

Field Assembly Instruction

BULLDOZER

D475A -5E0

D475ASD -5E0

SERIAL NUMBERS D475A- 30001 and up
D475ASD-30001

KOMATSU

Preface

Since this machine is large in size, it is divided into some units to meet the transportation conditions and regulations applied to the transportation route when shipped from our factory.

This manual describes how to assemble the units into the complete machine in the field. We hope that this machine will display its quality and you will use it safely according to the operation manual.

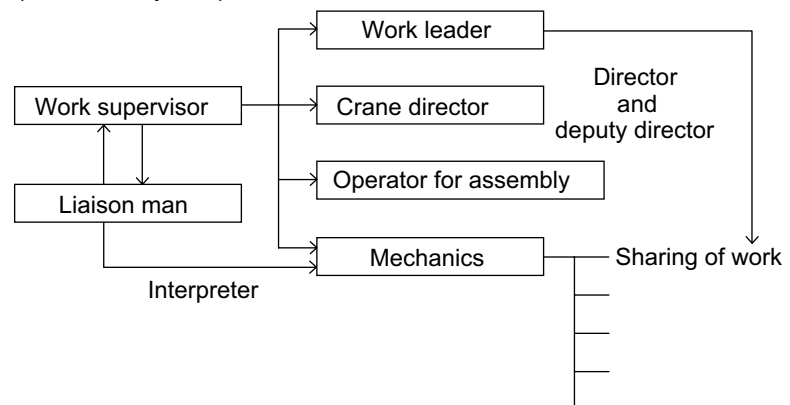
Many units are large in size and heavy in weight and may be handled in a dangerous place or posture and many workers may have to work together to sling them with cranes.

Accordingly, before starting the assembly work, the work supervisor is required to hold a safety meeting to oblige the workers to put on protective gear and appoint a work leader and a crane work signal man and allot roles to all the workers for safe work.

In particular, the above meeting is more important when worker of different languages and customs work together.

The following is a reference supervision system diagram.

(Instruction system)



When the work equipment is installed, the engine must be operated. Accordingly, before installing the work equipment, inspect and maintain the machine thoroughly.

Note that this manual does not describe the whole specification of the machine but describes only the basic specification.

If you have any question when dividing and transporting the machine by yourself in future, ask one of our distributors.

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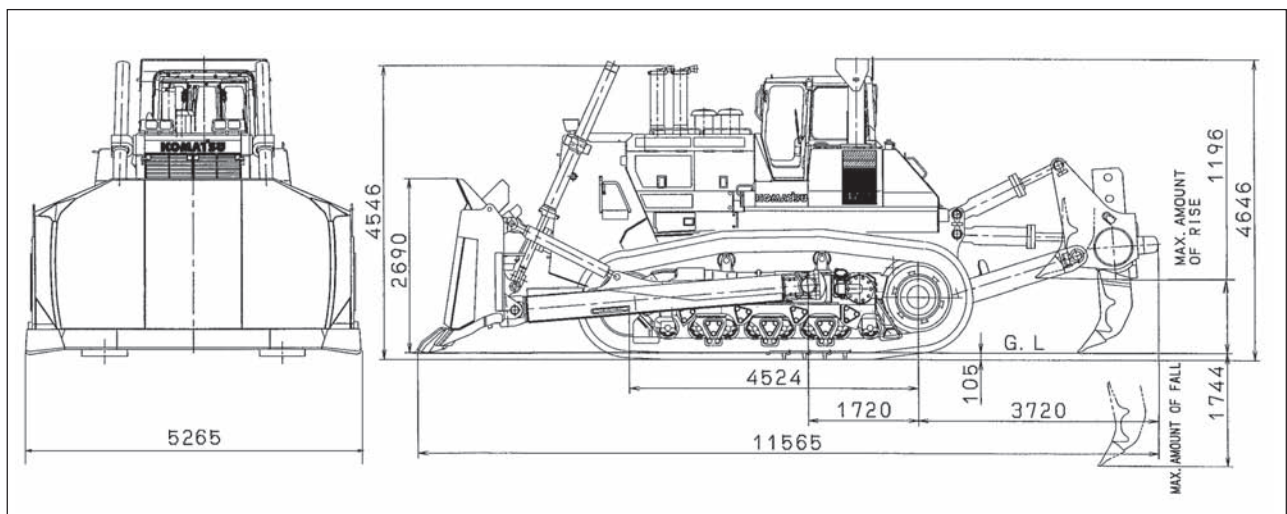
SPECIFICATIONS

Item	Unit	Semi-U-tiltdozer + Variable giant ripper	Full U-tiltdozer + Variable giant ripper	Superdozer + Counterweight
Operating weight (excluding operator's weight)	kg	108,310 (*1)		113,120 (*2)
Blade weight (including cylinders)	kg	16,500	18,800	20,900
Ripper weight (including cylinders)	kg	7,360		-
Counterweight	kg	-		6,040
Engine model	-	Komatsu SAA12V140E-3 diesel engine		
Rated engine output	kW/rpm {HP/rpm}	664/2,000{890/2,000}		
Overall length	mm	11,560	11,950	10,525
Overall height (with ROPS)	mm	4,546 (4,646)		
Overall width	mm	5,265	6,205	6,465
Travel speed (1st/2nd/3rd)	Forward	km/h		
	Reverse	km/h		
		3.5/6.3/10.9		
		4.7/8.4/14.3		

