) consists of the following two separate volumes;

Technical Manual	: Vol. No. T1LAE
Workshop Manual	: Vol. No. W1LAE

HITACHI

PREVIEW YOUFIXTHIS.COM

Download full manual at youfixthis.com

RECOGNIZE SAFETY INFORMATION

- This is the **SAFETY ALERT SYMBOL**.
  - When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.
  - Follow recommended precautions and safe operating practices.



001-E01A-0688

SA-688

UNDERSTAND SIGNAL WORDS

- On machine safety signs, signal words designating the degree or level of hazard - DANGER, WARNING, or CAUTION - are used with the safety alert symbol.
  - **DANGER** indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
  - **WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
  - **CAUTION** indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
  - **DANGER or WARNING safety signs** are located near specific hazards. General precautions are listed on **CAUTION safety signs**.
  - Some safety signs don't use any of the designated signal words above after the safety alert symbol are occasionally used on this machine.
- **CAUTION** also calls attention to safety messages in this manual.
- To avoid confusing machine protection with personal safety messages, a signal word **IMPORTANT** indicates a situation which, if not avoided, could result in damage to the machine.
- ***NOTE*** indicates an additional explanation for an element of information.



SA-1223

002-E01C-1223

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

Floating Seal Precautions

1. In general, replace the floating seal with a new one after disassembling.
   If the floating seal is to be reused, follow these procedures:

   (1) Keep seal rings together as a matched set with seal ring faces together. Insert a piece of cardboard to protect surfaces.

   (2) Check the slide surface on seal ring (A) for scuffing, scoring, corrosion, deformation or uneven wear.

   (3) Check O-ring (B) for tears, breaks, deformation or hardening.

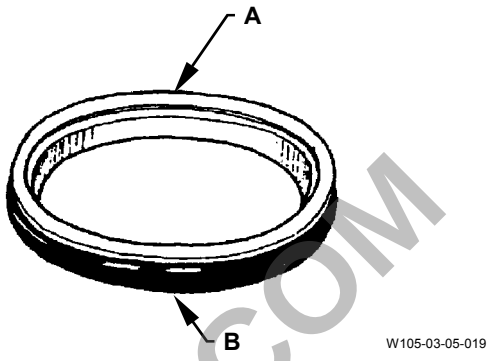
2. If incorrectly assembled, oil leakage or damage will occur. Be sure to do the following, to prevent trouble.

   (1) Clean the floating seal and seal mounting bores with cleaning solvent.
   Use a wire brush to remove mud, rust or dirt.
   After cleaning, thoroughly dry parts with compressed air.

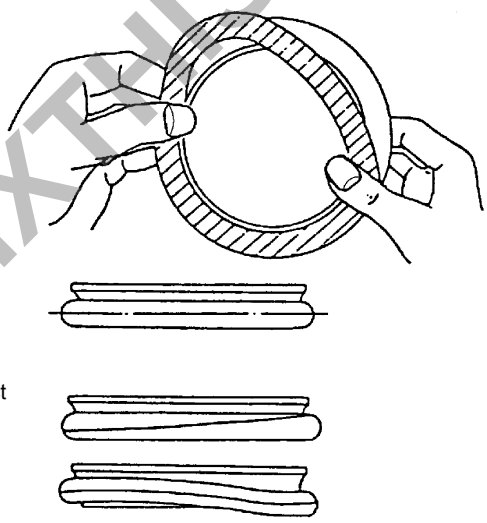
   (2) Clean the floating seal and seal mounting bores. Check the bore surface for scuffing or scoring by touching the surface with touch.

   (3) Check that the O-ring is not twisted, and that it is installed correctly on the seal ring.

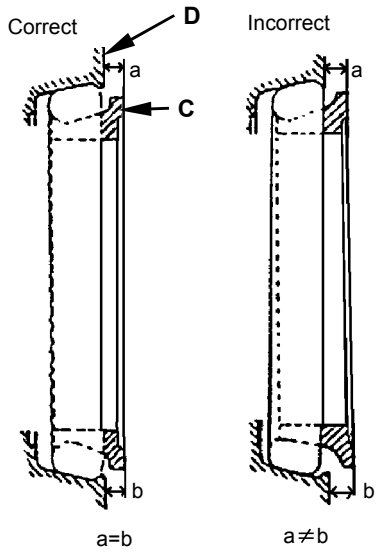
   (4) After installing the floating seal, check that seal ring surface (A) is parallel with seal mating face (C) by measuring the distances (A) and (C) at point (a) and (b), as illustrated. If these distances differ, correct the O-ring seating.



