



Saw motors –

engineered for the most demanding applications

www.fischer-elektromotoren.de

Driving innovation
made in Baden-Württemberg,
Germany



**The gold standard
for saw motors**

Fischer Saw Motors

Patented. Proven. Continuously improved.

Fischer saw motors deliver outstanding performance across a wide range of applications.

For more than three decades, we have specialised in customised drive technology solutions. Few companies combine experience, engineering expertise, innovative strength and customer-specific solutions as effectively as we do.

Our goal is to deliver precisely the performance our customers need for their machines and systems. We manufacture saw motors in a wide range of power ratings and can adapt individual design features to meet specific mechanical and electrical interface requirements.

Decades of experience combined with continuous innovation – that is what makes Fischer saw motors stand out.

For many years, we have worked closely with leading manufacturers of multi-blade saws, panel saws and other woodworking machinery. Our saw motors are also successfully used in cutting systems for insulation materials and other demanding applications.

Leading companies rely on our expertise in drive technology, which is built on two strong pillars: engineering and manufacturing. Both disciplines work hand in hand and in close cooperation with our customers. Manufacturing expertise flows directly into the engineering process, while engineering requirements are continuously reflected in production.

Combined with our in-depth understanding of our customers' applications and technical requirements, this close interaction enables us to develop saw motors that are precisely tailored to each application.

This approach has made Fischer what it is today: an internationally recognised specialist in high-quality, reliable and application-specific saw motors.



Quality and performance for a wide range of applications.

Fischer saw motors are primarily used for profiling, sawing and contour machining. Depending on the saw blade and application, they are suitable for cutting a wide range of materials, including:

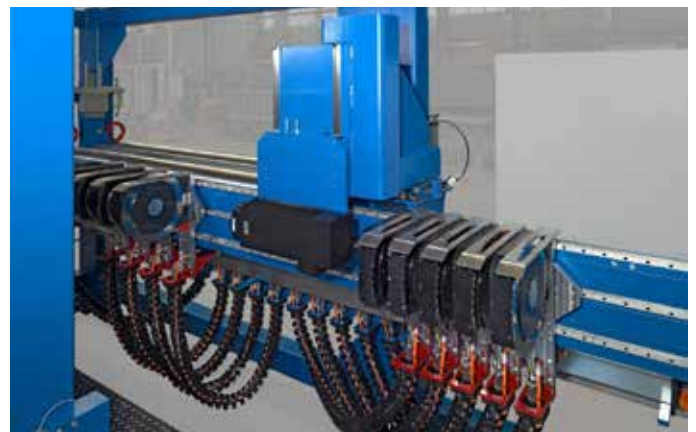
- Wood
- Aluminium
- Plastics
- Insulation materials
- Rubber
- Sandwich materials

For applications using particularly large-diameter saw blades, we adapt the motor speed to achieve optimum cutting conditions. The same applies to machining processes requiring lower cutting speeds: motor speed is precisely matched to the specific application and its requirements.

These high-performance motors are primarily used in multi-blade sawing systems for the flooring and furniture industries, as well as in window manufacturing, model making and the processing of insulation materials.



The compact design of Fischer saw motors allows for space-saving integration into multi-blade sawing systems while ensuring efficient, reliable operation.



How Fischer saw motors work

Maintenance-free drive concept: Thanks to direct drive technology, wear-prone transmission components are eliminated, resulting in minimal maintenance requirements.

Precise: A hardened and ground saw blade holder ensures excellent axial and radial runout accuracy.

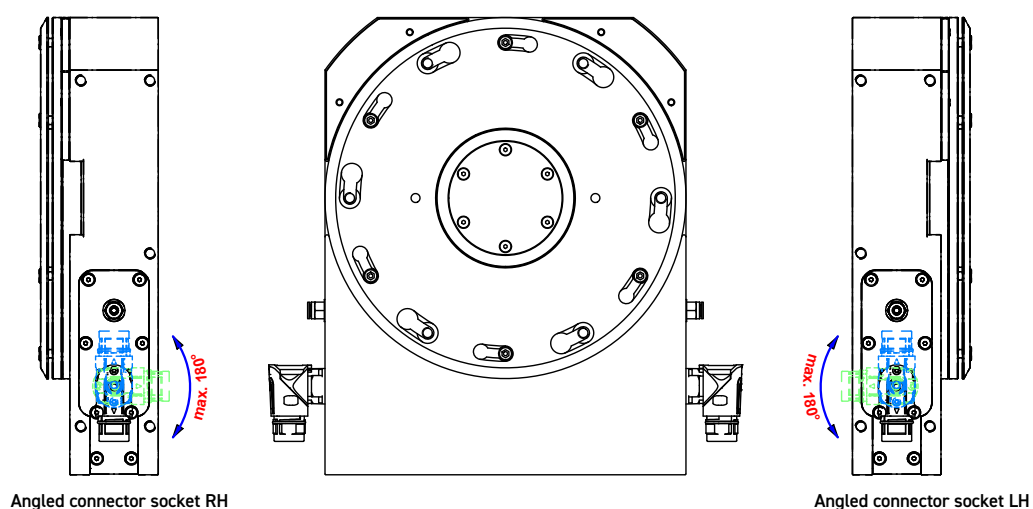
Compact: The synchronous disc-rotor design enables an exceptionally compact motor construction.

