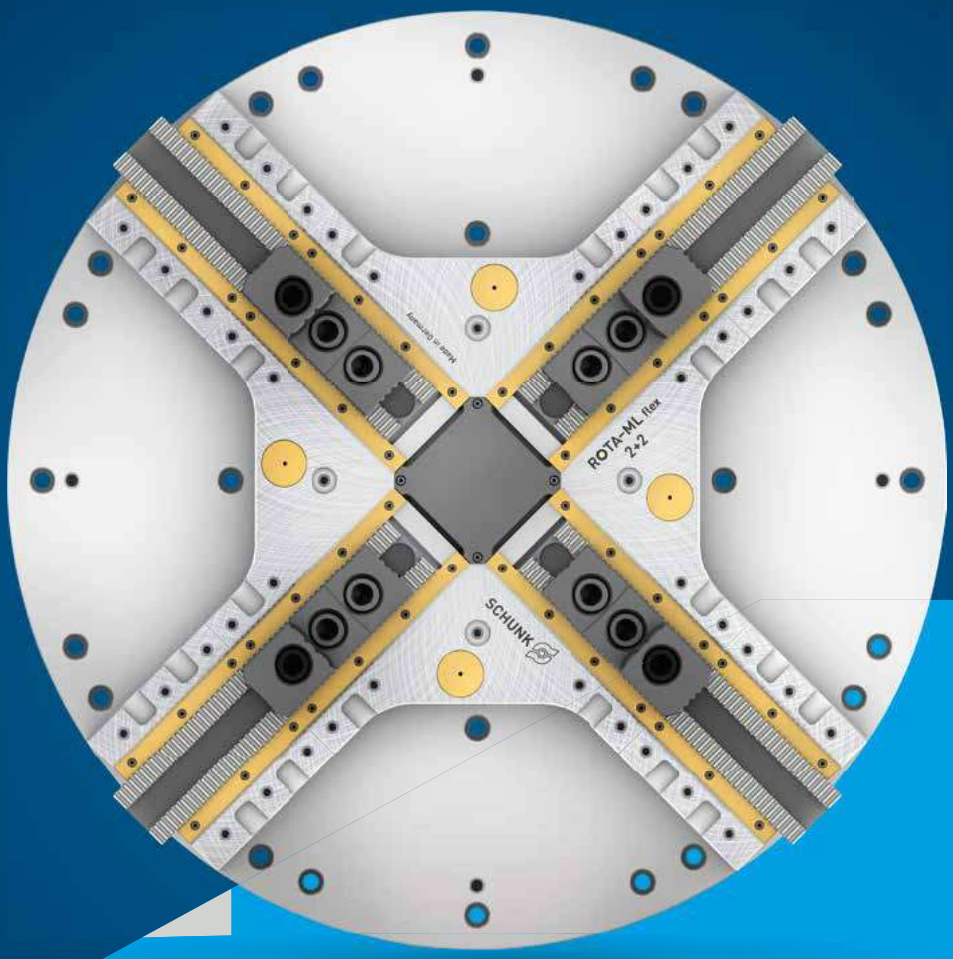
SCHUNK



ROTA-ML flex 2+2

Universal manual chuck for all clamping tasks on lathes and milling machines

Hand in hand for tomorrow

Centrically compensating workpiece clamping of any workpiece geometry

Clamping of round, cubic, and geometrically unshaped parts – no problem for the ROTA-ML flex 2+2. Thanks to the patented drive concept with coupled jaw pairs, any workpiece geometry can be clamped centrically and without overdetermination. The chucks are used, in particular, in storage solutions and mill/turn machines, but can also be used on lathes. The chuck weights of the large chucks with Ø 500 mm or more have been reduced by up to 40% compared to the previous version, so that an even higher workpiece weight can be loaded.

Advantages – your benefits

- **Sealed manual lathe chuck**
  For significantly longer maintenance intervals
- **Patented drive concept**
  Independent installation of the jaw pairs with subsequent centrically compensating workpiece clamping
- **Flexible clamping system**
  For clamping round, cubic, or geometrically unshaped workpieces
- **Compensation mechanism**
  Enables centric clamping of any workpiece geometries
- **Optimized chuck heights and weights for the new ROTA-ML flex 2+2 versions from Ø 500 mm**
  For a maximum additional payload of workpiece weight
- **High efficiency of the wedge bar system**
  Process-reliable clamping due to high clamping forces
- **Lubrication system with grease circulation**
  Ensures permanent grease supply for constant clamping forces
- **Visual clamping release**
  As an indicator for the range in which safe clamping can be ensured
- **All sides of the functional parts are ground and hardened**
  Ensures a long service life

Technical data

Description	Max. speed of rotation [RPM]	Max. clamping force [kN]	Max. torque [Nm]	Stroke/jaw [mm]	Compensation stroke/jaw [mm]
ROTA-M flex 2+2 260	2700	100	120	9.5	5.1
ROTA-M flex 2+2 315	2200	100	120	9.5	5.1
ROTA-M flex 2+2 400	1500	150	200	14.5	7.9
ROTA-ML flex 2+2 500	1500	180	210	17.3	12
ROTA-ML flex 2+2 630	1300	180	210	17.3	12
ROTA-ML flex 2+2 800	1100	180	210	17.3	12
ROTA-ML flex 2+2 1000	850	180	210	17.3	12
ROTA-ML flex 2+2 1200	750	180	210	17.3	12

Significant weight reduction in the new generation ROTA-ML flex 2+2

The large sizes of the ROTA-ML flex 2+2 from Ø 500 mm have undergone a complete facelift. The main focus has been on reducing the overall height and the associated reduction in chuck weight. Thanks to design modifications, the chuck height has been significantly reduced and the weight has been cut by as much as 40% compared to its predecessor. This means that even larger and heavier workpieces can now be processed. Another positive side effect of the weight reduction is that higher table speeds are now possible due to the lower mass.

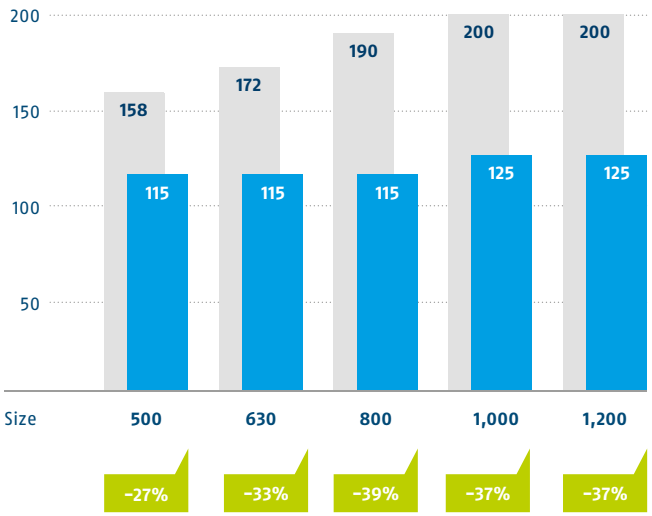
NEW

ROTA-ML flex 2+2 – the new generation

- **Up to 30% lower**
- **Up to 40% less weight**
- **Processing of larger and heavier workpieces possible**

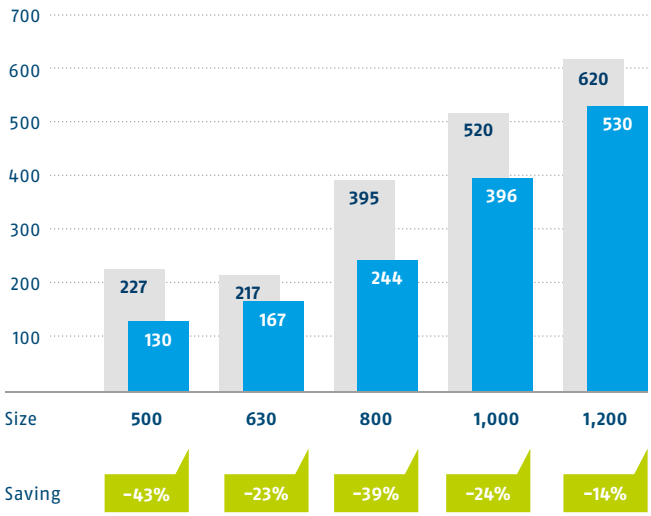
Height comparison

[mm]

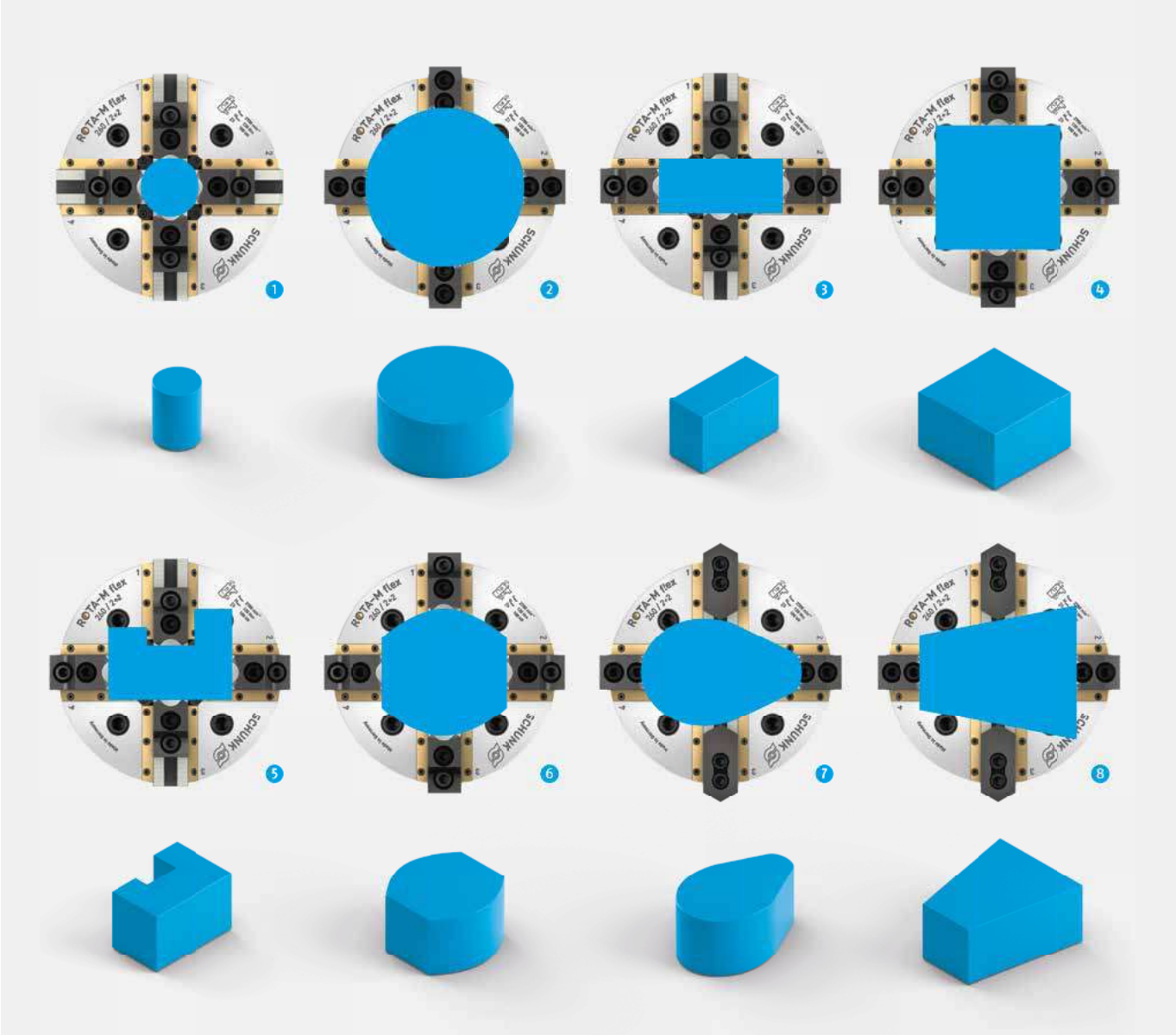


Weight comparison

[kg]



