

Suggestions for appropriate quills and grinding wheel diameter.



Imbalance

A large tool imbalance leads to poor precision and accidents. Correct imbalances in all tools

Critical Speed

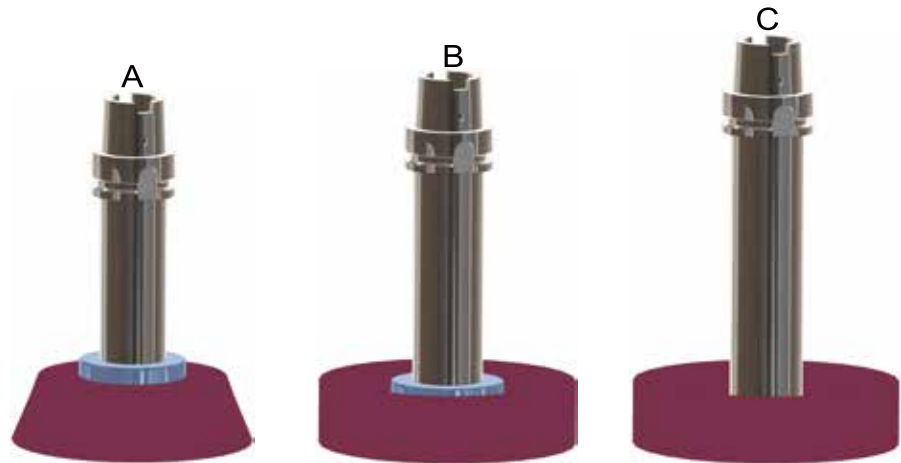
Do not use inappropriate tools like those with critical speed in the vicinity of the number of rotations used.

This is extremely dangerous.

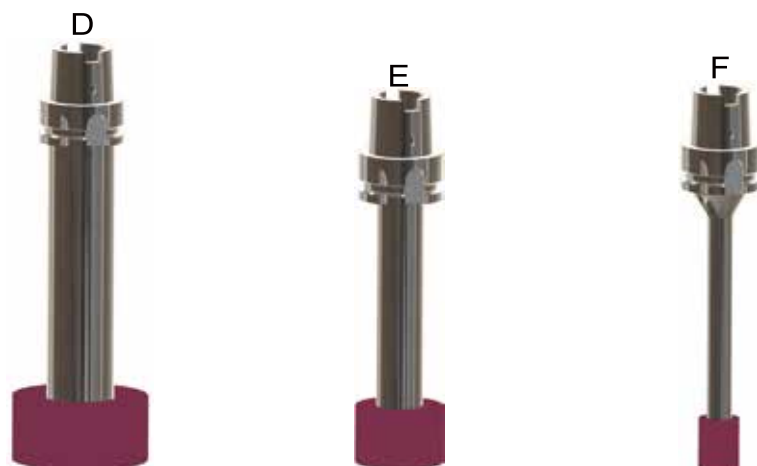
Centrifugal Force Exerted on the Tools

The grindstone has a weak tensile strength. This will cause damage if the centrifugal force from high-speed rotation is too great.

Use a grindstone with a margin greater than the maximum circumferential speed specified by the grindstone manufacturer.



	A	B	C
Quill length (mm)	110	135	160
Quill Ø (mm)	50	50	50
Grinding wheels Ø X WIDTH (mm)	180 X 40	180 X 40	180 X 40



	D	E	F
Quill length (mm)	160	118	120
Quill Ø (mm)	50	35	20
Grinding wheels Ø X WIDTH (mm)	100 X 40	65 X 32	32 X 30

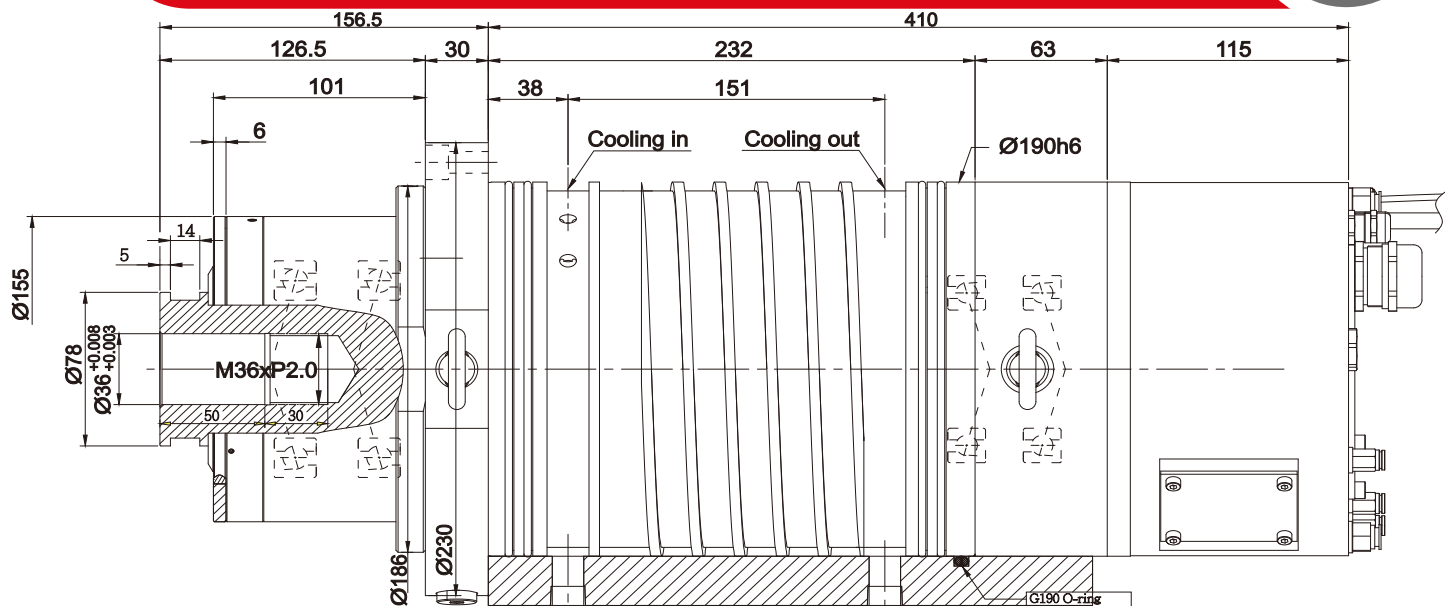


Maximum Speed					
Tool Interface D36/68	K	H			
Spindle Type		<80mm	100mm	125mm	160mm
THGN-170.03	25mm	20,000rpm	N/A	N/A	N/A
	32mm	20,000rpm	18,000rpm	N/A	N/A
	40mm	20,000rpm	18,000rpm	18,000rpm	N/A
	50mm	20,000rpm	18,000rpm	18,000rpm	18,000rpm
	56mm	20,000rpm	18,000rpm	18,000rpm	18,000rpm

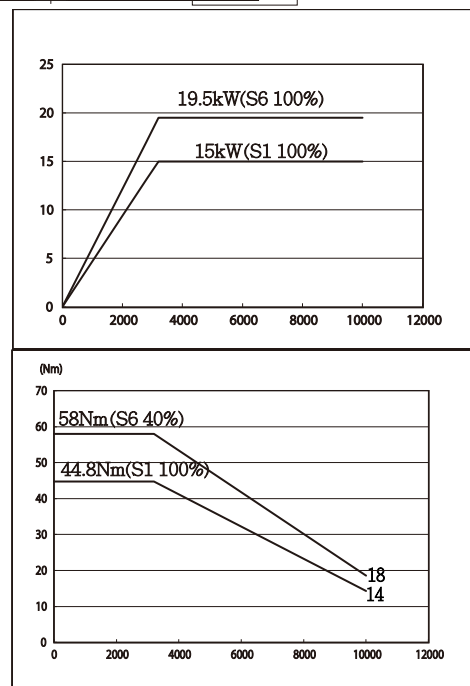
THG-190.01 D36/68 D36/78 HSK-C63

High-speed Vertical grinding spindle

Application : Vertical grinding with high rigidity
Manual tool change / Asynchronous Motor

