Heinz Fiege
Spindle Technology

Quality.
Precision.
Performance.

Spindle technology | Dressing technology | HF motors

ENGINEERED.
MANUFACTURED.
100% IN GERMANY.

Highlights

Customised spindles – high end technology to meet customers' demands

Many specifications for spindle systems cannot be covered by standard products alone. As a renowned spindle manufacturer, this is where we come into our own. We excel at special designs, from the simple modification of a standard product to the development of something completely new … Page 12

Sustainability through efficiency – responsible use of energy from wind, water and solar

Top performance is frequently called for where Fiege products are deployed. However, it is just as important that futureproof technology should work efficiently, too. Higher performance, lower energy consumption – it's a tall order, but Fiege has the right solutions. Page 08

Leading the way in quality and precision – through solid expertise and highly committed staff

Fiege has delivered application-specific spindle technology of the highest standard for over 50 years. We are pioneers in the field of spindle and dressing technology. This means that recent research developments frequently find their way into our products. Page 04

Professional spindle service – we are well prepared for the "worst case scenario"

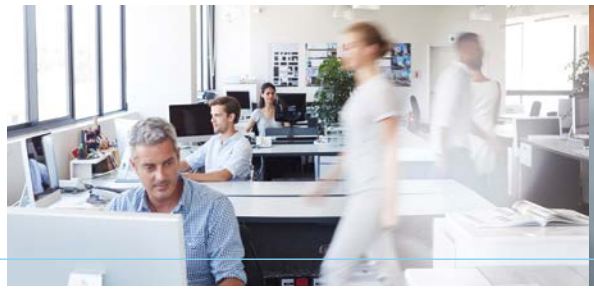
A spindle unit is subject to extreme stresses. Even robust materials and perfect workmanship cannot prevent wear and tear. Should repairs be required, our experienced technicians are ready to help with the well-coordinated Fiege spindle service. Page 92

oem
original equipment manufacturer

A reputation for high quality has established the Fiege product range as a potent OEM for internationally renowned machine tool manufacturers.

When skilled engineers work with the best materials, products of the highest quality result.

Fiege has delivered application-specific spindle technology of the highest standard for over 50 years. We are pioneers in the field of spindle and dressing technology. This means that recent research developments frequently find their way into our products. Some of the main factors that enable Fiege products to meet the highest standards include: ongoing development, expertise in applications to the limit of that which is technically possible, high precision manufacturing and a demanding quality policy.
Heinz Fiege GmbH is part of LTI Motion GmbH.
LTI Motion is part of Körber AG of Hamburg.



Fiege – where tradition and innovation combine to create the perfect fit

Fiege is now regarded as the specialist for spindle and dressing technology – a position we have acquired through our extensive expertise in consulting, design, manufacturing and our exceptional level of service. We offer all the benefits of a traditional SME – quick decision making, high flexibility and reliability as well as a keen sense of quality and a flair for innovation.

Customers – quality means customers return, not products

Our success is confirmed by our large number of satisfied and loyal customers worldwide. These are mainly renowned machine tool manufacturers in sectors such as the glass, wood, plastic, metal and diamond industries, with whom we enjoy longstanding business relationships.

Products – experience and solid expertise together produce top class spindles

We love challenges that demand something of us – they let us demonstrate what we can do. The combination of years of experience with our latest in-house developments and the results of academic research produces technically mature, reliable products of unassailable quality. Our qualified experts – supported by our state of the art facility – exceed all customer expectations.

Precision is our trademark – in production and in the field.

With “Spindle technology from Fiege”, you benefit from the latest technology and research to emerge from the bearing, motor and sensor technology, lubrication, sealing and materials sectors, to name but a few. Our highly trained technicians and engineers design reliable and technically advanced products to suit a wide range of applications in process technology – always in close cooperation with our customers. To do this, we use the latest CAD systems.

Turning on a CNC machine

Surface grinding intermediate rings

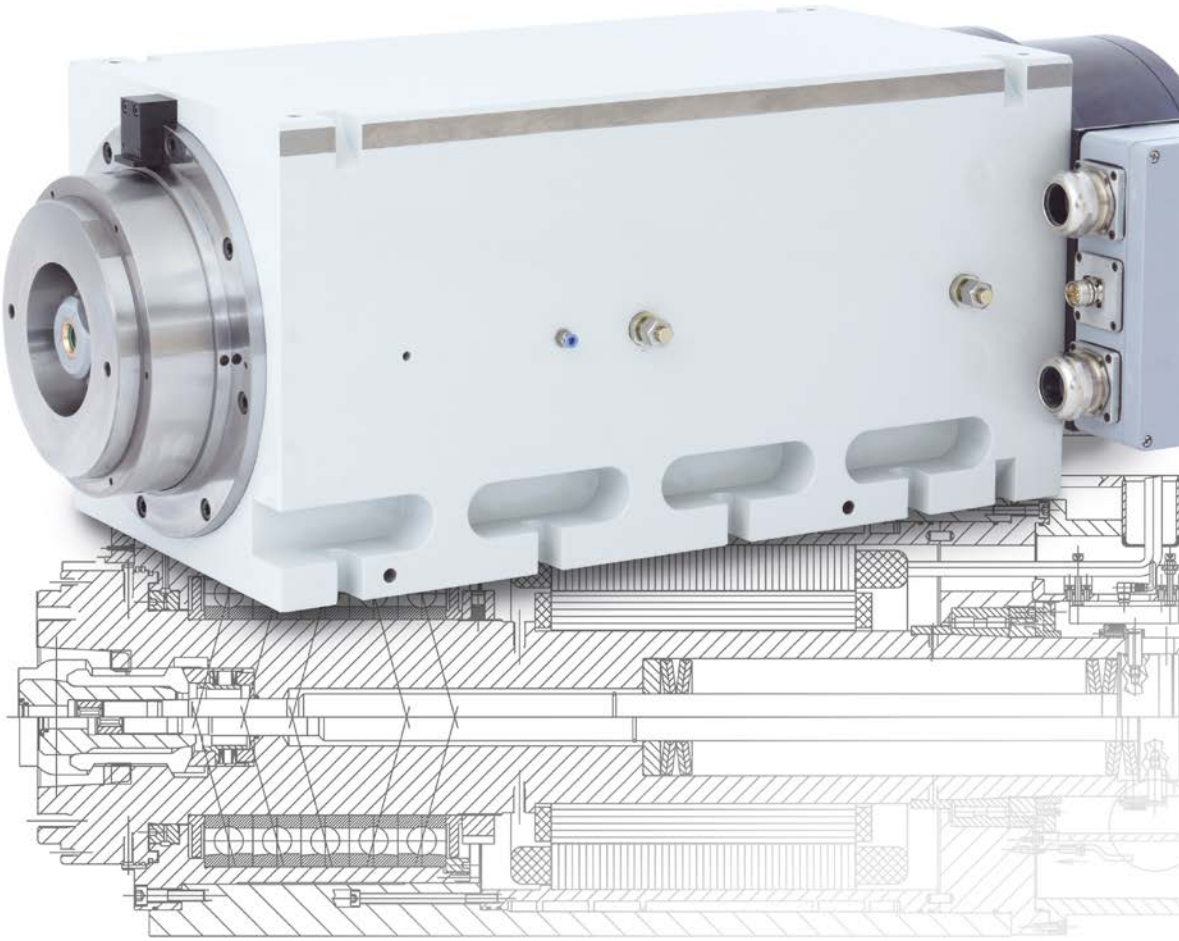
Manufacturing – trained personnel and leading edge technology

A production area of 4,000 m², state of the art machinery, plus qualified and experienced staff, enable Fiege to ensure an outstanding manufacturing depth, which guarantees that our customers only receive products of the highest quality. To ensure this remains the case well into the future, we intend to continue to invest in staff training and new machinery.

Quality control – reliable foundations for lasting customer satisfaction

Fiege continuously checks individual components during production. Prior to assembly, products undergo a rigorous final inspection with an acceptance report. We are committed to upholding our reputation for precision for the benefit of our customers.

ENGINEERED.
MANUFACTURED.
100% IN GERMANY.



Every Fiege product is designed for efficiency, but that's just the start.

Top performance is frequently called for where Fiege products are deployed. However, it is just as important that futureproof technology should work efficiently, too. Higher performance, lower energy consumption – it's a tall order, but Fiege has the right solutions. This pioneering approach distinguishes our products and has long been an integral part of our company philosophy.

> Achieving more with less – this is the guiding principle by which we endeavour to secure our company's long term success, sustainably protect the environment and strengthen our region for the future."
>
> Mathias Fiege · Managing Director

As a longstanding family enterprise with over 60 employees, we are closely connected to our region and its people. Today, we are part of Körber AG of Hamburg which employs 12,000 staff worldwide and belongs to the automation business sector. The protection of the environment is one of our primary concerns, and something we are mindful of in all our daily actions.

Demand for energy – less is more

Fiege products are proof that high performance is possible without high consumption. This not only protects our environment, it also reduces operating costs considerably. We ensure that any new equipment in our plant also has an excellent energy rating.

Waste management – recycling preferred

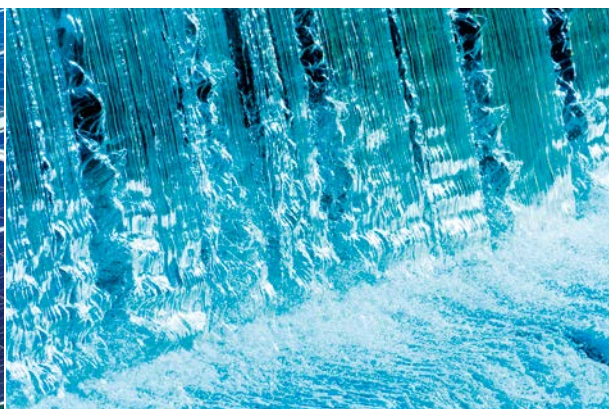
Avoiding waste and ensuring optimum use of all resources is a top priority for Fiege. However, it is not always possible to avoid waste completely. In these instances, high grade and valuable materials are recycled or disposed of correctly.

Natural energy sources – the company prefers to run on wind, water and solar

Renewable energies have long been the preferred energy source for Fiege. As a manufacturing company, we feel that we have a special responsibility in this regard. As a consequence, we are committed to keeping our daily energy demand as low as possible.

Using raw materials responsibly – reduces costs and protects the environment

As much as necessary, as little as possible – a maxim we follow when it comes to handling the raw materials used in our products. Fiege products are traditionally characterised by high quality and robust materials. A tradition that pays off – because durability also means sustainability.



When top performance is required, only Fiege will do.

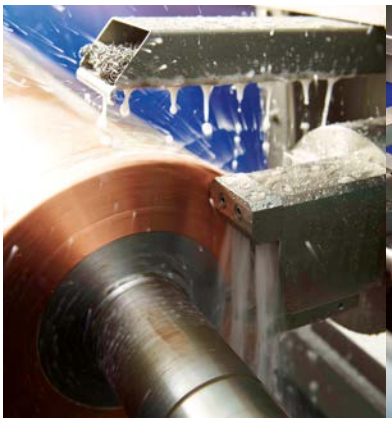
Rotational speeds of up to 50,000 rpm speak for themselves: Fiege spindles have what it takes. With all the forces that come into play at this load, the precision with which the spindles operate, is vital (concentricity on the mounting taper <0.002 mm). Quality of the highest level is the result, no matter what the application area.

Application examples

- Measuring
- Balancing
- Tool grinding
- Glass grinding
- Milling
- Drilling
- Turning
- Surface grinding
- Boring
- Acceleration
- Polishing
- Superfinishing
- Thread grinding
- Rolling
- Centreless grinding
- Glass wool spinner
- Vertical grinding
- Workpiece spindles
- Dressing
- Abrasive cutting
- Sawing

Woodworking

In large machining centres in the woodworking industry, entire wall segments for prefabricated timber buildings are made in a single operation. The outer dimensions are cut to size with a saw. Window openings, doors and cable ducts are cut with PCD milling tools.

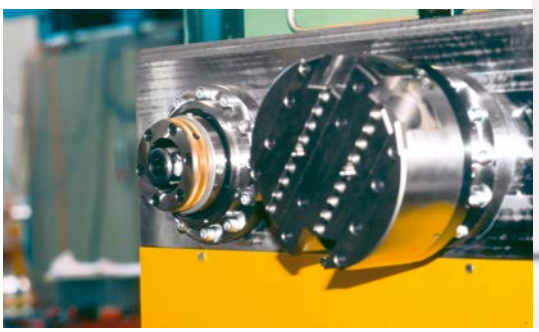


Processing gravure cylinders

Externally driven workpiece spindles clamp the workpiece between centres or in jigs. Workpiece weights up to 8 tonnes must be rotated and held with great precision. Bearing rigidity is particularly important here. Aqueous media are used for cooling. The spindles are made entirely of stainless material.

Transfer lines for mass-produced parts

Machining lines for milling and drilling mass-produced parts are generally precisely matched to the workpiece. Our spindle concepts, which are specifically adapted to the application in terms of performance, speed and type, are ideal.



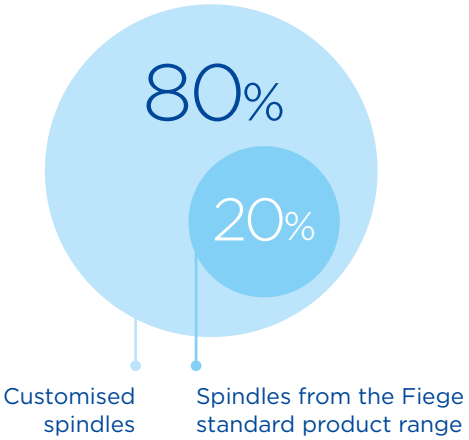
Long spindle neck with integrated sensor technology
- Temperature sensors for monitoring spindle bearings
- Open-centre integrated balancing system
- Integrated O/I sensors

Customised solutions
to meet customers' demands: this is where we excel.

Many specifications for spindle systems cannot be covered by standard products alone – so it's a good thing we have Fiege. As a renowned machine tool manufacturer, we excel at special designs. This is where our experienced engineers and technicians bring all their expertise to bear. Whether it be in the modification of a standard product or the creation of something completely new, in the end, you have a spindle system that is a perfect fit.

Custom-built products – because "bespoke" is the norm for Fiege

Four out of five Fiege spindles sold are specials. For us, "special" has become the norm, and every customer is given individual attention. Modifications can be applied to every spindle component: design, material selection, performance … the only standard we apply here is the discovery of the best possible and most efficient solution in the field.

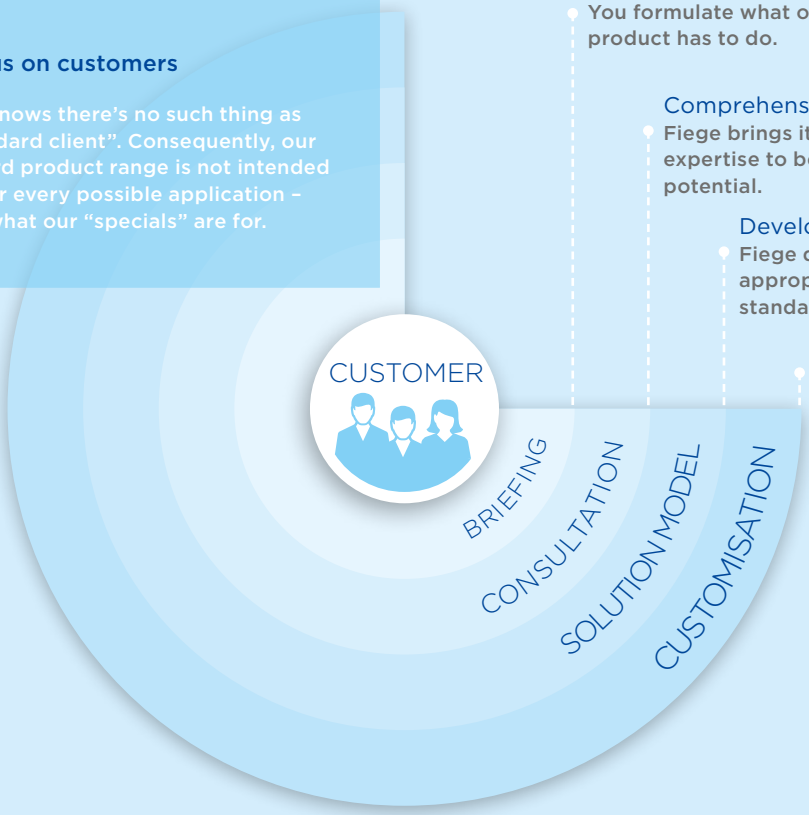


A standard spindle as basis for a bespoke solution
The centrepiece of this bespoke version is the 900 series motor spindle.

Full Service Provider – developing the perfect spindle with Fiege

Focus on customers

Fiege knows there's no such thing as a "standard client". Consequently, our standard product range is not intended to cover every possible application – that's what our "specials" are for.



Customer requirement
You formulate what our product has to do.

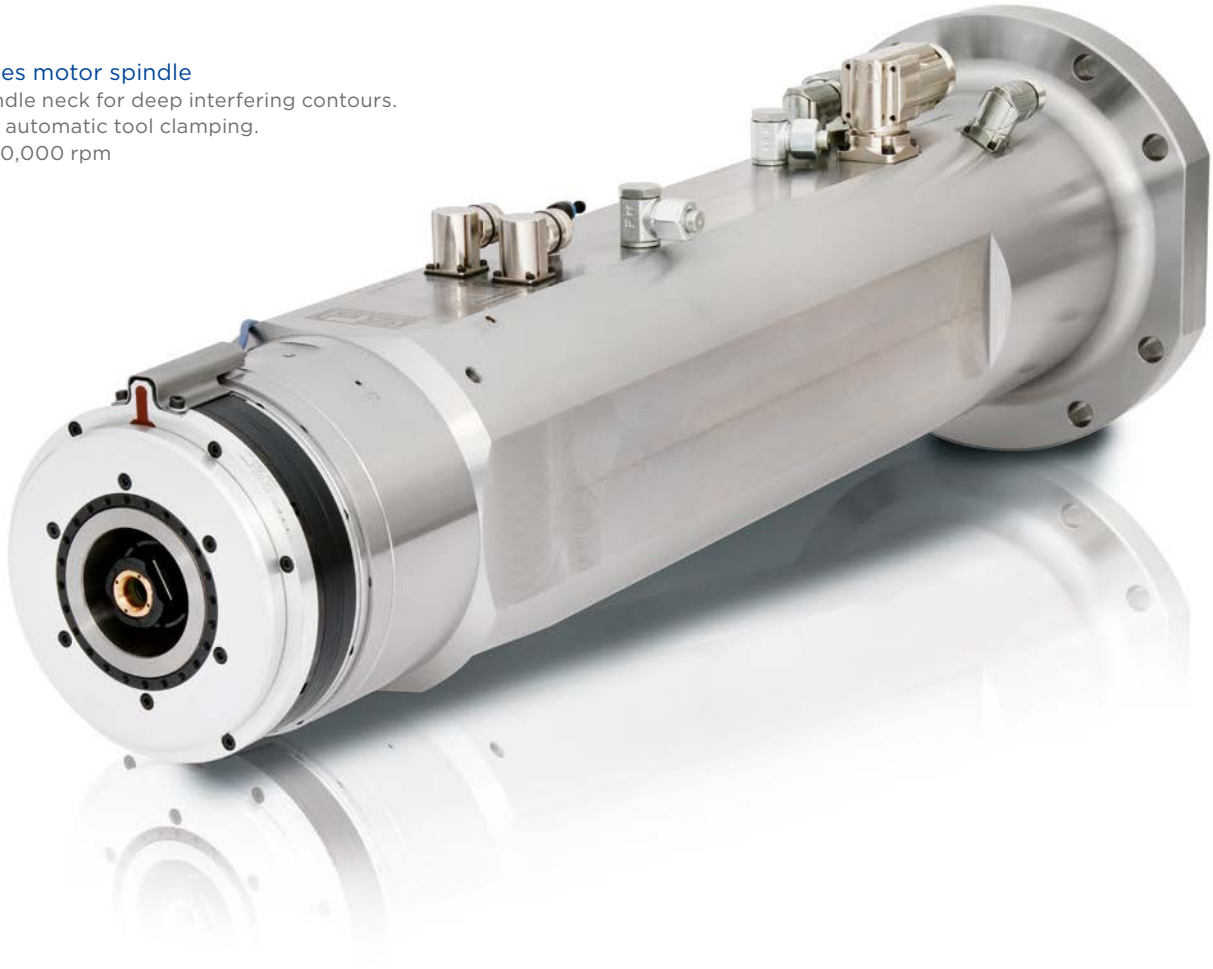
Comprehensive consultation
Fiege brings its experience and expertise to bear and uncovers potential.

Developing a solution
Fiege draws on the most appropriate solution from its standard range of products.

Individual adaptation
Fiege adapts the standard product precisely to the intended application. Modifications can affect all parameters: size, design, performance, and much more.

SPECIAL SPINDLES – A SMALL BUT EXCELLENT SELECTION

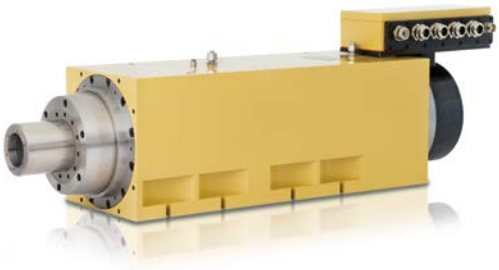
900 series motor spindle
Long spindle neck for deep interfering contours.
HSK-A80 automatic tool clamping.
38 kW / 10,000 rpm



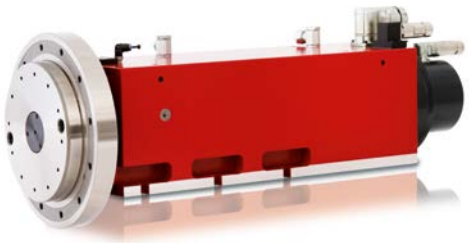
Motor spindle
Cross-section: 230 × 250 mm
Length: 350 mm
Chuck: HSK 63
Automatic tool clamping

Box spindle
Cross-section: 130 × 130 mm
Length: 320 mm
HSK 63 automatic clamping system
Rotational speed: 10,000 rpm

> Whenever uncompromising performance is required, every detail must be 100 % right. Fiege makes it possible – with individual spindle concepts tailored exactly to customers' requirements. You set the challenge, and we'll rise to meet it."
>
> Mathias Fiege · Managing Director



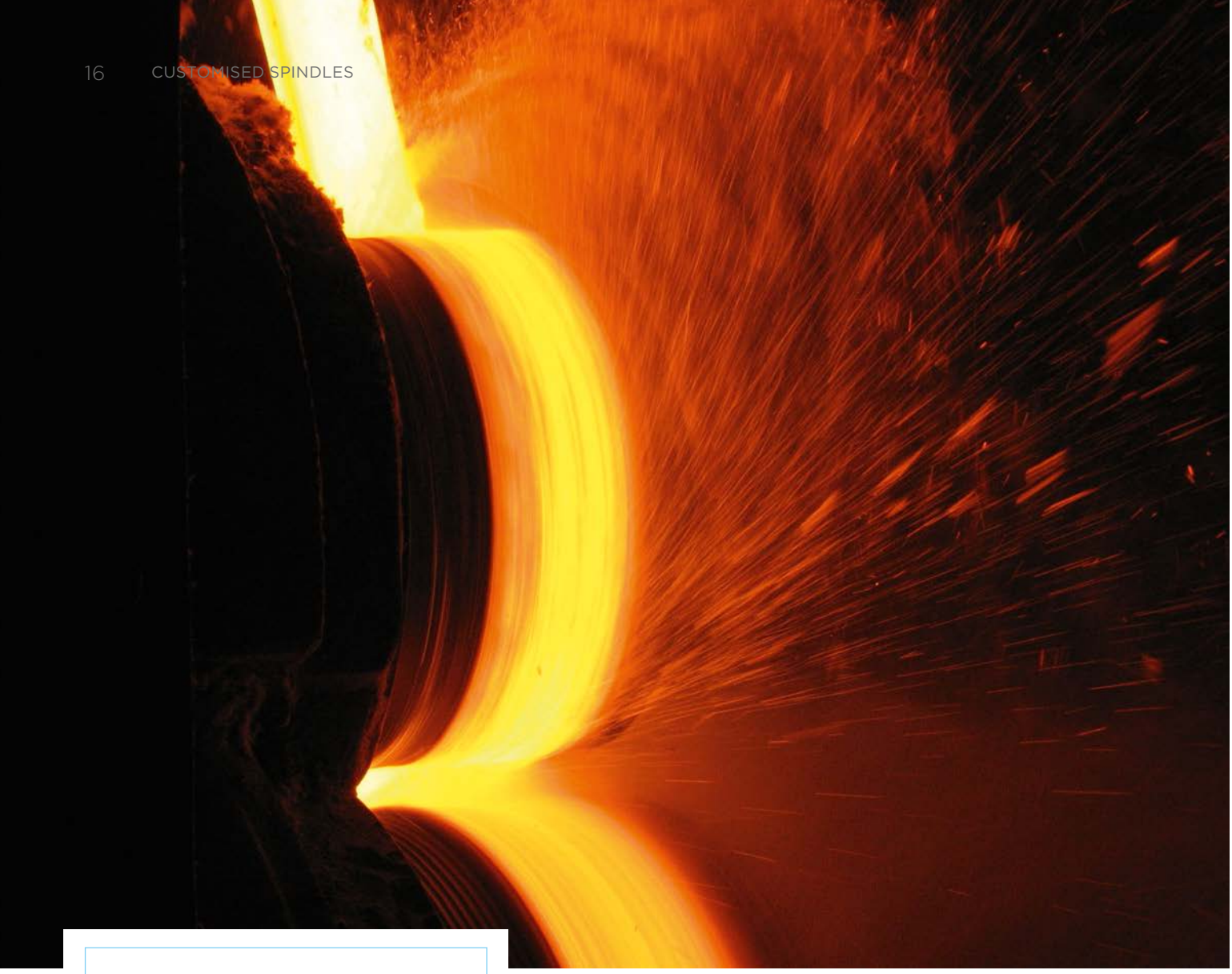
910 series motor spindle
High output pre-machining of ball bearing rings.
55 kW / 6,000 rpm



910 series motor spindle
CBN high speed grinding operation.
Direct mounting of the grinding wheel.
28 kW / 12,000 rpm

Spindle parts
Spindle shafts up to 1,500 mm long.

