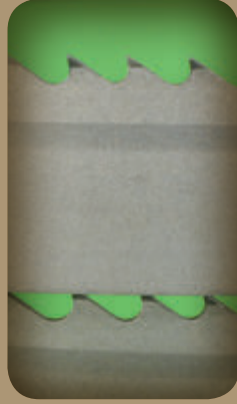


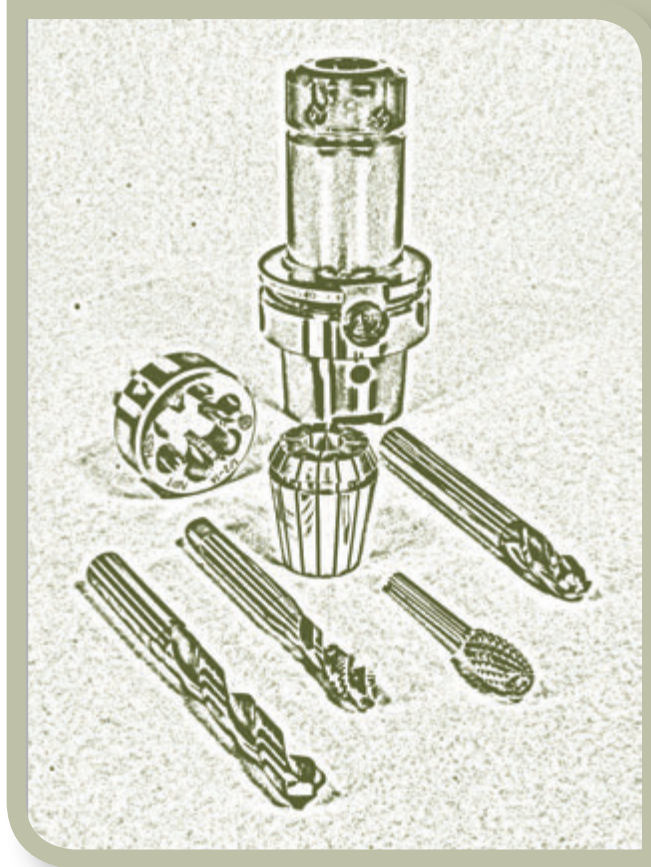
2017







53 years of experience...  
53 yıllık deneyim...



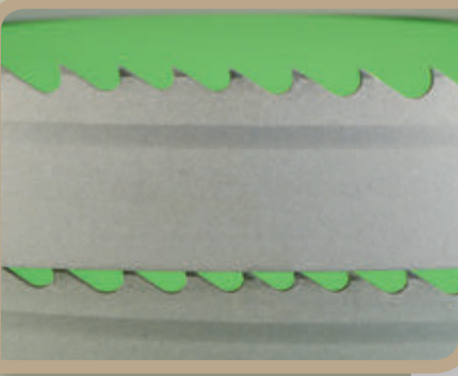
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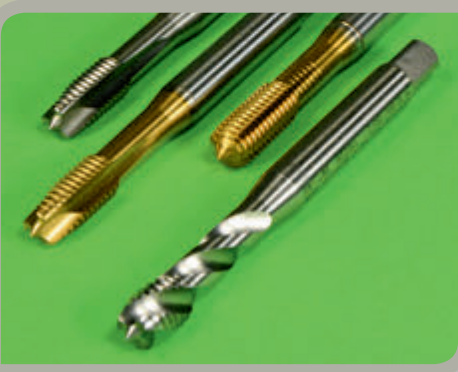
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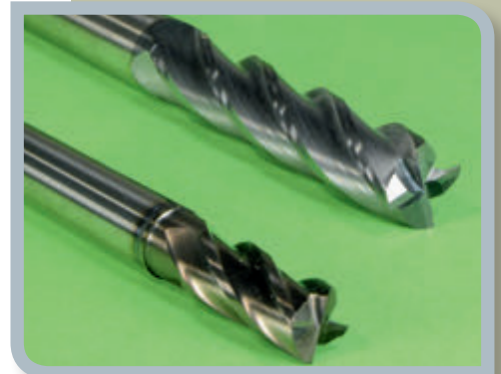
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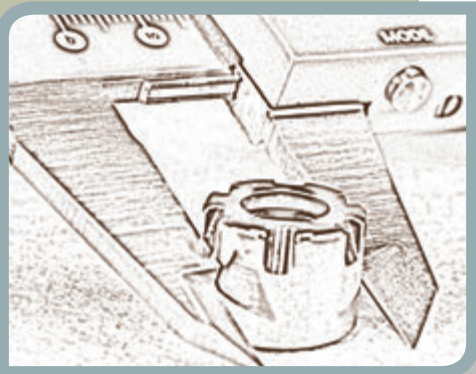
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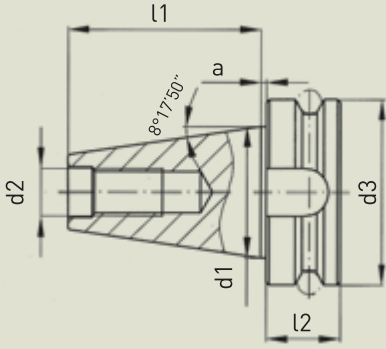
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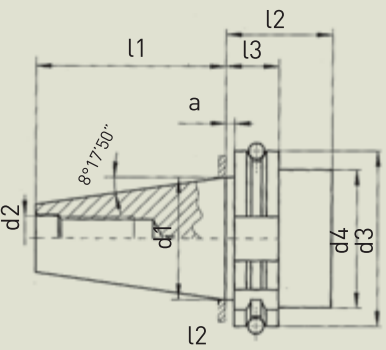
**TOOLHOLDERS & COLLETS**  
*TAKIM TUTUCULAR & PENSLER*

## TOOLHOLDERS TAPER STANDARDS TAKIM TUTUCU KONİK STANDARTLARI



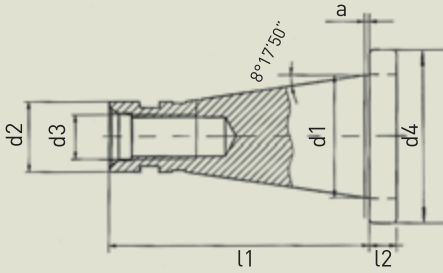
### MAS 403 BT (JIS B 6339)

TAPER	a +/- 0.2	d1	d2	d3	l2	l1 +/- 0.2
BT30	2	31.75	M12	46	20	48.4
BT40	2	44.45	M16	63	25	65.4
BT50	3	69.85	M24	100	35	101.8



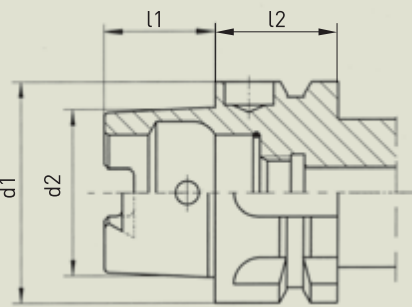
### DIN 69871 A (ISO 7388-1)

TAPER	a +/- 0.1	d1	d2	d3 0/- 0.1	d4 max.	l2 min.	l3 0/- 0.1	l1 0/- 0.3
DIN 30	3.2	31.75	M12	50.0	44	35	19.1	47.8
DIN 40	3.2	44.45	M16	63.55	50	35	19.1	68.4
DIN 50	3.2	69.85	M24	97.5	80	35	19.1	101.75



### DIN 2080 (ISO)

TAPER	a +/- 0.2	d1	d2 a10	d3	d4 0/-0.4	l2 +/- 0.15	l1
ISO 30	1.6	31.75	17.4	M12	50	8	68.4
ISO 40	1.6	44.45	25.3	M16	63	10	93.4
ISO 50	3.2	69.85	39.6	M24	97.5	12	126.8



### HSK DIN69893-1 A (ISO 12164-1)

TAPER	d1	d2	l1	l2
HSK 50	50	38	25	26
HSK 63	63	48	32	26
HSK 80	80	60	40	26

Tapers are according to AT3 specifications  
On the collet chucks the run out between outside taper to the taper of collet cavity is max. 5µ.  
Tutuculardaki konik hassasiyeti AT3 standardındadır.  
Pens tutucularındaki pens yuvası ile dış konik arası salgı max. 5µ.





**JIS B 6339 (MAS 403 BT)**

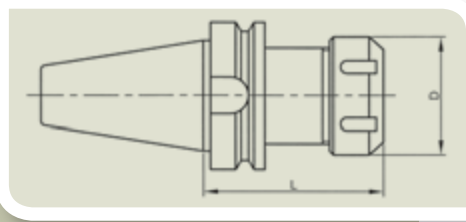
**TOOLHOLDERS**  
*TAKIM TUTUCULARI*

## ER COLLET CHUCKS ER PENS BAŞLIKLARI



### JIS B 6339 (MAS403 BT) - AD&B - Balanced G6.3

CODE / KOD BT 30	L	D	collet type and Ø clamping range pens tipi ve Ø sıkma aralığı	EURO
BT30 ER16	60	28	ER16 Ø1-10mm	29.00
BT30 ER25	60	42	ER25 Ø2-16mm	29.00
BT30 ER32	60	50	ER32 Ø3-20mm	31.00
BT30 ER40	70	63	ER40 Ø4-26mm	35.00



CODE / KOD BT 40	L	D	collet type and Ø clamping range pens tipi ve Ø sıkma aralığı	EURO
BT40 ER16	60	28	ER16 Ø1-10mm	25.00
BT40 ER16 100	100	28	ER16 Ø1-10mm	31.00
BT40 ER16 130M	130	22	ER16 Ø1-10mm	38.00
BT40 ER16 160	160	28	ER16 Ø1-10mm	49.00
BT40 ER20	70	34	ER20 Ø2-13mm	25.00
BT40 ER20 100	100	34	ER20 Ø2-13mm	31.00
BT40 ER25	70	42	ER25 Ø2-16mm	25.00
BT40 ER25 100	100	42	ER25 Ø2-16mm	31.00
BT40 ER25 160	160	42	ER25 Ø2-16mm	50.00
BT40 ER32	70	50	ER32 Ø3-20mm	25.00
BT40 ER32 100	100	50	ER32 Ø3-20mm	31.00
BT40 ER32 160	160	50	ER32 Ø3-20mm	52.00
BT40 ER40	70	63	ER40 Ø4-26mm	26.50
BT40 ER40 100	100	63	ER40 Ø4-26mm	32.00
BT40 ER40 160	160	63	ER40 Ø4-26mm	54.00

CODE / KOD BT 50	L	D	collet type and Ø clamping range pens tipi ve Ø sıkma aralığı	EURO
BT50 ER25	100	42	ER25 Ø2-16mm	50.00
BT50 ER25 160	160	42	ER25 Ø2-16mm	78.00
BT50 ER32	100	50	ER32 Ø3-20mm	50.00
BT50 ER32 160	160	50	ER32 Ø3-20mm	78.00
BT50 ER40	100	63	ER40 Ø4-26mm	52.00
BT50 ER40 160	160	63	ER40 Ø4-26mm	78.00
BT50 ER50	100	78	ER50 Ø12-34mm	78.00

## FACE MILL ADAPTORS

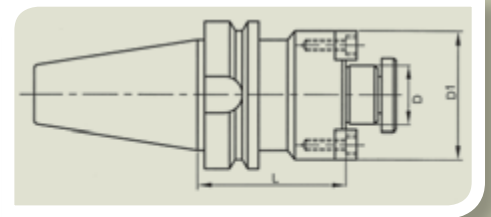
### ALINDAN SIKMALI FREZE TUTUCULAR

#### JIS B 6339 (MAS403 BT) - AD&B - Balanced G6.3

CODE / KOD BT 30	D	D1	L	EURO
BT30 FM16	16	38	40	30.00
BT30 FM22	22	48	40	30.00
BT30 FM27	27	58	40	30.00



CODE / KOD BT 40	D	D1	L	EURO
BT40 FM16	16	38	40	27.00
BT40 FM16 100	16	38	100	35.00
BT40 FM22	22	48	45	27.00
BT40 FM22 100	22	48	100	35.00
BT40 CM22 *	22	40	55	30.00
BT40 FM27	27	58	45	28.00
BT40 FM27 100	27	58	100	36.00
BT40 CM27 *	27	48	55	31.00
BT40 FM32	32	78	50	29.00
BT40 FM32 100	32	78	100	38.00
BT40 CM32 *	32	58	60	32.00
BT40 FM40	40	88	55	30.00

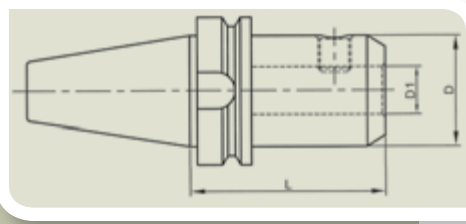


CODE / KOD BT 50	D	D1	L	EURO
BT50 FM16	16	38	55	50.00
BT50 FM22	22	48	55	50.00
BT50 FM27	27	58	55	52.00
BT50 FM32	32	78	55	52.00
BT50 FM40	40	88	55	54.00

\* CM are Combi Type shell mill holders suitable for vertical and horizontal keyway tools.

\* CM Kombine tip freze tutucusudur, enine ve boyuna kamalı takımları tutmaya uygundur.

## WELDON ADAPTORS WELDON TUTUCULAR



### JIS B 6339 (MAS403 BT) - AD&B - Balanced G6.3

CODE / KOD BT 30	D1	D	L	EURO
BT30 W06	6	25	50	27.00
BT30 W08	8	28	50	30.00
BT30 W10	10	35	50	27.00
BT30 W12	12	42	50	27.00
BT30 W16	16	48	63	27.00
BT30 W20	20	52	63	27.00

CODE / KOD BT 40	D1	D	L	EURO
BT40 W06	6	25	50	25.00
BT40 W06 100	6	25	100	30.00
BT40 W08	8	28	50	28.00
BT40 W08 100	8	28	100	33.00
BT40 W10	10	35	63	24.00
BT40 W10 100	10	35	100	29.00
BT40 W12	12	42	63	24.00
BT40 W12 100	12	42	100	29.00
BT40 W14	14	44	63	28.00
BT40 W16	16	48	63	24.00
BT40 W16 100	16	48	100	29.00
BT40 W18	18	50	63	29.00
BT40 W20	20	52	63	24.00
BT40 W20 100	20	52	100	29.00
BT40 W25	25	65	90	27.00
BT40 W32	32	72	100	32.00
BT40 W40	40	80	120	38.00

CODE / KOD BT 50	D1	D	L	EURO
BT50 W06	6	25	63	52.00
BT50 W08	8	28	63	54.00
BT50 W10	10	35	63	48.00
BT50 W12	12	42	80	48.00
BT50 W14	14	44	80	54.00
BT50 W16	16	48	80	48.00
BT50 W18	18	50	80	54.00
BT50 W20	20	52	80	48.00
BT50 W25	25	65	100	50.00
BT50 W32	32	72	105	52.00
BT50 W40	40	80	120	58.00

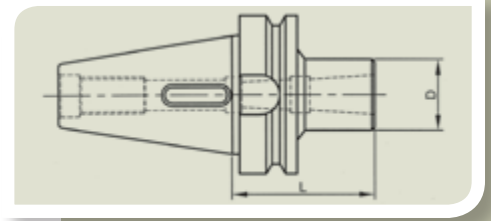
## MORSE TAPER ADAPTORS

### MORS KONİK TUTUCUSU

#### JIS B 6339 (MAS403 BT) - Balanced G6.3

CODE / KOD BT 40	MT	D	L	EURO
BT40 MT1	1	25	50	26.00
BT40 MT2	2	32	50	26.00
BT40 MT2 DB *	2	32	50	28.00
BT40 MT3	3	40	70	28.00
BT40 MT3 DB *	3	40	70	30.00
BT40 MT4	4	48	95	30.00
BT40 MT4 DB *	4	48	95	32.00

CODE / KOD BT 50	MT	D	L	EURO
BT50 MT1	1	25	45	52.00
BT50 MT2	2	32	60	49.00
BT50 MT3	3	40	65	50.00
BT50 MT4	4	48	95	52.00
BT50 MT5	5	63	105	55.00



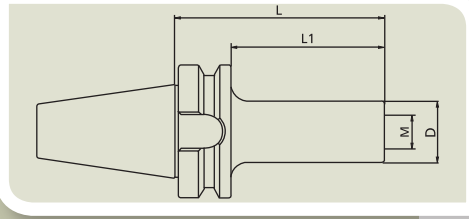
\* DB type are drawbar type for holding morse taper shank with screwed end, all others are for tang type morse taper shanks.

\* DB tipi çektilme vidalı mors konik saplar içindir, tüm diğerleri çakmalı tip mors konik saplar içindir.

## TOOLHOLDER FOR SCREW IN TYPE CUTTERS VİDALI TİP TAKIM TUTUCUSU

### JIS B 6339 (MAS403 BT) - AD&B - Balanced G6.3

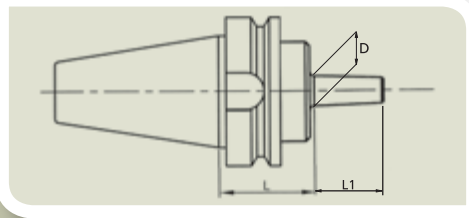
CODE / KOD BT 40	M	D	L	L1	EURO
BT40 M12-75	M12	21	75	48	34.00
BT40 M12-100	M12	21	100	73	37.00
BT40 M12-130	M12	21	130	103	40.00
BT40 M16-75	M16	29	75	48	34.00
BT40 M16-100	M16	29	100	73	37.00
BT40 M16-130	M16	29	130	103	40.00



## DRILL CHUCK ADAPTORS MANDREN TUTUCUSU

### JIS B 6339 (MAS403 BT)

CODE / KOD BT 40	D	L	L1	EURO
BT40 B12	B12	25	18.5	25.00
BT40 B16	B16	25	24	25.00
BT40 B18	B18	32	32	25.00

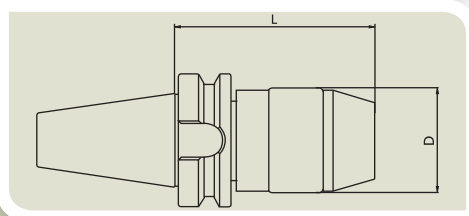


CODE / KOD BT 50	D	L	L1	EURO
BT50 B16	B16	32	24	49.00
BT50 B18	B18	32	32	49.00

## DRILL CHUCK HOLDER MANDRENLİ TUTUCU

### JIS B 6339 (MAS403 BT)

CODE / KOD BT 40	Clamping Range	D	L	EURO
BT40 DC13	1-13mm	48	100	80.00
BT40 DC16	3-16mm	53	110	84.00

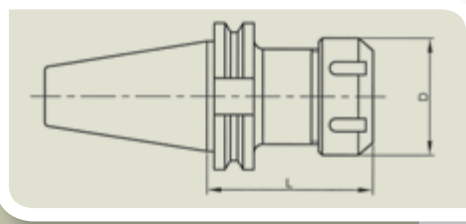




**DIN 69871 (ISO 7388-1)**

**TOOLHOLDERS**  
*TAKIM TUTUCULARI*

## COLLET CHUCKS PENS BAŞLIKLARI



### DIN 69871 (ISO7388-1) - AD&B - Balanced G6.3

CODE / KOD DIN 30	L	D	collet type and $\emptyset$ clamping range pens tipi ve $\emptyset$ sıkma aralığı	EURO
DIN30 ER16	60	28	ER16 $\emptyset$ 1-10mm	29.00
DIN30 ER25	60	42	ER25 $\emptyset$ 2-16mm	29.00
DIN30 ER32	60	50	ER32 $\emptyset$ 3-20mm	31.00
DIN30 ER40	70	63	ER40 $\emptyset$ 4-26mm	35.00

CODE / KOD DIN 40	L	D	collet type and $\emptyset$ clamping range pens tipi ve $\emptyset$ sıkma aralığı	EURO
DIN40 ER16	60	28	ER16 $\emptyset$ 1-10mm	25.00
DIN40 ER16 100	100	28	ER16 $\emptyset$ 1-10mm	31.00
DIN40 ER16 130M	130	22	ER16 $\emptyset$ 1-10mm	38.00
DIN40 ER16 160	160	28	ER16 $\emptyset$ 1-10mm	49.00
DIN40 ER20	70	34	ER20 $\emptyset$ 2-13mm	25.00
DIN40 ER20 100	100	34	ER20 $\emptyset$ 2-13mm	31.00
DIN40 ER25	70	42	ER25 $\emptyset$ 2-16mm	25.00
DIN40 ER25 100	100	42	ER25 $\emptyset$ 2-16mm	31.00
DIN40 ER25 160	160	42	ER25 $\emptyset$ 2-16mm	50.00
DIN40 ER32	70	50	ER32 $\emptyset$ 3-20mm	25.00
DIN40 ER32 100	100	50	ER32 $\emptyset$ 3-20mm	31.00
DIN40 ER32 160	160	50	ER32 $\emptyset$ 3-20mm	52.00
DIN40 ER40	70	63	ER40 $\emptyset$ 4-26mm	26.50
DIN40 ER40 100	100	63	ER40 $\emptyset$ 4-26mm	32.00
DIN40 ER40 160	160	63	ER40 $\emptyset$ 4-26mm	54.00

CODE / KOD DIN 50	L	D	collet type and $\emptyset$ clamping range pens tipi ve $\emptyset$ sıkma aralığı	EURO
DIN50 ER25	100	42	ER25 $\emptyset$ 2-16mm	50.00
DIN50 ER25 160	160	42	ER25 $\emptyset$ 2-16mm	78.00
DIN50 ER32	100	50	ER32 $\emptyset$ 3-20mm	50.00
DIN50 ER32 160	160	50	ER32 $\emptyset$ 3-20mm	78.00
DIN50 ER40	100	63	ER40 $\emptyset$ 4-26mm	52.00
DIN50 ER40 160	160	63	ER40 $\emptyset$ 4-26mm	78.00
DIN50 ER50	100	78	ER50 $\emptyset$ 12-34mm	78.00



## FACE MILL ADAPTORS

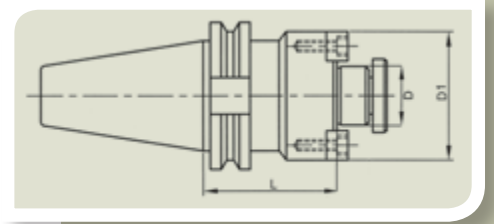
### ALINDAN SIKMALI FREZE TUTUCULAR

#### DIN 69871 (ISO7388-1) - AD&B - Balanced G6.3

CODE / KOD DIN 30	D	D1	L	EURO
DIN30 FM16	16	38	40	30.00
DIN30 FM22	22	48	40	30.00
DIN30 FM27	27	58	40	30.00

CODE / KOD DIN 40	D	D1	L	EURO
DIN40 FM16	16	38	35	27.00
DIN40 FM16 100	16	38	100	35.00
DIN40 FM22	22	48	35	27.00
DIN40 FM22 100	22	48	100	35.00
DIN40 CM22 *	22	40	55	30.00
DIN40 FM27	27	58	40	28.00
DIN40 FM27 100	27	58	100	36.00
DIN40 CM27 *	27	48	55	31.00
DIN40 FM32	32	78	50	29.00
DIN40 FM32 100	32	78	100	38.00
DIN40 CM32 *	32	58	60	32.00
DIN40 FM40	40	88	50	30.00

CODE / KOD DIN 50	D	D1	L	EURO
DIN50 FM16	16	38	35	50.00
DIN50 FM22	22	48	35	50.00
DIN50 FM27	27	58	40	52.00
DIN50 FM32	32	78	50	52.00
DIN50 FM40	40	88	50	54.00



\* CM are Combi Type shell mill holders suitable for vertical and horizontal keyway tools.

\* CM Kombine tip freze tutucusudur, enine ve boyuna kamalı takımları tutmaya uygundur.

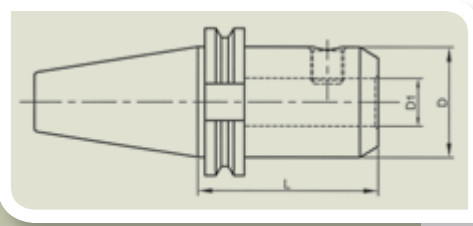
## WELDON ADAPTORS WELDON TUTUCULAR

### DIN 69871 (ISO7388-1) - AD&B - Balanced G6.3

CODE / KOD DIN 30	D1	D	L	EURO
DIN30 W06	6	25	50	27.00
DIN30 W08	8	28	50	30.00
DIN30 W10	10	35	50	27.00
DIN30 W12	12	42	50	27.00
DIN30 W16	16	48	63	27.00
DIN30 W20	20	52	63	27.00

CODE / KOD DIN 40	D1	D	L	EURO
DIN40 W06	6	25	50	25.00
DIN40 W06 100	6	25	100	30.00
DIN40 W08	8	28	50	28.00
DIN40 W08 100	8	28	100	33.00
DIN40 W10	10	35	50	24.00
DIN40 W10 100	10	35	100	29.00
DIN40 W12	12	42	50	24.00
DIN40 W12 100	12	42	100	29.00
DIN40 W14	14	44	50	28.00
DIN40 W16	16	48	63	24.00
DIN40 W16 100	16	48	100	29.00
DIN40 W18	18	50	63	29.00
DIN40 W20	20	52	63	24.00
DIN40 W20 100	20	52	100	29.00
DIN40 W25	25	65	100	27.00
DIN40 W32	32	72	100	32.00
DIN40 W40	40	80	120	38.00

CODE / KOD DIN 50	D1	D	L	EURO
DIN50 W06	6	25	63	52.00
DIN50 W08	8	28	63	54.00
DIN50 W10	10	35	63	48.00
DIN50 W12	12	42	63	48.00
DIN50 W14	14	44	63	54.00
DIN50 W16	16	48	63	48.00
DIN50 W18	18	50	63	54.00
DIN50 W20	20	52	63	48.00
DIN50 W25	25	65	80	50.00
DIN50 W32	32	72	100	52.00
DIN50 W40	40	80	120	58.00



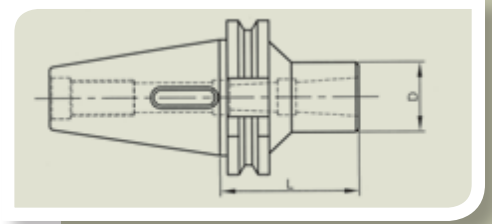
## MORSE TAPER ADAPTORS

### MORS KONİK TUTUCUSU

#### DIN 69871 (ISO7388-1) - Balanced G6.3

CODE / KOD DIN 40	MT	D	L	EURO
DIN40 MT1	1	25	50	26.00
DIN40 MT2	2	32	50	26.00
DIN40 MT2 DB *	2	32	50	28.00
DIN40 MT3	3	40	70	28.00
DIN40 MT3 DB *	3	40	70	30.00
DIN40 MT4	4	48	95	30.00
DIN40 MT4 DB *	4	48	95	32.00

CODE / KOD DIN 50	MT	D	L	EURO
DIN50 MT1	1	25	45	52.00
DIN50 MT2	2	32	60	49.00
DIN50 MT3	3	40	65	50.00
DIN50 MT4	4	48	95	52.00
DIN50 MT5	5	63	105	55.00



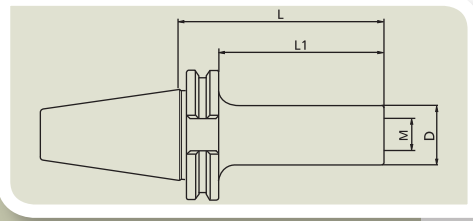
\* DB type are drawbar type for holding morse taper shank with screwed end, all others are for tang type morse taper shanks.

\* DB tipi çekirme vidalı mors konik saplar içindir, tüm diğerleri çakmalı tip mors konik saplar içindir.

## TOOLHOLDER FOR SCREW IN TYPE CUTTERS VİDALI TİP TAKIM TUTUCUSU

### DIN 69871 (ISO7388-1) - AD&B - Balanced G6.3

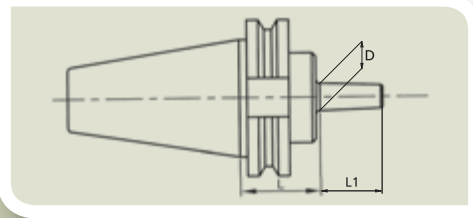
CODE / KOD DIN 40	M	D	L	L1	EURO
DIN40 M12-75	M12	21	75	56	34.00
DIN40 M12-100	M12	21	100	81	37.00
DIN40 M12-130	M12	21	130	111	40.00
DIN40 M16-75	M16	29	75	56	34.00
DIN40 M16-100	M16	29	100	81	37.00
DIN40 M16-130	M16	29	130	111	40.00



## DRILL CHUCK ADAPTORS MANDREN TUTUCUSU

### DIN 69871 (ISO7388-1)

CODE / KOD DIN 40	D	L	L1	EURO
DIN40 B12	B12	25	18.5	25.00
DIN40 B16	B16	25	24	25.00
DIN40 B18	B18	35	32	25.00

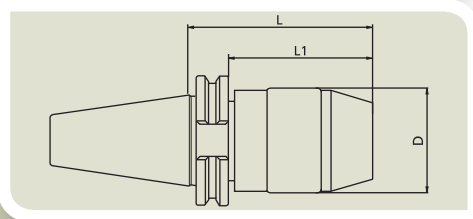


CODE / KOD DIN 50	D	L	L1	EURO
DIN50 B16	B16	25	24	49.00
DIN50 B18	B18	35	32	49.00

## DRILL CHUCK HOLDER MANDRENLİ TUTUCU

### JIS B 6339 (MAS403 BT)

CODE / KOD DIN 40	Clamping Range	D	L	EURO
DIN40 DC13	1-13mm	48	100	80.00
DIN40 DC16	3-16mm	53	110	84.00





**DIN 2080 ISO**

**TOOLHOLDERS**  
*TAKIM TUTUCULARI*

## COLLET CHUCKS PENS BAŞLIKLARI

### DIN 2080 ISO

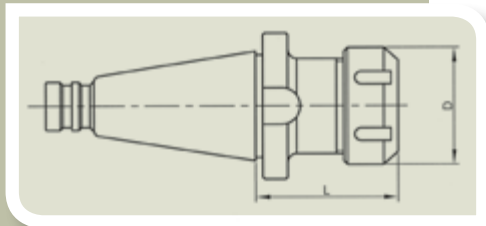
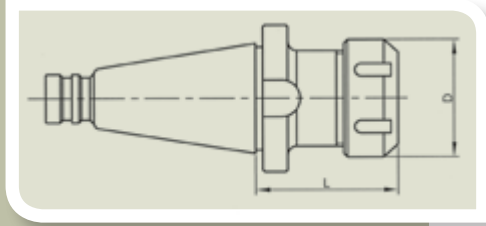
CODE / KOD ISO 30	L	D	collet type and Ø clamping range pens tipi ve Ø sıkma aralığı	EURO
ISO30 ER16	50	28	ER16 Ø1-10mm	29.00
ISO30 ER25	50	42	ER25 Ø2-16mm	29.00
ISO30 ER32	50	50	ER32 Ø3-20mm	31.00
ISO30 ER40	60	63	ER40 Ø4-26mm	35.00

CODE / KOD ISO 40	L	D	collet type and Ø clamping range pens tipi ve Ø sıkma aralığı	EURO
ISO40 ER16	50	28	ER16 Ø1-10mm	25.00
ISO40 ER25	60	42	ER25 Ø2-16mm	25.00
ISO40 ER32	60	50	ER32 Ø3-20mm	25.00
ISO40 ER40	60	63	ER40 Ø4-26mm	26.50

CODE / KOD ISO 50	L	D	collet type and Ø clamping range pens tipi ve Ø sıkma aralığı	EURO
ISO50 ER32	70	50	ER32 Ø3-20mm	50.00
ISO50 ER40	70	63	ER40 Ø4-26mm	52.00
ISO50 ER50	90	78	ER50 Ø12-34mm	78.00

### ISO40 DIN6388-25 Collet Chuck - ISO40 DIN6388-25 Pens Başlığı

CODE / KOD ISO 40	L	D	collet type and Ø clamping range pens tipi ve Ø sıkma aralığı	EURO
ISO40 OZ25	70	60	OZ25 Ø2-25mm	28.00



## FACE MILL ADAPTORS

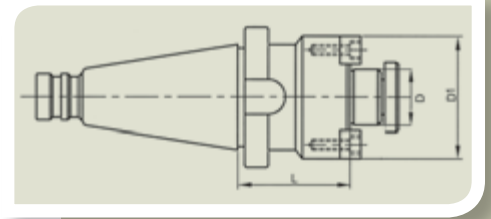
### ALINDAN SIKMALI FREZE TUTUCULAR

#### DIN 2080 ISO

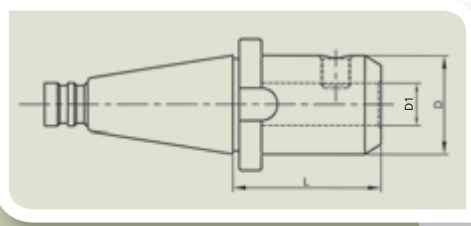
CODE / KOD ISO 30	D	D1	L	EURO
ISO30 FM16	16	38	30	30.00
ISO30 FM22	22	48	30	30.00
ISO30 FM27	27	58	30	30.00

CODE / KOD ISO 40	D	D1	L	EURO
ISO40 FM16	16	38	30	27.00
ISO40 FM22	22	48	30	27.00
ISO40 FM27	27	58	30	28.00
ISO40 FM32	32	78	30	29.00
ISO40 FM40	40	88	30	30.00

CODE / KOD ISO 50	D	D1	L	EURO
ISO50 FM16	16	38	30	50.00
ISO50 FM22	22	48	35	50.00
ISO50 FM27	27	58	35	52.00
ISO50 FM32	32	78	40	52.00
ISO50 FM40	40	88	40	54.00



## WELDON ADAPTORS WELDON TUTUCULAR



### DIN 2080 ISO

CODE / KOD ISO 30	D1	D	L	EURO
ISO30 W10	10	35	40	27.00
ISO30 W12	12	42	40	27.00
ISO30 W16	16	48	50	27.00
ISO30 W20	20	52	63	27.00

CODE / KOD ISO 40	D1	D	L	EURO
ISO40 W06	6	25	50	25.00
ISO40 W08	8	28	50	28.00
ISO40 W10	10	35	50	24.00
ISO40 W12	12	42	50	24.00
ISO40 W16	16	48	63	24.00
ISO40 W20	20	52	63	24.00
ISO40 W25	25	65	80	27.00
ISO40 W32	32	72	80	32.00
ISO40 W40	40	80	90	38.00

CODE / KOD ISO 50	D1	D	L	EURO
ISO50 W10	10	35	63	48.00
ISO50 W12	12	42	63	48.00
ISO50 W16	16	48	63	48.00
ISO50 W20	20	52	63	48.00
ISO50 W25	25	65	80	50.00
ISO50 W32	32	72	80	52.00
ISO50 W40	40	80	90	58.00



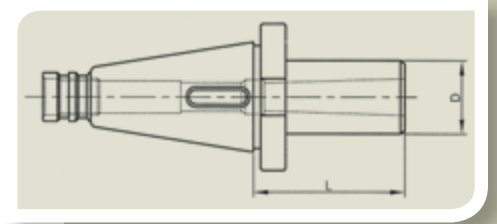
## MORSE TAPER ADAPTORS MORS KONİK TUTUCUSU

### DIN 2080 ISO

CODE / KOD ISO 40	MT	D	L	EURO
ISO40 MT1	1	25	50	26.00
ISO40 MT2	2	32	50	26.00
ISO40 MT3	3	40	65	28.00
ISO40 MT4	4	48	95	30.00



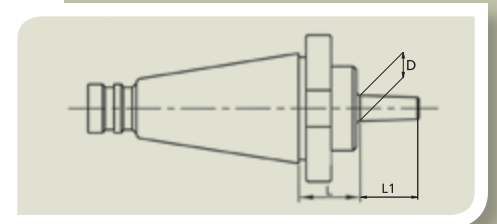
CODE / KOD ISO 50	MT	D	L	EURO
ISO50 MT2	2	32	60	49.00
ISO50 MT3	3	40	65	50.00
ISO50 MT4	4	48	70	52.00
ISO50 MT5	5	63	105	55.00



## DRILL CHUCK ADAPTORS MANDREN TUTUCUSU

### DIN 2080 ISO

CODE / KOD ISO 40	D	L	L1	EURO
ISO40 B12	B12	15	18.5	25.00
ISO40 B16	B16	17	24	25.00
ISO40 B18	B18	17	32	25.00







**HSK DIN69893 / ISO 12164  
MORSE TAPER DIN228  
TOOLHOLDERS**

*HSK DIN69893 / ISO 12164  
MORS KONİK DIN228  
TAKIM TUTUCULAR*

## HSK A COLLET HOLDERS DIN69893 / ISO 12164 FORM A

### HSK A PENS BAŞLIKLARI DIN69893 / ISO 12164 FORM A

#### HSK A - Balanced G2.5

CODE / KOD HSK50A	L	D	collet type and Ø clamping range pens tipi ve Ø sıkma aralığı	EURO
HSK50A ER16	100	28	ER16 Ø1-10mm	66.00
HSK50A ER25	100	42	ER25 Ø2-16mm	66.00
HSK50A ER32	100	50	ER32 Ø3-20mm	66.00

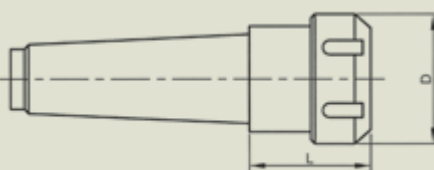
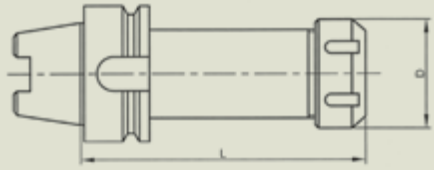
CODE / KOD HSK63A	L	D	collet type and Ø clamping range pens tipi ve Ø sıkma aralığı	EURO
HSK63A ER16	100	28	ER16 Ø1-10mm	66.00
HSK63A ER25	100	42	ER25 Ø2-16mm	66.00
HSK63A ER32	100	50	ER32 Ø3-20mm	66.00
HSK63A ER40	100	63	ER40 Ø4-26mm	66.00

## DIN228 MORSE TAPER SHANK COLLET CHUCKS

### DIN228 MORS KONİK SAPLI PENS BAŞLIKLARI

#### MT DIN228

CODE / KOD MT	L	D	collet type and Ø clamping range pens tipi ve Ø sıkma aralığı	EURO
MT2 ER20	50	34	ER20 Ø2-13mm	29.00
MT2 ER25	55	42	ER25 Ø2-16mm	29.00
MT2 ER32	70	50	ER32 Ø3-20mm	29.00
MT3 ER25	55	42	ER25 Ø2-16mm	29.00
MT3 ER32	70	50	ER32 Ø3-20mm	29.00
MT3 ER40	75	63	ER40 Ø4-26mm	29.00
MT4 ER32	70	50	ER32 Ø3-20mm	31.00
MT4 ER40	75	63	ER40 Ø4-26mm	31.00

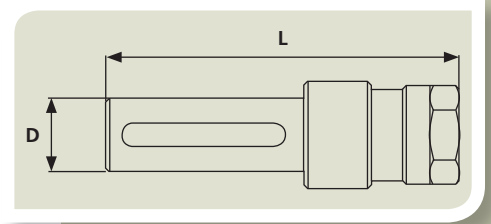


## STRAIGHT SHANK TAPPING CHUCK SİLİNDİRİK SAPLI KILAVUZ ADAPTÖRÜ

### TAPPING CHUCK / KILAVUZ ADAPTÖRÜ

CODE / KOD	L	D	collet type and Ø clamping range pens tipi ve Ø sıkma aralığı	tapping range kılavuz çekme aralığı	EURO
KT16 ER16	115	16	ER16 Ø1-10mm	M2 - M12	42.00
KT20 ER20	120	20	ER20 Ø2-13mm	M3 - M16	42.00
KT25 ER25	130	25	ER25 Ø2-16mm	M3 - M20	44.00

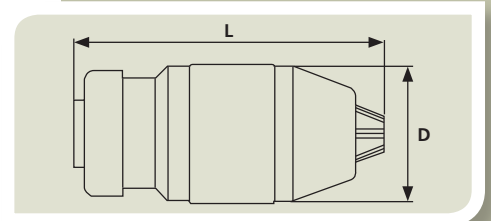
Suitable for ERT and ERTC tapping collets. They can also be used with standard ER collets  
ERT ve ERTC kılavuz penslerine uygundur. Normal ER penslerle de kullanılabilir



## SELF CENTERING DRILL CHUCK ELLE SIKMA MATKAP MANDRENİ

### DRILL CHUCK / MATKAP MANDRENİ

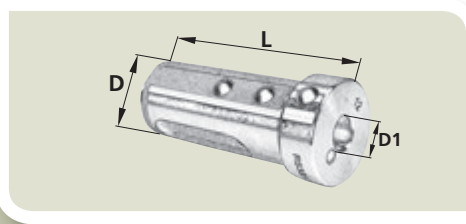
CODE / KOD	L	D	clamping range sıkma aralığı	inner rear taper arka konik	EURO
DC13B16	105	48	Ø1-13mm	B16	21.00
DC16B18	110	53	Ø1-16mm	B18	24.00



## REDUCTION SLEEVES FOR CNC TURNING MACHINES CNC TORNALAR İÇİN REDÜKSİYON KOVANLAR

### REDUCTION SLEEVE / REDÜKSİYON KOVAN

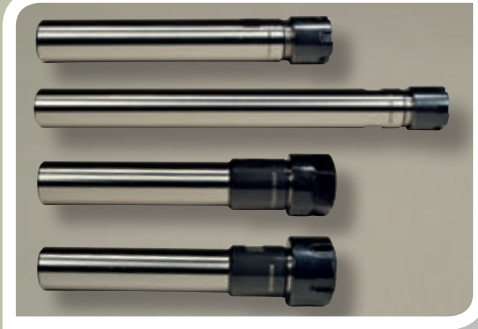
CODE / KOD	D	D1	L	FORM	EURO
RS2508	25	8	63	FORM 1	14.00
RS2510	25	10	63	FORM 1	14.00
RS2512	25	12	63	FORM 2	14.00
RS2516	25	16	63	FORM 2	14.00
RS2520	25	20	63	FORM 2	14.00
RS3208	32	8	89	FORM 1	15.00
RS3210	32	10	89	FORM 1	15.00
RS3212	32	12	89	FORM 1	15.00
RS3216	32	16	89	FORM 1	15.00
RS3220	32	20	89	FORM 2	15.00
RS3225	32	25	89	FORM 2	15.00
RS4008	40	8	100	FORM 1	16.50
RS4010	40	10	100	FORM 1	16.50
RS4012	40	12	100	FORM 1	16.50
RS4016	40	16	100	FORM 1	16.50
RS4020	40	20	100	FORM 1	16.50
RS4025	40	25	100	FORM 2	16.50
RS4032	40	32	100	FORM 2	16.50





**STAIHT SHANK COLLET CHUCKS**  
*SİLİNDİRİK SAPLI PENS TUTUCULARI*

## STRAIGHT SHANK ER COLLET HOLDERS SİLİNDİRİK SAPLI ER PENS TUTUCULARI



Straight shank collet holders have through hole for internal coolant and stop screw inside.

Silindirik saplı pens tutucuları içten soğutma için boydan boya deliktir ayrıca dayama vidası vardır.

### ER8

CODE / KOD	D	D1	L	collet type and Ø clamping range pens tipi ve Ø sıkma aralığı	EURO
ER0808085M	8	12	85	ER8 Ø1-5mm	23.00
ER0810095M	10	12	95	ER8 Ø1-5mm	23.00
ER0812095M	12	12	95	ER8 Ø1-5mm	23.00

### ER11

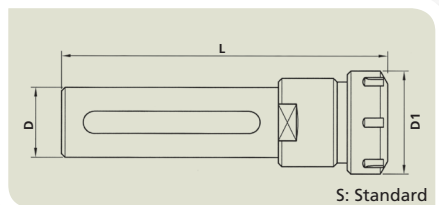
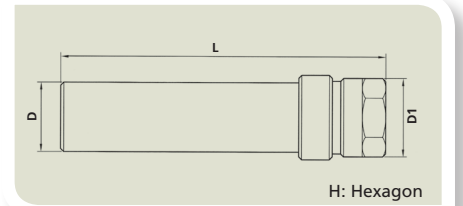
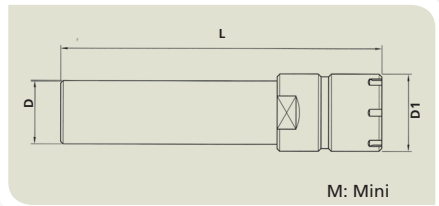
ER1112100M	12	16	100	ER11 Ø1-7mm	22.00
ER1116115M	16	16	115	ER11 Ø1-7mm	22.00
ER1116165M	16	16	165	ER11 Ø1-7mm	32.00
ER1116115H	16	19	115	ER11 Ø1-7mm	22.00

### ER16

ER1620130M	20	22	130	ER16 Ø1-10mm	22.00
ER1620200M	20	22	200	ER16 Ø1-10mm	33.00
ER1620130H	20	28	130	ER16 Ø1-10mm	22.00
ER1620130S	20	32	130	ER16 Ø1-10mm	22.00

### ER20

ER2020140M	20	28	140	ER20 Ø2-13mm	23.00
ER2020140H	20	34	140	ER20 Ø2-13mm	23.00
ER2020140S	20	35	140	ER20 Ø2-13mm	23.00
ER2025110H	25	34	110	ER20 Ø2-13mm	23.00
ER2025110S	25	35	110	ER20 Ø2-13mm	23.00
ER2025200M	25	28	200	ER20 Ø2-13mm	34.00



Suffix on the codes specifies the type of locknut  
M: with ER Mini locknut  
H: with ER Hexagon locknut  
S: with ER Standart locknut

Kodun sonundaki harf somun tipini belirtir.  
M: ER Mini somunlu  
H: ER Altıköşe somunlu  
S: ER Standart somunlu



## STRAIGHT SHANK ER COLLET HOLDERS SİLİNDİRİK SAPLI ER PENS TUTUCULARI

### ER25

CODE / KOD	D	D1	L	collet type and Ø clamping range pens tipi ve Ø sıkma aralığı	EURO
ER2520145M	20	35	145	ER25 Ø2-16mm	24.00
ER2525145M	25	35	145	ER25 Ø2-16mm	24.00
ER2525200M	25	35	200	ER25 Ø2-16mm	34.00
ER25254200M	25.4 (1"inch)	35	200	ER25 Ø2-16mm	34.00
ER2532110S	32	42	110	ER25 Ø2-16mm	24.00



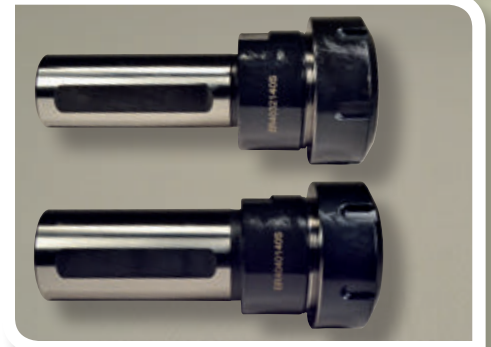
### ER32

ER3225110S	25	50	110	ER32 Ø3-20mm	25.00
ER3232110S	32	50	110	ER32 Ø3-20mm	25.00
ER3240110S	40	50	110	ER32 Ø3-20mm	26.00



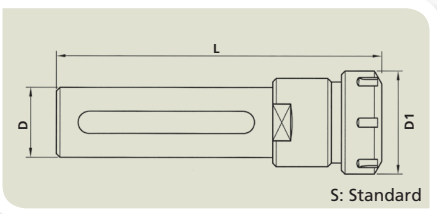
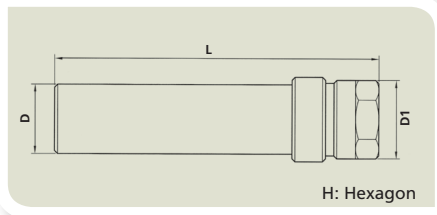
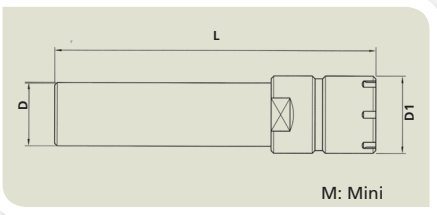
### ER40

ER4032140S	32	63	140	ER40 Ø4-26mm	32.00
ER4040140S	40	63	140	ER40 Ø4-26mm	32.00



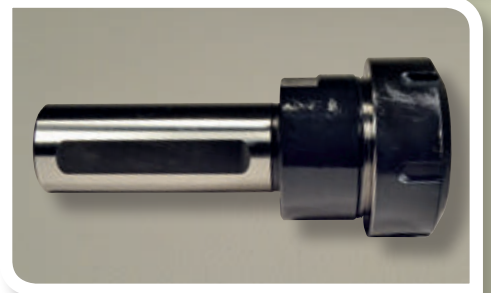
### ER50

ER5040165S	40	78	165	ER50 Ø6-40mm	88.00
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Suffix on the codes specifies the type of locknut  
M: with ER Mini locknut  
H: with ER Hexagon locknut  
S: with ER Standart locknut

Kodun sonundaki harf somun tipini belirtir.  
M: ER Mini somunlu  
H: ER Altıköşe somunlu  
S: ER Standart somunlu



Straight shank collet holders have through hole for internal coolant and stop screw inside.

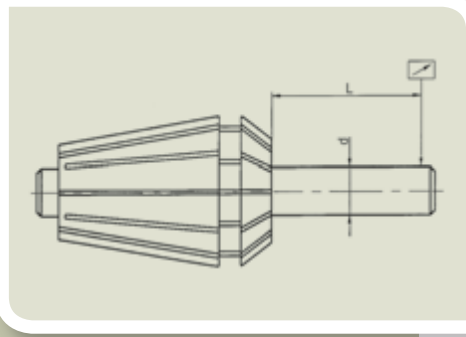
Silindirik saplı pens tutucuları içten soğutma için boydan boya deliktir ayrıca dayama vidası vardır.


## PRECISION STANDARDS HASSASİYET STANDARTLARI



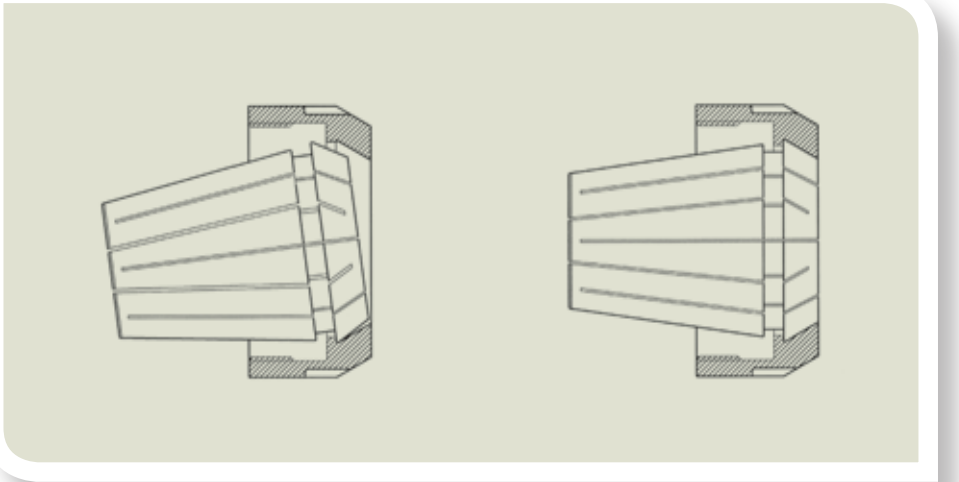
3 different precision levels  
3 ayrı hassasiyet sınıfı:

CLASS 2	Precise and economic, according to DIN6499 Class 2 max 15-20 micron run out. <i>Hassas ve ekonomik, DIN 6499 Class 2 standardında max.15-20 mikron salgı.</i>
CLASS 1	Upper precision level according to DIN 6499 Class 1 max. 10 micron run out. <i>Daha Hassas, DIN 6499 Class 1 standardında max.10 mikron salgı.</i>
TOPAC	TOP level ACcuracy with max. run out to 5micron, suitable for very high precision , tight tolerance , high speed applications. <i>Süper Hassas, max 5 mikron salgı. Çok hassas takımlar, dar toleranslı işler, yüksek hızlı işlemeye uygun.</i>



Ø d	L	DIN 6499 CLASS 2	DIN 6499 CLASS 1	 TOPAC
1 - 1.6	6	0.015	0.010	0.005
1.6 - 3	10	0.015	0.010	0.005
3 - 7	16	0.015	0.010	0.005
7 - 10	25	0.015	0.010	0.005
10 - 18	40	0.020	0.010	0.005
18 - 25	50	0.020	0.010	0.005
25 - 34	60	0.020	0.015	0.010

## COLLET MOUNTING INSTRUCTION PENS BAĞLAMA YÖNTEMİ





**COLLETS**  
**PENSLER**

## COLLETS PENSLER



All Gurkan collets

... are 100% run out checked

...are not deformed when clamped to their minimum diameter.