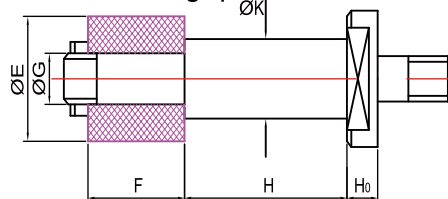


Type		THG-190.01 (400V)
Spindle Ø		190mm
Maximum Speed (Oil-Air)		10,000rpm
Bore diameter of front bearings		80mm
Rigidity	Axial (N/µm)	200N/µm
	Radial (N/µm)	250N/µm
Frequency Max. (Hz)		667Hz
at speed		3,200RPM
S1 kW		15kW
S1 Current (A)		56A
S6-40% kW		19.5kW
S6-40% Current (A)		72A
kW (Peak Power)		N/A
S1 Torque (Nm)		44.8Nm
S6-40% Torque (Nm)		58Nm
Tool Interface		D36/68 D36/78 HSK-C63
Spindle Cooling unit		Cooling capacity:4,000Kcal/hr (at25℃) Water cooling /Oil cooling
Spindle Weight		75kg
Integral Encoder For Closed-Loop Control		Option
Coolant Through Shaft (CTS)		Option
Grease Lubrication.		Also available with grease lubrication. This lubrication leads to speed reduction.
Flange Type		Standard



	K [mm]	H [mm]	Grinding wheel Ex F [mm]	G [mm]	Grinding wheel fixation	Ho [mm]
D36/68	32	63	50 X 40	20	Grinding quill with nut	15
D36/78	40	80	63 X 40	25		15
	56	125	100 X 40	36		15

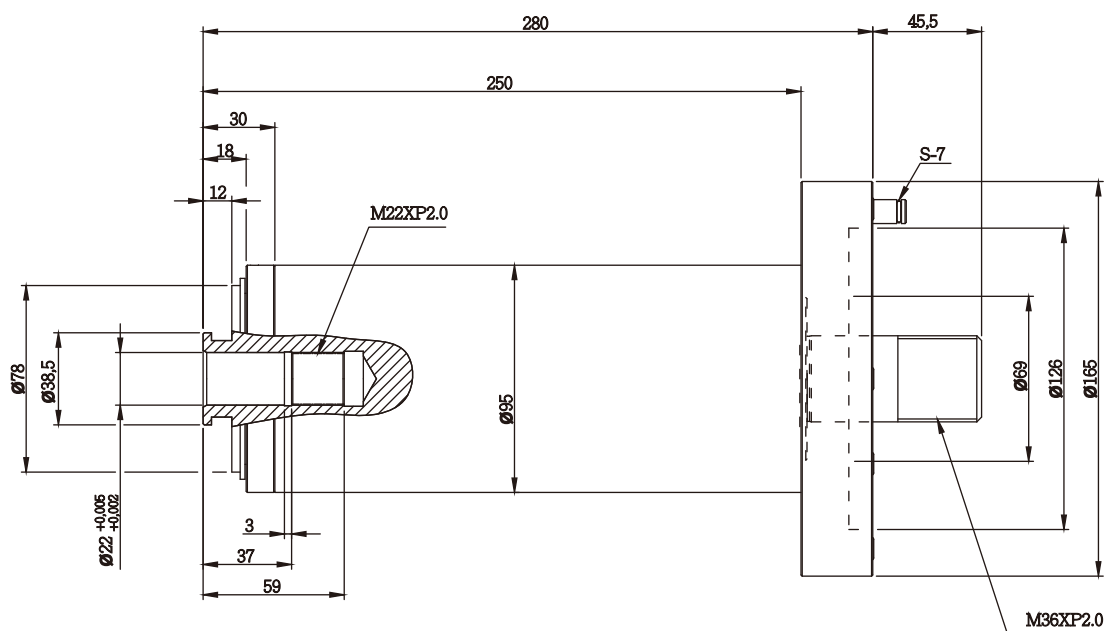
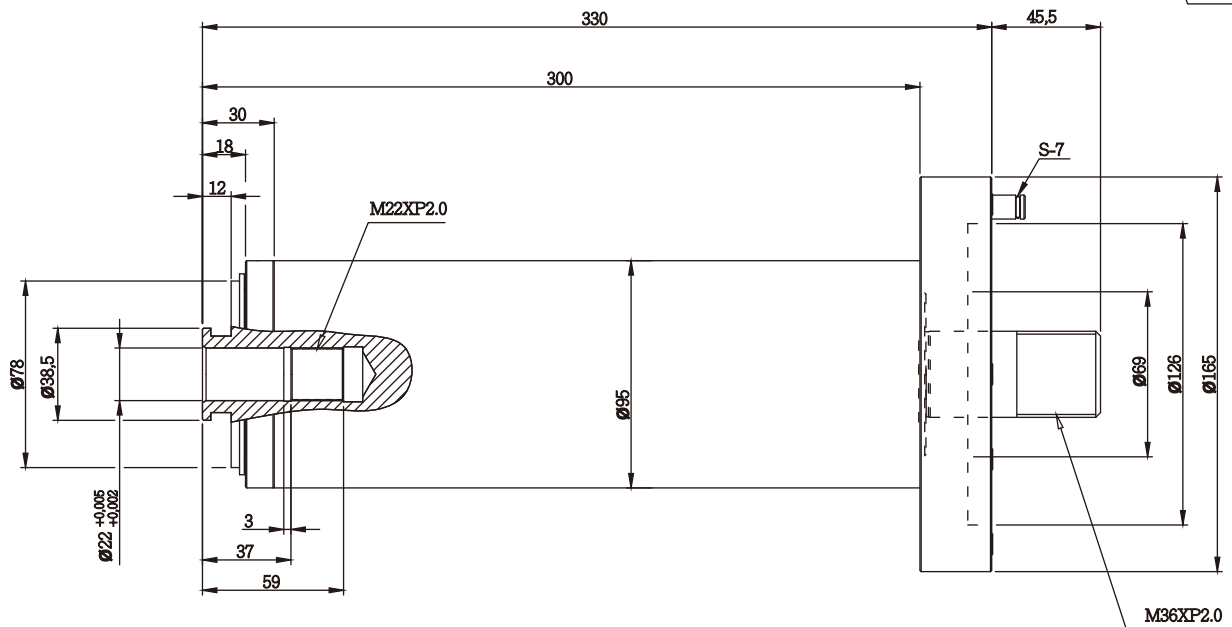
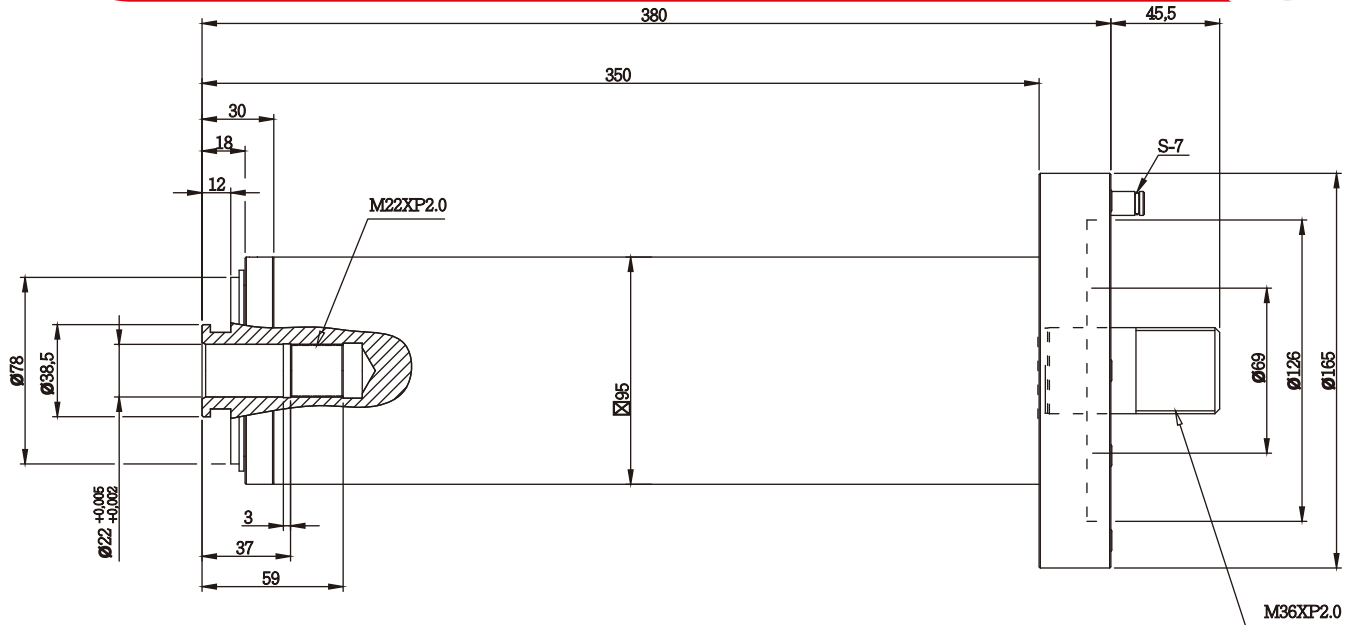
Grinding quill with nut



