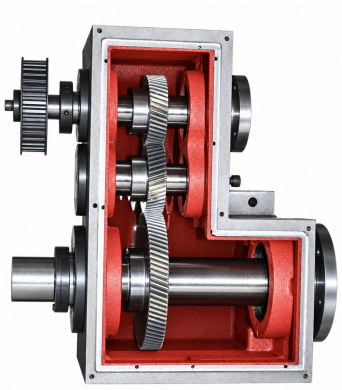


# Machine Design and Key Features

Spindle support and workholding

## Spindle and Bearing Arrangement

The high-precision, rigid spindle design is intended for heavy cutting and difficult-to-machine materials. Helical gears and precision tapered roller bearings support smooth spindle rotation and high rigidity.



## Hydraulic Clamping and Collets

Hydraulic clamping reduces loading and clamping time. A precision hydraulic rotary cylinder is standard. The front-locking arrangement shortens the distance between the collet and spindle, supporting firm workholding and improved concentricity. Large-bore collets and readily manufactured collet inserts accommodate larger workpieces and a broad range of parts.



# Machine Design and Key Features

Drive system and feed structure

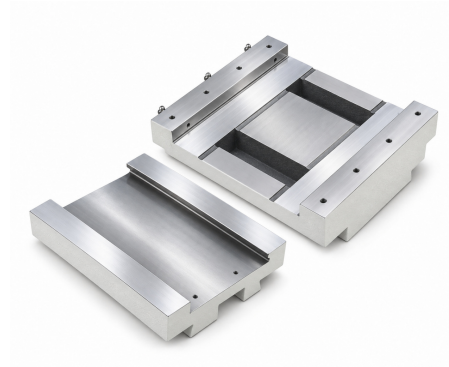
## Main Drive and Synchronized Transmission

The main drive uses a synchronous belt and pulleys for efficient motor-power transmission. Stepless variable-frequency speed control supports constant surface-speed cutting. The secondary transmission uses a heavy-duty vehicle-type drive shaft to provide rigid and accurate synchronized motion.



## Bed Guideways and Lubrication

The rigid bed and guideway design supports accurate machining in a single setup. Compared with the earlier design, revised load paths in the main and cross slides are stated to double the cutting allowance per pass. All mating surfaces are carefully hand-scraped for smooth feed without stick-slip. A comprehensive guideway lubrication system supplies the contact surfaces to support long service life.



# Machine Design and Key Features

Tooling for polygon turning

## Dedicated Cutter Heads and Tool Holders

Dedicated cutter heads simplify changeover between two-, four-, six- and eight-sided machining and make tool setting quicker. Purpose-designed tool holders support safer operation and easier correction of variation between multiple across-flats dimensions. Additional special tool holders are available for difficult workpieces and specific angular requirements.

