



# **Operating Manual**

Foot-hydraulic height-adjustable Work and Assembly Benches Ergoplan EP1, EP2 and EP3 | FH



Valid for types: | Ergoplan EP1, EP2 and EP3 | FH

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#### 1 Introduction

The information in this operating manual enables safe, proper and economical operation of your work and assembly bench. Please observe all the explanations, notes and regulations

- to avoid dangers and malfunctions,
- to reduce repair costs and downtimes
- and to increase reliability and service life

of your work and assembly bench.

The operating manual must be read and used by each person entrusted with carrying out work with the work and assembly bench. This must be ensured by the operator. Further this manual as well as any appendices and additional documents must be kept easily accessible at the place of use of the work and assembly bench.



Ignorance or non-observance of these operating instructions may result in certain accident hazards during <u>handling</u> with the work and assembly bench. Before commissioning, this operating manual and any appendices and additional documents must be read thoroughly. All instructions, in particular the safety regulations, must be observed!

**Handling** the work and assembly bench in the sense of these instructions means

- the installation and commissioning,
- the operation and proper usage,
- the influence on operating conditions, as well as
- the maintenance, troubleshooting and repair.

Apart from the operating manual and the legally binding accident prevention provisions applicable in the country and place of use, the recognized technical regulations for safe and proper work must also be observed.

#### 1.1 Legal Notice

All contents of these operating instructions are subject to the rights of use and copyright of Reinhold Beck Maschinenbau GmbH. Any reproduction, modification, further use and publication in other electronic or printed media, as well as their online publication, requires the prior written consent of Reinhold Beck Maschinenbau GmbH.

#### 1.2 Illustrations

All photos, figures and graphics contained in this document are for illustration and better understanding only and may differ from the current state of the product.

# 2 Symbols

#### 2.1 General Symbols

Symbol	Meaning
Indicates passages within this operating manual that must be particularly observed in prevent malfunctions or damage to the work and assembly bench.	
$\Rightarrow$	Refers to chapters, sections, or figures within this document.
<i>(</i> **)	Refers to an external document or a third-party source.



# 2.2 Symbols in Safety Instructions

The work and assembly bench is designed and manufactured according to the current state of the art. Nevertheless, residual hazards may occur during handling. In this operating manual, possible dangers and residual risks are pointed out at appropriate places.

Safety instructions are provided with corresponding danger symbols which have the following meanings:

Symbol	Safety Instruction
	Reading and applying the operating manual is mandatory for the operating personnel.  Failure to abide by the following precautions could lead to serious or possibly fatal injury.
<u>^</u>	General danger symbol, which requires the highest attention!  Failure to observe may result in damage to the equipment, serious injury or even death.
4	This symbol warns of the dangers of electric voltage!  Failure to observe may result in damage to the equipment, serious injury or even death.
	Reference to a prohibited zone under a lifted load!  Do not enter! There is an increased risk of injury or even death.
	Reference to a prohibited zone on a platform!  Do not enter! There is an increased risk of injury or even death.
	Reference to a possible crushing hazard!  Non-observance increases the risk of injury to hands and fingers!
	Reference to a possible crushing hazard!  Non-observance increases the risk of injury to feet and toes!
<u> </u>	Possible dangerous crushing hazard in the area of stationary objects!  Risk of personal injury and possibly additional equipment damage.
	Reference to a possible hazard due to forklift traffic!  Non-observance can result in life-threatening injuries.
	Reference to a possible danger under suspended loads!  Non-observance can result in life-threatening injuries.
	Reference to possible tripping and slipping hazards on the floor!  Non-observance may result in minor or severe injuries.
	Reference to possible environmental pollution!  Non-observance poses a risk of pollution of the environment and groundwater!
	Reference to the obligation to wear safety shoes resp. protective gloves!  Non-observance may result in increased risk of injury to feet & toes or hands & fingers!
	Fire hazard! Do not smoke and do not ignite open fire.
	Access for unauthorized persons prohibited!  Risk of personal injury and possibly additional equipment damage.



#### 3 General



The operating manual must be read carefully and understood before handling the work and assembly bench! If anything is unclear, please contact the manufacturer.

The Ergoplan series was specially developed for manual workstations in manufacturing, assembly operations and maintenance. They are suitable for use in industry and trade as well as in school facilities and training centres. The various models already cover a wide range of applications. In addition, a comprehensive range of accessories allows even better adaptation to different applications.

#### 3.1 Advantages

- Back-friendly, foot-operated hydraulic height adjustment on all available models
- Uniform adjustment to height, even under uneven load distribution
- The workbench top moves absolutely parallel and smoothly
- The side walls provide stability and protect the mechanics
- Optimal stand via adjustable feet (± 15 mm)
- High-quality hydraulic unit on the left side
- Basic solid and massive substructure

#### 3.2 Applications

Ergoplan can be used for all work corresponding to its intended use in section  $\Rightarrow$  4.2. The work and assembly bench is suitable for use as work equipment for transporting, lifting and lowering loads and also as a height-adjustable assembly table. Typical areas of application are workplaces in manufacturing, assembly and maintenance, where precise height adjustment for ergonomic working as well as high flexibility and mobility are of particular importance.

Ergoplan must not be used for work that does not correspond to its intended use (see section  $\Rightarrow$  4.2).

#### 3.3 Target Group and Previous Experience

This operating manual is intended for the operating and maintenance personnel of the work and assembly bench. The operating personnel is to be determined by the operator and must further meet the following requirements:

- Basic technical and mechanical knowledge as well as knowledge of the associated technical terms
- Reading and understanding these operating and maintenance instructions

In order to acquire the knowledge required to operate this work and assembly bench, the operator must ensure the following measures:

- Product training for every operator (also possible external personnel)
- Regular safety instruction

#### 3.4 Requirements for the Operators

- △ The operator is responsible for the safe use of the work and assembly bench!
- The work and assembly bench may only be operated by trained personnel who have also read this manual.
- ⚠ Inspection, maintenance, cleaning and repair may only be performed by technical specialists with product-specific training and mechanical and/or electrical training.
- △ Specialists with product-specific training are to be commissioned and held responsible for planning and checking the work.
- ▲ The national protective regulations for employees must be observed
- The legal minimum age must be observed.



