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the torque tool specialists®

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E-DRIV® MD-Series DC Torque Control System
Operation Manual
(Using Dashboard)



1. GENERAL SAFETY RULES

WARNING! Read and understand all instructions. Failure to follow all instructions listed below, may result in electric shock, fire and/or serious personal injury

SAVE THIS INSTRUCTIONS

1.1 Work Area

- **Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents.
- **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Power tools create sparks which may ignite the dust or fumes.
- **Keep bystanders, children, and visitors away while operating a power tool.** Distractions can cause you to lose control.

1.2 Electrical Safety

- **Grounded tools must be plugged into an outlet properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded.** If the tools should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user.
- **Avoid body contact with grounded surface ad pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is grounded.
- **Don't expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock
- **Do not abuse the cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately.** Damaged cords increase the risk of electric shock.
- **When operating a power tool outside, use an outdoor extension cord marked W-A or W.** These cords are rated for outdoor use and reduce the risk of electric shock.

1.3 Personal Safety

- **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use tool while tired or under the influence of drugs, alcohol, or medication.** A moment of inflation while operating power tools may result in serious personal injury.
- **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts.
- **Avoid accidental starting. Be sure switch is off before plugging in.** Carrying tools with your finger on the switch or plugging in tools may result in personal injury.
- **Remove adjusting keys or switches before turning the tool on.** A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.
- **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the tool in unexpected situations.
- **Use safety equipment. Always wear eye protection.** Dust mask, non-skid safety shoes, hard hat, or hearing

protection must be used for appropriate conditions.

1.4 Tool use and Care

- **Use clamps or other practical way to secure and support the workplace to a stable platform.** Holding the work by hand or against your body is unstable and may lead to loss of control.
- **Do not force tool. Use the correct tool for your application.** The correct tool will do the job better and safer at the rate for which it is designed.
- **Do not use tool if switch does not turn it on or off.** Any tool that cannot be controlled with the switch is dangerous and must be repaired.
- **Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool.** Such preventive safety
- **Store idle tools out of reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
- **Maintain tools with care**. **Keep cutting tools sharp and clean.** Properly maintained tools, with sharp cutting edges are less likely to bind and are easier to control.
- **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tools operation. If damaged, have the tool serviced before using.** Many accidents are caused by poorly maintained tools.
- **Use only accessories that are recommended by the manufacturer for your model.** Accessories that may be suitable for one tool, may become hazardous when used on another tool.

1.5 SERVICE

- **Tool service must be performed only by qualified personnel.** Service or maintenance performed by unqualified personnel could result in a risk of injury
- **When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual.** Use of unauthorized parts or failure to follow

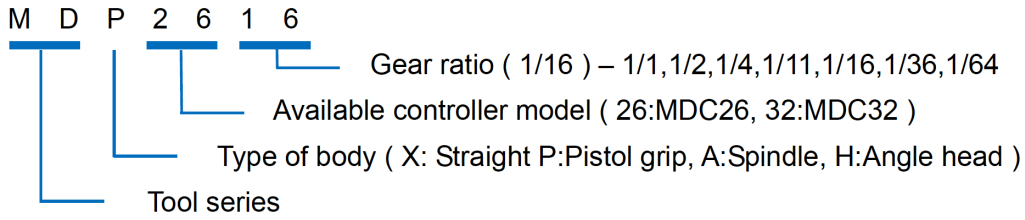
Maintenance instructions may create a risk of electric shock or injury.

2. SPECIFIC SAFETY RULES

2.1 Hold tool by insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring or its own cord. Contact with a "live" wire will make exposed metal parts of the tool "live" and shock the operator.

2.2 Never lubricate aerosol oil on to the electrical part.

5.2 Model specification



- Straight hand-held (Lever start)

Item	Model	Torque (lbf.in.)	Torque (N.m)	Min speed	Max speed	Bit Type	Control Box
310005	MD2601-A	0.26 - 3.4	0.029- 0.38	150	2000	Hex1/4”	MDC26
310006	MD2602-A	0.43 -6	0.049 - 0.67	150	2000	Hex1/4”	
310007	MD2604-A	1.7 - 12.1	0.19 - 1.36	150	1500	Hex1/4”	
310008	MD2611-A	3.4 - 29.5	0.38 - 3.33	100	900	Hex1/4”	
310009	MD2616-A	4.3 - 43.4	0.49 - 4.90	100	620	Hex1/4”	
310010	MD3201-A	0.86 - 10.4	0.09 - 1.17	150	2000	Hex1/4”	MDC32
310011	MD3202-A	1.73 - 19.0	0.19 - 2.14	150	2000	Hex1/4”	
310012	MD3204-A	3.4 - 34.7	0.38 - 3.92	150	1500	Hex1/4”	
310013	MD3211-A	8.6 - 78.1	1 - 8.8	50	690	Hex1/4”	
310014	MD3216-A	17.3 - 121.5	2 - 13.7	50	470	Hex1/4”	
310015	MD3236-Q, 3/8"	34.7 - 243	3.9 - 27.4	50	210	SQ3/8	
310016	MD3264-Q, 1/2"	69.4 - 434	7.8 - 49	50	115	SQ1/2	

- Pistol grip hand held (Trigger start)

Item	Model	Torque (lbf.in.)	Torque (N.m)	Min speed	Max speed	Bit Type	Control Box
310035	MDP3201-A/U	0.86 - 10.4	0.09 - 1.17	150	2000	Hex1/4”	MDC32
310017	MDP3201-A/D	0.86 - 10.4	0.09 - 1.17	150	2000	Hex1/4”	
310036	MDP3202-A/U	1.73 - 19.0	0.19 - 2.14	150	2000	Hex1/4”	
310018	MDP3202-A/D	1.73 - 19.0	0.19 - 2.14	150	2000	Hex1/4”	
310037	MDP3204-A/U	3.4 - 34.7	0.38 - 3.92	150	1500	Hex1/4”	
310019	MDP3204-A/ D	3.4 - 34.7	0.38 - 3.92	150	1500	Hex1/4”	
310038	MDP3211-A/U	8.6 - 78.1	1 - 8.8	50	690	Hex1/4”	
310020	MDP3211-A/D	8.6 - 78.1	1 - 8.8	50	690	Hex1/4”	
310039	MDP3216-A/U	17.3 - 121.5	2 - 13.7	50	470	Hex1/4”	
310021	MDP3216-A/D	17.3 - 121.5	2 - 13.7	50	470	Hex1/4”	
310040	MDP3236-Q/U, 3/8"	34.7 - 243	3.9 - 27.4	50	210	SQ3/8	
310022	MDP3236-Q/D, 3/8"	34.7 - 243	3.9 - 27.4	50	210	SQ3/8	
310041	MDP3264-Q/U, 1/2"	69.4 - 434	7.8 - 49	50	115	SQ1/2	
310023	MDP3264-Q/D, 1/2"	69.4 - 434	7.8 - 49	50	115	SQ1/2	

- Angle head hand-held (Lever start)

Item	Model	Torque (lbf.in.)	Torque (N.m)	Min speed	Max speed	Bit Type	Control Box
310024	MDH2604-A	1.7 - 12.1	0.19 - 1.36	150	1500	Hex1/4”	MDC26
310025	MDH2611-A	3.4 - 29.5	0.38 - 3.33	100	900	Hex1/4”	
310026	MDH2616-A	4.3 - 43.4	0.49 - 4.90	100	620	Hex1/4”	
310027	MDH3201-A	0.86 - 10.4	0.09 - 1.17	150	2000	Hex1/4”	MDC32
310028	MDH3202-A	1.73 - 19.0	0.19 - 2.14	150	2000	Hex1/4”	
310029	MDH3204-A	3.4 - 34.7	0.38 - 3.92	150	1500	Hex1/4”	
310031	MDH3211-A	8.6 - 78.1	1 - 8.8	50	690	Hex1/4”	
310032	MDH3216-A	17.3 - 121.5	2 - 13.7	50	470	Hex1/4”	
310033	MDH3236-Q, 3/8"	34.7 - 243	3.9 - 27.4	50	210	SQ3/8	
310034	MDH3264-Q, 1/2"	69.4 - 434	7.8 - 49	50	115	SQ1/2	

- Spindle for automation (Remote start by I/O)

Item	Model	Torque (lbf.in.)	Torque (N.m)	Min speed	Max speed	Bit Type	Control Box
310042	MDA2201-E+C	0.08 - 0.60	0.009 - 0.067	100	1000	dia.4 half moon	MDC26
310043	MDA2601-E	0.26 - 3.4	0.029 - 0.38	150	2000	dia.4 half moon	
310044	MDA2602-A	0.43 -6	0.048 - 0.67	150	2000	Hex1/4”	
310045	MDA2604-A	1.7 - 12.1	0.19 - 1.36	150	1500	Hex1/4”	
310046	MDA2611-A	3.4 - 29.5	0.38 - 3.33	100	900	Hex1/4”	
310047	MDA2616-A	4.3 - 43.4	0.49 - 4.90	100	620	Hex1/4”	
310048	MDA3201-A	0.86 - 10.4	0.09 - 1.17	150	2000	Hex1/4”	MDC32
310049	MDA3202-A	1.73 - 19.0	0.19 - 2.14	150	2000	Hex1/4”	
310050	MDA3204-A	3.4 - 34.7	0.38 - 3.92	150	1500	Hex1/4”	
310051	MDA3211-A	8.6 - 78.1	1 - 8.8	50	690	Hex1/4”	
310052	MDA3216-A	17.3 - 121.5	2 - 13.7	50	470	Hex1/4”	
310053	MDA3236-Q, 3/8"	34.7 - 243	3.9 - 27.4	50	210	SQ3/8	
310054	MDA3264-Q, 1/2"	69.4 - 434	7.8 - 49	50	115	SQ1/2	

★ Options

C : Bit cushion – rotating shaft has 4.5mm stroke sliding up cushion

V : Vacuum pick-up assy – screw pick-up by vacuum. It requires custom design for mouthpiece

MDC Controllers Set Up Instructions

Dear customer, thank you for choosing Mountz DC Controllers MDC line. We would like to give you some important recommendations before you start using your new system.

