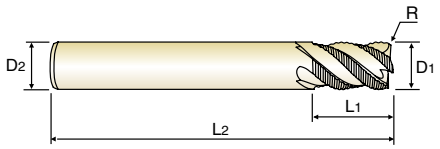
CARBIDE, 4&5 FLUTE MULTIPLE HELIX CORNER RADIUS - SHORT LENGTH

VOLLHARTMETALL, 4&5 SCHNEIDEN MEHRSPIRAL Fräser KURZ ECKENRADIUS
Fraise carbure, 4&5 dents, torique, hélice multiple, courte
MD, 4 & 5 TAGLIENTI, TORICA, SERIE CORTA

- Unique flute design for excellent chip evacuation and vibration reduction.
- Optimal roughing tooth profile to reduce cutting forces.
- Special tool geometry for high feed rate and heavy cutting.
- Strong end tooth design for plunge and pocket milling.
- Custom engineered coating to allow long tool life and excellent chip evacuation.

- einzigartige Nutengeometrie für hervorragenden Spänetransport und Vibrationsreduzierung
- neuartiges Schruppprofil zur reduzierung der Schnittkräfte
- Spezielle Werkzeuggeometrie für Hochvorschub- und Schwerzerspanung geeignet
- speziell entwickelte Schneidengeometrie für Tauch- und Taschenfräsen
- YG-1 eigene Beschichtung um lange lebensdauer und sehr guten Spänetransport zu gewährleisten



CARBIDE | 4&5 | 44°~45° | PLAIN | FLAT | Y Coating

p.C328

Recommended ToolHolder

Flat Shank	Page	Plain Shank	Page
END MILL HOLDER	D118 - 137	HYDRAULIC CHUCK SHRINK FIT HOLDER	D15 - 46 D47 - 72
-	-	POWER MILLING CHUCK	D161 - 176
-	-	ER COLLET CHUCK SK SLIM CHUCK	D73 - 116 D183 - 201

Unit : mm

EDP No.		Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Overall Length	No. of Flute
PLAIN	FLAT	R	D_1	D_2	L_1	L_2	
G9D75060	**G9D67060**	R0.5	**6.0**	6	9	57	4
G9D75080	**G9D67080**	R0.5	**8.0**	8	12	63	4
G9D75100	**G9D67100**	R0.5	**10.0**	10	15	72	4
G9D75120	**G9D67120**	R0.5	**12.0**	12	18	83	4
G9D75160	**G9D67160**	R1.0	**16.0**	16	24	92	5
G9D75200	**G9D67200**	R1.0	**20.0**	20	30	104	5

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.05	h5

Rotool

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend	○	○	◎	◎	◎	○	◎	◎	◎	○	◎	○	○	○	◎	◎	◎	◎	◎	◎

ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend						○	○	○													

4G MILL END MILLS

X-SPEED ROUGHER

PLAIN SHANK **G9D76** SERIES
FLAT SHANK **G9D68** SERIES

CARBIDE, 4&5 FLUTE MULTIPLE HELIX CORNER RADIUS - LONG LENGTH

VOLLHARTMETALL, 4&5 SCHNEIDEN MEHRSPIRAL Fräser KURZ ECKENRADIUS
Fraise carbure, 4&5 dents, torique, hélice multiple, courte
MD, 4 & 5 TAGLIENTI, TORICA, SERIE CORTA

- Unique flute design for excellent chip evacuation and vibration reduction.
- Optimal roughing tooth profile to reduce cutting forces.
- Special tool geometry for high feed rate and heavy cutting.
- Strong end tooth design for plunge and pocket milling.
- Custom engineered coating to allow long tool life and excellent chip evacuation.
- einzigartige Nutengeometrie für hervorragenden Spänetransport und Vibrationsreduzierung
- neuartiges Schruppprofil zur reduzierung der Schnittkräfte
- Spezielle Werkzeuggeometrie für Hochvorschub- und Schwerzerspanung geeignet
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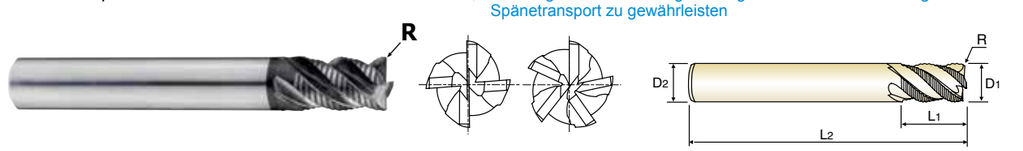

