

Transportation, Installation, Commissioning

ABC

Refer to additional sheet: Important information before commissioning

Note on applicability

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Safety Instructions

Instructions for shipment, installation, commissioning



When the working area door is open, the interlocking switch remains open after disconnecting the mains supply.



Shipping brackets are identified by their red color.

Improper shipment, installation or commissioning often leads to accidents, damage or malfunction of the machine which **INDEX** will accept no liability for and which will not be covered by the warranty.

Before the delivery, you should carefully plan the shipment to the installation site, the unloading, the installation and the commissioning of the machine. Please pay attention to the following instructions in this document.

For separate units e.g. chip conveyor, bar feeder, bar loading magazine etc., please see the corresponding shipping instructions.

General sources of danger during in-house transportation

Machines may be shipped only by authorized and qualified personnel.

Act consciously during shipping. Please omit hazardous and risky actions. Consider the consequences before acting.

Slopes and pitches can be particularly dangerous (e.g. ramps etc.). If passage is unavoidable extra precautions must be taken.

Make sure that the load will not slide off and that vehicle's traction and brake force are sufficient. Provide the load with additional securing devices, if necessary.

Dimensions and masses

For the masses of the machine and the control cabinet see the appropriate machine installation diagram in the chapter "Working data."

For the masses of separate units e.g. chip conveyor, bar feed, bar loading magazine etc. see the additional transportation instructions for these attachments or the appropriate machine installation diagram in the chapter "Working data".

Shipping- and lifting equipment

For lifting and moving individual units use only lifting and moving equipment with adequate load bearing capacity and loading area.

Transport equipment, ropes

For lifting the machine with a crane use only the provided transportation gear. This also applies to certain separate units such as bar feeder and the bar loading magazine.

For lifting all other separate units with a crane no special transportation equipment will be provided.

When selecting your own transportation equipment and ropes make sure that they have the recommended capacity and length.

When selecting and applying the transportation equipment and ropes/round slings respectively, consider the following instructions in this document, e. g.:

- Unloading the machine with a crane or a mobile crane.
- Unloading and transporting of separate units.

Preparations

This chapter is addressed to all personnel in charge of the installation. On the basis of the following instructions, the installation site can be prepared for immediate installation and commissioning of the machine.

Make sure that the delivery, the unloading and the placement of the machine from the unloading location to the installation site are planned carefully.

Take into account the size (dimensions) and the masses of the individual units.

Suitable transport and lifting equipment must be provided on delivery of the machine.

Remove potential obstacles along the way from the unloading location to the installation site.

Inspect the route for load bearing capacity, evenness, damage to surface, ridges, gradients and slopes etc.

Is there sufficient clearance through gates and door ways?

Do elevators have sufficient load bearing capacity?

Good preparation pays off!

Suitable transport- and lifting equipment

- Crane
- Mobile crane
- Fork lifter
- Trolley
- Conveyor rolls
- Hydraulic jacks
- Pallet truck (only for separate units; not suitable for machines).

Space requirements

Make sure to provide for the following:

- Sufficient clear space around the machine.
- Sufficient moving space for the operator.
- Sufficient space for maintenance and repair works.
- It must be possible to open all machine doors completely.
- Floor area must be provided for blanks- and workpiece palettes, workpiece container, chip pan, tool trolley etc.

See the machine installation diagram in the chapter "Working Data" for determining the space requirements.

For attachments such as bar feeders, bar loading magazines etc., see separate installation diagrams in the chapter "Working Data".

Foundations

Special foundations are not necessary as long as the floor quality complies with the usual building regulations according to the weight of the machine.

Within the machine standing area there must not be expansion joints.

The machine may be anchored. For anchoring holes refer to the machine installation diagram in the chapter "Working Data".

Bar supports, bar feeders and bar loading magazines must always be anchored. (For instructions see the appropriate operating instructions and the machine installation diagram in the chapter "Working Data").

When using a bar feed or a bar loading magazine **INDEX** recommends anchoring the machine as well.

Environmental Conditions

See Environmental Conditions in the document "Safety instructions"



If the data at the installation site deviate from the values above, please, contact INDEX or an INDEX agency.

Power supply



Keep the cables for mains supply to the machine as short as possible. Cable cross section must be adequate.

Power supply for the PLC and for the NC must be stable, i.e. the voltage fluctuation must not exceed +10% - 10%.

The cables must comply with the regulations of the local electricity suppliers and the locally valid regulations.

For additional data see chapter "Working Data".

Compressed Air Supply



Be aware of the max. permissible pressure for the machine. See pneumatic diagram in the chapter "Working Data".

Machines with elements operating with compressed air require compressed air supply with the following capacity:

Working pressure.....6 to 10 bar

Consumption.....according to machine equipment

For compressed air feed into the machine, see machine installation diagram in the chapter "Working Data".

Main fuse



Check if the service line can be loaded with an extra value that requires fusing. In case of doubt have the situation clarified by the local electricity provider.

The main fuse is not provided with the machine delivery. According to the regulations DIN EN 60204-1 this must be installed externally i.e. outside of the machine. If a pre-transformer is required, the main fuse must be installed ahead of the pre-transformer i.e. in the primary circuit.

