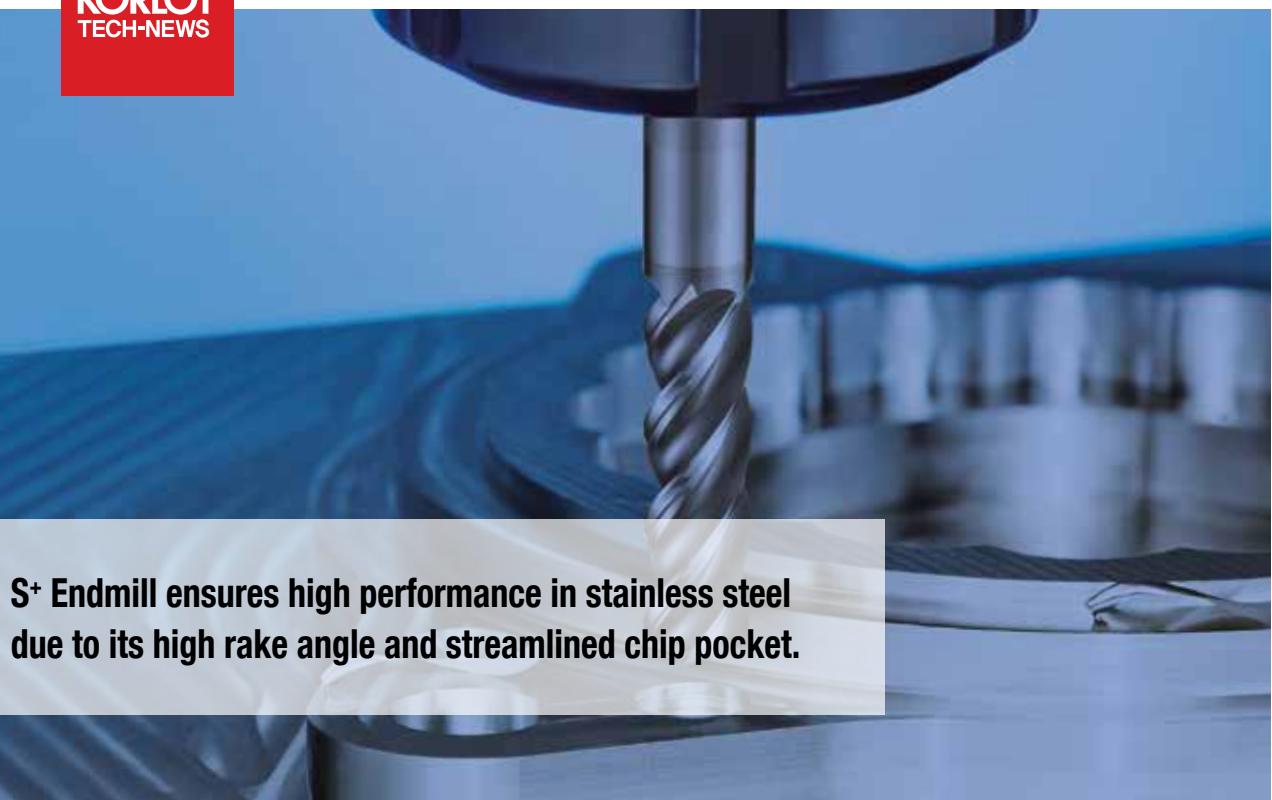

Endmill series for stainless steel machining

S⁺ Endmill

KORLOY
TECH-NEWS



S⁺ Endmill ensures high performance in stainless steel due to its high rake angle and streamlined chip pocket.

Endmill series for stainless steel machining

S⁺ Endmill

Stainless steel with corrosion resistance and smooth surface is widely used in daily life and various industries.

