

# hohner

## ORION 4

Pad and Folder  
Wire Stitching Machine



CE



## Customer Details

Inventory no.: .....

Location .....

## Manufacturer's Address

Company name: **hohner**  
Maschinenbau GmbH  
Street: Gänsäcker 19  
Town: D-78532 Tuttlingen  
Telephone: +49 (0) 74 62 / 94 68-0  
Fax: +49 (0) 74 62 / 94 68-20  
Email: info@hohner-postpress.com  
Internet home page: www.hohner-postpress.com

## Obtaining Spare Parts / Customer Service

Telephone: +49 (0) 74 62 / 94 68-0  
Fax: +49 (0) 74 62 / 94 68-20

## Operating Manual

Document: Translation of the german original Operating Instructions  
Document number: ORION 4, Volume 1/2  
Version: 10/2010

## Spare Parts Lists

Document number: ORION 4, Volume 2/2



## Table of Contents

<b>1</b>	<b>Basic safety precautions.....</b>	<b>7</b>
1.1	Purpose of this document.....	7
1.2	The operator.....	7
1.3	Safety symbols and the displays in use.....	7
1.4	Duty and liability.....	8
1.5	Correct use of the machine.....	8
1.6	User requirements.....	8
1.7	Safety and protective systems.....	8
1.8	Informal safety measures.....	8
1.9	Personnel training.....	8
1.10	Parts of the machine that are particularly dangerous.....	9
1.11	Servicing and repair work, elimination of faults.....	9
1.12	Structural modifications to the machine.....	9
1.13	Cleaning the machine and the removal of waste products.....	9
1.14	Noise levels produced by the machine.....	9
<b>2</b>	<b>Description of the Saddle Binder ORION 4.....</b>	<b>10</b>
2.1	Dimensions.....	11
2.2	Conformity.....	11
2.3	Marking and type plate.....	11
2.4	Technical data.....	11
2.5	Accessories.....	12
<b>3</b>	<b>Structure and function of the machine.....</b>	<b>13</b>
3.1	Safety-related components.....	14
3.2	Mounting of the finger guard.....	14
3.3	Electrical connection and motor protective relay.....	16
3.4	Installation of the stitching table.....	18
3.4.1	Installation of stitching table: flat stitching.....	18
3.4.2	Installation of the stitching table: for brochure stitching.....	18
3.5	Installation of the narrow stitching heads 70/20.....	20
3.6	Installation of the clincher box.....	22
3.7	Basic adjustment of clinchers.....	24
3.8	Pressure adjustment for clincher back pressure.....	26
3.9	Adjustment of the stitching thickness.....	28
3.10	Adjustment by hand of the ORION 4.....	30
3.11	Lubrication instructions.....	32
<b>4</b>	<b>Flow diagrams.....</b>	<b>33</b>

Table of Contents

## 1 Basic safety precautions

### 1.1 Purpose of this document

This document is to inform the operator of the **Wire Stitching Machine ORION 4** about the following matters:

- the safety symbols and signs
- the installation and commissioning
- the adjustment and operation

Familiarity with this Operating Manual is a prerequisite for the safe and correct running of the machine. It **must** be read carefully by the operator before the machine is commissioned. Keep the manual safely in a place where it is readily available and which is close to hand for persons working on the machine.

### 1.2 The operator

The **Wire Stitching Machine ORION 4** must only be operated by trained personnel. Training will be undertaken by the manufacturer or by persons who have been authorised by the manufacturer to undertake such training.

### 1.3 Safety symbols and the displays in use



**DANGER**

***This symbol displays immediate danger to the life or health of persons in the immediate vicinity of the machine.***

Non-observance of the warnings indicated can **have immediate**, grave consequences and can cause extensive damage to health or may even lead to death.



**WARNING**

***This symbol displays possible danger to the life or health of persons in the immediate vicinity of the machine.***

Non-observance of the warnings indicated **can** have grave consequences, and can cause extensive damage to health, or may even lead to death.



**CAUTION**

***This symbol displays the existence of a potentially dangerous situation.***

Non-observance of the warnings indicated can lead to minor injuries to persons.



**NOTICE**

***This symbol displays the existence of the risk of damage to equipment.***

Non-observance of the warnings indicated can lead to slight damage to equipment.



TIP

***This symbol indicates the availability of tips on how to use the machine or particularly useful information.***

These tips will help you to use all of the functions of the machine to best advantage.

-

***This sign requires you to take action.***

•

***This sign serves as a symbol for listing items.***

## Basic safety precautions

### 1.4 Duty and liability

The **Wire Stitching Machine ORION 4** has been built according to state-of-the-art technology under the observance of all the recognised safety regulations. It is, nevertheless, still possible when using this machine to cause danger to life and limb of the user or a third party or to cause damage to the machine or other property.

The machine should only be used,

- for the purpose for which it was designed
- when it is in a perfect technical condition

Faults that could reduce the levels of safety in using the machine must be removed immediately. Warranties and liability on the part of the manufacturer are fundamentally covered by the regulations laid down in our "General sales and delivery conditions".

### 1.5 Correct use of the machine

**The Wire Stitching Machine ORION 4** is designed exclusively stitching of brochures and leaflets or similar items. Any use of the machine contrary to that described above is forbidden since incorrect use of the machine can present a danger.

### 1.6 User requirements

The user of the machine is required to provide the required personal safety equipment. All existing safety systems should be checked regularly.

### 1.7 Safety and protective systems

All safety and protective systems must be attached to the machine and should be in full working order before every start-up of the machine.

Safety and protective systems may only be removed:

- when the machine is stationary **and**
- after it has been secured against being started up again.

### 1.8 Informal safety measures

The Operating Manual should be stored in such a way as to be permanently to hand at the machine. There are also generally valid local regulations concerning accident prevention and environmental protection measures that should be made available and observed, in addition to those described in the Operating Instructions.

All safety and danger signs on the machine should be maintained in a legible condition and should be renewed where necessary.

### 1.9 Personnel training


Only skilled and trained personnel are allowed to work on the machine.

The responsibility of the various parties involved is laid out in the following table:


	<b>Trained persons</b>	<b>Specialists</b>
<b>Transportation</b>		A haulage company
<b>Installation and commissioning</b>		The Hohner company, Customer Service
<b>Operation</b>	x	
<b>Locating faults</b>	x	
<b>Removing the fault</b>		The Hohner company, Customer Service
<b>Setting up, equipping</b>	x	
<b>Servicing</b>	x	



### 1.10 Parts of the machine that are particularly dangerous

	<p><b>! WARNING</b></p> <p><b>Quick stroke movements of the stitching heads!</b></p> <p><b>Danger of crushing!</b></p> <p>➤ Never operate the system without properly mounted finger guard.</p>
---	---

### 1.11 Servicing and repair work, elimination of faults

	<p><b>! WARNING</b></p> <p><b>Quick stroke movements of the stitching heads!</b></p> <p><b>Danger of crushing!</b></p> <p>➤ Before carrying out maintenance or repairs, take care that the power supply is switched off and prevented from being switched on again accidentally.</p> <p>➤ Never operate the system without properly mounted finger guard.</p>
---	---

Mount the finger guard again after adjustment-, maintenance- and inspection work.

### 1.12 Structural modifications to the machine

Changes to the machine, additions or modifications may only be undertaken with the permission of the manufacturer.

### 1.13 Cleaning the machine and the removal of waste products

The functionality of the machine and clean processing of the products can only be guaranteed over a prolonged period of time, if the machine is regularly cleaned in accordance with the normal methods used in mechanical engineering.

Clean with mild, non-abrasive and non-scratch cleaners. Never use aggressive cleaning agents such as e.g. solvents.

**NOTICE**

While doing this, **it is particularly important** to remove trimmed paper remnants and paper dust regularly, as these can result in jamming of the machine and in increased wear of its parts.

The machine contains bare metal parts. These should be cleaned regularly with a protective cleaning agent, especially when using the machine in rooms of high air humidity.

All substances and materials used (e.g. solvents and lubricants) must be handled appropriately and removed in an environmentally friendly way.

### 1.14 Noise levels produced by the machine

The noise emitted by the machine when it is running does **not** exceed a value of 81 dB(A) as measured in accordance with DIN 45635, Part 27.

