



HIOS®

Automatic Screw Feeder

Screw type for JIS HS series

HS-26 HS-30

HS-40 HS-50



Operation Manual

Read this manual before using this device.
Current as of March 2015

HIOS Inc.

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r100 Utilizing 100% post-consumer
recycled paper pulp

Operation Manual No. ET-D003

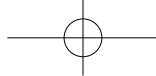
15A



1. Important safety instructions

- (1) Be sure to keep the feeder away from flammable or explosive gases, heat sources, humidity, static electricity and direct sunlight.
Do not use the feeder if the above are present.
- (2) Set the feeder on a flat and stable place. Otherwise it may fall and cause injuries.
- (3) Unplug the AC adapter from the electric outlet after use or when the feeder is not used for a long time.
- (4) Use only the AC adapter supplied with the feeder.
- (5) Never insert fingers or the objects in the screw bin, the access holes or other open spaces.
- (6) In case of malfunction, turn off the power and unplug the AC adapter.
Continuing to use a malfunctioning feeder may cause fire, electric shock or injury. Contact the dealer you bought it from.
- (7) Do not scratch the rail or allow oil to get on it.
- (8) Use only the recommended screws.
- (9) Do not use excess force when removing screws.
- (10) Do not use screws covered with oil or dust.

CAUTION: Do not attempt to repair, disassemble or modify the feeder by yourself.
Consult your dealer for assistance.



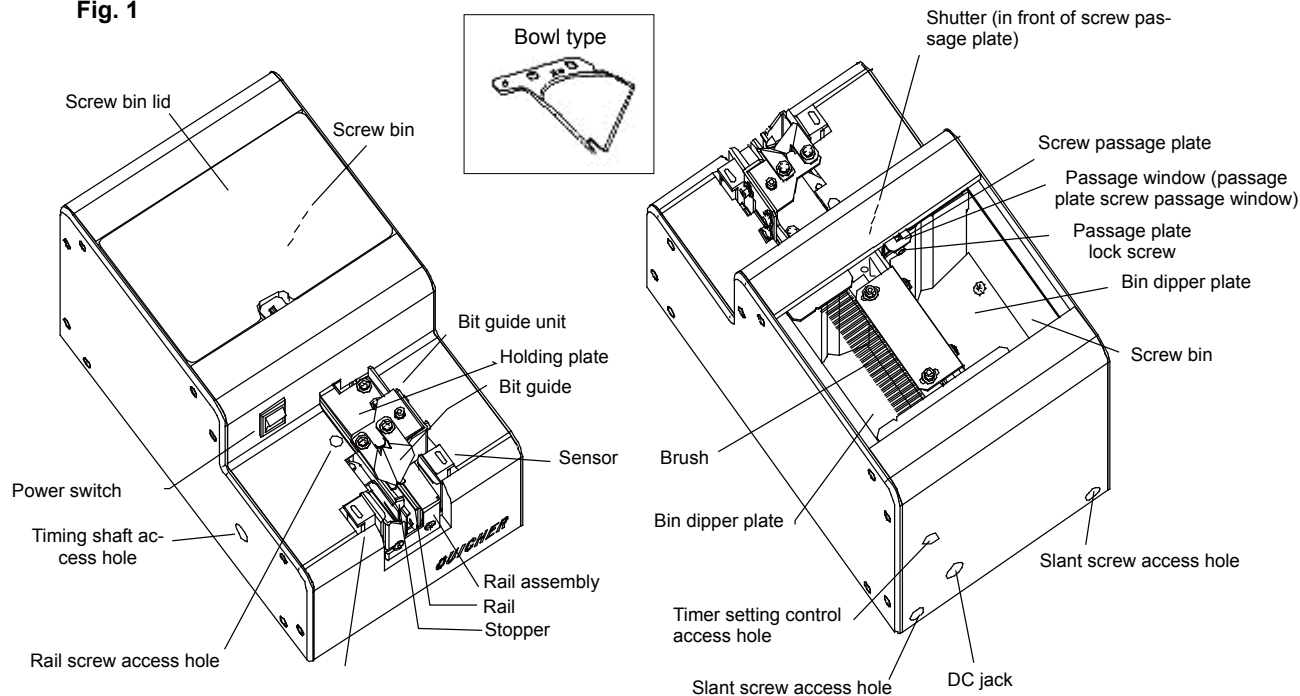
2. Parts of Names

Note: ① The design of bit-guide has been changed from V-type to bowl-type since September, 1998.

