Field Assembly Instruction

DUMP TRUCK

HD985-5

SERIAL NUMBERS 1021 and up

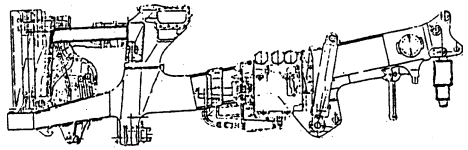
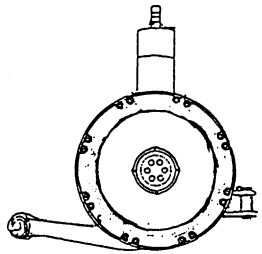
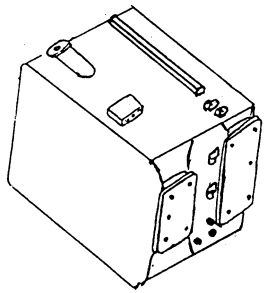
KOMATSU

CONTENTS

Note 1: Install fittings such as bolts, washers, nuts, retaining plates, and pins on their specified locations. Those fittings was used to mount separated package during transportation.
Note 2: Install or weld the components specified in the delivery instruction in place, except those specified to make package separate.

Front Axle, F/T, Chassis

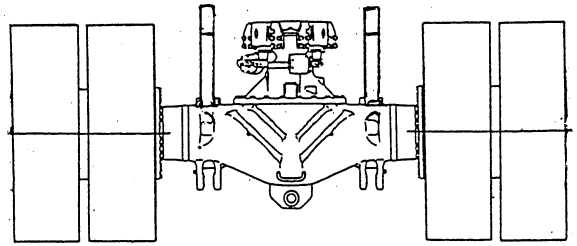
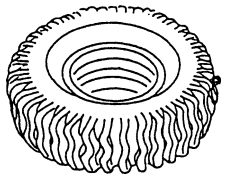
Remarks:
A ... Single part of assembly
L ... Single part of lot
B ... Single part of bulk

Component						Description
No	Part name	Part No.	Quantity/ machine	Classification		
01	Chasis A'ssy	561-00-00000	1	A		For Japan ..... without rack, with air cleaner Except Japan .... cleaner separated
01	F. Axle Ass'y (R.H.)	561-27-R0000	1	A		
02	F. Axle Ass'y (L.H.)	561-27-L0000	1	A		
03	Fuel Tank Ass'y	561-04-6111	1	A		(Note) Two spill lines added.

Note 1: Install fittings such as bolts, washers, nuts, retaining plates, and pins on their specified locations. Those fittings was used to mount separated package during transportation.
Note 2: Install or weld the components specified in the delivery instruction in place, except those specified to make package separate.

Tire Assembly (including Tires), Rear Axle

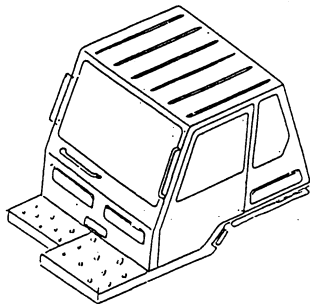
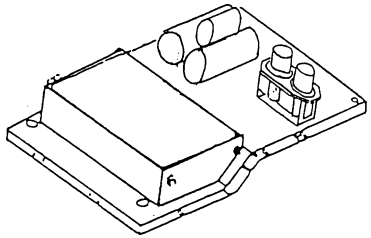
Remarks:
A ... Single part of assembly
L ... Single part of lot
B ... Single part of bulk

Component						Description
No	Part name	Part No.	Quantity/ machine	Classification		
01	R. Axle Ass'y	561-22-60001	1	A		(Note) Stopper pin bracket added.
02	Tire Ass'y (L.H.)	561-30-X0000	2	A		

Note 1: Install fittings such as bolts, washers, nuts, retaining plates, and pins on their specified locations. Those fittings was used to mount separated package during transportation.
Note 2: Install or weld the components specified in the delivery instruction in place, except those specified to make package separate.

R.H. Platform, Cabin

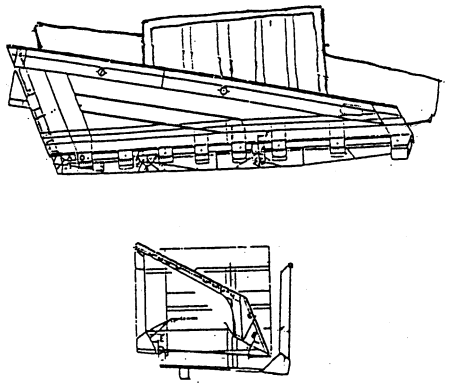
Remarks:
A ... Single part of assembly
L ... Single part of lot
B ... Single part of bulk

Component						Description
No	Part name	Part No.	Quantity/ machine	Classification		
01	Cabin A'ssy	561-54-67003	1	A		(Note) Improved cabin to make assembling easy.
02	R.H. Platform Ass'y	561-54-61411	1	A		(Note) Standardization of pressure reducing valve.