Maximum Speed					
Tool Interface D36/68		H			
Spindle Type		K	<80mm	100mm	125mm
THG-190.01		25mm	10,000rpm	N/A	N/A
		32mm	10,000rpm	10,000rpm	N/A
		40mm	10,000rpm	10,000rpm	10,000rpm
		50mm	10,000rpm	10,000rpm	10,000rpm
		56mm	10,000rpm	10,000rpm	10,000rpm

THDGL-V95 D22/38 Extension Spindles

Application : Vertical grinding with high rigidity
Manual tool change



THGN-170&THG-190
Assemble With Extension Spindle
Application : Vertical grinding
Manual tool change



Suggestions for appropriate HSK-A63 quills and grinding wheel diameter.



Imbalance

A large tool imbalance leads to poor precision and accidents. Correct imbalances in all tools

Critical Speed

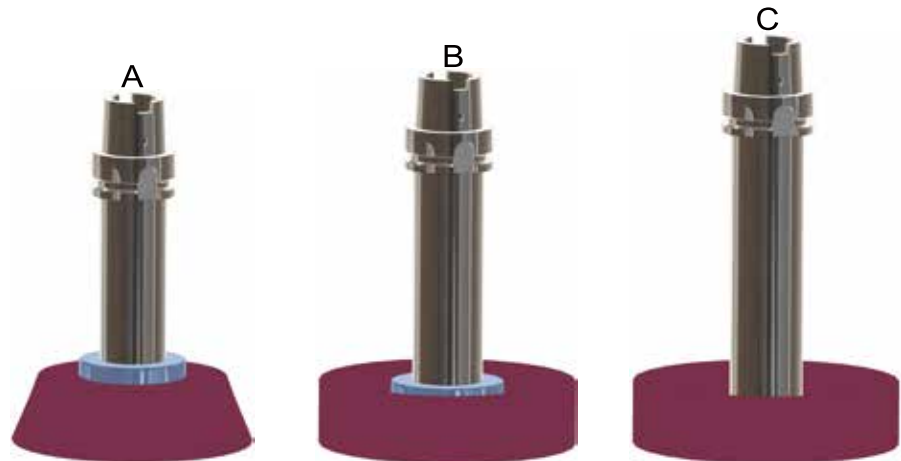
Do not use inappropriate tools like those with critical speed in the vicinity of the number of rotations used.

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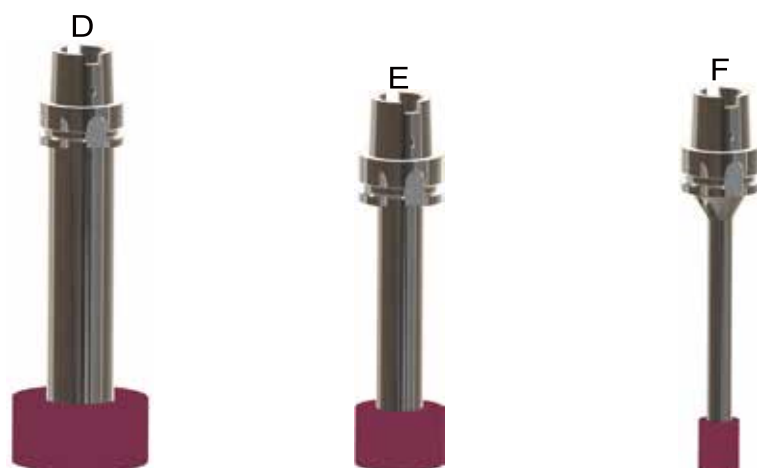
Centrifugal Force Exerted on the Tools

The grindstone has a weak tensile strength. This will cause damage if the centrifugal force from high-speed rotation is too great.

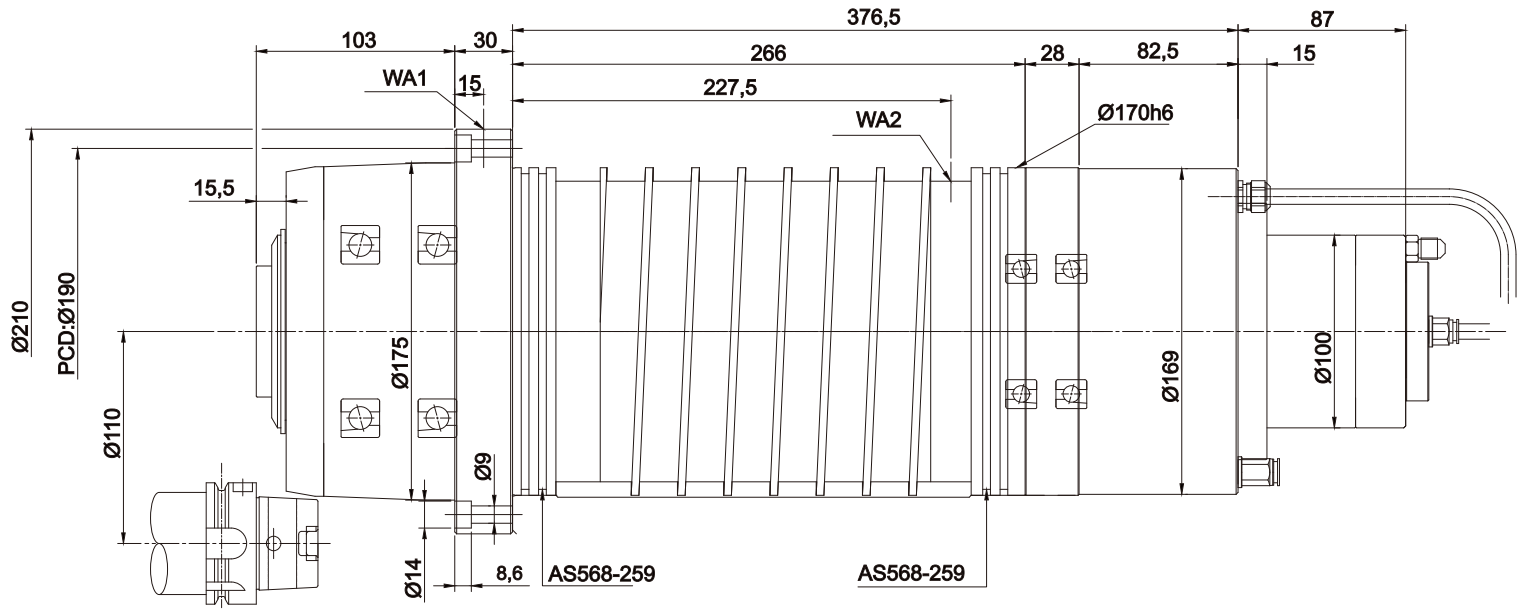
Use a grindstone with a margin greater than the maximum circumferential speed specified by the grindstone manufacturer.



