

Transport, Installation, Commissioning

G200.2

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 precautions



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

The safety precautions described in this document relate exclusively to the transport, installation and start-up of the machine.

Information on transport, installation, commissioning



Use only suitable hydraulic jacks, a forklift or crane to lift the machine. Use appropriate transport casters with adequate carrying capacity for transport.



If the door to the work area is open, the door safety switch will remain open after disconnecting the power supply line.



Transport locks can be identified by their red color.

Remove all transport locks prior to machine start-up. Store the removed transport locks at 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** 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 documentations exist for separate units such as chip conveyor, bar feeder, bar loading magazine and similar devices that must be observed as well.

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 passage-ways 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/manufacture documentation for these equipment options 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 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
- 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 additional 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.

The machine can be anchored in the foundation. For the distances between the anchoring holes, see the machine installation plan in Chapter “Working Documents”.

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”).

If a bar feeder or bar loading magazine is used, **INDEX** also recommends anchoring the machine in the foundation.

Environmental conditions

See Environmental Conditions in the document “Safety Precautions”.



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

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 circuit diagram.

External data transfer



Data lines must not be routed directly next to power lines.

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

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 pressure6-10 bar

Air demand.....depending on the machine equipment

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 accumulators attached to the machine are depressurized.

Before start-up of the machine, all pressure accumulators must be filled with nitrogen (N₂) by a specialist. The prescribed pressures must be observed.

For the prescribed pressures, see the hydraulic diagrams in Chapter “Working Documents”.



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

Operating material to be provided

- Hydraulic fluid ¹⁾
- Lubricating oil ¹⁾
- Approx. 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 Document “Notes on Operating Materials” and “Hydraulic Diagrams and Machine Installation Chart” in Chapter “Working Documents”.



Caution:

Be sure to use only hydraulic fluid according to ISO 4406 having a purity grade of 15/12 (10 µm absolute).

Hydraulic fluid: HLP 32; HLPD 32; VG 32.

Lubricating oil: CG 68; G 68

For cooling the spindles, only oil according to ISO VG 5 is used.

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 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 cost.

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 waste water regulations



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

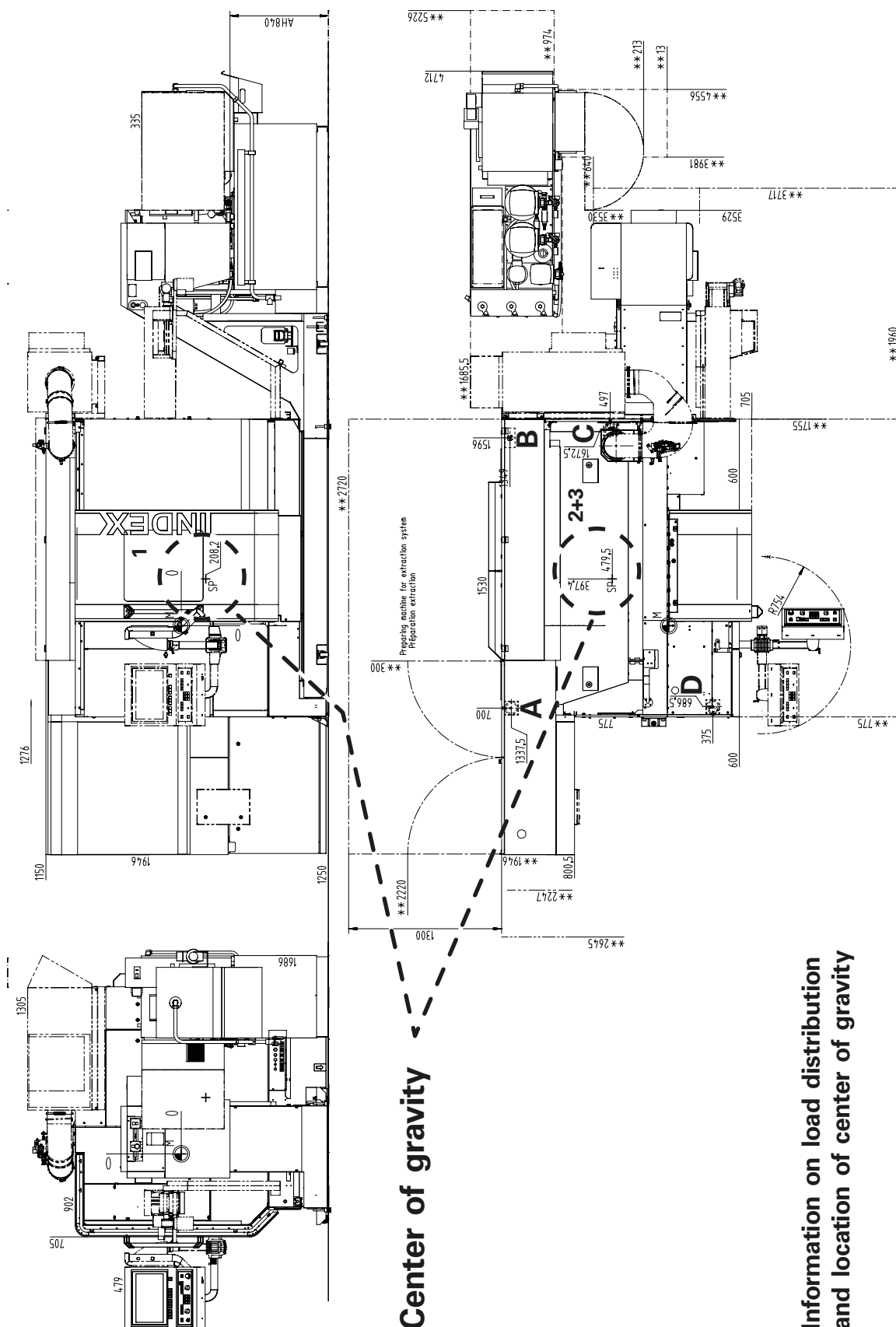
The machine contains water-polluting substances such as water-miscible cooling lubricants and mineral oils. These substances may leak from the machine in case of adverse events.

Therefore, the machine must be installed in a place that excludes any harm by these substances to waters or ground water.

Possible preventive measures:

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

Installation plan G200.2



Check the currently valid installation plan!



Installation items	A	B	C	D
kN	24	0	41	25
Center of gravity	1	2	3	
mm	208.2	397.4	479.5	

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Delivery

Machine

The machine will be delivered by a 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 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 sliding guards and the swiveling operating panel, are secured by transport locks or were removed.
- Protruding machine parts hampering the transport have been removed.
- All blank parts of the machine were treated by spray-covering with an anti-rust agent.

Pressure accumulator

If the machine was shipped by plane, all pressure accumulators attached to the machine are depressurized.

Before start-up of the machine, all pressure accumulators must be filled with nitrogen (N₂) by a specialist. The prescribed pressures must be observed.

For the prescribed pressures, see the hydraulic diagrams in Chapter "Working Documents".

Other separate units

Certain equipment options or accessories 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.

Transport gear

Transport gears are either packed separately or included with other units.

The transport gear is generally supplied at extra cost. Following the installation, the transport gear may be returned to **INDEX** in exchange of a credit.

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 only in a horizontal position. The center of gravity is not exactly in the center of the machine.
If necessary, set the machine down again and correct the skew by moving the hooks on the transport device as appropriate.

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 G200.2

Transporting the machine

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

INDEX

Machine mass

approx. 9000 kg

Transport by crane

Caution!

Check the proper seating of the ropes/chains in the transport hooks before lifting the machine. If using transport ropes other than those specified herein, it is important to verify that those ropes do not contact the paneling and that the machine remains in a horizontal position (**Figs. 1 and 2**).

