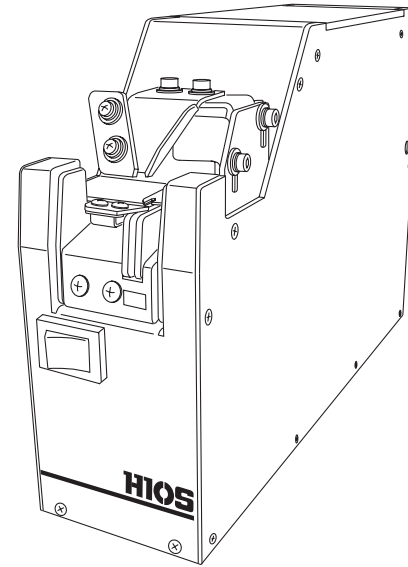
HSF Series

HSF-10 HSF-17 HSF-26
HSF-12 HSF-20 HSF-30
HSF-14 HSF-23



Instruction Manual

Read this manual before using this device.
Current as of May 2016.

HIOS Inc.

111-6 Akiyama, Matsudo City, Chiba Pref., Japan
TEL: +81 (JAPAN) 47-392-2001
FAX: +81 (JAPAN) 47-392-7773

Instruction Manual No. ET-D002 **16A**

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1. Before using this device

Thank you for purchasing the HSF Series automatic screw feeder.

Before using this device, please check that the following items have been supplied.

* 1 x instruction manual * 1 x hexagonal L-shaped wrench

* 1 x AC adapter

2. Precautions for use

Installation area

⚠ Caution Install the device on a level and stable surface.
Installing the device on an unstable surface may cause the device to fall, causing injuries.
Do not install the device in an area with flammable or combustible gases, or an area with high humidity.

AC Adapter

⚠ Caution Do not use any adapter except the one provided with the device.

Rail Do not damage the rail. Do not apply oil to the rail.
Regular cleaning of the rail is recommended.

Screws that must not be used

Please do not use any unspecified screws or dirty or oil screws

Caution when removing screws

Do not use excessive force or shock when removing screws as damage or injury may result.

Treatment during operation

⚠ Caution Do not insert foreign objects into the device when it is operating.

Do not insert your fingers into the device when it is operating as this may result in injury.

Malfunctions during operation

⚠ Caution If the device malfunctions during operation, remove the AC adapter from the power point.

A fire, electrocution, or injury can occur if the device is continued to be used with a malfunction. If the device malfunctions, contact the store of purchase.

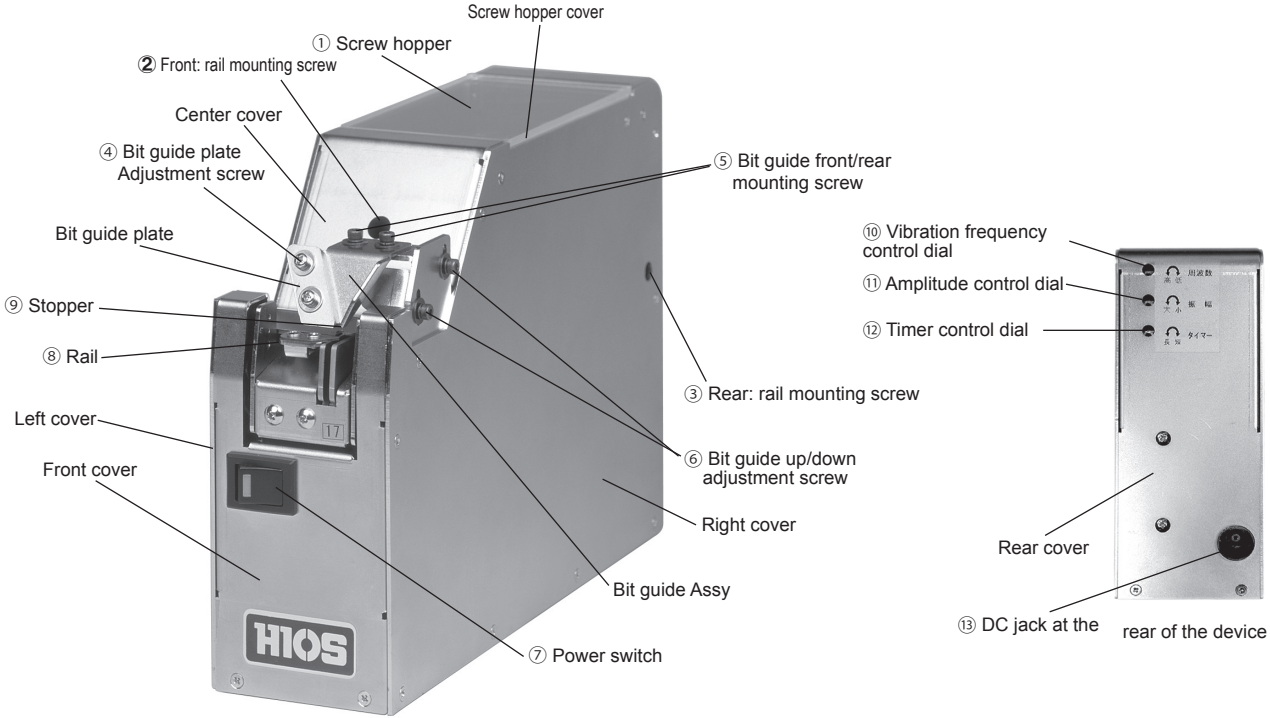
After completion of work/not using the device for extended periods

⚠ Caution Remove the AC adapter from the power point after the completion of work or if the device not used for an extended period of time.