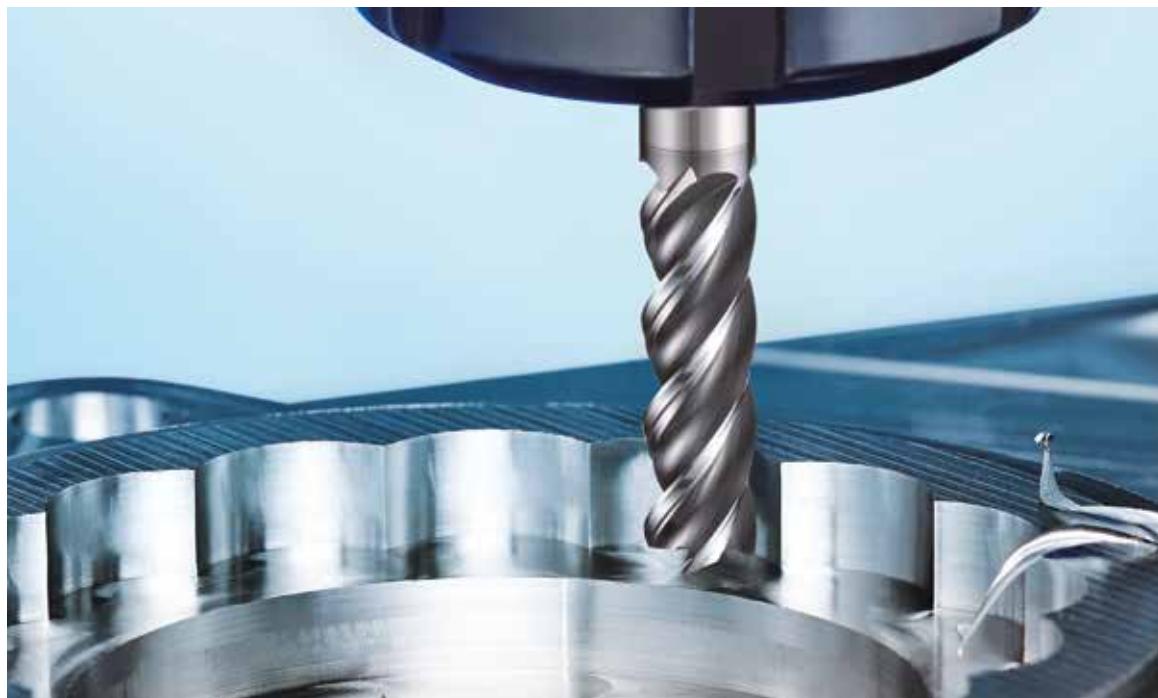
High work hardening and shear resistance of stainless steel often making chip welding and fracture on cutting edge reduce tool life.

Therefore, exclusive tools for stainless steel machining are recommended for efficient performance.

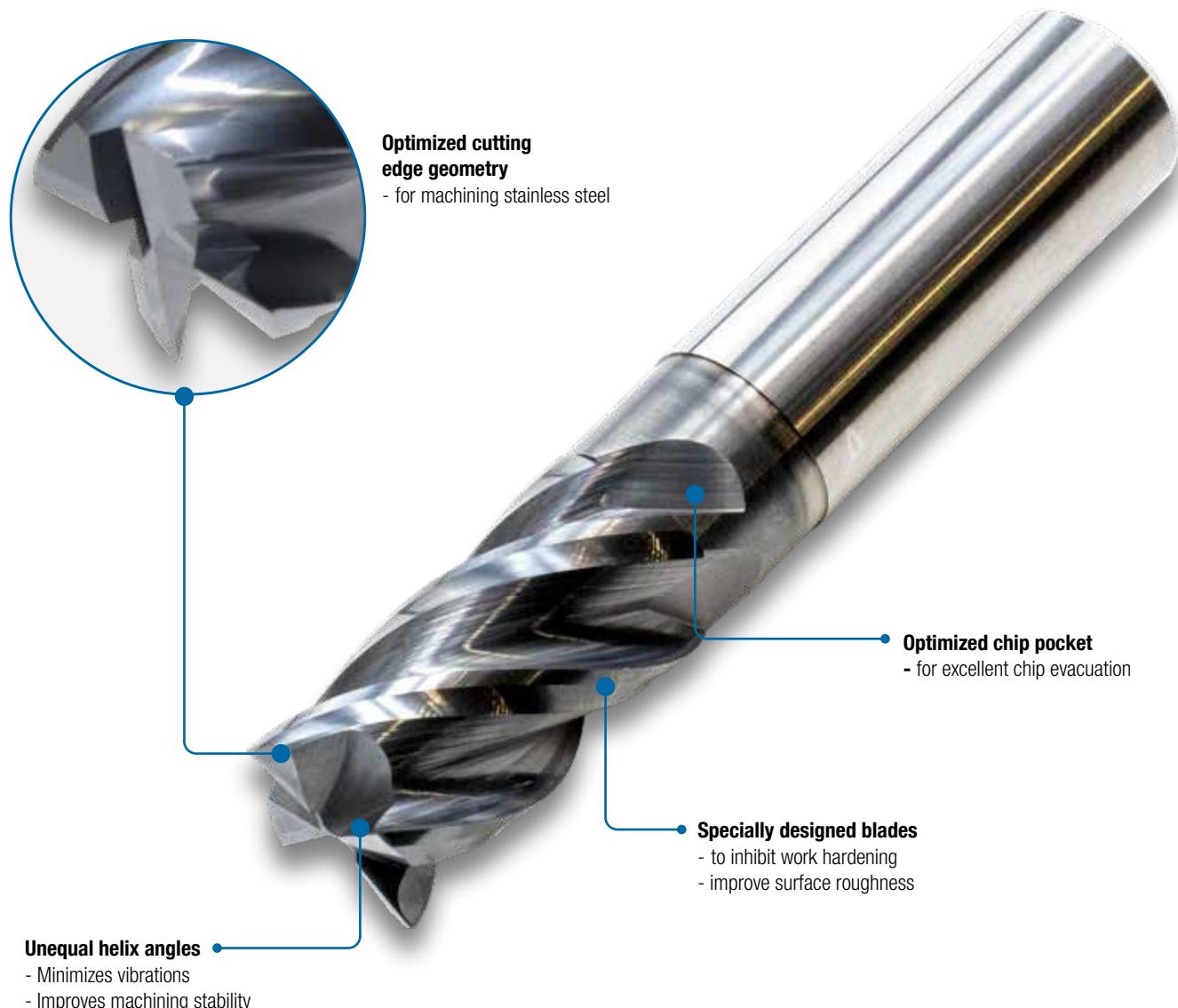
S⁺ Endmill with optimally designed cutting edges effectively reduces fracture from unexpected chipping by minimizing cutting load and vibration in cutting.

