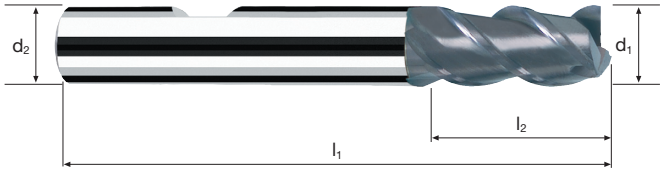
Zylindrische Fräser

Glattschneidig, normale Ausführung

HM MG10 | **λ 45° γ 15°**

45°



Schruppen

Schlichten

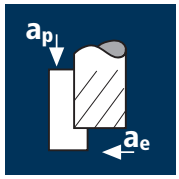
Rm < 850	**Rm** 850-1100	**Rm** 1100-1300					**Inox** Stainless		**GG(G) Copper**

Beispiel: **Bestell-Nr.** — Beschichtung **P** | Artikel-Nr. **5330** | ø-Code **138**

ø Code	d_1 e8	d_2 h6	l_1	l_2	45°	α	z	5330	POLYCHROM P5330
								5230	P5230
138 *	2.0	2.0	42	6	0.10	0.0°	3	●	●
140	2.0	6.0	54	6	0.10	8.0°	3	●	●
158 *	2.5	2.5	42	7	0.10	0.0°	3	●	●
160	2.5	6.0	54	6	0.10	7.5°	3	●	●
178 *	3.0	3.0	45	7	0.10	0.0°	3	●	●
180	3.0	6.0	57	7	0.10	6.0°	3	●	●
198 *	3.5	3.5	50	7	0.10	0.0°	3	●	●
200	3.5	6.0	57	7	0.10	5.5°	3	●	●
218 *	4.0	4.0	50	8	0.10	0.0°	3	●	●
220	4.0	6.0	57	8	0.10	4.5°	3	●	●
238 *	4.5	4.5	50	8	0.15	0.0°	3	●	●
240	4.5	6.0	57	8	0.10	3.5°	3	●	●
258 *	5.0	5.0	50	10	0.15	0.0°	3	●	●
260	5.0	6.0	57	10	0.15	2.5°	3	●	●
278 *	5.5	5.5	57	10	0.15	0.0°	3	●	●
280	5.5	6.0	57	10	0.15	1.5°	3	●	●
300	6.0	6.0	57	10	0.15	0.0°	3	●	●
322	6.5	8.0	63	13	0.15	2.5°	3	●	●
331	7.0	8.0	63	13	0.15	2.0°	3	●	●
362	7.5	8.0	63	16	0.15	1.0°	3	●	●
391	8.0	8.0	63	16	0.15	0.0°	3	●	●