# Description of the Saddle Binder ORION 4

## 2 Description of the *Saddle Binder ORION 4*

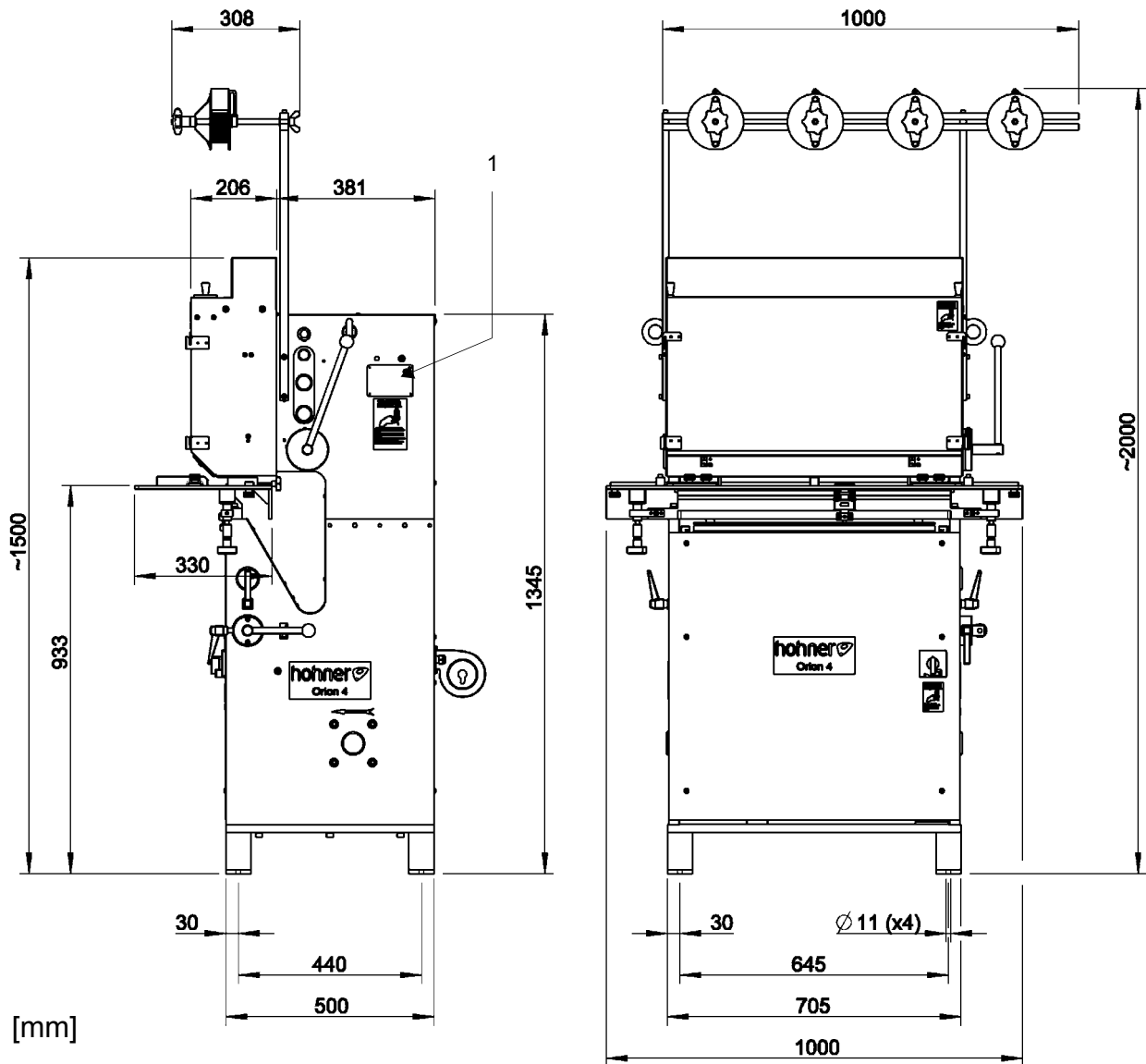


Fig. 2.1

## 2.1 Dimensions

- Fig. 2.1 -

## 2.2 Conformity

Please observe the document attached:

„**EC Declaration of Conformity according to the EC Machinery Directive 2006 / 42 / EC**“

## 2.3 Marking and type plate

The type plate and the CE labelling are fitted below the main switch - Fig. 2.1 -, Pos. 1.

## 2.4 Technical data

Max. stitching thickness	- standard stitching - loop stitching	20 mm 4 mm
Crown width of the staple		14 mm
Staple distance		min. 70 mm max. 550 mm
Stitching wire, round		No.20 - 28 (0.90 - 0.40 mm Ø*)
Stitching wire, flat		No.I - VI (0.70 x 0.35 mm - 0.96 x 0.78 mm)*
* Wire sizes corresponding to german standards!		
Stitching capacity per minute and stitching head		192
Size of stitching table		1000 x 330 mm
Max. depth from staple, towards the back up to stand:		230 mm
Stroke length	- driver - bender - clincher	66 mm 55 mm 5.5 mm
Max. number of usable stitching heads		4
Machine net weight		ca. 512 kg
Net weight per narrow stitching head UNIVERSAL 70/20		ca. 8.5 kg
Motor		Three-phase-motor (1.10 kW) 230/400 volt, 50 Hz - 3 phases with clutch-brake combination.
Loudness level		not over 81 dB(A)

This version of the wire stitching machine **ORION 4** affords room for four (4) narrow stitching heads UNIVERSAL 70/20.

The stitching table is placed in a horizontal position for block stitching and in a saddle position for brochure stitching. Positioning occurs via stops.

## Description of the Saddle Binder ORION 4

### 2.5 Accessories

Every **ORION 4 WIRE STITCHING MACHINE** is supplied with:

Art.-No. 31 44 030	setting gauge
Art.-No. 46 00 003	1 screw driver SB 4,5
Art.-No. 46 00 008	1 hexagon socket screw key SW 3
Art.-No. 46 00 004	1 screw driver SB 7,0
Art.-No. 46 00 014	1 diagonal cutting nipper
Art.-No. 46 00 019	1 hexagon socket screw key SW 5
Art.-No. 46 00 038	1 double offset ring wrench
Art.-No. 46 00 044	1 Torx angle screwdriver T10
Art.-No. 46 00 045	1 Torx angle screwdriver T20
Art.-No. 99 67 700	2 centring device, Cpl.

