

Dec 7th, 2020

# EC-Series DC Torque Control System Product Specifications



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## 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 THESE INSTRUCTIONS

#### 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.

#### Electrical Safety

Grounded tools must be plugged into an outlet properly installed and grounded by all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use ungrounded 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 and 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  
Take care when using and handling the power/data cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep the 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.

#### 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 inattention while operating power tools may result in serious personal injury.  
Dress according to local safety guidelines . 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 of tool(s). Be sure the 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.  
. Keep proper footing and balance at all times. Proper footing and balance enable 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.

#### Tool use and Care

Use clamps or another 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 operate a tool beyond its defined limits. 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 the tool if the 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. 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 operation of the tool. If damaged, have the tool serviced before using it. 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.



## **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.

## **SPECIFIC SAFETY RULES**

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

Never lubricate aerosol oil on to the electrical part.

## Product



The kit consists of a DC Servo screwdriver, cable and controller as a complete system.

### 1) Standard packing item



EC-Series Screwdriver



Cable\_14P (3m)



ECD-5000 Controller

## Main features

- 1) Digital torque and angle program in 15 preset numbers and 2 multi step sequence programs
- 2) 15 Models managing variable presets with counting no. and I/O in sequential 10 steps
- 3) Color LCD touch screen with easy control
- 4) Auto speed setting by torque
- 5) Monitoring fastening quality and count of screw numbers
- 6) Error information by code display
- 7) Easy parameter setting and monitoring by ParaMON (PC software)
- 8) Real time torque data and curve display
- 9) Real time fastening data output
- 10) Modbus and Open Protocol
- 11) RS232C, Ethernet communication port

## Screwdriver

### General specification

no	Item	Specification
1	Electric power	DC38V, 5A max
2	Motor	Swiss DC servo motor
7	Torque repeatability	Depending on Joint characteristics and tool settings; from +/- 3% to +/- 10%
8	Speed	Auto speed by torque setting,

### Model specification

<b>Driver</b> <b>EC v x y z w</b> ex) ECT50600-RA	<b>V</b>	Transducer	Blank	Non-Transducerized
			T	Transducerized
<b>Controller</b> ECD-4000U, 5000U ECTD-4000U	<b>W</b>	Type of Body	Blank	Straight
			-PT	Pistol (Up Type connector)
			-PB	Pistol (Down Type connector)
			-RA	Angle Head
			-R	Spindle
	<b>X</b>	Torque & RPM Range	30	
			40	
			50	
	<b>Y</b>	Gear Ratio	00, 05, 10...	See the Table 1
<b>Z</b>		Type of Drive	1	E
			0	A (¼")
				A (¼") w/ Up Type connector
				A (¼") w/ Down Type connector
			4	Q (¾")
				Q (¾") w/ Up Type connector
				Q (¾") w/ Down Type connector
			5	Q (½")
				Q (½") w/ Up Type connector
				Q (½") w/ Down Type connector