Repair

Contact the store of purchase if the device requires repairs. Do not modify the device in any way.

3. Names and explanations of parts



Name	Explanation
① Screw hopper	Insert screws to be used
② Front: rail mounting screw	Used when replacing rails
③ Rear: rail mounting screw	Used when replacing rails
④ Bit guide plate adjustment screw	Adjust to suit screw driver bit size
⑤ Bit guide front/rear mounting screw	Adjust to suit screw size
⑥ Bit guide up/down mounting screw	Adjust to suit height of screw head • When replacing the rail, raise the bit guide before removing and inserting the rail.
⑦ Power switch	Turns the power on and off.
⑧ Rail	Set the rail to suit screw size
⑨ Stopper	Stops the screws at the front of the rail
⑩ Vibration frequency control dial	Control the vibration frequency using a precision screw driver.
⑪ Amplitude control dial	Control the a amplitude using a precision screw driver.
⑫ Timer control dial	Control the screw feeding (stop) time using a precision screw driver. *The machine will stop feeding screws when they fill up the rail.
⑬ DC jack	Connects to the supplied AC adapter

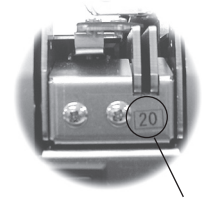
4. Making checks and adjustments before use

4-1 Checking model number

- Ensure that the screw driver bit used matches the size of the screw thread.
  The compatible screw thread is shown on the rail section (Image 1).
  Check the rail section for this information.
- Adjustments and checks are made to each section of the unit when ordered, to match the screws used (M1.0 to 1.7 <flat head>/M2.0 to 3.0 (pan head).
- The factory default settings can be used for the majority of screws.
  However, if the screw head height or shape differs and causes the unit to operate abnormally, further adjustments of each section may be required.
  In this case, check and adjust the following areas.
  - ○ Check the screw capacity
  - ○ Check and adjustment of rail oscillation
  - ○ Check and adjustment of passing plate・holding plate
  - ○ Check and adjustment of rail oscillation
  - ○ Check and adjustment of bit guide
  - ○ Check and adjustment of timer
  - ○ Check and adjustment of sensor voltage levels
- The rail can be replaced easily and quickly in this device to allow different sized screw threads to be used.
  Fine adjustments may be required after replacement of the rail.
  These adjustment methods are outlined in a separate section. Please read the relevant section first.

⚠ Caution Adjustments should only be made with the power switch in the OFF position.

Type of Unit	Displayed Numberr	Compatible Screw Size	Recommended Bit Size	
			Bit Tip Size	Tip Cross No.
HSF-01	10	M1.0	Φ1.5	No. 0
	12	M1.2		
	14	M1.4		
	17	M1.7		
	20	M2.0	Φ2.0	No. 0 or 1
HSF-02	23	M2.3		
	26	M2.6	Φ3.0	No. 1
	30	M3.0	Φ3.2	No. 1 or 2



Rail classification label

Image 1

4-2 Basic operation

The driving motor repeats normal rotation and an inversion for about 2 seconds at a time, and the scooper carries screws to the rail. The vibrator (solenoid) continuously sends screws to the front stopper to be picked up using the screwdriver.

Note:

If no screws are sent for approximately 10 seconds, vibration of a rail becomes stronger.
(The vibration sound, also, increases; however, this is not a problem.)
If no screws is not detected for about 20 more seconds, then the machine stops operating. When you want to start operation again, turn the power switch OFF and ON again or a stopper is operated (extraction sensor perception).

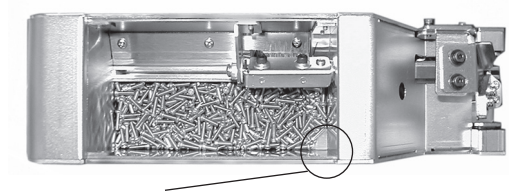
4-3 Screw capacity

Placing too many screws into the hopper can adversely affect the alignment and transport of screws.

The image below (Image 2) is the maximum capacity and should be used as a guide to filling the hopper.

- Turn the power switch ON-OFF and ensure that the panning block is at its lowest position.
- Fill the hopper with screws up to a point approximately 2mm below the rail entrance.
- Check that the front of the sloped plate is not covered by screws.
- Constantly check that the optimum screw level is maintained during operation.

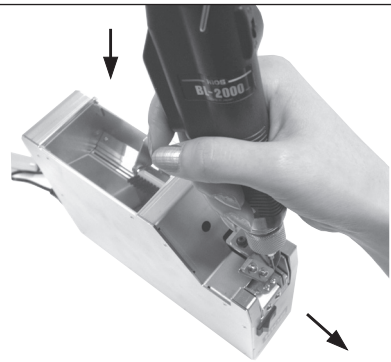
Image 2



4-4 Check of operation

- If each section has been adjusted correctly, screws will be transported to the stopper section.
- Screws in the stopper section can be taken out with an electronic screw driver.
  The screw driver should be vertical using the bit guide as a guide. The screw driver should then be briefly rotated and moved horizontally to take the screw (Image 3).
- Do not apply excessive force when moving the screw driver horizontally (when matching the bit to the screw head).
  Rotating the screw driver bit briefly makes it easier to line up the bit with the cross in the screw thread.
- Ensure that the screw driver bit matches that of the screw being used. (Refer to 4-1 Checking model number)
- Check the adjustment of each section if you believe the screw alignment and transport is not operating correctly.

