

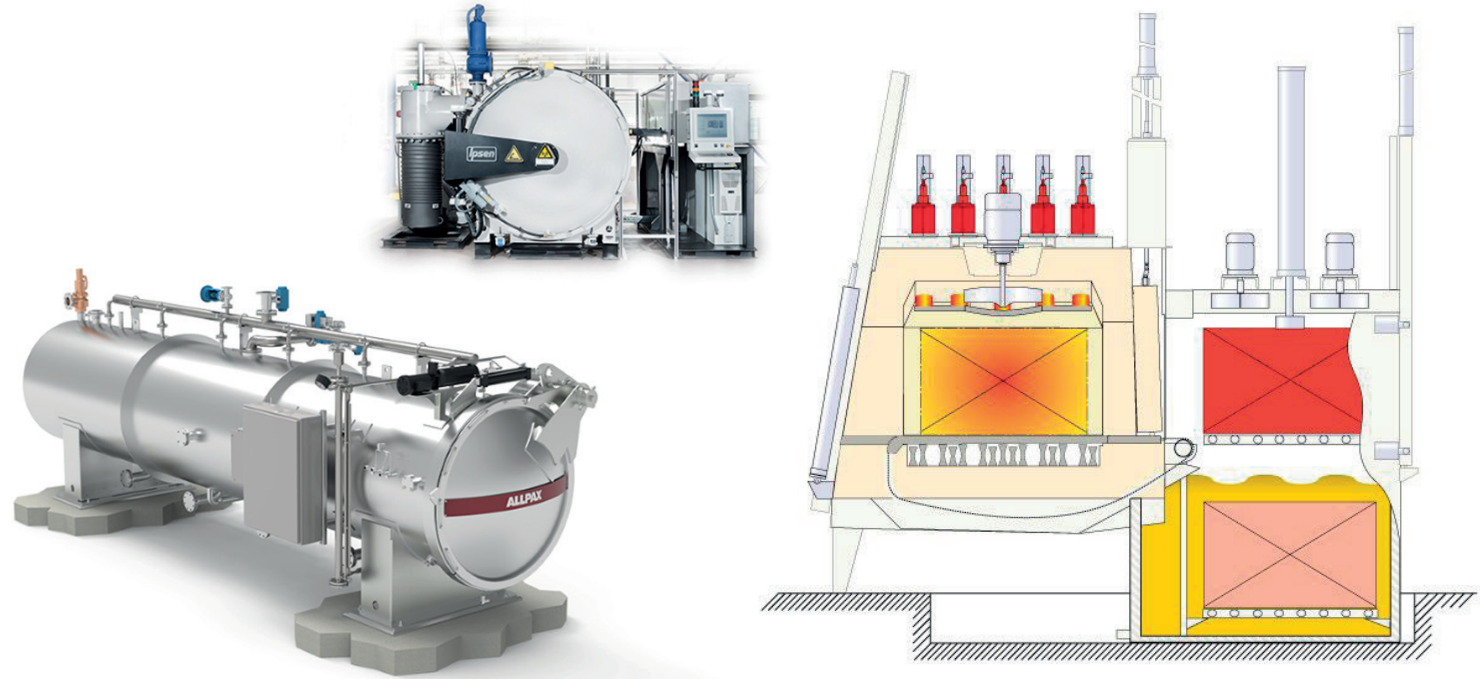
VAS VACUUM & ATMOSPHERE
SERVICES LTD

VAS Group, Unit 30 Park Rose Industrial Estate,
Middlemore Road, Smethwick, B66 2DZ

CONTROL SYSTEM SOLUTIONS

www.vacat.co.uk





INTRODUCTION

The VAS group of companies are established suppliers to the heat treatment industry. Together we offer a wide range of services. Our company ethos is to give competitive prices alongside a complete solution to your sourcing requirements. In all businesses, our knowledge, experience and friendly service come as standard.



