Transport and installation instructions

TNX65/42

142853 - 22.10.2021
10.21/Ru (Transport- und Aufstellanleitung) - 20057384

Note on applicability

Illustrations in this publication may deviate from the product supplied. Errors and omissions due to technical progress expected.

A word on copyright

Symbols

This chapter describes the symbols used in the documentation for users to highlight risks and tips.

This symbol draws attention to imminent danger to life and health. Failure to observe this danger sign can result in serious damage to health, as well as potentially fatal injuries and even death.

This symbol draws attention to imminent danger due to electricity. Failure to observe this danger sign can result in serious damage to health, as well as potentially fatal injuries and even death.

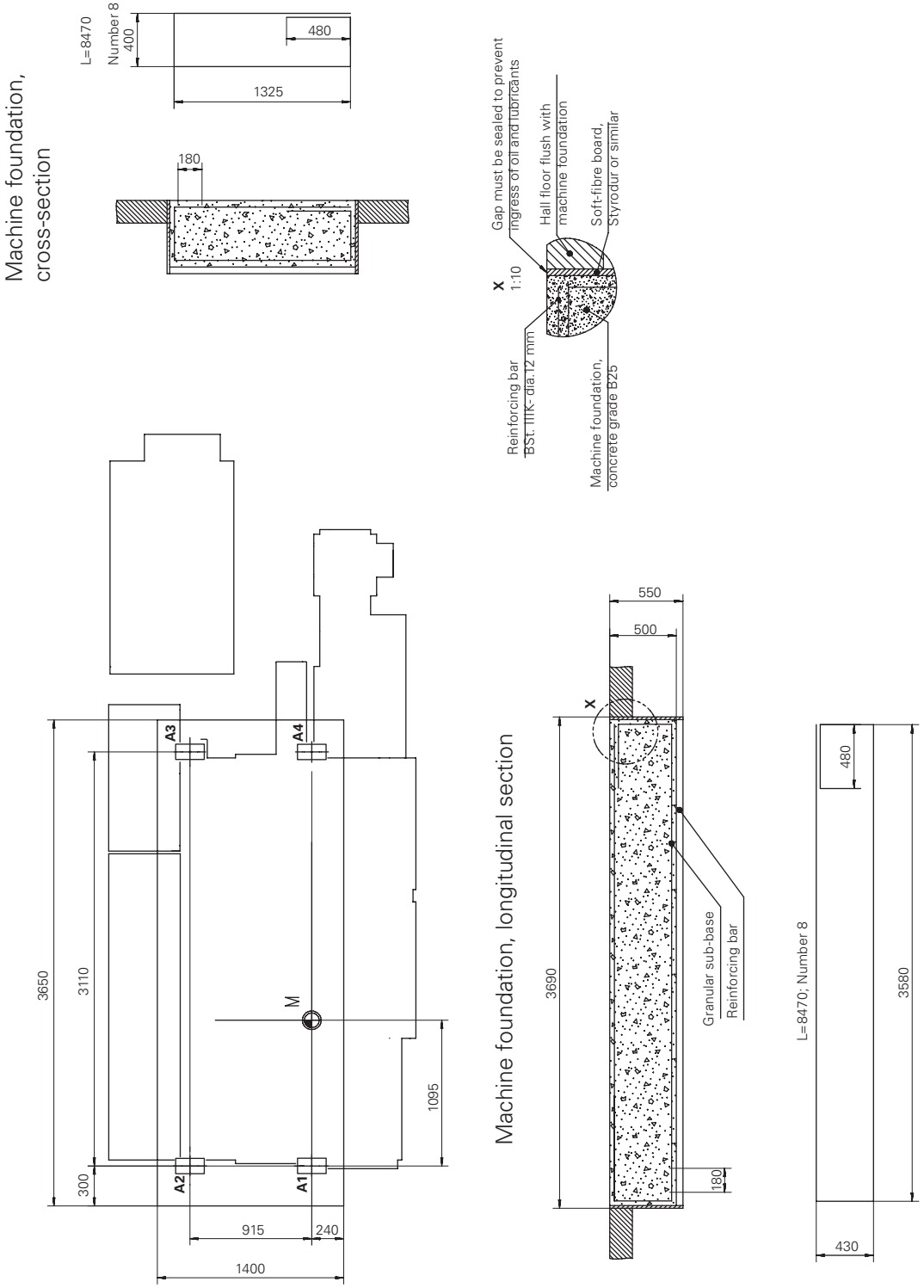
This symbol draws attention to important information on correct operation of the machine. The machine or parts of the machine may be damaged or malfunction if these instructions are not observed.

Documentation safety instructions

The documentation for users and particularly the safety instructions must be observed.
The safety instructions are set out in a separate document forming part of the TRAUB documentation for users.

Foundation diagram

Drawing No. 478504

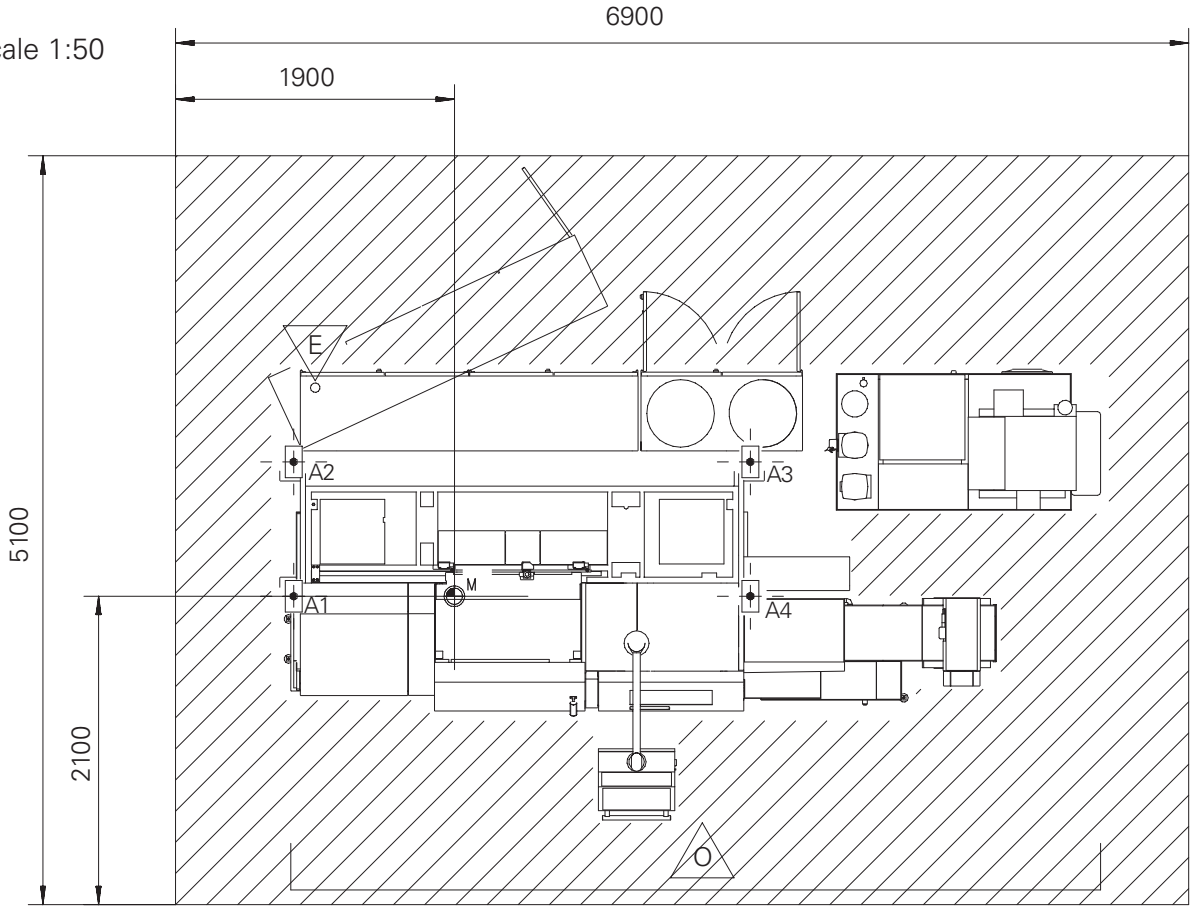


The corresponding installation and layout diagram must be obtained before the machine is installed.

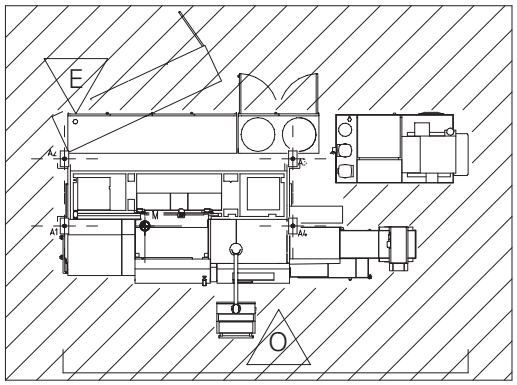
Layout diagram

Drawing No. 478503

Scale 1:50



Scale 1:100

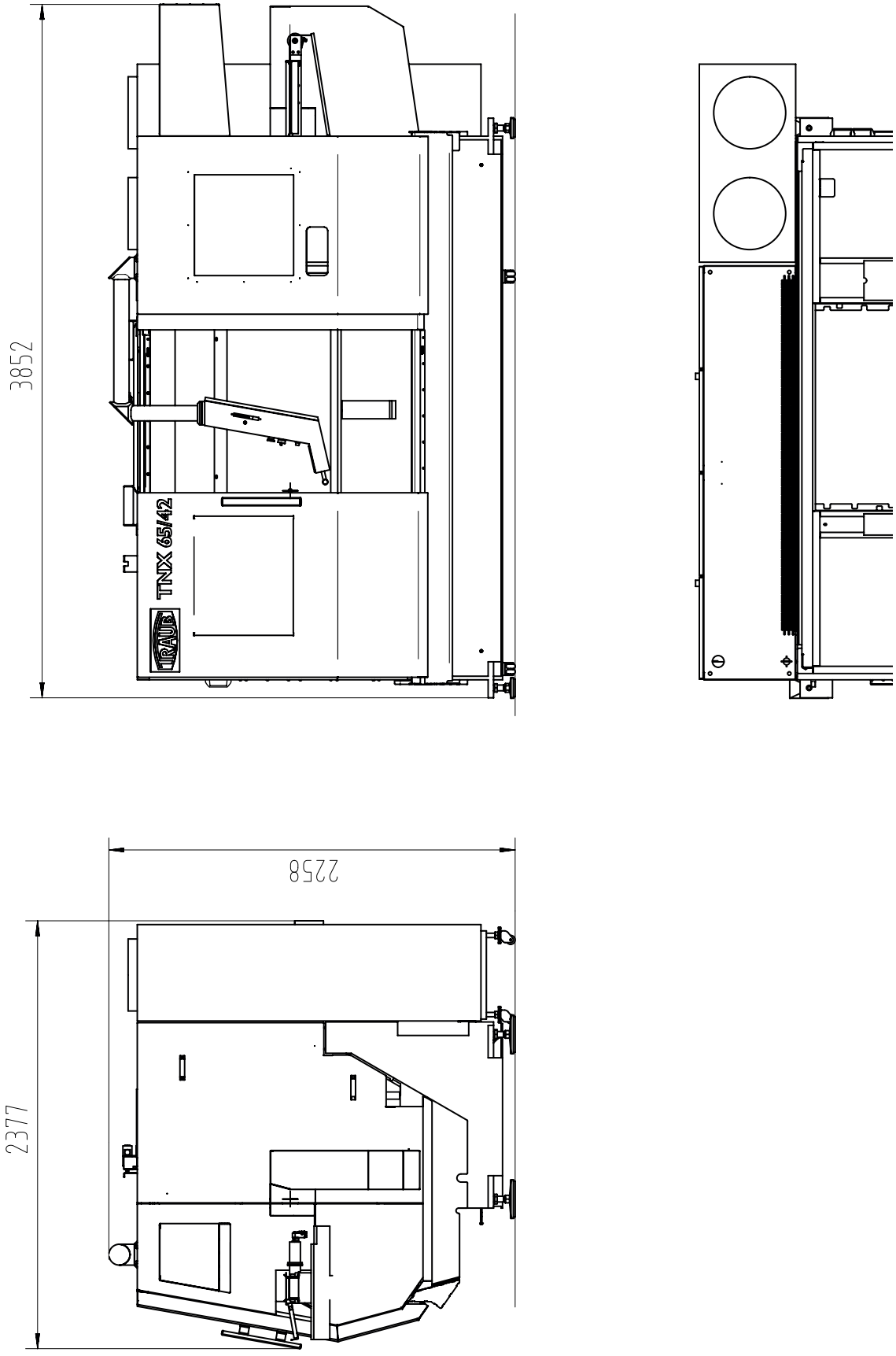


E = Electrical connection

O = Operator side

Illustration exemplary

Installation diagram



Beware of being crushed
The installation site must be selected in such a way that there is no risk of anyone or anything being crushed against walls, pillars or hall installations by moving parts or the machine, including manually operated doors and flaps, etc.

