APEX RADIO FREQUENCY SYSTEM SITE REQUIREMENTS

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PROJECT/CUSTOMER: **APEX Site Requirements**	
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FORM:	SCALE NONE / WEIGHT NA / SHEET Page 1 of 15

1.0 Objective

This document provides Transportation & Site Requirements for the APEX 7 kW Radio Frequency System, used for remediation of post-harvest Cannabis and Hemp products. This document is to act as a general guideline for moving and preparing the APEX for installation. Any site prep should be confirmed with Ziel prior to any actual work being carried out as specifications may be subject to change.

2.0 Transport & Site Requirements

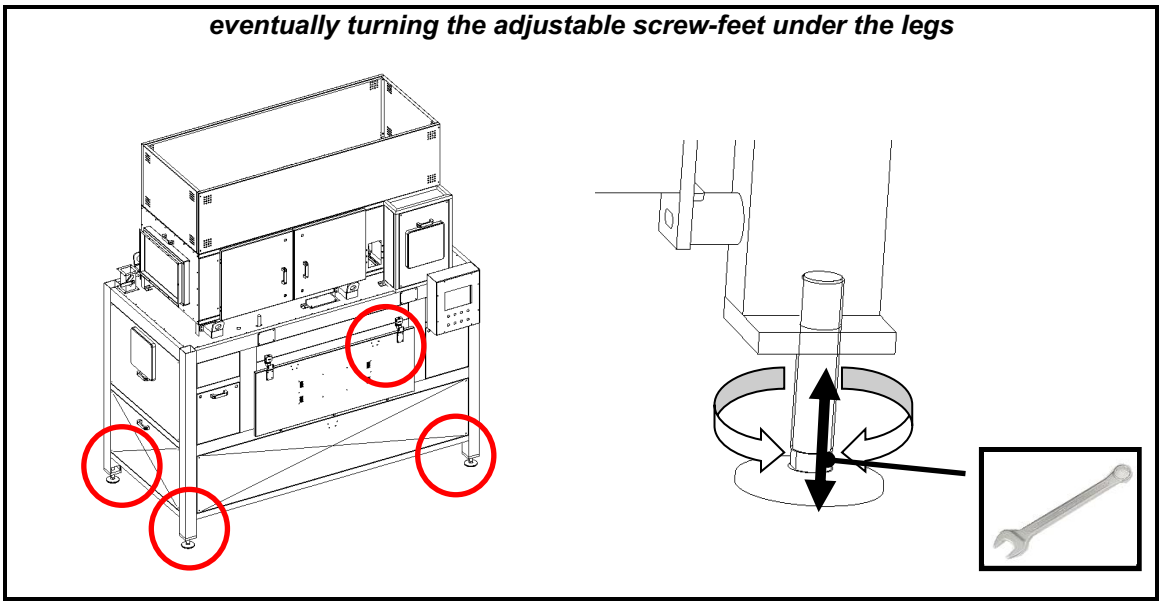
2.1 Transport

The equipment is transported by truck, plane, ship or combination of either, partly disassembled, covered by a PE sheet for protection and/or packed on pallets and/or in wooden boxes. Once the equipment arrives to the customer site, it can either be unpacked and set into place or remain in the crate for protection if the installation isn't set to take place for several weeks or months. The physical assembly should only be carried out by or under supervision of a Ziel Engineer.

2.2 Foundations

Foundations are not required. It is only necessary to provide a flat and levelled floor. The equipment is to be levelled with a water level for the correct working position, by turning the adjustable screw-feet under the legs. All around the equipment a two meter clear zone is to be provided.

eventually turning the adjustable screw-feet under the legs



2.3 Tools

The tools required for lifting the equipment (packages) are:

- Unloading a Trailer or Container – 5,000lb (2,200kg) Forklift with 8' (2.5M) forks will be required.
- For the assembly process – 3,000lb (1,300kg) Forklift with 6' (1.8M) forks will be required
- Rigging equipment such as straps or chains may be required depending on the unloading site configuration, if no loading dock is available it may be necessary to pull the pallets to the end of the trailer or container to pickup.

