

Spindle Datasheet

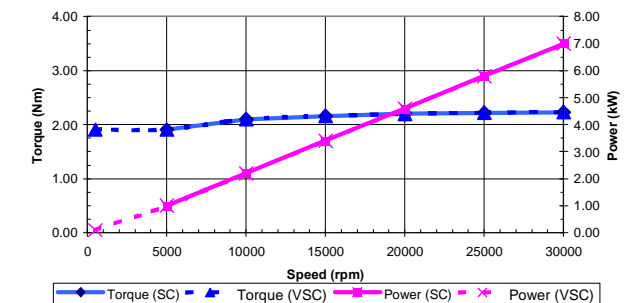
SC 50104 Series



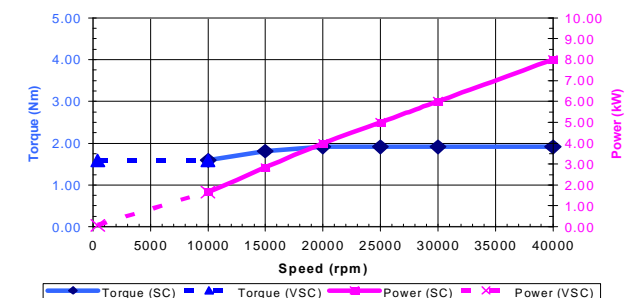
TYPE	SC 50104	VSC 50104	SC 50104-OA	VSC 50104-OA
MOTOR				
Speed Range	5,000 . 30,000 rpm	300 . 30,000 rpm	10,000 . 40,000 rpm	400 - 40,000 rpm
Maximum Power (S1-100%)	7.0 kW [9.4 hp] at 30,000 rpm		8 kW [10.7 hp] at 40,000 rpm	
Maximum Torque (S1-100%)	2.23 N-m [19.7 in-lb]		1.91 N-m [16.9 in-lb]	
Maximum Frequency	1,000 Hz at 30,000 rpm		1,333 Hz at 40,000 rpm	
Maximum Voltage	350 VAC at 1,000 Hz (30,000 rpm)		350 VAC at 1,333 Hz (40,000 rpm)	
Maximum Amperage	19 amps at full load		20 amps at full load	
Motor Type	AC asynchronous, 3-phase, 4-pole			
SPINDLE DRIVE				
Drive Type	Type PCSP series frequency converter	Type PSS series frequency converter	Type PCSP series frequency converter	Type PSS series frequency converter
BEARINGS				
Bearings	Four (4) angular-contact, hybrid-ceramic bearings, ABEC 7/9 precision			
Mounting	Front and rear duplex sets, mounted in % arrangement with shaft length compensation to provide constant spring pre-load (% arrangement mounting also available)			
Lubrication	Permanent grease lubrication		Oil-Air lubrication using Fischer Oil-Air Lubrication System	
Bearing labyrinth air seal	0.5 bar [7 psi] positive air pressure at bearing seal to prevent bearing contamination			
SHAFT DATA				
Stiffness at spindle nose	Axial: 65 N/μm [370,000 lb/in] Radial: 70 N/μm [400,000 lb/in]			
Runout Accuracy	m2 μm [0.00008-μ] radial runout in spindle taper.			
Balance Quality	m1 mm/sec radial vibration velocity at maximum rpm			
SPINDLE COOLING				
Cooling	Liquid (1 part Dowtherm® SR1 to 2 parts distilled water) circulation at 24°C +/- 1°C [75°F] through spindle housing using Type 2304 Refrigerated Cooling System.			
TOOL CLAMPING				
Toolholder Interface	HSK 32-E clamping system with spring-loaded drawbar			
Spring Retention	1900 N [427 lb]			
HSK clamping force	3800 N [854 lb]			
Toolchange (ATC)	Built-in pneumatic toolholder release cylinder, 5.5 bar [80 psi] minimum air pressure required			
Toolholder Type	Type ATC 4-32-20 toolholder (HSK 32-E)			
Collets	Type SRP 20 collets (12 mm, 1/2" maximum collet capacity)			
Taper Air Purge	0.3 . 0.5 bar [4 . 7 psi] air blast through taper at toolholder release			
SENSORS				
Motor Protection	PTC thermistor in stator			
Speed Sensing	tachometer	encoder	tachometer	encoder
Tool-In-Position	Four (4) PNP proximity sensors to detect toolholder position and release-cylinder position			
CONNECTIONS				
	<ul style="list-style-type: none"> liquid cooling (2 x Ø8mm tubes) labyrinth air seal (1 x Ø6mm tube) taper purge (1 x Ø6mm tube) ATC (2 x Ø6mm tubes) power cable (1 meter length with connector) tool-in-position sensor cable encoder cable (VSC only) 		<ul style="list-style-type: none"> liquid cooling (2 x Ø8mm tubes) labyrinth air seal (1 x Ø6mm tube) taper purge (1 x Ø6mm tube) ATC (2 x Ø6mm tubes) oil-air lubrication (4 x Ø4 mm tubes) oil drain (1 x Ø8 mm tube) power cable (1 meter length with connector) tool-in-position sensor cable encoder cable (VSC only) 	
MOUNTING / WEIGHT				
Mounting Diameter	Ø 100 mm h5 [3.9730+0, -0.0006-μ]			
Mount Type	Type 9100 plane mount (spindles can also be special ordered for flange-mounting)			
Net Weight	17 kg [37 lb]			



