

# CyMill

NC MILLING HEADS



## COMPONENTS PERFECTION



MADE IN GERMANY



**PROCESS STABLE  
RELIABLE  
DYNAMIC  
STRONG**

## DYNAMIC MEETS PRECISION

The CYTEC machining heads with synchronous drives for high dynamic applications are the result of long-term experience gained in the conception and design of torque motors produced by CYTEC Zylindertechnik GmbH.

CYTEC optimised them once more as latest generation of direct drives for rotating and swivel axes.

The distinctive characteristics of the series are performance, precision and a high level of reliability together with enormous power and dynamic.

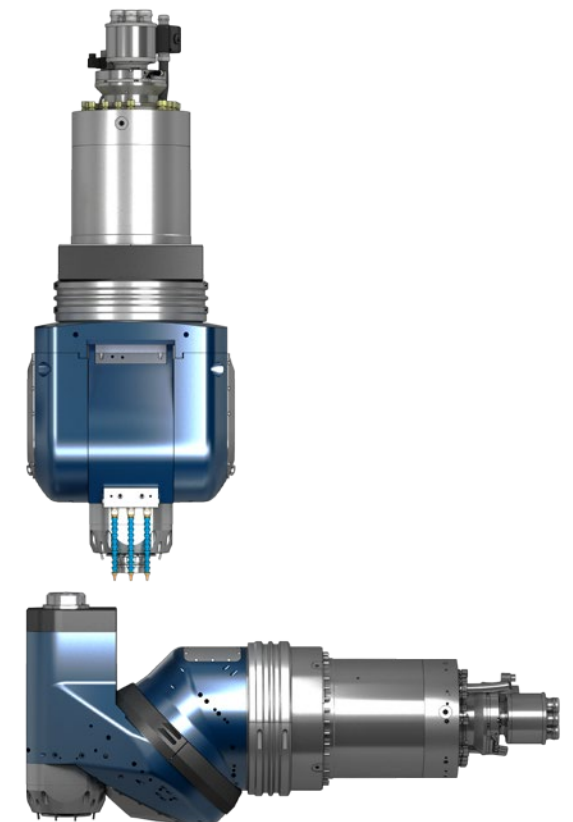
The drives are characterised by optimal control properties. A high overload capacity adapts ideally to most application requirements.

The powerful drive clamping device supports high precision positioning even for rough machining and high workpiece loads.

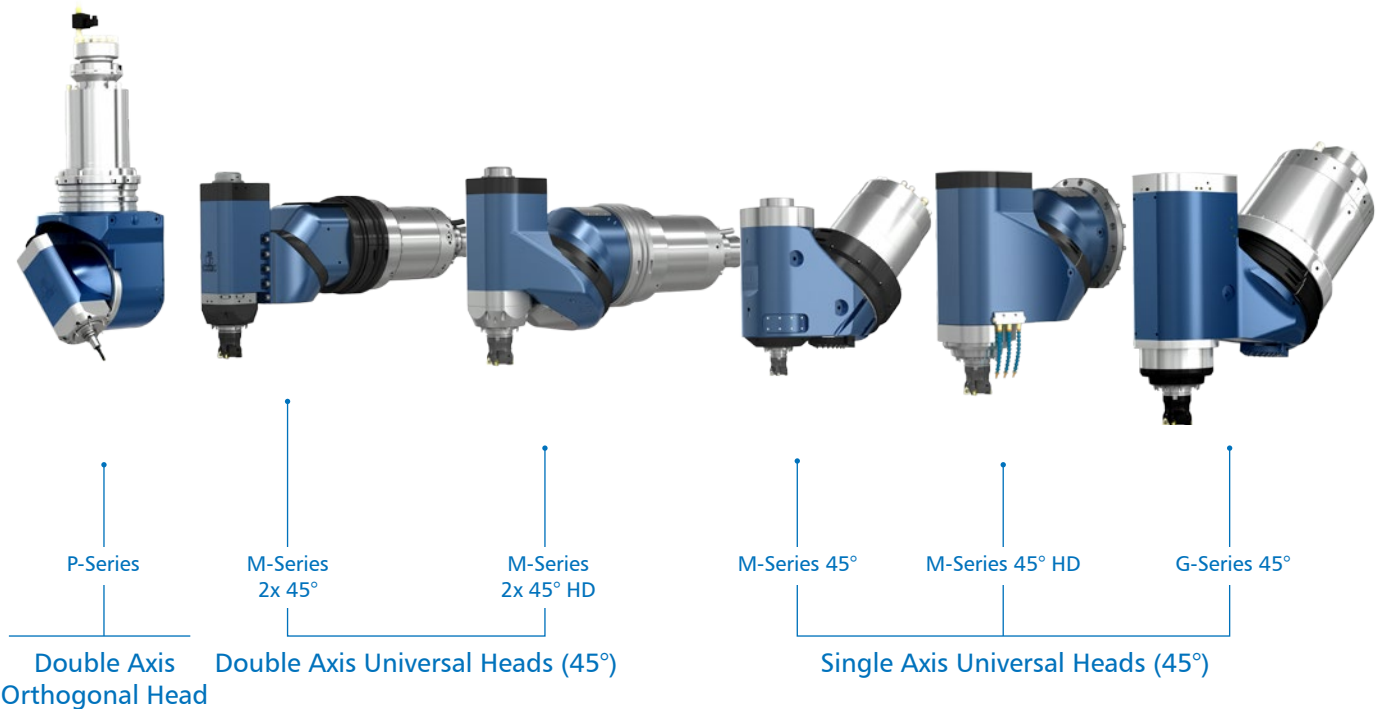
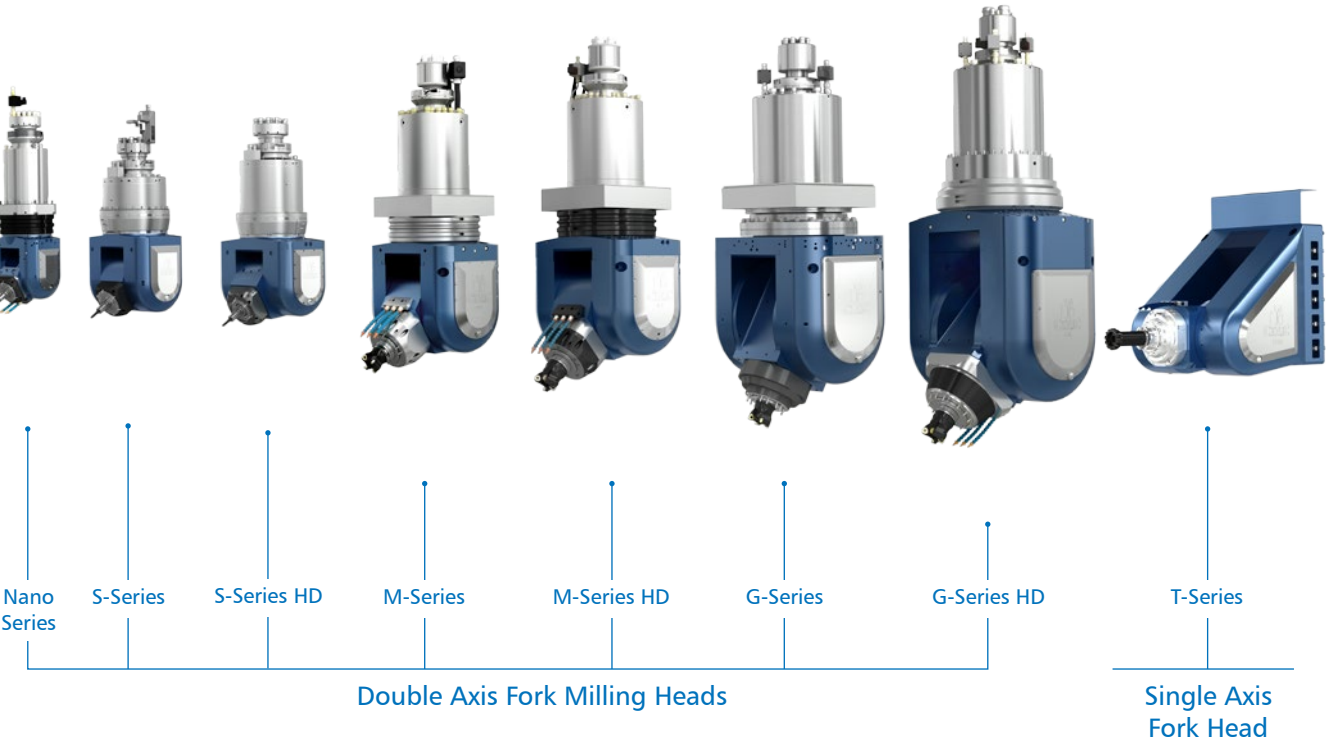


**CYTEC Zylindertechnik GmbH is a proven system partner for the mechanical engineering, technical know-how and creativity gained over decades working in the machine tool industry.**

The range of products comprises hydraulic and pneumatic clamping systems with positive lock, motor spindles, NC rotary tables and as well as single or multiple axis NC milling heads with ultra-high dynamic, patented direct drives. CYTEC Zylindertechnik GmbH is a developer and producer of tool machine components, that meet highest technical demands. Its in-house production depth and flexibility guarantee highest product quality.



# THE RIGHT HEAD FOR ANY APPLICATION



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## Options



## ○ Milling heads in individual configuration

- adapted to the application
- single and double axis systems
- fork, universal and orthogonal versions

## ○ Highest possible precision

- by means of
  - radial/axial roller bearings
  - state of the art measuring systems
  - high torsional stiffness

## ○ Integrated security pack

- in terms of a complete sensor system for total monitoring of all functions during the operational process



## ○ UltraHighTorque direct drives of the latest generation

- modular systems
- for maximised power and dynamic
- effective cooling solutions in A-/C axis
- powerful hydraulic clamping
- products of long term CYTEC experience and knowhow



## ○ High system rigidity

- as a result of extensive FEM calculation:
  - simulation of various stress situations caused by different loads and machining processes
  - optimised weight-reduced structure
  - for best machining quality and trouble free operation

