INDEX

Transport, installation, commissioning

G300.2
G320.2
(turning length 1400 mm)

DIE235EN - 2024-11-06
1124/Sp (Transport, Aufstellung, Inbetriebnahme)/20218660

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

INDEX

INDEX

INDEX

General information

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 film 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 weights

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 weights 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 (only for separate units)
- 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	briefly up to approx. 1000 L/min.

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 34%**

[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. This allows the cooling lubricant to 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.

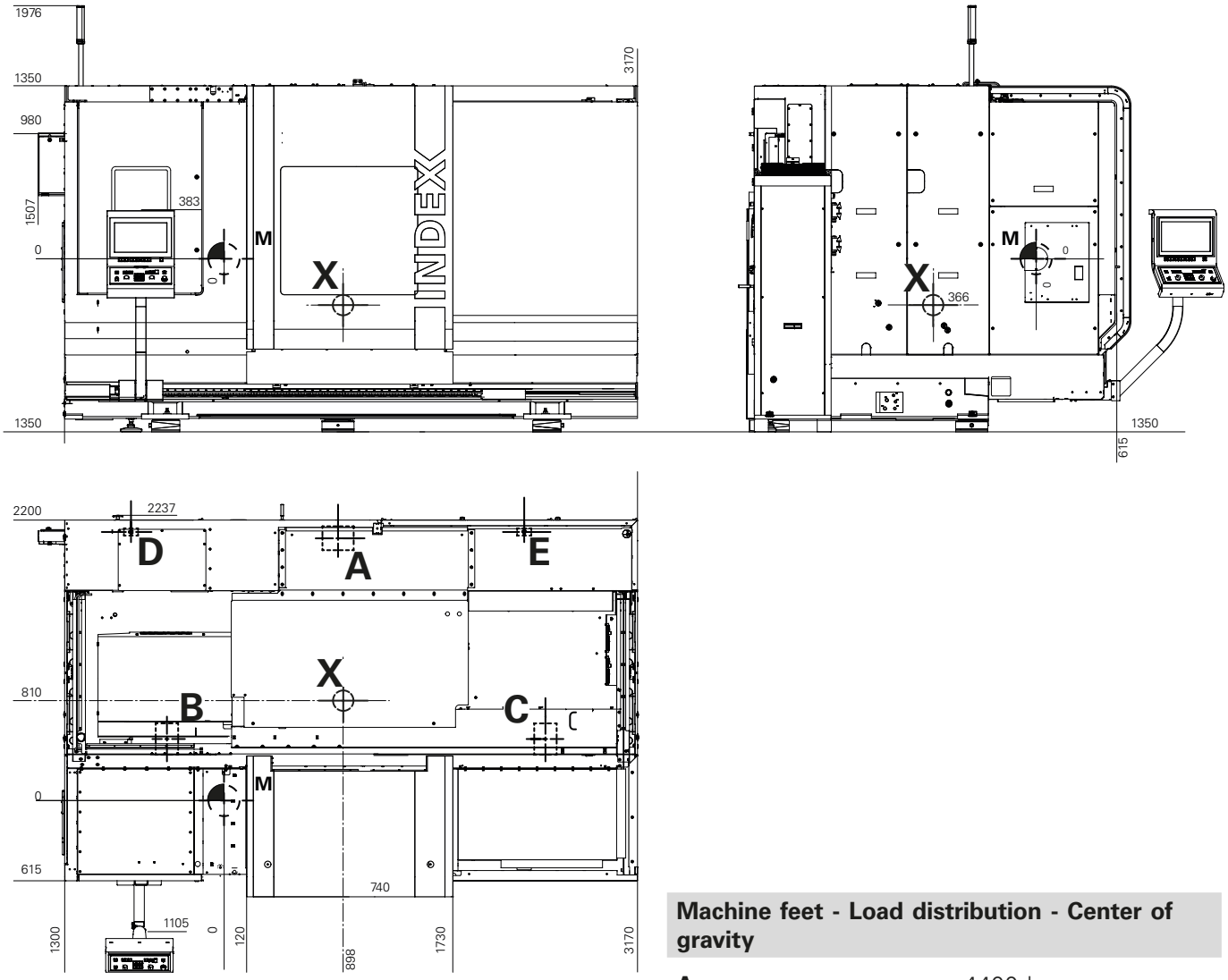
Possible preventive measures:

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

Transport

Transport chart (without transport means)

G300.2 G320.2 (1400 mm)



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Machine feet - Load distribution - Center of gravity	
A	4400 kg
B	9100 kg
C	8500 kg
D	500 kg
E	500 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

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Fig.: Blanking plug

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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.

INDEX G300.2/G320.2

INDEX

Transporting the machine - turning length 1400 mm

Kunde: _____

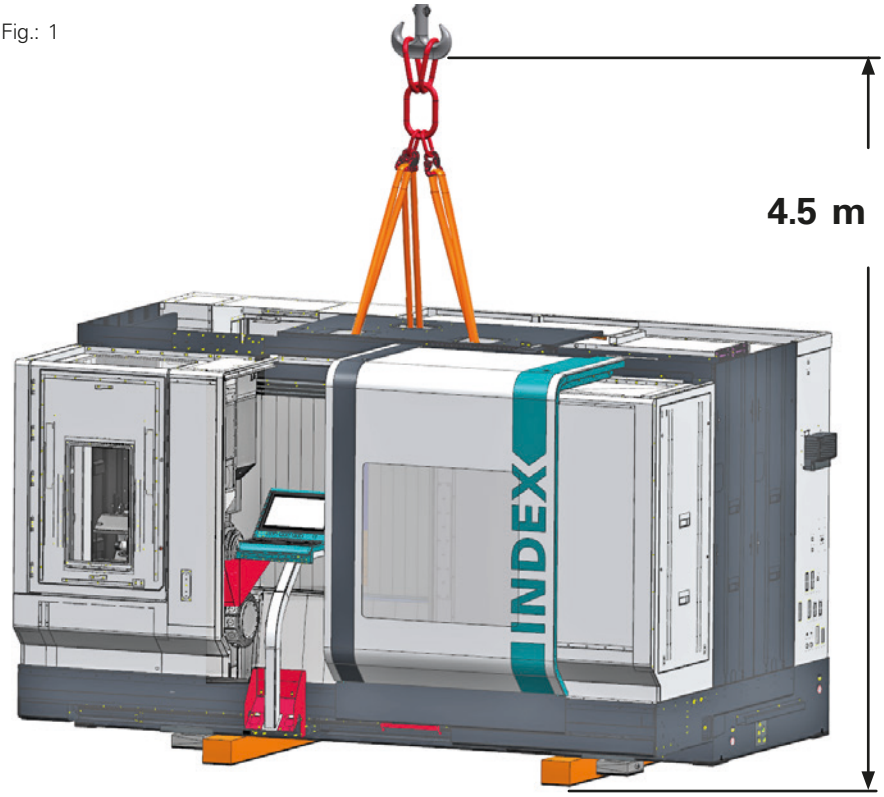
Projekt.-Nr.: _____ Masch. Nr: _____

Machine weight

approx. 23000 kg

(incl. lifting device)

Fig.: 1



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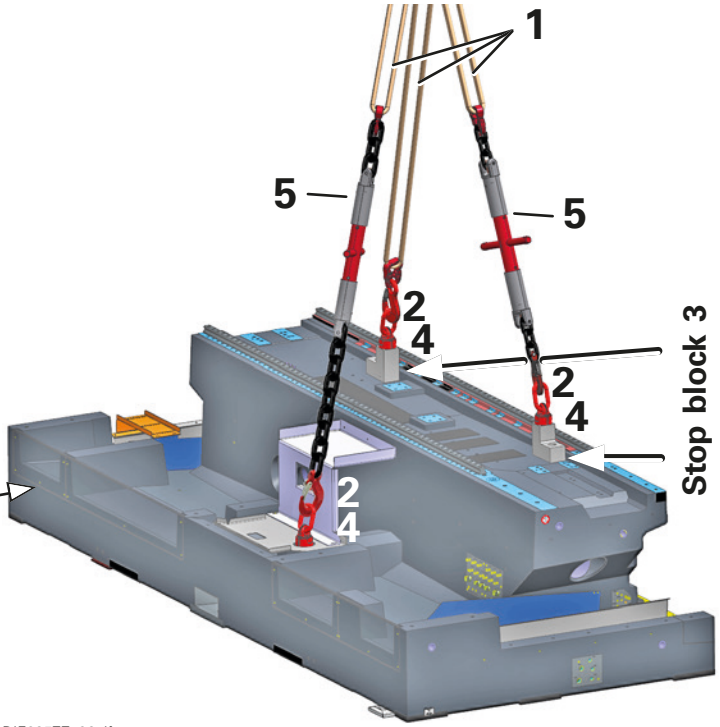
Check the proper seating of the ropes/ chains/round slings in the crane hooks before lifting the machine. The supplied lifting device, including attachment parts, is to be repacked in the appropriate crate after transport and returned to **INDEX**.

Fig.: 2



Rear view of the machine

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	Item	pcs.	Name
Lifting device			Round sling, for example:
	1	3	Round sling 10 t
	2	3	Heavy-duty hook (safety hook 10 t)
	3	2	End stop (180 mm)
		2	Cylinder head screw M36x120 8.8
	4	3	Load ring M42
	5	2	Turnbuckle

After removing the lifting device, be sure to remove the covers inserted on both sides (**X Fig.: 3 and 4**). They are installed to protect the ball screw and the glass scale.

Also, the foam covers fitted to protect the linear guides (**Y Fig.: 5**) must be removed.

Both should be kept for any new transport of the machine and, if necessary, reassembled as described.