Note 1: Install fittings such as bolts, washers, nuts, retaining plates, and pins on their specified locations. Those fittings was used to mount separated package during transportation.
Note 2: Install or weld the components specified in the delivery instruction in place, except those specified to make package separate.

Body Assembly (Including Body)

Remarks:
A ... Single part of assembly
L ... Single part of lot
B ... Single part of bulk

Component						Description
No	Part name	Part No.	Quantity/ machine	Classification		
01	Body Ass'y	561-74-00000	1	A		

LIST OF JIGS, TOOLS, AND CONSUMABLES FOR FIELD ASSEMBLING (1/3)

No.	Item	Specification	Q'ty	Remarks
1	Truck crane	25 tons	1	
2	Truck crane	45 tons	1	
3	Forklift truck	2.5 tons	1	
4	Gas cutting machine	No. A type Novac 112R	1	
5	Torch	1220N2	1	
6	Acetylene gas		1	For gas cutting machine
7	Oxygen gas	150kg/cm^2	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	180ϕ × 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	Pin for body hinge	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	566-88-14003	1	
25	Nitrogen gas bottle	150 kg/cm^2	1	Injection into suspension
26	Tire inflation gauge	No. 2252	1	
27	Electric nut runner	For 200 kgm NR-30T	1	For tire tightening
28	Extension	ATH-785-014	1	For tire tightening
29	Cord reel	For 200V	1	For electric nut runner
30	Generator	220V	1	
31	Grease pump gun	For 20kg can	1	
32	Grease	GL-2	5 kg	
33	Footstool	Three steps	1	
34	Footstool	Six steps	1	
35	Blue sheet	5 m × 10 m	5	Protection for equipment
36	Square timber	300 mm square, 1 m long	16	

LIST OF JIGS, TOOLS, AND CONSUMABLES FOR FIELD ASSEMBLING (2/3)

No.	Item	Specification	Q'ty	Remarks
37	Oil jack	5L	1	For oil injection
38	Oil	Engine oil SAE10W	100ℓ	See Field Assembling Procedures.
39	Oil	Engine oil SAE30W	20ℓ	See Field Assembling Procedures.
40	Oil sump, washing can		2	
41	Drained oil can	Empty drum can	1	
42	Cloth		5kg	
43	Diesel fuel	No. 2 for summer Special No. 3 for winter (ASTM D975 No. 2)		For refilling fuel
44	Antifreeze		5ℓ	For adding in subtank (to change mixing ratio depending on local weather)
45	Air hose	6ϕ × 1m	1	For air bleeding
46	Three-bond #1521	Tube of 100 gram	1	Use for windshield glass
47	Washer liquid		3ℓ	
48	Sanding machine for scaling-off coating	914B	1	
49	Sandpaper	#80	100	
50	Sandpaper	#180	10	
51	Cup gun set	W87-20R2S	1	Use for coating
52	Brush		1	Use to repair coating.
53	Air compressor	Not less than 3.5 m^3 or 7 kg/cm^2	1	
54	Air hose	With mouthpiece of ϕ12	5	For impact grinder
55	Impact wrench	UW-13SK	2	
56	Impact wrench	KW-3800P	1	
57	Impact wrench	UW-9SK	2	
58	Extension for impact wrench 38S	150 mm long	1	
59	Socket	1 inch × 41 mm	1	For tightening tire
60	Socket	1 inch × 36 mm	1	For tightening ROPS (option for overseas specification)
61	Socket	1 inch × 30 mm	1	For tightening support
62	Wrench	Width across flats: 36 mm	1	
63	Wrench	Width across flats: 41 mm	1	
64	Torque-wrench	1800QL	1	For propeller shaft
65	Torque-wrench	10000QLE	1	
66	Torque-wrench, open type	24 × 1200SP	1	
67	Torque-wrench, open type	36 × 2200SP	1	
68	Torque-wrench, box type	Width across flats: 27 mm, 4200CL	1	
69	Torque wrench, box type	Width across flats: 30 mm, 7000CL	1	
70	Convex	5m	2	

LIST OF JIGS, TOOLS, AND CONSUMABLES FOR FIELD ASSEMBLING (3/3)

No.	Item	Specification	Q'ty	Remarks
71	Locktite	LT-2	1	
72	Vinyl tape		1	Use to bundle harnesses
73	Standard tool (ISO specification)	700SX	2	
74	Bar	1m	1	
75	Shino		1	For hole alignment
76	Sledgehammer	10 lb	1	
77	Shackle	BD10 for 500 kg	4	
78	Shackle	BC40 for 10 tons	4	For mounting body
79	Chain	ATH-465-042	1	Multi purpose
80	Nylon shoe ring	100 mm wide × 5 m	2	For mounting fuel tank
81	Nylon shoe ring	250 mm wide × 5 m	1	For mounting R.H. platform to cabin
82	Nylon shoe ring	60 mm wide × 3 m	2	For mounting support and small articles
83	Nylon shoe ring	100 mm wide × 12 m	1	For mounting front tires
84	Nylon shoe ring	30 mm wide × 2 m	3	For installing front axle
85	Nylon shoe ring	100 mm wide × 3 m	1	For installing front axle
86	Pin	ϕ60 × 250 mm	2	For slinging chassis, rear side
87	Jig for slinging body	ATH-785-006	4	For mounting body
88	Lever block	3/4 tons, LB008	3	For installing front axle
89	Lever block	2 tons, LB020	1	For installing front axle
90	Wire	7m 28ϕ	2	For slinging chassis
91	Wire	4m 28ϕ	2	For mounting body
92	Wire	5m 28ϕ	2	For installing body
	The following items may be substituted for No. 90 to 92. ATH-465-039 ATH-465-040 ATH-465-041		 1 2 1	 For mounting body For slinging chassis For slinging separated body

