

SPINDLE PROGRAMME
GRINDING



GRINDING SPINDLES | BEST SELECTION

WEISS

G M B H

WEISS Spindeltechnologie GmbH
A Siemens Company

GSS | GLOBAL SPINDLE SOLUTIONS



GRINDING SPINDLES

" GRINDING
IN ALL VARIATIONS
- MORE THAN 100
DRIVE SOLUTIONS -
FROM ECONOMICAL
TO HIGH PERFORMANCE "

WEISS - GRINDING SPINDLES BEST SELECTION

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STANDARD SERIES

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GRINDING

Standard series set the standard!

Perfect internal grinding, whether large or small: grinding spindles from our standard series offer you proven quality and reliability. We can only point to the many satisfied customers who have put spindles from this series successfully to work.

The WEISS standard series prove one thing: good quality and high performance need not necessarily be expensive. Small batch production with a high degree of non-variable parts allows consistent exploitation of synergies and the economy of scale in material procurement and production. These savings are passed on to our customers.

Our standard spindles can naturally also be adapted through design engineering to fit individual needs. It should be remembered, however, that the larger the adjustments, the smaller the advantages in delivery time and purchase price.

Advantages of standard spindles:

- ⊕ affordable to procure
- ⊕ short delivery times
- ⊕ field tested and proven
- ⊕ latest state-of-the-art design
- ⊕ affordable spindle service through optional stocking of replacement spindles and parts



Standard series INTERNAL GRINDING		
Medium Power		High Power
Oil-air lubricated MODEL NUMBER	Grease lubricated MODEL NUMBER	Oil-air lubricated MODEL NUMBER
SM100-81/74-4	SM(F)120-45/36-9	SH120-51/45-12
SM120-72/60-5	SM(F)150-24/15-17	SH150-40/30-21
SM120-60/51-7	SM(F)150-30/24-13	SH150-33/24-24
SM120-51/36-8	SM(F)150-36/24-13	SH170-27/18-28
SM120-45/36-9	SM(F)170-18/9-23	SH170-21/12-32



PERFORMANCE CHARACTERISTICS

Tool interface:

Cylindrical, hardened

Precision spindle bearing:

Hybrid bearing
Spring preloaded

Balancing:

Shafts and rotors
Dynamic balancing of assembled spindle
Vibration speed $v < 1$ mm/s

Housing:

Cartridge

Bearing lubrication:

Oil-air lubrication
Alternatively with grease for-life lubrication

Sealing on working end:

Labyrinth with air supply from bearing lubrication
or separate purge air for grease lubricated spindle units

Spindle connections:

Axial via cover on spindle end

Coolant:

Liquid cooling of the stator

Motor:

Low-loss asynchronous motors

Options:

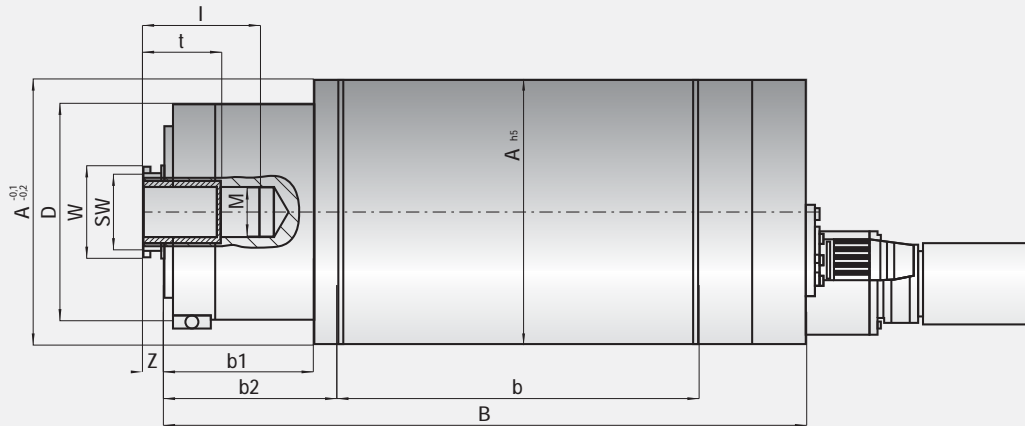
- Speed sensor
- Coded connectors
- Advice on dynamic characteristics relating to size of tools and suitability of grinding wheels and arbones

WEISS

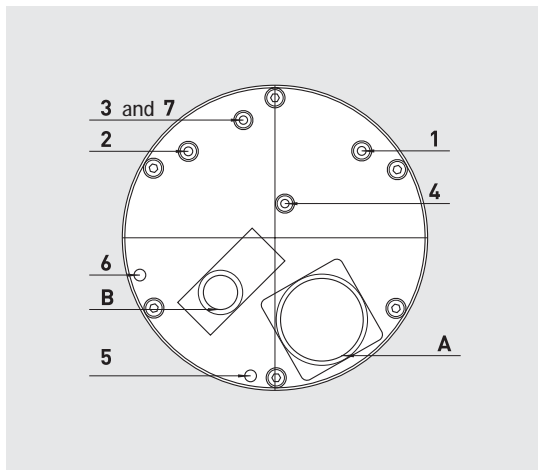
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DIMENSIONS



