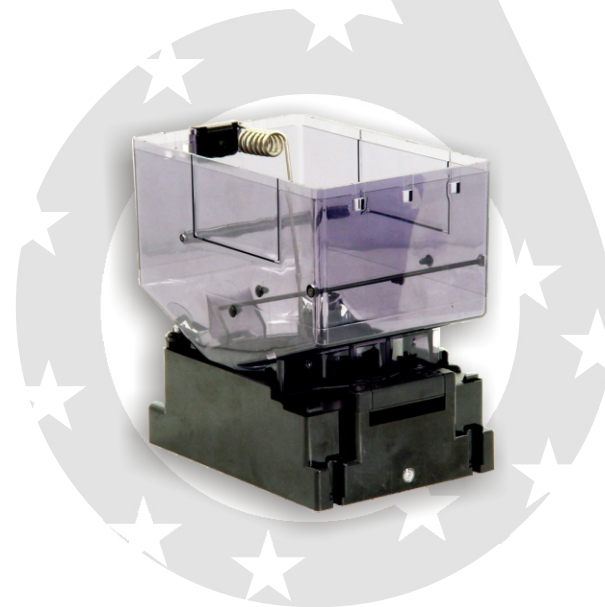




Leonid Mini Hopper

Installation Guide



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1. Introduction

1-1. Overview

Mini hopper is a coin dispensing unit for one denomination. Users can adjust the coin dimension with different coin payout plates and coin adjustment points. The design of Mini Hopper is easy-operated, trouble-free, and high reliability.

1-2. Features

- Dual sensors, double protections.
- Easy maintenance.
- Easy installation.
- Coin size adjustable.
- Advanced coin low level detection.
- Compact design with enormous capacity.

2. Specifications

General

Dispensing Speed	12V DC: 5~6 coins/second 24V DC: 6~8 coins/second
Interface	Pulse, ICT, Hopper, ccTalk *Note: For ccTalk information, please refer to Appendix.
Counting Method	Dual sensors



Installation: Indoor use only!!

Electrical

Power Source	MH-12XXX: 12V DC (11.4~12.6V DC) MH-24XXX: 24V DC (22.8~12.6V DC)
Power Consumption	12V DC: Standby : 0.05A, 0.6W Not loaded: 0.75A, 9W Maximum : 2.5A, 30W 24V DC: Standby : 0.05A, 1.2W Not loaded: 0.45A, 10.8W Maximum : 2.5A, 60W
Operation Environment	Operation Temperature: 5°C~50°C Storage Temperature: -15°C~70°C Humidity: 30%~85%RH (no condensation)

Mechanical

Coin Capacity	Approx. 500 coins
Outline Dimension	Refer to page.5
Weight	Approx. 0.8kg

3. Packing List

Main

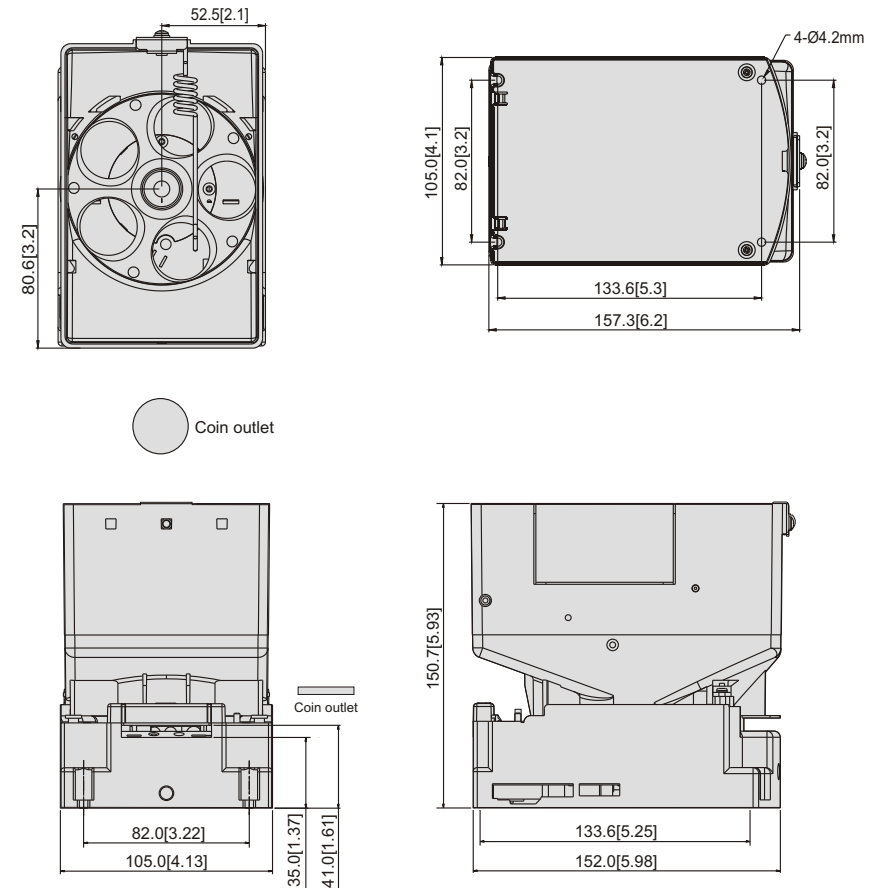
Mini Hopper

Accessory

Harness: Refer to 5-1
Mini Hopper Installation Guide

4. Dimension

Figure 1



Unit : mm [inch]

