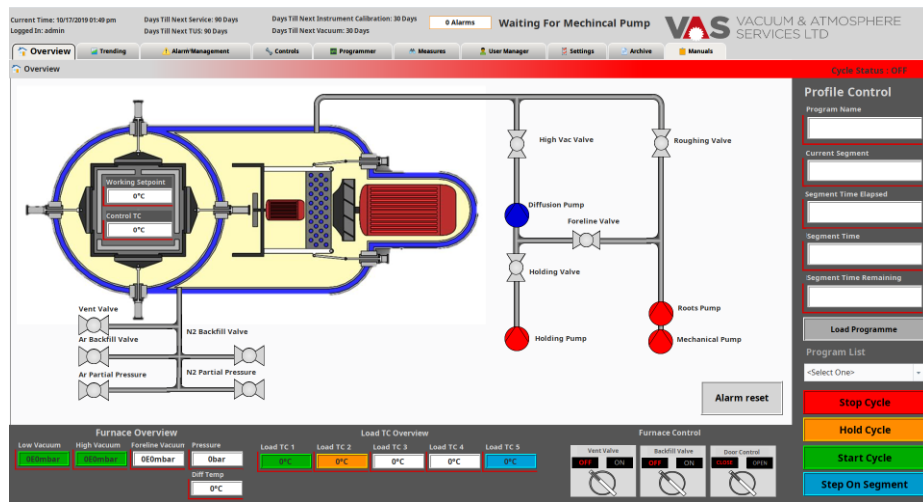


**REFURBISHED HORIZONTAL LOADING VACUUM FURNACE**

**MODEL No. ABAR HR6660**



Agents for:



Unit 30 Park Rose Ind Est, Middlemore Road, West Bromwich, B66 2DZ  
 Tel: 0121 544 4385 Fax: 0121 544 3874  
[www.vacat.co.uk](http://www.vacat.co.uk)

VAS Group of companies:



**TECHNICAL DATA**

**DIMENSIONS**

Floor space required

Width 6 m  
Height 4.0 m  
Depth 6.0 m

Plant gross weight 10,000 kgs

Work zone

Width 600 mm  
Height 760 mm  
Depth 1200 mm

Max gross charge 1000 kg

**TEMPERATURE**

Max. Temperature 1270 °C

Vacuum 600°C to 1200°C ±5 °C

**ENERGY**

Rating of heating 180Kw

Connected load 165Kva

Rated voltage (3 phase – 50Hz) 400 V

**VACUUM**

Ultimate vacuum (conditioned furnace)  $1.0 \times 10^{-5}$  mbar

Operating vacuum  $5.0 \times 10^{-5}$  mbar

Partial Pressure Nitrogen/Argon 0.1 to 10 mbar

Leak rate mbar/sec  $5 \times 10^{-2}$  mbar l / sec or < 4 microns

**PUMPING GROUP**

**MECHANICAL PUMP –**

Model No. – Edwards GV600 or Leybold SP630

Capacity 560m<sup>3</sup>/h-1 / 630 m<sup>3</sup>/h-1

**BOOSTER PUMP –**

Model No. – Edwards EH4200 or Leybold WAU 2001

Capacity 3100 m<sup>3</sup>/h-1 / 2050m<sup>3</sup>/h-1

**DIFFUSION PUMP –**

Model – Varian HS32

Capacity 30,000 l/sec

**COOLING FAN**

Rated power 110Kw

**INERT GAS**

Nitrogen quenching gas max pressure 800mbar

Gas consumption at max pressure 10m<sup>3</sup> approx

Quenching gas purity 99,999 %

**CYCLE FEATURES – CONDITIONED, EMPTY FURNACE**

Pumping time to 10<sup>-2</sup> 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

**CONTROL SYSTEM**

Controller	VCS+
PLC	Siemens
Temperature/Vacuum Recorder	VCS+
Over temperature safety controller	Eurotherm
Pirani Vacuum Gauge	Edwards
Penning Vacuum Gauge	Edwards
Thermocouples (Control O/Temp)	Type 'S'
Load thermocouples (12 off)	Type 'N'

**WATER (To be confirmed)**

Min/Max pressure cooling water	3.5 bar
Water consumption during cooling	30 m3/h
Average consumption cooling water	10 m3/h
Water inlet max. Temp.	25 °C

**GRAPHITE HOT ZONE**

Insulation	Graphite
Heating Elements	Graphite

The work cycle of the Model No. Abar HR6660 is completely automatic.