CONNECTIONS

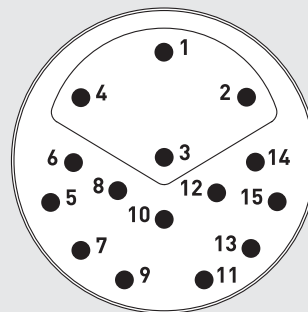


- 1 Coolant intake G1/4
- 2 Coolant exhaust G1/4
- 3 Bearing lubrication, front (for oil-air lubrication)
- 4 Bearing lubrication, rear (for oil-air lubrication)
- 5 Air discharge Ø 6
- 6 Leakage Ø 6

- A Line connector, motor
- B (Optional) Signal connector for encoding/key phasor

POWER PLUG DETAILS

SM(F)120/SM(F)150/SH120/SH150



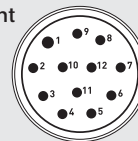
PIN assignment

- 1 Protective conductor
- 2 U
- 3 V
- 4 W
- 5 Key phasor (Optional)
- 6
- 15
- 7 Spindle encoder (Option)
- 8 --
- 9 --
- 10 --
- 11 --
- 12 --
- 13 PTC + 130 °C
- 14 PTC - 130 °C

Option SM(F)170/SH170
additional signal connector for coding/key phasor

PIN assignment

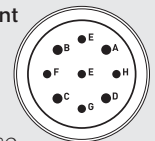
- 1 unassigned
- 2 --
- 3 --
- 4 --
- 5 Key phasor
- 6
- 15
- 7 Spindle encoder (Option)
- 8 --
- 9 --
- 10 --
- 11 --
- 12 --
- 13 unassigned
- 14 unassigned



SM(F)170/SH170

PIN assignment

- A U
- B V
- C W
- D Ground
- E PTC + 130 °C
- F PTC - 130 °C
- G unassigned
- H unassigned
- I unassigned

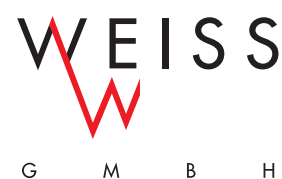


INTERNAL GRINDING

OIL-AIR LUBRICATED, MEDIUM POWER																				
Model number	Maximum speed [rpm]	Rated speed [rpm]	Maximum-frequency [Hz]	Rated-frequency [Hz]	Voltage [V]	Maximum-current [A]	Rated-Output [kW] S6-60%	Main measurements and connection dimensions for grinding arbour												
								A [mm]	B [mm]	W [mm]	SW [mm]	Z [mm]	D [mm]	b [mm]	b1 [mm]	b2 [mm]	H4 [mm]	t [mm]	l [mm]	M
SM100-81/74-4	81.000	74.000	1,350	1,234	350	10	4	100	212	13,5	12	6	75	94	59	740	8	13	30	M8
SM120-72/60-5	72.000	60.000	1,200	1,000	350	12	5	120	229	15,5	14	7	72	101	68	79	9	14	29	M9
SM120-60/51-7	60.000	51.000	1,000	850	350	16	7	120	249	18	15	9	80	109	80	91	10	17	36	M10
SM120-51/36-8	51.000	36.000	850	600	350	23	9	120	270	23	19	10	90	124	86	97	14	22	42	M14x1,5
SM120-45/36-9	45.000	36.000	750	600	350	20	9	120	290	28	24	10	95	144	86	97	16	26	45	M16x1,5

GREASE LUBRICATED, MEDIUM POWER																				
Model number	Maximum speed [rpm]	Rated speed [rpm]	Maximum-frequency [Hz]	Rated-frequency [Hz]	Voltage [V]	Maximum-current [A]	Rated-Output [kW] S6-60%	Main measurements and connection dimensions for grinding arbour												
								A [mm]	B [mm]	W [mm]	SW [mm]	Z [mm]	D [mm]	b [mm]	b1 [mm]	b2 [mm]	H4 [mm]	t [mm]	l [mm]	M
SM(F)120-45/36-9	45,000	36,000	750	600	350	20	9	120	290	28	24	10	95	144	86	97	16	26	45	M16x1,5
SM(F)150-24/15-17	24,000	15,000	400	250	350	40	17	150	374	48	41	14	124	200	89	104	28	44	69	M28x2
SM(F)150-30/24-13	30,000	24,000	500	400	350	38	13	150	343	38	32	12	110	170	88	103	22	36	61	M22x2
SM(F)120-36/24-8	36,000	24,000	600	400	350	38	13	150	347	33	27	14	104	170	86	101	16	26	45	M16x1,5
SM(F)170-18/9-23	18,000	9,000	600	300	350	50	23	170	416	58	50	14	139	233	96	113	32	50	75	M32x2

