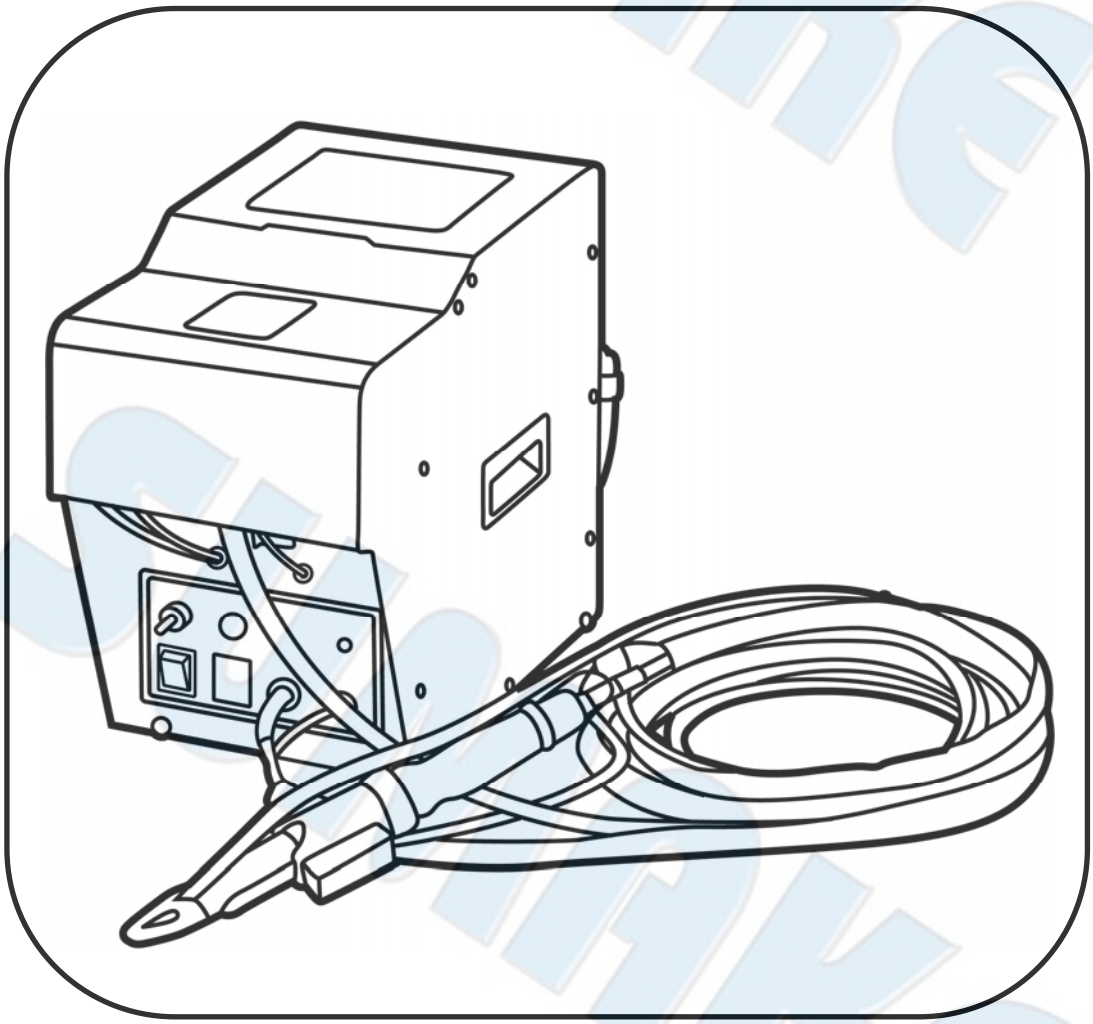
SUMAKE®

Professional & Industrial

INSTRUCTION MANUAL

ITEM NO.: SF40T, SF40TH

AUTOMATIC SCREW FEEDER



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Content

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I. Introduction

- Automatic Screw Feeder saves all the troubles of manually fetching the screws in a traditional way. Furthermore, by delivering the screw in a speedy and stable way to the tip of the screwdriver where the screw is immediately locked into the work piece. The machine substantially improves working efficiency and greatly lowers manpower costs by the utilization of the highly productive un-manned operation. Combined pneumatic or electric screwdriver to screw feeder in accordance with the design principles of fast, stable, convenience. To enhance the screws and speed significantly improve production efficiency.
- Combined pneumatic or electric screwdriver to screw feeder in accordance with the design principles of fast, stable, convenience. To enhance the screws and speed significantly improve production efficiency.
- Customized jaw by screw and working environment to ensure smooth and stable job.
- Can adapt to customer-specified screwdriver model.