MDC controllers and MDC Drivers are manufactured separately and when used for the first time, they need to recognize each other as the information stored within the controller and driver during testing at time of manufacture may not correlate.

Please follow the next steps before you start using your new system:

System Re-Initialization:

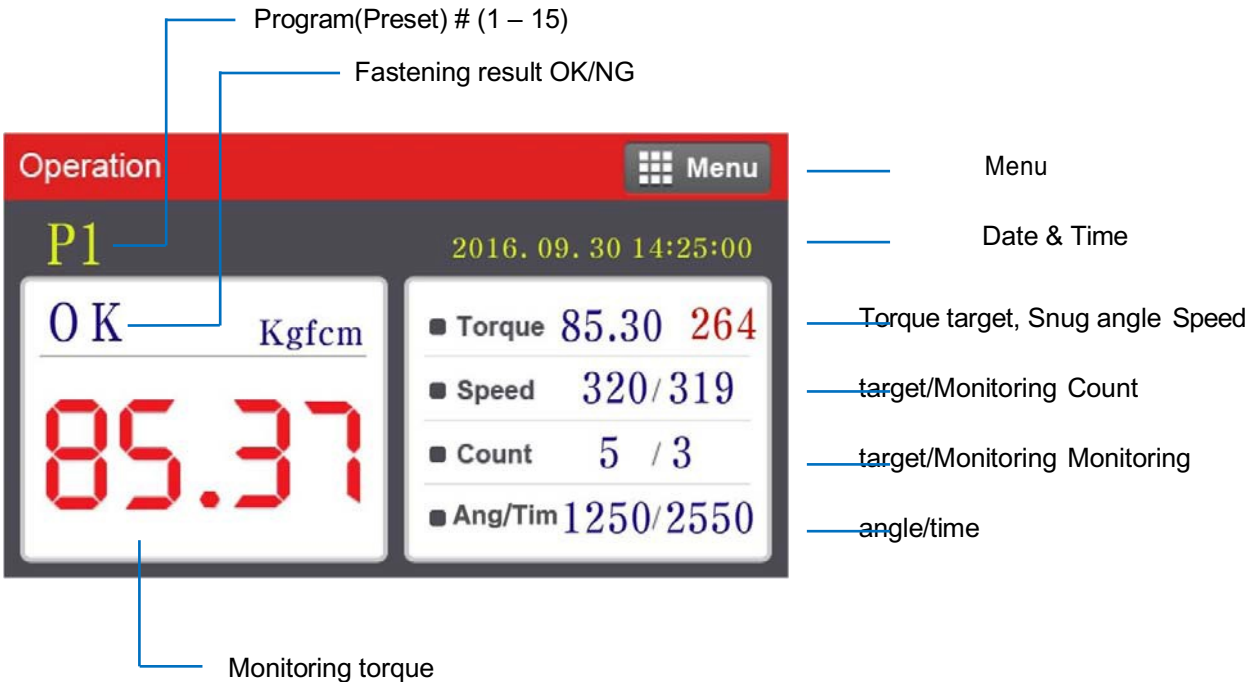
1. Power up controller
2. Log-in at the controller. Factory setting password is "0".
3. Press the menu icon located at the upper right of the display.
4. Go to Parameter>Controller screen 3/9>Controller parameter initialize (Press on 0, type in 77, press enter to initialize)
5. Power down controller, wait 5 seconds and power up controller
6. System is ready

Please repeat same process every time you change:

- *Units of Measure*
- *I/O Parameters*

3. Operation

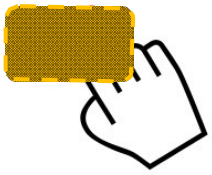
7.1 Operation screen



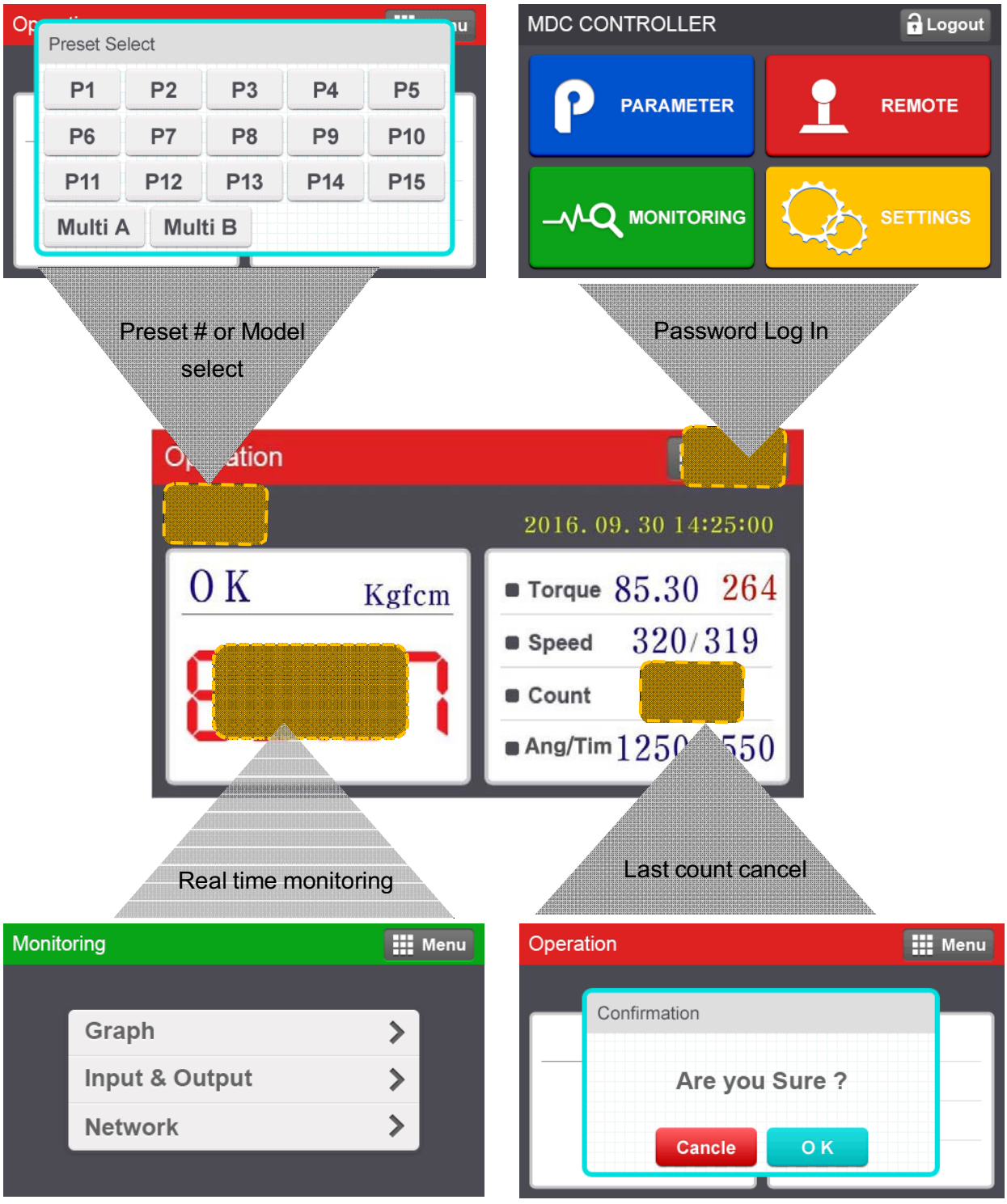
Operation screen is a default window when the controller power ON. The real time monitoring data and target settings are displayed together. To go other menu, click the Menu on the top right side.