4-5 Adjusting the height of the brushes



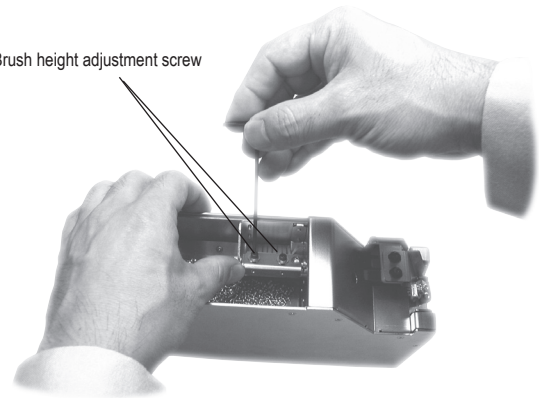
- Place the screw driver vertically and line up the bit with the cross on the screw head.
- Move the screw driver towards you into a horizontal position.

Image 3

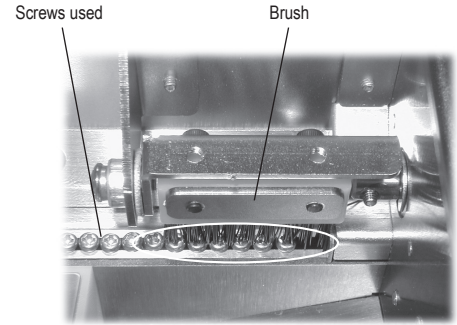
4-5 Adjusting the height of the brushes

No adjustment is required if the brushes rotate at a height where they come in contact with the screw heads going into the rail groove when the power is switch on.

- Turn the power OFF if the height of the brushes requires adjustment.
- If adjustment is required, loosen the brush height adjustment screw (Image 4-1).
  Move the brushes by hand and make adjustments by checking that the head of the screws entering the rail groove come in contact with the brushes (Image 4-2).
- If the brushes are set too high, misaligned screws may not be swept up.
- If the brushes are set too low, the screws may be thrown to one side, or the brushes may not rotate.



4-1



4-2

Image 4

4-5-1 Adjusting the height of the passing plate/holding plate (how to remove the rail)

- Adjustment of the passing plate/holding plate is required if screws become jammed at the front of the screw hopper.
- Ensure that screws within the device are all removed before removing the rail (very important).
- Loosen the bit guide up/down adjustment screw (Image 5).

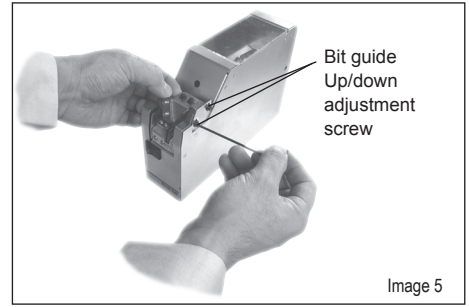


Image 5

- Front/rear: loosen the rail mounting screw <do not loosen it too much> (Image 6).
- Pull the bit guide Assy upwards, and pull the rail out toward you (Image 7).

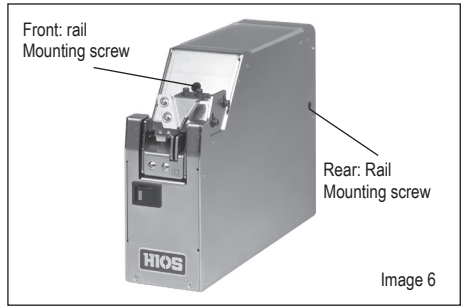


Image 6

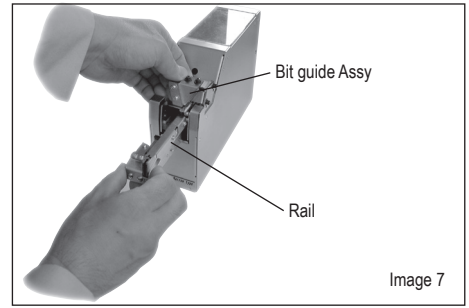


Image 7

4-5-2 Adjusting the height of the passing plate/holding plate

- The passing plate/holding plate are mounted to the rail (Image 8).
- The passing plate drops screws to be used into the passing plate section of the rail groove. Adjust the height of the passing plate mounting screw to ensure that the gap in the passing plate is sufficient.

  Screws can become easily jammed if this gap is too large. If there is no gap, the screws cannot pass through.

  The ideal gap is one that allows the screws to just pass through.

  A passing plate compatible with specially shaped screws, such as those with low heads, is available.
  A new passing plate can be designed upon request if details of the screws to be used, or their dimensions, are provided.
  (Please consult the store of purchase)

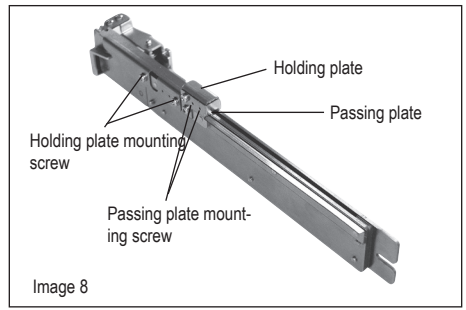


Image 8

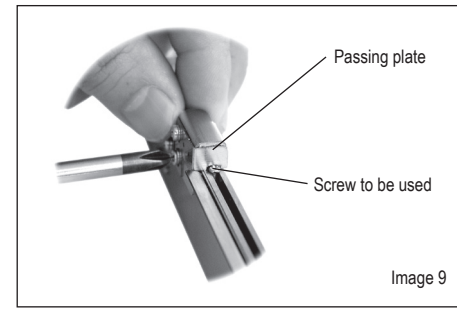


Image 9

- The holding plate drops screws to be used into the rail groove directly below the holding plate. Adjust the height of the holding plate mounting screw to ensure that the gap is sufficient. (Image 10)
  <Remove the holding plate and drop a screw into the groove to allow easy adjustment> (Image 11)
  Screws may be thrown out if this gap is too large. If there is no gap, the screws cannot move.
  The ideal gap size is between 0.2 and 0.5mm. The gap can be slightly larger if the screw thread is long.

