

FOLDNAK 4 / 6 / 8

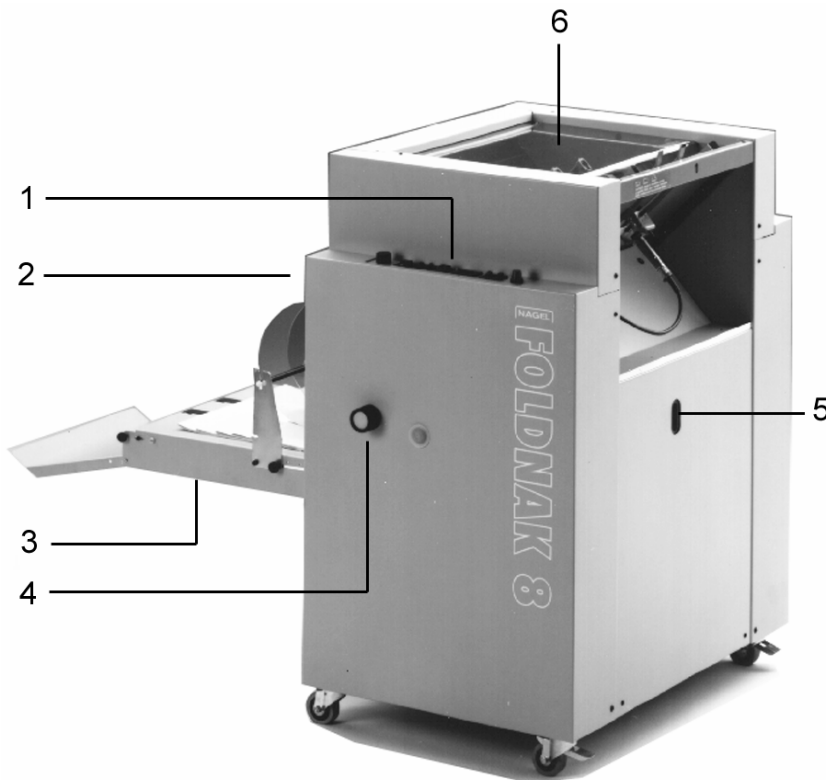
User Manual

English

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2 Description of function



1. Control panel with main switch

2. Guard plate

- The machine can only be operated with a closed guard plate

3. Slat conveyor

4. Turning handle

5. Opening to decouple the folding knife.

6. Protective cover

- The machine can only be operated with a closed protective cover

fig001

Dear customer,
Thank you for having decided upon our stapling folding machine. With the purchase of this quality product you have made a good choice.

Please read these user instructions carefully before using the machine and follow the security rules.

The numbers in brackets in the text relate to the figures.

3 Safety rules

- Only carry out repairs with original NAGEL spare parts.
- Only carry out repairs after disconnecting from the mains electricity supply.
- Repairs and work upon electric appliances may only be carried out by trained tradesmen.
- Removal of safety equipment and casing and operation with damage that affects safety is forbidden (e.g. damaged electricity cables, covering).
- Use the machine exclusively to staple documents out of paper and cardboard.

- Lay out the electricity cable in such a way that it does not form any kinks.
- Work place of the operator: in front of the machine.
- Only erect the machine in a dry room.

4 Installation

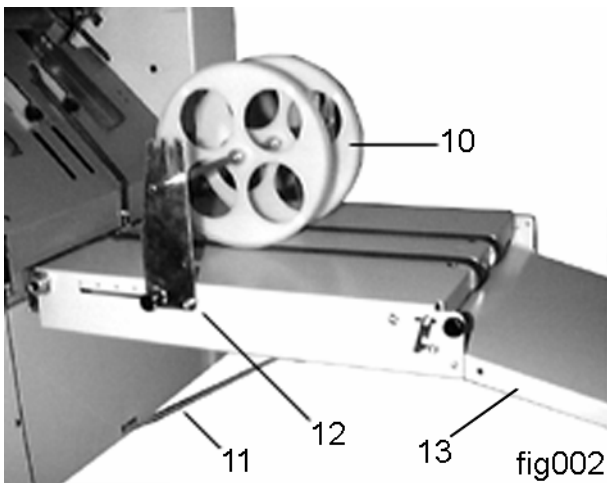
- Loosen the restraining straps of the wooden box.
- Remove the wooden box.
- Strip the packing foil to the bottom.
- Loosen the restraining screws between the Foldnak and the palette.
- Lift the machine from the palette and place the machine on a solid and level surface.