5. Installation

5-1. Harness Application

Mini Hopper With CPU Board :

Table 1

Interface	Used Voltage	Usage	Harness	Page
ccTalk	12V DC (MH-12XXX)	Power & *Data Comm.	WEL-RHP02	7
Hopper Mode		Power & *Data Comm.	WEL-RHP17	8
Pulse Mode	24V DC (MH-24XXX)	Power & *Data Comm.	WEL-RHP17	8
ICT Mode		*Data Comm.	WEL-R7U06	9

*Data Comm. : Data Communication.

Mini Hopper Without CPU Board :

Table 2

Interface	Used Voltage	Usage	Harness	Page
Hopper Mode	12V DC (MH-12XXX)	Power & *Data Comm.	WEL-RHP01	10
	24V DC (MH-24XXX)			

*Data Comm. : Data Communication.

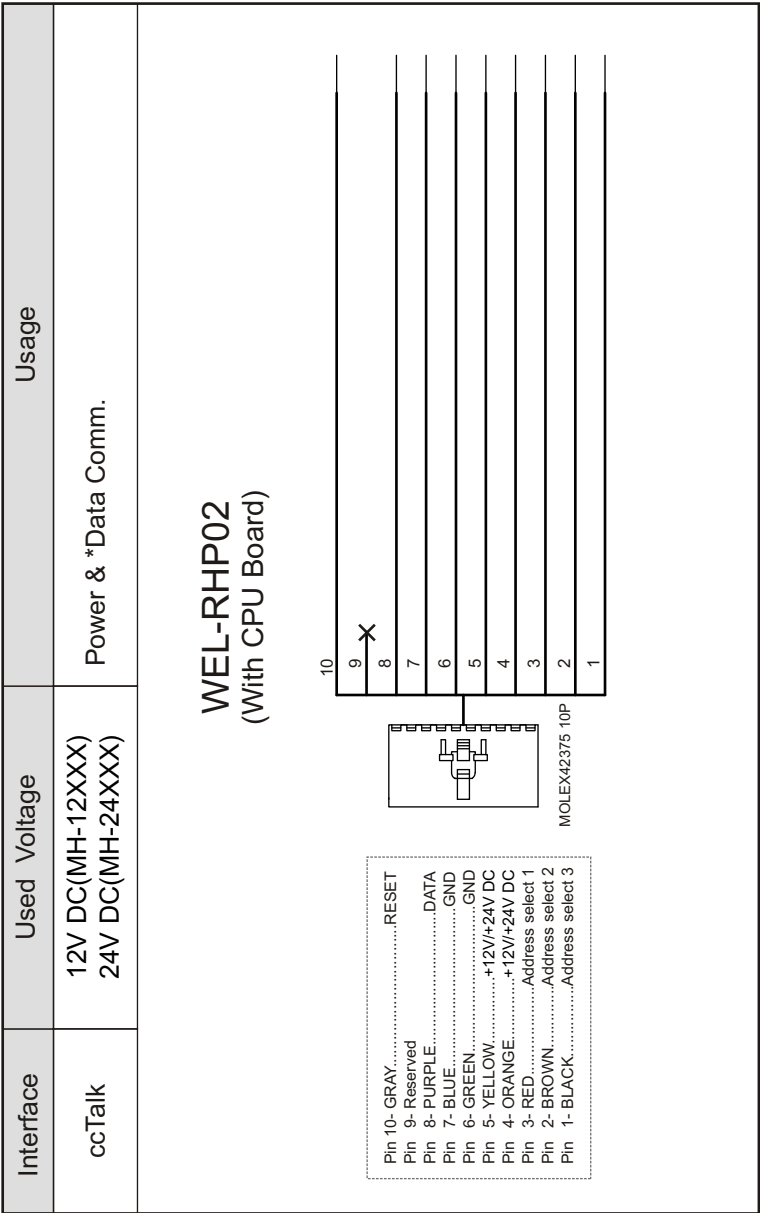
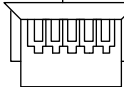


Figure 2

Interface	Used Voltage	Usage
Hopper Mode	12V DC(MH-12XXX) 24V DC(MH-24XXX)	Power & *Data Comm.
Pulse Mode	12V DC(MH-12XXX) 24V DC(MH-24XXX)	Power & *Data Comm.

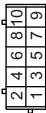
WEL-RHP17

(With CPU Board)



TMT 2*5

TMT 2*5 BACK VIEW



Pin 1- RED.....	*12V/+24V DC (Power)	Pin 6- PURPLE.....	COIN_EMPTY_0
Pin 2- BLACK.....	Ground(Power)	Pin 7- GRAY.....	METER_N.O
Pin 3- YELLOW.....	CREDIT_RELAY(N.O.)	Pin 8- BLACK.....	METER_COM
Pin 4- BLACK.....	CREDIT_RELAY(Common)	Pin 9- WHITE.....	INHIBIT_N.O
Pin 5- BLUE.....	PAYOUT_IN	Pin10- BLACK.....	INHIBIT_COM

Figure 3

Interface	Used Voltage	Usage
ICT Mode	12V DC(MH-12XXX) 24V DC(MH-24XXX)	*Data Comm.