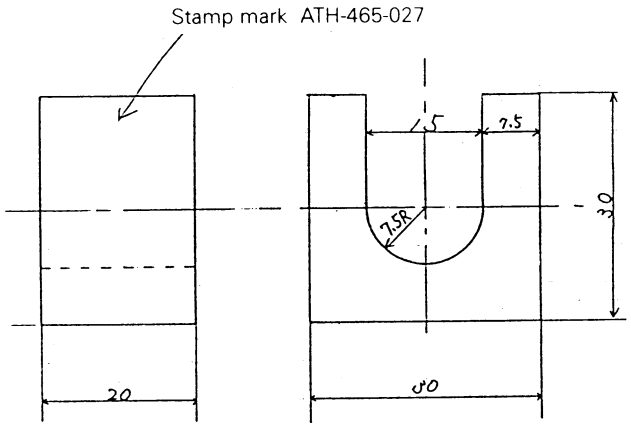
LIST OF TOUCH-UP COATING ON BODY FOR OVERSEAS SPECIFICATIONS

No.	Part Name	Unit	Q'ty
1	Retane GP primer	4kg	1
2	Retane GO hardener	0.8kg	1
3	Retane GP thinner	16	1
4	AX Mightylacq G2KB type natural yellow	10kg	2
5	NAX Mightylacq G2KB type hardener	2kg	2
6	X Mightylacq G2 500 standard thinner	16kg	1
7	Acryliquid cloud gray	Spray can	1
8	Heat-resistance silver	Spray can	1

SKETCHES OF SPECIAL TOOLS

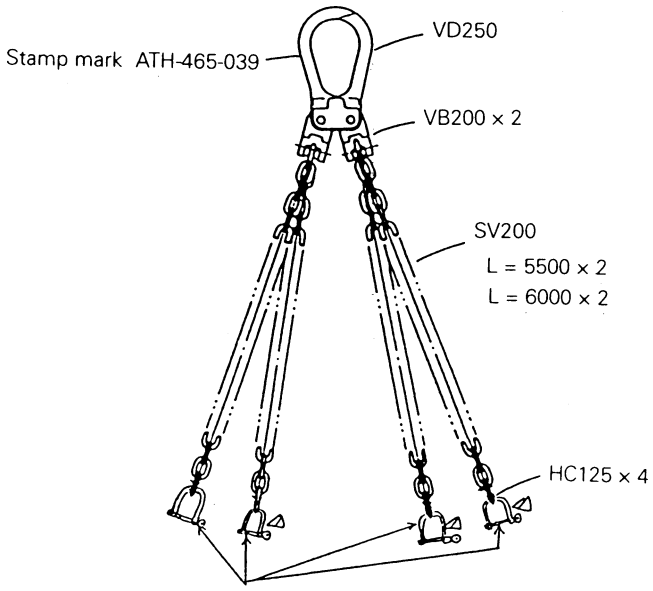
Note: Komatsu cannot accept any responsibility for special tools manufactured according to these sketches.

