

# MILLING SPINDLES

PRECISION. SPEED. POWER.





# TECHNOLOGY LEADER

**IN PRECISE, FAST AND POWERFUL ROTATION.**

We are the world leader in precise, fast and powerful rotation. Our more than 80 years of experience are reflected in all our technical innovations.

As an international technology leader, our expertise in development, simulation, manufacturing and performance testing stands out - market leaders from all over the world rely on FISCHER products.

**Comprehensive Program**

Thanks to high-torque motors, FISCHER motor spindles operate highly dynamically with extremely short start-up and braking times and impress with their high power density. They have standardized tool holders as well as robust infeed and clamping systems. This ensures fast and reliable tool changes with automatic change systems.

A wide range of variants is available with diameters from 35 to 360 mm; speeds up to 90'000 rpm; drive powers up to 200 kW and 1'000 Nm torque. This makes the high-quality motor spindles from FISCHER suitable for a wide range of applications. This includes productive roughing and high-precision finishing milling, heavy-duty cutting at high torques as well as precise micro-milling and micro-drilling at the highest speeds.

**Staying Cool Under Maximum Load**

We equip selected variants of our motor spindles with the unique CSC (Compact Shaft Cooling) cooling system. This internal cooling of the spindle shaft has several outstanding advantages.

Even under maximum load and at high speeds, the spindle shaft heats up only slightly. It expands only minimally. Even with changing loads, speeds and torques, it remains thermally stable. This significantly increases the machining accuracy on the workpiece. Under changing conditions, machining can be repeatedly and continuously carried out with high precision.

The controlled spindle cooling also shortens the time it takes for the spindle to start up and reach thermal stability. This creates additional time that can be used productively. With motor spindles that have the sophisticated CSC cooling system, manufacturing companies work much more economically and flexibly.

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# FAST ROTATING SPINDLES

## HSK-15 TO HSK-40

All spindles have high rotational speeds and torques that are responsive for the size. Efficient bearing, flange, motor and shaft cooling systems guarantee the highest manufacturing precision.

- Precise, high-speed spindles with outside diameters from 35 -140 mm
- Grease-lubricated bearings with speeds up to 65'000 rpm
- Oil-air lubricated bearings with speeds up to 90'000 rpm

TYPE		MLW-360/4 S	MFW-650 A	MFW-650 S	MFW-660 A	MFW-660/80/1 S	MFW-665 A
Outer diameter	D [mm]	35	61.91	61.91	60 / 61.91	60	60
Tool interface		HSK-EZ15	HSK-E25	HSK-E25	DS / SK10	HSK-E20	HSK-E20
Max. speed	nmax [min <sup>-1</sup> ]	60'000	50'000	50'000	60'000	80'000	65'000
Lubrication		Grease	Grease	Grease	Grease	DLS	Grease
Direction of rotation		left & right					

Power S1 / S6 40%	P [kW]	0.7 / 1.0	1.2 / 1.8	2.3 / 3.45	1.2 / 1.8	1.5 / 2.2	1.2 / 1.8
Torque S1 / S6 40%	M [Nm]	0.11 / 0.16	0.29 / 0.43	0.55 / 0.82	0.19 / 0.29	0.24 / 0.36	0.19 / 0.29
Nominal speed	nN [min <sup>-1</sup> ]	60'000	40'000	40'000	60'000	60'000	60'000
Motor frequency	[Hz]	1'000	834	834	1'000	1'334	1'083
Motor technology		SYN	ASYN	SYN	ASYN	SYN	ASYN
Voltage	[V]	194	220	270	200	350	200
Current S1	[A]	5.8	5.5	7.0	5.0	3.5	5.2

Length	L [mm]	225	356	356	297	330	289
Weight	[kg]	1.48	5.0	7.5	4.5	4.5	4.5

Shaft cooling system		-	-	-	-	-	-
Coolant Through Unit		-	-	Yes	-	-	-
Encoder		Yes	Yes	Yes	-	Yes	Yes