Sensorless operation: Fischer saw motors operate without the need for a rotary encoder or rotor position sensor. Motor speed can be continuously adjusted via the motor controller.

High power density: High-performance neodymium magnets enable a high power density and compact motor design.

Low noise levels: The gearless direct-drive design, combined with precision-engineered mechanical components, ensures particularly low noise levels.

Flexible configuration: Fischer saw motors are available in a range of power ratings. Mechanical and electrical interfaces can be adapted to meet specific customer requirements.



06
07

Patented innovation makes all the difference

New: Enhanced protection against dirt and dust ingress.

Fischer saw motors offer more than just rotational motion. Their outstanding performance is based on a magnetically preloaded system incorporating powerful neodymium magnets – eliminating the need for a gearbox.

Motor cooling is provided at the rear of the housing and can be adapted to the specific installation conditions. Our engineering team is available to support customers in selecting and implementing the optimum cooling solution.

Wherever materials are sawn, dust and chips are inevitably produced. Depending on the material and machining process, these particles can present a major challenge for the motor. Effective protection against contamination is therefore essential.

For this reason, Fischer saw motors are equipped with a sealing-air system that helps prevent dust and particles from entering the motor.

Sealing air provides effective protection against contamination, but its use also results in additional operating costs. To reduce these costs while further improving motor protection, Fischer has continuously optimised its labyrinth seal design.

The result is enhanced protection against dust and dirt ingress while reducing compressed-air consumption by up to 80%. This innovative solution also enabled the patent protection for Fischer saw motors to be extended by a further ten years.

Both the baffle plates and the labyrinth seal are replaceable, supporting a long service life and Fischer Elektromotoren's commitment to sustainable product design. Thanks to their direct-drive technology and the elimination of wear-prone transmission components, Fischer saw motors are characterised by low wear and minimal maintenance requirements.



Deutsches
Patent- und Markenamt



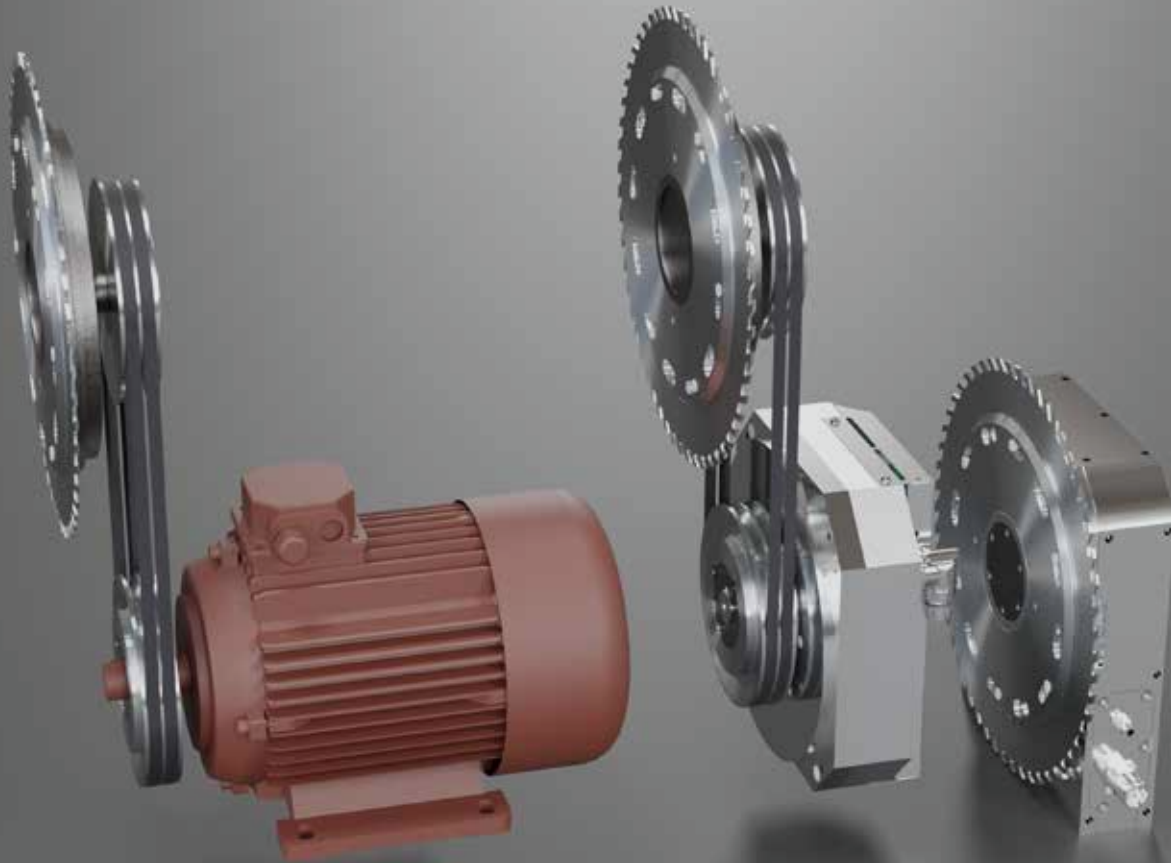
The newly developed labyrinth seal.