Danger due to falling machine / parts
Ensure there is no-one underneath the suspended load!

Transporting the machine
The machine can be transported with the aid of a crane, fork lift truck or heavy-duty rollers.
When using a fork lift truck, it must be lifted from the operator side.

The machine with bar loading magazine must in all cases be anchored in the ground.

Dimensions (without additional attachments)

TNX65/42 / TNX65/42 with milling unit

Length of foundation	mm	3690
Width of foundation	mm	1400
Depth of foundation	mm	550

Machine weight and machine dimensions

These informations refer exclusively to the basic machine, (i.e. **without** chip conveyor, lubricoolant unit and oil-spray extraction).

TNX65/42

Machine weight		
without control cabinet	kg	8600
with control cabinet	kg	9800

Machine dimensions		
Length (without chip conveyor)	mm	3850
Width without control console Width without working area door handle	mm	2365 2330
Height with amber-coloured indicator lamp Height with multi-coloured indicator lamp	mm	2286 2450
Operating altitude (prepared for oil-spray extraction)	mm	approx. 2470

TNX65/42 with milling unit

Machine weight		
without control cabinet	kg	8800
with control cabinet	kg	10000

Machine dimensions		
Length (without chip conveyor)	mm	4744
Width without control console Width without working area door handle	mm	2365 2330
Height	mm	2700 / 3461[1)]
Operating altitude (prepared for oil-spray extraction)	mm	2700 / 3461[1)]

Bearing points*		
A1	kN	25
A2	kN	25
A3	kN	25
A4	kN	25

[1)] Tool magazine with 120 positions

* Bearing points A see chapter Installation and layout diagrams

Delivery, unloading and transport of the machine from the unloading point to the installation site must be carefully planned.

Note the size (dimensions) and weight of the individual units.

Any obstacles on the way from the unloading point to the installation site must be removed before the machine is delivered.

Check the route with regard to load capacity, levelness, pavement damage, transverse grooves and gradients, both uphill and downhill.

Information on transporting the machine by truck

The truck should have pneumatic suspension in order to avoid major bumps during transport!

Space required

The following must be assured:

- Sufficient space around the machine.
- Sufficient freedom of movement for the operator.
- Sufficient space for maintenance and repair work.
- All doors on the machine must be able to open completely.
- Space for pallets containing blanks and workpieces, workpiece containers, chip trolleys, tool trolleys, etc.

The space required can be determined with the aid of the installation drawing.

Ambient conditions

Refer to the chapter *Ambient conditions* in the Safety instructions.

Please contact machine manufacturer or a machine manufacturer's agent if conditions at the installation site diverge from those specified.

Substrate, foundations

The load capacity and strength of the flooring must be sufficient to bear the weight of the machine in structural terms.

Expansion joints are not permitted in the area under the machine.

Bar feeding and re-feeding mechanisms, as well as bar loading magazines must be anchored in the foundations as a matter of principle (for further details refer to the associated User manual and Installation drawing).

Bottom sump

If a bottom sump is required, it must be as in the *"Information on bottom sump drawing"* specifications so that extending out of the relevant chip conveyor is guaranteed as required.

The base in the area of the bottom sump may only be convex by a maximum of 5 mm (and be flat or concave if possible). If the permitted unevenness is exceeded, the bottom sump may rub against the underside of the machine / machine components.

Compressed air supply

See chapter *Pneumatic connection*

Equipment to be provided

See chapter *Fuels* and *Notes on Operating Materials*

Pumps and tanks

A simple pump will suffice to extract the spent lubricoolant. The same pump can also be used to fill the lubricoolant tank, but must first be thoroughly rinsed with fresh lubricoolant.

A sturdy container is needed to collect the extracted fluids. Tightly closing and duly labelled metal containers of corresponding capacity can be used for this purpose.

Power supply

The directives and regulations of the country of use must always be taken into account.

Keep the mains power input to the machine as short as possible. Cable cross-section must be suitably dimensioned.

A stable supply is required for the interface controller (PLC) and numerical control system (NC) - maximum fluctuation in operating voltage +10% or -10%.

The mains power input must be realized in accordance with the regulations of the relevant power supply company and VDE regulations.

Main fuse

Check the service to establish whether it can bear the additional load required. Any unclear points must be clarified with the relevant power supply company.

The main fuse is not included in the scope of delivery of the machine.
It must be installed outside the machine in accordance with DIN EN 60204-1.
If an upstream transformer is required, the main fuse must be installed before the upstream transformer, i.e. on the primary side.
The values to be secured depend on the operating voltage available.

The values for machine connection, operating voltage and main fuse can be found in the electrical circuit diagrams and the chapter *Electrical connection*

External data transmission

Data lines must not be located directly alongside power lines.

Suitable metal conduits must be installed for the data line in order to transmit data from/to external computers and storage systems.

Chip disposal

A chip trolley will be needed if the machine operates with chip conveyor. The height of the chip trolley must be adapted to the discharge height of the chip conveyor.
The chip trolley should include an outlet via which the accumulated lubricoolant can be drained and returned to the lubricoolant tank.

Chip conveyor without discharge chute

When a chip conveyor without discharge chute is used, the customer must provide a cover for the collection tank for the chips. The cover must render impossible reaching into the discharge area of the chip conveyor.

Disposal of spent fuels and fluids

The directives and regulations of the country of use must always be taken into account.

The rules governing environmentally correct disposal of spent fuels and fluids, such as hydraulic fluid, lubricant oil and lubricoolant, must be clarified in good time.

Compliance with regulations concerning groundwater and wastewater

The directives and regulations of the country of use must always be taken into account.

The machine contains aquatic pollutants, such as water-miscible lubricoolants and mineral oils. These substances may leak from the machine in the event of a fault.
For this reason, the machine's installation site must be designed to prevent any harmful effects on bodies of water or the groundwater due to these substances.

Possible precautions

- Place the machine in a leak-proof steel pan (bottom sump).
- Seal the floor of the factory hall.

Close open hose or pipe lines

To prevent any remaining cutting oil or lubricoolant dripping from the lines, the open hose lines and pipes must be sealed with plugs.

Corrosion protection

Before delivery, all machines are coated to protect them from corrosion. This corrosion protection must be renewed accordingly whenever the machine is subsequently transported again.

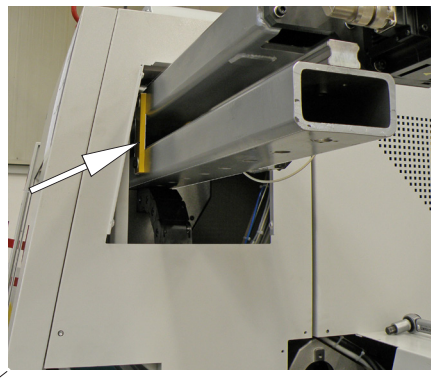
Details on corrosion protection can be found in the documentation **Notes on Operating Materials.**

Attach transport retainers to the machine

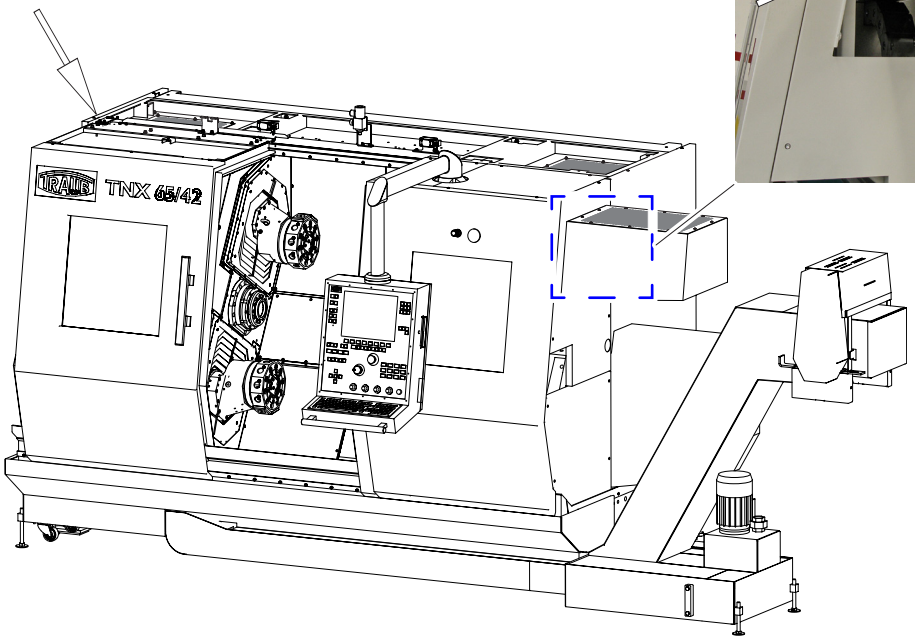
The transport retainers are located on the:

- control console
- tool carrier and opposed spindle
- sliding door
- workpiece handling with remnant removal device

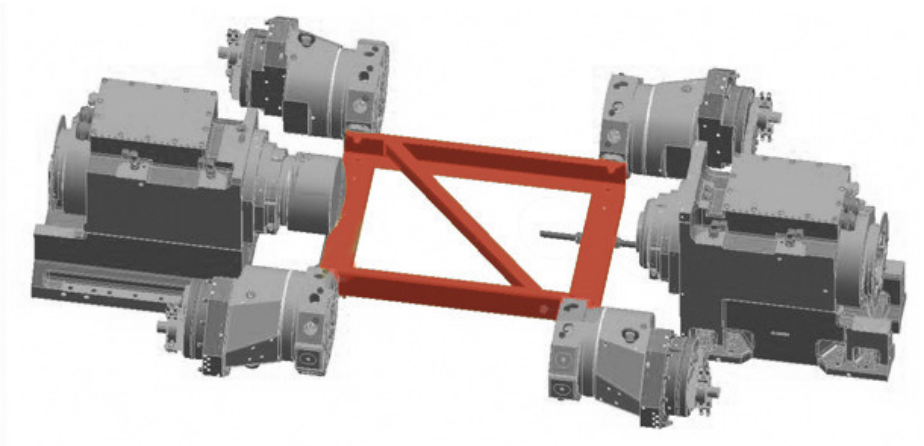
Workpiece handling with remnant removal device



Transport retainers for working area door

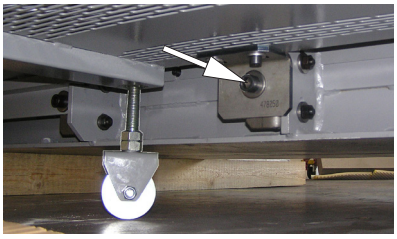


Tool carrier and opposed spindle

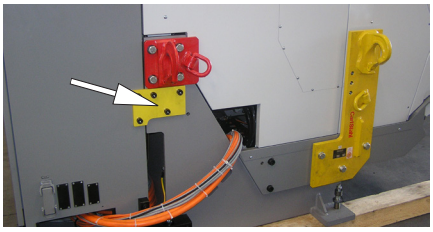


Attach transport retainers to the control cabinet

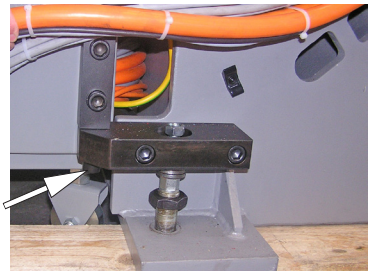
- Attach the retaining bracket to the underside of the control cabinet from the machine bed. The bracket remains connected to the control cabinet as a limit stop.



