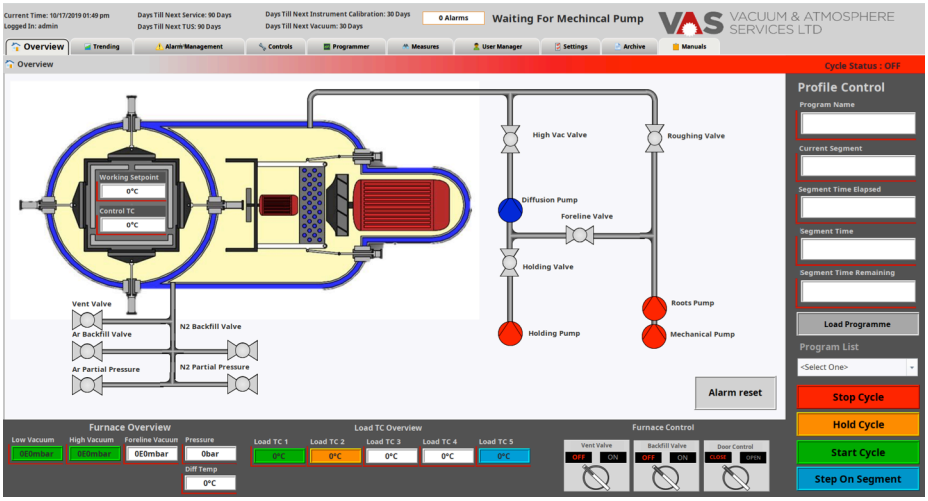
HORIZONTAL LOADING VACUUM FURNACE

MODEL No. DYNATECH DFHH1500





TECHNICAL DATA

DIMENSIONS

Floor space required	
Width	10.0 m
Height	4.0 m
Depth	10.0 m
Plant gross weight	22 tonne
Work zone	
Width	1500 mm
Height	1500 mm
Depth	1500 mm
Max gross charge	3200 kg

TEMPERATURE

Max. Temperature	1280 °C
Vacuum 600°C to 1200°C	±6 °C

QUALITY FROM EXPERIENCE

ENERGY

Rating of heating	TBC
Connected load	TBC
Rated voltage (3 phase – 50Hz)	400 V

VACUUM

Ultimate vacuum (conditioned furnace)	1.0 x 10^{-5} mbar
Operating vacuum	5.0 x 10^{-5} mbar
Partial Pressure Nitrogen/Argon	0.1 to 10 mbar
Leak rate mbar/sec	5 x 10^{-2} mbar l / sec

PUMPING GROUP

MECHANICAL PUMP – (x2) Model No. – Leybold SP630 Capacity	442 m^3/h
BOOSTER PUMP – Model No. – Edwards EH4200 – (x4) Capacity	2200 m^3/h

COOLING FAN

Rated power	TBC

INERT GAS

Argon quenching gas max pressure	1 bar
Gas consumption at max pressure	TBC
Quenching gas purity	99,999 %

CYCLE FEATURES – CONDITIONED, EMPTY FURNACE

Pumping time to 10^{-2} mbar range	< 30 min
Cooling time of furnace from 1250°C to 150°C	< 30 min
Heating time of the hot zone from 150°C. to 1250°C.	< 50 min

QUALITY FROM EXPERIENCE

CONTROL SYSTEM

Controller	VCS+
PLC	Allen Bradley
Temperature/Vacuum Recorder	VCS+
Over temperature safety controller	Eurotherm
Pirani Vacuum Controller	Edwards
Thermocouples (Control O/Temp)	Type 'S'
Thermocouples (Survey) – Customer supply	Type 'N'

WATER (To be confirmed)

Min/Max pressure cooling water	3.5 bar
Water consumption during cooling	40 m3/h
Average consumption cooling water	15 m3/h
Water inlet max. Temp.	25 °C

QUALITY FROM EXPERIENCE

GRAPHITE HOT ZONE (refurbished)

Insulation	Graphite
Heating Elements	Graphite

The work cycle of the Model No. DFHH is completely automatic.