#### 3.5 Accident Prevention

To avoid accidents, the following rules must be observed for operation:

- A Prevent unauthorized persons from gaining access to the work and assembly bench.
- ▲ Keep unauthorized persons away from the danger areas.
- ▲ Repeatedly inform present other persons about existing residual risks (see section ⇒ 4.8).
- △ Conduct and record regular training & instruction for persons who must be in the area of the work and assembly bench.
- New employees must be trained internally to work on a work and assembly bench and this training must be documented.
- ▲ It is not permitted to enter the work and assembly bench platform or to transport resp. lift persons.

#### 3.6 General Safety Regulations

In general, the following safety regulations and obligations apply when handling the work and assembly bench:

- The work and assembly bench may only be operated when it is in perfect working order.
- ▲ It is prohibited to remove, modify or bypass any protective, safety or monitoring equipment.
- ▲ It is forbidden to modify or alter the work and assembly bench without the written approval of the manufacturer / supplier.
- Faults or damage must be reported to the operator immediately, eliminated without delay and repaired if necessary.
- A Repair and maintenance work on electric, hydraulic, and pneumatic components (e.g. electric drives, hydraulic cylinders, vacuum pumps, etc.) may only be performed by authorized and trained personnel.
- ▲ Maintenance must be carried out and documented in accordance with the maintenance instructions.
- ▲ For repairs, only original spare parts from the manufacturer may be used.
- Only instructed, trained or qualified persons may work on the work and assembly bench.
- For the operation of the work and assembly bench, the respective national safety regulations for employees as well as the national safety and accident prevention regulations apply.

#### 3.7 Standard Equipment

- Model EP1 with work bench made of red beech wood, 4 feet and trolley for mobile use.
- Model EP2 with work bench made of red beech wood and 4 feet for stationary use.
- Planing benches for EP1 and EP2 with front and rear jaws and anti-squeeze cover on rear side.
- Model EP3 without work bench, as height adjustable ergonomic base for customer specific work benches.
- Uniform height adjustment even with uneven load distribution or eccentric loading.
- All three available models are continuously foot-hydraulically height adjustable (via a foot pedal mounted on the left side with separate pedal surfaces for up/down).
- With shelf for additional space under the table top (e.g. for base cabinet).
- CE-compliant design

#### 3.8 Options and Accessories

• Special accessories and optional components can be found in chapter ⇒ 16.



# 4 Safety

#### 4.1 Basic Safety Instructions

Work and assembly benches can be dangerous if used improperly. Therefore, observe the safety instructions listed in this chapter and the accident prevention regulations of your employer's liability insurance association!



The manufacturer accepts no liability for damage and malfunctions resulting from failure to observe these operating instructions.

#### 4.2 Application Area and Intended Use

The foot pedal operated, hydraulically adjustable work and assembly benches of the Ergoplan series conform to the Machinery Directive 2006/42/EC and are therefore suitable as technical equipment for both industrial and commercial applications as well as for training purposes in educational institutions.



Improper use can lead to danger to persons and to a defect or damage to the work and assembly bench.

- The work and assembly bench is primarily intended for operation in covered indoor areas, but it can also be used outdoors for loading and unloading purposes (e.g. from the service vehicle to the place of use).
- ⚠ Work on the work and assembly bench may only be performed at sufficiently illuminated workplaces.
- ⚠ The work and assembly bench is intended for processing, equipping, assembling and transporting assemblies, workpieces and similar components as well as for lifting, lowering and moving loads.
- ⚠ The work and assembly bench may only be used on horizontal floors for lifting loads.
- ⚠ The work and assembly bench may only be moved when the load is lowered.
- ⚠ The work and assembly bench must be positioned freely in the room when lifting and lowering. This means that no shearing or crushing edges may be caused by the movement of the work and assembly bench.
- ▲ The maximum load (see ⇒ 5 "Technical Specifications") with load center in the middle of the work and assembly bench must not be exceeded. If the work and assembly bench is loaded unevenly, outside the load center of gravity, the load capacity is of the maximum permitted load capacity (see ⇒ Figure 1).
- ⚠ The Ergoplan is not intended for moving and transporting persons.
- ⚠ The Ergoplan must not be operated in potentially explosive working areas. Any other use is considered improper and prohibited.

#### 4.3 Improper Use

Improper use is when the work and assembly bench is used for purposes other than those prescribed in this operating manual and in section  $\Rightarrow$  4.2, for example

- ⚠ Use and application for private or non-commercial purposes,
- Use in disregard of the regulations in the operating manual,
- use after unauthorized conversions or modifications,
- Exceeding the maximum permissible load (see 

   6 "Technical Specifications")
- ⚠ Transporting or conveying persons with the work and assembly bench
- Entering the work and assembly bench

In case of improper use of the work and assembly bench, any warranty, liability and other claims for damages of the operator against the manufacturer are excluded!



#### 4.4 Consequences in Case of Disregard

If the work and assembly bench is not operated, maintained or repaired in accordance with the safety regulations, not as intended, improperly or in an abusive manner, the following will result:

- △ Dangers to the health of the operating personnel
- △ Dangers to the work and assembly bench and objects in its vicinity
- ▲ Impairment of the work and assembly bench function

In case of improper use of the work and assembly bench, any warranty, liability and other claims for damages of the operator against the manufacturer are excluded!

## 4.5 Conversions and Modifications of Ergoplan

- △ Only use the work and assembly bench in its original condition, i.e. as delivered!
- △ The components of the work and assembly bench must not be changed in their type and condition.
- $\triangle$  Only original spare parts and accessories from the manufacturer (see  $\Rightarrow$  16) may be used.
- Deviations are not permitted.

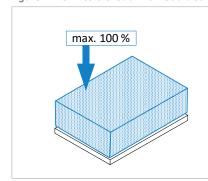


Unauthorized modifications or conversions by the operator, without the written consent of the manufacturer, are prohibited. This excludes any warranty, liability and other claims for damages by the operator against the manufacturer!

