INDEX

# Transport, installation, commissioning

**B500.3**

**(Turning length 1200 mm)**

**DIE333EN - 2024-10-21**
1024/Sp (Transport, Aufstellung, Inbetriebnahme)/20278817

## 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

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# General note

All the documents and drawings necessary for operating the machine can be found on the provided data carrier. See chapter 1 "Instructions" and chapter 2 "Diagrams and drawings".

Documents and drawings of auxiliary units from other manufacturers can be found in chapter 3, "Third-party documentation".

In addition, these data/documents are stored on the controller*.

(* - **iXpanel** installation required)

# Explanation of symbols

Explanation of the symbols used in the user documentation:

1.

**This symbol warns against a direct, imminent danger to the life and health of individuals. Failure to observe this danger warning may result in severe health impairment, such as perilous injury and even death.**

2.

**This symbol warns against a direct, imminent danger from electricity. Failure to observe this danger warning may result in severe health impairment, such as perilous injury and even death.**

3.

This symbol indicates important notes for the proper operation of the machine.
Failure to observe this caution may cause malfunctions on the machine.
This can result in damage to entire assemblies or parts thereof.

## Safety instructions

The user documentation, in particular, the document "Safety Instructions and Technical Specifications" must be observed.

The safety instructions described in this document relate exclusively to the transport, installation, and commissioning of the machine.

## Information on transport, installation, commissioning

**Use only suitable hydraulic jacks or a crane to lift the machine. When transporting with armored rollers, ensure that the rollers used have the appropriate load-bearing capacity.**
**Use plastic plates or Teflon plates to reduce rolling resistance and to bridge unevenness and cracks.**

If air cushions are used when transporting the machine to the installation site, be sure to observe the relevant manufacturer's documentation of the air cushion manufacturer.

**When selecting the modules, the following should be observed:**

- **Condition of the floor.**
- **Suitable size (load capacity), lifting height, and number of modules.**

If the floor is cracked or slightly porous, the manufacturer states that a foil should be laid out on the travel path.

**INDEX** uses the model 4K27NHDL from **AeroGO**.

Transport locks can be identified by their red color.

**All transport devices and transport locks (painted red) that are described in this documentation are part of the machine equipment and remain on the machine or with the customer.**

They must not be sent back to **INDEX**.

**Remove all transport locks prior to commissioning.**

Store the removed transport locks in a safe place so they are available for other transport in the future.

Improper transport, installation and commissioning of the machine can cause accidents. This may cause damage or malfunctions to the machine for which **INDEX** does not accept any liability or provide any warranty.

Carefully plan the unloading, transport to the installation site, installation, and commissioning of the machine before delivery. Be sure to observe the following instructions in this document.

Transport instructions and manufacturer documentation are available for separate units such as chip conveyors, bar guides, bar loading magazines, etc. Observe the following chapters - chapter 1 “Instructions” - chapter 3 “Third-party documentation”.

The safety switch (CTP-LBI) on the work area door has the following locking types/functions:

– A function that prevents accidental entrapment if the power fails or the machine is switched off and the work area door is open.
– A function that prevents the activated lock from being disabled in the event of a power outage.

(Source EUCHNER GmbH + Co. KG)

## Precautions for on-site transport

**Danger to life!**

**Do not step under suspended loads.**

Machines must be transported by authorized and qualified personnel only.

Act responsibly when transporting the system and always consider the consequences. Avoid dangerous and risky actions.

Slopes and gradients (e.g., driveways, ramps, etc.) are particularly dangerous. Use extra care if such passageways cannot be avoided.

### Dimensions and masses

The weight of the machine and the control cabinet is indicated on the relevant installation plan. See chapter 2 “Diagrams and drawings“.

The weight of separate delivered units, such as chip conveyors, bar guides, bar loading magazines, etc., can be found in either the manufacturer’s documentation or the relevant installation plan.

### Lifting devices

Only use lifting devices with sufficient load capacity for lifting individual units.

### Means of transport

When selecting means of transport (e.g., forklifts, trailers, heavy-duty trailers), ensure that each component’s load capacity is sufficient.

In addition, consider the towing capacity of the means of transport (e.g., forklift).

If the means of transport’s towing capacity cannot be found in the operating manual, obtain a written specification from the manufacturer.
If necessary, consult with the manufacturer of the means of transport.

Ensure secure and proper seating of the load. If necessary, use additional fixtures to ensure that the cargo is not able to slip.

# Preparations

This section is addressed to the persons responsible for the installation and their staff.
The information provided here allows you to prepare the installation site and its surroundings such that the machine, when delivered, can be installed and put into operation immediately.

Be sure to carefully plan the delivery, unloading, and transporting of the machine from the unloading site to the installation site.

The installation plan applicable to this machine was already submitted for approval after the contract award. When the machine is delivered, it can be found in chapter 2, "Diagrams and drawings" on the supplied data carrier and the controller (**iXpanel** installation required).

Take the size (dimensions) and masses of each unit into consideration.

Suitable transporting and lifting devices must be available when the machine is delivered.

Any obstacles along the transport route from the unloading site to the installation site must be eliminated before the machine is delivered.

Check the transport route for load-carrying capacity, levelness, damaged pavement, traverse grooves, slopes, gradients, etc.

Is the width and height of entrances and gates sufficient?

If elevators are to be used, do they have sufficient capacities?

Proper planning will pay off!

## Suitable transporting and lifting devices

Suitable transporting and lifting devices must be available when the machine is delivered:

- Crane
- Truck-mounted crane
- Forklift
- Heavy-duty trailer
- Armored rollers
- Air cushion
- Armored rollers
- Hydraulic jacks
- Forklift truck (only for separate units)

## Space requirements

The following must be ensured:

- Sufficient free space around the machine.
- Sufficient movement space for the operator.
- Sufficient space for maintenance and repair.
- It must be possible to open all doors of the machine completely.
- Space for placing blank and workpiece pallets, collection bins, chip trolleys, tool trolleys, etc.

Use the installation plan in chapter 2 "Diagrams and drawings" to determine the required space.

There are special installation plans for auxiliary units such as bar guides, bar loading magazines, etc. See chapter 2 "Diagrams and drawings".

## Floor conditions

A special foundation is not necessary. Only the load-carrying capacity and strength of the floor area must be suitable for the machine weight based on constructional aspects.

Comply with the requirements set out in ***DIN 18202:2019***.
In particular, note the information regarding **"Flatness tolerance for finished floors"**.

There must be **no expansion joints** in the area of the machine footprint.

The guidelines and regulations applicable in the country of use must be followed.

### Fastening/anchoring

Doweling of the machine is not necessary.

Bar feeders must always be doweled.
The machine does not need to be doweled in conjunction with a bar feeder.
Follow the relevant operating instructions.

**iXcenter** must always be doweled.
The machine does not need to be doweled in conjunction with an **iXcenter**.
Follow the relevant operating instructions.

When mounting a robot cell from a third-party manufacturer, doweling is recommended.
The machine does not need to be doweled in conjunction with the robot cell from a third-party manufacturer.

Be sure to follow the relevant third-party documentation.

## Ambient conditions

See ambient conditions in document "Safety Instructions and Technical Specifications".

**If the actual conditions at the installation site differ from these specifications, be sure to contact INDEX or an INDEX representative.**

## Power supply

The guidelines and regulations applicable in the country of use must be followed.

**The mains connection to the machine should be as short as possible.**
**Use a sufficient wire size.**

The power supply for the machine requires a stable supply grid.
The operating voltage may fluctuate no more than +10% or -10%.

The mains connection must be executed according to the regulations of the responsible electric utility company and in compliance with VDE regulations. For further information, see installation plan in chapter 2 “Diagrams and drawings”.

### Main circuit breaker

**Check that the building connection has sufficient capacity to cover the additional load to be protected.**
**Discuss any unclear conditions with your local electricity supplier.**

The main circuit breaker is not included in the delivery of the machine.
It must be installed outside the machine according **to DIN EN 60204-1**.
If a transformer is required, the main circuit breaker must be installed after the transformer, i.e., on the secondary side. The fuse protection on the primary side must be designed according to the connection data of pre-transformer.
The loads to be protected depend on the existing operating voltage.

The following values can be taken from the nameplate of the machine or the circuit diagram in chapter 2 "Diagrams and drawings":

- Machine connection,
- Operating voltage,
- Main circuit breaker.

## External data transfer

**Do not lay data cables directly next to power cables.**

Special data cables are required to transmit data between the machine and external computers or servers. To protect these cables, appropriate metal conduits must be installed.

The connection to the internal network (DNC) requires an RJ45 network cable.

An additional connection to the external network (IoT) must be made with a separate RJ45 network cable.

## Compressed air supply

**Observe the max. allowed connection pressure for the machine. See pneumatic diagram in chapter 2 “Diagrams and drawings”.**

Machines equipped with pneumatically operated components require a compressed-air supply with the following capacity:

| | |
|---|---|
| Operating pressure | 6 to 10 bar |
| Air consumption | depending on the machine equipment |
| Air requirement for rotating windows | approx. 1000 l/min - 60 $m^3$/h |

If the machine has a rotating window, it should be ensured that a sufficiently dimensioned cross-section of the compressed air supply lines is available for a higher compressed air consumption on site. Both pneumatic feeders on the machine can be used for this purpose.

For the air supply on the machine, see the installation plan in chapter 2 “Diagrams and drawings”.

## Pressure accumulator

If the machine was shipped by plane, all pressure accumulators attached to the machine are depressurized and emptied.
Before commissioning the machine, a specialist must refill all pressure accumulators with nitrogen ($N_2$). The prescribed pressures must be observed.
For the prescribed pressures, see the hydraulic diagrams in chapter 2 “Diagrams and drawings”.

The guidelines and regulations applicable in the country of use must be followed.

## Operating material to be provided

- Coolant [1)]
- Lubricating oil [1)]
- Hydraulic fluid [1)]
- 1 kg of high-performance grease for chuck
- Cooling lubricant

Information on the lubricating oils, hydraulic fluids, grease, and cooling lubricant types and filling quantities used at **INDEX** can be found in the following documents: Chapter 1 Instructions: "Information on working media" "Hydraulic diagrams" and "Installation plans" in chapter 2 "Diagrams and drawings".

Caution:
Be sure to use only hydraulic fluid according to **ISO 4406**, having a purity grade of **15/13** (10 µm absolute).
Hydraulic fluid: **HLPD 32**
Lubricating oil: **CGLP 68**
Coolant: **Antifrogen N** (100 l required)

[1)] The machine is delivered with a full tank.

## Pumps and tanks

Changing the hydraulic fluid and cooling lubricant is part of the periodic maintenance tasks.

To fill the machine's hydraulic tank with hydraulic fluid, a pump with a 10 µm fine filter (absolute) is required that may be used for this purpose only.

A simple pump is sufficient to extract the used hydraulic fluid or cooling lubricant. The same pump may be used to fill the cooling lubricant tank; however, it must be thoroughly flushed with fresh cooling lubricant.

A robust container is required for collecting the extracted fluids. Suitable containers are metal barrels of sufficient capacity and with proper labels, which can be tightly closed.

## Chip removal

If the machine operates with a chip conveyor, a chip trolley is required. Pay attention to the discharge height of the chip conveyor. The chip trolley should have a device for draining the accumulating cooling lubricant so it can be returned to the cooling lubricant tank.
This will protect the environment and save costs.

## Disposal of used operating materials

Decide in advance how to dispose of used operating fluids such as hydraulic fluid, lubricating oil, and cooling lubricant in an environmentally friendly manner.

## Observing the ground and wastewater regulations

The guidelines and regulations applicable in the country of use must be followed.

