



EURCLAY


DELİK İŞLEME

ÜRÜN KATALOĞU

DRILLING PRODUCT CATALOGUE



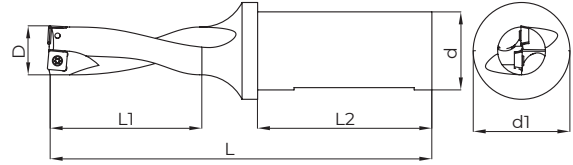
SPMG

ÜRÜN GÖRSELİ	UÇ KODU INSERT CODE	İLERLEME	U						UÇ ÖLÇÜSÜ			
			TC0630 200 (120-280)	TC1630 200 (120-280)	TP1630 190 (110-270)	TP2630 190 (110-270)	TP4630 190 (110-270)	TP4640 170 (100-240)	L	I,C	S	d
	ISO	f _n (mm/dev)										
	SPMG050204-DG	0,01-0,12				•	•		5	5	2.38	2.2
	SPMG060204-DG	0,02-0,15				•	•		6	6	2.38	2.6
	SPMG07T308-DG	0,02-0,16				•	•		7.94	7.94	3.97	2.8
	SPMG090408-DG	0,02-0,18				•	•		9.8	9.8	4.76	4.2
	SPMG110408-DG	0,03-0,20				•	•		11.5	11.5	4.76	4.4
	SPMG140512-DG	0,04-0,22				•	•		14.3	14.3	5.2	5.75

• Stok ürün | Stock item

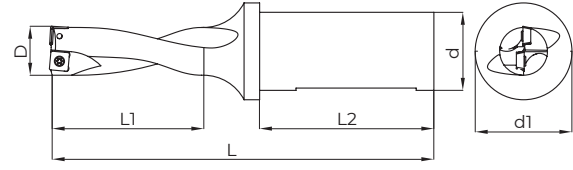
○ Stok dışı ürün | Non stock item

□ Özel ürün | Special order

SPMG TAKIMLAR / D2T


TAKIM KODU ORDER CODE	D	d	d1	L	L1	L2
D2T-1320-SP05	13	20	25	94	26	50
D2T-1420-SP05	14	20	25	97	28	50
D2T-1520-SP05	15	20	25	100	30	50
D2T-1625-SP06	16	25	34	110	32	50
D2T-1725-SP06	17	25	34	112	34	56
D2T-1825-SP06	18	25	34	114	36	56
D2T-1925-SP06	19	25	34	116	38	56
D2T-19525-SP06	19.5	25	34	119	40	56
D2T-2025-SP06	20	25	34	119	40	56
D2T-20525-SP06	20.5	25	34	122	42	56
D2T-2125-SP06	21	25	34	122	42	56
D2T-2225-SP07	22	25	34	125	44	56
D2T-2325-SP07	23	25	34	128	46	56
D2T-2425-SP07	24	25	34	129	48	56
D2T-2525-SP07	25	25	34	131	50	56
D2T-2625-SP07	26	25	34	134	52	56
D2T-2725-SP07	27	25	34	137	54	56
D2T-27525-SP09	27.5	25	34	140	56	56
D2T-2825-SP09	28	25	34	140	56	56
D2T-2925-SP09	29	25	34	143	58	56
D2T-3032-SP09	30	32	44	150	60	60
D2T-3132-SP09	31	32	44	153	62	60
D2T-3232-SP09	32	32	44	156	64	60
D2T-3332-SP09	33	32	44	159	66	60
D2T-3432-SP11	34	32	44	162	68	60
D2T-3532-SP11	35	32	44	165	70	60
D2T-3632-SP11	36	32	44	168	72	60
D2T-3732-SP11	37	32	44	171	74	60

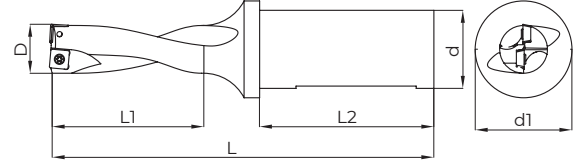
SPMG TAKIMLAR / D2T



TAKIM KODU ORDER CODE	D	d	d1	L	L1	L2
D2T-3832-SP11	38	32	44	174	76	60
D2T-3932-SP11	39	32	44	177	78	60
D2T-4032-SP11	40	32	44	180	80	60
D2T-4132-SP11	41	32	44	183	82	60

SPMG TAKIMLAR / D3T

TAKIM KODU ORDER CODE	D	d	d1	L	L1	L2
D3T-1320-SP05	13	20	25	101	39	50
D3T-1420-SP05	14	20	25	105	42	50
D3T-14520-SP05	14.5	20	25	109	45	50
D3T-1520-SP05	15	20	25	109	45	50
D3T-15520-SP05	15.5	20	34	126	48	50
D3T-1620-SP06	16	20	34	126	48	50
D3T-16525-SP06	16.5	25	34	129	51	50
D3T-1725-SP06	17	25	34	129	51	56
D3T-17525-SP06	17.5	25	34	132	54	56
D3T-1825-SP06	18	25	34	132	54	56
D3T-18525-SP06	18.5	25	34	135	57	56
D3T-1925-SP06	19	25	34	135	57	56
D3T-19525-SP06	19.5	25	34	139	60	56
D3T-2025-SP06	20	25	34	139	60	56
D3T-20525-SP06	20.5	25	34	143	63	56
D3T-2125-SP06	21	25	34	143	63	56
D3T-21525-SP06	21.5	25	34	147	66	56
D3T-2225-SP07	22	25	34	147	66	56
D3T-22525-SP07	22.5	25	34	151	69	56
D3T-2325-SP07	23	25	34	151	69	56
D3T-23525-SP07	23.5	25	34	153	72	56
D3T-2425-SP07	24	25	34	153	72	56
D3T-24525-SP07	24.5	25	34	156	75	56
D3T-2525-SP07	25	25	34	156	75	56
D3T-25525-SP07	25.5	25	34	160	78	56
D3T-2625-SP07	26	25	34	160	78	56
D3T-26525-SP07	26.5	25	34	164	81	56
D3T-2725-SP07	27	25	34	164	81	56
D3T-27525-SP07	27.5	25	34	168	84	56
D3T-2825-SP09	28	25	34	168	84	56
D3T-28525-SP09	28.5	25	34	172	87	56
D3T-2925-SP09	29	25	34	172	87	56
D3T-29525-SP09	29.5	25	44	180	90	56
D3T-3032-SP09	30	32	44	180	90	60
D3T-3132-SP09	31	32	44	184	93	60
D3T-3232-SP09	32	32	44	188	96	60

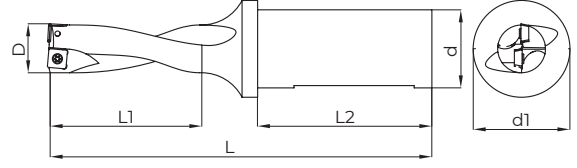
SPMG TAKIMLAR / D3T


TAKIM KODU ORDER CODE	D	d	d1	L	L1	L2
D3T-3332-SP09	33	32	44	192	99	60
D3T-3432-SP11	34	32	44	192	102	60
D3T-3532-SP11	35	32	44	200	105	60
D3T-3632-SP11	36	32	44	204	108	60
D3T-3732-SP11	37	32	44	208	111	60
D3T-3832-SP11	38	32	44	212	114	60
D3T-38532-SP11	38.5	32	44	212	114	60
D3T-3932-SP11	39	32	44	216	117	60
D3T-4032-SP11	40	32	44	220	120	60
D3T-4132-SP11	41	32	44	223	123	60
D3T-41532-SP11	41.5	32	44	226	126	60

SPMG TAKIMLAR / D4T

TAKIM KODU ORDER CODE	D	d	d1	L	L1	L2
D4T-1320-SP05	13	20	25	120	52	50
D4T-1420-SP05	14	20	25	124	56	50
D4T-14520-SP05	14.5	20	25	128	60	50
D4T-1520-SP05	15	20	25	128	60	50
D4T-15520-SP05	15.5	20	25	128	62	50
D4T-1625-SP06	16	25	34	142	64	50
D4T-1725-SP06	17	25	34	146	68	56
D4T-1825-SP06	18	25	34	150	72	56
D4T-1925-SP06	19	25	34	154	76	56
D4T-19525-SP06	19.5	25	34	159	80	56
D4T-2025-SP06	20	25	34	159	80	56
D4T-2125-SP06	21	25	34	164	84	56
D4T-2225-SP07	22	25	34	169	88	56
D4T-2325-SP07	23	25	34	174	92	56
D4T-2425-SP07	24	25	34	177	96	56
D4T-24525-SP07	24.5	25	34	181	100	56
D4T-2525-SP07	25	25	34	181	100	56
D4T-2625-SP07	26	25	34	186	104	56
D4T-2725-SP07	27	25	34	191	108	56
D4T-27525-SP07	27.5	25	34	196	112	56
D4T-2825-SP09	28	25	34	196	112	56
D4T-2925-SP09	29	25	34	201	116	56
D4T-3032-SP09	30	32	44	210	120	60
D4T-3132-SP09	31	32	44	215	124	60
D4T-3232-SP09	32	32	44	220	128	60
D4T-3332-SP09	33	32	44	225	132	60
D4T-33532-SP09	33.5	32	44	230	136	60
D4T-3432-SP11	34	32	44	230	136	60
D4T-3532-SP11	35	32	44	235	140	60