WEL-R7U06

(With CPU Board)

Pin 1- BLUE.....Ground

Pin 2- WHITE.....Download VCC

Pin 3- BLACK.....RX1

Pin 4- PURPLE.....TX1

Pin 1- BLUE.....Ground

Pin 6- WHITE.....Download VCC

Pin 7- BLACK.....RX1

Pin 8- PURPLE.....TX1

TMT 2*4 BACK VIEW

D-SUB 9F TOP VIEW

Pin 2- TXD

Pin 3- RXD

Pin 5- GND

D-SUB 9F TOP VIEW

Pin 2- TXD

Pin 3- RXD

Pin 5- GND

Figure 4

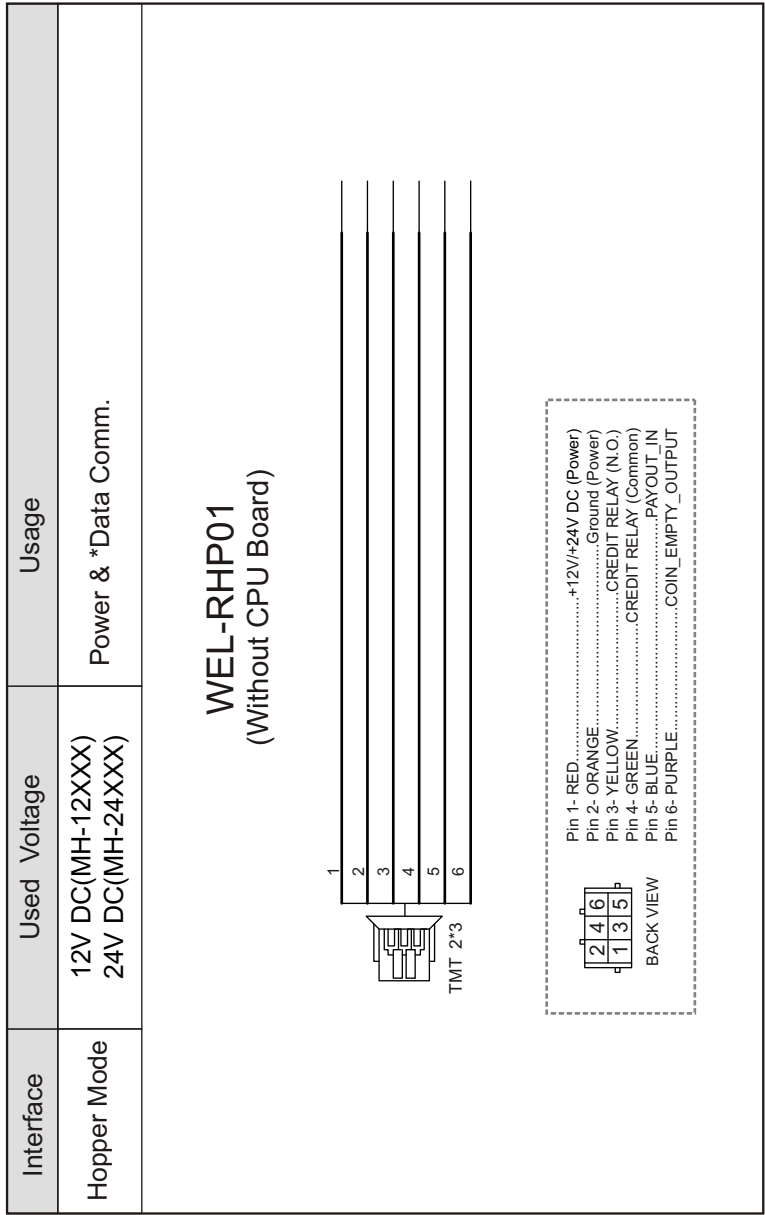


Figure 5

5-2. I/O Circuit

Hopper & Pulse Interface-1.

