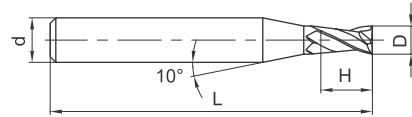
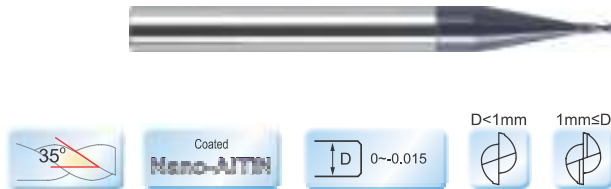


Milling · Fräsen

Solid Carbide end mills · Vollhartmetallschaftfräser

HM-2ES series machining high hardness steel · HM-2ES Serie für die Hartbearbeitung

2-flute tiny diameter end mills with straight shank
2-Schneiden Mirco-Fräser mit Zylinderschaft



Type Typ	Dimension(mm) Abmessungen				Teeth Zähne Z	Grade Sorte KMG 555
	D	d	H	L		
HM-2ES-D0.3	0.3	4.0	0.6	50	2	●
HM-2ES-D0.4	0.4	4.0	0.8	50	2	●
HM-2ES-D0.5	0.5	4.0	1.0	50	2	●
HM-2ES-D0.6	0.6	4.0	1.2	50	2	●
HM-2ES-D0.7	0.7	4.0	1.4	50	2	●
HM-2ES-D0.8	0.8	4.0	1.6	50	2	●
HM-2ES-D0.9	0.9	4.0	1.8	50	2	●
HM-2ES-D1.0	1.0	4.0	2.0	50	2	●
HM-2ES-D1.1	1.1	4.0	2.0	50	2	●
HM-2ES-D1.2	1.2	4.0	2.5	50	2	●
HM-2ES-D1.3	1.3	4.0	2.5	50	2	●
HM-2ES-D1.4	1.4	4.0	3.0	50	2	●
HM-2ES-D1.5	1.5	4.0	3.0	50	2	●
HM-2ES-D1.6	1.6	4.0	3.5	50	2	●
HM-2ES-D1.7	1.7	4.0	3.5	50	2	●
HM-2ES-D1.8	1.8	4.0	4.0	50	2	●
HM-2ES-D1.9	1.9	4.0	4.0	50	2	●
HM-2ES-D2.0	2.0	4.0	4.0	50	2	●
HM-2ES-D2.1	2.1	4.0	4.0	50	2	●
HM-2ES-D2.2	2.2	4.0	4.5	50	2	●
HM-2ES-D2.3	2.3	4.0	4.5	50	2	●
HM-2ES-D2.4	2.4	4.0	5.0	50	2	●
HM-2ES-D2.5	2.5	4.0	5.0	50	2	●
HM-2ES-D2.6	2.6	4.0	5.0	50	2	●
HM-2ES-D2.7	2.7	4.0	5.5	50	2	●
HM-2ES-D2.8	2.8	4.0	5.5	50	2	●
HM-2ES-D2.9	2.9	4.0	6.0	50	2	●
HM-2ES-D3.0	3.0	4.0	6.0	50	2	●

Material Overview · Material Übersicht

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

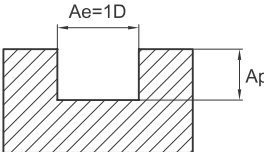
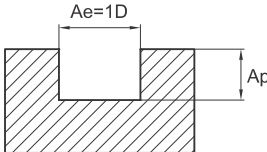
Workpiece material Werkstückstoff											
Carbon steel Kohlenstoff Stahl	Alloy steel Legierter Stahl	Quenched and tempered steel · Vergüteter Stahl		Hardened steel · Gehärteter Stahl		Stainless steel · Rostfreier Stahl	Cast iron, Nodular cast iron Grauguss GGG	Copper alloy Kupfer Leg	Aluminum alloy Alu Leg	Titanium alloy Titan Leg	Heat resist alloy warmfeste Leg
		~40HRC	~50HRC	~60HRC	~68HRC						
			✓	✓	✓		✓				

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

KMG555

Recommended cutting data · Empfohlene Schnittdaten

HM-2ES

Workpiece material Werkstück-material	Pre-hardened steel, Hardened steel Vergüteter Stahl, Gehärteter Stahl 40~50HRC		Hardened steel Gehärteter Stahl 50~60HRC																	
Diameter Ø Durchmesser (mm)	Rotating Drehzahl (min ⁻¹)	Feed Vorschub (mm/min)	Rotating Drehzahl (min ⁻¹)	Feed Vorschub (mm/min)																
0.3	32000	150	25000	120																
0.4	32000	200	25000	160																
0.5	21000	400	17000	300																
0.6	21000	480	17000	380																
0.7	20000	520	14000	360																
0.8	20000	560	14000	400																
0.9	17000	560	12000	400																
1.0	17000	640	12000	450																
1.5	12000	800	8000	530																
2.0	9000	800	6000	500																
2.5	8000	720	5000	420																
3.0	7000	640	5000	450																
Max. cutting depth max Schnitttiefe	 <table><tr><th colspan="2">Milling slot · Nutenfräsen</th></tr><tr><th>Ø</th><th>Ap</th></tr><tr><td>D<Ø1</td><td>0.02D</td></tr><tr><td>Ø1≤D≤Ø3</td><td>0.05D</td></tr></table>		Milling slot · Nutenfräsen		Ø	Ap	D<Ø1	0.02D	Ø1≤D≤Ø3	0.05D	 <table><tr><th colspan="2">Milling slot · Nutenfräsen</th></tr><tr><th>Ø</th><th>Ap</th></tr><tr><td>D<Ø1</td><td>0.01D</td></tr><tr><td>Ø1≤D≤Ø3</td><td>0.02D</td></tr></table>		Milling slot · Nutenfräsen		Ø	Ap	D<Ø1	0.01D	Ø1≤D≤Ø3	0.02D
	Milling slot · Nutenfräsen																			
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Ø	Ap																			
D<Ø1	0.01D																			
Ø1≤D≤Ø3	0.02D																			

1. Please select high precise machine and tool holder.
2. Please use air blow or cutting liquid with high mist retardant property.
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. Bitte Luftkühlung oder MQL (Minimalmenge) benutzen.
3. Empfohlene Fräsmethode: Gleichlaufräsen.
4. Bitte Vorschub entsprechend reduzieren, wenn die Drehzahlen niedrig sind.