SPMG TAKIMLAR / D4T



TAKIM KODU ORDER CODE	D	d	d1	L	L1	L2
D4T-3632-SP11	36	32	44	238	144	60
D4T-3732-SP11	37	32	44	241	148	60
D4T-3832-SP11	38	32	44	244	152	60
D4T-38532-SP11	38.5	32	44	247	156	60
D4T-3932-SP11	39	32	44	247	156	60
D4T-39532-SP11	39.5	32	44	247	156	60
D4T-4032-SP11	40	32	44	250	160	60
D4T-4132-SP11	41	32	44	253	164	60

SPMG TAKIMLAR / D5T

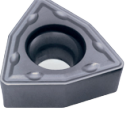
TAKIM KODU ORDER CODE	D	d	d1	L	L1	L2
D5T-1625-SP06	16	25	34	153	80	50
D5T-1725-SP06	17	25	34	158	85	56
D5T-1825-SP06	18	25	34	163	90	56
D5T-1925-SP06	19	25	34	168	95	56
D5T-2025-SP06	20	25	34	174	100	56
D5T-2125-SP06	21	25	34	180	105	56
D5T-2225-SP07	22	25	34	186	110	56
D5T-2325-SP07	23	25	34	192	115	56
D5T-2425-SP07	24	25	34	196	120	56
D5T-2525-SP07	25	25	34	200	125	56
D5T-2625-SP07	26	25	34	206	130	56
D5T-2725-SP07	27	25	34	212	135	56
D5T-2825-SP09	28	25	34	218	140	56
D5T-2925-SP09	29	25	34	224	145	56
D5T-3032-SP09	30	32	44	233	150	60

TAVSİYE EDİLEN ÇALIŞMA KOŞULLARI

WORKING PARAMETER RECOMMENDATION

ISO	MATERYAL GRUBU MATERIAL GROUP	Vc (m/min)	Ø 12,5-15	Ø 15,5-21,5	Ø 22-27,5	Ø 28-33	Ø 34-41	Ø 42-50
P	Karbon Çeliği	180-250	0,05-0,08	0,06-0,10	0,06-0,12	0,07-0,13	0,08-0,15	0,08-0,16
	Düşük Alaşımli Çelik	150-220	0,06-0,12	0,08-0,14	0,10-0,18	0,12-0,22	0,12-0,23	0,13-0,24
	Yüksek Alaşımli Çelik	130-180	0,06-0,10	0,08-0,15	0,10-0,20	0,12-0,23	0,12-0,24	0,13-0,25
M	Paslanmaz Çelik	170-240	0,05-0,10	0,06-0,12	0,08-0,15	0,09-0,16	0,10-0,17	0,11-0,19
K	Pik Dökme Demir	180-250	0,06-0,12	0,08-0,16	0,12-0,20	0,15-0,25	0,16-0,28	0,18-0,30
	Sfero Dökme Demir	130-200	0,06-0,10	0,08-0,15	0,10-0,18	0,12-0,20	0,15-0,23	0,16-0,25
N	Alaşımli Alüminyum	330-380	0,06-0,14	0,08-0,15	0,10-0,20	0,12-0,22	0,14-0,23	0,15-0,26
S	Isiya Dirençli Alaşım	30-60	0,05-0,10	0,06-0,14	0,08-0,18	0,10-0,22	0,12-0,22	0,14-0,24

WCMX

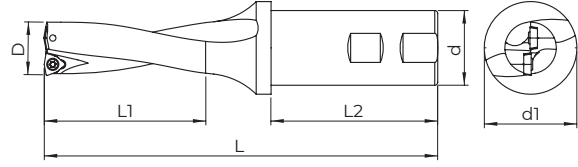
ÜRÜN GÖRSELİ	UÇ KODU INSERT CODE	İLERLEME ISO	U						UÇ ÖLÇÜSÜ			
			200 (120-280)		190 (110-270)		170 (100-240)		L	I,C	S	d
			TC0630	TC1630	TP1630	TP2630	TP4630	TP4640				
	WCMX030208R-53	0,01-0,12				•	•		3.8	5.56	2.38	2.8
	WCMX040208R-53	0,02-0,15				•	•		4.3	6.35	2.38	3.1
	WCMX050308R-53	0,02-0,16				•	•		5.4	7.94	3.18	3.2
	WCMX06T308R-53	0,02-0,18				•	•		6.5	9.525	3.97	3.7
	WCMX080412R-53	0,03-0,20				•	•		8.7	12.7	4.76	4.3

• Stok ürün | Stock item

○ Stok dışı ürün | Non stock item

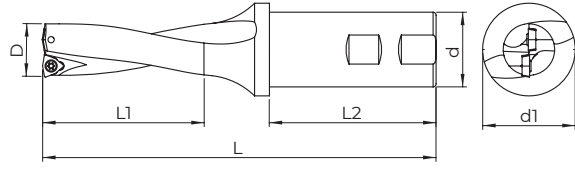
□ Özel ürün | Special order

WCMX TAKIMLAR / D2G



TAKIM KODU ORDER CODE	D	d	d1	L	L1	L2
D2G-1625-WC03	16	25	34	110	32	50
D2G-1725-WC03	17	25	34	112	34	56
D2G-1825-WC03	18	25	34	114	36	56
D2G-18525-WC03	18.5	25	34	114	36	56
D2G-1925-WC03	19	25	34	116	38	56
D2G-19525-WC03	19.5	25	34	116	38	56
D2G-2025-WC04	20	25	34	119	40	56
D2G-2125-WC04	21	25	34	122	42	56
D2G-21525-WC04	21.5	25	34	122	42	56
D2G-2225-WC04	22	25	34	125	44	56
D2G-2325-WC04	23	25	34	128	46	56
D2G-2425-WC05	24	25	34	129	48	56
D2G-2525-WC05	25	25	34	131	50	56
D2G-2625-WC05	26	25	34	134	52	56
D2G-2725-WC05	27	25	34	137	54	56
D2G-2825-WC05	28	25	34	140	56	56
D2G-2925-WC05	29	25	34	143	58	56
D2G-3032-WC06	30	32	44	150	60	60
D2G-3132-WC06	31	32	44	153	62	60
D2G-3232-WC06	32	32	44	156	64	60
D2G-3332-WC06	33	32	44	159	66	60
D2G-3432-WC06	34	32	44	162	68	60
D2G-3532-WC06	35	32	44	165	70	60
D2G-3632-WC06	36	32	44	168	72	60
D2G-3732-WC06	37	32	44	171	74	60
D2G-3832-WC06	38	32	44	174	76	60
D2G-3932-WC06	39	32	44	177	78	60
D2G-4032-WC06	40	32	44	180	80	60

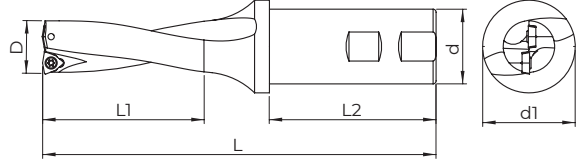
WCMX TAKIMLAR / D2G



TAKIM KODU ORDER CODE	D	d	d1	L	L1	L2
D2G-4132-WC06	41	32	44	183	82	60
D2G-4232-WC06	42	32	44	186	84	60
D2G-4332-WC06	43	32	44	189	86	60
D2G-4432-WC06	44	32	44	192	88	60
D2G-4540-WC08	45	40	54	195	90	70
D2G-4640-WC08	46	40	54	198	92	70
D2G-4740-WC08	47	40	54	201	94	70
D2G-4840-WC08	48	40	54	204	96	70
D2G-4940-WC08	49	40	54	207	98	70
D2G-5040-WC08	50	40	54	210	100	70

WCMX TAKIMLAR / D3G

TAKIM KODU ORDER CODE	D	d	d1	L	L1	L2
D3G-15525-WC03	15.5	25	34	126	46.5	56
D3G-1625-WC03	16	25	34	126	48	56
D3G-16525-WC03	16.5	25	34	129	49.5	56
D3G-1725-WC03	17	25	34	129	51	56
D3G-17525-WC03	17.5	25	34	132	52.5	56
D3G-1825-WC03	18	25	34	132	54	56
D3G-18525-WC03	18.5	25	34	135	55.5	56
D3G-1925-WC03	19	25	34	135	57	56
D3G-19525-WC03	19.5	25	34	139	58.5	56
D3G-2025-WC04	20	25	34	139	60	56
D3G-20525-WC04	20.5	25	34	143	61.5	56
D3G-2125-WC04	21	25	34	143	63	56
D3G-21525-WC04	21.5	25	34	147	64.5	56
D3G-2225-WC04	22	25	34	147	66	56
D3G-22525-WC04	22.5	25	34	151	67.5	56
D3G-2325-WC04	23	25	34	151	69	56
D3G-23525-WC04	23.5	25	34	153	70.5	56
D3G-2425-WC05	24	25	34	153	72	56
D3G-24525-WC05	24.5	25	34	156	73.5	56
D3G-2525-WC05	25	25	34	156	75	56
D3G-25525-WC05	25.5	25	34	160	76.5	56
D3G-2625-WC05	26	25	34	160	78	56
D3G-26525-WC05	26.5	25	34	164	79.5	56
D3G-2725-WC05	27	25	34	164	81	56
D3G-27525-WC05	27.5	25	34	168	82.5	56
D3G-2825-WC05	28	25	34	168	84	56
D3G-28525-WC05	28.5	25	34	172	85.5	56
D3G-2925-WC05	29	25	34	172	87	56
D3G-29525-WC05	29.5	25	34	180	88.5	56
D3G-3032-WC06	30	32	44	180	90	60

