Field Assembly Instruction

DUMP TRUCK

HD785-7

SERIAL NUMBERS 7001 and up

KOMATSU

CONTENTS

CONTENTS

CONTENTS

CONTENTS

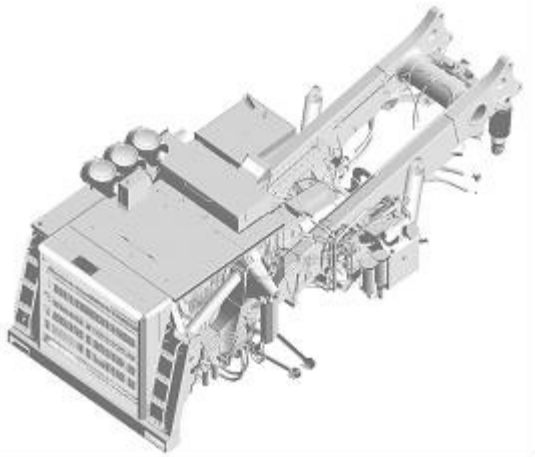
CONTENTS

7. Adjustment procedure

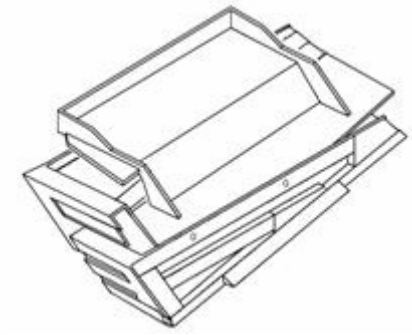
8. Welding procedure

1. Outline of division (Only main components)

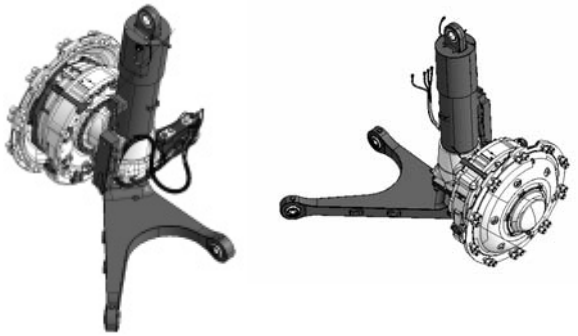
1. Bare machine



2. Dump body (Divided into 3)



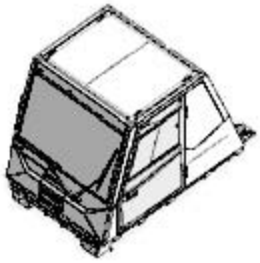
3. Front axle assembly



4. Rear axle and tire assembly

5. Front tire and wheel assembly

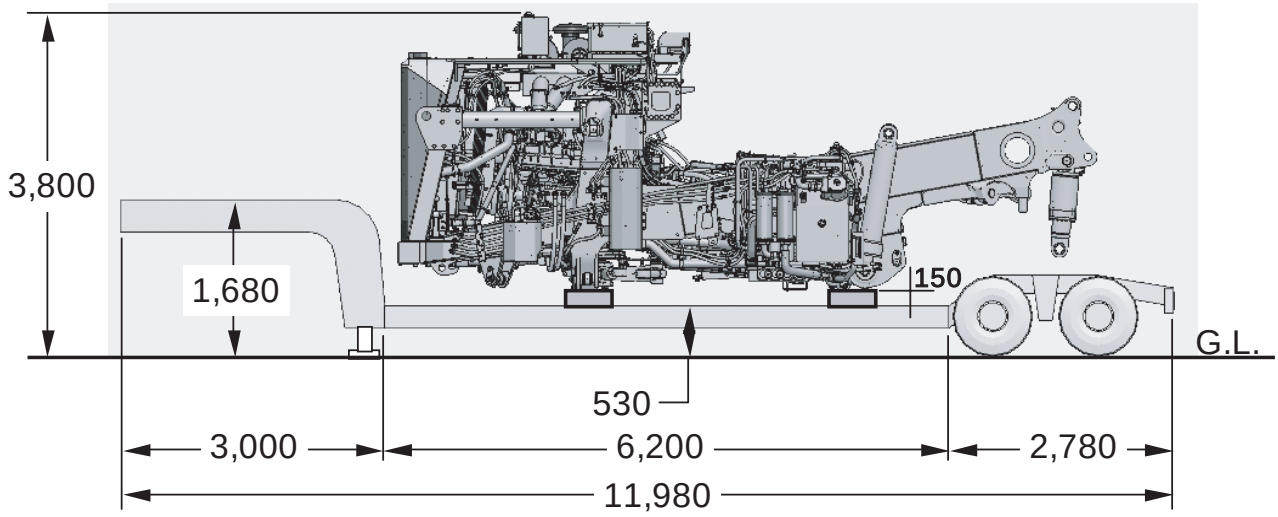
6. Cab assembly



2. Dimensions of main components

No.	Unit name	Weight (kg)	Overall length (mm)	Overall width (mm)	Overall height (mm)
1	Bare machine	21,600	7,930	3,190	3,120
2	Dump body	15,400	7,250	3,100	3,100
3	Right and left front axle assembly	2,400	2,200	1,700	2,100
4	Rear axle and tire assembly	17,000	4,390	2,700	2,700
5	Front tire and wheel assembly (1 set)	2,000	2,700	750	2,700
6	Cab	3,000	2,760	2,010	2,190