Gas fan cooling is included @ 1 bar abs

Gas Quenching is included:-

- Cooling from above and below

The gas pressure flowing through the gas quench system is operated at up to **1.0 bar** abs

The following items are switched from the control panel.

Pumping	booster pump introduced at pre-set vacuum levels.
Heating	can be activated automatically provided the pre-set vacuum levels are achieved and water is available.
Cooling	under vacuum, static or gas fan quench.
Air Admit	provided the safety interlock is met i.e. below 100°C.

QUALITY FROM EXPERIENCE

PROPOSAL

PRICE SCHEDULE

Item 1

One (1) Vacuum Heat Treatment & Brazing Furnace Model No. Dynatech DFHH 1500 as generally as described within the attached technical summary.

The following upgrade works are included

- New control panel and VCS+ system
- Refurbished hot zone
- Vacuum pump overhaul
- Furnace clean, prepared and painted.
- Heat exchanger removed and pressure tested
- Internal metalwork cleaned, prepared and painted (high temp paint)
- All new water and air hoses
- All new butterfly valves
- Delivery and installation
- Commissioning
- Aftercare (Engineer on site for 4 weeks)

Price: £TBA
(This offer is made Subject to Prior Sale)

QUALITY FROM EXPERIENCE

DELIVERY:

14-16 weeks

TERMS OF CONTRACT:

12 month warranty will apply to all new components.
All other items offered with 6 month warranty

TERMS OF PAYMENT:

60% with order
30% on delivery
10% on formal acceptance at the customers works or 90 days from delivery whichever is the soonest.

TAXES:

The aforementioned quotation is exclusive of VAT or any other taxes / import duties that may apply.

OPTIONS

i)	Loader	**£22,800.00**
ii)	Inert buffer tank	**£15,750.00**

QUALITY FROM EXPERIENCE

TRAINING

On site training at Customer site will include 3 man days where both practical and theoretical aspects of vacuum engineering will be discussed and include a seminar covering:-

1. Vacuum Terminology. Detailing a basic understanding of the terms and units used in day-to-day use of vacuum furnaces.
2. Vacuum Pumping. Detailing the basic operation of the individual vacuum pumps.
3. Furnace control and sequencing.
4. Vacuum furnace maintenance.
5. “Hands on” Maintenance training.

As well as the Operation and Maintenance manuals supplied with the plant, within the training programme, an additional manual will be supplied to each attendee of the seminar.

It is useful if a ‘classroom’ could be made available during this period.

QUALITY FROM EXPERIENCE

EXCLUSIONS

EQUIPMENT AND CIVIL

The following items are specifically not included in the VAS proposal for the furnace, unless otherwise quoted as options in the price schedule.

1. Pits, foundations, packers and associated foundation bolts, unless previously specified and quoted.
2. Steelwork covering pits.
3. Any additional supporting steelwork and stairs which might be requested.
4. Cranes and handling devices.
5. Sump pumps for pit where applicable.
6. Any water treatment equipment, unless previously specified and quoted.
7. Any auxiliary emergency pumps.

QUALITY FROM EXPERIENCE

VAS's installation proposal offer is based upon purchaser's acceptance of the following responsibilities, unless otherwise agreed in price summary.

1. Off load and position all equipment at time of delivery of plant.
2. Provide completely prepared foundation in accordance with VAS drawings.
3. Provide a fork lift truck and operator available for use on site during the equipment installation.
4. Provide services for portable tools.
5. Provide every assistance in order to prevent delays during the erection program and to provide compensation for delays that are not directly attributable to VAS.
6. Provide adequate 3 Phase, 50 Hz, power supply and in accordance with furnace requirements.
7. Provide all service connections to the furnace service termination points.
8. Provide security for all of the furnace and erection equipment against theft and malicious damage.
9. Provide and install all inlet exhaust ducting from the furnace termination point i.e.. mechanical pump exhaust.

QUALITY FROM EXPERIENCE