When welding by actually positioning exhaust flange on machine



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

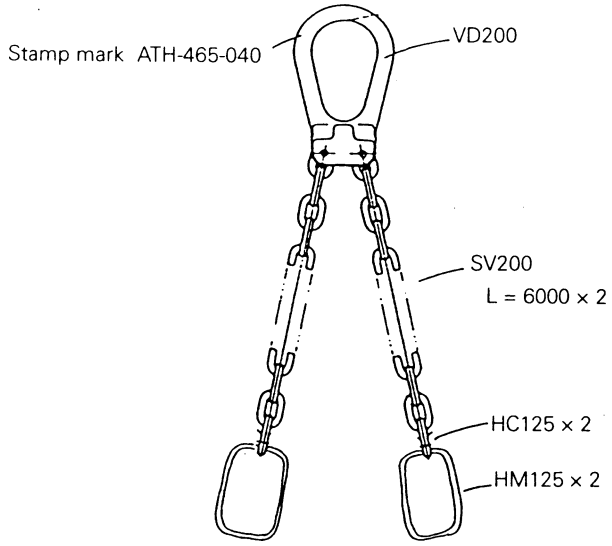
Body assembly lifting tool



Shackle (10 ton) BC nominal 40

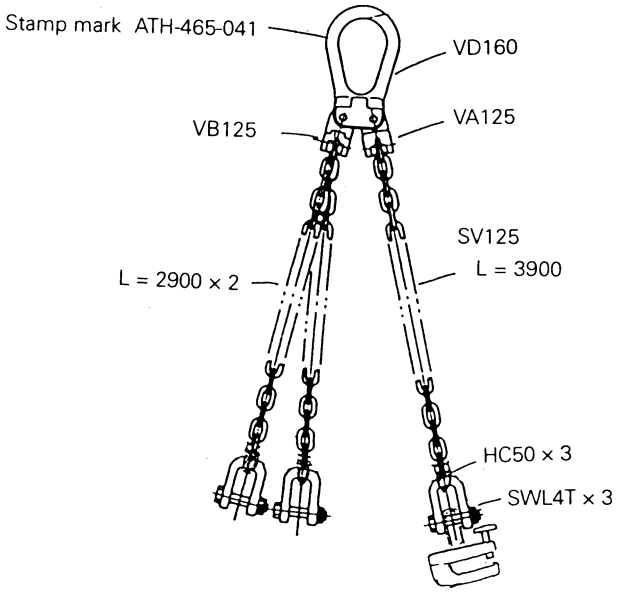
HEAT TREATMENT	MATERIAL
—	—
PART NAME	QTY
Body assembly lifting tool	1
ATH-465-039	

Chassis lifting tool



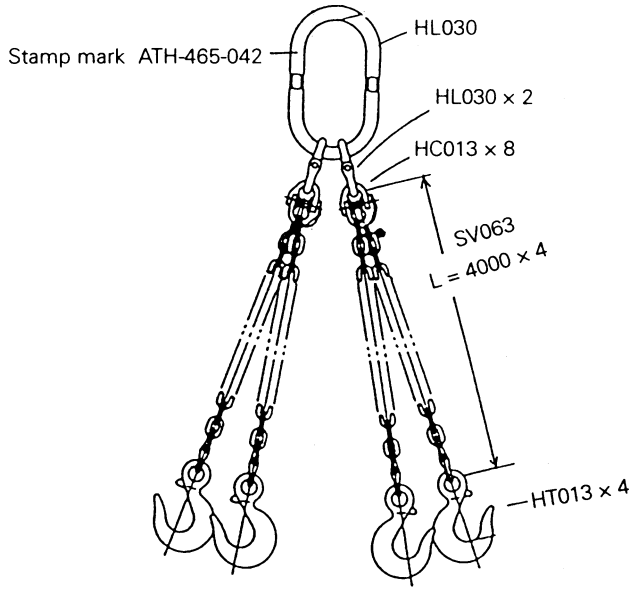
HEAT TREATMENT	MATERIAL
—	—
PART NAME	QTY
Chassis lifting tool	2
ATH-465-040	△

Dump body lifting tool



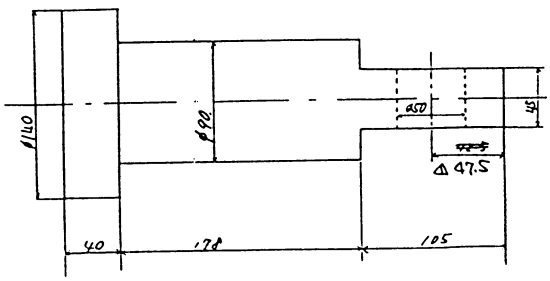
HEAT TREATMENT	MATERIAL
—	—
PART NAME	QTY
?? dump body lifting tool	1
ATH-465-041	△

