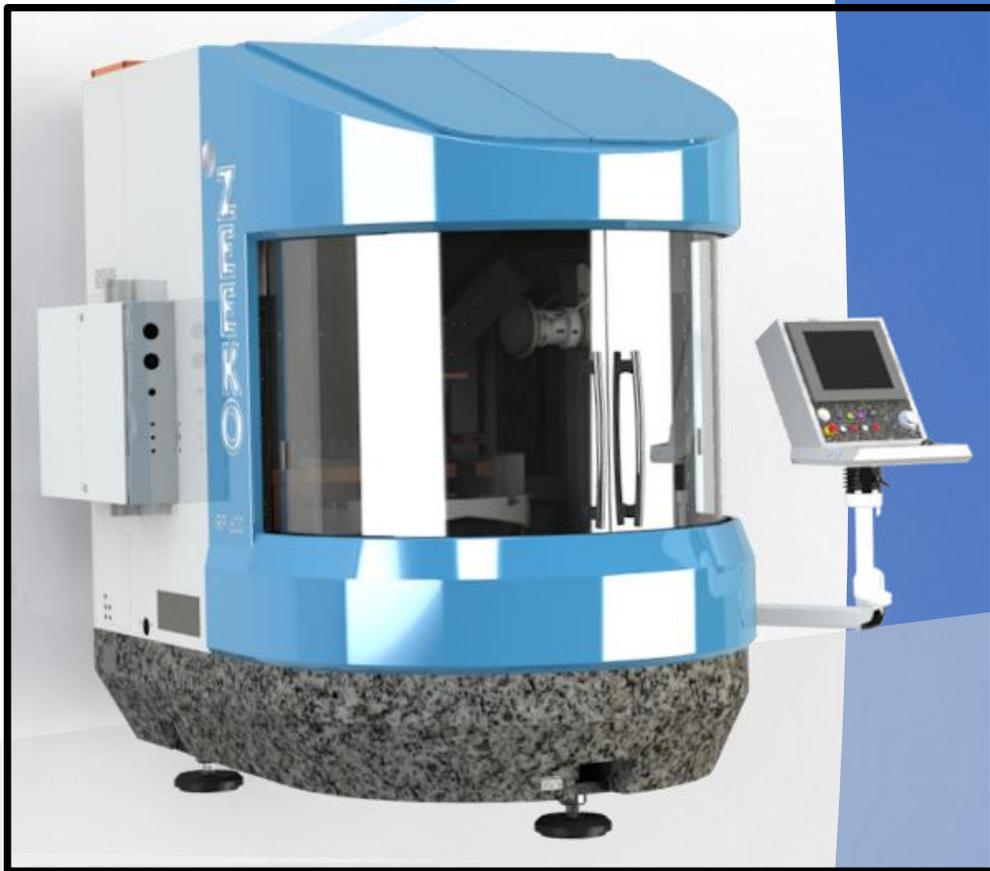


Transport & Installation Manual



IRP600 FL 7-axis

Version 2, Rev h

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Preface

Dear Customer,

This Transport and Installation manual describes all steps you must take for transportation and installation of the IRP600 machine.

Please take time to read the manual carefully. Pay attention to the instructions for this manual given on this and the next page.

With the aid of this manual, you can perform the following steps:

- Systematically prepare for the installation of the machine.
- Transport and install the machine safely.
- Connect the machine correctly.
- Always keep this manual in the immediate vicinity of the machine. That way, it will always be available for consultation. In addition to the Transport and Installation manual, the user documentation is comprised of the following:
 - Operation manual.
 - Software manuals.
 - Maintenance manual.

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Instructions for this manual

The following signs are used throughout the manual to depict areas of safety or general instruction. Please make yourself aware of these signs and take careful consideration when carrying out the specified maintenance tasks.

This manual is intended to be used in conjunction with all applicable local guidelines, regulations, and statutory requirements. Users are responsible for ensuring compliance with the relevant laws and standards in their area of operation.



WARNING: Identifies a potentially dangerous situation which may cause loss of life, serious.



ATTENTION: Signifies a potentially dangerous situation which may cause injury or serious.



NOTE: Identifies application instructions and other useful and important information.



