



EQUIPMENTS FOR THE SAW CIRCULAR WELDING OF GAS CYLINDER BOTTLE





1. PREAMBULE :

This document is strictly confidential and may not be disclosed or duplicated without prior permission of ALW. This document is based on the information's received and is only relative to this project.

The photographs are only for information and explanation and cannot be contractual.

2. SCOPE OF THIS OFFER :

This offer is made on information supplied to us as follows:

Job: Continuous circular welding of the half and the bottom parts on domestic gas bottle

Process: Submerged Arc process

Preparation: Under customer responsibilities

Welding result: No engagement and no responsibilities for the welded final results and final product homologation. It's under customer responsibilities.

Upper half bottle: Diameter = 300 mm
 Length = 637 mm
 Thickness = 3,3 mm

Based on it, our proposal is based on the supply of a complete welding machine comprising of:

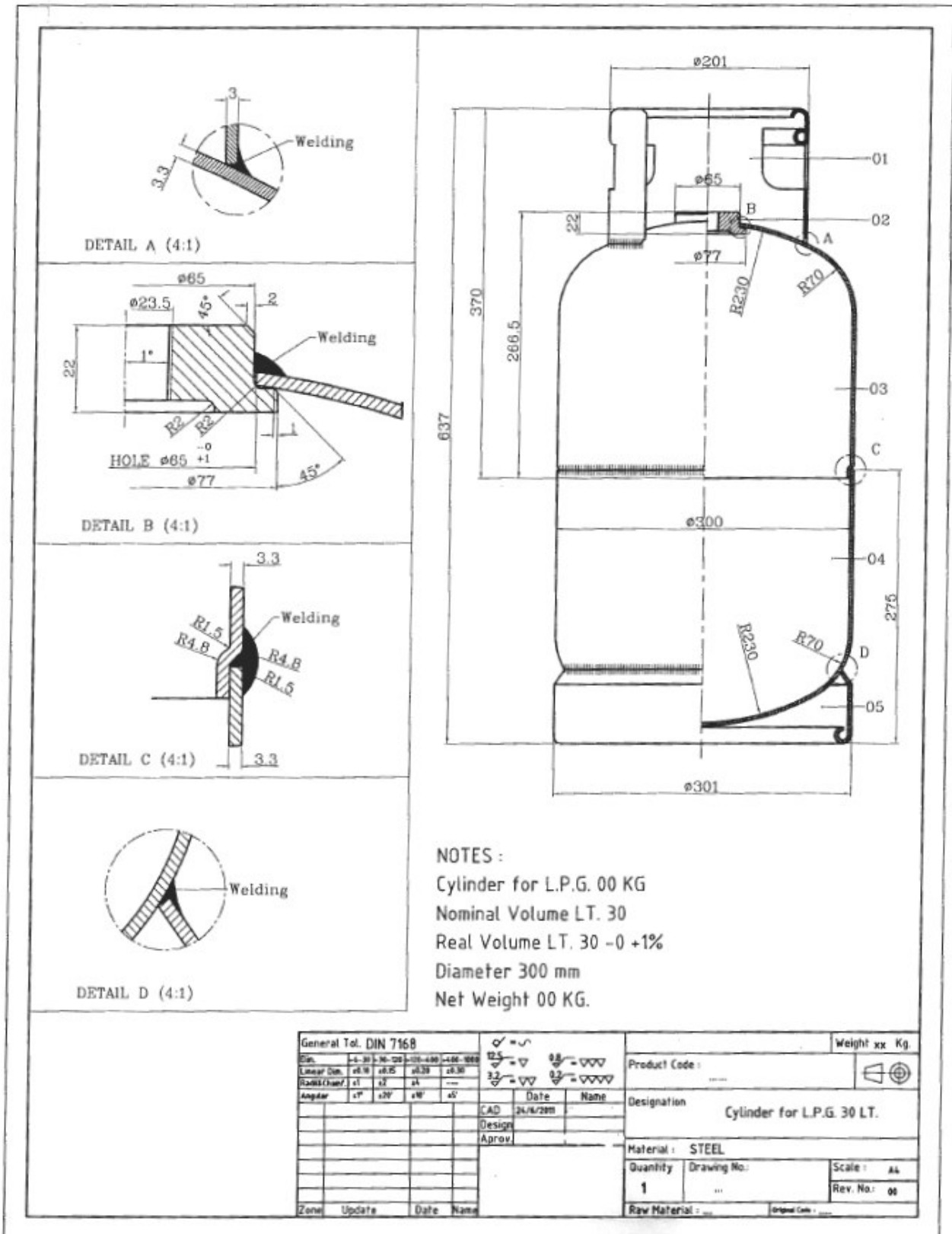
- ✓ A standard machine with platform and components,
- ✓ A work piece tooling device,
- ✓ Two Subarc 5 SAW welding systems.

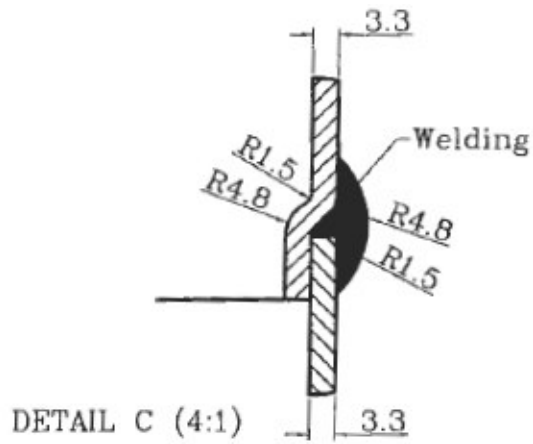
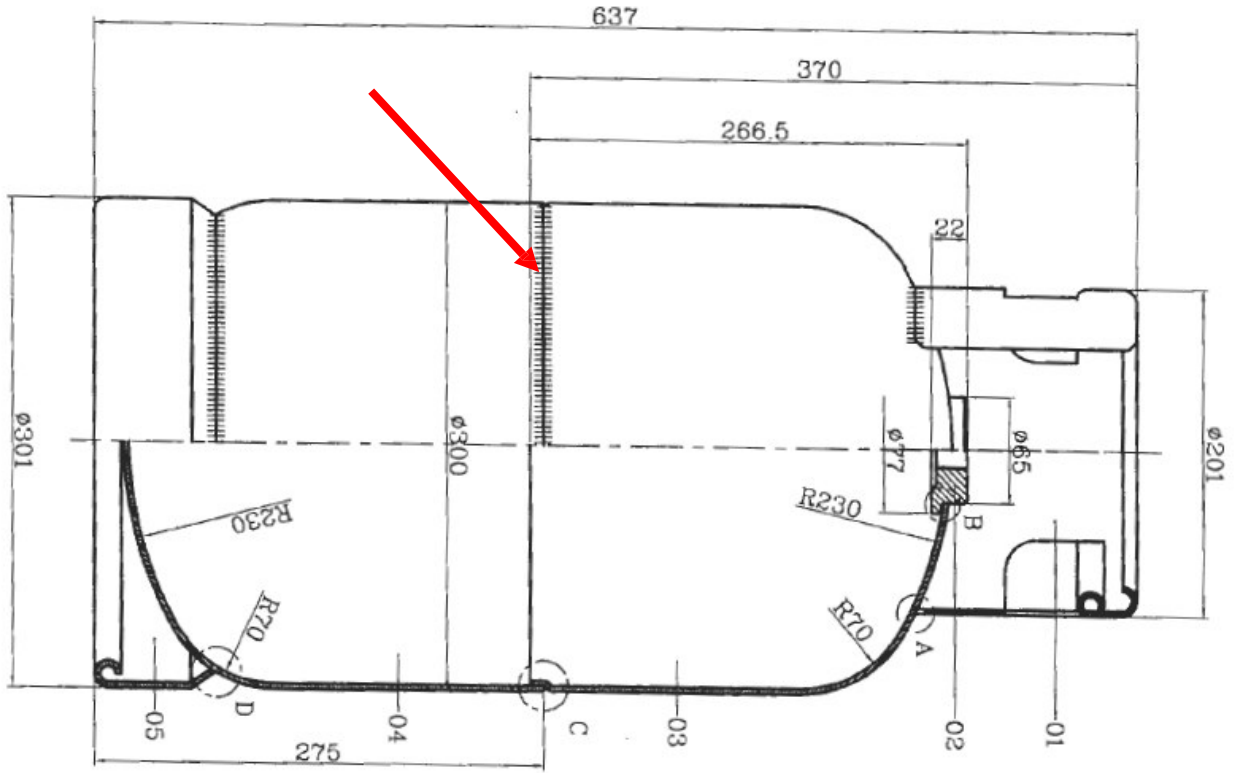
This offer includes the commissioning in our factory, a technical and electrical technical file (3 copies in English language)





