

# ASA

## ST1-X

### High Performance Precision Control General Purpose Type Servo Screwdriver

#### Instruction Sheet

#### (1) General precautions

Thank you for purchasing this product. This instruction sheet provides information about the ST1-X series servo screwdrivers. Before using this product, read the instruction sheet to ensure the correct use of the product. Keep this sheet handy for quick reference whenever needed. Before finishing reading this sheet, follow these instructions:

- Make sure the installation location is free of vapor, and corrosive and inflammable gas.
- Do not disassemble the servo screwdriver or change the wiring when the power is on.

For more information about the ST1-X series servo screwdrivers, refer to the Servo Screwdriver System user manual. To download the user manual, go to [ASA](http://www.asa-tool.com/zh-tw/download.html) website at <https://www.asa-tool.com/zh-tw/download.html>. If you have any inquiry during operation, contact our local distributors or [ASA](#) Customer Service Center. The instruction sheet may be revised without prior notice. Contact our distributors or download the latest version at [ASA](#) website.

#### (2) Safety precautions

Pay special attention to the following safety precautions at all times during inspection, installation, wiring, operation, maintenance, and examination of the screwdriver.

The product is marked with following safety symbols:

	<b>Danger: It might have potential danger to cause severe or fatal injuries for personnel if the instructions are not followed.</b>
	<b>Warning: It might cause moderate injury to personnel, or lead to severe damage, malfunction of product if the instructions are not followed.</b>
	<b>Absolutely prohibited activities: It might cause serious damage or malfunction of product if the instructions are not followed.</b>

#### Installation

- Do not expose the product to an environment containing vapor, corrosive gas, inflammable gas, or other foreign matter to reduce the risk of electric shock or fire.
- The controller for servo screwdrivers must be correctly grounded.
- Before connecting or removing the DC cable, ensure to turn off controller power.

#### Operation

- This product can be operated only by qualified personnel receiving the training for industrial assembly.
- This product is designed for intermittent use. Generally, operate the tool for 1 second and then stop it for 4 seconds. The allowable duty cycle is determined by the torque value and operating time. The built-in protection mechanism of this product ensures the allowable duty cycle is not exceeded.

- Do not touch any rotating parts when the tool is operating, since it might cause personnel injury.

#### Maintenance and inspection

- Do not use the cleaning fluid which contains solvents to clean the tool parts and tool cable.
- Only authorized personnel can repair and restart the system.

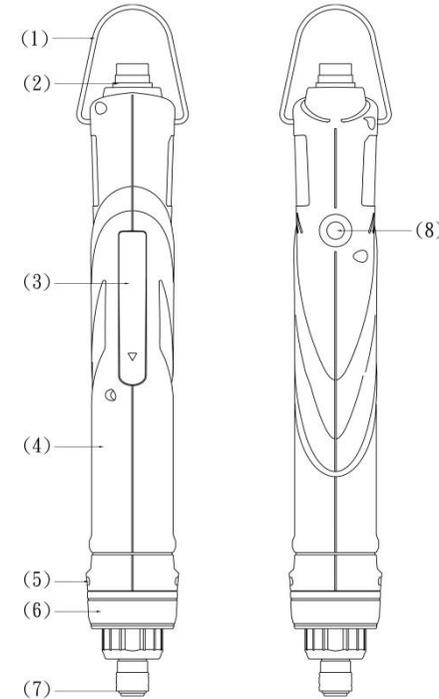
#### (3) Ambient conditions of installation



**Ambient conditions for installing and operating the servo screwdriver system:** the environment should be free of devices that generate excessive heat; no water, vapor, dust, and oily dust; no corrosive and inflammable gas or liquids; no airborne dust or metal particles; and the environment should be solid without vibration and interference of electromagnetic noise.

**Ambient conditions for operating the servo screwdriver:** the ambient temperature for operation is between 0°C (32°F) and 40°C (104°F). The environment should be free of devices that generate excessive heat; not water, vapor, dust, and oily dust; no corrosive and inflammable gas or liquids; no airborne dust or metal particles.

#### (4) How to use and install the servo screwdriver



No.	Item	Description
(1)	Hanger	For securing the servo screwdriver to the shelf on the worktable for easier operation.
(2)	Connector	Connecting servo screwdriver and controller for servo screwdriver.
(3)	Lever to start	Pressing this lever to start the servo screwdriver.
(4)	Non-slip grip	When an operator holds the servo screwdriver during operation, this non-slip grip prevents screwdriver from slipping off.
(5)	LED status indicator	Instantly shows the servo screwdriver status: Normal operation - yellow; tightening error - red; complete - green.
(6)	LED light	The light is white and steady on when the power is supplied. You can set and adjust its functions and brightness via the controller.
(7)	Servo screwdriver shaft	For changing the bits. Use 1/4" (6.35 mm) hex bits or 5 mm hex bits.
(8)	Forward / reverse switch	Change the direction of rotation (forward or reverse) for the servo screwdriver to tighten or loosen the screws.