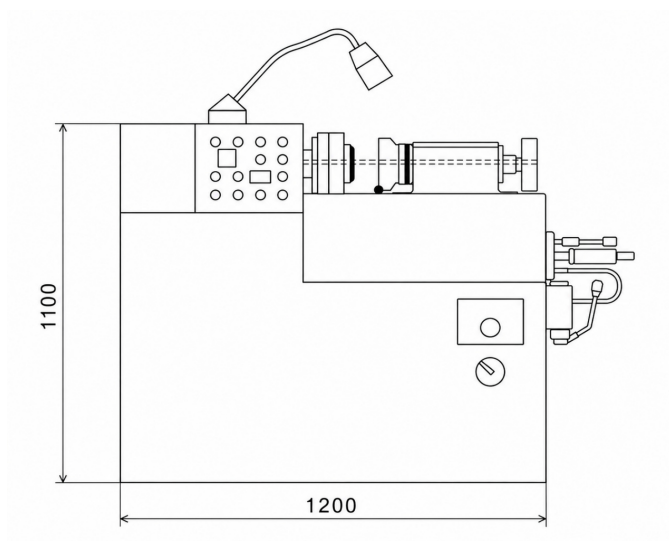


## CF-50HPC / CF-60HPC Hydraulic Models

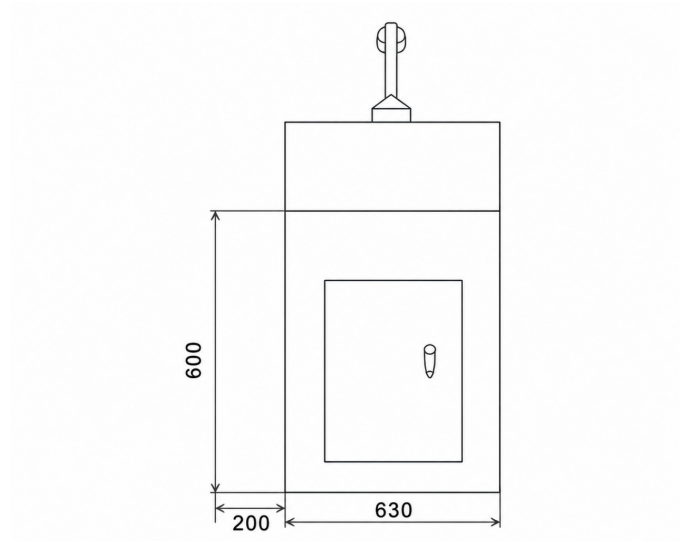
Machine overview and installation dimensions



