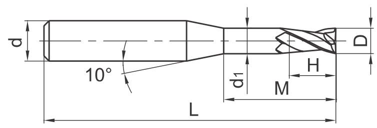
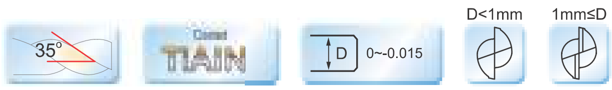
GM-2EP series for general machining · GM-2EP Serie für allgemeine Bearbeitung

2-flute end mills with straight shank and short cutting edge and long neck
2-Schneiden Eckfräser mit kurzer Schneide und Zylinderschaft





Type Typ	Dimension(mm) Abmessungen						Teeth Zähne Z	Grade Sorte KMG 303
	D	d	H	M	d1	L		
GM-2EP-D0.5-M04	0.5	4.0	0.7	4.0	0.45	50	2	●
GM-2EP-D0.5-M06	0.5	4.0	0.7	6.0	0.45	50	2	●
GM-2EP-D0.5-M08	0.5	4.0	0.7	8.0	0.45	50	2	●
GM-2EP-D0.8-M04	0.8	4.0	1.2	4.0	0.75	50	2	●
GM-2EP-D0.8-M06	0.8	4.0	1.2	6.0	0.75	50	2	●
GM-2EP-D0.8-M08	0.8	4.0	1.2	8.0	0.75	50	2	●
GM-2EP-D0.8-M10	0.8	4.0	1.2	10.0	0.75	50	2	●
GM-2EP-D1.0-M04	1.0	4.0	1.5	4.0	0.95	50	2	●
GM-2EP-D1.0-M06	1.0	4.0	1.5	6.0	0.95	50	2	●
GM-2EP-D1.0-M08	1.0	4.0	1.5	8.0	0.95	50	2	●
GM-2EP-D1.0-M10	1.0	4.0	1.5	10.0	0.95	50	2	●
GM-2EP-D1.0-M12	1.0	4.0	1.5	12.0	0.95	50	2	●
GM-2EP-D1.0-M14	1.0	4.0	1.5	14.0	0.95	50	2	●
GM-2EP-D1.2-M06	1.2	4.0	1.8	6.0	1.15	50	2	●
GM-2EP-D1.2-M08	1.2	4.0	1.8	8.0	1.15	50	2	●
GM-2EP-D1.2-M10	1.2	4.0	1.8	10.0	1.15	50	2	●
GM-2EP-D1.2-M12	1.2	4.0	1.8	12.0	1.15	50	2	○
GM-2EP-D1.5-M06	1.5	4.0	2.3	6.0	1.45	50	2	●
GM-2EP-D1.5-M08	1.5	4.0	2.3	8.0	1.45	50	2	●
GM-2EP-D1.5-M10	1.5	4.0	2.3	10.0	1.45	50	2	●
GM-2EP-D1.5-M12	1.5	4.0	2.3	12.0	1.45	50	2	●
GM-2EP-D1.5-M14	1.5	4.0	2.3	14.0	1.45	50	2	●
GM-2EP-D2.0-M06	2.0	4.0	3.0	6.0	1.95	50	2	●
GM-2EP-D2.0-M08	2.0	4.0	3.0	8.0	1.95	50	2	●

Material Overview · Material Übersicht

✔ = Very suitable · Sehr empfohlen
✔ = Suitable · Empfohlen

KMG303

Workpiece material Werkstückstoff											
Carbon steel Kohlenstoff Stahl	Alloy steel Legierter Stahl	Quenched and tempered steel · Vergüteter Stahl		Hardened steel · Gehärteter Stahl		Stainless steel · Rostfreier Stahl	Cast iron, Nodular cast iron Grauguss GGG	Copper alloy Kupfer Leg	Aluminum alloy Alu Leg	Titanium alloy Titan Leg	Heat resist alloy warmfeste Leg
		~40HRC	~50HRC	~55HRC	~68HRC						
✔	✔	✔	✔			✔	✔				

