MY-TR5
Standard Operating Procedure Document

Model : MY-TR5

ANLIDAR INDUSTRIAL CO., LTD.

http://www.anlidar.com

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1. Specification

Model	MY-TR5
Input Voltage	AC 100 ~ 240Vac
Input Frequency	50 / 60Hz
Input Current	6.3A
Output Voltage	DC 40V
Output Current	Max 9A
Output Power	360W
Duty Cycle	1s ON / 3s OFF
External Dimensions	185x320x209 mm
Weight	5.55Kg

Applicable Screwdriver Model							
Screwdriver Model	Speed (r.p.m)	Screwdriver Model	Speed (r.p.m)	Screwdriver Model	Speed (r.p.m)	Screwdriver Model	Speed (r.p.m)
MY2-TR0235L	1000	MYR-TR0206L MYR-TR0206P	1200	MYLR-TR0205L	1200	MYT-TR0320L	1200
MY2-TR0507L	1000	MYR-TR0309L MYR-TR0309P	900	MYLR-TR0375L	900	MYT-TR0830L	1200
MY2-TR0110L MY2-TR0210P	1000	MYR-TR0412L MYR-TR0412P	600	MYLR-TR0610L	600	MYT-TR0825LF	2000
MY5-TR0212L MY5-TR0212P	1000	MYR-TR0618L MYR-TR0618P	370	MYLR-TR0815L	370	MYT-TR0205L MYT-TR0205L	700
MY5-TR0212LF MY5-TR0212PF	2000	MYR-TR0412LF MYR-TR0412PF	880	MYLR-TR0610LF	880	MYT-TR0206L	1000
MY5-TR0317LF MY5-TR0317PF	2000	MYR-TR0618LF MYR-TR0618PF	600	MYLR-TR0815LF	600	MYT-TR0309L	800
MY5-TR0319L MY5-TR0319P	1000	MYR-TR0825L MYR-TR0825P	370	MYLR-TR1222L	370	MYT-TR0412L	550
MY7-TR0103L MY7-TR0103P	1000	MYR-TR0825LF MYR-TR0825PF	550			MYT-TR0618L	350
MY8-TR0205L MY8-TR0205P	1000	MYR-TR1235L MYR-TR1235P	350				
MY9-TR0206L MY9-TR0206P	1000	MYR-TR2050L MYR-TR2050P	230				
MY9-TR0309L MY9-TR0309P	1000						
MY9-TR0612L MY9-TR0612P	880						

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## 2. Appearance Function

2.1 Panel

|	
1. Tool signal indicator	9. **Start** signal indicator
2. **OK** signal indicator	10. **Reverse** signal indicator
3. NG signal indicator	11. **Disable** signal indicator
4. **OKALL** signal indicator	12. **16X4 LCM** display setup function
5. Four-digit seven-segment display of torque value	13. **Restart** button
6. Up, Down, Left, Right Buttons	14. **Enter** button (select/confirm)
7. **ESC** button (return/exit)	15. Power switch **ON/OFF**
8. Key switch	

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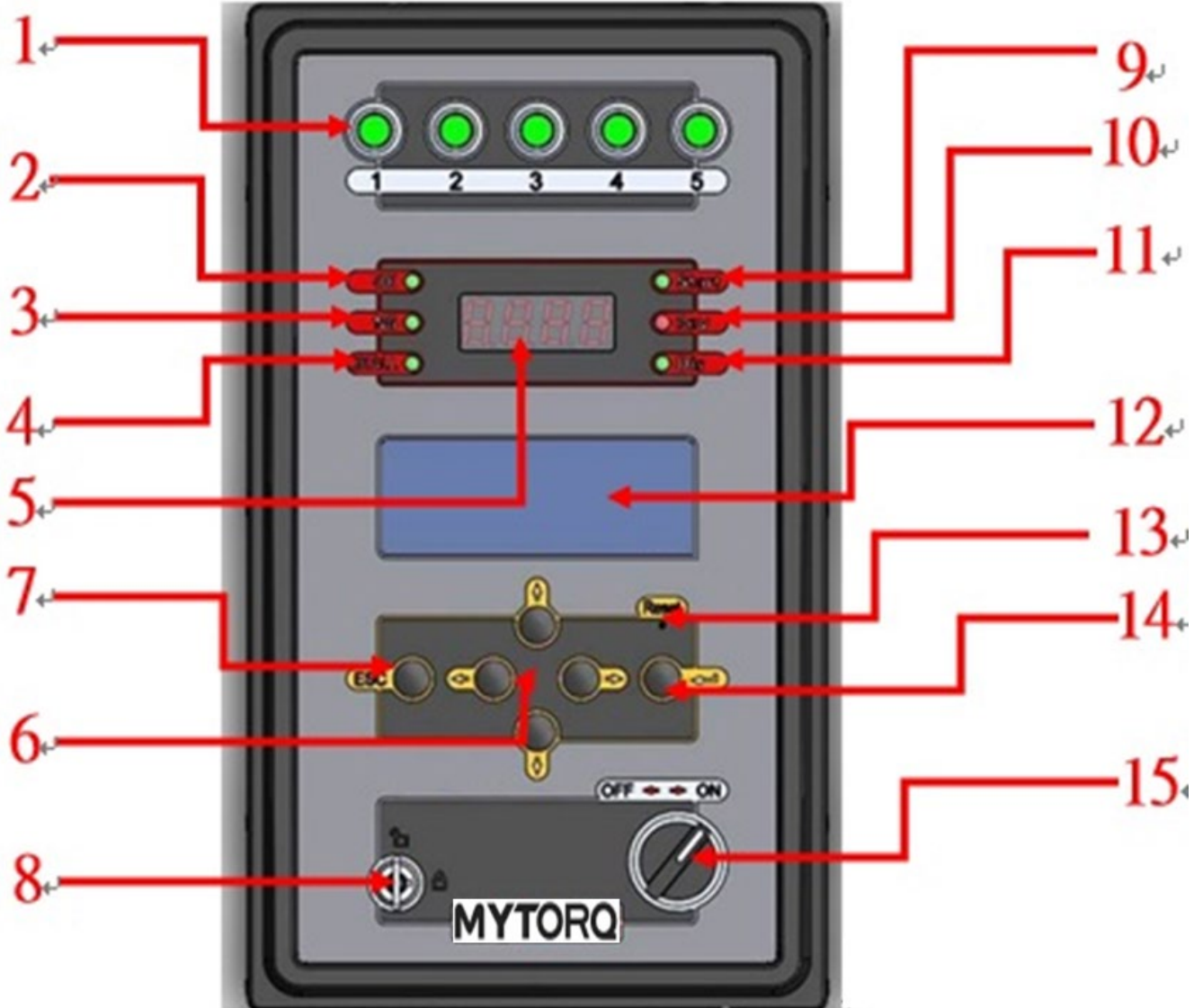
2.2 Bottom

1. Tool connection base, total of 5	7. Wired communication port
2. External wireless module communication port	8. Communication protocol output port
3. BarCode Gun USB type-A port	9. Output driver signal port
4. Micro SD card port (for data storage)	10. Input control driver signal port
5. Power cord socket	11. Output driver status signal port
6. Update software fixture port	

At present, 2 (external wireless module) + 8 (communication protocol output)/7 (built-in wired module) + 8 (communication protocol output) are combined, while other combinations may cause abnormal data transmission.