The fusing depends on the operating voltage.

For the values for

- mains connection,
- operating voltage,
- main fuse

see machine installation diagram in the chapter "Working Data".

External data transfer



Data lines must not run directly next to power lines.

When you intend to transmit data from/to an external computer or memory, appropriate metal ducts for the data lines must be installed.

Media to be provided

- Hydraulic oil ¹⁾
- Lubricating oil ¹⁾
- Appr. 1 kg heavy duty grease for chucks
- Coolant

For types of lubricating oil, hydraulic oil, grease and coolant as well as filling amounts see chapter "Maintenance Instructions" and the "machine installation diagram" in chapter "Working Data".



Attention!

Only hydraulic oil according to ISO 4406 with a purity 15/12 (10 µm absolute) may be filled. Hydraulic oil: HLP 32; HLPD 32; VG 32.
Lubrication oil CG 68; G68

¹⁾ Machine supplied with tank filled.

Pumps and Tanks

Change of hydraulic oil and coolant is part of regular maintenance.

For filling the hydraulic oil tank of the machine a pump with a 10 µm-microfilter (absolute) is required. The pump may be used only for this purpose.

For emptying the hydraulic oil tank and the coolant tank an ordinary pump is sufficient. The same pump can be used for filling the coolant tank, however, it has to be flushed with clean coolant beforehand.

The drained-off liquids are best collected in stable containers with adequate capacity. Best suitable are metal barrels which can be sealed and should be labelled.

Chip disposal

When the machine is equipped with a chip conveyor, a chip trolley to suitable for the discharge height of the chip conveyor is required.

The chip trolley should have a tap for draining-off the coolant trapped from the chips.

This is environmentally beneficial and money saving.

Disposal of used media

Please ensure in time how used media such as hydraulic oil, lubricating oil and coolant can be disposed of in compliance with environment pollution regulations.

Compliance with waterbalance regulations



The locally valid guide lines and regulations must be taken into consideration

The machine contains water polluting liquids, such as water soluble coolants and mineral oils. These can leak out of the machine accidentally. Therefore the machine must be installed in a manner that no detrimental effects are possible to waters or ground water by these media.

Possible precautions:

- Placing the machine into a steel tray.
- Sealing the workshop floor.

Delivery

Machine

The machine is delivered by truck it is either on planks or packed in a box standing on a transportation platform.

Machine state on delivery:

- Hydraulic oil and lubricant oil tanks are filled.
- Coolant tank is empty. (The machine is equipped with a chip conveyor with integrated coolant tank. The chip conveyor is packed separately.)
- Certain moving parts of the machine e.g. sliding doors and pivoting operator's panel are secured by appropriate brackets.
- Overhanging parts that hamper the transportation are dismantled.
- All bright parts of the machine are coated with a rust preventive.

Pressure accumulator

When the machine has been transported as airfreight all pressure accumulators fitted will be depressurized.

Before commissioning all pressure accumulators must be filled with nitrogen (N₂) by a specialist. Please keep to the recommended pressures.

For recommended pressures see the "Hydraulic diagrams" in the chapter "Working data".

Other separate units

Certain attachments like chip conveyor, bar feeder, bar loading magazine etc. are generally packed separately

Chip conveyors are usually shipped on a platform.

Bar feeder and bar loading magazine are shipped in a separate box.

Loose parts, such as spanners, small tools and instruments etc. are packed in a separate cardboard box. This might be enclosed with one of the separate units.

Transportation equipment

The transportation equipment is either packed separately or enclosed with other units.

The transportation equipment is generally charged for. When returning it to **INDEX** after installation, a refund will be paid.

First check the machine, the enclosed accessories and optional units for external damage and completeness (Bill of loading, delivery note).

Missing goods or damages can be confirmed on the note of delivery by the shipping company.

In case of damage it is recommended to take photographs for easier proof.

Please notify **INDEX** or **INDEX** agency.

Unloading the machine with a crane



**Suspended loads!
Fatal danger by a crushing machine.
Do not step under suspended loads and use only the permitted transportation equipment.**

Height of crane hook above ground level:

Height of the unit (e.g. Machine, control cabinet etc)

- + Lifting gear or length of slings above the unit see Fig.
- + Floor height of truck..... approx. 1,3 m
- + Hoisting 0,2 m

Remove all securing devices for transportation on the truck.

Attach the supplied lifting gear.



**Use a crane with sufficient carrying capacity. Unload the machine as close as possible installation site.
Short transportation distances reduce the risk of accidents.**

Lift machine slowly and carefully.



Make sure to keep the machine in a horizontal position. The centre of gravity is not exactly in the middle of the machine. If necessary put down the machine again and correct the tilt by adjusting the hooks on the beam.

Lift machine off the truck or move truck from under the suspended machine.

Place the transportation (e. g. trolley) means under the machine.



**Ensure that the selected transportation equipment has sufficient load bearing capacity. It must be at least equal to the machine mass.
When using a trolley the load bearing area must be larger than the machine area (floor area).**

Lower machine slowly and carefully onto the trolley, remove the lifting equipment and move the machine to the installation site.