However, the operation method is same as the former V-type, therefore, the descriptions and the drawings for the V-type are still used in this manual. Please be careful that the bit type have been changed. (See p.11)

② A drop preventive plate is provided in this machine. However, this part should not be touched or maintained by users, consequently, the explanations and the drawings for this part are omitted in this manual.

Fig. 1





3. Before use

3-1. Check screw type

Before operating HIOS your screw feeder, make sure You can easily replace the rail unit to match the diameter of the screw you wish to use.

Check the screw number shown on the front of the rail unit to make sure your using correct diameter screw.

Before operation, adjust the following according to the screw type to be used.

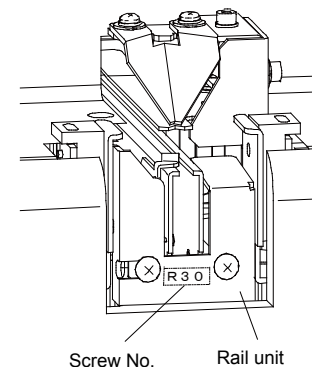
Before operation, adjust the following according to the screw type to be used.

- Brush
- Screw passage plate
- Bit guide unit
- Rail unit

CAUTION: Be sure to turn off the power switch of the feeder before making any adjustments.

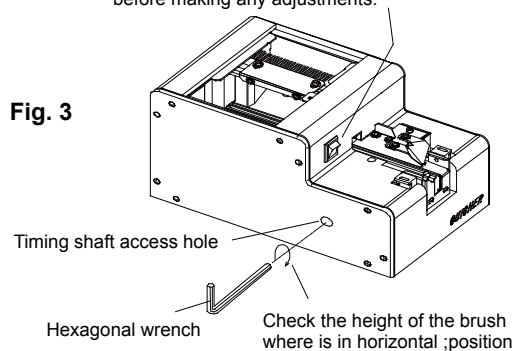
Operation screw dia. Nominal	Model
M2.6	HS-26
M3.0	HS-30
M4.0	HS-40
M5.0	HS-50

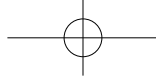
Fig. 2



Be sure to turn off the power switch of the feeder before making any adjustments.

Fig. 3





3-2. Adjustment of the brush

Check the height of the brush when it is in a horizontal position, as shown in fig. 3.

If not horizontal, adjust as follows;

- (1) Loose two screws from the brush.
- (2) Adjust the top of the brush and the head of the screw with no room clearance and don't too much downward adjusting of the brush.
- (3) After Adjusting the brush, fasten with two screws.

Turn the timing shaft clockwise with the included hexagonal wrench. Put a few screws in the rail to check the height of the brush. Rotate the brush manually within about 120 degrees, as indicated by the arrow in fig. 4

Be careful not to turn the brush forcedly beyond 120 degrees, No adjustment is necessary if there is no gap between the central part of the brush and the heads of the screws, as in fig. 5. If there is a gap, adjust as follows:

Loosen the brush set screws. Adjust to make the central part of the brush just touch the tops of the screws.

Do not lower the brush too much however' tighten the screws after adjusting, then make sure the brush turns smoothly by testing it again.

手動で刷毛を回転させ刷毛先端の～ 訳を

Fig. 4

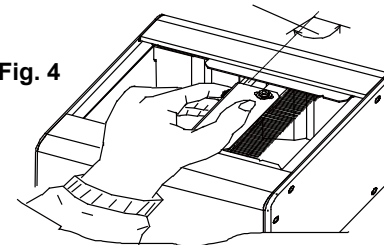


Fig. 5

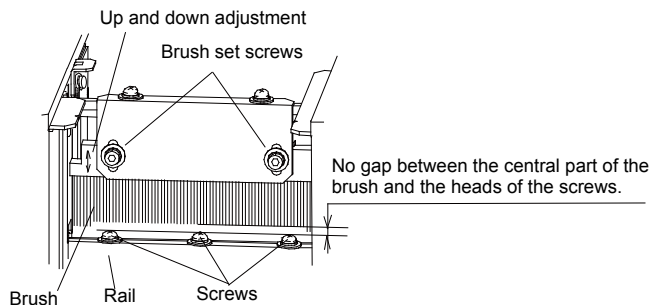
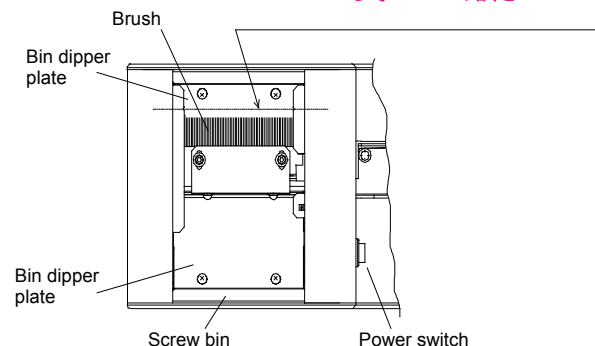
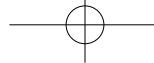


