

TS 300. STACKER OPERATOR MANUAL

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1 INTRODUCTION

1.1 General

The IDAB WAMAC TS 300 Stacker is designed to convert a continuous stream of overlapping newspaper copies into bundles, each one containing the desired number of copies. The bundles can, at wish, be cross stacked or not cross stacked.

Producing identical bundles of size, the number of copies per bundle is set at the built-in control unit of the TS 300 Stacker. To produce bundles of varying sizes, an external programmer is required.

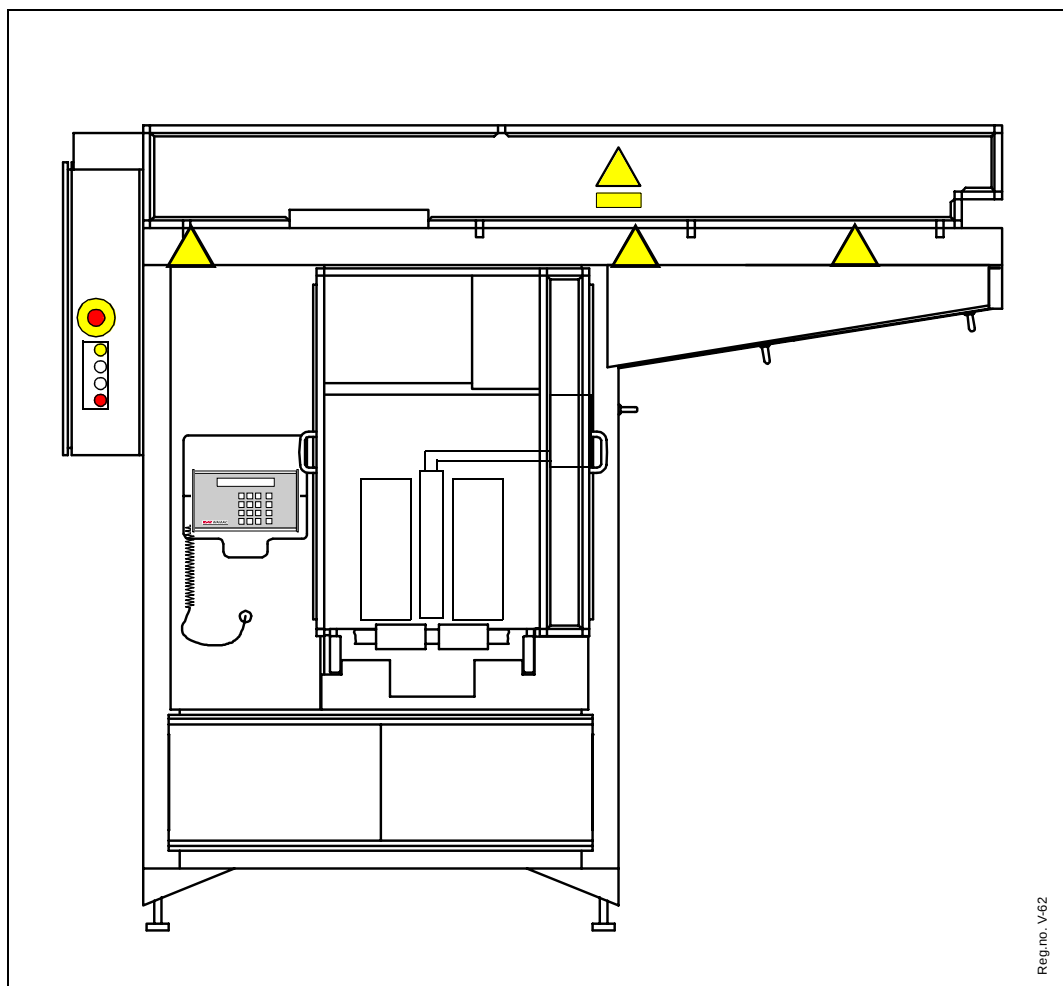


Figure 1 TS 300

1.2 Structure of the documentation

Documentation for the TS 300 is provided in three separate manuals intended for different users in different situations. Due to different reasons, it is not sure that all manual types are available. Check with IDAB WAMAC Documentation department.

(In addition to these manuals, there are documentation available for sub-systems, which are listed in section "list of references" in the appropriate manual type)

TS 300. Operators Manual (this manual)

The operator manual is intended for use by authorized mailroom operators in the employ of our customers. These operators shall have taken part in the course(s) IDAB WAMAC has arranged in the proper operation of the equipment and been approved as operators.

The operator manual includes hardware descriptions and functional descriptions that are also appropriate for some other audiences (they can be used in training, for example).

The manual contains all the information an operator needs to use the equipment properly and carry out the minor adjustments required in the course of daily operations. It also provides information on preventive maintenance to be carried out by the operator.

Note: IDAB WAMAC AB will honour the contracted warranty only if the purchaser carries out all prescribed maintenance.

TS 300. Maintenance Manual

The maintenance manual is intended for use by authorized maintenance technicians. These technicians shall have taken part in and passed the course(s) IDAB WAMAC has arranged on preventive maintenance of the equipment.

Note: IDAB WAMAC AB will honour the contracted warranty only if the purchaser carries out all prescribed maintenance.

TS 300. Parts Manual

The parts manual is intended for use by authorized maintenance technicians.

1.3 Operator qualifications and responsibilities

For the purposes of this manual, an "operator" is an authorized mailroom operator who has taken part in and passed the training course(s) IDAB WAMAC has arranged in the operation of the equipment in question.

The operator is responsible for operating the equipment, making the minor adjustments required during day-to-day operations, and handling simpler maintenance activities. The operator is not permitted access to the equipment's electrical cabinet. Contact a maintenance technician if measures requiring access to the electrical cabinet must be taken.

The operator, together with the maintenance technicians, is responsible for keeping a log of all measures taken and presenting operating reports and statistics to all relevant parties.

1.4 List of abbreviations

Photocell	Sensor, light sensitive. Is activated when darkened.
Inductive sensor	Sensor, metal sensitive. Is activated when close to metal.
Encoder	Pulse producing unit. To be installed on a shaft, giving a fixed number of pulses per rotation.
Batch	A newspaper bundle is normally divided into several part bundles, batches, making together a complete bundle. Small bundles can consist of a single batch.
Pneumatics	Mechanical controlling, using high pressure air (compressed air).
VLT	Voltage/Frequency converter. Unit used to control outfeed conveyor belt speed
FRL-unit	Unit for regulating, demisting and mist lubrication.

1.5 List of references

For more information on the computer systems and hardware units with which the TS 300 interacts, see the following IDAB WAMAC documents:

- LCC 70, Laser copy counter, Ref. no. IM LCC 70-9 9305
- VLT 2000 series, Voltage/Frequency converter, Ref. no. MG.20.A3.02
- LCS MICRO, Laser copy sensor, Ref. no. OMR332C 9712

2 TECHNICAL SPECIFICATIONS

2.1 Dimensions

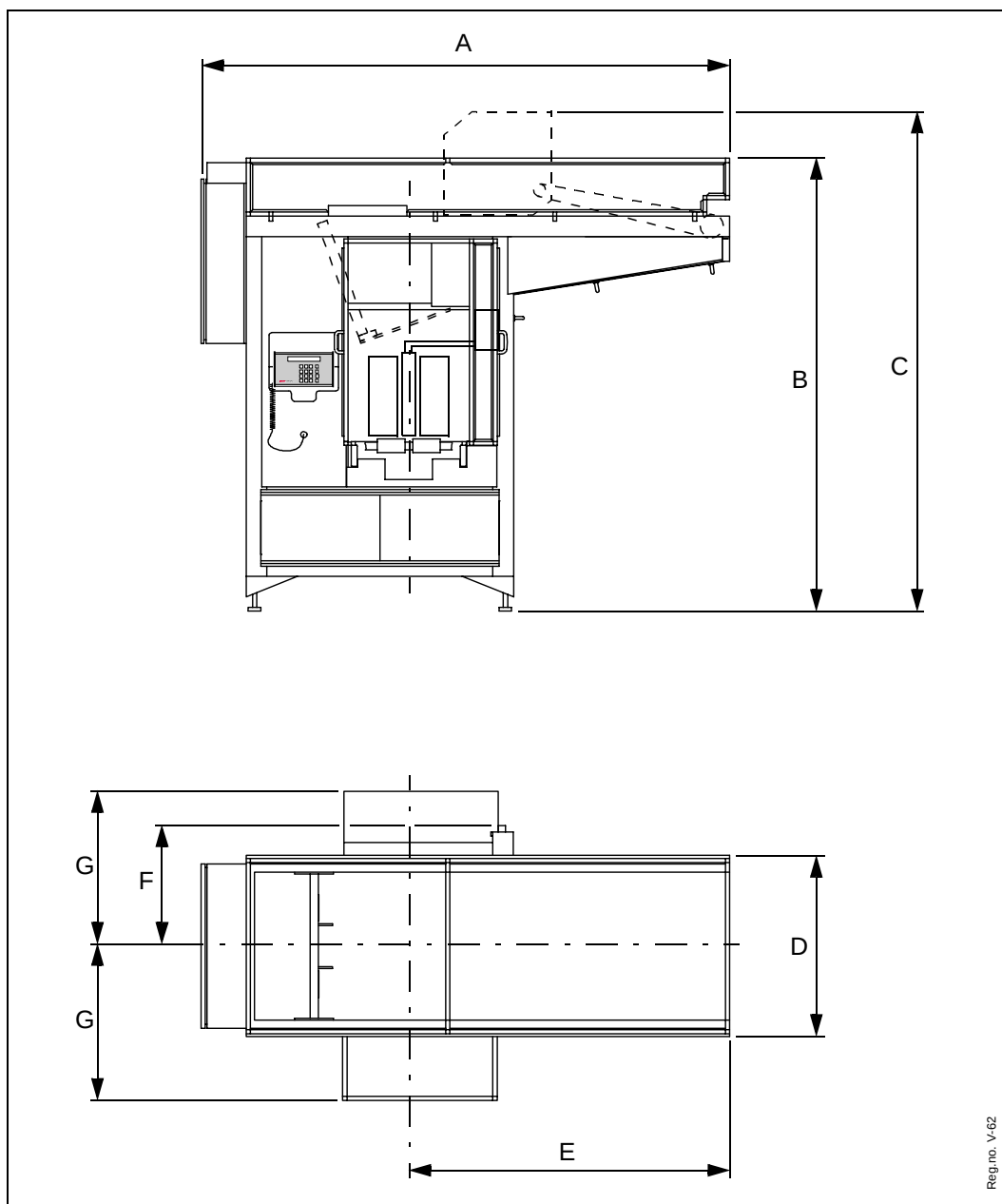


Figure 2 Dimensions TS 300

Dimensions in mm.

A	B	C	D	E	F	G
2570	2220	2500	880	1560	585	750

2.2 Data

Connection

Electric 3 x 400 V + Zero + Earth, 50 Hz, 10 A

Compressed air

Connection	3/4" pipe
Pressure	7 bar
Consumption	800 l/min, free air

Newspaper stream and product data

Capacity Max 70.000 copies/h

Spacing (distance between leading
edges of overlapping copies)

Recommended spacing	75 mm
Minimum spacing	65 mm

Centering Copy stream on stacker infeed centre line
within ± 10 mm

Product size

Width	210 - 485 mm
Length	210 - 350 mm
Max diagonal measure (inside the turning basket)	570 mm

Number of pages

Broadsheet	Max 64 Min 4
------------	-----------------

Tabloid	Max 96 Min 4
---------	-----------------

Batches and bundles

Cycle time	Appr. 1,4 - 1,5 sec. (product depending)
Number of copies per batch	See separate diagram
Height of batch	Max 300 mm
Height of bundle	Max 400 mm with two or more batches
Outfeed directions	Right or left

Miscellaneous

Net weight	900 kg
Infeed height	1960 ± 50 mm
Outfeed height	850 ± 50 mm
Noise level at operator position (L_{pA} is the A-weighted sound pressure level)	$L_{pA}=71\text{dB}$
Ambient temperature range	10 - 40 °C
Ambient relative humidity	30 - 80% non condensing

3 HARDWARE DESCRIPTION

3.1 General

The IDAB WAMAC TS 300. Newspaper stacker includes:

- Infeed section
- Blade section
- Basket section
- Outfeed section
- Panels
- Control system
- Pneumatic system
- Openable covers