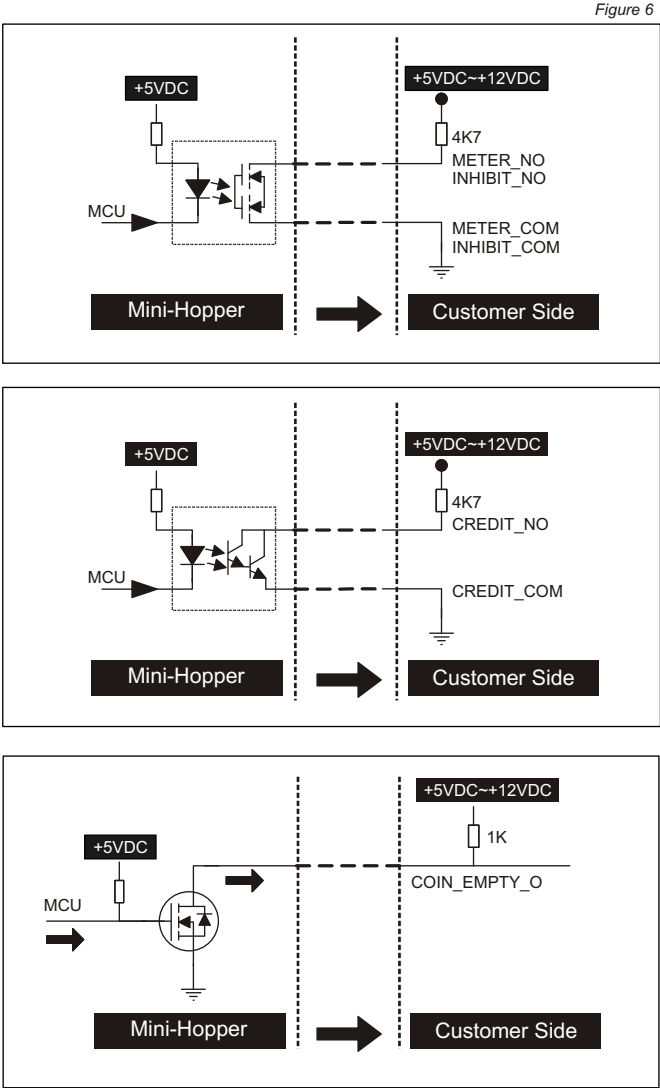
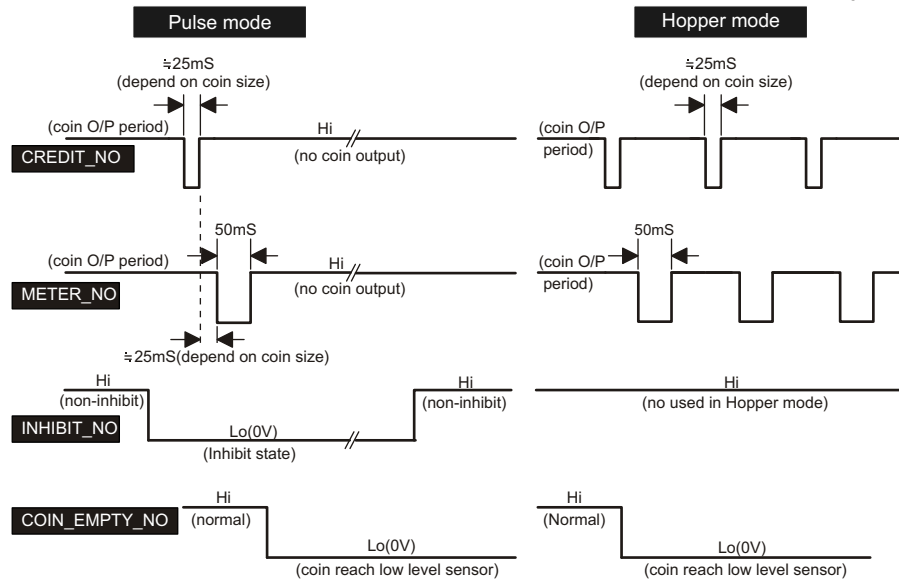
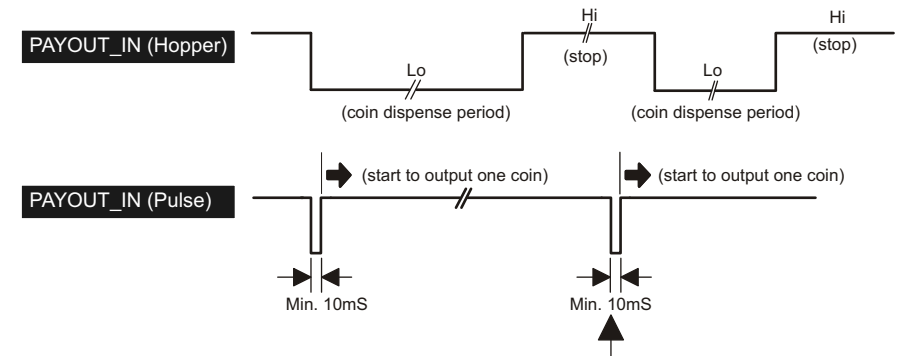
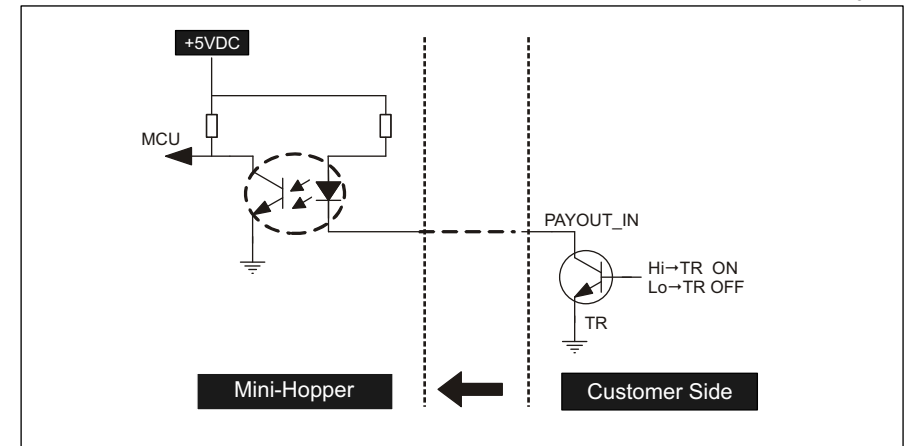


Figure 7



Hopper & Pulse Interface-2.

