



**THE F-SENSO 2.
FROM RÖHM.**



**MEASURING THE FORCE
TO TAKE YOU OVER
THE FINISH LINE**



THE F-SENSO 2. FROM RÖHM.

The F-SENSO 2 is a modular system for measuring the clamping force of clamping devices. It is used in workshops, in manufacturing plants or in laboratories for checking the clamping force before and after maintenance or repair work on the clamping device, and for checking the clamping system in the machine tool. The F-SENSO 2 is made up of the Senso module and a measuring head, which varies depending on the clamping device. The measured results are displayed on the tablet PC supplied.

The F-SENSO 2 is available with the F-Senso chuck module measuring head to measure the clamping force in manual lathe chucks, power chucks, and vices. The F-Senso HSK module enables the clamping force of clamping sets with hollow shaft cone to be measured.

An F-SENSO 2 complete set in sturdy plastic case consists of the F-SENSO 2 module, a measuring head, and a tablet PC including visualization and archiving software. Additional measuring heads are available as additional sets, also in a sturdy plastic case.

The F-SENSO 2 replaces the F-Senso chuck and F-Senso spindle clamping force measurement devices.

DESIGNED FOR

Vices, manual lathe and power chucks, HSK clamping sets in manufacturing plants, repair workshops or laboratories.

APPLICATION

Measurement and checking of clamping force, including during rotation.

BENEFITS

- Modular system, one F-SENSO 2 module for all measuring heads
- Measurement static or at speed
- Robust design
- Wireless transmission of measurement data
- Comprehensive software for visualization, archiving, management

WHY IT'S A WISE INVESTMENT

F-SENSO 2 CHUCK MODULE

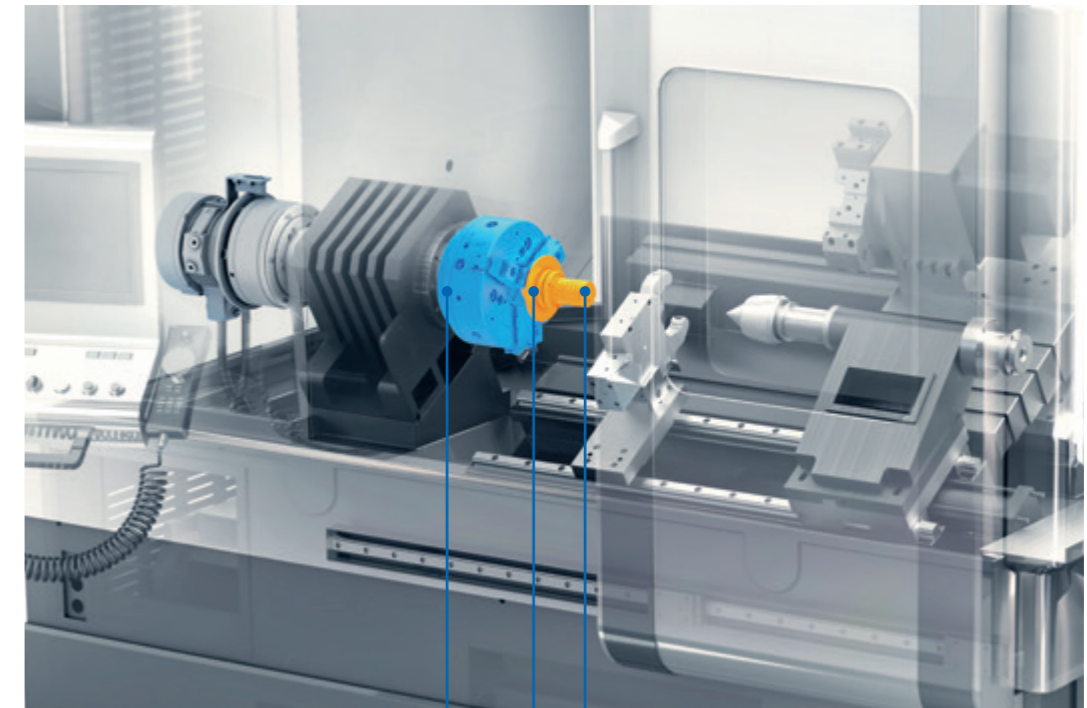
- 32 mm - 120 mm clamping diameter
- Up to 225 kN (size 65, 3 jaws)