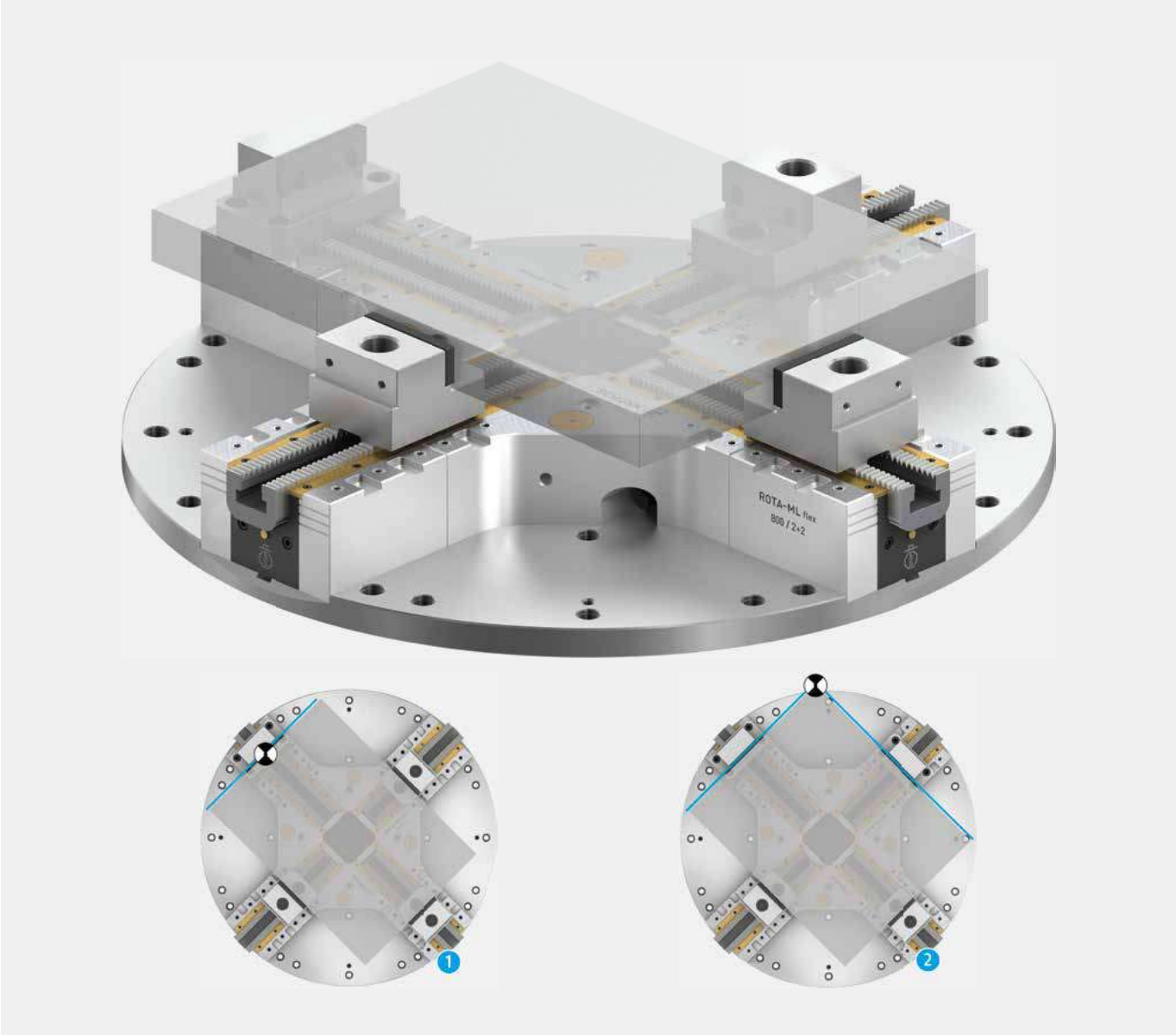
Highest flexibility



The ROTA-ML flex 2+2 is impressive with its high degree of flexibility. With this centrically compensating manual lathe chuck, there is virtually no workpiece that cannot be clamped with this clamping device. By choosing the top jaws, round, cubic, and a variety of geometrically unshaped parts can be clamped.

1. **Small workpieces**
2. **Large workpieces**
3. **Rectangular workpieces**
4. **Square workpieces**
5. **Free-form parts**
6. **Semicircular and angular workpieces**
7. **Cams**
8. **Inclined workpieces**

Console clamping



If one or two fixed zero points are required on mill/turn centers instead of centric compensating clamping, the ROTA-ML flex 2+2 can be converted into a "fixed jaw clamping vise" using special jaws. Via grooves in the chuck face, the fixed jaws can be connected to the chuck. As a result, you get a defined, repeatable zero point, which is required in particular for precise OP20 machining.

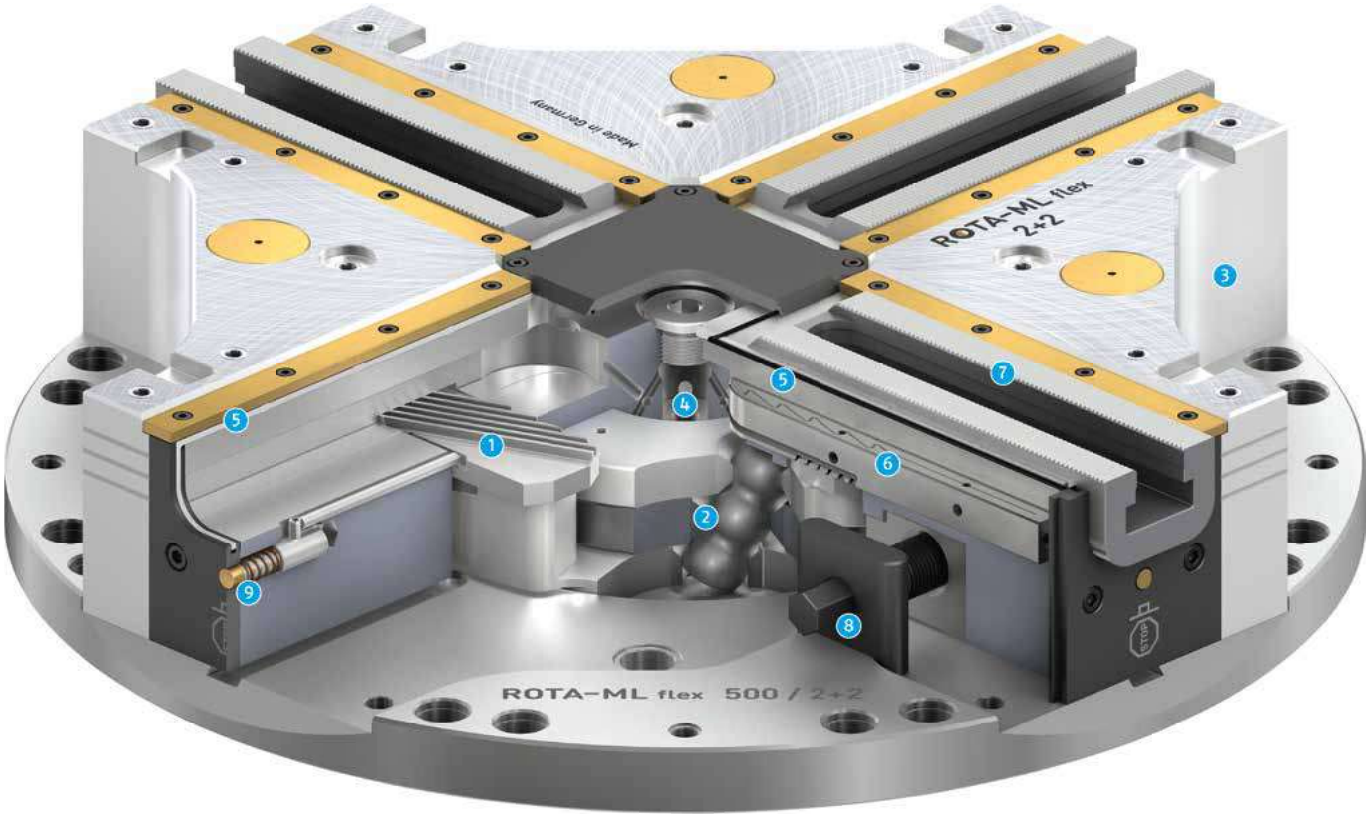
1 **Clamping against a fixed jaw**
The workpiece is clamped against a fixed jaw.
As a result, this one jaw forms the precise zero point in a plane.
Attention: For this clamping set-up, the clamping force is reduced by 25% compared to the maximum clamping force specified for the chuck.

2 **Clamping against two fixed jaws**
The workpiece is clamped against two fixed jaws.
The two fixed stops form the precise zero point at the intersection of the two stop lines.
For this clamping set-up, the maximum clamping force of the chuck is maintained.

ⓘ Attention: Fixed stops are not intended for use under rotation!

Function ROTA-ML flex 2+2

A patented drive ring system transfers the rotational motion of the threaded spindle onto the jaws. The opposing pairs of jaws contact the workpiece one after the other and center it in the corresponding plane. The workpiece is then clamped evenly at full clamping force.

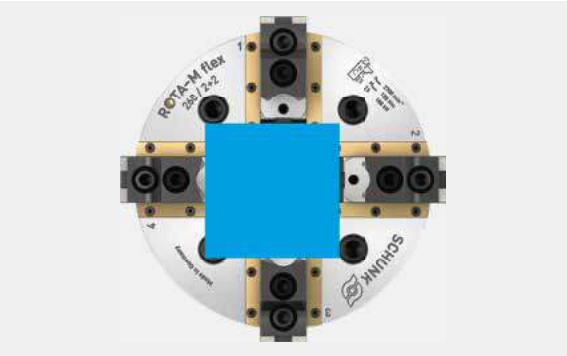


1. **Wedge bar actuation system**
   Offers high run-out accuracies
2. **Patented drive concept**
   As a basis for centrically compensating workpiece clamping
3. **Hardened and extremely rigid base body**
   Ensures a longer service life at highest precision. Even with maximum clamping force
4. **Central lubrication system with grease reservoir**
   Provides sufficient grease during machining. The actuation as well as the centrifugal force during machining also ensure that the grease is circulated in the chuck
5. **Sealing of the lathe chuck**
   Consists of a gasket and O-rings for the initial tension
6. **Long jaw guidance**
   Offers optimal support for O.D. and I.D. clamping
7. **Standard chuck jaw interface**
   For the use of standard top jaws from SCHUNK
8. **Actuation via hexagon connection**
   This ensures easy operation
9. **Indicator pin**
   For monitoring the jaw position via drive ring movement

Functionality: Compensating workpiece clamping

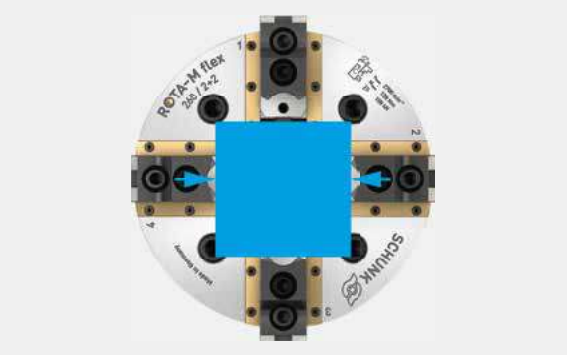
Step 1: Insert the workpiece

Round, cubic, or geometrically unshaped parts can be inserted in open position.



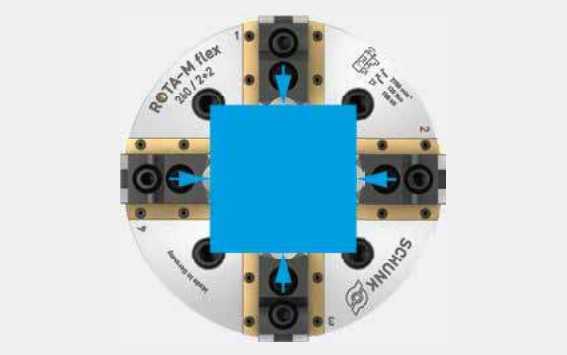
Step 2: Install the first pair of jaws

By actuating the manual lathe chuck, the first pair of jaws contacts the workpiece. The workpiece is now centered in this plane.



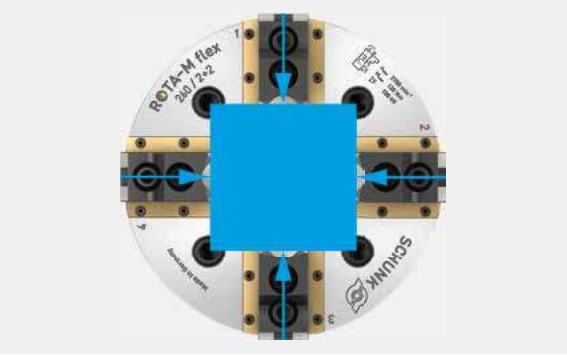
Step 3: Install the second pair of jaws

During further actuation, the second pair of jaws also contacts the workpiece and moves the workpiece in this plane to the center.



Step 4: Clamp the workpiece

If both pairs of jaws are in contact with the workpiece, the workpiece is clamped evenly and centrically with the full clamping force (depending on the torque).



Compensating workpiece clamping

Due to the innovative drive concept, round, cubic, and geometrically unshaped workpieces can be clamped in a compensating manner. The opposing jaws are always connected to each other via a drive ring system. Overdetermination is prevented by the compensation mechanism.

1. **First pair of jaws**
2. **Second pair of jaws**

Sealed manual lathe chuck

A sealing system consisting of a pre-loaded gasket and O-rings prevents grease from being flushed out during machining and the penetration of dirt or chips. This means that cast or forged parts can also be machined without hesitation.

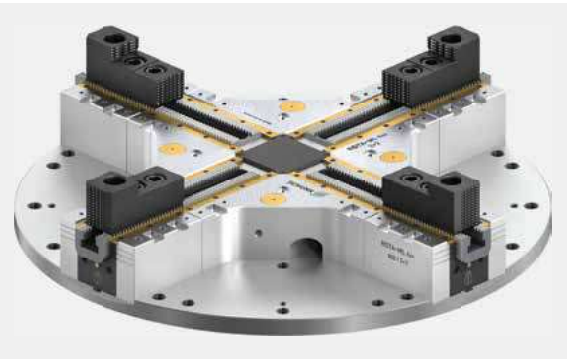
Visual clamping release

To ensure safe working, an indicator pin shows when the chuck mechanism is close to the stroke end position. As soon as the indicator pin moves outwards, the workpiece is no longer clamped correctly and machining must not be started.

1. **Indicator pin**

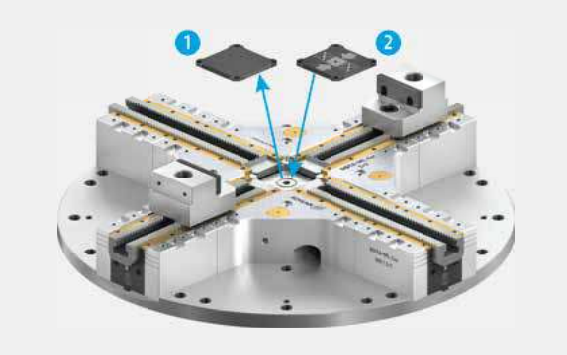
Stationary version

From size Ø 500 the ROTA-ML flex 2+2 is designed in an extremely weight-reduced monolithic design, and is now even flatter. As a result, a weight reduction of up to 60% can be achieved compared to conventional chucks of the same size.