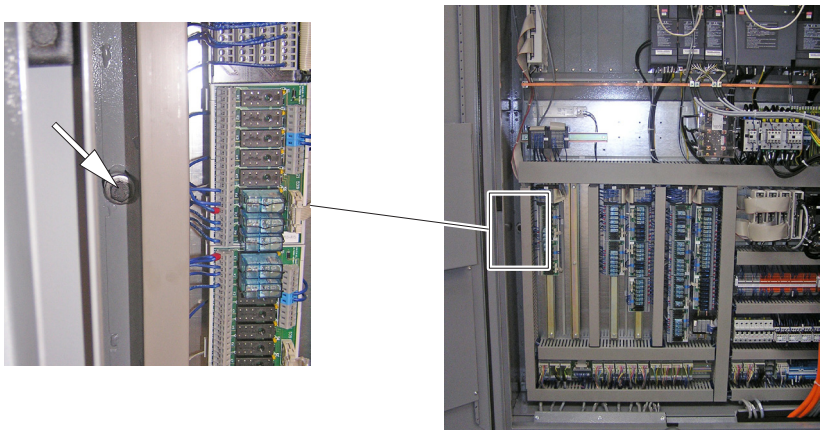
- Secure the locking plate to the machine bed / control cabinet.
  (The locking plate must be retained by the customer in case the machine has to be transported again).



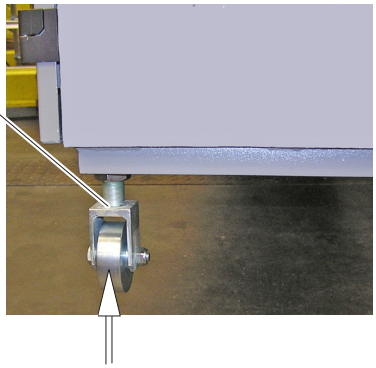
- Fit the M12 cheese head screw at the pivot point of the control cabinet.



- Fit the fixing screw inside the control cabinet.



Ensure that the four wheels on the control cabinet have been screwed in completely.

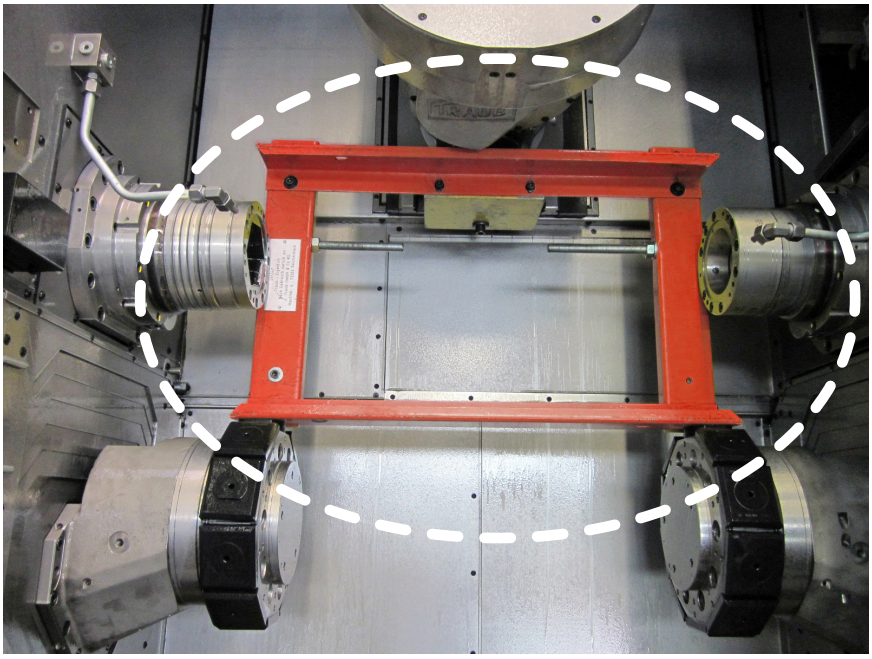


Transport retainers

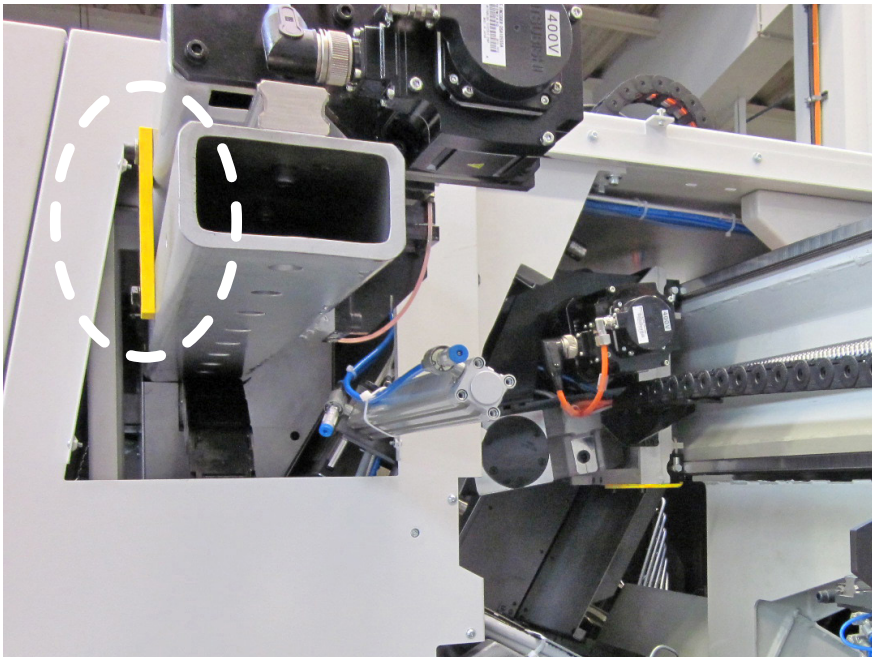
Transport retainers must be fitted to secure the machine for transport.

Position of the transport retainers

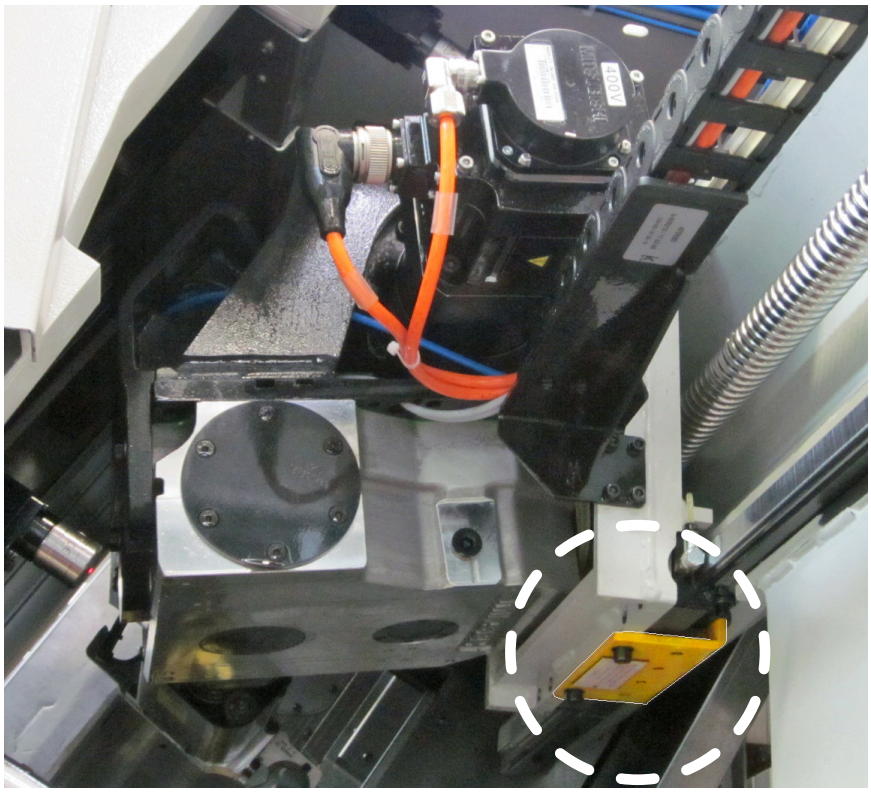
Transport retainer, turret / milling unit / main and opposed spindle

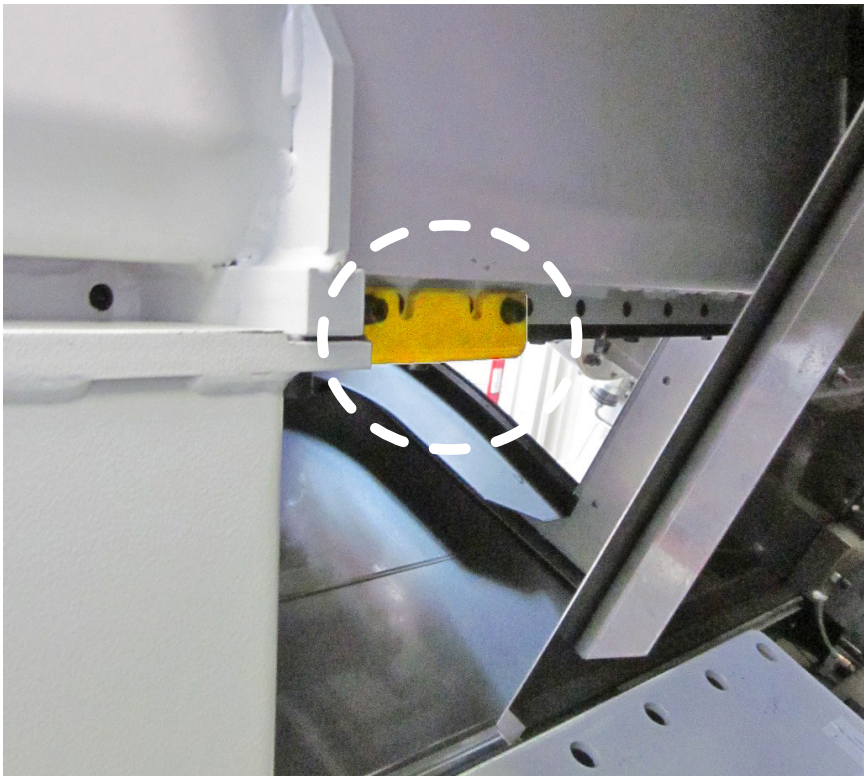


Transport retainer, workpiece handling



Transport retainer, tool changer





Remove the tool chain and chain magazine (only with optional 120 positions)

The chain magazine must be partly dismantled in order to transport the TNX 65/42 with milling unit and tool magazine with 120 positions.
The tool chain must be brought into a defined position before it is disconnected.

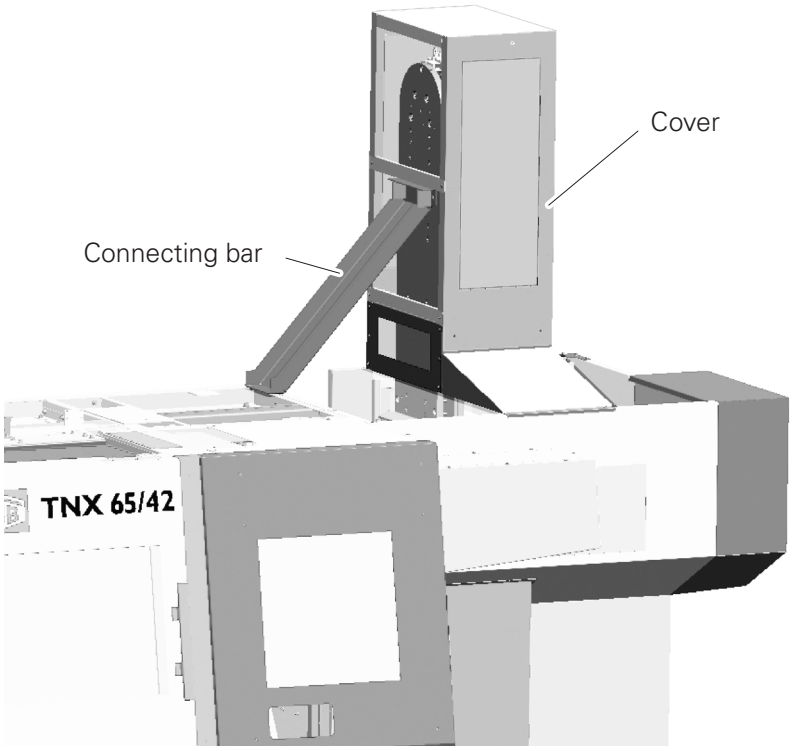
Risk of injury!
The machine must be switched off and secured to prevent re-activation before starting any assembly / disassembly work.

The upper part of the tool magazine must be lifted off with the aid of a crane or fork lift truck.