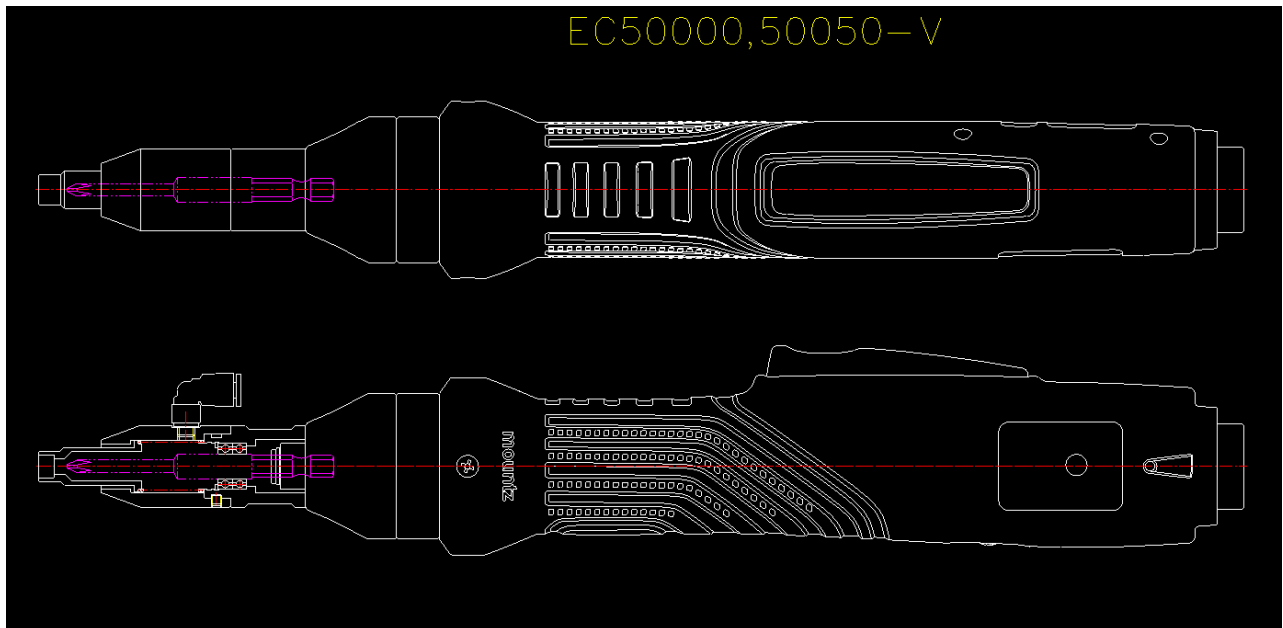
Table 1

	Hts	Mtz
↓Gear Ratio↓	MD	EC
1/1	01	00
1/2	02	05
1/4	04	10
1/6	06	12
1/8	08	15
1/10	10	18
1/11	11	20
1/16	16	30
1/20	20	40
1/24	24	50
1/28	28	55
1/36	36	60
1/43	43	70
1/45	45	80
1/58	58	85
1/64	64	90