The load beam and the transport harness ropes required for the proper transport of the machine are generally supplied at a fee and can be returned to **INDEX-Werke** after the machine has been installed.

Fig.: 1 (Overall view of the load beam from the front)



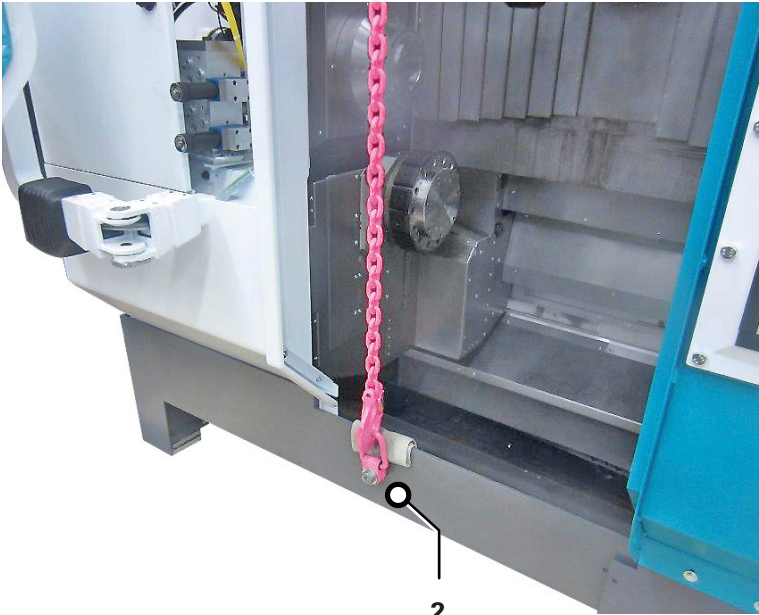
Fig.: 2 (Overall view of the load beam from the rear)



	Item	Qty.	Name	Part No.
Transport gear	1	1	Load beam 9.0t	12022097
	2	3	Load stand, M20, 3500kg	
	3	2	Load rings M36 8000kg	

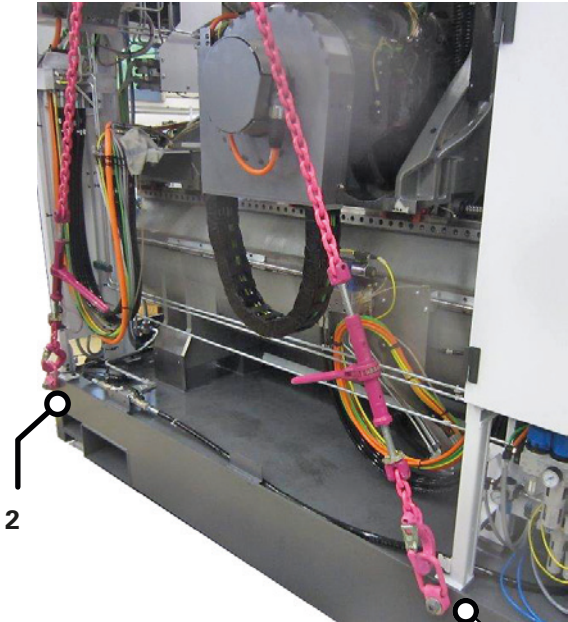
Attachment points

Fig.: 3 (Front view)



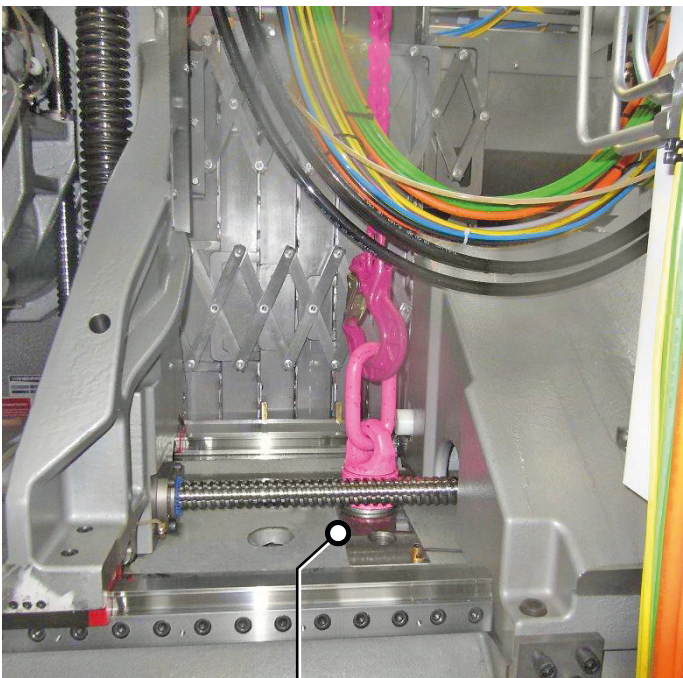
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Fig.: 4 (Rear view)



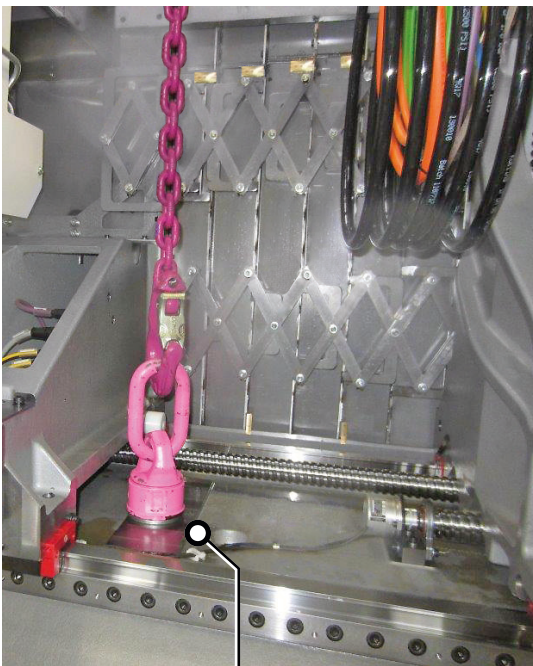
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Fig.: 4 (Left view of the machine bed)



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Fig.: 5 (Right view of the machine bed)



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Transport support for WHX



Caution!

The support (1) was mounted for transport on a truck.
Before putting the machine into operation, remove this support and replace it with the support feet supplied with the WHX. (Crane support - Fig.)



Caution!


To prevent the machine guard or cover from being damaged when lifting the machine with a crane, make sure that the side to the right of the operator (counter spindle /WHU side) is lifted first.



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Fig.:
Crane support during assembly/disassembly of support leg (x) WHU (height-adjustable)

Transporting with transport casters and forklift



Be sure to secure transport casters with bars and wire ropes to prevent slipping.
See Section "Transporting with transport casters".

For internal transport, the machine is prepared and placed onto transport casters. Use adequate hydraulic jacks or a forklift to lift the machine.
To lift the machine with a forklift, use only the recesses (**X** in Figure 2) on the rear of the machine.
The steering caster of the transport casters are on the right side of the machine as viewed from the control panel.

Fig. 1 Example



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Fig. 2

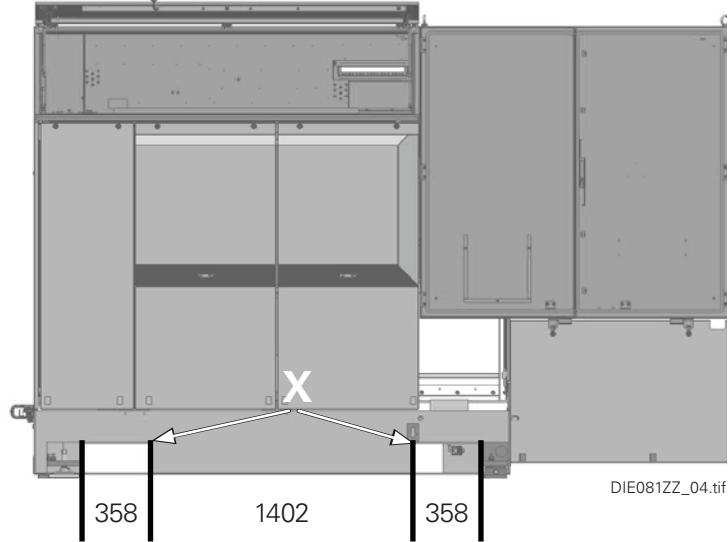


Fig. 3 Example



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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.