F-SENSO 2 HSK MODULE

- HSK 40, 50, 63, 100
- Up to 90 kN (HSK 100)

MAKING SURE YOU KNOW WHERE YOUR PROCESS PARAMETERS ARE

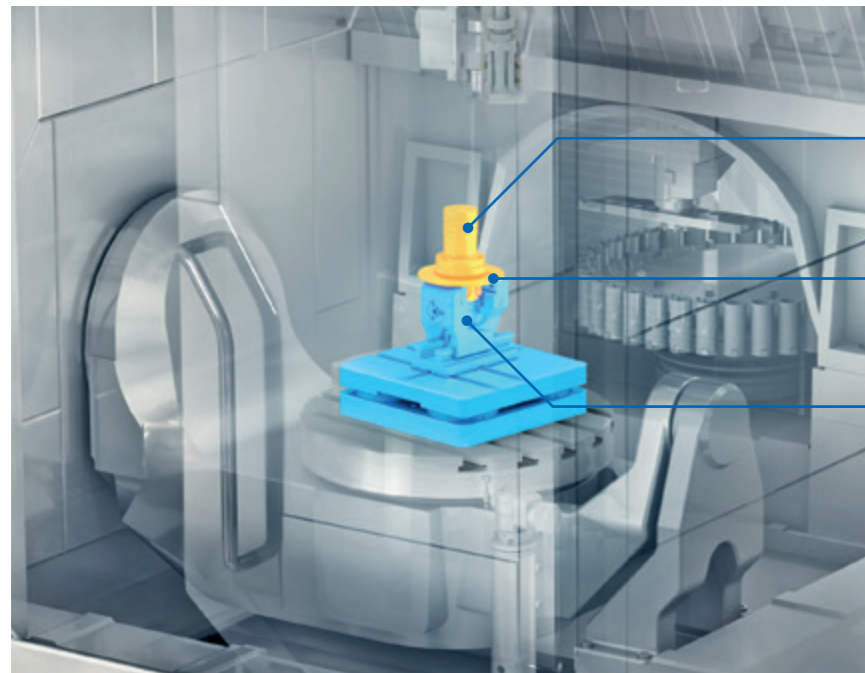
For measurement of clamping force on lathe chucks ...



Power chuck
(here: The Duro-A RC.
From RÖHM.)

Senso module
F-SENSO 2
chuck module

... in vices ...