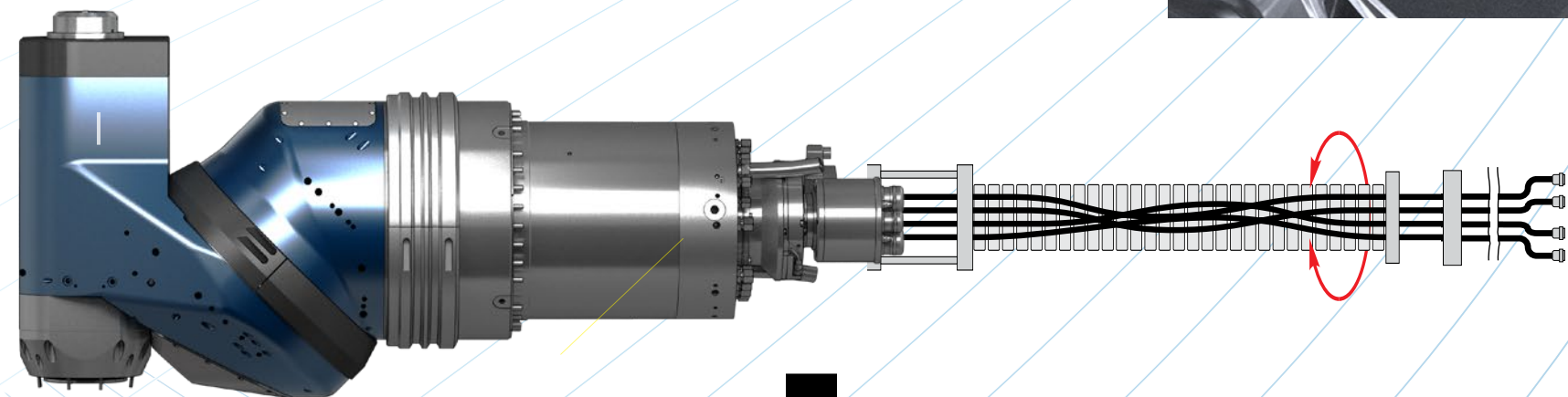
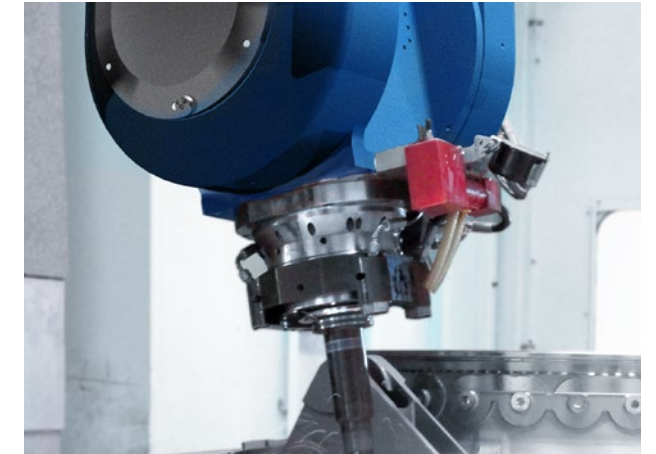
## ○ Cartridge axis housings

- and sealings have built in reliable protection against harmful external influences and dirt.

## ○ Effective simultaneous machining

## ○ Intelligent energy line/ data transmission concept

- elaborated internal arrangement with flexible wiring/tubing
- complete flexible cable harness - at least 2m length
- i. e. simple integration into the existing customer machine periphery

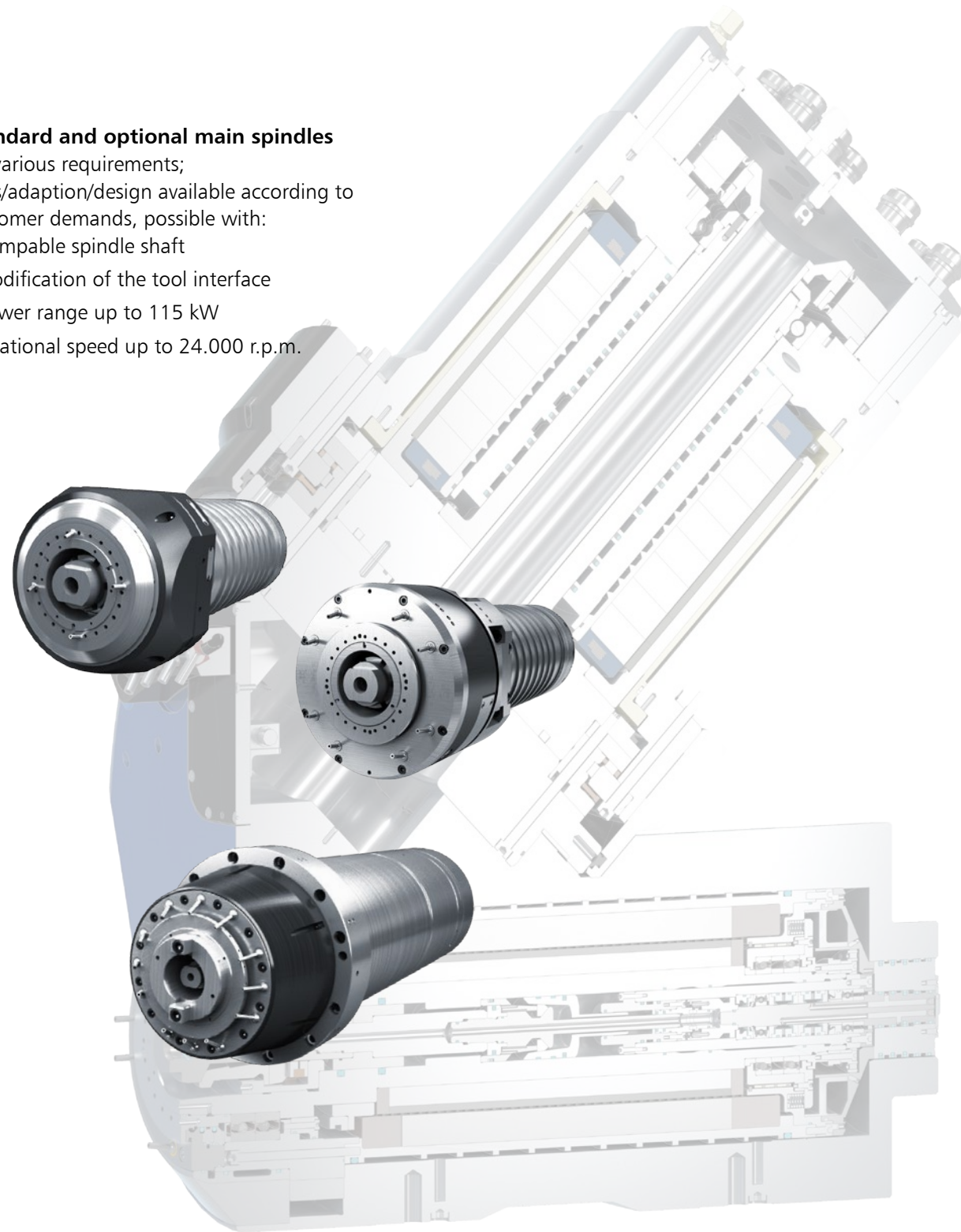


Made in  Germany

## Standard and optional main spindles

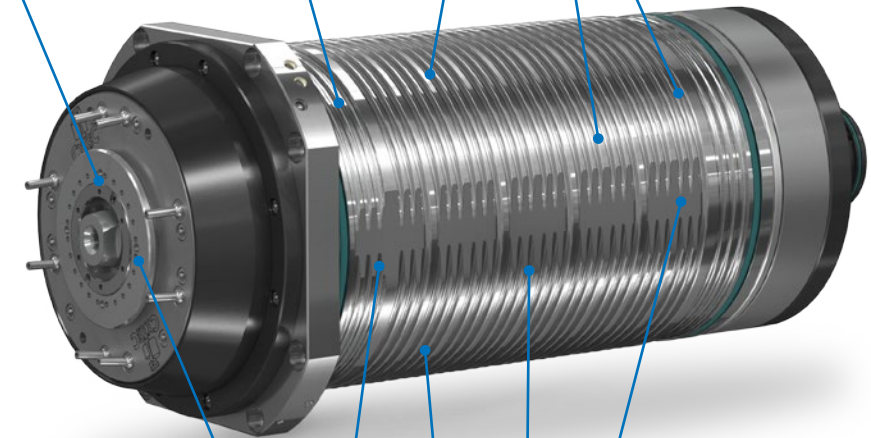
for various requirements;  
sizes/adaption/design available according to  
customer demands, possible with:

- clampable spindle shaft
- modification of the tool interface
- power range up to 115 kW
- rotational speed up to 24.000 r.p.m.



## The modular System

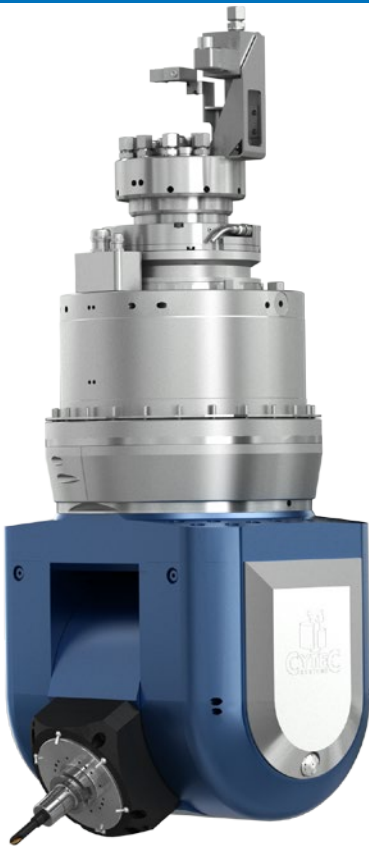
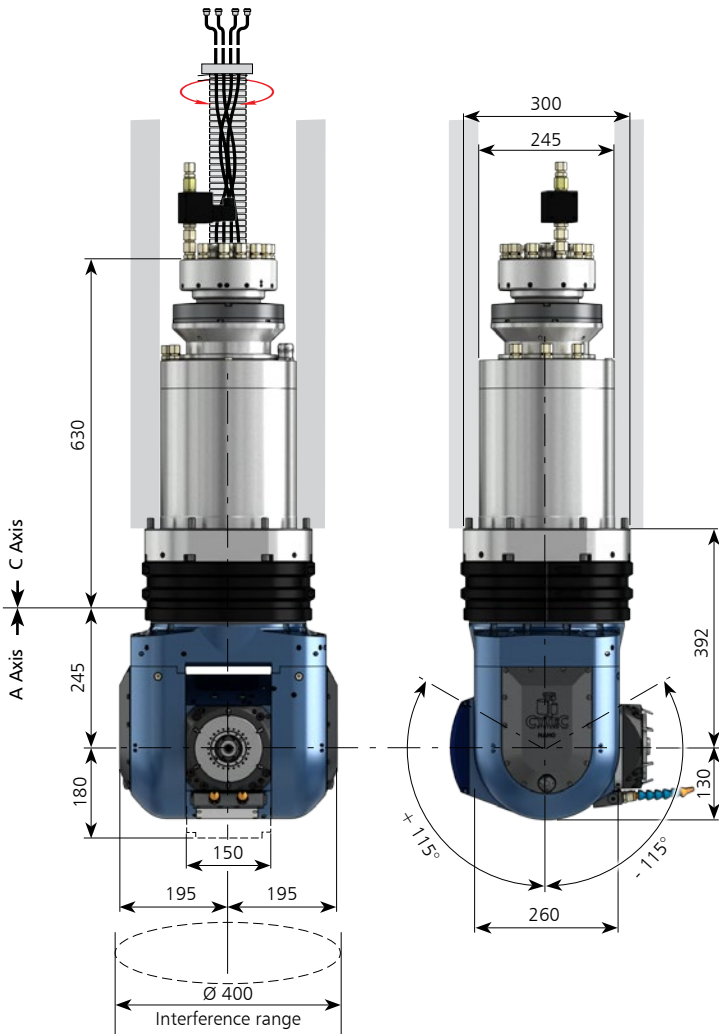
- Asynchronous / synchronous motors, depending on application either with high torque or speed, can be combined with all common control systems
- Tool interface standard HSK, option SK or Capto
- Heavy duty hybrid bearings for rotational speed up to 24.000 rpm
- Option: Minimal quantities of lubricant
- Monitoring of the state of the tool and locking system
- Automatic hydromechanical tool clamping system
- External coolant supply for effective tool cooling
- Complete integrated process monitoring:
  - Sensors for current, temperature and vibration
  - High definition incremental rotary encoders for the detection of speed and position
- Continuous or recirculating cooling of the rotary union
- Comprehensive media supply for separate cooling of stator and bearing unit