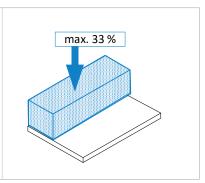
#### 4.6 Load Distribution and Influence on the Nominal Load

The nominal, maximum permissible load of Ergoplan is based on a load evenly distributed on the platform. If the load cannot be distributed evenly on the platform, the maximum permissible load must be reduced according to the figures below.

Figure 1: Permissible load with load distribution



# max. 50 %



#### **Even distribution**

Load is evenly distributed over the entire platform area

→ 100 % of the nominal load is permissible.

#### **Uneven distribution**

Load is distributed over half of the platform in transverse direction

→ 50 % of the nominal load is permissible.

#### **Uneven distribution**

Load is distributed over half of the platform in longitudinal direction

→ <u>33 %</u> of the nominal load is permissible.



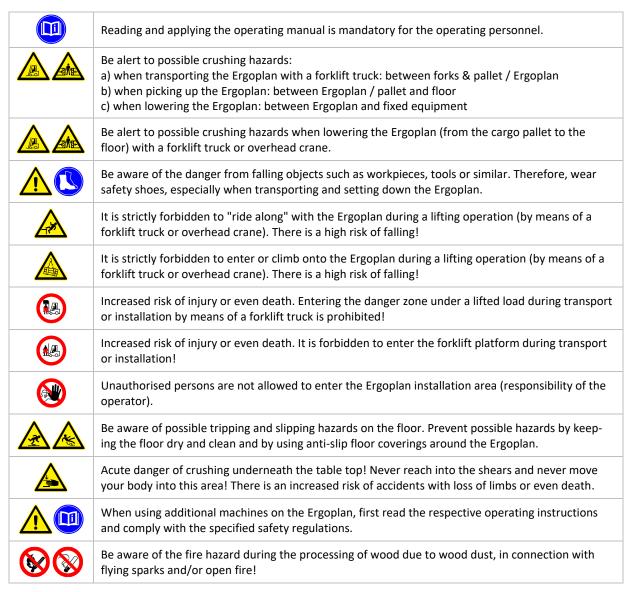
# 4.7 Hazardous Areas

Source	Area	Cause	Risk	Prevention
Foot pump	On the foot pedal for height adjustment	Slipping off the foot pedal	Injuries to feet and legs	Keep foot pedal and shoes dry Wear work shoes with non-slip soles
Mechanics	Under the table top	Crushing and shearing points	Loss of limbs, crushing of hands, increased risk of injury and even death	Do not reach under the table top during operation and do not move your body into this area
<u>^</u>	Version EP1 only: At the receptacle (A) for the undercarriage lever (see ⇒ Figure 16), or at the inserted lever).	Danger of snap- ping or kickback	Bruises and bro- ken bones all over the body	Always use the lever carefully, hold it firmly and do not let it snap away
Hydraulic system	On hydraulic cylinders and all oil-bearing parts, seals and lines	Oil spraying out with high pressure in case of damaged cylinder or seals	Injuries and poisoning of the eyes	Wear safety goggles or face shield Repair damaged parts and/or seals immediately (only qualified personnel!)



#### 4.8 Residual Risks

The Ergoplan is built according to the latest state of the art and the recognised safety rules. Nevertheless, the use of the Ergoplan may cause danger to life and limb of the user or third parties or damage to the Ergoplan and other equipment. Due to the construction of the Ergoplan, the following residual risks can occur even when used as intended and despite compliance with all relevant safety regulations:



#### 4.9 Observe the Environmental Protection Regulations

During all work with the Ergoplan, the environmental protection regulations, obligations and laws for waste avoidance and proper recycling and/or disposal applicable at the place of use must be observed. This applies in particular to installation, repair and maintenance work involving substances that could pollute the groundwater (e.g. hydraulic oils and cleaning agents and liquids containing solvents). In any case, prevent them from seeping into the ground or entering the sewage system.



Store and transport the above-mentioned hazardous substances only in suitable containers. Avoid leakage of hazardous substances by using suitable collection containers. Ensure that the above-mentioned substances are disposed of by a qualified disposal company.



#### 4.10 Organisational Measures

- Always keep this operating manual within easy reach and at the place of use of the Ergoplan.
- ▲ In addition to the operating manual, observe and instruct on generally applicable legal and other binding regulations for accident prevention and environmental protection.
- △ Supplement the operating manual with further instructions, including supervisory and reporting duties, to take account of special operational features (e.g. with regard to work organisation, work processes, personnel employed).
- ▲ Before starting work on the Ergoplan, the person responsible for its operation must have read the operating instructions, especially the chapter "Safety Instructions". This applies in particular to personnel who only occasionally work on the Ergoplan.
- ⚠ Check that work is carried out in a safety-conscious and hazard-conscious manner and in compliance with the operating manual.
- ⚠ When using additional machines on the Ergoplan, read the respective operating instructions and keep them handy. Pay particular attention to the respective safety and hazard information.
- In case of safety-relevant changes to the Ergoplan or its operating behaviour, shut down the entire system immediately and report the fault to the responsible office/person.
- △ Use personal protective equipment as necessary or required by regulations.
- △ Do not make any modifications, additional attachments or conversions to the Ergoplan without the manufacturer's approval! This will compromise safety and invalidate the manufacturer's warranty and any liability claim.
- A Spare parts must meet the technical requirements specified by the manufacturer. The exclusive use of original spare parts ensures this. Therefore, only use original spare parts from the manufacturer.
- △ Observe the fire alarm and firefighting possibilities. Make the location and operation of fire extinguishers (fire class ABC) known. Do not use water!

#### 4.11 Personnel Selection and Qualification - Basic Duties

- The design and operation of the Ergoplan is equally suitable for right- and left-handers.
- The Ergoplan is designed to be operated by a single person. Other persons in the vicinity of the Ergoplan must keep a suitable safety distance.
- Work on and with the Ergoplan may only be carried out by reliable personnel. Observe the legal minimum age!
- Only use trained or instructed personnel. Clearly define the responsibilities of the personnel for operating, setting up, maintaining and repairing!
- ▲ Ensure that only authorised personnel work on the Ergoplan.!
- ⚠ If personnel to be trained or apprenticed have to work on the Ergoplan, this may only be done under the constant supervision of an experienced resp. qualified person.
- Mork on hydraulic equipment may only be carried out by authorised and trained personnel.