...do not break with small shocks.

... are friendly to your toolholder in term of their smooth surface free of sharp edges and their exact angle geometry to suit the chuck taper and its clamping nut.

*Tüm Gürkan pensleri :*

*% 100 salgı kontrolünden geçmiştir.*

*Alt çaplarını sıkıldığında deforme olmaz...*

*Küçük darbelerden kırılmaz.*

*Çapaksız ve hassas yüzey kalitesi ile tutucunuza zarar vermez ve kusursuz açılal geometrisiyle tutucunuza mükemmel uyum sağlar.*

### COLLETS PACKAGING / PENS AMBALAJLARI

The different precision levels are distinguished with different colors of caps on the plastic collets boxes.

The bodies of the plastic packs are transparent.

The transparent light blue color bodies are only used for coolant sealed collets.

*Belirtilen 3 ayrı hassasiyet grubu penslerin plastik ambalajlarındaki kapak renkleri ile ayrılmaktadır.*

*Plastik kutuların gövdeleri şeffaftır.*

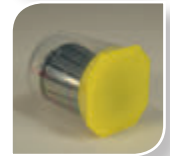
*Açık mavi renkli gövdeler sadece sızdırmaz penslerde kullanılmıştır.*



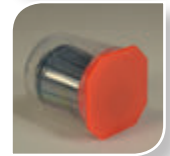
**Transparent cap : CLASS 2 (max.15-20 micron run out)**  
*Seffaf kapak : CLASS 2 (max.15-20 mikron salgı)*



**Yellow cap : CLASS 1 (max.10 micron run out)**  
*Sarı Kapak : CLASS 1 (max.10 mikron salgı)*



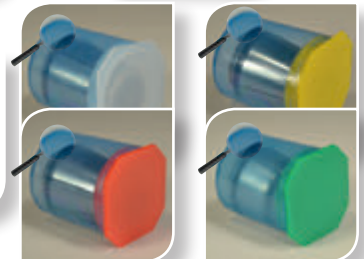
**Red cap : TOPAC (max.5 micron run out)**  
*Kırmızı kapak : TOPAC (süper hassas 5 Mikron salgı)*



**Green cap : only specifies it is a tapping ER collet**  
*Yeşil Kapak : Sadece kılavuz pensi olduğunu belli eder*



**Light Blue Body : Specifies it is a coolant sealed collet**  
*Açık mavi gövde : Sızdırmaz pens olduğunu belirtir*



## ER 8 COLLETS ER 8 PENSLER

### DIN 6499 / ISO 15488-B

#### ER 8 CLASS 2

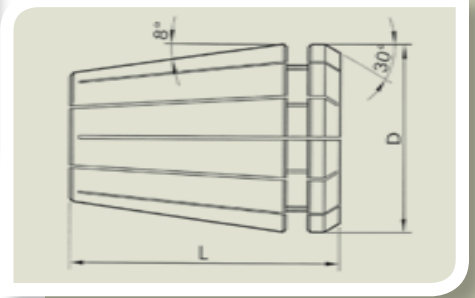
CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER080102	1.0-0.5	7.10
ER080152	1.5-1.0	7.10
ER080202	2.0-1.5	6.10
ER080252	2.5-2.0	6.10
ER080302	3.0-2.5	4.70
ER080352	3.5-3.0	4.70
ER080402	4.0-3.5	4.70
ER080452	4.5-4.0	4.70
ER080502	5.0-4.5	4.70

#### ER 8 CLASS 1

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER080101	1.0-0.5	8.40
ER080151	1.5-1.0	8.40
ER080201	2.0-1.5	7.20
ER080251	2.5-2.0	7.20
ER080301	3.0-2.5	5.80
ER080351	3.5-3.0	5.80
ER080401	4.0-3.5	5.80
ER080451	4.5-4.0	5.80
ER080501	5.0-4.5	5.80

#### ER 8 TOPAC (5 micron)

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER08010T	1.0-0.5	12.40
ER08015T	1.5-1.0	12.40
ER08020T	2.0-1.5	10.20
ER08025T	2.5-2.0	10.20
ER08030T	3.0-2.5	8.00
ER08035T	3.5-3.0	8.00
ER08040T	4.0-3.5	8.00
ER08045T	4.5-4.0	8.00
ER08050T	5.0-4.5	8.00



D	8.5mm
L	13mm
CLAMPING RANGE TUTMA ARALIĞI	1.0-5.0mm
COLLAPSING CAPACITY TUTMA DARALMA KAPASİTESİ	0.5mm

### ER 8 COLLET SETS (Ø1-5mm 9 pcs.) / ER 8 Pens Takımları (Ø1-5mm 9Ad.)

#### ER 8 COLLET SET CLASS 2

CODE/KOD	content - içeriği	EURO
ER08SET2	9pcs ER8 collets Class 2 Ø1-5mm in 0.5mm increment in plastic box 9ad. ER8 pens Class 2 Ø1-5mm arası 0.5mm atlamalı plastik kutuda	53.10

#### ER 8 COLLET SET CLASS 1

CODE/KOD	content - içeriği	EURO
ER08SET1	9pcs ER8 collets Class 1 Ø1-5mm in 0.5mm increment in plastic box 9ad. ER8 pens Class 1 Ø1-5mm arası 0.5mm atlamalı plastik kutuda	63.40

#### ER 8 COLLET SET TOPAC (5 micron)

CODE/KOD	content - içeriği	EURO
ER08SETT	9pcs ER8 collets TOPAC Ø1-5mm in 0.5mm increment in plastic box 9ad. ER8 pens TOPAC Ø1-5mm arası 0.5mm atlamalı plastik kutuda	88.40



## ER 11 COLLETS

### ER 11 PENSLELER

#### DIN 6499 / ISO 15488-B

##### ER 11 CLASS 2

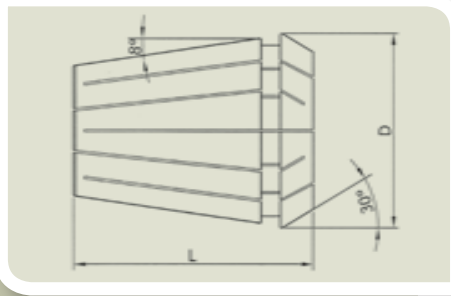
CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER110102	1.0-0.5	6.50
ER110152	1.5-1.0	6.50
ER110202	2.0-1.5	5.50
ER110252	2.5-2.0	5.50
ER110302	3.0-2.5	4.10
ER110352	3.5-3.0	4.10
ER110402	4.0-3.5	4.10
ER110452	4.5-4.0	4.10
ER110502	5.0-4.5	4.10
ER110552	5.5-5.0	4.10
ER110602	6.0-5.5	4.10
ER110652	6.5-6.0	4.10
ER110702	7.0-6.5	4.10
ER110752*	7.5-7.3	10.90
ER110802*	8.0-7.8	10.90

##### ER 11 CLASS 1

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER110101	1.0-0.5	7.70
ER110151	1.5-1.0	7.70
ER110201	2.0-1.5	6.60
ER110251	2.5-2.0	6.60
ER110301	3.0-2.5	5.10
ER110351	3.5-3.0	5.10
ER110401	4.0-3.5	5.10
ER110451	4.5-4.0	5.10
ER110501	5.0-4.5	5.10
ER110551	5.5-5.0	5.10
ER110601	6.0-5.5	5.10
ER110651	6.5-6.0	5.10
ER110701	7.0-6.5	5.10
ER110751*	7.5-7.3	13.50
ER110801*	8.0-7.8	13.50

##### ER 11 TOPAC (5 micron)

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER11010T	1.0-0.5	11.70
ER11015T	1.5-1.0	11.70
ER11020T	2.0-1.5	9.60
ER11025T	2.5-2.0	9.60
ER11030T	3.0-2.5	7.30
ER11035T	3.5-3.0	7.30
ER11040T	4.0-3.5	7.30
ER11045T	4.5-4.0	7.30
ER11050T	5.0-4.5	7.30
ER11055T	5.5-5.0	7.30
ER11060T	6.0-5.5	7.30
ER11065T	6.5-6.0	7.30
ER11070T	7.0-6.5	7.30
ER11075T*	7.5-7.3	17.50
ER11080T*	8.0-7.8	17.50



D	11.5mm
L	18mm
CLAMPING RANGE TUTMA ARALIĞI	1.0-8.0mm
COLLAPSING CAPACITY TUTMA DARALMA KAPASİTESİ	0.5mm

\* Ø>7 (over Ø7mm dia) collets have shorter lengths than standards. Their collapsing capacity is only Ø -0,2mm  
 \* Ø>7 (Ø7mm üstü çap) penslerin boyu standarttan daha kısadır. Daralma kapasitesi sadece Ø -0,2mm dir.  
 Inch sized collets are also available please see its section / İnç ölçü pensler için lütfen ilgili bölüme bakınız.

## ER 11 COLLETS ER 11 PENSLER

ER 11 COLLET SETS (Ø1-7mm 13 pcs.) / ER 11 Pens Takımları (Ø1-7mm 13Ad.)

### ER 11 COLLET SET CLASS 2

CODE/KOD	content - içeriği	EURO
ER11SET2	13pcs ER11 collets Class 2 Ø1-7mm in 0.5mm increment in plastic box 13ad. ER11 pens Class 2 Ø1-7mm arası 0.5mm atlamalı plastik kutuda	64.10

### ER 11 COLLET SET CLASS 1

CODE/KOD	content - içeriği	EURO
ER11SET1	13pcs ER11 collets Class 1 Ø1-7mm in 0.5mm increment in plastic box 13ad. ER11 pens Class 1 Ø1-7mm arası 0.5mm atlamalı plastik kutuda	77.70

### ER 11 COLLET SET TOPAC (5 micron)

CODE/KOD	content - içeriği	EURO
ER11SETT	13pcs ER11 collets TOPAC Ø1-7mm in 0.5mm increment in plastic box 13ad. ER11 pens TOPAC Ø1-7mm arası 0.5mm atlamalı plastik kutuda	111.50



## ER 16 COLLETS

### ER 16 PENSLELER

#### DIN 6499 / ISO 15488-B

##### ER 16 CLASS 2

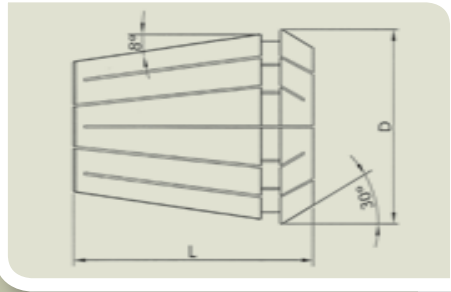
CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER160102	1.0-0.5	5.20
ER160152	1.5-1.0	5.20
ER160202	2.0-1.5	4.30
ER160252	2.5-2.0	4.30
ER160302	3.0-2.5	3.30
ER160352	3.5-2.5	4.30
ER160402	4.0-3.0	3.30
ER160452	4.5-3.5	4.30
ER160502	5.0-4.0	3.30
ER160552	5.5-4.5	4.30
ER160602	6.0-5.0	3.30
ER160652	6.5-5.5	4.30
ER160702	7.0-6.0	3.30
ER160752	7.5-6.5	4.30
ER160802	8.0-7.0	3.30
ER160852	8.5-7.5	4.30
ER160902	9.0-8.0	3.30
ER160952	9.5-8.5	4.30
ER161002	10.0-9.0	3.30
ER161052*	10.5-10.3	10.90
ER161102*	11.0-10.8	10.90
ER161152*	11.5-11.3	10.90
ER161202*	12.0-11.8	10.90

##### ER 16 CLASS 1

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER160101	1.0-0.5	6.90
ER160151	1.5-1.0	6.90
ER160201	2.0-1.5	5.80
ER160251	2.5-2.0	5.80
ER160301	3.0-2.5	4.60
ER160351	3.5-2.5	5.60
ER160401	4.0-3.0	4.60
ER160451	4.5-3.5	5.60
ER160501	5.0-4.0	4.60
ER160551	5.5-4.5	5.60
ER160601	6.0-5.0	4.60
ER160651	6.5-5.5	5.60
ER160701	7.0-6.0	4.60
ER160751	7.5-6.5	5.60
ER160801	8.0-7.0	4.60
ER160851	8.5-7.5	5.60
ER160901	9.0-8.0	4.60
ER160951	9.5-8.5	5.60
ER161001	10.0-9.0	4.60
ER161051*	10.5-10.3	13.50
ER161101*	11.0-10.8	13.50
ER161151*	11.5-11.3	13.50
ER161201*	12.0-11.8	13.50

##### ER 16 TOPAC (5 micron)

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER16010T	1.0-0.5	10.70
ER16015T	1.5-1.0	10.70
ER16020T	2.0-1.5	8.60
ER16025T	2.5-2.0	8.60
ER16030T	3.0-2.5	6.50
ER16035T	3.5-2.5	7.50
ER16040T	4.0-3.0	6.50
ER16045T	4.5-3.5	7.50
ER16050T	5.0-4.0	6.50
ER16055T	5.5-4.5	7.50
ER16060T	6.0-5.0	6.50
ER16065T	6.5-5.5	7.50
ER16070T	7.0-6.0	6.50
ER16075T	7.5-6.5	7.50
ER16080T	8.0-7.0	6.50
ER16085T	8.5-7.5	7.50
ER16090T	9.0-8.0	6.50
ER16095T	9.5-8.5	7.50
ER16100T	10.0-9.0	6.50
ER16105T*	10.5-10.3	17.50
ER16110T*	11.0-10.8	17.50
ER16115T*	11.5-11.3	17.50
ER16120T*	12.0-11.8	17.50



D	17.0mm
L	27.5mm
CLAMPING RANGE TUTMA ARALIĞI	1.0-12.0mm
COLLAPSING CAPACITY TUTMA DARALMA KAPASİTESİ	1.0mm

\* Ø>10 (over Ø10mm dia) collets have shorter lengths than standards. Their collapsing capacity is only Ø -0,2mm  
\* Ø>10 (Ø10mm üstü çap) penslerin boyu standarttan daha kısadır. Daralma kapasitesi sadece Ø -0,2mm dir.

For Ø1-3mm collets, the collapsing capacity is Ø-0,5mm / Ø1-3mm arası penslerde daralma kapasitesi Ø -0.5 mm dir  
Inch sized collets are also available please see its section / İnç ölçü pensler için lütfen ilgili bölüme bakınız.



## ER 16 COLLETS ER 16 PENSLER

ER 16 COLLET SETS (Ø1-10mm 10 pcs.) / ER 16 Pens Takımları (Ø1-10mm 10Ad.)

### ER 16 COLLET SET CLASS 2

CODE/KOD	content - içeriği	EURO
ER16SET2	10pcs ER16 collets Class 2 Ø1-10mm in 1.0mm increment in plastic box 10ad. ER16 pens Class 2 Ø1-10mm arası 1.0mm atlamalı plastik kutuda	39.10

### ER 16 COLLET SET CLASS 1

CODE/KOD	content - içeriği	EURO
ER16SET1	10pcs ER16 collets Class 1 Ø1-10mm in 1.0mm increment in plastic box 10ad. ER16 pens Class 1 Ø1-10mm arası 1.0mm atlamalı plastik kutuda	52.70

### ER 16 COLLET SET TOPAC (5 micron)

CODE/KOD	content - içeriği	EURO
ER16SETT	10pcs ER16 collets TOPAC Ø1-10mm in 1.0mm increment in plastic box 10ad. ER16 pens TOPAC Ø1-10mm arası 1.0mm atlamalı plastik kutuda	74.50



## ER 20 COLLETS ER 20 PENSLELER

### DIN 6499 / ISO 15488-B

#### ER 20 CLASS 2

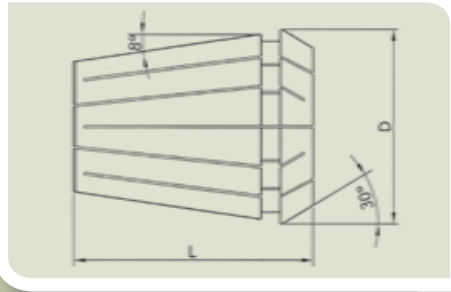
CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER200102	1.0-0.5	5.50
ER200152	1.5-1.0	5.50
ER200202	2.0-1.5	4.80
ER200252	2.5-2.0	4.80
ER200302	3.0-2.5	3.50
ER200352	3.5-2.5	4.80
ER200402	4.0-3.0	3.50
ER200452	4.5-3.5	4.80
ER200502	5.0-4.0	3.50
ER200552	5.5-4.5	4.80
ER200602	6.0-5.0	3.50
ER200652	6.5-5.5	4.80
ER200702	7.0-6.0	3.50
ER200752	7.5-6.5	4.80
ER200802	8.0-7.0	3.50
ER200852	8.5-7.5	4.80
ER200902	9.0-8.0	3.50
ER200952	9.5-8.5	4.80
ER201002	10.0-9.0	3.50
ER201052	10.5-9.5	4.80
ER201102	11.0-10.0	3.50
ER201152	11.5-10.5	4.80
ER201202	12.0-11.0	3.50
ER201252	12.5-11.5	4.80
ER201302	13.0-12.0	3.50
ER201352*	13.5-13.3	10.90
ER201402*	14.0-13.8	10.90
ER201452*	14.5-14.3	10.90
ER201502*	15.0-14.8	10.90
ER201552*	15.5-15.3	10.90
ER201602*	16.0-15.8	10.90

#### ER 20 CLASS 1

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER200101	1.0-0.5	7.20
ER200151	1.5-1.0	7.20
ER200201	2.0-1.5	6.40
ER200251	2.5-2.0	6.40
ER200301	3.0-2.5	4.90
ER200351	3.5-2.5	6.20
ER200401	4.0-3.0	4.90
ER200451	4.5-3.5	6.20
ER200501	5.0-4.0	4.90
ER200551	5.5-4.5	6.20
ER200601	6.0-5.0	4.90
ER200651	6.5-5.5	6.20
ER200701	7.0-6.0	4.90
ER200751	7.5-6.5	6.20
ER200801	8.0-7.0	4.90
ER200851	8.5-7.5	6.20
ER200901	9.0-8.0	4.90
ER200951	9.5-8.5	6.20
ER201001	10.0-9.0	4.90
ER201051	10.5-9.5	6.20
ER201101	11.0-10.0	4.90
ER201151	11.5-10.5	6.20
ER201201	12.0-11.0	4.90
ER201251	12.5-11.5	6.20
ER201301	13.0-12.0	4.90
ER201351*	13.5-13.3	13.50
ER201401*	14.0-13.8	13.50
ER201451*	14.5-14.3	13.50
ER201501*	15.0-14.8	13.50
ER201551*	15.5-15.3	13.50
ER201601*	16.0-15.8	13.50

#### ER 20 TOPAC (5 micron)

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER20010T	1.0-0.5	11.00
ER20015T	1.5-1.0	11.00
ER20020T	2.0-1.5	9.20
ER20025T	2.5-2.0	9.20
ER20030T	3.0-2.5	6.70
ER20035T	3.5-2.5	8.00
ER20040T	4.0-3.0	6.70
ER20045T	4.5-3.5	8.00
ER20050T	5.0-4.0	6.70
ER20055T	5.5-4.5	8.00
ER20060T	6.0-5.0	6.70
ER20065T	6.5-5.5	8.00
ER20070T	7.0-6.0	6.70
ER20075T	7.5-6.5	8.00
ER20080T	8.0-7.0	6.70
ER20085T	8.5-7.5	8.00
ER20090T	9.0-8.0	6.70
ER20095T	9.5-8.5	8.00
ER20100T	10.0-9.0	6.70
ER20105T	10.5-9.5	8.00
ER20110T	11.0-10.0	6.70
ER20115T	11.5-10.5	8.00
ER20120T	12.0-11.0	6.70
ER20125T	12.5-11.5	8.00
ER20130T	13.0-12.0	6.70
ER20135T*	13.5-13.3	17.50
ER20140T*	14.0-13.8	17.50
ER20145T*	14.5-14.3	17.50
ER20150T*	15.0-14.8	17.50
ER20155T*	15.5-15.3	17.50
ER20160T*	16.0-15.8	17.50



D	21.0mm
L	31.5mm
CLAMPING RANGE TUTMA ARALIĞI	1.0-16.0mm
COLLAPSING CAPACITY TUTMA DARALMA KAPASİTESİ	1.0mm

\* Ø>13 (over Ø13mm dia) collets have shorter lengths than standards. Their collapsing capacity is only Ø -0,2mm  
\* Ø>13 (Ø13mm üstü çap) penslerin boyu standarttan daha kısadır. Daralma kapasitesi sadece Ø -0,2mm dir.

For Ø1-3mm collets, the collapsing capacity is Ø-0,5mm / Ø1-3mm arası penslerde daralma kapasitesi Ø -0.5 mm dir  
Inch sized collets are also available please see its section / İnç ölçü pensler için lütfen ilgili bölüme bakınız.

## ER 20 COLLETS ER 20 PENSLER

ER 20 COLLET SETS (Ø2-13mm 12pcs.) / ER 20 Pens Takımları (Ø2-13mm 12 Ad.)

### ER 20 COLLET SET CLASS 2

CODE/KOD	content - içeriği	EURO
ER20SET2	12pcs ER20 collets Class 2 Ø2-13mm in 1.0mm increment in plastic box 12Ad. ER20 pens Class 2 Ø2-13mm arası 1.0mm atlamalı plastik kutuda	46.70

### ER 20 COLLET SET CLASS 1

CODE/KOD	content - içeriği	EURO
ER20SET1	12pcs ER20 collets Class 1 Ø2-13mm in 1.0mm increment in plastic box 12Ad. ER20 pens Class 1 Ø2-13mm arası 1.0mm atlamalı plastik kutuda	63.70

### ER 20 COLLET SET TOPAC (5 micron)

CODE/KOD	content - içeriği	EURO
ER20SETT	12pcs ER20 collets TOPAC Ø2-13mm in 1.0mm increment in plastic box 12Ad. ER20 pens TOPAC Ø2-13mm arası 1.0mm atlamalı plastik kutuda	86.30



## ER 25 COLLETS

### ER 25 PENSLELER

#### DIN 6499 / ISO 15488-B

##### ER 25 CLASS 2

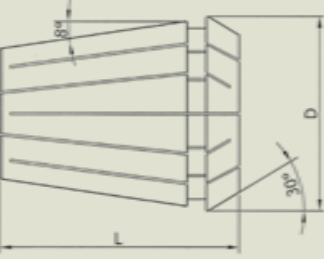
CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER250102	1.0-0.5	6.50
ER250152	1.5-1.0	6.50
ER250202	2.0-1.5	5.00
ER250252	2.5-2.0	5.00
ER250302	3.0-2.5	3.80
ER250352	3.5-2.5	5.00
ER250402	4.0-3.0	3.80
ER250452	4.5-3.5	5.00
ER250502	5.0-4.0	3.80
ER250552	5.5-4.5	5.00
ER250602	6.0-5.0	3.80
ER250652	6.5-5.5	5.00
ER250702	7.0-6.0	3.80
ER250752	7.5-6.5	5.00
ER250802	8.0-7.0	3.80
ER250852	8.5-7.5	5.00
ER250902	9.0-8.0	3.80
ER250952	9.5-8.5	5.00
ER251002	10.0-9.0	3.80
ER251052	10.5-9.5	5.00
ER251102	11.0-10.0	3.80
ER251152	11.5-10.5	5.00
ER251252	12.0-11.0	3.80
ER251252	12.5-11.5	5.00
ER251302	13.0-12.0	3.80
ER251352	13.5-12.5	5.00
ER251402	14.0-13.0	3.80
ER251452	14.5-13.5	5.00
ER251502	15.0-14.0	3.80
ER251552	15.5-14.5	5.00
ER251602	16.0-15.0	3.80
ER251652*	16.5-16.3	10.90
ER251702*	17.0-16.8	10.90
ER251752*	17.5-17.3	10.90
ER251802*	18.0-17.8	10.90
ER251852*	18.5-18.3	10.90
ER251902*	19.0-18.8	10.90
ER251952*	19.5-19.3	10.90
ER252002*	20.0-19.8	10.90

##### ER 25 CLASS 1

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER250101	1.0-0.5	8.20
ER250151	1.5-1.0	8.20
ER250201	2.0-1.5	6.60
ER250251	2.5-2.0	6.60
ER250301	3.0-2.5	5.20
ER250351	3.5-2.5	6.40
ER250401	4.0-3.0	5.20
ER250451	4.5-3.5	6.40
ER250501	5.0-4.0	5.20
ER250551	5.5-4.5	6.40
ER250601	6.0-5.0	5.20
ER250651	6.5-5.5	6.40
ER250701	7.0-6.0	5.20
ER250751	7.5-6.5	6.40
ER250801	8.0-7.0	5.20
ER250851	8.5-7.5	6.40
ER250901	9.0-8.0	5.20
ER250951	9.5-8.5	6.40
ER251001	10.0-9.0	5.20
ER251051	10.5-9.5	6.40
ER251101	11.0-10.0	5.20
ER251151	11.5-10.5	6.40
ER251251	12.0-11.0	5.20
ER251251	12.5-11.5	6.40
ER251301	13.0-12.0	5.20
ER251351	13.5-12.5	6.40
ER251401	14.0-13.0	5.20
ER251451	14.5-13.5	6.40
ER251501	15.0-14.0	5.20
ER251551	15.5-14.5	6.40
ER251601	16.0-15.0	5.20
ER251651*	16.5-16.3	13.50
ER251701*	17.0-16.8	13.50
ER251751*	17.5-17.3	13.50
ER251801*	18.0-17.8	13.50
ER251851*	18.5-18.3	13.50
ER251901*	19.0-18.8	13.50
ER251951*	19.5-19.3	13.50
ER252001*	20.0-19.8	13.50

##### ER 25 TOPAC (5 micron)

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER25010T	1.0-0.5	12.00
ER25015T	1.5-1.0	12.00
ER25020T	2.0-1.5	9.40
ER25025T	2.5-2.0	9.40
ER25030T	3.0-2.5	7.00
ER25035T	3.5-2.5	8.20
ER25040T	4.0-3.0	7.00
ER25045T	4.5-3.5	8.20
ER25050T	5.0-4.0	7.00
ER25055T	5.5-4.5	8.20
ER25060T	6.0-5.0	7.00
ER25065T	6.5-5.5	8.20
ER25070T	7.0-6.0	7.00
ER25075T	7.5-6.5	8.20
ER25080T	8.0-7.0	7.00
ER25085T	8.5-7.5	8.20
ER25090T	9.0-8.0	7.00
ER25095T	9.5-8.5	8.20
ER25100T	10.0-9.0	7.00
ER25105T	10.5-9.5	8.20
ER25110T	11.0-10.0	7.00
ER25115T	11.5-10.5	8.20
ER25125T	12.0-11.0	7.00
ER25125T	12.5-11.5	8.20
ER25130T	13.0-12.0	7.00
ER25135T	13.5-12.5	8.20
ER25140T	14.0-13.0	7.00
ER25145T	14.5-13.5	8.20
ER25150T	15.0-14.0	7.00
ER25155T	15.5-14.5	8.20
ER25160T	16.0-15.0	7.00
ER25165T*	16.5-16.3	17.50
ER25170T*	17.0-16.8	17.50
ER25175T*	17.5-17.3	17.50
ER25180T*	18.0-17.8	17.50
ER25185T*	18.5-18.3	17.50
ER25190T*	19.0-18.8	17.50
ER25195T*	19.5-19.3	17.50
ER25200T*	20.0-19.8	17.50



D	26.0mm
L	34.0mm
CLAMPING RANGE TUTMA ARALIĞI	1.0-20.0mm
COLLAPSING CAPACITY TUTMA DARALMA KAPASİTESİ	1.0mm

\* Ø>16 (over Ø16mm dia) collets have shorter lengths than standards. Their collapsing capacity is only Ø -0,2mm

\* Ø>16 (Ø16mm üstü çap) penslerin boyu standarttan daha kısadır. Daralma kapasitesi sadece Ø -0,2mm dir.

For Ø1-3mm collets, the collapsing capacity is Ø-0,5mm / Ø1-3mm arası penslerde daralma kapasitesi Ø -0.5 mm dir  
Inch sized collets are also available please see its section / İnç ölçü pensler için lütfen ilgili bölüme bakınız.

## ER 25 COLLETS ER 25 PENSLER

ER 25 COLLET SETS (Ø2-16mm 15pcs.) / ER 25 Pens Takımları (Ø2-16mm 15Ad.)

### ER 25 COLLET SET CLASS 2

CODE/KOD	content - içeriği	EURO
ER25SET2	15pcs ER25 collets Class 2 Ø2-16mm in 1.0mm increment in plastic box 15Ad. ER25 pens Class 2 Ø2-16mm arası 1.0mm atlamalı plastik kutuda	64.00

### ER 25 COLLET SET CLASS 1

CODE/KOD	content - içeriği	EURO
ER25SET1	15pcs ER25 collets Class 1 Ø2-16mm in 1.0mm increment in plastic box 15Ad. ER25 pens Class 1 Ø2-16mm arası 1.0mm atlamalı plastik kutuda	85.20

### ER 25 COLLET SET TOPAC (5 micron)

CODE/KOD	content - içeriği	EURO
ER25SETT	15pcs ER25 collets TOPAC Ø2-16mm in 1.0mm increment in plastic box 15Ad. ER25 pens TOPAC Ø2-16mm arası 1.0mm atlamalı plastik kutuda	113.20



## ER 32 COLLETS ER 32 PENSLER

### DIN 6499 / ISO 15488-B

#### ER 32 CLASS 2

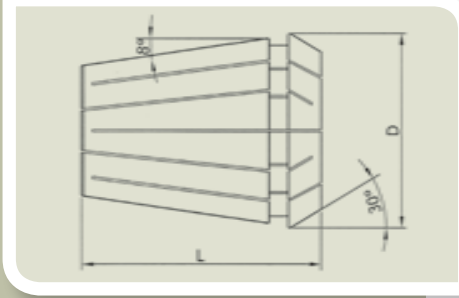
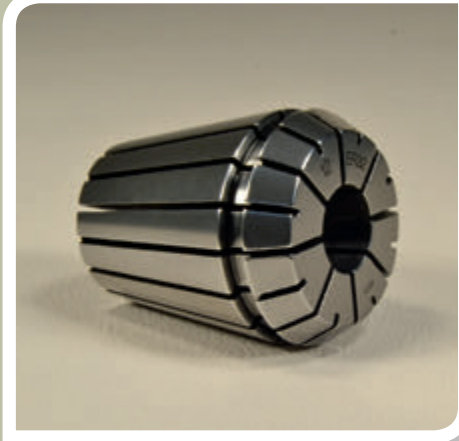
CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER320102	1.0-0.5	8.30
ER320152	1.5-1.0	8.30
ER320202	2.0-1.5	6.80
ER320252	2.5-2.0	6.80
ER320302	3.0-2.5	4.00
ER320352	3.5-2.5	5.80
ER320402	4.0-3.0	4.00
ER320452	4.5-3.5	5.80
ER320502	5.0-4.0	4.00
ER320552	5.5-4.5	5.80
ER320602	6.0-5.0	4.00
ER320652	6.5-5.5	5.80
ER320702	7.0-6.0	4.00
ER320752	7.5-6.5	5.80
ER320802	8.0-7.0	4.00
ER320852	8.5-7.5	5.80
ER320902	9.0-8.0	4.00
ER320952	9.5-8.5	5.80
ER321002	10.0-9.0	4.00
ER321052	10.5-9.5	5.80
ER321102	11.0-10.0	4.00
ER321152	11.5-10.5	5.80
ER321252	12.0-11.0	4.00
ER321252	12.5-11.5	5.80
ER321302	13.0-12.0	4.00
ER321352	13.5-12.5	5.80
ER321402	14.0-13.0	4.00
ER321452	14.5-13.5	5.80
ER321502	15.0-14.0	4.00
ER321552	15.5-14.5	5.80
ER321602	16.0-15.0	4.00
ER321652	16.5-15.5	5.80
ER321702	17.0-16.0	4.00
ER321752	17.5-16.5	5.80
ER321802	18.0-17.0	4.00
ER321852	18.5-17.5	5.80
ER321902	19.0-18.0	4.00
ER321952	19.5-18.5	5.80
ER322002	20.0-19.0	4.00
ER322102*	21.0-20.8	10.90
ER322202*	22.0-21.8	10.90
ER322302*	23.0-22.8	10.90
ER322402*	24.0-23.8	10.90
ER322502*	25.0-24.8	10.90

#### ER 32 CLASS 1

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER320101	1.0-0.5	10.30
ER320151	1.5-1.0	10.30
ER320201	2.0-1.5	8.80
ER320251	2.5-2.0	8.80
ER320301	3.0-2.5	5.60
ER320351	3.5-2.5	7.40
ER320401	4.0-3.0	5.60
ER320451	4.5-3.5	7.40
ER320501	5.0-4.0	5.60
ER320551	5.5-4.5	7.40
ER320601	6.0-5.0	5.60
ER320651	6.5-5.5	7.40
ER320701	7.0-6.0	5.60
ER320751	7.5-6.5	7.40
ER320801	8.0-7.0	5.60
ER320851	8.5-7.5	7.40
ER320901	9.0-8.0	5.60
ER320951	9.5-8.5	7.40
ER321001	10.0-9.0	5.60
ER321051	10.5-9.5	7.40
ER321101	11.0-10.0	5.60
ER321151	11.5-10.5	7.40
ER321251	12.0-11.0	5.60
ER321251	12.5-11.5	7.40
ER321301	13.0-12.0	5.60
ER321351	13.5-12.5	7.40
ER321401	14.0-13.0	5.60
ER321451	14.5-13.5	7.40
ER321501	15.0-14.0	5.60
ER321551	15.5-14.5	7.40
ER321601	16.0-15.0	5.60
ER321651	16.5-15.5	7.40
ER321701	17.0-16.0	5.60
ER321751	17.5-16.5	7.40
ER321801	18.0-17.0	5.60
ER321851	18.5-17.5	7.40
ER321901	19.0-18.0	5.60
ER321951	19.5-18.5	7.40
ER322001	20.0-19.0	5.60
ER322101*	21.0-20.8	13.50
ER322201*	22.0-21.8	13.50
ER322301*	23.0-22.8	13.50
ER322401*	24.0-23.8	13.50
ER322501*	25.0-24.8	13.50

#### ER 32 TOPAC (5 micron)

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER32010T	1.0-0.5	12.50
ER32015T	1.5-1.0	12.50
ER32020T	2.0-1.5	11.00
ER32025T	2.5-2.0	11.00
ER32030T	3.0-2.5	7.30
ER32035T	3.5-2.5	9.10
ER32040T	4.0-3.0	7.30
ER32045T	4.5-3.5	9.10
ER32050T	5.0-4.0	7.30
ER32055T	5.5-4.5	9.10
ER32060T	6.0-5.0	7.30
ER32065T	6.5-5.5	9.10
ER32070T	7.0-6.0	7.30
ER32075T	7.5-6.5	9.10
ER32080T	8.0-7.0	7.30
ER32085T	8.5-7.5	9.10
ER32090T	9.0-8.0	7.30
ER32095T	9.5-8.5	9.10
ER32100T	10.0-9.0	7.30
ER32105T	10.5-9.5	9.10
ER32110T	11.0-10.0	7.30
ER32115T	11.5-10.5	9.10
ER32125T	12.0-11.0	7.30
ER32125T	12.5-11.5	9.10
ER32130T	13.0-12.0	7.30
ER32135T	13.5-12.5	9.10
ER32140T	14.0-13.0	7.30
ER32145T	14.5-13.5	9.10
ER32150T	15.0-14.0	7.30
ER32155T	15.5-14.5	9.10
ER32160T	16.0-15.0	7.30
ER32165T	16.5-15.5	9.10
ER32170T	17.0-16.0	7.30
ER32175T	17.5-16.5	9.10
ER32180T	18.0-17.0	7.30
ER32185T	18.5-17.5	9.10
ER32190T	19.0-18.0	7.30
ER32195T	19.5-18.5	9.10
ER32200T	20.0-19.0	7.30
ER32210T*	21.0-20.8	17.50
ER32220T*	22.0-21.8	17.50
ER32230T*	23.0-22.8	17.50
ER32240T*	24.0-23.8	17.50
ER32250T*	25.0-24.8	17.50



D	33.0mm
L	40.0mm
CLAMPING RANGE TUTMA ARALIĞI	1.0-25.0mm
COLLAPSING CAPACITY TUTMA DARALMA KAPASİTESİ	1.0mm

\* Ø>20 (over Ø20mm dia) collets have shorter lengths than standards. Their collapsing capacity is only Ø -0,2mm  
\* Ø>20 (Ø20mm üstü çap) penslerin boyu standarttan daha kısadır. Daralma kapasitesi sadece Ø -0,2mm dir.

For Ø1-3mm collets, the collapsing capacity is Ø-0,5mm / Ø1-3mm arası penslerde daralma kapasitesi Ø -0.5 mm dir  
Inch sized collets are also available please see its section / İnç ölçü pensler için lütfen ilgili bölüme bakınız.

## ER 32 COLLETS ER 32 PENSLER

ER 32 COLLET SETS (Ø3-20mm 18pcs.) / ER 32 Pens Takımları (Ø3-20mm 18Ad.)

### ER 32 COLLET SET CLASS 2

CODE/KOD	content - içeriği	EURO
ER32SET2	18pcs ER32 collets Class 2 Ø3-20mm in 1.0mm increment in plastic box 18Ad. ER25 pens Class 2 Ø3-20mm arası 1.0mm atlamalı plastik kutuda	79.00

### ER 32 COLLET SET CLASS 1

CODE/KOD	content - içeriği	EURO
ER32SET1	18pcs ER32 collets Class 1 Ø3-20mm in 1.0mm increment in plastic box 18Ad. ER25 pens Class 1 Ø3-20mm arası 1.0mm atlamalı plastik kutuda	107.80

### ER 32 COLLET SET TOPAC (5 micron)

CODE/KOD	content - içeriği	EURO
ER32SETT	18pcs ER32 collets TOPAC Ø3-20mm in 1.0mm increment in plastic box 18Ad. ER25 pens TOPAC Ø3-20mm arası 1.0mm atlamalı plastik kutuda	138.40



## ER 40 COLLETS ER 40 PENSLELER

### DIN 6499 / ISO 15488-B

#### ER 40 CLASS 2

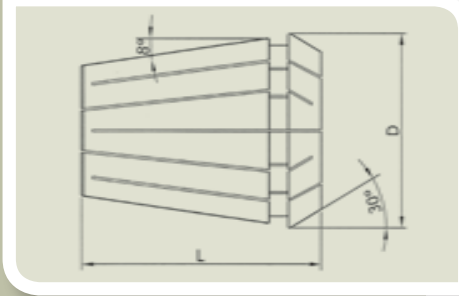
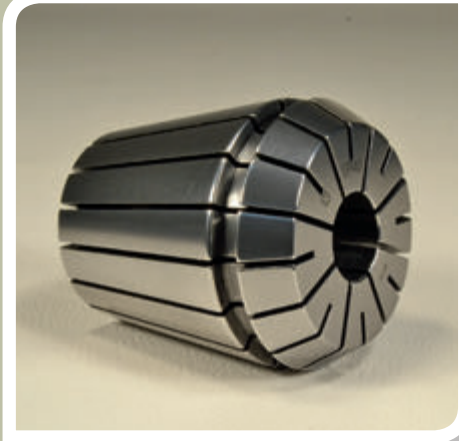
CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER400102	1.0-0.5	10.50
ER400152	1.5-1.0	10.50
ER400202	2.0-1.5	8.50
ER400252	2.5-2.0	8.50
ER400302	3.0-2.5	6.90
ER400352	3.5-2.5	6.90
ER400402	4.0-3.0	4.90
ER400452	4.5-3.5	6.90
ER400502	5.0-4.0	4.90
ER400602	6.0-5.0	4.90
ER400702	7.0-6.0	4.90
ER400802	8.0-7.0	4.90
ER400902	9.0-8.0	4.90
ER401002	10.0-9.0	4.90
ER401102	11.0-10.0	4.90
ER401202	12.0-11.0	4.90
ER401302	13.0-12.0	4.90
ER401402	14.0-13.0	4.90
ER401502	15.0-14.0	4.90
ER401602	16.0-15.0	4.90
ER401702	17.0-16.0	4.90
ER401802	18.0-17.0	4.90
ER401902	19.0-18.0	4.90
ER402002	20.0-19.0	4.90
ER402102	21.0-20.0	4.90
ER402202	22.0-21.0	4.90
ER402302	23.0-22.0	4.90
ER402402	24.0-23.0	4.90
ER402502	25.0-24.0	4.90
ER402602	26.0-25.0	4.90
ER402702*	27.0-26.8	11.20
ER402802*	28.0-27.8	11.20
ER402902*	29.0-28.8	11.20
ER403002*	30.0-29.8	11.20
ER403102*	31.0-30.8	11.20
ER403202*	32.0-31.8	11.20

#### ER 40 CLASS 1

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER400101	1.0-0.5	12.40
ER400151	1.5-1.0	12.40
ER400201	2.0-1.5	10.40
ER400251	2.5-2.0	10.40
ER400301	3.0-2.5	8.80
ER400351	3.5-2.5	8.80
ER400401	4.0-3.0	6.80
ER400451	4.5-3.5	8.80
ER400501	5.0-4.0	6.80
ER400601	6.0-5.0	6.80
ER400701	7.0-6.0	6.80
ER400801	8.0-7.0	6.80
ER400901	9.0-8.0	6.80
ER401001	10.0-9.0	6.80
ER401101	11.0-10.0	6.80
ER401201	12.0-11.0	6.80
ER401301	13.0-12.0	6.80
ER401401	14.0-13.0	6.80
ER401501	15.0-14.0	6.80
ER401601	16.0-15.0	6.80
ER401701	17.0-16.0	6.80
ER401801	18.0-17.0	6.80
ER401901	19.0-18.0	6.80
ER402001	20.0-19.0	6.80
ER402101	21.0-20.0	6.80
ER402201	22.0-21.0	6.80
ER402301	23.0-22.0	6.80
ER402401	24.0-23.0	6.80
ER402501	25.0-24.0	6.80
ER402601	26.0-25.0	6.80
ER402701*	27.0-26.8	14.00
ER402801*	28.0-27.8	14.00
ER402901*	29.0-28.8	14.00
ER403001*	30.0-29.8	14.00
ER403101*	31.0-30.8	14.00
ER403201*	32.0-31.8	14.00

#### ER 40 TOPAC (5 micron)

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER40010T	1.0-0.5	14.30
ER40015T	1.5-1.0	14.30
ER40020T	2.0-1.5	12.30
ER40025T	2.5-2.0	12.30
ER40030T	3.0-2.5	10.70
ER40035T	3.5-2.5	10.70
ER40040T	4.0-3.0	8.70
ER40045T	4.5-3.5	10.70
ER40050T	5.0-4.0	8.70
ER40060T	6.0-5.0	8.70
ER40070T	7.0-6.0	8.70
ER40080T	8.0-7.0	8.70
ER40090T	9.0-8.0	8.70
ER40100T	10.0-9.0	8.70
ER40110T	11.0-10.0	8.70
ER40120T	12.0-11.0	8.70
ER40130T	13.0-12.0	8.70
ER40140T	14.0-13.0	8.70
ER40150T	15.0-14.0	8.70
ER40160T	16.0-15.0	8.70
ER40170T	17.0-16.0	8.70
ER40180T	18.0-17.0	8.70
ER40190T	19.0-18.0	8.70
ER40200T	20.0-19.0	8.70
ER40210T	21.0-20.0	8.70
ER40220T	22.0-21.0	8.70
ER40230T	23.0-22.0	8.70
ER40240T	24.0-23.0	8.70
ER40250T	25.0-24.0	8.70
ER40260T	26.0-25.0	8.70
ER40270T*	27.0-26.8	18.00
ER40280T*	28.0-27.8	18.00
ER40290T*	29.0-28.8	18.00
ER40300T*	30.0-29.8	18.00
ER40310T*	31.0-30.8	18.00
ER40320T*	32.0-31.8	18.00



D	41.0mm
L	46.0mm
CLAMPING RANGE TUTMA ARALIĞI	1.0-32.0mm
COLLAPSING CAPACITY TUTMA DARALMA KAPASİTESİ	1.0mm

\* Ø>26 (over Ø26mm dia) collets have shorter lengths than standards. Their collapsing capacity is only Ø -0,2mm  
\* Ø>26(Ø26mm üstü çap) penslerin boyu standarttan daha kısadır. Daralma kapasitesi sadece Ø -0,2mm dir.

For Ø1-3mm collets, the collapsing capacity is Ø-0,5mm / Ø1-3mm arası penslerde daralma kapasitesi Ø -0.5 mm dir  
Inch sized collets are also available please see its section / İnç ölçü pensler için lütfen ilgili bölüme bakınız.



## ER 40 COLLETS ER 40 PENSLER

ER 40 COLLET SETS (Ø4-26mm 23pcs.) / ER 40 Pens Takımları (Ø4-26mm 23Ad.)

### ER 40 COLLET SET CLASS 2

CODE/KOD	content - içeriği	EURO
ER40SET2	23pcs ER40 collets Class 2 Ø4-26mm in 1.0mm increment in plastic box 23Ad. ER40 pens Class 2 Ø4-26mm arası 1.0mm atlamalı plastik kutuda	125.10

### ER 40 COLLET SET CLASS 1

CODE/KOD	content - içeriği	EURO
ER40SET1	23pcs ER40 collets Class 1 Ø4-26mm in 1.0mm increment in plastic box 23Ad. ER40 pens Class 1 Ø4-26mm arası 1.0mm atlamalı plastik kutuda	168.80

### ER 40 COLLET SET TOPAC (5 micron)

CODE/KOD	content - içeriği	EURO
ER40SETT	23pcs ER40 collets TOPAC Ø4-26mm in 1.0mm increment in plastic box 23Ad. ER40 pens TOPAC Ø4-26mm arası 1.0mm atlamalı plastik kutuda	212.50



## ER 50 COLLETS ER 50 PENSLELER

### DIN 6499 / ISO 15488-B

#### ER 50 CLASS 2

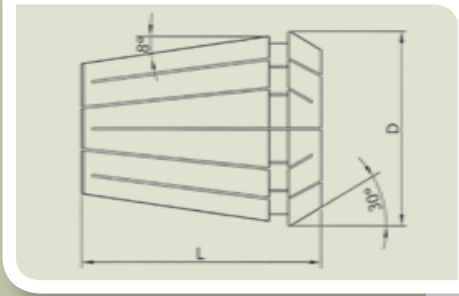
CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER500602	6.0-5.0	14.30
ER500802	8.0-7.0	14.30
ER501002	10.0-9.0	14.30
ER501202	12.0-11.0	14.30
ER501402	14.0-12.0	14.30
ER501602	16.0-14.0	14.30
ER501802	18.0-16.0	14.30
ER502002	20.0-18.0	14.30
ER502202	22.0-20.0	14.30
ER502402	24.0-22.0	14.30
ER502502	25.0-23.0	14.30
ER502602	26.0-24.0	14.30
ER502802	28.0-26.0	14.30
ER503002	30.0-28.0	14.30
ER503202	32.0-30.0	14.30
ER503402	34.0-32.0	14.30
ER503602*	36.0-35.8	28.00
ER503802*	38.0-37.8	28.00
ER504002*	40.0-39.8	28.00

#### ER 50 CLASS 1

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER500601	6.0-5.0	16.80
ER500801	8.0-7.0	16.80
ER501001	10.0-9.0	16.80
ER501201	12.0-11.0	16.80
ER501401	14.0-12.0	16.80
ER501601	16.0-14.0	16.80
ER501801	18.0-16.0	16.80
ER502001	20.0-18.0	16.80
ER502201	22.0-20.0	16.80
ER502401	24.0-22.0	16.80
ER502501	25.0-23.0	16.80
ER502601	26.0-24.0	16.80
ER502801	28.0-26.0	16.80
ER503001	30.0-28.0	16.80
ER503201	32.0-30.0	16.80
ER503401	34.0-32.0	16.80
ER503601*	36.0-35.8	30.00
ER503801*	38.0-37.8	30.00
ER504001*	40.0-39.8	30.00

#### ER 50 TOPAC (5 micron)

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ER50060T	6.0-5.0	20.30
ER50080T	8.0-7.0	20.30
ER50100T	10.0-9.0	20.30
ER50120T	12.0-11.0	20.30
ER50140T	14.0-12.0	20.30
ER50160T	16.0-14.0	20.30
ER50180T	18.0-16.0	20.30
ER50200T	20.0-18.0	20.30
ER50220T	22.0-20.0	20.30
ER50240T	24.0-22.0	20.30
ER50250T	25.0-23.0	20.30
ER50260T	26.0-24.0	20.30
ER50280T	28.0-26.0	20.30
ER50300T	30.0-28.0	20.30
ER50320T	32.0-30.0	20.30
ER50340T	34.0-32.0	20.30
ER50360T*	36.0-35.8	35.00
ER50380T*	38.0-37.8	35.00
ER50400T*	40.0-39.8	35.00



D	52.0mm
L	60.0mm
CLAMPING RANGE TUTMA ARALIĞI	6.0-40.0mm
COLLAPSING CAPACITY TUTMA DARALMA KAPASİTESİ	2.0mm

## ER 50 COLLETS ER 50 PENSLER

ER 50 COLLET SETS (Ø12-34mm 12pcs.) / ER 50 Pens Takımları (Ø12-34mm 12Ad.)

### ER 50 COLLET SET CLASS 2

CODE/KOD	content - içeriği	EURO
ER50SET2	12pcs ER50 collets Class 2 Ø12-34mm in 2.0mm increment in plastic box 12Ad. ER50 pens Class 2 Ø12-34mm arası 2.0mm atlamalı plastik kutuda	185.00

### ER 50 COLLET SET CLASS 1

CODE/KOD	content - içeriği	EURO
ER50SET1	12pcs ER50 collets Class 1 Ø12-34mm in 2.0mm increment in plastic box 12Ad. ER50 pens Class 1 Ø12-34mm arası 2.0mm atlamalı plastik kutuda	215.00

### ER 50 COLLET SET TOPAC (5 micron)

CODE/KOD	content - içeriği	EURO
ER50SETT	12pcs ER50 collets TOPAC Ø12-34mm in 2.0mm increment in plastic box 12Ad. ER50 pens TOPAC Ø12-34mm arası 2.0mm atlamalı plastik kutuda	257.00



Normally ER50 sets do not contain 25 mm collet. It can be included in the set instead of 26mm if requested when ordering.  
Normalde ER50 pens takımlarında 25mm pens yoktur. Bu pens sipariş esnasında istendiğinde 26mm nin yerine takıma konulabilir.