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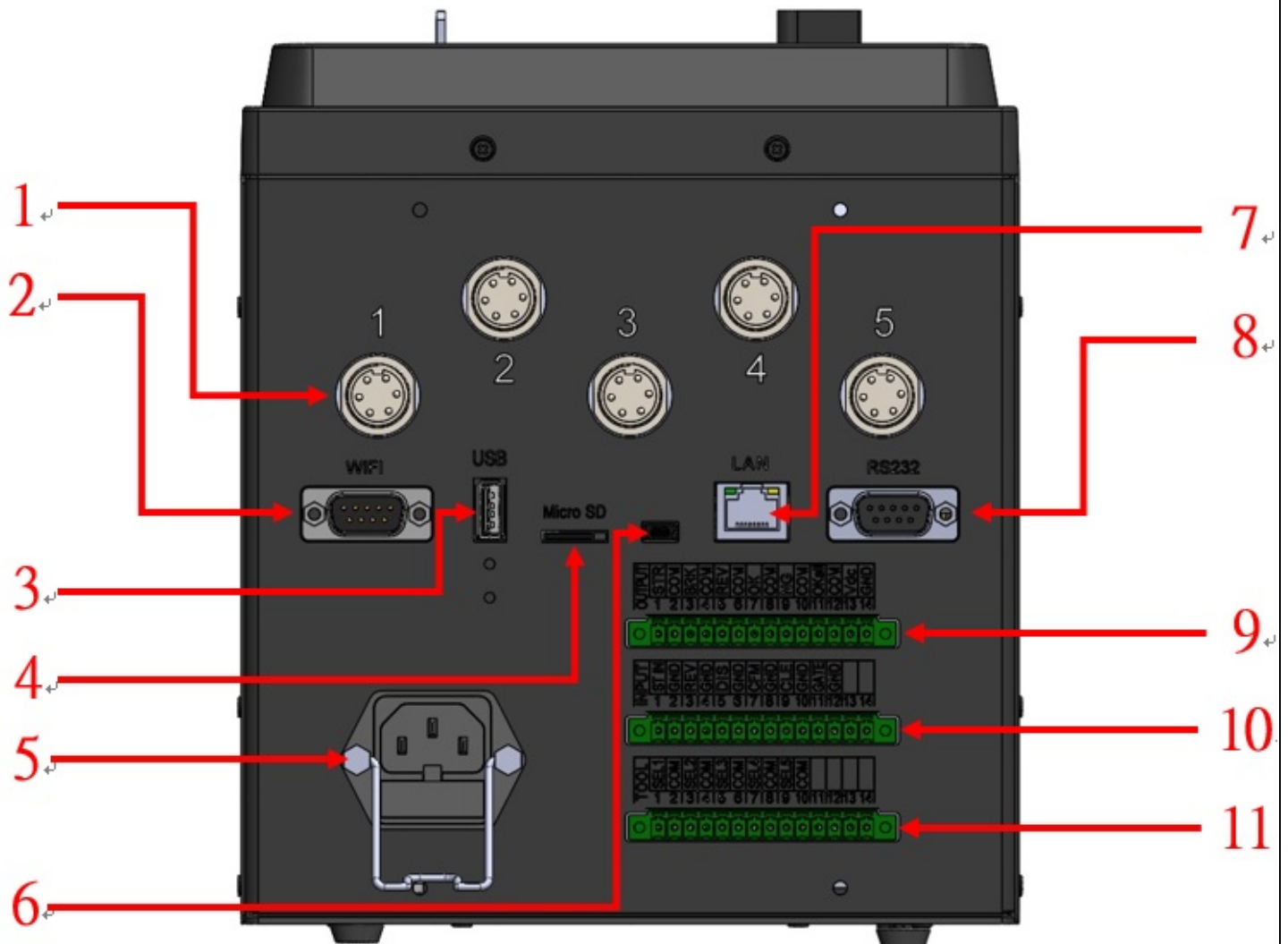
2.3 Above

1. Ground Terminal Block (FG)

2. DC Fuse Holder (includes 10A/250 fuses)
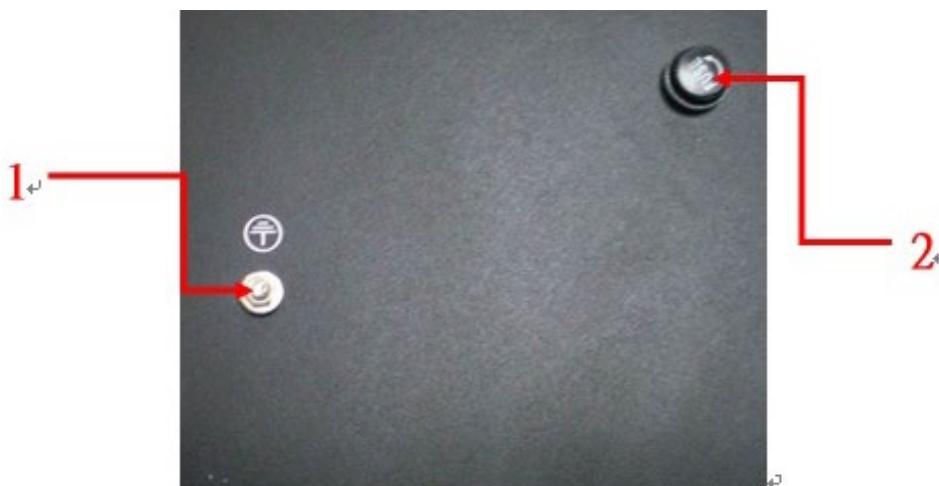
2.4 Description of LCM Display

1. Display the number of Sequence
2. Display the number of Job
3. Display the number of Unit
4. Display the number of tightening Screw
5. Display the system status, such as OK, OK all, ESD, etc.

6. Display the number of Program
7. Display the Time of tightening
8. Display the Thread of tightening
9. Display the Torque of tightening
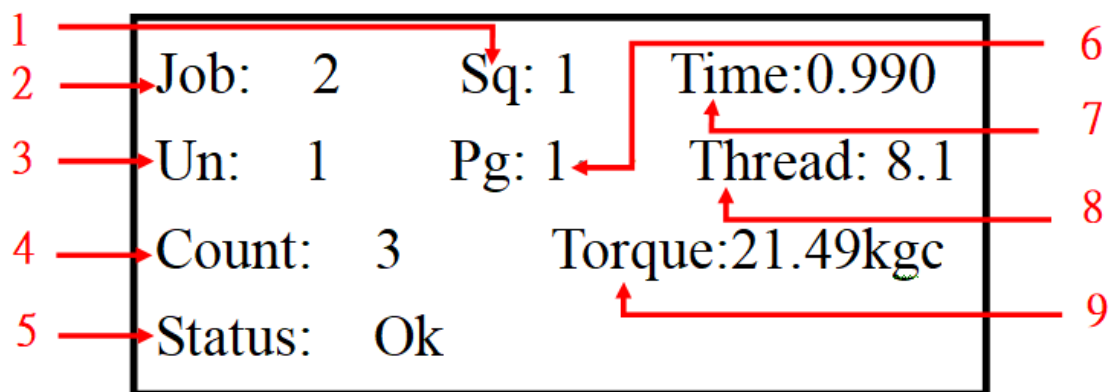
2.5 Hotkey Function

1. **Down key**: Press and hold the "**Down**" key for three seconds. When you hear the buzzer "**Beep**" sound, you are back to previous process.

2. **Up key**: Press the "Up & Down" keys together and then release the keys, to view the setting status of the tool.

3. **Left key**: (1) Clear the current screw count and back to the setting parameters.

    (2) Press and hold the key for three seconds. When you hear the buzzer "**Beep**" sound, you are back to previous process.

4. **Right key**: Press and hold the key for three seconds. When you hear the buzzer "**Beep**" sound, you are going to the next process.
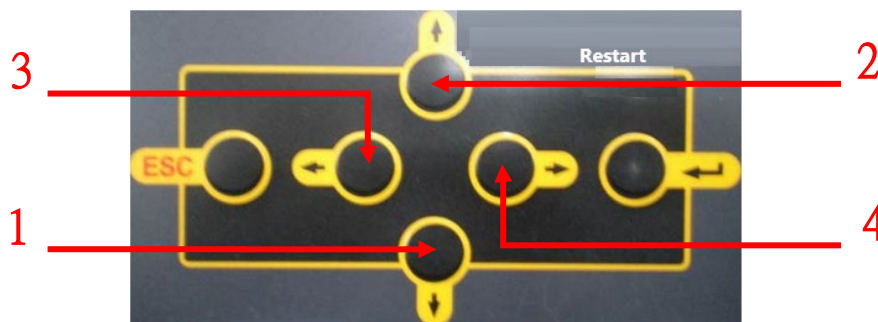
3. Setup Function