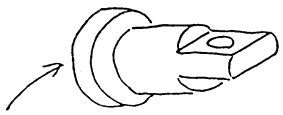
Universal lifting tool



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

Body lifting pin

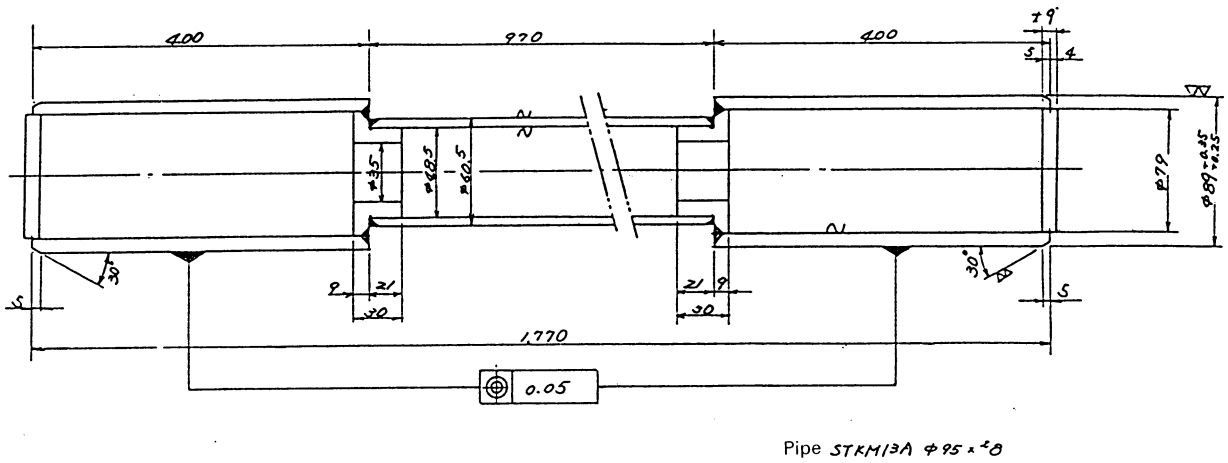




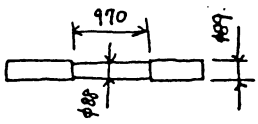
Stamp mark ATH-785-006

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

Chassis lifting tool

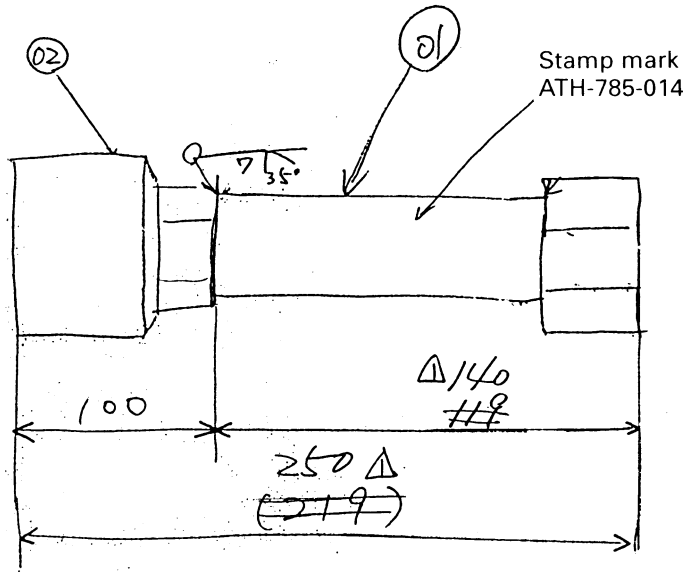


Pipe STKM13A φ95 × t8



or whole pipe also possible

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



No.	Parts Name	Parts No.	Material
01	BOLT	M33 × 170	SCM435
02	SOCKET	P850ML	

HEAT TREATMENT	MATERIAL
1124001600	
PART NAME	QTY
Extension	1
ATH-785-014	

MAN-HOURS, WORKERS NEEDED FOR LOCAL ASSEMBLY

		Assembly	Welding	Body mounting, connection of exhaust pipes	Inspection	Maintenance	Coating	Total	Remarks
HD985 series (day)		2.5	3	1	1.5	0.5	1	7	
	lock (field welding)	2.5	5	1	1.5	0.5	2	10	
Man-power	Assembly (per day)	3		3		1		3	Total shows max. man/day.
	Welding (per day)		3	2				3	Total shows max. man/day.
	Inspection (per day)				1			1	
	Coating (per day)						2	2	
Equipment	45 ton crane (day)	1	1	1				3	1st day (when shipment received), 2nd day (when reversing), and when mounting body
	25 tone crane	1	1					2	1st day (when shipment received), 2nd day (when reversing)
	Working car with crane	1						1	Everyday
	Semi-automatic welding machine		3	2				3	Total shows max. welding work days.
	Gas cutting machine		1	1				1	Total shows max. welding work days.
	Generator		1	1				1	Total shows max. welding work days.
	Compressor		1	1		1	1	1	1 everyday

Note: This schedule is made on the assumption that work day is not rainy (for welding and coating.) If it is rainy, postpone the work.

ASSEMBLING PROCEDURES ON SITE

1. LIFTING AND MOUNTING REAR AXLE ASSEMBLY

1. Remove rod retaining bolts for pins ① and ② on upper face of differential case and then withdraw pins. Hook sling at pins. Then, install pins in place again with sling.
   - kg Rear axle: 10 tons for single body.
   - kg Tire assembly: 1.5 ton per each tire. (Tire weight varies according to its specification.)
   - kg Rear axle assembly: approx. 17 tons
   - ★ Remember to remove spacers.
2. Lower rear axle on ground. Place chocks ③ and rectangular timbers to mount parking disc plate assembly.
   - ★ Select flat ground for assembling operation.
   - ★ Adjust stack height of rectangular timbers ④ so that axle is placed horizontally.
3. Remove sling.

