

# CoroMill® 216

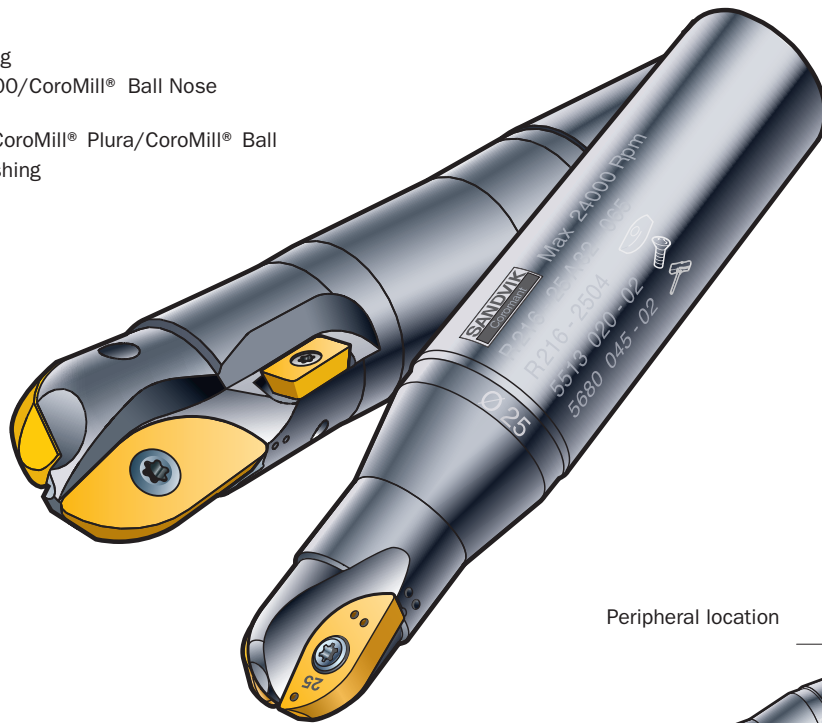
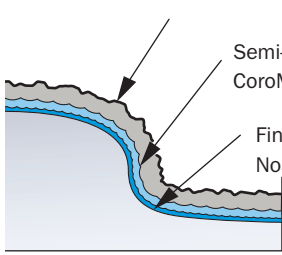
## Robust ball nose endmill

A metal remover for semi-finish profiling

Roughing CoroMill® 200/CoroMill® 300

Semi-finishing CoroMill® 300/CoroMill® Ball Nose

Finishing CoroMill® Plura/CoroMill® Ball Nose Finishing



**M** - inserts for higher security



**E** - inserts with sharper edges and higher precision

Peripheral location

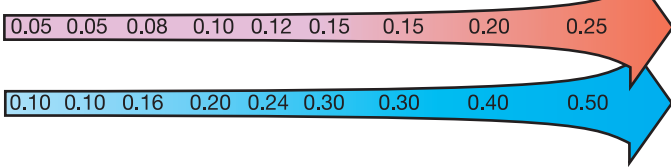
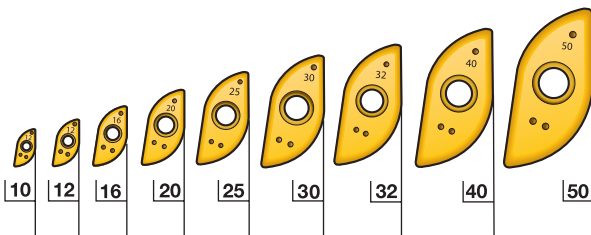
Identical inserts

