TCB SERIES

VER 001

TCB SERVICE MANUAL

TMT

INDEX

1. Calibration & Gravity Compensation

1.1. Calibration

When the power is off, press (ⓘ) while pressing (→H←)
When 'G-CAL' is displayed, and then press (✳)
Then this calibration mode is started. (→O←)

No.	TITLE	DISPLAY	KEYBOARD & DESCRIPTION
1	How to enter	G-CAL	(ⓘ) (→H←) ☞ (✳)
2	Program version	t TMT 100	Move to a next step in automatic
3	Maximum capacity	CAPA 5000	(→O←) Initialized value (→H←) numeric increase (→T←) scale increase / (✳) save
4	Minimum division	d iu 2	(→H←) decrease / (→T←) increase (✳) save
5	Setting weight	SEt-F 5000	(→O←) Initialized value (→H←) numeric increase (→T←) scale increase / (✳) save
NB : Setting weight shall be within the range of 10 %~100 % of max. capacity			
6	Zero calibration	ZEro -----	Unload the tray and press (✳)
7	Span calibration	LoAd -----	Load the weight which was set in step 5 and press (✳)
8	Finish	End	Unload the tray and press (✳)

1.2. Gravity compensation

When the power is off, press ⏻ while pressing →H←

When 'G-CAL' is displayed, and then press →H← again.

Then this gravity compensation mode is started.

No.	TITLE	DISPLAY	KEYBOARD & DESCRIPTION
1	How to enter	G-CAL	⏻ →H← ☞ →H←
2	Program version	t- 100	Move to a next step in automatic
3	Calibration location	GrAv 1 9799 (9.799m/s²)	→O← Initialized value →H← numeric increase →T← scale increase / ✳ save
4	Using location.	GrAv2 9799 (9.799m/s²)	→O← Initialized value →H← numeric increase →T← scale increase / ✳ save
5	Finish	End	Unload the tray and press ✳

ⓘ If the GrAv 1 value is same with GrAv2, it doesn't need to compensation set.

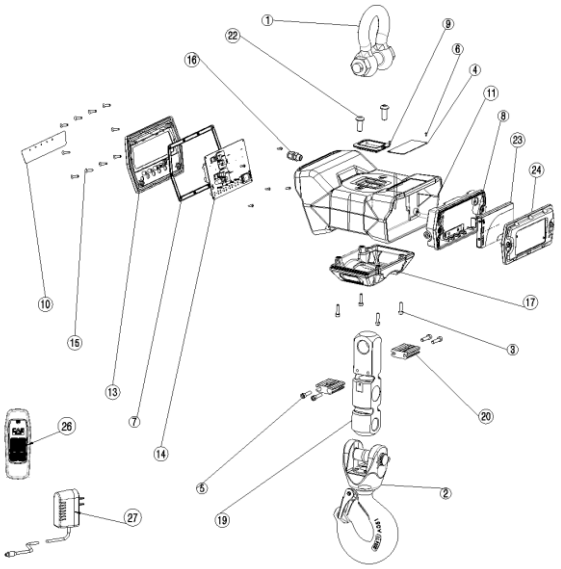
1.3. Check message

Code	Description
Ch 03	The resolution is set to be exceeded the limit 1/50,000. Check the resolution.
Ch 04	The balance weight for span calibration is lower than 10%, or greater than 100% of the maximum capacity of the scale. The weight for span calibration should be within 10%~100% of the maximum capacity of the scale.
Ch 05	Load cell output is too small or large at span calibration. Check the weight unit and load cell or calibrate with lower resolution.

2. Wireless Pairing

Step	Operation & Description
1	***How to enter the pairing mode*** **1) TCB crane scale** When the display is off, press ⏻ key while pressing ✳ key. When "t=40 1"(Firmware version) is displayed, press →H← key. Then, "rFSEt" is displayed. **2) TD3000(2300)F wireless display** Press the ⏻ key to power on and immediately press →H← key. And press the →H← key again. Then, "rFSEt" is displayed. **3) TF-100 controller** When the display is off, press ⏻ key while pressing ↵ key. When "t=60 1"(Firmware version) is displayed, press HOLD 3 key. Then, "rFSEt" is displayed. **4) TF-400 controller** Press the ✳ key and press ⏻ key at the same time. And then, press →H← key. Then, "rFSEt" is displayed. **5) TF -200 wireless dongle** Press the [SET] KEY for the 5 seconds with the power on that connected. Then, the green light is blinking.
2	***Pairing*** When "rFSEt" is displayed at both products, if you press ✳ key of TCB crane scale, pairing will finish. ⚠ Please check "End" message at both products. (**IR** -200: green light will be turn on) If ending message is not appear, please repeat the pairing.

