



# Product Bulletin



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## SH-Series

### Robotic & Automation Torque Control System



The SH-Series is a durable torque and automation control system engineered for precision accuracy and repeatable torque control. The high performance robotic fastening system by Mountz allows manufacturers to optimize the assembly area, reduce labor costs and increase productivity.

The SH-Series delivers cost savings and quality benefit through useful features such as digital adjustable torque setting, variable torque and speed control, multiple I/O options for integration with PLC and other line control techniques. A Windows based software package that can customize each fastening applications is included with the product. The torque control system features built-in error proofing data and screw counter. Multiple fastening strategies can be implemented for sensitive or of difficult assembly joints. The SH-Series tool increases productivity as one tool can be programmed to do the job of multiple conventional tools, saving time, maintenance cost, space and training.

The SH-Series features a programmable digital torque setting with memory for 8 preset torque settings. The robotic screwdrivers are built with an AC servo motor system. The torque is controlled by the motor's current, which provides precision torque control. Built for both critical low and high torque fastening applications, Mountz offers various automation models that range from 0.43 - 564.2 inch-pounds. The controller of the SH-Series includes a built-in screw counter, which prevents screw-fastening errors and detects cross threading, omissions, unfinished rundowns and cycle incompletes.

RoHS



The goal of the screw counting process is to ensure that all fasteners are accounted for during the assembly process. Further a fastening error is identified on the assembly line, the more it costs in rework time and expenses. If a fastening error is committed and detected during the assembly process, the operator can correct it or prevent the faulty product from moving along the manufacturing line or being shipped out to a customer. Making a safer world through accuracy and precision is the core purpose of Mountz, Inc.

The Mountz automation tool systems improve productivity and efficiency with six key essential manufacturing benefits:

1. Reduces the production cycle.
2. Production flexibility and rapid reconfiguration for new production projects.
3. Provides a consistent repeatable process control and eliminates potential variations.
4. Integration control and data exchange.
5. Optimum asset utilization. Tooling expense delivers favorable return of investment.
6. Maintenance and repair are easy and low cost.

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## Electric Screwdrivers (AC servo motor)

- Various models that range from 0.43 - 564.2 lbf.in
- Current controller servo motor features precision accuracy and repeatability performance. Low maintenance with an extended life cycle.
- Low inertial force provides smooth reaction-less operation with little G force to assembled parts.
- Low noise, vibration and maintenance.

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## Controller

- Programmable digital torque setting with memory for 8 preset torque settings.
- Real-time monitoring and torque control of the tightening process.
- Real time torque data and curve display ( Torque vs Time, Torque vs Speed, Torque vs Angle).
- Real time fastening data output (RS-232C).
- Selectable speed settings.
- Programming and monitoring with Smart-Manager (PC software).
- Programmable multi-sequence operation.
- Displays error information by code.
- Maintenance information and history memory. Firmware upgrade by Com port.

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## Preset Parameter Settings

- Five selectable units of torque measurements: ozf.in, lbf.in, cN.m, N.m, Kgf.cm.
- Selectable settings for Torque, Speed, Min & Max Angle, and Soft Start time.
- Maximum angle control and verification.
- Minimum angle control and error reporting.

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## I/O Interface & Settings

- 50P I/O interface to a PLC or 8 direct sensor ports.
- Sensor ports for preset selection and screw counting.
- Input via sensor ports for presets.
- Input / Output for PLC.

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## Output Signal Types

- Count complete
- Torque up and Count complete
- Alarm, screw missing

## Built-in Screw Counter

- Detection of fastening error and displays error condition.
- Visual assembly fastener count (count up or down), including total count.
- Real time monitoring by PC program.
- Detects - cross threading, omissions, unfinished rundowns and cycle complete.
- Programmable screw counter settings.
- 0 to 99 screws.

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## Panel Display

- Shows the status with 6-digit 7-segment LED display
- Sequence setting (Preset #).
- Fastening torque.
- Fastening process status. Min & Max Angle (OK/NG).
- Min and Max Angle setting.
- Torque unit setting.
- Preset torque setting.
- Preset speed and actual RPM.
- Turns and fastening time.
- Controller warning and alarm system. Signals the status of the controller.

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## Screw Counting Selections

- Auto
- Start (Continuous on)
- Start Pulse with time limit
- Start Pulse and Finish pulse

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## Motor Run Time Limits

- Motor run time limits, forward and reverse.
- Motor stall time limit.
- Sleep time.
- Motor acceleration for soft start.