OIL-AIR LUBRICATED, HIGH POWER																				
Model number	Maximum speed [rpm]	Rated speed [rpm]	Maximum-frequency [Hz]	Rated-frequency [Hz]	Voltage [V]	Maximum-current [A]	Rated-Output [kW] S6-60%	Main measurements and connection dimensions for grinding arbour												
								A [mm]	B [mm]	W [mm]	SW [mm]	Z [mm]	D [mm]	b [mm]	b1 [mm]	b2 [mm]	H4 [mm]	t [mm]	l [mm]	M
SH120-51/45-12	51.000	45.000	850	750	350	27	12	120	270	28	24	10	95	124	86	97	16	26	45	M16x1,5
SH150-40/30-21	40.000	30.000	550	500	350	54	21	150	343	38	32	12	110	170	88	103	22	36	61	M22x2
SH150-33/24-24	33.000	24.000	500	400	350	52	24	150	347	48	41	14	124	200	89	104	28	44	69	M28x2
SH170-27/18-28	27.000	18.000	900	600	350	72	28	150	361	58	50	14	139	178	96	113	50	50	75	M32x2
SH170-21/12-32	21.000	12.000	700	400	350	86	32	170	438	68	60	14	145	250	28	105	36	56	86	M36x2



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INDIVIDUAL DESIGNS GRINDING

INDIVIDUALITY and FLEXIBILITY

WEISS GmbH's palette of spindle solutions for grinding applications completely covers both internal and external in almost any variation.

In addition to the current standard series for internal grinding, over 100 individual spindle solutions for grinders have been designed and built in recent years. WEISS know-how is in constant demand when it comes to grinding spindles, from manufacturer and users from around the world looking to keep their solutions on the cutting edge of technology and affordability.

Flexibility is the key word when it comes to the development of customer-tailored grinding spindles. The designers and engineers at WEISS oriented themselves completely to the requirements of your machine concept. – **Test the strength of WEISS by requesting your own personal spindle bid.**

ADVANTAGES OF INDIVIDUAL CONSTRUCTIONS:

- ⊕ machine concepts tailor made for the required price, quality, or efficiency
- ⊕ chance to distinguish oneself
- ⊕ possibility of realising own vision

PREVIOUSLY REALISED PERFORMANCE PARAMETERS:

- Power (S1–100%): up to **100 kW**
- Max speed: up to **120,000 rpm**
- Spindle weight: up to **975 kg**
- Run-out: up to **1 µm**

RANGE OF PRODUCTS

- Spindles with **external drive** (i.e. belts)
- Spindles with **direct drive** (motor spindles)

- **synchronous motors**
- **asynchronous motors**

- Spindles with **ball bearings** (chromium steel, hybrid, ...)
- Spindles with **fluid bearings** (hydrostatic, hydrodynamic)

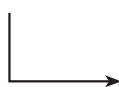
- **Grease for-life lubrication**
- **Oil-air lubrication**



