

Operating Manual
for

novopress

HSBL2 Hole punch 160 Digital



CE Conformity declaration

Safety regulations

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GENERAL SAFETY REGULATIONS

Read all safety regulations and instructions!

1. Keep the place of work clean.
Disorderly work-places and work-benches invite accidents.
Ensure that lighting is good.
2. Keep children away.
Do not allow unauthorised persons to touch the device or the cable.
Keep unauthorised persons away from your place of work.
3. Wear suitable working clothing.
Do not wear any wide clothes nor jewellery - they may get caught up in moving parts.
When working in the open it is recommended that you wear rubber gloves and non-slip footwear. Wear a hair- net if you have long hair.
4. Always be alert.
Only use a device after having been instructed in its operation.
Concentrate on your work. Proceed sensibly.
Do not use the device when you are distracted.
5. Do not lean too far forward. Avoid abnormal stance.
Make sure that you have a secure standing position, and maintain balance at all times.
6. Leave safety devices where they belong.
7. Hand tools may not be installed as fixtures.
8. Repair and maintenance.
Have repairs and maintenance work carried out in an authorised NOVOPRESS specialist workshop.
Only use original and identical NOVOPRESS spare parts.
We reject all responsibility and liability for work carried out by third- party personnel.
9. Our machines are not UL certificated. They may not be exported and used for USA and Canada.

SAFETY INSTRUCTIONS FOR HYDRAULIC EQUIPMENT

1. Please read the operating instructions.
Acquaint yourself with the hydraulic equipment.
2. Provide the equipment with the necessary care.
Always keep the equipment in operational condition.
Cleanness is an essential requirement for good and safe working.
3. Switch off the electric power supply to the hydraulic equipment,
 - when the equipment is not in use
 - when maintenance work is to be carried out.
4. Avoid unintentional switching - on.
Keep hands and feet away from the switch when the equipment is not being used.
5. Do not use the equipment in a manner in contravention of the instructions.
Never carry the equipment by the pipe or pull on the pipe.
Protect the piping from heat, oil, sharp edges and high levels of weight strain.
6. Use only piping, fittings and accessories which have been designed for the operating pressure of the hydraulic unit.
BURSTING PRESSURE OR TEST PRESSURE IS NOT OPERATING PRESSURE!
Avoid squashing or bending of the piping.
Piping must not be painted over.
7. Replace the hydraulic piping
 - when cracks, squashed or bent points are to be seen
 - when blistering is established
 - when hydraulic fluid escapes
 - when pipe fittings are damaged
 - when discolouration is established on the outer layer,
e.g. due to the influence of solvents.
8. The hydraulic fluid used in the system is kerosene-based.
This requires particular care and attention.
 - Avoid continuous contact with the skin
 - ensure that the hydraulic fluid does not get into the eyes or mouth.Hydraulic pipes have to be replaced after 5 years of usage, despite of the circumstance that no damages should be remarkable.
9. The equipment must not be operated, if it has leaks and there is a danger of hydraulic fluid coming into contact with persons, open fire, heating equipment, electric cabling, ground water, foods and other substances which are intended for human consumption.
10. Hydraulic units with petrol engines
 - must not be operated in closed rooms, due to the
DANGER OF INTOXICATION!
 - do not pour in petrol while the motor is running or in the vicinity of open fire.
DANGER OF EXPLOSION!

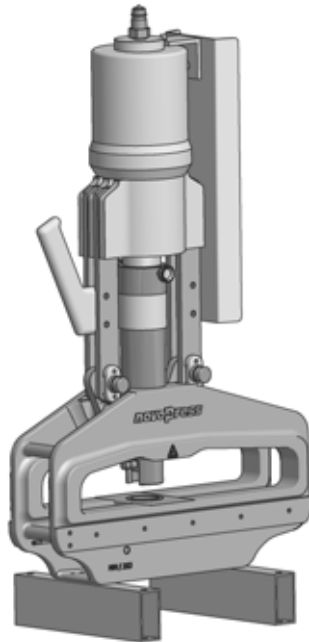
SAFETY TIPS FOR ELECTRIC TOOLS

ATTENTION: In order to avoid electric shock, danger of injury and burning the following basic safety measures are always to be taken when using electric tools. Read and observe the notes before using the device. Keep the safety tips in a safe place.

1. Take influences of the surroundings into account.
Do not expose electric devices to rain.
Do not use electric devices in damp or wet surroundings.
Do not use electric devices in the vicinity of flammable liquids or gases.
2. Protect yourself from electric shock.
Do not fix additional rating plates or symbols with rivets or screws.
Use adhesive signs. When working with electric devices avoid body contact with earthed objects such as pipes, heating appliances, refrigerators etc.
3. Use the correct tools.
Only use the tools and accessories outlined in the operating instructions.
Do not use the electric device to do work for which it is not intended.
4. Secure the work piece.
Use gripping devices or vice grips to hold the work piece steady.
It is more securely held than by hand and you can operate the device with two hands.
5. Do not overload your electric device.
You can work better and more securely in the indicated power range.
6. Do not use the cable for purposes for which it is not intended.
Do not carry the electric device by the cable.
Do not use the cable in order to pull the plug out of the socket. Protect the cable from heat, oil, acids and sharp edges.
For working in wet rooms or in the open only use the authorised extension cables with the corresponding marking.
7. Avoid unintentional starting.
Ensure that the electric device is switched off before connecting the mains plug.
Do not carry the electric device in such a way as that your finger is on the switch.
Do not use the electric device if the ON/OFF switch does not work perfectly.
8. Disconnect the mains plug:
 - if the device is not in use
 - before maintenance of the electric device
 - when changing tools
9. Carefully maintain the electric device. The best and most secure work is guaranteed if you:
 - keep the electric device clean
 - observe the instructions for greasing, changing the tools and ancillary equipment
 - regularly check the connection cable and the extension cable
 - have damaged cables repaired by a specialist
 - keep hand grips dry, clean and free from oil and fat
 - have the electric device examined and cleaned by a specialist after 900 operating hours.

10. Keep electric devices in a safe place.
Store electric tools and accessories out of the reach of children, in dry, high-lying places or in locked rooms.
11. Electric devices are often used by more than one person. Therefore before beginning to work you should check:
 - the socket to ensure it is securely fixed and is not damaged in such a way as can be seen from the outside
 - the connection cable for outward damage to the insulation and for sharp kinks
 - that the cable is securely fixed to the device and whether the insulating plastic tube is damaged
 - that the switch is secure and shows no outward signs of damage
 - whether protective appliances or damaged parts function properly
 - whether movable parts jam or are damaged
 - do not use the device in the event of finding defects
 - only allow the device to be repaired by a specialist or in an authorised NOVOPRESS specialist work-shop
 - only use original and identical NOVOPRESS spare parts.