3.1 Up/Down/Left/Right/ESC/Enter keys

To select different functions by the up and down keys
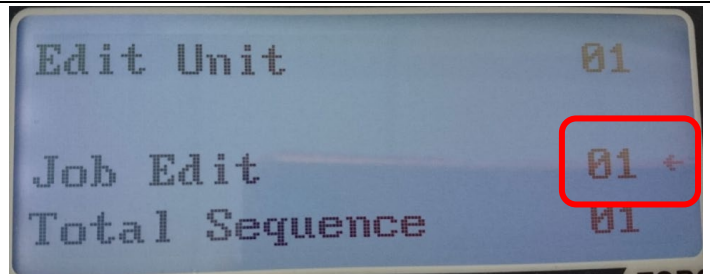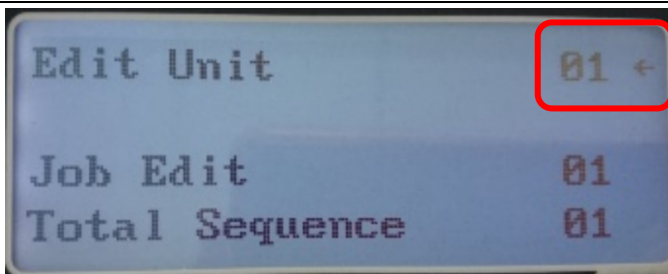
Using the "Edit Unit" function as an example, use the up and down keys to move the indicator to this option
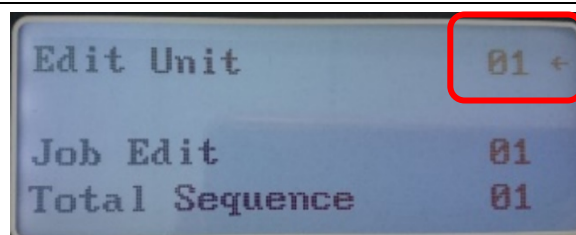
1. Press "Enter key" to select, then you will see beside number 1 there are flashing up arrow and down arrow; indicating the number is selected.
2. Use **up and down arrows** to increase or decrease the number. The figure shows increasing number from "1" to "3".
3. Use **left and right keys** to switch between left numbers and right numbers. The figure shows switching from "3" to "0".
4. Use **up and down arrows** to increase or decrease the number. The figure shows increasing number from "0" to "2".

5. Press "Enter key" to complete setup, as shown in the figure.

6. As shown in the figure that setup is not completed, press 'ESC key".

7. Return to previous page.

8. Or press it several times to return directly to the work page.
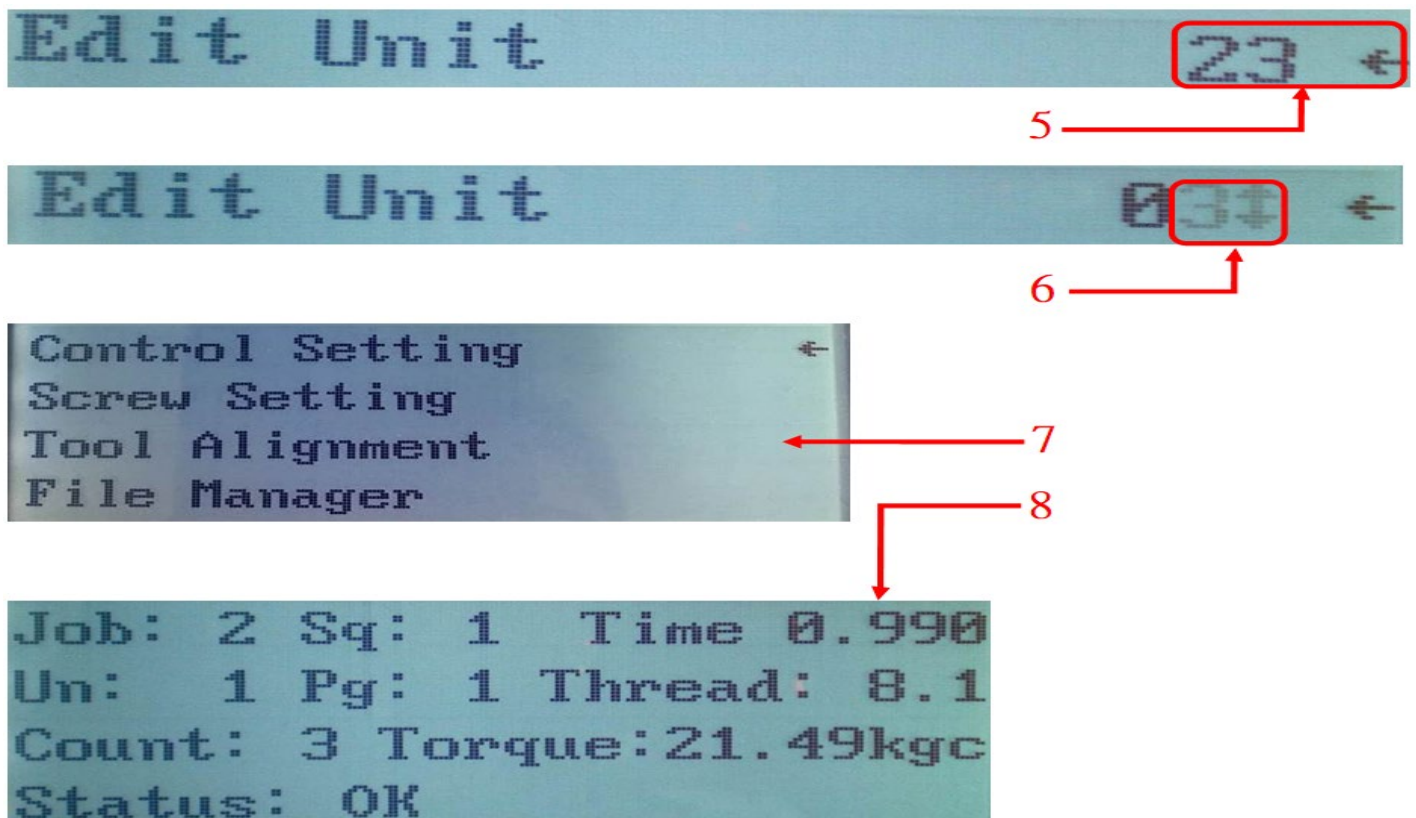
3.2 Enter the Setup Function Page

1. Press and hold the "**ESC**" key for four seconds. When you hear the buzzer "**Beep**" sound, you are on the verification password page. If there is no action for a long time, it will return to the status page.

2. Enter the password as shown in the figure. Press "**Enter**" to go to the next page.

3. According to the figures: **Control Setting, Screw Setting, Tool Alignment & File Manager** etc.; return to the previous page or leave, press "**ESC**" to return to the status page, or select any item and then press "**Enter**" button to go to the next page.
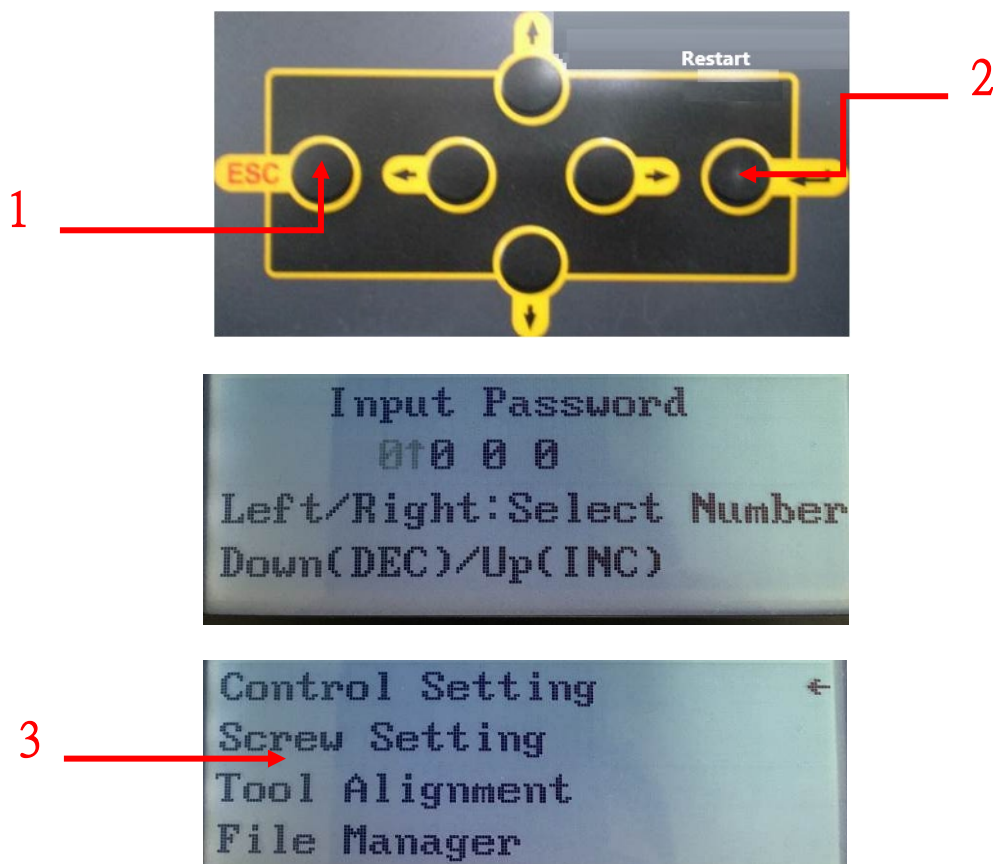
4. Control Setting