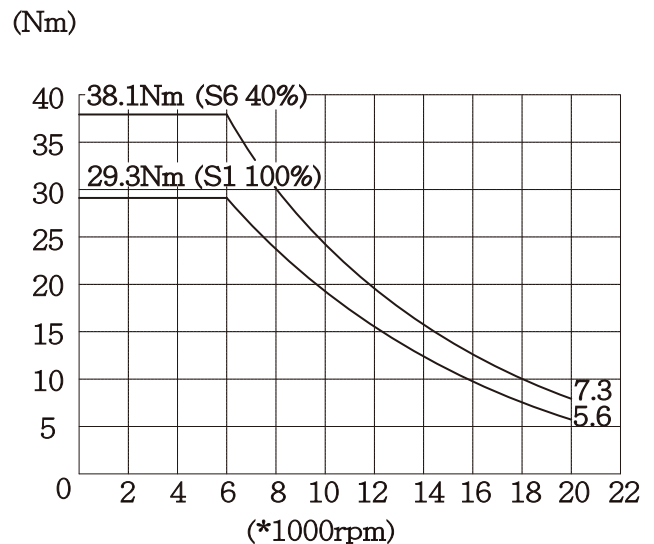
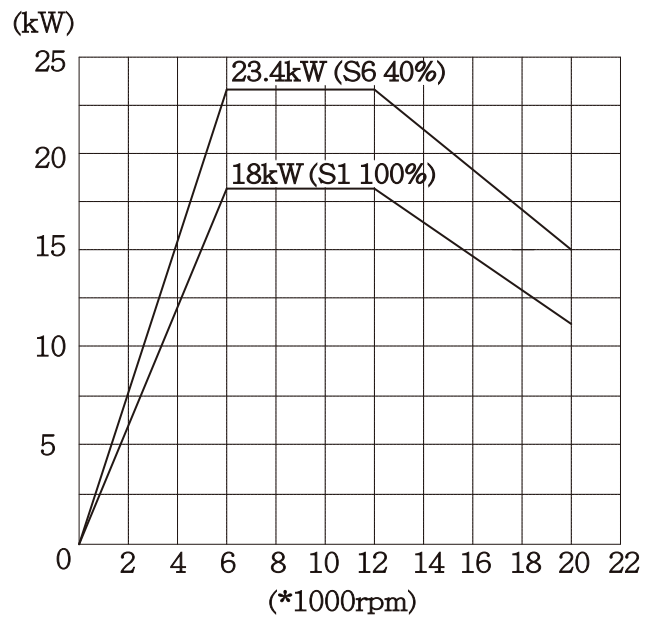
	A	B	C
Quill length (mm)	110	135	160
Quill Ø (mm)	50	50	50
Grinding wheels Ø X WIDTH (mm)	180 X 40	180 X 40	180 X 40



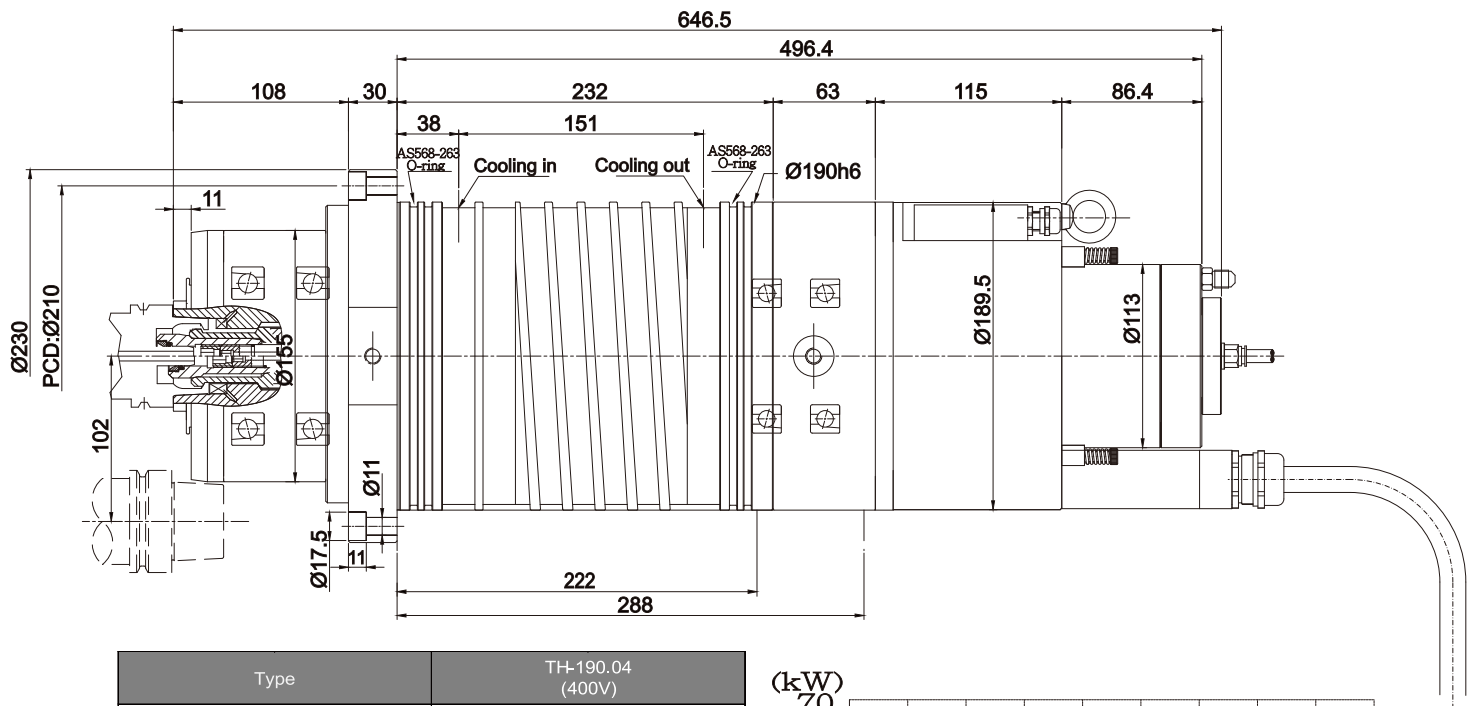
	D	E	F
Quill length (mm)	160	118	120
Quill Ø (mm)	50	35	20
Grinding wheels Ø X WIDTH (mm)	100 X 40	65 X 32	32 X 30



