CEBM001900

SHOP MANUAL

KOMATSU®

WA180-3

Parallel Tool Carrier

MACHINE MODEL	SERIAL NUMBERS
WA180-3	A85001 and up

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JAN 1998

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WA180-3PTC (WITH MATERIAL HANDLING ARM)

Operating information (Material Handling Arm)			
A	Reach, fully raised (extended)	10 ft. 8.7 in.	3268 mm
B	Reach, fully raised (mid-position)	9 ft. 1.1 in.	2770 mm
C	Reach, fully raised (retracted)	6 ft. 7.8 in.	2027 mm
D	Height, fully raised (retracted)	18 ft. 7.9 in.	5688 mm
E	Height, fully raised (mid-range)	21 ft. 5.2 in.	6532 mm
F	Height, fully raised (extended)	23 ft. 3.4 in.	7097 mm
G	Maximum reach (retracted)	12 ft. 4.5 in.	3773 mm
H	Maximum reach (mid-position)	16 ft. 0.8 in.	4897 mm
I	Height, maximum reach	5 ft. 11.9 in.	1825 mm
J	Maximum reach (extended)	18 ft. 6.4 in.	5650 mm
K	Depth, below ground (retracted)	5 ft. 0.0 in.	1524 mm
L	Depth, below ground (mid-position)	7 ft. 4.8 in.	2255 mm
M	Depth, below ground (extended)	9 ft. 0.1 in.	2745 mm
N	Reach, below ground (retracted)	8 ft. 3.8 in.	2534 mm
O	Reach, below ground (mid-position)	11 ft. 1.4 in.	3388 mm
P	Reach, below ground (extended)	12 ft. 11.9 in.	3960 mm

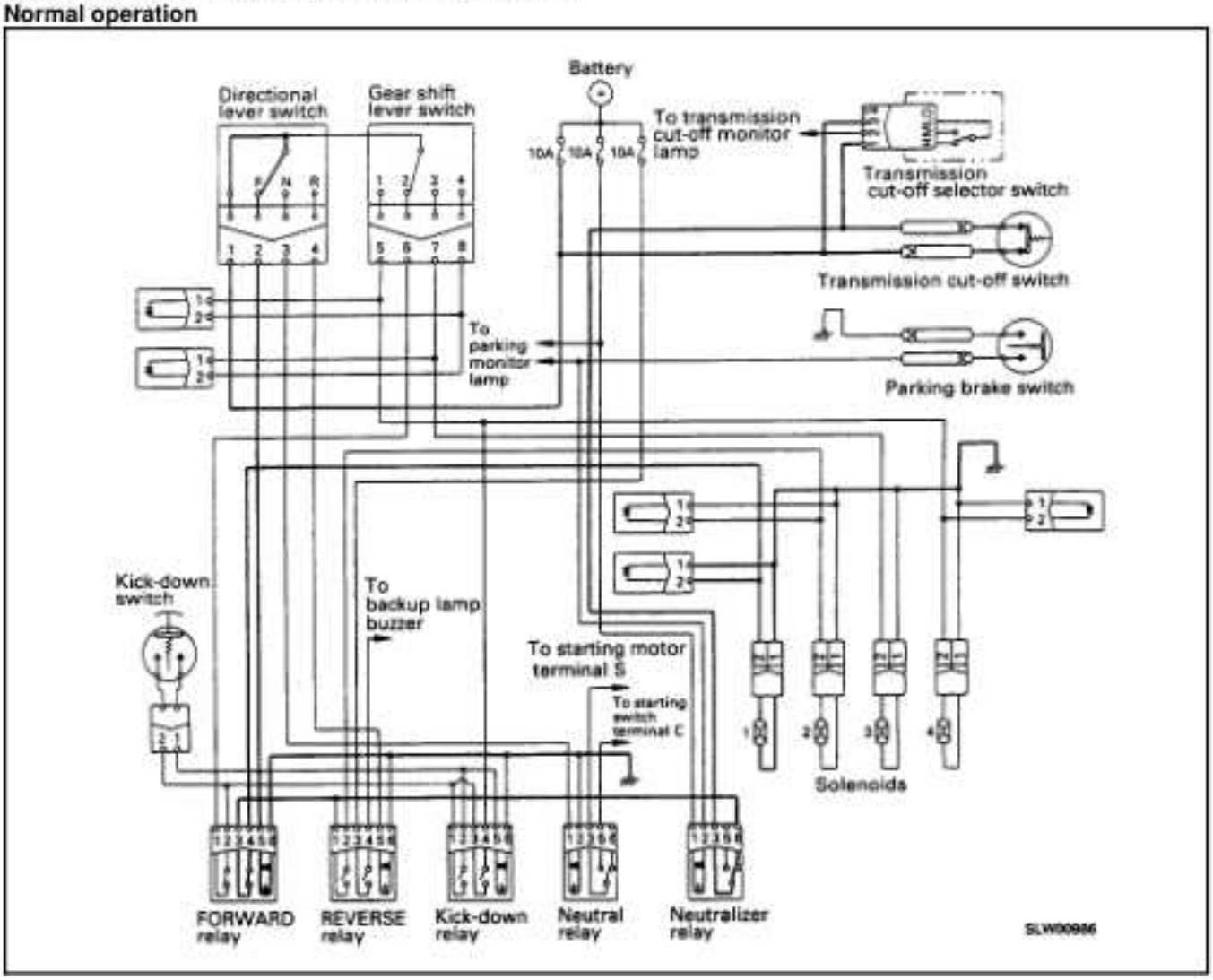
Tool carrier information (Material Handling Arm)			
Boom position	Retracted	Mid-position	Extended
Operating load	3370 lb. (1529 kg)	2649 lb. (1201 kg)	2306 lb. (1046 kg)
Tipping load, straight	7746 lb. (3513 kg)	6088 lb. (2761 kg)	5300 lb. (2404 kg)
Tipping load, 40 degree full turn	6739 lb. (3057 kg)	5297 lb. (2402 kg)	4611 lb. (2092 kg)
Operating weight	22448 lb. (10180 kg)	22448 lb. (10180 kg)	22448 lb. (10180 kg)