TIP: Specifies information that could be useful and save you unnecessary time and effort.

Installation requirement

This section covers the following topics:

[Access and Clearance Requirements for Installation](#)

[Workspace requirements](#)

[Space requirements](#)

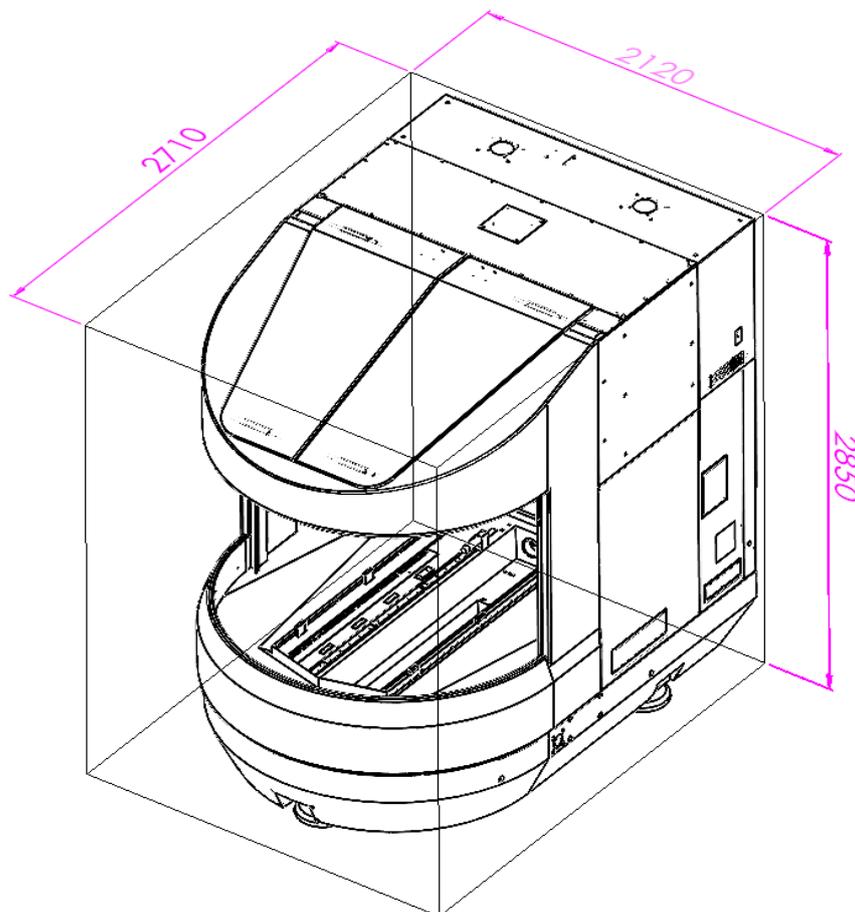
[Accessibility](#)

[Supply connections](#)

Access and Clearance Requirements for Installation

This section specifies the minimum passageway and doorway dimensions required to safely transport and install the machine at the installation site.

The boundary box diagram shown below illustrates the overall height (2850 mm), width (2120 mm), and depth (2710 mm) of the machine. All dimensions must be considered together to ensure the machine can pass through all passageways and door thresholds during installation.



Workspace requirements

Workspace requirements can be further divided into:

[Floor requirements](#)

[Room temperature](#)

[Storage of the polishing fluid \(lubricant\)](#)

[Electromagnetic influence](#)

Floor requirements

- The installation area for the machine should be self-supporting and level (floor unevenness 3 mm/m² max.).
- The conditions must be such that the machine can rest completely on all 3 levelling elements on the floor.
- When selecting the installation area, avoid placing the machine on a step, drain or the like.
- The bearing strength of the floor must be at least 90,000 Kg /m² in 3 places.

Room temperature

- The room temperature must be 20 °C +/- 1 °C.
- The change in temperature must not exceed 2 °C per day.
- The relative humidity should not exceed 80 %.
- If necessary, provide adequate air conditioning.

Storage of the polishing fluid (lubricant)

- Observe all regulations regarding the storage of polishing fluid and other chemicals associated with the machine's use, such as solvents and adhesives etc. Please observe your local COSHH and health & safety regulations before using any chemicals.

