



Installation manual

EN

Magnet module

Table of contents

1	General.....	4
1.1	Information about this manual.....	4
1.2	Explanation of symbols.....	4
1.3	Limitations of liability.....	5
1.4	Balance quality.....	5
1.5	Max. RPM.....	6
1.6	Copyright.....	6
1.7	Scope of delivery.....	6
1.8	Spare parts.....	7
1.9	Warranty terms.....	7
2	Safety.....	8
2.1	Responsibility of the customer.....	8
2.2	Personnel requirements.....	9
2.3	Intended use.....	10
2.4	Personal protective equipment.....	11
2.5	Special dangers.....	12
2.6	Further warnings.....	15
2.7	Clamping force / implementation limits.....	17
2.8	Functionality.....	23
2.9	Environmental protection.....	23
3	Technical data.....	24
3.1	General information.....	24
3.2	Operating conditions.....	25
3.3	Power specifications.....	25
3.4	Type designation.....	25
4	Structure and function.....	26
4.1	Overview and brief description.....	26
4.2	Spare parts / accessories.....	27
4.2.1	Clamping head.....	27
4.2.2	Clamping head SE.....	27
4.2.3	Key.....	28
5	Transporting, packaging and storing.....	29
5.1	Safety instructions for transporting.....	29
5.2	Symbols on the packaging.....	29
5.3	Transport inspection.....	30
5.4	Unpacking and inner-company transport.....	30
5.5	Packaging.....	31
5.6	Storing.....	32
6	Assembly.....	33
6.1	Pre-consideration.....	33
6.2	Preparation.....	34

Magnet module

6.3	Installation.....	34
6.3.1	Assembly / disassembly of the clamping head.....	35
6.3.2	Mounting the magnet module.....	36
6.3.3	Commissioning the magnet module.....	36
6.3.4	Operating the magnet module.....	37
6.4	Tests.....	38
6.5	Activities after production is concluded.....	39
7	Disassembling.....	40
7.1	Safety.....	40
7.2	Dismounting the magnet module.....	42
7.3	Subsequent storage of the clamping device.....	42
7.4	Disposal.....	43
8	Maintenance.....	44
8.1	General.....	44
8.2	Cleaning.....	45
8.3	Preservation.....	46
8.4	Use of lubricant.....	46
8.5	Maintenance schedule.....	47
9	Trouble shooting.....	48
9.1	Safety.....	48
9.2	Trouble shooting table.....	49
9.3	Start-up after corrected fault.....	49
10	Appendix.....	50
10.1	Service Hotline.....	50
10.2	Representatives.....	50
10.2.1	Europe.....	50
10.2.2	North america.....	53
10.2.3	South america.....	53
10.2.4	Asia.....	53
10.2.5	Australia.....	54
10.2.6	Africa.....	54
	Index.....	55

1 General

1.1 Information about this manual

This manual enables safe and efficient handling of the clamping device.

The manual is a component of the clamping device and must be kept in the immediate vicinity of the clamping device where it is accessible for personnel at all times. Personnel must have carefully read and understood this manual prior to starting all tasks. The basic prerequisite for safe work is compliance with all the safety instructions and handling instructions in this manual.

Illustrations in this manual are provided for a basic understanding and may deviate from the actual model of the clamping device.

It is assumed that the reader is familiar with standard procedures, such as cleaning the mounting surfaces.

1.2 Explanation of symbols

Safety instructions

Safety instructions are indicated by symbols in this operating manual. The safety instructions are introduced by signal words that express the scope of the hazard.

The safety instructions must be strictly adhered to. You must act prudently to prevent accidents, personal injury, and material damage.



DANGER

... indicates an imminent dangerous situation that can result in death or serious injury if it is not avoided.



WARNING

... indicates a possible dangerous situation that can result in death or serious injury if it is not avoided.



CAUTION

... indicates a possible dangerous situation that can result in minor or light injury if it is not avoided.



NOTE

... indicates a possible dangerous situation that can result in material damage if it is not avoided.

Tips and recommendations



... indicates useful tips and recommendations, as well as information for efficient and trouble-free operation.

1.3 Limitations of liability

All information and instructions in this operating manual have been provided under due consideration of applicable standards and regulations, the current state of technology, as well as our many years of experience.

The manufacturer assumes no liability for damage due to:

- Failure to follow the instructions in the manual
- Non-intended use
- Deployment of untrained personnel
- Unauthorized conversions
- Technical changes
- Use of non-approved spare parts

The actual scope of delivery can vary from the explanations and graphic representations provided in this manual in the case of special versions, if supplemental order options are desired, or on the basis of the latest technical changes.

The agreed obligations in the delivery contract, the general terms and conditions, as well as delivery conditions of the manufacturer, and the statutory regulations valid at the time the contract was concluded, apply.

1.4 Balance quality



CAUTION!

Our clamping devices are balanced with balance quality G=4, in one level n=1.

The clamping of not rotationally symmetrical workpieces may not be clamped and/or only be clamped after consultation with the manufacturer.

1.5 Max. RPM



CAUTION!

The maximum permissible speed is marked on the product.

By the combination of a clamping device and an add on clamping device a reduction of the maximum permissible speed may be necessary.

- Of all RPMs of the groups specified, the **lowest given RPM** must always be used.

Note that the clamping force is influenced by the centrifugal force of the clamping elements.

- If necessary, adjust the machining force!

1.6 Copyright

This manual is protected by copyright and is provided exclusively for internal purposes.

Delivery of the operating manual to third parties, duplication in any form – including excerpts – as well as exploitation and/or communication of the content, are not permitted [except for internal use] without written approval from the manufacturer.

Actions to the contrary make damage compensation mandatory. We reserve the right to enforce additional claims.

1.7 Scope of delivery



All tools and accessories that are not included in the scope of delivery are marked as optional.

The scope of delivery of the set includes:

- 1 magnet module
- 1 special clamping head
- actuating key

1.8 Spare parts



WARNING!

Safety risk if the wrong spare parts are used!

Incorrect or defective spare parts can cause damage, malfunction, or total failure; they can also impair safety.

- Only use manufacturer's original spare parts.

Only purchase spare parts from authorized dealers or direct from the manufacturer. Addresses are in the appendix.

1.9 Warranty terms

The warranty terms are included in the manufacturer's terms and conditions.

2 Safety

This section provides an overview of all the important safety aspects for optimal protection of personnel, as well as for safe and trouble-free operation.

2.1 Responsibility of the customer

The product is used in industrial applications. Consequently the owner of the product is subject to legal industrial safety obligations.

In addition to the safety instruction in this manual, generally valid safety and accident protection guidelines, and environmental protection guidelines as well as the machines' manual must be adhered to and complied with for the area of implementation of the device.

Note in particular that the status scans of the machine must be adjusted to the respective product.



DANGER!

Risk of injury due to thrown out parts!

Incorrect machine settings may lead to the throwing out of parts.

- The status scans the machine must be set to the respective clamping device.
- Regularly check the status scans of the machine, see chapter »Maintenance Schedule«. If the end position can not be reached the product may no longer be used.
- Observe the operating instructions of the machine.



WARNING!

Risk of injury!

Declining operating force, for example by declining energy supply, may cause serious personal injury.

- The product may be used only on machines where it is ensured, that during use, the operating force does not drop.

2.2 Personnel requirements



WARNING!

Danger of injury due to insufficient qualification!

Improper handling of the clamping device can cause serious injury or material damage.

- Only have activities performed by personnel who are qualified to perform these activities.

The following qualifications are cited in the operating manual for the various activity areas.

■ **Specialized personnel**

are personnel who due to their specialized training, skills, and experience, as well as knowledge of the applicable regulations, are capable of executing the tasks assigned to them and of recognizing and avoiding possible hazards on their own.

■ **Hydraulic specialist**

The hydraulic specialist has been trained for the particular task area in which he is active and is familiar with the relevant standards and regulations. Due to his specialized training and experience the hydraulic specialist can perform tasks on hydraulic equipment and recognize and avoid possible dangers on his own.

■ **Electric specialist**

The electric specialist has been trained for the particular task area in which he is active and is familiar with the relevant standards and regulations. Due to his specialized training and experience the electric specialist can perform tasks on electric equipment and recognize and avoid possible dangers on his own.

Only persons from whom it can be expected that they reliably execute their work are considered as personnel. Persons whose capability to react is impaired, for instance through drugs, alcohol, or medication, are not approved.

- Comply with age-specific and job-specific regulations that are applicable at the installation site when selecting personnel.

2.3 Intended use

The clamping device is designed for installation in a machine tool according to CE compliant.

The clamping device should only be mounted, operated, maintained, and cleaned by instructed, specialized personnel.

Intended use also includes compliance with all the instructions in this manual.

The clamping device is to be used for the case of application contractually agreed between the producer/deliverer and the user, as well as such cases of application described in the product description which are also in accordance with the technical values.

The safe function of the clamping device is, as far as it can be foreseen, guaranteed when it is used for the intended purpose in accordance with the appropriate safety regulations.

Any use that extends beyond the intended use, or any other use of the clamping device is considered to be misuse and can cause dangerous situations.



WARNING!

Danger due to misuse!

Misuse of the clamping device can cause dangerous situations.

Particularly refrain from the following uses of the clamping device:

- Use in machines other than machine tools.
- Use in machine tools with technical data other than that specified on the clamping device.

Claims of any type due to damage arising from non-intended use are excluded.

Unintended and improper use of the Power Chuck is for example

- If workpieces are not clamped properly
- If safety regulations are disregarded and persons are working at the clamping device without additional protective devices e.g. for machining.
- If the clamping device is used for machines or tools for which it is not intended.

2.4 Personal protective equipment

Wearing of personal protective equipment is required to minimize health hazards when working with the device.

- Always wear the protective equipment necessary for the respective task when working with the device.
- Follow the instructions that have been posted in the work area.

Always wear



For all tasks always wear:

Protective work clothing

is tight-fitting work clothing with low resistance to tearing, with tight sleeves, and without projecting parts. It is primarily used to protect against entanglement by moving machine parts.

