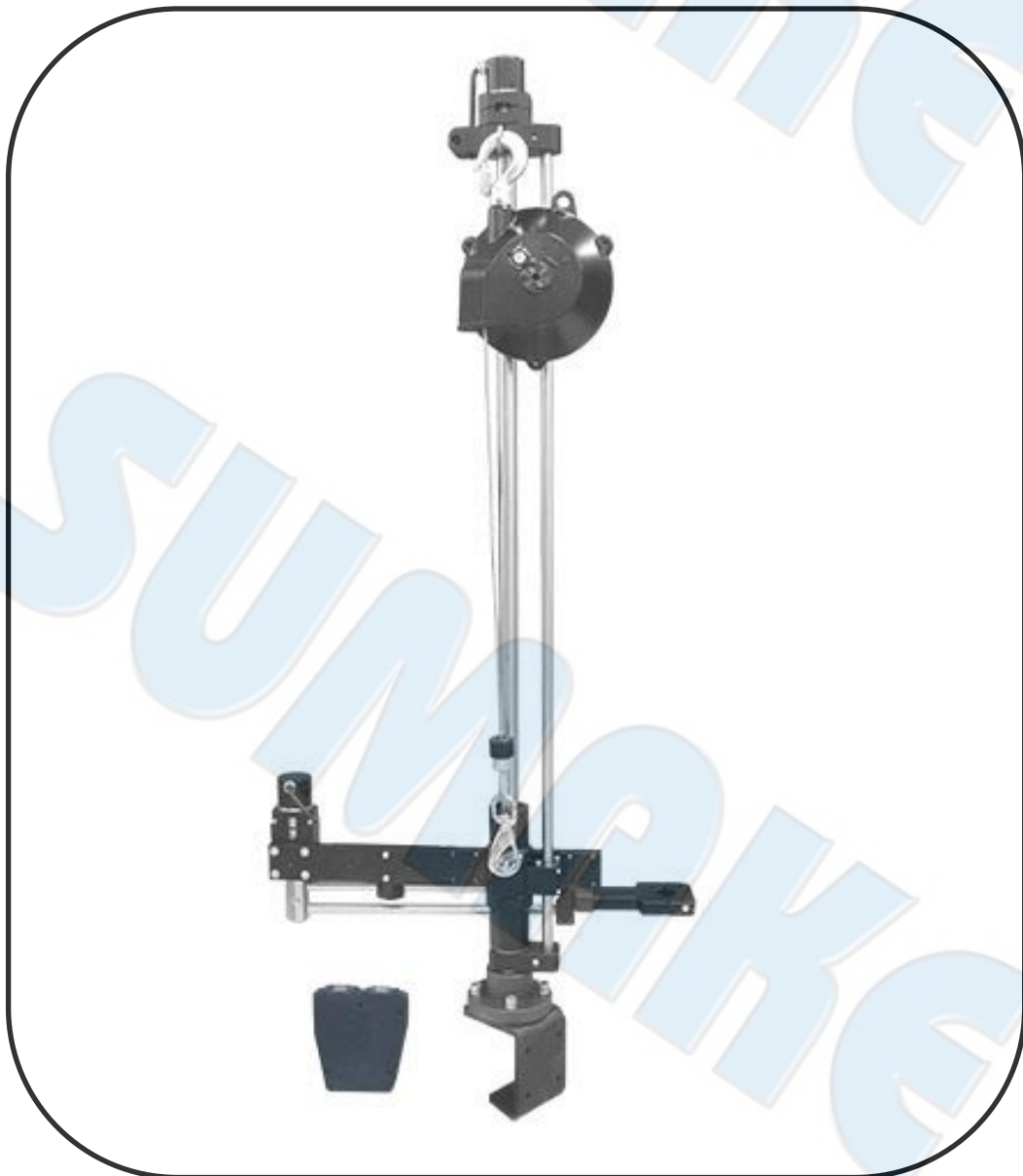


## OPERATION AND MAINTENANCE MANUAL

ITEM NO.: **ST-TAIP1050**  
**FOLDED POSITION CONTROL TORQUE REACTION ARM**



## Introduction

The Smart Positioning Torque Arm is an ergonomically designed tightening assistance device, also known as a reaction arm. It is primarily used alongside electric screwdrivers to support processes such as:

- Preventing tightening errors (e.g., missed or loose screws)
- Ensuring correct tightening sequences
- Capturing and storing tightening data
- Reducing operator fatigue

This device enhances safety, reliability, and operational stability. It improves production efficiency, optimizes the work environment, and minimizes repetitive or strenuous tasks that may harm the operator's physical health.