Machine overview



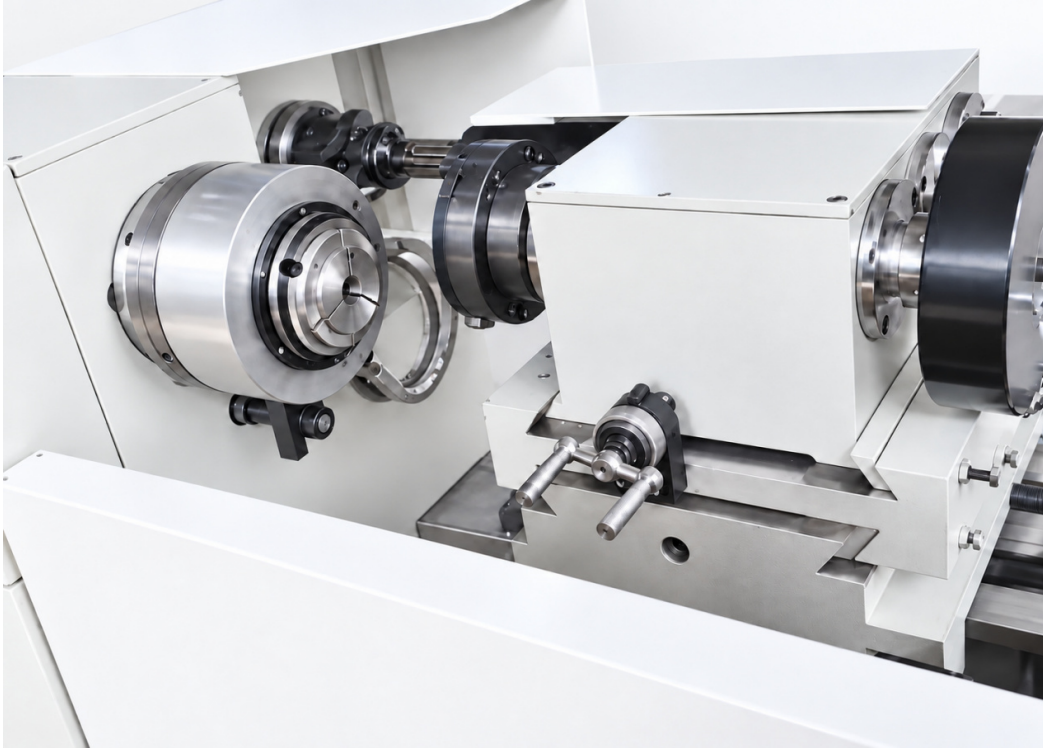
Installation dimensions - front view



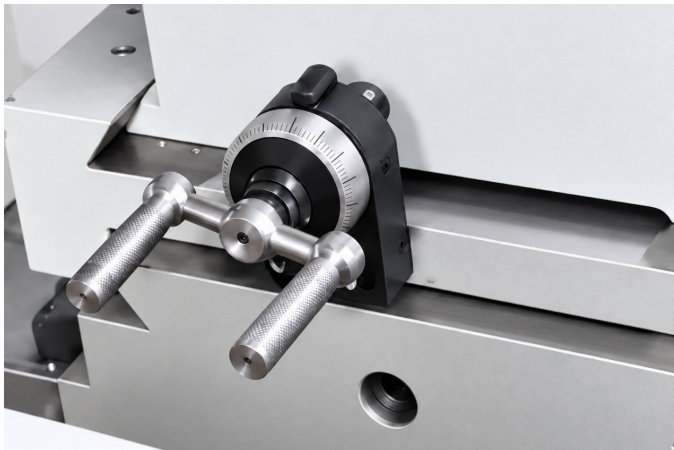
Installation dimensions - side view

# Hydraulic Models Interior and Adjustment

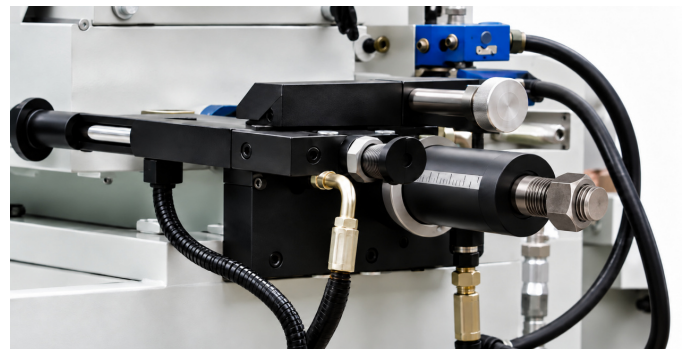
Machining area and X-axis / Z-axis adjustment locations



Machining area



X-axis adjustment dimensions



Z-axis adjustment dimensions

# Hydraulic Models Accessories and Tooling

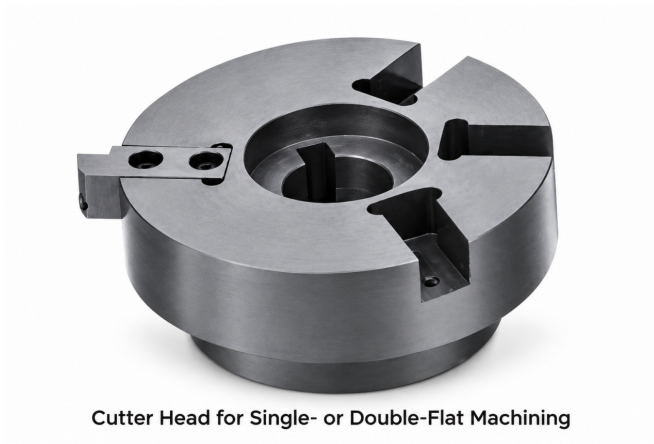
Adjustment aids workholding and cutting components



Optional digital readout and linear scales



Optional X-axis dial indicator mounting



Cutter Head for Single- or Double-Flat Machining



## 机床标准配置

- 1、弹簧夹头液压夹紧装置
- 2、可车削一、二、四、六方的专用刀架
- 3、手压式（Y6）润滑油泵
- 4、与主轴相联的工件定位杆

## 机床可选配置

- 1、针对特殊工件定制的弹簧夹头
- 2、可车削一、二、四、八方的专用刀架
- 3、电动自动润滑油泵
- 4、加工两头车方（且有对应角度要求）工件的专用定位杆
- 5、液压油冷却装置

# Hydraulic Models Technical Specifications

Technical data | Source values retained

| Parameter                          | Unit  | CF-50HPC            | CF-60HPC            |
|------------------------------------|-------|---------------------|---------------------|
| Machining diameter range           | mm    | Ø5-Ø50              | Ø5-Ø60              |
| Spindle bore diameter              | mm    | Ø46                 | Ø60                 |
| Maximum machining length           | mm    | 80                  | 80                  |
| Concentricity deviation [1]        | mm    | Ø0.05               | Ø0.05               |
| Across-flats accuracy              | mm    | 0.05                | 0.05                |
| Surface finish [2]                 | µm    | 1.60                | 1.60                |
| Number of workpiece sides          | —     | 1, 2, 4, 6, 8       | 1, 2, 4, 6, 8       |
| Feed rate                          | m/min | Stepless adjustment | Stepless adjustment |
| Main motor power                   | kW    | 2.2                 | 4.0                 |
| Power supply                       | V     | 380 V/50 Hz         | 380 V/50 Hz         |
| Pump power                         | kW    | 1.5                 | 1.5                 |
| Spindle speed range (stepless)     | r/min | 100-800, Stepless   | 100-800, Stepless   |
| Net machine weight                 | kg    | Approx. 1200        | Approx. 1300        |
| Machine tool dimensions(L x W x H) | m     | 1.6 x 0.85 x 1.25   | 1.6 x 0.85 x 1.25   |

[1] The source states Ø0.05 mm. The measurement datum and method require confirmation.

[2] The source specifies 1.60 µm without identifying the roughness parameter. Do not interpret it as Ra until confirmed.

The stated twofold increase in cutting allowance compares this design with an earlier model; the cutting conditions and test basis require confirmation.