INDEX ABC

Method of Slinging

INDEX

Kunde: _____
 Auftr.-Nr.: _____ Masch. Nr.: _____

**Mass of machine
 ca. 2900 kg**

**Mass of tackle,
 complete
 ca. 75 kg**

Attention!

Check the slings/chains for proper attachment in the transport hooks before lifting the machine. If other ropes are used for transport than those indicated here, make sure when lifting the machine that the ropes do not touch the housing. Transport the machine in horizontal position only (fig.1).

For transport with a fork-lift truck, the machine must be placed on planks. For minimum length and spacing of the prongs, see fig. 2.

The girder and slings/chains necessary for transporting the machine are supplied with the machine at extra charge and can be returned to **INDEX**-works after installation of the machine.



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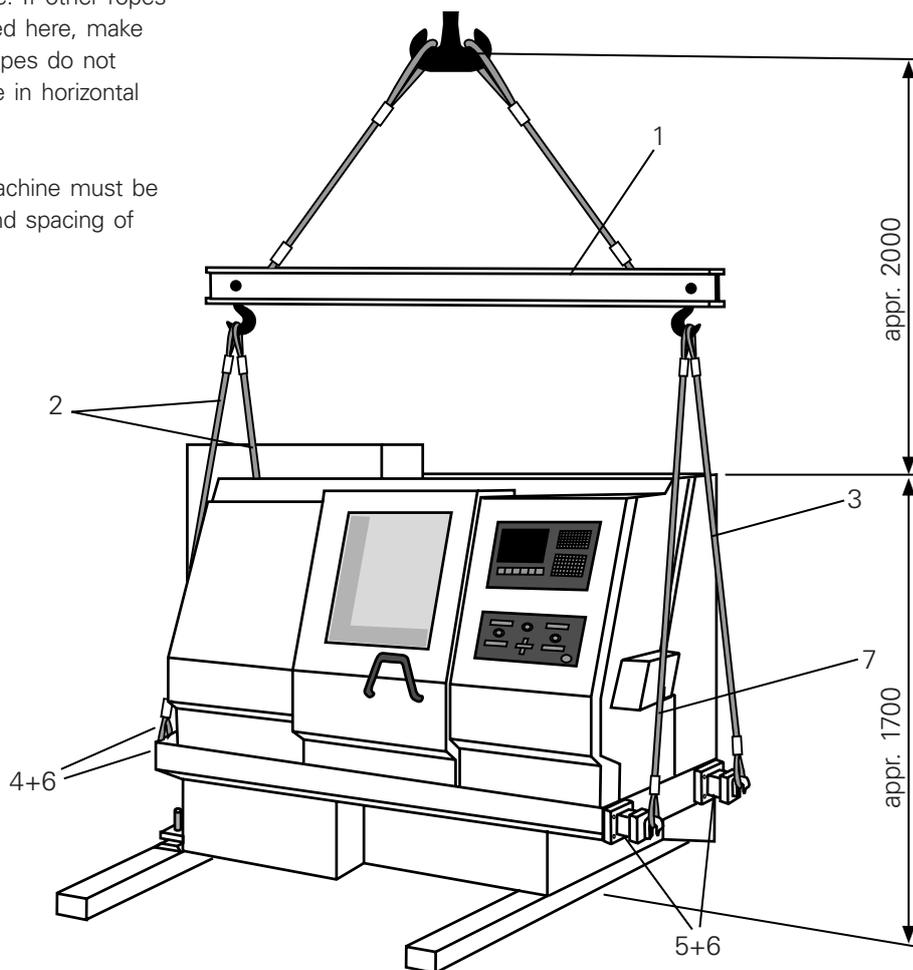


Fig. 1

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	Pos.	No off	Name	Ordering No.
Transporting tackle	1	1	Girder 3t	208315.1406
	2	2	Sling rope/ Ø12 x 1600	208111.1232
	3	1	Sling rope/ Ø12 x 1750	208111.1235
	4	2	Hook	208310.4601
	5	2	Hook long	208310.4604
		12	Cheese Head Screws M12 x 35 DIN 912-12.9	410260.1235
	6	4	Retaining eye	208310.4622
		6	plain washer	419021.16
		6	truss-head screw M16x260 DIN 603	410986.1660
	7	1	Sling rope/ Ø20 x 1870	208111.2037