HSBL2 Hole punch 160 Digital, Order no.: 40280 and HSBL Hydraulic cylinder, Order no.: 2420



Range of application

The cylinder and hole punch are designed for a max. operating pressure of 150 bar.

The cylinder can be operated with the hydraulic units HA1 or HA3.

The following materials can be punched using the punching tool:

- Copper and aluminium rails up to a 160 x 13 mm and a maximum strength of 250 N/mm².
The maximum punch diameter is 18mm (21mm at 10mm rail thickness).
- Steel rails up to 160 x 6 mm and a maximum strength of 370 N/mm².
The largest hole diameter is 21 mm.

Any other or additional use is regarded as non-intended.

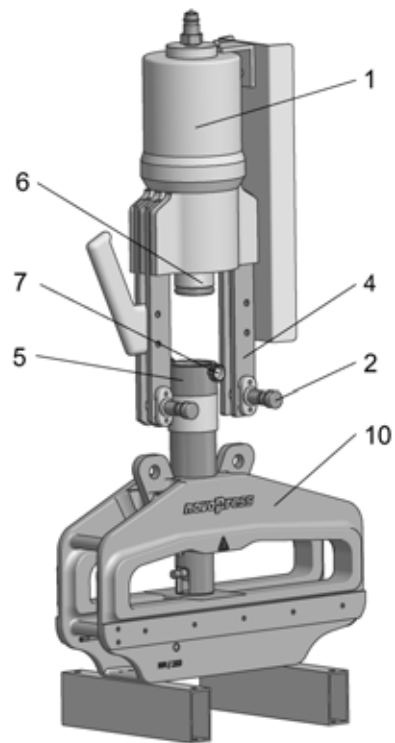
Novopress is not liable for any resulting consequences or damage. Neither is it liable for tools of other manufacturers nor for any damage caused by such.

Intended use also includes observance of the Operating Manual, adherence to the inspection and maintenance conditions as well as compliance with all the relevant safety regulations.

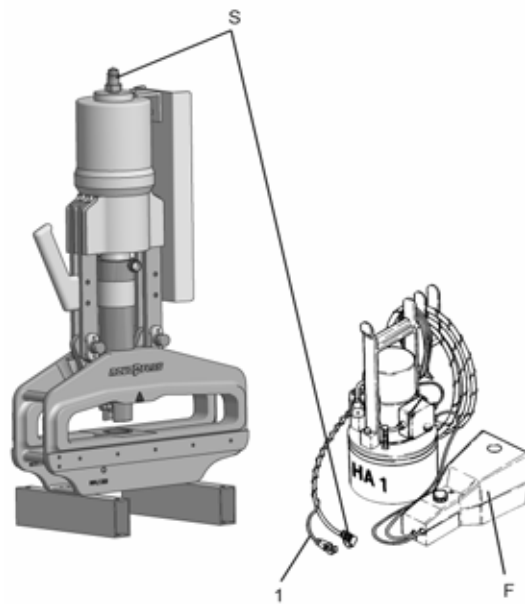
Technical data:

Height:	570	mm
Width	300	mm
Depth:	530	mm
Height inc. working cylinder:	990	mm
Total weight:	approx. 115	kg
Inner stand width:	450	mm
Punch stroke:	28	mm
Operating pressure:	Max. 150	bar
Force:	150	kN

Commissioning



1. Slide the hydraulic cylinder (1) with the cylinder tie bar (4) onto the punching assembly (10) and secure the holding pin.
2. Lift the tool guide (5) and slide until it hits the piston (6) of the cylinder and secure with both knurled screws.



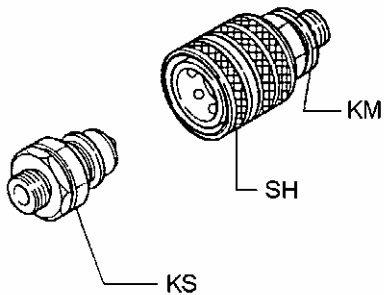
3. The control lead (1) of the hydraulic unit must be connected to the code plug attached to the hydraulic hose. If necessary: connect control line to code plug.

Note!

The hydraulic unit can only be operated if the code plug is connected.

4. The cylinder is connected to the hydraulic unit with the snap coupling S.

Snap coupling



Coupling

Hold the coupling socket (KM) against the sliding sleeve (SH) and push onto the coupling plug (KS).

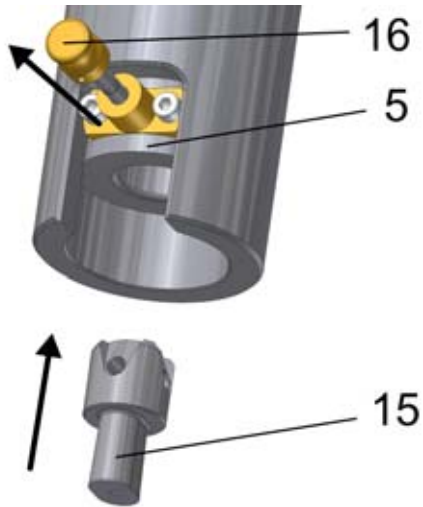
Uncoupling

Die Kupplungsmuffe (KM) an der Schiebehülse (SH) halten und vom Kupplungsstecker (KS) abziehen.

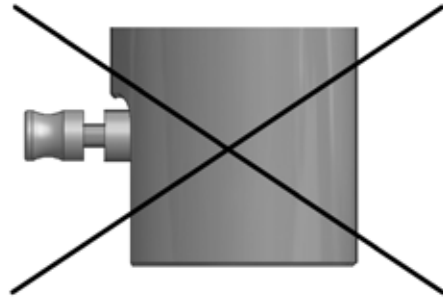
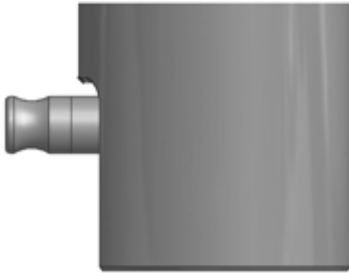
WARNING!

When assembling and disassembling the cylinder and during maintenance work, disconnected the hydraulic unit and the hydraulic unit power plug.