Drawing of bare machine on trailer



Reference

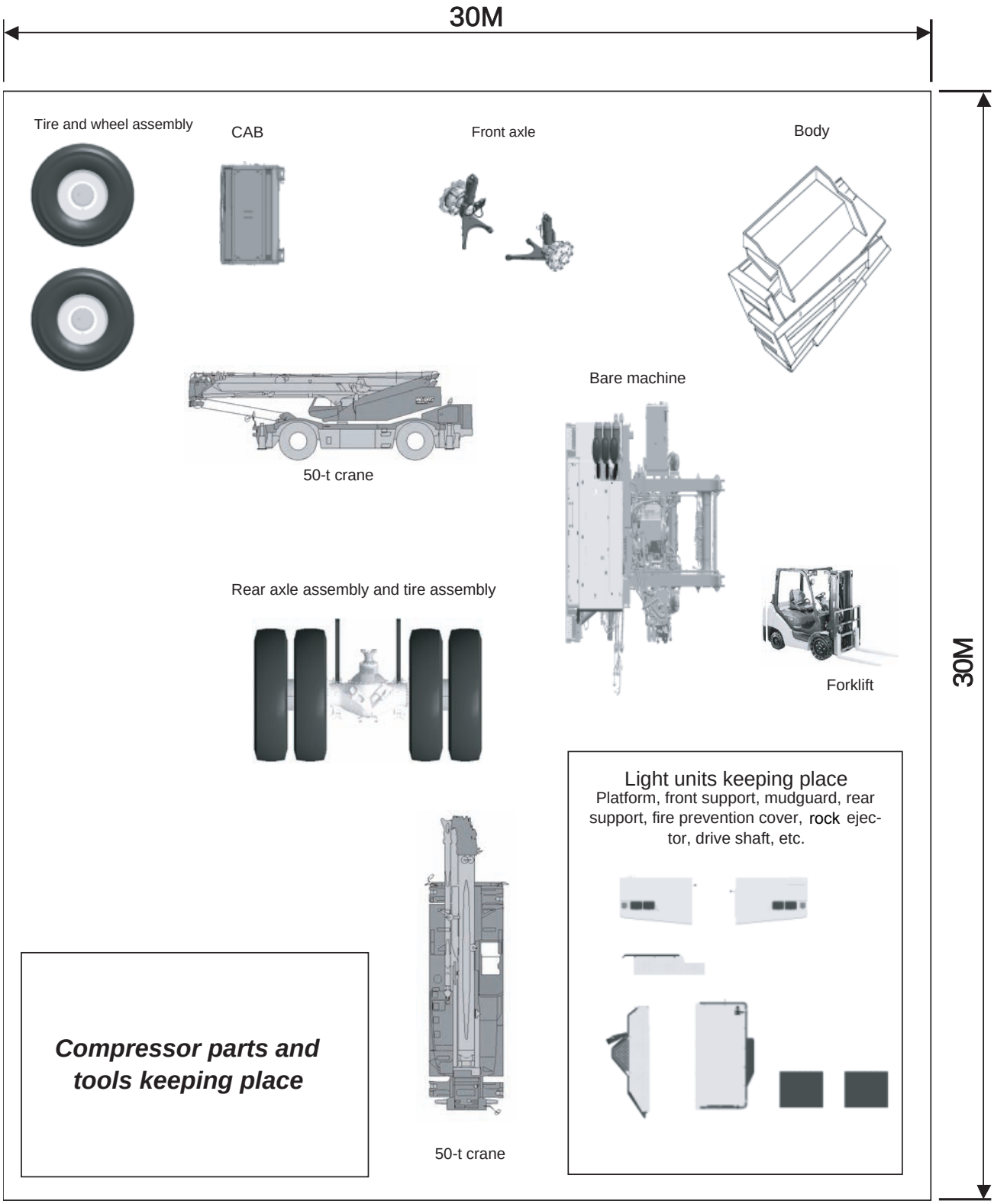
Specifications of completed truck

Specifications		Related items			
		Weight (kg)	Overall length (mm)	Overall width (mm)	Overall height (mm)
In self-propelled travel	HD785-7	64,600 (Mass of machine)	10,290 (Front bumper – End of body)	5,528	5,047 (When empty)

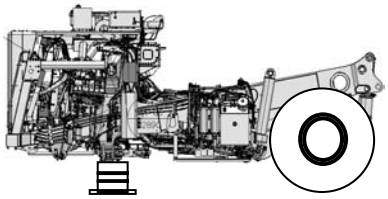
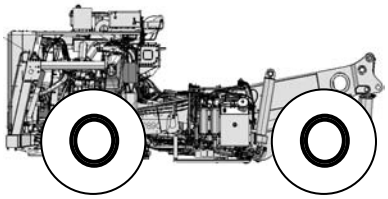
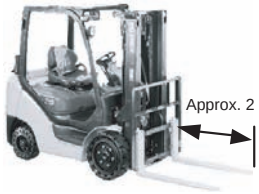
3. Layout of work space

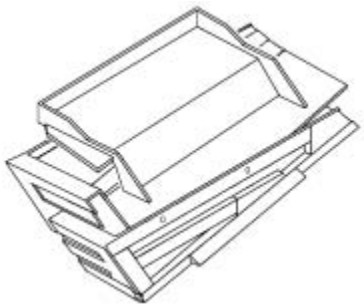
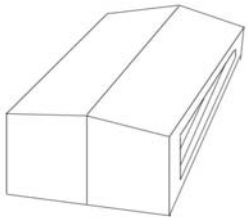
(The work space should be wider for the ease of work and must be at least 30 m square.)

Caution: The work space must be level and drained well.



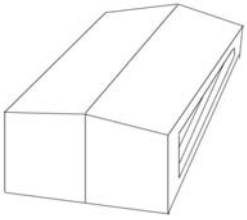
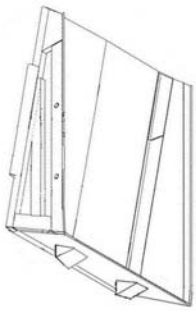
4-1. Rough schedule of assembly and welding

Day / Hour	1st day							
	1	2	3	4	5	6	7	8
Condition of chassis								
Rough contents of assembly work	Positioning rear axle Positioning chassis				Installing front axle Installing tires			
Crane	 490 kN {50 ton}		 245 kN {25 ton}		 245 kN {25 ton} (98 kN {10 ton})			
Forklift					 4 ton * Fork length: Approx. 2 m			
Number of workers	2							

Day / Hour	1st day							
	1	2	3	4	5	6	7	8
Condition of body								
Contents of welding work	Unloading Removal of stands and fixing parts				Positioning and fixing split body Welding back side			
Crane	 245 kN {25 ton}		 245 kN {25 ton}					
Number of workers	3							

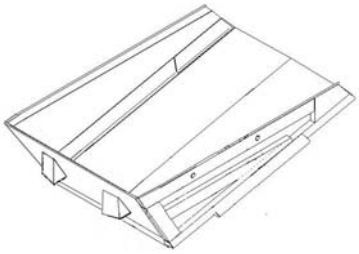
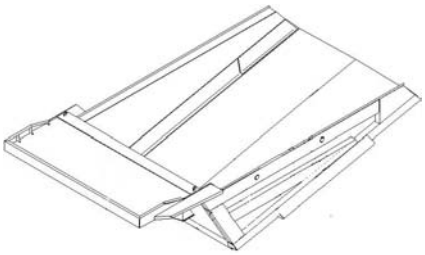
4-2. Rough schedule of assembly and welding

Day	2nd day							
Hour	1	2	3	4	5	6	7	8
Condition of chassis								
Rough contents of assembly work	Installing support Installing cab				Piping and wiring			
Crane	 490 kN {50 ton}				 490 kN {50 ton}			
Forklift								
Number of workers	2							

Day	2nd day							
Hour	1	2	3	4	5	6	7	8
Condition of body								
Contents of welding work	Positioning and fixing split body Welding back side				Turning over			
Crane	 245 kN {25 ton}							
Number of workers	3							

4-3. Rough schedule of assembly and welding

Day / Hour	3rd day							
	1	2	3	4	5	6	7	8
Condition of chassis								
Rough contents of assembly work	Installing platform Painting				Supply of oil and coolant Starting engine			
Crane								
Forklift								
Number of workers	2 							

Day / Hour	3rd day							
	1	2	3	4	5	6	7	8
Condition of body								
Contents of welding work	Welding inside of body				Welding protector			
Crane	 245 kN {25 ton} 							
Number of workers	3 							

4-4. Rough schedule of assembly and welding

Day / Hour	4th day							
	1	2	3	4	5	6	7	8
Condition of chassis								
Rough contents of assembly work	Mounting body Adjusting shims Field welding							
Crane	 490 kN {50 ton}		 245 kN {25 ton}		 245 kN {25 ton} (98 kN {10 ton})			
Number of workers	2							