Dressing unit
For centreless grinding machine complete with synchronous drive.



Rock wool production

Harsh ambient conditions prevail in rock wool manufacture. Nozzles direct the liquid raw material to rotating spinners/ fiberiser units. Inside each are four spindle units that drive the wheels to spin the rock wool fibres. Heat, dust, dirt and water must be kept away from the bearing.

Typical Fiege. Everything revolves around spindles – and our customers.

SPINDLES
are the **key components**
of your machine.

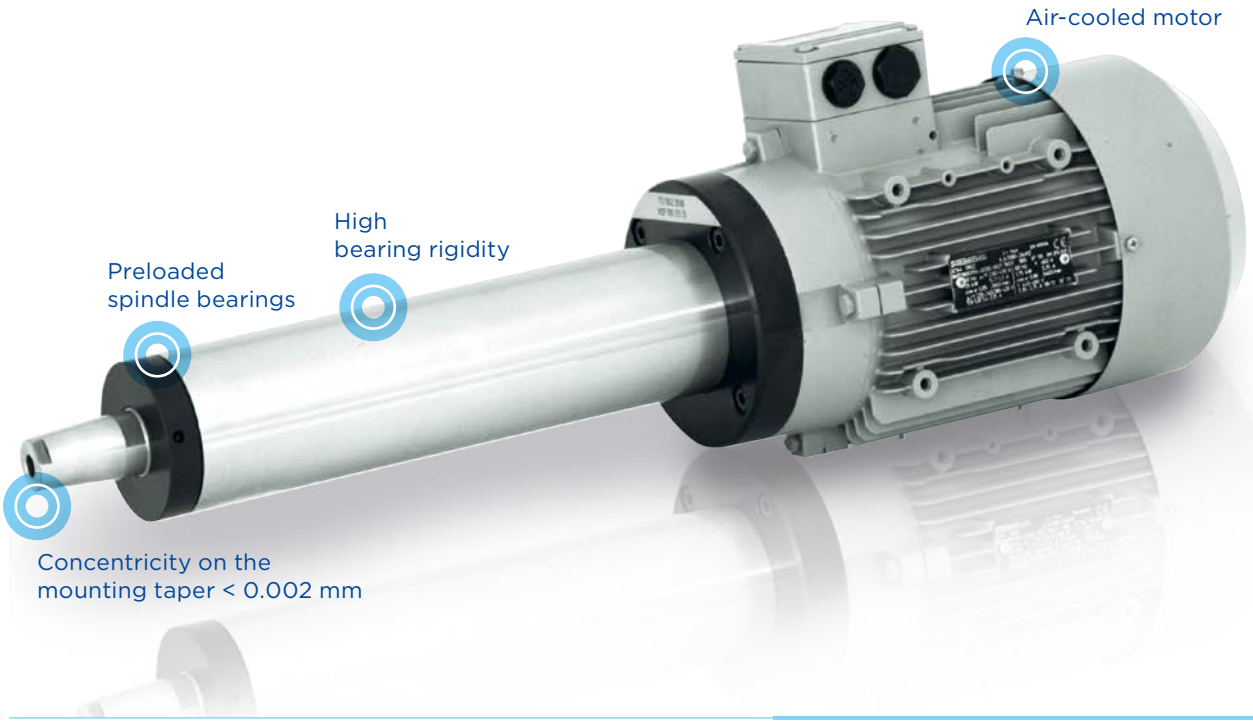
SPINDLES
determine the **success**
of your machine.

SPINDLES
that are **tailored** to your application
offer the best performance in the field.

DISCUSSIONS
at the start of development will
allow us to **accurately interpret**
your individual requirements.

HIGH PERFORMANCE SPINDLES

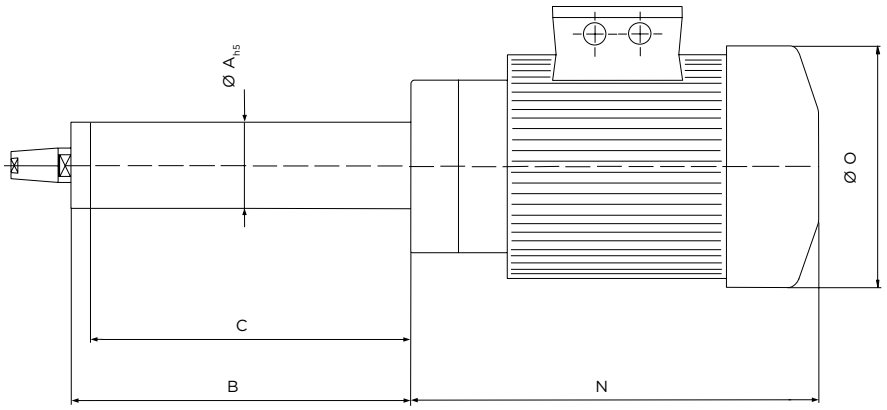
MOTOR SPINDLES
500 series



Rotational direction	The anti-twist lock on the mounting taper allows our grinding spindles to be operated clockwise and CCW. This requires use of our own brand accessories.
Lubrication	Lifetime grease lubrication
Motor	The motor can be controlled by a frequency converter (up to 100 Hz). The motor is connected to the spindle shank by a coupling.
Seal	The tool side is sealed by a specifically proven labyrinth packing. This protects the spindle bearings against soiling. Spindles can be installed either horizontally or vertically.
Standard delivery	Operating instructions, tensioning screw or nut for mounting the grinding wheel flange
Accessories	Grinding wheel flanges, balancing mandrels, spindle holders, sealing air rings, frequency converter
Mounting taper	Standard mounting taper 1:7.5 with anti-twist lock

Because of its robust design and precision, the **500 series** motor spindle can be used for all applications relating to advanced grinding equipment. Special materials, which guarantee high dimensional stability even under extreme conditions, are used to manufacture our grinding spindles. Only high precision preloaded bearings are used. The mounting taper concentricity is < 0.002 mm.

Type A



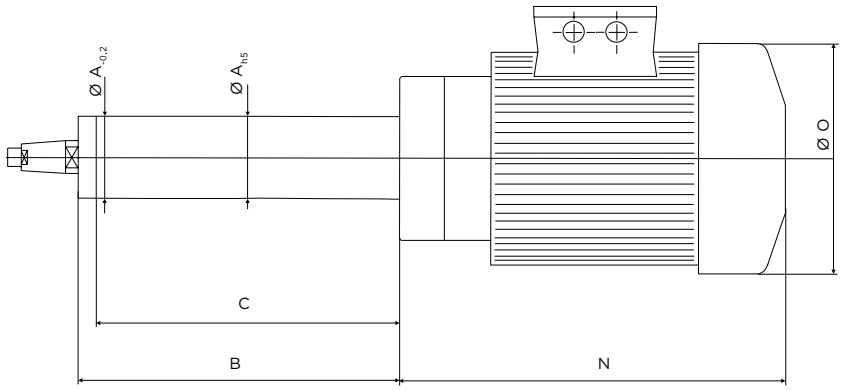
500 series > Type A

	Mechanical data					Electrical data			
Part no.	**Ø A_{h5}**	**B**	**C**	**N**	**Ø O**	**KW**	**Speed**	**Amp**	**Pols**
VFS-500.000000	40	180	172	229	145	0.55	3000	2.47/1.42	2
VFS-500.000001		250	242						
VFS-500.000010	50	180	168	236	145	0.55	3000	2.47/1.42	2
VFS-500.000011		250	238						
VFS-500.000020	60	200	186	275	159	0.75	3000	2.9/1.7	2
VFS-500.000021		250	236						
VFS-500.000022		315	301						
VFS-500.000023		355	341						
VFS-500.000024		400	386						
VFS-500.000025		450	436						
VFS-500.000030	80	250	232	323	178	1.5	3000	5.6/3.2	2
VFS-500.000031		315	297						
VFS-500.000032		355	337						
VFS-500.000034		400	382						
VFS-500.000035		600	582						

Voltage: 230/400 V · **Frequency:** 50 Hz · **IP rating:** IP55

For type A, an Allen screw secures the flange onto the mounting taper, which is built into the grinding wheel flange.

Type B



500 series > Type B

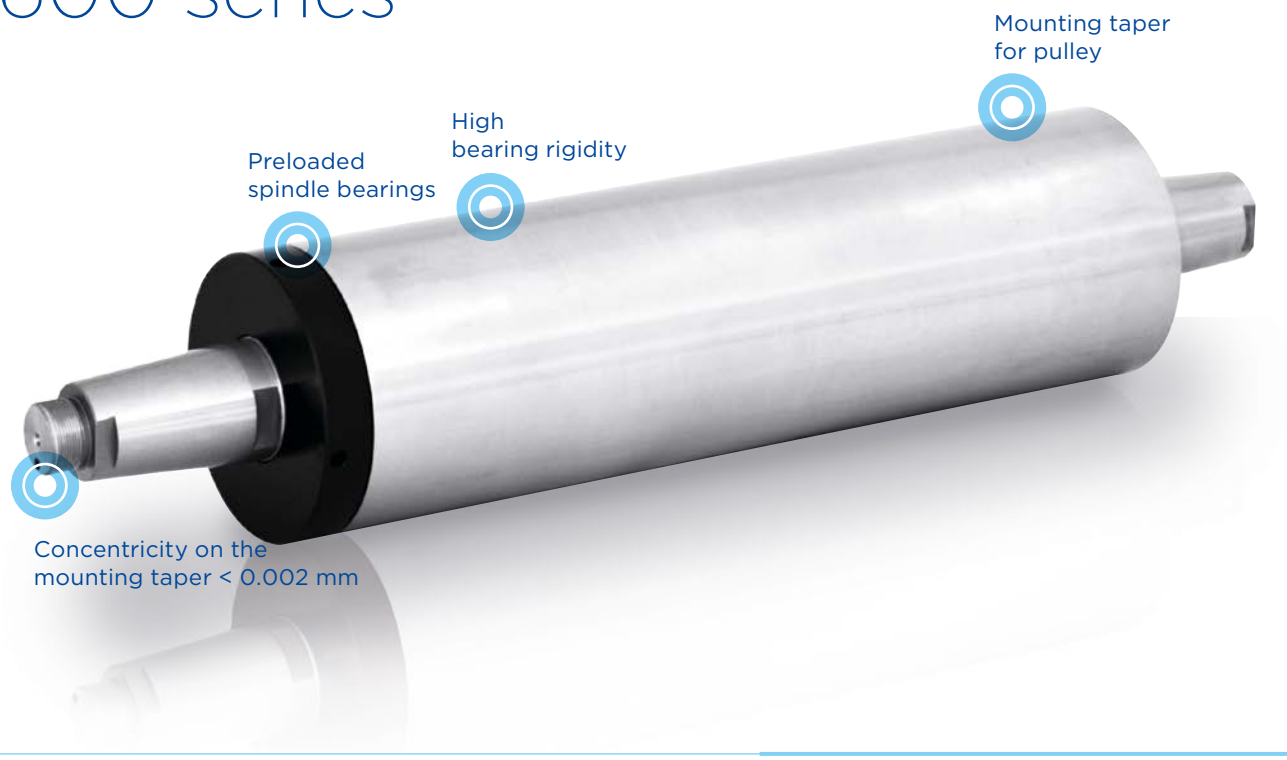
	Mechanical data					Electrical data			
Part no.	Ø A_{hs}	B	C	N	Ø O	KW	rpm	Amp	Pols
VFS-500.000040	100	315	295	367.5	198	3	1500	10.8/6.2	4
VFS-500.000041		315	295				3000		2
VFS-500.000042		400	380				1500		4
VFS-500.000043		400	380				3000		2
VFS-500.000048		450	430				1500		4
VFS-500.000049		450	430				3000		2
VFS-500.000044		500	480				1500		4
VFS-500.000045		500	480				3000		2
VFS-500.000046		600	580				1500		4
VFS-500.000047		600	580				3000		2
VFS-500.000050	120	350	328	422.5	262	5.5	1500	19.8/11.4	4
VFS-500.000051		350	328				3000	18.1/10.4	2
VFS-500.000052		500	478				1500	19.8/11.4	4
VFS-500.000053		500	478				3000	18.1/10.4	2
VFS-500.000054		600	578				1500	19.8/11.4	4
VFS-500.000055		600	578				3000	18.1/10.4	2
VFS-500.000056		800	778				1500	19.8/11.4	4
VFS-500.000057		800	778				3000	18.1/10.4	2
VFS-500.000058		1000	978				1500	19.8/11.4	4
VFS-500.000059		1000	978				3000	18.1/10.4	2
VFS-500.000060	140	400	374	422.5	262	7.5	1500	25.7/14.8	4
VFS-500.000061		400	374				3000	24.7/14.2	2
VFS-500.000062		600	574				1500	25.7/14.8	4
VFS-500.000063		600	574				3000	24.7/14.2	2
VFS-500.000064		800	774				1500	25.7/14.8	4
VFS-500.000065		800	774				3000	24.7/14.2	2
VFS-500.000066		1000	974				1500	25.7/14.8	4
VFS-500.000067		1000	974				3000	24.7/14.2	2
VFS-500.000068		1200	1174				1500	25.7/14.8	4
VFS-500.000069		1200	1174				3000	24.7/14.2	2
VFS-500.000070	160	400	372	536	314	11	1500	36.5/21.0	4
VFS-500.000074		400	372				3000	35.7/20.5	2
VFS-500.000071		600	572				1500	36.5/21.0	4
VFS-500.000075		600	572				3000	35.7/20.5	2
VFS-500.000072		800	772				1500	36.5/21.0	4
VFS-500.000076		800	772				3000	35.7/20.5	2
VFS-500.000073		1000	972				1500	36.5/21.0	4
VFS-500.000077		1000	972				3000	35.7/20.5	2
VFS-500.000080	200	400	370	602	314	15	1000	52.2/30.0	6
VFS-500.000081		500	470						
VFS-500.000082		800	770						
VFS-500.000083		1000	970						

Voltage: 230/400 V · **Frequency:** 50 Hz · **IP rating:** IP55

For type B, a separate clamping nut is used to secure the flange onto the mounting taper.

BELT-DRIVEN EXTERNAL GRINDING SPINDLES

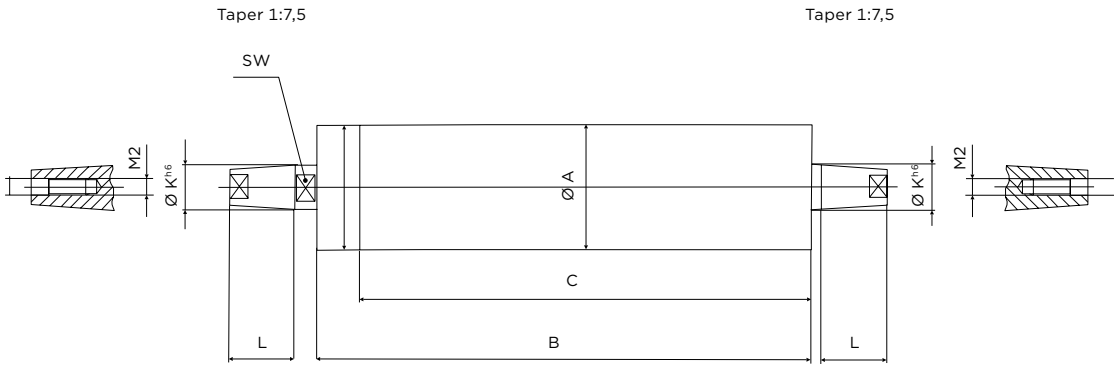
600 series



Rotational direction	The anti-twist lock on the mounting taper allows our grinding spindles to be operated clockwise and CCW. This requires use of our own brand accessories.
Lubrication	Lifetime grease lubrication
Seal	The tool side is sealed by a specifically proven labyrinth packing. This protects the spindle bearings against soiling. Spindles can be installed either horizontally or vertically.
Standard delivery	Operating instructions, tensioning screw or nut for mounting the grinding wheel flange
Accessories	Grinding wheel flanges, balancing mandrels, spindle holders, sealing air rings, pulleys
Mounting taper	Standard mounting taper 1:7.5 with anti-twist lock

The **600 series** external grinding spindles offer a stable spindle system. These spindles are used in modern grinding equipment. These systems are powered by pulleys. Special materials, which guarantee high dimensional stability even under extreme conditions, are used to manufacture our grinding spindles. Only high precision preloaded bearings are used. The mounting taper concentricity is < 0.002 mm.

Type A

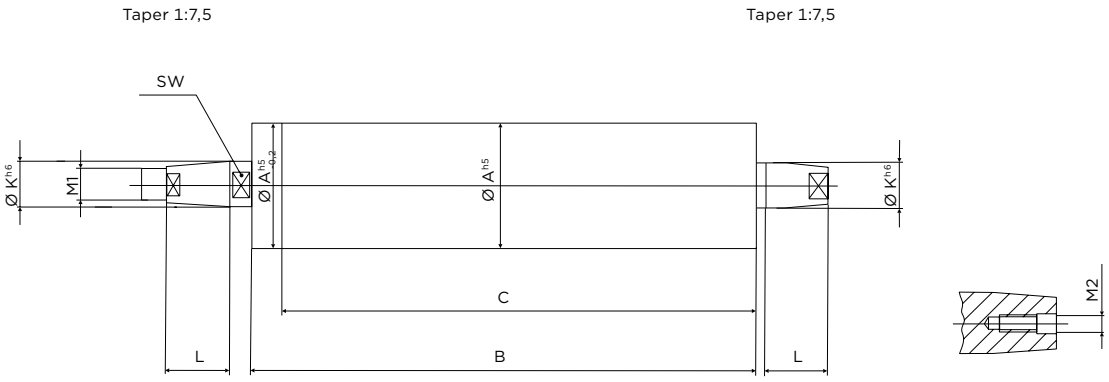


600 series > Type A

	Mechanical data							
Part no.	**Ø A**	**B**	**C**	**Ø K**	**L**	**M2**	**SW**	**rpm**
VFS-600.000000	40	160	152	13.5	20	M5	11	21,000
VFS-600.000001		200	192					
VFS-600.000002		250	242					
VFS-600.000010	50	160	148	15.5	24	M6	13	19,000
VFS-600.000011		200	188					
VFS-600.000012		250	238					
VFS-600.000013	50	350	338	15.5	24	M6	13	19,000
VFS-600.000020	60	160	146	23	30	M8	20	15,000
VFS-600.000021		200	186					
VFS-600.000022		250	236					
VFS-600.000023	60	315	301	23	30	M8	20	15,000
VFS-600.000024		400	386					
VFS-600.000025		450	436					
VFS-600.000026		500	486					
VFS-600.000030	80	200	186	32	44	M10	27	13,000
VFS-600.000031		250	236					
VFS-600.000032	80	315	301	32	44	M10	27	13,000
VFS-600.000033		400	386					
VFS-600.000035		550	536					
VFS-600.000036		850	836					
VFS-600.000039		1200	1186					

For type A, an Allen screw secures the flange onto the mounting taper, which is built into the grinding wheel flange.

Type B

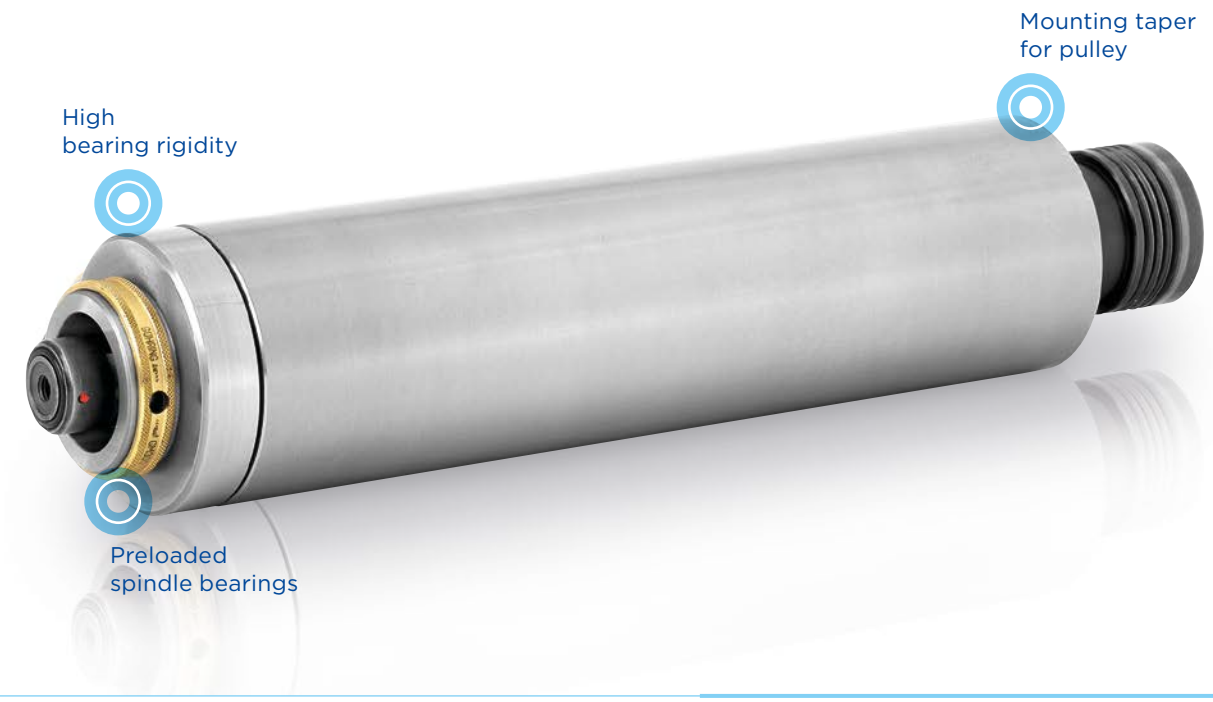


600 series > Type B

	Mechanical data								
Part no.	**Ø A**	**B**	**C**	**Ø K**	**L**	**M1**	**M2**	**SW**	**rpm**
VFS-600.000040	100	250	230	48	64	M30×1.5	M16×1.5	41	10,000
VFS-600.000041	100	315	295	48	64	M30×1.5	M16×1.5	41	10,000
VFS-600.000042		400	380						
VFS-600.000044		482	462						
VFS-600.000043		630	610						
VFS-600.000045		900	880						
VFS-600.000050	120	250	228	52	70	M30×1.5	M16×1.5	46	8000
VFS-600.000051	120	315	293	52	70	M30×1.5	M16×1.5	46	8000
VFS-600.000054		450	428						
VFS-600.000052		500	478						
VFS-600.000053		630	608						
VFS-600.000060	140	350	324	58	80	M35×1.5	M16×1.5	50	7000
VFS-600.000064		400	374						
VFS-600.000061		500	474						
VFS-600.000062		630	604						
VFS-600.000063		800	774						
VFS-600.000070	160	400	372	72	100	M40×1.5	M16×1.5	60	6000
VFS-600.000071		630	602						
VFS-600.000072		800	772						
VFS-600.000084	200	400	370	88	115	M50×1.5	M16×1.5	75	4500
VFS-600.000080		500	470						
VFS-600.000081		630	600						
VFS-600.000082		800	770						
VFS-600.000083		1000	970						

For type B, a separate clamping nut is used to secure the flange onto the mounting taper.