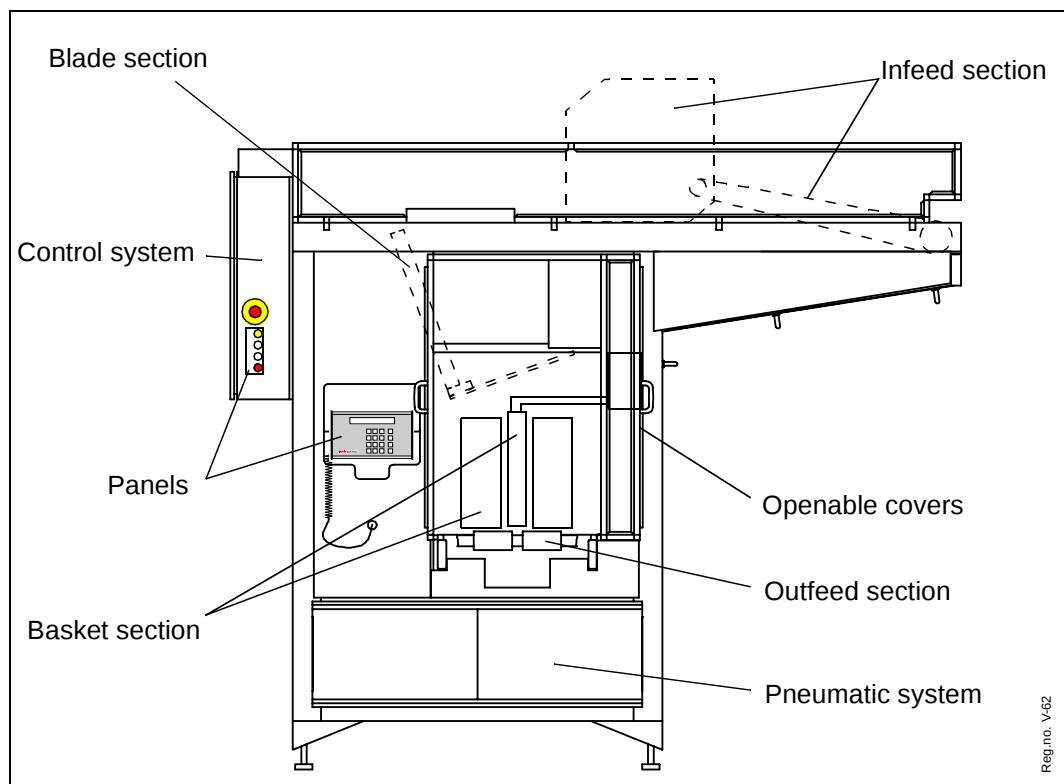


Figure 3 TS 300 Sections

3.2 Infeed section

3.2.1 General

The infeed section comprises:

- Drive motor
- Belt conveyor
- Distance sensor (encoder)
- Copy sensor
- Intercept
- Infeed box

The purpose of the infeed section is to receive and transport the arriving newspaper stream as far as the blade section.

3.2.2 Belt conveyor and drive motor

[Figure 4](#) shows how the belts of the infeed conveyor are thread. The drive roller drives the belt around the rollers. The tensioning arms are used to tension the belts. The drive for the conveyor is provided by an electrical motor installed on the drive shaft. The motor has the same speed as the preceding conveyor.

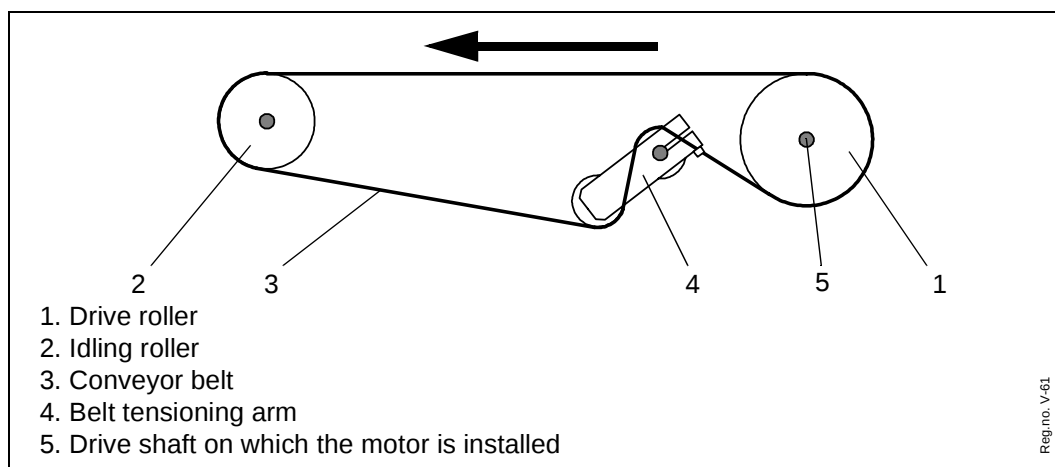


Figure 4 Infeed belt conveyor

3.2.3 Encoder

The encoder continuously registers the movements of the infeed conveyor. Via a timing belt, the encoder is connected to the drive roller of the infeed conveyor. The encoder generates a number of pulses for each centimetre for which the newspaper moves along the belt. The encoder is fitted to the right of the infeed conveyor.

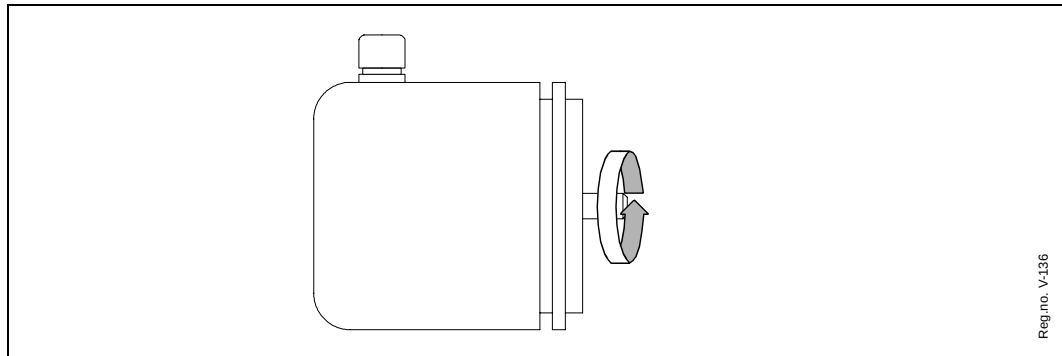


Figure 5 Encoder

3.2.4 Copy sensor

Warning

The copy sensor uses laser light, which can cause damage to the eyes.
Avoid looking into the laser beam.



The copy sensor, fitted at the infeed section, is a high precision counter, with no moving parts, and no mechanical contact with the copy stream (see separate manual). Each single copy generates one impulse, which is indicated by the indicator lamp on the counter flashing.



Figure 6 Copy sensor LCC 70 and LCS MICRO

3.2.5 Intercept

When the last newspaper in the batch has passed the suction cups, the air cylinder on the bridge is actuated. The cylinder lifts the bridge with suction cups up, and catch the first newspaper in the next batch. At the same time the brushes are pushed downwards and the newspaper holds back.

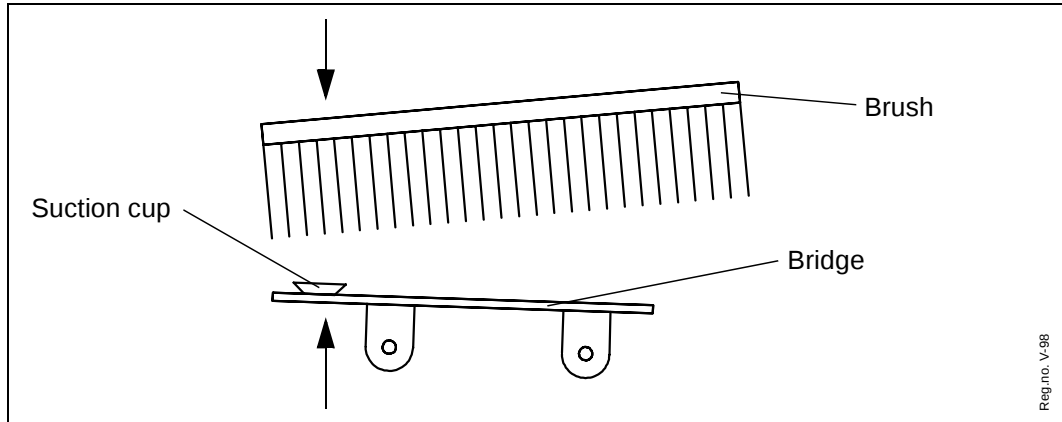


Figure 7 Intercept

3.2.6 Infeed box

The infeed box is driven by means of a chain connected to the infeed drive shaft. The infeed box, containing the squeeze rollers which squeeze the air out of the newspapers and make them stiffer. The pressure on the upper squeeze roller is applied by a pair of cylinders.

The corrugating rollers, corrugate each single copy, thus making it stiff enough to prevent folding, when dropping freely down onto the stacker blade. The infeed box is automatically elevated, as the batch is built up on the blade. This is to maintain the drop at a constant value. A photocell monitors the top of the growing batch, and controls the height of the box accordingly.

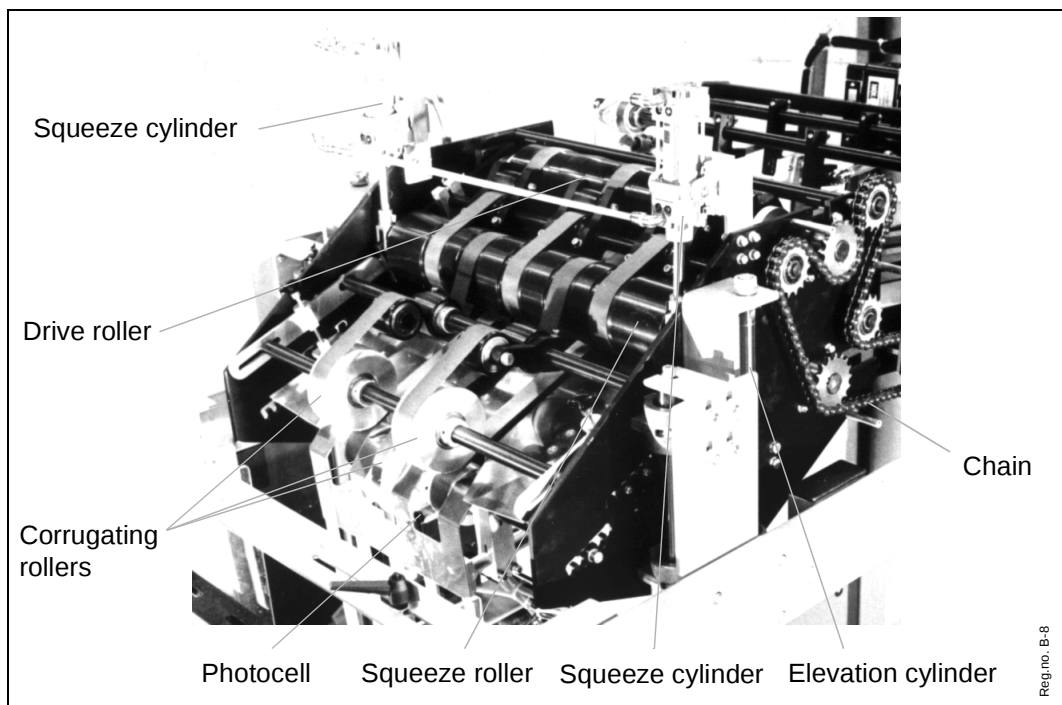


Figure 8 Infeed box

3.3 Blade section

The purpose of the blade section is to divide up the incoming newspaper stream into batches and bundles. The newspapers are picked up on the blade and are then deposited into the basket. The cylinder move the blade up and down. The purpose of the guides is to guide the newspapers so that an even batch is formed on the blade and in the basket.

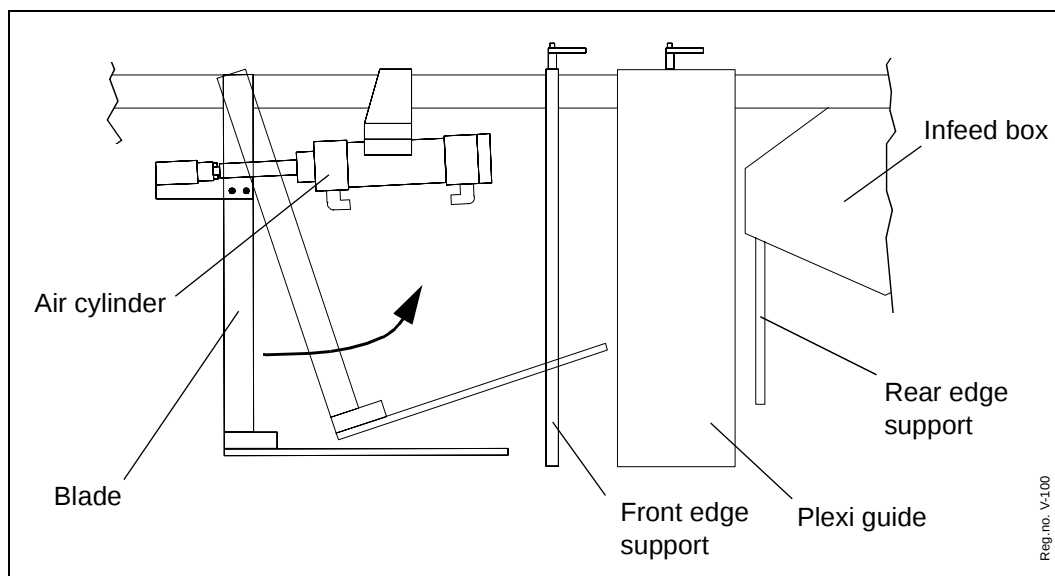


Figure 9 Blade section

3.4 Basket section

The purpose of the basket is to collect the batches of newspapers as they are released from the blade. In order to obtain a stable, balanced bundle, the basket is rotated through 180° between each batch by means of the turntable cylinder. Once the final batch in the bundle has been released down into the basket, the gates will open and the entire bundle is ejected by means of the pusher out to the outfeed conveyor.