Fig. 6

V 溝延長線がレール上面に対して～の訳を





3-3. Adjustment of the passage plate

Remove the screw bin lid.

Place a few screws in the rail and slide them up to the screw passage(b)

To check the clearance between the passage plate(d) and the head of the screw.

No adjustment is necessary if the clearance is less than 0.5 mm.

To adjust, loosen the set screw(a) and adjust by manually moving the passage plate(d) up and down. When the clearance is less than 0.5 mm, tighten the set screw.

Note: if the shaft(c) of the screw is a bit short, a slight adjustment is required

3-4. Adjustment of the bit guide unit

• In a case of using FLAT and OVAL SCREW types, Replace the screw holding plate(e).

• M2.6-M3.0 Model:2630F

• M4.0 Model:4040F

• M5.0 Model :5050F

Place five to ten screws in the rail and tilt the feeder until they hit the stopper of the rail unit. No adjustment is necessary if the clearance between the holding plate and the head of the screw is 0 to 1 mm, as in fig. 8.

The screw cannot go through the screw passage(b) when the shutter is closed.

To open the shutter, turn the timing shaft clockwise with the hexagonal wrench.

The screws cannot move toward the stopper if the clearance between the holding plate(e) and the rail is narrower than the head of the screw.

The holding plate(e) and the rail is narrower than the head of the screws.

Fig. 7

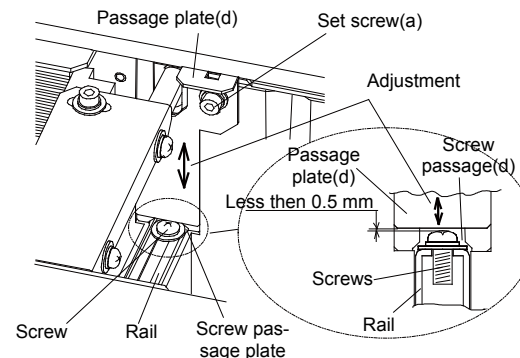
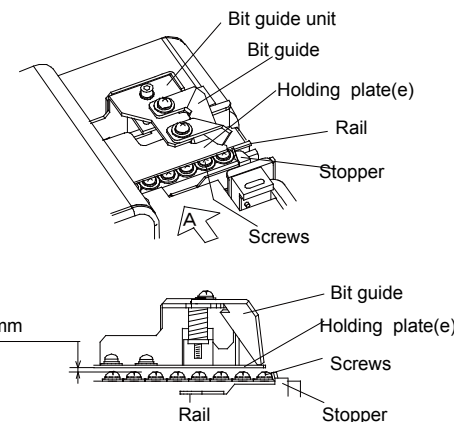


Fig. 8





To adjust height

Tilt the feeder so that a screw(a) hits the stopper(b), then loosen the set screw(c). Turn the bit guide unit adjusting screw(d) until a clearance of 0 to 1 mm is obtained. Be sure to tighten the screw(c) again after the adjustment.

Note: If the shaft of the screw is a bit short, a slight adjustment is required.

If the heads of the screws are not in alignment with the rail, try to make the gap between the holding plate and the heads as narrow as possible, as in fig. 10.

