

A photograph of four men in a factory setting. Three of the men are wearing blue work coats, while the man in the center is wearing a light blue button-down shirt. They are all smiling and holding various industrial tools. The man on the far left holds a metal vise. The man in the center holds a large, circular metal component with multiple holes. The man on the far right holds a drill bit. The background shows a factory floor with various equipment and a metal railing in the foreground.

Expert training

Universal swivel unit SRM

Superior Clamping and Gripping



Universal swivel unit

SRM

Universal unit for pneumatic swivel and turning movements.



The most robust swivel module with the highest power density on the market

Up to 25% increased torque with comparable size

Robust. Fast. High Performance.

SRM



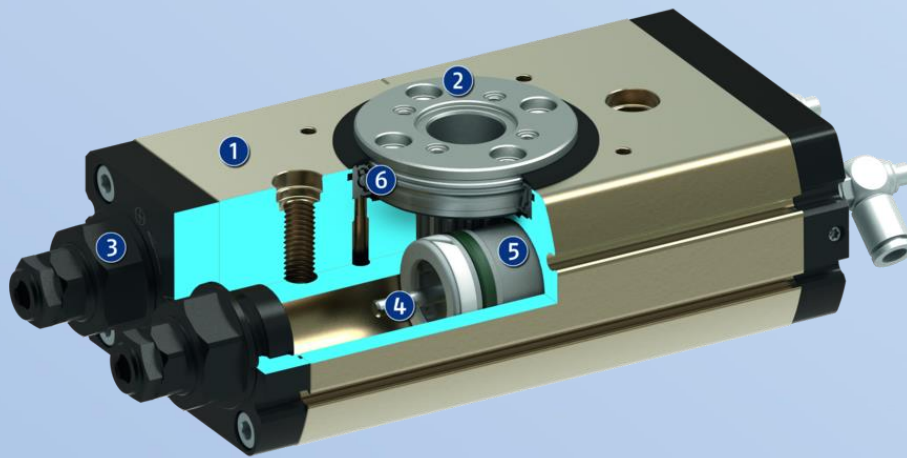
- + Largest center bore also in version with media feed-through
- + Pre-adjusted shock absorber stroke
- + Density, play-free pre-loaded bearing
- + Modular design and can be combined in any way with options
- + Equipped with FKM seals as standard

Principle of function

SRM

Functional description

When subjected to pressure, the two pneumatic pistons move their end faces in a straight line in their respective bores thus turning the pinion by means of the serrations on their sides.



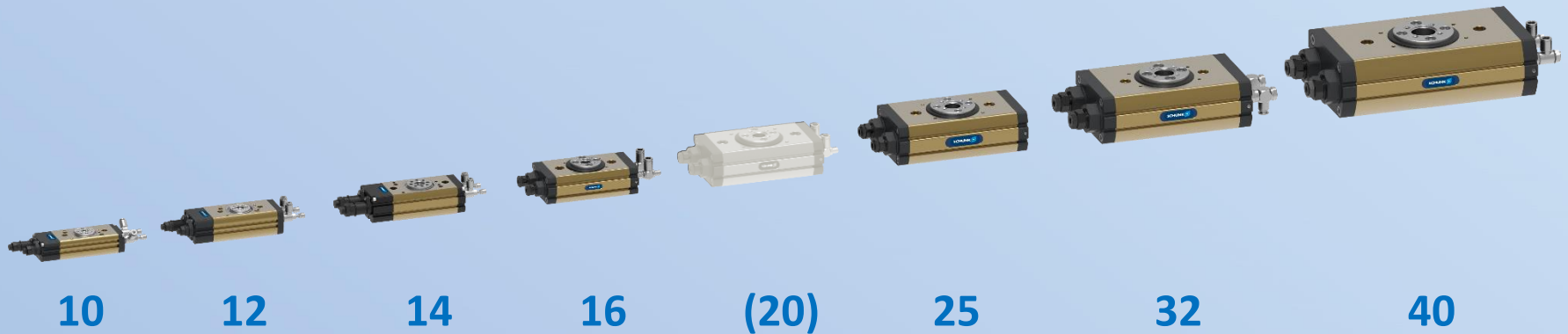
- ① Housing
- ② Pinion
- ③ Swivel angle adjustment
- ④ Damping
- ⑤ Drive
- ⑥ Bearing

Available sizes

SRM

Universal swivel unit SRM

- Continuous product series SRM from small to big units
- Development and production of the „small“ sizes (10, 12, 14) is done at production site in Huglfing, the „bigger“ sizes in Hausen



Competitors



Schunk **SRU+**



Zimmer **SF**



Festo **DRRD**



Röhm **RSP**



SMC **MSQ**



afag **CR**



Mader **SE**

Robustness

- ✓ Pre-loaded bearing
- ✓ FKM sealing
- ✓ Screwing



Performance

- ✓ Higher torque
- ✓ Special shock absorbers
- ✓ High power density



Commissioning

- ✓ Large center bore
- ✓ Preset damper stroke
- ✓ Color-coding



Modularity

- ✓ Diversity of variants
- ✓ Freely combinable
- ✓ Spare part kits



Robustness

- ✓ Pre-loaded bearing
- ✓ FKM sealing
- ✓ Screwing



Performance

- ✓ Higher torque
- ✓ Special shock absorbers
- ✓ High power density



Commissioning

- ✓ Large center bore
- ✓ Preset damper stroke
- ✓ Color-coding



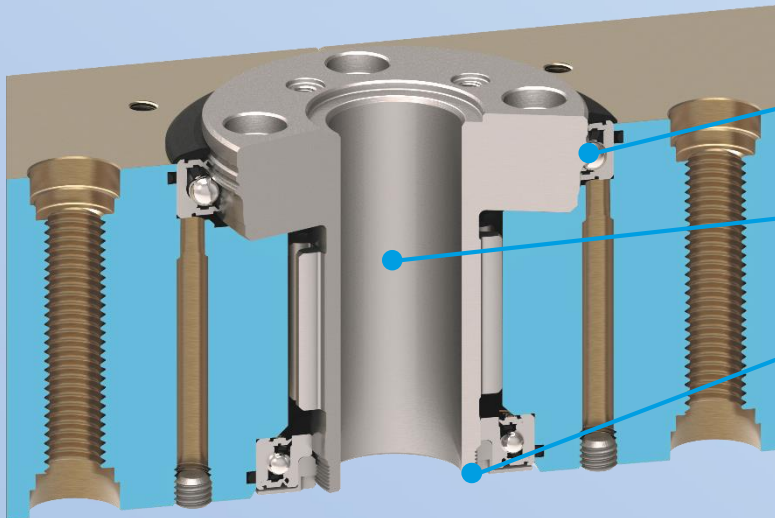
Modularity

- ✓ Diversity of variants
- ✓ Freely combinable
- ✓ Spare part kits



Integrated bearing

SRM



- + Bearing integrated in the pinion, thus minimal height (size 16 and bigger)
- + Covered bearing with double lip sealing IP 65 (size 16 and bigger)
- + Largest center bore on the market
- + Bearing is held by a screwed ring and is prestressed, thus the matching with adjusting washers is not necessary anymore, and maintenance is simplified

Benchmark

SRM

Maximum robustness



Zimmer
SF 100

SCHUNK
SRM 40

Comparison of gearing

Bsp.: SRM 40

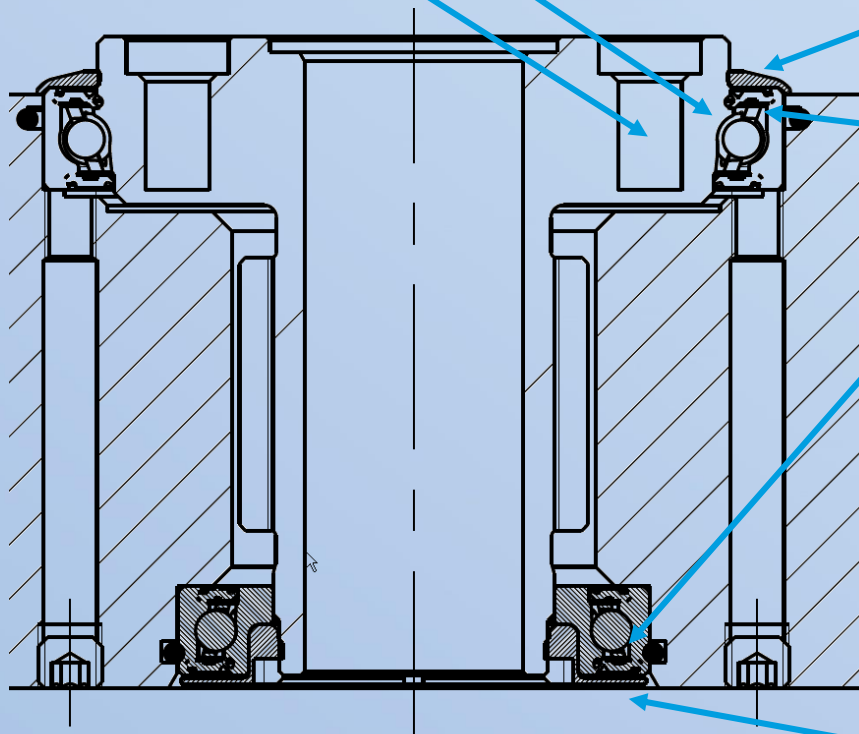
	Zimmer SF 100	SCHUNK SRM 40
Module	1,5	2
Number of teeth	18	20
Pitch circle-Ø	27 mm	40 mm
Center-Ø	15 mm	24 mm

Bearing

Pinion = Inner circle of the bearing

- Large sphere-Ø
- robust screwing

SRM



IP covering cap for protection

against splay water and dust (size 16 and bigger)

IP double-lip sealing

in FKM (size 16 and bigger)