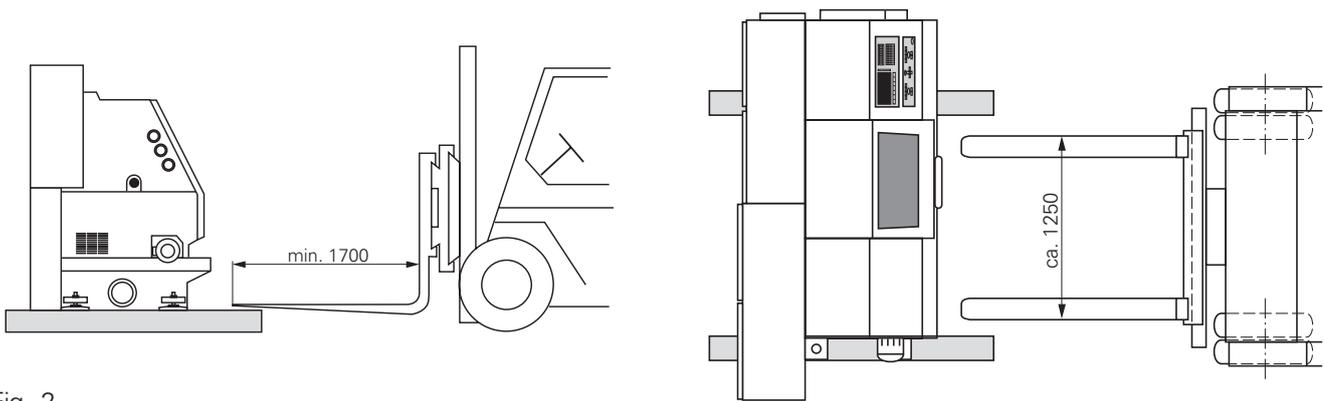


Fig. 2

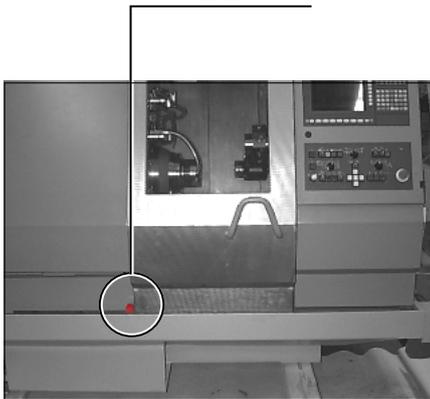
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Securing devices for Transport



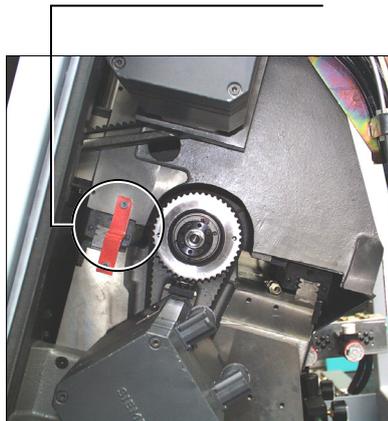
Before start-up all securing devices for the transport must be removed. Shipping brackets are identified by their red color.

Siding guard



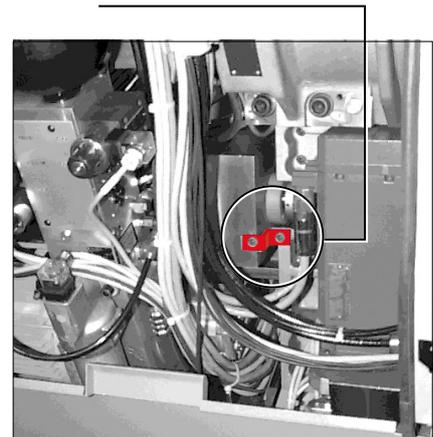
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Turret 1 (Z-axis)

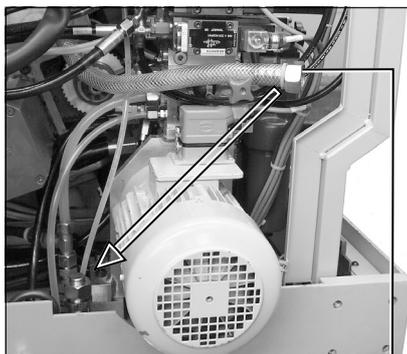


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Turret 2 (Z-axis)

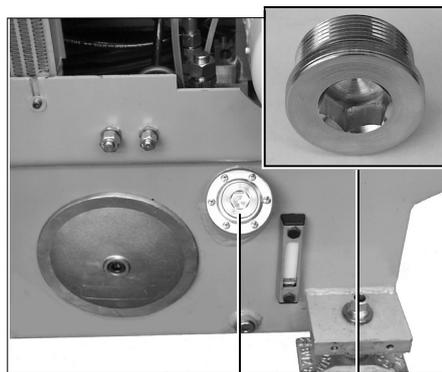


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L1601.10041_15

1



L1601.10041_17/18

2

2



L1601.10041_19

3

Connect the leakage oil-line from the chucking cylinder (1) to the oil tank (36mm A /F).

Unscrew the closing plug (2), and replace it with the filling and airing filter (3).

Transportation with a fork lift



The fork may be placed under the machine only from the front of the machine.

The minimum specified length of the fork must be observed. See Fig. 2.



For mass of the machine refer to chapter "Transport instructions". (Quick start manual for Transport ABC)

Transportation with casters

Use transportation casters when there is no suitable crane, a mobile crane or when a fork lift truck cannot be used at the installation site.

The advantage of casters is the low loading height which allows loading and unloading the machine using a hydraulic jack.

The disadvantages are the relatively small wheels (casters) which require a solid smooth floor with appropriate load bearing capacity, transport is very slow and must not be jerky.