Options							
Dilation sensor		-	Yes	Yes	-	-	-
Vibration sensor		-	-	-	-	-	-

TYPE		MFW-1032-A	MFW-1040-A	MFW-1045 A	MFW-1045 S	MFW-1060/90	MFW-1030/70
Outer diameter	D [mm]	100	100	100	100	100	100
Tool interface		HSK-E32 HSK-E40 HSK-F40	HSK-E32 HSK-A32	HSK-E25	HSK-E25	HSK-E20	HSK-E25
Max. speed	nmax [min <sup>-1</sup> ]	32'000	40'000	45'000	45'000	90'000	70'000
Lubrication		Grease	Grease	Grease	Grease	DLS	DLS
Direction of rotation		left & right					

Power S1 / S6 40%	P [kW]	9.0 / 13.5	6.3 / 9.45	3.5 / 5.25	6.3 / 9.45	3.0 / 3.8	4.0 / 5.0
Torque S1 / S6 40%	M [Nm]	3.5 / 5.22	2.0 / 3.0	1.4 / 2.0	2.0 / 3.0	0.5 / 0.6	1.2 / 1.5
Nominal speed	nN [min <sup>-1</sup> ]	24'700	30'000	25'000	30'000	60'000	32'000
Motor frequency	[Hz]	1'067	1'333	1'500	1'500	1'500	1'170
Motor technology		ASYN	ASYN	ASYN	SYN	ASYN	ASYN
Voltage	[V]	350	350	350	355	370	350
Current S1	[A]	28.0	18.0	11.0	17.0	7.0	12.5

Length	L [mm]	433	413	245	245	330	360
Weight	[kg]	15.0	13.5	7.0	7.6	13.0	15.0

Shaft cooling system		-	-	-	-	-	-
Coolant Through Unit		Yes	-	-	-	-	-
Encoder		Yes	Yes	Yes	Yes	Yes	Yes

Options							
Dilation sensor		Yes	Yes	Yes	Yes	Yes	Yes
Vibration sensor		-	-	-	-	-	-

ASYN = Asynchronous motor  
SYN = Synchronous motor  
DLS = Direct Lubrication System

### Options

The **dilation sensor** is a spindle-integrated length measuring sensor, which determines the axial shaft expansion and enables length compensation on the machine.

The **vibration sensor** integrated into the spindle can be used to detect imbalance and provides the signals essential for process and spindle monitoring.

MFW-665 S	MFW-680 A	MFW-840/50 A	MFW-840/50 S	MFW-825-S	MFW-860/1 A	TYPE	
60	60 / 61.91	80	80	80	80	D [mm]	Outer diameter
HSK-E20	DS	HSK-E25	HSK-E25	HSK-E32	HSK-E25		Tool interface
65'000	80'000	50'000	50'000	25'000	60'000	nmax [min <sup>-1</sup> ]	Max. speed
Grease	Grease	Grease	Grease	Grease	DLS		Lubrication
						left & right	
						Direction of rotation	

2.0 / 3.0	1.0 / 1.5	3.4 / 5.1	6.0 / 9.0	7.5 / 11.25	2.1 / 3.0	P [kW]	Power S1 / S6 40%
0.3 / 0.48	0.12 / 0.18	0.81 / 1.22	1.59 / 2.15	4.0 / 5.97	0.65	M [Nm]	Torque S1 / S6 40%
60'000	80'000	40'000	40'000	18'000	32'000	nN [min <sup>-1</sup> ]	Nominal speed
1'083	1'333	1'667	1'667	833	2'000	[Hz]	Motor frequency
SYN	ASYN	ASYN	SYN	SYN	ASYN		Motor technology
209	200	380	380	380	360	[V]	Voltage
7.3	4.7	10.0	15.0	17.0	6.0	[A]	Current S1

289	266	375	375	410	360	L [mm]	Length
4.5	4.8	11.2	11.2	11.2	10.5	[kg]	Weight

-	-	-	-	-	-		Shaft cooling system
-	-	Yes	Yes	Yes	-		Coolant Through Unit
Yes	Yes	Yes	Yes	Yes	Yes		Encoder

Options							
Yes	-	Yes	Yes	Yes	Yes		Dilation sensor
-	-	-	-	-	-		Vibration sensor