II. Item inspections

1. Comparison list

	Description	Q'ty	remark
1	Screw feeder	1 set	
2	Screwdriver set	1 set	electric/pneumatic
3	Electric wire	1 pcs	
4	Spring balancer	1 pcs	
5	BIT	10 pcs	
6	Operation manual	1 copy	

III. Safety precautions

Please do follow and read this instruction note to avoid endangering the lives and property of the individual and others. And prevent occurrence of dangerous.

＜Please MUST follow instructions as below to work>

1. Warning：

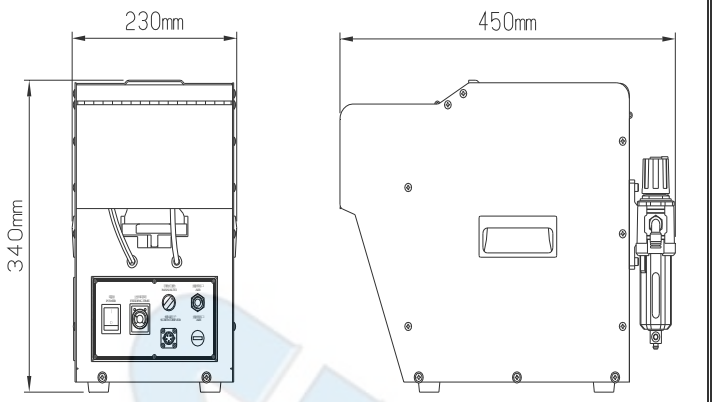
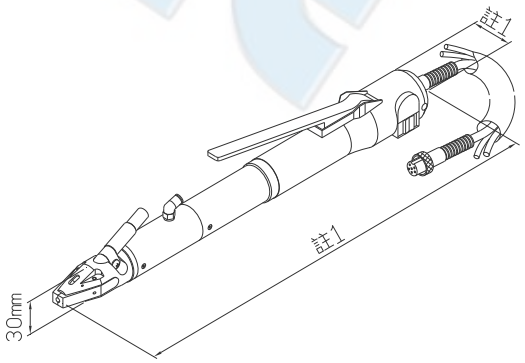
	【Prohibition Sign】Fire, electric shock, or personnel injury or death may occur if not observed.
	【Alarm Sign】 Damage of properties, or electric shock or injury of personal may occur if not observed.

2. Cautions：

	DO NOT let contaminants such as water or oil enter into machine.
	Please use the specified voltage and power. And confirm whether the ground wire of main power connected.
	Follow instructions depicted in the manual and operate the machine correctly.
	DO NOT dismantle or modify the machine.
	In case the machine emits smoke, the machine drops from a height, or water gets into the machine, please immediately remove the power plug; then send the product for repair.
	DO NOT place and operate the machine on an unstable table.
	Prohibit to put machien in flammable or corrosive gases place.
	Prohibit to hand in hopper while start working to avoid dangerous.
	Remove the power plug if the machine is to remain idle for a long period of time. And use specified voltage.
	Do not place non-spec screws into the hopper.
	Do perform regular maintenance of the machine as scheduled.

