INSTRUCTION MANUAL PREVIOUS TO DELIVERY OF THE MACHINE



SERIE ZV / ZVH

Version 0.15

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MACHINE AND ACCESSORIES UNLOADING
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MACHINE DATA

MODEL	**ZVH58/L3000 MULTIPROCESS**
SERIAL NUMBER.....	**180592**
MANUFACTURING YEAR.....	**2020**

1 INTRODUCTION

First of all, we would like to thank you for having purchased an IBARMIA machine.

If you are handling this manual, it means that you have purchased a ZV / ZVH machine model.

In this manual you will find useful instructions regarding foundation of the machine and connection to the working place.

IBARMIA INNOVATEK will help you and will advise you whenever you request any information regarding your machine.

Read the manual carefully and follow the instructions for a correct foundation and connection.

Forbidden the total or partial reproduction of this manual without the previous written authorization of IBARMIA INNOVATEK.
This manual is addressed to the end-user of the machine and to IBARMIA' S distributors.

This manual is in continuous change and IBARMIA keeps the right to make changes without prior notice.

Best regards,

IBARMIA INNOVATEK
Pol. Ind. Etxesaga
20720 AZKOITIA - SPAIN
Tel.: + 34 943 857 000
Fax: +34 943 857 005
E-mail: ibarmia@ibarmia.com
Web:www.ibarmia.com

2 RECEPTION OF THE MACHINE

Once the machine has reached to customer's premises, check the following points:

- **That the machine as well as the different accessories and dismounted parts for transport purposes have arrived in good condition**. In case of damages during transport, the customer should make a written notice on the transport delivery note. He should also inform IBARMIA within two days from the arrival date to his premises. It is also advisable to take photographs of the damaged parts.

- **That ordered accessories have been supplied correctly.** The customer should check that all ordered accessories or options have been supplied. There are accessories that may go inside the control of the machine, such as communication cards, non-standard software, etc, which are not visible at first sight. It is advisable to make a checking list to check the correct supply of all ordered accessories or options at the reception of the machine. In case of any anomaly, inform IBARMIA within two days from the arrival date to his premises. It is also advisable to take photographs of the damaged parts.



ATTENTION:
In case of not proceeding as mentioned above, IBARMIA INNOVATEK will consider that the supply has been correct and complete and the customer's claim will have no effect.

3 MACHINE AND ACCESSORIES UNLOADING



The machine and accessories unloading will be carried out by a crane and lifting auxiliary elements capable of supporting the weight of the machine with full security.

		Classic					
		ZV-40	ZV-45	ZV-48	ZV-50	ZV-55	ZV-58
L 1600	Kgr-f	10.800	13.000	14.000	12.300	14.500	15.500
L 2200	Kgr-f	12.000	14.500	16.000	13.500	16.000	18.000
L 3000	Kgr-f	13.700	16.500	19.000	15.200	18.000	21.500
L 4000	Kgr-f	15.500	18.700	23.500	17.000	20.200	26.000
L 5000	Kgr-f	17.400	21.000	27.800	18.900	22.500	29.000
L 6000	Kgr-f	19.500	23.500	29.800	21.000	25.000	32.000

		Extreme					
		ZV-40	ZV-45	ZV-48	ZV-50	ZV-55	ZV-58
L 1600	Kgr-f	10.500	12.000	14.500	15.000	18.000	21.000
L 2200	Kgr-f	13.000	14.500	17.000	18.500	21.500	24.500
L 3000	Kgr-f	16.000	17.500	20.000	21.000	24.000	28.000
L 4000	Kgr-f	20.000	21.500	24.000	23.500	27.500	31.500
L 5000	Kgr-f	25.000	26.500	28.000	28.000	31.000	35.000
L 6000	Kgr-f	28.000	29.500	32.000	31.500	34.500	38.000

		Extreme/Multiprocess				
		ZVH-45	ZVH-48	ZVH-55	ZVH-58	ZVH 60
L 1600	Kgr-f	12.000	14.500	18.000	21.000	
L 2200	Kgr-f	14.500	17.000	21.500	24.500	
L 3000	Kgr-f	17.500	20.000	24.000	28.000	
L 4000	Kgr-f	21.500	24.000	27.500	31.500	39.000
L 5000	Kgr-f	26.500	28.000	31.000	35.000	
L 6000	Kgr-f	29.500	32.000	34.500	38.500	46.000

	Extreme/Multiprocess		
	T-12	**T-16**	**T-22**
Kgr-f	**25.000**	**30.000**	**42.000**

Do not stand under a lifted machine.

Hang the machine from the hook of the crane as shown in the following drawings.

Personal in charge of unloading the machine should be qualified for such a task and authorised by the company where the machine is going to be installed.

Verify that the eyebolts and wires are firmly secured to the machine.

MACHINE UNLOADING

1 – Place the hook of the crane at the machine centre of gravity.

2 – Hang the wires, which neither must be twisted nor must have nodes.

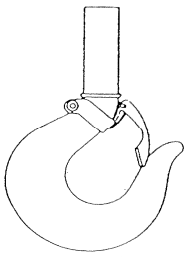
3 – Tauten the wires in order that all of them have the same uniform tension. It is advisable to lift the machine a few cm in order to check if it is equilibrated.

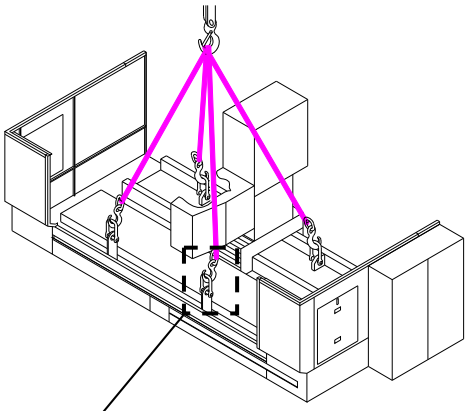
Use clothes, wood...where the wires or slings touch parts of the machines subject to be damaged.

4 - Lift the machine and set it up.

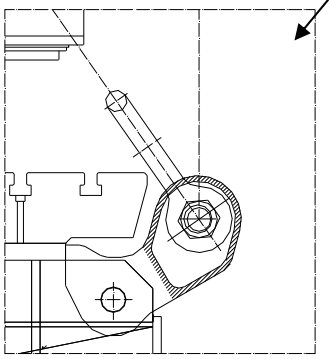
5 – Once the machine is unloaded, remove the lifting elements.

Use cranes equipped with security lock.





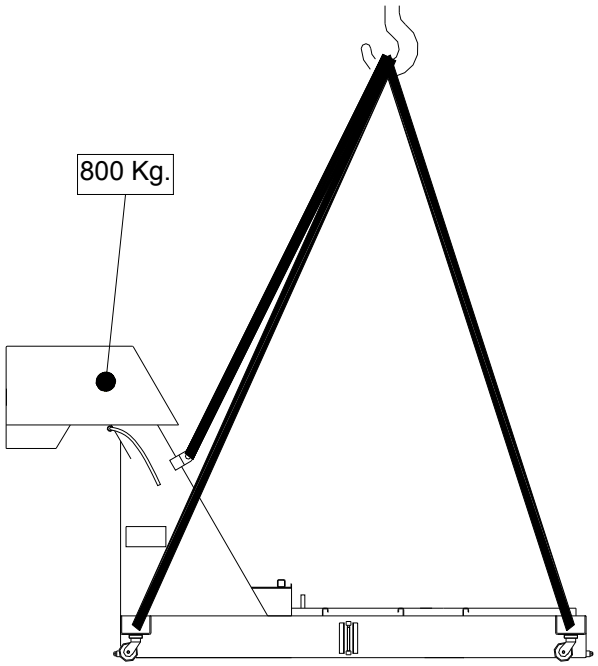
Serie Z



Details of the transport hook.

CHIPS CONVEYOR UNLOADING

1 – Use wires with chains adjustable in length and a rubber or synthetic material collar; place the wires as shown in the drawing, so that the chips conveyor centre of gravity is securely kept inside the shown triangle.
There are two types of chips conveyor:



2 – Start pulling the wires slowly, taking the necessary measures, lift the chip conveyor checking at the same time the limit rotation of the centre of gravity.

3 – Position the chips conveyor where necessary onto the machine and proceed to its connection.

4 – Verify the pulling sense of the chips conveyor wires and pullers.

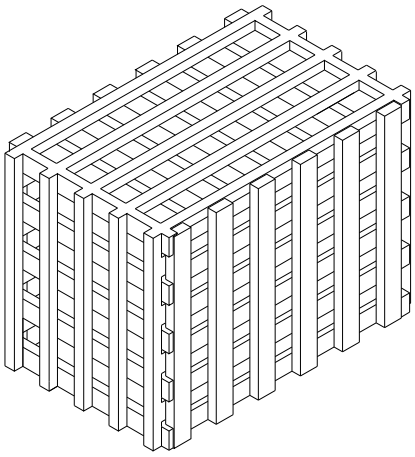
5 – Proceed with the hydraulic net connection for the evacuation of coolant liquid as per the installation requirement.

Under no circumstances force with a lever, hooks, bands or other elements any of the sheet metallic pieces. The pieces of the installation are not prepared to support any weight, even a small one, as the sheets might be deformed with the consequent interference on the moving pieces.

ACCESSORIES BOX UNLOADING



The box of accessories should be unloaded with extreme care, as it contains fragile elements such as the machine control panel, as well as other dismounted elements of the machine.
This box can be unloaded with a forklift; approximate weight is between 1000 and 1500 kg.



4 CONDITIONS FOR A CORRECT POSITION OF THE MACHINE

The machine is designed for operation in a physical environment with the following characteristics:

Electromagnetic compatibility: The generation of disturbances and level of immunity of the machine are in accordance with point 4.4.2 of standard EN 60204-1:1997. Nevertheless, the machine should not be placed in areas close to sources of intense radiation, for example, near welding machines, industrial battery chargers, etc…



Room temperature (1): The operating room temperature of the machine should be between +15ºC and +30ºC, and ideally a constant temperature of 20ºC to obtain maximum precision.



Humidity: Relative humidity should not exceed 50% of the maximum temperature of 40 ºC. Higher relative humidity at lower temperatures can exist (for example: 90% at +20 ºC). There must be no condensation. In accordance with point 4.4.4 of standard EN 60204-1:1997

Altitude (2): The maximum installation altitude of the machine is 1,000m above sea level. In accordance with point 4.4.5 of standard EN 60204-1:1997

Pollutants: the machine's electrical equipment is protected against the penetration of solid and liquid bodies. The electrical equipment is not designed for operating in corrosive environments. In accordance with point 4.4.6 of standard EN 60204-1:1997

Vibration: The vibration frequency transmitted to the machine through the floor should not exceed 15 Hertz

Compressed air supply: Pressure: between 6 and 7 bar. Filtering level: above 5 µm in accordance with ISO 4406, Humidity: air should be passed through a refrigerated dryer with a dew point of 3ºC. The compressed air should be free of oil.

Electrical energy supply (3): This should be stable and between +/- 10% of the voltage connection to the machine at 400 V (even when working at full capacity). An electrical connection with a magnetic thermoswitch and a class A "si" super immunised differential with a leak current of 300 mA measured in accordance with the machine specifications should be fitted. The maximum permitted earth resistance is 83 Ohms. Where the machine is connected to an electrical supply with a neutral regime other than TN a separation transformer is required.

Other conditions: The machine should never be placed in environments where there is a risk of explosion, sand, wind, rain, direct sunlight, etc…

(1) Room temperatures other than those specified may require the installation of other devices to ensure the correct operation of the machine. Please refer to Ibarmia.
(2) At altitudes of more than 1000 m above sea level the performance of the drives will gradually decrease in proportion to the altitude. Please refer to Ibarmia.
(3) Other connection voltages may require operating voltage margins other than 10%.

Besides and according to the dimensions of the machine plant, the customer should provide for:

√ Enough space for a free access to any part of the machine. Minimum recommended passing area around the machine **80 cm** (for further information see the lay-out of the machine).

5 CONNECTIONS OF THE MACHINE

ELECTRIC CONNECTION



DANGER !

Danger of injury or death due to electric shock!!

An electric shock may cause the following injuries: heart failure, respiratory failure, injuries in the nervous system, burns, etc…

- The machine must be connected to an electric point following the instructions described in the electric connection section.
- Ensure that the electric cable has no tension before connecting it. Consign the electric point where the machine will be connected.
- Ensure that the building network tension is correct for the machine. The machine tension is on the identification plate on the machine and is also indicated on the previous section.
- For safety reasons, connect first the protection conductor (green yellow) to the PE terminal and then the rest. This protection conductor must not be connected to the main switch but directly to the user's protection conductor (itts continuity must never be interrupted by any device)
- As a general rule, the machine must always be consigned prior to any maintenance or repair work. There is a section in this chapter about "consigning the machine". The consignation instructions must be strictly followed.
- Exceptionally, if a maintenance or repair work requires retiring the protections of electric/electronic devices, these must be restored immediately alter finishing the works.
- Maintenance and repair Works must ALWAYS be executed by trained and authorized professionals.
- Never bridge any safety functions in the machine under any concept.
- All the regulations for accident prevention and safety instructions to work with the machine, the ones in the working centre as well as the ones in the country where the machine is installed, must always be followed.

Case of electrical net with TN-C neutral operating conditions

The machine is ready to be connected directly or through an autotransformer to a net of TN-C neutral operating conditions.

In case of a TN-C net, normally, a large defect of isolation becomes a short circuit of value enough to trip the automatic switch or fuse installed at the connection point. However, in the hypothetical case of non-large isolation defect, a current of short circuit of value lower than value of tripping automatic switch or fuse could be created. For it, it is recommended to install a residual differential device (DDR) of suitable size with a sensitivity of 0, 3 A. The characteristics of DDR device recommended by the manufacturer of electronical equipments are included in this chapter.

For that reason, the electrical connection point must have at least one automatic switch or fuse of suitable size and is also recommended the insertion of a DDR device. In the current chapter the machine electrical features are included to allow the user to size and get the suitable devices to connect the same.

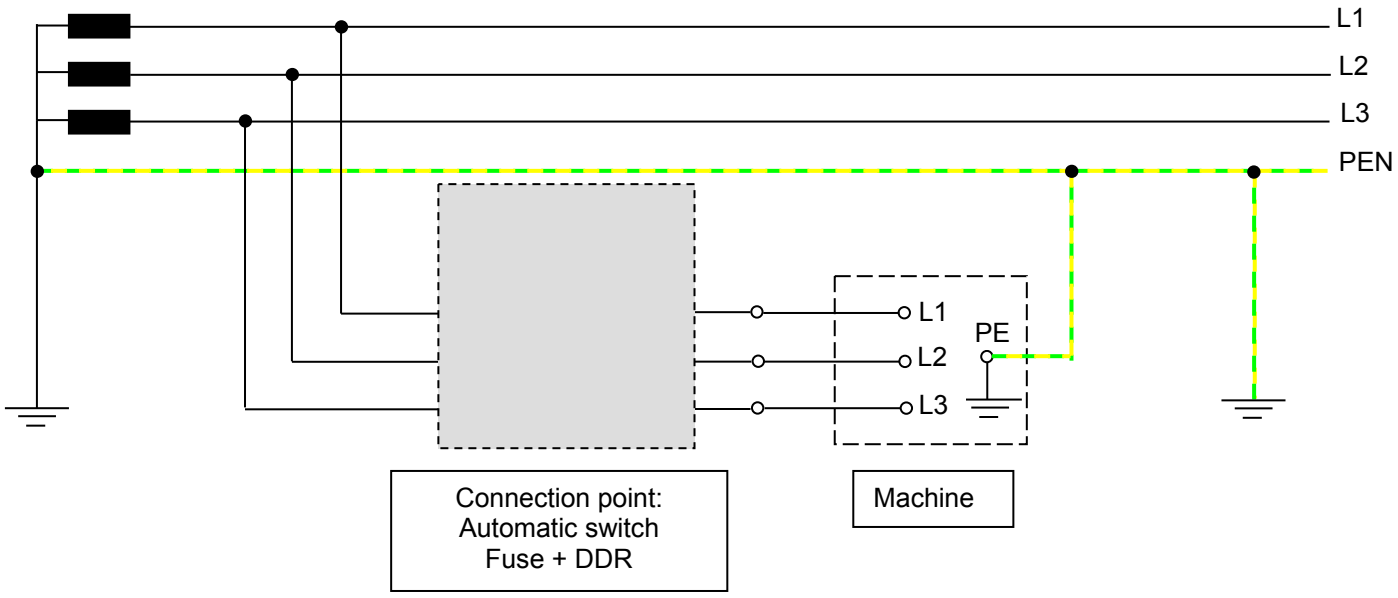


DANGER !

Danger of injury or death due to electric shock!!

An electric shock may cause the following injuries: heart failure, respiratory failure, injuries in the nervous system, burns, etc…

The machine must be installed to an electric point that meets strictly the electric and safety regulations of the country where the machine is installed. The machine owner must contact a specialist in electric networks to make a safe electric installation of the machine.



Case of electrical net with TT neutral operating conditions

In this case the machine connection must be done through an insulator three-phase transformer with centre star connected to earth in the secondary. In this way, in practice a TN-C net is created at outlet of transformer secondary. In case a divider transformer must be installed, consult the Ibarmia technical department the requested characteristics for its selection.