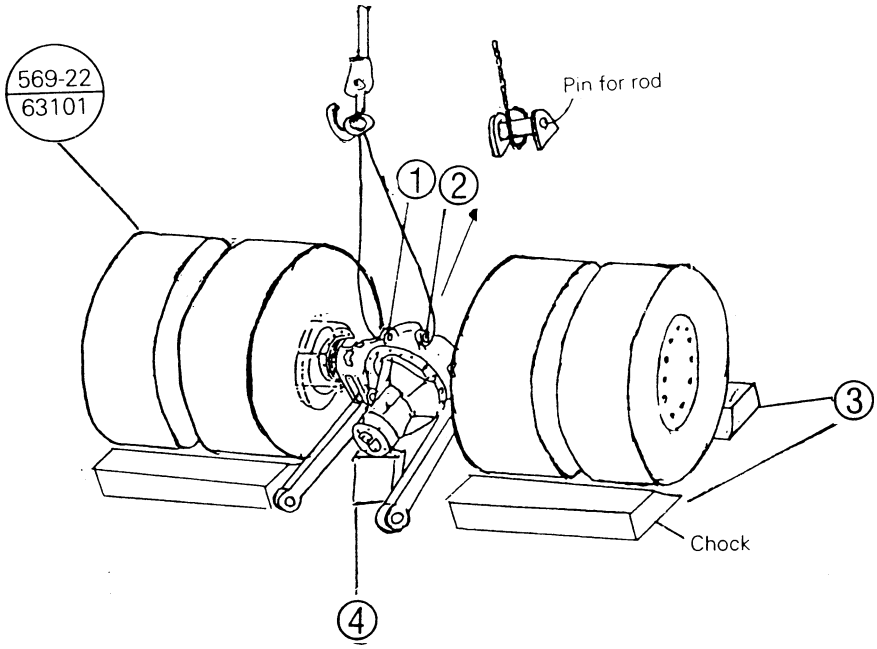


Photo shows sling operation by simultaneously using two cranes.

2. LIFTING CHASSIS ASSEMBLY

1. Use two cranes.
   kg Chassis assembly: approx. 22 tons
   For movable crane:
   45 tons for front side
   25 tons for rear side

2. Hook sling at chassis and then sling up chassis assembly.
   ★ Protect bumper on front side not to damage.
   ★ Be careful not to interfere assembly with grease tubes on rear side.

Chassis assembly is slung.

Use hook located under frame
on front side.

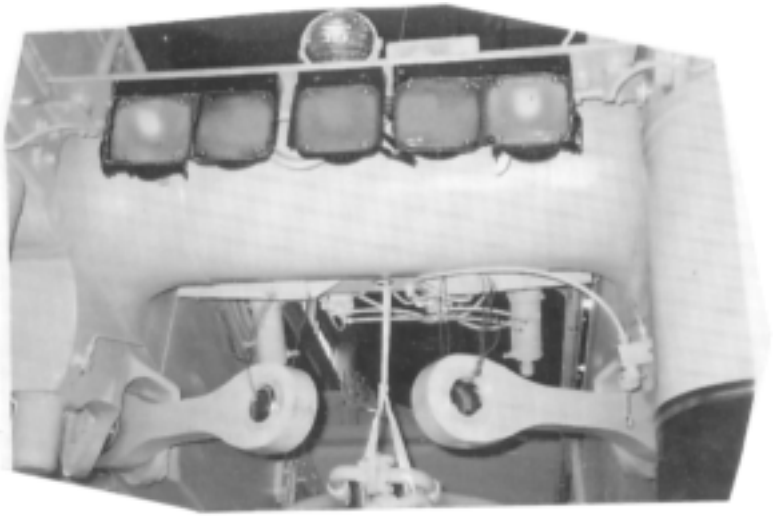
Insert pin from inside.

Use holes for body stopper pin on rear side.

3. TRANSFERRING CHASSIS ASSEMBLY ONTO REAR AXLE ASSEMBLY

1. Lift rod (upper rod) before installing upper side of differential.

2. Move chassis assembly onto rear axle assembly.



Upper rod lifted.

Chassis assembly is transferring onto rear axle.

4. CONNECTING RODS TO REAR AXLE SUSPENSION

1. Connect rods Ⓐ, Ⓑ, and Ⓒ in this order as shown in left-hand figure.

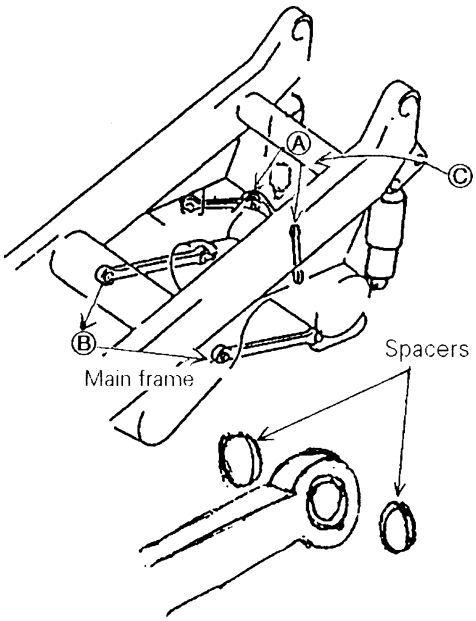
2. Align pin with hole, and temporally move rod.
   ★ When alignment, be careful not to be caught your finger.

3. Place spacer in rubber portion on spherical bushing.
   ★ Force spacer carefully,but not so strong as to deform spacer.