MFW-1024/50	MFW-1028-S	MFW-1206/20	MFW-1216/20	MFW-1216/24	MFW-1220/1	TYPE	
100	100	120	120	120	120	D [mm]	Outer diameter
HSK-E32	HSK-A40	HSK-E40	HSK-E40	HSK-E40	HSK-E40		Tool interface
50'000	28'000	20'000	20'000	24'000	20'000	nmax [min <sup>-1</sup> ]	Max. speed
DLS	Grease	Grease	Grease	Grease	Grease		Lubrication
						left & right	
						Direction of rotation	

6.0 / 7.5	14.0 / 18.5	9.5 / 12.5	17.0 / 23.0	17.0 / 20.0	10.5 / 14.0	P [kW]	Power S1 / S6 40%
2.4 / 3.0	9.0 / 11.8	15.0 / 20.0	10.1 / 13.7	10.1 / 13.7	5.0 / 6.7	M [Nm]	Torque S1 / S6 40%
24'000	15'000	6'000	16'000	16'000	20'000	nN [min <sup>-1</sup> ]	Nominal speed
1'667	1'400	1'000	667	800	667	[Hz]	Motor frequency
ASYN	SYN	SYN	SYN	SYN	ASYN		Motor technology
350	444	465	355	414	350	[V]	Voltage
21.8	31.0	35	36	36	27	[A]	Current S1

400	442	486	486	486	517	L [mm]	Length
17.0	13.5	28	28	28	27	[kg]	Weight

-	-	-	-	-	-		Shaft cooling system
-	Yes	Yes	Yes	Yes	Yes		Coolant Through Unit
Yes	Yes	Yes	Yes	Yes	Yes		Encoder

Options							
Yes	Yes	-	-	-	-		Dilation sensor
-	-	Yes	Yes	Yes	Yes		Vibration sensor

# FAST ROTATING SPINDLES HSK-15 TO HSK-40

TYPE		MFW-1230/70	MFW-1224/60	MFW-1260	MFW-1224/42	MFW-1224/45
Outer diameter	D [mm]	120	120	120	120	120
Tool interface		HSK-E25	HSK-E32	HSK-E32	HSK-E32 HSK-E40 HSK-T40	HSK-E40 HSK-T40
Max. speed	n <sub>max</sub> [min <sup>-1</sup> ]	70'000	60'000	60'000	42'000	45'000
Lubrication		DLS	DLS	DLS	DLS	DLS
Direction of rotation		left & right				
Power S1 / S6 40%	P [kW]	4.0 / 4.7	8.5 / 7.9	11.0 / 12.5	15.0 / 18.5	15.0 / 20.0
Torque S1 / S6 40%	M [Nm]	1.3 / 1.6	3.4 / 3.9	1.8 / 2.0	6.0 / 7.5	6.0 / 7.5
Nominal speed	n <sub>N</sub> [min <sup>-1</sup> ]	30'000	24'000	60'000	24'000	24'000
Motor frequency	[Hz]	1'170	2'000	1'000	1'400	1'500
Motor technology		ASYN	ASYN	ASYN	SYN	SYN
Voltage	[V]	200	350	330	446	446
Current S1	[A]	20	22	25	28	28
Length	L [mm]	341	365	365	333	383
Weight	[kg]	19.0	21.0	21.0	24.0	25.0
Shaft cooling system		-	-	-	-	Yes
Coolant Through Unit		Yes	Yes	Yes	Yes	Yes
Encoder		Yes	Yes	Yes	Yes	Yes
<b>Options</b>						
Dilation sensor		Yes	Yes	Yes	Yes	Yes
Vibration sensor		Yes	Yes	Yes	Yes	Yes

ASYN = Asynchronous motor  
SYN = Synchronous motor  
DLS = Direct Lubrication System

#### Options

The **dilation sensor** is a spindle-integrated length measuring sensor, which determines the axial shaft expansion and enables length compensation on the machine.

The **vibration sensor** integrated into the spindle can be used to detect imbalance and provides the signals essential for process and spindle monitoring.



# COMPACT SPINDLES

## HSK-50 TO HSK-100

- Compact spindles with outside diameters from 140-230 mm
- Oil-air lubricated bearings with speeds up to 40'000 rpm
- Grease lubricated bearings with speeds up to 24'000 rpm

ASYN = Asynchronous motor  
 SYN = Synchronous motor  
 DLS = Direct Lubrication System

### Options

The **dilation sensor** is a spindle-integrated length measuring sensor, which determines the axial shaft expansion and enables length compensation on the machine.