CARBIDE | 4&5 | 44°~45° | PLAIN | FLAT | Y Coating

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Recommended ToolHolder

	Flat Shank	Page	Plain Shank	Page
◎	END MILL HOLDER	D118 - 137	HYDRAULIC CHUCK SHRINK FIT HOLDER	D15 - 46 D47 - 72
◎	-	-	POWER MILLING CHUCK	D161 - 176
○	-	-	ER COLLET CHUCK SK SLIM CHUCK	D73 - 116 D183 - 201

Unit : mm

EDP No.		Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Overall Length	No. of Flute
PLAIN	FLAT	R	D1	D2	L1	L2	
G9D76060	**G9D68060**	R0.5	**6.0**	6	12	57	4
G9D76080	**G9D68080**	R0.5	**8.0**	8	16	63	4
G9D76100	**G9D68100**	R0.5	**10.0**	10	20	72	4
G9D76120	**G9D68120**	R0.5	**12.0**	12	24	83	4
G9D76160	**G9D68160**	R1.0	**16.0**	16	32	92	5
G9D76200	**G9D68200**	R1.0	**20.0**	20	40	104	5

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.05	h5

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend	○	○	◎	◎	◎	○	◎	◎	◎	○	◎	○	○	○	◎	◎	◎	◎	◎	◎

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend						○	○	○													

4G MILL END MILLS

X-SPEED ROUGHER

PLAIN SHANK **G9D77** SERIES
FLAT SHANK **G9D69** SERIES

CARBIDE, 4&5 FLUTE MULTIPLE HELIX LONG REACH CORNER RADIUS

VOLLHARTMETALL, 4&5 SCHNEIDEN MEHRSPIRAL Fräser GROßE REICHWEITE ECKENRADIUS
Fraise carbure, 4&5 dents, torique longue portée, hélice multiple
MD, 4 & 5 TAGLIENTI, TORICA, SCARICATA, SERIE LUNGS

- Unique flute design for excellent chip evacuation and vibration reduction.
- Optimal roughing tooth profile to reduce cutting forces.
- Special tool geometry for high feed rate and heavy cutting.
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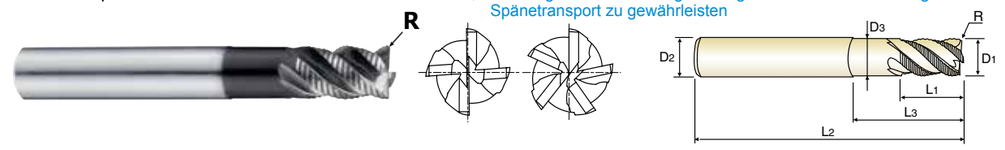

CARBIDE | 4&5 | 44°~45° | PLAIN | FLAT | Y Coating

p.C328

Recommended ToolHolder

	Flat Shank	Page	Plain Shank	Page
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◎	-	-	POWER MILLING CHUCK	D161 - 176
○	-	-	ER COLLET CHUCK SK SLIM CHUCK	D73 - 116 D183 - 201

Unit : mm

EDP No.		Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter	No. of Flute
PLAIN	FLAT	R	D1	D2	L1	L3	L2	D3	
G9D77060	**G9D69060**	R0.5	**6.0**	6	9	18	57	5.50	4
G9D77080	**G9D69080**	R0.5	**8.0**	8	12	24	63	7.50	4
G9D77100	**G9D69100**	R0.5	**10.0**	10	15	30	72	9.50	4
G9D77120	**G9D69120**	R0.5	**12.0**	12	18	36	83	11.50	4
G9D77160	**G9D69160**	R1.0	**16.0**	16	24	48	100	15.50	5
G9D77200	**G9D69200**	R1.0	**20.0**	20	30	60	110	19.20	5

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.05	h5

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
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HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommend	○	○	◎	◎	◎	○	◎	◎	◎	○	◎	○	○	○	◎	◎	◎	◎	◎	◎

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Recommend						○	○	○													