Requirements to be met by a fork lift truck		
Min. lifting height	mm	3500
Min. fork length	mm	1000
Max. fork width	mm	150
Forks adjustable to a minimum distance of	mm	114

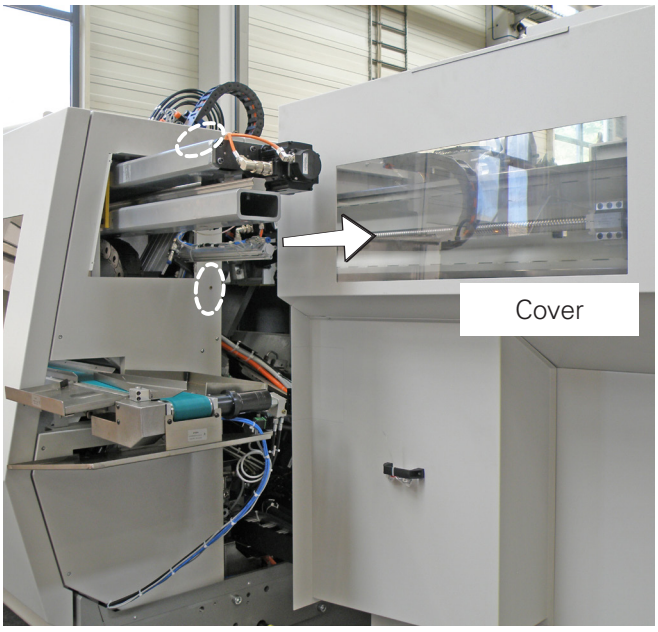
Disassembly

- Remove the connecting bar between the chain magazine and the machine.
- Remove the cover over the chain magazine.



Remove the cover on the milling unit with tool changer

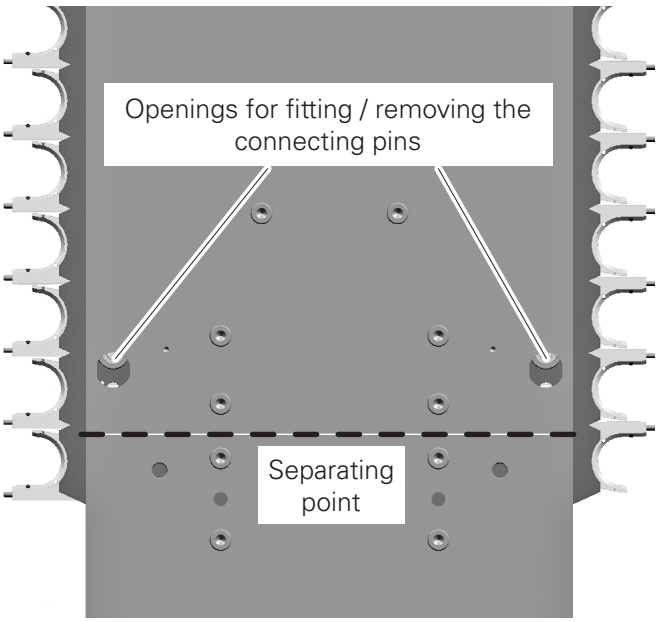
Disconnect the cables from the cover to the machine.
Unscrew the cover of the milling unit with tool changer at the five retaining points and remove it.



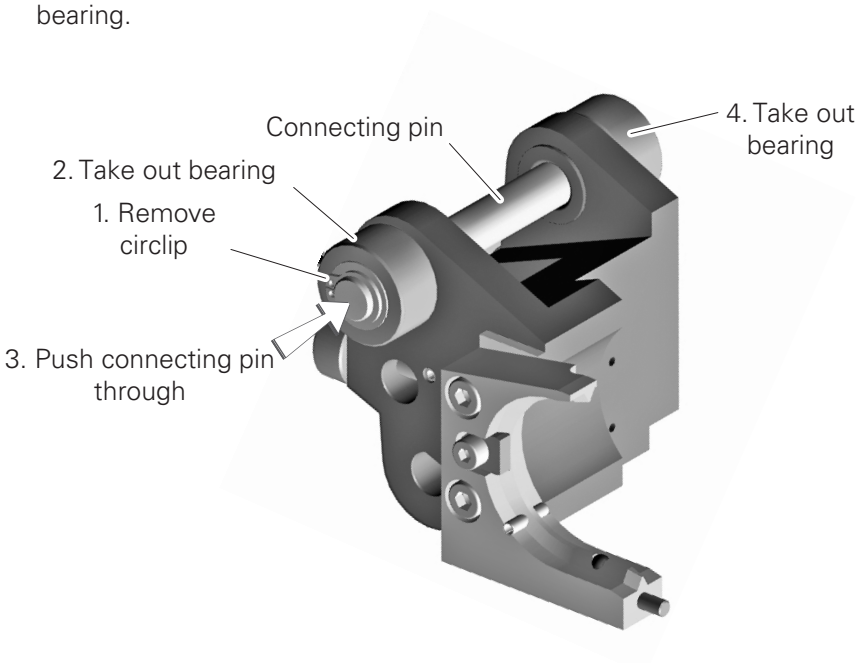
Separate the chain of the chain magazine (only with optional 120 positions)

Risk of injury! – The chain is tensioned
The tool chain must be secured by suitable means at the separating points before the connecting pins are unscrewed.

The tool chain must be brought to a defined indexing position before being separated.
Two openings are provided in the tool magazine for fitting / removing the connecting pins of the chain links.



- Remove the circlip from each connecting pin and take out the front bearing. Push the connecting pins through and remove them with the rear bearing.

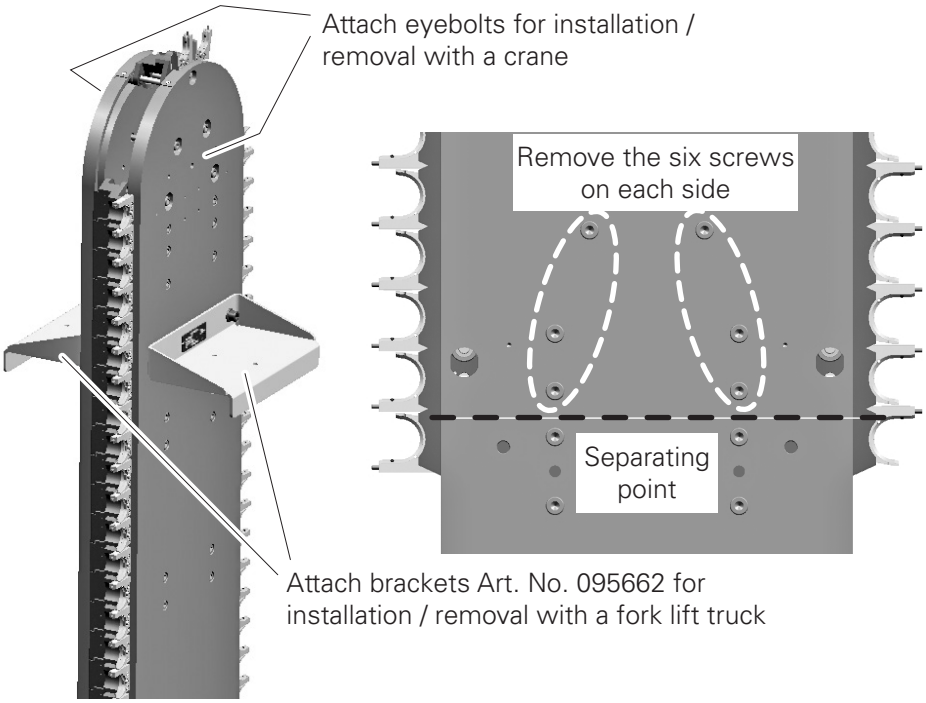


Remove upper part of chain magazine

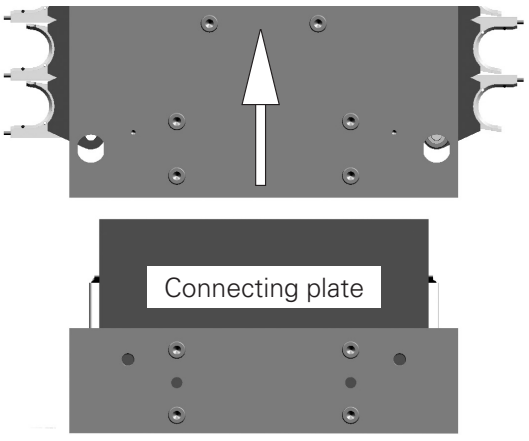
Danger due to falling parts

Ensure there is no-one underneath the suspended load!

- Before starting, secure the upper part of the chain magazine with the aid of eyebolts and a crane.
  A suitable fork lift truck can also be used instead of a crane. In this case, two brackets must be screwed onto the M12 threads provided for this purpose (the brackets Art. No. 095662 are available on loan from TRAUB).
- Take out the six screws on each side of the chain magazine.



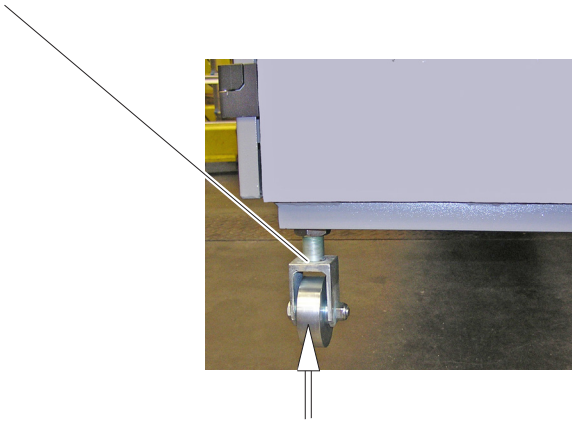
- Lift the upper part of the chain magazine off with the aid of eyebolts and a crane or the brackets Art. No. 095622 and a fork lift truck. Place the chain magazine on a suitable conveyance after being removed. The connecting plate remains attached to the bottom part.



Delivery of the machine

- Machine mounted on planks complete with control cabinet.
  The control cabinet is secured to the machine for transport.
- Moving parts are secured by means of transport retainers for transport.
- The fluid cabinet is securely connected to the machine.
- The central lubrication system is filled, the hydraulic and cooling units are empty.

Ensure that the four wheels on the control cabinet have been screwed in completely.



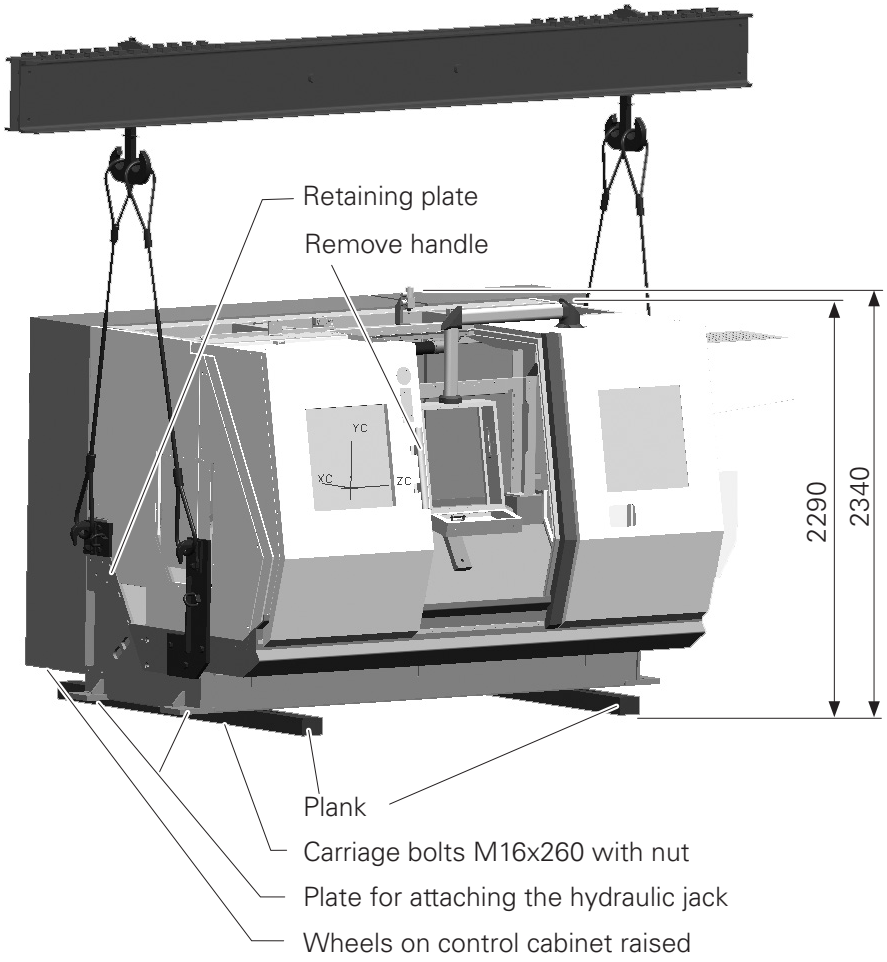
- Machine components and accessories mounted on pallets and secured

Transport by crane (min. load capacity 12 t)

Danger due to falling machine / parts
Ensure there is no-one underneath the suspended load!