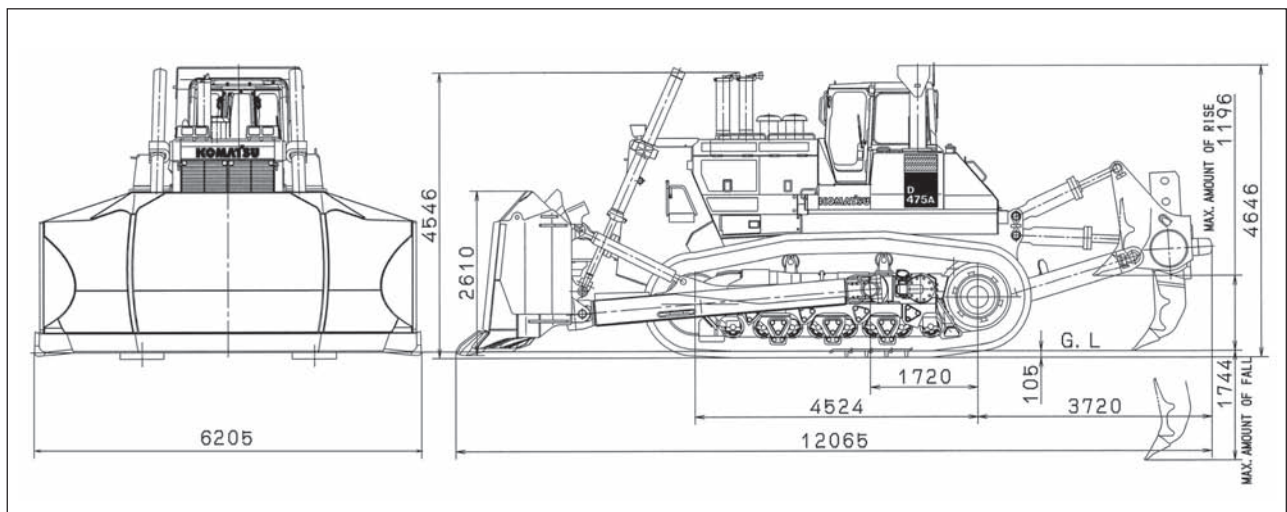
*1: Blade + ripper + ROPS cab + air conditioner

*2: Superdozer + counterweight + ROPS cab + air conditioner

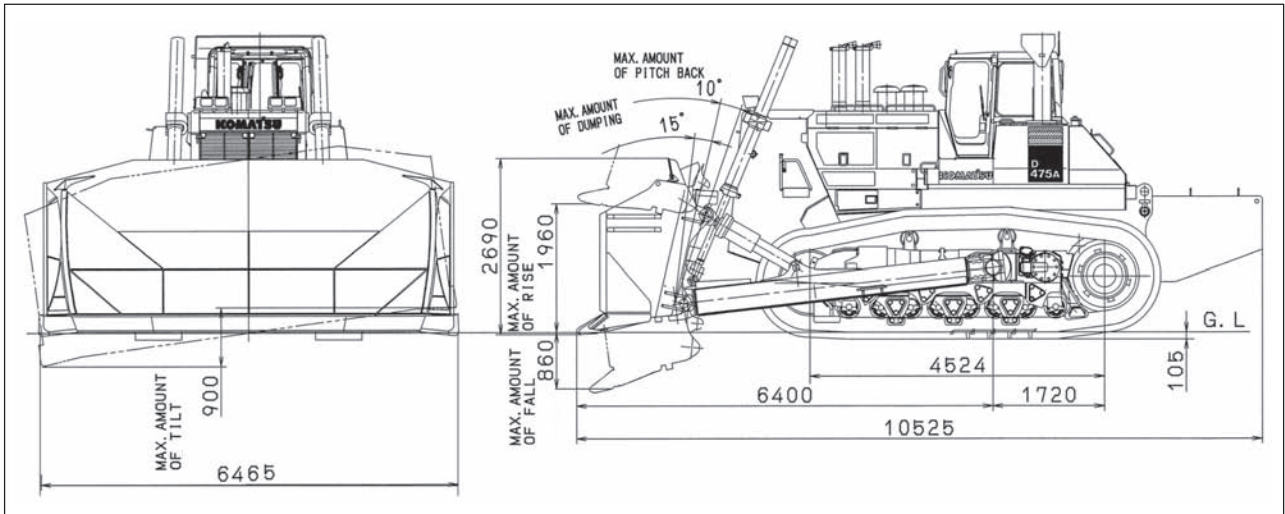
• Semi-U-tiltdozer + variable giant ripper



• Full U-tiltdozer + variable giant ripper



• Superdozer + counterweight



PRECAUTIONS FOR FIELD ASSEMBLY

1. Selection of work place

- 1) When selecting a work place, consider the following.
 - Is the work place sufficiently wide for loading and unloading the machine? (See the kit layout drawing.)
 - Is the ground sufficiently hard? (The machine and crane truck must not sink into the ground.)
 - Is the ground flat? (The ground surface must not be uneven or sloping.)
 - Is the road to inlet/outlet of the work place sufficient for turning the trailer and crane truck?
- 2) Take care extremely that dirt or water will not enter the hydraulic circuit while it is assembled.
- 3) Avoid working outdoors while strong wind is blowing or it is raining.
- 4) Take measures to protect the machine from sand, dirt and rainwater while the work is stopped.

2. How to do work

The work supervisor or the work leader should not do the work while reading this manual but should read and understand this manual thoroughly and then start the work.