  Note) The gap should be made larger if screws with plain washers are used.
  Washers may hit each other if the gap is small, causing jamming of the holding plate, stopping movement of the screws.

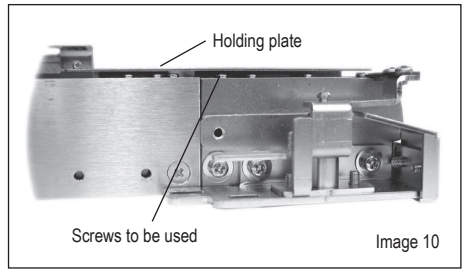


Image 10

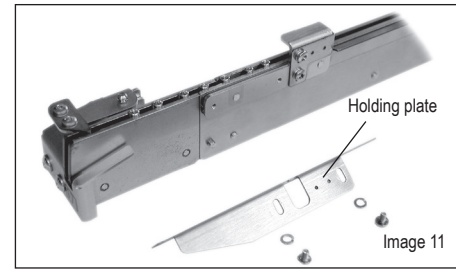


Image 11

- After adjustment is complete, insert a screw to be used into rear of the rail groove and tilt the rail. Check that the screw moves to the stopper section without any jamming (Image 12).
- After checking this, reassemble the rail into the device in the reverse order. (When reassembling the rail, insert it into the device as far as it goes and tighten the screw).

  Note) Front/rear: The rail cannot be inserted into the correct position if the rail mounting screw is not loosened.

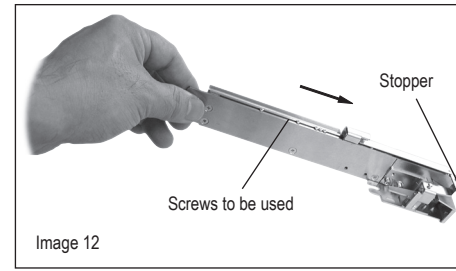
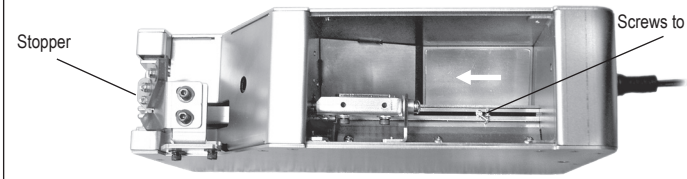


Image 12

4-6 Checking and adjusting rail oscillations

- The factory setting for oscillation suits ordinary purpose screw thread sizes that can be used with the supplied rail.
  (Check the rail thread size on the label at the front of the rail. Eg: 17 means a M1.7 thread)
- Place 2 or 3 screws to be used into the rail groove and turn the power on.
- No adjustment is required if these screws move smoothly to the stopper (Image 13).
- When the number of screws is low and no screw is picked up in a given period of time, vibration will become the maximum and it will stop operation after that.
  (Refer to 4-2 “Basic Operation”.) Adjustment of volume is not effect at the time of a forced oscillation.
- After it stops, turn on the machine again and repeat the above procedure.



* The screws to be used move smoothly in the direction of the arrow.

Image 13

Adjustment is required in the following cases.

- If screws do not move easily, or jump about in the rail:
  →Rotate the oscillation amplitude adjustment volume knob at the rear of the device with a precision screw driver.
  → Rotate the oscillation frequency adjustment volume knob at the rear of the device with a precision screw driver until a resonance point is found.

  The two volume knobs above should be adjusted until the optimum operating condition is found.
- To find the optimum operating condition, first maximize the oscillation amplitude and adjust the oscillation frequency until a resonance point (the frequency at which the rail oscillates the most) is found. Then adjust the oscillation again until it is smaller.
- While adjustments can be made when the device is operating, it is recommended that oscillations be adjusted before use.
- Do not apply excessive force while adjusting the volume knobs, and adjust them only within the range that they can be rotated.

4-7 Checking and adjusting the bit guide

- Check and adjust the position of the bit guide.
- Make adjustments while repeatedly taking screws out.
- When making adjustments, loosen the various adjustment screws.
- Refer to image 14 for the location of various adjustment screws.

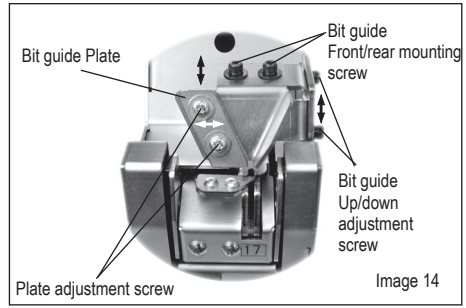
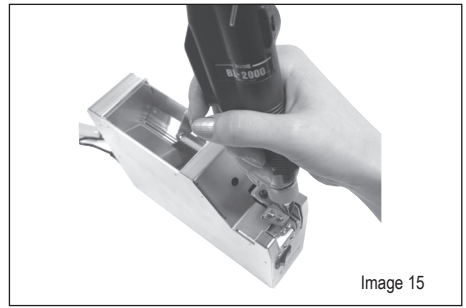


Image 14

Adjusting the bit guide

- The height of the bit guide can be adjusted with the bit guide height adjustment screws. Ensure that the guide does not hit the holding plate.
- The groove width and front/rear position of the bit guide should be adjusted to meet the holding plate groove using the plate adjustment screws and bit guide front/rear mounting screws.
- When making this adjustment, line up the screw driver bit with the bit guide (Image 15), and adjust the bit guide plate so that the bit moves smoothly.