Then the screws can be smoothly fed in the rail. The gap at the front should be a little less than the gap at the back, as in fig. 10

Fig. 10

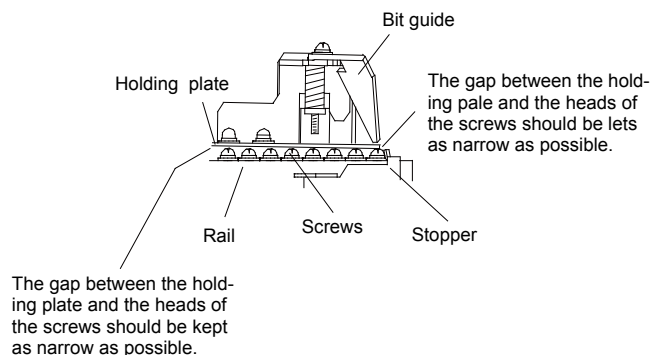
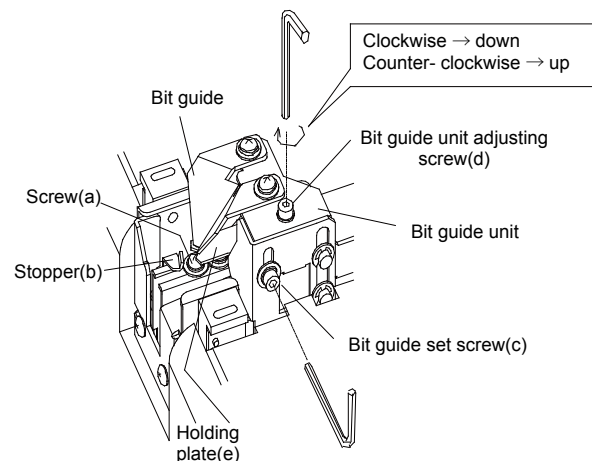
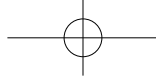


Fig. 9





The feeder was shipped from the factory with the U funnel on the holding plate(a). U funnel on the bit guide(b) and the center of the rail ditch(c) in perfect alignment.

If, however, the unit was bumped or jarred during shipment, these crucial parts may have gotten out of alignment, in which case they must be readjusted as follows: Loosen the holding plate and bit guide set screws with the hexagonal wrench and align the slots with the center of the rail ditch. Tighten the screws after adjustment.

3-5. Adjustment of the rail unit

Place five to ten screws in the rail and tilt the feeder until they hit the stopper of the rail unit.

When the shutter is closed, the screws cannot go through the screws passage.

If it is closed, turn the timing shaft clockwise with the hexagonal wrench to let it open.

The stopper is fixed to the rail unit. The adjustment of the stopper is made by moving the rail unit back and forth.

If the slot on the holding plate, the slot on the bit guide and the rear point of the Phillips slot on the screw head are not in alignment, adjust as follows;

Loosen the rail screw with the hexagonal wrench and move the rail unit back and forth to get them aligned.

Tighten the screw after adjusting.

Fig. 11

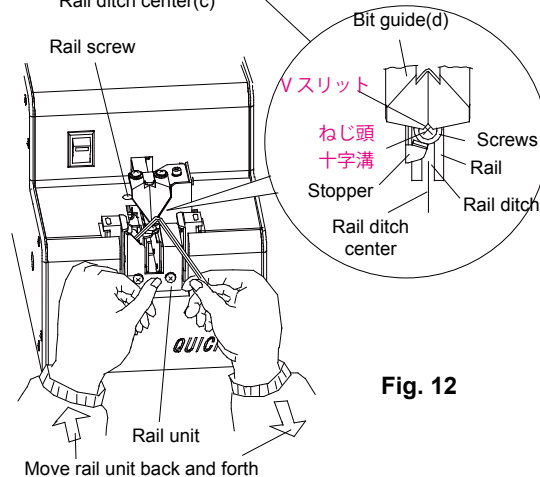
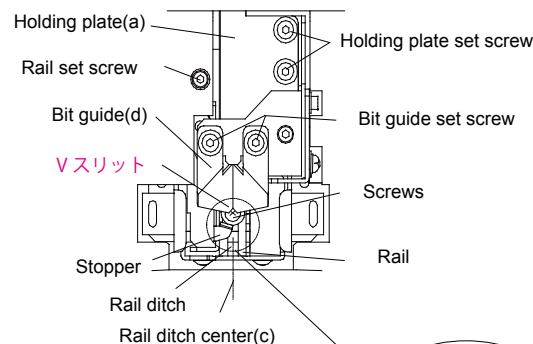
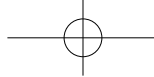


Fig. 12



4. Operation

Follow the procedure below after completing all adjustments for your screw type.

4-1. Feeding in the screws.

Open the screw bin lid. If the bin dipper plate is at the lowest position, pour in screws until they come to about 3 mm of the top of the rail, as shown in Fig. 13.