In particular, write the "Precautions" for each work process in a sheet to explain or stick that sheet to the work place so that all the workers will observe the precautions.

3. Preparation and check of protective gear, slings and tools

The work supervisor or the work leader must perform the following checks about protective gear, slings and tools.

- 1) Are all the workers wearing helmets and other protective gear which they are obliged to wear?
If special protective gear is necessary, check that it is prepared and can be used without problem.
- 2) Are all the slings and tools prepared? Check in advance that they are ready to be used without problem. In particular, check wooden blocks for internal decay and cracking.

4. Check during actual work

The work supervisor or the work leader must check the following items constantly and make all the workers observe them.

- 1) Are the parking brakes of the trailer and crane truck applied securely and are their wheels locked with chocks during work? Are outriggers, if installed, used securely?
- 2) Are the temperature and pressure of the engine, hydraulic oil, coolant, etc. lowered sufficiently during work?
- 3) Is horn or another signal is made to warn around when the engine is started? In addition, is it checked that work equipment control lever and other control levers are in neutral and the fuel control dial (or fuel control lever) is in the low idle position?
- 4) Is the balance of the slung item checked extremely during sling work with the crane?
- 5) Is entry prohibition for outsiders to the work place observed?

5. The work supervisor or the work leader is required to hold a meeting with all the workers at the beginning of every morning and explain the work plan of the day to them and give them instructions to observe the safe work.

6. Precautions for starting engine

When the engine is started for the first time after assembled in the field, its inside must be lubricated with engine oil. Lubricate according to "M-3 No-injection cranking of engine" in this manual.

DISPOSAL OF REMOVED PARTS

As described in "Preface", when this machine is transported, it is divided into some units such as the body, undercarriage, cab, work equipment, etc. according to the transportation measure, regulations, etc.

Accordingly, the hydraulic pipings and hydraulic hoses to connect the units, oil inlets and outlets of the hydraulic devices, and parts which must not be damaged are plugged or covered to prevent oil leakage, entry of dirt and dust, and damage during transportation.

In addition, fixing jigs are used to prevent a trouble caused by a fall or a shake during transportation and to facilitate loading, unloading and crane work.

The above plugs, jigs, etc. are removed when the machine is assembled and become unnecessary after completion of the machine. Since they are useful when the machine needs to be transported in future, however, we recommend you to keep them as long as possible.

