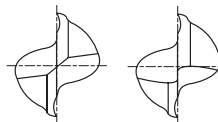


PLAIN SHANK
GLATTER ZYLINDERSCHAFT

FLAT SHANK
SEITLICHE MITNAHMEFLÄCHEN

CARBIDE, 2 FLUTE SHORT LENGTH
VOLLHARTMETALL, 2 SCHNEIDEN KURZ



up to Ø3mm over Ø3mm



P.1113, 1114

Unit : mm

EDP No.	ITEM No.	EDP No.	ITEM No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
PLAIN	PLAIN	FLAT	FLAT	h10	h6		
E5424010	T2GRS-010X	—	—	1.0	4	3	40
E5424015	T2GRS-015X	—	—	1.5	4	4.5	40
E5424020	T2GRS-020Z	—	—	2.0	2	8	32
E5424025	T2GRS-025Z	—	—	2.5	2.5	8	32
E5424030	T2GRS-030Z	—	—	3.0	3	12	32
E5424035	T2GRS-035Z	—	—	3.5	3.5	12	32
E5424040	T2GRS-040Z	—	—	4.0	4	12	40
E5424045	T2GRS-045Z	—	—	4.5	4.5	14	50
E5424050	T2GRS-050Z	—	—	5.0	5	14	50
E5424055	T2GRS-055Z	—	—	5.5	5.5	16	50
E5424060	T2GRS-060Z	E5416060	T2GRS-060ZF	6.0	6	16	50
E5424070	T2GRS-070Z	—	—	7.0	7	20	60
E5424080	T2GRS-080Z	E5416080	T2GRS-080ZF	8.0	8	20	60
E5424090	T2GRS-090Z	—	—	9.0	9	20	60
E5424100	T2GRS-100Z	E5416100	T2GRS-100ZF	10.0	10	22	70
E5424120	T2GRS-120Z	E5416120	T2GRS-120ZF	12.0	12	22	70
E5424140	T2GRS-140Z	E5416140	T2GRS-140ZF	14.0	14	25	75
E5424160	T2GRS-160Z	E5416160	T2GRS-160ZF	16.0	16	25	75
E5424200	T2GRS-200Z	E5416200	T2GRS-200ZF	20.0	20	32	100

► TiN, TiCN-COATING & TiAlN-COATING are available on your request.

Tolerances according to DIN 7160 & 7161
Toleranzen nach DIN 7160 & 7161

		Tolerance range in μm / Toleranzwerte in μm				
		Nominal-Diameter in mm / Nennmaßbereich in mm				
		from 1 to 3 von 1 bis 3	over 3 to 6 über 3 bis 6	over 6 to 10 über 6 bis 10	over 10 to 18 über 10 bis 18	over 18 to 30 über 18 bis 30
h10		0 - 40	0 - 48	0 - 58	0 - 70	0 - 84
h6		0 - 6	0 - 8	0 - 9	0 - 11	0 - 13

◎ : Excellent ○ : Good

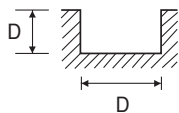
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel	Acrylic	CFRP
~HB225	HB225~325	HRC30~40	HRc40~45	HRc45~55	HRc55~70									
◎	◎	◎				○		○	○	○				

CARBIDE, 2 FLUTE - SLOTTING
VOLLHARTMETALL, 2 SCHNEIDEN - NUTENFRÄSEN

E5424, E5416, E5444, E5527, E5445, E5452 SERIES

MATERIAL	CARBON STEELS ALLOY STEELS TOOL STEELS				CARBON STEELS ALLOY STEELS TOOL STEELS				CARBON STEELS ALLOY STEELS TOOL STEELS				STAINLESS STEELS TITANIUM ALLOYS			
	~ HRc 20				HRc 20 ~ HRc 30				HRc 30 ~ HRc 40							
STRENGTH	500 ~ 800N/mm ²				800 ~ 1000N/mm ²				1000 ~ 1300N/mm ²							
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
2.0	5500	80	35	0.007	4800	70	30	0.007	4000	55	25	0.007	8000	65	50	0.004
3.0	3700	90	35	0.012	3200	80	30	0.013	2600	60	25	0.012	5300	65	50	0.006
4.0	2800	90	35	0.016	2400	80	30	0.017	2000	60	25	0.015	4000	65	50	0.008
5.0	2200	90	35	0.020	1900	80	30	0.021	1600	60	25	0.019	3200	65	50	0.010
6.0	1800	90	35	0.025	1600	80	30	0.025	1300	60	25	0.023	2600	65	50	0.013
8.0	1400	90	35	0.032	1200	80	30	0.033	1000	60	25	0.030	2000	65	50	0.016
10.0	1100	90	35	0.041	950	80	30	0.042	800	60	25	0.038	1600	65	50	0.020
12.0	900	90	35	0.050	800	80	30	0.050	660	60	25	0.045	1300	65	50	0.025
14.0	800	90	35	0.056	700	80	30	0.057	570	60	25	0.053	1100	65	50	0.030
16.0	700	100	35	0.071	600	85	30	0.071	500	75	25	0.075	1000	75	50	0.038
20.0	550	100	35	0.091	480	85	30	0.089	400	75	25	0.094	800	80	50	0.050