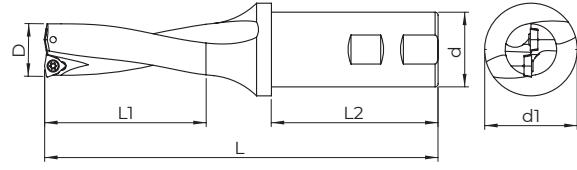
WCMX TAKIMLAR / D3G


TAKIM KODU ORDER CODE	D	d	d1	L	L1	L2
D3G-3132-WC06	31	32	44	184	93	60
D3G-3232-WC06	32	32	44	188	96	60
D3G-3332-WC06	33	32	44	192	99	60
D3G-3432-WC06	34	32	44	192	102	60
D3G-3532-WC06	35	32	44	200	105	60
D3G-3632-WC06	36	32	44	204	108	60
D3G-3732-WC06	37	32	44	208	111	60
D3G-3832-WC06	38	32	44	212	114	60
D3G-3932-WC06	39	32	44	216	117	60
D3G-4032-WC06	40	32	44	220	120	60
D3G-4132-WC06	41	32	44	223	123	60
D3G-4232-WC06	42	32	44	226	126	60
D3G-4332-WC06	43	32	44	229	129	60
D3G-4432-WC06	44	32	44	232	132	60
D3G-4540-WC08	45	40	54	245	135	70
D3G-4640-WC08	46	40	54	248	138	70
D3G-4740-WC08	47	40	54	251	141	70
D3G-4840-WC08	48	40	54	254	144	70
D3G-4940-WC08	49	40	54	257	147	70
D3G-5040-WC08	50	40	54	260	150	70

WCMX TAKIMLAR / D4G

TAKIM KODU ORDER CODE	D	d	d1	L	L1	L2
D4G-15525-WC03	15.5	25	34	142	64	56
D4G-1625-WC03	16	25	34	142	64	56
D4G-1725-WC03	17	25	34	146	68	56
D4G-17525-WC03	17.5	25	34	150	72	56
D4G-1825-WC03	18	25	34	150	72	56
D4G-1925-WC03	19	25	34	154	76	56
D4G-19525-WC03	19.5	25	34	159	80	56
D4G-2025-WC04	20	25	34	159	80	56
D4G-2125-WC04	21	25	34	164	84	56
D4G-2225-WC04	22	25	34	169	88	56
D4G-2325-WC04	23	25	34	174	92	56
D4G-23525-WC04	23.5	25	34	174	92	56
D4G-2425-WC05	24	25	34	177	96	56
D4G-2525-WC05	25	25	34	181	100	56
D4G-25525-WC05	25.5	25	34	181	100	56
D4G-2625-WC05	26	25	34	186	104	56
D4G-2725-WC05	27	25	34	191	108	56
D4G-27525-WC05	28	25	34	196	112	56
D4G-2825-WC05	28	25	34	196	112	56
D4G-2925-WC05	29	25	34	201	116	56

WCMX TAKIMLAR / D4G

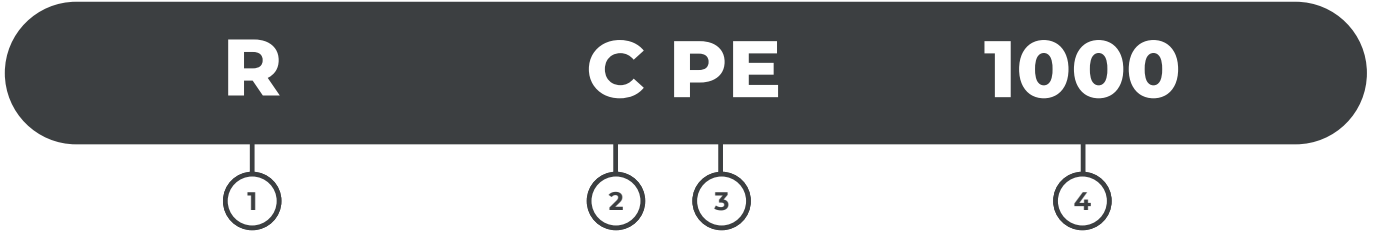


TAKIM KODU ORDER CODE	D	d	d1	L	L1	L2
D4G-3032-WC06	30	32	44	210	120	60
D4G-3132-WC06	31	32	44	215	124	60
D4G-3232-WC06	32	32	44	220	128	60
D4G-3332-WC06	33	32	44	225	132	60
D4G-3432-WC06	34	32	44	230	136	60
D4G-3532-WC06	35	32	44	235	140	60
D4G-3632-WC06	36	32	44	238	144	60
D4G-3732-WC06	37	32	44	241	148	60
D4G-3832-WC06	38	32	44	244	152	60
D4G-3932-WC06	39	32	44	247	166	60
D4G-4032-WC06	40	32	44	250	160	60
D4G-4132-WC06	41	32	44	253	164	60
D4G-4232-WC06	42	32	44	256	168	60
D4G-4332-WC06	43	32	44	259	172	60
D4G-4432-WC06	44	32	44	262	176	60
D4G-4540-WC08	45	40	54	266	180	60
D4G-4640-WC08	46	40	54	270	184	60
D4G-4740-WC08	47	40	54	274	188	60
D4G-4840-WC08	48	40	54	278	192	60
D4G-4940-WC08	49	40	54	282	196	60
D4G-5040-WC08	50	40	54	286	200	60

WCMX TAKIMLAR / D5G

TAKIM KODU ORDER CODE	D	d	d1	L	L1	L2
D5G-1625-WC03	16	25	34	153	80	56
D5G-1725-WC03	17	25	34	158	85	56
D5G-1825-WC03	18	25	34	163	90	56
D5G-1925-WC03	19	25	34	168	95	56
D5G-2025-WC04	20	25	34	174	100	56
D5G-2125-WC04	21	25	34	180	105	56
D5G-2225-WC04	22	25	34	186	110	56
D5G-2325-WC04	23	25	34	192	115	56
D5G-2425-WC05	24	25	34	196	120	56
D5G-2525-WC05	25	25	34	200	125	56
D5G-2625-WC05	26	25	34	206	130	56
D5G-2725-WC05	27	25	34	212	135	56
D5G-2825-WC05	28	25	34	218	140	56
D5G-2925-WC05	29	25	34	224	145	56
D5G-3032-WC06	30	32	44	233	150	60

UÇ KODLAMA SİSTEMİ INSERT CODING SYSTEM



**1 ÜRÜN GRUPLARI
PRODUCT SERIES**

R - Rapid Drill

**2 UÇ MATERYALİ
INSERT MATERIAL**

C: Karbür / Carbide
H: HSS-PM

3 UÇ KALİTESİ / INSERT GRADE

PE: Genel Kalite / *Universal Drill Point*
ME: Paslanmaz Çelik / *Drill Point for stainless steel*
KE: Dökme Demir / *Drill Point for cast iron*
NE: Demir Dışı Malzeme / *Drill Point for non-ferrous metals*
PC: High centering Drill Point

4 UÇ ÖLÇÜSÜ / INSERT DIAMETER

1000 - 10.0 mm
1270 - 12.7 mm
10000 - 100.0 mm

KARBÜR UÇ KALİTELERİ CARBIDE INSERT GRADES

mikro taneçikli Karbür

KALİTELER GRADES	P	M	K	N	S
CPE	•	○	○		
CME	○	•			○
CKE			•		
CNE				•	

- Stok ürün | Stock item ○ Stok dışı ürün | Non stock item

HSS PM UÇ KALİTESİ HSS PM INSERT GRADE

HSS PM

KALİTELER GRADES	P	M	K	N	S
HSS PM	•	○	○	○	

- Stok ürün | Stock item ○ Stok dışı ürün | Non stock item

TAKIM KODLAMA SİSTEMİ

TOOL CODING SYSTEM

R T 1800 03 S 25

1

2

3

4

5

6

1

ÜRÜN GRUPLARI
PRODUCT SERIES

R: Rapid Drill

2

TİP / TYPE

T: Holder

3

MİN. UÇ ÖLÇÜSÜ
MIN. INSERT DIAMETER

1800 - 18.0 mm

4

MAKSİMUM DELİK DERİNLİĞİ
MAX. HOLE DEPTH
03 - 3XD
05 - 5XD
08 - 8XD

5

TUTUCU TİPİ
SHANK TYPE
S: Side lock shank
Weldon tutucu
M: Morse taper shank
Konikli tutucu