Image 15

4-8 Checking and adjusting the timer

This device includes a sensor to detect a rail full with aligned screws.
If a screw accumulates to some extent on a rail, operation of a scooping block will stop and vibration will stop after time set time.

The timer is usually set to MIN.
However, with screws that are taking time to become lined up, the timer is better set to MAX.

- Adjust the timer volume knob at the rear of the device as shown below (Image 16).
- When viewing from the rear, clockwise shortens the time.
  Anti-clockwise lengthens the time.
- Do not apply excessive force while adjusting the volume knobs, and adjust them only in the range that they can be rotated.
- Check how the screws are being aligned, and adjust the timer appropriately.

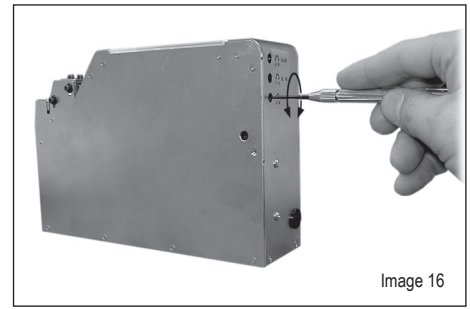


Image 16

4-9 Checking and adjusting the sensor voltage level

The sensor level in the device can be used with the majority of screws with its default settings.

However, differences in screw head height and shape, or if the rail has been replaced, mean that the device may not operate correctly, therefore requiring further adjustment.

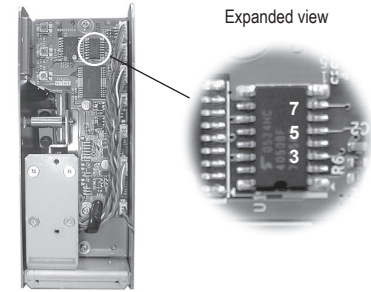
Adjust the sensor level for when there are screws on the rail and for when there are no screws on the rail.

The IC to be checked can be seen on the control board after remove the device cover (Image 17).

The voltage level is set using pins 3, 5, and 7 of IC4050 on the control board.

Metal parts of the device are grounded during this process.

(A test clip can be used to make measuring the voltage easier. The recommended product is the FP-7 test clip made by Sunhayato Corporation.



Device with the rear cover removed

Image 17

○Adjusting the full rail sensor <using pin number 3>.

This sensor detects the number of screws on the rail.

Loosen the full sensor light receptor mounting screws (2 places) and move up or down by rotating the bracket (Image 18).

If there are no screws to be used present, the voltage should be between 0.25 and 1.5V. If there are screws present, the voltage should be 3.5V or greater. A voltage of 2.5V is used as the electronic threshold for determining the presence of screws.

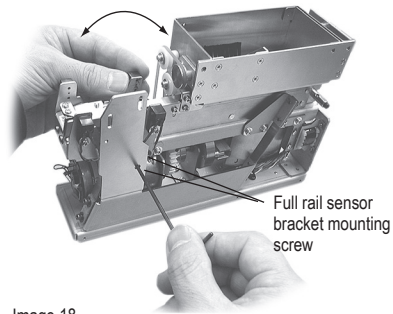


Image 18

○ Adjusting the screw feed sensor <using pin number 5>

This sensor detects movement of the stopper.

Loosen the stopper sensor bracket mounting screws (2 places) and adjust the light receptor in a sideways direction. (Image 19)

The sensor level is adjusted so that it is 4V or greater with the stopper in the ON position, and 0.2V or less with the stopper in the OFF position.

A voltage of 2.5V is used as the electronic threshold for determining the presence of screws.

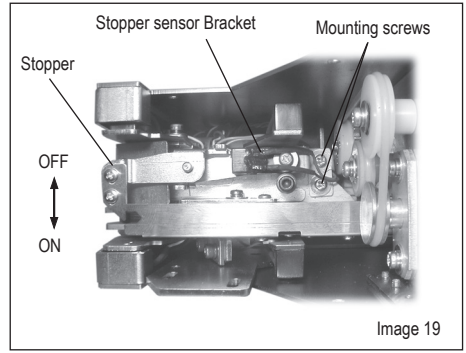


Image 19

○Adjusting the tip sensor <using pin number 7>

This sensor detects the presence of screws in the stopper.

Loosen the tip light receptor sensor bracket mounting screws (2 places) and move up or down by rotating the bracket (Image 20).

If there are no screws to be used present, the voltage should be between 0.25 and 1.5V. If there are screws present, the voltage should be 3.5V or greater.

A voltage of 2.5V is used as the electronic threshold for determining the presence of screws.

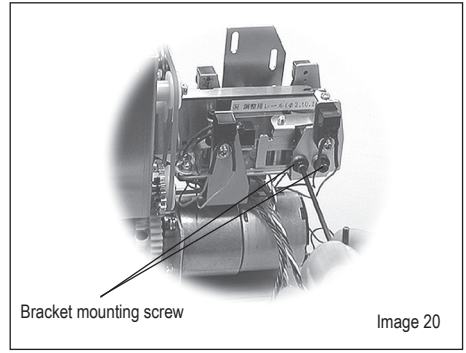


Image 20

Once adjustment of each section has been completed, check the actual operation of the device with screws to be used.