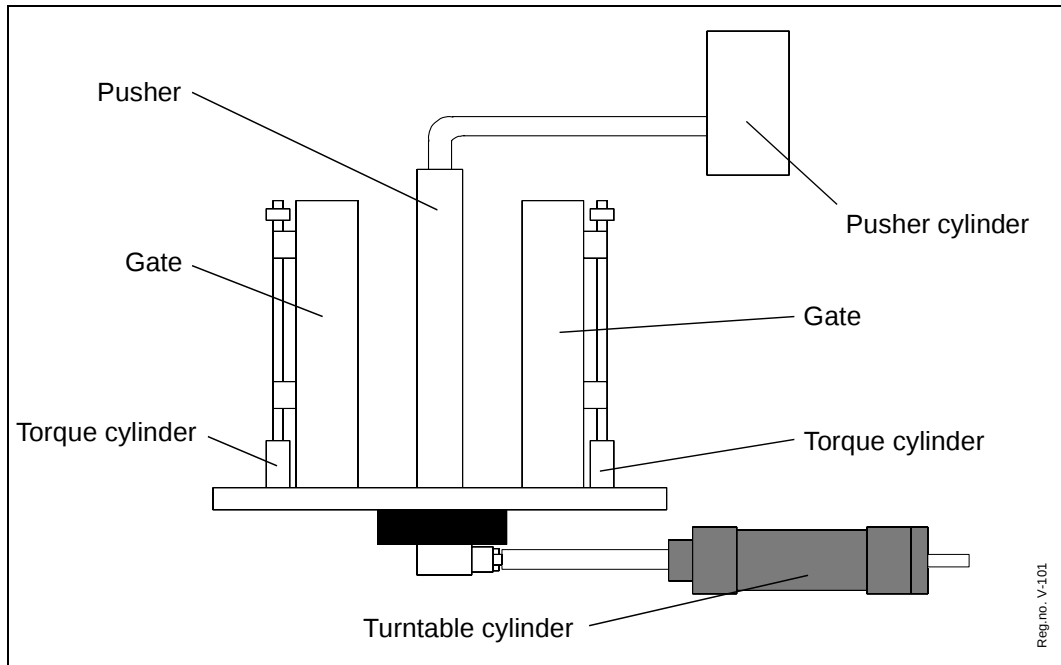


Figure 10 Turner basket and pusher

3.5 Outfeed section

[Figure 11](#) shows how the belts of the outfeed conveyor are thread. The drive roller which is connected to the electrical motor via a chain, drives the belts around the rollers. The belt tensioning device is used to tension the belts

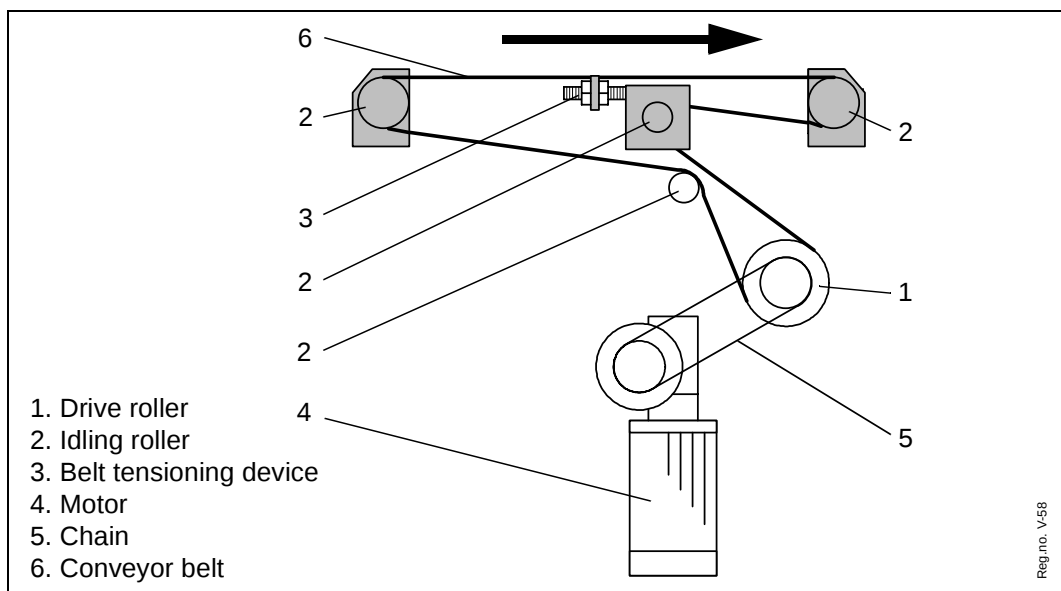


Figure 11 Outfeed belt conveyor

3.6 Panels

3.6.1 General

The TS 300 Stacker contains three types of panel

- Control panels
- Operator's panel
- Emergency stop

3.6.2 Control panels

The control panels are positioned on the wall of the control cabinet, one on the left-hand side and one on the right-hand side. The panels are identical and are connected in parallel, to permit activation from either side. The control panel has four buttons with the following functions:

- CLEAR
- READY
- START
- STOP

Clear

Push-button, yellow.

The stacker performs an clearing movement and ejects what is present on the blade and in the basket.

Ready

Push-button, white.

The Ready button must be activated (lit) before the stacker can receive newspapers. It can also control other external functions, such as the dump gate, etc. It must normally be activated during operation.

Start

Push-button, white.

The Start button starts the stacker, which begins by moving through its cycle to arrive at the starting position. Once this cycle is completed, the Ready button can be pressed and the stacker can receive newspapers.

Stop

Push-button, red, raised.

The Stop button immediately interrupts the work of the stacker and purges the machine.

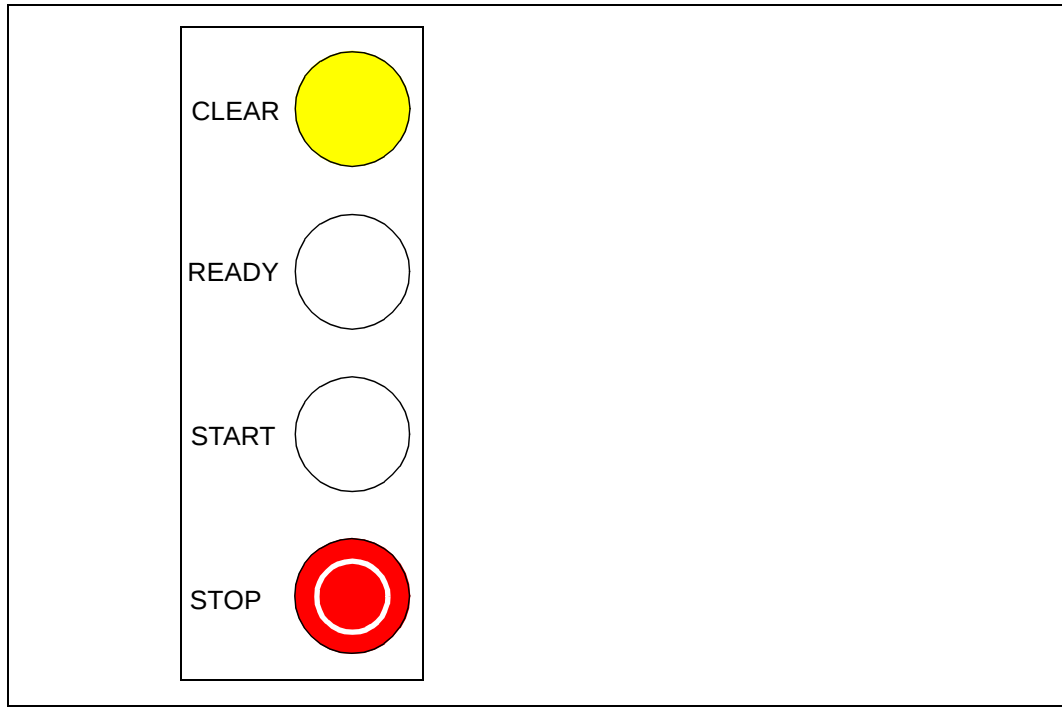


Figure 12 Control panel

3.6.3 Operator's panel

The operator's panel is used by the operator to change the working parameters which control the work of the stacker. It also contains functions intended for service and maintenance personnel, although these functions are not described in this manual.

The operator's panel consists of a portable panel case with a character display window and 16 push-buttons.

The character display window is able to display 2x80 characters and is used to display information relating to the operating mode of the computer and statistics.

The push-buttons are subdivided into three groups:

- Numerical buttons
- Cursor buttons
- Help buttons

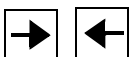
Numerical buttons

Buttons 0-9

These are used to enter new values and selections on the panel.

Cursor buttons

The cursors buttons have the following functions:



Moves the cursor in the direction of the arrows.



Reset, return to main menu.
Reset the window after a fault message.



ENTER

Help buttons

The help buttons have the following functions:



Changes an entered value if this was not activated with the "ENTER" key.



Activates help text for the marked function.

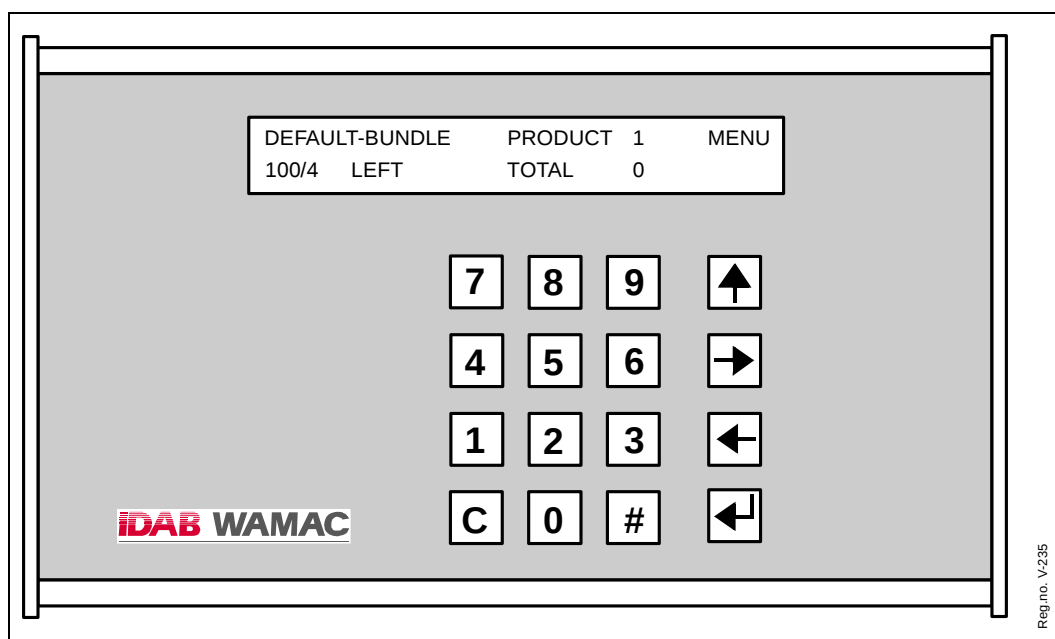


Figure 13 Operator's panel

3.6.4 Emergency stop

The emergency stop buttons are positioned on the wall of the control cabinet, one on the left-hand side and one on the right-hand side. The emergency stop button immediately interrupts the work of the stacker and purges the machine.