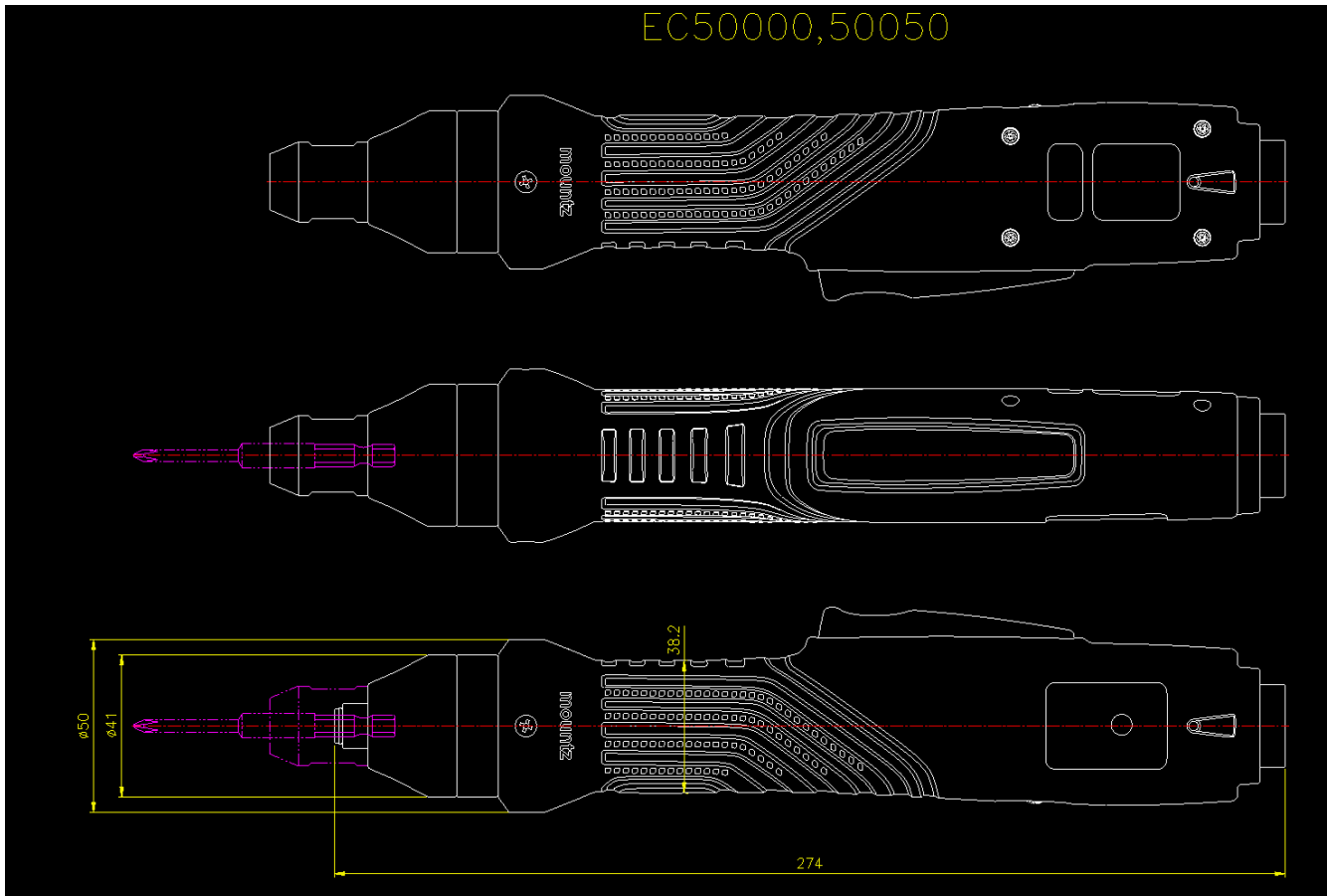
## Model List

HANDHELD NON - TRANSDUCERIZED									
MOUNTZ MODEL	Item No	Configuration	DRIVE	SPEED	Nm		Lbf.in.		Controller Model
					Min Torque	Max Torque	Min Torque	Max Torque	
EC50000	313006	Inline	F 1/4" HEX	150-2000	0.20	1.17	1.8	10.4	ECD-5000U Controller (110V) / 313000 ECD-5000E Controller (230V) / 313002
EC50050	313007	Inline	F 1/4" HEX	150-2000	0.43	2.15	3.8	19.0	
EC50100	313008	Inline	F 1/4" HEX	150-1500	0.78	3.92	6.9	34.7	
EC50150	313009	Inline	F 1/4" HEX	50-950	1.47	7.35	13.0	65.0	
EC50200	313010	Inline	F 1/4" HEX	50-690	1.76	8.82	15.6	78.1	
EC50300	313011	Inline	F 1/4" HEX	50-470	2.74	13.73	24.2	121.5	ECD-5000U Controller (110V) / 313000 ECD-5000E Controller (230V) / 313000
EC50000-PB	313012	Pistol Bottom Connector	F 1/4" HEX	150-2000	0.20	1.17	1.8	10.4	
EC50050-PB	313013	Pistol Bottom Connector	F 1/4" HEX	150-2000	0.43	2.15	3.8	19.0	
EC50100-PB	313014	Pistol Bottom Connector	F 1/4" HEX	150-1500	0.78	3.92	6.9	34.7	
EC50200-PB	313015	Pistol Bottom Connector	F 1/4" HEX	50-690	1.76	8.82	15.6	78.1	
EC50300-PB	313016	Pistol Bottom Connector	F 1/4" HEX	50-470	2.74	13.73	24.2	121.5	ECD-5000U Controller (110V) / 313000 ECD-5000E Controller (230V) / 313002
EC50000-PT	313017	Pistol Top Connector	F 1/4" HEX	150-2000	0.20	1.17	1.8	10.4	