Robust baffle plates provide additional protection for the housing.



Reduced passage for compressed air.



On the left is the traditional motor for driving the saw blade. On the right is the latest generation of Fischer synchronous saw motors. Extremely slim and even more efficient thanks to the newly developed labyrinth seal.

Because slimmer is simply better.

Fischer saw motors are highly efficient direct drives. Thanks to their patented, space-saving design, they are ideally suited to applications where installation space is limited by the machine design.

Their exceptionally slim construction also makes Fischer saw motors the ideal solution wherever the smallest possible centre distance between adjacent saw blades is required.

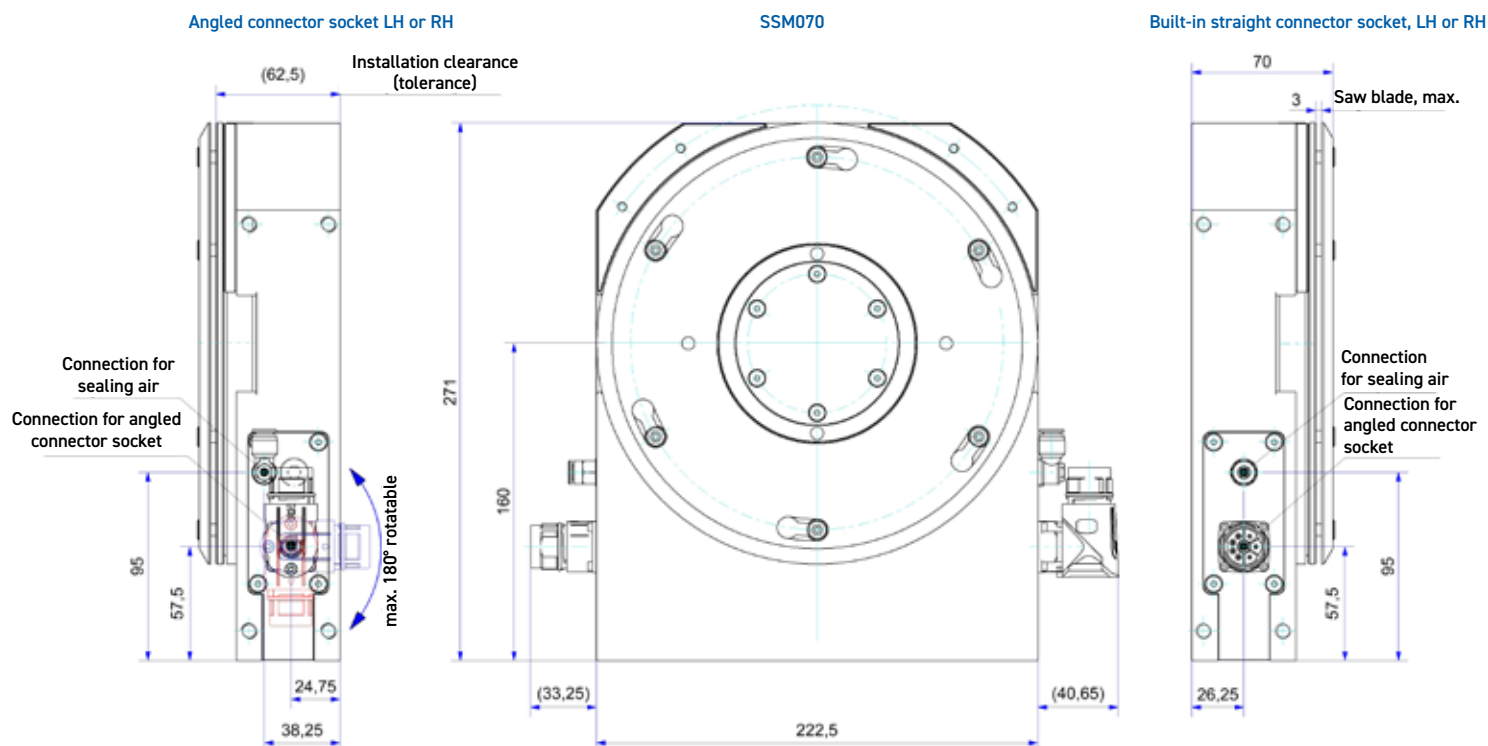
Leading manufacturers of sawing equipment and cutting systems worldwide rely on Fischer saw motors for reliable, high-performance and cost-effective direct-drive technology.

