AICHELIN
UNITHERM
industrial furnace solutions

Multi-Purpose Chamber Sealed Quench Furnace

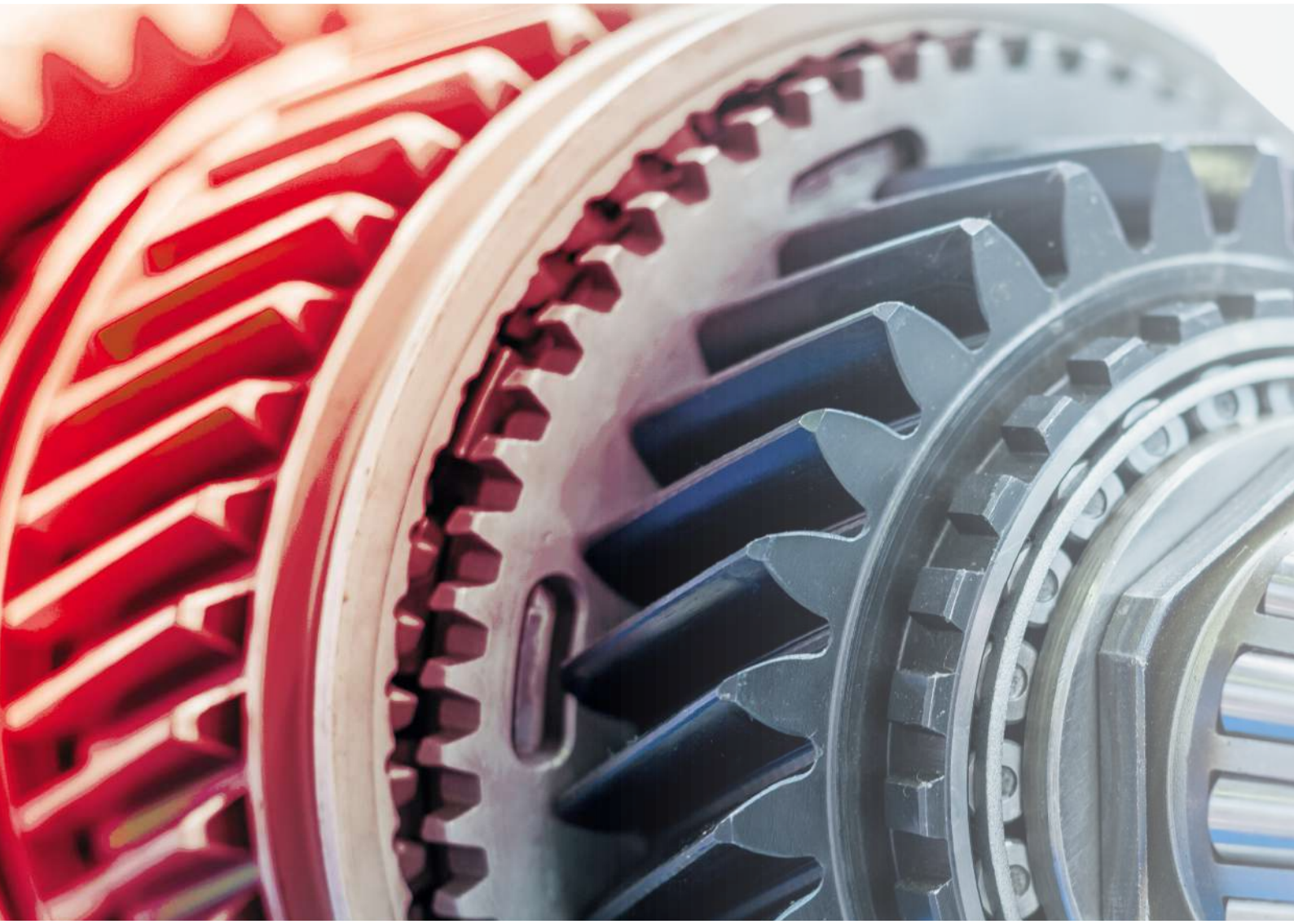
AICHELIN

Safety Always

Reliability at Work

Customised Solutions

Efficient Plants and Advance Solutions for Heat Treatment



CONTENT

Introduction

AICHELIN UNITHERM HEAT TREATMENT SYSTEMS INDIA PVT. LTD. is India's technological leader in the manufacturing of industrial plants and components for the thermal and thermochemical heat treatment of metallic parts.

AICHELIN UNITHERM is a 50:50 joint venture company (JVC) between AICHELIN Holding GmbH (Austria) and UNITHERM Engineers Limited (India). It manufactures state-of-the-art heat treatment furnaces for both domestic and international markets, with a manufacturing plant located in Pune, India.

With its strategic partnership with the AICHELIN Group (a leading European heat treatment solutions provider) over a short period of time, AICHELIN UNITHERM has strengthened its market position as one of India's largest heat treatment companies. It offers a wide range of heat treatment furnaces such as Sealed Quench Furnaces, Continuous Pusher Furnaces, Continuous Mesh Belt Furnaces, Roller Hearth Furnaces, Rotary Hearth Furnaces, Gas Nitriding Furnaces, Pit Furnaces, Washing Machines, Endo Gas Generators and more.

In the field of aluminium heat treatment industry, AICHELIN UNITHERM have supplied T6 furnaces and have the know-how from its group company AFC HOLCROFT USA (part of the AICHELIN Group) to manufacture these furnaces in India.

For the steel industry AICHELIN UNITHERM will provide state-of-the art high temperature and large capacity heat treatment furnaces which will be manufactured in India based on the know-how and design from BOSIO (part of the AICHELIN Group).

To cater to the steel industry, AICHELIN UNITHERM also has co-operation with a local partner in India to offer economical Bogie Hearth and Box Type furnaces based on proven design and technical know-how.

Vision

"AICHELIN UNITHERM will be the leading and most reliable partner for our customers by providing Industrial Heat Treatment plants and services in India and Overseas."

Mission

- We as AICHELIN UNITHERM are committed to customer satisfaction by offering reliable products and services at competitive prices.
- We offer high quality furnace equipment and fulfill the customer demands through continuous improvements, cost effectiveness and engaging qualified suppliers as partners.
- We commit to provide outstanding support and service.
- We encourage team integration and empower our employees through individual growth opportunities.
- We will grow through effective customer engagement and technological advancements.

We Contribute to Heat Treatment All Over the World

At AICHELIN UNITHERM, we deliver reliable, efficient, safe and customised heat treatment solutions built to meet your requirements. Backed by the globally renowned AICHELIN Group (Austria) and over years of experience, we offer best in the class technology, localised service and unmatched industry expertise.

RELIABILITY

Our furnaces are built for long-term performance with least lifetime operational costs ensuring maximum uptime and minimal risks in challenging heat treatment environments with reliability and repeatability of heat treatment results.

SAFETY FIRST

Safety is of the utmost importance, especially in the heat treatment Industry. This is where our furnace design stands out from the competition without compromising on any operational safety standards.

CUSTOMISED HEAT TREATMENT SOLUTIONS

We design and manufacture tailor-made heat treatment solutions to meet your specific process requirements, from carburising and hardening to nitriding, also heat treatment solutions for aluminium and steel industry.

COMPREHENSIVE PRODUCT RANGE

From various batch and continuous furnaces to gas generators and automation solutions – our product portfolio covers all your heat treatment needs under one roof.

PROVEN GLOBAL TECHNOLOGY INTEGRATION

Combining European technology with Indian engineering capability, we bring the best of global heat treatment solutions into your plant for your growth. Heat treatment in our furnaces makes the world safer by ensuring durability and reliability of components that go into various engineering products.

ENHANCED OPERATIONAL EFFICIENCY

Our furnaces are highly energy-optimized and Industry 4.0 ready, helping you achieve better throughput process, control and cost efficiency.

STRONG DOMESTIC and INTERNATIONAL PRESENCE

With 500+ of installations across India, Middle East and Southeast Asia, we are a preferred partner to OEMs, Tier-1 suppliers and engineering leaders.

BEST-IN-CLASS SALES and SERVICE SUPPORT

Our dedicated and highly experienced sales and service teams operate from multiple locations across India, ensuring quick response, spare part availability and long-term customer success.

AICHELIN Multi-Purpose Chamber Furnace Unit

1. INTRODUCTION

During the last decades, AICHELIN Group has built far more than 3000 protective gas chamber furnaces and put them into operation. These plants have been in operation with high efficiency and reliability thereby delivering quality products for our customers. Due to rugged furnace design and continuous development along with the customer feedback has helped us to gain their confidence and trust. This has resulted in the creation of different models of chamber furnace based on production capacity where each of them is optimally aligned to meet customer needs.