The **vibration sensor** integrated into the spindle can be used to detect imbalance and provides the signals essential for process and spindle monitoring.

TYPE		MFW-1309/24	MFW-1303/12	MFW-1406/24	MFW-1412/36	MFW-1708/15	MFW-1709/24
Outer diameter	D [mm]	130	130	140	140	170	170
Tool interface		HSK-E50	HSK-E50	HSK-E50	HSK-E40 HSK-E50	HSK-A63	HSK-A63
Max. speed	nmax [min <sup>-1</sup> ]	24'000	12'000	24'000	36'000	15'000	24'000
Lubrication		Grease	Grease	Grease	DLS	Grease	Grease
Direction of rotation		left & right					

Power S1 / S6 40%	P [kW]	27.0 / 37.0	8.0 / 11.0	15.0 / 19.0	15.2 / 19.5	44.0 / 49.0	20.0 / 22.0
Torque S1 / S6 40%	M [Nm]	29.0 / 40.0	25.5 / 35.0	23.0 / 29.0	12.4 / 15.9	50.0 / 60.2	21.5 / 23.7
Nominal speed	nN [min <sup>-1</sup> ]	9'000	3'000	6'200	12'000	8'400	9'000
Motor frequency	[Hz]	1'200	600	800	1'200	500	800
Motor technology		SYN	SYN	SYN	ASYN	SYN	ASYN
Voltage	[V]	569	500	490	350	439	350
Current S1	[A]	72	30	60	59	79	56

Length	L [mm]	595	595	465	455	595	417
Weight	[kg]	40	40	38.0	42.0	67.0	52.0

Shaft cooling system				-	-	-	-
Coolant Through Unit		Yes	Yes	Yes	Yes	Yes	Yes
Encoder		Yes	Yes	Yes	Yes	Yes	Yes

Options							
Dilation sensor		-	-	Yes	Yes	Yes	Yes
Vibration sensor		Yes	Yes	Yes	Yes	Yes	Yes

TYPE		MFW-1906/28	MFW-1920/30	MFW-2102/20	MFW-2106/24	MFW-2104/24	MFW-2310/30
Outer diameter	D [mm]	190	190	210	210	210	230
Tool interface		HSK-A63	HSK-A63	HSK-A63	HSK-A63	HSK-A63	HSK-A63/80
Max. speed	nmax [min <sup>-1</sup> ]	28'000	30'000	20'000	24'000	24'000	30'000
Lubrication		DLS	DLS	DLS	DLS	DLS	DLS
Direction of rotation		left & right					

Power S1 / S6 40%	P [kW]	20.0 / 30.0	63.0 / 81.0	25.0 / 31.0	54.0 / 68.0	29.0 / 38.0	74.0 / 78.0
Torque S1 / S6 40%	M [Nm]	27.1 / 40.9	30.7 / 39.5	119.4 / 148.0	85.8 / 108.8	69.2 / 90.7	73.0 / 92.0
Nominal speed	nN [min <sup>-1</sup> ]	7'180	19'600	2'000	6'010	4'000	9'690
Motor frequency	[Hz]	1'400	1'000	1'000	1'200	800	1'000
Motor technology		ASYN	ASYN	SYN	ASYN	ASYN	SYN
Voltage	[V]	420	380	814	420	350	617
Current S1	[A]	60	128	131	118	66	180

Length	L [mm]	421	491	558	565	542	582
Weight	[kg]	76.0	70.0	103.0	103.0	95.0	122.0

Shaft cooling system		Yes	-	-	-	Yes	-
Coolant Through Unit		Yes	Yes	Yes	Yes	Yes	Yes
Encoder		Yes	Yes	Yes	Yes	Yes	Yes

Options							
Dilation sensor		Yes	Yes	Yes	Yes	Yes	Yes
Vibration sensor		Yes	Yes	Yes	Yes	Yes	Yes