Name	Function Explanation	Set Value Options	Default Setting
Operation Mode	STD: Stand-alone mode ADV: KL-AMS Network system (wireless/wired) connection mode	STD/ADV	**STD**
Device ID	Set the device number	1~99	01
Edit Unit	**Unit = Program + Tool** Press "Enter" key and then set "Program" and "Tool"	1~99(Unit) 1~99(Pro) 1~5(Tool)	01 01 01
Job Edit / Total Sequence	Set the "**Job**" for the Sequence first, and then the quantity of "**Total Sequence**" for each job	1~20(Job) 1~20(Seq)	01 01
SEQ. Edit	Set the "Job" for the Sequence first and then the quantity of "**Unit**" and "**OF. (offset)**" for each "**S**"	1~20(Job) 1~20(Seq) 1~99(Unit) +99.99~ –99.99 (offset)	01 01 01 +00.00
Call Job	Select the program of job to start locking	0~20 (Job)	00
Factory Default	Restore to factory status and clear all memory data	Y/N	N
Torque Unit	Set torque display unit	Kgf.cm N.m Kgf.m Lbf.in	Kgf.cm
Brake Signal	After jump off, the duration of brake signal Keep: Continue to next startup and then disappear Release: Disappear as soon as hand-panel is released	Keep/Release	Keep
Barcode Enable	Switch "Job" with the barcode stored in the controller OFF : Turn off barcode switching ON : Turn on barcode switching	OFF/ON	OFF
Save/Scan Job Barcode	Select the work program, switch the bar code used by the work program, each group of bar codes cannot exceed 20 bytes.	1~20	01
Barcode Setting	First set the "Job" From: Set the bar code to judge from the first few characters. Count: There are a few judgment characters from the number of characters to be judged.	NA	NA
Change Password	Set password lock	0000~9999	0000

Sequence Type	1. "OKALL signal" output mode when the "Sequence Type" is "Single" or "Multiple".
	 2. Turn OFF/ON Sequence Loop Function.
	 OFF: (1)Sequence process controlled by "DAS" or "AMS" system.
	       (2) Turn OFF Sequence Loop Function.
	
	 Single :
	     (1) "OKALL signal" output after finished each "Sequence".
	     (2) Turn ON Sequence Loop Function.
	 Multiple :
	     (1) "OKALL signal" output after finished the "Job".
	     (2) Turn ON Sequence Loop Function
	 NOTE:
	 In "Single" or "Multiple" mode, "ASM" system cannot switch the programs and tools execution order externally
		OFF
		 Single
		 Multi
			OFF

Product Serial Number	Display controller's serial number	NA	controller's serial number
Auto Learning	Auto Learning: To enable the automatic learning function, you need to set "**P**" and "**T**" first. After the auto-learning is completed (there is a braking action), you will know which program and which tool the data to store. The screen will display three kinds of data for tools, as "**Time**", "**Torque"** & "**Thread"** (The three data cannot be 0, to save the parameters after automatic learning)	1~99(Pro) 1~5(Tool)	O1 NA
Gate Mode	Once: One-time artifacts are in place Twice: Two-time artifacts are in place None: Do not start this mode	Once/Twice/None	None
Reverse Mode	Set reverse countdown function Once: Reverse countdown only once Each: Count down each reverse rotation	Once/Each	Once
Batch Mode	Set counter function DEC: countdown; INC: count up	DEC/INC	DEC
Device Time	Set controller time Year/month/day/hour/minute/second	NA	NA
Network Mode	Select data output by WLAN 、 LAN or RS-232	WLAN / LAN / RS-232	RS-232

Thread Finding Mode	ON: Turn on the function, No "NG" is displayed if the tool doesn't shut off and the running time does not exceed "High Time" and the number of turns does not exceed "High Thread" OFF: Turn off the function, "NG" is displayed when a user releases the Lever / Push-start trigger before the tool shutting off NOTE: "Pre Tighten Time" is not applicable to this setting.	ON/OFF	ON
Language Select	Select language interface	Chinese/English	English
Memory Screw Count	The working picture state is retained, and the number of screws locked to zero after the controller is restarted due to power jump or the process of the workpiece is executed from the beginning.	OFF/ON	OFF
Lock Tool	This function allows the starter serial number to lock a set of tool port channels. Any change of the driver or installation on a tool port that is not locked will cause the controller to display "ESD" and trigger the buzzer. Y: lock screwdriver N: Turn off the lock function	N/Y	N
Firmware Version	Display controller firmware version	NA	NA

5. Screw Setting

Name	Function Explanation	Set Value Options	Default Setting
Program	Select program set	1~99	01
Batch Count	Select count value	1~99	05
High Time	The maximum stop time of the screwdriver (The time set at "High Time" after the start of the screwdriver, "NG" will be displayed on the status bar, it can detect stripped or oversize screw).	0.000~9.999	9.999
Low Time	The minimum stop time of the screwdriver (The time set at "Low Time" after the start of the screwdriver, "NG" will be displayed on the status bar, it can check whether the screw is properly fastened or not).	0.000~9.999	0.000
Height Torque	Screwdriver maximum torque range	000.00~550.00	550.00
Low Torque	Screwdriver minimum torque range	000.00~550.00	000.00
High Thread	Screwdriver maximum count thread, but not applicable to tapping screws	0.000~9.999	9.999
Low Thread	Screwdriver minimum count thread, but not applicable to tapping screws	0.000~9.999	0.000

Slow Start Time	Set up the slow start time of the screwdriver	0.000~9.999	0.000
Slow Start Speed	Set up the slow start speed of the screwdriver. L0 (100%), L1~L9 (10%~90%)	L0~ L9	L0
Run Reverse Time	Set up the screwdriver run reverse time	0.000~9.999	0.000
Rev Suspend Time	Set up the screwdriver reverse suspend time	0.001~9.999	0.100
Auto Reverse Time	Set up auto reverse time after screwdriver shut off.	0.000~9.999	0.000
Pre Tighten Time	Set up the screwdriver start automatic pre tighten time	0.000~9.999	0.000
Reconfirm Time	The screwdriver shut off on site does not count if it is within the set time.	0.000~9.999	0.000
Count Thread	After the fastening is completed, confirm the count thread again.	00~99	10
OKALL Alarm Time	Set OKALL signal output time	0.000~9.999	1.000
OK One Time	Set OK One signal output time	0.000~9.999	0.000
NG Stop	Sets the selected handling method when screwdriver error ON: When the error signal "NS" is displayed, immediately stop screwdriver action; the user must press "ENTER" button to cancel forward rotation (if it is the I/O part, input "CFM+GND" for external confirmation, but the screwdriver can be reversed) OFF: When the error signal "NS" is displayed, the screwdriver will not stop; it will not affect the next start, but only sends out alarm	ON/OFF	OFF
OKALL Stop	The handling method selected after setting up counter value is completed. ON: When the operation is completed, immediately stop screwdriver action; the user presses the "ENTER" button to cancel forward rotation (if it is the I/O part, input "CFM+GND" for external confirmation) OFF: When the action is completed, the screwdriver will not stop; it will not affect the next start.	ON/OFF	OFF

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5.1 Action Restriction

Function Name \ Mode	1	2	3	4
RunReverseTime	V	X	X	X
AutoReverseTime	X	V	X	X
PreTightentTime	X	X	V	X
Reconfirm Time	X	X	X	V

Note: V- can be set, X-OFF

Turn on the "NG Stop" function, when NG occurred in "RunReverse/AutoReverse/PreTightent" time, the screwdriver can still be used without being locked.