High power density for a wide range of applications.

Designation	Power S1 @ rpm	Power S6 – 40% @ rpm
SSM070 (8-pole)	3,5 kW @ 4200	5,3 kW @ 4050
SSM083 (8-pole)	6,25 kW @ 4200	9,5 kW @ 4050
SSM085 (8-pole)	6,15 kW @ 4200	9,5 kW @ 4050
SSM105 (8-pole)	9,7 kW @ 4200	14,5 kW @ 4050
SSM125 (8-pole)	9,7 kW @ 4200	14,5 kW @ 4050
SSM105 (20-pole)	3,01 kW @ 1200	3,38 kW @ 850
SSM125 (20-pole)	3,01 kW @ 1200	3,38 kW @ 850

Dimensions and performance data

Dimensions - technical data



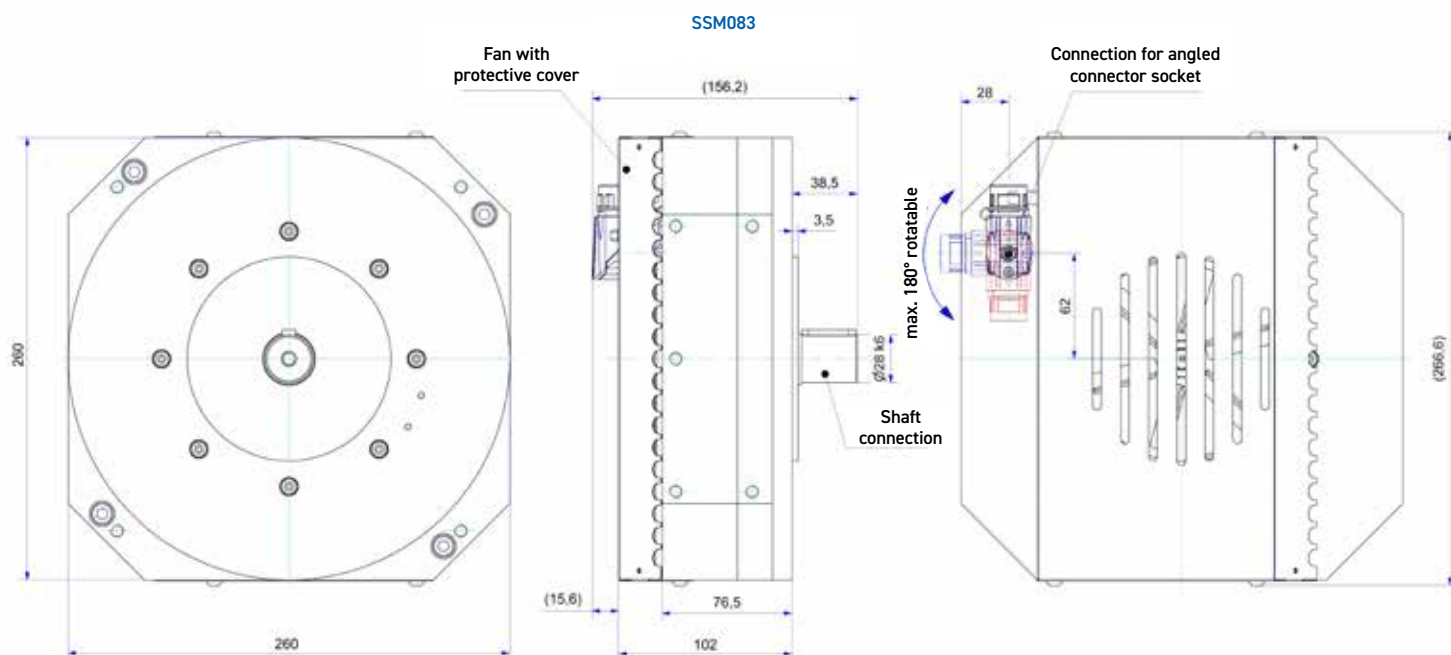
SSM070 8-pole

	Symbol	Unit	Value
Rated data S1			
Rated torque	Nominal Torque	Nm	7,95
Rated current	Rated current	A _{rms}	8,5
Rated speed	Rated speed	Rpm	4200
Output shaft power	Rated Power	kW	3,5
Data S6 - 40%			
Torque	M _{S6 - 40%}	Nm	12,57
Current	I _{S6 - 40%}	A _{rms}	13,5
Speed	n _{S6 - 40%}	Rpm	4050
Output shaft power	P _{S6 - 40%}	kW	5,3
Data at peak load			
Peak torque	Torque Peak	Nm	18
Current	I _{Peak}	A _{rms}	19
Speed	n _{Peak}	Rpm	3900
Output shaft power	P _{Peak}	kW	7,4
Data			
Torque constant	Torque constant	Nm/A _{rms}	0,930
Voltage constant (phase-to-phase)	Voltage constant	V _{rms} /(rad/s)	0,592
		V _{rms} /(rpm)	0,062
Motor constant	k _m	Nm/√W	0,913
No load speed	n ₀	Rpm	4500
Max. frequency	f _{max}	Hz	300
DC link voltage	U _{DC}	V _{DC}	560
Avg. resistance per phase (winding only)	R _{Ph20}	Ω	0,350
Average inductance per phase (winding only)	L _{Ph}	mH	1,180
Electrical time constant τ = L/R	τ	ms	3,38
Number of pole pairs	n		4
Rotor inertia	J	kgm ²	0,025
Motor weight	m	kg	0,025
Connection			Stern
IP rating	IP		54

Make sure that your controller can supply the motor's rated and peak current.