4.1 Slat conveyor

The slat conveyor (fig001, 3) (option with Foldnak 4) is folded upright for transport and locked with a hook.

Raising the hook unlocks it and swings it into an approximately horizontal position. In this position the rod (11) is guided into the hole of the foot stand as a prop. The rear collecting plate (13) is then hung downwards at an angle.

These axle brackets on both sides of the slat conveyor are to be swung into a vertical position and, after loosening the knurled screws, then secured. When not in use, the axle with the transport wheels can be taken off, the axle brackets folded towards the bottom and the slat conveyor can be folded upright and locked in order to save space.



The axle and both wheels (10) are accessories. They must be pre-mounted with the set collars, which are also accessories, so that both wheels are exactly over the green conveyor belts when the axle lays in the long vertical slits of both axle brackets (12).

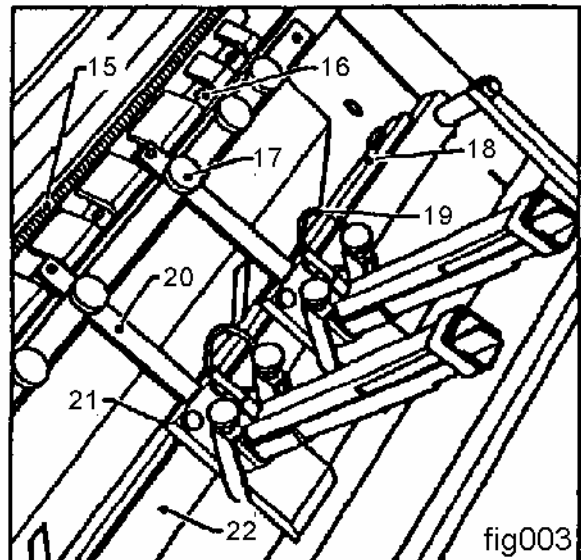
5 Preparation

5.1 Stapler heads / Stapler head distance

Foldnak stapling-folding machines are delivered with two stapler heads as standard. They can be operated with up to four stapler heads. The possible stapler head positions are:

Type	Distances in mm
Foldnak 8	30 x 50 x 80 x 50 x 30
Foldnak 6	30 x 50 x 80 x 50 x 30
Foldnak 4	50 x 80 x 50

The stapler heads can be adjusted in the previously given positions. For this, the screws (21) behind the stapler head batten (22) must be unscrewed with the supplied hexagonal spanner, the stapler head must be put into the desired position with the spigots and screwed tightly again.



The driver (20) is re-set as described in Chap 8.2. By adjusting the stapler heads and simultaneous adjustment of the side stops, the position of the staples in the paper can be altered. Care must be taken that the stapler heads are not placed over the side stops, especially when the stapler heads are used in the outer positions. Finally, plug the contact cable (19) onto the contact bank (18).

5.2 Staples

Foldnak stapling-folding machines use the following Nagel-staples:

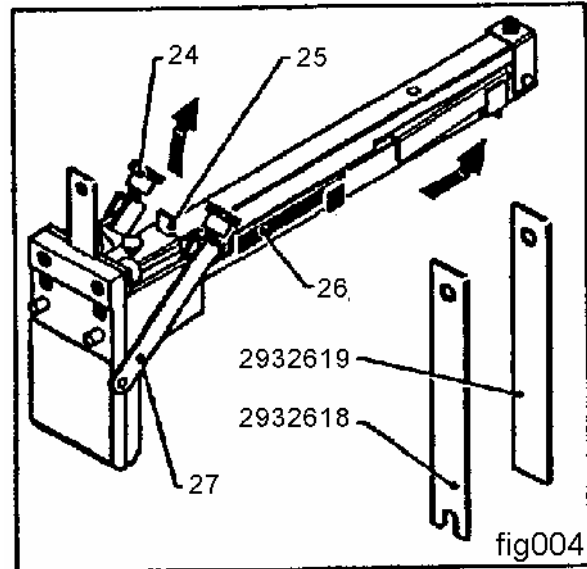
- **26/6**
26 = Wire guage
6 = Shank length in mm
for 2 up to ca. 20 sheets
- **26/8 S**
26 = Wire guage
8 = Shank length in mm
S = Steel wire
for 15 up to ca. 40 pages
- **Ri 26/6**
Ri = Ring staples
26 = Wire guage
6 = Shank length in mm
for 2 up to ca. 20 sheets

Only use original Nagel staples. They are made with special precision and therefore guarantee problem free and accurate function.

