

# Transport, Installation, Commissioning

**B400, B500**

(from machine number 12010100)

## Note on applicability

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

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## 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 general safety instructions, as a separate document, are part of the **INDEX/TRAUB** user documentation.

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, cranes, or a forklift to lift the machine. When transporting with transport or armored casters, ensure that the casters used have the appropriate load-bearing capacity.**

**Plastic plates or Teflon plates are used to reduce rolling resistance and to bridge unevenness and cracks.**



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 another transport in the future.

Failure to follow proper procedures for transport, installation and, start-up is prone to cause accidents and may induce damages to or malfunctions of the machine for which **INDEX/TRAUB** rejects any liability or warranty.

Prior to delivery of the machine, the procedures for unloading, transporting to the installation site, installation, and start-up must be carefully planned while absolutely observing the cautions below in this document.

Associated transport instructions and/or manufacturer documentation exist for separate units such as chip conveyor, bar feeder, bar loading magazine, and similar devices that must be observed as well.



**If the work area door is closed after disconnecting the machine from the power supply, it is locked in this position (locked without power).**

**An emergency release is available.**

### General hazards during 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 (driveways, ramps, etc.) are particularly dangerous. Use extra care if such passageways cannot be avoided.

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

The transport vehicles must be able to produce sufficient traction and braking forces for safe transport.

### Dimensions and masses

The machine and control cabinet masses are indicated on the respective machine installation plan in Chapter "Working Documents".

The masses of optional separate units, such as chip conveyor, bar feeder, bar loading magazine, and similar devices, can be found either in the specific transport instructions/manufacturer documentation for these equipment levels or accessories or in the corresponding machine installation plan in Chapter "Working Documents".

### Transporting and lifting aids

For lifting and transporting the individual units, only lifting and transporting aids having sufficient capacity and loading platform must be used.

## 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 for this machine was already submitted for approval after the contract award. Upon delivery of the machine, it is included in the working documents on the supplied documentation CD.

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

Suitable transporting and lifting means 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 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!

## Appropriate transporting and lifting aids

- Crane
- Truck-mounted crane
- Forklift
- Transport trolley
- Transport casters
- Armored casters
- 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, workpiece containers, chip trolleys, tool trolleys, etc.

Use the machine installation plan in Chapter “Working Documents” to determine the required space.

Chapter “Working Documents” also includes specific installation plans for add-on equipment such as bar feeders, bar loading magazines, etc.

## Subsoil, foundation

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

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

Bar guides, bar feeders, and bar loading magazines must generally be anchored in the foundation (for information, see the associated operating instructions and the machine installation plan in Chapter “Working Documents”).

## Environmental conditions

See Environmental Conditions in the document “Safety instructions”



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

## Power supply



**The power supply cord to the machine should be as short as possible. Use a sufficient wire size.**

The power supplies for the programmable logic controller (PLC) and the numerical control (NC) require stable mains conditions, i.e., the max. allowed operating voltage fluctuations are +10% or -10%.

The mains line must comply with the regulations of the local electricity supplier and the IEEE directives. For further information, see the machine installation plan in Chapter "Working Documents".



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

## 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 pre-transformer is required, the main circuit breaker must be installed before the pre-transformer, i.e., on the primary side.

The loads to be protected depend on the existing operating voltage.

The values for:

- machine connection,
- operating voltage,
- main circuit breaker

are indicated on the nameplate or the wiring diagram.

## External data transfer



**Data cables must not be routed directly next to live cables.**

For data transfer to/from external computers or servers/storage devices, suitable metal conduits must be installed for the data lines.

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 the pneumatic diagram in Chapter “Working Documents”.

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 window cleaning....	approx. 1000 l/min - 60 m <sup>3</sup> /h



If the machine is equipped with window cleaning, ensure a sufficient cross-section of the compressed air supply lines on site due to higher compressed air consumption. Both pneumatic feeders on the machine can be used for this purpose.

For the air supply on the machine, see the machine installation plan in Chapter “Working Documents”.

### Pressure accumulator

If the machine was shipped by plane, all pressure accumulators attached to the machine are depressurized and emptied. Before commissioning the machine, all pressure accumulators must be filled with nitrogen (N<sub>2</sub>) by a specialist. The prescribed pressures must be observed. For the prescribed pressures, see the hydraulic diagrams in Chapter “Working Documents”.



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

### Operating material to be provided

- Hydraulic fluid <sup>1)</sup>
- Lubricating oil <sup>1)</sup>
- 1 kg of high-performance grease for chuck
- Cooling lubricant

For the appropriate types of lubricating oil, hydraulic fluid, grease, and cooling lubricant, see the Chapter “Notes on Operating Materials” and “Hydraulic Diagrams and Machine Installation Plan” in Chapter “Working Documents”.



**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

<sup>1)</sup> 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 fluid 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 is equipped with a chip conveyor, a chip trolley, its height matching the chip conveyor's discharge height, is required. 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 on 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 locally valid guide lines and regulations must be taken into consideration.

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 waters or groundwater.

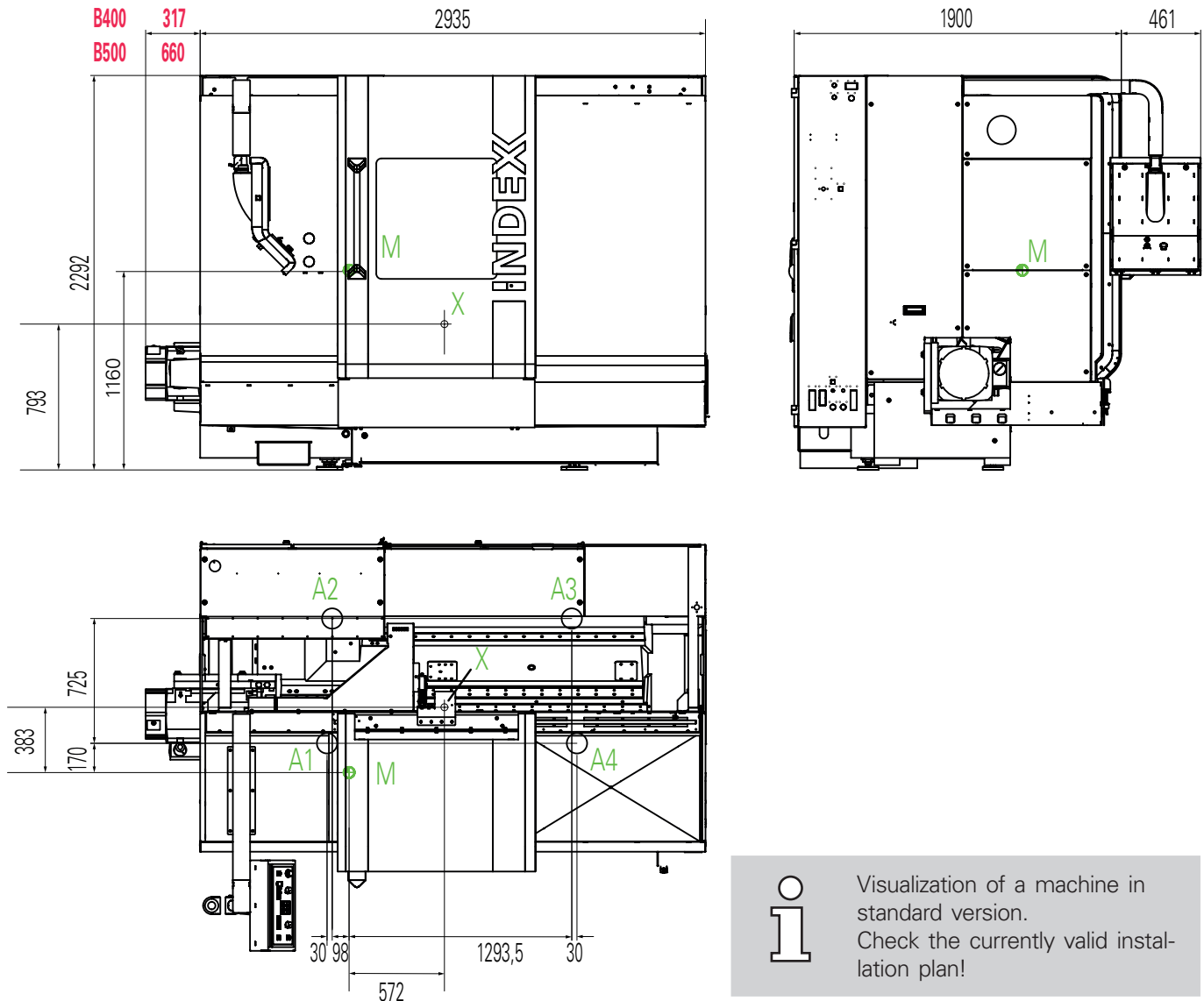
### Possible preventive measures:

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

## Transport

### Transport chart (without transport means)

#### B400/B500



Visualization of a machine in standard version. Check the currently valid installation plan!