Dimensions and performance data

Dimensions - technical data



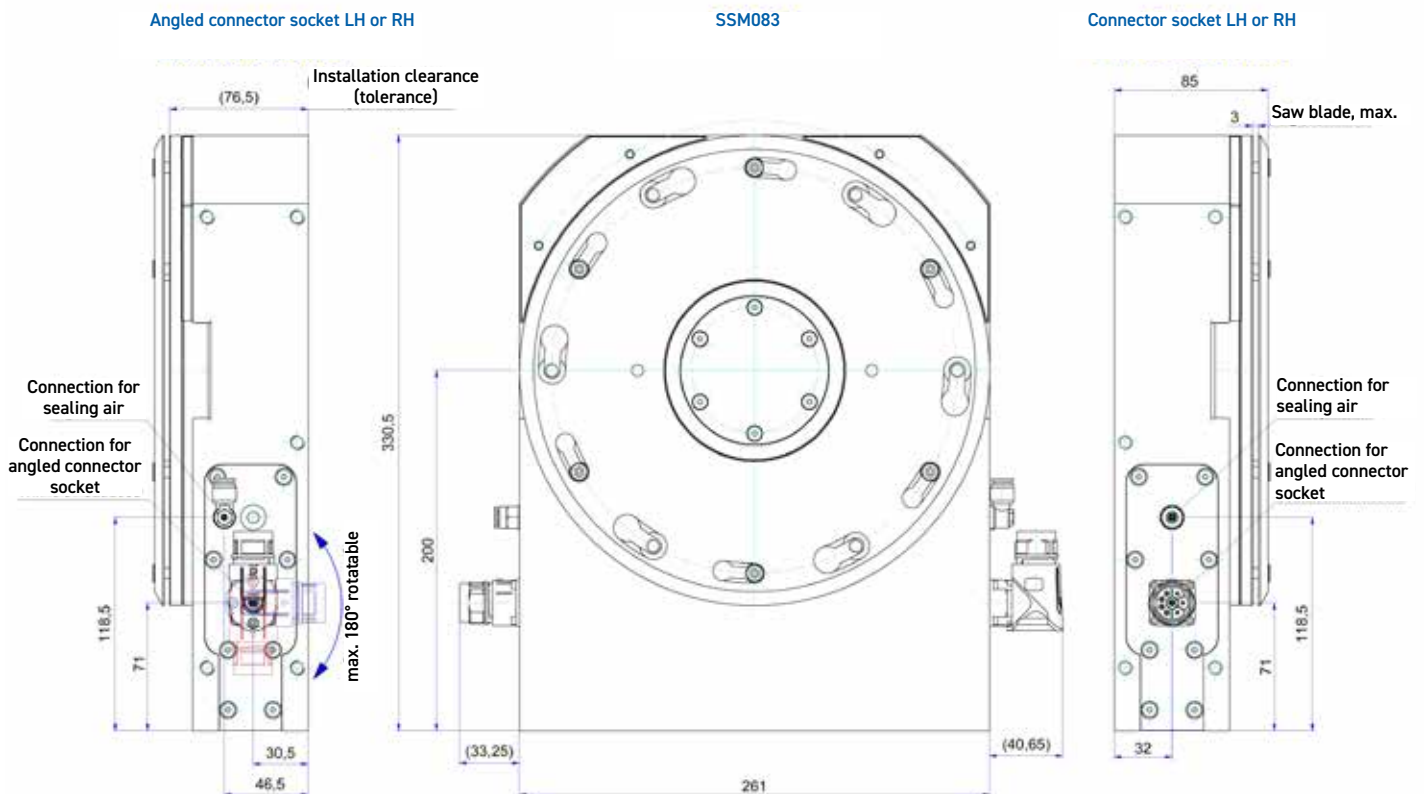
SSM083 8-pole

	Symbol	Unit	Value
Rated data S1			
Rated torque	Nominal Torque	Nm	14,2
Rated current	Rated current	A _{rms}	15,0
Rated speed	Rated speed	Rpm	4200
Output shaft power	Rated Power	kW	6,25
Data S6 - 40%			
Torque	M _{S6 - 40%}	Nm	22,45
Current	I _{S6 - 40%}	A _{rms}	24
Speed	n _{S6 - 40%}	Rpm	4050
Output shaft power	P _{S6 - 40%}	kW	9,52
Data bei Spitzenlast			
Peak torque	Torque Peak	Nm	30
Current	I _{Peak}	A _{rms}	30
Speed	n _{Peak}	Rpm	3900
Output shaft power	P _{Peak}	kW	12,25
Data			
Torque constant	Torque constant	Nm/A _{rms}	1,000
Voltage constant (phase-to-phase)	Voltage constant	V _{rms} /(rad/s)	0,710
		V _{rms} /(rpm)	0,074
Motor constant	k _m	Nm/√W	0,669
No load speed	n ₀	Rpm	4500
Max. frequency	f _{max}	Hz	300
DC link voltage	U _{DC}	V _{DC}	560
Avg. resistance per phase (winding only)	R _{Ph20}	Ω	0,665
Average inductance per phase (winding only)	L _{Ph}	mH	4,240
Electrical time constant τ = L/R	τ	ms	6,37
Number of pole pairs	n		4
Rotor inertia	J	kgm ²	0,0031
Motor weight	m	kg	18,0
Connection			Stern
IP rating	IP		54

Make sure that your controller can supply the motor's rated and peak current.