IV. Instruction

1. specification：

Model	Weight	Voltage	Screwdriver set	Weight
SF40T SF40TH	24.5kg	AC 220V		1.3 kg
				

■ Remark 1：The external dimension will be different for different screwdriver set

2. Working environment：

(1) General atmosphere 。

(2) Temperature：－10℃ ~ ＋40℃。

(3) Ambient humidity： 20% ~ 90%（no condensation）。

(4) Air pressure：5 ~ 6 kg / cm^2。

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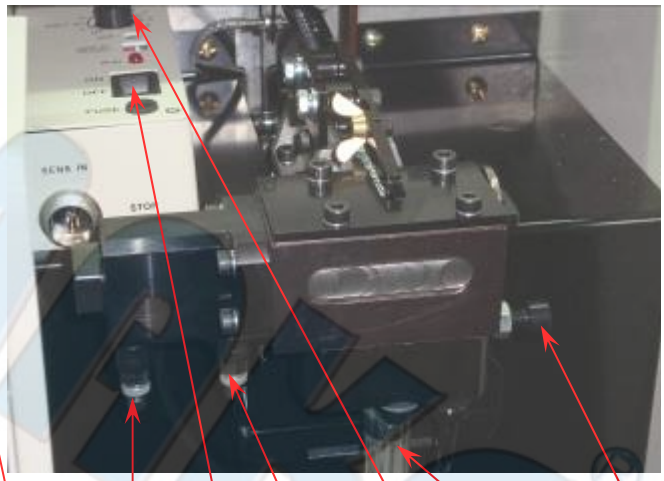
V. Parts Nomenclature

Front view



Power

Auto/Manu

Feeding time

Signal of screwdriver

Air of screwdriver

Air of screwdriver piston

Leftward Speed Adjust Valve

Power of

Rightward Speed Adjust Valve

Adjustment of controller

Screw outlet

Air Blow Adjust Valve

Back view

Oil adjustment knob

Lubricate inlet

Speed control value of screwdriver piston

Fuse

Power plug of screw feeder

Air connector

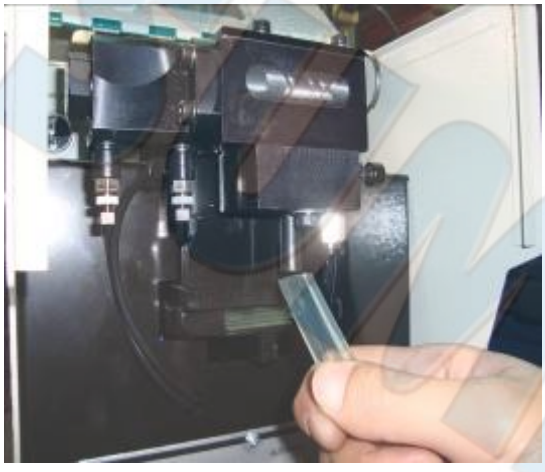
Adjustment of air pressure

VI. Installation procedure

- ✧ Sequence connect “signal cable of screwdriver”、”tube of screwdriver piston”、”delivery hose” to screw feeder by <Fig.1>

- ✧ Check power switch of controller.
- ✧ Install the spring balancer in stable place then mount screwdriver set.
- ✧ Keep the pipeline neatly to avoid being external compression, twist, pull and causing screw jammed, signal interruption or other failures.

Fig.1

Connect signal cable of screwdriver	Connect tube for screwdriver piston
	
Connect deliver hose	Check power switch of controller
	

- Connect power cord and air source after confirming voltage is correct. See <Fig.2>

Fig.2

Connect power cord	Connect air source
	

- Adjust air pressure (5~6 kg/cm^2) see <Fig.3>

Fig.3

Pull the air pressure knob up then adjust clockwise	Push air pressure knob down after adjusting
	

