Field Assembly Manual

HM300-2

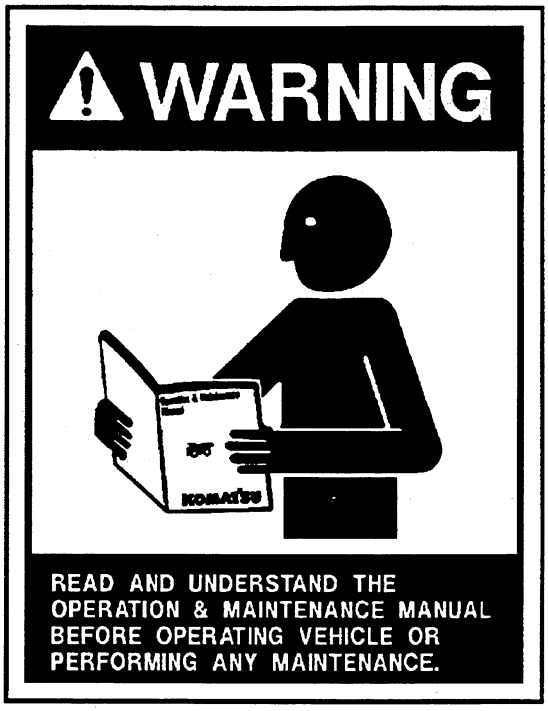
ARTICULATED DUMP TRUCK

SERIAL NUMBERS **HM300-2 2001 and up**

ENGINE **6D125E-3**

Copyright 2012 Komatsu
Printed in U.S.A.
Komatsu America Corp.

February 2012



⚠ WARNING

Unsafe use of this machine may cause serious injury or death. Operators and maintenance personnel must read this manual before operating or maintaining this machine. This manual should be kept near the machine for reference and periodically reviewed by all personnel who come in contact with it.

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

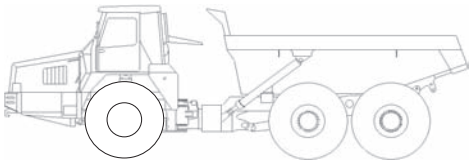
CALIFORNIA

Proposition 65 Warning

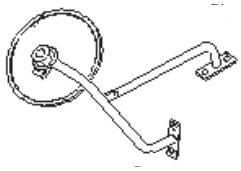
Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer, birth defects and reproductive harm. Wash hands after handling.

Contents

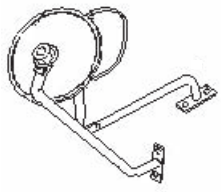
1 Drawings of removed units



1. Bare machine



2. Engine hood mirror, L.H.



3. Engine hood mirror, R.H.

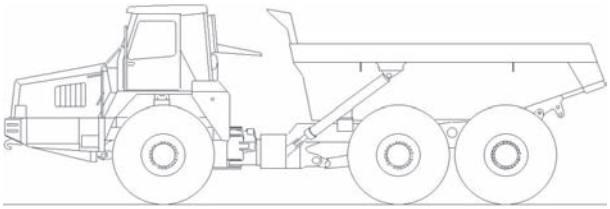
Specifications of HM300-2 completed truck

Specifications	Related items			
	Weight (kg)	Overall length (mm)	Overall width (mm)	Overall height (mm)
Self-propelled travel	24,040 (Weight of machine)	10,440	2,900	3,520 (When empty)

2 Dimensions of removed units

No.	Unit name	Weight (kg)	Overall length (mm)	Overall width (mm)	Overall height (mm)
1	Bare machine	24,033	10,440	3,140	3,520
2	Engine hood mirror, L.H.	3	500	340	450
3	Engine hood mirror, R.H.	4	570	300	450

3 Assembly procedure, necessary equipments, and schedule

Day / Hour	1st day			
	1	2	3	4
Assembly unit	 (1) Positioning bare machine (2) Installation of rear monitor (3) Installing engine hood mirrors (4) Installation of right and left mudguards (5) Adjusting N2 gas of front and rear suspensions (6) Inspection			
Assembly procedure No.	No.0100 – 0300			
Number of workers	2	→		
Remarks	Meeting before work Unloading Starting assembly			Completion of assembly

4 Necessary tools and equipments

(1) Necessary tools

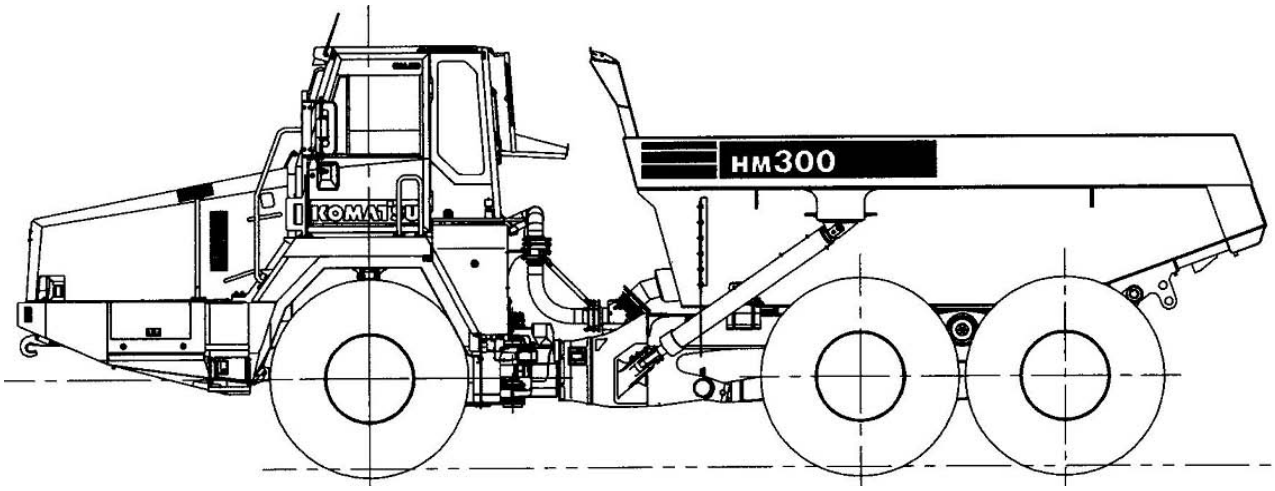
No.	Tool name	Specifications	Q'ty	Remarks
1	Ring wrench	19 mm	1	For installing hood mirror and front cover
2	Paint spray can	Clear	1	For touching up bolt head
3	Suspension gas pouring tool	7926-10-1000	1	For adjusting suspension pressure