6

TUTUCU ÇAPI
SHANK DIAMETER
16 - 16.0
20 - 20.0
25 - 25.0
32 - 32.0
40 - 40.0
T3 - MT3ISO
9766








3D

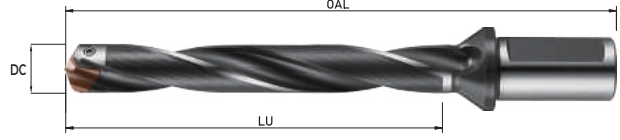
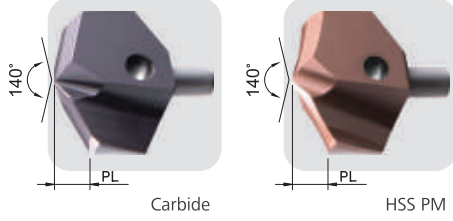
5D

8D

VİDA VE ANAHTARLAR

SCREWS AND WRENCHES

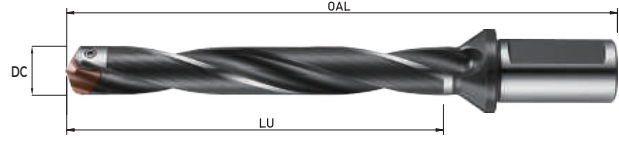
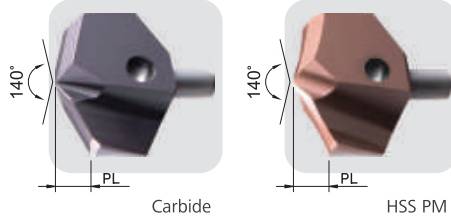
ÇAP ARALIĞI INSERT DIAMETER RANGE						
	TORX PLUS	SPEC.	ORDER CODE	SPEC.	ORDER CODE	SHAPE
10.0 ~ 10.99	6IP	M2X9	2102223	6IP	2502035	
11.0 ~ 12.49	6IP	M2X10	2102203	6IP		
12.5 ~ 13.99	6IP	M2X11.5	2102204	6IP		
14.0 ~ 15.99	7IP	M2.5X13	2102205	7IP	2502036	
16.0 ~ 17.99	7IP	M2.5X15	2102206	7IP		
18.0 ~ 18.99	9IP	M3X16	2102225	9IP	2502037	
19.0 ~ 20.99	9IP	M3X17	2102207	9IP		
21.0 ~ 23.99	9IP	M3X20	2102208	9IP		
24.0 ~ 25.99	10IP	M3.5X22	2102209	10IP	2502038	
26.0 ~ 27.99	10IP	M3.5X24	2102210	10IP		
28.0 ~ 30.99	15IP	M4X26	2102211	15IP	2502039	
31.0 ~ 33.99	20IP	M5X29	2102212	20IP		
34.0 ~ 36.99	20IP	M5X32	2102213	20IP	2502040	
37.0 ~ 39.99	25IP	M6X35	2102214	25IP		
					2502041	

RAPID DRILL UÇ VE TAKIMI
RAPID DRILL INSERT & TOOLHOLDER


KOD CODE	KALİTE GRADES	DELME ÇAPI DRILLING DIAMETER	PL	LU	TAKIM KODU ORDER CODE	TAKIM ÇAPI TOOL DIAMETER	OAL		
							3D	5D	8D
R-	CPE CME CKE CNE HSSPM	10.00	1.80	3D 5D 8D	R-T1000-0□L16	10,00-10,49	96	117	148
		10.20	1.90	3D 5D 8D	R-T1000-0□L16	10,00-10,49	96	117	148
		10.50	1.90	3D 5D 8D	R-T1050-0□L16	10,50-10,99	98	120	153
		11.00	2.00	3D 5D 8D	R-T1100-0□L16	11,00-11,49	100	123	158
		11.50	2.10	3D 5D 8D	R-T1150-0□L16	11,50-11,99	102	126	162
		12.00	2.20	3D 5D 8D	R-T1200-0□L16	12,00-12,49	105	130	167
		12.50	2.30	3D 5D 8D	R-T1250-0□L16	12,50-12,99	107	133	172
		13.00	2.40	3D 5D 8D	R-T1300-0□L16	13,00-13,49	109	136	176
		13.50	2.50	3D 5D 8D	R-T1350-0□L16	13,50-13,99	111	139	181
		14.00	2.50	3D 5D 8D	R-T1400-0□L16	14,00-14,49	113	142	186
		14.50	2.60	3D 5D 8D	R-T1450-0□L16	14,55-14,99	115	145	190
		15.00	2.70	3D 5D 8D	R-T1500-0□L20	15,00-15,99	122	154	202
		15.50	2.80						
		16.00	2.90	3D 5D 8D	R-T1600-0□L20	16,00-16,99	127	161	212
		16.50	3.00						
		17.00	3.10	3D 5D 8D	R-T1700-0□L20	17,00-17,99	131	167	221
		17.50	3.20						
		18.00	3.30	3D 5D 8D	R-T1800-0□L25	18,00-18,99	141	179	236
		18.50	3.40						
		19.00	3.50	3D 5D 8D	R-T1900-0□L25	19,00-19,99	146	186	246
		19.50	3.50						
		20.00	3.60	3D 5D 8D	R-T2000-0□L25	20,00-20,99	150	192	255
		20.50	3.70						
		21.00	3.80	3D 5D 8D	R-T2100-0□L25	21,00-21,99	154	198	264
		21.50	3.90						
		22.00	4.00	3D 5D 8D	R-T2200-0□L25	22,00-22,99	158	204	273
		22.50	4.10						
		23.00	4.20	3D 5D 8D	R-T2300-0□L25	23,00-23,99	163	211	283
		23.50	4.30						
		24.00	4.40	3D 5D 8D	R-T2400-0□L32	24,00-24,99	172	222	297
24.50	4.50								
25.00	4.50	3D 5D 8D	R-T2500-0□L32	25,00-25,99	176	228	306		
25.50	4.60								
26.00	4.70	3D 5D 8D	R-T2600-0□L32	26,00-26,99	181	235	316		
26.50	4.80								
27.00	4.90	3D 5D 8D	R-T2700-0□L32	27,00-27,99	185	241	325		
27.50	5.00								
28.00	5.10	3D 5D 8D	R-T2800-0□L32	28,00-28,99	189	247	334		
28.50	5.20								

RAPID DRILL UÇ VE TAKIMI

RAPID DRILL INSERT & TOOLHOLDER



mikro tanecikli

Karbür

HSS PM

ISO 9766



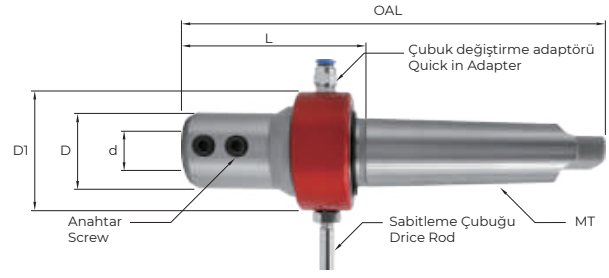
3D



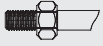

5D

8D

KOD CODE	KALİTE GRADES	DELME ÇAPI DRILLING DIAMETER	PL	LU	TAKIM KODU ORDER CODE	TAKIM ÇAPI DC	OAL		
							3D	5D	8D
R-	CPE CME CKE CNE HSSPM	29.00	5.30	3D 5D 8D	R-T2900-0□L32	29,00-29,99	193	253	343
		29.50	5.40						
		30.00	5.50	3D 5D 8D	R-T3000-0□L32	30,00-30,99	198	260	353
		30.50	5.60						
		31.00	5.60	3D 5D 8D	R-T3100-0□L32	31,00-31,99	202	266	362
		31.50	5.70						
		32.00	5.80	3D 5D 8D	R-T3200-0□L32	32,00-32,99	206	272	371
		32.50	5.90						
		33.00	6.00	3D 5D 8D	R-T3300-0□L32	33,00-33,99	211	279	381
		33.50	6.10						
		34.00	6.20	3D 5D 8D	R-T3400-0□L40	34,00-34,99	226	294	399
		34.50	6.30						
		35.00	6.40	3D 5D 8D	R-T3500-0□L40	35,00-35,99	230	300	408
		35.50	6.50						
		36.00	6.60	3D 5D 8D	R-T3600-0□L40	36,00-36,99	234	306	417
		36.50	6.60						
		37.00	6.70	3D 5D 8D	R-T3700-0□L40	37,00-37,99	239	313	427
		37.50	6.80						
		38.00	6.90	3D 5D 8D	R-T3900-0□L40	38,00-38,99	243	319	436
		38.50	7.00						
39.00	7.10	3D	R-T3900-03L40	39,00-39,99	252				
39.50	7.20	5D	R-T3900-05L40	39,00-39,99		332			
39.99	7.30	8D	R-T3900-08L40	39,00-39,99			455		