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#### Installation points - Load distribution - Center of gravity

B400		B500	
<b>A1</b>	2628 kg	<b>A1</b>	3229 kg
<b>A2</b>	1332 kg	<b>A2</b>	1267 kg
<b>A3</b>	1300 kg	<b>A3</b>	1681 kg
<b>A4</b>	2492 kg	<b>A4</b>	3580 kg
<b>X center of gravity</b>			

## **Delivery Machine**

The machine will be delivered by truck. It will rest either on planks or will be packed in a crate and then rest on a transport floor.

### **The machine will be in the following condition when delivered:**

- The hydraulic fluid and lubricating oil tanks will be full.  
**(The filler neck of the hydraulic fluid tank will be closed. Refit the filling and breathing filter before commissioning.)**
- The cooling lubricant tank will be empty. (The machine has a chip conveyor with an integrated cooling lubricant tank or a separate coolant cleaning system. The chip conveyor and coolant cleaning system are separate units.)
- Certain moving parts on the machine, such as the work area door and the swiveling operating panel, 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 equipment levels or add-on equipment such as chip conveyor, bar feeder, bar loading magazine, etc., are usually separate units.

Chip conveyors usually rest on a transport base for shipping.

The bar feeder and bar loading magazine 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 damages and completeness (compare bill of lading with delivery form).

Have the carrier confirm any damages or missing parts on the bill of lading or delivery form.

In case of damages during transport, it is recommended to take photos of the damages for evidence.

Inform **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., trolley) under the machine.



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

Lower machine slowly and carefully onto the trolley and move it to the installation site. Remove the transport gear beforehand.



# INDEX B400/B500

INDEX

## Transporting the machine

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

### Caution!

Check the proper seating of the ropes/chains/round slings in the transport hooks before lifting the machine. If using other lifting gear than specified herein, it is important to verify that it does not contact the paneling and that the machine remains in a horizontal position (Fig. 1).

The consoles **5**, **6**, and **7** and the corresponding screws (M16) required for proper transport of the machine are included with the machine and remain with the customer.

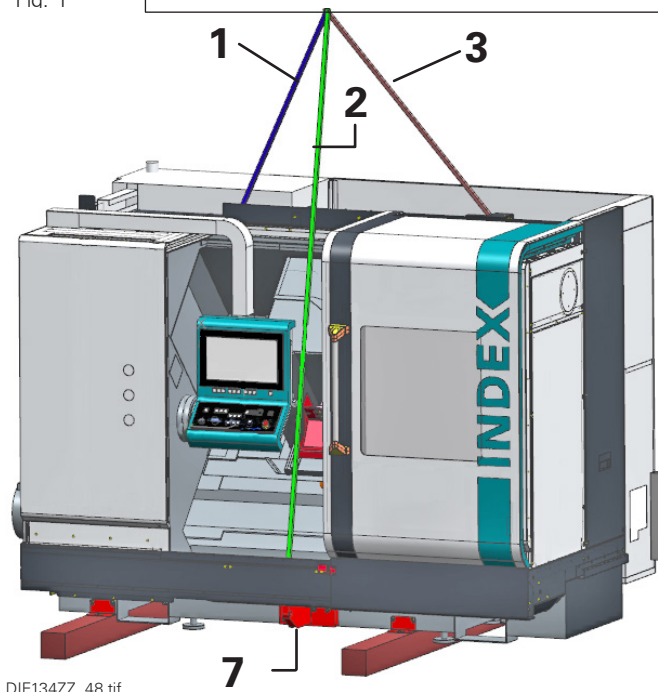


Console **5** remains on the machine. The consoles **6** and **7** must be removed.

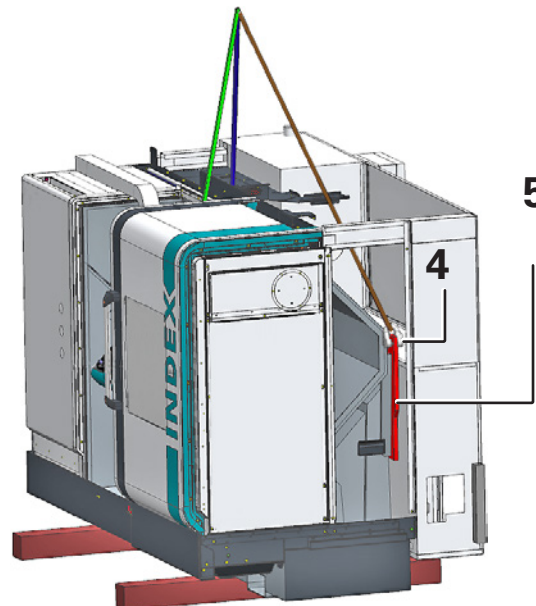
If the transport consoles are used again for transport, they must be checked and evaluated in advance (visual check). **In the event of obvious damage, such as deformation or cracks, they must no longer be used.**

Fig. 1

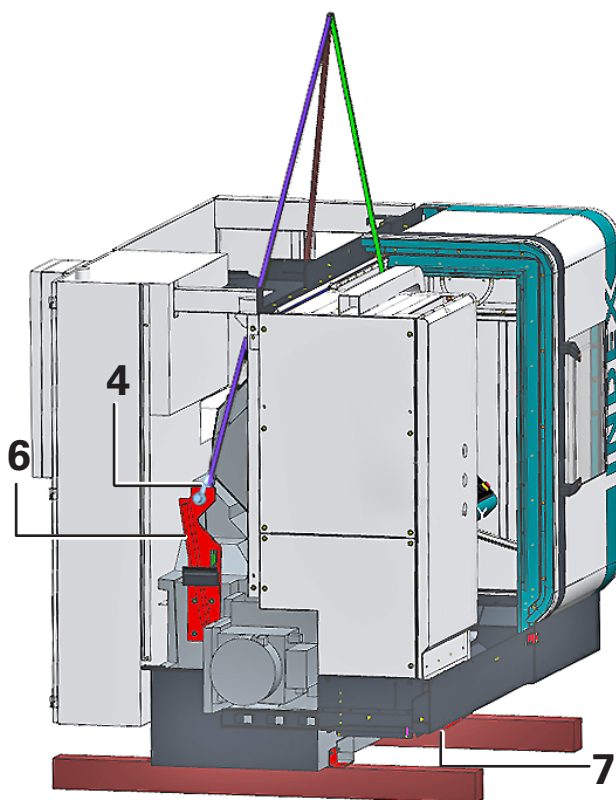
Machine mass	
<b>B400</b>	<b>B500</b>
<b>approx. 8000kg</b>	<b>approx. 10000kg</b>



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	Item	Qty.	Name
Transport gear	1	1	Round slings, for example: Liftfix 5000 by Carl Stahl
	2	1	Round sling 5 t (approx. 236 cm)
	3	1	Round sling 5 t (approx. 313 cm)
		1	Round sling 5 t (approx. 218 cm)
		8	Cyl. head screw 12.9 M16x600 4762
	4	Shackles	
	5	1	Transport console right + shackle
	6	1	Transport console left + shackle
	7	1	Transport console front + shackle
	5	5	Load stand, M30 (two each on the right and left and one on the rear)

The machine was placed on wooden planks for transport.

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

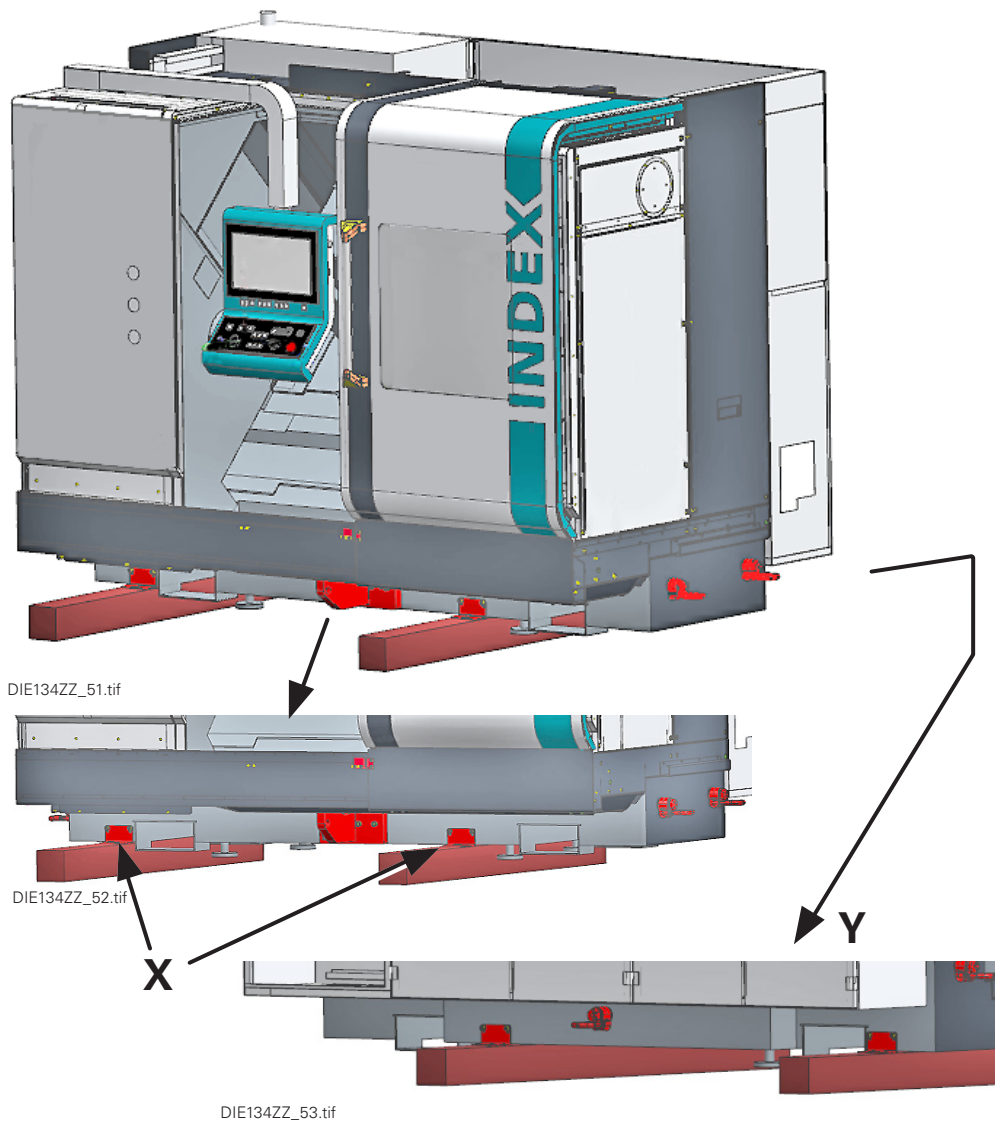
For this purpose, the machine is lifted slightly using the crane or forklift, the transport locks of the wooden planks are unscrewed, and the wooden planks are then removed.