**COOLANT SEALED ER COLLETS  
TAPPING ER COLLETS  
INCH SIZES ER COLLETS  
DIN 6388 / ISO10897-B (OZ25) COLLETS**

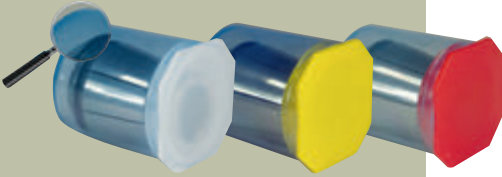
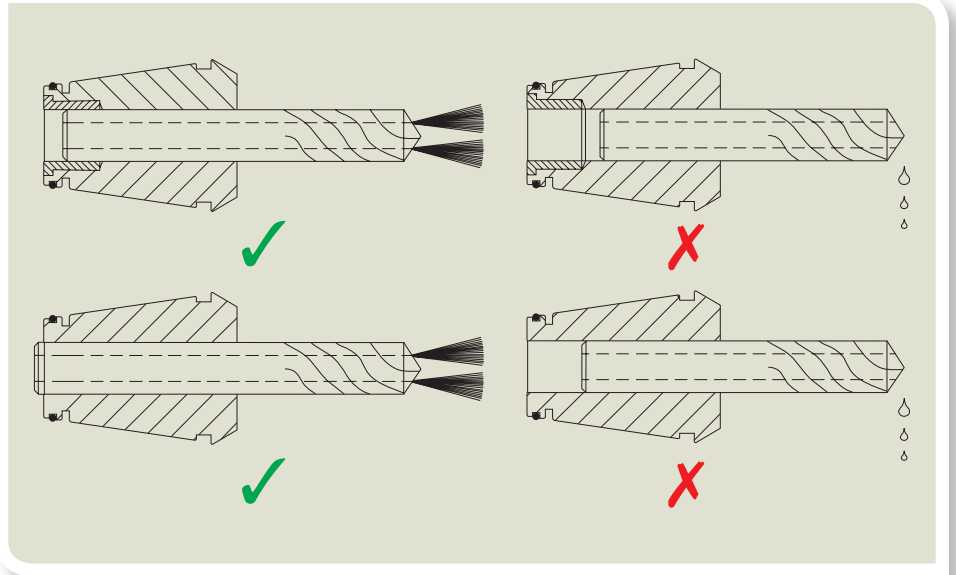
**SIZDIRMAZ ER PENSLER  
ER KILAVUZ PENSLERİ  
İNÇ ÖLÇÜ ER PENSLER  
DIN 6388 / ISO10897-B (OZ25) PENSLER**

## COOLANT SEALED ER COLLETS (For internal coolant tools) SIZDIRMAZ ER PENSLELER (içten soğutmalı takım için)



Coolant Sealed performance is only achieved when clamped the nominal diameter. The shank should be inserted till the back end of the collet as shown in the instruction. May collapse down 0.2mm but will have leakage when holding undersize. Suitable for all kinds of ER collet holders. May also be used as standard ER collet for the nominal diameter cutters without internal coolant. Less flexible with harder structure compared with standard ER collets. Other sizes are available on request.

*Sızdırmaz özelliği sadece kendi çapını sıkıldığında geçerlidir.  
Takım sapı pensin arkasına kadar sokulmalıdır.  
0.2mm daralma yapabilir, ancak alt ölçüyü sıkarken sızdırır.  
Her türlü ER pens tutucusuna uygundur.  
Nominal çapta standart pens olarak ta kullanılabilir.  
Daha sert gövde yapısıyla standart ER penslere göre daha az esnektir.  
Diğer çaplar şipariş yapılabilir.*



**COOLANT SEALED ER COLLETS (For internal coolant tools) DIN 6499 / ISO 15488**  
**SIZDIRMAZ ER PENSLELER (içten soğutmalı takımalar için) Pat. Nr. 2012 07739**

**ERC11 COOLANT SEALED COLLETS**  
**ERC11 SIZDIRMAZ PENSLELER**

**CLASS 2**

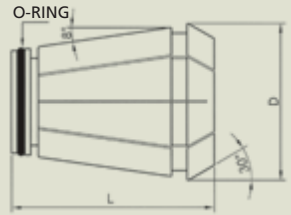
CODE / KOD	clamping dia sıkma çapı Ømm	EURO
ERC110302	3	13.40
ERC110402	4	13.40
ERC110502	5	13.40
ERC110602	6	13.40

**CLASS 1**

CODE / KOD	clamping dia sıkma çapı Ømm	EURO
ERC110301	3	14.80
ERC110401	4	14.80
ERC110501	5	14.80
ERC110601	6	14.80

**TOPAC**

CODE / KOD	clamping dia sıkma çapı Ømm	EURO
ERC11030T	3	17.30
ERC11040T	4	17.30
ERC11050T	5	17.30
ERC11060T	6	17.30



**ERC11 COOLANT SEALED COLLET SETS**  
**ERC11 SIZDIRMAZ PENS TAKIMLARI**

**ERC11 COOLANT SEALED COLLET SET CLASS 2**

CODE/KOD	content - içeriği	EURO
ERC11SET2	4pcs ERC11 Collant sealed collets Class 2 Ø3-6mm in 1.0mm increment in plastic box 4ad. ERC11 sızdırmaz pens Class 2 Ø3-6mm arası 1.0mm atlamalı plastik kutuda	56.80

**ERC11 COOLANT SEALED COLLET SET CLASS 1**

CODE/KOD	content - içeriği	EURO
ERC11SET1	4pcs ERC11 Collant sealed collets Class 1 Ø3-6mm in 1.0mm increment in plastic box 4ad. ERC11 sızdırmaz pens Class 1 Ø3-6mm arası 1.0mm atlamalı plastik kutuda	62.40

**ERC11 COOLANT SEALED COLLET SET TOPAC**

CODE/KOD	content - içeriği	EURO
ERC11SETT	4pcs ERC11 Collant sealed collets TOPAC Ø3-6mm in 1.0mm increment in plastic box 4ad. ERC11 sızdırmaz pens TOPAC Ø3-6mm arası 1.0mm atlamalı plastik kutuda	72.40



**ERC16 COOLANT SEALED COLLETS**  
**ERC16 SIZDIRMAZ PENSLELER**

**CLASS 2**

CODE / KOD	clamping dia sıkma çapı Ømm	EURO
ERC160302	3	9.30
ERC160402	4	9.30
ERC160502	5	9.30
ERC160602	6	9.30
ERC160702	7	9.30
ERC160802	8	9.30
ERC160902	9	9.30
ERC161002	10	9.30

**CLASS 1**

CODE / KOD	clamping dia sıkma çapı Ømm	EURO
ERC160301	3	10.60
ERC160401	4	10.60
ERC160501	5	10.60
ERC160601	6	10.60
ERC160701	7	10.60
ERC160801	8	10.60
ERC160901	9	10.60
ERC161001	10	10.60

**TOPAC**

CODE / KOD	clamping dia sıkma çapı Ømm	EURO
ERC16030T	3	13.10
ERC16040T	4	13.10
ERC16050T	5	13.10
ERC16060T	6	13.10
ERC16070T	7	13.10
ERC16080T	8	13.10
ERC16090T	9	13.10
ERC16100T	10	13.10



**ERC16 COOLANT SEALED COLLET SETS**  
**ERC16 SIZDIRMAZ PENS TAKIMLARI**

**ERC16 COOLANT SEALED COLLET SET CLASS 2**

CODE/KOD	content - içeriği	EURO
ERC16SET2	8pcs ERC16 Collant sealed collets Class 2 Ø3-10mm in 1.0mm increment in plastic box 8ad. ERC16 sızdırmaz pens Class 2 Ø3-10mm arası 1.0mm atlamalı plastik kutuda	77.60

**ERC16 COOLANT SEALED COLLET SET CLASS 1**

CODE/KOD	content - içeriği	EURO
ERC16SET1	8pcs ERC16 Collant sealed collets Class 1 Ø3-10mm in 1.0mm increment in plastic box 8ad. ERC16 sızdırmaz pens Class 1 Ø3-10mm arası 1.0mm atlamalı plastik kutuda	88.00

**ERC16 COOLANT SEALED COLLET SET TOPAC**

CODE/KOD	content - içeriği	EURO
ERC16SETT	8pcs ERC16 Collant sealed collets TOPAC Ø3-10mm in 1.0mm increment in plastic box 8ad. ERC16 sızdırmaz pens TOPAC Ø3-10mm arası 1.0mm atlamalı plastik kutuda	108.00





**COOLANT SEALED ER COLLETS (For internal coolant tools) DIN 6499 / ISO 15488**  
**SIZDIRMAZ ER PENSLER (içten soğutmalı takımlar için) Pat. Nr. 2012 07739**

**ERC20 COOLANT SEALED COLLETS**  
**ERC20 SIZDIRMAZ PENSLER**

**CLASS 2**

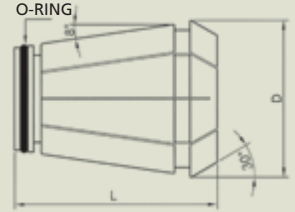
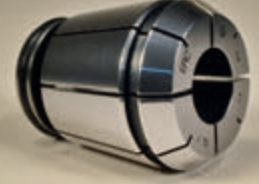
CODE / KOD	clamping dia sıkma çapı Ømm	EURO
ERC200302	3	9.40
ERC200402	4	9.40
ERC200502	5	9.40
ERC200602	6	9.40
ERC200702	7	9.40
ERC200802	8	9.40
ERC200902	9	9.40
ERC201002	10	9.40
ERC201102	11	9.40
ERC201202	12	9.40
ERC201302	13	9.40

**CLASS 1**

CODE / KOD	clamping dia sıkma çapı Ømm	EURO
ERC200301	3	10.70
ERC200401	4	10.70
ERC200501	5	10.70
ERC200601	6	10.70
ERC200701	7	10.70
ERC200801	8	10.70
ERC200901	9	10.70
ERC201001	10	10.70
ERC201101	11	10.70
ERC201201	12	10.70
ERC201301	13	10.70

**TOPAC**

CODE / KOD	clamping dia sıkma çapı Ømm	EURO
ERC20030T	3	13.20
ERC20040T	4	13.20
ERC20050T	5	13.20
ERC20060T	6	13.20
ERC20070T	7	13.20
ERC20080T	8	13.20
ERC20090T	9	13.20
ERC20100T	10	13.20
ERC20110T	11	13.20
ERC20120T	12	13.20
ERC20130T	13	13.20



**ERC20 COOLANT SEALED COLLET SETS**  
**ERC20 SIZDIRMAZ PENS TAKIMLARI**

**ERC20 COOLANT SEALED COLLET SET CLASS 2**

CODE/KOD	content - içeriği	EURO
ERC20SET2	11pcs ERC20 Collant sealed collets Class 2 Ø3-13mm in 1.0mm increment in plastic box 11ad. ERC20 sızdırmaz pens Class 2 Ø3-13mm arası 1.0mm atlamalı plastik kutuda	106.80

**ERC20 COOLANT SEALED COLLET SET CLASS 1**

CODE/KOD	content - içeriği	EURO
ERC20SET1	11pcs ERC20 Collant sealed collets Class 1 Ø3-13mm in 1.0mm increment in plastic box 11ad. ERC20 sızdırmaz pens Class 1 Ø3-13mm arası 1.0mm atlamalı plastik kutuda	121.10

**ERC20 COOLANT SEALED COLLET SET TOPAC**

CODE/KOD	content - içeriği	EURO
ERC20SETT	11pcs ERC20 Collant sealed collets TOPAC Ø3-13mm in 1.0mm increment in plastic box 11ad. ERC20 sızdırmaz pens TOPAC Ø3-13mm arası 1.0mm atlamalı plastik kutuda	148.60



**ERC25 COOLANT SEALED COLLETS**  
**ERC25 SIZDIRMAZ PENSLELER**

**CLASS 2**

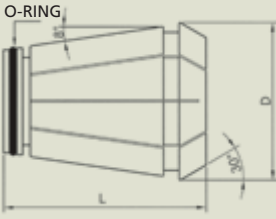
CODE / KOD	clamping dia sıkma çapı Ømm	EURO
ERC250302	3	10.00
ERC250402	4	10.00
ERC250502	5	10.00
ERC250602	6	10.00
ERC250702	7	10.00
ERC250802	8	10.00
ERC250902	9	10.00
ERC251002	10	10.00
ERC251102	11	10.00
ERC251202	12	10.00
ERC251302	13	10.00
ERC251402	14	10.00
ERC251502	15	10.00
ERC251602	16	10.00

**CLASS 1**

CODE / KOD	clamping dia sıkma çapı Ømm	EURO
ERC250301	3	11.30
ERC250401	4	11.30
ERC250501	5	11.30
ERC250601	6	11.30
ERC250701	7	11.30
ERC250801	8	11.30
ERC250901	9	11.30
ERC251001	10	11.30
ERC251101	11	11.30
ERC251201	12	11.30
ERC251301	13	11.30
ERC251401	14	11.30
ERC251501	15	11.30
ERC251601	16	11.30

**TOPAC**

CODE / KOD	clamping dia sıkma çapı Ømm	EURO
ERC25030T	3	13.80
ERC25040T	4	13.80
ERC25050T	5	13.80
ERC25060T	6	13.80
ERC25070T	7	13.80
ERC25080T	8	13.80
ERC25090T	9	13.80
ERC25100T	10	13.80
ERC25110T	11	13.80
ERC25120T	12	13.80
ERC25130T	13	13.80
ERC25140T	14	13.80
ERC25150T	15	13.80
ERC25160T	16	13.80



**ERC25 COOLANT SEALED COLLET SETS**  
**ERC25 SIZDIRMAZ PENS TAKIMLARI**

**ERC25 COOLANT SEALED COLLET SET CLASS 2**

CODE/KOD	content - içeriği	EURO
ERC25SET2	14pcs ERC25 Coolant sealed collets Class 2 Ø3-16mm in 1.0mm increment in plastic box 14Ad. ERC25 sızdırmaz pens Class 2 Ø3-16mm arası 1.0mm atlamalı plastik kutuda	145.80

**ERC25 COOLANT SEALED COLLET SET CLASS 1**

CODE/KOD	content - içeriği	EURO
ERC25SET1	14pcs ERC25 Coolant sealed collets Class 1 Ø3-16mm in 1.0mm increment in plastic box 14Ad. ERC25 sızdırmaz pens Class 1 Ø3-16mm arası 1.0mm atlamalı plastik kutuda	164.00

**ERC25 COOLANT SEALED COLLET SET TOPAC**

CODE/KOD	content - içeriği	EURO
ERC25SETT	14pcs ERC25 Coolant sealed collets TOPAC Ø3-16mm in 1.0mm increment in plastic box 14Ad. ERC25 sızdırmaz pens TOPAC Ø3-16mm arası 1.0mm atlamalı plastik kutuda	199.00

**COOLANT SEALED ER COLLETS (For internal coolant tools) DIN 6499 / ISO 15488**  
**SIZDIRMAZ ER PENSLELER (içten soğutmalı takımlar için) Pat. Nr. 2012 07739**

**ERC32 COOLANT SEALED COLLETS**  
**ERC32 SIZDIRMAZ PENSLELER**

**CLASS 2**

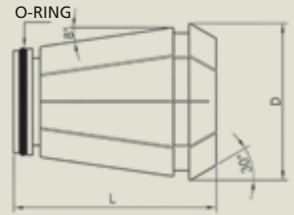
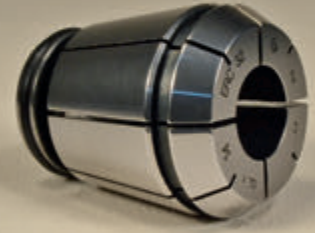
CODE / KOD	clamping dia sıkma çapı Ømm	EURO
ERC320302	3	10.60
ERC320402	4	10.60
ERC320502	5	10.60
ERC320602	6	10.60
ERC320702	7	10.60
ERC320802	8	10.60
ERC320902	9	10.60
ERC321002	10	10.60
ERC321102	11	10.60
ERC321202	12	10.60
ERC321302	13	10.60
ERC321402	14	10.60
ERC321502	15	10.60
ERC321602	16	10.60
ERC321702	17	10.60
ERC321802	18	10.60
ERC321902	19	10.60
ERC322002	20	10.60

**CLASS 1**

CODE / KOD	clamping dia sıkma çapı Ømm	EURO
ERC320301	3	12.00
ERC320401	4	12.00
ERC320501	5	12.00
ERC320601	6	12.00
ERC320701	7	12.00
ERC320801	8	12.00
ERC320901	9	12.00
ERC321001	10	12.00
ERC321101	11	12.00
ERC321201	12	12.00
ERC321301	13	12.00
ERC321401	14	12.00
ERC321501	15	12.00
ERC321601	16	12.00
ERC321701	17	12.00
ERC321801	18	12.00
ERC321901	19	12.00
ERC322001	20	12.00

**TOPAC**

CODE / KOD	clamping dia sıkma çapı Ømm	EURO
ERC32030T	3	14.50
ERC32040T	4	14.50
ERC32050T	5	14.50
ERC32060T	6	14.50
ERC32070T	7	14.50
ERC32080T	8	14.50
ERC32090T	9	14.50
ERC32100T	10	14.50
ERC32110T	11	14.50
ERC32120T	12	14.50
ERC32130T	13	14.50
ERC32140T	14	14.50
ERC32150T	15	14.50
ERC32160T	16	14.50
ERC32170T	17	14.50
ERC32180T	18	14.50
ERC32190T	19	14.50
ERC32200T	20	14.50



**ERC32 COOLANT SEALED COLLET SETS**  
**ERC32 SIZDIRMAZ PENS TAKIMLARI**

**ERC32 COOLANT SEALED COLLET SET CLASS 2**

CODE/KOD	content - içeriği	EURO
ERC32SET2	18pcs ERC32 Coolant sealed collets Class 2 Ø3-20mm in 1.0mm increment in plastic box 18Ad. ERC32 sızdırmaz pens Class 2 Ø3-20m arası 1.0mm atlamalı plastik kutuda	197.80

**ERC32 COOLANT SEALED COLLET SET CLASS 1**

CODE/KOD	content - içeriği	EURO
ERC32SET1	18pcs ERC32 Coolant sealed collets Class 1 Ø3-20mm in 1.0mm increment in plastic box 18Ad. ERC32 sızdırmaz pens Class 1 Ø3-20m arası 1.0mm atlamalı plastik kutuda	223.00

**ERC32 COOLANT SEALED COLLET SET TOPAC**

CODE/KOD	content - içeriği	EURO
ERC32SETT	18pcs ERC32 Coolant sealed collets TOPAC Ø3-20mm in 1.0mm increment in plastic box 18Ad. ERC32 sızdırmaz pens TOPAC Ø3-20m arası 1.0mm atlamalı plastik kutuda	268.00



**ERC40 COOLANT SEALED COLLETS**  
**ERC40 SIZDIRMAZ PENSLELER**

**CLASS 2**

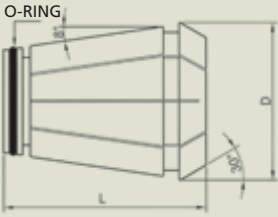
CODE KOD	clamping dia sıkma çapı Ømm	EURO
ERC400302	3	12.60
ERC400402	4	12.60
ERC400502	5	12.60
ERC400602	6	12.60
ERC400702	7	12.60
ERC400802	8	12.60
ERC400902	9	12.60
ERC401002	10	12.60
ERC401102	11	12.60
ERC401202	12	12.60
ERC401302	13	12.60
ERC401402	14	12.60
ERC401502	15	12.60
ERC401602	16	12.60
ERC401702	17	12.60
ERC401802	18	12.60
ERC401902	19	12.60
ERC402002	20	12.60
ERC402102*	21	12.60
ERC402202*	22	12.60
ERC402302*	23	12.60
ERC402402*	24	12.60
ERC402502	25	12.60
ERC402602*	26	12.60

**CLASS 1**

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ERC400301	3	14.00
ERC400401	4	14.00
ERC400501	5	14.00
ERC400601	6	14.00
ERC400701	7	14.00
ERC400801	8	14.00
ERC400901	9	14.00
ERC401001	10	14.00
ERC401101	11	14.00
ERC401201	12	14.00
ERC401301	13	14.00
ERC401401	14	14.00
ERC401501	15	14.00
ERC401601	16	14.00
ERC401701	17	14.00
ERC401801	18	14.00
ERC401901	19	14.00
ERC402001	20	14.00
ERC402101*	21	14.00
ERC402201*	22	14.00
ERC402301*	23	14.00
ERC402401*	24	14.00
ERC402501	25	14.00
ERC402601*	26	14.00

**TOPAC**

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ERC40030T	3	16.50
ERC40040T	4	16.50
ERC40050T	5	16.50
ERC40060T	6	16.50
ERC40070T	7	16.50
ERC40080T	8	16.50
ERC40090T	9	16.50
ERC40100T	10	16.50
ERC40110T	11	16.50
ERC40120T	12	16.50
ERC40130T	13	16.50
ERC40140T	14	16.50
ERC40150T	15	16.50
ERC40160T	16	16.50
ERC40170T	17	16.50
ERC40180T	18	16.50
ERC40190T	19	16.50
ERC40200T	20	16.50
ERC40210T*	21	16.50
ERC40220T*	22	16.50
ERC40230T*	23	16.50
ERC40240T*	24	16.50
ERC40250T	25	16.50
ERC40260T*	26	16.50



**ERC40 COOLANT SEALED COLLET SETS**  
**ERC40 SIZDIRMAZ PENS TAKIMLARI**

**ERC40 COOLANT SEALED COLLET SET CLASS 2**

CODE/KOD	content - içeriği	EURO
ERC40SET2	19pcs ERC40 Coolant sealed collets Class 2 Ø3-25mm in plastic box 19Ad. ERC40 sızdırmaz pens Class 2 Ø3-25m arası plastik kutuda	251.80

**ERC40 COOLANT SEALED COLLET SET CLASS 1**

CODE/KOD	content - içeriği	EURO
ERC40SET1	19pcs ERC40 Coolant sealed collets Class 1 Ø3-25mm in plastic box 19Ad. ERC40 sızdırmaz pens Class 1 Ø3-25m arası plastik kutuda	278.40

**ERC40 COOLANT SEALED COLLET SET TOPAC**

CODE/KOD	content - içeriği	EURO
ERC40SETT	19pcs ERC40 Coolant sealed collets TOPAC Ø3-25mm in plastic box 19Ad. ERC40 sızdırmaz pens TOPAC Ø3-25m arası plastik kutuda	325.90

\* These sizes are not included in the sets / \* Bu ölçüler setin içinde yoktur.

**COOLANT SEALED ER COLLETS (For internal coolant tools) DIN 6499 / ISO 15488**  
**SIZDIRMAZ ER PENSLELER (içten soğutmalı takım için) Pat. Nr. 2012 07739**

**ERC50 COOLANT SEALED COLLETS**  
**ERC50 SIZDIRMAZ PENSLELER**

**CLASS 2**

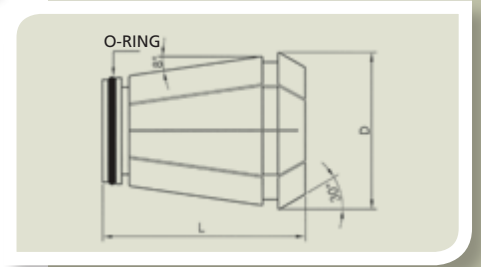
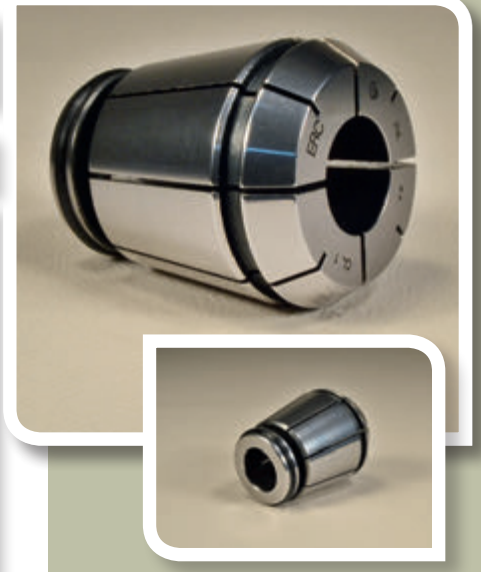
CODE KOD	clamping dia sıkma çapı Ømm	EURO
ERC501202	12	32.00
ERC501402	14	32.00
ERC501602	16	32.00
ERC501802	18	32.00
ERC502002	20	32.00
ERC502502	25	32.00
ERC503202	32	32.00

**CLASS 1**

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ERC501201	12	34.50
ERC501401	14	34.50
ERC501601	16	34.50
ERC501801	18	34.50
ERC502001	20	34.50
ERC502501	25	34.50
ERC503201	32	34.50

**TOPAC**

CODE KOD	clamping dia sıkma çapı Ømm	EURO
ERC50120T	12	38.00
ERC50140T	14	38.00
ERC50160T	16	38.00
ERC50180T	18	38.00
ERC50200T	20	38.00
ERC50250T	25	38.00
ERC50320T	32	38.00



**ERT16**

CODE / KOD	d1	square size kare ölçüsü □ mm	Tap Specs* - Kılavuz detayı*	EURO
ERT16028	2.8	2.1	DIN371 M2-M2,5 - DIN376 M4	11.00
ERT16035	3.5	2.7	DIN371 M3 - DIN376 M5	11.00
ERT16040	4	3.15/3.2	ISO M4/M5 - JIS M3/M3.5	11.00
ERT16045	4.5	3.4	DIN371 M4 - DIN376 M6	11.00
ERT16050	5	4	ISO M5 - JIS M4	11.00
ERT16055	5.5	4.3	DIN374/376 M7	11.00
ERT16060	6	4.9	DIN371 M4,5/M5/M6 DIN374/376 M8	11.00
ERT16063	6.3	5	ISO M6-M8-1/4"-5/16"	11.00
ERT16070	7	5.5	DIN371 M7 DIN374/376 M9-M10 JIS M9-M10	11.00
ERT16080	8	6.2/6.3	DIN371 M8 ISO M8 - M10 - 7/16" - 5/16"	11.00

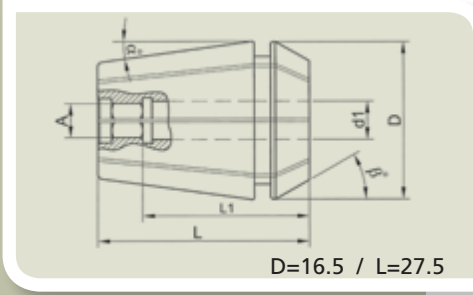
**ERT 16 TAPPING ER COLLET SET / ERT 16 KILAVUZ PENSi TAKIMI**

CODE / KOD	content - içeriği	EURO
ERT16SET	10 pcs ERT16 tapping ER collets, suitable for taps with shank Ø2.8-8.0, in plastic box. 10 adet ERT16 kılavuz pensi, Ø2.8-8.0 saplı kılavuzlara uygun, plastik kutuda	113.20



\* Tap specs indicated are some of the suitable sizes only.  
Tapping ER collets are all made to CL1 (Class 1 - 10 Micron) Precision Standard.  
They are packed with green cap.

\* Belirtilen kılavuz detaylarında uygun ölçülerin sadece bir kısmı belirtilmiştir.  
Tüm kılavuz pensleri CL1 (Class 1 - 10 Micron) hassasiyet sınıfına göre üretilmiştir.  
Ambalajları yeşil kapalıdır.



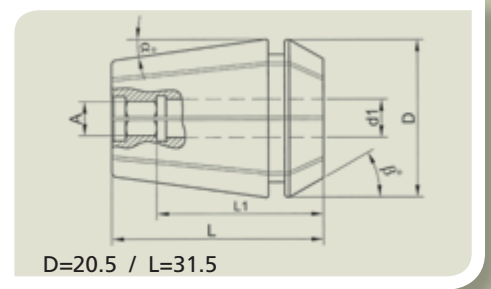
## TAPPING ER COLLETS ER KILAVUZ PENSLERİ

DIN 6499 / ISO 15488

### ERT20

CODE / KOD	d1	square size kare ölçüsü □ mm	Tap Specs* - Klavuz detayı*	EURO
ERT20035	3.5	2.7	DIN371 M3 - DIN376 M5	11.20
ERT20040	4	3.15/3.2	ISO M4/M5 - JIS M3/M3.5	11.20
ERT20045	4.5	3.4	DIN371 M4 - DIN376 M6	11.20
ERT20050**	5**	4	ISO M5 - JIS M4	11.20
ERT20055	5.5	4.3	DIN374/376 M7	11.20
ERT20060	6	4.9	DIN371 M4,5/M5/M6 DIN374/376 M8	11.20
ERT20063	6.3	5	ISO M6-M8-1/4"-5/16"	11.20
ERT20070	7	5.5	DIN371 M7 DIN374/376 M9-M10 JIS M9-M10	11.20
ERT20080	8	6.2/6.3	DIN371 M8 ISO M8 - M10 - 7/16" - 5/16"	11.20
ERT20090	9	7.0/7.1	DIN 374/376 M12 ISO M12 - 1/2"	11.20
ERT20100	10	8	DIN371 M10 ISO M10 - 3/8"	11.20
ERT20110	11	9	DIN 374/376 M14 - 9/16"	11.20
ERT20120	12	9	DIN 374/376 M16 - 5/8"	11.20

\*\* This item is not included in the set / Bu ürün setin içinde yoktur .



### ERT 20 TAPPING ER COLLET SET / ERT 20 KILAVUZ PENSI TAKIMI

CODE / KOD	content - içeriği	EURO
ERT20SET	12 pcs ERT20 tapping ER collets, suitable for taps with shank Ø3.5-12.0, in plastic box 12 adet ERT20 klavuz pensi, Ø3.5-12.0 saplı kılavuzlara uygun, plastik kutuda	137.80



\* Tap specs indicated are some of the suitable sizes only.  
Tapping ER collets are all made to CL1 (Class 1 - 10 Micron) Precision Standard.  
They are packed with green cap.

\* Belirtilen kılavuz detaylarında uygun ölçülerin sadece bir kısmı belirtilmiştir.  
Tüm kılavuz pensleri CL1 (Class 1 - 10 Micron) hassasiyet sınıfına göre üretilmiştir.  
Ambalajları yeşil kapaklıdır.



**ERT25**

CODE / KOD	d1	square size kare ölçüsü □ mm	Tap Specs* - Klavuz detayı*	EURO
ERT25035	3.5	2.7	DIN371 M3 - DIN376 M5	11.50
ERT25040	4	3.15/3.2	ISO M4/M5 - JIS M3/M3.5	11.50
ERT25045	4.5	3.4	DIN371 M4 - DIN376 M6	11.50
ERT25050	5	4	ISO M5 - JIS M4	11.50
ERT25055	5.5	4.3	DIN374/376 M7	11.50
ERT25060	6	4.9	DIN371 M4,5/M5/M6 DIN374/376 M8	11.50
ERT25063	6.3	5	ISO M6-M8-1/4"-5/16"	11.50
ERT25070	7	5.5	DIN371 M7 DIN374/376 M9-M10 JIS M9-M10	11.50
ERT25080	8	6.2/6.3	DIN371 M8 ISO M8 - M10 - 7/16" - 5/16"	11.50
ERT25090	9	7.0/7.1	DIN 374/376 M12 ISO M12 - 1/2"	11.50
ERT25100	10	8	DIN371 M10 ISO M10 - 3/8"	11.50
ERT25110	11	9	DIN 374/376 M14 - 9/16"	11.50
ERT25120	12	9	DIN 374/376 M16 - 5/8"	11.50
ERT25125**	12.5	10	ISO M16 - 5/8" JIS M16	11.50
ERT25140	14	11.0/11.2	DIN 374/376 M18 - JIS M18 ISO M18/M20 3/4"	11.50
ERT25160	16	12	DIN 374/376 M20	11.50

\*\* This item is not included in the set / Bu ürün setin içinde yoktur

**ERT 25 TAPPING ER COLLET SET / ERT 25 KILAVUZ PENSi TAKIMI**

CODE / KOD	content - içeriği	EURO
ERT25SET	15 pcs ERT25 tapping ER collets, suitable for taps with shank Ø3.5-16.0, in plastic box 15 adet ERT25 kılavuz pensi, Ø3.5-16.0 saplı kılavuzlara uygun, plastik kutuda	178.30



\* Tap specs indicated are some of the suitable sizes only. Tapping ER collets are all made to CL1 (Class 1 - 10 Micron) Precision Standard. They are packed with green cap.

\* Belirtilen kılavuz detaylarında uygun ölçülerin sadece bir kısmı belirtilmiştir. Tüm kılavuz pensleri CL1 (Class 1 - 10 Micron) hassasiyet sınıfına göre üretilmiştir. Ambalajları yeşil kapalıdır.

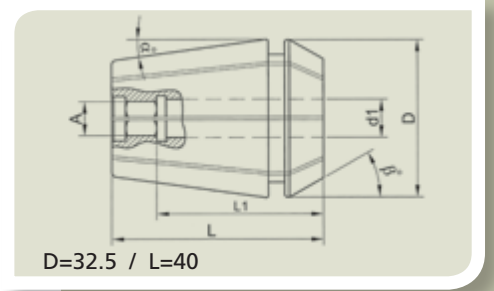


## TAPPING ER COLLETS ER KILAVUZ PENSLERİ

DIN 6499 / ISO 15488

### ERT32

CODE / KOD	d1	square size kare ölçüsü □ mm	Tap Specs* - Kılavuz detayı*	EURO
ERT32035	3.5	2.7	DIN371 M3 - DIN376 M5	12.60
ERT32040	4	3.15/3.2	ISO M4/M5 - JIS M3/M3.5	12.60
ERT32045	4.5	3.4	DIN371 M4 - DIN376 M6	12.60
ERT32050	5	4	ISO M5 - JIS M4	12.60
ERT32055	5.5	4.3	DIN374/376 M7	12.60
ERT32060	6	4.9	DIN371 M4,5/M5/M6 DIN374/376 M8	12.60
ERT32063	6.3	5	ISO M6-M8-1/4" -5/16"	12.60
ERT32070	7	5.5	DIN371 M7 DIN374/376 M9-M10 JIS M9-M10	12.60
ERT32080	8	6.2/6.3	DIN371 M8 ISO M8 - M10 - 7/16" - 5/16"	12.60
ERT32090	9	7.0/7.1	DIN 374/376 M12 ISO M12 - 1/2"	12.60
ERT32100	10	8	DIN371 M10 ISO M10 - 3/8"	12.60
ERT32110	11	9	DIN 374/376 M14 - 9/16"	12.60
ERT32120	12	9	DIN 374/376 M16 - 5/8"	12.60
ERT32125	12.5	10	ISO M16 - 5/8" JIS M16	12.60
ERT32140	14	11.0/11.2	DIN 374/376 M18 - JIS M18 ISO M18-M20 3/4"	12.60
ERT32160	16	12	DIN 374/376 M20	12.60
ERT32180	18	14.0/14.5	DIN 374/376 M22- M24 -7/8" ISO M24 - 1"	12.60
ERT32200	20	16	DIN 374/376 M27 - 1" ISO M27-M30 - 1 1/8"	12.60



### ERT 32 TAPPING ER COLLET SET / ERT 32 KILAVUZ PENSI TAKIMI

CODE / KOD	content - içeriği	EURO
ERT32SET	18 pcs ERT32 tapping ER collets, suitable for taps with shank Ø3.5-20.0, in plastic box 18 adet ERT32 kılavuz pensi, Ø3.5-20.0 saplı kılavuzlara uygun, plastik kutuda	233.80



\* Tap specs indicated are some of the suitable sizes only.  
Tapping ER collets are all made to CL1 (Class 1 - 10 Micron) Precision Standard.  
They are packed with green cap.

\* Belirtilen kılavuz detaylarında uygun ölçülerin sadece bir kısmı belirtilmiştir.  
Tüm kılavuz pensleri CL1 (Class 1 - 10 Micron) hassasiyet sınıfına göre üretilmiştir.  
Ambalajları yeşil kapaklıdır.



**ERT40**

CODE / KOD	d1	square size kare ölçüsü □ mm	Tap Specs* - Klavuz detayı*	EURO
ERT40040	4	3.15/3.2	ISO M4/M5 - JIS M3/M3.5	14.40
ERT40045	4.5	3.4	DIN371 M4 - DIN376 M6	14.40
ERT40050	5	4	ISO M5 - JIS M4	14.40
ERT40055	5.5	4.3	DIN374/376 M7	14.40
ERT40060	6	4.9	DIN371 M4,5/M5/M6 DIN374/376 M8	14.40
ERT40063	6.3	5	ISO M6-M8-1/4"-5/16"	14.40
ERT40070	7	5.5	DIN371 M7 DIN374/376 M9-M10 JIS M9-M10	14.40
ERT40080	8	6.2/6.3	DIN371 M8 ISO M8 - M10 - 7/16 - 5/16"	14.40
ERT40090	9	7.0/7.1	DIN 374/376 M12 ISO M12 - 1/2"	14.40
ERT40100	10	8	DIN371 M10 ISO M10 - 3/8"	14.40
ERT40110	11	9	DIN 374/376 M14 - 9/16"	14.40
ERT40120	12	9	DIN 374/376 M16 - 5/8"	14.40
ERT40125	12.5	10	ISO M16 - 5/8 JIS M16	14.40
ERT40140	14	11.0/11.2	DIN 374/376 M18 - JIS M18 ISO M18/M20 3/4"	14.40
ERT40160	16	12	DIN 374/376 M20	14.40
ERT40180	18	14.0/14.5	DIN 374/376 M22- M24 - 7/8" ISO M24 - 1"	14.40
ERT40200	20	16	DIN 374/376 M27 - 1" ISO M27-M30 - 1 1/8"	14.40
ERT40220	22	18	DIN 374/376 M30 - 1 1/8"	14.40
ERT40250	25	20	DIN 374/376 M33 - 1 1/4" ISO M36	14.40

**ERT 40 TAPPING ER COLLET SET / ERT 40 KILAVUZ PENSi TAKIMI**

CODE / KOD	content - içeriği	EURO
ERT40SET	19 pcs ERT40 tapping ER collets, suitable for taps with shank Ø4.0-25.0, in plastic box 19 adet ERT40 kılavuz pensi, Ø4.0-25.0 saplı kılavuzlara uygun, plastik kutuda	286.00



\* Tap specs indicated are some of the suitable sizes only. Tapping ER collets are all made to CL1 (Class 1 - 10 Micron) Precision Standard. They are packed with green cap.

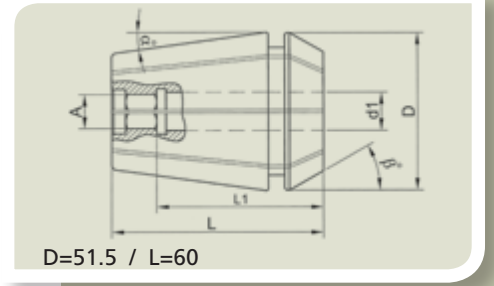
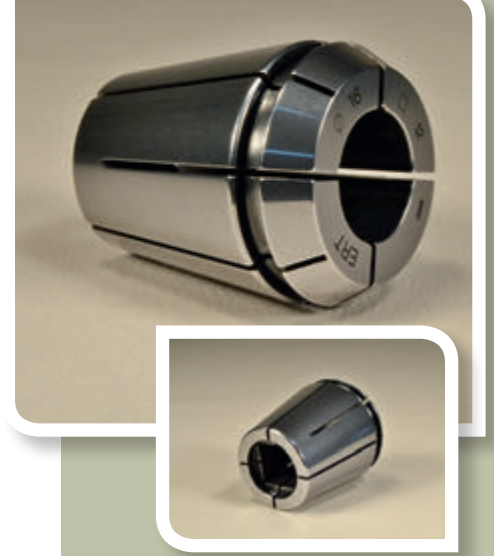
\* Belirtilen kılavuz detaylarında uygun ölçülerin sadece bir kısmı belirtilmiştir. Tüm kılavuz pensleri CL1 (Class 1 - 10 Micron) hassasiyet sınıfına göre üretilmiştir. Ambalajları yeşil kapalıdır.

## TAPPING ER COLLETS ER KILAVUZ PENSLERİ

DIN 6499 / ISO 15488

### ERT50

CODE / KOD	d1	square size kare ölçüsü □ mm	Tap Specs* - Klavuz detayı*	EURO
ERT50160	16	12	DIN 374/376 M20	32.00
ERT50180	18	14.0/14.5	DIN 374/376 M22- M24 -7/8" ISO M24 - 1"	32.00
ERT50200	20	16	DIN 374/376 M27 - 1" ISO M27-M30 - 1 1/8"	32.00
ERT50220	22	18	DIN 374/376 M30 - 1 1/8"	32.00
ERT50250	25	20	DIN 374/376 M33 - 1 1/4" ISO M36	32.00
ERT50280	28	22	DIN 374/376 M36 - 1 3/8" -1 1/2"	32.00
ERT50320	32	24	DIN 374/376 M39-M42 - 1 1/2"	32.00



\* Tap specs indicated are some of the suitable sizes only.  
Tapping ER collets are all made to CL1 (Class 1 - 10 Micron) Precision Standard.  
They are packed with green cap.

\* Belirtilen klavuz detaylarında uygun ölçülerin sadece bir kısmı belirtilmiştir.  
Tüm klavuz pensleri CL1 (Class 1 - 10 Micron) hassasiyet sınıfına göre üretilmiştir.  
Ambalajları yeşil kapaklıdır.



## ERTC COOLANT SEALED TAPPING COLLETS For internal coolant taps ERTC SIZDIRMAZ KILAVUZ PENSLERİ İçten soğutmalı kılavuzlar için

DIN 6499 / ISO 15488 / Pat. Nr. 2012 07739

### ERTC16

CODE / KOD	d1	square size kare ölçüsü □ mm	Tap Specs* - Klavuz detayı*	EURO
ERTC16045	4.5	3.4	DIN371 M4 - DIN376 M6	18.90
ERTC16060	6	4.9	DIN371 M4,5/M5/M6 DIN374/376 M8	18.90
ERTC16080	8	6.2/6.3	DIN371 M8 ISO M8 - M10 - 7/16" - 5/16"	18.90

### ERTC20

CODE / KOD	d1	square size kare ölçüsü □ mm	Tap Specs* - Klavuz detayı*	EURO
ERTC20045	4.5	3.4	DIN371 M4 - DIN376 M6	19.10
ERTC20060	6	4.9	DIN371 M4,5/M5/M6 DIN374/376 M8	19.10
ERTC20080	8	6.2/6.3	DIN371 M8 ISO M8 - M10 - 7/16" - 5/16"	19.10
ERTC20090	9	7.0/7.1	DIN 374/376 M12 ISO M12 - 1/2"	19.10
ERTC20100	10	8	DIN371 M10 ISO M10 - 3/8"	19.10
ERTC20110	11	9	DIN 374/376 M14 - 9/16"	19.10
ERTC20120	12	9	DIN 374/376 M16 - 5/8"	19.10

### ERTC25

CODE / KOD	d1	square size kare ölçüsü □ mm	Tap Specs* - Klavuz detayı*	EURO
ERTC25060	6	4.9	DIN371 M4,5/M5/M6 DIN374/376 M8	19.80
ERTC25080	8	6.2/6.3	DIN371 M8 ISO M8 - M10 - 7/16" - 5/16"	19.80
ERTC25090	9	7.0/7.1	DIN 374/376 M12 ISO M12 - 1/2"	19.80
ERTC25100	10	8	DIN371 M10 ISO M10 - 3/8"	19.80
ERTC25110	11	9	DIN 374/376 M14 - 9/16"	19.80
ERTC25120	12	9	DIN 374/376 M16 - 5/8"	19.80
ERTC25140	14	11.0/11.2	DIN 374/376 M18 - JIS M18 ISO M18/M20 3/4"	19.80
ERTC25160	16	12	DIN 374/376 M20	19.80

\* Tap specs indicated are some of the suitable sizes only.  
Coolant sealed Tapping ER collets are all made to CL1 (Class 1 - 10 Micron) Precision Standard They are packed with green cap and the body is transparent blue

\* Belirtilen kılavuz detaylarında uygun ölçülerin sadece bir kısmı belirtilmiştir  
Tüm sızdırmaz kılavuz pensleri CL1 (Class 1 - 10 Micron) hassasiyet sınıfına göre üretilmiştir.  
Ambalajlarının kapağı yeşil, gövdesi saydam mavidir.



## ERTC COOLANT SEALED TAPPING COLLETS For internal coolant taps ERTC SIZDIRMAZ KILAVUZ PENSLERİ İçten soğutmalı kılavuzlar için

DIN 6499 / ISO 15488 / Pat. Nr. 2012 07739

### ERTC32

CODE / KOD	d1	square size kare ölçüsü □ mm	Tap Specs* - Klavuz detayı*	EURO
ERTC32060	6	4.9	DIN371 M4,5/M5/M6 DIN374/376 M8	21.00
ERTC32080	8	6.2/6.3	DIN371 M8 ISO M8 - M10 - 7/16" - 5/16"	21.00
ERTC32090	9	7.0/7.1	DIN 374/376 M12 ISO M12 - 1/2"	21.00
ERTC32100	10	8	DIN371 M10 ISO M10 - 3/8"	21.00
ERTC32110	11	9	DIN 374/376 M14 - 9/16"	21.00
ERTC32120	12	9	DIN 374/376 M16 - 5/8"	21.00
ERTC32140	14	11.0/11.2	DIN 374/376 M18 - JIS M18 ISO M18-M20 3/4"	21.00
ERTC32160	16	12	DIN 374/376 M20	21.00
ERTC32180	18	14.0/14.5	DIN 374/376 M22- M24 -7/8" ISO M24 - 1"	21.00
ERTC32200	20	16	DIN 374/376 M27 - 1" ISO M27-M30 - 1 1/8"	21.00

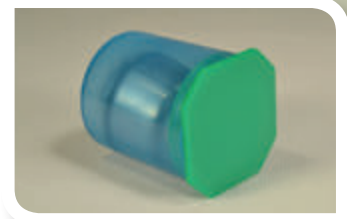
### ERTC40

CODE / KOD	d1	square size kare ölçüsü □ mm	Tap Specs* - Klavuz detayı*	EURO
ERTC40060	6	4.9	DIN371 M4,5/M5/M6 DIN374/376 M8	23.60
ERTC40080	8	6.2/6.3	DIN371 M8 ISO M8 - M10 - 7/16" - 5/16"	23.60
ERTC40090	9	7.0/7.1	DIN 374/376 M12 ISO M12 - 1/2"	23.60
ERTC40100	10	8	DIN371 M10 ISO M10 - 3/8"	23.60
ERTC40110	11	9	DIN 374/376 M14 - 9/16"	23.60
ERTC40120	12	9	DIN 374/376 M16 - 5/8"	23.60
ERTC40140	14	11.0/11.2	DIN 374/376 M18 - JIS M18 ISO M18-M20 3/4"	23.60
ERTC40160	16	12	DIN 374/376 M20	23.60
ERTC40180	18	14.0/14.5	DIN 374/376 M22- M24 -7/8" ISO M24 - 1"	23.60
ERTC40200	20	16	DIN 374/376 M27 - 1" ISO M27-M30 - 1 1/8"	23.60
ERTC40220	22	18	DIN 374/376 M30 - 1 1/8"	23.60
ERTC40250	25	20	DIN 374/376 M33 - 1 1/4" ISO M36	23.60



\* Tap specs indicated are some of the suitable sizes only.  
Coolant sealed Tapping ER collets are all made to CL1 (Class 1 - 10 Micron) Precision Standard They are packed with green cap and the body is transparent blue

\* Belirtilen kılavuz detaylarında uygun ölçülerin sadece bir kısmı belirtilmiştir  
Tüm sızdırmaz kılavuz pensleri CL1 (Class 1 - 10 Micron) hassasiyet sınıfına göre üretilmiştir. Ambalajlarının kapağı yeşil, gövdesi saydam mavidir.