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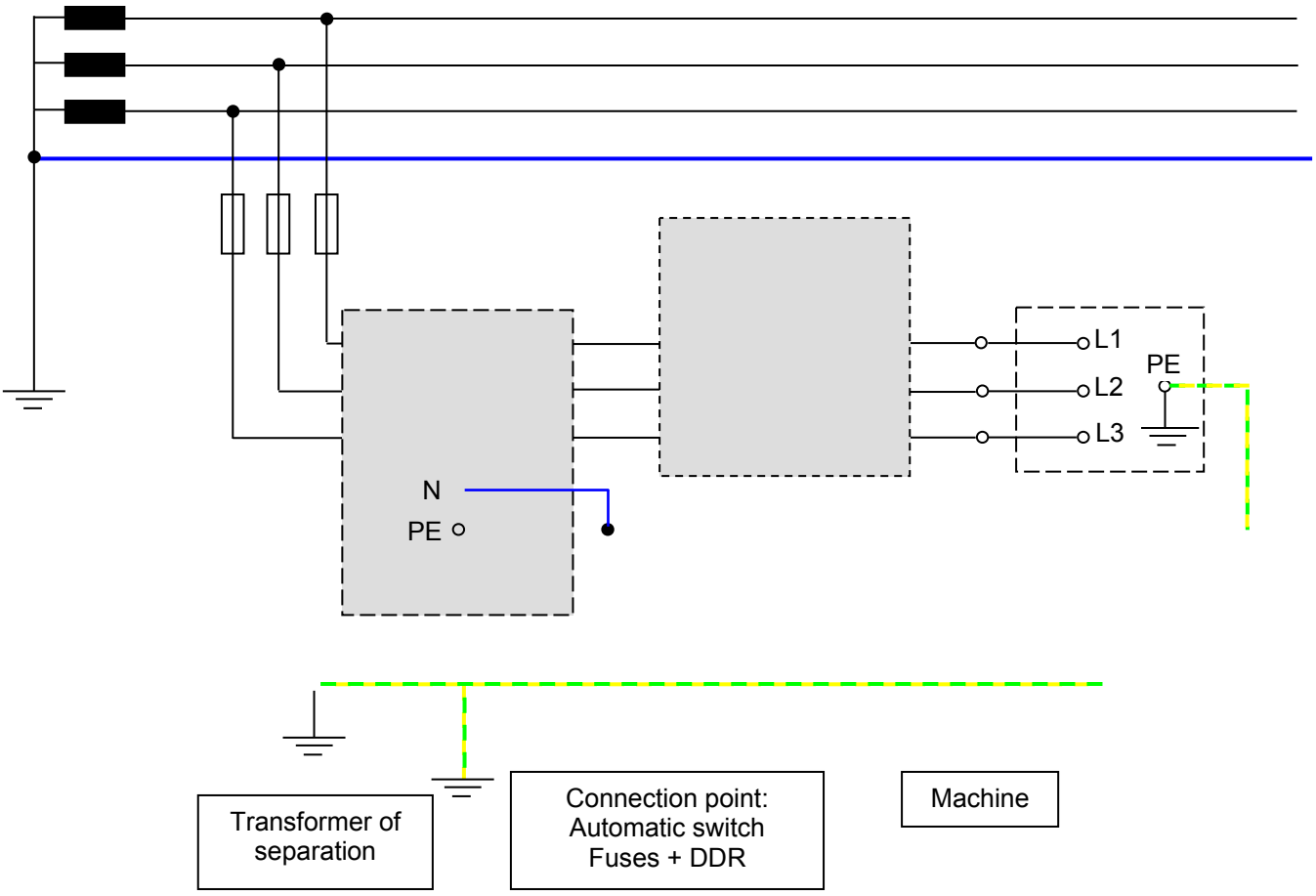
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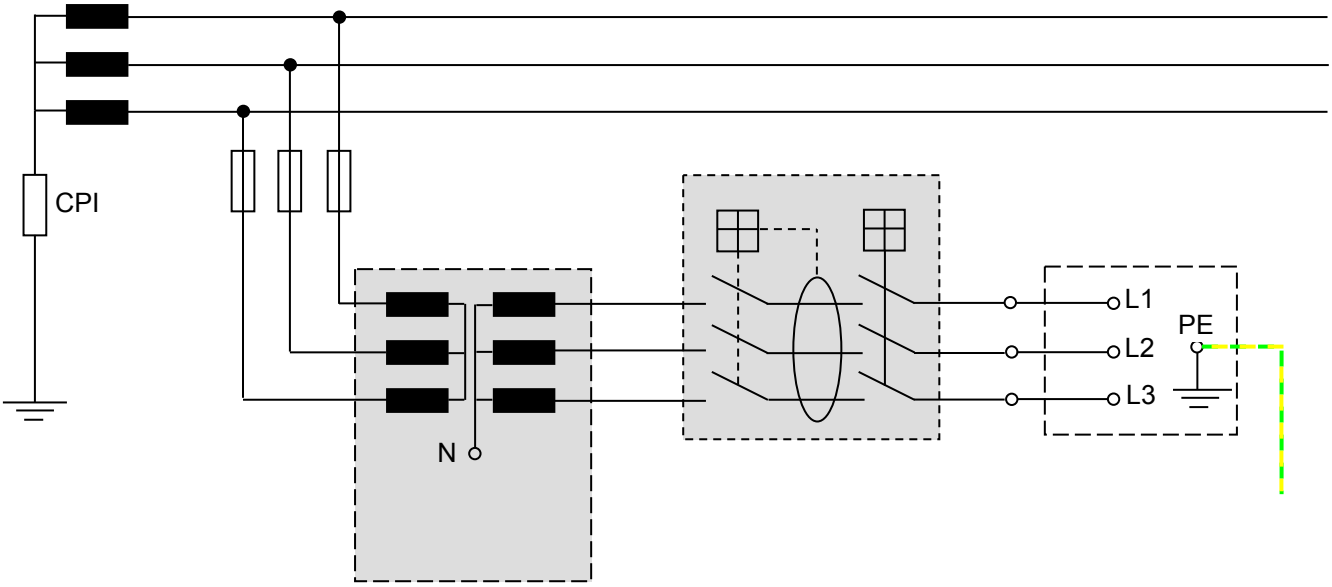
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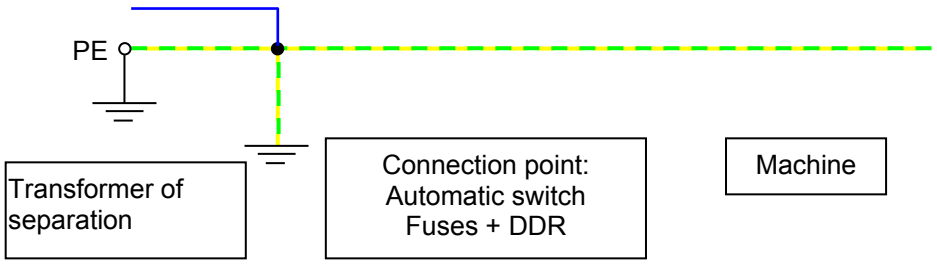
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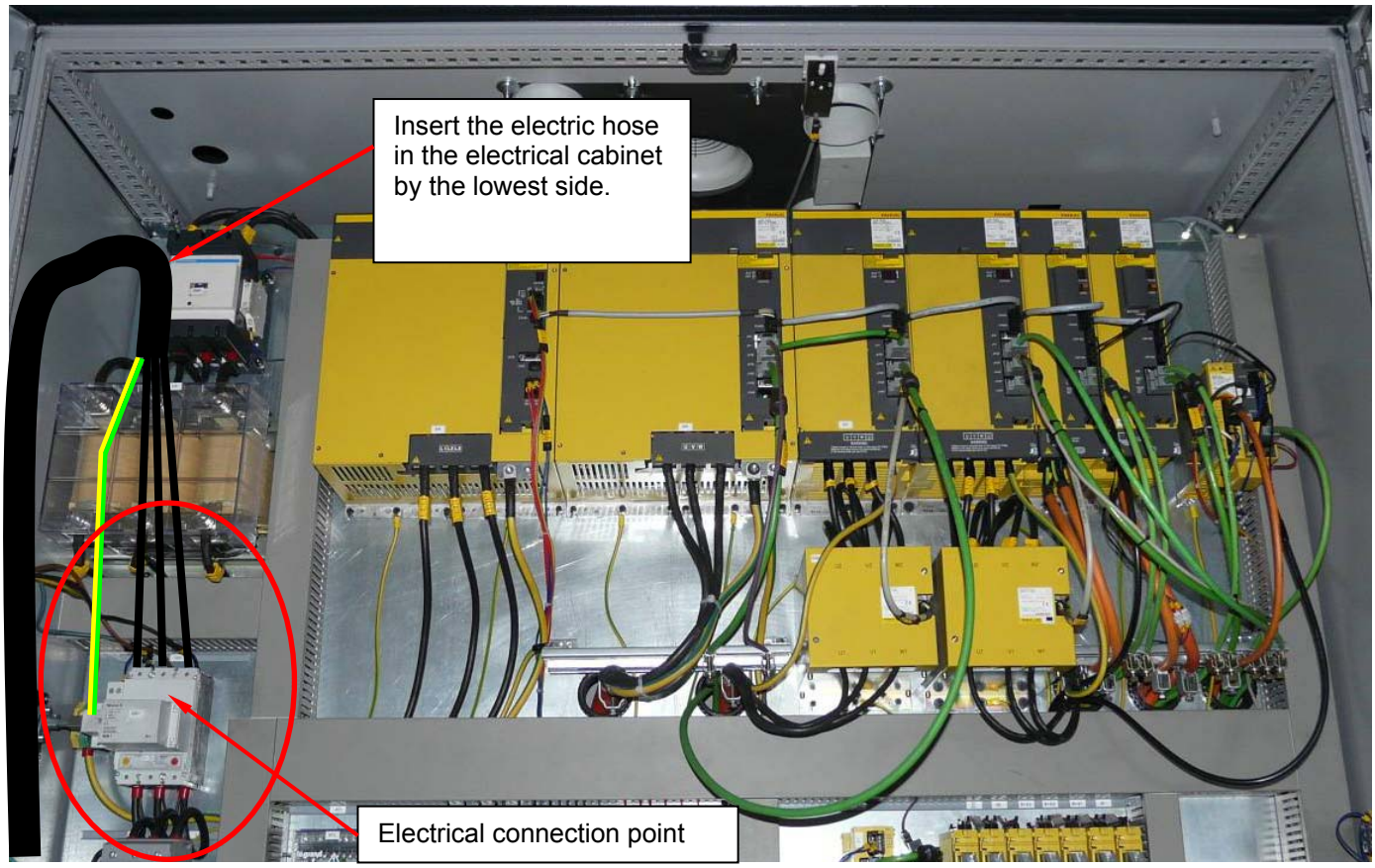
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Machine connection to electrical connection point



DANGER !

Danger of injury or death due to electric shock!!

An electric shock may cause the following injuries: heart failure, respiratory failure, injuries in the nervous system, burns, etc…

- The machine must be connected to an electric point following the instructions described in the electric connection section.
- Ensure that the electric cable has no tension before connecting it. Consign the electric point where the machine will be connected.
- Ensure that the building network tension is correct for the machine. The machine tension is on the identification plate on the machine and is also indicated on the previous section.
- For safety reasons, connect first the protection conductor (green yellow) to the PE terminal and then the rest. This protection conductor must not be connected to the main switch but directly to the user's protection conductor (itts continuity must never be interrupted by any device)
- As a general rule, the machine must always be consigned prior to any maintenance or repair work. There is a section in this chapter about "consigning the machine". The consignation instructions must be strictly followed.
- Exceptionally, if a maintenance or repair work requires retiring the

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- Maintenance and repair Works must ALWAYS be executed by trained and authorized professionals.
- Never bridge any safety functions in the machine under any concept.
- All the regulations for accident prevention and safety instructions to work with the machine, the ones in the working centre as well as the ones in the country where the machine is installed, must always be followed.

Use a cable with 4 conductors with the section specified in the connection data sheet of the machine.

The electric cable must meet the safety requirements established by the safety regulations.

Insert the electric cable by the top side of the electrical cabinet and connect it to the main switch as per the picture.

Ensure that the cable end has been correctly connected to the main switch.

WARNING !



Danger of electrical/Electronic damages!

One the machine is connected and turne don please verify that all the engines of various devices (cooling pumps, hydraulic group motor, chip conveyor motor, motor in paper filter, etc…) are turning on the right direction.

Connecting data of a Standard machine:

	ZV 58 EXTREME
Service tension (Other tensions need a previous transformer)	400 V ± 5 %
Installed total power (standard)	140 KVA
Phases	L1, L2, L3
Protection conductor	PE
Neutral conductor	No
Automatic switch size	200 A
Frequency	60Hz

Residual differential devices (DDR) for machine electrical connection

The current information is provided in case a DDR for people and machine protection in the electrical connection is necessary.

Due to the use of frequency converters for running, in the connection of the machine, differentials sensitive to any kind of currents type B (Tipo B ) must be installed.

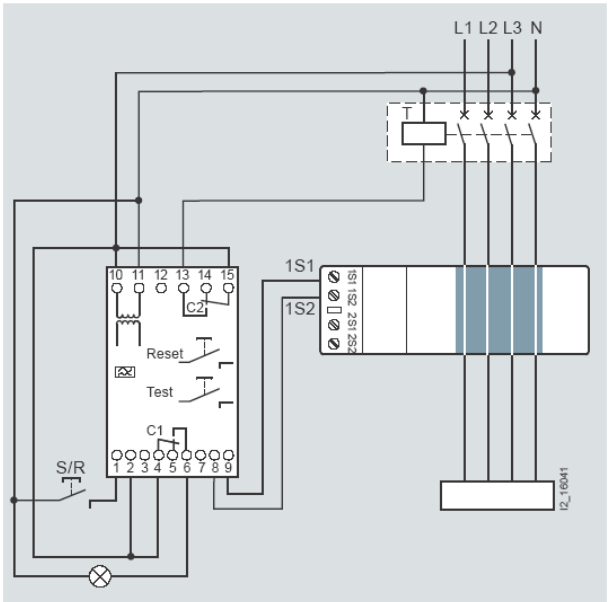
The following indicated references are a recommendation of electronical equipments manufacturer integrated in the machine.

Current of electrical connection	Differential reference	Voltage	Frequency
≤ 63 A	Siemens SIQUENCE RCCB (*) Type B Selective 3P+N 5SM3 646-5 63-A 300mA	230 … 400 V AC	50 / 60 Hz
≤ 80 A	Siemens SIQUENCE RCCB (*) Type B Selective 3P+N 5SM3 647-5 80-A 300mA	230 … 400 V AC	50 / 60 Hz
≤ 100 A	Siemens SIQUENCE RCBO (**) Type B Selective 4P 5SU1 674-8BK81 100-A 300mA	400 V AC	50 / 60 Hz
≤ 125 A	Siemens SIQUENCE RCBO (**) Type B Selective 4P 5SU1 674-7BK82 125-A 300mA	400 V AC	50 / 60 Hz

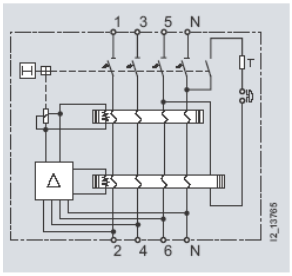
(*) RCCB: In this type of schema the differential goes loose (dimensions up to 80A). The user must add an automatic switch of the same size to the differential at the connection point.
(**) RCBO: In this type of compact schema the differential and the automatic switch go together (sizes 100A – 125A).
For the case of current intensities of connection higher than 125 A, differentials and compact automatics of type B are not produced. Only the type A are produced (Tipo A ). The manufacturer of electronical equipments recommends putting a transformer differential of intensity and a surveillance device of differential intensity. The surveillance device of differential intensity must then attack to shot relay of an automatic switch of the required size depending on the current intensity of the connection. The references of the recommended devices by the manufacturer of the electronical equipments are:

Transformer intensity differential	Surveillance device of differential intensity
5SV8 703-0KK (Ø 70 mm)	RCM digital type A Selective 230 V/50Hz regulated at 300 mA 5SV8 001-6KK

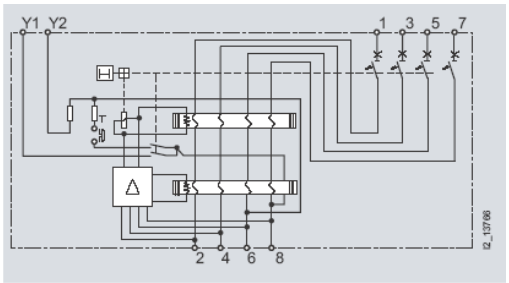
Current of electrical connection	Reference of automatical switch	Voltage	Frequency
160 A	Siemens SENTRON 3VL2716-1EJ43-8TA0	… 690 V AC	50 / 60 Hz
200 A	Siemens SENTRON 3VL3720-1EJ43-8TA0	… 690 V AC	50 / 60 Hz
250 A	Siemens SENTRON 3VL3725-1EJ43-8TA0	… 690 V AC	50 / 60 Hz



RCM digital, 5SV8 001-6KK, disparador por emisión de corriente (ST)



IDs SIQUENCE, tipo B
3P+N, 4 módulos



Combinados SIQUENCE, tipo B
4P, 11 módulos



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Danger of injury or death due to electric shock!!

An electric shock may cause the following injuries: heart failure, respiratory failure, injuries in the nervous system, burns, etc…

- The machine must be installed to an electric point that meets strictly the electric and safety regulations of the country where the machine is installed. The machine owner must contact a specialist in electric networks to make a safe electric installation of the machine.
- Information provided on this document corresponds to the one provided by the manufacturer of the electric equipment.
- Depending on the electric network of the building where the machine is installed even installing the indicated devices, issues may occur. In that case, it is necessary to a transformer of separation between the machine and the electrical installation of the user's building.