Electromagnetic Influence

- Interference caused by other electrical installations (high frequency) must be avoided.

Space Requirements

The installation area of the machine should be an area measuring approximately 4630 mm x 4950 mm x 3850 mm (W x D x H) according to the installation plan shown below.

This area comprises the installation area of the machine, plus:

- Work area of about 900 mm in front of the machine. (Ideally this should be larger to accommodate lifting gear for loading and unloading of the work pieces)
- Walkway of about 900 mm to the left and right of the machine.
- Maintenance area of 900 mm at the rear of the machine.

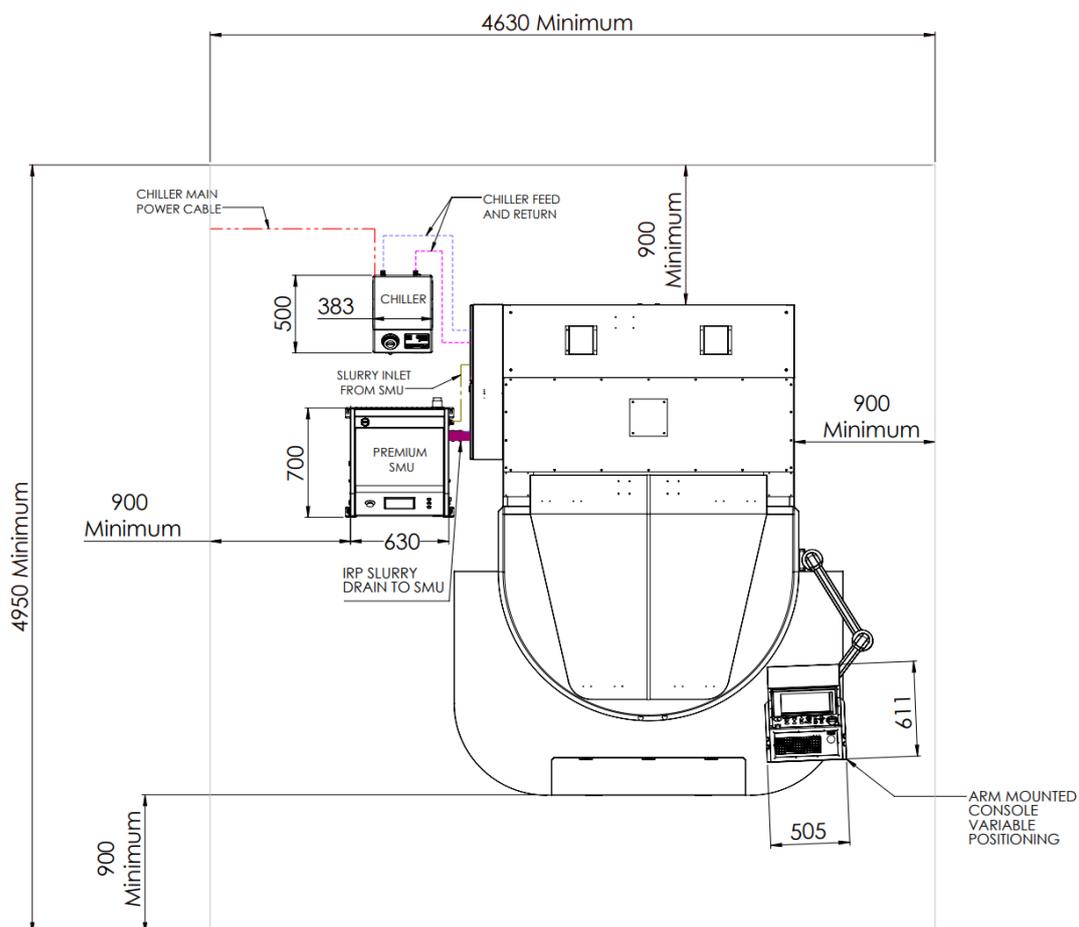


Figure 1 - Machine dimensions

Accessibility

- The height of the machine is 2850 mm. For maintenance work it may be necessary to have one meter (1000 mm) clearance above the machine or a facility to move the machine into another area.



NOTE: The above distances should be checked for compliance with local Health and Safety regulations.