Do not wear rings, chains, or other jewelry.



Safety footwear

for protection against heavy falling parts and slipping on slippery substrates.

For special tasks wear



Special protective equipment is required when executing special tasks. Separate reference is made to this equipment in the specific sections of this manual. This special protective equipment is explained below:

Hard hat

to protect against falling and flying parts and materials.



Protective goggles

to protect eyes from flying parts and liquid splashes.



Protective gloves

to protect hands from friction, abrasion, puncture wounds, or deeper injuries, as well as from contact with hot surfaces.

2.5 Special dangers

In the following section residual risks are cited that occur due to installation of the clamping device in a machine tool. In each case the residual risks that have been determined based on a risk analysis of the machine must be specified by the customer.

- Follow the safety instructions listed here and the warnings in the other sections of this manual to reduce health hazards and to avoid dangerous situations.

Horizontal / lying parts



WARNING!

Danger of injury due to horizontal parts!

Before transporting the clamping device in horizontal condition:

- Put the clamping device on a non-slip pad
- Screw in the eye bolts

Suspended loads



WARNING!

Life-threatening danger due to suspended loads!

Some clamping devices must be lifted with a crane. When lifting the clamping devices there is a life-threatening hazard due to falling parts or parts swinging out of control.

- Never step under suspended loads.
- Comply with the instructions concerning the intended attachment points. Ensure that the sling gear is securely seated!
- Do not attach lifting gear in projecting components.
- Only use approved hoists and sling gear with sufficient bearing capacity.
- Do not use rope and belts that are torn or frayed.

Moving parts



WARNING!

Danger of injury due to moving parts!

Rotating parts of the clamping device can cause serious injuries.

- Do not reach into moving parts or handle moving parts during operation.
- Pay attention to the clearance of moving parts.
- Do not open covers when the device is in operation.
- Be aware of afterrun time:
Prior to opening the covers ensure that all parts have come to a standstill.
- Wear tight-fitting protective work clothing in the danger zone.

Wrong clamping of the workpiece



WARNING!

Danger of injury due to incorrect clamping of the workpiece!

Incorrect workpiece clamping may lead to the ejection of the workpiece and result in serious injuries.

Uneven parts can lead to incorrect clamping!

Low ferromagnetism may result in throwing out parts.

Parts with sharp edges



WARNING!

Risk of injury!

When screwing in individual components such as for example workpiece end-stops, threaded adapters and similar devices that are equipped with an external thread or wear caused by burrs, there is risk of cutting.

- The operation must be done only by qualified personnel.
- Wearing of gloves / [PSA/ Personal protective equipment] is required!



WARNING!

Danger of injury due to applied magnetism!

The clamping device is designed with a magnet function. This magnetism is built-up or dissipated manually! Existing magnetism can cause injuries.

The following precautionary measures must always be complied with:

- Only handle the magnet module when it is demagnetized!
- Never reach between the magnet module and the workpiece.
- Special carefully approach is required!



WARNING!

Danger of injury due to applied magnetism!



- Employees with cardiac pacemakers must not operate the magnet module!



WARNING!

Danger of injury due to loosening of the clamping device!

When loosening the basic clamping device, e.g. through the clamping cylinder of the machine, the magnet module is loosened and released. The magnet module can fall and cause severe injuries.

- The basic clamping device must only be loosened in order to mount the magnet module.
- To loosen the workpiece, the clamping cylinder of the machine must not be triggered!
- Prior to releasing the magnet module, it must be secured via eye bolts and a crane and demagnetized.
- Special carefully approach is required!



Fig. 1

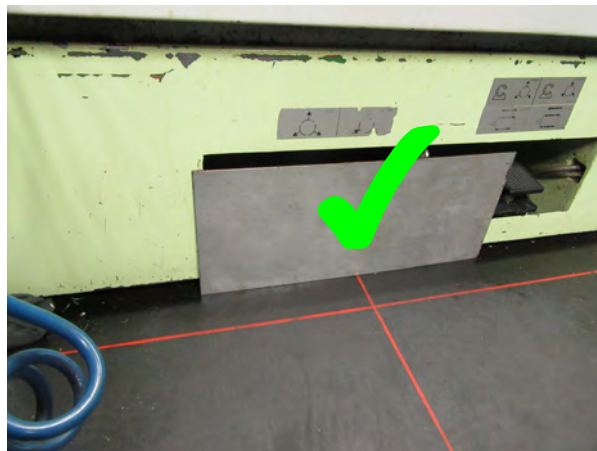


Fig. 2



Fig. 3



To prevent unintentional activation of the clamping cylinder, we recommend:

- Taking the cabled footswitch [Fig. 3] out of the action area of the worker and placing it to the side in accordance with the cable length
- In the case of stationary foot switches [Fig. 1/ Fig. 2] in the machine enclosure, we recommend that these foot switches be covered through attachment of a guard plate to protect against inadvertent opening.

2.6 Further warnings



WARNING!

Risk of injury!

Never reach for the clamping device while the spindle is rotating. Before starting to work on the mandrel, make sure the machine spindle cannot be put in motion.



WARNING!

Risk of injury!

Falling down of the clamping device or its parts can cause severe bruises and fractures. The dead weight of the clamping device or its parts can lead to high physical stress.



WARNING!

Risk of injury!

By repeated reworking or wear and tear of the clamping surfaces sharp edges and burrs may appear and lead to severe cutting damages.



CAUTION!

Damage of the adaptation clamping device!

Only loosen the adaptation clamping device in non-rotating condition!



CAUTION!

Risk of injury!

Bending into the machine work area can cause severe head injuries. Unexpected start up of the tool spindle can cause severe injury.

- Make sure that the system is pressure-free and that a restart of the machine can be excluded!



WARNING!

Risk of injury by falling components!

During the assembly / disassembly components may fall down and cause serious injury and property damage due to its weight and its size.

- For assembly / disassembly two people are required.
- To safely lift the clamping device or its individual parts always use a crane and suitable transport belts as well as a suitable assembling aid.
- Make sure that a moving or falling of the clamping device is excluded.
- For transporting with transport trolley place the clamping device and its individual parts on a non-slip pad.



NOTE!

In the product screws can be installed which are secured with sealing wax.

- The screws secured with sealing wax must not be opened.

2.7 Clamping force / implementation limits

Parameters

Symbol	Unit	Definition
d_z	mm	Machining operation, turning operation
d_{sp}	mm	Outside diameter of the attached workpiece surface
μ	-	Coefficient of friction
F_c	N	Cutting force
ν	—	Safety
F_{vk}	N	Displacement force
F_{ab}	N	Pull-off force
F_R	N	Tangential test force
H_{sph}	N/mm ²	Spec. holding power
K	-	Tilting point
M_K	Nmm	Tilting moment
M_Z	Nmm	Torque – machining
$M_{\ddot{u}v}$	Nmm	Available transferrable torque
L_w	mm	Workpiece length
L_z	mm	Distance, machining point – clamping position
M_s	Nmm	Torque – stability

Fixed values

μ	Coefficient of friction: 0.12
ν	Security: 2

Prerequisites

The clamping force of the magnet module is generated through the magnetic field of permanent magnets. The optimal clamping force is achieved when the magnetic force lines can flow unhindered through the workpiece. The magnet module does not have a positive fit connection. The clamping is achieved solely through the magnetic holding force in ferromagnetic materials. Moreover, it must be noted that in the magnet module core area [0-Ø30] no magnetic force is built up.

For the machining of workpieces, the cutting force that occurs acts as a displacement force [passive force] on the workpiece.

The displacement force must not exceed $\frac{1}{4}$ of the pull-off force. The maximum pull-off force is calculated from the specific holding power and the attached workpiece surface. Moreover, the holding power depends on the workpiece [see Table 1] and the condition of the clamping surface of the magnet module. For the implementation limit 3 conditions must be fulfilled:

1. The displacement force must be taken into account.
2. The tilting moment must not be exceeded.
3. The transferrable torque must not be exceeded.

Therefore the following must be ensured:

D > 30 mm [reason: up to approx. \varnothing 30 an adequate magnetic field is not present in the core]

1.
$$F_{VK} \leq \frac{F_{AB}}{4}$$

2.
$$M_K(\text{um Drehpunkt } K) \leq \frac{F_{ab} * d_{sp}}{2 * v}$$

3.
$$M_z \leq M_{üv}$$

$$M_z = F_c * \frac{d_z}{2}$$

$$M_{üv} = \frac{F_{ab} * d_{sp} * \mu}{2 * v}$$

Example, grinding

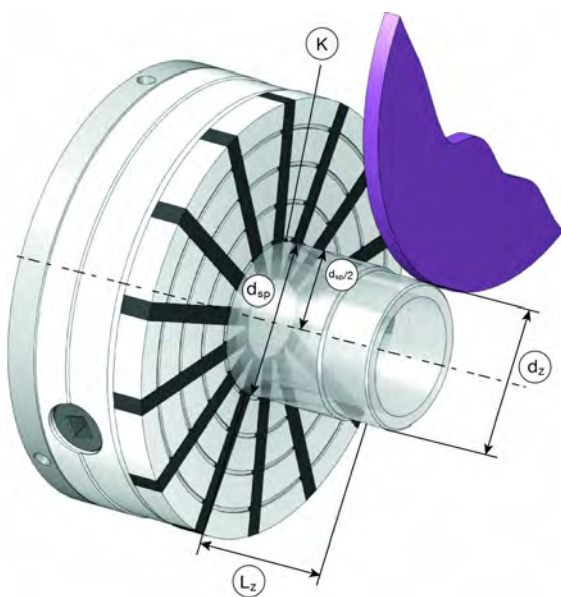


Fig. 4

Example, turning

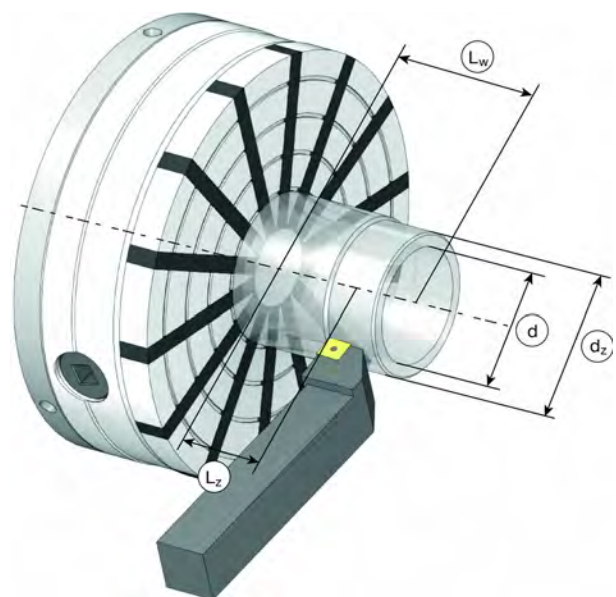


Fig. 5

Material

The clamping force depends on the material.