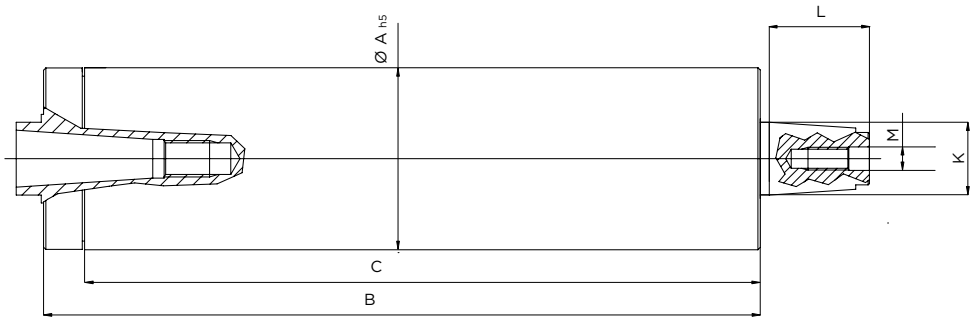
INTERNAL GRINDING SPINDLES
700 series



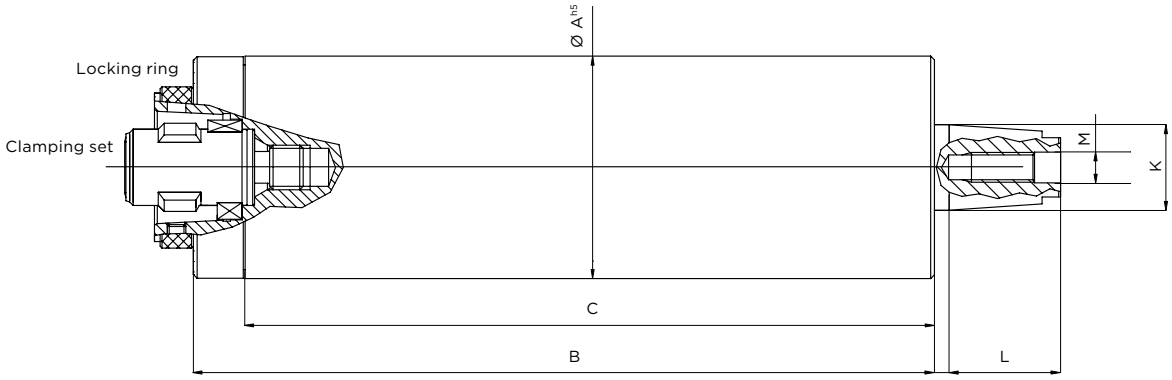
Rotational direction	For internal grinding spindles with internal taper 1:7.5, the appropriate direction of rotation must be determined. Internal grinding spindles with an HSK chuck can be used for both clockwise and CCW rotation. This requires use of our own brand accessories.
Lubrication	Lifetime grease lubrication
Seal	The tool side is sealed by a specifically proven labyrinth packing. This protects the spindle bearings against soiling. Spindles can be installed either horizontally or vertically.
Standard delivery	Operating instructions, operating tools
Accessories	Grinding mandrels, collets, spindle holders, sealing air rings, pulleys
Mounting taper	The tools are attached using the internal taper or manual HSK chuck

The **700 series** internal grinding spindles are used in applications when higher cutting speeds are required. All rotating components are finely balanced. Special materials, which guarantee high dimensional stability even under extreme conditions, are used to manufacture our grinding spindles. Only high precision preloaded bearings are used. The mounting taper concentricity is < 0.002 mm.

Spindles with 1:7.5 internal taper



Spindles with manual HSK holder



700 series › Type A

1:7.5 right	1:7.5 left	HSK taper	Mechanical data							
Part no.	Part no.	Part no.	Ø A	B	C	Ø K	L	M	HSK	rpm
VFS-700.000000(.K)	VFS-700.000100(.K)	VFS-700.000200(.K)	40	160	152	13.5	20	M5	C32	36,000 (56,000)
VFS-700.000001(.K)	VFS-700.000101(.K)	VFS-700.000201(.K)		200	192					
VFS-700.000002(.K)	VFS-700.000102(.K)	VFS-700.000202(.K)		250	242					
VFS-700.000003(.K)	VFS-700.000103(.K)	VFS-700.000203(.K)		300	292					
VFS-700.000010(.K)	VFS-700.000110(.K)	VFS-700.000210(.K)	50	160	148	15.5	24	M6	C32	27,000 (40,000)
VFS-700.000011(.K)	VFS-700.000111(.K)	VFS-700.000211(.K)		200	188					
VFS-700.000012(.K)	VFS-700.000112(.K)	VFS-700.000212(.K)		250	238					
VFS-700.000013(.K)	VFS-700.000113(.K)	VFS-700.000213(.K)	50	350	338	15.5	24	M6	C32	27,000 (40,000)
VFS-700.000020(.K)	VFS-700.000120(.K)	VFS-700.000220(.K)	60	160	146	23	30	M8	C40	21,500 (32,000)
VFS-700.000021(.K)	VFS-700.000121(.K)	VFS-700.000221(.K)		200	186					
VFS-700.000022(.K)	VFS-700.000122(.K)	VFS-700.000222(.K)		250	236					
VFS-700.000023(.K)	VFS-700.000123(.K)	VFS-700.000223(.K)	60	315	301	23	30	M8	C40	21,500 (32,000)
VFS-700.000030(.K)	VFS-700.000130(.K)	VFS-700.000230(.K)	80	200	182	32	44	M10	C50	15,500 (24,000)
VFS-700.000031(.K)	VFS-700.000131(.K)	VFS-700.000231(.K)		250	232					
VFS-700.000032(.K)	VFS-700.000132(.K)	VFS-700.000232(.K)	80	315	297	32	44	M10	C50	15,500 (24,000)
VFS-700.000033(.K)	VFS-700.000133(.K)	VFS-700.000233(.K)		400	382					
VFS-700.000034(.K)	VFS-700.000134(.K)	VFS-700.000234(.K)		500	482					
VFS-700.000040(.K)	VFS-700.000140(.K)	VFS-700.000240(.K)	100	250	230	48	64	M16×1.5	C50	12,000 (17,000)
VFS-700.000041(.K)	VFS-700.000141(.K)	VFS-700.000241(.K)	100	315	295	48	64	M16×1.5	C50	12,000 (17,000)
VFS-700.000042(.K)	VFS-700.000142(.K)	VFS-700.000242(.K)		400	380					
VFS-700.000043(.K)	VFS-700.000143(.K)	VFS-700.000243(.K)		500	480					

(.K) = Each spindle is available in a version with ceramic bearings

MOTOR SPINDLES
800 series

Bearing	We only use high precision preloaded ball bearings with ceramic balls. We thereby achieve a better wear behaviour and higher maximum speeds.
Rotational direction	The anti-twist lock on the mounting taper allows our grinding spindles to be operated clockwise and CCW. This requires use of our own brand accessories.
Lubrication	Lifetime grease lubrication
Motor	It is driven by a liquid-cooled, variable induction motor. A frequency converter is used to control the motor up to its maximum speed. The motor is protected by KTY or PTC Sensors in the motor winding.
Cooling	Heat is dissipated using an integral cooling circuit near the motor winding.
Seal	The tool side is sealed by a specifically proven labyrinth packing. This protects the spindle bearings against soiling. Spindles can be installed either horizontally or vertically.

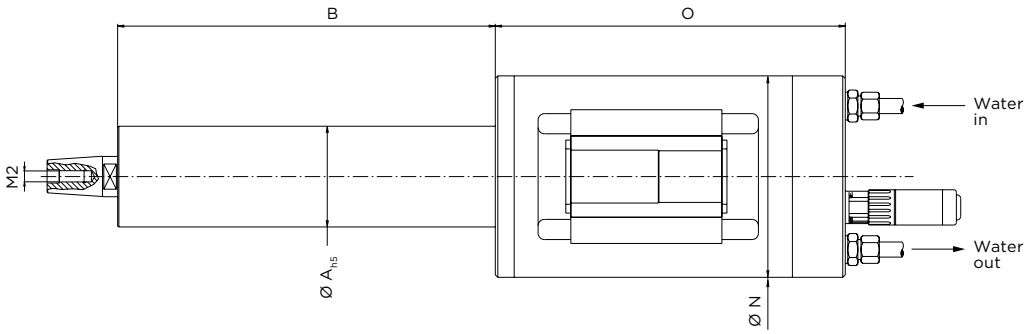
The **800 series** motor spindle conceals a powerful spindle system with a liquid-cooled drive which has been designed in line with the latest developments. Because of its precision and stability, this spindle is particularly suitable for all processing tasks that require higher cutting speeds. We manufacture these spindles exclusively from special materials that meet these high demands. The mounting taper concentricity is < 0.002 mm.

Standard delivery › Operating instructions, tensioning screw or nut for mounting the grinding wheel flange

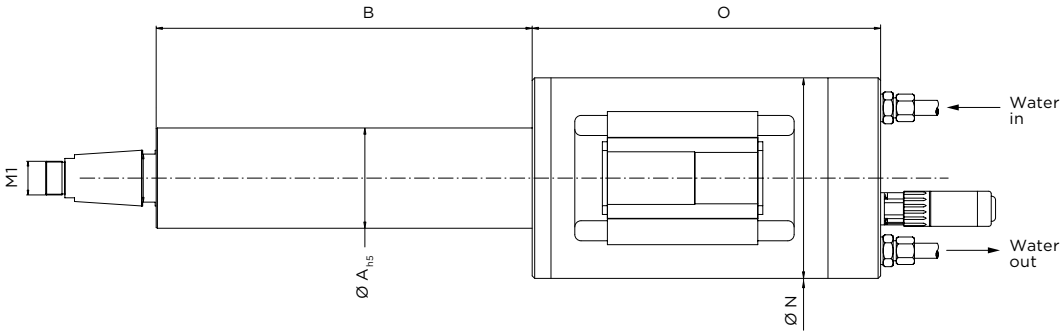
Accessories › Grinding wheel flanges, balancing mandrels, spindle holders, sealing air rings, frequency converter

Mounting taper › Standard mounting taper 1:7.5 with anti-twist lock

Type A



Type B



› 800 series › Type A and B

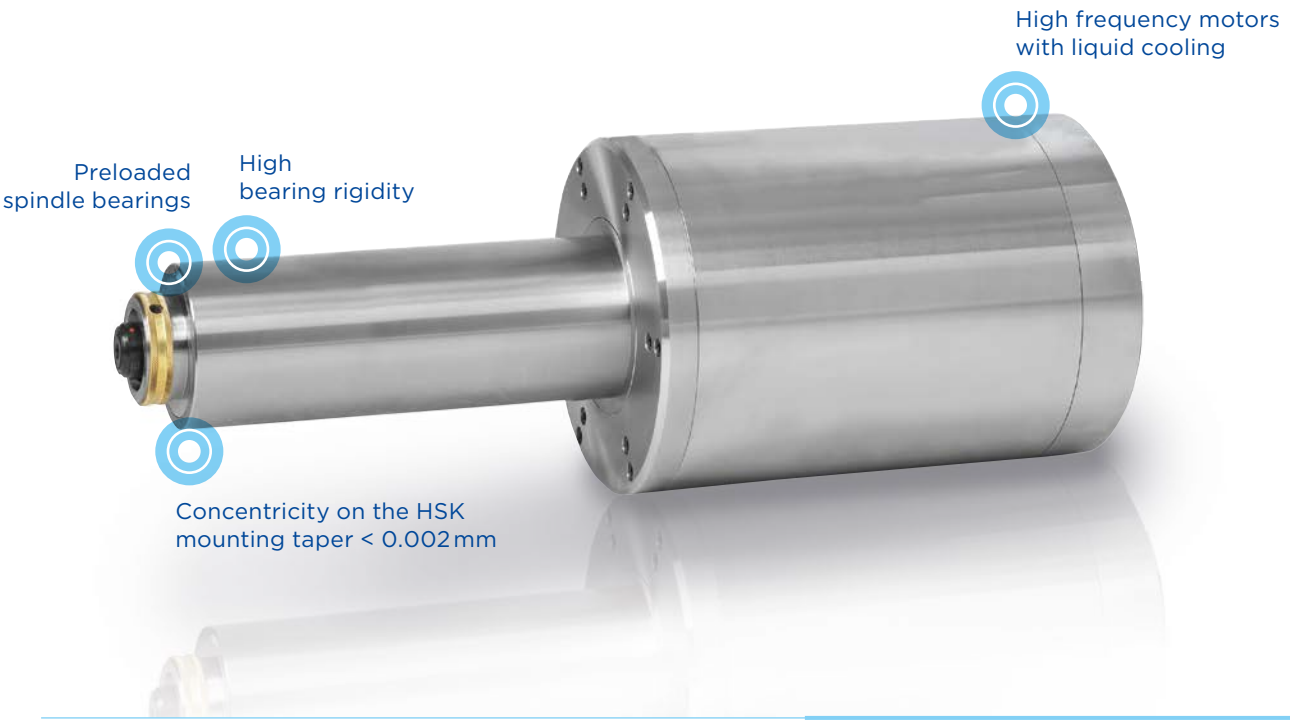
	Mechanical data							Electrical data					
Part no.	**Ø A_{h5}**	**B**	**M1**	**M2**	**Ø N**	**O**	**Type**	**KW**	**rpm**	**Amp**	**Hz**	**Pols**	**Nm**
VFS-800.000001	40	180		M5	135	205	A	3.0	17,600	7	600	4	1.63
VFS-800.000010	50	250		M6	135	205		3.0	17,600	7	600		1.63
VFS-800.000020	60	250		M8	140	243		8.0	17,600	18	600		4.34
VFS-800.000030	80	300		M10	160	278		11.0	11,700	22	400		8.97
VFS-800.000040	100	315	M30×1.5		200	330	B	15.0	10,800	35	367	4	13.26
VFS-800.000050	120	350	M30×1.5		220	285		15.0	8850	33	300		16.18

Voltage: 400 V

For **type A**, an Allen screw secures the flange onto the mounting taper, which is built into the grinding wheel flange.

For **type B**, a separate clamping nut is used to secure the flange onto the mounting taper.

MOTOR SPINDLES
810 series

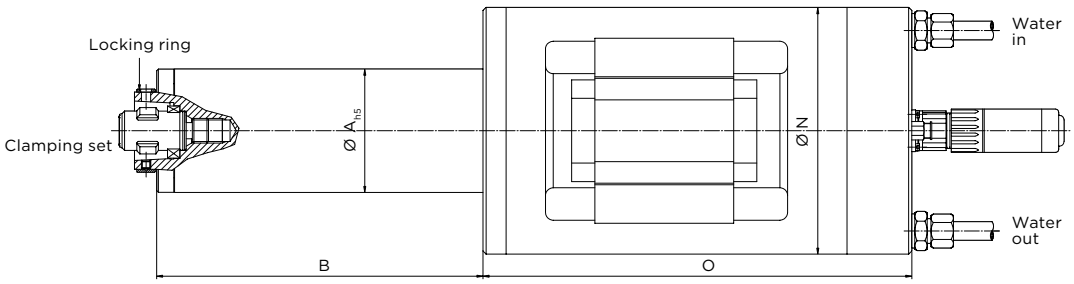


Bearing	We only use high precision preloaded ball bearings with ceramic balls. We thereby achieve better wear characteristics and higher maximum speeds.
Rotational direction	The HSK chuck is generally suitable for clockwise and CCW rotation.
Lubrication	Lifetime grease lubrication
Motor	It is driven by a liquid-cooled, variable induction motor. A frequency converter is used to control the motor up to its maximum speed. The motor is protected by KTY or PTC Sensors in the motor winding.
Cooling	Heat is dissipated using an integral cooling circuit near the motor winding.
Seal	The tool side is sealed by a specifically proven labyrinth packing. This protects the spindle bearings against soiling. Spindles can be installed either horizontally or vertically.

The **810 series** motor spindles were designed according to the same standards as the 800 article series. This is also a spindle system with liquid-cooled drive, whose accuracy and reliability meets the highest demands. The system is particularly suitable for processing tasks that require a higher cutting speed. Here too, the mounting taper concentricity is < 0.002 mm.

Standard delivery › Operating instructions, operating tools

Accessories › Grinding wheel flanges, balancing mandrels, spindle holders, sealing air rings, frequency converter



810 series

	Mechanical data					Electrical data					
Part no.	Ø A_{h5}	B		Ø N	O	KW	rpm	Amp	Hz	Pols	Nm
VFS-810.000001	40	180	HSK-C32	135	205	3.0	17,600	7	600	4	1.63
VFS-810.000010	50	250	HSK-C32	135	205	3.0	17,600	7	600		1.63
VFS-810.000020	60	250	HSK-C40	140	243	8.0	17,600	18	600		4.34
VFS-810.000030	80	300	HSK-C50	160	278	11.0	11,700	22	400		8.97
VFS-810.000040	100	315	HSK-C63	200	330	15.0	10,800	35	367		13.26
VFS-810.000050	120	350	HSK-C63	220	285	15.0	8850	33	300		16.18

MOTOR SPINDLES
820 series

Bearing › We only fit high precision preloaded bearings. These have excellent attenuation properties and wearing characteristics. Concentricity measured at the chuck is < 0.002 mm.

Rotational direction › The anti-twist lock on the mounting taper allow our grinding spindles to be operated clockwise and CCW. This requires use of our original accessories. The collet version is suitable only for clockwise rotation.

Lubrication › Lifetime grease lubrication

Motor › It is driven by a liquid-cooled, variable induction motor.
A frequency converter is used to control the motor up to its maximum speed.

Seal › The tool side is sealed by a specifically proven labyrinth packing. This protects the spindle bearings against soiling. Spindles can be installed either horizontally or vertically.

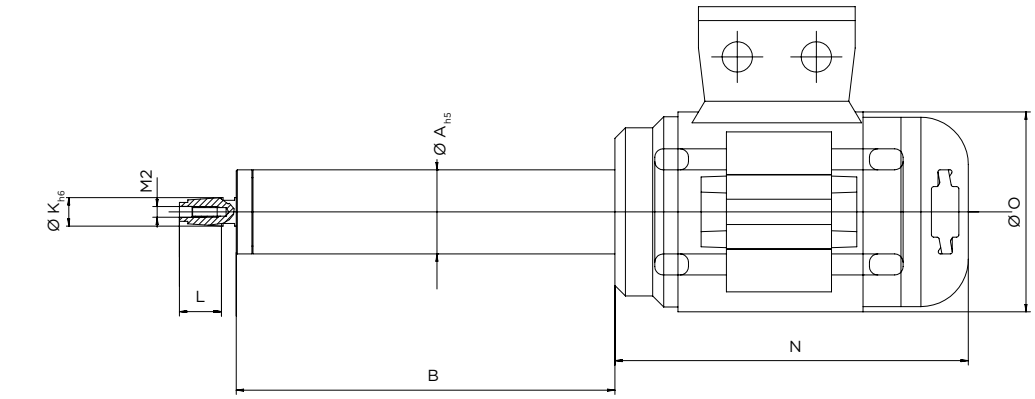
› The **820 series** motor spindles are air-cooled. A frequency converter is required to operate the spindle drive up to its maximum speed. The spindle shaft and motor shaft are made as a single piece in order to ensure the best possible vibration characteristics. To manufacture these spindles, we only use selected materials that guarantee a high degree of accuracy and reliability even under extreme conditions.

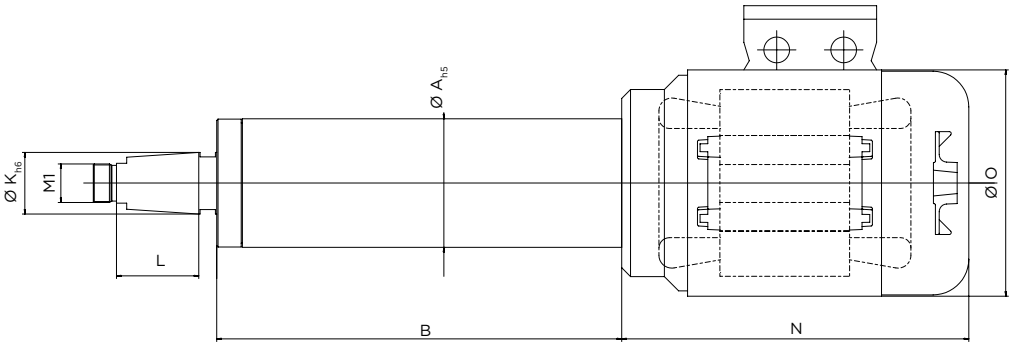
Standard delivery › Operating instructions, operating tools

Accessories › Grinding wheel flanges, balancing mandrels, spindle holders, sealing air rings, frequency converters, collets

Mounting taper › Standard mounting taper 1:7.5 with twist protection or collet

Taper type



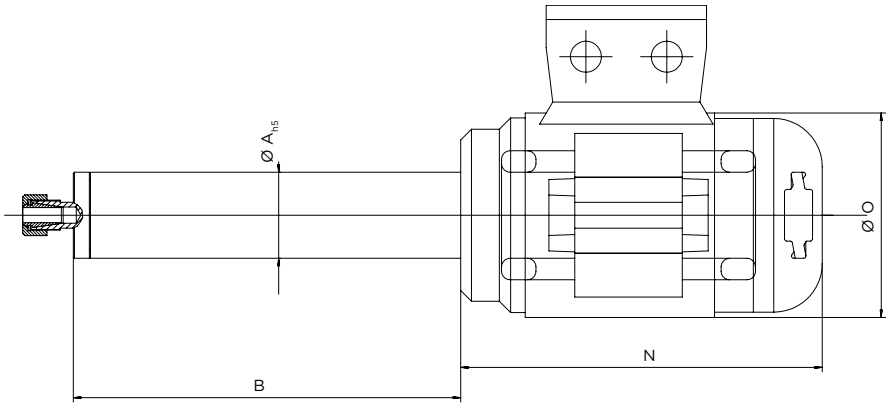


› 820 series › Type external taper

	Mechanical data								Electrical data			
Part no.	Ø A_{h5}	B	Ø K	L	M1	M2	N	Ø O	KW	rpm	Hz	Nm
VFS-820.000000	40	180	13.5	20		M5	168	95	0.75	33,600	450	0.21
VFS-820.000010	50	250	15.5	24		M6	186	127	2.0	18,500	350	1.03
VFS-820.000020	60	250	23	30		M8	186	127				
VFS-820.000030	80	300	32	44		M10	270	176	4.4	5600	100	7.5
VFS-820.000040	100	315	48	64	M30×1.5							

Voltage: 230 / 400 V · Performance charts on request

Type collet



820 series > Type collet

	Mechanical data					Electrical data			
Part no.	**Ø A_{h5}**	**B**	**Chuck**	**N**	**Ø O**	**KW**	**rpm**	**Hz**	**Nm**
VFS-820.000100	40	180	ER11	168	95	0.75	33,600	450	0.21
VFS-820.000110	50	250	ER11	186	127	2.0	18,500	350	1.03
VFS-820.000120	60	250	ER16	186	127				
VFS-820.000130	80	300	ER25	270	176	4.4	5600	100	7.5
VFS-820.000140	100	315							

Voltage: 230 / 400 V · Performance charts on request

MOTOR SPINDLES
840 series

Chuck	For manual chucks, you can choose between a collet and an HSK.
Rotational direction	The collet version is suitable only for clockwise rotation. The HSK version can be operated clockwise or CCW.
Lubrication	Lifetime grease lubrication.
Motor	It is driven by a liquid-cooled, variable asynchronous motor. A frequency converter is used to control the motor up to its maximum speed. The temperature is monitored by PTC thermistors in the motor winding.
Cooling	It is cooled using an integral cooling circuit near the motor windings.
Seal	The tool side is sealed by a specifically proven labyrinth packing. This protects the spindle bearings against soiling. Spindles can be installed either horizontally or vertically.

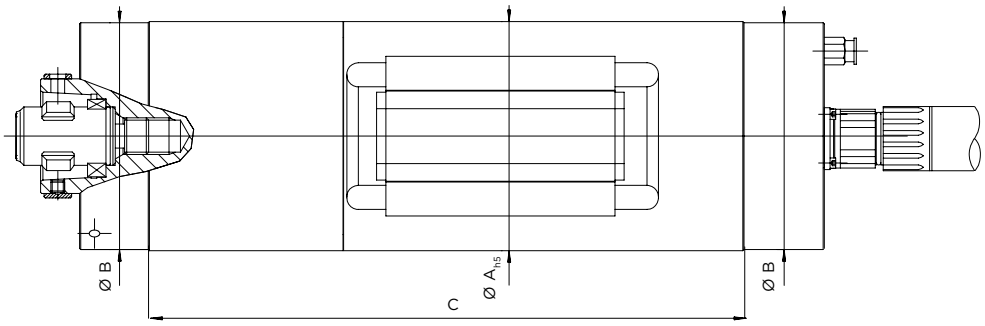
The **840 series** motor spindles are powerful high speed systems with a liquid-cooled drive. We only use ceramic spindle bearings. This gives higher speeds, improved wearing characteristics and a longer service life. Concentricity, measured at the chuck, is <0.002 mm. To manufacture these spindles, we only use selected materials that guarantee a high degree of accuracy and reliability even under extreme conditions.

Standard delivery › Operating instructions, operating tools

Accessories › Spindle holders, frequency converters, spindle coolers, collets.

Mounting taper › The tools are attached using an internal taper or a manual HSK chuck.

