

Service Manual



03

Load Moment Indicator

Model **AML-LK**

Input/Output Signals of the Load Moment Indicator (AML-LK) System (TT-600XL-1/TT-800XXL-1)

CN 2 connector		Signal names and functions
Pin No.	name	
23	CNTL 3P	<u>Signal name: Boom raising proportional control valve output</u> Current controlled by the AML is output from the AML to the boom raising proportional control valve when the boom raising is stopped by elevation slow stop. Output voltage: Square wave 0 to 24V
24	CNTL 3N	<u>Signal name: Ground terminal for boom raising proportional control valve</u> Input voltage: DC0V
25	CNTL 4P	<u>Signal name: Boom lowering proportional control valve output</u> Current controlled by the AML is output from the AML to the boom lowering proportional control valve when the boom lowering is stopped by elevation slow stop. Output voltage: Square wave 0 to 24V
26	CNTL 4N	<u>Signal name: Ground terminal for boom lowering proportional control valve</u> Input voltage: DC0V

CN3 connector signals and functions are shown below:

CN 3 connector		Signal names and functions
Pin No.	Name	
2	TR2	<u>Signal name: AML 90% alarm output</u> OC (Open collector) output turns ON when the Load moment ratio is between 90% and 100%. OC output "ON" (DC0V): External indicator lamp indicating 90% is lit. OC output "OFF" (DC24V): External indicator lamp indicating 90% goes out.
3	TR3	<u>Signal name: AML 100% alarm output</u> OC (Open collector) output turns ON when the load moment ratio exceeds 100% or automatic stop function is cancelled. OC output "ON" (DC0V): External indicator lamp indicating 100% is lit. OC output "OFF" (DC24V): External indicator lamp indicating 100% goes out.
		Condition to turn ON OC output
		Moment ratio $\geq 100\%$
		Anti-twoblock disable switch: pressed.
		Swing stop cancel switch: "OFF".
4	TR4	<u>Signal name: Front jack overload warning output</u> OC (Open collector) output turns ON when the front jack overload detection switch is ON. OC output "ON" (DC0V): The horn sounds. OC output "OFF" (DC24V): The horn does not sound.
5	TR5	<u>Signal name: Jib set output</u> OC (Open collector) output turns ON when setting to the jib set with the boom state selection key of AML. OC output "ON" (DC0V): The jib set pin can be pulled out. OC output "OFF" (DC24V): The jib set pin cannot be pulled out.

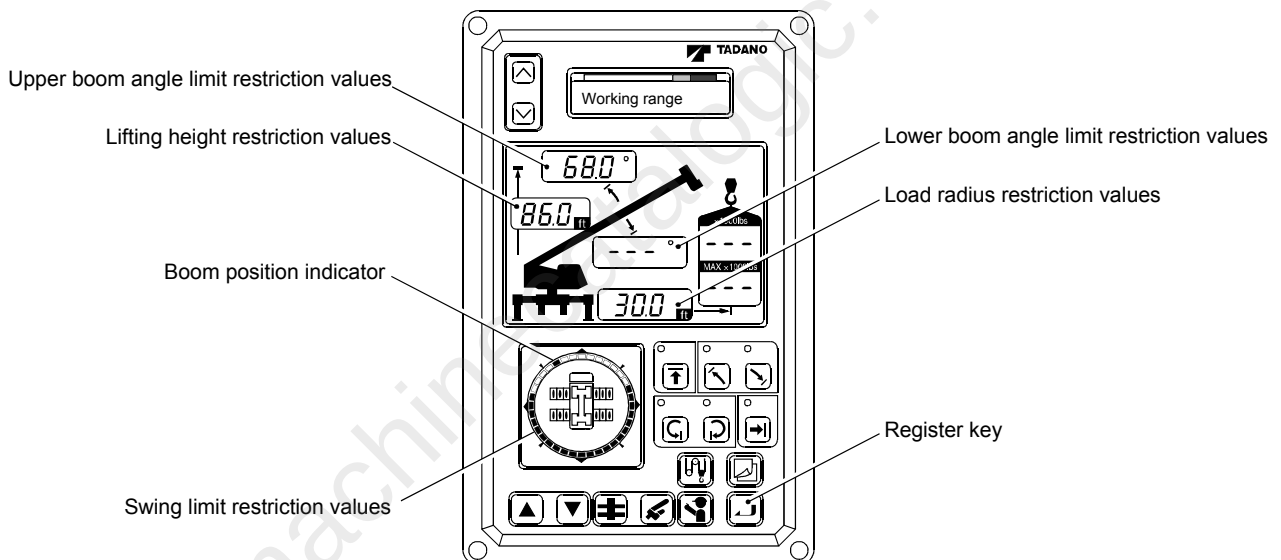
Display of Working Range Restriction Values

Press in the register key while working range restricting functions are registered.

While the key is being pressed in, the registered working range restriction values are displayed. On the moment display will be displayed a message "Working range".

[NOTICE]

- ◆ This display is not available when preoperational load moment indicator check is made and when working state is registered.
- ◆ When working range restricting functions are not registered, the message "---" will be displayed.