W105-03-05-019



W105-03-05-020

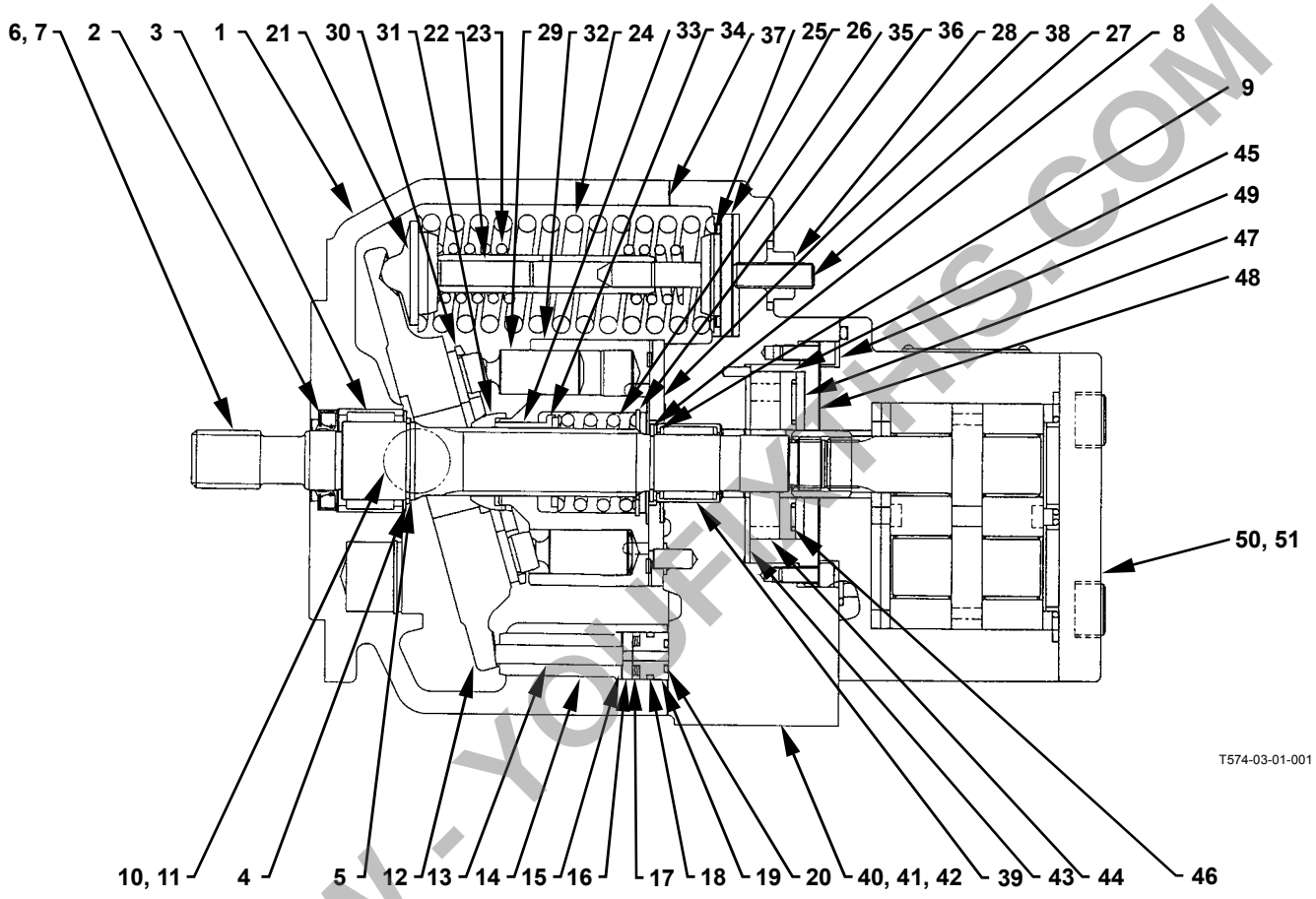


W110-03-05-004

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

ASSEMBLE PUMP DEVICE (ZAXIS27U)