6. Description of Displayed Status Code

Code	Description	Release Locking Method
C1	One-time external GATE signal confirmation	External GATE Signal Trigger One-time
C2	Two-time external GATE signal confirmation method	External GATE Signal Trigger Two-time
C3	When "OKALL Stop" function is enabled, LCM screen will display "C3" during OKALL.	Panel Enter Key/external CONFIRM Key
C4	When "OKALL Stop" & "Gate Mode-Once" function are enabled; LCM screen will display "C4" during OKALL.	External Sensor Switch One-time + Panel Enter/external CONFIRM Key
C5	When "OKALL Stop" & "Gate Mode-Once" function are enabled; LCM screen will display "C5" during OKALL.	External Sensor Switch Two-time + Panel Enter/external CONFIRM Key
NST NSQ NSC	NST: Stop time after screwdriver start is less than LT/greater than HT NSQ: Stop torque after screwdriver start is less than LQ/greater than HQ NSC: Stop count thread after screwdriver start is less than LC/greater than HC	Panel Enter Key/external CONFIRM Key
OK	The LCM screen will display "OK" each time the fastening is in position.	NA
OKALL	The LCM screen will display "OK ALL" each time the fastening for the entire batch is in position.	NA
NGT NGQ NGC	NGT: Stop time after screwdriver start is less than LT/greater than HT NGQ: Stop torque after screwdriver start is less than LQ/greater than HQ NGC: Stop count thread after screwdriver start is less than LC/greater than HC	NA

E3	Power-off Protection: When the voltage of the electric screw driver drops instantly, the action of the electric screw driver is stopped, and the LCM displays this symbol, representing that the screw driver is currently under low-voltage protection.	NA
E4	Temperature Protection: When the internal temperature of the electric screw driver is too high, the action of the electric screw driver is stopped, and the LCM displays this symbol, representing that the screw driver is currently under over-temperature protection.	NA
E5	Stall Protection: When the startup of the electric screw driver motor is abnormal, the action of the electric screw driver is stopped, and the LCM displays this symbol, representing that the screw driver is currently under motor startup abnormality protection.	NA
E7	Directional Push Board Fault: When the electric screw driver motor is switched on, as the direction push board is changed, the motor of the screw driver then stops action immediately, and LCM displays this symbol.	NA
E8	Abnormal Brake Signal: When the electric screw driver brake signal detection is abnormal, the action of the electric screw driver is stopped, and the LCM displays this symbol.	NA
E9	Eeprom Fault: When electric screwdriver Eeprom signal detection is faulty, it will stop screwdriver motion and show the symbol on LCM.	NA
Er	GATE Operation Fault: When there is fault with turning on GATE function operation, buzzer will sound intermittently and LCM will show this symbol.	NA
ES	Screwdriver End Communication is Abnormal: When the power screw driver communication signal detection is abnormal, the action of the electric screw driver is stopped, and the LED displays this symbol.	NA
ESC	Screwdriver End Calibration is Abnormal: When the electric screw driver is not calibrated, the LCM displays this symbol.	NA
ESD	Screwdriver End Anti-Interference Cable is Abnormal: When the device is being used and the screwdriver is swapped, replaced, or the interference preventive line is abnormal, the main screen will show "ESD", indicating that the current wiring may be abnormal, and immediate inspection and repair is recommended. After the inspection and repair is completed, press the "ENTER" button to dismiss it.	Panel Enter Key/external CONFIRM Key
EPC	"ADV Mode" at "Operation Mode"	Set up "STD Mode"

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7. Tool Alignment

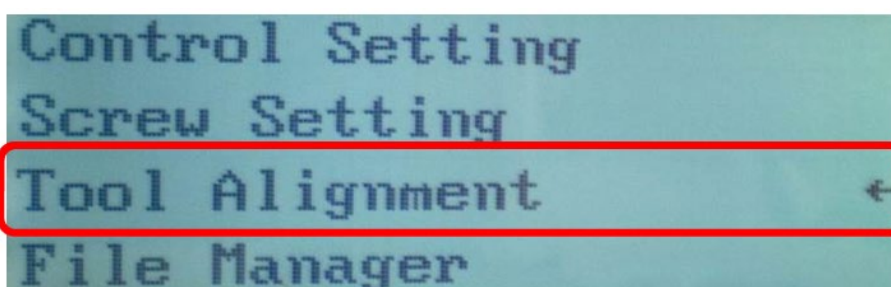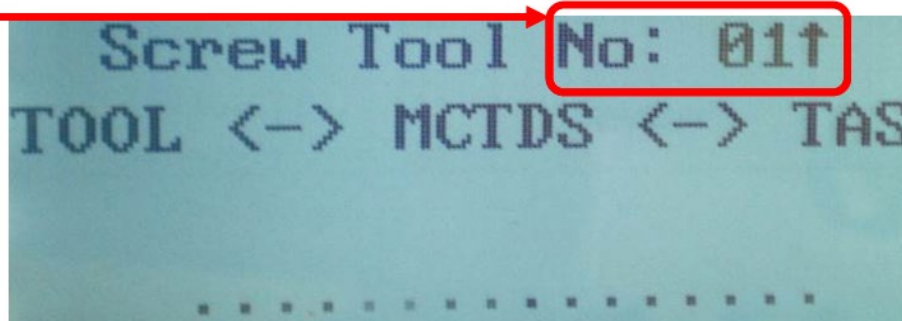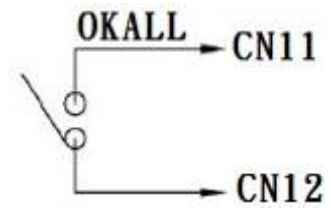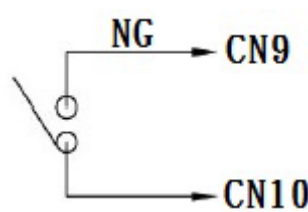| Operating Environment Construction Diagram |
|---|
| |
| **Tool & Torque meter**　　　　　　　**MY-TR5**　　　　　**Computer - (TAS Software)** |
| 1. Select "Tool Alignment". |
| 2. Select the tool to be calibrated, press "Enter key" to confirm, MY-TR5 setup is completed. |
| Please refer to "**TAS Operation Manual**" for more complete illustration. |
| |

8. File Manager

For internal test only, there is no authorized external access yet.

9. External Output Control Function Description

Connector No.	Definition	Function Description
CN 1	START	RUN FWD:
CN 2	COM	CN1 and 2 conducting when starting the screwdriver CN1+CN2 conducting when short-circuit CN1+CN2 breaking when open-circuit
CN 3	BRAKE	Brake:
CN 4	COM	CN3 and 4 conducting when screwdriver brake starts CN3+CN4 conducting when short circuit CN3+CN4 breaking when open-circuit
CN 5	REVERSE	RUN BWD:
CN 6	COM	CN5 and 6 conducting when screwdriver reversed CN5+CN6 conducting when short circuit CN5+CN6 breaking when open-circuit
CN 7	OK	OK:
CN 8	COM	CN7 and 8 conducting when one screw is locked CN7+CN8 conducting when short circuit CN7+CN8 breaking when open-circuit
CN 9	NG	NOK:
CN 10	COM	CN9 and 10 conducting when there is an operation error CN9+CN10 conducting when short circuit CN9+CN10 breaking when open-circuit
CN 11	OKALL	OK BATCH:
CN 12	COM	CN11+CN12 conducting when complete the set number of screwdriver CN11+CN12 conducting when short circuit CN11+CN12 breaking when open circuit
CN 13	Vdc	Output Power 24Vdc/50mA, 12Vdc/100mA
CN 14	GND	Output power GND

START → CN1 / CN2
BRAKE → CN3 / CN4
REVERSE → CN5 / CN6
OK → CN7 / CN8
NG → CN9 / CN10
OKALL → CN11 / CN12

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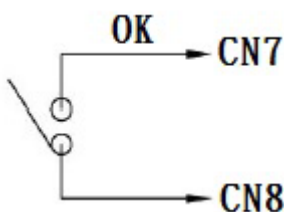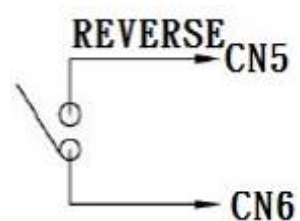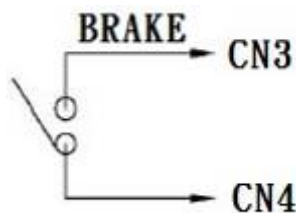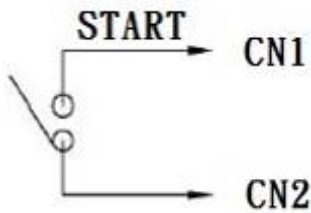
10. External Input Control Function Description