Working with hydraulic jacks



Always apply the hydraulic jacks only where indicated (Fig.). It may be necessary to remove the guide panels near the chip conveyor opening.

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

Fig.: Hydraulic jack by GKS.



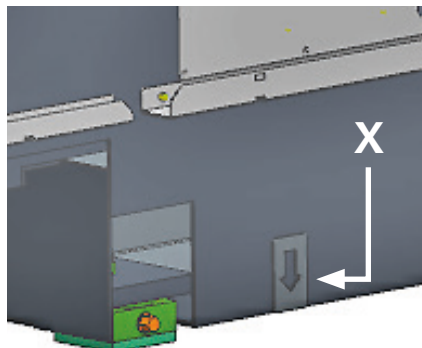
Hydraulik-Heber von vorne.tif



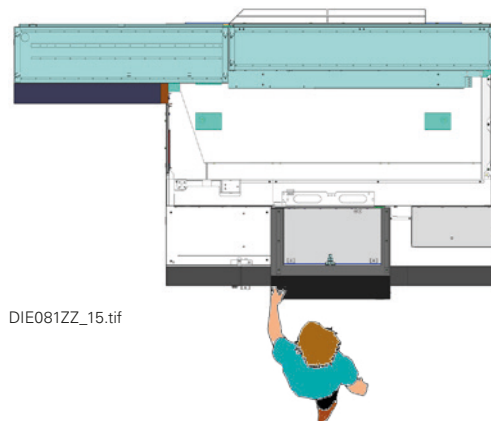
Hydraulik-Heber von hinten.tif

Lifting and placing down the machine with hydraulic jacks

The figures below (1, 2 and 3) show the locations where the hydraulic jacks must be positioned on the machine frame. The locations are also marked by **arrows (X)**.

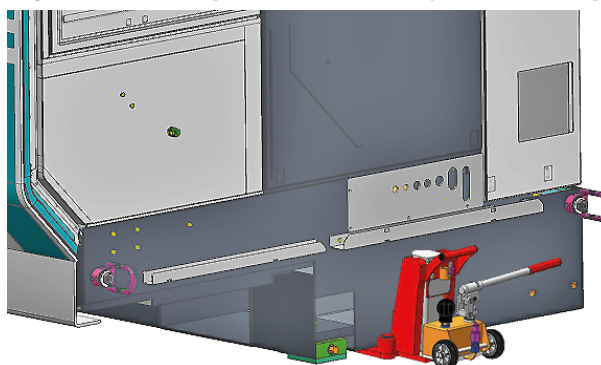


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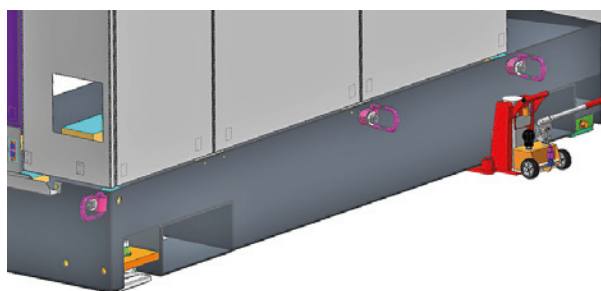
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Right view (1) - specifications always from the operator's point of view



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Rear view (2)



DIE081ZZ_07.tif

Left view (3)



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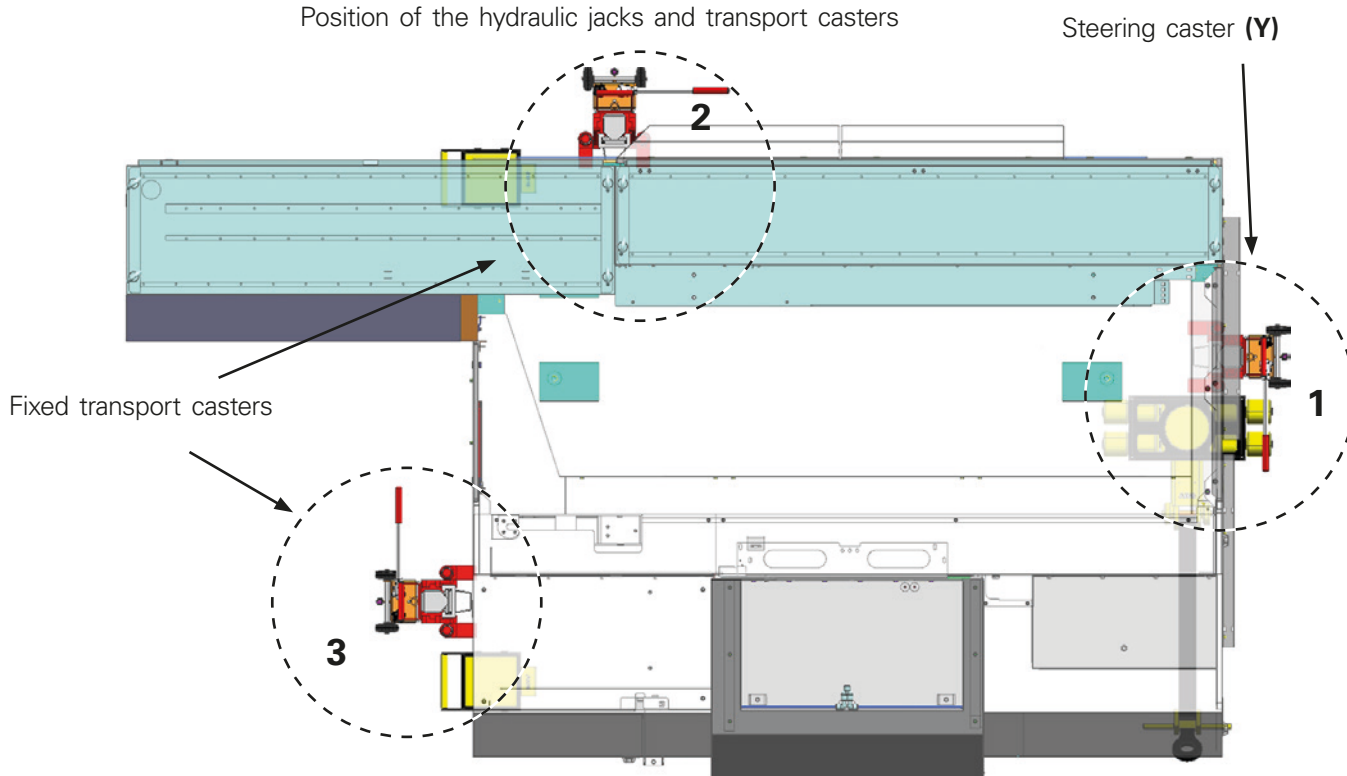
Lift the machine only as far as absolutely necessary.
Be sure to read the Section "Working with hydraulic jacks" above in the document.

Then remove the transport casters and gradually place the machine onto the machine feet.



This procedure applies in principle also to lifting the machines for transport using casters – only in reverse order.