1 - Case
2 - Oil Seal
3 - Bearing
4 - Shim
5 - Ring
6 - Shaft
7 - *Key
8 - Retaining Ring
9 - Shim
10 - *Guide (2 Used)
11 - *Bushing (2 Used)
12 - Swash Plate
13 - Pin
14 - Sleeve
15 - Shim
16 - Distance Piece
17 - Coned Disc Spring
18 - O-Ring
19 - Piston
20 - O-Ring
21 - Spring Seat
22 - Guide
23 - Spring
24 - Spring
25 - Shim
26 - Spring Seat
27 - Set Screw
28 - Nut
29 - Plunger (10 Used)
30 - Retainer
31 - Holder
32 - Cylinder Block
33 - Pin (3 Used)
34 - Washer
35 - Spring
36 - Retaining Ring
37 - Packing
38 - Valve Plate
39 - Bearing
40 - Cover
41 - *Socket Bolt (5 Used)
42 - *Relief Valve
43 - Side Plate
44 - Gear
45 - Side Plate
46 - O-Ring
47 - Plate
48 - Case
49 - Socket Bolt
50 - Socket Bolt (3 Used)
51 - Gear Pump (2 Used)

*NOTE: As for the item with *, refer to W2-3-6.*

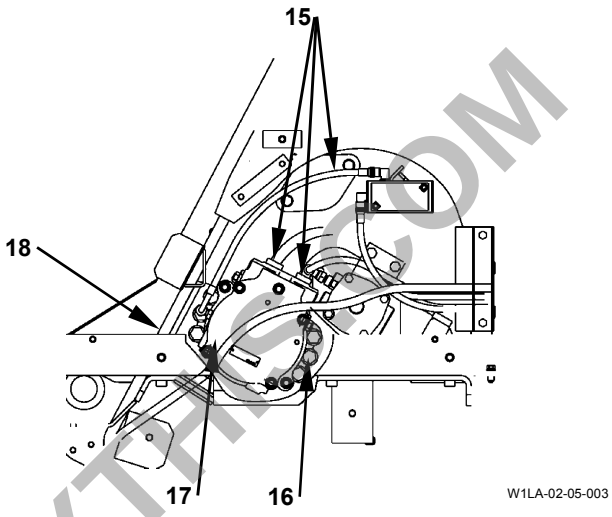
PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

Installation

CAUTION: Swing device (17) weight:
ZAXIS27U: 33 kg (73 lb)
ZAXIS30U, 35U: 38 kg (84 lb)

1. Hoist and install swing device (17) with bolts (16) (6 used).
   : 22 mm
   : 137 N·m (14 kgf·m, 101 lbf·ft)

2. Install hoses (15) (3 used) and (18) to swing device (17).
   : 19 mm
   : 29.5 N·m (3 kgf·m, 21.7 lbf·ft)
   : 22 mm
   : 39 N·m (4 kgf·m, 29 lbf·ft)

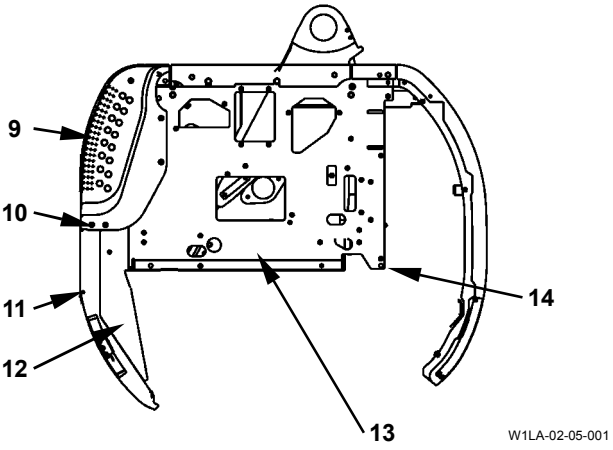


CAUTION: Floor plate (13) assembly
Weight: 95 kg (209 lb)

3. Hoist and install the floor plate (13) assembly with the seat onto the upperstructure with bolts (14) (6 used).
   : 13 mm
   : 20 N·m (2.0 kgf·m, 14.5 lbf·ft)