Day / Hour	4th day							
	1	2	3	4	5	6	7	8
Condition of body								
Contents of welding work								
Crane								
Number of workers								

4-5. Rough schedule of assembly and welding

Day / Hour	5th day							
	1	2	3	4	5	6	7	8
Condition of chassis								
Rough contents of assembly work	Installing exterior parts Painting				Maintenance, adjustment Inspection			
Crane	 245 kN {25 ton} (98 kN {10 ton})							
Number of workers	2							

Day / Hour	4th day							
	1	2	3	4	5	6	7	8
Condition of body								
Contents of welding work								
Crane								
Number of workers								

5-1 List of jigs, tools, and consumables for field assembling (1/2)

No.	Item	Specification	Q'ty	Remarks
1	Truck crane	25 tons	2	See Field Assembling Procedures
2	Truck crane	50 tons	2	See Field Assembling Procedures
3	Forklift	4 tons	1	See Field Assembling Procedures
4	Gas cutting machine		1	
5	Torch	1220N2	1	
6	Acetylene gas		1	For gas cutting machine
7	Oxygen gas	14.7 MPa {150kg/cm²}	1	For gas cutting machine
8	Grinder (round)	FG50L-1	1	
9	Grindstone	SCW50 × 19 • 10	1	
10	Grinder	LISG-7S	1	For finishing
11	Grindstone	180ø × 6 × 22	3	
12	Dia. bar	CB7C105	1	
13	Dia. bar blade	6GH	1	
14	Semi-automatic welding machine	500A	3	
15	Hand shield	GP-1S	3	
16	Welding wire for semi-automatic welding machine	1.2 mm	80kg	
17	Chipper scaling hammer	FCM-20F	2	
18	Port power	300 mm for 10 tons	1	For adjustment of dump body deviation
19	Hydraulic jack	10 tons	1	For dump body
20	Hydraulic jack	5 tons	1	For dump body
21	Shaft	WJ-H46-74001-023	1	
22	Refractory cloth	1 m × 10 m	1	Protection when field welding
23	Spacer	ATH-465-027	3	Use when welding exhaust flange in field
24	Nitrogen gas injector	7926-10-1000	1	
25	Nitrogen gas bottle	14.7 MPa {150 kg/cm²}	1	Injection into suspension
26	Tire inflation gauge	No. 2252	1	
27	Grease pump gun	For 20kg can	1	
28	Grease	GL-2	5 kg	
29	Footstool	3-step	1	
30	Footstool	6-step	1	
31	Blue sheet	5 m × 10 m	5	Protection for equipment
32	Wood block	300 mm square, 1 m long	12	* Quantity depends on using condition.
33	Oil jack	5 ℓ	1	For oil injection
34	Oil	See Field Assembling Procedures.	–	See Field Assembling Procedures.
35	Oil sump, washing can		2	
36	Drained oil can	Empty drum can	1	
37	Cloth		5kg	
38	Diesel fuel	See Field Assembling Procedures.		For refilling fuel
39	Antifreeze		5 ℓ	For adding in subtank (to change mixing ratio depending on local weather)
40	Air hose	6ø × 1m	1	For air bleeding

5-2 List of jigs, tools, and consumables for field assembling (2/2)

No.	Item	Specification	Q'ty	Remarks
41	Sanding machine for scaling-off coating	914B	1	
42	Sandpaper	#80	100	
43	Sandpaper	#180	10	
44	Cup gun set	W87-20R2S	1	Use for coating
45	Brush		1	Use to repair coating.
46	Air compressor	Not less than 3.5 m³ or 7 kg/cm²	1	
47	Air hose	With mouthpiece of ø12	5	For impact grinder
48	Impact wrench	UW-13SK	2	
49	Impact wrench	KW-3800P	1	
50	Impact wrench	UW-9SK	2	
51	Extension for impact wrench 38S	150 mm long	1	
52	Socket	1 inch × 46 mm	1	For tightening tire
53	Socket	1 inch × 30 mm	1	For tightening support
54	Torque-wrench	2800QL	1	For drive shaft and body pin
55	Torque-wrench	21000QLE	1	For tightening tire
56	Convex	5m	1	
57	Locktite	LT-2	1	
58	Vinyl tape		1	Use to bundle harnesses
59	Standard tool (ISO specification)	700SX	2	
60	Bar	1m	1	
61	Pointed steel bar		1	For hole alignment
62	Large hammer	10 lb	1	
63	Axle pin installation guide	ATH-785-078	2	
64	Shackle	BD10 for 500 kg	4	
65	Shackle	BC40 for 10 tons	4	For mounting body
66	Chain	ATH-465-042	1	Multi purpose
67	Nylon shoe ring	100 mm wide × 5 m	2	For mounting fuel tank
68	Nylon shoe ring	60 mm wide × 3 m	2	For mounting support and small articles
69	Nylon shoe ring	100 mm wide × 12 m	1	For mounting front tires
70	Nylon shoe ring	30 mm wide × 2 m	3	For installing front axle
71	Nylon shoe ring	100 mm wide × 3 m	1	For installing front axle
72	Pin	ø60 × 250 mm	2	For slinging chassis, rear side (Safety pin can substiture)
73	Jig for slinging body	ATH-785-006	4	For mounting body
74	Lever block	3/4 tons, LB008	3	For installing front axle
75	Lever block	2 tons, LB020	1	For installing front axle
76	Wire	7m 28ø	2	For slinging chassis
77	Wire	4m 28ø	2	For mounting body
78	Wire	5m 28ø	2	For installing body
	The following items may be substituted for No. 76 to 78.			
		ATH-465-039	1	For mounting body
		ATH-465-040	2	For slinging chassis
		ATH-465-041	1	For slinging separated body

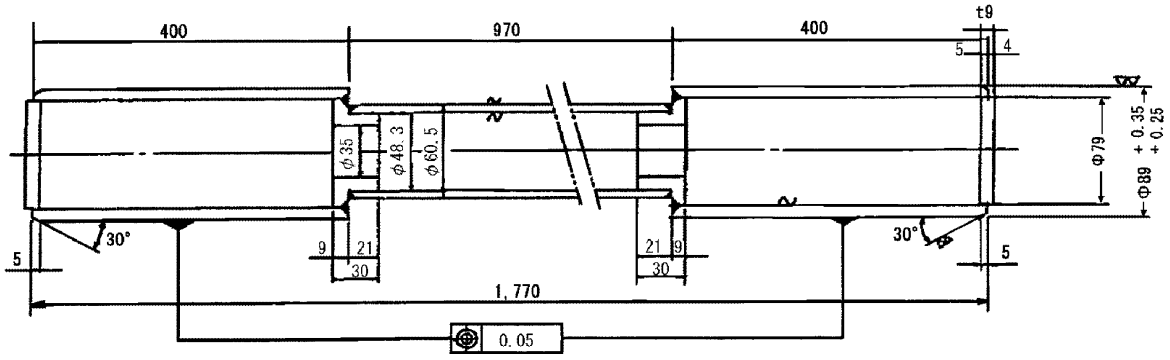
List of touch-up coating on body for overseas specifications

No.	Part Name	Unit	Q'ty
1	Retane GP primer	4kg	1
2	Retane GO hardener	0.8kg	1
3	Retane GP thinner	4ℓ	1
4	AX Mightylacq G2KB type natural yellow	16kg	1
5	NAX Mightylacq G2KB type hardener	15kg	1
6	X Mightylacq G2 500 standard thinner	17ℓ	1
7	Acryliquid cloud gray	Spray can	1
8	Heat-resistance silver	Spray can	1

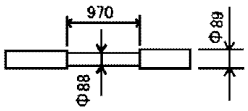
5-3. Tools and consumables

Note: Komatsu cannot accept any responsibility for special tools manufactured according to these sketches.