Fig.: 3

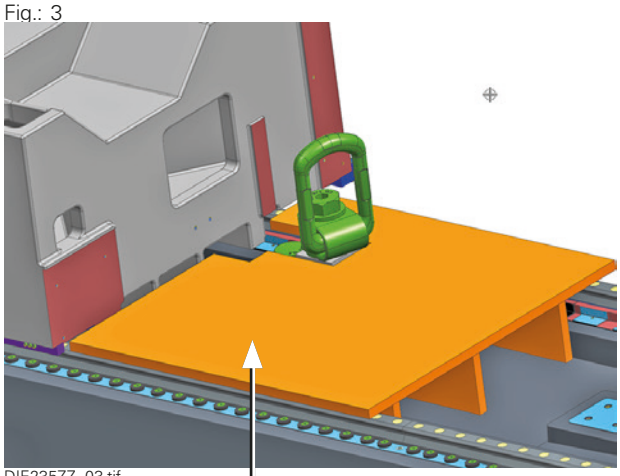

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Fig.: 4

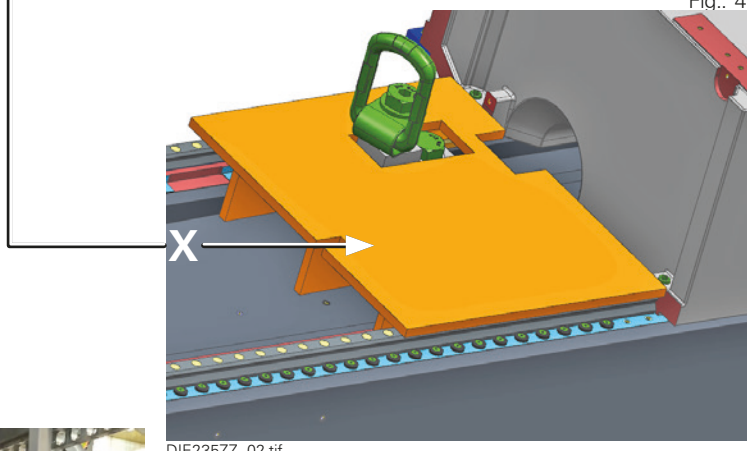

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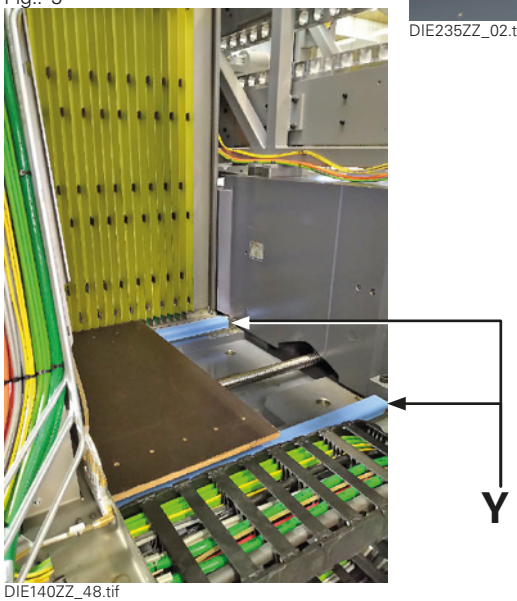
Fig.: 5



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Danger to life!

Do not step under suspended loads.

The machine was placed on wooden planks for transport.

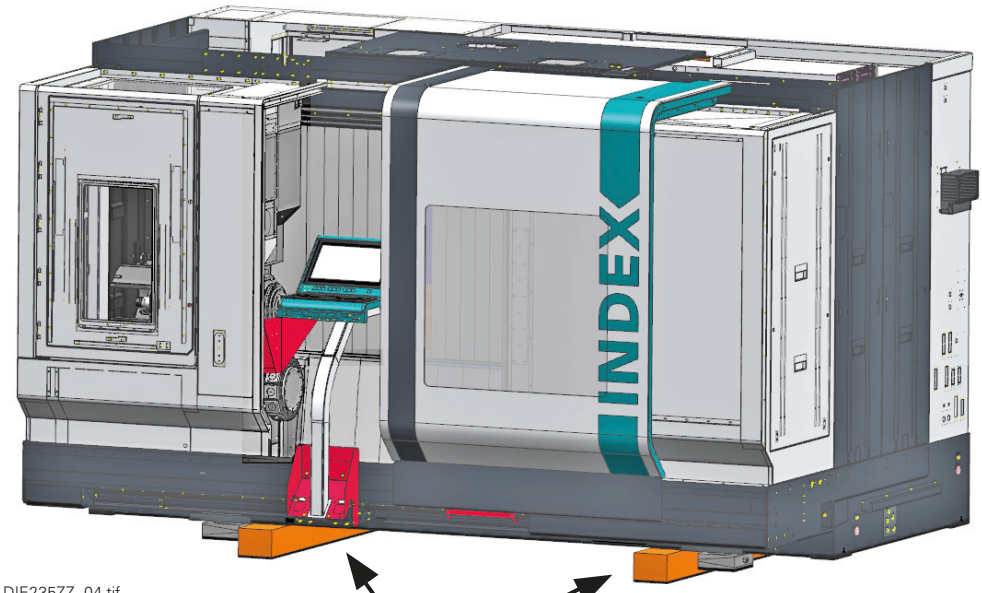
These wooden planks (**X**) must be removed before installation at the intended installation site.

For this purpose, the machine is slightly raised and supported by the crane or hydraulic jacks.

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

Keep transport lugs, wooden planks, and the associated transport locks for any further transport.

Do not return to INDEX or an INDEX representative.



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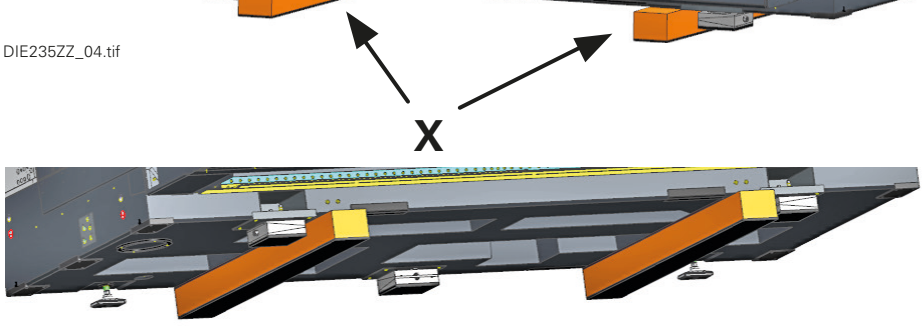

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Fig.: Operator side view

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 weight.

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

Lifting and lowering the machine with hydraulic jacks

..... when transporting with rollers

Use only armored rollers with a total minimum load capacity of **23 t**. This ensures that the plate support of the steering gear fits into the mounting provided in the machine bed (Ø 240 mm) for this purpose.

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

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

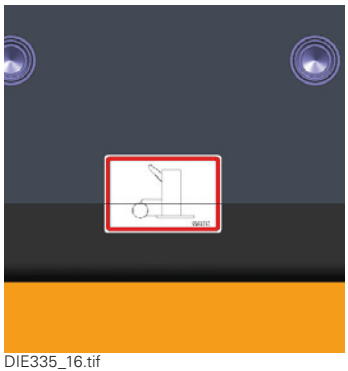

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Fig.
Sign for hydraulic jack locations

Procedure:

Lifting

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

– **It is essential to connect and secure both fixed armored rollers with a bar (b).**

- Attach hydraulic jacks (**X**) and raise the machine. See Fig.: Locations for hydraulic jacks and armored rollers.
- Place suitable timber underneath and secure.
- Release the clamp on the bar (**b**) and push the armored rollers together.

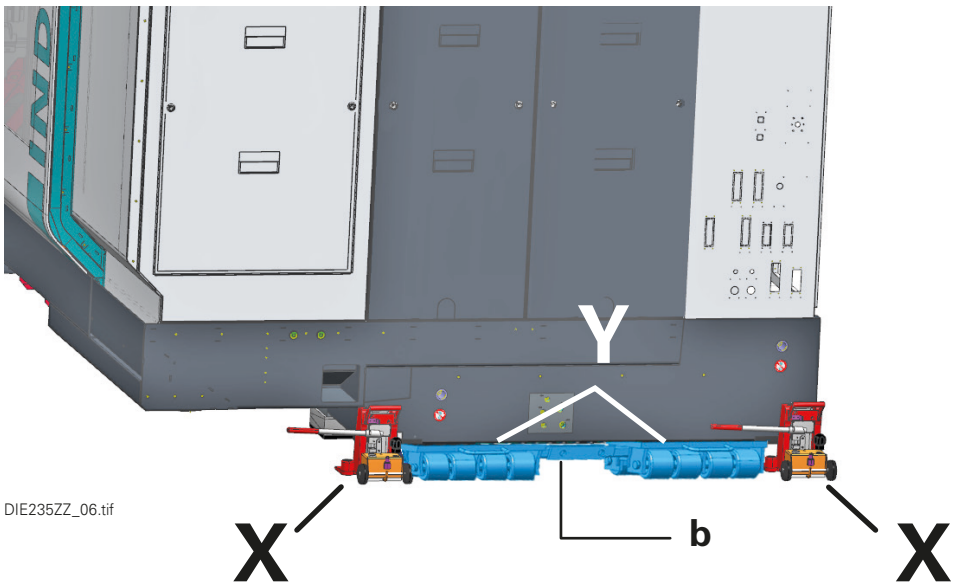

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Fig.
Locations for hydraulic jacks and armored rollers

- Slide the rigid armored rollers (**Y**) under the machine between the hydraulic jacks. Adjust the armored rollers to the required width and retighten the clamp (**b**).

Place anti-slip mats between the machine and the support of the armored rollers.

- Lower the machine onto the armored rollers and remove the hydraulic jacks (**X**).

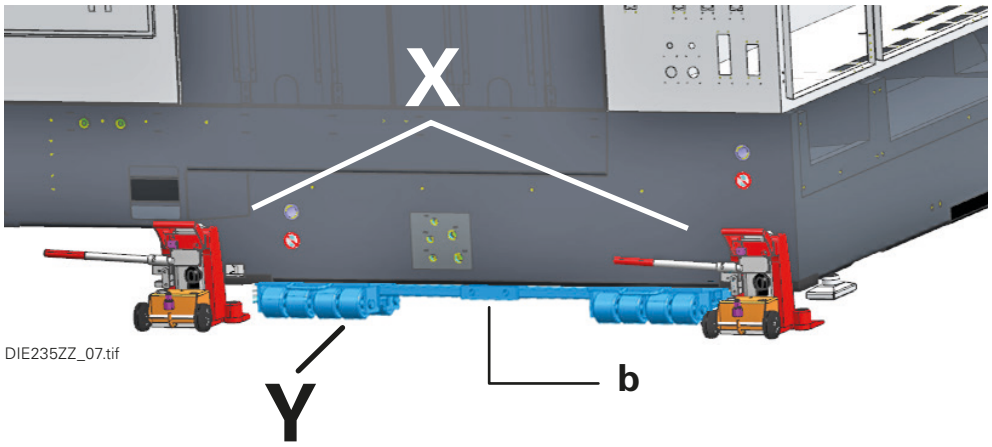

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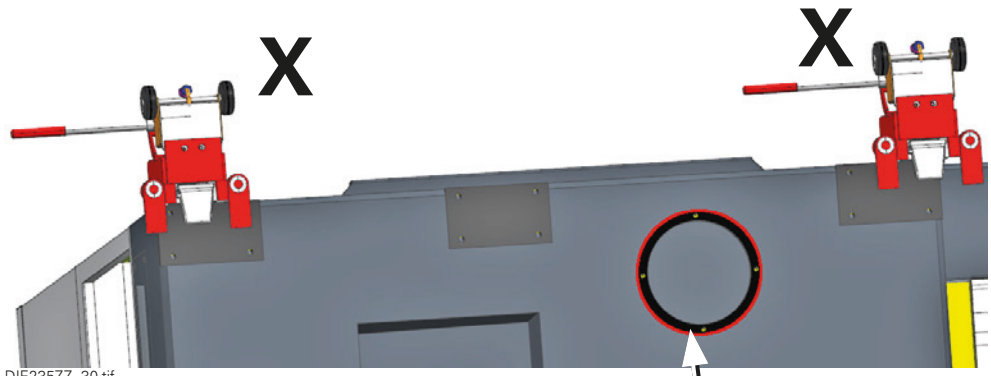
Fig.: Locations for hydraulic jacks and rigid armored rollers

Retracting the steering gear

- Attach hydraulic jacks **X** and raise the machine. Fig.: Locations for hydraulic jacks and the steering gear.
- It is recommended to move in the steering gear (**d**) from the left at an angle of 45°.
- Move the steering gear (**d**) under the machines. Make sure that the plate support of the steering gear is seated correctly in the provided mounting (**a**) under the machine bed.