Material	Reduced holding power [%]	
	Status: Soft	Status: Heat-treated
Pure iron	100	100
Low-carbon steel e.g. ST37-2	94	94
Case-hardened steel e.g. C15	91	46
16MnCr5	82	41
Nitriding steel, e.g. 31CrMoV9	75	47
Quenched and tempered steel, e.g. C45	81	46
C60	80	45
Roller bearing steel, e.g. 100Cr6	82	41
Cast steel	89	89
Cast iron	44	44
Tool steel, e.g. 42CrMo4	94	94
Stainless steel 430F	50	50
Nickel	10	10

Table 1: Reduction of the holding power [%] per material

For other materials please ask the supplier. Also consider that the workpiece usually does not pull off of the clamping surface through the machining force, but rather is displaced by the clamping force. The displacement force is approx. $\frac{1}{4}$ of the pull-off force. If possible we recommend using a drive dog pin.



CAUTION!

Unsafe applications!

The following applications must be **strictly refrained** from:

- Clamping a workpiece acentrically
- Clamping a workpiece with significant imbalance
- Clamping a workpiece with significant overhang
- Clamping a workpiece with irregular support surface

Sample calculation

As a calculation example, the test set with which the functionality of the magnet module can be tested at regular intervals has been used for dimensions.

Checking of the individual conditions

1. $F_{VK} \leq F_{ab}/4$

$$F_{VK} = F_{ab} \times \mu$$

$$\mu = 0,12 \text{ (fixed constant)}$$

$$F_{ab} = A_{ab} \times H_{sph} \times \text{reduction (table 1)}$$

$$H_{sph} = 1,4 \text{ N/mm}^2$$

Reduction according to table 16MnCr5 heat-treated = 41%

$$A_{ab} = \text{Pi}/4 \times (d_{sp}^2 - d^2)$$

$$A_{ab} = \text{Pi}/4 \times ((58,4)^2 \text{mm}^2 - (49,6)^2 \text{mm}^2)$$

$$A_{ab} = 746 \text{ mm}^2$$

$$F_{ab} = 746 \text{ mm}^2 \times 1,4 \text{ N/mm}^2 \times 0,41 = 428 \text{ N}$$

$$F_{VK} = 428 \text{ N} \times 0,12$$

$$F_{VK} = 51,4 \text{ N}$$

$$F_{VK} \leq F_{ab} / 4$$

51,4 N \leq 428 N / 4 \rightarrow condition 1 is fulfilled

2. $M_K \leq M_S$

$$M_K = F_{VK} \times L_z$$

$$M_K = 51,4 \text{ N} \times 12,5 \text{ mm}$$

$$M_K = 641,3 \text{ Nmm}$$

$$M_S = (F_{ab} \times d_{sp}) / (2 \times v)$$

$$M_S = (428 \text{ N} \times 58,4 \text{ mm}) / (2 \times 2)$$

$$M_S = 6248,8 \text{ Nmm}$$

641,3 Nmm $<$ 6248,8 Nmm \rightarrow condition 2 is fulfilled

$$3. M_Z \leq M_{\ddot{U}V}$$

$$M_Z = F_c \cdot d_z / 2$$

F_c Here use known machining calculations
for the example selected

$$a_p = 0,06 \text{ mm};$$

$$f = 0,06 \text{ mm};$$

$$V_c = 120 \text{ m/min};$$

$$k_c = 4800 \text{ N/mm}^2 \text{ (hardened steels),}$$

flat turning bei $L_z = 25 \text{ mm}$,

cylindrical component $d_{sp} = d_z$

Material 16MnCr5 hardened

reducing factor in accordance with table 1 = 41%

$$F_c = \sim 22 \text{ N}$$

$$M_Z = 22 \text{ N} \cdot 58,4 \text{ mm} / 2$$

$$M_Z = 642 \text{ Nmm}$$

$$M_{\ddot{U}V} = ((F_{ab} \cdot d_{sp}) / (2 \cdot v)) \cdot \mu$$

$$F_{ab} = A_{ab} \cdot H_{sph} \cdot \text{reduction (table 1)}$$

$$F_{ab} = 746 \text{ mm}^2 \cdot 1,4 \text{ N/mm}^2 \cdot 0,41 = 428 \text{ N}$$

$$M_{\ddot{U}V} = ((428 \text{ N} \cdot 58,4 \text{ mm}) / (2 \cdot 2)) \cdot 0,12$$

$$M_{\ddot{U}V} = 749 \text{ Nmm}$$

$642 \text{ Nmm} < 749 \text{ Nmm} \rightarrow$ condition 3 is fulfilled

All three conditions are fulfilled, you can execute the machining

Checking the magnet module

Every week check whether the displacement force F_{VK} [test piece of pure iron] is greater than 105 N and $M_{\ddot{U}V}$ is greater than 2,430 Nmm.

With the test piece with the distance $r = 27 \text{ mm}$ this equals, tested with a spring balance, $F_R > 90 \text{ N}$.

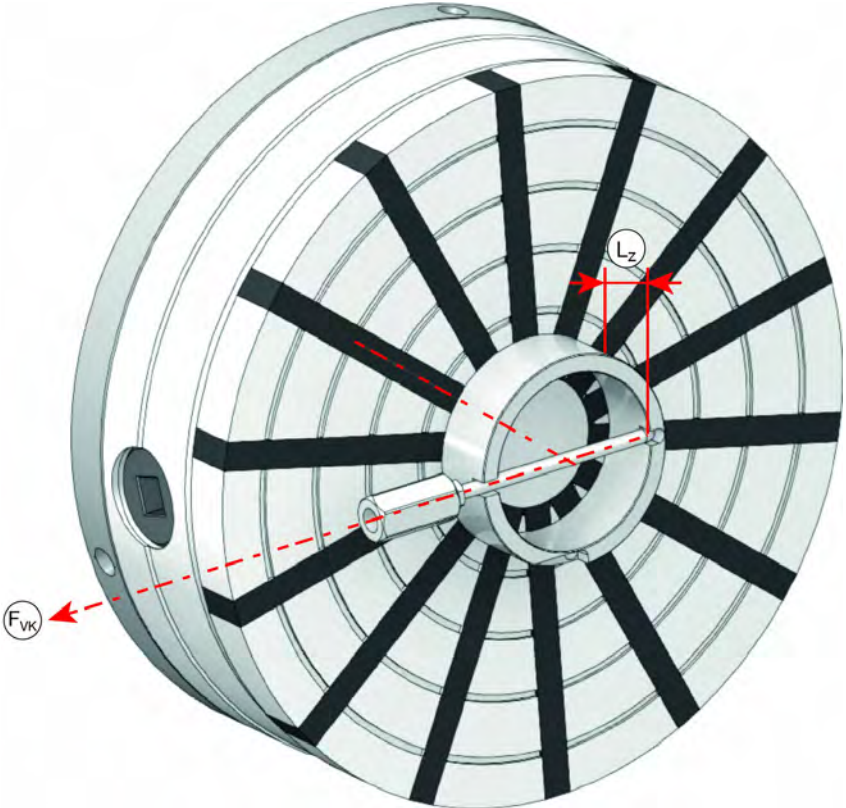


Fig. 6

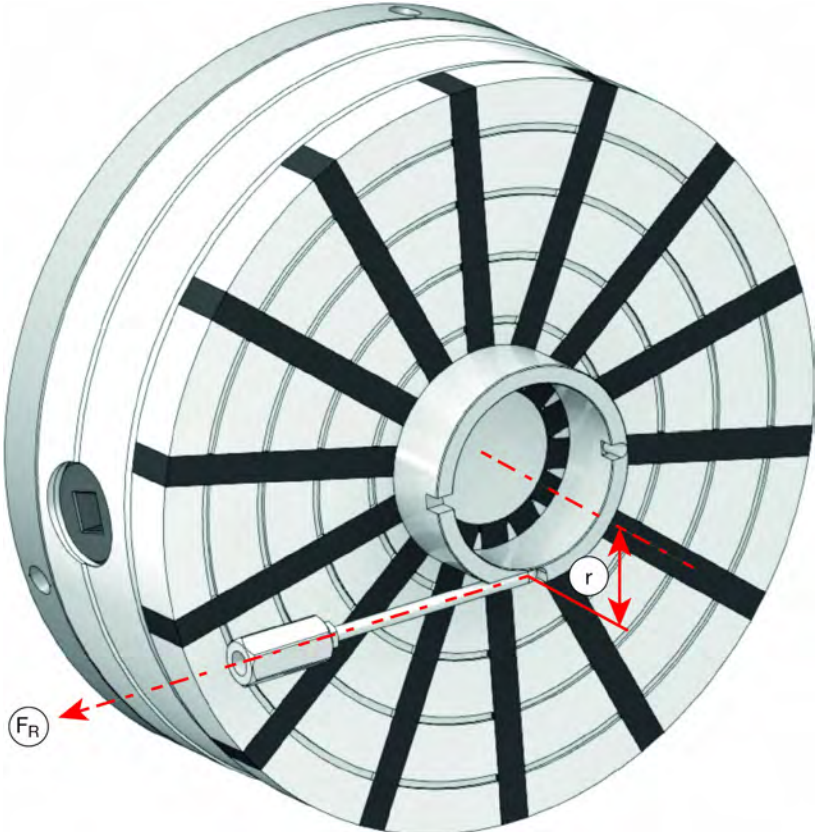


Fig. 7

2.8 Functionality



NOTICE!