The machine contains water-polluting substances such as water-miscible cooling lubricants and mineral oils. These substances may leak from the machine in case of adverse events.
Therefore, the machine must be installed in a place that excludes any harm by these substances to water or groundwater.

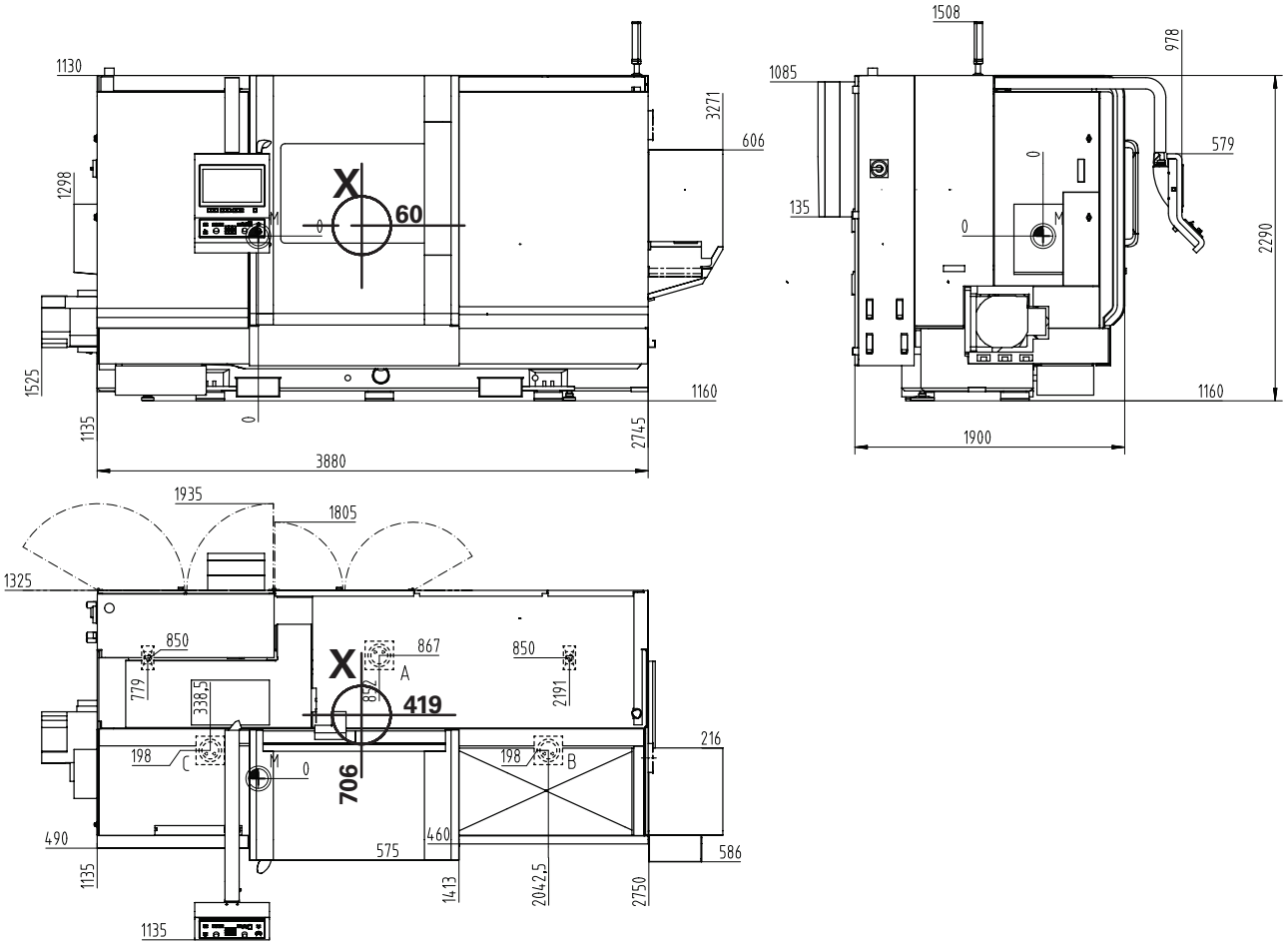
**Possible preventive measures:**

– Place the machine inside a tight trough.
– Seal the floor of the factory hall.

# Transport

## Transport chart (without transport means)

### B500.3 turning length 1200 mm

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| Machine feet - Load distribution - Center of gravity | |
|---|---|
| | **B500.3** |
| **A** | 3500 kg |
| **B** | 2900 kg |
| **C** | 4100 kg |

**X center of gravity**

Visualization of a machine in standard version.
Check the currently valid installation plan!
**The position of the center of gravity may change depending on the machine's equipment.**

# Delivery

## Machine

The machine is delivered by truck.

**The machine is in the following condition when delivered:**

– The hydraulic fluid and lubricating oil tanks are full.
**(The filler neck of the hydraulic tank is closed.
Refit the filling and breathing filter before commissioning.)**

Example:
Filling and breathing filter
by ARGO-HYTOS GmbH

DIE009ZZ_23.tif
Fig.: Blanking plug

DIE140ZZ_44.tif

DIE009ZZ_22.tif
Fig.:
Example of filler neck

– The cooling lubricant tank will be empty. (The machine has a chip conveyor with an integrated cooling lubricant tank or a separate cooling lubricant cleaning system. The chip conveyor and cooling lubricant cleaning system are separate units.)
– Certain moving parts on the machine, such as the work area doors and the swiveling operating terminal, are secured by transport locks or were removed.
– Protruding machine parts hampering the transport may have been removed.
– All blank parts of the machine were treated by spray-covering with an anti-rust agent.

## Other separate units

Certain configuration levels or auxiliary units, such as chip conveyors, bar guides, bar loading magazines, etc., are usually separate units.

For transport and attachment of a robot cell – **iXcenter** – observe the corresponding documentation for **iXcenter**.

Chip conveyors usually rest on a transport base for shipping.

The bar guides and bar loading magazines are delivered in a special shipping crate.

Loose parts, such as keys, tools, and fittings, are supplied in a separate box, which may be included with a separate unit.

Before unloading, check the machine, the enclosed accessories, and any separate units for external damage and completeness (compare with bill of lading or delivery note).

Have the carrier confirm any damage or missing parts on the bill of lading or delivery note.

Document and photograph any transport damage.

Notify **INDEX** or the **INDEX** representative.

## Unloading the machine with a crane



**Suspended loads!**
**Danger from the machine falling down.**
**Do not stand under suspended loads, and use only the allowable transport accessories.**

Clearance of the crane hook:

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

| | | |
|---|---|---|
| + | Transport traverse above the unit | approx. 1.2 m |
| + | Loading height of the truck | approx. 1.3 m |
| + | Lifting height | 0,2 m |

Remove all tensioning straps of the lashing safety devices on the truck.

Apply the supplied transport accessories.

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

Slowly and carefully lift the machine.

Lift the machine from the truck or drive the truck away from under the machine.

Move transport means (e.g., heavy-duty trailer) under the machine.

**Select a means of transport with sufficient capacity. It must match at least the mass of the machine.**
**When using a heavy-duty trailer, the loading platform area should be larger than the base area (footprint) of the machine.**

Lower machine slowly and carefully onto the heavy-duty trailer and move it to the installation site.
Remove the transport device.

# INDEX B500.3 1200 mm

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## Transporting the machine

Kunde: _____

Projekt.-Nr.: _____ Masch. Nr: _____

**Machine weight**

**B500.3**

**approx. 10500 kg**

**Danger to life!**

**Do not step under suspended loads.**

Check the proper seating of the ropes/chains/ round slings in the crane hooks before lifting the machine. When lifting the machine, ensure that it does not rest against the covers and remains level (fig. 1).

Brackets **5, 6,** and **7** must be removed.

The brackets are part of the lifting device (painted yellow) and must be returned to **INDEX** or a representative.

Fig. 1

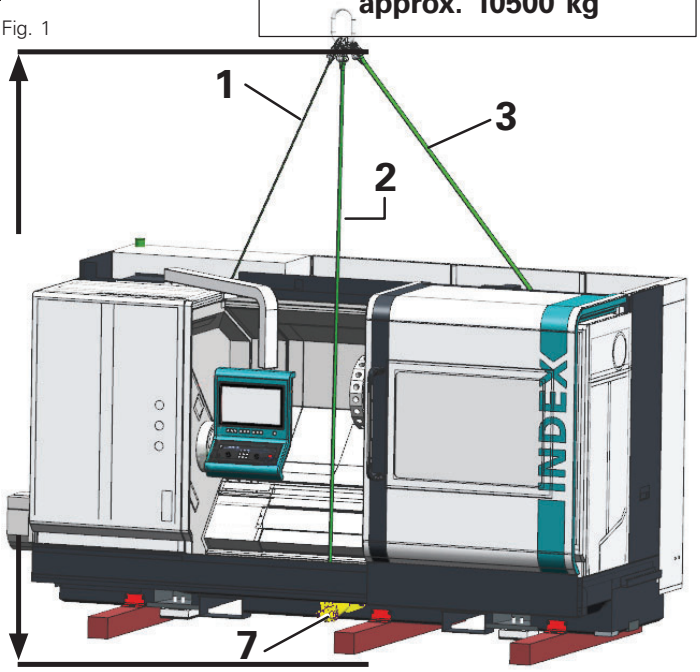


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Fig. 2

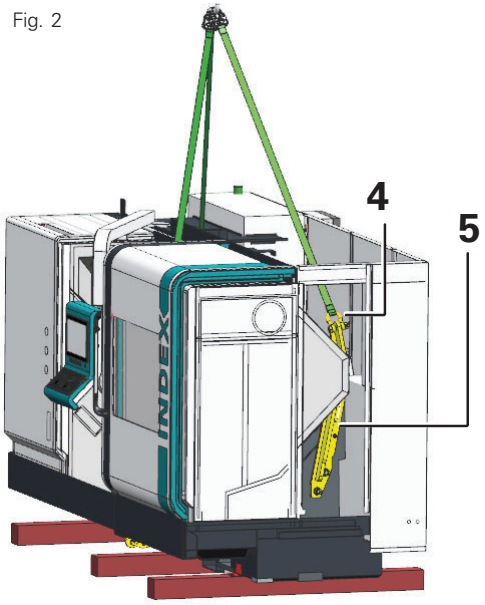


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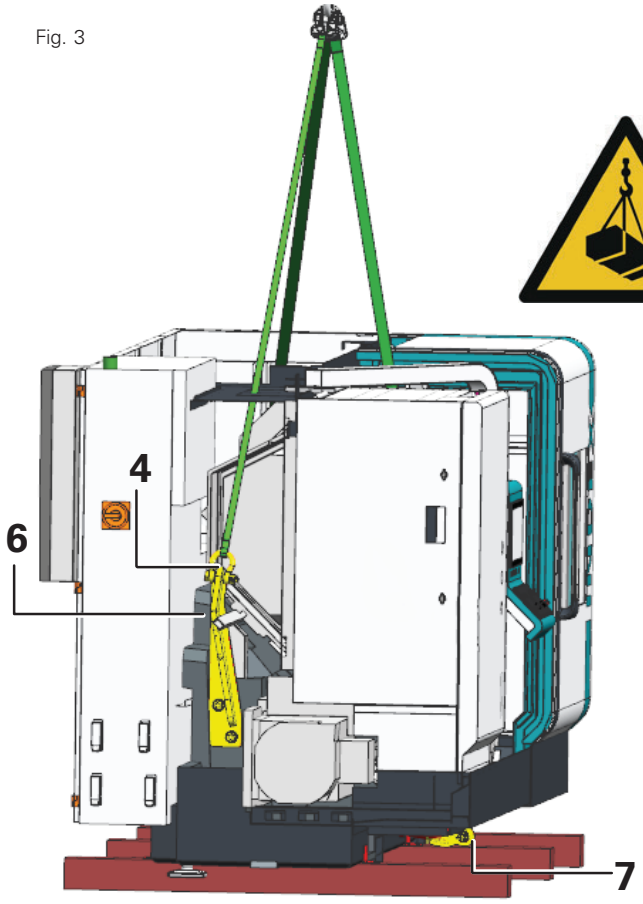
Fig. 3