WARNING !

The machine manufacturer will not accept any responsibility if the safety instructions are not followed.

NETWORK CONNECTION

For the correct functioning of IBARMIA´s SMART POINT application is necessary a cable connection to the network.

See the images below of the connection point inside the electrical cabinet.

Is necessary that the client provides to IBARMIA the following information:

- IP/GATEWAY
- Machine user E-MAIL





NEUMÁTIC CONECTION

The group of compressed air treatment is located on the side of the electrical cabinet.



Pneumatic connection point

Filter entry and water drain



DANGER !

Danger of injury due to compressed air!

Compressed air exit may damage skin and eyes.

- Always follow the instruction regarding compressed air described in chapter 2.

Machine must be connected to a pneumatic point that meets the following requirements	
Compressed air entry pressure	6 / 7 bar (stable pressure)
Compressed air	**ISO 8573-1:2001 class 2.4.1**
	Max nº of particles between 0,1 and 0,5 µm /m³ of compressed air: 100.000 Max nº of particles between 0,5 and 1 µm /m³ of compressed air: 1.000 Max nº of particles between 1 and 5 µm /m³ of compressed air: 10
	Dew point 3ºC
	Max. oil (spray or vapour 0,01 mg/m³

Consumption of compressed air in the machine

Next are given the approximate consumption of different devices which need compressed air to work. Some of them can be no integrated in your machine because they are optional and have not been ordered with the machine. Please check the ordered optional devices.

Devices which need air compressed continuously			
Device	Working pressure	Consumption l/min at 6 bar	Time of working
Sealed of electrospindle nose (main spindle)	6 bar	300 l/min	Continuous
Sealed nose of rotary table of horizontal turning (optional)	5 bar	200 l/min	Continuous
Oil-air lubrication	4 bar	25l/min /each bearing	Continuous

Devices which need compressed air at executing the working cycle			
Device	Working pressure	Consumption l/min at 6 bar	Time of working
Blowing main spindle taper	6 bar	340 l/min	2 / 3 seconds by cycle
Open / close door tool magazine	6 bar	230 l/min	2 / 3 seconds by cycle
Activate water gun	6 bar	No mean	Cycle
Activate air gun	6 bar	250 l/min	While is activated

Taking into account the information of consumption of compressed air, the user can calculate the needs of compressed air for his machine and dimension properly the size of requested compressor.



The consumption is at 6 bar of pressure measured in the connection point of compressed air of the machine (it is independent of final working pressure of referenced device).

ISO 8573-1:2001 Compressed Air Quality Standard

ISO 8573-1:2001 CLASS	Solid Particulate					Water		Oil
	Maximum number of particles per m^3			Particle Size micron	Concentration mg/m^3	Vapour Pressure Dewpoint	Liquid g/m^3	Total Oil (aerosol liquid and vapour)
	0.1 - 0.5 micron	0.5 - 1 micron	1 - 5 micron					mg/m^3
0	As specified by the equipment user or supplier					As specified by the equipment user or supplier		As specified by the equipment user or supplier
1	100	1	0	-	-	-70°C	-	0.01
2	100,000	1,000	10	-	-	-40°C	-	0.1
3	-	10,000	500	-	-	-20°C	-	1
4	-	-	1,000	-	-	+3°C	-	5
5	-	-	20,000	-	-	+7°C	-	-
6	-	-	-	5	5	+10°C	-	-
7	-	-	-	40	10		0.5	-
8	-	-	-	-	-		5	-
9	-	-	-	-	-		10	-



WARNING!

Danger of mechanical damages!

The machine manufacturer will not be responsible for any damages if the compressed air used is not correct.

WARNING!

Danger of mechanical damages!

It is very important to meet the quality specifications of the compressed air.

In the process of obtaining compressed air, this gets hot and absorbs humidity. If the equipment to generate compressed air is not correct, the air provided won't meet the specs and will be humid (Dew point over 3ºC)

The equipment to treat the compressed air does not have an air dryer so humidity will get into the pneumatic circuit and cause damages.

Water in the solid particle filtering glass is a sign of out of spec air (regarding humidity). Drain it weekly if there is water. This filter for solid particles is not a water filter. The machine user must be aware that there is an issue with the compressed air provided to the machine and will be responsible for any damages.

Some machine components might require oiled air (air with an oil concentration of less than 0, 01 mg/m³). The machine user is responsible for providing air with this spec. In this case, the manufacturer installs filters with oil retention. These filtres are efficient until they get blocked. The frequency of replacing these filters depends of the level of oil contamination of the air provided. If the compressed air meets the specification, the filter will protect safely the pneumatic circuit and it will be enough with replacing it once a year.

HIDRAÚLIC CONECTION

Las conexiones hidráulicas de los grupos hidráulicos son internas y por lo tanto no necesitan realizar ninguna conexión externa como las de la parte neumática o eléctrica.





DANGER !

Danger to health and enviroment due to hydraulic liquid!

The hydraulic liquids can get up to 80C temperature and be under pressure.

Contact with hydraulic liquids may cause allergic reactions, skin and eye irritations, injuries and burns.

Hydraulic liquids may damage the enviroment.

6 TYPES OF FOUNDATION



ATTENTION!
The details/images in this manual are illustrative. The orientation of the concrete pouring path and the chocks is clearly indicated in the foundation drawing in the annexes.

NOTES TO TAKE INTO ACCOUNT:

A suitable installation is an essential condition to assure the correct functioning of the machine and to get the required precision.

For this it is necessary to prepare an emplacement surface with enough load capacity to hold up the machine weight and with enough rigidity to avoid deformations.

Preparation of the emplacement surface will be according to provided dimensions in the attached foundation drawing, taking into account that its depth depends on the conditions of the ground.

The dimensions provided in the drawing are considered minimum measures, it is customer's responsibility to choose this or other solution.

Resistance of floor concrete: minimum 25 N/mm2

- Check values of concrete resistance and loading capacity of cement floor in the foundation plan of the machine.
- Client will be responsible for ensuring that concrete and floor fulfil requirements indicated in the foundation plan.
- To ensure the machine correct working, it is essential to fulfil specifications of foundation resistance and loading capacity of the floor indicated in the foundation plan.



We recommend to verify the levelling periodically in order to check possible variations. For this it is necessary to prepare the square, clocks and all required elements to level the machine when required.
(Always verify calibration date of the elements to use in the levelling).

FOUNDATION GUIDELINES

- *Make pit and foundation holes as per drawing attached.*

-Hole walls must be wrinkled and free of dust for an optimal result.

-The dipsticks must be free of grease, dust or rust for good adherence between the bar and the mortar.

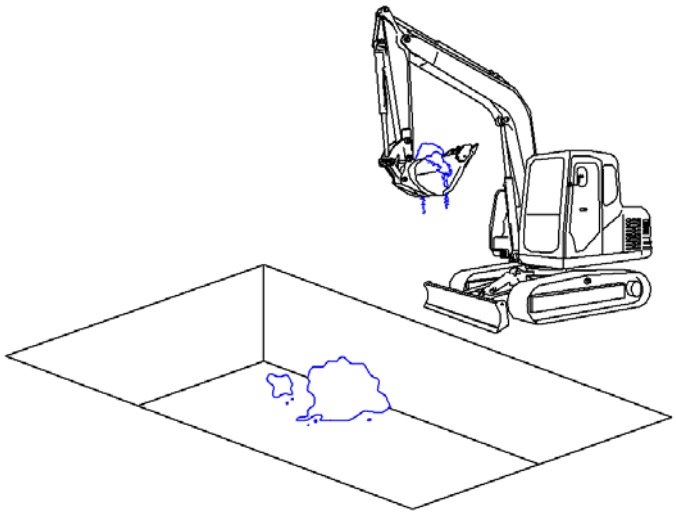
-The mortar mix must be homogenous and consisten.

-Always use calibrated and certified measuring devices for machine levelling. Check calibration date of the measuring devices.

FOUNDATION PROCEDURE

Please follow these steps for machine foundation:

1 – Dig a pit of approximately 800 mm depth.



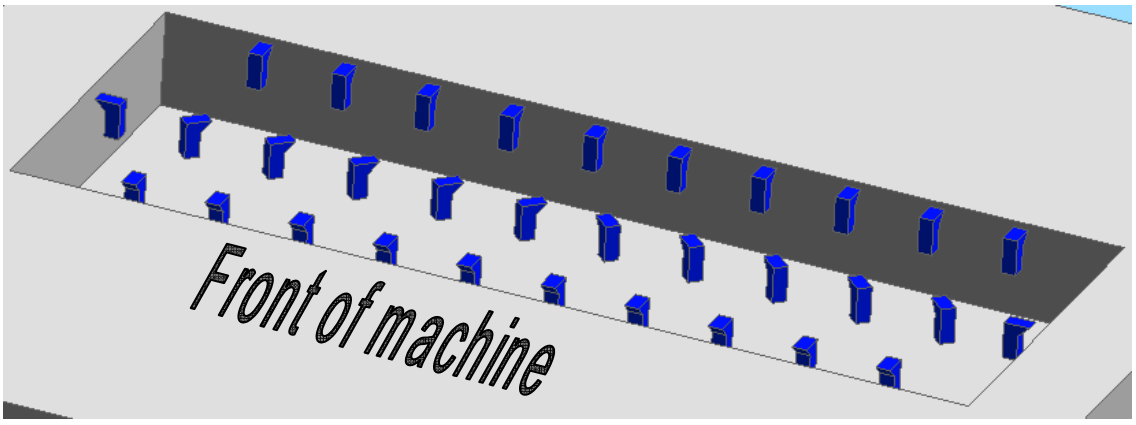
2 options for anchorage fitting:

A) Polystyrene.

B) Drillings.

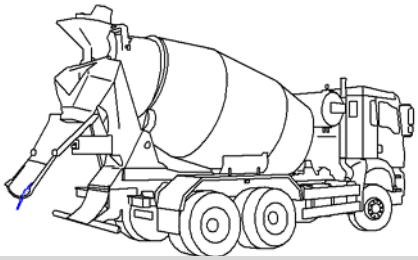
C) Drillings. Chemical foundation.

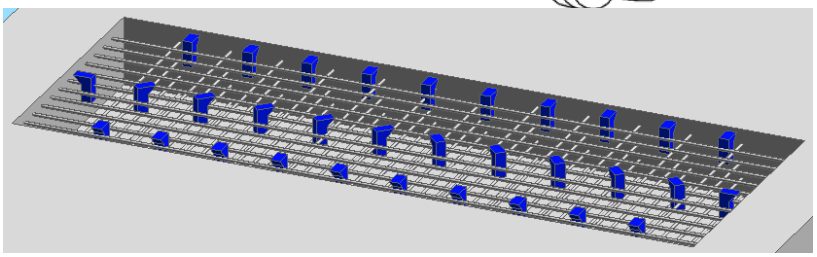
A.1). Place polystyrenes in the machine anchoring points (not provided by IBARMIA). These are placed together with the metal meshing to avoid interferences. Consider the correct orientation of the polystyrene inclination when fitting them.

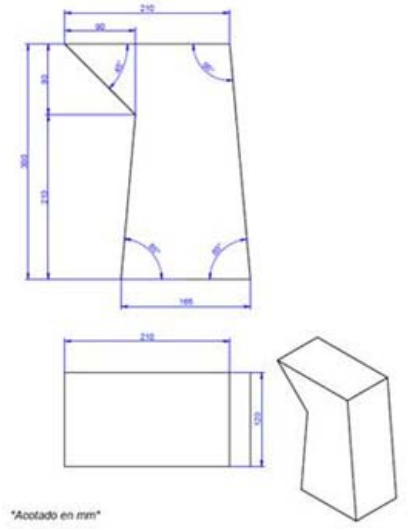


ATTENTION, THE DETAIL IS GENERIC, IS NOT YOUR MACHINE

A.2) Fill the pit with concrete.. Once settled, destroy the polystyrenes with dissolvent.

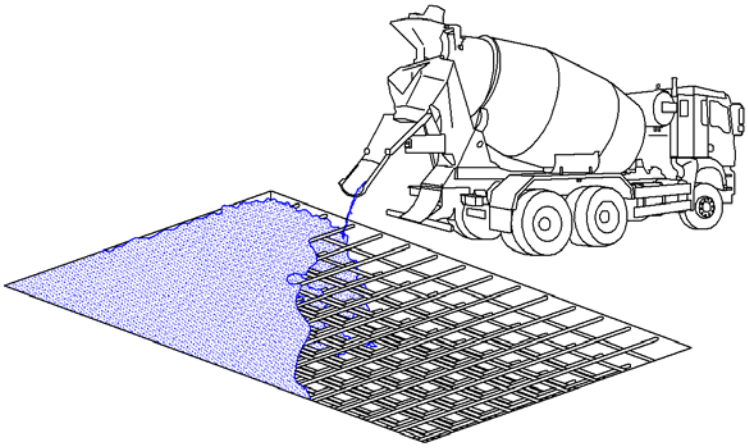




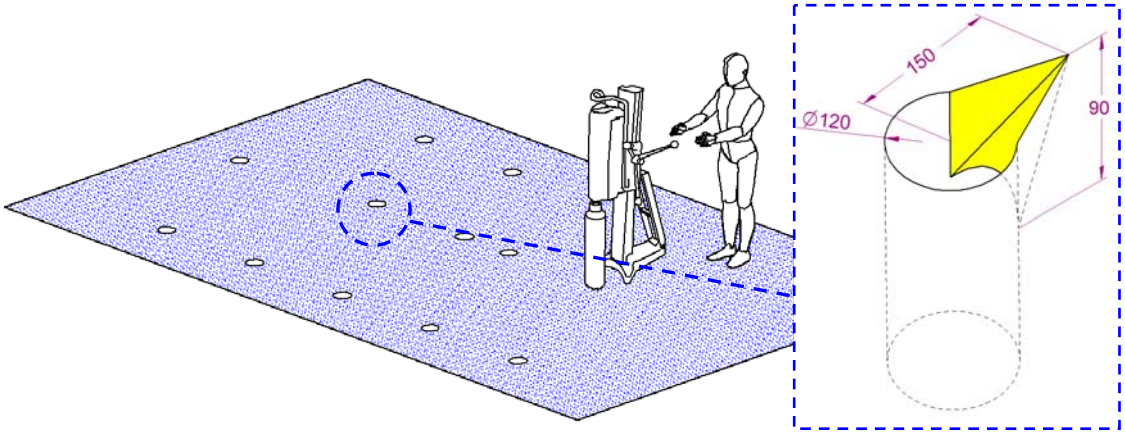


ATTENTION, THE DETAIL IS GENERIC, IS NOT YOUR MACHINE

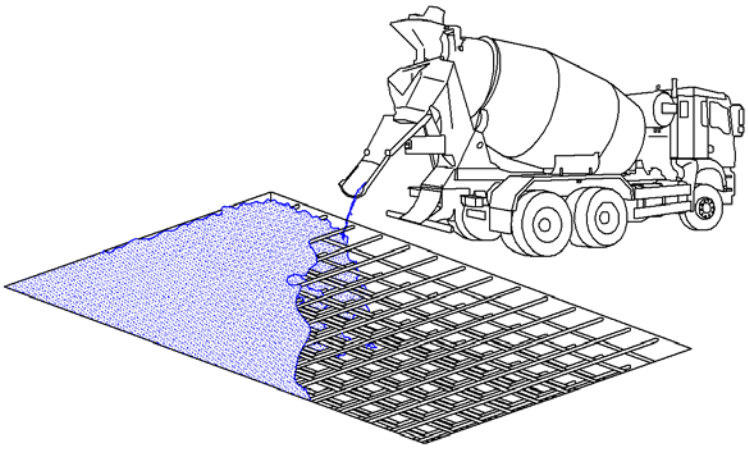
B.1) Fill up the pit with concrete and steel rods.



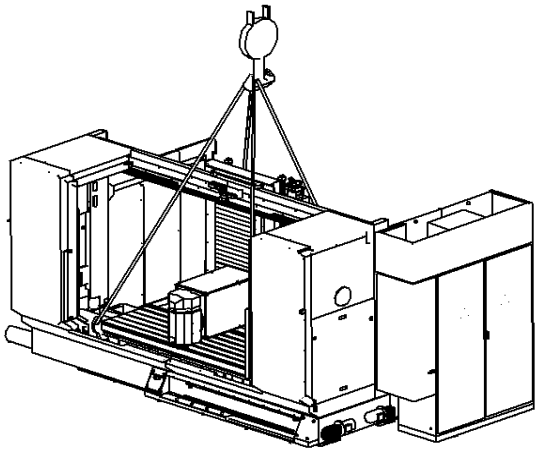
B.2) Once the concrete has been solidified, make the ø 120 mm holes. Generate the inclinations using a cutting disc (check the correct orientation) to add the anchoring mortar.