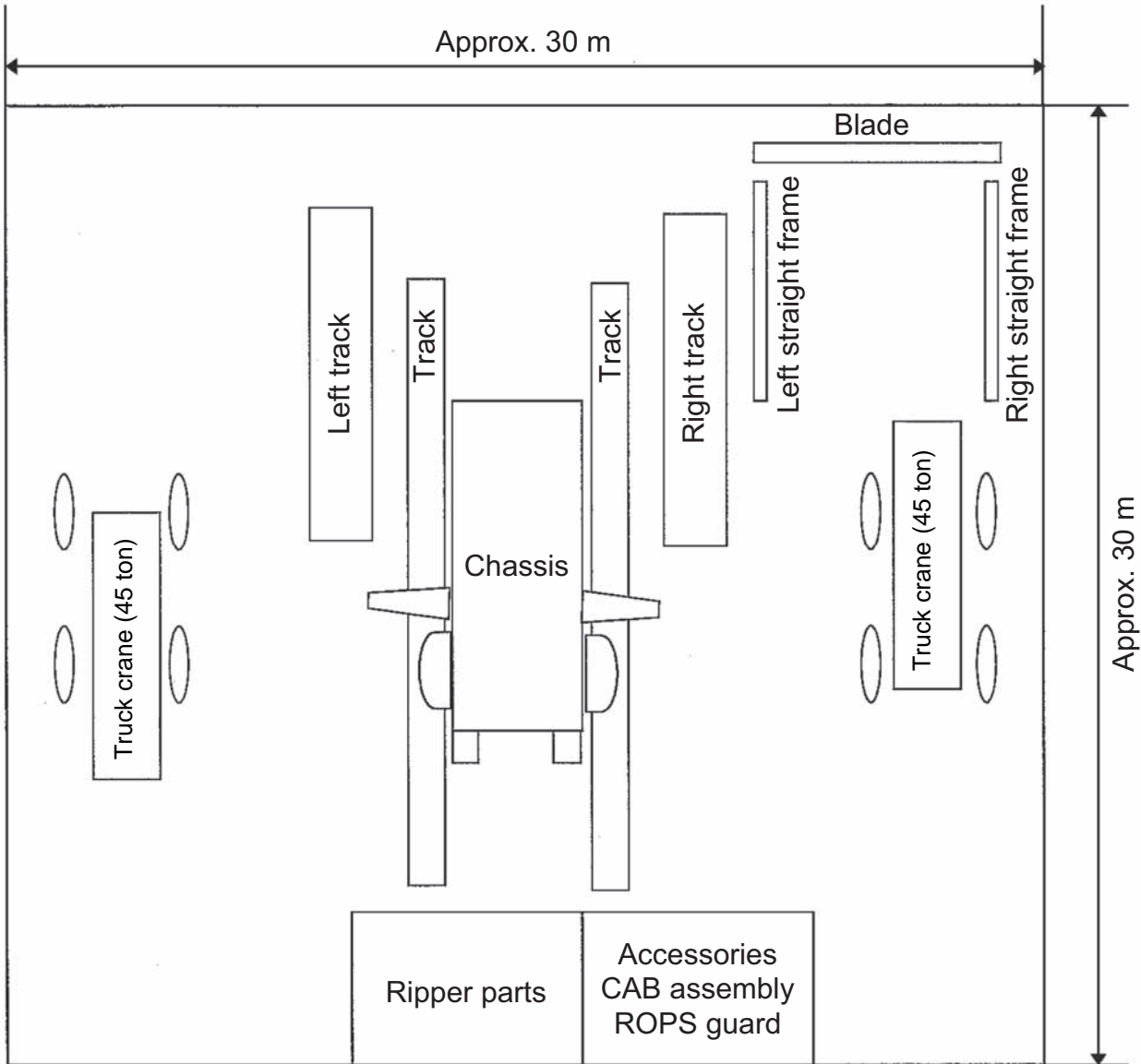
ASSEMBLY PROCEDURE, NECESSARY EQUIPMENT, AND SCHEDULE

- A change of the schedule caused by weather is not considered.
- The special work in the field shall be adjusted separately.

No.	Item	Schedule	1st day	2nd day	3rd day	4th day	5th day
1	Setting of track shoe		↑				
2	Setting of the machine (Unloading of other parts)		↑				
3	Installation of blade lift hydraulic cylinder		↑				
4	Installation of undercarriage			↑			
5	Replacement of return filter			↑			
6	Adding oil to pivot chamber						
7	Check of oil and coolant levels			↑			
8	Installation of ripper			↑			
9	Installation of trunnion				↑		
10	Installation of track shoe				↑		
11	Check track tension					↑	
12	Assembly of blade					↑	
13	Installation of blade						↑
14	Installation of operator's cab						↑
15	Installation of ROPS						↑
16	Installation of exhaust pipe						↑
17	Installation of giant ripper shank						↑
18	Adjustment of arm joint (U-blade)						↑
19	Installation of counterweight						↑
20	Procedure for adjusting blade tilt angle limit						↑
21	Method of checking auto reset system						↑
22	Installation of ORBCOMM antenna and wiring harness						↑
23	Installing lunchbox band						↑
24	Greasing each part of work equipment						↑
25	Bleeding air from hydraulic cylinders						↑
26	Air bleeding from work equipment pump and fan pump						↑
-	Inspection						↑
	Workers	Assembly	4	4	4	4	4
	Crane (With operator)	Welding	45 ton x 2	45 ton x 1	45 ton x 1 (2)	45 ton x 1	45 ton x 1

KIT LAYOUT DIAGRAM

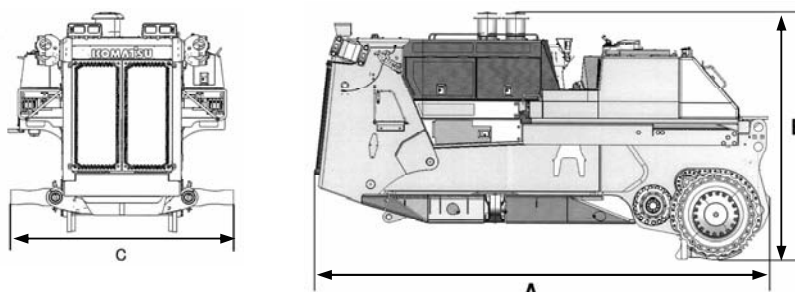
- When selection the work site, see "Precautions for field assembly", too.
- The delivered kits (components) should be arranged as shown in the layout below after unloaded from the trailer and truck.
- However, since the layout below is a reference image of a work site about 30 m by 30 m, decide the actual layout according to the area and land form of the work site, considering the transportation packaging of each kit (component) explained later.



STYLE FOR TRANSPORTATION

Since the machine can be divided for transportation, ask us or our service shop before transportation.
 ■ Style of each KIT.

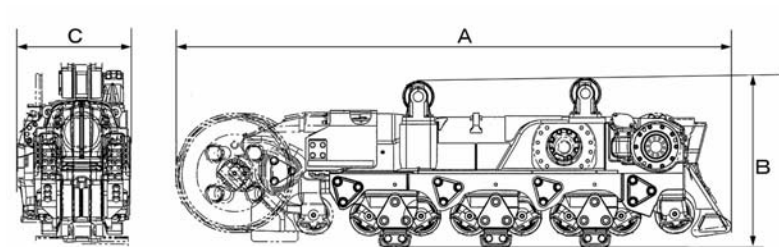
• Body



A	Overall length (mm)	6,600
B	Overall height (mm)	3,300
C	Overall width (mm)	3,320
Weight (kg)		43,000

Note: The blade lift cylinder may be installed before delivery.

• Track frame

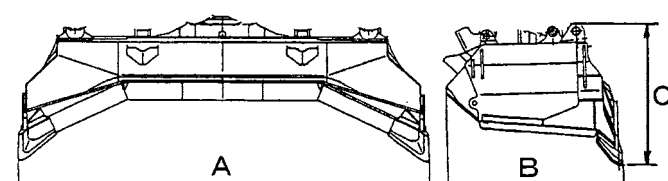


★ 2 sets of the shoes are prepared for each machine.