4. Install the pilot pipes and connectors in the pilot valve to the floor plate (13) assembly.

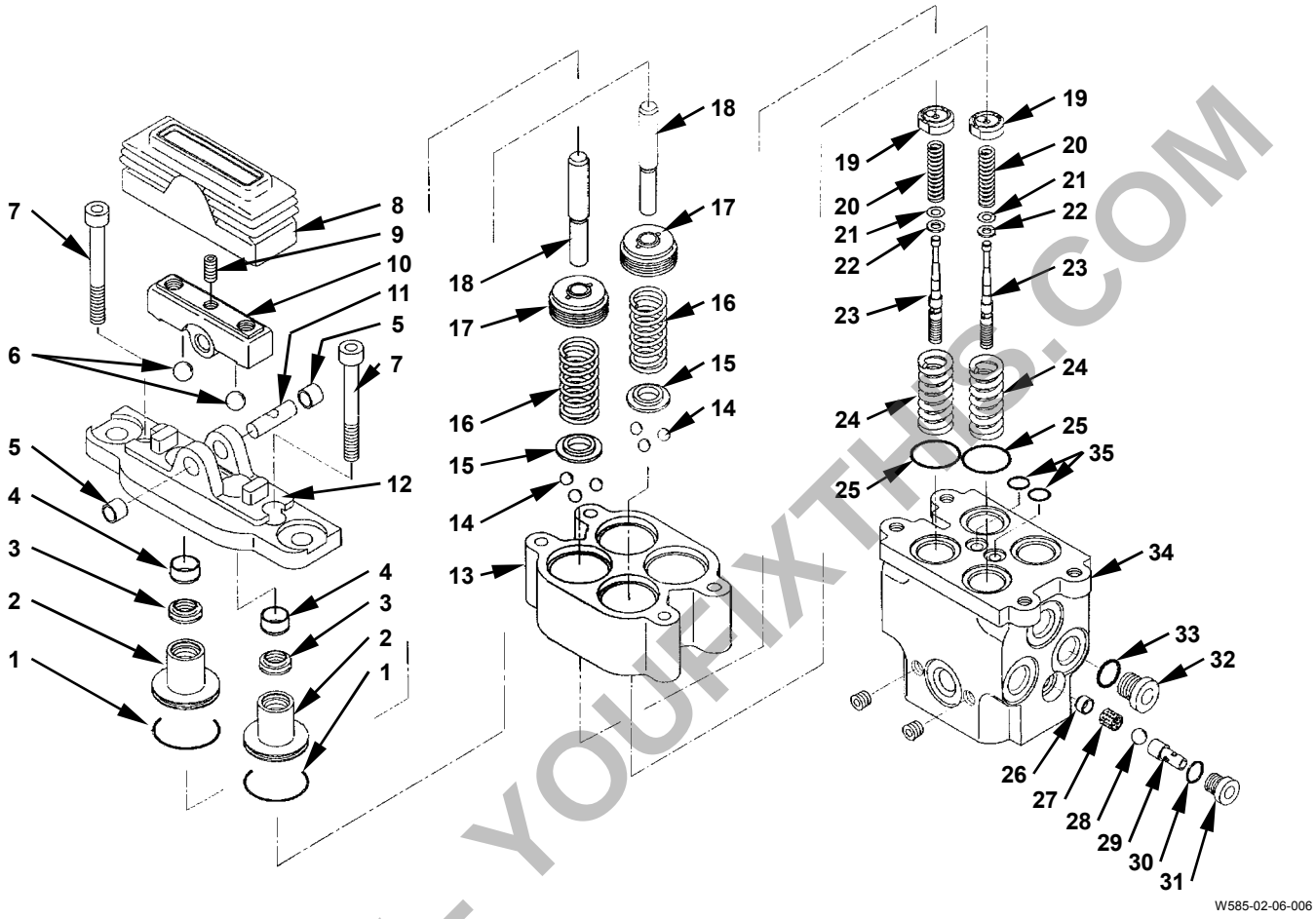
5. Install covers (9, 12) with bolts (11) (3 used) and (10) (5 used).
   : 13 mm
   : 20 N·m (2.0 kgf·m, 14.5 lbf·ft)



PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

DISASSEMBLE TRAVEL PILOT VALVE



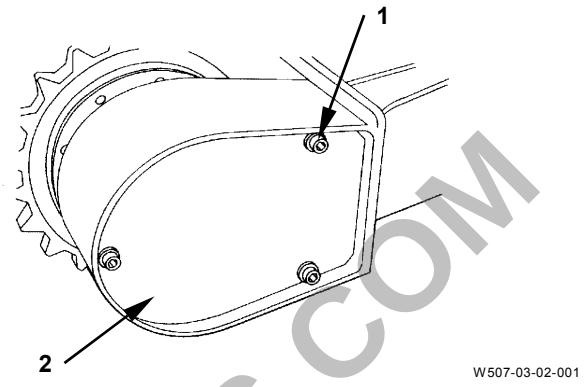
1 - O-Ring (4 Used)
2 - Bushing (4Used)
3 - Packing (4 Used)
4 - Grease Cup (4 Used)
5 - Bushing (4 Used)
6 - Steel Ball (4 Used)
7 - Socket Bolt (4 Used)
8 - Boot (2 Used)
9 - Set Screw (2 Used)
10 - Cam (2 Used)
11 - Pin (2 Used)
12 - Cover (2 Used)
13 - Casing
14 - Steel Ball (12 Used)
15 - Spring Seat (4 Used)
16 - Spring (4 Used)
17 - Piston (4 Used)
18 - Push Rod (4 Used)
19 - Spring Guide (4 Used)
20 - Spring (4 Used)
21 - Shim (4 Used)
22 - Washer (4 Used)
23 - Spool (4 Used)
24 - Spring (4 Used)
25 - O-Ring (4 Used)
26 - Seat (2 Used)
27 - Bushing (2 Used)
28 - Steel Ball (2 Used)
29 - Seat (2 Used)
30 - O-Ring (2 Used)
31 - Plug (2 Used)
32 - Plug (3 Used)
33 - O-Ring (3 Used)
34 - Casing
35 - O-Ring (2 Used)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

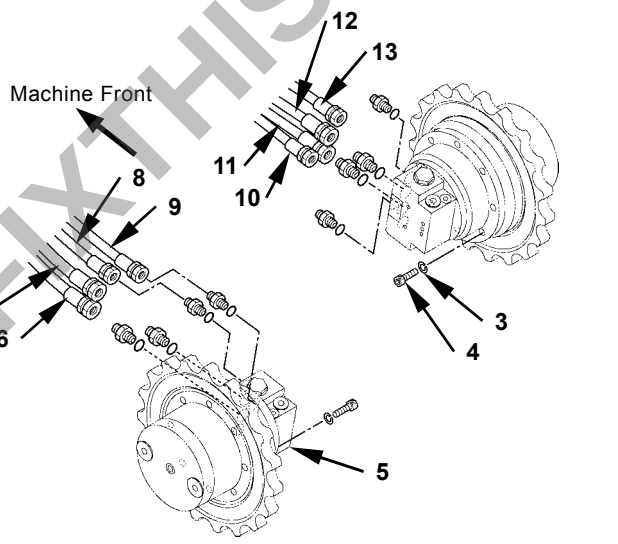
Removal

1. Remove socket bolts (1) (3 used). Remove cover (2).
   : 8 mm



W507-03-02-001

2. Remove hoses (6 to 13) from travel device (5). Cap the open ends. Attach an identification tag onto the removed hoses for assembling.
   : 19 mm, 22 mm, 27 mm



W1LA-03-02-005

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

（Blank）

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Disassemble Lower Roller

1. Remove plug (8) from collar (6). Drain engine oil from the roller.
   : 5 mm

IMPORTANT: Replace the axle (4) assembly as an assembly without disassembly.

2. Remove stopper ring(9) from collar (6). Remove the axle (4) assembly from roller (2) through collar (6) side by using a press.

IMPORTANT: For handling of floating seals (1, 5), refer to the section ″Precautions for floating seal handling" on page W1-1-4.

3. Remove collar(6) from roller (2). Remove floating seals (1, 5) from the both sides of roller (2).

IMPORTANT: Do not remove bushings (3) (2 used) from roller (2). In case bushing (3) must be replaced, replace the roller (2) assembly.

Assemble Lower Roller

IMPORTANT: For handling of floating seals (1, 5), refer to the section ″Precautions for floating seal handling" on page W1-1-4.

1. Install floating seal (1) to roller (2) and the axle (4) assembly. Install the axle (4) assembly in roller (2) through the side installing floating seal (1) by using a press.

2. Install floating seal (5) to roller (2) and collar (6).

3. Install O-ring (7) to axle (4). Align axle (4) and the stopper ring (9) mounting groove of collar (6). Install collar (6) and stopper ring (9) onto axle (4).