KONİK TUTUCU TAPER SHANK HOLDER



SİPARİŞ KODU ORDER CODE	d	L	D	D1	OAL	MT				
							ORDER CODE	ORDER CODE	ORDER CODE	ORDER CODE
R-JMT3-L16-100	16	100	37	54	194	#3	2102006	2301258	2301399	2301203
R-JMT3-L20-103	20	103	40	54	197.5	#3	2102006	2301258	2301399	2301203
R-JMT3-L25-109	25	109	49	54	204	#3	2102007	2301258	2301399	2301203
R-JMT4-L16-110	16	110	37	63.5	227.5	#4	2102006	2301257	2301400	2301202
R-JMT4-L20-113	20	113	40	63.5	230.5	#4	2102006	2301257	2301400	2301202
R-JMT4-L25-119	25	119	49	63.5	236.5	#4	2102007	2301257	2301400	2301202
R-JMT4-L32-128	32	128	64	76	245.5	#4	2102147	2301256	2301400	2301204
R-JMT4-L40-139	40	139	73	76	256.5	#4	2102147	2301256	2301400	2301204
R-JMT5-L16-105	16	105	37	76	254	#5	2102006	2301256	2301400	2301204
R-JMT5-L20-108	20	108	40	76	257	#5	2102006	2301256	2301400	2301204
R-JMT5-L25-114	25	114	49	76	263	#5	2102007	2301256	2301400	2301204
R-JMT5-L32-120	32	120	64	76	269	#5	2102147	2301256	2301400	2301204
R-JMT5-L40-130	40	130	73	76	279	#5	2102147	2301256	2301400	2301204

KULLANIM ŞARTLARI

ESSENTIALS OF USE AND PRECAUTIONS

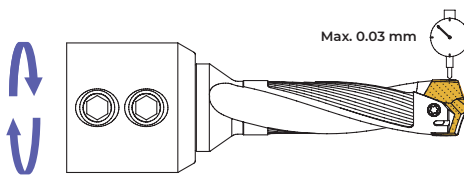
Uygulamaların dengesi, optimum takım ömrü ve delik doğruluğu için çok önemlidir. Maksimum stabilite ve sertliği garanti etmek için makine aracı iş milini, fişstürü ve iş parçasının tutmasını kontrol edin. Yanlış çalışma koşulları matkap uçlarının kırılmasına sebep olur.

The stability of the applications is essentials for optimal tool life and hole accuracy. Guarantee the maximum stability and rigidity by checking the holding of the machine tool spindle, fixtures and workpiece. Unstable operating conditions will cause fracture of drill bits.

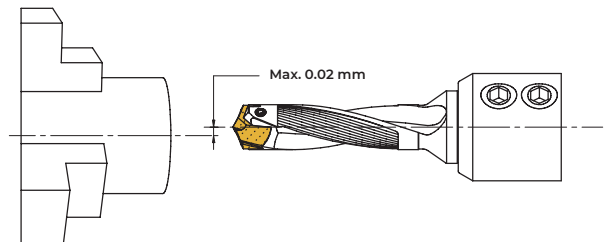
MAKSİMUM SALGI VE POZİSYONLAMA HATASI

MAX. RUNOUT AND MISALIGNMENT

Salgi / Runout



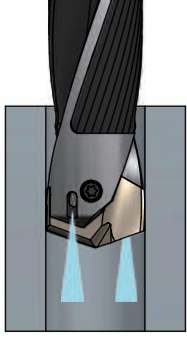
Pozisyonlama Hatası / Misalignment



SOĞUTMA TIPLERİ

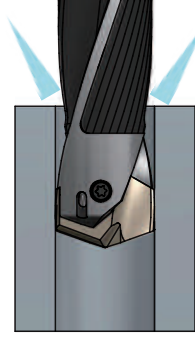
COOLING PRESSURE

İçten Soğutma Inner Cooling



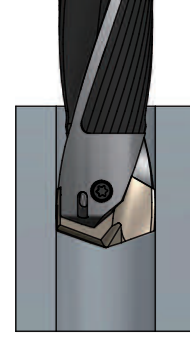
- ✓ 3xD: 5bar
- ✓ 5xD: 10bar
- ✓ 8xD: 15bar
- ✓ 10xD: 20bar

Dıştan Soğutma Outer Cooling



- ✓ 3xD: 5bar
- ✓ 5xD: 10bar
- ✓ 8xD: 15bar
- ✓ 10xD: 20bar

Kısmi Kuru Kesme Quasi-dry Cutting

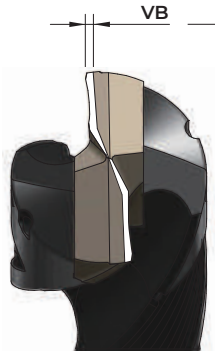


- ✓ 3xD: MQL

MATKAP UCU DEĞİŞİMLERİ İÇİN STANDART

STANDARD FOR DRILL BIT REPLACEMENT

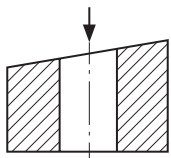
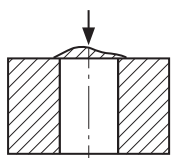
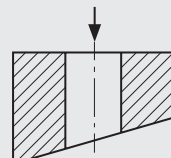
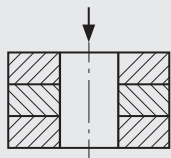
Aşınma Limiti Wear Limit



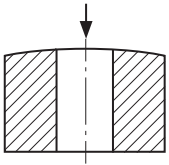
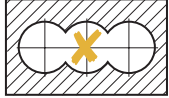
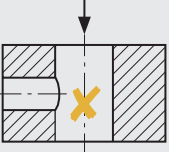
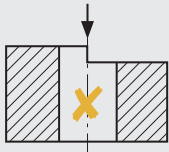
- Karbür Uç
Carbide Insert: VB0=0.3mm
- HSS-PM Uç
HSS-PM Insert: VB0=0.4mm

UYGULAMA

APPLICATION

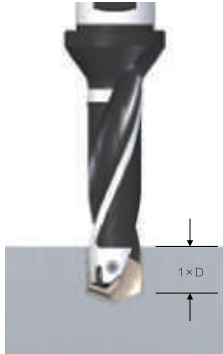
KOŞULLAR OPERATING CONDITION	UYGULAMA TALİMATLARI INSTRUCTIONS	KOŞULLAR OPERATING CONDITION	UYGULAMA TALİMATLARI INSTRUCTIONS
	<p>Giriş yüzeyi eğimli The entry surface is slanted Eğim ilerleme hızı Slope Feed Rate <3° 50%</p>		<p>Giriş yüzeyi kaynaklı The entry surface is welded Düzele getirmek için işlem öncesi yatacak için Level it through spot facing before machining</p>
	<p>Çıkış noktası eğimli The outlet is slanted Eğim ilerleme hızı Slope Feed Rate <3° 50%</p>		<p>Plakalar istifli Stacked plates Prensipite uygun Allowed in principle İş parçası düzgün kenetlenmelidir. The workpiece shall be properly clamped Plakalar arasında boşluk olmamalı There must be no gaps between the plates</p>

UYGULAMA APPLICATION

KOŞULLAR OPERATING CONDITION	UYGULAMA TALİMATLARI INSTRUCTIONS	KOŞULLAR OPERATING CONDITION	UYGULAMA TALİMATLARI INSTRUCTIONS
	Giriş yüzeyi kavisli Merkezde düşük ilerlemeyle delme işlemi görülür. Eğer giriş noktası merkez değilse işlem öncesi yatak açılması gerekmektedir. <i>The entry surface is arc Drilling at the center at reduced feed rate is allowed Spot facing is required if the entry point is not at the center of the arc</i>		Oyuklar uygun değildir. <i>Cavities Not allowed</i>
	Delik içerisinden uygun değildir. <i>Through hole Not allowed</i>		Giriş yüzeyinde kademe Uygun değildir. (giriş noktasının doğrusal olması gerekmektedir.) <i>Step on the entry surface Not allowed (the entry point must be on a horizontal plane)</i>

ÖNLEMLER PRECAUTIONS

8D uzunluğundaki takımlar için delme süreci Drilling process for holders with a length of 8D



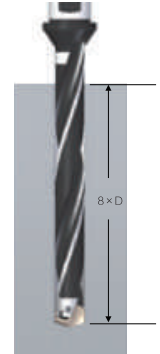
- Kısa bir matkap ucu ile 1D-1.5D arasında bir pilot delik açın.
- Drill a pilot hole to 1D to 1.5D with a short drill bit



- Pilot deliğe düşük hız ve düşük ilerleme hızıyla girin.
- Enter the pilot hole at a low speed and low feed rate



- Soğutucuyu 2 ile 3 saniye arasında tutun.
- Keep the coolant for 2 to 3s



- Önerilen parametrelere göre sürekli delme işlemine başlayın. Çıkışta hız ve ilerlemeyi düşürün.
- Carry out continuous Speed drilling according to the recommended parameters Reduce the speed and feed rate at the outlet