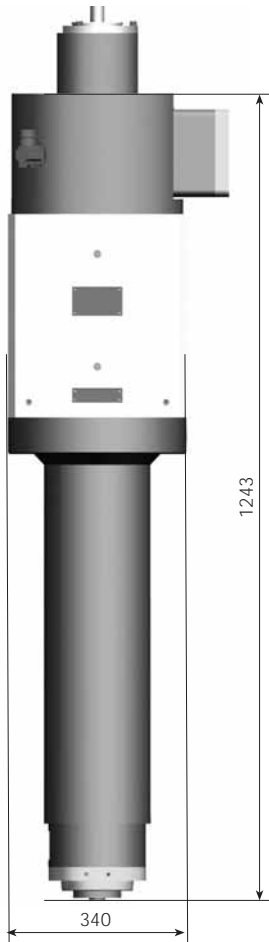
DESIGN EXAMPLES

– BEST SELECTION –

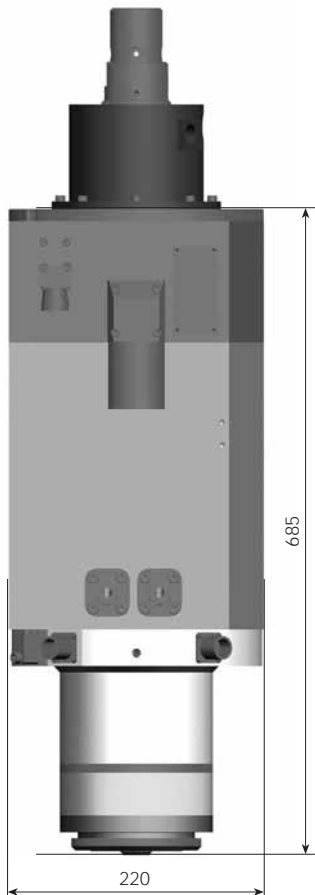
SPINDLE NUMBER	Interface	Max speed
175943	HSK-A63	8,000 rpm
175024B	HSK-A63	15,000 rpm
174974	HSK-A80	12,000 rpm
176025	HSK-C40	45,000 rpm
175463	HSK-C50	10,000 rpm
175465	HSK-C50	10,000 rpm
175624	HSK-F50	30,000 rpm
175625	HSK-F50	30,000 rpm
175464	HSK-F63	10,000 rpm
168578	special	500 rpm
175448	special	3,000 rpm
175577	special	4,500 rpm
168025	special	5,000 rpm
175083	special	7,500 rpm
175486A	special	9,000 rpm
175082	special	14,900 rpm


**A detailed data sheet for all spindle numbers
 can be downloaded from our homepage at:
www.weissgmbh.de**



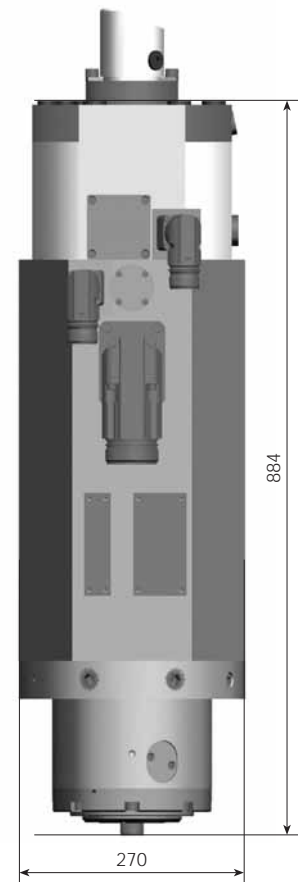


SPINDLE NUMBER	175943
Category:	Grinding Individual
Spindle nose:	HSK-A63
Max. speed:	8,000 rpm
Rated speed:	1,800 rpm
Rated power (S1-100%):	7.5 kW
Rated torque (S1-100%):	40 Nm
Motor:	asynchronous
Moment of inertia (spindle):	0.089 kgm ²
Housing shape:	block
Block dimensions W x H:	340 mm x 295 mm
Overall length:	1243 mm
Operating position:	vertical / nose down
Bearing bore diameter:	75 mm
Bearing lubrication:	grease

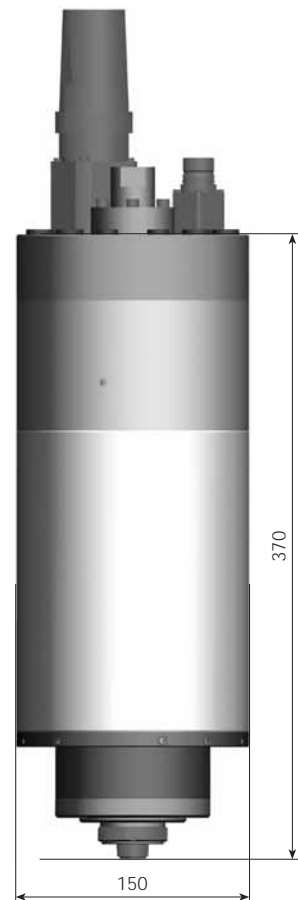


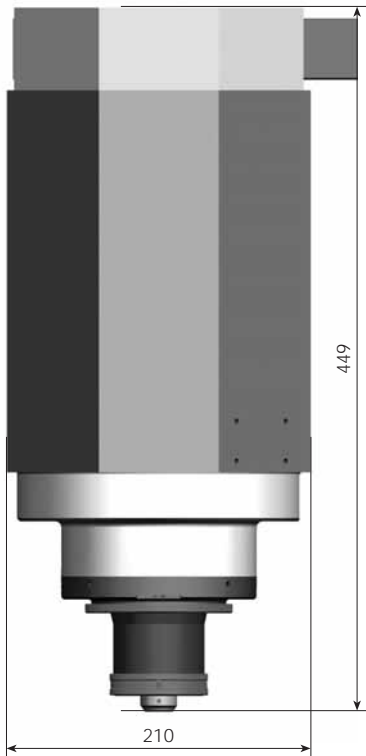
SPINDEL-NUMBER	175024B
Category:	Grinding Individual
Spindle nose:	HSK-A63
Max speed:	15,000 rpm
Rated speed:	3,000 rpm
Rated power (S1-100%):	10 kW
Rated torque (S1-100%):	32 Nm
Motor:	asynchronous
Moment of inertia (spindle):	0.027 kgm ²
Housing shape:	cylindrical
Centring diameter:	220 mm
Overall length:	685 mm
Operating position:	horizontal
Bearing bore diameter:	70 mm
Bearing lubrication:	grease