2-jaw clamping

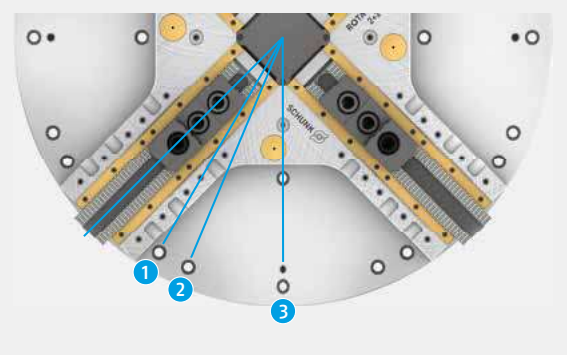
The ROTA-ML flex 2+2 can be converted from a 4-jaw chuck into a 2-jaw chuck with one simple adjustment. All you have to do is to exchange the central locking cover.



1. **Locking cover without stop**
   Both pairs of jaws are freely movable
2. **Locking cover with stop**
   One pair of jaws is blocked, the other one clamps centrically

Versatile mounting options

With the new ROTA-ML flex 2+2, additional mounting options have been incorporated into the base plate. This means that the chucks can be used even more flexibly on the machine tables of the individual machine manufacturers.



1. **22.5° star slot**
   For up to 16 radial T-slots
2. **30° star slot**
   For up to 12 radial T-slots
3. **45° star slot**
   For up to 8 radial T-slots

CUSTOMER TESTIMONIALS

4-jaw manual lathe chuck ROTA-ML flex 2+2 from SCHUNK in use at Schumacher

Flexibility thanks to a new lathe chuck: In order to be able to react flexibly to customer requirements, the family-owned business Josef Schumacher has purchased a new turn/mill center – equipped with a ROTA-ML flex 2+2 lathe chuck from SCHUNK, in order to be quickly and optimally equipped for all part geometries.

Satisfied with the collaboration (from left to right): Sotirios Vlachosotiros, Technical Consultant and Sales for Clamping Technology at SCHUNK, Christian Hutflies, Managing Director at Josef Schumacher GmbH, Alice Winkel, Authorized Signatory at Josef Schumacher GmbH, and skilled worker Enes Demirel

With the ROTA-ML flex 2+2 centrically compensating manual lathe chuck, round, square, or cubic parts as well as various geometrically unshaped parts can be clamped using suitable top jaws.
Long jaw guidance offers optimal support. If one or two fixed zero points are required on mill/turn centers rather than centrically compensating clamping, the ROTA-ML flex 2+2 can be converted to a "fixed jaw clamping vise" using special jaws.

As a subcontracted manufacturer, Josef Schumacher GmbH, a small medium-sized company in Brühl near Cologne, has to react permanently and flexibly to new customer requirements. "Our orders come from surrounding industry," explains Managing Director Christian Hutflies. "We have no idea today what requirements and customer wishes will await us tomorrow. This means our machines and tools always have to conform to the latest state-of-the-art technology. And we have to be able to use them variably and in a variety of ways." Therefore, it has recently become necessary to purchase a new milling center in order to be prepared for all machining cases. A DMU 105 FD monoBLOCK from DMG Mori has now been present in the production hall for several weeks. With a machine-integrated tool rack for 60 places and a large door opening, this five-axis machining center is designed for machining components that weigh up to 1,500 kilograms. For Schumacher, there were no reservations when it came to integrating a lathe chuck by SCHUNK right from the start. "We've known SCHUNK since 1999," says Hutflies, adding: "Their quality is entirely convincing and their service is second-to-none. We needed a versatile lathe chuck that would allow us to react quickly and directly, and the best place to acquire this is from SCHUNK."

Four jaws for maximum flexibility

The ROTA-ML flex 2+2 4-jaw manual lathe chuck was selected – in size 1000 with an impressive diameter of one meter. This allows the user to clamp any workpiece geometry completely flexible using suitable top jaws.

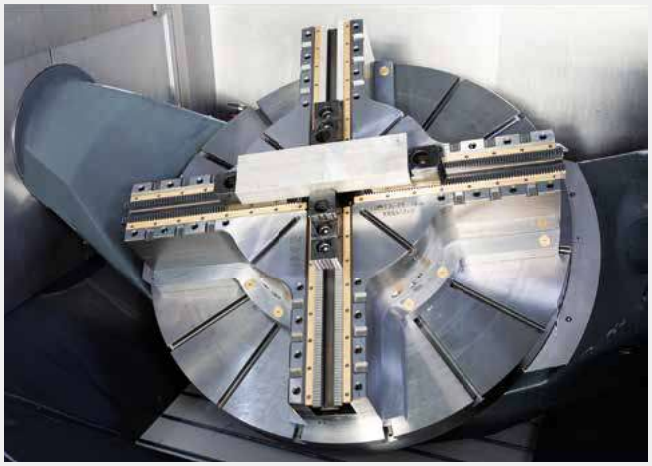
One meter diameter: With the new lathe chuck ROTA-ML flex 2+2 1000 Schumacher can machine all parts specifically and efficiently in its DMU 105 FD monoBLOCK five-axis machining center from DMG Mori.

Small, large, rectangular, semicircular, cubic, or chamfered workpieces can also be clamped without any problem, as well as any free-form parts or cams. When designing this lathe chuck, SCHUNK combined the advantages and functions of two, three, and four-jaw chucks on lathes, vises as well as on mill/turn machines. First of all, the workpiece is inserted and the first pair of jaws is fitted by actuating the manual lathe chuck. This way, the workpiece is centred on this plane. During further actuation of the manual lathe chuck, the second pair of jaws is also placed on the workpiece and moves the workpiece in this plane into the center. Once both pairs of jaws are in contact with the workpiece, the workpiece is clamped evenly and centrically with full clamping force depending on the torque for the machining. Because the ROTA-ML flex 2+2 transfers the power via both axes, higher holding forces on the workpieces, and corresponding machining parameters, are possible. This results in fast, precise, and economical part machining.

2+2: Two pairs of jaws are attached independently of each other

The basis for the centrically compensating workpiece clamping is the patent-pending drive ring system, by which the two opposite jaws are connected to one another. The drive rings transmit the rotary movement of the thread spindle onto the jaws. The two pairs of jaws are arranged one after the other on the workpiece as already described, and center it on the corresponding plane. The workpiece is then clamped evenly with the maximum possible clamping force. A compensation mechanism enables centric clamping including of thin-walled workpieces.

A special seal, consisting of a pre-loaded gasket and O-rings, prevents chips and coolant from entering the manual lathe chuck and grease from being flushed out.



One lathe chuck for everything: The compensation mechanism enables a significantly larger compensation stroke with the SCHUNK ROTA-ML flex than with comparable lathe chucks. This increases the flexibility with regard to the clampable workpiece geometries.

Machining this complex-shaped guide seat for vibrating heads, which shake off sand in the foundry, is no problem for the lathe chuck ROTA-ML flex 2+2.

This protects the internal mechanics so that cast or forged parts can also be machined without hesitation. A central lubrication system with a grease reservoir permanently and consistently supplies the mechanism. In this way, the clamping forces remain constant. The centrifugal force pushes the grease outwards into the guideways. Grease that has accumulated behind the jaws is pushed back in front of the jaws through holes when the chuck is opened and is thereby circulated constantly in the chuck.

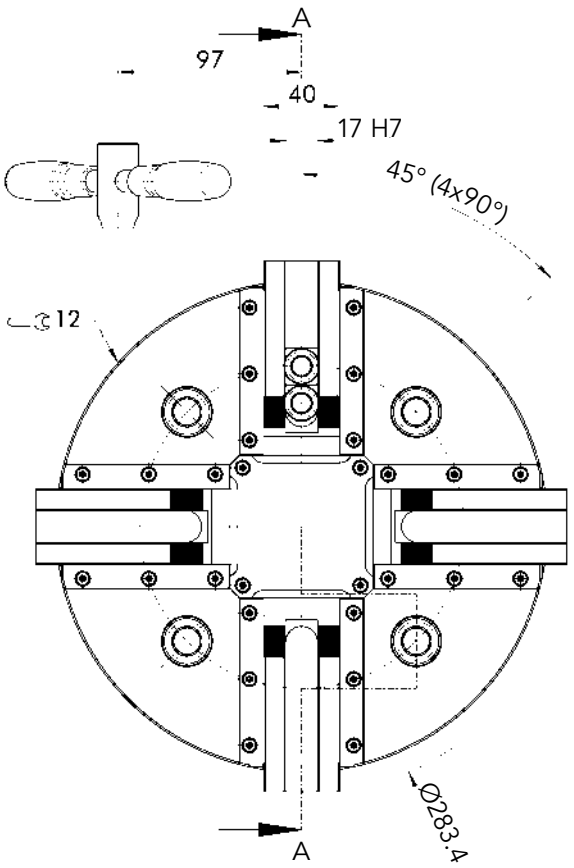
Visual clamping release

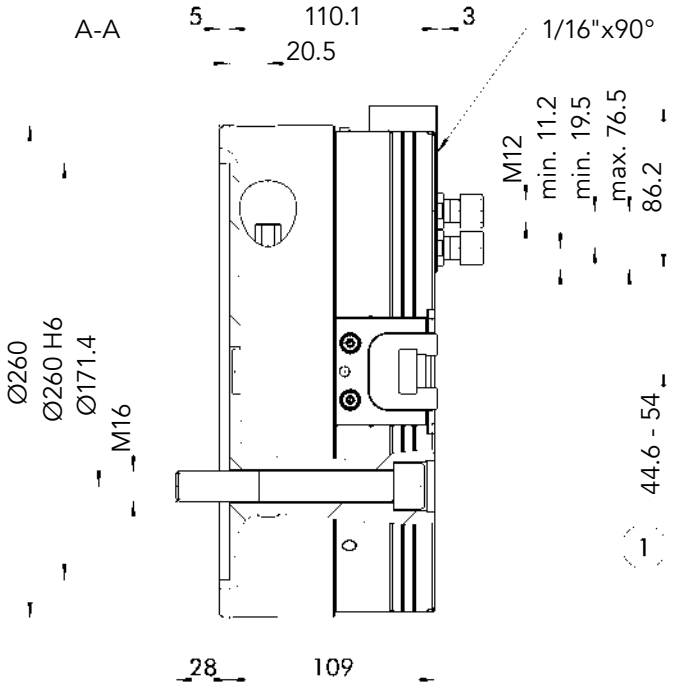
From size 500 on, lathe ROTA-ML flex 2+2 by SCHUNK is designed in an extremely weight-reduced monolithic design. This saves around 60 percent of the weight of conventional chucks of the same size. This results in a maximum possible machine load of workpiece weight. A mechanical indicator pin provides information about the jaw position and indicates when the chuck mechanism is about to reach the stroke end position. As soon as the pin moves outward, the workpiece is no longer properly clamped and machining must not be started. This visual clamping release ensures safe workpiece machining in the machine.

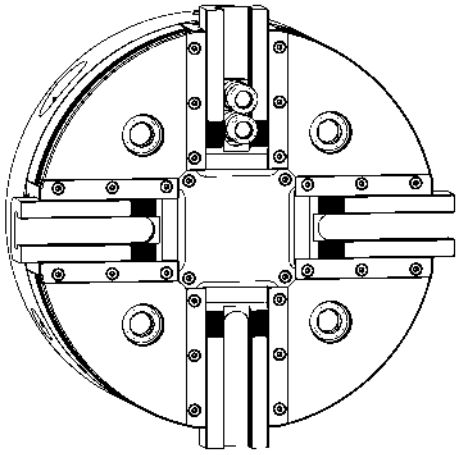
Equipped for every processing case

There have actually been customer requests in the past that could not be implemented with the four-jaw centering solution in use previously at Schumacher, or only with great effort. This is now a thing of the past. With the new ROTA-ML flex 2+2 lathe chuck in the 5-axis machining center, Schumacher can now specifically and efficiently machine any parts. Currently, a flywheel housing is in position on the table. "It used to be a complex case that we just had no solution to," Christian Hutflies concluded. "A casting like this is square on the outside, round on the inside, and also has lugs, so we wouldn't stand a chance with a conventional centric clamping vise. But now, we are fully flexible."

The DMU 105 monoBLOCK from DMG Mori in the production hall of Josef Schumacher in Brühl.







Chuck for shaft clamping shown in open position.
Technical changes reserved.

(1) Distance to center of first tooth

Technical data

Spindle type	Spindle size	ID	Serration	Max. speed of rotation [RPM]	Max. clamping force [kN]	Max. torque [Nm]	Stroke/jaw [mm]	Compensation stroke/jaw [mm]	Weight [kg]
ISO 702-4	No. 8 (Z220)	1389670	1/16" x 90°	2700	100	120	9.5	5.1	41

Scope of delivery

Chuck, T-nuts or mounting screws for top jaws, chuck mounting screws, actuation wrench, eye bolts, and operating manual; without top jaws, without locking cover

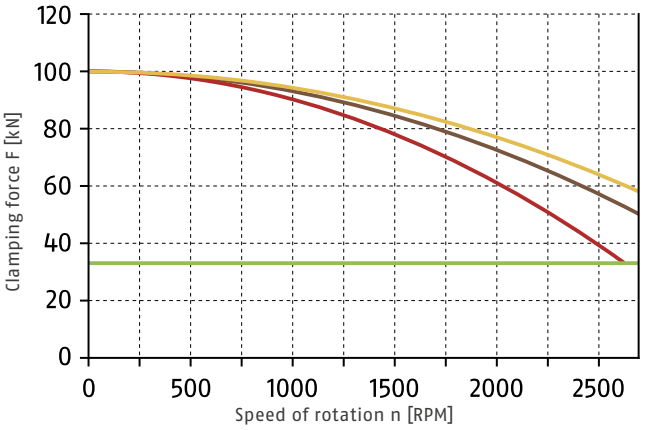
Notes

Stationary applications
For stationary use, the ROTA-M flex 2+2 can be retrofitted with standardized console and adapter plates (see accessories).