● Ex Stock / ab Lager ○ On demand / auf Anfrage

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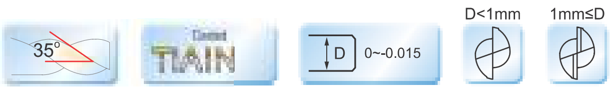
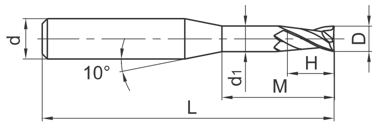
2-Schneiden Eckfräser mit kurzer Schneide und Zylinderschaft





Type Typ	Dimension(mm) Abmessungen						Teeth Zähne Z	Grade Sorte KMG 303
	D	d	H	M	d_1	L		
GM-2EP-D2.0-M10	2.0	4.0	3.0	10.0	1.95	50	2	●
GM-2EP-D2.0-M12	2.0	4.0	3.0	12.0	1.95	50	2	●
GM-2EP-D2.0-M14	2.0	4.0	3.0	14.0	1.95	50	2	●
GM-2EP-D2.0-M16	2.0	4.0	3.0	16.0	1.95	50	2	●
GM-2EP-D2.5-M08	2.5	4.0	3.7	8.0	2.4	50	2	●
GM-2EP-D2.5-M10	2.5	4.0	3.7	10.0	2.4	50	2	●
GM-2EP-D2.5-M12	2.5	4.0	3.7	12.0	2.4	50	2	●
GM-2EP-D2.5-M14	2.5	4.0	3.7	14.0	2.4	50	2	●
GM-2EP-D2.5-M16	2.5	4.0	3.7	16.0	2.4	60	2	●
GM-2EP-D2.5-M18	2.5	4.0	3.7	18.0	2.4	60	2	●
GM-2EP-D2.5-M20	2.5	4.0	3.7	20.0	2.4	60	2	●
GM-2EP-D3.0-M06	3.0	6.0	4.5	6.0	2.85	50	2	●
GM-2EP-D3.0-M08	3.0	6.0	4.5	8.0	2.85	50	2	●
GM-2EP-D3.0-M10	3.0	6.0	4.5	10.0	2.85	50	2	●
GM-2EP-D3.0-M12	3.0	6.0	4.5	12.0	2.85	50	2	●
GM-2EP-D3.0-M14	3.0	6.0	4.5	14.0	2.85	60	2	●
GM-2EP-D3.0-M16	3.0	6.0	4.5	16.0	2.85	60	2	●
GM-2EP-D3.0-M18	3.0	6.0	4.5	18.0	2.85	60	2	●
GM-2EP-D3.0-M20	3.0	6.0	4.5	20.0	2.85	60	2	●
GM-2EP-D4.0-M12	4.0	6.0	6.0	12.0	3.85	50	2	●
GM-2EP-D4.0-M14	4.0	6.0	6.0	14.0	3.85	60	2	●
GM-2EP-D4.0-M16	4.0	6.0	6.0	16.0	3.85	60	2	●
GM-2EP-D4.0-M20	4.0	6.0	6.0	20.0	3.85	60	2	●
GM-2EP-D4.0-M25	4.0	6.0	6.0	25.0	3.85	60	2	●
GM-2EP-D5.0-M16	5.0	6.0	7.5	16.0	4.85	60	2	●
GM-2EP-D5.0-M25	5.0	6.0	7.5	25.0	4.85	70	2	●

B

Solid Carbide end mills
Vollhartmetallschaftfräser

Material Overview · Material Übersicht

✔ = Very suitable · Sehr empfohlen
✓ = Suitable · Empfohlen

KMG303

Workpiece material Werkstückstoff											
Carbon steel Kohlenstoff Stahl	Alloy steel Legierter Stahl	Quenched and tempered steel · Vergüteter Stahl		Hardened steel · Gehärteter Stahl		Stainless steel · Rostfreier Stahl	Cast iron, Nodular cast iron Grauguss GGG	Copper alloy Kupfer Leg	Aluminum alloy Alu Leg	Titanium alloy Titan Leg	Heat resist alloy warmfeste Leg
		~40HRC	~50HRC	~55HRC	~68HRC						
✔	✔	✔	✓			✓	✓				