(2) Necessary equipments

No.	Equipment name	Specifications	Q'ty	Remarks
1	Stepladder (Work stand)	4 steps (About 1.5 m)	1	For work

Assembly procedure No.	Positioning bare machine
No.0100	

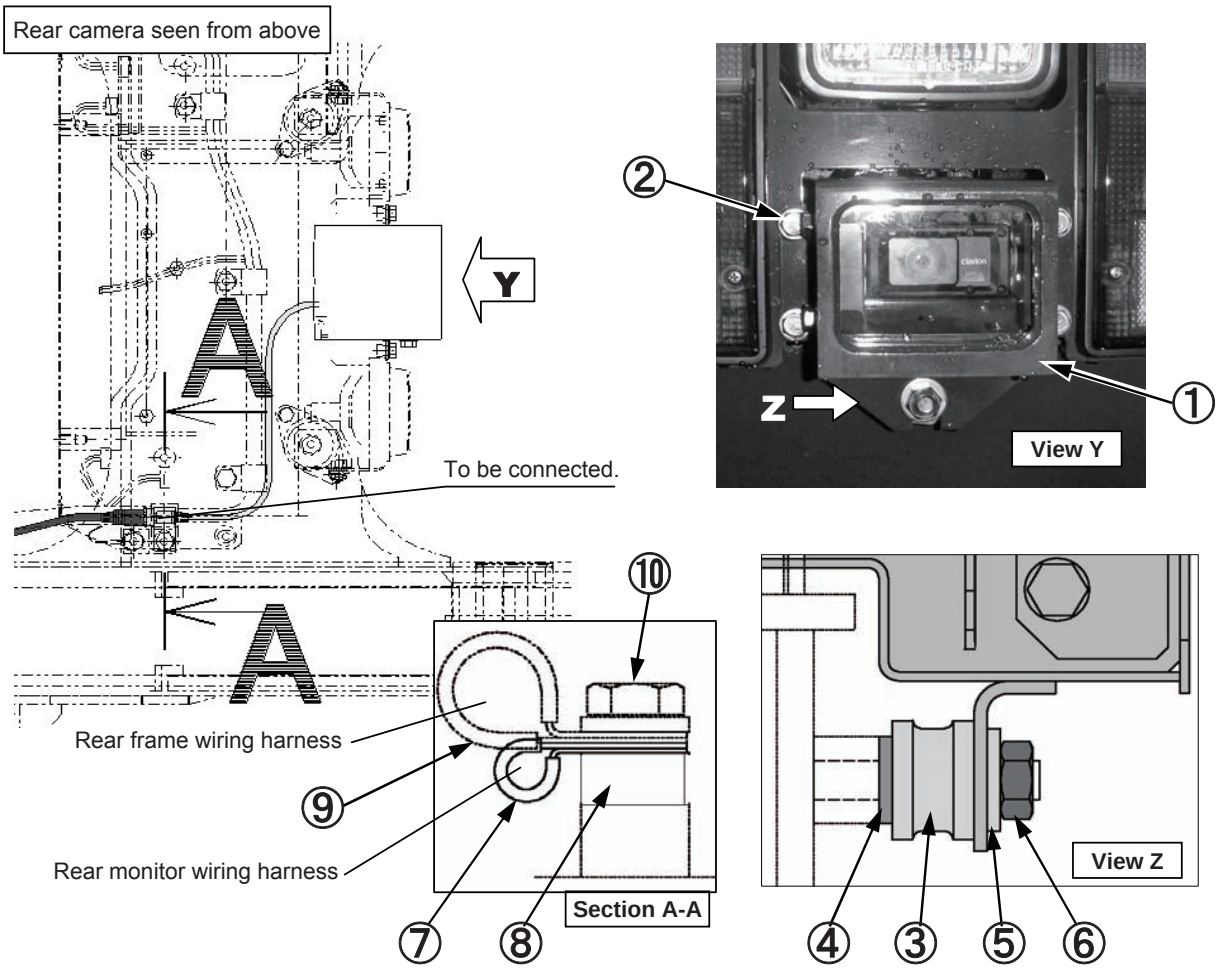
1. Positioning bare machine



1. Lower the bare machine from the trailer and position it on the flat ground.

Precautions	Necessary tools		Necessary equipment	
	Name	Q'ty	Name	Q'ty
	Others			

Assembly procedure No.	Installation of rear monitor
No.0150	



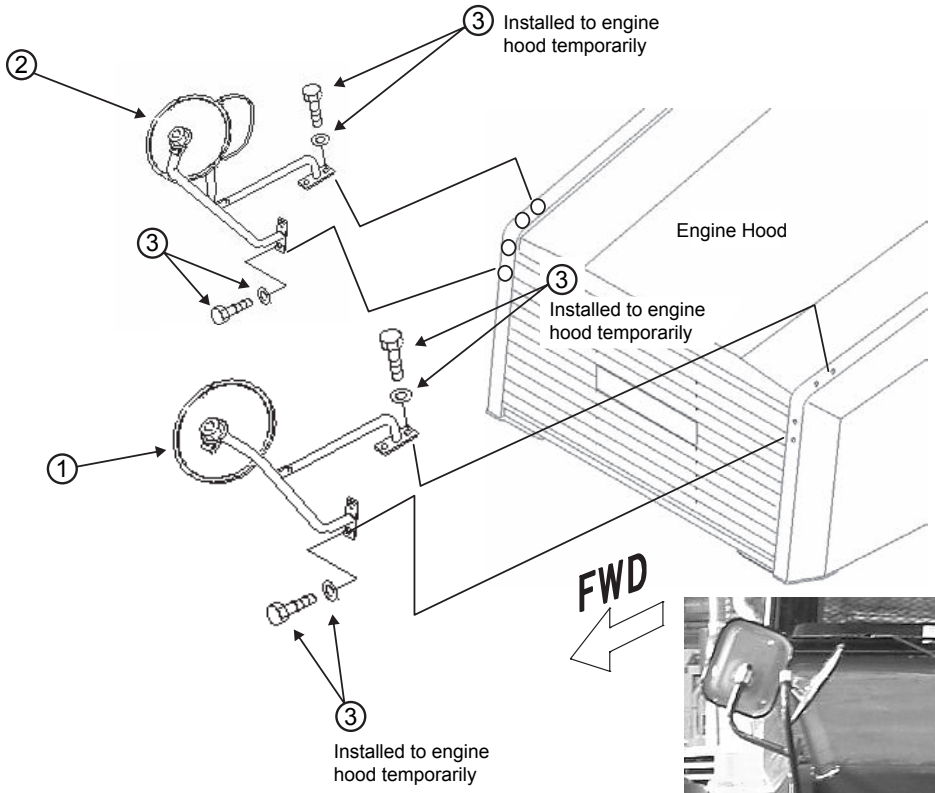
1. Install the rear monitor assembly as shown above.
2. Connect the rear monitor cable.

	Part No.	Part name	Q'ty	State of parts (Parts list No.)
(1)	561-86-8310A	REAR MONITOR ASS'Y	1	Separately packed (M32-06-050)
(2)	01024-80816	BOLT	4	Temporarily installed to rear lamp bracket
(3)	08522-10000	CUSHION	1	Temporarily installed to rear lamp bracket