SPINDLE NUMBER	174974
Category:	Grinding Individual
Spindle nose:	HSK-A80
Max speed:	12,000 rpm
Rated speed:	3,300 rpm
Rated power (S1–100 %):	26 kW
Rated torque (S1–100 %):	75 Nm
Motor:	synchronous
Moment of inertia (spindle):	0.05 kgm ²
Housing shape:	cylindrical
Snap diameter:	270 mm
Overall length:	884 mm
Operating position:	vertical / nose down
Bearing bore diameter:	85 mm
Bearing lubrication:	grease

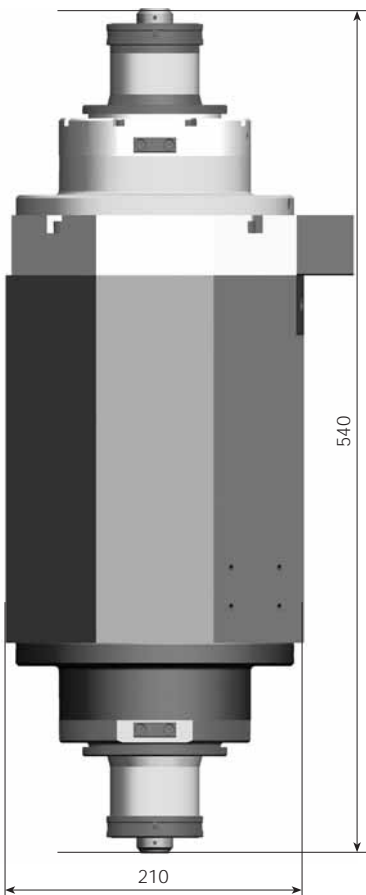


SPINDLE NUMBER	176025
Category:	Grinding Individual
Spindle nose:	HSK-C40
Max speed:	45,000 rpm
Rated speed:	21,000 rpm
Rated power (S1–100 %):	22 kW
Rated torque (S1–100 %):	10 Nm
Motor:	asynchronous
Moment of inertia (spindle):	0.003 kgm ²
Housing shape:	cylindrical
Snap diameter:	150 mm
Overall length:	370 mm
Operating position:	horizontal
Bearing bore diameter:	45 mm
Bearing lubrication:	Oil-air lubricated



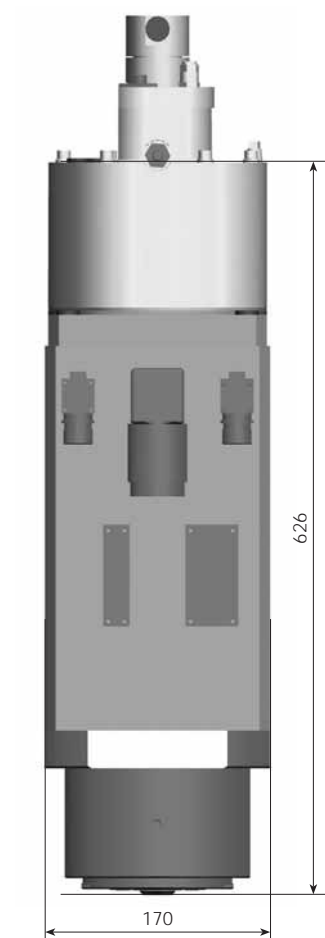


SPINDLE NUMBER		175463
Category:		Grinding Individual
Spindle nose:	HSK-C50	
Max speed:	10,000 rpm	
Rated speed:	2,000 rpm	
Rated power (S1–100%):	7.5 kW	
Rated torque (S1–100%):	35.8 Nm	
Motor:	asynchronous	
Moment of inertia (spindle):	0.0155 kgm ²	
Housing shape:	block	
Block dimensions W x H:	210 mm x 206 mm	
Overall length:	449 mm	
Operating position:	horizontal	
Bearing bore diameter:	70 mm	
Bearing lubrication:	grease	