With high contamination of the clamping device the functionality is no longer guaranteed.

- The cleaning and maintenance intervals must be observed.

2.9 Environmental protection



NOTE!

Environmental hazard due to incorrect handling!

Incorrect handling of environmentally hazardous substances, particularly improper disposal, can cause significant environmental damage.

- Always comply with the instructions cited below
- If environmentally harmful substances should inadvertently get into the environment, initiate suitable measures immediately. If in doubt notify the responsible municipal authority about the damage.

The following environmentally harmful substances are used:

Lubricants

Lubricants like greases and oils can contain toxic substances. Ensure that they do not get into the environment.

The device must be disposed of by a specialized disposal company.

To achieve trouble-free operational performance of the clamping device only use HAINBUCH lubricants. See the appendix for reference addresses.

3 Technical data

3.1 General information

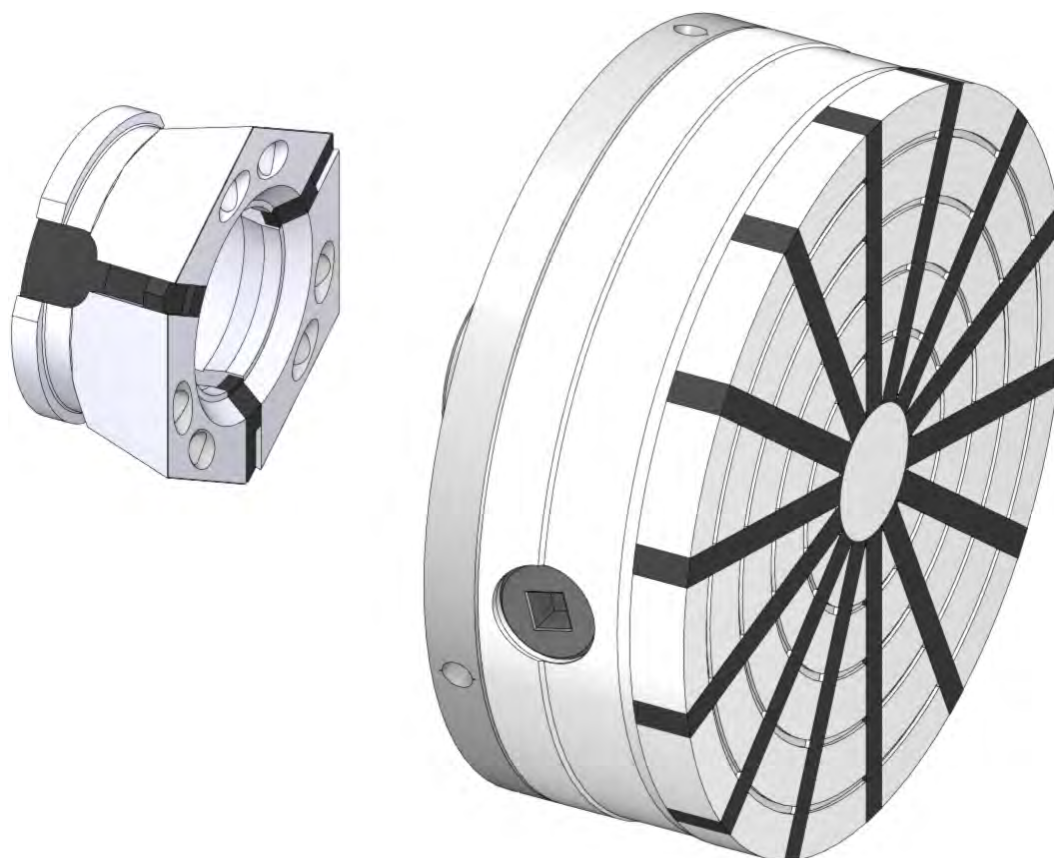


Fig. 8

Size clamping device	Variant	Order no. starter set	Dimensions	Speed max. [1/min]	Holding force max. [N/cm ²]	Minimum draw force – basic clamping device [kN]
52	RD	10825/0001	Ø 200 x 107	2000	140	10
	SE	10824/0001				
65	RD	10825/0002				
	SE	10824/0002				
80	RD	10825/0003				
100	RD	10825/0004				
	SE	10824/0003				



WARNING!

Risk of injury!

Using false technical data can lead to serious personal injury and property damage.

- The technical data [label on the product, assembly drawing] must be observed and may not be modified by the operator!

3.2 Operating conditions

Environment	Specification	Value	Unit
	Temperature range	15 - 65	°C

3.3 Power specifications



NOTE!

Material damage if the power specifications do not agree!

If the power specifications of base clamping device and add on clamping device do not agree, severe damage extending to total damage can occur to add on clamping device and machine.

- Only operate base clamping devices and add on clamping devices in machines with the same power specifications.

Information on maximum holding force H_{sph} and minimum axial drawtube force of the base clamping device is provided on the module.

3.4 Type designation

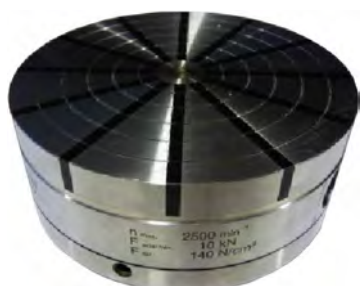


Fig. 9

The type designation is on the magnet module and includes the following information:

1. ID no. [marked with the # symbol]
z.B.: #10824/0003
2. Type designation and size
e.g.: Magnet module 200

4 Structure and function

4.1 Overview and brief description

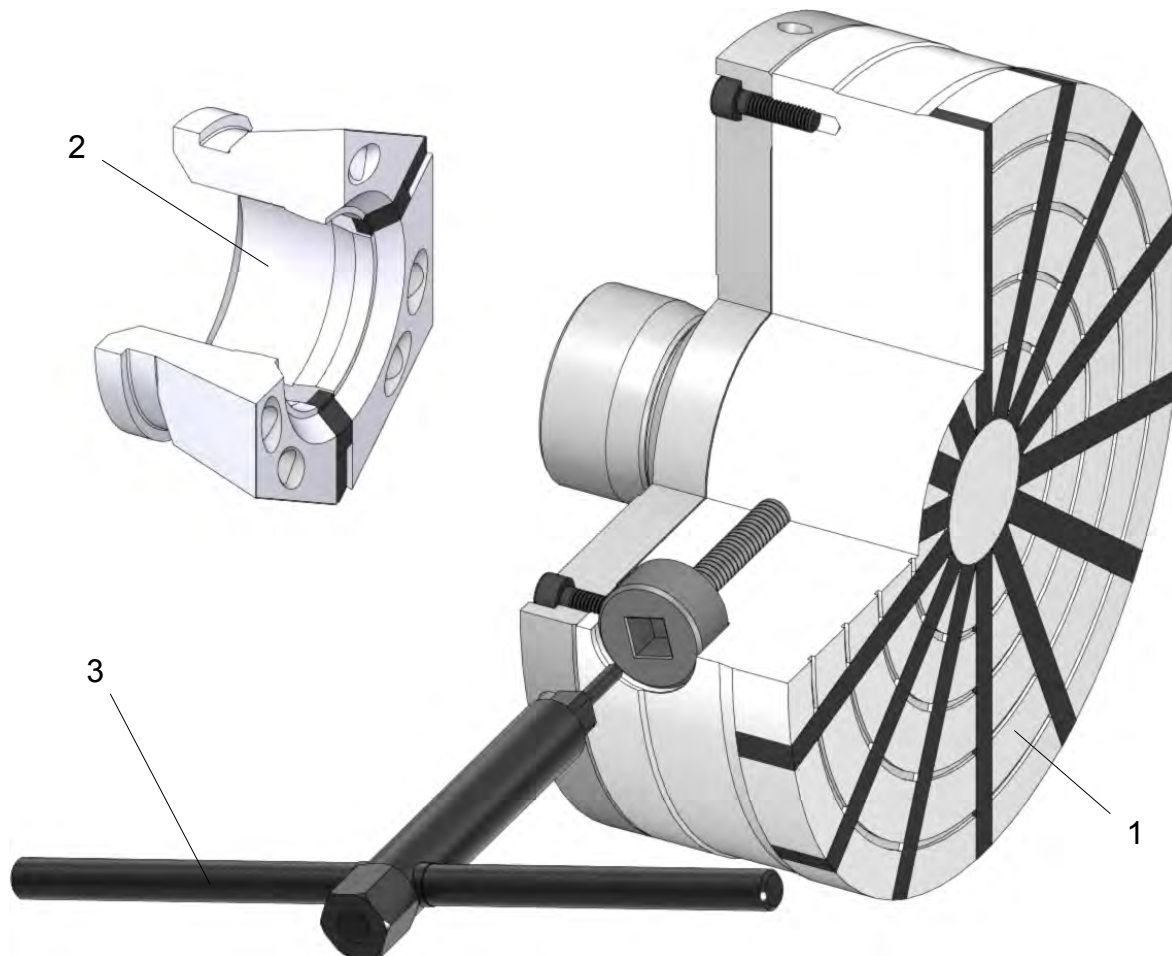


Fig. 10

- 1. Magnet module
- 2. Clamping head

- 3. Clamping key

Brief description

With the magnet module you can clamp components axially on a neodymium magnet.

The HAINBUCH magnet module is set-up in only 30 seconds. Your basic clamping device is already mounted. You exchange the clamping head that is included in the scope of delivery.

When clamping, the magnetic clamping device is pulled onto the flat contact area of your basic clamping device.

If, after initial installation, the magnet module is planed flat and the install position is marked, a planar change-over accuracy of 2 μm can be achieved. The workpiece itself is clamped by hand on the magnet.