Body alignment shaft



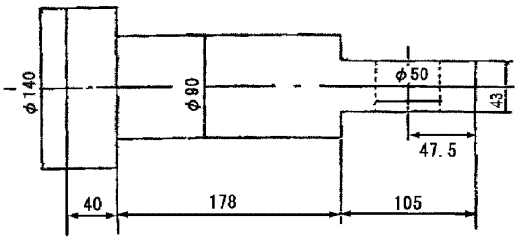
Pipe STKM13A Φ95 × t8

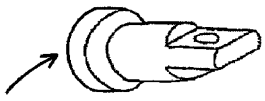


or whole pipe also possible

HEAT TREATMENT	MATERIAL
—	STKM13A
PART NAME	QTY
Shaft	1
WJ-H46-74001-023	

Body lifting pin





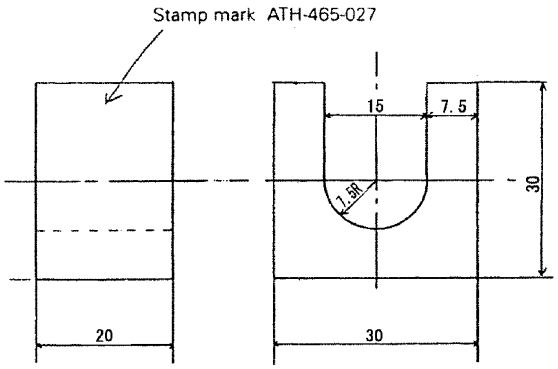
Stamp mark ATH-785-006

HEAT TREATMENT	MATERIAL
—	SS400
PART NAME	QTY
Body lifting pin	4
AHT-785-006	

Sketches of special tools

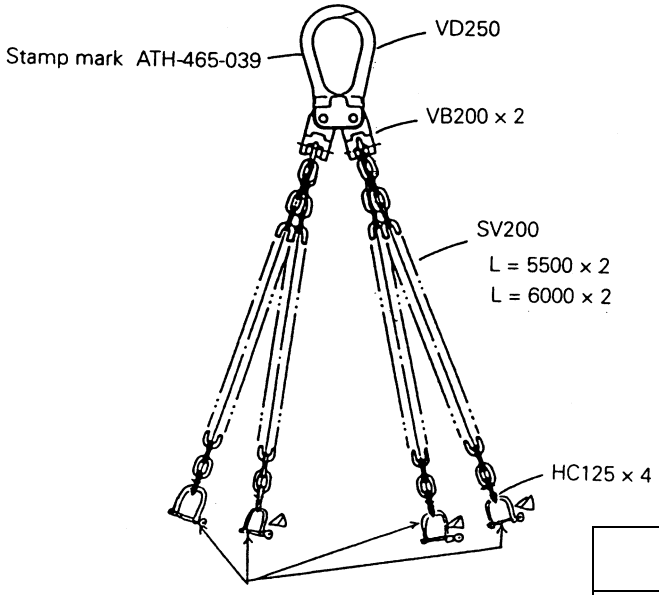
Note: Komatsu cannot accept any responsibility for special tools manufactured according to these sketches.

When welding by actually positioning exhaust flange on machine



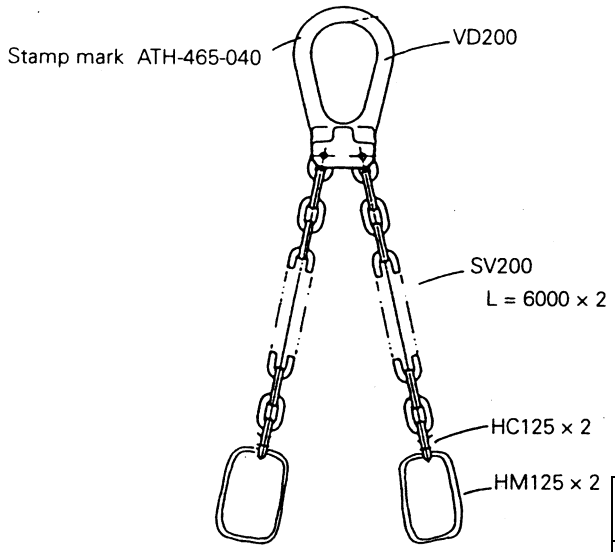
HEAT TREATMENT	MATERIAL
PU-4	SS40
PART NAME	QTY
SPACER	3
ATH-465-027	

Body assembly lifting tool



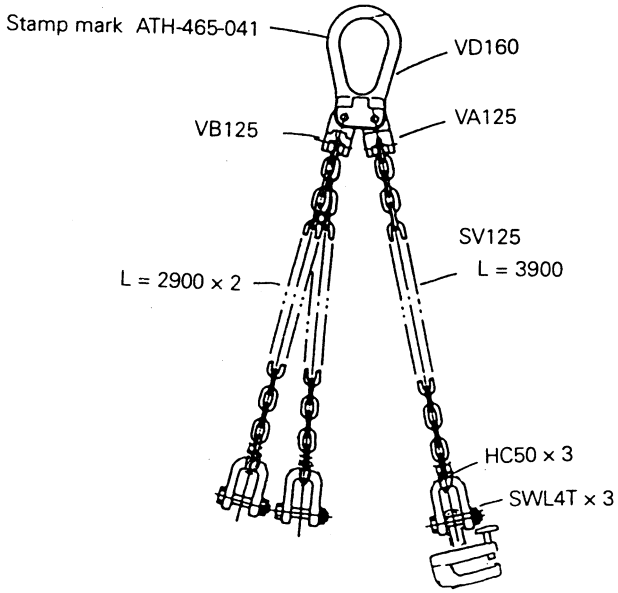
HEAT TREATMENT	MATERIAL
—	—
PART NAME	QTY
Body assembly lifting tool	1
ATH-465-039	

Chassis lifting tool



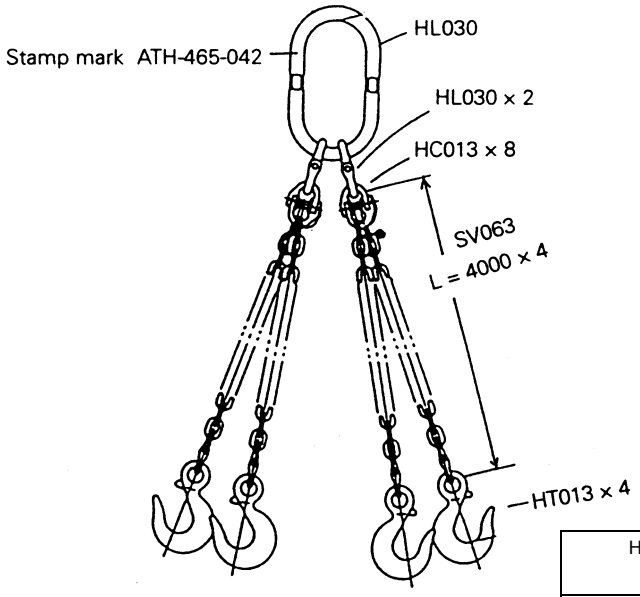
HEAT TREATMENT	MATERIAL
—	—
PART NAME	QTY
Chassis lifting tool	2
ATH-465-040 △	