Central location

Flexibility and long reach



Modular cutting heads in combination with a variety of shanks



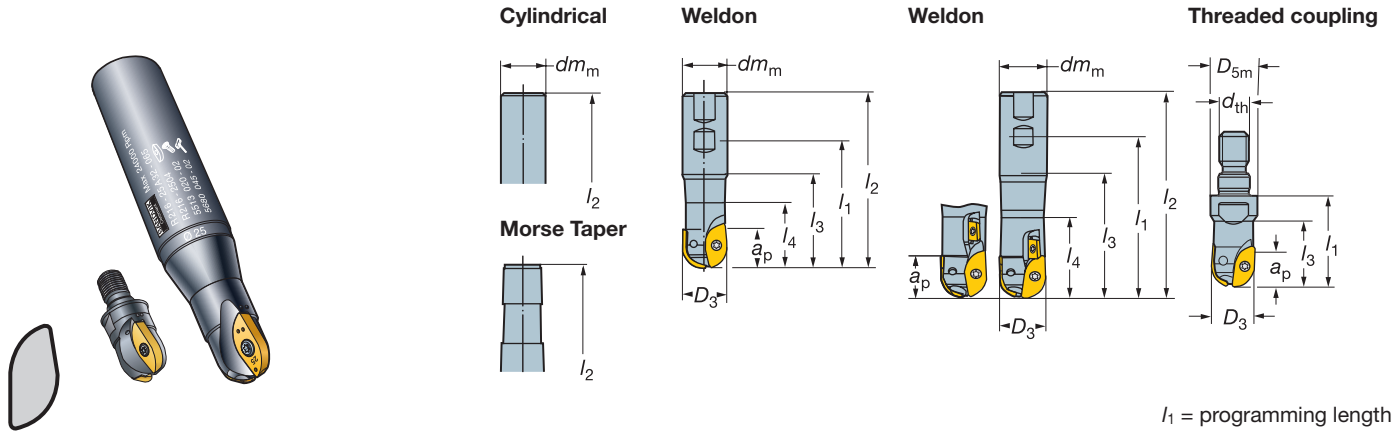
Feed - start values mm

ISO application areas:



# CoroMill® Ball Nose endmill

Diameter 12 - 50 mm



$l_1$  = programming length

$D_3$ mm	Ordering code	Pitch	Dimensions, mm								$n_{max}^{(2)}$	Inserts <sup>1)</sup>	
			$l_1$	$l_2$	$l_3$	$l_4$	$dm_m$	Max $a_p$	$d_{th}$	$D_{5m}$		Gauge inserts	Shank protection insert
<b>Cylindrical shank</b>													
10	R216-10A16-050	2	0.3	160	50	20	16	8.6		15900	R216-1002		
12	R216-12A20-045	2	0.4	200	45	20	20	10.8		21000	R216-1202M		
16	R216-16A20-045	2	0.4	200	45	27	20	14.4		20000	R216-1603M		
20	R216-20A25-055	2	0.7	200	55	33	25	17.9		24000	R216-20T3M		
25	R216-25A32-065	2	1.3	250	65	40	32	22.3		24000	R216-2504M		
30	R216-30A32-070	2+1	1.4	250	70	50	32	26.9		19500	R216-3006M	APMT160408-M	
32	R216-32A32-070	2	1.4	250	70	50	32	28.6		18500	R216-3206M		
<b>Morse taper</b>													
12	R216-12E2-040	2	0.2	45	104	40	20	10.8		21000	R216-1202M		
16	R216-16E2-060	2	0.3	65	124	60	27	14.4		20000	R216-1603M		
20	R216-20E2-070	2	0.3	70	134	70		17.9		24000	R216-20T3M		
20	R216-20E3-070	2	0.3	70	151	70	33	17.9		24000	R216-20T3M		
25	R216-25E3-080	2	0.4	80	161	80	70	22.3		24000	R216-2504M		
32	R216-32E3-100	2	0.7	105	181	100		28.6		18500	R216-3206M		
32	R216-32E4-100	2+1	0.8	105	202.5	100	82	28.6		18500	R216-3206M	APMT160408-M	
<b>Threaded coupling</b>													
10	R216-10T08	2	0.1	25		18		8.6	M8	12.8	R216-1002M		
12	R216-12T08	2	0.1	25		18		10.8	M8	12.8	R216-1203M		
16	R216-16T08	2	0.1	25				14.4	M8	12.8	R216-16T3M		
20	R216-20T10	2	0.1	30				17.9	M10	17.8	R216-20T3M		
25	R216-25T12	2	0.2	35				22.3	M12	20.8	R216-2504M		
30	R216-30T16	2	0.2	45				26.9	M16	28.8	R216-3006M		
32	R216-32T16	2	0.1	45				28.6	M16	28.8	R216-3206M		
<b>Weldon</b>													
12	R216-12B20-040	2	0.2	66	91	40	20	20	10.8	21000	R216-1202M		
12	R216-12B20-060	2	0.2	86	111	60	20	20	10.8	21000	R216-1202M		
16	R216-16B20-040	2	0.2	66	91	40	27	20	14.4	20000	R216-1603M		
16	R216-16B20-060	2	0.2	86	111	60	27	20	14.4	20000	R216-1603M		
20	R216-20B25-050	2	0.3	75	107	50	33	25	17.9	24000	R216-20T3M		
20	R216-20B25-070	2	0.4	95	127	70	33	25	17.9	24000	R216-20T3M		
25	R216-25B25-060	2	0.4	85	117	60	40	25	22.3	24000	R216-2504M		
25	R216-25B25-080	2	0.4	105	137	80	70	25	22.3	24000	R216-2504M		
30	R216-30B32-070	2+1	0.6	95	131	70	50	32	26.9	19500	R216-3006M	APMT160408-M	
30	R216-30B32-100	2+1	0.7	125	161	100	80	32	26.9	19500	R216-3006M	APMT160408-M8	
32	R216-32B32-070	2	0.6	95	131	70	50	32	28.6	18500	R216-3206M		
32	R216-32B32-100	2	0.7	125	161	100	82	32	28.6	18500	R216-3206M		
40	R216-40B40-100	2+2	1.3	131	171	100	69	40	36.5	8000	R216-4007M	APMT160408-M	
40	R216-40B40-150	2+2	1.7	181	221	150	120	40	36.5	8000	R216-4007M	APMT160408-M	
50	R216-50B40-100	2+2	1.9	131	171	100		40	44.6	7000	R216-5007M		
50	R216-50B50-125	2+2	2.8	161	207	125	95	2	44.6	7000	R216-5007M	APMT160408-M	
50	R216-50B50-175	2+2	3.4	211	257	175	145	2	44.6	7000	R216-5007M	APMT160408-M	

<sup>1)</sup> Inserts are ordered separately.

<sup>2)</sup>  $n_{max}$  (max. rev/min) for holders must also be considered.

<sup>3)</sup> Max. rpm values,  $n_{max}$ , are not given for Modular design as they are always used with long extensions.