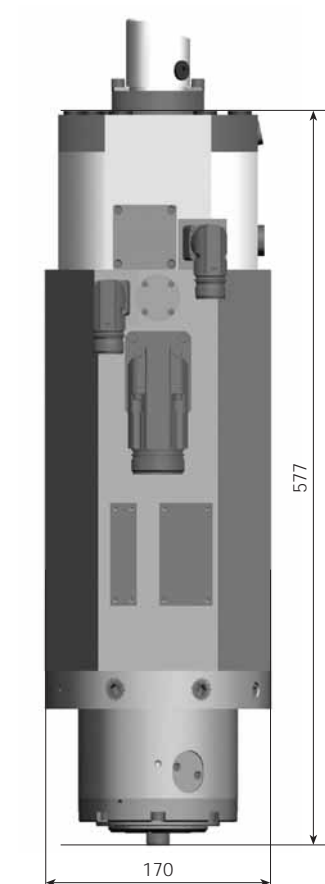


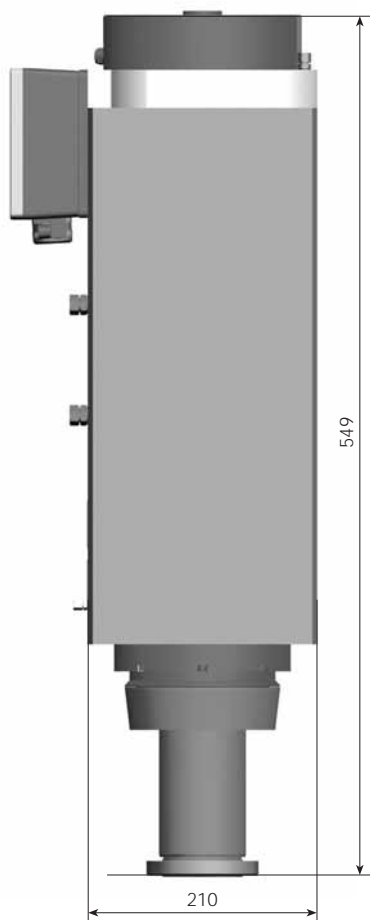
SPINDLE NUMBER		175465
Category:		Grinding Individual
Spindle nose:	HSK-C50, double end	
Max speed:	10,000 rpm	
Rated speed:	2,000 rpm	
Rated power (S1–100%):	7.5 kW	
Rated torque (S1–100%):	36 Nm	
Motor:	asynchronous	
Moment of inertia (spindle):	0.0155 kgm ²	
Housing shape:	block	
Block dimensions W x H:	210 mm x 208 mm	
Overall length:	540 mm	
Operating position:	horizontal	
Bearing bore diameter:	70 mm	
Bearing lubrication:	grease	

SPINDLE NUMBER	175624
Category:	Grinding Individual
Spindle nose:	HSK-A63
Max speed:	18,000 rpm
Rated speed:	5,500 rpm
Rated power (S1-100%):	16 kW
Rated torque (S1-100%):	27.8 Nm
Motor:	synchronous
Moment of inertia (spindle):	0.0108 kgm ²
Housing shape:	block
Block dimensions W x H:	170 mm x 185 mm
Overall length:	626 mm
Operating position:	vertical
Bearing bore diameter:	70 mm
Bearing lubrication:	grease



SPINDLE NUMBER	175625
Category:	Grinding Individual
Spindle nose:	HSK-F50
Max speed:	28,000 rpm
Rated speed:	12,500 rpm
Rated power (S1-100%):	18 kW
Rated torque (S1-100%):	13 Nm
Motor:	synchronous
Moment of inertia (spindle):	0.0038 kgm ²
Housing shape:	block
Block dimensions W x H:	170 mm x 185 mm
Overall length:	577 mm
Operating position:	Universal
Bearing bore diameter:	45 mm
Bearing lubrication:	grease





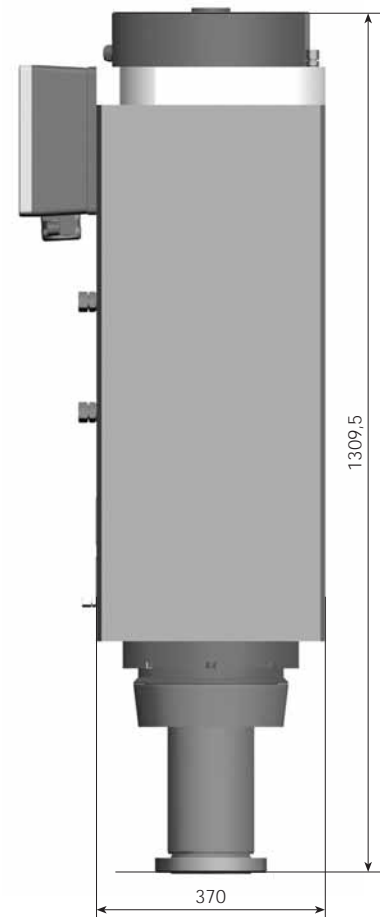
SPINDLE NUMBER	175464
Category:	Grinding Individual
Spindle nose:	HSK-F63
Max speed:	10,000 rpm
Rated speed:	2,000 rpm
Rated power (S1-100%):	7.5 kW
Rated torque (S1-100%):	36 Nm
Motor:	asynchronous
Moment of inertia (spindle):	0.0155 kgm ²
Housing shape:	block
Block dimensions W x H:	210 mm x 208 mm
Overall length:	549 mm
Operating position:	horizontal
Bearing bore diameter:	70 mm
Bearing lubrication:	grease