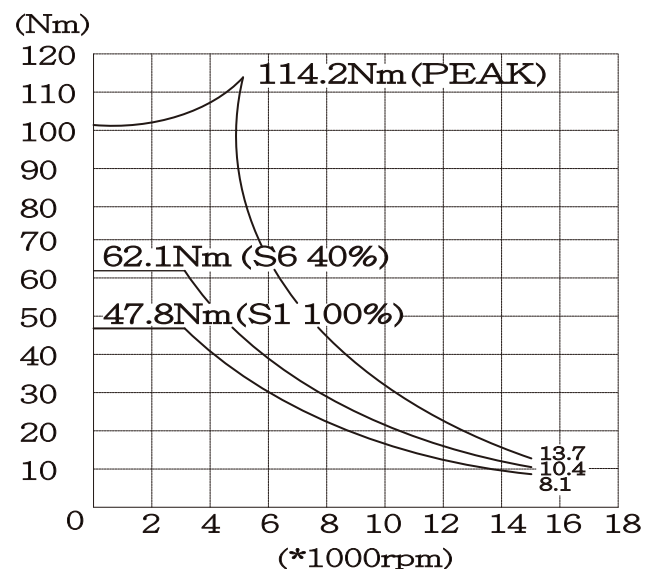
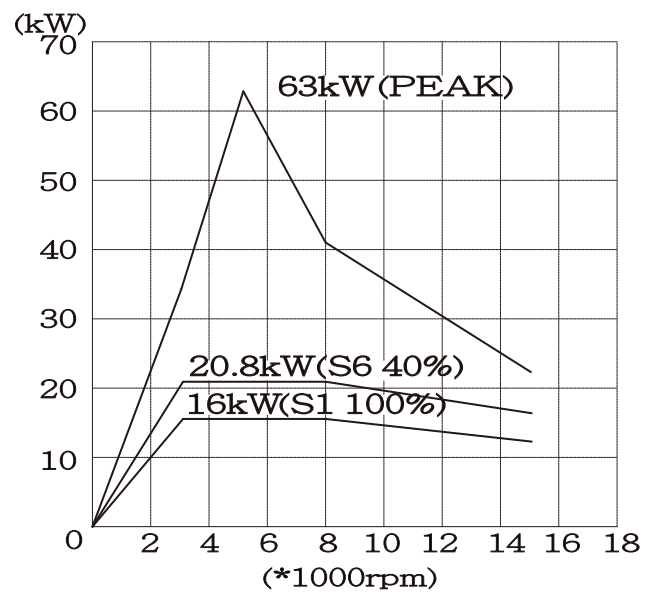
Type		THN-170.02 (230V)	THN-170.03 (400V)
Spindle Ø		170mm	
Maximum Speed (Oil-Air)		20,000rpm	
Bore diameter of front bearings		70mm	
Rigidity	Axial (N/µm)	180N/µm	
	Radial (N/µm)	200N/µm	
Frequency Max. (Hz)		667Hz	
at speed		5,870RPM	
S1 kW		18kW	
S1 Current (A)		75A	44A
S6-40% kW		23.4kW	
S6-40% Current (A)		98A	57A
kW (Peak Power)		58kW	
S1 Torque (Nm)		29.3Nm	
S6-40% Torque (Nm)		38.1Nm	
Tool Interface		HSK-A63	
Spindle Cooling unit		Cooling capacity:4,000Kcal/hr (at25℃) Water cooling /Oil cooling	
Spindle Weight		65kg	
Integral Encoder For Closed-Loop Control		Option	
Coolant Through Shaft (CTS)		Option	
Tool Position Sensors		Proximity switches / Analog sensor	
Front Bearing Temperature Sensor		Standard	
Also available with grease lubrication. This lubrication leads to speed reduction.			



TH-190.04 HSK-A63 15,000rpm High-speed Vertical grinding spindle Application : Vertical grinding with high rigidity Automatic Tool Change / Asynchronous Motor

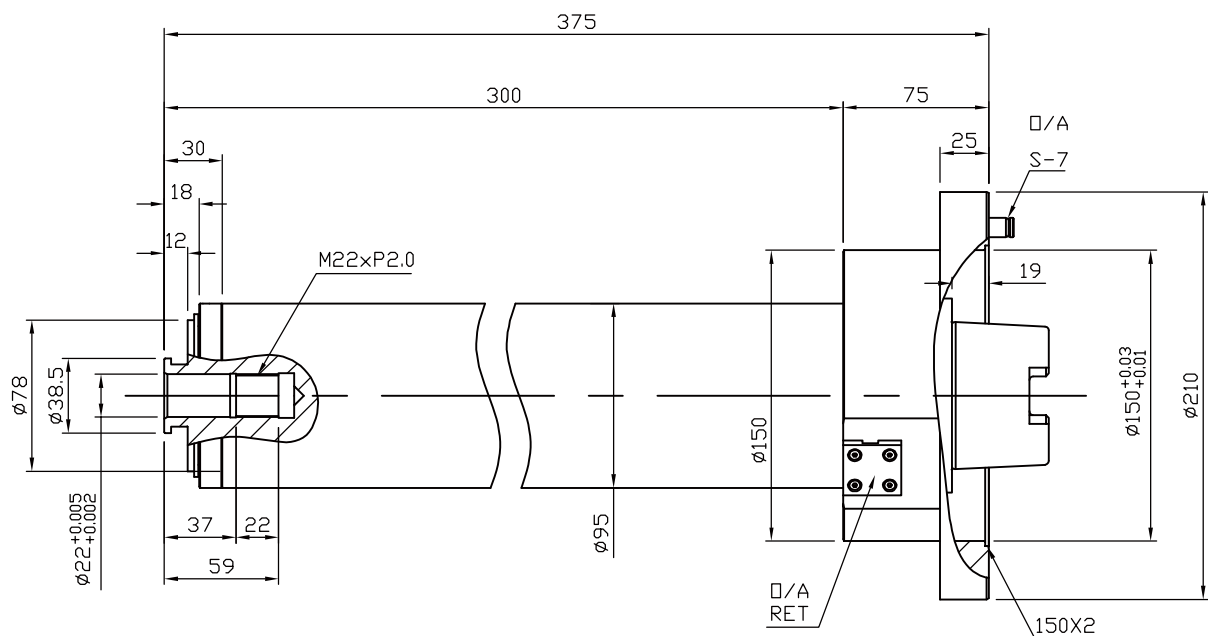
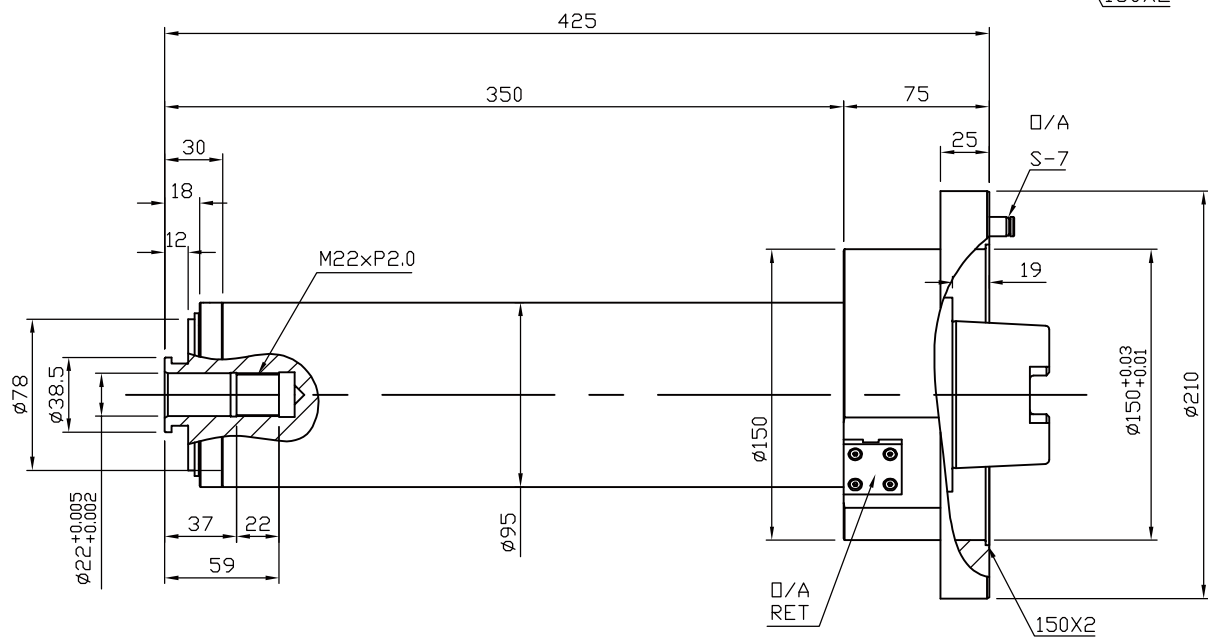
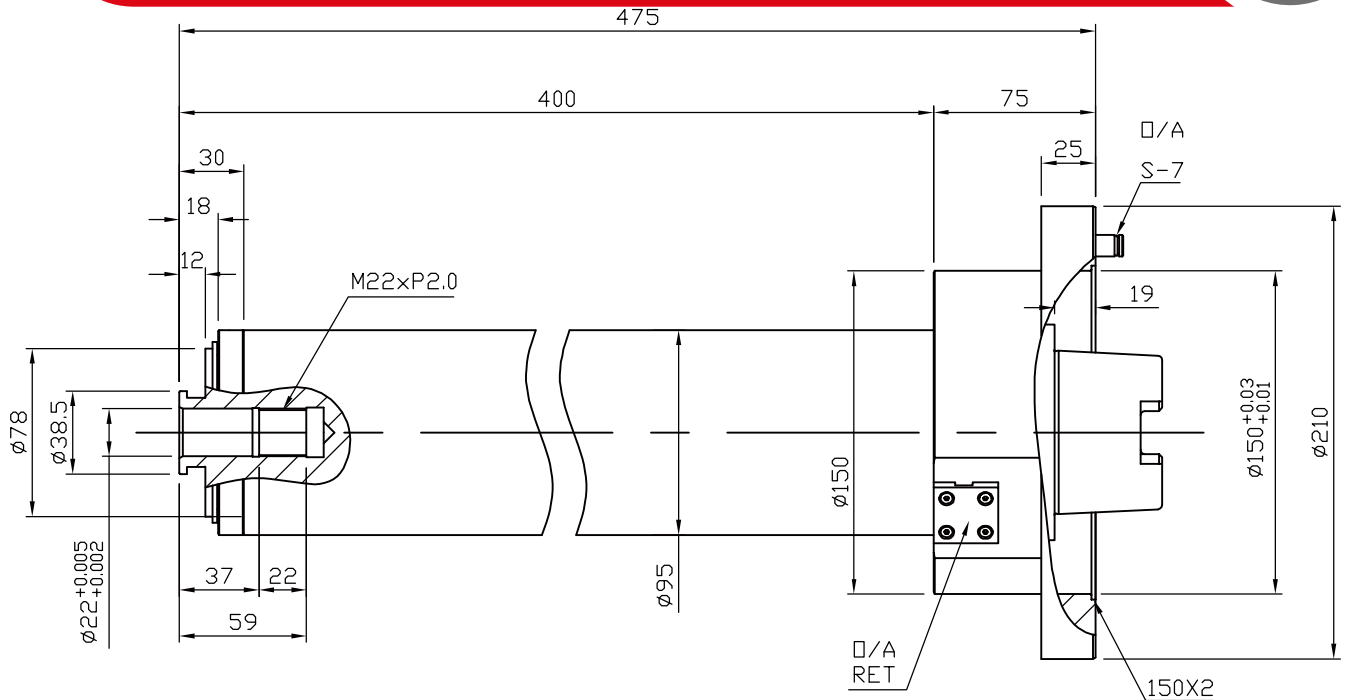