Dump body lifting tool



HEAT TREATMENT	MATERIAL
—	—
PART NAME	QTY
Split dump body lifting tool	1
ATH-465-041 △	

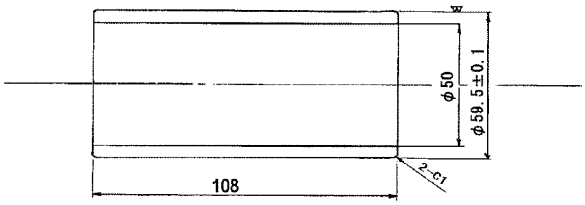
Universal lifting tool



QL-4T

HEAT TREATMENT	MATERIAL
—	—
PART NAME	QTY
Universal lifting tool	1
ATH-465-042	

Front axle installation guide



HEAT TREATMENT	MATERIAL
—	—
PART NAME	QTY
Front axle installation guide	2
ATH-785-078	

Assembly process No.	Oil, grease, and coolant
0010	

Method of using fuel, lubricant, and coolant according to ambient temperature

■ Fuel, oil

Use the correct type for the ambient temperature as shown in the table below.

★ Specified capacity: Total amount of oil including oil for components and oil in piping
Refill capacity: Amount of oil needed to refill system during normal inspection and maintenance.

★ When starting the engine in an ambient temperature of less than 0°C, always use EOS0W30, or EOS5W40, even though the temperature goes up to 10°C during the daytime.

■ Coolant

Komatsu genuine super coolant (AF-NAC) is added to the cooling water, so there is no need to change it for temperatures down to -10°C.

If the temperature goes below -10°C, adjust the density. For details, see CLEANING INSIDE OF COOLING SYSTEM in the WHEN REQUIRED Section of the Operation and Maintenance Manual.

Reservoir	Fluid Type	Ambient Temperature, degrees Celsius -22 -4 14 32 50 68 86 104 122 °F -30 -20 -10 0 10 20 30 40 50 °C	Recommended Komatsu Fluids
Engine oil pan	Engine oil	(Note.1)	Komatsu EOS0W30
		(Note.1)	Komatsu EOS5W40
			Komatsu EO10W30DH
			Komatsu EO15W40DH
			Komatsu EO30DH
Transmission Case Brake sub tank	Power train oil (Note.2)		TO10
			TO30
Steering, hoist oil tank	Power train oil		TO10
	Hydraulic oil		HO46-HM
Front suspension Rear suspension	Hydraulic oil		HO-MVK
Differential case Final drive case	Power train oil		TO30
			TO50
Grease fitting	Hyper grease (Note.3)		G2-T, G2-TE
	Lithium EP grease		G2-LI
Cooling system	Supercoolant AF-NAC (Note.4)		AF-NAC
Fuel tank	Diesel fuel		ASTM Grade No.1-D S15 ASTM Grade No.1-D S500
			ASTM Grade No.2-D S15 ASTM Grade No.2-D S500

★ For details of the notes (e.g., Note. 1, Note.2 ···) in the table, see the Operation and Maintenance Manual.

Assembly process No.	Levels of oil, grease, and coolant
0020	

Lubrication point	Type of oil	Specified capacity (ℓ)	Refill capacity (ℓ)	Volume of refilled oil (ℓ)
Engine oil pan	Engine oil	134	129	—
Transmission case (Including brake sub tank)	Power line oil	404	241	200
Steering and hoist oil tank		270	175	150
Front suspension		29.8 each on right and left sides	—	—
Rear suspension		16.5 each on right and left sides	—	—
Differential case		137	137	—
Final drive case		64 each on right and left sides	64 each on right and left sides	—
Fuel tank	Diesel fuel	1,308	—	—
Cooling system	Coolant	283	279	—

Caution) Before starting the engine, be sure to check each oil/coolant level.

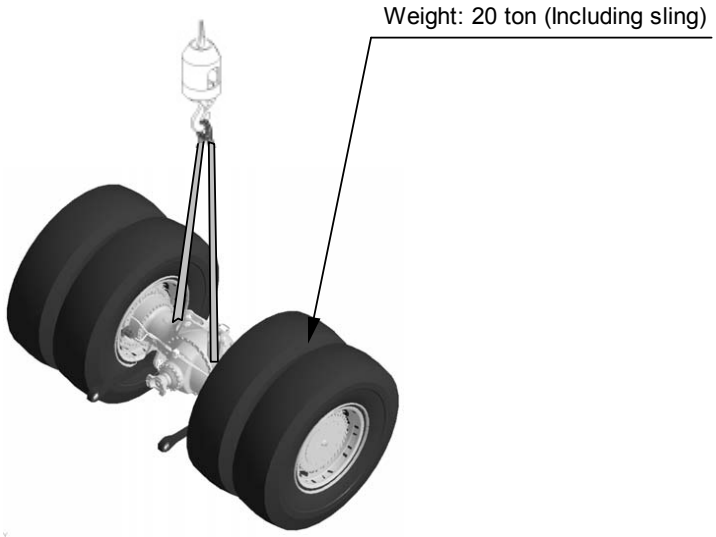
Do not steer the machine largely before adjusting the suspension
(If it is steered largely, the piping may be damaged).

Precautions	Necessary tools		Necessary equipment	
	Name	Q'ty	Name	Q'ty
	Other remarks			