MFW-1709/24	MFW-1709/30	MFW-1709/30	MFW-1718/30	MFW-1912/24	MFW-1906/24	TYPE	
170	170	170	170	190	190	D [mm]	Outer diameter
HSK-A63	HSK-A63	HSK-A63	HSK-A63	HSK-A63	HSK-A63		Tool interface
24'000	30'000	30'000	30'000	24'000	24'000	nmax [min <sup>-1</sup> ]	Max. speed
Grease	DLS	DLS	DLS	Grease	DLS		Lubrication
						left & right	
						Direction of rotation	

39.0 / 40.5	20.0 / 22.0	34.0 / 40.5	42.0 / 48.0	33.0 / 46.5	42.0 / 50.0	P [kW]	Power S1 / S6 40%
39.3 / 49.0	21.5 / 23.7	39.3 / 49.0	22.5 / 25.7	25.6 / 36.1	66.9 / 83.8	M [Nm]	Torque S1 / S6 40%
9'000	9'000	9'000	18'000	12'300	6'000	nN [min <sup>-1</sup> ]	Nominal speed
800	1'000	1'000	1'000	800	1'200	[Hz]	Motor frequency
SYN	ASYN	SYN	ASYN	ASYN	SYN		Motor technology
420	350	612	350	360	724	[V]	Voltage
83	56	83	103	85	108	[A]	Current S1

417	465	417	417	491	489	L [mm]	Length
54.0	56.0	55.0	56.0	70.0	73.0	[kg]	Weight

-	-	-	-	-	Yes		Shaft cooling system
Yes	Yes	Yes	Yes	Yes	Yes		Coolant Through Unit
Yes	Yes	Yes	Yes	Yes	Yes		Encoder

Options							
Dilation sensor		Yes	Yes	Yes	Yes	Yes	Dilation sensor
Vibration sensor		Yes	Yes	Yes	Yes	Yes	Vibration sensor

MFW-2318/30	MFW-2303/10	MFW-2304/15	MFW-2309/20	MFW-2314/20	TYPE	
230	230	230	230	230	D [mm]	Outer diameter
HSK-A63/80	HSK-A100	HSK-A100	HSK-A100	HSK-A100		Tool interface
30'000	10'000	15'000	20'000	20'000	nmax [min <sup>-1</sup> ]	Max. speed
DLS	DLS	DLS	DLS	DLS		Lubrication
					left & right	
					Direction of rotation	

125.0 / 156.0	63.0 / 74.0	70.0 / 86.0	85.0 / 91.0	125.0 / 156.0	P [kW]	Power S1 / S6 40%
66.0 / 83.0	240.0 / 250.0	167.0 / 229.0	84.0 / 106.0	85.0 / 106.0	M [Nm]	Torque S1 / S6 40%
18'000	3'000	4'000	9'000	14'000	nN [min <sup>-1</sup> ]	Nominal speed
1'000	667	750	667	667	[Hz]	Motor frequency
SYN	SYN	SYN	SYN	SYN		Motor technology
528	588	438	438	468	[V]	Voltage
219	187	149	200	231	[A]	Current S1

582	607	607	607	607	L [mm]	Length
130.0	145.0	145.0	152.0	152.0	[kg]	Weight

-	-	-	-	-		Shaft cooling system
Yes	Yes	Yes	Yes	Yes		Coolant Through Unit
Yes	Yes	Yes	Yes	Yes		Encoder

Options							
Dilation sensor		Yes	Yes	Yes	Yes	Yes	Dilation sensor
Vibration sensor		Yes	Yes	Yes	Yes	Yes	Vibration sensor

# POWERFUL AND ROBUST SPINDLES HSK-63 TO HSK-125

- Powerful and robust spindles with outside diameters of 240-360 mm
- Power up to 200 kW and torques up to 1'000 Nm