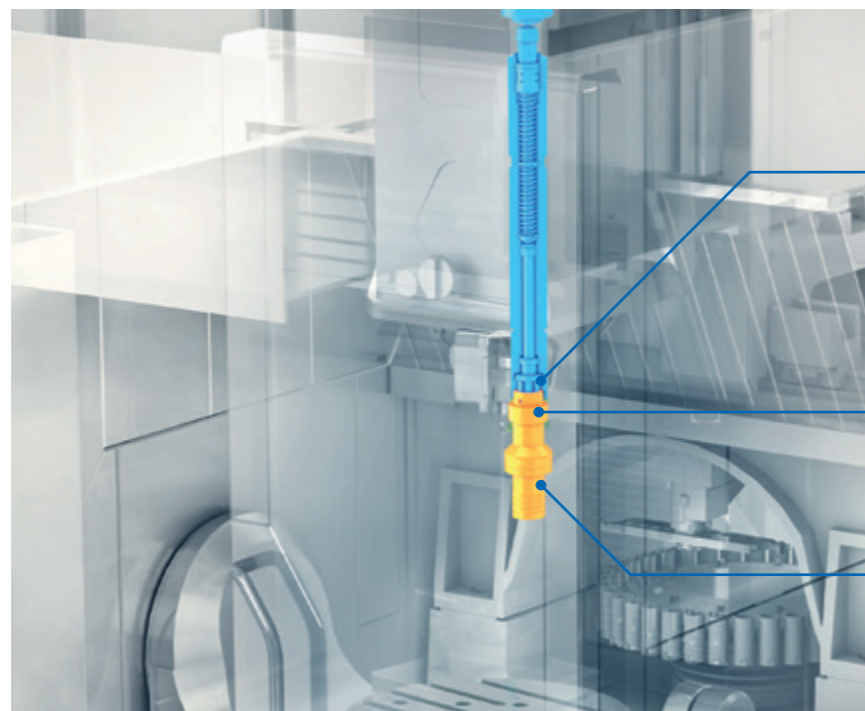


Senso module

F-SENSO 2
chuck module

Vice
(here: The RZM.
From RÖHM.)

... in clamping sets with hollow shaft cones



Clamping set
(here: HSK clamping
set. From RÖHM.)

F-SENSO 2
HSK module

Senso module

MEASURE SO YOU KNOW

One Senso module for all measuring tasks

The F-SENSO 2 has a modular design. The Senso module contains all the electronic components for data processing and wireless data transmission. This means that the Senso module can be used for all measuring tasks. You only require one Senso module and the appropriate measuring head for the relevant task.



*The F-SENSO 2 HSK module is simply
screwed onto the Senso module*



*The F-SENSO 2 chuck module is simply
screwed onto the Senso module*

To measure the clamping force in clamping sets with hollow shaft cones, the F-SENSO 2 HSK module is available in four different sizes.

To measure the clamping force in manually or automatically clamping lathe chucks and vices, the F-SENSO 2 chuck module is available in three different sizes.

Do you have a specific measuring task?
With specific measuring geometry?
We will be happy to design and produce
a customized measuring head for you.
Thanks to the modular system, it will
fit onto your existing Senso module
using the universal interface.

INSTALLATION

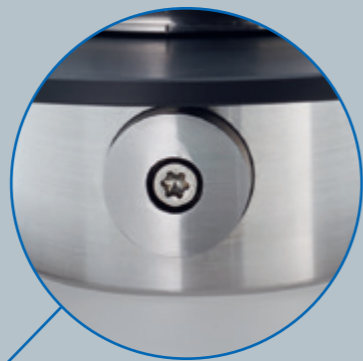
HOW DO YOU GET THE F-SENSO 2 ONTO YOUR MACHINE TOOL?

It's really easy: Simply clamp it

There are different measuring heads for different measuring tasks. After screwing the appropriate measuring head onto the Senso module, the F-SENSO 2 is simply inserted in the clamping device to be measured. It is then clamped. The applied clamping force activates the F-SENSO 2, which transmits the measured data wirelessly to the tablet PC.

Measuring pins for 2 or 3 jaw measurement and different diameters

To enable the F-SENSO 2 chuck module to measure accurately, measuring pins precisely adapted to the radius of the contour to be measured are required. The measuring pins are simply screwed onto the measuring head.

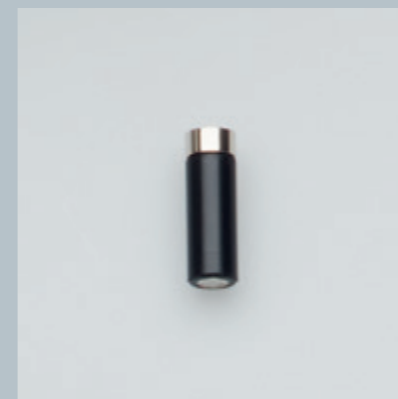


Appropriate measuring pins are available for the different clamping diameters, and are screwed onto the measuring head.

| Diameter | 32 | 32 | 42 | 52 | 65 | 65 | 80 | 100 | 120 |
|------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| F-SENSO 2 chuck 32 module | x | x | x | x | x | | | | |
| F-SENSO 2 chuck 65 module | | | | | | x | x | x | x |
| 2-point clamping force measurement | x | | | | | | x | x | x |
| 3-point clamping force measurement | | x | x | x | x | x | x | x | x |
| ID# | 10016898 | 10016804 | 10016805 | 10016806 | 10016899 | 10016807 | 10016808 | 10016809 | 10016810 |

Speed measurement

The Senso module also contains the sensors and electronics for measuring the speed. The magnet supplied acts as the speed sensor. It is positioned stationary (using a suitable auxiliary device, such as is available in any workshop) in the immediate vicinity of the rear of the Senso module.