A	Overall length (mm)	4,800
B	Overall height (mm)	1,500
C	Overall width (mm)	982
Weight (kg)		12,200

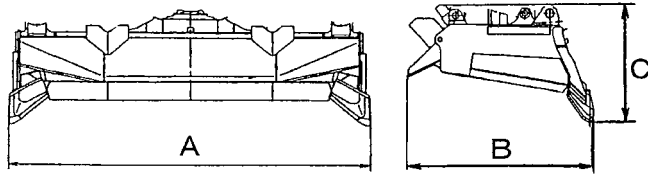
• WORK EQUIPMENT

(1) U-blade



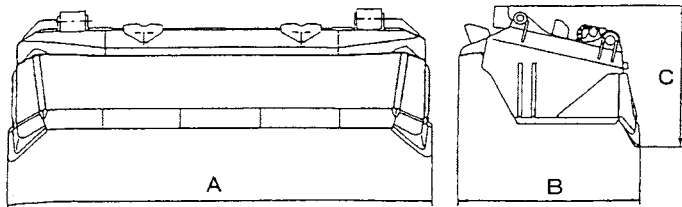
A	Overall length (mm)	6,205
B	Overall height (mm)	2,615
C	Overall width (mm)	2,170
Weight (kg)		14,000

(2) Semi U-blade



A	Overall length (mm)	5,263
B	Overall height (mm)	2,610
C	Overall width (mm)	1,760
Weight (kg)		13,000

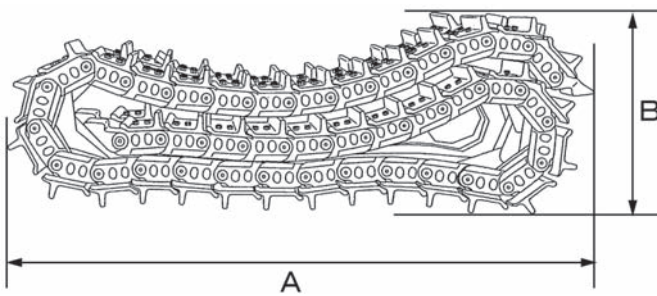
• Super blade



A	Overall length (mm)	6,465
B	Overall height (mm)	2,690
C	Overall width (mm)	2,180
Weight (kg)		14,000

★ Refer to the Appendix 1 for welding of spill guard.

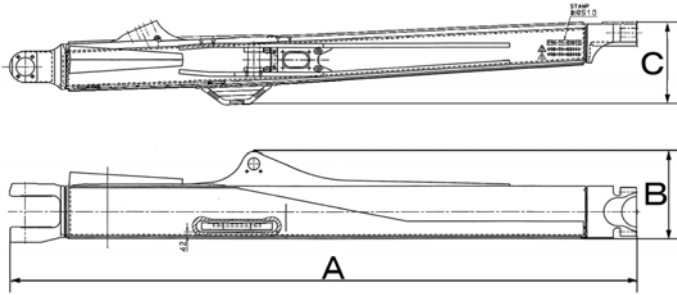
• Track shoe



★ 2 sets of the shoes are prepared for each machine.

Shoe width	810
A (mm)	4,500
B (mm)	1,400
Weight (kg)	6,770 (1/2)

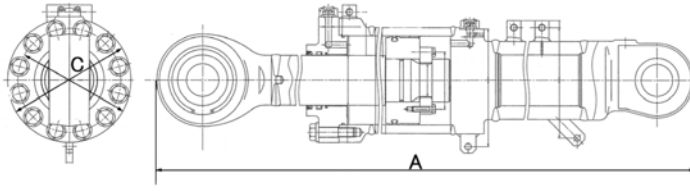
• **Straight frame**



★ Right and left straight frames are prepared for each machine.

		Semi-U, U	Super
A	Overall length (mm)	4,857	5,020
B	Overall height (mm)	674	682
C	Overall width (mm)	638	681
Weight (kg)		1,770	1,868

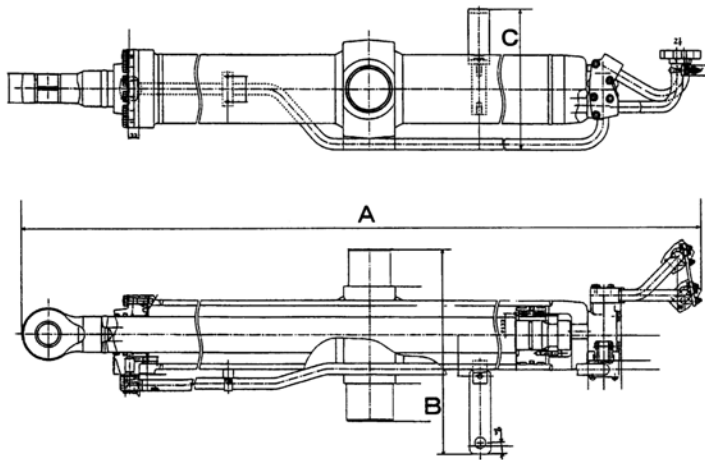
• **Hydraulic cylinder**
(1) **Pitch, tilt cylinder**



★ One set of this part is used for single tilt-dozer and two sets for dual tilt-dozer.

		Semi-U, U	Super
A	Overall length (mm)	1,930	1,754
C	Overall width (mm)	351	351
Weight (kg)		504	508

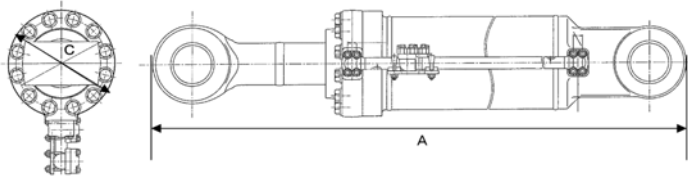
(2) **Blade lift cylinder**



A	Overall length (mm)	2,900
B	Overall height (mm)	630
C	Overall width (mm)	435
Weight (kg)		500

Note: May be installed to chassis before delivery.