Turn the timing shaft clockwise to lower the screw dipper plate to its lowest position, as in Fig. 13, then the brush can be set at the desired position for the screws to be put in.

Note: Don't overload the screw bin.

The motor protection circuit won't start the feeder if the feeder is overloaded.

4-2. To Turn on the feeder

Insert the AC adapter plug into the DC jack at the rear of the feeder.

Insert the AC adapter into the electric outlet and turn on the power switch (the indicator should come on).

The screw dipping plate and the rail will begin oscillating and the feeder will start feeding screws.

If the screw is not removed from the stopper, the sensor will react and stop the feeder. If the screw is removed, the sensor will react to start the feeder.

Note: Don't overload the screw bin.

Fig. 13

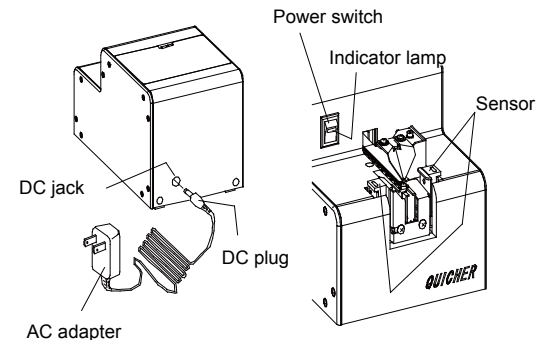
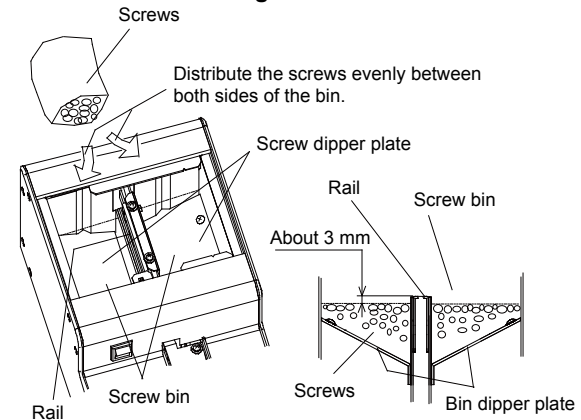
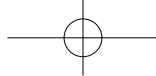
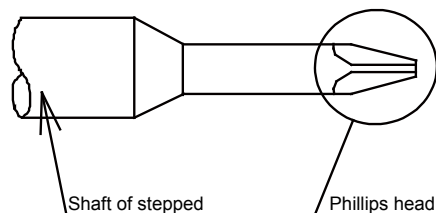


Fig. 14



4-3. To pick up screws

Bits



Screw dai.	Bowl type bit-guide No.	Shape of bit
M2.6	BG-26	H4, H5 #1 $\varnothing 2.6$
M3.0	BG-32	H4, H5 #2 $\varnothing 3.2$
M4.0		
M5.0		

Attach a bit to your electric screwdriver to match the head of the screw.

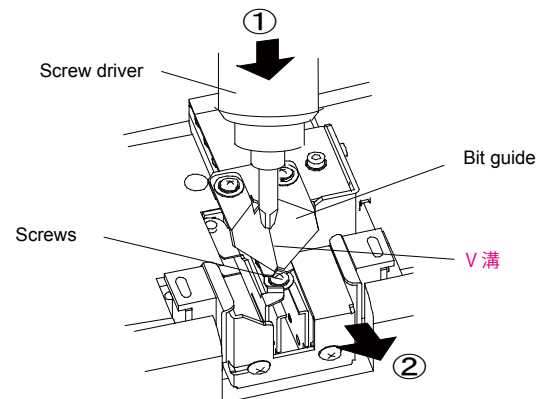
(the screwdriver bit must be magnetizes before use.) Put the driver bit somewhere in the opening of the bit guide and ; push it straight down while turning the bit slightly, until it hits the screws head.

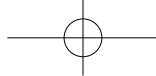
The back and forth movement of the rail will stop when the screwdrivers bit reaches the bottom of the screw head slot.

Then pull the screw out towards you. Be careful not to push the screwdriver bit into the screw head with too much force.

If the driver is lowered into the screw head with moderate force, the back and forth movement of the rail will stop. Do not use more pressure than necessary to stop the back and forth movement of the rail.

Fig. 15





4-4. How to tilt feeder forward

The feeder should normally be set horizontally. However, if it has difficulty feeding some types of screws smoothly, slant the feeder toward the front direction, as shown in Fig. 16a.