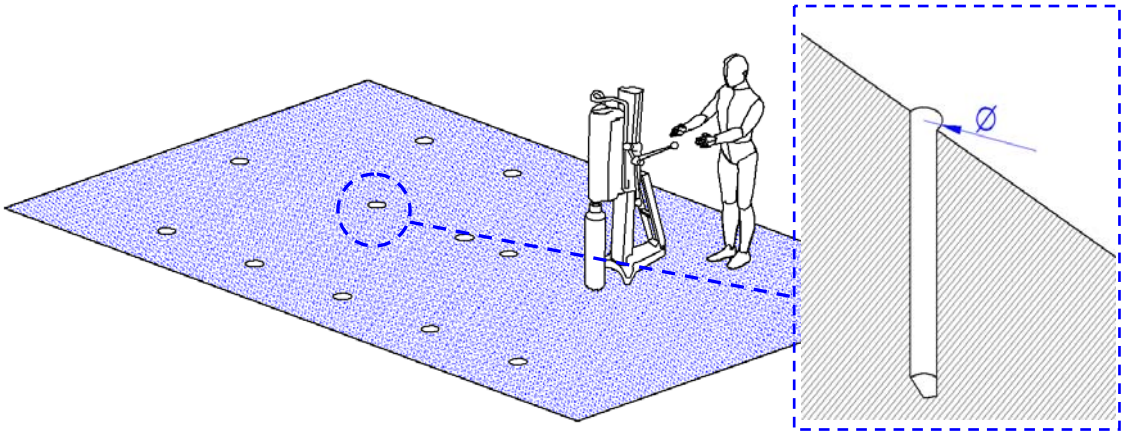
C.1) Fill up the pit with concrete and Steel rods.



C.2) Once the concrete has solidified, place the machine in the correct position, and mark all the holes in the basement.



C.3) Move away the machine and make the øD mm holes in the positions marked before. Afterwards follow the procedure that requires the chemical capsule.



IMPORTANT!

IBARMIA recommends using this product:

-CHEMICAL CAPSULE HVU2 M20x170 HILTI
-ANCHORING BOLT HAS-E M20X170/158 HILTI



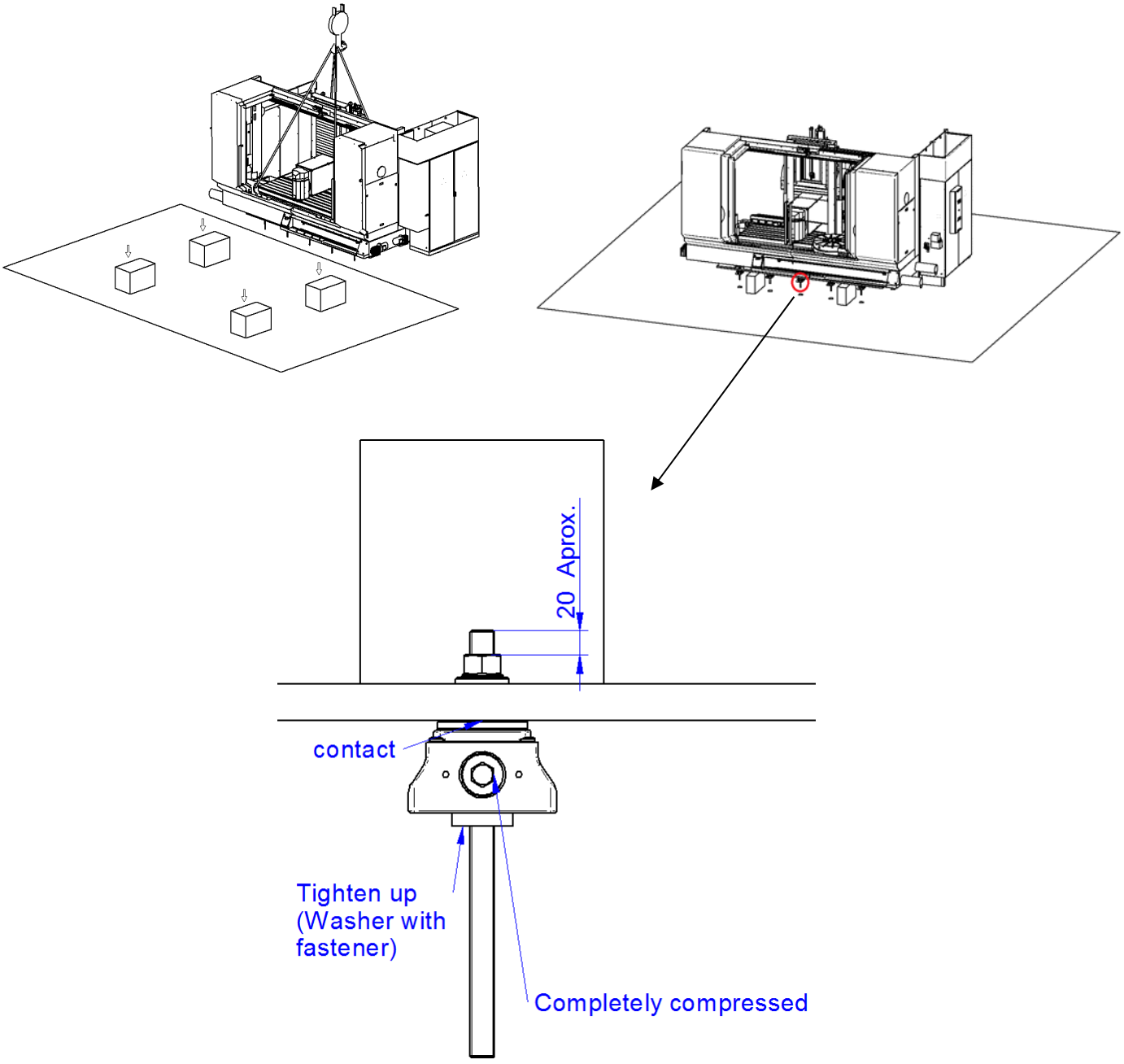
¡ WARNING !

ATTENTTION! Read purchased products instructions before making the holes in the ground. The size of the holes, and the procedure can be different for each product.

3- Depending the type of foundation there are 2 different procedures

3.1- Standard foundation.
3.1.1- Put the levelling shims with the anchoring bolts hanging underneath the machine.
To position the central row, with the machine held by the crane, rest it on trestles or supports that can withstand the weight of the machine. 4-6 or 8 supports will be necessary depending on the dimensions and weight of the machine. The minimum height of the supports will be 400 mm.

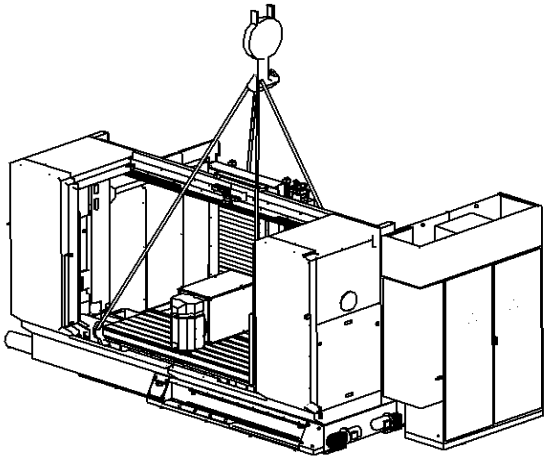
Position all chocks as compressed as possible against the bottom side of the bench.

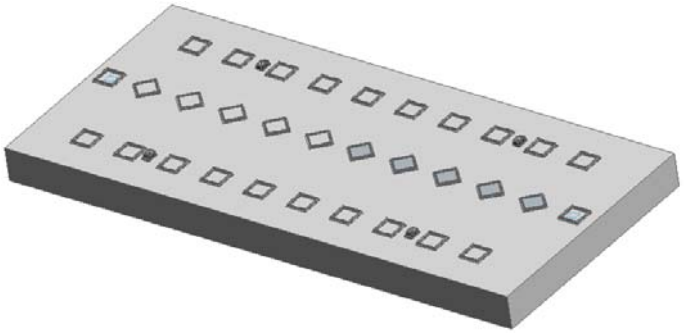


3.1.2 – Position:
90x90x300 support blocks.
Mortar retention frames on each hole.

Extra chocks for prelevelling (supplied by IBARMIA).

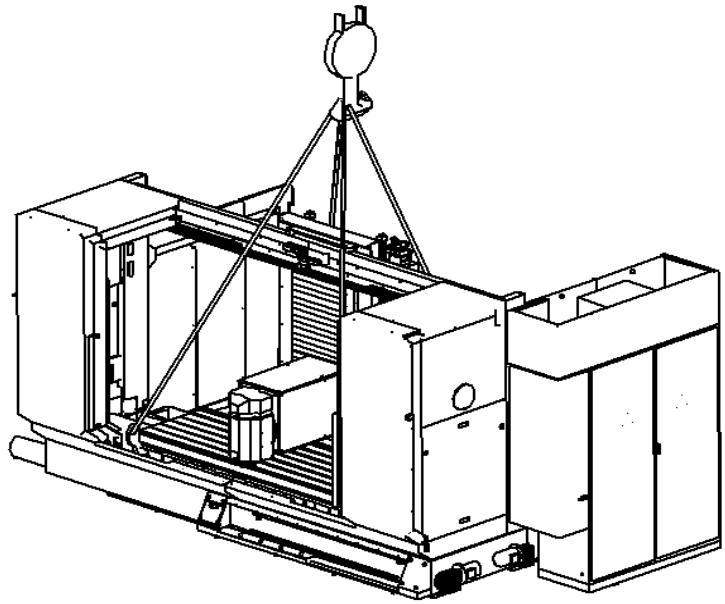
Place the machine on the supports of 90x90x300

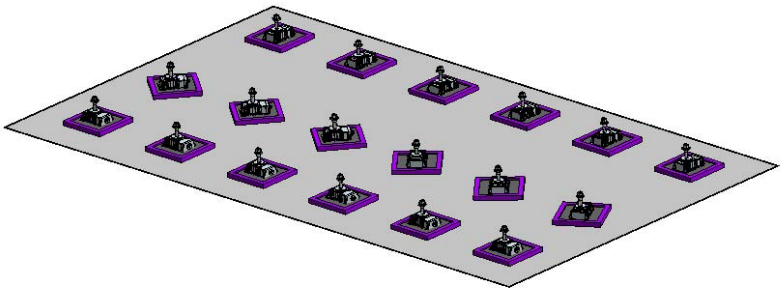




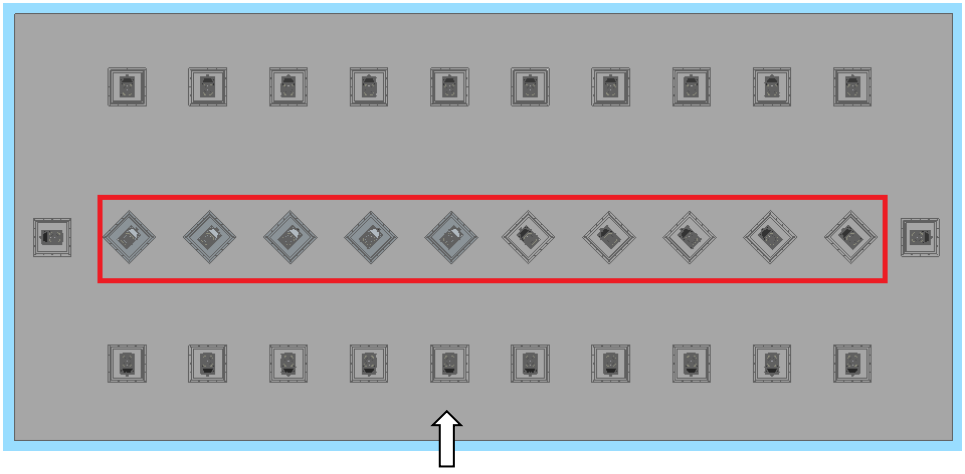
3.2- Chemical Foundation
3.2.1-Fix the anchoring bolts in the foundation as explained before. Put the levelling shims and then place the machine introducing each anchoring bolt in the corresponding hole in the basement of the machine.

Position all chocks as compressed as possible against the bottom side of the bench.





ATTENTION! The chocks in the central line (red) must be in diagonal direction, in this way they can be adjusted from the superior windows in the base. This is valid for both chemical and standard foundation. See foundation drawing for the exact orientation of the chocks.