Dimensions and performance data

Dimensions - technical data



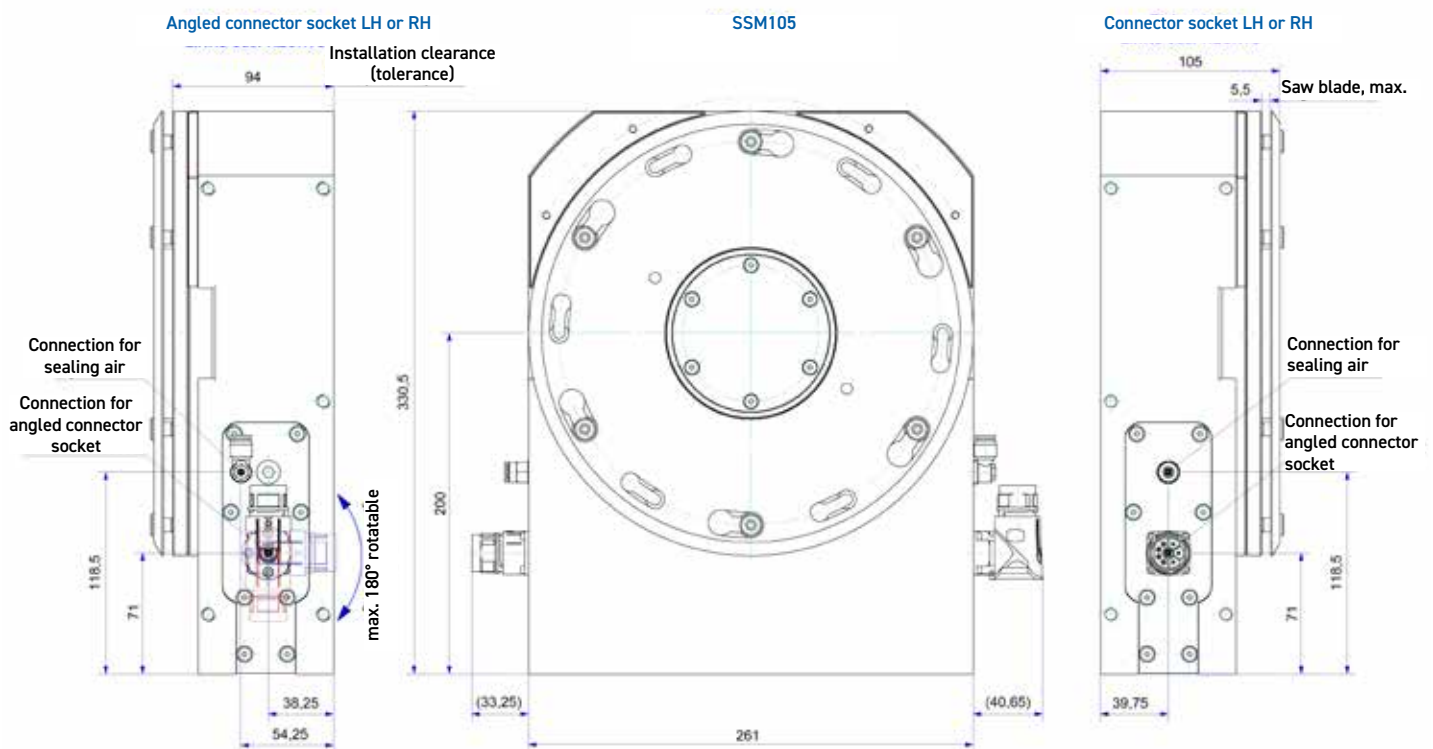
SSM085 8-pole

	Symbol	Unit	Value
Rated data S1			
Rated torque	Nominal Torque	Nm	14
Rated current	Rated current	A _{rms}	13,1
Rated speed	Rated speed	Rpm	4200
Output shaft power	Rated Power	kW	6,15
Data S6 - 40%			
Torque	M _{S6 - 40%}	Nm	22,5
Current	I _{S6 - 40%}	A _{rms}	20
Speed	n _{S6 - 40%}	Rpm	4050
Output shaft power	P _{S6 - 40%}	kW	9,5
Data bei Spitzenlast			
Peak torque	Torque Peak	Nm	30
Current	I _{Peak}	A _{rms}	27
Speed	n _{Peak}	Rpm	3900
Output shaft power	P _{Peak}	kW	12,3
Data			
Torque constant	Torque constant	Nm/A _{rms}	1,120
Voltage constant (phase-to-phase)	Voltage constant	V _{rms} /(rad/s)	0,783
		V _{rms} /(rpm)	0,082
Motor constant	k _m	Nm/√W	1,031
No load speed	n ₀	Rpm	4500
Max. frequency	f _{max}	Hz	300
DC link voltage	U _{DC}	V _{DC}	560
Avg. resistance per phase (winding only)	R _{Ph20}	Ω	0,400
Average inductance per phase (winding only)	L _{Ph}	mH	1,230
Electrical time constant τ = L/R	τ	ms	3,08
Number of pole pairs	n		4
Rotor inertia	J	kgm ²	0,063
Motor weight	m	kg	24,0
Connection			Stern
IP rating	IP		54

Make sure that your controller can supply the motor's rated and peak current.