Type A

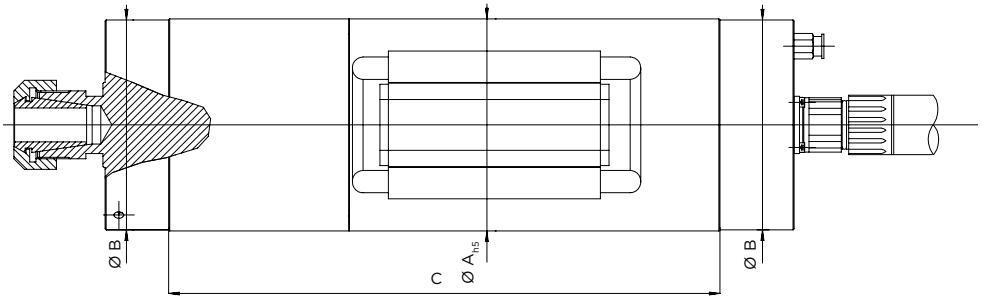


› 840 series › Type A

	Mechanical data				Electrical data				
Part no.	Ø A_{hs}	Ø B	Chuck	C	KW	rpm	Amp	Hz	Nm
VFS-840.000220	60	59.5	HSK-C25	129	1.4	40,000	3.5	1000	0.22
VFS-840.000230	80	79	HSK-C25	189.5	2.3	29,000	5.8	1000	0.75
VFS-840.000240	100	99	HSK-C40	260	7.2	29,600	18	1000	2.32
VFS-840.000241	100	99	HSK-C50	260	7.2	29,600	18	1000	2.32
VFS-840.000250	120	119.5	HSK-C50	310	13	24,700	28	834	5.00

Voltage: 400 V · Performance charts on request

Type B

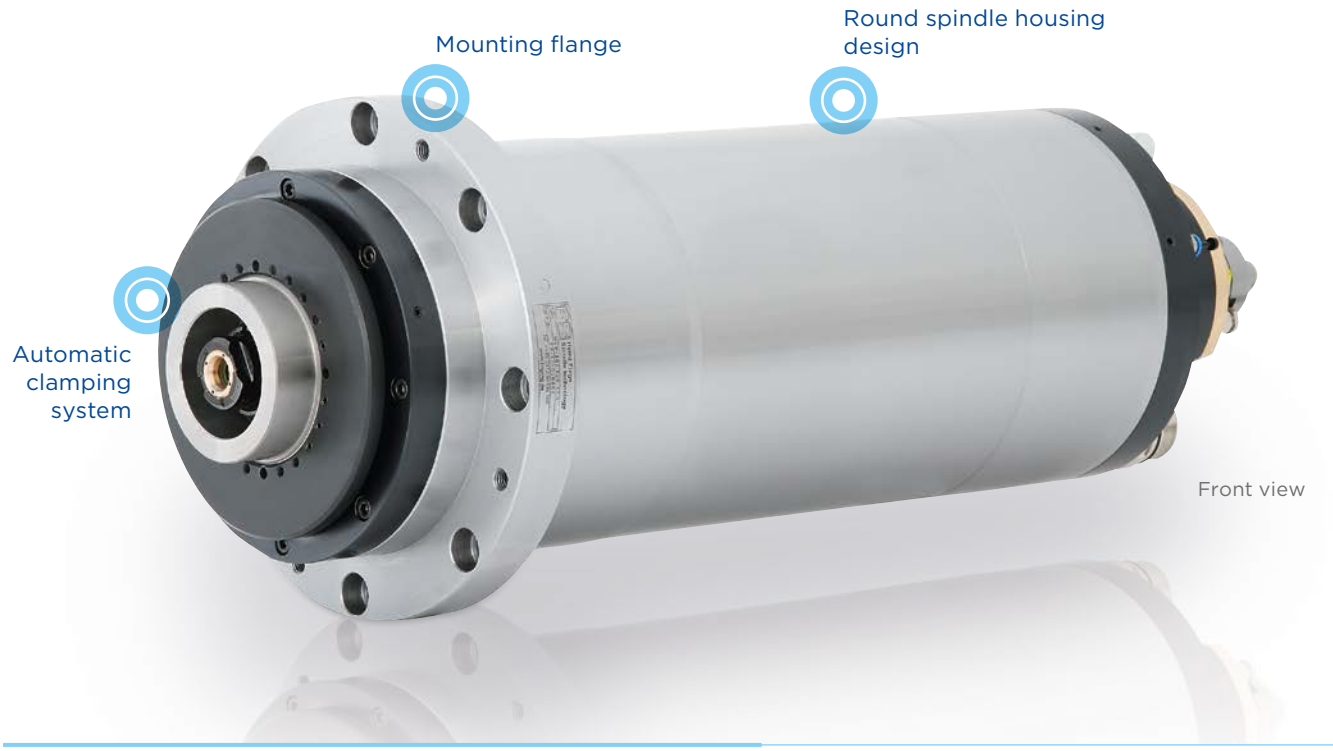


840 series › Type B

	Mechanical data				Electrical data				
Part no.	**Ø A_{h5}**	**Ø B**	**Chuck**	**C**	**KW**	**rpm**	**Amp**	**Hz**	**Nm**
VFS-840.000020	60	59.5	ER 16	129	1.4	40,000	3.5	1000	0.22
VFS-840.000030	80	79	ER 16	189.5	2.3	29,000	5.8		0.75
VFS-840.000031	80	79	ER 16	189.5	2.3	29,000	5.8		0.75
VFS-840.000040	100	99	ER 25	260	7.2	29,600	18		2.32

Voltage: 400 V · Performance charts on request

MOTOR SPINDLES
900 series



Modern machining operations require capable and dynamic spindle drives.

Our **900 series** is a spindle concept that our technicians and engineers developed from customers' applications in line with market demands. Building on many special versions, the spindle structure has been revised and standardised in order to achieve reasonable price structures. The latest techniques in the areas of bearings, motor and clamping technology, lubrication, sealing, sensor technology and materials were used in the 900 series, enabled through innovative product development and practical engineering.

Rear view

Chuck
- HSK interfaces with nominal sizes between 63 and 160 are available for the 900 series. A clamping set with integral spring pack is used to clamp the tools. The releasing unit operates hydraulically or pneumatically. The clamping state is controlled via a sensor and indicates 3 positions (released/clamped/clamped without tools). An integral rotary encoder positions the spindle for tool changes.

Bearing
- We only fit high precision preloaded bearings. These have excellent attenuation properties and wearing characteristics. Concentricity, measured at the chuck, is < 0.002 mm. The spindles run as smoothly as they do thanks to their rigid construction and optimised balancing.

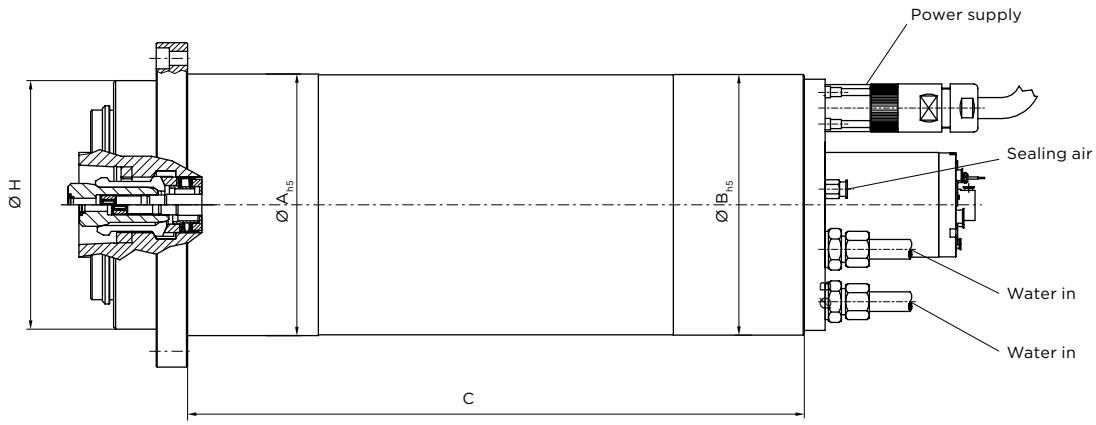
Rotational direction
- Spindles can be operated clockwise or CCW.

Lubrication
- Lifetime grease lubrication

Motor
- It is driven by a liquid-cooled, variable induction motor. Power ratings from 20–120 kW are available. A frequency converter is used to operate the spindle up to its maximum speed. The system is controlled by an integral rotary encoder. The temperature is monitored by sensors in the motor winding.

Cooling
- The motor is cooled by a separate integral cooling circuit near the motor windings.

Seal
- The spindle is sealed with a proven labyrinth packing and active sealing air. This protects the spindle bearings against soiling. Spindles can be installed either horizontally or vertically.



900 series

	Mechanical data					Electrical data					
Part no.	**Ø H**	**Ø A**	**Ø B**	**C**	**Chuck**	**KW**	**Rated rpm**	**rpm max.**	**Amp**	**Pols**	**Nm**
VFS-900.000110	130	170	169	350	HSK-C63	20	8000	8500	53	6	24
VFS-900.000150								11,600			
VFS-900.000210	185	200	199	425	HSK-C80	16	4000	6500	45	6	38
VFS-900.000250								8200			
VFS-900.000310	200	220	219	450	HSK-C80	11	1500	5500	46	8	70
VFS-900.000350								7500			
VFS-900.000410	230	250	249	550	HSK-C100	19.5	1500	4500	60	8	124
VFS-900.000450								5800			
VFS-900.000510	270	280	279	500	HSK-C100	28.5	1500	3700	94	8	181
VFS-900.000550								4700			
VFS-900.000610	285	300	299	600	HSK-C125	45	1500	3500	135	8	287
VFS-900.000650								4500			
VFS-900.000710	295	320	319	700	HSK-C125	50	1500	3200	200	8	318
VFS-900.000750								4100			
VFS-900.000810	340	350	349	850	HSK-C125	75	1500	2600	151	6	478
VFS-900.000850								3600			
VFS-900.000910	400	400	399	850	HSK-C160	120	1500	2300	247	8	764
VFS-900.000950								3000			

Voltage: 400 V

MOTOR SPINDLES
910 series

Modern machining operations require capable and dynamic spindle drives.

Our **910 series** is a spindle concept that our technicians and engineers developed from customers' applications in line with market demands. Building on many special versions, the spindle structure has been revised and standardised in order to achieve reasonable price structures. The latest techniques in the areas of bearings, motor and clamping technology, lubrication, sealing, sensor technology and materials were used in the 910 series, enabled through innovative product development and practical engineering.

Rear view

Chuck
- HSK chucks are available for the smaller sizes. Larger sizes are optionally equipped with HSK chucks on request. The larger versions are equipped with short taper according to DIN 55027. Manual tool clamping and releasing. The spindle is equipped with an integral rotary encoder.

Bearing
- We only fit high precision, preloaded bearings. These have excellent attenuation properties and wearing characteristics. Concentricity, measured at the chuck, is < 0.002 mm. The spindles run as smoothly as they do thanks to their rigid construction and optimised balancing.

Rotational direction
- Spindles can be operated clockwise or CCW.

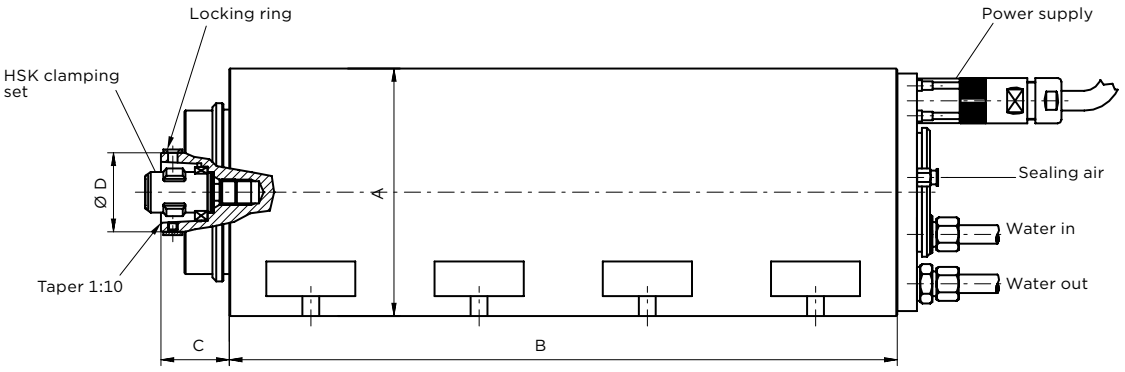
Lubrication
- Lifetime grease lubrication

Motor
- It is driven by a liquid-cooled, variable induction motor. Power ratings from 14.5–120 kW are available. A frequency converter is used to operate the spindle up to its maximum speed. The system is controlled by an integral rotary encoder. The temperature is monitored by sensors in the motor winding.

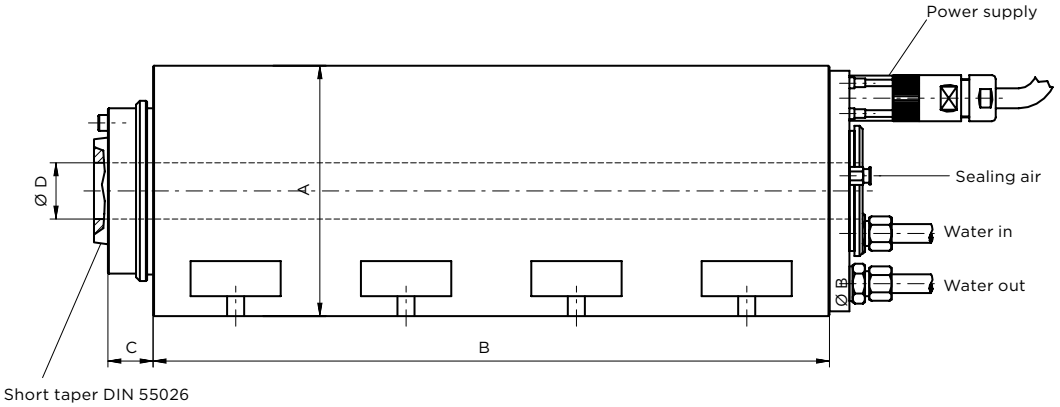
Cooling
- The motor is cooled by a separate integral cooling circuit near the motor windings.

Seal
- The spindle is sealed with a proven labyrinth packing and active sealing air. This protects the spindle bearings against soiling. Spindles can be installed either horizontally or vertically.

HSK



Short taper



910 series

	Mechanical data					Electrical data					
Part no.	**A**	**B**	**C**	**D**	**Chuck**	**KW**	**Rated rpm**	**rpm max.**	**Amp**	**Pols**	**Nm**
VFS-910.000010 VFS-910.000050	140	410	25	50	HSK-C50	14.5	8000	10,000 13,000	50	6	17
VFS-910.000110 VFS-910.000150	170	430	28	63	HSK-C63	20	8000	8500 11,600	53	6	24
VFS-910.000210 VFS-910.000250	200	530	38	–	Short taper 5	16	4000	6500 8200	45	6	38
VFS-910.000310 VFS-910.000350	220	550	40	40	Short taper 5	11	1500	5500 7500	46	8	70
VFS-910.000410 VFS-910.000450	250	675	44	56	Short taper 6	19.5	1500	4500 5800	60	8	124
VFS-910.000510 VFS-910.000550	280	610	67	56	Short taper 6	28.5	1500	3700 4700	94	8	181
VFS-910.000610 VFS-910.000650	300	720	67	60	Short taper 8	45	1500	3500 4500	135	8	287
VFS-910.000710 VFS-910.000750	320	850	88	70	Short taper 8	50	1500	3200 4100	200	8	318
VFS-910.000810 VFS-910.000850	350	1000	90	70	Short taper 8	75	1500	2600 3600	151	6	478
VFS-910.000910 VFS-910.000950	400	1025	90	70	Short taper 11	120	1500	2300 3000	247	8	764

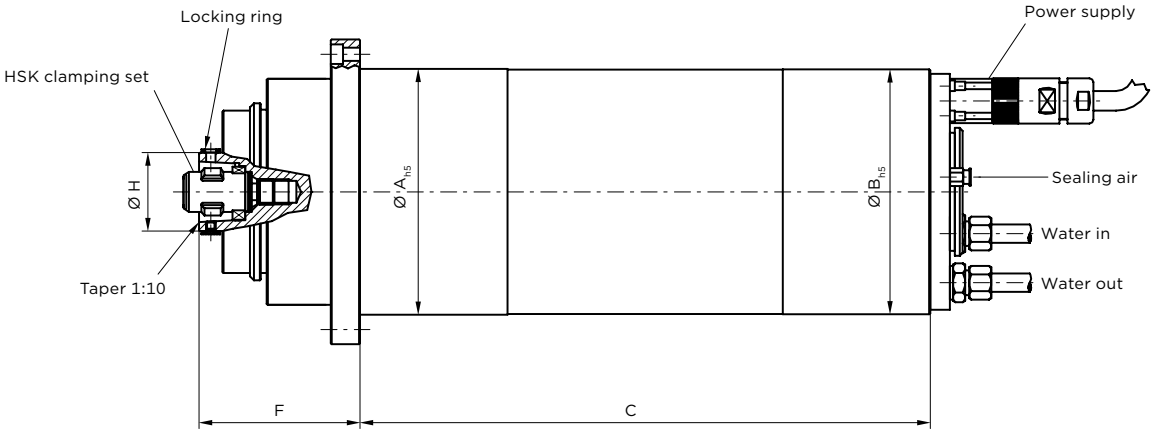
Voltage: 400 V

MOTOR SPINDLES
920 series

Modern machining operations require capable and dynamic spindle drives.

Our **920 series** is a spindle concept that our technicians and engineers developed from customers' applications in line with market demands. Building on many special versions, the spindle structure has been revised and standardised in order to achieve reasonable price structures. The latest techniques in the areas of bearings, motor and clamping technology, lubrication, sealing, sensor technology and materials were used in the 920 series, enabled through innovative product development and practical engineering.

HSK



Chuck
- HSK chucks are available for the smaller sizes. The larger versions are equipped with short taper according to DIN 55027. Larger sizes are optionally equipped with HSK chucks on request. Manual tool clamping and releasing. The spindle is equipped with an integral rotary encoder.

Bearing
- We only fit high precision preloaded bearings. These have excellent attenuation properties and wearing characteristics. Concentricity, measured at the chuck, is < 0.002 mm. The spindles run as smoothly as they do thanks to their rigid construction and optimised balancing.

Rotational direction
- Spindles can be operated clockwise or CCW.

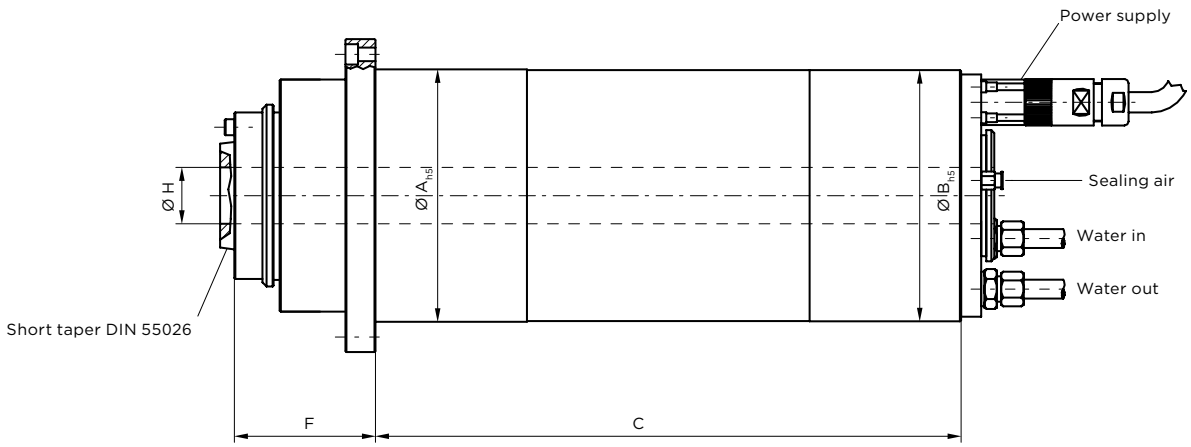
Lubrication
- Lifetime grease lubrication

Motor
- It is driven by a liquid-cooled, variable induction motor. Power ratings from 14.5–120 kW are available. A frequency converter is used to operate the spindle up to its maximum speed. The system is controlled by an integral rotary encoder. The temperature is monitored by sensors in the motor winding.

Cooling
- The motor is cooled by a separate integral cooling circuit near the motor windings.

Seal
- The spindle is sealed with a proven labyrinth packing and active sealing air. This protects the spindle bearings against soiling. Spindles can be installed either horizontally or vertically.

Short taper

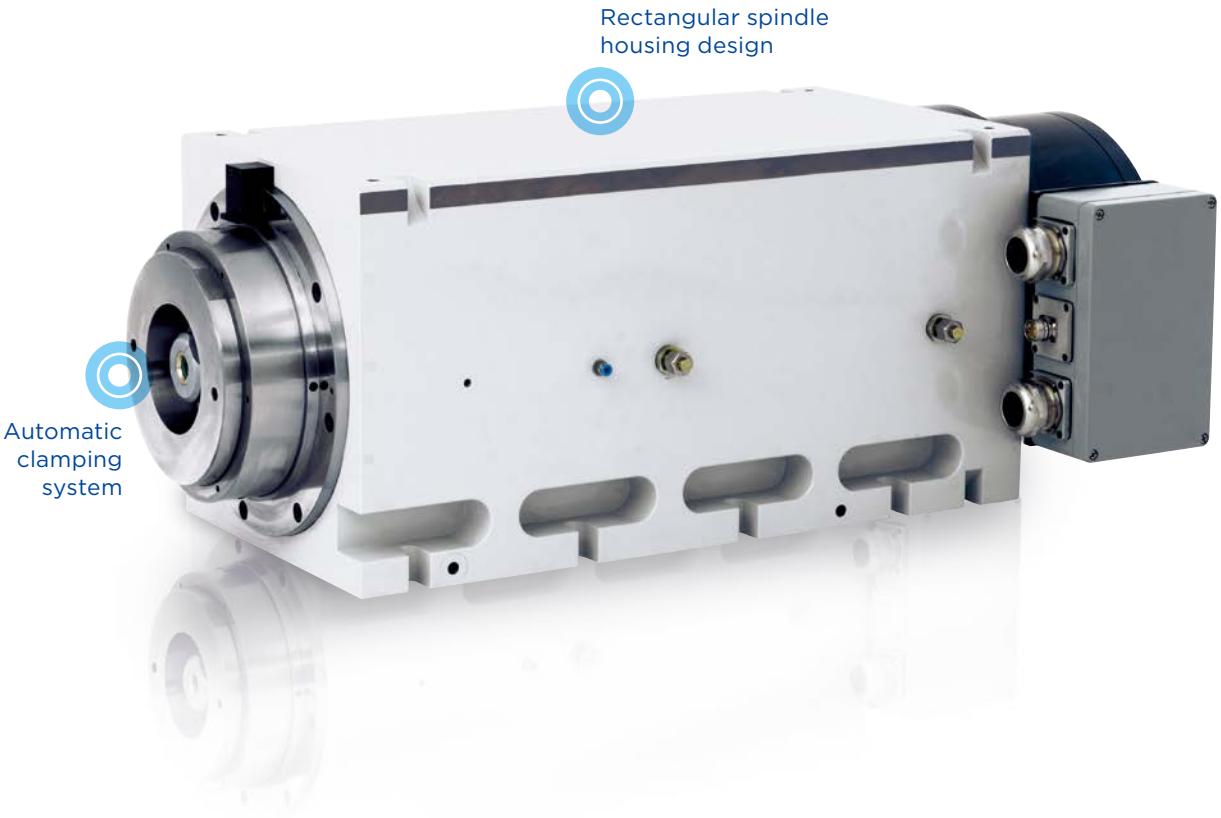


920 series

	Mechanical data						Electrical data					
Part no.	Ø A	Ø B	C	F	Ø H	Chuck	KW	Rated rpm	rpm max.	Amp	Pols	Nm
VFS-920.000010	140	139	350	85	50	HSK-C50	14.5	8000	10,000	50	6	17
VFS-920.000050									13,000			
VFS-920.000110	170	169	350	108	63	HSK-C63	20	8000	8500	53	6	24
VFS-920.000150									11,600			
VFS-920.000210	200	199	425	113	–	Short taper 5	16	4000	6500	45	6	38
VFS-920.000250									8200			
VFS-920.000310	220	219	450	140	40	Short taper 5	11	1500	5500	46	8	70
VFS-920.000350									7500			
VFS-920.000410	250	249	550	169	56	Short taper 6	19.5	1500	4500	60	8	124
VFS-920.000450									5800			
VFS-920.000510	280	279	500	177	56	Short taper 6	28.5	1500	3700	94	8	181
VFS-920.000550									4700			
VFS-920.000610	300	299	600	187	60	Short taper 8	45	1500	3500	135	8	287
VFS-920.000650									4500			
VFS-920.000710	320	319	700	238	70	Short taper 8	50	1500	3200	200	8	318
VFS-920.000750									4100			
VFS-920.000810	350	349	850	240	70	Short taper 8	75	1500	2600	151	6	478
VFS-920.000850									3600			
VFS-920.000910	400	399	850	265	70	Short taper 11	120	1500	2300	247	8	764
VFS-920.000950									3000			

Voltage: 400 V · Performance charts on request

MOTOR SPINDLES
930 series



Modern machining operations require capable and dynamic spindle drives.

Our **930 series** is a spindle concept that our technicians and engineers developed from customers' applications in line with market demands. Building on many special versions, the spindle structure has been revised and standardised in order to achieve reasonable price structures. The latest techniques in the areas of bearings, motor and clamping technology, lubrication, sealing, sensor technology and materials were used in the 930 series, enabled through innovative product development and practical engineering.

Chuck
- HSK interfaces with nominal sizes between 63 and 160 are available in the 930 series. A clamping set with integral spring pack is used to clamp the tools. The releasing unit operates hydraulically or pneumatically. The clamping state is controlled via a sensor and indicates 3 positions (released/clamped/clamped without tools). An integral rotary encoder positions the spindle for tool changes.