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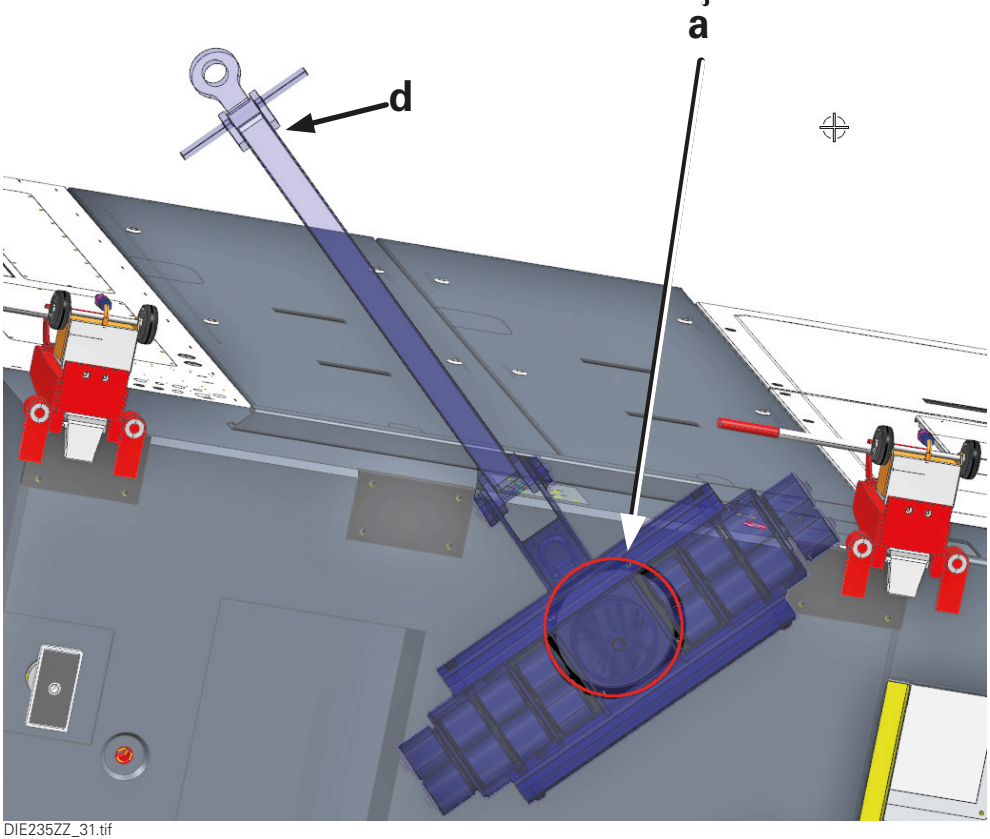

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Fig.: Locations for hydraulic jacks and steering gear

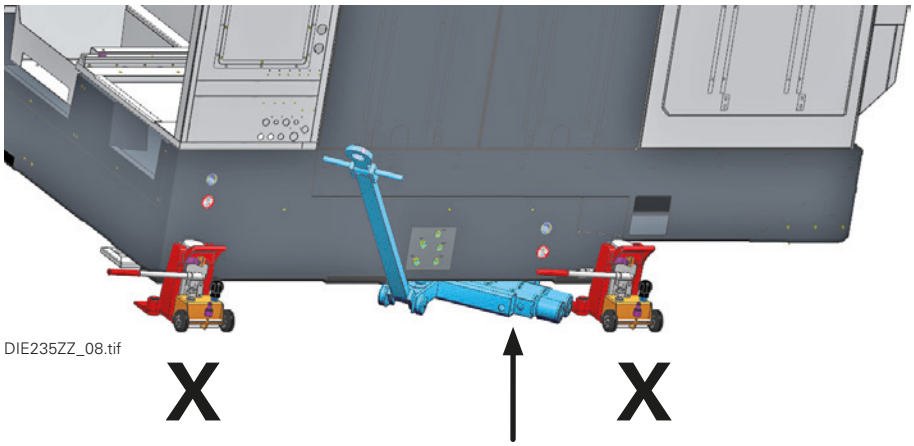


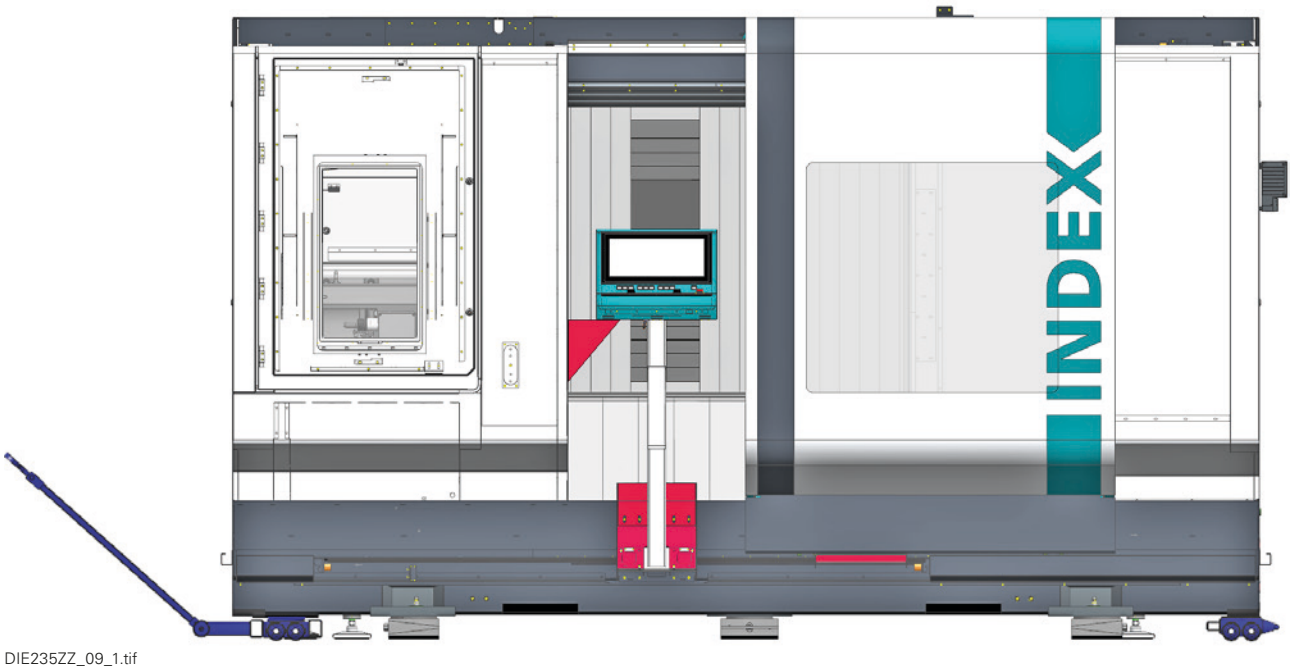
Fig.: Locations for hydraulic jacks and steering gear

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

Now the machine is ready for further transport.

It may only be pushed or pressed on the drawbar of the steering gear.

If a forklift or similar is used for support, the drawbar of the steering gear must be hooked into the coupling provided for this purpose and secured.



..... when transporting with air cushions

After selecting the appropriate air-cushion modules for this machine, the following procedure must be followed.

Procedure:

1. Lift the machine using hydraulic jacks.
   Proceed, as described in the section "... when transporting with rollers".

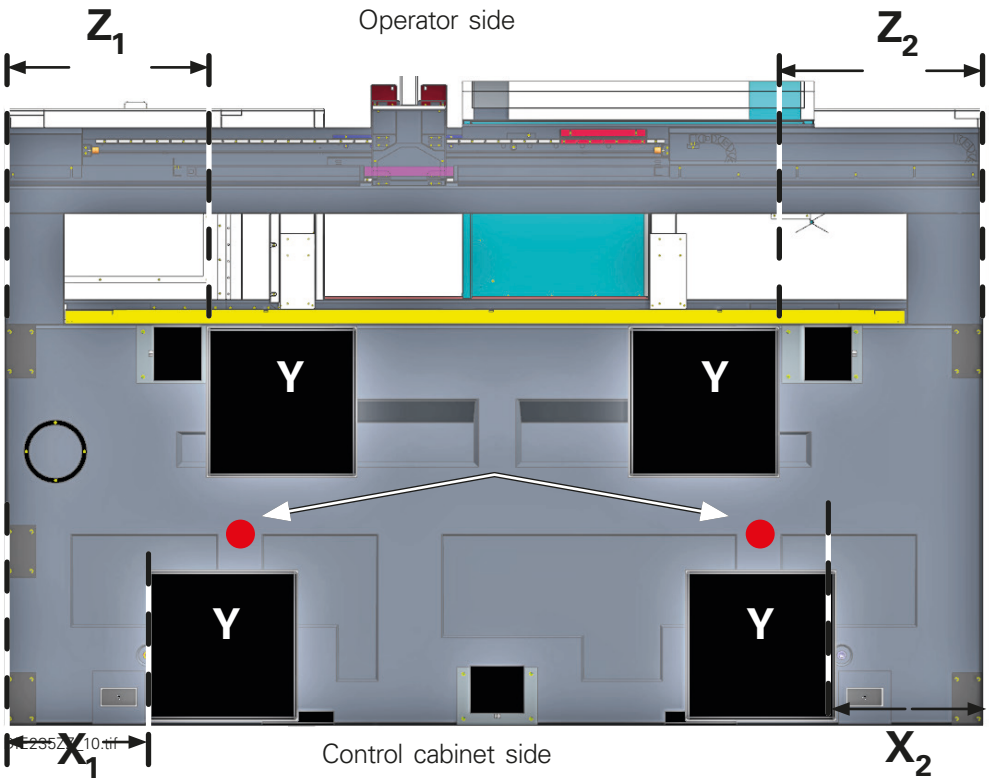


Fig.: 1
Locations of the air-cushion modules under the machine

2. Place air cushion modules (**Y**) under the machine (see **Fig.: 1**). Always position air cushion modules at points ($X_{1/2}$) only under the respective reinforcements/ ribs (•). Do not allow air cushion modules to protrude beyond the contour – at most flush with the machine bed.
   Also, be sure to maintain the positions (**X and Z**) from the outer edge of the machine.