EC50050-PT	313018	Pistol Top Connector	F 1/4" HEX	150-2000	0.43	2.15	3.8	19.0	
EC50100-PT	313019	Pistol Top Connector	F 1/4" HEX	150-1500	0.78	3.92	6.9	34.7	
EC50200-PT	313020	Pistol Top Connector	F 1/4" HEX	50-690	1.76	8.82	15.6	78.1	
EC50300-PT	313021	Pistol Top Connector	F 1/4" HEX	50-470	2.74	13.73	24.2	121.5	ECD-5000U Controller (110V) / 313000 ECD-5000E Controller (230V) / 313002
EC50000-RA	313022	Right Angle	F 1/4" HEX	150-2000	0.20	1.17	1.8	10.4	
EC50050-RA	313023	Right Angle	F 1/4" HEX	150-2000	0.43	2.15	3.8	19.0	
EC50100-RA	313024	Right Angle	F 1/4" HEX	150-1500	0.78	3.92	6.9	34.7	
EC50150-RA	313025	Right Angle	F 1/4" HEX	50-950	1.47	7.35	13.0	65.0	
EC50200-RA	313026	Right Angle	F 1/4" HEX	50-690	1.76	8.82	15.6	78.1	ECD-5000U Controller (110V) / 313000 ECD-5000E Controller (230V) / 313002
EC50300-RA	313027	Right Angle	F 1/4" HEX	50-470	2.74	13.73	24.2	121.5	
EC50000-R	313028	Robotic	F 1/4" HEX	150-2000	0.20	1.17	1.8	10.4	
EC50050-R	313029	Robotic	F 1/4" HEX	150-2000	0.43	2.15	3.8	19.0	
EC50100-R	313030	Robotic	F 1/4" HEX	150-1500	0.78	3.92	6.9	34.7	
EC50150-R	313031	Robotic	F 1/4" HEX	50-950	1.47	7.35	13.0	65.0	ECD-5000U Controller (110V) / 313000 ECD-5000E Controller (230V) / 313002
EC50200-R	313032	Robotic	F 1/4" HEX	50-690	1.76	8.82	15.6	78.1	
EC50300-R	313033	Robotic	F 1/4" HEX	50-470	2.74	13.73	24.2	121.5	