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| | Item | pcs. | Name |
|---|---|---|---|
| Lifting device | | | Round slings, for example: Liftfix 5000 from Carl Stahl |
| | 1 | 1 | Round sling 5 t (approx. 252 cm) |
| | 2 | 1 | Round sling 5 t (approx. 331 cm) |
| | 3 | 1 | Round sling 5 t (approx. 230 cm) |
| | | 3 | Cylinder head screw 12.9 M16x45 4762 |
| | | 4 | Cylinder head screw 12.9 M30x80 4762 |
| | 4 | | Shackles |
| | 5 | 1 | Bracket right + shackle |
| | 6 | 1 | Bracket left + shackle |
| | 7 | 1 | Bracket front + shackle |
| | | 8 | Load stand, M30 two each on the right and left and two on the front and back |

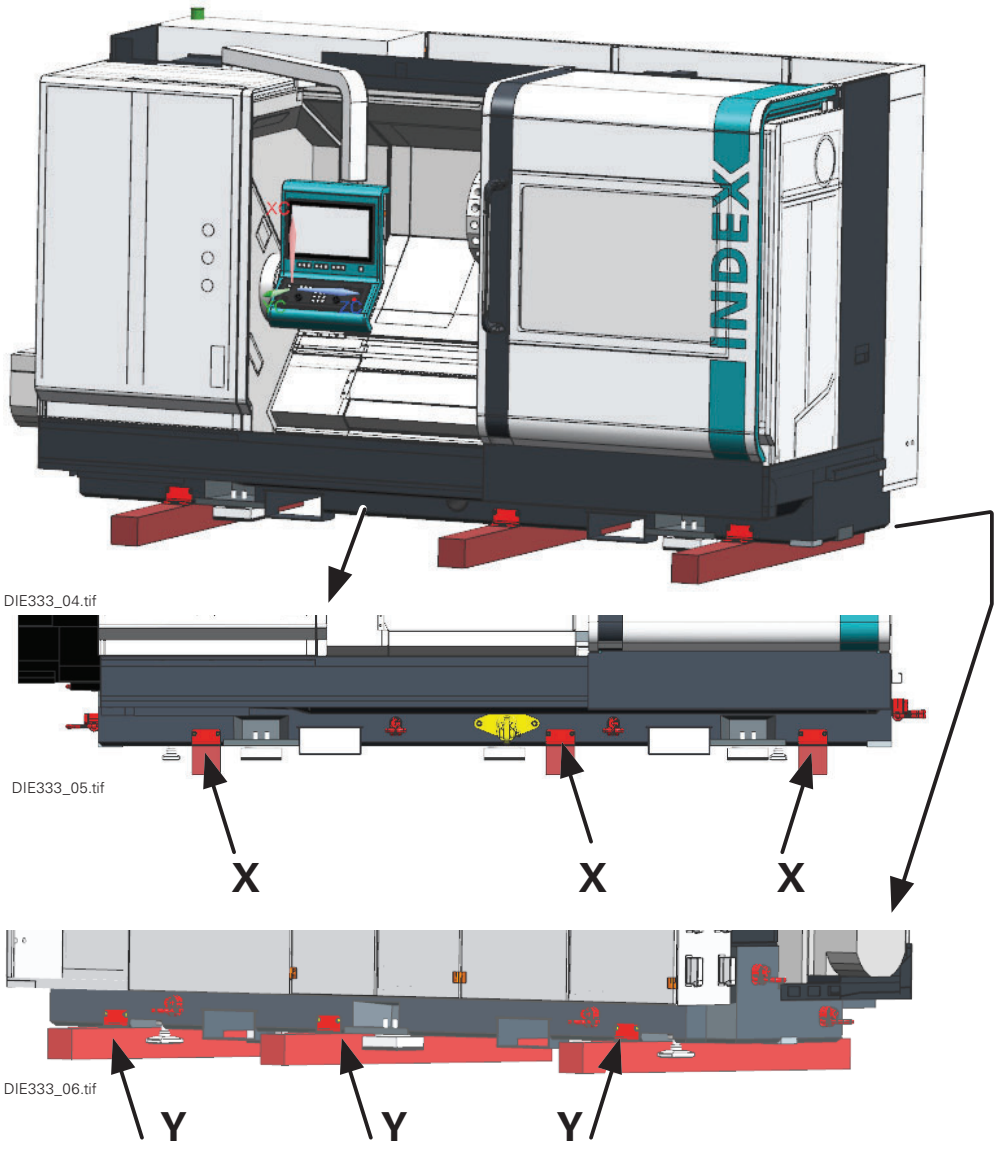
The machine was placed on wooden planks for transport.

These wooden planks must be removed before installation at the intended installation site.

For this purpose, the machine is lifted slightly using the crane or forklift, the transport locks of the wooden planks are unscrewed, and the wooden planks are then removed.

When using a hydraulic jack, always lift on one side only.

Store the wooden planks and the associated transport locks **X** and **Y** (at the rear of the machine) for any further transport.



## Transporting B500.3 1200 mm with a forklift

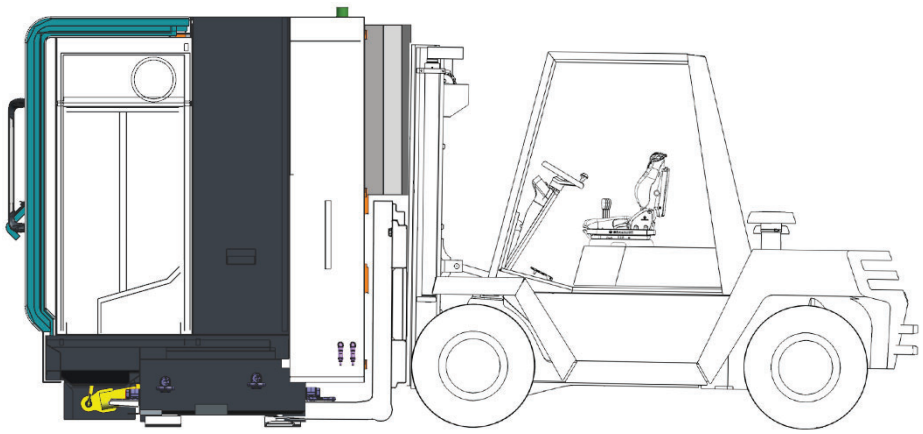
**INDEX** recommends transportation by forklift from the **rear** of the machine.

Observe the following when selecting the forklift:

**Load distribution on the forklift:**

| | **B500.3** |
|---|---|
| **Left fork** | 7000 kg |
| **Right fork** | 3500 kg |

**Fork spacing (L = clear width) 1416 mm**



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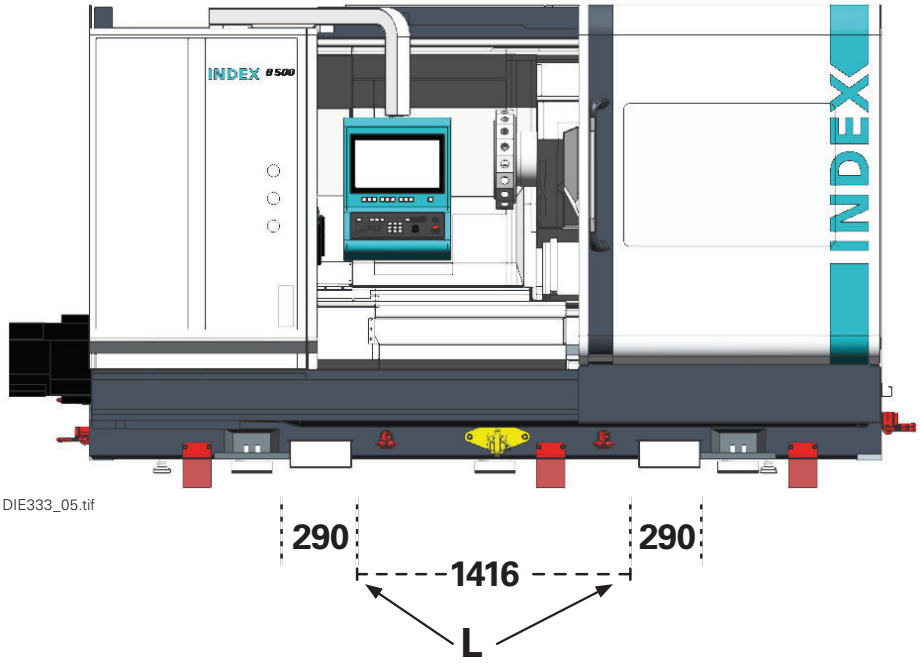


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## Working with hydraulic jacks

**Due to the machine's high center of gravity, we stipulate transporting with armored rollers only on absolutely even and horizontal ground.**

**INDEX** uses plastic plates or Teflon plates to bridge slightly uneven points and to reduce the rolling resistance.
This applies in particular to transporting on irregular or soft grounds such as industrial parquet floors or rubber or PVC-based floor covers, etc.

**When lifting the machine with hydraulic jacks**

To protect the machine bed, steel plates are cast into the machine bed at the following points. Use anti-slip mats between the machine bed and the lifting lug (**c**) on the hydraulic jack.

Also, use anti-slip mats between the machine bed and the armored rollers/steering gear.

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**Only use sufficiently dimensioned hydraulic jacks to lift or lower the machine.**

**Always apply the hydraulic jacks only where indicated (see fig.).**

**Be sure to provide three-point support when lifting or lowering the machine with hydraulic jacks: Two armored rollers or supporting on the floor on one side, hydraulic jacks on the other side.**

**Always lift the machine with hydraulic jacks on one narrow side only. The other narrow side must rest on the transport means or on the floor.**

**Do not lift the machine more than absolutely necessary.**

**As the center of gravity is not in the center of the machine, if 2 hydraulic jacks are used, each hydraulic jack should have a minimum capacity of 1/3 of the machine mass.**

**If only one hydraulic jack is used, it should have a capacity of at least 2/3 of the machine mass.**

# Lifting and lowering the machine with hydraulic jacks

## ... for roller transport

Use only armored rollers with a maximum load capacity of **12 t**. This ensures that the plate support dia. 150 mm of the steering gear fits into the mounting provided for this purpose on the bracket.

The figures below show the locations (**X/1**) where the hydraulic jacks and armored rollers must be positioned on the machine bed.

The machine bed was reinforced with metal plates at the points described (**1**).