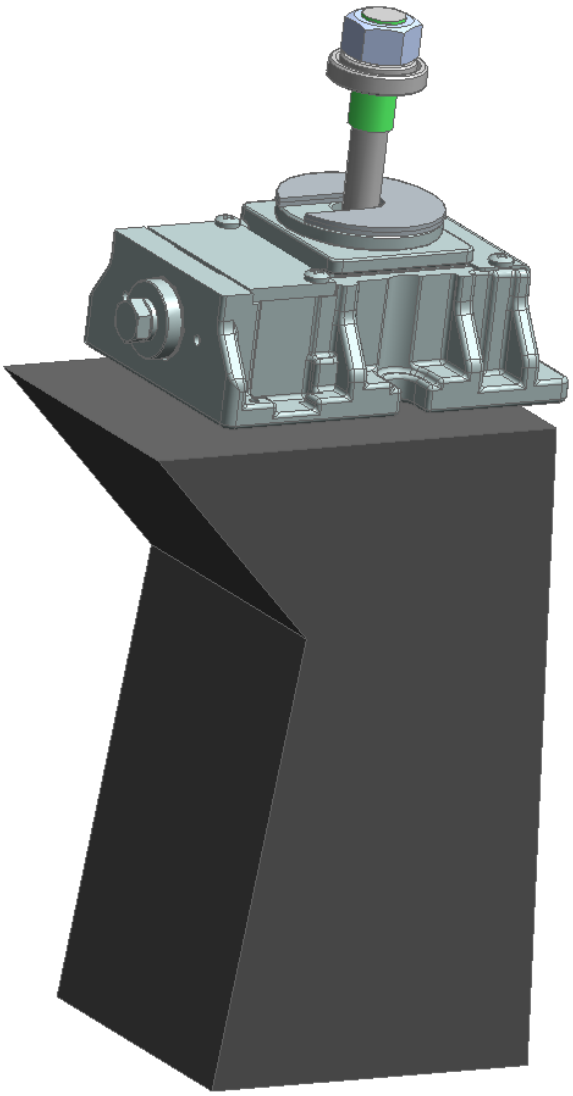


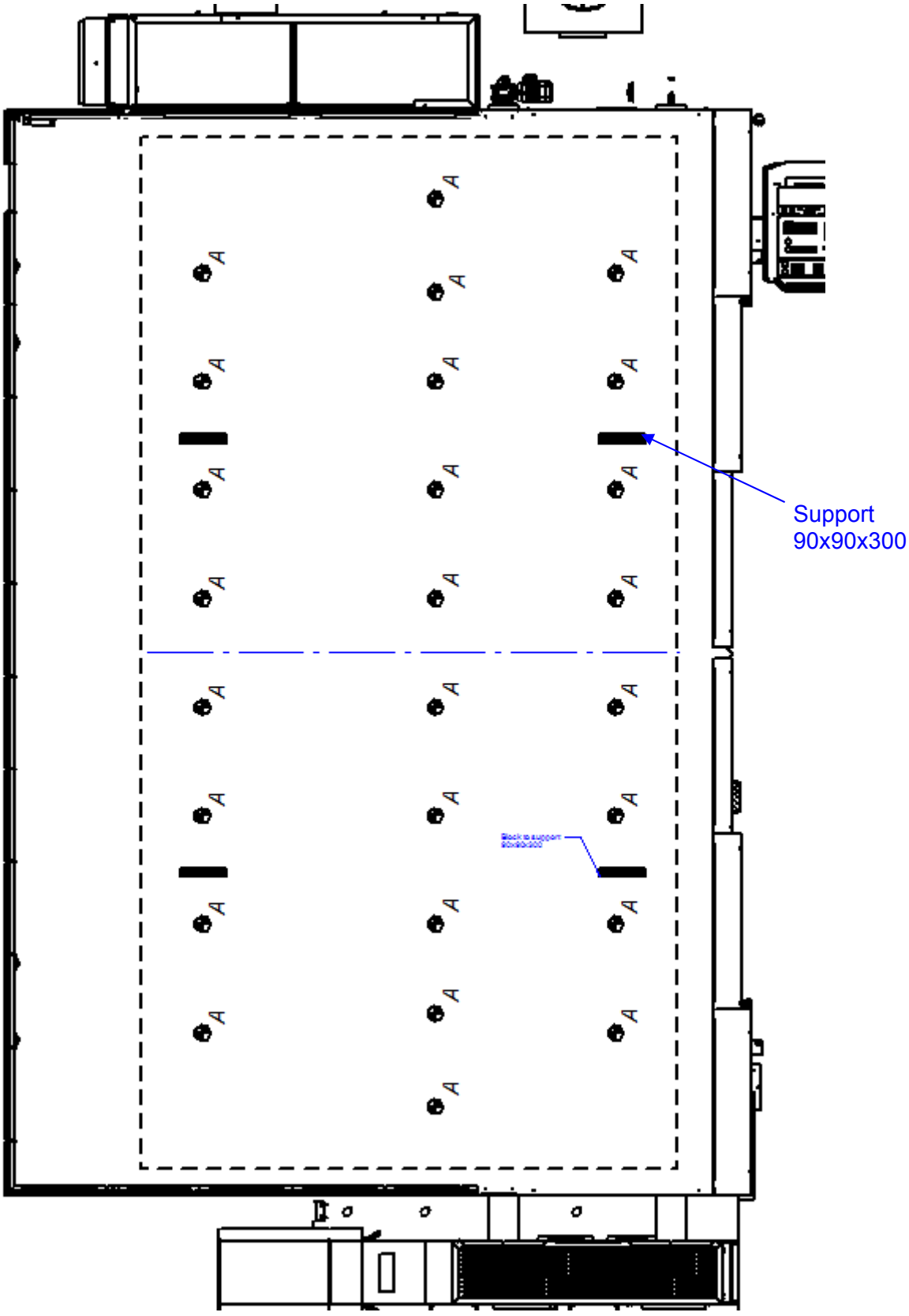
FRONT PART

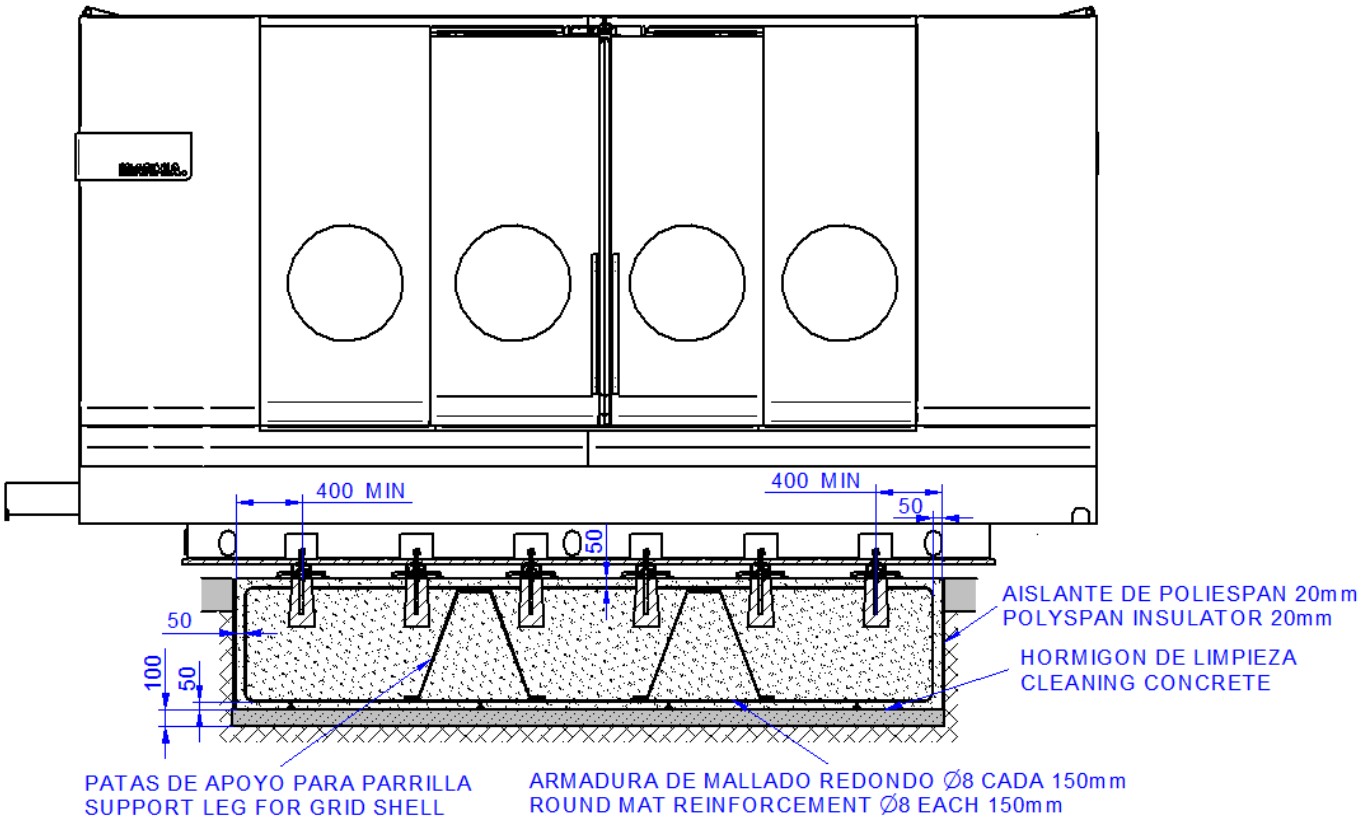
ATTENTION, THE DETAIL IS GENERIC, IS NOT YOUR MACHINE

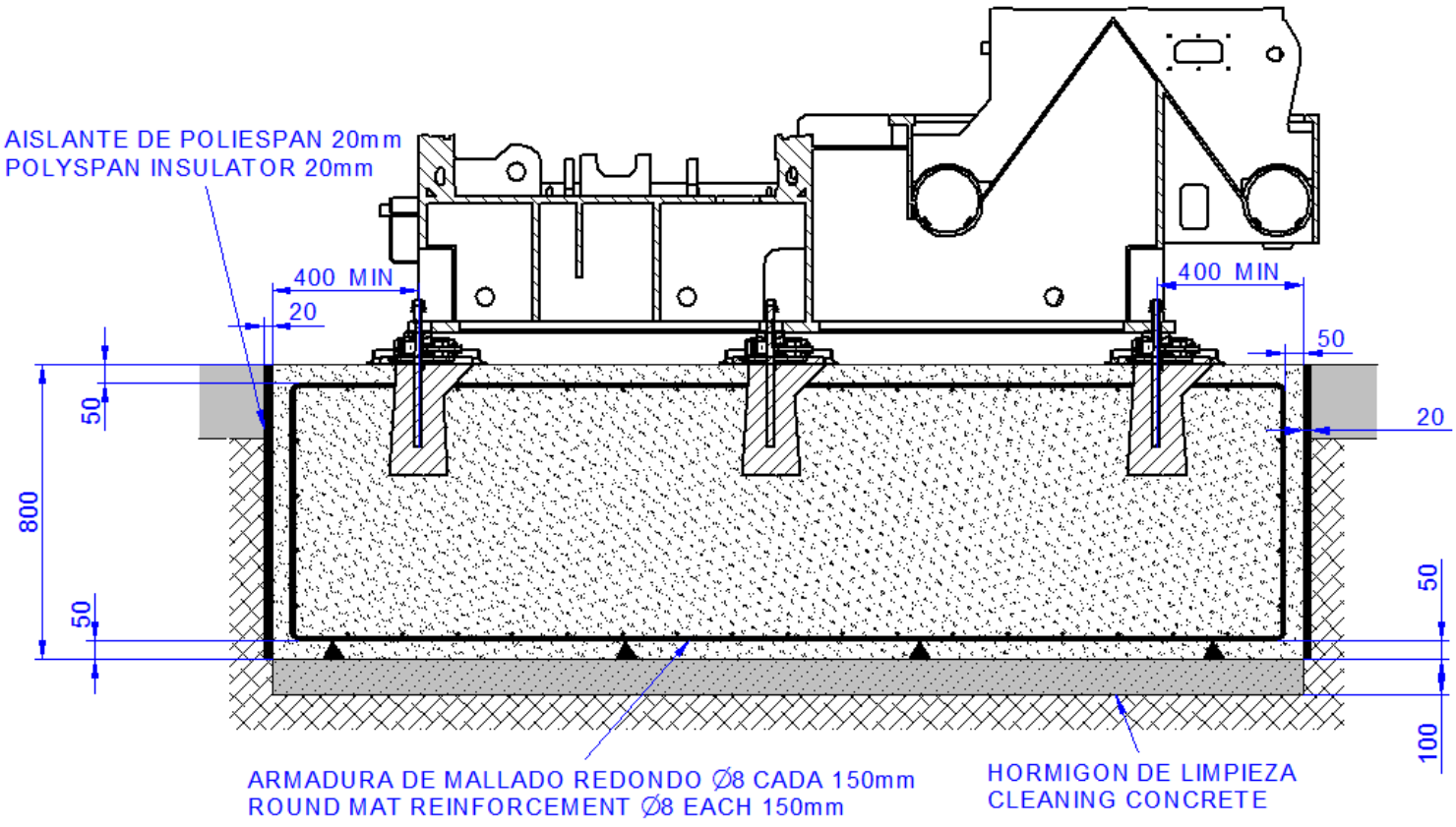
ATTENTION

When positioning the chocks, the bolt must be aligned with the concrete pouring path. The exact orientation is defined in the foundation drawing in the annexes.




Support
90x90x300

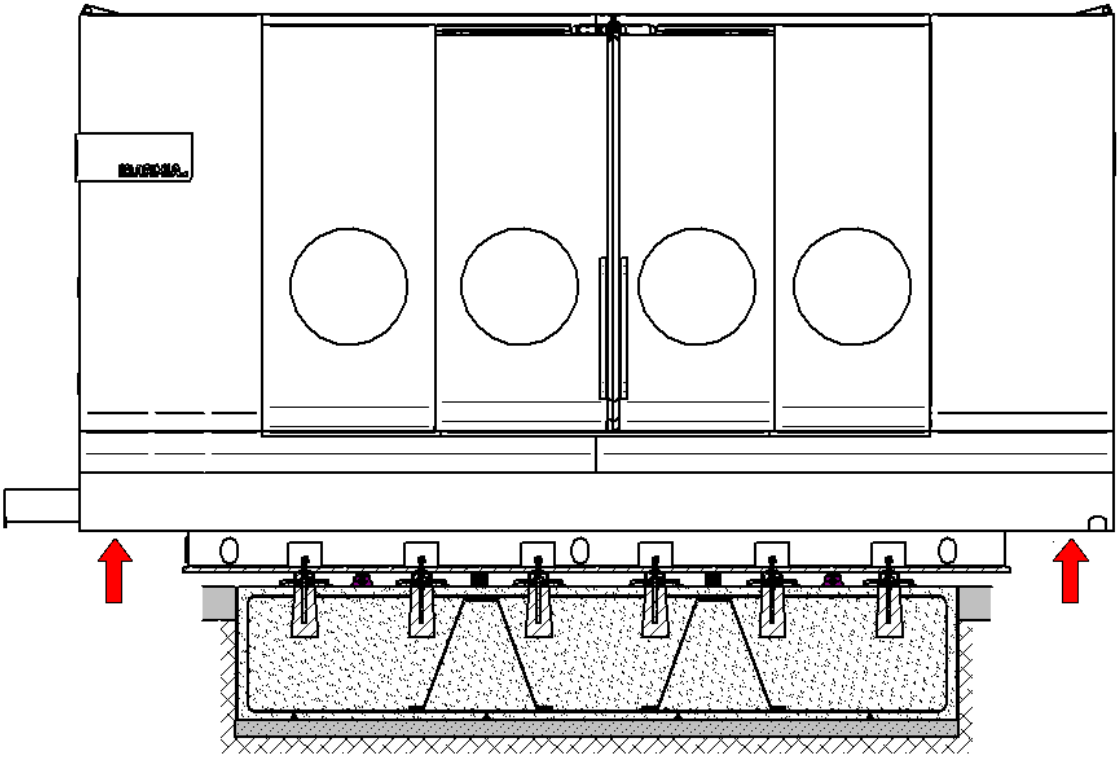

400 MIN
400 MIN
50
50
50
100
50
AISLANTE DE POLIESPAN 20mm
POLYSPAN INSULATOR 20mm
HORMIGON DE LIMPIEZA
CLEANING CONCRETE
PATAS DE APOYO PARA PARRILLA
SUPPORT LEG FOR GRID SHELL
ARMADURA DE MALLADO REDONDO ∅8 CADA 150mm
ROUND MAT REINFORCEMENT ∅8 EACH 150mm


AISLANTE DE POLIESPAN 20mm
POLYSPAN INSULATOR 20mm
400 MIN
20
400 MIN
50
50
800
50
20
50
100
ARMADURA DE MALLADO REDONDO ∅8 CADA 150mm
ROUND MAT REINFORCEMENT ∅8 EACH 150mm
HORMIGON DE LIMPIEZA
CLEANING CONCRETE

4 – Prelevelling of the machine.

All the equipment that is going to be used for prelevelling the machine must be in good condition and certified (see sheet of the last calibration).

With the machine on the 90x90x300 blocks, lift the machine activating the extra levelling chocks until the 90x90x300 blocks are freed.

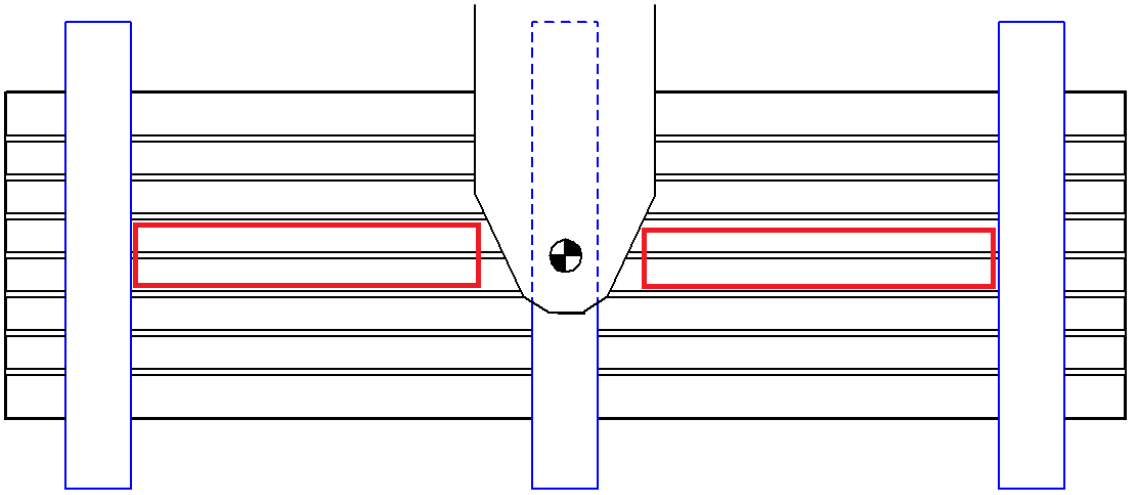


The extra levelling chocks might, depending on the irregularity of the ground, need to be chocked so that their effective travel can lift the machine.

With the machine supported and the head in the central position of the X travel and without having assembled the fairing, put a level in the middle of the table on a rectified ruler or marble.

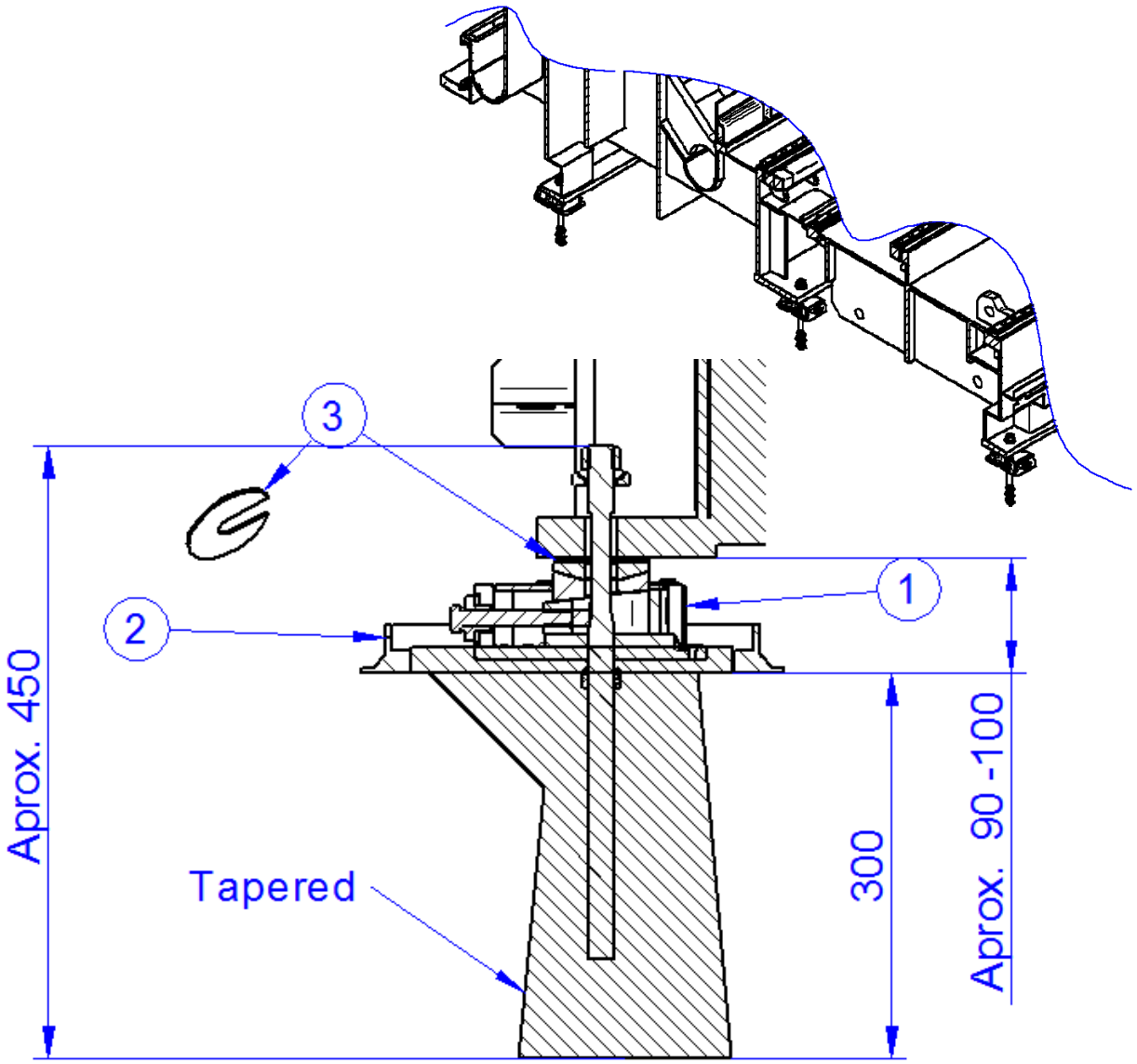
Prelevel the machine approximately, on the extra levelling chocks.