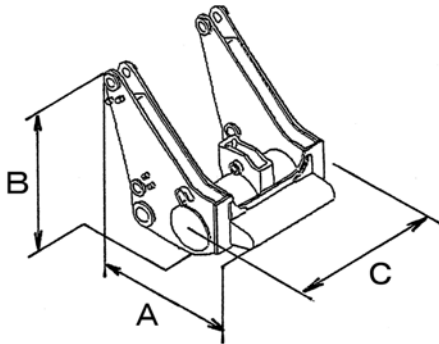
(3) Ripper cylinder



★ Both for lifting and tilting, each one set of this part is used on both left and right sides.

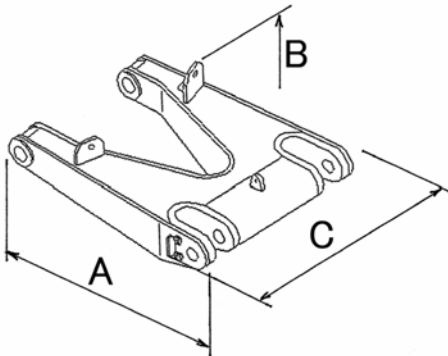
		Lift	Tilt
A	Overall length (mm)	1,748	1,698
C	Overall width (mm)	304	304
Weight (kg)		389	394

• Giant ripper beam



A	Overall length (mm)	1,545
B	Overall height (mm)	1,930
C	Overall width (mm)	1,535
Weight (kg)		2,400

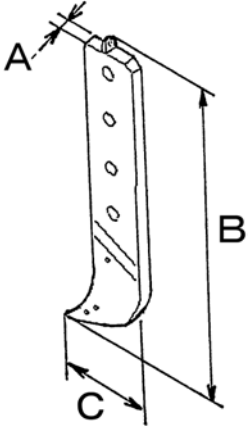
• Giant ripper arm, multi ripper arm



A	Overall length (mm)	2,290
B	Overall height (mm)	580
C	Overall width (mm)	1,781
Weight (kg)		1,750

★ Connecting pin with the beam is attached in this part in advance.

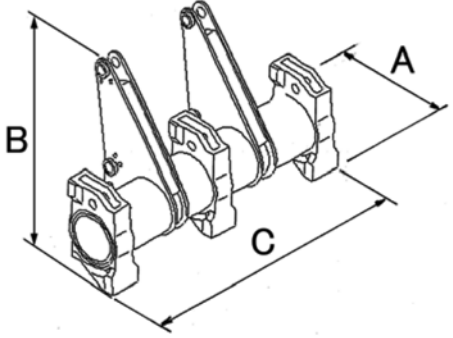
• Giant ripper shank assembly



A	Overall length (mm)	115
B	Overall height (mm)	2,800
C	Overall width (mm)	940
Weight (kg)		1,000

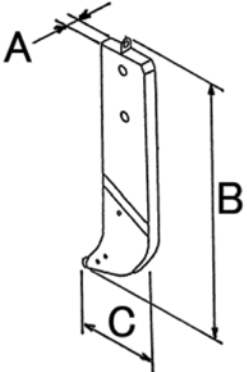
★ Protector and point is attached in this part in advance.

• Multi ripper beam



A	Overall length (mm)	1,210
B	Overall height (mm)	1,930
C	Overall width (mm)	3,065
Weight (kg)		3,450

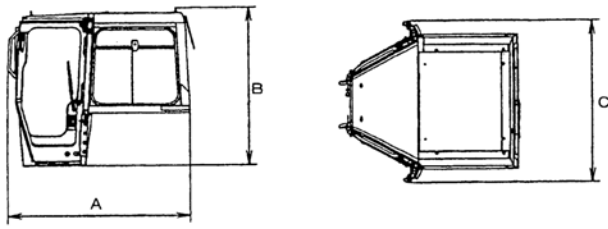
• Multi ripper shank assembly (machine with multi ripper specification only)



A	Overall length (mm)	115
B	Overall height (mm)	2,170
C	Overall width (mm)	775
Weight (kg)		740
Q'ty		3

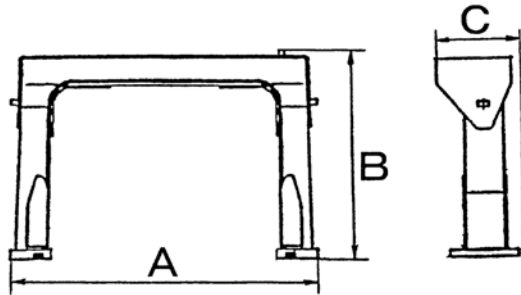
★ Protector and point is attached in this part in advance.

• Operator cab assembly



A	Overall length (mm)	1,875
B	Overall height (mm)	1,680
C	Overall width (mm)	1,740
Weight (kg)		500

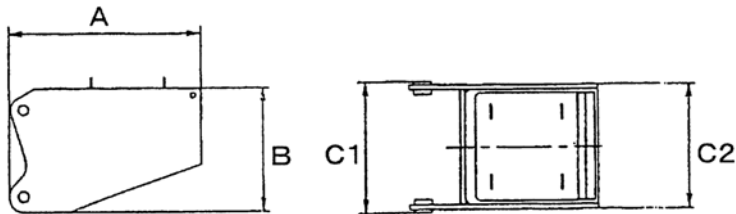
• ROPS



A	Overall length (mm)	2,100
B	Overall height (mm)	1,411
C	Overall width (mm)	585
Weight (kg)		918


★ For ROPS, see "Specifications".