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



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



## Transporting B400/B500 with a forklift



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

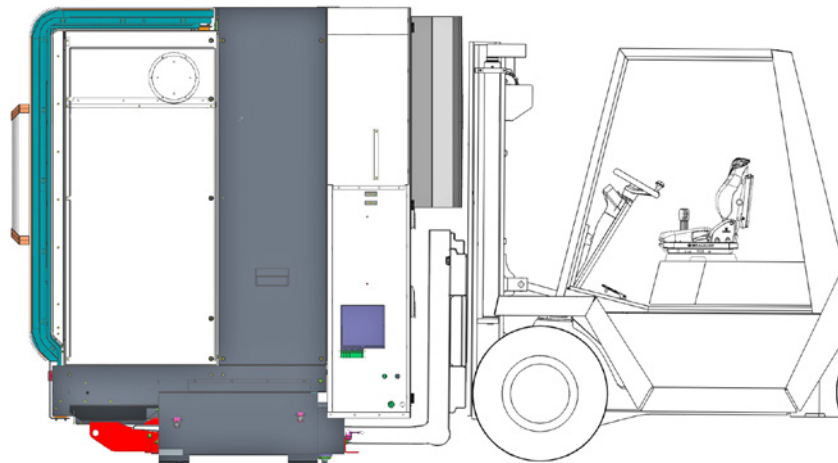
Observe the following when selecting the forklift:



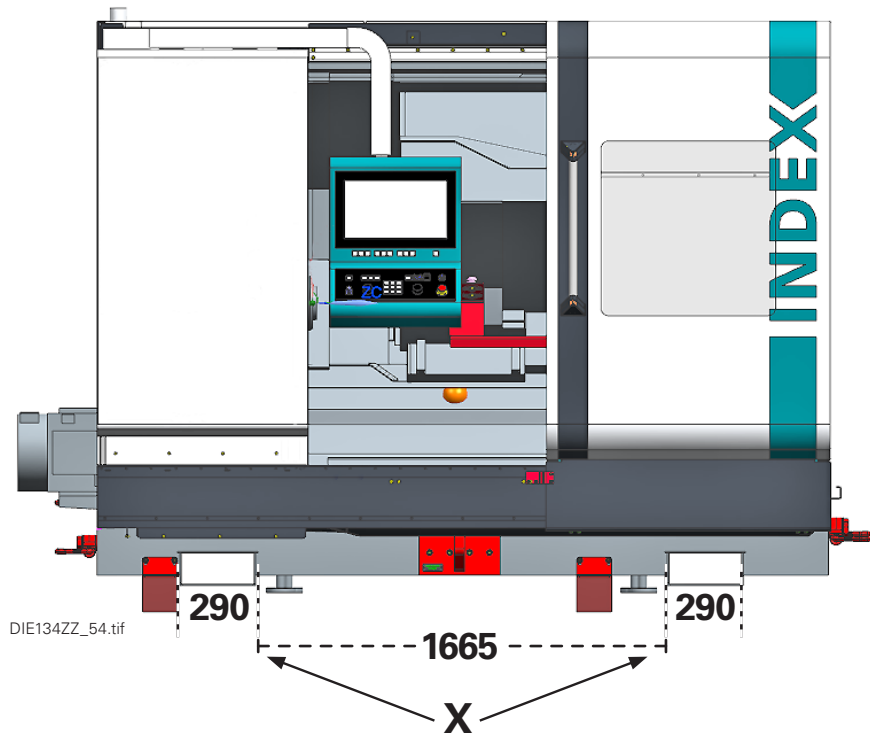
### Load distribution on the forklift:

	<b>B400</b>	<b>B500</b>
<b>Left fork</b>	3962 kg	4593 kg
<b>Right fork</b>	3791 kg	5162 kg

**Ensure a fork distance of 1665 mm.**



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## Working with hydraulic jacks



Due to the machine's high center of gravity, we stipulate transporting with transport casters 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.



To protect the machine bed when lifting the machine with hydraulic jacks, steel plates are cast into the machine bed at the following points. It is nevertheless recommended to use anti-slip mats between the machine bed and the jack claw (**c**) on the hydraulic jack.

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



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Only use sufficiently dimensioned hydraulic jacks for transporting the machine.

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

Be sure to provide for three-point support when lifting or lowering the machine with hydraulic jacks: two transport casters or armored casters 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.

The locations shown for the hydraulic jacks must absolutely be observed. The supporting points for the transport casters are reinforced by additional cast steel plates.

## Lifting and lowering the machine with hydraulic jacks ..... for caster transport



The figures below show the locations where the hydraulic jacks and transport casters must be positioned on the machine frame.

Steel plates are cast in at the described points to reinforce the machine bed (1).

### Lifting:

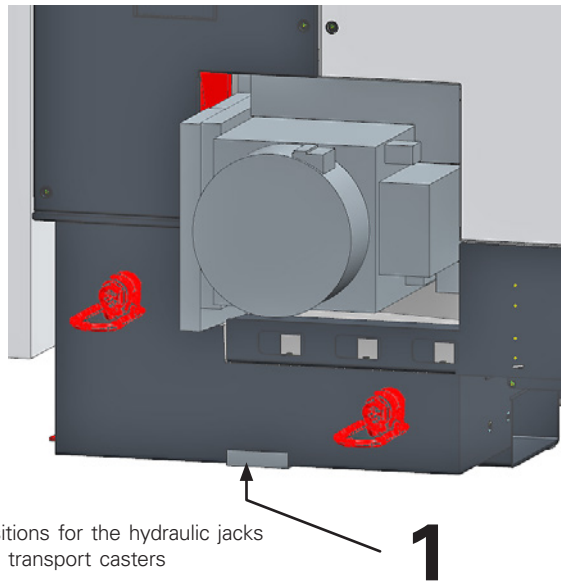


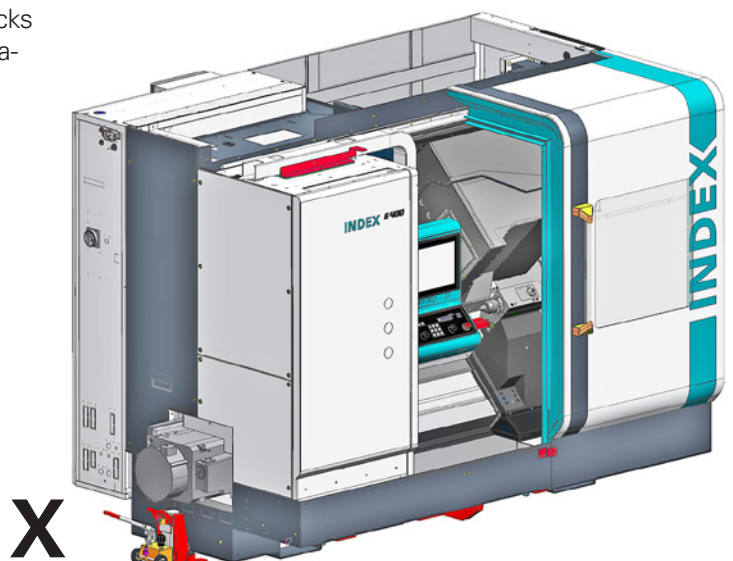
Fig.: Positions for the hydraulic jacks and transport casters