Assembly process No.	Positioning rear axle assembly
0030	

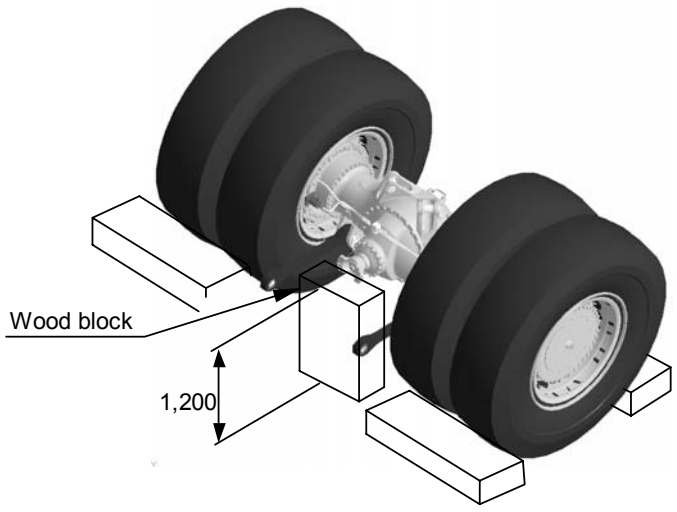
Slinging of rear axle

1. Sling the rear axle and tire assembly with a 50 ton crane.
   Slinging position: Rod mounting portion on differential



Positioning of rear axle

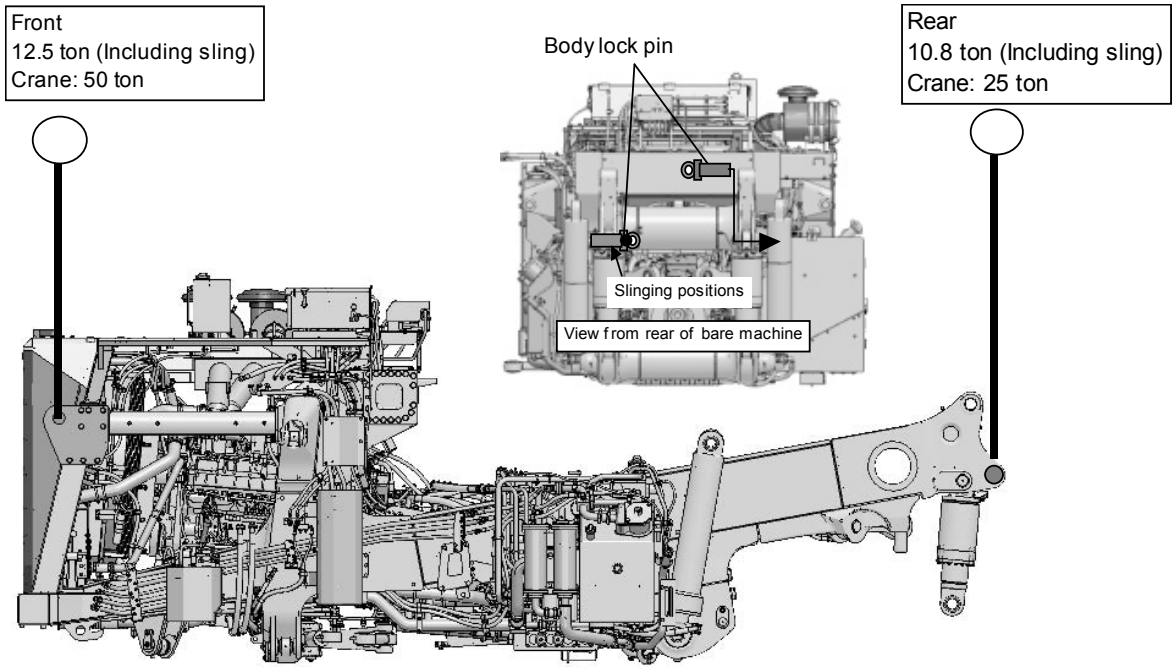
1. Position the rear axle. See the following figure.
   (Secure the ground clearance under the coupling section so that the rear axle assembly will be horizontal.)
   When positioning the rear axle on the ground, prevent slanting of the machine caused by subsidence of the ground.
2. Lock the wheels with chocks to prevent the rear axle from moving.



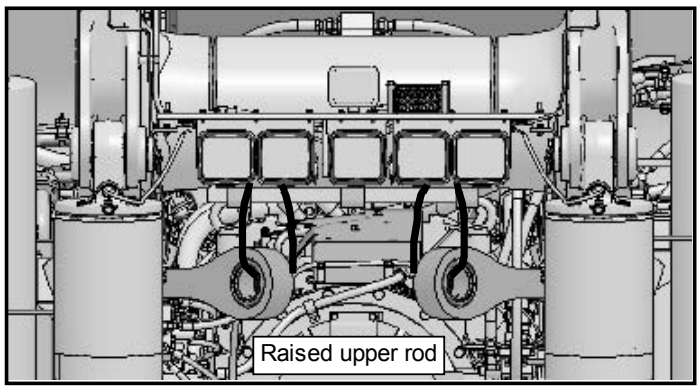
Precautions	Necessary tools		Necessary equipment	
Lock the wheels with chocks to prevent the rear axle from moving.	Name	Q'ty	Name	Q'ty
	Nylon sling (250 mm wide × 5 m)	1	Crane (50 ton)	1
	Other remarks			

Assembly process No.	Slinging and moving of bare machine
0040	

Sling of bare machine



1. Apply cloths etc. to the body so that the body will not be damaged when it is slung.
2. Sling the bare machine with 2 cranes (Front side: 50 ton, Rear side: 25 ton).
   Sling : Chain sling (ATH-465-040) or ø28 wire
   Slinging position on front side : Frame slinging bracket
   Slinging position on rear side : Body lock pin installing position
   * Insert the body lock pin from inside of the machine (See the above figure).
3. Raise the differential upper part installing rod (upper rod).



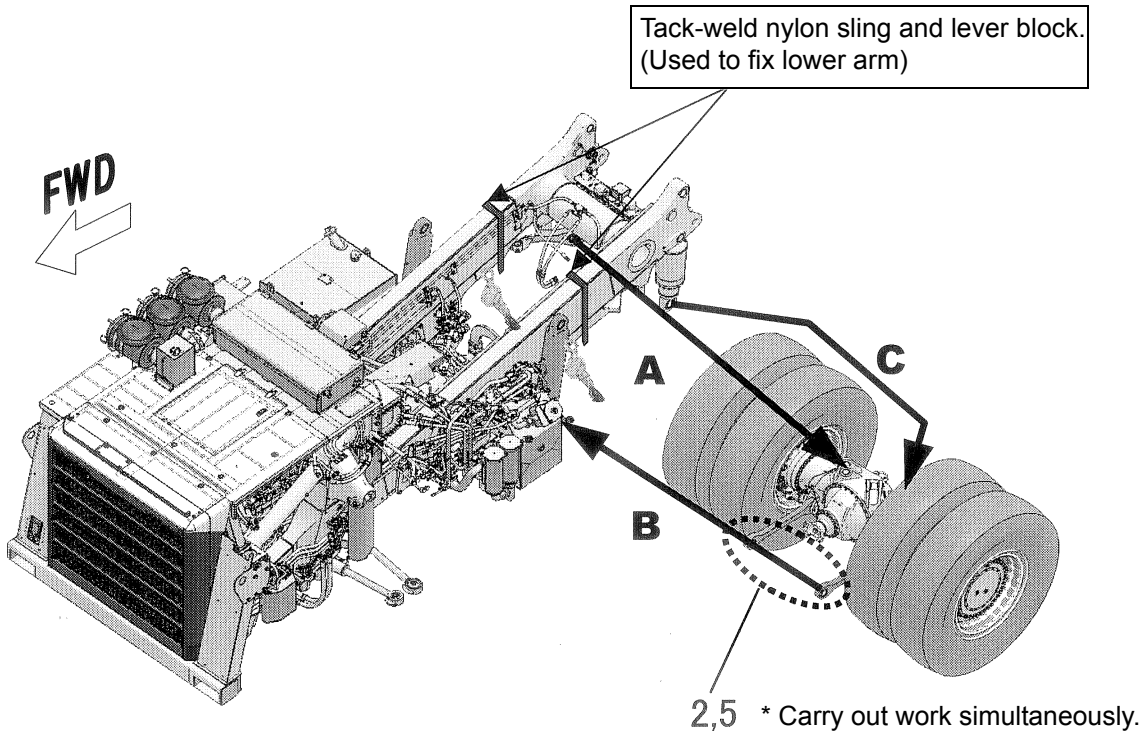
Moving of bare machine

1. Move the bare machine to above the rear axle.

Precautions	Necessary tools		Necessary equipment	
Insert the body lock pin for slinging the rear side from inside of the machine. (If it is inserted from outside, it cannot be removed after the tire is installed.)	Name	Q'ty	Name	Q'ty
			Cranes (50 ton, 25 ton)	1 each
			Sling (ATH-465-040)	2
			Pin (60 ø × 250 mm)	2
			Wire (7 m, 28 ø)	2
	Other remarks			