Prelevel the machine in the X and Y axis as shown in the image below. The achieved prelevelling has to be approximately 0,1mm/m.



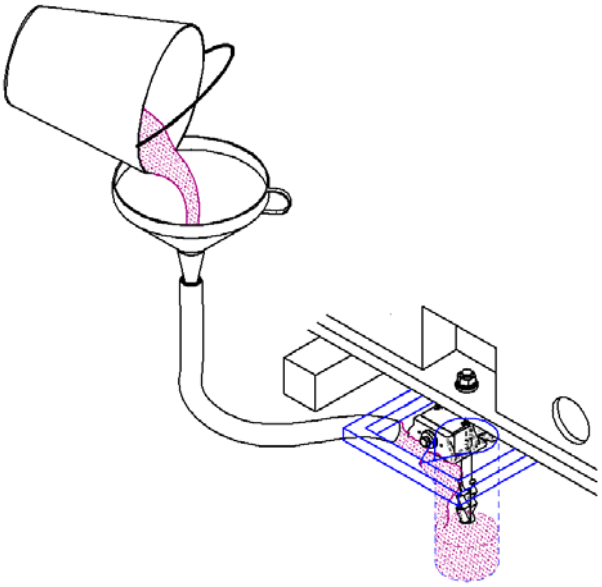
5 – Anchoring the fixing points.

Depending on the model the machine might have to raws of points instead of three (no centrals points).



REF.	DESCRIPTION	CODE	SUPPLIED BY
1	Levelling shim	-	IBARMIA
-	Steel support	90x90x300	CUSTOMER
2	Retention frame	-	IBARMIA
-	Flexible tube	-	CUSTOMER
-	Funnel	-	CUSTOMER
-	Concrete	-	CUSTOMER
3	Levelling washer		IBARMIA

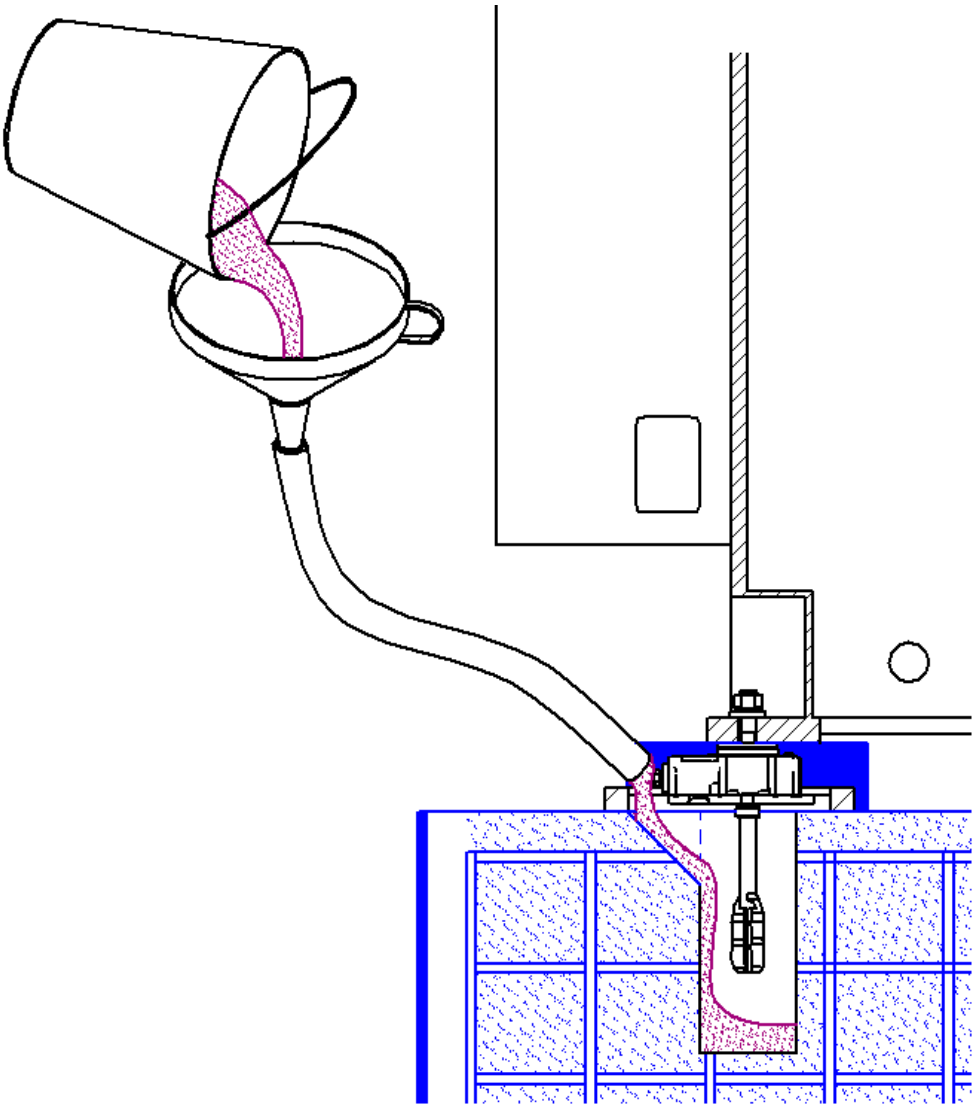
5.1 – External points:



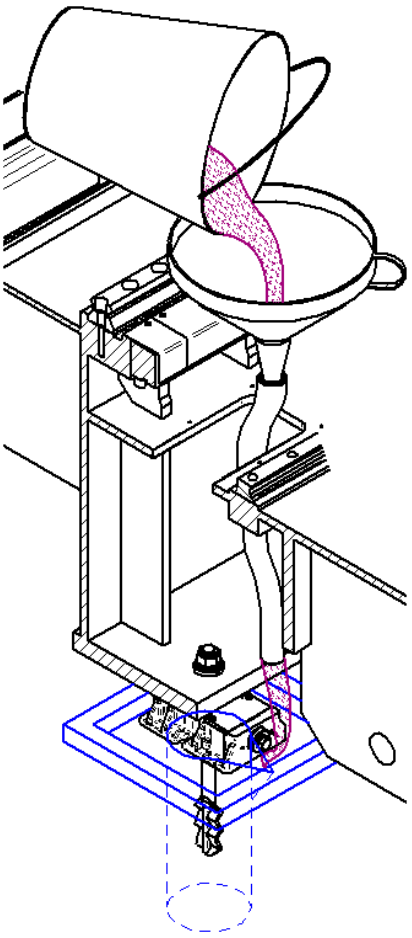
5.1.1 – Fill up the hole with special cement (**Ej.: SIKA GROUT 218**).

For this purpose are used a funnel and a flexible tube.

The levelling shim will be 10-15mm over the ground.



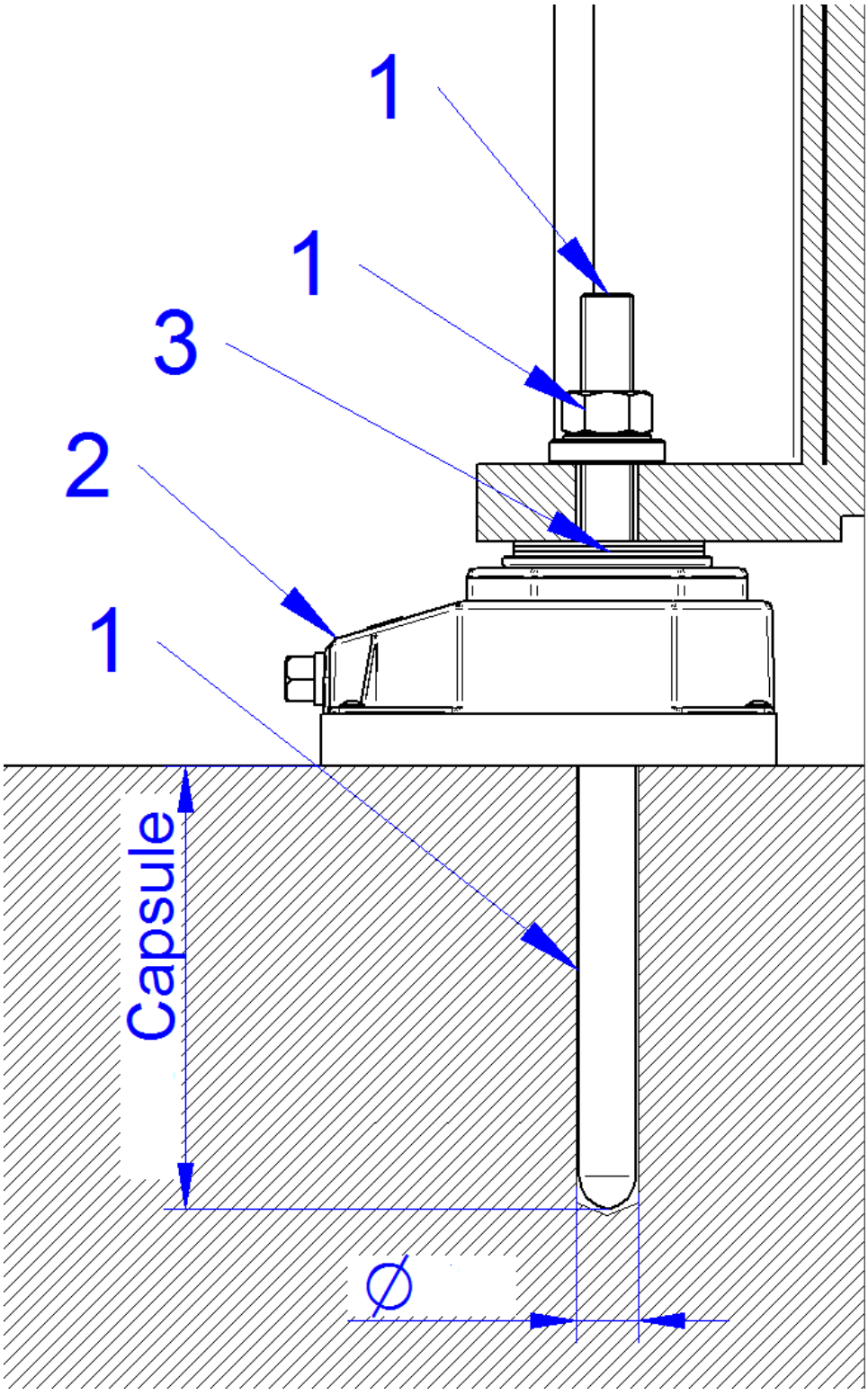
5.2 – Central points:



5.2.1
Pour the mortar using the funnel and the flexible tube. Access through the machine bed windows.

The levelling shim will be 10-15mm over the ground.

6 – Chemical foundation



REF.	DESCRIPCIÓN	CÓDIGO	PROPORCIONADO POR
1	Chemical Kit	-	CLIENT
-	Steel support	90x90x300	CLIENT
2	Levelling shim	-	IBARMIA
3	Levelling washer		IBARMIA

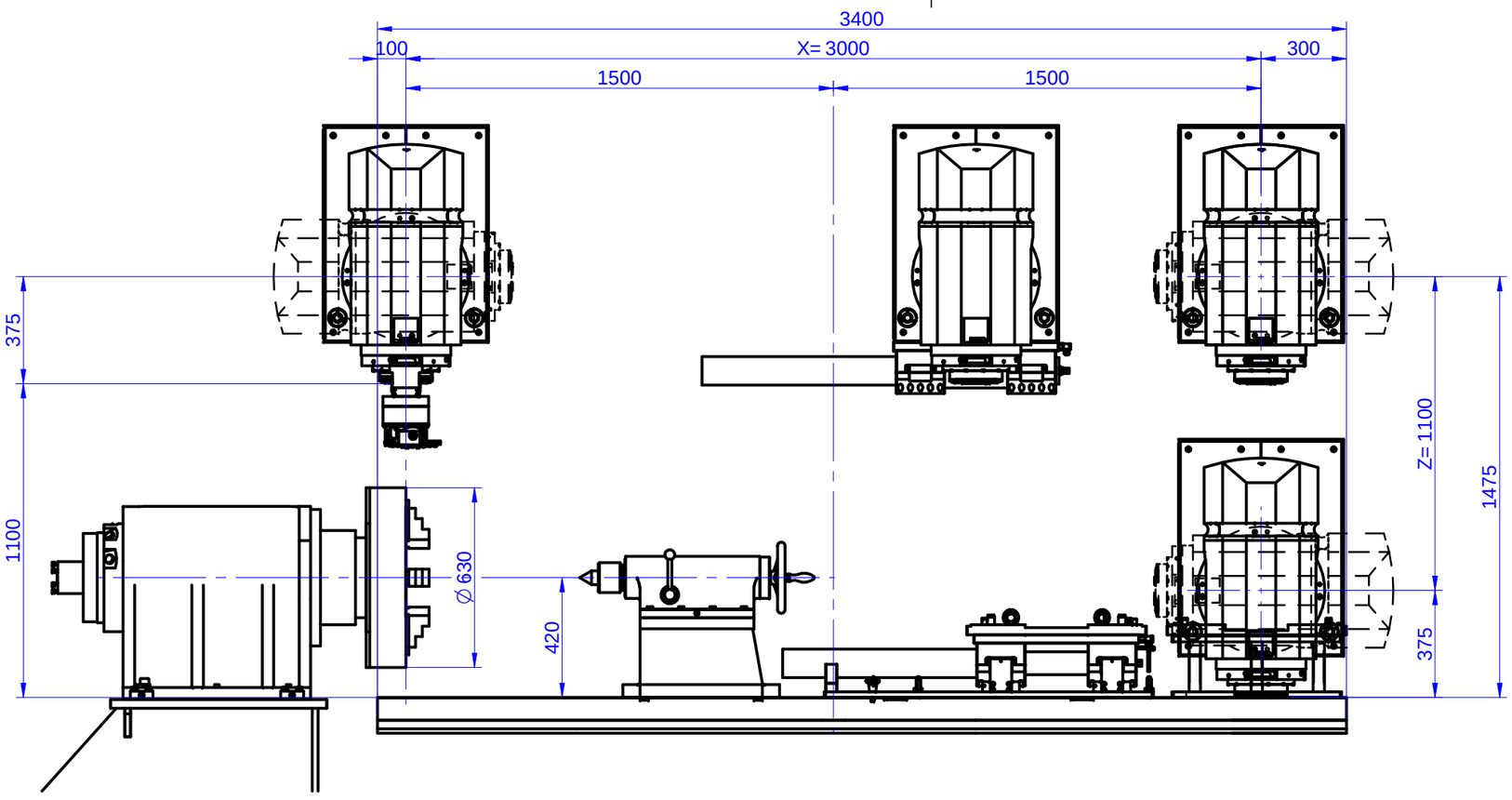
7 ANNEX

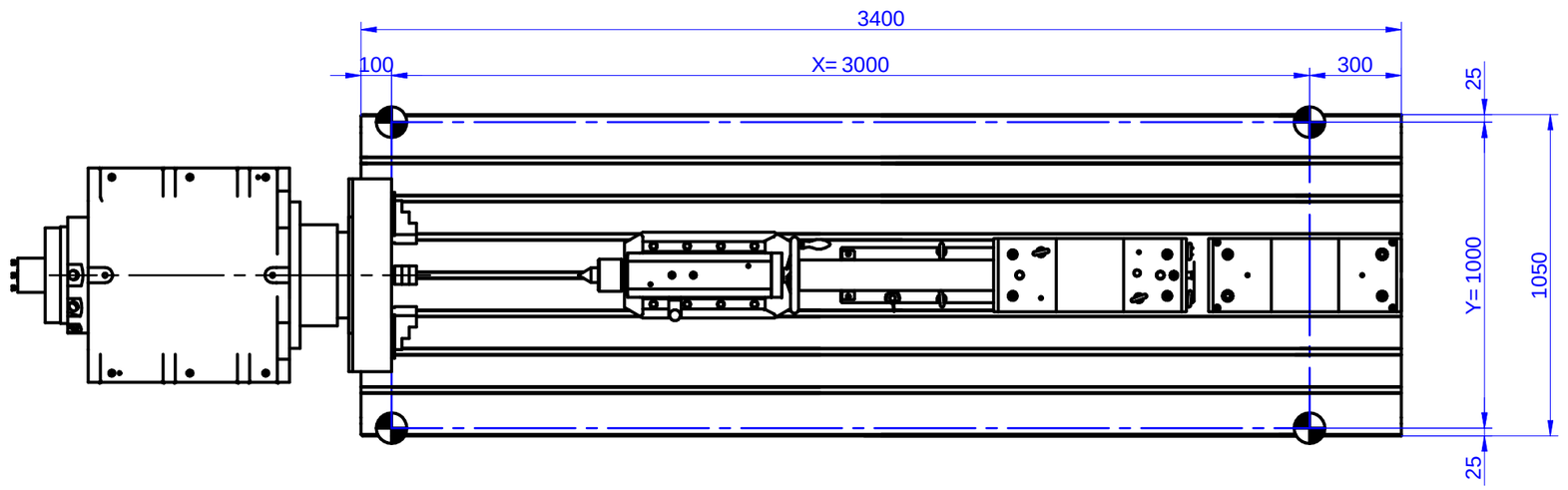
LAY – OUT OF THE MACHINE,

TRANSPORT

AND

FOUNDATION POINTS.