Fork Milling Head  
Nano-Series

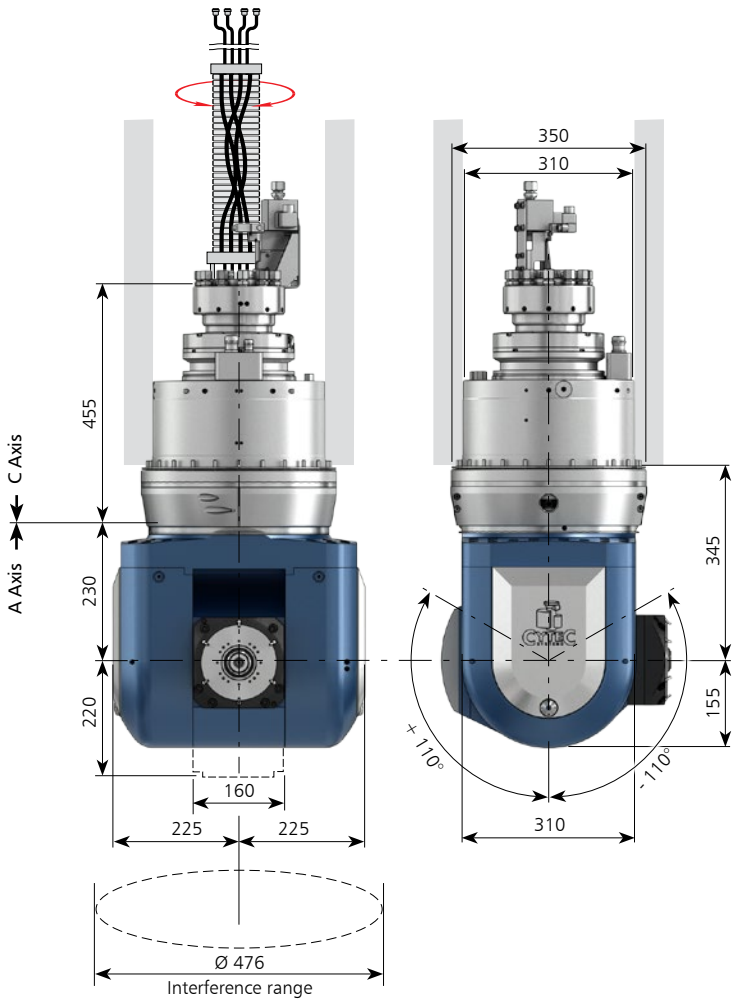
|                              | A Axis   | C Axis    |
|------------------------------|----------|-----------|
| Nom./Max. torque [Nm]:       | 165/310  | 605/1.130 |
| Nom. current [A]:            | 26       | 30        |
| Clamping torque 60 bar [Nm]: | 700      | 2.500     |
| Swivel angle [°]:            | ±115     | ±360      |
| Measuring system:            | absolute | absolute  |
| Position accuracy [″]:       | ±5       | ±2        |
| Total weight appr. [kg]:     | 290      |           |



Fork Milling Head  
S-Series

|                              | A Axis   | C Axis*  |
|------------------------------|----------|----------|
| Nom./Max. torque [Nm]:       | 400/770  | 430/820  |
| Nom. current [A]:            | 28       | 26       |
| Clamping torque 60 bar [Nm]: | 1.500    | 1.400    |
| Swivel angle [°]:            | ±110     | ±360     |
| Measuring system:            | absolute | absolute |
| Position accuracy [″]:       | ±5       | ±2       |
| Total weight appr. [kg]:     | 350      |          |

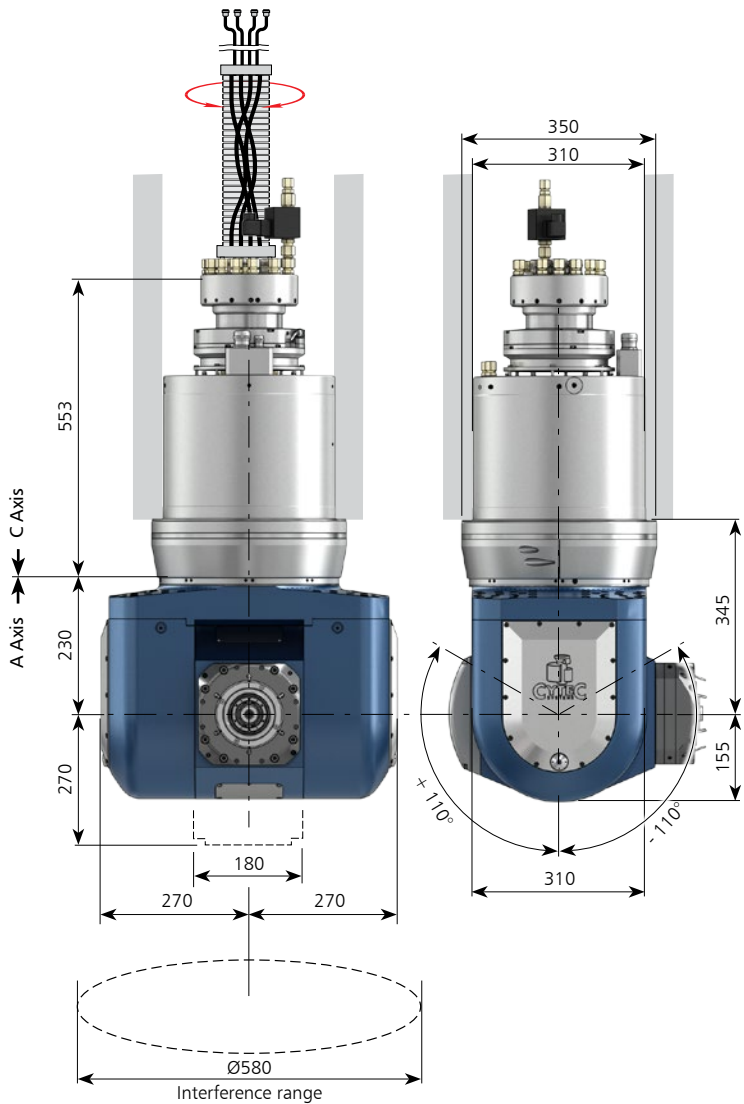
\* as an option, the Nano C axis is also usable





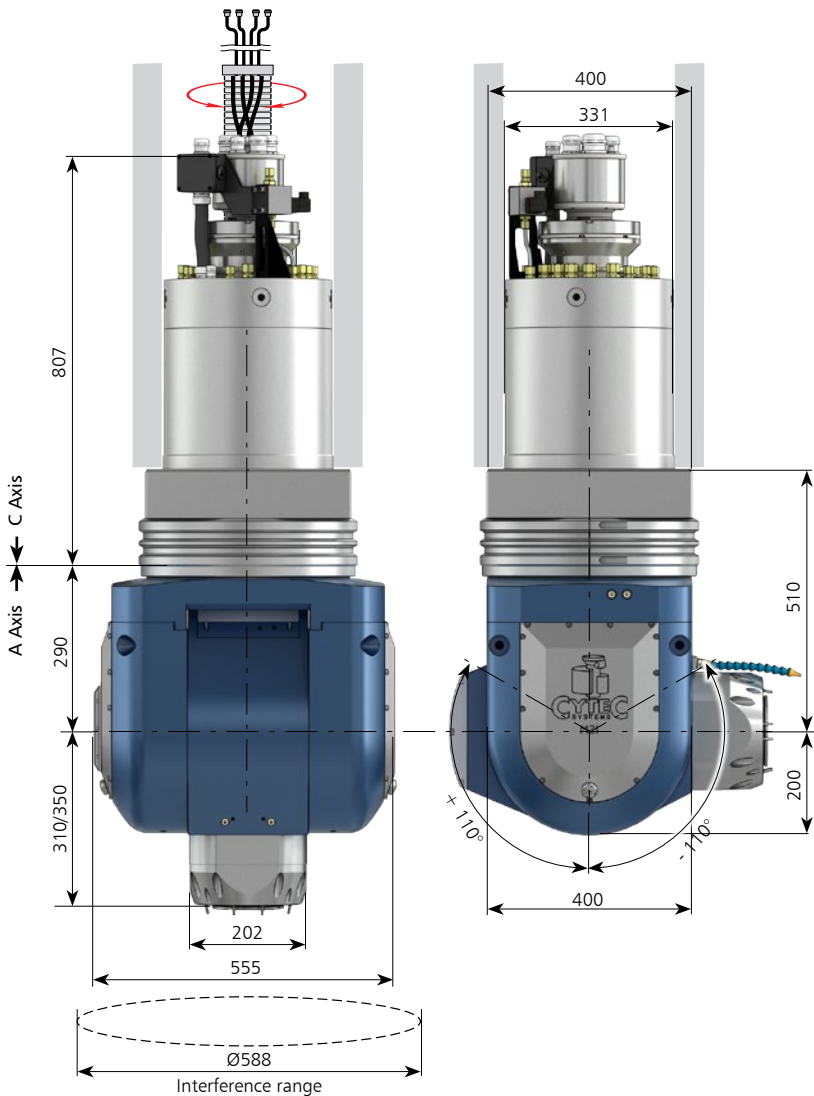
Fork Milling Head  
**S-Series HD**

|                              | A Axis    | C Axis    |
|------------------------------|-----------|-----------|
| Nom./Max. torque [Nm]:       | 630/1.190 | 670/1.320 |
| Nom. current [A]:            | 27        | 15        |
| Clamping torque 60 bar [Nm]: | 2.400     | 2.400     |
| Swivel angle [°]:            | ±110      | ±360      |
| Measuring system:            | absolute  | absolute  |
| Position accuracy ["]:       | ±5        | ±2        |
| Total weight appr. [kg]:     | 495       |           |



Fork Milling Head  
**M-Series**

|                              | A Axis    | C Axis      |
|------------------------------|-----------|-------------|
| Nom./Max. torque [Nm]:       | 840/1.340 | 1.020/1.960 |
| Nom. current [A]:            | 30        | 30          |
| Clamping torque 60 bar [Nm]: | 4.000     | 4.000       |
| Swivel angle [°]:            | ±110      | ±360/cont.  |
| Measuring system:            | absolute  | absolute    |
| Position accuracy ["]:       | ±5        | ±2          |
| Total weight appr. [kg]:     | 950       |             |