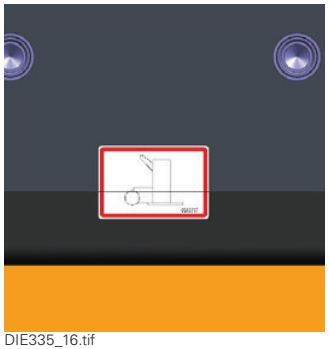

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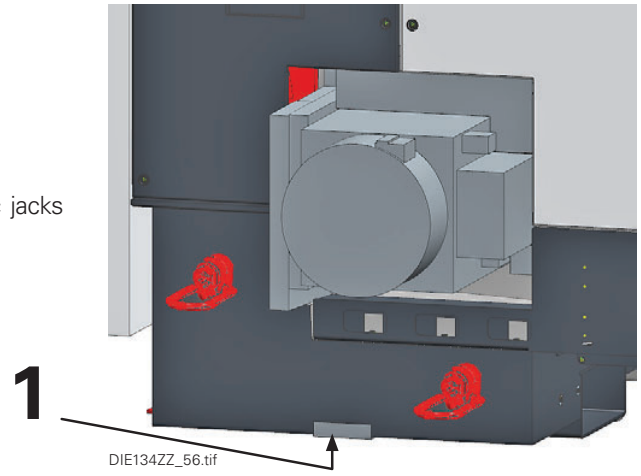
Fig.
Sign for hydraulic jack locations

Fig.:
Locations for hydraulic jacks and armored rollers

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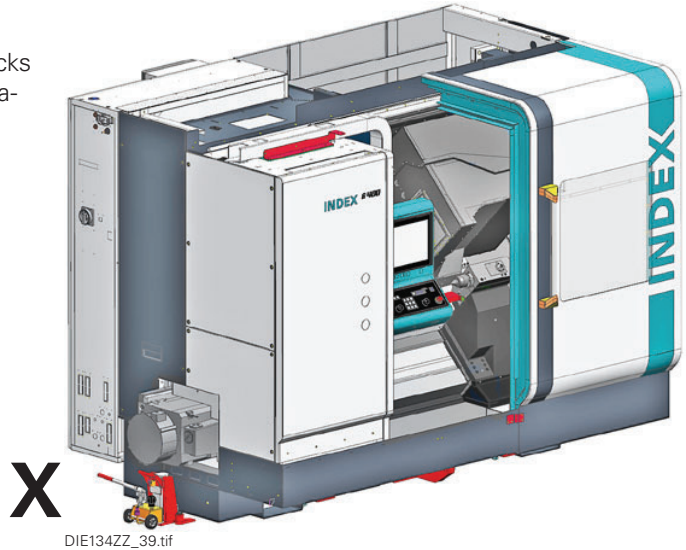
**Lifting:**

This procedure applies in principle also to lowering the machine after the transport using rollers – only in reverse order.

**Procedure:**

- Attach hydraulic jacks **X** and raise the machine.
  Fig.: Locations for hydraulic jacks and armored rollers.

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- Push fixed armored rollers (**a**) under the machine.
- It is essential to connect and secure both fixed armored rollers with a bar (**b**).
- Lower the machine onto the armored rollers and remove the hydraulic jacks **X**.

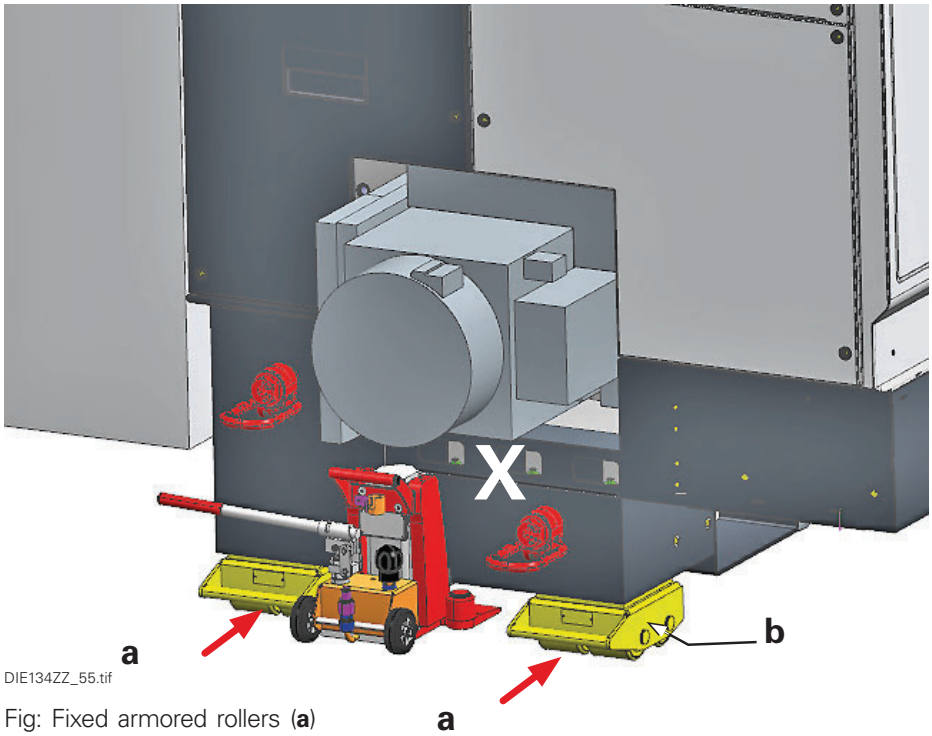


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Fig: Fixed armored rollers (**a**)

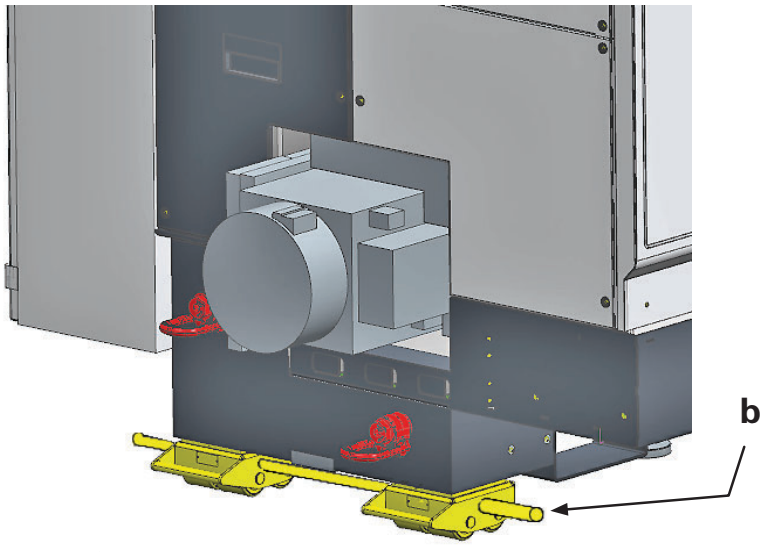


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Fig.: Locations for hydraulic jacks and armored rollers

- Attach hydraulic jacks **Y** (note position **1**) and raise the machine. See fig. locations for hydraulic jacks and armored rollers. The load stands may need to be removed.


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Fig.
Locations of the metal plates

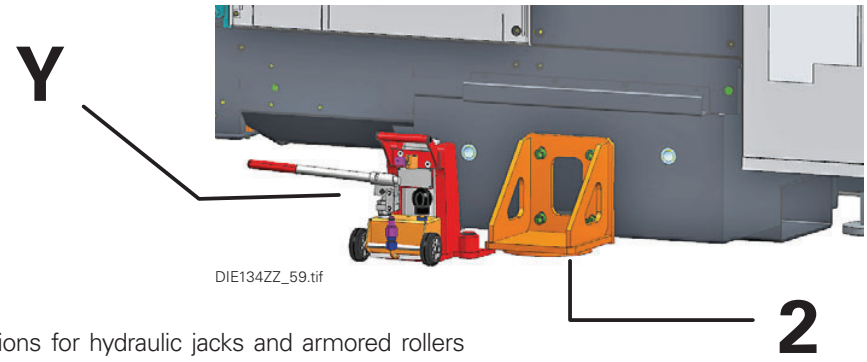


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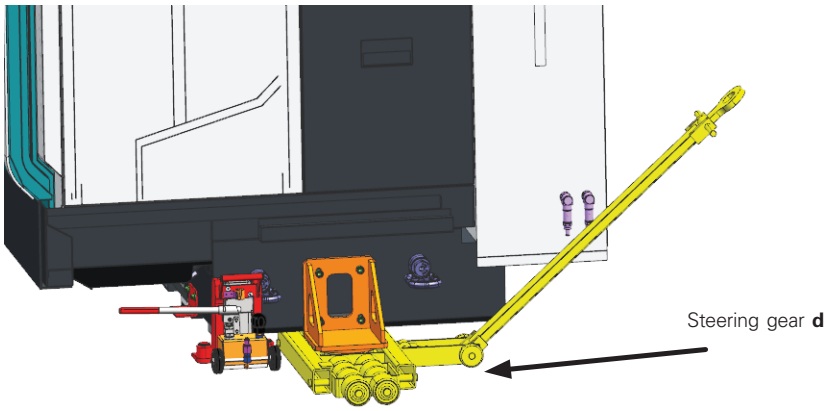
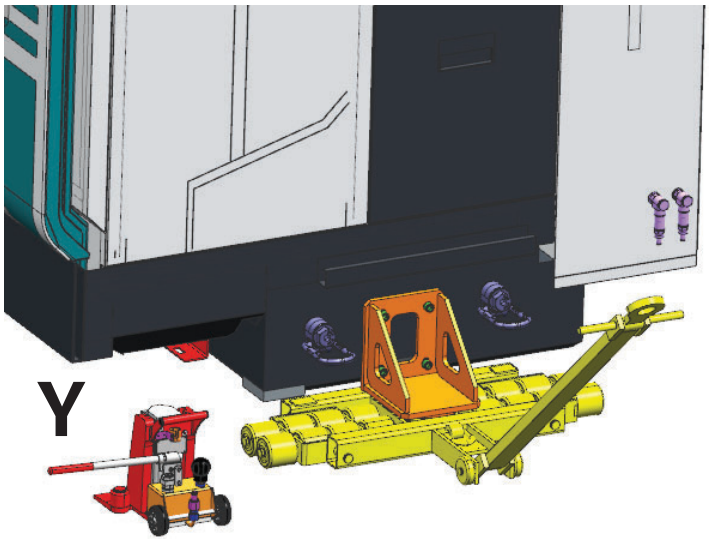
Fig.
Locations for hydraulic jacks and armored rollers

- Install the bracket (**2**) for the steering roller.
- Lift and move in the steering roller.




DIE333_08.tif

- It is recommended to move in the steering gear (**d**) from the right at an angle of 90°.

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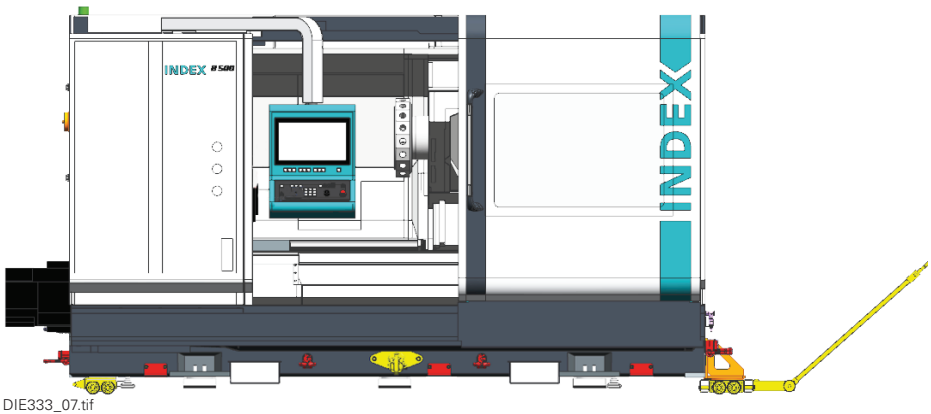
- Lower the machine onto the steering gear and remove the hydraulic jacks **Y**.

Now the machine is ready for further transport.