Use of 2-jaw clamping
When using 2-jaw clamping, a locking cover is additionally required to block one pair of jaws (see accessories).

Clamping force, 2-jaw clamping
When changing to 2-jaw clamping, the maximum clamping force is halved at the same torque.

Clamping force/RPM diagram



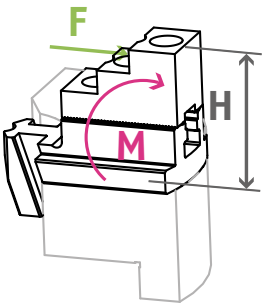
Required minimum clamping force F_{spmin} 33%

SHB 210/4
1.5 kg

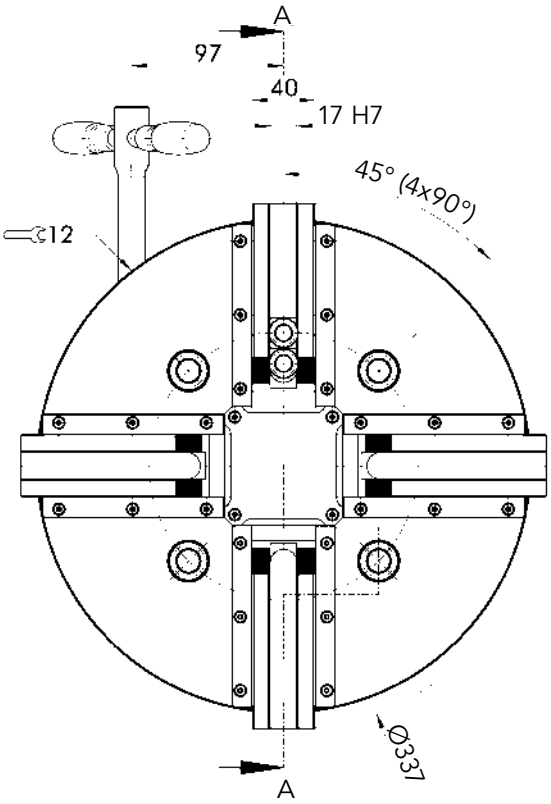
SWB 200/4
5.6 kg

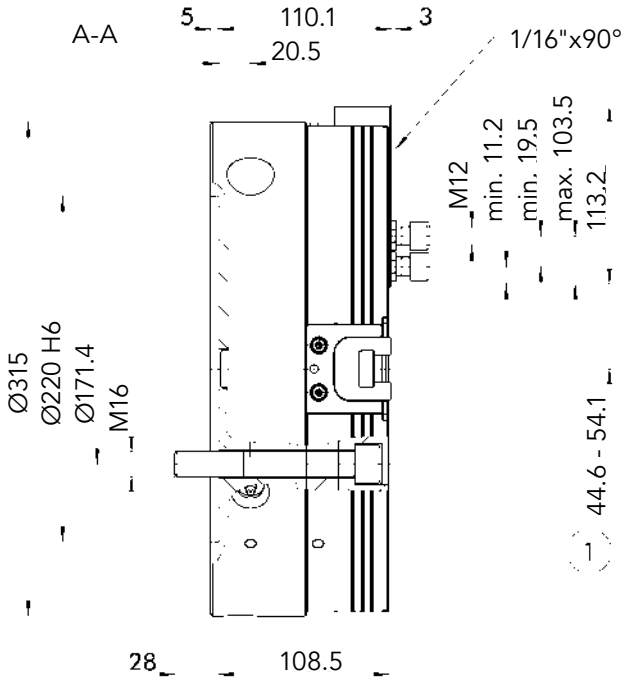
SWB-AL 200/4
2 kg

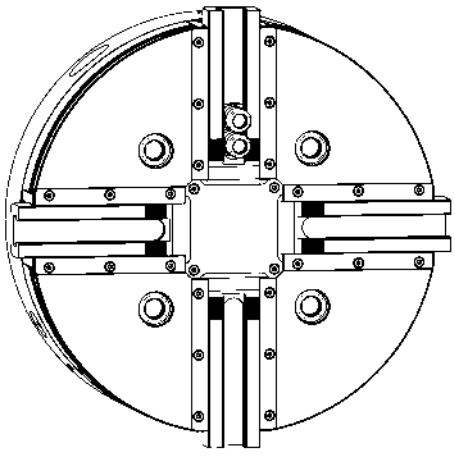
Jaw guidance load



M_{max} = 1850 Nm







Chuck for shaft clamping shown in open position.
Technical changes reserved.

(1) Distance to center of first tooth

Technical data

Spindle type	Spindle size	ID	Serration	Max. speed of rotation [RPM]	Max. clamping force [kN]	Max. torque [Nm]	Stroke/jaw [mm]	Compensation stroke/jaw [mm]	Weight [kg]
ISO 702-4	No. 8 (Z220)	1400911	1/16" x 90°	2200	100	120	9.5	5.1	63

Scope of delivery

Chuck, T-nuts or mounting screws for top jaws, chuck mounting screws, actuation wrench, eye bolts, and operating manual; without top jaws, without locking cover

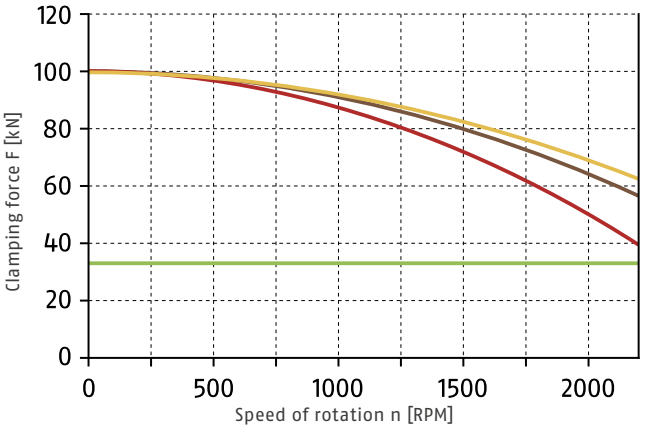
Notes

Stationary applications
For stationary use, the ROTA-M flex 2+2 can be retrofitted with standardized console and adapter plates (see accessories).

Use of 2-jaw clamping
When using 2-jaw clamping, a locking cover is additionally required to block one pair of jaws (see accessories).

Clamping force, 2-jaw clamping
When changing to 2-jaw clamping, the maximum clamping force is halved at the same torque.

Clamping force/RPM diagram



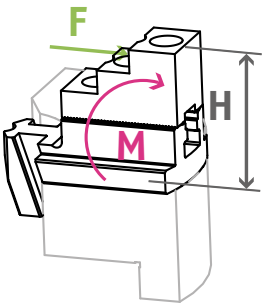
Required minimum clamping force F_{spmin} 33%

SHB 210/4
1.5 kg

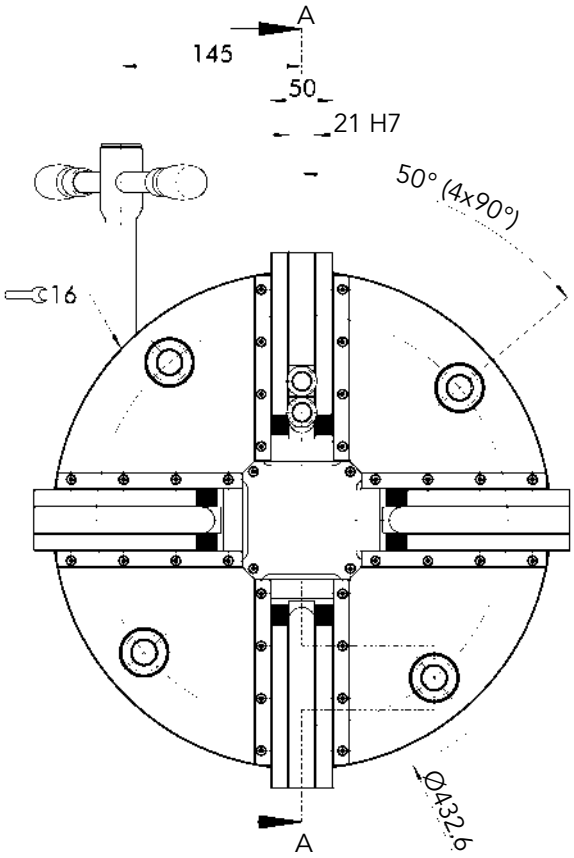
SWB 200/4
5.6 kg

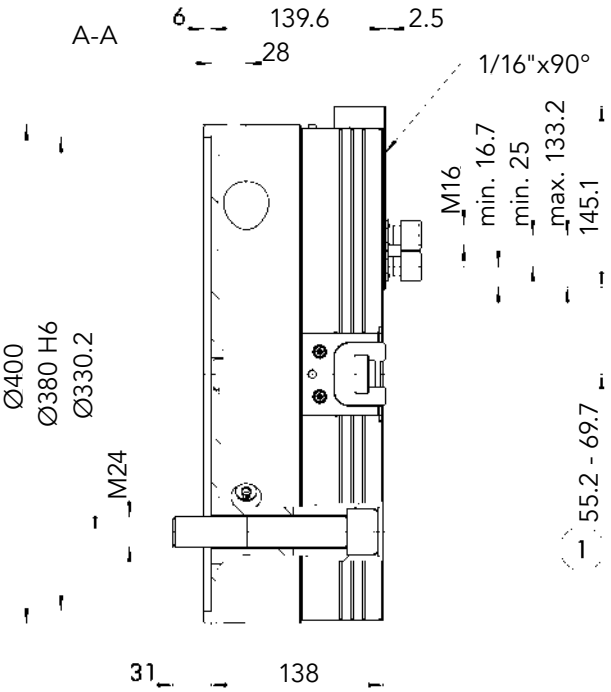
SWB-AL 200/4
2 kg

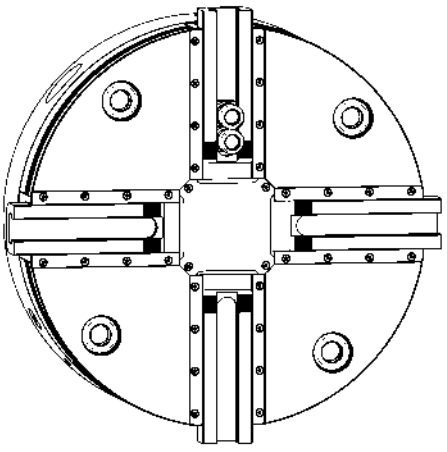
Jaw guidance load



M_{max} = 1850 Nm







Chuck for shaft clamping shown in open position.
Technical changes reserved.

(1) Distance to center of first tooth

Technical data

Spindle type	Spindle size	ID	Serration	Max. speed of rotation [RPM]	Max. clamping force [kN]	Max. torque [Nm]	Stroke/jaw [mm]	Compensation stroke/jaw [mm]	Weight [kg]
ISO 702-4	No. 15 (Z380)	1407684	1/16" x 90°	1500	150	200	14.5	7.9	125

Scope of delivery

Chuck, T-nuts or mounting screws for top jaws, chuck mounting screws, actuation wrench, eye bolts, and operating manual; without top jaws, without locking cover

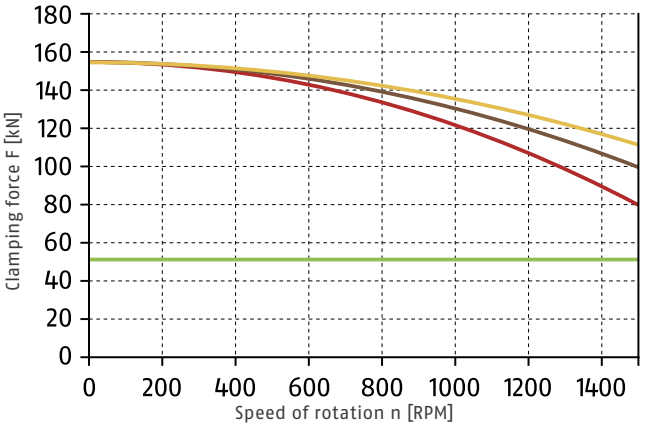
Notes

Stationary applications
For stationary use, the ROTA-M flex 2+2 can be retrofitted with standardized console and adapter plates (see accessories).

Use of 2-jaw clamping
When using 2-jaw clamping, a locking cover is additionally required to block one pair of jaws (see accessories).

Clamping force, 2-jaw clamping
When changing to 2-jaw clamping, the maximum clamping force is halved at the same torque.