There are 4 menu for Parameter change, Remote operation, Real time monitoring and Display settings.



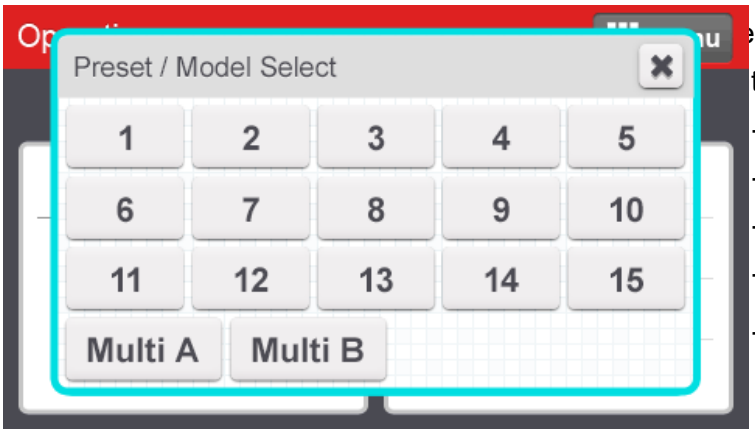


uch Screen field to move



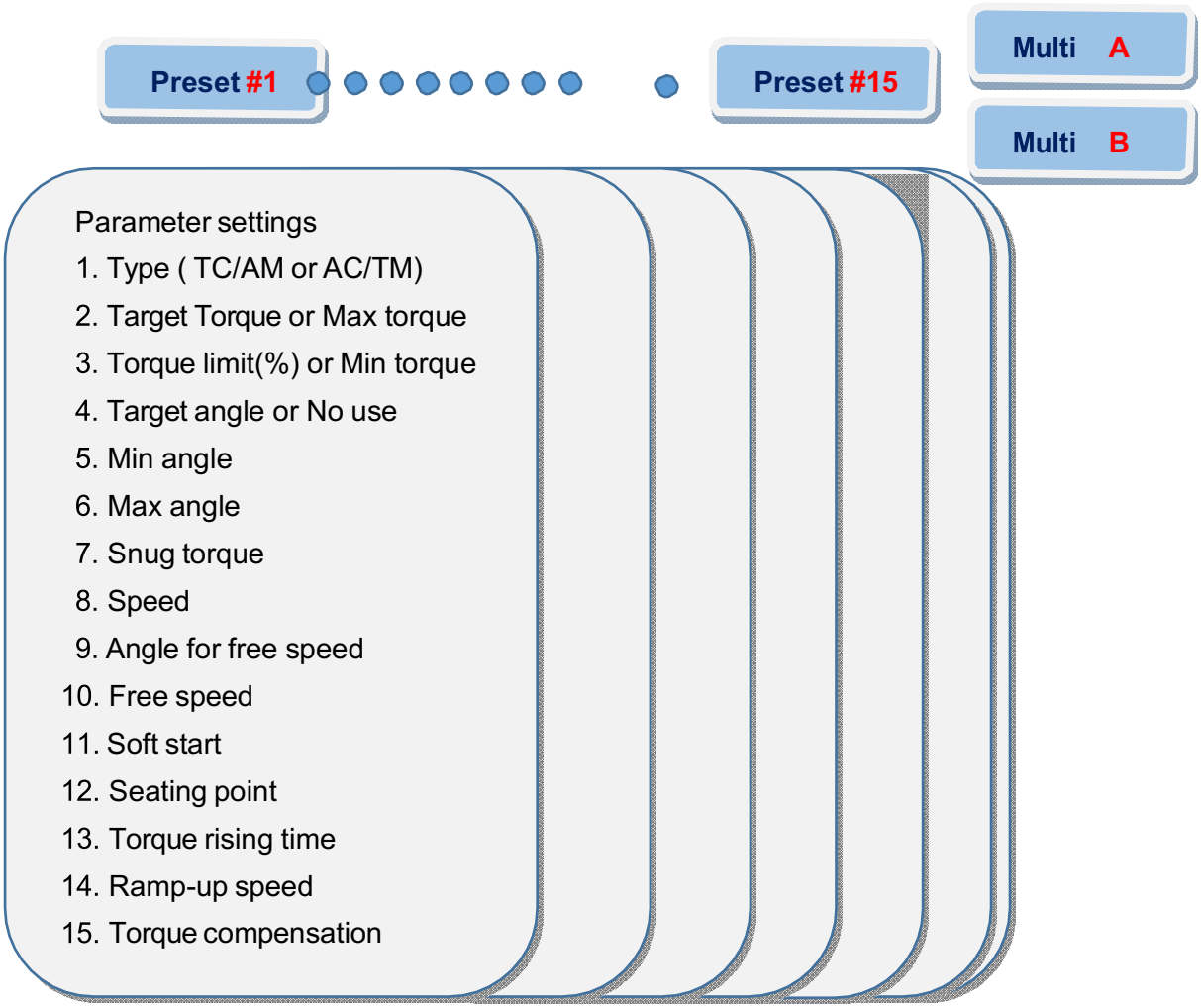
7.2 Presets or Model select

To use Model, Controller 4/9 → Model select ON setting required



ere are 15 presets of program. Each preset tains the following parameters

- Torque
- Speed
- verifying angles
- soft start duration time
- free speed tightening.



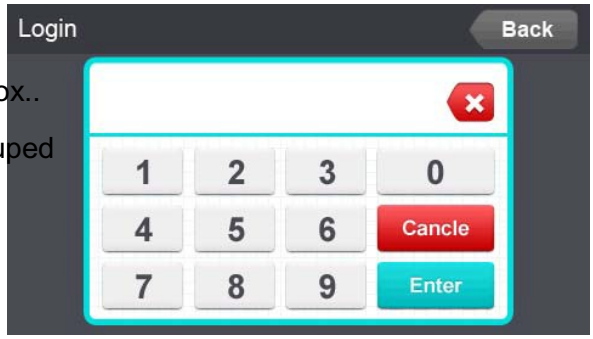
7.3 Parameters

To program each Presets, Click 

and go to 

Parameter menu require password to log in

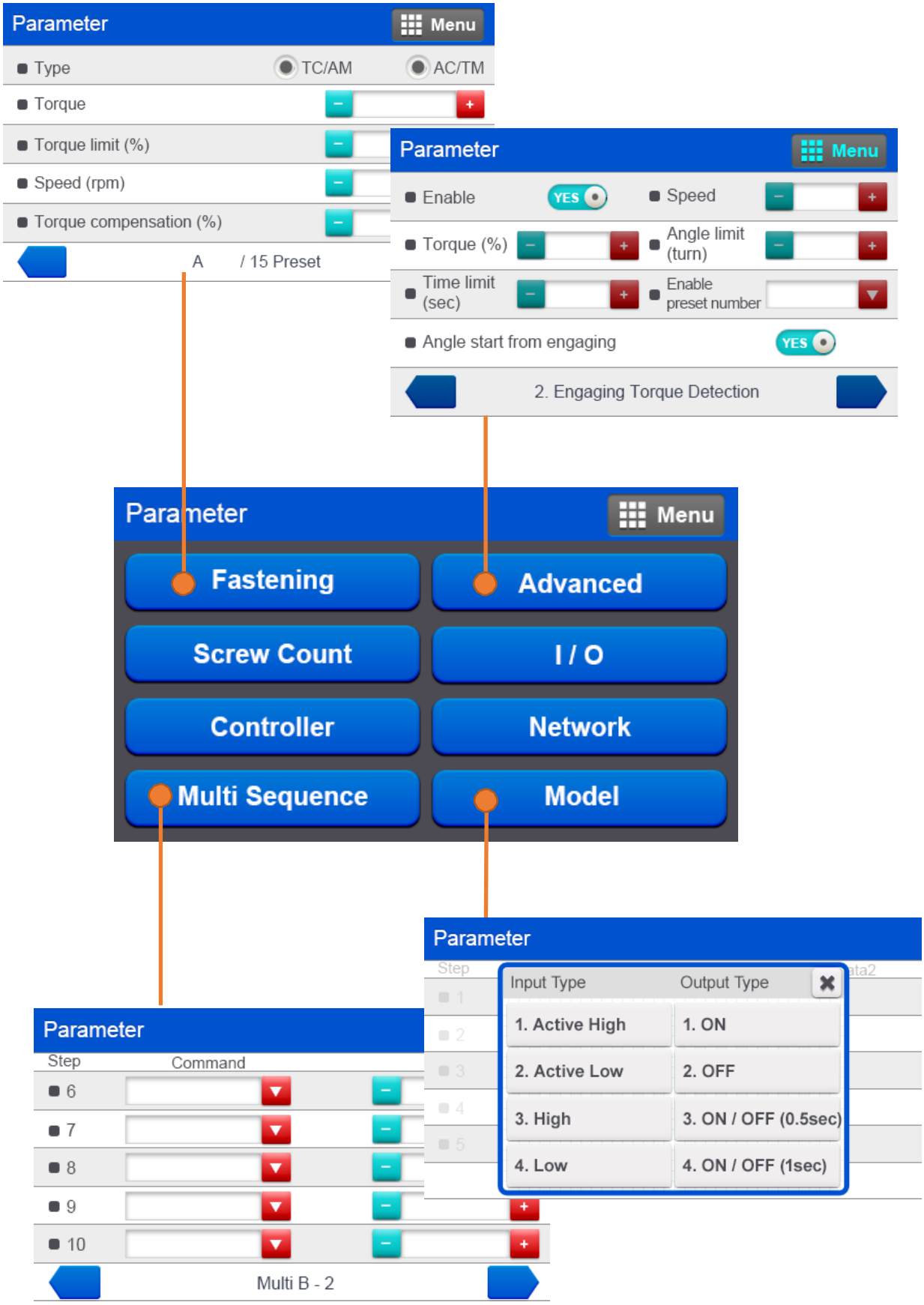
The initial factory setting is " 0 " for password The password can be changed once log in. There are approx.. 500 address for each parameters. Parameters are grouped for each settings as below