Connector No.	Definition	Function Description
CN 1	External start signal input START_IN	1. The screwdriver starts when the CN1+CN2 is at short-circuit (CLOSE)
CN 2	GND	2. The screwdriver stops when CN1+CN2 is at open-circuit (OPEN)
CN 3	External Reverse Signal Input REVERSE	1. The external reversal signal CN3+CN4 is short-circuited first (CLOSE). When the activation signal CN1+CN2 is short-circuited (CLOSE), the screwdriver starts reverse rotation.
CN 4	GND	2. The external reversal signal CN3+CN4 is open-circuited first (OPEN). When the signal CN1+CN2 is short-circuited (CLOSE), the screwdriver starts forward rotation.
CN 5	Disable externally signal input DISABLE	1. Screwdriver cannot start when CN5+CN6 is short-circuited (CLOSE)
CN 6	GND	2. The screwdriver can start when CN5+CN6 is open-circuited (OPEN)
CN 7	External confirmation button enter CONFIRM	1. When the system requires confirmation, it can be replaced by this CN7+CN8 short circuit (CLOSE)
CN 8	GND	2. NG signal will be cleared after CONFIRM is run
CN 9	External confirmation button enter CLEARED	When the counter value is to be cleared, the function can be enabled by this CN9+CN10 short-circuit (CLOSE).
CN 10	GND	
CN 11	External sensor switch GATE	1. Enter a confirmation signal for the machine to determine the locked object as a valid value
CN 12	GND	2. Inductive switch: external switch in operation, connect one or two switches 3. For any switch connection, CN14 must be connected
CN 13	External confirmation button enter RESET JOB	When the Job is to be reseted, the function can be enabled by this CN13+CN14 short-circuit (CLOSE).
CN 14	GND	
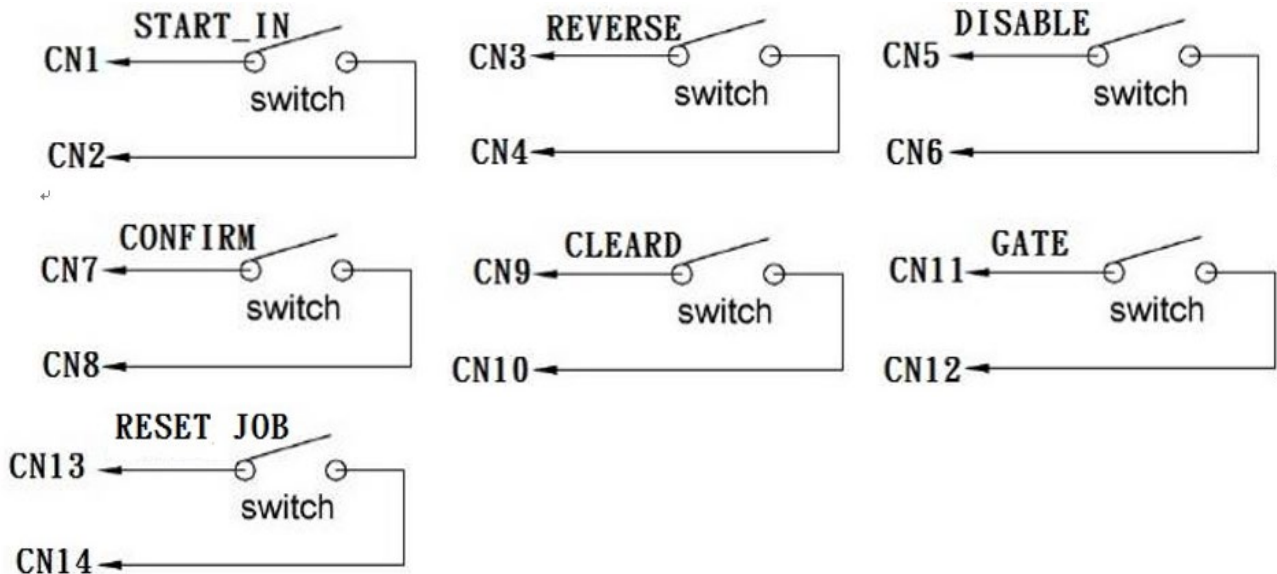
11. TOOL External Output Function Description

Connector No.	Definition	Function Description
CN 1	SEL1	TOOL lamp signal is enabled by CN1+CN2 short-circuit (CLOSE)
CN 2	COM	
CN 3	SEL2	TOOL lamp signal is enabled by CN3+CN4 short-circuit (CLOSE)
CN 4	COM	
CN 5	SEL3	TOOL lamp signal is enabled by CN5+CN6 short-circuit (CLOSE)
CN 6	COM	
CN 7	SEL4	TOOL lamp signal is enabled by CN7+CN8 short-circuit (CLOSE)
CN 8	COM	
CN 9	SEL5	TOOL lamp signal is enabled by CN9+CN10 short-circuit (CLOSE)
CN10	COM	

MY-TR V2.0/MY-TR5 Data transmission description and flow control suggestion
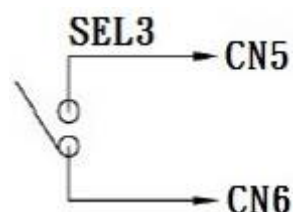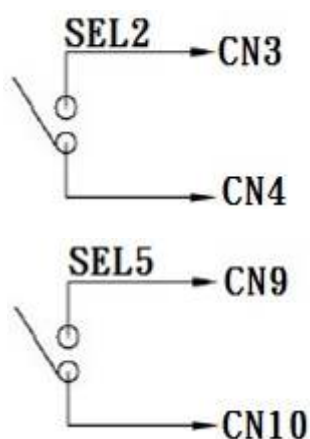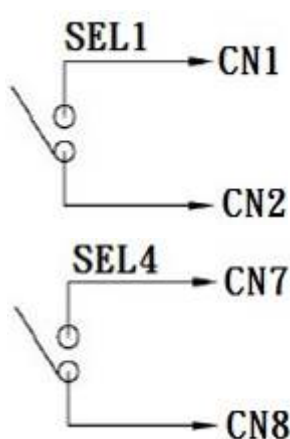
1. Controller power on and time synchronization

   After controller is power on, it will send data {REQ0...} each second to inform
   external device such as computer、PLC、AMS. It needs to reply {CMD0,....} that
   controller function normally and controller time.
   If the controller does not receive {CMD100,....},{REQ100,...}will be sent again after 10 seconds.

2. When controller received barcode information, it will send scanned data and data format as {REQ1....} to
   external device for control judgement or record saving. External device needs to reply {CMD0....}

3. After controller is power on and screwdriver shut off, brake signal format as {DATA0, ...} will be send.
   Every shut off will cause column 6 (no. of total tightening on controller) to increase by 1. External device
   needs to reply {CMD0,....}, if not, CMD0 will keep on sending DATA0(only update date time) and column
   6 (no. of total tightening on controller) value will remain unchanged.

4. Shut off data will be sent after each shut off. Use the column 6 (no. of tightening on controller) to judge if
   there it is a new shut off data or not.

5.When controller receive feedback and format as {CMD0,....} from external device, controller will resume to
automatically send {REQ0,...} and be able to configure controller time.

6. Recommended software control flow as below:
   P.S: The content of [CMD0] in flow as the below:

{CMD0,0,0,0,0,0,0,YEAR,MONTH,DAY,HOUR,MINUTE,SECOND,0000,0000}

   str8 0001~9999 YEAR
   str9 01~12 MONTH
   str10 01~31 DAY
   str11 00~23 HOUR
   str12 00~59 MINUTE
   str13 00~59 SECOND
   str14 0000-9999 Check Sum(year, month, day, hour, mimute, and second plus sum)
   str15 0000-9999 Key Code(Check Sum + 5438)

MYTORQ

Cyclic communication

Controller write to external device

REQ0(send/sec.)

Controller respond time

CMD0(send/sec.)