Type		TH-190.04 (400V)
Spindle Ø		190mm
Maximum Speed (Oil-Air)		15,000rpm
Bore diameter of front bearings		70mm
Rigidity	Axial (N/μm)	180N/μm
	Radial (N/μm)	200N/μm
Frequency Max. (Hz)		800Hz
at speed		3,200RPM
S1 kW		16kW
S1 Current (A)		69A
S6-40% kW		20.8kW
S6-40% Current (A)		90A
kW (Peak Power)		63kW
S1 Torque (Nm)		47.8Nm
S6-40% Torque (Nm)		62.1Nm
Tool Interface		HSK-A63
Spindle Cooling unit		Cooling capacity:4,000Kcal/hr (at25°C) Water cooling /Oil cooling
Spindle Weight		80kg 80kg
Integral Encoder For Closed-Loop Control		Option
Coolant Through Shaft (CTS)		Option
Tool Position Sensors		N/A Analog sensor
Front Bearing Temperature Sensor		Standard
Also available with grease lubrication. This lubrication leads to speed reduction.		



THDGL-V95 D22/38 Extension Spindles

Application : Vertical grinding with high rigidity
Automatic Tool Change



THN-170&TH-190.04
Assemble With Extension Spindle
Application : Vertical grinding
Automatic Tool Change



Suggestions for appropriate HSK-A100 quills and grinding wheel diameter.



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Critical Speed

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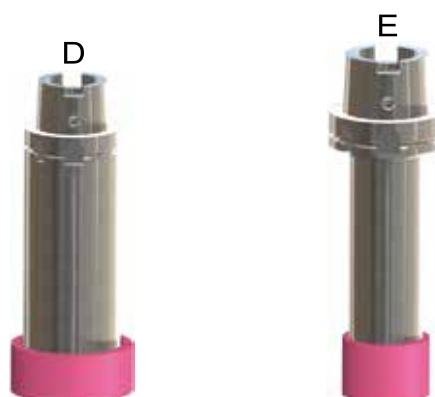
Centrifugal Force Exerted on the Tools

The grindstone has a weak tensile strength. This will cause damage if the centrifugal force from high-speed rotation is too great.

Use a grindstone with a margin greater than the maximum circumferential speed specified by the grindstone manufacturer.



	A	B	C
Quill length (mm)	100	135	200
	190	110	175
Quill Ø (mm)	63	50	63
	100	110	100
Grinding wheels Ø X WIDTH (mm)	255 X 50	255 X 50	205 X 50
	255 X 60		

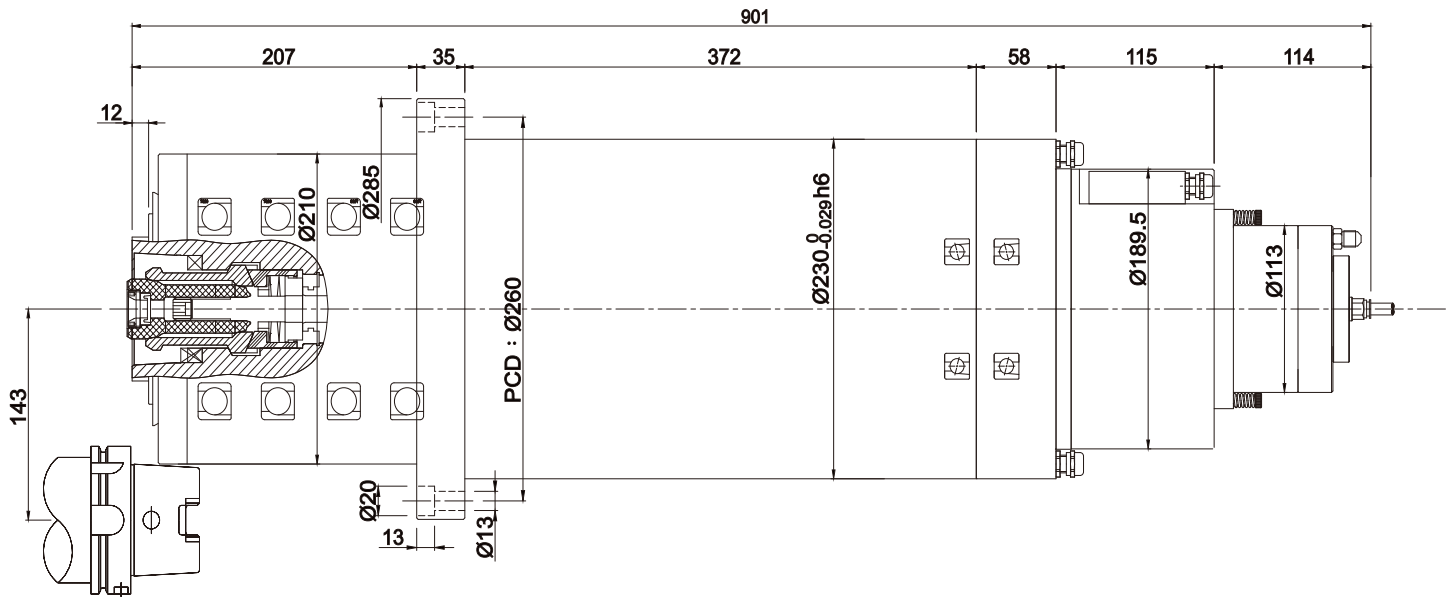


	D	E
Quill length (mm)	190	170
	290	240
Quill Ø (mm)	63	50
	100	70
Grinding wheels Ø X WIDTH (mm)	125 X 50	75 X 40
	150 X 60	100 X 50