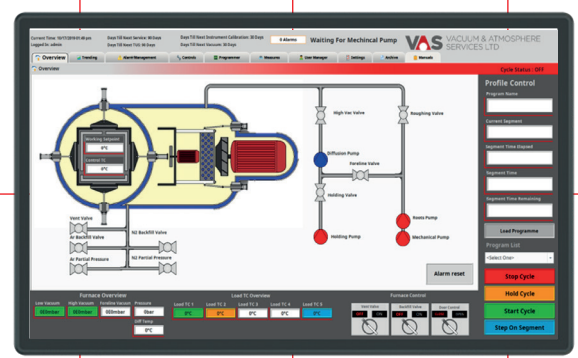
Modbus 57 / Ethernet Connection

Visualisation

Tolerance Limits

Encrypted Database

Setpoint Programmer



Alarming

Data Recorder

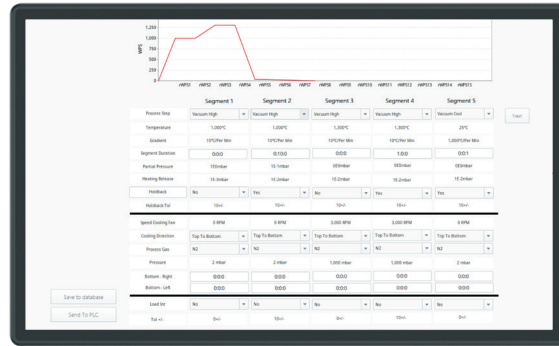
AMS 2750E Nadcap

WHY VCS?

- Easy-to-use interface with consistent user prompts and colour menus
- Extensive data collection and ability to download or print reports
- Sophisticated alarm package that monitors the furnace and suggests preventative maintenance
- Remote diagnostics and monitoring of the cycle
- Repeatable results with programmable recipes and optimisation of processes
- VAC Guardian / ATM Guardian
- The new system will also provide local independent and autonomous secure data logging, for all the required machine field sensors and data points. The data logging and data archive system will be compliant with **AMS2750E** and **NADCAP**.



V&S



S7-1200



Profi-Net

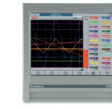
Ethernet



E+PLC



E-power



Datalogger



Watchdog

Modbus / TCP



Allen Bradley

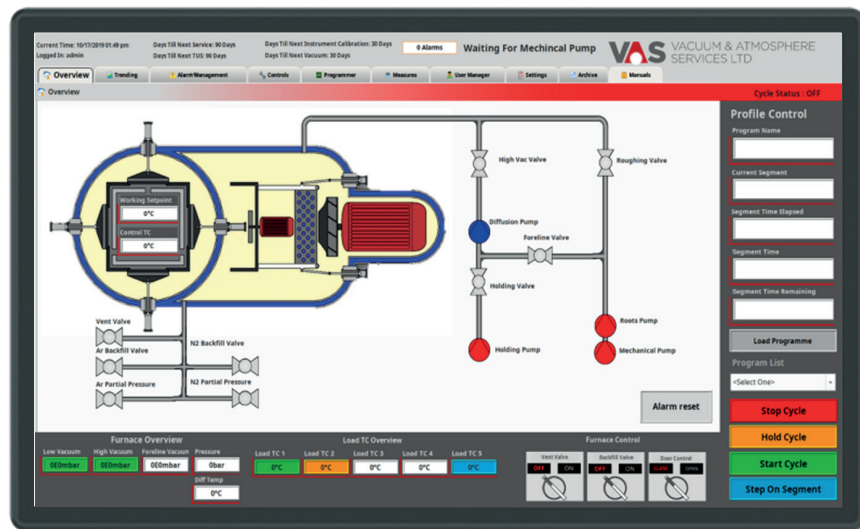


Ewon Flexy

SOLUTION CAPABILITIES

- All new control cabinets (various sizes and layouts)
- Panel upgrades
- AMS / NADCAP compliant
- CE marked
- Eurotherm EPC 3016 over temperature instruments
- Remote access
- Simple segmented programming
- Performance management remote access