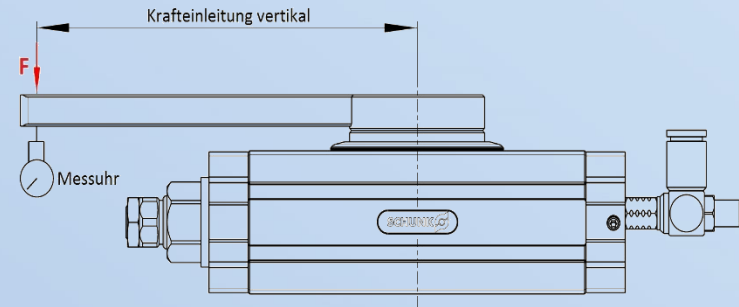
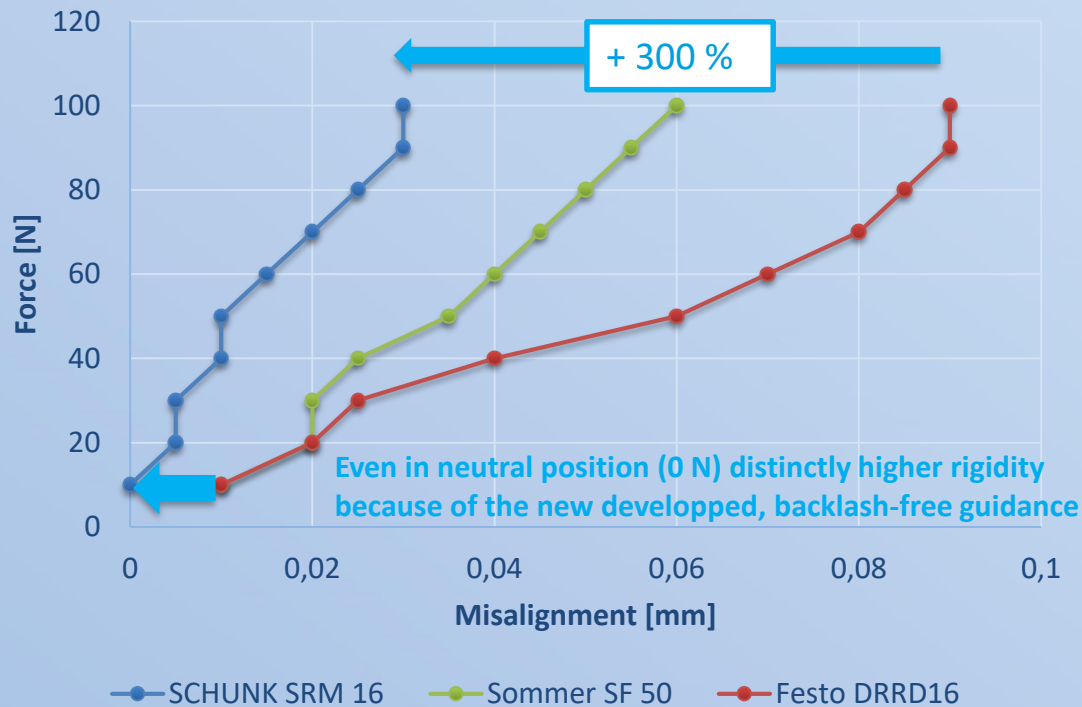
Backlash-free bearing

adjusted with a defined tightening torque of the thread ring

Backlash-free guidance

SRM

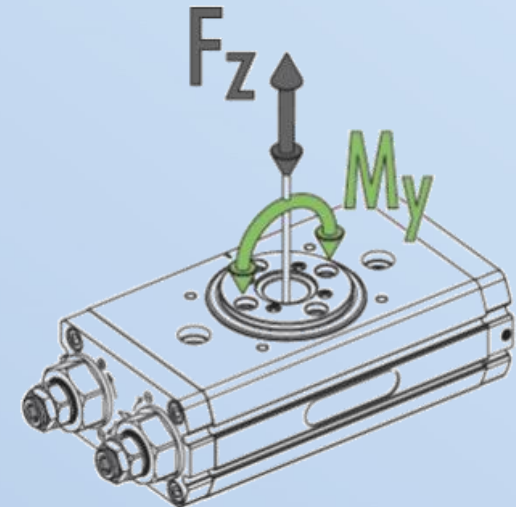
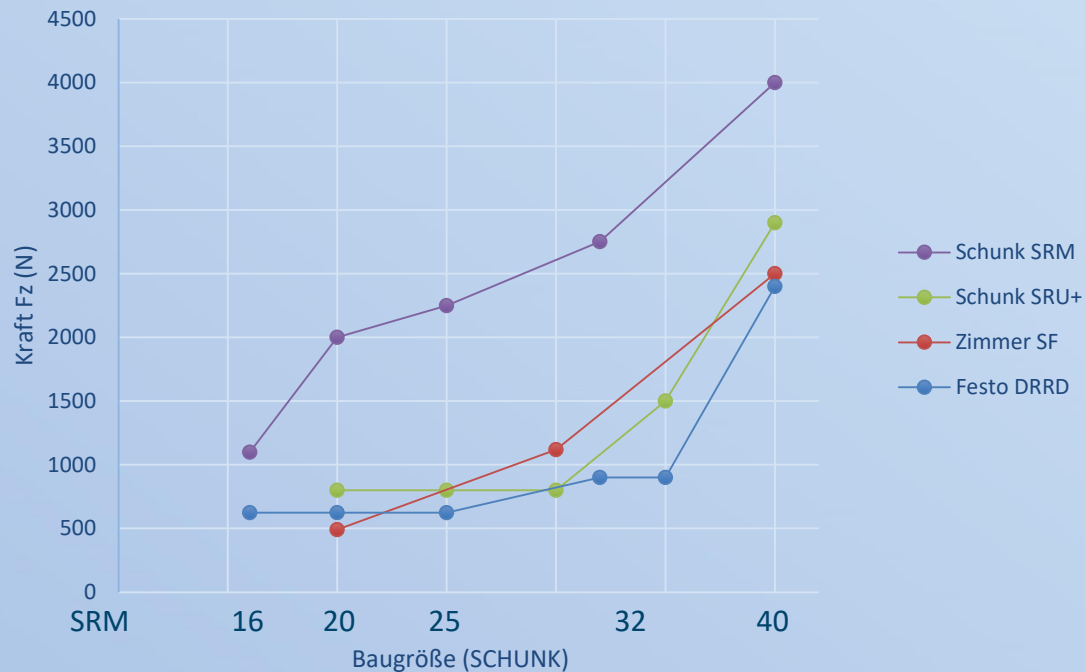
Lowest misalignment of the SRM bearing arrangement due to the backlash-free preload!



Forces and moments

SRM

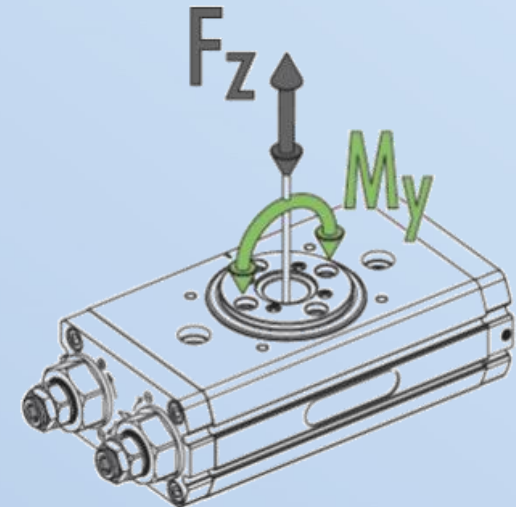
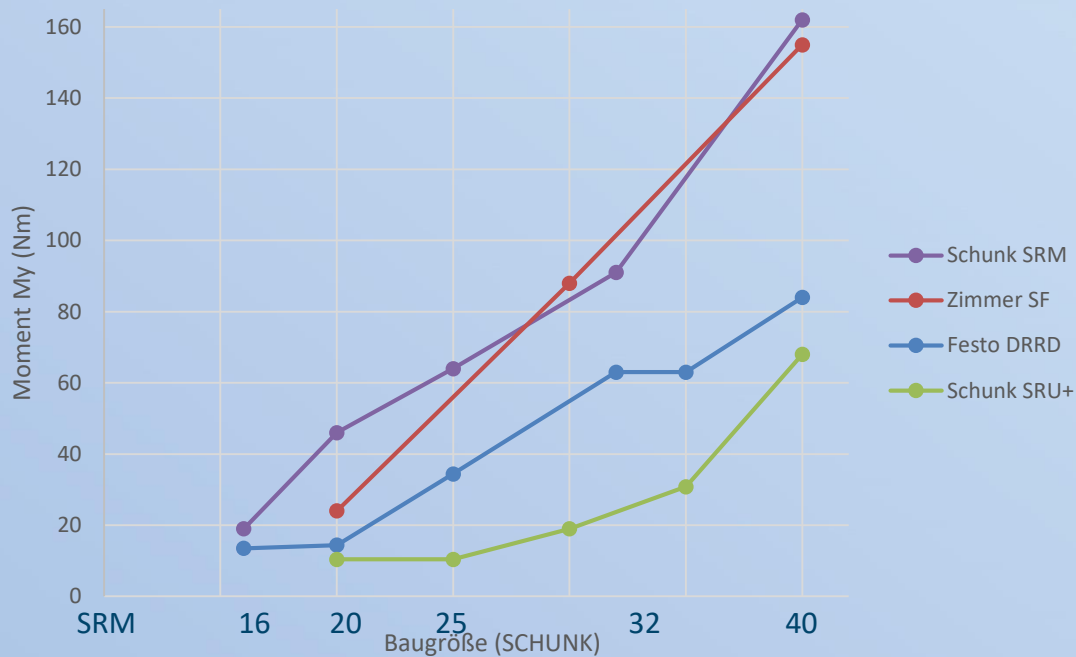
Permitted force F_z in comparison