Speed measurement sensor

TECHNOLOGY



HOW THE F-SENSO 2 FROM RÖHM WORKS

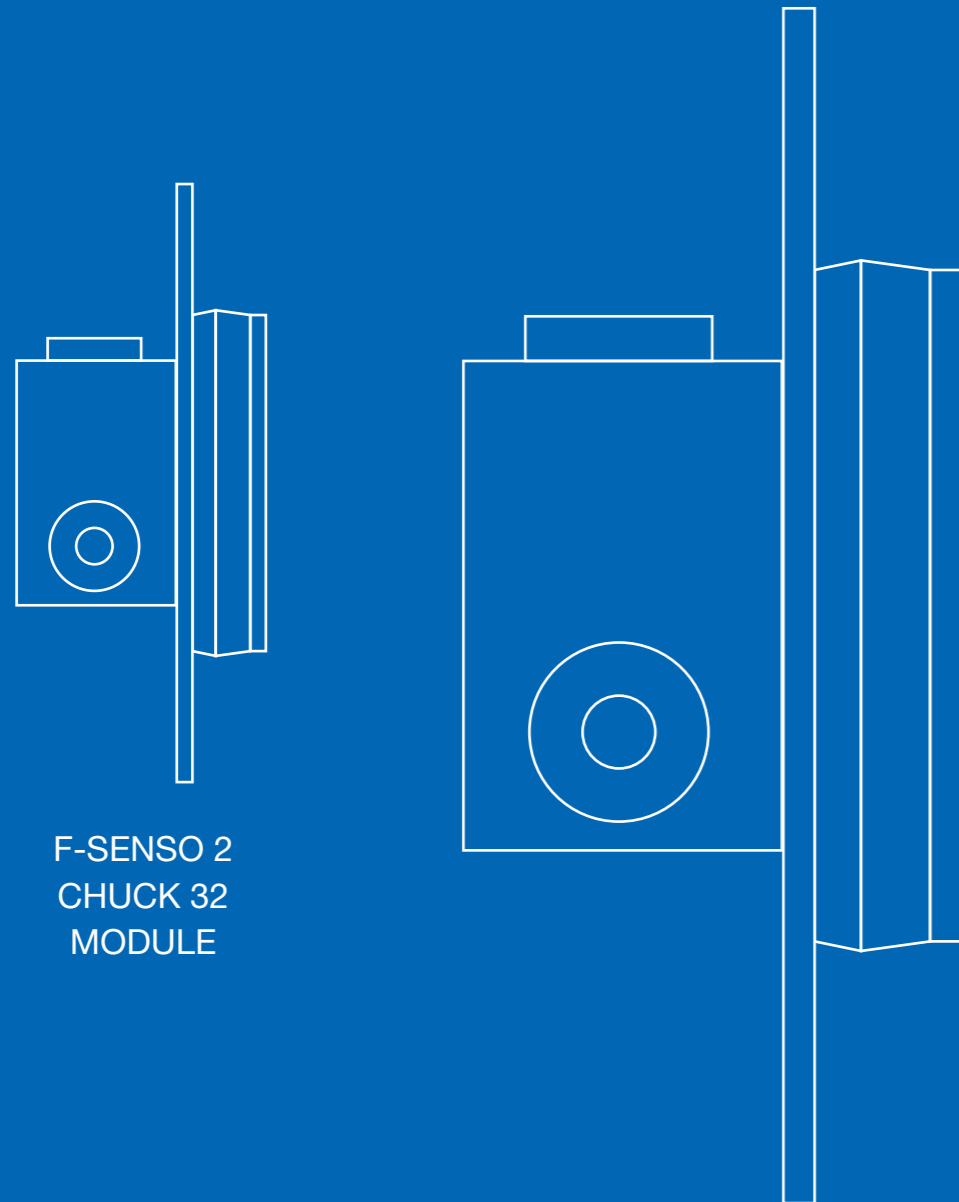
The F-SENSO 2 measurement device is made up of the universal Senso module (3) and a measuring head (9), which varies depending on the geometry to be measured. The Senso module and measuring head are screwed together with three screws using the mounting key (5). The measuring head contains the sensors for the force measurements. The electronics for processing the measurement signals, measuring the speed, and transmitting the data are contained in the Senso module. The data is transmitted wirelessly from the Senso module to the tablet PC (6) via Bluetooth.