We can only honour the staple head guarantee when Nagel staples are used.

5.3 Inserting staples

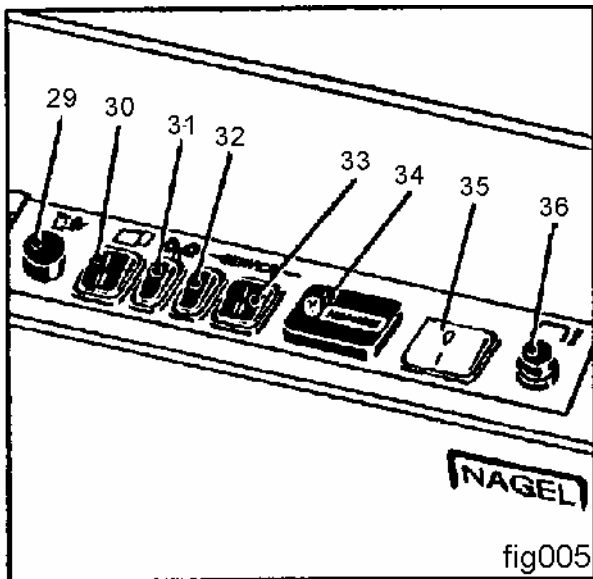
In order to insert staples, first of all the staple slide (26) is to be pulled back with the index finger on the underside of the stapler head magazine until it engages.



Then swing back the magazine cover. Insert the staples in this position. The magazine holds a stick of 210 staples or ring staples. When changing staples, check that no staples of the old type have been left in the magazine. Then the magazine cover is to be closed and the staple slide guided forward with the thumb and index finger. Do not let it shoot forward too quickly otherwise the staple stick breaks.

6 Operation

6.1 Control panel



The Foldnak 8 control panel is laid out as follows:

(36) Red signal light. It illuminates when the staples are finished or jammed. The machine can not trigger any more.

(35) On - off switch.

(34) Numbers counter with reset button.

(33) Service switch wide. In position 1 it serves as a brake lifting switch for the stroke motor brake.

(32) Service switch narrow. It serves as manual release. The photo-cell must be pushed out for this.

(31) Folding rollers on - off. The rollers must be switched off for block stapling.

(30) Block stapling switch. Switches on the block stapling stop in position 1.

(29) Rotary button for the slat conveyor. Controls the separation of the brochures on the slat conveyor (see Chap. 6.5.7, only Foldnak 8).

Foldnak 6 und Foldnak 4 do not have the switches (30) and (29).

6.2 Magazine control

The Foldnak is fitted with a magazine control. When there are not any more staples in the staple magazine, the machine does not trigger. This state is indicated by illumination of the red signal lights (36) on the control panel if the contact cable (fig003, 19) has been fitted.

6.3 Staple error control

The foldnak is equipped with a staple error control. The staple error control stops the machine triggering when there is a staple jam in the stapler head. In this condition the driver jumps out of its suspension and touches the spiral contact (fig003, 15). This causes the red signal light to illuminate. Then the driver has to be hung again after any stapler remnants have been removed from the stapler head (see chap. 8.2 and 8.3).

6.4 Equipment control

The Foldnak is equipped with an equipment control. It stops the stroke triggering when the paper has not been laid in correctly. The equipment control only works when the trigger has been correctly adjusted (see chap. 6.5.4).

6.5 Stapling brochures

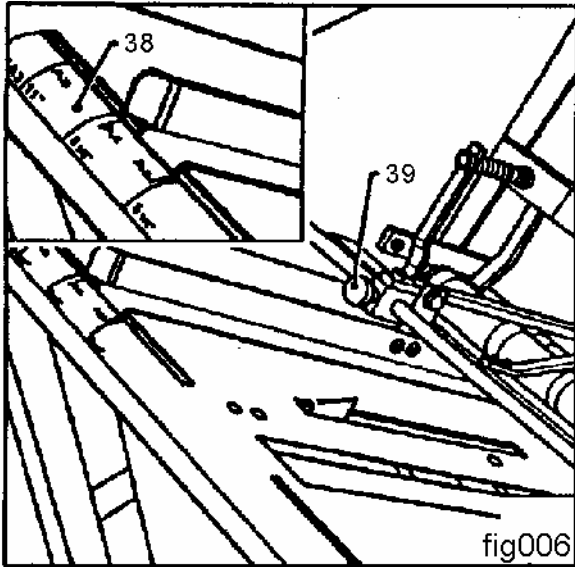
6.5.1 Formats / Number of sheets

Paper formats from 140 x 210 mm to 325 x 450 mm can be processed in the Foldnak stapling folding machine. This includes for instance DIN A3, A4 and A5.