Tool installation



1. Pull out the pin (16) to the stop and release (The pin retracts again slightly via a spring)
2. Insert the upper tool section (15) with the shaft in the mounting bore of the tool guide (5). A bore in the tool shaft must be adjusted to the pin (16) of the tool locking device.



3. Slide the upper tool section up to the upper limit stop. Push in the pin (16) to the stop.

Note:

Make sure that, after inserting the upper tool section, the pin is in its original position and not protruding. Non-observance results in damage to the tool.

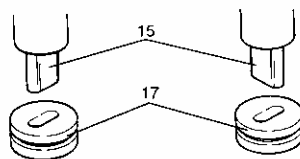
4. **Note!**

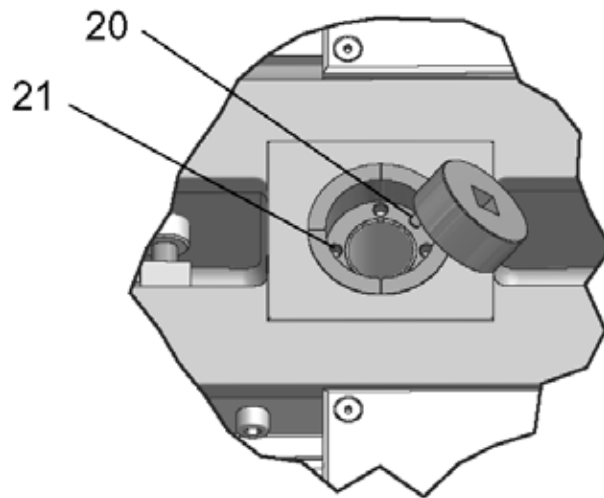
The supporting surface for the lower tool section must be free from dirt, swarf etc.

Insert the lower tool section (17) into the mounting bore of the punching assembly (10).

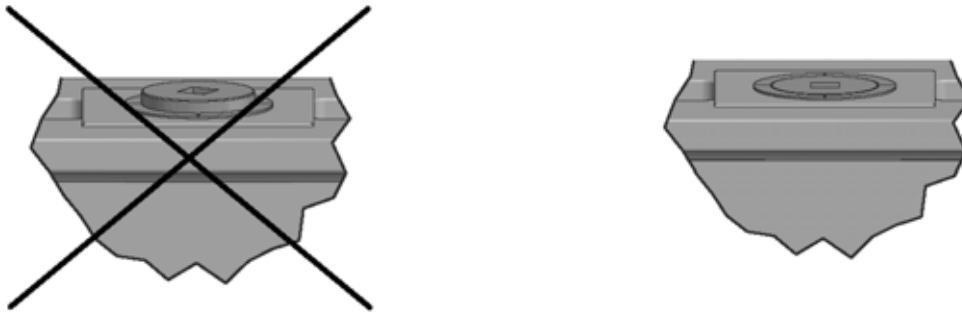
Note:

When fitting profile tools, it is essential to ensure that the upper (15) and lower (17) tool sections are properly aligned.





5. In profile tools, the pin (20) of the lower tool section must lock into the corresponding bore (21) of the lower tool section carrier.



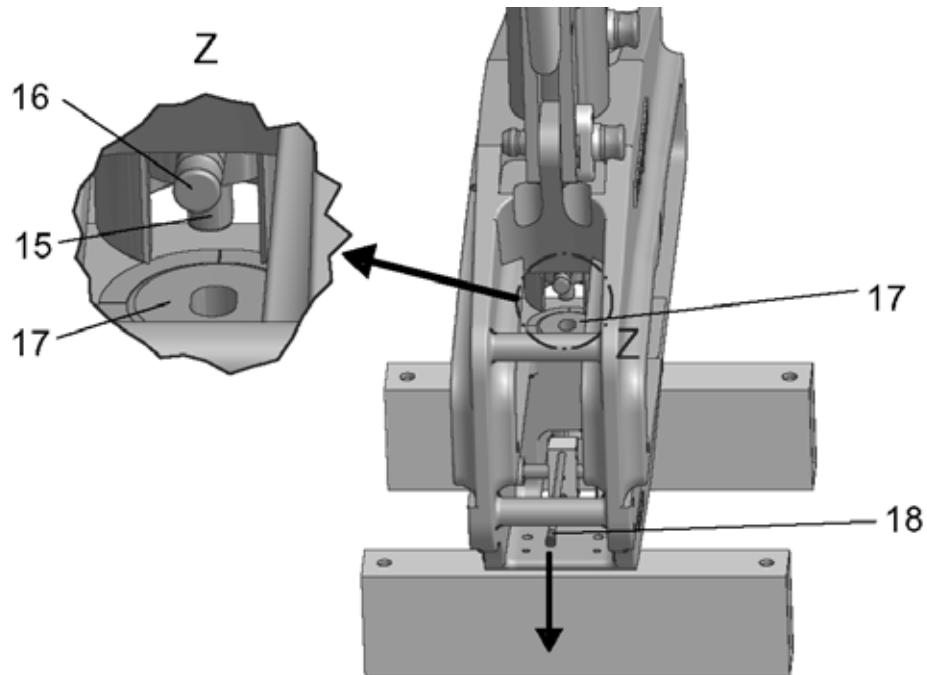
Note:

The lower tool section must be completely inserted into the lower tool section carrier. The lower tool section should not protrude from the lower tool section mounting.

5. Place the rail in the required punching position (see Page 10).

Punching

1. Operate the foot switch (F) (see Page 3). The rail is perforated.
2. Release the foot switch immediately after the punching procedure has ended. This avoids unnecessary heating of the oil.

Tool assembly**Upper tool section**

1. Pull out the pin (16) as far as possible and hold.
2. Remove the upper tool section (15).
3. Return the pin (16) to its original position.

Lower tool section

1. Press the lever (18) downwards
The lower tool section is raised from the mounting bore.
2. Remove the lower tool section (17).

