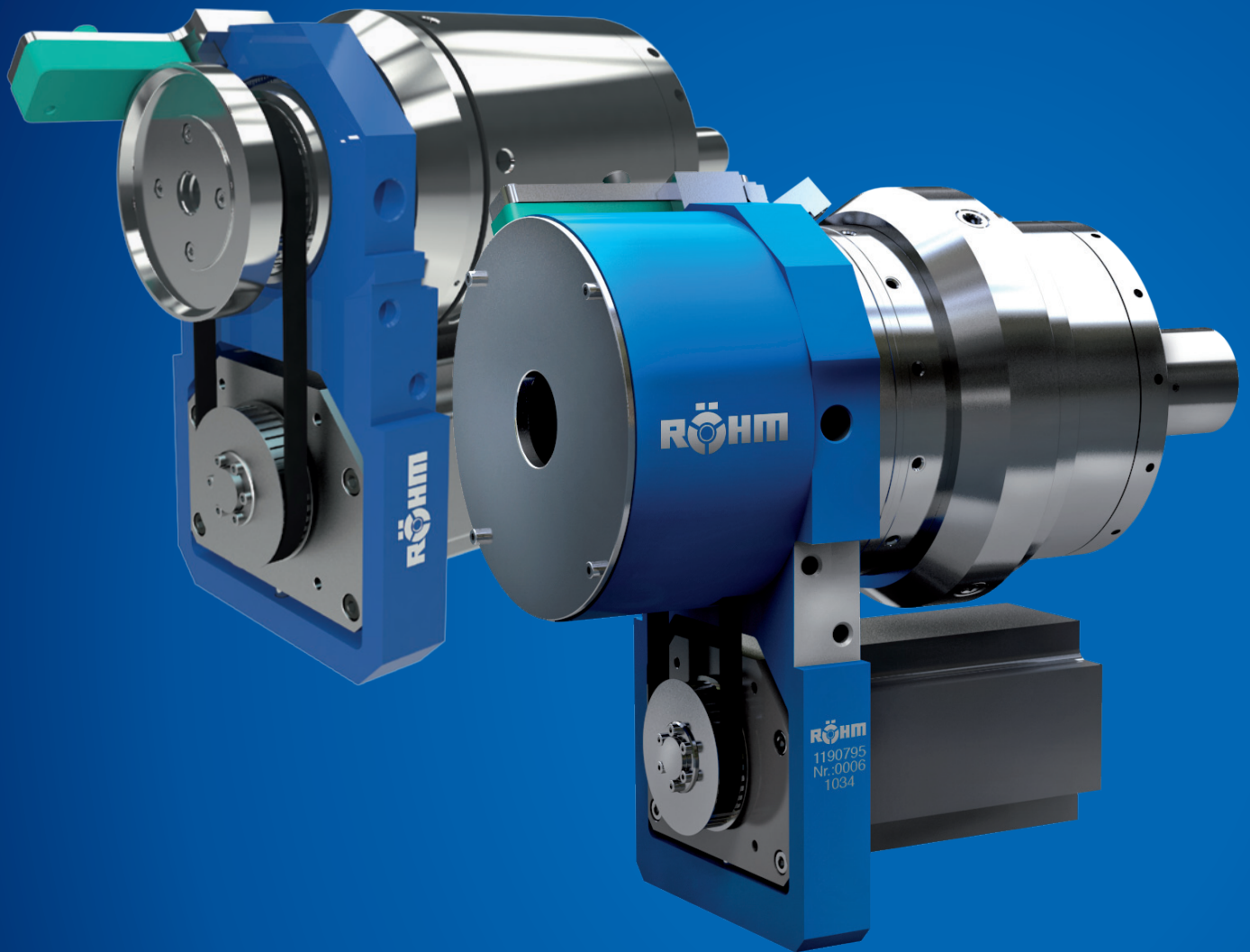


ENERGY EFFICIENCY



e-Cylinder

Saves energy and cash

Calculation example for energy and time saving

Sample calculation for energy savings with an electrical cylinder:

Energy consumption of a hydraulic clamping cylinder:

Output of hydraulic unit:	1,5 kW
Power dissipation from cylinders:	0,9 kW
Total output of a hydraulic clamping cylinder:	2,4 kW

Energy consumption per year: 14.400 kWh

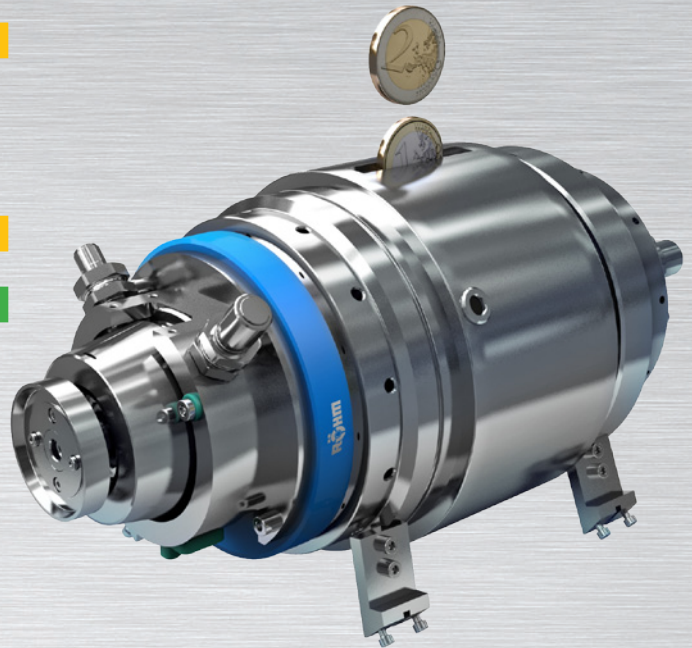
Energy consumption of an electrical cylinder:

Total output of the EHS:	0,2 kW
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Energy consumption per year: 1.200 kWh

Energy saving potential per year: 13.200 kWh

The above assumptions have been based on a standard manufacturing process in three-shift operation and may vary depending on the application involved. Where greater efficiency is achieved in the processing (e.g. by getting the best possible match between the cylinder and the process, or through shorter lift times), even more energy can be saved by indirect means.



Reducing the workpiece changing times

With our e-Cylinder you can adjust strokes flexible on different workpieces - it minimizes the time for the clamping and releasing operation.

Particularly when machining different workpieces the advantages of the e-Cylinder can be fully exploited, as the following example shows:

Stroke time hydraulic cylinder

Required stroke: 10 mm
Effective stroke: depending on the workpiece

	release position	clamping position	stroke time
Workpiece 1	0 mm	12 mm	0,9 s
Workpiece 2	0 mm	18 mm	1,3 s
Workpiece 3	0 mm	24 mm	1,6 s
Average stroke time¹			1,3 s

Stroke time electrical cylinder

Required stroke: 10 mm
Effective stroke: 10 mm

	release position	clamping position	stroke time
Workpiece 1	2 mm	12 mm	0,9 s
Workpiece 2	8 mm	18 mm	0,9 s
Workpiece 3	14 mm	24 mm	0,9 s
Average stroke time¹			0,9 s

Difference per workpiece (Clamping and releasing operation) 0,8 s

With a cycle time of 100 seconds 0,8 %

Energy saving potential per year²: 48 h

With a cycle time of 40 seconds 2 %

Energy saving potential per year²: 120 h

¹ Average level, depending on hydraulic performance, clamping device and workpiece

² At 6.000 hours of operation (three-shift operation)



E-Cylinders

All Advantages at a glance - The RÖHM e-Cylinders

efficient & flexible

The RÖHM e-Cylinders can be optimally adapted to your workpiece within seconds. Therefore both forces and strokes can be adjusted via machine control. Due to a reduction of strokes to the minimal requirements valuable time can be saved.

environmental friendly

Due to the use of e-Cylinders you clearly decrease the energy consumption of your machine and increase your efficiency. The oil free machine ensures a clean and pleasant working environment.