Forces and moments

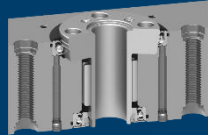
SRM

Permitted moment M_y in comparison



Robustness

- ✓ Pre-loaded bearing
- ✓ FKM sealing
- ✓ Screwing



Performance

- ✓ Higher torque
- ✓ Special shock absorbers
- ✓ High power density



Commissioning

- ✓ Large center bore
- ✓ Preset damper stroke
- ✓ Color-coding



Modularity

- ✓ Diversity of variants
- ✓ Freely combinable
- ✓ Spare part kits



Shock absorber

SRM

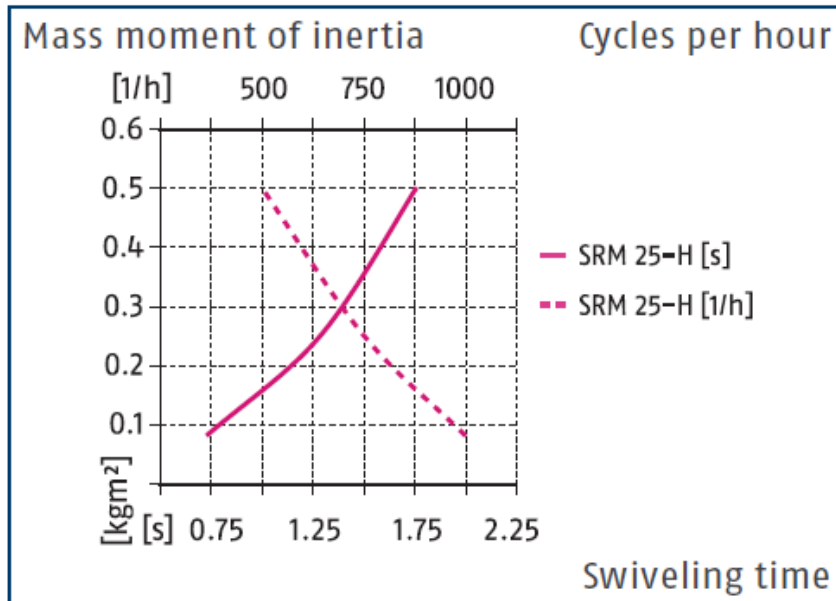
Shock absorbers have been improved

Improved damper parameters	Benefit
Larger oil volume	Longer lifetime
Larger bearing of piston	Higher force capacity
High-performance oil optimized for swivel applications	Improved shearing resistance → Longer lifetime
Optimized position of the throttle holes in the shock absorber	Higher fatigue limit of the pressure sleeve and better floating characteristic of the damper piston
Larger piston diameter	Higher energy absorption

Mass moment of inertia

SRM 25

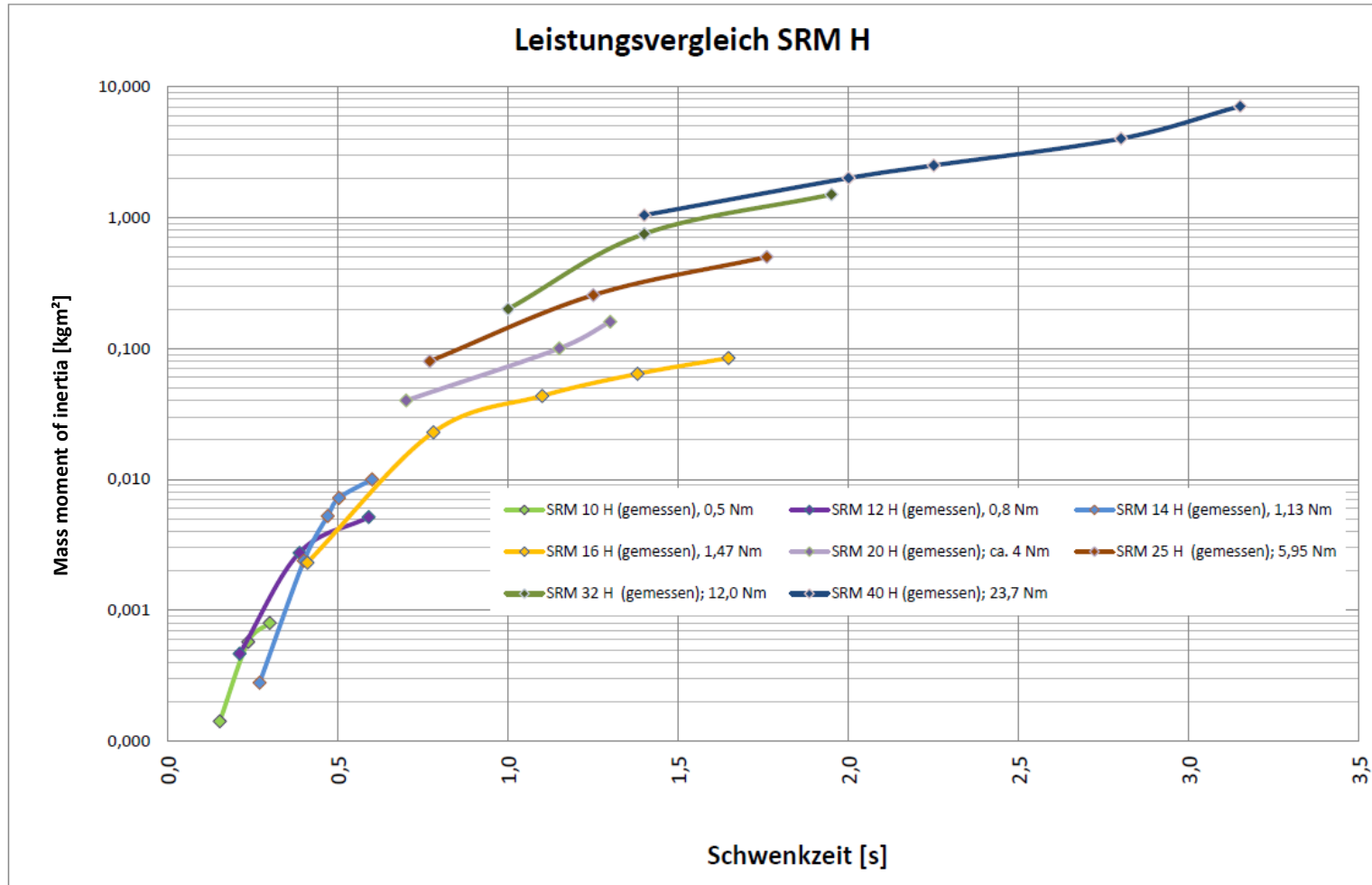
Max. permissible inertia J^*



- * The diagrams are valid for swivel angles of 90° and 180°, units without center position and for applications with a vertical swivel axis as well as for absolutely centric loads with a horizontal rotary axis and with a pneumatic operating pressure of 6 bar. The swiveling times per throttling have to be observed, otherwise the life time could reduce. We will be happy to help you to design other cases of application.

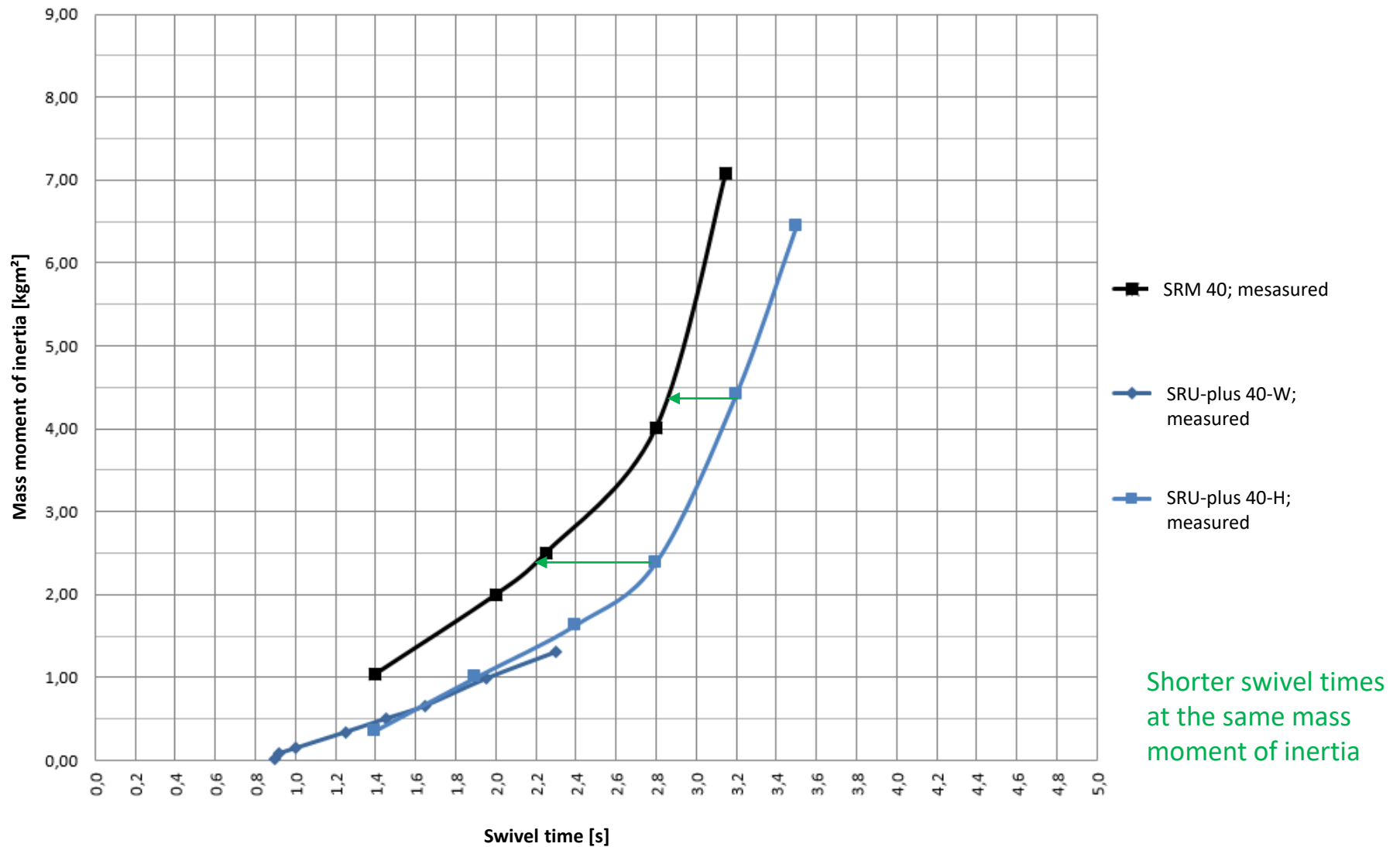
For further SRM sizes, see the diagrams in the data sheet.