By counteracting reaction forces, the arm reduces wrist strain and significantly lowers physical load during tightening operations, improving user comfort and safety.

## Key Benefits:

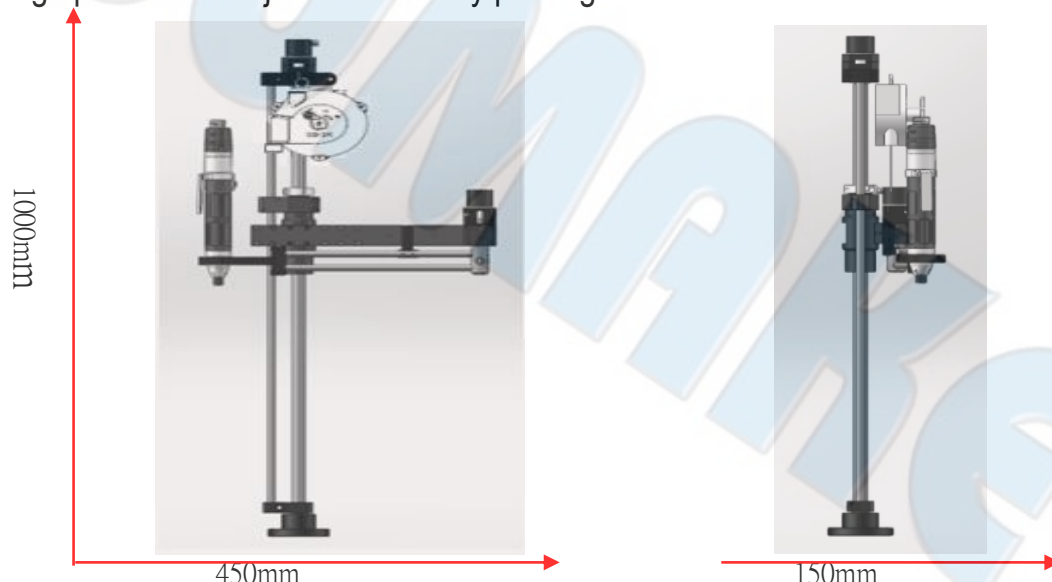
- **Improved Tightening Quality:** The vertical stability ensures the tool remains perpendicular to the workpiece, improving torque precision and assembly quality.
- **Position Monitoring:** Accurate position control enables precise fastening point location and ensures the correct tightening sequence, minimizing errors. Tightening data can also be recorded and stored.

## Model Overview & Features

### 1. Model: ST-TAIP1050 – Crank-Type Positioning Torque Arm

This model is mainly used to absorb the reaction force generated by a smart electric screwdriver during fastening.

The crank-type positioning torque arm directly absorbs and withstands this force, effectively preventing operator arm injuries caused by prolonged tool use.