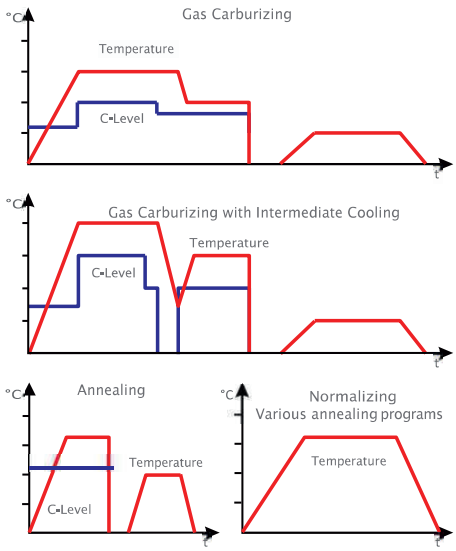
STANDARD-LINE

The standard line constitutes of most common models supplied to our customers for various parts heat treatment.

SPECIAL-LINE

The special line is developed to meet customer special requirements.

2. APPLICATION RANGE OF THE MULTI-PURPOSE CHAMBER FURNACE



Possible heat treatment processes:

For example:

- Gas carburising
- With direct quenching (oil or salt)
- With intermediate cooling
- With charge cooling under protective gas
- Re-carburising
- Carbonitriding
- Hardening in oil or salt
- Normalising
- Annealing
- Tempering

When are Chamber Furnaces preferentially used?

- For small and moderate batch capacities.
- For different heat treatment processes.
- For different kind of parts and high diversity of parts.
- The gross batch weights of approx. 350 - 2500 kg/ batch.
- If flexibility is required.
- For different production requirements.
- If quality with economy is required.

3. DESIGN CHARACTERISTICS OF A MULTI-PURPOSE CHAMBER FURNACE

3.1 Quality features of the Multi-Purpose Chamber Furnace of AICHELIN Design

- Heat treatment with high quality with economy.
- Temperature uniformity better than +/- 5°C.
- Carbon Potential control +/- 0.02% during Carburising through motorised valve in enriching line.
- Quench Oil tank volume ratio as per the customer requirements (Minimum - 1:8).
- Short charge transfer time from heating chamber to oil bath.
- Air cooled quench oil cooling system.
- Computerised Data Logging Systems.
- High uniformity and reproducibility of heat treatment results.
- Low energy and media consumption.
- Re-circulation fan coupled with standard motor, fan housing is oil cooled closed circuit Siphon design.
- HYPER Quench: The quench oil agitation system has draft tube which diverts the quench oil in the closed oil guide box surrounding the charge which ensures pressurised and uniform oil flow circulation throughout the charge during quenching. The propeller diameter is 325 mm driven by 5.5/7.5 kW motors through VFD with 2/4 nos. agitators depending upon the size of furnace.
- 7 years warranty on Charge Machine Transfer Chain.
- 5 years warranty on the Brick Lining (excluding skids).
- 3-5 years expected life of Centrifugally Casted Imported Radiant tubes tor heaters.

3.2 Sizes of the AICHELIN Chamber Furnace

STANDARD SIZES FOR SQF LINE

Type	Useful Charge Dimensions W x H x L (mm)	Useful Charge Volume (m^3)	Gross Charge Weight (kg)	Heating Power (kW)
2	500 × 650 × 900	0.3	350	72
3	600 × 650 × 1200	0.47	650	90
4/2(M)	700 x 850 × 1300	0.77	1000	162
4/2	760 x 850 x 1300	0.84	1000	162
5/2(M)	900 × 850 × 1300	0.99	1200	162
5/2(M)	900 × 900 × 1300	1.05	1500	162/180
5/2	900 × 850 × 1500	1.15	1500	162/180
5/2(M)	900 × 900 × 1500	1.21	1800	210
5/3	900 × 1300 × 1500	1.76	2000/2500	270
6/3	1200 × 900 × 1500	1.62	2000/2500	270

SPECIAL SIZES FOR SQF LINE

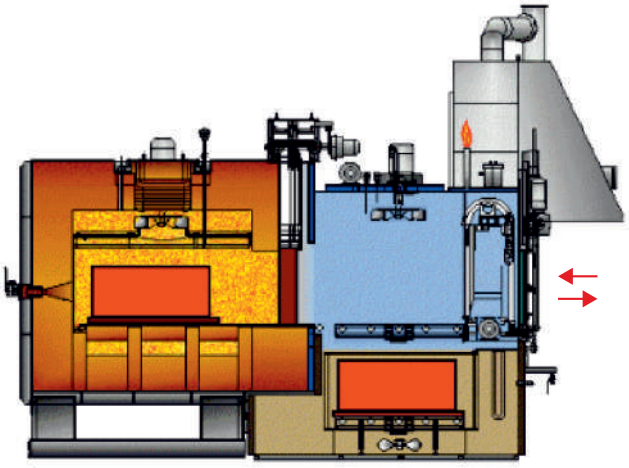
Type	Useful Charge Dimensions W x H x L (mm)	Useful Charge Volume (m^3)	Gross Charge Weight (kg)	Heating Power (kW)
5/4	900 × 850 × 1800	1.37	1800	210
5/5	900 × 850 × 2250	1.72	2500	270

STANDARD SIZES FOR DOUBLE CHAMBER SQF LINE

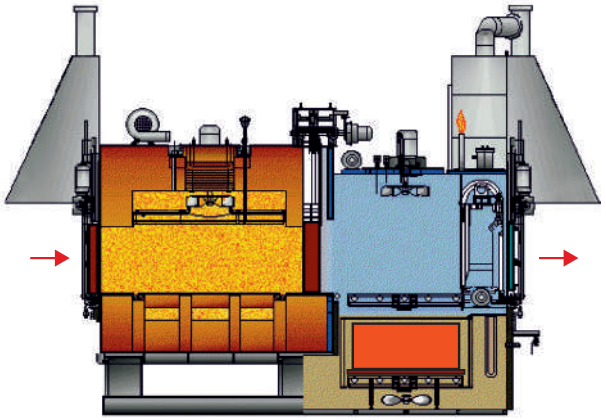
Type	Useful Charge Dimensions W x H x L (mm)	Useful Charge Volume (m^3)	Gross Charge Max. (kg)	Heating Power (kW)	
				Chamber 1	Chamber 2
5/2	900 × 850 × 1500	1.15	2 x 1500	180	90
5/2	900 × 900 × 1300	1.05	2 x 1500	180	90
5/2	900 × 900 × 1500	1.22	2 x 1800	210	105

*Special dimensions are available for your special needs

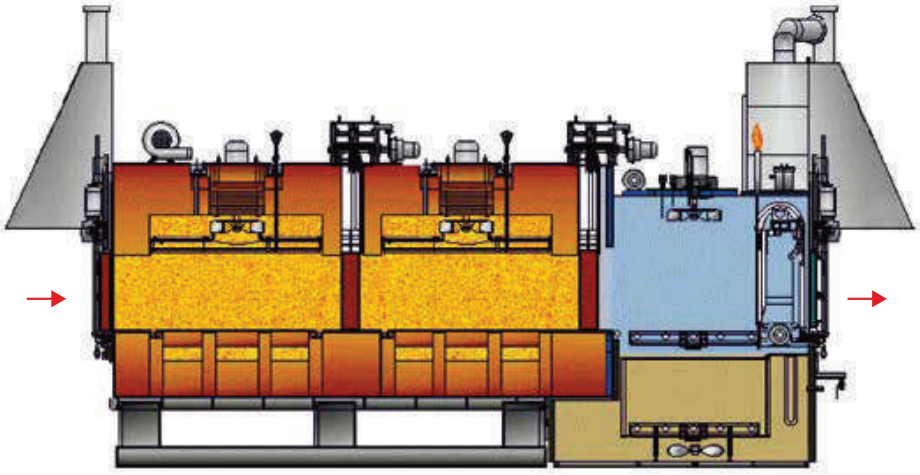
3.3 Possible designs of the Multi-Purpose Chamber Furnace



In-Out Design Single Chamber Furnace



Straight Through Design Single Chamber Furnace



Straight Through Design Double Chamber Furnace

3.4 Constructive characteristics of the AICHELIN Design Chamber Furnace

- In-Out Design / Straight Through Design.
- Electric / Gas heated options available.
- Designed on the principle of no compressed air and no cooling water.
- All electro-mechanical drives for doors, elevator and charge machine.
- No moving part in heating chamber apart from re-circulation fan.
- High thickness insulation for minimizing heat losses and skin temperature.
- Silicon Carbide skids in heating chamber.
- Silicon Carbide muffle in heating chamber for uniform temperature and atmosphere distribution (optional).
- Furnace Atmosphere: Endo Gas / Methanol / N_2.
- Enriching Gas: LPG / Propane / Natural Gas.
- Sealed Oil Quench or Sealed Salt Quench.
- Fully Automatic operation through PLC, HMI, programmer and latest process control systems.
- Fully Automatic no man operation plants through *i*FACE (Intelligent Fully Automatic Controlled Equipments).