Supply connections

[Power supply](#)

[Compressed air](#)

[Polishing fluid supply](#)

[Polishing fluid return](#)

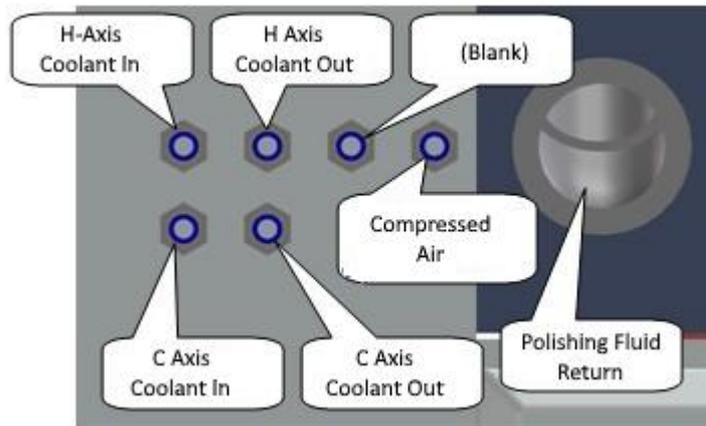


Figure 2 - Supply connections

Power Supply

The machine is designed for operation on a 3-Phase, 4 Wire (i.e. 3 Phases + Earth). The machine will be preset to the mains voltage stated at the time of order. The standard is:

- 400 V /50/60 *Hz: 3-PE \pm 5 %.
- 13 kVA (customer must supply a transformer or power supply to meet this specification)



WARNING: The machinery must only be plugged into a socket which has a protective earthed conductor. The primary side must match the incoming customer supply voltage. If a supply transformer is required, the secondary voltage supply to the machine must match the machine voltage specification.



WARNING: If the mains voltage supply is not the same as that specified on the machine rating plate, the transformer tapplings (if applicable) must be interchanged to correspond with the existing mains voltage. **This MUST only be performed by qualified personnel.**

Compressed air

The pressure at the compressed air supply must be between 6 and 8 bar. The maximum pressure is limited to 6 bar on the pressure controller within the compressed air preparation unit. The supply line must be equipped with a shut-off valve and adequate water trap / refrigerator system on the mains side. The compressed air line is connected on the left-hand side of the machine by means of a 10 mm push fit hose. See (Figure 2).

Polishing fluid supply

The polishing fluid supply hose is connected at mid-height at the left-hand side of the machine, see (Figure 2) via the external slurry on/off valve (not shown).

Polishing fluid return

The return hose is connected to the machine via a 54 mm PVC pipe connection at mid-height at the left-hand side of the machine. see (Figure 2).

Delivery

The machine and control cabinet are delivered as one unit.

- The total weight of the machine with packaging is 10,000 Kg.
- Dimensions of machine with packaging is approximately* 3290 mm x 2450 mm x 3220 mm (Height)
- The pallet is constructed from ISPM-15 heat treated plywood.

*Dimensions may vary depending on the packaging crate construction method used by the transport company



ATTENTION: Please observe all instructions for transport of the machine if you are responsible for unloading.

Immediately notify the carrier or Railroad Company and Zeeko Ltd of any damages and other defects, e.g. missing items.

Transport



ATTENTION: *The Transport and Installation of the machine must strictly be carried out only in the presence of Zeeko personnel.*

[Transporting the machine.](#)

[Lifting the machine on and from the pallet.](#)

Transporting the machine



ATTENTION: *Safety instructions for transport with a forklift:*

- The machine **MUST ONLY** be transported on the pallet. Risk of Tipping Over!
- The machine **MUST ONLY** be transported by a forklift – NOT a pallet truck. Risk of Tipping Over!
- The lift truck must have a minimum lifting capacity of 10 tonnes.
- The lift truck forks must be at least 1700 mm long.
- Note the centre of gravity shown in (Figure 3). Risk of Tipping Over!
- The lorry and the forklift must always be on level ground. Risk of Tipping Over!
- The machine weighs approximately 10,000 kg (with packing)
- Only qualified personnel should perform transport, lifting and positioning of the machine.