Bearing
- We only fit high precision preloaded bearings. These have excellent attenuation properties and wearing characteristics. Concentricity, measured at the chuck, is < 0.002 mm. The spindles run as smoothly as they do thanks to their rigid construction and optimised balancing.

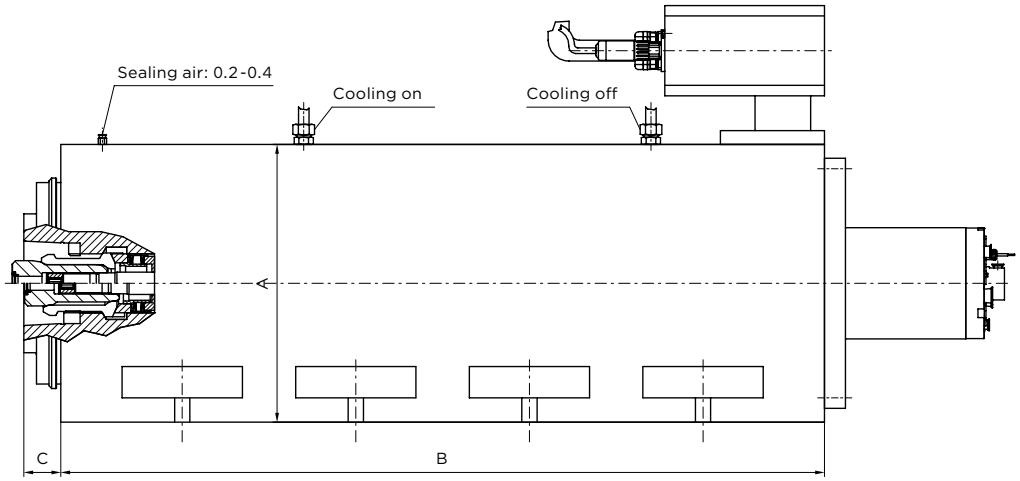
Rotational direction
- Spindles can be operated clockwise or CCW.

Lubrication
- Lifetime grease lubrication

Motor
- It is driven by a liquid-cooled, variable induction motor. Power ratings from 20–120 kW are available. A frequency converter is used to operate the spindle up to its maximum speed. The system is controlled by an integral rotary encoder. The temperature is monitored by sensors in the motor winding.

Cooling
- The motor is cooled by a separate integral cooling circuit near the motor windings.

Seal
- The spindle is sealed with a proven labyrinth packing and active sealing air. This protects the spindle bearings against soiling. Spindles can be installed either horizontally or vertically.



930 series

	Mechanical data				Electrical data					
Part no.	A	B	C	Chuck	KW	Rated rpm	rpm max.	Amp	Pols	Nm
VFS-930.000110	170	430	28	HSK-C63	20	8000	8500	53	6	24
VFS-930.000150							11,600			
VFS-930.000210	200	530	38	HSK-C80	16	4000	6500	45	6	38
VFS-930.000250							8200			
VFS-930.000310	220	550	31	HSK-C80	11	1500	5500	46	8	70
VFS-930.000350							7500			
VFS-930.000410	250	675	28	HSK-C100	19.5	1500	4500	60	8	124
VFS-930.000450							5800			
VFS-930.000510	280	610	45	HSK-C100	28.5	1500	3700	94	8	181
VFS-930.000550							4700			
VFS-930.000610	300	720	84	HSK-C125	45	1500	3500	135	8	287
VFS-930.000650							4500			
VFS-930.000710	320	850	60	HSK-C125	50	1500	3200	200	8	318
VFS-930.000750							4100			
VFS-930.000810	350	1000	95	HSK-C125	75	1500	2600	151	6	478
VFS-930.000850							3600			
VFS-930.000910	400	1025	105	HSK-C160	120	1500	2300	247	8	764
VFS-930.000950							3000			

Voltage: 400 V

MOTOR SPINDLES
940 series

The **940 series** motor spindles were specifically developed in-house for high performance machining processes. Automatic balancing systems for spindles with an automatic chuck as well as the various sensors for condition monitoring were standardised here. At all times, these integral sensors provide you with online information relating to the state of your spindle and the machining process.

We create special versions based on expertise and experience

We are able to create a custom chuck made of stainless steel, and much more, at your request.

We look forward to hearing from you.

T +49 93 72 948 39-100
E info@fiegekg.de

Rear view

Chuck
- You can select between manual and automatic tool clamping depending on the spindle and its use.

Bearing
- We only fit high precision preloaded bearings. These have excellent attenuation properties and wearing characteristics. Concentricity, measured at the chuck, is < 0.002 mm. The spindles run as smoothly as they do thanks to their rigid construction and optimised balancing.

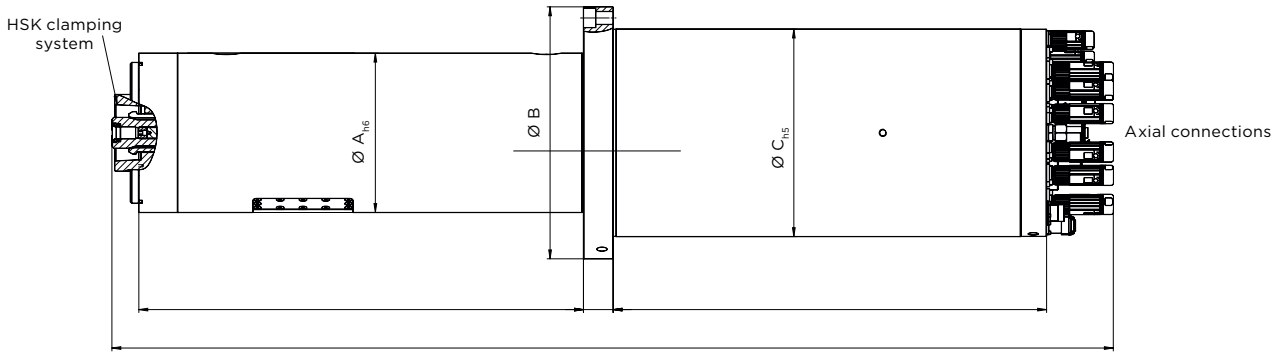
Lubrication
- Subject to speed range, the motor spindle benefits from oil-air or lifetime grease lubrication.

Motor
- It is driven by compact, powerful synchronous and induction motors. It is cooled by an integral cooling circuit around the motor. Sensors in the motor winding protect the motor from overheating.

Seal
- The spindle is sealed with a proven labyrinth packing and active sealing air. This protects the spindle bearings against soiling. Spindles can be installed either horizontally or vertically.

Balancing systems + O/I sensors
- For spindles with an HSK chuck we use open-centre, annular balancing systems that are partly combined with open center Acoustic-Emission sensors.

Temperature sensors
- Sensors used to monitor the bearing temperature are integrated on the side of fixed and floating bearings of the motor spindle.



940 series

Part no.	Mechanical data									
	Ø A_{h6}	Ø B	Ø C_{h5}	Chuck	Automatic/ manual	AE	Balancing system	Sensor bearing	Rotary encoder	Lubrication
VFS-900.100029	215	340	280	HSK-A 100	automatic	●	●	●	●	Grease
VFS-900.100036	200	270	210	HSK-A 80	automatic	–	–	●	●	Oil
VFS-920.100029	180	300	259	HSK-C 63	manual	–	●	●	●	Oil
VFS-900.100024	160	300	200	HSK-A 63	automatic	●	●	–	●	Grease
VFS-900.100023	230	340	280	KM 80	automatic	●	●	●	●	Grease
VFS-900.100028	215	340	280	HSK-A 100	automatic	●	●	●	●	Grease
VFS-900.100005	190	360	287	HSK-A 100	automatic	●	●	●	●	Grease
VFS-800.100018	150	260	235	Taper 1:5	manual	–	–	–	–	Grease

940 series

Part no.	Electrical data					
	KW	Rated speed	Max. speed	Volt	Amp	Nm
VFS-900.100029	30	1000	9930	400	95	286.5
VFS-900.100036	20	5870	17,700	400	53	31.8
VFS-920.100029	25	2500	23,700	380	73	95.5
VFS-900.100024	7.5	3000	5760	400	18	23.88
VFS-900.100023	45	2000	8940	400	115	214.97
VFS-900.100028	30	1000	9930	400	95	286.5
VFS-900.100005	75	5890	11,700	400	131	121
VFS-800.100018	22	4290	13,800	400	54	48.97

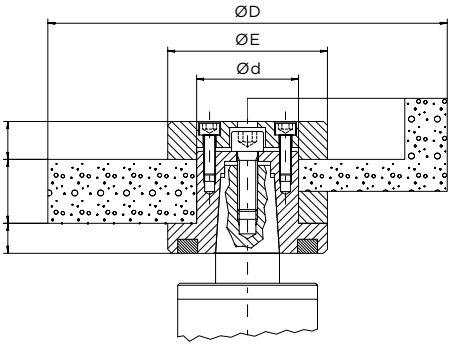
Performance charts on request

SPINDLE ACCESSORIES

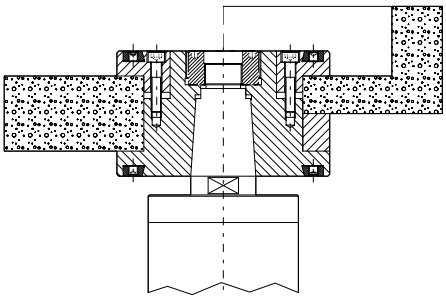
Grinding disk flanges

Special versions
according to drawing

Type A



Type B



	Flanges					Grinding wheels		
Part no.	Spindle Ø	A	C	Ø E	Type	B	Ø D	Ø d
VFZ-740.000000	40 mm	9	10	50	A	16	80	32
VFZ-740.000010	50 mm	13	10	50		20	100	32
VFZ-740.000020	60 mm	12	15	60		25	150	32
VFZ-740.000030	80 mm	19	15	80		32	200	51
VFZ-740.000040	100 mm	22	20	110	B	40	250	76
VFZ-740.000050	120 mm	15	20	170		60	350	127
VFZ-740.000060	140 mm	20	20	180		60	400	127
VFZ-740.000070	160 mm	17	25	260		80	500	203
VFZ-740.000080	200 mm	29	30	280		80	600	203

The grinding wheel flanges can be used for spindles in our 500, 600, 800 and 820 series.

Because of the anti-twist lock, our flanges can be used for both clockwise and CCW rotation. The scope of delivery includes the balancing weights and the intermediate ring. Our special flanges are manufactured individually according to drawing.

Spindle cooler
770 Compact series

Compact series

Plug-in devices as air-cooled version.
Cooling capacity from 0.89 to 5.3 kW.

Special features

- Stainless steel coiled tube evaporator
- Cutting edge technology with economical and quiet compressors and fans
- TÜV-certified high pressure limiter in the refrigerant circuit with expansion valve
- Minimum rating IP44
- CE-compliant / ISO 90001 / EN 60204
- Central fault message, flow switch and temperature alarm

Part no.	770 Compact series Type	Max. power consumption kW	Max. input current A	Cooling capacity kW	Air flow rate m^3/h
ZBA-770.00013	Compact 09	0.71	5.1	0.890	914
ZBA-770.00014	Compact 15	1.11	5.9	1.425	1210
ZBA-770.00001	Compact 25	1.59	10.0	2.475	1020
ZBA-770.00002	Compact 35	2.52	12.3	3.920	2300
ZBA-770.00015	Compact 45	2.98	13.3	5.340	2200

Supply voltage 230 V

Part no.	770 Industry series Type	Max. power consumption kW	Max. input current A	Cooling capacity kW	Air flow rate m^3/h
ZBA-770.00003	Industry 2.6	2.6	4.8	2.6	2800
ZBA-770.00004	Industry 4.1	3.4	6.2	4.1	4500
ZBA-770.00005	Industry 6.5	4.0	7.1	6.7	4500
ZBA-770.00006	Industry 7.5	4.7	8.1	7.9	4500
ZBA-770.00007	Industry 11.0	6.1	10.6	11.8	5500
ZBA-770.00008	Industry 14.0	7.9	13.9	14.4	6100

Supply voltage 400 V

Spindle cooler 770 Industry series

Industry series

Plug-in devices as air-cooled version.
Cooling capacity from 2.6 to 14.4 kW.

Special features

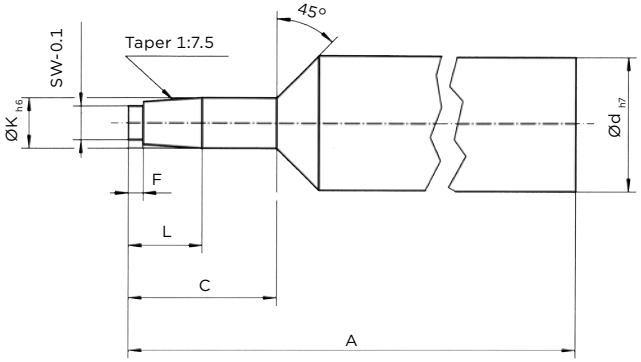
- Enclosure with stainless steel frame
- Stainless steel coiled tube evaporator
- All drives at least IP54
- Leading edge compressor technology with economical and quiet scroll compressors
- TÜV-certified high and low-pressure limiters

Water tank capacity l	Pump inlet pressure bar	Dimensions L × W × H mm	Dry weight kg
18	2.2	705 × 510 × 450	49
18	3.6	705 × 510 × 450	55
18	2.9	705 × 510 × 450	65
30	2.6	755 × 600 × 500	81
30	2.3	755 × 600 × 500	90

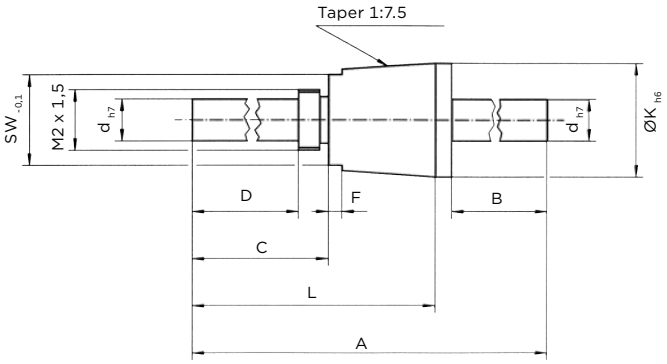
Water tank capacity l	Pump inlet pressure bar	Dimensions L × W × H mm	Dry weight kg
90	3.4	715 × 715 × 1375	170
90	3.4		170
90	3.4		180
120	3.8		190
120	3.8		200
120	3.8		200

Balancing mandrels

Type A



Type B

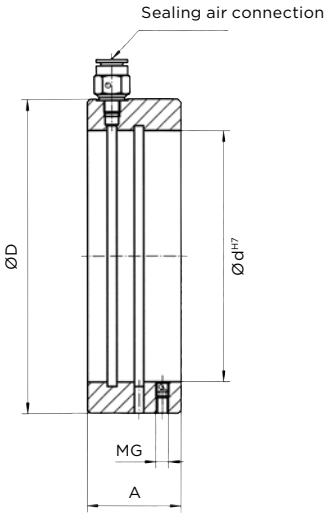


	Product data											
Part no.	**Spindle Ø**	**A**	**B**	**C**	**D**	**Ø d_{h7}**	**F**	**Ø K_{h6}**	**L**	**M2**	**$SW_{-0.1}$**	**Type**
VFZ-750.000000	40 mm	235	–	40	–	36	4	13.5	20	–	9	A
VFZ-750.000010	50 mm	239	–	44	–	40	4	15.5	24	–	10	
VFZ-750.000020	60 mm	260	–	60	–	60	5	23	30	–	16	
VFZ-750.000030	80 mm	380	–	79	–	70	6	32	44	–	23	
VFZ-750.000040	100 mm	270	79	117	99	25	8	48	181	M30	34	B
VFZ-750.000050	120 mm	300	100	120	100	27	8	52	190	M30	36	
VFZ-750.000060	140 mm	310	100	120	100	32	10	58	200	M35	41	
VFZ-750.000070	160 mm	310	80	120	98	37	12	72	220	M40	50	
VFZ-750.000080	200 mm	337.5	92.5	120	100	47	10	88	235	M50	65	

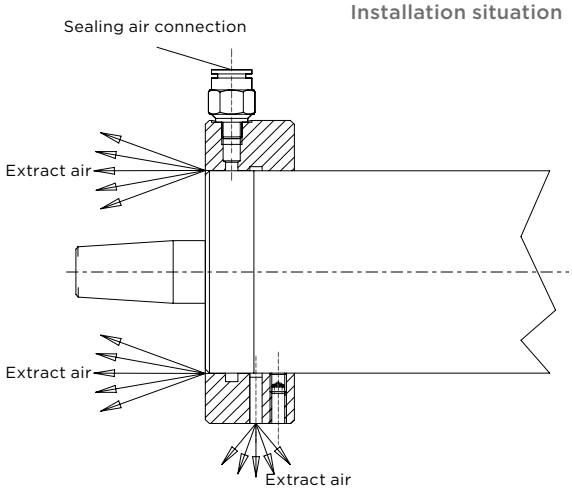
Sealing air rings

You can use our sealing air rings to provide sealing air later for spindle systems supplied without a sealing air seal.

It is mounted on the tool side of the spindle. The ring is attached and secured by a clamping screw on the spindle housing. The air is connected via a plug-in coupler on the outside of the device. The air pressure should be between 0.5 and 1 bar.



Installation situation



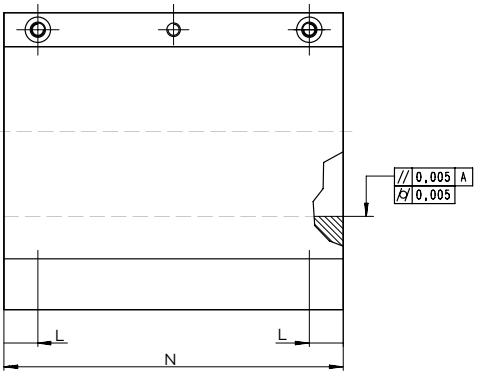
	Product data				
Part no.	**Spindle Ø**	**A**	**Ø D**	**Ø d H7**	**MG**
VFZ-751.00000	40 mm	20	60	40	M3
VFZ-751.00010	50 mm	22	75	50	M4
VFZ-751.00020	60 mm	24	80	60	M4
VFZ-751.00030	80 mm	30	100	80	M5
VFZ-751.00040	100 mm	35	120	100	M6
VFZ-751.00050	120 mm	40	140	120	M6
VFZ-751.00060	140 mm	45	160	140	M6
VFZ-751.00070	160 mm	50	190	160	M8
VFZ-751.00080	200 mm	55	230	200	M8

Spindle holders

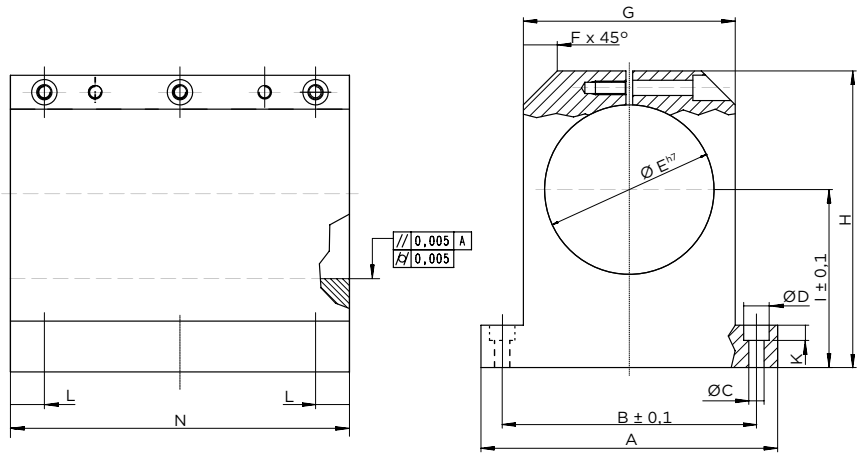
Our spindle holders guarantee best possible stability and precision during the machining process with our spindles.

These holders are made from low tension annealed GG25 material. The mounting surface is ground in order to ensure 0.01 mm parallelism to the receiving bore for the spindle.

Spindle holders NG 40 and NG 50



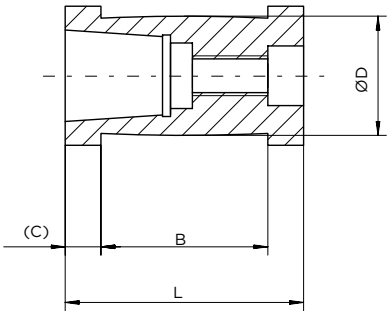
Spindle holders NG 60 – NG 200



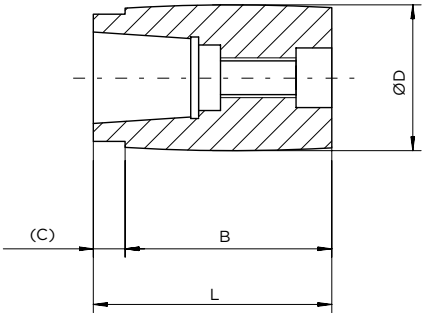
	Product data													
Part no.	Spindle Ø	A	$B_{\pm 0.1}$	Ø C	Ø D	Ø E H7	F x 45°	G	H	$l_{\pm 0.1}$	K	L	N	m kg
VFZ-780.00000	40 mm	85	70	6.6	11	40	15	55	112.5	77.5	7	20	165	6.8
VFZ-780.00010	50 mm	100	83			50	15	66	117.5	77.5			165	7.3
VFZ-780.00020	60 mm	120	100			60	15	80	130	85			185	10.9
VFZ-780.00030	80 mm	145	125	9	15	80	20	100	155	95	9	20	235	18.9
VFZ-780.00040	100 mm	175	150			100	20	125	175	105			300	32.4
VFZ-780.00050	120 mm	210	180	11	18	120	20	150	220	140	11	20	335	56.5
VFZ-780.00060	140 mm	240	210			140	25	170	230	140		30	385	71.1
VFZ-780.00070	160 mm	280	245			160	40	200	275	170		30	385	102.1
VFZ-780.00080	200 mm	330	290	13.5	20	200	50	250	315	190	13	30	485	170.9

Pulleys

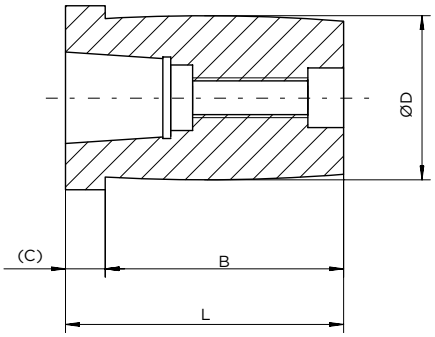
Type A



Type B



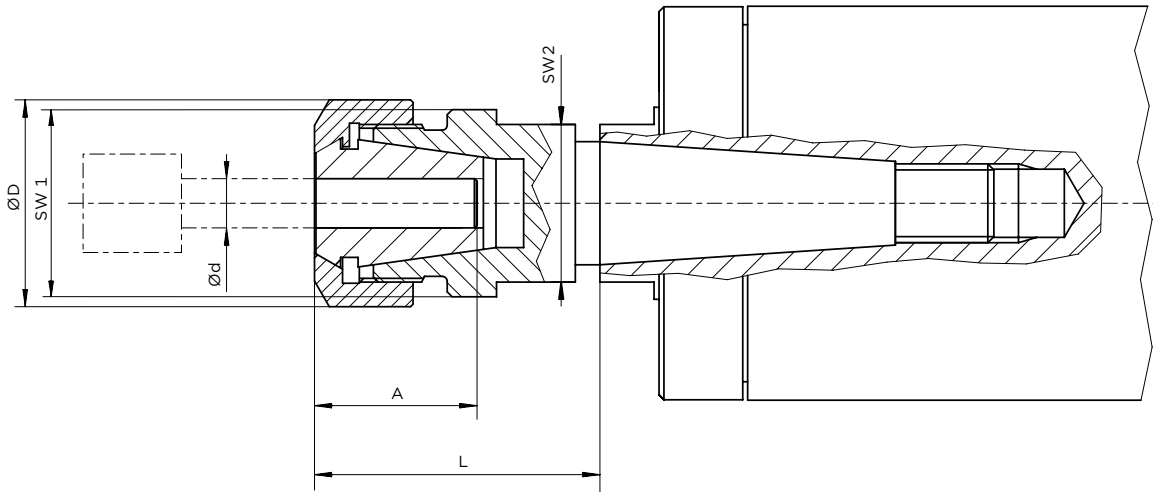
Type C



Part no.	Product data							
	Spindle Ø	B	C	D	L	Type	3000 rpm for motor pulleys Ø	
							Ø 220	Ø 110
VFZ-730.000000	40 mm	25	7.5	18.4	40	A	36000	18000
VFZ-730.000001		34	6	24.4		B	27000	13500
VFZ-730.000002		34	6	41.3		B	16000	8000
VFZ-730.000003		34	6	55		B	12000	6000
VFZ-730.000010	50 mm	25	10	20.7	45	A	32000	16000
VFZ-730.000011		34	11	30		B	22000	11000
VFZ-730.000012		34	11	47.1		B	14000	7000
VFZ-730.000013		34	11	66		B	10000	5000
VFZ-730.000020	60 mm	42	9	30	60	A	22000	11000
VFZ-730.000021		52	8	36.7		B	18000	9000
VFZ-730.000022		52	8	44		B	15000	7500
VFZ-730.000023		52	8	73.4		B	9000	4500
VFZ-730.000030	80 mm	60	10	41.3	70	C	16000	8000
VFZ-730.000031				55		B	12000	6000
VFZ-730.000032				73.4		B	9000	4500
VFZ-730.000033				110		B	6000	3000
VFZ-730.000040	100 mm	80	15	55	95	C	12000	6000
VFZ-730.000041				82.5		B	8000	4000
VFZ-730.000042				120		B	5500	2750
VFZ-730.000050	120 mm	90	15	165	105	B	4000	1000
VFZ-730.000051				200		B	3300	1650
VFZ-730.000060	140 mm	100	15	253.8	115	B	2600	1300
VFZ-730.000061				440		B	1500	750
VFZ-730.000070	160 mm	120	15	440	135	B	1500	750
VFZ-730.000080	200 mm	130	15	480	145	B	1250	625