4. Add engine oil 35 mL (SAE30, class CD) through the plug(8) hole on collar (6).

5. Apply LOCTITE #503 to plug (8). Install plug (8) to collar (6).
   : 5 mm
   : 9.8 N·m (1 kgf·m, 7.2 lbf·ft)

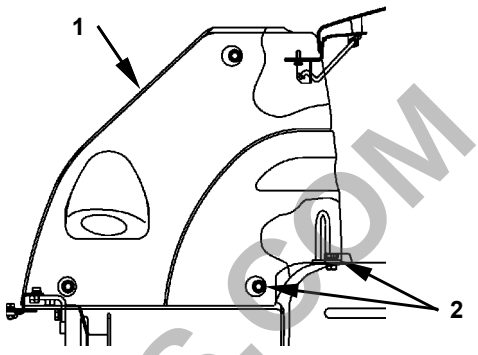
PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

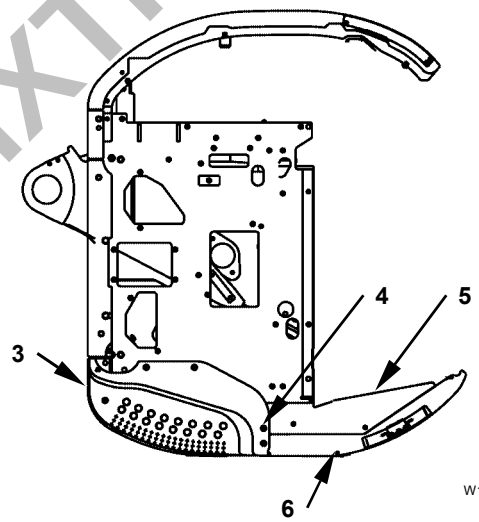
Remove Boom Swing Cylinder

CAUTION: Boom swing cylinder weight:
ZAXIS27U: 29 kg (64 lb)
ZAXIS30U, 35U: 34 kg (75 lb)

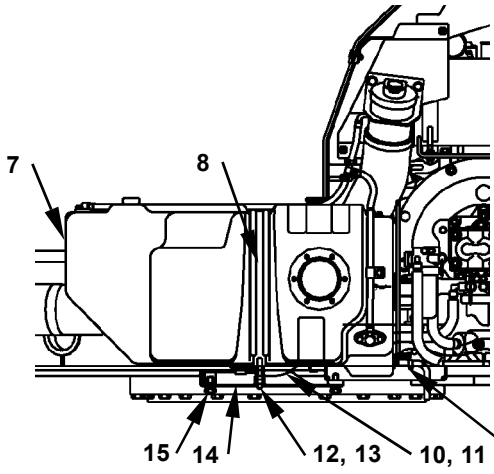
1. Remove bolts (2) (4 used). Remove cover (1) from left side of the machine.
   : 13 mm
2. Remove bolts (4) (5 used) and (6) (3 used). Remove covers (3, 5).
   : 13 mm
3. Before removing fuel tank (7), drain fuel through cock (9) and make fuel tank (7) empty.
4. Remove bolts (15) (2 used) and remove cover (14).
   : 17 mm
5. Remove bolts (12) and double nuts (13) (2 used). Remove band (8) from fuel tank (7).
   : 17 mm, 19 mm
6. Remove clamps (10) (2 used). Remove hoses (11) (2 used) from cock (9).
7. Remove fuel tank (7).



W1LA-04-02-006



W1LA-02-05-007



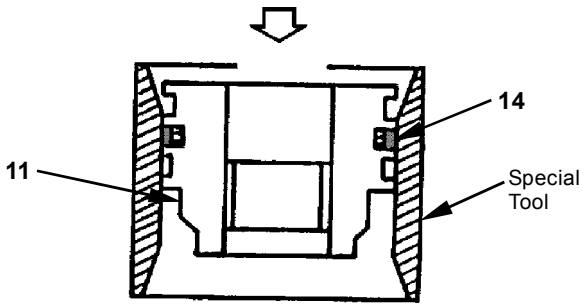
W1LA-04-02-007

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

IMPORTANT: If not adjusted seal ring (14), piston (11) can not be installed to cylinder tube (17).

6. Adjust seal ring (14) by using special tool.
   Special tool: ZAXIS27U: ST 2479
   ZAXIS30U, 35U: ST 2483



W566-04-02-011

7. Install slide rings (10, 16) to piston (11) in order not to align their split portions.

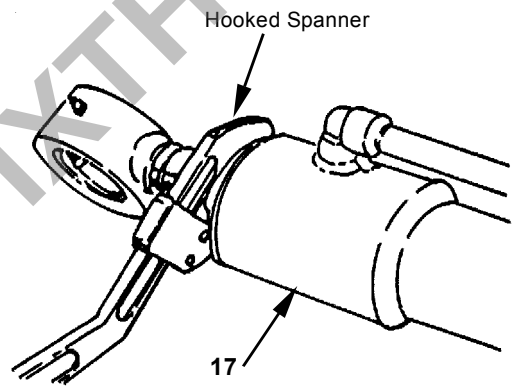
8. Wind a protective tape onto the thread of piston rod (1) in order to protect the cylinder head (3) seal. Rotate and install the cylinder head (3) assembly to piston rod (1).