Instructions for using the tools

- The hole diameter must not be smaller than the thickness of the material. Failure to observe this rule will result in damage to the tool.
- Enlarge holes using the **progressive die technique**:
The progressive die technique is only recommended for long-hole and profile tools. No clean progressive die stampings can be achieved using round tools.
Progressive die stampings are only permissible for tools with a minimum nominal dimension of 10mm.
In profile and long-hole tools, e.g. 16 x 10, progressive die stamping should only be executed on the long side, i.e. 16mm.
The overlapping of tools and materials should always be at least half the nominal tool dimension to ensure good punch quality.
Subsequent stampings should be a maximum of the "nominal tool dimension - 2mm" distance from the previous stampings to ensure that the whole material is punched out.
- **Change tools as soon as they become worn.**
Excess wear on a tool may cause the upper tool to become caught in the workpiece, and it may not be possible to wipe off the workpiece. The tool may be damaged when it is released.
- **Keep tools cleaned and oiled** when not in use. The tool life is increased by wetting it with a few drops of oil from time to time.
Storage of tools:
The upper tool must **not** be inserted into the lower tool, as this may damage the cutting edges.

Upper tool section

The upper tool section can repointed up to a minimum length of 38.0 mm.

Lower tool section

The lower tool section can repointed up to a minimum length of 19.0 mm.

Holder – extra wiper

The hole punch is equipped with a holder (70).

For flat bars/ rails with a width in excess of 60 mm, the holder also acts as a wiper.

An extra wiper (71) is needed in the following cases.

- Rail thickness less than or equal to 3 mm
- Rail width less than or equal to 60 mm
- Punching at the edge less than or equal to 20 mm
- Rail length less than or equal to 200 mm
- Laminated copper

Note

When carrying out punching work on laminated copper, a suitable extra wiper is required for each tool in order to produce the best possible punching result.

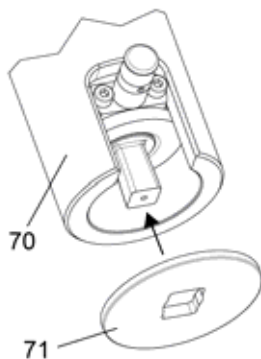
The extra wiper is fixed to the holder by means of magnets incorporated into the extra wiper. The size of the extra wiper is governed by the size of the tool. Please contact our sales department for information on order numbers.

Assembly

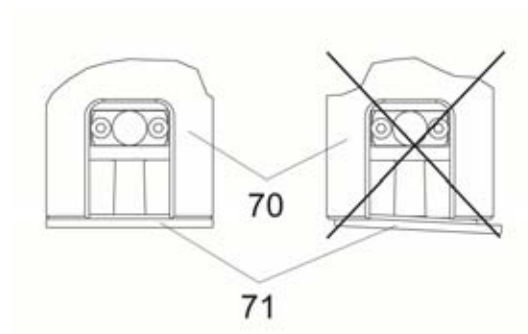
Requirement:

Upper tool section must be installed.

The bottom of holder (70) must be clean and free of swarf etc.



- Insert extra wiper (71) into holder (70) and press on by hand.
For profile tools, align extra wiper (71) with the upper tool section.



- Extra wiper (71) must lie flush with the bottom of holder (70).

Disassembly

Pull the extra wiper out of the holder.

Guide system with roller conveyor and table

Range of application

The guide system, roller conveyor and table are used to position the rail.

Technical data

Guide system

Length:	2300	mm
Width	280	mm
Height:	60	mm
Stroke x-axis	2000	mm
Stroke y-axis	190	mm
Display accuracy	0,5	mm (standard 0.1mm possible)
Batteries	1,5	V Size C (Baby)

Roller conveyor

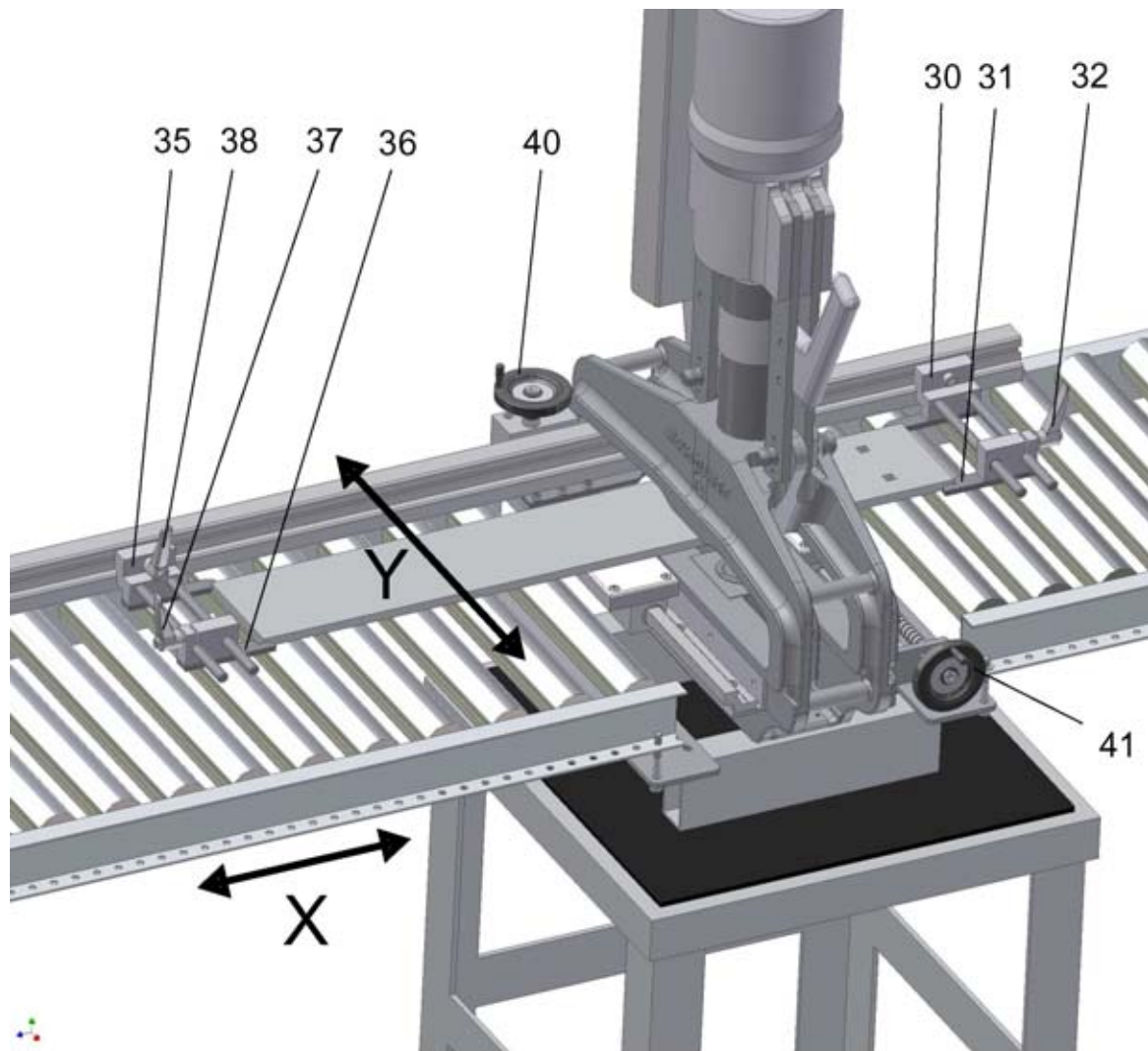
Length:	1950	mm
Roller width	400	mm
Frame width	450	mm
Height:	75	mm
Spacing of individual rollers	75	mm
Roller diameter	50	mm
Total weight:	approx. 15	kg