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

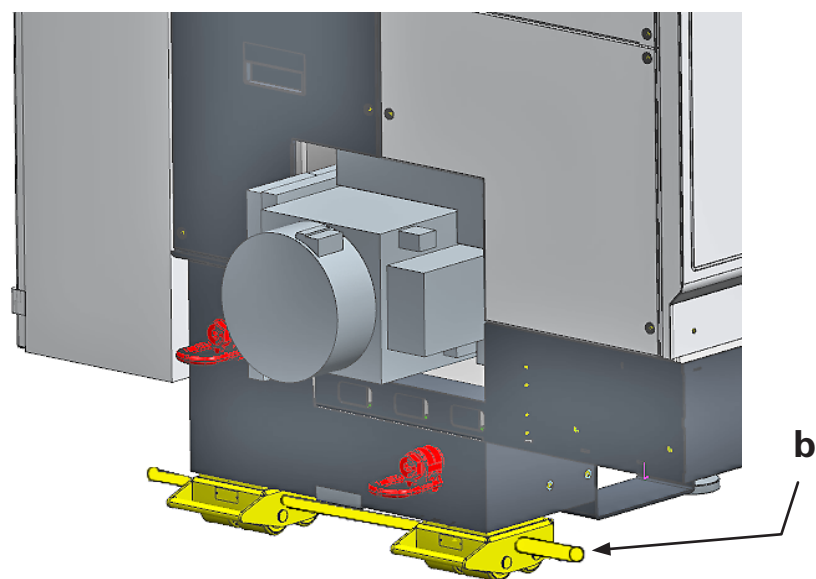
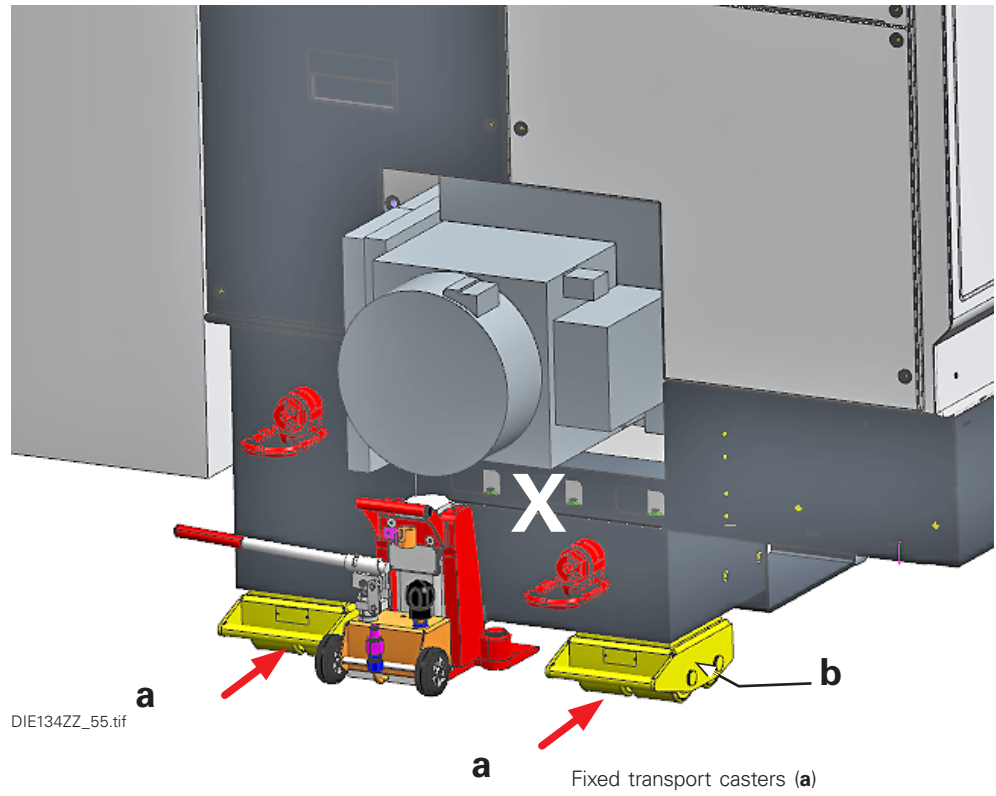
### Procedure:

- Attach hydraulic jacks **X** and raise the machine. (Fig. Locations for hydraulic jacks and transport casters)



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



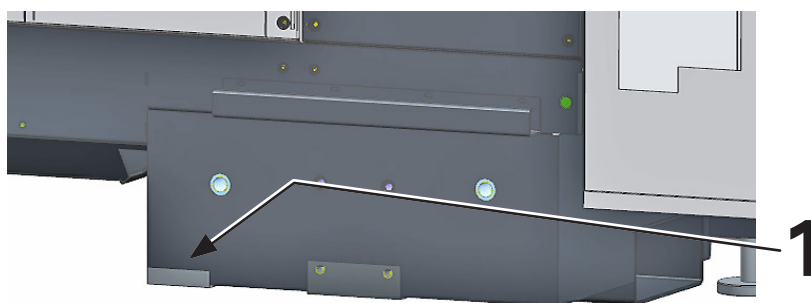
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Fig. Locations for hydraulic jacks and transport casters

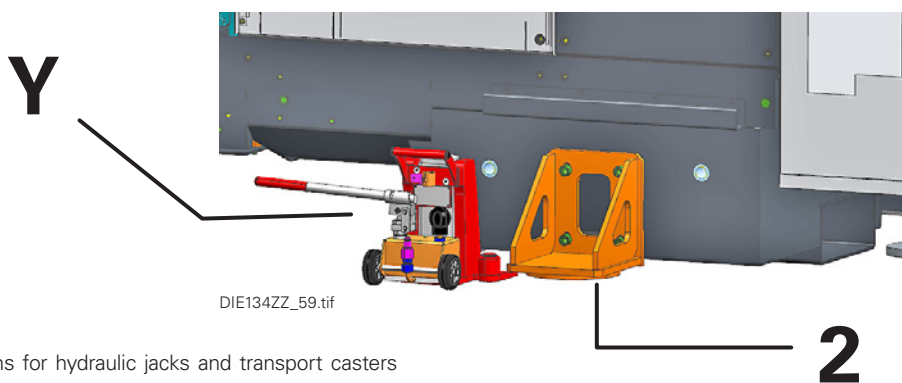
- Attach hydraulic jacks **Y** (note position **1**) and raise the machine. (Fig. Locations for hydraulic jacks and transport casters) The load stands may need to be removed first.



Use only transport casters with a maximum load capacity of 12 t. This ensures that the plate support (D 150 mm) of the steering gear fits into the mounting provided for this purpose on the console (**2**).

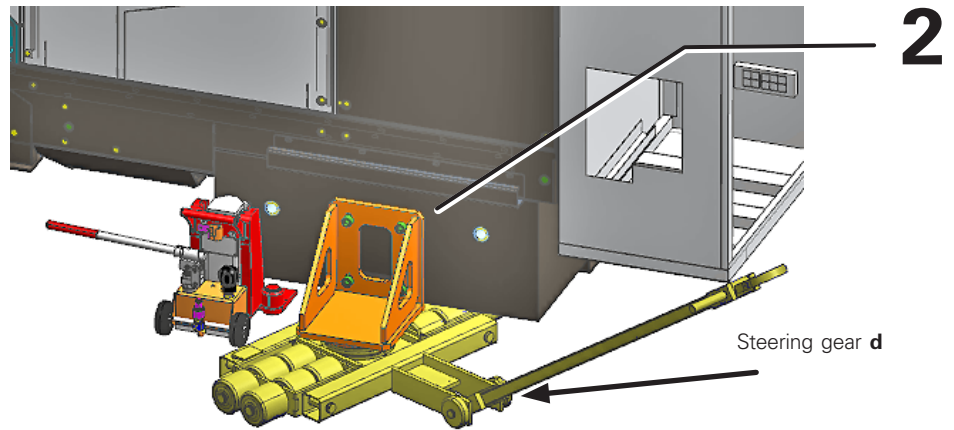


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Fig.  
Locations of the metal plates



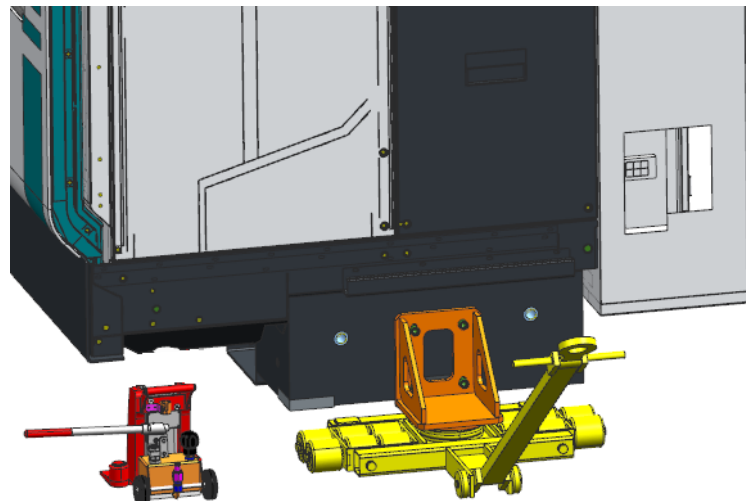
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Fig.  
Locations for hydraulic jacks and transport casters

- Install the console (**2**) for the steering caster.
- Lift and move in the steering caster.