The number of sheets which can be processed in a brochure is dependant upon the thickness of the paper and the cover. Dependant upon the paper quality ca. 30 sheets of 70g paper or 25 sheets of 80g paper can be processed for brochures with 120 or 100 pages. When a cardboard cover is used then the number of sheets is to be reduced accordingly.

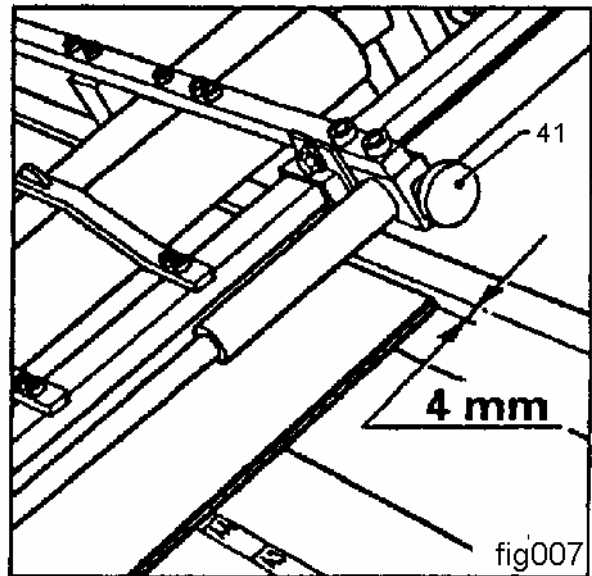
6.5.2 Adjustment of the side stop

First of all adjust the side stop with the assistance of the scale (38) on the green table plate. To do this the knurled screw (39) is opened and the stop moved to the side.



After correct adjustment the knurled screw is again tightened.

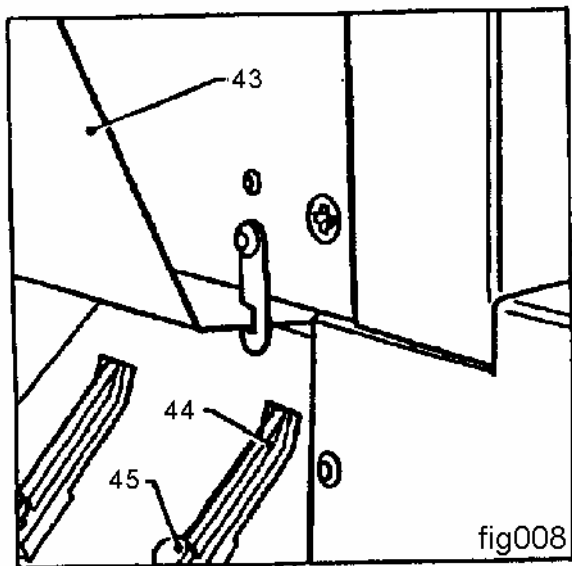
Then adjust the right stop.



To do this, insert a sheet of the paper to be processed and, after opening the knurled screw (41), the right stop is then brought flush to the sheet. From there, move ca. 4 mm to the right and secure the side stop in this position. This guarantees that the jogging movement which has been built into the right side stop, and is ca. 4 mm, lines up the staples smoothly.