The machine must not be lifted via the control cabinet!

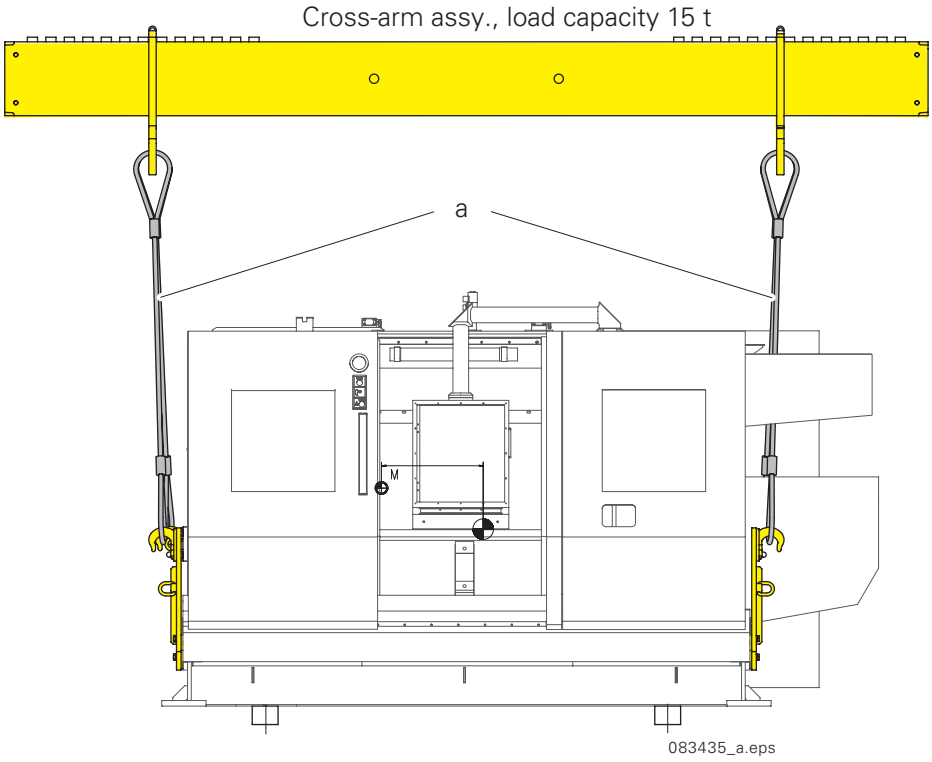
View of the machine in transport condition



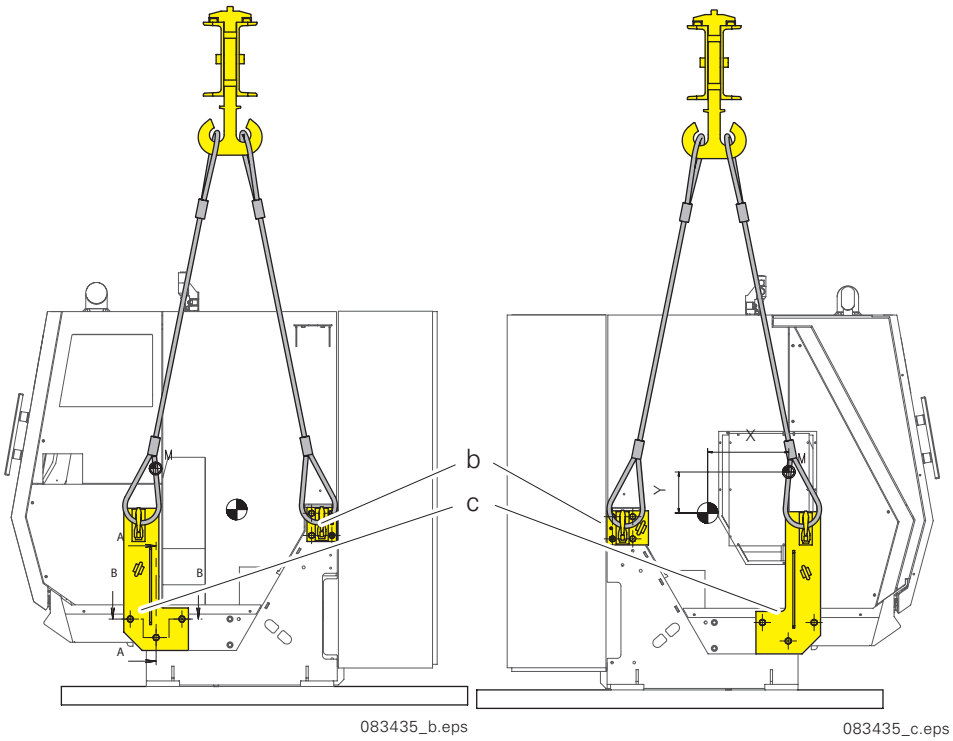
Set of hoisting gear and fittings

The complete set of hoisting gear and fittings (Article No. 083435) is available from TRAUB on loan and must be returned **completely and without delay** after use.

Suspension points, front view



Side views



083435_b.eps 083435_c.eps

Item	Designation	Article No.
a	4x Sling rope, L=2130 mm	083414
b	Attachment hook (8x hex head screw M20x40 10.9 DIN933)	083429 left 083427 right
c	Screw-on bracket (6x hex head screw M20x100 10.9 DIN933) (6x lock washer A 20 DIN 126)	083437 left 083436 right

TNX 65/42 Centres of gravity (machine with control cabinet)

Version	Tool carrier	Overall weight	Centre of gravity		
			X	Y	Z
1	1 top left 2 bottom right 3 top right 4 bottom left	9.760 t	440	-222	551
2	1 top left 2 bottom right	8.326 t	467.5	-233	568
3	1 top left 2 bottom right 4 bottom left	9.041 t	436	-255	501

Transport by fork lift truck

Requirements to be met by a fork lift truck		
Min. lifting capacity	kg	12000
Min. fork length	mm	2200
Load centre	mm	1200

The fork lift truck must have a minimum load capacity of 12 t. The machine may only be lifted from the operator side. When setting down the machine, ensure that the fork arms are not inclined, otherwise the planks may break.

To prevent damage to the machine, the rear wheel must be removed from the control cabinet before transporting it.

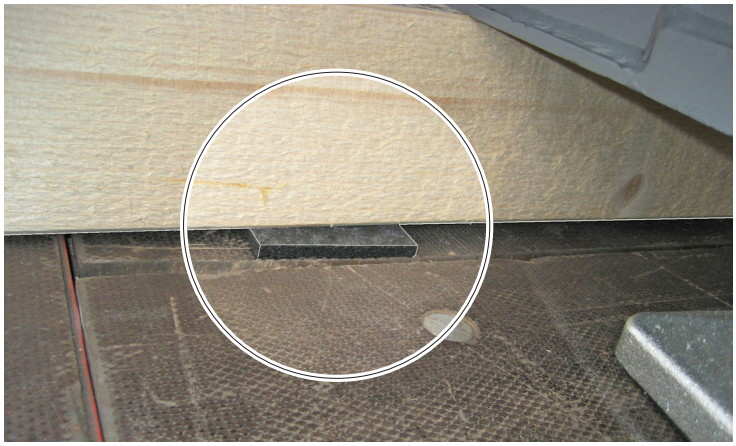
Transport by truck

The truck should have pneumatic suspension in order to avoid major bumps during transport!

The load must be secured so that it cannot slip.

Measures to prevent the load slipping

- Non-slip rubber mat between loading surface and machine.



- The machine base must be diagonally lashed to the loading surface with suitable lashing straps / chains.

Installing the machine by crane

Danger due to falling machine / parts
Ensure there is no-one underneath the suspended load!

Beware of being crushed
The installation site must be selected in such a way that there is no risk of anyone or anything being crushed against walls, pillars or hall installations by moving parts or the machine, including manually operated doors and flaps, etc.

Remove wooden planks

When delivered, the machine is positioned on and screwed to two wooden planks.

- Lift the machine by crane and secure it with suitable supports.
- Unscrew the wooden planks.

Ensure that the four wheels on the control cabinet have been screwed in completely.

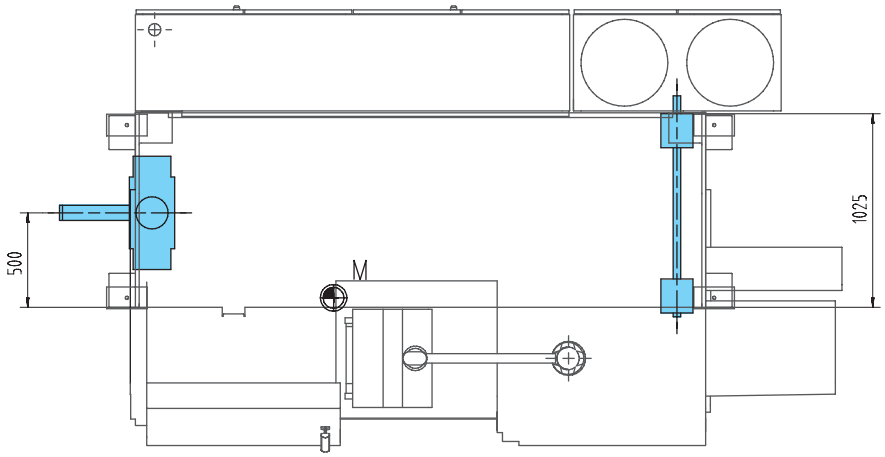
- Lift the machine (remove the supports) and slowly lower it onto the feet.

Positioning and installing the machine with transport rollers

Danger due to the load slipping
The load must be secured with appropriate lashing belts.

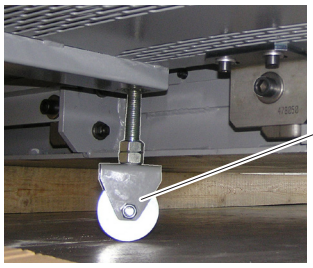
Transport rollers are used if a suitable crane is not available at the installation site and a mobile crane or fork lift truck cannot be used.
Due to the low loading height of the transport rollers, the machine can be loaded and unloaded with the aid of hydraulic jacks.
Each hydraulic jack must be able to support a full load of 10 t.
Three rollers are required for transport, including one steerable roller. The rollers must be dimensioned for loads of up to 12 t.
The rollers must always be positioned parallel to the material being hoisted.

Transport diagram



Lifting the machine with hydraulic jacks

There are two U-sections on both the right and left-hand sides of the machine for positioning the hydraulic jacks.



- Uniformly raise the machine with the aid of the jacks.

The wooden planks are screwed onto the four feet on the machine.

- Unscrew the wooden planks (if they have not been removed already
- If the rear wheel has been removed for transport, it must now be screwed back into place.

Positioning the transport rollers

Always place the rigid transport rollers under the machine first, and then place the steerable roller at the appropriate point under the machine.
The load must always be lowered onto the rigid transport rollers first.

The object to be transported must rest on the middle of the rotating plate on the steered transport roller so that the steering column can move freely.

Ensure that the four wheels on the control cabinet have been screwed in completely.

- Carefully lower the load onto the rigid transport rollers and secure it so that it cannot roll away inadvertently.
- Carefully lower the load onto the steerable transport roller.
- Move the machine to its installation site and secure the transport rollers so they cannot roll away inadvertently.
- First position the hydraulic jacks on the side of the machine with the steerable transport roller and lift it uniformly until the roller can be pulled out.
- Lower the machine onto the feet slowly and uniformly.
- Lift the other side of the machine until both transport rollers can be pulled out. Lower the machine slowly and uniformly onto the positioning elements.

Rough alignment of the machine

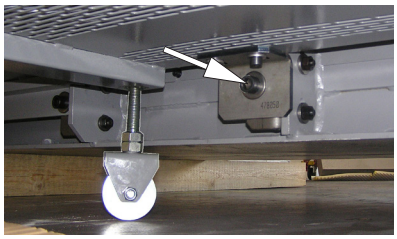
- Place a spirit level lengthwise on the clamping cylinder and crosswise on the hood.
- The distance from the floor must equal 70 mm at all four installation points.
- Adjust the four outer feet and align the machine with the aid of the spirit level.
- Secure the adjusting screws of the feet with the locknuts.