• Counterweight



A	Overall length (mm)	1,950
B	Overall height (mm)	1,300
C1	Overall width (mm)	1,361
C2		1,290
Weight (kg)		7,300

TOOLS LIST FOR FIELD ASSEMBLY

No.	Part name	Specification	Q'ty	Remarks
1	Truck crane	Maximum lifting capacity: 441 kN {45 t}	2	
2	Air compressor	Discharge pressure: 0.69 MPa {7 kg/cm ² } Discharge flow: 15 m ³ /min	1	
3	Welding machine (see remarks)	Determine the specification and quantity in accordance with the drawings mentioned in the remarks.		It is used when spill guard (if equipped) is to be added to the blade of work equipment. For drawing see "Attached sheet".
4	Chain lever hoist (Chain block)	Rated load: 15.7 kN {1.6 t}	2	JIS B8819 or equivalent
		Rated load: 31.4 kN {3.2 t}	2	
5	Wire rope sling	ø12 mm × 2 m (11 kN {1.2 t})	4	<ul style="list-style-type: none"> Vertical lifting capacity is shown in parentheses. JIS B8817 or equivalent The rope is 24A of JIS G3525 or equivalent
		ø12 mm × 4 m (11 kN {1.2 t})	1	
		ø16 mm × 2 m (21 kN {2.1 t})	4	
		ø20 mm × 5 m (32 kN {3.3 t})	4	
		ø20 mm × 6 m (32 kN {3.3 t})	4	
		ø24 mm × 2 m (47 kN {4.8 t})	2	
		ø32 mm × 5 m (84 kN {8.56 t})	4	
		ø52 mm × 3 m (238 kN {24.3 t})	2	
		ø65 mm × 5 m (373 kN {38 t})	1	For lifting the machine
6	Belt sling: (Made by synthetic fibers)	Width: 25 mm × 1.5 m (4.9 kN: {0.5 t})	1	<ul style="list-style-type: none"> Vertical lifting capacity is shown in parentheses. Class I, type E of JIS B8818 or equivalent
		Width: 25 mm × 3 m (4.9 kN: {0.5 t})	2	
		Width: 50 mm × 3 m (9.8 kN: {1 t})	2	
		Width: 50 mm × 4 m (9.8 kN: {1 t})	2	
		Width: 100 mm × 4 m (19.6 kN: {2 t})	2	
7	Load chain	Wire diameter: 12.5 mm × 1.5 m (49 kN: {5 t})	1	
8	Hydraulic wrench	Tightening capacity (torque): 5890 Nm {600 kgm} or more	1	For tightening master link bolts of the track shoes
9	Hydraulic wrench socket	Nominal width across flats: 50 mm	1	
10	16-times power wrench	Tightening capacity (torque): 4400 Nm {450 kgm} or more	1	
11	Socket for 16-times power wrench	Nominal width across flats (mm): 50, 46, 41, 36	1 each	
12	Pneumatic impact wrench	Tightening capacity (torque): 2940 Nm {300 kgm} or more	1	
		980 Nm {100 kgm} or more	1	
		315 Nm {32 kgm} or more	1	
		160 Nm {16 kgm} or more	1	
		140 Nm {14 kgm} or more	1	
13	Socket (for pneumatic impact wrench)	Nominal width across flats (mm): 50, 46, 41, 36, 32 30, 27, 24, 22, 19	1 each	
14	Extension bar	600 mm long	1	Extending bar for pneumatic impact wrench
		300 mm long	1	
15	Torque wrench	Tightening capacity (torque): 2060 Nm {210 kgm} or more	1	<ul style="list-style-type: none"> Prepare torque wrench so that the socket for air impact wrench could be used commonly. If torque wrench is not available, prepare the socket for torque wrench. The width across flats is the same with the socket for pneumatic impact wrench.
		1375 Nm {140 kgm} or more	1	
		590 Nm {60 kgm} or more	1	
		412 Nm {42 kgm} or more	1	
		180 Nm {18 kgm} or more	1	
16	Spanner 	Nominal width across flats (mm) : 17, 19, 22, 24, 27, 30 32, 36, 41, 46, 50	2 each	For tightening hydraulic hose mouthpiece nut
17	Pneumatic hose and coupler (for pneumatic tools)	Inner diameter 6 to 10 mm × length 30 m Service pressure: 0.69 MPa {7 kg/cm ² }	1	<ul style="list-style-type: none"> The size of couplers on both sides are to be same as that of air compressor, pneumatic impact wrench, grease pump and oil feeding pump.