6.5.3 Adjustment of the rear stop

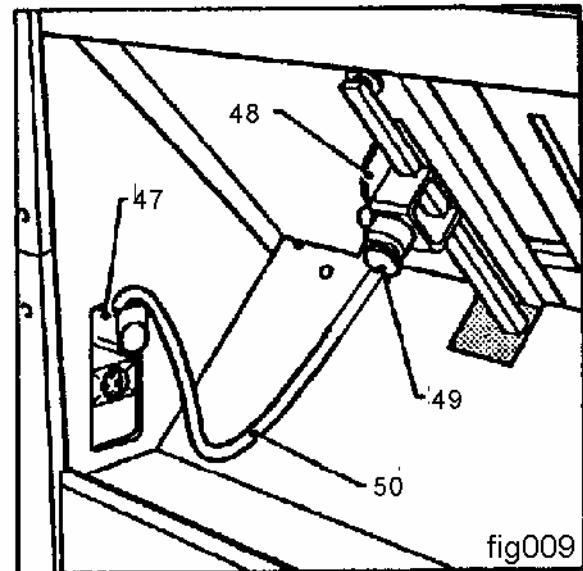
Adjustment of the rear stop is carried out by the turning handle (4, fig001) on the left side of the machine (only Foldnak 8). For adjustment a sheet of the paper to be processed is inserted. The turning handle is then moved so that the upper edge of the paper aligns with the format mark (for DIN formats), which corresponds to the paper format on the scale on the equipment table.



With Foldnak 6 and Foldnak 4, open the guard plate (43) and lock it upwards. Then move the rear stops (44) after opening the knurled screw (45). Correct adjustment of the rear stop is to be checked by a trial stapling.

6.5.4 Adjustment of trigger

Adjustment is carried out when the machine is switched off. Under the Foldnak work table is an adjustable photocell which has a baffle plate (48) mounted upon it.



Adjustment:

- Switch off Foldnak.
- Insert a sheet of the format to be used.
- Loosen screw (49) and push the photocell under the sheet.
- Switch on Foldnak.
- Pull the photocell slowly back until the Foldnak triggers. Then tighten the screw (49) in this position.

The switched-on machine now triggers automatically when the paper has been correctly inserted.

The baffle plate has the function of a barrier, it prevents single sheets jumping back.

6.5.5 Triggering by hand

Triggering can be carried out by hand when desired. For this, the photocell plug (fig009, 47) must be removed. The stroke is triggered by pressing the switch (fig005, 32) on the switch panel.

6.5.6 Counter

The counter on the switch panel can be re-set to zero by pressing the red switch whenever work is started. The number of brochures produced can be seen on the counter.

6.5.7 Adjustment of the slat conveyor

In order to be able to optimally utilise the capacity of the slat conveyor (fig001, 3), brochure movement on the slat conveyor is adjustable (only Foldnak 8). The movement, i.e. overlapping of individual brochures on the slat conveyor, is adjusted by the rotary switch (fig005, 29).

The distance of the Foldnak suppression wheels is also to be adjusted. For this, adjust the axle brackets (fig002, 12). A rule of thumb is that for small formats the wheels have to be closer to the Foldnak and further away for larger formats. The individual optimal adjustment is to be ascertained for a brochure.

6.5.8 Stapling

After switching on the machine, the paper is laid onto the equipment table. When it is correctly inserted, triggering occurs automatically. Should the paper not be correctly inserted, i.e. the upper edge of a sheet does not cover the photocell, the paper can be smoothly pushed by hand through the wide slit in the middle of the equipment table.

This task becomes unnecessary when you use a vertical vibrator (see chap. 7.2).

The first stapling should be a trial stapling to check the adjustments. The staples should be located an equal distance from the upper and lower edges of the brochures, sit exactly in the fold, and the fold should be exactly in the middle of the format. If necessary adjust the stops.

6.6 Stapling blocks

6.6.1 Formats / Number of sheets

The maximum number of sheets when stapling blocks is approximately as follows according to the paper weight:

Paper weight:	70g	80g
Foldnak 8	55 sheets	40 sheets
Foldnak 6	40 sheets	30 sheets
Foldnak 4	40 sheets	30 sheets

Depending upon how the paper is inserted, stapling can be, for instance, a staple in the upper left corner (corner stapling) or two staples at the side (block stapling). The distance to the edge of the paper is fixed, and is ca. 5 mm. Adjustment of the side stops and triggering is the same as that of brochure stapling (see chap. 6.5.2, 6.5.4). Do not use the format marks on the scale under the work table when adjusting the rear stop.