Table

Width	520	mm
Length:	520	mm
Height:	1400	mm
Total weight:	approx. 20	kg

Commissioning/Punching

1. Place the rail on the roller conveyor.



2. Place the rail at the limit stop (30).
3. Slide the press jaw (31) as shown onto the rail and fix with the clamping lever (32).

Information on operating the clamping lever

Lifting the handle releases the groove toothing and the clamping lever can be swivelled to the most favourable start position. When the lever is released the handle is automatically locked again.

It must be ensured that clamping levers are positioned so that, when the rail is moving, they do not collide with any other machine part.

4. Slide the limit stop (35) to the other end of the rail.
5. Slide the press jaw (36) onto the rail and fix with the clamping lever (37).
6. Fix the limit stop (35) with the clamping lever (38).
7. Slide the guide system by hand in the x-direction until the approximate required dimension appears on the digital display (45).
8. Set the required dimension in the x-direction using the control wheel (40).
9. Set the required dimension on the y-axis using the control wheel (41).
10. Operate the foot switch on the hydraulic unit (punching).
11. Release the foot switch immediately after the punching procedure has ended. This avoids unnecessary heating of the oil.

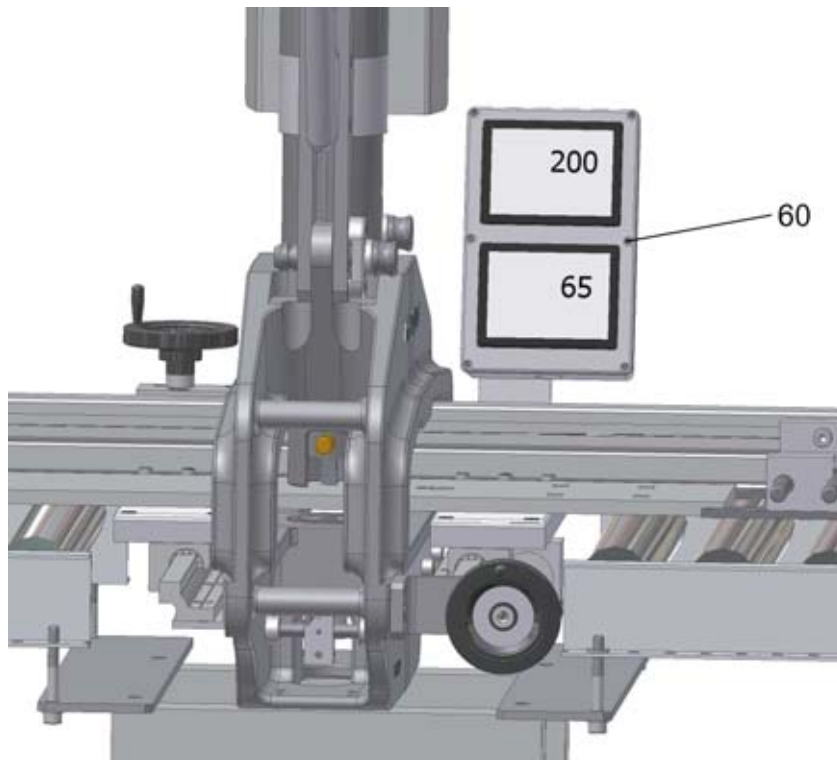
Operating the digital display of the measuring system



Battery charge level

- ||||| indicates the battery charge level.
the smaller the battery charge, the fewer lines are displayed.
This also indicates if the system is in display mode or parameter mode.
- ||||| on = display mode
- ||||| off = parameter mode

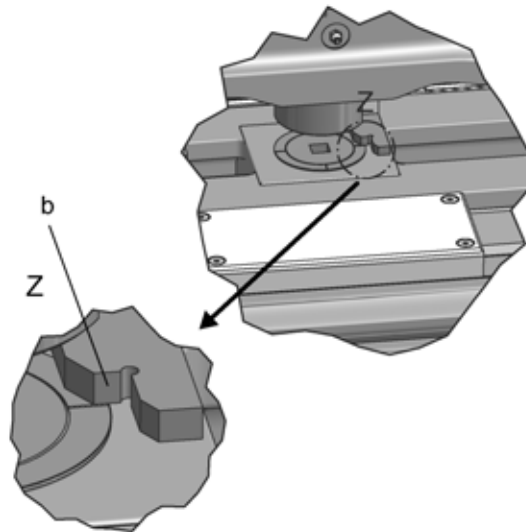
Changing the battery (1.5V baby cell; type C; LR14)



1. Remove 6 screws (60).
2. Remove the plate with the two displays as far as possible.
3. Press together the battery cover on the sides marked with an arrow and remove.
4. Replace battery, ensure the new battery is installed correctly.

Setting the x-axis to zero

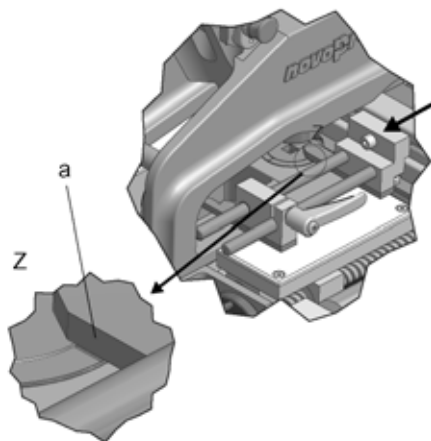
1. Slide the x-axis to the left up to the limit stop.