In addition, its new substrate and coating layer ensure higher wear and welding resistance than existing tools.

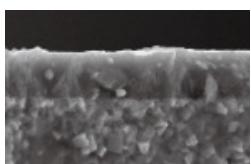
Moreover, KORLOY recommends **S⁺ Endmill** with increased welding and wear resistance from optimal substrate, layer, and shape for stainless steel machining to ensure customer's high productivity.



Product features

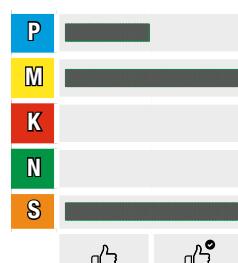


AlCrN coating and optimized substrate



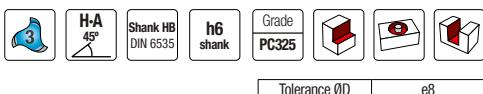
- Excellent wear resistance
- Improved welding resistance
- High cutting edge strength
- Special substrate for high process reliability

Suitability for Workpiece



SPFE3000 (Flat)

- Excellent chip evacuation thanks to wide chip pockets and high rake angle
- High welding and wear resistance due to special coating layer

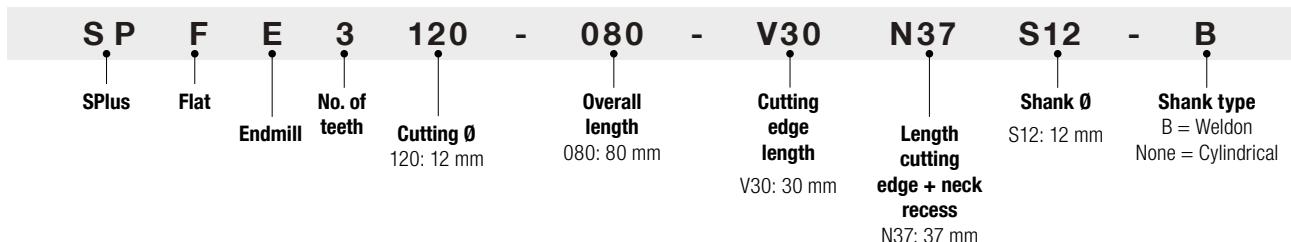


	Designation	PC325	ØD	Ød1	Ød2	L	l1	l2	Shank
3	SPFE3030-060-V10N15S6-B	▲	3	6	2.8	60	10	15	HB
	SPFE3040-060-V12N20S6-B	▲	4	6	3.7	60	12	20	HB
	SPFE3050-060-V15N20S6-B	▲	5	6	4.6	55	15	20	HB
	SPFE3060-060-V15N20S6-B	▲	6	6	5.5	60	15	20	HB
	SPFE3080-070-V20N25S8-B	▲	8	8	7.4	70	25	25	HB
	SPFE3100-075-V25N32S10-B	▲	10	10	9.2	75	25	32	HB
	SPFE3120-080-V30N37S12-B	▲	12	12	11.0	80	30	37	HB
	SPFE3160-092-V42N48S16-B	▲	16	16	15.0	92	42	48	HB
	SPFE3200-104-V48N55S20-B	▲	20	20	19.0	104	48	55	HB

Shank type HA available on request

▲: Stock item Europe ●: Stock item Korea ○: Production on demand

Code system



Recommended cutting conditions

Shouldering

Workpiece	Ap	Ae	Vc (m/min)	fz (mm/t) per Ø (mm)								
				3	4	5	6	8	10	12	16	20
Stainless steel	≤1xD	≤0.75xD	70-120	0.015- 0.035	0.015- 0.035	0.015- 0.035	0.028- 0.040	0.039- 0.055	0.055- 0.070	0.070- 0.095	0.085- 0.115	0.120- 0.150
Heat resistant superalloys	≤1xD	≤0.50xD	30-60	0.012- 0.020	0.012- 0.020	0.012- 0.020	0.025- 0.035	0.025- 0.033	0.045- 0.065	0.065- 0.075	0.075- 0.100	0.085- 0.150
Carbon steel/alloy steel (≤ HRC40)	≤1xD	≤0.75xD	120-180	0.018- 0.025	0.018- 0.025	0.018- 0.025	0.028- 0.045	0.046- 0.065	0.065- 0.085	0.085- 0.115	0.115- 0.165	0.200- 0.280

The given cutting conditions are valid for above depths of cut at ideal conditions.

