



# FR Series

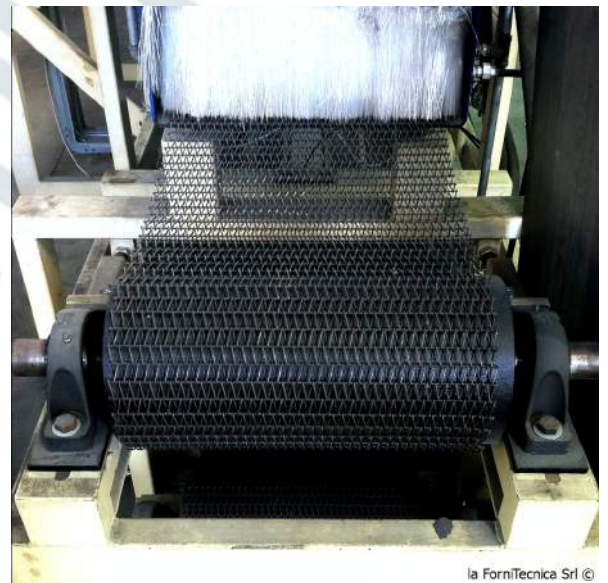
Cast belt continuous furnaces

Main Features:

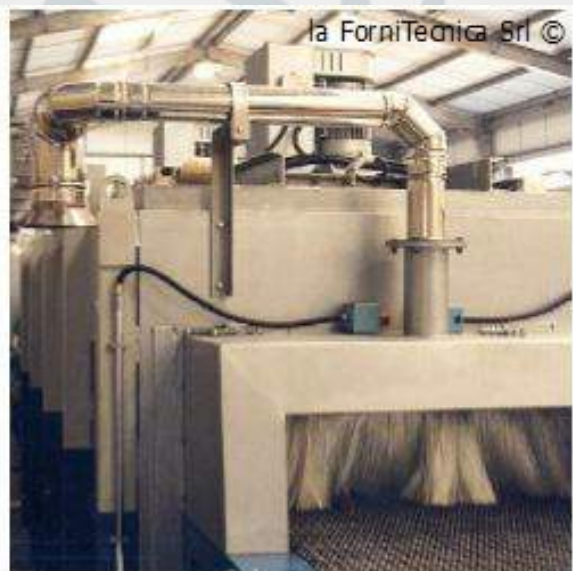
- Fully automated lines
- No need of thooted rollers, due to a patented system that insures longer conveyor belt life
- Oil layer separation system, working without any leakage
- Effective heating system with U-shaped radiant tubes and external heat recuperators, requiring no maintenance
- Quality treatments, according to customer's need, achievable through a supervising system
- The tempering furnace, equipped with a re-circulated gas direct flame heating system, allows a very high energetic efficiency while producing a protective atmosphere that is able to burnish the treated pieces

General Purpose:

- Carbonitriding
- Hardening
- Suitable for Fasteners



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The plant is set up as follows:

- An automated loading system including a case elevator, a vibrating Hopper, a dosing and weighting system
- A washing system for degreasing, dephosphating and drying
- A conveyor belt that feeds the furnace loading system
- A vibrating loading system for the hardening furnace that achieves uniform piece distribution on the conveyor belt (with such a system, loading happens with no danger for threads, since bolts suffer no shocks)
- A hardening furnace with a conveyor belt especially suited for fasteners with a minimum diameter of 3 mm
- An oil quenching pit equipped with a conveyor belt and oil stirring and cooling systems
- An intermediate gas-heated washer with alkaline detergent
- A further vibrator for the tempering furnace, similar to the one feeding the hardening furnace
- A continuous tempering furnace with direct flame heating
- A pit for cooling in soluble oil, equipped with a conveyor belt
- A control board for managing the whole line
- A supervising system including a Siemens PLC and a Holo-View station, housed in external PC
- An oxygen probe and a Holo-Carb La ForniTecnica regulator to control and regulate the carbon potential

Model	Heating	Production (Kg/h)	Conveyor width	Conveyor length	Power (Kw)	Temperature °C
FR-50	Electrical	50	300	2400	42	870-927
FR-100	Electrical	100	400	3800	84	870-927
FR-200	Electrical	200	500	3800	144	870-927
FR-300	Electrical/Gas	300	600	5200	180/228	870-927
FR-500	Electrical/Gas	500	700	7800	275/325	870-927
FR-600	Electrical/Gas	600	1000	7800	325/500	870-927
FR-1000	Electrical/Gas	1000	1500	7800	385/580	870-927

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