# 5 Ergoplan Versions

#### 5.1 Ergoplan EP1 | FH with Work Bench Top



The Ergoplan EP1 | FH is equipped with a fold-out carriage that allows it to be moved to any location in your workshop.

The undercarriage is folded out by means of a hand lever (see procedure in section ⇒ 11.3). This makes the Ergoplan easy and quick to use as a mobile unit.

With the carriage folded in, the EP1 | FH offers the usual stationary working position on its four feet.

# 5.2 Ergoplan EP2 | FH with Work Bench Top



The design and construction of the Ergoplan EP2 | FH is identical to the EP1 | FH, but it is only designed for stationary use via the four feet. Thus, this model is ideally suited for use at a final location.

Should the location nevertheless have to be changed, it can be moved to the new position by means of a lift truck or forklift truck.

# 5.3 Ergoplan EP3 | FH without Work Bench Top



The Ergoplan EP3 | FH model is supplied without a work bench top and is intended for customers who wish to convert their existing work bench into an ergonomic, height-adjustable work and assembly table.

For this purpose, we offer a revision including renovation and adaptation to the EP3 | FH substructure for existing work bench tops (on request).



# 6 Technical Specifications

<b>Type</b> Article number	<b>Ergoplan EP1 FH</b> 211.100.00	<b>Ergoplan EP2 FH</b> 211.110.00	<b>Ergoplan EP3 FH</b> 211.120.00
Special feature	mobile with undercarriage	stationary version	without work bench top
Work bench material	red beech wood, solid	red beech wood, solid	-
Work bench size <sup>1</sup>	1785 x 850 x 120 mm	1785 x 850 x 120 mm	-
Plate size without jaws	1700 x 640 x 120 mm	1700 x 640 x 120 mm	-
Plate thickness	120 / 60 mm	120 / 60 mm	-
Work bench height	approx. 95 kg	approx. 95 kg	-
Total height	1080 mm	1080 mm	970 mm
Construction height	780 mm	780 mm	670 mm
Effective stroke	300 mm	300 mm	300 mm
Height adjustment	hydraulically	hydraulically	hydraulically
Control element for height	foot pedal	foot pedal	foot pedal
Work bench drillings	Ø 30 mm	Ø 30 mm	-
Work bench hole grid	160 x 320 mm	160 x 320 mm	-
Front jaw hole grid	160 x 320 mm	160 x 320 mm	-
Rear jaw hole grid	150 mm	150 mm	-
Swivel castors / carriage	4 pieces	-	(optional 4 pieces)
Stand feet	4 pieces	4 pieces	4 pieces
Foot adjustment	height ± 15 mm	height ± 15 mm	height ± 15 mm
Load / lifting capacity	max. 400 kg	max. 400 kg	max. 500 kg <sup>2</sup>
Net weight	approx. 240 kg	approx. 210 kg	approx. 130 kg
Hydraulic power units	1 x left side	1 x left side	1 x left side

# 6.1 Manufacturer and Nameplate

#### Manufacturer:

#### Nameplate:

Reinhold Beck Maschinenbau GmbH Im Grund 23 DE-72505 Krauchenwies (Germany) Phone: +49 (0) 7576 / 962 978 - 0 Fax: +49 (0) 7576 / 962 978 - 90 Email: info@beck-maschinenbau.de The nameplate provides information about the characteristic values of your Ergoplan:



Figure 5: Nameplate

**Note:** Before using the unit in a way that deviates from the described suitability (see section ⇒ 4.2), it is essential to consult the manufacturer. Otherwise all warranty, liability and other claims for damages of the operator against the manufacturer will be voided!

<sup>&</sup>lt;sup>1</sup> Including front and rear jaws.

<sup>&</sup>lt;sup>2</sup> Assuming a customised workbench top with a weight of 100 kg.



# 7 Transport to the Installation Site

Only trained personnel may be used for the following work:

- Unloading the Ergoplan
- Check delivery condition of the Ergoplan
- Transport the Ergoplan

#### 7.1 Unloading the Ergoplan





There is an increased risk of accidents when unloading and transporting the Ergoplan!
The Ergoplan can fall or tip over due to its weight!



Use only suitable and technically perfect lifting gear and suspension systems with an adequate lifting capacity of 500 kg. Only transport the Ergoplan on level, solid ground!





When placing the Ergoplan, pay attention to the possible danger of crushing in the area of stationary objects around the Ergoplan!



Warning: Increased risk of injury and death! Never stand under the load when lifting and putting it down! Instruct bystanders to leave the danger zone!



Warning: Increased risk of injury and death! Do not enter or climb onto the forklift platform during transport!





Increased risk of crushing feet and toes! Wear steel-toed safety shoes!

#### Unloading by forklift truck

- With the forks set appropriately, drive centrally into the designated places on the freight pallet on the longitudinal side of the Ergoplan and lift carefully.
- Carefully lift the Ergoplan from the truck. The net weight of the Ergoplan is approx. 240 kg (EP1 | FH), approx.
   210 kg (EP2 | FH) and approx. 135 kg (EP3 | FH), each without accessories.

#### **Check delivery condition**

Check for completeness and transport damage. In case of transport damage or missing parts, document these
immediately on the consignment note of the transport company. At the same time, inform the manufacturer
of the situation.

#### Unpacking and placing

• Unpack the Ergoplan and remove the packing material. Then lift the Ergoplan from the transport pallet with a forklift. When doing so, drive under the centre of the long side of the Ergoplan with appropriately adjusted forks (see ⇒ Figure 6) and carefully lift slightly. Then lift carefully from the pallet, remove the pallet and set the Ergoplan down on the ground.



Dispose of packaging material in an environmentally friendly manner!

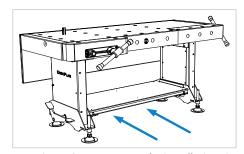


Figure 6: Transport to the installation site



Fire hazard! Do not smoke or light an open fire.