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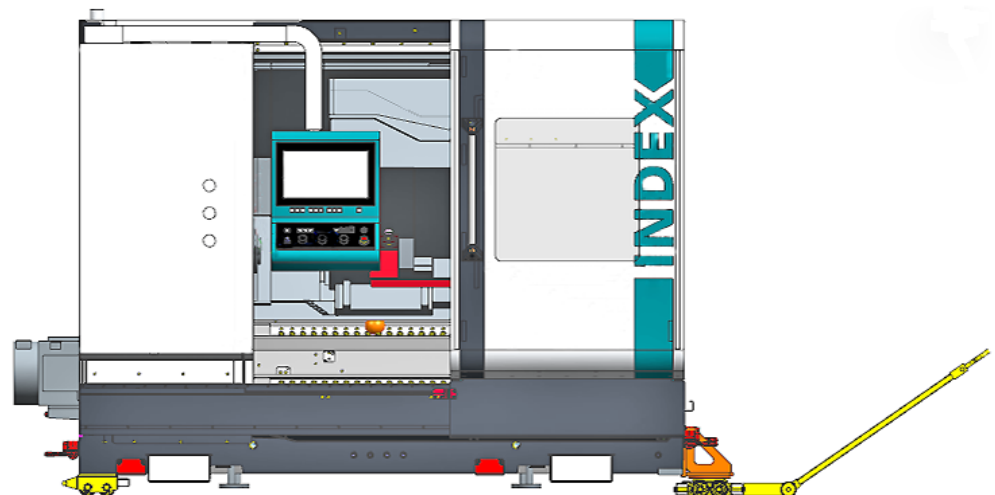
- It is recommended to move in the steering gear (**d**) from the right at an angle of 45°.



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

Now the machine is ready for further transport.



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## Transporting with casters

Transport casters have the advantage of a low loading height so that the machine can be loaded and unloaded using hydraulic jacks.

Disadvantages are, however, the relatively small wheels (casters), which require a solid, even floor of appropriate load capacity and very slow, smooth movements during the transport.

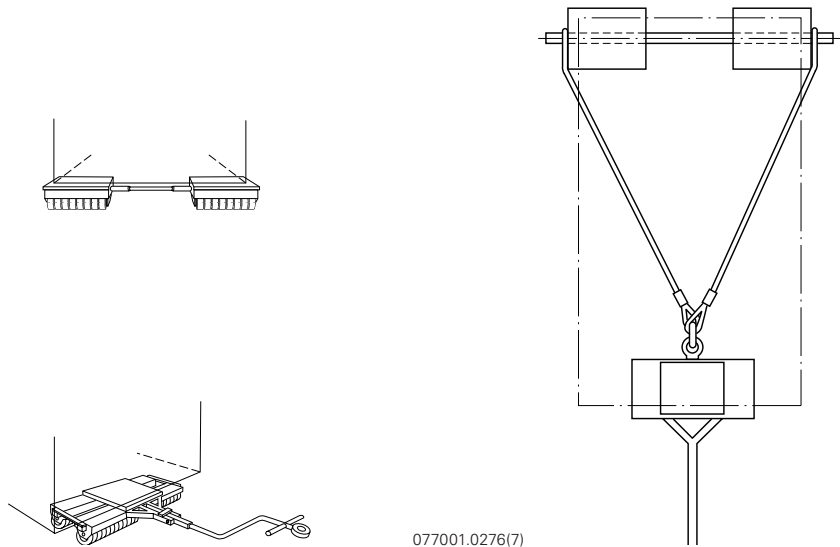
Depending on the size and mass of the machine, two or three transport casters are required for transport, one of which must be steerable.

The trolleys must always be parallel to the load to be lifted and in no case be oblique, because otherwise the casters would be damaged by the load.



**Connect the steerable and fixed transport casters with steel cables (Fig.). This will prevent the casters from slipping when being pulling.  
Secure the load with suitable straps.**

Fig.



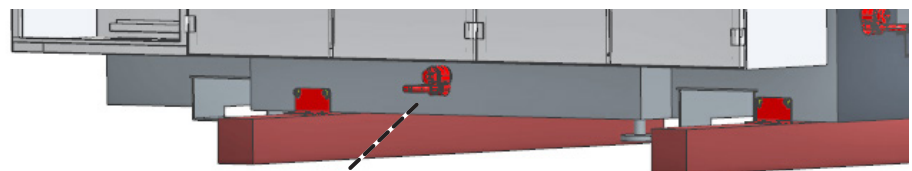
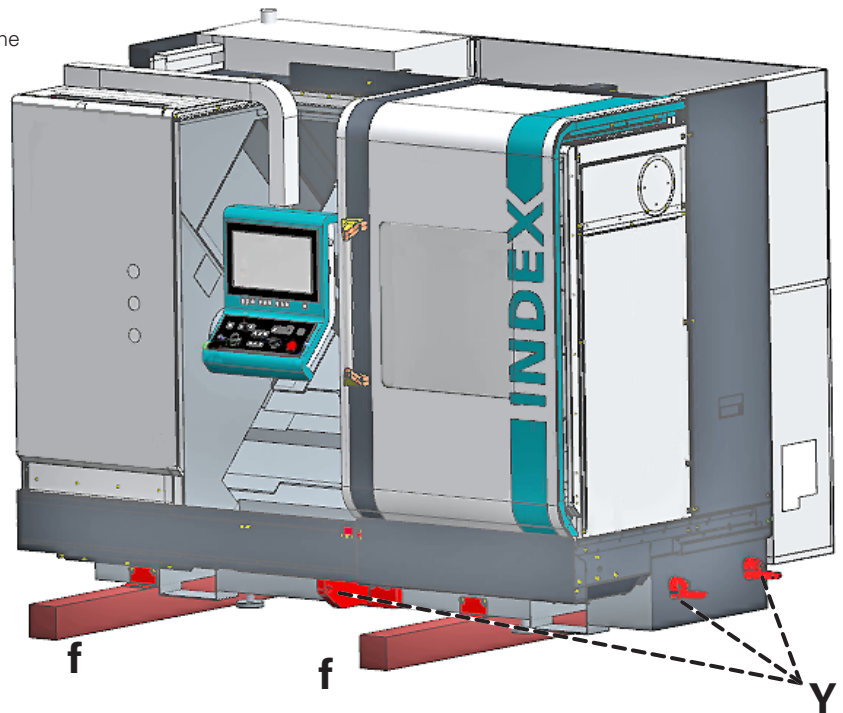
### Suspension and lashing points

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 (f).

Fig. 1  
Front view of the machine



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Fig. 2  
Rear view of the machine

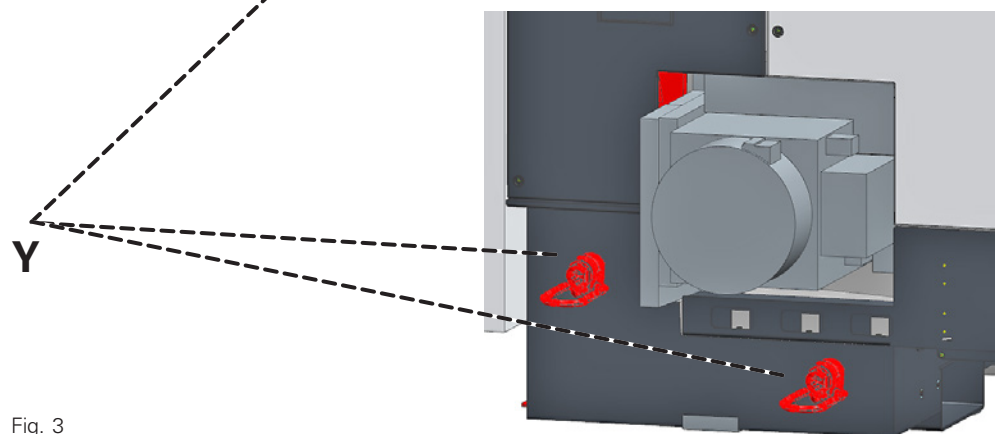
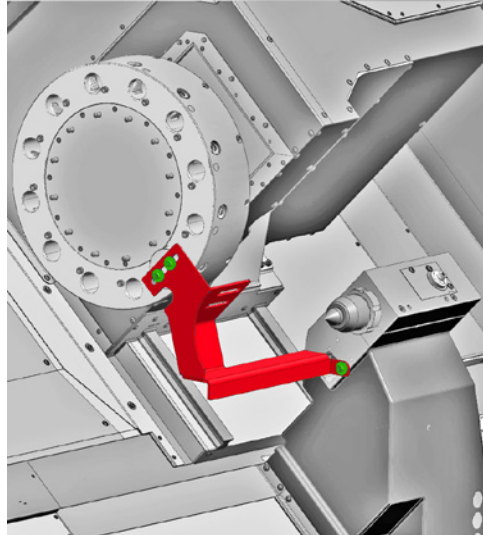