If there are any faults in the operation of the device, the adjustments above will need to be performed again, in addition to adjusting the rail oscillation and front/rear positioning.

After checking the operation of the device, return all wiring to its original state.

⚠ Caution Ensure that the wiring does not become jammed or interrupt the operation of moving parts.

5. Maintenance

The transport speed of screws to be used may become slower if the rail groove becomes dirty.

If the rail is extremely dirty, use a thin cloth soaked in alcohol to clean the rail groove. The rail can be removed from the device if you find it difficult to clean the rail. If removing the rail, ensure that the power is turned off and screws inside the panning area removed. (Refer to “Making checks and adjustments before use” for information on how to remove the rail).

Replacement of the rail is recommended if the rail groove is so dirty or damaged that it affects operation of the device.

6. Replacement and adjustment of parts

The brushes, drive belt, and drive motor are expendable items.

Replacement rails for different sized screw threads are to be ordered separately.
The replacement and adjustment method is outlined separately.
Please read the instructions carefully before making adjustments. Remove all screws within the device before replacing parts.

⚠ Caution Replacement and adjustment should only be performed with the power switch in the OFF position.

6-1 Replacement and adjustment of brushes

If misaligned screws are no longer swept up by the tips of the brushes, the brushes should be replaced with new items. Brushes with harder tips than the standard items are also available as an optional extra.

These brushes can be used to suit your requirements.

- Turn the power switch ON/OFF and position the brush as shown on the right to remove the brush tips (Image 21).
  (This positions the brush mounting screws in an easy to reach location)
- The brush tip mountings are as shown on the right.
- Assemble the brushes in the reverse order of disassembly.
- For adjustments, refer to “Making checks and adjustments before use”.

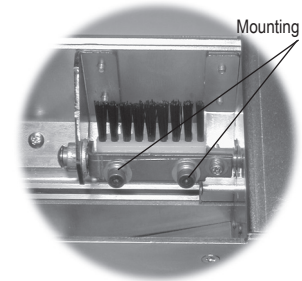
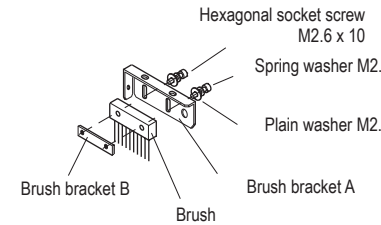


Image 21



Brush part numbers

HSF-02107: HSF-10, HSF-12, HSF-14, HSF-17, HSF-20

HSF-22001-23: HSF-26, HSF-30

6-2 Replacement and adjustment of the drive belt

If misaligned screws are no longer swept up by the tips of the brushes due to slipping of the brushes or faulty brush rotation from a worn drive belt, the belt should be replaced with a new item.

- Turn the power switch ON/OFF and remove the left and center covers.
- Upon removing the covers, the drive belts that fit into the grooves of the four rollers can be seen (Image 22).
- The drive belts are removed by squeezing them with your fingers as shown in the image (Image 23).
- Assemble the rollers in the reverse order of disassembly.
- After assembly, check that the brushes operate correctly.
- For adjustments, refer to “Making checks and adjustments before use” (P5 to P16).

Drive belt part number – HSF-03114

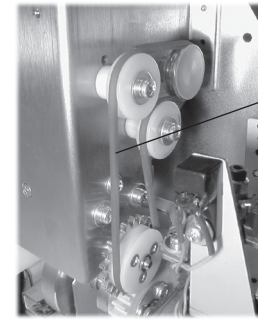


Image 22

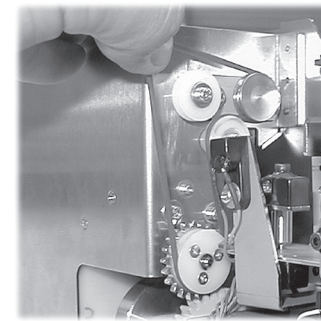


Image 23

6-3 Replacing the main motor

The driving Cam Assy should be replaced with a new one if it becomes damaged.

- Remove the rail and the front, center, and left and right covers. Loosen the 2 clips that hold the wiring in place.
- Remove the motor mounting screws (4 places) on the base of the device, and slide out the motor unit from the left side of the device (Image 24). Loosen the clips.

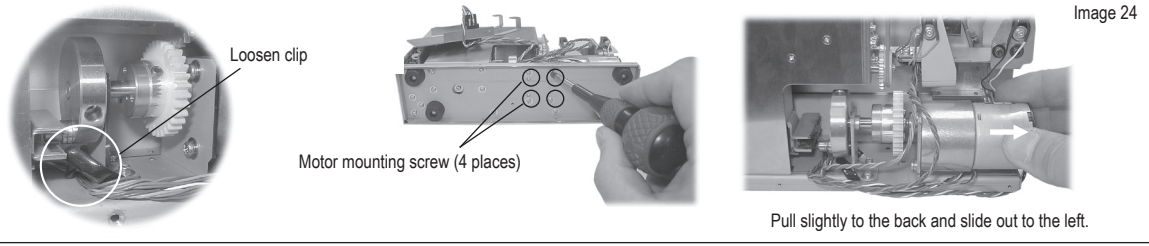


Image 24

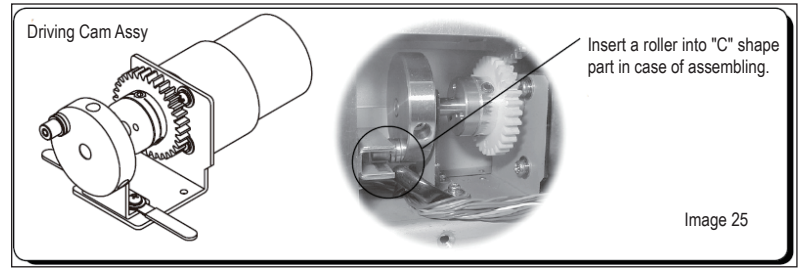


Image 25

- Install the motor in the reverse order of disassembly.