**Gas fan cooling is included @ 800 mbar**

**Gas Quenching is included:-**

- Cooling cylindrically, through gas nozzles

The gas pressure flowing through the gas quench system is operated at up to **800 mbar**

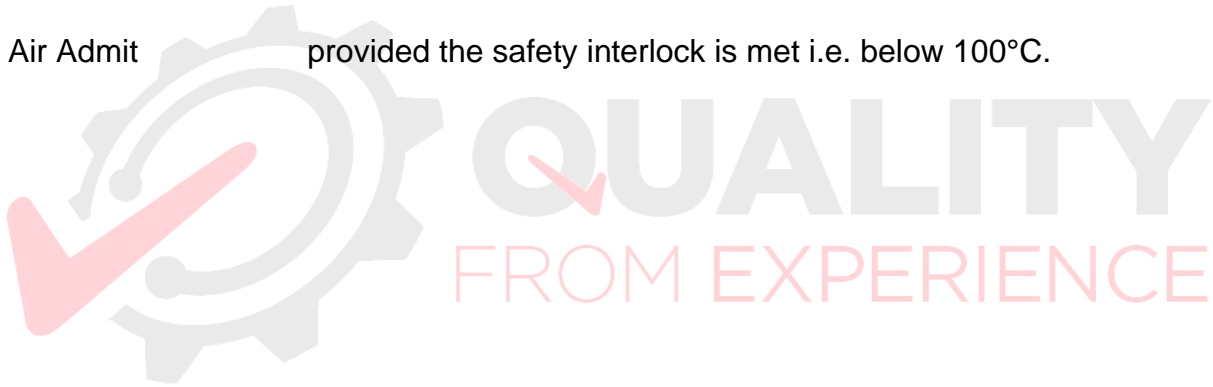
The following items are switched from the control panel.

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.



Agents for:



Unit 30 Park Rose Ind Est, Middlemore Road, West Bromwich, B66 2DZ  
Tel: 0121 544 4385      Fax: 0121 544 3874  
[www.vacat.co.uk](http://www.vacat.co.uk)

VAS Group of companies:



## PROPOSAL

### PRICE SCHEDULE

#### Item 1

One (1) Vacuum Heat Treatment & Brazing Furnace Model No. Abar HR6660 as generally as described within the attached technical summary.

The following upgrade works are included

- New vessel
- New control panel and VCS+ system
- New hot zone
- Vacuum pump overhaul
- Heat exchanger removed and pressure tested
- All new water and air hoses
- All new butterfly valves
- AMS2750 compliant
- Manual loader

**Price: POA**

(This offer is made Subject to Prior Sale)

**Delivery** – to be quoted upon advising final of the destination

**Installation / commissioning / training** – to be quoted upon advising of the final destination

#### DELIVERY:

10-12 weeks

#### TERMS OF CONTRACT:

12 month warranty will apply to all new components.

All other items offered with 6 month warranty

#### TERMS OF PAYMENT:

To be discussed

#### TAXES:

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

## 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. Furnace Control System
5. Vacuum furnace maintenance.
6. "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.

Agents for:



Unit 30 Park Rose Ind Est, Middlemore Road, West Bromwich, B66 2DZ  
Tel: 0121 544 4385 Fax: 0121 544 3874  
[www.vacat.co.uk](http://www.vacat.co.uk)

VAS Group of companies:



## EXCLUSIONS

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

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.
8. Provide adequate 3 Phase, 50 Hz, power supply and in accordance with furnace requirements.
9. Provide adequate water system including pipework
10. Provide inert gas to furnace termination point
11. Provide and install all inlet exhaust ducting from the furnace termination point i.e.. mechanical pump exhaust.
12. Provide security for all of the furnace and erection equipment against theft and malicious damage.