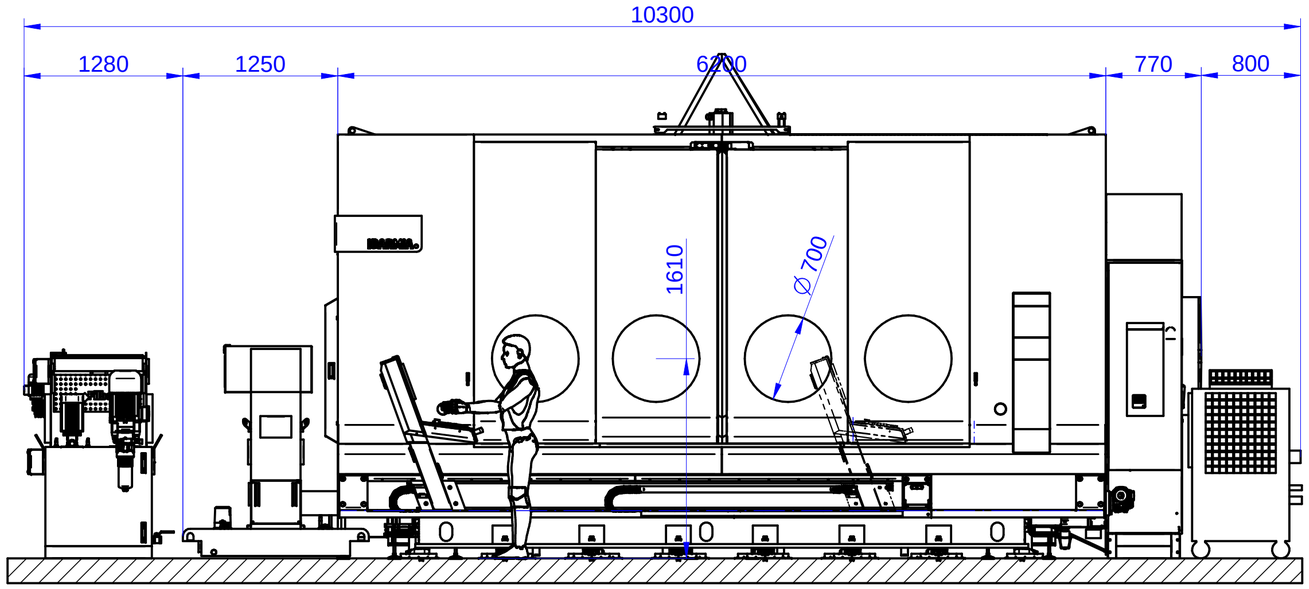


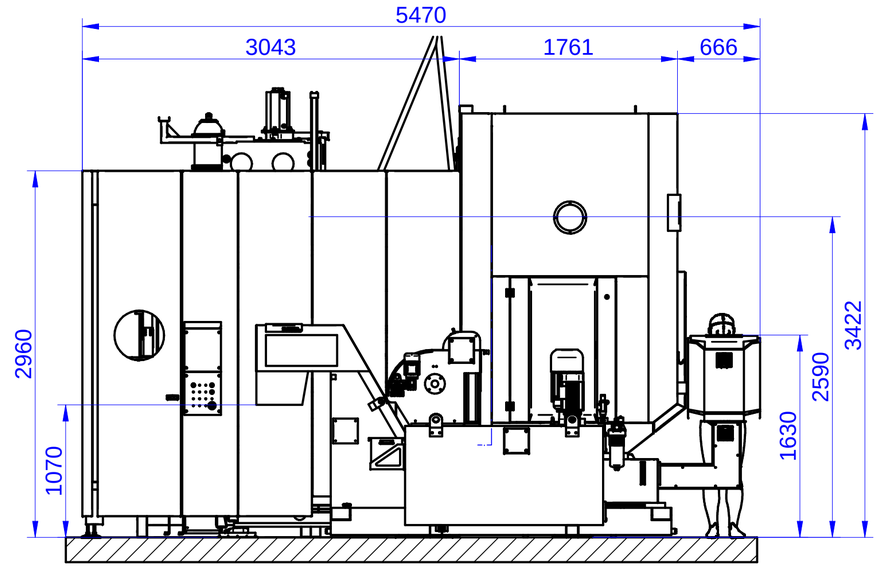


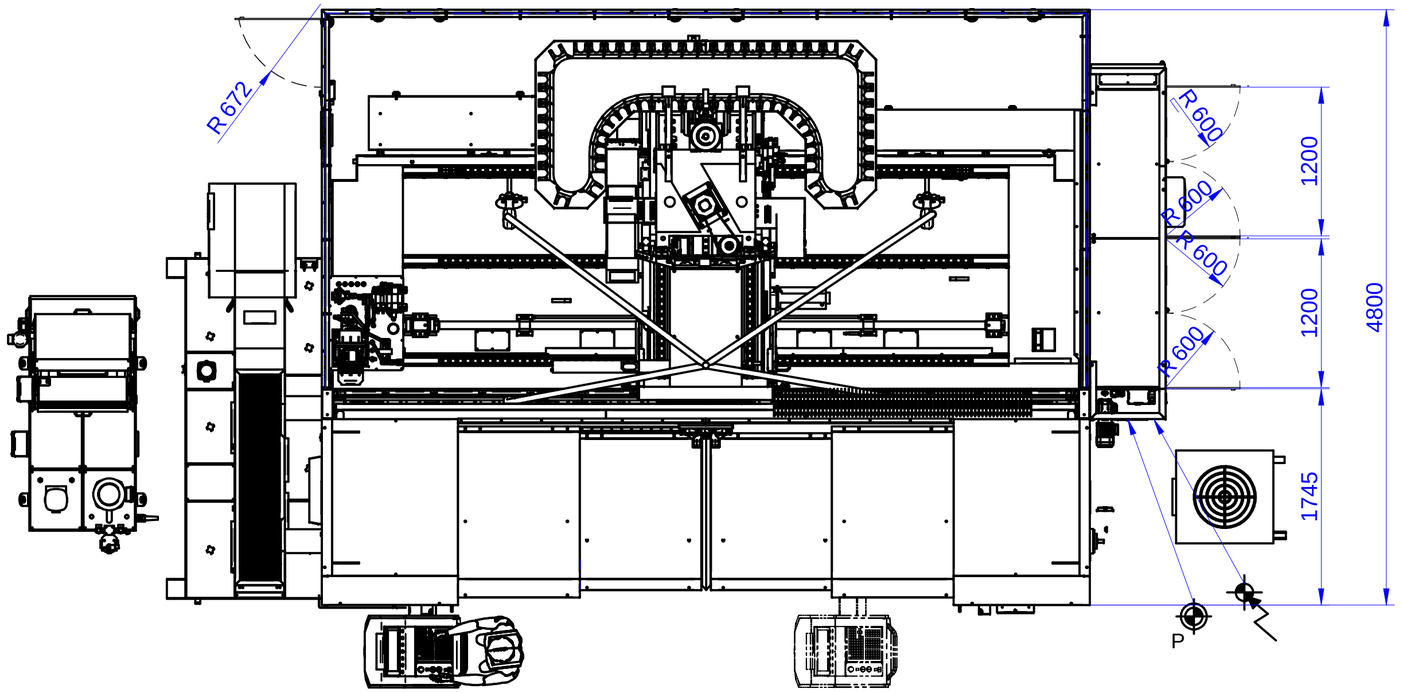
PIECES	DENOMINATION		MATERIAL
	Plano de recorridos		-

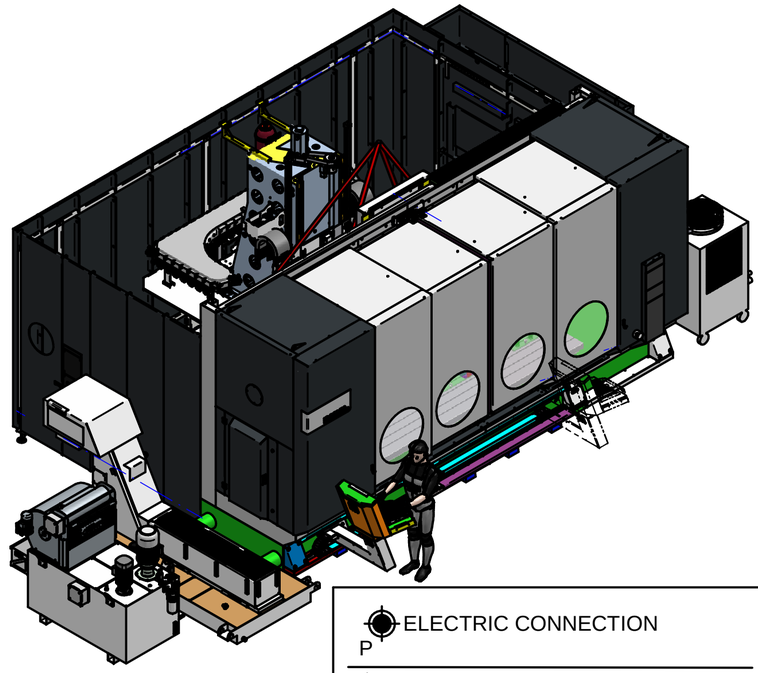
~ = √	▽ = 12.5/ 6.3/	NOT SPECIFIED TOLERANCES	SCALE		DATE	NAME	REPLACES: -
▽▽ = 3.2/ 1.6/	▽▽▽ = 0.8/ 0.4/	ISO - 2768 - m	1:20	DRAWN	17/06/2019	Mikel Arri	REPLACED BY: -
MACHINE SERIE		ISO 1101		MODIFIED	17/06/2019	Mikel Arri	ARTICLE CODE
ZVH58/L3000 Multiprocess				CHECKED	17/06/2019	Mikel Arri	-
Nº maq. 180592		ORIGINAL DIN A3	IBARMIA.				DRAWING NUMBER
WESTCON OLVONDO		CAD					-

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P ELECTRIC CONNECTION

PNEUMATIC CONNECTION

Tolerances		Admisible deviations - nominal lenght(mm)							
Standard	CLASS	0,5 To 3	From 3 To 6	From 6 To 30	From 30 To 120	From 120 To 400	From 400 To 1000	From 1000 To 2000	From 2000 To 4000
ISO2768-mK	m	± 0,1	± 0,1	± 0,2	± 0,3	± 0,5	± 0,8	± 1,2	± 2

PIECES	DENOMINATION	MATERIAL
	LAYOUT 180592	

NOT SPECIFIED TOLERANCES ISO - 2768 - m

SCALE 1:35

ISO 1101

ORIGINAL DIN A2 CAD

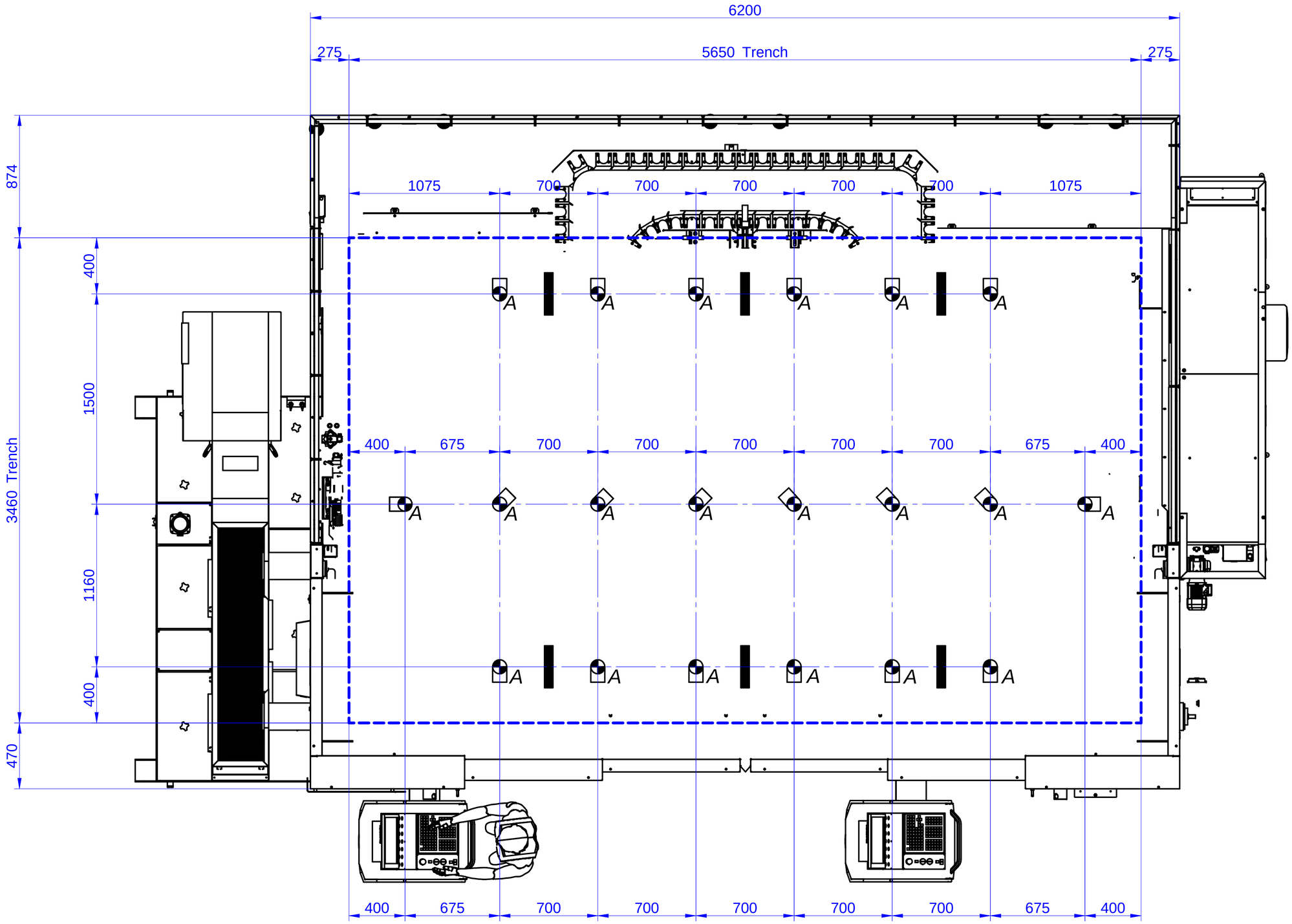
MACHINE SERIE
ZVH58/L3000 MULTIPROCESS
MAQ. Nº 180592
OLVONDO

	DATE	NAME	REPLACES	--
DRAWN	08/07/2019	Patxi Gorosabel	REPLACED BY	--
MODIFIED	08/07/2019	Patxi Gorosabel	ARTICLE CODE	
CHECKED	18/07/2019	Mikel Arri	-	

IBARMIA

DRAWING NUMBER
LAYOUT 180592-01

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Minimum concrete's compressive strength (25 N/mm²)
Minimum foundation base soil bearing pressure (70 kN/m²)

Tolerances		Admisible deviations - nominal lenght(mm)							
Standard	CLASS	0,5 To 3	From 3 To 6	From 6 To 30	From 30 To 120	From 120 To 400	From 400 To 1000	From 1000 To 2000	From 2000 To 4000
ISO2768-mK	m	± 0,1	± 0,1	± 0,2	± 0,3	± 0,5	± 0,8	± 1,2	± 2

INDEX	LETTER	MODIFICATION	DATE	NAME
-	-	-	-	-

PIECES	DENOMINATION	MATERIAL
	FOUNDATION 180592	

NOT SPECIFIED TOLERANCES
ISO - 2768 - m

SCALE 1:20

ISO 1101

ORIGINAL DIN A2 CAD

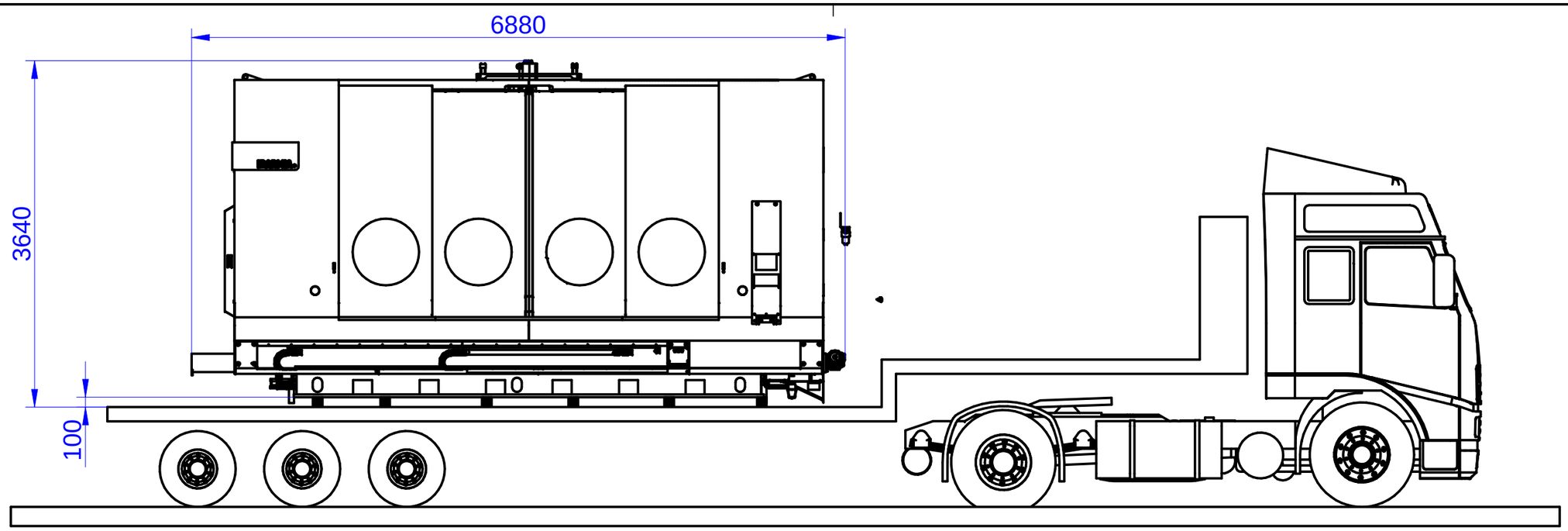
MACHINE SERIE
ZVH58/L3000
MAQ. Nº 180592
OLVONDO