9. Install the piston (11) assembly to piston rod (1).
   ZAXIS27U:
   : 540 N·m (55 kgf·m, 398 lbf·ft)
   ZAXIS30U, 35U:
   : 638 N·m (65 kgf·m, 471 lbf·ft)

10. Install steel ball (12) into piston (11). Install set screw (13). Crimp set screw (13) at two places by using a punch in order not to loosen.
    : 5 mm
    : 6.9 N·m (0.7 kgf·m, 5.1 lbf·ft)

11. Apply hydraulic oil onto the packing parts. Secure cylinder tube (17) horizontally in a vise. Insert the piston rod (1) assembly into cylinder tube (17) straightly in order not to damage.
    Do not fall off slide rings (10, 16) from piston (11).

12. Apply hydraulic oil onto the packing parts. Tighten cylinder head (3) to cylinder tube (17) by using a hooked spanner. Bend the lock washer in order not to loosen.
    Cylinder head (3) diameter:
    ZAXIS27U: 73 mm (2.87 in)
    : 286 N·m (29 kgf·m, 211 lbf·ft)
    ZAXIS30U, 35U: 78 mm (3.07 in)
    : 294 N·m (30 kgf·m, 217 lbf·ft)



W506-04-02-019

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

TIGHTENING TORQUE ON MAJOR COMPONENTS

1. COOLING FAN AND WATER PUMP

N·m (kgf·m/lb·ft)