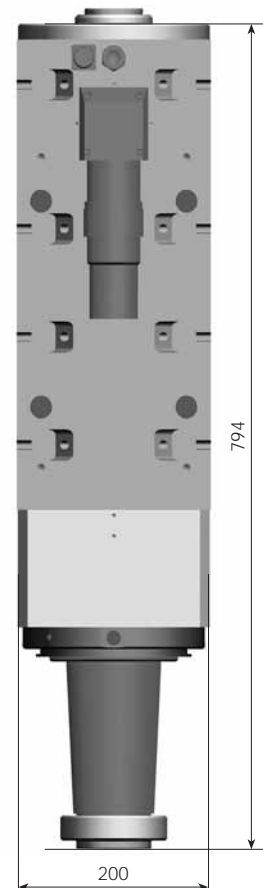
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SPINDLE NUMBER	168578
Category:	Grinding Individual
Spindle nose:	Special interface
Max speed:	500 rpm
Rated speed:	not given
Rated power (S1-100%):	
Rated torque (S1-100%):	0 Nm
Motor:	
Moment of inertia (spindle):	0.058 kgm ²
Housing shape:	spindle sleeve
Snap diameter:	200 mm
Overall length:	557 mm
Operating position:	horizontal
Bearing bore diameter:	110
Bearing lubrication:	Oil circulation

SPINDLE NUMBER	175448
Category:	Grinding Individual
Spindle nose:	Special interface
Max speed:	3,000 rpm
Rated speed:	1,200 rpm
Rated power (S1–100 %):	103 kW
Rated torque (S1–100 %):	820 Nm
Motor:	synchronous
Moment of inertia (spindle):	1.53 kgm ²
Housing shape:	block
Block dimensions W x H:	370 mm x 370 mm
Overall length:	1,309.5 mm
Operating position:	horizontal / nose down
Bearing bore diameter:	160 mm
Bearing lubrication:	grease

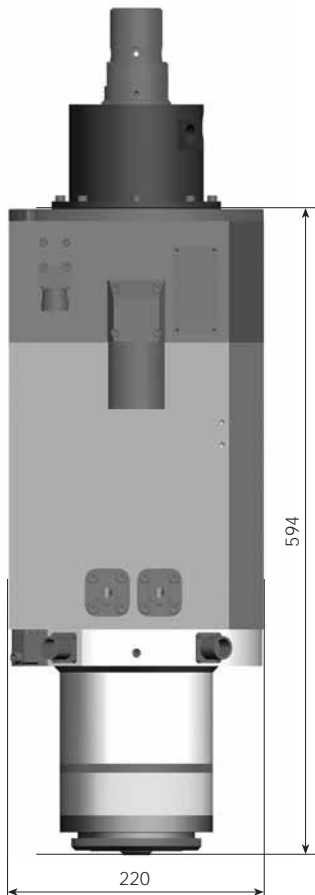


SPINDLE NUMBER	175577
Category:	Grinding Individual
Spindle nose:	Special interface
Max speed:	4,500 rpm
Rated speed:	1,100 rpm
Rated power (S1–100 %):	15 kW
Rated torque (S1–100 %):	130 Nm
Motor:	synchronous
Moment of inertia (spindle):	0.0789 kgm ²
Housing shape:	block
Block dimensions W x H:	225 mm x 200 mm
Overall length:	794 mm
Operating position:	horizontal
Bearing bore diameter:	100 mm
Bearing lubrication:	grease



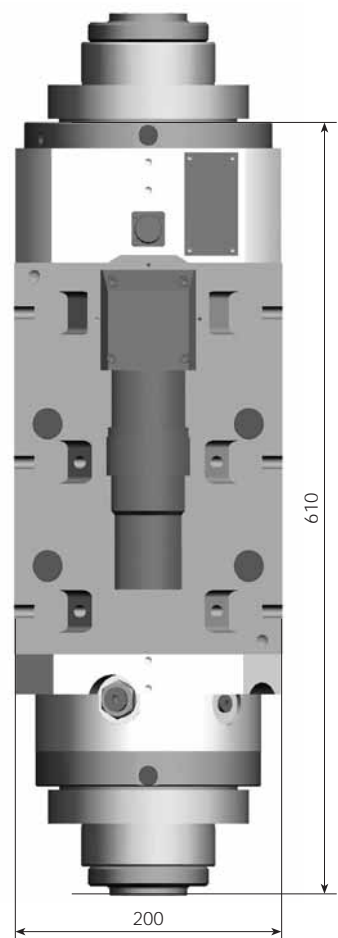


SPINDLE NUMBER	168025
Category:	Grinding Individual
Spindle nose:	Special interface
Max speed:	5,000 rpm
Rated speed:	
Rated power (S1-100%):	
Rated torque (S1-100%):	
Motor:	not given
Moment of inertia (spindle):	
Housing shape:	spindle sleeve
Centring spigot:	200 mm
Overall length:	748 mm
Operating position:	horizontal
Bearing bore diameter:	100 mm
Bearing lubrication:	grease