Ordering example: 2 pieces R216-10A16-050

⊕ = Even pitch  
⊖ = Differential pitch



# Inserts for CoroMill® Ball Nose

Main inserts



M-M

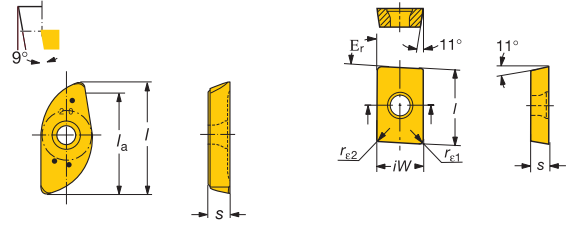


E-M

Shank protection insert



M



For cutter dia.	$r_\epsilon$	Ordering code	P					M				K		N		S		H		Dimensions, mm										
			GC	GC	GC	GC	CT	-	GC	GC	GC	CT	-	GC	GC	-	GC	GC	-	GC	GC	CT	$l_a$	$l$	$s$	$iW$	$E_r$	$r_{\epsilon 1}$	$r_{\epsilon 2}$	
10	05	R216-10 02 E-M	☆	☆			☆	☆							☆	☆			☆	☆		☆	☆	8.6	9.8	1.7				
12	06	R216-12 02 E-M	☆	☆			☆	☆							☆	☆			☆	☆		☆	☆	10.8	12	2.38				
		R216-12 02 M-M	☆		☆	☆	☆	☆							☆	☆			☆	☆		☆	☆	10.8	12	2.38				
16	08	R216-16 03 E-M	☆	☆			☆	☆							☆	☆			☆	☆		☆	☆	14.4	16	3.18				
		R216-16 03 M-M	☆		☆	☆	☆	☆							☆	☆			☆	☆		☆	☆	14.4	16	3.18				
20	10	R216-20 T3 M-M	☆		☆	☆	☆	☆							☆	☆			☆	☆		☆	☆	17.9	20	3.97				
		R216-20 T3 E-M	☆	☆			☆	☆							☆	☆			☆	☆		☆	☆	17.9	20	3.97				
25	12.5	R216-25 04 M-M	☆		☆	☆	☆	☆							☆	☆			☆	☆		☆	☆	22.3	24.9	4.76				
		R216-25 04 E-M	☆	☆			☆	☆							☆	☆			☆	☆		☆	☆	22.3	24.9	4.76				
30	15	R216-30 06 M-M	☆	☆		☆	☆	☆							☆	☆			☆	☆		☆	☆	26.9	29.9	6.35				
		R216-30 06 E-M	☆	☆			☆	☆							☆	☆			☆	☆		☆	☆	26.9	29.9	6.35				
32	16	R216-32 06 M-M	☆	☆		☆	☆	☆							☆	☆			☆	☆		☆	☆	28.6	31.8	6.35				
		R216-32 06 E-M	☆	☆			☆	☆							☆	☆			☆	☆		☆	☆	28.6	31.8	6.35				
40	20	R216-40 07 E-M	☆	☆			☆	☆							☆	☆			☆	☆		☆	☆	36.5	39.9	7.94				
		R216-40 07 M-M	☆	☆		☆	☆	☆							☆	☆			☆	☆		☆	☆	36.5	39.9	7.94				
50	25	R216-50 07 E-M	☆	☆			☆	☆							☆	☆			☆	☆		☆	☆	44.6	49.7	0.94				
		R216-50 07 M-M	☆		☆	☆	☆	☆							☆	☆			☆	☆		☆	☆	44.6	49.7	7.94				
30-50		APMT 16 04 08-M				☆								☆									16.4	4.76	9.25	85°	0.8	0.4		