Mass moment of inertia for all SRM sizes

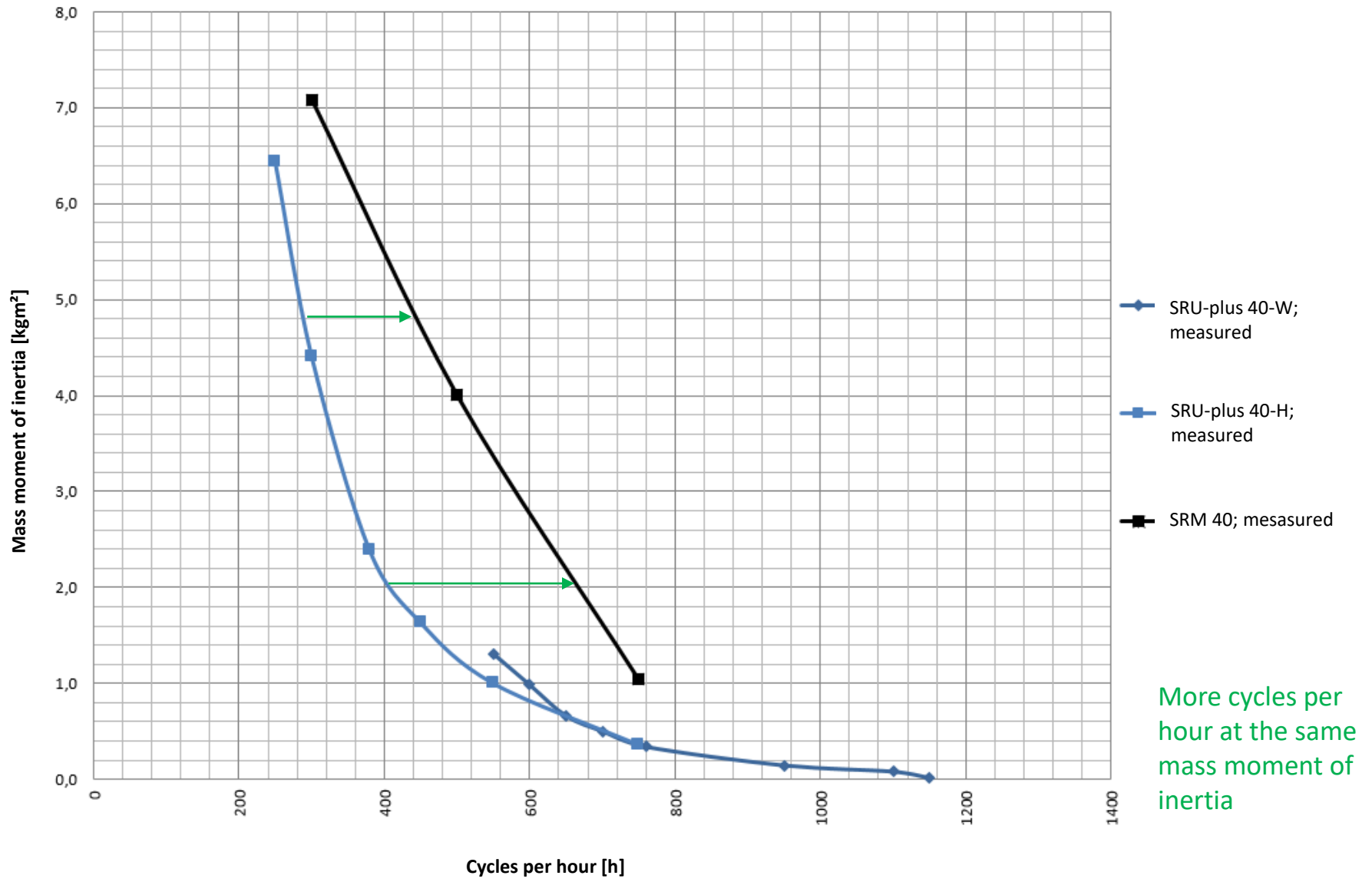


Every size is overlapping approx. 50 % of the range of mass moment of inertia of the next higher and the next lower size.

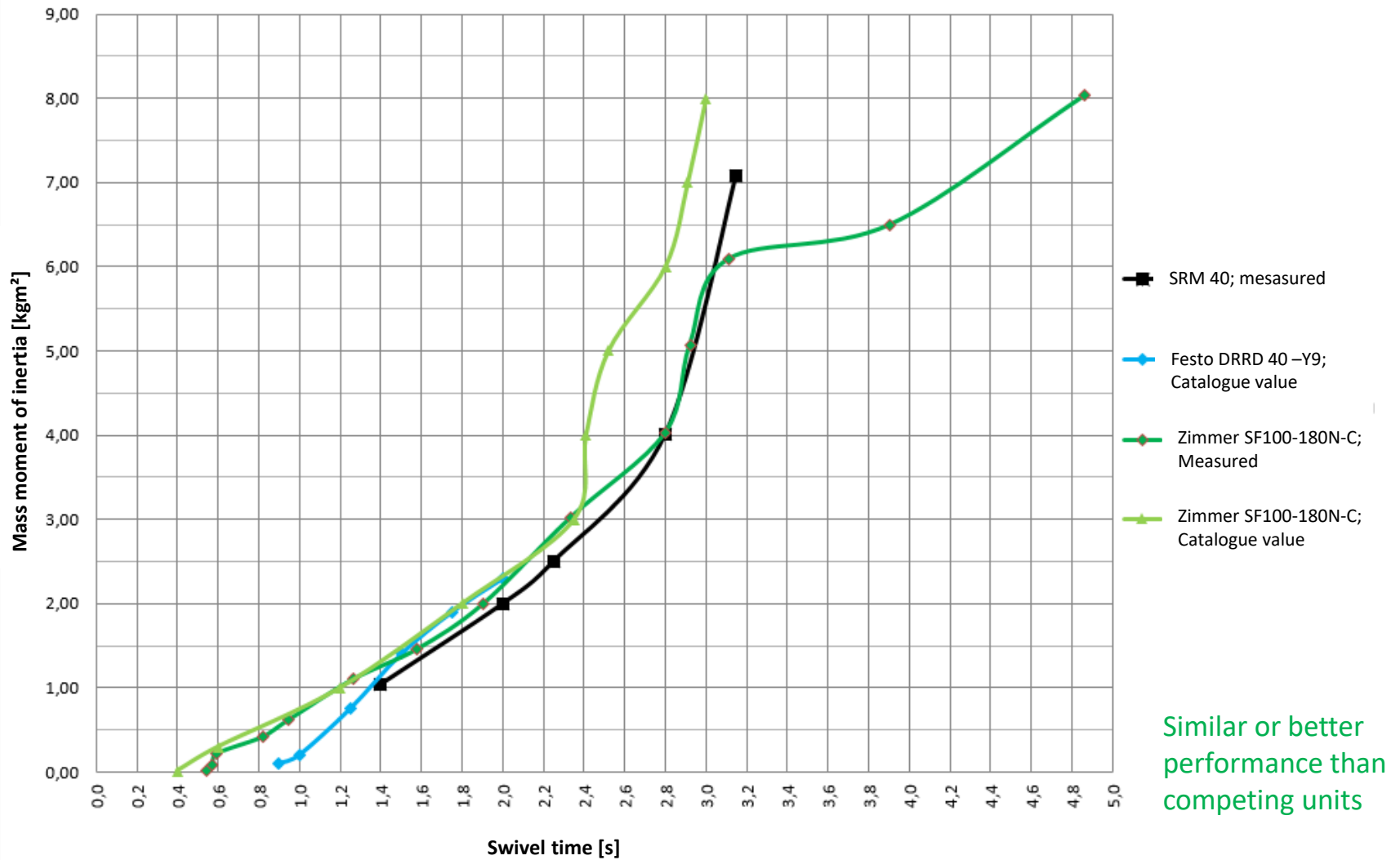
Performance indicators SRM 40 – Vertical swivel axis