precise

Due to the sensitive regulation of the clamping force even damageable workpieces can be machined precisely. Since a change in force is possible during rotation as well, the force can be reduced for the finishing process for example. Furthermore the thermal influences on the spindle are clearly lower than on hydraulic components.

low maintenance

Due to the omission of the hydraulic components the maintenance effort is reduced extremely. Therefore neither a check nor a change of oil is necessary, for example. The risk of leakage is eliminated completely. The control device detects the need for maintenance and reports it preventively. That way downtime can be avoided and maintenance intervals can be extended.

safe

The permanent sensorial monitoring of force and position grants secure processes. That way e.g. faulty raw parts can be recognized immediately. The clamping force safety ensures total safety via energy storage - even in case of power failure.



Even more compact!

EVS



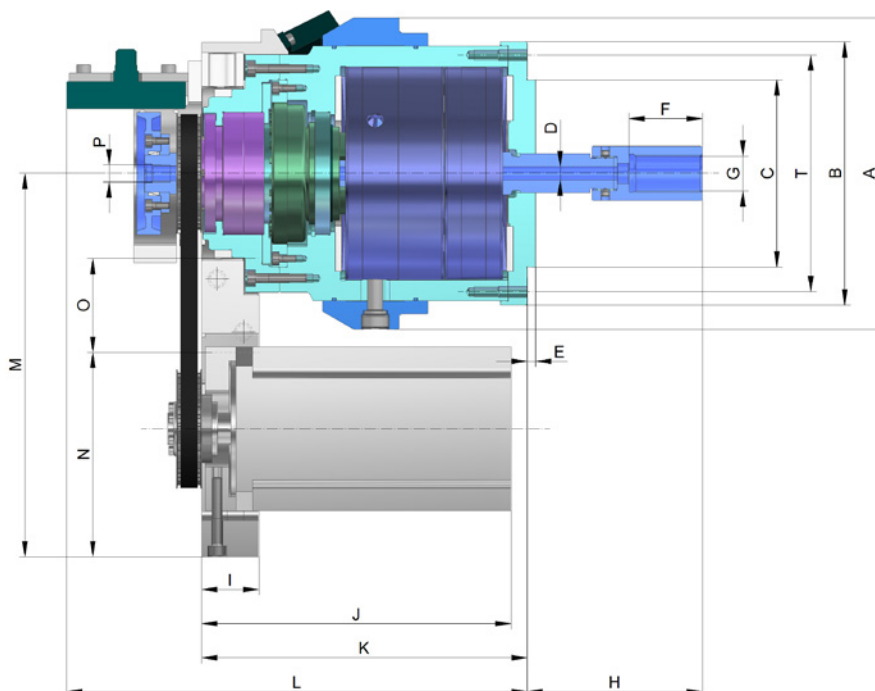
Electrical cylinder EVS for actuating chucks without through-hole. Especially suitable for safety and energy efficient clamping of workpieces on lathes and grinding machines.

With through hole Ø 11mm for coolant or other media.
Max. pull-in / compressing force: 50 kN

Scope of delivery:

- Compact electrical cylinder including
 - Servodrive
 - Complete sensor technology
 - Control modul with software, available data interface
 - ProfiBus
 - ProfiNet
 - CANOpen
 - Further interfaces on request
- Drive controller
- Electric lines to electrical cylinder

Typ			EVS 50
Item no.			1203050
Max. pull-in / compressing force		kN	50
Total stroke		mm	32
Outer diameter	A	mm	144
Centering diameter	C	mm	110 ^{h6}
Through-hole	D	mm	11
	E	mm	5
Pitch circle spindle connection (M6 - 10x36°) T		mm	129
	F	mm	43
Connecting thread draw bar	G	mm	M22x1,5
Stroke min./max.	H	mm	72 / 104
	I	mm	33,5
	J	mm	180
	K	mm	192,5
	L	mm	275
	M	mm	195,5
	N	mm	110,5
Connection for mounting at spindle case	O	mm	55
Connection for media supply	P	mm	5/8 - 18 UNF
Speed max.		min ⁻¹	6.000
Weight		kg	34,8
Rotating mass		kg	24,1
Moment of inertia		kgm ²	0,05