### 3 Structure and function of the machine

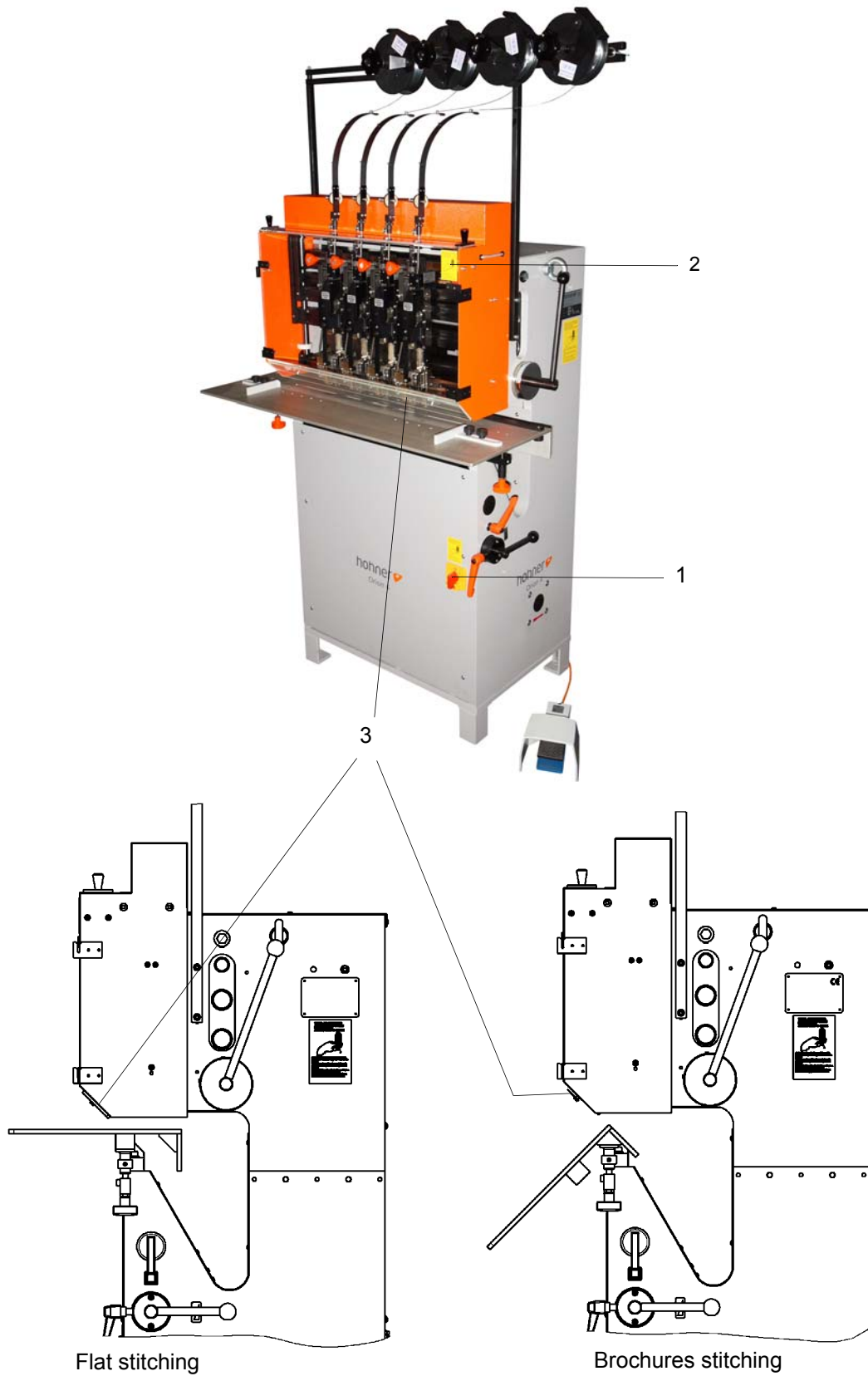


Fig. 3.1


## Structure and function of the machine

### 3.1 Safety-related components

- Fig. 2.1 -

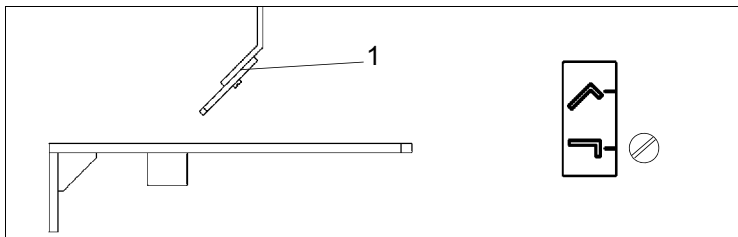
The combined ON/EMERGENCY-STOP button -1-, the door safety switch -2- and the finger guard -3- are essential for the safe function of the machine.

### 3.2 Mounting of the finger guard

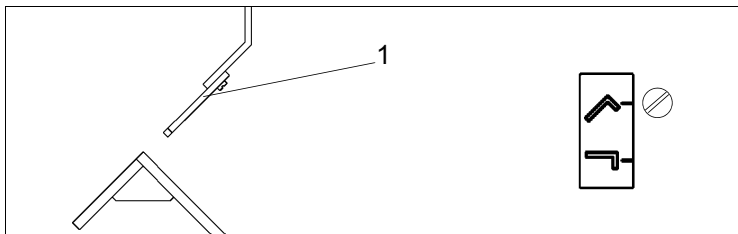
	<p><b>WARNING</b></p> <p><b>Quick stroke movements of the stitching heads!</b></p> <p><b>Danger of crushing!</b></p> <p>➤ Never operate the system without properly mounted finger guard.</p>
---	---

The finger guard must be mounted and adapted to the block- and brochure stitching. Mounting is simplified by corresponding symbols which are stuck on the finger guard.

Fit the finger guard -1- for block- and brochure stitching as shown below.



Flat stitching



Brochures stitching

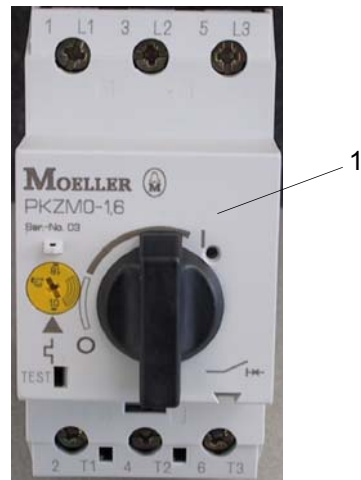



Fig. 3.2

## Structure and function of the machine

### 3.3 Electrical connection and motor protective relay

	<p><b>⚠ DANGER</b></p> <p><b>Voltage</b></p> <p><b>Danger of electrical shock!</b></p> <p>➤ Only qualified skilled workers may carry out work in the vicinity of the mains power supply.</p>
---	--

- Employ a specialist to connect the machine to the mains supply. The local connection regulations must be adhered to. The cable should not lie loosely on the ground after it has been laid.

#### **NOTICE**

Specifically observe the direction of rotation of the motor shaft (visible at the vane marked by the red arrow).

Direction can be reversed by exchanging 2 phases in the mains supply cable.

#### **Motor protective relay**

The motor protective relay is triggered upon overload of the motor and switches off the power supply of the motor.

- Should the motor protective relay have triggered, the machine must first be switched off with the ON/EMERGENCY-STOP button. Then determine and eliminate the cause.
- Once the cause has been eliminated, the motor protective relay can be reset by turning the knob -1- to position I, - Fig. 3.2 -.

**While doing so, ensure** that all protective systems are installed on the machine and all tools have been removed from the machine.