- (1) Large hard-shell case with foam inserts
- (2) Small case with foam inserts for accessories
- (3) Senso module
- (4) Power supply unit for Senso module and USB cable
- (5) Mounting key
- (6) Tablet PC with keyboard
- (7) Power supply unit
- (8) Magnet for speed measurement
- (9) F-SENSO 2 modules (depending on version)

You can find further information about the F-SENSO 2 on our website:

roehm.biz/en/f-senso2

FOR THE LIMITS OF LATHE CHUCKS AND HSK CLAMPING SETS



F-SENSO 2 CHUCK 32 MODULE

F-SENSO 2 CHUCK 65 MODULE

F-SENSO 2 chuck

| Size | | 32 | 65 |
|-------------------------------------|-------|---------|---------|
| Clamping diameter | | 32 | 65 |
| Measuring range, 3 measuring points | [kN] | 0 - 140 | 0 - 225 |
| Measuring range, 2 measuring points | [kN] | 0 - 90 | 0 - 150 |
| Max. speed | [rpm] | 8,000 | 6,000 |

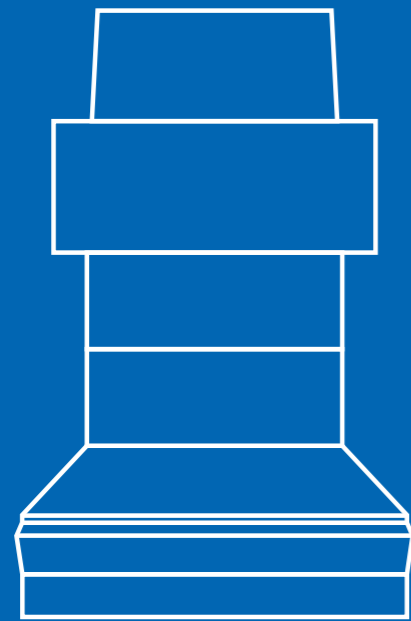
COMPLETE SET

| | | | |
|--|--|-----------------|-----------------|
| Large, sturdy hard-shell case with foam insert | | x | x |
| Senso module, including charger | | x | x |
| F-SENSO 2 chuck module with measuring segments for 2 and 3 jaw measurement | | 32 | 65 |
| Screws, mounting key | | x | x |
| Tablet PC with Windows 10 and measurement software pre-installed | | x | x |
| Speed sensor | | x | x |
| Service pass | | x | x |
| ID# | | 10016792 | 10016793 |

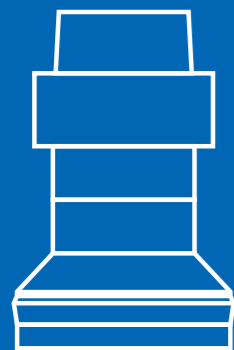
SUPPLEMENTARY SET

| | | | |
|--|--|-----------------|-----------------|
| Sturdy hard-shell case with foam insert | | x | x |
| F-SENSO 2 chuck module with measuring segments for 2 and 3 jaw measurement | | 32 | 65 |
| Service pass | | x | x |
| ID# | | 10016798 | 10016799 |

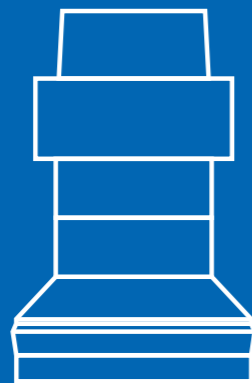
Note: The measuring pins for measurement of the different diameters are not supplied as standard. Please order these separately.