Additional constructive benefits for Double Chamber Furnace

- Compact design with two heating chambers and common quench tank.
- Savings in connected load, running cost and space

4. ACCESSORY EQUIPMENTS FOR MULTI-PURPOSE CHAMBER FURNACES

4.1 Pre-Heating / Tempering without N_2 Atmosphere.

Furnace temperature max. 500 °C

- VKHLE electrically heated
- VKHLG gas heated

4.2 Pre-Heating / Tempering / Stress relieving without N_2 Atmosphere.

Furnace temperature max. 750 °C

- UHAFe electrically heated
- UHAFg gas heated

4.3 Pre-Heating / Tempering / Stress relieving with N_2 Atmosphere.

Furnace temperature max. 750 °C

- UHAFe electrically heated
- UHAFg gas heated

Optional: With charge cooling device.

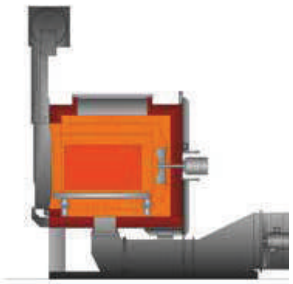
4.4 Gas Nitriding Furnace with Retort

Heat Treatment Process

For gas nitriding, gas nitro-carburising, bright annealing and thermal oxidation.

Main Characteristics

- Horizontal loading sealed retort furnace design.
- Sealed Retort made of SS310 / Inconel 800 options available.
- Electrically heated with heaters and radiant tube located outside retort.
- Special door design with bayonet locking system for precision sealing.
- Special shape door seal without joint for effective sealing and safety.
- NH3 + N2 + CO2 / ENDO + H2 atmosphere for Gas Nitriding and Gas Nitro-carburising.
- Water / Steam atmosphere for post oxidation / thermal oxidation.
- Latest Nitriding potential process control system with H_2 / 0_2 sensors and mass flow meters.
- Option of automatic Kn control available through recipe program.
- Temperature uniformity +/- 5°C with thyristor control.
- Forced rapid cooling for shorter cycle times.
- Computerized process monitoring and data logging.
- Capacity varying from 350 to 1500 kg / batch.



Suitable For Parts

Ring gears, automotive parts and machining tools etc.

4.5 Chamber Immersion-Spraying-Drying Washing Machine (KEKTE Design)

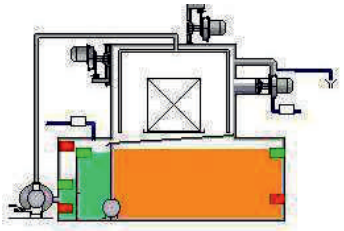
For high quality washing processes in water based alkaline solutions.

Options Available

- KEKTE/UHWT(ISDe) electrically heated
- KEKTG/UHWT(ISDg) gas heated

Main Characteristics

- With immersion, dunking, spraying and drying.
- Spraying system with rotating jet arms.
- Option of one / two washing liquid containers with mild steel / stainless steel construction.
- Drying device by hot air (optional).
- Coalescence oil separation by disk-phase separator working on the principle of gravity and coalescence.
- Fresh water automatic top-up to spray and rinse tank.



4.6 FLEXICLEAN® Vacuum washing Machine

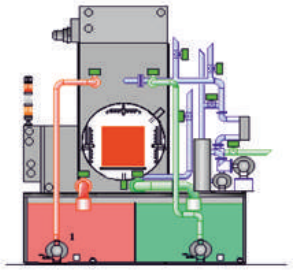
For high-quality washing processes in alkaline solutions (especially with neutral cleaners) with two washing liquid containers (option: third container).

Options Available

- EKFE - electrically heated
- EKFG - gas heated

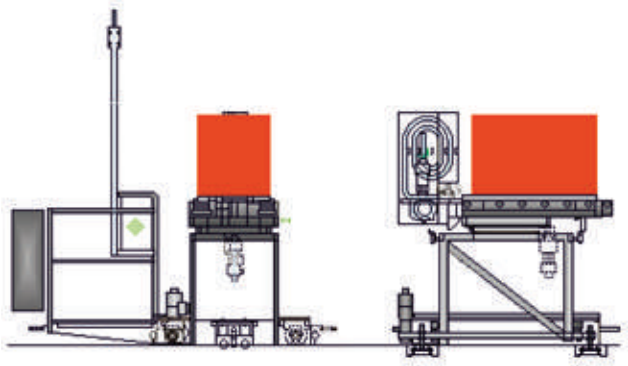
Advantages

- Low-pressure boiling VACUPEARL® for improved cleaning effect, even in inaccessible areas.
- Vacuum drying unit for achieving completely dry components.
- Stainless steel design.
- Oil separation for each cleaning agent (optional).
- Heater exchange without emptying the tank.
- Operation produces almost no wastewater and exhaust air.
- Short cycles and low energy consumption.



4.7 Charging and Discharging Wagon

For one-sided or both side operations



Optional: Lifting function for two-layer charge storages.

PROTECTIVE GAS GENERATOR

Gas carburising processes and other heat treatments under protective gas, where the carbon exchange with the work piece surface plays an important role, make high demands on the controllability of the atmosphere. The carrier gas procedure using endogas, proven since many years, offers the best atmosphere conditions and accordingly process engineering for the following:

- Exact process control.
- Best reproducibility of the final results.
- High quality requirements.
- Capacity varying from Endo 20, 30, 40, 60, 80, 100, 120 m^3/hr.

THE λ –PROBE CONTROL

The measuring gas is conducted through a temperature-constant -probe. At the same time a mV-signal is emitted by the λ –probe, which is used for measuring, control and regeneration of the Endogas-composition and is displayed in °C dew point.

A very precise control of gas/air mixture is required to produce constant quality of endogas.

QUANTITY CONTROL

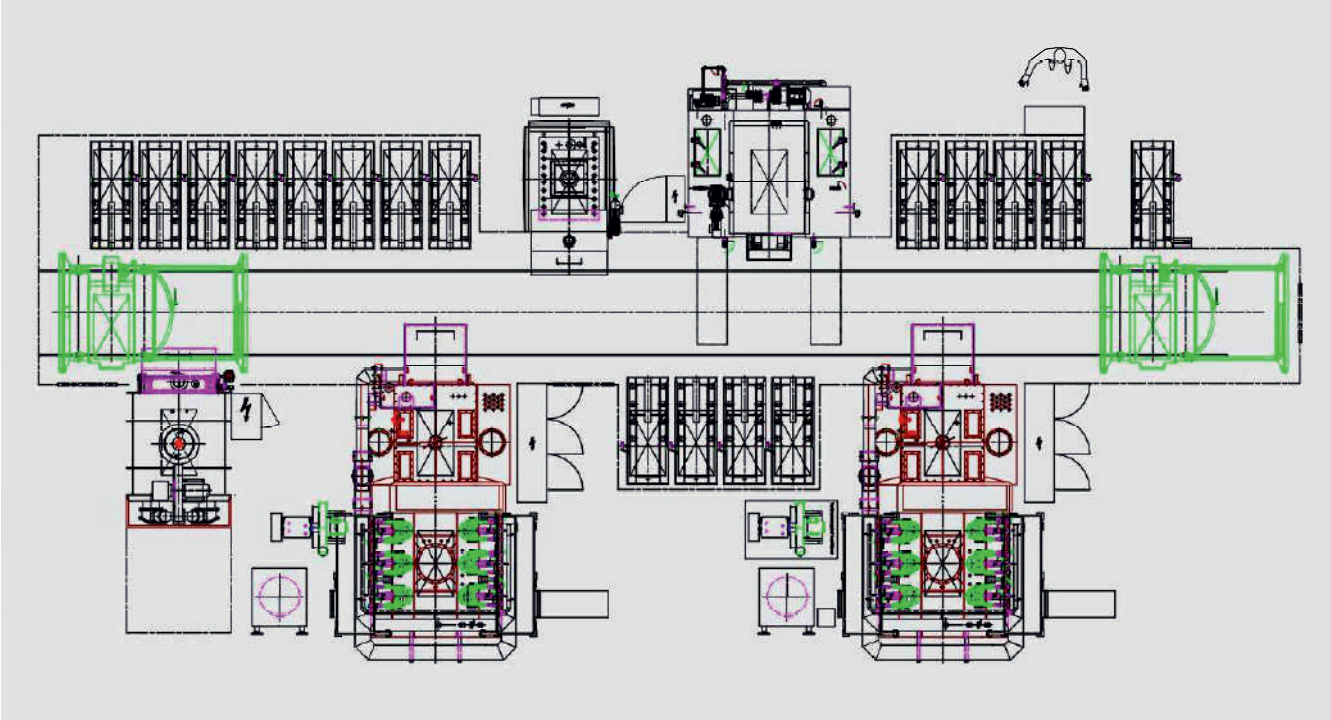
The Endogas generator capacity can be adjusted to the required capacity manually or by automatic quantity control. The unused protective gas is burned off in manually controlled Endo Gas Generator. In automatic controlled quality control system the amount of Endogas is generated automatically with minimum wastage at burn-off.