## Brushless Robotic Electric Screwdrivers

Model	Driver Type	Item #	Torque Ranges		RPM		Length	Drive Size
			lbf.in	S.I.	High	Low		
SH030R010-E/VC*	Remote Start	145939	0.43 - 2.2	4.9 - 24.5 cN.m	1000	100	8 1/4"	4mm D-Cut
SH050R010-E/VC*	Remote Start	145940	0.7 - 3.9	7.8 - 44.1 cN.m	1000	100	8 3/4"	4mm D-Cut
SH100R010-A/VC*	Remote Start	145941	1.3 - 7.8	14.7 - 88.3 cN.m	1200	100	9 7/8"	1/4 F/Hex
SH100R030-A	Remote Start	145942	4.3 - 21.7	49.1 - 245.3 cN.m	1000	100	10 1/8"	1/4 F/Hex
SH100R040-A	Remote Start	145943	8.7 - 28.6	98.1 - 323.7 cN.m	1000	100	10 1/8"	1/4 F/Hex
SH100R050-A	Remote Start	145944	8.7 - 37.3	98.1 - 421.8 cN.m	1000	100	10 1/8"	1/4 F/Hex
SH100R100-A	Remote Start	145945	17.4 - 73.8	196.2 - 833.9 cN.m	500	100	10 1/8"	1/4 F/Hex
SH400R010-A	Remote Start	145946	6.9 - 30.4	78.8 - 343.4 cN.m	1000	100	8 1/2"	1/4 F/Hex
SH400R050-Q	Remote Start	145947	43.4 - 147.6	4.9 - 16.6 N.m	1000	100	12"	3/8 Sq. Dr.
SH400R100-Q	Remote Start	145948	69.5 - 303.8	7.8 - 34.3 N.m	500	100	12"	3/8 Sq. Dr.
SH800R050-Q	Remote Start	145949	86.8 - 269.1	9.8 - 30.4 N.m	1000	100	12"	3/8 Sq. Dr.
SH800R100-Q	Remote Start	145950	173.6 - 564.2	19.6 - 63.7 N.m	500	100	12"	3/8 Sq. Dr.

**Note!:** \* These models (VC) are equipped with vacuum attachment adapter and a bit cushion.



SH driver mounted to an automation system.



A robotic screw presenter used in conjunction with SH robotic torque control system.

# Controllers

**Model:** SHC-50 Controller  
**Item #** 145938  
**For driver models:** SH030R- SH050R

**Model:** SHC-100 Controller  
**Item #** 145937  
**For driver models:** SH100R

**Model:** SHC-400 Controller  
**Item #** 145951  
**For driver models:** SH400R

**Model:** SHC-800 Controller  
**Item #** 145952  
**For driver models:** SH800R



## Specifications

- Input (Electric): AC220V Single Phase, 50~60Hz (for Controllers SHC-50, SHC-100 & SHC-400)  
 AC220V Three Phase, 50~60Hz (for Controller SHC-800)
- Mountable
- Preset selection capability: Front panel or 50P I/O
- Angle Control: 0.1 - 10 turns
- Preset Parameters: Torque, Speed, Soft Start & Angle in 8 preset numbers
- Auto detection of the connected driver: Auto detection of the offset value from the EEPROM on the driver
- Error display: Error display by code no. in system, communication & pattern error group
- Fastening Quality Control: OK/NG monitoring of screw fastening by preset pattern of angle and/or time.
- PC based program for parameter settings, monitoring and real time output.

## Dimensions:

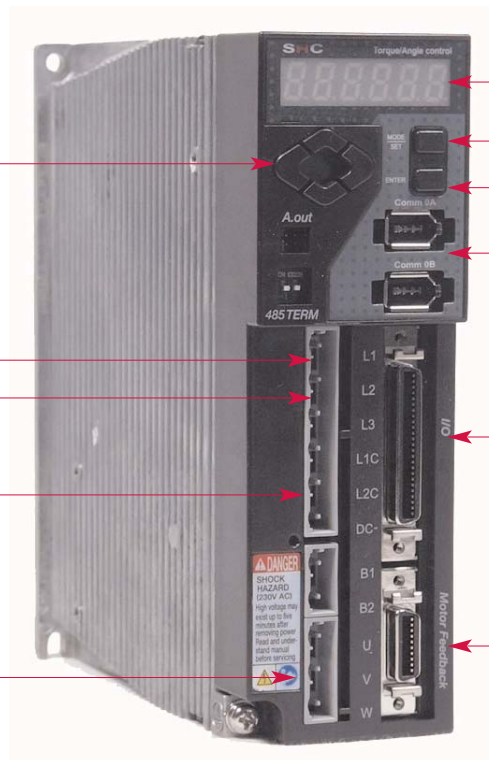
SHC-50 & SHC-100: (WxLxH): 2" x 6 1/8" x 6"  
 SHC-400: (WxLxH): 2 1/4" x 6 1/8" x 6"  
 SHC-800: (WxLxH): 3 1/8" x 6 1/8" x 7 7/8"



**Optional Accessory**  
 RS-232C  
**Item: # 145953**



**Cable Included**  
 SH-Motor Cable (3m)  
**Item: #14-518-0037**



- ↑ Keys
- ↓
- ←
- Display
- Mode Key
- Enter Key
- Serial COM Ports
- AC Input Single Phase
- AC Input 3 Phase
- Power for Control
- Interface I/O
- Motor Encoder



**Cable Included**  
 SH-Encoder Cable (3m)  
**Item: #14-518-0034**