Collet chucks

Type A



Product data											
CW rotation Part no.	CCW rotation Part no.	HSK Part no.	HSK size	Spindle Ø	Clamping Ø	Collet	A max.	Ø D	SW1	SW2	L
VFZ-710.000000	VFZ-710.000100	VFZ-710.000200	HSK-C32	40 mm	1-10 mm	ER16	25	19	17	17	29
VFZ-710.000010	VFZ-710.000110	VFZ-710.000210	HSK-C32	50 mm	1-10 mm	ER16	25	19	17	19	29
VFZ-710.000020	VFZ-710.000120	VFZ-710.000220	HSK-C40	60 mm	1-10 mm	ER16	35	28	25	25	40
VFZ-710.000030	VFZ-710.000130	VFZ-710.000230	HSK-C50	80 mm	2-16 mm	ER25	35	42	–	32	58
VFZ-710.000040	VFZ-710.000140	VFZ-710.000240	HSK-C50	100 mm	3-20 mm	ER32	45	63	–	50	70

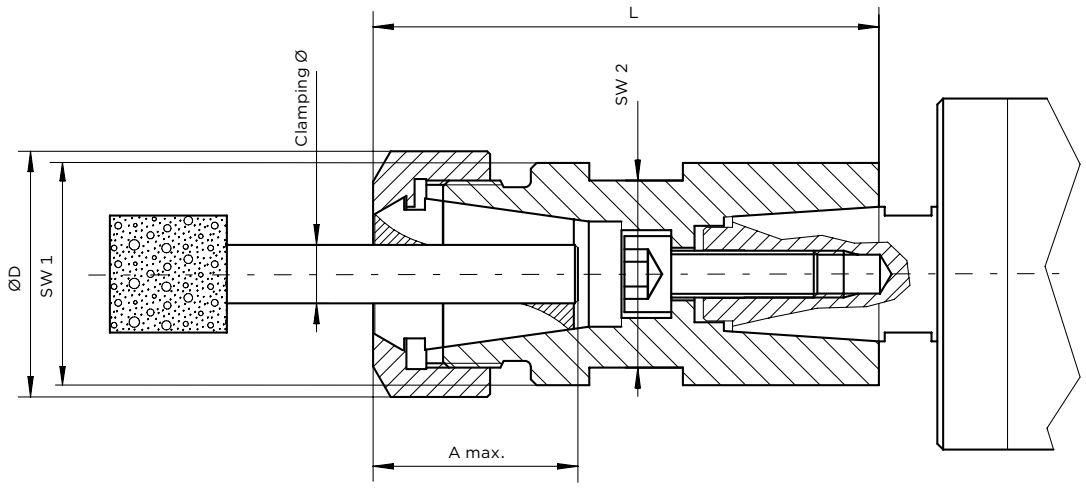
Highest stability is guaranteed when you use the shortest possible chuck. The collet required for your machining task must be ordered separately.

The collet chucks are also suitable for our 700 and 810 series spindles.

Collet chucks

for spindles with an internal taper 1:7.5

Type A



	Product data							
CW rotation Part no.	Spindle Ø	Clamping Ø	Collet	A max.	Ø D	SW1	SW2	L
VFZ-712.000000	40 mm	1–6 mm	ER11	18	19	17	17	53
VFZ-712.000010	50 mm	1–6 mm	ER11	18	19	17	17	60
VFZ-712.000020	60 mm	1-10 mm	ER16	28	28	25	25	76
VFZ-712.000030	80 mm	1-16 mm	ER25	35	42	–	35	98

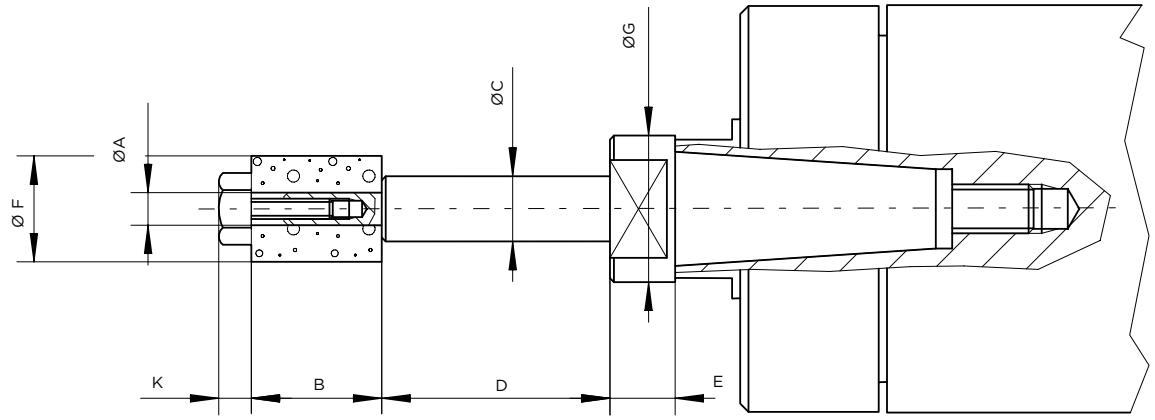
Highest stability is guaranteed when you use the shortest possible chuck.
The collet required for your machining task must be ordered separately.

The collet chucks are also suitable for our 500, 600, 800 and 820 series spindles.

Grinding mandrels

for internal grinding spindles

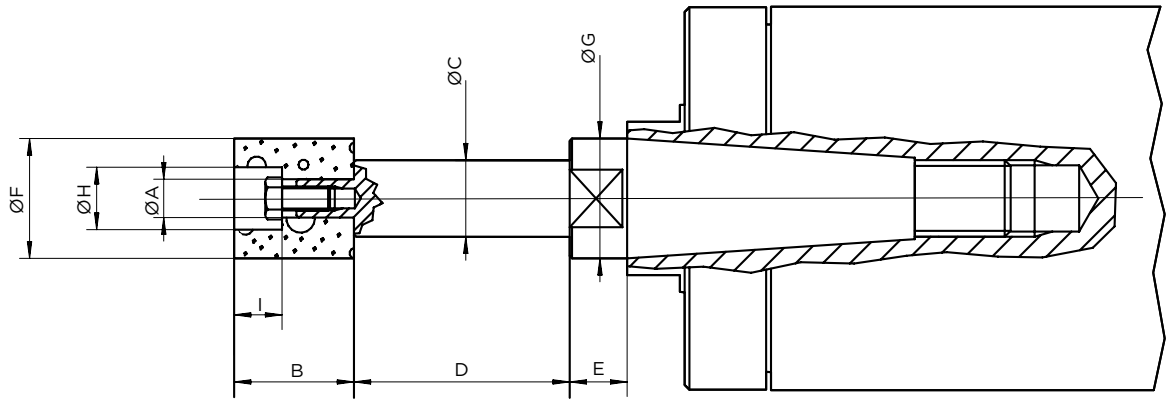
Type A



Product data															
CW rotation Part no.	CCW rotation Part no.	HSK Part no.	HSK size	Spindle Ø	Ø A	B	Ø C	D	E	Ø F	Ø G	Ø H	I	K	Type
VFZ-720.000000	VFZ-720.000100	VFZ-720.000200	HSK-C32	40 mm	4	16	8	28	7	13	15	–	–	4	A
VFZ-720.000001	VFZ-720.000101	VFZ-720.000201			4		8	50		13		–	–	4	
VFZ-720.000002	VFZ-720.000102	VFZ-720.000202			6		10	30		16		–	–	7	
VFZ-720.000003	VFZ-720.000103	VFZ-720.000203			6		10	55		16		–	–	7	
VFZ-720.000004	VFZ-720.000104	VFZ-720.000204	HSK-C32	40 mm	8	22	15	30	7	22	15	13	10	–	B
VFZ-720.000005	VFZ-720.000105	VFZ-720.000205						60						–	
VFZ-720.000010	VFZ-720.000110	VFZ-720.000210	HSK-C32	50 mm	4	16	8	28	8	13	18	–	–	4	A
VFZ-720.000011	VFZ-720.000111	VFZ-720.000211			4	16	8	50		13		–	–	4	
VFZ-720.000012	VFZ-720.000112	VFZ-720.000212			6	16	10	30		16		–	–	7	
VFZ-720.000013	VFZ-720.000113	VFZ-720.000213			6	16	10	55		16		–	–	7	
VFZ-720.000014	VFZ-720.000114	VFZ-720.000214	HSK-C32	50 mm	8	22	15	30	8	22	18	13	10	–	B
VFZ-720.000015	VFZ-720.000115	VFZ-720.000215			8	22	15	60		22		13		–	
VFZ-720.000016	VFZ-720.000116	VFZ-720.000216			10	25	18	30		25		16		–	
VFZ-720.000017	VFZ-720.000117	VFZ-720.000217			10	25	18	70		25		16		–	
VFZ-720.000020	VFZ-720.000120	VFZ-720.000220	HSK-C40	60 mm	6	16	10	35	8	16	24	–	–	7	A
VFZ-720.000021	VFZ-720.000121	VFZ-720.000221						60				–	–	7	
VFZ-720.000022	VFZ-720.000122	VFZ-720.000222	HSK-C40	60 mm	6	20	13	40	8	20	24	11	5	–	B
VFZ-720.000023	VFZ-720.000123	VFZ-720.000223			6	20	13	70		20		11	5	–	
VFZ-720.000024	VFZ-720.000124	VFZ-720.000224			8	25	16	45		25		13	10	–	
VFZ-720.000025	VFZ-720.000125	VFZ-720.000225			8	25	16	80		25		13	10	–	
VFZ-720.000026	VFZ-720.000126	VFZ-720.000226			10	30	20	50		30		16	10	–	
VFZ-720.000027	VFZ-720.000127	VFZ-720.000227			10	30	20	85		30		16	10	–	
VFZ-720.000028	VFZ-720.000128	VFZ-720.000228	HSK-C40	60 mm	13	40	28	55	8	40	28	22	10	–	B

Select the grinding mandrel required for your particular machining task.
Highest stability is guaranteed when you use the shortest possible grinding mandrel.
You can also use the grinding mandrels for our 700 and 810 series spindles.

Type B



Product data															
CW rotation Part no.	CCW rotation Part no.	HSK Part no.	HSK size	Spindle Ø	Ø A	B	Ø C	D	E	Ø F	Ø G	Ø H	I	K	Type
VFZ-720.000030	VFZ-720.000130	VFZ-720.000230	HSK-C50	80 mm	8	25	16	45	12	25	25	13	10	–	B
VFZ-720.000031	VFZ-720.000131	VFZ-720.000231			8	25	16	80		25	25	13	10	–	
VFZ-720.000032	VFZ-720.000132	VFZ-720.000232			10	30	20	50		30	25	16	10	–	
VFZ-720.000033	VFZ-720.000133	VFZ-720.000233			10	30	20	85		30	25	16	10	–	
VFZ-720.000034	VFZ-720.000134	VFZ-720.000234			13	40	28	55		40	32	22	10	–	
VFZ-720.000035	VFZ-720.000135	VFZ-720.000235			13	40	28	85		40	32	22	10	–	
VFZ-720.000036	VFZ-720.000136	VFZ-720.000236			16	50	32	45		50	32	27	20	–	
VFZ-720.000037	VFZ-720.000137	VFZ-720.000237			16	50	32	90		50	32	27	20	–	
VFZ-720.000038	VFZ-720.000138	VFZ-720.000238			20	40	40	45		60	40	32	20	–	
VFZ-720.000039	VFZ-720.000139	VFZ-720.000239			20	40	40	90		60	40	32	20	–	
VFZ-720.000040	VFZ-720.000140	VFZ-720.000240	HSK-C50	100 mm	10	30	20	50	15	30	32	16	10	–	B
VFZ-720.000041	VFZ-720.000141	VFZ-720.000241			10	30	20	85		30	32	16	10	–	
VFZ-720.000042	VFZ-720.000142	VFZ-720.000242			13	40	28	55		40	32	22	10	–	
VFZ-720.000043	VFZ-720.000143	VFZ-720.000243			13	40	28	85		40	32	22	10	–	
VFZ-720.000044	VFZ-720.000144	VFZ-720.000244			16	50	32	45		50	32	27	20	–	
VFZ-720.000045	VFZ-720.000145	VFZ-720.000245			16	50	32	90		50	32	27	20	–	
VFZ-720.000046	VFZ-720.000146	VFZ-720.000246			20	40	40	45		60	40	32	20	–	
VFZ-720.000047	VFZ-720.000147	VFZ-720.000247			20	40	40	90		60	40	32	20	–	
VFZ-720.000048	VFZ-720.000148	VFZ-720.000248			25	40	60	50		80	60	42	20	–	
VFZ-720.000049	VFZ-720.000149	VFZ-720.000249			25	40	60	100		80	60	42	20	–	

DRESSING TECHNOLOGY

DRESSING DEVICES
150 EAGH series

The **150 series** dressing devices are made for all applications that require a higher torque during dressing and have little space available.

In order to achieve optimum damping characteristics, only aged GG25 machine castings are used for the production of the body.

Chuck
- Chucks are mounted using a HSK 63.
  Concentricity < 0.002 mm
  Axial run-out < 0.002 mm

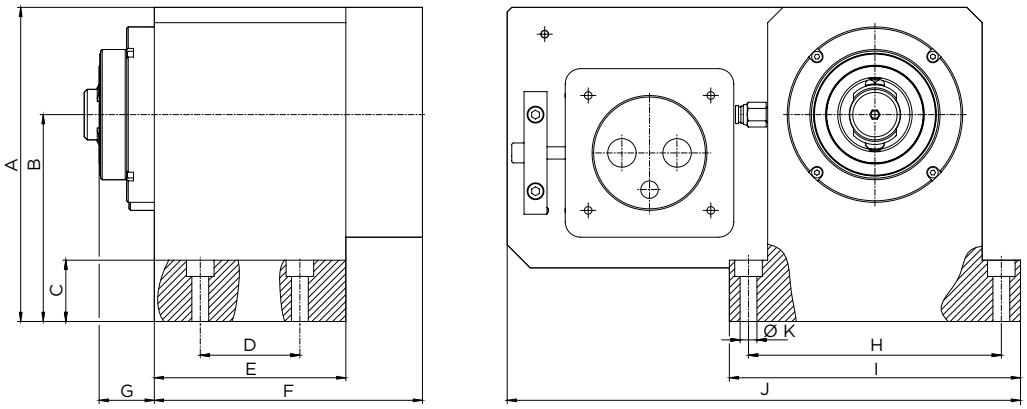
Bearing
- We only fit high precision preloaded bearings.
  These have particularly good damping properties and extremely robust wearing characteristics.

Lubrication
- The EAGH dressing device is lubricated for life.

Motor
- It is driven by a specially controlled hydraulic motor or a synchronous motor.

Seal
- The spindle is sealed with a proven labyrinth packing and active sealing air.

Precision
- The base area is ground. Parallelism of the base area to the dressing-axis is < 0.003 mm.



150 series

	EAGH 030 product data												
Part no.	**Type**	**Chuck**	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**Ø K**
VFA-150.000001	EAGH 030.10	HSK 63	205	135	40	65	125	175	36	165	190	335	11

150 series

	EAGH 030 motor data				
Part no.	**Type**	**Pressure bar 100 % ED**	**Torque Nm Nm/bar**	**Output kW**	**Dressing speed max.**
VFA-150.000001	EAGH 030.10	125	0.12	3.5	3500

DRESSING DEVICES
160 AGE/170 AGH series

The **160/170 series** dressing devices are especially designed for dressing with diamond rolls on grinding machines. Three base types with a 50/100/150 mm mounting width for the diamond roll are available.
In order to achieve optimum damping characteristics, only aged GG25 machine castings are used for the production of the body.
The appropriate ASF-type dressing spindles are available for each mounting width and each mounting diameter (see page 72).

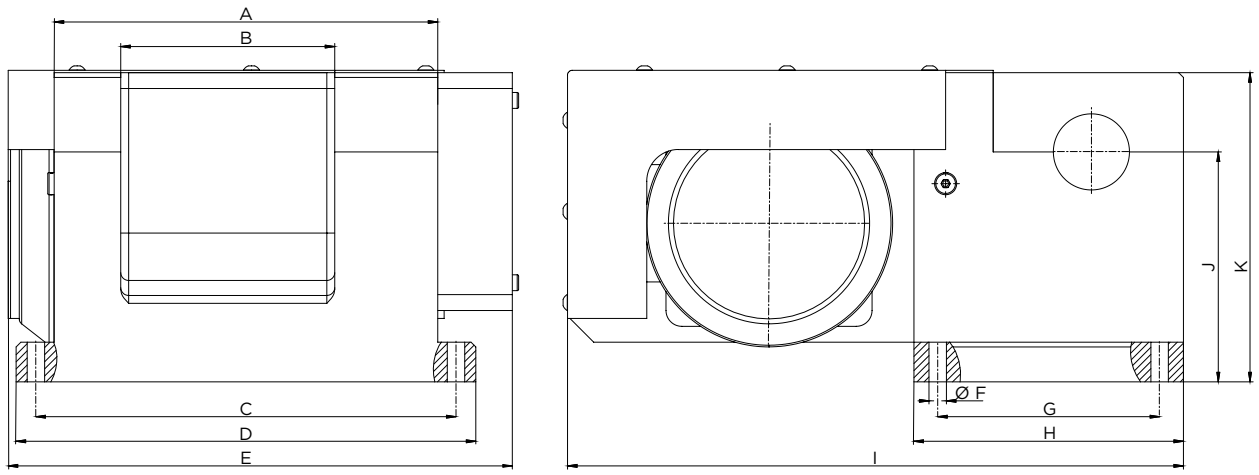
Type selection Our dressing devices are delivered with an electric or hydraulic motor. They are driven clockwise or CCW.
AGE: Electric drive
AGH: Hydraulic drive

Type AGE/S This type also enables the connection of sealing air. In order to be able to use this sealing air system, the corresponding dressing spindle with ASF/S attachment must be used.

Type AGE/HS This device is designed for dressing speeds up to 7000 rpm. Using this device requires the appropriate dressing spindle with the ASF/HS attachment to be used.

Precision The base area is ground and the receiving bores are precision turned in the base body. Parallelism of the base area to the dressing axis is < 0.003 mm.

160 AGE series, electric drive, clockwise



160 series > AGE > Electric drive, right

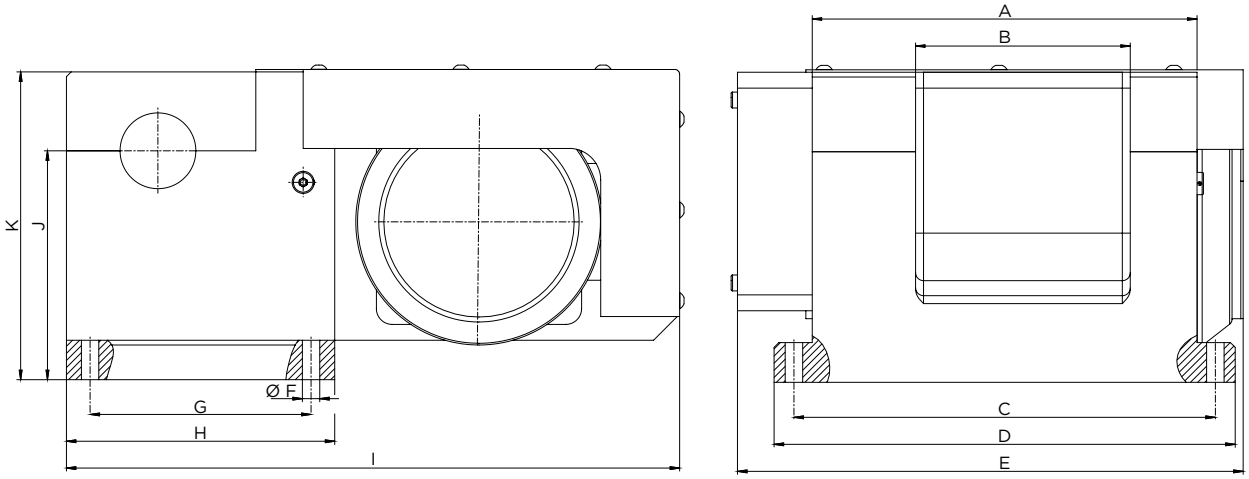
	Product data											
Part no.	Type	A	B	C	D	E	Ø F	G	H	I	J	K
VFA-160.000001	AGE 050.10	192	85	215	240	268	11	140	170	388.5	145	195
VFA-160.000002	AGE 100.10	242	135	265	290	318						
VFA-160.000003	AGE 150.10	292	185	315	340	363.5						
VFA-160.000004	AGE/S 050.10	192	85	215	240	268	11	140	170	388.5	145	195
VFA-160.000005	AGE/S 100.10	242	135	265	290	318						
VFA-160.000006	AGE/S 150.10	292	185	315	340	363.5						
VFA-160.000013	AGE/HS 050.10	192	85	215	240	268	11	140	170	388.5	145	195
VFA-160.000014	AGE/HS 100.10	242	135	265	290	318						
VFA-160.000015	AGE/HS 150.10	292	185	315	340	363.5						

160 series > AGE > Electric drive, right

	Motor data					
Part no.	Type	Voltage V	Current A	Frequency Hz	Output kW	Dressing speed max.
VFA-160.000001	AGE 050.10	400 Y	1.73	50	0.75	3500
VFA-160.000002	AGE 100.10					
VFA-160.000003	AGE 150.10					
VFA-160.000004	AGE/S 050.10	400 Y	1.73	50	0.75	3500
VFA-160.000005	AGE/S 100.10					
VFA-160.000006	AGE/S 150.10					
VFA-160.000013	AGE/HS 050.10	400 Δ*	3	87 (100)	0.75	7000
VFA-160.000014	AGE/HS 100.10					
VFA-160.000015	AGE/HS 150.10					

* 87 Hz curve

160 AGE series, electric drive, CCW



160 series > AGE > Electric drive, left

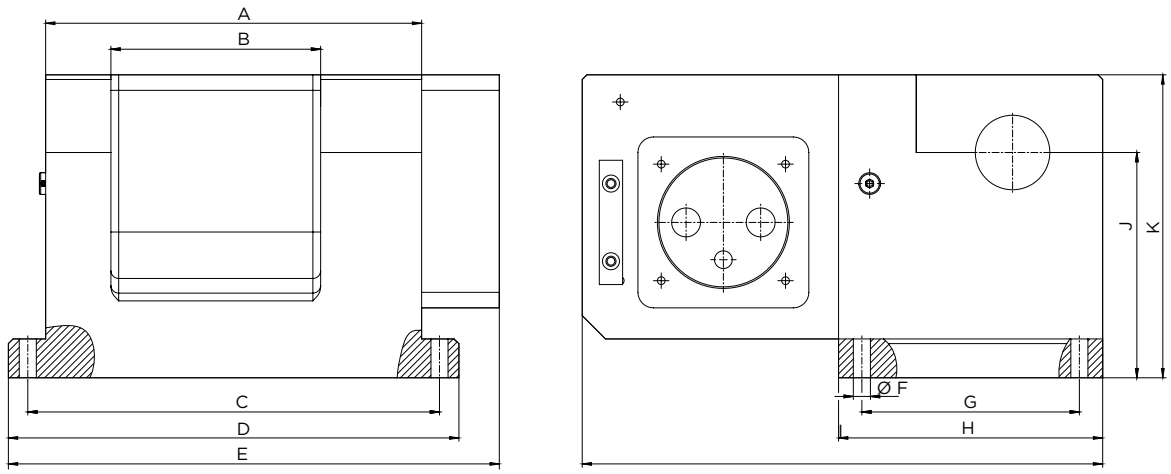
	Product data											
Part no.	Type	A	B	C	D	E	Ø F	G	H	I	J	K
VFA-160.000007	AGE 050.20	192	85	215	240	268	11	140	170	388.5	145	195
VFA-160.000009	AGE 100.20	242	135	265	290	318						
VFA-160.000011	AGE 150.20	292	185	315	340	363.5						
VFA-160.000008	AGE/S 050.20	192	85	215	240	268	11	140	170	388.5	145	195
VFA-160.000010	AGE/S 100.20	242	135	265	290	318						
VFA-160.000012	AGE/S 150.20	292	185	315	340	363.5						
VFA-160.000016	AGE/HS 050.20	192	85	215	240	268	11	140	170	388.5	145	195
VFA-160.000017	AGE/HS 100.20	242	135	265	290	318						
VFA-160.000018	AGE/HS 150.20	292	185	315	340	363.5						