6.6.2 Block stapling with the Foldnak 8

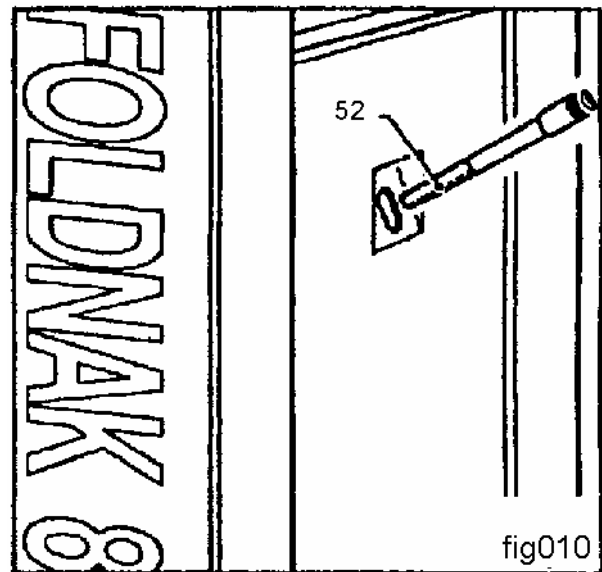
With the Foldnak 8, blocks can be stapled in the form that the block is automatically laid out on the slat conveyor.

Changing to corner or block stapling:

1. Switch off the rollers
(switch fig005, 31)
2. Switch on the block staple stop
(switch fig005, 30 on position I)
3. Decouple the folding knife
4. Adjust the slat conveyor

Carry out these steps in the reverse order in order to switch off block stapling.

Re 3.) Decouple the folding knife:

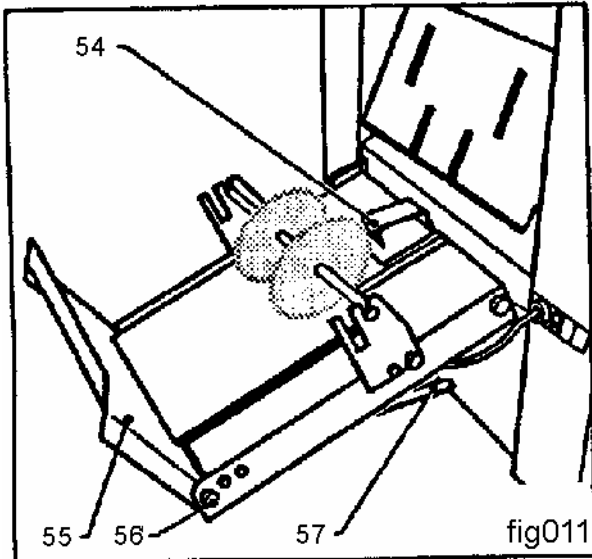


When the machine is switched off, the folding knife is decoupled by unscrewing screw (52) with the supplied 4 mm hexagonal spanner. The screw must be completely unscrewed and removed. Two holes for keeping the screw and hexagonal spanner are located on the right in the cubby hole of the front plate.

IMPORTANT:

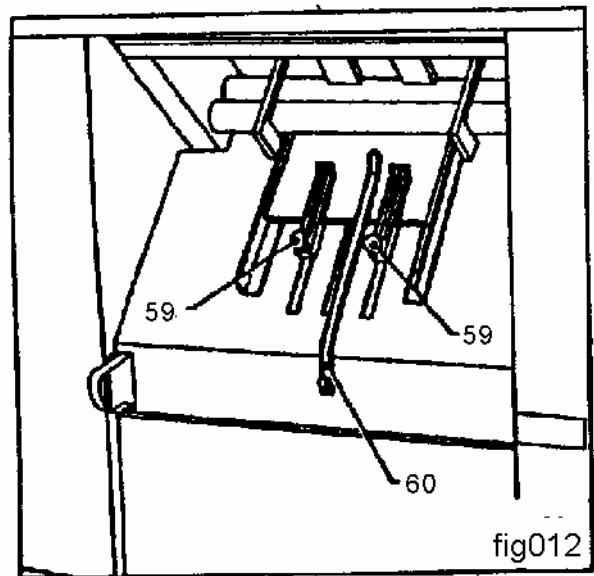
After again changing to brochure production, the screw (52) must be completely screwed in again. It moves during operation and would otherwise break off.

Re 4.) Adjust the slat conveyor:
Both transport wheels are inserted into the upper position of the axle brackets so that they somewhat brake the block that falls out.



By adjusting the support (57) the slat conveyor is folded at an angle downwards. The collecting plate (55) is folded upwards and retained in this position with both knurled screws (56) to the right and left of the slat conveyor.

The jump angle (54) is raised and pushed a little to the right or left, so that it supports itself on the slat conveyor. It prevents the block slipping down into the gap between the slat conveyor and the machine.



