Ipsen Model VR-72x72 2-Bar MetalMaster® Vertical Loading Vacuum Heat Treating Furnace which includes:

Work zone size of 72" diameter x 72" high.

Hearth gross load weight capacity of 5,000 pounds at 2,400°F.

Normal operating temperature range between 950°F to 2,400°F. Maximum temperature for bake out/clean-up operation 2,500°F (2 hours).

Hot zone consisting of .015" thick ML molybdenum inner shield, .010" thick molybdenum second and third shields and two .018" stainless steel outer shields, all housed in stainless steel gas distribution hot zone structure with ML molybdenum heating elements (includes end elements) and molybdenum hearth.

The hot zone is divided into five (5) digital trimmable zones (top, center, bottom and both ends) with temperature uniformity of ±10°F between 1,000°F to 2,200°F.

The furnace chamber is double walled, water cooled construction with carbon steel inner wall and carbon steel outer wall and flanges. Chamber inner wall is coated with a rust preventive, low out gassing, high temperature coating to prevent oxidation and to facilitate cleaning.

The lower head is also double wall, water cooled carbon steel construction with machined carbon steel sealing flange. The construction includes wheels on the head to provide for roll-out from under the vacuum chamber for loading and unloading by an electric motor. Bottom head is motor driven (in/out). Head lift is by means of four (4) ball screws, phased for smooth, level travel. A locking ring type bottom head closure for up to 2-Bar gas quenching. Service platform with ladder (with safety cage).

Varian Model NHS-35 Diffusion pump, with Leybold rotary vane holding pump.

Edwards Model 1738 VFD mechanical/blower pump combination. The blower is equipped with a VFD that permits operation to begin at atmosphere, thus reducing pump-down times. Includes an oil mist separator for pump exhaust.

Ultimate vacuum: 10-6 Torr range (clean, dry & empty at ambient).

Leak rate: 2 microns per hour (clean, dry & empty at ambient).

Ipsen Model GQ-5500, 100 HP driven turbine argon gas cooling system with gas injection nozzles located at 360° around the perimeter of the hot zone.

Reduced voltage motor starter for 100 HP gas cooling motor.

Argon step down transformer for 100 HP gas cooling motor.

Panel board with main circuit breaker and hot zone circuit breakers with undervolt trip.

Argon gas actuated pneumatic system.

675 KVA Variable Reactance Transformer with 5 year manufacturer's warranty.

EMT conduit and wire way with interconnect wiring between panel board, furnace and main control panel.

Customer primary power: 460 volts, 3 phase, 60 Hz.

One (1) spare parts starter kit.Ipsen CompuVac control system including the following:

A. Industrial Computer with touch monitor.

B. Wonderware HMI software.

C. Honeywell UDC-2500 digital over-temperature controller. D. Allen-Bradley programmable logic controller to perform all furnace sequencing, PID control and alarm functions.

E. Five (5) ammeters & voltmeters, one for each digital control zone.

F. Type-S thermocouples for control and over temperature.

G. One (1) Type-K thermocouple jack panel for up to twelve (12) customer supplied work thermocouples.

H. Two (2) twelve point Type-K thermocouple jack panels mounted on main control cabinet with jumpers (reference BM2118).

I. Honeywell Multi-Trend GR Paperless Recorder (24 channel) or equivalent.

J. Inficon VGC-403 (3 channel) vacuum gauge controller, using BPG 402-S in vessel, PSG500 in vessel & PSG500 in fore line with cables.

K. Control cabinet mounted "backup" Inficon VGC-402 vacuum gauge controller, using BPD 402-S with cable.

L. UPS (uninterruptable power supply).

M. Interface port (Ethernet, USB and power outlet).

N. Remote access software for diagnostics and troubleshooting by Ipsen Inc.

O. Capable of meeting AMS-2750E applicable requirements.

Four (4) seats at Ipsen "U" (customer responsible for travel and lodging).

Ipsen Inc. ISO pre-shipment testing including standard temperature uniformity test.

One (1) year standard Ipsen Inc. equipment warranty.

The entire furnace is painted Sherwin Williams 6508 Secure Blue machine enamel as specified by the user.

Equipment Installation by customer.

Start-up & Equipment Operational Instruction (travel and living expenses are included for up to five (5) days).

PRICE (FCA) .....

OPTION

2 One (1) Inconel standard flat work grid rated for 2200oF maximum. PRICE (FCA) .....

3 High temperature alloy TUS fixture rated for 2200oF maximum. PRICE (FCA) .....

4 Barcode scanner with software to verify that the recipe number selected matches recipe number barcode on the job traveler for Item #1 above & BM2118. PRICE .....

5 One (1) argon gas backfill reservoir rated for 125 psig. PRICE (FCA) .....

6 Ipsen Inc. PdMetricsTM Predictive Maintenance Platform (attachments). PRICE .....

7 Extended Ipsen Inc. Standard Equipment Warranty to two (2) years. PRICE .....

8 Equipment Installation by Ipsen Inc (attachment). PRICE .....

9 Freight PPD (pre-paid) OH. PRICE .....