3. Exploded view

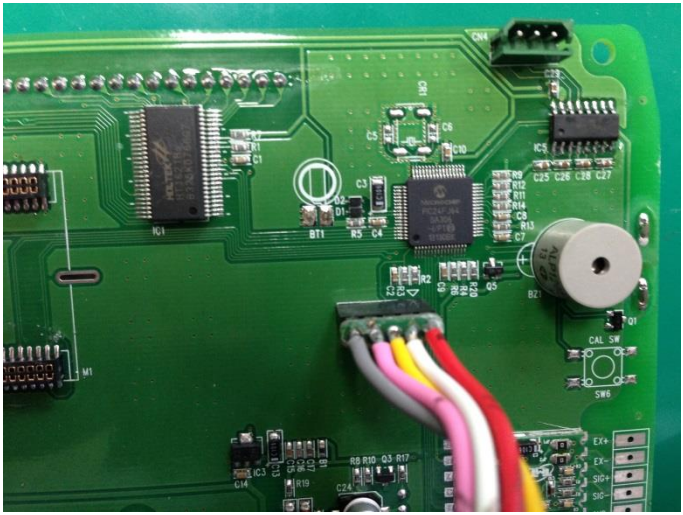


No	NAME	SPEC				Q'TY
		1ton	3ton	5ton	10ton	
1	Shackle	5/8	7/8		1,1/4	1
2	Hook ass'y		3T	5T	10T	1
3	bolt	M5 x 20				4
4	Spec plate	95 x 40				1
5	bolt	M6 x30				4
6	Rivet	BLIND 2.5 x 6				2
7	gasket	200x120x3.5				1
8	Battery-cover assy	TCBL				1
9	LC CAP	66x55x9 1T	66x55x9 3T	66x55x9 5T	120x98x6 10T	1
10	Keypad	169x29(Selection for LCD type or FND type)				1
11	TCB body	215x220x135(5T)			10T	1
13	Front panel	201x121x20				1
14	PCB ass'y	LCD type or FND type				1
15	Screw	Flat head M4x16				10
16	Code-stopper	PG7				2
17	LC cover	1T	3T	5T	10T	1
19	Loadcell	CSS3-1T	CSS3-3T	CSS3-5T	CSS3-10T	1
20	LC BRK	1T	3T		10T	1
22	Wrench Bolt	Round Head M10 x 25				2
23	BATTERY PACK	TLP-100(LCD type) or TLP-200(FND type)				1
24	BATTERY COVER	LCD type or FND type				2
25	Power-cable	Ø2.5x400				1
26	Remocon	IR-100				10
27	Adaptor	LCD type : 5V,1A , Ø3.5 or FND type : 12V,1A , Ø3.5				1

4. Firmware Update

1. Install the ‘MPLABX’
2. Run ‘MPLAB X IDE’
3. Connect the PICkit3 to PC
4. Connect as shown in the picture below.

   Aligned the RED wire and arrow mark of PCB, and then combines them.



5. Select the HEX file (File – Import – Hex/ELF… (Prebuilt) File)

   SEE ATTACHED VIDEO

   1) Prebuilt Filename: Bring up the HEX file
   2) Family: 16-bit MCUs (PIC24)
   3) Device: PIC24FJ64GA306
   4) Supported Debug Header: None
   5) Hardware Tool: PICkit3
   6) After the above setting, click NEXT ☞ NEXT ☞ Finish.

6. Set the Project Properties (File – Project Properties) *SEE ATTACHED VIDEO*
   1) Click PICkit3 in Categories
   2) Option categories: Memories to Program
   3) Preserve Program Memory: Select
   4) Preserve Program Memory Start (hex): 0x0800
   5) Preserve Program Memory End (hex): 0x1FFF
   6) After the above setting, click Apply.
   7) Option categories: Power
   8) Power target circuit from PICkit3: Select
   9) After the above setting, click Apply ☞ OK.

7. Upgrade firmware *SEE ATTACHED VIDEO*
   1) Click the Make and Program Device icon.
   2) Confirm the complete message.