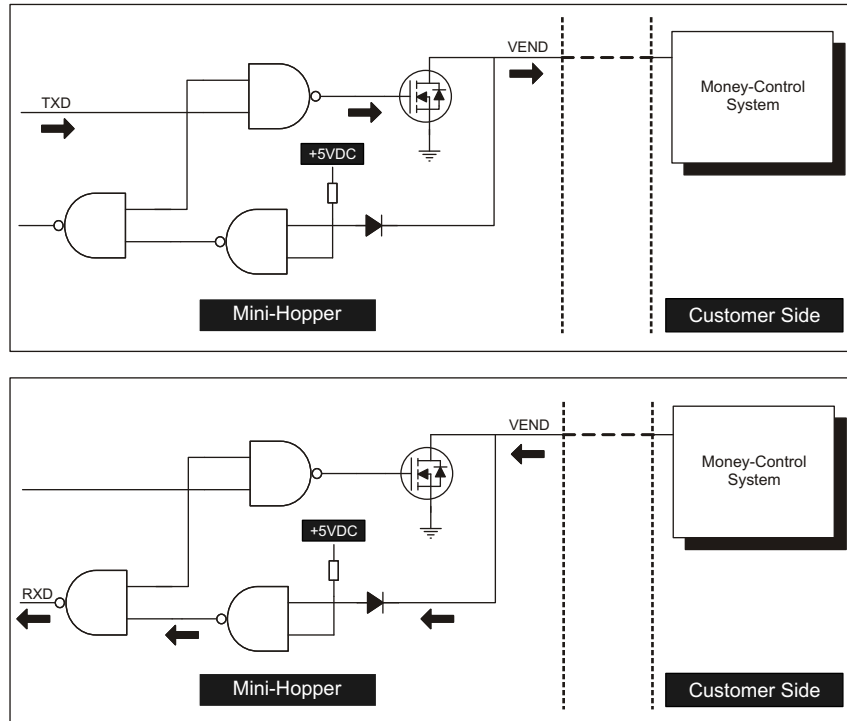
Figure 8



-The pulse can be issued before previous coin dispense finished.
-The minimum timing between pulse and pulse $\Rightarrow 10\text{ms}$.

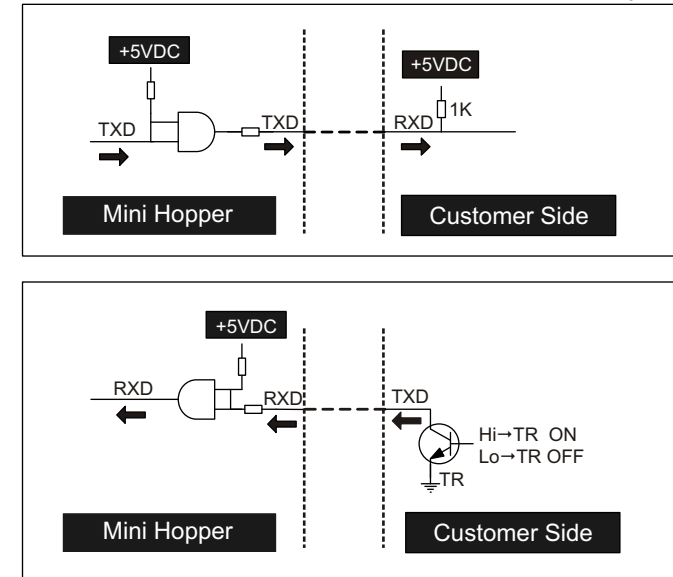
ccTalk Interface.

Figure 9



ICT-Protocol Interface.

Figure 10



5-3. Mini Hopper With CPU Board

5-3-1. Mini Hopper Setup:

To setup Mini Hopper, follow the steps below:

- (1). For Hopper Mode, Pulse Mode, and ccTalk Mode:
 - a. Setup DIP Switches which are located at the bottom of Mini Hopper according to interface.
(Please refer to (P.19) 5-3-2. DIP Switch Setup.)

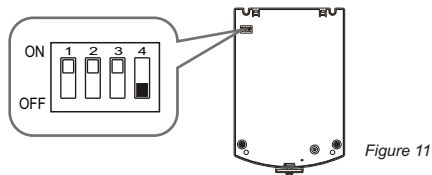


Figure 11

- b. Remove the cover by pressing hooks, and then remove coin box.

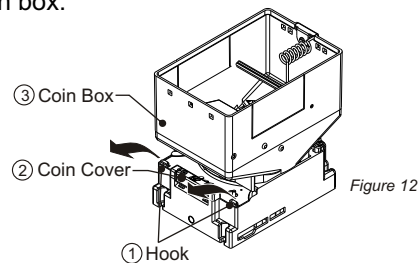


Figure 12

- c. Adjust coin dimensions. (Please refer to P.25 Adjustment Coin Dimension Chart.)