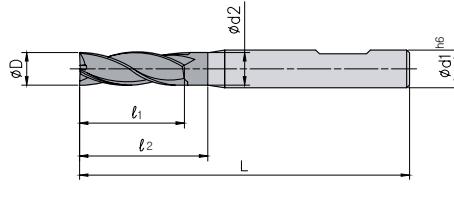
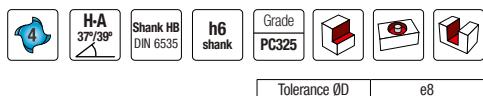
Slotting

Workpiece	Ap	Ae	Vc (m/min)	fz (mm/t) per Ø (mm)								
				3	4	5	6	8	10	12	16	20
Stainless steel	≤1xD	1xD	70-120	0.010- 0.015	0.010- 0.015	0.010- 0.015	0.020- 0.028	0.028- 0.038	0.038- 0.050	0.050- 0.070	0.060- 0.080	0.080- 0.100
Heat resistant superalloys	≤1xD	1xD	30-60	0.008- 0.014	0.008- 0.014	0.008- 0.014	0.018- 0.025	0.025- 0.033	0.033- 0.046	0.046- 0.055	0.055- 0.072	0.060- 0.090
Carbon steel/alloy steel (≤ HRC40)	≤1xD	1xD	120-180	0.013- 0.018	0.008- 0.014	0.008- 0.014	0.020- 0.032	0.033- 0.045	0.045- 0.060	0.060- 0.080	0.080- 0.12	0.160- 0.200

The given cutting conditions are valid for above depths of cut at ideal conditions.

SPFE4000 (Flat)

- Excellent chip evacuation thanks to streamlined chip pockets and high rake angle
- High welding and wear resistance due to special coating layer



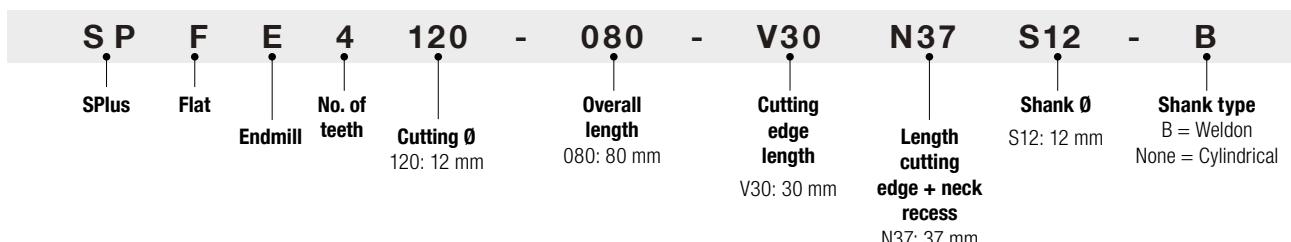
(mm)

	Designation	PC325	ØD	Ød1	Ød2	L	l1	l2	Shank
4	SPFE4030-060-V10N15S6-B	▲	3	6	2.8	60	10	15	HB
	SPFE4040-060-V12N20S6-B	▲	4	6	3.7	60	12	20	HB
	SPFE4050-055-V15N20S6-B	▲	5	6	4.6	55	15	20	HB
	SPFE4060-060-V15N20S6-B	▲	6	6	5.5	60	15	20	HB
	SPFE4080-070-V25N30S8-B	▲	8	8	7.4	70	25	30	HB
	SPFE4100-075-V25N32S10-B	▲	10	10	9.2	75	25	32	HB
	SPFE4120-080-V30N37S12-B	▲	12	12	11.0	80	30	37	HB
	SPFE4160-092-V42N48S16-B	▲	16	16	15.0	92	42	48	HB
	SPFE4200-104-V48N55S20-B	▲	20	20	19.0	104	48	55	HB

Shank type HA available on request

▲: Stock item Europe ●: Stock item Korea ○: Production on demand

Code system



Recommended cutting conditions

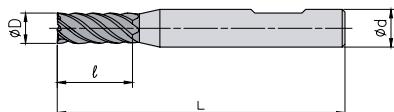
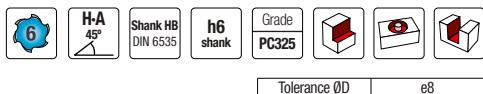
Shouldering

Workpiece	Ap	Ae	Vc (m/min)	fz (mm/t) per Ø (mm)								
				3	4	5	6	8	10	12	16	20
Stainless steel	≤1xD	≤0.75xD	70-120	0.015-0.035	0.015-0.035	0.015-0.035	0.028-0.040	0.039-0.055	0.055-0.070	0.070-0.095	0.085-0.115	0.120-0.150
Heat resistant superalloys	≤1xD	≤0.50xD	30-60	0.012-0.020	0.012-0.02	0.012-0.02	0.025-0.035	0.025-0.033	0.045-0.065	0.065-0.075	0.075-0.100	0.085-0.15
Carbon steel/alloy steel (≤ HRC40)	≤1xD	≤0.75xD	120-180	0.018-0.025	0.018-0.025	0.018-0.025	0.028-0.045	0.046-0.065	0.065-0.085	0.085-0.115	0.115-0.165	0.200-0.280

The given cutting conditions are valid for above depths of cut at ideal conditions.