160 series > AGE > Electric drive, left

	Motor data					
Part no.	Type	Voltage V	Current A	Frequency Hz	Output kW	Dressing speed max.
VFA-160.000007	AGE 050.20	400 Y	1.73	50	0.75	3500
VFA-160.000009	AGE 100.20					
VFA-160.000011	AGE 150.20					
VFA-160.000008	AGE/S 050.20	400 Y	1.73	50	0.75	3500
VFA-160.000010	AGE/S 100.20					
VFA-160.000012	AGE/S 150.20					
VFA-160.000016	AGE/HS 050.20	400 Δ*	3	87 (100)	0.75	7000
VFA-160.000017	AGE/HS 100.20					
VFA-160.000018	AGE/HS 150.20					

* 87 Hz curve

170 AGH series, hydraulic drive, clockwise



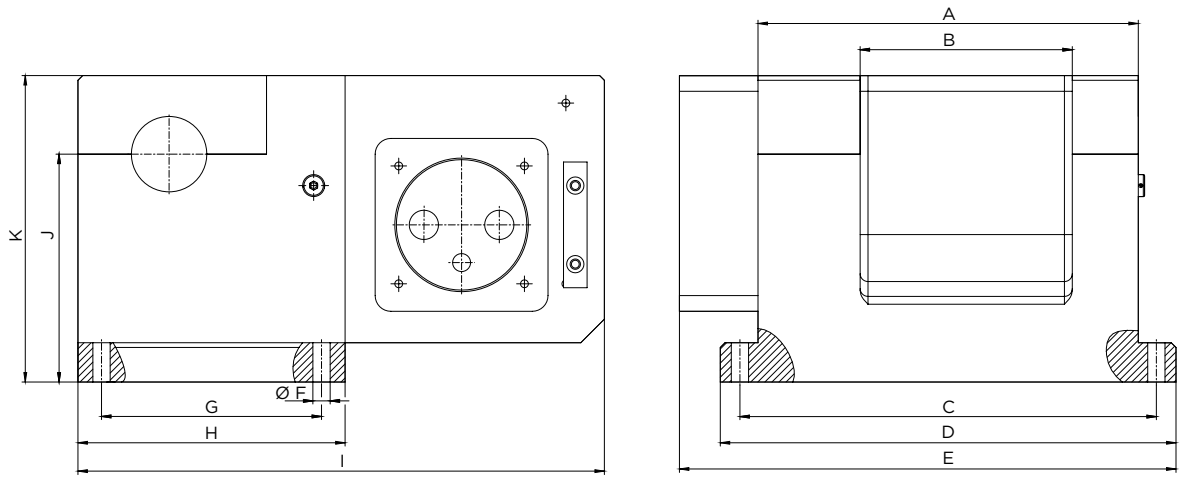
170 series > AGH > Hydraulic drive, right

	Product data											
Part no.	Type	A	B	C	D	E	Ø F	G	H	I	J	K
VFA-170.000001	AGH 050.10	192	85	215	240	266	11	140	170	335	145	195
VFA-170.000002	AGH 100.10	242	135	265	290	316						
VFA-170.000003	AGH 150.10	292	185	315	340	366						
VFA-170.000004	AGH/S 050.10	192	85	215	240	266	11	140	170	335	145	195
VFA-170.000005	AGH/S 100.10	242	135	265	290	316						
VFA-170.000006	AGH/S 150.10	292	185	315	340	366						

170 series > AGH > Hydraulic drive, right

	Motor data				
Part no.	Type	Pressure bar 100 % ED	Torque Nm Nm/bar	Output kW	Dressing speed max.
VFA-170.000001	AGH 050.10	125	0.21	4.42	3500
VFA-170.000002	AGH 100.10				
VFA-170.000003	AGH 150.10				
VFA-170.000004	AGH/S 050.10	125	0.21	4.42	3500
VFA-170.000005	AGH/S 100.10				
VFA-170.000006	AGH/S 150.10				

170 AGH series, hydraulic drive, CCW



170 series > AGH > Hydraulic drive, left

	Product data											
Part no.	Type	A	B	C	D	E	Ø F	G	H	I	J	K
VFA-170.000007	AGH 050.20	192	85	215	240	266	11	140	170	335	145	195
VFA-170.000009	AGH 100.20	242	135	265	290	316						
VFA-170.000011	AGH 150.20	292	185	315	340	366						
VFA-170.000008	AGH/S 050.20	192	85	215	240	266	11	140	170	335	145	195
VFA-170.000010	AGH/S 100.20	242	135	265	290	316						
VFA-170.000012	AGH/S 150.20	292	185	315	340	366						

170 series > AGH > Hydraulic drive, left

	Motor data				
Part no.	Type	Pressure bar 100 % ED	Torque Nm Nm/bar	Output kW	Dressing speed max.
VFA-170.000007	AGH 050.20	125	0.21	4.42	3500
VFA-170.000009	AGH 100.20				
VFA-170.000011	AGH 150.20				
VFA-170.000008	AGH/S 050.20	125	0.21	4.42	3500
VFA-170.000010	AGH/S 100.20				
VFA-170.000012	AGH/S 150.20				

DRESSING SPINDLES
180 ASF series

The **180 series** dressing spindles are high precision mechanical spindles without their own drive, developed specifically for use in our AGE / AGH dressing devices. Their functions are a perfect match. You can choose between chuck diameters 50 / 52 / 56 / 63 and chuck lengths 50 / 100 / 150 mm.

In their manufacture, we use exclusively hard-wearing special steel. All components are hardened and ground. After mounting, the dressing spindle is subject to a test run in which an acceptance test report with all relevant spindle data is issued.

Chuck

- The chuck of the diamond roll is the centrepiece of the dressing spindle.
  The cylindrical chuck is precision-ground with a tolerance of h1. The concentricity and axial run-out is < 0.002 mm.

Bearing

- We only fit high precision preloaded bearings. These have particularly good damping properties and extremely robust wearing characteristics. We achieve smooth running from a rigid construction and optimal balancing.

Lubrication

- All 180 series dressing spindles have lifetime grease lubrication.

Motor

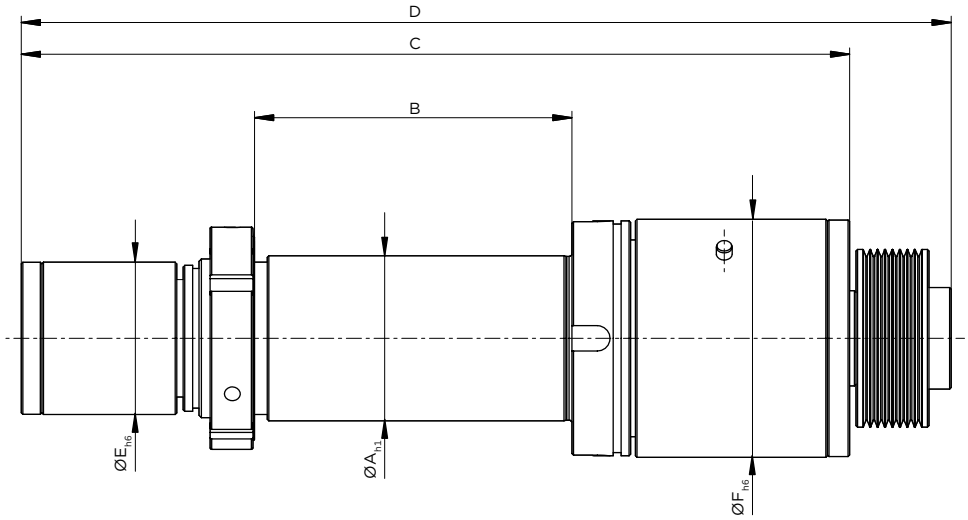
- Our dressing devices are driven by a belt with frequency controlled motor.

Seal / Type selection:

Type ASF:
Dressing speed up to 3,500 rpm
The spindle is sealed with a tried and tested labyrinth packing with mechanical seal.

Type ASF/S:
Dressing speed up to 3,500 rpm + heavy exposure to dirt
A sealing air seal is installed here in addition to the mechanical seal. Using this system requires the respective dressing device to be used with the AGE/S or AGH/S attachment.

Type ASF/HS:
Dressing speeds up to 7,000 rpm
It is sealed with a tried and tested labyrinth packing and active sealing air. These spindles are designed for dressing speeds up to 7000 rpm. Using this system requires the respective dressing device to be used with the AGE/HS attachment.

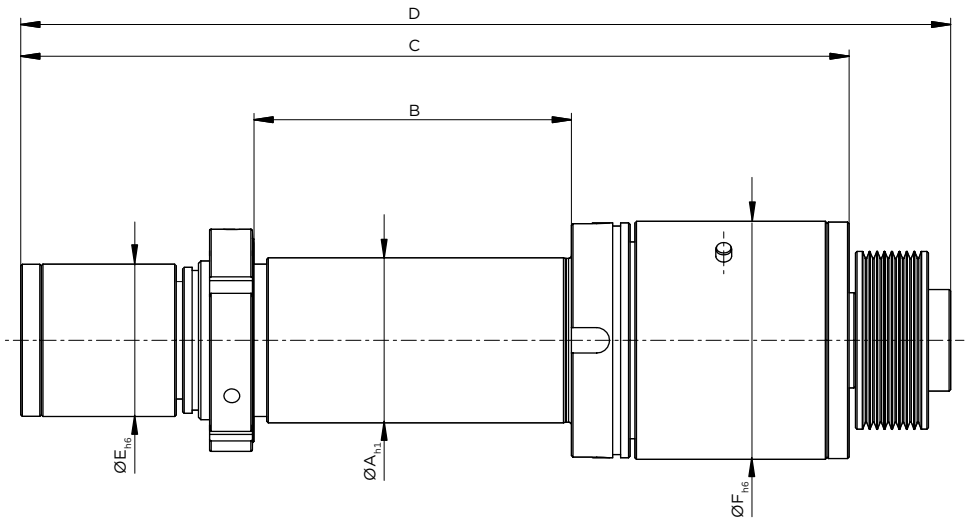


180 series › ASF 050

	Product data									
Part no.	Type	Ø A	B	C	D	Ø E	Ø F	Speed	Shaft seal	Sealing air
VFA-180.00100	ASF 050.050.10	50	50	211	243	48	75	3500	●	–
VFA-180.00101	ASF 050.100.10		100	261	293				●	–
VFA-180.00102	ASF 050.150.10		150	311	343				●	–
VFA-180.00103	ASF/S 050.050.10	50	50	211	243	48	75	3500	●	●
VFA-180.00104	ASF/S 050.100.10		100	261	293				●	●
VFA-180.00105	ASF/S 050.150.10		150	311	343				●	●
VFA-180.00106	ASF/HS 050.050.10	50	50	211	243	48	75	7000	–	●
VFA-180.00107	ASF/HS 050.100.10		100	261	293				–	●
VFA-180.00108	ASF/HS 050.150.10		150	311	343				–	●

180 series › ASF 052

	Product data									
Part no.	Type	Ø A	B	C	D	Ø E	Ø F	Speed	Shaft seal	Sealing air
VFA-180.00200	ASF 052.050.10	52	50	211	243	48	75	3500	●	–
VFA-180.00201	ASF 052.100.10		100	261	293				●	–
VFA-180.00202	ASF 052.150.10		150	311	343				●	–
VFA-180.00203	ASF/S 052.050.10	52	50	211	243	48	75	3500	●	●
VFA-180.00204	ASF/S 052.100.10		100	261	293				●	●
VFA-180.00205	ASF/S 052.150.10		150	311	343				●	●
VFA-180.00206	ASF/HS 052.050.10	52	50	211	243	48	75	7000	–	●
VFA-180.00207	ASF/HS 052.100.10		100	261	293				–	●
VFA-180.00208	ASF/HS 052.150.10		150	311	343				–	●



180 series > ASF 056

	Product data									
Part no.	Type	Ø A	B	C	D	Ø E	Ø F	Speed	Shaft seal	Sealing air
VFA-180.00300	ASF 056.050.10	56	50	211	243	48	75	3500	●	–
VFA-180.00301	ASF 056.100.10		100	261	293				●	–
VFA-180.00302	ASF 056.150.10		150	311	343				●	–
VFA-180.00303	ASF/S 056.050.10	56	50	211	243	48	75	3500	●	●
VFA-180.00304	ASF/S 056.100.10		100	261	293				●	●
VFA-180.00305	ASF/S 056.150.10		150	311	343				●	●
VFA-180.00306	ASF/HS 056.050.10	56	50	211	243	48	75	7000	–	●
VFA-180.00307	ASF/HS 056.100.10		100	261	293				–	●
VFA-180.00308	ASF/HS 056.150.10		150	311	343				–	●

180 series > ASF 063

	Product data									
Part no.	Type	Ø A	B	C	D	Ø E	Ø F	Speed	Shaft seal	Sealing air
VFA-180.00400	ASF 063.050.10	63	50	211	243	48	75	3500	●	–
VFA-180.00401	ASF 063.100.10		100	261	293				●	–
VFA-180.00402	ASF 063.150.10		150	311	343				●	–
VFA-180.00403	ASF/S 063.050.10	63	50	211	243	48	75	3500	●	●
VFA-180.00404	ASF/S 063.100.10		100	261	293				●	●
VFA-180.00405	ASF/S 063.150.10		150	311	343				●	●
VFA-180.00406	ASF/HS 063.050.10	63	50	211	243	48	75	7000	–	●
VFA-180.00407	ASF/HS 063.100.10		100	261	293				–	●
VFA-180.00408	ASF/HS 063.150.10		150	311	343				–	●

DRESSING SPINDLES
190 DS series

Front view

The **190 series** dressing spindles are powerful motor spindle systems that have been designed to the highest standards specifically for dressing with rotating tools.

Selected materials guarantee a high degree of precision and reliability even under extreme conditions. A modular system lets you assemble the spindles in the necessary version (see type selection in the table). A rotary encoder and first-cut detection can be retrofitted at any time.

Rear view

Chuck
- The chuck is a cylindrical, ground diameter with an axial clamping washer. A pitch circle diameter with mount threads is available to fasten dressing tools directly to the spindle.
  Concentricity < 0.002 mm
  Axial run-out < 0.002 mm

Bearing
- We only fit high precision preloaded bearings. These have particularly good damping properties and extremely robust wearing characteristics. We achieve smooth running from a rigid construction and optimal balancing.

Lubrication
- All 190 series dressing spindles have lifetime grease lubrication.

Motor
- It is driven by a liquid-cooled, variable induction motor. A frequency converter regulates the motor up to its maximum speed.

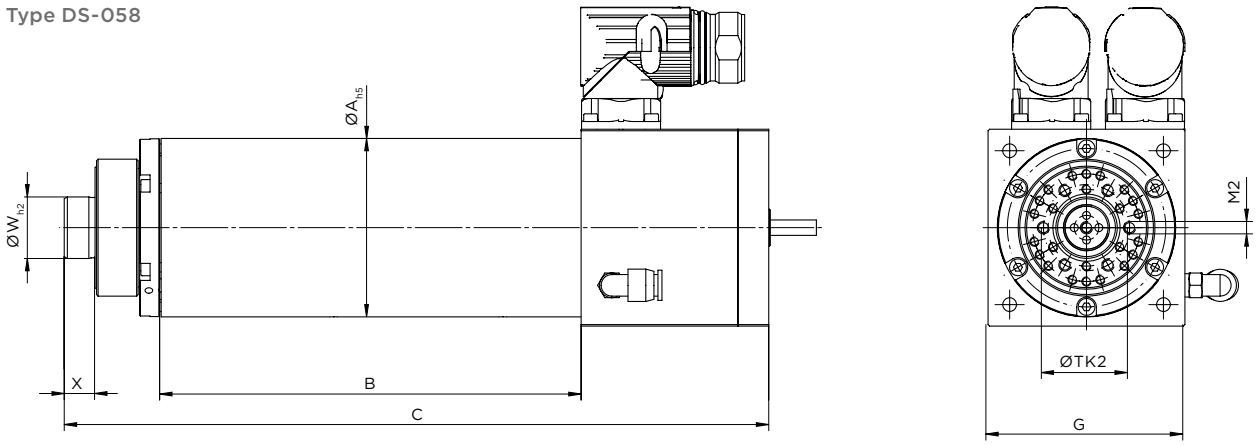
Seal
- The spindle is sealed with a proven labyrinth packing and active sealing air. This protects the spindle bearings against soiling.

Cooling
- An internal cooling circuit in the area of the motor winding provides the necessary cooling. Subject to the required output, either a liquid or air is used as coolant.

AE sensors
- Our standard systems are made by Dittel-Marposs. Sensors are integrated in the spindle.
  Evaluators are not part of the standard delivery.

Rotary encoder
- When speed feedback is required, you can select a rotary encoder with a 1Vpp output signal.

Type DS-058



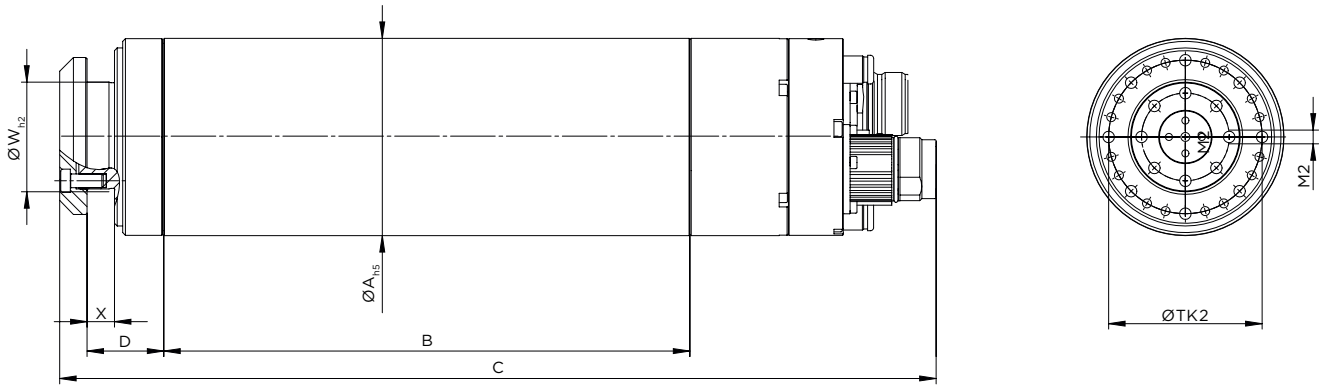
190 series > Type DS-058

	Product data								Motor data				
									Air cooling S6-40 % - 2 min				
Part no.	Type	Ø A	B	C	G	Ø W	X	TK2	M2	rpm	KW	Amp	Volt	Hz
VFA-190.00100	DS-058-001	58	137	229	64	20	10	28	6 × M4	21300	0.5	1.2	400	367
VFA-190.00101	DS-058-002													
VFA-190.00102	DS-058-003													
VFA-190.00104	DS-058-005													

190 series > Type DS-058

	Type selection		
Part no.	Type	Rotary encoder	AE sensor
VFA-190.00100	DS-058-001	–	–
VFA-190.00101	DS-058-002	●	–
VFA-190.00102	DS-058-003	–	●
VFA-190.00104	DS-058-005	●	●

Type DS-072



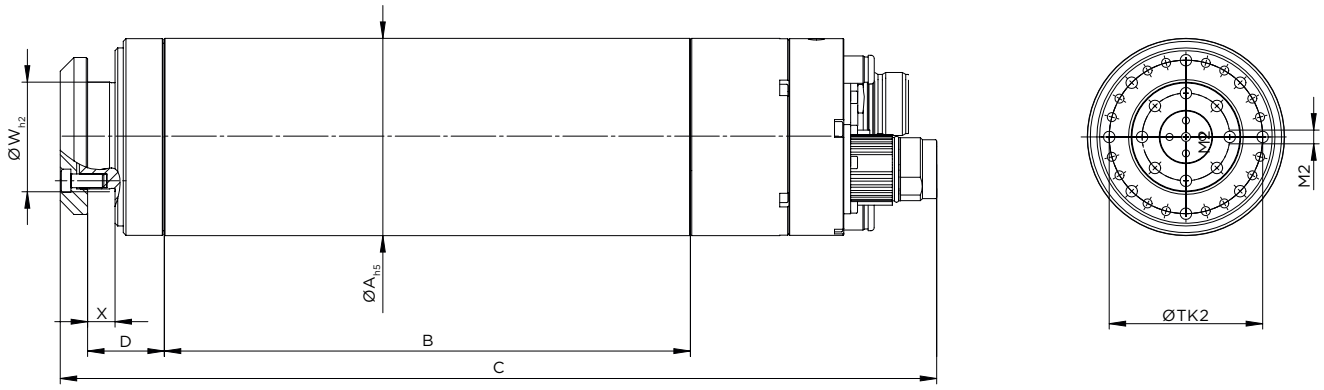
190 series > Type DS-072

	Product data									Type selection	
Part no.	Type	Ø A	B	C	D	Ø W	X	TK2	M2	Rotary encoder	AE sensor
VFA-190.00200	DS-072-001	72	192	320	28	40	10	56	8 × M5	–	–
VFA-190.00201	DS-072-002									●	–
VFA-190.00202	DS-072-003									–	●
VFA-190.00204	DS-072-005									●	●

190 series > Type DS-072

	Motor data										
		Air cooling S6-40 % - 2 min					Water cooling S6-40 % - 2 min				
Part no.	Type	rpm	KW	Amp	Volt	Hz	rpm	KW	Amp	Volt	Hz
VFA-190.00200	DS-072-001	16,900	0.54	1.5	400	293	16,600	0.69	1.7	400	293
VFA-190.00201	DS-072-002										
VFA-190.00202	DS-072-003										
VFA-190.00204	DS-072-005										

Type DS-080



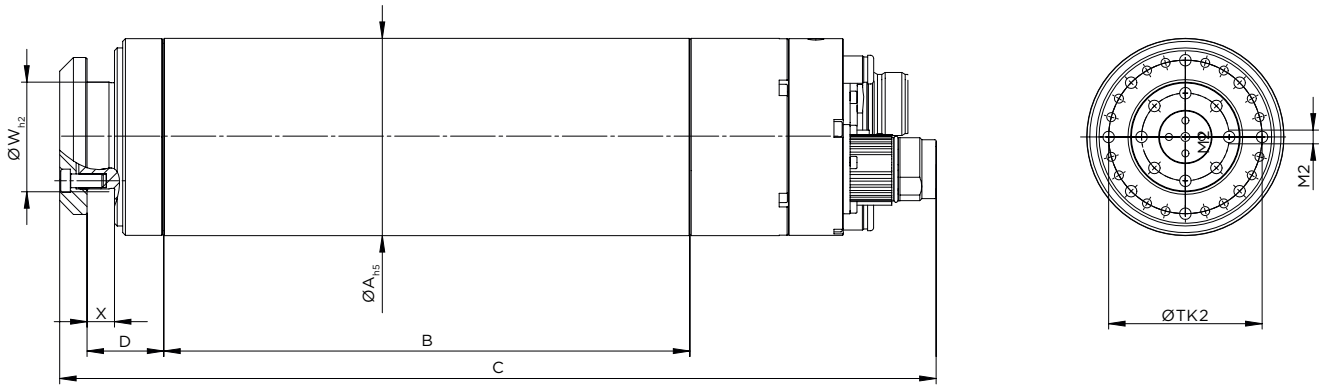
190 series > Type DS-080

	Product data									Type selection	
Part no.	Type	Ø A	B	C	D	Ø W	X	TK2	M2	Rotary encoder	AE sensor
VFA-190.00300	DS-080-001	80	186	316	30	40	10	56	8 × M5	–	–
VFA-190.00301	DS-080-002									●	–
VFA-190.00302	DS-080-003									–	●
VFA-190.00304	DS-080-005									●	●

190 series > Type DS-080

	Motor data										
		Air cooling S6-40% - 2 min					Water cooling S6-40% - 2 min				
Part no.	Type	rpm	KW	Amp	Volt	Hz	rpm	KW	Amp	Volt	Hz
VFA-190.00300	DS-080-001	14,200	0.65	1.7	400	250	13,900	0.7	1.7	400	250
VFA-190.00301	DS-080-002										
VFA-190.00302	DS-080-003										
VFA-190.00304	DS-080-005										