Clamping force/RPM diagram



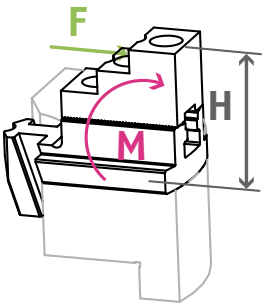
Required minimum clamping force F_{spmin} 33%

SHB 250/4
4.8 kg

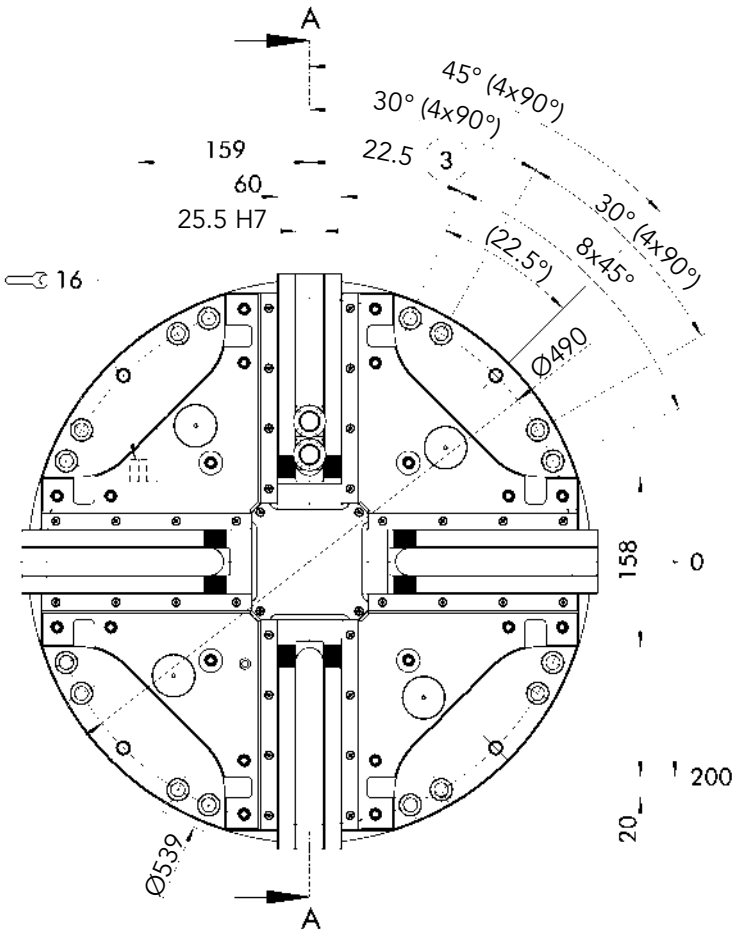
SWB 250/4
12.4 kg

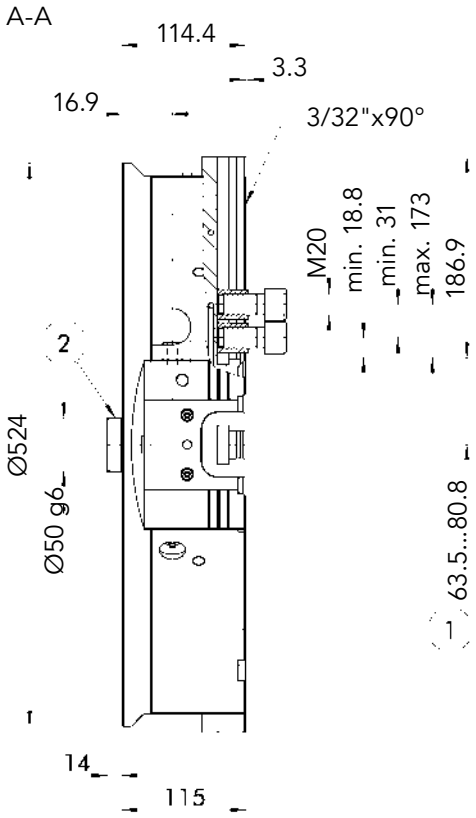
SWB-AL 250/4
4.4 kg

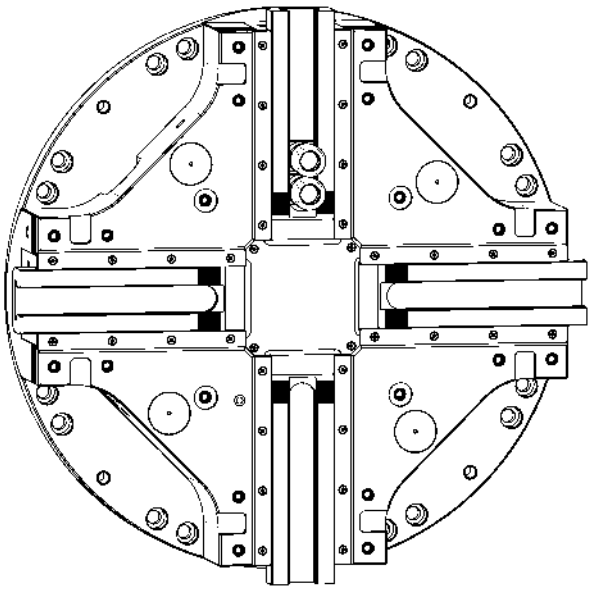
Jaw guidance load



M_{max} = 3250 Nm







Chuck for shaft clamping shown in open position.
Technical changes reserved.

① Distance to center of first tooth
② Centering pin for centering the clamping pallet
③ Lathe chuck suitable for a 22.5° or 30° star slot table

Technical data

ID	Serration	Max. speed of rotation [RPM]	Max. clamping force [kN]	Max. torque [Nm]	Stroke/jaw [mm]	Compensation stroke/jaw [mm]	Weight [kg]
1583348	3/32" x 90°	1500	180	210	17.3	12	130

Scope of delivery

Chuck, centering pin, T-nuts, ratchet wrenches with adapter, eye bolt, mounting screws, nut for T-slots, bore closing cover, operating manual; without top jaws, without fixed workpiece stops, without locking cover

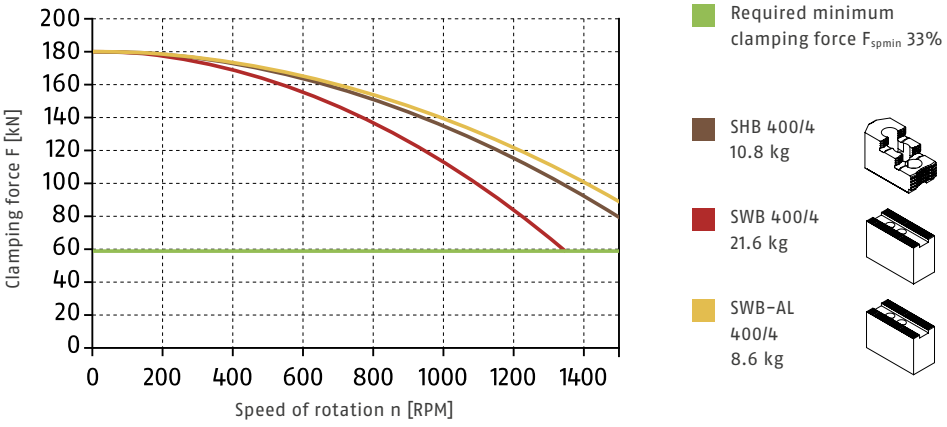
Notes

Use of 2-jaw clamping
When using 2-jaw clamping, a locking cover is additionally required to block one pair of jaws (see accessories).

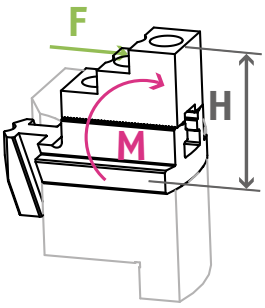
Clamping force, 2-jaw clamping
When changing to 2-jaw clamping, the maximum clamping force is halved at the same torque.

Version with straight recess mount
For use on lathes, the Ø 500 mm size with straight recess mount is available on request.

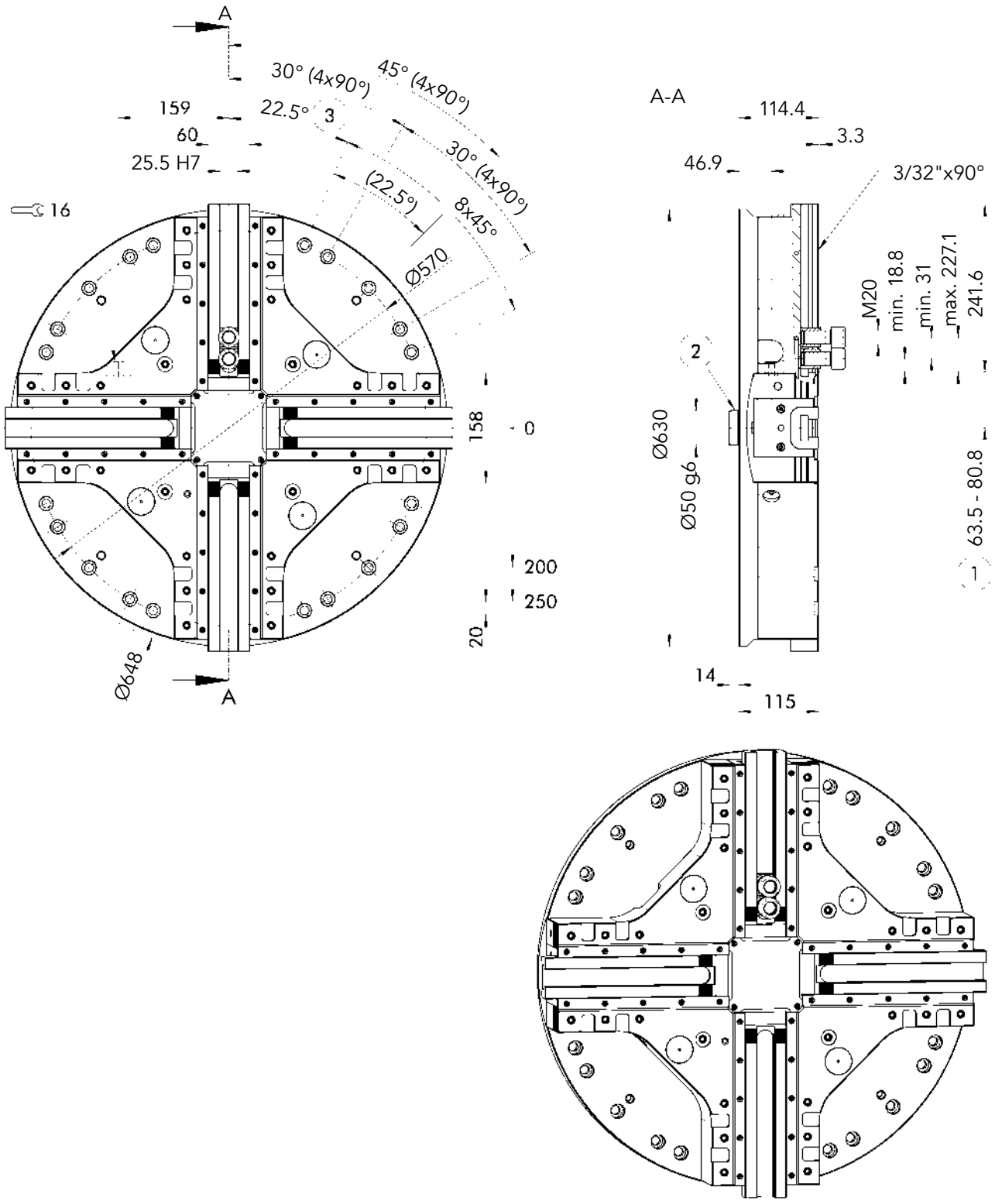
Clamping force/RPM diagram



Jaw guidance load



M_{max} = 4550 Nm



Chuck for shaft clamping shown in open position.
Technical changes reserved.

① Distance to center of first tooth
② Centering pin for centering the clamping pallet
③ Lathe chuck suitable for a 22.5° or 30° star slot table

Technical data

ID	Serration	Max. speed of rotation [RPM]	Max. clamping force [kN]	Max. torque [Nm]	Stroke/jaw [mm]	Compensation stroke/jaw [mm]	Weight [kg]
1570299	3/32" x 90°	1300	180	210	17.3	12	167

Scope of delivery

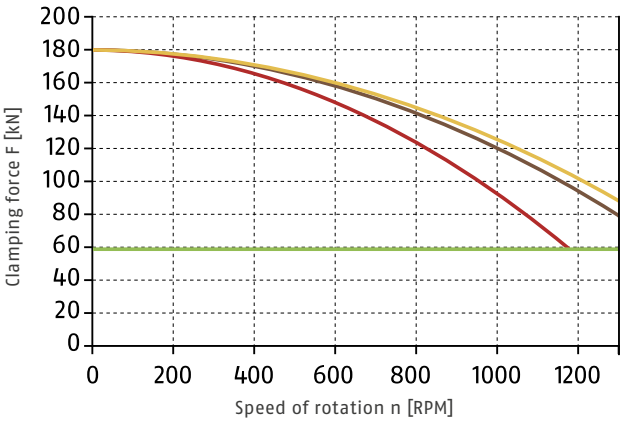
Chuck, centering pin, T-nuts, ratchet wrenches with adapter, eye bolt, mounting screws, nut for T-slots, bore closing cover, operating manual; without top jaws, without fixed workpiece stops, without locking cover

Notes

Use of 2-jaw clamping
When using 2-jaw clamping, a locking cover is additionally required to block one pair of jaws (see accessories).

Clamping force, 2-jaw clamping
When changing to 2-jaw clamping, the maximum clamping force is halved at the same torque.