Cycles / hour

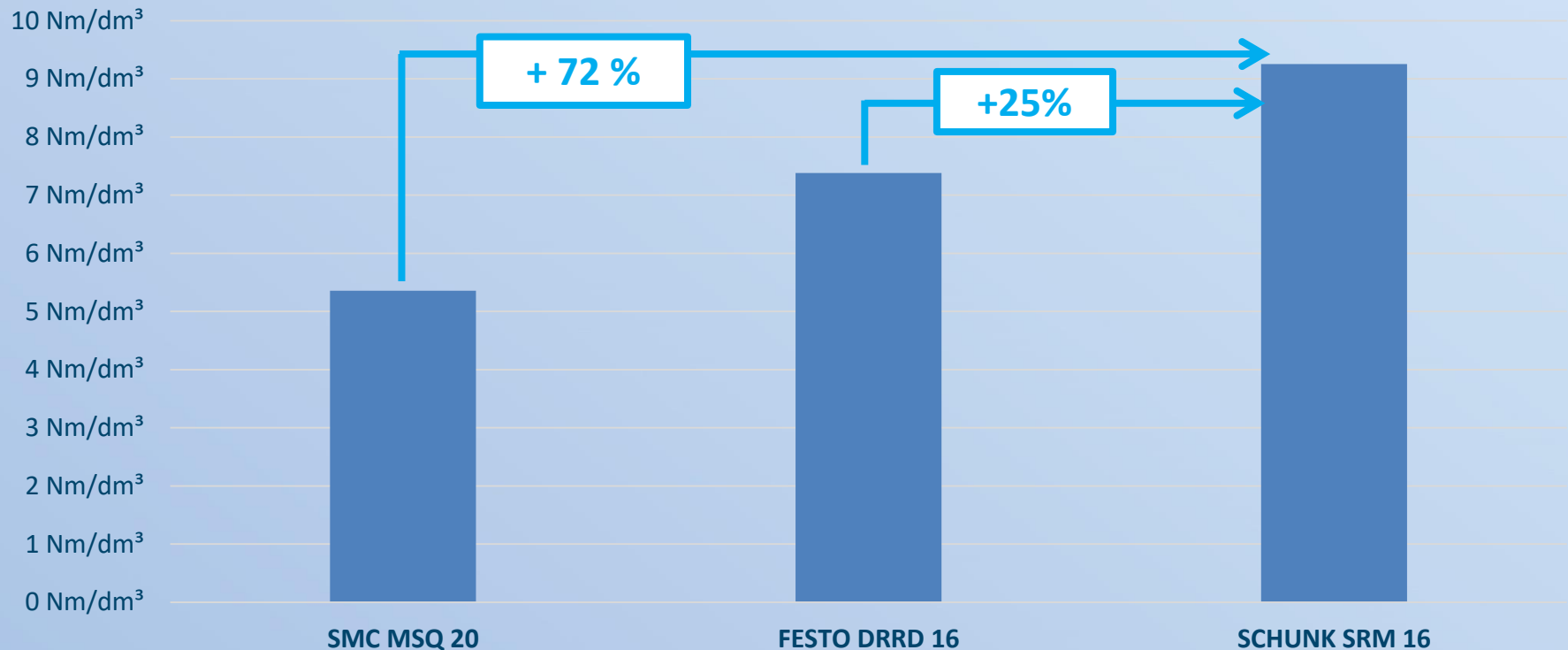


Performance indicators SRM 40 – Vertical swivel axis



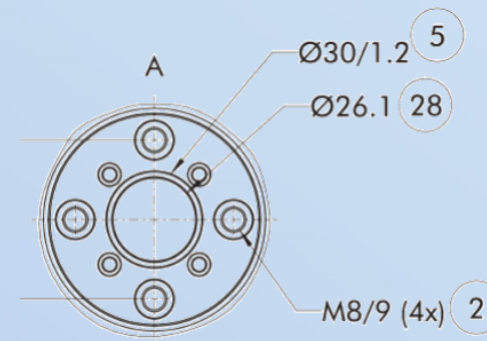
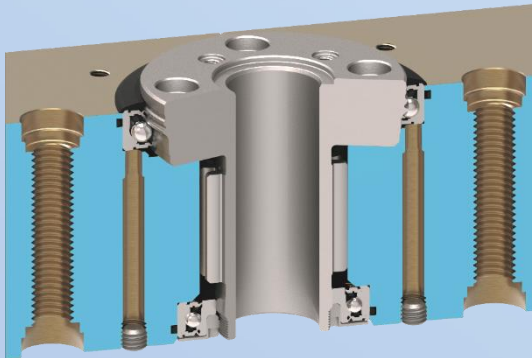
Power density

Power density
Torque / Volume



Center hole

SRM



Size of the center hole

	SRM 14	SRM 16	SRM 25	SRM 40
Ø Center hole	9 mm	10.5 mm	17.1 mm	26.1 mm

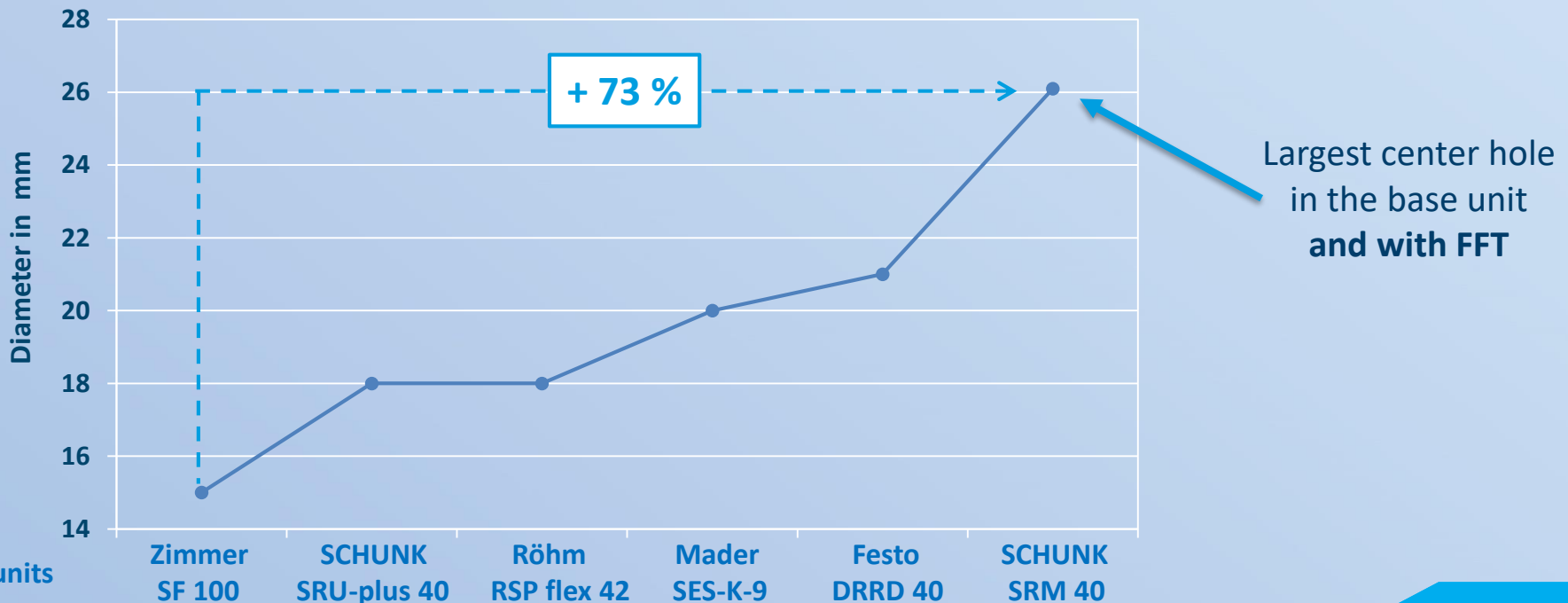
	SRU 14	SRU-plus 20	SRU-plus 25	SRU-plus 40
Ø Center hole	7.6 mm	10 mm	10 mm	18 mm

Benchmark

SRM

Largest center hole

- Customer oriented solution for automotive industry
- More cables can be put through the hole, also with plug
- Also bigger parts can be put through the hole