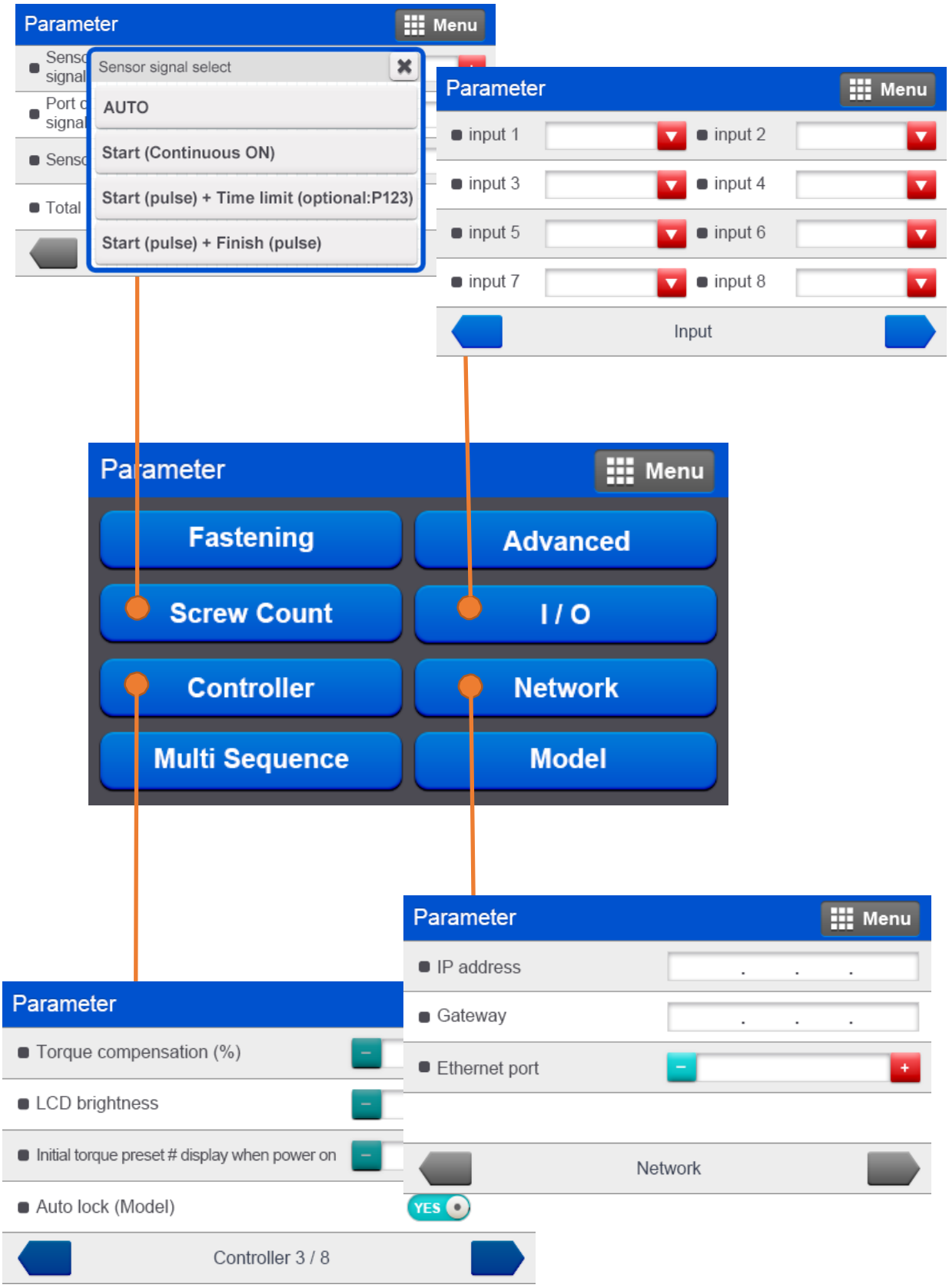


Parameter group

Please refer to the operation manual of ParaMon PC software for details of parameter settings.

Group	Parameter	Address
1. Fastening	Preset #1 to #15	A001 – A225
2. I/O	Input	A226 – A233
	Output	A234 – A241
3. Screw count	Number & cycle start	A242 – A247
4. Advanced Function	Free reverse	A250 – 253
	Engaging detection	A254 – 260
	Angle after torque	A261 – 265
5. Controller	Setting 1	A270 – 284
	Setting 2	A290 – 305
6. Network	IP address	A310 – 318
7. Multi sequence	Multi-A, Multi-B	A321 – 348
8. Model	Model #1 to 15	A350 – 499


Parameter
Menu
Type
TC/AM
AC/TM
Torque
Torque limit (%)
Speed (rpm)
Torque compensation (%)
A
/ 15 Preset
Parameter
Menu
Enable
YES
Speed
Torque (%)
Angle limit (turn)
Time limit (sec)
Enable preset number
Angle start from engaging
YES
2. Engaging Torque Detection
Parameter
Menu
Fastening
Advanced
Screw Count
I / O
Controller
Network
Multi Sequence
Model
Parameter
Step
Command
6
7
8
9
10
Multi B - 2
Parameter
Step
Input Type
Output Type
1. Active High
1. ON
2. Active Low
2. OFF
3. High
3. ON / OFF (0.5sec)
4. Low
4. ON / OFF (1sec)


Parameter
Menu
Sensor signal select
AUTO
Start (Continuous ON)
Start (pulse) + Time limit (optional:P123)
Start (pulse) + Finish (pulse)
Parameter
Menu
input 1
input 2
input 3
input 4
input 5
input 6
input 7
input 8
Input
Parameter
Menu
Fastening
Advanced
Screw Count
I / O
Controller
Network
Multi Sequence
Model
Parameter
Menu
IP address
Gateway
Ethernet port
Network
Parameter
Torque compensation (%)
LCD brightness
Initial torque preset # display when power on
Auto lock (Model)
YES
Controller 3 / 8

Parameter details and factory setting Firmwareversion 1.03.8)

	Preset #	Parameter		Adderss	Factory setting
Fastening	1	TC/AM	AC/TM	1	0
		Target torque	Max torque	2	Auto
		Torque limit (%)	Min torque	3	0
		No use	Target angle(degree)	4	0
		Min angle(degree)		5	0
		Max angle(degree)		6	0
		Snug torque(%)		7	0
		Speed (rpm)		8	Auto
		Free fastenig angle(degree)		9	0
		Free fastenig speed(rpm)		10	0
		Soft start(1-300ms)		11	0
		Seating point (%) 10-90		12	Auto
		Torque rising rate(ms) 50-200		13	50
		Ramp-up speed (rpm) 20 – 80% of max .		14	Auto
		Torque compensation (%) 90-110		15	100
	2	TC/AM	AC/TM	16	0
		Target torque	Max torque	17	Auto
		Torque limit (%)	Min torque	18	0
		No use	Target angle(degree)	19	0
		Min angle(degree)		20	0
		Max angle(degree)		21	0
		Snug torque(%)		22	0
		Speed (rpm)		23	Auto
		Free fastenig angle(degree)		24	0
		Free fastenig speed(rpm)		25	0
		Soft start(1-300ms)		26	0
		Seating point (%) 10-90		27	Auto
		Torque rising rate(ms) 50-200		28	50
		Ramp-up speed (rpm) 20 – 80% of max .		29	Auto
		Torque compensation (%) 90-110		30	100
	3	TC/AM	AC/TM	31	0