Locations of the air-cushion modules

	X_1	X_2	Z_1	Z_2
G300.2/G320.2	650	670	920	930

3. Wooden boards and anti-slip mats must be placed between the air-cushion modules and the machine (**Fig.: 2**).

Fig.: 2

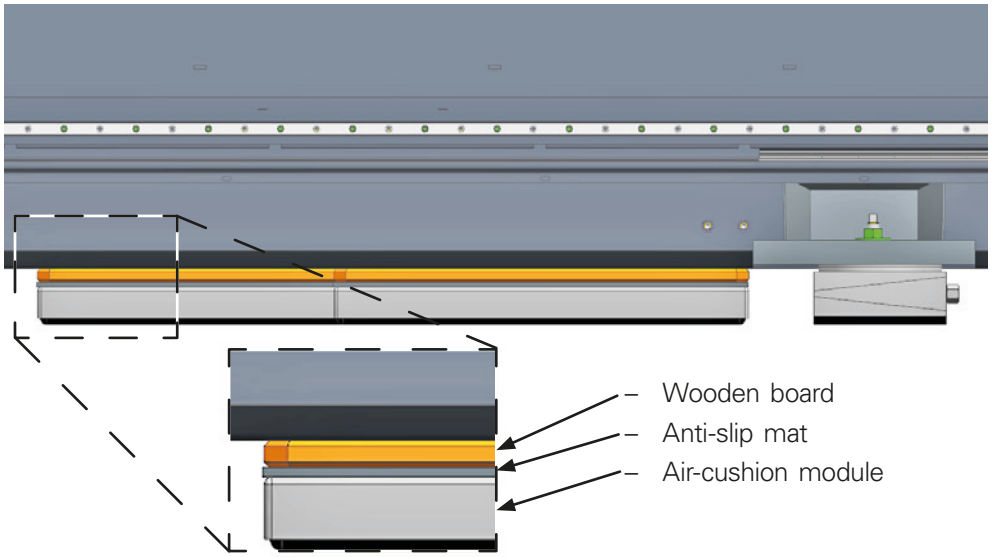


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Fig.: 2
Placing wooden boards and anti-slip mats

Fig.: 3

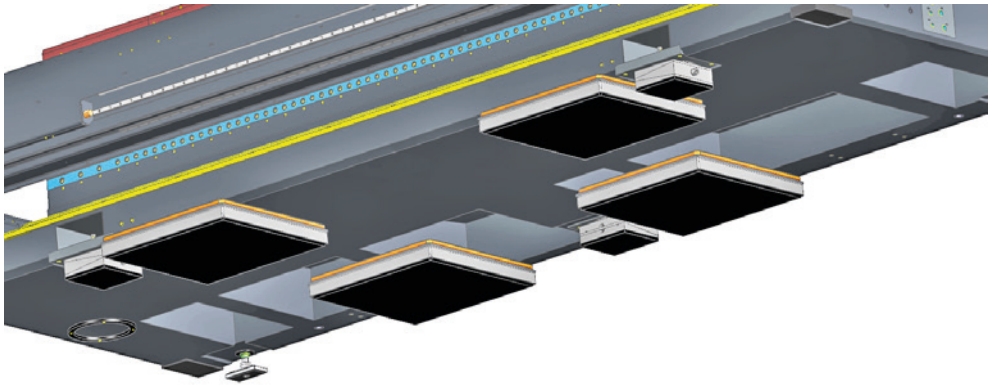

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Fig.: 3
Locations of the air-cushion modules (with wooden boards and anti-slip mats) under the machine

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 (**1**) was opened (Fig.: a) and secured (**Y**).

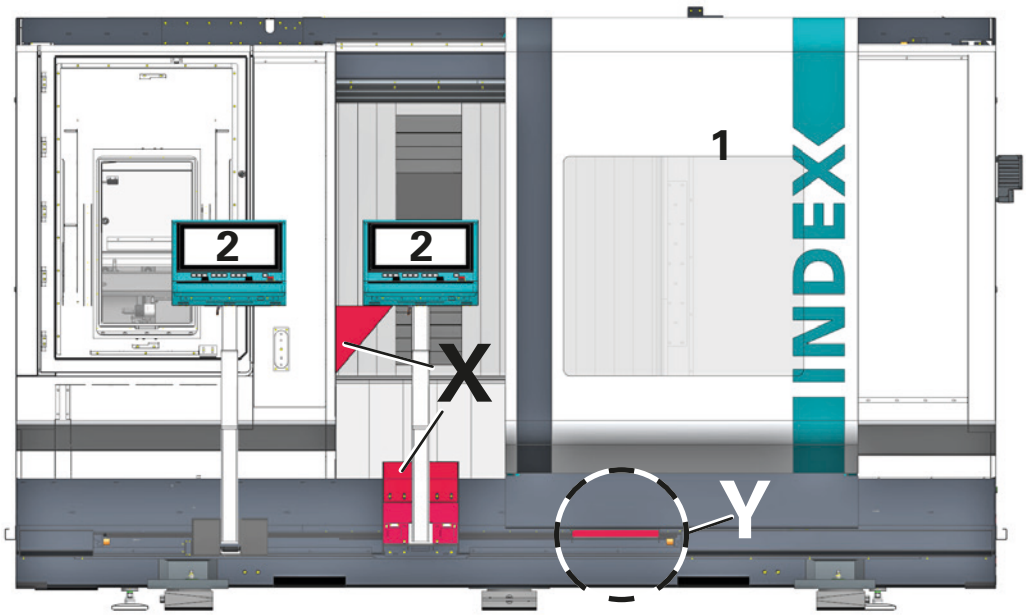
The operating terminal (**2**) was partially detached and swiveled into the work area position.
The operating terminal was secured using the transport locks (**X**). (Fig.: a)

- Release and remove the transport lock of the work area door (**Y**) from the guide rail and the cover plate of the work area door.

Always stabilize the operating terminal (2) when swiveling it out and removing the transport locks (X) (danger of tipping over).

- Remove the transport lock (**X**).
- Swing the operating terminal back to the position outside the work area and screw it to the operating terminal slide.

Fig.: a



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Transport lock of tool carrier

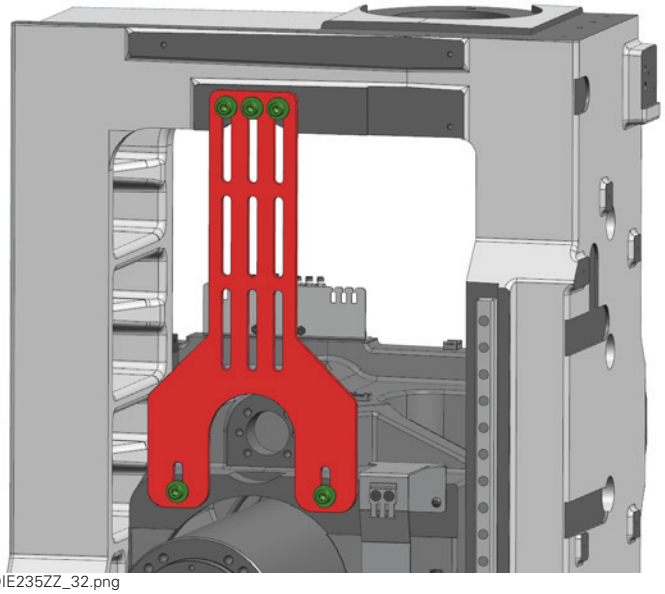
Before attaching the transport locks, the tool carriers were moved to the following positions:

The tool carriers are located at defined positions and are secured there with transport locks.
If the machine is at the installation site, the transport locks must be removed before commissioning.
Before a new transport/change of location, the tool carriers must be moved back to the defined positions, and the transport locks must be installed.

Tool carrier 1 (TC* top) with turret

	VDI30	VDI40
X	75	105
Y	-80	-80
Z	845	845

X



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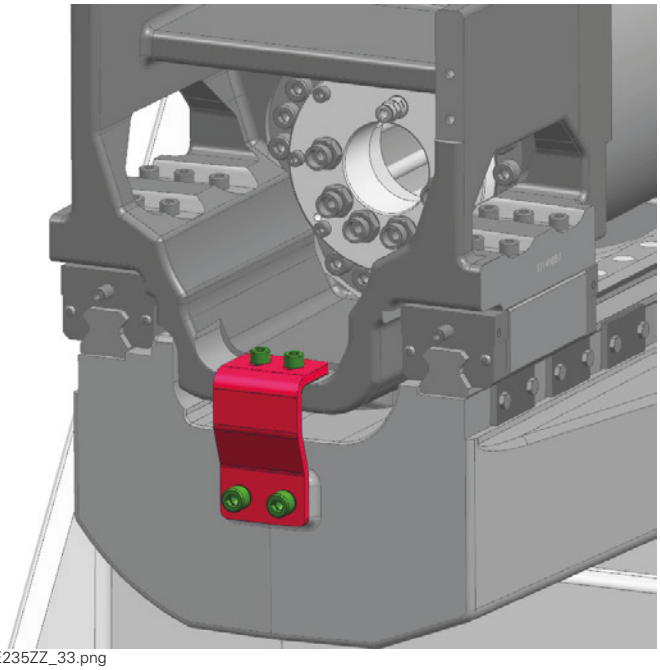
Y



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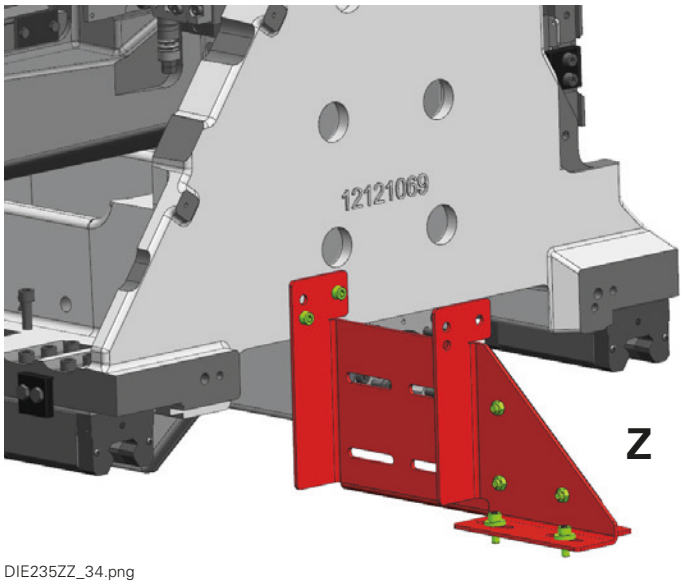