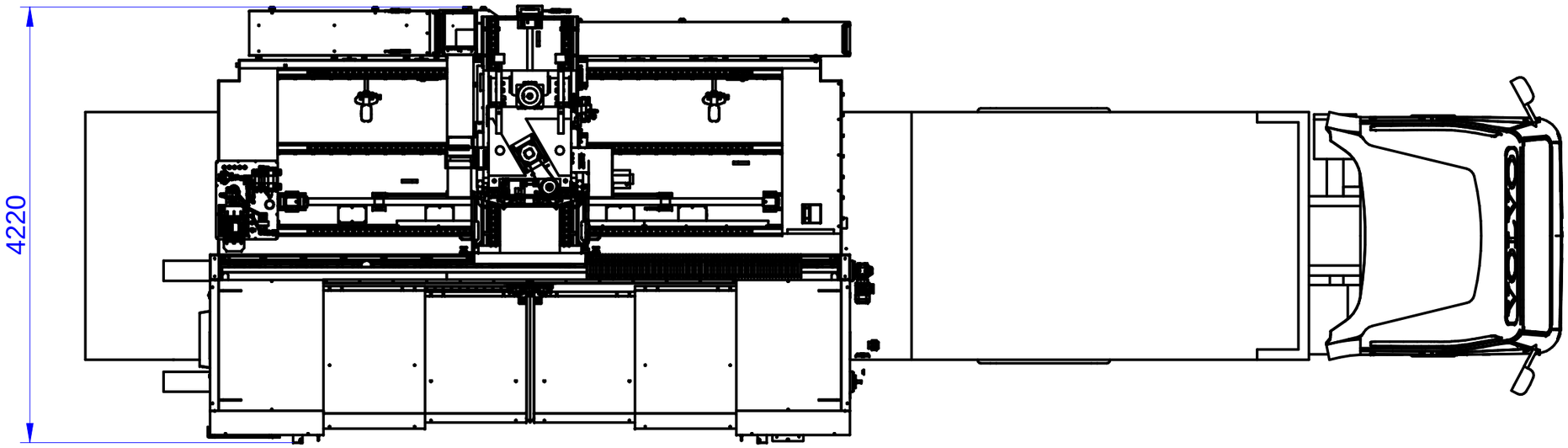
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MODIFIED	05/07/2019	Patxi Gorosabel	ARTICLE CODE	
CHECKED	05/07/2019	Patxi Gorosabel	MAQUINA ZVH 58/L3000 S/N: 180592	

IBARMIA.

DRAWING NUMBER
-

C:\Ibarmia\PROYECTOS\1.MAQ\2.018\180057\4_DISEÑOS\5_DOCUMENTOSDEVALIDACION\Plano de cimentación 180057.dft





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Peso Aprox.:28.000kg

Clase de tolerancia		Desviaciones admisibles respecto al valor nominal(mm)							
Designación	Descripción	0,5 hasta 3	más de 3 hasta 6	más de 6 hasta 30	más de 30 hasta 120	más de 120 hasta 400	más de 400 hasta 1000	más de 1000 hasta 2000	más de 2000 hasta 4000
m	media	± 0,1	± 0,1	± 0,2	± 0,3	± 0,5	± 0,8	± 1,2	± 2

INDEX	LETTER	MODIFICATION	DATE	NAME
-	-	-	-	-

PIECES	DENOMINATION	MATERIAL
	TRANSPORTE-180592-1	-

TOLERANCIAS NO ESPECIFICADAS ISO - 2768 - m

SCALE 1:50

ISO 1101

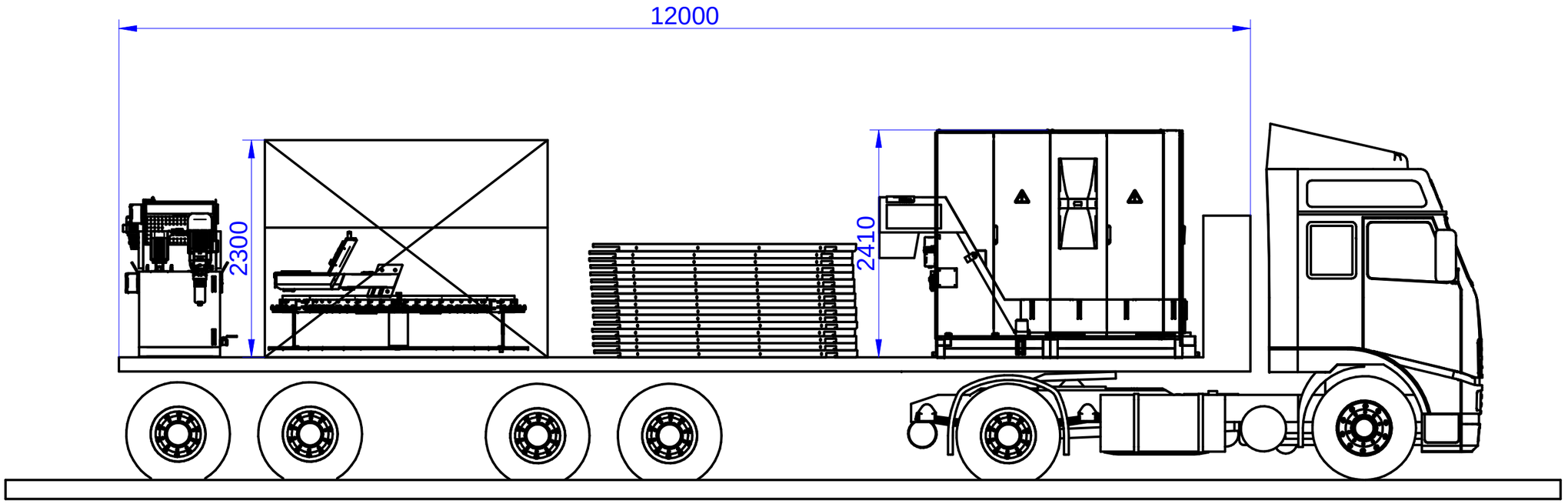
ORIGINAL DIN A3 CAD

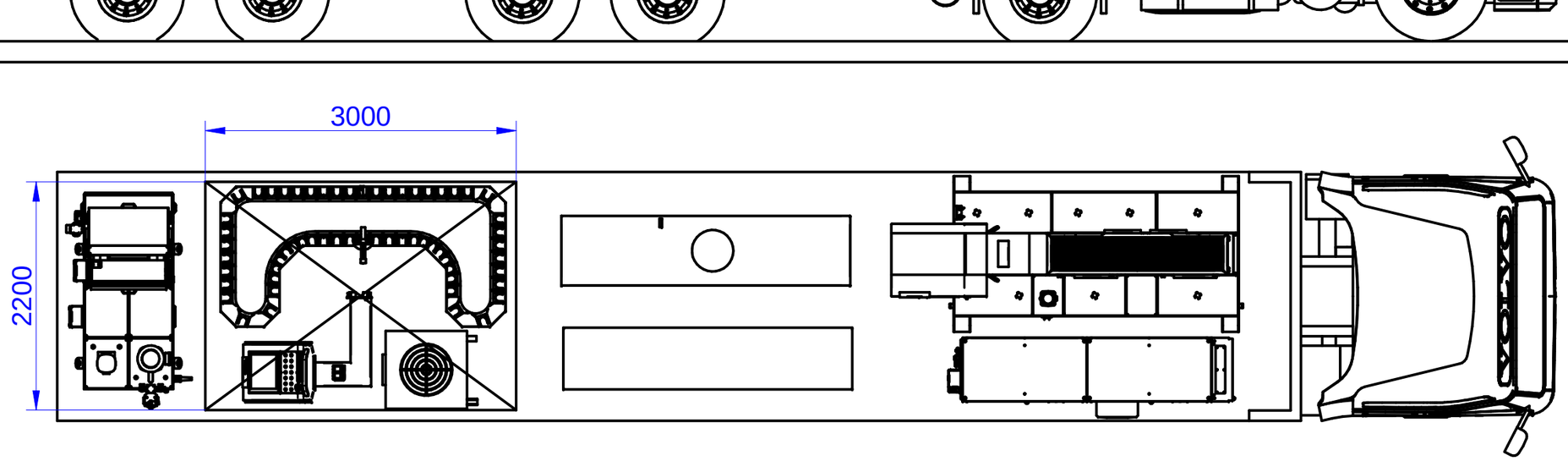
MACHINE SERIE
ZVH58/L3000 MULTIPROCESS
MAQ. Nº 180592
OLVONDO

	DATE	NAME	REPLACES	-
DRAWN	05/07/2019	Patxi Gorosabel	REPLACED BY	-
MODIFIED	05/07/2019	Patxi Gorosabel	ARTICLE CODE	
CHECKED	05/07/2019	Patxi Gorosabel	-	

IBARMIA.

DRAWING NUMBER
TRANSPORTE 180592-1





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Peso Aprox.:8.000kg

Clase de tolerancia		Desviaciones admisibles respecto al valor nominal(mm)							
Designación	Descripción	0,5 hasta 3	más de 3 hasta 6	más de 6 hasta 30	más de 30 hasta 120	más de 120 hasta 400	más de 400 hasta 1000	más de 1000 hasta 2000	más de 2000 hasta 4000
m	media	± 0,1	± 0,1	± 0,2	± 0,3	± 0,5	± 0,8	± 1,2	± 2

INDEX	LETTER	MODIFICATION	DATE	NAME
-	-	-	-	-

PIECES	DENOMINATION	MATERIAL
	TRANSPORTE-180592-2	-

		DATE	NAME	REPLACES	-
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MODIFIED		05/07/2019	Patxi Gorosabel	ARTICLE CODE	
CHECKED		05/07/2019	Patxi Gorosabel	-	

TOLERANCIAS NO ESPECIFICADAS ISO - 2768 - m

SCALE 1:50

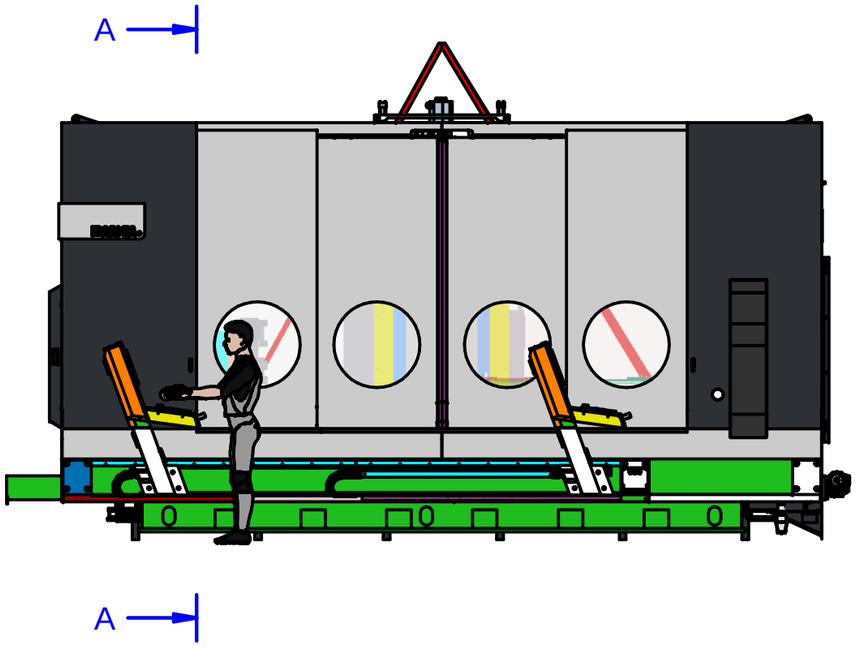
ISO 1101

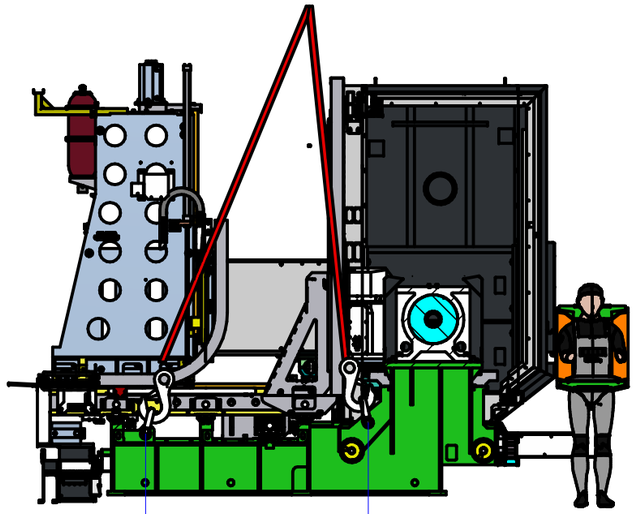
MACHINE SERIE
ZVH58/L3000 EXTREME
MAQ. Nº 180592
OLVONDO

ORIGINAL DIN A3
CAD

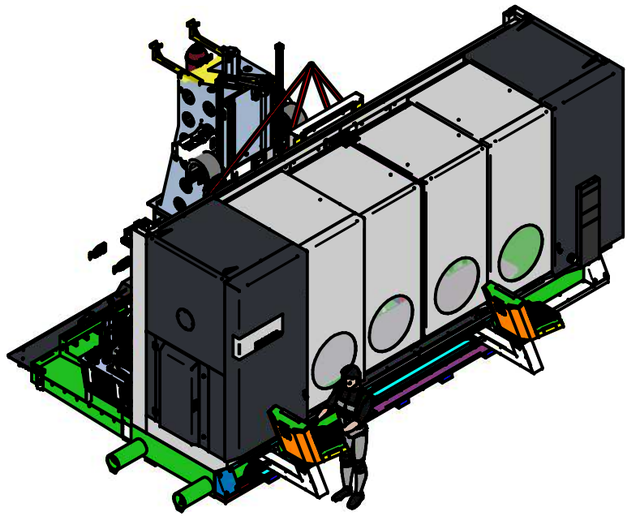
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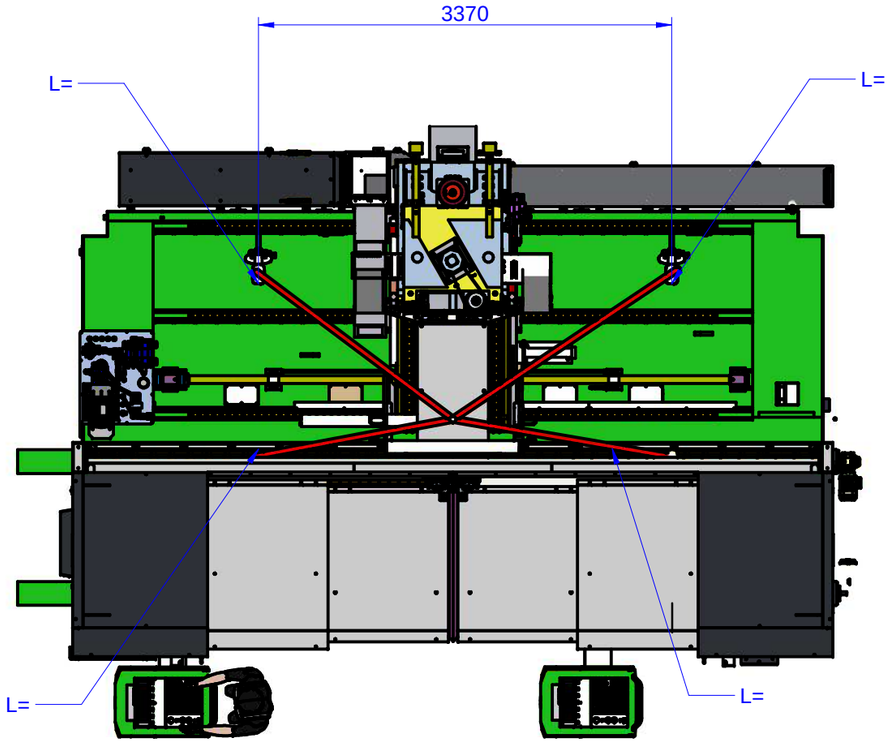
DRAWING NUMBER
Transporte180592-2





CORTE A-A





-	-	-	-	-
INDEX	LETTER	MODIFICATION	DATE	NAME

PIECES	DENOMINATION	MATERIAL
	Plano elevación	

~ = √	▽ = 12.5/ 6.3/	NOT SPECIFIED TOLERANCES	SCALE		DATE	NAME	REPLACES	-
▽▽ = 3.2/ 1.6/	▽▽▽=0.8/ 0.4/	ISO - 2768 - m		DRAWN	15/07/2019	Patxi Gorosabel	REPLACED BY	-
MACHINE SERIE			ISO 1101	MODIFIED	15/07/2019	Patxi Gorosabel	ARTICLE CODE	MAQUINA ZVH 58/L3000 S/N: 180592
ZVH58/L3000				CHECKED	15/07/2019	Patxi Gorosabel		
MAQ. Nº 180592			ORIGINAL DIN A3	IBARMIA.			DRAWING NUMBER	Plano elevación-180592-01
OLVONDO			CAD					

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