Dimensions and performance data

Dimensions - technical data



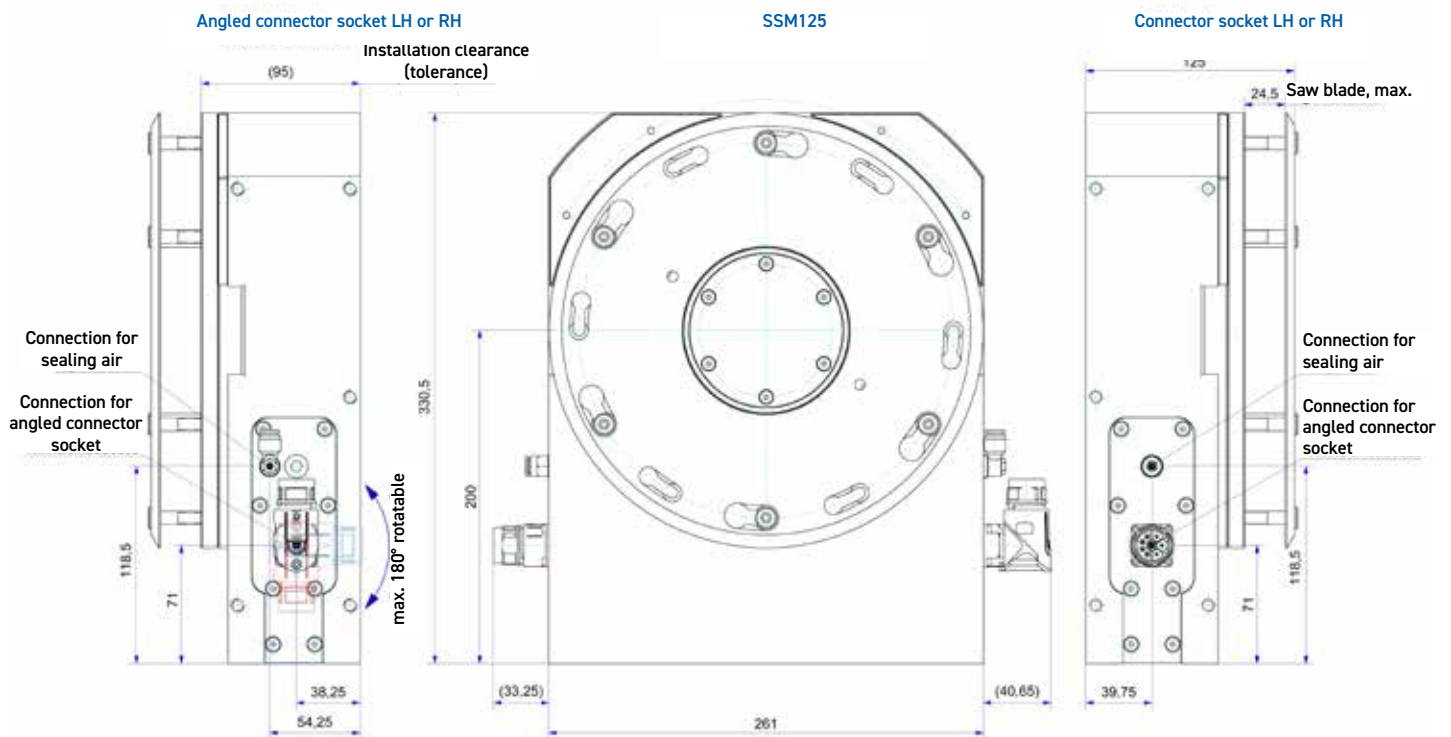
SSM105/125 8-pole

	Symbol	Unit	Value
Rated data S1			
Rated torque	Nominal Torque	Nm	21,6
Rated current	Rated current	A _{rms}	15
Rated speed	Rated speed	Rpm	4200
Output shaft power	Rated Power	kW	9,7
Data S6 - 40%			
Torque	M _{S6 - 40%}	Nm	34,2
Current	I _{S6 - 40%}	A _{rms}	22
Speed	n _{S6 - 40%}	Rpm	4050
Output shaft power	P _{S6 - 40%}	kW	14,5
Data bei Spitzenlast			
Peak torque	Torque Peak	Nm	51
Current	I _{Peak}	A _{rms}	35
Speed	n _{Peak}	Rpm	3900
Output shaft power	P _{Peak}	kW	20,8
Data			
Torque constant	Torque constant	Nm/A _{rms}	1,500
Voltage constant (phase-to-phase)	Voltage constant	V _{rms} /(rad/s)	0,754
		V _{rms} /(rpm)	0,079
Motor constant	k _m	Nm/√W	1,406
No load speed	n ₀	Rpm	4500
Max. frequency	f _{max}	Hz	300
DC link voltage	U _{DC}	V _{DC}	560
Avg. resistance per phase (winding only)	R _{Ph20}	Ω	0,350
Average inductance per phase (winding only)	L _{Ph}	mH	1,400
Electrical time constant τ = L/R	τ	ms	4,00
Number of pole pairs	n		4
Rotor inertia	J	kgm ²	0,07
Motor weight	m	kg	30,5
Connection			Stern
IP rating	IP		54

Make sure that your controller can supply the motor's rated and peak current.

Dimensions and performance data

Dimensions - technical data



SSM105/125 20-polig

	Symbol	Unit	Value
Rated data S1			
Rated torque	Nominal Torque	Nm	24
Rated current	Rated current	A _{rms}	8,9
Rated speed	Rated speed	Rpm	1200
Output shaft power	Rated Power	kW	3,01
Data S6 - 40%			
Torque	M _{S6 - 40%}	Nm	38
Current	I _{S6 - 40%}	A _{rms}	13,8
Speed	n _{S6 - 40%}	Rpm	850
Output shaft power	P _{S6 - 40%}	kW	3,38
Data bei Spitzenlast			