* nur ohne Seitenspannfläche

Anwendung



Werkstoff	d1 [mm]	z	v_c [m/min]	f_z [mm]	a_p [mm]	a_e [mm]	n [min⁻¹]	v_f [mm/min]	Q [cm³/min]
Stahl < 850 N/mm²	2.0	3	115	0.005	3.0	0.2	18305	275	0.2
	2.5	3	115	0.010	3.8	0.3	14645	440	0.4
	3.0	3	115	0.010	4.5	0.3	12200	365	0.5
	3.5	3	115	0.010	5.3	0.4	10460	315	0.6
	4.0	3	115	0.015	6.0	0.4	9150	410	1.0
	5.0	3	115	0.015	7.5	0.5	7320	330	1.2
	6.0	3	115	0.020	9.0	0.6	6100	365	2.0
	7.0	3	115	0.025	10.5	0.7	5230	390	2.9
	8.0	3	115	0.025	12.0	0.8	4575	345	3.3
Stahl 850 - 1100 N/mm²	2.0	3	75	0.005	3.0	0.2	11935	180	0.1
	2.5	3	75	0.010	3.8	0.3	9550	285	0.3
	3.0	3	75	0.010	4.5	0.3	7960	240	0.3
	3.5	3	75	0.010	5.3	0.4	6820	205	0.4
	4.0	3	75	0.015	6.0	0.4	5970	270	0.6
	5.0	3	75	0.015	7.5	0.5	4775	215	0.8
	6.0	3	75	0.020	9.0	0.6	3980	240	1.3
	7.0	3	75	0.025	10.5	0.7	3410	255	1.9
	8.0	3	75	0.025	12.0	0.8	2985	225	2.2
Nichtrostender Stahl [Cr-Ni/1.4301]	2.0	3	60	0.005	3.0	0.2	9550	145	0.1
	2.5	3	60	0.010	3.8	0.3	7640	230	0.2
	3.0	3	60	0.010	4.5	0.3	6365	190	0.3
	3.5	3	60	0.010	5.3	0.4	5455	165	0.3
	4.0	3	60	0.015	6.0	0.4	4775	215	0.5
	5.0	3	60	0.015	7.5	0.5	3820	170	0.6
	6.0	3	60	0.020	9.0	0.6	3185	190	1.0
	7.0	3	60	0.025	10.5	0.7	2730	205	1.5
	8.0	3	60	0.025	12.0	0.8	2385	180	1.7
Gusseisen GG(G)	2.0	3	150	0.005	3.0	0.2	23875	360	0.2
	2.5	3	150	0.010	3.8	0.3	19100	575	0.5
	3.0	3	150	0.010	4.5	0.3	15915	475	0.6
	3.5	3	150	0.010	5.3	0.4	13640	410	0.8
	4.0	3	150	0.015	6.0	0.4	11935	535	1.3
	5.0	3	150	0.015	7.5	0.5	9550	430	1.6
	6.0	3	150	0.020	9.0	0.6	7960	480	2.6
	7.0	3	150	0.025	10.5	0.7	6820	510	3.7
	8.0	3	150	0.025	12.0	0.8	5970	450	4.3

Anwendung

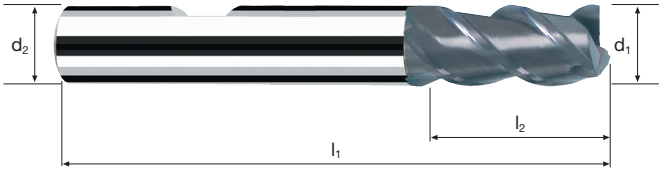
Werkstoff	d1 [mm]	z	v_c [m/min]	f_z [mm]	a_p [mm]	a_e [mm]	n [min⁻¹]	v_f [mm/min]	Q [cm³/min]
Stahl < 850 N/mm²	2.0	3	85	0.005	1.0	2	13530	205	0.5
	2.5	3	85	0.005	1.3	3	10825	160	0.5
	3.0	3	85	0.010	1.5	3	9020	270	1.0
	3.5	3	85	0.010	1.8	4	7730	230	1.5
	4.0	3	85	0.010	2.0	4	6765	205	1.5
	5.0	3	85	0.015	2.5	5	5410	245	3.0
	6.0	3	85	0.015	3.0	6	4510	205	3.5
	7.0	3	85	0.020	3.5	7	3865	230	5.5
	8.0	3	85	0.020	4.0	8	3380	205	6.5
Stahl 850 - 1100 N/mm²	2.0	3	60	0.005	1.0	2	9550	145	0.5
	2.5	3	60	0.005	1.3	3	7640	115	0.5
	3.0	3	60	0.010	1.5	3	6365	190	1.0
	3.5	3	60	0.010	1.8	4	5455	165	1.0
	4.0	3	60	0.010	2.0	4	4775	145	1.0
	5.0	3	60	0.015	2.5	5	3820	170	2.0
	6.0	3	60	0.015	3.0	6	3185	145	2.5
	7.0	3	60	0.020	3.5	7	2730	165	4.0
	8.0	3	60	0.020	4.0	8	2385	145	4.5
Nichtrostender Stahl [Cr-Ni/1.4301]	2.0	3	40	0.005	1.0	2	6365	95	0.2
	2.5	3	40	0.005	1.3	3	5095	75	0.2
	3.0	3	40	0.010	1.5	3	4245	125	0.5
	3.5	3	40	0.010	1.8	4	3640	110	0.5
	4.0	3	40	0.010	2.0	4	3185	95	1.0
	5.0	3	40	0.015	2.5	5	2545	115	1.5
	6.0	3	40	0.015	3.0	6	2120	95	1.5
	7.0	3	40	0.020	3.5	7	1820	110	2.5
	8.0	3	40	0.020	4.0	8	1590	95	3.0
Gusseisen GG(G)	2.0	3	105	0.005	1.0	2	16710	250	0.5
	2.5	3	105	0.010	1.3	3	13370	400	1.5
	3.0	3	105	0.010	1.5	3	11140	335	1.5
	3.5	3	105	0.010	1.8	4	9550	285	1.5
	4.0	3	105	0.010	2.0	4	8355	250	2.0
	5.0	3	105	0.015	2.5	5	6685	300	4.0
	6.0	3	105	0.020	3.0	6	5570	335	6.0
	7.0	3	105	0.020	3.5	7	4775	285	7.0
	8.0	3	105	0.025	4.0	8	4180	315	10.0