Clamping force/RPM diagram



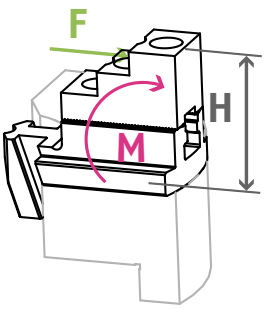
Required minimum clamping force F_{spmin} 33%

SHB 400/4
10.8 kg

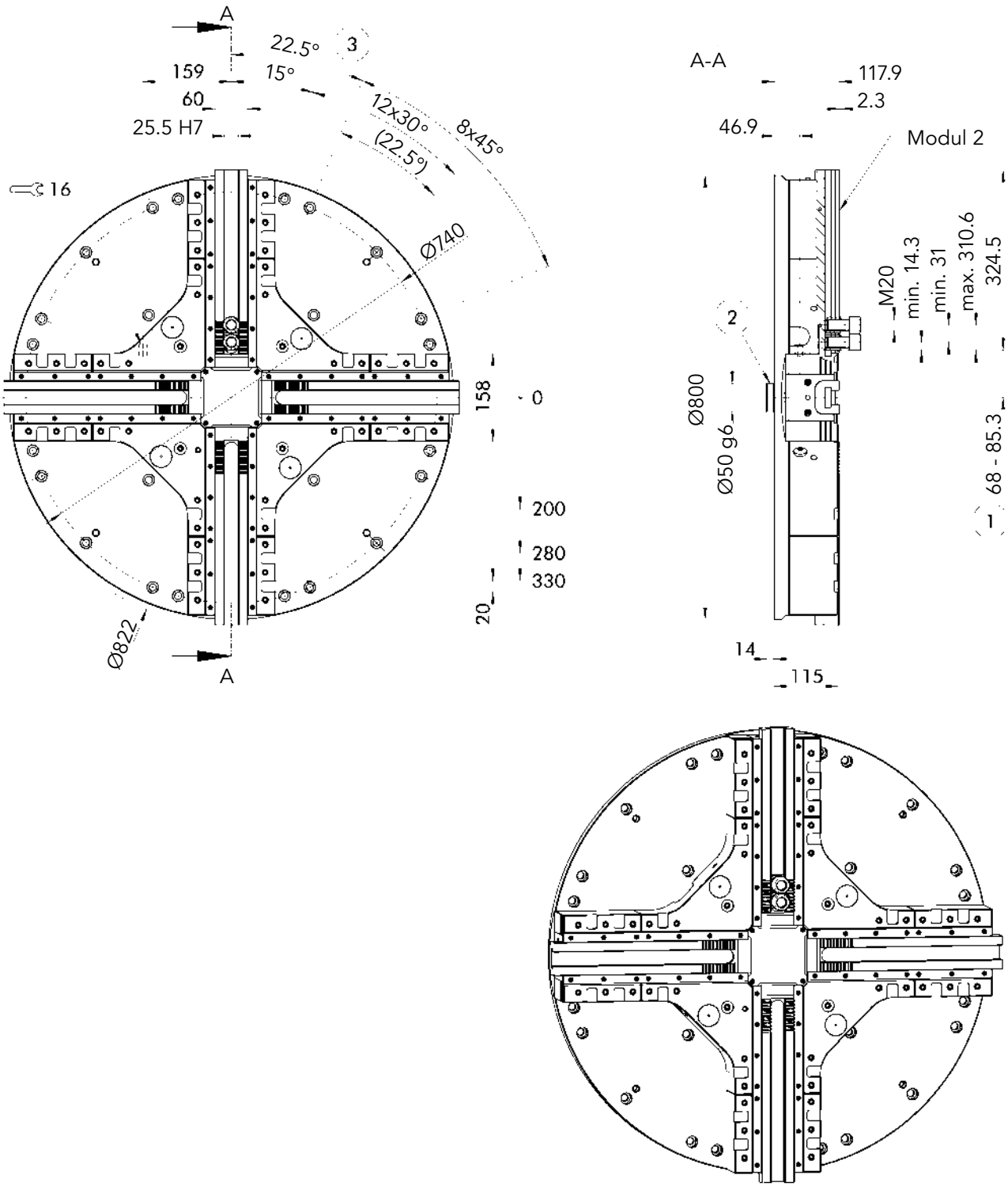
SWB 400/4
21.6 kg

SWB-AL 400/4
8.6 kg

Jaw guidance load



M_{max} = 4550 Nm



Chuck for shaft clamping shown in open position.
Technical changes reserved.

(1) Distance to center of first tooth
(2) Centering pin for centering the clamping pallet
(3) Lathe chuck suitable for a 22.5° or 30° star slot table

Technical data

ID	Serration	Max. speed of rotation [RPM]	Max. clamping force [kN]	Max. torque [Nm]	Stroke/jaw [mm]	Compensation stroke/jaw [mm]	Weight [kg]
1573345	Modul 2	1100	180	210	17.3	12	244

Scope of delivery

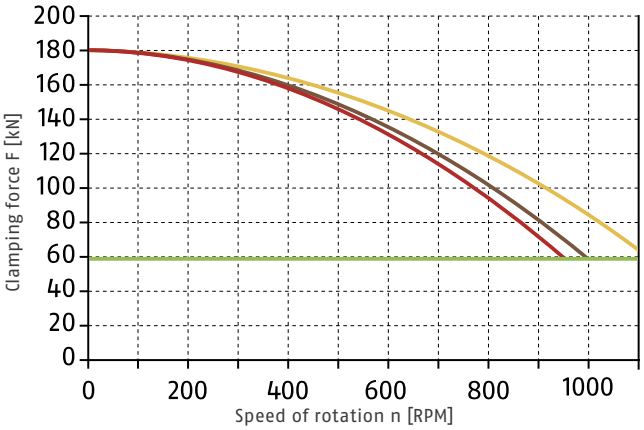
Chuck, centering pin, T-nuts, ratchet wrenches with adapter, eye bolt, mounting screws, nut for T-slots, bore closing cover, operating manual; without top jaws, without fixed workpiece stops, without locking cover

Notes

Use of 2-jaw clamping
When using 2-jaw clamping, a locking cover is additionally required to block one pair of jaws (see accessories).

Clamping force, 2-jaw clamping
When changing to 2-jaw clamping, the maximum clamping force is halved at the same torque.

Clamping force/RPM diagram



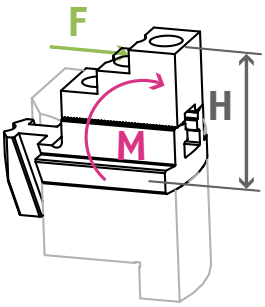
Required minimum clamping force F_{spmin} 33%

SP-HB-M
400-500/4
13.6 kg

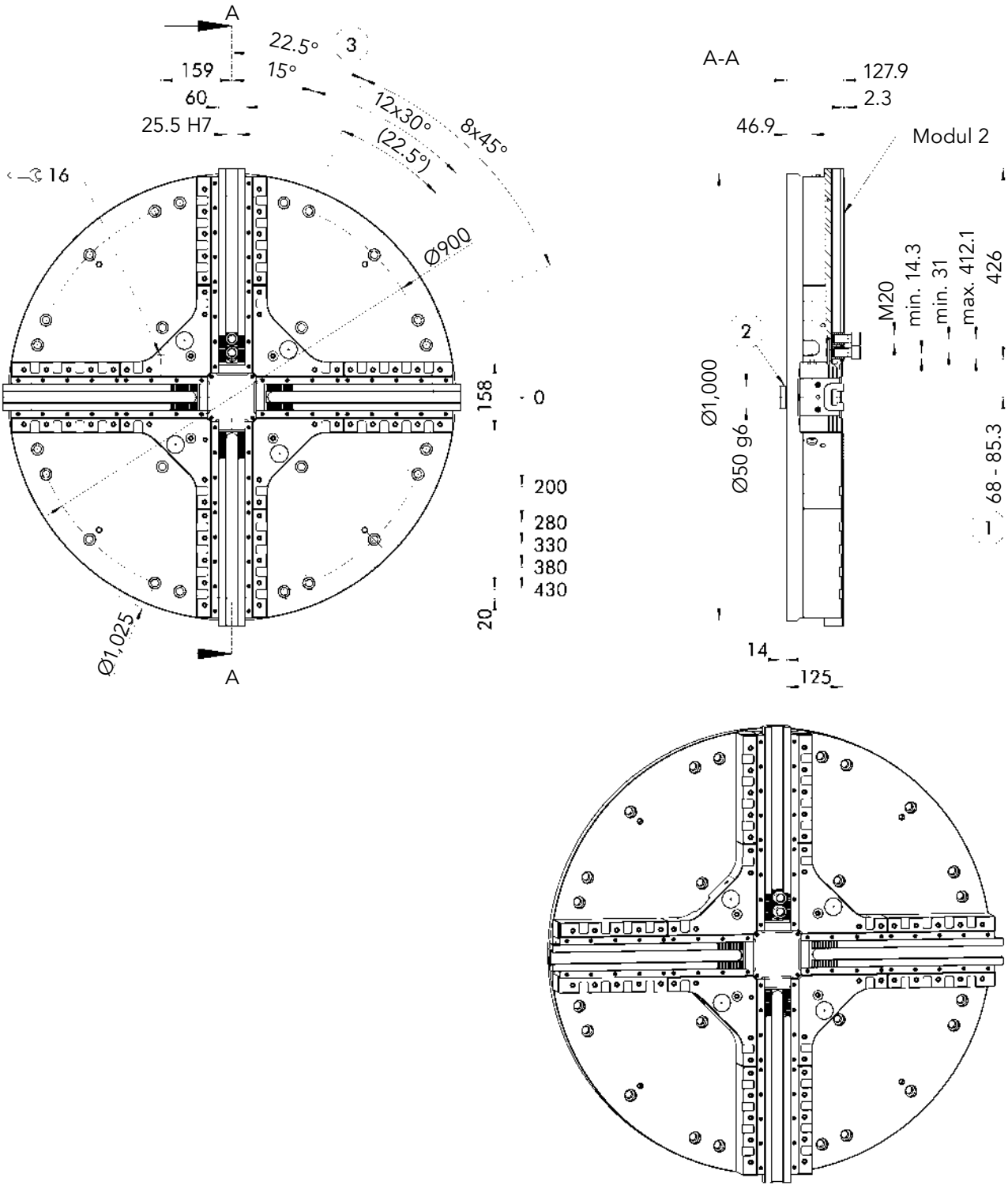
SWB-M 400/4
21.8 kg

SWBL-M
400/4
9 kg

Jaw guidance load



M_{max} = 4750 Nm



Chuck for shaft clamping shown in open position.
Technical changes reserved.

(1) Distance to center of first tooth
(2) Centering pin for centering the clamping pallet
(3) Lathe chuck suitable for a 22.5° or 30° star slot table

Technical data

ID	Serration	Max. speed of rotation [RPM]	Max. clamping force [kN]	Max. torque [Nm]	Stroke/jaw [mm]	Compensation stroke/jaw [mm]	Weight [kg]
1573346	Modul 2	850	180	210	17.3	12	396

Scope of delivery

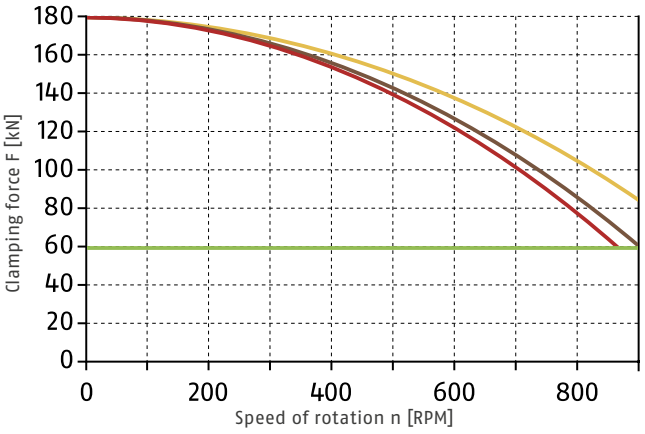
Chuck, centering pin, T-nuts, ratchet wrenches with adapter, eye bolt, mounting screws, nut for T-slots, bore closing cover, operating manual; without top jaws, without fixed workpiece stops, without locking cover

Notes

Use of 2-jaw clamping
When using 2-jaw clamping, a locking cover is additionally required to block one pair of jaws (see accessories).

Clamping force, 2-jaw clamping
When changing to 2-jaw clamping, the maximum clamping force is halved at the same torque.