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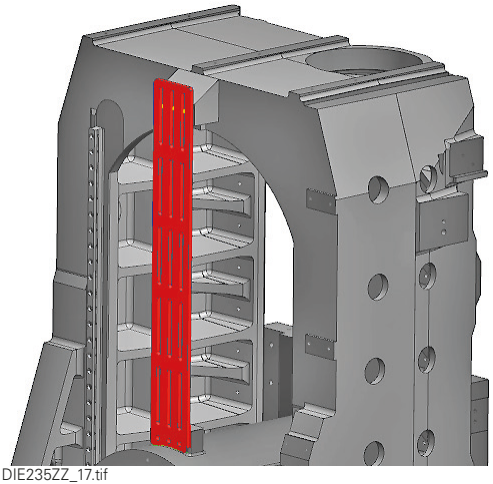
(*TC = tool carrier)

Tool carrier 1 (TC* top) with motor milling spindle

X



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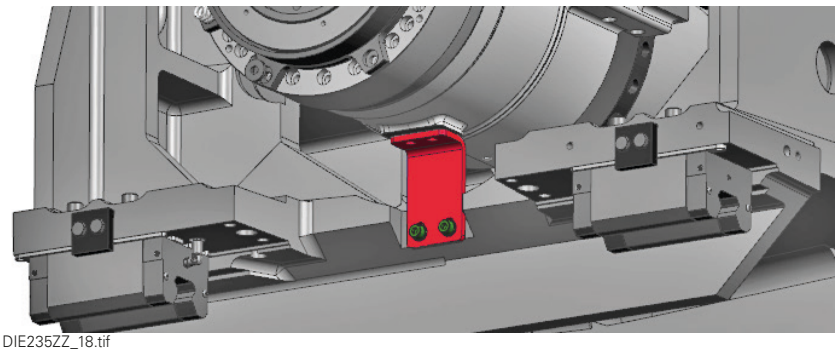
TC1	
X	0
Y	-45
Z	780

Y



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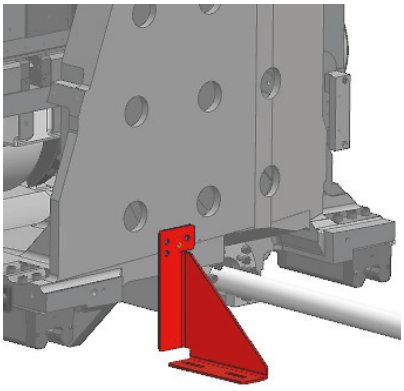
Z



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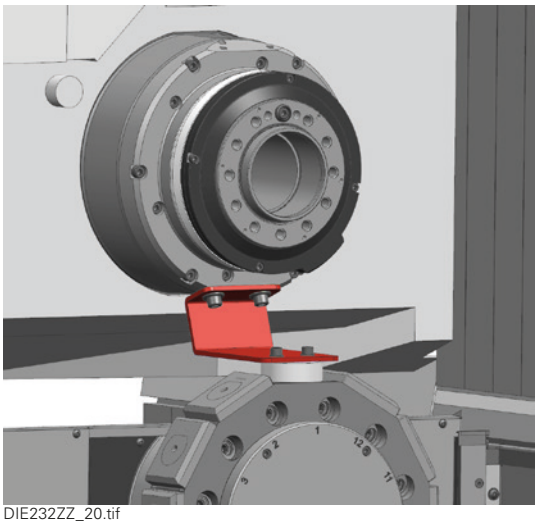
Tool carriers 2 and 3 (TC* bottom)

There are no separate transport locks for the X axes on tool carriers 2 and 3.
These are braked without power.

Before attaching the transport locks, the tool carriers were moved to the following positions:

TC2	
X	255
Y	0
Z	30



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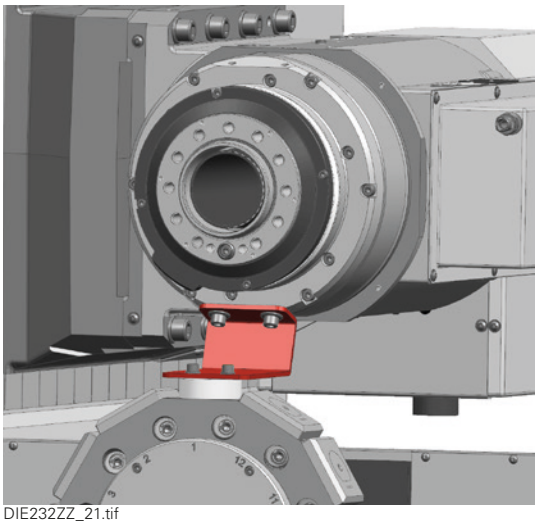
TC3	
X	255
Y	0
Z	1650



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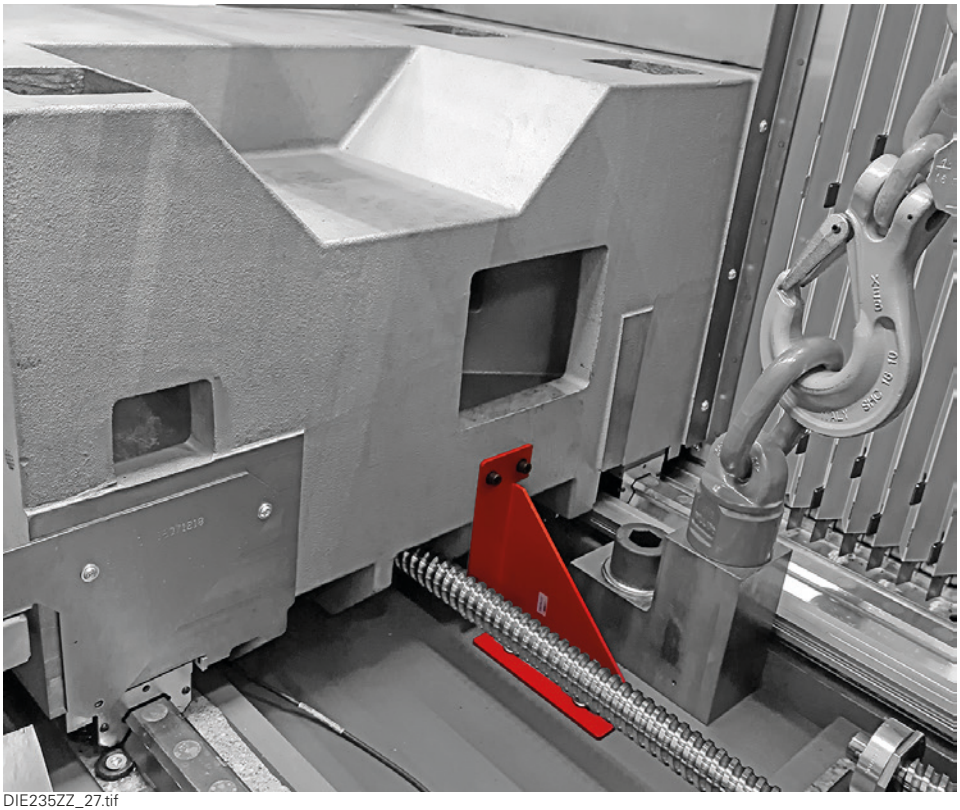
(*TC = tool carrier)

Counter spindle

Z5

Z 1190



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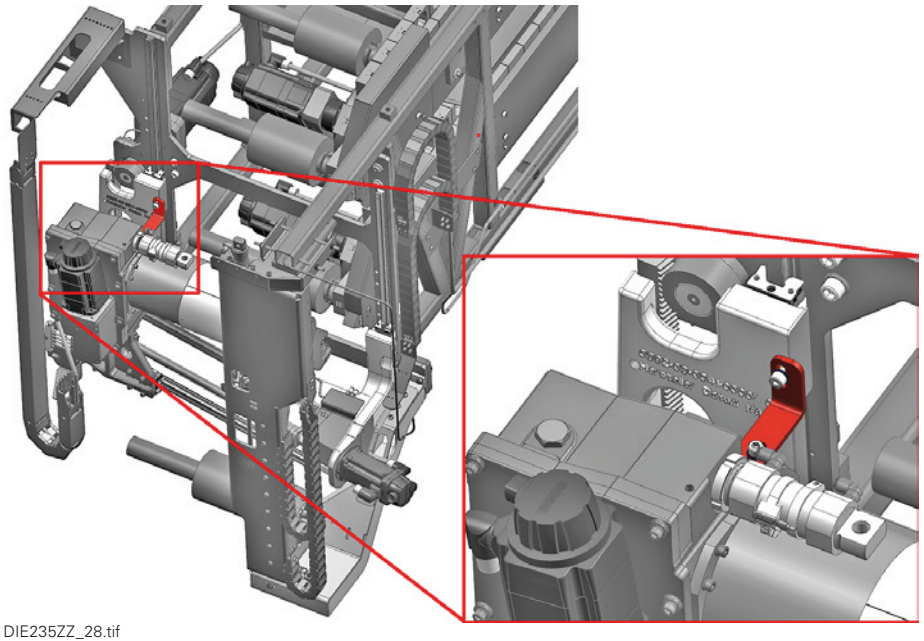
Tool magazine



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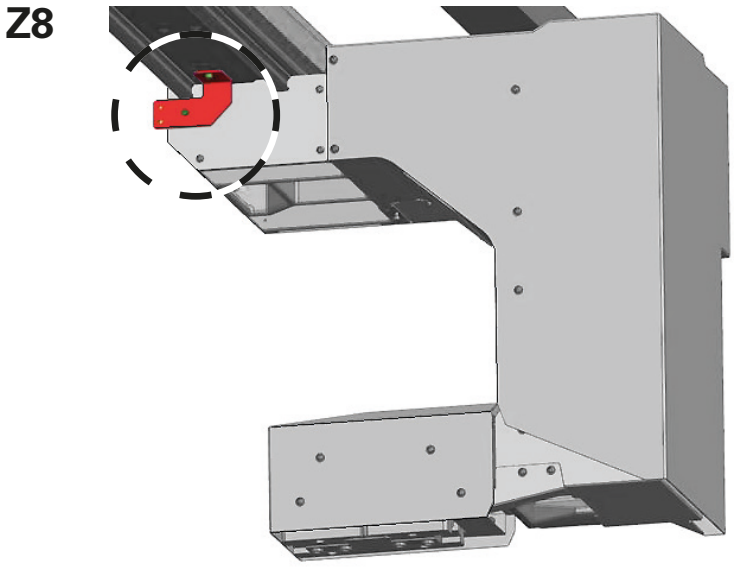
Workpiece handling unit



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Workpiece handling1 shaft	Z 3640
Workpiece handling1 flange	Z 3694

Dimensions refer to the gripper center and machine zero point.