Lift the rear of the feeder slightly, loosen the slant screws with the hexagonal wrench and pull out the base bracket (it can be pulled out by about 12 mm).

Tighten the screws when the desired slant is achieved. Make Tighten the screws when the desired slant is achieved.

Make sure the feeder is steady and that it doesn't wobble.

Note: Do not slant the feeder too much. Screws may get caught in the screw passage if slanted more than necessary.

4-5. Fix of Interval Time

As for all the HS Series, suitable interval time until next feeding can be adjusted by manual operation.

Fixing time: 0 to 6 sec.

Please adjust proper interval time according to the condition of use.

Fix the time by the timer volume in the rear part of machine with a small screw driver as the Fig. 16b.

When the volume is fumed to clockwise, the fixing time will be longed.

So in case of counterclockwise, the time will be shortened.

Do not turn the volume exceeding the adjustable range.

頂いた英文にはこの場所に画像と英字がありますが、ワードのデータの中にはありませんでしたが削除したのですか？

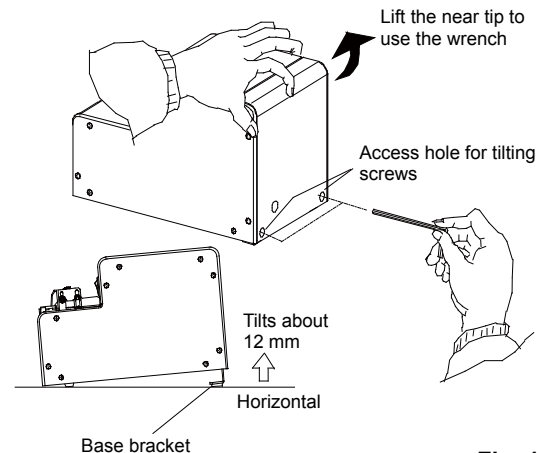


Fig. 16a

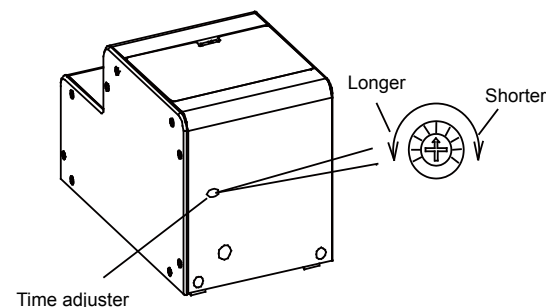
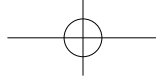


Fig. 16b



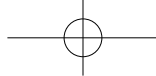
5. TROUBLE SHOOTING

Caution: Be sure to turn off the power switch of the feeder before making any adjustments.

Problem	Cause	Remedy
5-1 The feeder doesn't run when turned on.	• The feeder is not plugged in. • A screw has not been removed from the stopper for the set duration. • The bin is over loaded with screws. • Some screws have gotten caught in the gaps.	• Check if the AC Adapter is connected. • Remove the screw from the stopper • Adjust the time adjuster. • Remove some screws until they reach 3mm below the top of the rail. • Remove them.
5-2 Screws don't feed.	• Screws are too large for the rail unit. • Too few screws in the bin. • The brush cannot sweep up the screws passage. • The screw shaft gets caught in the screws passage • The screw gets caught in the rail in an abnormal position. • The rail doesn't move back and forth. (A screw is caught in the rail.) • Inadequate adjustment of the time adjuster.	• Use correct size screws. • Put in the proper amount. • Adjust the brush. • Adjust the screw passage plate. • The problem will occasionally be solved. • When the proper amount of screws are put in. • Remove it and adjust the screw passage plate. • Remove it. • To remove, Loosen the bit guide with set screw and move the bit guide upward. • Then tilt the feeder to remove the screw from the front end of the rail and adjust the holding plate. • Remove the screw waiting to be fed. (If no screw is caught in the rail, but it's still not moving, contact your dealer.) • Adjust it properly.
5-3 A screw has fallen into the ditch of the rail.	• The screw is too small for the rail unit.	• Replace the correct size screw or install different size rail. • Contact your dealer.