SPFE6000 (Flat)

- Reinforced core for maximum stability and feed
- High welding and wear resistance due to special coating layer



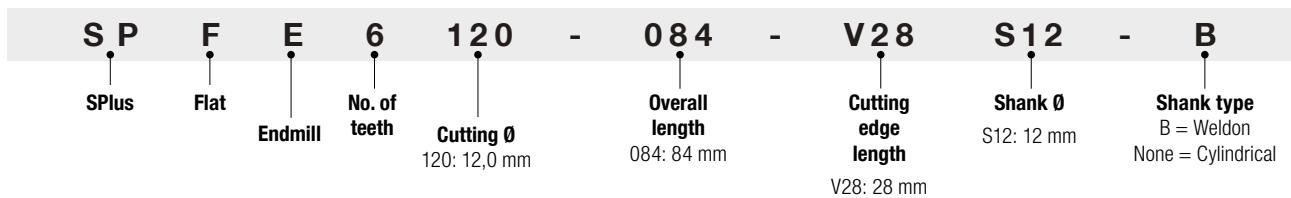
(mm)

	Designation	PC325	ØD	Ød	L	I	Shank
6	SPFE6030-060-V8S6-B	▲	3	6	60	8	HB
	SPFE6040-060-V10S6-B	▲	4	6	60	10	HB
	SPFE6050-060-V13S6-B	▲	5	6	60	13	HB
	SPFE6060-060-V16S6-B	▲	6	6	60	16	HB
	SPFE6080-070-V22S8-B	▲	8	8	70	22	HB
	SPFE6100-075-V25S10-B	▲	10	10	75	25	HB
	SPFE6120-084-V28S12-B	▲	12	12	84	28	HB
	SPFE6160-093-V35S16-B	▲	16	16	93	35	HB
	SPFE6200-100-V40S20-B	▲	20	20	100	40	HB

Shank type HA available on request

▲: Stock item Europe ●: Stock item Korea ○: Production on demand

Code system



Recommended cutting conditions

Shouldering

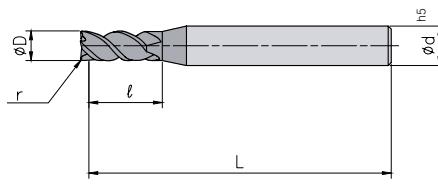
Workpiece	Ap	Ae	Vc (m/min)	fz (mm/t) per Ø (mm)								
				3	4	5	6	8	10	12	16	20
Stainless steel	≤1.5xD	≤0.2xD	70-120	0.015-0.035	0.015-0.035	0.015-0.035	0.028-0.040	0.039-0.055	0.055-0.070	0.070-0.095	0.085-0.115	0.120-0.150
Heat resistant superalloys	≤1.5xD	≤0.2xD	30-60	0.012-0.020	0.012-0.020	0.012-0.020	0.025-0.035	0.025-0.033	0.045-0.065	0.065-0.075	0.075-0.100	0.085-0.150
Carbon steel/alloy steel (≤ HRC40)	≤1.5xD	≤0.2xD	120-180	0.018-0.025	0.018-0.025	0.018-0.025	0.028-0.045	0.046-0.065	0.065-0.085	0.085-0.115	0.115-0.165	0.200-0.280

The given cutting conditions are valid for above depths of cut at ideal conditions.

SPRE4000 (Radius)

- Excellent chip evacuation thanks to streamlined chip pockets and high rake angle
- High welding and wear resistance due to special coating layer

		HA shank	h5 shank	Grade PC325	
		Tolerance ØD	e8	Tolerance R	±0.01



(mm)