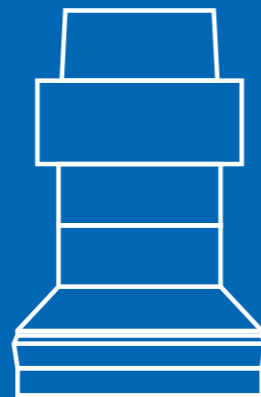
F-SENSO 2
HSK100 MODULE



F-SENSO 2
HSK40 MODULE



F-SENSO 2
HSK50 MODULE



F-SENSO 2
HSK63 MODULE

F-SENSO 2 HSK

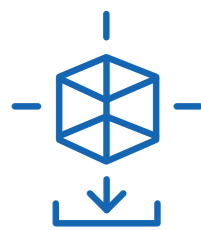
| Size | | HSK 40 | HSK 50 | HSK 63 | HSK 100 |
|------------------------|------|--------|--------|--------|---------|
| Measuring range, axial | [kN] | 0 - 20 | 0 - 20 | 0 - 50 | 0 - 90 |

COMPLETE SET

| | | | | | |
|--|--|-----------------|-----------------|-----------------|-----------------|
| Large, sturdy hard-shell case with foam insert | | x | x | x | x |
| Senso module, including charger | | x | x | x | x |
| F-SENSO 2 HSK module | | 40 | 50 | 63 | 100 |
| Screws, mounting key | | x | x | x | |
| Tablet PC with Windows 10 and measurement software pre-installed | | x | x | x | x |
| Speed sensor | | x | x | x | x |
| Service pass | | x | x | x | x |
| ID# | | 10016794 | 10016795 | 10016796 | 10016797 |

SUPPLEMENTARY SET

| | | | | | |
|---|--|-----------------|-----------------|-----------------|-----------------|
| Sturdy hard-shell case with foam insert | | x | x | x | x |
| F-SENSO 2 HSK module | | 40 | 50 | 63 | 100 |
| Service pass | | x | x | x | x |
| ID# | | 10016800 | 10016801 | 10016802 | 10016803 |

