

CARBIDE, 4 FLUTE SHORT LENGTH

VOLLHARTMETALL, 4 SCHNEIDEN KURZ



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		
E5432020	T4GRC-020Z	—	—	2.0	2	8	32
E5432025	T4GRC-025Z	—	—	2.5	2.5	8	32
E5432030	T4GRC-030Z	—	—	3.0	3	12	32
E5432035	T4GRC-035Z	—	—	3.5	3.5	12	32
E5432040	T4GRC-040Z	—	—	4.0	4	12	40
E5432045	T4GRC-045Z	—	—	4.5	4.5	14	50
E5432050	T4GRC-050Z	—	—	5.0	5	14	50
E5432055	T4GRC-055Z	—	—	5.5	5.5	16	50
E5432060	T4GRC-060Z	E5595060	T4GRC-060ZF	6.0	6	16	50
E5432070	T4GRC-070Z	—	—	7.0	7	20	60
E5432080	T4GRC-080Z	E5595080	T4GRC-080ZF	8.0	8	20	60
E5432090	T4GRC-090Z	—	—	9.0	9	20	60
E5432100	T4GRC-100Z	E5595100	T4GRC-100ZF	10.0	10	22	70
E5432120	T4GRC-120Z	E5595120	T4GRC-120ZF	12.0	12	22	70
E5432140	T4GRC-140Z	E5595140	T4GRC-140ZF	14.0	14	25	75
E5432160	T4GRC-160Z	E5595160	T4GRC-160ZF	16.0	16	25	75
E5432200	T4GRC-200Z	E5595200	T4GRC-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

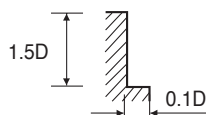
◎ : Excellent ○ : Good

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, 4 FLUTE - SIDE CUTTING
VOLLHARTMETALL, 3 SCHNEIDEN - SEITENFRÄSEN
E5432, E5595, E5448, E5449, E5540, E5453 SERIES

MATERIAL	CARBON STEELS ALLOY STEELS TOOL STEELS				CARBON STEELS ALLOY STEELS TOOL STEELS				CARBON STEELS ALLOY STEELS TOOL STEELS				STAINLESS STEELS TITANIUM ALLOYS			
HARDNESS	~ 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	240	35	0.011	4800	210	30	0.011	4000	160	25	0.010	8000	200	50	0.006
3.0	3700	270	35	0.018	3200	240	30	0.019	2600	180	25	0.017	5300	200	50	0.009
4.0	2800	270	35	0.024	2400	240	30	0.025	2000	180	25	0.023	4000	200	50	0.013
5.0	2200	270	35	0.031	1900	240	30	0.032	1600	180	25	0.028	3200	200	50	0.016
6.0	1800	270	35	0.038	1600	240	30	0.038	1300	180	25	0.035	2600	200	50	0.019
8.0	1400	270	35	0.048	1200	240	30	0.050	1000	180	25	0.045	2000	200	50	0.025
10.0	1100	270	35	0.061	950	240	30	0.063	800	180	25	0.056	1600	200	50	0.031
12.0	900	270	35	0.075	800	240	30	0.075	660	180	25	0.068	1300	200	50	0.038
14.0	800	270	35	0.084	700	240	30	0.086	570	180	25	0.079	1100	200	50	0.045
16.0	700	300	35	0.107	600	260	30	0.108	500	220	25	0.110	1000	225	50	0.056
20.0	550	300	35	0.136	480	260	30	0.135	400	220	25	0.138	800	240	50	0.075