Peak torque	Torque Peak	Nm	50
Current	I _{Peak}	A _{rms}	20
Speed	n _{Peak}	Rpm	550
Output shaft power	P _{Peak}	kW	2,88
Data			
Torque constant	Torque constant	Nm/A _{rms}	2,700
Voltage constant (phase-to-phase)	Voltage constant	V _{rms} /(rad/s)	1,823
		V _{rms} /(rpm)	0,191
Motor constant	k _m	Nm/√W	1,847
No load speed	n ₀	Rpm	1800
Max. frequency	f _{max}	Hz	300
DC link voltage	U _{DC}	V _{DC}	560
Avg. resistance per phase (winding only)	R _{Ph20}	Ω	0,710
Average inductance per phase (winding only)	L _{Ph}	mH	8,410
Electrical time constant τ = L/R	τ	ms	11,85
Number of pole pairs	n		10
Rotor inertia	J	kgm ²	0,07
Motor weight	m	kg	30,5
Connection			Stern
IP rating	IP		54

Make sure that your controller can supply the motor's rated and peak current.

18
19



Sustainability in every detail

At Fischer Elektromotoren, sustainability means quality, durability and repairability throughout the entire service life of our drives.

We place great importance on the materials we use, right down to the smallest detail. High-quality components are the foundation of durable drive systems.

We firmly believe that premium drive technology should be built to last – and remain worth repairing even after many years of operation. Repairing instead of replacing: to us, that is true sustainability.

This philosophy is reflected in our highly regarded repair workshop, which has been providing professional repair services for more than 60 years.





Fischer Elektromotoren GmbH
Schützenstr. 19
74842 Billigheim

Phone: +49 (0) 6265 9222-0
Fax: +49 (0) 6265 9222-22

vertrieb@fischer-elektromotoren.de
www.fischer-elektromotoren.de



More information
is available on our website.