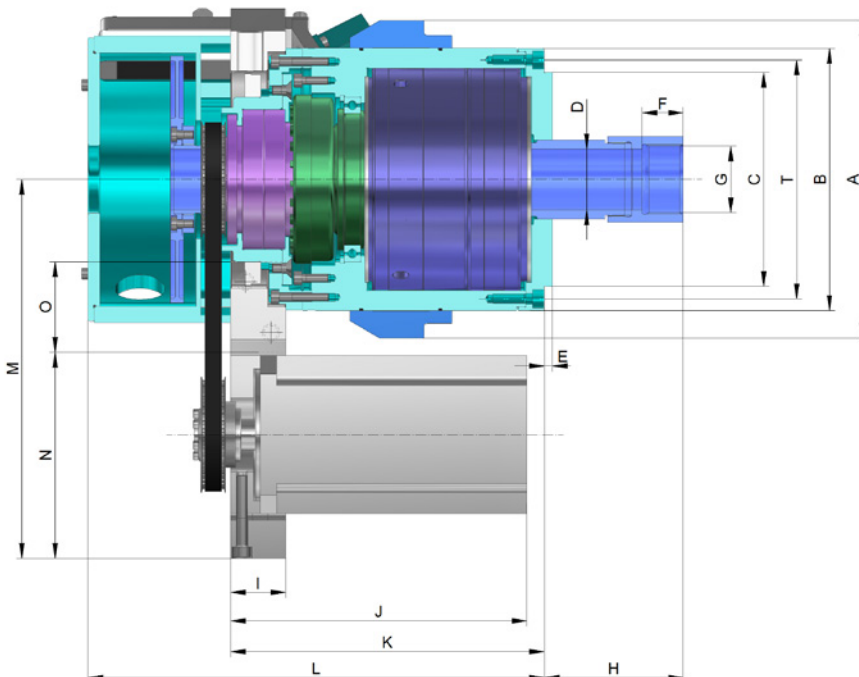
Electrical cylinder EHS for actuating chucks with through-hole. Especially suitable for clamping bars with an outside diameter of up to 67 mm on lathes and grinding machines.