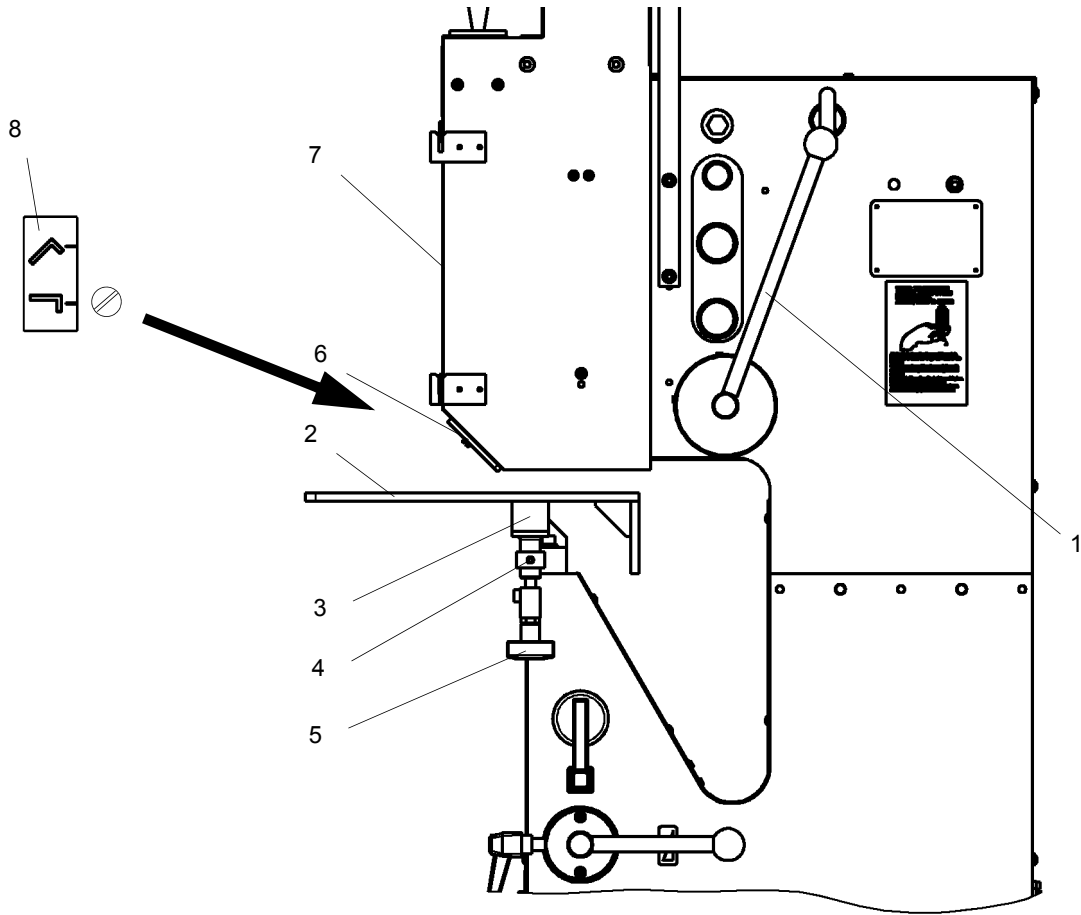


Fig. 3.3

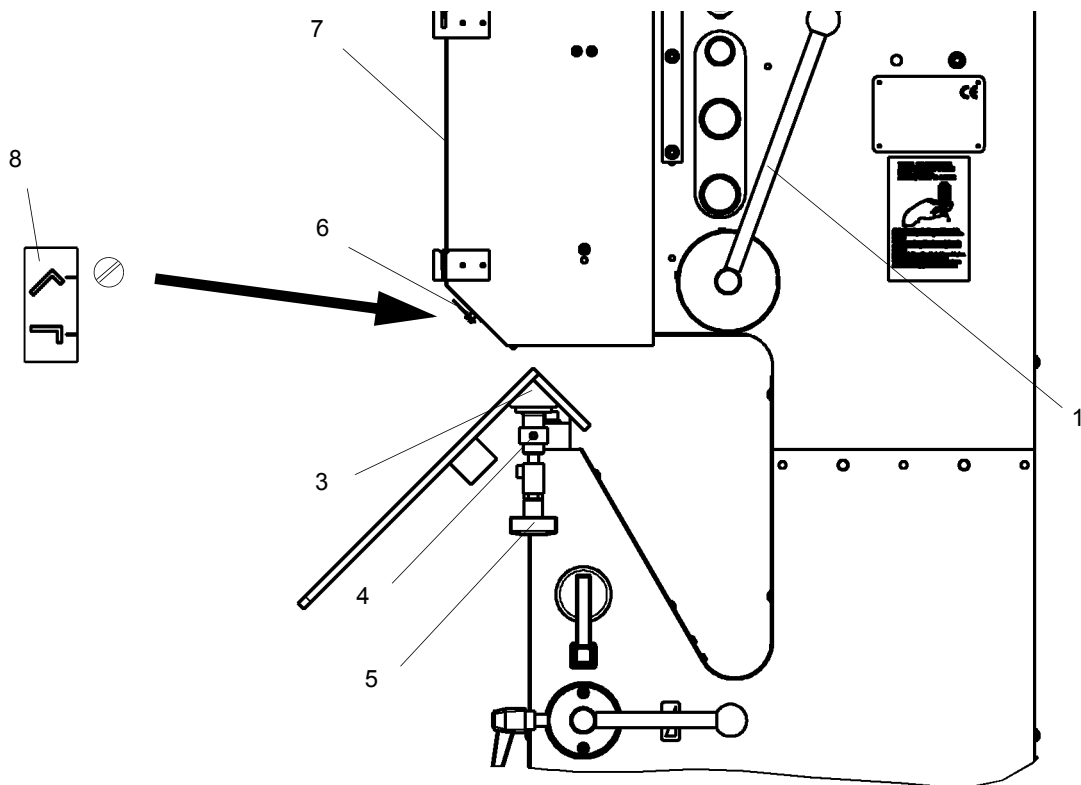


Fig. 3.4

## Structure and function of the machine

### 3.4 Installation of the stitching table

#### 3.4.1 Installation of stitching table: flat stitching

- Fig. 3.3 -
- With the lever -1- lift all stitching heads to the highest position. Slide the stitching table -2- with the small side into the machine. Move it with both handles -3- right and left over the centring discs -4-.
- Put down the stitching table until it will be supported. Push the triangle-handles -5- upwards and tighten them.
- Dismantling of the stitching table -2- in reverse order



**WARNING** The "stick-on-level" -8- on the front panel -7- shows, how to fix the safety guard -6- in the two way position of the stitching table. (see 3.2).

#### 3.4.2 Installation of the stitching table: for brochure stitching

- Fig. 3.4 -
- With the lever -1- lift all stitching heads to the highest position. Slide the stitching table -2- with the small side into the machine. Tilt the stitching table downwards to 45 degrees.
- Move the stitching table with both fixed angle-supports over the centring discs -4-.
- Put down the stitching table until it will be supported. Push the triangle handles -5- upwards and tighten them.
- Dismantling of the stitching table -2- in reverse order



**WARNING** The "stick-on-level" -8- on the front panel -7- shows, how to fix the safety guard -6- in the two way position of the stitching table. (see 3.2).

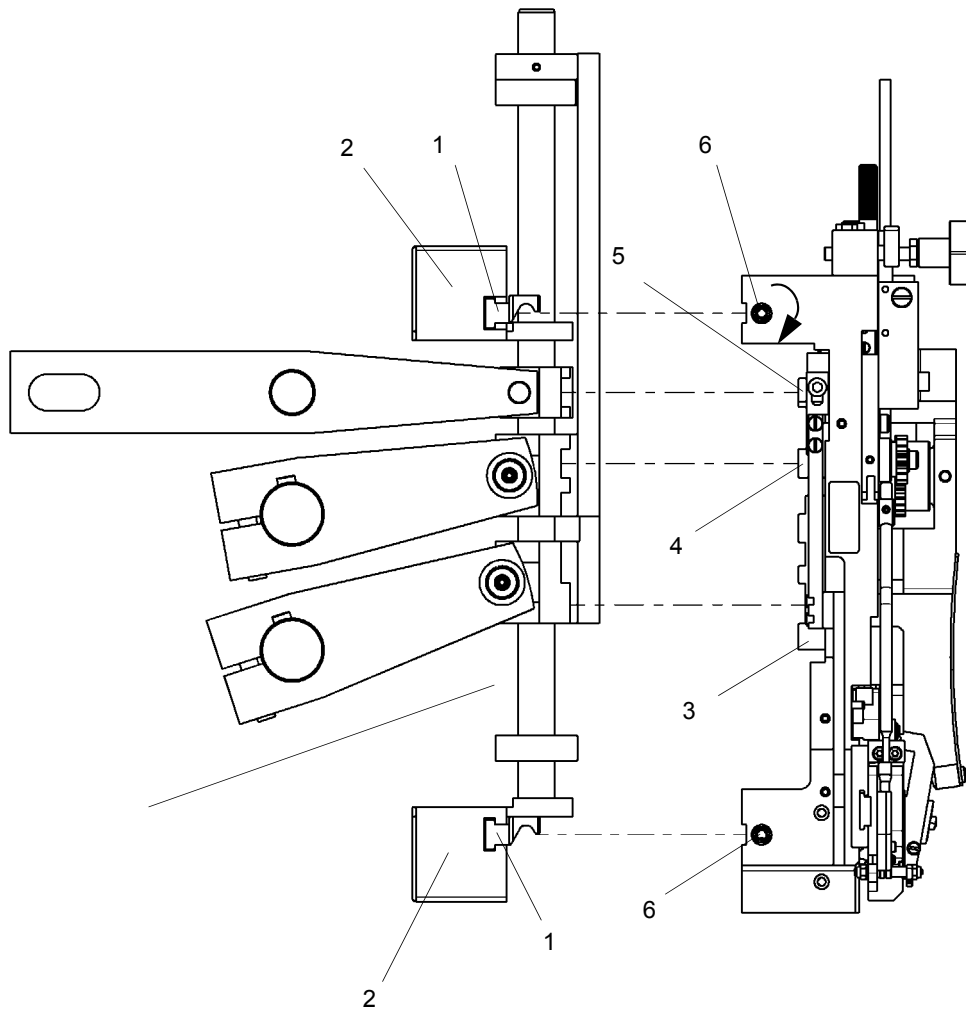


Fig. 3.5

## Structure and function of the machine

### 3.5 Installation of the narrow stitching heads 70/20

- Fig. 3.5 -
- Insert key blocks -1- into the traverses -2- .  
Milled part must point downwards!
- Install the stitching head with the boring over the peg of the key blocks -1- , at the same time also align the driving block -3- , the pusher -4- and adjusting block -5- with the corresponding rails.
- Clamp the stitching head to the machine by turning down the hex sockets -6- of the eccentric until it is tight.