Fig.:
Position of the hydraulic jacks and transport casters



DIE081ZZ_17.tif

1. First remove the steering caster (Y) in position **1** and then lower the machine onto the machine foot in position **1** on the ground.
2. Then remove the two rigid transport casters in position **2** and **3**. Next, using the drain plugs on the hydraulic jacks, lower the machine carefully and evenly onto the machine feet in position **2** and **3**.

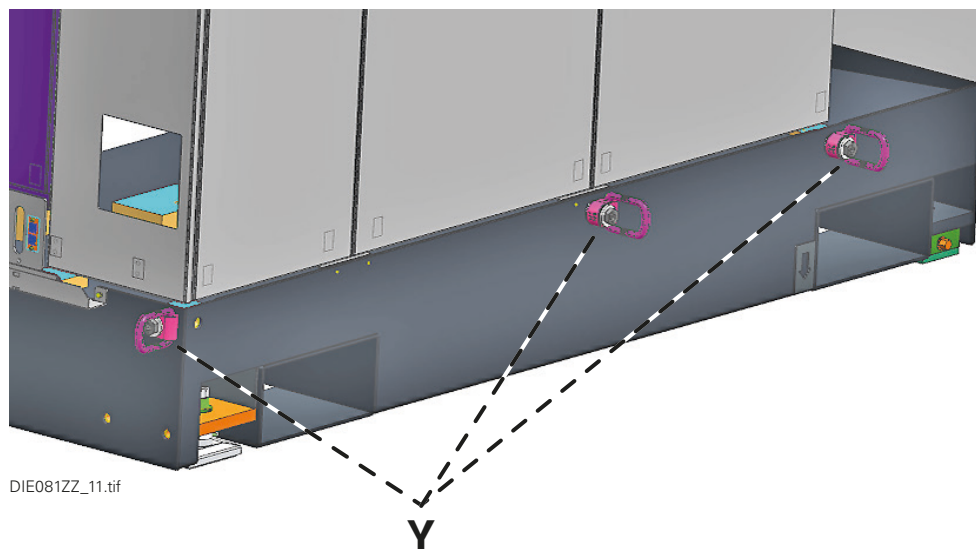
Suspension and lashing points

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

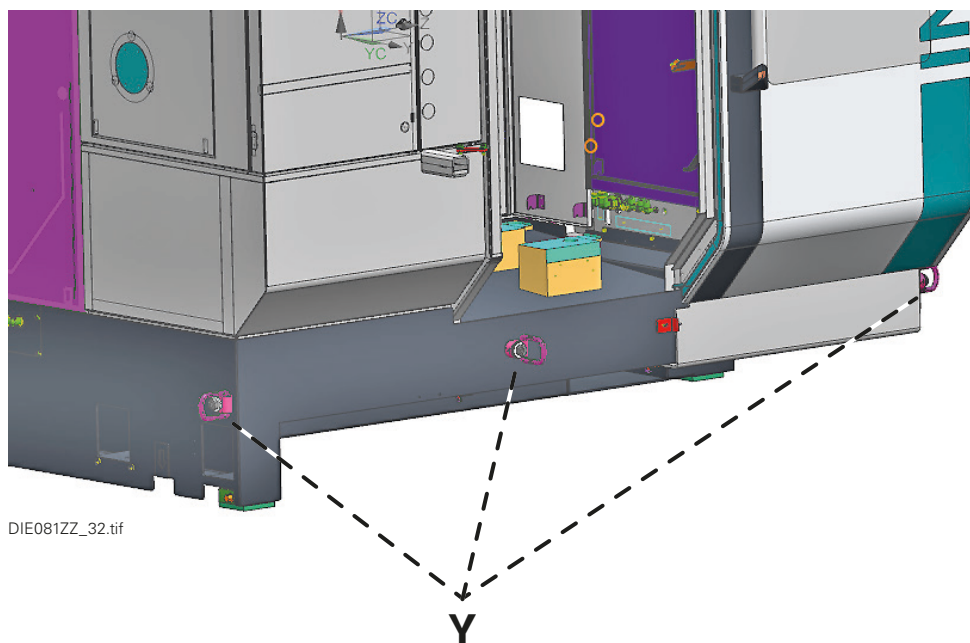


The load must be secured to prevent slipping on the loading area using the lashing points (Y).
In addition, anti-slip mats must be used between the loading area and the three support points (machine foot) of the machine.

Rear attachment points*

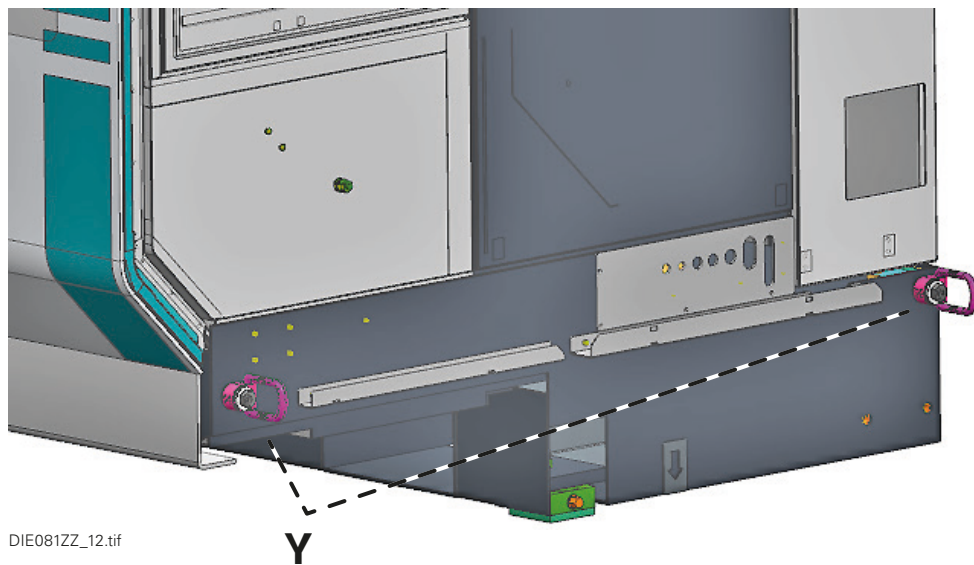


Front attachments points*

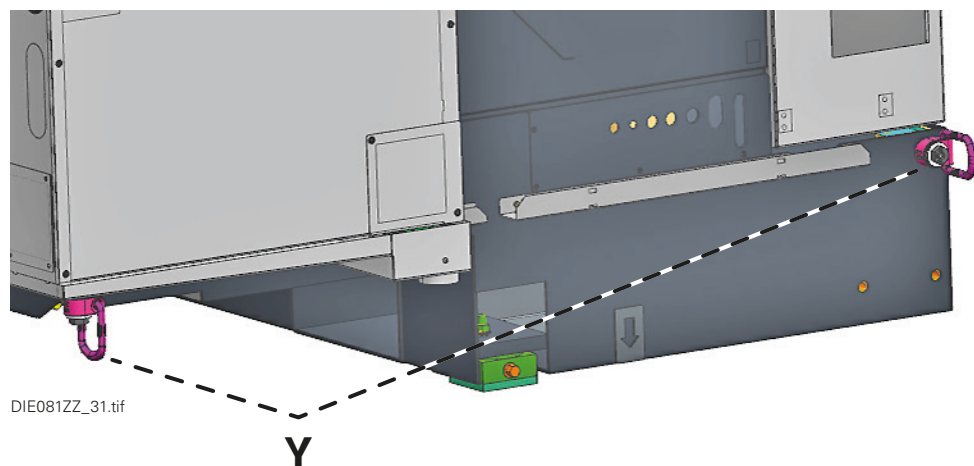


*Specifications from the operator's point of view/work area

Right attachment points*



Right attachment points with
WHU*



*Specifications from the operator's point of view/work area




The lashing points shown in the figure must always be used as described.