Designation	PC325	ØD	Ød	L	I	r	Shank
	SPRE4030-055-R03	▲	3	6	55	8	0.3 HA
	SPRE4040-055-R03	▲	4	6	55	10	0.3 HA
	SPRE4040-055-R05	▲	4	6	55	10	0.5 HA
	SPRE4050-055-R03	▲	5	6	55	15	0.3 HA
	SPRE4050-055-R05	▲	5	6	55	15	0.5 HA
	SPRE4060-060-R03	▲	6	6	60	15	0.3 HA
	SPRE4060-060-R05	▲	6	6	60	15	0.5 HA
	SPRE4060-060-R10	▲	6	6	60	15	1.0 HA
	SPRE4080-070-R05	▲	8	8	70	20	0.5 HA
	SPRE4080-070-R10	▲	8	8	70	20	1.0 HA
	SPRE4080-070-V20S8-R15	▲	8	8	70	20	1.5 HA
	SPRE4080-070-V20S8-R20	▲	8	8	70	20	2.0 HA
	SPRE4100-075-R05	▲	10	10	75	25	0.5 HA
	SPRE4100-075-R10	▲	10	10	75	25	1.0 HA
	SPRE4100-075-R15	▲	10	10	75	25	1.5 HA
	SPRE4100-075-R20	▲	10	10	75	25	2.0 HA
	SPRE4120-080-R05	▲	12	12	80	30	0.5 HA
	SPRE4120-080-R10	▲	12	12	80	30	1.0 HA
	SPRE4120-080-R15	▲	12	12	80	30	1.5 HA
	SPRE4120-080-R20	▲	12	12	80	30	2.0 HA
	SPRE4160-100-R05	▲	16	16	100	42	0.5 HA
	SPRE4160-100-R10	▲	16	16	100	42	1.0 HA
	SPRE4160-100-V42S16-R15	▲	16	16	100	42	1.5 HA
	SPRE4160-100-V42S16-R20	▲	16	16	100	42	2.0 HA
	SPRE4200-100-R05	▲	20	20	100	48	0.5 HA
	SPRE4200-100-R10	▲	20	20	100	48	1.0 HA
	SPRE4200-100-V48S20-R15	▲	20	20	100	48	1.5 HA
	SPRE4200-100-V48S20-R20	▲	20	20	100	48	2.0 HA

Shank type HB available on request

▲: Stock item Europe ●: Stock item Korea ○: Production on demand

Code system

S P	R	E	4	0 8 0	-	0 7 0	-	V 2 0	S 8	-	R 1 5
SPlus	Radius	Endmill	No. of teeth	Cutting Ø 080: 8.0 mm		Overall length 070: 70 mm		Cutting edge length V20: 20 mm	Shank Ø S8: 8.0 mm		Corner R R15: Radius 1.5 mm

SPRE4000 (Radius)

Recommended cutting conditions

Shouldering

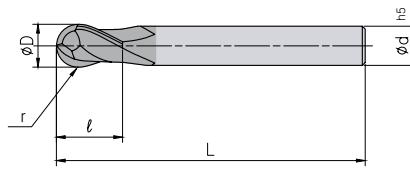
Workpiece	Ap	Ae	Vc (m/min)	fz (mm/t) per Ø (mm)								
				3	4	5	6	8	10	12	16	20
Stainless steel	≤1.5xD	≤0.2xD	70-120	0.015- 0.035	0.015- 0.035	0.015- 0.035	0.028- 0.040	0.039- 0.055	0.055- 0.070	0.070- 0.095	0.085- 0.115	0.120- 0.150
Heat resistant superalloys	≤1.5xD	≤0.2xD	30-60	0.012- 0.02	0.012- 0.020	0.012- 0.02	0.025- 0.035	0.025- 0.033	0.045- 0.065	0.065- 0.075	0.075- 0.100	0.085- 0.15
Carbon steel/alloy steel (≤ HRC40)	≤1.5xD	≤0.2xD	120-180	0.018- 0.025	0.018- 0.025	0.018- 0.025	0.028- 0.045	0.046- 0.065	0.065- 0.085	0.085- 0.115	0.115- 0.165	0.200- 0.280

The given cutting conditions are valid for above depths of cut at ideal conditions.

SPBE2000 (Ball)

- Special cutting edge geometry for best surface roughness
- Excellent chip evacuation due to optimized chip pockets
- High welding and wear resistance due to special coating layer

				Grade PC325
Tolerance ØD e8			Tolerance R ±0.01	



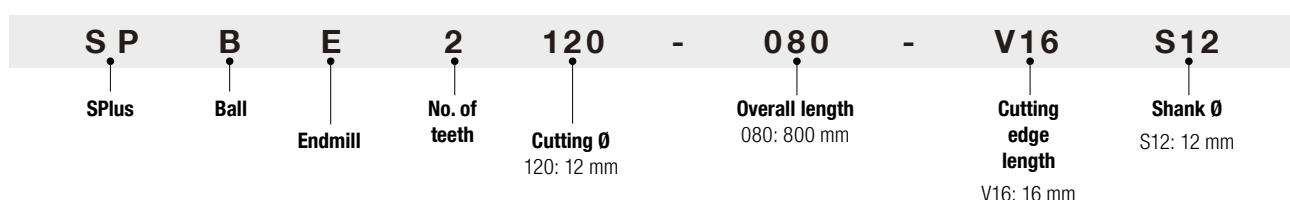
(mm)

Designation	PC325	ØD	Ød	L	I	r	Shank
	▲	3	6	50	5	1.5	HA
	▲	3	6	75	5	1.5	HA
	▲	4	6	50	8	2.0	HA
	▲	4	6	75	8	2.0	HA
	▲	5	6	50	9	2.5	HA
	▲	5	6	75	9	2.5	HA
	▲	6	6	60	10	3.0	HA
	▲	6	6	100	10	3.0	HA
	▲	8	8	60	12	4.0	HA
	▲	8	8	100	12	4.0	HA
	▲	10	10	75	14	5.0	HA
	▲	10	10	100	14	5.0	HA
	▲	12	12	80	16	6.0	HA
	▲	12	12	150	16	6.0	HA
	▲	16	16	100	22	8.0	HA
	▲	16	16	150	22	8.0	HA