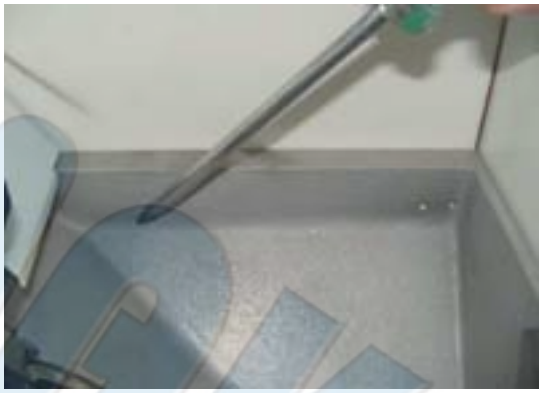
VII. Inspections prior to test run

- According to “Installation Procedures”, make correct connections of respective items. Especially for voltage and air pressure.
- Make sire all connections of power, signal and air hose are install correctly
- Make sure the incoming power supply is correct
- Make sure the ground wire of main power install correctly.
- Make sure the feeding time of screw feeder is between 0.5~1 second
- Make sure there is 80% oil of air unit.
- Make sure air pressure (5~6kgf/cm^2)。
- Make sure the hopper is clean and no miscellaneous material.
- Make sure the installation place of screwdriver is stable or not. And whether the capacity of spring balancer is correct.
- Make sure whether screw feeder place in smooth, stable and suitable position.
- Must keep the pipeline neatly to avoid external compression.

VIII. Test run

- Confirm < Inspections prior to test run> be done properly before <Test run>
- Open the power of screw feeder then confirm whether the signal light will be lit.
- Check whether the pushing board swing repeatedly until the vibration equipment rail full of screw. If full then it will be stop. And whether the vibration keeping to move screw forward.

➢ Load screw in hopper then check feeding condition is normal or not

Load screw in hopper	The Max. volme of screw
	

➢ Test whether feeding is normal

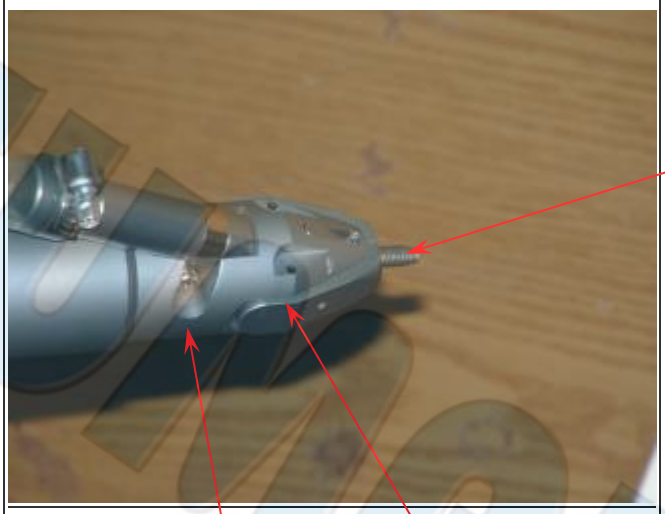
✧ Check the screw can move forward smoothly while feeding.

✧ Press screwdriver lever for 1 second then release to start working then screw will be fed.

✧ Check whether screw can reach tip of screwdriver after fed, and the screw thread should be beyond the jaw. See <Fig.4>

Fig.4

The tip of screwdriver



➢ Test whether the screwdriver working normal

✧ Check the screwdriver will rotate after pressing switch.

✧ Check whether there is abnormal voice while screwdriver working.

IX. Operation

1. Instruction of operation：

(1). Open power of screw feeder

(2). Press screwdriver lever for 1 second then release for first use then screw will be fed.

(3). Check whether screw reach tip of screwdriver and screw thread beyond jaw.

(4). Aim screwdriver to work-piece by straight <90°> then press lever to screwing.

(5). Take screwdriver up then release lever after screwing well. In same time, next screw will be fed.

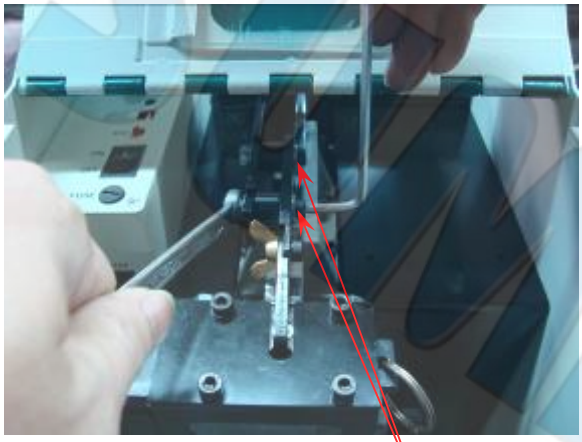
(6). Repeat action (4), (5)

