TECHNICAL SPECIFICATIONS TO BE FOLLOWED IN THE OPEN TENDER PROCEDURE FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF MACHINE TO MAKE THE CAVITIES TO THE PLASTICIZED ALUMINIUM (ALF) OF THE POUCH CELLS.

1. PURPOSE OF THE CONTRACT

The purpose of this document is to define the technical conditions that must govern the supply, installation and commissioning of a machine to make the cavities to the plasticized aluminium (alf) of the pouch cells.

The equipment would be used for perform cavities to the plasticized aluminum foil, for pouch cell format lithium ion cells in a way that ensure no pinholes appear.

Also, it will be the object of the contract, without any additional cost:

- The preventive maintenance service, two years, at least once per year from the reception of the equipment. Such preventive maintenance shall include, in addition to the work to be carried out, the costs of labour force and displacement, in their entirety.

- Fundación Cidetec technical staff training.

The CPV code for the contract is the following: 38540000-2 (Machines and equipment's for testing and measurements).

2. SCOPE OF SUPPLY

In addition to the supply, installation and commissioning of the equipment, the scope of supply enclose the preventive maintenance previously detailed.

3. WARRANTY

A warranty period of 2 years is established from the date of reception of the equipment with the agreement of the CIDETEC technical managers. The warranty includes travel, labour, parts and consumables necessary for the repair, as well as the installation of any new software version of the equipment that is developed during the warranty period and the annual preventive maintenance recommended by the manufacturer.

If during the aforementioned warranty period the existence of faults or defects in the goods supplied is demonstrated, CIDETEC will have the right to demand from the contractor the replacement of the defective goods or their repair if that is considered sufficient.

If CIDETEC considers, during the warranty period, that the supplied product is not fit for its intended purpose, as a consequence of the faults or defects observed in it and attributable to the contractor, and there is a presumption that the replacement or repair of the product will not be sufficient to achieve such purpose, it may, before the expiration of said period, request the replacement of the unit with a new one.

4. TECHNICAL REQUIREMENTS

1. Process flow steps.

    a. Pre cut multilayer film (alf) loading into press (manually)
    b. Cold forming. (automatic, operation start by 2 hands push bottom).
    c. Cold formed shell unloading.

2. Machine parts.

    a. Multilayer film feeding: The multilayer film sheet is manually feed by the operator.
    b. Cold forming system:
        i. Cold forming die (size parts) actuated by pneumatic or other system. Better if closing system is running with a servomotor which speed and pressure controlled from operator panel.
        ii. Die set frame. (upper and lower presser, punch, die)
        iii. Punch tooling
        iv. Blank holder with pressure regulator.
        v. Safety cover and safety light barrier.
        vi. Tool will provide reference holes in order to match the two half shells

later on.

vii. Load cell to measure the stripper pressure and the forming pressure given by the punching tool for an in-line process control

viii. Color HMI with touch screen control

The operator starts the cold forming cycle by pressing a two hands push button.

c. Cold formed shell unloading: The cold-formed shell is unloaded manually.

d. Safety: 2 start push bottom and optical barrier to stop process in case hand introduced in press area.

e. Control: PLC, HMI with user interface to display and set unit´s parameters. Internet remote control access to give technical support in case of equipment failure.

The following operation situations are possible:

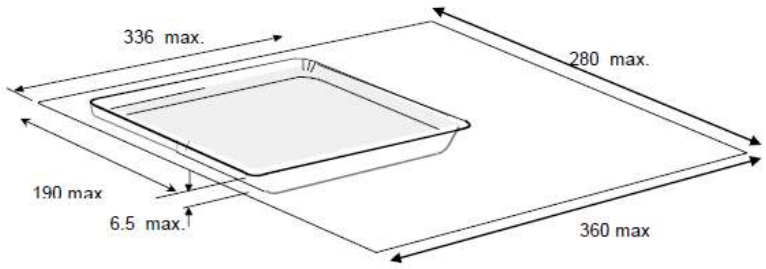
- Operation of the system
- Set-up of the system.
- Job control
- Machine data
- Service

Different user groups could be defined, and corresponding passwords could be assigned.

3. Incoming material: Equipment have to be designed to work with. Multilayer film in sheet. Possible material types:

a. ON (PA) /Al /PP
b. ON (PA) /Al /PE
c. PET - Al - PET - PE
d. PET - Al - PET - PP or other
e. Thickness 100 to 160 microns

4. Pocket size range that equipment can work with.(mm)



5. Pocket specific formats:

    a. 2 sizes: Dies tooling for each format have to be included.
        i. 6x10 cm (final dimensions to be define)
        ii. 14x23 cm (final dimensions to be define)

    b. Pocket depth will be adjustable, in all its range. (Possible use tooling).
    c. No pinholes, wrinkles and thin wall have to appear, during cold forming. To ensure that no leaking appear in lithium ion cells when are assembled and working. This will be one of the most important criteria to FAT and SAT acceptance (20 units manufacture of each model, with 100% percent without pinholes, wrinkles no thin wall, and good appearance).

6. Machine Cycle time: approx. 20 seconds
7. Machine set-up time to change die model less than 60 minutes. Quick change tooling system design required.
8. Sound level < 80 dB(A) at 1 m distance.
9. Power supply 220V or 380V 50 Hz available voltage.
10. Air pressure: 6 bar.
11. Maximum dimensions: W1100× L1500 × H2000mm (smaller better)
12. Machine colour: To be determined.

13. All accessories and components will be first brands with technical support in Spain. Such as OMRON, SIEMENS, ABB, SEW, BECKHOFF…

14. Documentation: It will be necessary one copy in paper format in Spanish, and another in electronic form.

15. The equipment must have CE marking.

5. TRANSPORTATION, INSTALLATION AND TRAINING

The transport, unloading, put in place and commissioning of the equipment supplied will be the responsibility of the successful bidder and will not involve any additional costs whatsoever.

The successful bidder will provide the necessary training with qualified personnel of the company that guarantees that the staff of FUNDACIÓN CIDETEC will be able to correctly use the acquired equipment.