Ordering example: 10 pieces R216-10 02 E-M 1025

R216-10 02 E-M

- E = Highest edge sharpness and precision
- M = Highest edge security

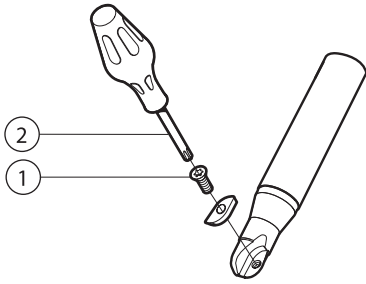


D 50



### Spare parts for CoroMill® Ball Nose endmill

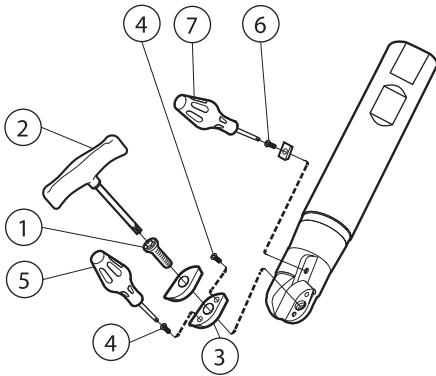
R216



D<sub>3</sub> 12-25 and 32 mm

Cutter	1	2				
	D <sub>3</sub> mm	Insert screw	Key (Torx Plus)	Torque value Nm	Molykote	Torque wrench <sup>1)</sup>
R216	10	5513 020-40	5680 051-01 (6IP)	0.6	5683 010-01	5680 100-01
	12	5513 020-36	5680 046-01 (8IP)	1.2	5683 010-01	5680 100-03
	16	5513 020-36	5680 046-01 (8IP)	1.2	5683 010-01	5680 100-03
	20	5513 020-16	5680 048-02 (10IP)	2.0	5683 010-01	5680 100-05
	25	5513 020-52	5680 048-01 (15IP)	3.0	5683 010-01	5680 100-06
	30	5513 020-07	5680 048-04 (20IP)	5.0	5683 010-01	-
	32	5513 020-07	5680 048-04 (20IP)	5.0	5683 010-01	-
	40	5513 020-31	5680 048-06 (25IP)	7.5	5683 010-01	-
	50	5513 021-03	5680 048-07 (30IP)	10.0	5683 010-01	-

<sup>1)</sup> Accessories, must be ordered separately



D<sub>3</sub> 30, 40 and 50 mm

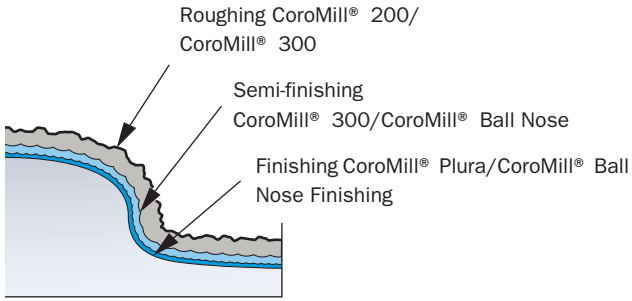
Cutter	3	4	5	6	7			
	D <sub>3</sub> mm	Shim	Shim screw	Key (Torx Plus)	Torque value Nm	Protection insert screw	Key (Torx Plus)	Torque value Nm
R216	30	-	-	-	-	5513 020-09	5680 046-02 (15IP)	3.0
	40	-	-	-	-	5513 020-09	5680 046-02 (15IP)	3.0
	50	5322 475-01	5513 020-09	5680 046-02 (15IP)	3.0	5513 020-09	5680 046-02 (15IP)	3.0