SC 50104 and VSC 50104 Power / Torque Curves (S1-100%)



SC 50104-OA and VSC 50104-OA Power / Torque Curves (S1-100%)



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SC 50104 Series




SC 50104 Series Standard Equipment:

SC 50104 spindle: Cat. #550293 (w/ 1-meter power cable) SC 50104-OA spindle: Cat. #550366 (w/ 1-meter power cable) VSC 50104 spindle: Cat. #550367 (w/1-meter power cable) VSC 50104-OA spindle: Cat. #550359 (w/1-meter power cable)	Documentation: <ul style="list-style-type: none"> 1 outline drawing 1 warranty registration card (#176991) 1 safety instructions (#329139) 1 warning label (#330156) 1 operating instructions (#331969)
Wrenches: <ul style="list-style-type: none"> 1 27mm open-end vise wrench (#411605) 1 27mm open-end wrench (#412589) 	Cleaning Kit: <ul style="list-style-type: none"> 1 SRP 20 taper wiper (#412663) 1 round cleaning brush (#477450) 1 straight cleaning brush (#477451) 1 HSK 32 taper wiper (#018001)

SC 50104 System Components (ordered separately):

Type PCSP series frequency converter




Type RCS 2304 refrigerated cooling system


Cat. #330698 (60Hz)
Cat. #330697 (50Hz)



Type PSS series frequency converter (Types %SC+only)



Fischer oil-air lubrication system (%OA+)




SC 50104 Accessories (ordered separately):

Type SRP 20 Collets:

Cat. #410743, 3mm	Cat. #410752, 12mm
Cat. #410744, 4mm	Cat. #410782, 1/8+
Cat. #410745, 5mm	Cat. #410783, 3/16+
Cat. #410746, 6mm	Cat. #410784, 1/4"
Cat. #410747, 7mm	Cat. #410785, 5/16+
Cat. #410748, 8mm	Cat. #410786, 3/8+
Cat. #410749, 9mm	Cat. #410787, 7/16+
Cat. #410750, 10mm	Cat. #410788, 1/2"
Cat. #410751, 11mm	

Extension Cables (1 meter cable length standard):

- 3m [9.6 ft] extension cable #332783
- 5m [16 ft] extension cable #332784


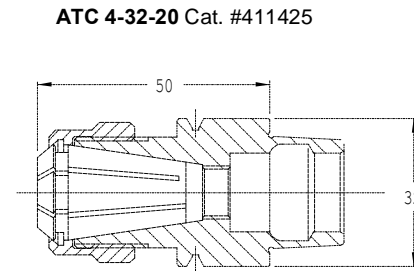


Toolholders:
Type ATC 4-32-20, Cat. #411425

Installation kits:

- Filter / Regulator Kit #329492 (for labyrinth air-seal and ATC functions)
- Base Tubing Kit #411681 (for liquid cooling and labyrinth air-seal connections)
- ATC Tubing Kit #411682 (for ATC connections)
- Oil-Air Tubing Kit #411683 (SC 50104-OA only / for oil-air lubrication connections)

Type 9100 Plane Mount:
Cat. #410705

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