WARNING: *DO NOT LIFT THE MACHINE FROM THE 20 mm HOLES IN THE SIDE OF THE GRANITE BASE (SEVERE DAMAGE WILL BE CAUSED!)*

- Remove the packaging materials from the machine (shrink wrap) – NOT THE PALLET.
- Move the forks of the lift truck or forklift as far as possible under the pallet.



ATTENTION: Please note the centre of gravity. See (Figure 3).

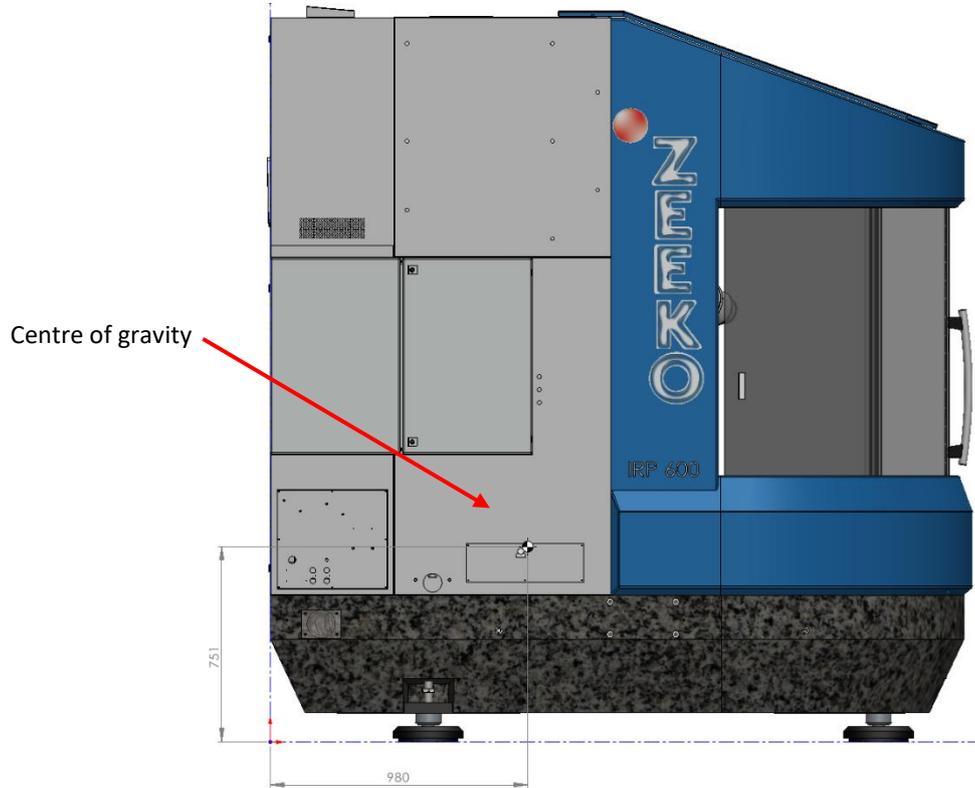


Figure 3a - Centre of gravity – Side profile

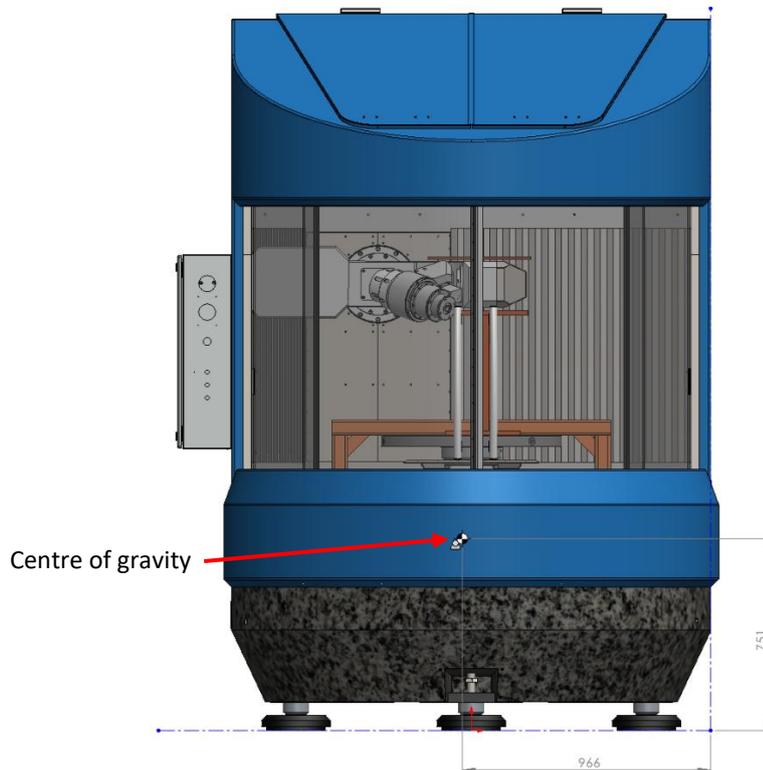


Figure 4b - Centre of gravity – Front Profile



ATTENTION: The pallet must be lifted in the forklift zones marked in (Figure 5) Risk of Tipping Over!



Figure 5 - Pallet forklift zones

- Slowly lift the pallet and carefully move it to the installation site.

Lifting the Machine on or off the Pallet

[Lifting the machine from the floor onto the pallet.](#)

[Lifting the machine from the pallet onto the floor.](#)

Lifting the machine from the floor onto the pallet