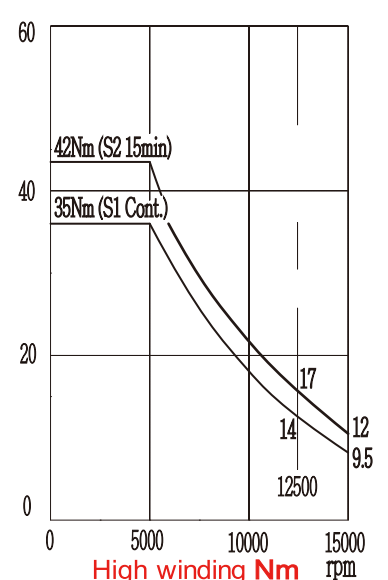
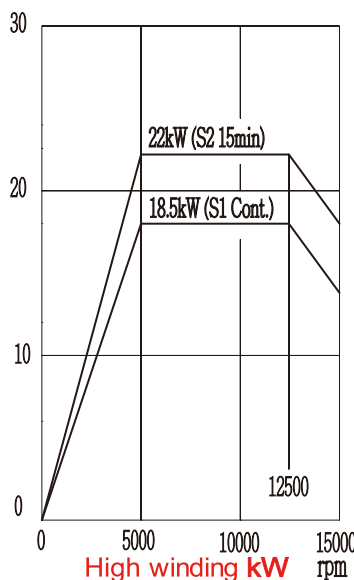
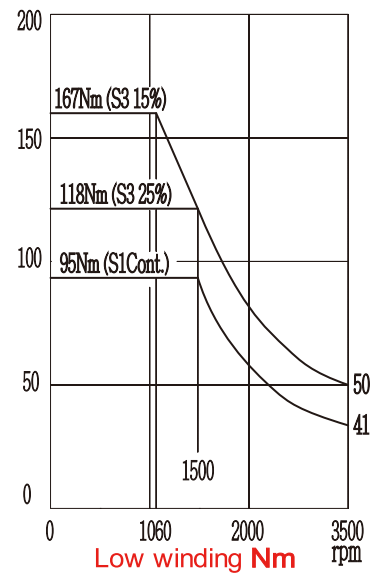
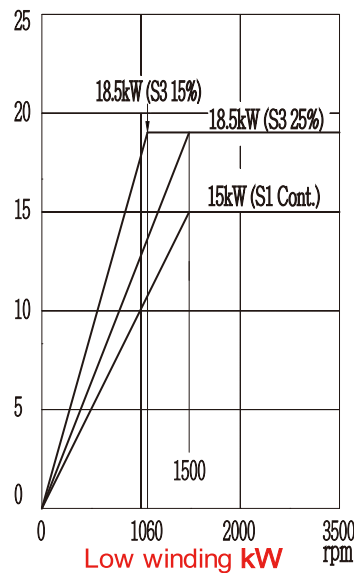
TH-230.04 HSK-A100 10,000rpm

High-speed Vertical grinding spindle

Application : Vertical grinding with high rigidity
Automatic Tool Change / Asynchronous Motor



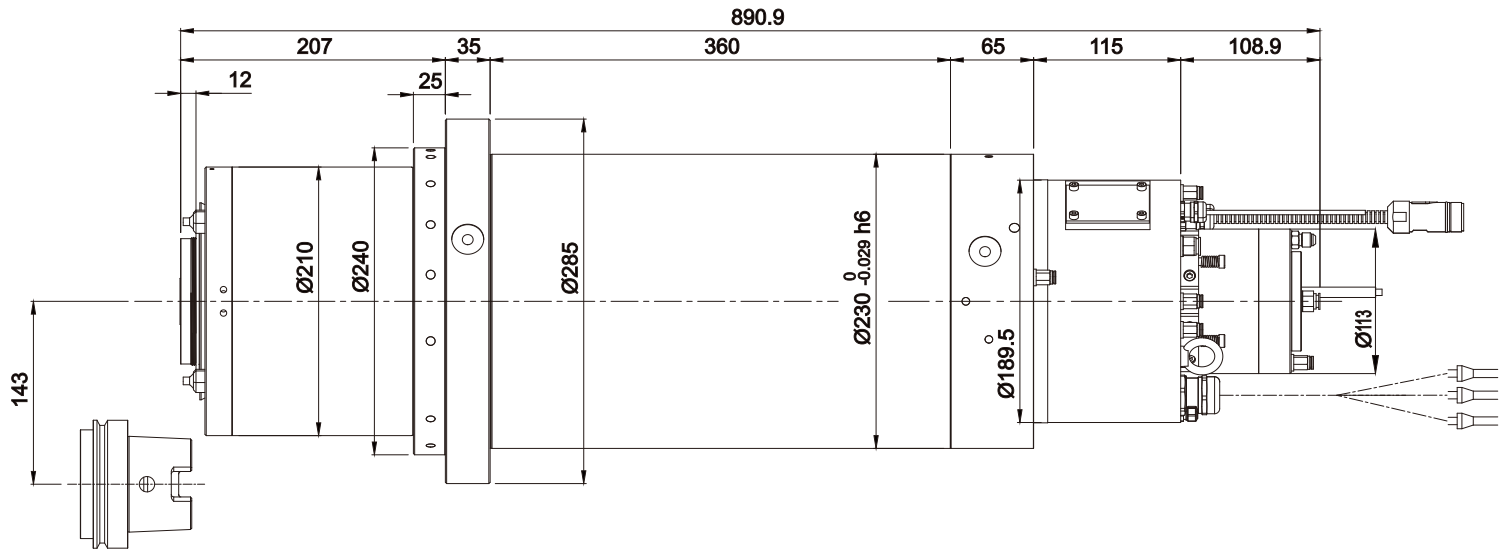
Type		TH-230.04
FANUC BUILT-IN SPINDLE MOTOR		B1 112L/15000i
Spindle Ø		230mm
Maximum Speed (Oil-Air)		10,000rpm
Bore diameter of front bearings		100mm
Rigidity	Axial (N/μm)	Standardised or According to customer needs. It is available to increase the static rigidity, but the maximum speed will be reduced.
	Radial (N/μm)	
Low winding	S1 kW	15kW at speed : 1,500~3,500rpm
	S1 Torque (Nm)	95Nm at speed : ~1,500rpm
	S2/S3 kW	18.5kW(S3-15%) at speed : 1,060~3,500rpm
	S2/S3 Torque (Nm)	167Nm(S3-15%) at speed : ~1,060rpm
High winding	S1 kW	18.5kW at speed : 5,000~10,000rpm
	S1 Torque (Nm)	35Nm at speed : ~5,000rpm
	S2/S3 kW	22kW(S2-15min) at speed : 5,000~10,000rpm
	S2/S3 Torque (Nm)	42Nm(S2-15min) at speed : ~5,000rpm
Tool Interface		HSK-A100 BBT-50
Spindle Cooling		Cooling capacity:6,000Kcal/hr (at25℃) Water cooling /Oil cooling
Spindle Weight		230kg
Integral Encoder For Closed-Loop Control		Standard
Coolant Through Shaft (CTS)		Option
Tool Position Sensors		Proximity switches / Analog sensor
Front Bearing Temperature Sensor		Standard
Also available with Oil cooling. This cooling leads to motor power reduction. Also available with grease lubrication. This lubrication leads to speed reduction.		