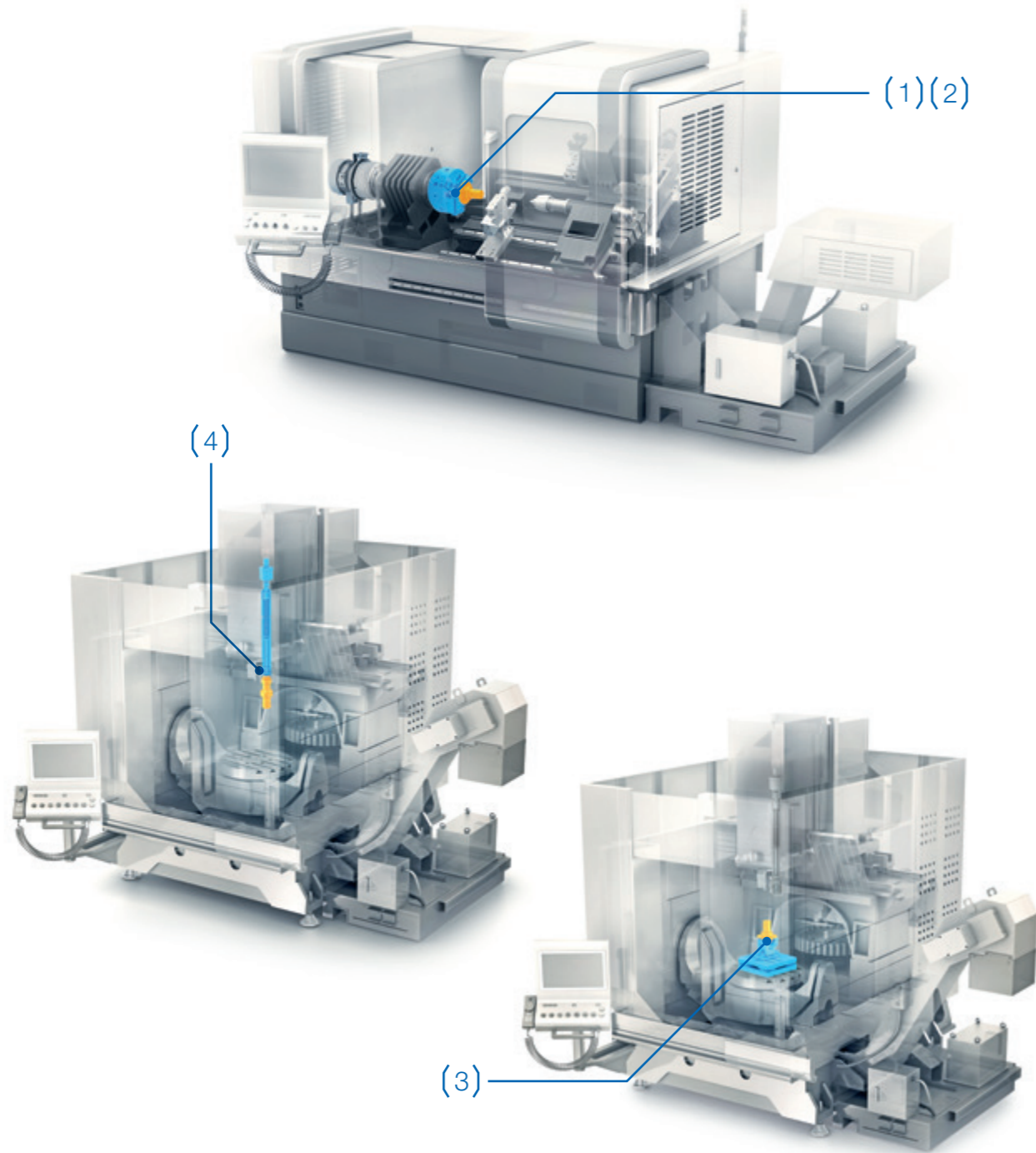


You can find CAD data for the F-SENSO 2 at

roehm.biz/en/f-senso2

YOU NEED THE WHOLE SYSTEM ...

The F-SENSO 2 enables you to measure and check the clamping forces on your clamping devices. But precise clamping also requires powerful clamping devices. That's why we offer the complete system.



(1)



... for clamping turned parts manually.
RÖHM supplies manual lathe chucks to do this.

(2)



... for clamping turned parts automatically.
RÖHM supplies automatic power chucks to do this.
Needless to say, the appropriate clamping cylinders are also available from RÖHM.

(3)



... for clamping components for milling.
RÖHM supplies vices for the bench setup to do this.

(4)



... for clamping tools with HSK interface.
RÖHM supplies powerful clamping sets for installation in tool clamps to do this.



You can buy clamping and gripping technology from RÖHM conveniently 24/7 in our online shop:

eshop247.roehm.biz

MAYBE YOU NEED SOMETHING ELSE ALTOGETHER ...

... because you want to measure during machining. In real time. Our iJaw measuring clamping jaw can do this. It is a measuring device that can also clamp and, at the same time, the jaw that can also measure. The data is sent to a gateway using the IO-Link Wireless protocol and from there to your machine, to the cloud, or to a smart device for visualization, storage, or further processing.

Find out more at: www.roehm-smarter-clamping.com.



... because you want to measure your installation contour (clamping taper) on spindles for automatic HSK clamping sets. Our measuring gages for all standard HSK sizes can do this.



... because you want to maintain the clamping force of your HSK clamping sets in the long term. Our patent pending Lubritool lubrication tool can do this. Simply install it in the tool magazine on your machine tool and program it to be sent up when required. During a changeover, a defined quantity of lubricant is discharged and your clamping set is lubricated.