Note: Allied attachments ordered through Komatsu America dealers.

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KICK DOWN ELECTRIC CIRCUIT DIAGRAM

Normal operation



Directional lever operated to F

- When the directional lever is operated to the **F** position, current flows from battery ⊕ → directional lever switch terminals **1** - **2** → FORWARD relay terminals **5** - **6** → ground. As a result, the FORWARD relay is actuated and terminals **1** and **2** and terminals **3** and **4** are connected.
- Next, electric current flows from battery ⊕ → transmission cut-off switch → neutralizer relay terminals **3** - **6** → FORWARD relay terminals **3** - **4** → solenoid (**1**) → ground, and solenoid (**1**) is actuated.

Speed lever set to 2

- When the gear shift lever is at the **2nd** position, no electric current flows to solenoids (**2**), (**3**), or (**4**). In this condition, the transmission valve is set to **F2** by the action of solenoid (**1**).
- If the kick-down switch is not pressed, no electric current will flow to the kick-down relay coil (relay terminals **5**, **6**). Therefore, the kick-down relay is not actuated and the transmission is held in **F2**.

Solenoid actuation table

	F1	F2	F3	F4	N	R1	R2	R3	R4
1	○	●	○	○					
2						○	○	○	○
3			○	○				○	○
4	○			○		○			○

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H-3 When boom is raised, it moves slowly at a certain height

Checks before troubleshooting
- Can any deformation be seen in the boom cylinder?

Cause
- Swelling or internal damage to boom cylinder tube

★ For other abnormalities when the boom is raised, go to **"H-2 Boom movement is slow or boom lacks lifting power."**

H-4 Bucket cannot be pushed with boom cylinder (bucket floats)

See "H-2 Boom movement is slow or boom lacks lifting power."

Checks before troubleshooting
- Is the stroke of the boom spool in the main control valve properly adjusted?

Cause
- Defective seating of suction valve at boom cylinder rod end of main control valve
- Oil leakage from boom cylinder piston seal

H-5 Excessive hydraulic drift of boom

Ask the operator the following questions.
- Did the problem suddenly start?
  Yes = Dirt caught in valve, broken part
- Did the problem gradually appear?
  Yes = Worn parts

Checks before troubleshooting
- Is the boom spool at the neutral position?
  Yes = Seized link bushing, defect in spool detent

Troubleshooting and Cause
- When measuring the hydraulic drift, is there any sound of oil leakage from inside the boom cylinder?
  Yes = Defective cylinder packing

H-6 Boom shakes during operation

When digging or leveling operations are carried out with the boom control lever at HOLD, the bucket and boom move up and down to follow the shape of the ground.

Troubleshooting and Cause

Measure the hydraulic drift of the boom and check if it is possible to lift the chassis with the boom cylinder.