Lashing differently than described here is prohibited for safety reasons.

Be sure not to use only one strap through multiple lashing points for lashing.

The attachment and lashing points must be as close as possible to each other on the loading platform.



When lashing a machine on a loading platform, be sure to observe also the direction of travel . Be sure to view the illustration below.




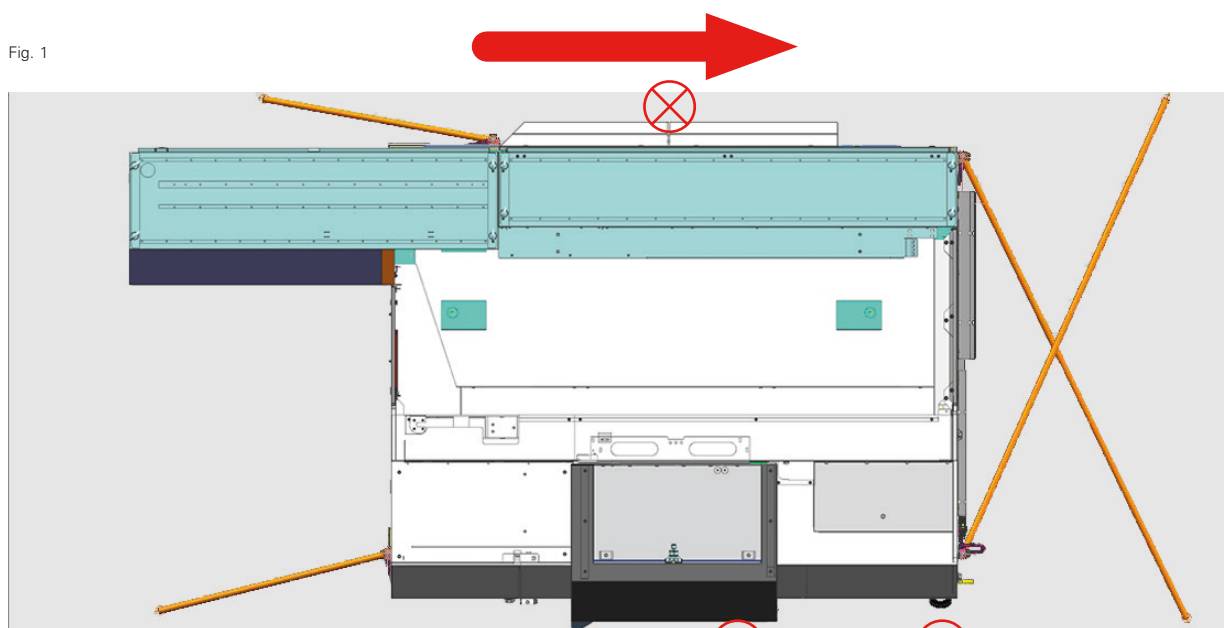
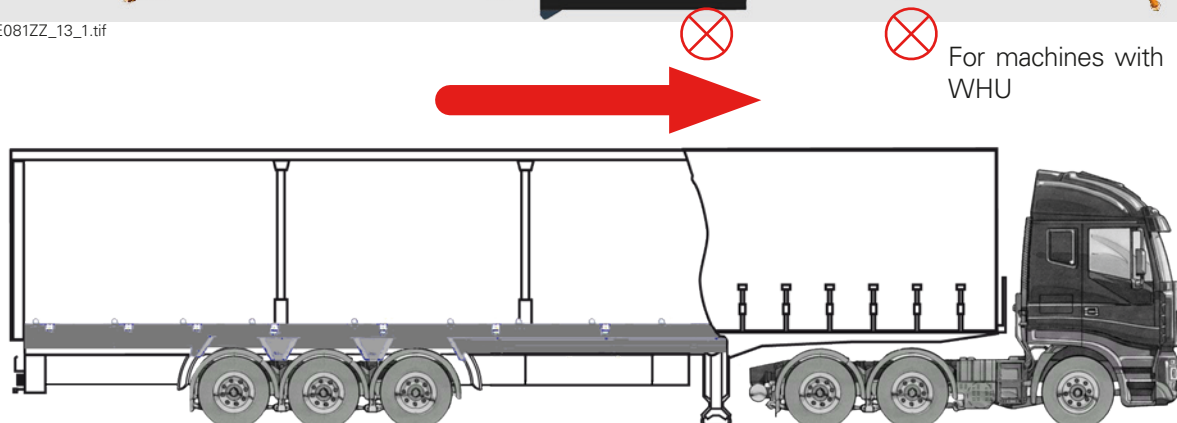
The machine must be secured with short transport belts at the points marked by  (Fig.: 1) to absorb the roll torques. There are load and lashing points at these points.

Fig. 1



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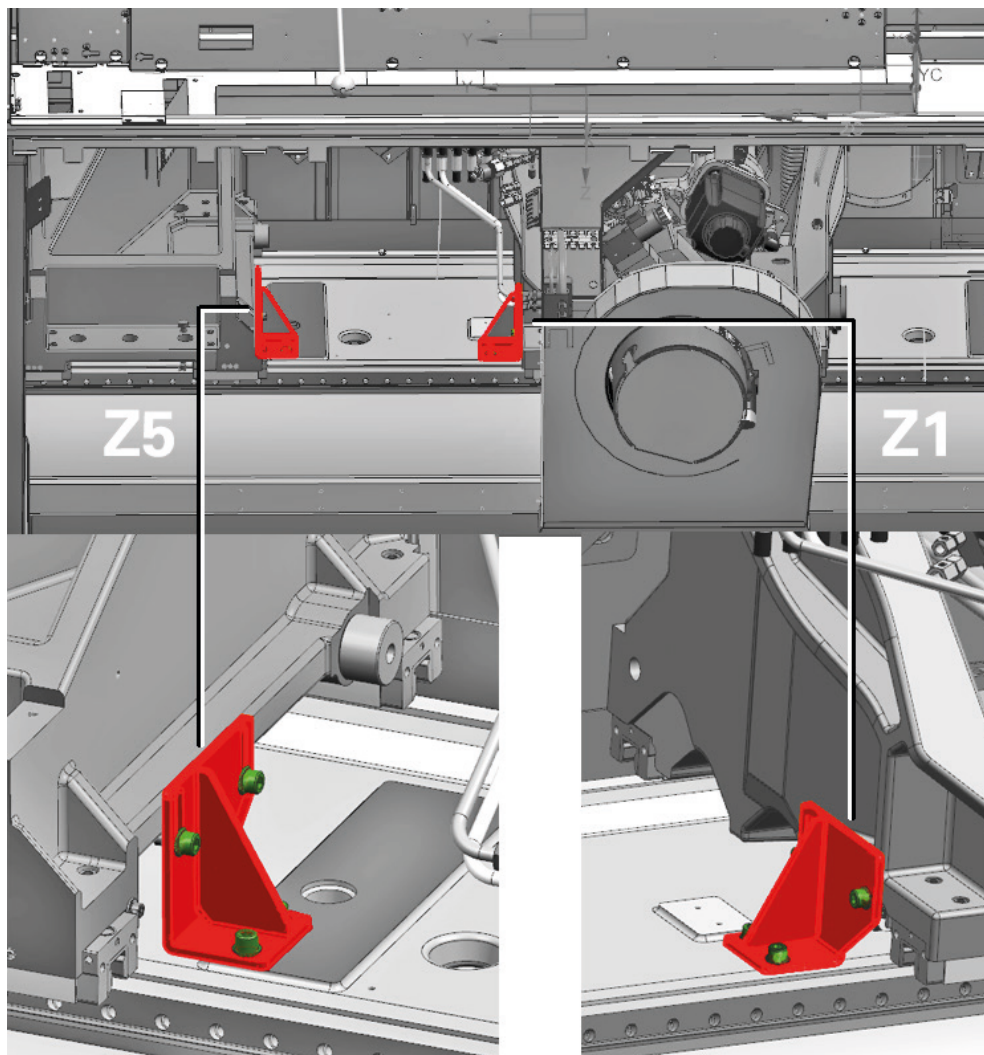