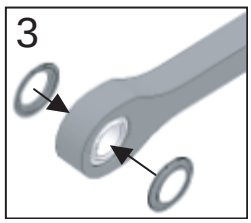
Assembly process No.	Connection of rod and rear suspension
0050	

Connection of rod and rear suspension



1. Connect A, B and C in order.
   Remove the pins installed temporarily and the spacers and bolts to be used in step 3.

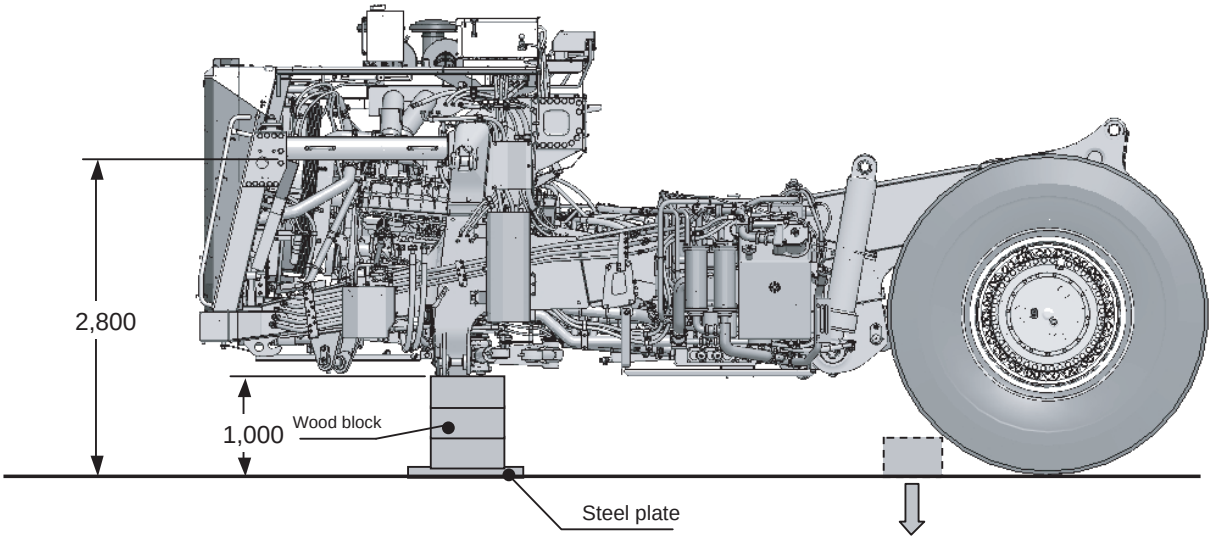
		Part No.	Part name	Q'ty	Condition of parts
A	(1)	561-52-81210	Pin	2	Temporarily installed to rear axle A
	(2)	01010-81430	Bolt	2	Temporarily installed to rear axle A
	(3)	569-40-61710	Washer	2	Temporarily installed to rear axle A
B	(4)	561-52-81210	Pin	2	Temporarily installed to frame B
	(5)	01010-81430	Bolt	2	Temporarily installed to frame B
	(6)	569-40-61710	Washer	2	Temporarily installed to frame B
C	(7)	561-52-81210	Pin	2	Temporarily installed to rear axle C
	(8)	01010-81425	Bolt	2	Temporarily installed to rear axle C
	(9)	569-40-61710	Washer	2	Temporarily installed to rear axle C

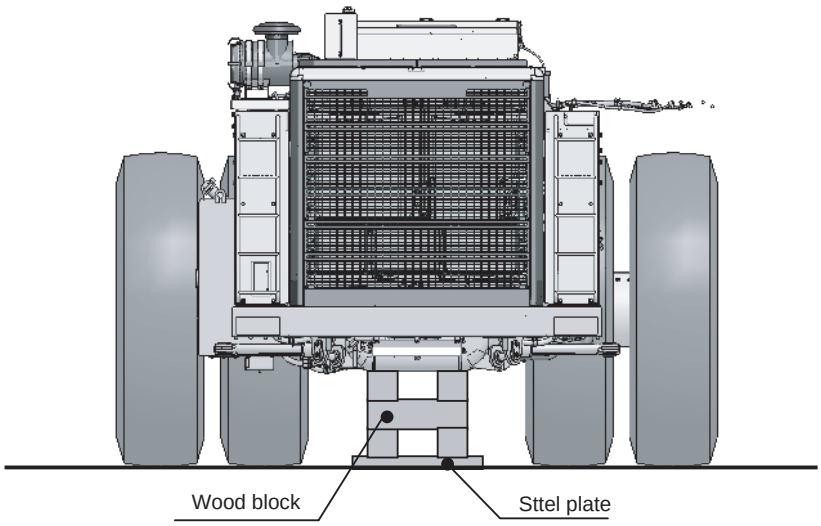


2. Adjust the pin holes and remove the rod from the pin holes temporarily.
3. Put the spacer in the rubber part of the spherical bushing. (See the figure at right.)
4. Adjust the pin holes and insert the pin.
5. Install the lock bolt and washer.
6. Supply grease.

Precautions	Necessary tools		Necessary equipment	
1. When adjusting the holes, take care not to catch your finger. 2. If the spacer is installed forcibly, it is deformed. Take care. 3. When hitting the pin, take care not to crash the grease fitting. 4. Clean the pins installed temporarily and parts A, B and C.	Name	Q'ty	Name	Q'ty
	Nylon sling (60 mm wide × 3 m)	2		
	Lever block (2 ton, LB020)	2		
	Other remarks			