Levelling the APEX:

- Conventional mechanical and hydraulic tooling, and a water level.

Ref. 89/656/EEC

The staff deputed to move, assemble, install and service the equipment must be provided with the proper personal protection outfit and must use adequate tools, ladders and any other device required to work in safe conditions. Clothing, gloves and arm guards must be protecting against cuts in conformity ISO 13999

2.4 Lifting instructions

Machine unloading from container:

To unload the machine, 2,200kg *f*orklift with 3m long forks is necessary

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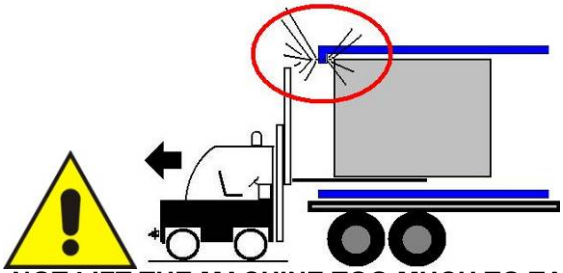

DO NOT LIFT THE MACHINE TOO MUCH TO TAKE OUT FROM THE CONTAINER

Inside the container, the machine does not have much space from top to the container ceiling.

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DAMAGE EXAMPLE DURING UNLOADING OPERATION

TRIODE PACKAGE
ALWAYS KEEP VERTICAL AND PROTECTED.
DRY AND CLEAN STORAGE IS REQUIRED

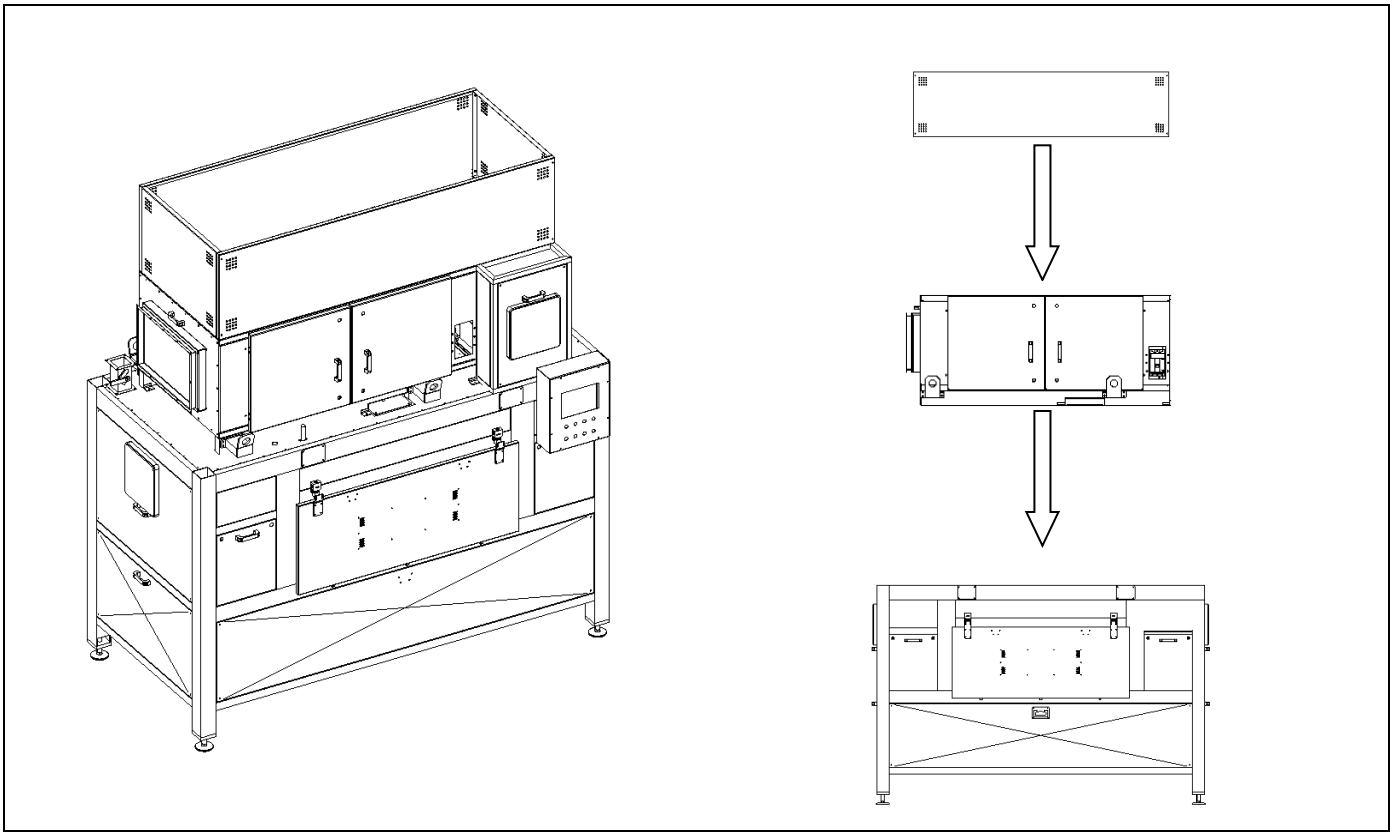
2.5 Environmental Requirements

APEX equipment must be stored and run in an environment with the following ambient conditions:

- Temperature between 59°F [15 °C] and 104°F [40 °C]
- Relative Humidity between 10% and 90% (non-condensing)

EQUIPMENT ASSEMBLY

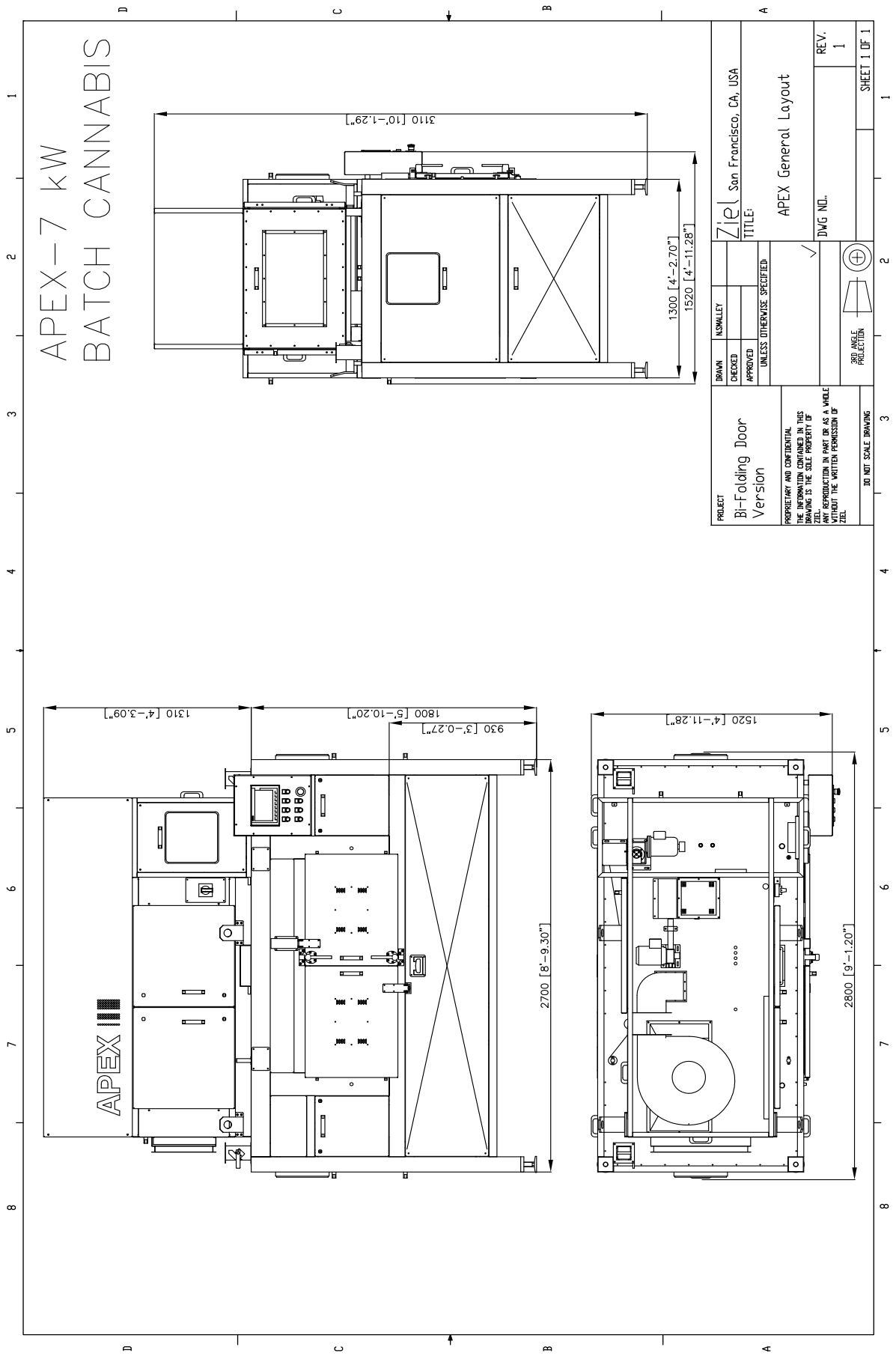
For Reference Only Actual Equipment Configuration May Vary