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Locations of the transport locks on the machine

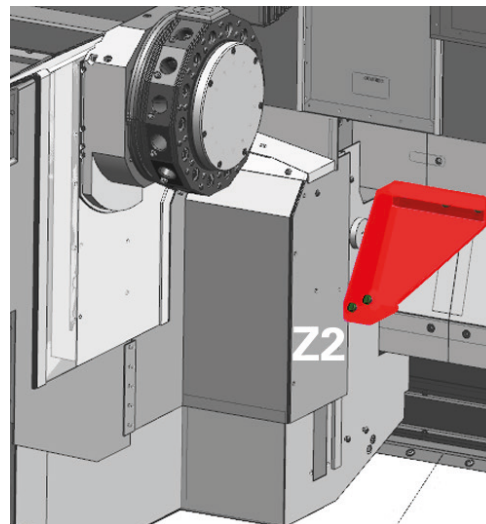
Z1 and Z5

(View: Rear of machine)



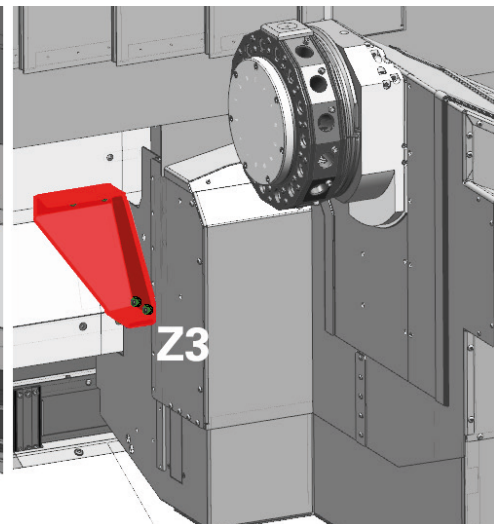
DIE081ZZ_37.tif

Z2

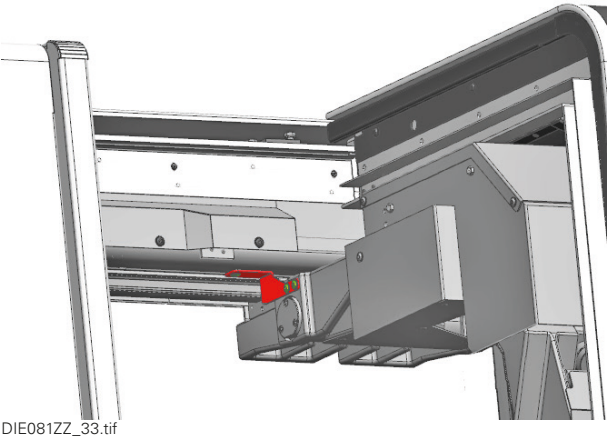


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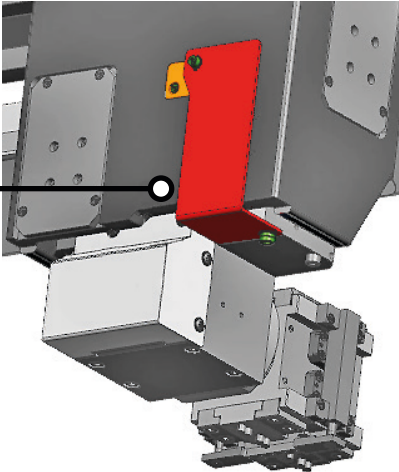
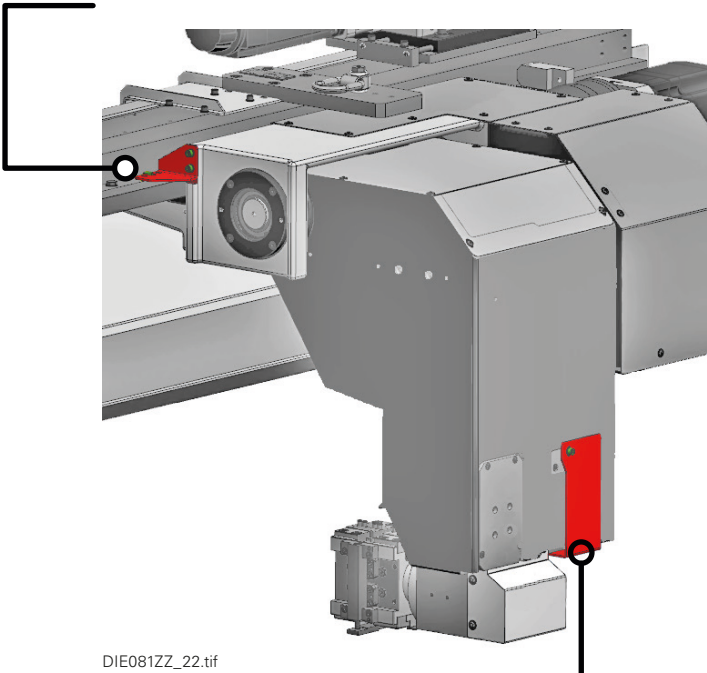
Z3