Depending on the size of the machine two or three casters are needed, one of which must be a swivel caster.

The load bearing capacity of the individual trolley may be less than the mass of the machine.

When using 2 trolleys their load bearing capacity should be 2/3 of the machine mass.

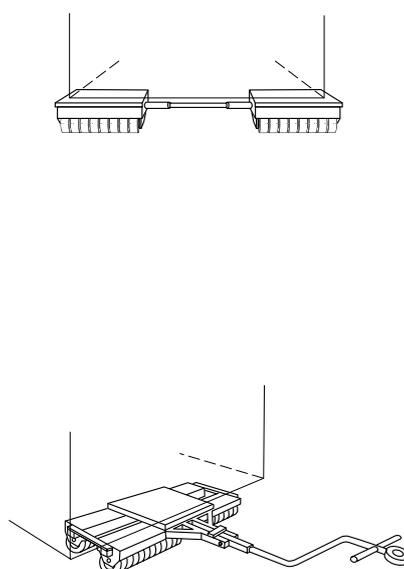
When using 3 trolleys the two rigid ones should be able to take at least 1/3, the steerable one 2/3 of the machine mass.

Castor trolleys are placed under the short sides of the machine base. If the machine sits on planks, the transport rolls may also be pushed under them. Lower the machine slowly until it rests on the castor trolleys as shown in the picture.

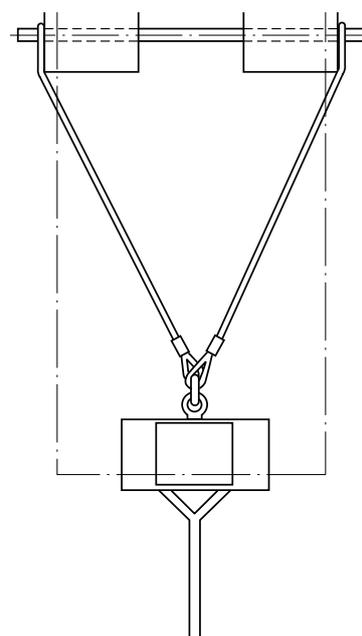
The casters must always run in parallel to the load, otherwise they will "rub" and the coating of the castors will get damaged.



Connect the swivel caster and the fix ones with steel ropes (Fig) to prevent them from moving apart. Secure the load with suitable straps.



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077001.0277

Notes on lifting with hydraulic jacks:

- Always put first the fix castors under the machine first and then the swivel castors.
- With the fix castors the resting plates must always protrude over the edges of the load to be transported
- The load must be secured against rolling away.
- With the swivel casters the load must be placed in the middle of the turn table to ensure that the steering rod can be moved freely.

Notes on transportation with a crane:

- The load must be lowered gently on the casters.

Placing the machine

When the final installation site has been determined and prepared, the machine can be directed there and put down carefully.

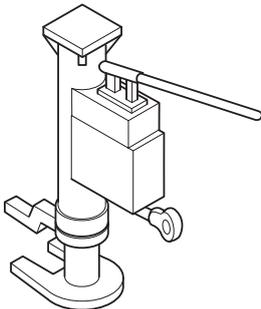
Placing the machine ...

...with a crane or a mobile crane

Lift the machine with the crane until it is suspended.

When you have moved the machine on casters to the installation site pull these out from under the machine.

...with hydraulic jacks (Fig.)



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Hydraulic jacks are required when the use of a crane is not possible at the installation site.



When lifting or lowering the machine with hydraulic jacks make sure that a three-point bearing is provided for: Seat the machine on the floor or on two Conveyor rolls on one side – two hydraulic jacks on the other side.

Always jack up one narrow side of the machine. The other narrow side must stand on the transportation means or on the floor.

Never lift the machine higher than absolutely necessary. As the centre of gravity does not lie in the middle of the machine the load bearing capacity of one jack should be at least 1/3 of the machine mass when using 2 hydraulic jacks.

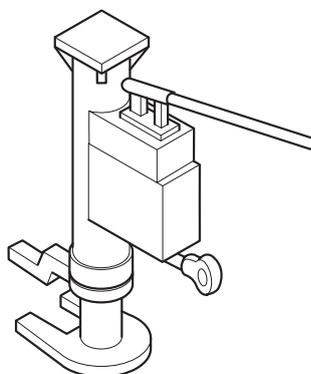
When working with only one hydraulic jack its load bearing capacity should be minimum 2/3 of the machine mass.

Lift the machine step by step and support the machine after each step by packing suitable blocks of wood underneath. Same applies for lowering.

If a forklift cannot be used for lowering the machine you must select a transportation means corresponding to the lifting height of the hydraulic jacks.
In this case we recommend the use of casters, as they require a lower lifting height.

Only special professional hydraulic jacks with the following specifications may be used:

- The hydraulic jacks must have sufficient load bearing capacity.
- The jacks must stand securely during jacking-up and lowering, they must not topple
- The load must not be able to slide.
- Delicate continuous lowering must be possible.
- The load must not be damaged during lifting and lowering.