2. The edge (b) must correspond with the labelling on the lower tool section carrier.

Setting the y-axis to zero

1. Turn the y-axis as far as possible in direction of arrow.



2. The edge (a) of the limit stop must correspond with the labelling on the lower tool section carrier.

Resetting the digital display

1. Move the x or y limit stop to the corresponding zero setting.
2. Press the * key for approx. 3 secs.
"rEsEt" appears on the display:

3. Press the * key.
The previous set value appears flashing.
4. Press the * key.
The message "dOne" appears briefly followed by "0.0". The zero point for the corresponding limit is reset.

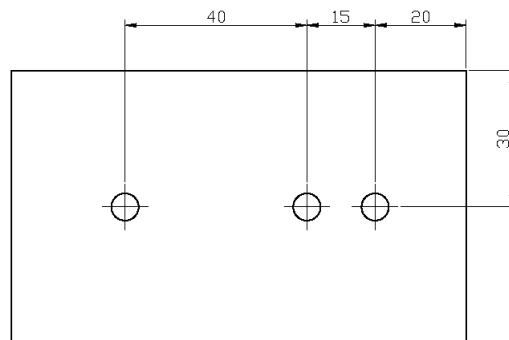
Note:

If the zero is cancelled, press the **P** key

Setting the incremental dimension

1. Move the rail to the position from which the incremental dimension begins.
2. Press the **P** and * keys simultaneously. The dimension "0.0" appears. This commences incremental dimension mode.
Note:
The decimal point flashes in incremental dimension mode
3. Move the rail to the required dimension.
4. Punch.
5. Press the * key for approx. 3 secs. The display is reset to zero.
6. Repeat points 3 to 5 as often as necessary.
7. To end incremental dimension mode, press the **P** and * keys. The absolute dimension is displayed
The decimal point stops flashing.

Example:



1. Set rail to dimension $x=20\text{mm}$ and $y=30\text{mm}$.
2. Adjust the x-display by pressing the **P** and * keys in incremental dimension mode. The following appears on the display: 0.0
3. Move the rail in the x-direction to the dimension 15mm.
4. Punch
5. Press the * key for 3 secs. 0.0 appears again on the display.
6. Move the rail in the x-direction to the dimension 40mm.
7. Punch.
8. Press the **P** and * keys. The dimension 75.0mm is indicated on the x-display.

Conversion of mm into inches and vice-versa

Press the **←** key for approx. 3 secs.

The set unit is indicated in the right-hand side of the display.

Setting of parameters

The digital display/measuring system provides the option for altering several parameters

The majority of these parameters are not required for punching and should not be altered.

The following table only shows the standard values for the parameters which should not be altered. The standard settings can be quickly checked and the factory settings reapplied with the aid of this table.

The parameters are displayed in a pre-established sequence. Pressing the P key switches the display to the next parameter and the value/setting associated therewith. The values/settings in the display flash.

The parameter name is always displayed first in the parameter menu, followed by the current value and current setting associated therewith.

To exit the parameter menu, press the **P** key for 3 secs.

To alter a parameter, select the parameter value, change the setting by pressing the **↑** key and then confirm the change with the * key. If the change is not confirmed with the * key, the original setting is maintained.

Changing a parameter

1. Select the parameter value.
2. Change the setting with the **↑** key.
3. Press the * key.
The setting has been changed.

Exiting the parameter menu

Press the **P** key for 3 secs.

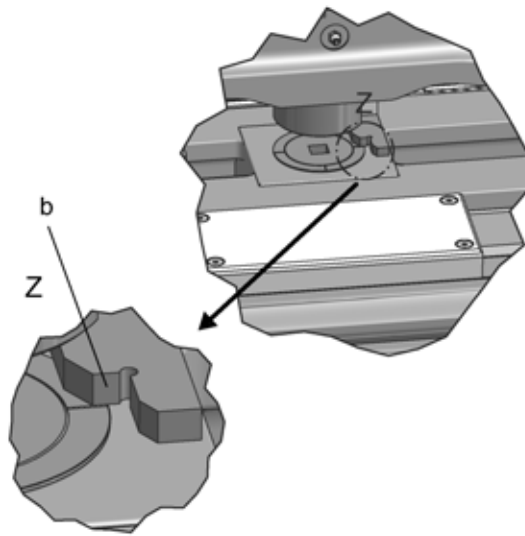
Inputting a parameter:

1. Press the **P** key for approx. 3 secs. to change the parameter level.
"SEtUP" is shown on the display.
2. Press the **↑** key to access the menu.
3. The first parameter "Unit" is displayed.
4. Press the **P** key.
The first standard value "dEc" flashes on the display.
5. Press the **P** key
The second parameter "rES" appears on the display.
6. Press the **P** key until the entire menu has been run through, see also the following table.
7. The "rESET" parameter appears if the **P** key is pressed again.
8. Press the **P** key.
Firstly the message "no_rST" appears briefly.
Then "-----" appears
followed by the set value.
Display mode then reappears.

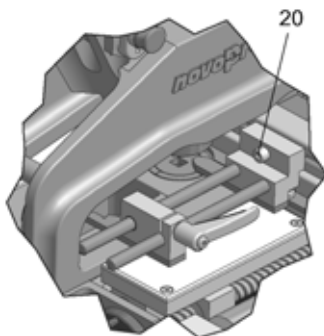
Parameter	Standard value	Other values	Comment
Unit	dEc		millimetres only
rES	0,5		Indicates the resolution with which the position display works
		1	0.5 mm
		0,01	1 mm
		0,05	0.01 mm
		0,1	0.05 mm
dIc			Count direction
	uP		upwards (positive)
		dn	downwards (negative)
F_nnl			Display mode can be changed from mm to inches using the ← key.
	yES		active
F_rEL			Release of incremental dimension function.
	yES		active
		no	inactive
F_rSt			These parameters are not required and should not be adjusted.
	yES		
F_rEF			
	no		
F_oFS			
	no		

Adjusting the x-axis zero setting

1. Slide the x-axis to the left as far as possible.



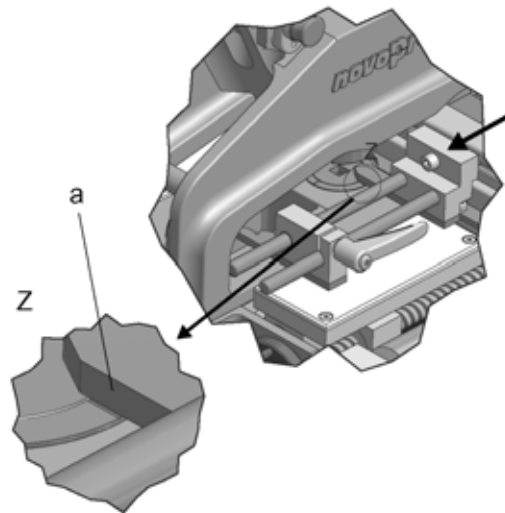
2. The edge (b) of the limit stop must correspond with the height of labelling on the lower tool section carrier.
3. The edge (b) must correspond with the labelling on the lower tool section carrier. If this is not the case, reset the zero point as follows:



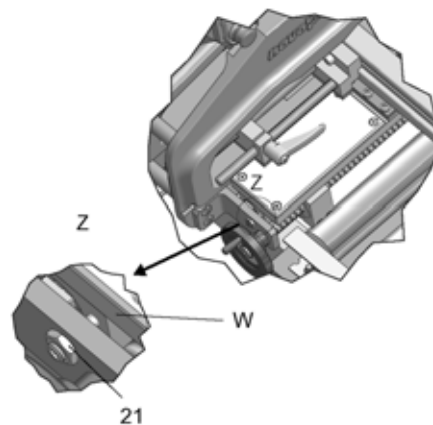
4. Loosen screw (20).
5. Set correct position.
6. Tighten the screw (20).
7. Press the * key for approx. 3 secs.
"rEsEt" appears on the display:
8. Press the * key.
The previous set value appears flashing.
9. Press the * key.
The message "dOne" appears briefly followed by "0,0". The zero point for the corresponding limit is reset.

Adjusting the y-axis zero setting

1. Turn the y-axis as far as possible in direction of arrow.
2. Slide the x-axis to the left as far as possible.



3. The edge (b) of the limit stop must correspond with the labelling on the lower tool section carrier.
4. If this is not the case, reset the zero point as follows:



5. Loosen nut (21).
6. Unscrew the grub screw slightly.
7. Adjust the y-axis with the dial so that the labelling on the lower tool section carrier corresponds with the limit stop.
8. Adjust the grub screw so that it comes into contact with the slide (W).
9. Fix the grub screw with the nut (21).
10. Press the * key for approx. 3 secs.
"rEsEt" appears on the display:
11. Press the * key.
The previous set value appears flashing.
12. Press the * key.
The message "dOne" appears briefly followed by "0,0". The zero point for the corresponding limit is reset.

Assembly

Required tools:

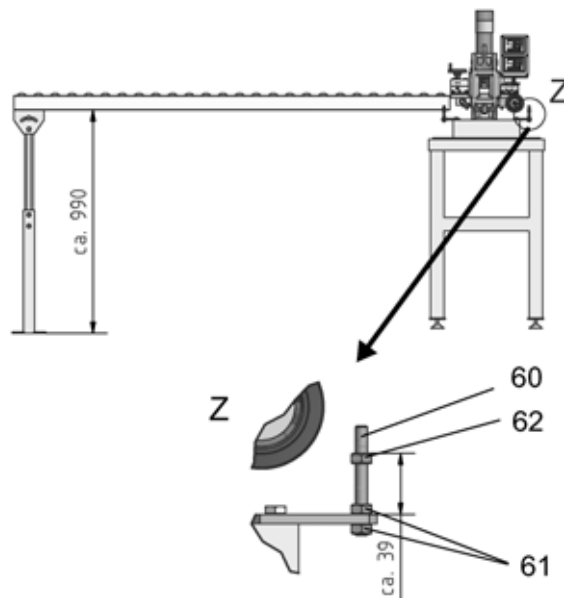
Open-jawed or ring spanner SW 13; SW 17

Hexagon socket screw key 5; 6

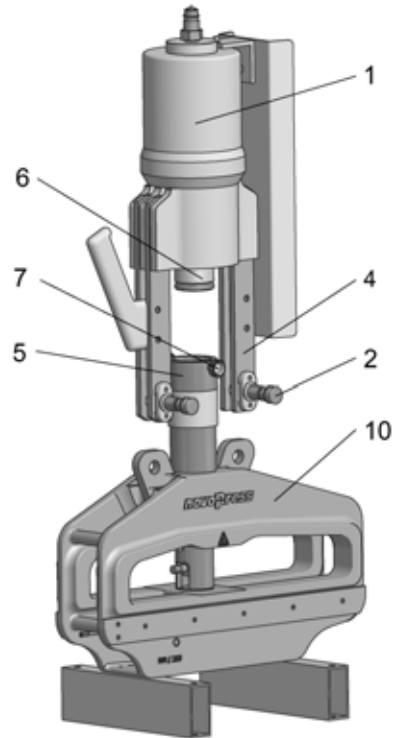
Spirit level

Folding rule

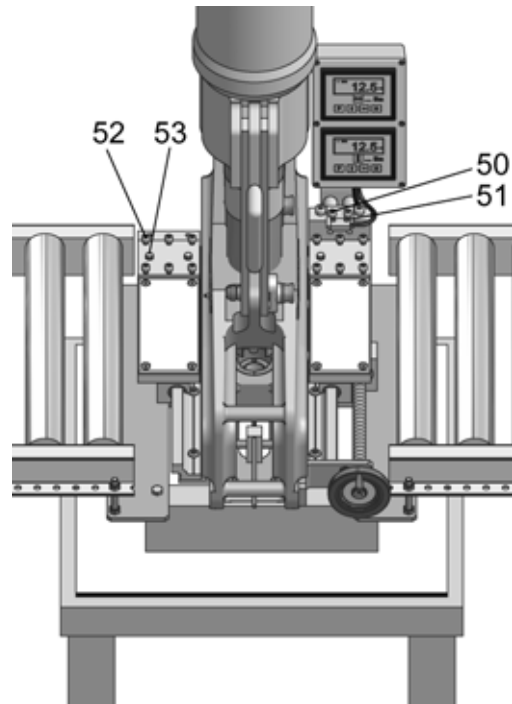
1. Place the hole punch on a table, workbench, etc.
2. Fasten the hole punch by means of the four holes in the feet.
3. Fasten the connector plates for the roller conveyors to the hole punch with 2 screws and 2 nuts.