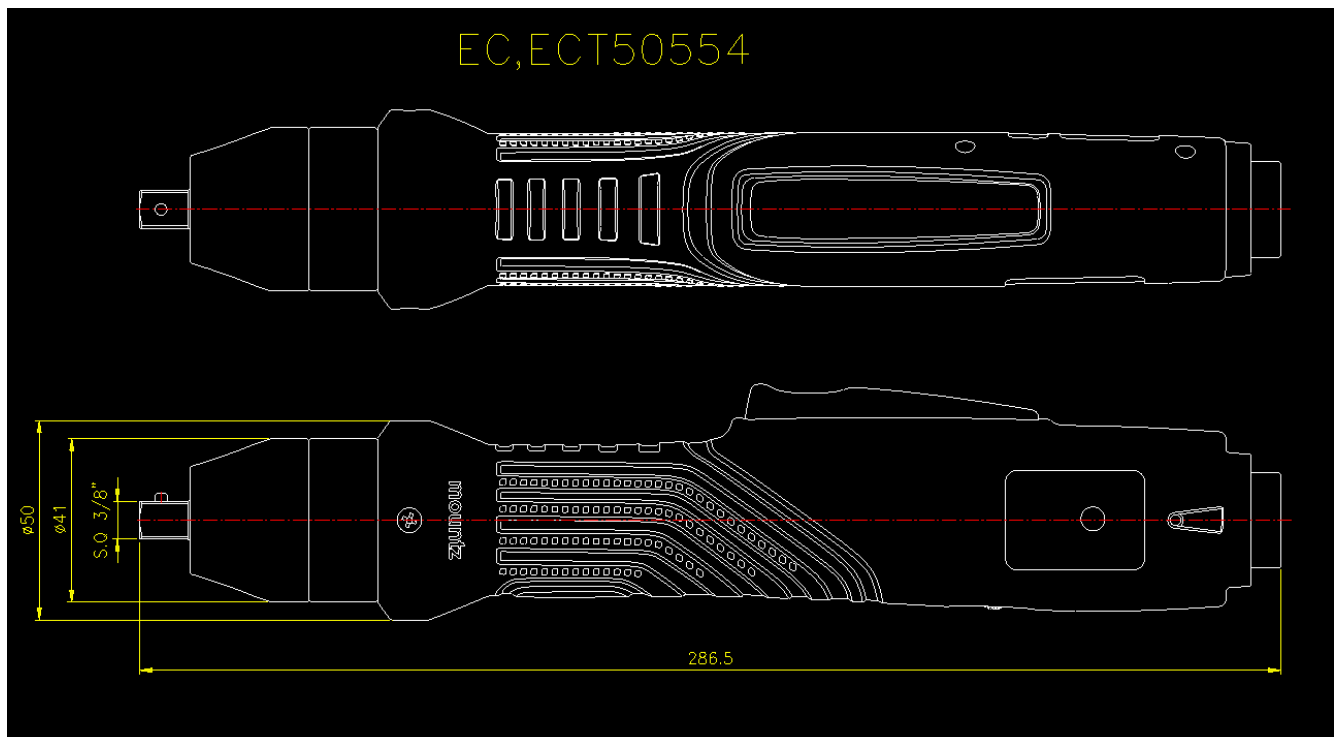
## Model Drawings



EC50000,50050

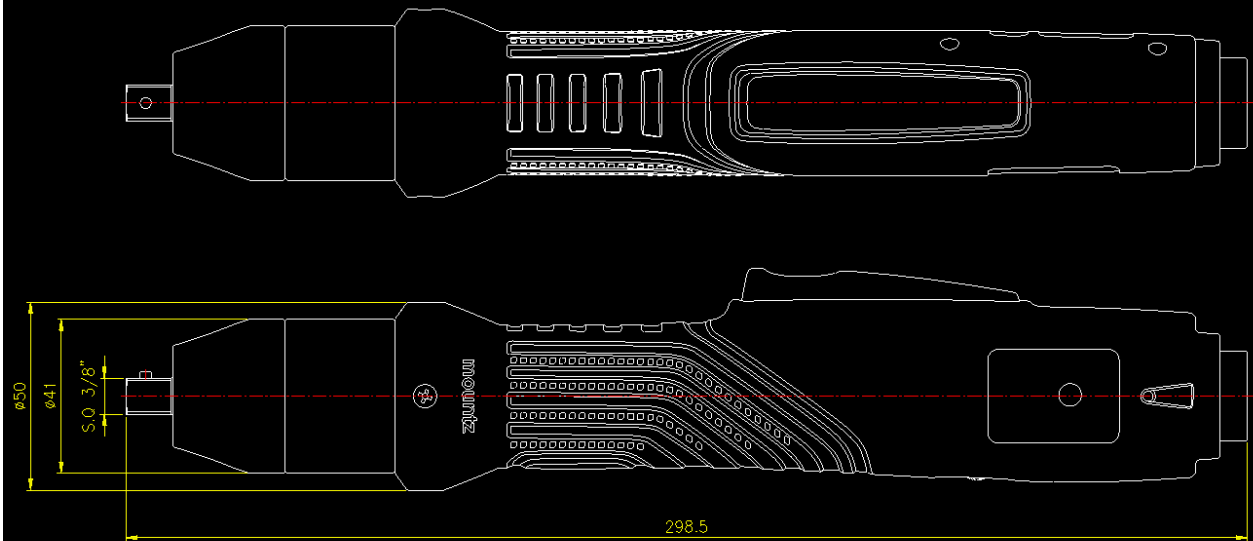


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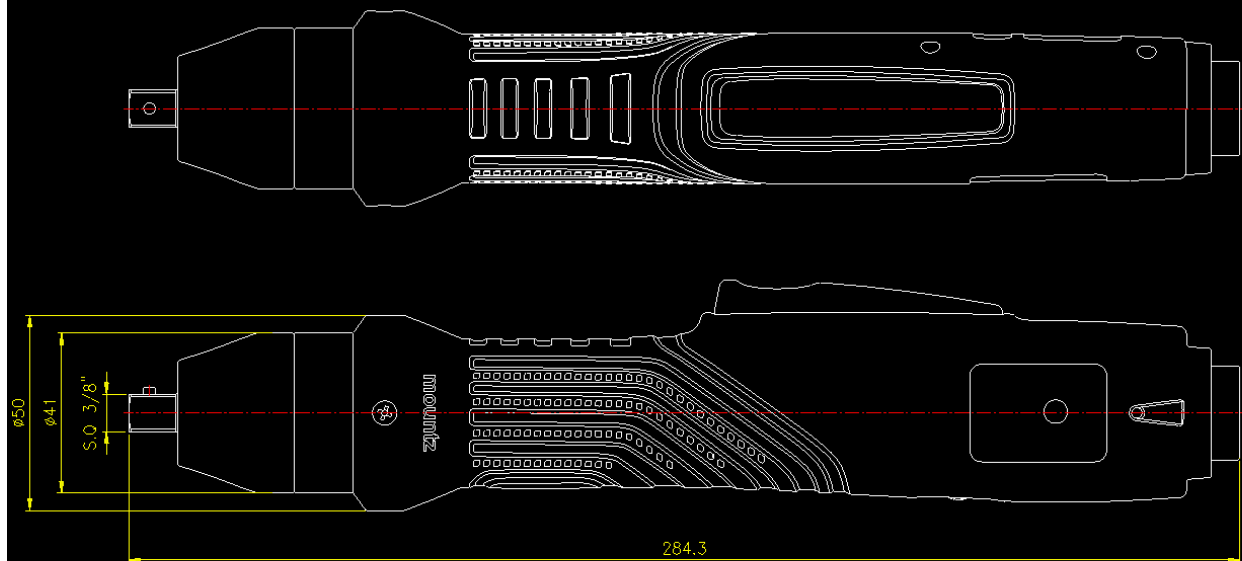