Shank type HB available on request

▲: Stock item Europe ●: Stock item Korea ○: Production on demand

Code system



SPBE2000 (Ball)

Recommended cutting conditions

Low depths of cut

Workpiece	Ap	Ae	Vc (m/min)	fz (mm/t) per Ø (mm)							
				3	4	5	6	8	10	12	16
Stainless steel	0.05xD	0.03xD	60-100	0.010- 0.012	0.010- 0.012	0.010- 0.012	0.030- 0.035	0.040- 0.050	0.060- 0.065	0.080- 0.100	0.100- 0.200
Heat resistant superalloys	0.05xD	0.03xD	100-160	0.010- 0.012	0.010- 0.012	0.010- 0.012	0.030- 0.035	0.040- 0.050	0.060- 0.065	0.080- 0.100	0.100- 0.200
Carbon steel/alloy steel (≤ HRC40)	0.05xD	0.03xD	120-180	0.010- 0.012	0.010- 0.012	0.010- 0.012	0.030- 0.035	0.040- 0.050	0.060- 0.065	0.080- 0.100	0.100- 0.200

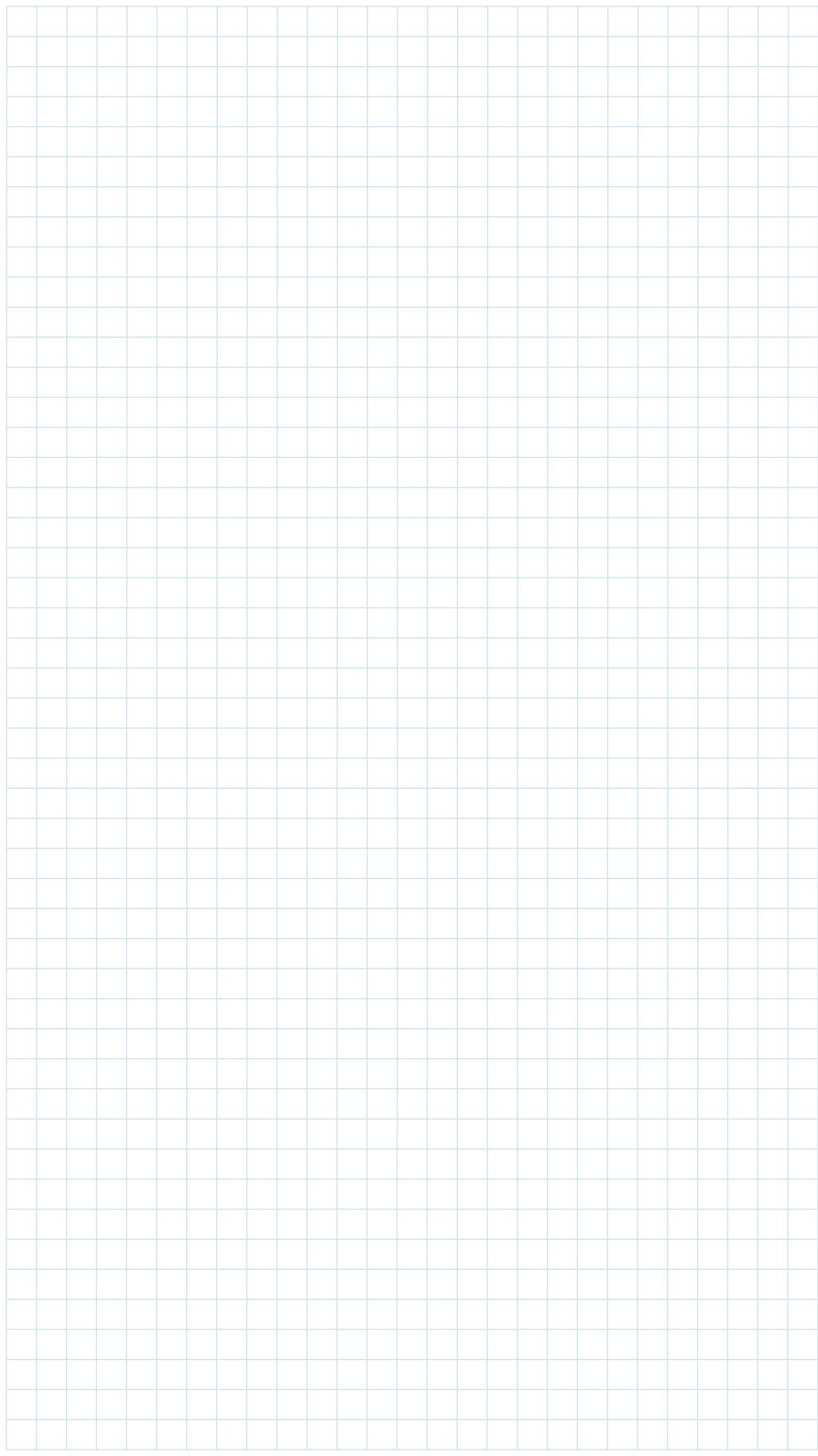
The given cutting conditions are valid for above depths of cut at ideal conditions.