		Target torque	Max torque	32	Auto
		Torque limit (%)	Min torque	33	0
		No use	Target angle(degree)	34	0
		Min angle(degree)		35	0
		Max angle(degree)		36	0
		Snug torque(%)		37	0
		Speed (rpm)		38	Auto
		Free fastenig angle(degree)		39	0
		Free fastenig speed(rpm)		40	0
		Soft start(1-300ms)		41	0
		Seating point (%) 10-90		42	Auto
		Torque rising rate(ms) 50-200		43	50
		Ramp-up speed (rpm) 20 – 80% of max .		44	Auto
		Torque compensation (%) 90-110		45	100
	4	TC/AM	AC/TM	46	0
		Target torque	Max torque	47	Auto
		Torque limit (%)	Min torque	48	0
		No use	Target angle(degree)	49	0
		Min angle(degree)		50	0
		Max angle(degree)		51	0
		Snug torque(%)		52	0
		Speed (rpm)		53	Auto
		Free fastenig angle(degree)		54	0
		Free fastenig speed(rpm)		55	0
		Soft start(1-300ms)		56	0
		Seating point (%) 10-90		57	Auto
		Torque rising rate(ms) 50-200		58	50
		Ramp-up speed (rpm) 20 – 80% of max .		59	Auto
		Torque compensation (%) 90-110		60	100
	5	TC/AM	AC/TM	61	0
		Target torque	Max torque	62	Auto
		Torque limit (%)	Min torque	63	0
		No use	Target angle(degree)	64	0
		Min angle(degree)		65	0
		Max angle(degree)		66	0

		Snug torque(%)		67	0
		Speed (rpm)		68	Auto
		Free fastenig angle(degree)		69	0
		Free fastenig speed(rpm)		70	0
		Soft start(1-300ms)		71	0
		Seating point (%) 10-90		72	Auto
		Torque rising rate(ms) 50-200		73	50
		Ramp-up speed (rpm) 20 – 80% of max .		74	Auto
		Torque compensation (%) 90-110		75	100
	6	TC/AM	AC/TM	76	0
		Target torque	Max torque	77	Auto
		Torque limit (%)	Min torque	78	0
		No use	Target angle(degree)	79	0
		Min angle(degree)		80	0
		Max angle(degree)		81	0
		Snug torque(%)		82	0
		Speed (rpm)		83	Auto
		Free fastenig angle(degree)		84	0
		Free fastenig speed(rpm)		85	0
		Soft start(1-300ms)		86	0
		Seating point (%) 10-90		87	Auto
		Torque rising rate(ms) 50-200		88	50
		Ramp-up speed (rpm) 20 – 80% of max .		89	Auto
		Torque compensation (%) 90-110		90	100
	7	TC/AM	AC/TM	91	0
		Target torque	Max torque	92	Auto
		Torque limit (%)	Min torque	93	0
		No use	Target angle(degree)	94	0
		Min angle(degree)		95	0
		Max angle(degree)		96	0
		Snug torque(%)		97	0
		Speed (rpm)		98	Auto
		Free fastenig angle(degree)		99	0
		Free fastenig speed(rpm)		100	0
		Soft start(1-300ms)		101	0

		Seating point (%) 10-90		102	Auto
		Torque rising rate(ms) 50-200		103	50
		Ramp-up speed (rpm) 20 – 80% of max .		104	Auto
		Torque compensation (%) 90-110		105	100
	8	TC/AM	AC/TM	106	0
		Target torque	Max torque	107	Auto
		Torque limit (%)	Min torque	108	0
		No use	Target angle(degree)	109	0
		Min angle(degree)		110	0
		Max angle(degree)		111	0
		Snug torque(%)		112	0
		Speed (rpm)		113	Auto
		Free fastenig angle(degree)		114	0
		Free fastenig speed(rpm)		115	0
		Soft start(1-300ms)		116	0
		Seating point (%) 10-90		117	Auto
		Torque rising rate(ms) 50-200		118	50
		Ramp-up speed (rpm) 20 – 80% of max .		119	Auto
		Torque compensation (%) 90-110		120	100
	9	TC/AM	AC/TM	121	0
		Target torque	Max torque	122	Auto
		Torque limit (%)	Min torque	123	0
		No use	Target angle(degree)	124	0
		Min angle(degree)		125	0
		Max angle(degree)		126	0
		Snug torque(%)		127	0
		Speed (rpm)		128	Auto
		Free fastenig angle(degree)		129	0
		Free fastenig speed(rpm)		130	0
		Soft start(1-300ms)		131	0
		Seating point (%) 10-90		132	Auto
		Torque rising rate(ms) 50-200		133	50
		Ramp-up speed (rpm) 20 – 80% of max .		134	Auto
		Torque compensation (%) 90-110		135	100
	10	TC/AM	AC/TM	136	0

		Target torque	Max torque	137	Auto
		Torque limit (%)	Min torque	138	0
		No use	Target angle(degree)	139	0
		Min angle(degree)		140	0
		Max angle(degree)		141	0
		Snug torque(%)		142	0
		Speed (rpm)		143	Auto
		Free fastenig angle(degree)		144	0
		Free fastenig speed(rpm)		145	0
		Soft start(1-300ms)		146	0
		Seating point (%) 10-90		147	Auto
		Torque rising rate(ms) 50-200		148	50
		Ramp-up speed (rpm) 20 – 80% of max .		149	Auto
		Torque compensation (%) 90-110		150	100
	11	TC/AM	AC/TM	151	0
		Target torque	Max torque	152	Auto
		Torque limit (%)	Min torque	153	0
		No use	Target angle(degree)	154	0
		Min angle(degree)		155	0
		Max angle(degree)		156	0
		Snug torque(%)		157	0
		Speed (rpm)		158	Auto
		Free fastenig angle(degree)		159	0
		Free fastenig speed(rpm)		160	0
		Soft start(1-300ms)		161	0
		Seating point (%) 10-90		162	Auto
		Torque rising rate(ms) 50-200		163	50
		Ramp-up speed (rpm) 20 – 80% of max .		164	Auto
		Torque compensation (%) 90-110		165	100
	12	TC/AM	AC/TM	166	0
		Target torque	Max torque	167	Auto
		Torque limit (%)	Min torque	168	0
		No use	Target angle(degree)	169	0
		Min angle(degree)		170	0
		Max angle(degree)		171	0

		Snug torque(%)		172	0
		Speed (rpm)		173	Auto
		Free fastenig angle(degree)		174	0
		Free fastenig speed(rpm)		175	0
		Soft start(1-300ms)		176	0
		Seating point (%) 10-90		177	Auto
		Torque rising rate(ms) 50-200		178	50
		Ramp-up speed (rpm) 20 – 80% of max .		179	Auto
		Torque compensation (%) 90-110		180	100
	13	TC/AM	AC/TM	181	0
		Target torque	Max torque	182	Auto
		Torque limit (%)	Min torque	183	0
		No use	Target angle(degree)	184	0
		Min angle(degree)		185	0
		Max angle(degree)		186	0
		Snug torque(%)		187	0
		Speed (rpm)		188	Auto
		Free fastenig angle(degree)		189	0
		Free fastenig speed(rpm)		190	0
		Soft start(1-300ms)		191	0
		Seating point (%) 10-90		192	Auto
		Torque rising rate(ms) 50-200		193	50
		Ramp-up speed (rpm) 20 – 80% of max .		194	Auto
		Torque compensation (%) 90-110		195	100
	14	TC/AM	AC/TM	196	0
		Target torque	Max torque	197	Auto
		Torque limit (%)	Min torque	198	0
		No use	Target angle(degree)	199	0
		Min angle(degree)		200	0
		Max angle(degree)		201	0
		Snug torque(%)		202	0
		Speed (rpm)		203	Auto
		Free fastenig angle(degree)		204	0
		Free fastenig speed(rpm)		205	0
		Soft start(1-300ms)		206	0

		Seating point (%) 10-90		207	Auto
		Torque rising rate(ms) 50-200		208	50
		Ramp-up speed (rpm) 20 – 80% of max .		209	Auto
		Torque compensation (%) 90-110		210	100
	15	TC/AM	AC/TM	211	0
		Target torque	Max torque	212	Auto
		Torque limit (%)	Min torque	213	0
		No use	Target angle(degree)	214	0
		Min angle(degree)		215	0
		Max angle(degree)		216	0
		Snug torque(%)		217	0
		Speed (rpm)		218	Auto
		Free fastenig angle(degree)		219	0
		Free fastenig speed(rpm)		220	0
		Soft start(1-300ms)		221	0
		Seating point (%) 10-90		222	Auto
		Torque rising rate(ms) 50-200		223	50
		Ramp-up speed (rpm) 20 – 80% of max .		224	Auto
		Torque compensation (%) 90-110		225	100
I/O	I/O (IN)	Input #1	1) None 2) Torque select 1 3) Torque select 2 4) Torque select 3 5) Torque select 4 6) Start 7) Fastening / Loosening 8) Driver Lock 9) Multi sequence 10) Alarm reset 11) Count start 12) Count reset 13) Count(workpiece) out 14) Model cancel 15) Model select 1 16) Model select 2 17) Model select 3 18) Model select 4	226	1
		Input #2		227	2
		Input #3		228	3
		Input #4		229	5
		Input #5		230	6
		Input #6		231	7
		Input #7		232	8
		Input #8		233	9
	I/O (OUT)	Output #1	1) None 2) Torque Up 3) Fastening OK 4) Ready 5) Motor RUN 6) Alarm 7) Status of F/L 8) Count complete 9) Alarm code 1 10) Alarm code 2 11) Alarm code 3 12) Model complete	234	1
		Output #2		235	2
		Output #3		236	3
		Output #4		237	4
		Output #5		238	5
		Output #6		239	6
		Output #7		240	7
		Output #8		241	8