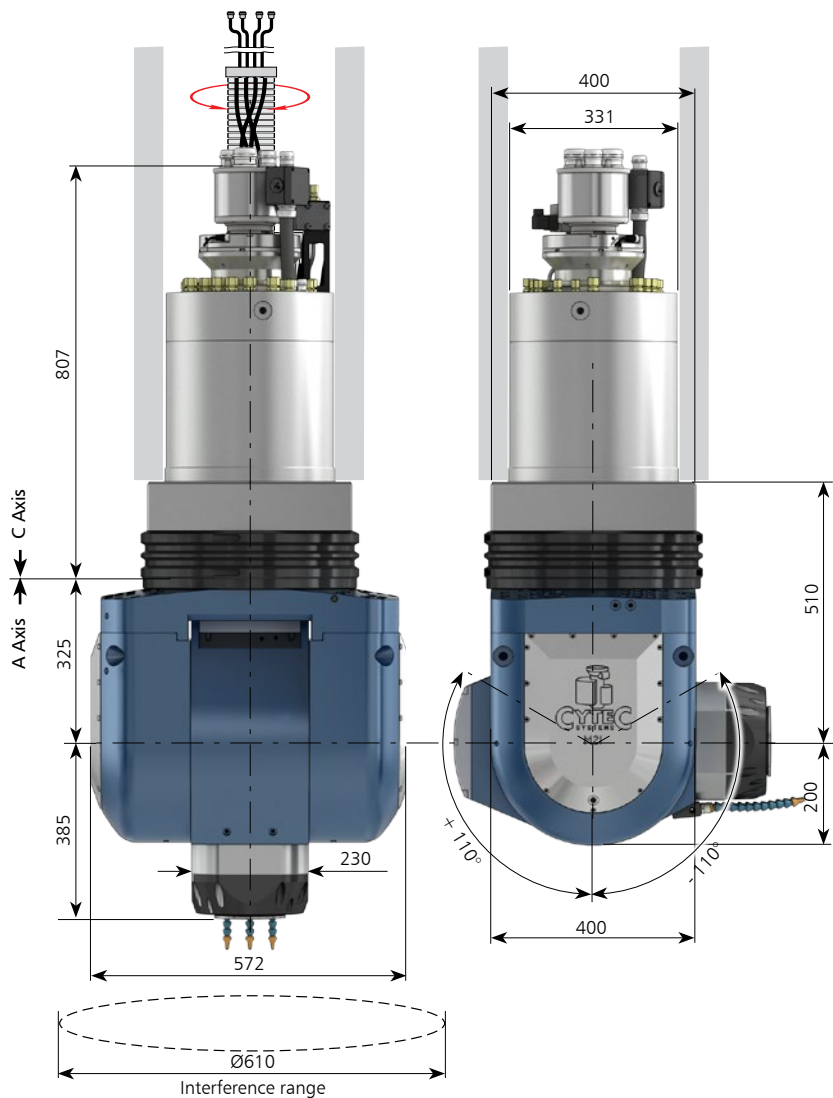


SERIES

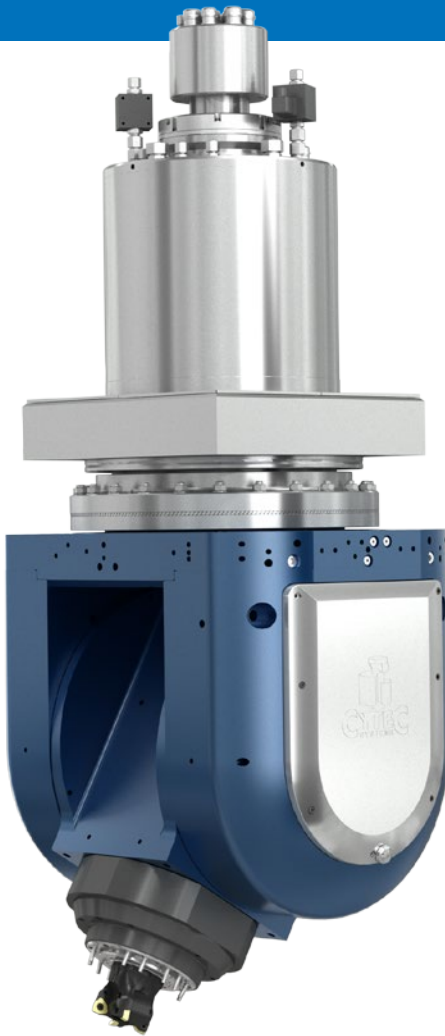


Fork Milling Head  
**M-Series HD**

|                              | A Axis    | C Axis      |
|------------------------------|-----------|-------------|
| Nom./Max. torque [Nm]:       | 840/1.340 | 1.020/1.960 |
| Nom. current [A]:            | 30        | 30          |
| Clamping torque 60 bar [Nm]: | 4.000     | 4.000       |
| Swivel angle [°]:            | ±110      | ±360/cont.  |
| Measuring system:            | absolute  | absolute    |
| Position accuracy [″]:       | ±5        | ±2          |
| Total weight appr. [kg]:     | 960       |             |

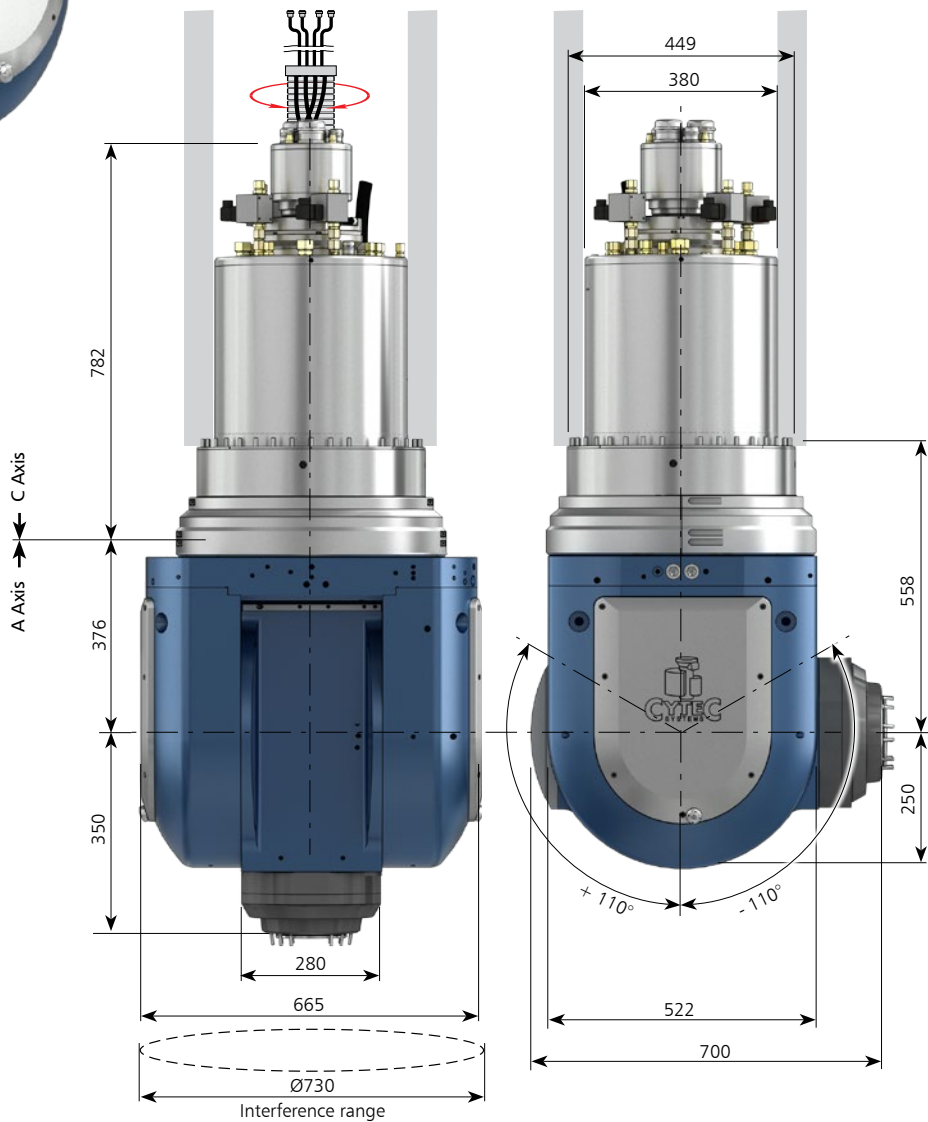


SERIES



Fork Milling Head  
**G-Series**

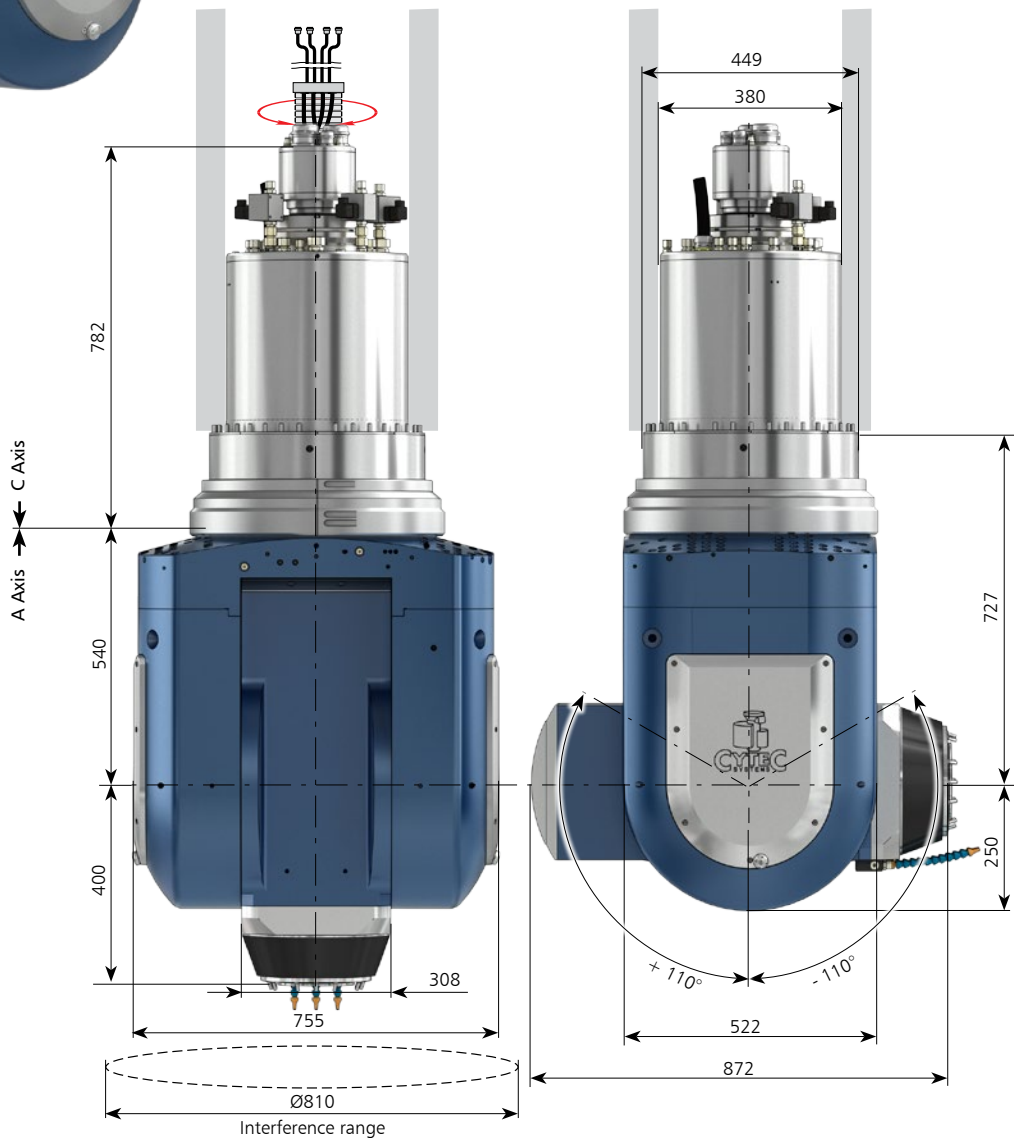
|                              | A Axis   | C Axis     |
|------------------------------|----------|------------|
| Nom./Max. torque [Nm]:       | 2.000    | 1.830      |
| Max. speed [r.p.m.]:         | 60       | 60         |
| Nom. current [A]:            | 30       | 29         |
| Clamping torque 60 bar [Nm]: | 7.000    |            |
| Swivel angle [°]:            | ±110     | ±360/cont. |
| Measuring system:            | absolute | absolute   |
| Position accuracy [″]:       | ±2,5     | ±2         |
| Total weight appr. [kg]:     | 1.200    |            |