### 2. Features

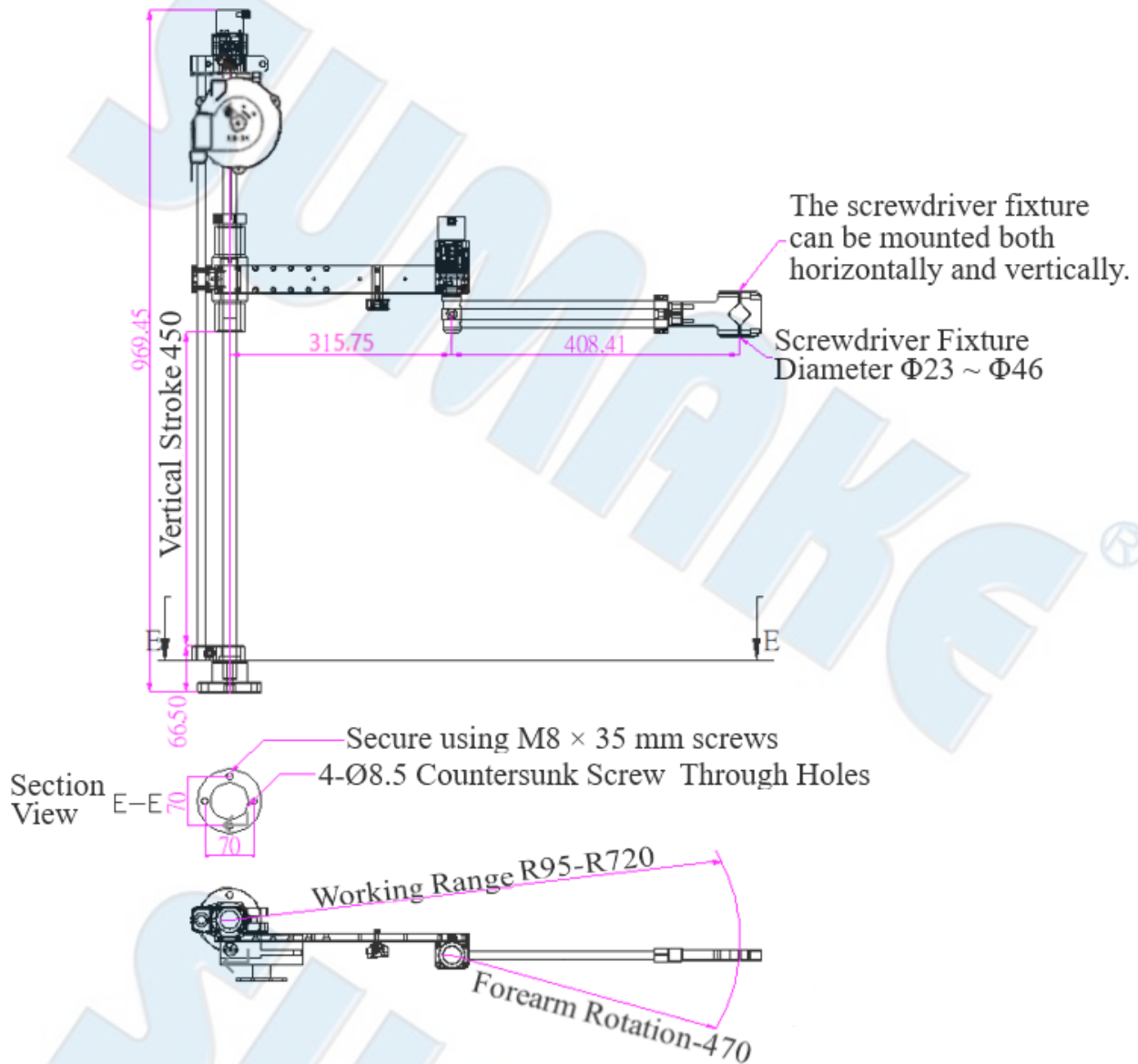
The arm structure rotates **360°**, allowing both rotational and vertical movement. The vertical height automatically aligns with the position of the smart electric screwdriver and holds it at that position—whether raised or lowered.

This design enables operators to quickly and steadily fasten screws into the workpiece, significantly improving work efficiency and quality while reducing the risk of injury.

It supports **high-efficiency, high-quality production**.

*(As shown in the illustration.)*

Model	ST-TAIP1050
Total Height (mm)	970
Vertical Stroke (mm)	450
Working Range (mm)	R95-R720
Maximum Torque Capacity (kgf·cm or Nm)	≤ 20
Maximum Load (kg)	5
Maximum Allowable Screwdriver Torque (kgf·cm or Nm)	200



### 3. Safety Precautions

To ensure proper use of this product and to prevent harm to yourself, others, or property, please carefully read and strictly follow the safety instructions provided in this manual. Failure to do so may result in accidents or injury.

