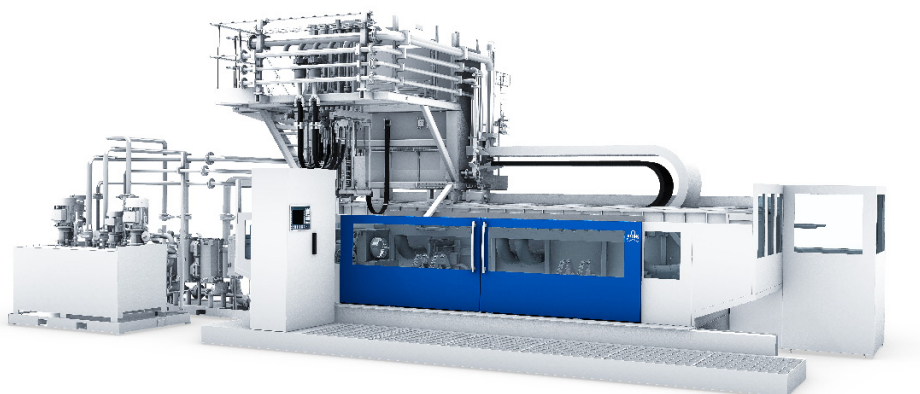


FLEX 4.0

Technical Data Sheet



Type	Multi-inductor hardening machine
Number of hardening stations	1
Number of inductors	Max. 5
Positioning of inductors	NC drive
Travel speed of inductors	Max. 180 mm/s
Positioning of inductors (pitch adjustment of inductors)	Manual or NC drive
Lowering/raising of inductors	NC drive
Lowering speed of inductors	Max. 100 mm/s
Raising speed of inductors	Min. 220 mm/s
Weight offset of inductors	Pneumatic
Rotary drive of component	NC drive
Rotation speed	20 rpm
Standard MF output	Up to 350 kW
Control system	Siemens Sinumerik ONE Siemens S7-15xx PLC
NC servo technology	Siemens Sinamics S120/CU320
HMI	Siemens IPC427E/OP15-Black Siemens IPC477E
Manual controller	Siemens MPP483/MCP483/KP8
Process monitoring	Inverter central supply unit with monitoring in PLC or EME2020
Monitoring of quenching medium	Volume control with pump drive Flow monitoring with PLC or EME2020
Safety technology	Pilz safety relay or Siemens – Safety Integrated ET200SP/Profisafe
Spray protection enclosure	With sliding safety doors
Steam extraction	Integrated, centralised or decentralised, optionally with air filter
Condensate recovery	Integrated
Dimensions (L × W × H)	13,000 × 5,300 × 4,800 mm
Total height	4,800 mm
Total weight	Approx. 28 t

Options

- › Process monitoring and data capture (EME)
- › Washing machine with control via HM
- › Water-to-water or water-to-air chiller
- › Inductor recognition
- › Inductor database
- › Interfaces for data transfer
- › Automatic pitch setting
- › Detection system (e.g. DMC)
- › Monitoring of quenching water quantity via EME
- › Maintenance reminder in machine control system
- › Monitoring of hardening result (lab equipment)

Component handling

Loading	From front
Unloading	From front
Loading height	1,050 mm
Loading	Manual on roller blocks
Unloading	Manual

Applications

Crankshafts	All types
Max. length	4,500 mm
Max. swing diameter	580 mm
Max. weight	3.5 t
No. of pin bearings	Variable
No. of main bearings	Variable
Cycle time	Variable
Machining orientation	Horizontal
Clamping technique	Gimballed three-jaw chuck
Inductor design, main/pin bearing	Half shell inductor
Inductor design, end sections	Half shell inductor