(4)	01643-31032	WASHER	1	Temporarily installed to rear lamp bracket
(5)	203-54-56970	WASEHR	1	Temporarily installed to rear lamp bracket
(6)	01582-01008	NUT	1	Temporarily installed to rear lamp bracket
(7)	04434-50810	CLIP	1	Temporarily installed to rear lamp bracket
(8)	424-54-14380	COLLAR	1	Temporarily installed to rear lamp bracket
(9)	04434-51410	CLIP	1	Temporarily installed to rear lamp bracket
(10)	01024-81030	BOLT	1	Temporarily installed to rear lamp bracket

Precautions	Necessary tools		Necessary equipment	
	Name	Q'ty	Name	Q'ty
	Others			

Assembly procedure No.	Installing engine hood mirrors
No.0200	

1. Installing engine hood mirrors



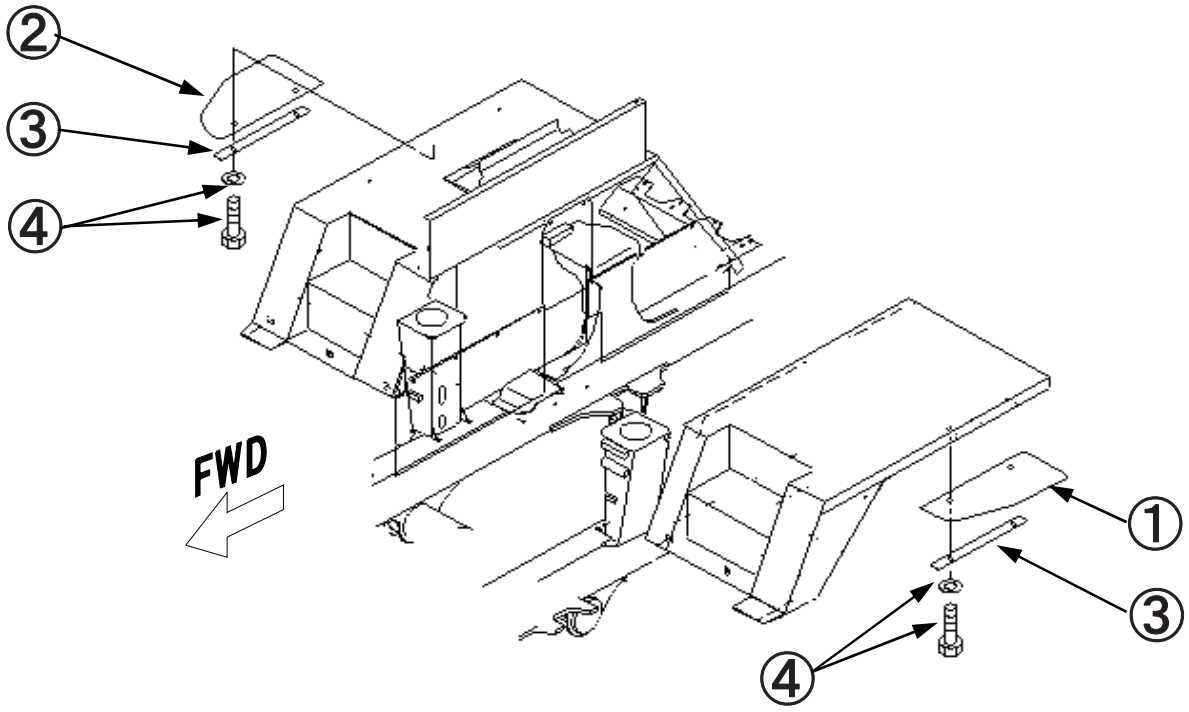
	Part No.	Part name	Q'ty	State of parts
(1)	56D-54-21510	STAY, L.H.	1	Mounted in cab
(2)	56D-54-21520	STAY, R.H.	1	
(3)	01024-81225	BOLT	8	Installed to engine hood temporarily