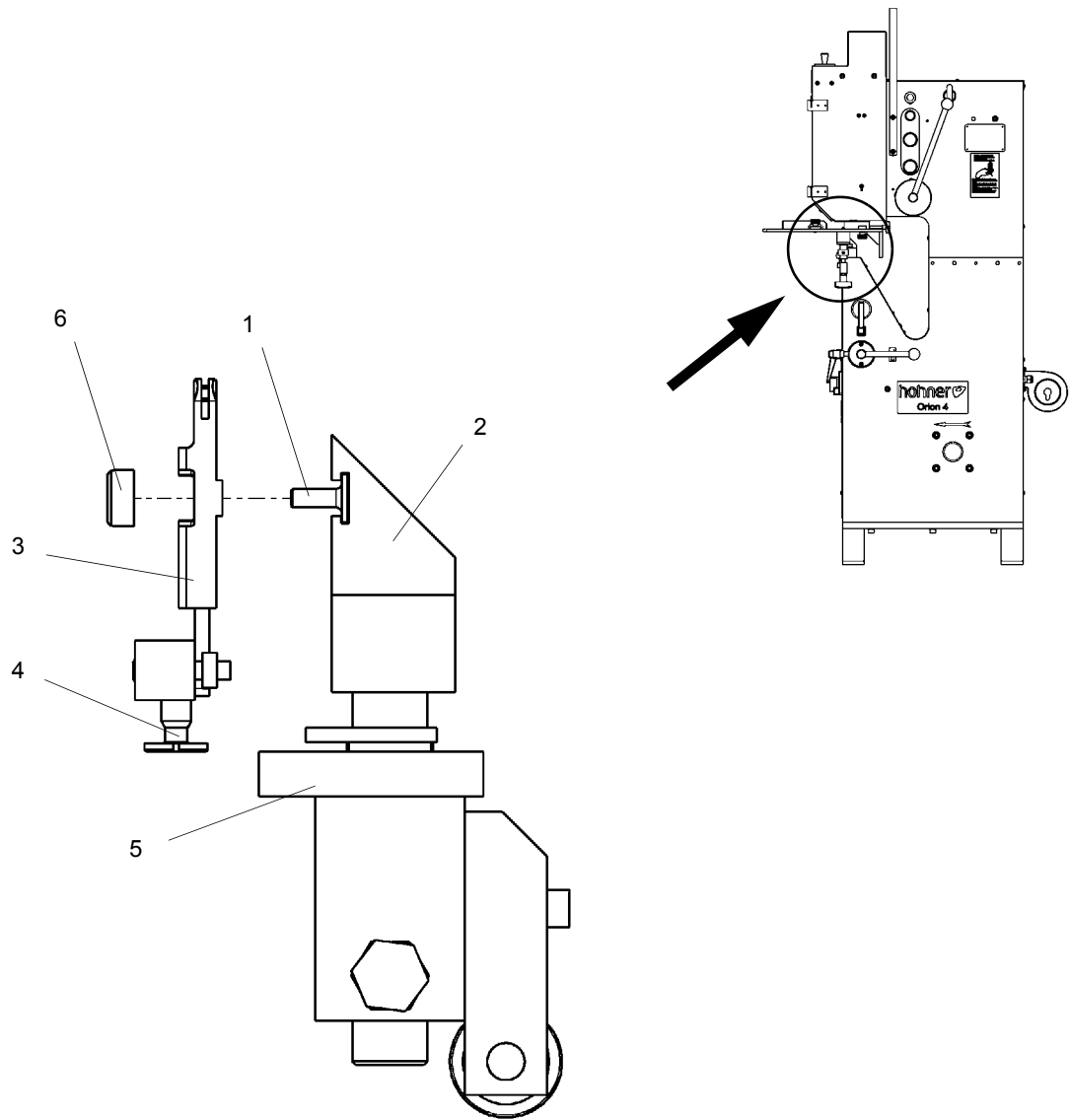


Fig. 3.6

## Structure and function of the machine

### 3.6 Installation of the clincher box

- Fig. 3.6 -

- Slide both clincher box mounting studs -1- in the T-slot of the clincher box receiver -2- .
  - Install the clincher box -3- on with the mounting studs -1- and make certain that the adjustment screw -4- is aligned with the driving slot as shown. Tighten both clamp nuts -6-.
- Be sure the clincher box is correctly aligned with the stitching head.

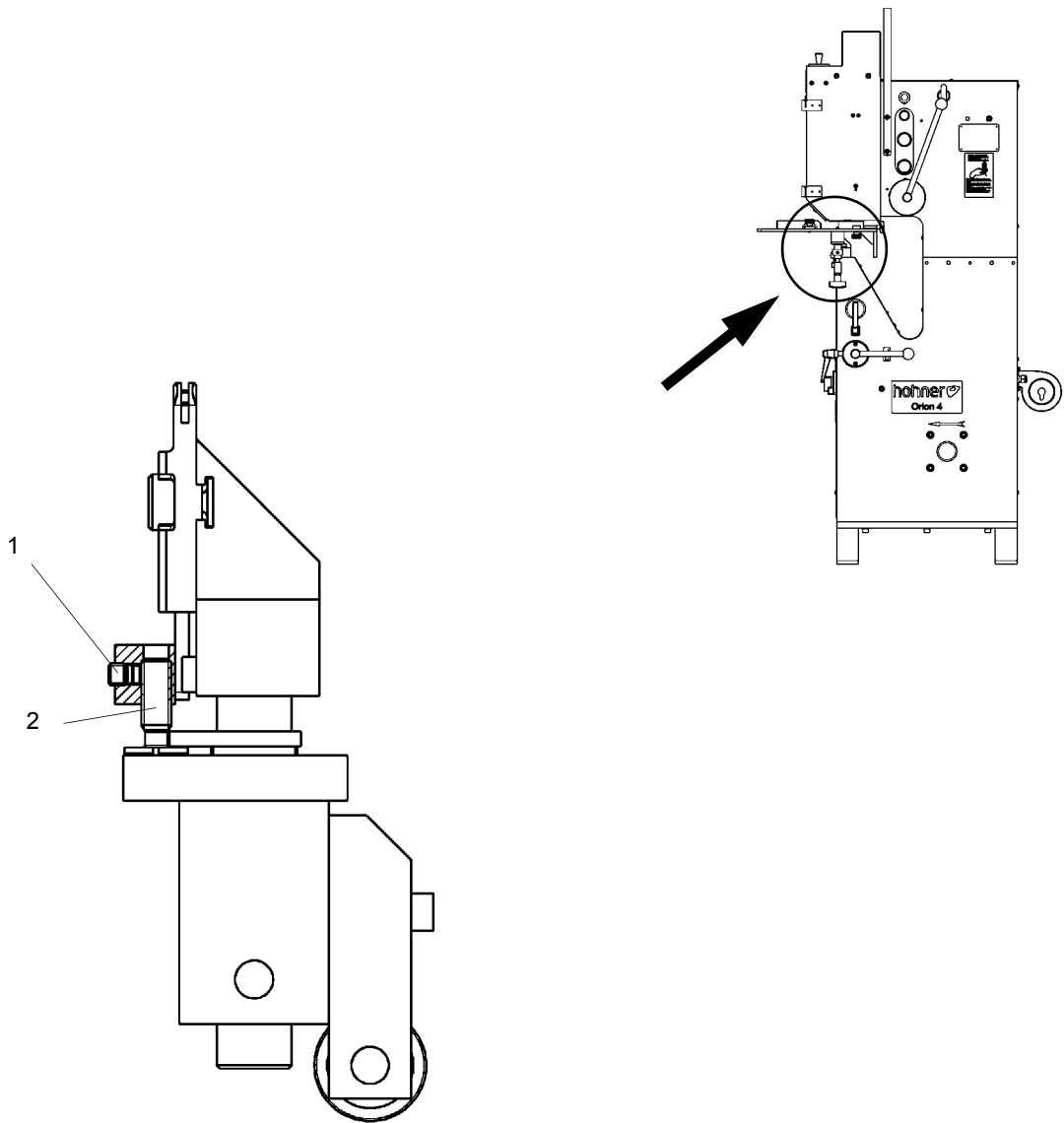


Fig. 3.7

## Structure and function of the machine

### 3.7 Basic adjustment of clinchers

- Fig. 3.7 -

In case of replacement or retrofit of the stitching heads UNIVERSAL 70/20 and the clincher boxes a basic adjustment will be necessary.

The pressure of the clincher spine pressure must be adjusted at minimal pressure (correspond to 2-sheet-stitching). See page 26.

#### **Adjustment:**

- Loosen the allen set screw -1- . Cycle the machine by hand until the clincher points reach their highest position. Adjust the clincher pusher screw -2- until the centre of the clincher points are approx. 1 mm above the clincher box surface. Tighten the allen set screw -1-.