#### Transport to the installation site

The EP1 model can be moved directly to the installation site using the existing carriage (see section ⇒ 11.3).
 The EP2 and EP3 | FH models must be transported to the installation site with a forklift or lift truck in accordance with the general safety regulations.



#### 7.2 Requirements for the Installation Site

The following guidelines apply with regard to space requirements, load-bearing capacity and the condition of the substrate:

• Space requirements: B x H x T = 1700 x 1080 x 640 mm (with work bench top)

Load capacity: Concrete of classification B 15
 Conditions: Level, smooth, non-slip and tilt-free

#### 7.2.1 Setting Up and Levelling

Align the Ergoplan at the place of use with a spirit level and via the four stand adjustment screws using an openend wrench (SW30). To do this, loosen the corresponding lock nuts and adjust the height at the screws until the table is perfectly aligned. Each screw can be adjusted by  $\pm$  15 mm.

#### 7.3 Temporary Storage

If the Ergoplan is not put into operation immediately after delivery, it must be stored carefully in a protected place. Carefully cover the entire Ergoplan so that neither dust nor moisture can penetrate.

#### 7.3.1 Short Term Storage

- Dry environment
- Protect components at risk of corrosion
- Park in a stable place

#### 7.3.2 Long Term Storage

- Dry environment
- Protect components at risk of corrosion
- Protect Ergoplan from dirt
- Park in a stable place

## 7.4 Lashing on a Transport Vehicle

The Ergoplan must be lashed to the loading area of the transport vehicle on a transport pallet for possible onward transport. For this purpose, at least two lashing straps with the appropriate load-bearing capacity must be used.

The responsibility for safe loading is borne by the respective shipper!



A separate lashing strap must be used for each lashing and must be tensioned individually on the floor of the loading area of the vehicle! The pallet must also be secured against slipping.

Please note the following when lashing in the transport vehicle:

- On the EP1 the mobile base must be raised for transport.
- The loading area of the transport vehicle must always be clean and dry.
- The lashing straps used must be suitable for the total weight of the Ergoplan (see chapter ⇒ 6).
- Fastening on the loading area is done by lashing down: This means that the transport pallet is secured by frictional locking. The load is pressed so firmly onto the loading surface that it can no longer slip. The clamping tool should have a high STF value at the frictional connection, e.g. long-lever ratchets.
- In addition, anti-slip mats should be used to provide even more safety.
- The ideal lashing angle (α) for tie-down lashing is 83° to and 90°. Therefore, the lashing straps should pull downwards approx. vertically. As the angle decreases, the pretensioning force of the lashing is reduced.
- Observe the permissible total weight of the transport vehicle.
- Ensure that the permissible axle loads of the transport vehicle are observed. The load must be distributed evenly on all axles of the vehicle.



# 8 Components and Controls



Figure 7: Components and controls

Pos.	Description	Pos.	Description
1	Foot pedal for height adjustment	8	Work bench top with hole grid <sup>3</sup>
2	Undercarriage with 4 swivel castors <sup>4</sup>	9	Protection cover <sup>4</sup> (against crushing / shearing)
3	Carriage lever <sup>3</sup> for folding in and out	10	Front jaw <sup>4</sup> for workpiece clamping
4	Receptacle <sup>3</sup> for carriage lever ( <b>3</b> )	11	Rear jaw <sup>4</sup> for workpiece clamping
5	Lifting column with hydraulic cylinder	12	4 x Stand foot (± 15 mm height adjustable)
6	Shelf (e.g. for base cabinet)	13	Bench dog (option, see section ⇒ 11.2.1.1)
7	Synchronous shaft		

Available options and other accessories see chapter  $\Rightarrow$  16.

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<sup>&</sup>lt;sup>3</sup> Only included as standard for Ergoplan EP1 model and available as an option for Ergoplan EP2 model.

<sup>&</sup>lt;sup>4</sup> Only available on Ergoplan EP1 and EP2 models (as the work bench top on EP3 is customer-specific).



# 9 Installation and Commissioning

The Ergoplan must be set up in a stable position so that there are no crushing or shearing points between the Ergoplan and/or the load and objects in the vicinity. Therefore, ensure sufficient space around the Ergoplan. It must be possible to carry out the intended work on the Ergoplan or the load without obstruction.

The following installation and operating requirements must be observed:

- ↑ The Ergoplan must be integrated into the existing machinery in such a way that the basic safety requirements of the EU Machinery Directive 2006/42/EC are met. This must be checked and ensured by the operator of the Ergoplan.
- ⚠ The environment must not be explosive.
- This operating manual and any supplementary documents must be read carefully and understood.

  All safety instructions and regulations must be observed and complied.

# 10 Operation



Before operating the Ergoplan, the operator must ensure that no hazards are caused by the movement of the Ergoplan platform.



Generally wear steel-toed safety shoes and suitable protective work clothing!

#### 10.1 Loading and Unloading the Platform

- ♦ When loading or unloading the work platform, the load distribution according to section ⇒ 4.6 "Load Distribution and Influence on the Nominal Load" must be observed and complied with.
- A load placed on the Ergoplan must be secured with suitable measures against slipping, tipping over, rolling away and falling down. This is particularly necessary for loads that have an unstable position on the platform or that do not rest snugly on the Ergoplan plate due to their shape and/or nature (e.g. rolling objects).

#### 10.2 Lifting and Lowering the Platform



Before lifting or lowering a load, make sure that the Ergoplan has a secure footing. With version Ergoplan 1, the undercarriage must first be folded in before the work platform may be moved.

#### 10.2.1 Height Adjustment



When adjusting the height downwards, make sure that there are no objects on the shelf under the table that are higher than the lowest position of the table top.



Pay attention to the existing danger of crushing hands and fingers, especially when moving the platform downwards. Never reach under the table top during height adjustment!

The hydraulic height adjustment of the work bench top is based on 2 parallel column guides, with the hydraulic power unit located in the left column.