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Fig.: Hydraulic jacks

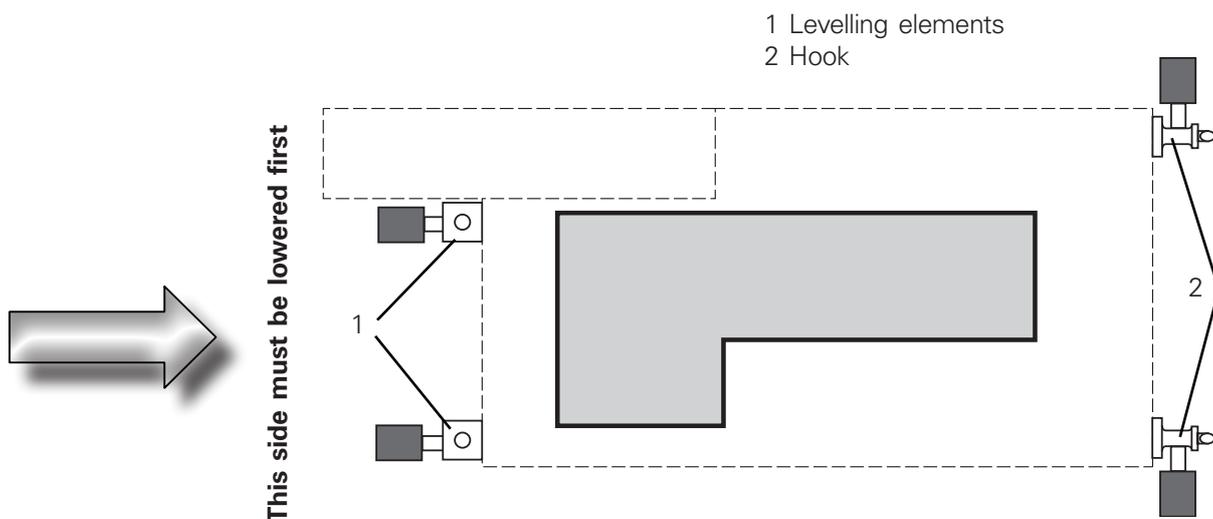


Fig.: Placing points

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Unloading and transporting separate units

Optional units or attachments such as chip conveyor, bar feeder, bar loading magazines are shipped separately.

Please follow the appropriate transportation instructions for these units. See the label on the units.



Never step under suspended units.

For smaller units there are no special transportation instructions. These units are either on a pallet or they are enclosed with other units.

For unloading and transporting use suitable slings or straps.

Attach the slings or straps in such a manner that they cannot slide off and the unit is safely suspended.

If eye bolts are provided attach the ropes or straps to these.

Unpacking the accessories and checking them for completeness

The accessories must be checked against the delivery note for completeness after unloading and unpacking (Compare with bill of lading or delivery note).

In case of discrepancy please contact **Index** or a **INDEX** agency.

Installation

Electrical connection

Important notes



Caution! Danger of Life!

All work on the electrical equipment must be carried out exclusively by properly trained qualified personnel.



The control voltage is to be connected, according to EN 60204-1, one sided with PE. Please read the notes in the wiring diagram.

The switchgear cabinet may be opened only after the main switch have been set to the OFF position, and it must be secured according to the valid safety standards.



See the order confirmation for the precise electrical requirements. The electrical specifications provided are decisive and binding. They must be available to **INDEX/TRAUB's** customer service at any time.

The machine must be connected to the electrical supply network via the main switch (multi-wire cable). Be sure to observe the clockwise phase sequence for the connection.

The electrical connection is indicated in the wiring diagrams.

The machine has been prepared for connection to three-phase current.

Before connecting, check that the available line voltage matches the machine's operating voltage. If this is not the case, you will need an appropriate transformer connected in front of the machine.

Putting-up and Levelling the Machine

When the instructions in the chapter "Preparations" have been followed there should be no problems with the putting up and adjustment of the machine.

As standard the machine is provided with levelling pads (3, 4, 5 and 7). The levelling pads consist of an adjusting screw (11), a levelling plate (9) and a locking nut (10).

After setting down the machine lower with the levelling screws (11) to the floor clearance prescribed in the picture "Putting up and adjustment" of the machine.



The adjustment should be carried out before fitting the chip conveyor. Securing brackets for transport must be removed.

Adjustment procedure

- Traverse the compound slide 1 in Z-direction as far as possible towards the spindle (dismount tools if necessary).
- Open door at the back of the machine.
- Set a spirit level (6) on the Z-axis ball screw (see picture).
- Adjust machine with levelling elements (3, 4, 5 and 7) - accuracy longitudinal $\pm 0,1$ mm/m.



In transverse direction it is sufficient to carry out rough adjustment, for this the spirit level is set onto the machine frame (see picture).

- After the adjustment tighten the securing nuts on all levelling elements.