## INCH SIZED ER COLLETS İNÇ ÖLÇÜ ER PENSLELER

DIN 6499 / ISO 15488-B

### ER8 INCH SIZED COLLETS / ER8 İNÇ ÖLÇÜ PENSLELER

ER8	CLASS 2		CLASS 1		TOPAC	
	CODE / KOD	EURO	CODE / KOD	EURO	CODE / KOD	EURO
clamping dia sıkma çapı Ømm						
1/16"	ER0801592	7.40	ER0801591	8.80	ER080159T	12.80
1/8"	ER0803182	5.10	ER0803181	6.20	ER080318T	8.40
3/16"	ER0804762	5.10	ER0804761	6.20	ER080476T	8.40

### ER11 INCH SIZED COLLETS / ER11 İNÇ ÖLÇÜ PENSLELER

ER11	CLASS 2		CLASS 1		TOPAC	
	CODE / KOD	EURO	CODE / KOD	EURO	CODE / KOD	EURO
clamping dia sıkma çapı Ømm						
1/16"	ER1101592	6.90	ER1101591	8.10	ER110159T	12.10
1/8"	ER1103182	4.50	ER1103181	5.50	ER110318T	7.70
3/16"	ER1104762	4.50	ER1104761	5.50	ER110476T	7.70
1/4"	ER1106352	4.50	ER1106351	5.50	ER110635T	7.70

## INCH SIZED ER COLLETS İNÇ ÖLÇÜ ER PENSLELER

DIN 6499 / ISO 15488-B

### ER16 INCH SIZED COLLETS / ER16 İNÇ ÖLÇÜ PENSLELER

ER16	CLASS 2		CLASS 1		TOPAC	
	CODE / KOD	EURO	CODE / KOD	EURO	CODE / KOD	EURO
clamping dia sıkma çapı Ømm						
1/16"	ER1601592	5.50	ER1601591	7.20	ER160159T	11.00
1/8"	ER1603182	3.60	ER1603181	4.90	ER160318T	6.80
3/16"	ER1604762	3.60	ER1604761	4.90	ER160476T	6.80
1/4"	ER1606352	3.60	ER1606351	4.90	ER160635T	6.80
5/16"	ER1607942	3.60	ER1607941	4.90	ER160794T	6.80
3/8"	ER1609532	3.60	ER1609531	4.90	ER160953T	6.80



### ER16 INCH SIZED COLLETS SETS / ER16 İNÇ ÖLÇÜ PENS TAKIMLARI

#### ER16 INCH COLLET SET CLASS 2

CODE/KOD	content - içeriği	EURO
ER16SETIN2	6pcs ER16 Inch sized collets Class 2 Ø1/16"-3/8" in plastic box 6Ad. ER16 İnç ölçü pens Class 2 Ø1/16"-3/8" arası plastik kutuda	26.70

#### ER16 INCH COLLET SET CLASS 1

CODE/KOD	content - içeriği	EURO
ER16SETIN1	6pcs ER16 Inch sized collets Class 1 Ø1/16"-3/8" in plastic box 6Ad. ER16 İnç ölçü pens Class 1 Ø1/16"-3/8" arası plastik kutuda	34.90

#### ER16 INCH COLLET SET TOPAC (5 micron)

CODE/KOD	content - içeriği	EURO
ER16SETINT	6pcs ER16 Inch sized collets TOPAC Ø1/16"-3/8" in plastic box 6Ad. ER16 İnç ölçü pens TOPAC Ø1/16"-3/8" arası plastik kutuda	48.20



**ER20 INCH SIZED COLLETS / ER20 İNÇ ÖLÇÜ PENSLER**

ER20	CLASS 2		CLASS 1		TOPAC	
	CODE / KOD	EURO	CODE / KOD	EURO	CODE / KOD	EURO
clamping dia sıkma çapı Ømm						
1/16"	ER2001592	5.80	ER2001591	7.50	ER200159T	11.30
1/8"	ER2003182	3.80	ER2003181	5.20	ER200318T	7.00
3/16"	ER2004762	3.80	ER2004761	5.20	ER200476T	7.00
1/4"	ER2006352	3.80	ER2006351	5.20	ER200635T	7.00
5/16"	ER2007942	3.80	ER2007941	5.20	ER200794T	7.00
3/8"	ER2009532	3.80	ER2009531	5.20	ER200953T	7.00
7/16"	ER2011112	3.80	ER2011111	5.20	ER201111T	7.00
1/2"	ER2012702	3.80	ER2012701	5.20	ER201270T	7.00

**ER20 INCH SIZED COLLETS SETS / ER20 İNÇ ÖLÇÜ PENS TAKIMLARI**

**ER20 INCH COLLET SET CLASS 2**

CODE/KOD	content - içeriği	EURO
ER20SETIN2	8pcs ER20 Inch sized collets Class 2 Ø1/16"-1/2" in plastic box 8Ad. ER20 İnç ölçü pens Class 2 Ø1/16"-1/2" arası plastik kutuda	35.80

**ER20 INCH COLLET SET CLASS 1**

CODE/KOD	content - içeriği	EURO
ER20SETIN1	8pcs ER20 Inch sized collets Class 1 Ø1/16"-1/2" in plastic box 8Ad. ER20 İnç ölçü pens Class 1 Ø1/16"-1/2" arası plastik kutuda	47.30

**ER20 INCH COLLET SET TOPAC (5 micron)**

CODE/KOD	content - içeriği	EURO
ER20SETINT	8pcs ER20 Inch sized collets TOPAC Ø1/16"-1/2" in plastic box 8Ad. ER20 İnç ölçü pens TOPAC Ø1/16"-1/2" arası plastik kutuda	63.70

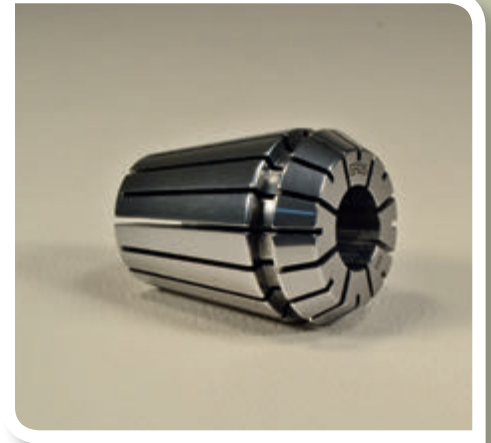


## INCH SIZED ER COLLETS İNÇ ÖLÇÜ ER PENSLER

DIN 6499 / ISO 15488-B

### ER25 INCH SIZED COLLETS / ER25 İNÇ ÖLÇÜ PENSLER

ER25	CLASS 2		CLASS 1		TOPAC	
	CODE / KOD	EURO	CODE / KOD	EURO	CODE / KOD	EURO
clamping dia sıkma çapı Ømm						
1/16"	ER2501592	6.80	ER2501591	8.50	ER250159T	12.30
1/8"	ER2503182	4.10	ER2503181	5.50	ER250318T	7.30
3/16"	ER2504762	4.10	ER2504761	5.50	ER250476T	7.30
1/4"	ER2506352	4.10	ER2506351	5.50	ER250635T	7.30
5/16"	ER2507942	4.10	ER2507941	5.50	ER250794T	7.30
3/8"	ER2509532	4.10	ER2509531	5.50	ER250953T	7.30
7/16"	ER2511112	4.10	ER2511111	5.50	ER251111T	7.30
1/2"	ER2512702	4.10	ER2512701	5.50	ER251270T	7.30
9/16"	ER2514292	4.10	ER2514291	5.50	ER251429T	7.30
5/8"	ER2515882	4.10	ER2515881	5.50	ER251588T	7.30



### ER25 INCH SIZED COLLETS SETS / ER25 İNÇ ÖLÇÜ PENS TAKIMLARI

#### ER25 INCH COLLET SET CLASS 2

CODE/KOD	content - içeriği	EURO
ER25SETIN2	10pcs ER25 Inch sized collets Class 2 Ø1/16"-5/8" in plastic box 10Ad. ER25 İnc ölçü pens Class 2 Ø1/16"-5/8" arası plastik kutuda	49.50

#### ER25 INCH COLLET SET CLASS 1

CODE/KOD	content - içeriği	EURO
ER25SETIN1	10pcs ER25 Inch sized collets Class 1 Ø1/16"-5/8" in plastic box 10Ad. ER25 İnc ölçü pens Class 1 Ø1/16"-5/8" arası plastik kutuda	63.80

#### ER25 INCH COLLET SET TOPAC (5 micron)

CODE/KOD	content - içeriği	EURO
ER25SETINT	10pcs ER25 Inch sized collets TOPAC Ø1/16"-5/8" in plastic box 10Ad. ER25 İnc ölçü pens TOPAC Ø1/16"-5/8" arası plastik kutuda	83.80



**ER32 INCH SIZED COLLETS / ER32 İNÇ ÖLÇÜ PENSLER**

ER32	CLASS 2		CLASS 1		TOPAC	
	CODE / KOD	EURO	CODE / KOD	EURO	CODE / KOD	EURO
clamping dia sıkma çapı Ømm						
1/8"	ER3203182	4.30	ER3203181	5.90	ER320318T	7.60
3/16"	ER3204762	4.30	ER3204761	5.90	ER320476T	7.60
1/4"	ER3206352	4.30	ER3206351	5.90	ER320635T	7.60
5/16"	ER3207942	4.30	ER3207941	5.90	ER320794T	7.60
3/8"	ER3209532	4.30	ER3209531	5.90	ER320953T	7.60
7/16"	ER3211112	4.30	ER3211111	5.90	ER321111T	7.60
1/2"	ER3212702	4.30	ER3212701	5.90	ER321270T	7.60
9/16"	ER3214292	4.30	ER3214291	5.90	ER321429T	7.60
5/8"	ER3215882	4.30	ER3215881	5.90	ER321588T	7.60
11/16"	ER3217462	4.30	ER3217461	5.90	ER321746T	7.60
3/4"	ER3219052	4.30	ER3219051	5.90	ER321905T	7.60

**ER32 INCH SIZED COLLETS SETS / ER32 İNÇ ÖLÇÜ PENS TAKIMLARI**

**ER32 INCH COLLET SET CLASS 2**

CODE/KOD	content - içeriği	EURO
ER32SETIN2	11pcs ER32 Inch sized collets Class 2 Ø1/8"-3/4" in plastic box 11Ad. ER32 İnç ölçü pens Class 2 Ø1/8"-3/4" arası plastik kutuda	54.30

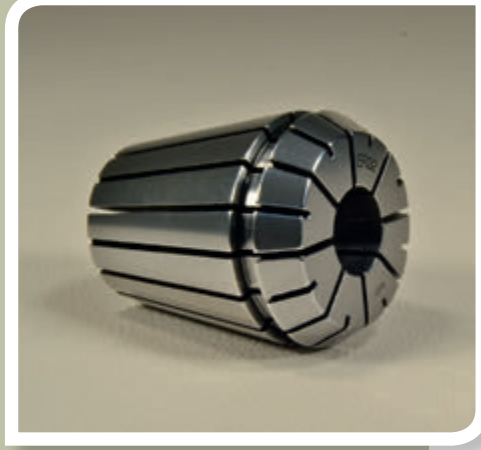
**ER32 INCH COLLET SET CLASS 1**

CODE/KOD	content - içeriği	EURO
ER32SETIN1	11pcs ER32 Inch sized collets Class 1 Ø1/8"-3/4" in plastic box 11Ad. ER32 İnç ölçü pens Class 1 Ø1/8"-3/4" arası plastik kutuda	71.90

**ER32 INCH COLLET SET TOPAC (5 micron)**

CODE/KOD	content - içeriği	EURO
ER32SETINT	11pcs ER32 Inch sized collets TOPAC Ø1/8"-3/4" in plastic box 11Ad. ER32 İnç ölçü pens TOPAC Ø1/8"-3/4" arası plastik kutuda	90.60

Other inch sized collets are available on request / Diğer inç ölçü pensler siparişe yapılabilir.

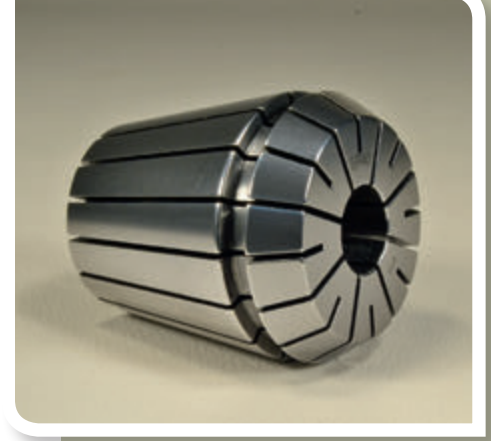


## INCH SIZED ER COLLETS İNÇ ÖLÇÜ ER PENSLELER

DIN 6499 / ISO 15488-B

### ER40 INCH SIZED COLLETS / ER40 İNÇ ÖLÇÜ PENSLELER

ER40	CLASS 2		CLASS 1		TOPAC	
	CODE / KOD	EURO	CODE / KOD	EURO	CODE / KOD	EURO
clamping dia sıkma çapı Ømm						
1/8"	ER4003182	7.10	ER4003181	8.90	ER400318T	10.80
5/32"***	ER4003972	5.30	ER4003971	7.20	ER400397T	9.10
3/16"	ER4004762	5.30	ER4004761	7.20	ER400476T	9.10
7/32"***	ER4005562	5.30	ER4005561	7.20	ER400556T	9.10
1/4"	ER4006352	5.30	ER4006351	7.20	ER400635T	9.10
9/32"***	ER4007142	5.30	ER4007141	7.20	ER400714T	9.10
5/16"	ER4007942	5.30	ER4007941	7.20	ER400794T	9.10
11/32"***	ER4008732	5.30	ER4008731	7.20	ER400873T	9.10
3/8"	ER4009532	5.30	ER4009531	7.20	ER400953T	9.10
13/32"***	ER4010322	5.30	ER4010321	7.20	ER401032T	9.10
7/16"	ER4011112	5.30	ER4011111	7.20	ER401111T	9.10
15/32"***	ER4011912	5.30	ER4011911	7.20	ER401191T	9.10
1/2"	ER4012702	5.30	ER4012701	7.20	ER401270T	9.10
17/32"***	ER4013492	5.30	ER4013491	7.20	ER401349T	9.10
9/16"	ER4014292	5.30	ER4014291	7.20	ER401429T	9.10
19/32"***	ER4015082	5.30	ER4015081	7.20	ER401508T	9.10
5/8"	ER4015882	5.30	ER4015881	7.20	ER401588T	9.10
21/32"***	ER4016672	5.30	ER4016671	7.20	ER401667T	9.10
11/16"	ER4017462	5.30	ER4017461	7.20	ER401746T	9.10
23/32"***	ER4018262	5.30	ER4018261	7.20	ER401826T	9.10
3/4"	ER4019052	5.30	ER4019051	7.20	ER401905T	9.10
13/16"	ER4020642	5.30	ER4020641	7.20	ER402064T	9.10
7/8"	ER4022232	5.30	ER4022231	7.20	ER402223T	9.10
15/16"	ER4023812	5.30	ER4023811	7.20	ER402381T	9.10
1"	ER4025402	5.30	ER4025401	7.20	ER402540T	9.10



### ER40 INCH SIZED COLLETS SETS / ER40 İNÇ ÖLÇÜ PENS TAKIMLARI

#### ER40 INCH COLLET SET CLASS 2

CODE/KOD	content - içeriği	EURO
ER40SETIN2	15pcs ER40 Inch sized collets Class 2 Ø1/8"-1" in plastic box 15Ad. ER40 İnce ölçü pens Class 2 Ø1/8"-1" arası plastik kutuda	94.00

#### ER40 INCH COLLET SET CLASS 1

CODE/KOD	content - içeriği	EURO
ER40SETIN1	15pcs ER40 Inch sized collets Class 1 Ø1/8"-1" in plastic box 15Ad. ER40 İnce ölçü pens Class 1 Ø1/8"-1" arası plastik kutuda	122.10

#### ER40 INCH COLLET SET TOPAC (5 micron)

CODE/KOD	content - içeriği	EURO
ER40SETINT	15pcs ER40 Inch sized collets TOPAC Ø1/8"-1" in plastic box 15Ad. ER40 İnce ölçü pens TOPAC Ø1/8"-1" arası plastik kutuda	150.60



\*\* indicated size collets are not included in the sets / İşaretili ölçü pensler setin içinde yoktur.  
Other inch sized collets are available on request / Diğer ince ölçü pensler siparişe yapılabilir.

## INCH SIZED COOLANT SEALED ER COLLETS for internal coolant tools İNÇ ÖLÇÜ SIZDIRMAZ PESLER İçten soğutmalı takımlar için

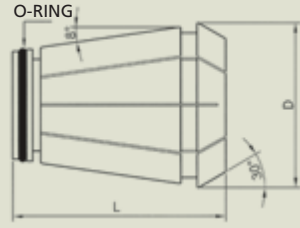
**DIN 6499 / ISO 15488**

Pat. Nr. 2012 07739

ERC16	CLASS 2		CLASS 1		TOPAC	
	CODE / KOD	EURO	CODE / KOD	EURO	CODE / KOD	EURO
clamping dia sıkma çapı Ømm						
1/8"	ERC1603182	10.40	ERC1603181	11.70	ERC160318T	14.20
1/4"	ERC1606352	10.40	ERC1606351	11.70	ERC160635T	14.20
5/16"	ERC1607942	10.40	ERC1607941	11.70	ERC160794T	14.20
3/8"	ERC1609532	10.40	ERC1609531	11.70	ERC160953T	14.20

ERC20	CLASS 2		CLASS 1		TOPAC	
	CODE / KOD	EURO	CODE / KOD	EURO	CODE / KOD	EURO
clamping dia sıkma çapı Ømm						
1/8"	ERC2003182	10.50	ERC2003181	11.80	ERC200318T	14.30
1/4"	ERC2006352	10.50	ERC2006351	11.80	ERC200635T	14.30
5/16"	ERC2007942	10.50	ERC2007941	11.80	ERC200794T	14.30
3/8"	ERC2009532	10.50	ERC2009531	11.80	ERC200953T	14.30
7/16"	ERC2011112	10.50	ERC2011111	11.80	ERC201111T	14.30
1/2"	ERC2012702	10.50	ERC2012701	11.80	ERC201270T	14.30

ERC25	CLASS 2		CLASS 1		TOPAC	
	CODE / KOD	EURO	CODE / KOD	EURO	CODE / KOD	EURO
clamping dia sıkma çapı Ømm						
1/8"	ERC2503182	11.40	ERC2503181	12.40	ERC250318T	14.90
1/4"	ERC2506352	11.40	ERC2506351	12.40	ERC250635T	14.90
5/16"	ERC2507942	11.40	ERC2507941	12.40	ERC250794T	14.90
3/8"	ERC2509532	11.40	ERC2509531	12.40	ERC250953T	14.90
7/16"	ERC2511112	11.40	ERC2511111	12.40	ERC251111T	14.90
1/2"	ERC2512702	11.40	ERC2512701	12.40	ERC251270T	14.90
9/16"	ERC2514292	11.40	ERC2514291	12.40	ERC251429T	14.90
5/8"	ERC2515882	11.40	ERC2515881	12.40	ERC251588T	14.90



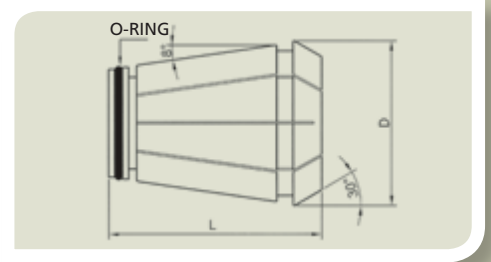
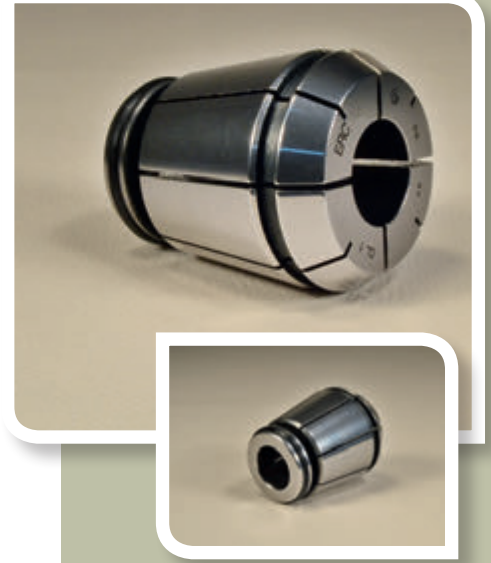
**INCH SIZED COOLANT SEALED ER COLLETS for internal coolant tools**  
**İNÇ ÖLÇÜ SIZDIRMAZ PESLER İçten soğutmalı takımalar için**

**DIN 6499 / ISO 15488**

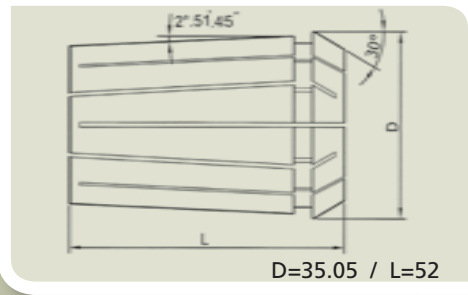
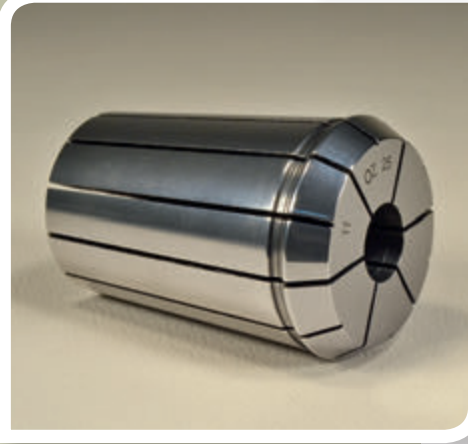
Pat. Nr. 2012 07739

ERC32	CLASS 2		CLASS 1		TOPAC	
	CODE / KOD	EURO	CODE / KOD	EURO	CODE / KOD	EURO
clamping dia sıkma çapı Ømm						
1/8"	ERC3203182	11.60	ERC3203181	13.00	ERC320318T	15.50
1/4"	ERC3206352	11.60	ERC3206351	13.00	ERC320635T	15.50
5/16"	ERC3207942	11.60	ERC3207941	13.00	ERC320794T	15.50
3/8"	ERC3209532	11.60	ERC3209531	13.00	ERC320953T	15.50
7/16"	ERC3211112	11.60	ERC3211111	13.00	ERC321111T	15.50
1/2"	ERC3212702	11.60	ERC3212701	13.00	ERC321270T	15.50
9/16"	ERC3214292	11.60	ERC3214291	13.00	ERC321429T	15.50
5/8"	ERC3215882	11.60	ERC3215881	13.00	ERC321588T	15.50
3/4"	ERC3219052	11.60	ERC3219051	13.00	ERC321905T	15.50

ERC40	CLASS 2		CLASS 1		TOPAC	
	CODE / KOD	EURO	CODE / KOD	EURO	CODE / KOD	EURO
clamping dia sıkma çapı Ømm						
1/4"	ERC4006352	13.60	ERC4006351	15.00	ERC400635T	17.50
5/16"	ERC4007942	13.60	ERC4007941	15.00	ERC400794T	17.50
3/8"	ERC4009532	13.60	ERC4009531	15.00	ERC400953T	17.50
7/16"	ERC4011112	13.60	ERC4011111	15.00	ERC401111T	17.50
1/2"	ERC4012702	13.60	ERC4012701	15.00	ERC401270T	17.50
9/16"	ERC4014292	13.60	ERC4014291	15.00	ERC401429T	17.50
5/8"	ERC4015882	13.60	ERC4015881	15.00	ERC401588T	17.50
3/4"	ERC4019052	13.60	ERC4019051	15.00	ERC401905T	17.50
1"	ERC4025402	13.60	ERC4025401	15.00	ERC402540T	17.50



## DIN 6388 / ISO 10897-B COLLETS



D	52.0mm
L	60.0mm
$\alpha$	2° 51' 45"
$\beta$	30°
CLAMPING RANGE TUTMA ARALIĞI	2.0-25.4
CLAMPING STEPS TUTMA KAPASİTESİ	0.5mm



OZ25 clamping dia sıkma çapı	DIN 6388 / ISO10897-B (OZ25) CLASS 2		DIN 6388 / ISO10897-B (OZ25) CLASS 1		DIN 6388 / ISO10897-B (OZ25) TOPAC (5 micron)	
	CODE / KOD	EURO	CODE / KOD	EURO	CODE / KOD	EURO
2.0-1.5	OZ250202	10.40	OZ250201	11.60	OZ25020T	13.60
2.5-2.0	OZ250252	10.40	OZ250251	11.60	OZ25025T	13.60
3.0-2.5	OZ250302	9.80	OZ250301	11.00	OZ25030T	13.00
3.5-3.0	OZ250352	9.80	OZ250351	11.00	OZ25035T	13.00
4.0-3.5	OZ250402	7.30	OZ250401	8.50	OZ25040T	10.50
4.5-4.0	OZ250452	9.20	OZ250451	10.40	OZ25045T	12.40
5.0-4.5	OZ250502	7.30	OZ250501	8.50	OZ25050T	10.50
5.5-5.0	OZ250552	9.20	OZ250551	10.40	OZ25055T	12.40
6.0-5.5	OZ250602	7.30	OZ250601	8.50	OZ25060T	10.50
1/4" (6.35)	OZ250632	9.20	OZ250631	10.40	OZ25063T	12.40
6.5-6.0	OZ250652	9.20	OZ250651	10.40	OZ25065T	12.40
7.0-6.5	OZ250702	7.30	OZ250701	8.50	OZ25070T	10.50
7.5-7.0	OZ250752	9.20	OZ250751	10.40	OZ25075T	12.40
8.0-7.5	OZ250802	7.30	OZ250801	8.50	OZ25080T	10.50
8.5-8.0	OZ250852	9.20	OZ250851	10.40	OZ25085T	12.40
9.0-8.5	OZ250902	7.30	OZ250901	8.50	OZ25090T	10.50
9.5-9.0	OZ250952	9.20	OZ250951	10.40	OZ25095T	12.40
3/8" (9.53)	OZ250962	9.20	OZ250961	10.40	OZ25096T	12.40
10.0-9.5	OZ251002	7.30	OZ251001	8.50	OZ25100T	10.50
10.5-10.0	OZ251052	9.20	OZ251051	10.40	OZ25105T	12.40
11.0-10.5	OZ251102	7.30	OZ251101	8.50	OZ25110T	10.50
11.5-11.0	OZ251152	9.20	OZ251151	10.40	OZ25115T	12.40
12.0-11.5	OZ251202	7.30	OZ251201	8.50	OZ25120T	10.50
12.5-12.0	OZ251252	9.20	OZ251251	10.40	OZ25125T	12.40
1/2" (12.70)	OZ251272	9.20	OZ251271	10.40	OZ25127T	12.40
13.0-12.5	OZ251302	7.30	OZ251301	8.50	OZ25130T	10.50
13.5-13.0	OZ251352	9.20	OZ251351	10.40	OZ25135T	12.40
14.0-13.5	OZ251402	7.30	OZ251401	8.50	OZ25140T	10.50
14.5-14.0	OZ251452	9.20	OZ251451	10.40	OZ25145T	12.40
15.0-14.5	OZ251502	7.30	OZ251501	8.50	OZ25150T	10.50
15.5-15.0	OZ251552	9.20	OZ251551	10.40	OZ25155T	12.40
5/8" (15.87)	OZ251582	9.20	OZ251581	10.40	OZ25158T	12.40
16.0-15.5	OZ251602	7.30	OZ251601	8.50	OZ25160T	10.50
16.5-16.0	OZ251652	9.20	OZ251651	10.40	OZ25165T	12.40
17.0-16.5	OZ251702	7.30	OZ251701	8.50	OZ25170T	10.50
17.5-17.0	OZ251752	9.20	OZ251751	10.40	OZ25175T	12.40
18.0-17.5	OZ251802	7.30	OZ251801	8.50	OZ25180T	10.50
18.5-18.0	OZ251852	9.20	OZ251851	10.40	OZ25185T	12.40
19.0-18.5	OZ251902	7.30	OZ251901	8.50	OZ25190T	10.50
3/4" (19.05)	OZ251912	9.20	OZ251911	10.40	OZ25191T	12.40
19.5-19.0	OZ251952	9.20	OZ251951	10.40	OZ25195T	12.40
20.0-19.5	OZ252002	7.30	OZ252001	8.50	OZ25200T	10.50
20.5-20.0	OZ252052	9.20	OZ252051	10.40	OZ25205T	12.40
21.0-20.5	OZ252102	7.30	OZ252101	8.50	OZ25210T	10.50
21.5-21.0	OZ252152	9.20	OZ252151	10.40	OZ25215T	12.40
22.0-21.5	OZ252202	7.30	OZ252201	8.50	OZ25220T	10.50
22.5-22.0	OZ252252	9.20	OZ252251	10.40	OZ25225T	12.40
23.0-22.5	OZ252302	7.30	OZ252301	8.50	OZ25230T	10.50
23.5-23.0	OZ252352	9.20	OZ252351	10.40	OZ25235T	12.40
24.0-23.5	OZ252402	7.30	OZ252401	8.50	OZ25240T	10.50
24.5-24.0	OZ252452	9.20	OZ252451	10.40	OZ25245T	12.40
25.0-24.5	OZ252502	7.30	OZ252501	8.50	OZ25250T	10.50
1" (25.40)	OZ252542	9.20	OZ252541	10.40	OZ25254T	12.40

### DIN6388B-25 COLLET SETS / DIN6388B-25 PENS TAKIMLARI

#### OZ25 COLLET SET CLASS 2

CODE/KOD	content - içeriği	EURO
OZ25SET2	24pcs DIN6388B-25 collets Class2 Ø2-25mm in 1mm increments in plastic box 24 Ad. DIN6388-25 Pens Class2 Ø2-25mm 1mm atlamalı plastik kutuda	195.00

#### OZ25 COLLET SET CLASS 1

CODE/KOD	content - içeriği	EURO
OZ25SET1	24pcs DIN6388B-25 collets Class1 Ø2-25mm in 1mm increments in plastic box 24 Ad. DIN6388-25 Pens Class1 Ø2-25mm 1mm atlamalı plastik kutuda	224.00

#### OZ25 COLLET SET TOPAC (5 micron)

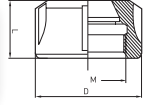
CODE/KOD	content - içeriği	EURO
OZ25SETT	24pcs DIN6388B-25 collets TOPAC Ø2-25mm in 1mm increments in plastic box 24 Ad. DIN6388-25 Pens TOPAC Ø2-25mm 1mm atlamalı plastik kutuda	272.00



**TOOLHOLDER ACCESSORIES**  
*TUTUCU AKSESUARLARI*

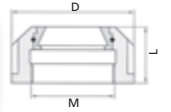
## LOCKNUTS PENS SOMUNLARI

### ER STANDARD LOCKNUT / ER STANDART SOMUN DIN 6499 / ISO 15488



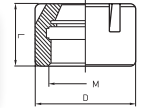
CODE KOD	ER SIZE ER ÖLÇÜSÜ	D	L	M	EURO
NER16S	ER 16	32	17.5	M 22 x 1.5	5.20
NER20S	ER 20	35	19	M 25 x 1.5	5.20
NER25S	ER 25	42	20	M 32 x 1.5	5.50
NER32S	ER 32	50	22.5	M 40 x 1.5	5.70
NER40S	ER 40	63	25.5	M 50 x 1.5	7.50
NER50S	ER 50	78	35	M 64 x 2	13.00

### ER BEARING TYPE LOCKNUT / ER BİLYALI TİP SOMUN DIN 6499 / ISO 15488



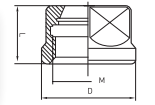
CODE KOD	ER SIZE ER ÖLÇÜSÜ	D	L	M	EURO
NER25B	ER 25	42	23	M 32 x 1.5	14.00
NER32B	ER 32	50	25	M 40 x 1.5	14.00
NER40B	ER 40	63	28.5	M 50 x 1.5	15.00

### ER MINI LOCKNUT / ER MİNİ SOMUN DIN 6499 / ISO 15488



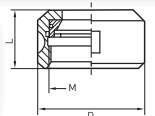
CODE KOD	ER SIZE ER ÖLÇÜSÜ	D	L	M	EURO
NER08M	ER 8 MINI	12	11	M 10 x 0.75	5.80
NER11M	ER 11 MINI	16	12	M 13 x 0.75	5.20
NER16M	ER 16 MINI	22	19	M 19 x 1	5.20
NER20M	ER 20 MINI	28	19	M 24 x 1	5.30
NER25M	ER 25 MINI	35	20	M 30 x 1	5.60

### ER HEXAGON LOCKNUT / ER ALTİKÖŞE SOMUN DIN 6499 / ISO 15488



CODE KOD	ER SIZE ER ÖLÇÜSÜ	D	L	M	EURO
NER11H	ER 11	19	11.3	M 14 x 0.75	5.20
NER16H	ER 16	28	17	M 22 x 1.5	5.20
NER20H	ER 20	34	19	M 25 x 1.5	5.30

### OZ TYPE LOCKNUT / OZ TİP SOMUN DIN 6388 / ISO 10897-D



CODE KOD	D	L	M	EURO
NOZ25B	60	33	M 48 x 2	16.00



## SPANNERS ANAHTARLAR

### ER STANDARD SPANNER / ER STANDART ANAHTAR

CODE / KOD	ER SIZE / ER ÖLÇÜSÜ	EURO
SPER16S	ER 16	4.25
SPER20S	ER 20	4.30
SPER25S	ER 25	4.60
SPER32S	ER 32	5.00
SPER40S	ER 40	6.30
SPER50S	ER 50	12.00



### ER MOON TYPE SPANNER / ER AY TİPİ ANAHTAR

CODE / KOD	ER SIZE / ER ÖLÇÜSÜ	EURO
SPER25C	ER 25	4.60
SPER32C	ER 32	5.00
SPER40C	ER 40	6.30



### ER MINI SPANNER / ER MINI ANAHTAR

CODE / KOD	ER SIZE / ER ÖLÇÜSÜ	EURO
SPER08M	ER 8 MINI	5.40
SPER11M	ER 11 MINI	5.40
SPER16M	ER 16 MINI	5.40
SPER20M	ER 20 MINI	6.20
SPER25M	ER 25 MINI	6.70



### ER HEXAGON SPANNER / ER ALTIKÖŞE ANAHTAR

CODE / KOD	ER SIZE / ER ÖLÇÜSÜ	EURO
SPER11H	ER 11	3.60
SPER16H	ER 16	3.80
SPER20H	ER 20	4.00



### OZ SPANNER DIN 6388 / ISO 10897 - OZ AY ANAHTAR DIN 6388 / ISO 10897

CODE / KOD	LOCKNUT TYPE SOMUN TİPİ	EURO
SPOZ25	DIN6388B-25 (OZ25)	5.00



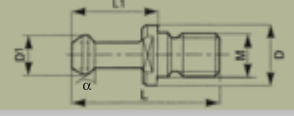
### FACE MILL SPANNER / ALIN FREZE TUTUCU ANAHTARI

CODE / KOD	TYPE / TİP	EURO
SPFM16	FM16	10.00
SPFM22	FM22	11.00
SPFM27	FM27	12.50
SPFM32	FM32	14.80
SPFM40	FM40	21.00



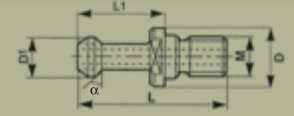
## PULL STUDS ÇEKTİRME CİVATALARI

### MAS 403 BT



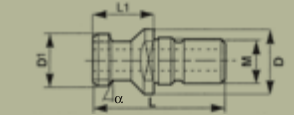
CODE KOD	Toolholder Taper Tutucu Konik	M	D	D1	L	L1	$\alpha$	EURO
PSBT3045	BT30	M12	16.5	11	43	23	45°	4.00
PSBT4045	BT40	M16	23	15	60	35	45°	3.60
PSBT4060	BT40	M16	23	15	60	35	60°	3.60
PSBT4090	BT40	M16	23	15	60	35	90°	3.60
PSBT5045	BT50	M24	38	23	85	45	45°	5.50

### MAS 403 BT - internal coolant İçten soğutma delikli



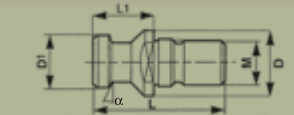
CODE KOD	Toolholder Taper Tutucu Konik	M	D	D1	L	L1	$\alpha$	EURO
PSBT4045B	BT40	M16	23	15	60	35	45°	3.90
PSBT5045B	BT50	M24	38	23	85	45	45°	5.90

### DIN 69872A - internal coolant İçten soğutma delikli



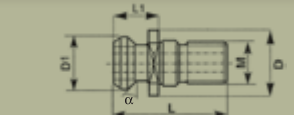
CODE KOD	Toolholder Taper Tutucu Konik	M	D	D1	L	L1	$\alpha$	EURO
PS698724A	DIN40 (69871)	M16	23	19	54	26	15°	3.90
PS698725A	DIN50 (69871)	M24	36	28	74	34	15°	5.90

### DIN 69872B



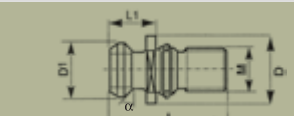
CODE KOD	Toolholder Taper Tutucu Konik	M	D	D1	L	L1	$\alpha$	EURO
PS698724B	DIN40 (69871)	M16	23	19	54	26	15°	3.60
PS698725B	DIN50 (69871)	M24	36	28	74	34	15°	5.50

### ISO 7388/2 (1984/B) - internal coolant İçten soğutma delikli



CODE KOD	Toolholder Taper Tutucu Konik	M	D	D1	L	L1	$\alpha$	EURO
PS738840A	DIN40 (69871)	M16	22.5	18.9	44.5	16.3	45°	3.90
PS738850A	DIN50 (69871)	M24	36	29.1	65.5	25.6	45°	5.90

### ISO 7388/2 (1984/B)

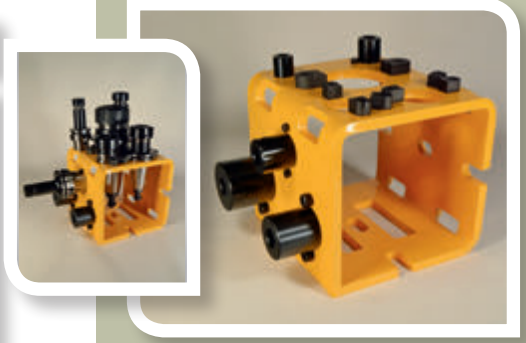


CODE KOD	Toolholder Taper Tutucu Konik	M	D	D1	L	L1	$\alpha$	EURO
PS738840B	DIN40 (69871)	M16	22.5	18.9	44.5	16.3	45°	3.60
PS738850B	DIN50 (69871)	M24	36	29.1	65.5	25.6	45°	5.50

## TOOL CLAMPING UNITS TAKIM BAĞLAMA ÜNİTELERİ

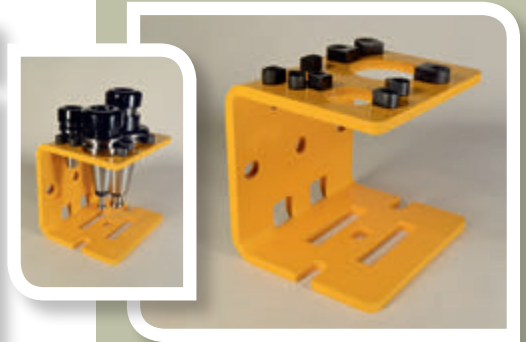
### UNIVERSAL TOOL CLAMPING SET / ÜNİVERSAL TAKIM BAĞLAMA SETİ Pat.

CODE / KOD	Description / Tanımı	EURO
TBAUNI	<p>All in one, Universal design massive steel construction, usable both vertical and horizontal position, suitable tapers: BT-DIN-ISO-SK-CAT 30-40-50 HSK A 40-50-63-80-100</p> <p>Hepsi bir arada, üniversal tasarım, masif çelik yapı, dikey ve yatay kullanım ve bağlama imkanı takılan konikler BT-DIN-ISO-SK-CAT 30-40-50 HSK A 40-50-63-80-100</p> <p>Dimensions/Boyutlar: 174x191x169mm</p>	268.00



### TOOL CLAMPING UNIT 30-40-50 TAPER / TAKIM BAĞLAMA APARATI 30-40-50 KONİK

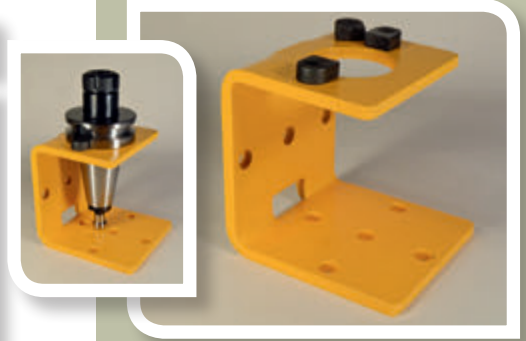
CODE / KOD	Description / Tanımı	EURO
TBA304050	<p>Massive steel construction, usable both vertical and horizontal position, suitable for tapers BT-DIN-ISO-SK-CAT 30-40-50</p> <p>Masif çelik yapı, dikey ve yatay konumda bağlama imkanı, Bağladığı konikler: BT-DIN-ISO-SK-CAT 30-40-50</p> <p>Dimensions/Boyutlar: 165x190x165mm</p>	86.00



### TOOL CLAMPING UNIT WITH SINGLE TAPER / TAKIM BAĞLAMA APARATI TEK KONİKLİ

CODE / KOD	Description / Tanımı	EURO
TBA30	<p>Tool clamping unit 30 Taper Takım bağlama aparatı 30 konik BT-DIN-ISO-SK-CAT 30 Dimensions/Boyutlar: 75x95x75mm</p>	47.00
TBA40	<p>Tool clamping unit 40 Taper Takım bağlama aparatı 40 konik BT-DIN-ISO-SK-CAT 40 Dimensions/Boyutlar: 90x110x105mm</p>	55.00
TBA50	<p>Tool clamping unit 50 Taper Takım bağlama aparatı 50 konik BT-DIN-ISO-SK-CAT 50 Dimensions/Boyutlar: 110x148x150mm</p>	65.00

Massive steel construction, usable both vertical and horizontal position,  
Masif çelik yapı, dikey ve yatay bağlama imkanı



## TOOL CLAMPING UNITS TAKIM BAĞLAMA ÜNİTELERİ

### TOOL CLAMPING UNIT FOR HSK-A TAPERS / TAKIM BAĞLAMA APARATI HSK-A KONİKLER İÇİN

CODE / KOD	Description / Tanımı	EURO
TBAHSK40	Tool clamping unit HSK-A 40 Taper Takım bağlama aparatı HSK-A 40 konik Dimensions/Boyutlar: 60x80x60mm	70.00
TBAHSK50	Tool clamping unit HSK-A 50 Taper Takım bağlama aparatı HSK-A 50 konik Dimensions/Boyutlar: 75x90x65mm	76.00
TBAHSK63	Tool clamping unit HSK-A 63 Taper Takım bağlama aparatı HSK-A 63 konik Dimensions/Boyutlar: 85x100x70mm	85.00
TBAHSK80	Tool clamping unit HSK-A 80 Taper Takım bağlama aparatı HSK-A 80 konik Dimensions/Boyutlar: 100x120x70mm	95.00
TBAHSK100	Tool clamping unit HSK-A 100 Taper Takım bağlama aparatı HSK-A 100 konik Dimensions/Boyutlar: 120x130x70mm	110.00

Massive steel construction, usable both vertical and horizontal position,  
Masif çelik yapı, dikey ve yatay bağlama imkanı

### MULTI PURPOSE MITER FIXTURE / ÇOK AMAÇLI GÖNYE APARATI

CODE / KOD	Description / Tanımı	EURO
MITFIX	Massive steel construction, usable both vertical and horizontal position, fixing and workpiece or fixture, suitable for our tool clamping set / unit Dimensions: WidthxLengthxHeight 100x190x140mm  Masif çelik yapı, dikey ve yatay konumda kullanım ve her tür iş parçası ve aparat bağlamaya uygun, ayrıca takım bağlama aparat ve setlerimize de uygundur Boyutlar: EnxBoyxYükseklik 100x190x140mm	22.00

### TOOLHOLDER STORAGE STAND / TAKIM TUTUCU STANDI

CODE / KOD	Description / Tanımı	EURO
TSUNI16	Toolholder storage stand 16 holes Universal design suits all tapers BT-DIN-ISO-SK-CAT 30-40-50 HSK A 32-40-50-63-80 Dimensions: WidthxLengthxHeight 57x50x30mm  Takım tutucu standı 16 hazneli Universal tasarım tüm koniklere uygun BT-DIN-ISO-SK-CAT 30-40-50 HSK A 32-40-50-63-80 Boyutlar: EnxBoyxYükseklik 57x50x30mm	70.00

## WOODEN COLLET STANDS AĖŞAP PENS STANTLARI

### WOODEN COLLET STAND / AĖŞAP PENS STANDI

CODE / KOD	Collet to fit / Uygun pens tipi	EURO
WCS08	ER 8	5.00
WCS11	ER 11	5.00
WCS16	ER 16	5.00
WCS20	ER 20	5.00
WCS25	ER 25	6.50
WCS32	ER 32	8.00
WCS40	ER 40	11.50
WCS50	ER 50	11.50
WCSOZ	OZ25 DIN6388-25	11.50



## SPARE TOOLHOLDER SCREWS YEDEK TAKIM TUTUCU CİVATALARI

### FACE MILL ADAPTOR LOCK SCREW / ALIN FREZE TUTUCU SABİTLEME CİVATASI

CODE / KOD	TOOLHOLDER REF. / TUTUCU REF.	SIZE / ÖLÇÜ	EURO
SCFM16	FACE MILL Ø16MM	M8	3.10
SCFM22	FACE MILL Ø22MM	M10	3.80
SCFM27	FACE MILL Ø27MM	M12	4.10
SCFM32	FACE MILL Ø32MM	M16	5.20
SCFM40	FACE MILL Ø40MM	M20	7.00

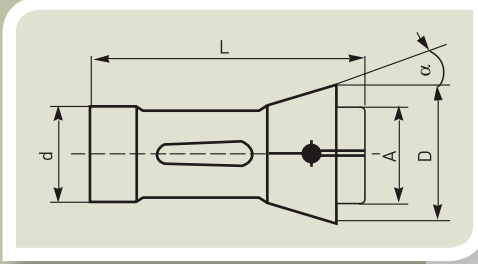


### WELDON ADAPTOR SIDE LOCK SCREW / WELDON TUTUCU SABİTLEME CİVATASI

CODE / KOD	TOOLHOLDER REF. / TUTUCU REF.	SIZE / ÖLÇÜ	EURO
SCW06	WELDON Ø6MM	M6X10	1.20
SCW08	WELDON Ø8MM	M8X10	1.20
SCW10	WELDON Ø10MM	M10X12	1.75
SCW12	WELDON Ø12MM	M12X16	1.75
SCW14	WELDON Ø14MM	M12X16	1.75
SCW16	WELDON Ø16MM	M14X16	1.85
SCW18	WELDON Ø18MM	M14X16	1.85
SCW20	WELDON Ø20MM	M16X16	2.00
SCW25	WELDON Ø25MM	M18X2X20	3.30
SCW32	WELDON Ø32MM	M20X2X20	3.50
SCW40	WELDON Ø40MM	M20X2X20	3.50



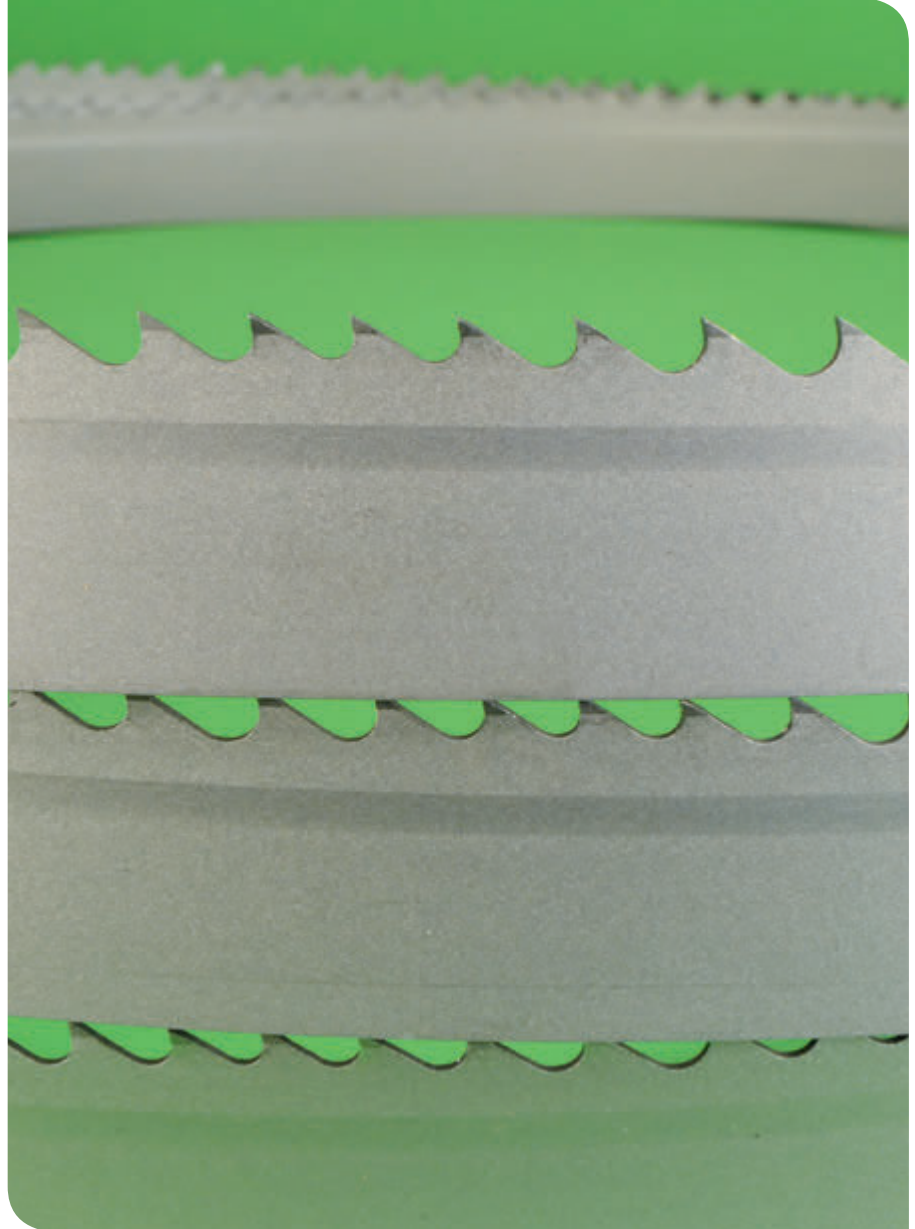
## DIN 6343 WORKHOLDING COLLETS DIN 6343 CNC TORNA, OTOMAT, REVOLVER PENSLERİ



CODE KOD	TYPE TİP	d	L	D	A	$\alpha$	ROUND YUVARLAK	HEXAGON ALTİKÖŞE	SQUARE KARE
							EURO	EURO	EURO
FC140E....	A16 140E F22 TRAUB A15 INDEX 12	22	55	30	21	15°	10.50 (Ø3-16mm)	17.50 (Ø5-13mm)	19.00 (Ø5-10mm)
FC148E....	A20 148E F28 TRAUB A20 INDEX 18	28	70	38	28	15°	12.50 (Ø3-22mm)	19.00 (Ø5-19mm)	21.00 (Ø5-15mm)
FC161E....	A25 161E F32 TRAUB A25 INDEX 20	32	75	45	34	15°	13.00 (Ø3-26mm)	20.00 (Ø5-22mm)	22.00 (Ø5-18mm)
FC162E....	A25-1 162E F35 INDEX 25	35	70	43	34	15°	14.50 (Ø3-25mm)	21.00 (Ø5-22mm)	23.00 (Ø5-18mm)
FC163E....	A30 163E F35 TRAUB A30 INDEX 24	35	80	48	38	15°	14.00 (Ø3-30mm)	20.00 (Ø5-26mm)	22.00 (Ø5-20mm)
FC171E....	A36 171E F42 TRAUB A36 INDEX 30	42	94	55	42	15°	19.00 (Ø3-36mm)	31.00 (Ø5-30mm)	33.00 (Ø5-25mm)
FC173E....	A42 173E F48 TRAUB A42 INDEX 36	48	94	60	50	15°	19.00 (Ø3-42mm)	31.00 (Ø5-36mm)	33.00 (Ø5-29mm)
FC185E....	A60 185E F66 TRAUB A60 INDEX 52	66	110	84	73	15°	38.00 (Ø4-60mm)	60.00 (Ø10-52mm)	62.00 (Ø7-42mm)

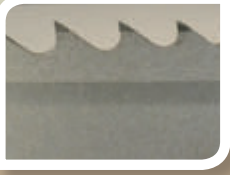
Ordering examples : FC173E100R - 173E collet 10mm Round  
Suffix of the code R= Round H=Hexagon S=Square  
Special sizes made to order

Sipariş kodu örnek : FC173E100R - 173E pens 10mm Yuvarlak  
Kod sonundaki R=Yuvarlak H=Altıköşe S=Kare  
Özel ölçüler siparişe üretilir.



**BAND SAWS**  
**ŞERİT TESTERELER**

## BANDSAW BLADES NARROW BANDS BI-METAL M42 - MATRIX ŞERİT TESTERELER DEKUPAJ BI-METAL M42 - MATRIX



Bi-metal blades suitable to cut steel, metals, non ferrous materials in rod, plate, sheet and structurals. To be operated in all sorts of horizontal as well as vertical machines.

"H" indicated tooth (Hook form) are only suitable for aluminium, copper and similar non-ferrous materials and their casts. They are not suitable to cut steel.

Dekupaj dikey veya yatay tezgahlarda çelik veya hafif metalleri, plaka, lama, kütle, yuvarlak veya profil halinde keser "H" işaretli dişler (kanca formu) sadece alüminyum, bakır, bronz gibi hafif metaller ve döküm malzemeler içindir. Demir ve çelik için uygun değildir.