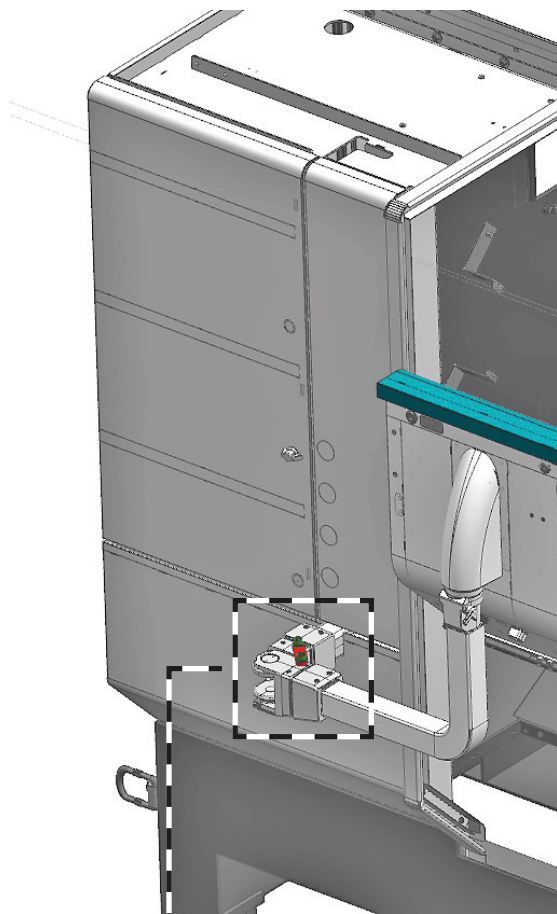
Gantry-type removal unit Z8



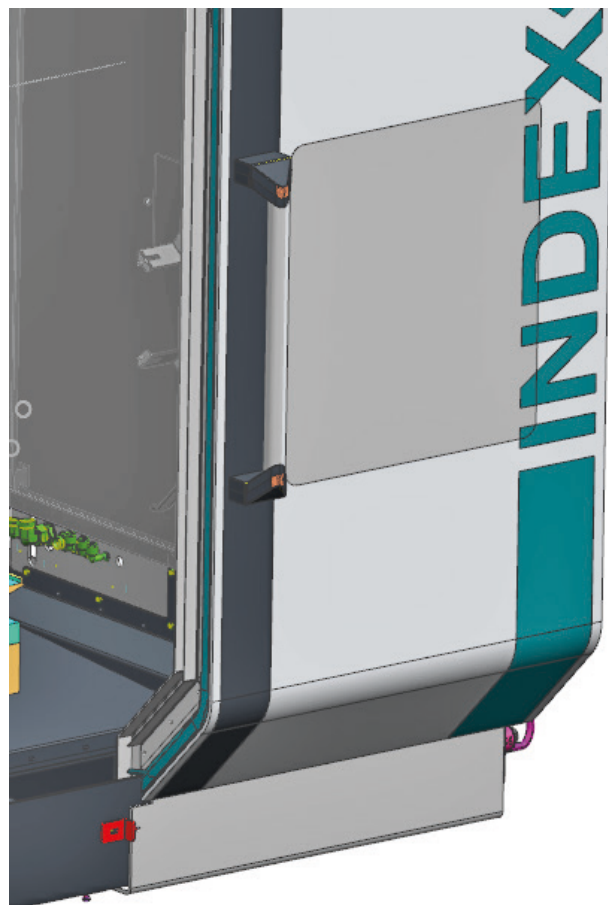
WHU Z8



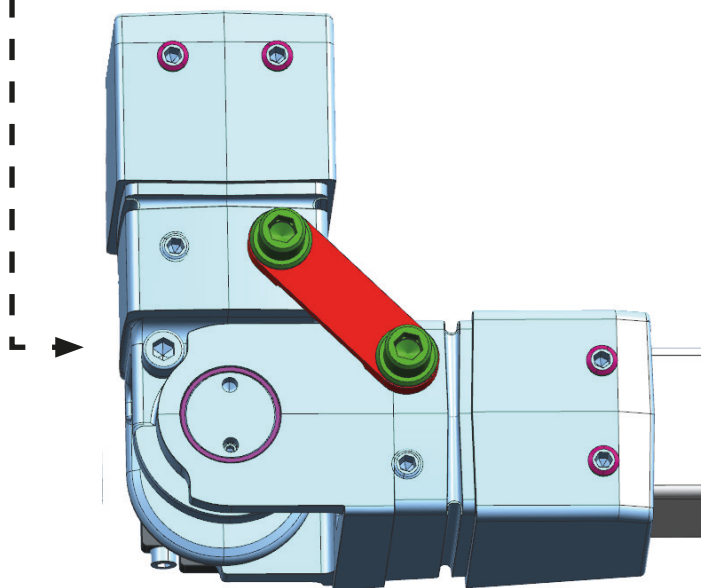
Work area door and operating panel



DIE081ZZ_35.tif



DIE081ZZ_34.tif



DIE081ZZ_36.tif

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.

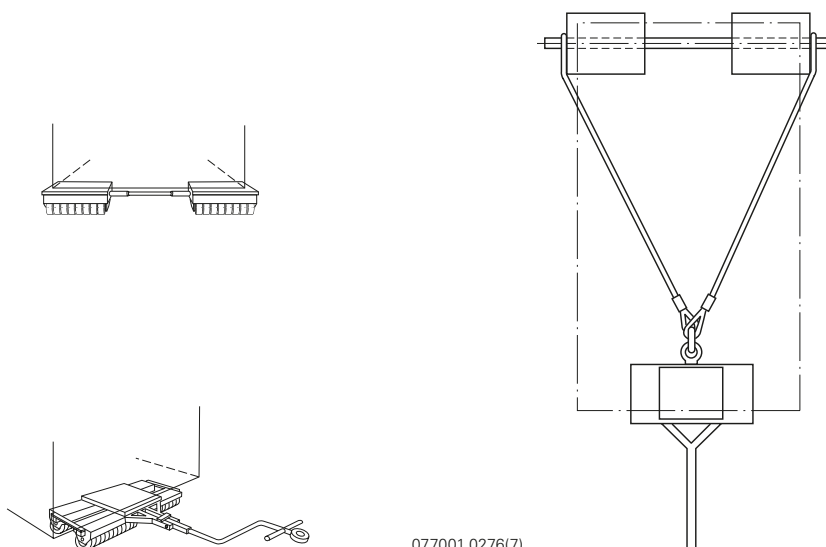
Depending on the size and mass of the machine, two or three transport casters are required for transport, one of which must be steerable.

The trolleys must always be parallel to the load to be lifted and in no case be oblique, because otherwise the casters would "rub out" causing the surfaces to 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.



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Unloading and transporting of separate units

Equipment options or accessories 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 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 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 the valid safety standards.



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

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

The electrical connection is indicated in the wiring diagrams.

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

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



In some cases (dependent on year of manufacture/machine number), the plug-in connections on the operating panel are disconnected for transport and the operating panel is unscrewed from the operating panel slide. Before the machine is switched on, the plug-in connections of the operating panel are connected again and the operating panel is screwed onto the operating panel slide again.



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

Hydraulic system

Attaching filling/breathing filter

The filler neck on the hydraulic tank (Fig. 2) was closed for transporting.

Reinsert the filling/breathing filter before operating the machine.

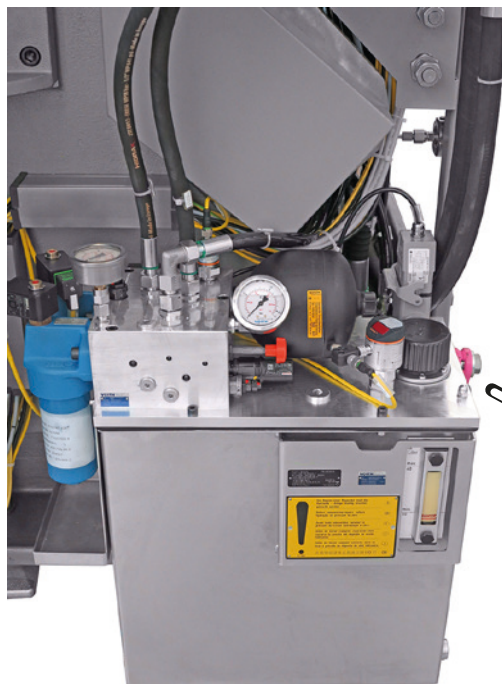
Hook the filling/breathing filter onto the safety chain and screw in.



Caution!

Use only the oil type indicated on the oil tank.

Fig. 1



DIG003ZZ_08.tif

Fig. 2



DIE009ZZ_23.tif

Installing the machine

The G200.2 machine is equipped with four adjustable feet as standard (see Fig. "Leveling the entire machine" and "Adjustable machine foot"). However, only the feet **1-3** are used here to level the machine.



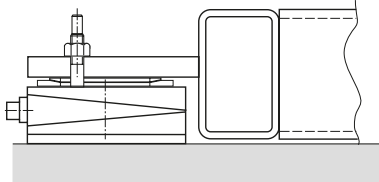
Hydraulik-Heber von vorne.tif
 Fig. 1 Hydraulic jacks



Before placing the machine on the ground, back off the foot **4**. Always support the leveling process with suitable hydraulic jacks (Fig. 1). Be sure to observe the positions of the hydraulic jacks (Figure 4 - See pictures in "Transporting the machine").

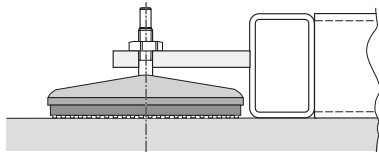
After leveling, the machine foot **4** is only adjusted to the floor for support so that the indications on the spirit levels do not change.