The strap (60) is then taken off after the screw has been loosened and both of the rear stops (59) are unscrewed so that the block can fall out of the machine after stapling.

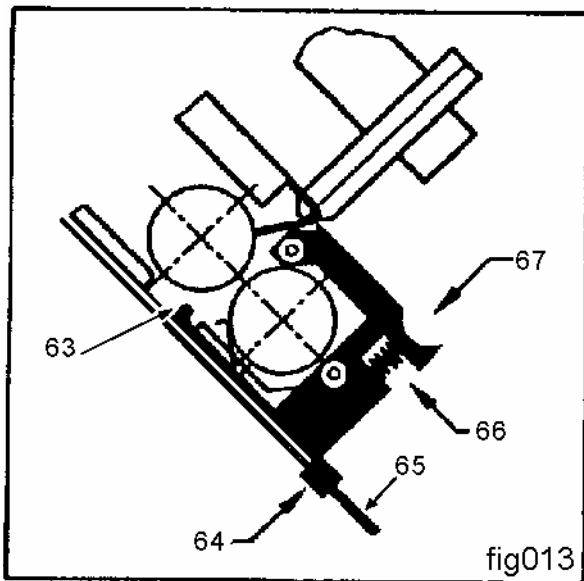
6.6.3 Block stapling with Foldnak 6 and Foldnak 4

For block stapling the rollers must be switched off by the switch (fig005, 31) on the switch panel. Then pull out the photocell plug (fig009, 47). Triggering is done by hand by using the switch (fig005, 32) on the switch panel.

The supplied block stapling stop (fig013, 66) (accessory for Foldnak 4) is necessary for block stapling. The additional stop is to be guided into the long slit in the rear wall underneath the rollers. Thereby hold the smooth side of the stop parallel to the rear wall. Fig013 shows the correct position of the stop.

When guiding the stop, push the moving arm up in the direction of the arrow (fig013, 67) and at the same time push the stop in the direction of the arrow (fig013, 66). It then clasps the lower roller. It is important for the correct seating that the stop groove is at the position (fig013, 64) under the rear wall plate.

When the stop is fitted, the paper can be inserted in the machine from the front. It knocks against the position (fig013, 63). After stapling, the paper can be removed by hand.



7 Accessories

Foldnak 8, 6 and 4 can also be subsequently connected online (i.e. with mechanical and electrical connections) with all current table assembling machines and many assembling towers:

- Nagel ZN 10, ZN 8
- Watkiss Vario / Eco / Slim Vac
- Plockmatik 310, 306, 410, 406
- Duplo DC-10 mini, DC-8 / 6 mini
- Uchida UC-800 / 1000
- Panduro PC-6, PC-8
- C.P. Bourg BT12, BST10
- Barenthin
- Horizon or Stielow QC-P8, QC-P10, AC 1200, AC2400A, AC 8000S
- AB Dick 10 and 6 station table assembling machines
- AM International 10 and 6 station table assembling machines

In order to save time with trimming the front, Foldnak 8 and 6 are able to be of connected online to the Nagel Trimmer.

7.1 Stapler heads, staples

- Nr. 2932600: Additional stapler heads
- Nr. 6272060: 5,000 Staples 26/6
- Nr. 6272081: 5,000 Staples 26/8S
- Nr. 6274062: 5,000 Ring staples Ri 26/6

7.2 Vertical vibrator

The vertical vibrator replaces manual jogging during hand feed. The vertical vibrator ensures that the stapled product always lays against the rear stop without any problems. Order no. 285520x (x = according to electrical voltage).

7.3 Coupling to assembling machines

Brochures can be produced more economically efficient with automatic paper feed. This is made possible by coupling the Foldnak to an assembling machine.

Nagel offers two table assembling machines: ZN 8 and ZN 10 with 8 or 10 stations (only in Germany). These models are optimally adjusted for the Foldnak. But even coupling to every other table assembling machine and to many large assembling towers is possible with Nagel accessories. Your Nagel dealer will happily advise you.

7.4 Trimmer

When processing sets from ca. 4 sheets = 16 pages, the inner sheets are pushed forwards visibly. These inner sheets are trimmed flush through front trimming in the Trimmer. Thereby every brochure receives a professional and clean appearance.

The fold becomes less sharp with thick layers. The Trimmer therefore additionally presses each brochure again and thereby improves the quality of the fold.