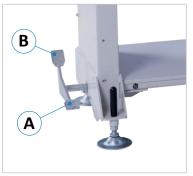


Figure 8: Food pedal for height

- By actuating the foot pedal (A) downwards, the internal hydraulics react to the tie bars in the columns and move the table top gradually upwards. To reach the complete lifting height, approx. 40 actuations are required.
- When the foot pedal (A) is released, the movement stops and the
  working platform remains in this position. In order to adjust the Ergoplan infinitely and exactly to the desired position, the foot pedal (A)
  can be released at any point.
- By actuating the foot pedal (B), the working platform is lowered downwards for the duration of the operation.

The hydraulic force is transmitted to the hydraulic cylinder via the foot pump. Foot pump and hydraulic cylinder are a fixed unit.

# 11 Handling the Work Bench Top

The ergonomic work and assembly benches of the Ergoplan EP1 and EP2 series are equipped with a solid work bench top made of red beech wood. The surface is waxed and polished. In order to keep the work bench in perfect condition, certain instructions must be followed (see also section ⇒ 11.1).



Fire hazard! Do not carry out any work with naked flames (e.g. welding) on the wooden plate!

#### 11.1 Chiselling and Drilling Work on the Work Bench



To protect the surface from scratches and damage, generally use a sufficiently high base (e.g. wooden board) for chiselling work or when drilling on the work bench top.

- If damage, scratches or drill holes nevertheless occur on the work bench top, you can putty them out and then sand them cleanly flat.
- In addition, the work bench top should be treated with linseed oil depending on use and wear, but at least once a year. An additional positive aspect of care with linseed oil is that glue residues and stains can be removed very quickly and easily afterwards.

#### 11.2 Workpiece Clamping



Caution! Danger of crushing hands and fingers between the jaws and/or supplementary clamping devices (such as clamping dogs and stops) and the workpiece.



Danger of cutting and abrasion due to sharp workpiece edges and pointed corners. Handle sharp-edged and pointed workpieces with care and wear protective gloves if necessary.

There are various ways to clamp a workpiece on the work bench top. You will find more about this in the following sections.



#### 11.2.1 Clamping with Front and Rear Yaw

The front and rear jaw of the work bench each are equipped with a high quality and solid threaded spindle. The clamping jaws can be easily clamped or opened with the vice handles. Depending on the dimensions and properties, the workpiece can be clamped directly via the clamping jaws or with the aid of clamping hooks via the hole grid of the work bench top.

The **front jaw** is attached to the left longitudinal side of the Ergoplan. It is used to clamp workpieces horizontally (e.g. for longitudinal edging with the planer or for grinding long edges).



Figure 9: Front jaw

- To avoid unnecessary stress on the spindle and the mechanics of the jaw, the workpiece should always be clamped in the center of the front jaw. This ensures a uniform clamping force.
- If this is not possible with very small workpieces, clamp a wider waste piece to keep the clamping jaw as parallel as possible.

The **rear jaw** is located on the right-hand transverse side of the work bench. It is used to clamp work-pieces vertically (e.g. when trimming or sawing to width with a slitting or jigsaw).



Figure 10: Rear jaw

- Sawing work should always be carried out on the rear jaw.
- When shooting end grain edges also rear jaw should be used, with the workpiece clamped as deeply as possible. This prevents the workpiece from bouncing during machining.

#### 11.2.1.1 Protecting the Front and Rear Jaw

- Only clamp workpieces made of wood or plastic in the front and rear jaws. Do not clamp workpieces made of metal in the jaws. Use a vice with aluminium jaws for this purpose.
- d Chiselling work should generally be carried out on the table top center and with a suitable base, but never on via the jaws. The mechanics can be damaged by the blows with the hammer.

#### 11.2.2 Clamping with Bench Dogs (Option)

Bench dogs are an optimal addition to the planer bench, because they can be used to perform many elementary tasks in carpentry or woodworking. They are adjustable in height and can be used both for clamping and as a stop system. When using Bench dogs, only one clamp is required in most cases, even for larger workpieces.

Unlike conventional work benches, which are equipped with only one row of bench dog holes, the Ergoplan EP1 and EP2 models have several rows of holes at the same time. This means that even wider workpieces can be flexibly clamped over the rows arranged on the work bench. This is very helpful when gluing, for example.



Figure 11: Bench dogs inserted on work bench



#### 11.2.2.1 Advantages of the optional Bench Dogs

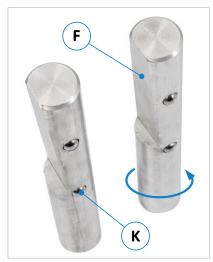


Figure 12: Bench dog set (2 pieces)

The optionally available bench dogs are optimally matched to the Ergoplan work benches and their hole grid. The two lengths 120 mm (Art.-No. 211.201.30) and 200 mm (Art.-No. 211.205.30) are available as a set of 2 pieces (see chapter ⇒ 16).

- The spring-loaded ball (K) in the shaft of the bench dog, together
  with the milled groove in the hole grid bore, ensures optimum and
  secure fixation at all times. In addition, the bench dog is locked in
  the hole so that it cannot fall through.
- For clamping flat workpieces and components, the bench dogs have a face-milled surface (F) on one side. The surface can be easily rotated in any direction. This allows the clamping of parts with parallel opposite edges as well as angled workpieces.
- The bench dogs can also be lowered very far, so that even very thin workpieces (such as plates and strips) can be securely clamped and fixed in place.

#### 11.2.2.2 Recommendations for Handling Bench Dogs

- Whenever a clamp proves unsuitable for material processing, the bench dog is an ideal alternative.
- For sensitive workpieces or workpieces already cut to size, protect the workpiece surface with additionally clamped waste spacers (see example in ⇒ Figure 13).
- Never hit the bench dog with a hammer, e.g. to adjust the height (risk of burr formation).
- Keep the height of the bench dog below the height of the workpiece during surface machining operations.



Figure 13: Clamping with waste spacers

#### 11.2.3 Using Vertical Clamps

Another option for clamping a workpiece on the Ergoplan work bench are the optionally available vertical clamps. The 30 mm grid bolt for insertion into the grid holes on the work bench ensures optimum and secure fixing. The projection of the clamp is 120 mm with a vertical clamping height of 200 mm.



Figure 14: Vertical clamps - application examples



The vertical clamp can be ordered as a single part via Art. No. 211.2033.00 (see also chapter  $\Rightarrow$  16).