Blade width x thickness Testere Genişlik x Kalınlık	CODE KOD	Nr. Of teeth /inch Diş sayısı (1 inç'te)	Packing details: in coils Ambalaj Şekli: Top Halinde	Price/Metre Metre Fiyatı EURO
6.4 x 0.64mm	TB06060600H	6H**	30,5 M	4.25
6.4 x 0.64mm	TB06061400	14**	30,5 M	4.25
6.4 x 0.64mm	TB06061014	10/14	30,5 M	4.25
6.4 X 0.9mm	TB06091000	10	30,5 M	4.40
6.4 X 0.9mm	TB06091400	14	30,5 M	4.40
6.4 X 0.9mm	TB06091014	10/14	30,5 M	4.40
9.5 x 0.64mm	TB10060400H	4H**	30,5 M	4.25
9.5 x 0.64mm	TB10060800	8**	30,5 M	4.25
9.5 x 0.64mm	TB10061000	10**	30,5 M	4.25
9.5 x 0.64mm	TB10061400	14**	30,5 M	4.25
9.5 x 0.64mm	TB10061014	10/14**	30,5 M	4.25
9.5 x 0.9mm	TB10090400H	4H	30,5 M	4.50
9.5 x 0.9mm	TB10091000	10	30,5 M	4.50
9.5 x 0.9mm	TB10091014	10/14	30,5 M	4.50
12,7 x 0.50mm	TB12051014	10/14**	30,5 M	4.25
12,7 x 0.50mm	TB12051418	14/18**	30,5 M	4.25
12,7 x 0.50mm	TB12052024	20/24**	30,5 M	4.25
12,7 x 0.50mm	TB12051000	10**	30,5 M	4.25
12,7 x 0.50mm	TB12051400	14**	30,5 M	4.25
12,7 x 0.50mm	TB12051800	18**	30,5 M	4.25
12,7 x 0.50mm	TB12052400	24**	30,5 M	4.25
12,7 x 0.64mm	TB12060300H	3H**	30,5 M	4.50
12,7 x 0.64mm	TB12060400H	4H**	30,5 M	4.50
12,7 x 0.64mm	TB12060600H	6H	30,5 M	4.50
12,7 x 0.64mm	TB12060600	6**	30,5 M	4.50
12,7 x 0.64mm	TB12061000	10**	30,5 M	4.50
12,7 x 0.64mm	TB12061400	14**	30,5 M	4.50
12,7 x 0.64mm	TB12061800	18**	30,5 M	4.50
12,7 x 0.64mm	TB12060610	6/10**	30,5 M	4.50
12,7 x 0.64mm	TB12060812	8/12	30,5 M	4.50
12,7 x 0.64mm	TB12061014	10/14**	30,5 M	4.50
12,7 x 0.64mm	TB12061418	14/18**	30,5 M	4.50
12,7 x 0.9mm	TB12090400H	4H	30,5 M	4.65
12,7 x 0.9mm	TB12090600H	6H	30,5 M	4.65
12,7 x 0.9mm	TB12091000	10	30,5 M	4.65
12,7 x 0.9mm	TB12091400	14	30,5 M	4.65
12,7 x 0.9mm	TB12090610	6/10**	30,5 M	4.65
12,7 x 0.9mm	TB12091014	10/14	30,5 M	4.65
16 x 0.9mm	TB16090610	6/10**	30,5 M	5.00

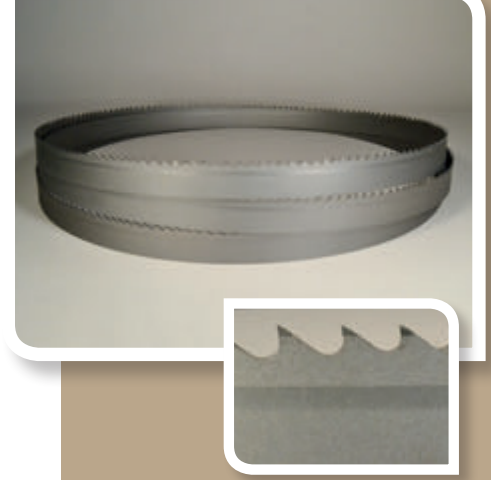
\*\* indicated blades are Matrix Bi-Metal  
\*\* işaretli dişler Matrix Bi-Metal dir



## BANDSAW BLADES BI-METAL M42 - MATRIX

### ŞERİT TESTERELER BI-METAL M42 - MATRIX

Blade width x thickness Testere Genişlik x Kalınlık	CODE KOD	Nr. Of teeth /inch Diş sayısı (1 inç'te)	Cutting Angle Kesme Açısı	Price/Metre Metre Fiyatı  EURO
19 x 0.9mm	TB19090300H	3H	posi	4.90
19 x 0.9mm	TB19090600	6**	0°	4.90
19 x 0.9mm	TB19060800	8**	0°	4.90
19 x 0.9mm	TB19091000	10**	0°	4.90
19 x 0.9mm	TB19091200	12**	0°	4.90
19 x 0.9mm	TB19091400	14**	0°	4.90
19 x 0.9mm	TB19090304P	3/4**	posi	4.90
19 x 0.9mm	TB19090406P	4/6	posi	4.90
19 x 0.9mm	TB19090507P	5/7	posi	4.90
19 x 0.9mm	TB19090610	6/10	0°	4.90
19 x 0.9mm	TB19090812	8/12	0°	4.90
19 x 0.9mm	TB19091014	10/14	0°	4.90
27 x 0.9mm	TB27090200H	2H	posi	5.00
27 x 0.9mm	TB27090300H	3H	posi	5.00
27 x 0.9mm	TB27090400	4	0°	5.00
27 x 0.9mm	TB27090600	6	0°	5.00
27 x 0.9mm	TB27090800	8	0°	5.00
27 x 0.9mm	TB27091000	10	0°	5.00
27 x 0.9mm	TB27091400	14**	0°	5.00
27 x 0.9mm	TB27090203P	2/3	posi	5.00
27 x 0.9mm	TB27090304P	3/4	posi	5.00
27 x 0.9mm	TB27090406P	4/6	posi	5.00
27 x 0.9mm	TB27090507P	5/7	posi	5.00
27 x 0.9mm	TB27090610	6/10	0°	5.00
27 x 0.9mm	TB27090812	8/12	0°	5.00
27 x 0.9mm	TB27091014	10/14	0°	5.00
34 x 1.1mm	TB34110110H	1.14H	posi	6.50
34 x 1.1mm	TB34110200H	2H	posi	6.50
34 x 1.1mm	TB34110300H	3H	posi	6.50
34 x 1.1mm	TB34110400H	4H	posi	6.50
34 x 1.1mm	TB34110400	4	0°	6.50
34 x 1.1mm	TB34110600	6	0°	6.50
34 x 1.1mm	TB34110203P	2/3	posi	6.50
34 x 1.1mm	TB34110304P	3/4	posi	6.50
34 x 1.1mm	TB34110406P	4/6	posi	6.50
34 x 1.1mm	TB34110507P	5/7	posi	6.50
34 x 1.1mm	TB34110610	6/10**	0°	6.50
34 x 1.1mm	TB34110812	8/12	0°	6.50
41 x 1.3mm	TB41130142P	1.4/2.5	posi	8.40
41 x 1.3mm	TB41130200H	2H	posi	8.40
41 x 1.3mm	TB41130203P	2/3	posi	8.40
41 x 1.3mm	TB41130304P	3/4	posi	8.40
41 x 1.3mm	TB41130406P	4/6	posi	8.40
41 x 1.3mm	TB41130507P	5/7	posi	8.40
54 x 1.6mm	TB54160100	1H	posi	14.00
54 x 1.6mm	TB54160102	1.4/2.5	posi	14.00
54 x 1.6mm	TB54160203	2/3	posi	14.00
54 x 1.6mm	TB54160304	3/4	posi	14.00



Suitable for all sorts of metal and non-ferrous materials in solid, rod, plate, sheet, single or bundle cutting.

\* indicated tooth are type H (Hook) and only suitable for aluminium, copper and similar non-ferrous materials and their casts. They are not suitable to cut steel. On the tooth of blades there is a cutting angle in being in 0° or positive (posi). When choosing this angle.

0° should be selected rather harder materials or thin wall thickness materials or when the cutting conditions are not so stable.

"posi" = positive cutting angle blades is selected where a fast and aggressive cut is preferred, especially for solid applications.

Moreover posi angle is suitable for more elasticity materials such as stainless steel or some hard to cut non ferrous materials such as aluminium copper alloys or casts. The cutting conditions should be rigid enough to enable the aggression of cut not to cause damage on the teeth.

Her türlü çelik ve türlerinin, hafif metallerin, Yuvarlak, profil, lama ve paket kesimlerinde kullanılır.

"H" işaretli dişler (kanca formu) sadece alüminyum, bakır bronz gibi hafif metaller ve döküm malzemeler içindir. Demir ve çelik için uygun değildir.

Dişlere "0°" düz kesme açısı veya "posi" pozitif kesme açısı uygulanmıştır.

Diş açısını tercih ederken :

"0°" düz kesme açılı testere sert malzemelerde ve ince etli malzemelerde ve kesme koşullarının çok rijit olmadığı hallerde tercih edilmelidir.

"posi" pozitif kesme açılı testere hızlı kesim istenen yerlerde daha agresif kesim için dolu ve kalın etli malzemelerde tercih edilmelidir

Posi testere ayrıca paslanmaz alaşımları, benzeri sünek malzemeler, alüminyum bronz bakır ve alaşımları ve diğer hafif metaller ve dökümler için uygundur.

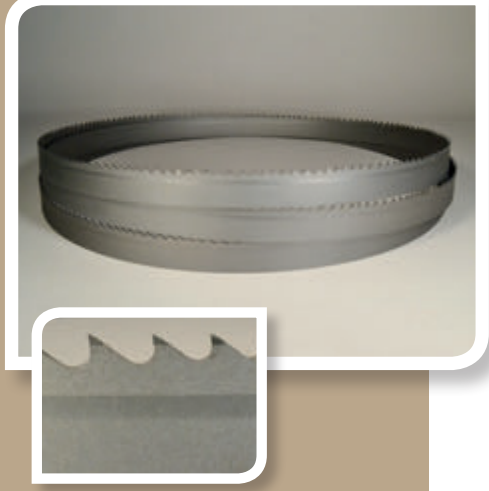
Kesme koşulları sağlıklı ve rijit olduğu hallerde kullanılmalıdır aksi halde agresif kesimden dolayı dişler daha kırılabilir.

\*\* indicated blades are Matrix Bi-Metal / İşaretli dişler Matrix Bi-Metal dir

Welded to length blades are supplied without additional welding costs.

İstenilen uzunlukta şerit testere hazırlanmış olarak teslim edilir ayrıca kaynak ücreti alınmaz

## WELDED TO LENGHT BI METAL BANDSAW BLADES HAZIR KAYNAKLI BI-METAL ŞERİT TESTERELER



WidthxThickness Genişlik x Kalınlık	CODE KOD	Lenght (metre) Boy (metre)	EURO
19 x 0.9mm	TBM42K19208	2,08 M.	10.19
19 x 0.9mm	TBM42K19236	2,36 M.	11.56
27 x 0.9mm	TBM42K27248	2.48 M.	12.40
27 x 0.9mm	TBM42K27320	3,20 M.	16.00
27 x 0.9mm	TBM42K27366	3,66 M.	18.30
27 x 0.9mm	TBM42K27385	3,85 M.	19.25
27 x 0.9mm	TBM42K27416	4,16 M.	20.80
34 x 1.1mm	TBM42K34426	4,26 M.	27.69
34 x 1.1mm	TBM42K34432	4,32 M.	28.08
34 x 1.1mm	TBM42K34486	4,86 M.	25.09
34 x 1.1mm	TBM42K34504	5,04 M.	32.76
41 x 1.3mm	TBM42K41504	5.04 M.	42.34
41 x 1.3mm	TBM42K41550	5.50 M.	46.20
41 x 1.3mm	TBM42K41610	6,10 M.	51.24
54 x 1,6mm	TBM42K54610	6.10 M.	85.40
54 x 1,6mm	TBM42K54833	8.33 M.	116.62
54 x 1,6mm	TBM42K54940	9,40 M.	131.60

All sizes other then the ones indicated can be welded to lenght and delivered as welded without additional welding costs

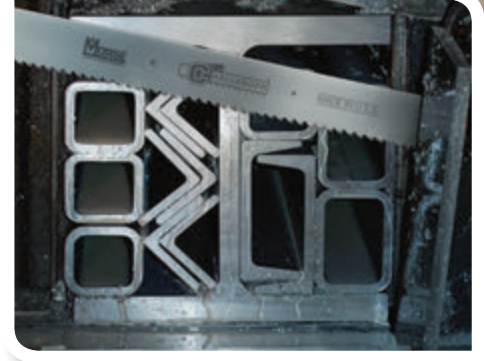
Tabloda belirtilen ölçüler dışında istenilen uzunlukta şerit testereleler hazır kaynatılmış olarak teslim edilir. Ayrıca kaynak ücreti alınmaz

$$\text{welded to lenght blade cost} = \text{price per metre} \times \text{lenght (in metre)}$$

*kaynaklı testere fiyatı = testere metre fiyatı x testere boyu (metre)*

## "CHALLENGER" STRUCTRURAL PERFORMANCE BLADES "CHALLENGER" BORU PROFİL PERFORMANS TESTERESİ

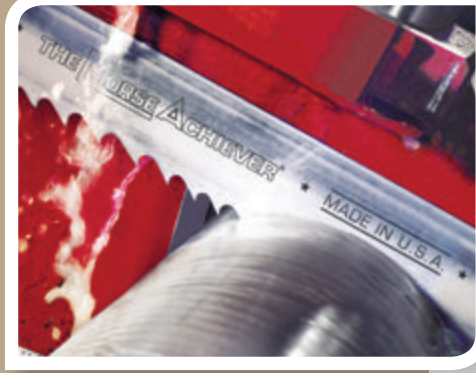
Blade width x thickness Testere Genişlik x Kalınlık	CODE KOD	Nr. Of teeth /inch Diş sayısı (1 inç'te)	Price/Metre Metre Fiyatı EURO
12 x 0,64mm	TB12060811CH	8/11	5.10
19 x 0.9mm	TB19090507CH	5/7	5.60
19 x 0.9mm	TB19090811CH	8/11	5.60
27 x 0.9mm	TB27090406CH	4/6	5.75
27 x 0.9mm	TB27090507CH	5/7	5.75
27 x 0.9mm	TB27090811CH	8/11	5.75
34 x 1.1mm	TB34110203CH	2/3	7.35
34 x 1.1mm	TB34110304CH	3/4	7.35
34 x 1.1mm	TB34110406CH	4/6	7.35
34 x 1.1mm	TB34110507CH	5/7	7.35
34 x 1.1mm	TB34110811CH	8/11	7.35
41 x 1.3mm	TB41130203CH	2/3	9.40
41 x 1.3mm	TB41130304CH	3/4	9.40
41 x 1.3mm	TB41130406CH	4/6	9.40
41 x 1.3mm	TB41130507CH	5/7	9.40
41 x 1.3mm	TB41130811CH	8/11	9.40
54 x 1.6mm	TB54160203CH	2/3	15.20
54 x 1.6mm	TB54160304CH	3/4	15.20
54 x 1.6mm	TB54160406CH	4/6	15.20
67 x 1.6mm	TB67160203CH	2/3	27.50
67 x 1.6mm	TB67160304CH	3/4	27.50
67 x 1.6mm	TB67160406CH	4/6	27.50



Special tooth profile for cutting structural materials, less noise and vibration, less tooth stippage longer life and straighter cut in interrupted cuts and bundle cuts.  
**RESULT : LONG LIFE STRAIGHT CUT, IN STRUCTRAL MATERIAL WITH CLEANER EDGES**

Boru ve profil için özel diş geometrisi ile diş kırılmalarına karşı daha güvenli, daha az ses ve vibrasyon ile daha uzun testere ömrü ve düzgün kesim yüzeyi.  
**SONUÇ: BORU PROFİL VE BENZER MALZEMEDE UZUN ÖMÜR DÜZ KESİM TEMİZ YÜZEY**

## "ACHIEVER" HIGH ALLOY BI-METAL BLADES "ACHIEVER" YÜKSEK ALAŞIM BI-METAL TESTERELER



### RESULT : EXTRA LONG LIFE EXTRA PERFORMANCE

When a higher performance and longer life over standard M42 blades required.

Suitable for hard to cut material and continuous cut applications. High Alloy Bi-Metal "Achiever" resists against heat wear in harder cutting conditions. Suitable for the following materials:

Aluminium and light alloy steels, alloy steels , mold steels, tool steels, stainless steels.

### SONUÇ: EXTRA UZUN ÖMÜR EXTRA PERFORMANS

Standart M42 testere performansının üzerinde ömür ve kesme performansı arandığında, zor malzemelerde veya durmaksızın kesim yapıldığı hallerde uygundur.

Yüksek alaşımlı Bi-Metal Achiever, metal yorgunluğuna ısıya ve zor kesim şartlarına ve aşınmaya karşı extra dirençlidir.

Aşağıdaki malzemelerde kullanılabilir

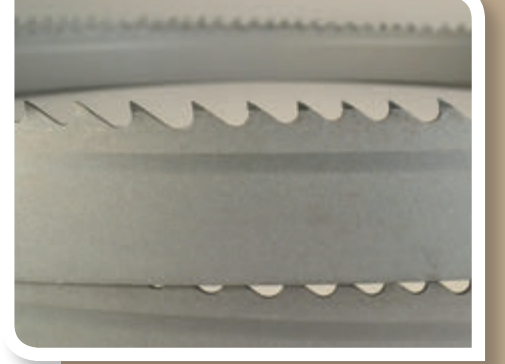
Aluminyum alaşımları ve hafif alaşımlı çelikler, alaşımlı çelikler. Paslanmaz çelikler, kalıp çelikleri, takım çelikleri

Blade width x thickness Testere Genişlik x Kalınlık	CODE KOD	Nr. Of teeth /inch Diş sayısı (1 inç'te)	Price/Metre Metre Fiyatı EURO
19 x 0.9mm	TB19090406AC	4/6	5.75
19 x 0.9mm	TB19090508AC	5/8	5.75
19 x 0.9mm	TB19090610AC	6/10	5.75
19 x 0.9mm	TB19090812AC	8/12	5.75
19 x 0.9mm	TB19091014AC	10/14	5.75
27 x 0.9mm	TB27090203AC	2/3	5.90
27 x 0.9mm	TB27090304AC	3/4	5.90
27 x 0.9mm	TB27090406AC	4/6	5.90
27 x 0.9mm	TB27090507AC	5/7	5.90
27 x 0.9mm	TB27090610AC	6/10	5.90
27 x 0.9mm	TB27090812AC	8/12	5.90
27 x 0.9mm	TB27091014AC	10/14	5.90
34 x 1.1mm	TB34110102AC	1.4/2.5	7.60
34 x 1.1mm	TB34110203AC	2/3	7.60
34 x 1.1mm	TB34110304AC	3/4	7.60
34 x 1.1mm	TB34110406AC	4/6	7.60
34 x 1.1mm	TB34110507AC	5/7	7.60
34 x 1.1mm	TB34110610AC	6/10	7.60
41 x 1.3mm	TB41130102AC	1.4/2.5	9.70
41 x 1.3mm	TB41130203AC	2/3	9.70
41 x 1.3mm	TB41130304AC	3/4	9.70
41 x 1.3mm	TB41130406AC	4/6	9.70
54 x 1.6mm	TB54160102AC	1.4/2.5	16.00
54 x 1.6mm	TB54160203AC	2/3	16.00
54 x 1.6mm	TB54160304AC	3/4	16.00
67 x 1.6mm	TB67160071AC	0.75/1.1	27.00
67 x 1.6mm	TB67160111AC	1.1/1.5	27.00
67 x 1.6mm	TB67160152AC	1.5/2.0	27.00
67 x 1.6mm	TB67160203AC	2/3	27.00
67 x 1.6mm	TB67160304AC	3/4	27.00
80 x 1.6mm	TB80160071AC	0.75/1.1	35.00
80 x 1.6mm	TB80160111AC	1.1/1.5	35.00
80 x 1.6mm	TB80160152AC	1.5/2.0	35.00

## XP 51 BI-METAL EXTRA HIGH PERFORMANCE

### XP 51 EXTRA YÜKSEK PERFORMANS

Blade width x thickness Testere Genişlik x Kalınlık	CODE KOD	Nr. Of teeth /inch Diş sayısı (1 inç'te)	Price/Metre Metre Fiyatı EURO
27 x 0.9mm	TB27090203XP	2/3	6.50
27 x 0.9mm	TB27090304XP	3/4	6.50
27 x 0.9mm	TB27090406XP	4/6	6.50
34 x 1.1mm	TB34110203XP	2/3	9.00
34 x 1.1mm	TB34110304XP	3/4	9.00
34 x 1.1mm	TB34110406XP	4/6	9.00
41 x 1.3mm	TB41130102XP	1.4/2	11.00
41 x 1.3mm	TB41130203XP	2/3	11.00
41 x 1.3mm	TB41130304XP	3/4	11.00
41 x 1.3mm	TB41130406XP	4/6	11.00
54 x 1.6mm	TB54160102XP	1.4/2	20.00
54 x 1.6mm	TB54160203XP	2/3	20.00
54 x 1.6mm	TB54160304XP	3/4	20.00
54 x 1.6mm	TB54160406XP	4/6	20.00
67 x 1.6mm	TB67160071XP	0.75/1.25	27.00
67 x 1.6mm	TB67160101XP	1.1/1.6	27.00
67 x 1.6mm	TB67160102XP	1.4/2	27.00
67 x 1.6mm	TB67160203XP	2/3	27.00



High production cutting of large solids, tool steel, stainless steels, nickel alloys and exotics

Büyük çaplı dolu malzeme takım çelikleri, paslanmaz çelikler nikel alaşımlı çelikler, inconel, wasp alloy, monel ve titanyum alaşımları

## INDEPENDENCE II: EXTRA HIGH PERFORMANCE PRODUCTION CUTTING INDEPENDENCE II: EXTRA YÜKSEK PERFORMANS SÜREKLİ KESİM

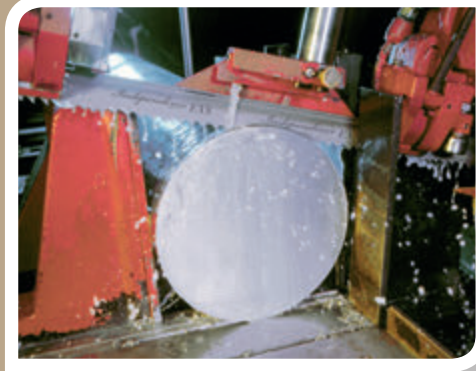


Solid of tool steel , small to medium solids of stainless, nickel based alloys, Inconel Monel, all machinable metals in single pieces or bundle.

Dolu malzeme takım çelikleri , paslanmaz çelikler, nikel alaşımlı çelikler ve tüm talaş kaldırılabilen çelikler.

Blade width x thickness Testere Genişlik x Kalınlık	CODE KOD	Nr. Of teeth /inch Diş sayısı (1 inç'te)	Price/Metre Metre Fiyatı EURO
27 x 0.9mm	TB27090203IN2	2/3	7.00
27 x 0.9mm	TB27090304IN2	3/4	7.00
27 x 0.9mm	TB27090406IN2	4/6	7.00
27 x 0.9mm	TB27090507IN2	5/7	7.00
34 x 1.1mm	TB34110203IN2	2/3	9.70
34 x 1.1mm	TB34110304IN2	3/4	9.70
34 x 1.1mm	TB34110406IN2	4/6	9.70
34 x 1.1mm	TB34110507IN2	5/7	9.70
41 x 1.3mm	TB41130203IN2	2/3	12.50
41 x 1.3mm	TB41130304IN2	3/4	12.50
41 x 1.3mm	TB41130406IN2	4/6	12.50
41 x 1.3mm	TB41130507IN2	5/7	12.50
54 x 1.6mm	TB54160203IN2	2/3	20.00
54 x 1.6mm	TB54160304IN2	3/4	20.00
54 x 1.6mm	TB54160406IN2	4/6	20.00
54 x 1.6mm	TB54160507IN2	5/7	20.00

## INDEPENDENCE EXS : EXTRA HIGH PERFORMANCE PRODUCTION CUTTING INDEPENDENCE EXS : EXTRA YÜKSEK PERFORMANS SÜREKLİ KESİM



High production cutting of large solids, stainless steels, nickel alloys and exotics,

Büyük çaplı dolu malzeme takım çelikleri , paslanmaz çelikler nikel alaşımlı çelikler, inconel, waspalloy, monel ve titanyum alaşımları

Blade width x thickness Testere Genişlik x Kalınlık	CODE KOD	Nr. Of teeth /inch Diş sayısı (1 inç'te)	Price/Metre Metre Fiyatı EURO
27 x 0.9mm	TB27090203INE	2/3	7.50
27 x 0.9mm	TB27090304INE	3/4	7.50
27 x 0.9mm	TB27090406INE	4/6	7.50
34 x 1.1mm	TB34110203INE	2/3	10.20
34 x 1.1mm	TB34110304INE	3/4	10.20
34 x 1.1mm	TB34110406INE	4/6	10.20
41 x 1.3mm	TB41130101INE	1/1.5	13.00
41 x 1.3mm	TB41130203INE	2/3	13.00
41 x 1.3mm	TB41130304INE	3/4	13.00
54 x 1.6mm	TB54160101INE	1.1/1.5	21.00
54 x 1.6mm	TB54160203INE	2/3	21.00
54 x 1.6mm	TB54160304INE	3/4	21.00

## "M FACTOR" CARBIDE TIPPED BANDSAW BLADES "M FACTOR" SERT METAL UÇLU ŞERİT TESTERELER

### M FACTOR GP (General Purpose - Genel maksatlı)

Blade (width x thickness) Testere (Genişlik x Kalınlık)	CODE KOD	Nr. Of teeth/inch Diş sayısı (1 inç'te)	Price/Metre Metre Fiyatı EURO
27 x 0.9mm	TB27090203MFG	2/3	37.00
27 x 0.9mm	TB27090304MFG	3/4	47.00
34 x 1.1mm	TB34110071MFG	0.75/1.0	32.00
34 x 1.1mm	TB34110102MFG	1.5/2.0	34.00
34 x 1.1mm	TB34110203MFG	2/3	41.00
34 x 1.1mm	TB34110304MFG	3/4	51.00
41 x 1.3mm	TB41130102MFG	1.5/2.0	39.00
41 x 1.3mm	TB41130203MFG	2/3	45.00
41 x 1.3mm	TB41130304MFG	3/4	56.00
54 x 1.6mm	TB54160071MFG	0.75/1.0	43.00
54 x 1.6mm	TB54160102MFG	1.5/2.0	45.00
54 x 1.6mm	TB54160203MFG	2/3	52.00
67 x 1.6mm	TB67160071MFG	0.75/1.0	62.00
67 x 1.6mm	TB67160102MFG	1.5/2.0	72.00
80 x 1.6mm	TB80160071MFG	0.75/1.0	67.00
80 x 1.6mm	TB80160102MFG	1.5/2.0	77.00

### M FACTOR EX (Exotics - Egzotikler)

Blade (width x thickness) Testere (Genişlik x Kalınlık)	CODE KOD	Nr. Of teeth/inch Diş sayısı (1 inç'te)	Price/Metre Metre Fiyatı EURO
34 x 1.1mm	TB34110102MFE	1.5/2.0	39.00
34 x 1.1mm	TB34110203MFE	2/3	47.00
34 x 1.1mm	TB34110304MFE	3/4	60.00
41 x 1.3mm	TB41130102MFE	1.5/2.0	45.00
41 x 1.3mm	TB41130203MFE	2/3	53.00
41 x 1.3mm	TB41130304MFE	3/4	65.00
54 x 1.6mm	TB54160102MFE	1.5/2.0	53.00
54 x 1.6mm	TB54160203MFE	2/3	60.00
67 x 1.6mm	TB67160071MFE	0.75/1.0	69.00
67 x 1.6mm	TB67160102MFE	1.5/2.0	81.00
80 x 1.6mm	TB80160071MFE	0.75/1.0	76.00
80 x 1.6mm	TB80160102MFE	1.5/2.0	89.00

### M FACTOR CH (Case Hardened - Yüzeyi Sertleşmiş Semente)

Blade (width x thickness) Testere (Genişlik x Kalınlık)	CODE KOD	Nr. Of teeth/inch Diş sayısı (1 inç'te)	Price/Metre Metre Fiyatı EURO
27 x 0.9mm	TB27090003MFC	3	52.00
27 x 0.9mm	TB27090304MFC	3/4	66.00
34 x 1.1mm	TB34110003MFC	3	55.00
34 x 1.1mm	TB34110304MFC	3/4	69.00
41 x 1.3mm	TB41130102MFC	1.5/2.0	55.00
41 x 1.3mm	TB41130203MFC	2/3	62.00
41 x 1.3mm	TB41130304MFC	3/4	72.00
54 x 1.6mm	TB54160102MFC	1.5/2.0	62.00
54 x 1.6mm	TB54160203MFC	2/3	69.00

### M FACTOR FB (Foundry - Dökümhane)

Blade (width x thickness) Testere (Genişlik x Kalınlık)	CODE KOD	Nr. Of teeth/inch Diş sayısı (1 inç'te)	Price/Metre Metre Fiyatı EURO
12,7 x 0,60mm	TB12060003MFF	3	32.00
19 x 0.9mm	TB19090003MFF	3	35.00
27 x 0.9mm	TB27090003MFF	3	36.00
34 x 1.1mm	TB34110003MFF	3	42.00

Welded to length blades are supplied without additional welding costs.

İstenilen uzunlukta şerit testere hazırlanmış olarak teslim edilir ayrıca kaynak ücreti alınmaz



**Solid materials**  
alloy steels,  
stainless  
steels, tool steels, mould steels,  
carbon steels. Extra long life blade  
Dolu malzeme alaşımlı çelikler,  
paslanmaz çelikler takım çelikleri,  
kalıp çelikleri karbon çelikler.

**Solid materials exotic materials,**  
difficult to cut alloy steels,  
all stainless steel grades  
inconel, titanium, tool steels. Extra  
long life blade  
Dolu malzeme Egzotik malzemeler  
kesimi zor alaşımlı çelikler ve  
tüm paslanmaz alaşımları inconel,  
titanyum, takım çelikleri.  
Extra uzun ömürlü testere

**Case hardened or chrome plated**  
shafts , shapes, surface hardened  
thick wall tubing. Extra long life  
blade  
Sementasyon sertleşmesi yapılmış,  
krom kaplanmış malzemeler, yüzeyi  
sert kalın etli borular, profiller. Extra  
uzun ömürlü testere

**Aluminium casting, abrasive wood,**  
plywood and similar komposite  
materials graphite, composite wood.  
Extra long life blade  
Alüminyum döküm, Aşındırıcı  
ahşap, plywood ve türevi kompozit  
malzemeler, grafit, sıkıştırılmış ahşap.  
Extra uzun ömürlü testere

## CARBON BANDSAW BLADES KARBON ŞERİT TESTERELER



\* marked teeth (type H) only suitable for aluminium copper bronze, and their castings and wood. Not suitable for metals  
\*\* marked teeth ( type S) only suitable for plastic, brass, bronze, aluminium. Not suitable for metals

\* işaretli dişler ("H" tipi) sadece alüminyum, bakır bronz gibi hafif metaller ,döküm malzemeler ve ahşap içindir. Demir ve çelik için uygun değildir.

\*\* İşaretli dişler ("S" tipi) ağaç plastik , pirinç bakır bronz ve alüminyum içindir. Demir ve çelik için uygun değildir.

Blade width x thickness Testere Genişlik x Kalınlık	CODE KOD	Nr. Of teeth /inch Diş sayısı (1 inç'te)	Packing details: in coils Ambalaj Şekli: Top Halinde	Price per coil of 30.5m 30.5m Top Fiyatı
4,8x0,64mm	TC040604S	4S**	30,5 M	54.00
6 x 0.64mm	TC060604H	4H*	30,5 M	54.00
6 x 0.64mm	TC060606H	6H*	30,5 M	54.00
6 x 0.64mm	TC060604S	4S**	30,5 M	54.00
6 x 0.64mm	TC060606S	6S**	30,5 M	54.00
6 x 0.64mm	TC060610	10	30,5 M	54.00
6 x 0.64mm	TC060614	14	30,5 M	54.00
6 x 0.64mm	TC060618	18	30,5 M	54.00
6 x 0.64mm	TC060624	24	30,5 M	54.00
6 x 0.64mm	TC060632	32	30,5 M	54.00
10x0.64mm	TC100603S	3S**	30,5 M	56.00
10x0.64mm	TC100604S	4S**	30,5 M	56.00
10x0.64mm	TC100603H	3H*	30,5 M	56.00
10x0.64mm	TC100604H	4H*	30,5 M	56.00
10x0.64mm	TC100606H	6H*	30,5 M	56.00
10x0.64mm	TC100608	8	30,5 M	56.00
10x0.64mm	TC100610	10	30,5 M	56.00
10x0.64mm	TC100614	14	30,5 M	56.00
10x0.64mm	TC100618	18	30,5 M	56.00
12,5x0,5mm	TC120514	14	30,5 M	60.00
12,5x0,64mm	TC120604S	4S**	30,5 M	60.00
12,5x0,64mm	TC120603H	3H*	30,5 M	60.00
12,5x0,64mm	TC120604H	4H*	30,5 M	60.00
12,5x0,64mm	TC120606H	6H*	30,5 M	60.00
12,5x0,64mm	TC120606	6	30,5 M	60.00
12,5x0,64mm	TC120608	8	30,5 M	60.00
12,5x0,64mm	TC120610	10	30,5 M	60.00
12,5x0,64mm	TC120614	14	30,5 M	60.00
12,5x0,64mm	TC120618	18	30,5 M	60.00
12,5x0,64mm	TC120624	24	30,5 M	60.00
16x0.80mm	TC160808	8	30,5 M	70.00
19x0,80mm	TC190803S	3S**	30,5 M	75.00
19x0,80mm	TC190804S	4S**	30,5 M	75.00
19x0,80mm	TC190802H	2H*	30,5 M	75.00
19x0,80mm	TC190803H	3H*	30,5 M	75.00
19x0,80mm	TC190806H	6H*	30,5 M	75.00
19x0,80mm	TC190806H	6H*	30,5 M	75.00
19x0,80mm	TC190806	6	30,5 M	75.00
19x0,80mm	TC190808	8	30,5 M	75.00
19x0,80mm	TC190810	10	30,5 M	75.00
19x0,80mm	TC190814	14	30,5 M	75.00
19x0,80mm	TC190818	18	30,5 M	75.00
27x0.90mm	TC270901H	1.3H*	30,5 M	95.00
27x0.90mm	TC270902H	2H*	30,5 M	95.00
27x0.90mm	TC270903H	3H*	30,5 M	95.00
27x0.90mm	TC270904H	4H*	30,5 M	95.00
27x0.90mm	TC270906	6	30,5 M	95.00
27x0.90mm	TC270908	8	30,5 M	95.00
27x0.90mm	TC270910	10	30,5 M	95.00
27x0.90mm	TC270914	14	30,5 M	95.00
32X1,1mm	TC321101H	1.3H*	30,5 M	140.00
32X1,1mm	TC321106	6	30,5 M	145.00

Karbon bandsaws are sold in coils of 30,5 metres  
Karbon Şerit testereleer 30,5 metre top halinde satılır

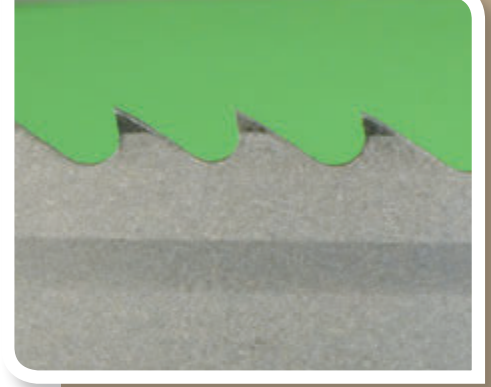


**TECHNICAL INFO - BANDSAWS**  
**TEKNİK BİLGİLER - ŞERİT TESTERELER**

**Bi-metal bandsaw tooth selection guide (according to workpiece dia or thickness )**  
**Bi-Metal Şerit testere diş seçim tablosu (Malzeme çap ve et kalınlığına göre)**

Solid Ø Dolu Ø	Tooth Diş
2-5 mm	14 - 10/14
6-12 mm	10 - 8/12
13-20 mm	8 - 6/10
20-30 mm	6 - 5/7
30-50 mm	4/6
50-90 mm	4 - 3/4
90-120 mm	3/4
120-200 mm	2/3
200-400 mm	1.3 - 1,4 /2.5

Pipe / profile etc.. Wall thickness Boru profil vs. et kalınlığı	Tooth Diş
1,5-3mm	14 - 10/14
3-5mm	10 - 8/12
5-7 mm	6/10
7-10 mm	5/7
10-20 mm	4/6
20-40 mm	3/4
40 - + mm	2/3



**SOLVING THE PROBLEM BY WATCHING THE CHIPS**  
Problems can be identified by watching the chips created during cutting operation,

Chips : thin and curled silver color  
Speed : GOOD  
Feed : GOOD  
Other : Speed / feed and tooth selection is OK.

Chips : Thick, Hard and Short , blue or brown color  
Speed : Decrease  
Feed : Decrease  
Other : Check the cutting oil

Chips : powder in silver color  
Speed : Decrease  
Feed : Increase

Chips : Thin and Tightly Curled in silver color  
Speed : OK  
Feed : Decrease  
Other : May be wrong tooth selection

**TALAŞLARI İZLEYEREK PROBLEM ÇÖZME**

Kesim esnasında çıkan talaşları inceleyerek problemleri bulabilir ve çözebilirsiniz.

Talaş : ince kıvrımlı ve gri metal renkte

Devir : uygun

İlerleme : uygun

Diğer : devir ilerleme ve diş seçiminiz uygundur

Talaş : Kısa, kalın, sert ve mavi veya kahve renkte

Devir : düşürün

İlerleme : düşürün

Diğer : kesme yağını kontrol edin.

Talaş : Toz halinde ve gri

Devir : düşürün

İlerleme : arttırın

Talaş : ince ve çok sıkı kıvrımlı ve gri renkte

Devir : kesme hızı uygun

İlerleme : düşürün.

Diğer : yanlış diş seçimi olabilir.

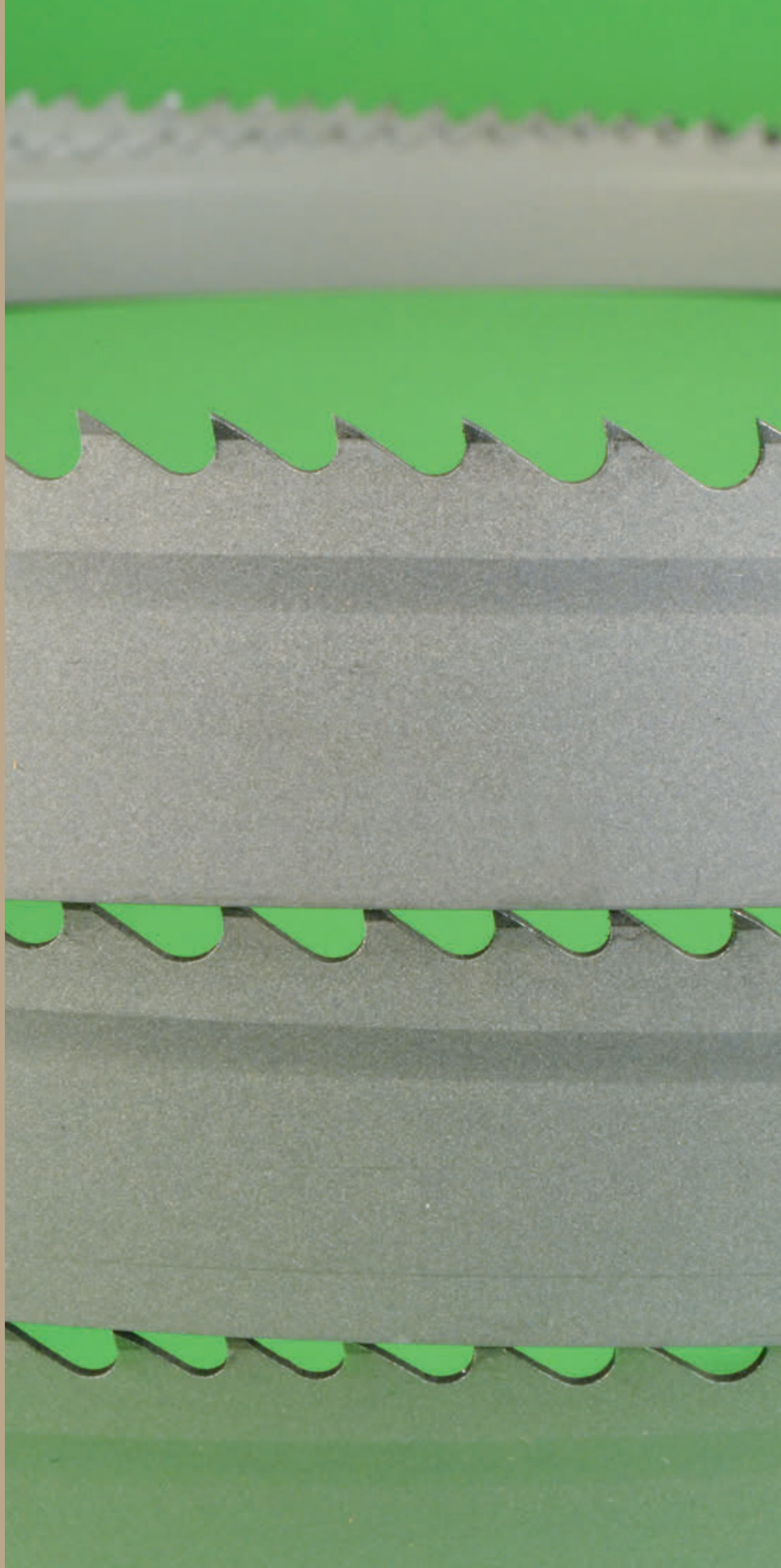
**Note:** Tooth selection guide is only general guide and could well vary according to materials' characteristics and also cutting conditions  
Please consult our company for further recommendations.

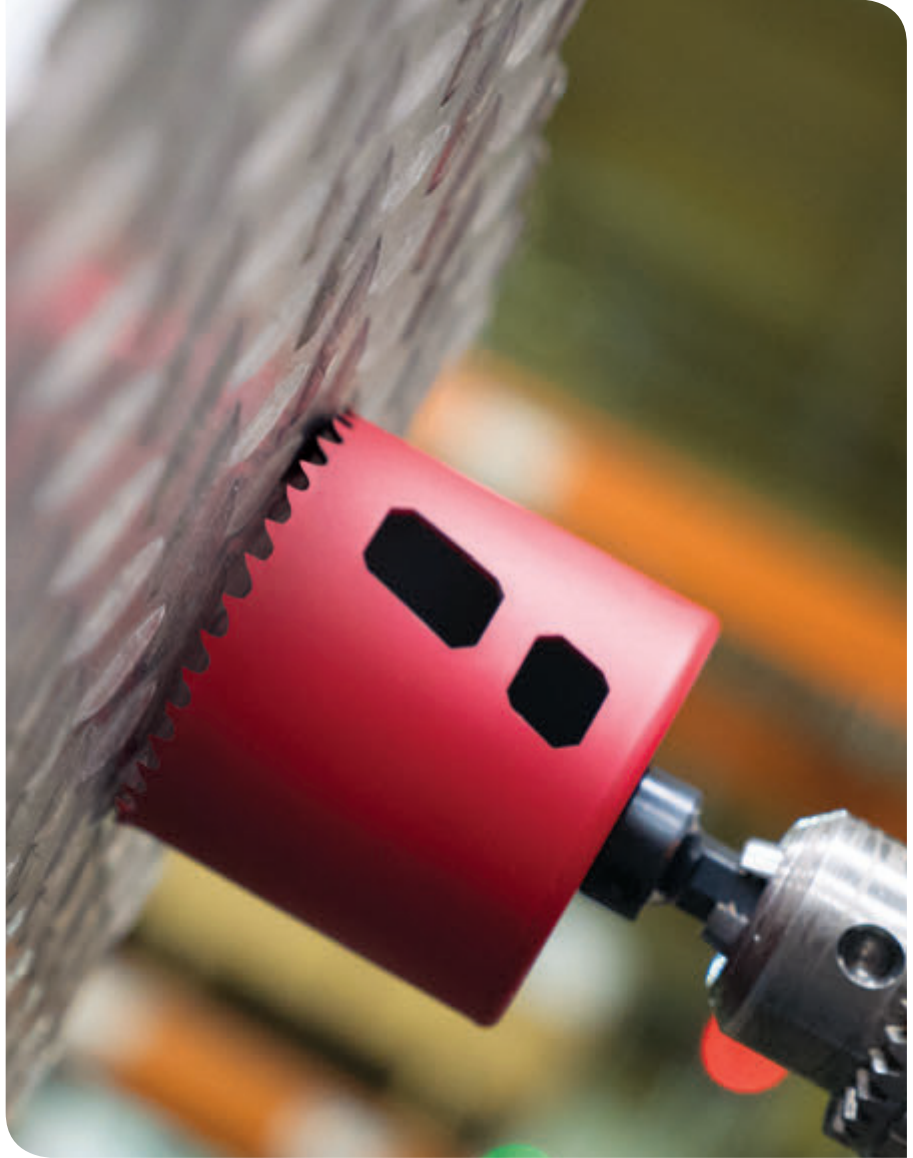
**Not:** Diş seçimi genel olarak belirtilmiş olup kesilen malzeme evsafı ve kesim şartları bu seçimi değiştirebilir.  
Ayrıntılı bilgi için lütfen firmamızla irtibata geçiniz.

**Performance:** When you mount your new blade while keeping the speed constant reduce your feed by half.

Having cut for 15 minutes with half the feed gradually increase your feed up to your standard level. The very sharp cutting edges of your new blades will not be damaged in the very first cuts, thus this will improve the life of your blade

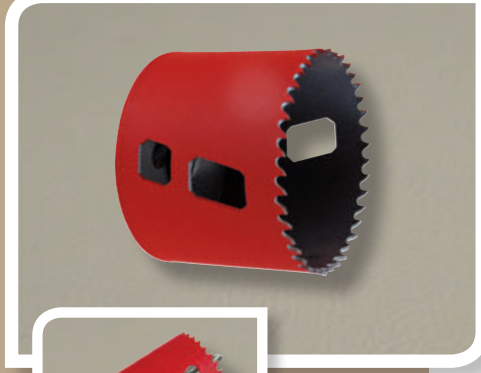
**Performans:** Yeni testerenizi taktığınızda devir sabit kalmak koşulu ile normal testere iniş hızınızı (ilerleme) yarıya düşürünüz.  
15 dk. kesim yaptıktan sonra yavaş yavaş eski haline getiriniz ve normal ilerlemenizle devam ediniz. Yeni testerenizin çok keskin diş uçlarında küçük kırılmalar engellenecek ve testerenizin ömrü artacaktır.





**HOLESAWS**  
*DELİK TESTERELERİ*

## BI-METAL HOLE SAWS BI-METAL DELİK TESTERELERİ



Suitable for all machinable metals, stainless steels , wood, plastics. Requires a separate arbor for operation. The suitable arbor is indicated for each diameter.

Her türlü ağaç, metal ve plastik, pan için. Adaptörü ile kullanılır  
Her delik testere çapının yanında takıldığı adaptörün kodu belirtilmiştir.

Diameter Çap Ø mm	CODE KOD	EURO	Arbor Adaptör
14	MHS09C-14	4.00	MA34
16	MHS105C-16	3.90	MA34
17	MHS11C-17	3.90	MA34
19	MHS12C-19	3.90	MA34
20	MHS125C-20	3.90	MA34
21	MHS13C-21	3.90	MA34
22	MHS14C-22	3.90	MA34
24	MHS15C-24	3.90	MA34
25	MHS155C-25	4.10	MA34
27	MHS17C-27	4.10	MA34
29	MHS18C-29	4.10	MA34
30	MHS185C-30	4.10	MA34
32	MHS205C-32	4.20	MA45PS
33	MHS21C-33	4.20	MA45PS
35	MHS225C-35	4.45	MA45PS
37	MHS23C-37	4.45	MA45PS
38	MHS24C-38	4.45	MA45PS
40	MHS255C-40	4.45	MA45PS
41	MHS26C-41	4.45	MA45PS
43	MHS27C-43	4.45	MA45PS
44	MHS28C-44	5.50	MA45PS
45	MHS285C-45	5.50	MA45PS
46	MHS29C-46	5.50	MA45PS
48	MHS30C-48	5.50	MA45PS
50	MHS315C-50	5.50	MA45PS
51	MHS32C-51	5.50	MA45PS
52	MHS33C-52	6.80	MA45PS
54	MHS34C-54	6.80	MA45PS
55	MHS345C-55	6.80	MA45PS
57	MHS36C-57	6.80	MA45PS
59	MHS37C-59	6.80	MA45PS

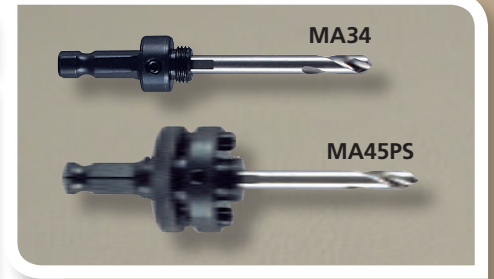
Diameter Çap Ø mm	CODE KOD	EURO	Arbor Adaptör
60	MHS38C-60	6.80	MA45PS
62	MHS385C-62	7.30	MA45PS
64	MHS40C-64	7.30	MA45PS
65	MHS41C-65	7.30	MA45PS
67	MHS42C-67	7.30	MA45PS
68	MHS425C-68	7.30	MA45PS
70	MHS44C-70	7.30	MA45PS
73	MHS46C-73	7.30	MA45PS
75	MHS475C-75	7.50	MA45PS
76	MHS48C-76	7.50	MA45PS
79	MHS50C-79	7.50	MA45PS
83	MHS52C-83	7.50	MA45PS
86	MHS54C-86	7.50	MA45PS
89	MHS56C-89	7.50	MA45PS
92	MHS58C-92	8.90	MA45PS
95	MHS60C-95	10.50	MA45PS
98	MHS62C-98	10.85	MA45PS
100	MHS63C-100	10.90	MA45PS
102	MHS64C-102	10.90	MA45PS
105	MHS66-105	12.00	MA45PS
108	MHS68-108	15.60	MA45PS
111	MHS70-111	18.60	MA45PS
114	MHS72-114	21.60	MA45PS
121	MHS76-121	24.00	MA45PS
127	MHS80-127	26.60	MA45PS
133	MHS84-133	31.00	MA45PS
140	MHS88-140	32.00	MA45PS
146	MHS92-146	35.00	MA45PS
152	MHS96-152	37.50	MA45PS
162	MHS104-162	54.00	MA45PS
168	MHS106-168	58.00	MA45PS

## HOLE SAWS ACCESSORIES AND SETS

### DELİK TESTERE AKSESUAR VE TAKIMLARI

#### HOLE SAWS ARBOR / DELİK TESTERE ADAPTÖRÜ

CODE KOD	Suitable for hole saws Taktığı Delik testere Ø	EURO
MA34	Ø14-30 mm	4.75
MA45PS	Ø32-168mm	8.70



#### PILOT DRILL / PİLOT MATKABI

CODE KOD	SUITS THE ARBOR TAKILDIĞI ADAPTÖR	EURO
MAPD301	MA34 - MA45PS	1.90



#### EXTENSION ADAPTOR / UZATMA ADAPTÖRÜ

CODE KOD	SUITS THE ARBOR TAKILDIĞI ADAPTÖR	EURO
ME121	MA45PS	8.00

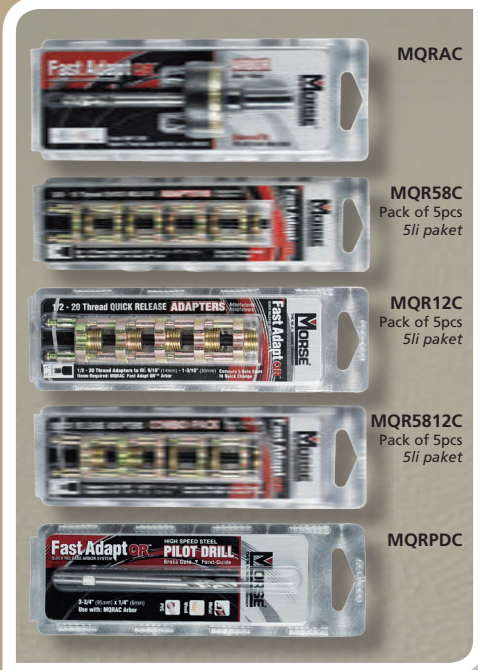
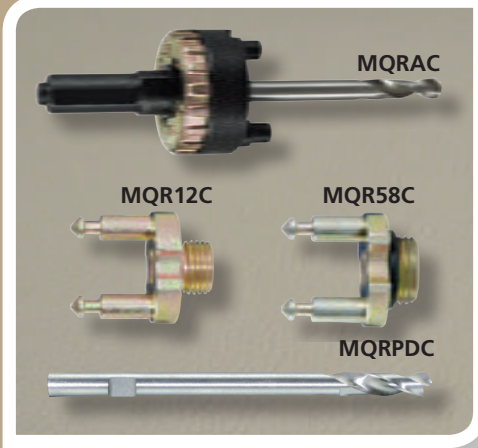
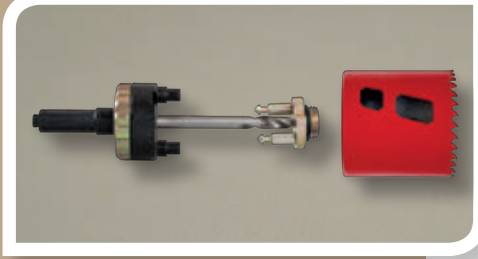


#### BI-METAL HOLES AW KIT / BI-METAL DELİK TESTERESİ TAKIMI

CODE KOD	Description Tanımı	Contents içindekiler	EURO
MHS100	Maintenance Kit with 13 pcs Tamir bakım seti 13 parçalı	9pcs holesaws Ø19-22-29-35-38-44- 51-57-64mm 3pcs arbors 1pce extension 9Ad. delik testeresi 3Ad. adaptör 1Ad. uzatma	79.00
MHS08E	Electrician Kit with 13 pcs Elektrikçi Seti 13 parçalı	10pcs holesaws Ø22-29-35-44-51-64- 76-92-105-114mm 3pcs arbors 10Ad. delik testeresi 3Ad. adaptör	117.00



## FAST ADAPTORS HIZLI DEĞİŞTİRME ADAPTÖRLERİ



CODE KOD	Description Tanımı	Suits Ø holesaws takıldığı Ø delik testereler	EURO
MQRAC	Universal Arbor <i>Universal Tutucu</i> Pack of 1 pce <i>Tekli paket</i> Works with adaptors <i>Çalıştığı adaptörler</i> MQR58C-MQR12C	Ø14-168mm	10.00
MQR58C	5/8 thread Fast adaptor pack of 5 pcs <i>5/8 diş Hızlı değiştirme adaptörü</i> 5 adetli paket	Ø32-168mm	12.00*
MQR12C	1/2 thread Fast adaptor pack of 5 pcs <i>1/2 diş Hızlı değiştirme adaptörü</i> 5 adetli paket	Ø14-30mm	11.50*
MQR5812C	5/8 (3pcs)-1/2 (2pcs) thread 5 pcs combo pack fast adaptor <i>Hızlı değiştirme adaptörü</i> 5 adetli paket	Ø14-168mm	11.75*
MQRPDC	Fast adaptor pilot drill <i>hızlı değiştirme pilot matkabı</i> Pack of 1 pce <i>Tekli paket</i> Works with arbor <i>Çalıştığı tutucu</i> MQRAC	Ø14-168mm	3.40

\* Price for pack of 5pcs

\* 5 Adetli paket fiyatıdır.