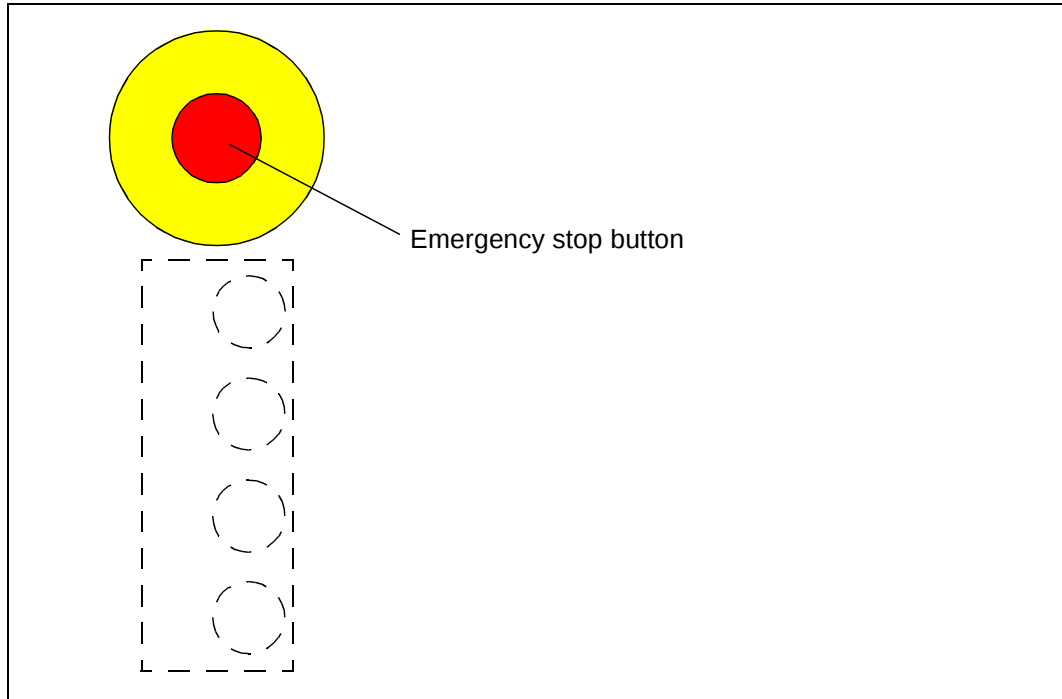


Figure 14 Emergency stop

3.7 Pneumatic system

3.7.1 General

The following description refers to [Figure 15](#) and [Figure 16](#).

The pneumatic system consists of

- FRL unit (unit for pressurizing, dehumidifying and mist lubrication)
- Valves
- Adjustable pressure regulator with gauge for squeeze pressure

The purpose of the pneumatic system is to control the cylinders movement.

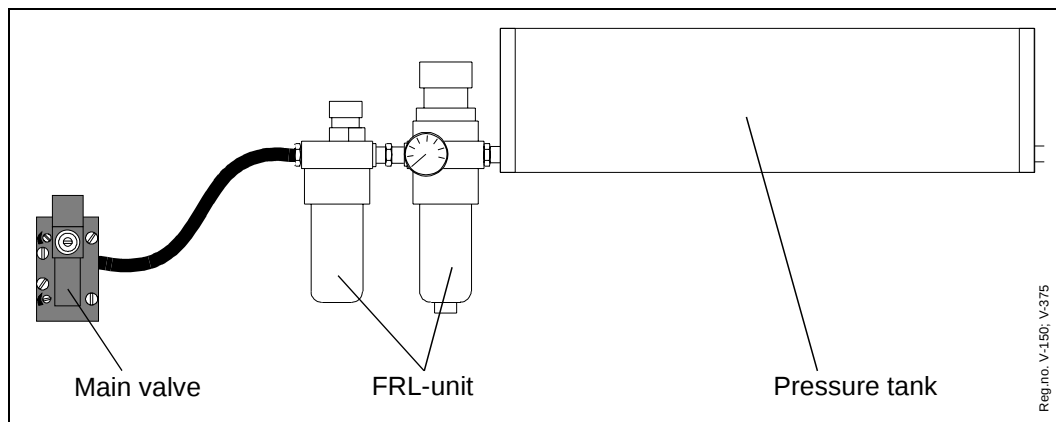


Figure 15 Pneumatic cabinet, right side

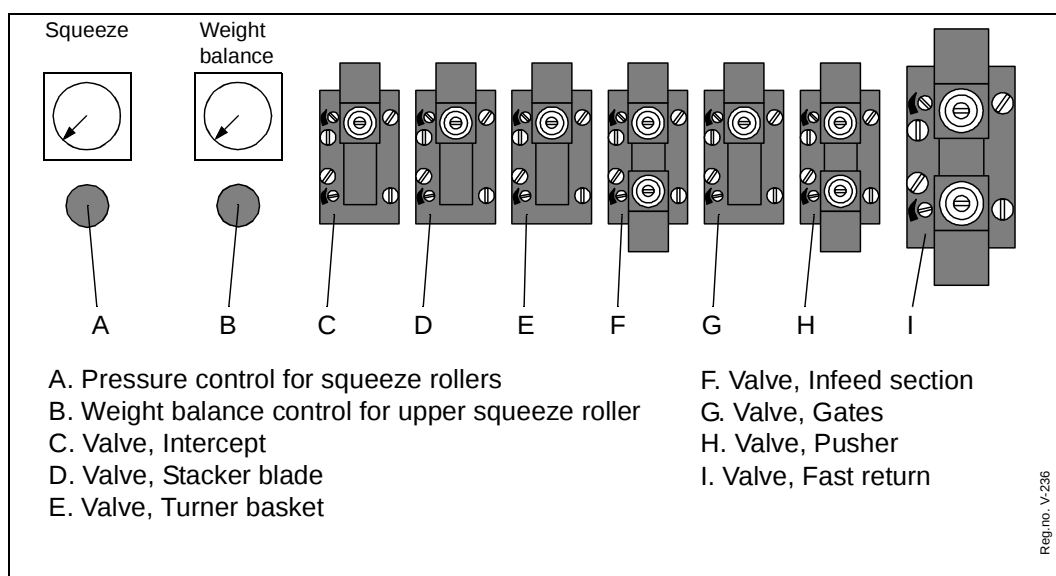


Figure 16 Pneumatic cabinet, left side

3.7.2 FRL-unit

The FRL-unit is located in the pneumatic cabinet on the right side of the stacker. Three functions are built into the unit:

- Adjustable pressure regulator with pressure gauge for setting the initial working pressure of the stacker
- Water trap
- Mist lubrication unit

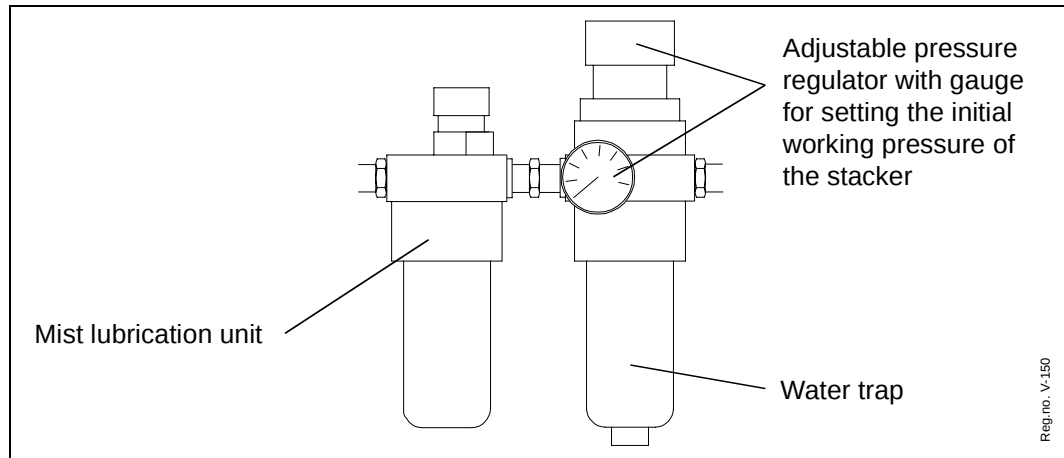


Figure 17 FRL-unit

3.7.3 Valves

The valves ([Figure 16](#)) control the flow of air to the cylinders. Each valve has two throttle valves with which to adjust cylinder speed.

3.7.4 Adjustable pressure regulator with gauge for squeeze pressure

The adjustable pressure regulator permits manual adjustment of the squeeze pressure. The pressure gauge allows the pressure to be adjusted against a preset value. (See [Figure 18](#))

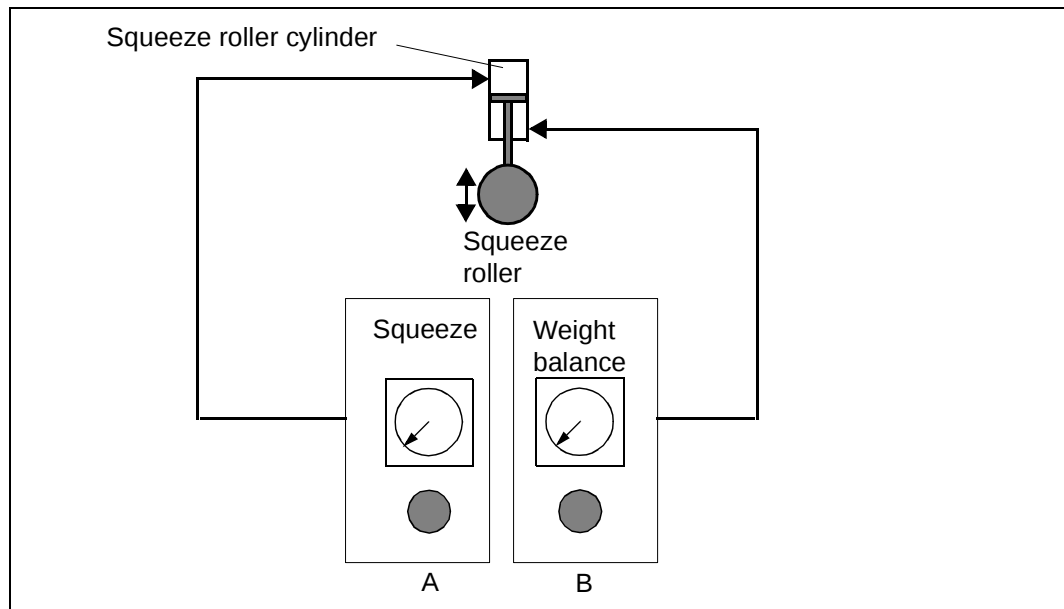


Figure 18 Squeeze roller principle.

- Squeeze pressure (regulator A)
- Weight balancing of upper roller (regulator B)

3.8 Openable covers

The openable covers on the stacker are doors of plexi with safety switches. If a door is opened, the stacker will stop immediately and can not be restarted before the door has been closed.

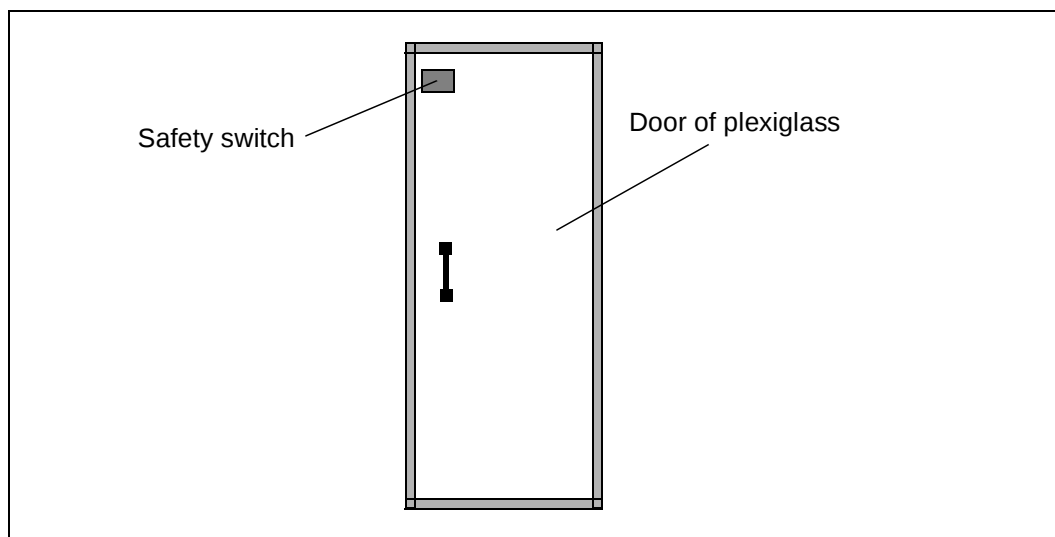


Figure 19 TS 300, openable cover

4 FUNCTIONAL DESCRIPTION

4.1 General

The main purpose of the TS 300 Newspaper stacker is to handle an overlapped newspaper stream and create bundles containing a specific number of newspapers. The bundles can consist of one or more batches. If a bundle consists of two or more batches, the bundle is balanced

4.2 Infeed section

The infeed section of the TS 300 Stacker is to receive a stream of overlapping newspaper copies, as specified under section [2.2](#).

The infeed section contains a horizontal belt conveyor, onto which the 1 copy sensor and the intercept are fitted. The conveyor ends up in the infeed box, containing the corrugating rollers, which corrugate each single copy, thus making it stiff enough to prevent folding, when dropping freely down onto the stacker blade.