Fig. 2
 Adjustable machine feet 1, 2, 3

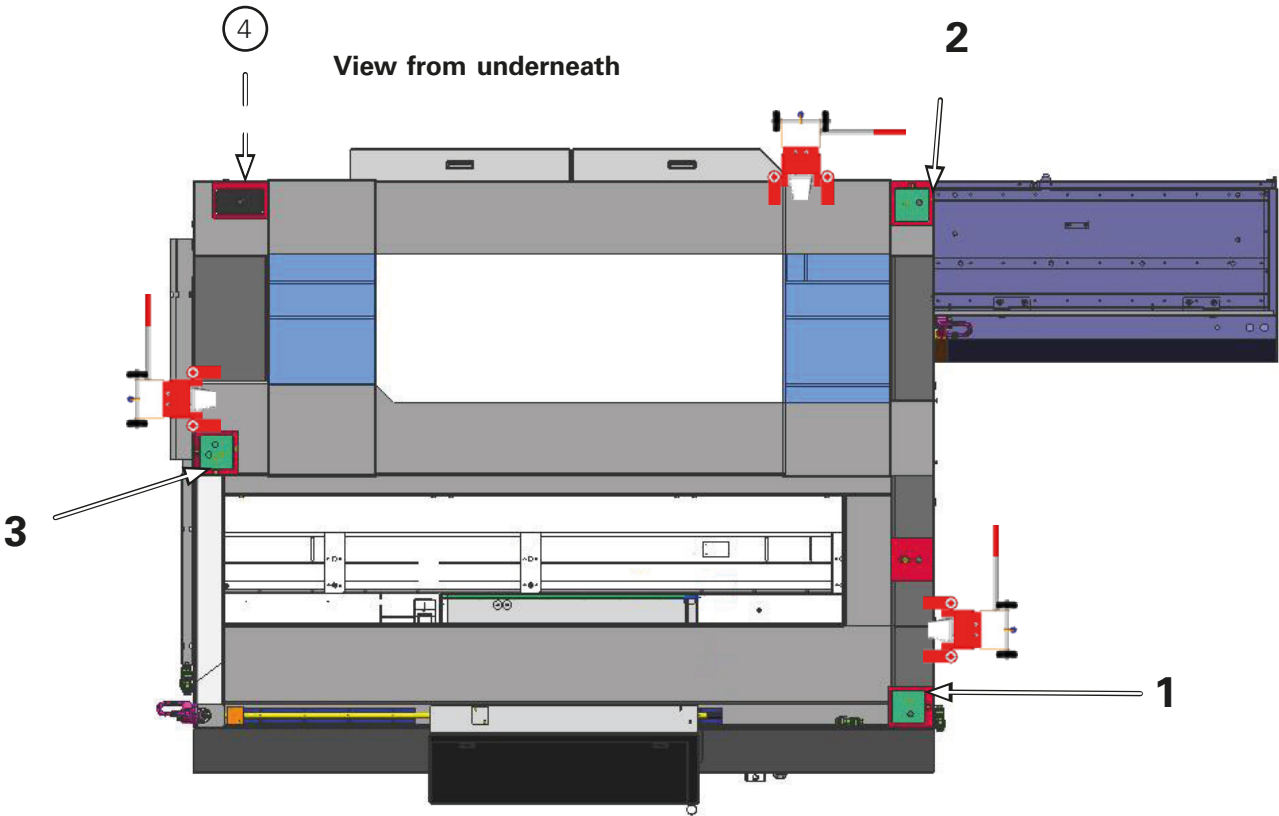


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Fig. 3
 Adjustable machine foot 4



L1901.10011_02.eps



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Figure 4 "Leveling the entire 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).

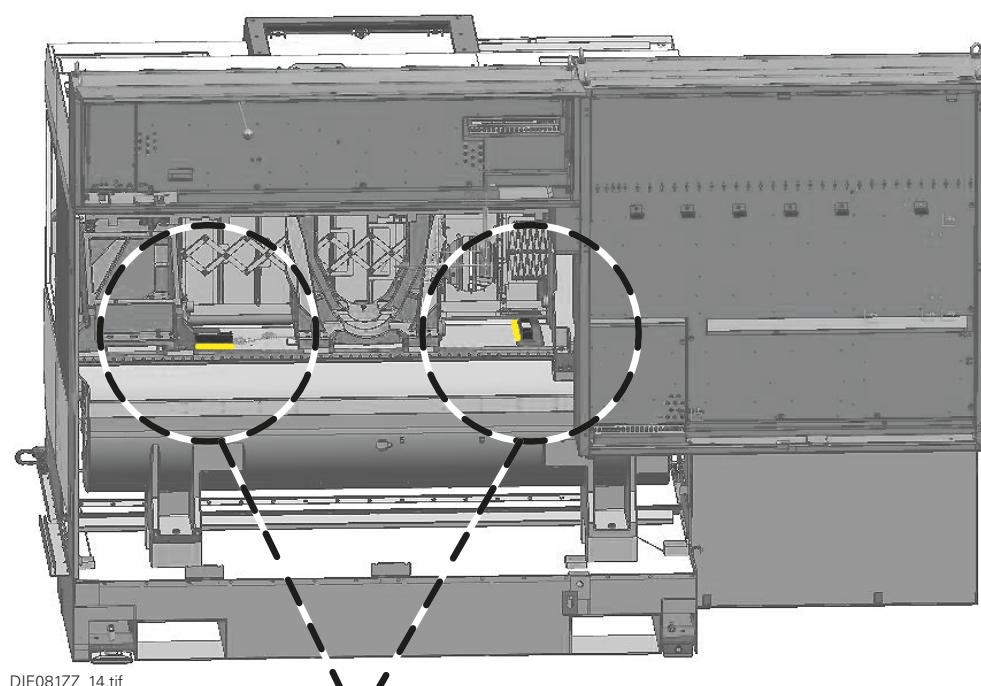
Now level the machine by adjusting the machine feet 1, 2, and 3 (see also Section "Installing the machine" Fig. "Levelling the entire machine").

Place the precision spirit levels (X) as shown in Fig. 1 and 2.

Leveling in the Y-Axis

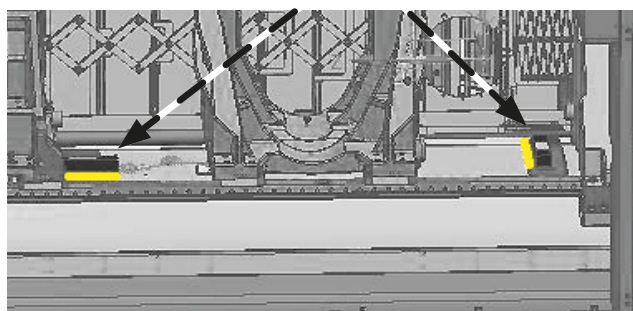
- Level the machine in the Y direction by adjusting the machine feet 1 and 2.

Fig. 1



DIE081ZZ_14.tif

Fig. 2



DIE081ZZ_14.tif

Leveling in the Z-Axis

- Level the machine in the Z direction by adjusting the machine foot 3.
- After leveling in the Z direction, check the Y direction once again. If necessary, readjust.
- When aligning the machine is complete, adjust the machine foot 4 (see Section "Installing the machine" Fig. "Leveling the entire machine") to the floor.
Take care not to change the position of the machine (continuously check the precision spirit levels).



Be sure to remove the precision spirit levels from the drive area after the leveling process is complete.

Installation and leveling of expansion stages and accessories

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

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

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

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


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 the machine is ready for operation.

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 accessories 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
- Auxiliary 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 chart 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 Chapter "Operating the Machine".

Relocation



Attach transport locks. See also Section "Location of transport locks".

When transporting with a truck:

If the machine has a WHX workpiece pick-up device, be sure to mount the transport support.

(This is not necessary when transporting with transport casters)



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

(See also Section "Attaching Filling/Breathing Filter".)

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 accumulators attached to the machine must be depressurized by a specialist.

Provide the appropriate transport gear for feeding blanks.



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