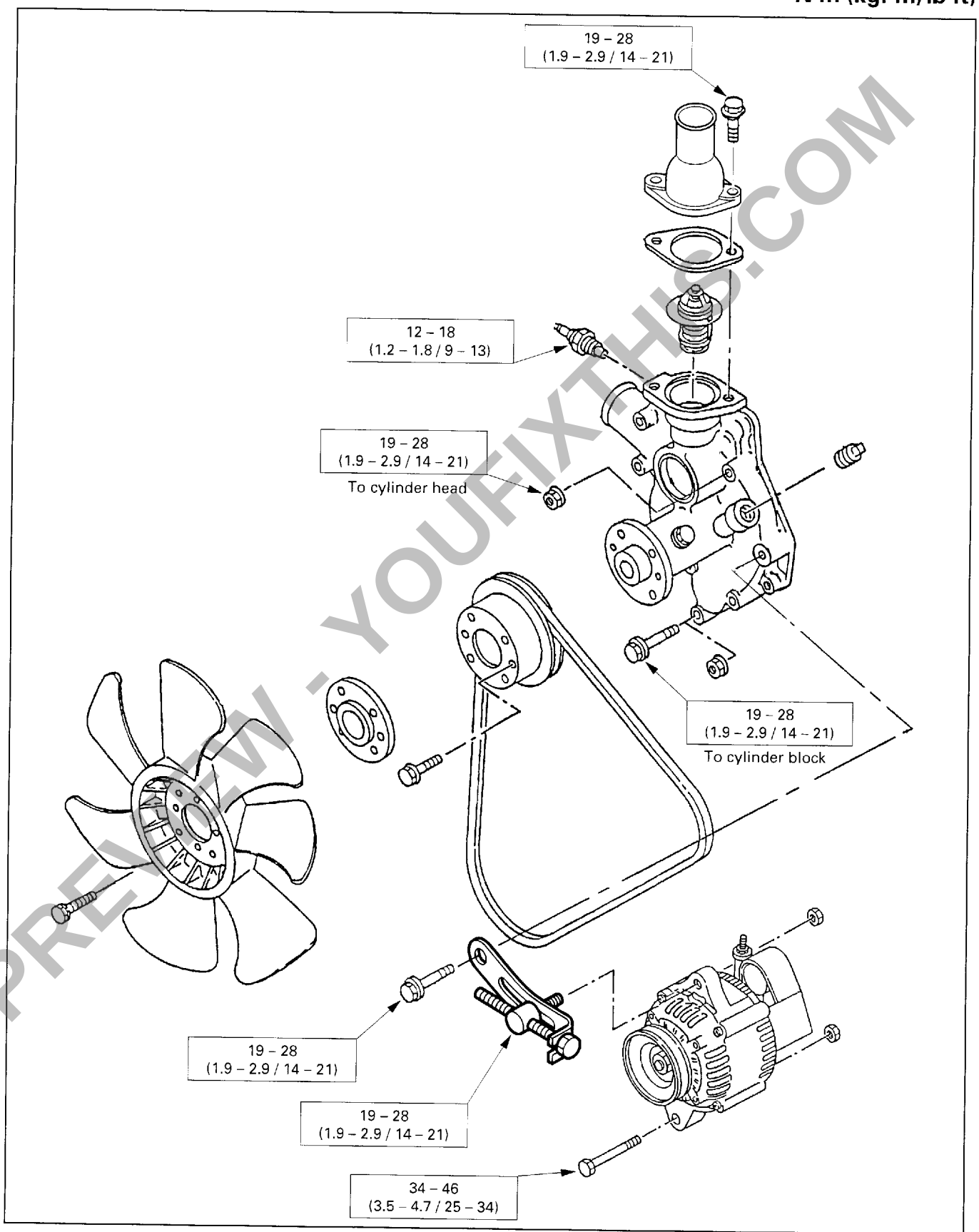


Fig. 10

FD6E100113

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

4. VALVE SPRING

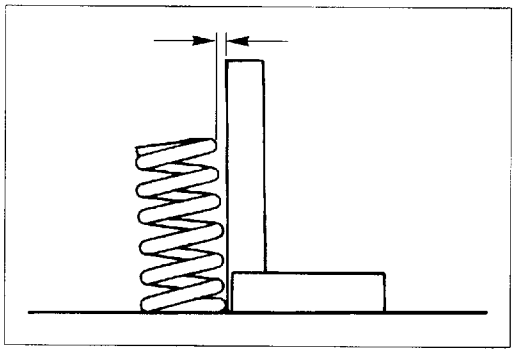


Fig. 69

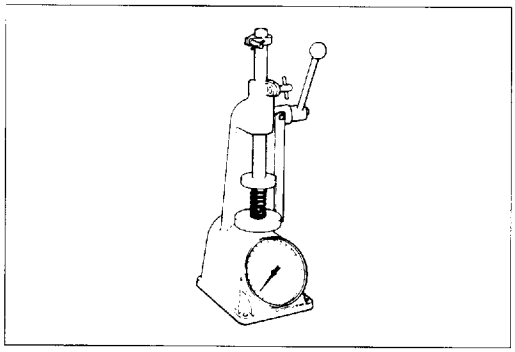


Fig. 70

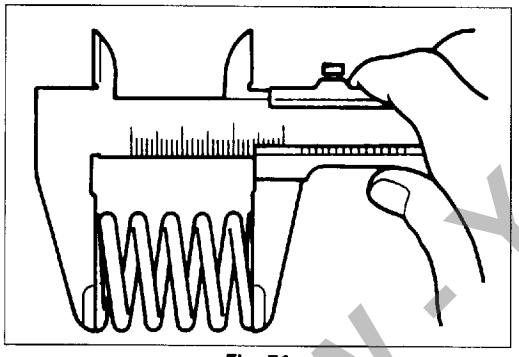


Fig. 71

Valve Spring Inclination

Use a surface plate and a square to measure the valve spring inclination.

If the measured value exceeds the specified limit, the valve spring must be replaced.

mm (in.)

	Standard	Limit
Valve Spring Inclination	1.8 (0.0709)	2.5 (0.0984)

Valve Spring Tension

Use a spring tester to measure the valve spring tension.

If the measured value is less than the specified limit, the valve spring must be replaced.

N (kgf)

	Standard	Limit
Valve Spring Tension at 29.9 mm Set Length	167 (17.0)	147 (15.0)

Valve Spring Free Length

Use a vernier caliper to measure the valve spring free length.

If the measured value is less than the specified limit, the valve spring must be replaced.

mm (in.)

	Standard	Limit
Exhaust and Intake Valve Spring Free Length	42.1 (1.6575)	40.0 (1.5748)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

SECTION 4

COOLING SYSTEM

TABLE OF CONTENTS

CONTENTS PAGE

COOLING WATER CIRCULATION SYSTEM DIAGRAM 80
WATER PUMP 81
THERMOSTAT 84

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

PREVIEW ONLY

You're viewing 17 of 447 pages

The full manual includes:

- All 447 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

Hitachi 27U, 30U, 35U, ZAXIS 27U, ZAXIS 30U, ZAXIS 35U Shop Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual