

Workshop Manual

EX5600-7B

Hydraulic Excavator

Tier 4 Final Cummins engine

EX5600-7B HYDRAULIC EXCAVATOR WORKSHOP MANUAL

WKGB91-EN-00

 Hitachi Construction Machinery Co., Ltd.

LOADER SPECIFICATIONS

Service Manual consists of the following separate Part No.
Technical Manual (Operational Principle) : Vol. No.TOKGB91-EN
Technical Manual (Troubleshooting) : Vol. No.TTKGB91-EN
Workshop Manual : Vol. No.WKGB91-EN

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SAFETY

Provide Signals for Jobs Involving Multiple Machines

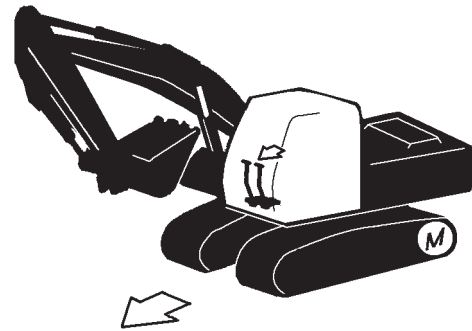
- For jobs involving multiple machines, provide signals commonly known by all personnel involved. Also, appoint a signal person to coordinate the job site. Make sure that all personnel obey the signal person's directions.



SA-481

Confirm Direction of Machine to Be Driven

- Incorrect travel pedal/lever operation may result in serious injury or death.
 - Before driving the machine, confirm the position of the undercarriage in relation to the operator's position. If the travel motors are located in front of the cab, the machine will move in reverse when travel pedals/levers are operated facing forwards.



SA-491

SAFETY

Check Emergency Engine Stop Switch:

- If a fire breaks out, failure to release pressurized air inside the hydraulic oil tank will escalate fire, hampering fire fighting.
 - Check the emergency engine stop switch function every 250 hours:
 - 1) Start the engine and run it at slow Idle.
 - 2) Press the emergency engine stop switch.
 - 3) Confirm that engine stops and that pressurized air inside the hydraulic oil tank is released (a hissing sound should be heard).
- If any abnormalities are found, be sure to repair them before operating the machine.

SECTION 1

GENERAL

CONTENTS

Group 1 Precautions for Disassembling and Assembling

Precautions for Disassembling
and AssemblingW1-1-1-1

Group 2 Tightening

Tightening Bolts and NutsW1-2-1-1
Piping JointW1-2-1-4

Group 3 Painting

PaintingW1-3-1-1

Group 4 Bleeding Air

Bleeding Air from Hydraulic Oil Tank.....W1-4-1-1
Bleeding Air from Hydraulic SystemW1-4-2-1
Bleeding Air from Fuel SystemW1-4-3-1
Bleeding Air from Water Tank.....W1-4-4-1

Group 5 Releasing Pressure

Releasing Pressure in Hydraulic Circuit.....W1-5-1-1

Group 6 Preparation

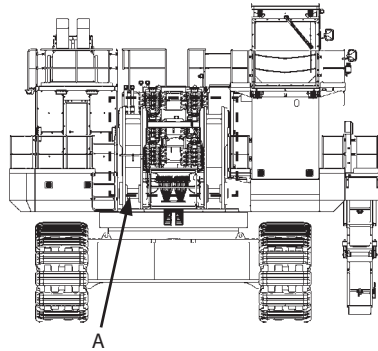
Preparation before Inspection
and Maintenance.....W1-6-1-1

SECTION 1 GENERAL

Group 3 Painting

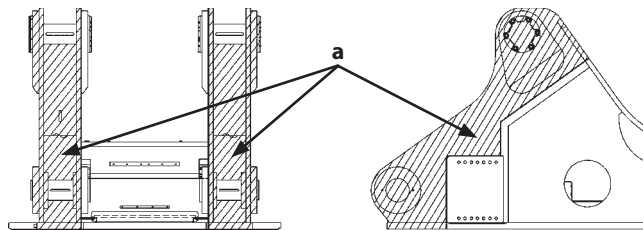
Painting

Machine Front Side



Detail A
Boom Foot Part

WKGB91-01-03-005



a- Shaded Area: Taxi Yellow (Gray for the parts other than the shaded area)

WKGB91-01-03-006

Surfaces to Be Painted		Painting Colour
Upperstructure		
Outside surface 1	Fuel Tank, Cab Bed, Water Tank, Oil Cooler Grill, Engine Grill, Engine Unit (except Left Engine Unit Inner Side Surface and Right Engine Unit Inner Side Surface), Main Frame Front Part	YR1-01 [Taxi Yellow]
Outside surface 2	Right and Left Fenders, Counterweight, Folding Stairway (including Switch Box Inside), Handrail, Step, Air Cleaner, Cab (except Around Cab Windows for Front, Right, and Left Side), Fuel Cooler	PB3-03 [High Grade Beige Deep]
Outside surface 3	Counterweight Bottom, Main Frame Bottom, Swing Device, Piping of Machine, Center Joint, Control Valve, Electric Pump (Hydraulic Oil), Hydraulic Oil Tank, Left Engine Unit Inner Side Surface (except Cab Bed), Right Engine Unit Inner Side Surface	N-40 [N4 Gray]
Outside surface 4	Oil Cooler Grill Stay, Radiator Grill Stay, Radiator, Fan Net	N-10 [Black]
Outside surface 5	Muffler, Muffler Cover, Exhaust System Parts	M/F Beige Deep
Outside surface 6	Cab (Around Cab Windows for Front, Right, and Left Side)	N-30 [N3 Gray]
Inside surface 1	Engine Compartment, Pump Compartment, Grease Tank, Cab Bed, Battery Box	N-40 [N4 Gray]
Inside surface 2	Cab (except Cab Floor), DEF Tank	M/F Beige Deep
Inside surface 3	Cab Floor	HK Gray
Front Attachment		
except Bucket		YR1-01 [Taxi Yellow]
Bucket		N-10 [Black]
Track (including Swing Bearing)		N-10 [Black]

SECTION 2

MAINTENANCE STANDARD

CONTENTS

Group 1 Upperstructure

Pump Device	W2-1-1-1
Swing Motor	W2-1-2-1

Group 2 Undercarriage

Travel Motor	W2-2-1-1
Drive Tumbler	W2-2-2-1
Front Idler	W2-2-3-1
Upper Roller	W2-2-4-1
Lower Roller	W2-2-5-1
Track.....	W2-2-6-1

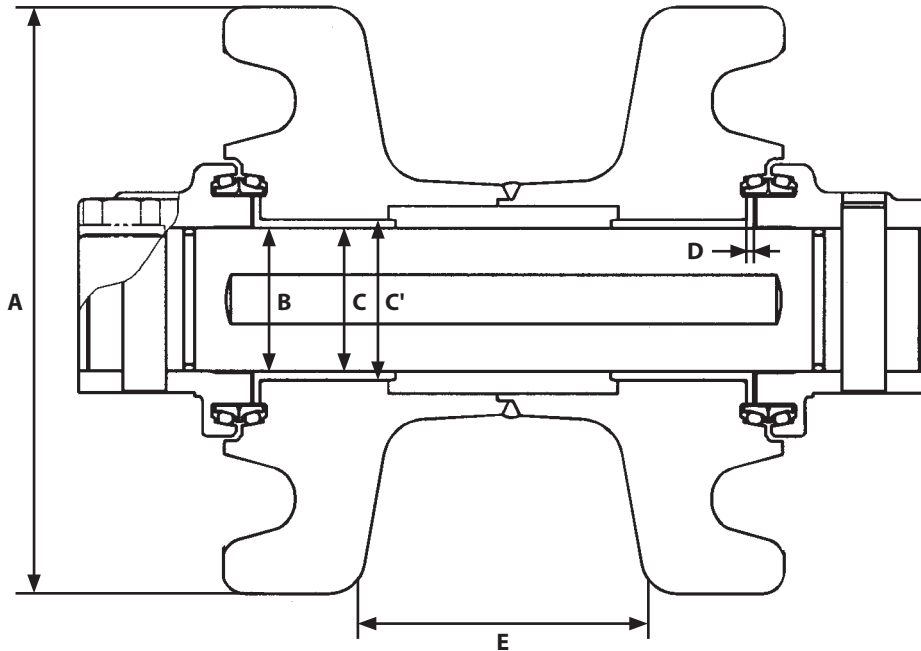
Group 3 Loader Front Attachment

Pin and Bushing.....	W2-3-1-1
Point, Shroud.....	W2-3-2-1
Cylinder	W2-3-3-1

SECTION 2 MAINTENANCE STANDARD

Group 2 Undercarriage


Upper Roller



W118-03-07-005

Unit: mm (in)

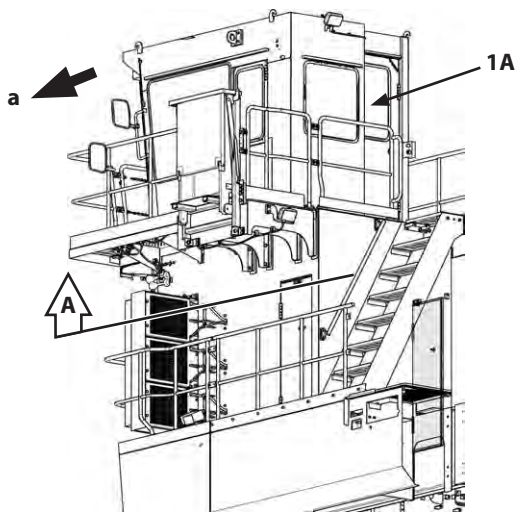
	Item	Standard	Allowable Limit	Remedy
A	Roller (Outer Diameter)	410 (16.1)	398 (15.7)	Repair or Replace
B	Axle (Outer Diameter)	100 (3.94)	[98 (3.86)]	Replace
C	Bushing (Inner Diameter)	100 (3.94)	[103 (4.06)]	Replace
C'	Bushing (Outer Diameter)	112 (4.41)	-	Replace
D	Bushing (Flange Thickness)	6.0 (0.24)	[4.5 (0.18)]	Replace
E	Tread Interval	200 (7.87)	-	-

 **NOTE:** As for repair, refer to *Welding Repair Procedure (W4-11-3)* and the pattern drawings attached in the back of this book.

The values in [] are for reference only.

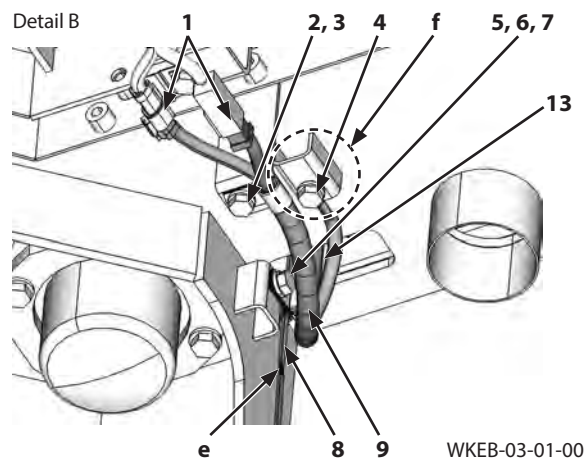
SECTION 3 UPPERSTRUCTURE

Group 1 Cab



a- Machine Front Side

TKGB-01-02-004

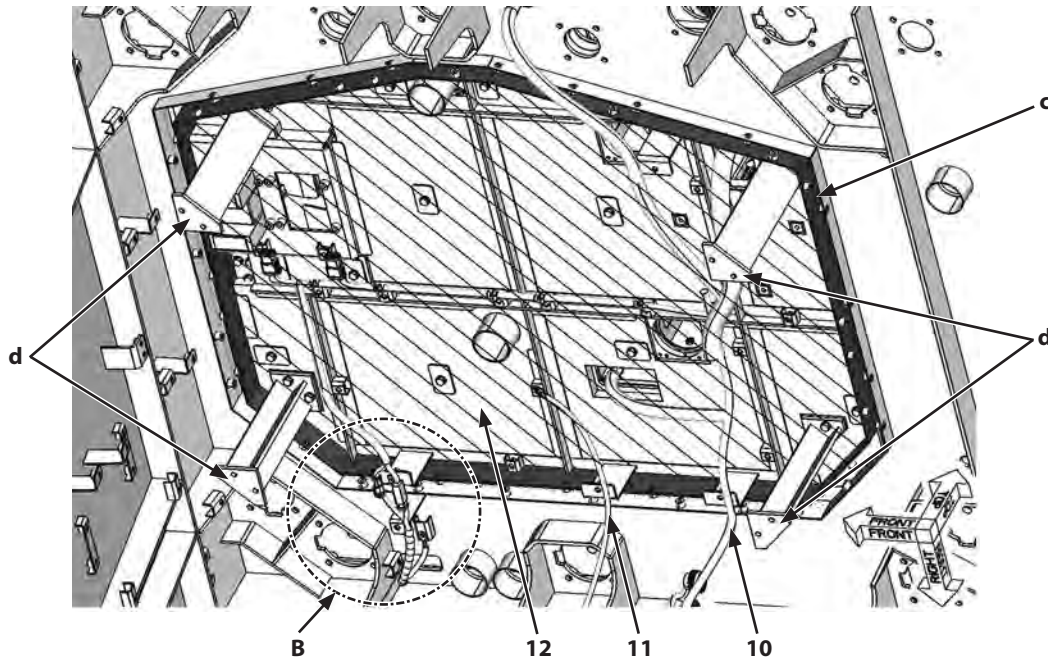


e- Valve

f- Ground Cable Mounting Surface

WKEB-03-01-009

Section A



c- Plate at Cab (1A) Side

d- Bottom of Bracket

WKEB-03-01-008

- Secure wire harness (10) which is disconnected in step 1 to step 2 on the back of cab floor (12).

NOTE: Secure wire harness (10) in the shaded area inside plates (c) at the cab (1A) side. At this time, prevent wire harness (10) from protruding from bottom (d) of the bracket.

- Remove bolt, washer (2). Remove clip (3).

: 17 mm

- Remove bolt, washer (4).

: 17 mm

- Remove bolt, washer (5). Remove clips (6, 7). Disconnect ground cable (13).

: 17 mm

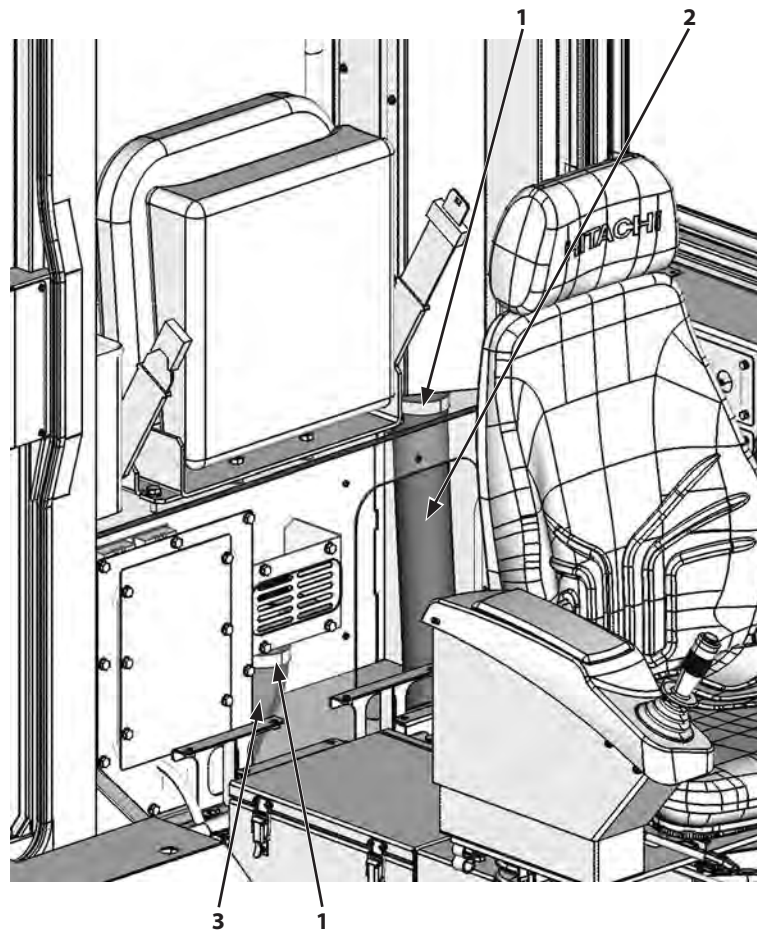
- Disconnect connectors (1) (2 used).

- Disconnect washer hose (8) at the valve (e) part.

NOTE: Pull wire harness (9) which is disconnected in step 4 to step 7 and washer hose (8) which is disconnected in step 8 toward the cab (1A) side during the work for cab (1A).


SECTION 3 UPPERSTRUCTURE


Group 1 Cab



WKEB-03-01-023

4. Connect duct hoses (2, 3) with clamps (1) (2 used).

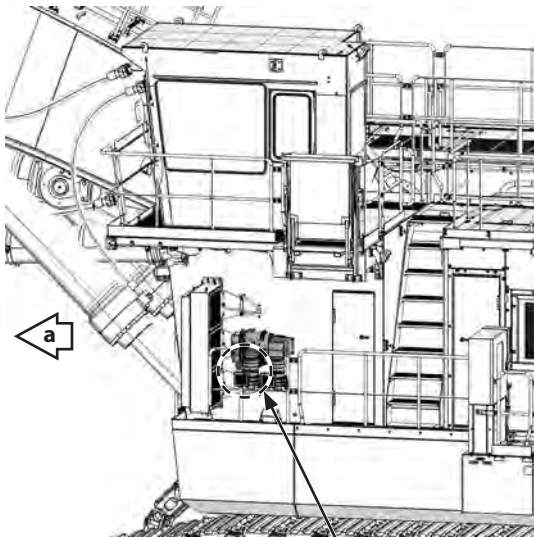
 : 10 mm

 : 4 N·m (3.0 lbf·ft)

SECTION 3 UPPERSTRUCTURE

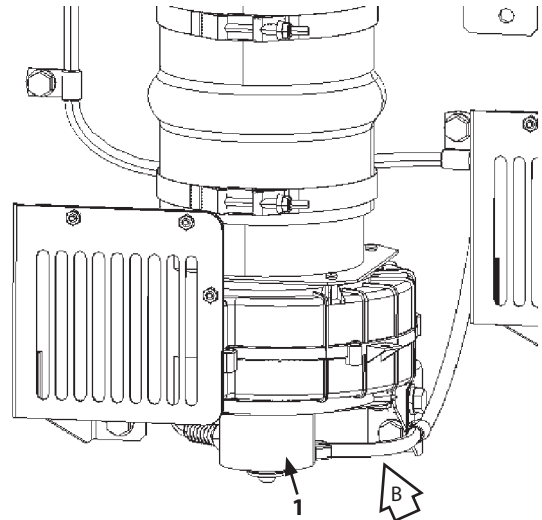
Group 2 Cab Bed

Removal and Installation of Cab Bed Blower Motor



A WKGB91-03-02-101

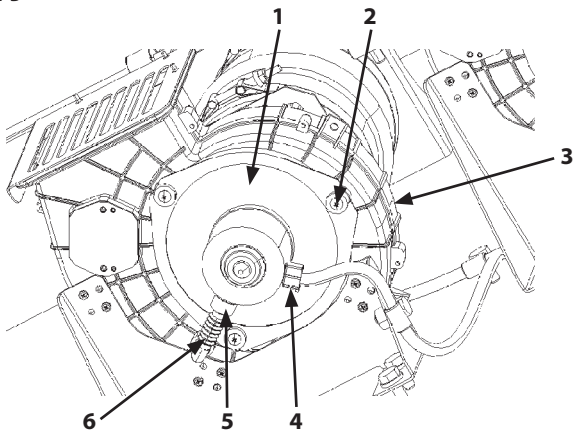
Detail A



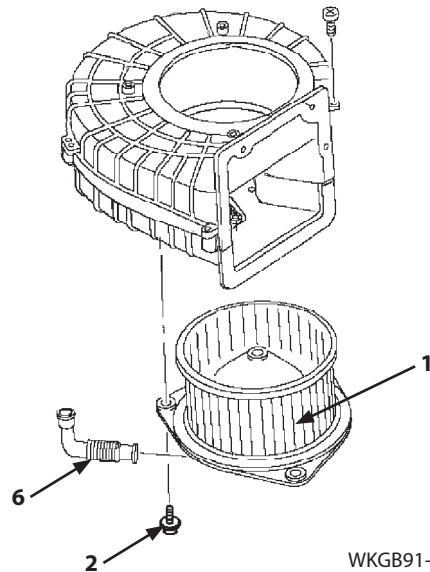
WKEB-03-02-002

a- Machine Front Side

View B



WKEB-03-02-003



WKGB91-03-02-001

Removal


- There are two blower motors (1) located inside the cab bed.
1. Set the machine for inspection and maintenance. Stop the engine. Turn OFF the isolation switch. (Refer to W1-6-1.)
 2. Disconnect connector (4).
 3. Remove clamp (5). Disconnect hose (6).
 4. Remove screws (2) (3 used). Remove the blower motor (1) assembly from case (3).

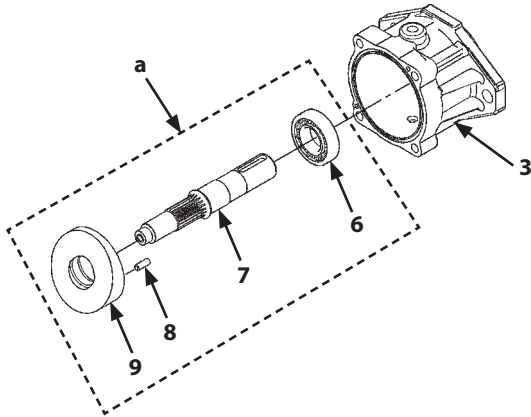
SECTION 3 UPPERSTRUCTURE

Group 2 Cab Bed

IMPORTANT: Do not damage swash plate (9) and shaft (7).

9. Remove swash plate assembly (a) from case (3).

 **NOTE:** When swash plate assembly (a) cannot be removed, tap the end surface of shaft (7) by using a plastic hammer.



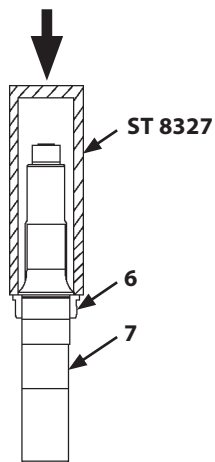
WKEB-03-02-104

a- Swash Plate Assembly

IMPORTANT: Do not damage swash plate (9) and shaft (7).

10. Remove the outer race of roller bearing (6), shaft (7), pin (8), and swash plate (9) from swash plate assembly (a).

11. Remove the inner race of roller bearing (6) from shaft (7) by using a press and special tool (ST 8327).

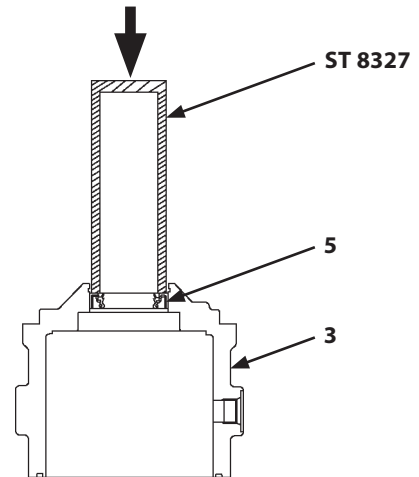


WKEB-03-02-105

12. Remove retaining ring (2) from case (3).

IMPORTANT: Oil seal (5) cannot be reused.

13. Remove oil seal (5) from case (3) by using a press and special tool (ST 8327).



WKEB-03-02-106

14. Remove the outer race of roller bearing (22) from rear cover (23).

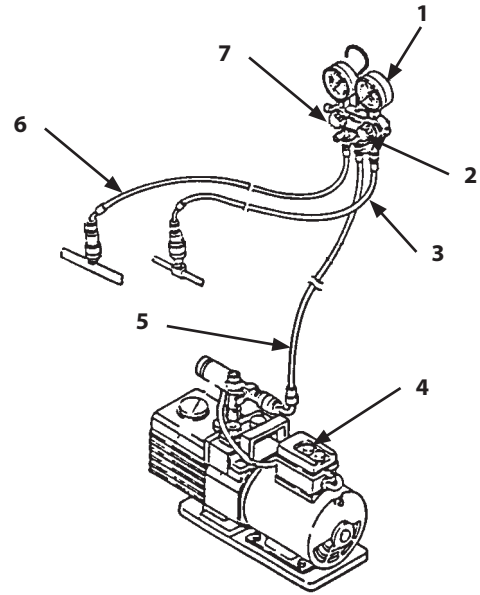
SECTION 3 UPPERSTRUCTURE

Group 2 Cab Bed

Procedures for charging air conditioner with refrigerant

IMPORTANT: Do not mistake the charge hose connections.

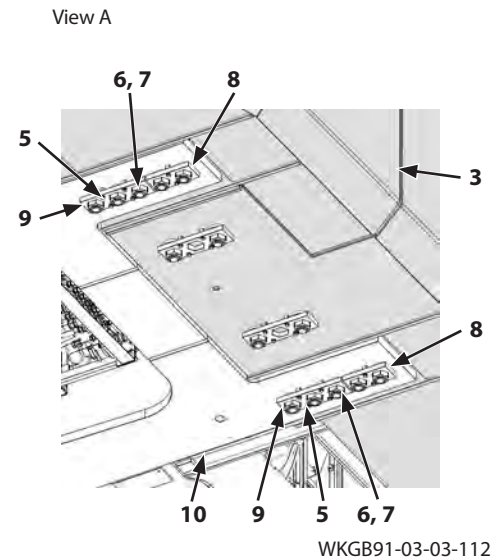
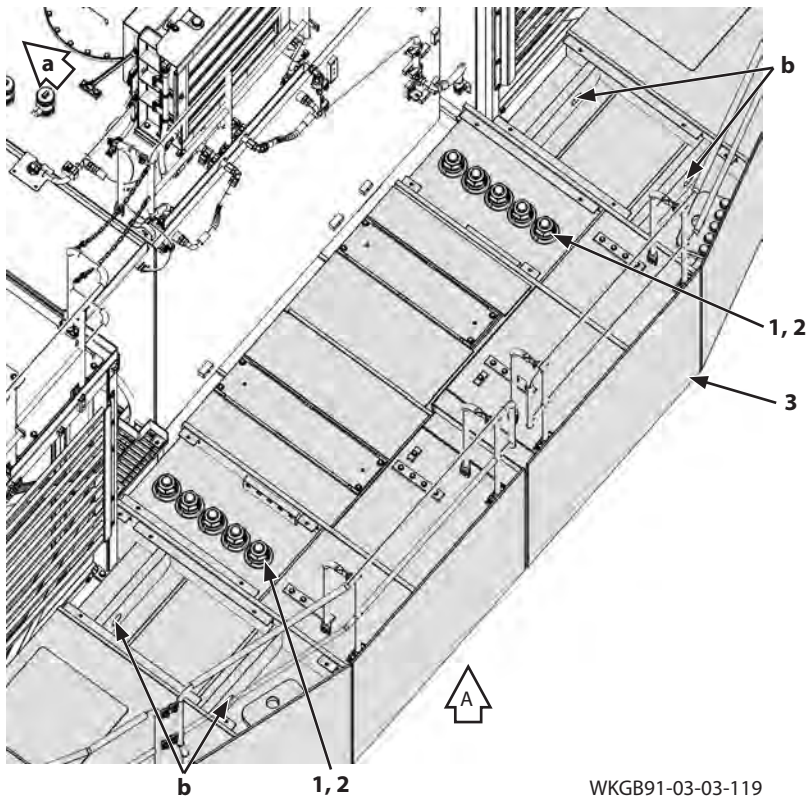
1. Close high pressure valve (2) and low pressure valve (7) on manifold gauge (1). Connect the high-pressure side charge hose (3) of manifold gauge (1) to the high-pressure side charge valve ("H" marked) of the compressor. Connect the low-pressure side charge hose (6) of manifold gauge (1) to the low-pressure side charge valve ("L" marked) of the compressor. Connect charge hose (5) located on the center of manifold gauge (1) to vacuum pump (4).
2. Open high pressure valve (2) and low pressure valve (7) on manifold gauge (1). Perform purging for 10 minutes or more by operating vacuum pump (4).



W115-02-10-005

SECTION 3 UPPERSTRUCTURE

Group 3 Counterweight



a- Machine Front Side

b- Lifting Hole

WKGB91-03-03-119

Installation

CAUTION: The counterweight (3) assembly weight: 48600 kg (107200 lb)

1. Install shackles (4 used) to lifting holes (b) (4 places). Attach wire ropes onto the shackles (4 used). Hoist the counterweight (3) assembly.


CAUTION: Bolt (1) weight: 27 kg (60 lb)

2. Move the counterweight (3) assembly to machine front side (a). Install the counterweight (3) assembly to main frame (10).

IMPORTANT: Apply lubricant to bolt (1).


IMPORTANT: Install washer (7) to bolt (1) with the groove surface down.

3. Install the counterweight (3) assembly with bolts (1) (10 used), washers (2, 7) (10 used for each), and nuts (6) (10 used).

 : 85 mm

 : 6860 N·m (5060 lbf·ft)

4. Install stoppers (8, 9) with bolts, washers (5) (6 used).

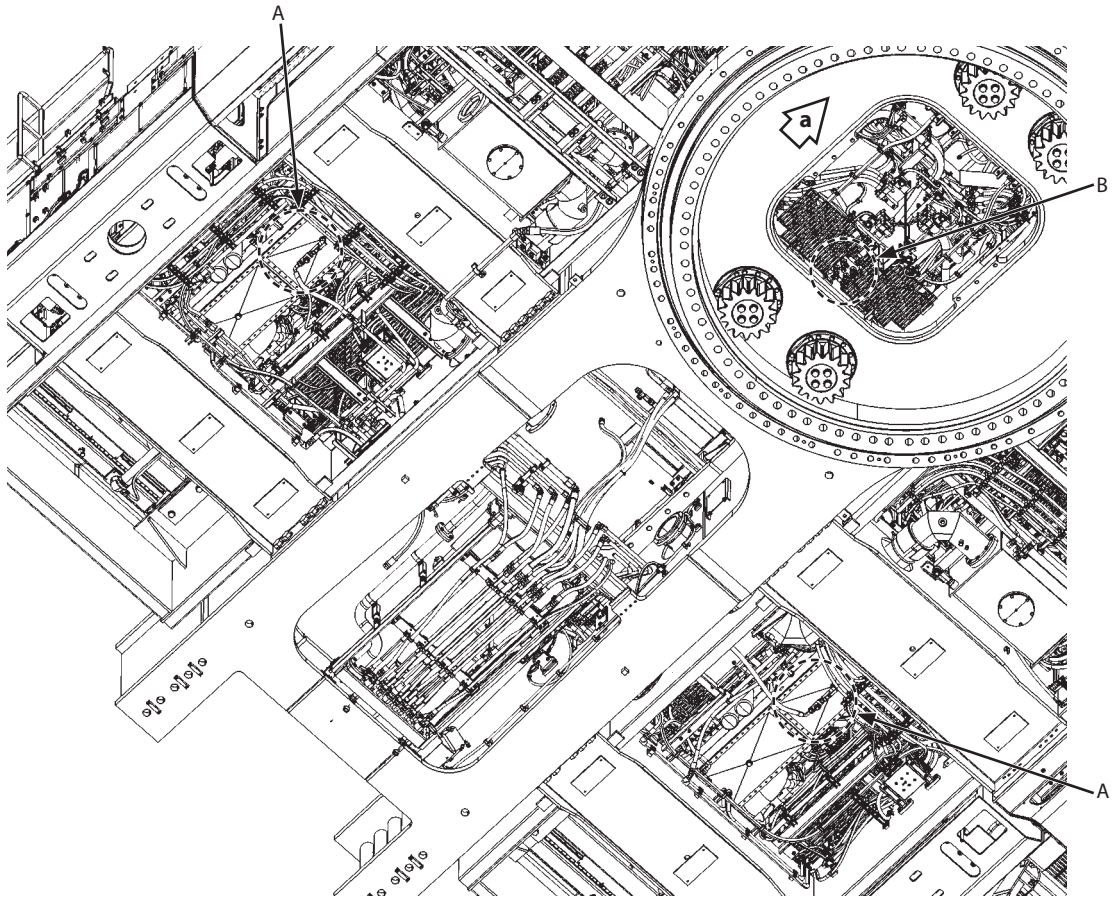
 : 19 mm

 : 90 N·m (66 lbf·ft)

5. Install other stoppers (8, 9) in the same way as step 4.

SECTION 3 UPPERSTRUCTURE

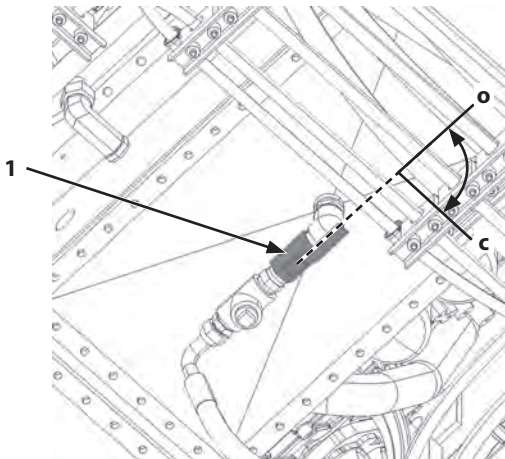
Group 4 Upperstructure



WKGB91-03-04-112

a- Machine Front Side

Detail A

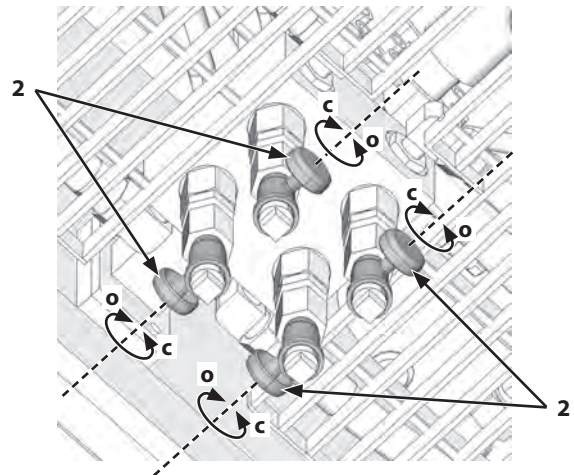


WKGB91-03-04-113

c- Close Position

o- Open Position

Detail B



WKGB91-03-04-114

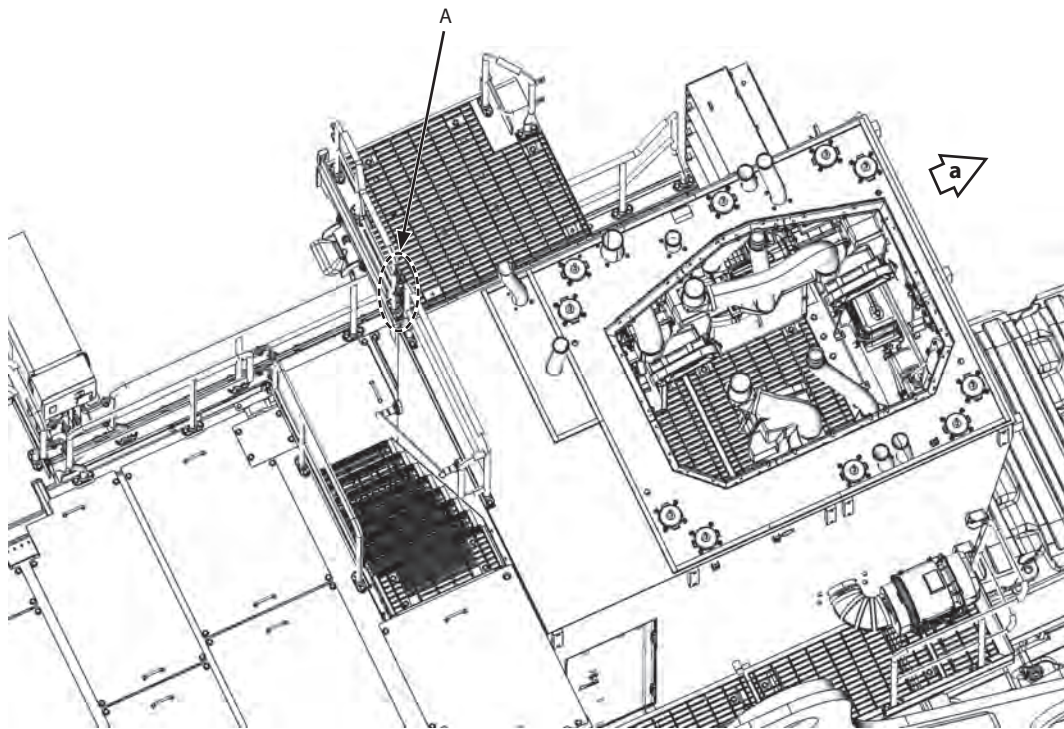
c- Close Position

o- Open Position

7. Close valves (1) (2 used) and valves (2) (4 used).

SECTION 3 UPPERSTRUCTURE

Group 4 Upperstructure




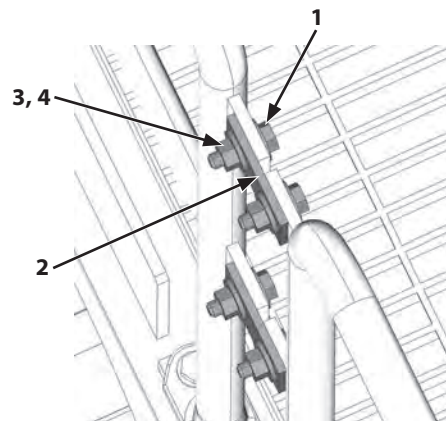
WKGB91-03-04-148

a- Machine Front Side

25. Remove bolts, washers (1) (4 used), nuts (3) (4 used), washers (4) (4 used), and plates (2) (2 used).

Detail A

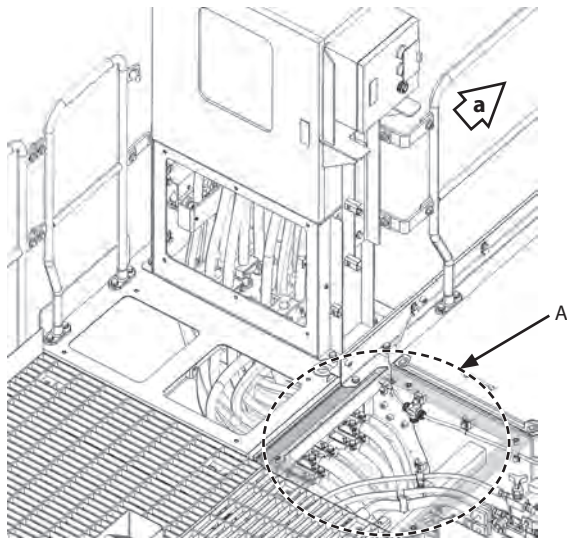
 : 19 mm



WKGB91-03-04-149

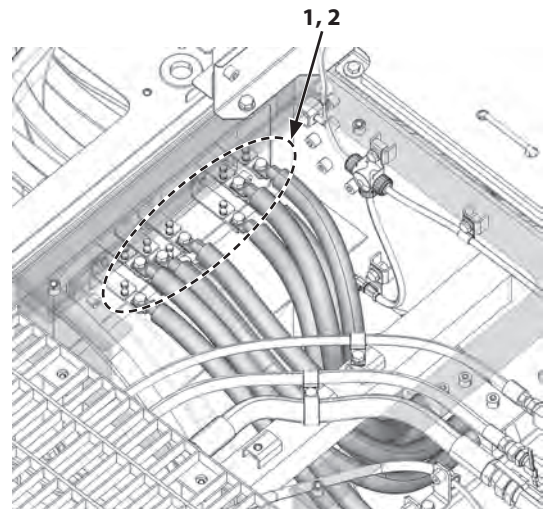
SECTION 3 UPPERSTRUCTURE

Group 4 Upperstructure



WKGB91-03-04-185


Detail A




WKGB91-03-04-186

a- Machine Front Side

69. Remove bolts, washers (1) (10 used). Disconnect terminals (2) (10 used).

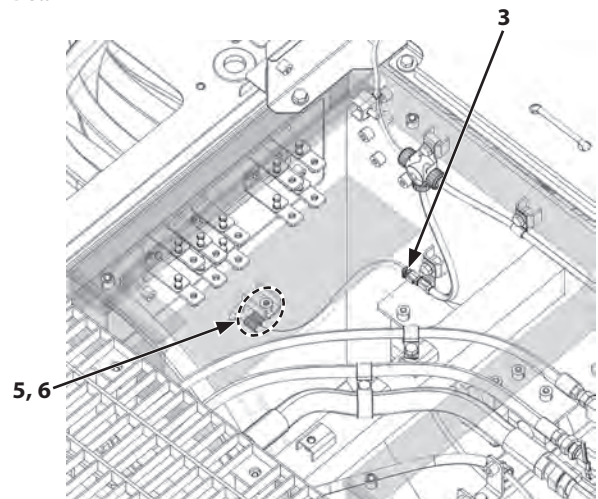
 : 17 mm

70. Remove bolt, washer (5) and clip (6).

 : 17 mm

71. Disconnect connector (3).

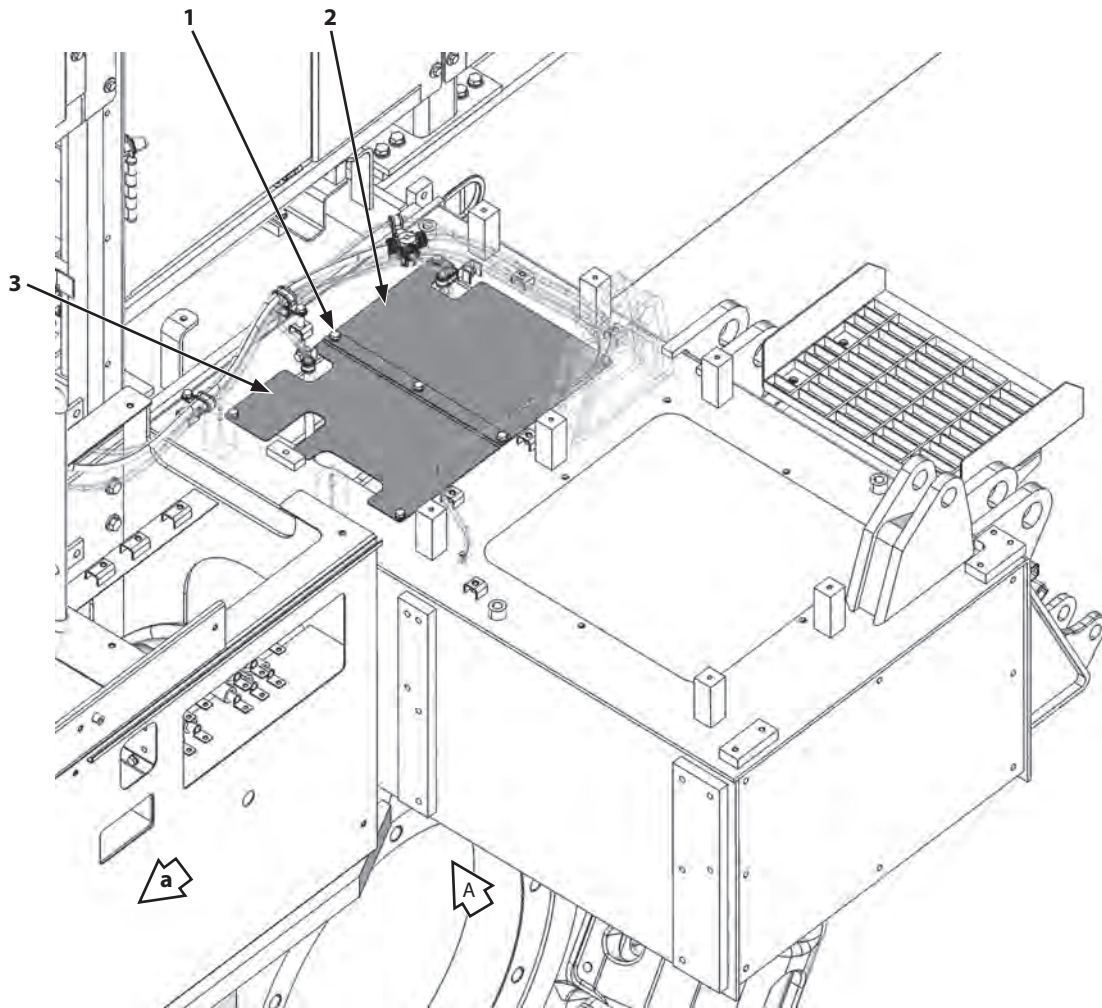
Detail A



WKGB91-03-04-187

SECTION 3 UPPERSTRUCTURE


Group 4 Upperstructure




WKGB91-03-04-218

a- Machine Front Side

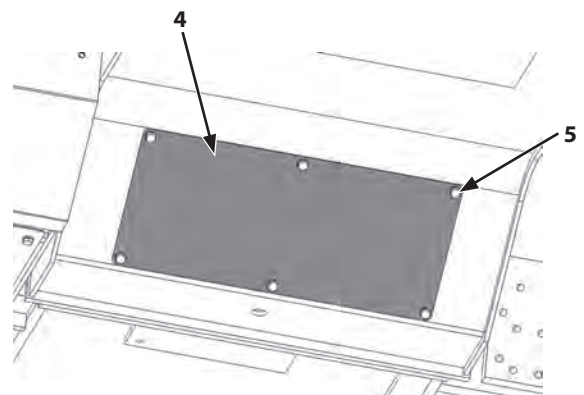
16. Remove bolts, washers (1) (7 used). Remove covers (2, 3).

 : 17 mm

17. Remove bolts, washers (5) (6 used). Remove cover (4).

 : 17 mm

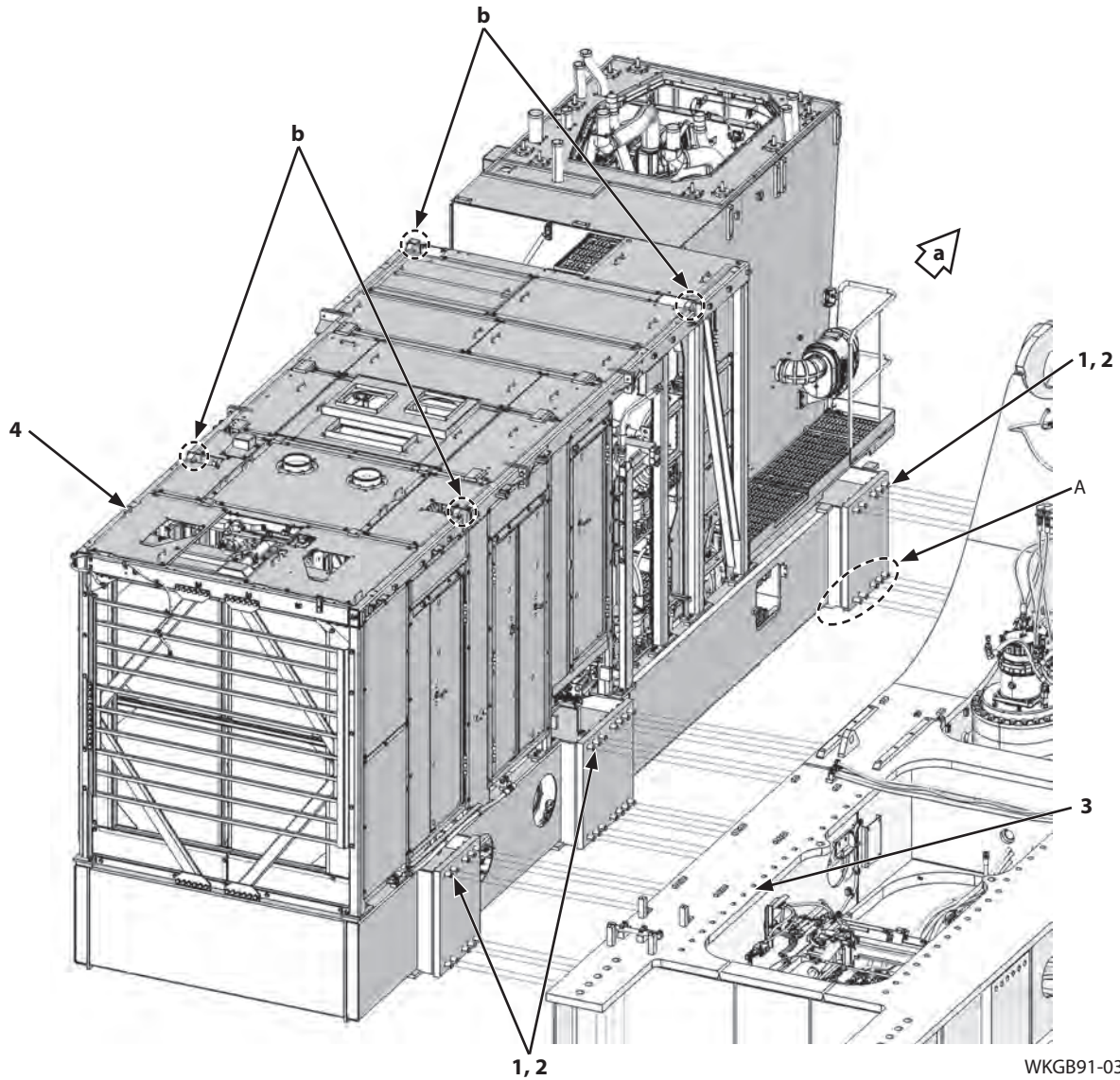
View A



WKGB91-03-04-219

SECTION 3 UPPERSTRUCTURE

Group 4 Upperstructure



WKGB91-03-04-255


a- Machine Front Side

b- Lifting Hole

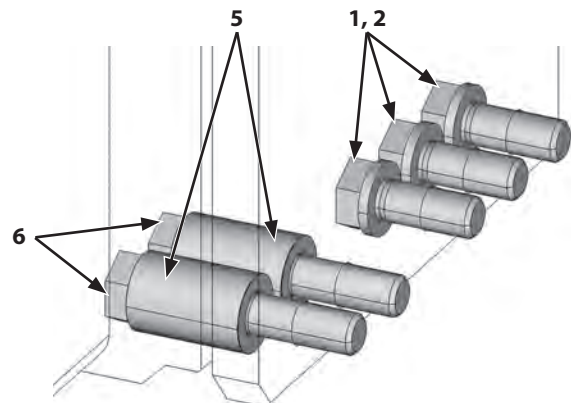
Removal of Left Engine Unit

CAUTION: Left engine unit (4) weight: 27200 kg (60000 lb)

1. Install shackles (4 used) to lifting holes (b) (4 places). Attach nylon slings onto the shackles (4 used). Hoist and hold left engine unit (4).
2. Remove bolts (1) (32 used), bolts (6) (2 used), washers (2) (32 used), and spacers (5) (2 used). Remove left engine unit (4) from main frame (3).

 : 65 mm

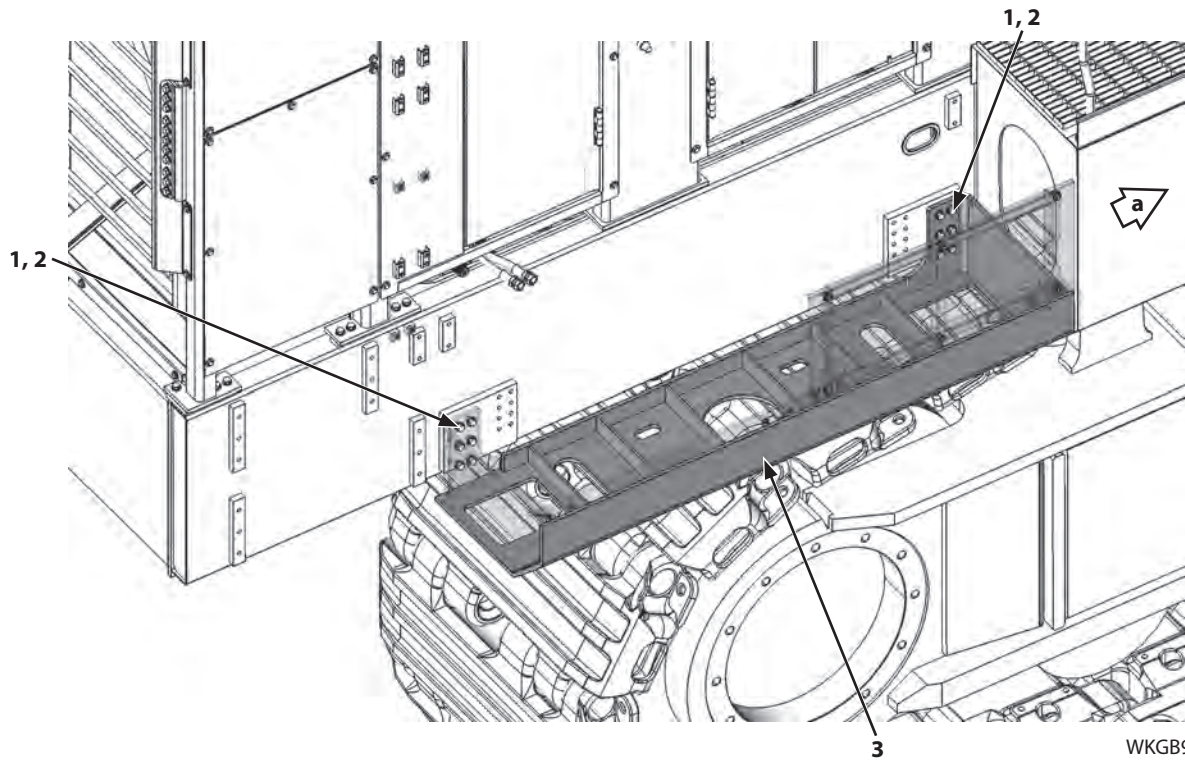
Detail A



WKGB91-03-04-256

SECTION 3 UPPERSTRUCTURE

Group 4 Upperstructure




a- Machine Front Side

WKGB91-03-04-284

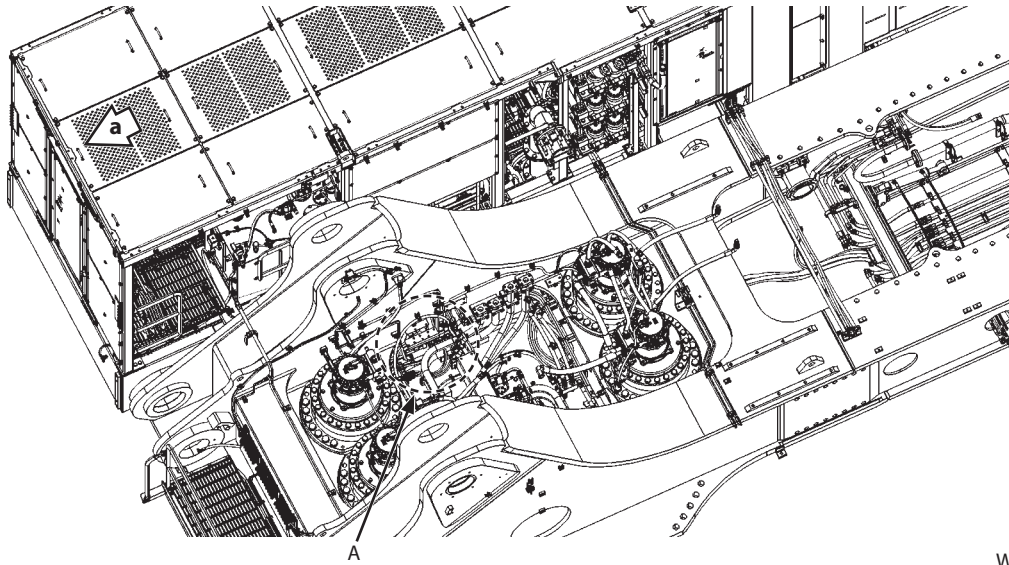
⚠ CAUTION: The guard (3) assembly weight: 375 kg (830 lb)

10. Attach nylon slings onto guard (3). Hoist and hold the guard (3) assembly.
11. Remove bolts (1) (12 used) and washers (2) (12 used). Remove the guard (3) assembly.

 : 24 mm

SECTION 3 UPPERSTRUCTURE


Group 4 Upperstructure




WKGB91-03-04-321

a- Machine Front Side

25. Remove bolts (1) (4 used), washers (2) (4 used), brackets (3) (2 used), and clamps (4) (2 used).

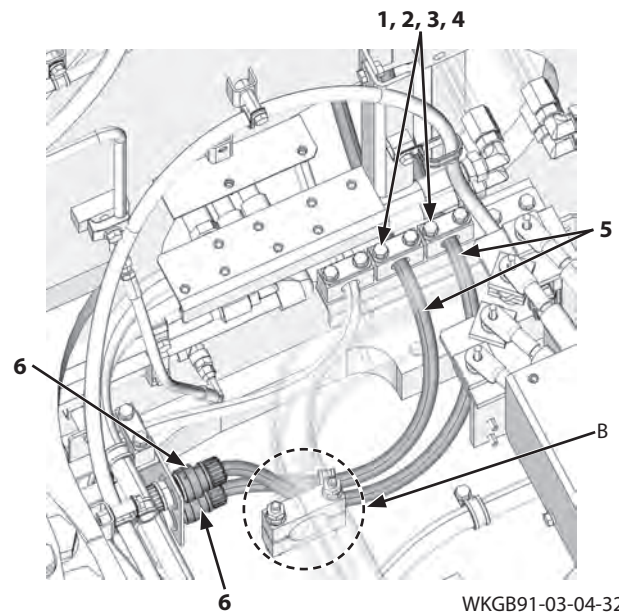
 : 17 mm

26. Remove bolt (10), washers (8) (2 used), nuts (7) (2 used), and clip (9).

 : 22 mm

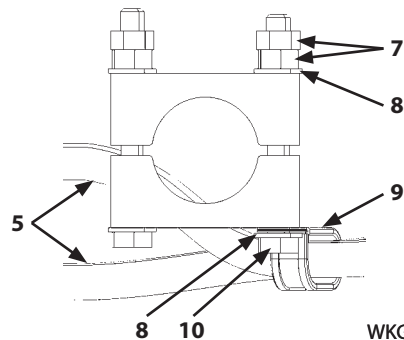
27. Disconnect connectors (6) (2 used). Place wire harnesses (5) (2 used) outside the work area.

Detail A



WKGB91-03-04-322

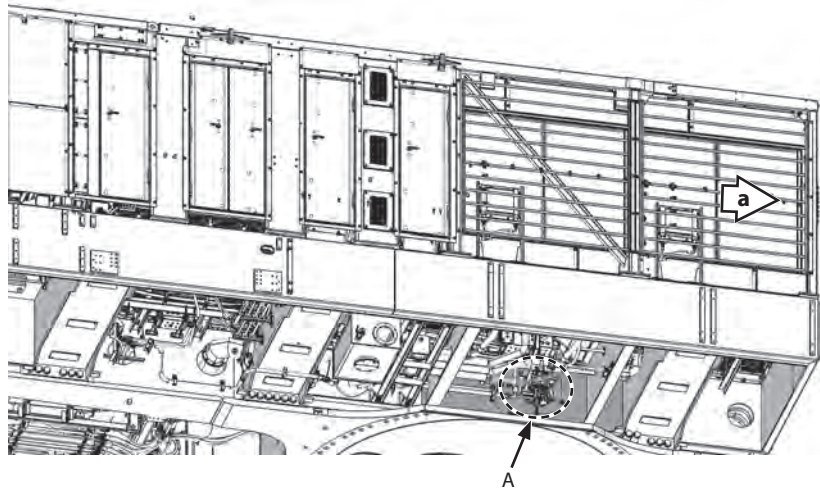
Detail B



WKGB91-03-04-323

SECTION 3 UPPERSTRUCTURE

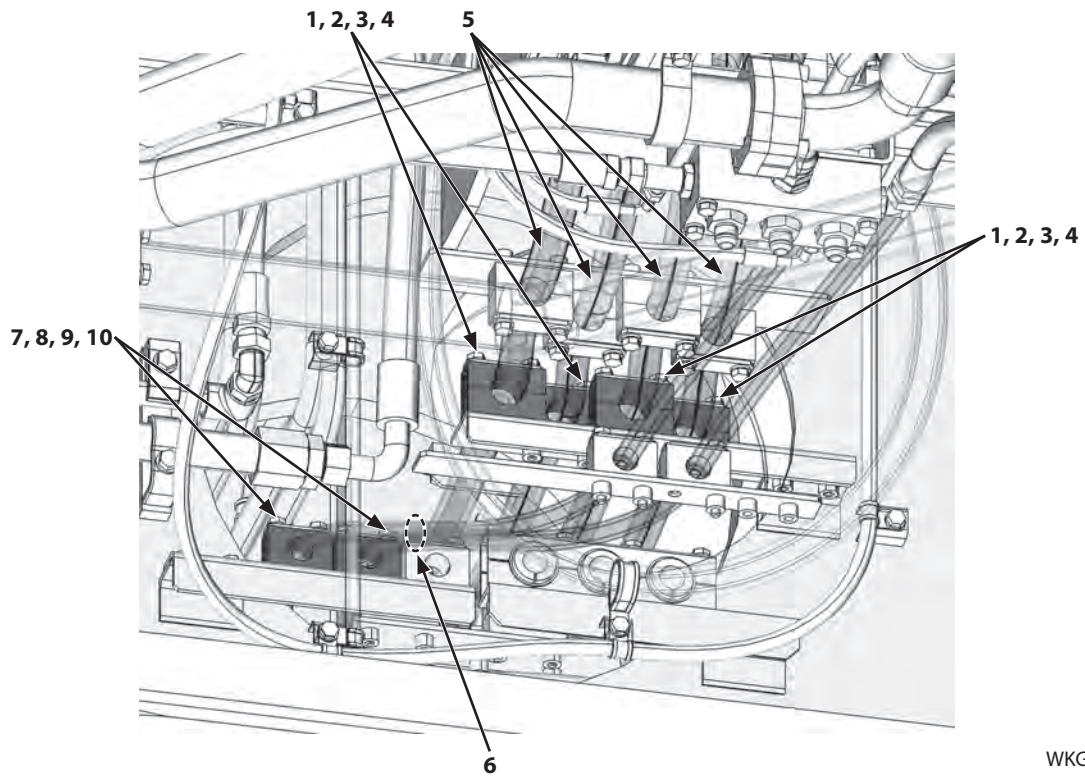
Group 4 Upperstructure



WKGB91-03-04-315


a- Machine Front Side


Detail A




WKGB91-03-04-316


7. Secure wire harnesses (6) (2 used) with clamps (10) (2 used), brackets (9) (2 used), washers (8) (4 used), and bolts (7) (4 used).

 : 17 mm

 : 12 N·m (8.9 lbf·ft)

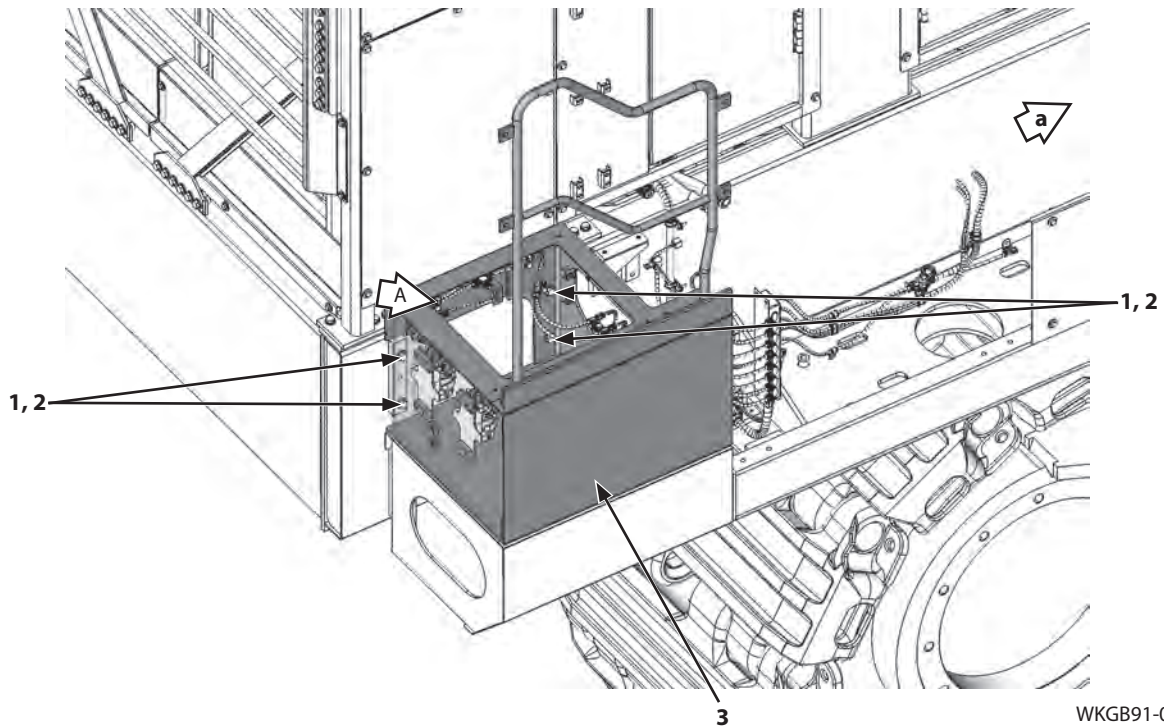
8. Secure wire harnesses (5) (4 used) with clamps (4) (4 used), brackets (3) (4 used), washers (2) (8 used), and bolts (1) (8 used).

 : 17 mm

 : 15 N·m (11 lbf·ft)

SECTION 3 UPPERSTRUCTURE

Group 4 Upperstructure




a- Machine Front Side

WKGB91-03-04-279

CAUTION: The fender (3) assembly weight: 165 kg (365 lb)


27. Attach nylon slings onto the fender (3) assembly. Hoist and hold the fender (3) assembly.
28. Install the fender (3) assembly with washers (2) (4 used) and bolts (1) (4 used).

 : 24 mm

 : 270 N·m (200 lbf·ft)

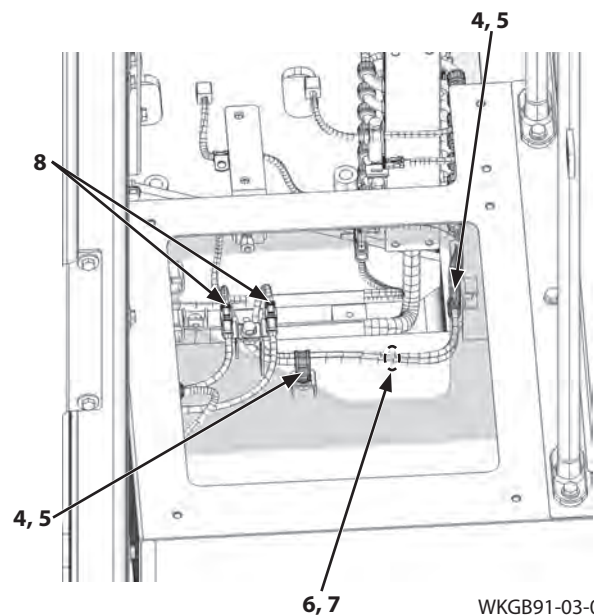
29. Connect connectors (8) (2 used).

30. Secure wire harnesses (6, 7) with clips (5) (2 used) and bolts, washers (4) (2 used).

 : 17 mm

 : 50 N·m (37 lbf·ft)

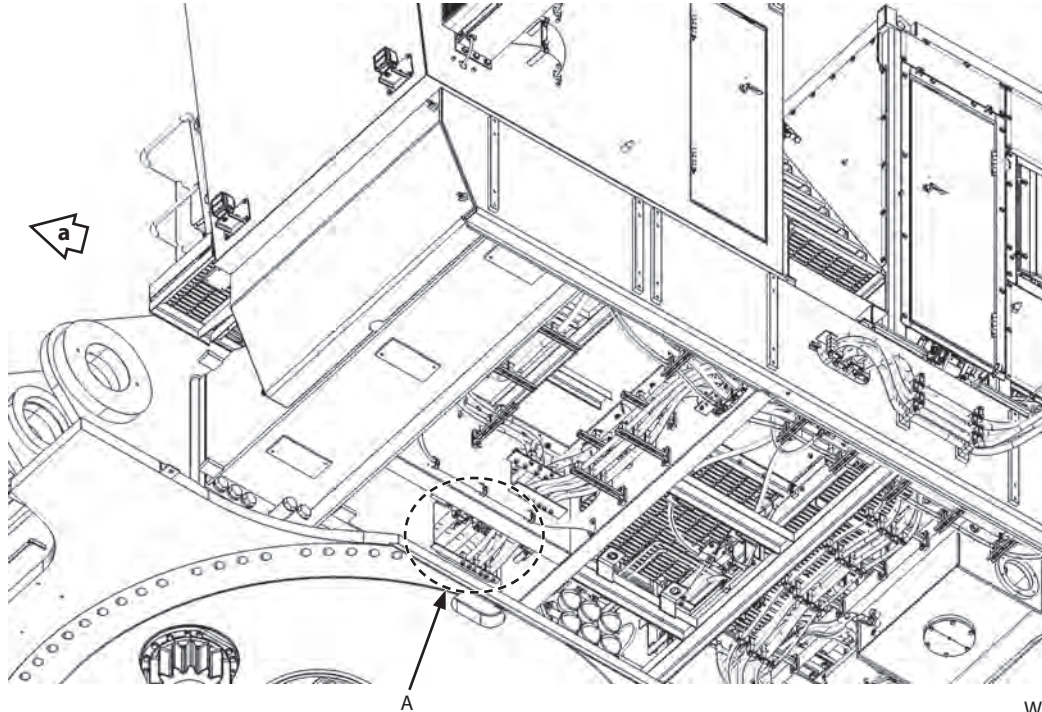
View A



WKGB91-03-04-280

SECTION 3 UPPERSTRUCTURE


Group 4 Upperstructure



WKGB91-03-04-249


a- Machine Front Side

8. Connect hoses (1) (2 used).

 : 19 mm


 : 30 N·m (22 lbf·ft)

9. Secure hoses (1) (2 used) with clip (4) and bolt, washer (3).

 : 17 mm


 : 50 N·m (37 lbf·ft)

10. Connect hoses (2) (3 used).

 : 36 mm

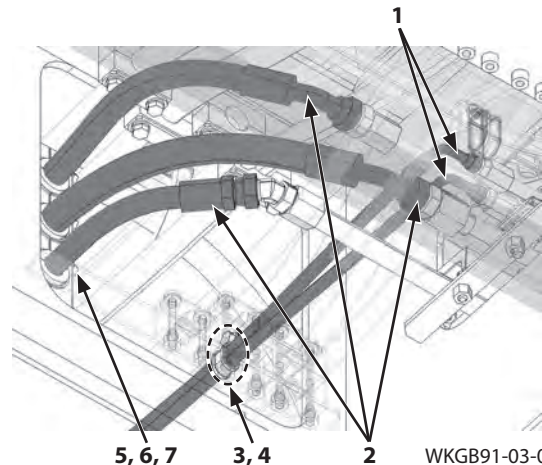
 : 180 N·m (133 lbf·ft)

11. Secure hoses (2) (3 used) with bushings (7) (3 used), clamp (6), and bolts, washers (5) (4 used).

 : 17 mm

 : 50 N·m (37 lbf·ft)

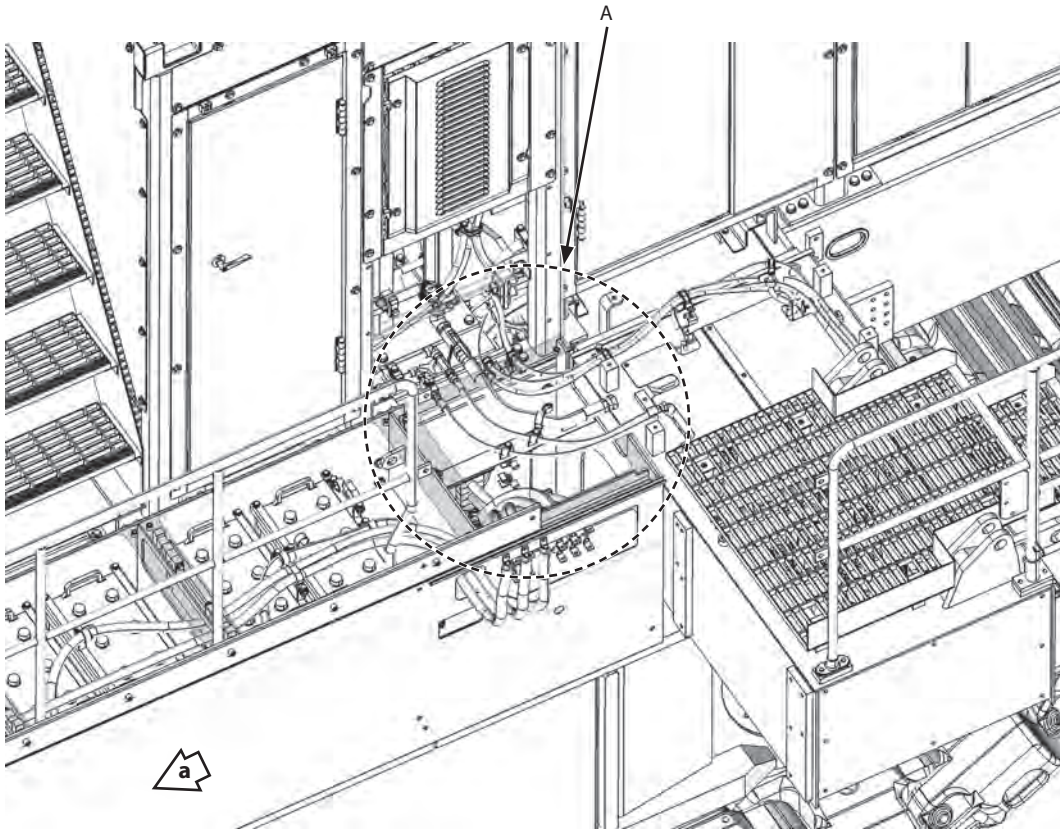
Detail A



WKGB91-03-04-250

SECTION 3 UPPERSTRUCTURE


Group 4 Upperstructure



WKGB91-03-04-213


a- Machine Front Side

22. Connect the both ends of hose (6).

 : 22 mm


 : 40 N·m (29.5 lbf·ft)

23. Connect the both ends of hose (5).

 : 27 mm


 : 80 N·m (59 lbf·ft)

24. Connect the both ends of hose (1).

 : 41 mm

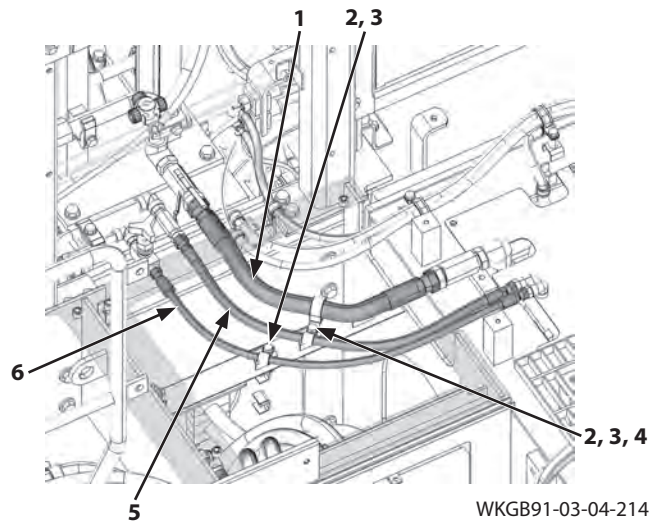
 : 210 N·m (155 lbf·ft)

25. Secure hoses (1, 5, 6) with clips (3) (2 used), clip (4), and bolts, washers (2) (2 used).

 : 17 mm

 : 50 N·m (37 lbf·ft)

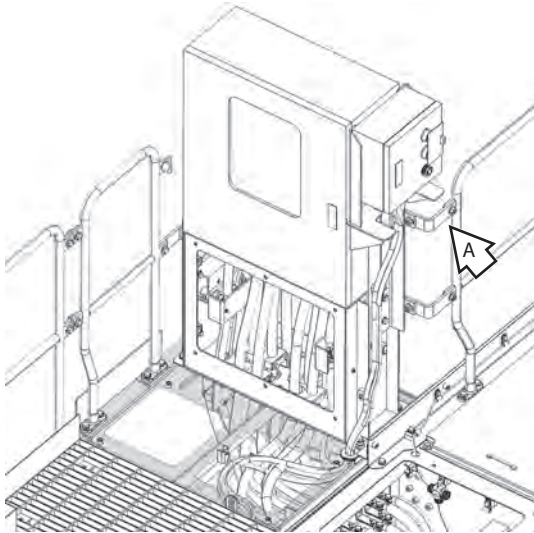
Detail A



WKGB91-03-04-214

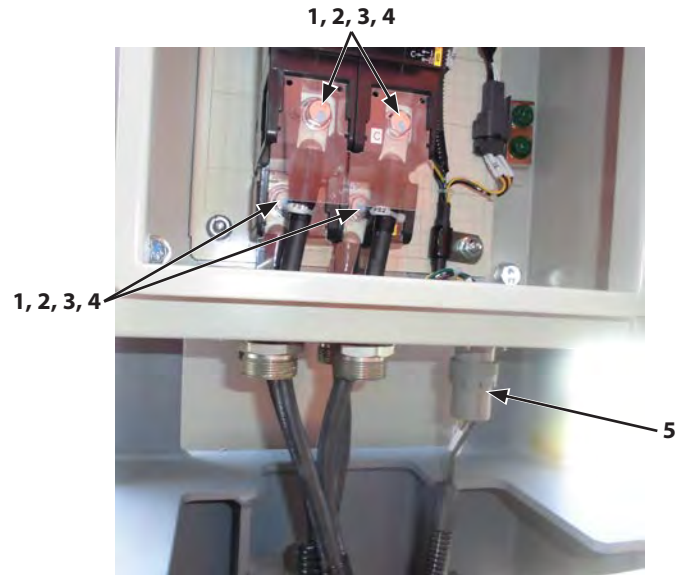
SECTION 3 UPPERSTRUCTURE

Group 4 Upperstructure




WKGB91-03-04-179

View A



WKGB91-03-04-180

16. Connect terminals (4) (4 used) with washers (3) (4 used), spring washers (2) (4 used), and bolts (1) (4 used).

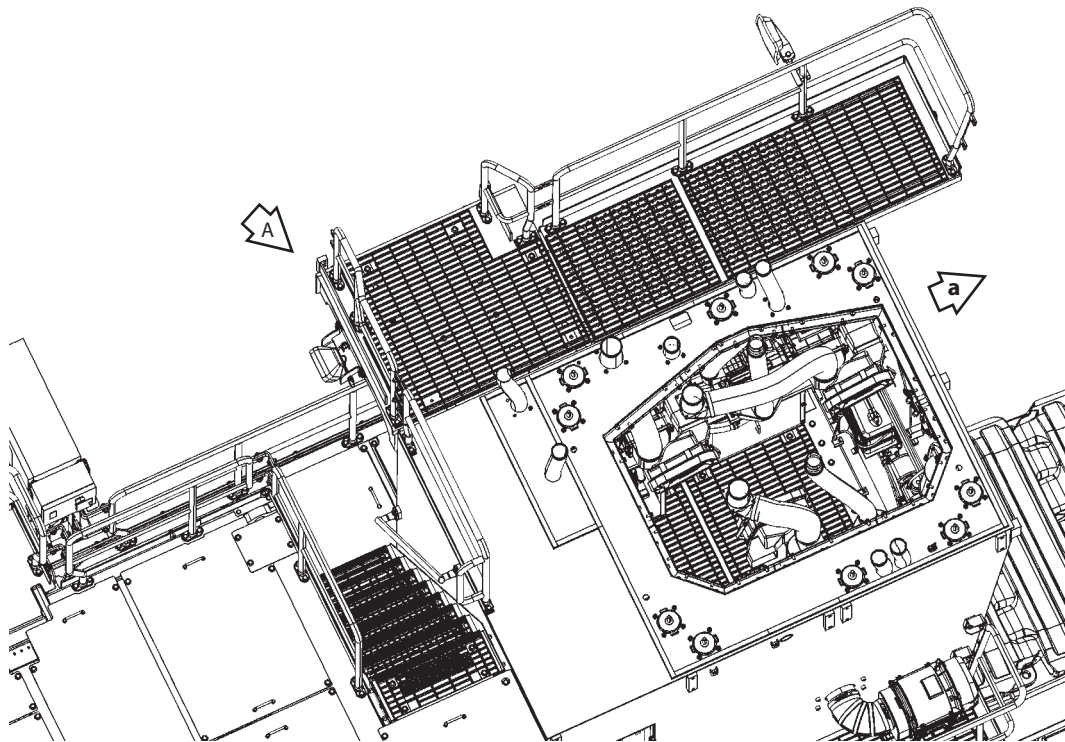
 : 17 mm

 : 50 N·m (37 lbf·ft)

17. Connect connector (5).

SECTION 3 UPPERSTRUCTURE


Group 4 Upperstructure




WKGB91-03-04-144

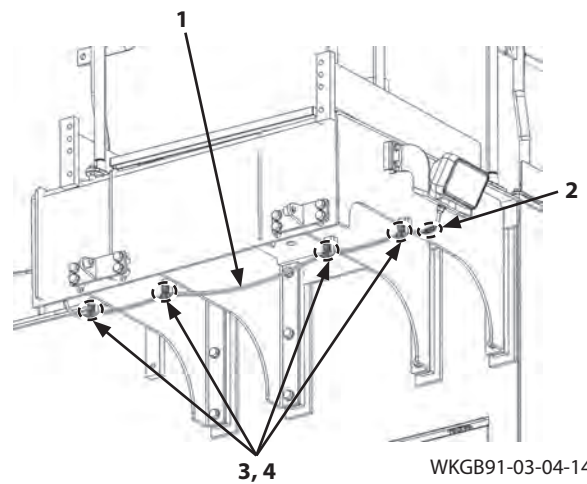
a- Machine Front Side

- 59. Connect connectors (2) (2 used).
- 60. Secure wire harness (1) with clips (4) (4 used) and bolts, washers (3) (4 used).

 : 17 mm

 : 50 N·m (37 lbf-ft)

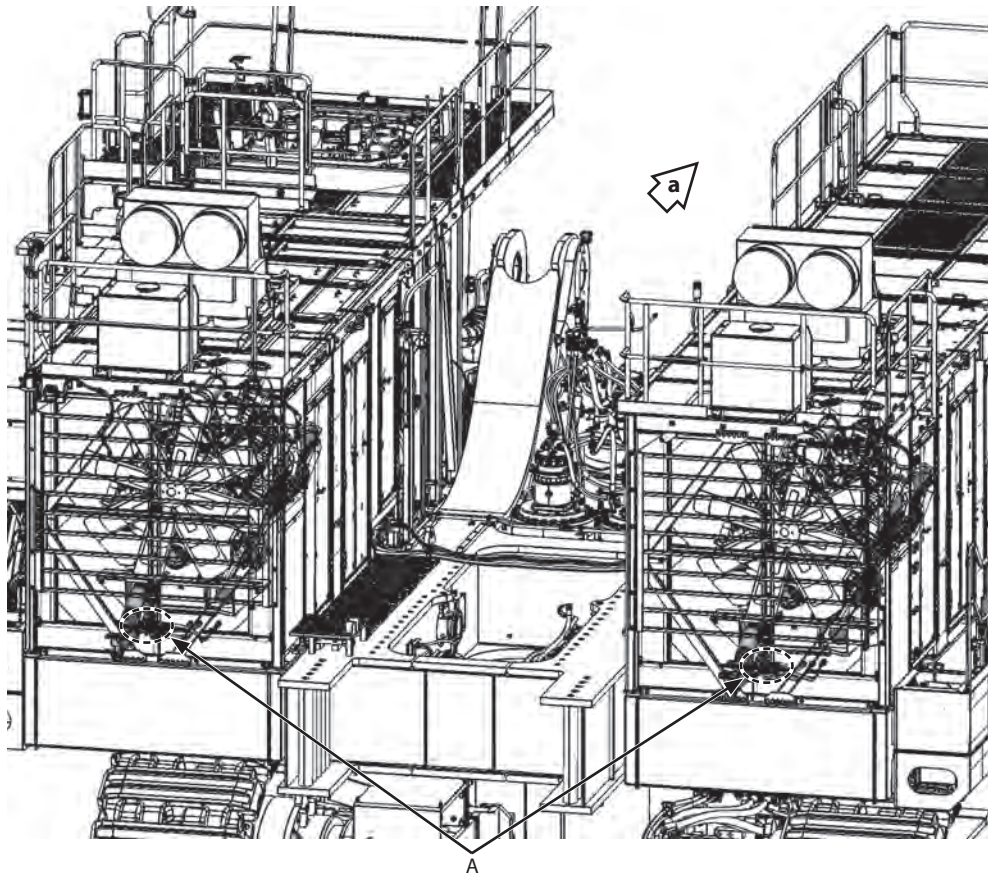
View A



WKGB91-03-04-145

SECTION 3 UPPERSTRUCTURE

Group 4 Upperstructure

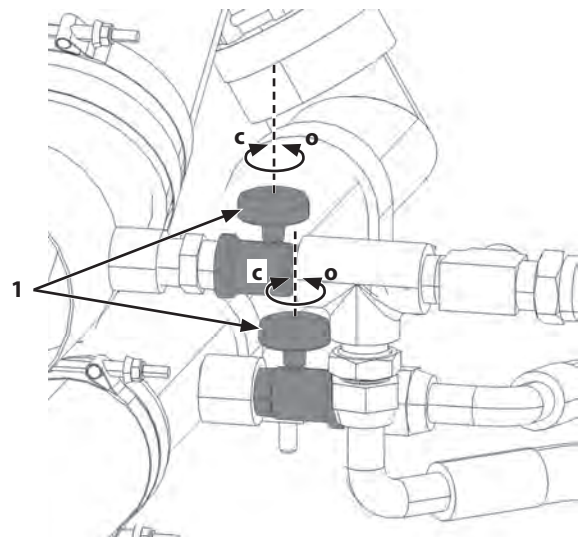


WKGB91-03-04-108

a- Machine Front Side

8. Open valves (1) (4 used).

Detail A



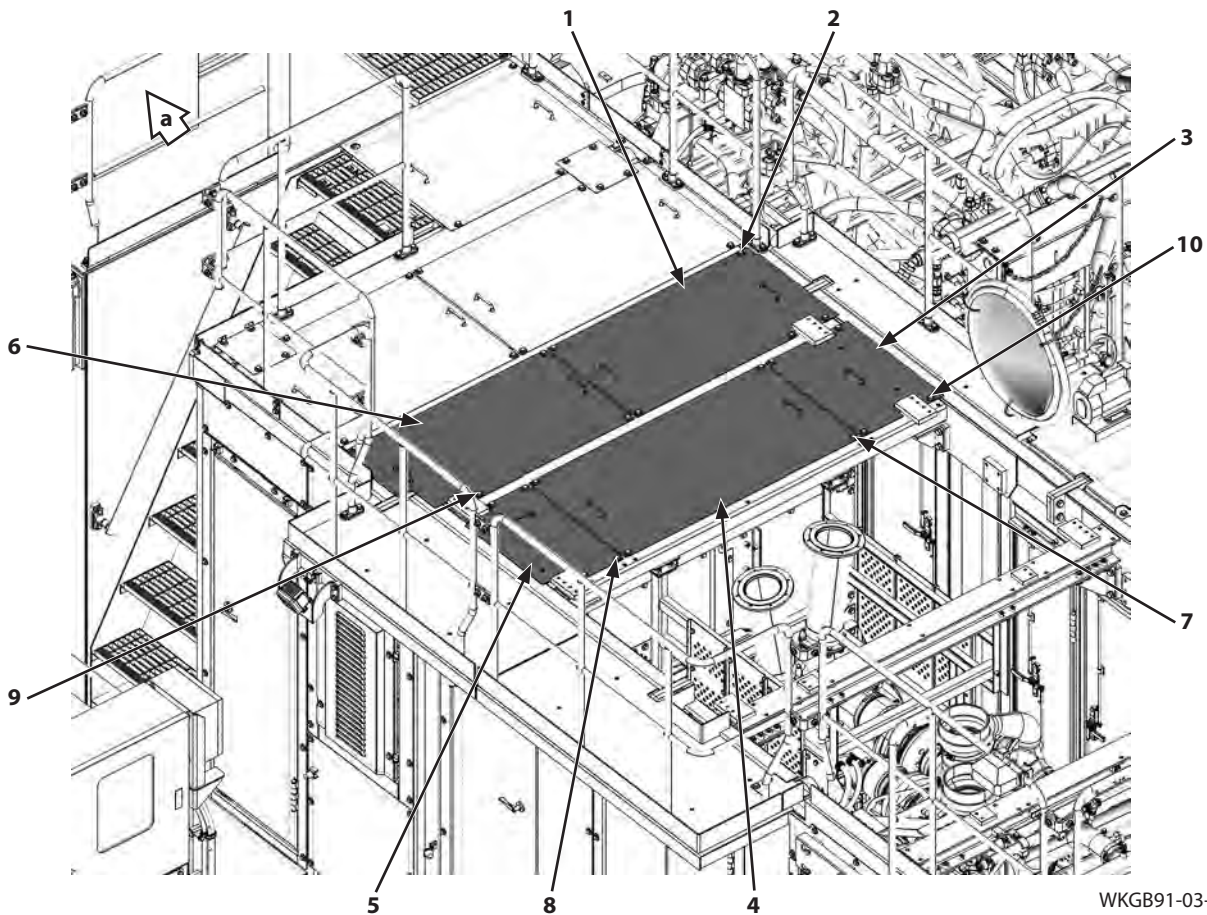
WKGB91-03-04-109

c- Close Position

o- Open Position

SECTION 3 UPPER STRUCTURE


Group 5 Engine Unit



WKGB91-03-05-236

a- Machine Front Side


39. Remove bolts, washers (10) (4 used). Remove cover (3). Remove bolts, washers (8) (4 used). Remove cover (5).

 : 19 mm

CAUTION: Cover (4) weight: 25 kg (56 lb)

40. Attach nylon slings onto cover (4). Hoist and hold cover (4).


41. Remove bolts, washers (7) (4 used). Remove cover (4).

 : 19 mm

CAUTION: Cover (1) weight: 20 kg (45 lb)

42. Attach nylon slings onto cover (1). Hoist and hold cover (1).


43. Remove bolts, washers (2) (5 used). Remove cover (1).

 : 19 mm

CAUTION: Cover (6) weight: 20 kg (45 lb)

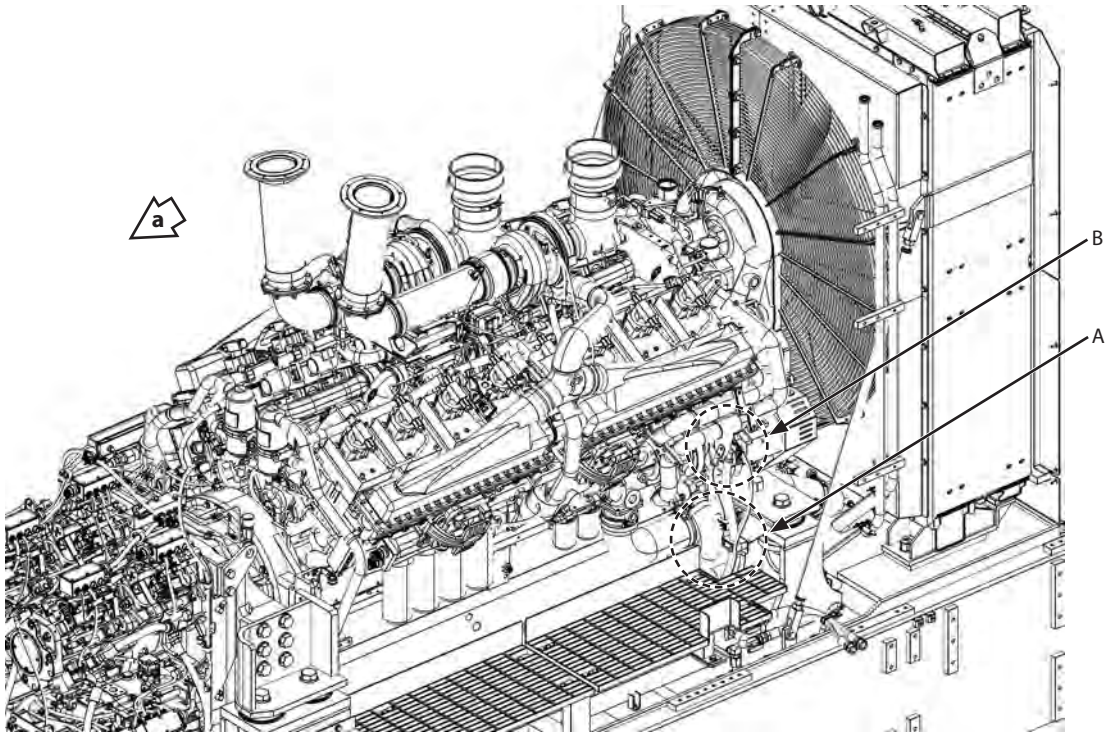
44. Attach nylon slings onto cover (6). Hoist and hold cover (6).

45. Remove bolts, washers (9) (4 used). Remove cover (6).

 : 19 mm

SECTION 3 UPPER STRUCTURE


Group 5 Engine Unit




WKGB91-03-05-272

a- Machine Front Side


102. Remove bolt, washer (2) and clip (3).

 : 17 mm

103. Remove nut (11). Disconnect terminal (12).

 : 13 mm


104. Remove nut (15). Disconnect terminal (16).

 : 13 mm

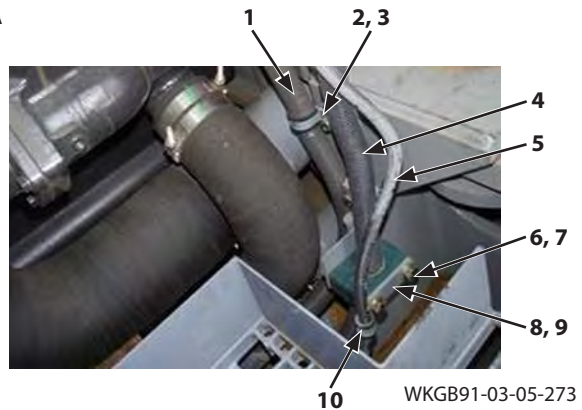
105. Remove nuts (13) (2 used). Disconnect terminals (14) (2 used).

 : 8 mm

106. Remove bolts (6) (2 used), washers (7) (2 used), clip (10), bracket (8), and clamp (9). Place wire harnesses (1, 4, 5) outside the work area.

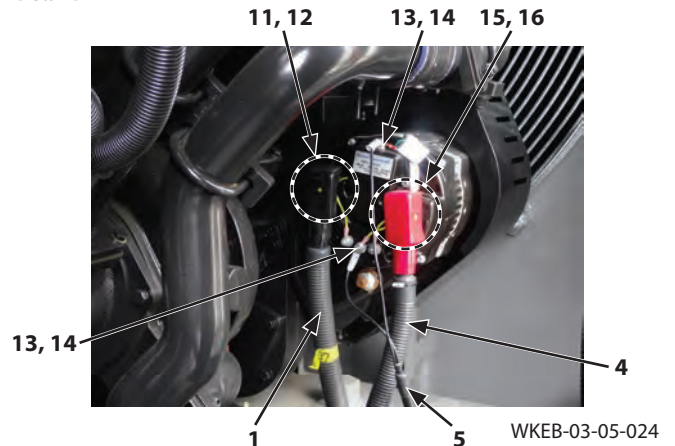
 : 17 mm

Detail A



WKGB91-03-05-273

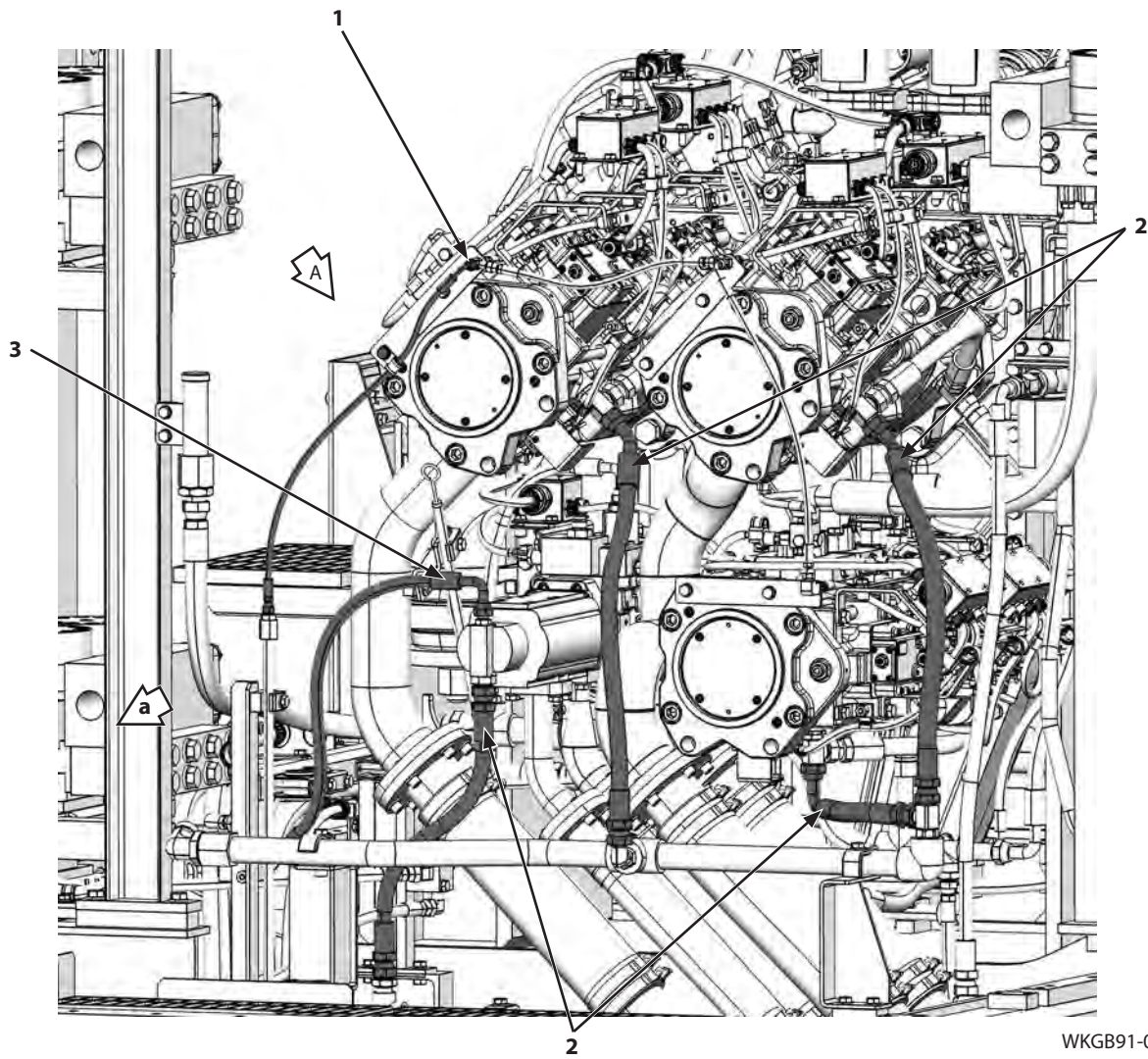
Detail B



WKEB-03-05-024

SECTION 3 UPPER STRUCTURE


Group 5 Engine Unit




WKGB91-03-05-288


a- Machine Front Side

13. Connect hoses (2) (4 used).

 : 36 mm


 : 180 N·m (133 lbf-ft)

14. Connect hose (3).

 : 27 mm


 : 80 N·m (59 lbf-ft)

15. Connect hose (1).

 : 17 mm

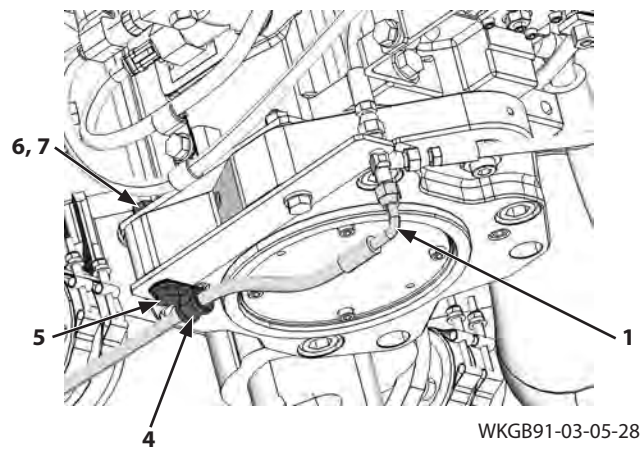
 : 25 N·m (19 lbf-ft)

16. Secure hose (1) with bolt, washer (5), clip (4), washer (7), and nut (6).

 : 17 mm

 : 50 N·m (37 lbf-ft)

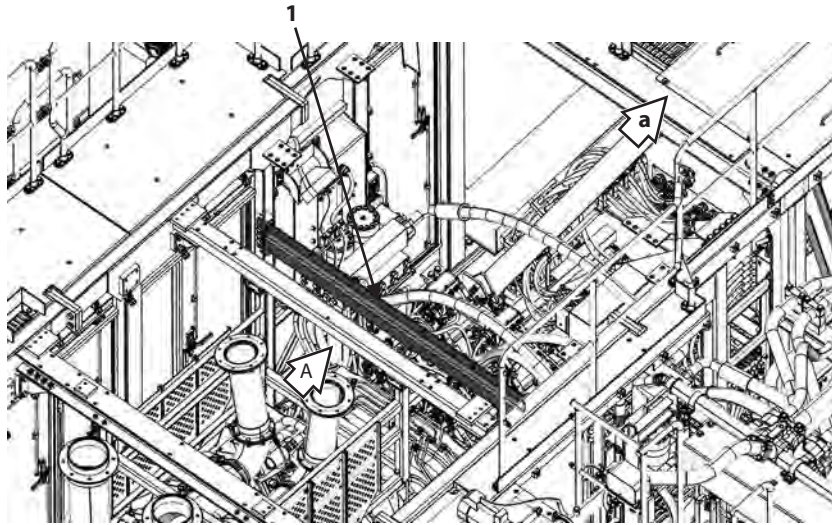
View A



WKGB91-03-05-289

SECTION 3 UPPER STRUCTURE

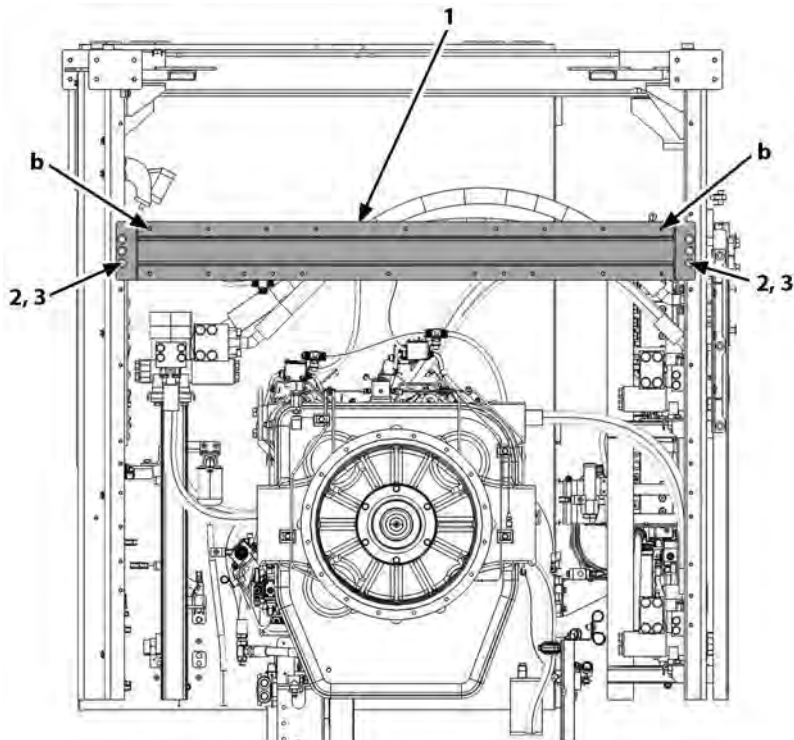
Group 5 Engine Unit



a- Machine Front Side

WKGB91-03-05-248

View A




b- Lifting Hole

WKGB91-03-06-120

CAUTION: Stay (1) weight: 33 kg (73 lb)

90. Install eyebolts (M10, Pitch 1.5 mm) (2 used) into stay (1) lifting holes (b) (2 places). Attach nylon slings onto eyebolts (2 used). Hoist and hold stay (1).

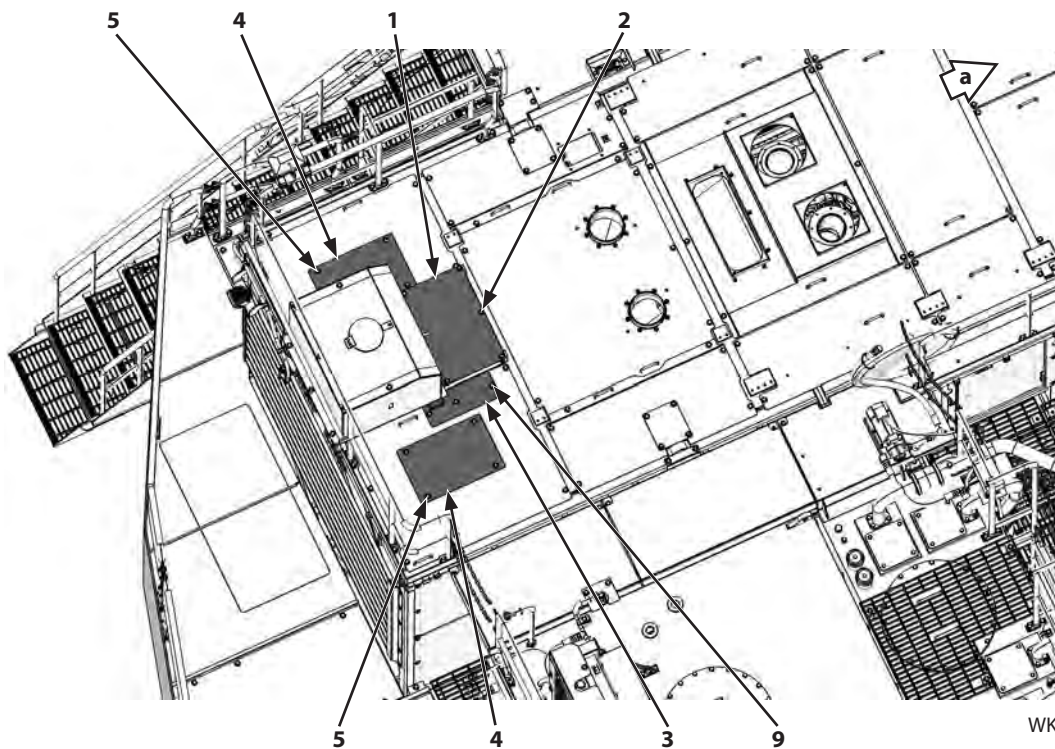
91. Install stay (1) with washers (3) (6 used) and bolts (2) (6 used).

 : 24 mm

 : 270 N·m (200 lbf·ft)

SECTION 3 UPPER STRUCTURE


Group 5 Engine Unit




WKGB91-03-05-224


a- Machine Front Side


154. Install cover (1) with bolts, washers (2) (5 used).
Install cover (3) with bolts, washers (9) (3 used).

 : 17 mm

 : 50 N·m (37 lbf·ft)

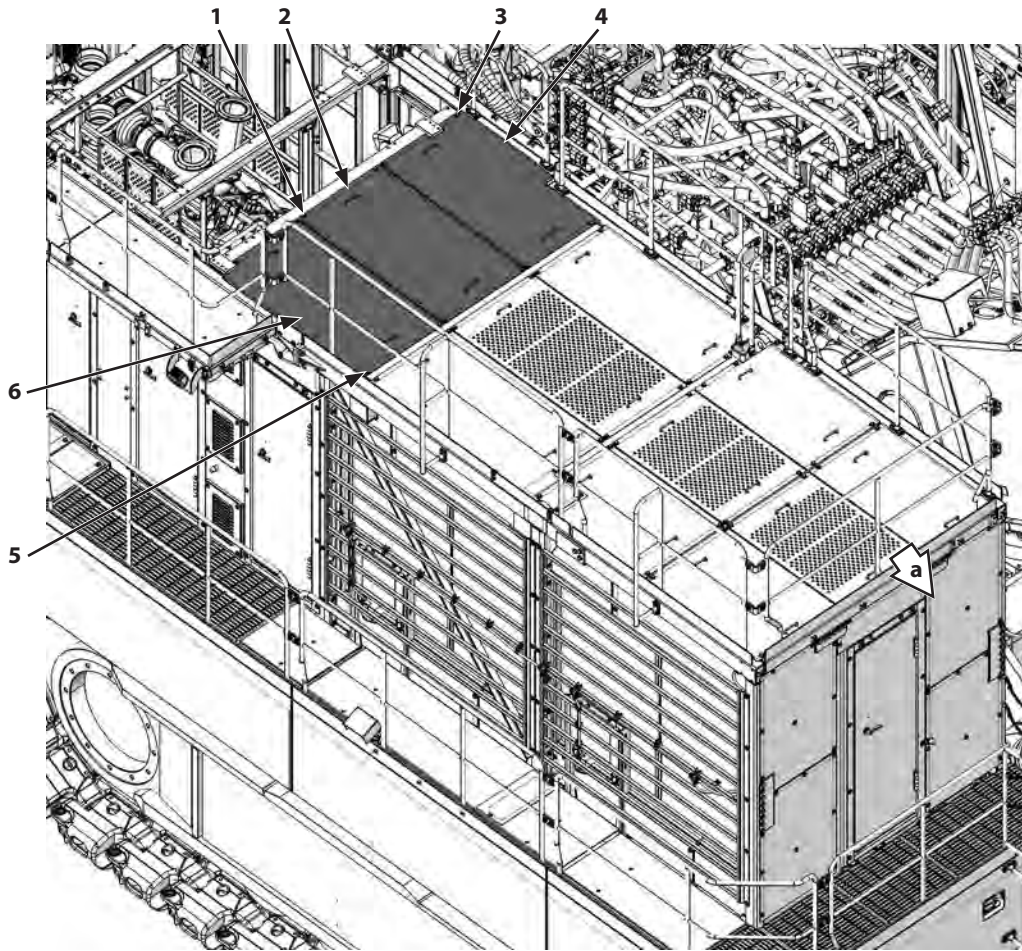
155. Install plates (4) (2 used) with bolts, washers (5) (8 used).

 : 17 mm

 : 50 N·m (37 lbf·ft)

SECTION 3 UPPER STRUCTURE

Group 5 Engine Unit




WKGB91-03-05-318

a- Machine Front Side


⚠ CAUTION: Cover (4) weight: 27 kg (60 lb)

44. Attach nylon slings onto cover (4). Hoist and hold cover (4).
45. Remove bolts, washers (3) (4 used). Remove cover (4).

 : 19 mm


⚠ CAUTION: Cover (6) weight: 27 kg (60 lb)

46. Attach nylon slings onto cover (6). Hoist and hold cover (6).
47. Remove bolts, washers (5) (4 used). Remove cover (6).

 : 19 mm

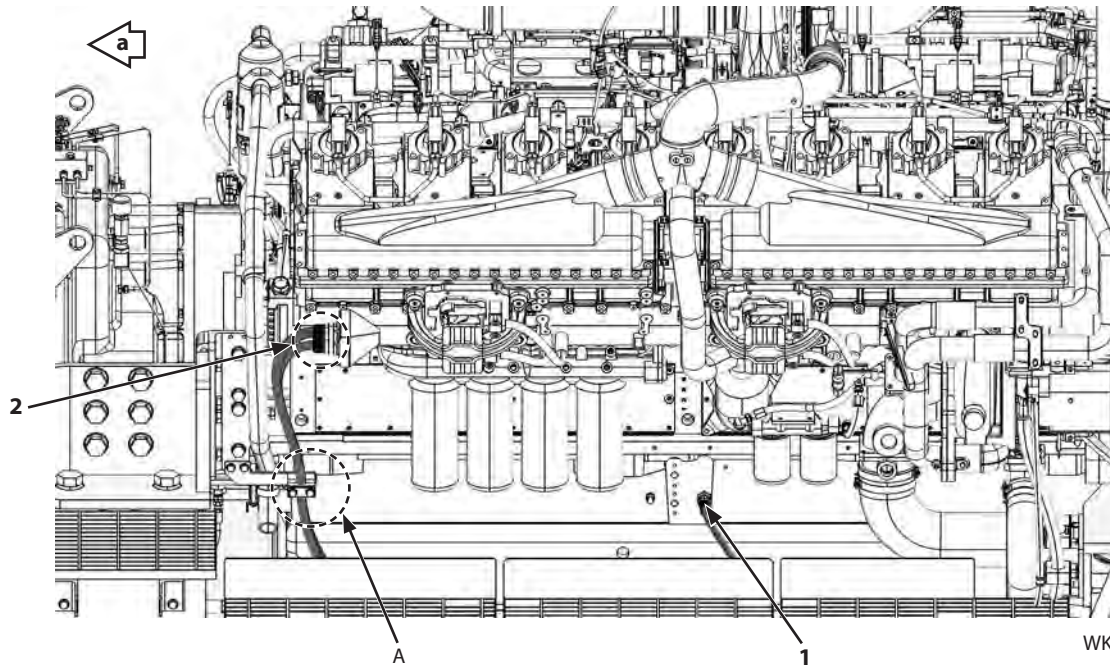
⚠ CAUTION: Cover (2) weight: 28 kg (62 lb)

48. Attach nylon slings onto cover (2). Hoist and hold cover (2).
49. Remove bolts, washers (1) (4 used). Remove cover (2).

 : 19 mm

SECTION 3 UPPER STRUCTURE


Group 5 Engine Unit



WKGB91-03-05-343

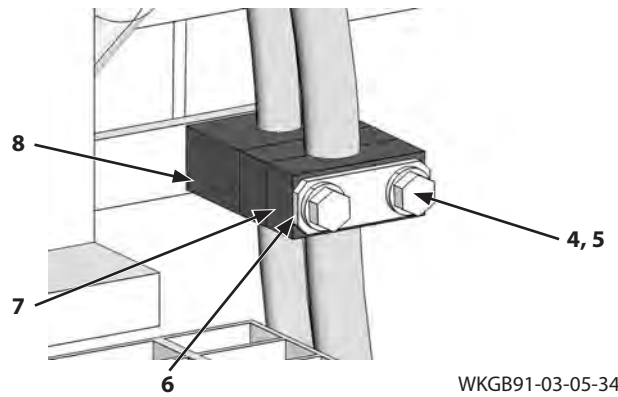
a- Machine Front Side

100. Remove bolts (4) (2 used), washers (5) (2 used), bracket (6), and clamps (7, 8).

 : 17 mm

101. Disconnect connector (1) and connectors (2) (2 used).

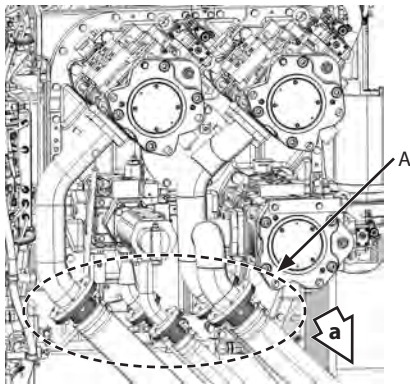
Detail A



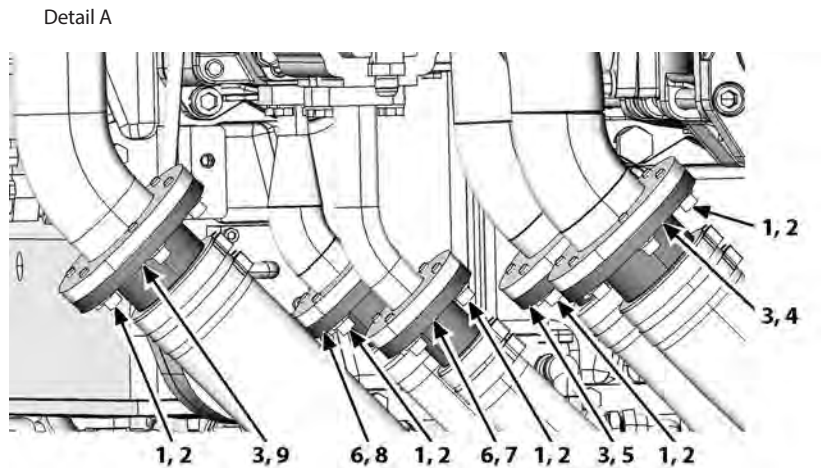
WKGB91-03-05-344

SECTION 3 UPPER STRUCTURE

Group 5 Engine Unit




WKGB91-03-06-160



a- Machine Front Side


WKGB91-03-06-161

6. Install O-ring (6). Connect pipe (8) with washers (2) (4 used) and socket bolts (1) (4 used).

 : 10 mm


 : 210 N·m (155 lbf·ft)

7. Install O-ring (6). Connect pipe (7) with washers (2) (4 used) and socket bolts (1) (4 used).

 : 10 mm


 : 210 N·m (155 lbf·ft)

8. Install O-ring (3). Connect pipe (9) with washers (2) (6 used) and socket bolts (1) (6 used).

 : 10 mm


 : 210 N·m (155 lbf·ft)

9. Install O-ring (3). Connect pipe (5) with washers (2) (6 used) and socket bolts (1) (6 used).

 : 10 mm

 : 210 N·m (155 lbf·ft)

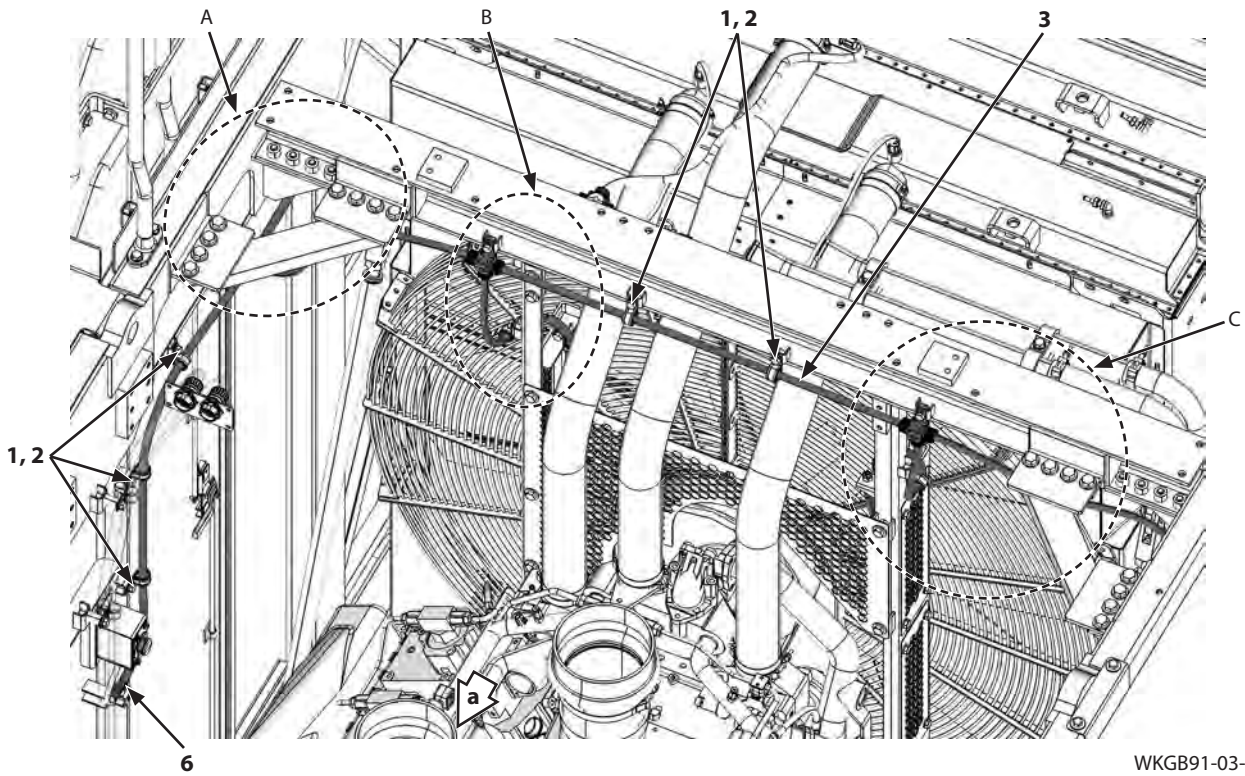
10. Install O-ring (3). Connect pipe (4) with washers (2) (6 used) and socket bolts (1) (6 used).

 : 10 mm

 : 210 N·m (155 lbf·ft)

SECTION 3 UPPER STRUCTURE

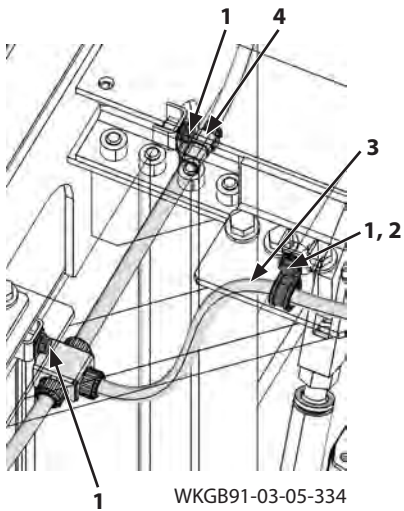
Group 5 Engine Unit



WKGB91-03-05-333

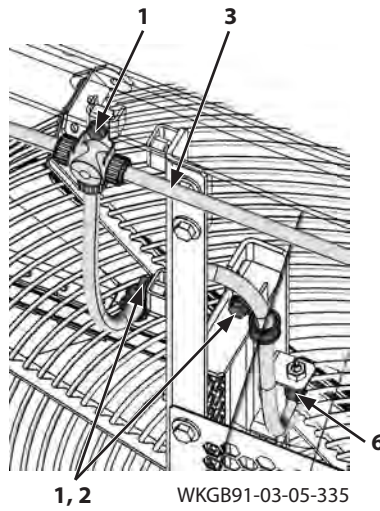
a- Machine Front Side

Detail A



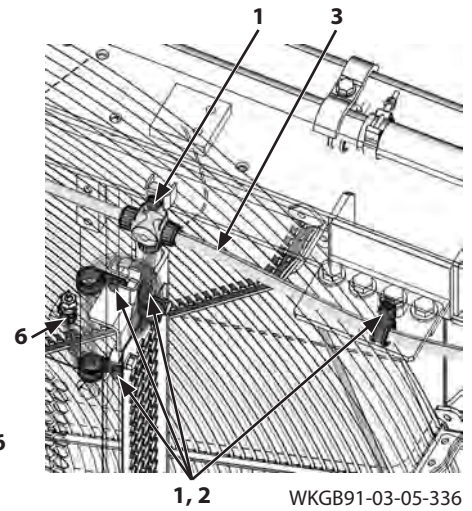
WKGB91-03-05-334

Detail B




WKGB91-03-05-335

Detail C



WKGB91-03-05-336

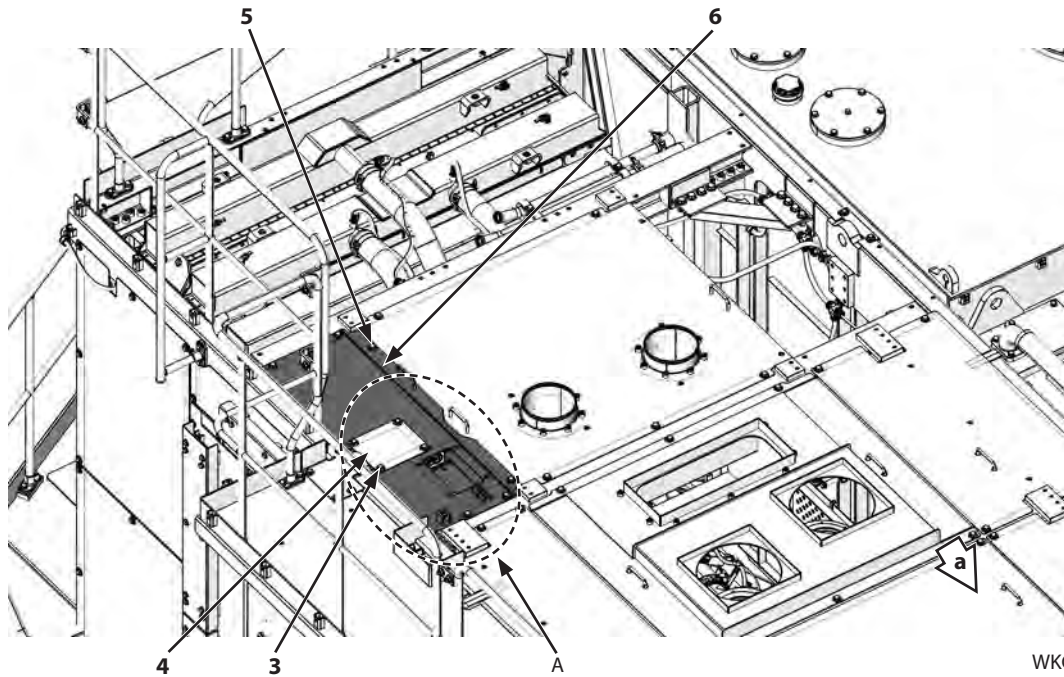
74. Connect connector (4) and connectors (6) (3 used).
75. Secure wire harness (3) and connector (4) assembly with clips (2) (12 used) and bolts, washers (1) (16 used).

 : 17 mm

 : 50 N·m (37 lbf·ft)

SECTION 3 UPPER STRUCTURE


Group 5 Engine Unit



a- Machine Front Side


WKGB91-03-05-309

131. Install cover (6) with bolts, washers (5) (6 used).

 : 19 mm


 : 90 N·m (66 lbf·ft)

132. Connect wire harnesses (7) (2 used) with bolts, washers (11) (4 used).

 : 13 mm

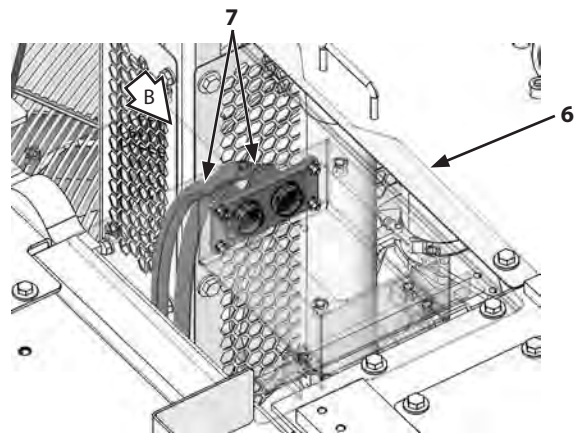
 : 10 N·m (7.4 lbf·ft)

133. Install plate (4) with bolts, washers (3) (4 used).

 : 17 mm

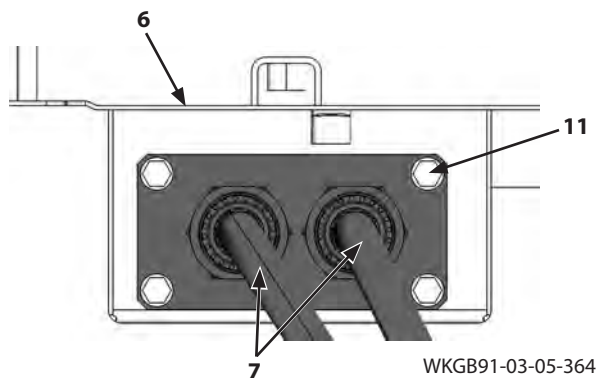
 : 50 N·m (37 lbf·ft)

Detail A



WKGB91-03-05-310

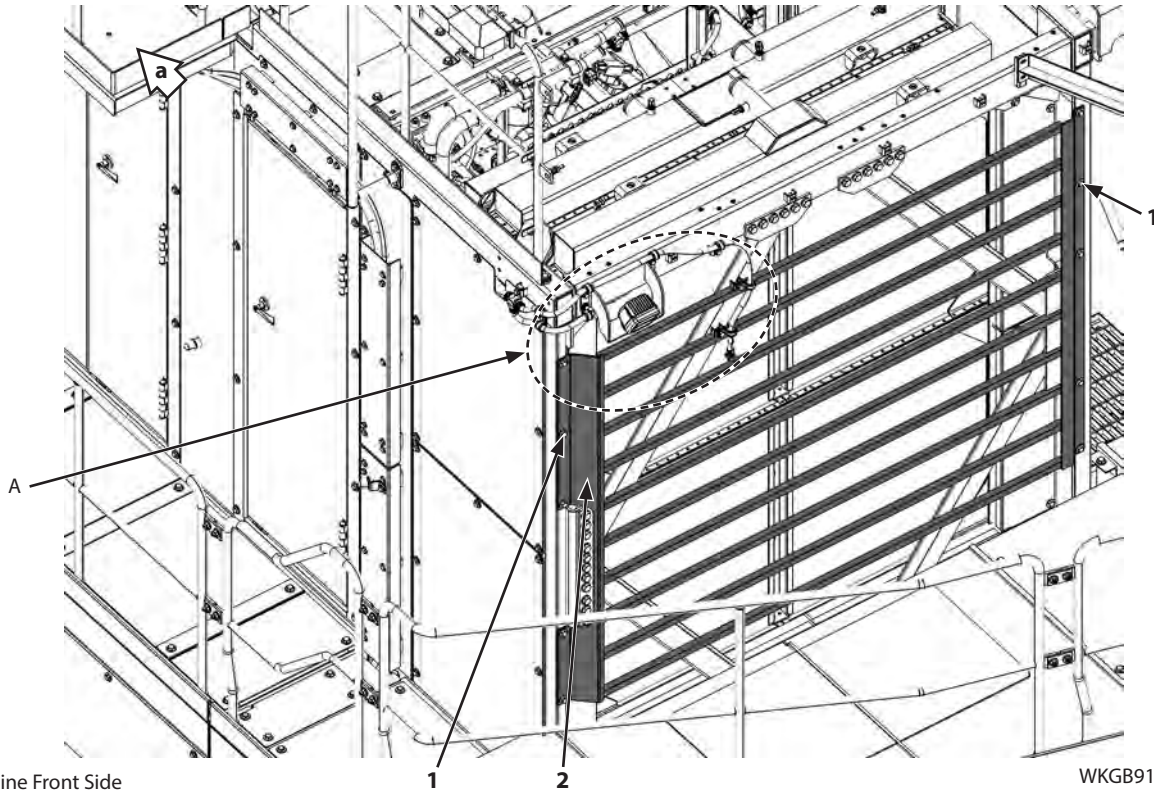
View B



WKGB91-03-05-364


SECTION 3 UPPERSTRUCTURE

Group 5 Engine Unit



32. Disconnect connector (4).


33. Remove bolts, washers (5) (2 used) and clips (6) (2 used). Remove wire harness (3).

 : 17 mm

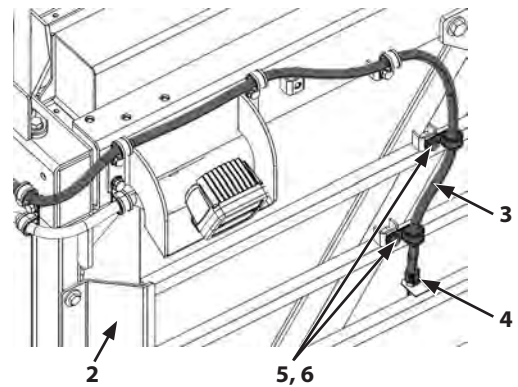
⚠ CAUTION: Grille (2) weight: 37 kg (82 lb)

34. Attach nylon slings onto grille (2). Hoist and hold grille (2).

35. Remove bolts, washers (1) (10 used). Remove grille (2).

 : 17 mm

Detail A

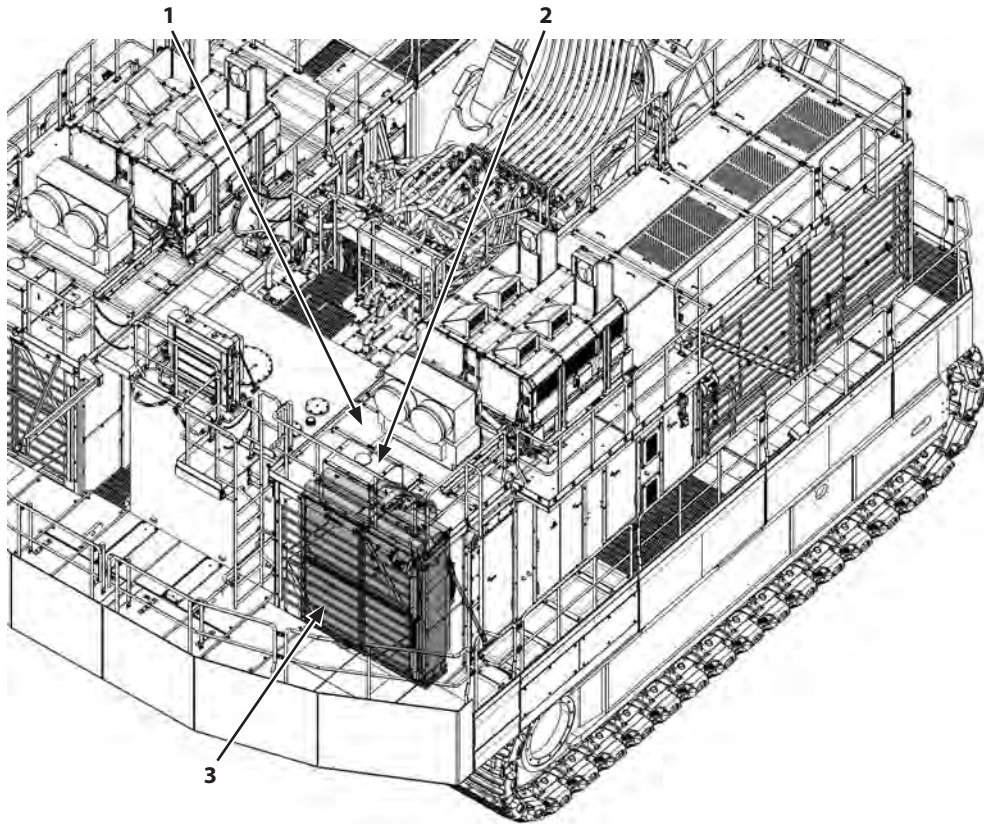


WKGB91-03-05-180

SECTION 3 UPPER STRUCTURE

Group 5 Engine Unit

Removal and Installation of Radiator



WKGB91-03-05-194

IMPORTANT: The hoses and pipes contain coolant. When disconnecting the hoses and pipes, catch the coolant with a container in order to avoid spilling.

IMPORTANT: Cap the open ends of disconnected hoses and pipes. In addition, attach identification tags onto the connectors, hoses, and pipes to identify them for reassembly. If the clips which secure the hoses have been removed, install the clips after connecting the hoses.

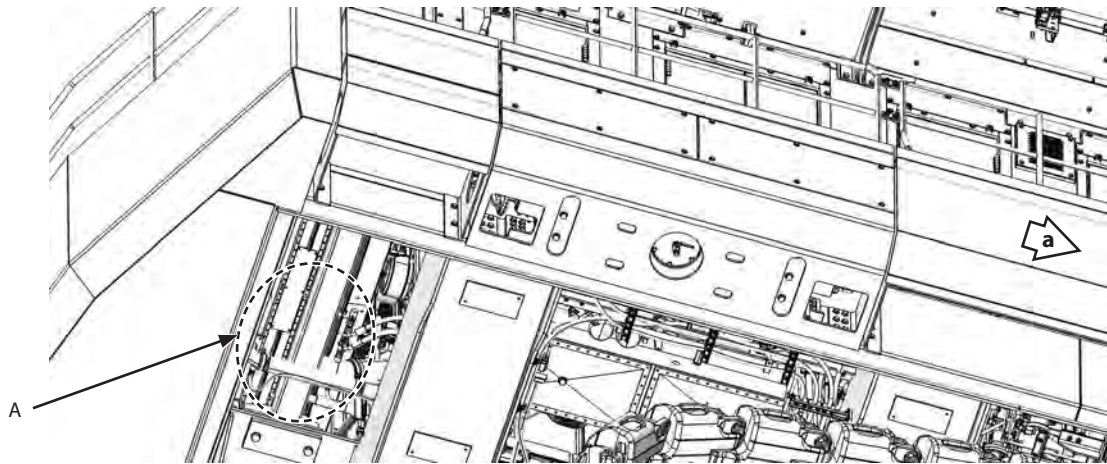
- Radiator (3) is located inside the right engine unit module (1).

Removal

1. Set the machine position for inspection and maintenance. Stop the engine. Turn OFF the isolation switch. (Refer to W1-6-1.)
2. Bleed air from water tank (2). (Refer to W1-4-4.)
3. Drain coolant from radiator (3). (Refer to Operator's Manual.)

SECTION 3 UPPER STRUCTURE

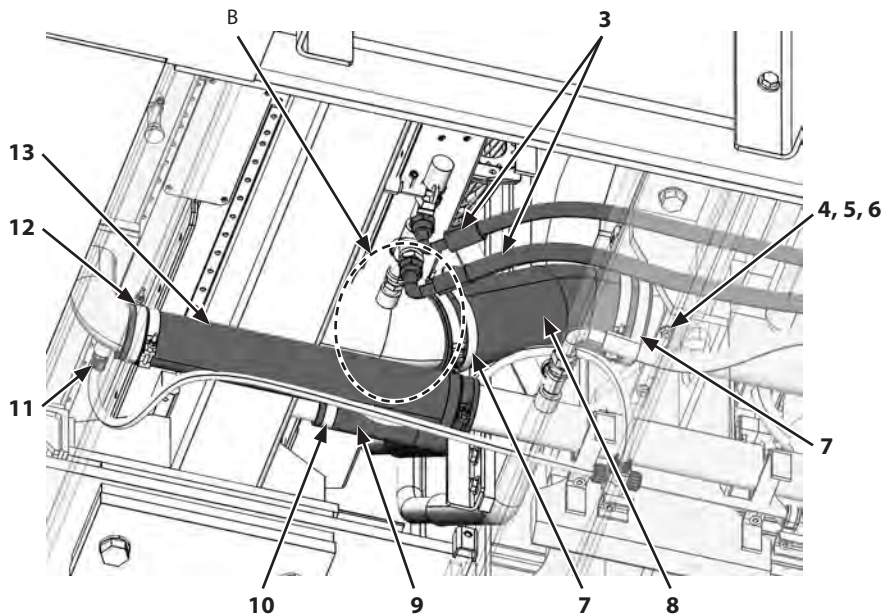
Group 5 Engine Unit



a- Machine Front Side

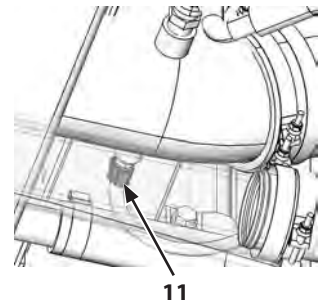
WKGB91-03-05-201

Detail A



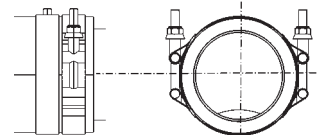
WKGB91-03-05-202

Detail B



WKGB91-03-05-203


Details of clamps (7, 12)




WKGB91-03-05-193


IMPORTANT: Pay attention to the installation positions of clamps (7) (4 used).

19. Connect both ends of hose (8) with clamps (7) (4 used).

 : 11 mm


 : 12 N·m (8.9 lbf·ft)

20. Install hose (8) with U-bolt (6), washers (5) (2 used), and nuts (4) (2 used).

 : 17 mm

 : 50 N·m (37 lbf·ft)


21. Connect hoses (3) (2 used).

 : 36 mm

 : 180 N·m (133 lbf·ft)

22. Connect hose (9) with clamp (10).

 : 11 mm

 : 12 N·m (8.9 lbf·ft)

IMPORTANT: Pay attention to the installation positions of clamps (12) (2 used).

23. Connect hose (13) with clamps (12) (2 used).

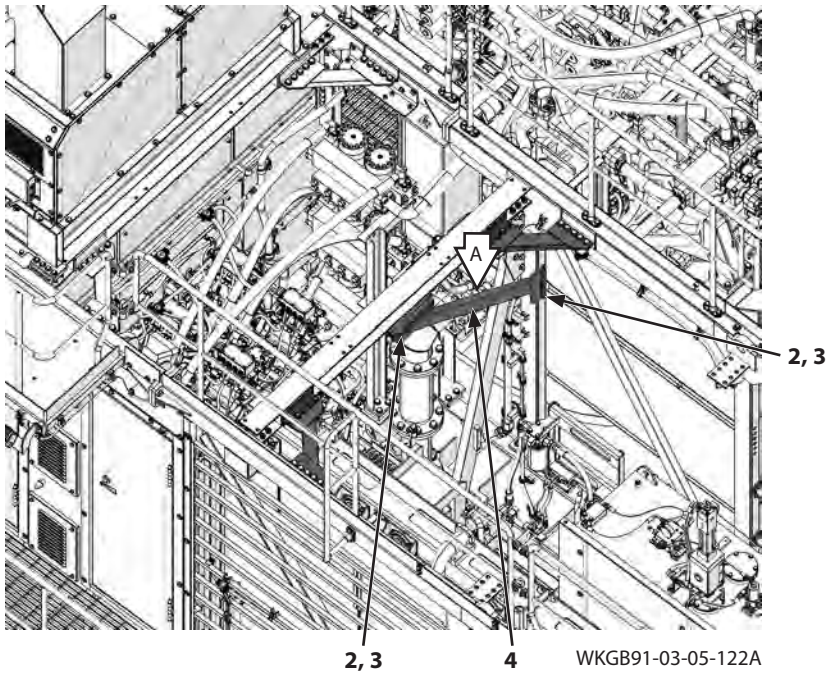
 : 11 mm

 : 12 N·m (8.9 lbf·ft)


24. Connect connectors (11) (2 used).

SECTION 3 UPPERSTRUCTURE


Group 5 Engine Unit



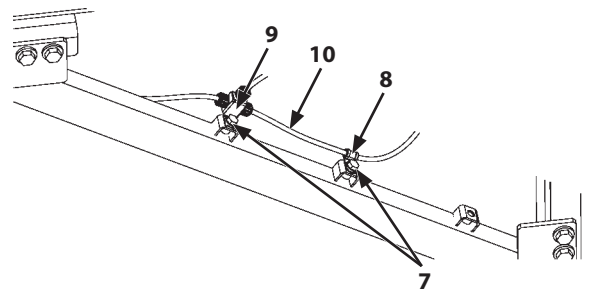
47. Remove bolts, washers (7) (2 used), clip (8), and bracket (9). Disconnect wire harness (10).

 : 17 mm

48. Remove bolts (2) (12 used) and washers (3) (12 used). Remove stay (4).

 : 24 mm

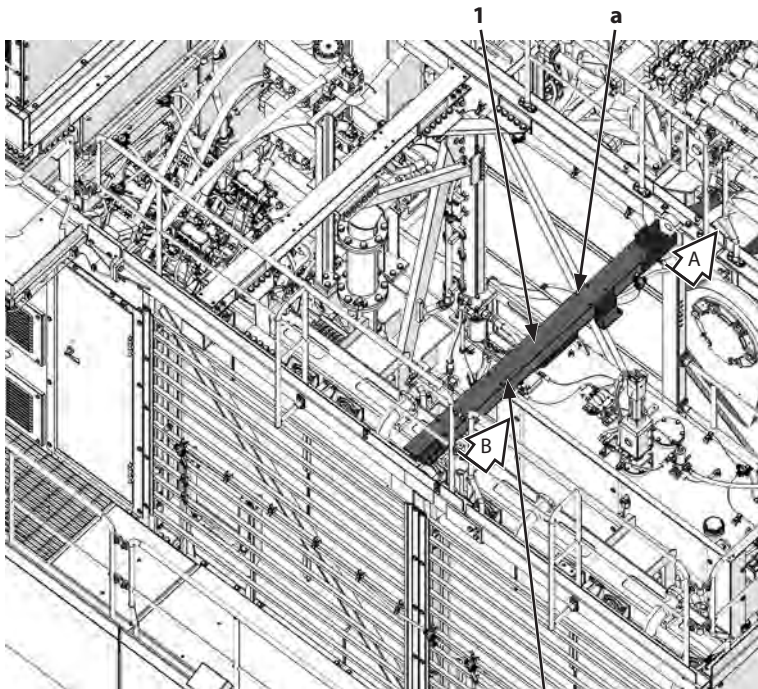
Section A



WKGB91-03-05-058

SECTION 3 UPPERSTRUCTURE

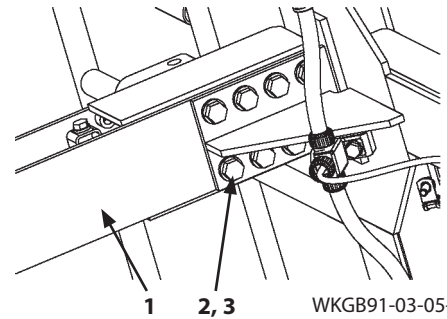
Group 5 Engine Unit



a- Eyebolt Mounting Hole

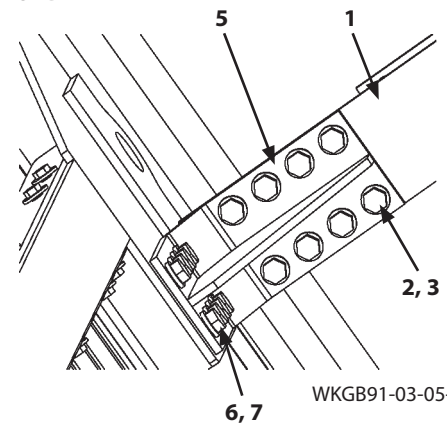
WKGB91-03-05-119

View A




WKGB91-03-05-053

View B



WKGB91-03-05-054


23. Install bracket (5) with washers (7) (8 used) and bolts (6) (8 used).

 : 24 mm

 : 270 N·m (200 lbf·ft)

CAUTION: The beam (1) assembly weight: 67 kg

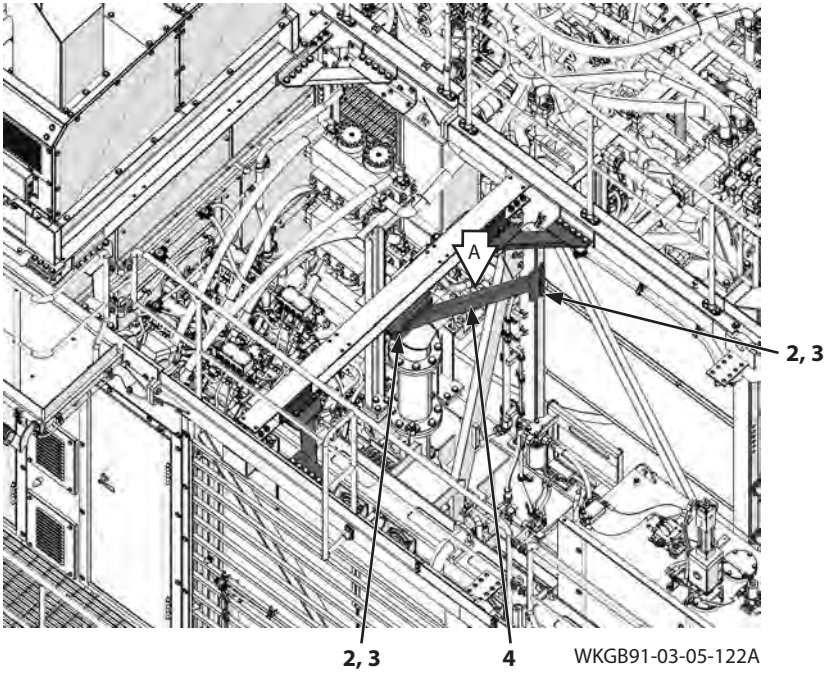
24. Diagonally install eyebolts (M12, Pitch 1.75 mm) (2 used) to eyebolt mounting holes (a) of beam (1). Attach nylon slings onto the eyebolts (2 used). Hoist and hold the beam (1) assembly.
25. Install the beam (1) assembly with washers (3) (16 used) and bolts (2) (16 used).

 : 24 mm


 : 270 N·m (200 lbf·ft)

SECTION 3 UPPER STRUCTURE


Group 5 Engine Unit



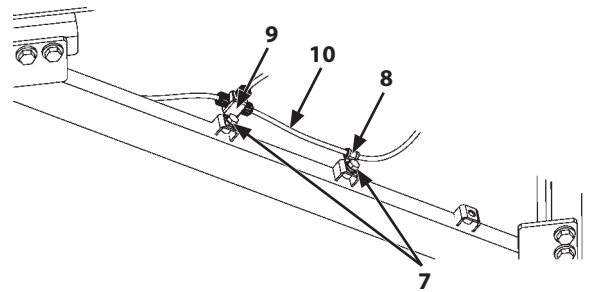
39. Remove bolts, washers (7) (2 used), clip (8), and bracket (9). Disconnect wire harness (10).

 : 17 mm

40. Remove bolts (2) (12 used) and washers (3) (12 used). Remove stay (4).

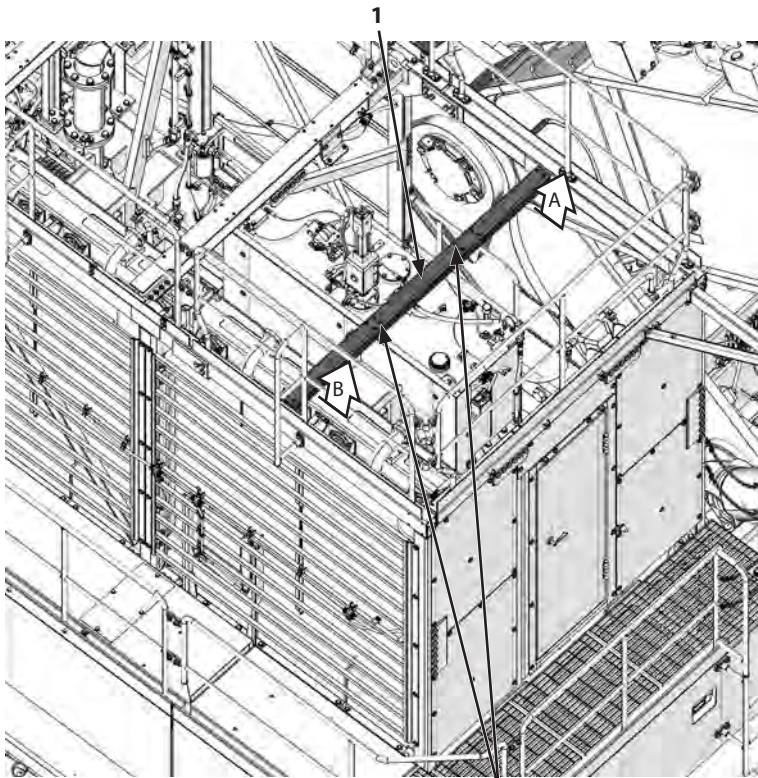
 : 24 mm

Section A



SECTION 3 UPPER STRUCTURE

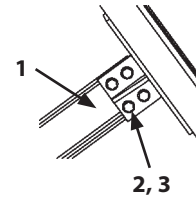
Group 5 Engine Unit



a- Lifting Hole

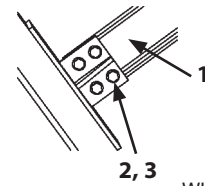
WKGB91-03-05-114

Section A



WKGB91-03-05-051


Section B



WKGB91-03-05-052

CAUTION: Beam (1) weight: 25 kg (56 lb)

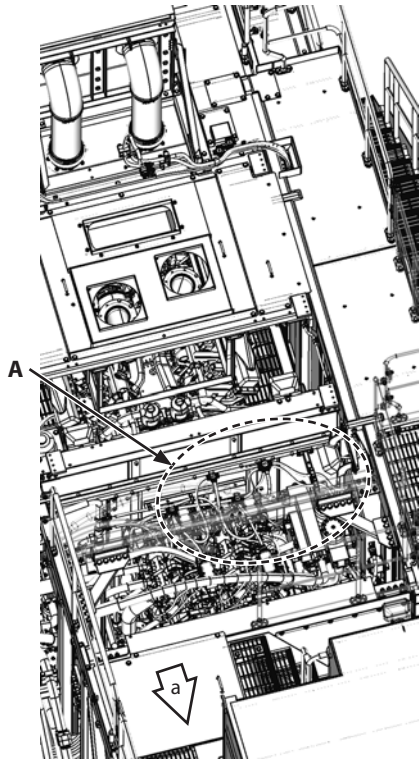
30. Install eyebolts (M12, Pitch 1.75 mm) (2 used) to diagonally opposite lifting holes (a) of beam (1). Attach nylon slings onto the eyebolts (2 used). Hoist and hold beam (1).
31. Install beam (1) with washers (3) (8 used) and bolts (2) (8 used).

 : 19 mm

 : 110 N·m (81 lbf·ft)

SECTION 3 UPPER STRUCTURE

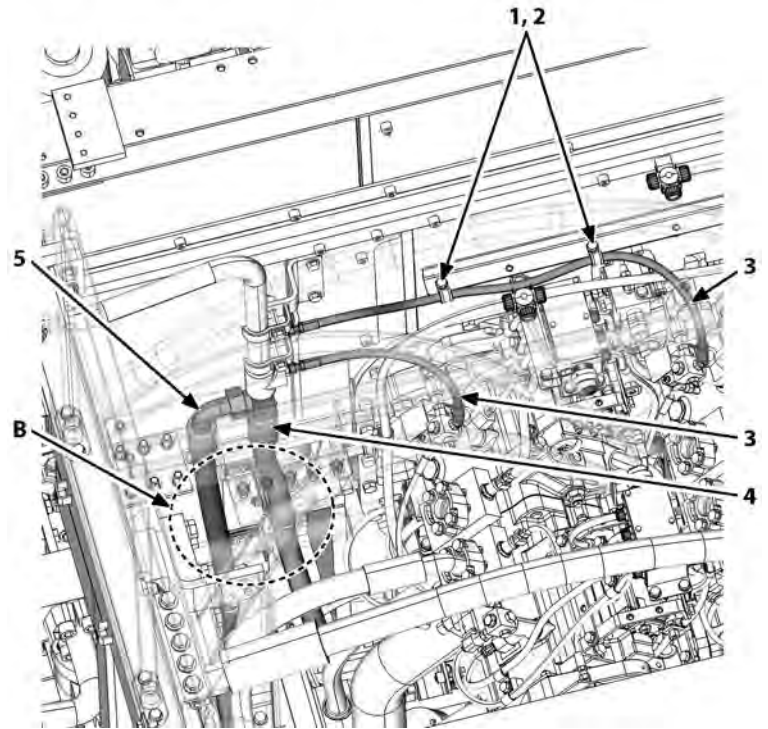
Group 6 Pump Device



WKGB91-03-06-106


a- Machine Front Side

Detail A




WKGB91-03-06-109


- Remove bolts, washers (1) (2 used), and clips (2) (2 used).

 : 17 mm


- Disconnect hoses (3) (2 used).

 : 22 mm

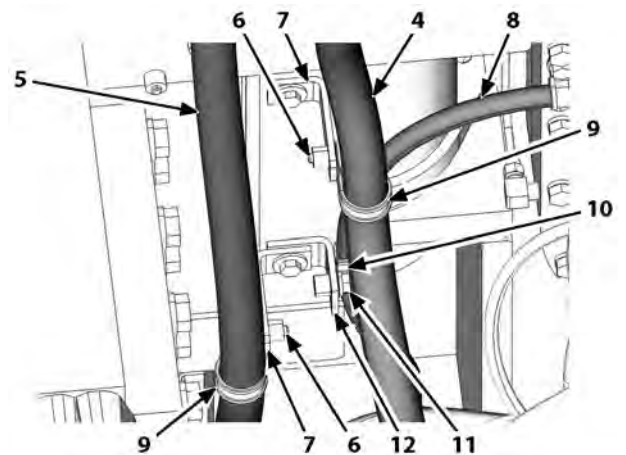
- Remove bolts, washers (6) (2 used), and clips (9) (2 used). Disconnect hoses (4, 5) from brackets (7) (2 used).

 : 17 mm

- Remove bolt, washer (11) and clip (10). Disconnect hose (8) from bracket (12).

 : 17 mm

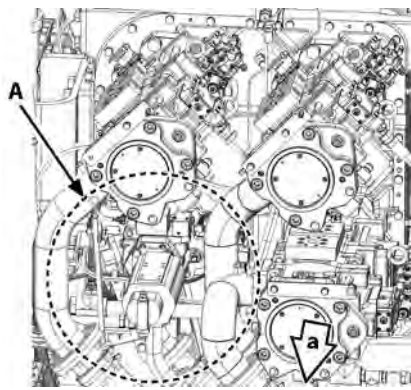
Detail B



WKGB91-03-06-111

SECTION 3 UPPER STRUCTURE

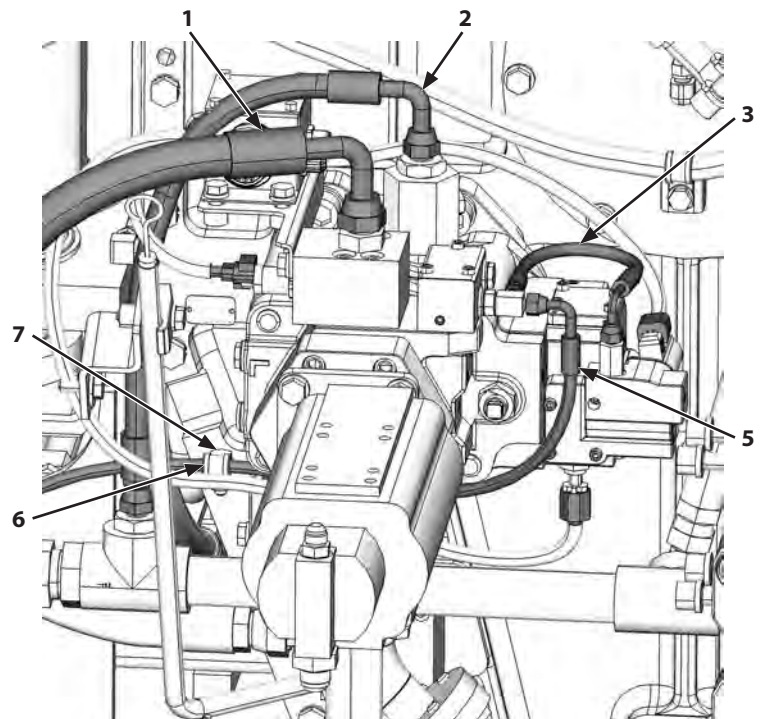
Group 6 Pump Device



a- Machine Front Side


WKGB91-03-06-153

Detail A




WKGB91-03-06-154


20. Disconnect hose (1).

 : 36 mm


21. Disconnect hose (2).

 : 27 mm


22. Disconnect both ends of hose (3).

 : 17 mm

23. Remove bolt, washer (7), and clip (6).

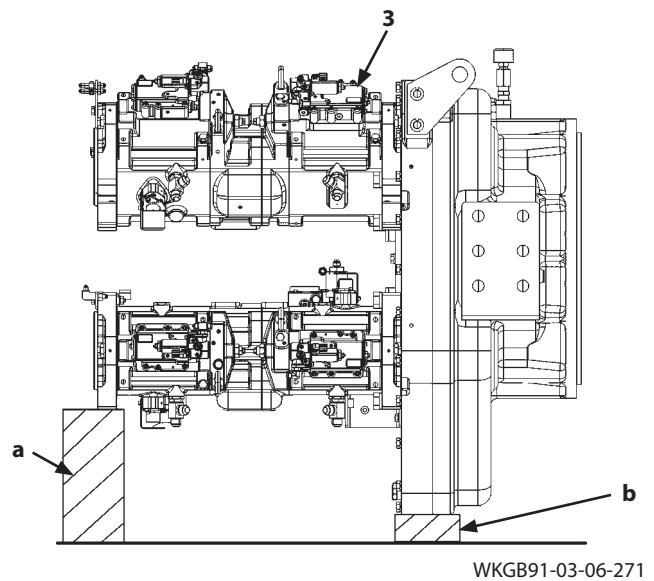
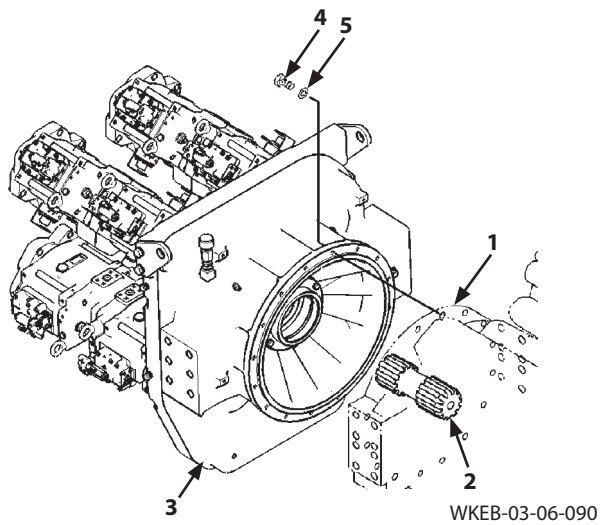
 : 17 mm

24. Disconnect hose (5).

 : 17 mm

SECTION 3 UPPER STRUCTURE

Group 6 Pump Device




a- Wooden Block


b- Wooden Block

6. Remove bolts (4) (16 used) and spring washers (5) (16 used). Pull pump device (3) straight out from engine (1) and remove pump device (3).

 : 3/4 in.

 **NOTE:** When removing pump device (3) from engine (1), press in shaft (2) to the engine (1) side.

7. Place wooden blocks (a, b) under pump device (3). Remove the nylon slings and chain blocks.

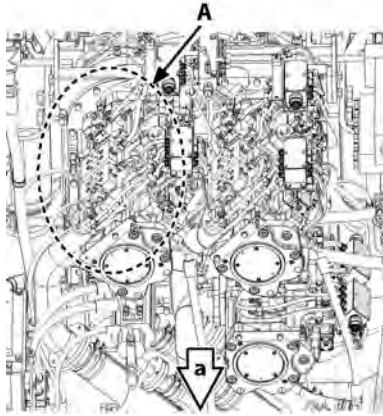
 **NOTE:** Wooden block (a): Height 340 mm (13 in)
Wooden block (b): Height 60 mm (2.4 in)

 **CAUTION: Shaft (2) weight: 26 kg (58 lb)**

8. Attach nylon slings onto shaft (2). Hoist and hold shaft (2). Remove shaft (2) from engine (1).

SECTION 3 UPPER STRUCTURE

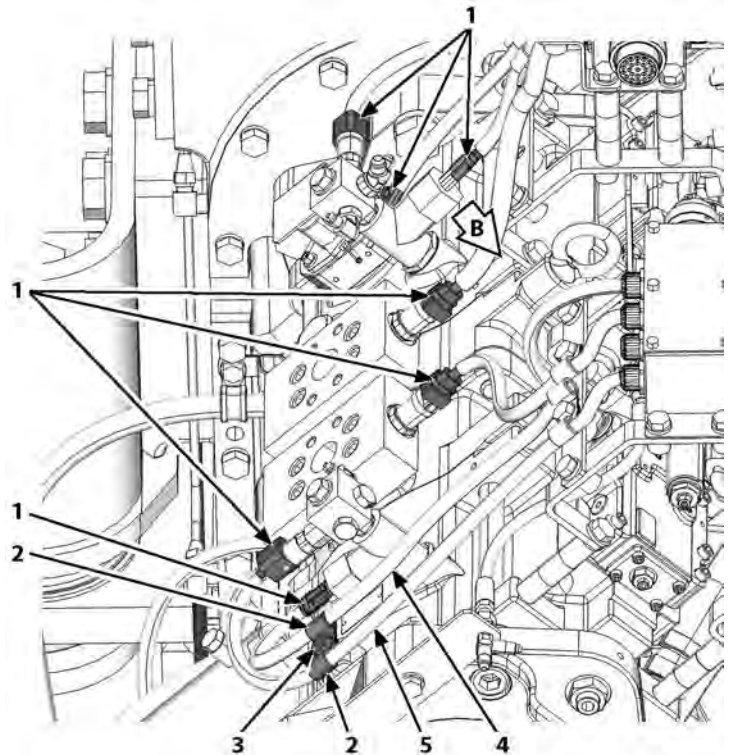
Group 6 Pump Device



WKGB91-03-06-128


a- Machine Front Side

Detail A



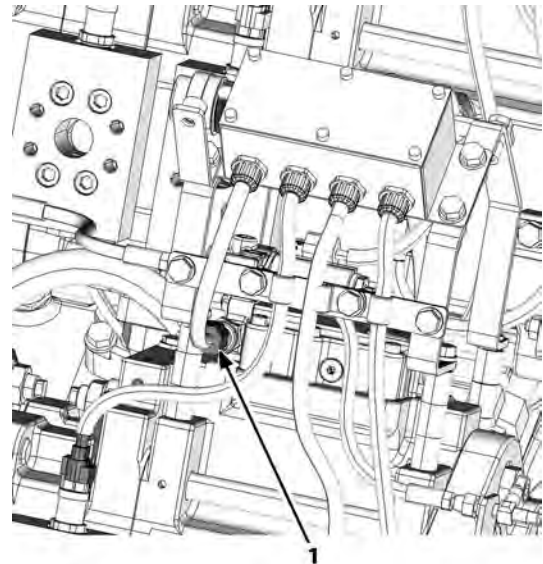
WKGB91-03-06-190

- 26. Connect connectors (1) (8 used).
- 27. Secure wire harnesses (4, 5) with clips (2) (2 used), and bolt, washer (3).

 : 17 mm

 : 50 N·m (37 lbf·ft)

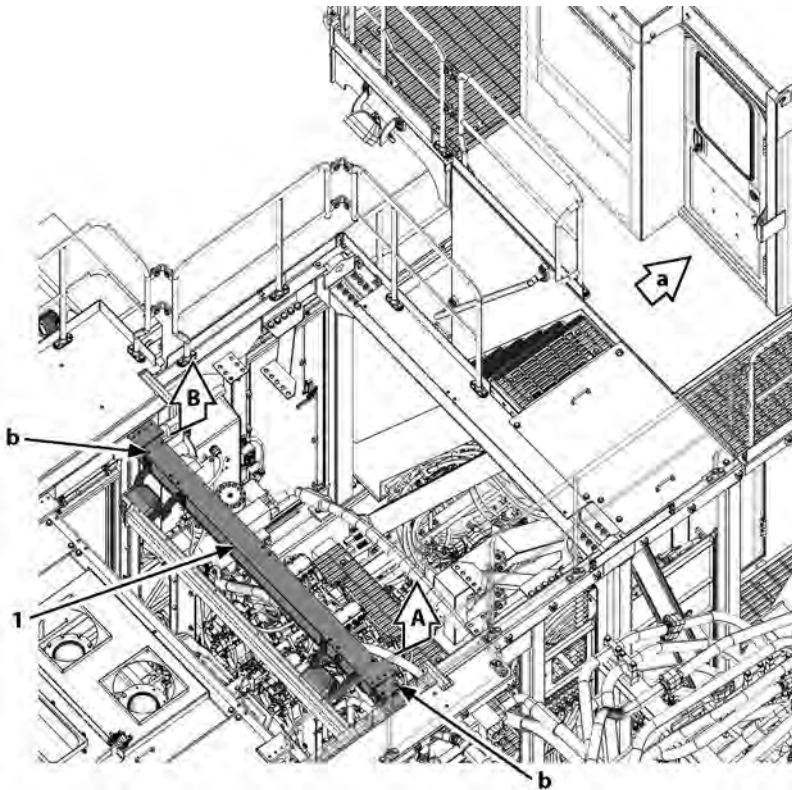
View B



WKGB91-03-06-130

SECTION 3 UPPER STRUCTURE

Group 6 Pump Device

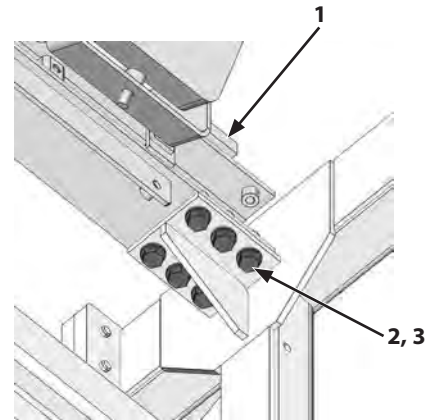


WKGB91-03-06-167

a- Machine Front Side

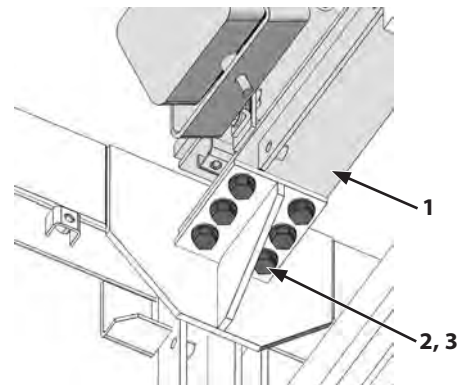
b- Lifting Hole

View A



WKGB91-03-05-361


View B



WKGB91-03-05-362

⚠ CAUTION: Beam (1) assembly weight: 66 kg (150 lb)

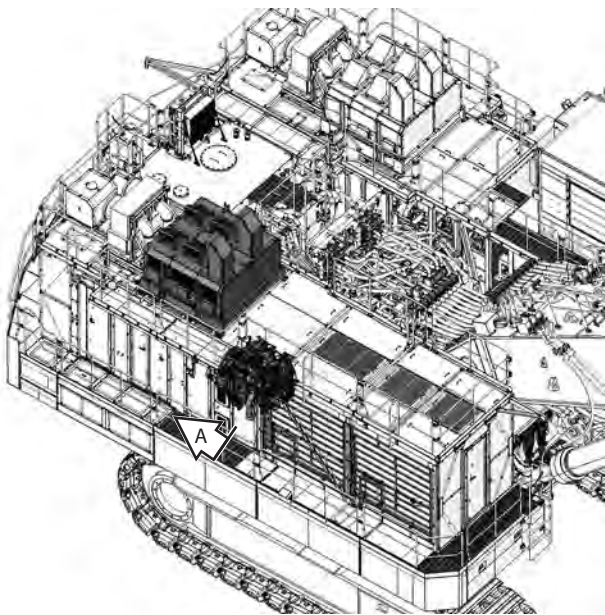
3. Install eyebolts (M12, Pitch 1.75 mm) (2 used) to diagonally opposite lifting holes (b) of beam (1). Attach nylon slings onto eyebolts (2 used). Hoist and hold the beam (1) assembly.
4. Install the beam (1) assembly with washers (3) (12 used) and bolts (2) (12 used).

 : 24 mm

 : 270 N·m (200 lbf·ft)

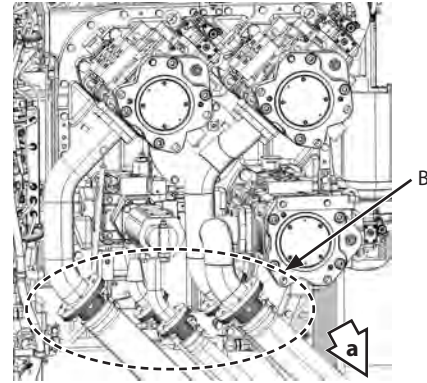
SECTION 3 UPPER STRUCTURE

Group 6 Pump Device



WKGB91-03-06-193

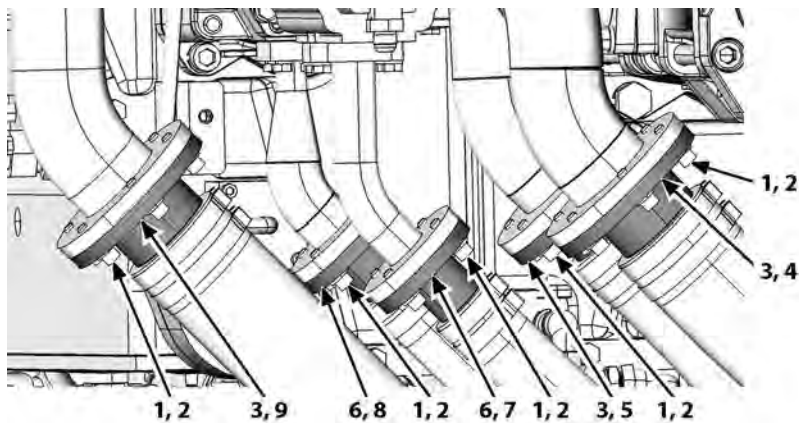
View A



WKGB91-03-06-160


a- Machine Front Side

Detail B



WKGB91-03-06-161


2. Place container under pipe (4). Remove socket bolts (1) (6 used) and washers (2) (6 used). Disconnect pipe (4). Drain the hydraulic oil. Remove O-ring (3).

 : 10 mm

 **NOTE:** Amount of hydraulic oil: Approx. 8 L (2.1 US gal)

3. Disconnect pipes (5, 9) in the same way as step 2.

4. Place container under pipe (7). Remove socket bolts (1) (4 used) and washers (2) (4 used). Disconnect pipe (7). Drain the hydraulic oil. Remove O-ring (6).

 : 10 mm

 **NOTE:** Amount of hydraulic oil: Approx. 6 L (1.6 US gal)

5. Disconnect pipe (8) in the same way as step 4.

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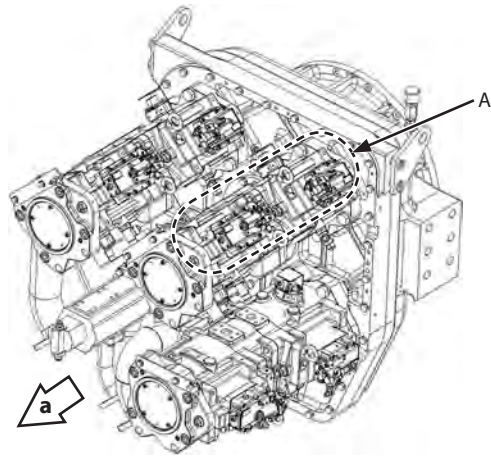


- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

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SECTION 3 UPPER STRUCTURE

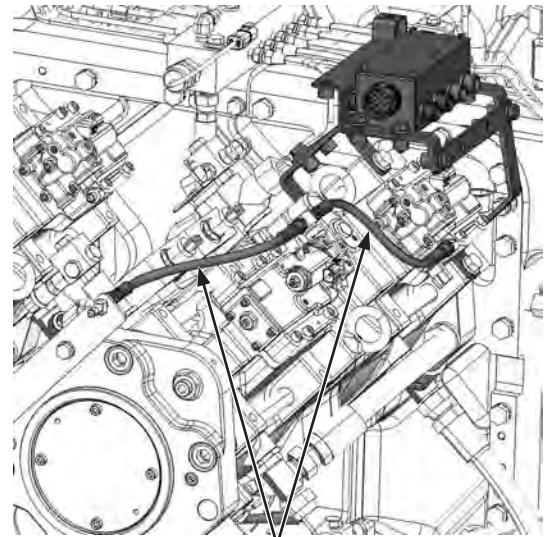
Group 6 Pump Device



a- Machine Front Side

WKGB91-03-06-165


Detail A



6

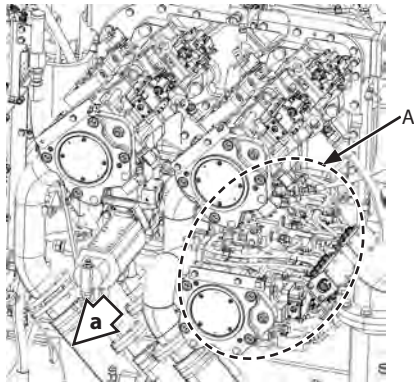
WKGB91-03-06-238

8. Disconnect both ends of hoses (6) (2 used).

 : 17 mm

SECTION 3 UPPER STRUCTURE

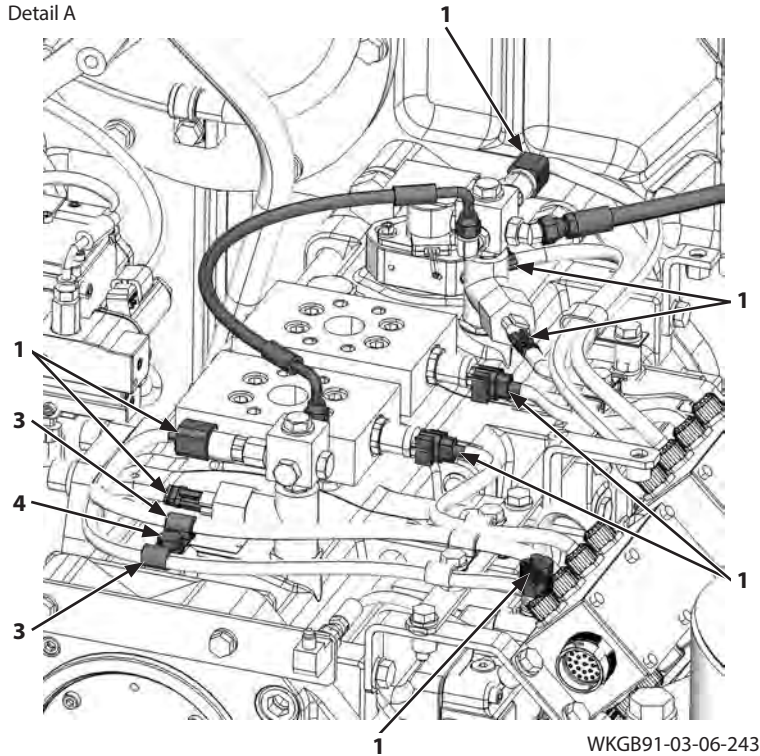
Group 6 Pump Device



WKGB91-03-06-242


a- Machine Front Side

Detail A



WKGB91-03-06-243

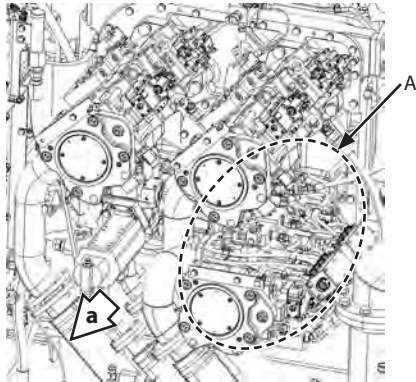
19. Remove bolt, washer (4), and clips (3) (2 used).

 : 17 mm

20. Disconnect connectors (1) (8 used).

SECTION 3 UPPER STRUCTURE

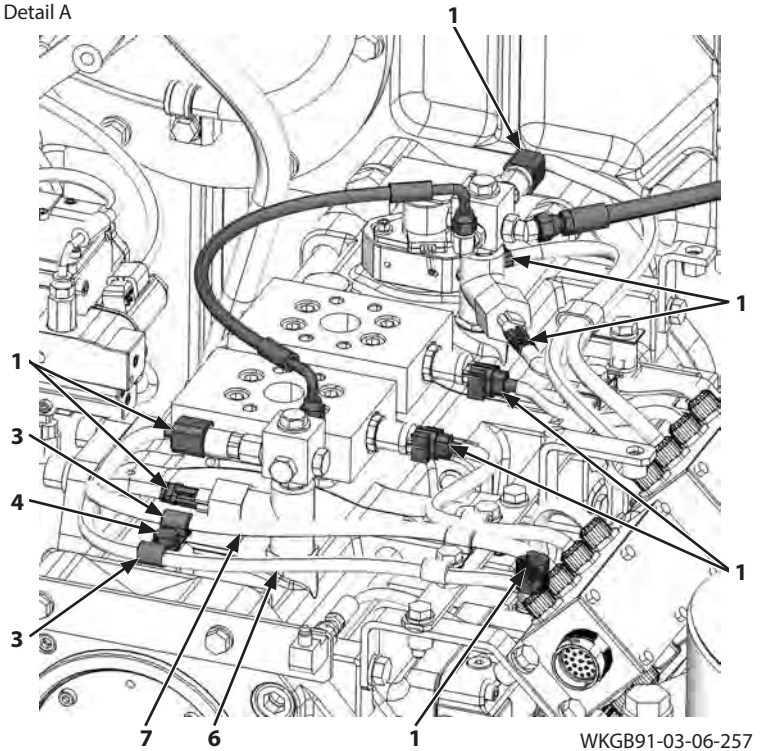
Group 6 Pump Device



WKGB91-03-06-242


a- Machine Front Side


Detail A



WKGB91-03-06-257

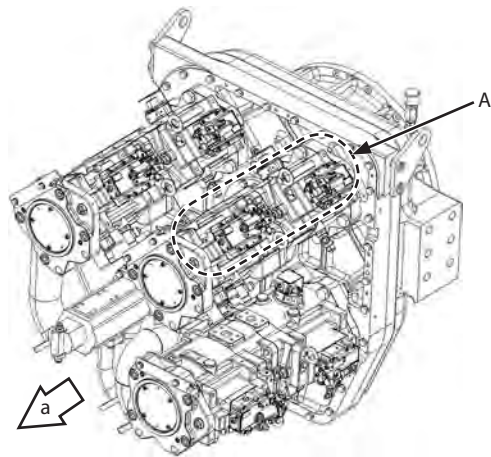
10. Connect connectors (1) (8 used).
11. Secure wire harnesses (6, 7) with clips (3) (2 used), and bolt, washer (4).

 : 17 mm

 : 50 N·m (37 lbf-ft)

SECTION 3 UPPER STRUCTURE

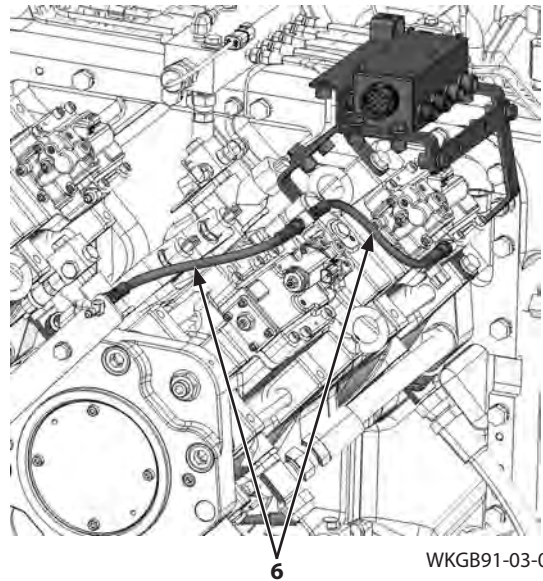
Group 6 Pump Device



a- Machine Front Side


WKGB91-03-06-165


Detail A



WKGB91-03-06-238

27. Connect both ends of hoses (6) (2 used).

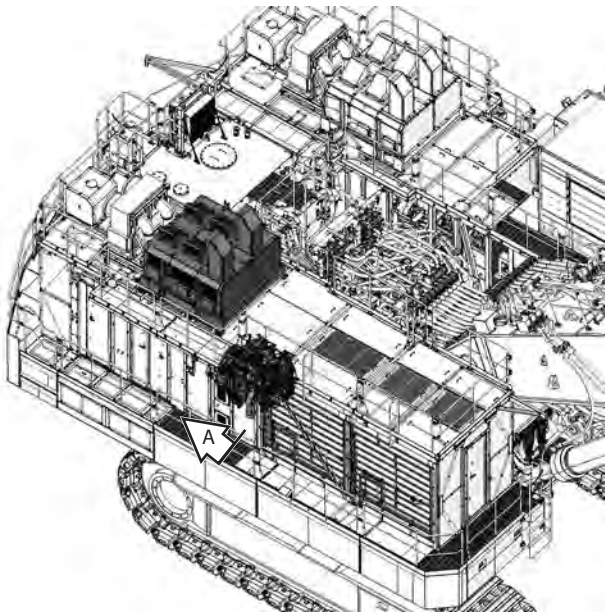
 : 17 mm

 : 25 N·m (18.5 lbf·ft)

SECTION 3 UPPER STRUCTURE

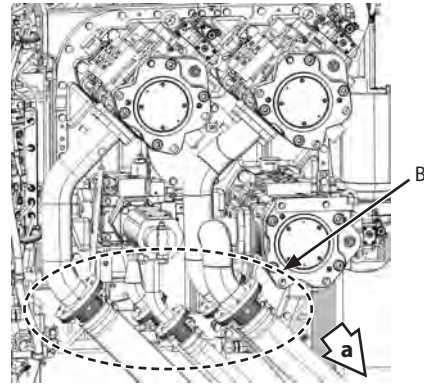
Group 6 Pump Device

Work After Installation



WKGB91-03-06-193

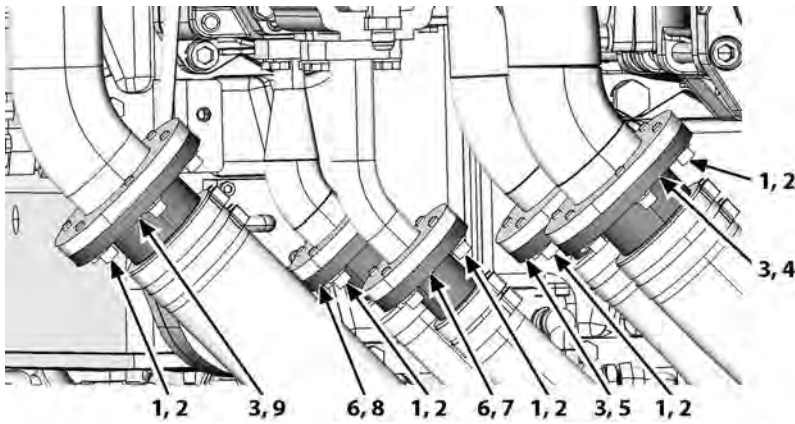
View A



WKGB91-03-06-160


a- Machine Front Side

Detail B



WKGB91-03-06-161


1. Install O-ring (6). Connect pipe (8) with washers (2) (4 used) and socket bolts (1) (4 used).

 : 10 mm

 : 130 N·m (96 lbf·ft)

2. Connect pipe (7) in the same way as step 1.

3. Install O-ring (3). Connect pipe (9) with washers (2) (6 used) and socket bolts (1) (6 used).

 : 10 mm

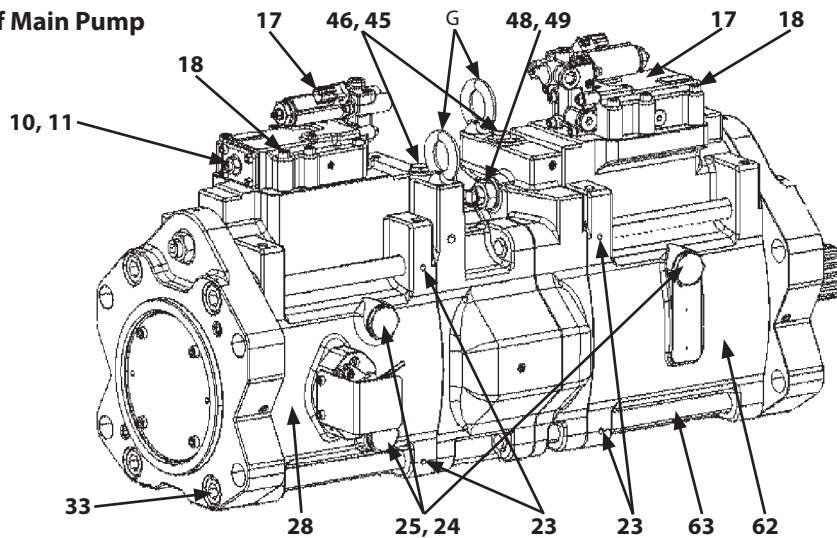
 : 130 N·m (96 lbf·ft)

4. Connect pipes (4, 5) in the same way as step 3.

SECTION 3 UPPERSTRUCTURE

Group 6 Pump Device

Disassembly of Main Pump



WKGB91-03-06-006

- Twelve main pumps are installed in the right and left engines via the pump transmission. Three units of tandem pumps are installed in each engine. The basic structure of the main pumps is the same structure. The disassembly procedures for one set of the 2-unit pump are explained here.

CAUTION: Main pump weight: 300 kg


IMPORTANT: Do not remove set screws (11, 48) (2 used for each) and lock nuts (10, 49) (2 used for each) as the setting of the pump flow rate control changes.

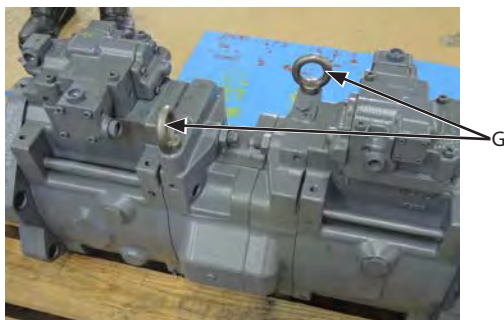
IMPORTANT: The parts of housing (28) are same as those of housing (62). Do not confuse the disassembled parts.

IMPORTANT: Valve plate (42) is different from valve plate (53). Record the position and the direction to install valve plates (42, 53) before removing.

Preparation

Attach nylon slings onto eyebolts (G) (M16) (2 used). Hoist the main pump assembly. Install the main pump assembly to special tool (ST 4242) with bolts (M24, Pitch 3 mm) (4 used). Install special tool (ST 4242) to workbench (ST 4243) with bolts (4 used) and nuts (4 used) in order to receive a reaction force.

 : 19 mm



WKGB91-03-06-023





WKGB91-03-06-024




WKGB91-03-06-047

1. Remove socket bolts (18) (12 used). Remove regulators (17A, 17B).


 : 6 mm

 **NOTE:** Check that O-ring of regulator (17) does not fall off.

2. Remove plugs (25) (2 used) and plugs (46) (2 used). Drain hydraulic oil from housings (28, 62).

 : 36 mm, 19 mm

3. Remove O-rings (24) (6 used) from plug (25). Remove O-rings (45) (2 used) from plug (46).

 **NOTE:** LOCTITE #263 or equivalent has been applied to set screw (23).


4. Remove set screws (23) (8 used).

 : 4 mm

5. Loosen socket bolts (33) (4 used), socket bolts (9) (4 used), and socket bolts (63) (4 used).

 : 17 mm, 8 mm

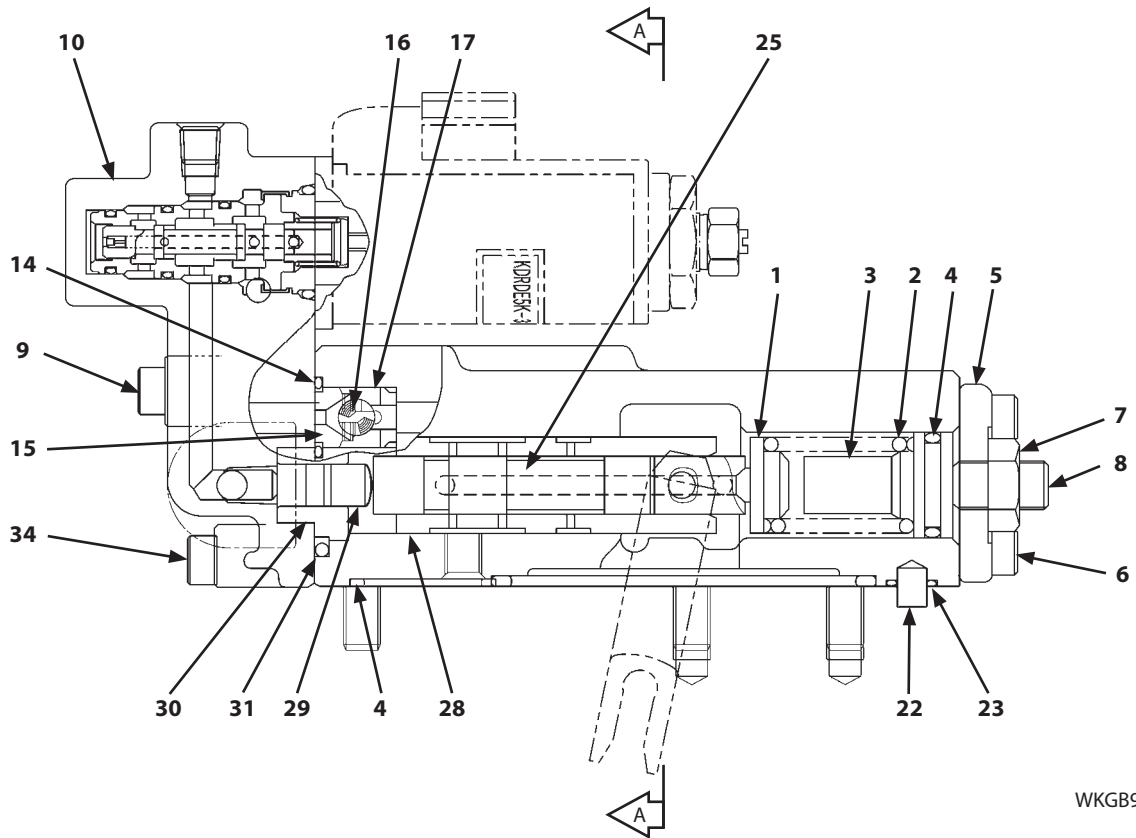
6. Remove socket bolts (56) (4 used).

 : 6 mm

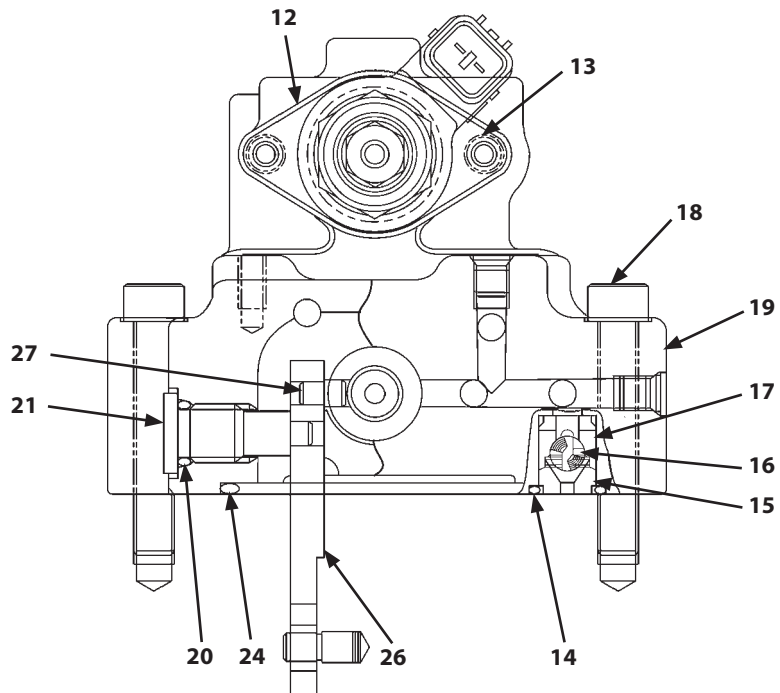
SECTION 3 UPPERSTRUCTURE

Group 6 Pump Device

Assembly of Regulator for Main Pump



WKGB91-03-06-001

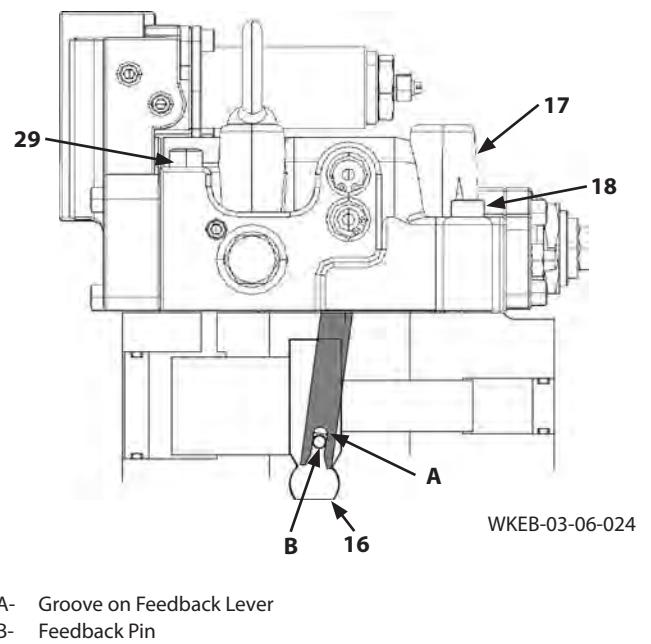
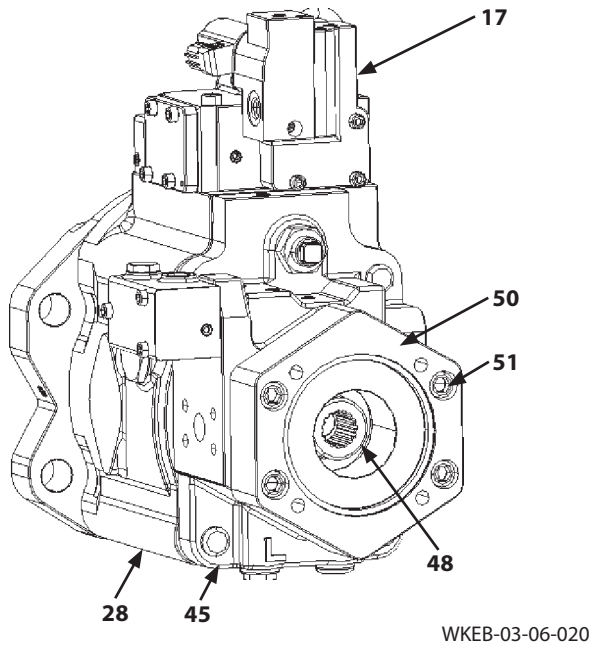


Section A-A


WKGB91-03-06-002


SECTION 3 UPPERSTRUCTURE

Group 6 Pump Device

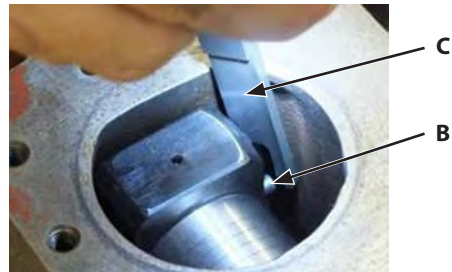


18. Install coupling (48) to shaft (5).
19. Install O-ring (49) to plate (50). Install plate (50) to cover (45) with socket bolts (51) (4 used).


 : 10 mm


 : 98 N·m (72 lbf-ft)


20. Fit groove (A) on feedback lever of regulator (17) to feedback pin (B) of tilting pin (16).



21. Install regulator (17) with socket bolts (18, 29) (2 used for each).

 : 6 mm

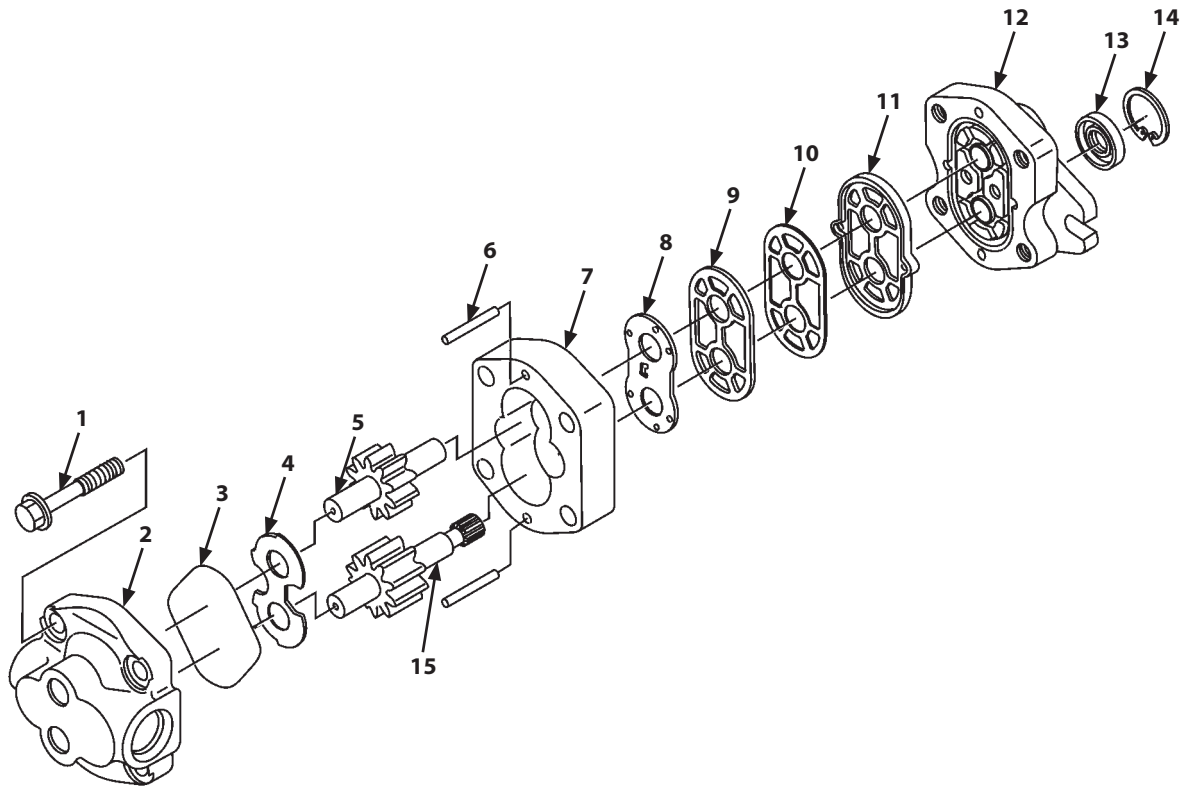
 : 29 N·m (21.5 lbf-ft)

 **NOTE:** Check that O-ring of regulator (17) does not fall off.

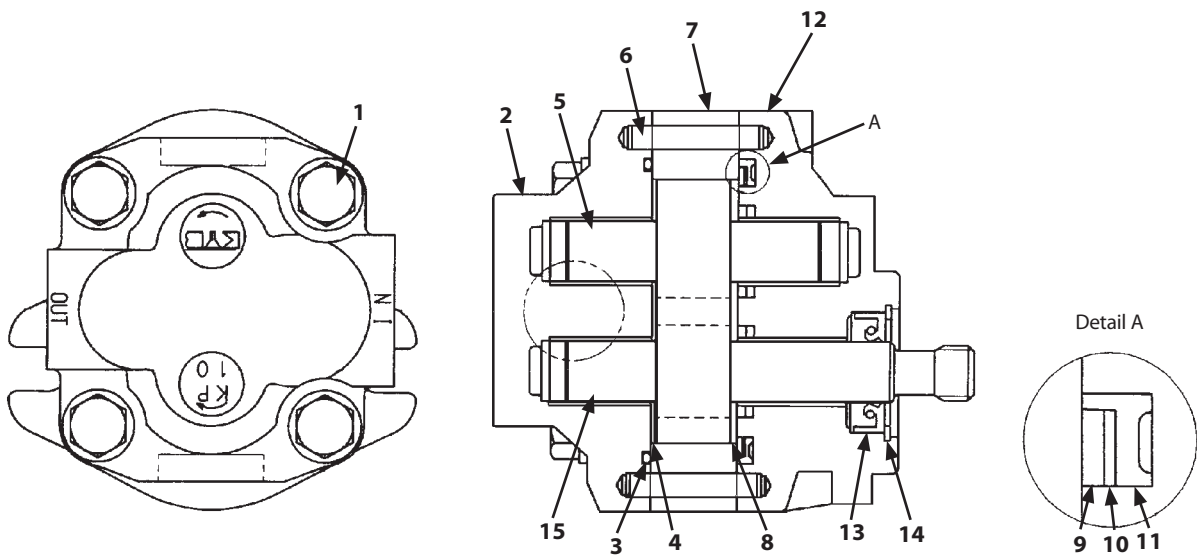
SECTION 3 UPPERSTRUCTURE

Group 6 Pump Device

Structure of Pump Transmission Oil Pump



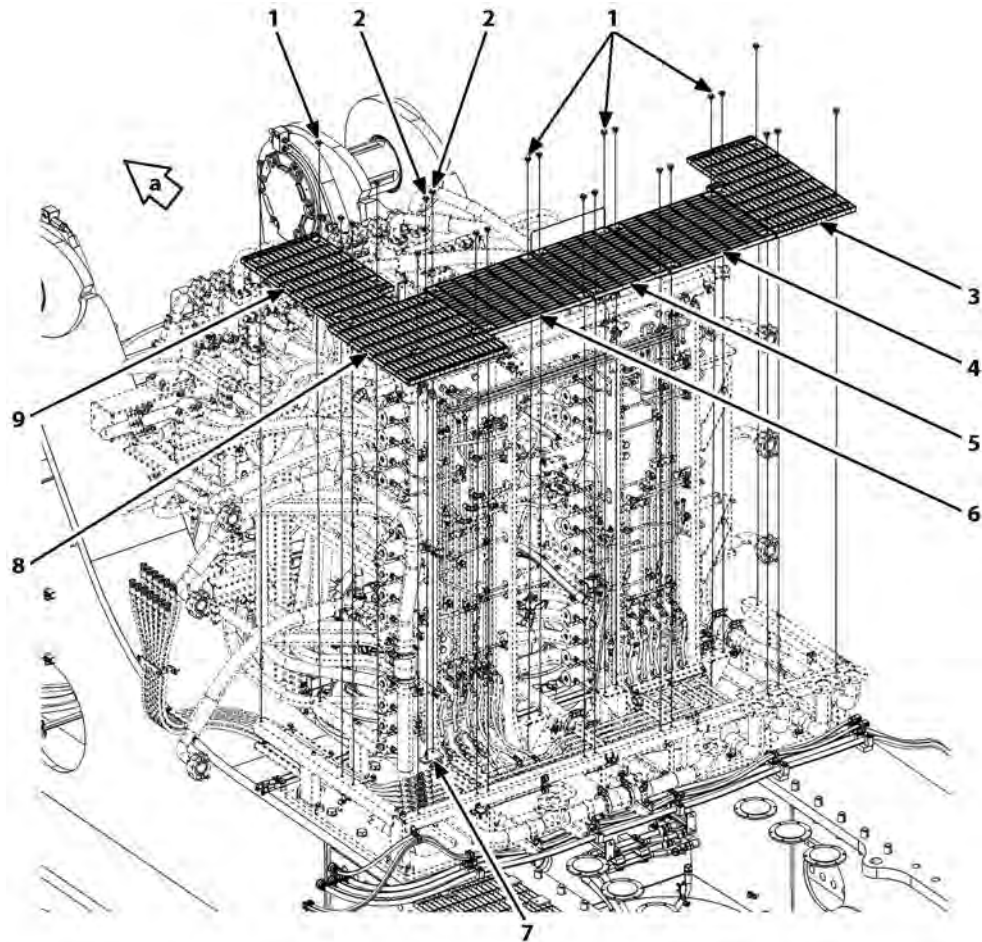
W18B-02-04-014



WKEB-03-06-039

SECTION 3 UPPER STRUCTURE


Group 7 Control Valve



WKGB91-03-07-130

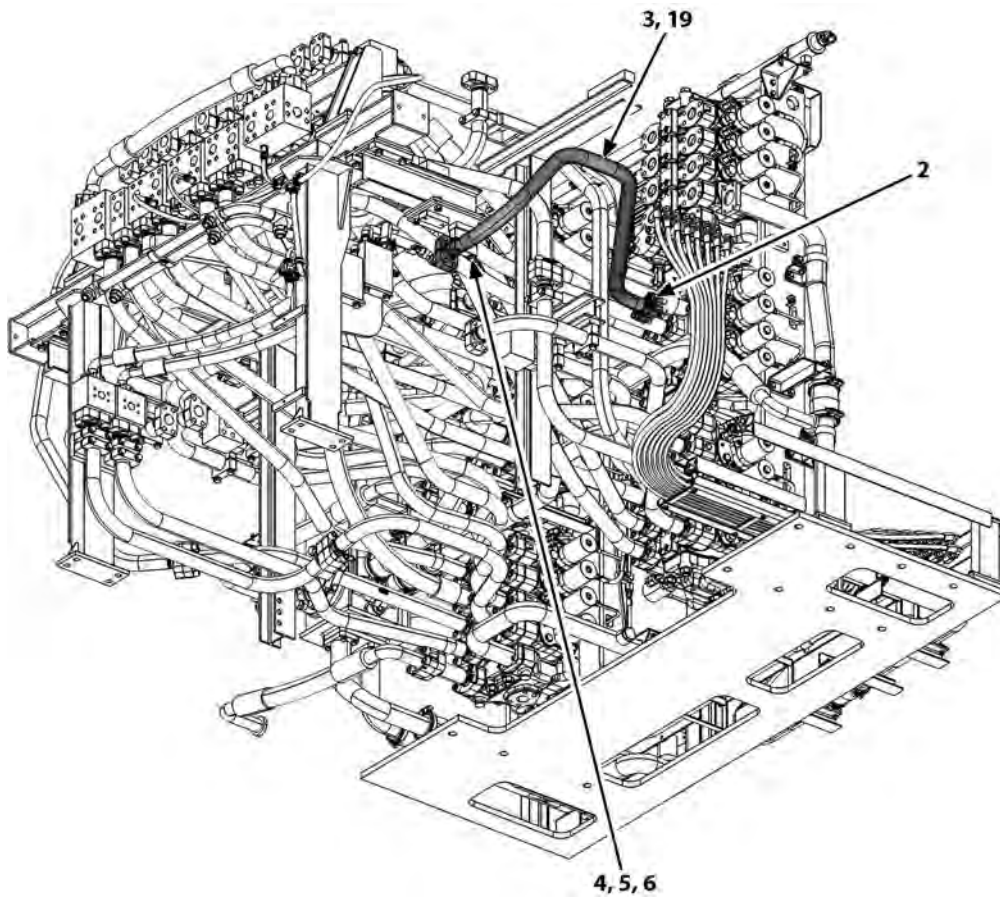
a- Machine Front Side

50. Remove bolts, washers (1) (22 used), bolts, washers (2) (2 used), and plate (7). Remove steps (3, 4, 5, 6, 8, 9).

 : 17 mm

SECTION 3 UPPER STRUCTURE


Group 7 Control Valve




WKGB91-03-07-155

⚠ CAUTION: Pipe (19) weight: 26 kg (58 lb)

84. Attach nylon slings onto pipe (19). Hoist and hold pipe (19). Remove bolts (4) (2 used), washers (5) (2 used), and clamps (6) (2 used).

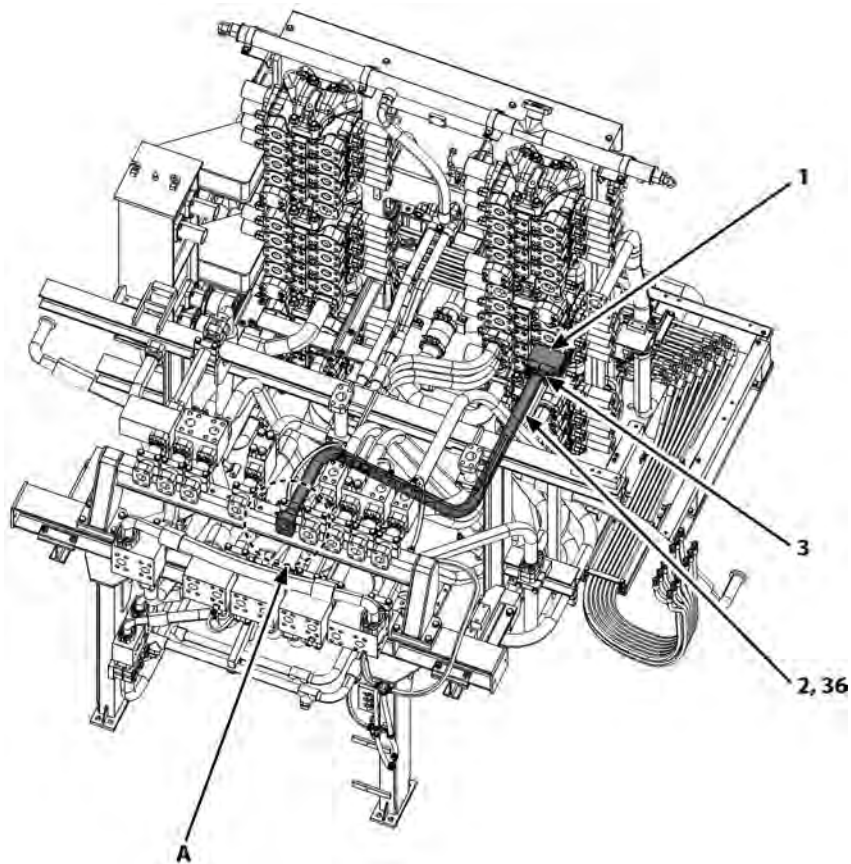
 : 22 mm

85. Remove socket bolts (2) (4 used). Disconnect pipe (19). Remove O-ring (3).

 : 17 mm

SECTION 3 UPPER STRUCTURE


Group 7 Control Valve




WKGB91-03-07-177

⚠ CAUTION: Pipe (36) weight: 26 kg (58 lb)

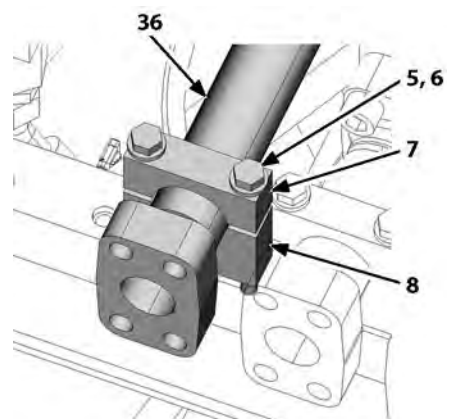
116. Attach nylon slings onto pipe (36). Hoist and hold pipe (36). Remove bolts (5) (2 used), washers (6) (2 used), and clamps (7, 8).

 : 22 mm

117. Remove socket bolts (3) (4 used). Disconnect pipe (36) and block (1). Remove O-rings (2) (2 used).

 : 17 mm

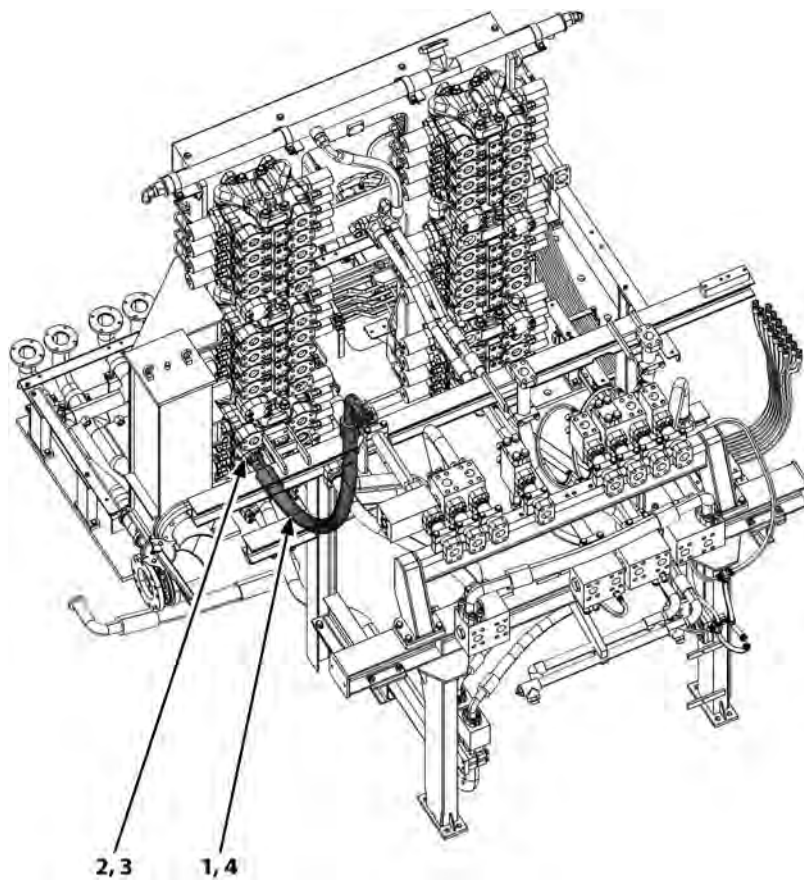
Detail A



WKGB91-03-07-184

SECTION 3 UPPER STRUCTURE


Group 7 Control Valve



WKGB91-03-07-208

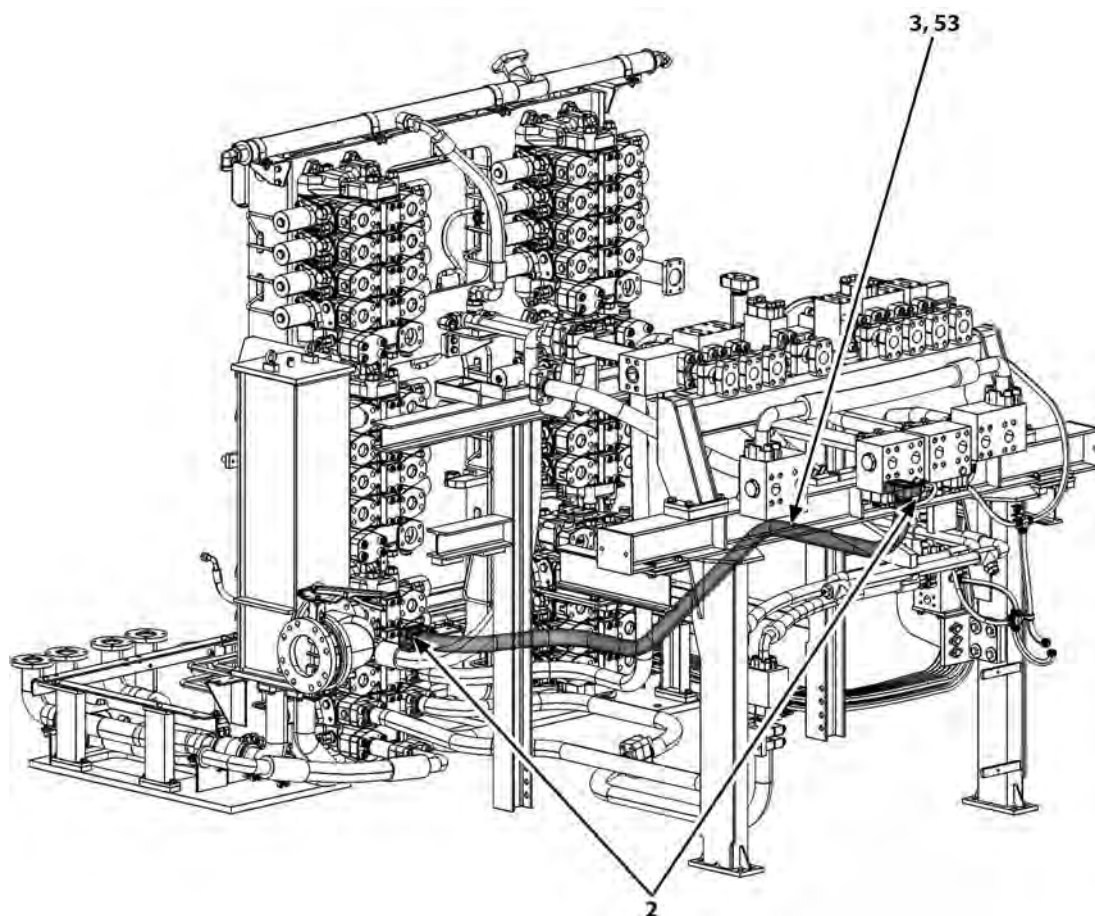
⚠ CAUTION: Hose (1) weight: 21 kg (47 lb)

143. Attach nylon slings onto hose (1). Hoist and hold hose (1). Remove socket bolts (2) (4 used) and split flanges (3) (2 used). Disconnect hose (1). Remove O-ring (4).

 : 17 mm

SECTION 3 UPPER STRUCTURE


Group 7 Control Valve




WKGB91-03-07-207

⚠ CAUTION: Pipe (53) weight: 29 kg (64 lb)

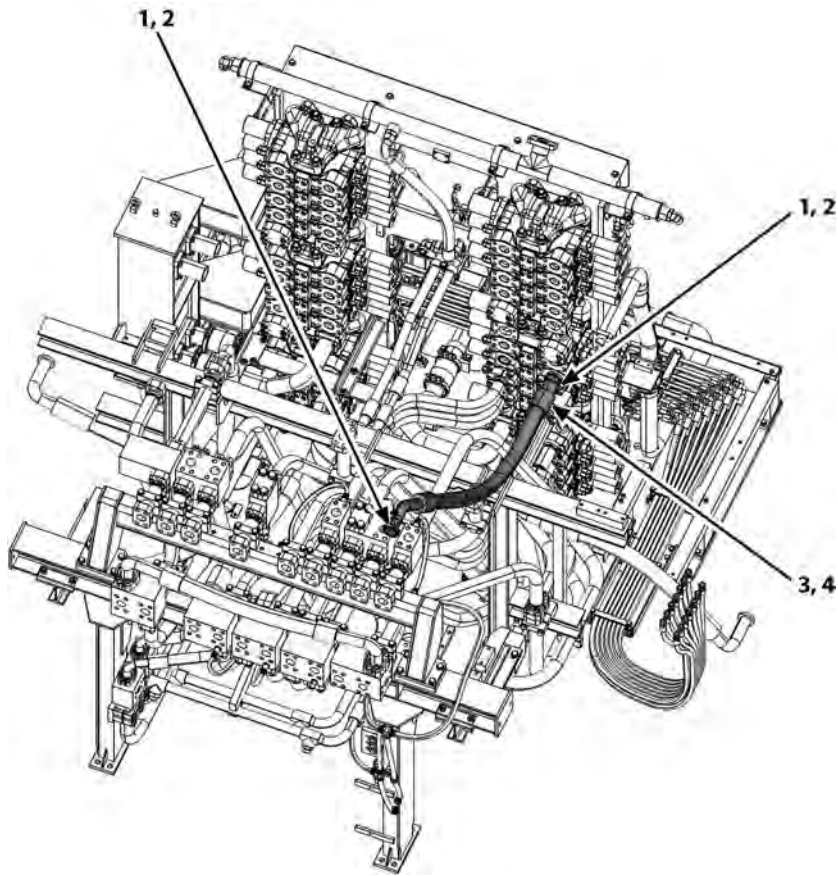
21. Attach nylon slings onto pipe (53). Hoist and hold pipe (53). Install O-rings (3) (2 used). Connect both ends of pipe (53) with socket bolts (2) (8 used).

 : 17 mm

 : 400 N·m (300 lbf·ft)


SECTION 3 UPPER STRUCTURE


Group 7 Control Valve



WKGB91-03-07-176

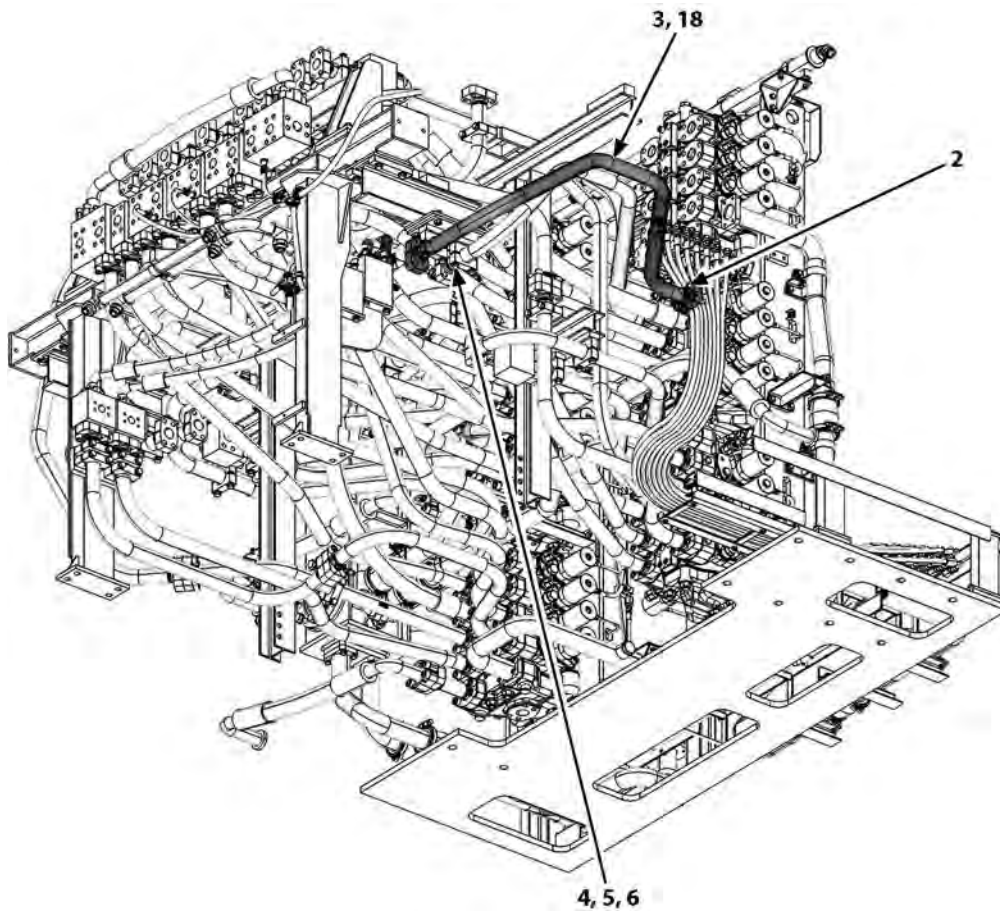
64. Install O-rings (3) (2 used). Connect both ends of hose (4) with split flanges (2) (4 used) and socket bolts (1) (8 used).

 : 17 mm

 : 400 N·m (300 lbf·ft)

SECTION 3 UPPER STRUCTURE

Group 7 Control Valve




WKGB91-03-07-154

⚠ CAUTION: Pipe (18) weight: 27 kg (60 lb)

115. Attach nylon slings onto pipe (18). Hoist and hold pipe (18).


116. Install O-ring (3). Temporarily install pipe (18) with socket bolts (2) (4 used), bolts (4) (2 used), washers (5) (2 used), and clamps (6) (2 used).


117. Tighten socket bolts (2) (4 used).

 : 17 mm

 : 400 N·m (300 lbf·ft)

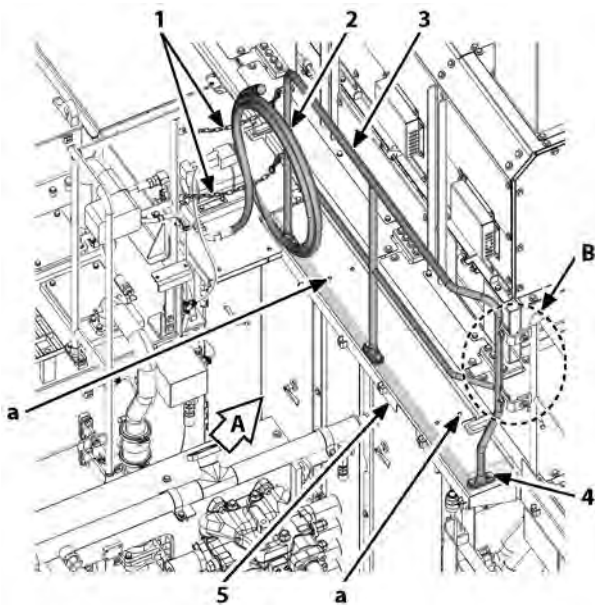
118. Tighten bolts (4) (2 used).

 : 22 mm

 : 140 N·m (103 lbf·ft)

SECTION 3 UPPER STRUCTURE

Group 7 Control Valve




WKGB91-03-07-123

a- Lifting Hole

CAUTION: Step (5) weight: 22 kg (49 lb)


160. Install eyebolts (M12, Pitch 1.75 mm) to diagonally opposite lifting holes (a) of step (5). Attach nylon slings onto the eyebolts (2 used). Hoist and hold step (5).
161. Install step (5) with washers (7) (4 used) and bolts (6) (4 used).

 : 24 mm

 : 270 N·m (200 lbf·ft)

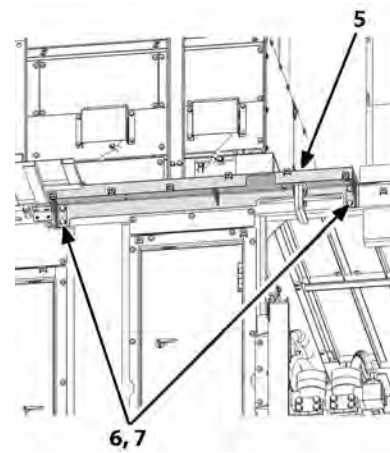
CAUTION: Handrail (3) weight: 22 kg (49 lb)

162. Attach nylon slings onto handrail (3). Hoist and hold handrail (3).
163. Install handrail (3) with bolts, washers (4) (6 used).

 : 19 mm

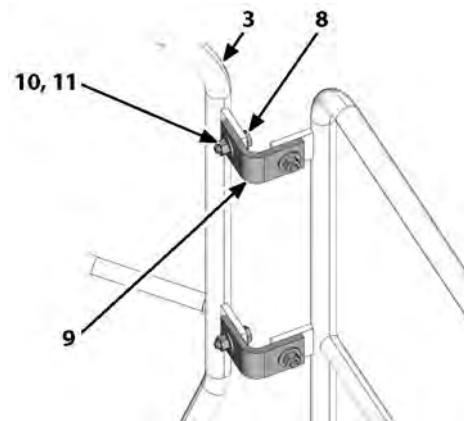
 : 90 N·m (66 lbf·ft)

View A



WKGB91-03-07-124


Detail B



WKGB91-03-07-197

164. Install plates (9) (2 used) with bolts, washers (8) (4 used), washers (11) (4 used), and nuts (10) (4 used).

 : 19 mm

 : 90 N·m (66 lbf·ft)

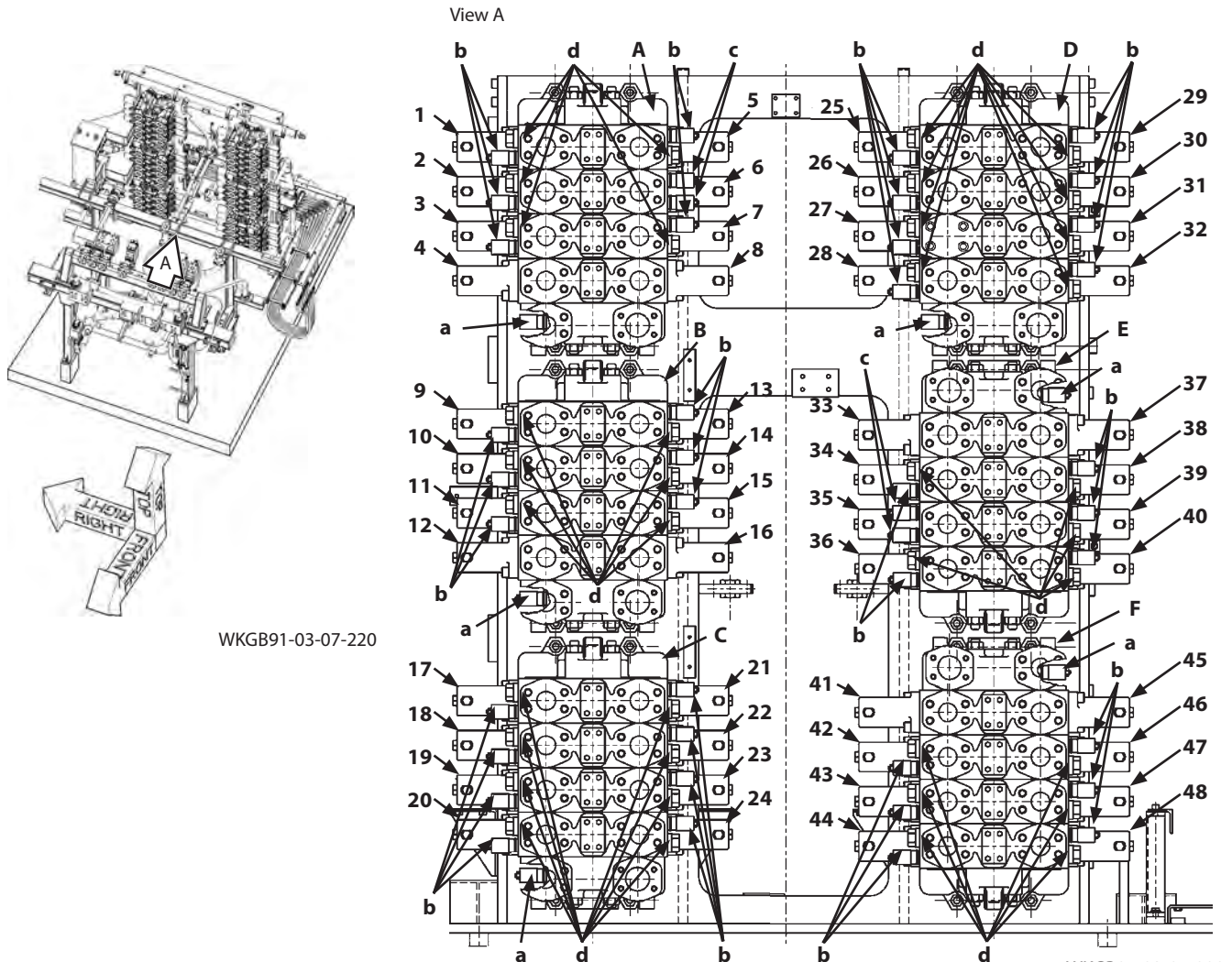
165. Install hose (2) to handrail (3).

166. Install chains (1) (2 used).

SECTION 3 UPPERSTRUCTURE

Group 7 Control Valve

Layout of Relief Valves and Make-up Valves



WKGB91-03-07-220

WKGB91-03-07-008

- a- Main Relief Valve (29.4 MPa)
- b- Overload Relief Valve (31.4 MPa)
- c- Overload Relief Valve (15.4 MPa)
- d- Make-up Valve

A- Control Valve 4 (Upper Right)

- 1- Arm Roll-Out
- 2- Bucket Open
- 3- Boom Raise
- 4- Travel (Left) Reverse
- 5- Arm Roll-In
- 6- Bucket Close
- 7- Bucket Roll-In
- 8- Travel (Left) Forward

D- Control Valve 1 (Upper Left)

- 25- Bucket Roll-Out
- 26- Boom Lower
- 27- Boom Lower
- 28- Right Swing
- 29- Bucket Roll-In
- 30- Arm Roll-Out
- 31- Boom Raise
- 32- Left Swing

B- Control Valve 5 (Middle Right)

- 9- Bucket Roll-In
- 10- Boom Lower
- 11- Arm Roll-Out
- 12- Travel (Right) Forward
- 13- Bucket Roll-Out
- 14- Boom Raise
- 15- Arm Roll-In
- 16- Travel (Right) Reverse

E- Control Valve 2 (Middle Left)

- 33- Travel (Left) Forward
- 34- Bucket Roll-In
- 35- Bucket Close
- 36- Arm Roll-In
- 37- Travel (Left) Reverse
- 38- Boom Raise
- 39- Bucket Open
- 40- Arm Roll-Out

C- Control Valve 6 (Lower Right)

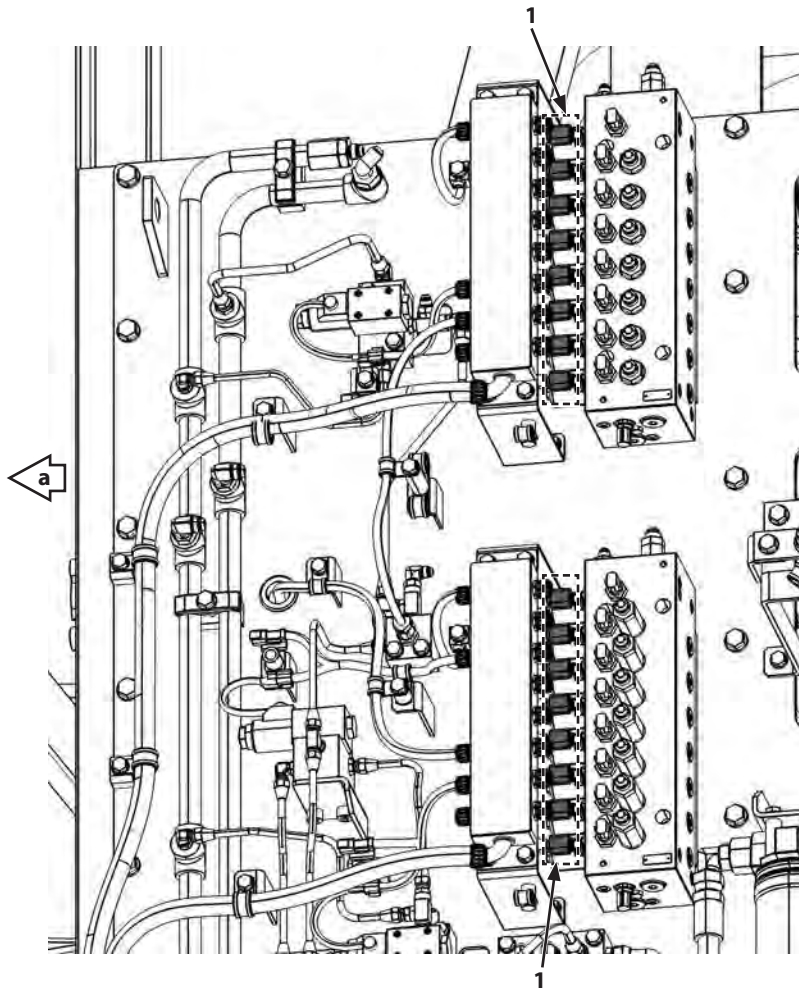
- 17- Bucket Roll-In
- 18- Boom Lower
- 19- Boom Lower
- 20- Right Swing
- 21- Bucket Roll-Out
- 22- Arm Roll-Out
- 23- Boom Raise
- 24- Left Swing

D- Control Valve 3 (Lower Left)

- 41- Travel (Right) Reverse
- 42- Arm Roll-In
- 43- Boom Raise
- 44- Bucket Roll-Out
- 45- Travel (Right) Forward
- 46- Arm Roll-Out
- 47- Boom Lower
- 48- Bucket Roll-In

SECTION 3 UPPERSTRUCTURE

Group 8 Other Valves



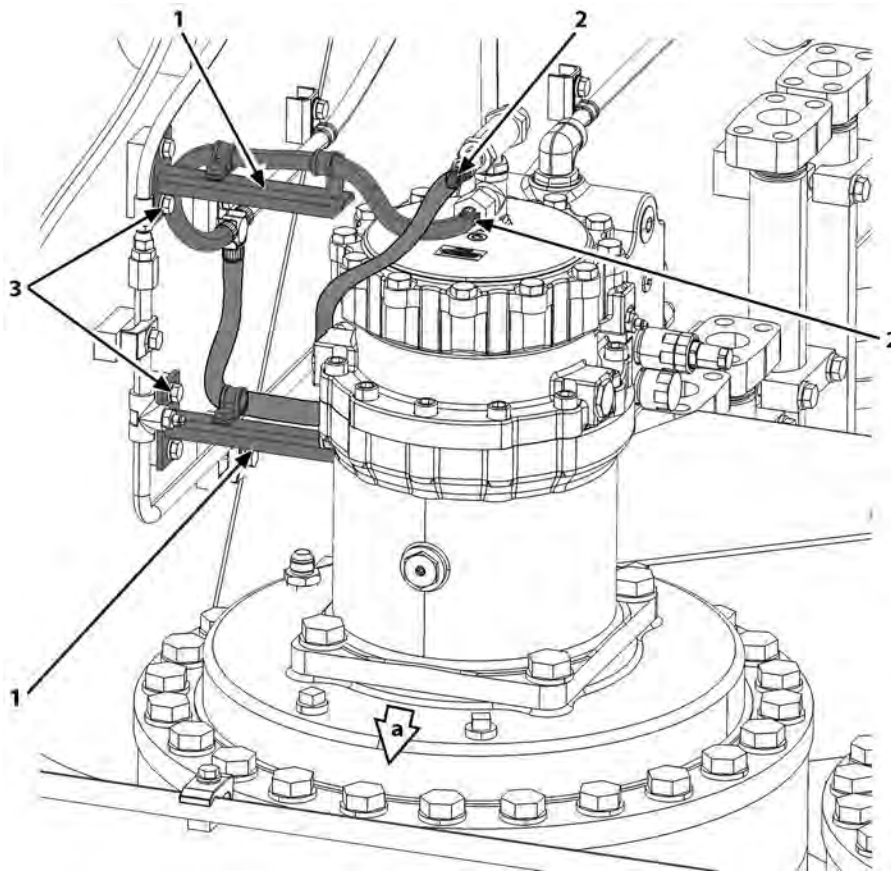
a- Machine Front Side

WKGB91-03-08-106

11. Disconnect connectors (1) (16 used).

SECTION 3 UPPER STRUCTURE


Group 9 Swing Device



WKGB91-03-09-106

a- Machine Front Side

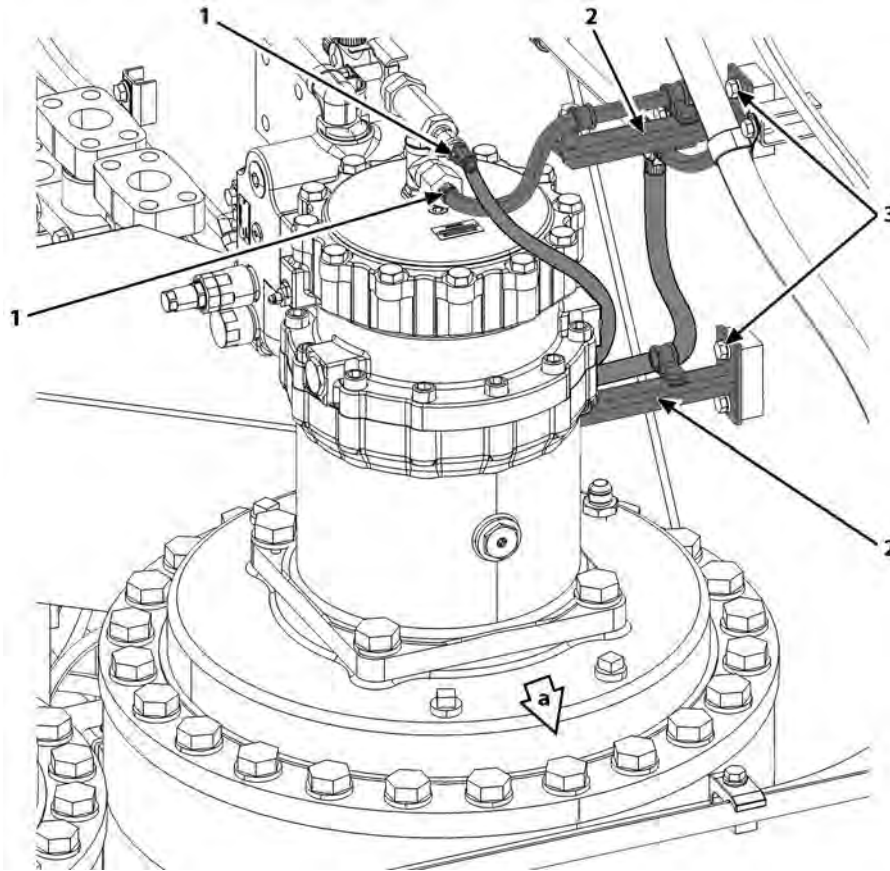
12. Disconnect connectors (2) (2 used).
13. Remove bolts, washers (3) (4 used). Place the bracket (1) assemblies (2 used) outside the work area.

 : 17 mm

SECTION 3 UPPER STRUCTURE

Group 9 Swing Device


Swing Device (Front Left Side)




WKGB91-03-09-109

a- Machine Front Side

25. Install the bracket (2) assemblies (2 used) with bolts, washers (3) (4 used).

 : 17 mm

 : 50 N·m (37 lbf·ft)

26. Connect connectors (1) (2 used).

SECTION 3 UPPERSTRUCTURE


Group 9 Swing Device

Disassembly of Swing Motor


IMPORTANT: Attach identification tags onto the removed parts for assembling.

1. Remove plugs (11) (2 used) from casing (9). Remove plugs (24, 40) from cover (41). Completely drain off hydraulic oil from casing (9).

- Plugs (11, 24)

 : 36 mm


- Plug (40)

 : 8 mm

2. Remove O-rings (12) (2 used) from plugs (11) (2 used). Remove O-ring (23) from plug (24).

CAUTION: The swing motor assembly weight: 226 kg

3. Horizontally place the swing motor assembly onto workbench (ST 4243) with the valve unit (22) side up.
4. Loosen socket bolts (21) (8 used).

 : 14 mm

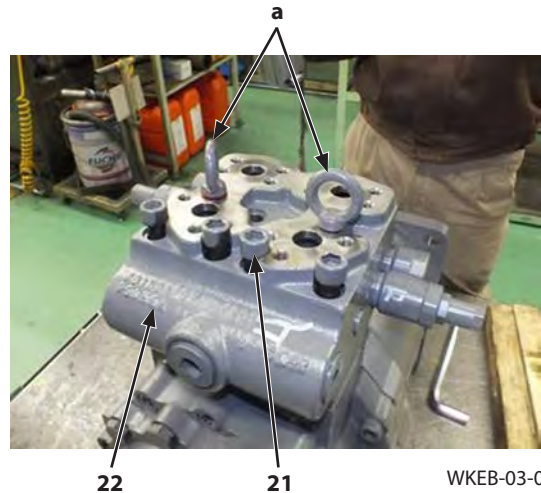


22 21

WKEB-03-09-111

CAUTION: Valve unit (22) weight: 31 kg

5. Install eyebolts (a) (M16, Pitch 2.0 mm) (2 used) to the screw holes (2 places) of valve unit (22). Attach nylon slings onto eyebolts (a) (2 used). Hoist and hold valve unit (22).



22 21

WKEB-03-09-112

a- Eyebolt

6. Remove socket bolts (21) (8 used). Remove valve unit (22) from the swing motor.

 : 14 mm

SECTION 3 UPPERSTRUCTURE

Group 9 Swing Device

IMPORTANT: Check the direction to install spacer (14).

34. Install spacer (14) to cover (25) with groove (a) up.

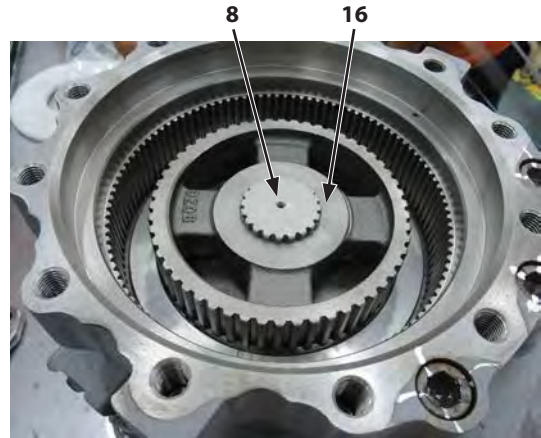


WKEB-03-09-166

a- Groove

IMPORTANT: Check the direction to install coupling (16).

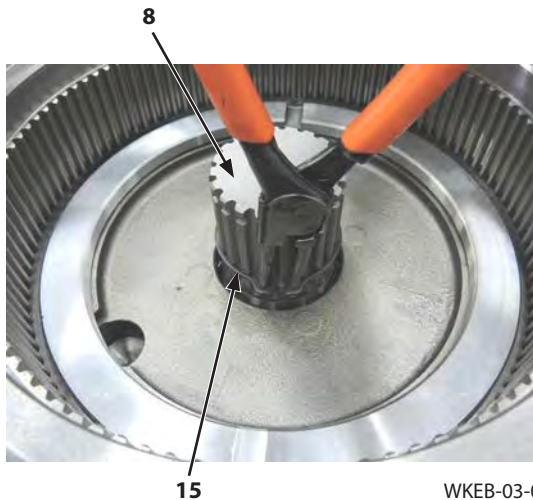
36. Install coupling (16) to shaft (8) with the stamped mark up.



WKEB-03-09-168

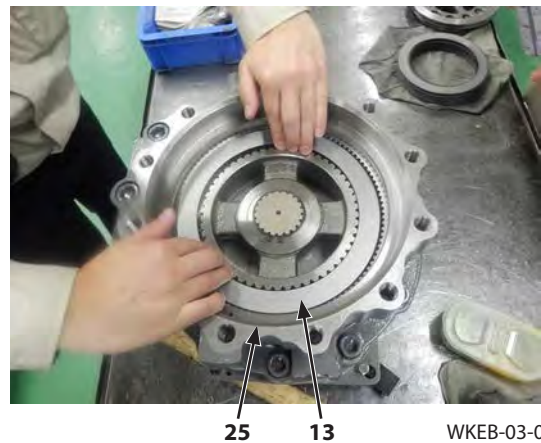
IMPORTANT: Install retaining ring (15) with the chamfered side up.

35. Install retaining ring (15) to shaft (8).



WKEB-03-09-167

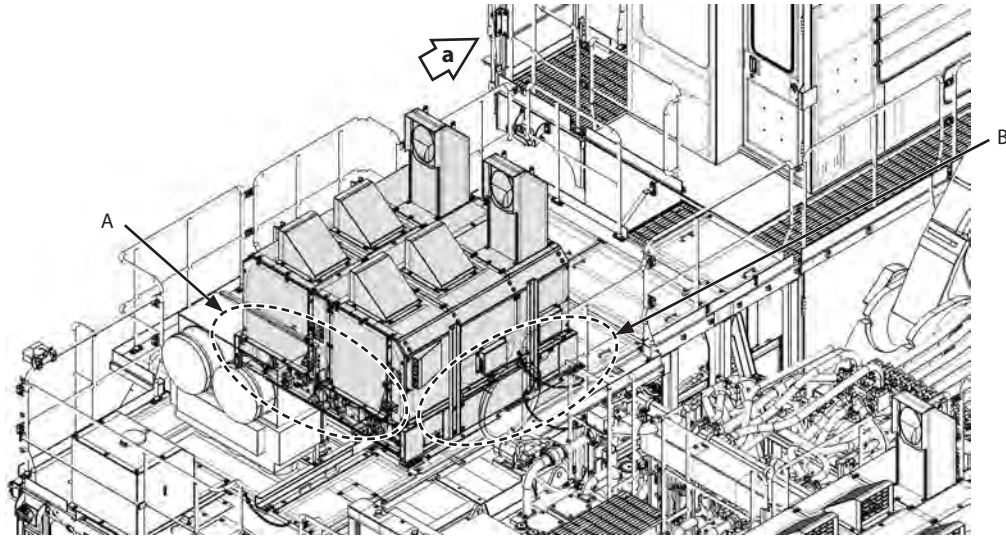
37. Install shim (13) to cover (25).



WKEB-03-09-169

SECTION 3 UPPERSTRUCTURE

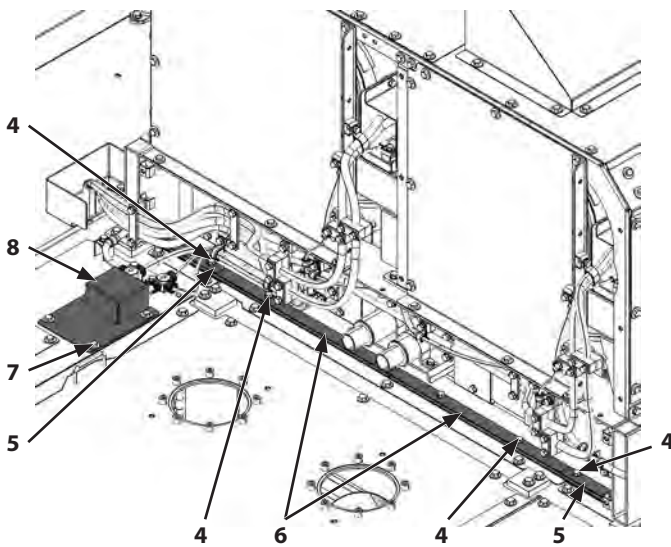
Group 10 Aftertreatment Device



a- Machine Front Side

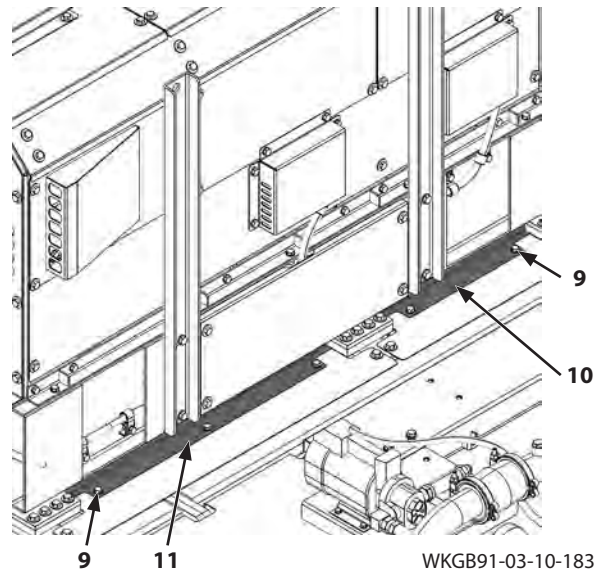
WKGB91-03-10-181

Detail A




WKGB91-03-10-189

Detail B




WKGB91-03-10-183

7. Install covers (10, 11) with bolts, washers (9) (5 used).

 : 17 mm


 : 50 N·m (37 lbf-ft)

8. Install cover (8) with bolts, washers (7) (4 used).

 : 17 mm

 : 50 N·m (37 lbf-ft)

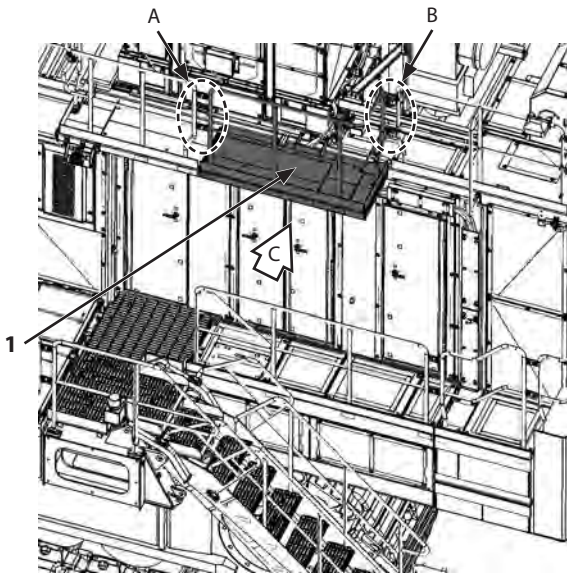
9. Install covers (5, 6) (2 used for each) with bolts, washers (4) (8 used).

 : 17 mm

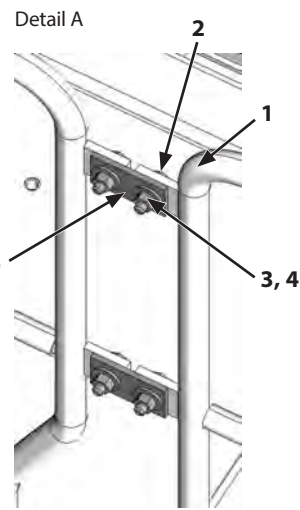
 : 50 N·m (37 lbf-ft)

SECTION 3 UPPERSTRUCTURE

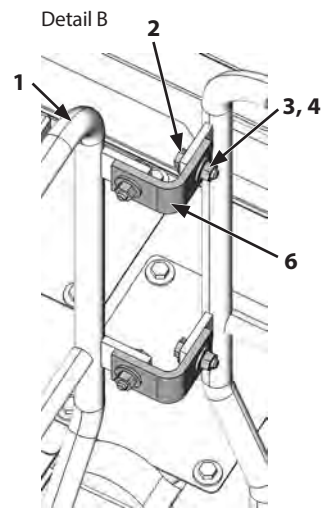
Group 10 Aftertreatment Device



WKGB91-03-10-106




WKGB91-03-10-107




WKGB91-03-10-108

6. Remove bolts, washers (2) (8 used), nuts (3) (8 used), and washers (4) (8 used). Remove plates (5, 6) (2 used for each).


 : 19 mm

7. Remove bolts, washers (9) (4 used). Remove the bracket (10) assemblies (2 used).

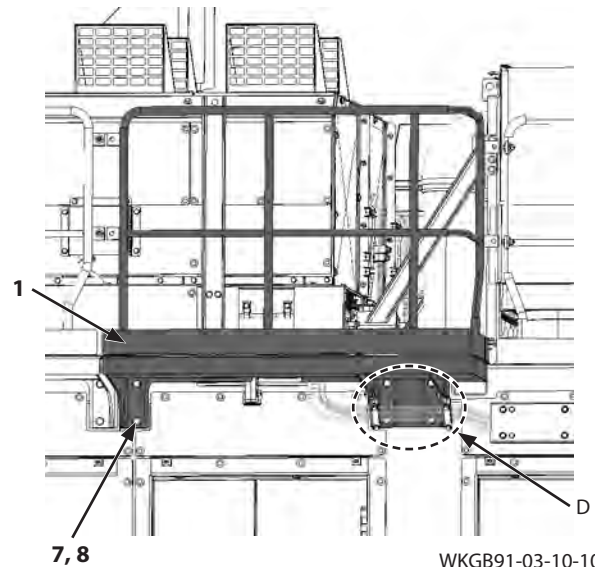
 : 17 mm

⚠ CAUTION: The step (1) assembly weight: 91 kg (205 lb)

8. Attach nylon slings onto the step (1) assembly. Hoist and hold the step (1) assembly.
9. Remove bolts (7) (6 used) and washers (8) (6 used). Remove the step (1) assembly.

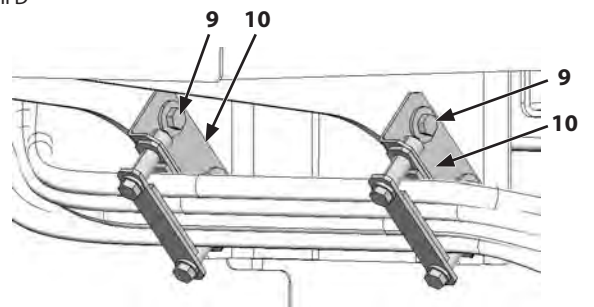
 : 24 mm

View C



WKGB91-03-10-109

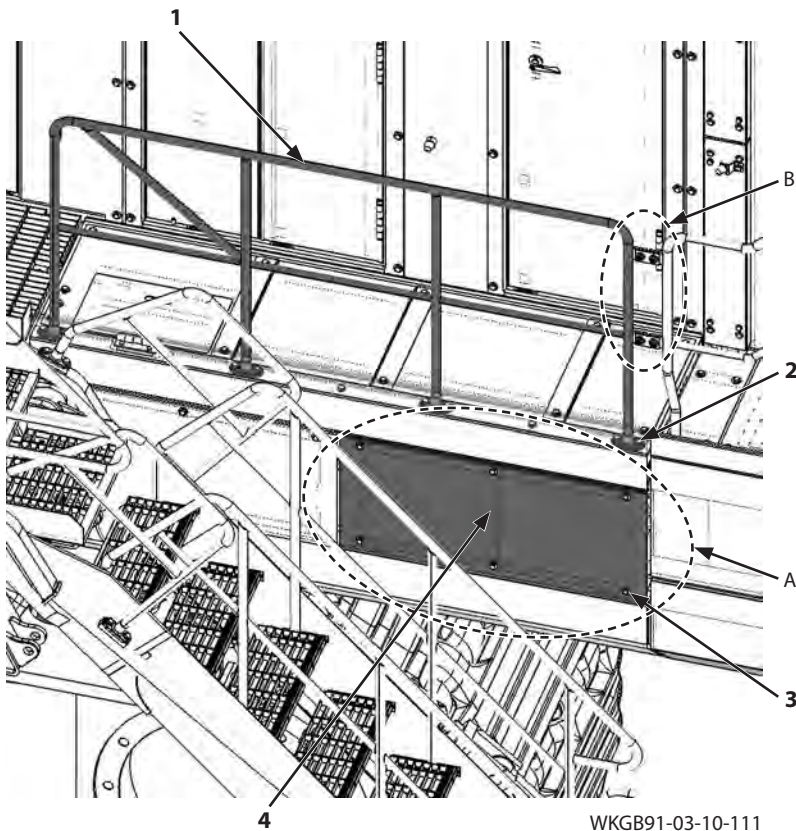
Detail D



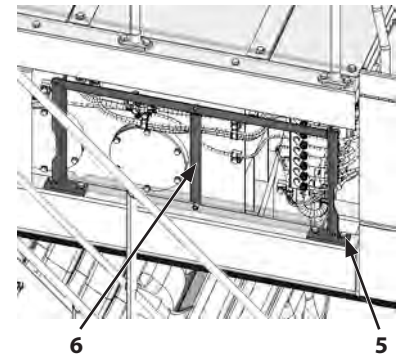
WKGB91-03-10-110

SECTION 3 UPPERSTRUCTURE

Group 10 Aftertreatment Device

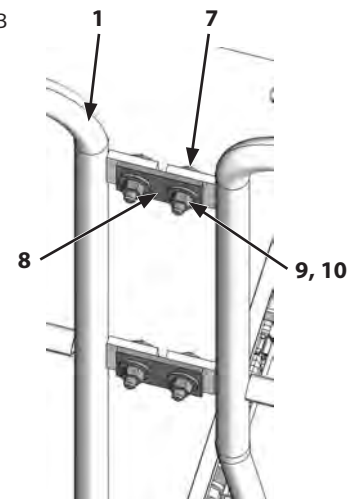


Detail A



WKGB91-03-10-112

Detail B




WKGB91-03-10-113

⚠ CAUTION: Handrail (1) weight: 23 kg (51 lb)


27. Attach nylon slings onto handrail (1). Hoist and hold handrail (1).

28. Install handrail (1) with bolts, washers (2) (8 used).

 : 19 mm


 : 90 N·m (66 lbf·ft)

29. Install plates (8) (2 used) with bolts, washers (7) (4 used), washers (10) (4 used), and nuts (9) (4 used).

 : 19 mm


 : 90 N·m (66 lbf·ft)

30. Install bracket (6) with bolts, washers (5) (4 used).

 : 19 mm

 : 90 N·m (66 lbf·ft)

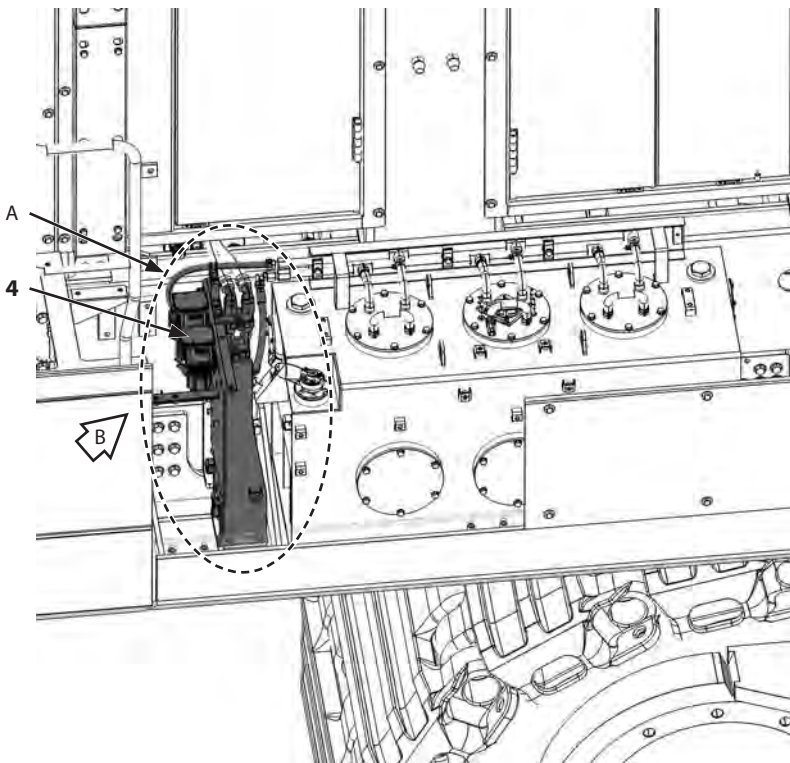
31. Install cover (4) with bolts, washers (3) (6 used).

 : 17 mm

 : 50 N·m (37 lbf·ft)

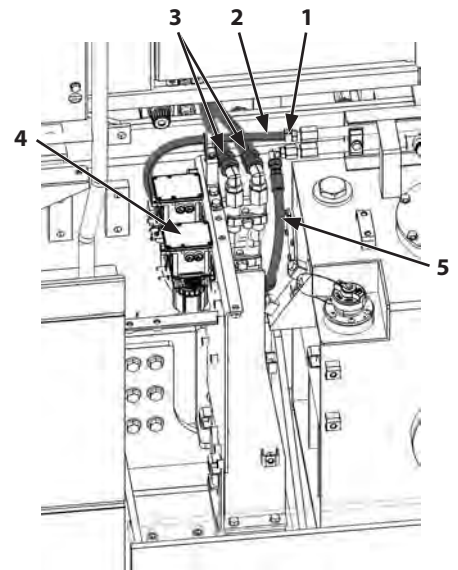
SECTION 3 UPPERSTRUCTURE

Group 10 Aftertreatment Device



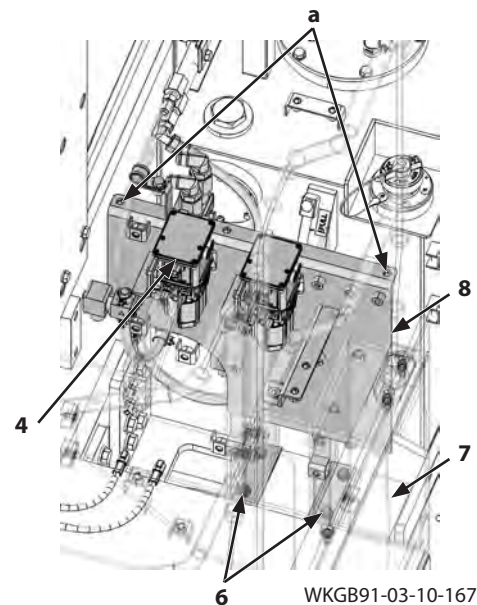
WKGB91-03-10-165

Detail A



WKGB91-03-10-166

View B




WKGB91-03-10-167

a- Lifting Hole


⚠ CAUTION: The DEF supply module (4) assembly weight: 32 kg (71 lb)


7. Install eyebolts (M10, Pitch 1.5 mm) (2 used) to lifting holes (a) (2 places) of bracket (8). Attach nylon slings onto the eyebolts (2 used). Hoist and hold the DEF supply module (4) assembly.
8. Install the DEF supply module (4) assembly to bracket (7) with bolts, washers (6) (4 used).

 : 17 mm


 : 50 N·m (37 lbf·ft)

9. Connect hoses (3) (2 used).

 : 36 mm

 : 180 N·m (133 lbf·ft)

10. Connect hose (5).

 : 27 mm

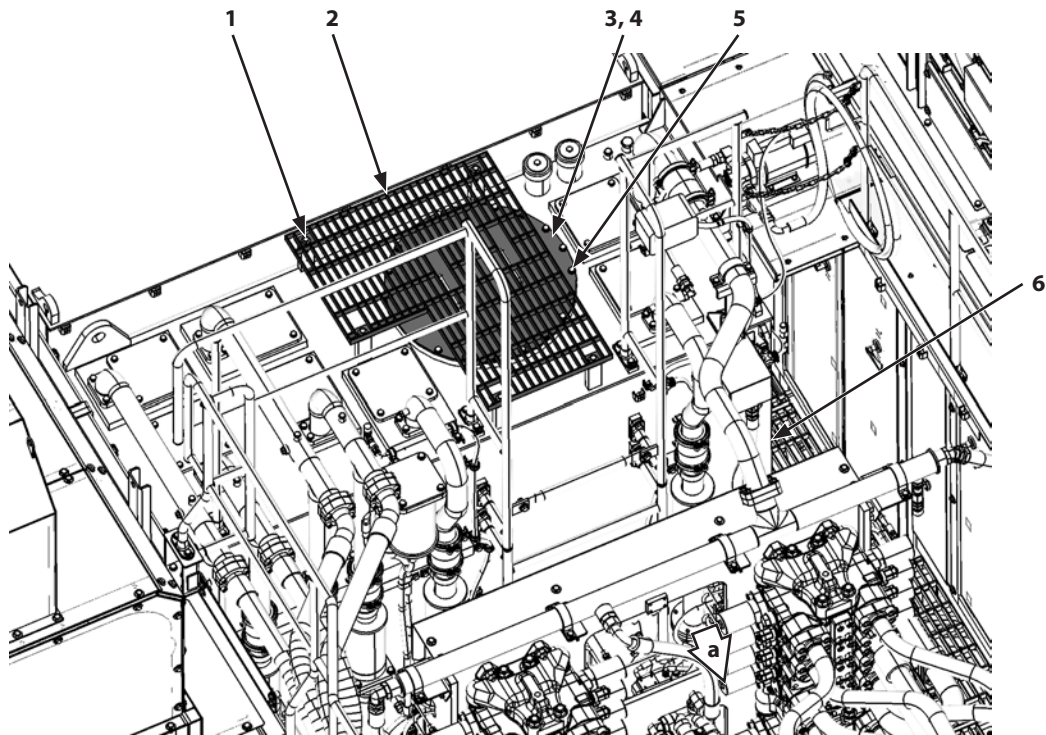
 : 80 N·m (59 lbf·ft)

11. Connect hose (2) with clip (1).

SECTION 3 UPPER STRUCTURE

Group 11 Hydraulic Oil Tank

Removal and Installation of Hydraulic Oil Tank



WKGB91-03-11-123

a- Machine Front Side

CAUTION: Escaping fluid under pressure may penetrate the skin and eyes, and cause serious injury. Release the pressure before disconnecting the hydraulic pipings or removing other equipment. Hot hydraulic oil just after operation may spout out and cause severe burns. Allow oil to cool before starting any work.

IMPORTANT: The hoses and pipes contain hydraulic oil. When removing the hoses and pipes, receive oil with a container in order to avoid spilling.

IMPORTANT: Cap the open ends in case the hoses and pipes have been disconnected. In addition, attach identification tags onto the connectors, hoses, and pipes for assembly. If the clips which secure the hoses have been removed, install the clips after connecting the hoses.

Removal

1. Set the machine for inspection and maintenance. Stop the engine. Turn OFF the isolation switch. (Refer to W1-6-1.)

CAUTION: Bleed air from the hydraulic oil tank (6). (Refer to W1-4-1.)

2. Remove bolts, washers (1) (5 used). Remove step (2).

 : 17 mm

CAUTION: Cover (3) weight: 29 kg (64 lb)

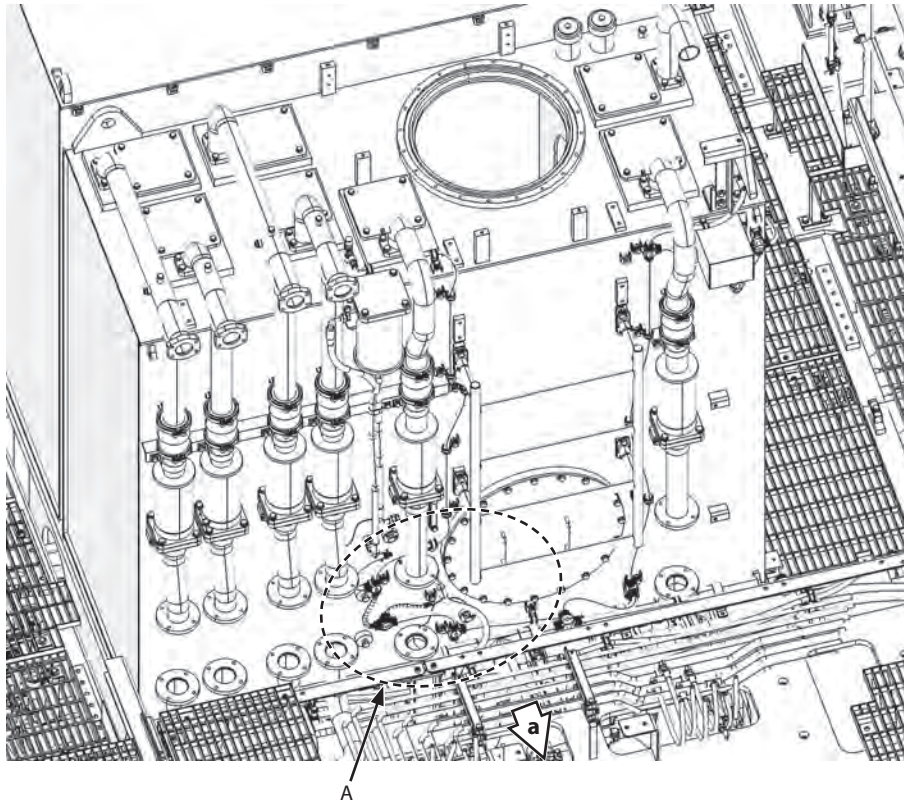
3. Attach nylon slings onto cover (3). Hoist and hold cover (3).
4. Remove bolts, washers (5) (20 used). Remove cover (3) and O-ring (4).

 : 19 mm

5. Place a container. Drain off hydraulic oil by using an oil feed pump.

SECTION 3 UPPER STRUCTURE


Group 11 Hydraulic Oil Tank



WKGB91-03-11-119

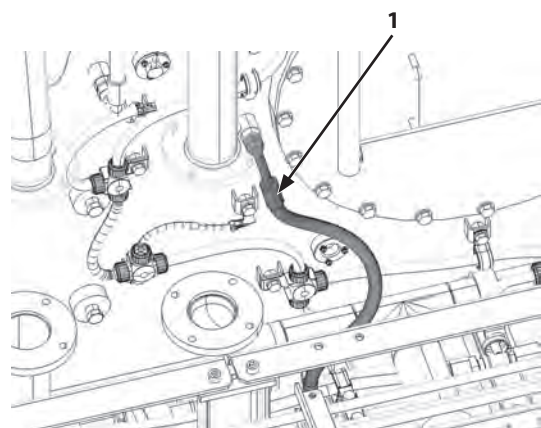
a- Machine Front Side

9. Connect hose (1).

 : 27 mm

 : 80 N·m (59 lbf·ft)

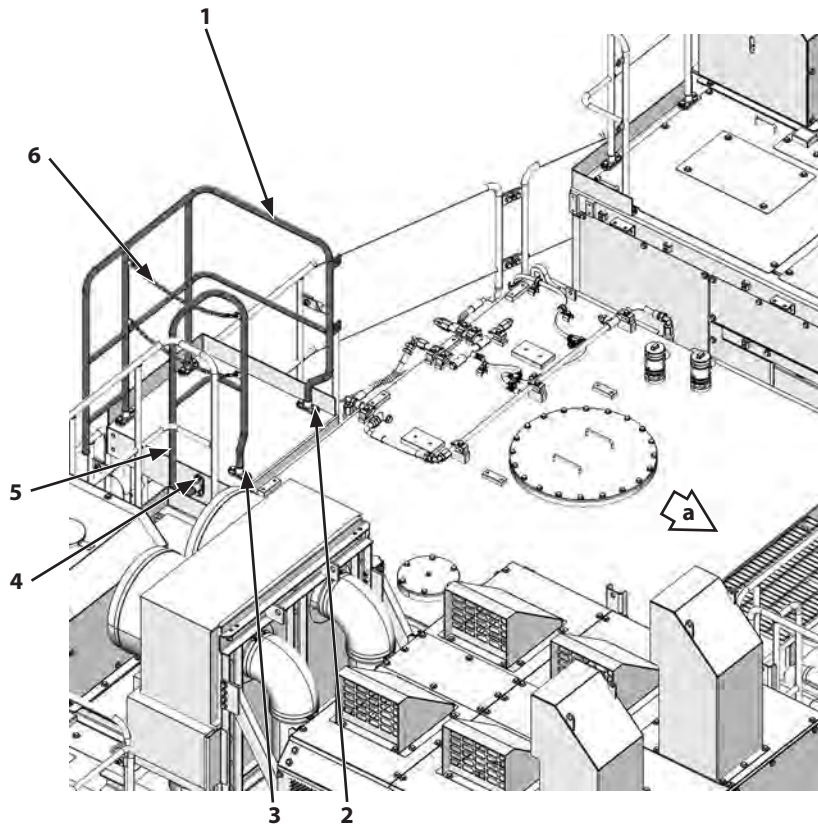
Detail A



WKGB91-03-11-113

SECTION 3 UPPERSTRUCTURE

Group 12 Fuel Tank



a- Machine Front Side


WKGB91-03-12-118

22. Remove chains (6) (2 used).


CAUTION: Handrail (1) weight: 24 kg (53 lb)

23. Attach nylon slings onto handrail (1). Hoist and hold handrail (1).

24. Remove bolts, washers (2) (6 used). Remove handrail (1).

 : 19 mm

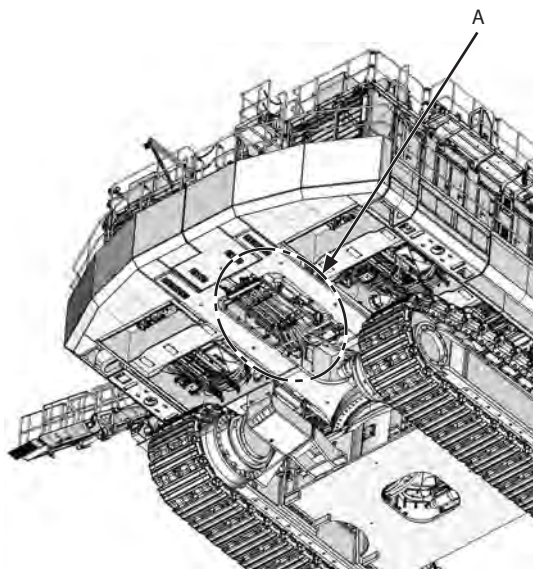
25. Remove bolts, washers (3) (2 used) and bolts, washers (4) (2 used). Remove handrail (5).

 : 19 mm

SECTION 3 UPPERSTRUCTURE

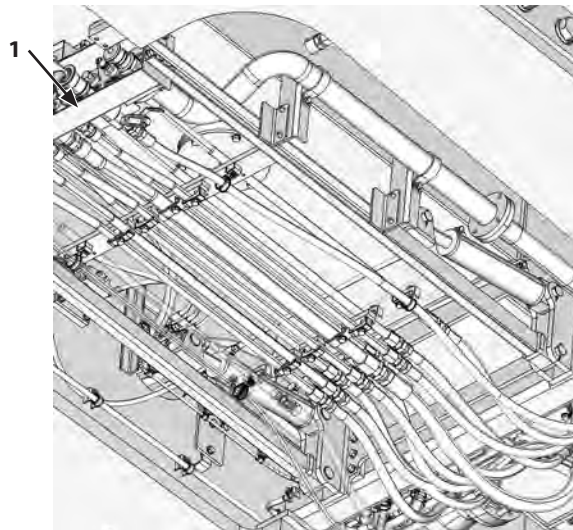
Group 13 Lift Cylinder (Fast-Filling System)

Removal and Installation of Lift Cylinder (Fast-Filling System)



WKGB91-03-13-101

Detail A



WKGB91-03-13-102

IMPORTANT: The hoses and pipes contain hydraulic oil. When removing the hoses and pipes, receive oil with a container in order to avoid spilling.

IMPORTANT: Cap the open ends in case the hoses and pipes have been disconnected. In addition, attach an identification tags onto the connectors, hoses, and pipes for assembly. If the clips which secure the hoses have been removed, install the clips after connecting the hoses.

CAUTION: Set the machine position for inspection and maintenance. Stop the engine. Turn OFF the isolation switch. (Refer to W1-6-1.)

Removal

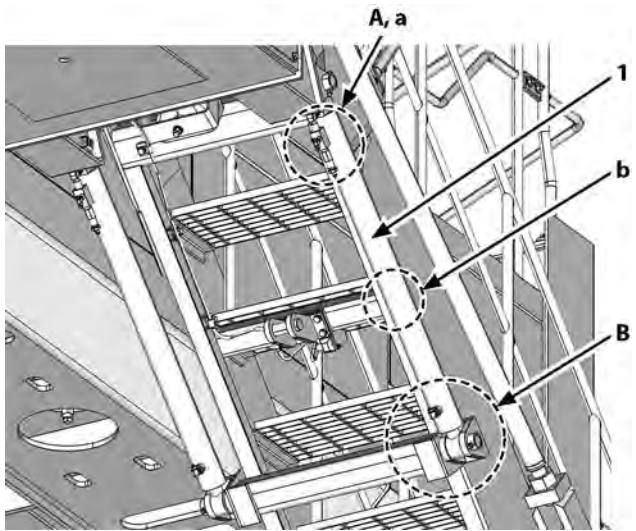
CAUTION: Bleed air from the hydraulic oil tank. (Refer to W1-4-1.)

CAUTION: Fast-filling system (1) weight: 330 kg (730 lb)

1. Operate Fast-filling system (1) and set the central lubrication device (1) so that it is stored. Place stands under fast-filling system (1).

SECTION 3 UPPERSTRUCTURE

Group 14 Lift Cylinder (Retractable Stairway)

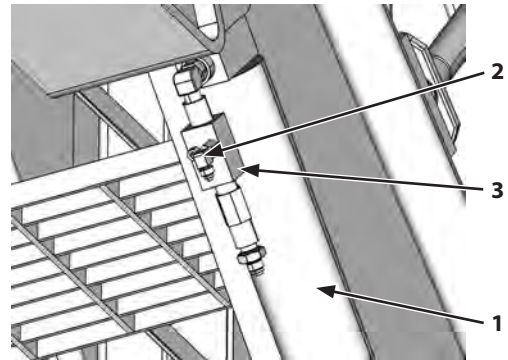


WKGB91-03-14-103

a- Bottom Side

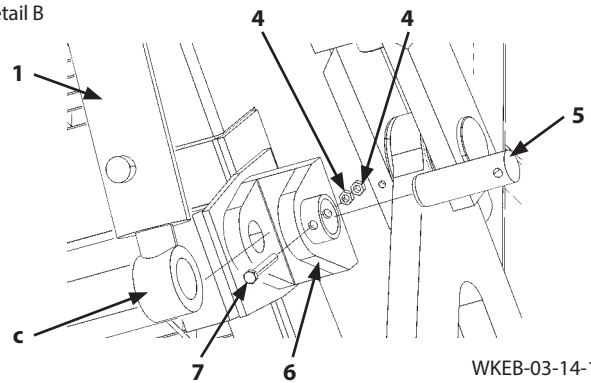
b- Center of Lift Cylinder (1)

Detail A



WKEB-03-14-105


Detail B




WKEB-03-14-106

c- Rod

7. Remove elbow (2).

 : 22 mm

8. Remove holding valve (3).

 : 22 mm


9. Remove the remaining adapters from lift cylinder (1) if necessary.

⚠ CAUTION: Lift cylinder (1) weight: 28 kg (62 lb)


10. Attach a nylon sling to center (b) of lift cylinder (1), and hoist and hold lift cylinder (1).

11. Attach a chain block to bottom side (a) of lift cylinder (1).

12. Remove nuts (4) (2 used) and bolt (7).

 : 13 mm

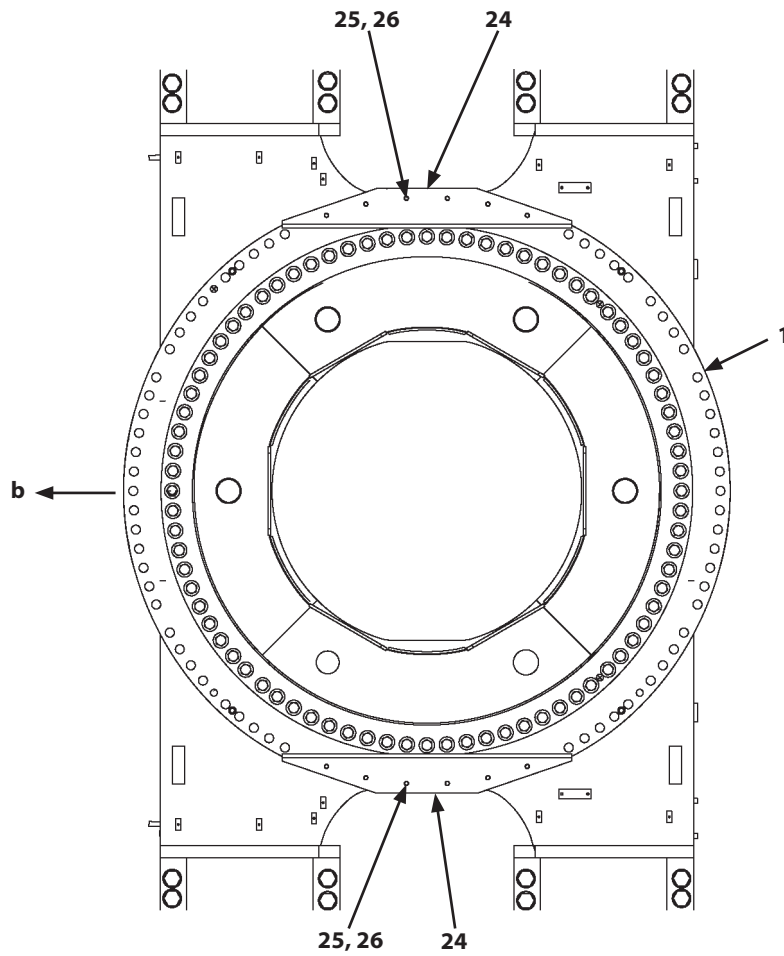
13. Remove pin (5). Disconnect rod (c) side of lift cylinder (1) from bracket (6).

 **NOTE:** Insert a hex wrench (M4) into the hole where bolt (7) was removed, and push out pin (5) in the removal direction.

14. Retract rod (c) of lift cylinder (1). So that rod (c) does not extend, pass wires through the rod (c) hole and secure rod (c) to the lift cylinder (1) tube.

SECTION 4 UNDERCARRIAGE

Group 1 Swing Bearing




WKGB91-04-01-005

b- Machine Front Side

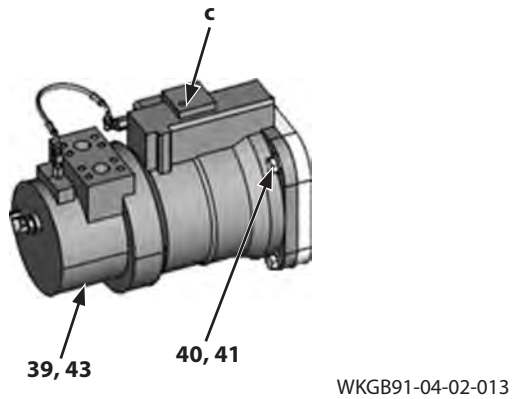
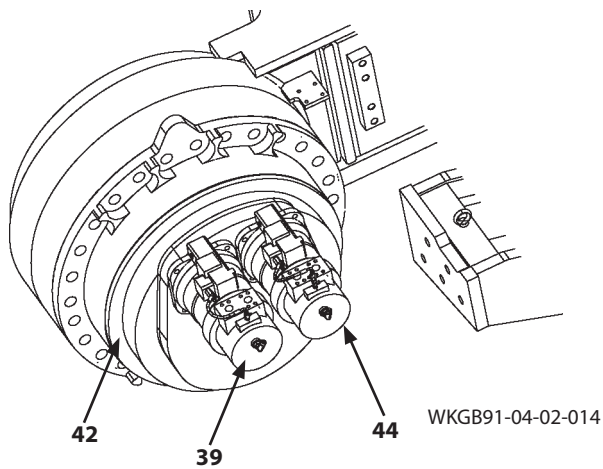
14. Remove bolts (25) (6 used) and washers (26) (6 used). Remove cover (24) from swing bearing (1).

15. Remove other cover (24) in the same way as step 14.

 : 24 mm

SECTION 4 UNDERCARRIAGE

Group 2 Travel Device




c- Lifting Hole

7. Install all removed hoses and adapters to travel motor (39).

CAUTION: Travel motors (39, 44) weight: 280 kg (620 lb)

8. Install an eyebolt (M16, Pitch 2.0 mm) to lifting hole (c) of travel motor (39). Attach nylon slings onto the eyebolt. Hoist travel motor (39).
9. Install O-ring (43) to the travel motor (39) mounting surface. Install travel motor (39) to travel reduction gear (42) with bolts (40) (4 used) and washers (41) (4 used).

 : 32 mm

 : 740 N·m (550 lbf·ft)

10. Install travel motor (44) in the same way as step 7 to step 9.


SECTION 4 UNDERCARRIAGE


Group 2 Travel Device

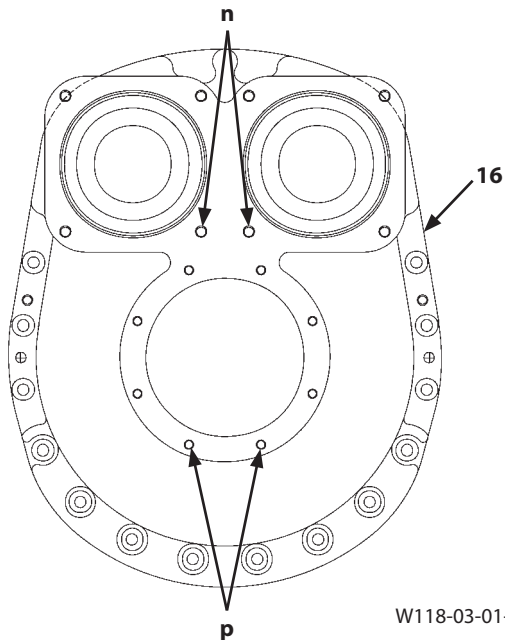
CAUTION: The cover (16) assembly weight: 120 kg (265 lb)

20. Apply THREEBOND #1215 or equivalent to the matching surfaces of cover (16) and case (14). Install eyebolts (M18, Pitch 2.5 mm) (2 used) and eyebolts (M22, Pitch 2.5 mm) (2 used) to eyebolt mounting holes (n, p) of cover (16).

Hoist cover (16). Place and install cover (16) to case (14) with bolts (27) (23 used) and washers (28) (23 used).

 : 30 mm

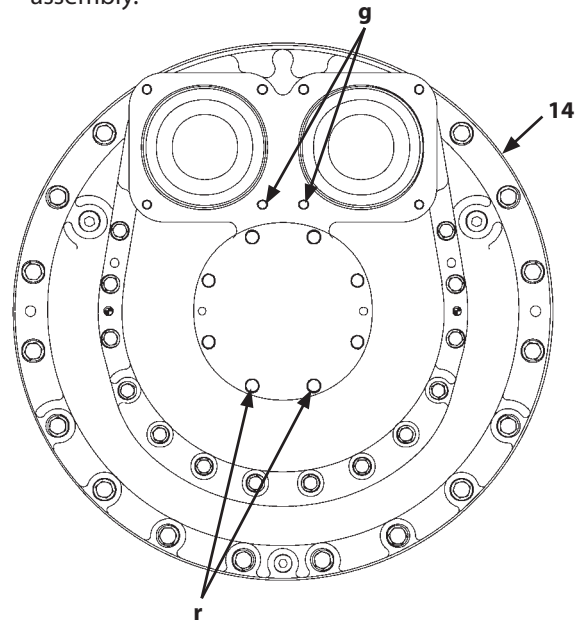
 : 550 N·m (1410 lbf·ft)



n- Eyebolt Mounting Hole
p- Eyebolt Mounting Hole

CAUTION: The case (14) assembly weight: 830 kg (1830 lb)

21. Apply THREEBOND #1215 or equivalent to the matching surfaces of case (14) and the first stage ring gear (10). Install eyebolts (M18, Pitch 2.5 mm) (2 used) and eyebolts (M22, Pitch 2.5 mm) (2 used) to eyebolt mounting holes (g, r) of the case (14) assembly.




g- Eyebolt Mounting Hole
r- Eyebolt Mounting Hole


SECTION 4 UNDERCARRIAGE

Group 2 Travel Device


IMPORTANT: Screw in the socket bolts (14) until cover (16) contacts casing (40), then tighten on diagonally opposite lines.


42. Install cover (16) onto casing (40) using socket bolts (14) (12 used).

 : 10 mm


 : 98 N·m


43. Install O-ring (52) onto plug (15). Install plug (15) onto cover (16).

 : 36 mm

 : 170 N·m

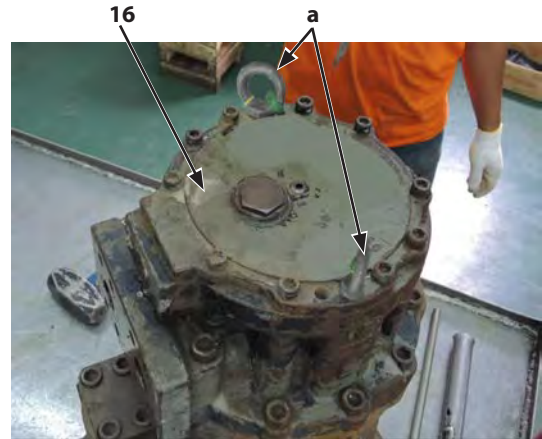
44. Install O-rings (42, 49, 54) onto plugs (41, 48, 55). Install plugs (41, 48, 55) onto casing (40).

 : 36 mm

 : 170 N·m

CAUTION: Travel motor weight: 280 kg

45. Install eyebolts (a) (M16, Pitch 2.0 mm) (2 used) into the bolt holes in cover (16). Attach nylon sling to the eyebolt (a). Hoist travel motor and place it so it is level, and with plug (48) facing up.

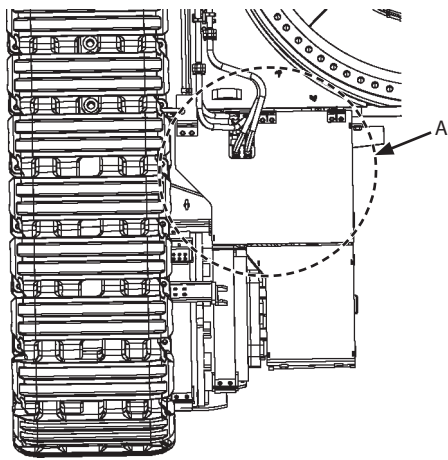


WKEB-04-02-099

a- Eyebolt

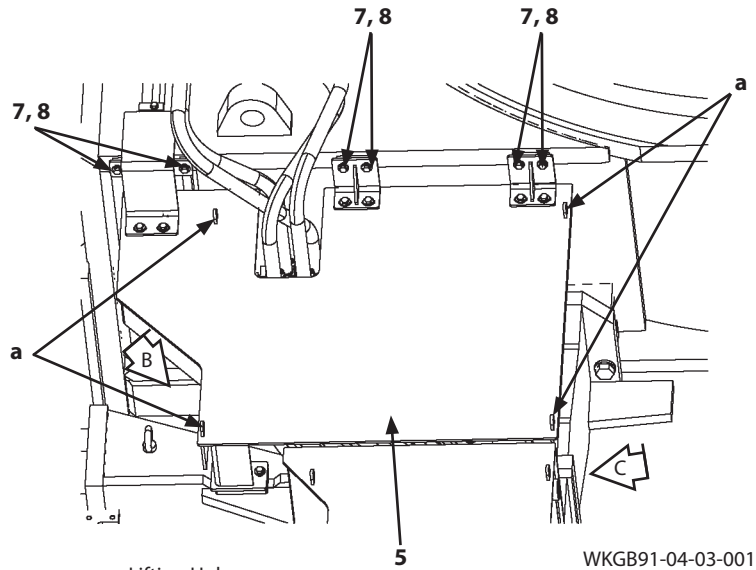
SECTION 4 UNDERCARRIAGE

Group 3 Travel Brake Valve



WKGB91-04-02-017

Detail A

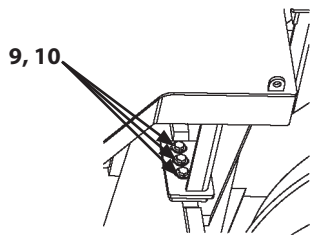


WKGB91-04-03-001

a- Lifting Hole

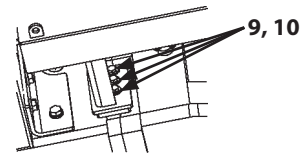
5

View B



WKGB91-04-03-002


View C



WKGB91-04-03-003

⚠ CAUTION: The cover (5) assembly weight: 177 kg (395 lb)

13. Install shackles (4 used) to lifting holes (a) (4 places) of cover (5). Attach nylon slings onto the shackles. Hoist the cover (5) assembly.
14. Install the cover (5) assembly with bolts (7) (6 used), washers (8) (6 used), bolts (9) (6 used), and washers (10) (6 used).

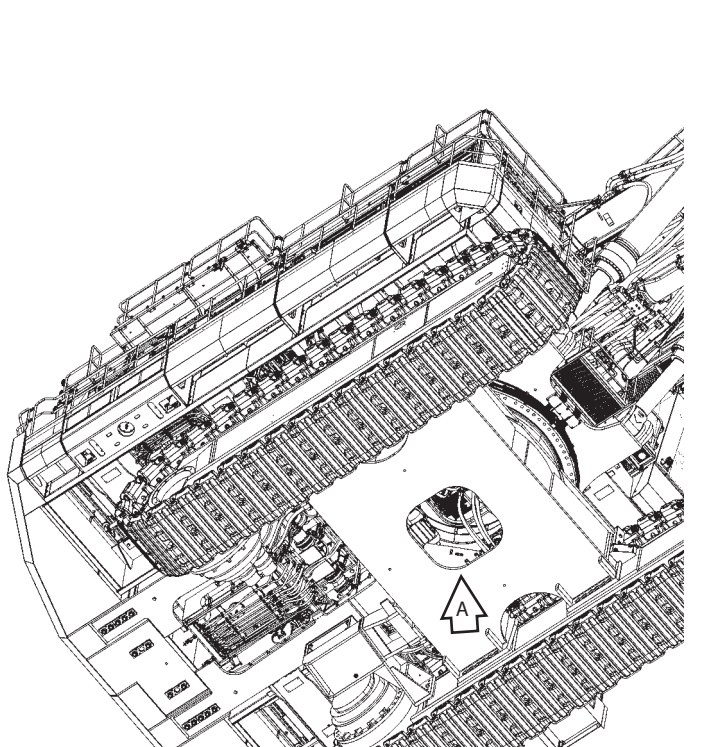
 : 22 mm

 : 180 N·m (133 lbf·ft)

SECTION 4 UNDERCARRIAGE

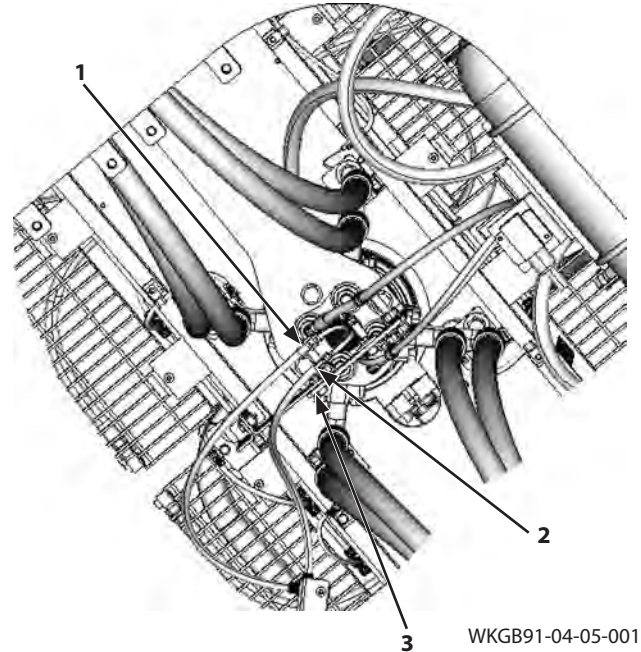
Group 5 Center Joint

Removal and Installation of Center Joint



WKGB91-03-07-101

View A



WKGB91-04-05-001

IMPORTANT: The hoses and pipes contain hydraulic oil. When removing the hoses and pipes, receive oil with a container in order to avoid spilling oil.

IMPORTANT: Cap the open ends in case the hoses and pipes have been disconnected. In addition, attach identification tags onto the connectors, hoses, and pipes for assembling. If the clips which secure the hoses have been removed, install the clips after connecting the hoses.

Removal

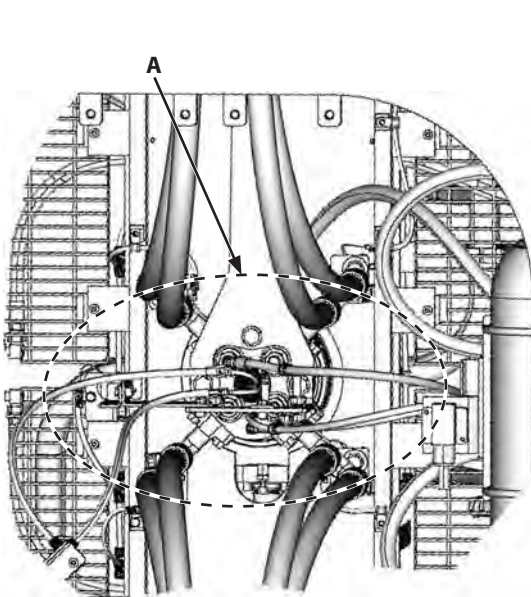
1. Set the machine position for inspection and maintenance. Stop the engine. Turn OFF the isolation switch. (Refer to W1-6-1.)

CAUTION: Bleed air from the hydraulic oil tank. (Refer to W1-4-1.)

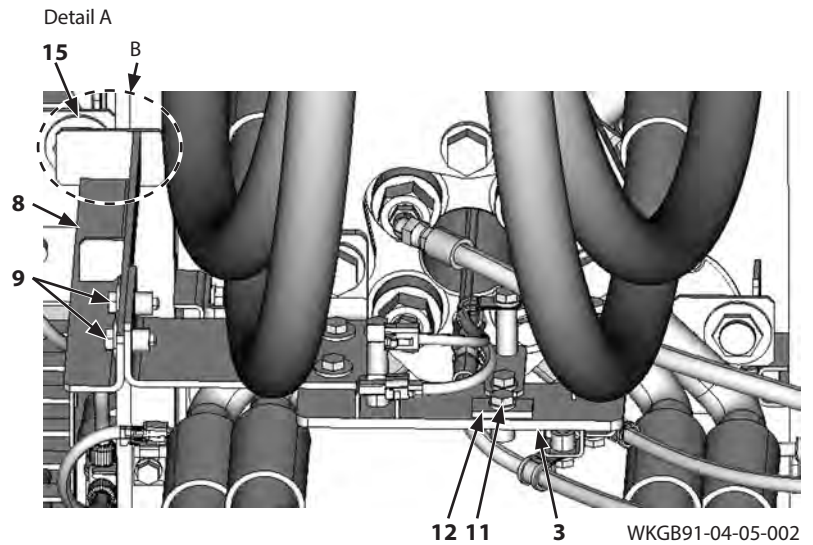
2. Disconnect connectors (1, 2) from bracket (3).

SECTION 4 UNDERCARRIAGE

Group 5 Center Joint




WKGB91-04-05-021




WKGB91-04-05-002


27. Loosen bolts, washers (9) (2 used).


 : 17 mm


28. Remove bolt, washer (11) and shim (12) from bracket (3).

 : 17 mm

29. Install shim (12) between bracket (8) and proximity switch (15). Tighten bolts, washers (9) (2 used). Remove shim (12).

 : 17 mm


 : 50 N·m (37 lbf·ft)

 **NOTE:** Shim (12) thickness: 6 mm

Set clearance (a) between bracket (8) and proximity switch (15) to 6 mm.

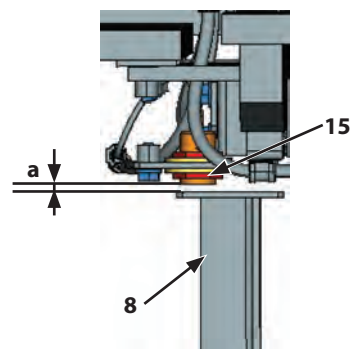
IMPORTANT: Five proximity switches (15) have been installed. Adjust only one clearance between bracket (8) and proximity switch (15). Equally adjust each clearance between bracket (8) and other proximity switches (15) (4 used).

30. Install shim (12) and bolt, washer (11) to bracket (3).

 : 17 mm

 : 50 N·m (37 lbf·ft)

Detail B



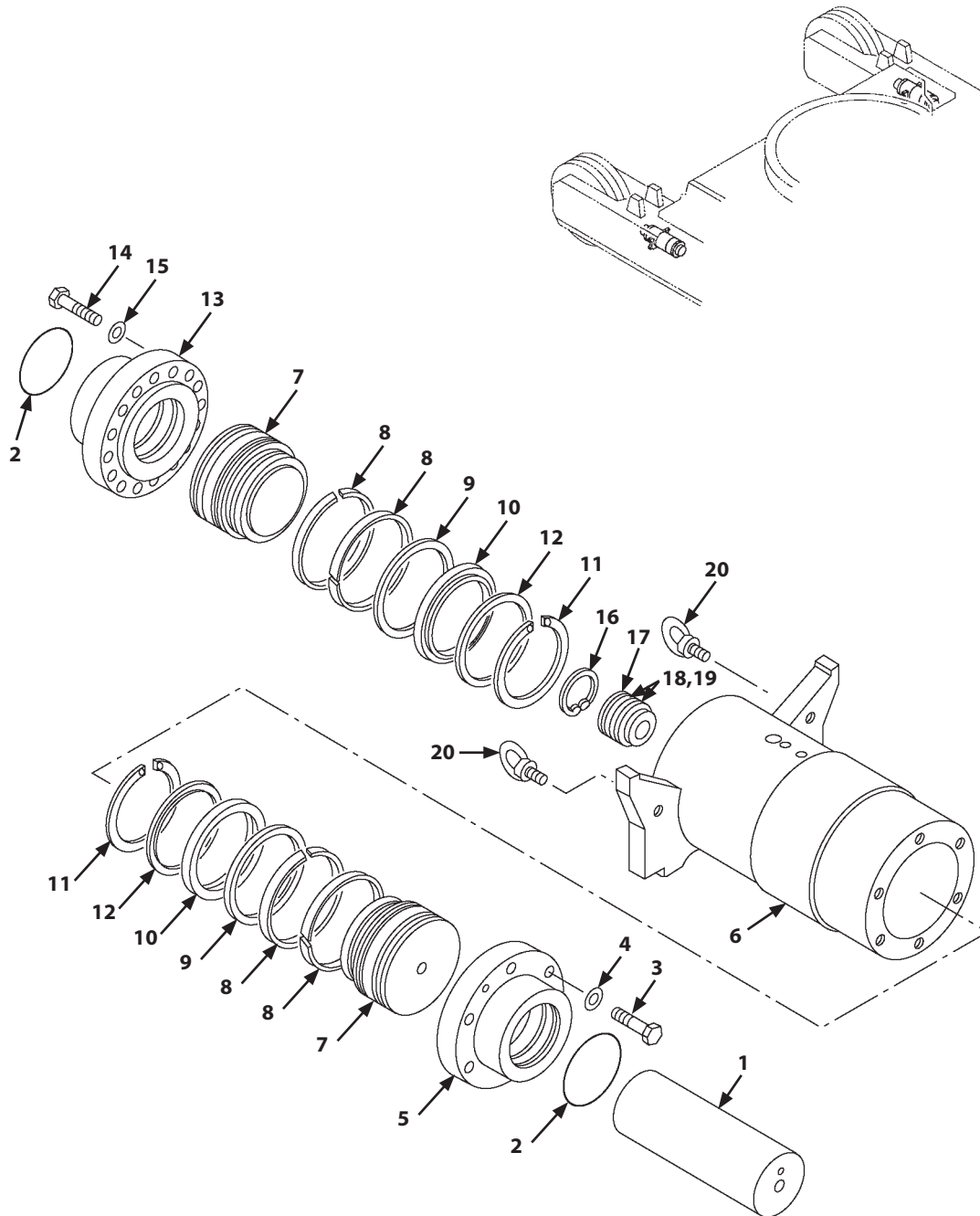
WKGB91-04-05-020

a- Clearance: 6 mm

SECTION 4 UNDERCARRIAGE

Group 6 Adjuster Cylinder

Disassembly of Adjuster Cylinder



WKGB91-04-06-021

- | | | | |
|--------------------|-------------------------|-----------------------------|--------------------------|
| 1- Rod | 6- Cylinder | 11- Retaining Ring (2 Used) | 16- Retaining Ring |
| 2- O-Ring (2 Used) | 7- Piston (2 Used) | 12- Ring Plate (2 Used) | 17- Switch Valve |
| 3- Bolt (6 Used) | 8- Wear Ring (4 Used) | 13- Flange | 18- O-Ring (2 Used) |
| 4- Washer (6 Used) | 9- Backup Ring (2 Used) | 14- Bolt (16 Used) | 19- Backup Ring (2 Used) |
| 5- Flange | 10- U-Ring (2 Used) | 15- Washer (16 Used) | 20- Eyebolt (2 Used) |

SECTION 4 UNDERCARRIAGE

Group 8 Upper and Lower Rollers


Installation of Upper Roller

CAUTION: Upper roller (7) weight: 235 kg (520 lb)

1. Install upper roller (7) to side frame (b) by using a forklift.


CAUTION: When using a power wrench, do not injure hands by the reaction bar.

2. Tighten bolt (6) by using a power wrench.

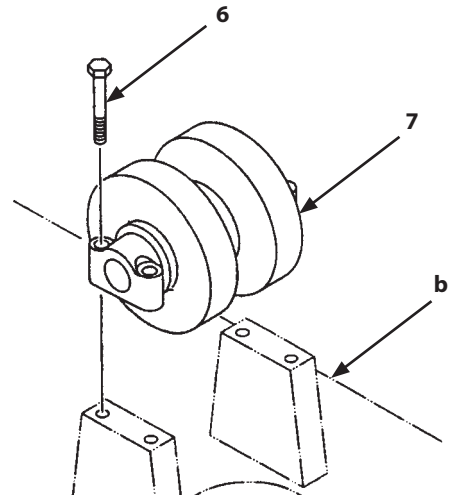
 : 46 mm

 : 1950 N·m (1440 lbf·ft)

3. Close stop valve (5) of accumulator (3). Install plug (4).

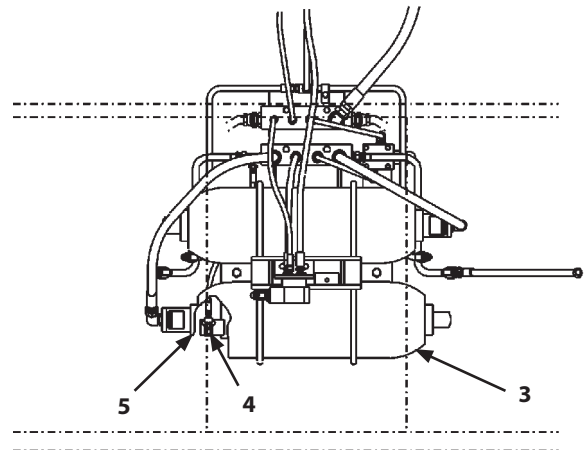
 : 19 mm

 : 29.5 N·m (22 lbf·ft)



b- Side Frame

W117-03-07-003



M18N-03-06-001

SECTION 4 UNDERCARRIAGE

Group 8 Upper and Lower Rollers

Assembly of Lower Roller

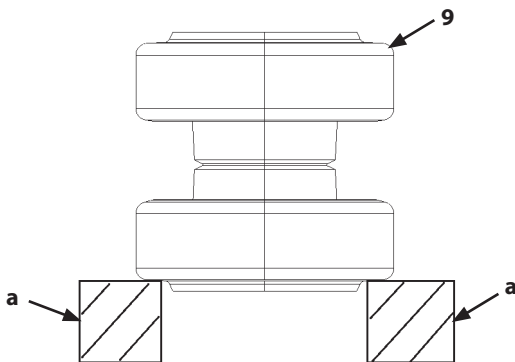
CAUTION: Roller (9) weight: 787 kg (1740 lb)

1. Install bushings (8) (2 used) to roller (9) by using a press.

CAUTION: Roller (9) weight: 833 kg (1840 lb)

2. Attach nylon slings onto roller (9). Hoist roller (9). Vertically place roller (9) onto wooden blocks (a).

NOTE: Wooden block (a): over 150 mm (6 in) square



WKEB-04-08-115

a- Wooden Block

IMPORTANT: Check the position to install O-rings (5, 6).

3. Apply grease to O-rings (5, 6). Install O-rings (5, 6) to axle (7).

NOTE: O-Ring (5): for low temperature

O-Ring (6): Standard

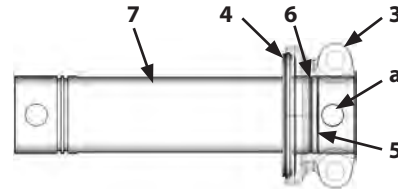
IMPORTANT: Handle floating seals (4) with care. (Refer to W1-1-1.)

4. Apply engine oil to the O-ring of floating seal (4). Install floating seal (4) to the upper side of roller (9) and collar (3).

CAUTION: Collar (3) weight: 77 kg (170 lb)

Axle (7) weight: 302 kg (670 lb)

5. Attach nylon slings onto collar (3). Fit hole (a) for pin (2). Install collar (3) to axle (7).



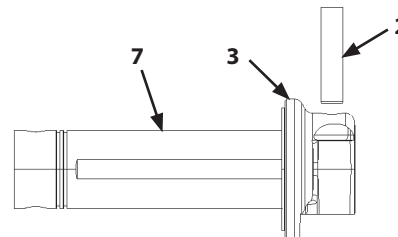
WKEB-04-08-116

a- Hole for Pin (2)

CAUTION: Metal fragments may fly off when a hammer is used. Wear necessary protection, such as goggles, hard hats, etc. in order to prevent personal injury.

6. Install pin (2) to axle (7) and collar (3) by using a round bar and a hammer.

NOTE: Outer diameter of pin (2): 60 mm (2.4 in)



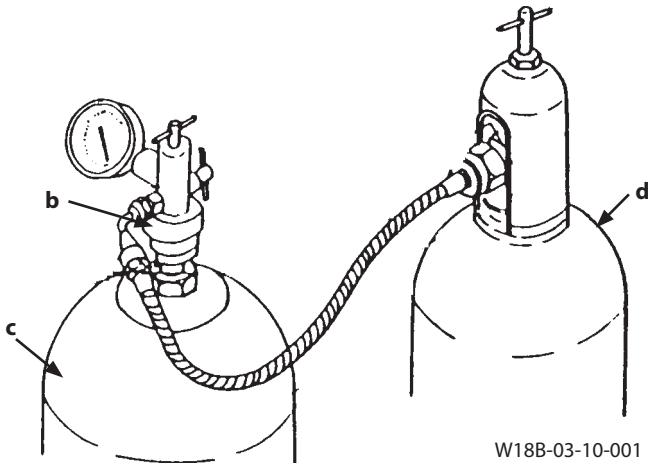
WKEB-04-08-117

SECTION 4 UNDERCARRIAGE

Group 10 Accumulator

IMPORTANT: After charging nitrogen gas, smear gas valve (23) with soap bubble and check for gas leakage.

15. Install O-ring (22) to gas valve (23). Install gas valve (23) to valve stem (14). Charge nitrogen gas to bladder (13) by using charge valve (b) (Parts No.: 4032854). (Refer to Maintenance and Inspection of Accumulator on W4-10-3.)



b- Charge Valve d- Nitrogen Gas
c- Accumulator Cylinder

16. Install cap (24) to gas valve (23).
17. Install valve guard (26) to valve stem (14).

IMPORTANT: Replace wire (25) with the new one.

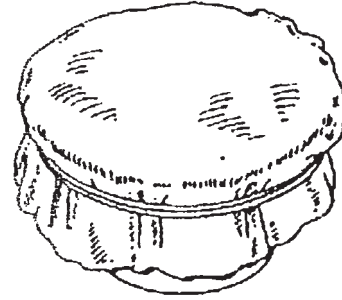
18. Install wire (25) to valve guard (26) and ring (21).

SECTION 4 UNDERCARRIAGE

Group 11 Welding Repair Procedure

IMPORTANT: Roller will crack if quickly cooled.

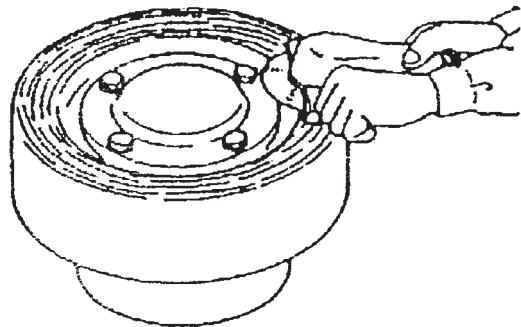
7. Cover the roller with glass wool or other equivalent material to avoid quick cooling.



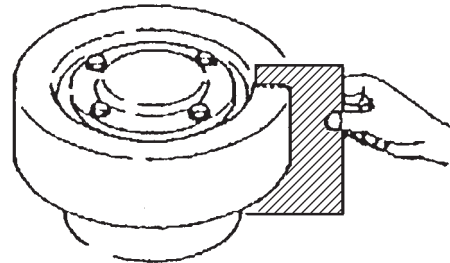
W115-03-11-021

8. After 24 hours, check that the roller is free from cracks.

Correctly finish the roller using a grinder. Use pattern to check the roller shape, as illustrated to the right.



W115-03-11-022



W115-03-11-014

9. Prepare lower roller pattern show in the appendix. Measure wear amount of the lower roller. If the wear amount exceeds 10 mm, repair it in the same way as step 2 to step 8.

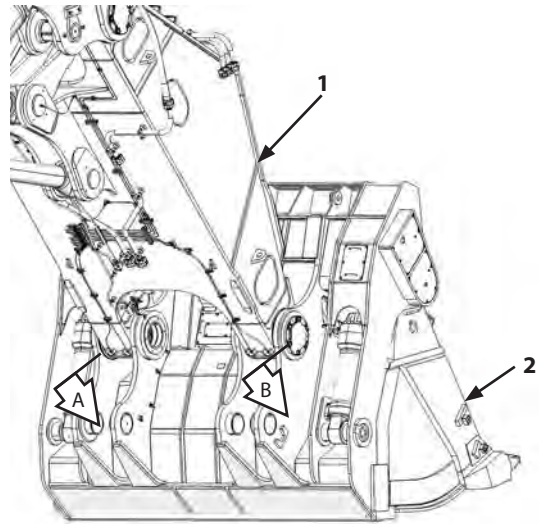
SECTION 5 LOADER FRONT ATTACHMENT

Group 1 Front Attachment

⚠ CAUTION: Metal fragments may fly off when a hammer is used. Wear necessary protection, such as goggles, hard hat, etc. in order to prevent personal injury.

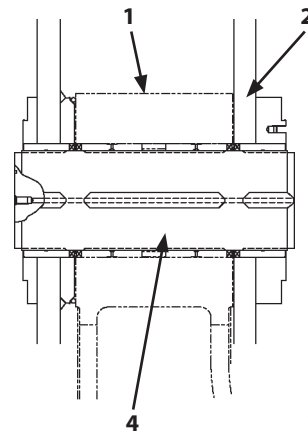
⚠ CAUTION: Pin (4) weight: 380 kg (840 lb)

24. Move pins (4) (2 used) to the position where arm (1) can be removed from bucket (2) by using a bar and a hammer.
25. Install lifting tool (ST 0276) to pin (4). Hoist pin (4). Remove pin (4).
26. Remove other pin (4) in the same way.



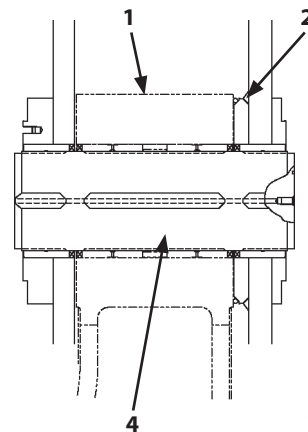
WKGB91-05-01-118

Section A



WKGB91-05-01-010

Section B



WKGB91-05-01-011

SECTION 5 LOADER FRONT ATTACHMENT

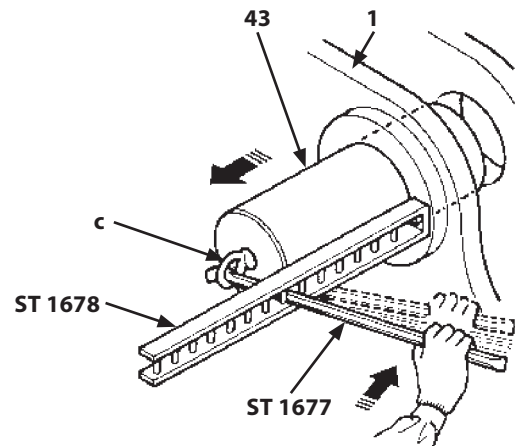
Group 1 Front Attachment

CAUTION: Pin (43) weight: 275 kg (610 lb)

16. Install eyebolt (c) to the screw hole (M20, Pitch 2.5 mm) of the pin (43) end.
17. Move pin (43) to the position where level cylinder (41) can be removed from arm (1) by using special tools (ST 1677, ST 1678).

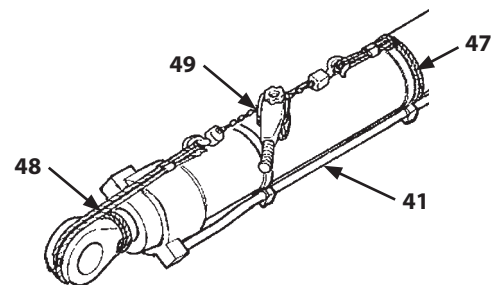
CAUTION: The hydraulic circuit between level cylinder (41) and the boom cylinders is connected. When performing boom lower operation, level cylinder (41) is retracted. When level cylinder (41) is fully retracted, the boom cylinders are retracted and the boom is lowered. This may result in hazards. Appoint a signal person and coordinate hand signals before starting the work.

18. Start the engine. Retract level cylinder (41) by performing boom lower operation. In order not to extend the rod part, secure the rod part to the cylinder tube with wire ropes (47, 48) and lever block (49).
19. Do not remove pin (43). Return pin (43) to the level cylinder (41) rod mounting hole of arm (1) by using special tools (ST 1677, ST 1678).

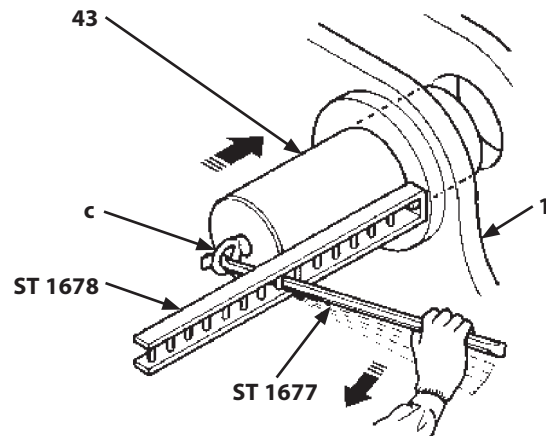


c- Eyebolt

W18P-04-01-015



WKEB-05-02-012



c- Eyebolt

W18P-04-01-016

SECTION 5 LOADER FRONT ATTACHMENT

Group 1 Front Attachment

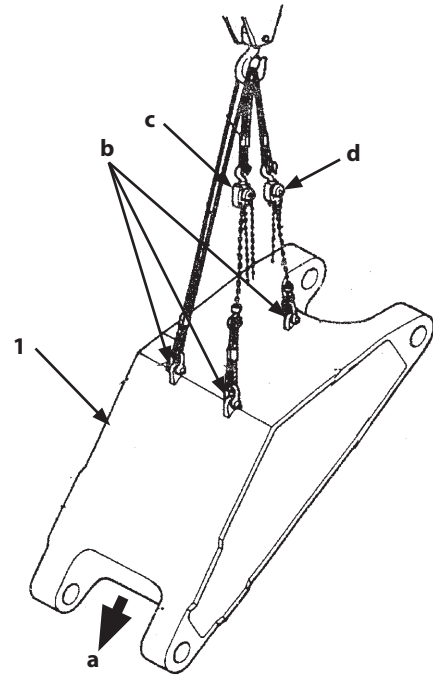
18. Install shackles, wire ropes, and chain blocks (c, d) to lifting holes (b) (3 places) of arm (1).

CAUTION: The arm (1) assembly weight: 21000 kg (46300 lb)

19. Hoist the arm (1) assembly. Fit the pin (3) hole of arm (1) to the mounting hole of boom (2).

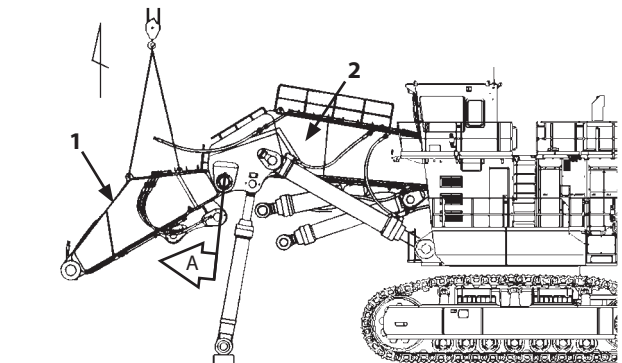
CAUTION: Pin (3) weight: 380 kg (840 lb)

20. Install lifting tool (ST 0276) to pin (3). Hoist pin (3). Insert pin (3) into the mounting hole of boom (2).



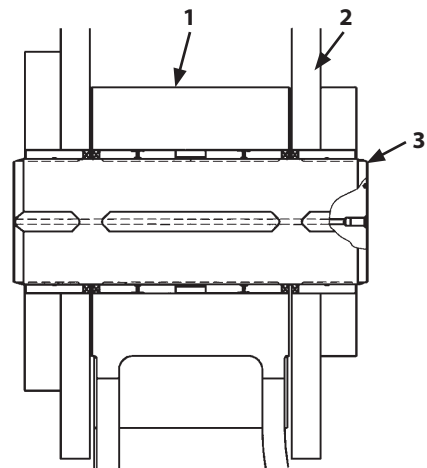
W18B-04-01-027

- a- Machine Front Side
b- Lifting Hole
c- Chain Block
d- Chain Block



WKGB91-05-01-031

Section A



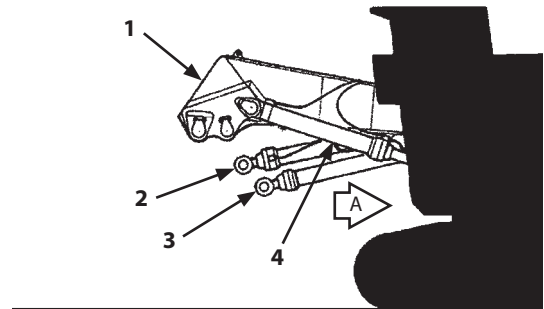
WKGB91-05-01-164

SECTION 5 LOADER FRONT ATTACHMENT

Group 1 Front Attachment

Removal and Installation of Boom

- Before removing and installing the boom, the bucket and arm must be removed first. (Refer to W5-1-1 and W5-1-2.)
- The work described here begins with bucket and arm removed, and with level cylinder (2) and arm cylinder (3) held by lever blocks (5).
- Turn the auto-lubrication selector switch to the OFF position.




WKGB91-05-01-180

Removal


CAUTION: Level cylinder (2) weight: 3840 kg (8470 lb)

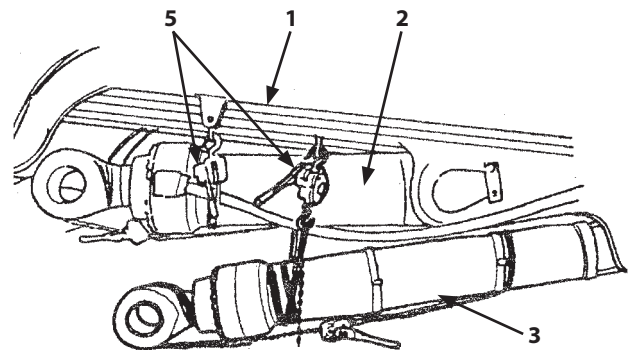
Arm cylinder (3) weight: 4320 kg (9530 lb)

1. Wind the lever blocks (5) that are holding level cylinder (2) and arm cylinder (3) as far up as possible. Secure level cylinder (2) and arm cylinder (3) to boom (1).
2. Disconnect lubrication hoses (10) (2 used) from boom cylinder (4) rod-side pins (8) (2 used). Remove elbows (9) (2 used) from pins (8) (2 used).

 : 19 mm

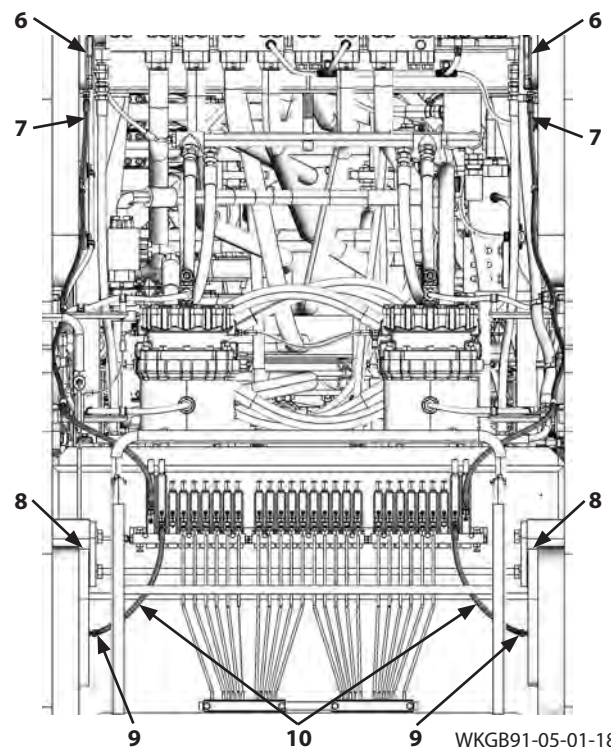
3. Disconnect hoses (7) (2 used) from covers (6) (2 used).

 : 19 mm



W18B-04-01-037

View A




WKGB91-05-01-181

SECTION 5 LOADER FRONT ATTACHMENT


Group 1 Front Attachment

30. Connect lubrication hoses (7) (2 used) to covers (6) (2 used).

 : 19 mm


 : 30 N·m (22 lbf-ft)

31. Connect elbows (9) (2 used) to boom cylinder rod-side pins (8) (2 used).

 : 19 mm

 : 30 N·m (22 lbf-ft)

32. Connect hoses (10) (2 used) to elbows (9) (2 used) of pins (8) (2 used).

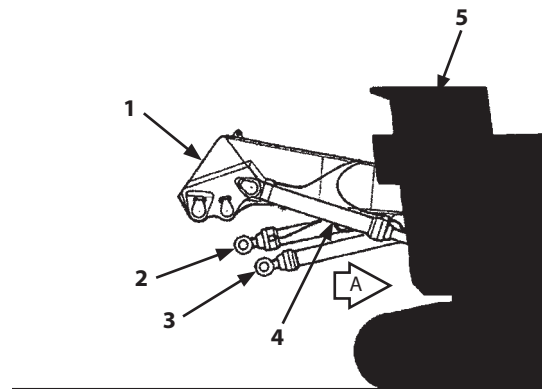
 : 19 mm

 : 30 N·m (22 lbf-ft)

33. Apply grease to the designated locations. (For the lubrication locations, refer to the page of "Lubrication" in the Operator's Manual.)

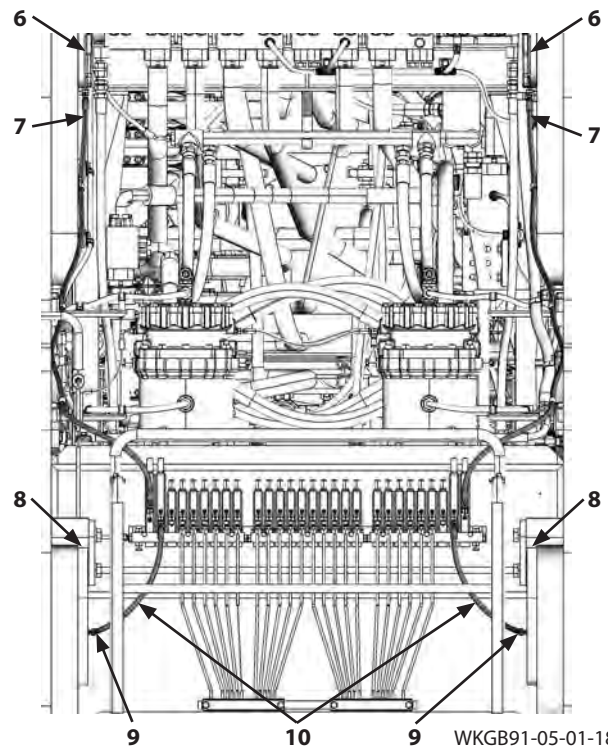
IMPORTANT: After reassembling the front, or after reinstalling the angle sensors, angle adjustment of the angle gauges is required. If angle adjustment is not performed, cylinder stroke end control will not activate, affecting the lifetime of the structure. Use monitor screen operations to perform angle adjustment. (Refer to TROUBLESHOOTING / Monitor section in the separate manual.)

IMPORTANT: After all work is completed, add hydraulic oil to the prescribed level. Bleed air from all cylinders. (Refer to W1-4-2.)



WKGB91-05-01-180

View A

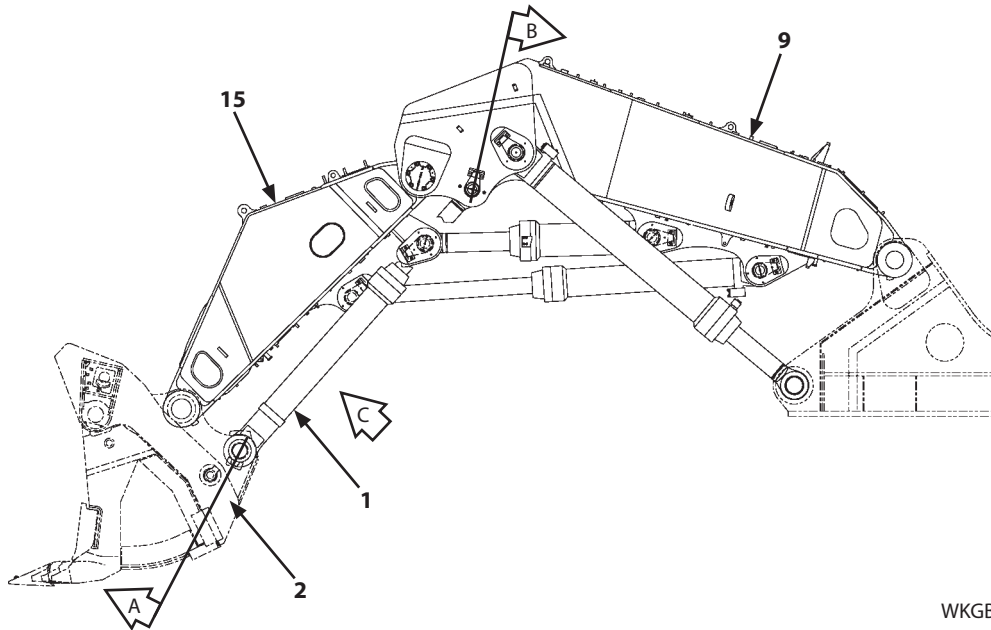


WKGB91-05-01-181

SECTION 5 LOADER FRONT ATTACHMENT

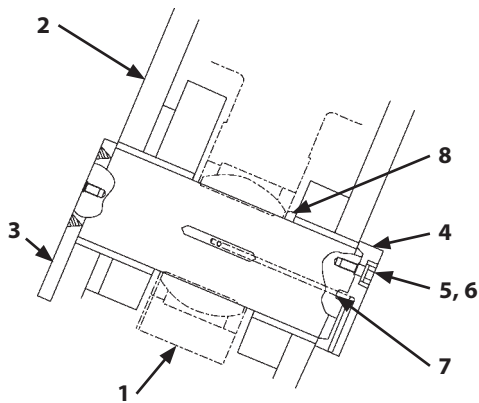
Group 2 Cylinder

Removal and Installation of Bucket Cylinder



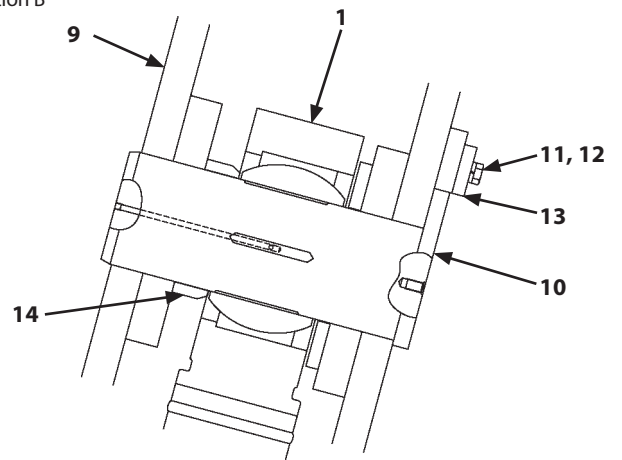
WKGB91-05-02-185

Section A



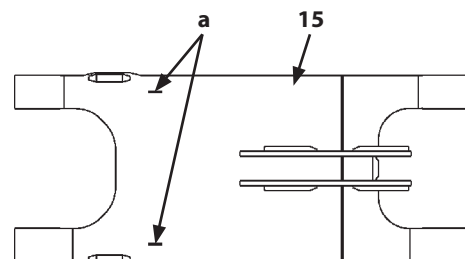
WKGB91-05-02-200

Section B



WKGB91-05-02-001

View C



W18B-04-02-020

- | | | | |
|-----------------------------|---------------------------|----------------------------|---------------------|
| 1- Bucket Cylinder (2 Used) | 5- Bolt (8 Used) | 9- Boom | 13- Plate (2 Used) |
| 2- Bucket | 6- Spring Washer (8 Used) | 10- Pin (2 Used) | 14- Spacer (2 Used) |
| 3- Pin (2 Used) | 7- O-Ring (2 Used) | 11- Bolt (4 Used) | 15- Arm |
| 4- Stopper (2 Used) | 8- Spacer (2 Used) | 12- Spring Washer (4 Used) | |
| a- Bracket | | | |

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