1. Remove the bolts and washers installed to the engine hood temporarily.
2. Take the engine hood mirrors out of the cab and install them to the engine hood.
3. Adjust the angle of the mirror.
   ★ To adjust, see Operation and Maintenance Manual.

Precautions	Necessary tools		Necessary equipment	
	Name	Q'ty	Name	Q'ty
	Ring wrench (19 mm)	1	Stepladder (Work stand)	1
	Others			

Assembly procedure No.	Installation of right and left mudguards
No.0250	

1. Install mudguards to the right and left fenders.



	Part No.	Part name	Q'ty	State of parts
(1)	56D-54-22950	GUARD, L.H.	1	Mounted in cab
(2)	56D-54-22960	GUARD, R.H.	1	Mounted in cab
(3)	56D-54-22970	PLATE	2	Temporarily installed to fender
(4)	01024-81025	BOLT, SEMS	4	Temporarily installed to fender

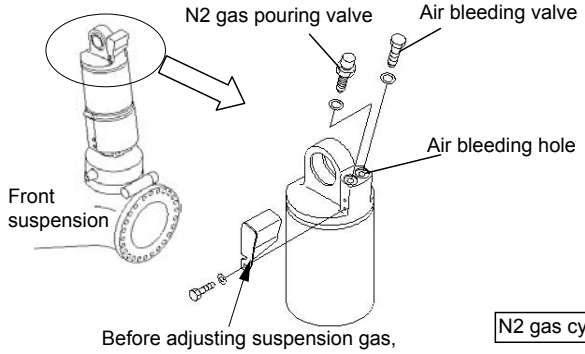
1. Remove the bolts and plates installed temporarily to the fenders.
2. Install mudguards mounted in the cab to the fenders.

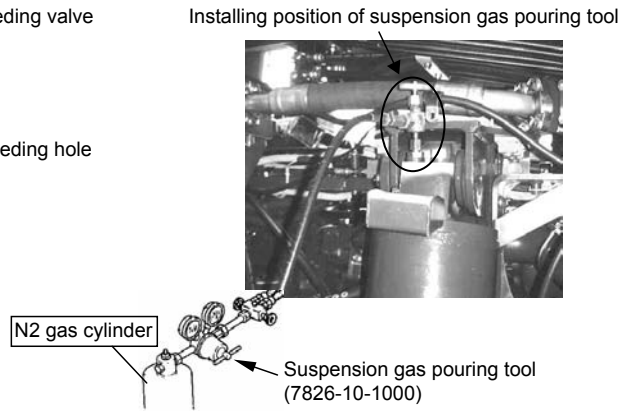
Precautions	Necessary tools		Necessary equipment	
	Name	Q'ty	Name	Q'ty
	Ring wrench (19 mm)	1	Stepladder (Work stand)	1
	Others			

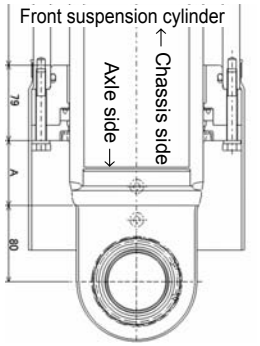
Assembly procedure No.	Adjusting N2 gas of front and rear suspensions
No.0300	

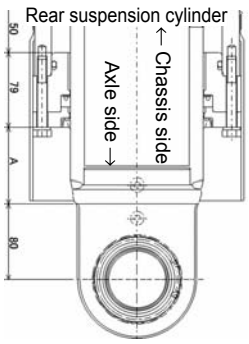
1. Adjusting N2 gas of front and rear suspensions

Adjust the quantity of N2 gas (front and rear, 4 places).