4.2 Spare parts / accessories

The spare parts / accessories described here are not included in the scope of delivery.

For each product, specially designed spare parts and accessories, which are tuned to the maximum speed, are available.

The perfect and precise function of HAINBUCH products is only guaranteed when using original HAINBUCH spare parts and accessories.

Lubricating grease and grease gun are required for cleaning and preservation of the clamping device. The lubricating grease is also specially matched for protection of the vulcanized segments of the clamping elements and increase their service life and elasticity by a significant factor.

4.2.1 Clamping head

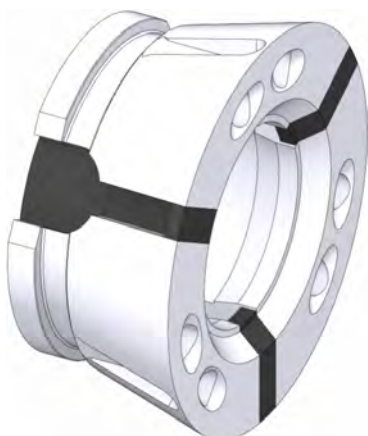


Fig. 11

The special clamping heads consist of hard steel and rubber segments, which are connected by a vulcanization.

The special clamping heads are used to hold the magnet module and have a special interface.

4.2.2 Clamping head SE

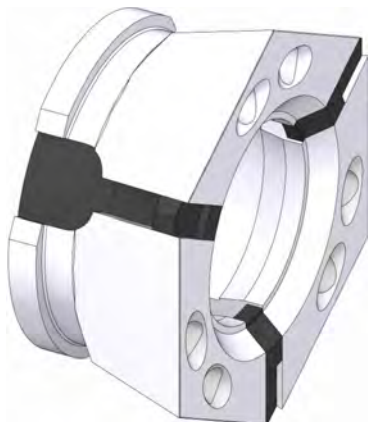


Fig. 12

The special clamping heads consist of hard steel and rubber segments, which are connected by a vulcanization.

The special clamping heads are used to hold the magnet module and have a special interface.

4.2.3 Key

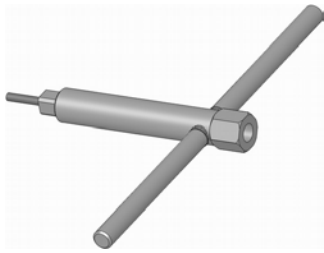


Fig. 13

The key has the order number NH.611/0002, it can be ordered from HAINBUCH.

5 Transporting, packaging and storing

5.1 Safety instructions for transporting

Unbalanced package



WARNING!

Danger of falling due to an unbalanced package

Packed goods can have an unbalanced package. If attached incorrectly the package can tip and cause life-threatening injuries.

- Note the markings on the packages.
- Attach the crane hook in such a manner that it is located above the center of gravity.
- Carefully lift and see if the load tilts. If necessary change the attachment.



Transport!

- For transport always use a suitable clamping means / crane.
- Make sure that a rolling / falling of the clamping device is not possible.

5.2 Symbols on the packaging



Fragile

Identifies packages with fragile or sensitive contents. Handle the packed goods with care; do not allow them to fall, and do not subject them to impact.



Protect from moisture

Keep packed goods dry and protected against moisture.

5.3 Transport inspection

Check delivery immediately upon receipt to ensure that delivery is complete and to identify any transport damage.

Proceed as follows if there is apparent external damage:

- Do not accept the delivery, or only accept it with reservation.
- Note the extent of transport damage on the transport documents or on the transport company's delivery ticket.
- Submit a complaint.



Report any defect as soon as it is detected. Claims for damage compensation can only be enforced during the applicable periods for giving notice of lack of conformity.

5.4 Unpacking and inner-company transport



From about weight 15 kg there are also threaded holes in the circumference of the add on clamping device. Lifting eye bolts can be screwed into these threaded holes.

To safely lift the add on clamping device out of the package it must be hooked into a crane depending on the weight.

For transporting with transport trolley the add on clamping device must be positioned in standing condition. Make sure that a non-slip pad has been laid.

All tools and accessories which are not in scope of delivery are marked as optional in the operating instructions.

- Two people are required for this task.
- Special tools required:
 - Crane from weight 15 kg
 - Eye bolts
- 1. Screw lifting eye bolts into the thread in the front face of the add on clamping device.
- 2. Hook the load-handling equipment into the lifting eye bolts.

3. Carefully lift the add on clamping device out of the transport packaging and put it down on a non-slip pad.
4. Prevent the add on clamping device against rolling away.

5.5 Packaging

About the packaging

Individual packages are packed according to the expected transport conditions. Environmentally-friendly materials have been used exclusively for the packaging.

Packaging should protect the specific components from transport damage, corrosion, and other damage until installation. Therefore do not destroy the packaging, remove it just before installation.



The packed goods are sealed in foil airtight and packed in cartons. See the »Technical Data« section for the specific weight of the respective sizes.

Handling packaging materials

Dispose of packaging materials in accordance with the respectively valid statutory regulations and local guidelines.



NOTE!

Improper disposal causes environmental damage!

Packaging materials are valuable raw materials and in many cases they can be reused, or they can be effectively treated and recycled.

- Dispose of packaging materials in an environmentally responsible manner.
- Comply with locally applicable disposal guidelines. If necessary commission a specialized company to dispose of packaging.

5.6 Storing



Under certain circumstances instructions for storage and subsequent storage are affixed to the packages that extend beyond the requirements cited here. Comply with these instructions accordingly.

Storage of packages

Only store packages under the following conditions:

- Do not store outdoors.
- Store in a dry and dust-free location
- Do not expose to aggressive media
- Protect from direct sunlight
- Avoid mechanical vibration
- Storage temperature: 15 bis 35 °C
- Relative humidity: max. 60 %
- For storage periods longer than 3 months:
 - Check the general condition of all parts and the packaging at regular intervals.
 - Touch up or re-apply anti-corrosion agents as needed

Subsequent storage of the clamping device

Only re-store the clamping device under the following conditions:

- Thoroughly clean the clamping device prior to subsequent storage [see section »Cleaning«]
- Thoroughly oil and grease the clamping device [see section »Cleaning«].
- Store the clamping device in airtight foil
- The clamping device must be stored securely in position. If this is not guaranteed, use a suitable container for the clamping device or equip the shelf with a circumferential securing edge.

6 Assembly



WARNING!

During the initial installation of the clamping device severe injuries may occur.

- The initial installation must be done only by qualified personnel.
- All screws remaining in the clamping must be tightened firmly.
- All tools and keys must be removed after installation.
- Always wear personal protective equipment!

6.1 Pre-consideration

- To avoid precision error clean the screw joint surfaces and also the mating surfaces, see »Maintenance«.

The ex works wetting of the plate surfaces and the clamping element is only corrosion protection. It's not functionally lubricated.

- Note that the function surfaces [plate surface, mating surface, cone surface and seal surface] may not be damaged.



CAUTION!

Risk of injury!

Wear safety shoes during the assembly and maintenance work.

Make sure that the starting of the spindle is impossible.



WARNING!

Risk of injury due to unauthorized release of the clamping device.

When releasing the base clamping device, e.g. by the clamping cylinder of the machine, the magnet module will be loosened and released. The magnet module may fall and cause severe injuries.

- Make sure that the clamping cylinder will not be actuated inadvertently, see »special dangers«.

6.2 Preparation

The total weight of the jaw module depends on the size and can be as much as 15 kg.



NOTE!

Material damage due to falling of the jaw module!

When mounting the jaw module can fall and be damaged e.g. may cause material damage at the machine.

- Two people are always required for this task.
- Always handle carefully with the jaw module
- Always wear safety footwear.

6.3 Installation



WARNING!

Danger of injury due to unintentional start-up of the tool spindle!

Unexpected start up of the tool spindle can cause severe injury.

- Only run the machine in set-up mode or jog mode.
- Always remove immediately all the tools and wrenches from the clamping device after use.
- Unscrew all eye bolts from the clamping device and remove them from the interior of the machine.
- Prior to switching on automatic mode close all protective doors or hoods that are present on the machine tool.



WARNING!

Risk of injury!

Bending in the working area of the machine can cause severe head injuries!



Transport!

- For transport always use a suitable clamping means / crane.
- Make sure that a rolling / falling of the clamping device is not possible.



WARNING!

Danger of injury due to vertical suspended spindle!

Bending into the machine work area when assembling overhead can cause severe head injuries.

- Secure components prior to overhead assembly.
- For assembly on a vertically suspended spindle always use a suitable mounting aid.

6.3.1 Assembly / disassembly of the clamping head



For adapting the magnet module to a chuck [RD/SE] a special clamping head is required. Such a special clamping head is in scope of delivery of the set and can be re-ordered from HAINBUCH.



For inserting/removing the clamping head move the coupling of the clamping device to front end position.

Depending on the model of the clamping head the handling of the changing fixture is easier or more difficult.