- Energy saving
- Energy monitoring
- Predictive analytic trending / reporting
- Data archiving
- Modules for digital Inputs and outputs
- UPS for power failure protection
- OEE software
- Performance management

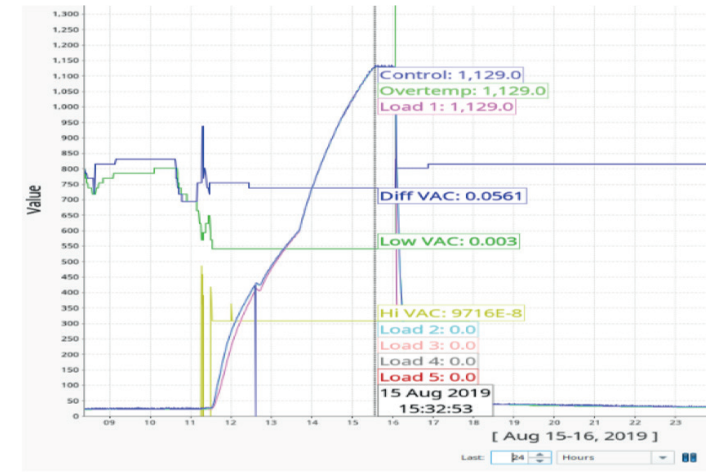
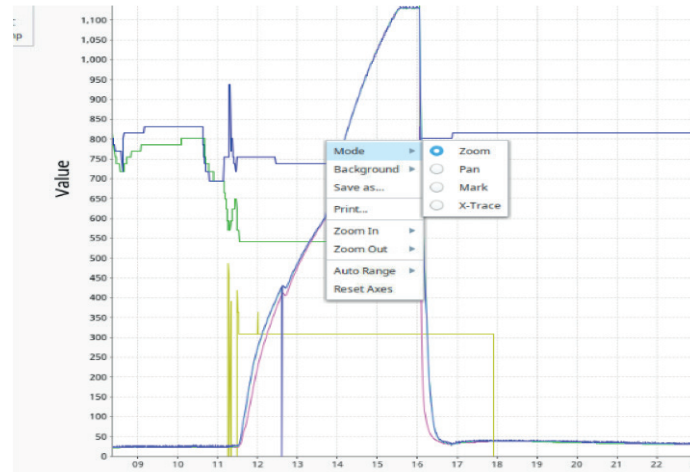


OVERVIEW

The overview screen for quick glance:

- Program name & details
- Alarms
- Hottest and coldest TC
- Program control

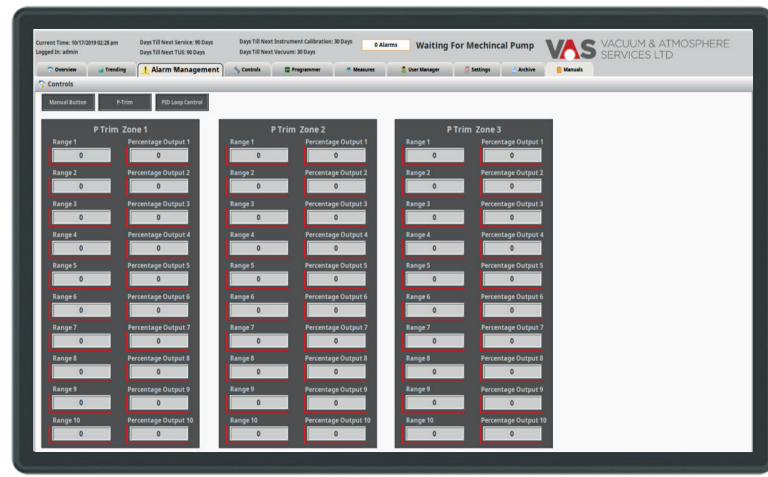
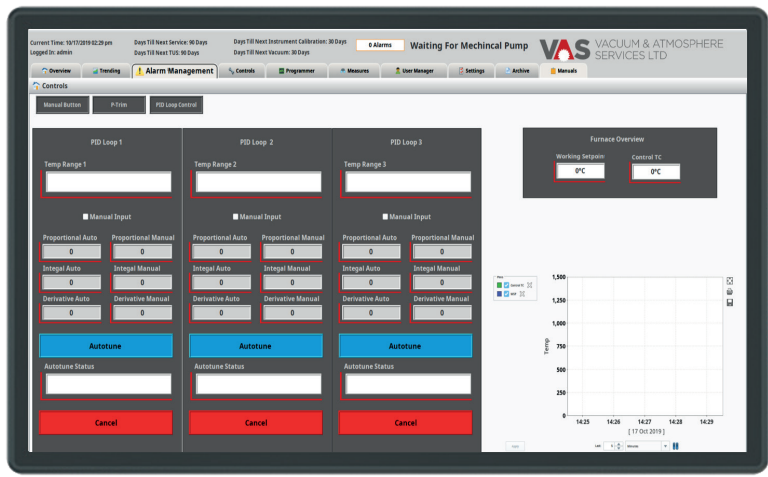
- TUS / calibration / Service count down
- LED for pumps & valves
- Quick furnace Control
- Cycle status banner