Barcode input to controller

REQ1

Controller feedback time

CMD0

Data write in to controller

DATA0(check column 6 if it's new data)

Controller feedback time

CMD0

Controller
MY-TR/MY-TR5
(Master)

External device
PC/AMS/PLC
(Slave)
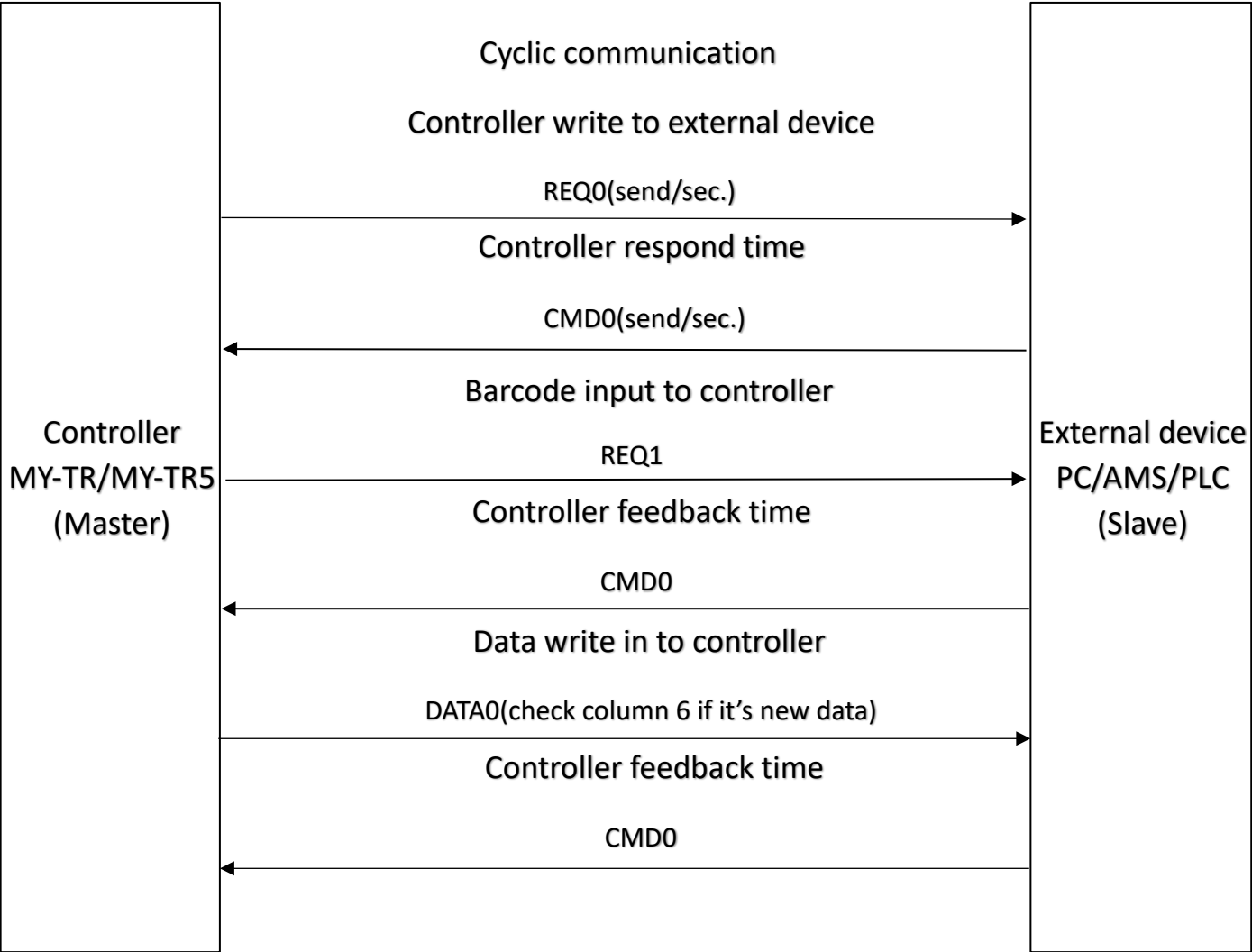
(Ver1.0_20210302_01)

COMPORT Setting:Baud rate : 115200/9600(MY-TR 1.7X), Data bit : 8 , Stop bit : 1, Parity bit :NON
Serial communication Mode -ASCII (American Standard Code for Information Interchange)
There are three basic data output formats send from device (MY-TR/MY-TR5) to external system (DAS/AMS/Other System) via the buildin RS232 port on the device :

1.Command {REQ0} : Send from Device to Host (Send device status to host per second after device startup ready)
2.Command {REQ1} : Send from Device to Host (Send barcode data to host immediately after barcode scaned a data)
3.Command {DATA0} : Send from Device to Host (Send last shutoff data to host immediately and repeat per second after screwdriver shutoff)
4.Command {CMD0} : Send from Host to Device (Host respond system time to device)
  ps : 1.Device will change output data from {DATA0} to {REQ0} after read {CMD} from external system
     2.The character position in the string does not contain a comma

1. {REQ0} Data format/example	{REQ0,01,00,001,5555566666_____,01_____,1,1,1,01,01,1,0000000001,2.123,2.15,1,0,0,001/005,2018,08,02,13,23,02,2066,7504}					
Field	**Parameter**	**Value**	**Data Type**	**String Length**	**Position**	**Description**
1	Header+CMD	{REQ0	String	5 Byte	1-5	Header+Command code
2	Sequence ID	01 ~ 20	String	2 Byte	7-8	MY-TR = 1 - 8, MY-TR5 = 1 - 20
3	Job ID	00~ 20	String	2 Byte	10-11	MY-TR = 1, MY-TR5 = 1-20,Default=0
4	Device ID	001 ~ 255	String	3 Byte	13-15	Device index number arranged in the same assembly line (or workstation) (CTDS:1-255 , MCTDS5:1-99)
5	Tool SN	20 Byte	String	20 Byte	17-36	Screwdriver serial no. Less than 20 Bytes ,fill the underline"_".
6	Device SN	20 Byte	String	20 Byte	38-57	Device serial no. Less than 20 Bytes ,fill the underline"_".
7	Device Operation Mode	0~3	String	1 Byte	59	Mode : 0 : ADV (Connection mode), 1 : STD (Standalone Mode), 2 : ALI (Alignment mode) , 3 : SET(Setting mode)
8	Sequence Control Mode	0~1	String	1 Byte	61	0 : Sequence control mode 1 : Skip sequence mode
9	Setting Status	0~1	String	1 Byte	63	Setting status (Received command executed status) 0 : fales, 1 : success
10	Select Tool	01~09	String	2 Byte	65-66	Selected Tool (Current activated screwdriver)
11	Program Unit	01~99	String	2 Byte	68-69	Selected Unit Program
12	Device Type	0~3	String	1 Byte	71	Device type (0: 1.7x MY-TR,1: 2.0 MY-TR, 2: MY-TR5, 3: WSCBSN)
13	Tool Connect & Keylock	0000000000(10 Byte)	String	10 Byte	73-82	Screwdriver connection status and Keylock state (1: Connect, 0: Not connect) (Byte 1-9 indicate screwdriver connected or disconnected to controller from right to left order, byte 10th is keylock state)
14	Device Version	0.000~9.999	String	5 Byte	84-88	Device firmware version
15	Tool Version	0.00~9.99	String	4 Byte	90-93	Screwdriver firmware version
16	Tool Enable/Disable Status	0~1	String	1 Byte	95	Screwdriver status (0: Disable, 1: Enable)
17	Tool Stop Status	0~9,A~J	String	1 Byte	97	Tool Stop Status (0: None , 1:NS, 2:AS, 3:E3, 4:E4, 5:E5, 7:E7, 8:E8, 9:BS, A:EPC, B:ESC, C:ES, D:Er, E:C1, F:C2, G:C4, H:C5 I:ESD J:EA) EA has an abnormal communication in CTDS 1.7X version. The appearance of EA in MCTDS5 means bad RS485 communication. C3 appears for AS so it will send 2. BS only appear on the MCTDS5.
18	Device extend function	0~1	String	1 Byte	99	Device extend function code (0: None, 1:Clear Batch)
19	Screw count	000~250/001~250	String	7 Byte	101-107	Remaining screws/Total screws
20	Year	0001~9999	String	4 Byte	109-112	Year
21	Month	01~12	String	2 Byte	114-115	Month
22	Date	01~31	String	2 Byte	117-118	Date
23	Hour	00~23	String	2 Byte	120-121	Hour(24 hours)
24	Minute	00~59	String	2 Byte	123-124	Minute
25	Second	00~59	String	2 Byte	126-127	Second
26	Check Sum	0000~9999	String	4 Byte	129-132	Check Sum
27	Key Code	0000~9999}	String	5 Byte	134-138	Key Code+Tail
28						ASCII code LF
29						ASCII code CR
				{REQ0,... }Total:138 Byte,27 Field		
Remark	Item 1 to 27 are separated by "," (ASCII 0x2c)					