3. PREPARATION AND PART TO WELD :





DETAIL D (4:1)



4. WELDING CYCLE:

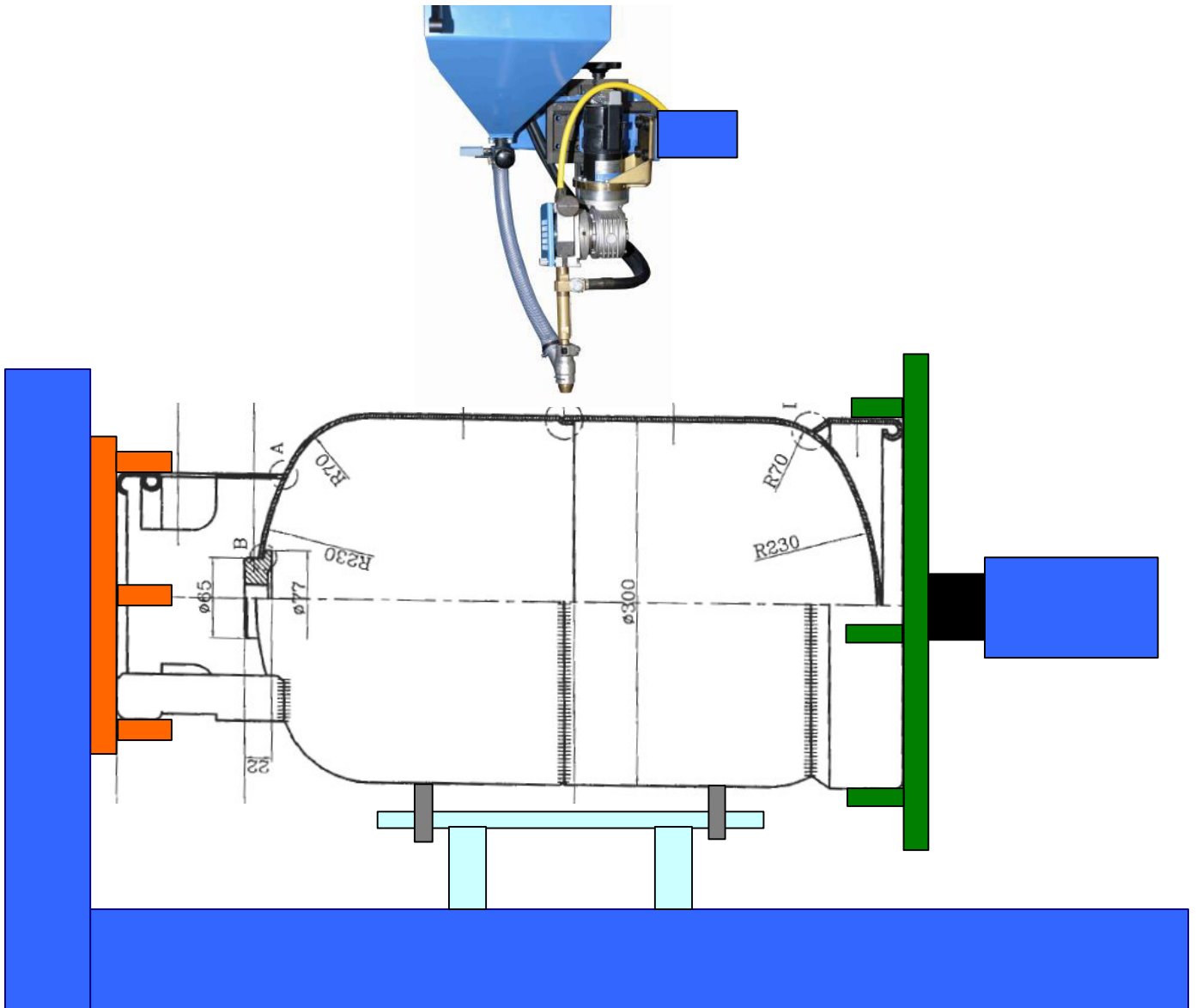
1. Manual loading of the work pieces by operator,
2. Action on pushbutton : clamping of work pieces,
3. Manual preparation of the torches positions and welding conditions (wire cut, flux...),
4. Action on welding start pushbutton (ON) :
 - 4.1. arc striking,
 - 4.2. work pieces rotation: 360° rotation + overlap,
 - 4.3. the torch n°2 (for the bottom piece) stops,
 - 4.4. work pieces rotation: a second 360° rotation + overlap, (for the 2nd passes)
5. Automatic stopping of welding and work piece movement in case of normal cycle [or manual action on welding stop pushbutton (OFF)],
6. Action on pushbutton : unclamping of work pieces,
7. Manual unloading of work piece by operator.