TRENDING

The trends page displays live and historical trend views of all analogue inputs connected to the PLC, the trend screen can be navigated between the furnace readings and the load thermocouples.

- Zoom in / out using the mouse
- Allows easier scrolling
- Mark graph select the data to gain more information
- X-Trace selects all data and gives you all information from the data
- Chose between a white or black background
- Save the trend to a PDF with all the raw data from the run
- Print trend to local printer
- Zoom in
- Zoom out
- Auto range the scales axes to the top and bottom limits of the data
- Reset axes to restore the graph to its default look



PID LOOP CONTROL

The controllers use the most cutting-edge PID control algorithms. Customer has the option of 3 different control PID loops to help with TUS. Each loop can be easily configured.

Autotune the PID loop easily to ensure stable and accurate temperature control, to prevent overshoot and oscillations at critical or even in fast thermal processes.

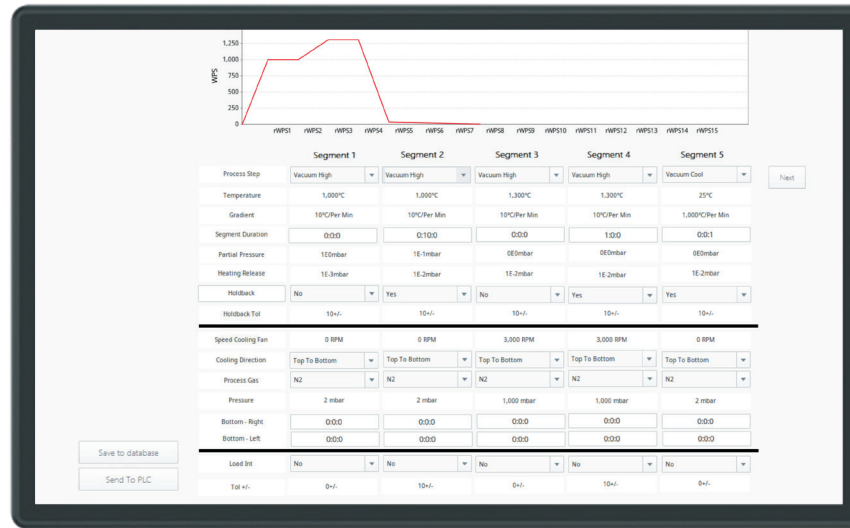
P-TRIM CONTROL

P-Trim is designed by VAS to give the user a greater control of the hot and cold spots inside their hot zone. It does work in either a one or three zone control system, however you will get better results in a three zone.

It works by limiting the percentage output of the transformer. For example, looking at the above: from 0°C to 600°C, the transformer has been limited to only give out 45% maximum power. Then from 600°C to 1400°C, the transformer has been limited to 65% output.