Zylindrische Fräser

Glattschneidig, normale Ausführung

HM MG10 | **λ 45° γ 15°**

45°



Schruppen

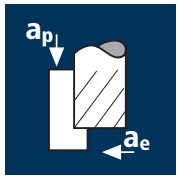
Schlichten

Rm < 850	**Rm** 850-1100	**Rm** 1100-1300					**Inox** Stainless		**GG(G) Copper**

Beispiel: **Bestell-Nr.** — Beschichtung: **P** | Artikel-Nr.: **5330** | ø-Code: **410**

ø Code	d_1 e8	d_2 h6	l_1	l_2	45°	α	z	**5330**	**POLYCHROM P5330**
								5230	**P5230**
410	8.5	10.0	72	16	0.20	2.5°	3	●	●
420	9.0	10.0	72	16	0.20	1.5°	3	●	●
430	9.5	10.0	72	19	0.20	1.0°	3	●	●
450	10.0	10.0	72	19	0.20	0.0°	3	●	●
470	11.0	12.0	83	22	0.20	1.5°	3	●	●
501	12.0	12.0	83	22	0.20	0.0°	3	●	●
540	13.0	14.0	83	22	0.20	1.5°	3	●	●
570	14.0	14.0	83	22	0.20	0.0°	3	●	●
581	15.0	16.0	92	26	0.20	1.0°	3	●	●
610	16.0	16.0	92	26	0.20	0.0°	3	●	●
640	18.0	18.0	92	26	0.20	0.0°	3	●	●
682	20.0	20.0	104	32	0.20	0.0°	3	●	●
710	22.0	20.0	104	38	0.25	0.0°	3	●	●
772	25.0	25.0	121	45	0.25	0.0°	3	●	●

Anwendung



Werkstoff	d1 [mm]	z	v_c [m/min]	f_z [mm]	a_p [mm]	a_e [mm]	n [min⁻¹]	v_f [mm/min]	Q [cm³/min]
Stahl < 850 N/mm²	9	3	115	0.030	13.5	0.9	4065	365	4.5
	10	3	115	0.035	15.0	1.0	3660	385	6.0
	12	3	115	0.040	18.0	1.2	3050	365	8.0
	14	3	115	0.045	21.0	1.4	2615	355	10.5
	16	3	115	0.055	24.0	1.6	2290	380	14.5
	18	3	115	0.060	27.0	1.8	2035	365	17.5
	20	3	115	0.065	30.0	2.0	1830	355	21.5
	22	3	115	0.075	33.0	2.2	1665	375	27.0
	25	3	115	0.085	37.5	2.5	1465	375	35.0
Stahl 850 - 1100 N/mm²	9	3	75	0.030	13.5	0.9	2655	240	3.0
	10	3	75	0.035	15.0	1.0	2385	250	4.0
	12	3	75	0.040	18.0	1.2	1990	240	5.0
	14	3	75	0.045	21.0	1.4	1705	230	7.0
	16	3	75	0.055	24.0	1.6	1490	245	9.5
	18	3	75	0.060	27.0	1.8	1325	240	11.5
	20	3	75	0.065	30.0	2.0	1195	235	14.0
	22	3	75	0.075	33.0	2.2	1085	245	18.0
	25	3	75	0.085	37.5	2.5	955	245	23.0
Nichtrostender Stahl [Cr-Ni/1.4301]	9	3	60	0.030	13.5	0.9	2120	190	2.5
	10	3	60	0.035	15.0	1.0	1910	200	3.0
	12	3	60	0.040	18.0	1.2	1590	190	4.0
	14	3	60	0.045	21.0	1.4	1365	185	5.5
	16	3	60	0.055	24.0	1.6	1195	195	7.5
	18	3	60	0.060	27.0	1.8	1060	190	9.0
	20	3	60	0.065	30.0	2.0	955	185	11.0
	22	3	60	0.075	33.0	2.2	870	195	14.0
	25	3	60	0.085	37.5	2.5	765	195	18.5
Gusseisen GG(G)	9	3	150	0.030	13.5	0.9	5305	475	6.0
	10	3	150	0.035	15.0	1.0	4775	500	7.5
	12	3	150	0.040	18.0	1.2	3980	480	10.5
	14	3	150	0.045	21.0	1.4	3410	460	13.5
	16	3	150	0.055	24.0	1.6	2985	495	19.0
	18	3	150	0.060	27.0	1.8	2655	480	23.5
	20	3	150	0.065	30.0	2.0	2385	465	28.0
	22	3	150	0.075	33.0	2.2	2170	490	35.5
	25	3	150	0.085	37.5	2.5	1910	485	45.5