Code key B231
ISO Kennzeichen
Cutting data B431-456
Schnittdaten
Graphics identification & application B232
Graphische Werkzeug- & Anwendungsbeschr.
Order form for non-standard products B497-B498
Bestellformular für Sonderwerkzeuge

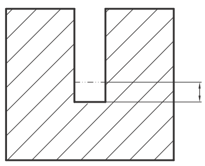
Recommended cutting data · Empfohlene Schnittdaten

GM-2EP

Workpiece material Werkstück-material		Cast iron, Carbon steel, Alloy steel Kohlenstoffstahl Leg. Stahl ~750N/mm^2			Carbon steel, Alloy steel Kohlenstoffstahl Leg. Stahl ~30HRC			Pre-hardened steel, Quenched and tempered steel Vergüteter Stahl ~40HRC			Stainless steel Rostfreier Stahll		
Diameter Ø Durchmesser (mm)	Effective length Effektive Länge (mm)	Rotating Drehzahl (min^{-1})	Feed Vorschub (mm/min)	Ap (mm)	Rotating Drehzahl (min^{-1})	Feed Vorschub (mm/min)	Ap (mm)	Rotating Drehzahl (min^{-1})	Feed Vorschub (mm/min)	Ap (mm)	Rotating Drehzahl (min^{-1})	Feed Vorschub (mm/min)	Ap (mm)
0.5	**4**	28000	200	0.023	28000	175	0.021	28000	150	0.018	25000	100	0.014
	6	22000	150	0.007	22000	125	0.006	22000	100	0.005	20000	75	0.004
	8	18000	100	0.005	18000	75	0.005	18000	75	0.004	20000	50	0.003
0.8	**4**	32000	400	0.057	32000	350	0.053	32000	300	0.044	25000	200	0.035
	6	26000	300	0.036	26000	250	0.034	26000	200	0.028	21000	150	0.022
	8	22000	200	0.026	22000	150	0.024	22000	125	0.020	18000	100	0.016
	10	22000	150	0.01	22000	100	0.01	22000	75	0.008	18000	75	0.006
1.0	**4**	29000	800	0.08	27000	600	0.08	26000	400	0.07	20000	300	0.05
	6	29000	800	0.07	27000	600	0.07	26000	400	0.06	20000	300	0.04
	8	24000	600	0.05	23000	400	0.04	22000	300	0.04	18000	200	0.03
	10	20000	500	0.03	19000	400	0.03	18000	300	0.03	15000	200	0.02
	12	20000	300	0.02	19000	200	0.02	18000	175	0.02	15000	150	0.01
	14	18000	200	0.015	15000	150	0.01	15000	125	0.01	12000	100	0.008
1.2	**6**	25000	800	0.09	23000	600	0.08	22000	400	0.07	17000	300	0.05
	8	21000	600	0.07	20000	400	0.07	19000	300	0.05	14000	200	0.04
	10	21000	600	0.06	20000	400	0.05	19000	300	0.04	14000	200	0.03
	12	18000	400	0.04	17000	300	0.04	16000	200	0.03	11000	150	0.02
1.5	**6**	20000	800	0.15	18000	600	0.14	18000	400	0.11	14000	300	0.09
	8	19000	600	0.11	16000	400	0.10	15000	300	0.08	12000	200	0.07
	10	19000	600	0.09	16000	400	0.08	15000	300	0.06	12000	200	0.05
	12	19000	600	0.07	16000	400	0.06	15000	300	0.05	12000	200	0.04
	14	19000	500	0.06	16000	350	0.05	15000	250	0.04	12000	180	0.03
2.0	**6**	16000	800	0.34	15000	600	0.31	14000	450	0.26	11000	350	0.21
	8	16000	800	0.29	15000	600	0.26	14000	450	0.22	11000	350	0.18
	10	14000	600	0.26	1300	400	0.24	12000	300	0.20	9000	250	0.16
	12	14000	600	0.14	13000	400	0.13	12000	300	0.11	9000	250	0.09
	14	14000	500	0.10	13000	350	0.11	12000	250	0.09	9000	200	0.07
	16	14000	400	0.08	13000	300	0.08	12000	200	0.07	9000	150	0.06

max. cutting depth

max Schnitttiefe



Ap (Once cutting depth)
(Einzelne Schnitttiefe)