2. {REQ1} Barcode format/example	{REQ1,6910066016096,2018,08,02,16,33,33,2110,7548}					
Field	**Parameter**	**Value**	**Data Type**	**String Length**	**Position**	**Description**
1	Header+CMD	{REQ1	String	5 Byte	1-5	Header+Command code
2	Barcode	1~30 Byte	String	30 Byte	7-36	Barcode data
3	Year	0001~9999	String	4 Byte	38-41	Year
4	Month	01~12	String	2 Byte	43-44	Month
5	Date	01~31	String	2 Byte	46-47	Date
6	Hour	00~23	String	2 Byte	49-50	Hour(24 hours)
7	Minute	00~59	String	2 Byte	52-53	Minute
8	Second	00~59	String	2 Byte	55-56	Second
9	Check Sum	0000-9999	String	4 Byte	58-61	Check Sum
10	Key Code	0000-9999}	String	5 Byte	63-67	Key Code+Tail
11						ASCII code LF
12						ASCII code CR
				{REQ1, ... }Total: 67Byte,10 Field		
Remark	Item 1 to 10 are separated by "," (ASCII 0x2c)					

3. {DATA0} Data format/example	{DATA0,1,001,2344_____,1y_____,0000000002,01,01,0002.4800,kgf.cm,0000.2100,0002.4000,003/005,INC,OK__,1,0,0,0002.4800,00339,2019,02,22,11,51,51,2156,7594}					
Field	**Parameter**	**Value**	**Data Type**	**String Length**	**Position**	**Description**
1	Header+CMD	{DATA0	String	6 Byte	1-6	Header+Command code
2	Device Type	0~3	String	1 Byte	8	Devic type (0: 1.7x MY-TR 1: 2.0 MY-TR 2: MY-TR5 3: WSCBSN)
3	Device ID	001~255	String	3 Byte	10-12	Device index(Exclusive in the same AMS system) (CTDS:1-255 , MCTDS5:1-99)
4	Tool SN	20 Byte	String	20 Byte	14-33	Screwdriver serial no. Less than 20 Bytes ,fill the underline"_".
5	Device SN	20 Byte	String	20 Byte	35-54	Devicer serial no. Less than 20 Bytes ,fill the underline"_".
6	Device Count	0000000001~9999999999	String	10 Byte	56-65	Device accumulated shutoff count after poweron
7	Program unit	01~99	String	2 Byte	67-68	Selected Program unit
8	Select Tool	01~09	String	2 Byte	70-71	Selected Tool (Activated screwdriver)
9	Torque	0000.0000~0550.0000	String	9 Byte	73-81	Shutoff troque
10	Torque unit	kgf.cm, N.m, lbf.in, kgf.m	String	6 Byte	83-88	Troque unit Less than 6 Bytes ,fill the bottom line"_".
11	Fastening time	0000.0000~0009.9990	String	9 Byte	90-98	Fastening time(ms)
12	Fastening thread	0000.0000~0999.9000	String	9 Byte	100-108	Fastening thread
13	Screw count	000~250/001~250	String	7 Byte	110-116	Remaining screws/Total screws
14	INC/DEC	INC,DEC	String	3 Byte	118-120	Batch Mode:Increase , Decrease
15	Status	OK,NGT,NGQ,NGC,OKALL,REV	String	5 Byte	122-126	Fastening status OK:Each time when the fastening is complete. NGT: stop time is earlier than L/later than H. NGQ: stop torque is less than L/more than H. NGC: stop number of turns is less than L/more than H. OKALL:Each time when a batch is complete. REV:Reverse Less than 5 Bytes ,fill the underline"_".

		Parameter	Value	Data Type	String Length	Position	Description
	16	Device Operation Mode	0~3	String	1 Byte	128	Mode: 0 : ADV (Connection mode), 1 : STD (Standalone Mode), 2 : ALI (Alignment mode) , 3 : SET(Setting mode)
	17	Tool Stop Status	0~9,A~J	String	1 Byte	130	Tool Stop Status (0: None , 1:NS, 2:AS, 3:E3, 4:E4, 5:E5, 7:E7, 8:E8, 9:BS, A:EPC, B:ESC, C:ES, D:Er, E:C1, F:C2, G:C4, H:C5 I:ESD J:EA) EA has an abnormal communication in CTDS 1.7X version. The appearance of EA in MCTDS5 means bad RS485 communication. C3 appears for AS so it will send 2. BS only appear on the MCTDS5.
	18	Torque Filter	0~250,255	String	3 Byte	132-134	Torque filter (0:No filter,1-250 : Filter count,255:Unlimited Filter) MY-TR 2.124 and MY-TR5 2.005 version add infinite filtering and modify 20 times to 250 times
	19	Pre-filtering torque	0000.0000~0550.0000	String	9 Byte	136-144	Pre-filtering torque This field is only available for MY-TR 2.124 and MY-TR5 2.006.
	20	Current value	00000-65535	String	5 Byte	146-150	Current value This field is only available for MY-TR 2.124 and MY-TR5 2.006.
	21	Year	0001~9999	String	4 Byte	152-155	Year
	22	Month	01~12	String	2 Byte	157-158	Month
	23	Date	01~31	String	2 Byte	160-161	Date
	24	Hour	00~23	String	2 Byte	163-164	Hour(24 hours)
	25	Minute	00~59	String	2 Byte	166-167	Minute
	26	Second	00~59	String	2 Byte	169-170	Second
	27	Check Sum	0000-9999	String	4 Byte	172-175	
	28	Key Code	0000-9999}	String	5 Byte	177-181	Key Code+Tail
	29						ASCII code LF
	30						ASCII code CR
			{DATA0, ... }Total:181 Byte,28 Field				
Remark	Item 1 to 28 are separated by "," (ASCII 0x2c)						

4. {CMD0} Data format/example		{CMD0,0,0,0,0,0,0,2018,09,03,18,45,19,2112,7550}					
Field		Parameter	Value	Data Type	String Length	Position	Description
	1	Header+CMD	{CMD0	String	5 Byte	1-5	Header+Command code
	2	Device Name	0~1	String	1 Byte	7	Device Name(0: AMS, 1: DAS)
	3	unused	0	String	1 Byte	9	unused
	4	unused	0	String	1 Byte	11	unused
	5	unused	0	String	1 Byte	13	unused
	6	unused	0	String	1 Byte	15	unused
	7	unused	0	String	1 Byte	17	unused
	8	Year	0001~9999	String	4 Byte	19-22	Year
	9	Month	01~12	String	2 Byte	24-25	Month
	10	Date	01~31	String	2 Byte	27-28	Date
	11	Hour	00~23	String	2 Byte	30-31	Hour(24 hours)
	12	Minute	00~59	String	2 Byte	33-34	Minute
	13	Second	00~59	String	2 Byte	36-37	Second
	14	Check Sum	0000-9999	String	4 Byte	39-42	Check Sum
	15	Key Code	0000-9999}	String	5 Byte	44-48	Key Code+Tail
	16						ASCII code LF
	17						ASCII code CR
			{CMD0, ... }Total: 48Byte,15 Filed				
Remark	1.Item 1 to 15 are separated by "," (ASCII 0x2c) 2.Reply to CMD0 when the time is inconsistent or repeat {DATA0}						

Communication interface :	RS-232C 9 Pin Female (DCE) to PC or PLC (DTE)		
Connection RS232 :	1.Barcode scanner	Connection method:MY-TR	Connection method:MY-TR5
PORT1			
	2.WIFI module	Connection method:MY-TR	Connection method:MY-TR5
PORT2			
Remark	※When the trip information (DATA0) is continuously transmitted, it can be judged by the field six。		