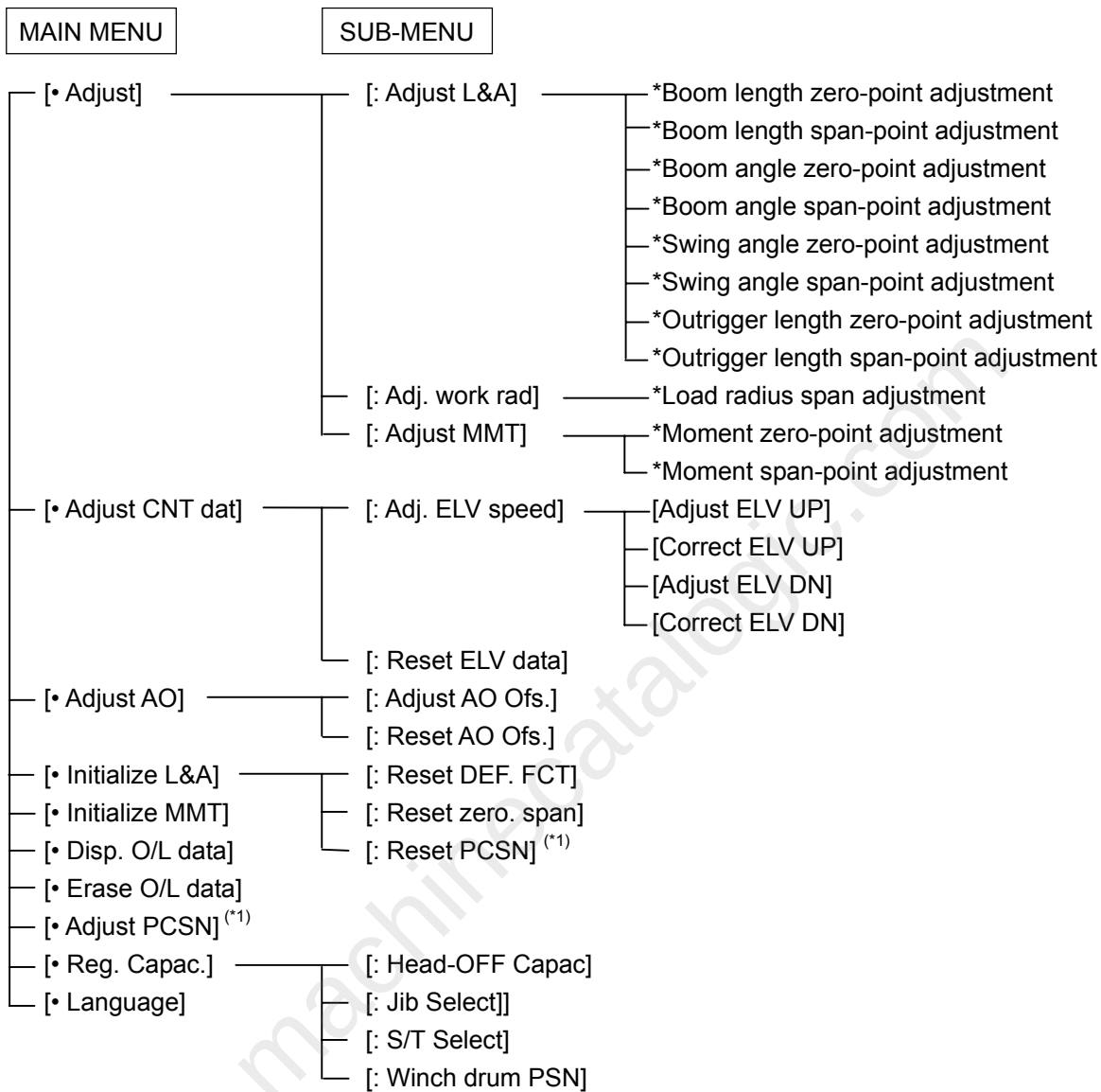


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General: Adjustment Mode and Maintenance Mode

3. Adjustment Mode:

Used to make detector adjustment. This mode has the following menus:



(*) : This menu is prohibited to be used.

9. Adjustment of Swing Output

[NOTICE]

- ◆ Always reset the Ao offset value before adjustment of swing output (Ao offset adjustment).

9.1 Procedure of Resetting Ao Offset Value

1. Select the main menu [• Adjust AO ↓] in the adjustment mode, and press the register key to select the menu.
2. When [:Adjust AO Ofs. ↓] is displayed, press the scroll-down key until the display [:Reset AO Ofs.] appears. Press the register key to select the menu.
3. When [Reset OK?] appears, reset the Ao offset value by pressing the register key.
4. When the message [Done] appears, the Ao offset value resetting is completed. Press the display alteration key to return to the main menu.

9.2 Adjustment of Swing Output (Ao offset adjustment)

[NOTICE]

- ◆ Refer to “Adjustment Value Table” in the INFORMATION AND DATA section since the standard value of the swing output varies depending on the specification number. For the models other than TR-600XL-4, TR-800XXL-4 refer to the Service Manual specified for each crane model.