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 turned off. If the main switch is on, secure it according to 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

Cooling, lubrication, and hydraulics

The cooling unit, lubrication unit, and hydraulic unit are located on the left front/rear side of the machine.

Coolant tank (**X**), lubricating oil tank (**Y**), and hydraulic tank (**Z**) were not emptied before transport.

Caution!

Fill in only the coolant indicated on the coolant tank (X) at the filler neck (X1).
The filler neck has a ventilation opening.

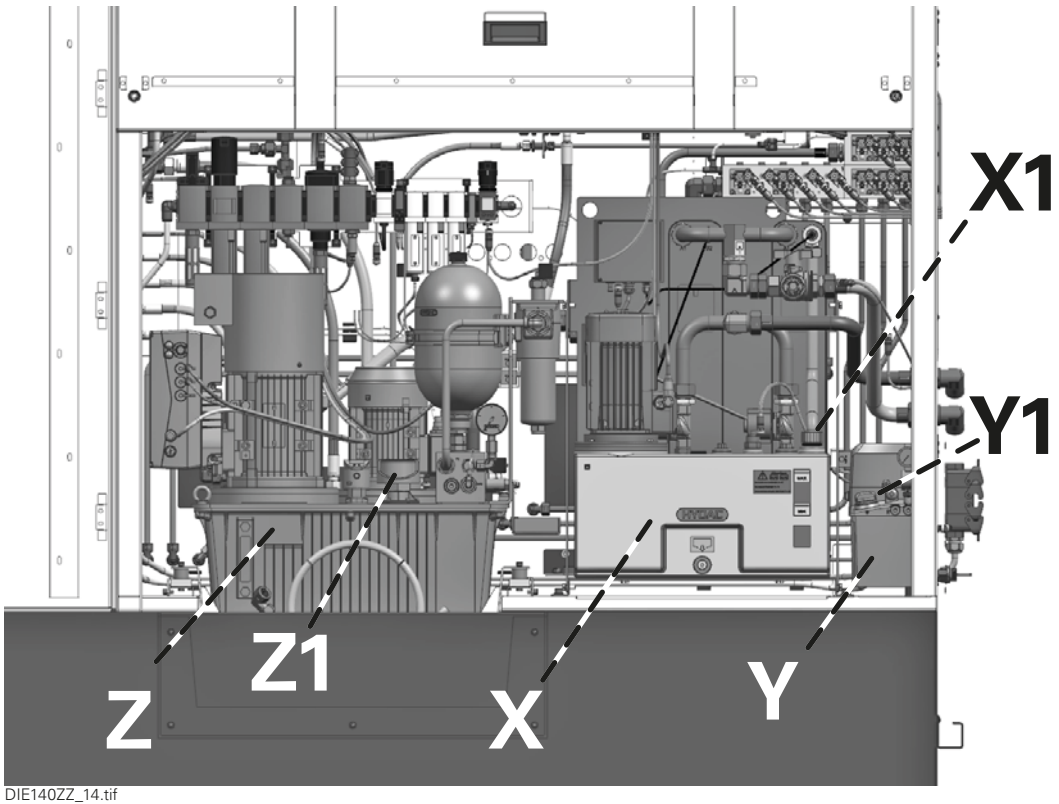
Caution!

Fill in only the lubricating oil type indicated on the lubricating oil tank (Y) at the filler neck (Y1).
The filler neck has a ventilation opening.

Caution!

Fill in only the fluid type indicated on the hydraulic tank (Z) at the filler neck (Z1).
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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Installing the machine

The machine G300.2/G320.2 is equipped with five adjustable feet as standard. See Figs. "Adjustable machine foot" and "Leveling the entire machine"" However, only the machine feet **A, B, and C** (wedge shoes) are used here to level the machine.

To enable the installation of a bar feeder, the machine must be adjusted to 1400 mm +/- the main spindle height. Always ensure that the adjustment range of the wedge shoes is +/- 10 mm.

Be sure to follow the procedure described below.
Before finally setting the machine down at the installation site, turn the machine feet **D** and **E** back as far as necessary. They must not affect the alignment of the machine. Also, rotate the wedge shoes **B** and **C** so that the set screws **(1)** point outwards.

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Fig.: Hydraulic jacks

Fig.:
Adjustable machine foot (wedge shoes)
A, B, C

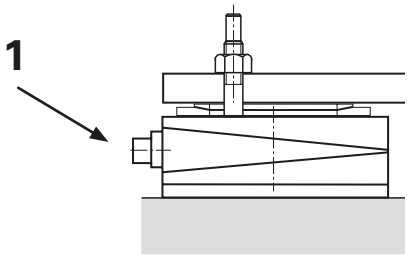

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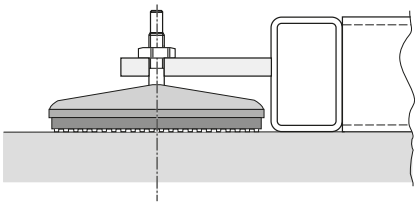
Fig.:
Adjustable machine foot
D, E



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Adjusting screws (1) of the wedge shoes (B + C) point outwards.

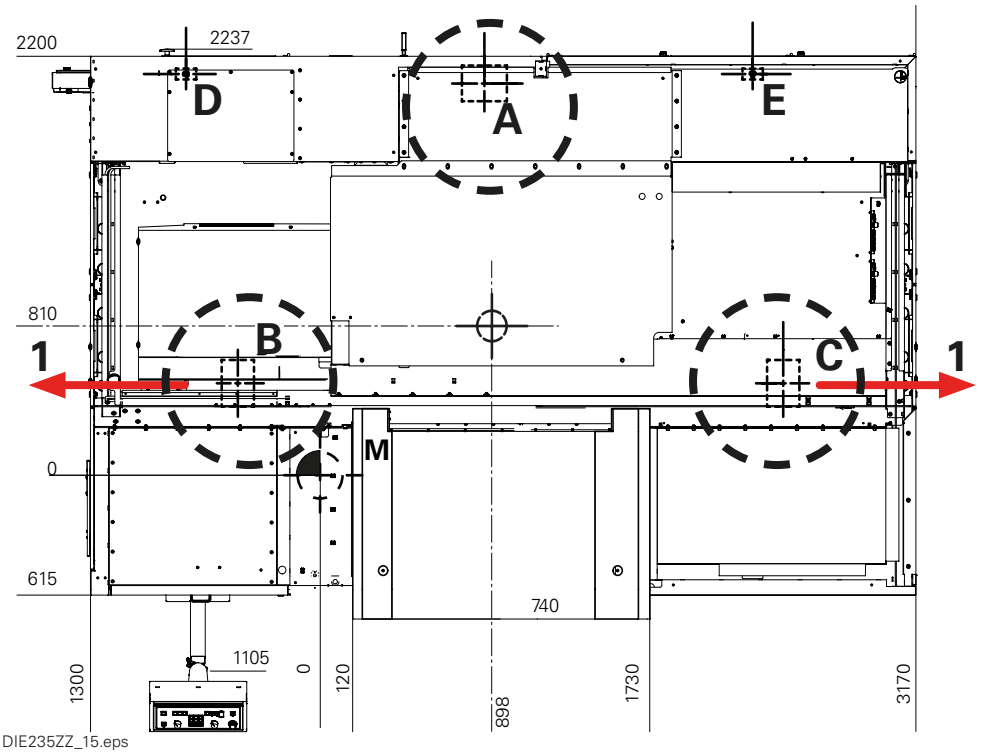

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Fig.:
"Leveling the entire machine"

Leveling the machine

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

Leveling in the Z and Y directions

To level the machine, precision spirit levels (**Figs.: 1-2**) are placed at certain points.

Turn back machine feet **D** and **E** as far as necessary so that they do not influence the alignment of the machine.

See the section "Installing the machine", Fig.: "Leveling the entire machine".

Leveling in the Z direction

– Place the precision spirit level on the guide rail Z1. **Fig.: 1**
– Now level the machine in the Z direction using machine feet **B** and **C**.

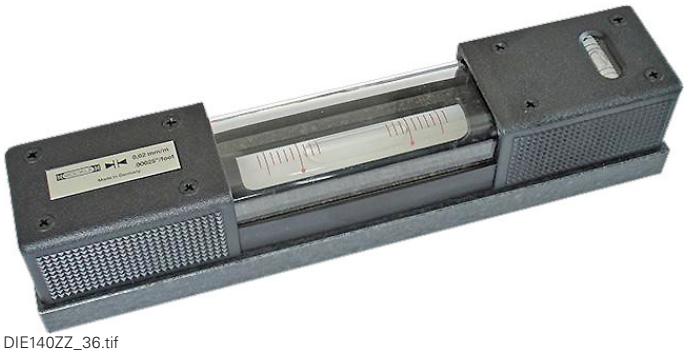

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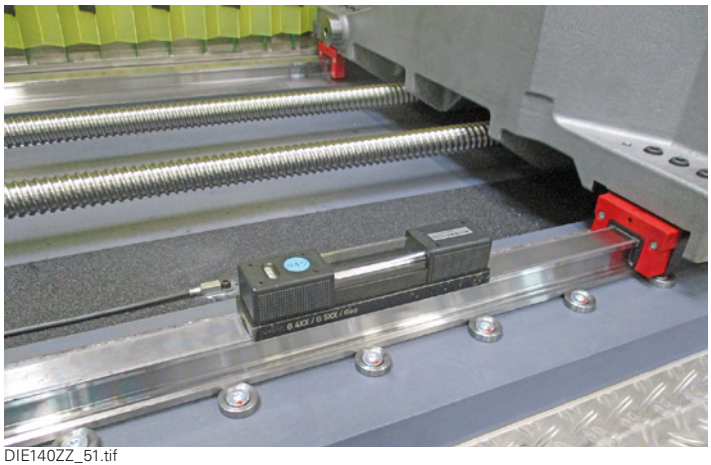
Fig.: Example precision spirit level 0.10 mm/m (Roeckle)

Fig.: 1



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Leveling in the Y direction

– Then place a second spirit level on a surface as described in Fig.: 2. (Y direction)
– Now align the machine in the Y direction using the wedge shoe **A**.