Ordering example: 10 pieces 5513 020-40

# CoroMill® 216F

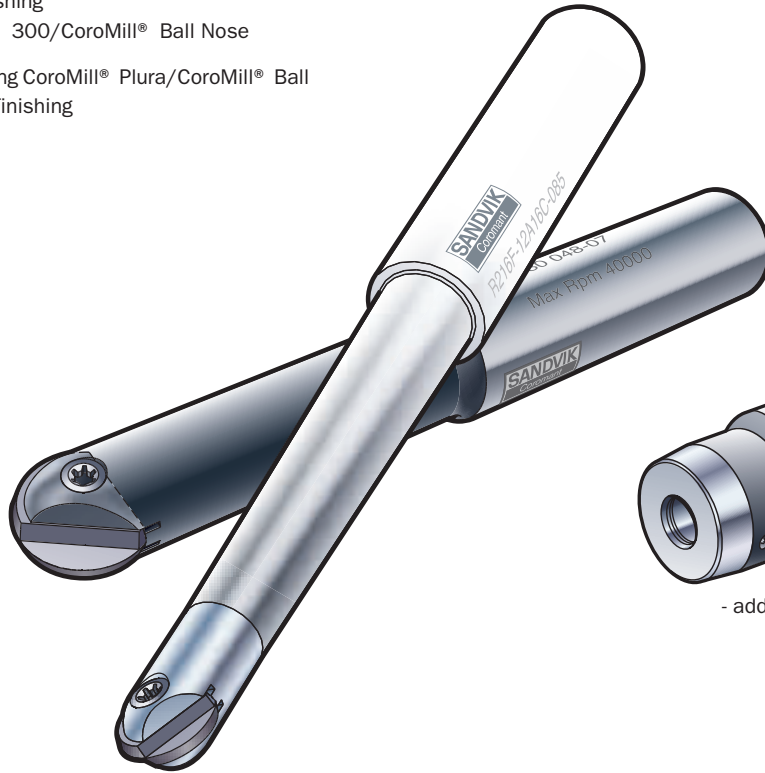
## Ball Nose Finishing endmill

A cutter for high finish profiling



Constant stock allows near  
net shape milling

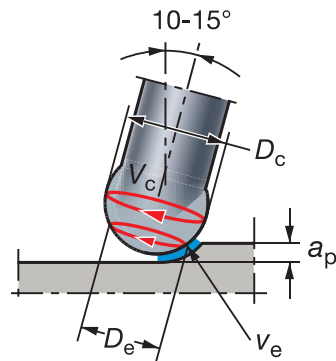
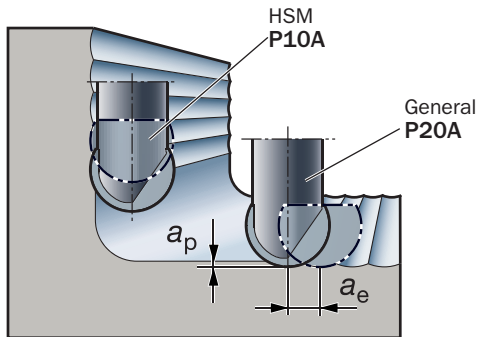
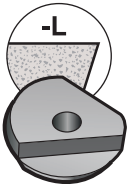
Carbide shank option



CoroGrip®

- adds even more precision

Sharp -L geometry



Use shallow axial and radial cuts for safe productivity. Always calculate the true cutting speed ( $v_e$ ) based on the effective diameter in cut ( $d_e$ )

ISO application areas:

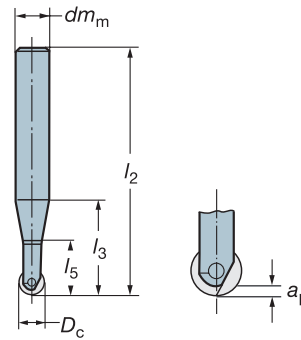


# CoroMill® Ball Nose Finishing endmill

Steel and Carbide shank



Cylindrical



Insert size <sup>1)</sup>	D <sub>c</sub> mm	Ordering code	Dimensions, mm							Max a <sub>p</sub>	n <sub>max</sub> <sup>2)</sup>
			$\frac{R}{mm}$	l <sub>2</sub>	l <sub>3</sub>	l <sub>5</sub>	dm <sub>m</sub>				
8	8	R216F-08A12S-035	0.2	92	35	19	12.0	1.2	40000		
		R216F-08A12S-053	0.2	110	53	19	12.0	1.2	33600		
		R216F-08A12S-075	0.2	132	75	19	12.0	1.2	16800		
		R216F-08A12S-035	0.1	92	35	19	12.0	1.2	40000		
		R216F-08A12S-053	0.1	110	53	19	12.0	1.2	40000		
10	10	R216F-08A12C-075	0.2	132	75	19	12.0	1.2	23400		
		R216F-10A12S-038	0.2	95	38	22	12.0	1.5	40000		
		R216F-10A12S-053	0.2	110	53	22	12.0	1.5	40000		
		R216F-10A12S-075	0.2	132	75	22	12.0	1.5	20300		
		R216F-10A12C-053	0.1	110	53	22	12.0	1.5	40000		
12	12	R216F-10A12C-075	0.2	132	75	22	12.0	1.5	23400		
		R216F-12A12S-026	0.2	83	26		12.0	1.8	40000		
		R216F-12A12S-053	0.2	110	53		12.0	1.8	40000		
		R216F-12A16S-085	0.3	145	85	23	16.0	1.8	19800		
		R216F-12A12C-053	0.1	110	53		12.0	1.8	40000		
16	16	R216F-12A16C-085	0.3	145	85	21.5	16.0	1.8	21000		
		R216F-16A16S-032	0.3	92	32		16.0	2.4	36000		
		R216F-16A16S-063	0.3	123	63		16.0	2.4	36000		
		R216F-16A20S-100	0.4	166	100	30	20.0	2.4	20000		
		R216F-16A16C-063	0.3	123	63		16.0	2.4	43000		
20	20	R216F-16A20C-100	0.5	166	100	28.5	20.0	2.4	25500		
		R216F-20A20S-038	0.4	104	38		20.0	3.0	40000		
		R216F-20A20S-075	0.4	141	75		20.0	3.0	40000		
		R216F-20A25S-115	0.7	191	115	35	25.0	3.0	18400		
		R216F-20A25C-115	1.0	191	115	35	25.0	3.0	18500		
25	25	R216F-25A25S-045	0.5	121	45		25.0	3.7	40000		
		R216F-25A25S-090	0.7	166	90		25.0	3.7	37100		
		R216F-25A32S-135	1.1	215	135	43	32.0	3.7	16500		
30, 32	30/32	R216F-32A32S-054	0.8	134	54		32.0	4.5	35500		
		R216F-32A32S-107	1.1	187	107		32.0	4.5	32500		
		R216F-32A32S-160	1.6	240	160	54	32.0	4.5	14500		