The infeed box is automatically elevated, as the batch is built up on the blade. This is to maintain the drop at a constant value. A photocell monitors the top of the growing batch, and controls the height of the box accordingly.

The infeed belt conveyor is equipped with a variable speed drive system - a 3 phase AC motor with a potential / frequency converter - for the synchronizing with the speed of the preceding conveyor.

4.3 Copy sensor and encoder

The copy sensor, fitted at the infeed section, is a high precision counter, with no moving parts, and no mechanical contact with the copy stream (see separate manual). Each single copy generates one impulse, which is registered by the counter. On the receipt of the impulse from the last copy of a batch, the copy sensor starts the interceptor counter. The latter one receives impulses from an encoder, fitted to the right of the infeed conveyor. After the preprogrammed number of impulse, the intercept bridge is actuated.

4.4 Interceptor

The electronic intercept counter, is set to actuate the valve at the moment the rear end of the last copy of a batch has just passed the suction cups at the intercept bridge. The suction cups catch the next copy, i.e. the first one of the next batch, lifts it from the conveyor belts, and hold it against the brushes, which at the same

time are descended. The gap between the batches has to be wide enough to give the blade the time it requires to retract, release the batch, and return to its home position to receive the next batch.

4.5 Stacker blade

The batch built up on the blade, has to form a compact unit. To that purpose the blade is fitted in a sloping position. Further, when released, the batch has to land horizontally in the turner basket. This achieved by the proper setting of the retraction speed of the blade.

If the retraction speed is too high or too low, the batch will not land in the basket in a horizontal position, but leaning over, forwards or backwards, respectively (see [Figure 20](#)).

At the same time as the blade starts retracting, the infeed section returns to its bottom position. After a preset time, the basket turner or the pusher is actuated as required.

When the blade has released the batch it returns to its home position. The return speed of the blade, shall be as high as possible without causing mechanical noise.

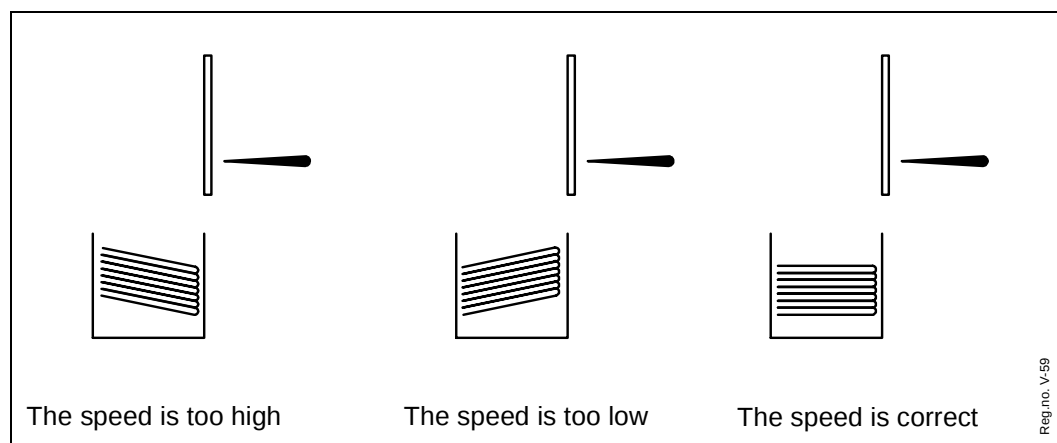


Figure 20 Blade retraction speed

4.6 Turner basket

Rotation takes place with help of the turntable cylinder. Turning is performed in two steps, each of 90°. The same cylinder is used to perform the entire 180° rotation.

[Figure 21](#) illustrates how a turning movement takes place. As a first step, the cylinder contracts and the turntable starts its movement as shown by the arrow. When the turntable arrives in its central position, the direction of the cylinder changes and it begins to extend. The fact that the turntable is already moving, as shown by

the arrow, causes it to continue in the same direction until it arrives in its second home position. Turning in the other sense takes place in the opposite direction according to the same principle.

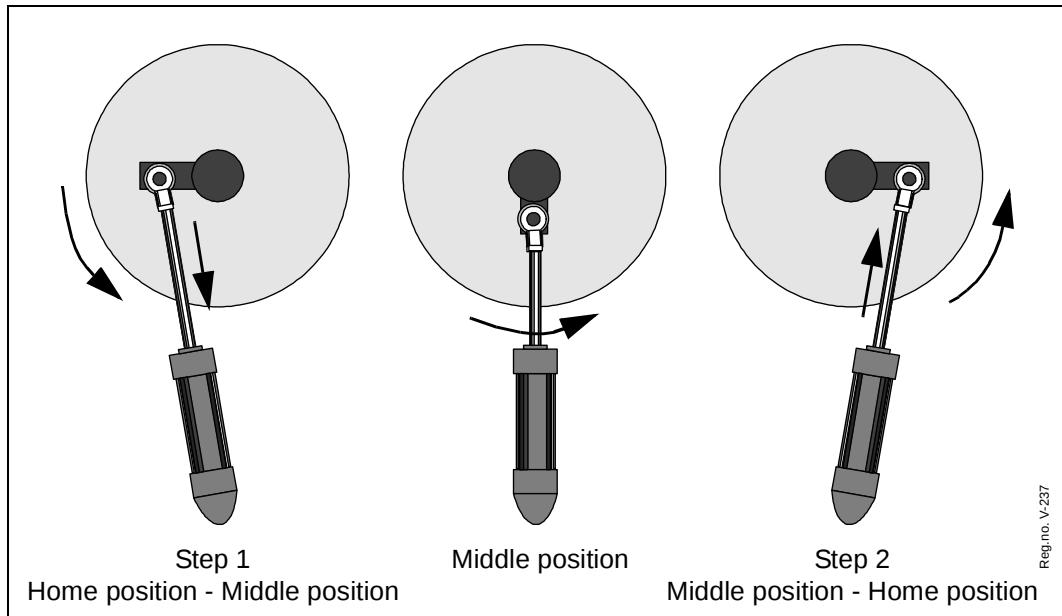


Figure 21 Turning basket

Sensor for turning device

Two sensors are used to permit turning to take place.

- Home position sensor for turning
- Central position sensor for turning

These sensors are located on the cylinder as shown in [Figure 22](#). The sensors are of magnetic type and detect the position of the piston inside the cylinder. When the piston is in its extended position, the basket is in its home position, and the home position sensor is activated. When the piston is in its inner position, the basket is in its halfway position, and the central position sensor is activated.

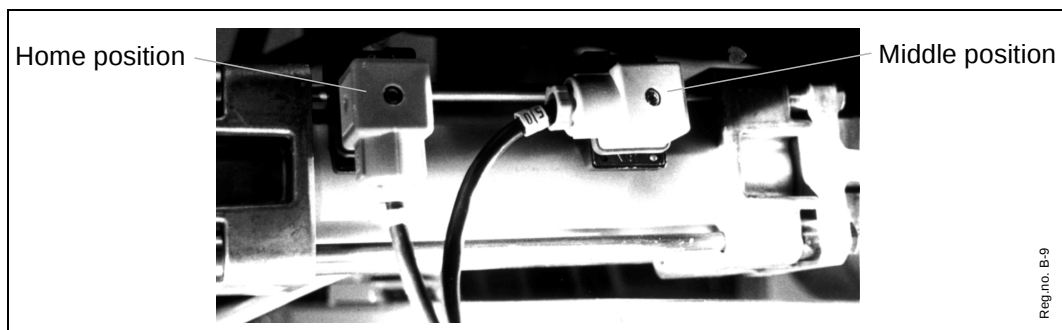


Figure 22 Turn table cylinder with sensors

4.7 Pusher and outfeed belt conveyor

For the ejection, the following alternative ways out are available:

For right/left stacker: Only right, only left, or alternating at will, right and left.

When the stacker blade has released the last batch of the bundle, the pusher eject the bundle out of the basket onto to outfeed conveyor. When operating with alternating ways out, the pusher performs a full stroke, and stops in the end position opposite to the start position. Thus, the next bundle will be ejected the other way.

Before the pusher start to eject the bundle, the basket gates will open.

Also when operating with only one way out, the pusher is actuated as described above.

The speed of the pusher is controlled by a valve, and it shall be adjusted to match the speed of the outfeed conveyor. A too high pusher speed may cause the bundle to roll over forward, when retarded by the conveyor. A too low pusher speed may cause it roll over the other way.

The purpose of the outfeed conveyor is to accept the bundle when it is ejected from the basket and transport it to the following conveyor. The speed of the outfeed conveyor is controlled via a voltage/frequency transformer (VLT) located in the control cabinet.

4.8 Control system

The control system for the TS 300 consists of a number of electrical and electronic components, most of which are located in the stacker control cabinet.

The control cabinet must only be opened by authorized electrical personnel, and there are accordingly no measures that require to be performed inside the control cabinet by the operator.

5 SAFETY

5.1 General

The safety instruction that are described in this chapter are of great importance for both personal safety and machine safety. Make yourself familiar with the location of the emergency stops and safety equipment in your installation.

Because of personal safety and equipment safety reasons, components in an installation may not be changed or replaced to other than original without written consent of authorized IDAB WAMAC personal.

The safety equipment in your installation should always be functional and never disconnected.

5.2 Personnel safety

5.2.1 Personnel safety during maintenance

When carrying out work at a level not reachable from the floor, some sort of working platform shall be used.

Never use the machine as a ladder.

It is up to the working personnel to ensure that no person is under or dangerously close to the working area, to prevent from injuries caused by falling tools or parts. It is also up to the working personnel to be informed about any local regulations.

5.2.2 Personnel safety during operation

Mailroom equipment includes moving parts that can be dangerous if handled improperly. If someone has got into a dangerous situation, the unit in question can be stopped immediately by pressing the emergency stop button:

EMERGENCY STOP

Emergency stop buttons are accessible on or near all equipment units.

If there is a risk of personnel safety:

1. Stop the machinery by pressing the EMERGENCY STOP button
2. When the situation that required the emergency stop has been cleared up and measures have been taken to correct any problems, reset the emergency stop function by pulling out the emergency stop button. Restart the machine in the usual manner.

If adjustments must be made to the stream of newspapers or a newspaper is jammed in the equipment, turn off and lock the main switch before taking corrective action !



Warning

Do not work on equipment with moving parts without:

- Turn off and lock the main switch on the stacker.
- Put up a warning sign at the main switch to prevent from unwanted start of the stacker.

5.2.3 Personnel safety and laser radiation

There is a copy sensor on the infeed section of the stacker that emits dangerous laser radiation. The copy sensor is of type:

- Denex LCC 70 and uses visible red light max. 1.0 mW
or
- Denex LCS MICRO and uses visible red light max. 1.4 mW

At work on laser equipped machines, the personnel must be aware of the function and regulations for lasers.



Warning

Do not open or adjust the copy sensor without first turning off its power supply!

The copy sensor is equipped with a warning sign of the type specified in section [5.4](#).

5.2.4 Openable covers

The stacker is equipped with openable covers to prevent the risk of injuries when operating the machine. These covers must be closed during operation, and are therefore equipped with protective switches. These protective switches must NOT be disconnected or in any way jumped.

5.3 Machine security

To prevent serious breakdowns, there is a stop button on the control panel of each unit of machinery so that the operator can stop it immediately if necessary. This stop button is raised, for easy operation.

5.4 Warning signs

5.4.1 Laser

The copy sensor on the infeed section must be equipped with the following warning sign.