ATTENTION: Do not use other pallets than those provided by Zeeko. Risk of Tipping Over!

The machine **MUST ONLY** be lifted, **NOT TRANSPORTED** without the pallet. Risk of Tipping Over!



WARNING: DO NOT LIFT THE MACHINE FROM the 16 mm HOLES IN THE SIDE OF THE GRANITE BASE (SEVERE DAMAGE WILL BE CAUSED!)



ATTENTION: Please note the centre of gravity. See (Figure 6).

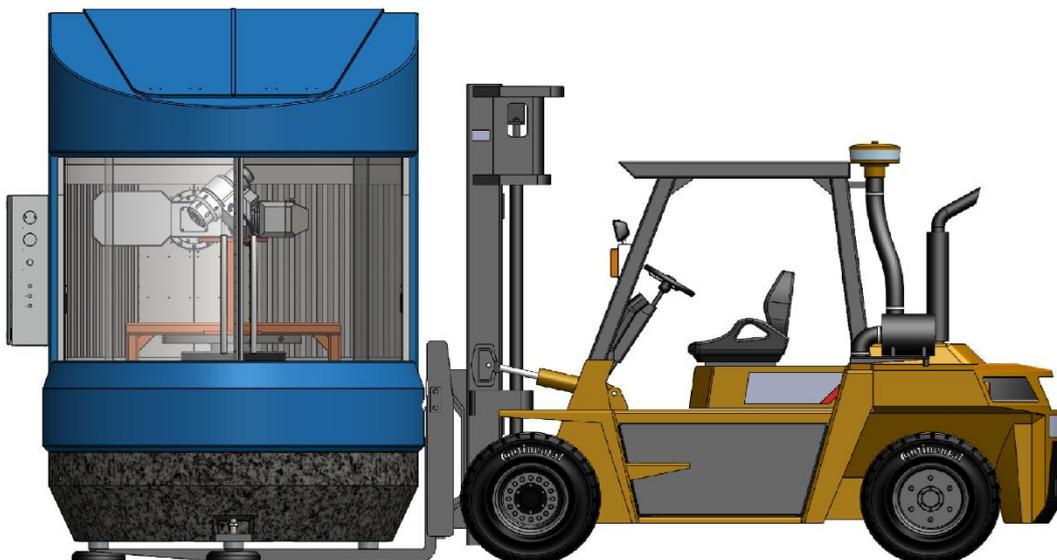


Figure 6 - Forklift zones



ATTENTION: The machine must be lifted in the forklift zones marked in (Figure 6). Risk of Tipping Over!

- The machine can be lifted from either side, however it may be advantageous to lift it from the right hand side so that the fork lift truck can get closer to the centre of the machines mass (due to the pneumatics cabinet sticking out on the opposing side).



- Slowly lift the machine.



ATTENTION: The rear and front side of the pallet is marked in (Figure 5). Do not put the machine in any other way on the pallet. Risk of Tipping Over!