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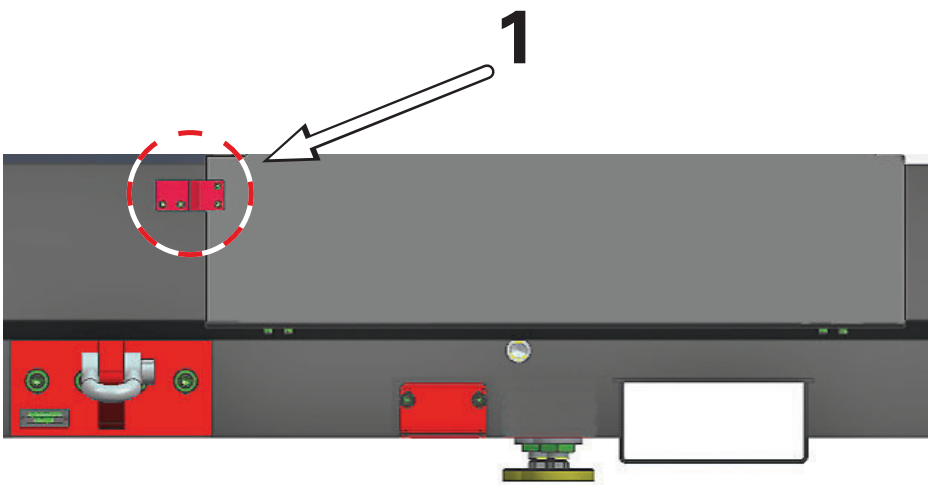
# Locations of the transport locks on the machine

## Transport lock for operating panel and work area door

For transporting the machine, the work area door was opened and secured (**1**).

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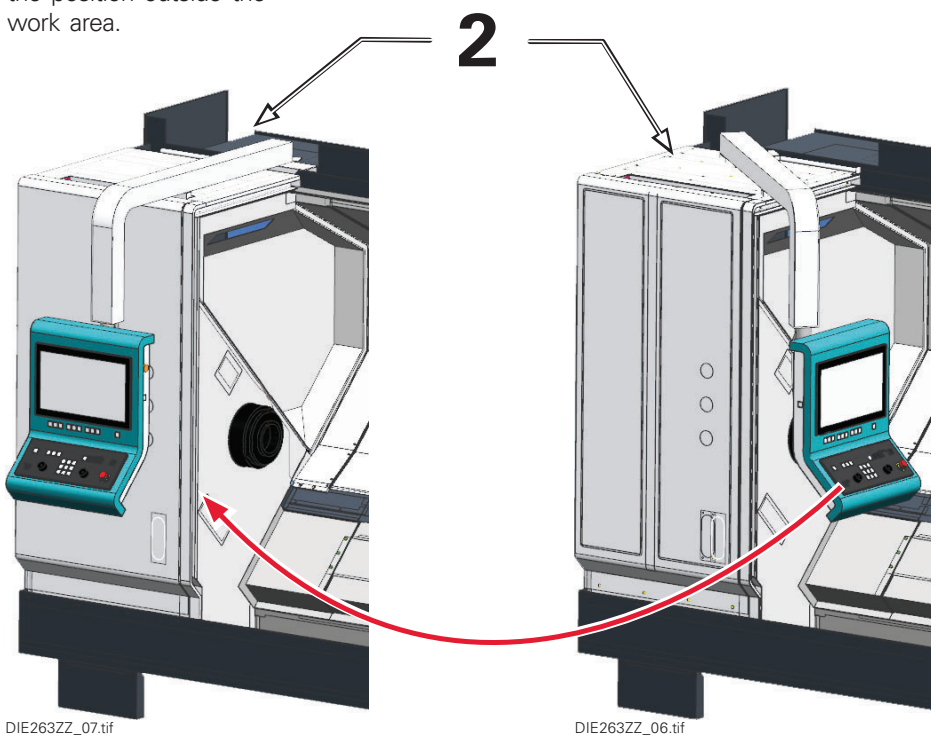
The operating panel mounting (**2**) has been unscrewed, swiveled into the work area, and screwed on again. (**X**).

Fig.:
Before commissioning, it is essential to return the operating terminal back to the position outside the work area.

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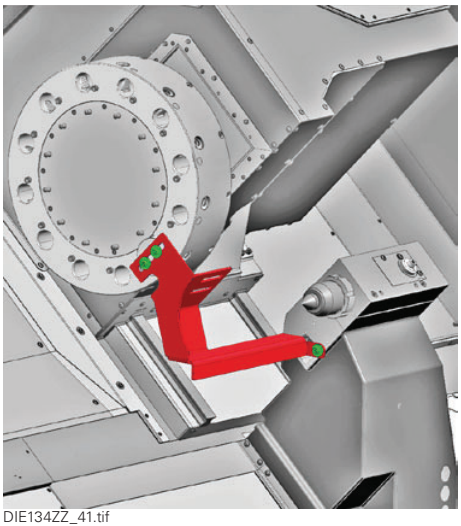
## Transport lock Z1 (version with tailstock)



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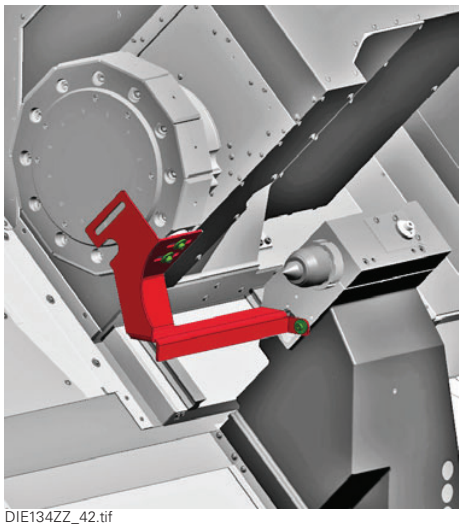
Example:
Disk-type turret with tailstock



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Example:
Radial turret

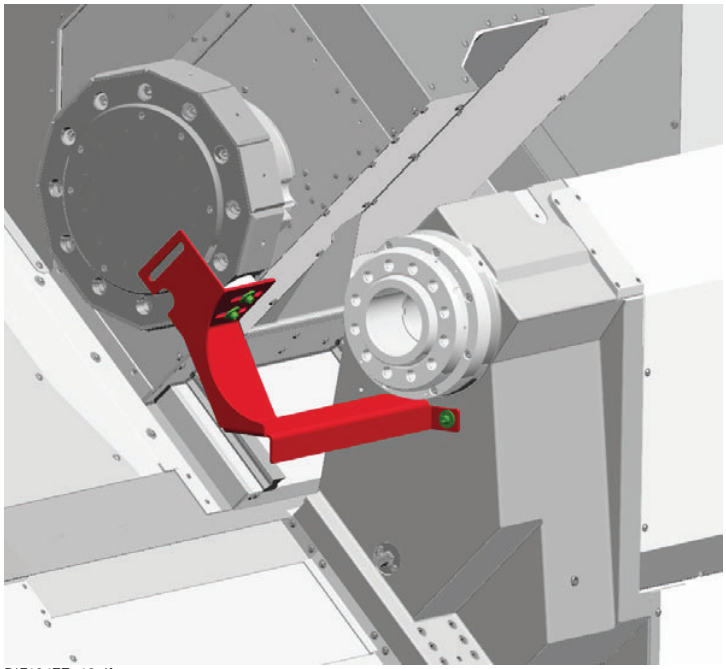
The following procedure needs to be followed only for a new transport.

The tailstock (Z5 axis) is braked when disconnected from power.

To secure the Z1 axis, first move the tailstock to the following position:

| | X | Y | Z |
|---|---|---|---|
| Tailstock ..... | | | 1325 mm |
| Radial turret ..... VDI40 | 290 mm | -55 mm | 1000 mm |
| Disk-type turret ..... VDI40 | 434 mm | -55 mm | 970 mm |

## Transport lock Z1 (version with counter spindle)



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Example:
Version: radial turret with counter spindle

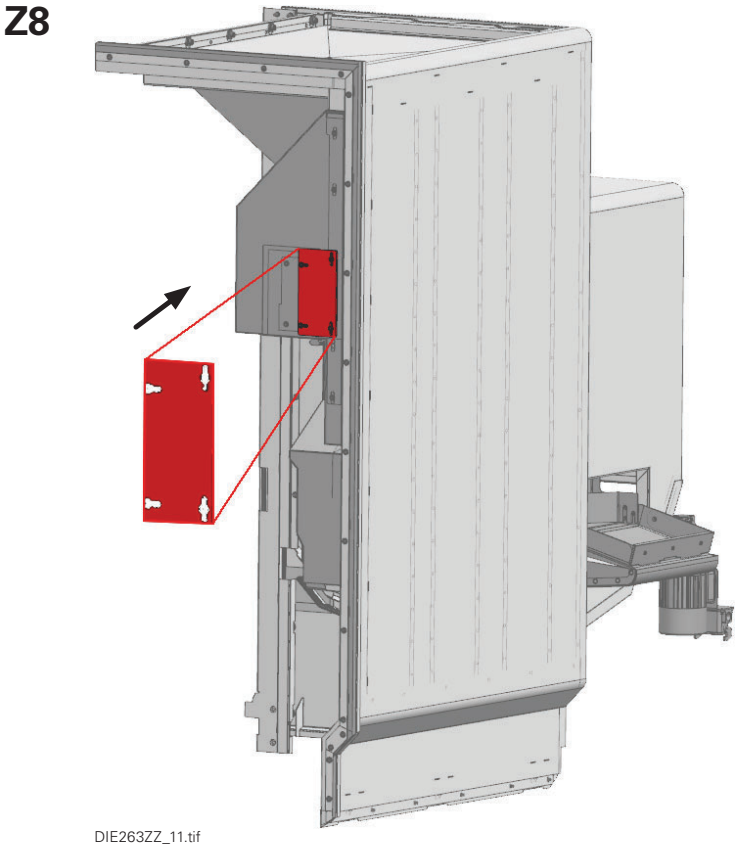
To secure the Z1 axis, first move the tailstock to the following position:

Counter spindle: Z= 890

Then, in both versions, move the turret slide 1 to the following positions:

| | X | Y | Z |
|---|---|---|---|
| Counter spindle ..... | | | 1250 mm |
| Radial turret .....VDI40 | 290 mm | -55 mm | 1000 mm |

## Transport lock Z8 (workpiece removal unit)

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## Unloading and transporting of separate units

Configuration levels or auxiliary units such as chip conveyors, bar guides, bar loading magazines are separate units.
They have dedicated transport regulations that must be observed for unloading and transporting.
See chapter 1 “Instructions” and chapter 3 “Third-party documentation".

**Do not step under suspended loads.**

Minor separate units do not have specific transport regulations.
They either rest on a pallet or are included in the packaging of another unit.

**Follow the manufacturer’s documentation!**

Documents and drawings of auxiliary units from other manufacturers can be found in chapter 3, “Third-party documentation”.

Use suitable round slings or straps for unloading and transporting.

Attach the round slings or straps, making sure they cannot slip and the load is securely suspended.

Attach the ropes or straps to any eyebolts that are provided for transport.

## Unpacking the accessories and checking them for completeness

After unloading, unpack the machine accessories and check them against the information on the delivery form for completeness (compare with the bill of lading or delivery form).

In case of discrepancies, contact **INDEX** or your **INDEX** representative.

# Installation

## Electrical connection

### Important notes

**Caution: danger to life**

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

**The control voltages are connected on one side with PE according to EN 60204-1. See the information on the circuit diagram.**

**Only open the control cabinet when the main switch is switched off. When the main switch is switched on, secure the area in accordance with the applicable safety standards.**

See the order confirmation for the precise electrical requirements. The electrical documentation supplied is definitive and binding. They should be available to **INDEX** customer service at all times.