TYPE		MFW-2401/15	MFW-2401/18	MFW-2401/20	MFW-2612/18	MFW-2702/08
Outer diameter	D [mm]	240	240	240	260	275
Tool interface		HSK-A63 HSK-A80	HSK-A63 HSK-A80	HSK-A80	HSK-A100	HSK-A100
Max. speed	nmax [min <sup>-1</sup> ]	15'000	18'000	20'000	18'000	8'000
Lubrication		Grease	DLS	DLS	DLS	DLS
Direction of rotation		left & right				
Power S1 / S6 40%	P [kW]	20.0 / 22.0	20.0 / 22.0	20.0 / 22.0	100.0 / 110.0	93.0 / 103.0
Torque S1 / S6 40%	M [Nm]	166.0 / 182.0	166.0 / 182.0	166.0 / 182.0	64.0 / 88.0	444.0 / 553.0
Nominal speed	nN [min <sup>-1</sup> ]	1'000	1'000	1'000	12'000	2'000
Motor frequency	[Hz]	500	600	667	600	667
Motor technology		ASYN	ASYN	ASYN	ASYN	SYN
Voltage	[V]	380	380	380	350	451
Current S1	[A]	116	116	116	199	200
Length	L [mm]	874	874	874	666	702
Weight	[kg]	185.0	185.0	185.0	180.0	244.0
Shaft cooling system		-	-	-	-	-
Coolant Through Unit		Yes	Yes	Yes	Yes	Yes
Encoder		Yes	Yes	Yes	Yes	Yes
<b>Options</b>						
Dilation sensor		Yes	Yes	Yes	Yes	Yes
Vibration sensor		Yes	Yes	Yes	Yes	Yes

TYPE		MFW-2701/15	MFW-2715/20	MFW-2714/20	MFW-2702/20	MFW-2801/14	MFW-3601/08
Outer diameter	D [mm]	275	275	275	275	285	360
Tool interface		HSK-A100	HSK-A100	HSK-A100	HSK-A100 HSK-T100	HSK-A100	HSK-A100 HSK-A125
Max. speed	nmax [min <sup>-1</sup> ]	15'000	20'000	20'000	20'000	14'000	8'000
Lubrication		DLS	DLS	DLS	DLS	DLS	DLS
Direction of rotation		left & right					
Power S1 / S6 40%	P [kW]	63.0 / 82.0	150.0 / 187.0	200.0 / 250.0	50.0 / 62.0	32.0 / 40.0	100.0 / 113.0
Torque S1 / S6 40%	M [Nm]	300.0 / 391.0	96.0 / 119.0	140.0 / 176.0	251.0 / 313.0	305.0 / 389.0	1'000.0 / 1'134.0
Nominal speed	nN [min <sup>-1</sup> ]	2'000	15'000	13'600	1'900	1'000	954
Motor frequency	[Hz]	1'000	667	667	1'333	700	533
Motor technology		ASYN	SYN	SYN	ASYN	ASYN	ASYN
Voltage	[V]	400	450	462	380	420	420
Current S1	[A]	172	228	342	133	84	199
Length	L [mm]	675	573	573	707	921	930
Weight	[kg]	239.0	180.0	180	220.0	290.0	550.0
Shaft cooling system		-	-	-	Yes	-	-
Coolant Through Unit		Yes	Yes	Yes	Yes	Yes	Yes
Encoder		Yes	Yes	Yes	Yes	Yes	Yes
<b>Options</b>							
Dilation sensor		Yes	Yes	Yes	Yes	Yes	Yes
Vibration sensor		Yes	Yes	Yes	Yes	Yes	Yes

# SPINDLES FOR MANUAL TOOL CHANGE

MFM-650	MFM-660-A	MFM-825-S	MFM-850	MFM-850-A	TYPE	
60	60	80	80	80	D [mm]	Outer diameter
HSK-C25	Collet SRP6	HSK-C32	Collet SRP20	HSK-C25		Tool interface
50'000	60'000	25'000	50'000	50'000	nmax [min <sup>-1</sup> ]	Max. speed
Grease	Grease	Grease	DLS	Grease		Lubrication
left & right			right	left & right		Direction of rotation
1.2 / 1.8	1.2 / 1.8	7.0 / 10.5	3.0 / 3.4	3.4 / 5.1	P [kW]	Power S1 / S6 40%
0.29 / 0.43	0.19 / 0.29	4.0 / 5.57	0.7 / 0.8	0.81 / 1.22	M [Nm]	Torque S1 / S6 40%
40'000	60'000	18'000	50'000	40'000	nN [min <sup>-1</sup> ]	Nominal speed
834	1'000	833	1'667	1'667	[Hz]	Motor frequency
ASYN	ASYN	SYN	ASYN	ASYN		Motor technology
220	200	380	350	380	[V]	Voltage
5.5	5.0	17.0	7.0	10.0	[A]	Current S1
228	234	289.6	288	364	L [mm]	Length
3.8	3.5	10.0	8.0	10.0	[kg]	Weight
-	-	-	-	-		Shaft cooling system
-	-	Yes	-	Yes		Coolant Through Unit
Yes	-	Yes	-	Yes		Encoder
<b>Options</b>						
-	-	-	-	-		Dilation sensor
-	-	-	-	-		Vibration sensor