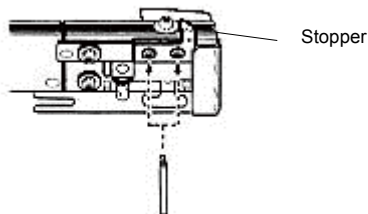
Problem	Cause	Remedy
5-4 The screw in the rail don't feed smoothly.	• The gap between the holding plate and the screw head is too narrow. • A screw with a spring washer, the diameter of which was narrower than the rail unit, was put in the bin. • The rail has become clogged with dust or oil. • The rail doesn't move back and forth. (A screw us caught in a gap.)	• Adjust the bit guide unit (Adjust the holding plate.) • Slant the feeder as in 4-4. • If the feeder doesn't feed, contact your dealer. • Clean the rail and the rail guide. • Remove the screw waiting to be fed from the rail. • If no screw is caught in the rail, but it's still not moving, contact your dealer.
5-5 Screw sometimes go through the screw passage in an abnormal position. The screw shaft sometimes gets caught in the screw passage.	• Inadequate adjustment of the screw passage plate. • The feeder is tilted more than necessary.	• Adjust it properly. • Tilt the feeder only as much as necessary.
5-6 The screw fails to reach the specified position at the bit guide.	• The screw stops halfway in the rail. • In correct adjustment of back and froth movement of the rail unit.. • The time adjuster is not adjuster properly.	• Adjust the bit guide unit.(Adjust the holding plate.) • Adjust it correctly. • Adjust it properly.
5-7 The bit sometimes doesn't match the Phillips head.	• Improper position(front/back) • Improper position(left/right)	• Adjust the rail unit properly. • Adjust the bit guide and holding plate properly.



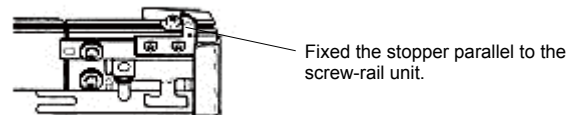
Problem	Cause	Remedy
5-8 The feeder stops suddenly.	- At the moment of over- load, the screw feeding vibrated rail will repeat regular/ reverse rotations alternately during approx. 5 sec. and then anti-overcurrent circuit will stop the machine. - The screw has not been removed from the stopper for the set duration.	- Turn the power off, then on again. - If the feeder stops again. - Over load: Remove some screws. - Screw have been caught in the gaps:remove them. - Remove the screw.
5-9 Screw have dropper inside the feeder housing.		Shake out the screws from the hole on the rear of the feeder.

● Adjusting SEMS and W-SEMS screws.

If you use SEMS and W-SEMS screws, the stopper set on the head of the screw, you can smoothly catch the screw one by one.



The stopper can move up and down, after you loose two screws from the stopper.



After adjusting the height of the screw, head fixed the stopper parallel to the screw-rail unit with two screws.

NOTICE: Be careful to set the stopper not to bend To the screw-rail unit.

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6. Maintenance

CAUTION: Be sure to turn off the feeder before performing maintenance.
Remove all the screws in the bin and the rail.

6-1. Cleaning

* Cleaning the rail

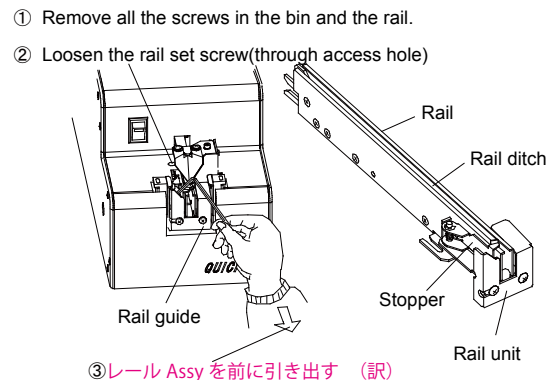
Loosen the rail screw with the hexagonal wrench.

Pull the rail unit toward you to take it out.

Clean the rail ditch and the top of the rail with a clean, Then, cotton cloth soaked with alcohol.

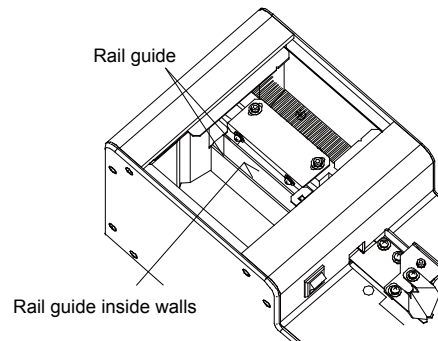
**Cleaning the rail guide inside walls visually inspect the rail guide inside walls and if there is dust, remove it with a clean, thin cotton cloth soaked with alcohol.