## CARBIDE TIPPED HOLE SAWS SERT METAL UÇLU DELİK TESTERELERİ

Diameter Çap Ø mm	CODE KOD	EURO	Arbor Adaptör
14	MHST09-14	7.50	MA34CT
16	MHST105-16	7.50	MA34CT
17	MHST11-17	7.70	MA34CT
19	MHST12-19	7.70	MA34CT
20	MHST125-20	7.70	MA34CT
21	MHST13-21	7.70	MA34CT
22	MHST14-22	7.80	MA34CT
24	MHST15-24	8.00	MA34CT
25	MHST16-25	8.20	MA34CT
27	MHST17-27	8.50	MA34CT
29	MHST18-29	8.70	MA34CT
30	MHST19-30	9.00	MA34CT
32	MHST20-32	9.10	MA45PSCT
33	MHST21-33	9.15	MA45PSCT
35	MHST22-35	9.20	MA45PSCT
37	MHST23-37	9.30	MA45PSCT
38	MHST24-38	9.50	MA45PSCT
40	MHST25-40	9.80	MA45PSCT
41	MHST26-41	10.00	MA45PSCT
43	MHST27-43	10.20	MA45PSCT
44	MHST28-44	10.50	MA45PSCT
46	MHST29-46	10.70	MA45PSCT
48	MHST30-48	10.90	MA45PSCT
51	MHST32-51	11.20	MA45PSCT
52	MHST33-52	13.00	MA45PSCT
54	MHST34-54	13.20	MA45PSCT
57	MHST36-57	13.70	MA45PSCT

Diameter Çap Ø mm	CODE KOD	EURO	Arbor Adaptör
59	MHST37-59	14.00	MA45PSCT
60	MHST38-60	14.10	MA45PSCT
64	MHST40-64	14.80	MA45PSCT
65	MHST41-65	15.00	MA45PSCT
67	MHST42-67	15.20	MA45PSCT
70	MHST44-70	15.70	MA45PSCT
73	MHST46-73	16.20	MA45PSCT
76	MHST48-76	16.70	MA45PSCT
79	MHST50-79	20.10	MA45PSCT
83	MHST52-83	20.60	MA45PSCT
86	MHST54-86	22.00	MA45PSCT
89	MHST56-89	22.50	MA45PSCT
92	MHST58-92	23.50	MA45PSCT
95	MHST60-95	24.00	MA45PSCT
98	MHST62-98	25.00	MA45PSCT
102	MHST64-102	26.00	MA45PSCT
105	MHST66-105	36.00	MA45PSCT
108	MHST68-108	38.00	MA45PSCT
111	MHST70-111	40.00	MA45PSCT
114	MHST72-114	41.00	MA45PSCT
121	MHST76-121	43.00	MA45PSCT
127	MHST80-127	45.00	MA45PSCT
133	MHST84-133	46.00	MA45PSCT
140	MHST88-140	47.00	MA45PSCT
146	MHST92-146	49.00	MA45PSCT
152	MHST96-152	50.00	MA45PSCT



Suitable for abrasive materials, asbestos board formica and metals that bi-metal saws will not cut. Requires a separate arbor for operation. The suitable arbor is indicated for each diameter.

Aşındırıcı malzemeler, asbest plaka, formika ve bi-metal ile kesilemeyen çelikler için. Her delik testere çapının yanında takıldığı adaptörün kodu belirtilmiştir.

### HOLE SAW ARBOR / DELİK TESTERE ADAPTÖRÜ

CODE KOD	Suitable for hole saws Taktığı Delik testere	EURO
MA34CT	Ø14-30 MHST09-14 - MHST19-30	6.00
MA45PSCT	Ø32-152 MHST20-32 - MHST96-152	10.00

### PILOT DRILL CARBIDE TIPPED / PİLOT MATKABI KARBÜR UÇLU

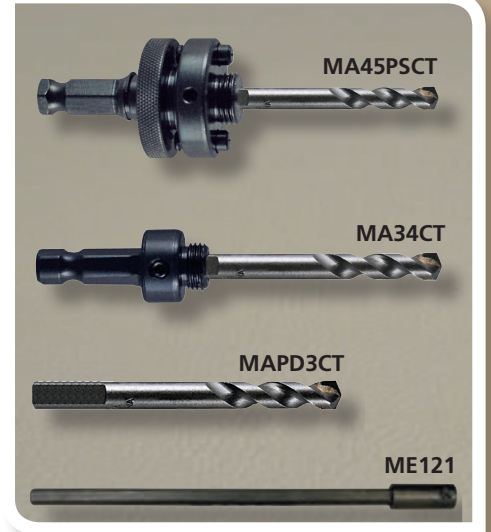
CODE KOD	SUITS THE ARBOR TAKILDIĞI ADAPTÖR	EURO
MAPD3CT	MA34CT - MA45PSCT	2.70

### EXTENSION ADAPTOR / UZATMA ADAPTÖRÜ

CODE KOD	SUITS THE ARBOR TAKILDIĞI ADAPTÖR	EURO
ME121	MA45PS	8.00

### CARBIDE TIPPED HOLE SAW KIT / SERT METAL UÇLU DELİK TESTERE TAKIMI

CODE KOD	Description Tanımı	Contents İçindekiler	EURO
MHST100	Maintenance Kit with 12 pcs Tamir bakım seti 12 parçalı	9pcs holesaws Ø19-22-29-35-38-44-51-57-64mm 2pcs arbors, 1pce extension 9Ad. delik testeresi 2Ad. adaptör, 1ad. uzatma	116.00



## TUNGSTEN CARBIDE GRIT HOLE SAWS SERT METAL AŞINDIRICI TANELİ DELİK TESTERELERİ



Suitable for abrasive materials, ceramic, fiberglass, panels, cast iron, composite, cement.  
Requires a separate arbor for operation. The suitable arbor is indicated for each diameter.

Aşındırıcı malzemeler, seramik, fiberglas, alçıpan, döküm, kompozit, beton.  
Her delik testere çapının yanında takıldığı adaptörün kodu belirtilmiştir.



Diameter Çap Ø mm	CODE KOD	EURO	Arbor Adaptör
19	MHSG12-19	5.80	MA34CT
21	MHSG13-21	5.80	MA34CT
22	MHSG14-22	5.80	MA34CT
24	MHSG15-24	5.80	MA34CT
25	MHSG16-25	6.20	MA34CT
27	MHSG17-27	6.20	MA34CT
29	MHSG18-29	6.20	MA34CT
30	MHSG19-30	6.20	MA34CT
32	MHSG20-32	6.40	MA45PSCT
33	MHSG21-33	6.40	MA45PSCT
35	MHSG22-35	6.50	MA45PSCT
37	MHSG23-37	6.50	MA45PSCT
38	MHSG24-38	6.50	MA45PSCT
40	MHSG25-40	6.50	MA45PSCT
41	MHSG26-41	6.50	MA45PSCT
43	MHSG27-43	6.50	MA45PSCT
44	MHSG28-44	8.00	MA45PSCT
46	MHSG29-46	8.00	MA45PSCT
48	MHSG30-48	8.00	MA45PSCT
51	MHSG32-51	8.00	MA45PSCT
52	MHSG33-52	8.00	MA45PSCT
54	MHSG34-54	9.50	MA45PSCT
57	MHSG36-57	9.50	MA45PSCT
59	MHSG37-59	9.50	MA45PSCT
60	MHSG38-60	9.50	MA45PSCT
64	MHSG40-64	10.70	MA45PSCT

Diameter Çap Ø mm	CODE KOD	EURO	Arbor Adaptör
65	MHSG41-65	10.70	MA45PSCT
67	MHSG42-67	10.70	MA45PSCT
70	MHSG44-70	10.70	MA45PSCT
73	MHSG46-73	10.70	MA45PSCT
76	MHSG48-76	13.00	MA45PSCT
79	MHSG50-79	13.00	MA45PSCT
83	MHSG52-83	13.00	MA45PSCT
86	MHSG54-86	13.00	MA45PSCT
89	MHSG56-89	14.00	MA45PSCT
92	MHSG58-92	15.00	MA45PSCT
95	MHSG60-95	16.50	MA45PSCT
98	MHSG62-98	18.00	MA45PSCT
102	MHSG64-102	19.00	MA45PSCT
105	MHSG66-105	20.00	MA45PSCT
108	MHSG68-108	21.00	MA45PSCT
111	MHSG70-111	22.00	MA45PSCT
114	MHSG72-114	23.00	MA45PSCT
121	MHSG76-121	24.00	MA45PSCT
127	MHSG80-127	26.00	MA45PSCT
140	MHSG88-140	27.00	MA45PSCT
146	MHSG92-146	28.00	MA45PSCT
152	MHSG96-152	29.00	MA45PSCT
162	MHSG104-162	54.00	MA45PSCT
168	MHSG106-168	55.00	MA45PSCT
174	MHSG110-174	56.00	MA45PSCT

### HOLE SAW ARBOR / DELİK TESTERE ADAPTÖRÜ

CODE / KOD	Suitable for hole saws / Taktığı Delik testere	EURO
MA34CT	Ø14-30 MHSG12-19 - MHSG19-30	6.00
MA45PSCT	Ø32-152 MHSG20-32 - MHSG110-174	10.00

### PILOT DRILL CARBIDE TIPPED / PİLOT MATKABI KARBÜR UÇLU

CODE / KOD	SUITS THE ARBOR / TAKILDIĞI ADAPTÖR	EURO
MAPD3CT	MA34CT - MA45PSCT	2.70

### EXTENSION ADAPTOR / UZATMA ADAPTÖRÜ

CODE / KOD	SUITS THE ARBOR / TAKILDIĞI ADAPTÖR	EURO
ME121	MA45PS	8.00

### TUNGSTEN CARBIDE GRIT HOLE SAW KIT SERT METAL AŞINDIRICI TANELİ DELİK TESTERE TAKIMI

CODE KOD	Description Tanımı	Contents içindekiler	EURO
MHSG100	Maintenance Kit with 13 pcs Tamir bakım seti 13 parçalı	9pcs holesaws Ø19-22-29-35-38-44-51-57-64mm 3pcs arbors, 1pce extension 9Ad. delik testeresi 3ad adaptör, 1ad. uzatma	92.00





**OTHER SAWS AND ACCESSORIES**  
***DİĞER TESTERE VE AKSESUARLAR***

## HACK SAW BLADES & FRAMES EL TESTERELERİ & TESTERE KOLLARI



The variable teeth forms enables anti vibration and smooth cut. Bi-metal body provides maximum elasticity. Vibrasyonu engelleyen, kolay kesim sağlayan değişken diş yapısı. Bi-metal özelliği sayesinde esnektir.



### BI METAL HAND HACKSAW BLADES / BI-METAL EL TESTERE LAMASI

CODE KOD	lengthxwidthxthickness -- teeth (per inch) BoyxxGenişlikxKalınlık -- Diş	EURO
HHB1214	300 x 13 x 0,6mm -- 14	0.80
HHB1218	300 x 13 x 0,6mm -- 18	0.80
HHB121418	300 x 13 x 0,6mm -- 14/18	0.80
HHB122024	300 x 13 x 0,6mm -- 20/24	0.80
HHB12182432	300 x 13 x 0,6mm -- 18/24/32 3 different pitch on the same blade 3 ayrı diş aynı testerede	0.95

Prices are for one pce. Sold in packs of 10pcs  
Fiyatlar bir adet içindir. 10 adetli ambalajlarda satılır.

### HACKSAW BLADES FRAMES / EL TESTERE KOLLARI

CODE KOD	HACK SAW FRAME EL TESTERE KOLU	EURO
HHBF01	Hacksaw Frame with 300mm Bi-Metal blade Testere kolu 300mm Bi-Metal testere ağı ile birlikte	21.00
HHBF02		32.00
HHBF03		15.00
HHBF04		14.00
HHBF06		11.00

CODE KOD	GENERAL PURPOSE HAND SAWS GENEL AMAÇLI EL TESTERESİ	EURO
JSHRBC01	JAB saw handle with 150mm blade "JAB" Testere (sap ağızında testeresi ile birlikte)	9.00

JAB SAW General purpose hand tool with ergonomic handle and takes standard reciprocating blades, Çok maksatlı JAB SAW 'a birçok testere ağı takılabilir. Ergonomik saplıdır ve dar alanlarda kesme imkanı sağlar.

CODE KOD	JAB SAW spare blade "JAB SAW" ağı (yedeği)	EURO
RB650508	JAB saw spare blade 5/8tpi (coarse teeth) JAB Testere ağı yedek 5/8 Diş (Kaba diş)	1.50
RB651014	JAB saw spare blade 10/14tpi (fine teeth) JAB Testere ağı yedek 10/14 Diş (ince diş)	1.50

Prices are for one pce. Sold in packs of 5pcs / Fiyatlar bir adet içindir. 5 adetli ambalajlarda satılır.

### GENERAL PURPOSE MINI HACK SAW FRAME / GENEL AMAÇLI MINI EL TESTERE KOLU

CODE KOD	GENERAL PURPOSE MINI HACK SAW FRAME GENEL AMAÇLI MINI EL TESTERE KOLU	EURO
HHBF05-10	Mini hack saw frame with 250mm bi-metal blade Mini testere kolu 250mm testere ağı ile birlikte	5.50
CODE KOD	MINI HACK SAW FRAME SPARE BLADES MINI EL TESTERE KOLU YEDEK TESTERE AĞZI	EURO
HHB1018	Spare blade for mini hack saw frame 250mm Mini testere kolu 250mm için yedek testere ağı	0.80

Prices are for one pce. Sold in packs of 10pcs / Fiyatlar bir adet içindir. 10 adetli ambalajlarda satılır.

## METAL DEVIL NXT CARBIDE TIPPED METAL CUTTING CIRCULAR SAW BLADES METAL KESEN SERT METAL PLAKETLİ DAİRE TESTERELER

Blade Diameter Testere çapı Ø MM	CODE KOD	Bore diameter Delik çapı Ømm or inch	Number of teeth Diş adeti Z	Material to cut Keseceği malzeme	Max rpm Max devir dev/dak.	EURO
137	CSM53832NSC	20	32	STEEL - ÇELİK	4200	45.00
137	CSM53848NAC	20 - 16mm or 5/8"	48	ALUMINIUM / ALUMİNYUM	4200	45.00
159	CSM62554NAC	5/8"	54	ALUMINIUM / ALUMİNYUM	4200	51.00
159	CSM62548NSIC	20 - 16mm	48	STEEL - ÇELİK	4200	57.00
165	CSM65040NSC	5/8"	40	STEEL - ÇELİK	4200	63.00
165	CSM6504020NSC	20mm	40	STEEL - ÇELİK	4200	63.00
165	CSM6504820TSC	20mm	48	THIN STEEL / İNCE SAC	4200	56.00
171	CSM67540NSC	20mm	40	STEEL - ÇELİK	4200	57.00
171	CSM6754030SIC	30mm	40	STEEL - ÇELİK	4200	55.00
178	CSM740NSC	20mm	40	STEEL - ÇELİK	5800	62.00
178	CSM754NAC	20mm	54	ALUMINIUM / ALUMİNYUM	5800	65.00
178	CSM768NTSC	20mm	68	THIN STEEL / İNCE SAC	5800	80.00
184	CSM72540NSC	5/8"	40	STEEL - ÇELİK	5800	59.00
184	CSM72548NSC	5/8"	48	STEEL - ÇELİK	5800	59.00
184	CSM72560NAC	5/8"	60	THIN STEEL / İNCE SAC	5800	57.00
184	CSM72568NTSC	5/8"	68	THIN STEEL / İNCE SAC	5800	73.00
184	CSM7254020NSC	20	40	STEEL - ÇELİK	5800	59.00
203	CSM842NSC	5/8"	42	STEEL - ÇELİK	5800	68.00
203	CSM848NSC	5/8"	48	STEEL - ÇELİK	5800	69.00
203	CSM860NAC	5/8"	60	ALUMINIUM / ALUMİNYUM	5800	69.00
203	CSM868NTSC	5/8"	68	THIN STEEL / İNCE SAC	5800	75.00
210	CSM82548NSC	5/8"	48	STEEL - ÇELİK	5800	72.00
210	SCM82550SC	5/8"	50	STEEL - ÇELİK	5800	68.00
229	CSM948NSC	25,4 - 1"	48	STEEL - ÇELİK	3200	77.00
229	CSM968NTSC	25,4 - 1"	68	THIN STEEL / İNCE SAC	3200	98.00
229	CSM972NAC	25,4 - 1"	72	ALUMINIUM / ALUMİNYUM	3200	96.00
254	CSM1052NTSC	5/8"	52	THIN STEEL / İNCE SAC	5200	104.00
254	CSM1072NAC	5/8"	72	ALUMINIUM / ALUMİNYUM	5500	104.00
305	CSM1260NSC	25,4 - 1"	60	STEEL - ÇELİK	1800	144.00
305	CSM1280NAC	25,4 - 1"	80	ALUMINIUM / ALUMİNYUM	3800	153.00
305	CSM1280NTSC	25,4 - 1"	80	THIN STEEL / İNCE SAC	2000	178.00
356	CSM1466NSC	25,4 - 1"	66	STEEL - ÇELİK	1800	183.00
356	CSM1480NAC	25,4 - 1"	80	ALUMINIUM / ALUMİNYUM	3800	195.00
356	CSM1490NTSC	25,4 - 1"	90	THIN STEEL / İNCE SAC	1800	195.00
356	CSM1490SSC	25,4 - 1"	90	STAINLESS / PASLANMAZ	1800	284.00



### METAL DEVIL

Iron, steel, stainless steel, aluminium and all sorts of metals.

Can be used in circular saw machines and higher torque is advantageous for better performance.

Advantages: Faster cut time saving, longer tool life and cheaper costs per cut.

No heat generated while cutting thus easier faster handling and painted surfaces are not damaged.

Smoother cuts.

### 4 types

**STEEL:** angle iron steel plate, I beams, pipe and other ferrous metal  
**THIN STEEL:** Under 3 mm thickness, pipe or steel metal.

**ALUMINIUM:** Up to 10mm thick aluminium plates tube and shapes.  
**STAINLESS STEEL:** up to 6 mm thick stainless steel plate up to 3 mm wall thickness stainless steel tubes.

### METAL DEVIL

Demir, çelik, paslanmaz, alüminyum ve her türlü metali keser.

Dairesel testerenin kullanılabildiği elektrikli kesim cihazlarında kullanılır.

Güçlü tork kullanım performansını artıracığından tercih olmalıdır.

Avantajları: Çok hızlı keser ve zamandan tasarruf sağlar

Uzun ömürlüdür, testere başına kesilen parça adeti yüksektir

Kesilen parçayı ısıtmaz. kullanım kolaylığı ve zamandan tasarruf.

Ayrıca ısıtmama özelliği parçaya örneğin boyalı yüzeylere zarar vermez.

Çapaksız yüzey bırakır.

### 4 ana tip :

**ÇELİK:** köşebent, profil, "I" ve "U" profil, demir, saplama, plaka, metal

profil ve parçalar

**İNCE SAC:** ince etli boru (3 mm altı) sac, profil, panel, çatı malzemesi vs.. kenarları katlamadan ve ezmeden keser.

**ALUMİNYUM:** 10 mm altı et kalınlığında alüminyum plaka profil ve parçalar.

**PASLANMAZ :** 6mm altı et kalınlığında paslanmaz plaka, boru, profil ve parçalar

## BI-METAL JIG SAW BLADES / BI-METAL RECIPROCATING SAW BLADES BI-METAL DEKUPAJ TESTERE UÇLARI / BI-METAL TİLKİ KUYRUĞU TESTRELER

### "T" TYPE SHANK BI-METAL JIG SAW BLADES "T" TİPİ SAPLI BI-METAL DEKUPAJ UÇLARI

LenghtxWidthx Thickness BoyxGenişlikx Kalinlık mm	CODE KOD	Nr. Of teeth/ inch Diş sayısı (1 inç'te)	Material to cut Kestiği malzeme	Price per one pce Bir adet fiyatı EURO
100X8X1	SBO406T25	6	wood, fiber, asbest rough cut Ağaç, fiber, asbest kaba kesim	1.00
100X8X0,9	SBO408T25	8	wood, hard wood, compressed wood Ağaç, sert ağaç, mdf	1.00
100x8x0,9	SBO410T25	10	All wood , compressed wood, plastic, Tüm ağaç,mdf,sunta, plastik, laminat	1.00
75X10X0,9	SBO314T25	14	Over 3mm metal and non ferrus metal 3mm ve üstü et kalınlığında metal ve hafif metaller.	0.85
75X10X0,9	SBO318T25	18	Metals of 1-3mm thick 1-3mm arası et kalınlığında metaller	0.85
75X10X0,9	SBO324T25	24	Metals below 1 mm thick and plastics 1mm altı ince metal ve plastik.	0.85

Prices are for one pce. Sold in packs of 25pcs / Fiyatlar bir adet içindir. 25 adetli ambalajlarda satılır.

### "U" TYPE UNIVERSAL SHANK BI-METAL JIG SAW BLADES "U" TİPİ UNIVERSAL SAPLI BI-METAL DEKUPAJ UÇLARI

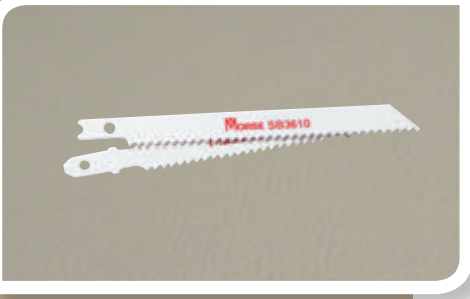
LenghtxWidthx Thickness BoyxGenişlikx Kalinlık mm	CODE KOD	Nr. Of teeth/ inch Diş sayısı (1 inç'te)	Material to cut Kestiği malzeme	Price per one pce Bir adet fiyatı EURO
100X10X0,9	SB3606T25	6	wood , fiber, asbest rough cut Ağaç, fiber, asbest kaba kesim	1.00
100X10X0,9	SB3610T25	10	wood, hard wood, compressed wood Ağaç, sert ağaç, mdf	1.00
100X10X0,9	SB3614T25	14	wood , non-ferrous, rubber Ağaç, hafif metaller, fiber, lastik, çivili ağaç	1.00
75X10X0,9	SB2718T25	18	up to 3 mm thick metals 3mm altı et kalınlığında metaller	0.85
92X5X0,9	SB412ST25	12	Non ferrous, fiber, compressed wood Hafif metaller, fiber, mdf.	1.00

Prices are for one pce. Sold in packs of 25pcs / Fiyatlar bir adet içindir. 25 adetli ambalajlarda satılır.

### RECIPROCATING MASTER COBALT BI-METAL BLADES TİLKİ KUYRUĞU TİPİ MASTER COBALT BI-METAL DEKUPAJ UÇLARI

LenghtxWidthx Thickness BoyxGenişlikx Kalinlık mm	CODE KOD	Nr. Of teeth/ inch Diş sayısı (1 inç'te)	Material to cut Kestiği malzeme	Price per one pce Bir adet fiyatı EURO
152X20X0,9	RB610T05	10	Wood, nail embedded wood, plastic, aluminium Ahşap, çivili ahşap, plastik, alüminyum.	1.25
203X20X0,9	RB810T05	10	Wood, nail embedded wood, plastic, aluminium Ahşap, çivili ahşap, plastik, alüminyum.	1.90
152X20X0,9	RB614T05	14	over 3 mm sheet metal 3 mm üstü kalın metal plakalar	1.25
203X20X0,9	RB814T05	14	over 3 mm sheet metal 3 mm üstü kalın metal plakalar	1.90
152X20X0,9	RB618T05	18	up to 3 mm wall thickness metal 3mm ye kadar etli metal	1.25
203X20X0,9	RB818T05	18	up to 3 mm wall thickness metal 3mm ye kadar etli metal	1.90
152X20X1.3	RB65006T05	6	Wood nail embedded wood, plastic, aluminium Ahşap, çivili ahşap, plastik, alüminyum.	1.70
229X20X1.3	RB95006T05	6	Wood nail embedded wood, plastic, aluminium Ahşap, çivili ahşap, plastik, alüminyum.	2.20
305X20X1.3	RB125006T05	6	Wood nail embedded wood, plastic, aluminium Ahşap, çivili ahşap, plastik, alüminyum.	2.90
305X25X1.3	RB125010T05	10	Wood nail embedded wood, plastic, aluminium Ahşap, çivili ahşap, plastik, alüminyum.	3.30

Prices are for one pce. Sold in packs of 5pcs / Fiyatlar bir adet içindir. 5 adetli ambalajlarda satılır.



## SHEET METAL STEP DRILL KADEMELİ SAC MATKABI

### STEP DRILL KIT / KADEMELİ SAC MATKAP TAKIMI

CODE KOD	Contents İçindekiler	EURO
ESDKIT01	4 Ad. kademeli matkap 4 Pcs. step drills ESD01 Ø1/8" - 1/2" ESD03 Ø3/16" - 7/8" ESD04 Ø1/4" - 3/4" ESD05 Ø1/4" - 1 1/8"	170.00



### SHEET METAL STEP DRILL / KADEMELİ SAC MATKABI

CODE KOD	Size range Ölçü aralığı Ø(inch) / mm	EURO
ESD01	( 1/8" - 1/2" ) / 3,2 - 12,7mm	27.00
ESD03	( 3/16" - 7/8" ) / 4,7 - 22,2mm	46.00
ESD04	( 1/4" - 3/4" ) / 6,3 - 19,0mm	39.00
ESD05	( 1/4" - 1 1/8" ) / 6,3 - 28,5mm	58.00
ESD07	( 1/8" - 1/2" ) / 3,2 - 12,7mm	33.00



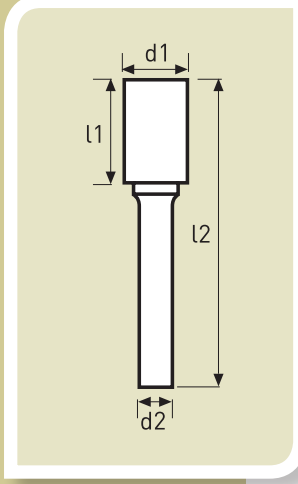


**CARBIDE BURS**  
*SERT METAL ÇAPAK ALMA FREZELERİ*

## CARBIDE BURS SERT METAL ÇAPAK ALMA FREZELERİ



### Cylinder without end cut / Silindir Düz Uçlu



d1 Dia/Çap	1.5	2.4	2.4	3	3	4
l1	6	13	13	13	13	13
d2	3	2.4	2.4	3	3	4
l2	38	38	63	38	63	50
Standard Cut Düz Kanallı	T1050	T1100		T1200		T1300
EURO	3.65	3.65		4.05		6.00
Double Cut Talaş Kırıclı	T1050D	T1100D	T 1100DL	T1200D	T 1200DL	T1300D
EURO	3.65	3.65	7.00	4.05	5.85	6.00

d1 Dia/Çap	4	4	6	6	6
l1	13	16	13	19	19
d2	4	6	3	6	6
l2	63	50	45	50	75
Standard Cut Düz Kanallı		T1300-6	T1240	T1400	T1400L
EURO		6.10	6.00	8.20	12.50
Double Cut Talaş Kırıclı	T1300DL	T1300D-6	T1240D	T1400D	T1400DL
EURO	11.00	6.10	6.00	8.20	12.50

d1 Dia/Çap	6	8	10	10	11
l1	25	19	19	25	25
d2	6	6	6	6	6
l2	50	65	65	70	70
Standard Cut Düz Kanallı		T1500	T1600		
EURO		9.40	10.70		
Double Cut Talaş Kırıclı	T1400D-1	T1500D	TDX160	T1600D-1	T1650D
EURO	9.10	9.40	10.70	11.40	12.00

d1 Dia/Çap	12	12	12	16	16
l1	19	25	25	25	25
d2	6	6	8	6	8
l2	65	70	70	70	70
Standard Cut Düz Kanallı	T1700	T1700-1		T1800-6	T1800
EURO	13.00	15.00		19.50	19.50
Double Cut Talaş Kırıclı	T1700D	TDX170-1	T1700D-1-8	T1800D-6	T1800D
EURO	13.00	15.00	15.00	19.50	19.50



## CARBIDE BURS SERT METAL ÇAPAK ALMA FREZELERİ



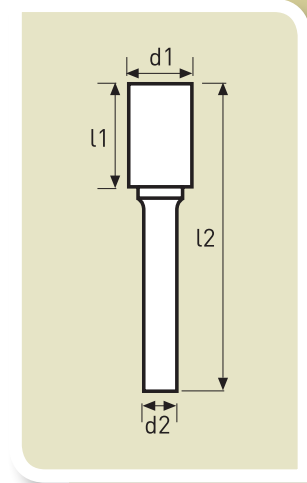
### Cylinder with end cut / Silindir Alın Kesicili

d1 Dia/Çap	1.5	2.4	2.4	3	3	4
l1	6	13	13	13	13	13
d2	3	2.4	2.4	3	3	4
l2	38	38	63	38	63	50
Standard Cut Düz Kanallı	T1052	T1102		T1202	T1202L	T1302
EURO	4.00	4.00		4.25	6.25	6.45
Double Cut Talaş Kırıcılı	T1052D	T1102D	T1102DL	T1202D	T1202DL	T1302D
EURO	4.00	4.00	8.00	4.25	6.25	6.45

d1 Dia/Çap	4	4	6	6	6
l1	13	16	13	19	19
d2	4	6	3	6	6
l2	63	50	45	50	75
Standard Cut Düz Kanallı		T1302-6	T1242	T1402	T1402L
EURO		6.60	7.20	9.20	13.50
Double Cut Talaş Kırıcılı	T1302DL	T1302D-6	T1242D	T1402D	T1402DL
EURO	8.20	6.60	7.20	9.20	13.50

d1 Dia/Çap	6	8	10	10	11
l1	25	19	19	25	25
d2	6	6	6	6	6
l2	50	65	65	70	70
Standard Cut Düz Kanallı		T1502	T1602		
EURO		10.70	11.70		
Double Cut Talaş Kırıcılı	T1402D-1	T1502D	TDX162	T1602D-1	T1652D
EURO	10.10	10.70	11.70	12.40	13.00

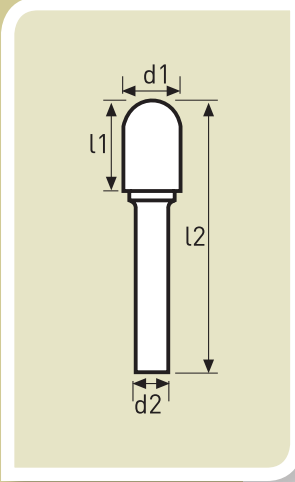
d1 Dia/Çap	12	12	12	16	16
l1	19	25	25	25	25
d2	6	6	8	6	8
l2	65	70	70	70	70
Standard Cut Düz Kanallı	T1702	T1702-1	T1702-1-8	T1802-6	T1802
EURO	15.80	16.30	16.30	22.30	22.30
Double Cut Talaş Kırıcılı	T1702D	TDX172-1	T1702D-1-8	T1802D-6	T1802D
EURO	15.80	16.30	16.30	22.30	22.30



## CARBIDE BURS SERT METAL ÇAPAK ALMA FREZELERİ



### Ball Nosed Cylinder / Küre Uçlu Silindir



d1 Dia/Çap	2.5	3	3	3	4
l1	11	13	13	13	16
d2	3	3	3	3	6
l2	38	38	50	75	50
Standard Cut Düz Kanallı	T3100	T3200			T3300-6
EURO	4.65	4.65			8.70
Double Cut Talaş Kırıclı	T3100D	T3200D	T3200DL	T3200DXL	T3300D-6
EURO	4.65	4.65	6.00	7.00	8.70

d1 Dia/Çap	5	6	6	6
l1	16	13	19	25
d2	6	3	6	6
l2	50	45	50	50
Standard Cut Düz Kanallı		T3240	T3400	
EURO		8.70	8.70	
Double Cut Talaş Kırıclı	T3350D-6	T3240D	T3400D	T3400D-1
EURO	8.90	8.70	8.70	9.00









d1 Dia/Çap	8	10	10	11	12
l1	19	19	25	25	19
d2	6	6	6	6	6
l2	65	65	70	70	65
Standard Cut Düz Kanallı	T3500	T3600			T3700
EURO	9.30	10.20			13.40
Double Cut Talaş Kırıclı	TDX350	TDX360	T3600D-1	T3650D	TDX370
EURO	9.30	10.20	10.70	12.00	13.40

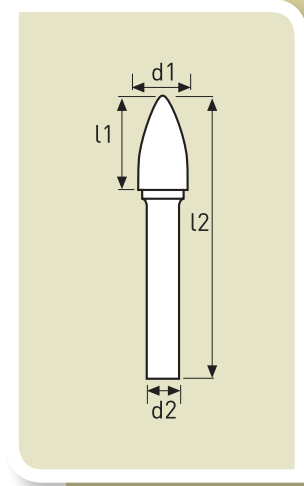
d1 Dia/Çap	12	12	16	16
l1	25	25	25	25
d2	6	8	6	8
l2	70	70	70	70
Standard Cut Düz Kanallı	T3700-1	T3700-1-8	T3800-6	T3800
EURO	14.00	14.00	18.90	18.90
Double Cut Talaş Kırıclı	TDX370-1	TDX370-1-8	TDX380-6	TDX380
EURO	14.00	14.00	18.90	18.90









## CARBIDE BURS SERT METAL ÇAPAK ALMA FREZELERİ



### Tree / Çam

						
d1 Dia/Çap	3	3	3	6	6	8
l1	6	10	13	13	16	19
d2	3	3	3	3	6	6
l2	38	38	38	45	50	65
 Standard Cut Düz Kanallı	T6220	T6230	T6200	T6240	T6400	
EURO	4.50	4.60	4.80	8.70	9.90	
 Double Cut Talaş Kırıcılı	T6220D	T6230D	T6200D	T6240D	T6400D	T6450D
EURO	4.50	4.60	4.80	8.70	9.90	10.10









						
d1 Dia/Çap	10	12	12	12	16	16
l1	19	19	25	25	25	25
d2	6	6	6	8	6	8
l2	65	65	70	70	70	70
 Standard Cut Düz Kanallı	T6500	T6700	T6800	T6800-8	T6900-6	T6900
EURO	10.90	15.40	15.80	15.80	22.50	22.50
 Double Cut Talaş Kırıcılı	TDX650	T6700D	TDX680	T6800D-8	T6900D-6	T6900D
EURO	10.90	15.40	15.80	15.80	22.50	22.50

## CARBIDE BURS SERT METAL ÇAPAK ALMA FREZELERİ




### Ball / Küre

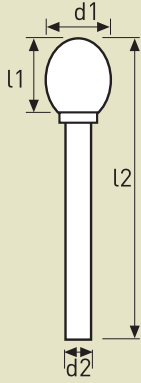
					
d1 Dia/Çap	2.5	3	3	4	5
l1	2.3	2.7	2.5	3.6	4.7
d2	3	3	6	3	3
l2	38	38	50	45	38






 **Standard Cut**  
Düz Kanallı


T7100	T7200	T7200-6	T7300	T7350	
EURO	5.70	5.75	9.30	10.20	10.00

 **Double Cut**  
Talaş Kırıcılı


T7100D	T7200D	T7200D-6	T7300D	T7350D	
EURO	5.70	5.75	9.30	10.20	10.00








					
d1 Dia/Çap	5	6	6	8	10
l1	4.7	5.4	5.4	7.2	9
d2	6	3	6	6	6
l2	50	38	50	52	53

 **Standard Cut**  
Düz Kanallı

T7350-6	T7240	T7400	T7500	T7600	
EURO	10.00	8.55	9.30	7.70	8.00


 **Double Cut**  
Talaş Kırıcılı

T7350D-6	T7240D	T7400D	T7500D	TDX760	
EURO	10.00	8.55	9.30	7.70	8.00

					
d1 Dia/Çap	11	12	16	19	19
l1	9.9	10.8	14.4	17.1	17.1
d2	6	6	6	6	8
l2	54	55	60	63	63

 **Standard Cut**  
Düz Kanallı

T7700	T7800	T7900-6	T7900	
EURO	10.90	15.10	23.70	23.70



 **Double Cut**  
Talaş Kırıcılı



T7650D	TDX770	T7800D	T7900D-6	T7900D	
EURO	9.40	10.90	15.10	23.70	23.70

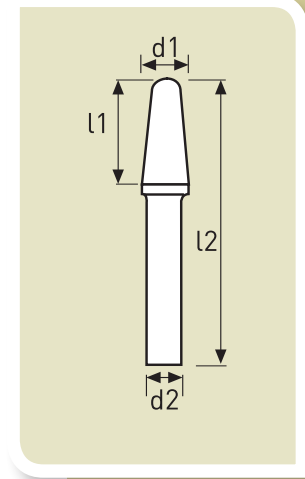
## CARBIDE BURS SERT METAL ÇAPAK ALMA FREZELERİ



### Ball Nosed Cone / Küre Uçlu Konik

	8°	8°	8°	14°	14°	14°
d1 Dia/Çap	3	3	3	6	6	8
l1	8	9.5	13	13	16	19
d2	3	3	3	3	6	6
l2	38	38	38	45	50	69
 <b>Standard Cut</b> Düz Kanallı	T4200	T4210	T4220	T4240	T4400	
EURO	5.20	5.30	5.60	8.90	11.20	
 <b>Double Cut</b> Talaş Kırıcılı	T4200D	T4210D	T4220D	T4240D	T4400D	T4500D
EURO	5.20	5.30	5.60	8.90	11.20	11.90

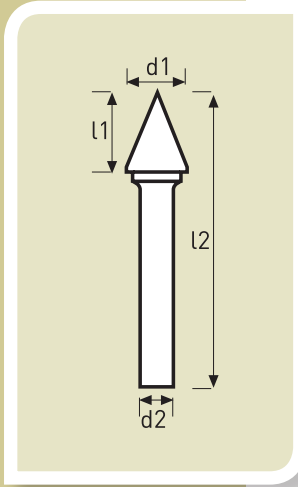
	14°	14°	14°	14°	14°	14°
d1 Dia/Çap	10	10	12	12	16	16
l1	19	27	30	30	33	33
d2	6	6	6	8	6	8
l2	65	75	75	75	78	78
 <b>Standard Cut</b> Düz Kanallı	T4600	T4600-1	T4700	T4700-8	T4800-6	T4800
EURO	12.50	14.10	15.50	15.50	22.60	22.60
 <b>Double Cut</b> Talaş Kırıcılı	T4600D	TDX460-1	TDX470	T4700D-8	T4800D-6	T4800D
EURO	12.50	14.10	15.50	15.50	22.60	22.60



## CARBIDE BURS SERT METAL ÇAPAK ALMA FREZELERİ



### Cone / Konik



	12°	7°	22°	22°	14°	11°
<b>d1 Dia/Çap</b>	3	3	6	6	6	6
<b>l1</b>	11	16	13	13	19	25
<b>d2</b>	3	3	3	6	6	6
<b>l2</b>	38	38	45	50	50	50
<b>Standard Cut Düz Kanallı</b>	<b>T2200</b>	<b>T2220</b>	<b>T2240</b>		<b>T2400</b>	
<b>EURO</b>	<b>3.50</b>	<b>3.85</b>	<b>7.30</b>		<b>8.50</b>	
<b>Double Cut Talaş Kırıclı</b>	<b>T2200D</b>	<b>T2220D</b>	<b>T2240D</b>	<b>T2300D</b>	<b>T2400D</b>	<b>T2400D-1</b>
<b>EURO</b>	<b>3.50</b>	<b>3.85</b>	<b>7.30</b>	<b>8.10</b>	<b>8.50</b>	<b>8.90</b>

	28°	35°	28°	28°	31°	31°
<b>d1 Dia/Çap</b>	10	12	12	12	16	16
<b>l1</b>	16	19	25	25	25	25
<b>d2</b>	6	6	6	8	6	8
<b>l2</b>	65	65	70	70	73	73
<b>Standard Cut Düz Kanallı</b>	<b>T2600</b>	<b>T2700</b>	<b>T2700-1</b>	<b>T2700-1-8</b>		
<b>EURO</b>	<b>11.10</b>	<b>12.70</b>	<b>13.00</b>	<b>13.00</b>		
<b>Double Cut Talaş Kırıclı</b>	<b>T2600D</b>	<b>T2700D</b>	<b>T2700D-1</b>	<b>T2700D-1-8</b>	<b>T2750D-1-6</b>	<b>T2750D-1</b>
<b>EURO</b>	<b>11.10</b>	<b>12.70</b>	<b>13.00</b>	<b>13.00</b>	<b>14.10</b>	<b>14.10</b>

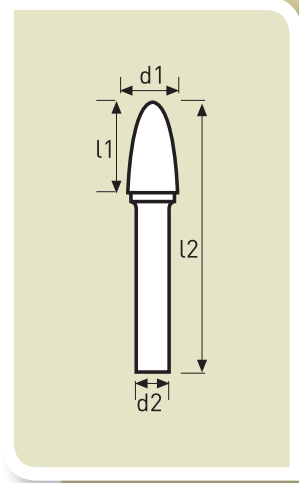
## CARBIDE BURS SERT METAL ÇAPAK ALMA FREZELERİ



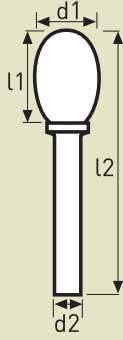
### Ball Nosed Tree / Küre Uçlu Çam

d1 Dia/Çap	3	3	6	6	10
l1	6	13	13	16	19
d2	3	3	3	6	6
l2	38	38	45	50	65
Standard Cut Düz Kanallı	T9220	T9200	T9240	T9400	T9600
EURO	4.80	4.80	6.80	10.40	11.50
Double Cut Talaş Kırıcılı	T9220D	T9200D	T9240D	T9400D	TDX960
EURO	4.80	4.80	6.80	10.40	11.50








d1 Dia/Çap	11	12	12	16	16
l1	25	19	25	25	25
d2	6	6	6	6	8
l2	70	65	70	70	70
Standard Cut Düz Kanallı			T9700	T9800-6	T9800
EURO			15.10	18.40	18.40
Double Cut Talaş Kırıcılı	T9650D	T9730D	TDX970	TDX980-6	TDX980
EURO	12.60	14.70	15.10	18.40	18.40









## CARBIDE BURS SERT METAL ÇAPAK ALMA FREZELERİ



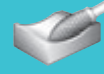
### Oval / Oval

					
d1 Dia/Çap	3	6	6	8	10
l1	6	10	10	13	16
d2	3	3	6	6	6
l2	38	42	50	58	60
 <b>Standard Cut</b> Düz Kanallı	T5220	T5240		T5300	T5500
EURO	5.50	8.30		9.50	9.70
 <b>Double Cut</b> Talaş Kırıcılı	T5220D	T5240D	T5260D	T5300D	TDX550
EURO	5.50	8.30	9.00	9.50	9.70

				
d1 Dia/Çap	12	12	16	16
l1	22	22	25	25
d2	6	8	6	8
l2	67	67	70	70
 <b>Standard Cut</b> Düz Kanallı	T5700	T5700-8	T5800	T5800-8
EURO	14.50	14.50	19.00	19.00
 <b>Double Cut</b> Talaş Kırıcılı	TDX570	T5700D-8	T5800D	T5800D-8
EURO	14.50	14.50	19.00	19.00

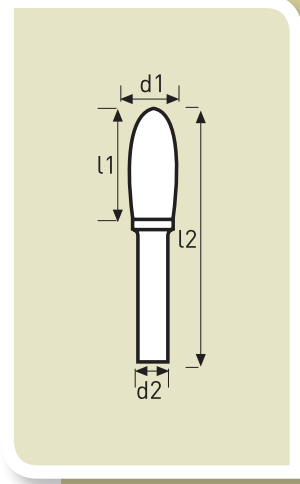


## CARBIDE BURS SERT METAL ÇAPAK ALMA FREZELERİ

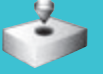


### Flame / Alev








d1 Dia/Çap	3	6	8	12	16	16
l1	8	14	19	32	36	36
d2	3	6	6	6	6	8
l2	38	50	65	77	80	80
Standard Cut Düz Kanallı	T5200	T5400	T5550	T5600		
EURO	5.10	8.80	10.50	17.90		
Double Cut Talaş Kırıcı	T5200D	T5400D	T5550D	TDX560	T5850D-6	T5850D
EURO	5.10	8.80	10.50	17.90	19.00	19.00

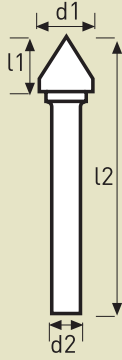


## CARBIDE BURS SERT METAL ÇAPAK ALMA FREZELERİ









### Countersink 90° / Havşa 90°

					
d1 Dia/Çap	3	6	10	12	16
l1	1.5	3	5	6	8
d2	3	6	6	6	6
l2	38	50	55	54	60
 <b>Standard Cut</b> Düz Kanallı	T2810	T2820	T2000	T2840	T2800
EURO	4.10	7.80	8.80	11.50	14.00
 <b>Double Cut</b> Talaş Kırıcılı	T2810D		T2000D	T2840D	T2800D
EURO	4.10		8.80	11.50	14.00



### Countersink 60° / Havşa 60°

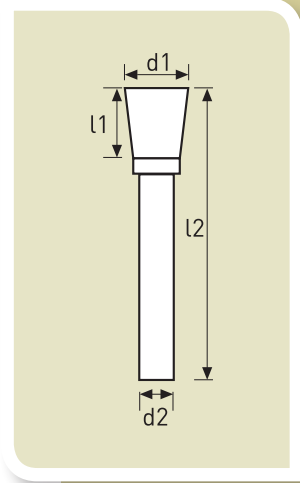
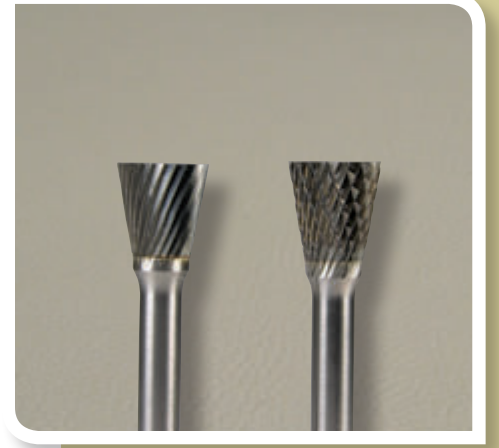
				
d1 Dia/Çap	6	10	12	16
l1	4	8	11	14.5
d2	6	6	6	6
l2	50	55	60	60
 <b>Standard Cut</b> Düz Kanallı	T2920	T2940	T2900	T2960
EURO	7.80	8.80	14.40	15.30
 <b>Double Cut</b> Talaş Kırıcılı			T2900D	T2960D
EURO			14.40	15.30

## CARBIDE BURS SERT METAL ÇAPAK ALMA FREZELERİ



### Inverted Cone / Ters Konik

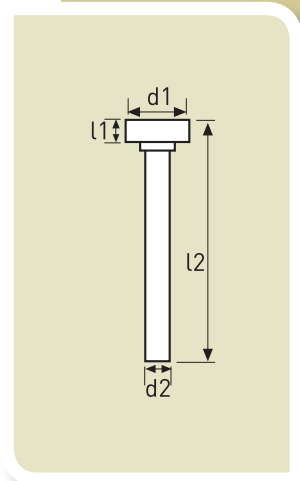
	10°	10°	13°	20°	18°
d1 Dia/Çap	3	6	9.5	12	16
l1	7	7	9.5	13	19
d2	3	6	6	6	6
l2	38	50	53	58	63
Standard Cut Düz Kanallı	T8200	T8400		T8500	
EURO	6.30	11.10		17.50	
Double Cut Talaş Kırıcılı	T8200D	T8400D	T8450D	T8500D	T8800D-6
EURO	6.30	11.10	14.10	17.50	21.00



### Rim "T" Slot / "T" Yarık











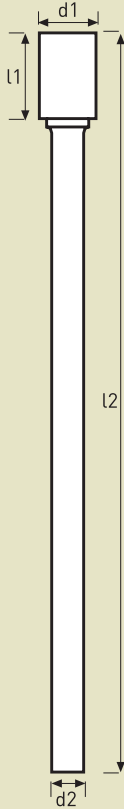
d1 Dia/Çap	10	12	25	25
l1	1.6	2.6	5.2	6.3
d2	3	6	8	8
l2	34	48	50	51
Standard Cut Düz Kanallı	T8240	T8700	T8100	T9100
EURO	10.70	11.00	31.00	27.00











## CARBIDE BURS SERT METAL ÇAPAK ALMA FREZELERİ

### Extra Long Lenght / Extra Uzun Boylar





						
d1 Dia/Çap	10	12	10	12	10	12
l1	19	25	19	25	9	10.8
d2	6	6	6	6	6	6
l2	169	175	169	175	159	161
 <b>Standard Cut</b> Düz Kanallı	T1600XL		T3600XL		T7600XL	T7700XL
EURO	21.00		21.00		23.00	29.00
 <b>Double Cut</b> Talaş Kırıcılı	T1600DXL	T1700D-1XL	T3600DXL	T3700D-1XL	T7600DXL	T7700DXL
EURO	21.00	26.00	21.00	26.00	23.00	29.00

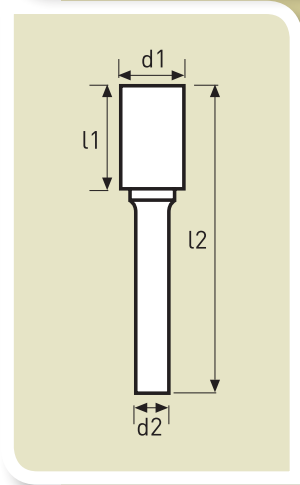


						
d1 Dia/Çap	10	12	10	12	10	12
l1	19	25	19	25	27	30
d2	6	6	6	6	6	6
l2	169	175	169	175	177	180
 <b>Standard Cut</b> Düz Kanallı						
EURO						
 <b>Double Cut</b> Talaş Kırıcılı	T9600DXL	T9700DXL	T6500DXL	T6800DXL	T4600D-1XL	T4700DXL
EURO	22.00	29.00	21.00	26.00	26.00	30.00





## CARBIDE BURS ALUMINIUM CUT SERT METAL ÇAPAK ALMA FREZELERİ ALUMİNYUM İÇİN

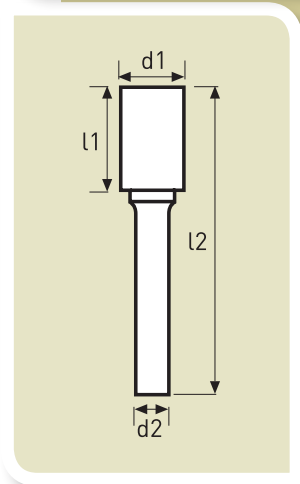
### Cylinder without end cut / Silindir Düz Uçlu

				
d1 Dia/Çap	6	10	12	16
l1	19	19	25	25
d2	6	6	6	8
l2	50	65	70	70
Aluminium Cut Alüminyum Kanal	TTA240	TTA260	TTA270	TTA280
EURO	13.00	16.80	17.20	28.50