- LCC 70, Class 2

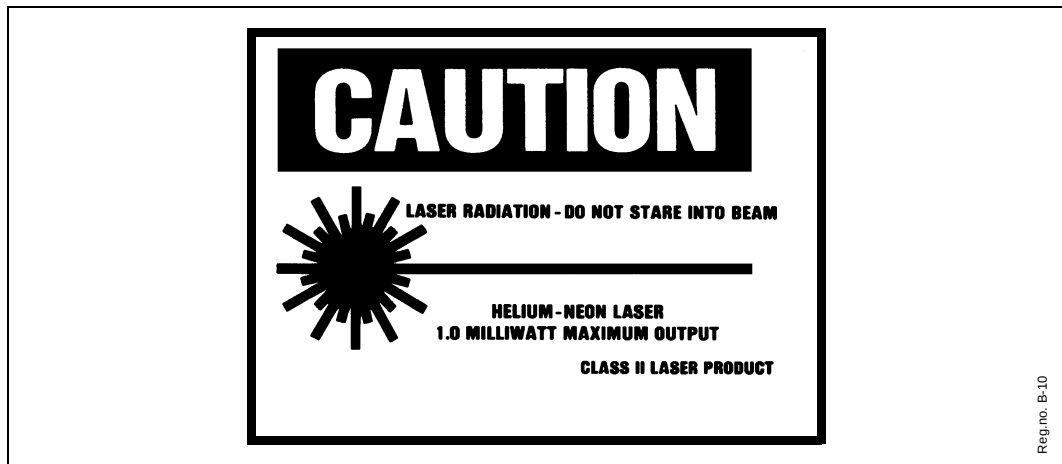


Figure 23 Warning sign on copy sensor LCC 70

- LCS MICRO, Class 2

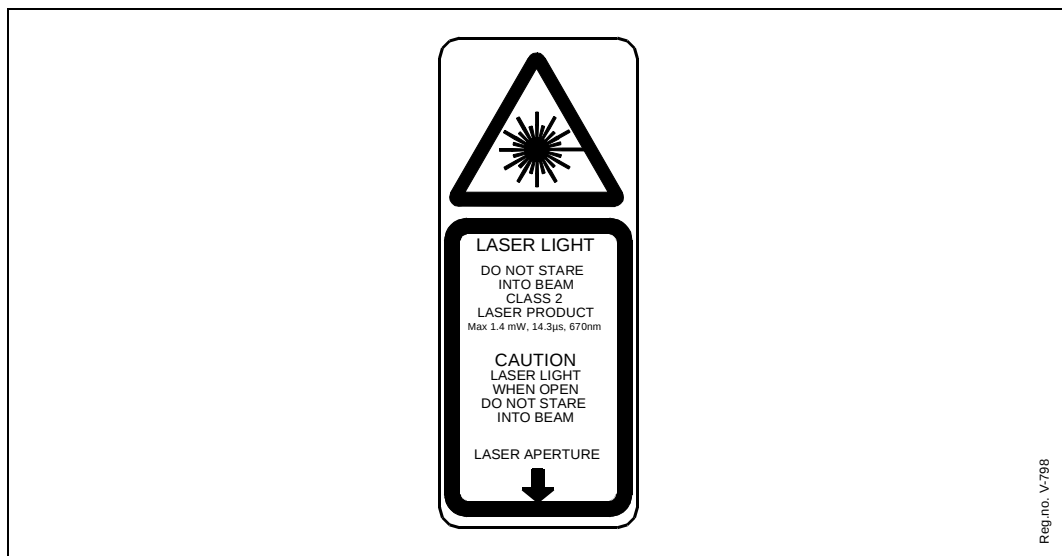


Figure 24 Warning sign on copy sensor LCS MICRO

The following sign is posted on the stacker.

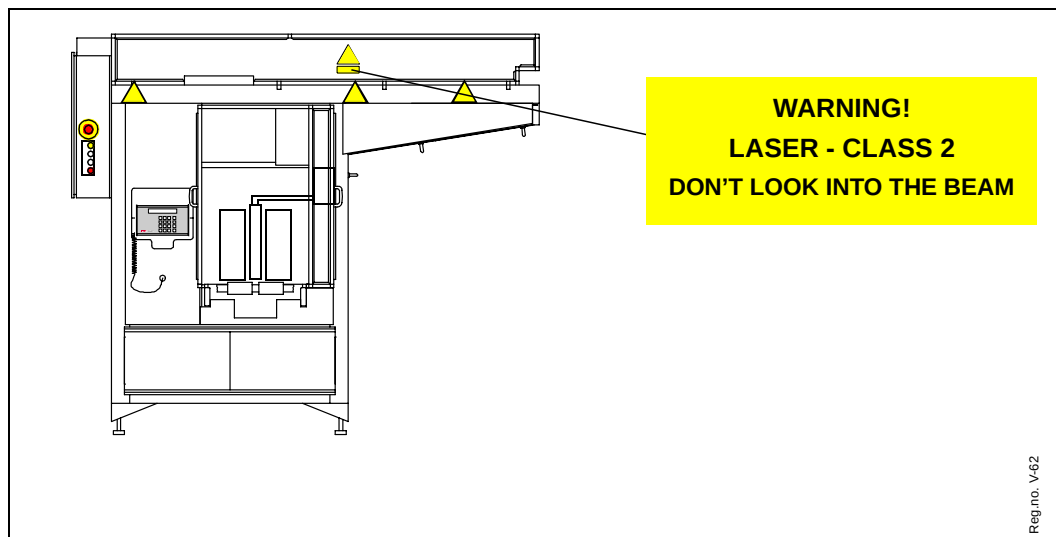


Figure 25 Warning sign

5.4.2 Beware of moving machinery risk of personal injury

The following warning sign must be posted on the TS 300, at a position near moving machinery which can cause injuries to personnel.



Figure 26 Warning sign on TS 300

6 OPERATION

6.1 Running the machine

The following points should be checked before starting the stacker:

- That no work is being performed on the stacker
- That no foreign objects are present on the infeed section, or in the basket
- That no emergency stops are activated

6.1.1 Start

- Check that the guides and the basket have the correct basic settings for the intended format.
- Put the main switch in position ON.
- Close all openable covers.
- Make sure no EMERGENCY STOP buttons are depressed.
- Press the START button and let the stacker perform its start-up cycle.
- Press the READY button.

6.1.2 Stop

- Check that the stacker has finished its work.
- Press the STOP button.
- Put the main switch in position OFF.

6.1.3 Clear

The clear function is used to reset the machine in conjunction with a jam situation. This function can only be used when the stacker is started.

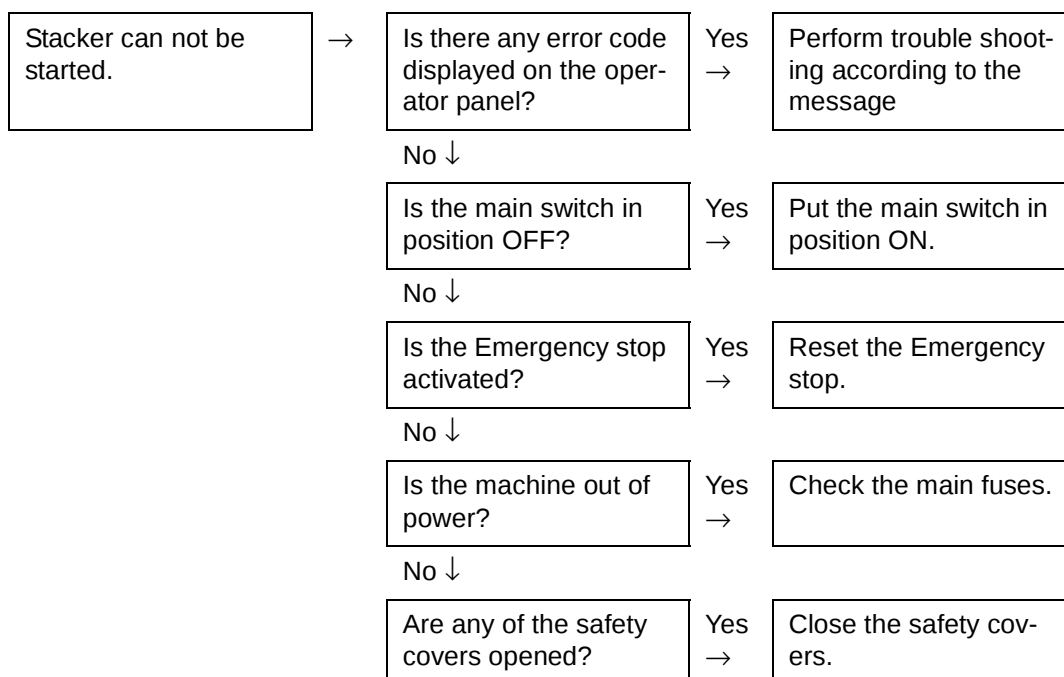
- Press the CLEAR button. The stacker will perform an clearing movement and will clear the basket and blade.

6.2 Troubleshooting

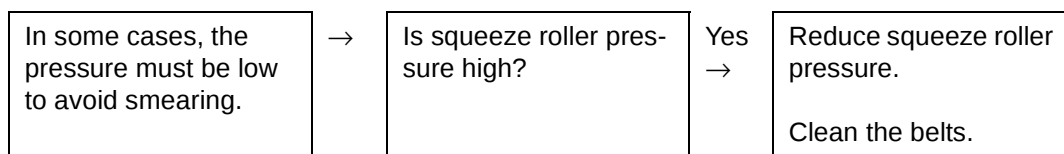
At minor faults

- Stop the TS 300.
- Turn off and lock the main switch or put up a warning sign at the main switch to prevent unwanted start of the TS 300.
- Clear the fault.
- Restart.

6.2.1 TS 300 does not start



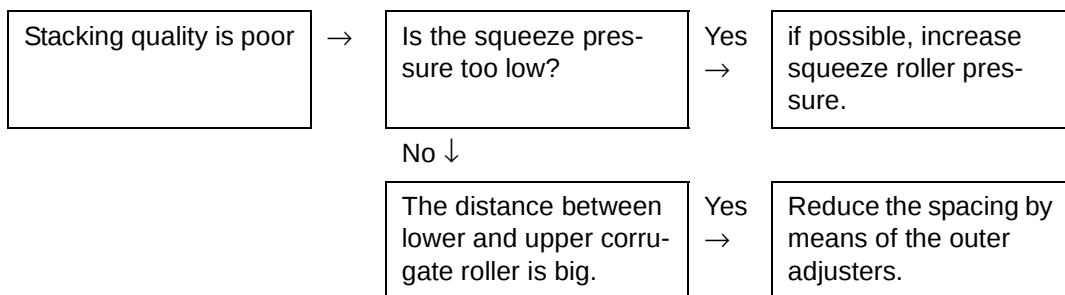
6.2.2 Smearing in squeeze rollers



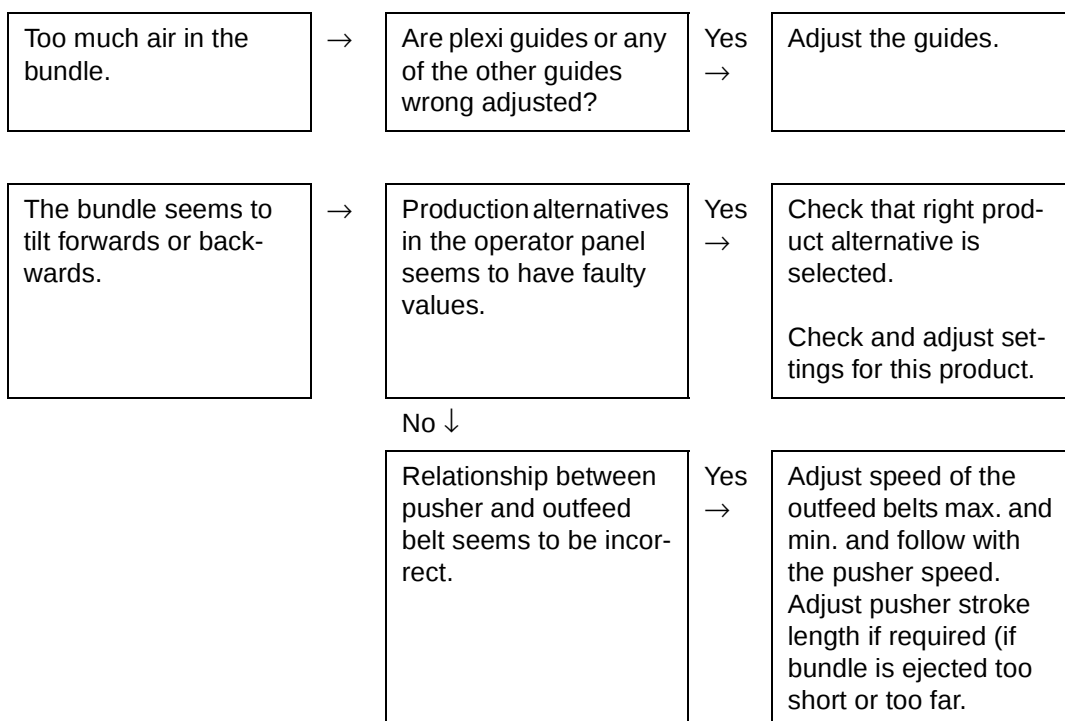
6.2.3 Problems with stacking and drop to basket

The batch drop down to the turning basket happens differently.	→	Walls of the turning basket are not adjusted same for both sides. (checked with a basket turn) Wrong adjustment?	Yes →	Check adjustment of the turning basket. Use the center hole in the basket as the fixed point.
		No ↓		
		The turning basket is not parallel with the outfeed conveyor belts.	Yes →	Adjust the stop positions of the turning basket. Check both sides (with a turn).
The batch drop down to the basket is not good. Happens even if the basket has turned.	→	The batch is touching the walls of the basket on it's way down.	Yes →	Check the setting of front/rear edge support and plexi guides. Make sure the supports are adjusted to guide the batch inside the turning basket walls.
The newspapers are touching the plexi guides too hard when entering the blade.	→	Newspaper stream is out of the center line.	Yes →	Take necessary actions to center the newspaper stream. Always use the center hole in turning basket as the fixed (start) point. Carry out adjustments in order upstream.
		No ↓		
		Incoming newspapers has out sticking pages, (which makes the dimension of the copy too big).	Yes →	Adjustment to be carried out in the press. If this is not possible, it is possible to compensate this in the stacker by means of increasing the format settings in general. Note that the this will make the bundle quality poorer. Test to increase the angle of the plexi guides as the first step.