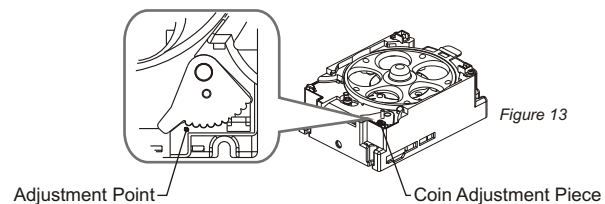


Figure 13

- d. Fill coins in the coin box unit, the coins are higher than empty sensor.

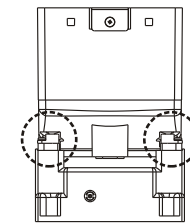


Figure 14

Empty Sensor

- e. Connect the cable to one side of Mini Hopper.
(Please refer to (P.21) 5-3-3. Connection.)

- f. Apply power to Mini Hopper, if LED turns from orange to green, it indicates the machine is completed setup.

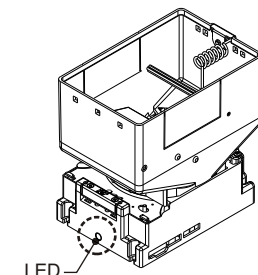


Figure 15

(2). For ICT Mode:

- a. Setup DIP Switches which are located at the bottom of Mini Hopper (as figure 11) according to interface.
(Please refer to (P.19) 5-3-2. DIP Switch Setting)
- b. Connect the cable to one side of Mini Hopper.
(Please refer to (P.21) 5-3-3. Connection.)
- c. Download the software (Mini Hopper Tool Kit) from PC through download box (FP-001).

5-3-2. DIP Switch Setting:

(1). For MH-XXXCX

a. ccTalk setup:

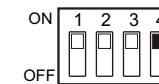


Table 3

Function	SW1	SW2	SW3	SW4
Address 3	OFF	OFF		ON
Address 4	ON	OFF		ON
Address 5	OFF	ON		ON
Address 6	ON	ON		ON
Manufacture Default			ON	
★ System Default			OFF	

(★) Manufacture setting

b. Hopper mode setup:

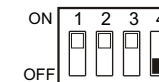


Table 4

SW1	SW2	SW3	SW4
N/A	N/A	N/A	OFF



- ◆ To purchase download box (FP-001) and cables for downloading, please contact ICT.
- ◆ For software (Mini Hopper Tool Kit) downloading, please go on ICT [website: www.ictgroup.com.tw](http://www.ictgroup.com.tw)



Please reset Mini Hopper every time after DIP switch setup.

(2). For MH-XXXGX

a. ICT mode setup:

Table 5

ON	1	2	3	4	SW1	SW2	SW3	SW4
OFF					ON	ON	ON	ON

b. Pulse mode setup:

Table 6

ON	1	2	3	4	Coins/Pulse	SW1	SW2	SW3	SW4
OFF					1/1	OFF	OFF	OFF	ON
					2/1	ON	OFF	OFF	ON
					4/1	OFF	ON	OFF	ON
					5/1	ON	ON	OFF	ON
					10/1	OFF	OFF	ON	ON
					20/1	ON	OFF	ON	ON
					50/1	OFF	ON	ON	ON

c. Hopper mode setup:

Table 7

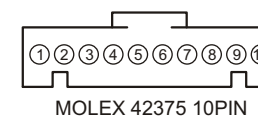
ON	1	2	3	4	SW1	SW2	SW3	SW4
OFF					N/A	N/A	N/A	OFF



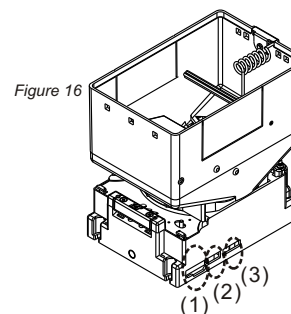
Please reset Mini Hopper every time after DIP switch setup.

5-3-3. Connection:

(1) ccTalk Interface Connector

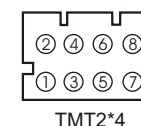


PIN 1- Address select 3
PIN 2- Address select 2
PIN 3- Address select 1
PIN 4- +12V/+24V DC
PIN 5- +12V/+24V DC



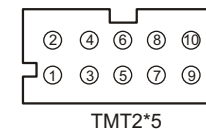
PIN 6- Ground
PIN 7- Ground
PIN 8- DATA
PIN 9- Reserved
PIN 10- Reset

(2) Download and ICT Interface Connector



PIN 1- Ground
PIN 2- TXD2
PIN 3- RXD2
PIN 4- Program
PIN 5- /Reset
PIN 6- VCC
PIN 7- RXD1
PIN 8- TXD1

(3) Power and I/O Connector (Hopper Mode or Pulse Mode)



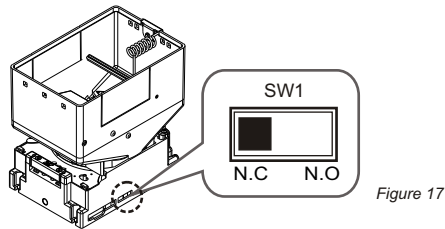
PIN 1- +12V/+24V DC(Power)
PIN 2- Ground(Power)
PIN 3- CREDIT RELAY(N.O.)
PIN 4- CREDIT RELAY(Common)
PIN 5- PAYOUT_IN
PIN 6- COIN_EMPTY_O
PIN 7- METER_N.O
PIN 8- METER_COM
PIN 9- INHIBIT_N.O
PIN10- INHIBIT_COM