Fig. 3  
View of main spindle side

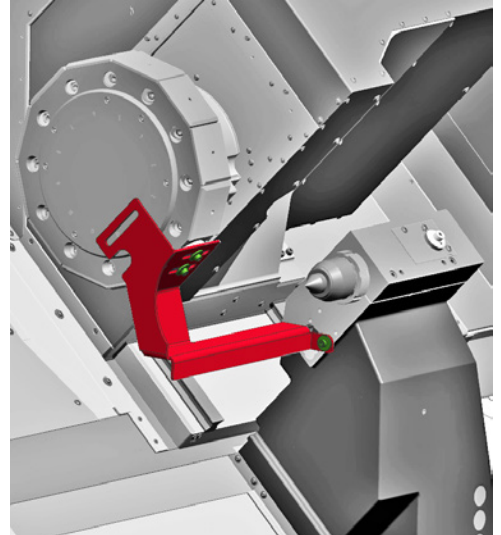
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**Locations of the transport locks on the machine**  
**Transport lock Z1 (version with tailstock)**



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Example:  
Disk-type turret with tailstock



DIE134ZZ\_42.tif

Example:  
Radial turret



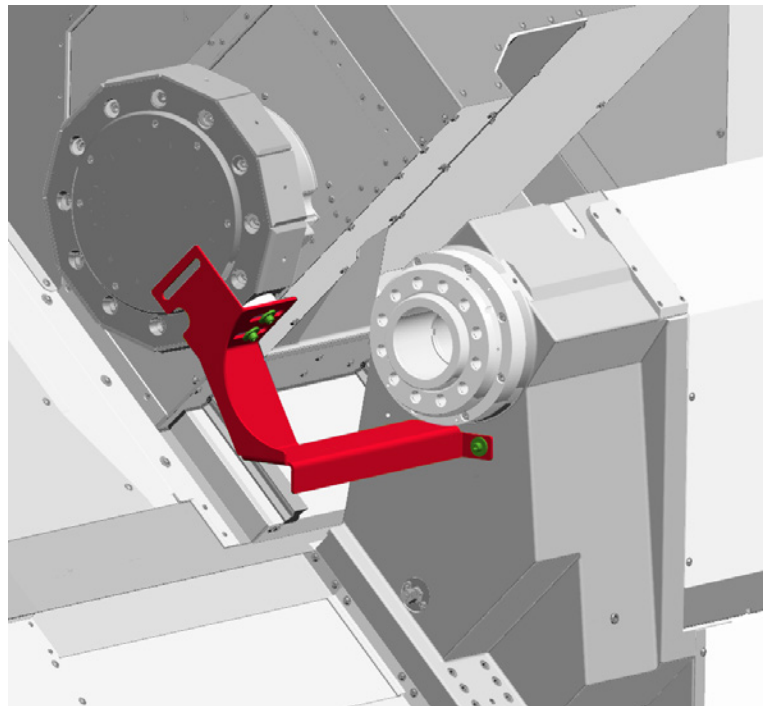
The following procedure needs to be followed only for a new transport

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 .....			974.5 mm
Radial turret ..... VDI30	290.0 mm	-40.0 mm	640.0 mm
Radial turret ..... VDI40	290.0 mm	-40.0 mm	640.0 mm
Disk-type turret ..... VDI40	434.0 mm	-50.0 mm	570.0 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 .....			890.0 mm
Radial turret .....VDI30	290.0 mm	-55.0 mm	640.0 mm
Radial turret .....VDI40	290.0 mm	-55.0 mm	640.0 mm

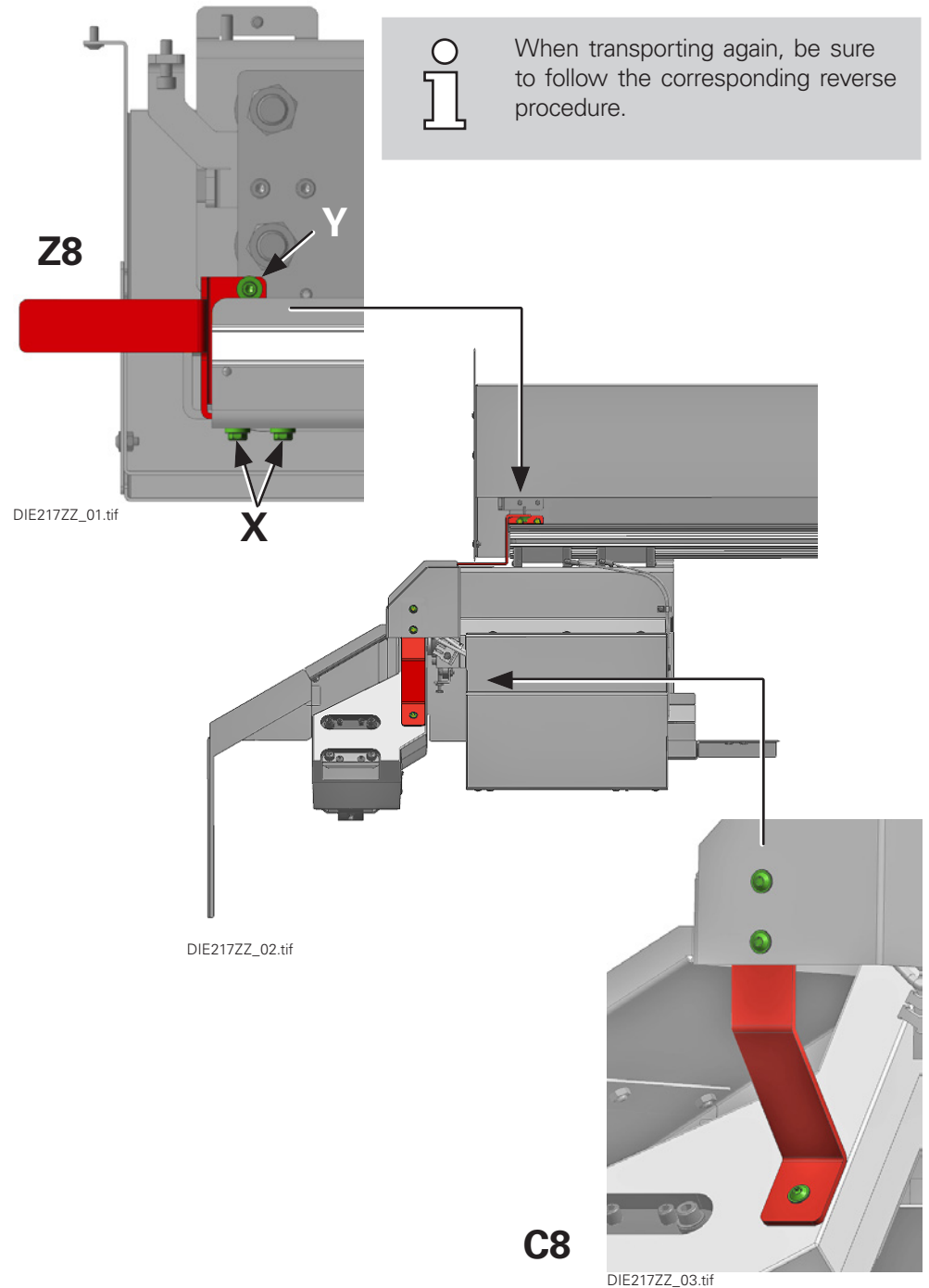
### Transport locks Z8 and C8 (workpiece removal unit)

Detailed view of transport lock **Z8** from below.

The transport lock **Z8** is fixed with 3 screws **X + Y**.

First, unscrew and remove the screw marked **Y**.

Then, the workpiece removal unit can be extended. Then unscrew and remove the two screws **X**.

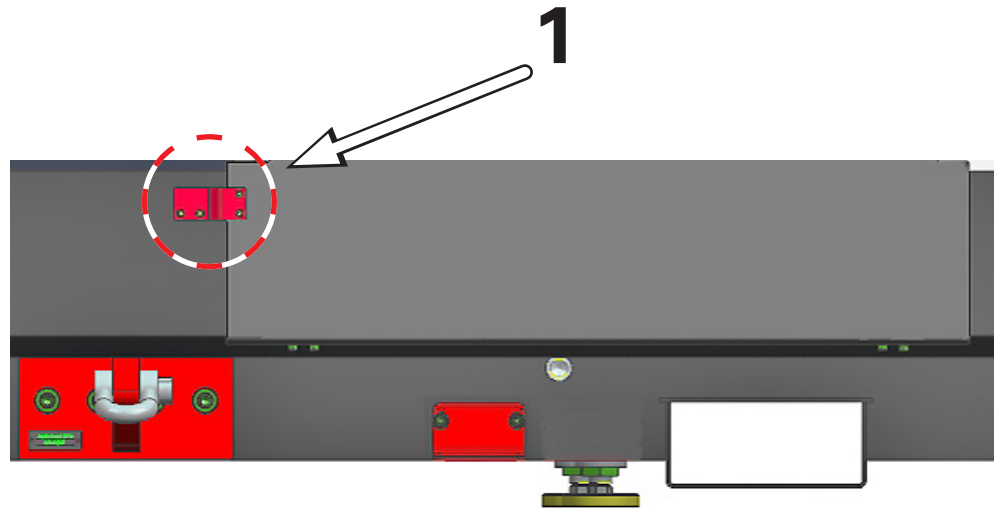


**i** The transport lock of the swivel axis (**C8**) can only be removed when the Z axis is extended.

### Transport lock for operating panel and work area door

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

The operating panel mounting (2) has been unscrewed and swiveled by 90° into the work area, and screwed on again. (X).