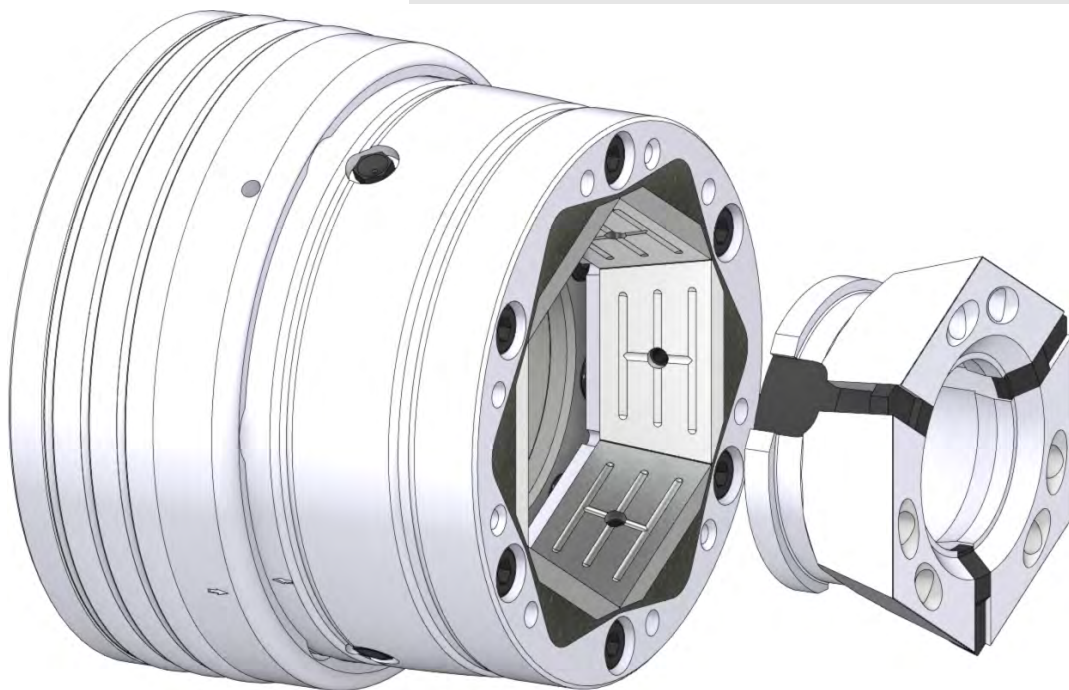


Fig. 14 *

* Illustration only exemplary



WARNING!

Danger of violent pressure to hands and fingers!

- Before working at the installed clamping device make sure that starting of the machine is impossible.
- Only run the machine in set-up mode or jog mode.
- During operation never reach into the coupling or slot area of the clamping head nor in the changing fixture.

6.3.2 Mounting the magnet module

On the flange side of the magnet module there is a clamping pin with cone.

To mount the magnet module the following steps are required:

1. Move the basic clamping device into unclamped position.
2. Mount the special clamping head in the basic clamping device, see »Mounting / dismantling the clamping head«.
3. Screw the transport lifting eye bolts into the circumference of the magnet module and secure it on a crane
4. Insert the magnet module into the special clamping head to the end-stop.
5. Move the basic clamping device into clamped position.

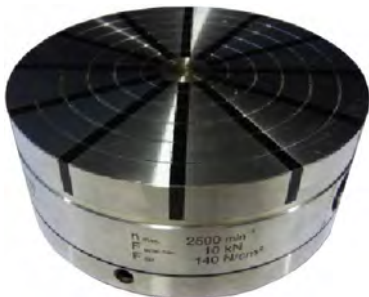


Fig. 15

The magnet module is mounted.

6.3.3 Commissioning the magnet module



To achieve the best possible face run precision, HAINBUCH recommends visually marking the magnet module in the radial alignment of basic clamping device to add on clamping device or bring already existing characteristics into agreement to uniquely define the radial position.

Face run

For the commissioning, as well as for wear of the magnetic clamping surface, rework of the clamping surface may be necessary. Regrind or return the clamping surface of the magnet module in a low clamping depth-feed ratio $[a_p/f]$, to achieve the desired face run characteristic here.

- For each use of a different constellation of machine and add on clamping device a face run correction can be required.

The min. length [magnet module + flange] must not exceed 67 mm.

6.3.4 Operating the magnet module



WARNING!

Danger of injury due to applied magnetism!

The clamping device is designed with a magnet function. This magnetism is built-up or dissipated manually! Existing magnetism can cause injuries.

The following precautionary measures must always be complied with:

- Only handle the magnet module when it is demagnetized!
- Never reach between the magnet module and the workpiece.
- Special carefully approach is required!



WARNING!

Danger of injury due to applied magnetism!



- Employees with cardiac pacemakers must not operate the magnet module!

Clamping the workpiece

The magnet module is manually operated!

To clamp a workpiece, proceed as follows:

- Clean the clamping surface of the magnet module and the contact surface of the workpiece. Any burrs and unevenness must be removed.
- Position the workpiece on the magnet module.
- Switch on the magnet module by turning the chuck wrench approx. 90° clockwise. This generates approx. 50% of the clamping force



The workpiece will now be held by the magnetism of the magnet module.

- If necessary, align the workpiece at reduced clamping force.
- Switch on the full holding power by turning the wrench to the end-stop:
 - Guide the chuck wrench carefully into end position.
 - Do not exert any additional force, to ensure that the end-stop pin is not damaged.
- Remove the wrench.
- Attach the shielding.

Loosen workpiece

To loosen a workpiece, proceed as follows:

- Safeguard the workpiece against falling.
- Turn the chuck wrench counter-clockwise to the end-stop.
- Remove the workpiece.



If the workpiece still adheres [e.g. for tool steel]:

- Loosen the workpiece by lightly tapping it.

6.4 Tests



NOTE!

Material damage due to damaged adaptation clamping device

Damaged, incomplete, or unbalanced Add on clamping devices can significantly damage or even destroy the machine and the workpiece.

- Only mount undamaged, complete, and precisely balanced add on clamping devices.
- If in doubt contact the manufacturer.

Ensure the following points prior to each installation and start-up of the clamping device:

- All rubber segments must be intact; this means that they are neither torn, nor are they porous at any point.
- All edges and bearing surfaces are intact; this means that they are neither broken nor do they show any signs of wear.
- The set speed of the machine tool should not ex-

ceed the maximum permissible speed of the clamping device.

- The axial clamping force of the machine must be sufficiently high.
- All mounting tools must be removed from the interior of the machine.
- The workpiece must be clamped with sufficient holding power.

6.5 Activities after production is concluded



When the machine is switched on after a production break, if necessary the clamping cylinder must be activated. For this it may be necessary [depending on the machine controller] to dismount the magnet module.

- If necessary dismount the magnet module, see »Disassembly«.

7 Disassembling

If there is break in production prior to switching off the machine the magnet module must be dismantled and properly stored in accordance with the manufacturer's specifications [see the section »Transport, packaging, storage«].

Prior to disassembling:

- Put the machine in set up mode.
- Remove fuels and auxiliary materials, as well as residual processing materials and dispose of these items in an environmentally-responsible manner.



When the machine is switched on after a production break, if necessary the clamping cylinder must be activated. For this it may be necessary [depending on the machine controller] to dismantle the magnet module.

- If necessary dismantle the magnet module, see »Dismounting the magnet module«.

7.1 Safety



WARNING!

Risk of injury due to falling parts!

When dismantling, components can fall and cause severe injury and material damage.

- Two people are always required for this task.
- Use a crane.
- For dismantling on an inverted vertical spindle always use a suitable mounting aid.



WARNING!

Danger of injury due to vertical suspended spindle!

Bending into the machine work area when assembling overhead can cause severe head injuries.

- Secure components prior to overhead assembly.
- For assembly on a vertically suspended spindle always use a suitable mounting aid.



WARNING!

Danger of injury due to applied magnetism!

The clamping device is designed with a magnet function. This magnetism is built-up or dissipated manually! Existing magnetism can cause injuries.

The following precautionary measures must always be complied with:

- Only handle the magnet module when it is demagnetized!
- Never reach between the magnet module and the workpiece.
- Special carefully approach is required!



WARNING!

Danger of injury due to applied magnetism!



- Employees with cardiac pacemakers must not operate the magnet module!



Transport!

- For transport always use a suitable clamping means / crane.
- Make sure that a rolling / falling of the clamping device is not possible.

7.2 Dismounting the magnet module



WARNING!

Danger of injury due to loosening of the clamping device!

When loosening the basic clamping device, e.g. through the clamping cylinder of the machine, the magnet module is loosened and released. The magnet module can fall and cause severe injuries.

- Ensure that the clamping cylinder is not activated unintentionally, see »Special dangers«.

For disassembly of the magnet module the following steps are required:

1. Screw the transport lifting eye bolts into the circumference of the magnet module and secure it on a crane.
3. Move the basic clamping device into unclamped position.
4. Take the magnet module off of the basic clamping device and set it down in a safe position.

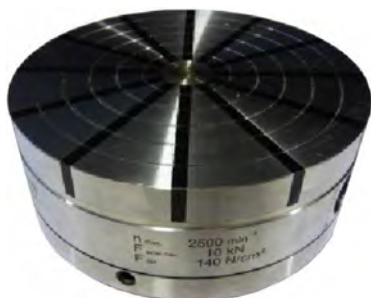


Fig. 16

5. Disassembly the special clamping head in the basic clamping device, see »Disassembly of the special clamping head«.

7.3 Subsequent storage of the clamping device

The clamping device must be cleaned and treated with corrosion protection for subsequent storage [see section »Cleaning«].



NOTE!

The storage conditions are specified in the section »Transport, packaging and storage«.

7.4 Disposal

If a return or disposal agreement has not been concluded, then recycle disassembled components.



CAUTION!

Danger of injury due to escaping fluids!

Hydraulically-operated or pneumatically-operated clamping devices can contain fluid residues. Uncontrolled escape of the fluids can cause injuries.

- Open the pressure relief screws and let the remaining fluids flow off.
- Dispose of the fluids.



NOTE!

Improper disposal causes environmental damage!

Lubricants and other auxiliary materials are subject to treatment as special waste, and should only be disposed of by approved specialist companies!

Local municipal authorities or specialized disposal companies provide information on environmentally-responsible disposal.

8 Maintenance

Environmental protection

Comply with the following instructions for environmental protection when performing maintenance work:

- At all lubricating points where lubricant is applied by hand, remove escaping, used, or excess grease, and dispose of it in accordance with applicable local regulations.
- Collect used oil in suitable containers and dispose of it in accordance with applicable local regulations.

8.1 General

Cleanliness of the appropriate end-stop as well as the guidance diameters are conditions for reaching the concentricity and perpendicularity tolerances. Clean these surfaces with an appropriate cleaner.



CAUTION!

Risk of injury!

Comply with the hazard guidelines issued by the respective manufacturer.



CAUTION!

Contamination can result in a considerable loss of clamping force in the basic clamping device.

- The maintenance and cleaning intervals of the basic clamping device must be strictly complied with.
- As part of these maintenance intervals, a regular check of the maintenance status of the basic clamping device through static clamping force measurement devices is strictly required!