# CF-50CNC / CF-60CNC CNC Models

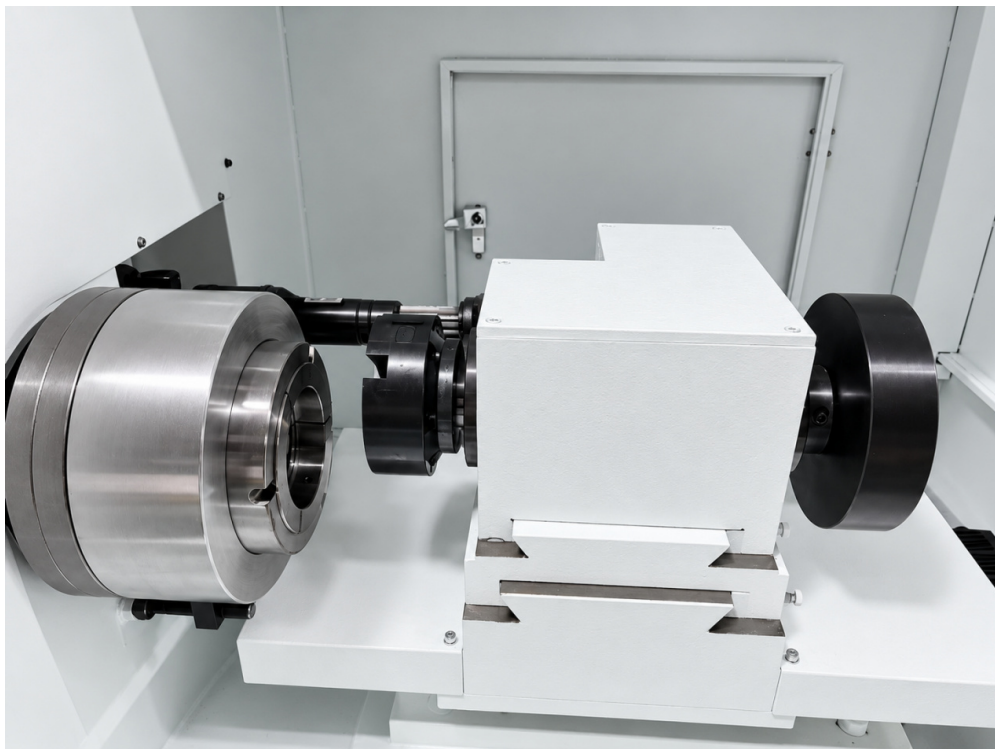
Machine overview control panel and machining area