The machine must be connected to the electrical supply network via the main switch (multi-wire cable). The connection must be made with a clockwise rotating field.
The electrical connection is indicated in the wiring diagram.

The machine is prepared for connection to three-phase power lines (TN-S network).

Before connecting the machine, check that the existing power settings and network form of the respective power supply company match the ratings defined for the machine.
If this is not the case, a transformer is required.

The guidelines and regulations applicable in the country of use must be followed.

# Fluidic system

## Hydraulic system

The hydraulic tank for the hydraulic system (**Z**) was not emptied before transport.

**Caution!**

**Fill in only the oil type indicated on the hydraulic tank at the filler neck (X1).**
**The filler neck has a ventilation opening.**

## Lubrication

The lubrication unit (**Y**) was not emptied before transport.

**Caution!**

**Fill in only the oil type indicated on the lubricating oil tank at the filler neck (X2).**
**The filler neck has a ventilation opening.**

Pay attention to the types and quantities of lubricating oil, hydraulic fluid, grease, and coolant used at **INDEX**. See the document "Information on operating fluids" and "Hydraulic diagrams" and "Installation plan" in the chapter "Diagrams and drawings".

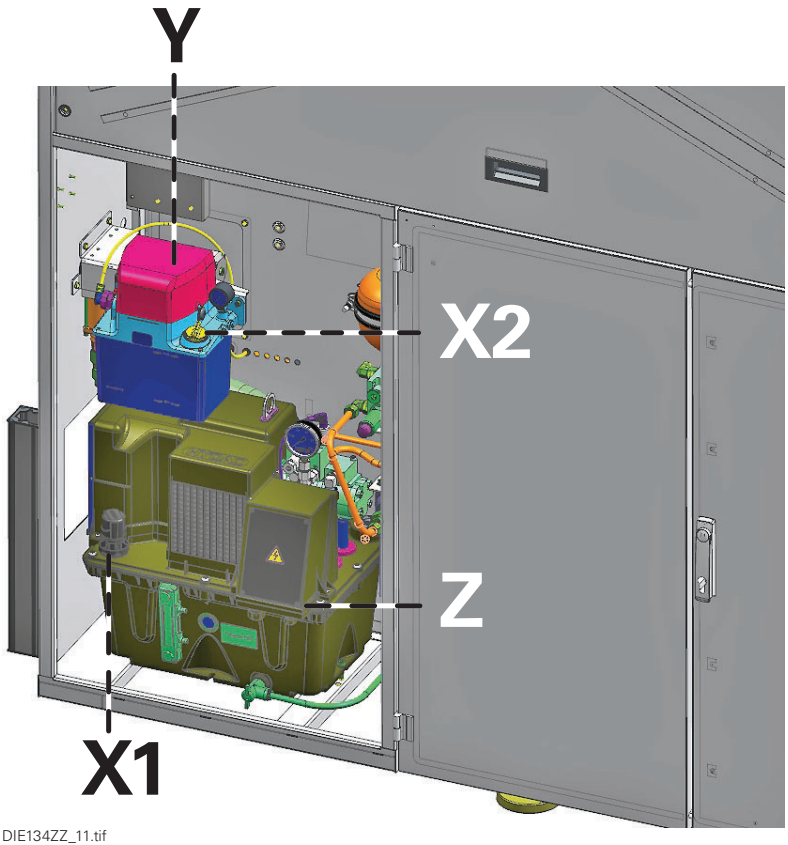


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Fig.:
Filler necks of the hydraulic and lubrication unit

# Installing the machine

## Installing the machine with turning length 1200 mm

The B500.3 machine with a turning length of 1200 mm is equipped with five adjustable machine feet. See fig. "Leveling the entire machine" and "Adjustable machine foot". However, only feet **1, 2, and 3** are used here to level the machine.

> The machine must be adjusted exactly to 1160 mm main spindle height.

Machine feet **a** and **b** should only be adjusted to support the machine after leveling, without causing any changes to the readings on the spirit levels.

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Fig.: Hydraulic jacks

Fig.:
Adjustable machine foot (wedge shoes)
**1, 2, 3**

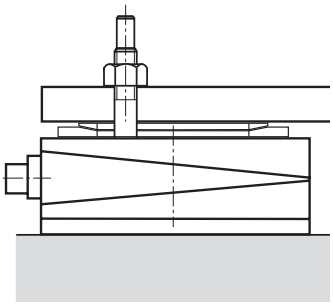

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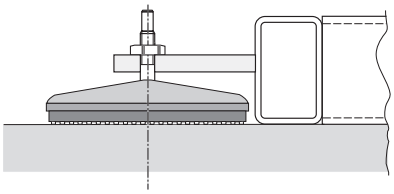
Fig.:
Adjustable machine foot
**a, b**



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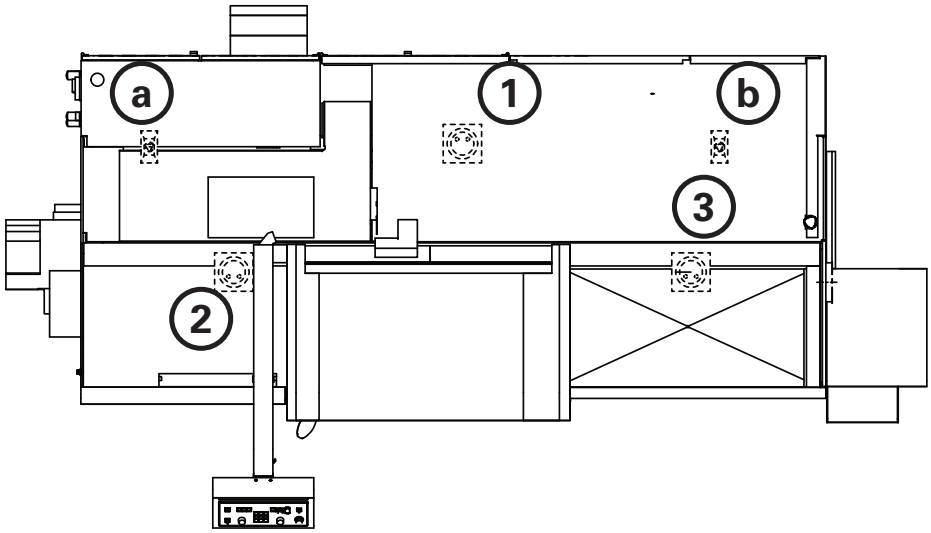


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Fig. "Leveling the overall machine"

# Leveling the machine
# (Accuracy 0.1 mm/m – also check by inverting the level)

## Leveling in the Y and Z directions

To level the machine, place a precision spirit level at the point marked Y + Z (see Fig. 1-2).

– Place the precision spirit level first in the **Y**-direction, then in the **Z**-direction, as shown in the illustration.

Next, level the machine using the machine feet as indicated. See section "Installing the Machine", fig. "Leveling the entire machine".

– When the alignment of the machine is complete, place the corresponding machine feet that were not used for leveling.
  Take care not to change the position of the machine.
– To check, place the precision spirit levels once again in the **Y**- and **Z**-directions and check.

Fig. 1

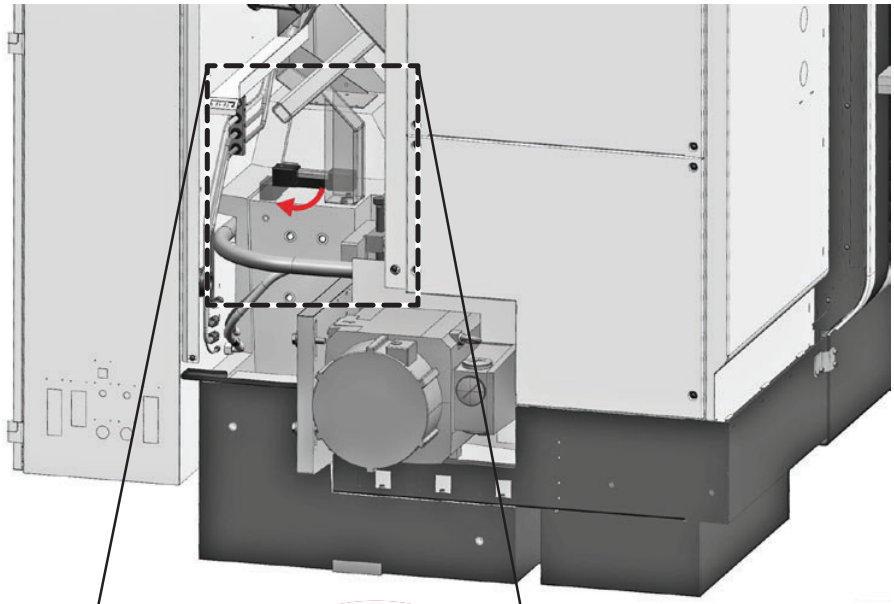

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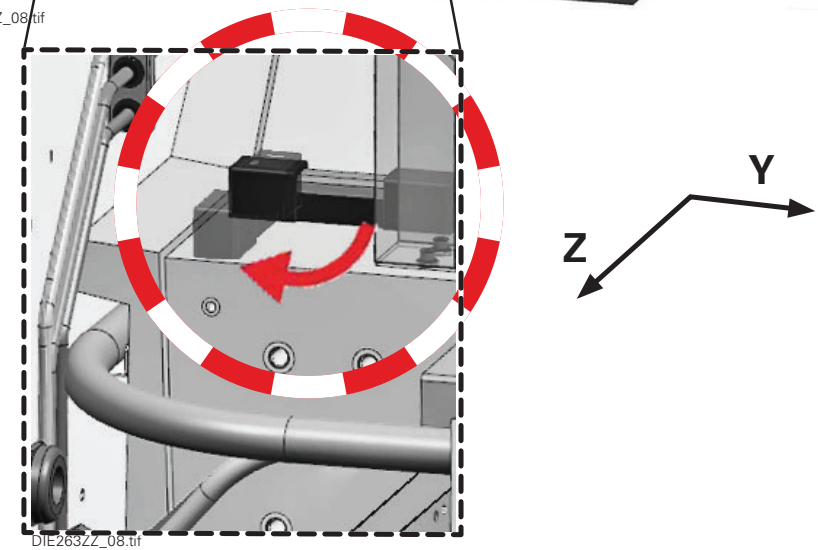
Fig. 2

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## Installation and leveling of configuration levels and auxiliary unit

A bar feeder or bar loading magazine must be fastened to the machine using dowels. The dowels are included with the machine.

The bar guide, bar feeder, or bar loading magazine have leveling elements that allow them to be aligned flush with the work spindle with ± 0.1 mm/m accuracy.

The conveyor belt, pallet station, etc., also have leveling elements that allow them to be aligned longitudinally and laterally to the main spindle's axis of rotation with ± 0.1 mm/m accuracy.

For further information, see the corresponding installation plan in chapter "Diagrams and drawings".

## Installation and leveling of the chip conveyor

When setting up or installing the chip conveyor in the machine, note the following:

– After inserting the chip conveyor into the machine, it must be raised using the adjusting screws (**X**).
– The continuous sealing lip of the chip conveyor (**Y'**) must be in contact with the contact surface (**Y**) underneath the machine to ensure a complete seal (fig. **a** and **b**).

Always lower the chip conveyor before removing it from the machine. Use the adjusting screws (**X**) to lower the chip conveyor until it is back on the rollers.
Pay attention to sealing lips (**Y'**).