Through adapted design and using the imported compressor the Endogas generation can be controlled in the range of 100 %, 75% and 50 % of the nominal capacity is now possible.

5. EXAMPLES OF PLANT LAYOUT FOR MULTIPURPOSE CHAMBER FURNACES

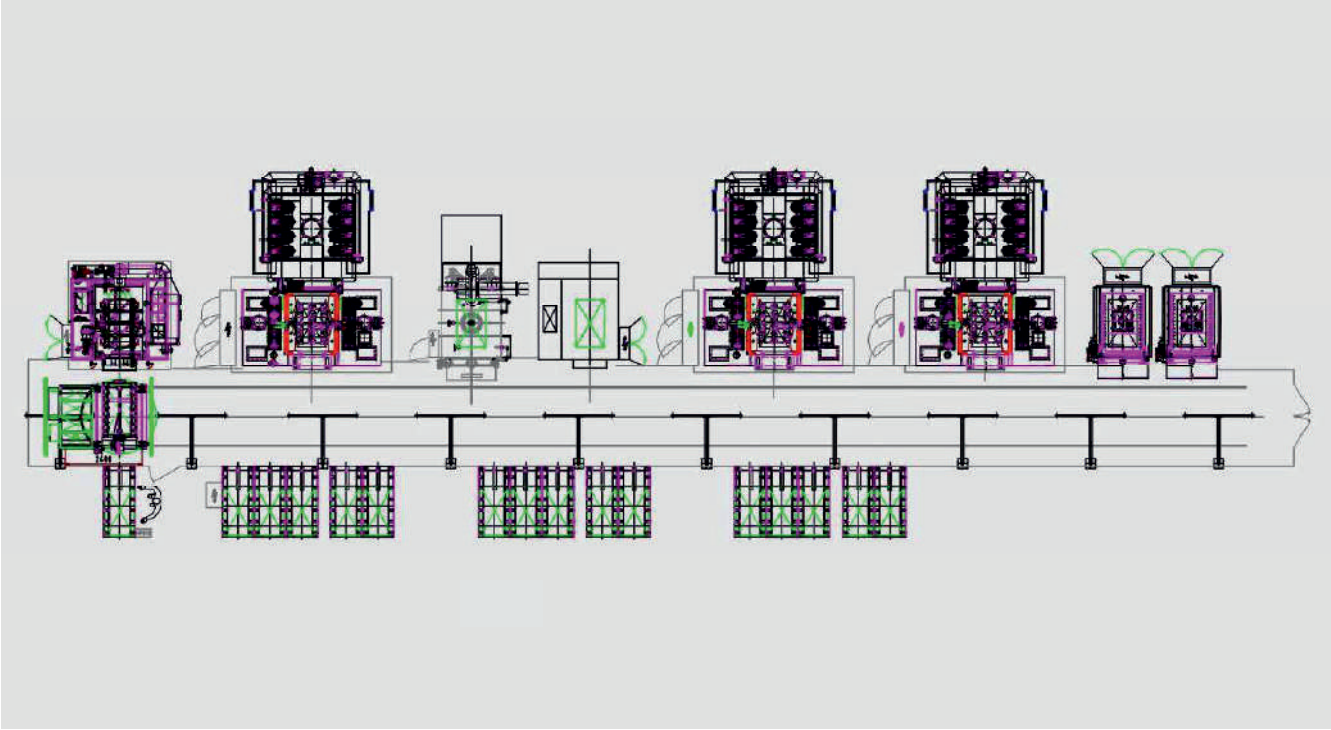
5.1 Single Chamber Furnace Line: (Fully Automatic No Man Operation)

In-Out Design with both side operation through one charge wagon.



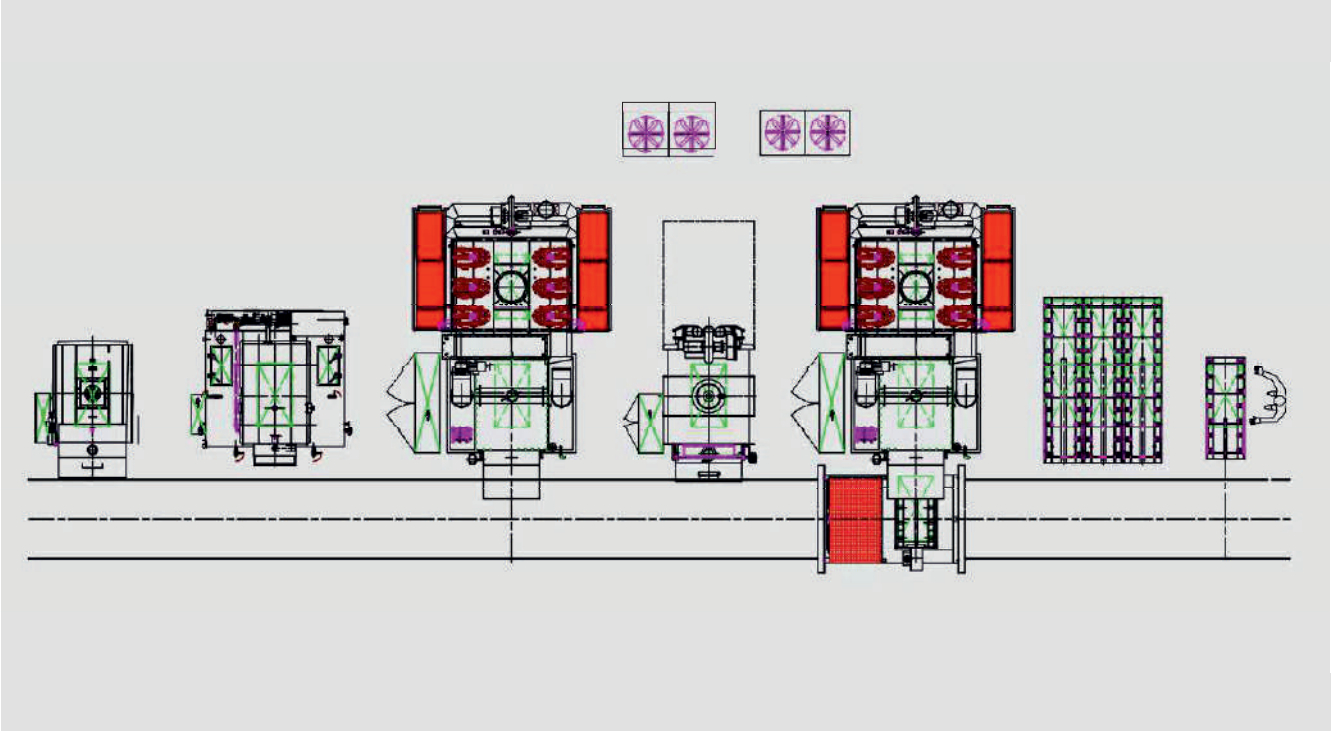
5.2 Single Chamber Furnace Line: (Semi-Automatic Operation)

In-Out Design with both side operation through one charge wagon.