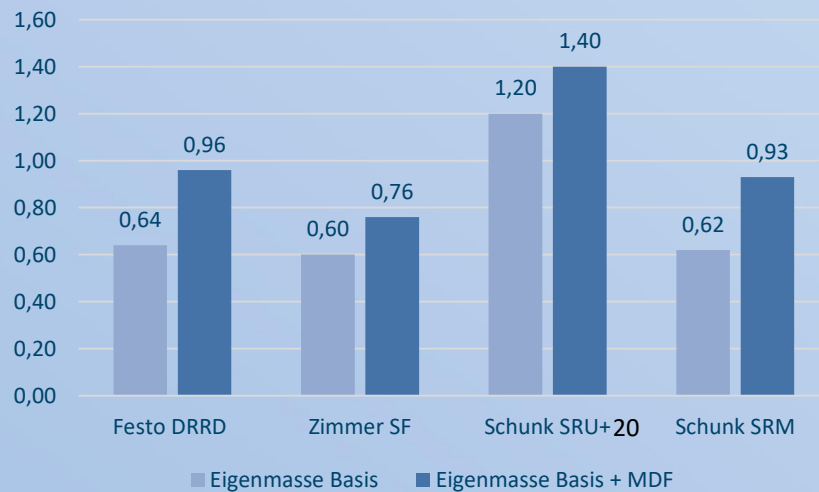


Weight

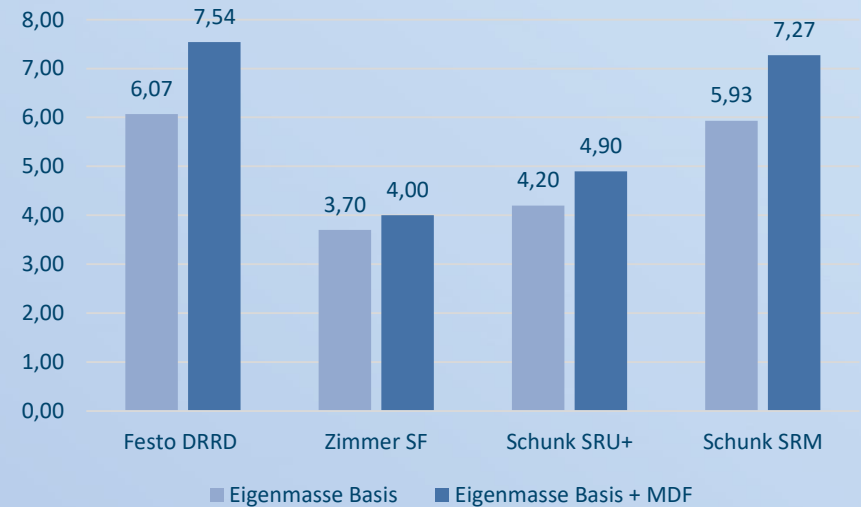
SRM



Weight comparison SRM 16

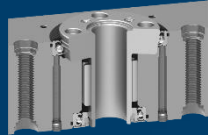


Weight comparison SRM 40



Robustness

- ✓ Pre-loaded bearing
- ✓ FKM sealing
- ✓ Screwing



Performance

- ✓ Higher torque
- ✓ Special shock absorbers
- ✓ High power density



Commissioning

- ✓ Large center bore
- ✓ Preset damper stroke
- ✓ Color-coding



Modularity

- ✓ Diversity of variants
- ✓ Freely combinable
- ✓ Spare part kits



Modularity

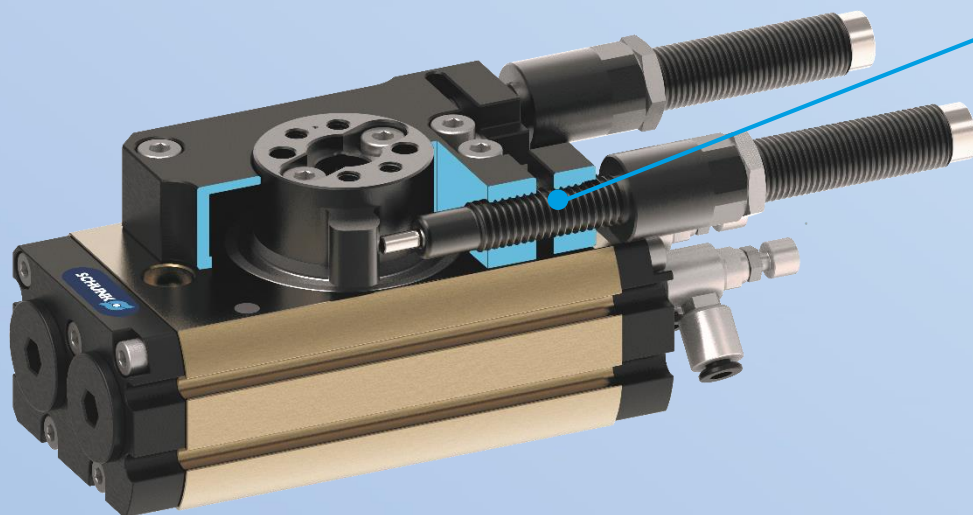
SRM



- + All options are freely combinable with each other
- + Configuration in SAP
- + Electrical feed-through top side
- + Inductive sensors
- + Fluid feed-through
- + Basic module
- + Electrical feed-through bottom side

External stop

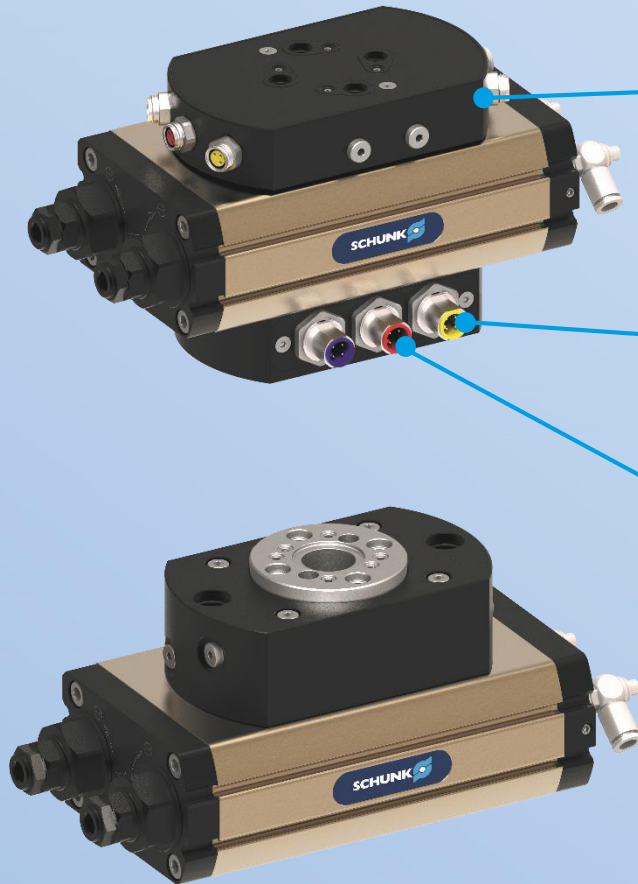
SRM



- + Option for size 10-14
- + Higher mass moment of inertia
- + Higher precision of the end position

Option FFT and EFT

SRM



- + FFT with two, four or eight pneumatic feed-throughs
- + EFT with six or ten electrical feed-throughs
- + EFT with M8 and M12 industrial connectors
- + One or two signals for each connector
- + Colored connectors for simple identification of the signal transfer
- + FFT and EFT can be used either single or together

Option FFT und EFT

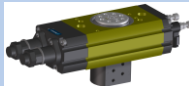
SRM

SRM 10, 12, 14

Basic-Version



MDF „bottom side“



EDF not possible



Combination of MDF
and EDF not possible



SRM 16

Basic-Version



MDF „bottom side“



EDF „top side“



Combination of MDF
and EDF not possible



SRM 20, 25, 32, 40

Basic-Version



MDF „top side“



EDF „top side“

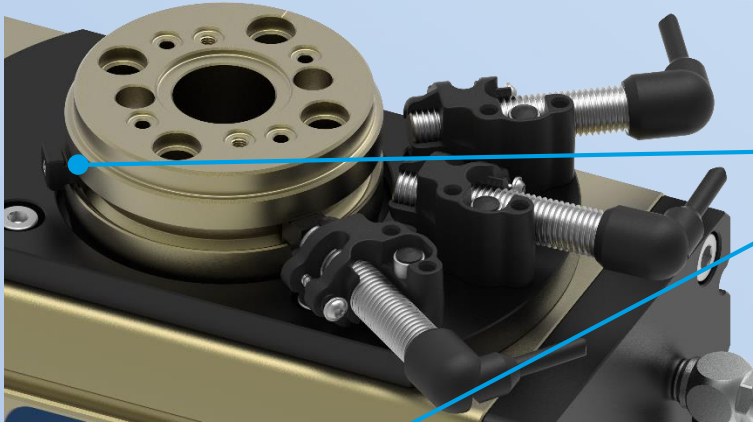


Combination of MDF
and EDF is possible

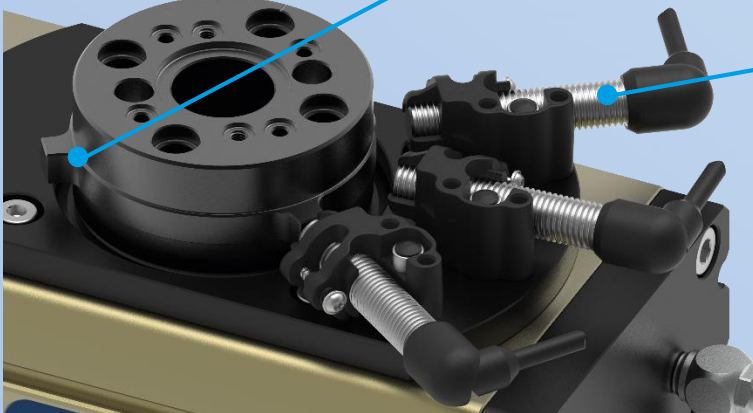


Inductive sensors

SRM

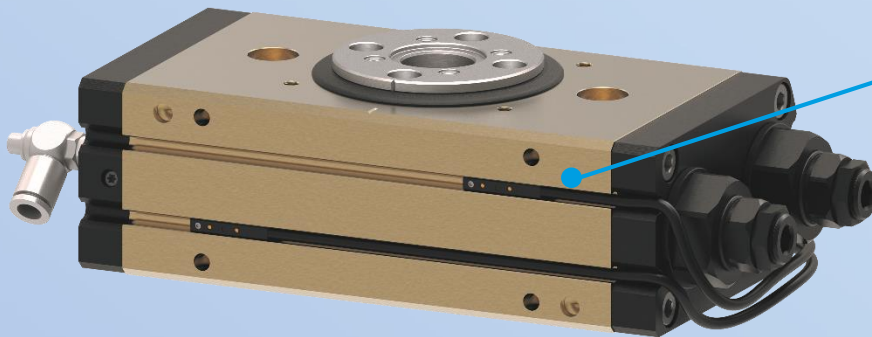


- + Attachment kit with adjustable or fixed switch cam
- + Adjustment of sensors from one side, thus replacement of sensors is possible at an implemented unit
- + IN 80 can be used
- + Three positions can be detected with the attachment kit
- + Fixing of the sensor holder and the sensor itself can be adjusted separately
- + The sensor can be inserted on a fixed stop



Magnetic sensors

SRM



- + Four C-Nuts for mounting of SCHUNK magnetic switched
- + MMS and MMS-PI1 are compatible

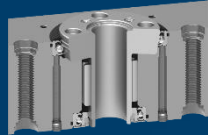


Ordering key

	SRM	25	-	H	-	180	-	3	-	4P	-	6E	-	SI
Description SRM														
Size 10/12/14/16/25/32/40														
Type of damping method H = hydraulic E = Elastomer (for sizes 10-14) X = external damping (for sizes 10-14) S = Speed damping (for sizes 14)														
Swivel angle 90°/180°														
End position adjustability 3 = $\pm 3^\circ$ 90 = $+5^\circ/-95^\circ$ (for sizes 10 - 14) 90 = $+3^\circ/-93^\circ$ (for sizes 16 - 40)														
Number of media feed-throughs - = no 2P = 2 pneumatic feed-throughs (for size 10) 4P = 4 pneumatic feed-throughs (for sizes 12 - 40)														
Number of connectors for electric rotary feed-through - = no 6E = 6 connectors per side (for sizes 16-32) 10E = 10 connectors per side (for size 40)														
Option for inductive proximity switches - = no SI = with adjustable position SF = with fixed position														