- Carefully lower the machine onto the pallet.
- Strap the machine to the pallet using the three 16 mm anker holes on the side of the granite base.
- To eliminate side movement when transported, fit wooden blocks on the sides of the machine.

Lifting the machine from the pallet onto the Floor



ATTENTION: The machine MUST ONLY be lifted NOT TRANSPORTED without the pallet. Risk of Tipping Over!



NOTE: DO NOT LIFT THE MACHINE FROM THE 16 mm HOLES IN THE SIDE OF THE GRANITE BASE (SEVERE DAMAGE WILL BE CAUSED!)

- Place pallet on the floor.
- Remove straps and wooden packaging blocks from around the machine.



ATTENTION: Please note the centre of gravity in (Figure 63).

- Move the forks of the lift truck or forklift as far as possible under the machine. See (Figure 6).



ATTENTION: The machine must be lifted in the forklift zones marked in (Figure 6). Risk of Tipping Over!

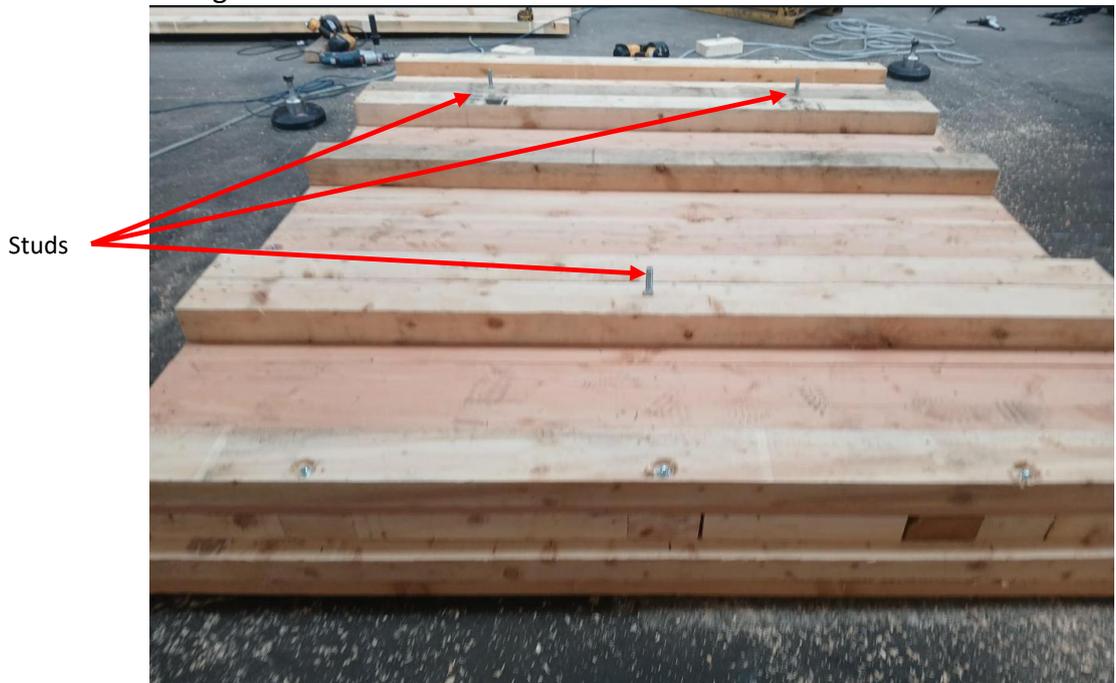
- Slowly lift the machine clear of the pallet.
- Remove the pallet.
- Slowly lower the machine on the floor.

Fastening the Machine Down for Transport

- The machine must be adequately fastened down to the pallet or truck during transport.
- Suggested methods are shown below, however advice from the transport company should be taken if any concerns are raised.

Pallet mounting

Sufficiently strong studs should be facilitated in the case base / pallet design, which can be fastened in place of the machine feet as per the images below.



Securing to a Truck Bed Without a Pallet

- Picking up from the base eye bolts, the machine can be strapped down to sufficiently robust mounting points as shown below, although the expertise of the transport company should be taken into consideration at all times. If there are any concerns, please contact Zeeko Ltd.