#### 11.3 Undercarriage (Model EP1 only)

In order to move the work and assembly table to another place of use, the undercarriage of the EP1 can be folded out. However, the load-bearing capacity of the construction is designed exclusively for transporting the Ergoplan. Therefore, the undercarriage should never be unfolded and used with a loaded table.



Before moving the work and assembly table, the load must always be removed!

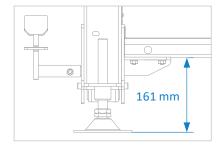


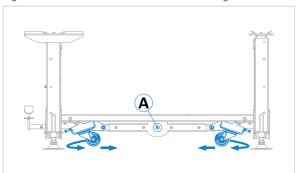
Figure 15: Prepare undercarriage

#### **Important Measure for Preparation:**

For proper functioning of the undercarriage, the height of the Ergoplan table must first be set to approx. 161 mm (see ⇒ Figure 15 above). Then proceed as described below.

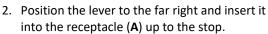
To unfold the undercarriage, the hand lever supplied is needed (see  $\Rightarrow$  Figure below).

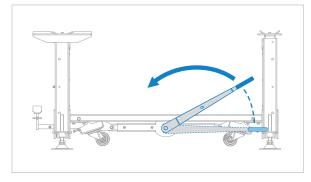
Figure 16: Fold out and move the undercarriage

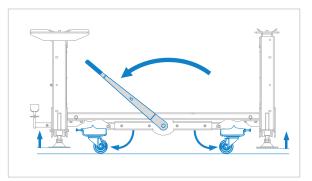


Top view

1. Turn the castors inwards (parallel to the table).







- 3. Turn the hand lever firmly to the left until it stops while holding the table a little.
- 4. The hand lever must hold itself in position at approx. 45° and the undercarriage folds out.
- 5. Remove the lever and move the Ergoplan to the new location. Move the last 30 cm in front of the stand transversely to the rear so that the castors at the location (see step  $\Rightarrow$  1.) are parallel to the front edge.
- 6. Now insert the lever from the left position (see step  $\Rightarrow$  4.) into the receptacle (A).
- 7. Then turn the hand lever all the way to the right until the undercarriage is unloaded again.



Caution! The hand lever can snap back dangerously and cause bruises and broken bones on hands, legs and the entire body!

- 8. Now pull off the hand lever and stow it away → The table now stands on its four feet again.
- 9. Finally, check that the Ergoplan has a secure, wobble-free stand. If the surface is uneven, level the Ergoplan with the adjusting screws on the four feet (see section ⇒ 7.2.1).



# 12 Troubleshooting

Repair and maintenance work may only be carried out by competent, trained and instructed personnel.



Repair work on mechanical and hydraulic components may only be carried out by authorised and trained personnel.

Proceed systematically when searching for the cause of a malfunction. If you are unable to find the fault or to remedy the malfunction, contact our customer service department (phone: 0049 7576 / 962 978 - 0).

Before you call us, please follow these steps:

- Make a note of the information on the nameplate of your Ergoplan (see ⇒ Figure 5).
- Keep these operating instructions and any supplementary documents at hand.

The more precisely you describe the fault to us, the better we can then remedy the situation.

#### **Possible Faults**

Fault	Possible Cause	Remedy
Platform does not lower completely to the bottom	An object that is too high is lying on the shelf under the table	→ Lift the platform a little and remove the object
Platform cannot	Lift table is overloaded	→ Reduce load
be lifted up	Hydraulic cylinder, foot pump or mechanics defective	→ Contact customer service
Rear or front clamp of the work bench is difficult to	Spindle is dirty or resinous	<ul> <li>→ Clean and oil the spindle</li> <li>→ If necessary, dismantle the mechanical parts of the vice and thoroughly clean and oil</li> </ul>
move or jammed	Guide or spindle is mechanically distorted (e.g. workpieces were repeatedly clamped incorrectly or on one side)	→ Contact customer service
Work bench top is scratched or has has drill holes	No or no sufficiently high support was used during drilling and/or chiselling work or similar activities. No base or a base of insufficient height was used.	<ul> <li>→ Filling and grinding of the damaged areas</li> <li>→ In case of severe damage arrange revision (contact customer service)</li> </ul>
Ergoplan cannot be moved or can only be moved with great difficulty when the undercarriage is folded out	The platform was not set to the correct height before folding out the undercarriage	→ Set the correct height of approx. 161 mm (\$\Rightarrow\$ 11.2.1.1)



# 13 Maintenance and Repair

Maintenance and repair work may only be carried out by competent, trained and instructed personnel. If necessary, further operating instructions and/or additional documents must be observed.



After maintenance or repair work on the work and assembly table, always carry out a function test.



- Wear safety shoes with steel-toed caps.
- Wear suitable protective clothing.



Repair work on mechanical and hydraulic components may only be carried out by authorised and trained personnel.



Before any maintenance and repair work is carried out, chapter  $\Rightarrow$  4 "Safety" must be read carefully and observed.

#### 13.1 Maintenance Intervals

Interval	Action
Daily	Check all components for damage and have them replaced by competent personnel if necessary. If you have any questions, please contact our support (phone: 0049 7576 / 962 978 - 0).
Monthly	Lubricate the castors and bearings a little.
Annual	<ul><li>a) Make and document annual inspection of the Ergoplan according to regulations.</li><li>b) Treat the work bench top with linseed oil and remove glue residues.</li></ul>

# 14 Decommissioning

- Before taking out of service, the platform of the Ergoplan must be lowered completely.
- For recommissioning, observe chapter  $\Rightarrow$  9 "Installation and commissioning ".
- For the final scrapping of the Ergoplan, please refer to chapter ⇒ 15.



# 15 Disassembly and Scrapping

When dismantling and scrapping the Ergoplan, the current EU regulations or the respective regulations and laws of the country of operation, which are prescribed for proper dismantling and disposal, must be observed. The aim is to dismantle the Ergoplan and its various materials and components properly, to recycle all possible parts and to dispose of non-recyclable components in the most environmentally friendly way.