2. Instruction of adjustment：

(1). Adjustment of regulating plate：

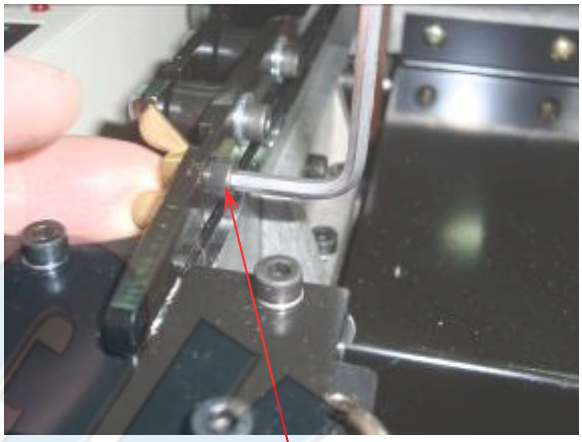
If the regulating plate is too high or low, use 3mm hex-wrench and 8mm hex-wrench to adjust.

Back regulating plate



Screw

Front regulating plate



Screw

(2). Air volume adjustment ：

If the screw can't reach to screwdriver within feeding time, please adjust air volume by procedures as below.

a. Use wrench to release nut of escapement.

b. Then use wrench to adjust screw by procedures as below.

※ Reduce air volume ： Turn clockwise

※ Increase air volume： Turn counter-clockwise

c. Then assemble nut after adjusting.

Caution: **The different length of delivery hose will need different air volume. The jaw will be damaged easily if air volume is too strong. The proper volume just let screw deliver to tip of screwdriver.**

Use 5mm hex-wrench to adjust

Use 10mm hex-wrench to adjust

(3). Adjustment of escapement speed：

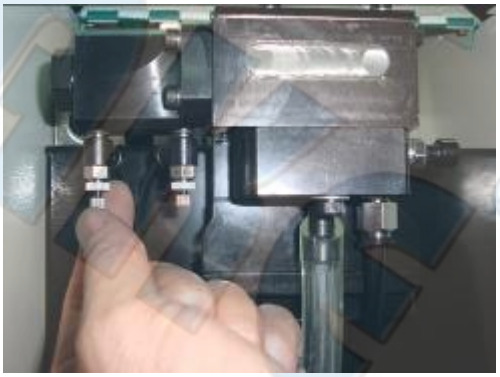
If the shutter of escapement works badly, then need to adjust speed value by procedures as below.

a. Change shutter for rightward speed, adjust right valve. See <Fig. **5**>

b. Change shutter for leftward speed, adjust left valve. See <Fig.6>

Fig.5

Fig.6



(4). Adjustment of regulating plate：

a. If feeding time is inadequate or too long, please adjust feeding time know. The standard is 0.5 second. See <Fig.7>

Caution: **Necessary to adjust appropriate feeding time for different length of delivery hose.**

b. If the screw which in slide rail can't move forward smoothly, please adjust inverter. See <Fig.8>

Fig.7

Fig.8

(5). Torque adjustment and BIT replacement：

The pipeline of screwdriver must be separated then disassemble to before BIT replacement or torque adjustment. Steps are as below.

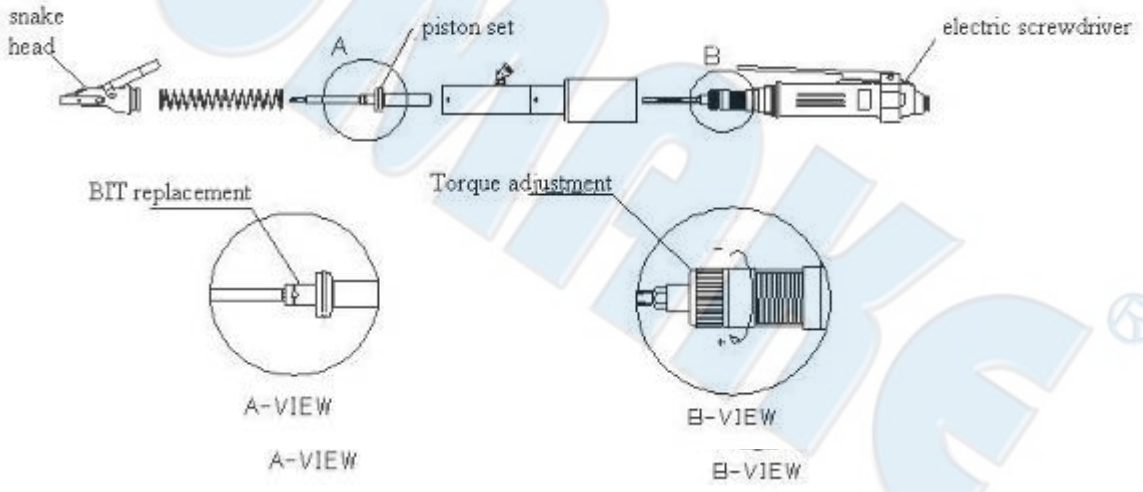
a. Turn off power of screw feeder.