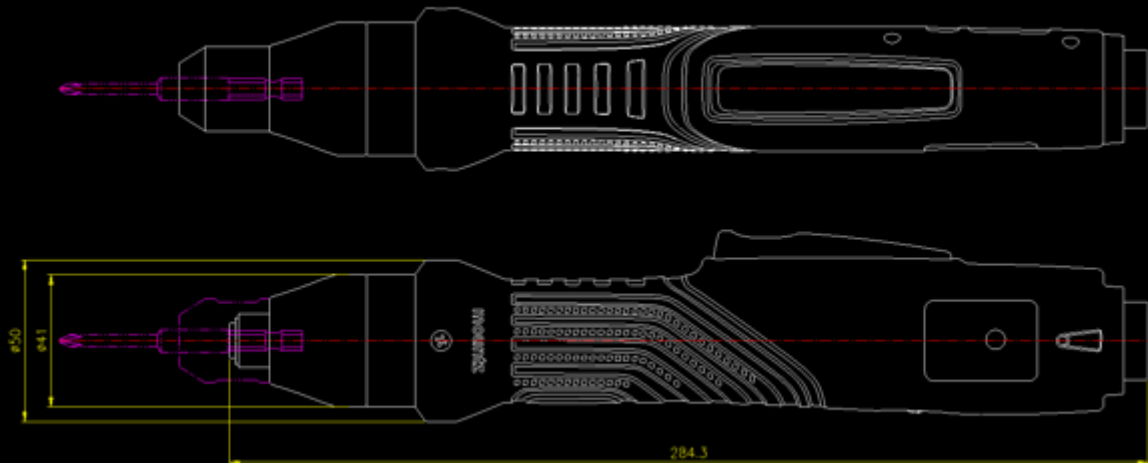
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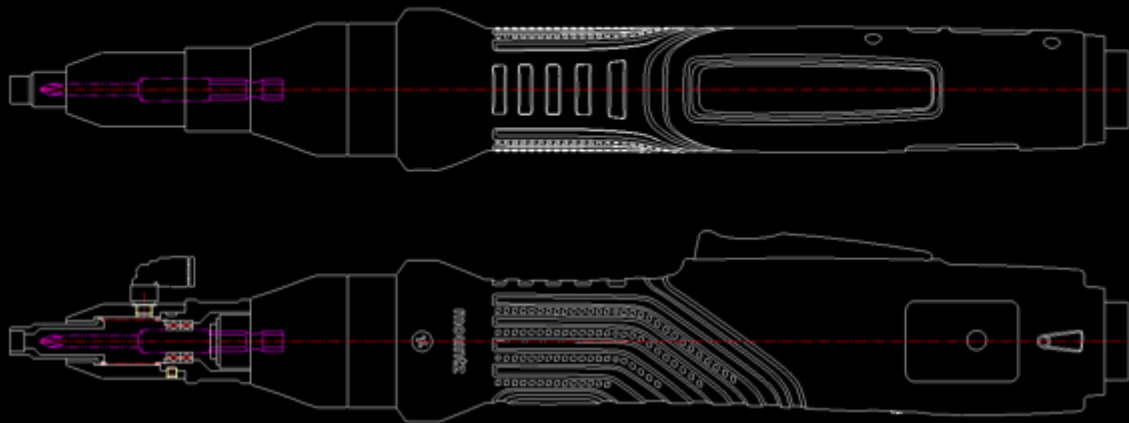
EC,ECT50104,50154,50204,50304