Clamping force/RPM diagram



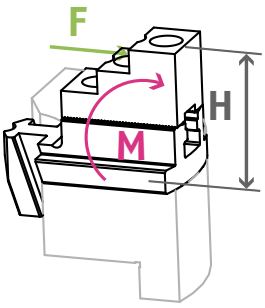
Required minimum clamping force F_{spmin} 33%

SP-HB-M 400-500/4 13.6 kg

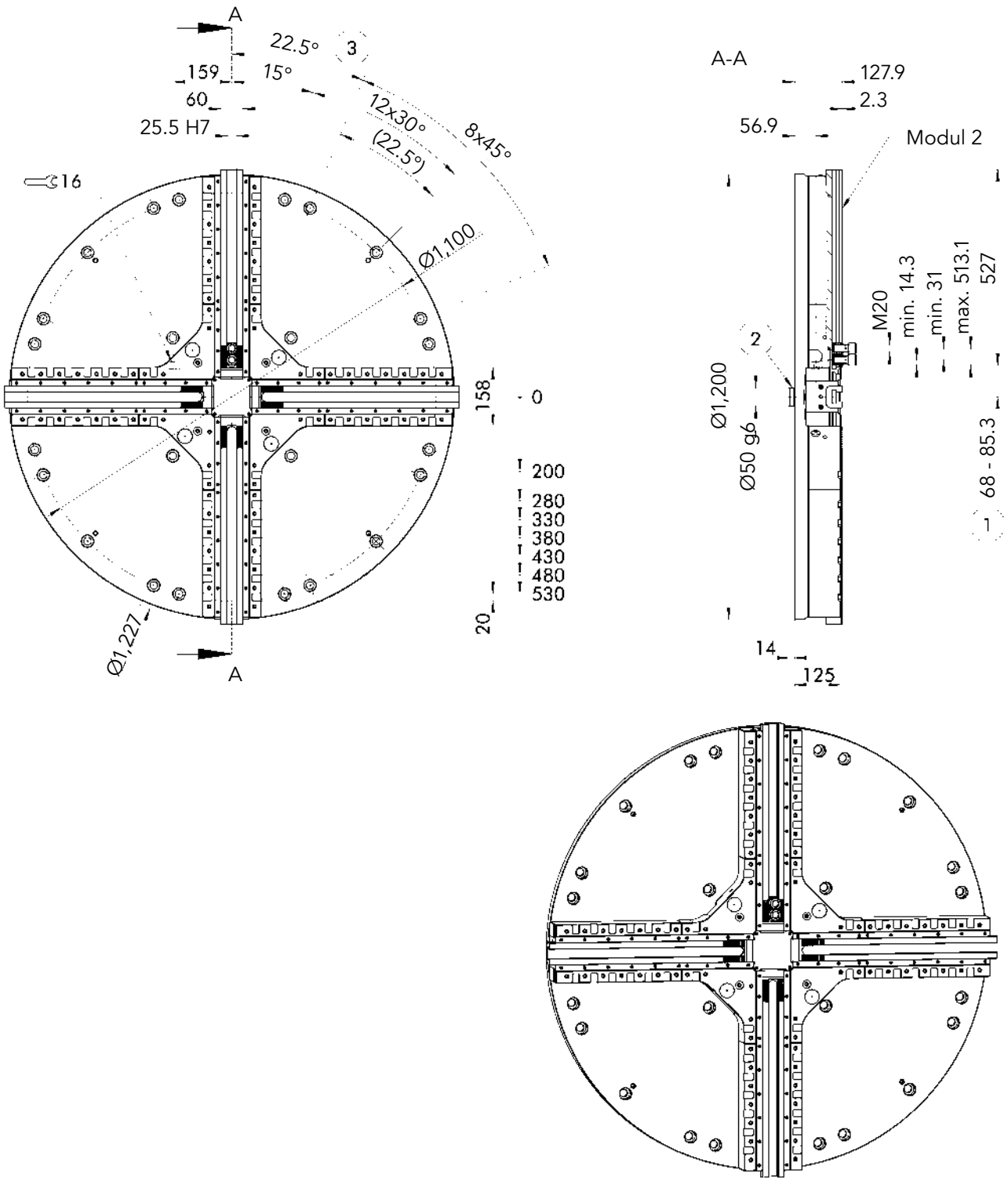
SWB-M 400/4 21.8 kg

SWBL-M 400/4 9 kg

Jaw guidance load



M_{max} = 4750 Nm



Chuck for shaft clamping shown in open position.
Technical changes reserved.

(1) Distance to center of first tooth
(2) Centering pin for centering the clamping pallet
(3) Lathe chuck suitable for a 22.5° or 30° star slot table

Technical data

ID	Serration	Max. speed of rotation [RPM]	Max. clamping force [kN]	Max. torque [Nm]	Stroke/jaw [mm]	Compensation stroke/jaw [mm]	Weight [kg]
1573347	Modul 2	750	180	210	17.3	12	530

Scope of delivery

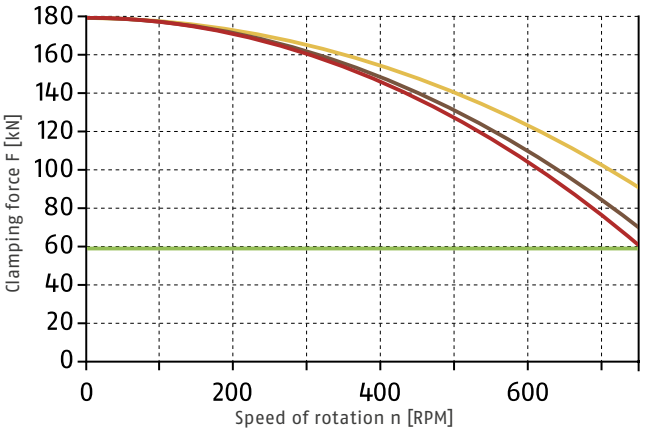
Chuck, centering pin, T-nuts, ratchet wrenches with adapter, eye bolt, mounting screws, nut for T-slots, bore closing cover, operating manual; without top jaws, without fixed workpiece stops, without locking cover

Notes

Use of 2-jaw clamping
When using 2-jaw clamping, a locking cover is additionally required to block one pair of jaws (see accessories).

Clamping force, 2-jaw clamping
When changing to 2-jaw clamping, the maximum clamping force is halved at the same torque.

Clamping force/RPM diagram



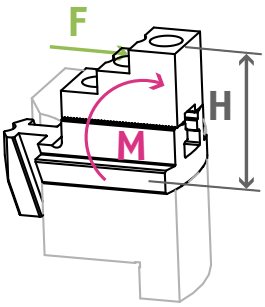
Required minimum clamping force F_{spmin} 33%

SP-HB-M 400-500/4 13.6 kg

SWB-M 400/4 21.8 kg

SWBL-M 400/4 9 kg

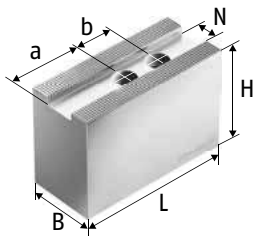
Jaw guidance load



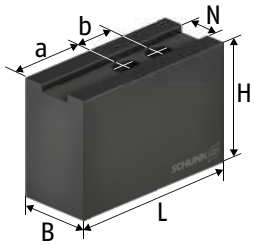
M_{max} = 4750 Nm

Soft top jaws

with fine serration 90°



SWB-AL
Soft top jaws



SWB
Soft top jaws

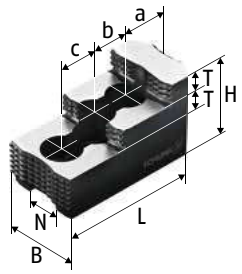
Technical data

Chuck type	Description	ID	N [mm]	B [mm]	H [mm]	L [mm]	a [mm]	b [mm]	Screws	m/SET [kg]
ROTA-M flex 2+2 260	SWB-AL 200/4	1457304	17	40	60	90	43	22	M12	2.0
ROTA-M flex 2+2 260	SWB 200/4	1455397	17	40	60	90	43	22	M12	5.6
ROTA-M flex 2+2 315	SWB-AL 200/4	1457304	17	40	60	90	43	22	M12	2.0
ROTA-M flex 2+2 315	SWB 200/4	1455397	17	40	60	90	43	22	M12	5.6
ROTA-M flex 2+2 400	SWB-AL 250/4	1457305	21	50	80	120	62	28	M16	4.4
ROTA-M flex 2+2 400	SWB 250/4	1457272	21	50	80	120	62	28	M16	12.4
ROTA-ML flex 2+2 500	SWB-AL 400/4	1457306	25.5	60	100	155	90	35	M20	8.6
ROTA-ML flex 2+2 500	SWB 400/4	1457273	25.5	60	90	155	90	35	M20	21.6
ROTA-ML flex 2+2 630	SWB-AL 400/4	1457306	25.5	60	100	155	90	35	M20	8.6
ROTA-ML flex 2+2 630	SWB 400/4	1457273	25.5	60	90	155	90	35	M20	21.6

Our complete range of chuck jaws can be found online in our Chuck Jaw Quickfinder and on schunk.com

Hard stepped top jaws

with fine serration 90°



SHB
Hard stepped top jaws

Technical data

Chuck type	Description	ID	N [mm]	B [mm]	H [mm]	L [mm]	T [mm]	a [mm]	b [mm]	c [mm]	Screws	m/SET [kg]
ROTA-M flex 2+2 260	SHB 210/4	1457276	17	40	49	84.2	12	28.7	19	19	M12	1.5
ROTA-M flex 2+2 315	SHB 210/4	1457276	17	40	49	84.2	12	28.7	19	19	M12	1.5
ROTA-M flex 2+2 400	SHB 250/4	1457277	21	50	58	103.5	14	34	25	25	M16	4.8
ROTA-ML flex 2+2 500	SHB 400/4	1457278	25.5	60	75	140	18	53	31	31	M20	10.8
ROTA-ML flex 2+2 630	SHB 400/4	1457278	25.5	60	75	140	18	53	31	31	M20	10.8

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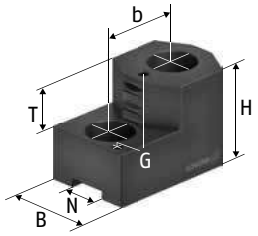
Universal claw jaws

with fine serration 90°



SZAU
Claw jaws

Technical data

Chuck type	Clamping range ØD [mm]	Swing diameter SDmax [mm]	Description	ID	N [mm]	B [mm]	H [mm]	T [mm]	G	b [mm]	Screws	m/SET [kg]
ROTA-M flex 2+2 260	82 – 205	292	SZAU 200/4	1457355	17	40	52	25	M6	35	M12	2
ROTA-M flex 2+2 315	82 – 259	346	SZAU 200/4	1457355	17	40	52	25	M6	35	M12	2
ROTA-M flex 2+2 400	104 – 331	444	SZAU 200/4	1457356	21	50	55	25	M6	45	M16	4.1
ROTA-ML flex 2+2 500	102 – 426	571	SZAU 400/4	1457357	25.5	60	75	33	M6	60	M20	8.2
ROTA-ML flex 2+2 630	102 – 534	679	SZAU 400/4	1457357	25.5	60	75	33	M6	60	M20	8.2

T-nut

with fine serration 90°

NS
T-nut

Chuck type	Description	ID	H [mm]	H1 [mm]	G	Cyl. screw	Max. adm. tightening torque [Nm]
ROTA-M flex 2+2 260	NS 120	0140101	23	9	M12	M12 x 30	70
ROTA-M flex 2+2 315	NS 120	0140101	23	9	M12	M12 x 30	70
ROTA-M flex 2+2 400	NS 160	0140102	27	11	M16	M16 x 35	150
ROTA-ML flex 2+2 500	NS 200	0140103	29	11	M20	M20 x 40	220
ROTA-ML flex 2+2 630	NS 200	0140103	29	11	M20	M20 x 40	220
ROTA-ML flex 2+2 800	NS 200	0140103	29	11	M20	M20 x 40	220
ROTA-ML flex 2+2 1000	NS 200	0140103	29	11	M20	M20 x 40	220
ROTA-ML flex 2+2 1200	NS 200	0140103	29	11	M20	M20 x 40	220

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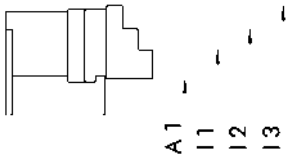
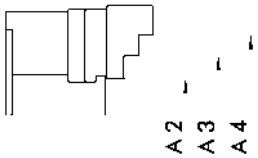
Hard stepped top jaws

with fine serration 90°



Jaw position I



Jaw position II

O.D. clamping

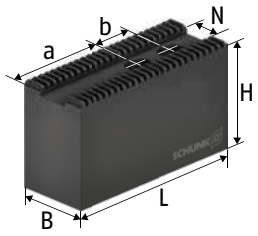
Chuck type	Description	ID	A1 [mm]	A2 [mm]	A3 [mm]	A4 [mm]
ROTA-M flex 2+2 260	SHB 210/4	1457276	23 - 161	48 - 173	98 - 223	143 - 260
ROTA-M flex 2+2 315	SHB 210/4	1457276	23 - 215	47 - 240	97 - 290	143 - 315
ROTA-M flex 2+2 400	SHB 250/4	1457277	38 - 282	66 - 312	148 - 394	221 - 400
ROTA-ML flex 2+2 500	SHB 400/4	1457278	49 - 335	62 - 375	164 - 478	266 - 500
ROTA-ML flex 2+2 630	SHB 400/4	1457278	49 - 444	62 - 500	164 - 605	266 - 630

I.D. clamping

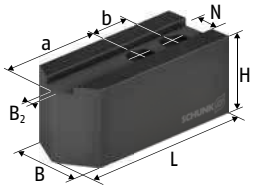
Chuck type	Description	ID	I1 [mm]	I2 [mm]	I3 [mm]
ROTA-M flex 2+2 260	SHB 210/4	1457276	98 - 236	144 - 282	192 - 330
ROTA-M flex 2+2 315	SHB 210/4	1457276	98 - 289	144 - 335	192 - 384
ROTA-M flex 2+2 400	SHB 250/4	1457277	91 - 335	164 - 408	244 - 488
ROTA-ML flex 2+2 500	SHB 400/4	1457278	130 - 410	228 - 513	328 - 615
ROTA-ML flex 2+2 630	SHB 400/4	1457278	130 - 519	228 - 622	328 - 724

Soft top jaws

Modul 2



SWB-M/4
Soft top jaws



SWBL-M/4
Soft top jaws

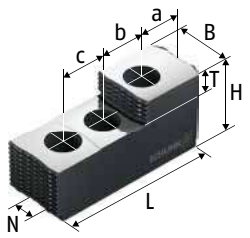
Technical data

Chuck type	Description	ID	N [mm]	B [mm]	H [mm]	L [mm]	a [mm]	b [mm]	Screws	m/SET [kg]
ROTA-ML flex 2+2 800	SWBL-M 400/4	1457325	25.5	60	90	195	110	35		9.0
ROTA-ML flex 2+2 800	SWB-M 400/4	1457324	25.5	60	90	157	30	35	M20	21.8
ROTA-ML flex 2+2 1000	SWBL-M 400/4	1457325	25.5	60	90	195	110	35		9.0
ROTA-ML flex 2+2 1000	SWB-M 400/4	1457324	25.5	60	90	157	30	35	M20	21.8
ROTA-ML flex 2+2 1200	SWBL-M 400/4	1457325	25.5	60	90	195	110	35		9.0
ROTA-ML flex 2+2 1200	SWB-M 400/4	1457324	25.5	60	90	157	30	35	M20	21.8