MATERIAL	CAST IRON				ALUMINUM ALLOYS				COPPER. BRASS NON-FERROUS METALS			
HARDNESS												
STRENGTH												
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
2.0	6500	450	40	0.017	16000	960	100	0.015	12000	720	75	0.015
3.0	4200	450	40	0.027	11000	960	105	0.022	8000	720	75	0.023
4.0	3200	450	40	0.035	8000	960	100	0.030	6000	720	75	0.030
5.0	2500	450	40	0.045	6400	960	100	0.038	4800	720	75	0.038
6.0	2100	540	40	0.064	5300	1020	100	0.048	4000	780	75	0.049
8.0	1600	570	40	0.089	4000	1020	100	0.064	3000	780	75	0.065
10.0	1300	600	40	0.115	3200	1020	100	0.080	2400	780	75	0.081
12.0	1000	630	40	0.158	2600	1020	100	0.098	2000	780	75	0.098
14.0	900	660	40	0.183	2300	1020	100	0.111	1700	780	75	0.115
16.0	800	680	40	0.213	2000	1020	100	0.128	1500	780	75	0.130
20.0	640	720	40	0.281	1600	1020	100	0.159	1200	780	75	0.163



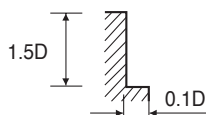
※ The FEED, in long & extra long types, should be reduced by around 50%

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


CARBIDE, 4 FLUTE TiAlN-COATED - SIDE CUTTING
VOLLHARTMETALL, 3 SCHNEIDEN TiAlN-BESCHICHTET - SEITENFRÄSEN
E5432, E5595, E5448, E5449, E5540, E5453 SERIES

MATERIAL	CARBON STEELS ALLOY STEELS TOOL STEELS				CARBON STEELS ALLOY STEELS TOOL STEELS				CARBON STEELS ALLOY STEELS TOOL STEELS				STAINLESS STEELS TITANIUM ALLOYS			
HARDNESS	~ 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	335	50	0.011	6720	295	40	0.011	5600	225	35	0.010	11200	280	70	0.006
3.0	5180	380	50	0.018	4480	335	40	0.019	3640	250	35	0.017	7420	280	70	0.009
4.0	3920	380	50	0.024	3360	335	40	0.025	2800	250	35	0.022	5600	280	70	0.013
5.0	3080	380	50	0.031	2660	335	40	0.031	2240	250	35	0.028	4480	280	70	0.016
6.0	2520	380	50	0.038	2240	335	40	0.037	1820	250	35	0.034	3640	280	70	0.019
8.0	1960	380	50	0.048	1680	335	40	0.050	1400	250	35	0.045	2800	280	70	0.025
10.0	1540	380	50	0.062	1330	335	40	0.063	1120	250	35	0.056	2240	280	70	0.031
12.0	1260	380	50	0.075	1120	335	40	0.075	920	250	35	0.068	1820	280	70	0.038
14.0	1120	380	50	0.085	980	335	45	0.085	800	250	35	0.078	1540	280	70	0.045
16.0	980	420	50	0.107	840	365	45	0.109	700	310	35	0.111	1400	315	70	0.056
20.0	770	420	50	0.136	670	365	45	0.136	560	310	35	0.138	1120	335	70	0.075

MATERIAL	CAST IRON				ALUMINUM ALLOYS				COPPER, BRASS NON-FERROUS METALS			
HARDNESS												
STRENGTH												
DIAMETER	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz	RPM	FEED	Vc	fz
2.0	9100	630	55	0.017	22400	1345	140	0.015	16800	1010	105	0.015
3.0	5880	630	55	0.027	15400	1345	145	0.022	11200	1010	105	0.023
4.0	4480	630	55	0.035	11200	1345	140	0.030	8400	1010	105	0.030
5.0	3500	630	55	0.045	8960	1345	140	0.038	6720	1010	105	0.038
6.0	2940	755	55	0.064	7420	1430	140	0.048	5600	1090	105	0.049
8.0	2240	800	55	0.089	5600	1430	140	0.064	4200	1090	105	0.065
10.0	1820	840	55	0.115	4480	1430	140	0.080	3360	1090	105	0.081
12.0	1400	880	55	0.157	3640	1430	135	0.098	2800	1090	105	0.097
14.0	1260	925	55	0.184	3220	1430	140	0.111	2380	1090	105	0.114
16.0	1120	950	55	0.212	2800	1430	140	0.128	2100	1090	105	0.130
20.0	900	1010	55	0.281	2240	1430	140	0.160	1680	1090	105	0.162



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

RPM = rev./min.
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fz = mm/t