WARNING!

Danger of injury due to applied magnetism!

The clamping device is designed with a magnet function. This magnetism is built-up or dissipated manually! Existing magnetism can cause injuries.

The following precautionary measures must always be complied with:

- Only handle the magnet module when it is demagnetized!
- Never reach between the magnet module and the workpiece.
- Special carefully approach is required!



WARNING!

Danger of injury due to applied magnetism!



- Employees with cardiac pacemakers must not operate the magnet module!

8.2 Cleaning



NOTE!

Material damage if cleaned with compressed air!

Cleaning the adaption clamping device with compressed air can force metal chips into thread and grooves. This can damage or even destroy the add on clamping device.

- Never clean the add on clamping device with compressed air!
- Special tools required:
 - Ester-free, non-polar cleaning agent
 - Soft, lint-free cloth
 - 1. Dismount the add on clamping device [see section »Dismounting the add on clamping device«].
 - 2. Clean all the components listed below with cleaning agent and a cloth; remove all oil and grease residues:
 - Clamping pin with cone
 - clamping surface

8.3 Preservation

- Special tools required:
 - Preservation oil
 - Oil stone
 - Soft, lint-free cloth
- 1. Apply a thin coat of oil to all inner and outer surfaces of the add on clamping device. Take up excess oil with a cloth.
- 2. Pack the add on clamping device airtight in foil. Place it on a level, impact-free storage location and safeguard it from falling.

8.4 Use of lubricant

With the usage of lubricant you may only use grease that corresponds to the requirements concerning bond, pressure-stability and solubility in lubricating coolant. In addition no dirt particles may be in the grease; they cause run errors if they come in in-between two mating surfaces.

We recommend for this the following lubricant:

HAINBUCH grease

See optional Accessories

Alternatives:

Lubricant	Manufacturer	Product
Universal grease	OKS	OKS 265
	MicroGleit	GP 355
	Klüber	QNB 50
	Zeller & Gmelin	DIVINOL SD24440
	Bremer & Leguill	RIVOLTA W.A.P.
Special grease	Klüber	MICROLUBE GL 261

8.5 Maintenance schedule

Maintenance tasks are described in the sections above that are required for optimal and trouble-free operation.

If increased wear is detected during regular inspections, then reduce the required maintenance intervals according to the actual indications of wear.

Contact the manufacturer, [see the service address on the back] if you have questions concerning maintenance tasks and intervals.

Interval	Maintenance task
Daily	Perform a visual inspection, particularly on the clamping and end-stop face, to detect damage of the add on clamping device in good time. If heavily soiled, complete cleaning [see section »Cleaning«].
	Check switching mechanism; it must be function without a major expenditure of force and without a lot of play. Do not use the magnet module if the switching mechanism does not function effectively.
Weekly	Check the clamping surface and rework if necessary. The time interval is based on the degree of damage of the clamping surface. See section »Commissioning«.
	Visual inspection of the pole plate. This must be replaced as soon as the holes of the mounting screws become visible.
	Check the switching mechanism. It must be repaired or replaced if there is excessive play.



WARNING!

When opening the magnet module the balance of the magnet system is disturbed and must always be restored before it is placed in service again.

- This work must be only be executed by the manufacturer or by an authorized workshop.

9 Trouble shooting

Possible fault causes and the tasks to correct these faults are described in the following section.

If faults occur more frequently, the maintenance intervals must be shortened to correspond to the actual system load.

Contact the manufacturer if there are faults that cannot be corrected by following the instructions below; see the service address on the back of this operating instruction.

9.1 Safety

Trouble shooting

The following always applies:

1. For faults that pose a direct danger for personnel and or property immediately execute the emergency-stop function of the machine.
2. Determine the cause of the fault.
3. If correction of the fault requires work in the danger zone, put the machine in set-up mode.
4. Immediately inform the responsible parties at the installation site of the fault.
5. Depending on the type of fault, either have authorized specialized personnel correct the fault, or correct it yourself.



The trouble shooting table provided below lists personnel who are authorized to correct the fault.

6. If there is a fault that was not caused by the base clamping device and/or add on clamping device the cause of the fault may be in the machine area. See the operating manual for the machine in this regard.

9.2 Trouble shooting table



The faults and causes described in the fault table are based both on the adaptation clamping device as well as the adapted magnet module.

Fault	Possible cause	Trouble shooting	Corrected by
End position scan not successful or end positions not reached	Contamination in the coupling area of the basic clamping device	Clean the coupling area of the basic clamping device.	Specialist
	Insufficient stroke	Contact the machine manufacturer	Machine manufacturer
Clamping force is too low	Insufficient hydraulic pressure on the clamping cylinder	Check the machine-side hydraulic aggregate.	Hydraulic specialist
	Defective clamping cylinder or blocked drawtube	Contact the machine manufacturer.	Machine manufacturer
Plane-parallel dimensional deviation on the workpiece	Face runout of the magnet module	Check face run on the magnet module.	Specialist
	Face runout of the basic clamping device	Check flat contact on the basic clamping device and remount magnet module if necessary. Correct face run again.	Specialist
Workpiece falls down	Insufficient ferromagnetism of the workpiece	Check Material class table, change machining data.	Specialist
		Check holding power.	Specialist

9.3 Start-up after corrected fault

After correcting the fault execute the following steps to start up again:

1. Reset the emergency-stop device
2. Acknowledge the fault on the machine tool controller
3. Ensure that no one is in the danger zone
4. Start the machine tool

10 Appendix

10.1 Service Hotline

Order Hotline

Quickly ordered and delivered. A call is all it takes:
+49 7144. 907-333

Schedule Hotline

Current status of your order? Just call:
+49 7144. 907-222

24h emergency call

Has there been a crash or other technical emergency?

Our experts are at your service around the clock:
+49 7144. 907-444

10.2 Representatives

The sales partners and service employees listed below are available for further consultation or support.

10.2.1 Europe

Austria

HAINBUCH in Austria GmbH
SPANNENDE TECHNIK
Pillweinstr. 16
5020 Salzburg
Phone +43 662 825309
Fax +43 662 62500720
E-mail: verkauf@hainbuch.at
Internet: www.hainbuch.at

Bulgaria

Aton MI Ltd
63 Shipchenski prohod Blvd., floor: 9,
office No. 92
1574 Sofia
Phone +359 879050951
E-mail: sales@smartcnc.eu
Internet: www.smartcnc.eu

Denmark

Jørn B. Herringe A/S
Ramsømagle, Syvvejen 31
4621 Gadstrup
Phone +45 46170000
Fax +45 46170001
E-mail: sales@jbh-tools.dk
Internet: www.jbh-tools.dk

Belgium

BIS Technics bvba/sprl
Zevenputtenstraat 20
3690 Zutendaal
Phone +32 89518890
Fax +32 89518899
E-mail: info@bistechnics.com
Internet: www.bistechnics.com

Czech Republic

TMC CR s.r.o.
Masná 27/9
60200 Brno
Phone +420 533433722
Fax +420 548217219
E-mail: info@tmccr.cz
Internet: www.tmccr.cz

Estonia, Latvia, Lithuania

DV-Tools OÜ
Peterburi tee 34/4
11415 Tallinn
Phone +372 6030508
Fax +372 6030508
E-mail: info@dv-tools.ee
Internet: www.dv-tools.ee

Finland

Oy Maanterä Ab
PL 70 Keinumäenkuja 2
01510 Vantaa
Phone +358 29006130
Fax +358 290061130
E-mail: maantera@maantera.fi
Internet: www.maantera.fi

Great Britain

HAINBUCH UK Ltd.
WORKHOLDING TECHNOLOGY
Newbury
Keys Business Village, Keys Park Road
Hednesford, Staffordshire
WS12 2HA
Phone +44 1543 278731
Fax +44 1543 478711
Mobile +44 7980212784
E-mail: nick.peter@hainbuch.co.uk
Internet: www.hainbuch.com

Greece

CNCMECHANICS
Afroditis 16 - N. Ionia
14235 Athens
Phone +30 6948 860408
Fax +30 210 2753725
E-mail: info@cncmechanics.gr
Internet: www.cncmechanics.gr

Ireland

HAINBUCH UK Ltd.
WORKHOLDING TECHNOLOGY
Newbury
Keys Business Village, Keys Park Road
Hednesford, Staffordshire
WS12 2HA
Phone +44 1543 278731
Fax +44 1543 478711
Mobile +44 7980212784
E-mail: nick.peter@hainbuch.co.uk
Internet: www.hainbuch.com

Netherlands

BIS Specials
[Brandenburg Industry Service Dongen B.V.]
Regelinkstraat 11
7255 CC Hengelo [Gld.]
Phone +31 313482566
Fax +31 313482569
E-mail: info@bisspecials.com
Internet: www.bisspecials.com

France

HAINBUCH France Sarl
TECHNIQUE DE SERRAGE
1600 route de la Lième
ZI Lons Perrigny
39570 Perrigny
Phone +33 384876666
Fax +33 384876677
E-mail: info@hainbuch.fr
Internet: www.hainbuch.fr

Great Britain

Leader Chuck Systems Limited
PO Box 16050
Tamworth, B77 9JP
Tel. +44 1827 700000
Fax +44 1827 707777
E-mail: information@leaderchuck.com
Internet: www.leaderchuck.com

Hungary

GIMEX Hydraulik GmbH
Selyem utca 1.
9025 Győr
Phone +36 96525588
Fax +36 96427239
E-mail: info@gimex.hu
Internet: www.gimex.hu

Italy

HAINBUCH Italia srl
TECNICA DEL SERRAGGIO
Via Caduti di Nassiriya 5
22063 Cantu' [Co]
Phone +39 0313355351
Fax +39 031611570
E-mail: info@hainbuchitalia.it
Internet: www.hainbuchitalia.it

Norway

Onstad Maskin A/S
Chr. H. Blomsgt. 13
3717 Skien
Phone +47 35532373/74
Fax +47 35532375
E-mail: postmaster@onstadmaskin.no
Internet: www.onstadmaskin.no