Securing against the floor is possible at the levelling elements (3) and (4). (Refer to machine installation plan in the chapter "Working data")

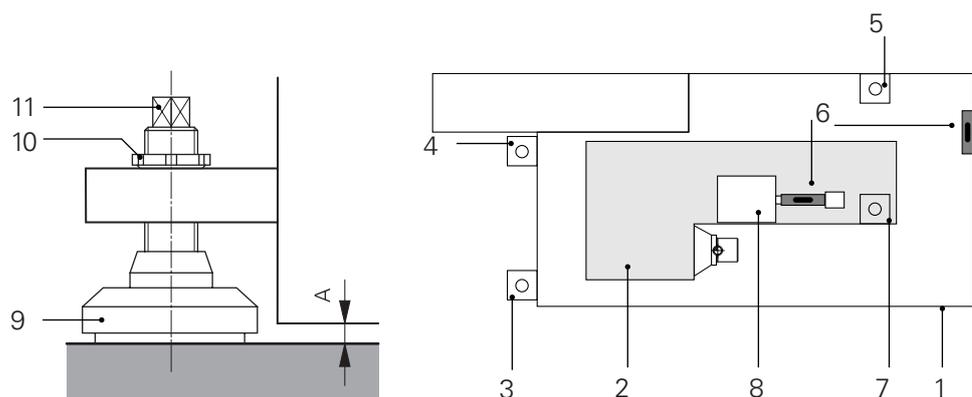


Fig.: Putting-up and Levelling the Machine

Dim. A: min.10 mm, max.20 mm Floor clearance

1	Base	8	Compound slide 1
2	Machine main frame	9	Levelling plate
3,4,5,7	Levelling elements	10	Securing nut
6	Spirit level	11	Adjusting screw

Putting-up and alignment of attachments

Bar support, bar feed or bar loading magazine are provided with levelling pads with which they must be aligned with the machine's workspindle or Spindle drum within ± 0.1 mm deviation per 1 m.

Workpiece conveyor belt, palletizing station etc. have levelling elements by means of which they can be levelled longitudinal and transversely to the main spindle turning axis within ± 0.1 mm/m.

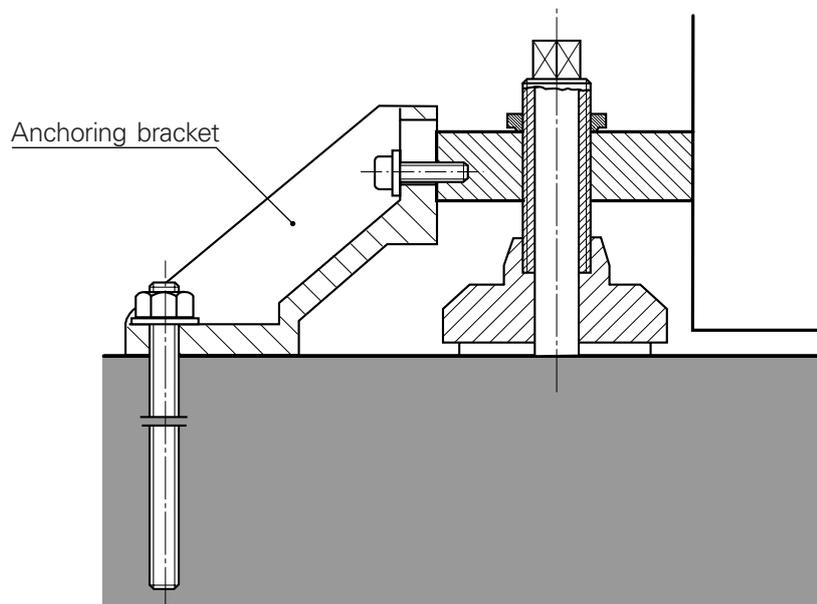
(Refer to the chapters "Preparations", "Floor, Foundations" and to the appropriate installation plans in the chapter "Working Data".)

Anchoring the Machine

When you anchor the machine this is done at the levelling elements (3) and (4). Use the delivered anchoring brackets (refer to picture).

When a bar feed or a bar loading magazine are to be anchored the bar support must be aligned with the workspindle before. (Refer to section "Putting-up and alignment of attachments".)

For the method of anchoring and the distances of the anchoring bolts in the foundation refer to the machine installation plan in the chapter "Working Data".



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Fig.: Anchoring the Machine

Commissioning

All the following tasks have to be carried out chronologically before commissioning.

After these have been carried out the machine will be ready for commissioning.

Cleaning the Machine

All bright machine parts are coated with a rust preventing agent. Generally this coat will be washed off by the coolant during the operation of the machine.



When cleaning the machine some of the solvent might splash into the eyes. Protect your eyes by wearing suitable safety goggles.

Protect your hands and arms by wearing long sleeve clothing and gloves when cleaning the machine.

Risk of bodily injury by sharp edged machine parts and tools!

The rust preventing agent must be washed off manually when the machine is put into operation after a longer period and when the rust agent has become very tough.

Mounting surfaces for toolholders and attachments must be cleaned in any case.

For this purpose only agents that do not attack the machine paint may be used. Suitable are turpentine, paraffin (kerosene) or benzene.

Checking supplies, restocking

Hydraulic system: Check oil level

Coolant system: Fill coolant tank

Central lubrication system: Check oil level

Attachments: Check oil level



For notes on the quality of media, such as lubricating oil, hydraulic oil and coolant, as well as on capacity of tanks and charging holes, see chapter "Service and Maintenance" and machine installation diagram in the chapter "Working Data".