b. Released electric wire of screwdriver, tube and delivery hose.

c. To replace BIT, released screw of snake head and extract piston set then rotate screw at "A" point.

d. Adjust torque at "B" point. See <Fig.9>

Fig.-9



X. Troubleshooting

1. screw can't reach tip of screwdriver：

(1). The screw jammed or delivery hose off.

➢ Check whether there is miscellaneous material and tube didn't connect.

(2). The air volume is too weak to feed screw from screw feeder to screwdriver.

➢ Adjust air volume ◦【refer to **IX. 2-2**】

(3). Regulation plate chocked.

➢ Please adjust regulation plate and clean screw on track then adjust regulation plate to appropriate position.**【refer to IX. 2-1】**

(4). If feeding time is too short.

➢ Please**【refer to IX. 2-4】**◦

(5) If screw can't fed in normal condition.

➢ Make sure there are screws in hopper.；If yes, please press lever for 1 second then release.

2. screw can't fed through escapement：

◆ Please turn off power and air.

(1) The escapement is jammed by material.

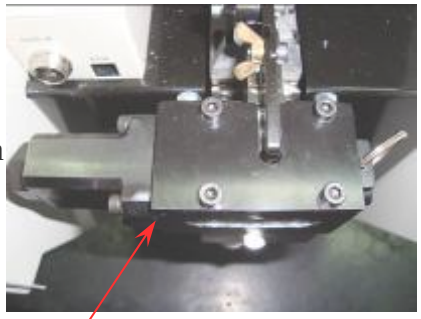
➢ Move the ring around and try to remove. See <Fig.**10**>

➢ If it isn't useful. Please release screw to open ES. cover by 3mm Hex-wrench then clean it. Re-assembly after done well.

(2.) The Amplitude of inverter is too weak.

【refer to IX. 2-4】

Fig.10



3. screw can't fed through delivery hose：

(1) Delivery hose is jammed by material.

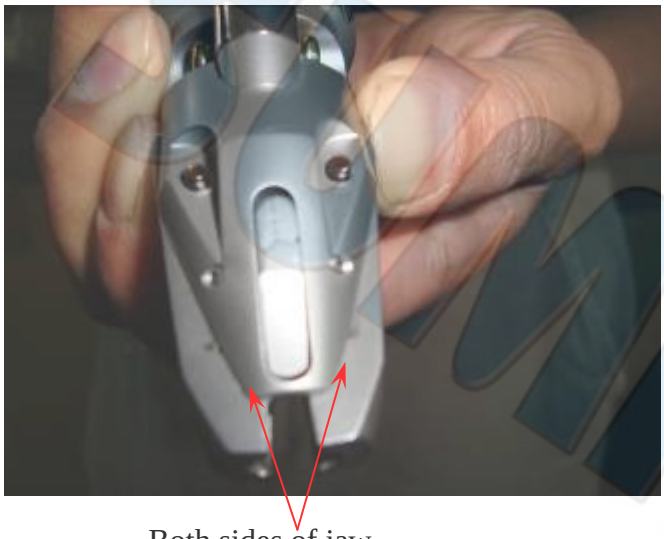
➢ Remove delivery hose from escapement then clean.

(2) The hose joint is jammed by material.