<sup>1)</sup> Inserts are ordered separately.

<sup>2)</sup> n<sub>max</sub> (max. rev/min) for holders must also be considered.

Ordering example: 2 pieces R216F-08A12S-035

R216F-08A12S-035

- |
- S = Steel shank
- C = Carbide shank

- = Even pitch
- = Differential pitch



D54



D54

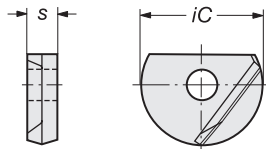


G3



D2

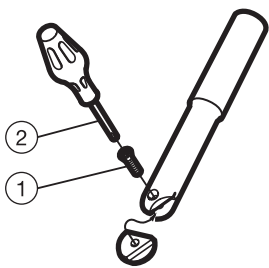
## Inserts for CoroMill® Ball Nose Finishing endmill



iO	Ordering code	P				M		K		H		Dimensions, mm	
		P10A	P20A	P10A	P20A	P10A	P20A	P10A	P20A	P10A	P20A	iC	s
08	R216F-08 24 E-L	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	8	2.4
10	R216F-10 26 E-L	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	10	2.6
12	R216F-12 30 E-L	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	12	3
16	R216F-16 40 E-L	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	16	4
20	R216F-20 50 E-L	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	20	5
25	R216F-25 60 E-L	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	25	6
30	R216F-30 70 E-L	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	30	7
32	R216F-32 70 E-L	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	32	7

Ordering example: 10 pieces R216F-08 24 E-L P10A

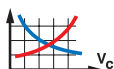
## Spare parts for CoroMill® Ball Nose Finishing endmill



	1	2 <sup>1)</sup>		
Cutter	Insert screw	Key (Torx Plus)	Torque value Nm	Molykote
R216F-08...	5513 040-01	5680 046-03 (7IP)	0,9	5683 010-01
R216F-10...	5513 040-02	5680 046-01 (8IP)	1,2	5683 010-01
R216F-12...	5513 040-03	5680 046-05 (10IP)	2,0	5683 010-01
R216F-16...	5513 040-04	5680 046-02 (15IP)	3,0	5683 010-01
R216F-20...	5513 040-05	5680 048-03 (20IP)	5,0	5683 010-01
R216F-25...	5513 040-06	5680 048-06 (25IP)	7,5	5683 010-01
R216F-32...	5513 040-07	5680 048-08 (40IP)	26,0	5683 010-01

1) Accessories, must be ordered separately

Ordering example: 10 pieces 5513 040-01



D154



D172



D2

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