Robustness

- ✓ Pre-loaded bearing
- ✓ FKM sealing
- ✓ Screwing



Performance

- ✓ Higher torque
- ✓ Special shock absorbers
- ✓ High power density



Commissioning

- ✓ Large center bore
- ✓ Preset damper stroke
- ✓ Color-coding



Modularity

- ✓ Diversity of variants
- ✓ Freely combinable
- ✓ Spare part kits



Assembly

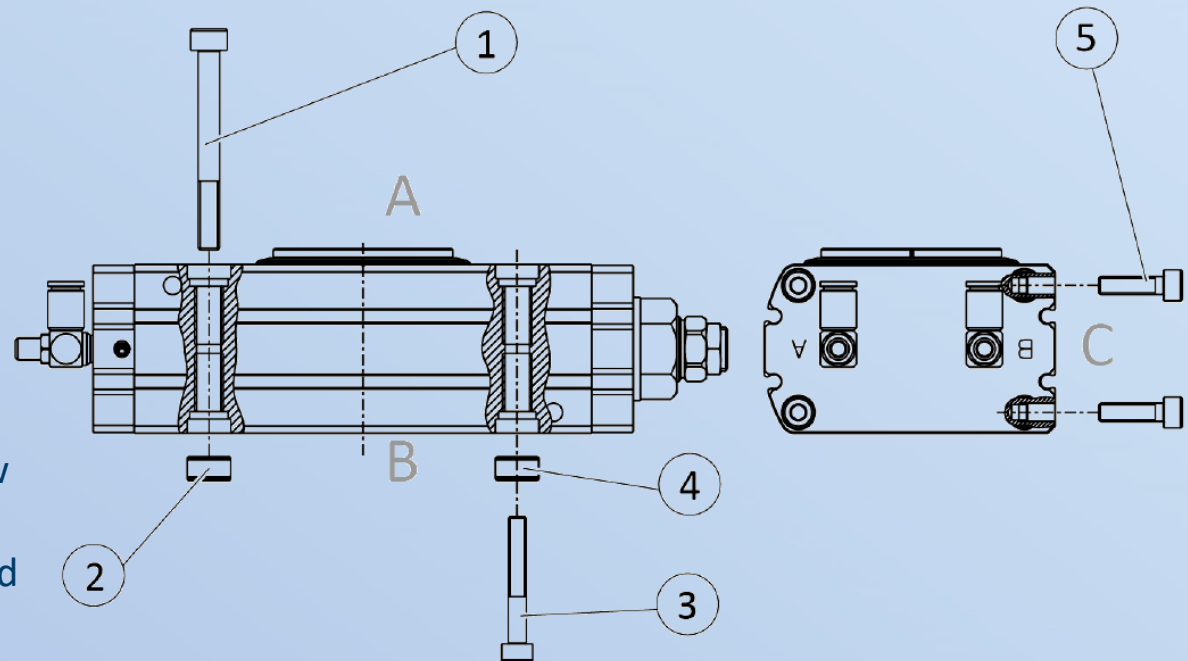
SRM

Mechanical connection SRM

The swivel unit can be mounted from 3 sides

- On the side of apparatus via threaded holes(B)
- On the attachment side via through-bores (A)
- On the side via threaded holes (C)

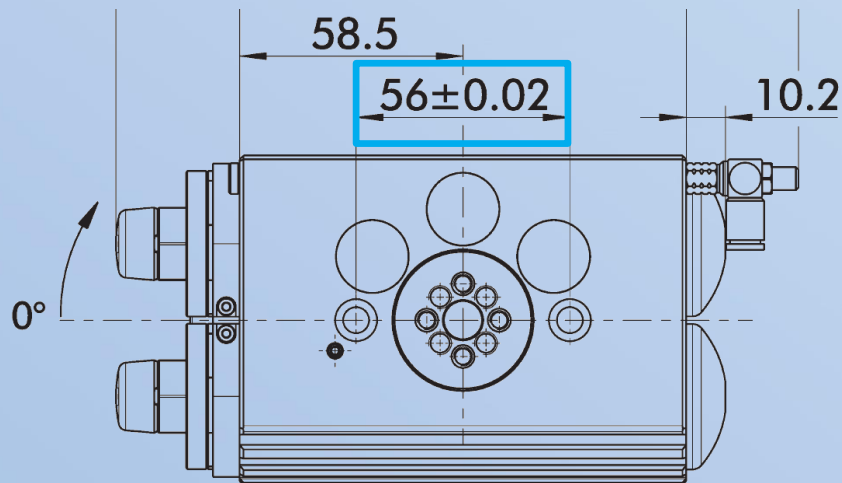
Compared to the SRU-plus, the screw connections have been designed more robustly (e.g. larger threads and larger hole spacing)