- ◆ Set the crane as follows:

- (1) Outriggers mode: Fully extended
- (2) Lift mode: Boom lift (Stow jib and single top.)
- (3) Boom length: Fully retracted
- (4) Boom angle: As high as possible (Lowered boom can constitute a hazard when swung.)
- (5) Hook block position: Hoisted up as much as possible
- (6) Hydraulic oil temperature: Approx. 122° F (50°C)

1. Select the main menu [• Adjust AO ↓] in the adjustment mode, and press the register key to select the menu.
2. When [: Adjust AO Ofs. ↓] is displayed, press the register key to select the menu.

3. Press the scroll-up or scroll-down key until the right swing output adjustment display [41 SWG RV] (the left swing output adjustment display [42 SWG LV] for the left swing output adjustment) appears and a cursor comes on under the output value.

Display example:

[41 SWG RV 0 0 ↓]
 └─ Actual output value
 └─ Output value

4. Press the increase or decrease key to conform the output value of the right swing output adjustment display [41 SWG RV] to the standard value of the swing output. Remember that actual output value will also change in this situation.

Display example:

[41 SWG RV 35 35 ↓]
 └─ Actual output value
 └─ Output value

5. Press the scroll-down key to move the cursor to under the actual output value.

Display example:

[41 SWG RV 35 35 ↓]
 └─ Actual output value
 └─ Output value

6. While keeping the swing control lever fully to the right swing side, raise the engine speed to maximum. Then press the increase or decrease key so that the boom swing will stop under this condition.

Display example:

[41 SWG RV 35 37 ↓]
 └─ Actual output value
 └─ Output value

7. Press the register key to save the adjusted value in EEPROM. Now the adjustment of the right swing output is completed.

3. Swing Angle Detector

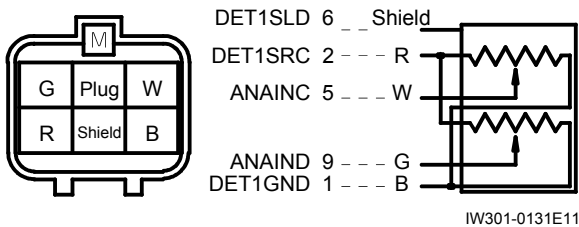
1. Swing the boom to over-left and turn off the PTO switch.
2. Measure resistance of the potentiometer.

Checking at the connector of the detector

Pull out the connector of the detector and measure resistance of the potentiometer. The specified resistance values are as follows:

R-B: $500 \pm 75 \Omega$

W-B: $0-15 \Omega$

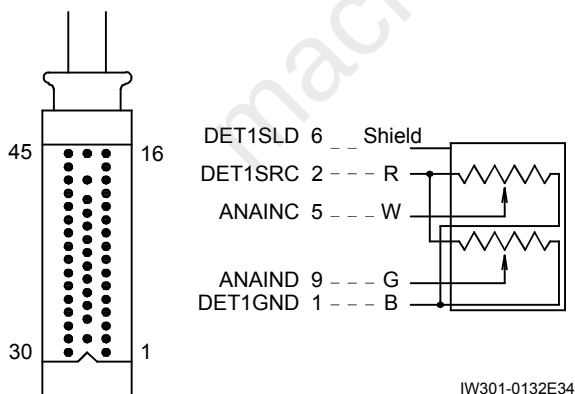


Checking at the CN1 connector of the AML

Pull out the connector of the boom length and angle detector. Then pull out the CN1 connector and measure resistance of the potentiometer. The specified resistance values are as follows:

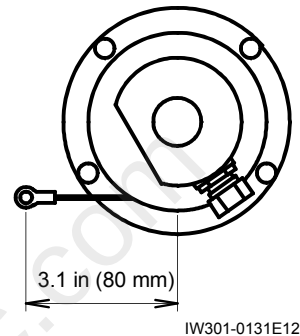
2-1: $500 \pm 75 \Omega$

5-1: $0-15 \Omega$



4. Outrigger Extension Width Detector

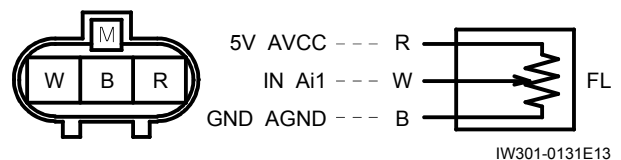
1. Stow the outriggers and turn the starter switch to OFF.
2. Remove the wire for the detector from the outrigger and hold the wire, letting it protruding by 3.1 in (80mm) from the guide hold of the detector.



3. Pull out the connector of the detector and measure resistance of the potentiometer. The specified resistance values are as follows:

R-B: $2000 \pm 100 \Omega$

W-B: $200 \pm 30 \Omega$



Full Version Available

Tadano AML-LK Load Moment Indicator Service Manual

Tadano AML-LK load moment indicator service manual, with system diagrams, signals, adjustment and maintenance data. 143-page searchable PDF.

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