### Cylinder with end cut / Silindir Alın Kesicili

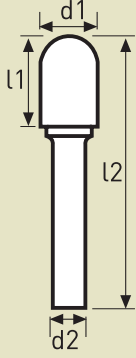
				
d1 Dia/Çap	6	10	12	16
l1	19	19	25	25
d2	6	6	6	8
l2	50	65	70	70
Aluminium Cut Alüminyum Kanal	TTA140	TTA160	TTA170	TTA180
EURO	13.20	17.20	24.00	30.00




**CARBIDE BURS ALUMINIUM CUT**  
**SERT METAL ÇAPAK ALMA FREZELERİ ALUMİNYUM İÇİN**

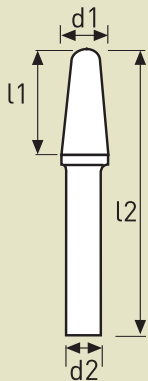
**Ball Nosed Cylinder / Küre Uçlu Silindir**

				
<b>d1 Dia/Çap</b>	6	10	12	16
<b>l1</b>	19	19	25	25
<b>d2</b>	6	6	6	8
<b>l2</b>	50	65	70	70
<b>Aluminium Cut Alüminyum Kanal</b>	TTA340	TTA360	TTA370	TTA380
<b>EURO</b>	13.20	16.50	22.50	31.00







**Ball Nosed Cone / Küre Uçlu Konik**

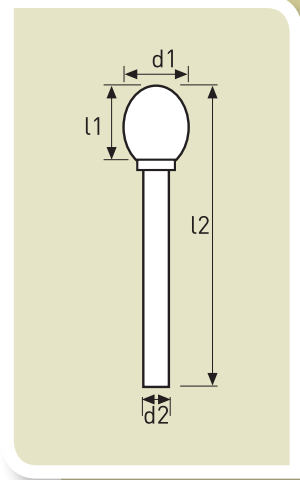
				
<b>d1 Dia/Çap</b>	6	10	12	16
<b>l1</b>	16	27	30	33
<b>d2</b>	6	6	6	8
<b>l2</b>	50	75	75	78
<b>Aluminium Cut Alüminyum Kanal</b>	TTA440	TTA460	TTA470	TTA480
<b>EURO</b>	13.30	20.50	25.50	34.50







## CARBIDE BURS ALUMINIUM CUT SERT METAL ÇAPAK ALMA FREZELERİ ALUMİNYUM İÇİN

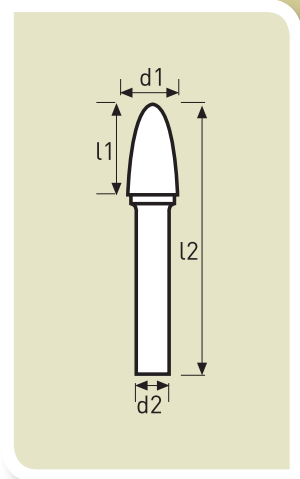
### Ball / Küre

				
d1 Dia/Çap	6	10	12	16
l1	5.4	9	10.8	14.4
d2	6	6	6	8
l2	50	53	55	60
Aluminium Cut Alüminyum Kanal	TTA740	TTA760	TTA770	TTA780
EURO	13.00	17.00	18.00	29.00



### Ball Nosed Tree / Küre Uçlu Çam

				
d1 Dia/Çap	6	10	12	16
l1	16	19	25	25
d2	6	6	6	8
l2	50	65	70	70
Aluminium Cut Alüminyum Kanal	TTA940	TTA960	TTA970	TTA980
EURO	13.20	16.50	21.50	29.00

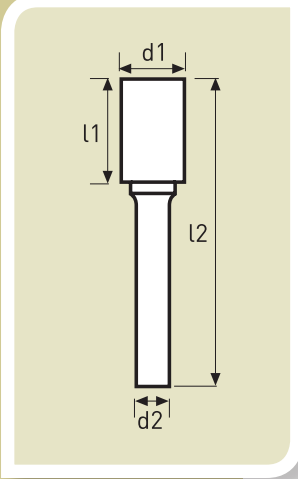


## CARBIDE BURS STEEL - INOX SERIES SERT METAL ÇAPAK ALMA FREZELERİ ÇELİK - PASLANMAZ SERİSİ

### Cylinder (without end cut) / Silindir (Düz Uçlu)



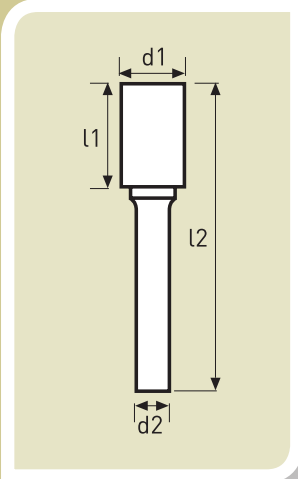
d1 Dia/Çap	3	6	6	8	10	12
l1	13	13	19	19	19	25
d2	3	3	6	6	6	6
l2	38	45	75	65	65	70
Steel / Çelik			T1400ST	T1500ST	T1600ST	T1700-1ST
EURO			10.00	13.00	13.50	18.50
Inox Paslanmaz	T1200IN	T1240IN	T1400IN	T1500IN	T1600IN	T1700-1IN
EURO	7.20	11.80	11.00	14.00	14.50	20.00



### Cylinder with end cut / Silindir alın kesicili



d1 Dia/Çap	6	8	10	12
l1	19	19	19	25
d2	6	6	6	6
l2	75	65	65	70
Steel / Çelik	T1402ST	T1502ST	T1602ST	T 1702-1ST
EURO	12.10	14.40	15.60	21.60



#### STEEL SERIES CARBIDE BURS

Specially designed for steel , cast steel and high stock removal appliaction

#### ÇELİK SERİSİ ÇAPAK FREZE

Özellikle çelik , çelik döküm ve ağır talaş kaldırılan uygulamalarda

#### INOX SERIES CARBIDE BURS

Specially designed for stainless steel materials and its derivatives

#### PASLANMAZ (INOX) SERİSİ ÇAPAK FREZE

Özellikle paslanmaz çelik ve türevleri için tasarlanmıştır

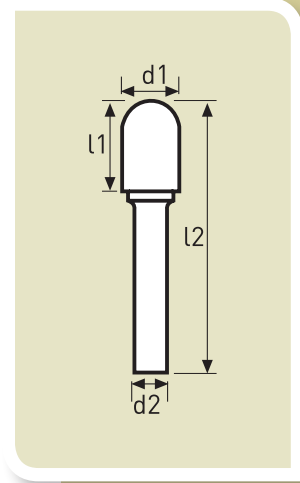


**CARBIDE BURS STEEL - INOX SERIES**  
**SERT METAL ÇAPAK ALMA FREZELERİ ÇELİK - PASLANMAZ SERİSİ**

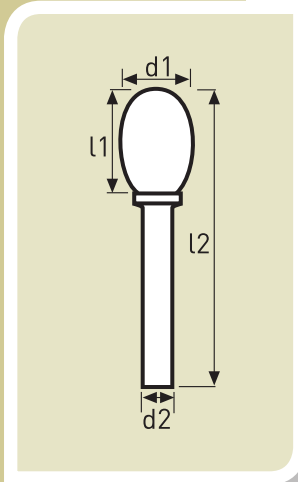
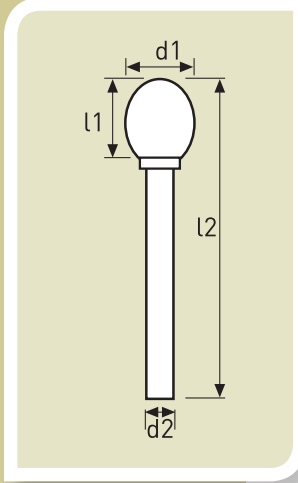
**Ball Nosed Cylinder / Küre Uçlu Silindir**



<b>d1 Dia/Çap</b>	3	6	6	8	10	12
<b>l1</b>	13	13	19	19	19	25
<b>d2</b>	3	3	6	6	6	6
<b>l2</b>	38	45	50	65	65	70
<b>Steel / Çelik</b>			T3400ST	T3500ST	T3600ST	T3700-1ST
<b>EURO</b>			11.50	12.50	13.60	18.70
<b>Inox Paslanmaz</b>	T3200IN	T3240IN	T3400IN	T3500IN	T3600IN	T3700-1IN
<b>EURO</b>	7.20	11.70	12.50	13.60	14.80	20.30



## CARBIDE BURS STEEL - INOX SERIES SERT METAL ÇAPAK ALMA FREZELERİ ÇELİK - PASLANMAZ SERİSİ



### Ball / Küre



d1 Dia/Çap	3	6	6	8	10	12
l1	2.7	5.4	5.4	7.2	9	10.8
d2	3	3	6	6	6	6
l2	38	38	50	52	53	55
Steel / Çelik			T7400ST	T7500ST	T7600ST	T7700ST
EURO			12.40	12.60	12.80	17.30
Inox Paslanmaz	T7200IN	T7240IN	T7400IN	T7500IN	T7600IN	T7700IN
EURO	13.00	13.80	14.00	14.20	14.40	18.70

### Oval / Oval



d1 Dia/Çap	8	10	12
l1	13	16	22
d2	6	6	6
l2	58	60	67
Steel / Çelik			T5700ST
EURO			19.20
Inox Paslanmaz	T5300IN	T5500IN	T5700IN
EURO	15.20	17.00	21.00

#### STEEL SERIES CARBIDE BURS

Specially designed for steel , cast steel and high stock removal appliaction

#### ÇELİK SERİSİ ÇAPAK FREZE

Özellikle çelik , çelik döküm ve ağır talaş kaldırılan uygulamalarda

#### INOX SERIES CARBIDE BURS

Specially designed for stainless steel materials and its derivatives

#### PASLANMAZ (INOX) SERİSİ ÇAPAK FREZE

Özellikle paslanmaz çelik ve türevleri için tasarlanmıştır

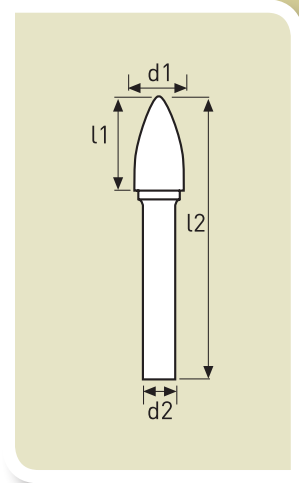
## CARBIDE BURS STEEL - INOX SERIES

### SERT METAL ÇAPAK ALMA FREZELERİ ÇELİK - PASLANMAZ SERİSİ

#### Tree / Çam



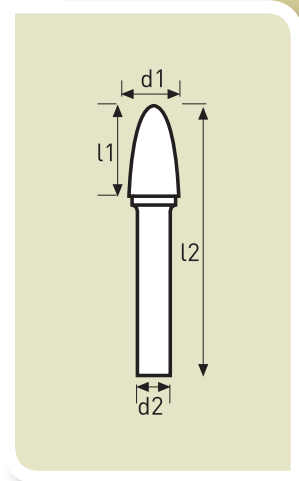
d1 Dia/Çap	6	8	10	12
l1	16	19	19	25
d2	6	6	6	6
l2	50	65	65	70
Steel / Çelik	T6400ST	T6450ST	T6500ST	T6800ST
EURO	13.20	14.60	14.70	18.40
Inox Paslanmaz	T6400IN	T6450IN	T6500IN	T6800IN
EURO	14.40	15.90	16.00	20.00



#### Ball Nosed Tree / Küre Uçlu Çam



d1 Dia/Çap	3	6	6	8	10	12
l1	13	13	16	19	19	25
d2	3	3	6	6	6	6
l2	38	45	50	65	65	70
Steel / Çelik			T9400ST	T9500ST	T9600ST	T9700ST
EURO			13.80	14.00	14.90	19.60
Inox Paslanmaz	T9200IN	T9240IN	T9400IN	T9500IN	T9600IN	T9700IN
EURO	12.00	14.80	15.00	15.20	16.30	21.40



#### STEEL SERIES CARBIDE BURS

Specially designed for steel , cast steel and high stock removal appliaction

#### ÇELİK SERİSİ ÇAPAK FREZE

Özellikle çelik , çelik döküm ve ağır talaş kaldırılan uygulamalarda

#### INOX SERIES CARBIDE BURS

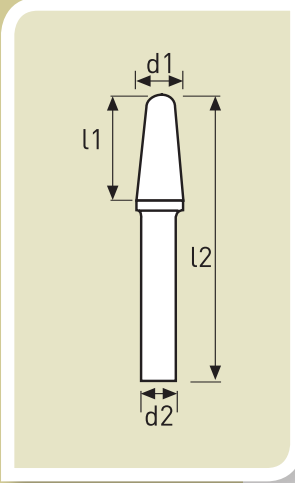
Specially designed for stainless steel materials and its derivatives







#### PASLANMAZ (INOX) SERİSİ ÇAPAK FREZE

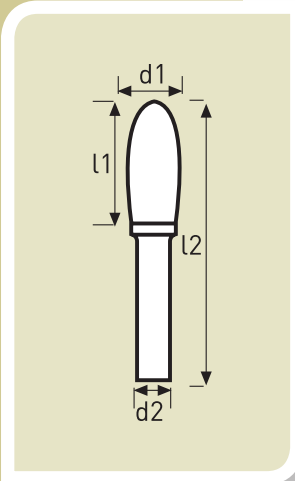
Özellikle paslanmaz çelik ve türevleri için tasarlanmış

## CARBIDE BURS STEEL - INOX SERIES SERT METAL ÇAPAK ALMA FREZELERİ ÇELİK - PASLANMAZ SERİSİ

### Ball Nosed Cone / Küre Uçlu Konik








				
d1 Dia/Çap	8	10	10	12
l1	19	19	27	30
d2	6	6	6	6
l2	69	65	75	75
 Steel / Çelik		T4600ST	T4600-1ST	T4700ST
EURO		16.80	17.00	19.00
 Inox Paslanmaz	T4500IN	T4600IN		T4700IN
EURO	14.80	18.30		20.40



### Flame / Alev



			
d1 Dia/Çap	8	10	12
l1	19	19	32
d2	6	6	6
l2	65	65	77
 Steel / Çelik	T5550ST		T5600ST
EURO	16.20		24.50
 Inox Paslanmaz	T5550IN	T 5555 IN	T5600IN
EURO	17.40	18.00	26.50

#### STEEL SERIES CARBIDE BURS

Specially designed for steel , cast steel and high stock removal appliaction

#### ÇELİK SERİSİ ÇAPAK FREZE

Özellikle çelik , çelik döküm ve ağır talaş kaldırılan uygulamalarda

#### INOX SERIES CARBIDE BURS

Specially designed for stainless steel materials and its derivatives

#### PASLANMAZ (INOX) SERİSİ ÇAPAK FREZE

Özellikle paslanmaz çelik ve türevleri için tasarlanmıştır

## ROUTERS

### KENAR FREZESİ

#### Routers With Front End Cut

#### Kenar Frezesi Alın Kesicili

Code Kod	Cutting Dia Kesici çap Ømm	Cutting Length Kesici Boy	Shank Dia Sap çapı	Overall length Tam Boy	EURO
262030	3	12	2	38	13.00
262040	4	16	4	50	20.00
262060	6	19	6	63	24.00
262080	8	25	8	63	28.00
262100	10	25	10	75	52.00
262120	12	25	12	75	73.00

For fiberglas countouring and roughing / Fiber malzeme kontur kesme ve işleme



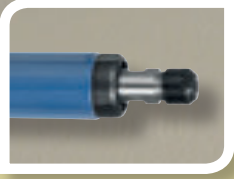
**CARBIDE BURRS OPERATION SPEED**  
**SERT METAL ÇAPAK FREZE KULLANIM HIZLARI**


Workpiece <i>İşlenen malzeme</i>	Rpm range according to tool diameter <i>Takım çapına göre devir aralığı</i>				
	Ø 3mm	Ø 6mm	Ø 10mm	Ø 12mm	Ø 16mm
<b>Steel</b> <i>Çelik</i>	60.000-80.000	35.000-45.000	22.000-35.000	20.000-30.000	15.000-20.000
<b>Hard Steel</b> <i>Sert Çelik</i>	60.000-80.000	30.000-45.000	19.000-30.000	15.000-22.000	12.000-18.000
<b>Stainless steel</b> <i>Paslanmaz Çelik</i>	60.000-80.000	30.000-45.000	19.000-30.000	15.000-22.000	12.000-18.000
<b>Cast iron</b> <i>Döküm</i>	45.000-80.000	22.000-45.000	15.000-35.000	11.000-30.000	9.000-20.000
<b>Titanium</b> <i>Titanyum</i>	60.000-80.000	30.000-45.000	19.000-30.000	15.000-22.000	12.000-18.000
<b>Nickel</b> <i>Nikel</i>	60.000-80.000	30.000-45.000	19.000-30.000	15.000-22.000	12.000-18.000
<b>Copper and Copper alloys</b> <i>Bakır ve alaşımları</i>	45.000-80.000	22.000-45.000	15.000-35.000	11.000-30.000	9.000-20.000
<b>Aluminium</b> <i>Aluminyum</i>	30.000-80.000	15.000-45.000	10.000-35.000	7.000-30.000	6.000-20.000
<b>Plastics</b> <i>Plastik</i>	30.000-80.000	15.000-45.000	10.000-35.000	7.000-30.000	6.000-20.000



**AIR GRINDERS  
ACCESSORIES AND ABRASIVES  
HAVALI TAŞLAMALAR  
AKSESUAR VE AŞINDIRICILAR**

## PENCIL TYPE AIR GRINDER 75.000 RPM KALEM TİPİ HAVALI TAŞLAMA 75.000 Devir/dak.



CODE KOD	Speed rpm Devir / Dak.	Standard Collet Standart Pens	Optional collet* Opsiyonel pens	Ideal for monting burs dia İdeal takılabilecek çapak freze çap aralığı	EURO
SP75R	75.000	Ø3mm	Ø2.34mm	Ø1-3mm	225.00

\* Optional collet is not provided with the grinder and need to be ordered separately.  
\* Opsiyonel pens taşlama motoru ile verilmez ayrıca sipariş edilmelidir.

### Spare parts / Yedek parçalar

Description Tanımı	CODE KOD	EURO	Description Tanımı	CODE KOD	EURO
Motor	RM60/75	155.00	Spacer Ara halkası	23310110	8.00
Collet / Pens Ø3mm	CC/13310110	18.00	Bearing back Arka rulman	15010200	19.00
Collet / Pens Ø2.34mm	CC/13310310	18.00	Bearing plate Rulman kapağı	67510810	8.50
Spanner (7mm) Anahtar	25510100	4.50	Rotor spacer Rotor pulu	24410110	6.50
Hose set Hortum seti	17701220	43.00	Vanes 4 pcs Kanat 4 ad	26610110	4.50
Collet guard pens kapağı	67510110	13.00	Back Plate Arka kapak	67510910	14.00
Front end cap ön kapak	67510210	13.00	Distributor Block Distribütör blok	67511010	22.50
Front end cap o ring ön kapak o ring	18810100	0.70	Throttle assembly Klape grubu	27805520	150.00
cap nut pens somunu	67510610	16.50	Service Kit : 3pcs O-ring, 2pcs bearings, 4pcs vanes. Tamir takımı: 3 Ad. O-ring, 2 Ad. Rulman 4 Ad. Kanat	55515120	52.00
Chuck spindle Tutucu malafa	67510710	75.00			
Shim pack Pul seti	22210320	7.00			
Bearing front ön rulman	15010100	28.00			

To maintain the tool life and the performance of your airtool, a professionally clean, regulated and lubricated compressed air is essential.

Taşlama motorunuzun ömrü ve performansı için profesyonelce regüle edilmiş basınçlı temiz ve yağlı hava şarttır.



### Air/Oil Kit - Hava/Yağ Ünitesi

Description Tanımı	CODE KOD	EURO
Compressed air filter regulator lubricator Basınçlı hava hazırlama regülatör yağlayıcı ünite	FRC1/4DB7MINI	90.00



## HIGH SPEED AIR MOTOR DIE GRINDER 45.000 RPM

YÜKSEK DEVİR HAVALI KALIPÇI TAŞLAMA 45.000 Devir/dak.

CODE KOD	Speed rpm Devir / Dak.	Collet Pens	Optional collet* Opsiyonel pens	Ideal for monting burs dia İdeal takılabilecek çapak freze çap aralığı	EURO
SD45LR	45.000	Ø6mm	Ø3-4mm	Ø4-5-6mm	315.00

\* Optional collet is not provided with the grinder and need to be ordered separately.

\* Opsiyonel pens taşlama motoru ile verilmez ayrıca sipariş edilmelidir.

### Spare parts / Yedek parçalar

Description Tanımı	CODE KOD	EURO	Description Tanımı	CODE KOD	EURO
Motor	RMSD45	180.00	Front Bearing housing ön rulman yatağı	15100210	14.00
Collet / Pens Ø3mm	13312610	16.00	Rear Bearing housing Arka rulman yatağı	15100310	19.00
Collet / Pens Ø4mm	13300200	16.00	Front end cap ön kapak	54500110	40.00
Collet / Pens Ø5mm	133DA305	16.00	Motor housing Motor yatağı	54500920	53.00
Collet / Pens Ø6mm	13312210	16.00	throttle ball, klape bilyası	15000110	0.75
Spanner 7/16" Anahtar	25546200	6.00	throttle spring klape yayı	27700110	3.80
Spanner 9/16" Anahtar	25561110	8.00	throttle plug klape tıpası	19100110	5.30
Hose set Hortum seti	17701220	37.00	Valve stem subap ucu	27900110	6.80
Vanes 4 pcs Kanatlar 4 adet	26600110	6.00	Throttle housing klape yatağı	54501220	48.00
Slide lever itmeli Mandal	14071920	38.00	Hose adaptor hortum adaptörü	54500410	20.00
Cap nut pens somunu	12246310	18.00	Exhaust hose clip egzost hortum klipsi	27710210	2.50
Chuck spindle pens malafası	13100310	58.00	Ergo Sleeve Ergonomik boru	30601320	28.00
Bearing front Rulman ön	15060300	10.50	O-ring	18833000	0.65
Spacer Ara halka	23301010	6.50	O-ring	18800100	1.10
Bearing back Rulman arka	15009800	10.50	Service Kit : 4 bearing, 1 coupling, 1 circlip, 4 vanes, 4 o-rings Tamir takımı : 4 rulman, 1 kaplin 1 pul, 4 kanat, 4 o-ring	55514520	75.00
Circlip pul	13200600	0.40			
coupling Kaplin	54500210	8.50			
Bearing Rulman	15010200	19.00			
Control Lever Kontrol kolu	54500610	38.00			



To maintain the tool life and the performance of your airtool, a professionally clean, regulated and lubricated compressed air is essential.

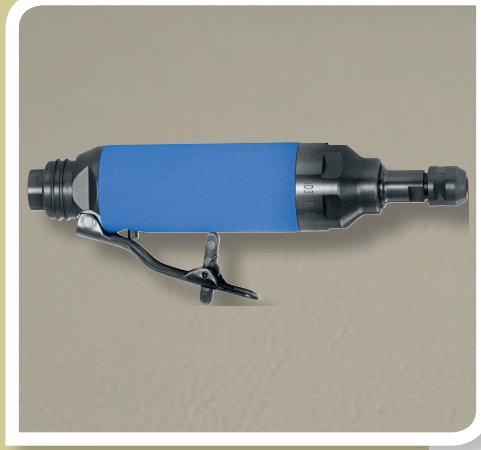
Taşlama motorunuzun ömrü ve performansı için profesyonelle regüle edilmiş basınçlı temiz ve yağlı hava şarttır.

### Air/Oil Kit - Hava/Yağ Ünitesi

Description Tanımı	CODE KOD	EURO
Compressed air filter regulator lubricator Basınçlı hava hazırlama regülatör yağlayıcı ünite	FRC1/4DB7MINI	90.00



## HIGH SPEED AIR MOTOR DIE GRINDER 37.000 RPM YÜKSEK DEVİR HAVALI KALIPÇI TAŞLAMA 37.000 Devir/dak.



CODE KOD	Speed rpm Devir / Dak.	Collet Pens	Optional collet* Opsiyonel pens	Ideal for monting burs dia İdeal takılabilecek çapak freze çap aralığı	EURO
SD37LR	37.000	Ø6mm	Ø3-4mm	Ø6-8mm	315.00

\* Optional collet is not provided with the grinder and need to be ordered separately.  
\* Opsiyonel pens taşlama motoru ile verilmez ayrıca sipariş edilmelidir.

### Spare parts / Yedek parçalar

Description Tanımı	CODE KOD	EURO	Description Tanımı	CODE KOD	EURO
Motor	RMSD37	160.00	Rotor key Rotor kaması	30110100	5.00
Collet / Pens Ø3mm	13312610	16.00	Vanes 3 pcs kanat 3 ad.	26610310	3.50
Collet / Pens Ø4mm	13300200	16.00	Rear Rotor Spacer Rotor arka halkası	24400610	7.50
Collet / Pens Ø5mm	133DA305	16.00	Rear Bearing housing Arka rulman yatağı	15100710	18.00
Collet / Pens Ø6mm	13312210	16.00	Wave washer Pul	27700800	4.00
Spanner (Chuck) 7/16" Anahtar (malafa)	25546200	6.00	Bearing Rulman	15009800	10.50
Spanner (Cap nut) 9/16" Anahtar (Pens somunu)	25561110	8.00	Ergo Sleeve Ergonomik boru	30616420	28.00
Hose set hortum takımı	17711420	38.00	Safety level Emniyet kolu	14065020	38.00
Slide lever itmeli Mandal	14071920	38.00	Level pin Kol pimi	14014100	0.25
Cap nut pens somunu	12246310	18.00	Throttle spring hava yayı	27710710	4.50
Chuck Pens malafası	13110310	66.00	Hose connector Hortum adaptörü	16611520	29.00
Chuck locater malafa yatağı	52510610	13.50	Overhose clip hortum Klipsi	27710410	4.50
Front bearing ön rulman	15060500	13.00	Service Kit : 2 bearings, 3 vanes, 1 pin, 2 o-rings Tamir takımı : 2 rulman, 3 kanat, 1 pim, 2 o-ring	55514120	32.00
Bearing housing Rulman yatağı	15185510	12.00			
Rotor Spacer Rotor ara halka	23309210	4.50			

To maintain the tool life and the performance of your airtool, a professionally clean, regulated and lubricated compressed air is essential.

Taşlama motorunuzun ömrü ve performansı için profesyonelce regüle edilmiş basınçlı temiz ve yağlı hava şarttır.



### Air/Oil Kit - Hava/Yağ Ünitesi

Description Tanımı	CODE KOD	EURO
Compressed air filter regulator lubricator Basınçlı hava hazırlama regülatör yağlayıcı ünite	FRC1/4DB7MINI	90.00

## HIGH SPEED AIR MOTOR DIE GRINDER 25.000-16.000 RPM YÜKSEK DEVİR HAVALI KALIPÇI TAŞLAMA 25.000-16.000 Devir/dak.

CODE KOD	Speed rpm Devir / Dak.	Collet Pens	Optional collet* Opsiyonel pens	Ideal for monting burs dia İdeal takılabilecek çapak freze çap aralığı	EURO
SM25LR-CA	25.000	Ø6mm	Ø3-4-8-10mm	Ø10-12mm	420.00
SM16LR-CA	16.000	Ø6mm	Ø3-4-8-10mm	Ø16-20mm	420.00

\* Optional collet is not provided with the grinder and need to be ordered separately.  
\* Opsiyonel pens taşlama motoru ile verilmez ayrıca sipariş edilmelidir.

### Spare parts / Yedek parçalar

Description Tanımı	CODE KOD	EURO	Description Tanımı	CODE KOD	EURO
Motor SM25	RMSM25	350.00	vanes 4 pcs kanat 4 adet	26610510	14.50
Motor SM16	RMSM16	350.00	Rear Bearing housing Arka rulman yatağı	15100810	42.00
Collet / Pens Ø3mm	13312310	16.00	Motor lock screw Motor kilit vidası	45001410	11.00
Collet / Pens Ø4mm	133DA204	16.00	Throttle housing klape kapağı	45000710	40.00
Collet / Pens Ø6mm	13312110	16.00	Governor for SM16LR Burç SM16LR için	45003020	52.00
Collet / Pens Ø8mm	13312410	16.00	Moulded sleeve muhafaza kılıfı	45000610	24.00
Collet / Pens Ø10mm	13310610	16.00	Valve stem subap ucu	27900310	28.00
Collet nut pens somunu	12260810	18.00	Throttle seat klape yatağı	45001510	2.50
chuck Pens malafa	13101710	150.00	Throttle shim klape pulu	22211310	4.50
Spanner (collet nut) 17mm Anahtar (pens somunu)	25561210	9.50	Throttle valve klape subapı	45000910	5.50
Spanner for chuck 14mm Anahtar malafa için	25500510	6.50	Throttle valve spring Subap yayı	27701610	6.00
Complete hose assembly komple hortum grubu	17705120	23.00	Throttle plug klape kapağı	45001110	19.50
Inlet hose connector hortum rakoru	45001610	51.00	O-ring	18824700	0.25
Toggle lever Basmalı Mandal	14065120	45.00	o ring	18801100	0.25
Front bearing ön rulman	15068900	12.00	Exhaust spring Egzoz yayı	27701810	6.00
Front bearing housing ön rulman muhafazası	15110310	21.50	Exhaust plunger Egzoz kovani	45001710	10.50
Front rotor spacer Rotor ön ara halkası	24410210	5.50	Service Kit : 2 bearings, 4 vanes, 3 o-rings, 1 pin, 1 sleeve	55519320	88.00
Bearing Rulman	15009800	11.00	Tamir takımı : 2 rulman, 4 kanat, 3 o-ring, 1 pim, 1 kılıf		
Rear rotor spacer Rotor arka halkası	24400710	7.00			



To maintain the tool life and the performance of your airtool, a professionally clean, regulated and lubricated compressed air is essential.

Taşlama motorunuzun ömrü ve performansı için profesyonelce regüle edilmiş basınçlı temiz ve yağlı hava şarttır.

### Air/Oil Kit - Hava/Yağ Ünitesi

Description Tanımı	CODE KOD	EURO
Compressed air filter regulator lubricator Basınçlı hava hazırlama regülatör yağlayıcı ünite	FRC1/4DB7MINI	90.00



## PREMIUM FLAP WHEELS AŞINDIRICI SAPLI FIRFİR ZIMPARALAR



CODE KOD	Dia/Çap mm	Width Kalınlık	Shank Sap Ø mm	EURO
S3010	30	10	3	1.35
S3015	30	15	3	1.40
S3010L	30	10	6	1.35
S3015L	30	15	6	1.40
S4010	40	10	6	1.40
S4015	40	15	6	1.45
S4020	40	20	6	1.50
S4025	40	25	6	1.60
S4030	40	30	6	1.65
S5010	50	10	6	1.55
S5015	50	15	6	1.65
S5020	50	20	6	1.75
S5025	50	25	6	1.80
S5030	50	30	6	1.90
S5040	50	40	6	2.20
S6010	60	10	6	1.80
S6015	60	15	6	1.85
S6020	60	20	6	1.90
S6025	60	25	6	2.00
S6030	60	30	6	2.15
S6040	60	40	6	2.40
S6050	60	50	6	2.75
S8015	80	15	6	2.10
S8020	80	20	6	2.50
S8025	80	25	6	2.75
S8030	80	30	6	2.75
S8040	80	40	6	2.75
S8050	80	50	6	3.50

Grit selections - Kum seçenekleri : 40-60-80-100-120-150-180-240-320 Grit/kum

Packed in (Minimum order) 10 pcs / Ambalaj miktarı (Minimum sipariş) 10 Ad.

Prices are for 1 pce / Fiyatlar 1 adet içindir.

Ordering example: S6010-080 (for Ø60x10mm with 80grit)

Sipariş örneği : S6010-080 (Ø60x10mm 80kum için)

## MINI FLAP WHEELS MİNİ FIRFİR ZIMPARA

CODE KOD	Dia/Çap mm	Width Kalınlık	Shank Sap Ø mm	EURO
SM1010	10	10	3	1.75
SM1515	15	15	3	2.00
SM2010	20	10	6	3.25
SM2015	20	15	6	3.40
SM2020	20	20	6	3.45
SM2505	25	5	6	3.25
SM2510	25	10	6	3.25
SM2515	25	15	6	3.50
SM2520	25	20	6	3.65
SM2525	25	25	6	3.80
SM3005	30	5	3	2.00
SM3005L	30	5	6	2.00



Grit selections / Kum seçenekleri : 80-120-180 Grit/kum  
Packed in (Minimum order) 10 pcs / Ambalaj miktarı (Minimum sipariş) 10 Ad.  
Prices are for 1 pce / Fiyatlar 1 adet içindir.  
Ordering example: GSM3005-080 (for Ø30x5mm with 80grit)  
Sipariş örneği : GSM3005-080 (Ø30x5mm 80kum için)

## ABRASIVE RUBBER BLOCK AŞINDIRICI LASTİK SİLGİ

Grit / Kum - Colour / Renk	Abrasive Aşındırıcı	CODE KOD	EURO
36 Grit - Pink 36 Kum - Pembe	Extra Coarse Ekstra Kaba	GB036GFLEX	6.10
60 Grit - Blue 60 Kum - Mavi	Coarse Kaba	GB060GFLEX	6.10
120 Grit - Gray 120 Kum - Gri	Medium Orta	GB120GFLEX	6.10
240 Grit - Brown 240 Kum - Kahverengi	Fine İnce	GB240GFLEX	6.10



Sizes / Boyutlar 80x50x20mm.  
Prices are for 1 pce / Fiyatlar 1 adet içindir.  
Packed in Box of 18 pcs / Ambalaj Miktarı 18 Adet





**TAPS**  
**KILAVUZLAR**

## MACHINE TAPS STRAIGHT FLUTE HSS-E MAKİNA KILAVUZLARI DÜZ KANALLI HSS-E

### DIN371 METRIC COARSE THREAD / METRİK NORMAL DİŞ

Metric Metrik	Pitch Hatve	Code Kod	Type Tip	EURO
M 1 *	0.25	371010	DIN371-C	29.00
M 1.2 *	0.25	371012	DIN371-C	29.00
M 1.4	0.30	371014	DIN371-C	25.00
M 1.6	0.35	371016	DIN371-C	24.00
M 1.7	0.35	371017	DIN371-C	24.00
M 1.8	0.35	371018	DIN371-C	24.00
M 2	0.40	371020	DIN371-C	8.30
M 2.2	0.45	371022	DIN371-C	10.00
M 2.3	0.40	371023	DIN371-C	10.00
M 2.5	0.45	371025	DIN371-C	8.10
M 2.6	0.45	371026	DIN371-C	9.20
M 3	0.5	371030	DIN371-B	4.60
M 3.5	0.6	371035	DIN371-C	6.70
M 4	0.7	371040	DIN371-B	4.70
M 4.5	0.75	371045	DIN371-B	11.70
M 5	0.8	371050	DIN371-B	5.00
M 6	1	371060	DIN371-B	5.00
M 7	1	371070	DIN371-C	8.10
M 8	1.25	371080	DIN371-B	6.20
M 9	1.25	371090	DIN371-B	12.20
M 10	1.5	371100	DIN371-B	7.80

\* fluteless / \* kanalsızdır

Bottoming DIN371-C, Spiral Point DIN371-B / Düz Uçlu DIN371-C, Eğik Ağız Bileme DIN371-B

### DIN376 METRIC COARSE THREAD / METRİK NORMAL DİŞ

Metric Metrik	Pitch Hatve	Code Kod	Type Tip	EURO
M 12	1.75	376120	DIN376-B	10.10
M 14	2	376140	DIN376-C	15.20
M 16	2	376160	DIN376-B	15.60
M 18	2.5	376180	DIN376-C	26.00
M 20	2.5	376200	DIN376-C	26.00
M 22	2.5	376220	DIN376-C	36.00
M 24	3	376240	DIN376-C	36.00
M 27	3	376270	DIN376-C	47.00
M 30	3.5	376300	DIN376-C	59.00
M 33	3.5	376330	DIN376-C	80.00
M 36	4	376360	DIN376-C	99.00
M 39	4	376390	DIN376-C	152.00
M 42	4.5	376420	DIN376-C	156.00
M 45	4.5	376450	DIN376-C	192.00
M 48	5	376480	DIN376-C	215.00
M 52	5	376520	DIN376-C	270.00



## MACHINE TAPS STRAIGHT FLUTE HSS-E + TIN

### MAKİNA KILAVUZLARI DÜZ KANALLI HSS-E + TIN

#### DIN371 METRIC COARSE THREAD TIN / METRİK NORMAL DİŞ TIN

Metric Metrik	Pitch Hatve	Code Kod	Type Tip	EURO
M 2	0.4	371020T	DIN371-B	12.00
M 2.5	0.45	371025T	DIN371-B	12.00
M 3	0.5	371030T	DIN371-B	6.50
M 3.5	0.6	371035T	DIN371-B	10.60
M 4	0.7	371040T	DIN371-B	6.60
M 5	0.8	371050T	DIN371-B	7.10
M 6	1	371060T	DIN371-B	7.10
M 8	1.25	371080T	DIN371-B	9.20
M 10	1.5	371100T	DIN371-B	11.20

Bottoming DIN371-C, Spiral Point DIN371-B / Düz Uçlu DIN371-C, Eğik Ağız Bileme DIN371-B



#### DIN376 METRIC COARSE THREAD TIN / METRİK NORMAL DİŞ TIN

Metric Metrik	Pitch Hatve	Code Kod	Type Tip	EURO
M 12	1.75	376120T	DIN376-B	14.10
M 14	2	376140T	DIN376-C	20.00
M 16	2	376160T	DIN376-B	22.00
M 18	2.5	376180T	DIN376-C	33.50
M 20	2.5	376200T	DIN376-C	33.50
M 22	2.5	376220T	DIN376-C	45.00
M 24	3	376240T	DIN376-C	46.00
M 27	3	376270T	DIN376-C	60.00
M 30	3.5	376300T	DIN376-C	73.00
M 33	3.5	376330T	DIN376-C	98.00
M 36	4	376360T	DIN376-C	119.00



## MACHINE TAPS SPIRAL FLUTE HSS-E MAKİNA KILAVUZLARI HELİS KANALLI HSS-E

### DIN371 METRIC COARSE PITCH / METRİK NORMAL DİŞ

Metric / Metrik	Pitch / Hatve	Code / Kod	Type / Tip	EURO
M 2	0.4	371020H	DIN371-C	9.80
M 2.5	0.45	371025H	DIN371-C	9.70
M 3	0.5	371030H	DIN371-C	4.65
M 3.5	0.6	371035H	DIN371-C	8.70
M 4	0.7	371040H	DIN371-C	4.75
M 5	0.8	371050H	DIN371-C	5.10
M 6	1	371060H	DIN371-C	5.10
M 7	1	371070H	DIN371-C	10.50
M 8	1.25	371080H	DIN371-C	6.30
M 10	1.5	371100H	DIN371-C	7.90

### DIN376 METRIC COARSE PITCH / METRİK NORMAL DİŞ

Metric / Metrik	Pitch / Hatve	Code / Kod	Type / Tip	EURO
M 12	1.75	376120H	DIN376-C	10.20
M 14	2	376140H	DIN376-C	19.00
M 16	2	376160H	DIN376-C	17.50
M 18	2.5	376180H	DIN376-C	31.50
M 20	2.5	376200H	DIN376-C	31.50
M 22	2.5	376220H	DIN376-C	43.00
M 24	3	376240H	DIN376-C	41.00
M 27	3	376270H	DIN376-C	52.00
M 30	3.5	376300H	DIN376-C	66.00
M 33	3.5	376330H	DIN376-C	100.00
M 36	4	376360H	DIN376-C	100.00
M 39	4	376390H	DIN376-C	162.00
M 42	4.5	376420H	DIN376-C	182.00

### DIN371 METRIC COARSE THREAD **TIN** / METRİK NORMAL DİŞ **TIN**

Metric / Metrik	Pitch / Hatve	Code / Kod	Type / Tip	EURO
M 2	0.4	371020HT	DIN371-C	12.70
M 2.5	0.45	371025HT	DIN371-C	12.60
M 3	0.5	371030HT	DIN371-C	6.55
M 3.5	0.6	371035HT	DIN371-C	12.00
M 4	0.7	371040HT	DIN371-C	6.65
M 5	0.8	371050HT	DIN371-C	7.20
M 6	1	371060HT	DIN371-C	7.20
M 8	1.25	371080HT	DIN371-C	9.30
M 10	1.5	371100HT	DIN371-C	11.30

### DIN376 METRIC COARSE THREAD **TIN** / METRİK NORMAL DİŞ **TIN**

Metric / Metrik	Pitch / Hatve	Code / Kod	Type / Tip	EURO
M 12	1.75	376120HT	DIN376-C	14.00
M 14	2	376140HT	DIN376-C	24.00
M 16	2	376160HT	DIN376-C	24.00
M 18	2.5	376180HT	DIN376-C	39.00
M 20	2.5	376200HT	DIN376-C	39.00
M 22	2.5	376220HT	DIN376-C	52.00
M 24	3	376240HT	DIN376-C	51.00
M 27	3	376270HT	DIN376-C	65.00
M 30	3.5	376300HT	DIN376-C	80.00
M 33	3.5	376330HT	DIN376-C	118.00
M 36	4	376360HT	DIN376-C	120.00

**MACHINE TAPS FOR HARDER STEELS < HRC50 AND STAINLESS STEEL STRAIGHT FLUTE**  
**MAKİNA KILAVUZLARI SERT MALZEME < HRC50 ve PASLANMAZ İÇİN DÜZ KANALLI**

**DIN371-376 METRIC COARSE THREAD / METRİK NORMAL DİŞ**  
**STRAIGHT FLUTE / DÜZ KANALLI HSSE - EP + TiCN**

Metric Metrik	Pitch Hatve	Code Kod	Type Tip	EURO
M 3	0.5	371030EP	DIN371-B	12.00
M 4	0.7	371040EP	DIN371-B	12.50
M 5	0.8	371050EP	DIN371-B	13.50
M 6	1	371060EP	DIN371-B	13.50
M 8	1.25	371080EP	DIN371-B	17.00
M 10	1.5	371100EP	DIN371-B	21.00
M 12	1.75	376120EP	DIN376-B	25.00
M 14	2	376140EP	DIN376-B	36.00
M 16	2	376160EP	DIN376-B	37.50
M 20	2.5	376200EP	DIN376-B	54.00
M 24	3	376240EP	DIN376-B	72.00



**MACHINE TAPS FOR HARDER STEELS < HRC50 AND STAINLESS STEEL SPIRAL FLUTE**  
**MAKİNA KILAVUZLARI SERT MALZEME < HRC50 ve PASLANMAZ İÇİN HELİS KANALLI**

**DIN371-376 METRIC COARSE THREAD / METRİK NORMAL DİŞ**  
**SPIRAL FLUTE / HELİS KANALLI HSSE - EP + TiCN**

Metric Metrik	Pitch Hatve	Code Kod	Type Tip	EURO
M 3	0.5	371030HEP	DIN371-C	12.50
M 4	0.7	371040HEP	DIN371-C	13.00
M 5	0.8	371050HEP	DIN371-C	14.00
M 6	1	371060HEP	DIN371-C	14.00
M 8	1.25	371080HEP	DIN371-C	18.00
M 10	1.5	371100HEP	DIN371-C	22.50
M 12	1.75	376120HEP	DIN376-C	26.50
M 14	2	376140HEP	DIN376-C	37.50
M 16	2	376160HEP	DIN376-C	39.00
M 20	2,5	376200HEP	DIN376-C	56.00
M 24	3	376240HEP	DIN376-C	74.00



**MACHINE TAPS METRIC FINE THREAD STRAIGHT FLUTE HSS-E**  
**MAKİNA KILAVUZLARI METRİK İNCE DİŞ DÜZ KANALLI HSS-E**

**DIN371-DIN374 METRIC FINE / METRİK İNCE**

Metric Fine Metrik ince	Code Kod	Type Tip	EURO
M 2x0.35	37102003	DIN371-C	17.50
M 2.5x0.35	37102503	DIN371-C	15.50
M 3x0.35	37103003	DIN371-C	11.50
M 4x0,5	37104005	DIN371-C	11.00
M 4,5x0,5	37104505	DIN371-C	18.00
M 5x0,5	37105005	DIN371-C	11.50
M 6x0,5	37106005	DIN371-C	11.50
M 6x0,75	37106007	DIN371-C	10.60
M 7x0,75	37107007	DIN371-C	13.50
M 8x0.5	37108005	DIN371-C	15.50
M 8x0,75	37408007	DIN374-C	11.80
M 8x1	37108010	DIN371-C	10.60
M 9x1	37409010	DIN374-C	15.50
M 10x0,75	37410007	DIN371-C	16.50
M 10x1	37110010	DIN371-C	10.80
M 10x1,25	37410012	DIN374-C	14.20
M 11x1	37411010	DIN374-C	19.00
M 12x1	37412010	DIN374-C	13.10
M 12x1,25	37412012	DIN374-C	14.50
M 12x1,5	37412015	DIN374-C	12.60
M 13x1	37413010	DIN374-C	20.50
M 14x1	37414010	DIN374-C	17.00
M 14x1,25	37414012	DIN374-C	16.80
M 14x1,5	37414015	DIN374-C	16.50
M 15x1	37415010	DIN374-C	23.00
M 15x1,5	37415015	DIN374-C	23.00
M 16x1	37416010	DIN374-C	20.00
M 16x1,5	37416015	DIN374-C	18.00
M 18x1	37418010	DIN374-C	27.00
M 18x1,5	37418015	DIN374-C	21.50
M 18x2	37418020	DIN374-C	26.00
M 20x1	37420010	DIN374-C	31.00
M 20x1,5	37420015	DIN374-C	26.50
M 20x2	37420020	DIN374-C	38.00
M 22x1	37422010	DIN374-C	44.00
M 22x1,5	37422015	DIN374-C	29.00
M 22x2	37422020	DIN374-C	41.00
M 24x1	37424010	DIN374-C	44.00
M 24x1,5	37424015	DIN374-C	32.50
M 24x2	37424020	DIN374-C	37.00

## MACHINE TAPS METRIC FINE THREAD STRAIGHT FLUTE HSS-E MAKİNA KILAVUZLARI METRİK İNCE DİŞ DÜZ KANALLI HSS-E

### DIN374-DIN2181 METRIC FINE / METRİK İNCE

Metric Fine Metrik ince	Code Kod	Type Tip	EURO
M 25x1	218125010	DIN2181-C	42.00
M 25x1,5	37425015	DIN374-C	62.00
M 26x1,5	37426015	DIN374-C	43.00
M 27x1,5	37427015	DIN374-C	52.00
M 27x2	37427020	DIN374-C	53.00
M 28x1,5	37428015	DIN374-C	53.00
M 28x2	218128020	DIN2181-C	52.00
M 30x1	218130010	DIN2181-C	55.00
M 30x1,5	37430015	DIN374-C	54.00
M 30x2	37430020	DIN374-C	60.00
M 32x1,5	37432015	DIN374-C	66.00
M 33x1,5	37433015	DIN374-C	76.00
M 33x2	37433020	DIN374-C	77.00
M 34x1,5	37434015	DIN374-C	92.00
M 35x1,5	37435015	DIN374-C	93.00
M 36x1,5	37436015	DIN374-C	82.00
M 36x2	37436020	DIN374-C	93.00
M 36x3	37436030	DIN374-C	110.00
M 38x1,5	37438015	DIN374-C	88.00
M 39x2	37439020	DIN374-C	120.00
M 39x3	37439030	DIN374-C	128.00
M 40x1,5	37440015	DIN374-C	98.00
M 40x2	37440020	DIN374-C	116.00
M 40x3	37440030	DIN374-C	130.00
M 42x1,5	37442015	DIN374-C	110.00
M 42x2	37442020	DIN374-C	130.00
M 42x3	37442030	DIN374-C	157.00
M 45x1,5	37445015	DIN374-C	120.00
M 45x2	37445020	DIN374-C	156.00
M 45x3	37445030	DIN374-C	173.00
M 48x1,5	37448015	DIN374-C	147.00
M 48x2	37448020	DIN374-C	190.00
M 48x3	37448030	DIN374-C	205.00
M 50x1,5	37450015	DIN374-C	156.00
M 50x2	37450020	DIN374-C	202.00
M 50x3	37450030	DIN374-C	227.00
M 52x1,5	37452015	DIN374-C	180.00
M 52x2	37452020	DIN374-C	212.00
M 52x3	37452030	DIN374-C	238.00



## MACHINE TAPS METRIC FINE THREAD SPIRAL FLUTE HSS-E MAKİNA KILAVUZLARI METRİK İNCE DİŞ HELİS KANALLI HSS-E

DIN 371



DIN 374



### DIN371-DIN374 METRIC FINE / METRİK İNCE

Metric Fine Metrik ince	Code Kod	Type Tip	EURO
M 4x0,5	37104005H	DIN371-C	12.70
M 5x0,5	37105005H	DIN371-C	13.00
M 6x0,5	37106005H	DIN371-C	13.00
M 6x0,75	37106007H	DIN371-C	12.50
M 8x0,75	37408007H	DIN374-C	13.50
M 8x1	37108010H	DIN371-C	12.50
M 10x1	37110010H	DIN371-C	13.50
M 10x1,25	37410012H	DIN374-C	18.00
M 12x1	37412010H	DIN374-C	16.00
M 12x1,25	37412012H	DIN374-C	21.00
M 12x1,5	37412015H	DIN374-C	15.00
M 14x1	37414010H	DIN374-C	21.00
M 14x1,25	37414012H	DIN374-C	22.00
M 14x1,5	37414015H	DIN374-C	19.50
M 16x1	37416010H	DIN374-C	25.50
M 16x1,5	37416015H	DIN374-C	23.50
M 18x1,5	37418015H	DIN374-C	27.00
M 18x2.0	37418020H	DIN374-C	31.00
M 20x1,5	37420015H	DIN374-C	31.00
M 20x2	37420020H	DIN374-C	45.00
M 22x1,5	37422015H	DIN374-C	37.00
M 22x2	37422020H	DIN374-C	48.00
M 24x1,5	37424015H	DIN374-C	41.00
M 24x2	37424020H	DIN374-C	48.00
M 25x1,5	37425015H	DIN374-C	70.00
M 26x1,5	37426015H	DIN374-C	58.00
M 27x1,5	37427015H	DIN374-C	62.00
M 27x2	37427020H	DIN374-C	69.00
M 28x1,5	37428015H	DIN374-C	68.00
M 30x1,5	37430015H	DIN374-C	67.00
M 30x2	37430020H	DIN374-C	70.00
M 32x1,5	37432015H	DIN374-C	80.00
M 33x1,5	37433015H	DIN374-C	97.00
M 33x2	37433020H	DIN374-C	100.00
M 34x1,5	37434015H	DIN374-C	100.00
M 35x1,5	37435015H	DIN374-C	103.00
M 36x1,5	37436015H	DIN374-C	100.00
M 36x2	37436020H	DIN374-C	131.00
M 36x3	37436030H	DIN374-C	122.00
M 38x1,5	37438015H	DIN374-C	105.00
M 40x1,5	37440015H	DIN374-C	128.00
M 42x1,5	37442015H	DIN374-C	135.00
M 42x2	37442020H	DIN374-C	158.00
M 42x3	37442030H	DIN374-C	164.00
M 45x1,5	37445015H	DIN374-C	152.00
M 48X1,5	37448020H	DIN374-C	174.00
M 48X2	37448020H	DIN374-C	210.00
M 48X3	37448030H	DIN374-C	215.00
M 50X1,5	37450015H	DIN374-C	198.00
M 52X1,5	37452015H	DIN374-C	229.00

**MACHINE TAPS METRIC FINE THREAD STRAIGHT FLUTE HSS-E + TIN**  
**MAKİNA KILAVUZLARI METRİK İNCE DİŞ DÜZ KANALLI HSS-E + TIN**