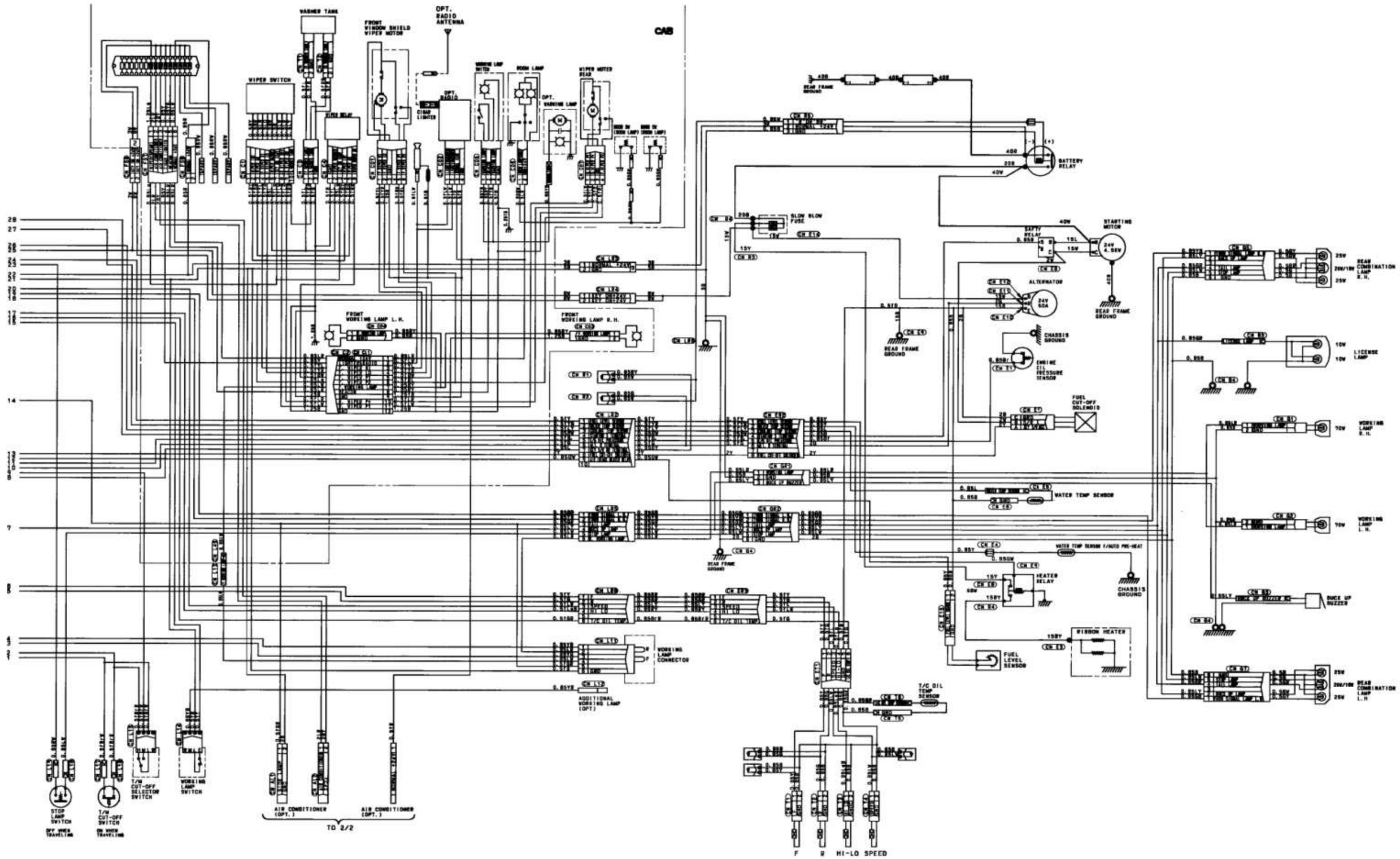
1. If the hydraulic drift of the boom cylinder is outside the standard value, go to **"H-5 Excessive hydraulic drift of boom."**
2. If the chassis cannot be raised with the boom cylinder, go to **"H-4 Bucket cannot be pushed with boom cylinder."**
3. If the hydraulic drift of the boom is normal, operate the boom several times, and operate the boom cylinder to the end of its stroke. Is it now possible to raise the chassis with the boom cylinder?
   Yes = Vacuum had formed inside cylinder

★ However, if this problem appears frequently, the suction valve at the boom cylinder rod end is defective.

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ELECTRICAL WIRING DIAGRAM (3/3)

SEE FOLD-OUT 10-151



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