The above cycle operations are provided for information only and may vary according to:

- cleanliness of work piece,
- quality of preparation,
- position of torch,
- consumables : wire and flux used,
- ...



Details of loading and positioning of work pieces:

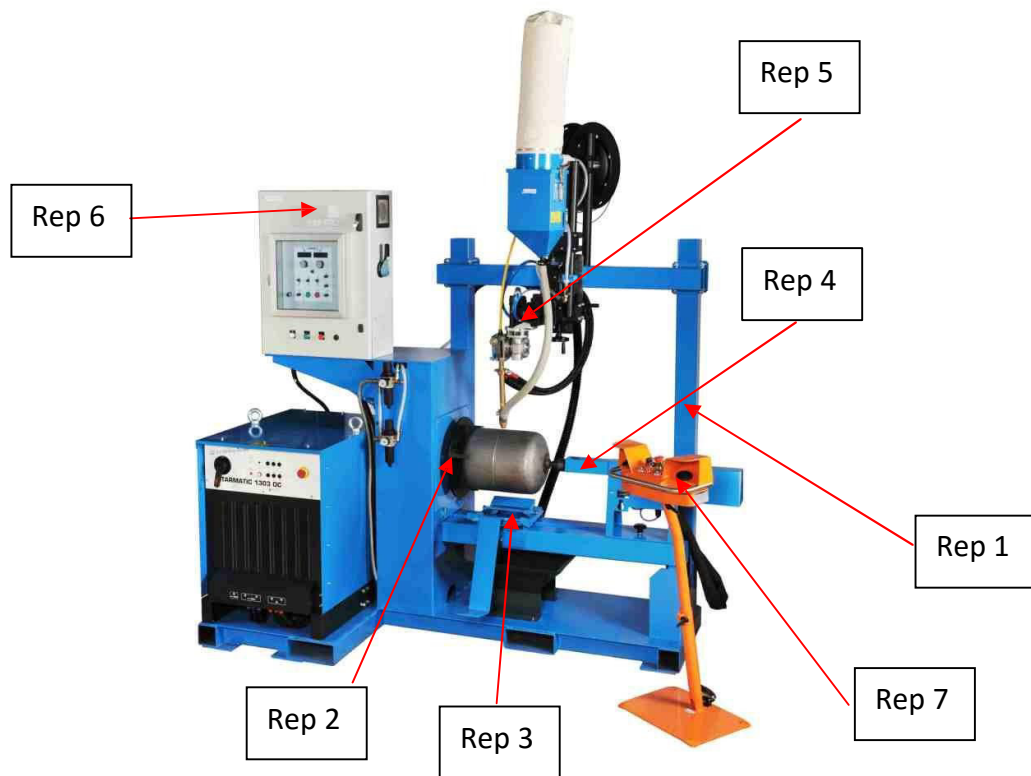




5. EQUIPMENTS DESCRIPTION:

We propose a configuration of standard equipments specifically assembled for your application and consisting of the principal elements describe in the following pages.

A platform concept integrates all the necessary elements. This design facilitates fast and easy installation on site and the easy relocation at a later date if required.

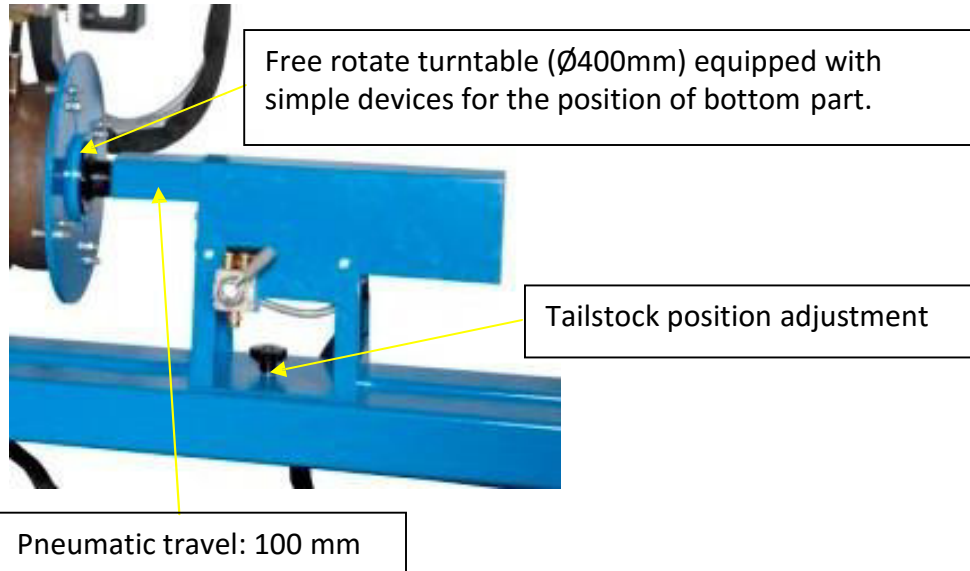


- A **robust mechanical structure (rep 1)** supports all the equipments as the welding head...
- A **motorised rotation unit (rep 2)** with a rotating plate ($\varnothing 400\text{mm}$) equipped with devices for positioning and centring the handle.
The motorised unit is integrated into the mechanical welded structure, protected from impacts and dust (ie: rotating speed: 0.3 to 8.5 rpm).
- A **manual mechanical support (rep 3)** to support the work pieces for the loading and unloading.





- **A pneumatic tailstock (rep 4)** with dead centre equipped with a flow limiter enabling adjustment of the forward or reverse speed translation and a stop cylinder safety device blocking the dead centre in the position which it occupies in case of accidental cut off the compressed air supply.

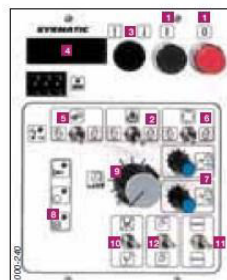


- **Two mono SAW welding head (rep 5)**, including mainly:
 - A single torch,
 - Wire feeding unit,
 - Flux distribution,
 - Two manual slides (travel = 60mm) for the vertical and transversal adjustment of the torch in the joint.