Installation

Adjusting the machine

- Mark the installation area and the position of the levelling elements.



NOTE: The installation area must be clean and level ([see section - Floor requirements](#)).

- Place the machine with the three levelling elements on the planned position.
- Level the machine with a spirit level in both directions. To do so, adjust the relevant threaded pins.
- Screw the lock nuts on the threaded pins and tighten them after the machine has been accurately aligned.

Opening the doors if the machine is not electrically connected



TIP: If manual release of the Chamber Door Interlocks is required, the upper enclosure cover, see (Figure 7) can be removed. A Torx #8 tool with extension can then be passed above the chamber lamp to manually unlock the door interlocks.

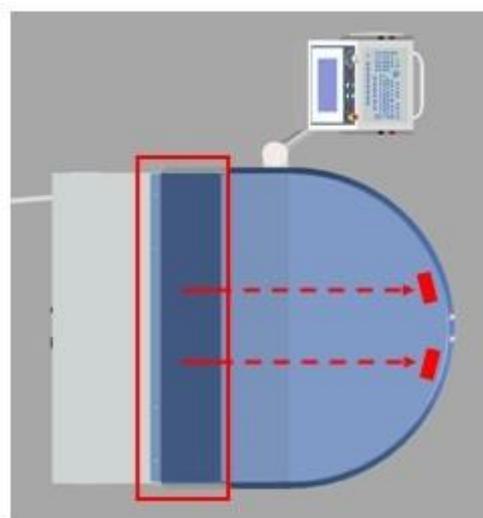


Figure 7 - Manual access points to door interlocks

Connection

[Connecting the polishing fluid system](#)

[Connecting the compressed air supply](#)

[Electrical connection](#)

Connecting the polishing fluid system

[Connecting the polishing fluid supply hose\(s\)](#)

[Connecting the polishing fluid drain hose](#)

Connecting the polishing fluid supply hose(s)

The machine is delivered with a coolant supply hose (NW12).

- Connect the hose to the appropriate LEGRIS connection adapter (SW32) of the machine. See (Figure 2).
- Connect the other end of the hose to the polishing fluid (lubricant) unit.

Connecting the polishing fluid drain hose

The machine is delivered with a fluid drainpipe (DN40).

- Connect the drainpipe to the pipe fitting (DN40) in the panelling and to the polishing fluid unit. See (Figure 2).

Connecting the compressed air supply

- The compressed air supply can be connected with an adequate standard type of air hose.

Electrical connection

Setting the mains voltage:



WARNING: Work on electrical parts and equipment must only be done by a qualified electrician or by duly trained personnel under the instruction and supervision of a qualified electrician, in accordance with electro-technical rules and regulations.

The machine should be equipped with a 32A Euro-plug, 3-Phase, 4 Wire (i.e. 3 Phases + Earth). This must be supplied by the customer and fitted in line with the local electrical regulations at the site.

The cable is located in the mechanical and electrical cabinet. See (Figure 8).



Figure 8 - Electrical connection of the machine

The standard mains voltage is:

- 400 V /50/60 *Hz: 3-PE $\pm 5\%$.



WARNING: The machinery must only be plugged into a socket which has a protective earthed conductor. The primary side must match the incoming customer supply voltage. If a supply transformer is required, the secondary voltage supply to the machine must match the machine voltage specification.

Operation at startup



ATTENTION: *Safety Instruction! Familiarise yourself with the machine prior to start-up.*

The following conditions must be met before putting the machine into operation:

- The space requirements and ambient conditions at the site of installation must be met.
- The power, compressed air and coolant supply connections required by the machine must be connected.
- The machine panelling has been mounted.
- The mechanical and electrical cabinet doors are closed.
- The “EMERGENCY STOP” button is unlocked, (unlocking is achieved by turning clockwise).

The following jobs must be done prior to putting the machine into operation:

- Transport the machine to its site of installation. Read the transport safety instructions.
- Lift the machine off the pallet.
- Put the machine into place on the levelling elements and align it.
- Fill the polishing fluid (lubricant) supply unit and connect it to the machine.
- Connect the compressed air supply Connect the machine to the power supply.