



**ECM**  
TECHNOLOGIES

# ICBP® DUO

## DOUBLE CHAMBER VACUUM FURNACE FOR HEAT TREATMENTS

ICBP® Duo TH Oil Quenching and ICBP® Duo TG Gas Quenching comprises 2 independent chambers separated by a vacuum-tight door. Both solutions are compatible with AMS 2750 E and suitable for the treatment of aeronautics parts.

**ICBP® Duo TH Oil Quenching:** hot or cold oil quenching;

**ICBP® Duo TG Gas Quenching:** up to 20 bars for gas quenching (Nitrogen / Argon / Helium).



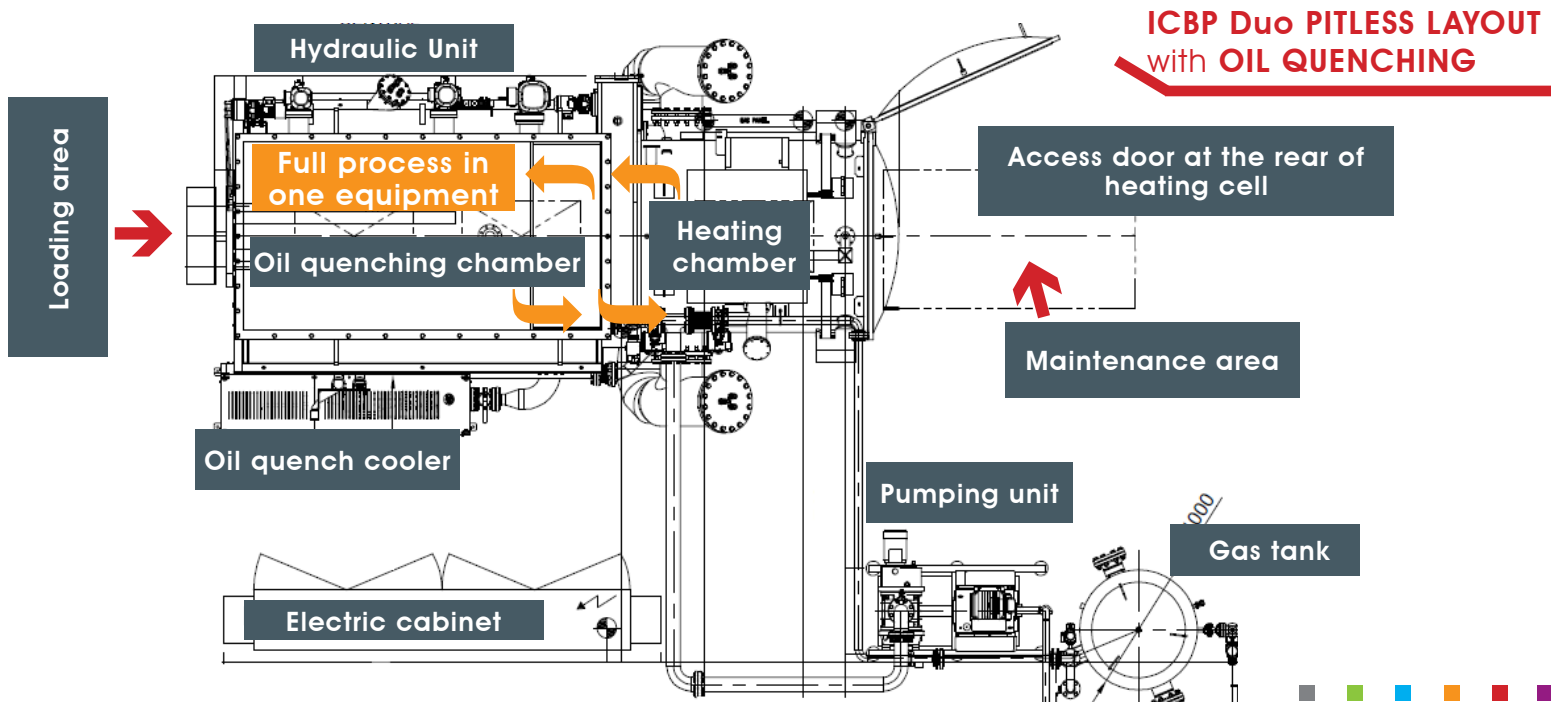
ICBP Duo® TH Oil Quenching



ICBP Duo® TG Gas Quenching

## MAIN STRENGTHS :

- ◆ **The design is optimized to shorten treatment cycles** thanks to the **heating chamber which is already hot**;
- ◆ **High quenching efficiency:** cold quenching chamber with vacuum-tight door separation;
- ◆ **Enhancement of treatment quality** by using mature and patented Low Pressure Carburizing (LPC) & Carbonitriding (LPCN) processes already proven on more than 200 installations and 1 100 ICBP heating cells throughout the world.