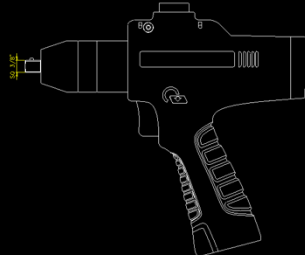
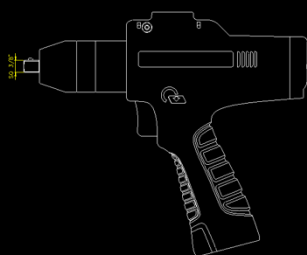
EC,ECT50100,50150,50200,50300



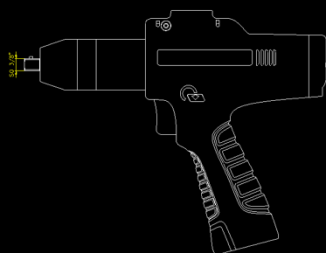
EC,ECT50100,50150,50200,50300-V



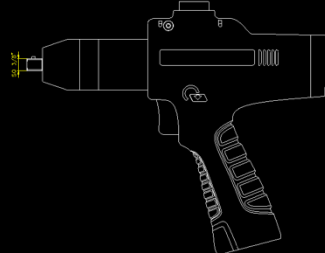
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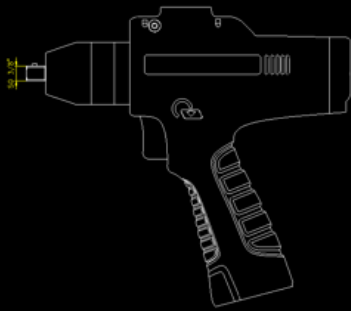
EC,ECT50804-PB,50904-PB



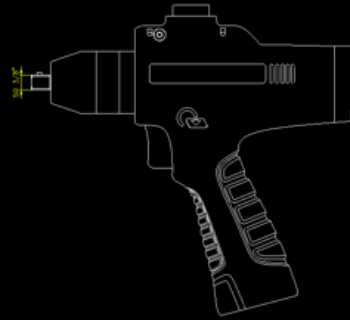
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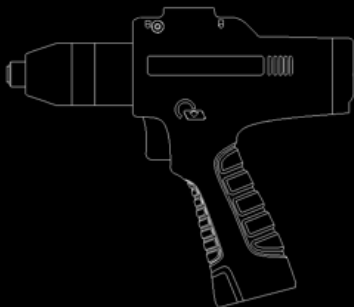
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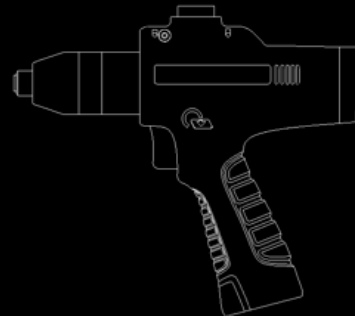
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EC,ECT50200-PB,50300-PB,50500-PB