Dimension A (Front side)

When cylinder is retracted fully:	MIN	(83 ± 1 mm)
Specified quantity of filled oil:	OIL	113 ± 3 mm
When empty:	EMPTY	(163 ± 5 mm)
When cylinder is extracted fully:	MAX	(196 ± 1 mm)

Dimension A (Rear side)

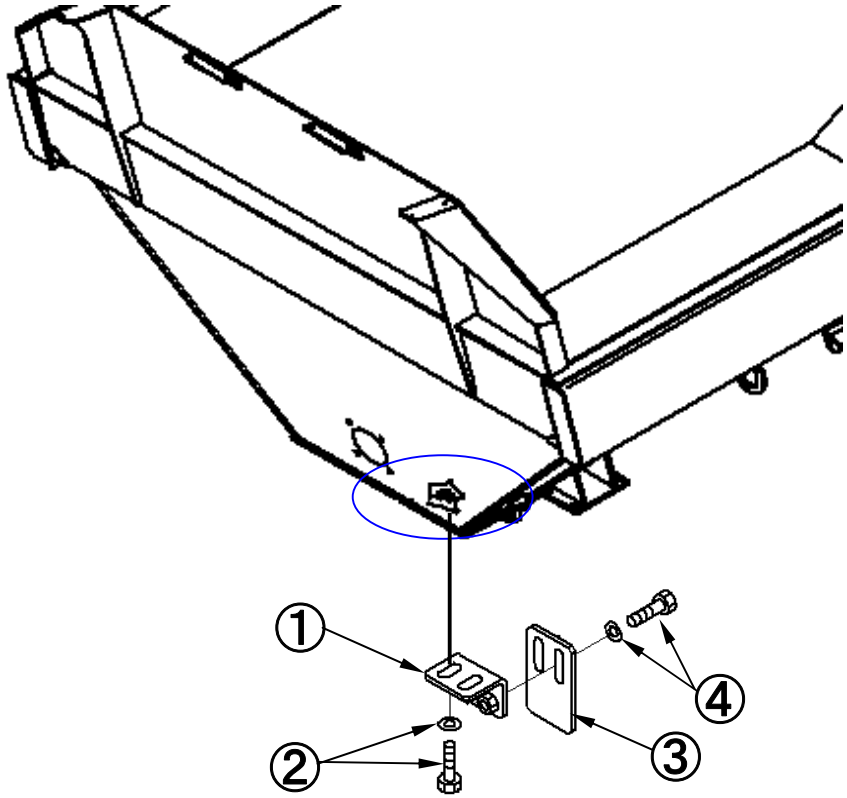
When cylinder is retracted fully:	MIN	(31 ± 1 mm)
Specified quantity of filled oil:	OIL	51 ± 3 mm
When empty:	EMPTY	(101 ± 5 mm)
When cylinder is extracted fully:	MAX	(121 ± 1 mm)

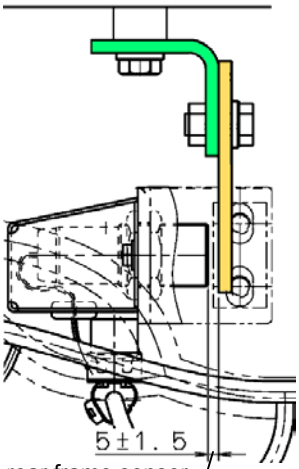
1. Loosen the air bleeding valves of the right and left front suspension cylinders and bleed air thoroughly. (Check that air does not come out any more (and only oil flows out) and tighten the valves again. Tightening torque: 39.2 – 49.0 Nm {4 – 5 kgm})
2. Check that the valves are closed and install the suspension gas pouring tool to the gas cylinder.
3. Connect the hoses of the suspension gas pouring tool to the nitrogen gas pouring valves. (Since there are 2 hoses, connect them to the right and left suspension cylinders and pour the nitrogen gas simultaneously so that pressure will be applied to both cylinders evenly.)
4. Open the valve of the suspension gas pouring tool gradually.
5. When the suspension cylinders rise to the specified level shown above, close the valve. (Pour the gas to the front suspension cylinders until they rise to the level indicated by the decalcomania. Pour the gas to the rear suspension cylinders until they rise to the level shown in the above figure.)
6. Remove the hoses from the nitrogen gas pouring valves and move the machine forward and in reverse to fit the suspension cylinders, and then stop without applying the brake. (Finally, stop the machine without applying the brake to prevent an uneven load caused by braking.)
7. Apply the parking brake and check the length of the suspension cylinders.
8. If the length of the suspension cylinders is out of the standard range, repeat steps 3 - 7. (Usually, adjustment is completed by repeating those steps 3 - 4 times.)

Precautions	Necessary tools		Necessary equipment	
	Name	Q'ty	Name	Q'ty
1. Bleed air from the cylinders. 2. Pour nitrogen gas in the right and left suspension cylinders simultaneously. 3. Do not extend the suspension cylinders to the stroke end. 4. After moving the machine forward and in reverse, stop it without applying the brake. 5. Do not steer the machine before finishing this adjustment. (If it is steered, the piping may be broken.)	Suspension gas pouring tool	1		
	(7926-10-1000)			
	Others			

Assembly procedure No.	Installation of seating sensor plate for PLM
No.0390	

1. Install seating sensor plate to mounting seat in front of body anti-vibration bracket.





③ Clearance between plate and rear frame sensor

No.	Part No.	Part Name	Q'ty	State of part (Parts list No.)
(1)	56B-86-16570NK	PLATE	1	Details of component (M32-03-100)
(2)	01024-81020	BOLT,SEMS	2	Details of component (M32-03-100)
(3)	56B-86-16580NK	PLATE	1	Details of component (M32-03-100)
(4)	01024-81025	BOLT,SEMS	2	Details of component (M32-03-100)