Machine overview



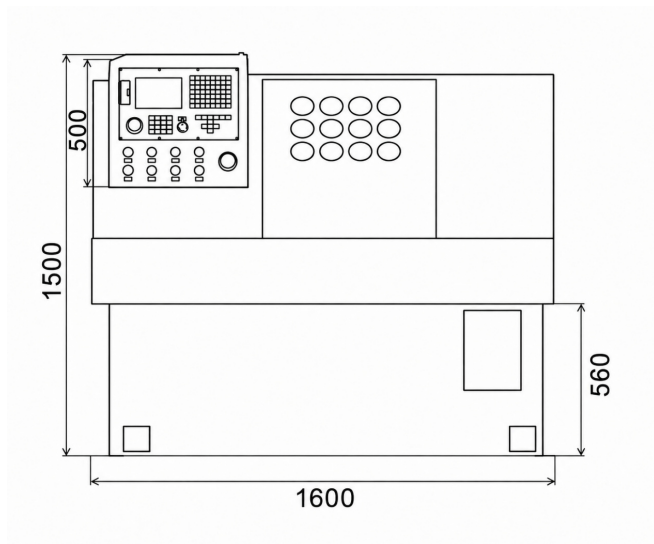
CNC control panel



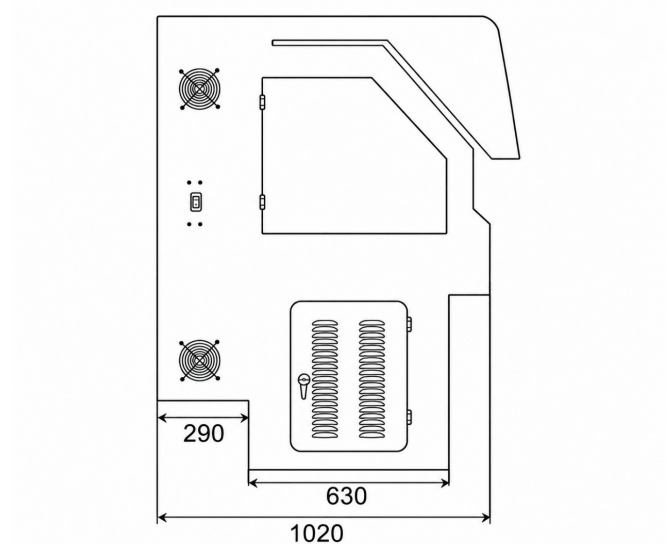
Machine interior

# CNC Models Installation and Workholding

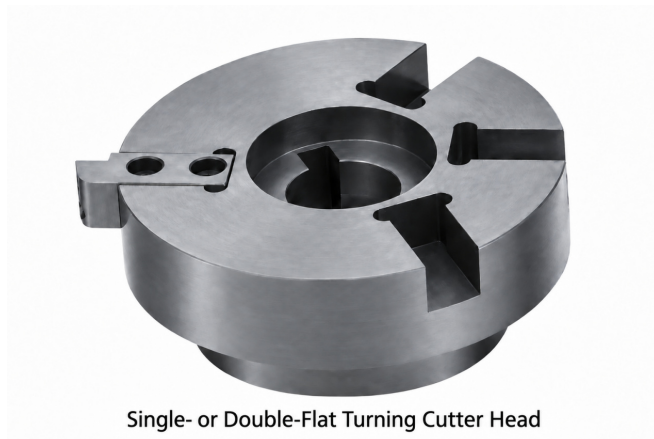
Installation dimensions and collet components



Installation dimensions - front view



Installation dimensions - side view



Single- or Double-Flat Turning Cutter Head



Collet components Auxiliary collet

# Equipment Configuration and Examples

Original configuration illustration and example parts

## 机床标准配置

- 1、弹簧夹头液压夹紧装置
- 2、可车削一、二、四、六方的专用刀架
- 3、电动自动润滑油泵
- 4、与主轴相联的工件定位杆

## 机床可选配置

- 1、针对特殊工件定制的弹簧夹头
- 2、可车削一、二、四、八方的专用刀架
- 3、液压尾座
- 4、加工两头车方（且有对应角度要求）工件的专用定位杆
- 5、液压油冷却装置



# Standard Equipment and Options

English translation of the configuration illustrations

## Standard Equipment

1. Hydraulic collet clamping system.
2. Dedicated cutter heads for one-, two-, four- and six-sided turning.
3. Automatic electric lubrication pump.
4. Workpiece locating rod linked to the main spindle.

## Optional Equipment

1. Custom collets for specific workpieces.
2. Dedicated cutter heads for one-, two-, four- and eight-sided turning.
3. Hydraulic tailstock.
4. Special locating rod for machining flats at both ends with a specified angular relationship.
5. Hydraulic oil cooling unit.

The source configuration illustration lists eight-sided turning as an option, while the technical tables include eight sides in the machining range. Confirm the supplied cutter head and tooling for each order.

# CNC Models Technical Specifications

Technical data | Source values retained

| Parameter                          | Unit  | CF-50CNC        | CF-60CNC        |
|------------------------------------|-------|-----------------|-----------------|
| Machining diameter range           | mm    | Ø5-Ø50          | Ø5-Ø60          |
| Spindle bore diameter              | mm    | Ø46             | Ø60             |
| Maximum machining length           | mm    | 100             | 100             |
| Concentricity deviation [1]        | mm    | Ø0.05           | Ø0.05           |
| Across-flats accuracy              | mm    | 0.05            | 0.05            |
| Surface finish [2]                 | µm    | 1.60            | 1.60            |
| Number of workpiece sides          | —     | 1, 2, 4, 6, 8   | 1, 2, 4, 6, 8   |
| Feed rate                          | m/min | Stepless        | Stepless        |
| Main motor power                   | kW    | 3.0             | 4.0             |
| Spindle speed range (stepless)     | r/min | 100-800         | 100-800         |
| CNC control system                 | —     | KND K1          | KND K1          |
| X-axis servo motor data [3]        | N·m   | 6 (servo)       | 6 (servo)       |
| Z-axis servo motor data [3]        | N·m   | 8 (servo)       | 8 (servo)       |
| Power supply                       | V     | 380 V/50 Hz     | 380 V/50 Hz     |
| Pump power                         | kW    | 1.50            | 1.50            |
| Net machine weight                 | kg    | Approx. 1500    | Approx. 1600    |
| Machine tool dimensions(L x W x H) | m     | 1.6 x 1.1 x 1.5 | 1.6 x 1.1 x 1.5 |

[1] The source states Ø0.05 mm. The measurement datum and method require confirmation.

[2] The source specifies 1.60 µm without identifying the roughness parameter. Do not interpret it as Ra until confirmed.

[3] The source labels these entries as motor power but gives torque units. Values of 6 and 8 N·m are retained; verify the rated torque and motor specification.

## Representative Machined Parts

Polygonal and combined-feature components



## Representative Machined Parts

Polygonal and combined-feature components