ASSEMBLY TO BE CONDUCTED OR SUPERVISED ONLY BY QUALIFIED ZIEL PERSONEL SERIOUS DAMAGE CAN OCCUR IF PRECAUTIONS ARE NOT TAKEN DURING THE ASSEMBLY PROCESS.

Assembly Requirements:

- 3,000 lb (1,300 kg) capacity forklift
- 6’ (1.8 M) forks
- Lift straps (Qty 4)
    - 8’ (2.5 M) length
    - 2,000 lb (900 kg) capacity each
- Step Ladders



2.6 Electrical Requirements:

Connected Load:
38 A (27 kVA) @ 400 VAC 3-Phase 50 Hz **OR** 32 A (27 kVA) @ 480 VAC 3 - Phase 60 Hz

Voltage must be stable within +/- 5%

The machine is equipped with a 40 A – 400/480 VAC – 50/60 Hz switch

On-board thermal protection at 32/38 A and magnetic protection at 320/380 A.

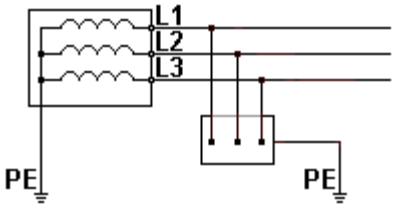
A Step-up/Step-down transformer may be required to achieve the required 400 or 480 VAC 50/60 Hz supply.

If voltage is out of the 5% tolerance, a stabilizer will be required. Recommended rating of 30 kVA minimum.
Input: (Local 3-phase) Output: 400 or 480 VAC 50/60 Hz

Copper or aluminium flexible cables up to 70 mm² (not bigger than 70 mm²) should be used.

The protection of the lines connected to the machine, needs to have breaking current capacity, thermal and magnetic protection higher than the main switch of the machine.

TT electrical distribution system



3 phase + earth (no neutral needed).