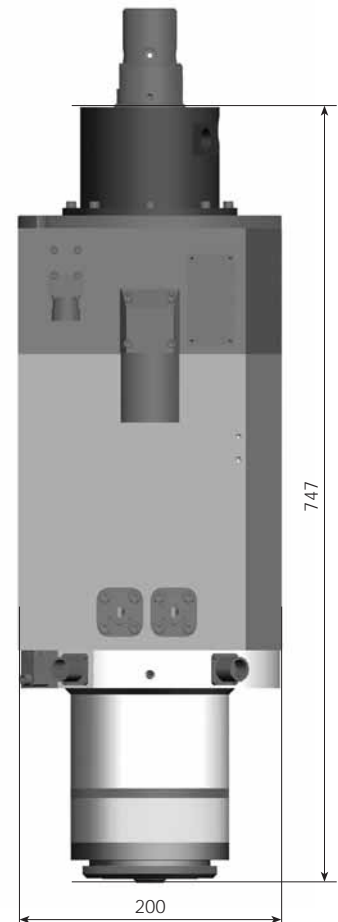


SPINDLE NUMBER	175083
Category:	Grinding Individual
Spindle nose:	Special interface
Max speed:	7,500 rpm
Rated speed:	3,600 rpm
Rated power (S1-100%):	10 kW
Rated torque (S1-100%):	27 Nm
Motor:	asynchronous
Moment of inertia (spindle):	0.129 kgm ²
Housing shape:	block
Block dimensions W x H:	220 mm x 220 mm
Overall length:	594 mm
Operating position:	horizontal
Bearing bore diameter:	90 mm
Bearing lubrication:	grease

SPINDLE NUMBER	175486A
Category:	Grinding Individual
Spindle nose:	Special interface, double end
Max speed:	9,000 rpm
Rated speed:	2,200 rpm
Rated power (S1-100 %):	15 kW
Rated torque (S1-100 %):	65 Nm
Motor:	synchronous
Moment of inertia (spindle):	0.055 kgm ²
Housing shape:	block
Block dimensions W x H:	200 mm x 225 mm
Overall length:	610 mm
Operating position:	horizontal
Bearing bore diameter:	70 mm
Bearing lubrication:	grease



SPINDLE NUMBER	175082
Category:	Grinding Individual
Spindle nose:	Special interface
Max speed:	14,900 rpm
Rated speed:	4,720 rpm
Rated power (S1-100 %):	24 kW
Rated torque (S1-100 %):	49 Nm
Motor:	asynchronous
Moment of inertia (spindle):	0.016 kgm ²
Housing shape:	block
Block dimensions W x H:	200 mm x 215 mm
Overall length:	747 mm
Operating position:	horizontal
Bearing bore diameter:	80 mm
Bearing lubrication:	Oil-air



YOUR CONTACT

Siemens and WEISS – everywhere near by!

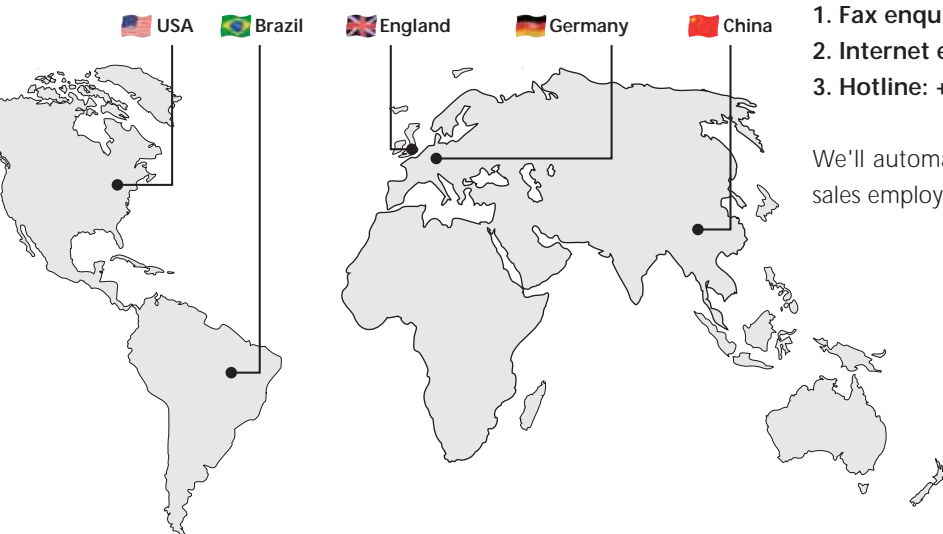
The Siemens Automation & Drives division is present around the world through its branches – near you as well! Qualified and competent contact partners stand ready to work at your side, on site, and provide support.

WEISS Spindeltechnologie GmbH and its 6 current service centres in 4 continents serve as the centre of competence for Siemens in all questions related to spindle technology. Almost on 300 employees are currently employed for all spindle-related questions, from development to production to service.

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