EC,ECT50200-PT,50300-PT,50500-PT



EC50000-PB,50050-PB



EC50000-PT,50050-PT



EC,ECT50100-PB,50120-PB



EC,ECT50100-PT,50120-PT

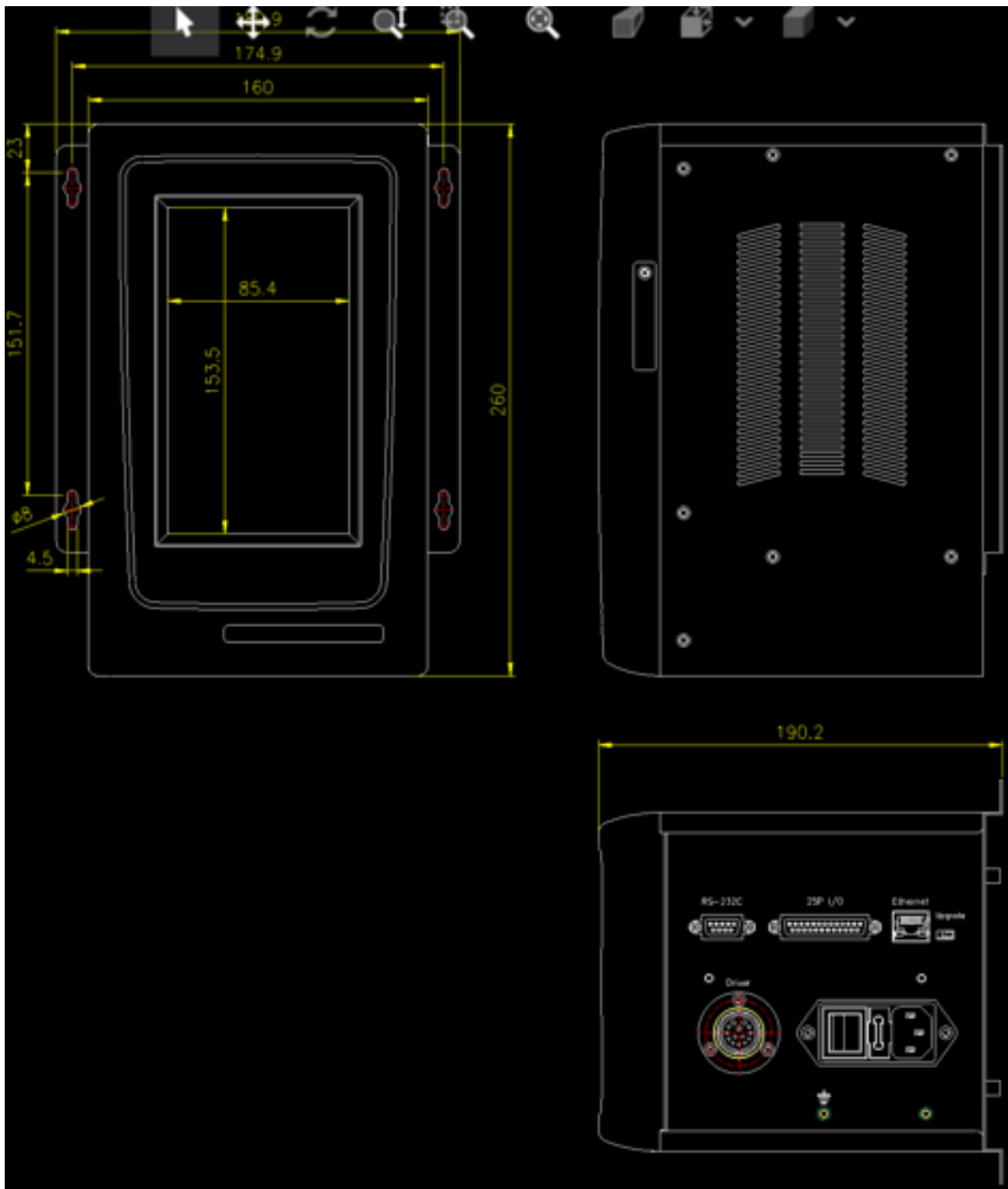


## Controller

### Specification

no	Item	Specification	
		ECD-5000U	ECD-5000E
1	Input	AC120VC / AC230V, 50/60Hz	
2	Output	DC38V 3.5A	
3	Fuse	230V 25A	
4	Operating environment	0 ~ 40°C / 15 ~ 80% RH ( without dew )	
5	Front panel	4.3" Color LCD with touch screen	
6	Communication	1 x RS232C, 1 x Ethernet	
7	Protocol	Modbus and Open Protocol	
8	I/O	8 Input & 8 Output flexible I/O (25P D-Sub)	
9	No. of program(Preset)	15	
10	Torque calibration	- 10% ~ +10%	
11	Screwdriver recognition	Auto detection of connected driver when power ON of controller	
12	Error display	Error code display ( 3 groups )	
13	Fastening verification	Torque control, Angle Monitoring or Angle Control, Torque Monitoring.	

## Controller dimension





From the land of 1's and 0's torque tools that inspire 100% confidence

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