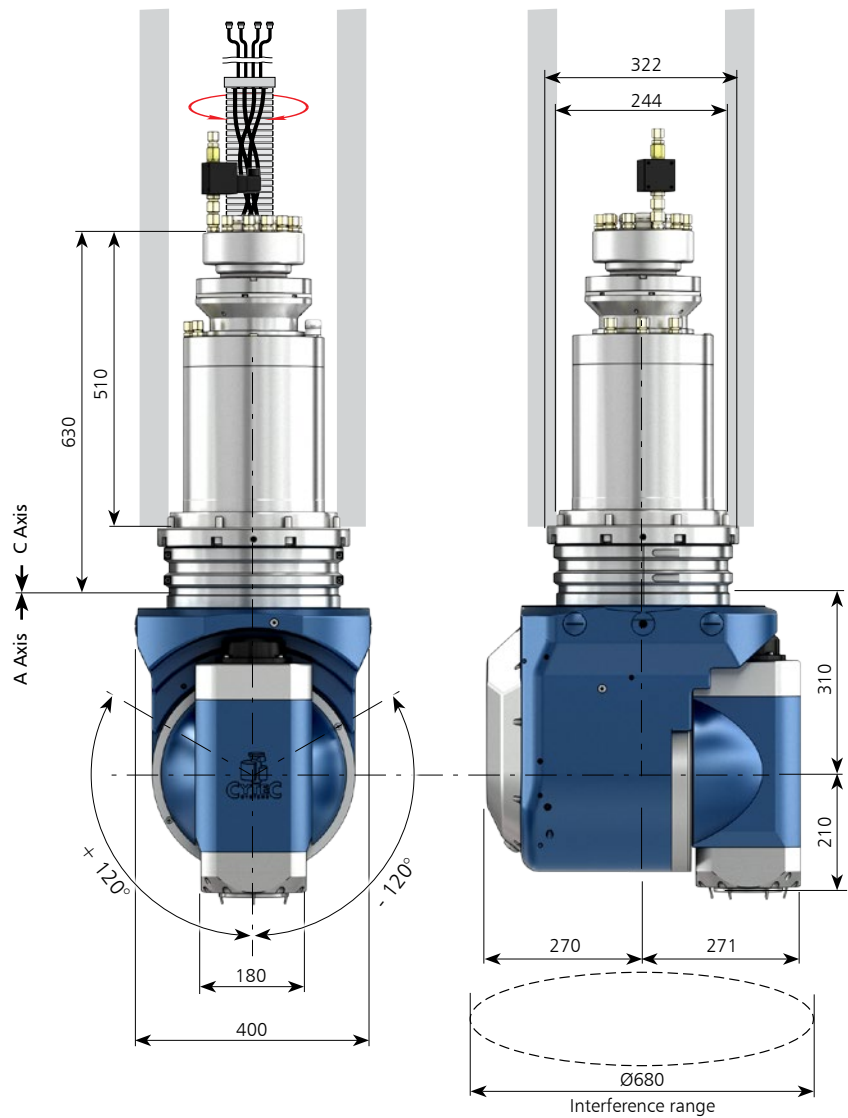
Fork Milling Head  
G-Series HD

|                              | A Axis      | C Axis      |
|------------------------------|-------------|-------------|
| Nom./Max. torque [Nm]:       | 2.730/5.080 | 2.400/4.700 |
| Max. speed [r.p.m.]:         | 60          | 40          |
| Nom. current [A]:            | 54          | 30          |
| Clamping torque 60 bar [Nm]: | 7.500       |             |
| Swivel angle [°]:            | ±110        | ±360/cont.  |
| Measuring system:            | absolute    | absolute    |
| Position accuracy [″]:       | ±2,5        | ±2          |
| Total weight appr. [kg]:     | 2.100       |             |



Orthogonal Milling Head  
P-Series

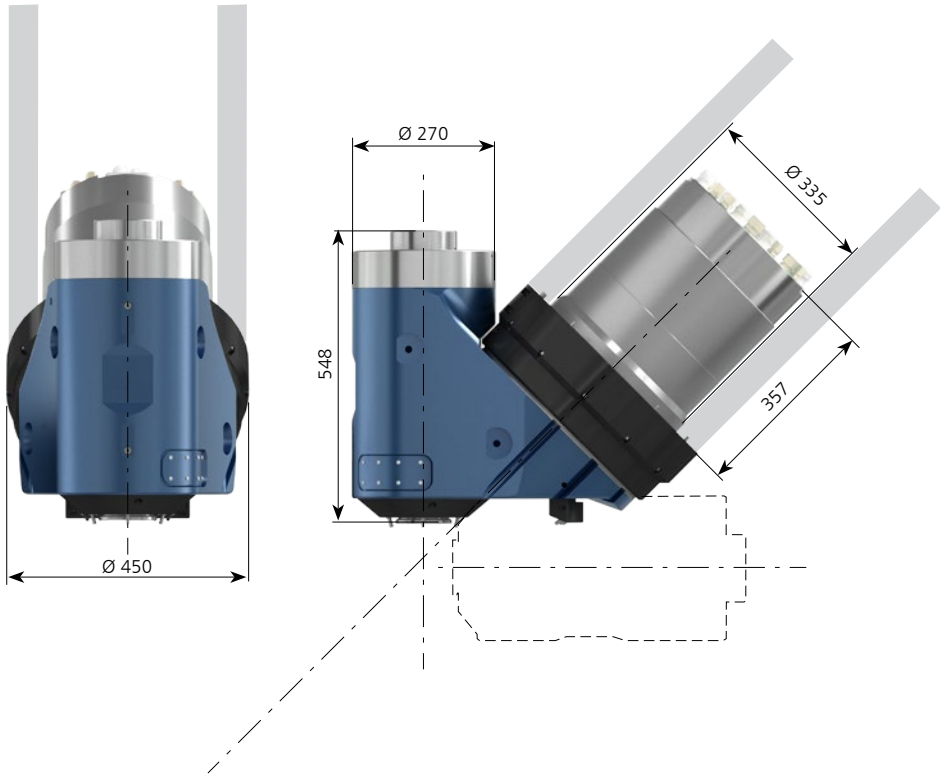
|                              | A Axis   | C Axis   |
|------------------------------|----------|----------|
| Nom./Max. torque [Nm]:       | 433/817  | 490/820  |
| Nom. current [A]:            | 14       | 30       |
| Clamping torque 60 bar [Nm]: | 1.400    | 2.500    |
| Swivel angle [°]:            | ±120     | ±360     |
| Measuring system:            | absolute | absolute |
| Position accuracy [″]:       | ±2       | ±2       |
| Total weight appr. [kg]:     | 470      |          |





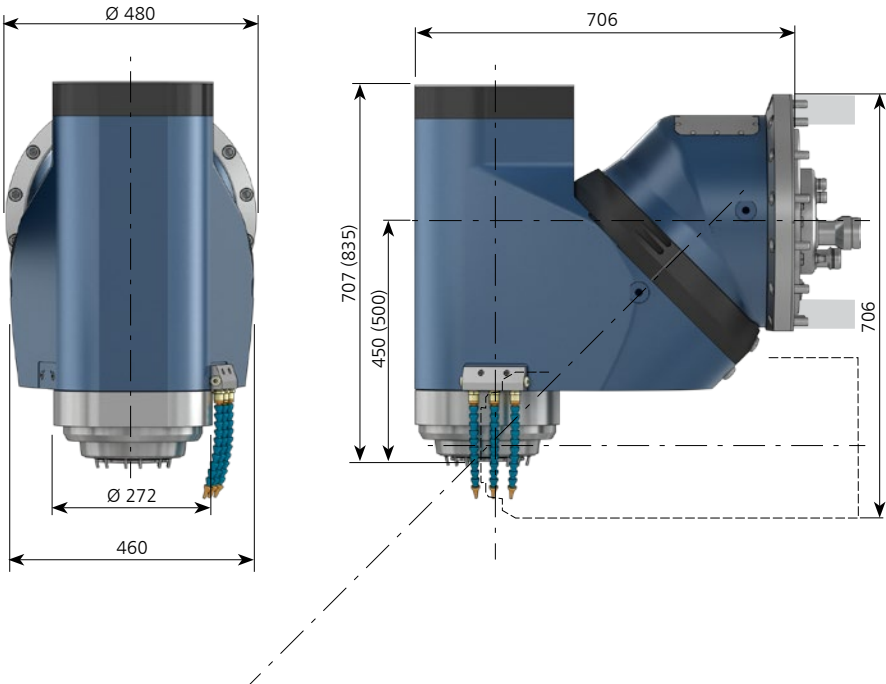
Universal Milling Head  
**M-Series 45°**