4. Again, align pins with holes.
   ★ When driving pins with hammer, be careful not to damage grease fittings.

5. Place lock bolts and washers.
   kgm Tightening torque:
   157 to 196 Nm {16 to 20 kgm},
   desired value: 177 Nm {18 kgm}

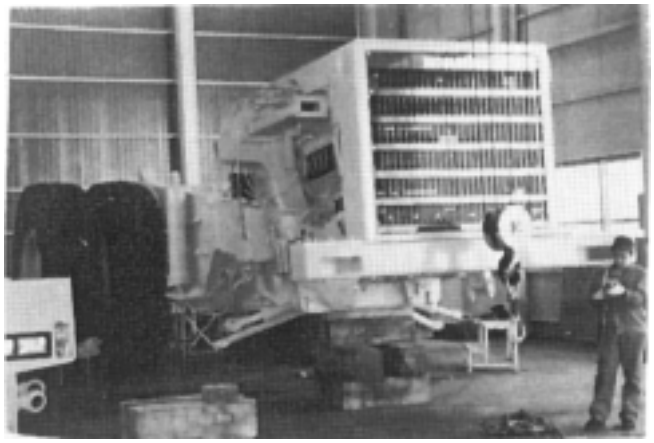
6. Supply grease in related lubrication points.


Ⓐ
Ⓒ
Ⓑ
Main frame
Spacers

5. PLACING MOUNT FOR FRONT SIDE

1. Place rectangular timbers under vertical member up to 1 m in height.
   ★ Stack timbers crosswise in parallel

2. Lower frame.



6. CONNECTING REAR AXLE AND PARKING BRAKE LINE

1. Remove blind parts Ⓐ from elbow of relay valve on parking brake line.
   ★ For machine with two-way brake system, only one hose is provided.

2. Connect hose from rear axle.
   kgm Tightening torque:
   29 to 69 Nm {3.0 to 7.0 kg},
   desired value: 49 Nm {5.0 kgm}

3. Remove blind parts Ⓑ from connector of brake chamber on brake chamber line.

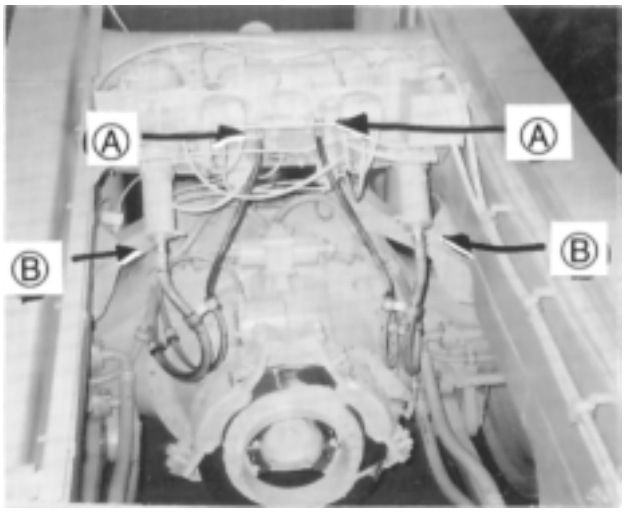
4. Connect hose from rear axle
   kgm Tightening torque:
   108 to 167 Nm {11.0 to 17.0 kgm},
   desired value: 137 Nm {14.0 kgm}
   ★ Keep hoses from interfering with each other.
5. Place oil sump.

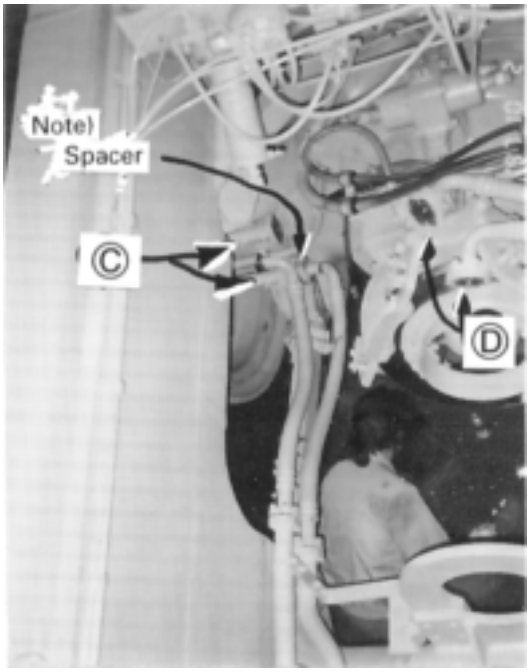
6. Remove blind parts Ⓒ (total four on both sides) of cooling tube on rear axle.

7. Remove blind parts Ⓓ (total two on upper and lower sides) of cooling tube on chassis side.

8. Connect two hoses on each left and right side respectively.
   ★ Keep hoses uncrossed.
   ★ Remember to mount spacer on lower right side.
   ★ Keep hoses from interfering with each other.

