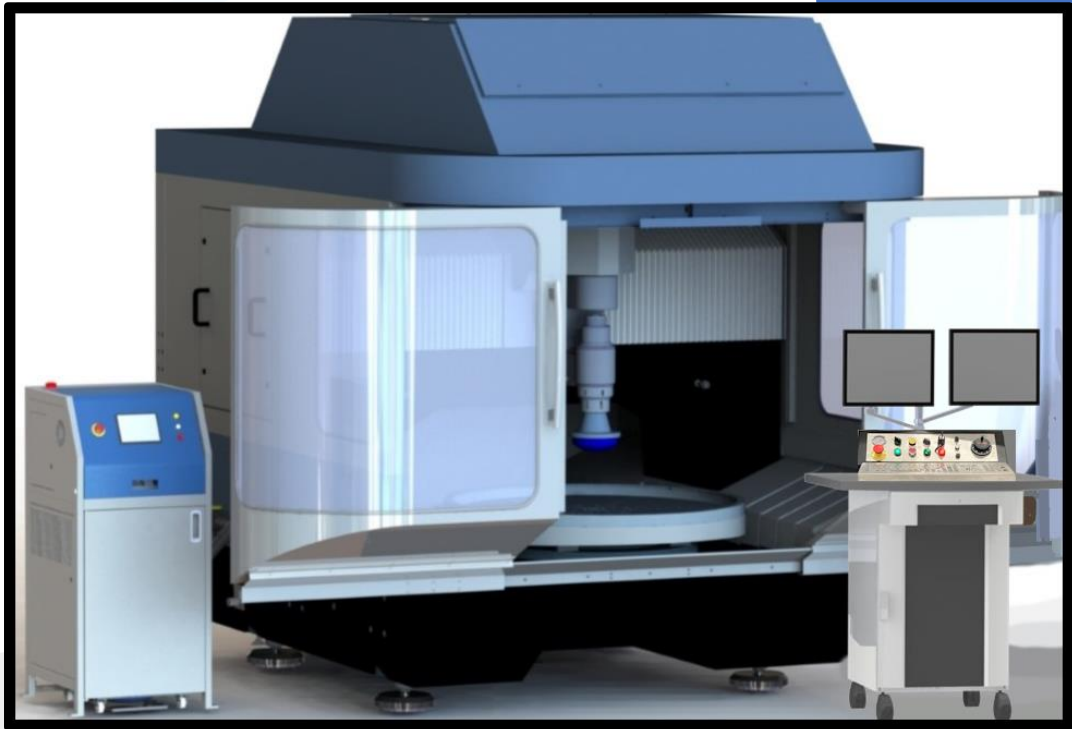


Transport & Installation Manual



IRP1200 MK1 -
Fanuc Ballscrew

Version 2, Rev b

Sept 2024

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Preface

Dear Customer,

This Transport and Installation manual describes all steps you must take for transportation and installation of the IRP1200 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.



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:

[Workspace requirements](#)

[Space requirements](#)

[Accessibility](#)

[Supply connections](#)

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 leveling 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 10Kg/cm² in 3 places.
- The three feet indicated are used to level the machine. When level, the two remaining feet are engaged to enhance machine stability. See Figure 1.