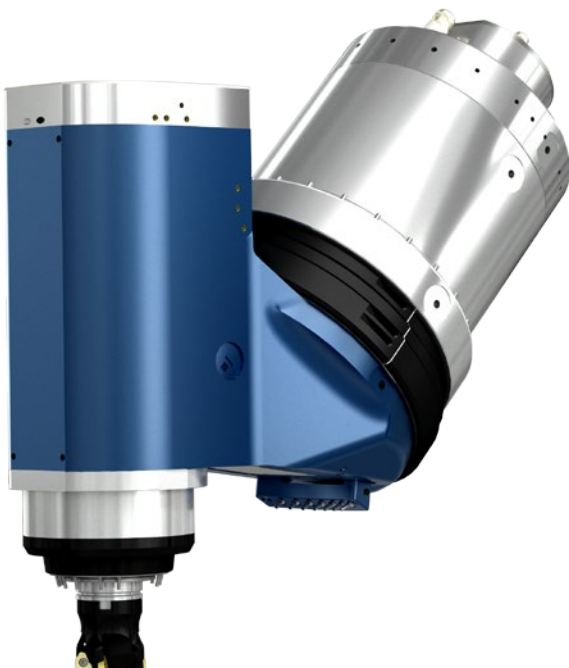
|                              | A Axis    |
|------------------------------|-----------|
| Nom./Max. torque [Nm]:       | 900/1.680 |
| Nom. current [A]:            | 30        |
| Clamping torque 50 bar [Nm]: | 4.000     |
| Swivel angle [°]:            | ±180      |
| Measuring system:            | absolute  |
| Position accuracy [″]:       | ±2        |
| Total weight appr. [kg]:     | 410       |



Universal Milling Head  
**M-Series 45° HD**

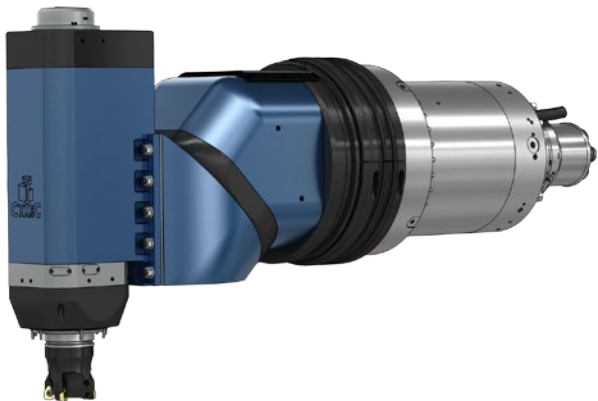
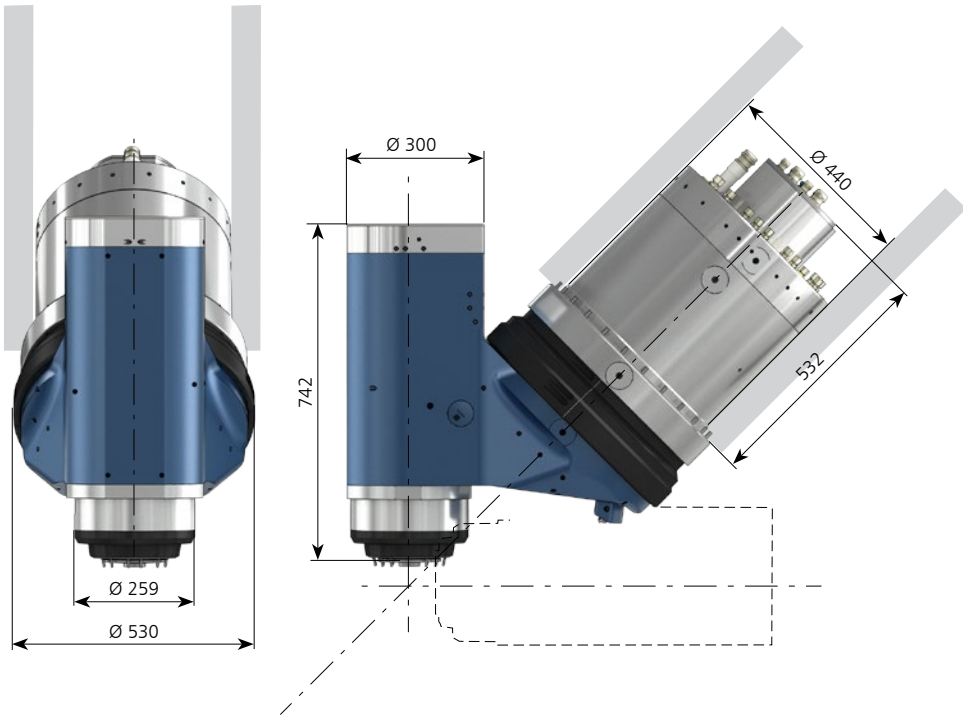
|                              | A Axis    |
|------------------------------|-----------|
| Nom./Max. torque [Nm]:       | 780/1.470 |
| Nom. current [A]:            | 30        |
| Clamping torque 50 bar [Nm]: | 2.500     |
| Swivel angle [°]:            | ±190      |
| Measuring system:            | absolute  |
| Position accuracy [″]:       | ±2        |
| Total weight appr. [kg]:     | 700       |





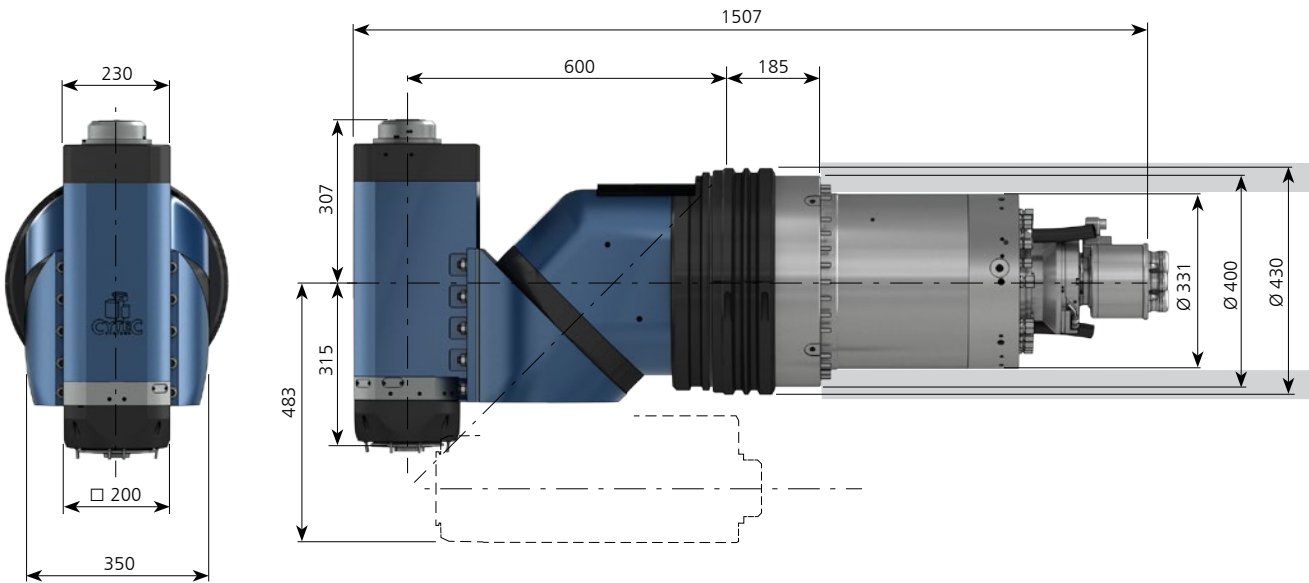
Universal Milling Head  
**G-Series 45°**

|                              | A Axis      |
|------------------------------|-------------|
| Nom./Max. torque [Nm]:       | 1.820/3.550 |
| Nom. current [A]:            | 28,6        |
| Clamping torque 60 bar [Nm]: | 5.500       |
| Swivel angle [°]:            | ±180°       |
| Measuring system:            | absolute    |
| Position accuracy [″]:       | ±2          |
| Total weight appr. [kg]:     | 840         |



Universal Milling Head  
**M-Series 2x 45°**

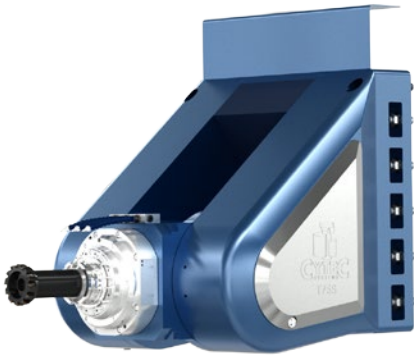
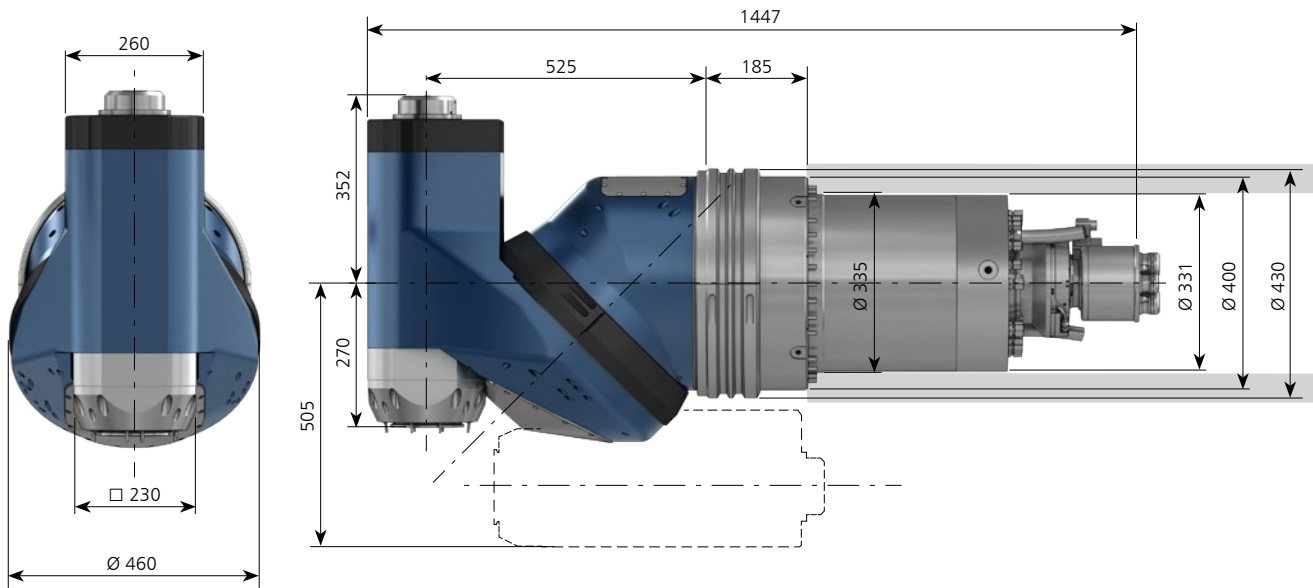
|                              | A Axis    | C Axis      |
|------------------------------|-----------|-------------|
| Nom./Max. torque [Nm]:       | 552/1.058 | 1.022/1.985 |
| Nom. current [A]:            | 14        | 30          |
| Clamping torque 60 bar [Nm]: | 2.000     | 4.000       |
| Swivel angle [°]:            | ±180      | ±360        |
| Measuring system:            | absolute  | absolute    |
| Position accuracy [″]:       | ±2        | ±2          |
| Total weight appr. [kg]:     | 870       |             |