<Please be sure to follow instruction>

- Sign definitions









**【PROHIBITION】** Attempting to perform without notice may cause body injury or damage to the auxiliary arm.



**【WARNING】** Attempting to perform without notice may cause body injury or damage to your objects.

- Safety notification

	Follow instructions in this manual and operate machine correctly.
	Do not spread unknown contaminants to the machine such as oil or water.
	Modification and disassembly are not allowed.
	Keep hand in the safty area while machine is operating.
	Measure tool's weight and adjust balancer to a proper position.
	Please maintain and clean the machine regularly.

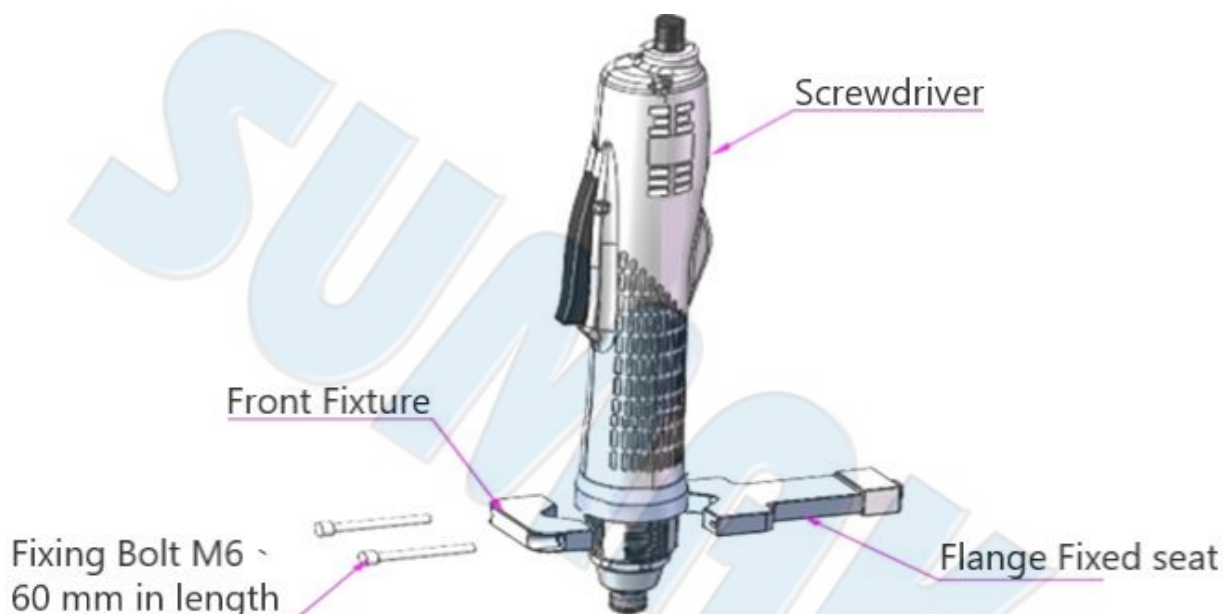
#### 4. Product Description

##### Crank-Type Mechanical Arm:

After opening the packaging box, the product consists of five main components. Please assemble them according to the following steps (as illustrated below):

- (1) Use four M8\*30L hex socket screws to secure the **Base (5)** onto a stable workbench, or fix it using a **C-type clamp**.
- (2) Fix the Balancer Assembly from the top using M6\*25L hex socket screws.
- (3) Connect the Balancer Assembly (3) with the Vertical Slide Assembly (6).
- (4) After securing the components, adjust the **balancer's load setting** according to the weight of the tool mounted on the arm.





**EPSK-A00005** The signal connection box should be used in conjunction with **SMT-SMIS** software.

**Signal Connection Box  
(EPSK-A00005)**  
+  
5V High-Frequency  
Rectifier (**EPK85102-031**)



**SMT-SMIS**  
Software



## 5. Maintenance

For better condition and extending life cycle of this machine, please clean and maintain regularly.