MFM-850-S	MFM-1032-A	TYPE	
80	100	D [mm]	Outer diameter
HSK-C25	HSK-C40		Tool interface
50'000	32'000	nmax [min <sup>-1</sup> ]	Max. speed
Grease	Grease		Lubrication
left & right			Direction of rotation
6.0 / 9.0	9.0 / 13.5	P [kW]	Power S1 / S6 40%
1.59 / 2.15	3.0 / 4.3	M [Nm]	Torque S1 / S6 40%
40'000	25'000	nN [min <sup>-1</sup> ]	Nominal speed
1'667	1'067	[Hz]	Motor frequency
SYN	ASYN		Motor technology
380	350	[V]	Voltage
15.0	28.0	[A]	Current S1
364	433	L [mm]	Length
10.0	13.5	[kg]	Weight
-	-		Shaft cooling system
Yes	-		Coolant Through Unit
Yes	Yes		Encoder
<b>Options</b>			
-	-		Dilation sensor
-	-		Vibration sensor

ASYN = Asynchronous motor  
SYN = Synchronous motor  
DLS = Direct Lubrication System

**Options**  
The **dilation sensor** is a spindle-integrated length measuring sensor, which determines the axial shaft expansion and enables length compensation on the machine.

The **vibration sensor** integrated into the spindle can be used to detect imbalance and provides the signals essential for process and spindle monitoring.

# PERIPHERALS

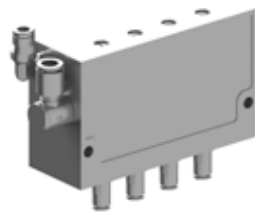


## Oil-air central lubrication unit

Pre-assembled central lubrication unit on aluminium base plate with the following components:

- Lubrication pump with level control
- Main shut-off valve
- Ultra-fine filter for oil
- Air treatment for central lubrication unit and sealing air

MAIN TYPES*	ARTICLE NO.
OLA 106212110	147889



## Oil-air dosing unit

- Used for oil metering in spindles with oil-air bearing type
- 100 % tested and certified
- Compatible with current competitor product

TYPE	SPECIFICATION	ARTICLE NO.
SFJ 4G	4 injectors, 0,01cm <sup>3</sup> each	104235



## CSC Aggregate

- Shaft cooling unit for all common CSC spindles
- Low pressure for shaft cooling
- High pressure for tool change

TYPE	ARTICLE NO.
CSC-Peripherie III	126317



## Exhaust air filter

- For collecting waste oil coming out of spindle oil return path
- Dampens the air noise of the lubrication system

DESIGNATION EXHAUST AIR FILTER	SPINDLE SIZE	ARTICLE NO.
ALF 310 for 1 oil return line	Suitable up to spindle-diameter 210 mm	107061
ALF 310 for 2 oil return lines		106807
ALF 310 for 3 oil return lines		107057
ALF 510 for 1 oil return line	Suitable from spindle-diameter 230 mm	108107
ALF 510 for 2 oil return lines		108106
ALF 510 for 3 oil return lines		108108



## Frequency converter

The correct design of the converter is decisive for the smooth running, power development and heat generation of your spindle unit. FISCHER has been working closely with the leading converter manufacturers for years and regularly exchanges experience. As a result, we offer you optimum conditions when defining the inverter and are happy to support you in choosing the suitable supplier.



## Filter choke

When using pulse width modulating (PWM) frequency inverters in the low-cost price segment, the interposition of a motor choke is mandatory. The FISCHER test center supports you in the design of the motor choke.