#### Please pay particular attention to

- the dismantling of the Ergoplan in the working area
- proper dismantling of the Ergoplan and accessories
- a safe and proper removal of the Ergoplan
- proper separation of all components and materials.

When dismantling and disposing the Ergoplan, the laws and regulations in force at the place of use concerning health and environmental protection must be observed.



Remove all residues of oil, grease and other lubricants and have them disposed of properly by a qualified disposal company.

When separating, disposing of or recycling the Ergoplan materials, comply with the environmental protection laws in force at the place of use regarding the disposal of industrial solid waste toxic and hazardous waste.



- Hoses and plastic parts as well as other components that are not made of metal must be dismantled and recycled or disposed of separately.
- Pneumatic and hydraulic parts such as valves, solenoid valves, pressure regulators, etc.
   must be removed and (if possible) recycled or otherwise disposed of in a qualified manner.
- Dismantle the base frame and all metal parts of the Ergoplan and sort them according to material type. Metals can be melted down and recycled.

In the event of improper disposal of lubricants, the following residual risks to the environment and health exist:



Pollution of the environment by seepage into groundwater or sewage system.



Poisoning of the personnel contracted for the disposal.

**Note:** The disposal of lubricants considered toxic and hazardous must be carried out in accordance with the regulations and laws in force at the respective place of use. Only qualified disposal companies that have the appropriate permits for the disposal of used oil and lubricants are to be commissioned with the disposal.



# 16 Options and Accessories

In the following tables you will find available options and accessories that you can use to upgrade your work and assembly bench. Please also visit our online shop  $\stackrel{\frown}{}$  https://www.hokubema.com.



Only use the original accessories and spare parts specified by the manufacturer. The use of other accessories or spare parts may cause injury to persons and damage to the work and assembly bench. The manufacturer accepts no liability for any damage resulting from the use of non-prescribed accessories and spare parts or additional components from third parties!

Article	Description	ArtNo.
FOLDABLE UNDERCARRIAGE	Suitable for Ergoplan EP3, mounted on the base frame. The chassis with the 4 swivel castors can be folded out by means of a hand lever. The undercarriage lifts the Ergoplan by approx. 15 mm when folded out. When folded in, the Ergoplan is statically in the working position via its four feet. Weight approx. 35 kg	211.140.00
ROUND BENCH DOG 120 MM, 2pcs SET	Suitable for Ergoplan EP1 and EP2, for insertion at the front as workpiece support. Suitable for clamping or as a stop. Rotatable with flat milled clamping surface, secure hold due to spring-loaded balls. Bench dog $\emptyset$ 30 mm   Length = 120 mm   Weight approx. 1 kg	211.201.30
ROUND BENCH DOG 200 MM, 2pcs SET	Suitable for Ergoplan EP1 and EP2, for insertion at the front as workpiece support. Suitable for clamping or as a stop. Rotatable with flat milled clamping surface, secure hold due to spring-loaded balls. Bench dog $\emptyset$ 30 mm   Length = 200 mm   Weight approx. 1.7 kg	211.205.30
VERTICAL CLAMP WITH BOLT	Suitable for Ergoplan EP1 and EP2, with grid bolts for insertion into the grid holes.  Bolt $\emptyset$ 30 mm   Profile = 30 x 8.5 mm   Projection = 120 mm   Vertical clamping height= 200 mm   Weight approx. 1 kg	211.203.00
ANTI-SLIP PAD 1200 MM	Suitable for Ergoplan EP1 and EP2, with grid bolts for insertion into the grid holes.  Length = 1200 mm   Weight approx. 3 kg	210.610.30
ANTI-SLIP PAD 600 MM	Suitable for Ergoplan EP1 and EP2, with grid bolts for insertion into the grid holes.  Length = 600 mm   Weight approx. 2 kg	210.612.30
METAL DRAWER BASE CABINET	Suitable for Ergoplan EP1 - EP3, with 1 drawer block, drawers with perforated bottom and slotted walls (for individual drawer subdivision), central lock with 2 keys, with labelling strip and transparent cover.  Size = 1060 x 330 x 675 mm   1 Drawer 1058 x 328 x 675 mm   Usable size = 900 x 255 x 600 mm   Load capacity = 100 kg   Colour: RAL 7035 (light-grey) or RAL 5023 (blue)   Weight approx. 40 kg	210.645.00
MULTIPLEX TOOL BASE CABINET	Suitable for Ergoplan EP1 - EP3, with 6 Drawers.  Size = 1.100 x 370 x 500 mm   2 Drawers 620 x 40 x 420 mm    2 Drawers 360 x 40 x 420 mm   1 Drawer 620 x 120 x 420 mm    1 Drawer 360 x 120 x 420 mm   Weight approx. 40 kg	210.620.00
BASE CABINET M182 WOOD	Suitable for Ergoplan EP1 - EP3, with 2 lockable drawers. Ball bearing roller guide with 100 % extension of the drawers.  Size = 860 x 400 x 455 mm   Drawer size top = 750 x 80 x 380 mm, Drawer size bottom = 750 x 140 x 380 mm   Weight approx. 30 kg	210.630.00

More information and illustrations can be found in our ♥ catalogue.



# **EU - Declaration of Conformity**

in accordance with the EU Machinery Directive 2006/42/EC Annex II A

The manufacturer,

Fa. Reinhold Beck Maschinenbau GmbH Im Grund 23

DE-72505 Krauchenwies (Germany) Phone: 0049 - 7576 962 978 0 Fax: 0049 - 7576 962 978 90

hereby declares that the manufactured machine

Model: ERGOPLAN EP1 FH / EP2 FH / EP3 FH

Type designation: Lifting Table

Serial number(s): Year of manufacture:

in the version provided complies with the EU Machinery Directive 2006/42/EC and the following further directives:

The following harmonised standards and instructions have been applied in manufacturing the machine:

• EN ISO 12100:2010 Safety of machinery - General principles for design -

Risk assessment and risk reduction

• EN 1570-1:2011 Safety requirements for lifting tables

Name: Beck First name: Reinhold

Position: Managing Director

Krauchenwies, 16.11.2021

Place and date Signature

R. Beck