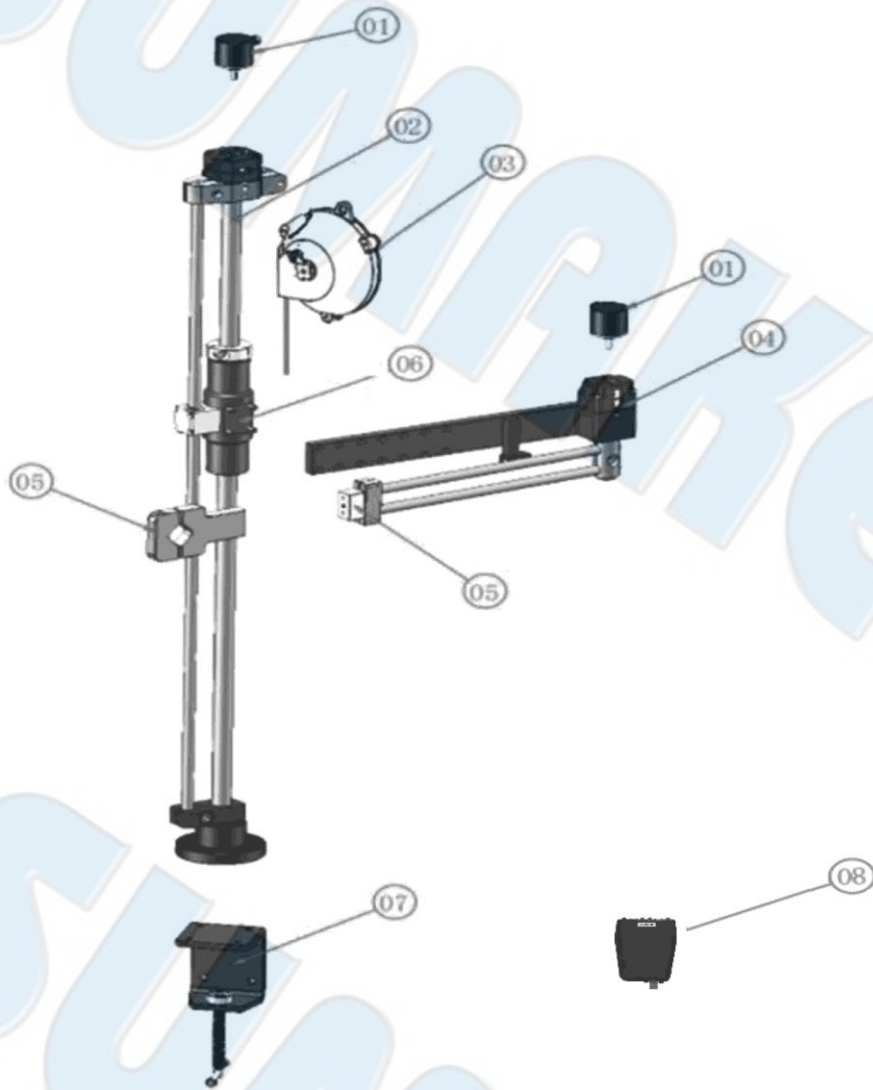
- (1) **Daly** Lubricate the machine with the industrial oil like WD-40 daily as a frequent user.
- (2) **Weekly** Add proper greases into the linear bearing part weekly.

You may shorten maintenance time period, if the machine has been used under a bad weather condition or a higher frequent use.

**Our company reserves the right to modify the product without prior notice.**

# ST-TAIP1050

## FOLDED POSITION CONTROL TORQUE REACTION ARM



PARTS LIST

No.	Description	Q'ty
1	Encoder	2
2	Torque Arm Body	1
3	Balancer	1
4	Crank Mechanism	1
5	Screwdriver Mount Assembly	1
6	Vertical Slide Assembly	1
7	C-Type Mounting Clamp	1
8	EPSK-A00005 Signal Connection Box	1

**NOTE**

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