Fig.: 2

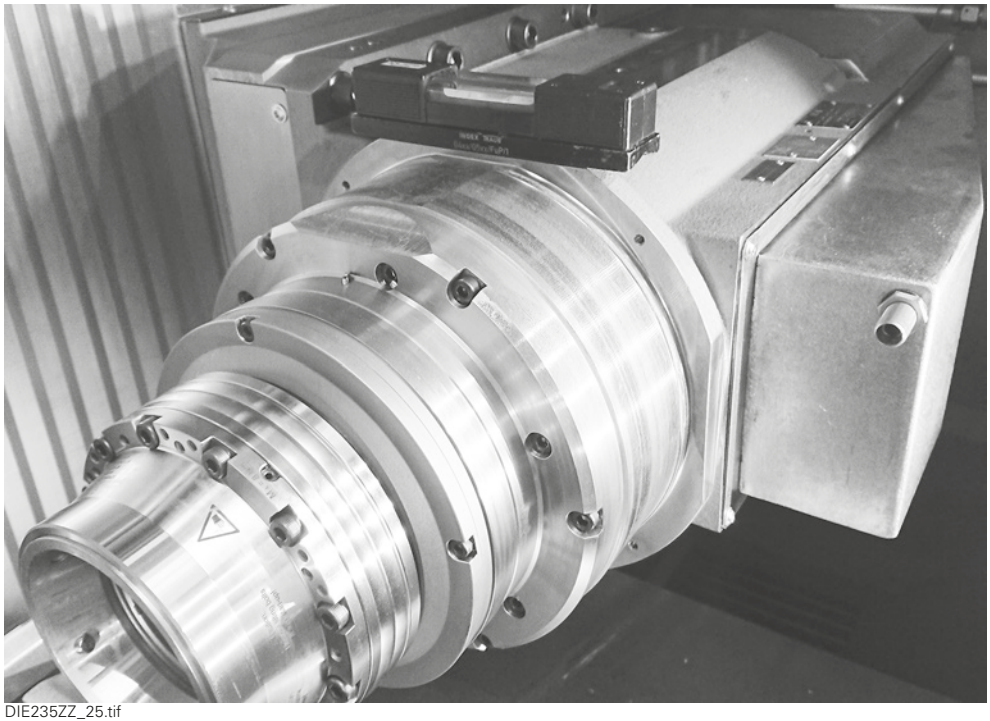

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Fig.: Leveling the machine in the Y direction

A dial gauge is required for adjusting the machine feet **D** and **E** as described below. Place the dial gauge at the bottom (**Fig.: 3**) on a flat surface (small metal plate **1**) and set against the machine bed from below.

– Next, apply the machine feet **D** and **E** with a pretension of 0.1 mm (dial gauge) (**Fig.: 3**)

Fig.: 3

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– While setting the machine feet **D**, **E**, the position of the machine must not change.

To verify, check the indications of the two precision spirit levels once again.

After completing the leveling procedure, remove the spirit levels from the machine. In addition, all covers must be reinstalled, and all access doors must be closed.

Fig.: 4

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Installation and leveling of configuration levels and auxiliary units

The bar feeder must always be doweled. In conjunction with a bar feeder, the machine does not need to be doweled.

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

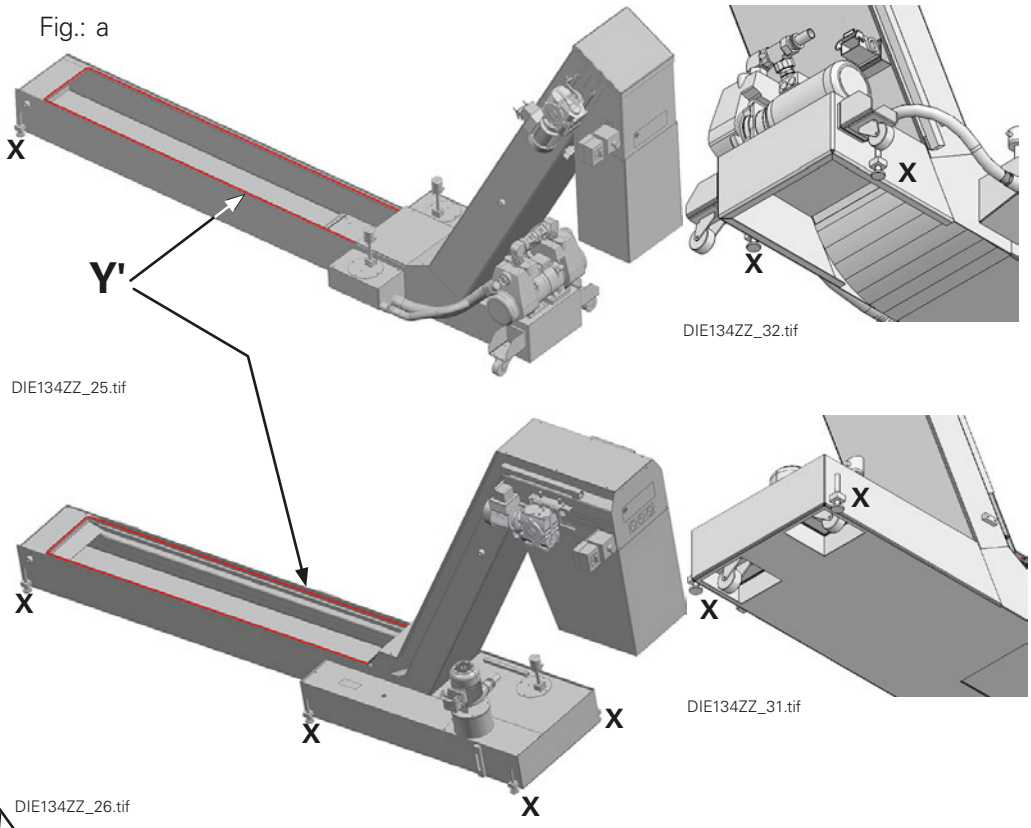
When setting up or installing the chip conveyor in the machine, note the following:

– 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



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DIE134ZZ_32.tif
DIE134ZZ_31.tif

Fig. b

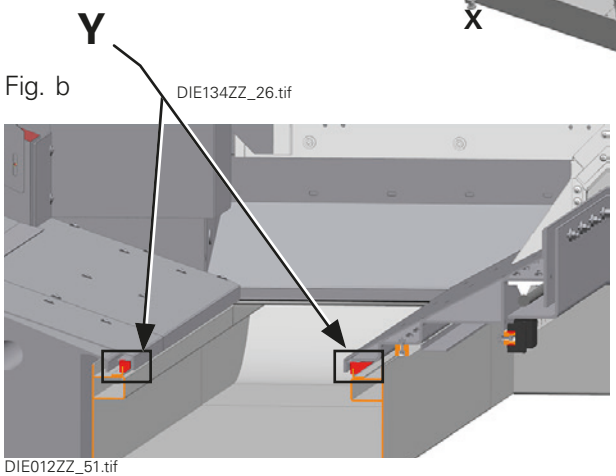

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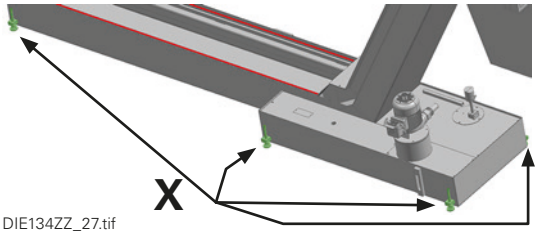
Fig.: Adjustable feet on the chip conveyor



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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.
Refer to the 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.
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 units: ..... Oil level check

Cooling: ..... 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.

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.

The tightening torque of 300 Nm for the screws (M36) of the lifting device must be strictly observed.

Checking the lifting device

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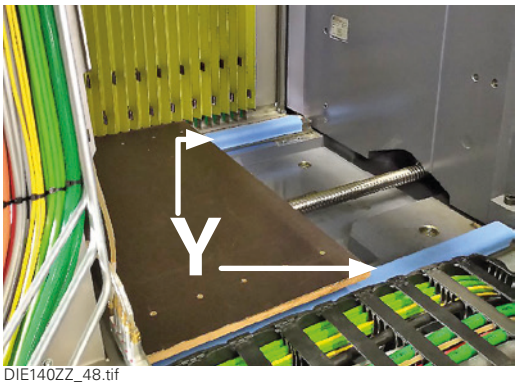
Fig.:
View of lifting device equipment as a whole – with turnbuckle

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.

Drive area cover

Before transporting the machine again and remounting the lifting device, essential protective covers must be put in place.
These include the foam covers (**Y**) required to protect the linear guides, as well as both covers (**X**) for the ball screw and the glass scale.



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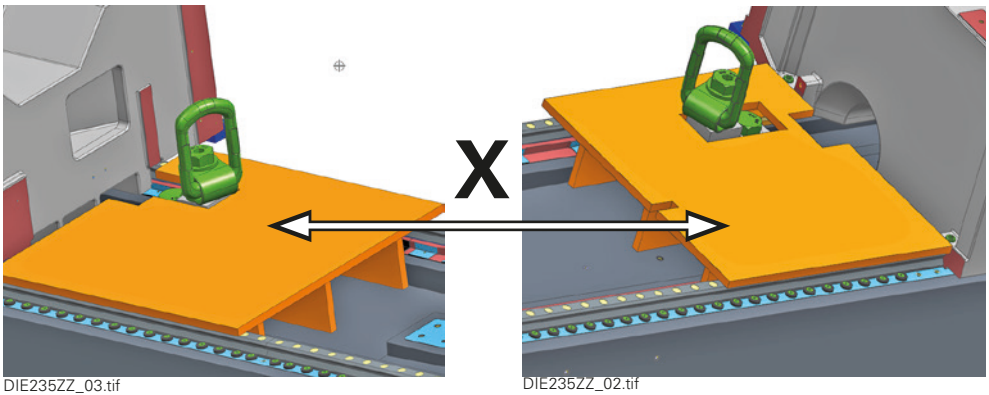