Set up control cabinet on wheels

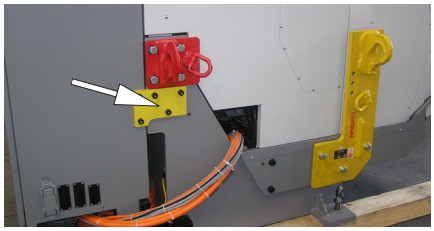
- Lightly position the four wheels to support the control cabinet on the ground.

Remove transport retainers from the control cabinet

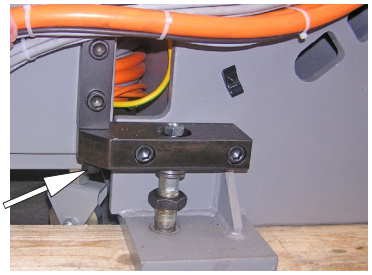
- Unscrew the retaining bracket underneath the control cabinet from the machine bed. The bracket remains connected to the control cabinet as a limit stop.



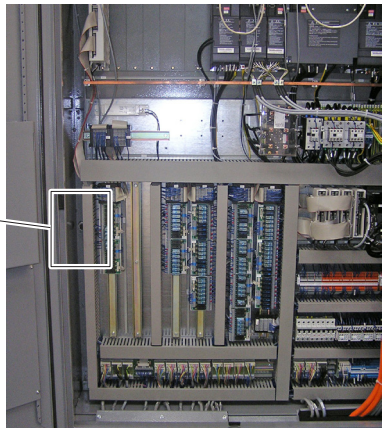
- Remove the locking plate on the machine bed / control cabinet.
  (The locking plate must be retained by the customer in case the machine has to be transported again).



- Unscrew the M12 cheese head screw at the turning point of the control cabinet.

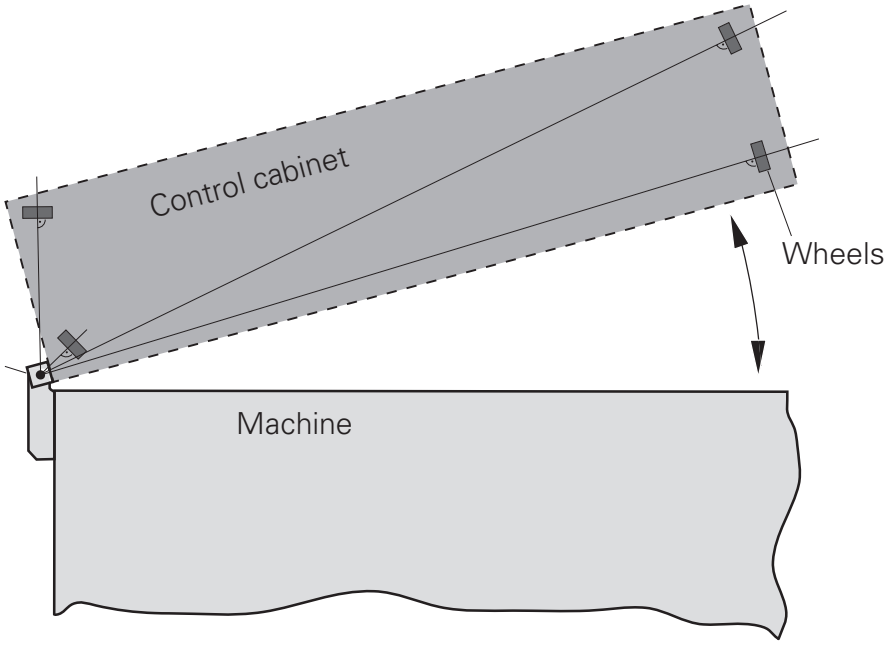


- Take out the fixing screw in the control cabinet.



Aligning the wheels on the control cabinet

- Raise the control cabinet with the aid of the four wheels until it lifts off the two bearing points on the machine bed. Ensure that the wheels are at right angles to the pivot point and secure the wheels with locknuts.



- The control cabinet can now be swivelled to the rear.

Indicator lamp

Connect the indicator lamp on the machine if removed for transport.

Remove transport retainers from the machine

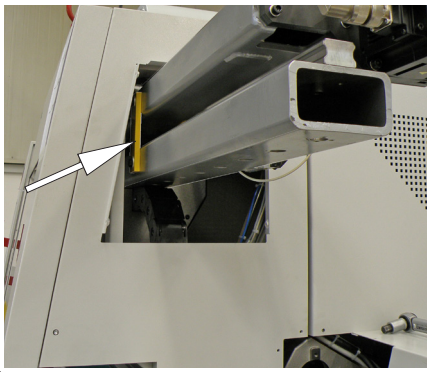
The transport retainers are located on the:

- control console
- sliding door
- workpiece handling with remnant removal device
- tool carrier and opposed spindle

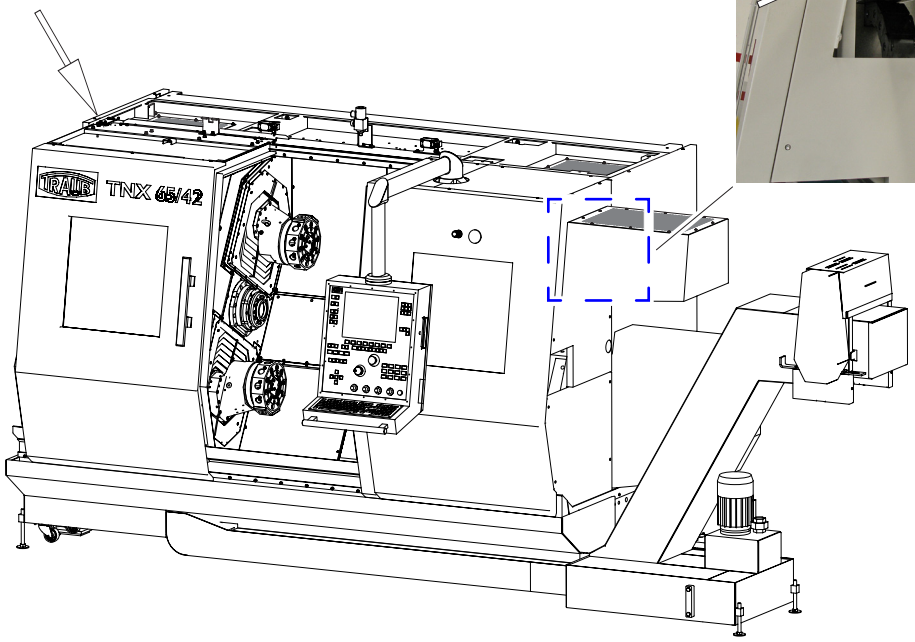
Transport retainers

- **Working area door**
- **Workpiece handling with remnant removal device**

Workpiece handling with remnant removal device

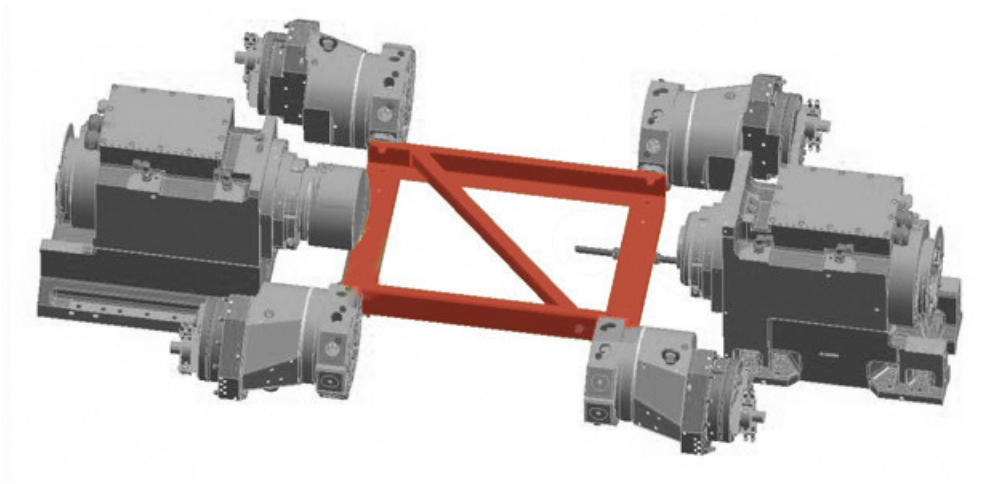


Transport retainers for working area door

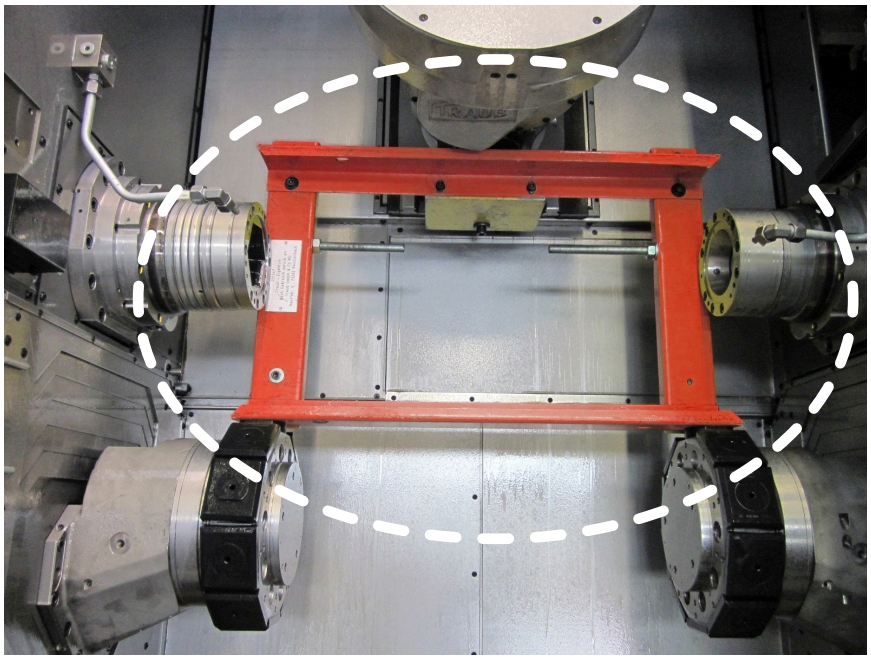


Transport retainer for turret (tool carrier / main spindle and opposed spindle / milling unit)

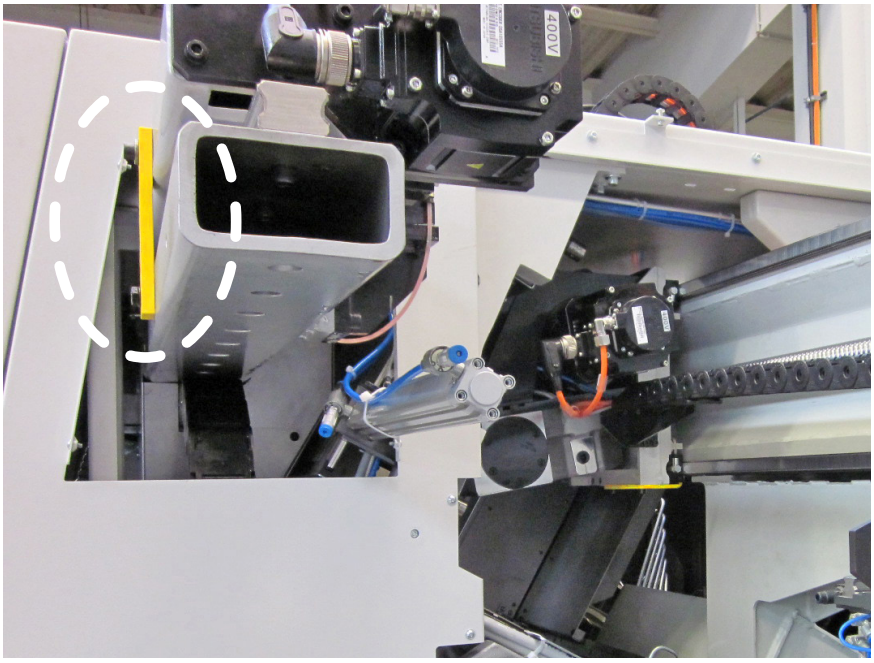
Transport retainer for turret / main spindle and opposed spindle