Pressure accumulator

When the machine has been transported as airfreight all attached pressure accumulators will be depressurized.

Before commissioning all pressure accumulators must be charged with nitrogen (N₂) by a specialist. Observe the recommended pressures.

For recommended pressures see "Hydraulic diagrams" in the chapter "Working data".

Removing the shipping brackets

(See section "Securing devices for Transport" of the quick guide for ABC transport)



When the working area door is open, the interlocking switch remains open after disconnecting the mains supply.



The shipping brackets are painted red.



Save the brackets for future machine transport.

Attaching the filler/breather filter

See also "Important information before commissioning" manual.

Bleeding the Hydraulic System

refer to the chapter "Service and Maintenance".

Loss of data after a longer idle period



The machine is only fully operable only after complete data input.

When the machine has not been in use for a long period of time the data in the RAM can be lost.

In such a case the data must be entered again before starting up the machine.

The data are saved in the commissioning sheet and stored on a memory device. The commissioning sheet and the memory device are stored in the document box on the control cabinet door.

Switching-on the Machine

See chapter "Setting-up and Operation basics".



Always charge the coolant tank before switching on the coolant pump.
A dry running coolant pump will get damaged.

Changing the location



For shipping as airfreight all charged pressure accumulators on the machine have to be de-pressurised by a specialist.

Set main switch to OFF and secure against switching on. Depressurize the hydraulic system by opening the pressure accumulator valves.

Provide the appropriate equipment for shipping the machine. The equipment can be ordered from **INDEX** giving the model and serial No. of the machine.



Replace the filler/breather with a screw plug. See also "Important information before commissioning" manual. The works described therein must be carried out in reverse order.

Applicable only for machines with a chip conveyor

Disconnect the coolant supply hose at the joint above the coolant tank and disconnect the electricity supply to the coolant pump and to the chip conveyor drive motor.

Pull out the chip conveyor and clean it.

Applicable only for machines with a bar feeder or a bar loading magazine

Disconnect the two hydraulic lines P and T to the bar feeder or the bar loading magazine.

With bar feeder: disconnect the plug connection of one electricity supply.
With bar loading magazine: disconnect the plug connections of three electricity supplies.

Mounting the shipping braces



When the working area door is open, the interlocking switch remains open after disconnecting the mains supply.



Shipping brackets are identified by their red color.

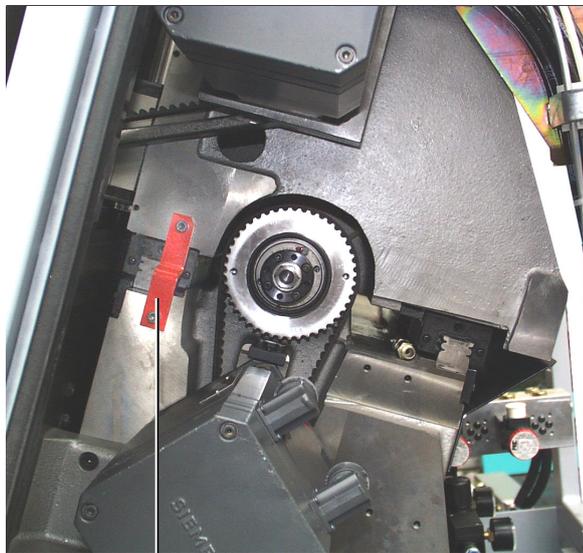
Mounting the shipping braces for the working area door



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Tool carrier 1 - Z-axis

Travel the tool carrier in Z1-axis to the position in which the securing plate (3) can be fitted. Distance in X-direction is arbitrary. Screw the securing plate to the compound slide and to the machine bed.

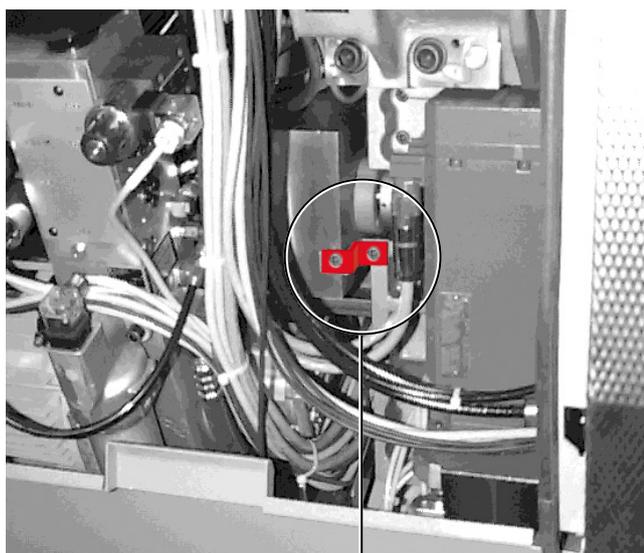


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3

Tool carrier 2 - Z-axis

Traverse the tool carrier 2 in Z2-axis to the distance $M1-N2 = 111$ mm, in X2-axis to any distance. Screw on the securing plate (4).



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