Due to the different chip conveyors that can be installed on the machines, the respective manufacturer's documentation must be observed during installation.

Fig.: a

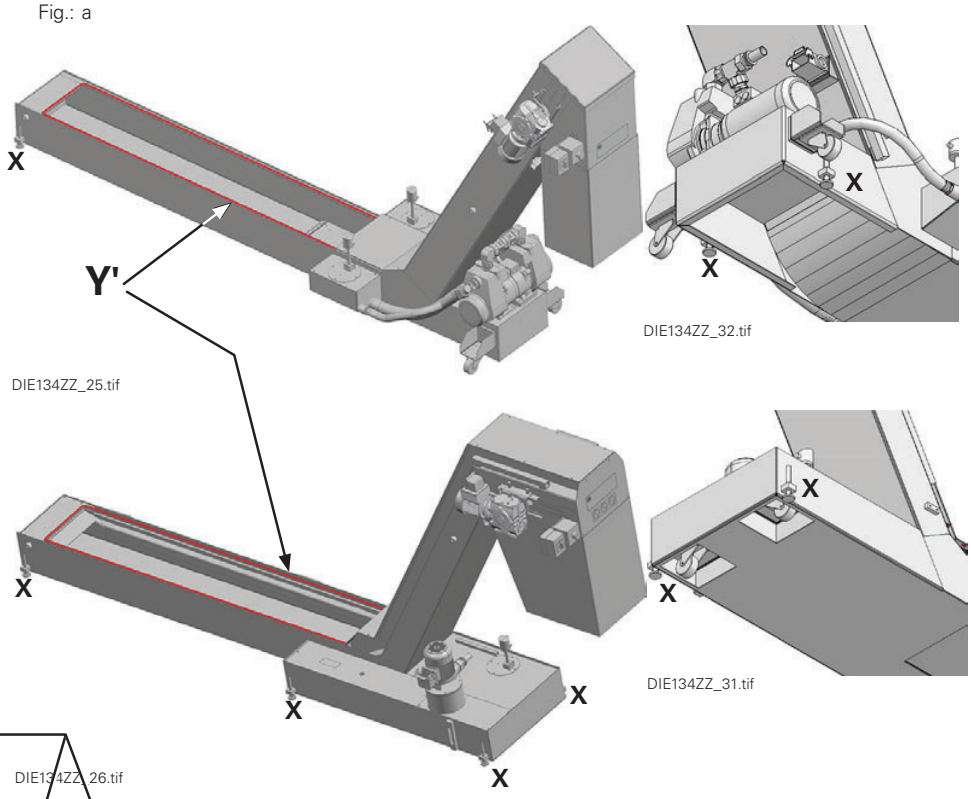



Fig. b

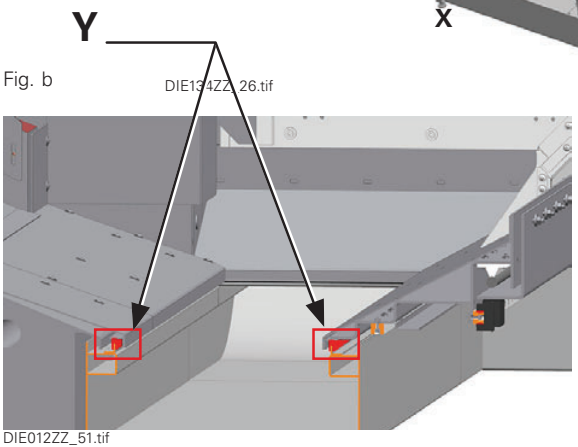
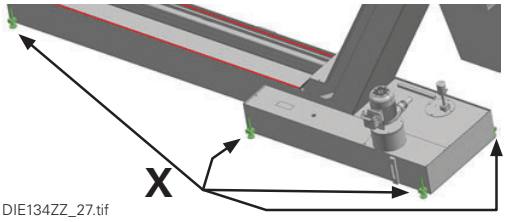



Fig.: Adjustable feet on the chip conveyor



# Commissioning

This section lists all the actions that must be carried out in the order given before the machine is ready for start-up.

Before commissioning the machine, unscrew all transport locks (**recognizable by their red color**) and keep them for another transport in the future.
**See also section "Location of transport locks".**

## Cleaning the machine

All blank parts of the machine were treated by spray-covering with an anti-rust agent. Usually, this protective cover is flushed away by the cooling lubricant during the operation of the machine.

**Wear personal protective equipment.**

**Solvent may splash into the eyes when cleaning the machine. Protect your eyes by wearing suitable safety goggles.**
**For cleaning the inside of the machine's work area, protect your hands and arms by wearing appropriate gloves and long-sleeved clothing.**
**Risk of injury by sharp machine parts and cutting edges.**

The anti-rust agent must be washed off if the machine is put into operation after a long time and the protective layer has become very tough.

The mounting surfaces for tool holders and auxiliary units must also be cleaned.

For this purpose, only solvents may be used that do not affect the machine paint. Suitable solutions are turpentine, petroleum, or benzene.

## Check the operating fluid levels and replenish, if necessary.

Hydraulic system: ..... Oil level check

Cooling lubricant system:..... Replenish cooling lubricant

Central lubrication system: ..... Oil level check

Auxiliary unit..... Oil level check

Pay attention to the quality of operating fluids such as lubricating oil, hydraulic fluid, cooling lubricant, and coolant. Ensure correct filling quantities and filling points.
For more information, see the document "Information on operating fluids" and "Hydraulic diagrams" and "Installation plan" in the chapter "Diagrams and drawings".

## Pressure accumulator

If the machine was shipped by plane, all pressure accumulators attached to the machine are depressurized.
Before commissioning the machine, a specialist must refill all pressure accumulators with nitrogen ($N_2$). The prescribed pressures must be observed.
For the prescribed pressures, see the hydraulic diagrams in chapter 2 "Diagrams and drawings".

## Data loss due to prolonged downtime

The machine is functional only after all data have been entered.

After a prolonged downtime of the machine, data may be lost in the RAM.
In such a case, the lost data must be re-entered or re-loaded before the machine can be put back into operation.

The data are recorded in the start-up report and backed up on a storage medium. The start-up report and the storage medium are located in the document pocket in the control cabinet door.

Only then is the machine ready for operation.

## Switching on the machine

See document "Operating the machine".

# Relocation

**Be sure to clean the contact surfaces of oil and grease before reattaching the transport locks.**

**See the sections “Transporting the machine” and “Location of the transport locks”.**

**Replace filling/breathing filters on hydraulic and cooling units with blanking plugs.**

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DIE009ZZ_23.tif

Fig.:
Example of filler neck and blanking plug

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Example:
Filling and breathing filter - ARGO-HYTOS GmbH

## Additional information for any new transport of the machine

Before transporting the machine again, be sure to read the chapter "Transporting" and section "Location of the transport locks ....".

All transport locks and transport devices must be mounted. To fit the transport locks, assemblies may need to be moved to a defined position.

When assembling the lifting device, be careful not to damage the ball screw or the glass scale.

Make sure to observe the tightening torques of the respective screws.
See the table below.

| | **1200 mm** |
|---|---|
| M16 | 200 Nm |
| M30 | 300 Nm |
| M36 | |

### Checking the lifting device

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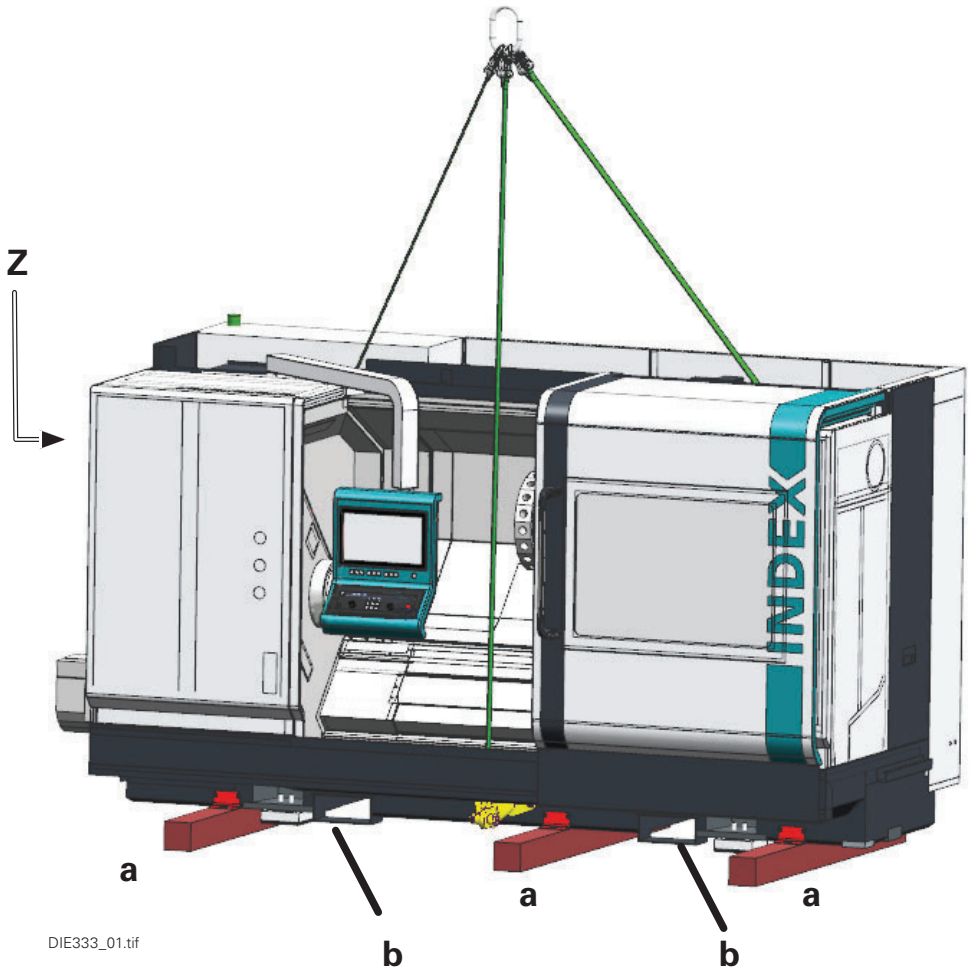
Fig.:
Overall view of lifting device

Before re-use, be sure to check and evaluate the entire transport gear (visual inspection).

**In the event of obvious damage, such as deformation or cracks, it must no longer be used.**

## Loading the machine onto a truck

1. First, the wooden planks (**a**) must be mounted again.
2. When transporting with a forklift truck, the transport lugs (**b**) must be mounted.
3. Prepare the control/operating terminal for transportation.

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## Suspension and lashing points

Suspension and lashing points (**Y**) are used to secure the load (inclined/diagonal lashing) on the truck.

The load must be secured to prevent slipping on the loading platform using the lashing points (**Y**).
In addition, anti-slip mats must be placed between the loading platform and the two screwed-on wooden planks.