VAS



Segment 1

Process Step: Vacuum

Temperature: Vacuum

Gradient: Partial Pressure

Segment Duration: Convection

Partial Pressure: Gas Cooling

Process Gas: N2

Pressure: Gas Fan Cooling

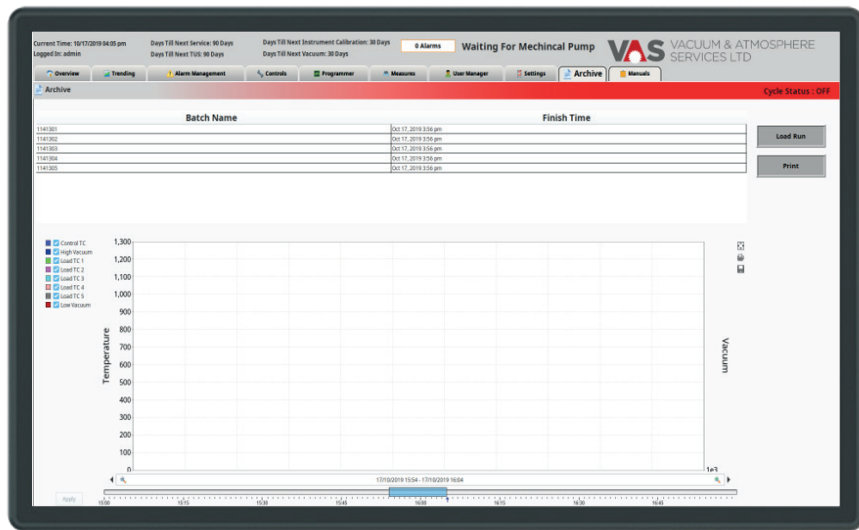
Load Int: Vacuum Cool

Tol +/-: End Of Cycle

PROGRAMMER

The programmer is in-built to the SCADA package & uses an SQL secure database to keep recipes. Writing programs is as simply as picking the process from a drop down box and depending on access level save to the database. Live changes can also be made during the cycle.

- Drop down easy to write program
- Interlocked parameters to avoid mis-writing programs
- Segment graph
- Live changes
- Password protected
- Flexible
- 7+ Furnace control options



The screenshot shows a spreadsheet with a detailed batch report. The columns include: t_stamp, Overtemp, rLoad_TC1, rLoad_TC2, rLoad_TC3, rLoad_TC4, rLoad_TC5, rDiff_Vac, rLow_Vac, rHigh_Vac, and Control_TC. The data is organized into rows, with the first row being the header and subsequent rows containing numerical values for each parameter.

| | A | B | C | D | E | F | G | H | I | J | K |
|----|------------------|----------|-----------|-----------|-----------|-----------|-----------|-------------|------------|-----------|------------|
| E1 | t_stamp | Overtemp | rLoad_TC1 | rLoad_TC2 | rLoad_TC3 | rLoad_TC4 | rLoad_TC5 | rDiff_Vac | rLow_Vac | rHigh_Vac | Control_TC |
| 1 | 15/08/2019 08:22 | 222 | 190 | 184 | 0 | 0 | 0 | 0.144999996 | 0.01255486 | 0 | 221 |
| 2 | 15/08/2019 08:22 | 222 | 190 | 184 | 0 | 0 | 0 | 0.144999996 | 0.01255486 | 0 | 221 |
| 3 | 15/08/2019 08:22 | 222 | 190 | 184 | 0 | 0 | 0 | 0.144999996 | 0.01255486 | 0 | 221 |
| 4 | 15/08/2019 08:22 | 222 | 190 | 184 | 0 | 0 | 0 | 0.144999996 | 0.01255486 | 0 | 221 |
| 5 | 15/08/2019 08:22 | 222 | 190 | 184 | 0 | 0 | 0 | 0.144999996 | 0.01255486 | 0 | 221 |
| 6 | 15/08/2019 08:22 | 222 | 190 | 184 | 0 | 0 | 0 | 0.144999996 | 0.01255486 | 0 | 221 |
| 7 | 15/08/2019 08:22 | 222 | 190 | 184 | 0 | 0 | 0 | 0.144999996 | 0.01255486 | 0 | 221 |
| 8 | 15/08/2019 08:22 | 222 | 190 | 184 | 0 | 0 | 0 | 0.144999996 | 0.01255486 | 0 | 221 |
| 9 | 15/08/2019 08:23 | 222 | 190 | 184 | 0 | 0 | 0 | 0.144999996 | 0.01255486 | 0 | 222 |
| 10 | 15/08/2019 08:23 | 223 | 191 | 185 | 0 | 0 | 0 | 0.144999996 | 0.01255486 | 0 | 222 |
| 11 | 15/08/2019 08:23 | 223 | 191 | 185 | 0 | 0 | 0 | 0.144999996 | 0.01255486 | 0 | 222 |
| 12 | 15/08/2019 08:23 | 223 | 191 | 185 | 0 | 0 | 0 | 0.144999996 | 0.01255486 | 0 | 222 |
| 13 | 15/08/2019 08:23 | 223 | 191 | 185 | 0 | 0 | 0 | 0.144999996 | 0.01255486 | 0 | 222 |
| 14 | 15/08/2019 08:23 | 223 | 191 | 185 | 0 | 0 | 0 | 0.144999996 | 0.01255486 | 0 | 222 |
| 15 | 15/08/2019 08:23 | 223 | 191 | 185 | 0 | 0 | 0 | 0.144999996 | 0.01255486 | 0 | 222 |