8 Service

8.1 Possible malfunctions

- Machine does not function: Electricity plug plugged in? Main switch switched on? Safety covers open?
- Electricity cuts out: Press the circuit breaker in again after a short time. It is located below the electricity cable exit.

8.2 Change the driver

Drivers are subject to wear and tear and must be changed occasionally. The driver (fig003, 20) is hung from a spigot (fig003, 16) and is secured with a knurled screw (fig003, 17).

When overloaded, it jumps from the spigot and is pushed up until it touches the spiral contact (fig003, 15) and thereby activates the staple error control (see chap. 6.3). A precondition for this is that the contact cable (fig003, 19) is mounted, which connects the stapling head with the contact bank. When the knurled screw (fig003, 17) is loosened the driver can be re-hung onto the spigot.

Afterwards the knurled screw is to be re-tightened.

To change the driver, loosen the knurled screw and pull the driver from the spigot which is sprung and on bearings, and pull it upwards out of the stapler head guide. To install, guide the driver in from above and hang it on the spigot.

Then tighten the knurled screw. When changing the driver, care is to be taken that the engraving “26” on the upper end of the driver shows towards the operator. Normally Foldnak stapling folding machines are delivered with ring drivers (item no. 2932619) which are suitable for stapling with ring staples or staples. Instead of the ring driver, a flat driver (item no. 2932616) can be used for thick layers.

8.3 Stapler head care and malfunctions

Damaged staples must be removed from the stapler head staple channel. For this, pull back the staple slide (fig004, 26) until it engages, then loosen both knurled screws (fig004, 24) and swing the straps (fig004, 27) towards the bottom.

The stapler head can be pulled off after the contact wire has been pulled off. The stapler head front plate and the magazine are to be cleaned of staple remnants as well as the front plate still in the machine.

Then replace the stapler head and tighten the knurled screws (24). Staple remnants in the guide channel can lead to driver breakage. Please, therefore, thoroughly clean the guide channel every time stapling is unsuccessful. Very thinly grease the driver above the stapler head after approximately every 5,000 staplings.

Clean the stapler head regularly, otherwise faulty operation could occur because of dirt.

Should there not be any staples in the paper although the magazine is full: Check whether the staple slide is bent forward due to accidentally being allowed to spring forward. If this is the case then carefully file off these burrs so that the staple slide can again push completely forwards into the stapler head.

8.4 Cleaning rollers

With use, printer's ink can collect on the rollers. This can reduce the rollers' grip. For this reason the rollers must be cleaned when needed. A cleaning agent can be used for this, such as is used for folding machines or pressure rollers.

8.5 Rotating the machine by hand

It can be necessary to rotate the machine by hand for servicing.

- Pull the photocell cable (fig009, 50) out of the plug socket for this.
- Remove the turning handle (fig001, 4) for the rear stop. Remove the side wall plastic top and reinsert the turning handle there. With Foldnak 6 and 4 use the pipe spanner from the accessories bag as a turning handle.
- Move the wide service switch (fig005, 33) to position I so that the stroke motor is raised.
- Press the narrow service switch (fig005, 32) briefly several times.

Now the machine can be rotated clockwise by hand. After completing servicing the photocell cable must be inserted when the machine is switched off, otherwise a stroke is triggered.

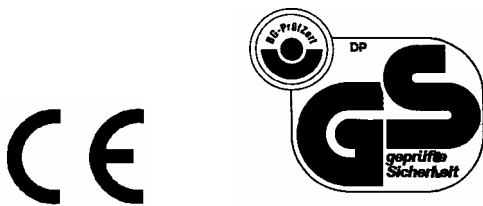
9 Technical data

- Manufacturer: Ernst Nagel GmbH, Breitwiesenstr. 21, D-70565 Stuttgart, Germany
- Electricity supply: See type plate on the machine
- Series number: See type plate on the machine
- Year of manufacture: First two digits of the series number
- Noise emission: < 70 db(A)

10 Conformity statement

This machine has been checked by the printing and paper technical committee of the employer's liability insurance association for conformity with the CE European Norm and the requirements for tested security and complies with EC Directives 89/392 and 89/336.

Norms used: EN 954-1, prEN 1010, EN 60204.



A handwritten signature in blue ink that reads 'Michael Kipp'.

Michael Kipp
Manager

Foldnak 4/6/8
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02. 1998

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