The protective earth is provided by local connection to earth, independent from electrical supply earth

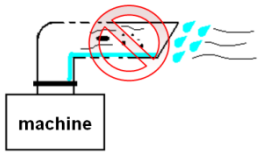
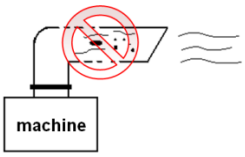
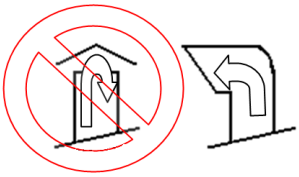
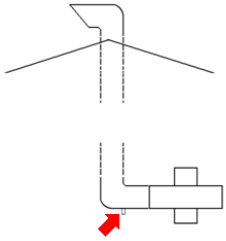
2.7 APEX Heat Load to Ambient Environment

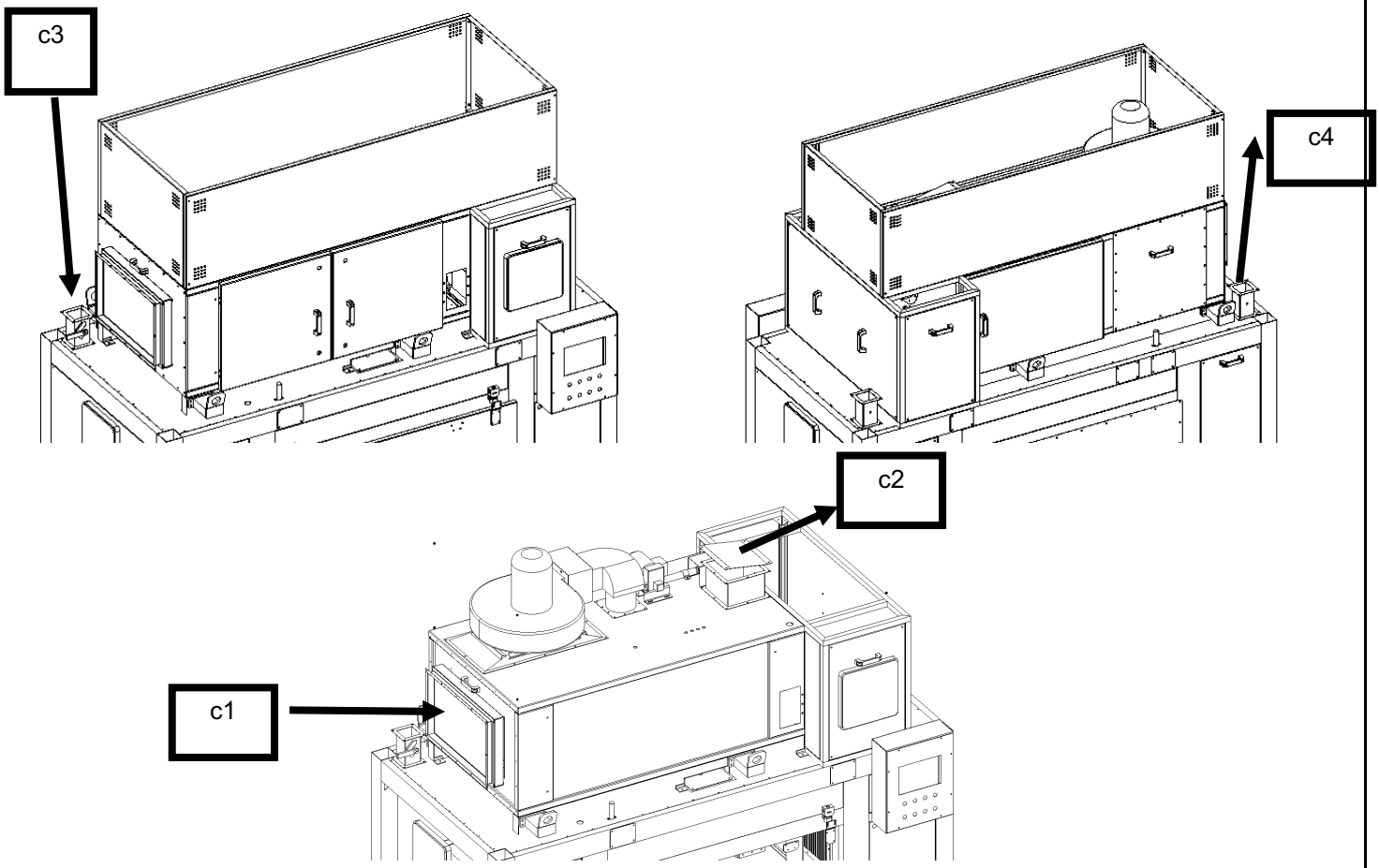
RF Generator – 12,000 btu/h @ maximum rated RF power output.