9. Clean any greasy surfaces.

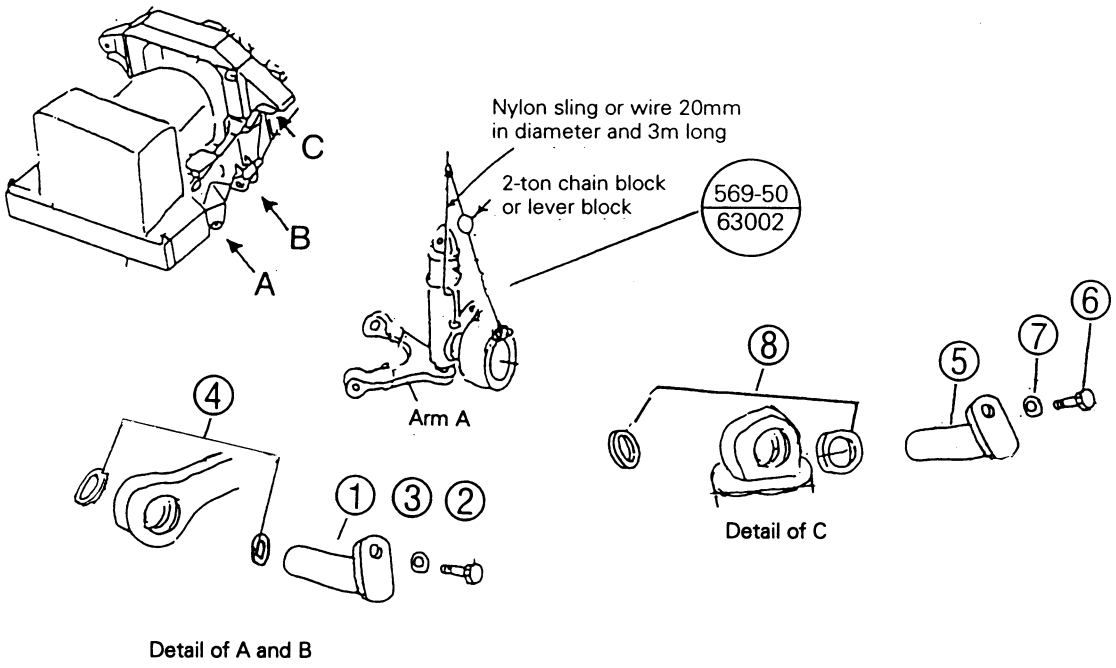


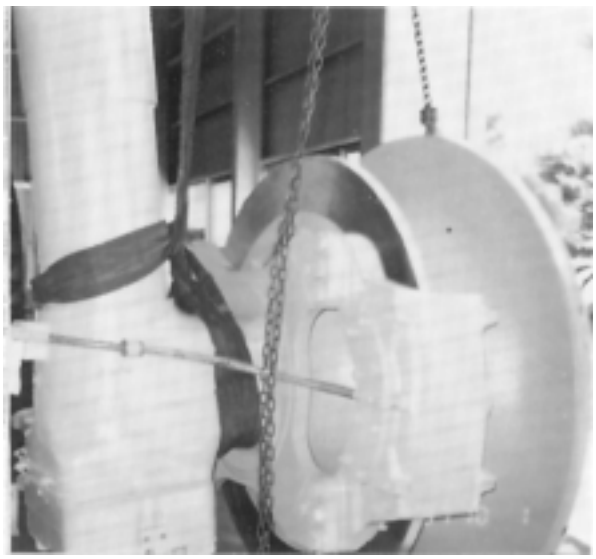


7. LIFTING FRONT AXLE ASSEMBLY

1. Remove pins and spacers from portions **A**, **B**, and **C** on chassis side.
   ★ Dimensions of pin vary on each portion. Place pins near relevant locations to install pins in place with ease.

2. Lifting front axle as shown in photo.
   ★ Adjust sling so that suspension cylinder becomes vertical against ground.
   Hook slings at suspension cylinder assembly and hub stud portion.


C
B
A
Nylon sling or wire 20mm
in diameter and 3m long
2-ton chain block
or lever block
569-50
63002
Arm A
4
1 3 2
8
5
7
6
Detail of C
Detail of A and B



8. ASSEMBLING FRONT AXLE

1. While controlling crane and lever block, insert A-shaped arm into mounting portion on chassis and align pins with holes once. Then, lower A-shaped arm with lever block.
   Caution: When making alignment, watch your fingers!

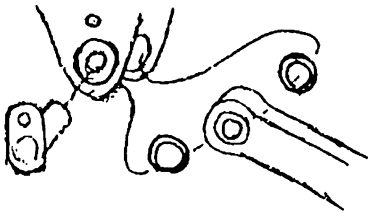
2. Insert 8 spacers previously removed into rubber cover on spherical bushing (four places on both sides) of A-shaped arm. Align pins with holes again using lever block.
   ★ Check spacer for deviation.
   ★ Check for O-ring on spherical bushing.

3. Set pins and install lock bolts.
   kgm Tightening torque:
   157 to 196 Nm {16 to 20 kgm},
   desired value: 177 Nm {18 kgm}

5. Remove sling from A-shaped arm.

6. Install upper portion of suspension in the same way as for A-shaped arm while controlling crane.

7. Supply grease in related lubrication points.



Left side

Right side