B

Solid Carbide end mills
Vollhartmetallschaftfräser

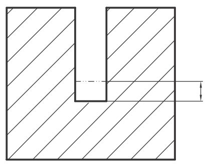
Recommended cutting data · Empfohlene Schnittdaten

GM-2EP

Workpiece material Werkstück-material		Cast iron, Carbon steel, Alloy steel Kohlenstoffstahl Leg. Stahl ~750N/mm²			Carbon steel, Alloy steel Kohlenstoffstahl Leg. Stahl ~30HRC			Pre-hardened steel, Quenched and tempered steel Vergüteter Stahl ~40HRC			Stainless steel Rostfreier Stahl		
Diameter Ø Durchmesser (mm)	Effective length Effektive Länge (mm)	Rotating Drehzahl (min^{-1})	Feed Vorschub (mm/min)	Ap (mm)	Rotating Drehzahl (min^{-1})	Feed Vorschub (mm/min)	Ap (mm)	Rotating Drehzahl (min^{-1})	Feed Vorschub (mm/min)	Ap (mm)	Rotating Drehzahl (min^{-1})	Feed Vorschub (mm/min)	Ap (mm)
2.5	**8**	13000	800	0.42	12000	600	0.39	11000	450	0.33	9000	350	0.26
	10	13000	800	0.36	12000	600	0.33	11000	450	0.28	9000	350	0.22
	12	13000	800	0.24	12000	600	0.23	11000	450	0.19	9000	350	0.15
	14	12000	600	0.18	10000	400	0.17	9000	300	0.14	7000	250	0.11
	16	12000	600	0.13	10000	400	0.12	9000	300	0.09	7000	250	0.08
	18	12000	600	0.11	10000	350	0.10	9000	250	0.07	7000	200	0.07
	20	12000	600	0.09	10000	350	0.08	9000	250	0.05	7000	200	0.05
3.0	**6**	11000	800	0.42	10000	600	0.39	10000	450	0.32	8000	350	0.27
	8	11000	800	0.39	10000	600	0.36	10000	450	0.30	8000	350	0.24
	10	11000	800	0.31	10000	600	0.29	10000	450	0.24	8000	350	0.19
	12	11000	800	0.29	10000	500	0.27	10000	400	0.22	8000	300	0.16
	14	11000	600	0.27	10000	450	0.25	10000	350	0.20	8000	250	0.15
	16	10000	600	0.22	10000	400	0.20	9000	300	0.17	6000	200	0.13
	18	10000	600	0.16	10000	400	0.14	9000	300	0.12	6000	200	0.10
	20	10000	500	0.12	10000	350	0.10	9000	250	0.08	6000	175	0.07
4.0	**12**	8000	800	0.42	7000	600	0.38	7000	450	0.32	6000	350	0.26
	16	8000	800	0.39	7000	500	0.35	7000	400	0.30	6000	300	0.24
	20	7000	600	0.34	7000	400	0.30	6000	350	0.27	5000	250	0.20
	25	7000	600	0.30	7000	400	0.27	6000	350	0.24	5000	250	0.15
5.0	**16**	6000	800	0.49	6000	500	0.45	5000	400	0.38	5000	300	0.30
	25	5000	800	0.45	5000	400	0.42	5000	350	0.35	5000	250	0.25

Max. cutting depth

max Schnitttiefe



Ap (Once cutting depth)
(Einzelne Schnitttiefe)

1. Please select high precise machine and tool holder.
2. Please use air blow or MQL (minimum oil mist cooling).
3. Make overhang as short as possible if no interference.
4. Reduce feed correspondingly when rotating speed is low.

1. Bitte präzise Maschine und Werkzeugaufnahmen wählen
2. Als Kühlmittel bitte Luft oder MQL (Minimalmengen) verwenden.
3. Werkzeugauskragung so kurz wie möglich wählen.
4. Bitte Vorschub entsprechend reduzieren, wenn die Drehzahlen niedrig sind.