Electric Chamber Heaters – 10.2 kW total load.

Actual heat load from electric air heaters will depend on the set temperature. Settable between 0C to 80C. As a reference, most installations and processes are set at 25C. Typically, the air is recirculated within the chamber and not exhausted to the environment.

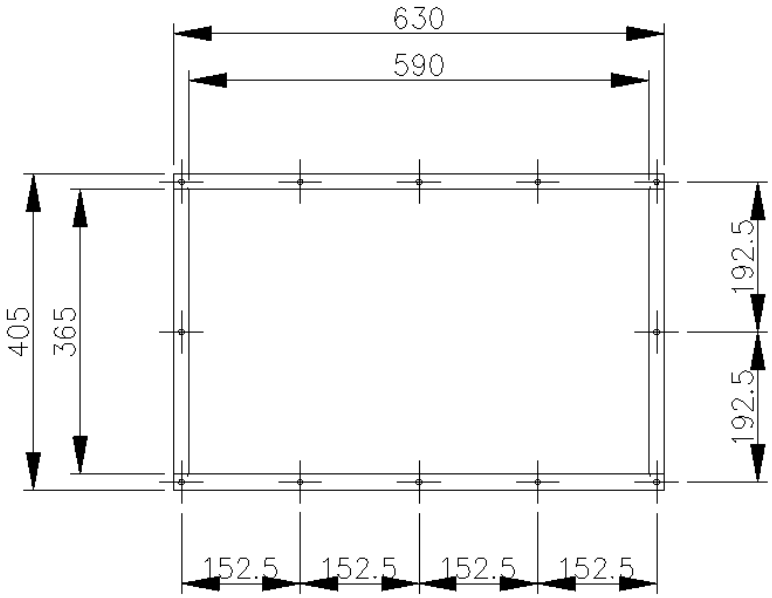
Exhaust ducting (Optional)

 do not allow water entry	 do not allow dust entry	 Duct outlet shape	 Condensate drain

