

# Universal Turn/Skiving Machine

## Type CTS 650



Type CTS 650 for serial or individual production

### Turn/Skiving

Turn/skiving has been developed as an extension of turn broaching for the machining of different types of crankshafts. The agile machine concept is of highest flexibility. The crankshafts are processed in two steps. At first the outer counter weight diameters, the cheeks, the bearing length dimensions, the bearing width (without axial thrust face bearing) and the radial and axial undercuts are turned to finish dimension. This is followed by skiving the bearing diameters to reach minimum machining allowance for the finish grinding operation. Tool discs serve as tool carriers providing peripheral mounting for up to 40 tool cartridges with indexable carbide inserts.

### Effective Process

The combination of turning and cross skiving (axially cutting tool) resulted in the development of turn/skiving. It finds its application in the crankshaft manufacturing for the automotive industry and offers high metal removal rates as necessary in particular for crankshaft cheek turning.

### Advantages

The convincing economic and system advantages of the model Type CTS 650 are as follows:

- High flexibility
- High capability
- Increased productivity
- Improved quality
- Superior component accuracy
- Reduced operating cost
- Low tooling cost
- Dry cutting
- Integrated tool size control
- Multiple skiving tool segments
- Individual length and diameter tool compensation
- Especially robust design (important for counter weight turning)
- Excellent operating comfort
- Minimized noise level

## Technical Data

### CTS 650

#### Spindles

Twin main spindle headstocks with frequency controlled AC motor	37 kW
RPM range, variable under load	infinitely variable
for main bearing chuck	from 20 to 1500 min <sup>-1</sup>
for pin bearing chuck	from 20 to 1200 min <sup>-1</sup>
Right spindle headstock adjustment HW	350 mm
Left spindle headstock	fixed
Diameter of front bearing in headstock	310/200 mm

#### Workpiece

Length measurement of the crankshaft	320mm/650mm
Maximum Swing over the bed	350mm
Number of bearings that can be machined simultaneously	2
Minimum bearing diameter	30mm
Minimum bearing width	17mm
Minimum cheek width	8mm

#### Tooling cross slide heads

Tool diameter	700 mm
Tool positions on circumference	max. 48

#### Feed drives

Variable speed AC motors for NC axes	
Rapid speed X1; X2; Z1 and Z2	20 m/min.

#### Electric

Total driving power CTS 650 M	approx. 60 kW
Total driving power CTS 650 P	approx. 100 kW
Operating voltage	400 V, 50 Hz
Control voltage	230 V, 50 Hz

#### Weights and dimensions

Machine including Electric switch cabinet and Hydraulic system	approx. 18.000 kg
Machine length excluding swarf conveyor	approx. 4600 mm
including swarf conveyor	approx. 6600 mm
width	approx. 2605 mm
height	approx. 2645 mm
Required floor space incl. electric cabinet, operator panel, swarf conveyor	approx. 7300x4400 mm

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