Screw count	Screw count	Sensor signal type 0 - 3	242	0
		Time limit (if P122-->2)	243	0
		Count complete OUT manage	244	0
		Middle count no. 0 - 99	245	0
		Sensor signal delay time (x10ms)	246	0
		Total count (screw no.)	247	5
Advanced Function	Free Reverse	Enable(1) / Disable(0)	250	0
		Speed (rpm)	251	0
		Angle (turn) 0 - 20	252	0
		Applicable Preset # 1-15	253	0
	Engaging torque detection	Enable(1) / Disable(0)	254	0
		Speed (rpm)	255	0
		Torque(%)	256	0
		Angle limit (turn) 0 - 20	257	0
		Time limit (sec)	258	0
		Applicable Preset # 1-15	259	0
		Angle start from engaging	260	0
	Extra angle after torque up	Enable(1) / Disable(0)	261	0
		Speed (rpm)	262	0
		Angle (degree) 0-3600	263	0
		Direction	264	0
		Applicable Preset # 1-15	265	0
Controller	Setting 1	Run time limit / Forward (sec)	270	10
		Run time limit / Reverse (sec)	271	10
		Motor stall time limit (sec)	272	0.2
		Loosening speed (rpm)	273	Auto
		Motor acceleration (ms)	274	100
		Fastening complete signal OUT time	275	0
		Driver ID no.	276	1
		Error display reset time	277	1
		Torque compensation master (%) 90-110	278	100
		LCD brightness 10-64	279	45
		Initial preset # when power ON	280	1
		Driver model no. 1-99	281	Auto
		Password 0-9999	282	0

		Parameter initialize to factory setting	283	
		Driver auto lock (for Model)	284	0
		Preset/Model selection on panel 0-1	285	0
		Torque holding time(ms) 2 - 20	286	2
	Setting 2	Auto speed on torque setting	290	1
		Judge fastening min turns	291	0
		Model select	292	0
		Fastening stop error	293	0
		Reverse Lock	294	0
		Trigger start (Handheld only)	295	0
		Reverse start (Handheld only)	296	0
		Auto data output	297	0
		Beep sound	298	1
		Preset change by Touch pannel	299	1
		COM port Baud rate	300	4
		Torque unit	301	0
		Screw type	302	0
		Auto update port	303	0
		Lamp on time	304	0
		Option card	305	0
IP Address		IP Address1	310	192
		IP Address2	311	168
		IP Address3	312	1
		IP Address4	313	100
		Gateway 1	314	192
		Gateway 2	315	168
		Gateway 3	316	1
		Gateway 4	317	1
		Port	318	5000
Multi SQ	PG1	MS PG 1	321	0
		MS PG 2	322	0
		MS PG 3	323	0
		MS PG 4	324	0
		MS PG 5	325	0
		MS PG 6	326	0

	PG2	MS PG 7	327	0
		MS PG 8	328	0
		MS PG 9	329	0
		MS PG 10	330	0
		MS PG 11	331	0
		MS PG 12	332	0
		MS PG 13	333	0
		MS PG 14	334	0
		MS PG 15	335	0
		MS PG 16	336	0
		MS PG 17	337	0
		MS PG 18	338	0
		MS PG 19	339	0
		MS PG 20	340	0
ERROR		ERROR 1	341	0
		ERROR 2	342	0
		ERROR 3	343	0
		ERROR 4	344	0
		ERROR 5	345	0
		ERROR 6	346	0
		ERROR 7	347	0
		ERROR 8	348	0
		Controller model	349	Auto
Model		Model data (150)	350 ~ 499	0
Firmware Version			500	Auto

★ Please refer to the operation manual of ParaMon PC software for details of parameter settings.

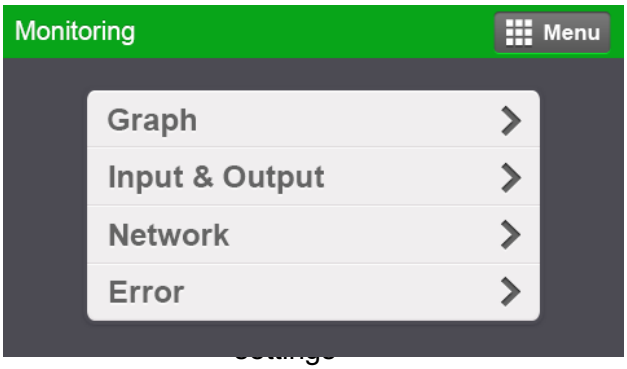
7.4 Monitoring

To monitor fastening data and I/O status, Click 

and go to 

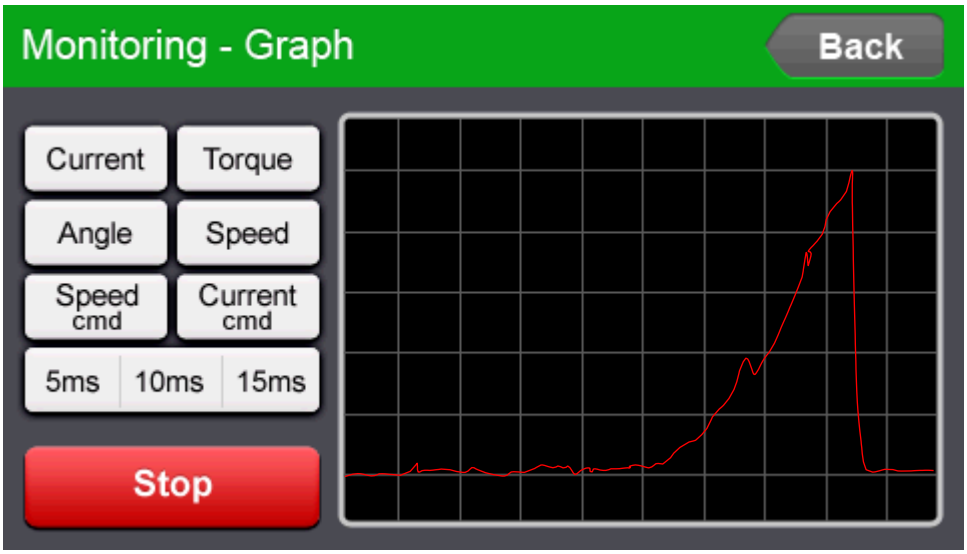
There are three(3) real-time monitoring menu.

And one error history.



- Error : latest 8 error history

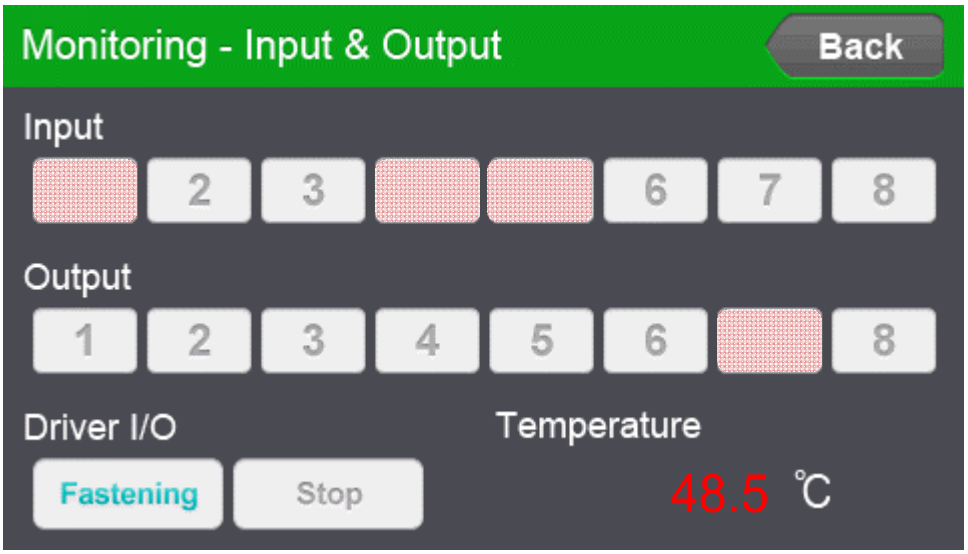
- Graph (Torque curve) monitoring



Select the required data and press Start. The sampling rate is 5ms for 1second, 10ms for 2 second and 15ms for 3 second display with total 200 data