No.	Part name	Specification	Q'ty	Remarks
18	Eyebolt 	Adaptable screw: M12 Using load: 2.16 kN {220 kg}	4	<ul style="list-style-type: none"> • JIS B1168 or equivalent • The using load is the load for vertical lifting
		Adaptable screw: M16 Using load: 4.41 kN {450 kg}	2	
		Suitable screw: M24 Using load: 9.32 kN {950 kg}	1	
19	Shackle for sling	SD16-M, using load 9.8 kN {1 t}	2	<ul style="list-style-type: none"> • JIS B2801 or equivalent • Symbols show the type, nominal size and class in order. (See Fig. 8.)
		SD22-M, using load 19.6 kN {2 t}	1	
		SB28-S, using load 78.5 kN {8 t}	1	
		SD34-M, using load 49 kN {5 t}	2	
		SB36-S, using load 122.6 kN {12.5 t}	2	
		SB50-S, using load 245.2 kN {25 t}	1	
		BB24-M, using load 35.3 kN {3.6 t}	1	
		BB28-S, using load 78.5 kN {8 t}	2	
		SB50-V, using load 392 kN {40 t}	1	
20	Master link for lifting	O type, using load 80 kN {8.16 t}	1	<ul style="list-style-type: none"> • O type of JIS B8817 or equivalent • See Fig. 3 and Fig. 5 for the using positions.
		O type, using load 125 kN {12.7 t}	2	
		O type, using load 160 kN {16.3 t}	1	
21	Pinch bar (lever bar)	Diameter of grip x full length of tool ø13 mm x 400 mm or equivalent	2	<ul style="list-style-type: none"> • JCMAS P018 or equivalent • See Fig. 9 for the shapes
		ø25 mm x 900 mm or equivalent	2	
22	Sling bar (steel rod)	ø25 mm x 1 m	1	<ul style="list-style-type: none"> • S53C (JIS G4051) or equivalent is suitable for its material.
		ø25 mm x 700 mm	2	
		ø19 mm x 300 mm	1	
23	Sledge hammer	Double-headed: 4.5 kg (10 lbs)	1	
24	Jack	Thread type Using load: 147.1 kN {15 t}	2	<ul style="list-style-type: none"> • For assembly of the undercarriage
25	Tap (for repairing thread)	M24 x pitch 3	1	<ul style="list-style-type: none"> • For master link of track shoes
		M30 x pitch 3	1	
		M33 x pitch 2	1	
26	Angle meter	With leveler with a smallest scale of one degree	1	<ul style="list-style-type: none"> • For adjusting the tilt limit angle of the blade (see A-25 in assembly procedure)
27	Grease pump	Pneumatic supplying type	1	
28	Oil feed pump	Manual type or pneumatic supplying type	1	
29	Oil jack	Capacity: Approx. 5 ℓ	1	
30	Drain oil receiver (made of steel sheet)	Height x width x depth (mm) Approx. 1000 x 700 x 150	2 each	
		Approx. 700 x 400 x 150		
		Approx. 300 x 300 x 100		
31	Chassis stand (for fixing the machine body)	Front stand (see Fig. 1)	1	
		Rear stand (see Fig. 2)	1	
32	Floor plate made by steel (for setting chassis stand)	Thickness x height x width (mm) 16 x 1000 x 500	4	<ul style="list-style-type: none"> • Weld lifting hook to the corner
33	Steel plate	t25 x □300 (mm)	1	
		t25 x 300 x 600 (mm)	4	
34	Sling jig A	See Fig. 3 and Fig. 4	1	<ul style="list-style-type: none"> • For slinging track frame assembly
35	Sling jig B	See Fig. 5 and Fig. 6	1	<ul style="list-style-type: none"> • For slinging final drive assembly and pivot shaft
36	Sling jig C	See Fig. 5 and Fig. 7	1	<ul style="list-style-type: none"> • For slinging final drive assembly

No.	Part name	Specification	Q'ty	Remarks
37	Wooden bar	Height x width x depth (mm) 350 x 350 x 750	4	
		350 x 350 x 670	2	
		350 x 350 x 400	4	
		300 x 300 x 600	2	
		100 x 100 x 750	4	
		95 x 95 x 180 to 200	2	
		350 x 350 x 800	2	
38	Stand for high lift work	Height 2 m with stairs and handrail	1	
39	Safety belt	Trunk belt type	For the number of workers	For high lift works
40	Goggles	For welding	Necessary quantity	
		For protecting from spray		
41	Safety rope and "No Entrance" board	<ul style="list-style-type: none"> • Rope of yellow ground color with black stripes • Standing signboard 	Necessary quantity	For preventing outsiders from entering the working area
42	Resin tube (Vinyl tube)	Inner diameter 8 mm x thickness 1 mm x length 3 m Soft and transparent	1	For checking air tightness (internal pressure) of operator's cab
43	Lubricating oil and grease	See A-13 of assembly procedure	—	
44	Seizure preventing agent	Molybdenum disulfide grease (LM-P)	200 g	See the list of coating materials.
45	Cleaning oil	For removing of preservative	40 ℓ	
46	Paint remover	For removing of phthalic acid coating materials	5 ℓ	
47	Repair paint	See the list of coating materials.	3 each	
48	Glass cleaner	Liquid cleaner	Proper quantity	For cleaning of the windshield glass of operator's cab
49	Waste cloth		1 kg	
50	Adhesive cloth tape	Width x Length x Color 50 mm x 25 m x Not specified	1 wrap	
51	Wire (metal wire)	ø3.2 mm x length approx. 2 m	1	JIS G3532 #10 or equivalent

★ General tools for manual works (such as box wrench, driver, pliers, etc.) are not listed in this list.
Prepare general tools if necessary.

SKETCH OF TOOLS

- For jigs that are not available from the market, see jig drawings (Fig. 1 to Fig. 7) and make them in the field.
- ★ But Komatsu does not take the responsibility of manufacturer for the jigs made in accordance with Fig. 1 to Fig. 7

1. Chassis stand (Front side)