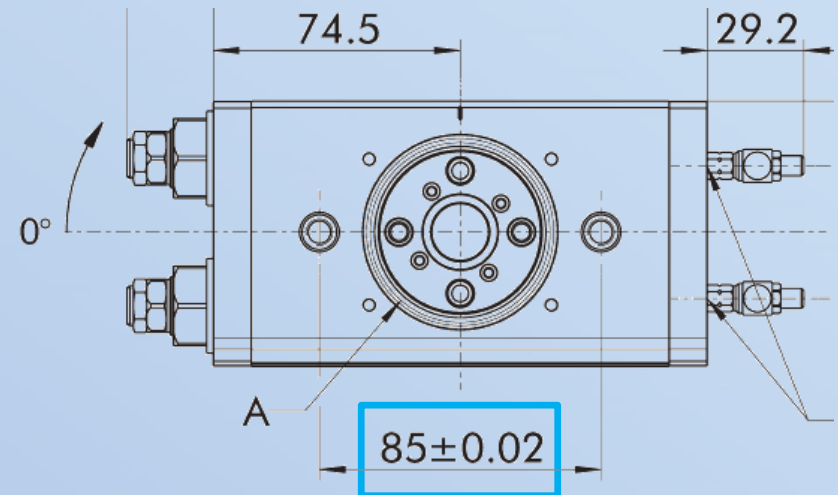
Assembly

Larger distance of screwing threads

→ Less moment loading of the screws



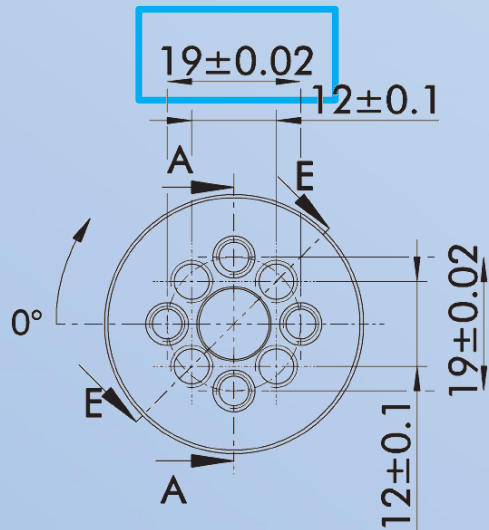
SRM



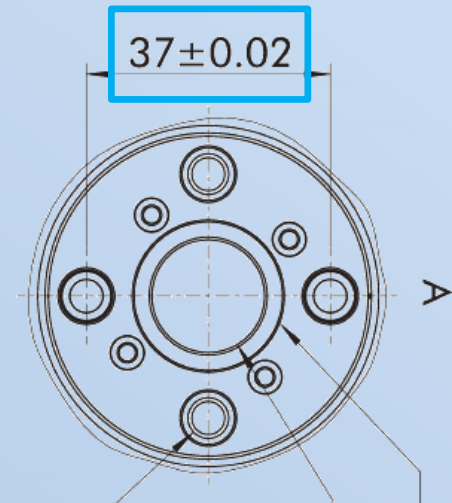
Assembly

Larger inner circle for screwing of the assembly

→ Less moment loading of the screws



SRM



Commissioning

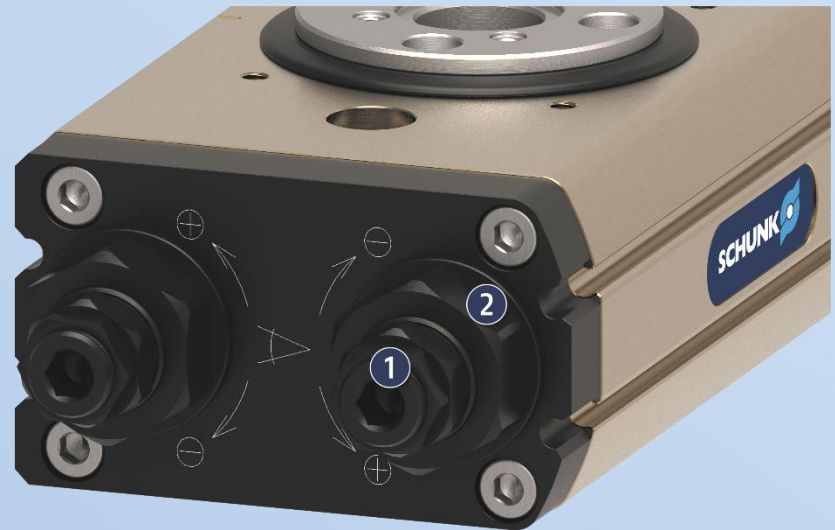
SRM

Commissioning possibilities

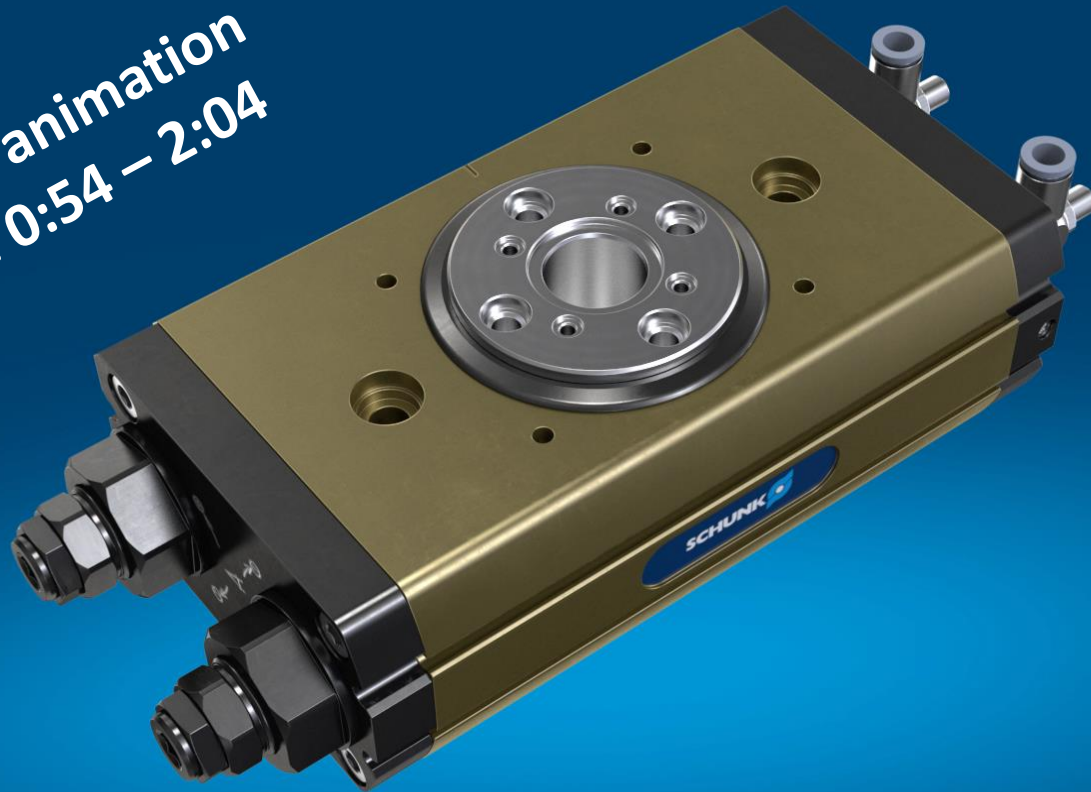
Adjustment of shock absorber and end position via adjustment screws on the side.

Cover can be unscrewed completely

→ No readjustment of shock absorber stroke and end position is necessary after replacement of shock absorbers



Product animation
Scene: 0:54 – 2:04



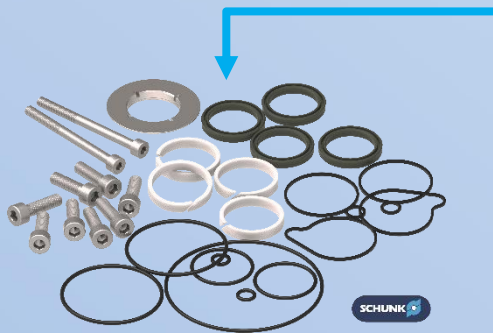
SRM

Superior Clamping and Gripping



Spare part kits & service

SRM



ETP sealing kit



ETP sealing FFT



ETP shock absorber



WZG disassembly tool sealing kit

Sales supporting

- ✓ Flyer
- ✓ Website
- ✓ Catalogue
- ✓ Animation
- ✓ Presentation





Use the benefits:

Robust and durable

- Robust flange connection
- High load and torque absorption due to the lack of play in the pre-loaded bearing of the pinion
- High-quality FKM seals with high resilience and long service life

Maximum performance

- Unique combination of high torque and increased mass moment of inertia with short swivel times
- High power density with compact design
- Up to 25% increased torque due to bigger pitch circle of the pinion

Easy commissioning

- Preset damper stroke, therefore the customer must only adjust the air throttles
- Large center bore for simple feed-through of pneumatic supply lines and electric standard cables
- For the electrical media feed-through, the sensor cables can be inserted directly. The color-coding of the plug connectors simplifies the signal allocation

Modular diversity

- Any design of the SRM with either air feed-through MDF or electrical feed-through EDF for individual use
- Reliable feed-through of compressed air or electrical signals to the actuator
- Simple maintenance and exchange of wearing parts due to the modular design



Modular system

Individual fields of application through optimal air feed-through MDF and electrical feed-through EDF, can be combined in any way desired



Robust and large flange connection diagram

for higher forces and torques with compact design



Robust seal

made of FKM, very long-life and resilient



Up to 25% more torque moment

due to the large pitch circle of the pinion



Specially developed shock absorbers

for increased moments of inertia for shorter swivel times



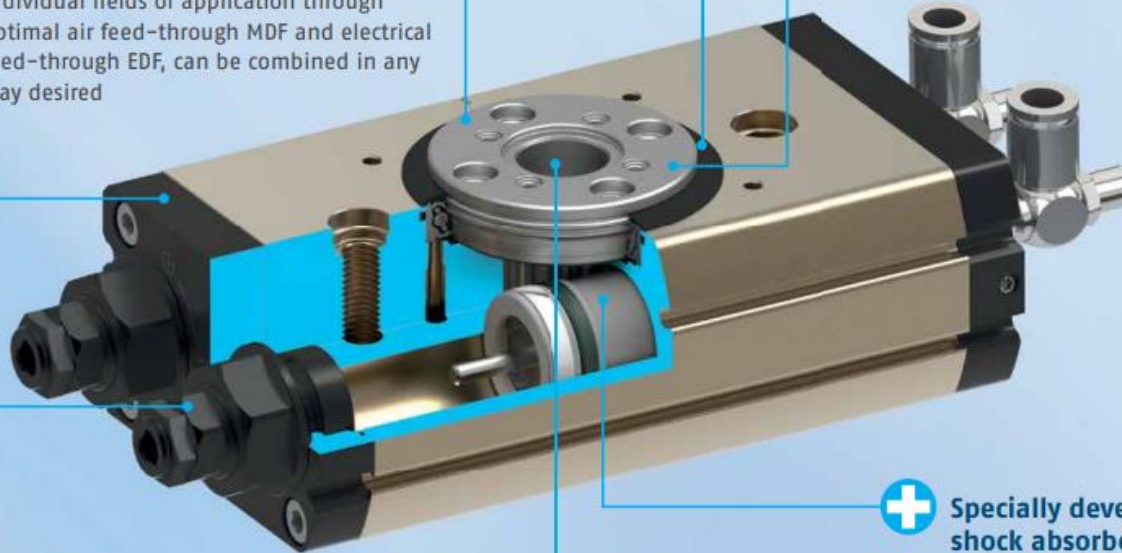
Pre-adjusted shock absorber stroke

Meaning faster commissioning



Up to 55% larger center bore

The biggest of its class.
Problem-free feed-through of supply lines and electrical cables





Air feed-through MDF

- 4-fold optional air feed-through
- Direct air supply of the actuators
- Increased reliability and better performance



Electrical feed-through EDF

- Optionally with up to 10 sensor signals
- Simple integration of sensor systems without the risk of cable breakage
- Connector sizes M8 and M12 available
- Color-coded connectors for easier commissioning



Combination of electrical feed-through EDF and air feed-through MDF

- To supply pneumatic and electrical actuators and the feed-through of electrical sensor signals
- Can be combined in a modular form without additional components
- Simple maintenance of the individual attachment modules



Mounting kit for monitoring with inductive sensors

- Safe monitoring, also without magnetic switch
- Can be combined directly with other options
- Simple adjustment of the sensors by means of clamping screw on the side



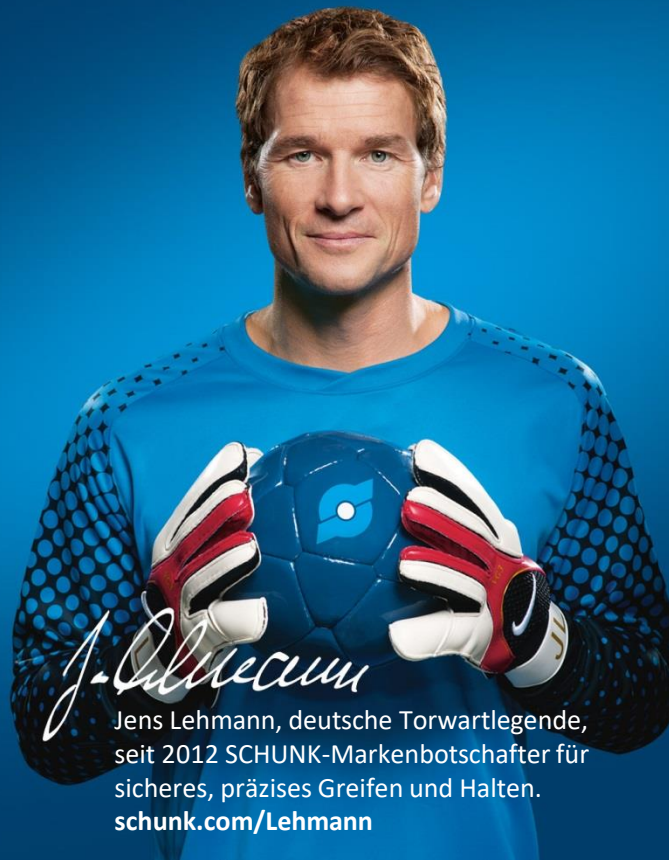
Advantages – Your benefits

- **Finely graded series with a steady increase in torque** for multiple cases of application, the correct size as a standard product is available
- **Large center bore** for feed-through of cables and hoses with the same unit height
- **Pre-adjusted shock absorber stroke** for fast and easy commissioning
- **Swivel angle can be selected as either 90° or 180°** complete flexibility in selecting the swivel angle; special angles available on request

SRM

- **Selectable end position adjustability either small or large** for flexible adjustability of the swivel angle
- **Optionally attachable fluid feed-through and electrical feed-through** for permanently safe feed-through of gases, vacuum, and electrical sensor and actuator signals
- **Modular attachment to various options** for individual adjustment to various cases of application
- **Choice of electronic magnetic sensors or inductive proximity sensors** for absolute variability of position monitoring

Superior Clamping and Gripping



Jens Lehmann, deutsche Torwartlegende,
seit 2012 SCHUNK-Markenbotschafter für
sicheres, präzises Greifen und Halten.
schunk.com/Lehmann