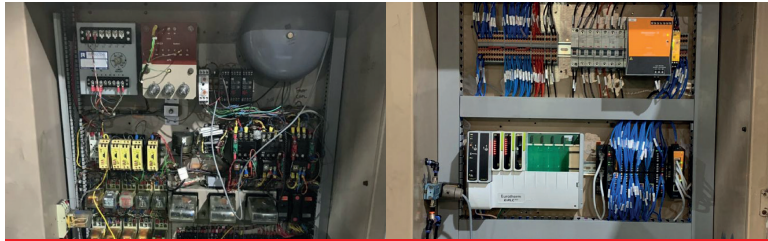
DATA COLLECTION

Using the secure database to pull up previous runs and view on the graph, or export the XML / CSV file to a format you require. This can be done automatically if the customer wishes.

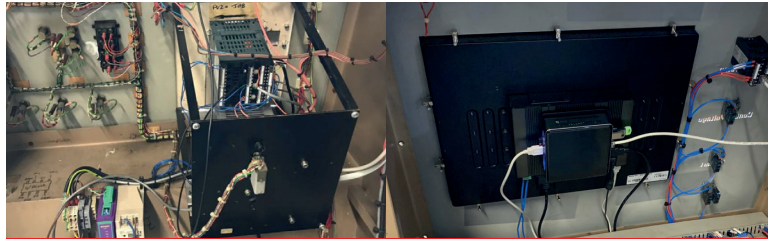
- Standard CSV file
- Encrypted format
- Graphic trend view

BATCH REPORT

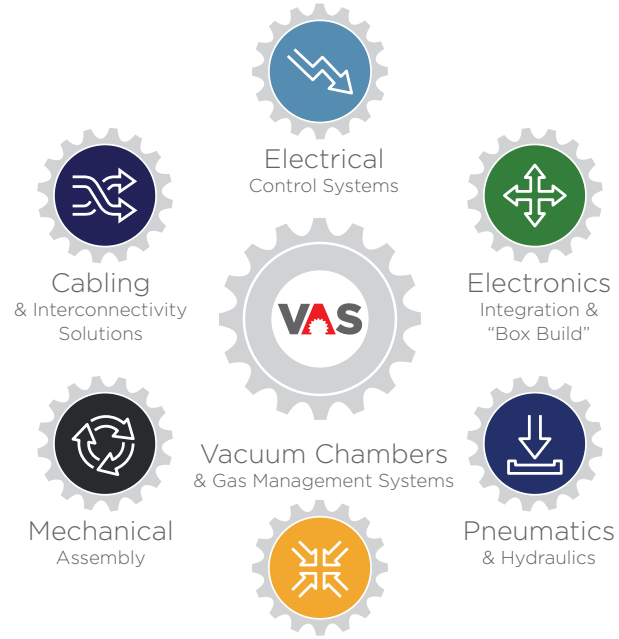
The batch report options allow you to archive process data and recall it at a touch of a button. The data is timestamped and saved to the secure and encrypted SQL database. This can be used to produce production / quality reports or exported to a CSV file.