Poland

BIM Sp. z o.o.
Złotniki, ul. Kobaltowa 6
62-002 Suchy Las
Phone +48 616232041
Fax +48 616232040
E-mail: bim@bim-polska.pl
Internet: www.bim-polska.pl

Romania

Banatech srl. – connecting technologies
Ep. Miron Cristea 26
325400 Caransebes, Caras Severin
Phone +40 255517175
Fax +40 355814125
Mobile +40 749220553
E-mail: office@banatech.ro
Internet: www.banatech.ro

Slovakia

TNS s.r.o.
Vácka ulica 4109/10
01841 Dubnica N/V
Phone +421 424450873
Fax +421 424440406
E-mail: tns@tnssro.sk
Internet: www.tnssro.eu

Slovenia

Elmetool d.o.o.
Prvomajska ulica 62
5000 Nova Gorica
Phone +386 53303300
Fax +386 53303304
E-mail: info@elmetool.si
Internet: www.elmetool.si

Sweden

HAINBUCH Svenska AB
SPÄNNANDE TEKNIK
Kemistvägen 17
18379 Täby
Phone +46 87327550
Fax +46 87327650
E-mail: hainbuch@hainbuch.se
Internet: www.hainbuch.se

Turkey

Hidkom
Organize Sanayi Bölgesi
75. Yil CD. Demirciler Sit. B Blok No.2
16159 Nilüfer / Bursa
Phone +90 2242438292
Fax +90 2242436365
E-mail: hidkom@hidkom.com
Internet: www.hidkom.com

Poland

ARCO Andrzej Rudenko
UL.NIEZAPOMINAJKI 6
05-500 NOWA IWICZNA
Phone +48 223532705
Fax +48 222702722
E-mail: info@arcotools.pl
Internet: www.arcotools.pl

Russia

ROSNA Engineering LLC
Sveaborgskaya street, 12, Letter »A«, office 20N,
196105 Saint-Petersburg
Phone +7 812 4016767-100
Fax +7 812 4016767
E-mail: rosna@rosna.spb.ru
Internet: www.rosna.spb.ru

Slovakia

TMC CR s.r.o.
Masná 27/9
60200 Brno
Phone +420 533433722
Fax +420 548217219
E-mail: info@tmccr.cz
Internet: www.tmccr.cz

Spain, Portugal

ATM S.L
C/. Gran Bretanya, 16
Pol. Ind. Pla de Llerona
08520 Les Franqueses del Vallès
[Barcelona]
Phone +34 938700885
Fax +34 938791689
E-mail: atm.sl@atmbarcelona.com

Switzerland

Utilis AG
Präzisionswerkzeuge
Kreuzlinger Straße 22
8555 Müllheim
Phone +41 527626262
Fax +41 527626200
E-mail: info@utilis.com
Internet: www.utilis.com

10.2.2 North america

Canada

HAINBUCH America Corp.
WORKHOLDING TECHNOLOGY
W129 N10980 Washington Dr.
Germantown, WI 53022
U.S.A
Phone +1 4143589550
Fax +1 4143589560
E-mail: sales@hainbuchamerica.com
Internet: www.hainbuch.com

Mexico

HAINBUCH México
TECNOLOGÍA EN SUJECIÓN
Edificio La Torre
Blvd. Adolfo López Mateos #901 Piso 6,
Centro
38000 Celaya, Gto.
Phone +52 46122163928
E-mail: sales@hainbuch.mx
Internet: www.hainbuch.mx

Canada

Representative for: Ontario, Québec
J. Winkel & Associates Inc.
6 Sugarmill Court
Kitchener, ON
N2P 2S3
Canada
Phone +1 9058248335
E-mail: info@winkel.ca
Internet: www.winkel.ca

USA

HAINBUCH America Corp.
WORKHOLDING TECHNOLOGY
W129 N10980 Washington Dr.
Germantown, WI 53022
Phone +1 4143589550
Fax +1 4143589560
E-mail: sales@hainbuchamerica.com
Internet: www.hainbuch.com

10.2.3 South america

Argentina

HAINBUCH America Corp.
WORKHOLDING TECHNOLOGY
W129N10980 Washington Dr.
Germantown, WI 53022
U.S.A
Phone +1 4143589550
Fax +1 4143589560
E-mail: sales@hainbuchamerica.com
Internet: www.hainbuchamerica.com

Brasil

Sanposs Tecnologia
Suprimentos e Consultoria Internacional Ltda.
Rua Cândia n° 65 - Jardim do Mar
CEP: 09726-220
São Bernardo do Campo - São Paulo
Phone +55 11 41266711
E-mail: tsci@sanposs.com.br
Internet: www.sanposs.com.br

10.2.4 Asia

China

HAINBUCH Shanghai Co. Ltd.
WORKHOLDING TECHNOLOGY
Room 611-612 BaoHong Center
No. 7755 Zhongchun Road
Minhang District, Shanghai 201101
Phone +86 2120916384
Fax +86 2120916383
E-mail: sales@hainbuch.cn
Internet: www.hainbuch.cn

Indonesia

PT. STAHL ARBEIT
Simprug Ruko Plaza
Jl. Taman Simprug Raya Blok B1 No. 01
Jababeka Cikarang Baru 17530
Phone +62 8111080041
Phone +62 8111080042
Fax. +62 2128518061
E-mail: info@stahl-arbeit.com
Internet: www.stahl-arbeit.com

India

M'la Sales Corporation
5, Yeshwantnagar
Telco-Century Enka Road
Pimpri, Pune 411018
Phone +91 2065003776
Phone +91 2065002369
E-mail: sales@m-la-sales.com
Internet: www.m-la-sales.com

Israel

MTM Ltd.
Hakishor str. 26
5886708 Holon
Phone +972 36479560
Fax +972 36479578
E-mail: sales@mtm.co.il
Internet: www.mtm.co.il

Japan

NK Works Co LTD
2-17-17 Iwamoto-cho, Chiyoda-ku
Tokyo, 101-0032
Phone +81 338645411
Fax +81 338646752
E-mail: info@nk-works.co.jp
Internet: www.nk-works.co.jp

Korea

K2tech
67, Gunjacheon-ro 185beon-gil,
Siheung-si, Gyeonggi-do
Korea
Tel.: +82-31-431-7964
Mobil: +82-10-9489-4762
Fax: 031-624-0154
E-Mail: bh@k2tech.co.kr

Taiwan

GSTC Technology Co., Ltd.
No. 418, Youn-Chun East 1st Rd
Taichung City 40877, Taiwan'
Phone +88 6423805678
Fax +88 6423805511
E-mail: gstc@seed.net.tw
Internet: www.gstctech.com.tw

Korea

Kims International Co., Ltd.
22, MTV 10-ro 10,
Ansan-si Danwon-gu Gyeonggi-do,
Korea
Phone: +82 7043387908
Fax: +82 314970613
E-Mail: kimi@kimigroup.co.kr

Malaysia, Singapore & Vietnam

Jebsen & Jessen Technology [S] Pte Ltd.
Industrial Services Division
18 Enterprise Road
Singapore 629824
Phone +65 63053692
Mobile +65 93803737
Fax +65 63053699
E-mail: phillip_lee@jjsea.com
Internet: www.jjsea.com

Thailand

HAINBUCH [Thailand] Co. Ltd
WORKHOLDING SOLUTIONS
2/25 Sukhapiban 2 Road Prawet,
Prawet, Bangkok 10250
Phone +662329 0622/23
Fax +662329 0624
E-Mail: info@hainbuch.co.th
Internet: www.hainbuch.com

10.2.5 Australia

Australia

Romheld Automation Pty Ltd
Unit 30 115 Woodpark Road
Smithfield . NSW. 2164
Phone +61 297211799
Fax +61 297211766
E-mail: sales@romheld.com.au
Internet: www.romheld.com.au

10.2.6 Africa

South Africa

Retecon [PTY] Ltd.
P.O. Box 1472
1620 Kempton Park
Phone +27 119768600
Fax +27 113942471
E-mail: tools@retecon.co.za
Internet: www.retecon.co.za

Index

A		
Accessories.....	27	
Assembly.....		
Clamping head.....	35	
Commissioning the magnet module	36	
magnet module.....	36	
Operating the magnet module.....	37	
Preparation.....	34	
B		
Brief description.....	26	
C		
Clamping head.....	27	
Clamping head SE.....	27	
Cleaning.....	45	
D		
dangers.....	12	
Disassembly.....		
Clamping head.....	35	
magnet module.....	42	
E		
Environmental protection.....	23	
I		
Intended use.....	10	
K		
Key.....	28	
L		
loads.....	12	
M		
Maintenance schedule.....	47	
misuse.....	10	
O		
Operating conditions.....	25	
P		
Packaging.....	31	
Personal protective equipment.....		
Hard hat.....	11	
Protective gloves.....	11	
Protective goggles.....	11	
Protective work clothing.....	11	
Safety footwear.....	11	
Personnel requirements.....	9	
Power specifications.....	25	
Preservation.....	46	
Production is concluded.....	39	
PSA [Personal protective equipment]..	11	
R		
Representatives.....		
Africa.....	54	
Asia.....	53	
Australia.....	54	
Europe.....	50	
North america.....	53	
South america.....	53	
S		
Scope of delivery.....	6	
Spare parts.....	7, 27	
Storing.....	32	
Structure.....	26	
Symbols on the packaging.....	29	
T		
Tests.....	38	
Transport inspection.....	30	
Transport, inner-company.....	30	
Trouble shooting.....	48	
Trouble shooting table.....	49	
Type designation.....	25	
U		
Unpacking.....	30	
use.....	10	



HAINBUCH GMBH · SPANNENDE TECHNIK
PO Box 1262 · 71667 Marbach / Erdmannhauser Strasse 57 · 71672 Marbach · Germany
Phone +49 7144.907-0 · Fax +49 7144.18826 · sales@hainbuch.de · www.hainbuch.com
24h-Emergency call +49 7144.907-444