Deep Rolling and Roll Straightening Machine Type 7893







Model series 7893 for individual or serial production

Deep Rolling and Roll Straightening

Deep rolling of fillet radii improves the fatigue strength of high stressed crankshafts by inducing compressive residual stresses. The innovative machine series 7893 combines deep rolling with roll straightening to reduce even the radial run-out of the crankshaft for optimum process efficiency.

Economic Advantages

- High flexibility for crank families with differing strokes and bearings
- New tool design for longer tool life
- Deep rolling of various materials
- Low production costs
- Low maintenance costs
- Short floor to floor times
- Deep rolling of various materials
- High degree of machine availability
- Lower grinding cost in the finishing processes due to roll straightening

System Advantages

The convincing system advantages of the innovative model series 7893 are as follows:

- Increase of fatigue strength
- Self teaching straightening process
- Angle dependent rolling for minimum crankshaft elongation
- Flexible machine layout
- High degree of process reliability
- Automatic error diagnosis
- Tool monitoring sensor
- Uniform tool layout for main and pin bearings
- Space-saving design
- Short cycle times by direct loading
- User friendly, menu-based screens
- Laser gauged radial position and stroke
- Precision callipers measure the total indicated run-out of main bearings
- Reduced notching

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Technical Data

Machine Details	Type 7893-01 K	Type 7893-02 K	Type 7893-03 K	Type 7893-03 M
	Deep rolling and roll straightening machine for crankshaft families with differing strokes.	With axially adjustable headstock position for processing of families with differing number of pins.	With axially adjustable head- and tailstock for shifting the workpiece to the fixed tooling positions.	As type 7893-03 K but suitable for processing crankshafts up to 1072 mm length.
Crankshaft				
Pitch of the crankshaft's main outer bearings:	max. 700 mm	max. 700 mm	max. 700 mm	max. 925 mm
Swing diameter:	max. 195 mm	max. 195 mm	max. 195 mm	max. 250 mm
Max. number of bearings:	7 mains, 6 pins	7 mains, 6 pins	7 mains, 6 pins	7 mains, 6 pins
Min./max.bearing diameters:	30 / 84 mm	30 / 84 mm	30 / 84 mm	37,5 / 100 mm
Min. bearing width:	18 mm	18 mm	18 mm	25 mm
Max. stroke:	120 mm	120 mm	120 mm	150 mm
Min. pitch between the main and the pin bearing:	29,5 mm	29,5 mm	29,5 mm	41 mm
Headstock				
Main drive output:	15 KW	15 KW	15 KW	15 KW
Deep rolling speed:	120 min^{-1}	120 min^{-1}	120 min^{-1}	100 min^{-1}
Roll straightening speed:	30 min^{-1}	30 min^{-1}	30 min^{-1}	20 min^{-1}
Axially adjustable headstock position:	no	yes	yes	yes
Tailstock				
Axially adjustable tailstock position:	no	no	yes	yes
Machine				
Weight including auxiliary aggregates:	~ 13.800 kg	~ 13.800 kg	~ 13.800 kg	~ 13.800 kg
Dimensions including integrated switching cabinet and hydraulics (L/W/H).:	4,3 x 3,4 x 2,65 m	4,3 x 3,4 x 2,65 m	4,3 x 3,4 x 2,65 m	4,3 x 3,4 x 2,65 m
Operating platform:	4,2 x 1,25 x 0,47 m	4,2 x 1,25 x 0,47 m	4,2 x 1,25 x 0,47 m	4,2 x 1,25 x 0,47 m
Machining height:	1.465 mm	1.465 mm	1.465 mm	1.465 mm

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