- Current
- Torque
- Angle
- Speed

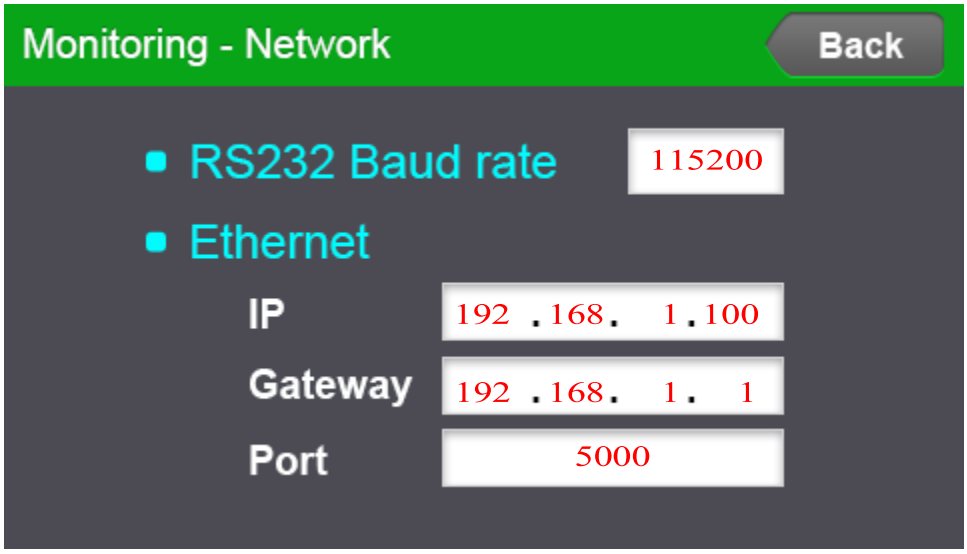
- I/O Status monitoring



The active I/O & tool operation signals are displayed with orange color by real time. The temperature of the motor surface is also displayed.

Refer to the operation manual of ParaMon for details of wiring, schematic and digital I/O mapping.

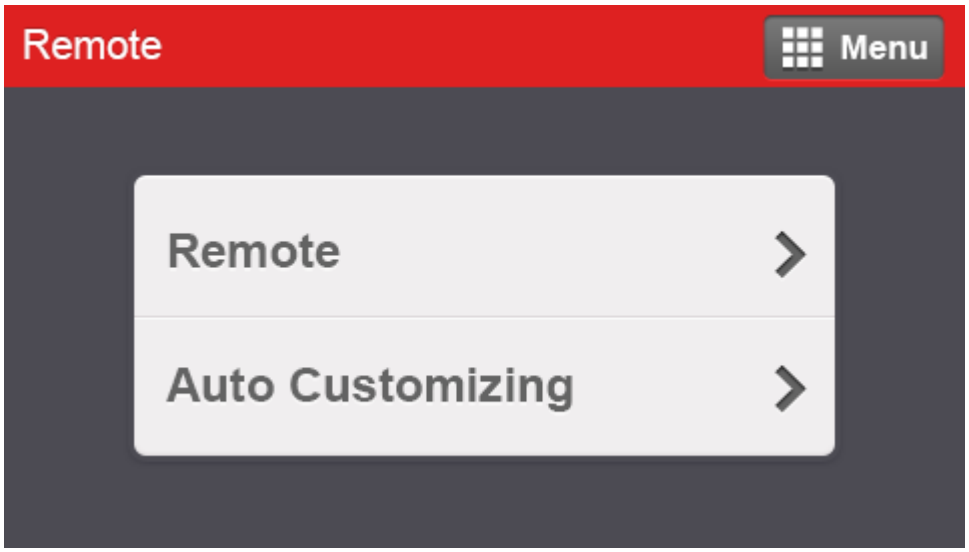
- Network setting



7.4 Remote & Auto customizing

For remote operation and Auto customizing parameters, Click 

, and

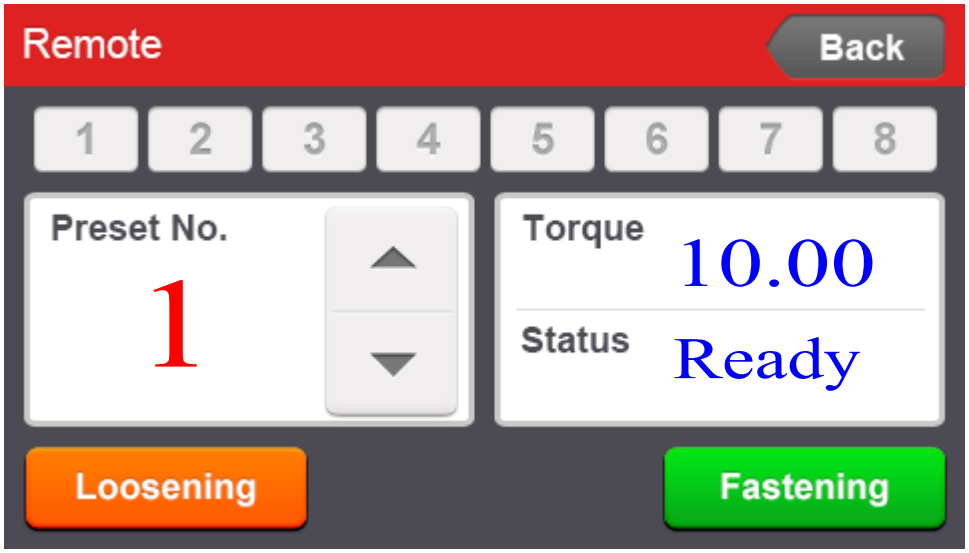


- Remote

The tool and output signal can be operated remotely by click the screen.

It is useful feature to simulate the tools in automation integration. Easy to find the output wiring and tool test without PLC

- Preset selection
- Remote start tool in Fastening or Loosening direction
- Providing Output signals



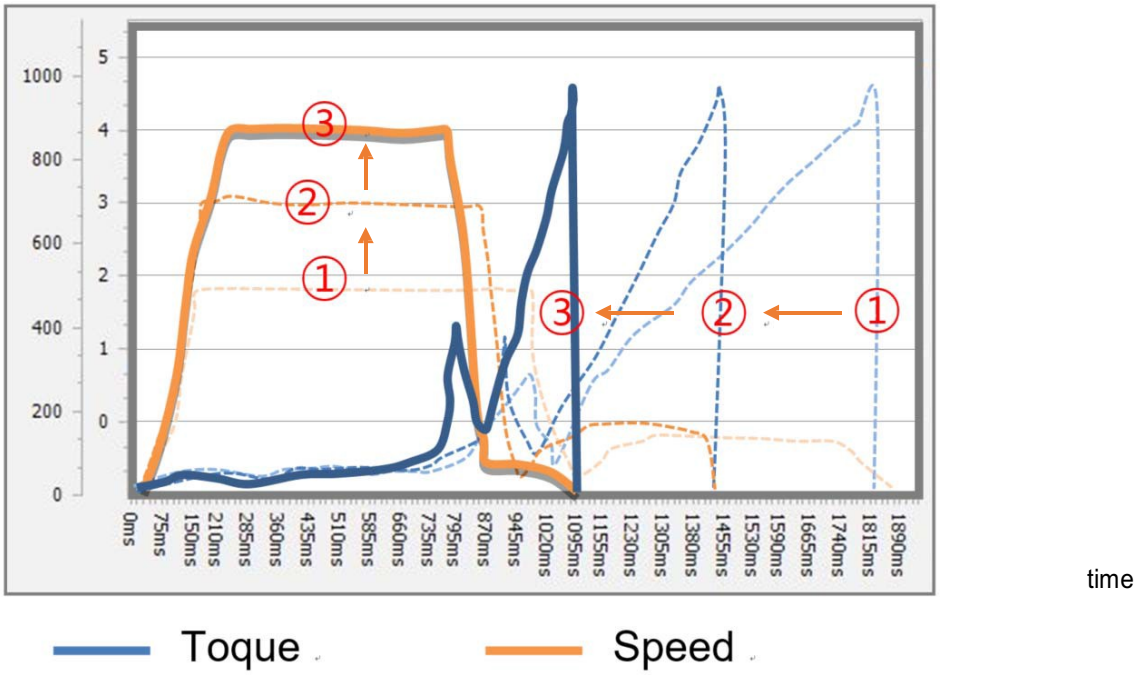
- Auto customizing parameters



Simulation & modification window

MD tool has the auto speed setting feature against torque setting not to provide any over torque by speed shock. This auto speed is safe speed on the hard joint condition. On the real application, this setting can be changed manually. Auto customizing feature provides most optimized parameter settings for saving cycle time on the real application.