Type DS-090



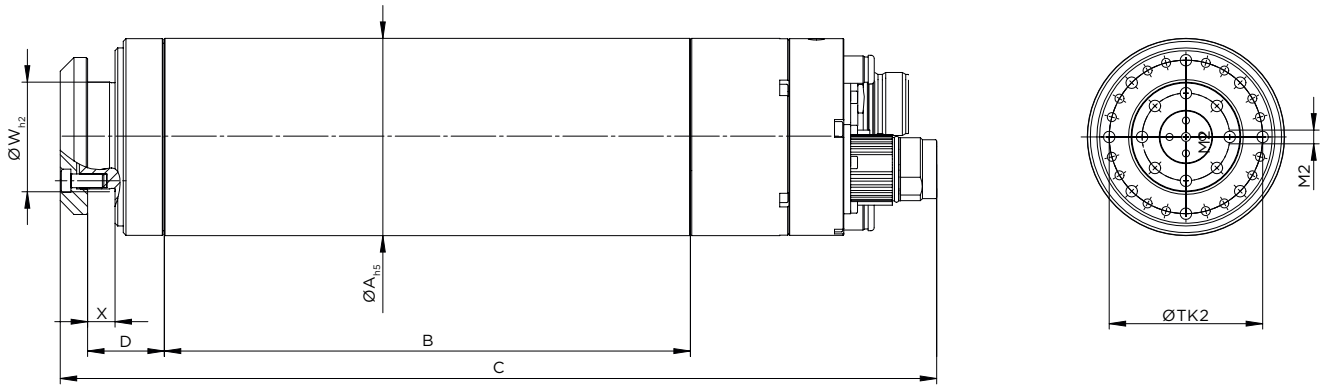
190 series > Type DS-090

	Product data									Type selection	
Part no.	Type	Ø A	B	C	D	Ø W	X	TK2	M2	Rotary encoder	AE sensor
VFA-190.00400	DS-090-001	90	218	360	28	40	10	56	8 × M5	–	–
VFA-190.00401	DS-090-002									●	–
VFA-190.00402	DS-090-003									–	●
VFA-190.00404	DS-090-005									●	●

190 series > Type DS-090

	Motor data										
		Air cooling S6-40 % - 2 min					Water cooling S6-40 % - 2 min				
Part no.	Type	rpm	KW	Amp	Volt	Hz	rpm	KW	Amp	Volt	Hz
VFA-190.00400	DS-090-001	14,500	1.2	3	400	250	14,300	1.6	3	400	250
VFA-190.00401	DS-090-002										
VFA-190.00402	DS-090-003										
VFA-190.00404	DS-090-005										

Type DS-100



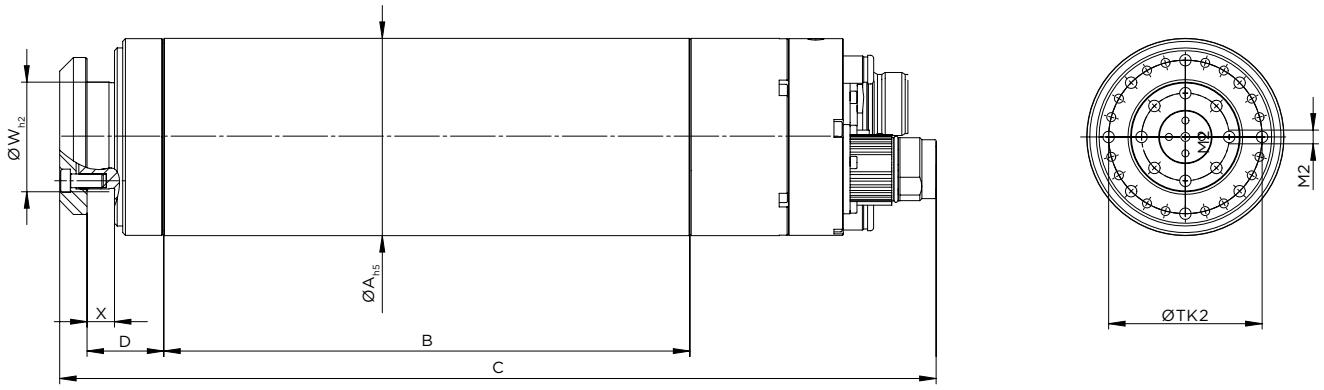
190 series > Type DS-100

	Product data									Type selection	
Part no.	Type	Ø A	B	C	D	Ø W	X	TK2	M2	Rotary encoder	AE sensor
VFA-190.00500	DS-100-001	100	259	422	31	40	10	56	8 × M5	–	–
VFA-190.00501	DS-100-002									●	–
VFA-190.00502	DS-100-003									–	●
VFA-190.00504	DS-100-005									●	●

190 series > Type DS-100

	Motor data										
		Air cooling S6-40% - 2 min					Water cooling S6-40% - 2 min				
Part no.	Type	rpm	KW	Amp	Volt	Hz	rpm	KW	Amp	Volt	Hz
VFA-190.00500	DS-100-001	12,200	1.9	4	400	208	12,100	2.3	4.4	400	208
VFA-190.00501	DS-100-002										
VFA-190.00502	DS-100-003										
VFA-190.00504	DS-100-005										

Type DS-120



190 series > Type DS-120

	Product data									Type selection	
Part no.	Type	Ø A	B	C	D	Ø W	X	TK2	M2	Rotary encoder	AE sensor
VFA-190.00600	DS-120-001	120	294	452	34	52	15	72	8 × M5	–	–
VFA-190.00601	DS-120-002									●	–
VFA-190.00602	DS-120-003									–	●
VFA-190.00604	DS-120-005									●	●

190 series > Type DS-120

	Motor data										
		Air cooling S6-40 % - 2 min					Water cooling S6-40 % - 2 min				
Part no.	Type	rpm	kW	A	V	Hz	rpm	kW	A	V	Hz
VFA-190.00600	DS-120-001	12,300	3.6	9	400	417	12,200	4.3	10	400	417
VFA-190.00601	DS-120-002										
VFA-190.00602	DS-120-003										
VFA-190.00604	DS-120-005										

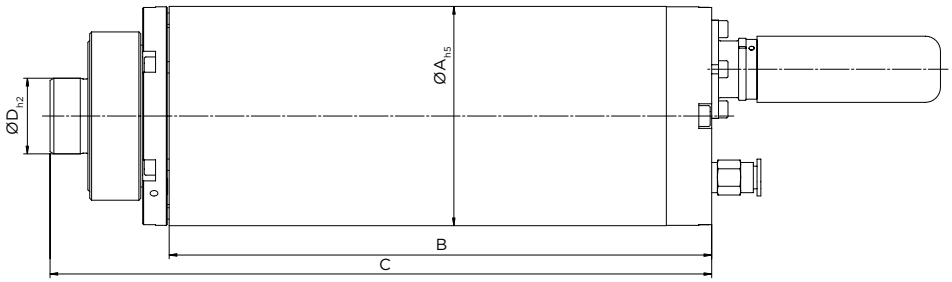
DRESSING SPINDLES
190 DS Easy series

The **DS Easy** series of dressing spindles are designed according to the same performance parameters in terms of their rigidity, performance and precision as our normal, selective DS 190 series.
Depending on size, only one version without cooling, rotary encoder and O/I sensors is available, and represents an economical alternative.

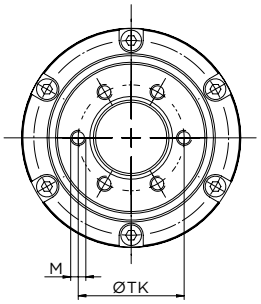
Special features

- The spindle has no cooling circuit for liquid cooling.
  It is cooled solely by convection.
- Maximum permissible duration of dressing cycles: 1 minute

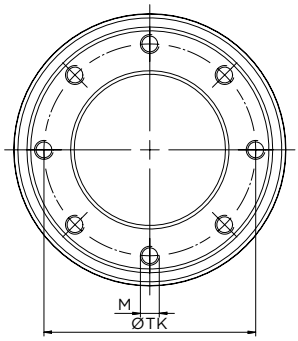
Type DS Easy



DS-058



DS-072 to DS-120



190 series > Type DS Easy

	Product data							
Part no.	Type	Ø A	B	C	D	Ø W	X	TK2
VFA-190.00199	Easy DS-058-199	58	143.5	175	20	10	28	6 × M4
VFA-190.00299	Easy DS-072-299	72	162.5	193	40	13	56	8 × M5
VFA-190.00399	Easy DS-080-399	80	172	205	40	13	56	8 × M5
VFA-190.00499	Easy DS-090-499	90	202	233	40	13	56	8 × M5
VFA-190.00599	Easy DS-100-599	100	229	263	40	13	56	8 × M5
VFA-190.00699	Easy DS-120-699	120	259	296	52	18	72	8 × M5

190 series > Type DS Easy

	Motor data									
		S1-100 %					S6-40 %			
Part no.	Type	rpm	KW	Amp	Volt	Hz	KW	Amp	Volt	Hz
VFA-190.00199	Easy DS-058-199	21,100	0.38	1.00	400	367	0.53	1.40	400	367
VFA-190.00299	Easy DS-072-299	16,900	0.42	1.15	400	293	0.54	1.50	400	293
VFA-190.00399	Easy DS-080-399	14,200	0.50	1.30	400	250	0.65	1.70	400	250
VFA-190.00499	Easy DS-090-499	14,500	0.96	2.00	400	250	1.20	3.00	400	250
VFA-190.00599	Easy DS-100-599	12,200	1.45	3.00	400	208	1.90	4.00	400	208
VFA-190.00699	Easy DS-120-699	12,300	2.65	7.00	400	417	3.60	9.00	400	417

DRESSING ACCESSORIES

DSdrive controller

The **DSdrive** series are high grade, high speed drive controllers that are perfectly matched to our dressing spindles.
They can be operated either “open loop” or “closed loop”.
The devices feature a speed display and a potentiometer for speed control.

Rear view

DSdrive > For spindles with rotary encoder

Part no.	
ZBA-760.00052	DSdrive 058 SF
ZBA-760.00053	DSdrive 072 SF
ZBA-760.00054	DSdrive 080 SF
ZBA-760.00055	DSdrive 090 SF
ZBA-760.00056	DSdrive 100 SF
ZBA-760.00057	DSdrive 120 SF

DSdrive > For spindles without rotary encoder

Part no.	
ZBA-760.00080	DSdrive 058 OL
ZBA-760.00081	DSdrive 072 OL
ZBA-760.00082	DSdrive 080 OL
ZBA-760.00083	DSdrive 090 OL
ZBA-760.00084	DSdrive 100 OL
ZBA-760.00085	DSdrive 120 OL

Cable sets

Cable sets for the power supply and transmitters are available in 5 m or 10 m standard lengths.
All cables are screened, oil resistant and suitable for drag chains.

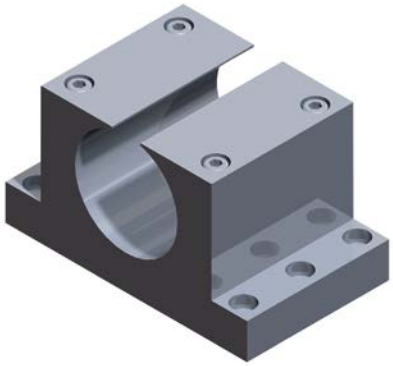
Power cable

Encoder cable

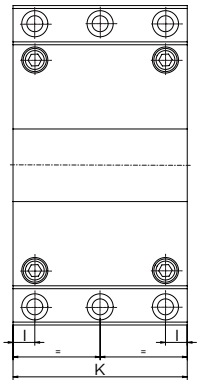
Part no.	
ZBA-004.00563	Power cable 5 m
ZBA-004.00565	Power cable 10 m

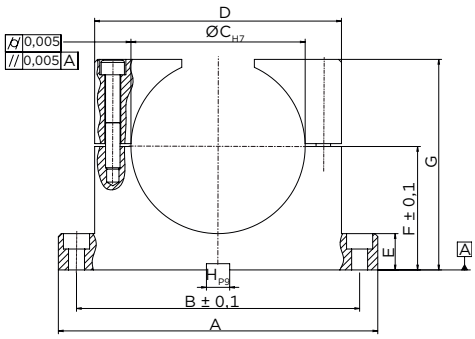
Part no.	
ZBA-004.00566	Signal cable 5 m
ZBA-004.00567	Signal cable 10 m

Spindle holders



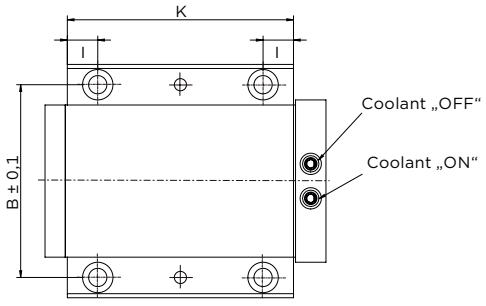
Our spindle holders are made from low tension annealed GG25 material.
The mounting surface is polished.
The parallelism of the chuck bore to the base area is 0.005 mm.

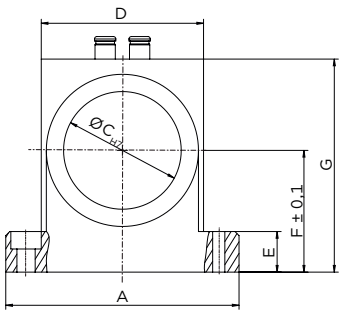




VFZ-780.100007

Spindle holder with integrated cooling curculation only for DS-058

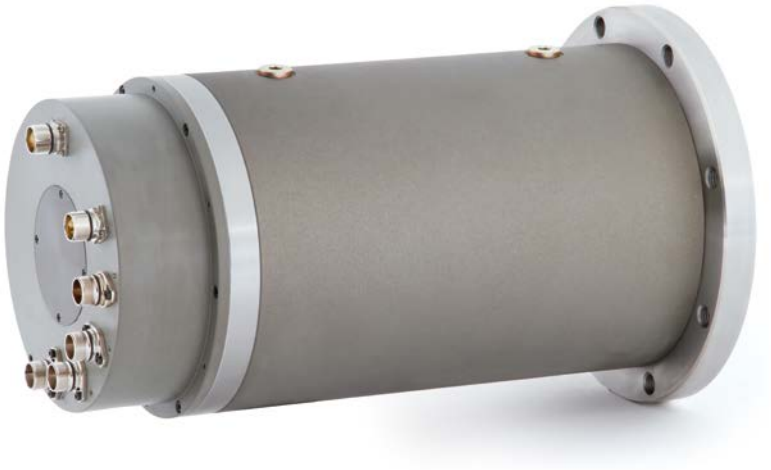




	Product data									
Part no.	**A**	**$B_{\pm 0.1}$**	**Ø C_{H7}**	**D**	**E**	**$F_{\pm 0.1}$**	**G**	**H_{P9}**	**I**	**K**
VFZ-780.100006	140	120	58	98	20	51	80	12	10	80
VFZ-780.100007	115	95		80		60	105	–	15	138.5
VFZ-780.100008	170	145	72	120	25	60	96	16	10	100
VFZ-780.100009	180	155	80	130		60	100		15	120
VFZ-780.100010	190	165	90	140		70	115		15	120
VFZ-780.100011	200	175	100	150	25	80	130	16	15	120
VFZ-780.100012	220	195	120	170		85	145			

HF MOTORS

Fiege HF motors are powerful induction motors with an integral, liquid-cooled drive. They drive processes dynamically directly or indirectly. Their layout is derived from the HF motor spindles used in industrial manufacturing.



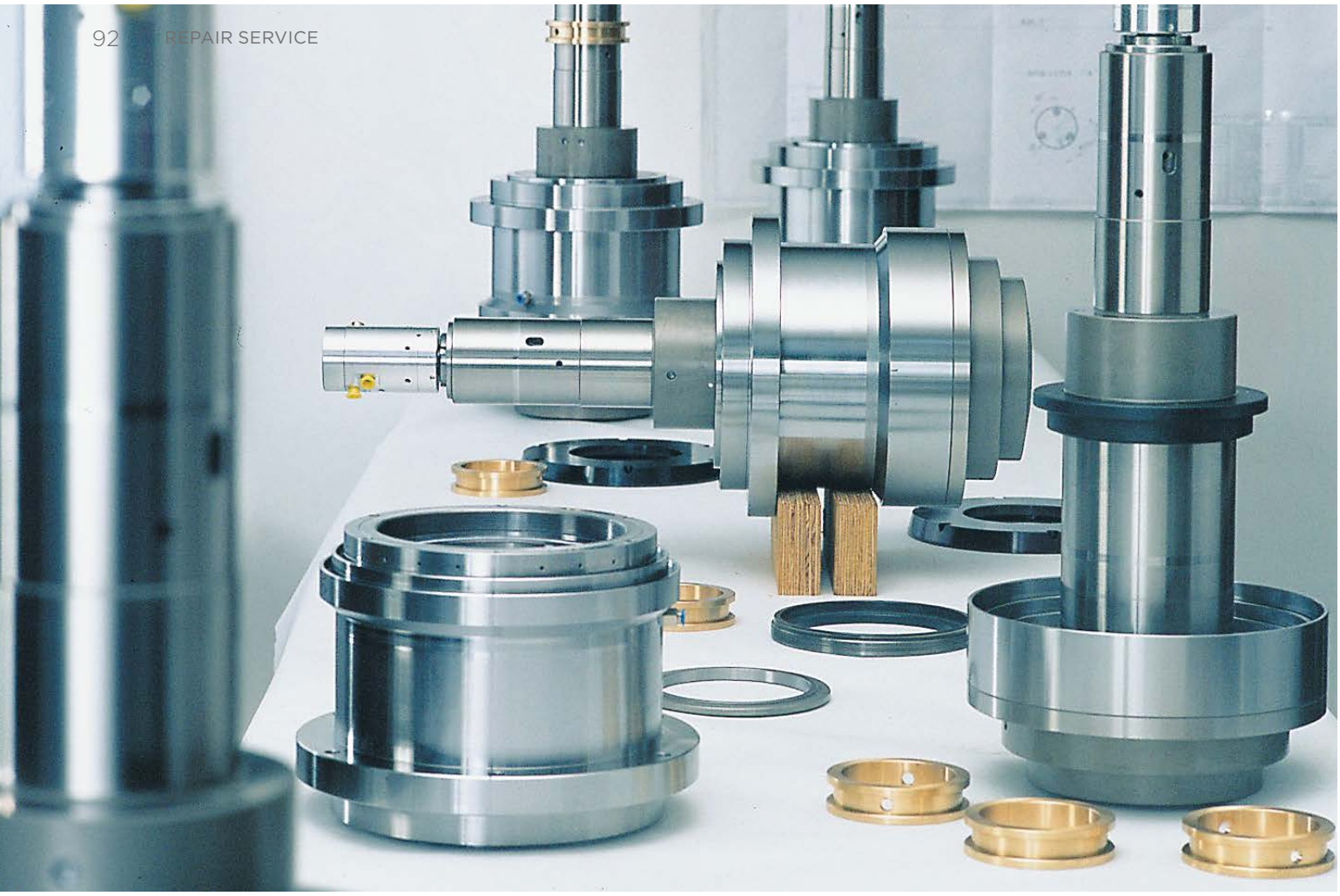
Rear view

Their smooth and extremely quiet running is achieved by precision spindle bearings and high precision manufacturing techniques. All the important fits and seats are hardened and ground. As a result of this processing quality, this product has an exceptionally long service life. Bearings are lubricated for life, which makes them maintenance free.

Several standard types are currently available with an output between 2 and 150 kW and speeds up to 30,000 rpm. Motors are protected using PTC or KTY. All motors are equipped with a rotary encoder system with a 1 Vpp output signal.

Besides these standard types, special motors are, of course, also produced, which are precisely matched to the process in terms of output, torque, speed and size. These motors are particularly powerful and reliable. They are used in test bench technology, plant engineering and in the machine tool industry.

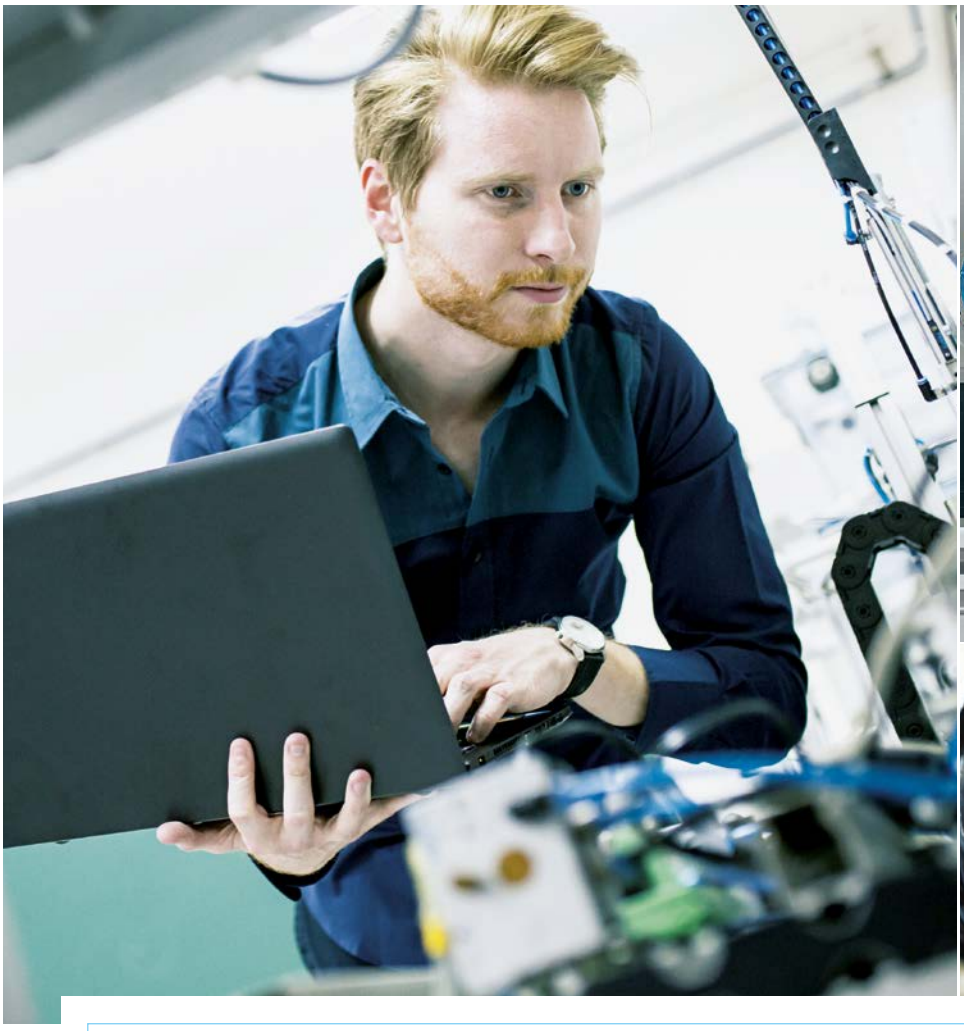
	Motor data				
Part no.	**KW**	**Nm**	**Rated speed rpm**	**rpm max.**	**Amp**
VFB-001.00050	12	23	5000		25
VFB-001.00053	94	90	10,000		166
VFB-001.00055	2.2	14	1500	12,000	29
VFB-001.00056	60	29	19,900		141
VFB-001.00058	70	75	8890		126
VFB-001.00059	145	349	3970		293
VFB-001.00060	145	349	3970	7900	293
VFB-001.00061	27.5	88	3000	6200	101
VFB-001.00062	7	12	5800	12,800	33
VFB-001.00064	25	30	8000	10,000	56
VFB-001.00068	35	42	7900	8870	63
VFB-001.00069	20	24	8000		40
VFB-001.00071	5	17	2850	8800	18
VFB-001.00072	125	241	4950	6400	240
VFB-001.00073	125	853	1400	5000	480
VFB-001.00074	30	14	20,000	29,700	64
VFB-001.00075	84	100	8000		159
VFB-001.00076	4	3	14,800	24,600	10
VFB-001.00077	81	258	3000	12,000	327
VFB-001.00081	104	200	4970		220
VFB-001.00082	117	281	3970		234
VFB-001.00083	125	402	2970		250
VFB-001.00084	136	500	2600		274
VFB-001.00085	10	6	14,900		31
VFB-001.00086	85	125	6500		180

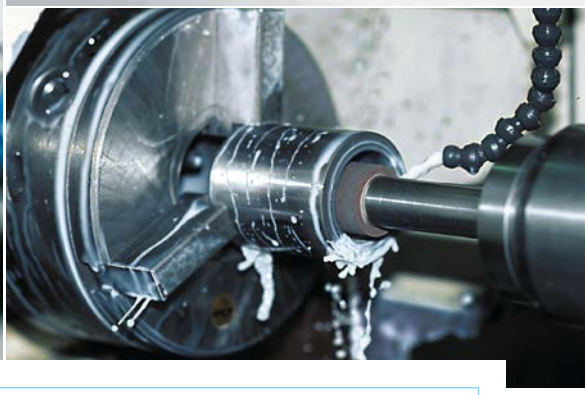


Spindle service

The same quality and precision as with a new spindle – to keep your processes running

A spindle unit is subject to the highest loads in daily operation. Even robust materials and perfect workmanship cannot prevent wear and tear. Should repairs be required, our experienced technicians will be there for you offering their well-coordinated Fiege spindle service.





Acceptance

Acceptance of the faulty spindle system

Localisation

Locating the cause of a failure

Cost estimate

Cost estimate incl. list of spare parts, if necessary

Repair

Repair of the spindle system by qualified personnel

Quality inspection

Quality inspection and test report for the client

Delivery

A fully functioning spindle is delivered

Precise analysis, transparent costs

Each spindle is carefully disassembled upon receipt to locate the cause of the failure. After close examination, the necessary maintenance work and required spare parts such as ball bearings, seals, etc. are ascertained, and the customer immediately receives a cost estimate. Of course, production components are meticulously examined to ensure possible reuse.

Spindle systems as good as new

After the order has been placed or the cost estimate approved by the customer, the repair is carried out as quickly as possible.
The criteria for acceptance and approval by our quality assurance department are the same as those that apply to new spindle units. When spindles are returned, the customer receives a test report listing the quality values achieved.
Qualified personnel and strict quality controls ensure the professional repair of your spindle.

Notes

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