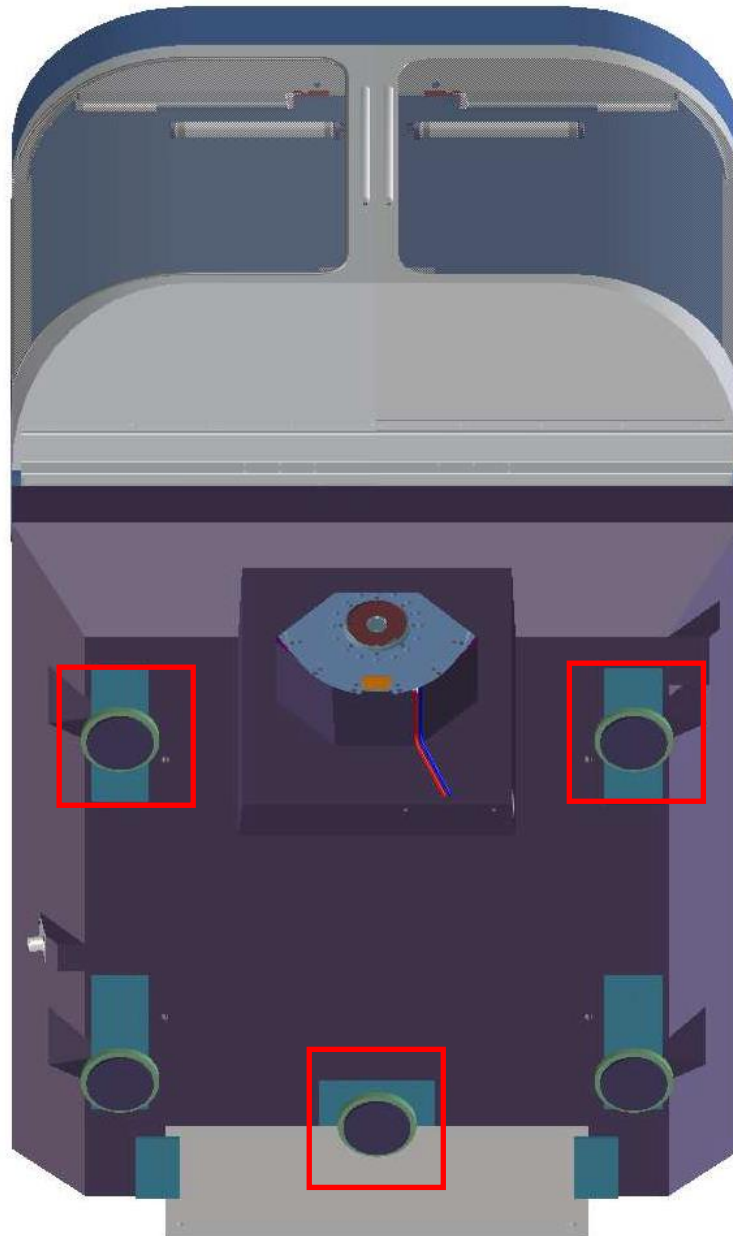


Figure 1 - Machine levelling feet (underside view)

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 condition.

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 4800 mm x 4300 mm x 3000 mm (W x D x H) according to the installation plan shown below.

This area comprises:

- The installation area of the machine.
- Work area of about 1000 mm in front of the machine.
- Walkway of about 1000 mm to the left and right of the machine.
- Maintenance area of about > 1000 mm at the rear of the machine.
- The overall height of the machine is 3000 mm.

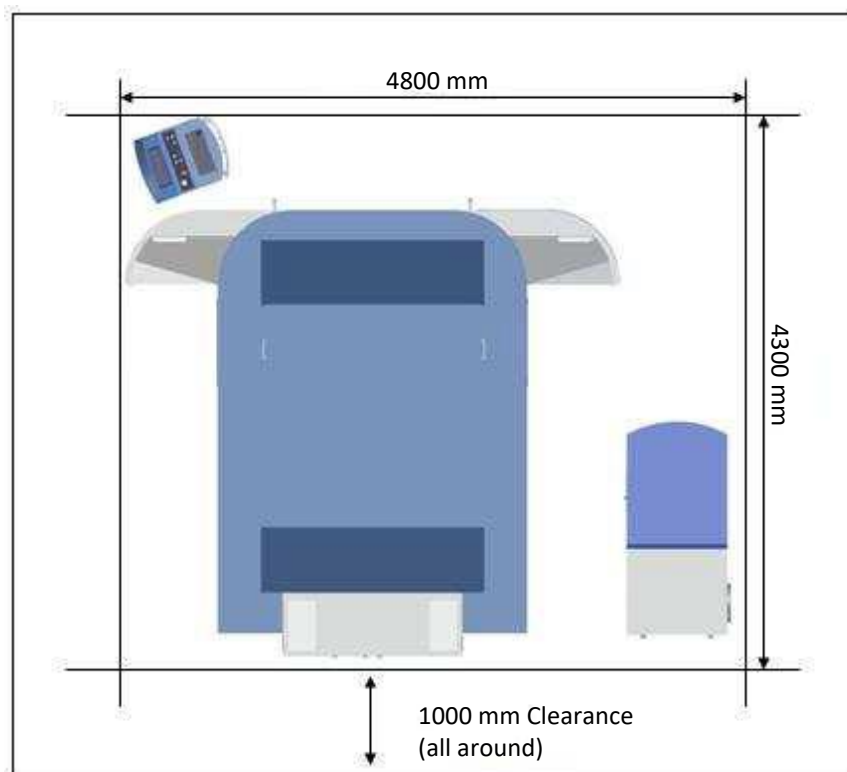


Figure 2 - Machine dimensions

Accessibility

- 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 distances should be checked for compliance with local Health and Safety regulations.