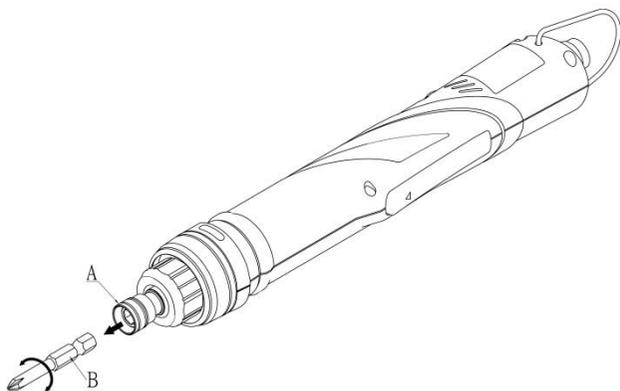
#### Safety precautions for using the screwdriver:

- When removing or installing a servo screwdriver, hold the whole servo screwdriver instead of

holding it only by its cable or rotating shaft.

- Do not hit the servo screwdriver shaft. Impact force will damage the shaft and the motor that is attached at the rear end of the shaft.
- The material of the servo screwdriver shaft is not rustproof. To ensure a longer product life, apply rustproof oil during operation.(add oil wd-40 or sewing machine oil before changing bit or continuously operating over 5-7 days.)
- Turn off the power of the controller for servo screwdriver before replacing the servo screwdriver or DC cable. Otherwise, the servo screwdriver or DC cable may be damaged.
- Correctly connect and secure the DC cable. Avoid tangled and unsecured cables from causing wire damage and personnel injury.

**Install the bit:**

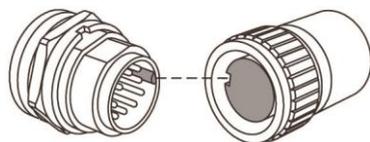
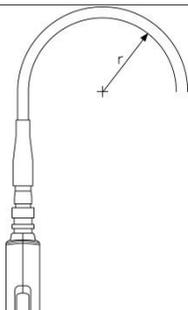


- Pull out the chuck (A).
- Insert the bit (B).
- If not successful, rotate the bit (B) until it can be inserted.

**Install the DC cable:**

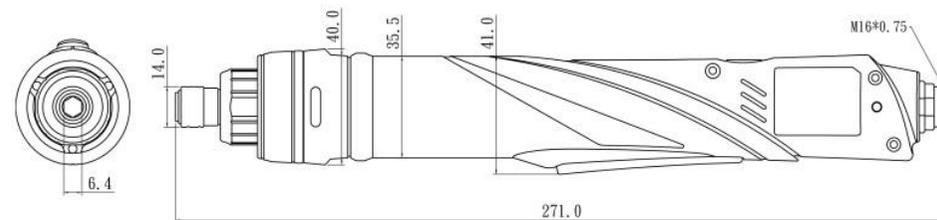
The DC cable connects the servo screwdriver to the controller for servo screwdriver. Note that the minimum bend radius (r) of the cable is 60 mm (2.36 inches).

Refer to the following figure. When DC cable connects to the servo screwdriver, align and mate the positioning structure on the plug and receptacle, and then rotate and tighten the nut in clockwise direction.



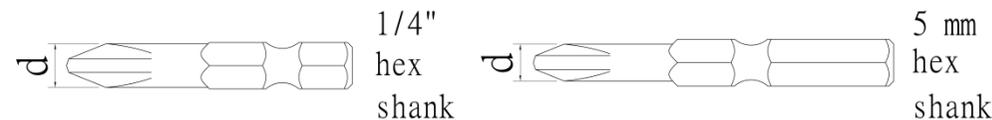
**(5) Servo screwdriver specification**

Model number	Torque range (kgf-cm)	Max. speed (rpm)	Bit size	Weight
ST1-12SA	2.4 - 12	2000	1/4" (6.35 mm) hex bit	480 g (1.06 lb)
ST1-30SA	6 - 30	1100		
ST1-50SA	10 - 50	700		
ST1-12SB	2.4 - 12	2000	5 mm hex bit	
ST1-30SB	6 - 30	1100		
ST1-50SB	10 - 50	700		



Note: the dimensions are in the unit of mm.

**(6) Bit specifications**



1/4" Hex shank			5mm Hex shank			Available Screwdriver Model
Tip No.	Tip diameter D	P#	Tip No.	Tip diameter D	P#	
#1	ψ3.0	7W16774	#1	5mm	7W20303	ST1-12SA ST1-12SB
#2	ψ4.5	7W17334	#2	5mm	7W20338	
#2	ψ4.5	7W17334	#2	5mm	7W20338	ST1-30SA ST1-30SB
#2	ψ6.0	7W17859	#2	5mm	7W20338	
#2	ψ6.0	7W17859	#2	5mm	7W20338	ST1-50SA ST1-50SB
#2	ψ6.0	7W17859	#2	5mm	7W20338	

**(7) Hazardous Substances**

(ASA) All products comply with EU directive 2011 / 65 EU(known as ROHS 2.0)and the amendment Directive(EU)2015 / 863 on the Restriction of the use of certain Hazardous Substances in electrical and electronic equipment.