TH-230.05 HSK-A100 12,000rpm

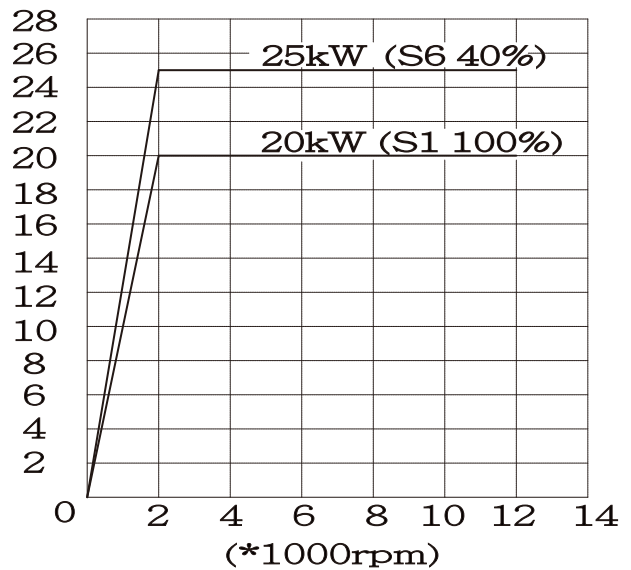
High-speed Vertical grinding spindle

Application : Vertical grinding with high rigidity
Automatic Tool Change / Asynchronous Motor

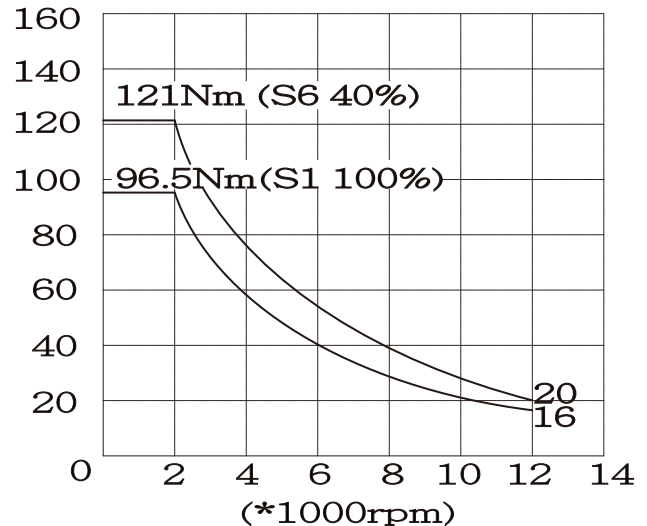


Type		TH-230.05 (400V)
Spindle Ø		230mm
Maximum Speed (Oil-Air)		12,000rpm
Bore diameter of front bearings		100mm
Rigidity	Axial (N/μm)	Standardised or According to customer needs. It is available to increase the static rigidity, but the maximum speed will be reduced.
	Radial (N/μm)	
Frequency Max. (Hz)		533Hz
at speed		1,980RPM
S1 kW		20kW
S1 Current (A)		89A
S6-40% kW		25kW
S6-40% Current (A)		110A
kW (Peak Power)		171kW
S1 Torque (Nm)		96.5Nm
S6-40% Torque (Nm)		121Nm
Tool Interface		HSK-A100
Spindle Cooling unit		Cooling capacity:6,000Kcal/hr (at25℃) Water cooling /Oil cooling
Spindle Weight		210kg
Integral Encoder For Closed-Loop Control		Option
Coolant Through Shaft (CTS)		Option
Tool Position Sensors		Proximity switches / Analog sensor
Front Bearing Temperature Sensor		Standard
Also available with grease lubrication. This lubrication leads to speed reduction.		

(kW)



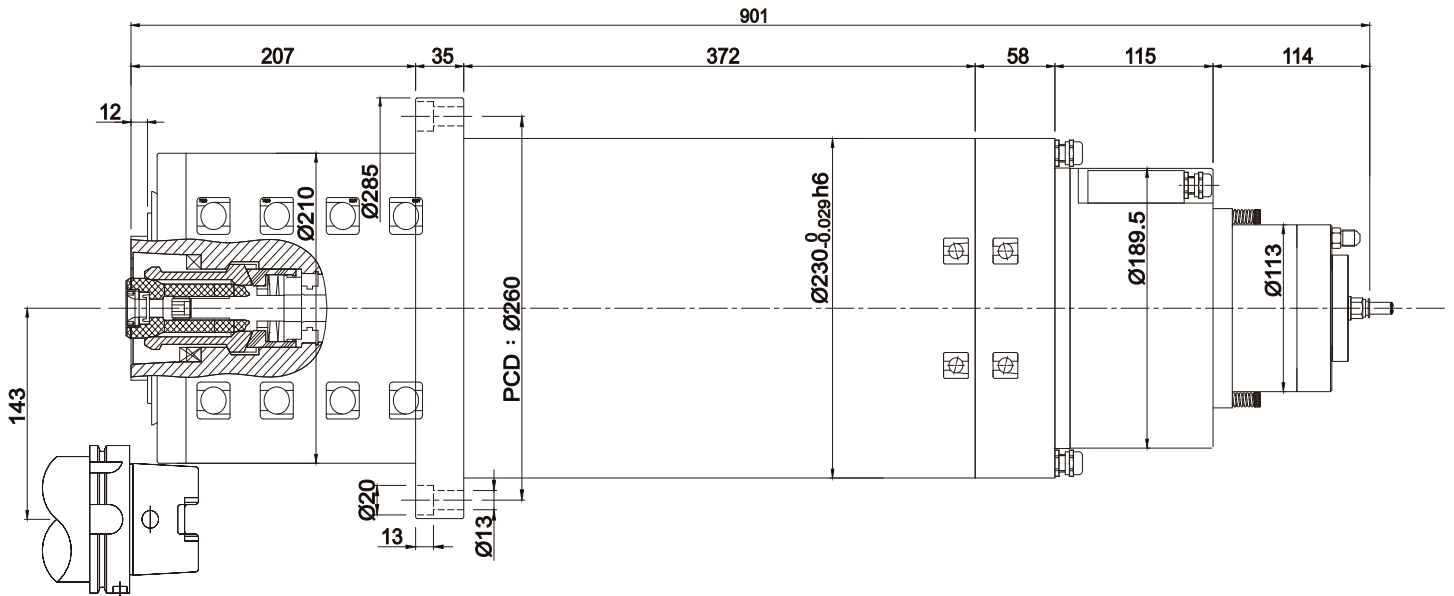
(Nm)



TH-230.20 HSK-A100 10,000rpm

High-speed Vertical grinding spindle

Application : Vertical grinding with high rigidity
Automatic Tool Change / Asynchronous Motor



Type		TH-230.20
FANUC BUILT-IN SPINDLE MOTOR		B7i 112L/20000i
Spindle Ø		230mm
Maximum Speed (Oil-Air)		10,000rpm
Bore diameter of front bearings		100mm
Rigidity	Axial (N/μm)	Standardised or According to customer needs. It is available to increase the static rigidity, but the maximum speed will be reduced.
	Radial (N/μm)	
Low winding	S1 kW	18.5kW at speed : 2,050~5,500rpm
	S1 Torque (Nm)	86.2Nm at speed : ~2,050rpm
	S2/S3 kW	25kW(S6-40%) at speed : 2,050~5,500rpm
	S2/S3 Torque (Nm)	116Nm(S6-40%) at speed : ~2,050rpm
High winding	S1 kW	N/A
	S1 Torque (Nm)	N/A
	S2/S3 kW	N/A
	S2/S3 Torque (Nm)	N/A
Tool Interface		HSK-A100
Spindle Cooling		Cooling capacity:6,000Kcal/hr (at25℃) Water cooling /Oil cooling
Spindle Weight		230kg
Integral Encoder For Closed-Loop Control		Standard
Coolant Through Shaft (CTS)		Option
Tool Position Sensors		Proximity switches / Analog sensor
Front Bearing Temperature Sensor		Standard
Also available with Oil cooling. This cooling leads to motor power reduction. Also available with grease lubrication. This lubrication leads to speed reduction.		