5-4. Mini Hopper Without CPU Board

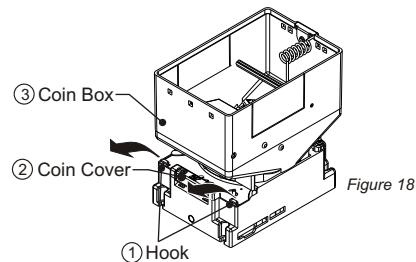
5-4-1. Mini Hopper Setup:

To setup Mini Hopper, follow the steps below:

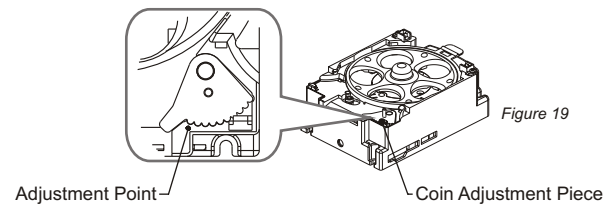
- a. Setup DIP Switches which are located at the bottom of Mini Hopper according to interface.
(Please refer to (P.24) 5-4-2. DIP Switch Setup.)



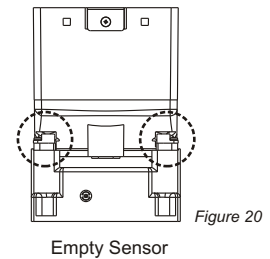
- b. Remove the cover by pressing hooks, and then remove coin box.



- c. Adjust coin dimensions. (Please refer to (P.25) Adjustment Coin Dimension Chart.)

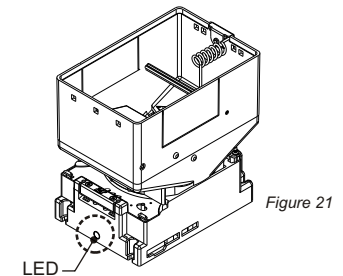


- d. Fill coins in the coin box unit, the coins are higher than empty sensors.



- e. Connect the cable to one side of Mini Hopper.
(Please refer to (P.24) 5-4-3. Connection.)

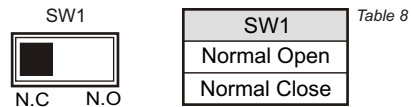
- f. Apply power to Mini Hopper, if LED turns from orange to green, it indicates the machine is completed setup.



5-4-2. DIP Switch Setting:

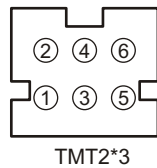
(1). For MH-XXXHX

a. Credit output function setup:

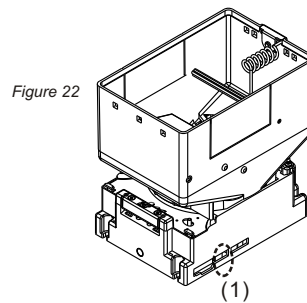


5-4-3. Connection:

(1). Power and I/O Connector
(Hopper Mode)



PIN 1- +12V/+24VDC (Power)
PIN 2- Ground (Power)
PIN 3- Credit Relay (N.O.)
PIN 4- Credit Relay (Common)
PIN 5- Payout_Input
PIN 6- Coin_Empty_Output
(Normal Open Active Low)



◆ Adjustment coin dimension :

Table 9

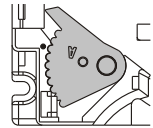
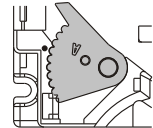
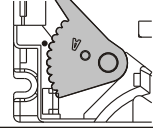
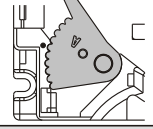
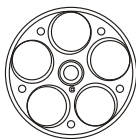
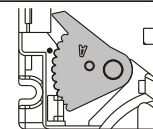
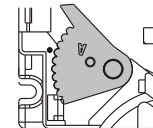
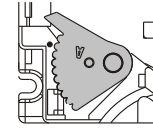
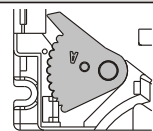
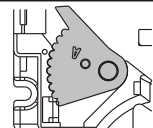
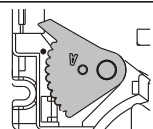
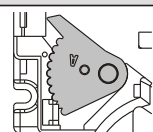
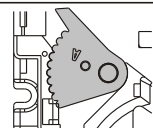
Coin Payout Plate	Coin Payout Adjustment	Diameter	22.5mm ≤ 28mm
A	C1607A	thickness	1.6mm ≤ 2.4mm
 Part number A25140-R		Diameter	25.5mm ≤ 28mm
		thickness	1.6mm ≤ 2.4mm
		Diameter	22.5mm ≤ 25.5mm
		thickness	1.6mm ≤ 2.4mm
Coin Payout Plate	Coin Payout Adjustment	Diameter	20mm ≤ 23mm
B	C1607A	thickness	1.6mm ≤ 2.2mm
 Part number A25920-R		Diameter	22.5mm ≤ 23mm
		thickness	1.6mm ≤ 2.2mm
		Diameter	20mm ≤ 22.5mm
		thickness	1.6mm ≤ 2.2mm
Coin Payout Plate	Coin Payout Adjustment	Diameter	23mm ≤ 30mm
C	C1607A	thickness	2.5mm ≤ 3.3mm
 Part number A26740-R		Diameter	25.5mm ≤ 28mm
		thickness	2.5mm ≤ 3.3mm
		Diameter	23mm ≤ 25.5mm
		thickness	2.5mm ≤ 3.3mm
		Diameter	28mm ≤ 30mm
		thickness	2.5mm ≤ 3.3mm