6.2.4 Bundle unsteady due to air in the copies



6.2.5 Bundles are unstable when ejected



On other events

- Report to maintenance personnel.

6.3 Error messages

In event of a fault in the stacker or incorrect settings, error messages will appear in the character display window of the operator's panel. The fault messages are written over the previous text in the display window. In the event of a new fault message, the most recent fault message will appear in the display window. The fault messages shown in the display window are also stored in the stacker's memory, from where they can be retrieved by the authorized personnel. The error messages that can appear in the character display window are described below together with examples of reasons for faults. If the fault cannot be corrected by the measures recommended below, authorized maintenance personnel must always be notified.

BLADE NOT FINDING HOME

This fault message is displayed if the index sensor does not receive a signal telling it that a blade has arrived within a certain period after a bundle was released into the basket. The stacker stops.

- | | |
|---|---|
| <ul style="list-style-type: none"> • The blade has stopped against a bundle in the basket, because the bundle is too high. | → Check that the stacker is correctly set for the product being run. |
| <ul style="list-style-type: none"> • Index sensor broken. | → Test the sensor with a metal object. The indicator diode on the sensor must flash when the metal object approaches the sensor (1-2 mm). Contact authorized maintenance personnel. |

TURN MIDDLE NOT FOUND

This fault message is displayed if the basket is unable to execute its turning movement, or if it has executed its turning movement without activation of the central position indicator. If turning takes place, production can be completed without any further action. If the basket fails to return to its home position after a certain maximum time, the stacker will stop.

- | | |
|---|--|
| <ul style="list-style-type: none"> • Midway sensor unserviceable. | → Contact authorized maintenance personnel. |
| <ul style="list-style-type: none"> • Parameters for simulated midway position incorrectly set. | → Contact authorized maintenance personnel. |
| <ul style="list-style-type: none"> • No air supply to turning cylinder. | → Check that the air supply is reaching the machine. If necessary, contact authorized maintenance personnel. |

SHORT OF TIME

This fault message is displayed if the blade is ready to deposit a batch into the basket and if the basket has not returned to its home position after turning, or if the ejector has not managed to complete its movement in conjunction with ejection. If the "wait for eject or turn" time out also is elapsed and the signal transmitted was:

Turn: Error message **"Lost turn"** is displayed and the basket will not turn.

Eject: Error message **"Lost eject"** is displayed and the ejector will not eject the bundle.

- | | | |
|--|---|--|
| • The batch is not sufficiently large for this production speed. | → | Check that the stacker is correctly set for the product being run. |
| • Turning movement too slow. | → | Check the turning cylinder and the valve settings. Contact authorized maintenance personnel. |
| • Ejection movement too slow. | → | Check ejection times and distances. Contact authorized maintenance personnel. |
| • Home position sensor unserviceable. (Turning/Ejection) | → | Check sensor function. Contact authorized maintenance personnel. |

BASKET MUST COME HOME AT START-UP

This fault message is displayed if the turning basket was not in the home position when the stacker attempted to start up. The stacker cannot be started.

- | | | |
|---------------------------------------|---|--|
| • Home position sensor unserviceable. | → | Contact authorized maintenance personnel. |
| • No air supply to turning cylinder. | → | Check that the air supply is reaching the machine. If necessary, contact authorized maintenance personnel. |

TURN OR EJECT NOT HOME

This fault message is displayed during ejection if the basket or ejector is not in home position. The stacker stops.

- | | | |
|---|---|--|
| • As for "Turning basket not in home position on start-up". | → | See "Turning basket not in home position on start-up". |
|---|---|--|

- Ejection movement too slow. → Check ejection times and distances. Contact authorized maintenance personnel.

OVERRUN

This fault message is displayed if the stacker has been instructed to make smaller bundles than it is able to handle. The bundle will have more newspapers, but production will continue.

- The batch is not large enough for this production speed. → Check that the stacker is correctly set for the product being run.
- Incorrect input data from external unit (Programmer). → Change order data.

EJECT MIDDLE NOT FOUND

This fault message is displayed if the ejection was made without signal from eject middle sensor.

EJECT MUST BE HOME AT START UP

This fault message is displayed if the ejector is not in any of the two home positions when starting up. Manually push the ejector to its home position. Check the home position sensor on the eject cylinder.

INTERCEPT NOT ACTIVE

This fault message is displayed if the electronics is not working correctly.

PARAMETERS NOT OK

This fault message is displayed if wrong parameter values is entered. Check and change the parameters. Then save the new parameters. Turn off the stacker and restart.

BLADE JAM

This fault message is displayed when the lifting photocell is activated too long.

6.4 Settings and adjustments

6.4.1 Turner basket

The turner basket is adjusted by means of handles and screws.

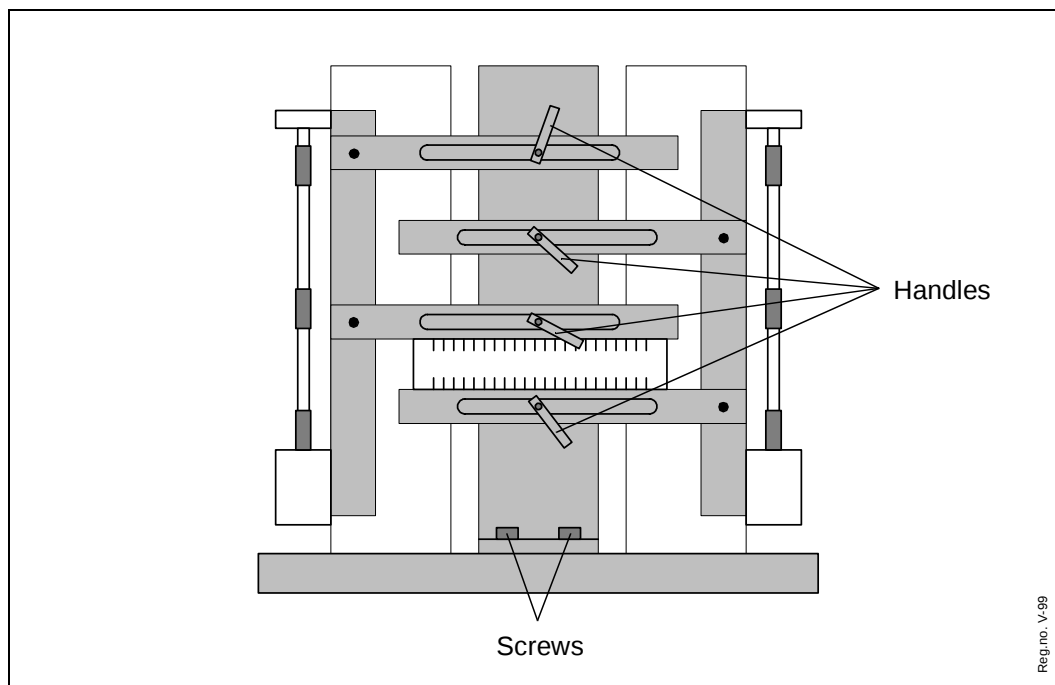


Figure 27 Turner basket adjustments

6.4.2 Front edge support

The front edge support is adjusted at the factory, but, nevertheless, a slight repositioning may be required. The stopper sticks guide the batch dropping down into the turner basket. The batch shall land with the leading edge of the copies parallel with, and close to but not in contact with the wall of the turner basket. (See [Figure 28](#)).

6.4.3 Plexi guides

The plexi guides are adjusted by means of the handles (see [Figure 28](#)). Place a batch of average size on the blade. Adjust the plexi guides so they makes the newspapers drop down on the baskets centre line with a gap of 5 mm on booth sides of the newspapers.

6.4.4 Corrugating rollers

The corrugating rollers is adjusted with the screws (see [Figure 28](#)).

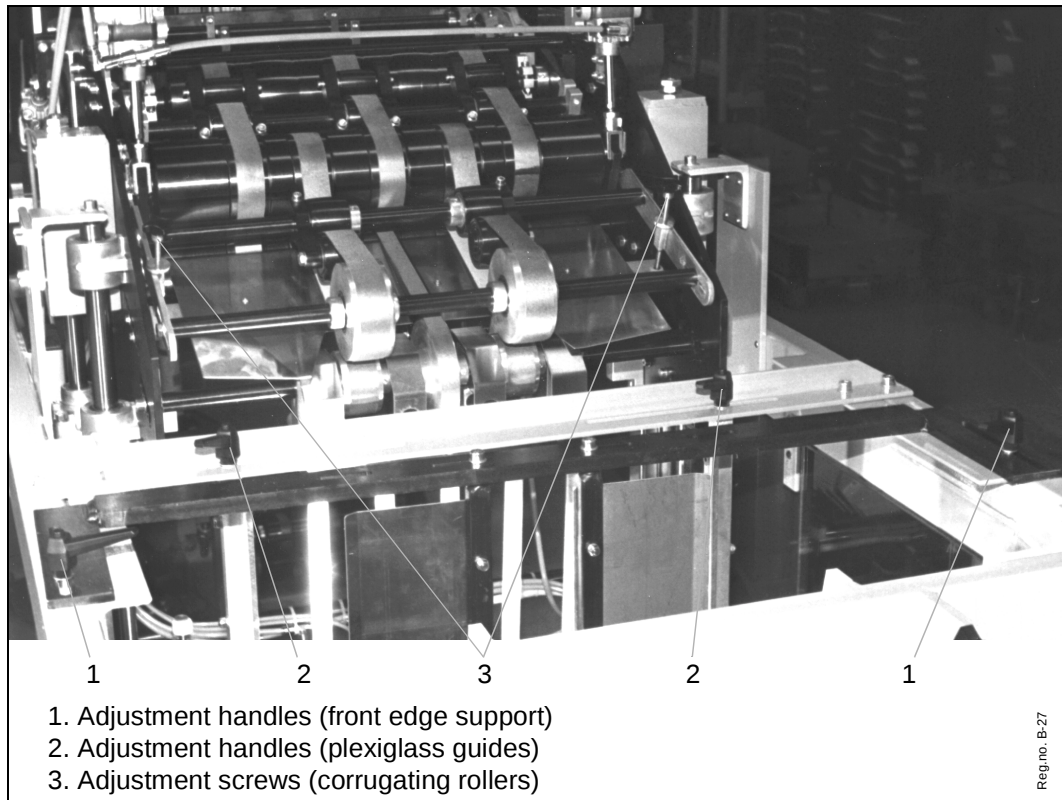


Figure 28 Adjustment devices for different products

6.4.5 Squeeze rollers

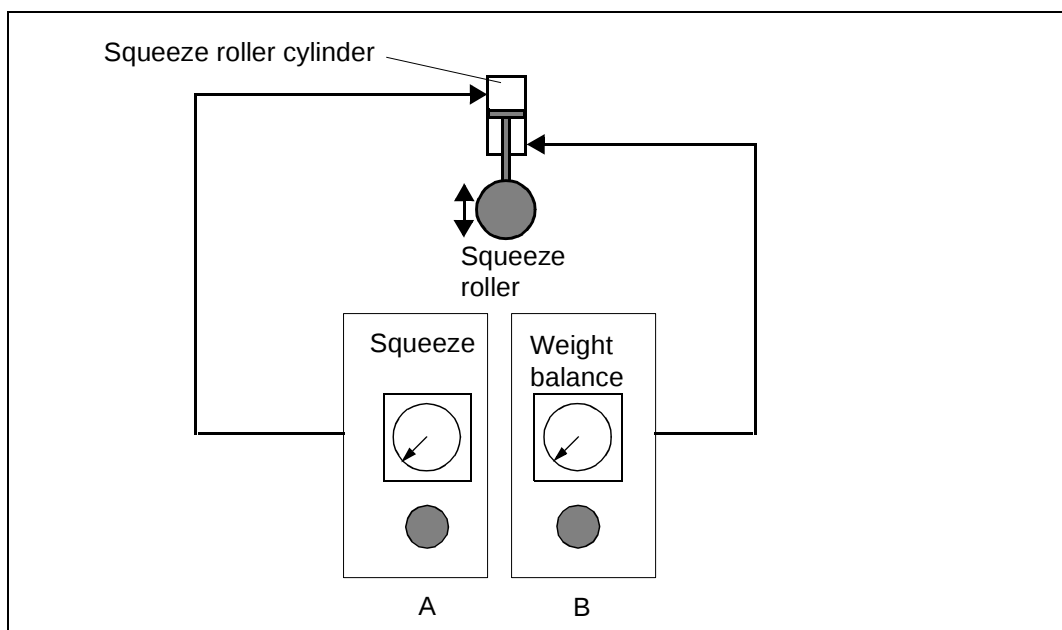


Figure 29 Squeeze roller principle.