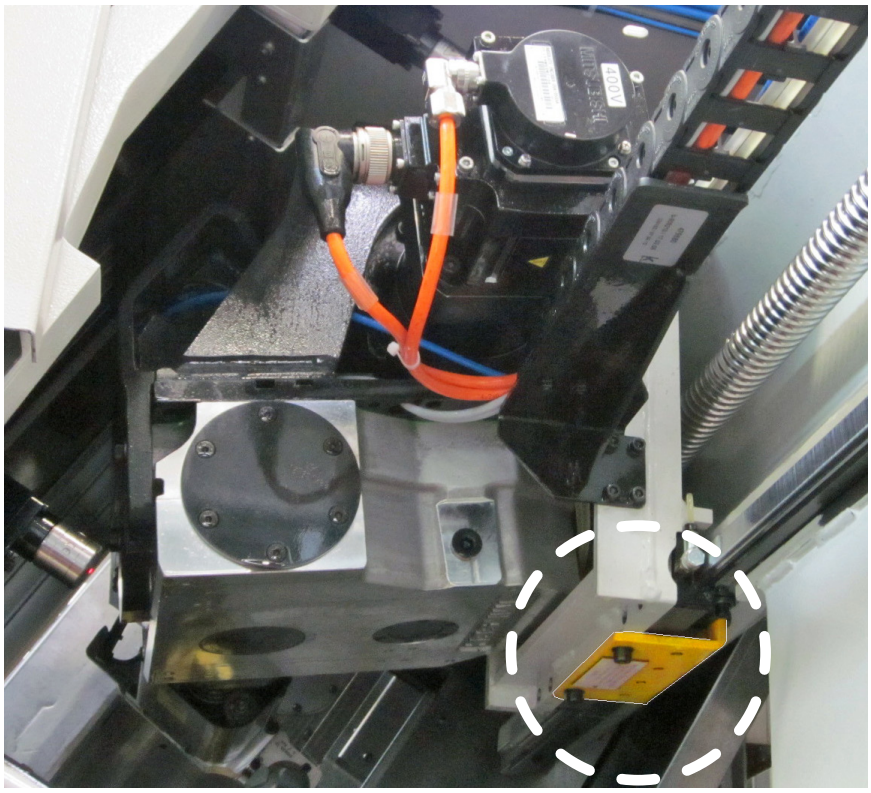
Transport retainer for turret / milling unit / main spindle and opposed spindle

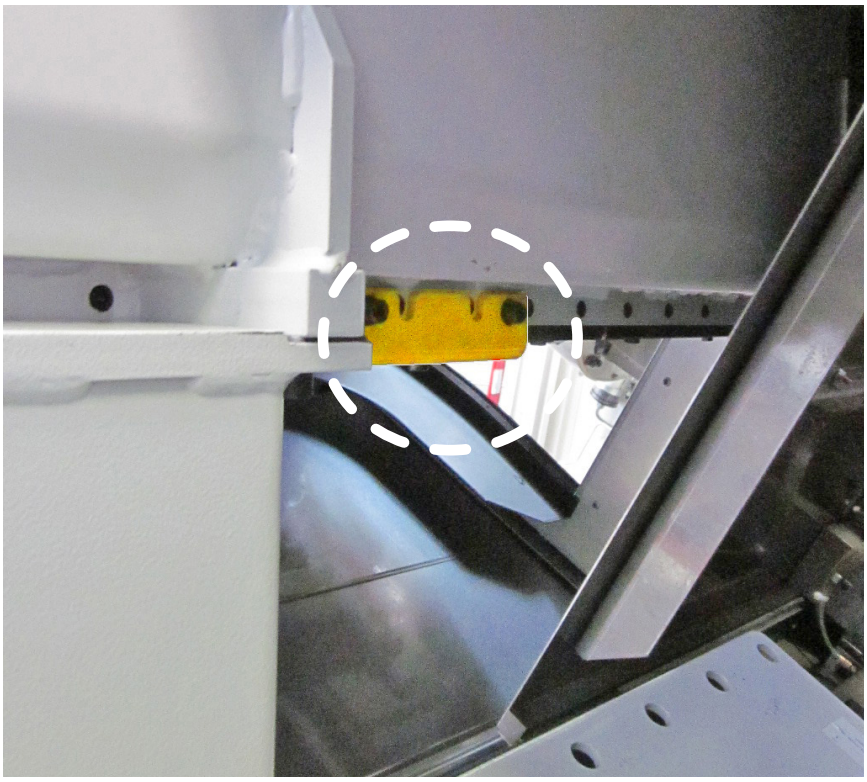


Transport retainer for workpiece handling



Transport retainer for tool changer if necessary





Installation of the tool chain and chain magazine (only with optional 120 positions)

Install upper part of chain magazine

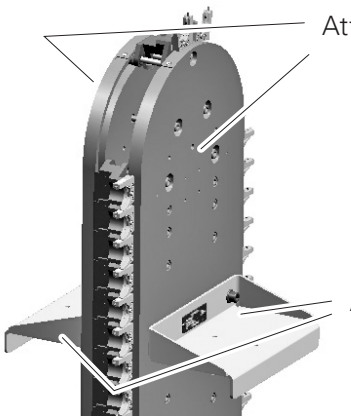
Danger due to falling parts

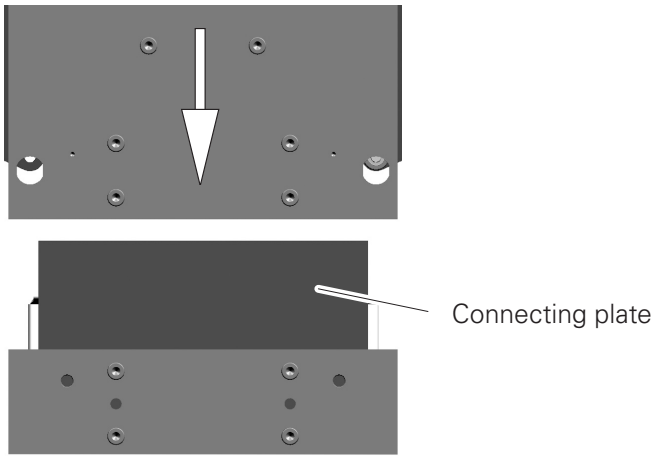
Ensure there is no-one underneath the suspended load!

- Lift the upper part of the chain magazine with the aid of eyebolts and a crane.
  A suitable fork lift truck can also be used instead of a crane. In this case, two brackets must be screwed onto the M12 threads provided for this purpose (the brackets Art. No. 095662 are available on loan from TRAUB).

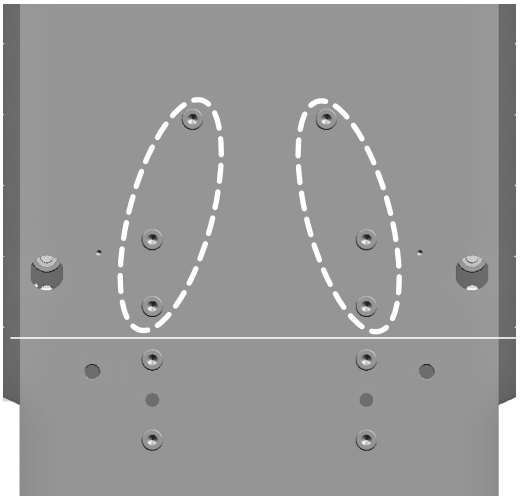
Requirements to be met by a fork lift truck		
Min. lifting height	mm	3500
Min. fork length	mm	1000
Max. fork width	mm	150
Forks adjustable to a minimum distance of	mm	114

- Carefully lower the upper part of the chain magazine over the connecting plate in the bottom part of the chain magazine.
- Remove the eyebolts or brackets Art. No. 095662.





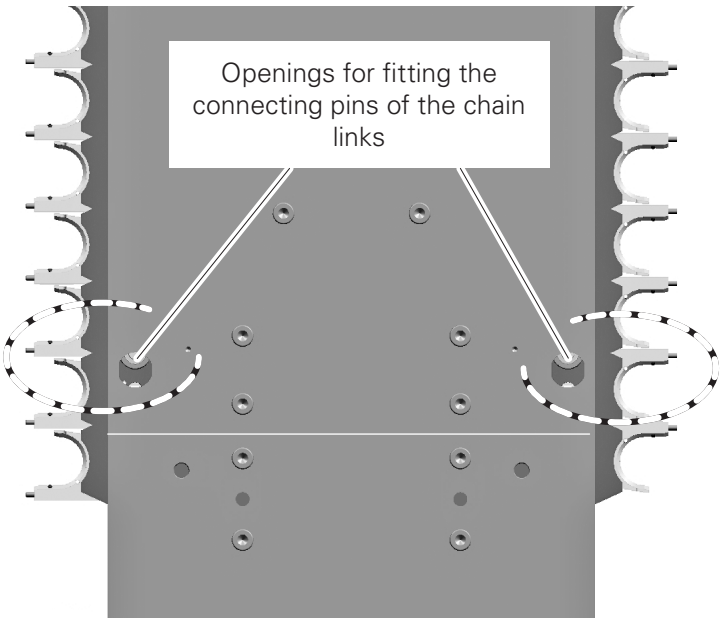
- Secure the chain magazine on both sides with the six screws provided.



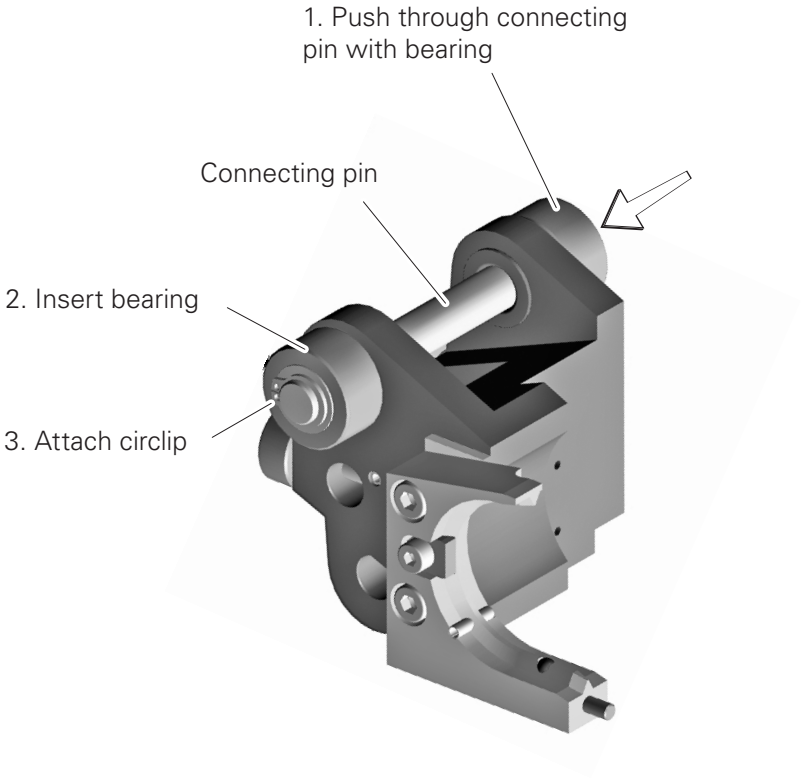
Connect the chain of the chain magazine (only with optional 120 positions)

Risk of injury!
The tool chain must be secured at the separating points by suitable means so it cannot fall down.

Two openings are provided in the tool magazine for fitting the connecting pins of the chain links.