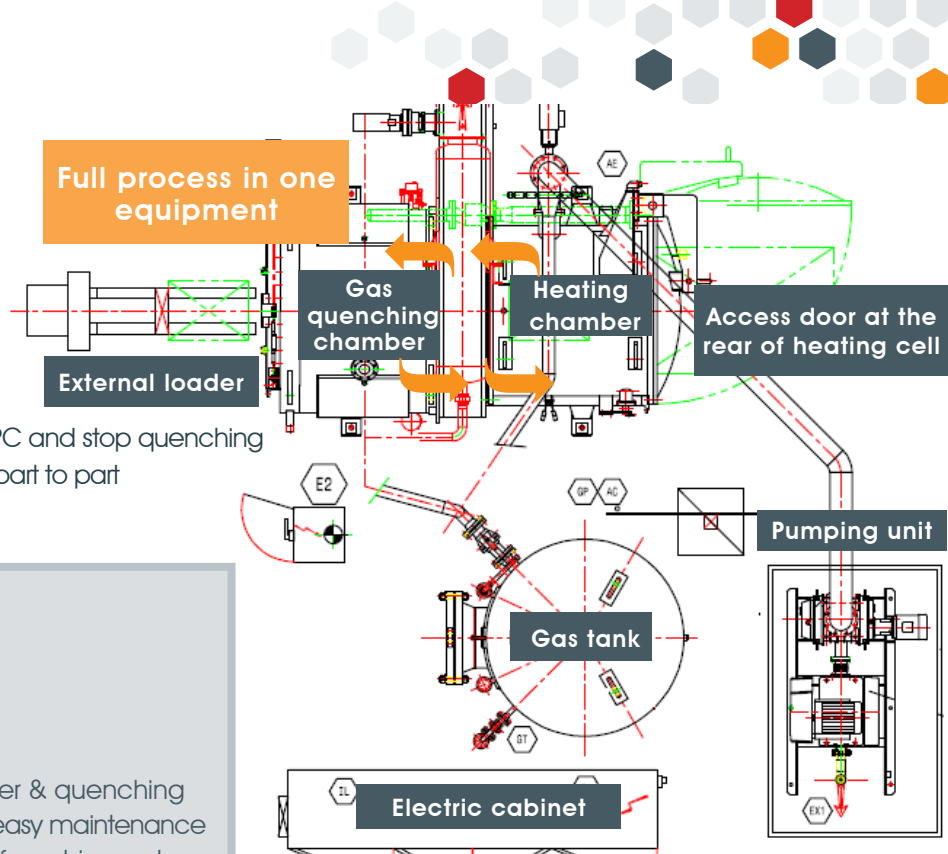
# ADVANTAGES :

## Process advantages:

- Compatible with LPC & LPCN processes
- No oxidation
- No decarburizing
- No carbon potential control required
- Less power consumption
- Optimum atmosphere quality
- Enhanced fatigue strength with combination of LPC and stop quenching
- Excellent repeatability, from batch to batch, from part to part

## Facility advantages:

- Direct integration in machining workshop
- The installation is completely automated
- Less surface occupied on the ground
- No civil engineering required (pitless)
- Short transfer time between heating chamber & quenching
- An access door at the rear of heating cell for easy maintenance
- Fully assembled and tested in our facility before shipment



ICBP Duo TG GAS QUENCHING

# TREATMENT CAPACITY :

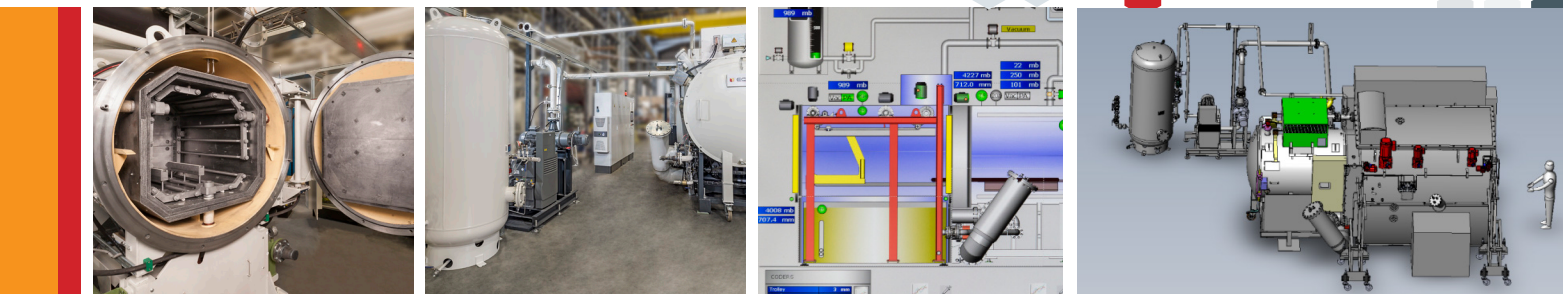
Range	OIL QUENCHING			GAS QUENCHING		
		Useful dimension L*W*H	Gross load		Useful dimension L*W*H	Gross load
ICBP® DUO 644	●	600 mm x 450 mm x 450 mm	200 kg	●	600 mm x 450 mm x 450 mm	250 kg
ICBP® DUO 966	●	1000 mm x 610 mm x 750 mm	750 kg	●	960 mm x 610 mm x 660 mm	500 kg
ICBP® DUO 1299	●	1200 mm x 910 mm x 910 mm	1500 kg			
Working temperature from 800 °C to 1,200 °C, maximum temperature is 1,250°C						

## POSSIBLE PROCESSES

- Vacuum carburizing
- Vacuum carbonitriding
- Hardening
- Precipitation hardening
- Vacuum annealing
- Brazing
- Sintering

## OPTIONS

- Machine compatible with AMS2750
- Protective atmosphere convection heating
- System for exhaust gas treatment
- Cooling water loop
- Quenching gas recovery system (for Helium)
- All peripherals such as washing machine, preheating, tempering, storage, transfer system and loading/unloading stations, etc.



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