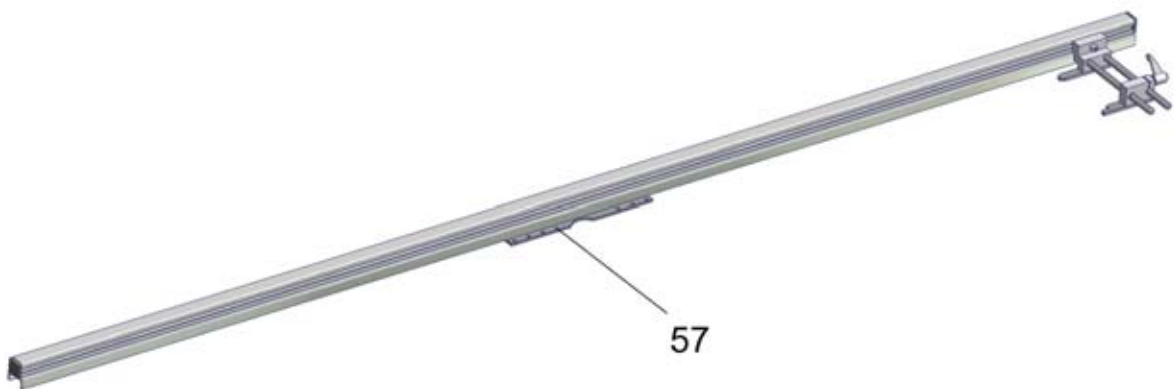
4. Fasten 4 set screws (60) each with 2 nuts (61) to both plates.
5. Attach the roller conveyor supports to one end of the roller conveyor with 4 screws.
6. Set the dimension of the supports to approximately 990mm.
7. Attach a nut (62) to each set screw (60) so that the dimension 39mm is achieved.
8. Place the roller conveyor on these set screws.
9. Then align the roller conveyor so that a rail does not hit the green base of the hole punch but glide easily over it. Ensure that the roller conveyor in x and y-direction is aligned horizontally.
10. Secure the roller conveyor with a second nut.



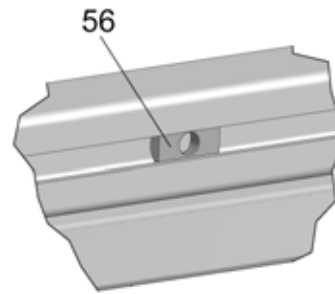
11. Slide the hydraulic cylinder (1) with the cylinder tie bar (4) onto the punching assembly (10) and secure the holding pin.
12. Lift the tool guide (5) and slide until it hits the piston (6) of the cylinder and secure with both knurled screws.



13. Remove 2 screws (50) from the sensor fastening plate (51).
14. Remove the sensor fastening plate (51) and place behind the digital display.
15. Undo 12 screws (52).



16. Slide the x-axis with the fastening plate (57) into the hole punch frame so that the preassembled limit stop is to the right of the hole punch frame.
17. Place the fastening plate (57) on the four screws (53).
18. Secure the fastening plate (57) with 12 screws (52).
19. Place the plate (51) with the sensor on the fastening element and slide into the groove of the guide rail.
20. Attach the plate (51) with 2 screws (50).



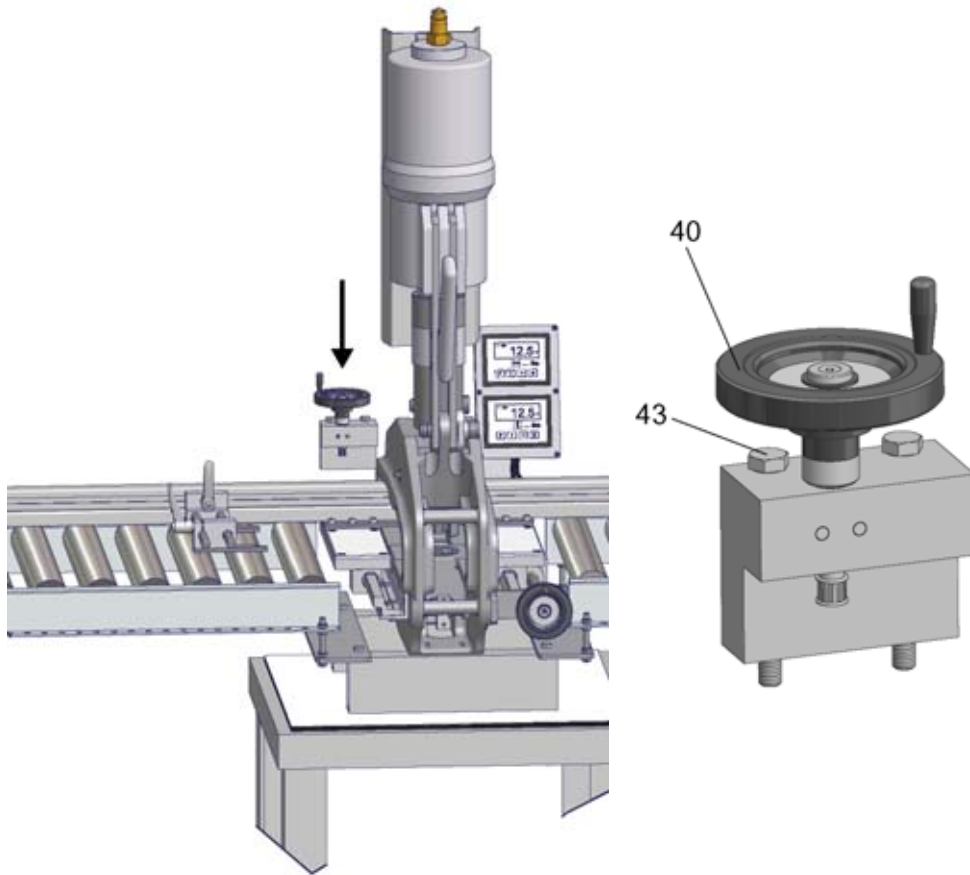
21. The guide rail contains a sliding block (56) for attaching the second limit stop. The sliding block must be positioned to the left of the hole punch. Slide the sliding block to the left-hand side if necessary.
22. Attach the second limit stop to the guide rail with the aid of the clamping lever and the sliding block.

Information on operating the clamping lever

Lifting the handle releases the groove toothing and the clamping lever can be swivelled to the most favourable start position. When the lever is released the handle is automatically locked again.

It must be ensured that clamping levers are positioned so that, when the rail is moving, they do not collide with any other machine part.

23. Screw the clamping lever of the second limit stop into the sliding block.



24. Place the control wheel (40) on the guide rail.
Ensure that the pinion engages the tothing of the guide rail.
25. Secure both screws (43).
26. Slide the x-axis manually to the left.
27. Check the zero setting of the x and y-axes (see Pages 11 and 12).

Reparaturen / Service

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