MATERIAL	CAST IRON				ALUMINUM ALLOYS				COPPER. BRASS NON-FERROUS METALS			
	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
2.0	6500	150	40	0.012	16000	320	100	0.010	12000	240	75	0.010
3.0	4200	150	40	0.018	11000	320	105	0.015	8000	240	75	0.015
4.0	3200	150	40	0.023	8000	320	100	0.020	6000	240	75	0.020
5.0	2500	150	40	0.030	6400	320	100	0.025	4800	240	75	0.025
6.0	2100	180	40	0.043	5300	340	100	0.032	4000	260	75	0.033
8.0	1600	190	40	0.059	4000	340	100	0.043	3000	260	75	0.043
10.0	1300	200	40	0.077	3200	340	100	0.053	2400	260	75	0.054
12.0	1000	210	40	0.105	2600	340	100	0.065	2000	260	75	0.065
14.0	900	220	40	0.122	2300	340	100	0.074	1700	260	75	0.076
16.0	800	225	40	0.141	2000	340	100	0.085	1500	260	75	0.087
20.0	640	240	40	0.188	1600	340	100	0.106	1200	260	75	0.108



※ The FEED, in long & extra long types, should be reduced by around 50%

RPM = rev./min.
FEED = mm/min.
Vc = m/min.
fz = mm/t



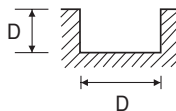
RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDKONDITIONEN

CARBIDE, 2 FLUTE TiAlN-COATED - SLOTTING
VOLLHARTMETALL, 2 SCHNEIDEN TiAlN-BESCHICHTET - NUTENFRÄSEN

E5424, E5416, E5444, E5527, E5445, E5452 SERIES

MATERIAL	CARBON STEELS ALLOY STEELS TOOL STEELS				CARBON STEELS ALLOY STEELS TOOL STEELS				CARBON STEELS ALLOY STEELS TOOL STEELS				STAINLESS STEELS TITANIUM ALLOYS			
	~ HRc 20				HRc 20 ~ HRc 30				HRc 30 ~ HRc 40							
STRENGTH	500 ~ 800N/mm ²				800 ~ 1000N/mm ²				1000 ~ 1300N/mm ²							
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
2.0	7700	110	50	0.007	6720	100	40	0.007	5600	75	35	0.007	11200	90	70	0.004
3.0	5180	125	50	0.012	4480	110	40	0.012	3640	85	35	0.012	7420	90	70	0.006
4.0	3920	125	50	0.016	3360	110	40	0.016	2800	85	35	0.015	5600	90	70	0.008
5.0	3080	125	50	0.020	2660	110	40	0.021	2240	85	35	0.019	4480	90	70	0.010
6.0	2520	125	50	0.025	2240	110	40	0.025	1820	85	35	0.023	3640	90	70	0.012
8.0	1960	125	50	0.032	1680	110	40	0.033	1400	85	35	0.030	2800	90	70	0.016
10.0	1540	125	50	0.041	1330	110	40	0.041	1120	85	35	0.038	2240	90	70	0.020
12.0	1260	125	50	0.050	1120	110	40	0.049	924	85	35	0.046	1820	90	70	0.025
14.0	1120	125	50	0.056	980	110	40	0.056	798	85	35	0.053	1540	90	70	0.029
16.0	980	140	50	0.071	840	120	40	0.071	700	105	35	0.075	1400	105	70	0.038
20.0	770	140	50	0.091	672	120	40	0.089	560	105	35	0.094	1120	110	70	0.049

MATERIAL	CAST IRON				ALUMINUM ALLOYS				COPPER. BRASS NON-FERROUS METALS			
	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
2.0	9100	210	55	0.012	22400	450	140	0.010	16800	335	105	0.010
3.0	5880	210	55	0.018	15400	450	145	0.015	11200	335	105	0.015
4.0	4480	210	55	0.023	11200	450	140	0.020	8400	335	105	0.020
5.0	3500	210	55	0.030	8960	450	140	0.025	6720	335	105	0.025
6.0	2940	250	55	0.043	7420	475	140	0.032	5600	365	105	0.033
8.0	2240	265	55	0.059	5600	475	140	0.042	4200	365	105	0.043
10.0	1820	280	55	0.077	4480	475	140	0.053	3360	365	105	0.054
12.0	1400	295	55	0.105	3640	475	135	0.065	2800	365	105	0.065
14.0	1260	310	55	0.123	3220	475	140	0.074	2380	365	105	0.077
16.0	1120	315	55	0.141	2800	475	140	0.085	2100	365	105	0.087
20.0	900	335	55	0.186	2240	475	140	0.106	1680	365	105	0.109



※ The FEED, in long & extra long types, should be reduced by around 50%

RPM = rev./min.
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