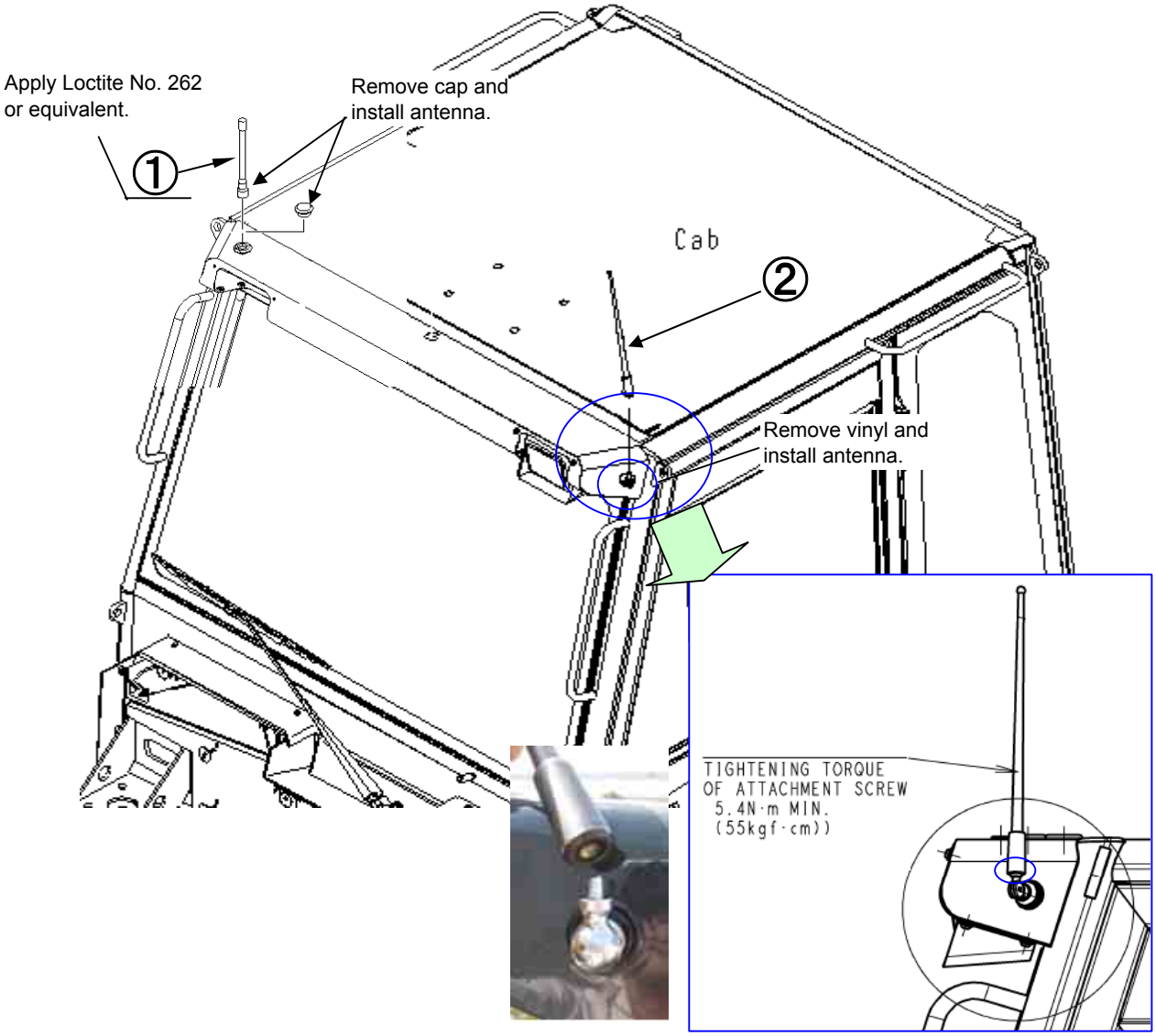
Cautions	Special tool		Necessary Equipment	
	Name	Q'ty	Name	Q'ty
	Other	Shape of material not being installed to body + payload meter specification (when 6HF52CB**)		

Assembly procedure No.	Installation of antenna
No. A0100	

1. Install antenna to top of cab.

1. KOMTRAX antenna : Install antenna to top of cab.
2. Radio antenna : Install antenna to left top of cab.

	Part No.	Part name	Q'ty	State of parts (Parts list No.)
(1)	8A13-10-2100	ANTENNA. SAT	1	Separately Packed (M42-05-070)
(2)	416-56-31130	RUBBER ANTENNA	1	Separately Packed (M42-05-071)