High depths of cut

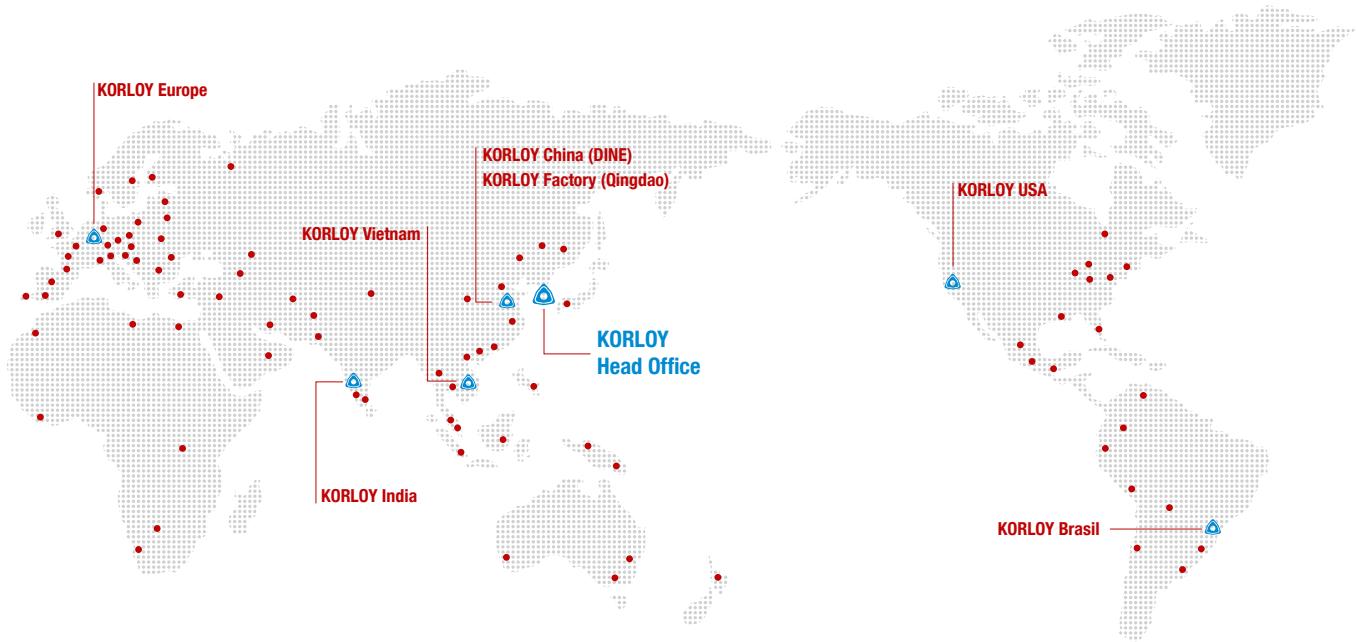
Workpiece	Ap	Ae	Vc (m/min)	fz (mm/t) per Ø (mm)							
				3	4	5	6	8	10	12	16
Stainless steel	0.2xD	0.2xD	40-70	0.012- 0.015	0.012- 0.015	0.012- 0.015	0.035- 0.045	0.050- 0.060	0.075- 0.080	0.095- 0.150	0.120- 0.250
Heat resistant superalloys	0.2xD	0.2xD	60-120	0.012- 0.015	0.012- 0.015	0.012- 0.015	0.035- 0.045	0.050- 0.060	0.075- 0.080	0.095- 0.150	0.120- 0.250
Carbon steel/alloy steel (≤ HRC40)	0.2xD	0.2xD	80-140	0.012- 0.015	0.012- 0.015	0.012- 0.015	0.035- 0.045	0.050- 0.060	0.075- 0.080	0.095- 0.150	0.120- 0.250

The given cutting conditions are valid for above depths of cut at ideal conditions.

Notes



0 5 25mm



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R & D Institute Seoul

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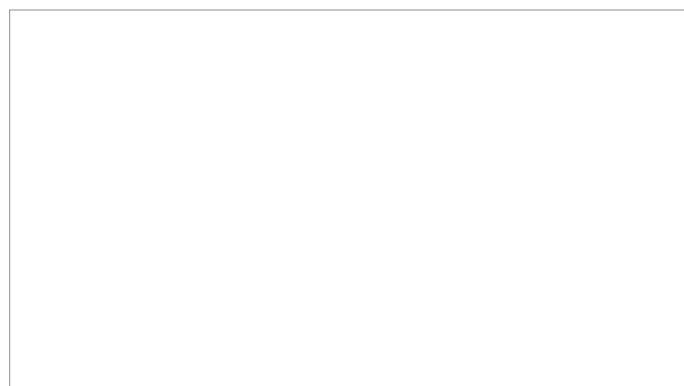
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