Fig. 1
Front view of the machine

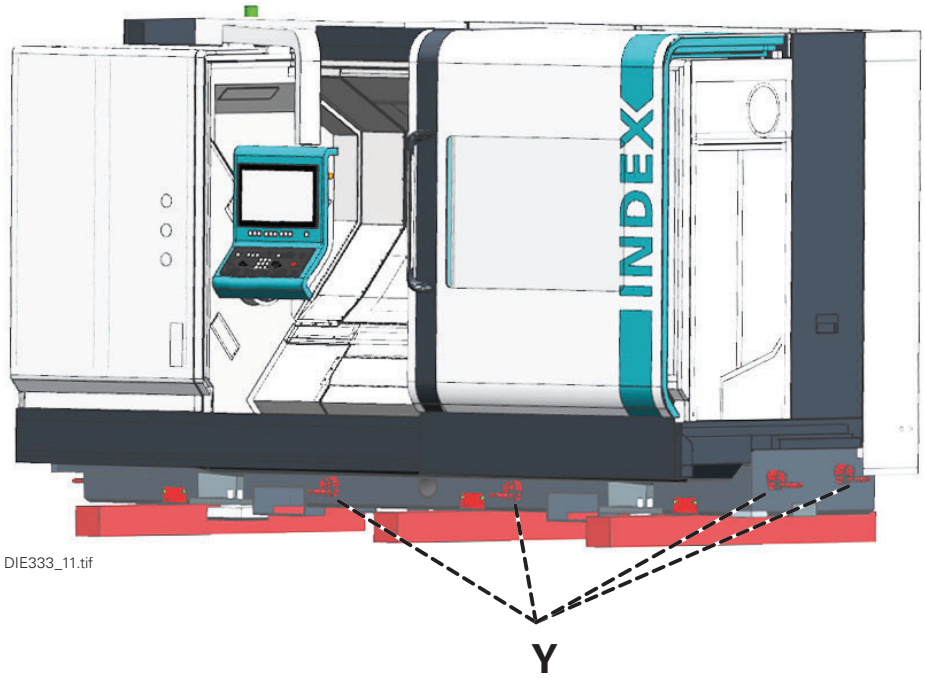


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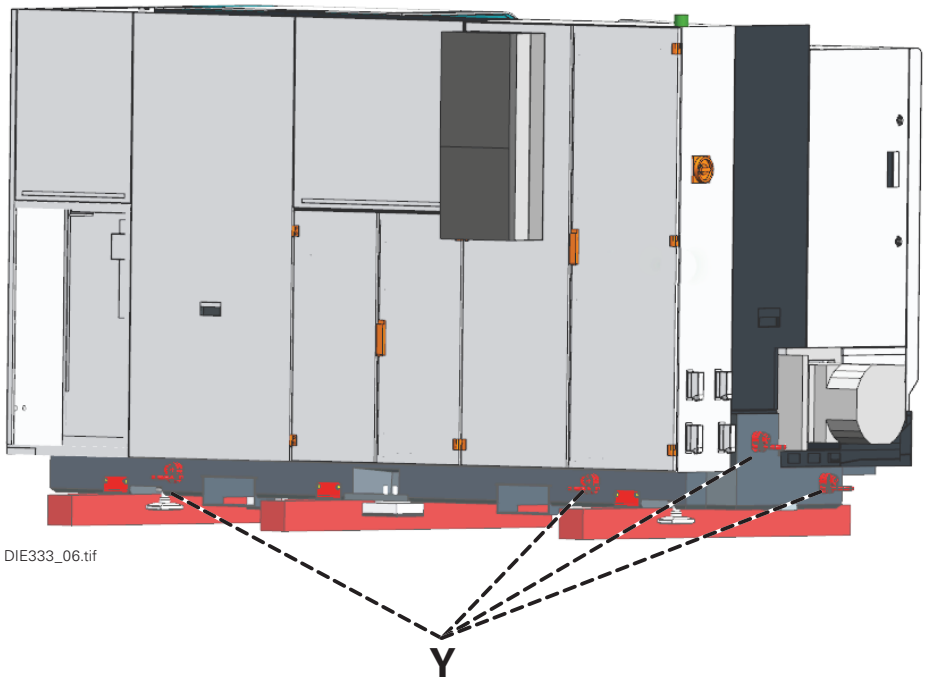
Fig. 2
Rear view of the machine

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## Views for lashing

Fig.:
Right view and operator side of the machine

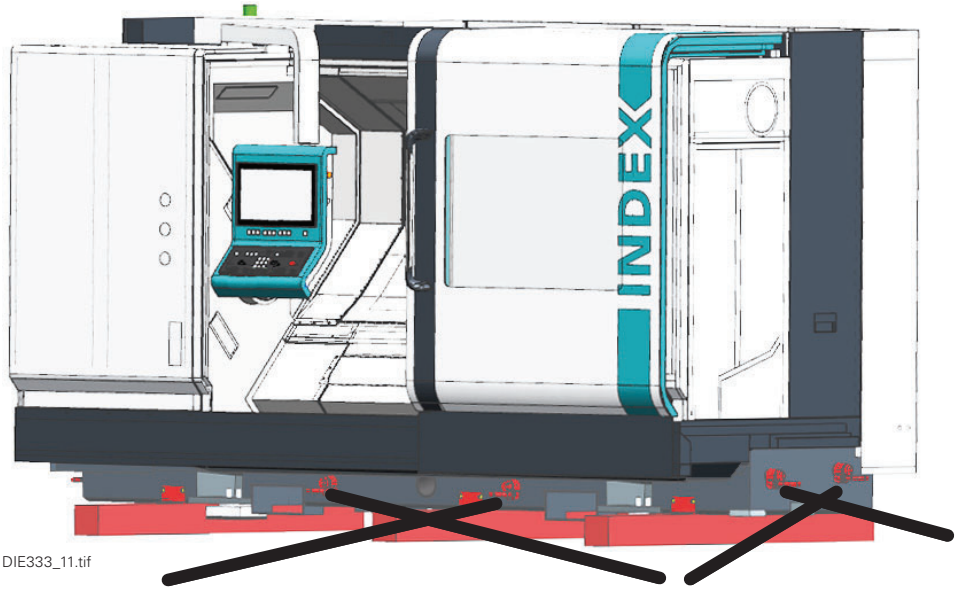


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Fig.:
Rear view of the machine

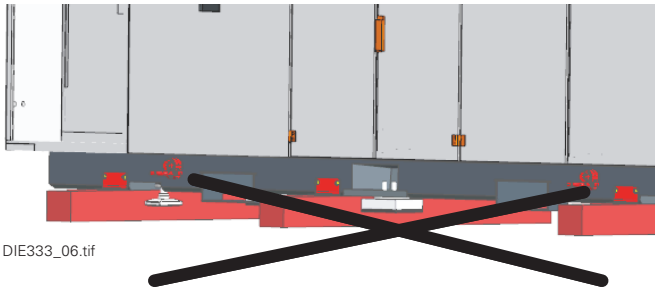

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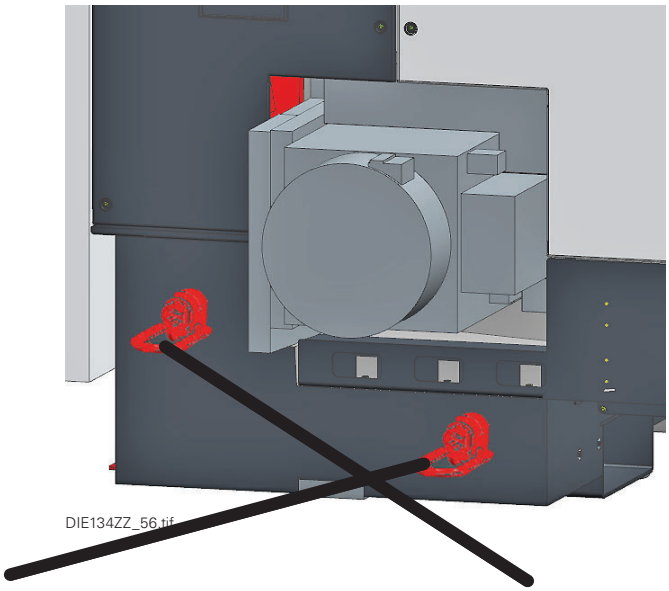
Fig.:
Left view of main spindle side



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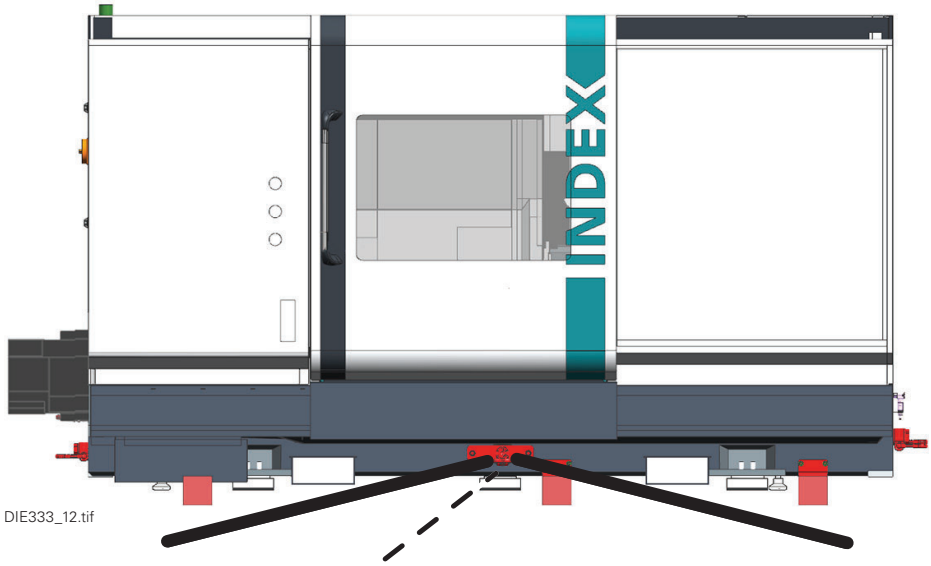
## Previous version

Due to design changes and version updates, the method for securing the machine may differ from the current described version.

For machines without two lashing points on the operator side, an intermediate plate (**Z**) must be installed.

To do this, remove the original transport device on the operator side and replace it with the intermediate plate (**Z**).

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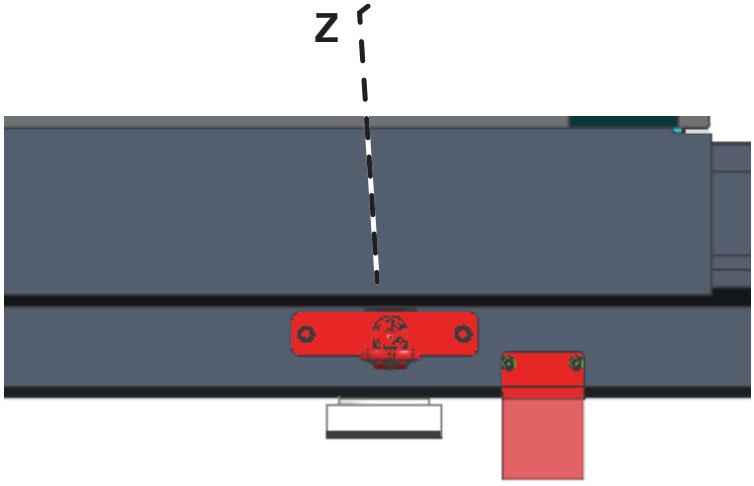


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## Accessories

### Only for machines equipped with chip conveyor

Unscrew the cooling lubricant line at the screw connection above the cooling lubricant tank. Loosen the connections of the power supply lines to the cooling lubricant pump and to the chip conveyor motor.

Pull out the chip conveyor and clean it.

### Only for machines with a separate workpiece feeder

Disconnect the energy supplies, and close the connections, if applicable.

Provide the appropriate lifting device for the respective workpiece feeder.

### Pressure accumulator

**Preparation for transport with an airplane.**
**All pressure accumulators attached to the machine must be depressurized and emptied by a specialist.**

**Set the main switch to OFF and lock it against powering on.**

**Depressurize the hydraulic system by opening the accumulator drain valves.**

The guidelines and regulations applicable in the country of use must be followed.

INDEX

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