Fig. 17



③ レール Assy を前に引き出す (訳)

Fig. 18



(レール Assy を取り去った後のレールガイド内側壁面) ← (訳)



6-2. Replacement

.Replacement of the rail unit

Replacement of the rail unit is recommended, if after cleaning it as per the instructions in 6-1, screws still don't flow smoothly due to flaws, etc.

Replacement can easily be done.

..Replacement of the brush

Replace the brush when it is too worn and torn to wipe the screws in Fig. 19.

Remove the brush unit screws and the brush unit.

Then disassemble the brush(as shown in Fig. 19), replace it and reassemble it.

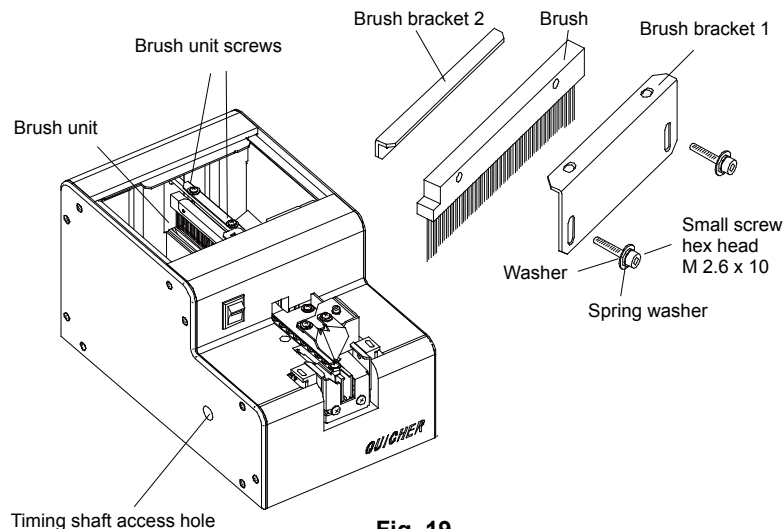


Fig. 19

7. Optional parts

A variety of rail units are available as optional parts. You may need to replace it in the following cases:

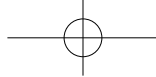
The feeder doesn't feed screws smoothly.

When using screws of a different diameter.

The brush types vary are with the model of Screw feeders.

For JIS standard screws (Brush part NO. HS-B2050)

HS-26, HS-30, HS-40, HS-50



8. Specifications 1

Kind of feeder	Length of shaft	Slot type							
		1st, 2st type	Pan head			Binding	Truss	Flat	Screw with Washer
			Sems	W-sems	Washer head				
HS-26	18 mm down	—	○	○	○	○	○	○	○
HS-30									
HS-40									
HS-50									

(*):For flat head screw,oval countersunk head screw.

- Option parts: Changeable rail-unit, Push plate.
- JIS are standard of Japan,but they are metric unit.

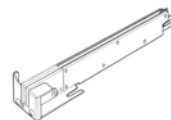
8. Specifications 2

Power supply (AC Adaptor)	Input :AC115V or 230V 50/60Hz
	Output: DC 12V 500mA
Dimensions (mm)	130(W) x 215(D) x 136 (H) mm
Weight (kg)	About 4.2 kg(including the rail)
Capacity	150 cc
Weight	3.2 kg (including rails)

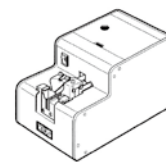
• Accessories

Operation Manual	1 set.
Hexagonal Wrench	1 piece.
Bit Magnetizer	1 piece.

(For Example) Combination between rail-unit and the push-pate Body NO.HS-230



Rail-unit NO.:R-26 , R-30



(*):Push-plate NO.:2630F

(*):For flat head screw, oval countersunk head screw.

Note: The body of HS-26 HS-30 are same HS-230 and the rail are R-26 R-30 and The push-plate are 2630F(for model:HS-26 and HS-30).

• Size of operable screws

Kind of feeder	Length of shaft	Slot type							
		1st, 2st type	Pan head			Binding	Truss	Flat	Screw with Washer
			Sems	W-sems	Washer-head				
HS-26	18 mm down	—	○	○	○	○	○	○	○
HS-30									
HS-40									
HS-50									

CAUTION:
Meaterial is steel (magnetizable)