  Note Be careful not to apply too much pressure to the motor wiring that may cause the wiring to break.

  Drive Cam Assy part number HSF-03001

7. Other

Overload protection circuits

This device includes overload protection circuits.

Under ordinary operation, the drive motor rotates correctly (ordinary rotation), transporting screws to the rail section, enabling screws to be taken out continuously. However if the drive sections become overloaded, the drive motor rotates in the reverse direction briefly, followed by correct rotation.

If the cause of the overload disappears during reverse rotation, the device will return to the correct rotation allow screws to be taken out continuously. If the cause of the overload does not disappear, a series of reverse rotation, correct rotation, reverse rotation, correct rotation will continue for a set amount of time before power to the drive motor is cut.

If power has been cut to the drive motor, turn the power switch OFF and remove the cause of the overload.

For example, if there are too many screws in the panning area, remove some of the screws to achieve the appropriate level. If screws are jammed in the drive parts, remove those screws.

Turn the power switch ON after the cause of the overload has been removed, and use the device as per normal (power reset).

8. Troubleshooting

⚠ Caution Turn OFF the power switch before diagnosing any symptoms.

Symptoms	Cause	Solution
8-1 The device does not operate even after turning the power switch ON	• There is no power being supplied to the device • A screw at the screw feeding point has not been taken out within the set time • There are too many screws in the panning area • A foreign object (screw etc) has entered the device • The AC adapter is faulty	• Check the power connection to the AC adapter • Remove the screw at the screw feeding point • Adjust the timer setting volume knob • Ensure appropriate level of screws in the panning area • Remove the foreign object • Contact the store of purchase
8-2 There is no front/rear movement in the rail	• A screw is jammed in the gap • There is no screw jammed, however there is no oscillation	• Remove the screw that is jammed in the gap • Check the oscillation amplitude Contact the store of purchase if the device does not operate even after making adjustments
8-3 Screws do not move down	• Screws with a different rail specified thread have been inserted • The amount of screws in the panning area has decreased • Misaligned screws in the passing plate are not swept up by the brushes • Screws have become misaligned in the rail	• Use screws with specified threads • Remove any mixed screws • Insert the appropriate amount of screws into the panning area • Adjust the brushes • Adjust the passing plate • This can be resolved by inserting the appropriate amount of screws into the panning area • Replace the drive belt (replaceable part) • Use the optional brushes (harder brushes) • Remove any misaligned screws Remove the misaligned screws using the method below, ensuring not to damage the rail groove. Remove the holding plate by moving it upwards, and adjust the position of the holding plate

Symptoms	Cause	Solution
8-4 A screw has fallen into the rail groove	• Screws smaller than the rail specified thread have been inserted	• Use screws with specified threads
	• Screws longer than the rail groove width have been inserted	• Incompatible Seek advice separately
8-5 Poor movement of screws within the rail	• The gap between the holding plate and screws is too small	• Adjust the holding plate
	• Screws with spring washers that are one step smaller than the rail specified thread have been inserted	• Adjust the oscillation
		• Try using the device at an angle
		• Seek advice separately if the above methods do not work
	• There is dirt or oil in the rail	• Clean the rail
	• Weak rail oscillation (the device and rail are interfering with each other)	• Check the adjustment of oscillation
		• Contact the store of purchase if the device and rail are interfering with each other
	• Worn motor	• Replace the motor
8-6 Misaligned screws are passing through the passing plate with ease	• Faulty adjustment of the passing plate	• Adjust the passing plate
The shaft of the screws enter the passing plate with ease	• Too many screws in the panning area	• Insert the appropriate amount of screws
8-7 Screws do not arrive at the screw feeding point	• Screws have stopped within the rail	• Adjust the position of the holding plate

Symptoms	Cause	Solution
8-8 The device stops operating suddenly	• The overload protection circuit has been tripped • Too many screws in the panning area • Screws are jammed in the gap • A screw at the screw feeding point has not been taken out within the set time	• Turn the power switch back on • Remove the cause of the overload • Insert the appropriate amount of screws • Contact the store of purchase if the device stops with the appropriate amount of screws • Remove the jammed screw • Take out the screw
8-9 Panning does not stop even if there is a screw at the screw feeding point	• The device is not full with screws • The sensor is not detecting the screws	• Jammed screw or not enough screws • Re-adjust the sensor voltage level
8-10 Oscillation does not stop even if there is a screw at the screw feeding point	• The sensor is not detecting the screws	• Re-adjust the sensor voltage level
8-11 A screw has fallen into the device		• Take off the cover and remove the screw
8-12 The device has become louder	• Inappropriate oscillation frequency, oscillation amplitude volume adjustment • Run out of grease	• Readjust the oscillation frequency, oscillation amplitude volume • Apply grease to moving parts ○ Recommended product: Dow Corning Asia Corporation Part name: BR2Plus