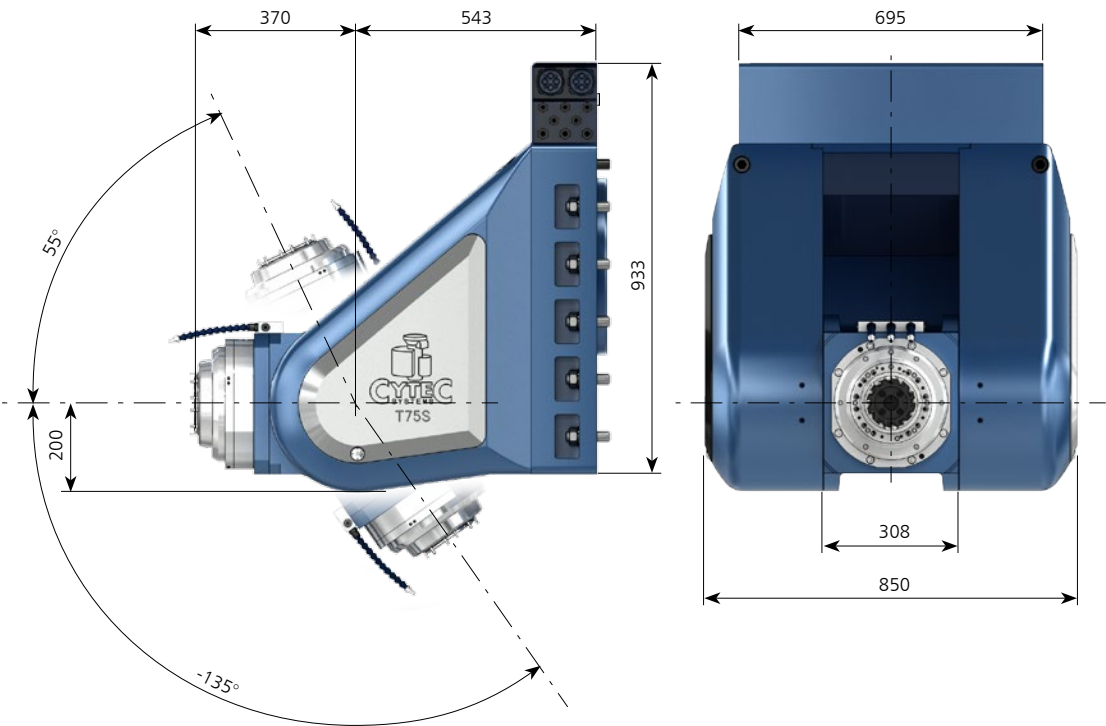
Universal Milling Head  
M-Series 2x 45° HD

|                              | A Axis    | C Axis      |
|------------------------------|-----------|-------------|
| Nom./Max. torque [Nm]:       | 780/1.470 | 1.020/1.960 |
| Nom. current [A]:            | 30        | 30          |
| Clamping torque 60 bar [Nm]: | 2.500     | 4.000       |
| Swivel angle [°]:            | ±190      | ±360        |
| Measuring system:            | absolute  | absolute    |
| Position accuracy ["]:       | ±2        | ±2          |
| Total weight appr. [kg]:     | 960       |             |



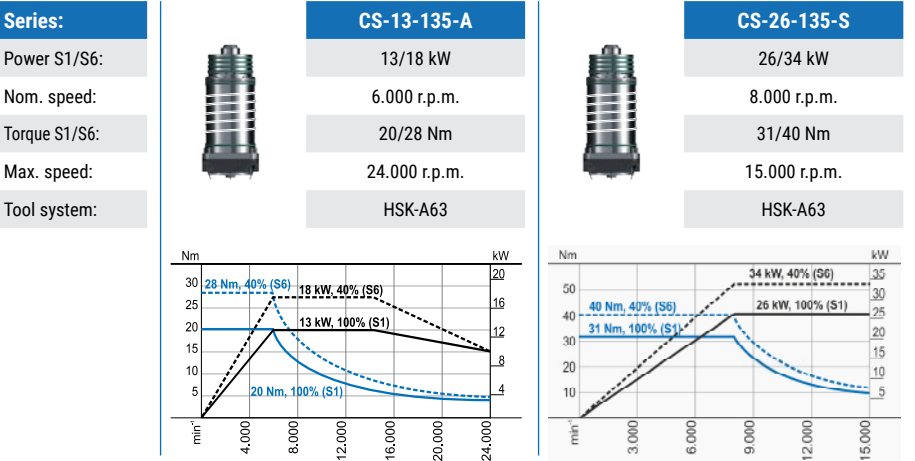
Fork Milling Head  
T-Series

|                              | A Axis      |
|------------------------------|-------------|
| Nom./Max. torque [Nm]:       | 2.400/4.400 |
| Nom. current [A]:            | 56          |
| Clamping torque 60 bar [Nm]: | 6.500       |
| Swivel angle [°]:            | -135 / +55  |
| Measuring system:            | absolute    |
| Position accuracy ["]:       | ±2,5        |
| Total weight appr. [kg]:     | 1.650       |