RAPID DRILL TAVSİYE EDİLEN KESME KOŞULLARI

RAPID DRILL CUTTING PARAMETER RECOMMENDATION

Karbür Uç Serisi / Carbide Insert Series

ISO	MATERYAL MATERIAL	ISIL İŞLEM HEATTREATMENT	HB	N/mm2	Vc (m/min)			
					Min.	Tavsiye	Max.	
P	Alaşimsız çelik / Non-alloy steel Y13 1215 1.0736 Y15 1213 1.0715	<0.25%C	Tavlanmış - Annealed	100-150	370-500	84	120	156
		≥0.25%C	Tavlanmış - Annealed	175-225	600-775	77	110	143
	Düşük karbon çeliği Low carbon steel 45 1045 1.0503 Q345B 1140 1.7026	<0.55%C	Suverilmiş ve menevişli Quenched and tempered	225-275	775-940	70	100	130
		≥0.55%C	Tavlanmış - Annealed	275-325	940-1090	56	80	104
	Düşük alaşimsız çelik Low alloy steel 40Cr 5140 1.7035 42CrMo 4144 1.7225		Suverilmiş ve menevişli Quenched and tempered	300	1000	49	70	91
			Tavlanmış - Annealed	175-225	600-775	74	105	137
			Tavlanmış - Annealed	225-275	775-940	70	100	130
			Tavlanmış - Annealed	275-325	940-1090	63	90	117
	Yüksek alaşım çeliği, takım çeliği, dökme çelik High alloy steel, tool steel, Cast steel Cr12, D3, 1.2080; 4Cr5MoSiV, H13, 1.2344		Menevişli - Tempered	325-375	1090-1265	53	75	98
			Tavlanmış - Annealed	225-300	600-1020	49	70	91
Paslanmaz çelik ferritik / martensitik - Stainless steel Ferritic/martensitic 0Cr13 403 1.400 2Cr13 410 1.4021		Menevişli - Tempered	300-350	1020-1180	42	60	78	
		Ferritik - Ferritic	185-275	640-940	35	50	65	
M	Paslanmaz çelik östenitik - Stainless steel Austenitic 0Cr18Ni9 304 1.4301 0Cr17Ni11Mo2 316 1.4401		Martensitik - Martensitic	275-350	940-1180	42	60	78
			Tavlanmış/Sertleştirilmiş - Annealed/Hardened	135-185	480-640	39	55	72
	Süper Dubleks Paslanmaz Çelik Super Duplex Stainless Steel	N<0.1%	İşlenmemiş döküm - Cast Unhandled	185-275	640-940	39	55	72
N≥0.1%		Ferritik - Ferritic	135-185	480-640	42	60	78	
K	Gri dökme demir - Grey cast iron HT200 NO.30 GG20 HT250 NO.35 GG25		Ferritik - Ferritic	120-150	430-500	76	108	140
			Perlit - Pearlitic	150-200	500-700	69	99	129
	Nodüler dökme demir - Cast iron nodular QT400-18 60-40-18 GGG40 QT600-3 80-60-03 GGG60		Ferritik - Ferritic	200-220	700-755	63	90	117
			Perlit - Pearlitic	220-260	755-890	63	90	117
Dövülebilir dökme demir - Malleable cast iron		Ferritik - Ferritic	120-150	430-500	63	90	117	
		Perlit - Pearlitic	260-320	890-1020	63	90	117	
N	Dövme alüminyum - Wrought Aluminium		Kürlenmemiş - Not Cureable	30	100	105	150	195
			Kürlenmiş - Cured	180	600	91	130	169
	Alüminyum döküm - Cast Aluminium	≤12% Si	Kürlenmemiş - Not Cureable	30	100	105	150	195
		>12% Si	Kürlenmiş - Cured	180	600	91	130	169
	Bakır alaşımli - Copper Alloys	>1% Pb	Isiya dayanıklı - High temperature	—	—	91	130	169
			Serbest kesim - Free cutting	100-200	370-670	105	150	195
			Pirinç - Brass	200-250	670-855	105	150	195
			Elektrolit bakır - Electrolytic copper	100	370	105	150	195
	Demir dışı - Non metallic		Fiber plastikler - Fiber plastics	—	—	105	150	195
			Sert kauçuk - Hard rubber	60	200	105	150	195
S	Isiya dayanıklı alaşım - High Temp. Alloy Hastelloy B, Inconel 600	Fe base	Tavlanmış - Annealed	140-220	480-755	32	45	59
			Kürlenmiş - Cured	223-310	755-990	25	35	46
		Ni or Co base	Tavlanmış - Annealed	250	—	25	35	46
			Kürlenmiş - Cured	350	—	25	35	46
	Titanyum alaşım - Titanium Alloy		Döküm - Cast	320	—	25	35	46
				320	Rm 400	25	35	46
H	Plaka - Wear Plate Hardox, AR400, T-1		α+β Kürlenmiş alaşım α+β alloys Cured		Rm 1050	25	35	46
			Sertleşmiş - Harden	400	1365	21	30	39
	Sertleştirilmiş çelik - Hardened Steel		Sertleşmiş - Harden	500	1600	15	21	30
			Sertleşmiş - Harden	300-400	1020-1365	28	40	52
	Sertleşmiş - Harden	400-500	1365+	18	25	35		

Note:

1. Üst hız kesme parametreleri 3D modele tabidir. 5D ve 8D modelleri kullanırken, ilerlemeyi uygun şekilde azaltın. İlerleme: 3D=%100, 5D=%80 veya daha az, 8D=%70 veya daha az.
2. H sınıfı sert malzemeleri kesmek için MQL (mikro yağ soğutma yöntemi) kullanılması önerilir.