Table 10

Coin Payout Plate	Coin Payout Adjustment	Diameter	23mm ≤ 30mm
D	C1607A	thickness	1.6mm ≤ 2.4mm
 Part number A28730-R		Diameter	25.5mm ≤ 28mm
		thickness	1.6mm ≤ 2.4mm
		Diameter	23mm ≤ 25.5mm
		thickness	1.6mm ≤ 2.4mm
		Diameter	28mm ≤ 30mm
		thickness	1.6mm ≤ 2.4mm
Coin Payout Plate	Coin Payout Adjustment	Diameter	22.5mm ≤ 28mm
F	C1607A	thickness	1.0mm ≤ 1.5mm
 Part number A31150-R		Diameter	25.5mm ≤ 28mm
		thickness	1.0mm ≤ 1.5mm
		Diameter	22.5mm ≤ 25.5mm
		thickness	1.0mm ≤ 1.5mm

6. Maintenance

To make sure the Mini Hopper always works smoothly, we suggest you clean the internal parts of Mini Hopper regularly.



Please make sure Mini Hopper turns OFF before cleaning.

To clean the internal parts:

1. Remove the coin box.
2. Use a dry, soft cloth, or brush to clean internal parts and coin path.
3. Use a dry, soft cloth, or towel to clean the coin box.

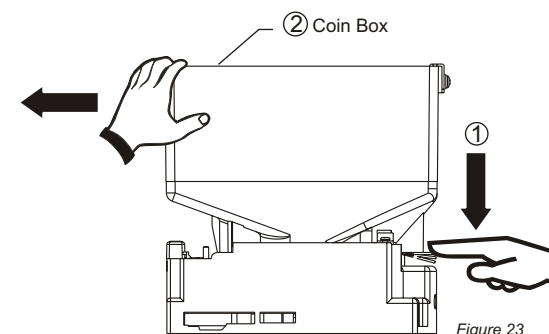


Figure 23



Maintenance Notice
(Any improper maintenance will result invalid warranty.)

Recommended	Mild, non-abrasive, soap water.
DO NOT USE	Organic solvent , Alcohol, Volatility liquid.

7. Troubleshooting

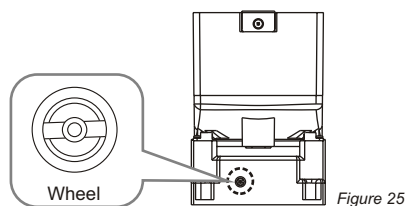
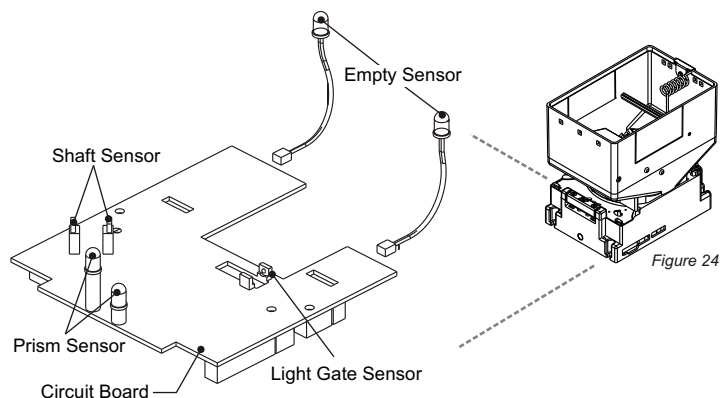


Table 11

Flashes	Status	Corrective actions
1	1. Incorrect voltage 2. Coin jammed 3. Motor problem	1. Make sure the voltage is applied to Mini Hopper. 2. Clockwise turn the wheel which is in the front of Mini Hopper to remove the jammed coin (as figure 25) and check the shaft-block.
2	Insufficient coins	Refill coins.
3	Overpay logic error	Re-adjust coin size and shaft.
5	Prism sensor error	Inspect for foreign objects on prism sensor or jammed coins.
6	Shaft sensor error	



If the errors can not be solved after corrective actions or happen again, please contact ICT for technical support.

◆ ccTalk Information

- Manufacturer ID: ICT
- Equipment Category ID: Payout
- Product Code: MH-125/ 245
- Build Code: Standard
- Serial Number: Default as 1 2 3 4 5 6 7 8
- Software Revision: According to the software revision number.

Ex. HP0&HWDXX53

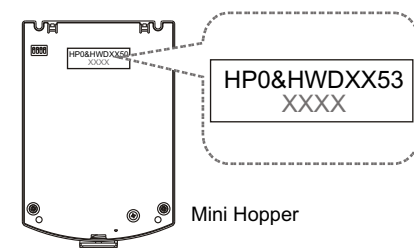


Figure 26



Please contact ICT for more information.



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