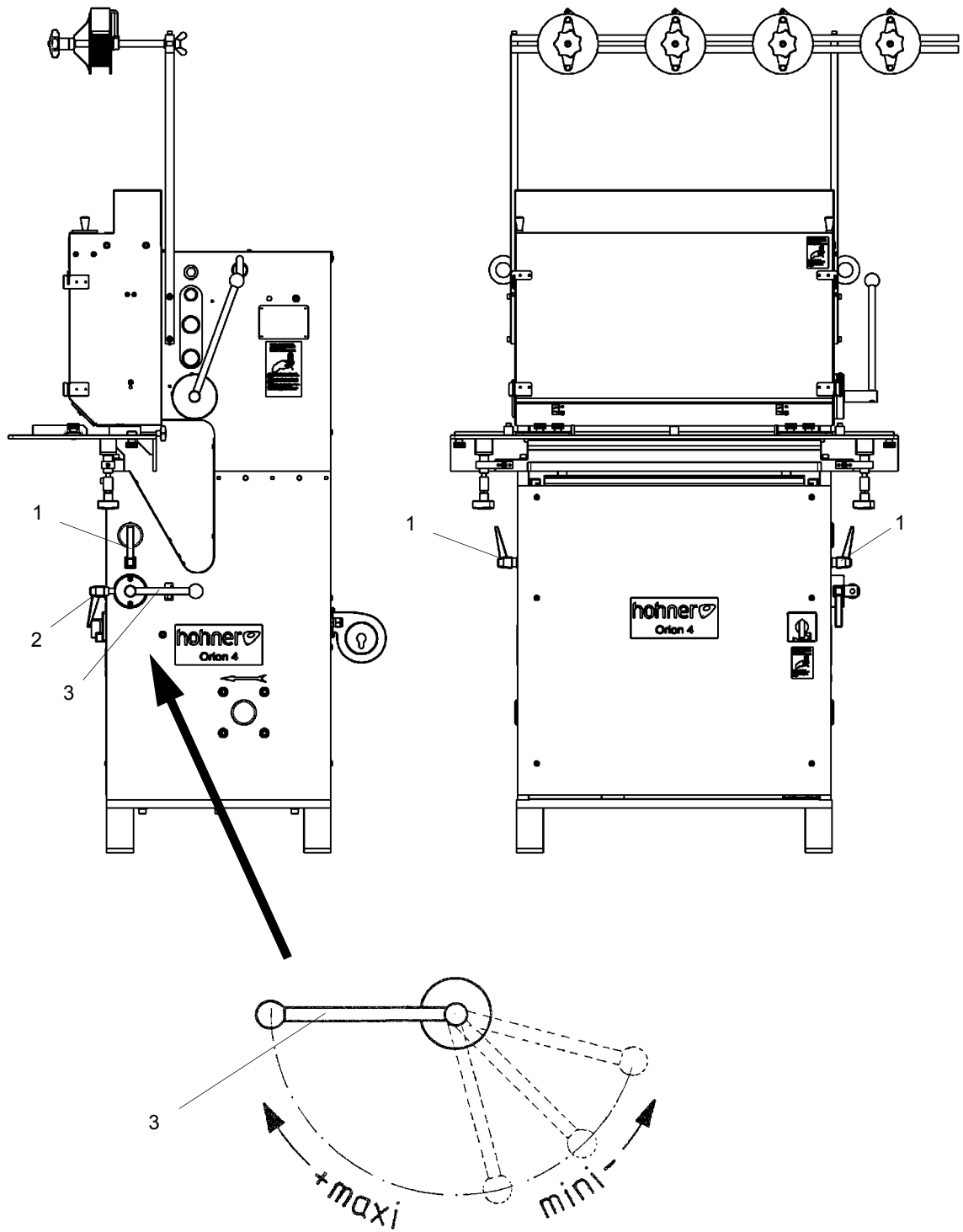


Fig. 3.8

## Structure and function of the machine

### 3.8 Pressure adjustment for clincher back pressure

- Fig. 3.8 -

The clincher back pressure can be adjusted, it depends on the stitching thickness and the kind of paper.

- First loosen clamp levers -1- on the right and left side of the machine.
- then loosen the clamp lever -2- and adjust the clincher back pressure with the adjusting lever -3-.
- After the pressure adjustment tighten again clamp lever -2- and both clamp levers -1-.

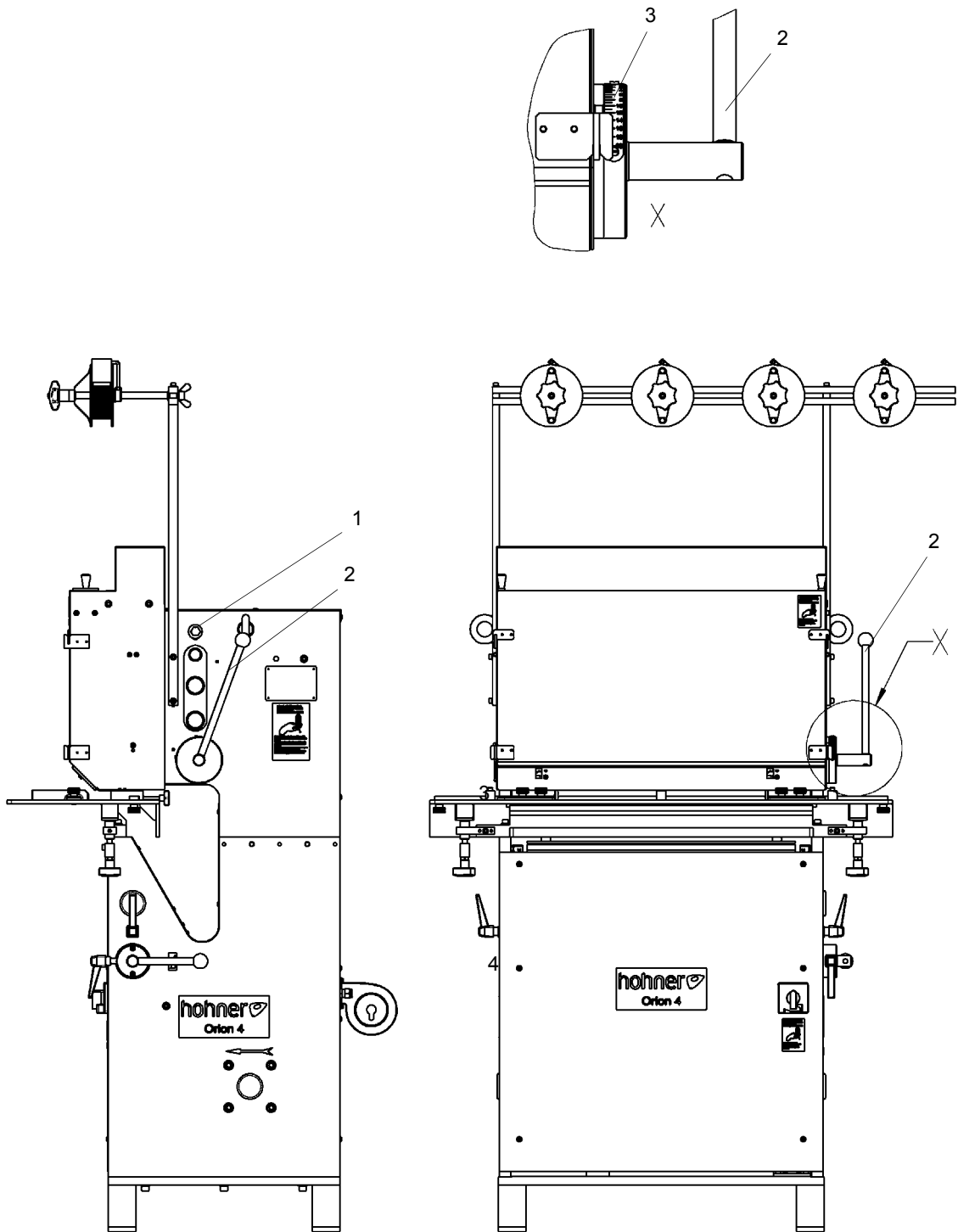


Fig. 3.9

## Structure and function of the machine

### 3.9 Adjustment of the stitching thickness

- Fig. 3.9 -

- Loosen the hexagon head screws -1- on both sides of the machine. Measure the book thickness in millimetres. Move adjusting lever -2- to the proper thickness indicated on the scale -3-.
- Tighten the hexagon head screws -1-.



When working with special paper material, a correction of the adjustment may be necessary. -2-.