- **A control and electrical panel (rep 6)** including our Gyromatic modular system:

- 1 Automatic cycle start/stop.
- 2 Manual control to start up part rotation with direction selector.
- 3 Raise/lower torch (option).
- 4 Display of rotation speed (option).
- 5 Selection of part rotation direction in foot pedal control mode.
- 6 Selection of workpiece rotation direction in automatic mode.



- 7 Time-delays controlling overlap area and stop time before reset.
- 8 LED display of current cycle status.
- 9 Adjustment of workpiece rotation speed by potentiometer to guarantee constant, regular movement.
- 10 Selection of automatic cycle mode: with or without welding.
- 11 Selection of welding mode: continuous or intermittent.
- 12 Selection of one or two lathes.

- **A welding remote control (rep 7)** with emergency stop and for start and stop the welding cycle.

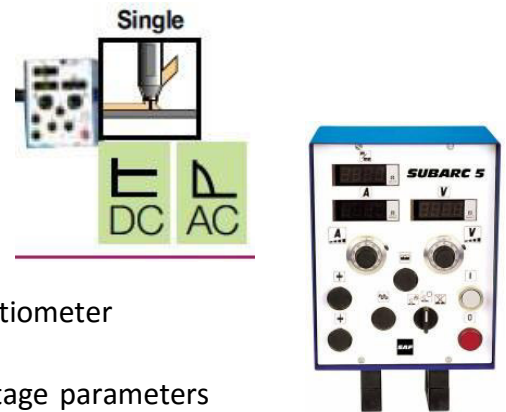




6. WELDING EQUIPMENTS: 2 x Subarc 5 system

Welding control unit box

- arc voltage display and welding current display
- arc voltage and wire feed adjustment with single turn potentiometer
- controls of the welding cycle
- pre-setting and pre-selection of the welding current and voltage parameters



Devimatic DX7 wire feed unit

- A tachometer driven by the wire feed motor guarantees very accurate welding control.
- A simple and rugged mechanical assembly that is easy to configure to suit your application.
- Fine adjustments for all degrees of freedom in rotation allow easy adjustment of the point at which the wire impinges on the work piece.
- Base equipment: linear speed of wire feed between 0,17 to 4,2 m/min,
- Single wire configuration for wire size = 2,4 mm



Flux recovery equipment with hopper (10 l) and manual flux supply valve

This is a compact, self-contained unit that ensures the recovery and supply of the welding protection flux. Considerably reduces manual flux tank refilling operations. This is fitted with a powerful "VENTURI" with compressed air supply tap and a cloth sleeve breather in the tank cover.

It receives compressed air at the network pressure.



Power source: ~~1003-DC~~ => 650DC

- Rugged, reliable, proof against aggressive industrial environments,
- Fan cooled, fitted with thermal cut-out, easy to move using crane or forklift,
- Electronic protection against overload
- Quick connection to the core of the installation by simple and accessible connectors
- Remote controlled.



- 1000 A / 44V duty cycle at 100 %
- 400/ 440V - 50/60 Hz - 3 phases
- Technology: Thyristors
- Primary current at 100% duty cycle: 95 A
- Maximum power consumption : 65,8 kVA
- Temperature range : 0-40°C.
- Protection index : IP23
- Insulation class : H



7. ENVIRONNEMENT CONDITIONS

Standards and Regulations

Our machines are studied and manufactured in accordance with the European standards and regulations. As these equipments will integrate with other equipments, ALWF provide only a declaration of incorporation EC. The customer is responsible for the CE certification.

Operation conditions for the electric cabinet (control panel)

- Ambient temperature range: 15 ~ 50°C max.
- Ambient humidity range: 20 ~ 80 % HR max.
- No condensation
- No dust

Electrical supply

The electrical connections of any nature outside the machine and the main power to the machine are not our supplying.

The characteristics of the main power to supply are:

- Voltage: 3 phases 380 V + ground connection
- Frequency: 50 Hz
- Estimate power supply: *≈ to be confirm latter*

Fluid supply

The fluid connections of any nature outside the machine and the supplying with pressure reducing stations to the machine are not our supplying.