Speed Torque



① Select Preset # to modify parameter settings

② Select one of Soft & Hard joint condition when it is obviously clear or both together when it is not clear to be clarified, then click START

③ Apply screw tightening several times until there is no more parameter changing on the simulation & modification window. Be sure that the fastening condition should be same during the process. The system changes parameter values by the previous fastening data.

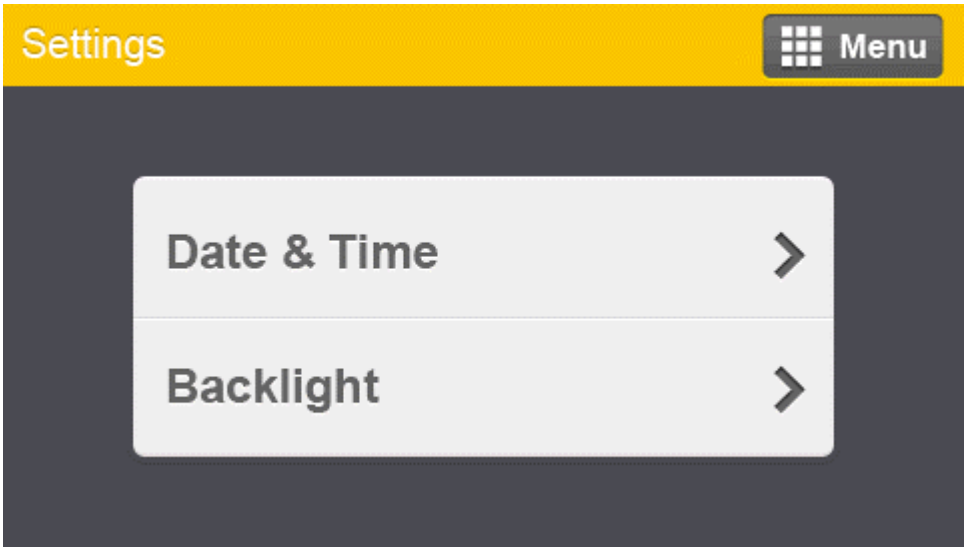
④ Once there is no more changes on the simulation & modification window, click STOP to finish testing.

⑤ Click APPLY to apply the settings on the simulation & modification window. The setting can be modified by manually before applying them.

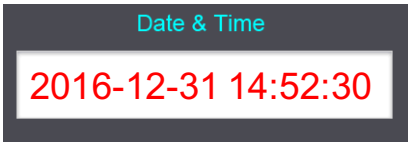
7.5 Setting

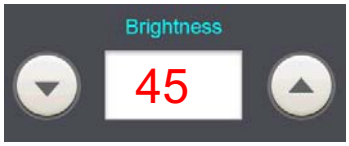
To modify Date, Time and backlight brightness , Click 

, and



System date and time can be modified. yyyy-mm-dd hh:mm:ss Backlight brightness is adjustable between 2 to 64. Factory setting is 45.





◆ Barcode setting

The barcode information can select the Preset or Model by the setting.
In order to use barcode scanner, there are some parameters to be selected prior to the barcode setting.

[Controller] A306 R2232C : Modbus / Barcode (O)
A300 : RS232C baud rate : Select right one for the scanner



- Total number of barcode registration : up to 22
- Max number of barcode data length : 24 characters (including CR data)
- Registering process
  1) Click “READ” and scan the barcode
  2) Select the first and ending digit number from the scan data for registration
  3) Select Preset # to be linked with the registered scan data
  4) Click UP button to move the next registration and repeat the same process.

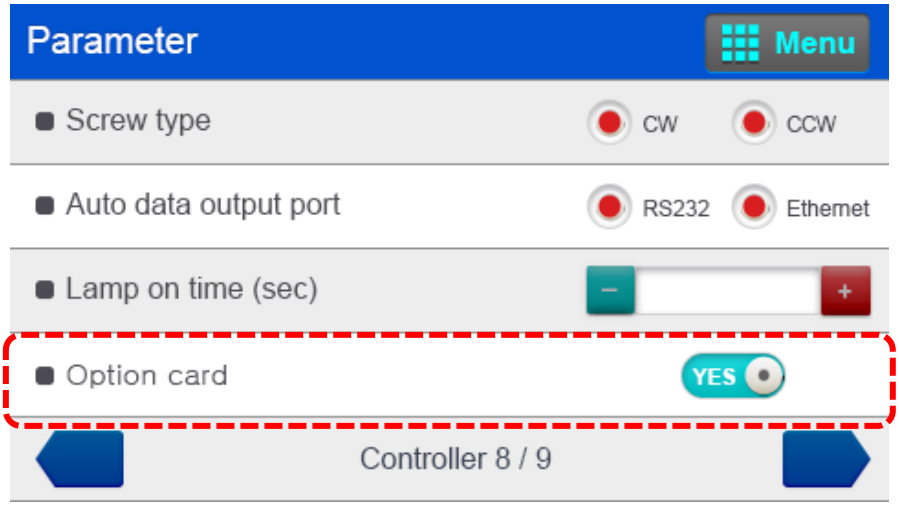
** Preset #16 and 17 in P.M# window works for Multi A and B
When Muli A or B is used, the operation window display contains the followings according to the sequence
MA or MB > Step no. > Preset # (current preset #)

- “ Reset all “ button is used to clear all registration

- “ Reset “ button is used to clear the current scan data.

7.6 SD memory card (Option)

To use this option, check on the parameter (A305) on the Parameter setting.



System creates the folders of YEAR, MONTH automatically. And it creates one file in CSV format with the file name of DATE.
SD CARD > 2017 (folder) > 07 (folder) > 21 (file) ….. File name : 21.csv
The real time fastening data in Monitoring menu are stored together with the system clock time of the controller.
Clock time, Fastening time, Preset#, Target torque, Converted torque, Speed, A1, A2, A3 angles, Count no.
Error code, Forward/Reverse, Status(OK), Snug angle

SD Memory card
- drvstate.txt
HISTORY → folder
YEAR → folder / one folder per year
MONTH → folder / one folder per month

- Date.csv → monitoring data file / one file per one day

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Time	Serial	Barcode	F_time	Preset	T_torque	C_torque	Speed	A1	A2	A3	Count	Error	F/L	Status	Snug angle
2	%16:11:27	16.11.0005	:B170728025201/3	0	1	10	0	214	0	0	0	5	0	0	0	0
3	16:11:30	16.11.0005	:B170601011304/10	0	2	10	0	214	0	0	0	5	0	0	0	0
4	16:11:33	16.11.0005	:B170728025201/3	0	1	10	0	214	0	0	0	5	0	0	0	0
5	16:12:11	16.11.0005	:B170728025201/3	699	1	5	5.14	113	381	8	389	4	0	0	1	0
6	16:12:13	16.11.0005	:B170728025201/3	650	1	5	5.08	113	336	16	352	3	0	0	1	0
7	16:12:15	16.11.0005	:B170728025201/3	1278	1	5	5.09	113	766	11	777	2	0	0	1	0
8	16:12:17	16.11.0005	:B170728025201/3	1000	1	5	4.94	113	581	9	590	1	0	0	1	0
9	16:12:19	16.11.0005	:B170728025201/3	1059	1	5	5.24	113	625	7	632	5	0	0	1	0
10	16:12:21	16.11.0005	:B170728025201/3	813	1	5	5.1	113	464	4	468	4	0	0	1	0
11	16:12:23	16.11.0005	:B170728025201/3	647	1	5	5.11	113	344	8	352	3	0	0	1	0
12	16:12:25	16.11.0005	:B170728025201/3	1029	1	5	4.95	113	597	13	610	2	0	0	1	0
13	16:12:26	16.11.0005	:B170728025201/3	1001	1	5	5.09	113	558	16	574	1	0	0	1	0
14	16:12:28	16.11.0005	:B170728025201/3	0	1	5	0	113	0	0	0	1	0	0	0	0
15	16:12:30	16.11.0005	:B170728025201/3	919	1	5	5.02	113	530	6	536	5	0	0	1	0
16	16:12:32	16.11.0005	:B170728025201/3	0	1	5	0	113	0	0	0	5	0	0	0	0
17	16:12:35	16.11.0005	:B170601011304/10	0	2	7.5	0	163	0	0	0	5	0	0	0	0
18	16:12:38	16.11.0005	:B170601011304/10	890	2	7.5	7.7	163	729	12	741	4	0	0	1	0
19	16:12:40	16.11.0005	:B170601011304/10	942	2	7.5	7.73	163	776	15	791	3	0	0	1	0
20	16:12:42	16.11.0005	:B170601011304/10	936	2	7.5	7.28	163	766	16	782	2	0	0	1	0
21	16:12:43	16.11.0005	:B170601011304/10	942	2	7.5	7.51	163	768	19	787	1	0	0	1	0

** The last scanning data is recorded together with every fastening data

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