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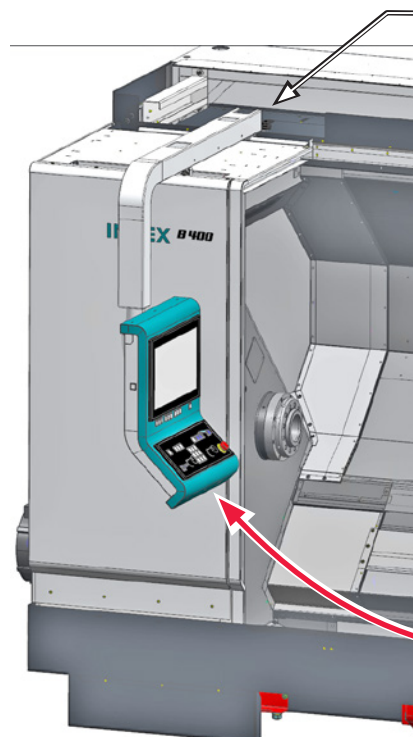
Fig.: 1

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

Fig.: 2

Unscrew the operating panel holder in the transport position and screw it back on again, offset by 90°

Fig.: 1



DIE134ZZ\_45.tif

2

Fig.: 2



DIE134ZZ\_44.tif

## Unloading and transporting of separate units

Equipment levels or add-on equipment such as chip conveyors, bar feeders, bar loading magazines, etc., are separate units.

They have dedicated transport regulations that must be observed for unloading and transporting (see the manufacturer's 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.

Use suitable transport ropes or straps for unloading and transporting.

Attach the transport ropes 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.

## Unpack the accessories and check 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 of 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 wiring diagram.

The control cabinet may be opened only when the main switch is switched off. While the main switch is switched on, the control cabinet must be secured according to valid safety standards.



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

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

The electrical connection is indicated in the wiring diagrams.

The machine is prepared for connection to three-phase power supplies (TN mains system).

Before connecting the machine, check that the existing mains settings of the respective power supply company match the ratings required for the machine.

If this is not the case, an upstream transformer is required.



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



## Hydraulic and lubrication systems

The hydraulic tank of the hydraulic system (**Z**) was not emptied for transporting.



**Caution!**

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

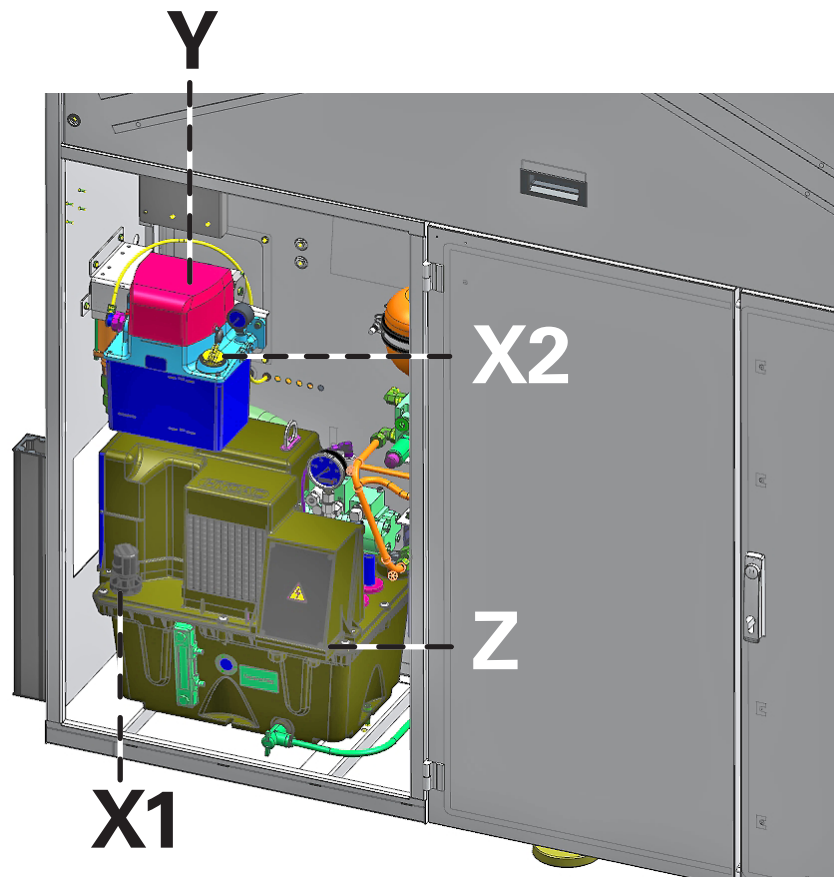
The lubrication system (**Y**) was not emptied before transport.



**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.

For the appropriate types of lubricating oil, hydraulic fluid, grease, and cooling lubricant, see the Chapter "Notes on Operating Materials" and "Hydraulic Diagrams and Machine Installation Plan" in Chapter "Working Documents".



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Fig.:  
Filler necks of the hydraulic and lubrication systems

### Installing the machine

The B400/B500 machines are equipped with four adjustable feet as standard (see Fig. "Leveling the entire machine" and "Adjustable machine foot"). However, only feet **1, 2, and 4** are used here to level the machine.



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

After leveling, the machine foot **3** is only adjusted to the floor for support so that the indications on the spirit levels do not change.



DIE002ZZ\_04.tif  
Fig.: Hydraulic jacks

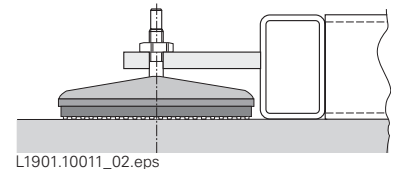
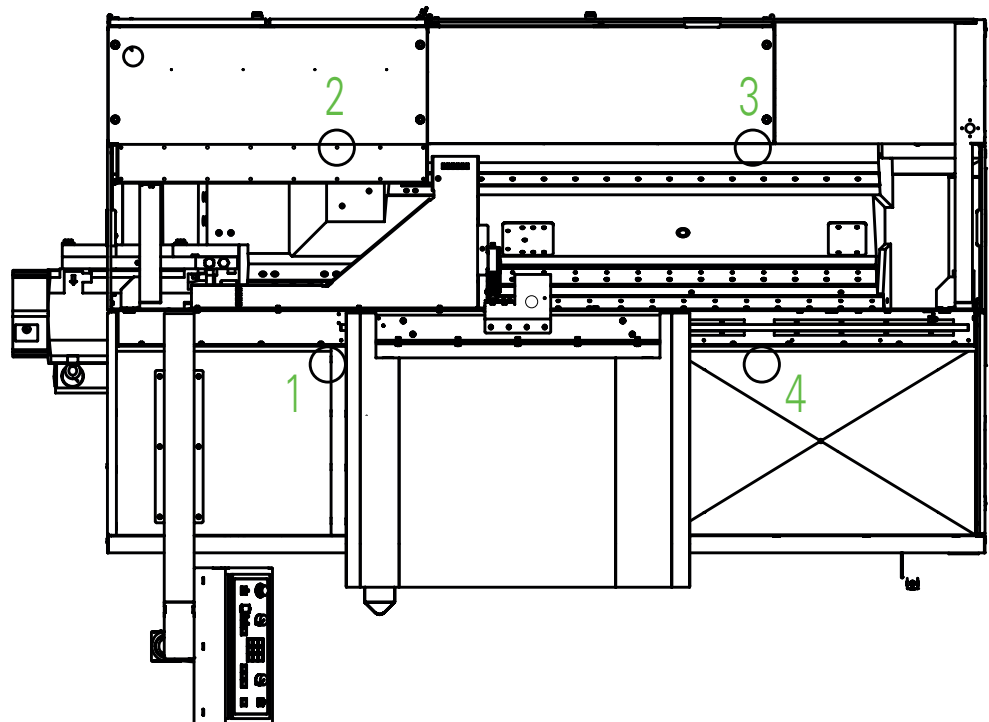


Fig.  
Adjustable machine feet 1-4

L1901.10011\_02.eps



DIE134ZZ\_28.eps

Fig. "Leveling the overall machine"

## Leveling the machine (Accuracy 0.1 mm/m – also check with face change)

### Leveling in the Y and Z directions

To level the machine, place precision spirit levels at certain points. (See Fig. 1-2)

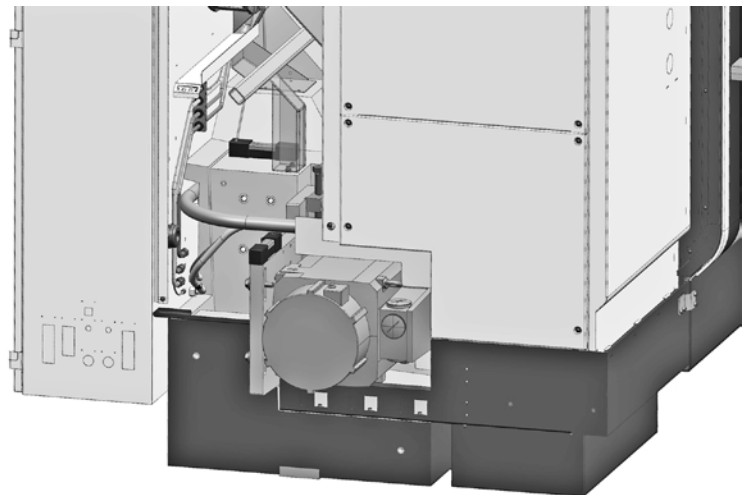
- Place the precision spirit levels as shown in Fig.