Our complete range of chuck jaws can be found online in our Chuck Jaw Quickfinder and on schunk.com

Hard stepped top jaws

Modul 2



SP-HB-M/4
Hard stepped top jaws

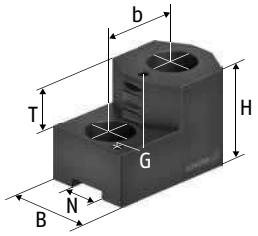
Technical data

Chuck type	Description	ID	N [mm]	B [mm]	H [mm]	L [mm]	T [mm]	a [mm]	b [mm]	c [mm]	Screws	m/SET [kg]
ROTA-ML flex 2+2 800	SP-HB-M 400-500/4	1457323	25.5	57.5	73	159.1	22	38.3	42	42	M20	13.6
ROTA-ML flex 2+2 1000	SP-HB-M 400-500/4	1457323	25.5	57.5	73	159.1	22	38.3	42	42	M20	13.6
ROTA-ML flex 2+2 1200	SP-HB-M 400-500/4	1457323	25.5	57.5	73	159.1	22	38.3	42	42	M20	13.6

Our complete range of chuck jaws can be found online in our Chuck Jaw Quickfinder and on schunk.com

Universal claw jaws

Modul 2



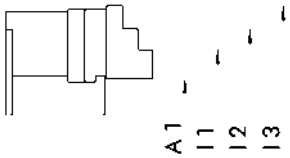
SZAU
Claw jaws

Technical data

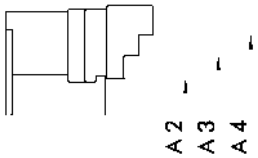
Chuck type	Clamping range ØD [mm]	Swing diameter SDmax [mm]	Description	ID	N [mm]	B [mm]	H [mm]	T [mm]	G	b [mm]	Screws	m/SET [kg]
ROTA-ML flex 2+2 800	102 – 710	855	SZAU-M 400/4	1457627	25.5	60	75	33	M6	20	M20	8.2
ROTA-ML flex 2+2 1000	102 – 913	1058	SZAU-M 400/4	1457627	25.5	60	75	33	M6	20	M20	8.2
ROTA-ML flex 2+2 1200	102 – 1115	1260	SZAU-M 400/4	1457627	25.5	60	75	33	M6	20	M20	8.2

Hard stepped top jaws

Modul 2



Jaw position I



Jaw position II

O.D. clamping

Chuck type	Description	ID	A1 [mm]	A2 [mm]	A4 [mm]
ROTA-ML flex 2+2 800	SP-HB-M 400-500/4	1457323	49 - 614	57 - 630	245 - 800
ROTA-ML flex 2+2 1000	SP-HB-M 400-500/4	1457323	49 - 815	57 - 831	245 - 1000
ROTA-ML flex 2+2 1200	SP-HB-M 400-500/4	1457323	49 - 1016	57 - 1031	245 - 1200

I.D. clamping

Chuck type	Description	ID	I1 [mm]	I3 [mm]
ROTA-ML flex 2+2 800	SP-HB-M 400-500/4	1457323	181 - 744	366 - 933
ROTA-ML flex 2+2 1000	SP-HB-M 400-500/4	1457323	181 - 944	366 - 1133
ROTA-ML flex 2+2 1200	SP-HB-M 400-500/4	1457323	181 - 1146	366 - 1335

Console jaws

Console jaw, movable
With 3/32" x 90° or modul 2 serration.
For suitable top jaws, see "Interface" column.

Suitable for	Description	Interface	ID
ROTA-ML flex 2+2 500 ROTA-ML flex 2+2 630	SKB-SV90° 100	W-100-1	1572700
ROTA-ML flex 2+2 800 ROTA-ML flex 2+2 1000 ROTA-ML flex 2+2 1200	SKB-M2 100	W-100-1	1572701

Console jaw, fixed
Can be positioned in the chuck face via T-slots.
For suitable top jaws, see "Interface" column.

Suitable for	Description	Interface	ID
ROTA-ML flex 2+2 500 ROTA-ML flex 2+2 630 ROTA-ML flex 2+2 800 ROTA-ML flex 2+2 1000 ROTA-ML flex 2+2 1200	SKB-F 100	W-100-1	1572658

Top jaws

Jaw profiled
For increasing the friction between jaw and workpiece without clamping impressions.

Description	Width [mm]	Height [mm]	Depth [mm]	Interface	ID
GBD 100-35-10	100	35	10	W-100-1	1373346

Hewn jaw
For increasing the friction between jaw and workpiece with minimal impression marks.

Description	Width [mm]	Height [mm]	Depth [mm]	Interface	ID
GBC 100-35-11	100	35	11	W-100-1	1373267

Ground jaw
With a completely ground clamping face.

Description	Width [mm]	Height [mm]	Depth [mm]	Interface	ID
GBP 100-35-10	100	35	10	W-100-1	1373272

Soft jaw
Hardenable jaws for rework at the customer site, e.g. for incorporating contours or special shapes.

Description	Width [mm]	Height [mm]	Depth [mm]	Interface	ID
GBW 100-35-16	100	35	16	W-100-1	1373287

Stepped jaw
With ground step, 8 mm.

Description	Width [mm]	Height [mm]	Depth [mm]	Interface	ID
GBS 100-35-10-5	100	35	10	W-100-1	1373325

Stepped jaw
With coated step, 5 mm.

Description	Width [mm]	Height [mm]	Depth [mm]	Interface	ID
GBS-W 100-35-10-5	100	35	10	W-100-1	1395510

Stepped jaw
With grip step, 3 mm.
For embossed clamping of unhardened materials up to 22 HRC.

Description	Width [mm]	Height [mm]	Depth [mm]	Interface	ID
GBS-G3 100-35-10	100	35	10	W-100-1	1373330

Stepped jaw
With grip step, 5 mm.
For embossed clamping of unhardened materials up to 22 HRC.

Description	Width [mm]	Height [mm]	Depth [mm]	Interface	ID
GBS-G5 100-35-10	100	35	10	W-100-1	1373333

Stepped jaw
With grip step, 8 mm.
For embossed clamping of unhardened materials up to 22 HRC.

Description	Width [mm]	Height [mm]	Depth [mm]	Interface	ID
GBS-G8 100-35-10	100	35	10	W-100-1	1373337

Stepped jaw
With carbide grip step, 3 mm.
For embossed clamping of hardened materials up to 58 HRC.

Description	Width [mm]	Height [mm]	Depth [mm]	Interface	ID
GBS-CG3 100-35-10	100	35	10	W-100-1	1428440

Stepped jaw
With carbide grip step, 5 mm.
For embossed clamping of hardened materials up to 58 HRC.

Description	Width [mm]	Height [mm]	Depth [mm]	Interface	ID
GBS-CG5 100-35-12	100	35	12	W-100-1	1428441

Grip jaw
For embossed clamping of unhardened materials up to 22 HRC.

Description	Width [mm]	Height [mm]	Depth [mm]	Interface	ID
GBG 100-35-10	100	35	10	W-100-1	1373282

Spring plate pull-down jaw
For an active jaw pull-down with a light impression mark on the workpiece for more precise machining results.

Description	Width [mm]	Height [mm]	Depth [mm]	Interface	ID
GFA 100-35-10	100	35	10	W-100-1	1373301

Spring plate pull-down jaw
For an active jaw pull-down with a light impression mark on the workpiece for more precise machining results.

Description	Width [mm]	Height [mm]	Depth [mm]	Interface	ID
GFB 100-34-10	100	35	10	W-100-1	0430191

Accessories

Clamping force tester
For measuring the jaw clamping force of 2-, 3-, and 6-jaw chucks up to 6,000 RPM.

Suitable for	Description	ID
ROTA-M flex 2+2 260 ROTA-M flex 2+2 315 ROTA-M flex 2+2 400 ROTA-ML flex 2+2 500 ROTA-ML flex 2+2 630 ROTA-ML flex 2+2 800 ROTA-ML flex 2+2 1000 ROTA-ML flex 2+2 1200	IFT Set	1404235

Measuring head adapter for 4-jaw clamping
For use as an extension of the IFT measuring head for measuring the jaw clamping force of 4-jaw chucks.

Suitable for	Description	ID
ROTA-M flex 2+2 260 ROTA-M flex 2+2 315 ROTA-M flex 2+2 400 ROTA-ML flex 2+2 500 ROTA-ML flex 2+2 630 ROTA-ML flex 2+2 800 ROTA-ML flex 2+2 1000 ROTA-ML flex 2+2 1200	IFT MA4	1452686

Extension set for large chucks
For use as an extension of the IFT measuring head for measuring the jaw clamping force of large chucks of Ø 400 mm and more.

Suitable for	Description	ID
ROTA-M flex 2+2 400 ROTA-ML flex 2+2 500 ROTA-ML flex 2+2 630 ROTA-ML flex 2+2 800 ROTA-ML flex 2+2 1000 ROTA-ML flex 2+2 1200	IFT Adapter Set	1498512

Torque wrench
Torque wrench for actuation of SCHUNK manual chucks.

Suitable for	Description	ID
ROTA-M flex 2+2 260 ROTA-M flex 2+2 315 ROTA-M flex 2+2 400	SSH-D-1/2" 40-200	9938065
ROTA-ML flex 2+2 500 ROTA-ML flex 2+2 630 ROTA-ML flex 2+2 800 ROTA-ML flex 2+2 1000 ROTA-ML flex 2+2 1200	SSH-D-1/2" 60-300	1301281

Wrenches
Ratchet for fast actuation of SCHUNK manual lathe chucks.

Suitable for	Description	ID
ROTA-M flex 2+2 260 ROTA-M flex 2+2 315 ROTA-M flex 2+2 400 ROTA-ML flex 2+2 500 ROTA-ML flex 2+2 630 ROTA-ML flex 2+2 800 ROTA-ML flex 2+2 1000 ROTA-ML flex 2+2 1200	SSH-K 1/2"-350	1151118

Hexagon spanner wrench
Spanner wrench for manual actuation of the SCHUNK manual lathe chucks with hexagonal connections.

Suitable for	Description	ID
ROTA-M flex 2+2 260 ROTA-M flex 2+2 315	SSH-SK SW12-160	1330869
ROTA-M flex 2+2 260 ROTA-M flex 2+2 315	SSH-SL SW12-260	8704921
ROTA-M flex 2+2 400	SSH-SK SW16-230	1330894
ROTA-M flex 2+2 400	SSH-SL SW16-330	8704923

Hexagon spanner wrench adapter with ejector
For use as an attachment for a torque wrench and ratchet for actuating SCHUNK manual lathe chucks with hexagonal connection.

Suitable for	Description	ID
ROTA-M flex 2+2 260 ROTA-M flex 2+2 315	SAS-I 1/2"-SW12	8705487
ROTA-M flex 2+2 400 ROTA-ML flex 2+2 500 ROTA-ML flex 2+2 630 ROTA-ML flex 2+2 800	SAS-I 1/2"-SW16	8705471
ROTA-ML flex 2+2 1000	SAS-I 1/2"-SW16	1583509
ROTA-ML flex 2+2 1200	SAS-I 1/2"-SW16	1583524

Console plate
For mounting the ROTA-M flex 2+2 manual lathe chucks on T-slot tables. The console plate must still be adapted to the respective machine table.

Suitable for	Description	ID
ROTA-M flex 2+2 260	KSL flex 260	1452440
ROTA-M flex 2+2 315	KSL flex 315	1452441
ROTA-M flex 2+2 400	KSL flex 400	1452442

Adapter plate
As a standard size for sizes Ø 260 to Ø 400 mm.
Suitable for clamping station VERO-S ...

Suitable for	Description	ID
NSL3 400	ADP-NSL3 400	1454646
NSL3 turn 450-3	ADP-NSL3 turn 450	1454659
NSL3 turn 450-3-Z	ADP-NSL3 turn 450-Z	1454670
NSL3 turn 570-5	ADP-NSL3 turn 570	1454668
NSL3 turn 570-5-Z	ADP-NSL3 turn 570-Z	1454671

Locking cover
For blocking a pair of jaws for 2-jaw clamping

Suitable for	Description	ID
ROTA-M flex 2+2 260 ROTA-M flex 2+2 315	SLC 260-315	1471984
ROTA-M flex 2+2 400	SLC 400	1471987
ROTA-ML flex 2+2 500 ROTA-ML flex 2+2 630 ROTA-ML flex 2+2 800 ROTA-ML flex 2+2 1000 ROTA-ML flex 2+2 1200	SLC 500-1200	1471989

Grease

LINOMAX plus
High-performance grease as standard for regularly lubricating SCHUNK manual and power lathe chucks and steady rests.

Bundle	Description	ID
Cartridge	LINOMAX plus cartridge	1342585
Can	LINOMAX plus can	1342586
Bucket	LINOMAX plus bucket	1342587

Grease gun
Auxiliary tools for lubrication of all kinds of SCHUNK products. The grease gun can be used for cartridges of all types of SCHUNK grease.

Bundle	Description	ID
Cartridge	Grease gun	9900543

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