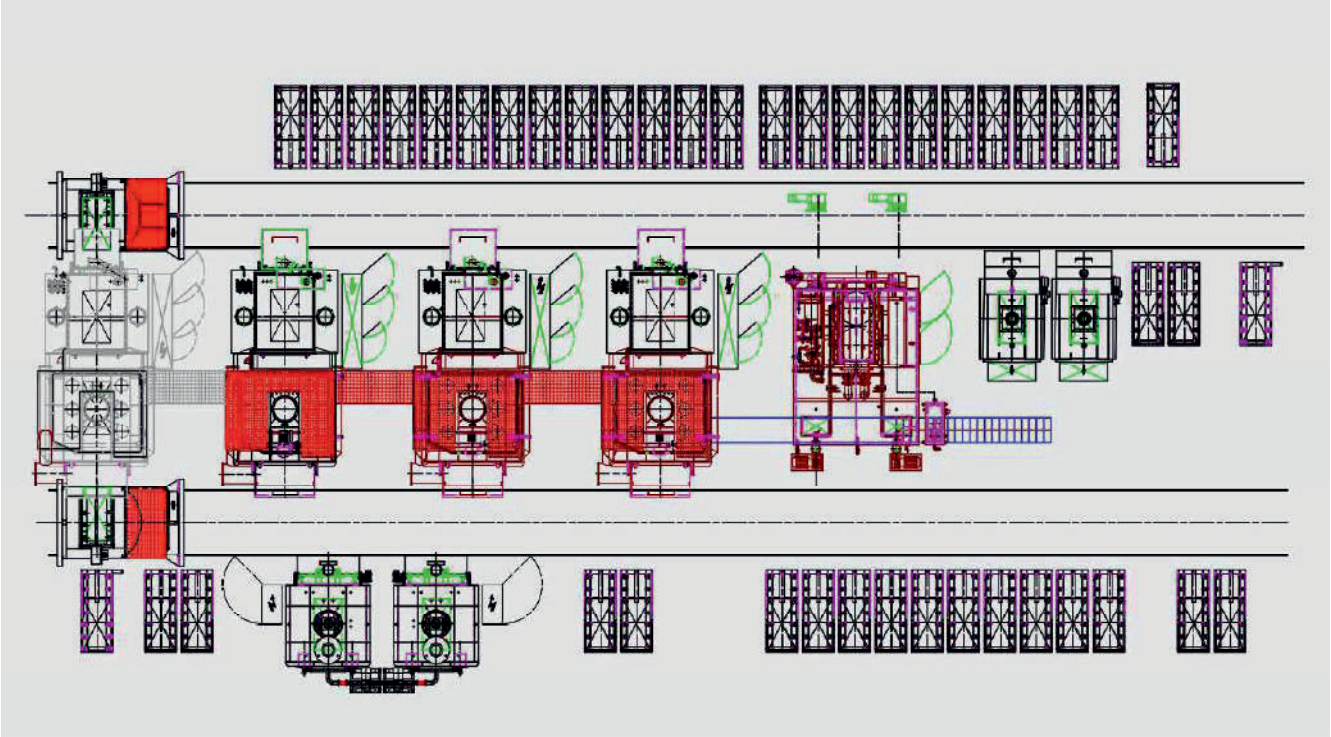
5.3 Single Chamber Furnace Line: (Semi-Automatic Operation)

In-Out Design with one side operation through one charge wagon.



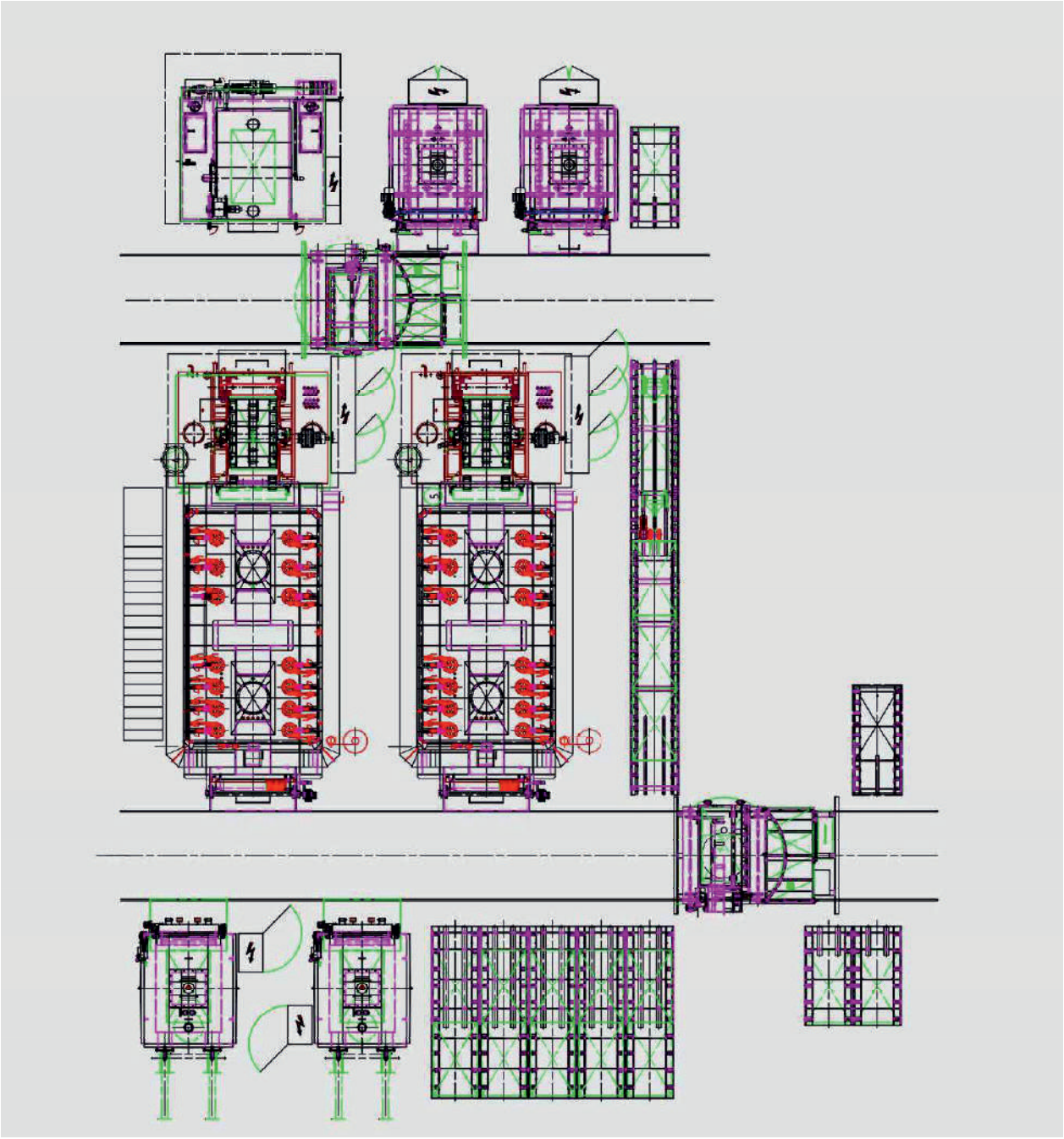
5.4 Single Chamber Furnace Line: (Fully Automatic No Man Operation)

Straight Through Design operation with two charge wagons.



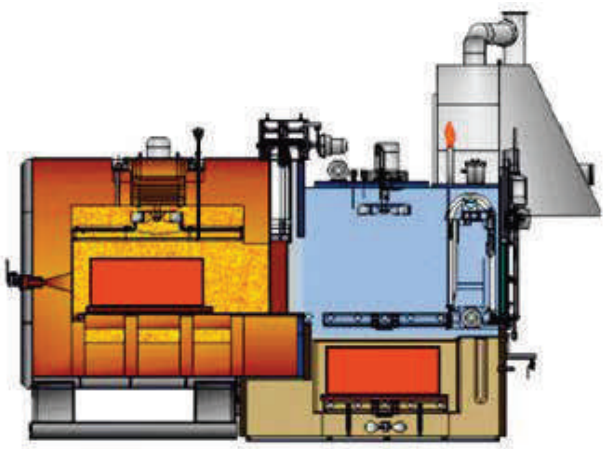
5.5 Double Chamber Furnace Line: (Fully Automatic No Man Operation)

In-Out Design with one side operation through one charge wagon.



6. TECHNICAL DESCRIPTION OF THE SEALED QUENCH CHAMBER FURNACE

The Multi Purpose Chamber Furnace consists of following components:



6.1 Furnace Chamber:

The furnace chamber consists of a gas tight furnace housing and lining of high-quality insulating material. The ceramic hearth made of silicon-carbide skids, possesses a large open space for the gas flow. The optional silicon carbide gas conduction muffle and the intensively working gas circulation aggregate ensure a continuous flow on the charge and outstanding temperature uniformity. The gas circulation fan is user friendly and easy to maintain due to bearing housing design and coupled motor. By this closed oil cooling circuit with thermosiphon effect cooling of the fan assembly is without current supply. The intermediate door is closely fit to the furnace chamber.