Squeeze pressure (regulator A)

The pressure is applied by a pair of cylinders, acting upon the upper press roller. The air pressure to these cylinders is controlled by a regulator, fitted at the left side of the machine. The pressure is set by means of the knob, and is indicated at the gauge. Recommended air pressure; 0,5 - 3 bar.

Weight balancing of upper roller (regulator B)

The purpose of this function is to eliminate the weight (appr. 10 kg) of the upper squeeze roller. This is achieved by adding pressure in the bottom of the upper squeeze roller cylinders.

It is necessary to balance the weight of the press roller, to eliminate set-off problems. Adjust as follows:

Reduce air pressure on both regulators to 0 (zero). Then increase pressure on regulator B until you can observe that the squeeze roller just begins to move upwards. Setting is ready. Lock the regulator by means of the locking ring.

6.4.6 Intercept

The entire interceptor assembly is movable forward / backward, and it has to be set to match the cut-off length.

The distance centre to centre of suction cups and press rollers, respectively, is to be set to cut-off length + 20 mm. This applies for the activated intercept, i.e. with the suction cups in their top position.

NOTE 1 If this centre to centre distance is too short, it may occur that the copy to be hold back by the intercept ("first copy of the next batch") is forced through by the press rollers.

NOTE 2 If the distance is too long, the "last copy of the batch" may stick in the intercept without reaching the press rollers, and, thus is not forwarded to the stacker blade.

6.4.7 Menus and functions of operator's panel

The operator's panel is used to communicate with the stacker. Production data are entered via the panel, and information relating to the current status is displayed there.

Before each production run, the production data on the operator's panel must be checked and, if necessary, changed.

The operator's panel is also used to display a fault message if a fault has occurred in the machine or in the newspaper handling in the machine.

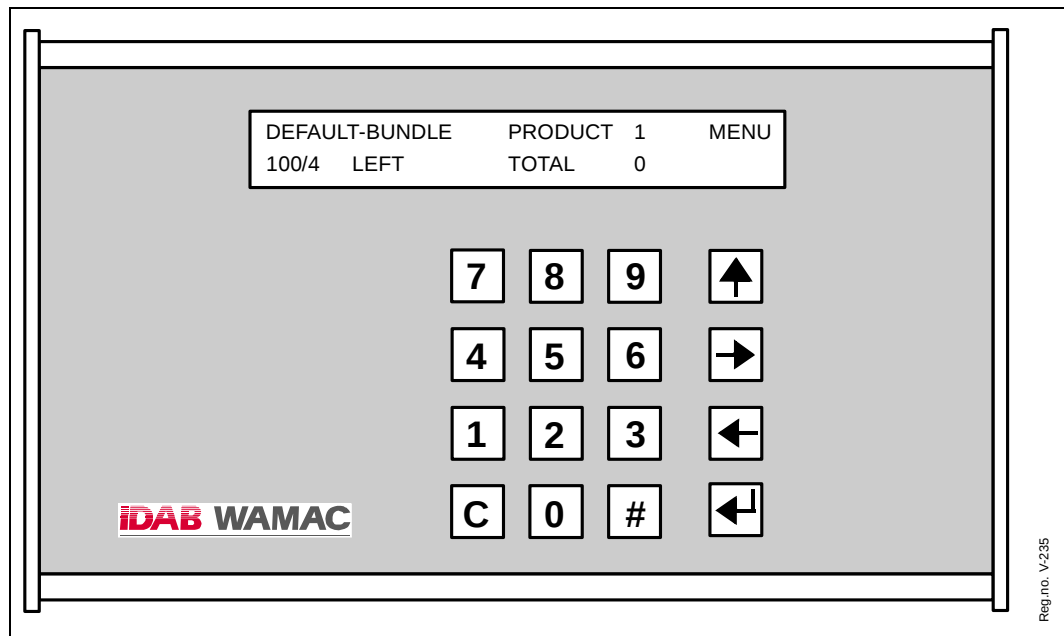


Figure 30 Operator's panel

The panel has a large number of functions, which are constructed in menu form. Most of these functions are purely service and maintenance functions and are not described in this manual. These functions are highlighted in grey in the menu tree shown in [Figure 31](#). It is possible to store the setting for 4 different types of production. These can then be selected directly with a simple keystroke sequence. It is also possible to go in manually to change an existing setting.

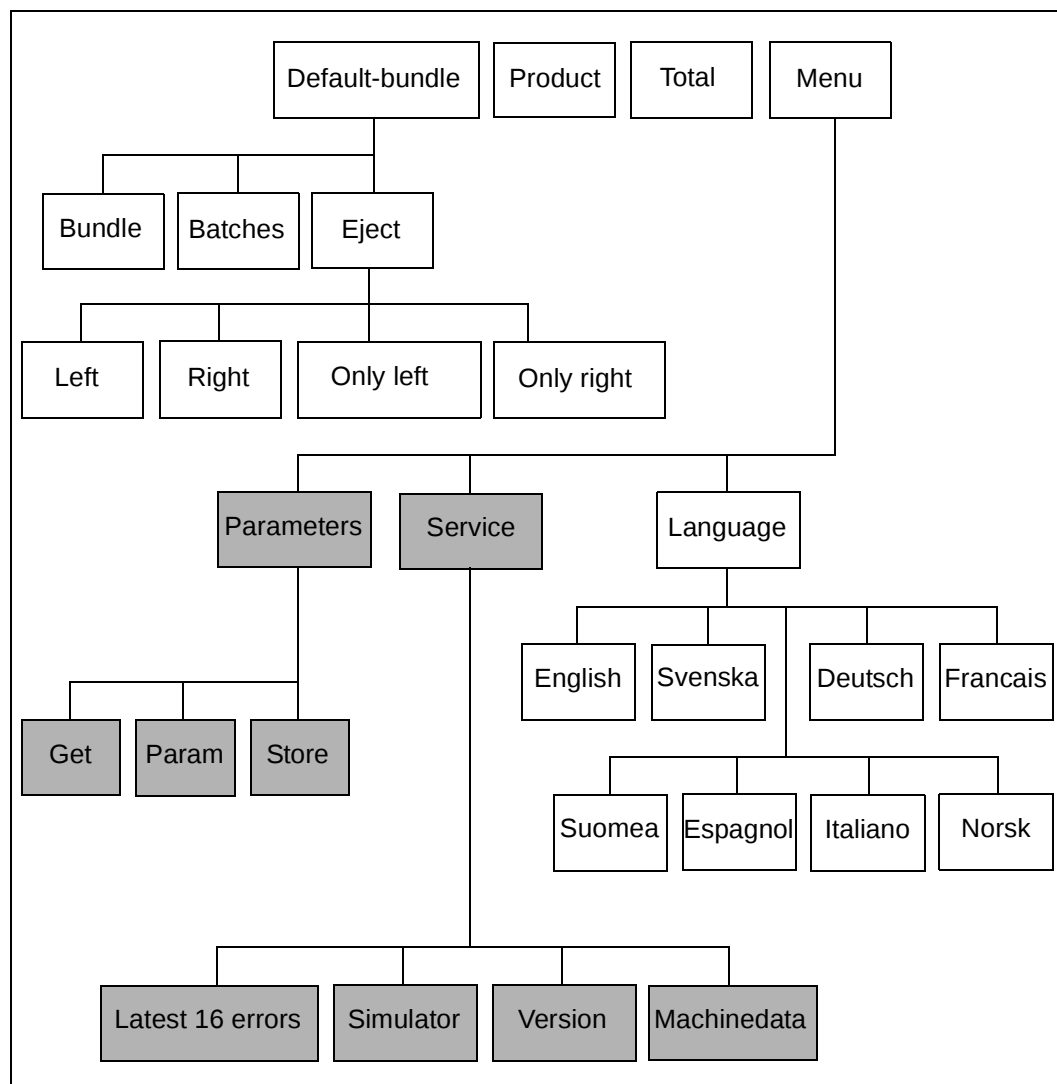


Figure 31 Operator's panel, menu tree

Default-bundle

A menu containing the settings for bundle size, number of batches and direction of ejection.

Bundle

Indicates the number of newspapers in a standard bundle. Must not be less than the value for the stacker's minimum bundle.

Batch

Indicates the number of batches into which the standard bundle is to be sub-divided.

The size of the batches must not be less than the value for the stacker's minimum bundle.

Ejection

Indicates the ejection direction for a standard bundle. Four different options are available.

- Left Used for machines with double ejection directions. Commands the stacker to eject each bundle to the left.
- Right Used for machines with double ejection directions. Commands the stacker to eject each bundle to the right.
- Left only Used for machines with single ejection directions. Commands the stacker to eject each bundle to the left.
- Right only Used for machines with single ejection directions. Commands the stacker to eject each bundle to the right.

Product

Selects an alternative product setting. A presetting facility for 4 different products is provided. Presetting is performed by the staff responsible for the machine in accordance with the preferences for each plant.

Presetting essentially involves standard bundle settings and the working parameters that may be product-dependent in one way or another.

The preset value can be changed temporarily. Any such change will be reset, however, when the mains power supply to the machine is interrupted. The person responsible for the machine can also change the setting permanently, if required.

Total

Indicates the total number of newspapers that has passed through the stacker since it was last zeroed. Zeroing is automatic after the mains power supply to the machine is interrupted. Manual zeroing is also possible by entering the value 0.

Menu

A menu containing the "Parameters", "Service" and "Language" sub menus.

Parameters

A sub-menu containing functions for changing the machine's working parameters, and for making permanent changes to preset values. Requires authorization as a person responsible for the machine.

Service

A sub-menu containing functions for service and maintenance. Used by the service and maintenance personnel.

Language

A sub-menu containing choice of language functions. The facility is provided to see the machine's text in up to 8 different languages, depending on the installed software. The ability to see the text in Swedish or English is offered as standard. A pre selected language is always used on starting up the stacker after the mains power supply has been interrupted.

6.4.8 Using the operator's panel

The operator's panel is easy to use without the need for special skills. The function of the buttons is described in section [3.6.3](#); a few practical examples of how to use the panel are given below.

All these examples assume that the panel is in the starting mode (such as after the mains power supply has been interrupted).

Change preset production setting to alternative 3

- Press  twice The heading 'Product' flashes.
- Press  A figure '3' appears on the empty line.
- Press  The choice is executed, and the machine will now begin to work according to this setting. If the power supply is interrupted, however, the setting will revert to 1.

Change standard bundle from 100 with 25 in each batch to 75 with 25 in each batch

- Press  The heading "Standard bundle" flashes.
- Press  A sub-menu with the options "Bundle", "Batch" and "Eject" is shown.
- Press  The heading "Bundle" flashes. (If anything else flashes, keep pressing the same key until the correct heading flashes).
- Press  and
 75 is displaced on the empty line.
- Press  The value changes from 100 to 75.
- Press  The heading 'Batch' flashes.
- Press  A figure '3' appears on the empty line.
- Press  The value changes from 4 to 3.
- Press  A prompt is displayed asking whether to save the changes permanently.
- Press  The panel returns to the main menu, and the machine will now begin to work with the new settings.

7 PREVENTIVE MAINTENANCE

To ensure that the TS 300 operates with a minimum of problems and a minimum of wear and tear, the following checks and maintenance activities should be carried out at the intervals specified.

Cleaning from dust shall be carried out by means of a vacuum cleaner equipped with a plastic mouthpiece.

The maintenance intervals are based on a 6 hours production /24 hours.



Warning

Before all maintenance work:

- Turn off and lock the main switch on the stacker.
- Put up a warning sign at the main switch to prevent from unwanted start of the stacker.
- Disconnect the inlet air.

7.1 Log

Operators are responsible for keeping a log of all maintenance and service. The log should be stored in a place accessible both for company maintenance personnel and IDAB WAMAC service personnel.

The following information should be included in every log entry:

- Position/machine number
- Activity carried out
- Date and time
- Signature and position of the person who made the entry

The transfer documents (record of transfer, record of installation check, transfer test record) produced when the equipment was installed should be kept in the log book.

The log book should be a record of all maintenance carried out in conjunction with the operation of the equipment. IDAB WAMAC's equipment warranty is valid only if these maintenance activities have been performed correctly.

7.2 Daily

- Clean the TS 300, removing dust and bits of paper.
- Check the photocell. Clean with soft cloth if required.

7.3 Weekly

In addition to daily maintenance, the following checks and maintenance activities should be carried out once a week. If problems should arise, make sure that the necessary measures are carried out immediately by authorized personnel.

- Check the water trap, the water should be automatically drained off. Empty if necessary.
- Run the machine idling. Listen carefully for any un normal noise. Adjust when required. Worn parts have to be repaired or replaced immediately, to eliminate the risk of a break down.