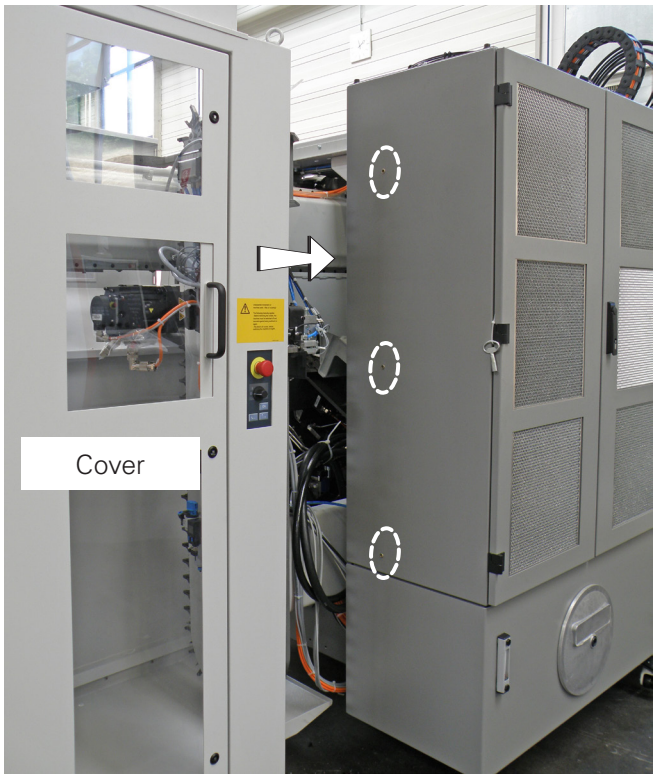


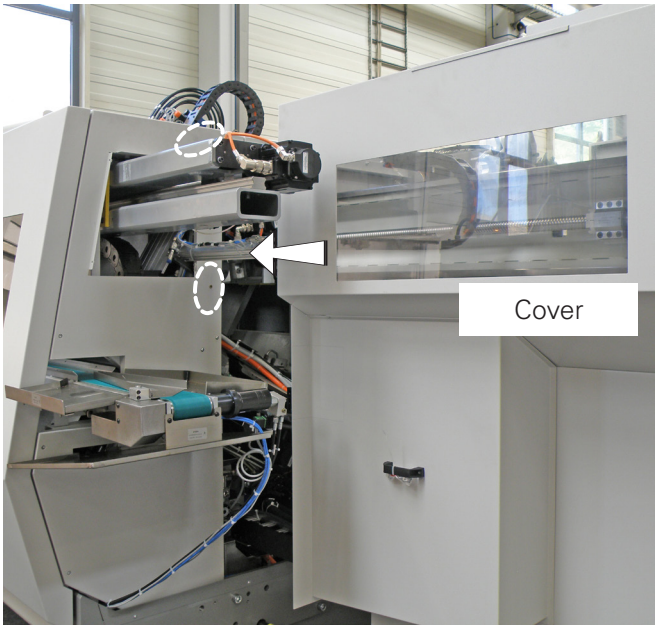
- Lift the ends of the chain with suitable means, move them into position to connect the chain links and secure them so they cannot fall down.
- Push through the connecting pin with bearing and fit the bearing on the opposite side.
- Attach the circlip to the connecting pin.



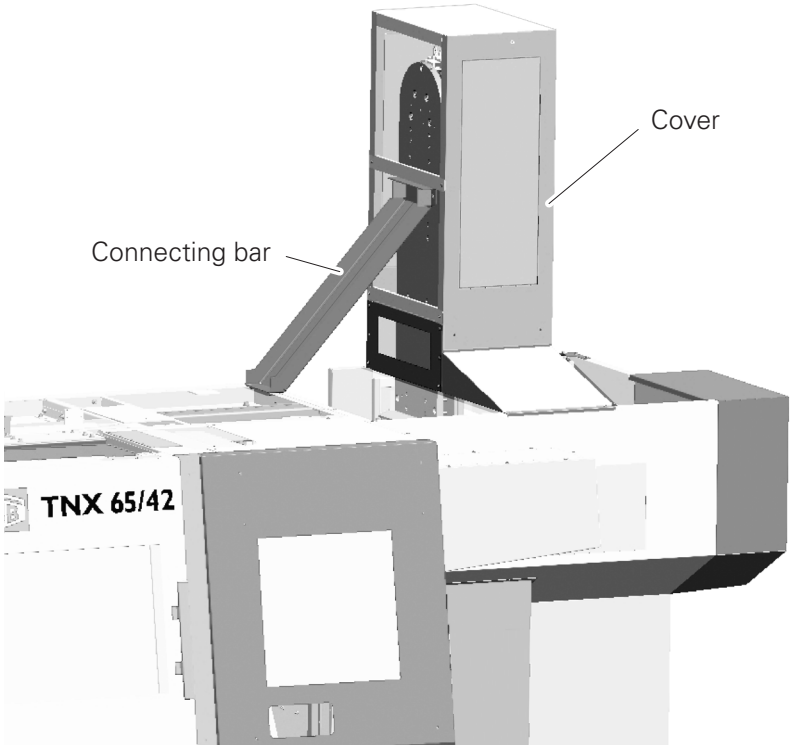
Install cover on milling unit with tool changer

Attach the cover of the milling unit with tool changer and secure it at the five fixing points.
Reconnect the cables to the machine cover.





- Position the cover on the chain magazine with suitable aids and secure it.
- Refit the connecting bar.



Overview of fuels

The information in the data sheets of the fluid manufacturers and in the document **Notes on Operating Materials** must be observed during all work involving fuels and fluids.

The filling quantities of the fuels and fluids are stated in the respective fluid schedules.

	Quantity [litres]	Designation	Initial start-up
Central lubrication	6		Factory-filled by **TRAUB**
Hydraulic system	180		To be provided by the **customer**
Lubricoolant unit	Note the corresponding manufacturer's documentation		
Compressed air	See chapter Pneumatic connection		
Bar loading magazine	Note the corresponding manufacturer's documentation		

Supply of compressed air

The information in the data sheets of the fluid manufacturers and in the document **Notes on Operating Materials** must be observed during all work involving fuels and fluids.

The filling quantities of the fuels and fluids are stated in the respective fluid schedules.

The necessary compressed air is conditioned in a maintenance unit on which settings are not required.

The values can be read off on pressure gauges to check normal functioning.

Air consumption

The air consumption depends on the machine's equipment configuration and cycle time.
A value of 200 - 300 Nl/min (without window clearing blower) is assumed on average for a standard machine.

The control cabinet may only be opened when the master switch is off and must be locked in accordance with the applicable safety standards whenever the master switch is on.

Notes

- The electrical connections may only be made by duly qualified electricians.
- The electrical documentation supplied is definitive and binding.
  It must be available to the machine manufacturer's service personnel at all times.
- Potentiometer and switch settings, machine parameters, etc. may only be changed by the machine manufacturer's service personnel.
- The machine must be connected to the mains power supply via the master switch (multi-wire cable).
  The clockwise phase sequence must be ensured when connecting the machine.
- The feeder to the master switch on the control cabinet can be routed from above or through a duct in the base of the control cabinet..
- The control voltages are connected to the PE on one side in accordance with EN 60204 Part 1 (VDE 0113).

Please note the instructions in the circuit diagram.

Precise alignment of the machine

Requirements

- The hydraulic unit in the fluid cabinet must be filled with hydraulic fluid.
- The machine must be connected to the power supply.

Switching on the machine

Before the machine is put into operation for the first time, its owner must ensure that the machine and its safety mechanisms are in good working order. This must also be checked at reasonable, regular intervals during operation, but at least whenever the machine has been repaired or serviced.

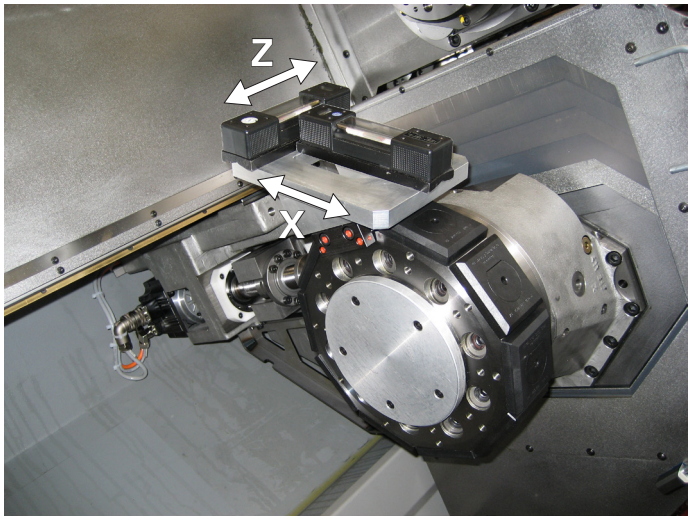
- Switch on the machine at the master switch.
- Press "NC ON".
- Press "Drives ON".
- Open/close working area door (activate safety function).

Check / correct position and torsion of the machine

Precision adjustment of the machine is carried out with the aid of a fixture inserted in the turret on tool carrier 2.
Spirit levels with an accuracy of 0.02 mm/m are placed on this fixture in Z and X directions in order to check the machine's position and torsion.

Check / correct with tool carrier 2

- Move tool carrier to the limit position Z+.
- Mount the invariable fixture in position 1 of the turret on tool carrier 2.
- Place two spirit levels on the fixture, one in Z-direction and one in X-direction.



- Advance in Z-direction to check the machine and uniformly adjust the right or left feet to re-align it if necessary. The deviation must not exceed 0.01 mm over the entire distance travelled.
- Move to the limit position Z- to check the machine's torsion. The deviation must not exceed 0.01 mm over the entire distance travelled. If this is not the case, the machine must be re-aligned by adjusting the appropriate outer foot.
- Secure the adjusting screws of the feet with the locknuts.

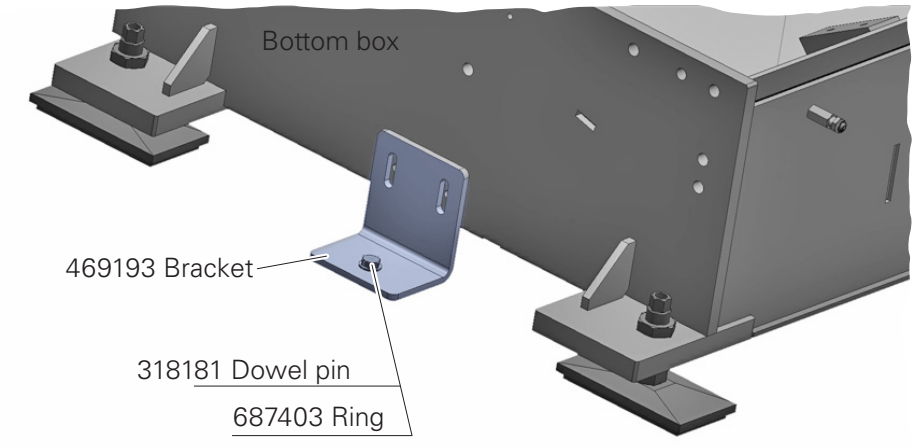
Switch off the control system, disconnect the machine from the power supply and secure it so that it cannot be reactivated.

Secure machine to the floor

The machine can be secured to the floor if necessary. The following parts are enclosed with the accessories for this purpose:

- 2 retaining brackets, Article No. 469193
- 2 rings, Article No. 687403
- 2 dowel pins, Article No. 318181

- Screw the two retaining brackets (Article No. 469193) to the right and left-hand sides of the bottom box. The brackets must lie squarely on the foundations.
- Using a dia. 18 mm stone drill, drill a hole 110 mm deep through each of the retaining brackets.
- Fit the ring (Article No. 687403) under the screw head of the dowel pin and insert the dowel pin (Article No. 318181) in the hole. The machine is anchored to the foundations by tightening down the hex bolt with the specified torque (approx. 80 Nm).



Transport and installation of the chip conveyor

Note the corresponding manufacturer's documentation

- Lift the chip conveyor off the pallet with a rope and set it down.
- Turn up the feet until the chip conveyor rests on the rollers.
- The two stop bolts on the bottom box must be set to 20 mm.
- Push the chip conveyor as far as possible under the machine from the operator side.
- Raise the chip conveyor with the adjusting screws until it is horizontal and the bottom edge of the chip conveyor is 50 mm from the floor all-round.

Setting the level switch of the chip conveyor

Note the corresponding manufacturer's documentation

The level switch on the chip conveyor is normally set to emulsion as standard medium.
When the machine is operated with cutting oil, the level switch must be switched over accordingly before starting.
Note the User Manual (parameter list) provided by the manufacturer.

Lubricoolant unit

Note the corresponding manufacturer's documentation

The cooling lubricant unit has to be aligned to the respective emulsion or cutting oil medium as required.
Note the User Manual (parameter list) provided by the manufacturer.

Bar feeding mechanisms

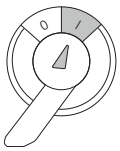
Note the corresponding manufacturer's documentation

The bar feeding mechanisms and other accessories must be mounted, aligned and secured to the floor as directed by the respective manufacturers.

Switching on the machine

Before switching on the machine, the key-operated switch must be set to ***"Production mode"*** in order to prevent the machine starting or moving unexpectedly.

Before starting up the machine for the first time, the operator must ensure that the machine and its safety mechanisms are in perfect working order. This must also be checked regularly during normal operation of the machine, but at least whenever it has been repaired or serviced.



- Switch ON the master switch on the control cabinet!

- Switch ON the NC control on the machine control panel.

- Switch drives ON.

- Open and close working area door
  Operability of the door switches must be checked by opening and closing the working area door. Operation of the machine cannot be commenced until the safety facilities have responded.

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