Anwendung

Werkstoff	d1 [mm]	z	v_c [m/min]	f_z [mm]	a_p [mm]	a_e [mm]	n [min⁻¹]	v_f [mm/min]	Q [cm³/min]
Stahl < 850 N/mm²	9	3	85	0.025	4.5	9	3005	225	9.0
	10	3	85	0.030	5.0	10	2705	245	12.5
	12	3	85	0.035	6.0	12	2255	235	17.0
	14	3	85	0.040	7.0	14	1935	230	22.5
	16	3	85	0.045	8.0	16	1690	230	29.5
	18	3	85	0.050	9.0	18	1505	225	36.5
	20	3	85	0.055	10.0	20	1355	225	45.0
	22	3	85	0.060	11.0	22	1230	220	53.0
	25	3	85	0.070	12.5	25	1080	225	70.5
Stahl 850 - 1100 N/mm²	9	3	60	0.025	4.5	9	2120	160	6.5
	10	3	60	0.025	5.0	10	1910	145	7.5
	12	3	60	0.030	6.0	12	1590	145	10.5
	14	3	60	0.035	7.0	14	1365	145	14.0
	16	3	60	0.040	8.0	16	1195	145	18.5
	18	3	60	0.045	9.0	18	1060	145	23.5
	20	3	60	0.050	10.0	20	955	145	29.0
	22	3	60	0.055	11.0	22	870	145	35.0
	25	3	60	0.065	12.5	25	765	150	47.0
Nichtrostender Stahl [Cr-Ni/1.4301]	9	3	40	0.025	4.5	9	1415	105	4.5
	10	3	40	0.025	5.0	10	1275	95	5.0
	12	3	40	0.030	6.0	12	1060	95	7.0
	14	3	40	0.035	7.0	14	910	95	9.5
	16	3	40	0.040	8.0	16	795	95	12.0
	18	3	40	0.045	9.0	18	705	95	15.5
	20	3	40	0.050	10.0	20	635	95	19.0
	22	3	40	0.055	11.0	22	580	95	23.0
	25	3	40	0.065	12.5	25	510	100	31.5
Gusseisen GG(G)	9	3	105	0.030	4.5	9	3715	335	13.5
	10	3	105	0.030	5.0	10	3340	300	15.0
	12	3	105	0.035	6.0	12	2785	290	21.0
	14	3	105	0.045	7.0	14	2385	320	31.5
	16	3	105	0.050	8.0	16	2090	315	40.5
	18	3	105	0.055	9.0	18	1855	305	49.5
	20	3	105	0.060	10.0	20	1670	300	60.0
	22	3	105	0.065	11.0	22	1520	295	71.5
	25	3	105	0.075	12.5	25	1335	300	94.0