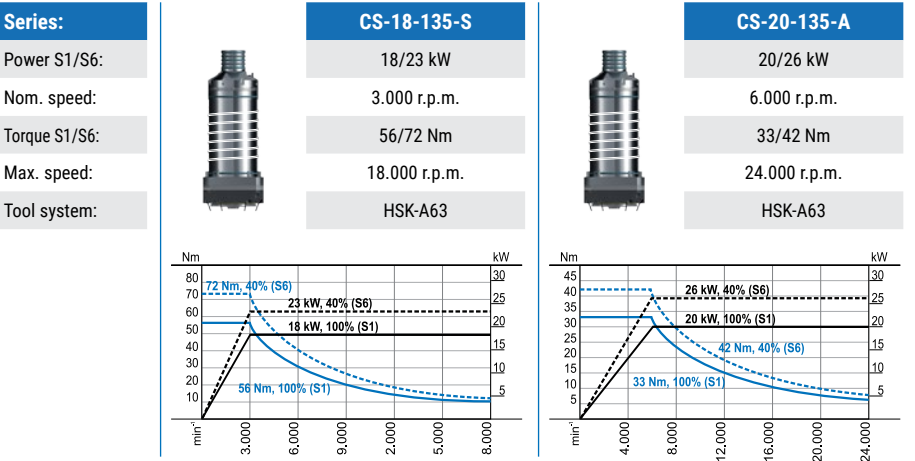


MOTOR SPINDLES

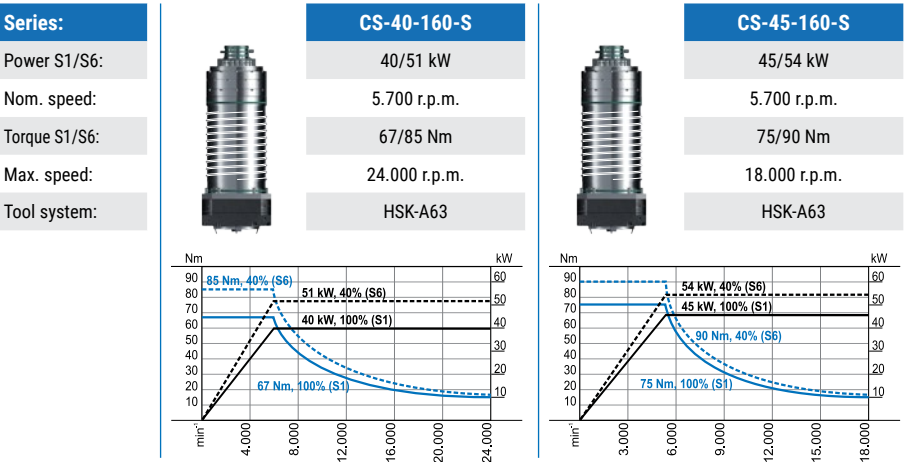
Applied in: NANO-Series



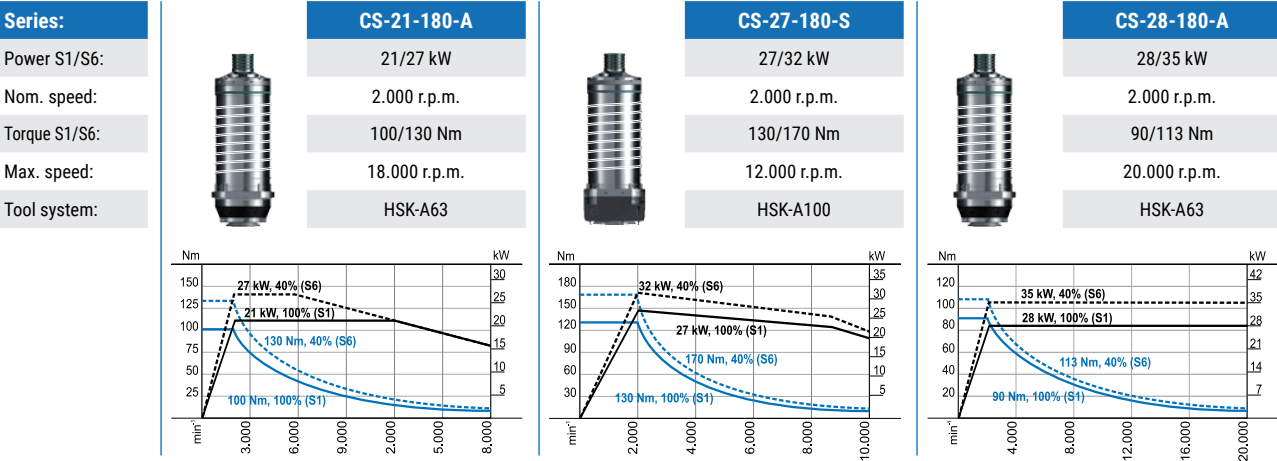
Applied in: S-Series



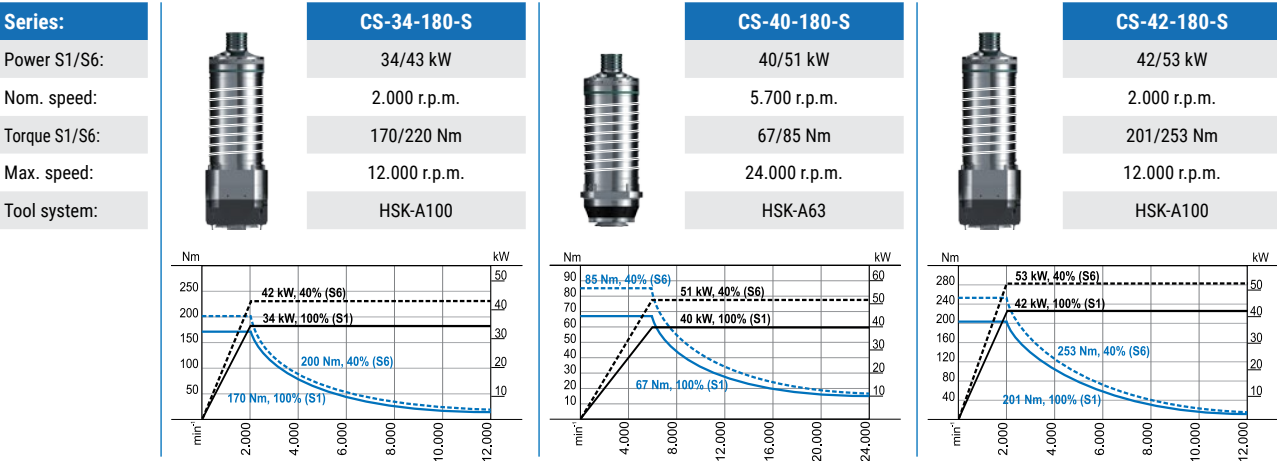
Applied in: S-Series HD



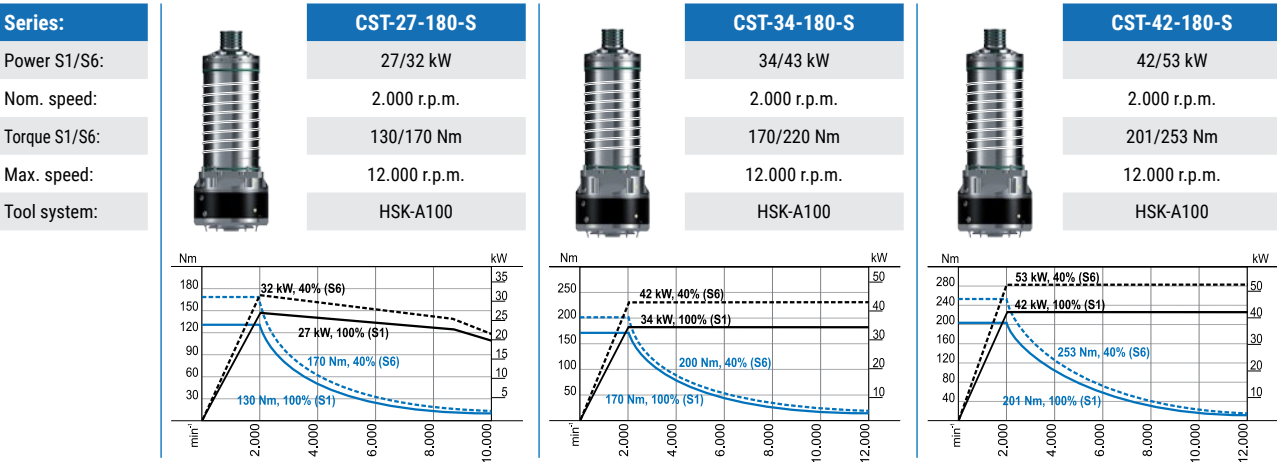
Applied in: M-Series



Applied in: M-Series

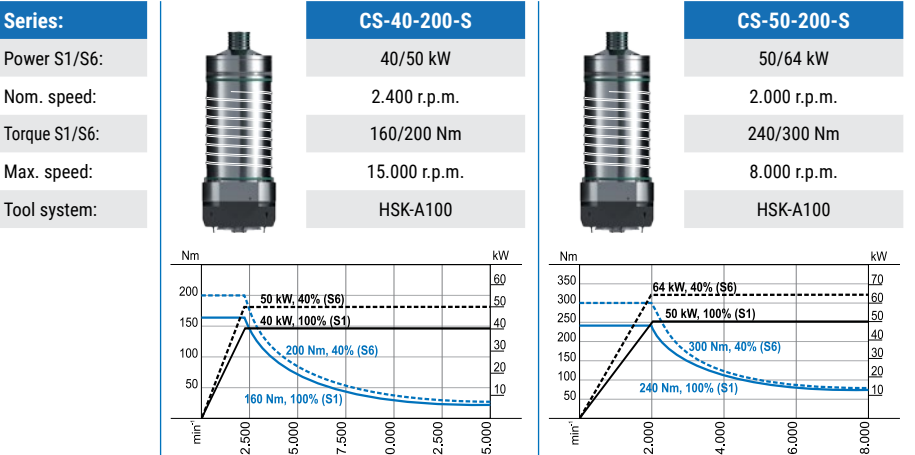


Applied in: M-Series

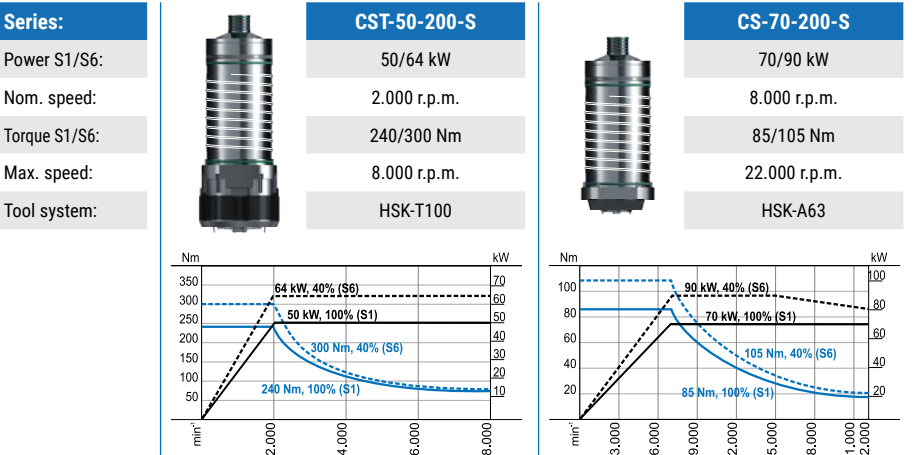


MOTOR SPINDLES

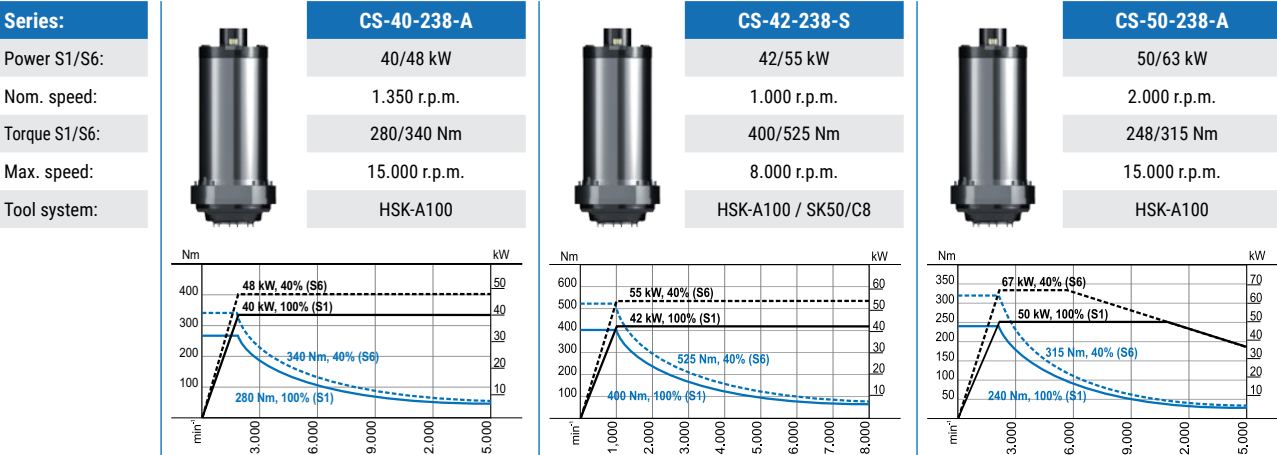
Applied in: M-Series HD



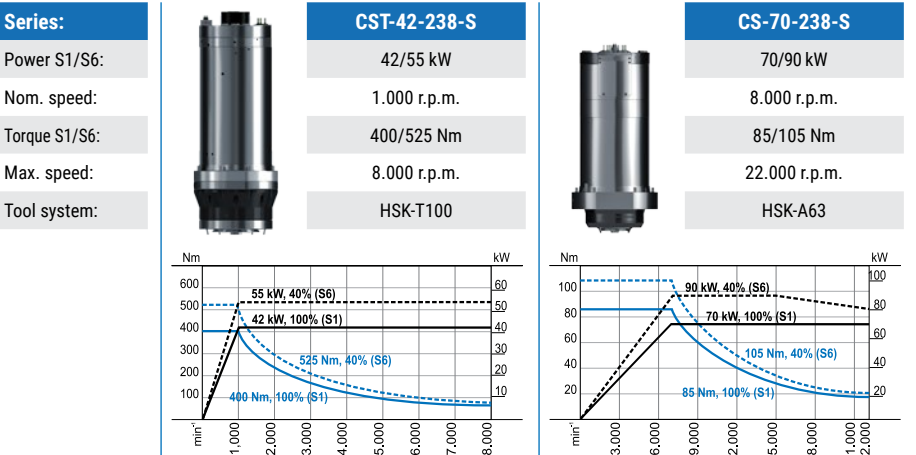
Applied in: M-Series HD



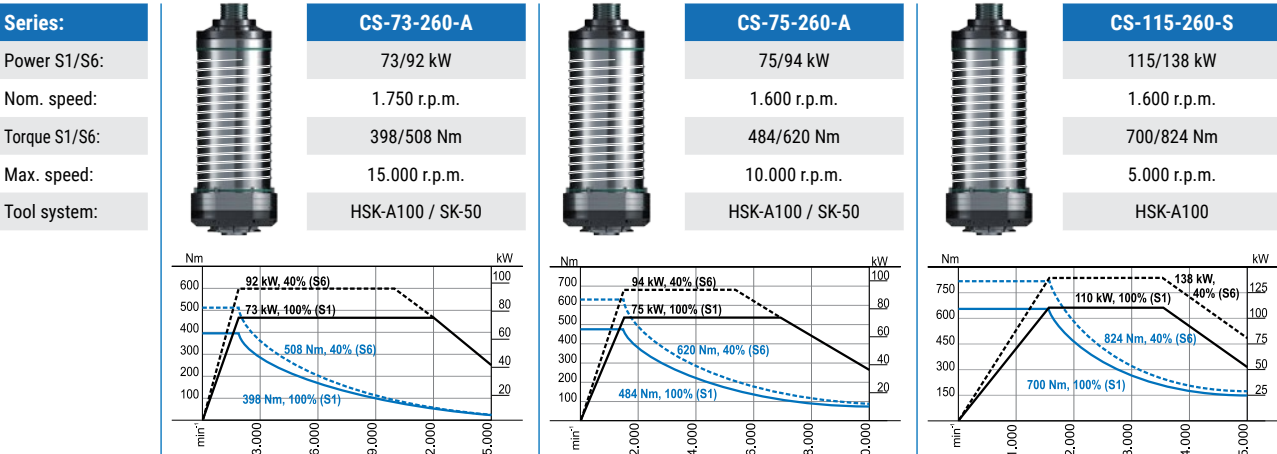
Applied in: G-/T-Series



Applied in: G-/T-Series



Applied in: G-Series HD/T-Series





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CyMill\_01 | 06/2020 | english

We reserve the right to make technical modifications. The components/ machines shown here may include options, accessories and control variants.