6.2 Heating:

Heating is done by vertically installed radiant tubes, optionally electrically or with gas. For gas heating, automatic gas burners (type Aichelin NOXMAT®) with recuperative preliminary heating are used. These do have a high firing-technical efficiency. A variable switching cycle ensures highest temperature uniformity. With gas heating, the radiant tubes can be used as cooling tube for the rapid lowering of temperature from carburizing to hardening. Thus, it results in shortening of the total heat treatment time. For excess temperature control, there is a separate over-temperature safety thermocouple and controller, which protects the furnace and radiant tubes against overheating.

6.3 Vestibule Chamber - Quenching Tank:

At the furnace chamber, the vestibule chamber with oil bath is attached gas tight.
The vestibule chamber can be used additionally for charge cooling down to discharging temperature or for intermediate cooling (isothermal annealing). Therefore, a separate cooling equipment with own heat carrier oil-cooling circuit via finned pipe heat exchangers is provided. For the support of the charge cooling procedure, a gas circulation aggregate with guiding muffle is installed. Optionally, the oil bath and vestibule cooling can be equipped with oil/air heat exchangers.
Thus, no cooling water and cooling tower is required at the plant.

The vestibule door is pressed via cranks by control shafts through a gear motor with spring pressing device into the door seal.

Underneath the vestibule door, a supervised flame curtain device, automatically firing by piezo ignition is implemented. The flame curtain must be ignited, only then the outer door can open. The oil bath volume of the hardening container is optimally adapted to the charges. The double-walled housing execution with oil detector safely avoids environmental - damaging oil leakages can be offered optionally.

The oil level in the hardening container can be supervised by a minimum - maximum level indication for safety. Oil cooling is done by means of heat exchangers (oil / air).
The oil bath heating is carried out electrically by immersion heaters. The oil circulation is reached by means of two or four oil circulation aggregates through VFD.

Via oil guidance channels and oil guide plates, attached closely around the charge, uniform flow of oil through the charge takes place. This is particularly important with closely packed charges for a constant hardening result.

Depending upon need, the hardening bath can be equipped additionally with intensified oil bath circulation capacity and with program controlled continuously adjustable circulation capacity of the oil bath circulation aggregates.

6.4 Lowering platform, charge transport:

The lowering platform is carried out in two layers, thus you can load fresh batch in the furnace again, while a charge stays in the oil bath. In the vestibule chamber, the automatically working tray transport equipment is implemented.
The cooperation of the high speeds of lowering platform and intermediate transport results in very short moving times; for example for the multi-purpose chamber furnace size 3: start from the furnace chamber up to complete immersing into the oil bath takes place approx. (30 seconds.)
All drives are electrical geared break motors with safe end positions. Hand wheels are provided for the manual drive movement in case of emergency operation.

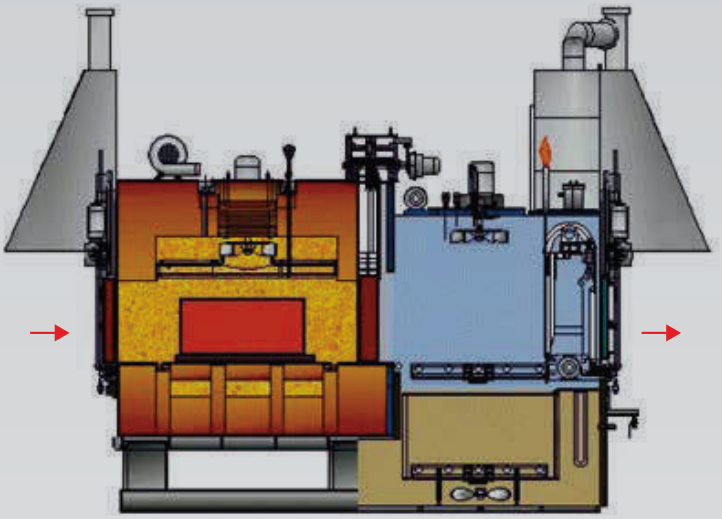
6.5 Safety device:

In order to save the charge from de-carb / Oxidation damage during power failures, the multi-purpose chamber furnace is equipped with an automatic N_2-safety gas supply device for purging and also helps to maintain the furnace in positive pressure in case of long power failure duration.
Further, all failures of energy supply, drives, heating etc. are signalized in alarm and saved in alarm history for trouble shooting.

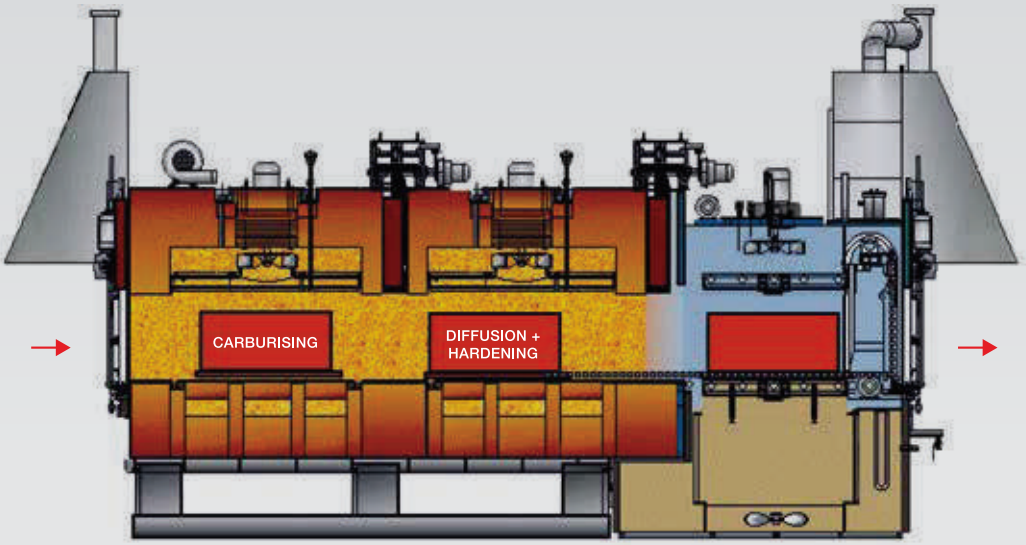
6.6 Gas supply:

The multi-purpose chamber furnace can be designed with different kinds of gas supply. Endogas and N_2-methanol as carrier gases.
As enriching gases, propane, natural gas, LPG media can be used for carburizing.
The automatic control of the carbon level is done according to standard by oxygen probe.

7. TYPES OF CHAMBER FURNACE (STRAIGHT THROUGH DESIGN)



Single Chamber Furnace



Double Chamber Furnace

The furnace types are chosen as per the requirement of heat treatment process. Charge transport takes place according to the continuous principle. With the continuous chamber furnace, the charge is pushed into the first chamber by the charging wagon. With the double chamber furnace, likewise from the charging wagon into the first chamber and afterwards into second (with slightly opened entry door). Charge transport into the oil bath is done by the transport equipment of the furnace vestibule chamber.

The continuous double chamber furnace has separate temperature and C-level-regulation for each zone. An intermediate door separates both furnace chambers.

8. PROCESS CONTROL SYSTEM OF A MULTI-PURPOSE CHAMBER FURNACE

8.1 Control:

The control level is divided into 3 operation modes:

- Setting mode
- Manual mode
- Automatic mode

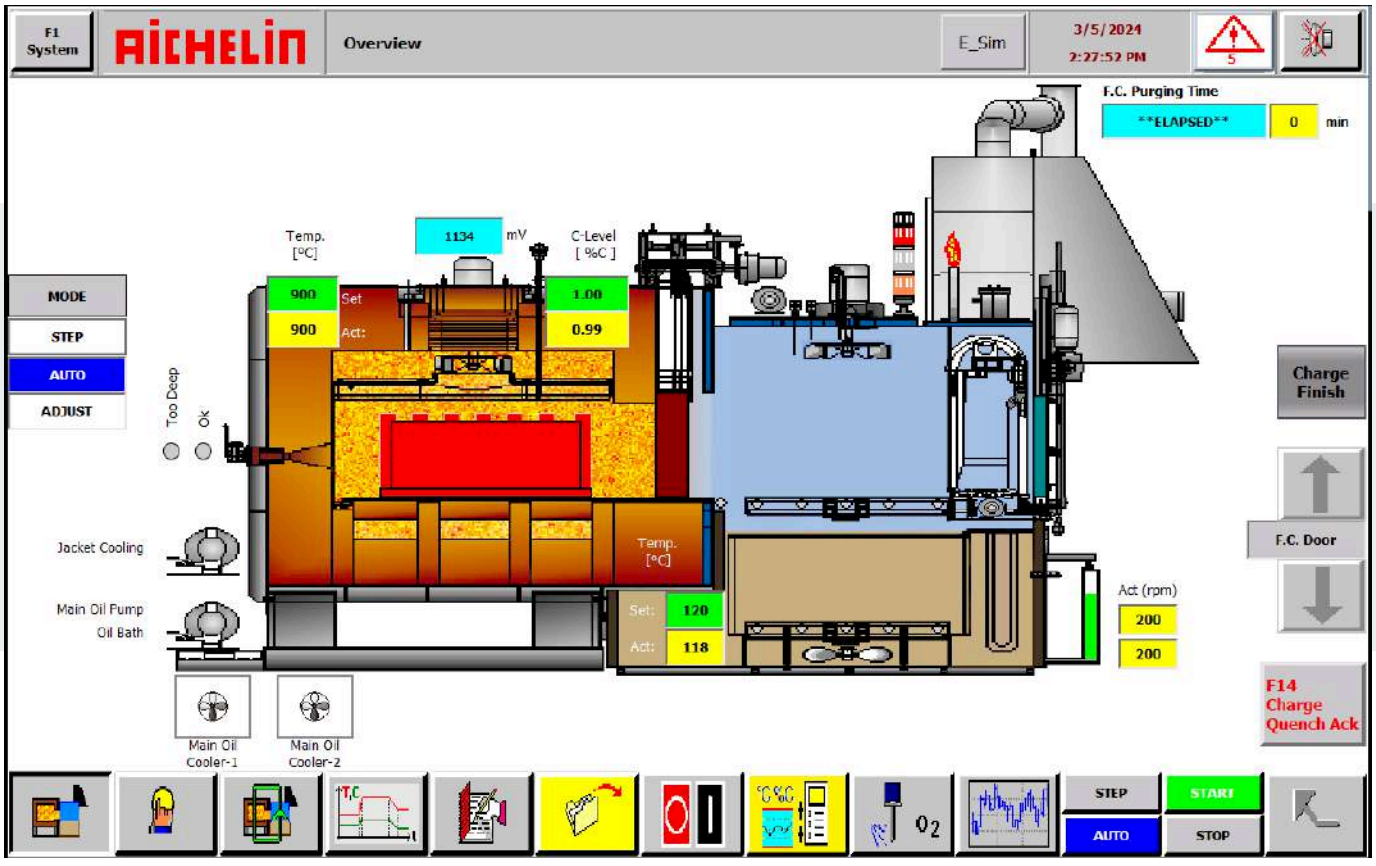
Automatic mode

In this mode, the furnace is operated for normal production. After loading the charge in the front chamber the charge movement inside the furnace is done in automatic mode i.e. transfer of charge to heating chamber, thereafter quenching the charge from heating chamber to oil bath etc.

A full graphic operator panel is the central operation element of the furnace. It displays all limit switch conditions and the conditions of the sequencers.
All continuously running devices (fans, pumps etc.) are also controlled by this operator panel.

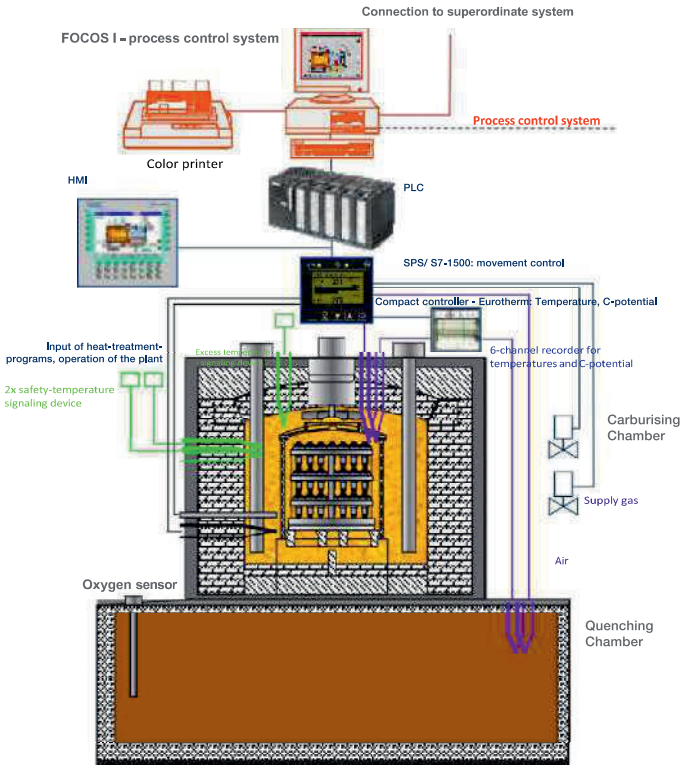
On the overview screen (see below), the condition of the plant is shown in form of an animated picture.
Therefore, at any time an overall picture of the plant is visible and secures a simple operation of the furnace.

On these overview pictures, the position of the charge and all actual states of the drives, as well as the actual and standard value indication for C-level and temperature are displayed.



8.2 Controlling:

Temperature control of the heating chamber,
oil bath heating as well as C-level control is done by means of a compact controller. Communication with the programmable logic control (PLC by bus system (Profibus DP). With standard operation, the set values are preset by the PLC and the actual values indicated back to the PLC. These values are displayed at the operator panel.
The protection against exceeding of the allowed maximum temperature of the furnace is controlled by an excess temperature safety device. Falling below the safety temperature at gasified furnace is supervised by one safety temperature signal devices. The oil bath is protected against exceed of the allowed maximum temperature by safety temperature controller. C-level control of the furnace is done by special software in a compact controller.
Regulation and control of the gas feeding is independent from the programmable logic control.
At the operator panel, complete heat treatment programs are menu-driven.
After charging and start of the required heat treatment program, the PLC takes over the function of the programmer.



The set value is preset to the temperature/C-level-controller due to the stored program set values.
The PLC also takes over the control of the quenching processes (oil resp. gas quenching).
Recording of furnace temperature, C-potential, Agitator RPM and temperature of oil bath is done by computerised Data Logging System.

8.3 C-level control:

C-level control and measuring and switch system with Cp controller with extended software for temperature and C-potential. The actual values are transmitted by an oxygen probe (measurement of the gas atmosphere in the furnace via zircon oxide). Fault signals are intended for sensor loss and as well as for minimum and maximum limit values. Alternatively, the C-level-regulation can be carried out with software controllers of other selected measuring technology companies.

9. *i*FACE PLANT AUTOMATION (NO MAN OPERATION)

With the *i*FACE, several chamber furnaces can be controlled.
With starting of a heat treatment program, the entire information is sent to the programmable controller (PLC) of the furnace plant. Afterwards, the *i*FACE system controls the program sequence and sends the standard values to the PLC. This passes the standard values on to the compact controller. The current actual values of temperature and C-level are recorded to the *i*FACE system. The program sequence can be viewed on-line via operator panel.

If there were a loss of the *i*FACE system during a heat treatment, then the PLC of the furnace plant immediately takes over the programmer function and the program can be continued without interruption.

*i*FACE system contains the following program items in its basic version:

- **OFF-LINE diffusion program (Can be offered optionally)**
  For simulation and optimization of carburising programs.

- **Program management**
  Input of different heat treatment programs, whereby the program sequence can be divided into up to 10 sections. Option of time and target size control.

- **Part data bank**
  Allocation of the individual heat treatment programs for certain parts.

- **Programmer**
  Standard value of temperature and C-potential are preset according to the heat treatment program data and indicated graphically.

- **ON-LINE diffusion program (Can be offered optionally)**
  During a carburising program, the current carburizing profile with the carbon process can be indicated and printed at any time.
  At programs with target size control, the carbon process in the heat treatment material is calculated with the recorded actual values and controlled according to the target size.

- **Heat treatment reports**
  Is available for each charge. It is stored on the hard disk and can be shown on the screen and printed at any time. It contains the heat treatment program in tabular form with all relevant part data, the standard and actual values of C-potential and temperatures in graphic form for the entire process duration, as well as the calculated carbon process in the parts in tabular form and graphical trends.