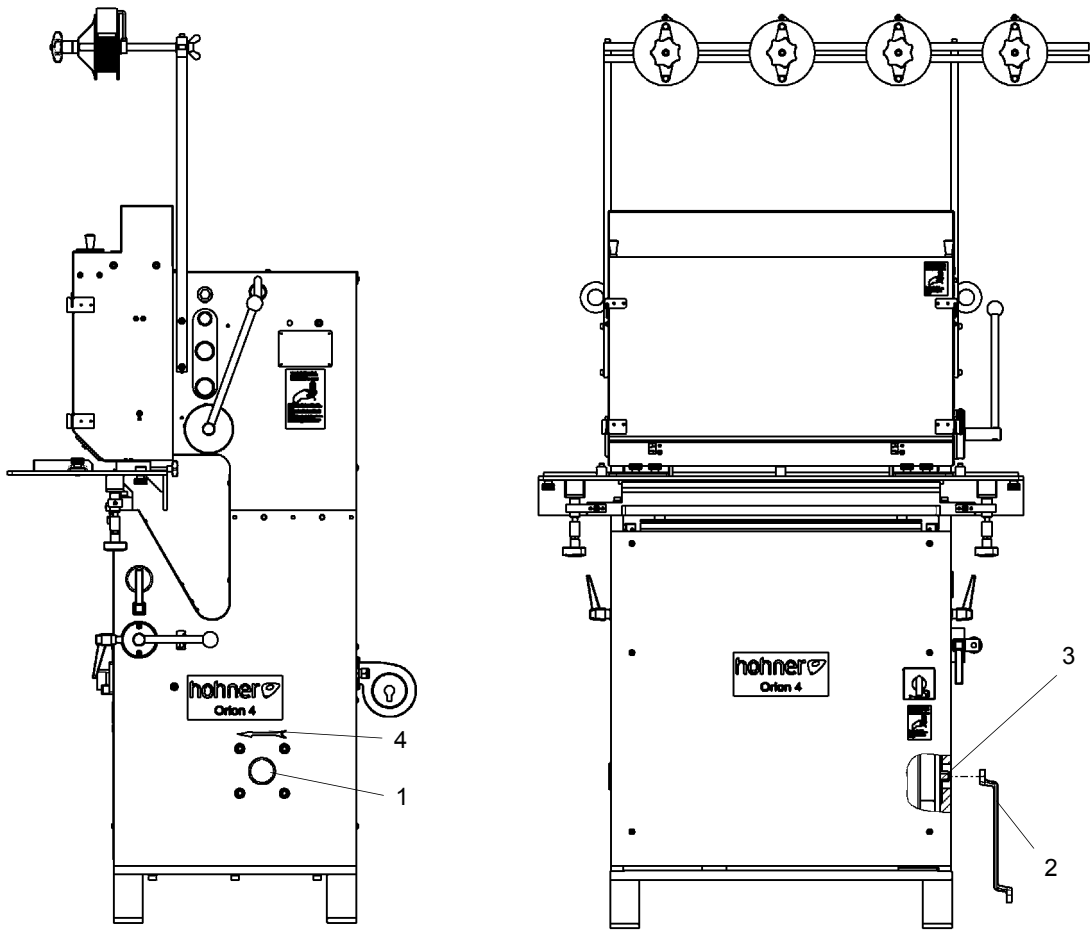


Fig. 3.10

## Structure and function of the machine

### 3.10 Adjustment by hand of the ORION 4

- Fig. 3.10 -



**WARNING** Before all repairs, disconnect the power supply and set safety switch (main switch) to "0".

For any adjustment or installation work at the wire stitching machine ORION 4 , the drive unit can be moved by hand. For this step use the pipe spanner 19 mm -2-.

First remove the plug -1- . Put the double offset ring wrench -2- on the hexagon -3- of the motor shaft and turn the pipe spanner -2- in direction of arrow -4- .



**NOTICE** Before resumption of work the pipe spanner -2- has to be removed from the hexagon of the motor shaft.

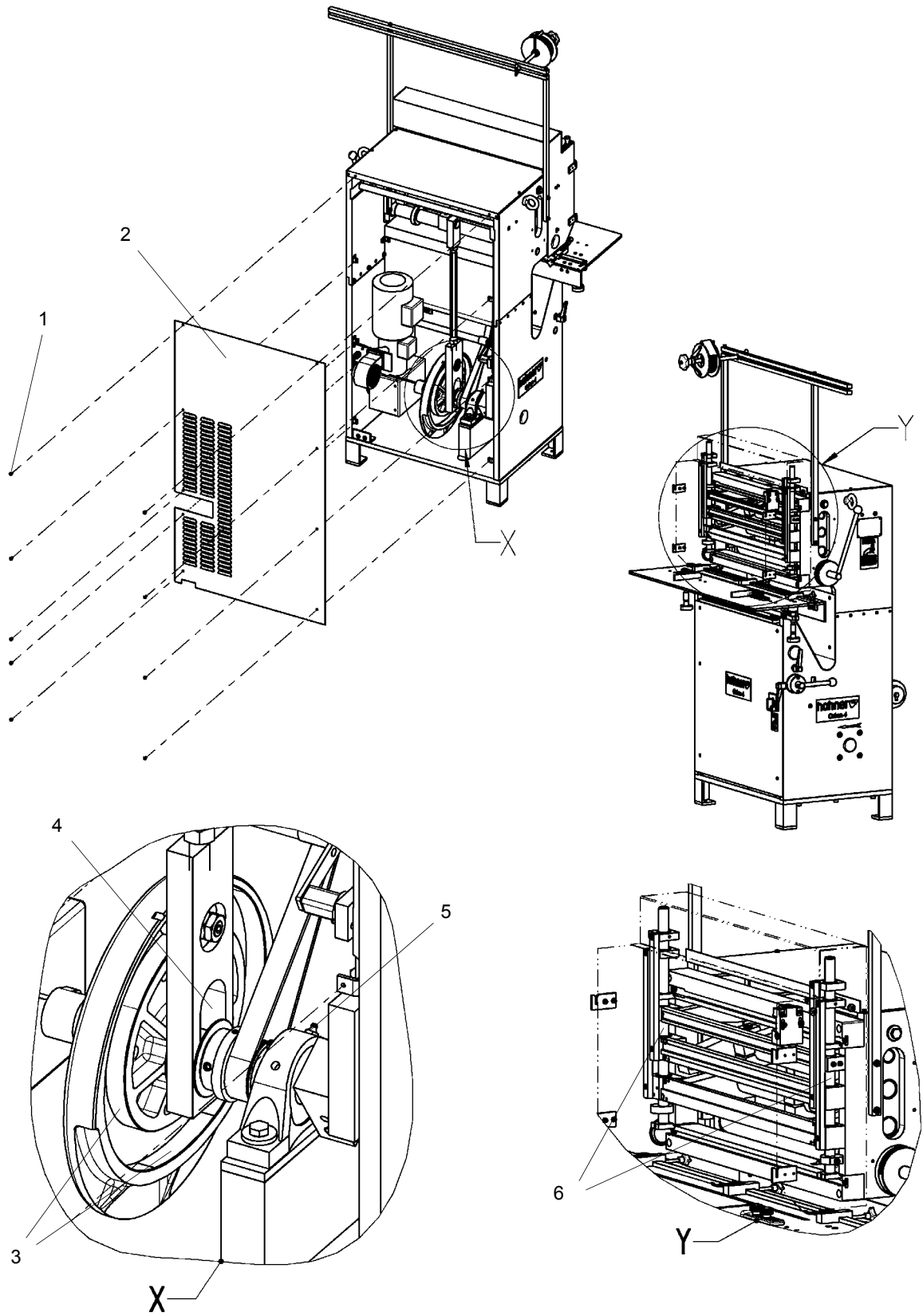


Fig. 3.11

## Structure and function of the machine

### 3.11 Lubrication instructions

- Fig. 3.11 - please see figure on the next page -

The cam disc, the plate and the pedestal bearing should be lubricated once a year.

Remove the 9 screws -1- of the rear cover -2- and remove the cover -2- carefully.

Apply a thin grease layer to the running surfaces for the cam disc -3- and the running surface for the bearing ring -4-.

Grease the pedestal bearing at the lubrication nipple provided therefor -5- using a grease gun.

Remount the cover -2- and tighten the -9- screws 1.



The cover -2- must be mounted by all means to prevent an increased risk of injury.

Slightly spray in the two guide columns -6- with an oil spray, if necessary.

#### **Recommended lubricants**

GREASE:

ELKALUB, GLS 135/N2; ELKALUB, GLS 163 or ESSO MOBILUX 2

Oil spray with PTFE:

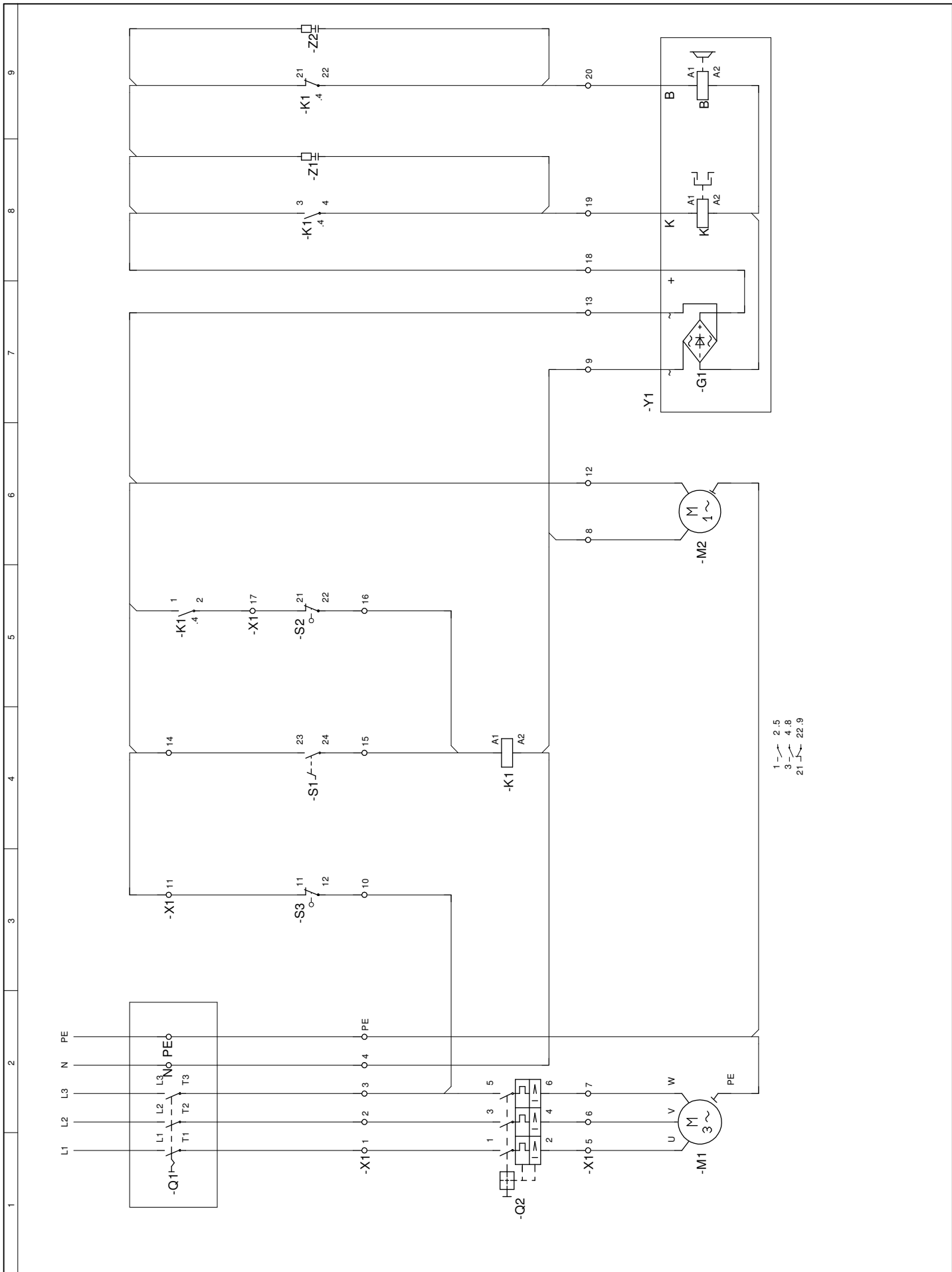
ELKALUB, FLC 1014



## 4 Flow diagrams

**ORION 4**                      **Nr. 43 44 360**                      P. 1-3  
400 V 3 Phase AC / Y 50/60Hz

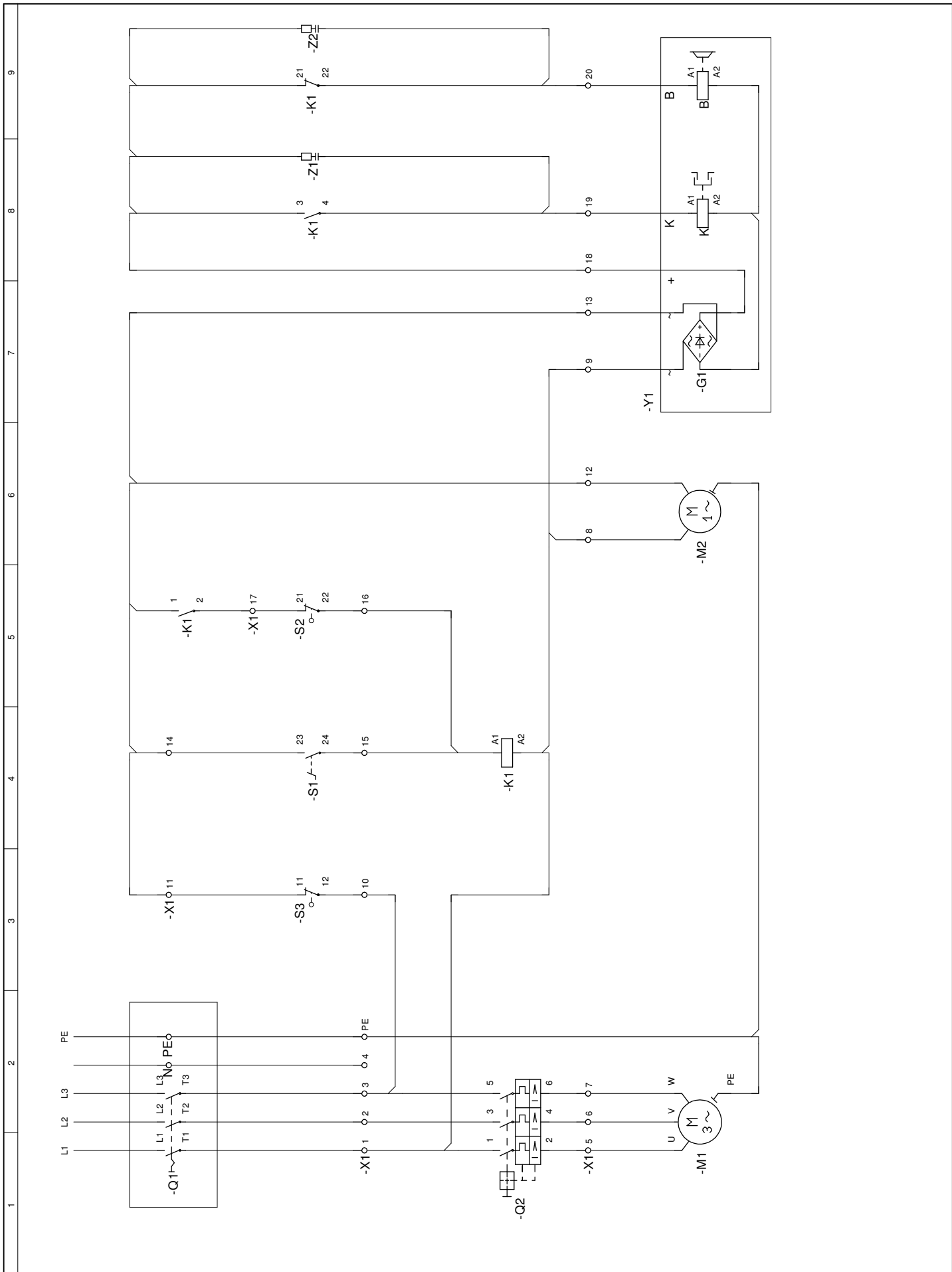
**ORION 4**                      **Nr. 43 44 362**                      P. 1-3  
230V 3 Phase AC /  $\Delta$  50/60Hz



23.10.08	VEK	<b>hohner</b>	Maschine / Machine / Machine	Orion IV	Zeichnungs-Nr. / Drawing-Nr. / Dessin-No.	Index
					43 44 360	a
Benennung / Title / Dénomination Schaltplan / flow diagrams / schéma des circuits 400V 3 Phase AC / Y 50 / 60 Hz						
Änderung	Name	©Hohner Maschinenbau GmbH				Seite Sheet Page
						1

Seite/Pfad page/path bord/sentier	Bezeichnung description designation	Anschiuß supply reecordement	Zielpunkt destination destination	Brücken bridge pont	Klemmennummer binder number numero borne	Anschiuß supply reecordement	Zielpunkt destination destination	Bezeichnung description designation	
/1.2			-PE		PE	PE	-M1		
/1.9		22	-K1		20	A1	-B		
/1.8		4	-K1		19	A1	-K		
/1.8		3	-K1		18		-G1		
/1.5		2	-K1		17	21	-S2		
/1.5		A1	-K1		16	22	-S2		
/1.4		A1	-K1		15	24	-S1		
/1.4				●	14	23	-S1		
/1.7				●	13		-G1		
/1.6		1	-K1	●	12		-M2		
/1.3				●	11	11	-S3		
/1.3				●	10	12	-S3		
/1.7		A2	-K1	●	9		-G1		
/1.6				●	8		-M2		
/1.2		6	-Q2		7	W	-M1		
/1.2		4	-Q2		6	V	-M1		
/1.1		2	-Q2		5	U	-M1		
/1.2			-N		4	A2	-K1		
/1.2		T3	-Q1	●	3	5	-Q2		
/1.2		T2	-Q1		2	3	-Q2		
/1.1		T1	-Q1		1	1	-Q2		
		=ORION4+400V-X1							
		Klemmleiste / connector block / borne plate							





21.05.08 VEK



Maschine / Machine / Machine

Orion IV

Zeichnungs-Nr. / Drawing-Nr. / Dessin-No.

43 44 362

Index

a

Benennung / Title / Dénomination  
 Schaltplan / flow diagrams / schéma des circuits 230V 3 Phase AC /  $\Delta$  50 / 60 Hz

Änderung Name ©Hohner Maschinenbau GmbH

Seite  
 Sheet  
 Page

1