BEFORE & AFTER 1

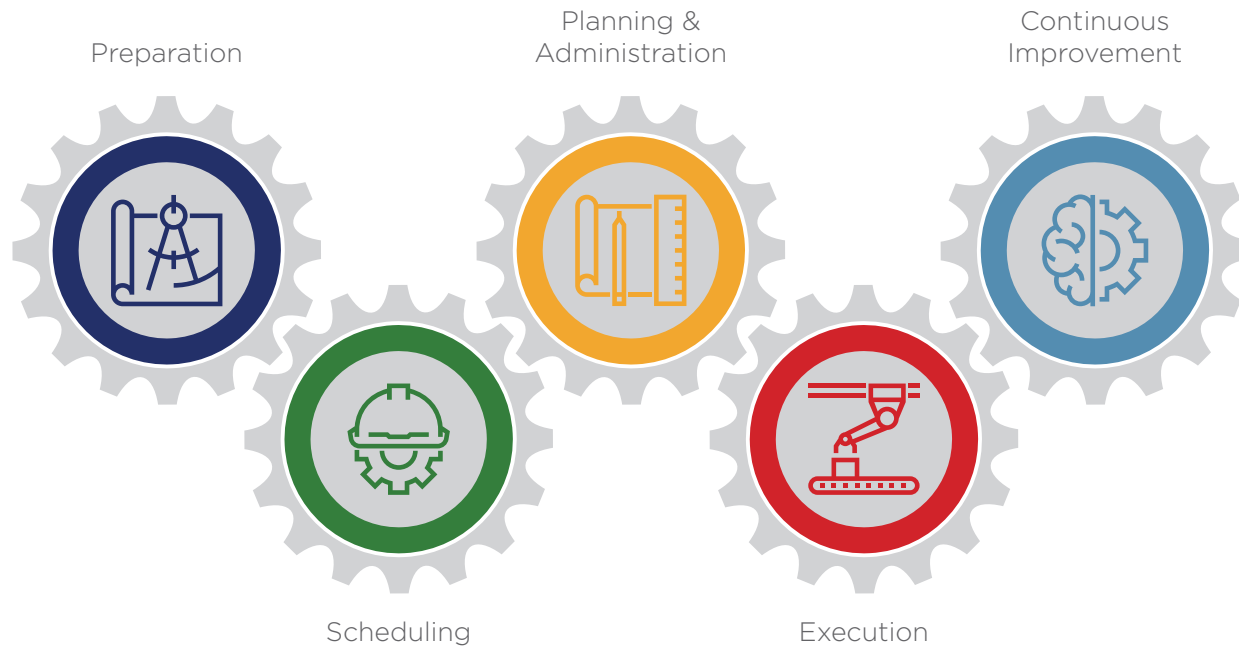


BEFORE & AFTER 2



NEW PANEL OR PANEL INTEGRATION

VAS offer the choice of brand new panels, or can using existing control gear and retro-fit the new PLC and IPC to the customers existing panel. We have done both to great success.



VAC / ATM GUARD - INTRODUCTION

There are many points of failure on a vacuum furnace, but most are avoidable with more care and attention, Vac-Guard aims to attack these points of failure and provide intervention and monitoring to eliminate all points of failure.

- Early warning alerts
- Operator tasking
- Preventative actions
- Predictive actions
- Service warnings
- Safety warnings
- Calibration / TUS warnings
- SMS or Email notification
- Traffic light system
- Cutting edge technology never used before in the heat treatment industry



VAS VACUUM & ATMOSPHERE SERVICES LTD



Agents for:



UK & Ireland distributors for:



Customized for your hot innovations

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