9. Specifications

Specifications

Power (AC adapter)	Input:AC100V-240V 50/60Hz Output: DC 15V 1A
Dimensions	Refer to external view
Weight	Approx. 2.4kg (including screw rail)
Screw capacity	Approx.40cc (cubic measure)
Following accessories	Operation Manual 1 copy, AC Adapter 1 uni Hexagonal Wrench 1 piec, Screwdriver 1 piece

Rail replacement guide

Type of Unit	Order Cord (depends on screw size)
HSF-01	HS-WR10, HS-WR12, HS-WR14, HS-WR17, HS-WR20
HSF-02	HS-WR23, HS-WR26, HS-WR30

Type of Unit	Reference table of the specified screws							Shape of screw head				
	Screw Feeder Mode	Screw size	Screw Shaft diameter (∅)	Screw Head diameter (∅)	Washer diameter (∅)	Screw head thick-ness (mm)	Screw length (mm)	Pan head*1	Bing ding	Flat head*2	Counter sunk head	HEX. head with washer face
HSF-01	HSF-10	M1.0	0.9 - 0.95	1.2 - 2.0	—	0.35 - 1.0	1.6 - 10	—	—	○	—	—
	HSF-12	M1.2	1.1- 1.15	1.4 - 2.3		0.35 - 1.0	1.8 - 10					
	HSF-14	M1.4	1.3 - 1.4	1.7 - 2.5		0.35 - 1.0	2.0 - 10					
	HSF-17	M1.7	1.6 - 1.7	2.0 - 3.0		0.35 - 1.0	2.3 - 10					
	HSF-20	M2.0	1.9 - 2.1	2.4 - 4.0	2.4 - 6.0	0.35 - 1.3	2.6 - 10	○	○	○	○	○
HSF-02	HSF-23	M2.3	2.2 - 2.4	2.7 - 4.0	2.7 - 7.0	0.35 - 1.5	2.9 - 10					
	HSF-26	M2.6	2.5 - 2.7	3.0 - 4.5	3.0 - 7.5	0.35 - 1.7	3.2 - 10					
	HSF-30	M3.0	2.9 - 3.2	3.5 - 5.5	3.5 - 8.0	0.35 - 2.0	3.6 -10					

Notes:

*2 Please consult your distributor for Flat head.

-Check if the axis diameter of the loaded screw corresponds with the above rail groove width.

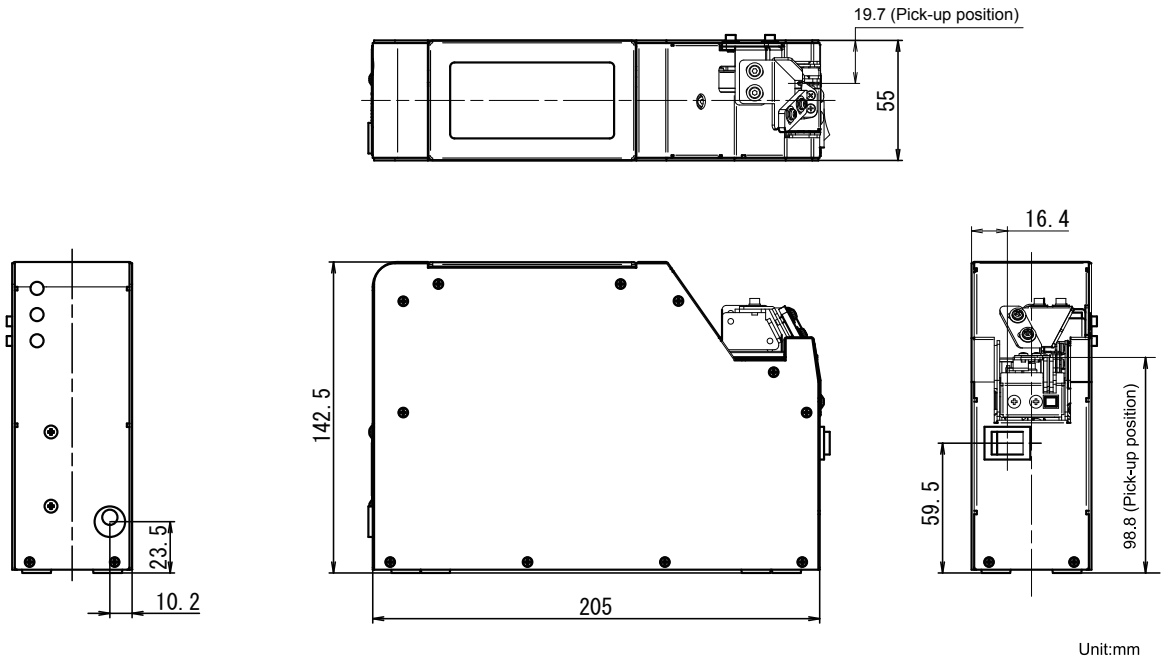
-To change the nominal diameter of loaded screw, replace it with a part that is mentioned in the above table.

-The rail, escaper, stopper assembly, escaper guide-right and passing plate are optional.

-The design, performance and specifications are subject to change without prior notice for the sake of improvement.

-*1 Sems, W-Sems, head with washer face can be used with the HSF series as long as those are within the specifications in the table above.

10. External view



Unit:mm

11. Repair claim sheet

If you want to repair the screw feeder by HIOS, please copy this page and fill in as much information as possible and use it when contacting your distributor.

◎ Model No. :Circle your model number.

HSF-10 HSF-12 HSF-14 HSF-17 HSF-20 HSF-23 HSF-26 HSF-30

◎ Date of purchase:

◎ Serial number:

◎ Distributor's name and address:

◎ Customer's name, address and telephone number and e-mail address:

◎ A detailed description of the problem.