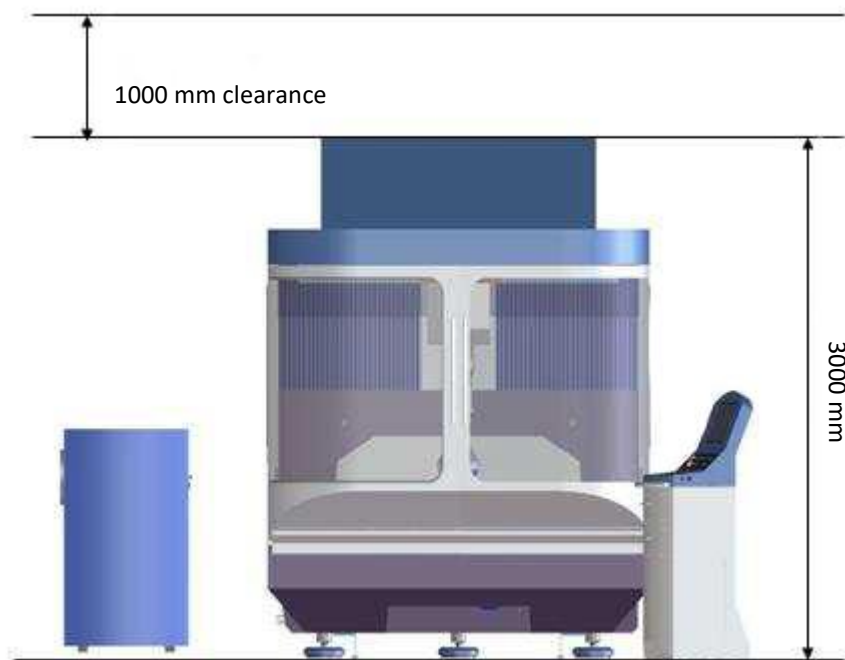


Figure 3 - Height requirement and overhead clearance

Supply connections

[Power supply](#)

[Compressed air](#)

[Polishing fluid supply](#)

[Polishing fluid return](#)

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 %.



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 2 bar. The maximum pressure is limited to 6 bar on the pressure controller within the compressed air conditioner. 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 fabric hose.

Polishing fluid supply

The polishing fluid supply hose is connected at mid-height at the left-hand side of the machine, via the external slurry on/off valve.

Polishing fluid return

The return hose is connected to the machine via a 32 mm hose connection at mid-height at the left-hand side of the machine.

Delivery

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 are 3990mm x 2780 mm x 3410 mm (Height).
- Pallet is constructed from ISPM-15 Heat Treated plywood.



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.

Transportation



WARNING: The transport and installation of the metrology system must only be carried out only in the presence of Zeeko personnel.

Transporting the IRP1200

The IRP1200 is to be transported complete in its packing crate until the final lifting into position is to be completed.

The requirements are:

- A forklift or telehandler capable of lifting 20 tonnes and with long forks.

Summary of steps for installation (IRP1200)

- The IRP machine will be packed into a crate suitable for sea-freight. The crate will be loaded onto the transport lorry in the UK and make its way to the customer by a combination of sea-freight and road-freight.
- The IRP machine will be shipped on a curtain-sided lorry or low-loader. The lorry will arrive at the customer and park at the most convenient point for the unloading operation to take place.



- The IRP machine crate will be picked up from the transport lorry using a large forklift truck that will be made available on site (IRP600 shown below as example). **(The photo below is for illustration only and does not show the crate sides or roof)**. The actual machine will be fully crated at this lifting operation.



- The IRP machine will be lifted directly into the laboratory at the customer using the forklift truck. At this point, the crate sides will be removed.
- The forklift truck will then position the base of the crate onto the floor space and lift the IRP machine clear of the shipping crate ready for final positioning.
- The forklift truck will position the IRP machine onto the floor of the customer laboratory.
- Using skates (if required), the final position of the IRP1200 machine will be adjusted.



Connection

[Connecting the polishing fluid system](#)

[Connecting the compressed air supply](#)

[Electrical connection](#)

Connecting the polishing fluid system

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.
- 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 paneling and to the polishing fluid unit.

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.



Figure 4 - 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.



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.**

Installation

Adjusting the machine

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



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

- Place the machine with the three leveling 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.

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 paneling has been mounted.
- The mechanical and electrical cabinet doors are closed.
- The “EMERGENCY STOP” button is unlocked, i.e. not locked (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 leveling 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.