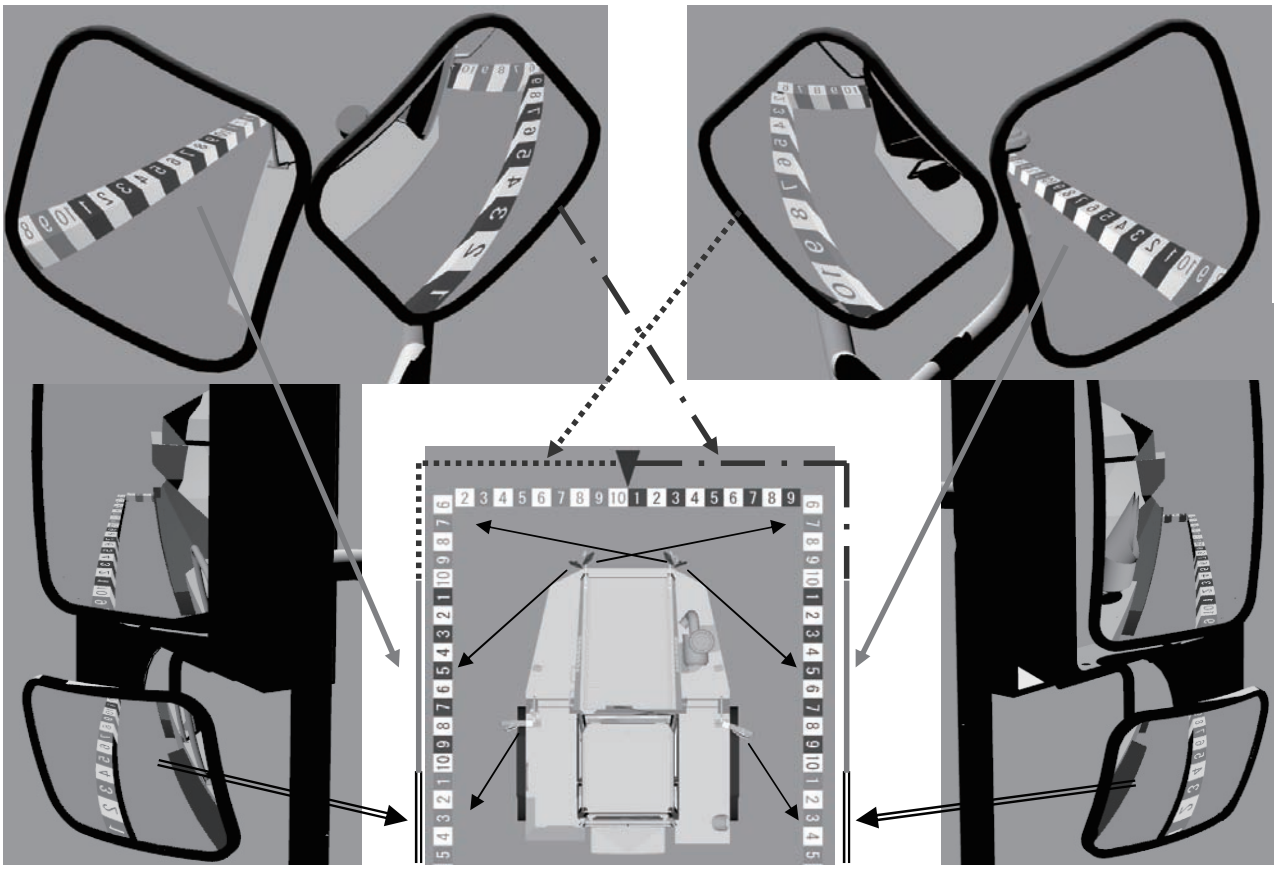
Precautions	Necessary tools		Necessary equipment	
	Name	Q'ty	Name	Q'ty
	Others			

Assembly procedure No.	Mirror adjustment for reference
Attached sheet	

1. Mirror adjustment

Referring to the following figures, adjust the mirrors.

Watch each mirror from the operator's seat.
Adjust each mirror so that it will reflect a part of the machine as shown below.



Precautions	Necessary tools		Necessary equipment	
	Name	Q'ty	Name	Q'ty
	Others			

★ Carefully read the Operation and Maintenance Manual in advance to understand safety, operation, machine operations and controls, and then carry out the following inspections.

Date of Inspection	Inspector	Service meter		Mileo meter	
		Start	Finish	Start	Finish

List of check marks for inspection results

✓ : Acceptable ✕ : Unacceptable
( ) : Enter numeric values. Empty column : Uninspected
▨ : Not applicable ■ : No check is required

* Check relevant items after maintenance.
When the result is acceptable, circle any of the above marks.
(Example: ・)

No.	Inspection items	Judgment procedures and criteria	Check	Maintenance	Remarks
Checking oil and water levels.					
1	Engine oil level (Check with engine stopped.)	The level must be in the range between (H) and (H - 10 mm).			
2	Transmission oil level (Check with engine at low idling.)	The level must be in the range between (H) and (center between H and L).			
3	Hydraulic oil level	The level must be within inspection window range.			
Turn switch ON. (Basic items: Check lights and buzzers.)					
4	Function of horn	Sound must be proper in volume and must not have beat noise. (Sensory check)			
5	Function of back-up buzzer	Sound must be proper in volume and must not have beat noise. (Sensory check)			
6	Function of clearance lamp	When light switch is turned ON (1st, 2nd stage), front right and left clearance lamps and rear right, center, and left clearance lamps (3 lamps) must light up.			
7	Check of headlamps	When light switch is turned ON (2nd stage), 2 headlamps must light up.			
8	Check of high beam (Function of dimmer switch)	High beam should turn on by operating the dimmer switch while the headlamps are on.			
9	Function of turn signal lamps	When turn signal lever is operated, front and rear turn signal lamps must flash on correct side.			
10	Function of hazard lamp	All the right and left turn signal lamps as well as their pilot lamps (arrows) in the cab should flash when the hazard warning light switch is set to “ON”.			
11	Function of backup lamps	When transmission shift lever is set to at R, backup lamps must light up.			
12	Function of brake lamps	The brake lamps should light up when the brake pedal is depressed.			
		The brake lamps should light up when the retarder lever is pulled.			
		When light switch is ON and brake is turned ON, brightness of brake lamp must change (become brighter).			
13	Fog lamp operation check （If equipped）	The fog lamps should light up when the fog lamp switch is set to ON. The lamp inside switch should also light up simultaneously.			
Start engine.					
14	Abnormal noise from engine	No abnormal noise must be generated. (Sensory check)			
15	Exhaust gas leakage	No exhaust leakage should be detected at any muffler and exhaust connections.			
16	Operating effort of dump lever	The force necessary for moving the lever into every position should be proper (HOLD to UP: 3.0 kg; FLOAT to HOLD: 3.0kg; FLOAT to DOWN: 3.0 kg). Operation of the lever should not involve any snagging movements.			
17	Function of dump lever	1) Check that order of operation from top is RAISE → HOLD →FLOAT → LOWER.			
		2) Check that dump body can be stopped at desired position when lever is at HOLD.			
		3) Operate lever to LOWER position and check that it returns to FLOAT when released.			
		4) Pressure must be adjusted at RAISE and LOWER positions.			
18	Check of potentiometer voltage. *Perform this check at transmission contact No. 34603.	Voltage of potentiometer at dump lever LOWER end (dump body is seated) Standard value: 0.40 – 0.60V , Measured value: ( ) V			
		Voltage of potentiometer at dump lever RAISE end Standard value: 4.00 – 4.70V, Measured value: ( ) V			