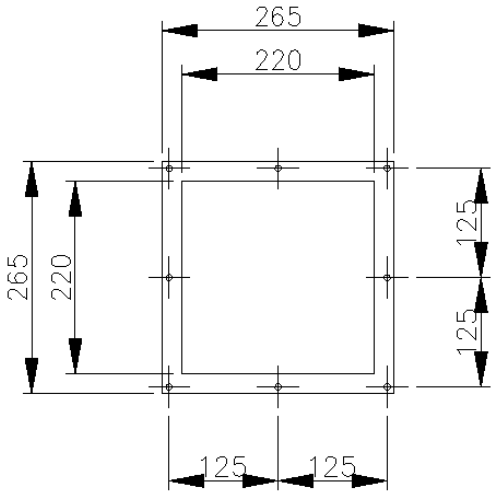


c1 input air, exits to c2 output
c3 input air, exits to c4 output

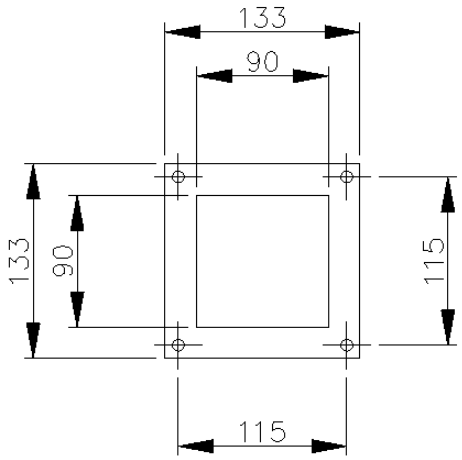
c1: flow rate typically 22 m³/min



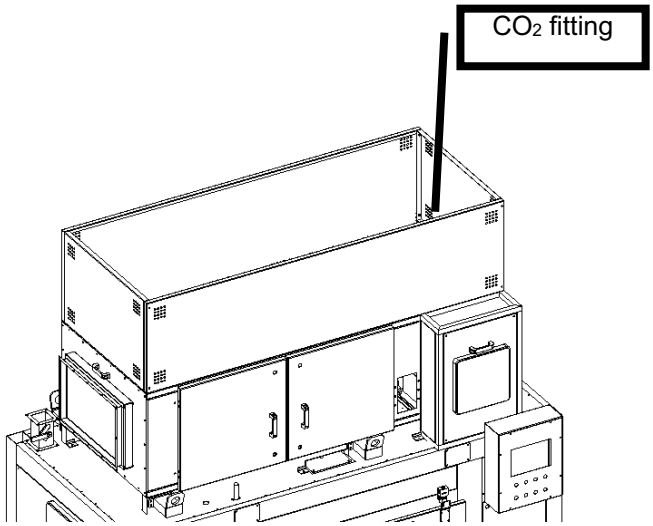
c2: flow rate typically 22 m³/min



c3: flow rate typically 1-10 m³/min



FIRE EXTINGUISHING SYSTEM CONNECTION (OPTIONAL)

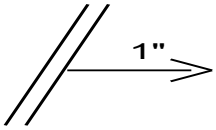


Pipes with CO2 bells installed on the machine	
Pipes with sprayers installed on the machine	

OTHER DEVICES NECESSARY TO COMPLETE THE FIRE EXTINGUISHING SYSTEM (CO2 bottles, electric valves, connecting pipes to the machine, etc.) ARE NOT (CANNOT BE) PROVIDED BY ZESS: in every country there are different standards for these items and therefore they can only be sourced locally by the customer.

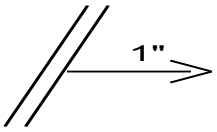
CO_2 extinguishing bottles installation

1” input fitting to be connected to the fire extinguishing system CO_2 bottles. The bottles need to have 60 bars CO_2 pressure and 30 kg capacity for each module.
In case the CO_2 release is managed through a manual valve or through a solenoid valve controlled by the customer, it is needed to detect the position of the valve with a switch equipped with a number of electrical contacts equal to number of modules of the machine. On the machine electrical services board a terminal block is predisposed for this electrical connection in order to switch off immediately the machine once the CO_2 is released inside the RF Zone.

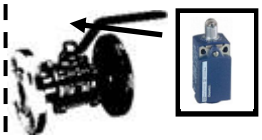


Water input as additional fire extinguishing system

1” input fitting to be connected to the water pipeline.
This water supply has to be managed by a manual valve equipped with a switch that detects its position provided with a number of electrical contacts equal to number of the generators of the machine. On the machine electrical board, a terminal block is predisposed for this electrical connection in order to switch off immediately the machine once water is released inside the RF Zone.



Pressure required 2-4 bar



NOT SUPPLIED

Position switch may be connected to the emergency circuit.
When the valve is closed, the switch is pushed and the contact that is normally open, is closed.
If the valve is opened, the machine goes into emergency mode.

<u>Alternatively, a 10lb CO2 handheld fire extinguisher will be sufficient.</u>

CHOICE OF ELECTRICAL VOLTAGE SUPPLY STABILIZER

In case the electrical voltage supplied cannot stay within the range of +/- 5%, an electromechanical voltage stabilizer device is needed. The following table will help to choose it.

GENERATOR RF POWER	INSTALLED POWER	MINIMUM STABILIZER CAPACITY	OUTPUT VOLTAGE TOLERANCE
7 kW	27 kVA	30 kVA	+/- 3%