Assembly process No.	Positioning bare machine
0060	



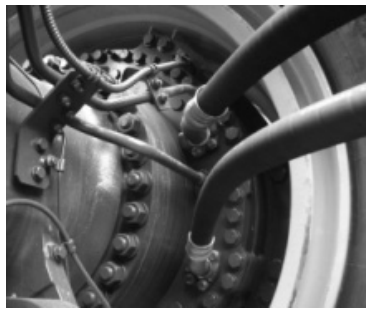


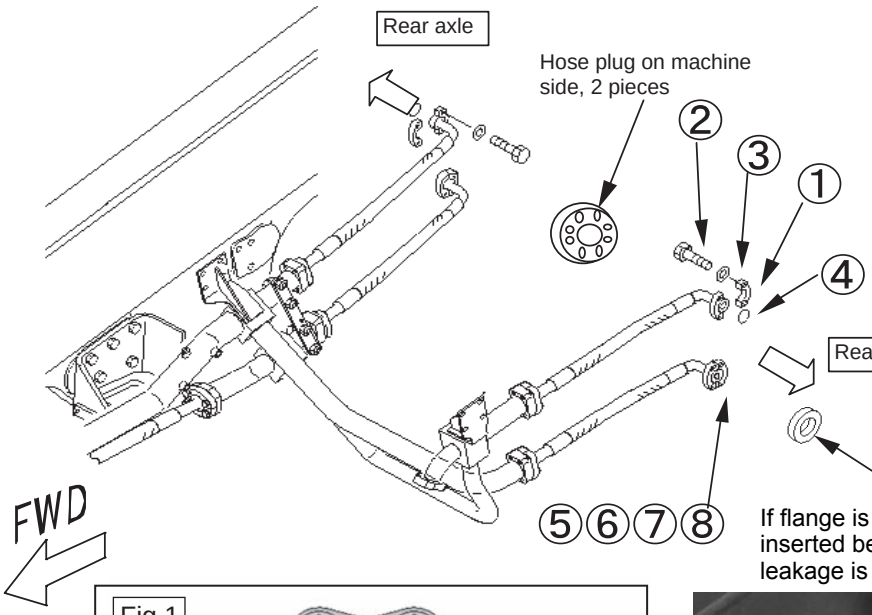
1. Set the wooden blocks 1 m high under the vertical member as shown above.
   (If wooden blocks are set under the bumper, the machine is more stabilized.)
   When positioning the bare machine on the ground, place a steel plate under the wood blocks so that the bare machine will not sink and lean.
2. Remove the sling.
3. Discard the bolts and washers used to install the sling since they are not used any more.

Precautions	Necessary tools		Necessary equipment	
Take care that the chassis will not move. Set the bare machine to proper height so that you can install the front tires.	Name	Q'ty	Name	Q'ty
	Wood block (300 mm square, 1 m)	6		
	Steel plate	1		
	Other remarks			

Assembly process No.	Connection of rear axle cooling hose
0070	

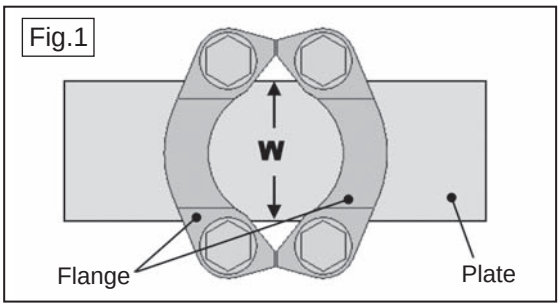
Connection of rear axle cooling hose





If flange is loosened a little and a plate is inserted before piping is disconnected, oil leakage is decreased (*1).

Fig.1



Note) Do not damage the O-ring.

1. Remove all of the hose plugs on the machine side (2 pieces) and rear axle plugs (4 pieces).
2. Connect the hoses by using the following parts.

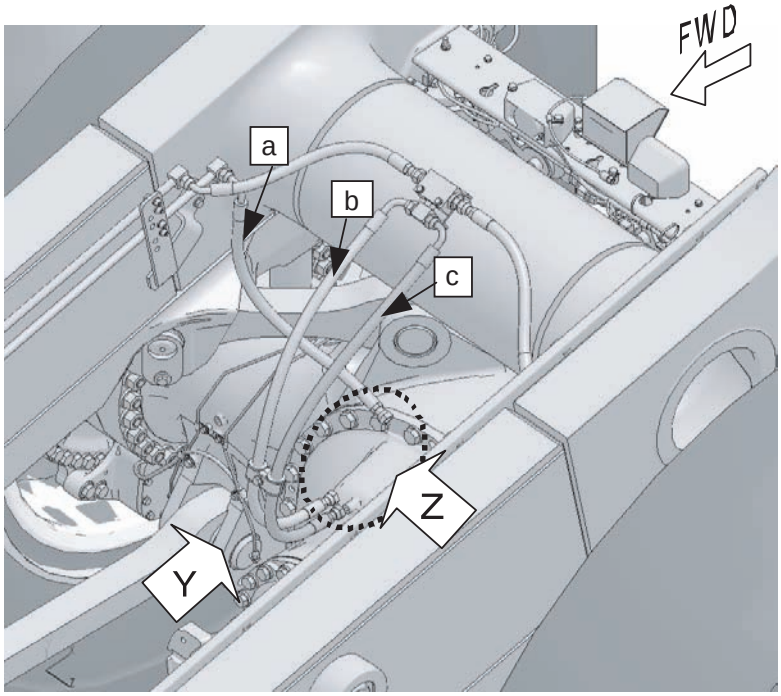
	Part No.	Part name	Q'ty	Condition of parts
(1)	07371-21465	Flange	4	Installed parts
(2)	07372-21245	Bolt	8	Installed parts
(3)	01643-51232	Washer	8	Installed parts
(4)	07000-F3048	O-ring	2	Installed parts
(5)	07371-32076	Flange	4	Installed parts
(6)	07372-21240	Bolt	8	Installed parts
(7)	01643-51232	Washer	8	Installed parts
(8)	07000-F2060	O-ring	2	Installed parts

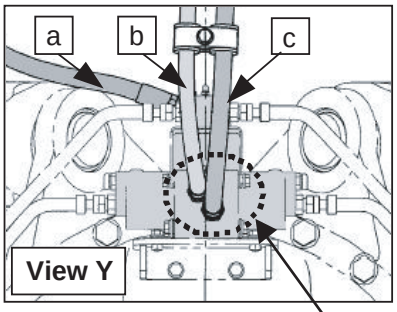
3. Clean the parts stained with oil.

Precautions	Necessary tools		Necessary equipment	
	Name	Q'ty	Name	Q'ty
When connecting each hose, check that no dirt is in the hose and the O-ring is fitted securely.	Impact wrench (For M12 mm)	1		
When removing each plug, set an oil drain case to receive the leaking oil.	Socket (19 mm)	1		
*1. Dimension of plate (See "Fig 1") Large pipe: W = 63 mm Small pipe: W = 55 mm				
	Other remarks			

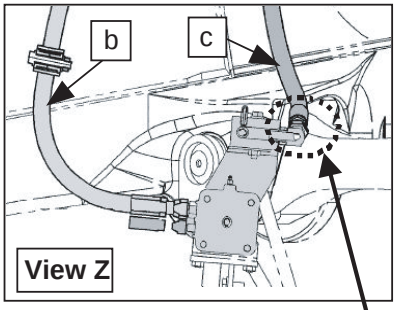
Assembly process No.	Connection of rear axle brake hose
0080	

Connection of rear axle brake hose





Connection: From block to front side of valve
(Reuse O-ring)



Connection: From tube to rear side of valve
(Reuse O-ring)

1. Remove the plugs from each part.
2. Connect the 3 hoses.
3. Clean the parts stained with oil.

Caution: Install the hoses horizontally.

Precautions	Necessary tools		Necessary equipment	
1. Take care extremely not to mistake the connecting positions. 2. When removing each plug, do not lose the O-ring.	Name	Q'ty	Name	Q'ty
	Other remarks			