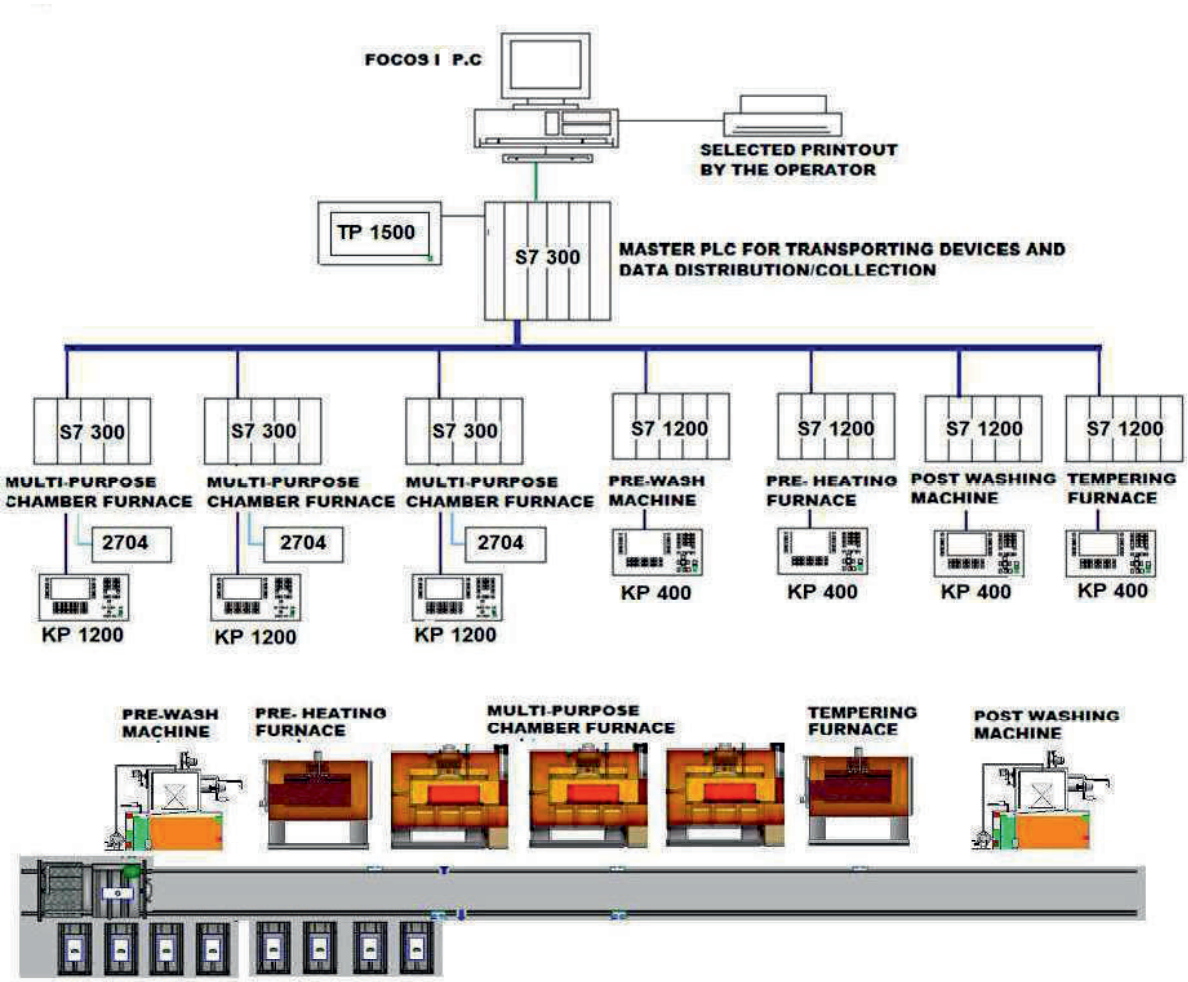
- **Service programs**
  Calculation of the alloy factor from the composition of the material.
  Different conversion functions such as C-levels in probe tension, CO content, etc.

- **Failure handling**
  Indication of failure alarms in clear text with time stamp with starts and end time.

- **Help texts**
  The existing help texts offer valuable support with operation.
  Beyond that, there is however still a multiplicity of development stages of the process control system, which can be extended up to the controlling of a fully automated multi-purpose chamber furnace plant. Then, not only the multipurpose chamber furnaces are controlled, but all ancillary units get the defaults from the *i*FACE, so that the complete treatment cycle of a charge is accomplished automatically. The operation of the plant is limited to charging/discharging of the storage guide rails. In addition to the already described program items, there is still another multiplicity of software modules such as teleservice, SMS notification (optional) or extended heat treatment proof with laboratory minutes, which can be adapted to the respective customer requirements.

9.1 Fully automatic Chamber Furnace Line:

Data structure and networking



References

MULTI-PURPOSE SINGLE CHAMBER FURNACE LINE

MULTI-PURPOSE DOUBLE CHAMBER FURNACE LINE

Loading Side

Unloading Side

Manufacturing Plant Pune

AICHELIN UNITHERM Upcoming New Factory at Talegaon-Pune, India

AICHELIN UNITHERM Manufacturing Plant at Talegaon-Pune, India

AICHELIN Holding
Headquarters Aichelin
Group AICHELIN (Austria)

AICHELIN ST
Vacuum Gmbh
(Austria)

AICHELIN Service,
NOXMAT (Germany)

SAFED Suisse
(France)

BOSIO
(Slovenia)

AFC-Holcroft
(USA)

AICHELIN Heat
Treatment Systems
(China)
NOXMAT (China)

AICHELIN UNITHERM
Heat Treatment Systems
(India)
NOXMAT (India)

UNITHERM

THERMAL PROCESSING

PVD COATINGS

FURNACE MANUFACTURING

ATMOSPHERIC

VACUUM

UNITHERM ENGINEERS LTD.
Pune, Bangalore, Bhiwadi, Chennai, Ahmedabad

INDO-GERMAN VACU TREAT PVT. LTD.
Pune, Bangalore, Chennai

(A 50:50 JV between UNITHERM and Systherms, Germany)

UNITHERM NOVA COATING
Pune, India

(A 50:50 JV between UNITHERM and NOVA, Germany)

AICHELIN UNITHERM HEAT TREATMENT SYSTEMS INDIA PVT. LTD.
Pune, India

(A 50:50 JV between UNITHERM and AICHELIN, Austria)

Our Customers Our Pride

UNITHERM ENGINEERS LIMITED | hadeed | RENAULT NISSAN | EICHER | MMF | DANA | Mubea

BOSCH | BHAVANI | IGW | naw | MODERN AUTOMOTIVES | SONALIKA INTERNATIONAL | AAM AMERICAN AXLE & MANUFACTURING

ELGI | LMW | Cummins | Hero | TENNECO FEDERAL MOGUL | FEDERAL MOGUL | ULTRA ENGINEERS

KALYANI BHARAT FORGE | oerlikon fairfield | BEML | ROLEX ROLLED RINGS | AVTEC CKA Birla Group | radicon POWERBUILD

SCHAEFFLER | SGG | Hirschvogel Group | TIMKEN | NBC BEARINGS | CIE India

ELECON | TATA HITACHI Reliable solutions | OMNI AUTO LIMITED | SYNNOVA SYNNOVA GEARS & TRANSMISSIONS PVT. LTD. | Ashok Leyland

Bonfiglioli | CARRARO | Epiroc | CRAFTSMAN | KONGU ROCKS

SHIRODKAR PRECI COMP | SONA COMSTAR | GPP Smart Technology Solutions | GNA DRIVELINES | GNA GEARS

Super Sales India Ltd | SD WELDTECH | EUROMETAL A HEAT-TREATMENT UNIT | Parajiya Engineering Works | KROSS | KAY JAY | Shriram Pistons & Rings Ltd

GNA AXLES | RACL Geartech | Kubota Escorts Kubota Limited | Think Precision RIGHT | GLOBAL PRECISION Pvt Ltd

AGRASEN | VBC HYDRAULICS | UNIPARTS GROUP | MILESTONE | DOMORE METALS

AICHELIN UNITHERM
industrial furnace solutions

Factory Address:
AICHELIN UNITHERM HEAT TREATMENT SYSTEMS INDIA PVT. LTD.

Gat No. 38, B.M. Kakade Industrial Park,
Jadhavwadi Road, Village Navalakh Umbre,
Next to Talegaon MIDC, Tal. Maval,
Dist. Pune - 410507, Maharashtra, India.

✉ sales@au-india.com

Corporate Office Address:
AICHELIN UNITHERM HEAT TREATMENT SYSTEMS INDIA PVT. LTD.

Office No. 103/1, Om Chambers,
Plot No. 29/ 31, T-Block, Bhosari Telco Road
Balaji Nagar, Bhosari MIDC, Pune - 411026,
Maharashtra, India.

✆ +91 89569 02169

www.au-india.com