RAPID DRILL TAVSİYE EDİLEN KESME KOŞULLARI
RAPID DRILL CUTTING PARAMETER RECOMMENDATION

ISO	(fn)mm/r																				
	Ø 10.00-11.99mm			Ø 12.00-13.99mm			Ø 14.00-15.99mm			Ø 16.00-19.99mm			Ø 20.00-25.99mm			Ø 26.00-32.99mm			Ø 33.00-39.99mm		
	Min.	Tavsiye	Max.	Min.	Tavsiye	Max.	Min.	Tavsiye	Max.	Min.	Tavsiye	Max.	Min.	Tavsiye	Max.	Min.	Tavsiye	Max.	Min.	Tavsiye	Max.
P	0.13	0.18	0.23	0.14	0.20	0.26	0.18	0.25	0.33	0.22	0.32	0.41	0.24	0.35	0.45	0.27	0.38	0.49	0.28	0.40	0.52
	0.13	0.18	0.23	0.14	0.20	0.26	0.18	0.25	0.33	0.22	0.32	0.41	0.24	0.35	0.45	0.27	0.38	0.49	0.28	0.40	0.52
	0.13	0.18	0.23	0.14	0.20	0.26	0.18	0.25	0.33	0.22	0.32	0.41	0.24	0.35	0.45	0.27	0.38	0.49	0.28	0.40	0.52
	0.13	0.18	0.23	0.14	0.20	0.26	0.18	0.25	0.33	0.22	0.32	0.41	0.24	0.35	0.45	0.27	0.38	0.49	0.28	0.40	0.52
	0.11	0.16	0.21	0.13	0.18	0.23	0.16	0.23	0.30	0.21	0.30	0.39	0.22	0.32	0.42	0.25	0.36	0.47	0.27	0.38	0.49
	0.13	0.18	0.23	0.14	0.20	0.26	0.17	0.24	0.31	0.21	0.30	0.39	0.25	0.35	0.46	0.28	0.40	0.52	0.32	0.45	0.59
	0.13	0.18	0.23	0.14	0.20	0.26	0.17	0.24	0.31	0.21	0.30	0.39	0.25	0.35	0.46	0.28	0.40	0.52	0.32	0.45	0.59
	0.12	0.17	0.22	0.13	0.19	0.25	0.16	0.23	0.30	0.20	0.29	0.38	0.24	0.34	0.44	0.27	0.39	0.51	0.31	0.44	0.57
	0.11	0.16	0.21	0.13	0.18	0.23	0.15	0.22	0.29	0.20	0.28	0.36	0.23	0.33	0.43	0.27	0.38	0.49	0.30	0.43	0.56
	0.11	0.16	0.21	0.13	0.19	0.25	0.15	0.22	0.29	0.18	0.25	0.33	0.21	0.30	0.39	0.21	0.30	0.39	0.22	0.32	0.42
	0.11	0.16	0.21	0.13	0.19	0.25	0.15	0.22	0.29	0.18	0.25	0.33	0.21	0.30	0.39	0.21	0.30	0.39	0.22	0.32	0.42
	0.09	0.14	0.18	0.11	0.16	0.20	0.12	0.17	0.22	0.15	0.22	0.28	0.19	0.27	0.34	0.20	0.29	0.38	0.23	0.33	0.43
0.09	0.13	0.16	0.09	0.14	0.18	0.11	0.15	0.20	0.13	0.19	0.24	0.16	0.24	0.31	0.18	0.26	0.34	0.23	0.33	0.43	
M	0.09	0.13	0.16	0.09	0.14	0.18	0.11	0.15	0.20	0.12	0.18	0.23	0.15	0.22	0.28	0.17	0.24	0.31	0.23	0.33	0.43
	0.09	0.13	0.16	0.09	0.14	0.18	0.11	0.15	0.20	0.12	0.18	0.23	0.15	0.22	0.28	0.17	0.24	0.31	0.23	0.33	0.43
	0.09	0.13	0.16	0.09	0.14	0.18	0.11	0.15	0.20	0.12	0.18	0.23	0.14	0.21	0.27	0.16	0.23	0.30	0.23	0.33	0.43
	0.09	0.13	0.16	0.09	0.14	0.18	0.11	0.15	0.20	0.12	0.18	0.23	0.14	0.21	0.27	0.16	0.23	0.30	0.23	0.33	0.43
K	0.18	0.25	0.33	0.20	0.29	0.38	0.26	0.37	0.48	0.28	0.41	0.53	0.32	0.45	0.59	0.34	0.48	0.63	0.35	0.50	0.65
	0.18	0.25	0.33	0.20	0.29	0.38	0.26	0.37	0.48	0.28	0.41	0.53	0.32	0.45	0.59	0.34	0.48	0.63	0.35	0.50	0.65
	0.18	0.25	0.33	0.20	0.29	0.38	0.26	0.37	0.48	0.28	0.41	0.53	0.32	0.45	0.59	0.34	0.48	0.63	0.35	0.50	0.65
	0.18	0.25	0.33	0.20	0.29	0.38	0.26	0.37	0.48	0.28	0.41	0.53	0.32	0.45	0.59	0.34	0.48	0.63	0.35	0.50	0.65
	0.18	0.25	0.33	0.20	0.29	0.38	0.26	0.37	0.48	0.28	0.41	0.53	0.32	0.45	0.59	0.34	0.48	0.63	0.35	0.50	0.65
N	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
S	0.06	0.08	0.10	0.07	0.10	0.13	0.10	0.14	0.18	0.11	0.16	0.21	0.13	0.18	0.23	0.14	0.20	0.26	0.15	0.22	0.29
	0.06	0.08	0.10	0.07	0.10	0.13	0.10	0.14	0.18	0.11	0.16	0.21	0.13	0.18	0.23	0.14	0.20	0.26	0.15	0.22	0.29
	0.06	0.08	0.10	0.07	0.10	0.13	0.10	0.14	0.18	0.11	0.16	0.21	0.13	0.18	0.23	0.14	0.20	0.26	0.15	0.22	0.29
	0.06	0.08	0.10	0.07	0.10	0.13	0.10	0.14	0.18	0.11	0.16	0.21	0.13	0.18	0.23	0.14	0.20	0.26	0.15	0.22	0.29
	0.06	0.08	0.10	0.07	0.10	0.13	0.10	0.14	0.18	0.11	0.16	0.21	0.13	0.18	0.23	0.14	0.20	0.26	0.15	0.22	0.29
	0.06	0.08	0.10	0.07	0.10	0.13	0.10	0.14	0.18	0.11	0.16	0.21	0.13	0.18	0.23	0.14	0.20	0.26	0.15	0.22	0.29
	0.06	0.08	0.10	0.07	0.10	0.13	0.10	0.14	0.18	0.11	0.16	0.21	0.13	0.18	0.23	0.14	0.20	0.26	0.15	0.22	0.29
H	0.06	0.08	0.10	0.08	0.12	0.16	0.11	0.15	0.20	0.14	0.20	0.26	0.18	0.25	0.33	0.21	0.30	0.39	0.25	0.35	0.46
	0.03	0.04	0.06	0.04	0.06	0.08	0.05	0.07	0.10	0.08	0.11	0.15	0.1	0.14	0.20	0.13	0.18	0.25	0.15	0.21	0.30
	0.07	0.10	0.13	0.08	0.12	0.16	0.11	0.15	0.20	0.13	0.18	0.23	0.14	0.20	0.26	0.15	0.22	0.29	0.18	0.25	0.33
	0.04	0.06	0.08	0.05	0.07	0.10	0.06	0.08	0.12	0.08	0.11	0.16	0.9	0.13	0.18	0.1	0.14	0.20	0.11	0.15	0.22

Note:

1. The cutting parameters recommended by the upper speed are subject to the 3D model. When using 5D and 8D models, reduce the feed rate appropriately according to the working conditions. Feed rate: 3D type=100%, 5D type=80% or less, 8D type=70% or less
2. It is recommended to use MQL (micro oil mist cooling method) for cutting H-class hard materials.

RAPID DRILL TAVSİYE EDİLEN KESME KOŞULLARI

RAPID DRILL CUTTING PARAMETER RECOMMENDATION

HSS-PM Uç Serisi / HSS-PM Insert Series

ISO	MATERYAL MATERIAL	ISIL İŞLEM HEATTREATMENT	HB	N/mm2	Vc (m/min)			
					Min.	Tavsiye	Max.	
P	Alaşsız çelik / Non-alloy steel Y13 1215 1.0736 Y15 1213 1.0715	<0.25%C	Tavlanmış - Annealed	100-150	370-500	38	54	70
		≥0.25%C	Tavlanmış - Annealed	175-225	600-775	35	50	64
	Düşük karbon çeliği Low carbon steel 45 1045 1.0503 Q345B 1140 1.7026	<0.55%C	Suverilmiş ve menevşili Quenched and tempered	225-275	775-940	32	45	59
		≥0.55%C	Tavlanmış - Annealed	275-325	940-1090	25	36	47
	Düşük alaşsız çelik Low alloy steel 40Cr 5140 1.7035 42CrMo 4144 1.7225		Tavlanmış - Annealed	175-225	600-775	33	47	62
			Tavlanmış - Annealed	225-275	775-940	32	45	59
			Tavlanmış - Annealed	275-325	940-1090	28	41	53
			Menevşili - Tempered	325-375	1090-1265	24	34	44
	Yüksek alaşım çeliği, takım çeliği, dökme çelik High alloy steel, tool steel, Cast steel Cr12, D3, 1.2080; 4Cr5MoSiV, H13, 1.2344		Tavlanmış - Annealed	225-300	600-1020	22	32	41
			Menevşili - Tempered	300-350	1020-1180	19	27	35
Paslanmaz çelik ferritik / martensitik - Stainless steel Ferritic/martensitic 0Cr13 403 1.400 2Cr13 410 1.4021		Ferritik - Ferritic	185-275	640-940	16	23	29	
		Martensitik - Martensitic	275-350	940-1180	19	27	35	
M	Paslanmaz çelik östenitik - Stainless steel Austenitic 0Cr18Ni9 304 1.4301 0Cr17Ni11Mo2 316 1.4401		Tavlanmış/Sertleştirilmiş - Annealed/Hardened	135-185	480-640	18	25	32
			İşlenmemiş döküm - Cast Unhandled	185-275	640-940	18	25	32
	Süper Dupleks Paslanmaz Çelik Super Duplex Stainless Steel	N<0.1%	Ferritik - Ferritic	135-185	480-640	19	27	35
N≥0.1%		Ferritik - Ferritic	185-275	640-940	16	23	29	
K	Gri dökme demir - Grey cast iron HT200 NO.30 GG20 HT250 NO.35 GG25		Ferritik - Ferritic	120-150	430-500	38	54	70
			Perlit - Pearlitic	150-200	500-700	35	50	64
	Nodüler dökme demir - Cast iron nodular QT400-18 60-40-18 GGG40 QT600-3 80-60-03 GGG60		Ferritik - Ferritic	200-220	700-755	32	45	59
			Perlit - Pearlitic	220-260	755-890	32	45	59
	Dövülebilir dökme demir - Malleable cast iron		Ferritik - Ferritic	120-150	430-500	32	45	59
	Perlit - Pearlitic	260-320	890-1020	32	45	59		
N	Dövme alüminyum - Wrought Aluminium		Kürlenmemiş - Not Cureable	30	100	47	68	88
			Kürlenmiş - Cured	180	600	41	59	76
	Alüminyum döküm - Cast Aluminium	≤12% Si	Kürlenmemiş - Not Cureable	30	100	47	68	88
		>12% Si	Isıya dayanıklı - High temperature	—	—	41	59	76
	Bakır alaşımlı - Copper Alloys	>1% Pb	Serbest kesim - Free cutting	100-200	370-670	47	68	88
			Pirinç - Brass	200-250	670-855	47	68	88
			Elektrolit bakır - Electrolytic copper	100	370	47	68	88
Demir dışı - Non metallic		Fiber plastikler - Fiber plastics	—	—	47	68	88	
		Sert kauçuk - Hard rubber	60	200	47	68	88	
S	Isıya dayanıklı alaşım - High Temp. Alloy Hastelloy B, Inconel 600	Fe base	Tavlanmış - Annealed	140-220	480-755	14	20	27
			Kürlenmiş - Cured	223-310	755-990	11	16	21
		Ni or Co base	Tavlanmış - Annealed	250	—	11	16	21
			Kürlenmiş - Cured	350	—	11	16	21
	Titanyum alaşım - Titanium Alloy		Döküm - Cast	320	—	11	16	21
			α+β Kürlenmiş alaşım α+β alloys Cured	320	Rm 400	11	16	21
H	Plaka - Wear Plate Hardox, AR400, T-1		Sertleşmiş - Harden	400	1365	7	10	13
			Sertleşmiş - Harden	500	1600	—	—	—
	Sertleştirilmiş çelik - Hardened Steel		Sertleşmiş - Harden	300-400	1020-1365	9	13	16
			Sertleşmiş - Harden	400-500	1365+	—	—	—

Note:

1. Üst hız kesme parametreleri 3D modele tabidir. 5D ve 8D modelleri kullanırken, ilerlemeyi uygun şekilde azaltın. İlerleme: 3D=%100, 5D=%80 veya daha az, 8D=%70 veya daha az.

