

# Smart Construction Pilot Payload Supplementary Manual

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# Introduction



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This document introduces points to note when operating the Smart Construction Pilot payload meter function in order to use it more accurately.

Initial set-up and calibration are required to use the payload meter.

Please refer to the Smart Construction Retrofit Kit Instruction Manual.

## **【Caution】**

If you want to keep track of your loading result, purchase Smart Construction Fleet and use it in online environment.

You can also use payload in offline environment without saving loading result.

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## Chapter

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# Recommended operation

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# 1-1 Mechanism of Payload meter

This is a briefly introduce the machine of the payload meter.

When using the payload meter, the work flow is determined after identifying the movement of the machine from each sensor information in the retrofit kit.

("Digging" → "Load swing" → "Loading" → "Return swing")

Payload calculation is performed based on the boom cylinder pressure during the load swing operation.

By following the work procedures on the next page, you can improve the accuracy of the determination of this work flow and use the payload accurately.

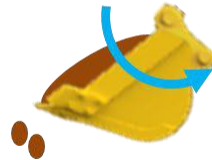
1. Digging  
(Bucket Curl)



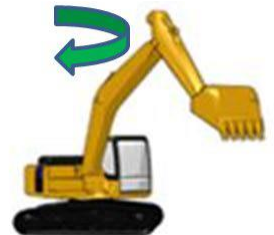
2. Load swing



3. Loading  
(Bucket dump)



4. Return swing



# 1-2 Recommend work method for payload meter use



To use the payload meter accurately, please follow the procedure below.

1. Press the "Start Excavation" button and excavate with the measurement started.
2. After digging, raise the boom while turning.

## 【Recommendation】

- When turning the payload, the boom should be raised and turned for at least **3 seconds** (guideline: turning angle of 45 degrees or more). (Since calculations are performed while the load is being swung, a longer boom lift swivel time allows for more accurate calculation of the payload value.)
- Please ensure smooth boom raising operation from the start of the payload swing to the end of the swing. (The payload value can be calculated more accurately if the boom cylinder hydraulic pressure is stabilized.)

## 【Caution】

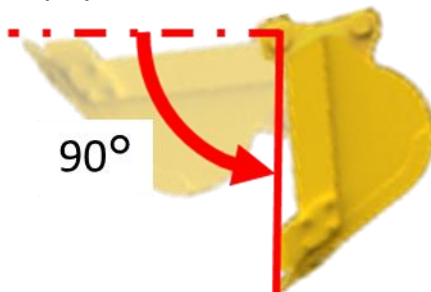
- Do not perform any sudden boom operation (sudden start of movement or sudden stop). (The boom cylinder hydraulic pressure will be disturbed and the payload value cannot be calculated correctly.)
- Do not raise the boom fully before swing.  
(Any boom raising operation that does not involve a swing cannot be considered a "load swing" and the payload value cannot be calculated correctly.)

3. Dump the bucket and remove the soil. When the payload value is determined after the earth removal is recognized, a "beep" sound will be heard. Dump the bucket until this tone sounds. \*Check the tablet's settings in advance and confirm that the sound is emitted.

## 【Reference】

Timing of payload value determination

When the bucket is dumped more than 90 degrees, the machine recognizes the soil discharge and determines the payload value.



## 【 CAUTION 】

- Do not move on to the next operation (return, etc.) until you hear a "beep" sound of confirmation. (If the bucket is not opened enough, the payload value will not be counted.)

# 1-3 Setting of one excavation weight

- Set the optimum excavation weight to "1 excavation weight" according to the soil to be excavated. (Refer to "Smart Construction Retrofit Instruction Manual, p. 74")
- Choose from the list in 500 kg increments.
- For more detailed settings, you can freely input the value using the keyboard.



- The maximum value of the meter on the right side of the payload screen changes according to the value set and can be used as a guide.



## 【 Caution 】

Please set a value close to the actual excavation weight, because an incorrect "one excavation weight" may result in incorrect determination of the work flow, and payload calculation may not be possible.

# 02

## Chapter

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# Troubleshooting

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- 2.1 [When the payload value is misaligned](#)
- 2.2 [When the payload value is not fixed](#)



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If any of the following problems occur, please check the settings of each item.

## 2.1. When the payload value is misaligned

- Check that the pressure sensor is not installed incorrectly.
- Check if the machine model selection is correct.
- Calibration may not have been performed correctly, so please re-calibrate.

## 2.2 When the payload value is not fixed

- Check that the excavation is being performed until a confirmation tone is heard.
- Make sure that the "Excavation Weight per Excavation" is set correctly.

## ■ Inquiries about our products

EARTHRAIN Ltd.

Support site URL :

<https://support.smartconstruction.com/hc/ja/requests/new>