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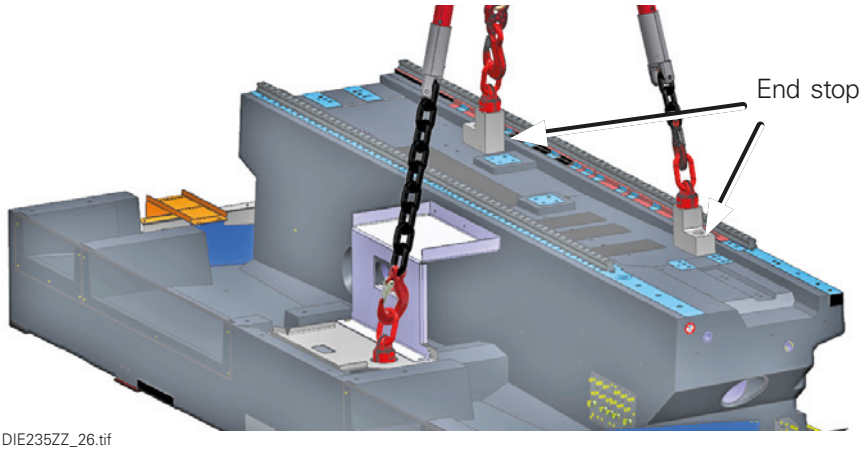

View:
Rear of the machine

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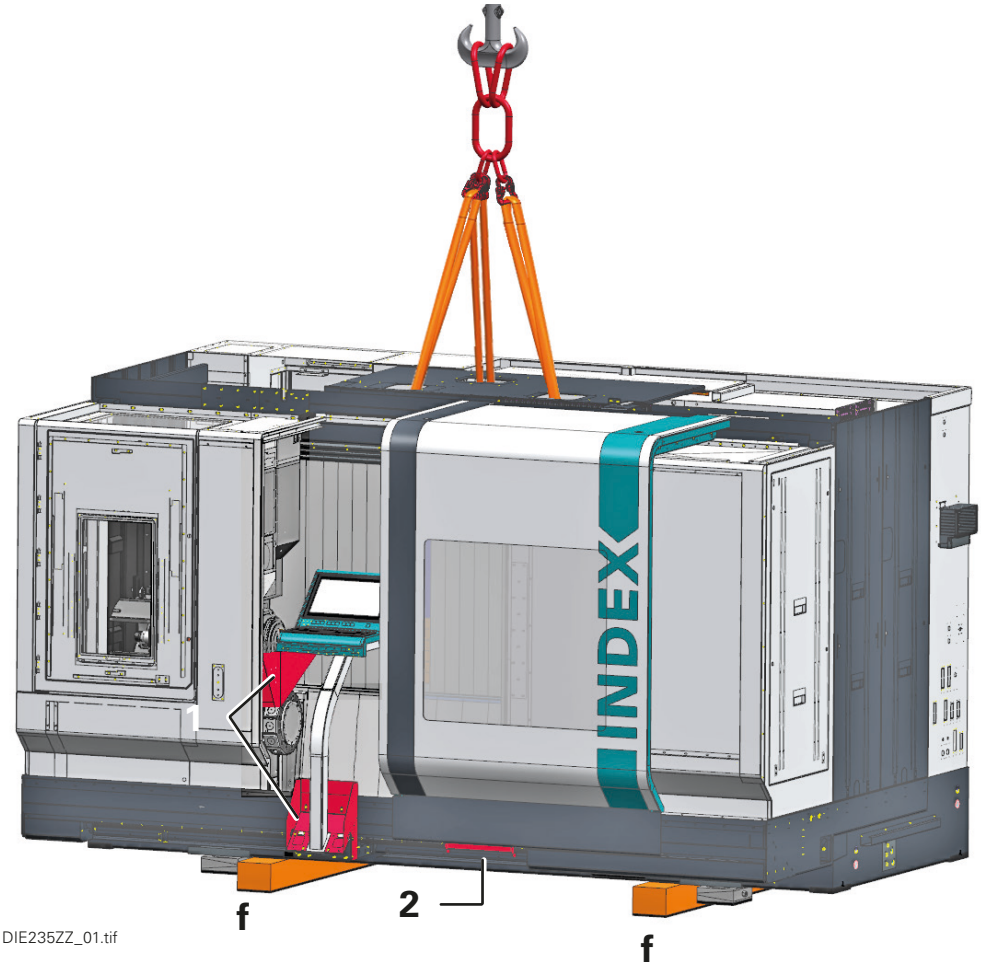
Loading the machine onto a truck

1. First, the wooden planks (**f**) and the transport lock (**2**) of the work area door must be mounted again.
2. Swivel the operating terminal back in and secure it with the transport locks (**1**).



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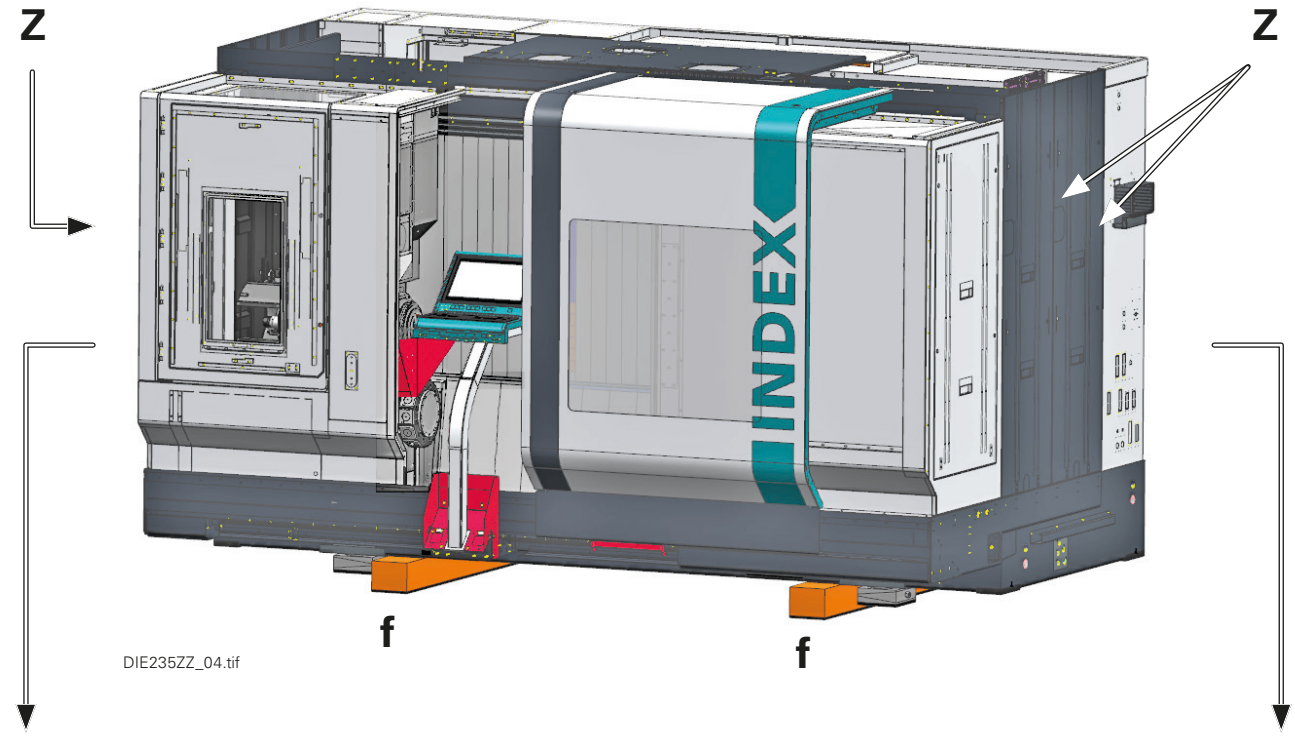
Suspension and lashing points

Suspension and lashing points (**Y+Y'**) are used to secure the load on the truck.

The load must be secured to prevent slipping on the loading platform using the lashing points (**Y+ Y´**). In addition, the wooden planks must be reassembled and placed under anti-slip mats between the loading platform and the two bolted wooden planks (**f**).
In addition, several side panels (**Z**) on both sides of the machine must be removed.



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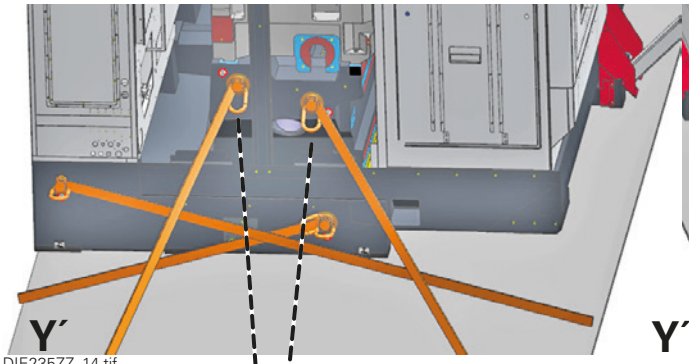

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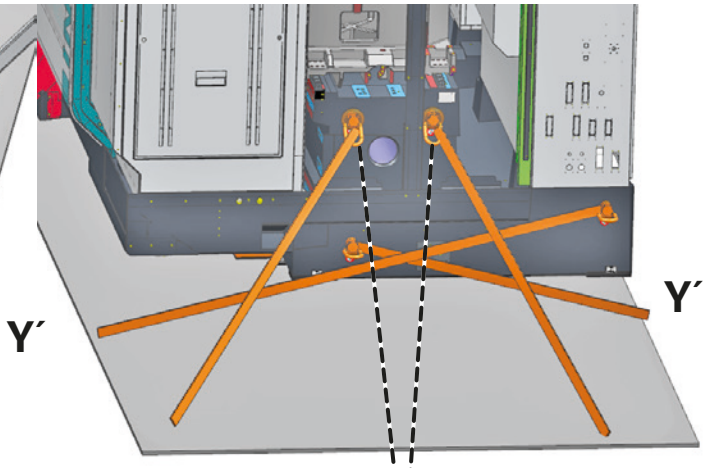

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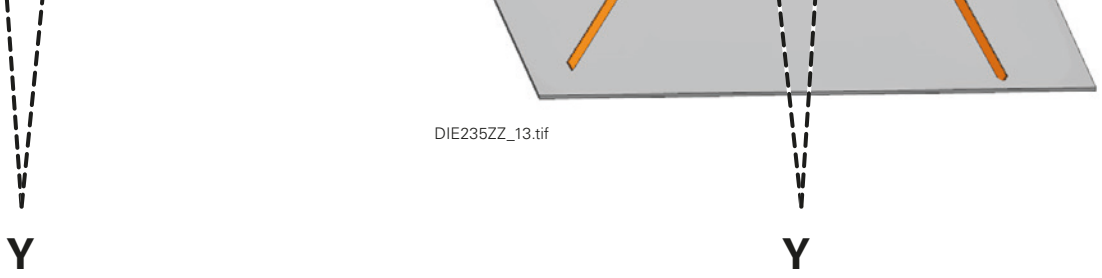

Accessories

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

INDEX-Werke GmbH & Co. KG
Hahn & Tessky

Plochinger Straße 92
D-73730 Esslingen

Fon +49 711 3191-0
Fax +49 711 3191-587

info@index-werke.de
www.index-werke.de