2. H sınıfı sert malzemeleri kesmek için MQL (mikro yağ soğutma yöntemi) kullanılması önerilir.

RAPID DRILL TAVSİYE EDİLEN KESME KOŞULLARI
RAPID DRILL CUTTING PARAMETER RECOMMENDATION

ISO	(fn)mm/r																				
	Ø 10.00-11.99mm			Ø 12.00-13.99mm			Ø 14.00-15.99mm			Ø 16.00-19.99mm			Ø 20.00-25.99mm			Ø 26.00-32.99mm			Ø 33.00-39.99mm		
	Min.	Tavsiye	Max.	Min.	Tavsiye	Max.	Min.	Tavsiye	Max.	Min.	Tavsiye	Max.	Min.	Tavsiye	Max.	Min.	Tavsiye	Max.	Min.	Tavsiye	Max.
P	0.13	0.18	0.23	0.14	0.20	0.26	0.18	0.25	0.33	0.22	0.32	0.41	0.24	0.35	0.45	0.27	0.38	0.49	0.28	0.40	0.52
	0.13	0.18	0.23	0.14	0.20	0.26	0.18	0.25	0.33	0.22	0.32	0.41	0.24	0.35	0.45	0.27	0.38	0.49	0.28	0.40	0.52
	0.13	0.18	0.23	0.14	0.20	0.26	0.18	0.25	0.33	0.22	0.32	0.41	0.24	0.35	0.45	0.27	0.38	0.49	0.28	0.40	0.52
	0.13	0.18	0.23	0.14	0.20	0.26	0.18	0.25	0.33	0.22	0.32	0.41	0.24	0.35	0.45	0.27	0.38	0.49	0.28	0.40	0.52
	0.11	0.16	0.21	0.13	0.18	0.23	0.16	0.23	0.30	0.21	0.30	0.39	0.22	0.32	0.42	0.25	0.36	0.47	0.27	0.38	0.49
	0.13	0.18	0.23	0.14	0.20	0.26	0.17	0.24	0.31	0.21	0.30	0.39	0.25	0.35	0.46	0.28	0.40	0.52	0.32	0.45	0.59
	0.13	0.18	0.23	0.14	0.20	0.26	0.17	0.24	0.31	0.21	0.30	0.39	0.25	0.35	0.46	0.28	0.40	0.52	0.32	0.45	0.59
	0.12	0.17	0.22	0.13	0.19	0.25	0.16	0.23	0.30	0.20	0.29	0.38	0.24	0.34	0.44	0.27	0.39	0.51	0.31	0.44	0.57
	0.11	0.16	0.21	0.13	0.18	0.23	0.15	0.22	0.29	0.20	0.28	0.36	0.23	0.33	0.43	0.27	0.38	0.49	0.30	0.43	0.56
	0.11	0.16	0.21	0.13	0.19	0.25	0.15	0.22	0.29	0.18	0.25	0.33	0.21	0.30	0.39	0.21	0.30	0.39	0.22	0.32	0.42
	0.11	0.16	0.21	0.13	0.19	0.25	0.15	0.22	0.29	0.18	0.25	0.33	0.21	0.30	0.39	0.21	0.30	0.39	0.22	0.32	0.42
	0.09	0.14	0.18	0.11	0.16	0.20	0.12	0.17	0.22	0.15	0.22	0.28	0.19	0.27	0.34	0.20	0.29	0.38	0.23	0.33	0.43
0.09	0.13	0.16	0.09	0.14	0.18	0.11	0.15	0.20	0.13	0.19	0.24	0.16	0.24	0.31	0.18	0.26	0.34	0.23	0.33	0.43	
M	0.09	0.13	0.16	0.09	0.14	0.18	0.11	0.15	0.20	0.12	0.18	0.23	0.15	0.22	0.28	0.17	0.24	0.31	0.23	0.33	0.43
	0.09	0.13	0.16	0.09	0.14	0.18	0.11	0.15	0.20	0.12	0.18	0.23	0.15	0.22	0.28	0.17	0.24	0.31	0.23	0.33	0.43
	0.09	0.13	0.16	0.09	0.14	0.18	0.11	0.15	0.20	0.12	0.18	0.23	0.14	0.21	0.27	0.16	0.23	0.30	0.23	0.33	0.43
	0.09	0.13	0.16	0.09	0.14	0.18	0.11	0.15	0.20	0.12	0.18	0.23	0.14	0.21	0.27	0.16	0.23	0.30	0.23	0.33	0.43
K	0.18	0.25	0.33	0.20	0.29	0.38	0.26	0.37	0.48	0.28	0.41	0.53	0.32	0.45	0.59	0.34	0.48	0.63	0.35	0.50	0.65
	0.18	0.25	0.33	0.20	0.29	0.38	0.26	0.37	0.48	0.28	0.41	0.53	0.32	0.45	0.59	0.34	0.48	0.63	0.35	0.50	0.65
	0.18	0.25	0.33	0.20	0.29	0.38	0.26	0.37	0.48	0.28	0.41	0.53	0.32	0.45	0.59	0.34	0.48	0.63	0.35	0.50	0.65
	0.18	0.25	0.33	0.20	0.29	0.38	0.26	0.37	0.48	0.28	0.41	0.53	0.32	0.45	0.59	0.34	0.48	0.63	0.35	0.50	0.65
	0.18	0.25	0.33	0.20	0.29	0.38	0.26	0.37	0.48	0.28	0.41	0.53	0.32	0.45	0.59	0.34	0.48	0.63	0.35	0.50	0.65
	0.18	0.25	0.33	0.20	0.29	0.38	0.26	0.37	0.48	0.28	0.41	0.53	0.32	0.45	0.59	0.34	0.48	0.63	0.35	0.50	0.65
N	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
	0.18	0.25	0.33	0.20	0.28	0.36	0.26	0.37	0.48	0.28	0.40	0.52	0.32	0.45	0.59	0.35	0.50	0.65	0.39	0.55	0.72
S	0.06	0.08	0.10	0.07	0.10	0.13	0.10	0.14	0.18	0.11	0.16	0.21	0.13	0.18	0.23	0.14	0.20	0.26	0.15	0.22	0.29
	0.06	0.08	0.10	0.07	0.10	0.13	0.10	0.14	0.18	0.11	0.16	0.21	0.13	0.18	0.23	0.14	0.20	0.26	0.15	0.22	0.29
	0.06	0.08	0.10	0.07	0.10	0.13	0.10	0.14	0.18	0.11	0.16	0.21	0.13	0.18	0.23	0.14	0.20	0.26	0.15	0.22	0.29
	0.06	0.08	0.10	0.07	0.10	0.13	0.10	0.14	0.18	0.11	0.16	0.21	0.13	0.18	0.23	0.14	0.20	0.26	0.15	0.22	0.29
	0.06	0.08	0.10	0.07	0.10	0.13	0.10	0.14	0.18	0.11	0.16	0.21	0.13	0.18	0.23	0.14	0.20	0.26	0.15	0.22	0.29
	0.06	0.08	0.10	0.07	0.10	0.13	0.10	0.14	0.18	0.11	0.16	0.21	0.13	0.18	0.23	0.14	0.20	0.26	0.15	0.22	0.29
	0.06	0.08	0.10	0.07	0.10	0.13	0.10	0.14	0.18	0.11	0.16	0.21	0.13	0.18	0.23	0.14	0.20	0.26	0.15	0.22	0.29
H	0.06	0.08	0.10	0.08	0.12	0.16	0.11	0.15	0.20	0.14	0.20	0.26	0.18	0.25	0.33	0.21	0.30	0.39	0.25	0.35	0.46
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	0.07	0.10	0.13	0.08	0.12	0.16	0.11	0.15	0.20	0.13	0.18	0.23	0.14	0.20	0.26	0.15	0.22	0.29	0.18	0.25	0.33
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Note:
 1. The cutting parameters recommended by the upper speed are subject to the 3D model. When using 5D and 8D models, reduce the feed rate appropriately according to the working conditions. Feed rate: 3D type=100%, 5D type=80% or less, 8D type=70% or less
 2. It is recommended to use MQL (micro oil mist cooling method) for cutting H-class hard materials.