➢ Press both sides of jaw then clean. See <Fig.11>

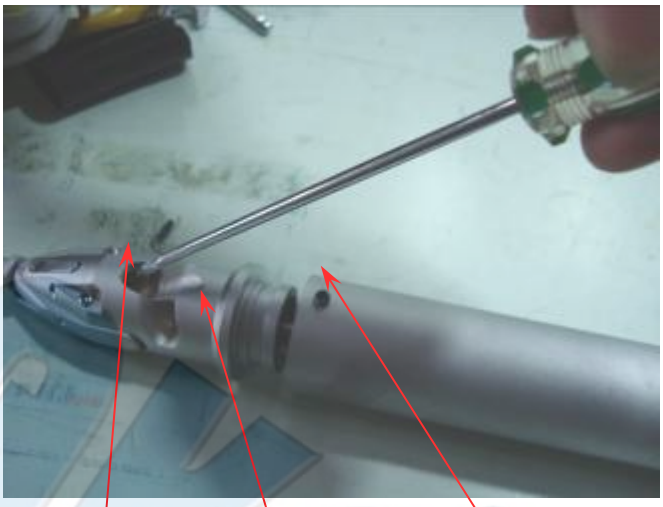
➢ Disassembly snake head and hose joint and use slot screwdriver to clean. See <Fig.12>

Fig.11



Both sides of jaw

Fig.12



After removing hose joint

Jaw base

Screw of cylinder

4.feeding through slide rail is not smoothly：

(1). The slide rail is dirty

- Please use cotton dip alcohol to clean then smear by WD-40 oil.

(2). The regulation plate position is not appropriate or screw tolerance is too big.

- Chen regulation plate location. If it suppressed the screw, please adjust regulation plate. **【refer to IX. 2-1】**

(3). The slide rail deformed or damaged.

- If yes, please ship back to dealer or our company.

5. machine doesn’t operator in normal condition：

(1). Power is not lit.

- Chen whether the fuse broken, if yes, please replace it.

(2). If screwdriver can’t rotate.

- Check whether electric wire or air connected.

★.If the above trouble event happened, please contact dealer or our company.

XI. Maintenance

To make screw feeder and screwdriver set can be used in long state. Please lubricate and clean dirty parts regularly. Please also replace BIT regularly to avoid stripping.

★ .**If working environment is harsh or frequent operation, please short time of maintenance.**

(1). Clean hopper.

- Please clean miscellaneous material in hopper per week.

(2). Check air unit

- Please supply oil (w10) if oil level under 80%. See <Fig.13>
- Remove water in air unit. See <Fig.14>

Fig.13	Fig.14
	

(3). Clean escapement and slide rail

- Use air gun to clean regularly
- Use cotton dip alcohol to clean slide rail then smear by WD-40 oil.

(4). Check whether BIT damaged

- BIT replacement **【refer to IX. 2-5】**

EU Declaration of Conformity (DOC)

We: **SUMAKE INDUSTRIAL CO., LTD.**

4F, No. 351, Yangguang St., Neihu District, Taipei City, Taiwan

declare in sole responsibility that the equipment

Equipment： **AUTOMATIC SCREW FEEDER**

Model/ Serial No.： **SNF-A1, SNF-A2, SNF-A3, SNF-A4, SNF-A8, SNF-A9, SNF-A10, SNF-A11, SNF-A12, SNF-A13, SF40TH, SF30A, SF30M, SF30T, SF40A, SF40T, SF501, SF501T, SF502, SF502T, SAF-100S, SAF-100G, SAF-100L, SAF-100R, SDA, SF-SERIES**

The object of the declaration described above is in conformity with the relevant union harmonization legislation:

- **Machinery Directive 2006/42/EC**
- **Low Voltage Directive: 2014/35/EU**
- **RoHS 2011/65/EU**

The following harmonised standards and technical specifications have been applied:

- **EN ISO 12100:2010**
- **EN ISO 13849-1:2023**
- **EN ISO 13850:2015**
- **EN ISO 13857:2019**
- **EN ISO 4414:2010**
- **EN 60204-1:2018**

Name and Signature/Position

Mike Su – Managing Director

Date and Place

2023/9/26

Taipei, Taiwan

NOTE