No.	Inspection items	Judgment procedures and criteria	Check	Maintenance	Remarks
19	Shock made when dump body is lower to end	There should be no harsh shock when the dump body gets seated on the frame (sensory check). *Perform this check after completing the calibration.			
20	Function of positioner	Operate lever to RAISE position and check that it does not return to HOLD when released.			
		Operate lever to RAISE position to raise dump body and check that it automatically returns to HOLD at a point 50 – 100 mm before end of H/T cylinder stroke.			
21	Alignment of dump body on right and left	When dump body is raised fully, it must not sway to right or left.			
		When dump body is lower fully, it must come in contact with mount evenly. (Contact area must be at least 60%.)			
		The clearance at the hinge pin section should not exceed 1mm on one side. (Perform this check for both the clearances on the right and left sides.)			
		The clearance at the deflection stopper should be 1 to 2 mm on one side when the dump body is in the lower end position.			
22	Body lifting speed (Oil temperature: 80°C)	Engine speed: Rated speed (2,000rpm) Standard: 12.0 ± 1.5 sec, Measured value: ( ) sec			
23	Body lowering speed (Lever at FLOAT,Oil temperature: 70 – 90 °C)	Power down (from No. 1 cylinder: Hi to No. 2 cylinder: LiL) Standard: 12.0±1.5 sec, Measured value:( )sec			
24	Hydraulic drift of dump body	Hydraulic drift in 5 minutes must be 85 mm or less. (From point where cylinder No. 2 is extended by 100 mm). Measured value: ( ) mm			
Stop truck on level ground and measure.					
25	Length of suspension cylinder (Front) * Measure with dump body empty.	Length must be shorter than dimension A. Dimension A: 163 ± 10 mm Measured value: Left ( ) mm, Right ( ) mm			
26	Length of suspension cylinder (Rear) * Measure with dump body empty.	Length must be shorter than dimension A. Dimension A: 101 ± 5 mm Measured value: Left ( ) mm, Right ( ) mm			
Inspect each part.					
27	Function of safety pin	Safety pin must be inserted without obstruction in right and left stopper holes.			
28	Storage function of safety pin	Safety pin must be removed from, installed to, and locked at storage position securely.			
29	Inspection around engine	No oil and water leakage.			
30	Inspection around transmission	No oil leakage.			
31	Inspection of hydraulic oil system (tank, cylinder, pump, piping)	No oil leakage.			
32	Tightness of tire hub nuts *See the Assembling Procedure for the tightening torque specification.	(1) Front left: Should be retightened to the specification.			
		(2) Front right: Should be retightened to the specification.			
		(3) Center left: Should be retightened to the specification.			
		(4) Center right: Should be retightened to the specification.			
		(5) Rear left: Should be retightened to the specification.			
		(6) Rear right: Should be retightened to the specification.			
33	Tire inflation pressure (When dump body is empty) 750/65-R25 E3 (Standard for Japanese markets) Front wheels : 0.34 ± 0.01 Mpa Front wheels & Rear wheels : 0.40 ± 0.01 Mpa 23.5-R25 E3 (Standard for other markets than Japan) Front wheels : 0.44 ± 0.01 Mpa Front wheels & Rear wheels : 0.44 ± 0.01 Mpa	Standard: Shown at left Measured value: Front left (MPa) Front right (MPa)			
		Standard: Shown at left Measured value: Center left inside (MPa) Center right inside (MPa)			
		Standard: Shown at left Measured value: Rear left outside (MPa) Rear right outside (MPa)			

No.	Inspection items	Judgment procedures and criteria	Check	Maintenance	Remarks
34	Flaw of tires (6 wheels)	Tires must be free from flaw and tear.			
35	Hoist cylinders (Both sides)	Plated surfaces must be free from rust, harmful flaw, spatter, paint, etc.			
36	Conformity of dump body specifications to Shipment Order	Should conform to the Shipment Order.			
37	Conformity of tire specification to Shipment Order	Should conform to the Shipment Order.			

Remarks（Reports）

・Enter any problem found during the field inspection in this space.

Calibration of dump body system

Note: Before starting the calibration, make sure all adjustments of the dump body system and potentiometer have been satisfactorily completed.

【Calibration procedure】

1) Start the engine and let it operate to warm the hydraulic oil to 80 to 90°C.
2) With the dump body in the seated position (dump body caution light OFF), keep the dump lever in the FLOAT position for at least 5 seconds.
3) With the dump body raised to the end of stroke, keep the dump lever in the UP position for at least 5 seconds.
4) Bring the dump body to the seated position.
5) With the engine running at a low idle, move the dump lever to the UP and FLOAT positions several times.
   (* Move the lever to the end of stroke both when placing it into the UP position and the FLOAT position.)
6) With the engine running at a high idle, move the dump lever to the UP and FLOAT positions several times.
   (* Move the lever to the end of stroke both when placing it into the UP position and FLOAT position.)
7) Calibration can be considered to have been satisfactorily completed if the dump body gets seated without shock in both Steps 5) and 6).