Next, level the machine by adjusting the machine feet **1**, **2**, and **4**. (See Section "Installing the Machine", Figure "Leveling the entire machine")

Completely turn back the machine foot **3**.

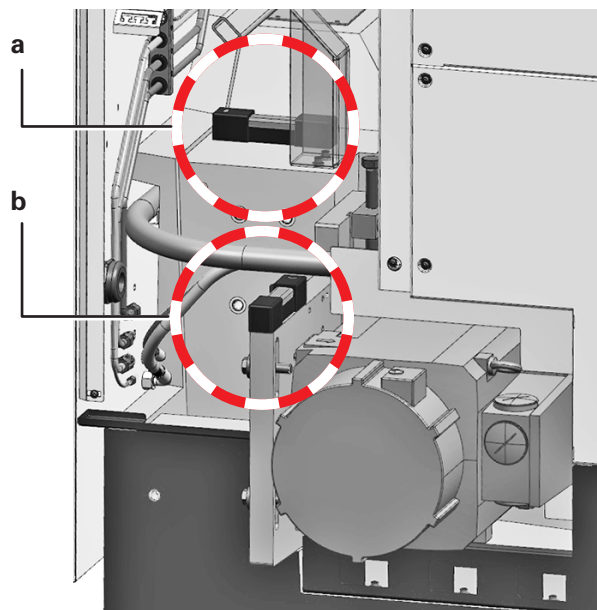
- After the machine has been leveled, attach the machine foot 3 only slightly. Take care not to change the position of the machine.
- To verify, check the precision spirit levels at positions **a** and **b** once more.

Fig. 1



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Fig. 2



DIE134ZZ\_30.tif

### **Installation and leveling of expansion stages and add-on equipment**

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  $\pm 0.1$  mm/m accuracy.

The workpiece 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  $\pm 0.1$  mm/m accuracy.

(For further information, see the corresponding installation plan in Chapter "Working Documents".)

### Installation and leveling of the chip conveyor

Observe the following when installing the chip conveyor in the machine: After pushing the chip conveyor into the machine, ensure that it is raised high enough – using the adjusting screws (X) – so that the chip conveyor's circumferential sealing lip (Y') is positioned on the contact surface (Y) below the machine and therefore provides a seal (Fig. a and Fig. b).

**i** Before removing the chip conveyor from the machine, be sure to lower it back onto the rollers again using the adjusting screws (X). Pay attention to sealing lips (Y').

**i** 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

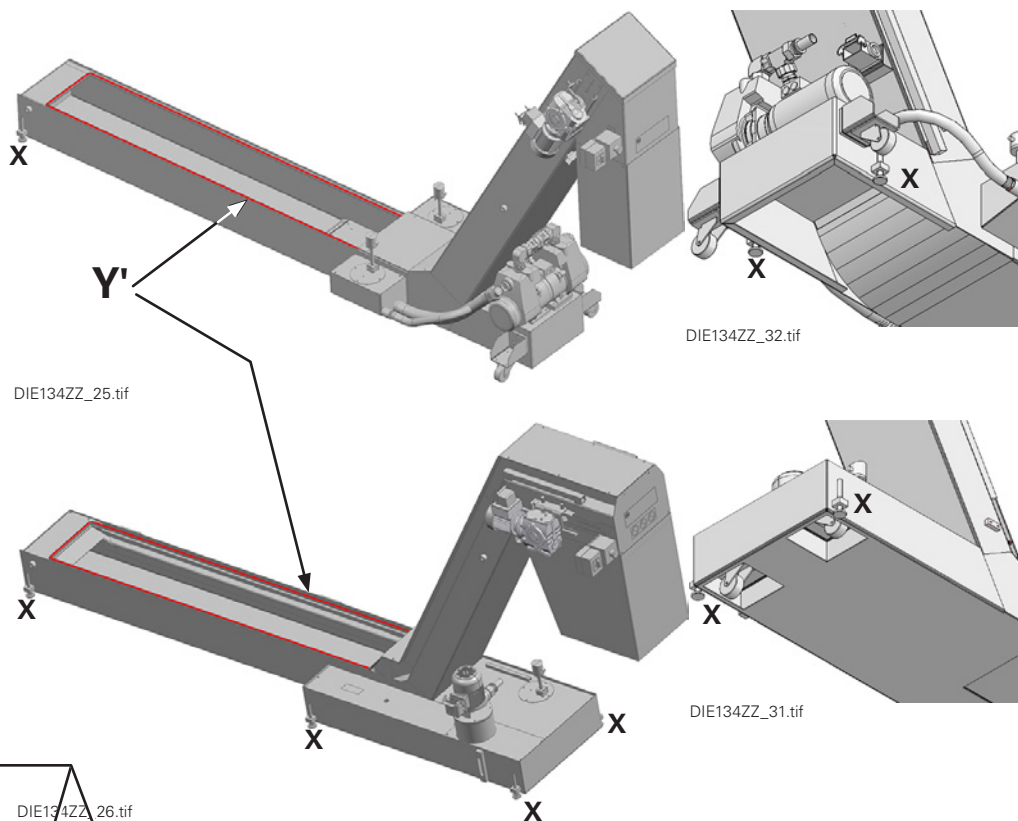


Fig. b

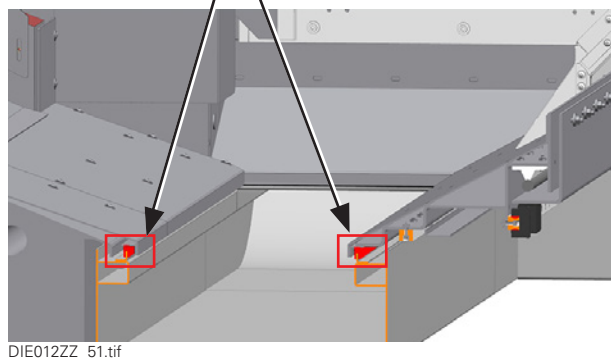
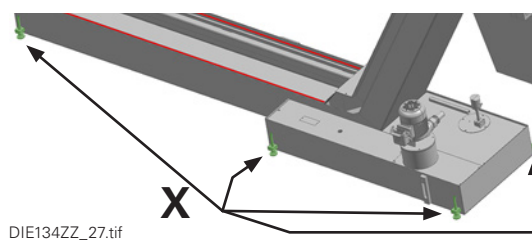


Fig.: Adjusting feet on the chip conveyor



## Commissioning

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

Only then is the machine ready for operation.



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 coolant during the operation of the machine.



**To prevent solvent splashes from entering the eyes when cleaning the machine, be sure to wear suitable safety goggles. For cleaning the inside of the machine's work area, protect your hands and arms by wearing clothes with long sleeves and suitable gloves. 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 only after a long time so that the protective layer has become very tough.

The mounting surfaces for tool holders and add-on equipment 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: ..... Fluid level check

Cooling lubricant unit:..... Replenish cooling lubricant

Central lubrication system: ..... Fluid level check

Add-on equipment:..... Fluid level check



For information on the lubricating oil, hydraulic, fluid and cooling lubricant grades, as well as on volumes and filling positions, see Document "Notes on Operating Materials" and the machine installation plan in Chapter "Working Documents".

## 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 door of the control cabinet.

## Switching on the machine

See document "Machine Operation".

## Relocation



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

Refer to Sections "Transporting the machine" and "Location of the transport locks".



Replace filling/breathing filters on the hydraulic and cooling unit with a blanking plug.



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DIE009ZZ\_23.tif

Fig.:  
Example of filler neck and blanking plug



DIE140ZZ\_44.tif

Example:  
Filling and breathing filter  
by ARGO-HYTOS GmbH



### **Only for machines equipped with chip conveyor**

Unscrew the coolant hose from the screw connection above the coolant tank and loosen the power line connections to the chip conveyor's coolant motor and drive motor.

Pull out the chip conveyor and clean it.

### **Only for machines equipped with blank feeder**

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



**For transport by air, all pressure accumulators attached to the machine must be depressurized and emptied by a specialist.**

Provide the appropriate transport gear for feeding blanks.



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