The ideal frequency inverter/choke combination results in less heat loss in the rotor and stator and higher power output. Results were measured and documented on the FISCHER test bench.



## Operating fluids

TYPE	SPECIFICATION	CONTENTS	ARTICLE NO.
MOTOREX Spindel oil ISO VG68	Bearing lubrication	5 Litres	133563
MOTOREX Cool-Oil	Motor, bearing, shaft cooling	20 Litres	152421
MOTOREX Cool-X	Motor and bearing cooling	25 Litres	107657
MOTOREX CS-Cleaner	Cleaning agent for cooling circuit	1 Litres	120891



## Accessories

Our accessories can be found on our website at:

[www.fischerspindle.com/accessories](http://www.fischerspindle.com/accessories)

# SERVICE AND REPAIRS

## THE RIGHT OFFER FOR EVERY NEED

### SERVICE AND SUPPORT

- On-site support: Support for commissioning of spindle systems
- Maintenance training and application consulting
- Service visits for minor repairs or optimizations
- On-site vibration and bearing analysis
- Trainings

### REPAIRS OF FISCHER SPINDLES AND MILLING HEADS

- FISCHER Spindle Group has service centers and production facilities around the world
- Repair FISCHER spindles with original parts; refurbish key components as needed; bring spindle to like new condition.
- Express repairs
- Repair of FISCHER milling heads

### THIRD PARTY SPINDLE REPAIRS

- We repair all brands of spindles in our worldwide group companies
- Analysis, repairs and retrofits of all your spindles
- FISCHER quality, service and advice
- All from one source

### SERVICES

#### Spindle hotel

Your spindle is stored at FISCHER and checked for proper function at regular intervals. The warranty begins with the call-off and delivery of the spindle.

#### Spindle pool for machine manufacturers

While your spindle is being repaired, you can benefit from one of our pool spindles. You can continue adding value without interruption and keep production going.

#### Exchange spindles for end customers

We offer exchange spindles available in short notice with your defective spindle. This depends on the spindle type and availability.

#### Spindle repair service

We offer a professional and binding repair service. On request we provide a detailed analysis of the defective spindle as well as individual quotations.

#### Spindle Taxi

Your spindle will be picked up free of charge in Europe.

#### Spindle periphery

We support you in the selection and design of the appropriate periphery for a safe operation of the spindle.

# LOCATIONS WORLDWIDE

## OF THE FISCHER GROUP

The FISCHER family is present at five locations worldwide and employs over 400 people. A strong global team with the greatest enthusiasm for technology, ensuring customer satisfaction through successful, innovative products and outstanding service.



### HEADQUARTERS SWITZERLAND AND LOCAL BRANCHES

**Switzerland**  
FISCHER Spindle Group AG  
+41 62 956 22 22  
info-fsg@fischerspindle.com

**Switzerland**  
FISCHER AG Präzisionsspindeln  
+41 62 956 22 22  
info-fch@fischerspindle.com

**Germany**  
FISCHER DEUTSCHLAND GmbH  
+49 2173 20535 0  
info-fde@fischerspindle.com

**USA**  
FISCHER USA Inc.  
+1 262 632 6173  
info-fusa@fischerspindle.com

**China**  
FISCHER SHANGHAI Spindle Technologies, Inc.  
+86 21 643 481 50  
info-fsh@fischerspindle.cn

**Taiwan**  
FISCHER TAIWAN Inc.  
+886 4 2620 2200  
info-ftw@fischerspindle.com

### AUTHORIZED PARTNERS

**France**  
PRECISE France SAS  
+33 4 50 36 90 15  
www.reparation-electrobroche.com  
precise@precise.fr

**Japan**  
CAPTAIN INDUSTRIES, Ltd.  
+81 3 5674 1162  
www.capind.co.jp  
info@capind.co.jp

**Korea**  
SPC Technology, Inc.  
+82 2 2082 5858  
spc@spctech.co.kr  
www.spctech.co.kr

**India**  
Precise High Speed Spindle Service  
Centre Pvt.Ltd  
+91 9422622701  
sales@phssscpl.com  
www.phssscpl.com

www.fischerspindle.com





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