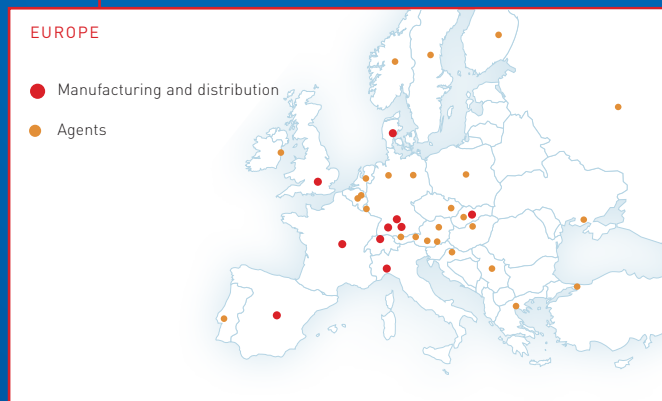
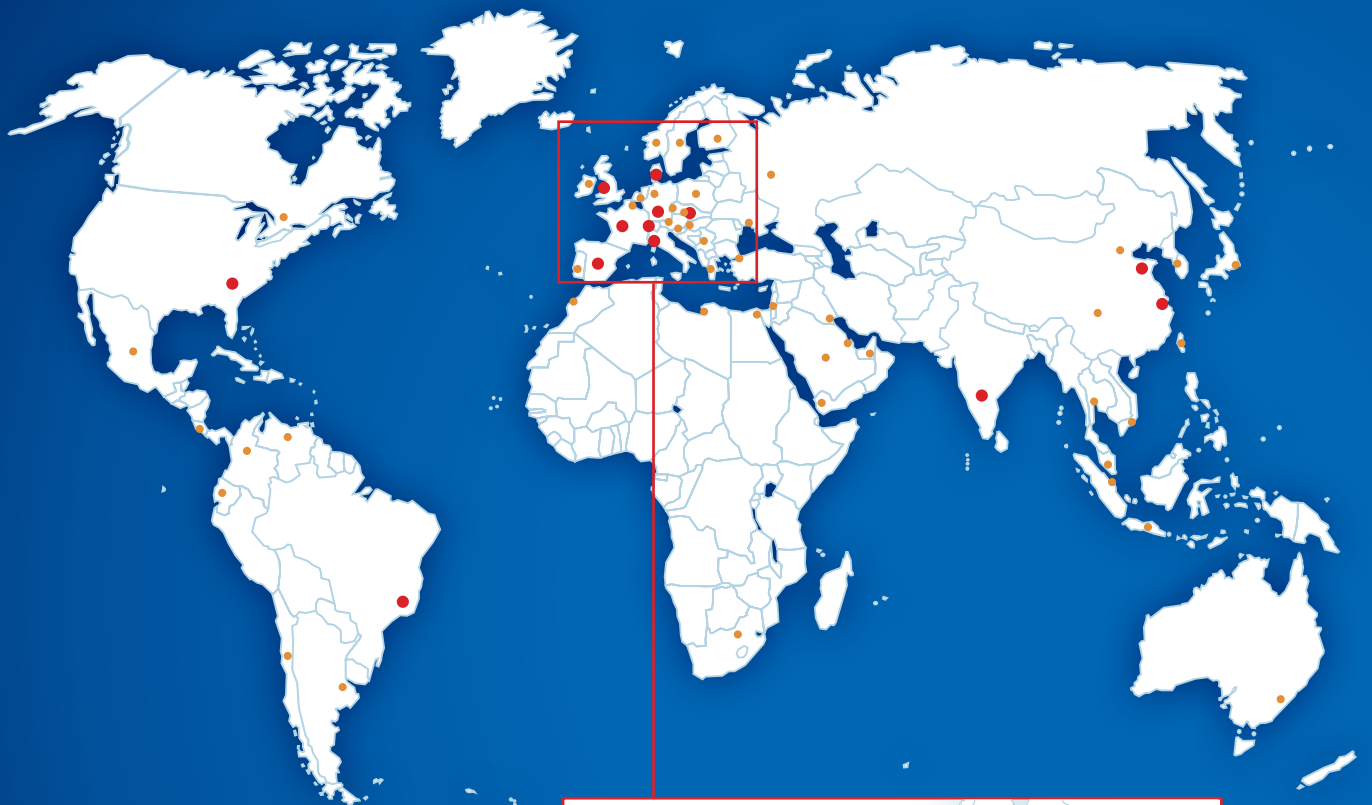
Max. pull-in / compressing force: 68 kN

Scope of delivery:

- Compact electrical cylinder
- Servodrive
- Complete sensor technology
- Control modul with software, available data interface
 - ProfiBus
 - ProfiNet
 - CANOpen
 - Further interfaces on request
- Drive controller
- Electric lines from control modul

		EHS 37 / 50	EHS 67 / 68
Item no.		1190795	1239541
Max. pull-in / compressing force	kN	50	68
Total stroke	mm	32	32
Outer diameter	A mm	193	255,5
Ø	B mm	159,3	209,8
Centering diameter	C mm	130 ^{h6}	170 ^{h6}
Through-hole	D mm	37	67
	E mm	5	8
Pitch circle spindle connection (M6 - 10x36°) T	mm	145	196
	F mm	25	25
Connecting thread draw bar	G mm	M42x1,5	M75x2
Stroke min./max.	H mm	52,5 / 84,5	89 / 57
	I mm	33,5	33,5
	J mm	180	180
	K mm	192,6	226,6
	L mm	279,1	318,1
	M mm	230	260
	N mm	125	130
Connection for mounting at spindle case	O mm	55	55
Speed max.	min ⁻¹	6.000	6.000
Weight	kg	36,9	70
Rotating mass	kg	26,2	53
Moment of inertia	kgm ²	0,107	0,36





driven by technology

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