**DIN371-DIN374 METRIC FINE TIN / METRİK İNCE TIN**

Metric Fine Metrik ince	Code Kod	Type Tip	EURO
M 4x0.5	37104005T	DIN371-C	13.50
M 6x0.5	37106005T	DIN371-C	14.00
M 6x0,75	37106007T	DIN371-C	13.10
M 8x0,75	37408007T	DIN374-C	14.80
M 8x1	37108010T	DIN371-C	13.60
M 10x1	37110010T	DIN371-C	14.80
M 10x1,25	37410012T	DIN374-C	18.20
M 12x1	37412010T	DIN374-C	18.10
M 12x1,25	37412012T	DIN374-C	19.50
M 12x1,5	37412015T	DIN374-C	17.60
M 14x1	37414010T	DIN374-C	22.50
M 14x1,25	37414012T	DIN374-C	22.30
M 14x1,5	37414015T	DIN374-C	22.00
M 16x1,5	37416015T	DIN374-C	25.00
M 18x1,5	37418015T	DIN374-C	29.00
M 20x1,5	37420015T	DIN374-C	34.50
M 22x1,5	37422015T	DIN374-C	37.50
M 24x1,5	37424015T	DIN374-C	41.00

DIN 371



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**MACHINE TAPS METRIC FINE THREAD SPIRAL FLUTE HSS-E + TIN**  
**MAKİNA KILAVUZLARI METRİK İNCE DİŞ HELİS KANALLI HSS-E + TIN**

**DIN371-DIN374 METRIC FINE TIN / METRİK İNCE TIN**

Metric Fine Metrik ince	Code Kod	Type Tip	EURO
M 4x0.5	37104005HT	DIN371-C	15.20
M 6x0.5	37106005HT	DIN371-C	15.50
M 6x0,75	37106007HT	DIN371-C	15.00
M 8x0,75	37408007HT	DIN374-C	16.50
M 8x1	37108010HT	DIN371-C	15.50
M 10x1	37110010HT	DIN371-C	17.50
M 10x1,25	37410012HT	DIN374-C	22.00
M 12x1	37412010HT	DIN374-C	21.00
M 12x1,25	37412012HT	DIN374-C	26.00
M 12x1,5	37412015HT	DIN374-C	20.00
M 14x1	37414010HT	DIN374-C	26.50
M 14x1,25	37414012HT	DIN374-C	27.50
M 14x1,5	37414015HT	DIN374-C	25.00
M 16x1,5	37416015HT	DIN374-C	30.50
M 18x1,5	37418015HT	DIN374-C	34.50
M 20x1,5	37420015HT	DIN374-C	39.00
M 22x1,5	37422015HT	DIN374-C	45.50
M 24x1,5	37424015HT	DIN374-C	49.50

DIN 371



DIN 374



## HAND TAPS METRIC COARSE THREAD SETS OF 3 PCS DIN352 3 LÜ TAKIM EL KILAVUZU METRİK NORMAL DIŞ DIN352



### DIN 352 HSS

Metric Metrik	Pitch Hatve	Code Kod	Type Tip	EURO
M 3	0.5	35203	DIN352 set of 3 pcs Nr. 1-2-3 DIN352-3'lü takım Nr. 1-2-3	12.00
M 4	0.7	35204	DIN352 set of 3 pcs Nr. 1-2-3 DIN352-3'lü takım Nr. 1-2-3	12.00
M 5	0.8	35205	DIN352 set of 3 pcs Nr. 1-2-3 DIN352-3'lü takım Nr. 1-2-3	13.00
M 6	1	35206	DIN352 set of 3 pcs Nr. 1-2-3 DIN352-3'lü takım Nr. 1-2-3	13.50
M 8	1.25	35208	DIN352 set of 3 pcs Nr. 1-2-3 DIN352-3'lü takım Nr. 1-2-3	15.00
M 10	1.5	35210	DIN352 set of 3 pcs Nr. 1-2-3 DIN352-3'lü takım Nr. 1-2-3	19.00
M 12	1.75	35212	DIN352 set of 3 pcs Nr. 1-2-3 DIN352-3'lü takım Nr. 1-2-3	25.00
M 14	2	35214	DIN352 set of 3 pcs Nr. 1-2-3 DIN352-3'lü takım Nr. 1-2-3	32.00
M 16	2	35216	DIN352 set of 3 pcs Nr. 1-2-3 DIN352-3'lü takım Nr. 1-2-3	40.00
M 18	2.5	35218	DIN352 set of 3 pcs Nr. 1-2-3 DIN352-3'lü takım Nr. 1-2-3	63.00
M 20	2.5	35220	DIN352 set of 3 pcs Nr. 1-2-3 DIN352-3'lü takım Nr. 1-2-3	63.00
M 22	2.5	35222	DIN352 set of 3 pcs Nr. 1-2-3 DIN352-3'lü takım Nr. 1-2-3	75.00
M 24	3	35224	DIN352 set of 3 pcs Nr. 1-2-3 DIN352-3'lü takım Nr. 1-2-3	80.00
M 27	3	35227	DIN352 set of 3 pcs Nr. 1-2-3 DIN352-3'lü takım Nr. 1-2-3	120.00
M 30	3.5	35230	DIN352 set of 3 pcs Nr. 1-2-3 DIN352-3'lü takım Nr. 1-2-3	146.00
M 33	3.5	35233	DIN352 set of 3 pcs Nr. 1-2-3 DIN352-3'lü takım Nr. 1-2-3	180.00
M 36	4	35236	DIN352 set of 3 pcs Nr. 1-2-3 DIN352-3'lü takım Nr. 1-2-3	215.00



## LEFT HAND TAPS METRIC COARSE THREAD HSS-E SOL DİŞ KILAVUZLAR METRİK NORMAL HSS-E

### DIN371 - 376 LEFT HAND M. COARSE / SOL DİŞ M. NORMAL

Metric Metrik	Pitch Hatve	Code Kod	Type Tip	EURO
M 3	0.5	37103L	DIN371-C	11.00
M 4	0.7	37104L	DIN371-C	11.00
M 5	0.8	37105L	DIN371-C	12.00
M 6	1	37106L	DIN371-C	12.00
M 8	1.25	37108L	DIN371-C	13.00
M 10	1.5	37110L	DIN371-C	16.00
M 12	1.75	37612L	DIN376-C	20.00
M 14	2	37614L	DIN376-C	25.00
M 16	2	37616L	DIN376-C	29.00
M 20	2.5	37620L	DIN376-C	42.00
M 24	3	37624L	DIN376-C	57.00

DIN 371



DIN 376



## LEFT HAND TAPS METRIC FINE THREAD HSS-E SOL DİŞ KILAVUZLAR METRİK İNCE HSS-E

### DIN374 LEFT HAND METRIC FINE / SOL DİŞ METRİK İNCE

Metric Fine Metrik ince	Code Kod	Type Tip	EURO
M 6 x 0.75	3740607L	DIN374-C	18.00
M 8 x 0.75	3740807L	DIN374-C	20.00
M 8 x 1	3740810L	DIN374-C	14.00
M 10 x 1	3741010L	DIN374-C	15.00
M 12 x 1	3741210L	DIN374-C	17.00
M 12 x 1.5	3741215L	DIN374-C	22.00
M 14 x 1.5	3741415L	DIN374-C	28.00
M 16 x 1.5	3741615L	DIN374-C	30.00
M 20 x 1.5	3742015L	DIN374-C	46.00
M 24 x 1.5	3742415L	DIN374-C	55.00



Other sizes available on request / Diğer ölçüler için lütfen arayınız

**COLD FORMING (FLUTELESS) TAPS METRIC COARSE THREAD HSS-E + TIN**  
**OVALAMA (KANALSIZ) KILAVUZLARI METRİK NORMAL DIŞ HSS-E + TIN**

DIN 371



DIN 376



DIN371-376 COLD FORMING M. COARSE TIN / OVALAMA M. NORMAL TIN

Metric Metrik	Pitch Hatve	Code Kod	Type Tip	EURO
M 2	0.4	243020	DIN371	31.00
M 2.5	0.45	243025	DIN371	31.00
M 3	0.5	245030	DIN371	17.00
M 4	0.7	245040	DIN371	17.50
M 5	0.8	245050	DIN371	18.00
M 6	1	245060	DIN371	21.00
M 8	1.25	245080	DIN371	24.00
M 10	1.5	245100	DIN371	31.00
M 12	1.75	345120	DIN376	66.00
M 14	2	345140	DIN376	103.00
M 16	2	345160	DIN376	110.00
M 18	2.5	345180	DIN376	170.00
M 20	2.5	345200	DIN376	175.00
M 22	2.5	345220	DIN376	175.00
M 24	3	345240	DIN376	175.00

**COLD FORMING (FLUTELESS) TAPS METRIC FINE THREAD HSS-E + TIN**  
**OVALAMA (KANALSIZ) KILAVUZLARI METRİK İNCE DIŞ HSS-E + TIN**

DIN 374



DIN374 COLD FORMING METRIC FINE TIN / OVALAMA METRİK İNCE TIN

Metric Fine Metrik ince	Code Kod	Type Tip	EURO
M 6X0.75	34506007	DIN374-C	70.00
M 8X075	34508007	DIN374-C	78.00
M 8X1	34508010	DIN374-C	60.00
M 10X1	34510010	DIN374-C	61.00
M 10X1.25	34510012	DIN374-C	80.00
M 12X1	34512010	DIN374-C	80.00
M 12X1.25	34512012	DIN374-C	82.00
M 12X1.5	34512015	DIN374-C	80.00
M 14X1.5	34514015	DIN374-C	97.00
M 16X1.5	34516015	DIN374-C	110.00
M 18X1.5	34518015	DIN374-C	134.00
M 20X1.5	34520015	DIN374-C	153.00

## INTERRUPTED TEETH METRIC COARSE THREAD TAPS HSS-E ATLAMALI DİŞ KILAVUZLAR METRİK NORMAL DİŞ HSS-E

### DIN371-376 INTERRUPTED TEETH M. COARSE / ATLAMALI DİŞ M. NORMAL

Metric Metrik	Pitch Hatve	Code Kod	Type Tip	EURO
M 3	0.5	209030	DIN371-B	10.50
M 4	0.7	209040	DIN371-B	10.50
M 5	0.8	209050	DIN371-B	10.50
M 6	1	209060	DIN371-B	10.50
M 8	1.25	209080	DIN371-B	12.70
M 10	1.5	209100	DIN371-B	15.50
M 12	1.75	309120	DIN376-B	19.00
M 14	2	309140	DIN376-B	27.00
M 16	2	309160	DIN376-B	28.00
M 18	2.5	309180	DIN376-B	45.00
M 20	2.5	309200	DIN376-B	45.00
M 22	2.5	309220	DIN376-B	64.00
M 24	3	309240	DIN376-B	57.00

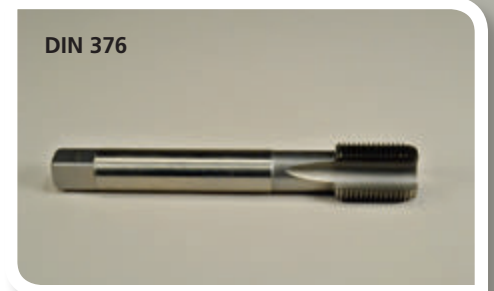
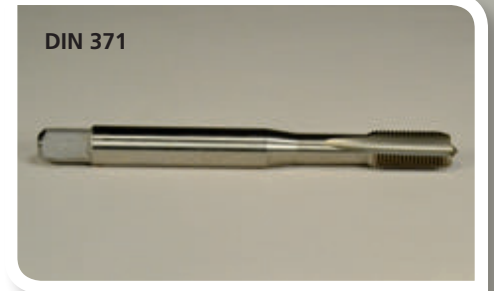
For soft materials, aluminium, brass, copper etc. / Yumuşak malzemeler için Alüminyum, Pirinç, Bakır vs...



## EG-M FOR WIRE INSERTS DIN8140/2 METRIC COARSE THREAD TAPS HSS-E EG-M HELİ-COİL KILAVUZLAR DIN8140/2 METRİK NORMAL HSS-E

### DIN371-376 EG-M FOR WIRE INSERTS / EG-M HELİ-COİL

Metric Metrik	Pitch Hatve	Code Kod	Type Tip	EURO
EG M 2.5	0.45	EGM025	DIN371-B	12.00
EG M 3	0.5	EGM030	DIN371-B	10.00
EG M 4	0.7	EGM040	DIN371-B	10.00
EG M. 5	0.8	EGM050	DIN371-B	10.50
EG M 6	1	EGM060	DIN371-B	10.50
EG M 8	1.25	EGM080	DIN371-B	12.00
EG M 10	1.5	EGM100	DIN376-B	15.00
EG M 12	1.75	EGM120	DIN376-B	18.00
EG M 14	2	EGM140	DIN376-B	24.50
EG M 16	2	EGM160	DIN376-B	26.00
EG M 18	2.5	EGM180	DIN376-B	42.00
EG M 20	2.5	EGM200	DIN376-B	40.00
EG M 22	2.5	EGM220	DIN376-B	60.00
EG M 24	3	EGM240	DIN376-B	54.00



**OVERSIZE TAPS Tol. 6G STRAIGHT FLUTE METRIC COARSE THREAD HSS-E**  
**KAPLAMA PAYLI Tol. 6G KILAVUZLAR DÜZ KANALLI METRİK NORMAL DIŞ HSS-E**

DIN 371



DIN 376



**DIN371-376 Tol. 6G OVERSIZE M.COARSE / KAPLAMA PAYLI M.NORMAL**

Metric Metrik	Pitch Hatve	Code Kod	+ Oversize + Ölçüsü	Type Tip	EURO
M 3 6G	0.5	2010306G	+ 0.016mm	DIN371-C	6.80
M 4 6G	0.7	2010406G	+ 0.019mm	DIN371-C	7.00
M 5 6G	0.8	2010506G	+ 0.020mm	DIN371-C	7.00
M 6 6G	1	2010606G	+ 0.024mm	DIN371-C	7.20
M 8 6G	1.25	2010806G	+ 0.025mm	DIN371-C	8.00
M 10 6G	1.5	2011006G	+ 0.028mm	DIN371-C	10.00
M 12 6G	1.75	3011206G	+ 0.032mm	DIN376-C	13.00
M 16 6G	2.0	3011606G	+ 0.034mm	DIN376-C	20.00

**OVERSIZE TAPS Tol. 6G SPIRAL FLUTE METRIC COARSE THREAD HSS-E**  
**KAPLAMA PAYLI Tol. 6G KILAVUZLAR HELİS KANALLI METRİK NORMAL DIŞ HSS-E**

DIN 371



DIN 376



**DIN371-376 Tol. 6G OVERSIZE M.COARSE / KAPLAMA PAYLI M.NORMAL**

Metric Metrik	Pitch Hatve	Code Kod	+ Oversize + Ölçüsü	Type Tip	EURO
M 3 6G	0.5	2290306G	+ 0.016mm	DIN371-C	8.20
M 4 6G	0.7	2290406G	+ 0.019mm	DIN371-C	8.30
M 5 6G	0.8	2290506G	+ 0.020mm	DIN371-C	8.30
M 6 6G	1	2290606G	+ 0.024mm	DIN371-C	8.80
M 8 6G	1.25	2290806G	+ 0.025mm	DIN371-C	10.50
M 10 6G	1.5	2291006G	+ 0.028mm	DIN371-C	12.10
M 12 6G	1.75	3291206G	+ 0.032mm	DIN376-C	15.80
M 14 6G	2	3291406G	+ 0.034mm	DIN376-C	21.00
M 16 6G	2	3291606G	+ 0.034mm	DIN376-C	22.00

**OVERSIZE +0.1mm TAPS SPIRAL FLUTE METRIC COARSE THREAD HSS-E**  
**KAPLAMA PAYLI +0.1mm KILAVUZLAR HELİS KANALLI METRİK NORMAL DIŞ HSS-E**

**DIN371-376 +0.1mm OVERSIZE M.COARSE / KAPLAMA PAYLI M.NORMAL**

Metric Metrik	Pitch Hatve	Code Kod	+ Oversize + Ölçüsü	Type Tip	EURO
M 3 +0.1	0.5	233030K1	+ 0.10mm	DIN371-C	10.50
M 4 +0.1	0.7	233040K1	+ 0.10mm	DIN371-C	10.50
M 5 +0.1	0.8	233050K1	+ 0.10mm	DIN371-C	10.50
M 6 +0.1	1	233060K1	+ 0.10mm	DIN371-C	11.00
M 8 +0.1	1.25	233080K1	+ 0.10mm	DIN371-C	13.00
M 10 +0.1	1.5	233100K1	+ 0.10mm	DIN371-C	15.00
M 12 +0.1	1.75	333120K1	+ 0.10mm	DIN376-C	17.00
M 16 +0.1	2	333160K1	+ 0.10mm	DIN376-C	24.00
M 20 +0.1	2.5	333200K1	+ 0.10mm	DIN376-C	35.00
M 24 +0.1	3	333240K1	+ 0.10mm	DIN376-C	45.00

Effective diameter (pitch diameter) of these taps are oversized according to standard taps with indicated "+ oversize". Please choose the tap "+ oversize" the most suitable to your coating thickness. Please note this "+ oversize" is "+" on diameter.

Metrik Normal diş kılavuzlara göre çapları (bölüm dairesi çapları) tabloda "+ ölçüsü" olarak belirtilen miktarda büyük olan kılavuzlardır kaplama kalınlığınıza en uygun olanı tercih ediniz. Dikkat, belirtilen "+ ölçüsü" çaptaki artı ölçüsüdür.

**BRASS CUTTING TAPS MS METRIC COARSE THREAD HSS-E**  
**PİRİNÇ MALZEME KILAVUZLARI MS METRİK NORMAL DIŞ HSS-E**

**MS** BRASS  
PİRİNÇ

**DIN371-376 MS BRASS M. COARSE / MS PİRİNÇ M. NORMAL**

Metric Metrik	Pitch Hatve	Code Kod	Type Tip	EURO
M 2	0.4	283020MS	DIN371-E	9.30
M 2.5	0.45	283025MS	DIN371-E	9.30
M 3	0.5	283030MS	DIN371-E	7.10
M 4	0.7	283040MS	DIN371-E	7.30
M 5	0.8	283050MS	DIN371-E	7.40
M 6	1	283060MS	DIN371-E	7.60
M 8	1.25	283080MS	DIN371-E	8.50
M 10	1.5	283100MS	DIN371-E	10.30
M 12	1.75	383120MS	DIN376-E	13.00

DIN 371



DIN 376



**DIN371 MS BRASS M. COARSE / MS PİRİNÇ M. NORMAL**  
**Tol. 6G OVERSIZE / KAPLAMA PAYLI**

Metric Metrik	Pitch Hatve	Code Kod	+ Oversize + Ölçüsü	Type Tip	EURO
M 2 6G	0.4	285020MS6G	+ 0.014mm	DIN371-E	9.60
M 2.5 6G	0.45	285025MS6G	+ 0.015mm	DIN371-E	9.50
M 3 6G	0.5	285030MS6G	+ 0.016mm	DIN371-E	7.50
M 4 6G	0.7	285040MS6G	+ 0.019mm	DIN371-E	7.70
M 5 6G	0.8	285050MS6G	+ 0.020mm	DIN371-E	7.80
M 6 6G	1	285060MS6G	+ 0.024mm	DIN371-E	8.00
M 8 6G	1.25	285080MS6G	+ 0.025mm	DIN371-E	8.90
M 10 6G	1.5	285100MS6G	+ 0.028mm	DIN371-E	10.80

Effective diameter (pitch diameter) of these taps are oversized according to standard taps with indicated "+ oversize". Please choose the tap "+ oversize" the most suitable to your coating thickness. Please note this "+ oversize" is "+" on diameter.

Metrik Normal dış kılavuzlara göre çapları (bölüm dairesi çapları) tabloda "+ ölçüsü" olarak belirtilen miktarda büyük olan kılavuzlardır kaplama kalınlığınıza en uygun olanı tercih ediniz. Dikkat, belirtilen "+ ölçüsü" çaptaki artı ölçüsüdür.

**BRASS CUTTING TAPS MS METRIC FINE THREAD HSS-E**  
**PİRİNÇ MALZEME KILAVUZLARI MS METRİK İNCE DİŞ HSS-E**

**MS** BRASS  
PİRİNÇ

**MS BRASS METRIC FINE / MS PİRİNÇ METRİK İNCE**  
**Works' standard automat taps / Özel norm otomat klavuzu**

Metric Fine Metrik ince	Code Kod	Dimensions Boyutlar oalxthreadxØshank tamboyxdışboyuxØsap	EURO
M 8x1	6000810MS	70x17xØ6mm	10.50
M 10x1	6001010MS	70x22xØ8mm	11.60
M 11x1	6001110MS	70x18xØ9mm	19.00
M 10x1,25	6001012MS	70x22xØ8mm	12.50
M 12x1	6001210MS	70x18xØ9mm	13.50
M 12x1,25	6001212MS	70x18xØ9mm	15.00
M 12x1,5	6001215MS	70x22xØ9mm	12.50
M 13x1	6001310MS	70x20xØ10mm	22.00
M 14x1	6001410MS	70x20xØ10mm	17.50
M 14x1,25	6001412MS	70x20xØ10mm	17.00
M 14x1,5	6001415MS	70x20xØ10mm	17.00
M 16x1,5	6001615MS	70x20xØ12mm	18.50
M 18x1,5	6001815MS	70x22xØ12mm	25.00
M 20x1,5	6002015MS	70x22xØ15mm	25.00
M 24x1,5	6002415MS	70x22xØ18mm	33.00

**To1. 6G OVERSIZE MS BRASS M. FINE / KAPLAMA PAYLI MS PİRİNÇ M. İNCE**  
**Works' standard automat taps / Özel norm otomat klavuzu**

Metric Fine Metrik İnce	Code Kod	Dimensions Boyutlar oalxthreadxØshank tamboyxdışboyuxØsap	+ Oversize + Ölçüsü	EURO
M 8x1 6G	6010810MS6G	70x17xØ6mm	+ 0.024mm	11.00
M 10x1 6G	6011010MS6G	70x22xØ8mm	+ 0.024mm	12.20
M 11x1 6G	6011110MS6G	70x18xØ9mm	+ 0.024mm	20.00
M 10x1,25 6G	6011012MS6G	70x22xØ8mm	+ 0.025mm	13.00
M 12x1 6G	6011210MS6G	70x18xØ9mm	+ 0.025mm	14.00
M 12x1,25 6G	6011212MS6G	70x18xØ9mm	+ 0.028mm	15.60
M 12x1,5 6G	6011215MS6G	70x22xØ9mm	+ 0.030mm	13.00
M 13x1 6G	6011310MS6G	70x20xØ10mm	+ 0.025mm	23.00
M 14x1 6G	6011410MS6G	70x20xØ10mm	+ 0.025mm	18.00
M 14x1,25 6G	6011412MS6G	70x20xØ10mm	+ 0.028mm	17.50
M 14x1,5 6G	6011415MS6G	70x20xØ10mm	+ 0.030mm	17.50
M 16x1,5 6G	6011615MS6G	70x20xØ12mm	+ 0.030mm	19.00
M 18x1,5 6G	6011815MS6G	70x22xØ12mm	+ 0.030mm	26.00
M 20x1,5 6G	6012015MS6G	70x22xØ15mm	+ 0.030mm	26.00
M 24x1,5 6G	6012415MS6G	70x22xØ18mm	+ 0.032mm	34.00

Effective diameter (pitch diameter) of these taps are oversized according to standard taps with indicated "+ oversize". Please choose the tap "+ oversize" the most suitable to your coating thickness. Please note this "+ oversize" is "+" on diameter.

Metrik Normal diş kılavuzlara göre çapları (bölüm dairesi çapları) tabloda "+ ölçüsü" olarak belirtilen miktarda büyük olan kılavuzlardır kaplama kalınlığınıza en uygun olanı tercih ediniz. Dikkat, belirtilen "+ ölçüsü" çaptaki artı ölçüsüdür.

## BSP-G WITHWORTH PIPE THREAD TAPS

### BSP-G BORU DIŐI KILAVUZLAR

## BSP-G DIN5157 STRAIGHT FLUTE SHORT TYPE HSS

### BSP-G DIN5157 DÜZ KANALLI KISA TİP HSS

BSP / G	Pitch / Hatve	Code / Kod	Type / Tip	EURO
G 1/8"	28	5157018	DIN5157	9.20
G 1/4"	19	5157014	DIN5157	11.80
G 3/8"	19	5157038	DIN5157	14.20
G 1/2"	14	5157012	DIN5157	20.00
G 5/8"	14	5157058	DIN5157	26.00
G 3/4"	14	5157034	DIN5157	30.50
G 7/8"	14	5157078	DIN5157	43.00
G 1"	11	5157100	DIN5157	50.00
G 1 1/8"	11	5157118	DIN5157	81.00
G 1 1/4"	11	5157114	DIN5157	85.00
G 1 1/2"	11	5157112	DIN5157	108.00
G 1 3/4"	11	5157134	DIN5157	150.00
G 2"	11	5157200	DIN5157	160.00
G 2 1/2"	11	5157212	DIN5157	270.00
G 3"	11	5157300	DIN5157	400.00
G 4"	11	5157400	DIN5157	600.00



## BSP-G DIN5156 STRAIGHT FLUTE LONG SHANK HSS-E

### BSP-G DIN5156 DÜZ KANALLI UZUN SAPLI HSS-E

BSP / G	Pitch / Hatve	Code / Kod	Type / Tip	EURO
G 1/8"	28	5156018	DIN5156	12.30
G 1/4"	19	5156014	DIN5156	16.20
G 3/8"	19	5156038	DIN5156	20.80
G 1/2"	14	5156012	DIN5156	27.00
G 5/8"	14	5156058	DIN5156	35.00
G 3/4"	14	5156034	DIN5156	43.00
G 7/8"	14	5156078	DIN5156	60.00
G 1"	11	5156100	DIN5156	61.00
G 1 1/8"	11	5156118	DIN5156	95.00
G 1 1/4"	11	5156114	DIN5156	105.00
G 1 1/2"	11	5156112	DIN5156	140.00
G 1 3/4"	11	5156134	DIN5156	195.00
G 2"	11	5156200	DIN5156	215.00
G 2 1/2"	11	5156212	DIN5156	350.00



## BSP-G DIN5156 SPIRAL FLUTE LONG SHANK HSS-E

### BSP-G DIN5156 HELİS KANALLI UZUN SAPLI HSS-E

BSP / G	Pitch / Hatve	Code / Kod	Type / Tip	EURO
G 1/8"	28	5156018H	DIN5156	14.50
G 1/4"	19	5156014H	DIN5156	19.00
G 3/8"	19	5156038H	DIN5156	24.00
G 1/2"	14	5156012H	DIN5156	31.00
G 5/8"	14	5156058H	DIN5156	40.00
G 3/4"	14	5156034H	DIN5156	50.00
G 7/8"	14	5156078H	DIN5156	70.00
G 1"	11	5156100H	DIN5156	75.00
G 1 1/4"	11	5156114H	DIN5156	122.00
G 1 1/2"	11	5156112H	DIN5156	172.00
G 2"	11	5156200H	DIN5156	250.00



**BSP-G WITHWORTH PIPE THREAD BRASS CUTTING TAPS MS HSS-E**  
**BSP-G BORU DIŐI PİRİNÇ MALZEME KILAVUZLARI MS HSS-E**

**MS** BRASS PİRİNÇ

**BSP-G DIN5157 MS BRASS STRAIGHT FLUTE**  
**BSP-G DIN5157 MS PİRİNÇ DÜZ KANALLI**

BSP G	Pitch Hatve	Code Kod	Type Tip	EURO
G 1/8"	28	5157018MS	DIN5157	12.50
G 1/4"	19	5157014MS	DIN5157	16.50
G 3/8"	19	5157038MS	DIN5157	19.00
G 1/2"	14	5157012MS	DIN5157	28.00
G 5/8"	14	5157058MS	DIN5157	35.00
G 3/4"	14	5157034MS	DIN5157	43.00
G 7/8"	14	5157078MS	DIN5157	60.00
G 1"	11	5157100MS	DIN5157	65.00
G 1 1/4"	11	5157114MS	DIN5157	110.00
G 1 1/2"	11	5157112MS	DIN5157	140.00

**BSP-G OVERSIZE +0.05mm TAPS MS BRASS STRAIGHT FLUTE DIN5157**  
**BSP-G KAPLAMA PAYLI +0.05mm KILAVUZLAR MS PİRİNÇ DÜZ KANAL DIN5157**

BSP G	Pitch Hatve	+ Oversize + Ölçüsü	Code Kod	Type Tip	EURO
G 1/8" +0.05	28	+ 0.05mm	5157018MSK	DIN5157	13.20
G 1/4" +0.05	19	+ 0.05mm	5157014MSK	DIN5157	17.30
G 3/8" +0.05	19	+ 0.05mm	5157038MSK	DIN5157	20.00
G 1/2" +0.05	14	+ 0.05mm	5157012MSK	DIN5157	29.00
G 3/4" +0.05	14	+ 0.05mm	5157034MSK	DIN5157	44.00
G 1" +0.05	11	+ 0.05mm	5157100MSK	DIN5157	67.50
G 1 1/4" +0.05	11	+ 0.05mm	5157114MSK	DIN5157	115.00
G 1 1/2" +0.05	11	+ 0.05mm	5157112MSK	DIN5157	145.00



## BSP-G MS BRASS CUTTING MS EXTRA THREAD LENGHT TAPS BSP-G MS PİRİNÇ İÇİN EKSTRA DİŞ BOYLU KILAVUZLAR

MS BRASS  
PİRİNÇ

## BSP-G MS BRASS EXSTRA THREAD LENGHT FITTINGS BSP-G MS PİRİNÇ EKSTRA DİŞ BOYLU FITTINGS

BSP G	Pitch Hatve	Code Kod	Dimensions Boyutlar oalxthreadxØshank tamboyxdışboyuxØsap	EURO
G 1/4"	19	FTG014MS	100x40xØ11mm	25.00
G 3/8"	19	FTG038MS	100x40xØ12mm	29.00
G 1/2"	14	FTG012MS	100x45xØ16mm	33.00
G 3/4"	14	FTG034MS	100x50xØ20mm	48.00
G 1"	11	FTG100MS	120x60xØ25mm	85.00

Specially designed for fittings industry with extra long teeth lenght which enables extra long tool life  
Fittings sanayi için özel tasarım kılavuz ekstra uzun diş boyu ile extra uzun takım ömrü.



## BSP-G OVERSIZE +0.05mm MS BRASS EXSTRA THREAD LENGHT BSP-G KAPLAMA PAYLI +0.05mm MS PİRİNÇ EKSTRA DİŞ BOYLU

BSP G	Pitch Hatve	Code Kod	+ Oversize + Ölçüsü	Dimensions Boyutlar oalxthreadxØshank tamboyxdışboyuxØsap	EURO
G 1/4"	19	FTG014MSK	+ 0.05mm	100x40xØ11mm	27.00
G 3/8"	19	FTG038MSK	+ 0.05mm	100x40xØ12mm	31.00
G 1/2"	14	FTG012MSK	+ 0.05mm	100x45xØ16mm	35.00
G 3/4"	14	FTG034MSK	+ 0.05mm	100x50xØ20mm	50.00
G 1"	11	FTG100MSK	+ 0.05mm	120x60xØ25mm	88.00

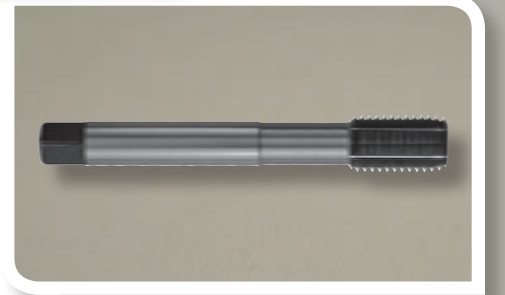
Specially designed for fittings industry with extra long teeth lenght which enables extra long tool life  
Fittings sanayi için özel tasarım kılavuz ekstra uzun diş boyu ile extra uzun takım ömrü.



## BSP-G COLD FORMING (FLUTELESS) TAPS PIPE THREAD HSS-E BSP-G OVALAMA (KANALSIZ) KILAVUZLAR HSS-E

### BSP-G DIN5156 COLD FORMING / OVALAMA

BSP G	Pitch Hatve	Code Kod	Dimensions Boyutlar oalxthreadxØshank tamboyxdışboyuxØsap	EURO
G 1/8"	28	KG018OV345	90x18xØ7mm	78.00
G 1/4"	19	KG014OV345	100x20xØ11mm	96.00
G 3/8"	19	KG038OV345	100x22xØ12mm	135.00
G 1/2"	14	KG012OV345	125x25xØ16mm	174.00
G 3/4"	14	KG034OV345	140x28xØ20mm	195.00



## TAPER PIPE THREADS TAPS HSS-E KONİK BORU DIŞI KILAVUZLAR HSS-E

### NPT AMERICAN TAPER PIPE THREAD 1:16 TAPER NPT AMERİKAN KONİK BORU DIŞI 1:16 KONİK

NPT	Pitch Hatve	Code Kod	Dimensions Boyutlar oalxthreadxØshank tamboyxdışboyuxØsap	EURO
NPT 1/16"	27	KNPT011	63x12xØ6mm	17.00
NPT 1/8"	27	KNPT018	63x12xØ7mm	17.50
NPT 1/4"	18	KNPT014	63x18xØ11mm	22.00
NPT 3/8"	18	KNPT038	70x18xØ12mm	26.00
NPT 1/2"	14	KNPT012	80x24xØ16mm	36.00
NPT 3/4"	14	KNPT034	100x24xØ20mm	48.00
NPT 1"	11.5	KNPT100	110x30xØ25mm	68.00
NPT 1 1/4"	11.5	KNPT114	125x30xØ32mm	115.00
NPT 1 1/2"	11.5	KNPT112	140x30xØ36mm	140.00
NPT 2"	11.5	KNPT200	160x30xØ45mm	205.00

### NPTF AMERICAN TAPER PIPE THREAD 1:16 TAPER NPTF AMERİKAN KONİK BORU DIŞI 1:16 KONİK

NPTF	Pitch Hatve	Code Kod	Dimensions Boyutlar oalxthreadxØshank tamboyxdışboyuxØsap	EURO
NPTF 1/16"	27	KNPTF011	63x12xØ6mm	19.00
NPTF 1/8"	27	KNPTF018	63x12xØ7mm	21.00
NPTF 1/4"	18	KNPTF014	63x18xØ11mm	25.00
NPTF 3/8"	18	KNPTF038	70x18xØ12mm	31.00
NPTF 1/2"	14	KNPTF012	80x24xØ16mm	41.00
NPTF 3/4"	14	KNPTF034	100x24xØ20mm	56.00
NPTF 1"	11.5	KNPTF100	110x30xØ25mm	80.00
NPT 1 1/4"	11.5	KNPT114	125x30xØ32mm	142.00
NPT 1 1/2"	11.5	KNPT112	140x30xØ36mm	180.00
NPT 2"	11.5	KNPT200	160x30xØ45mm	265.00

## Rc (BSPT) WHITHWORTH TAPER PIPE THREAD TAPS 1:16 TAPER HSS-E Rc (BSPT) WHITHWORTH KONİK BORU DIŞI KILAVUZLAR 1:16 KONİK HSS-E

### Rc (BSPT) DIN-EN 10226-2 (ISO7)

Rc (BSPT)	Pitch Hatve	Code Kod	Dimensions Boyutlar oalxthreadxØshank tamboyxdışboyuxØsap	EURO
Rc (BSPT) 1/8"	28	KRC018	90x14xØ7mm	32.00
Rc (BSPT) 1/4"	19	KRC014	100x20xØ11mm	35.00
Rc (BSPT) 3/8"	19	KRC038	100x21xØ12mm	43.00
Rc (BSPT) 1/2"	14	KRC012	125x25xØ16mm	56.00
Rc (BSPT) 3/4"	14	KRC034	140x29xØ20mm	86.00
Rc (BSPT) 1"	11	KRC100	160x35xØ25mm	115.00



Application: Internal taper (Rc) thread - External taper thread (R - ISO7/1 DIN EN10226-1+2)  
Uygulama: İç vida (Rc) konik - Dış vida konik (R - ISO7/1 DIN EN10226-1+2)

## Rp (DIN2999) WHITHWORTH PARALLELE PIPE THREAD TAPS DIN EN10226-1 (ISO7) HSS-E Rp (DIN2999) WHITHWORTH DÜZ BORU DIŞI KILAVUZLAR DIN EN10226-1 (ISO 7) HSS-E

### DIN-EN 10226-1 (ISO7)

Rp (DIN2999)	Pitch Hatve	Code Kod	Dimensions Boyutlar oalxthreadxØshank tamboyxdışboyuxØsap	EURO
Rp 1/8"	28	KRP018	90x17xØ7mm	14.50
Rp 1/4"	19	KRP014	100x20xØ11mm	19.50
Rp 3/8"	19	KRP038	100x22xØ12mm	25.00
Rp 1/2"	14	KRP012	125x25xØ16mm	32.50
Rp 3/4"	14	KRP034	140x28xØ20mm	52.00
Rp 1"	11	KRP100	160x30xØ25mm	75.00
Rp 1 1/4"	11	KRP114	170x30xØ32mm	126.00
Rp 1 1/2"	11	KRP112	190x32xØ36mm	175.00
Rp 2"	11	KRP200	220x40xØ45mm	265.00



Application: Internal cylindrical (Rp) thread - External taper thread (R - ISO7/1 DIN EN10226-1+2)  
Uygulama: İç vida (Rp) düz - Dış vida konik (R - ISO7/1 DIN EN10226-1+2)

## DIN477 VALVE THREAD TAPS HSS-E DIN477 VALF DIŞI KILAVUZLAR HSS-E

### DIN477 VALVE THREAD / DIN477 VALF DIŞI

W DIN477	Pitch Hatve	Code Kod	Dimensions Boyutlar oalxthreadxØshank tamboyxdışboyuxØsap	EURO
W 19.8 * Taper/ Konik	14	KW477198T	70x22xØ15mm	150.00
W 28.8 * Taper/ Konik	14	KW477288T	70x22xØ18mm	175.00
W 21.8 **	14	KW477218MS	70x22xØ15mm	130.00
W 21.8 LH/SOL **	14	KW477218LMS	70x22xØ15mm	140.00
W 24.32 **	14	KW477243MS	70x22xØ18mm	140.00



\* W19.8x14 and W 28.8x14 threads are taper threads the rest are parallele  
\*\* W21.8x14 and W24.32x14 taps are for brass use  
\* W19.8x14 ve W 28.8x14 dişler konik vidalardır diğerleri düzdür  
\*\* W21.8x14 ve W24.32x14 kılavuzlar pirinc MS malzeme içindir.

## UNC MACHINE TAPS UNC MAKİNA KILAVUZLARI

Fig. 1



Fig. 2



Nr2 - 3/8 Reinforced shank  
7/16 - 2" reduced shank  
Nr2 - 3/8 takviyeli saplı  
7/16 - 2" ince saplı

Fig. 1



Fig. 2



Nr2 - 3/8 Reinforced shank  
7/16 - 1" reduced shank  
Nr2 - 3/8 takviyeli saplı  
7/16 - 1" ince saplı

### STRAIGHT FLUTE DIN2184-1 HSS-E / DÜZ KANALLI DIN2184-1 HSS-E

UNC	Pitch / Hatve	Code / Kod	Type / Tip	EURO
UNC Nr. 2	56	KUNCN02	DIN2184-1 / Fig.1	11.00
UNC Nr. 3	48	KUNCN03	DIN2184-1 / Fig.1	10.50
UNC Nr. 4	40	KUNCN04	DIN2184-1 / Fig.1	9.50
UNC Nr. 5	40	KUNCN05	DIN2184-1 / Fig.1	8.90
UNC Nr. 6	32	KUNCN06	DIN2184-1 / Fig.1	8.00
UNC Nr. 8	32	KUNCN08	DIN2184-1 / Fig.1	8.00
UNC Nr.10	24	KUNCN10	DIN2184-1 / Fig.1	9.00
UNC Nr.12	24	KUNCN12	DIN2184-1 / Fig.1	9.60
UNC 1/4"	20	KUNC014	DIN2184-1 / Fig.1	9.50
UNC 5/16"	18	KUNC051	DIN2184-1 / Fig.1	10.50
UNC 3/8"	16	KUNC038	DIN2184-1 / Fig.1	12.00
UNC 7/16"	14	KUNC071	DIN2184-1 / Fig.2	15.00
UNC 1/2"	13	KUNC012	DIN2184-1 / Fig.2	15.50
UNC 9/16"	12	KUNC091	DIN2184-1 / Fig.2	22.00
UNC 5/8"	11	KUNC058	DIN2184-1 / Fig.2	20.00
UNC 3/4"	10	KUNC034	DIN2184-1 / Fig.2	27.50
UNC 7/8"	9	KUNC078	DIN2184-1 / Fig.2	34.00
UNC 1"	8	KUNC100	DIN2184-1 / Fig.2	45.00
UNC 1 1/8"	7	KUNC118	DIN2184-1 / Fig.2	68.00
UNC 1 1/4"	7	KUNC114	DIN2184-1 / Fig.2	75.00
UNC 1 3/8"	6	KUNC138	DIN2184-1 / Fig.2	105.00
UNC 1 1/2"	6	KUNC112	DIN2184-1 / Fig.2	110.00
UNC 1 3/4"	5	KUNC134	DIN2184-1 / Fig.2	165.00
UNC 2"	4.5	KUNC200	DIN2184-1 / Fig.2	210.00

### SPIRAL FLUTE DIN2184-1 HSS-E / HELİS KANALLI DIN2184-1 HSS-E

UNC	Pitch / Hatve	Code / Kod	Type / Tip	EURO
UNC Nr. 2	56	KUNCN02H	DIN2184-1 / Fig.1	12.00
UNC Nr. 3	48	KUNCN03H	DIN2184-1 / Fig.1	11.50
UNC Nr. 4	40	KUNCN04H	DIN2184-1 / Fig.1	10.00
UNC Nr. 5	40	KUNCN05H	DIN2184-1 / Fig.1	10.00
UNC Nr. 6	32	KUNCN06H	DIN2184-1 / Fig.1	9.00
UNC Nr. 8	32	KUNCN08H	DIN2184-1 / Fig.1	9.00
UNC Nr.10	24	KUNCN10H	DIN2184-1 / Fig.1	10.00
UNC Nr.12	24	KUNCN12H	DIN2184-1 / Fig.1	11.50
UNC 1/4"	20	KUNC014H	DIN2184-1 / Fig.1	10.80
UNC 5/16"	18	KUNC051H	DIN2184-1 / Fig.1	11.50
UNC 3/8"	16	KUNC038H	DIN2184-1 / Fig.1	13.00
UNC 7/16"	14	KUNC071H	DIN2184-1 / Fig.2	17.50
UNC 1/2"	13	KUNC012H	DIN2184-1 / Fig.2	18.00
UNC 9/16"	12	KUNC091H	DIN2184-1 / Fig.2	25.50
UNC 5/8"	11	KUNC058H	DIN2184-1 / Fig.2	23.50
UNC 3/4"	10	KUNC034H	DIN2184-1 / Fig.2	29.00
UNC 7/8"	9	KUNC078H	DIN2184-1 / Fig.2	37.00
UNC 1"	8	KUNC100H	DIN2184-1 / Fig.2	50.00
UNC 1 1/8"	7	KUNC118H	DIN2184-1 / Fig.2	76.00
UNC 1 1/4"	7	KUNC114H	DIN2184-1 / Fig.2	84.00
UNC 1 3/8"	6	KUNC138H	DIN2184-1 / Fig.2	115.00
UNC 1 1/2"	6	KUNC112H	DIN2184-1 / Fig.2	120.00
UNC 1 3/4"	5	KUNC134H	DIN2184-1 / Fig.2	180.00
UNC 2"	4.5	KUNC200H	DIN2184-1 / Fig.2	225.00

TIN Coated available on request / TIN kaplı olarak ta mevcuttur.

## UNF MACHINE TAPS

### UNF MAKİNA KILAVUZLARI

#### STRAIGHT FLUTE DIN2184-1 HSS-E / DÜZ KANALLI DIN2184-1 HSS-E

UNF	Pitch / Hatve	Code / Kod	Type / Tip	EURO
UNF Nr. 2	64	KUNFN02	DIN2184-1 / Fig.1	13.00
UNF Nr. 3	56	KUNFN03	DIN2184-1 / Fig.1	12.00
UNF Nr. 4	48	KUNFN04	DIN2184-1 / Fig.1	11.20
UNF Nr. 5	44	KUNFN05	DIN2184-1 / Fig.1	10.60
UNF Nr. 6	40	KUNFN06	DIN2184-1 / Fig.1	10.00
UNF Nr. 8	36	KUNFN08	DIN2184-1 / Fig.1	10.00
UNF Nr. 10	32	KUNFN10	DIN2184-1 / Fig.1	10.80
UNF Nr. 12	28	KUNFN12	DIN2184-1 / Fig.1	12.30
UNF 1/4"	28	KUNF014	DIN2184-1 / Fig.1	11.20
UNF 5/16"	24	KUNF051	DIN2184-1 / Fig.1	12.00
UNF 3/8"	24	KUNF038	DIN2184-1 / Fig.1	12.70
UNF 7/16"	20	KUNF071	DIN2184-1 / Fig.2	16.00
UNF 1/2"	20	KUNF012	DIN2184-1 / Fig.2	15.50
UNF 9/16"	18	KUNF091	DIN2184-1 / Fig.2	25.50
UNF 5/8"	18	KUNF058	DIN2184-1 / Fig.2	21.00
UNF 3/4"	16	KUNF034	DIN2184-1 / Fig.2	28.00
UNF 7/8"	14	KUNF078	DIN2184-1 / Fig.2	36.00
UNF 1"	12	KUNF100	DIN2184-1 / Fig.2	50.00
UNF 1 1/8"	12	KUNF118	DIN2184-1 / Fig.2	60.00
UNF 1 1/4"	12	KUNF114	DIN2184-1 / Fig.2	72.00
UNF 1 3/8"	12	KUNF138	DIN2184-1 / Fig.2	100.00
UNF 1 1/2"	12	KUNF112	DIN2184-1 / Fig.2	110.00

Fig. 1



Fig. 2



Nr2 - 3/8 Reinforced shank  
7/16 - 2" reduced shank  
Nr2 - 3/8 takviyeli saplı  
7/16 - 1 1/2" İnce saplı

#### SPIRAL FLUTE DIN2184-1 HSS-E / HELİS KANALLI DIN2184-1 HSS-E

UNF	Pitch / Hatve	Code / Kod	Type / Tip	EURO
UNF Nr. 2	64	KUNFN02H	DIN2184-1 / Fig.1	14.00
UNF Nr. 3	56	KUNFN03H	DIN2184-1 / Fig.1	13.00
UNF Nr. 4	48	KUNFN04H	DIN2184-1 / Fig.1	12.00
UNF Nr. 5	44	KUNFN05H	DIN2184-1 / Fig.1	11.00
UNF Nr. 6	40	KUNFN06H	DIN2184-1 / Fig.1	11.00
UNF Nr. 8	36	KUNFN08H	DIN2184-1 / Fig.1	11.00
UNF Nr. 10	32	KUNFN10H	DIN2184-1 / Fig.1	11.50
UNF Nr. 12	28	KUNFN12H	DIN2184-1 / Fig.1	13.00
UNF 1/4"	28	KUNF014H	DIN2184-1 / Fig.1	12.50
UNF 5/16"	24	KUNF051H	DIN2184-1 / Fig.1	13.00
UNF 3/8"	24	KUNF038H	DIN2184-1 / Fig.1	14.00
UNF 7/16"	20	KUNF071H	DIN2184-1 / Fig.2	18.30
UNF 1/2"	20	KUNF012H	DIN2184-1 / Fig.2	18.50
UNF 9/16"	18	KUNF091H	DIN2184-1 / Fig.2	31.00
UNF 5/8"	18	KUNF058H	DIN2184-1 / Fig.2	24.00
UNF 3/4"	16	KUNF034H	DIN2184-1 / Fig.2	32.00
UNF 7/8"	14	KUNF078H	DIN2184-1 / Fig.2	39.00
UNF 1"	12	KUNF100H	DIN2184-1 / Fig.2	53.00
UNF 1 1/8"	12	KUNF118H	DIN2184-1 / Fig.2	78.00
UNF 1 1/4"	12	KUNF114H	DIN2184-1 / Fig.2	90.00
UNF 1 3/8"	12	KUNF138H	DIN2184-1 / Fig.2	110.00
UNF 1 1/2"	12	KUNF112H	DIN2184-1 / Fig.2	120.00

Fig. 1



Fig. 2



Nr2 - 3/8 Reinforced shank  
7/16 - 2" reduced shank  
Nr2 - 3/8 takviyeli saplı  
7/16 - 1 1/2" İnce saplı

TIN Coated available on request. / TIN kaplı olarak ta mevcuttur.

## BSW MACHINE TAPS HSS-E

### BSW MAKİNA KILAVUZLARI HSS-E

Fig. 1



Fig. 2



1/8 - 3/8 Reinforced shank  
7/16 - 1" reduced shank  
1/8 - 3/8 takviyeli saplı  
7/16 - 2" İnce saplı

Fig. 1



Fig. 2



1/8 - 3/8 Reinforced shank  
7/16 - 1" reduced shank  
1/8 - 3/8 takviyeli saplı  
7/16 - 1 1/2" İnce saplı

### STRAIGHT FLUTE DIN2184-1 / DÜZ KANALLI DIN2184-1

BSW	Pitch Hatve	Code Kod	Type Tip	EURO
BSW 1/8"	40	KBSW018	DIN2184-1 / Fig.1	8.80
BSW 3/16"	24	KBSW031	DIN2184-1 / Fig.1	9.00
BSW 1/4"	20	KBSW014	DIN2184-1 / Fig.1	9.50
BSW 5/16"	18	KBSW051	DIN2184-1 / Fig.1	10.50
BSW 3/8"	16	KBSW038	DIN2184-1 / Fig.1	12.50
BSW 7/16"	14	KBSW071	DIN2184-1 / Fig.2	16.50
BSW 1/2"	12	KBSW012	DIN2184-1 / Fig.2	16.50
BSW 5/8"	11	KBSW058	DIN2184-1 / Fig.2	21.00
BSW 3/4"	10	KBSW034	DIN2184-1 / Fig.2	30.00
BSW 7/8"	9	KBSW078	DIN2184-1 / Fig.2	37.00
BSW 1"	8	KBSW100	DIN2184-1 / Fig.2	54.00
BSW 1 1/8"	7	KBSW118	DIN2184-1 / Fig.2	76.00
BSW 1 1/4"	7	KBSW114	DIN2184-1 / Fig.2	88.00
BSW 1 3/8"	6	KBSW138	DIN2184-1 / Fig.2	114.00
BSW 1 1/2"	6	KBSW112	DIN2184-1 / Fig.2	136.00
BSW 1 3/4"	5	KBSW134	DIN2184-1 / Fig.2	170.00
BSW 2"	4.5	KBSW200	DIN2184-1 / Fig.2	220.00

### SPIRAL FLUTE DIN2184-1 / HELİS KANALLI DIN2184-1

BSW	Pitch Hatve	Code Kod	Type Tip	EURO
BSW 1/8"	40	KBSW018H	DIN2184-1 / Fig.1	10.50
BSW 3/16"	24	KBSW031H	DIN2184-1 / Fig.1	10.70
BSW 1/4"	20	KBSW014H	DIN2184-1 / Fig.1	11.50
BSW 5/16"	18	KBSW051H	DIN2184-1 / Fig.1	13.00
BSW 3/8"	16	KBSW038H	DIN2184-1 / Fig.1	14.50
BSW 7/16"	14	KBSW071H	DIN2184-1 / Fig.2	19.00
BSW 1/2"	12	KBSW012H	DIN2184-1 / Fig.2	19.00
BSW 5/8"	11	KBSW058H	DIN2184-1 / Fig.2	25.50
BSW 3/4"	10	KBSW034H	DIN2184-1 / Fig.2	34.00
BSW 7/8"	9	KBSW078H	DIN2184-1 / Fig.2	44.00
BSW 1"	8	KBSW100H	DIN2184-1 / Fig.2	61.00
BSW 1 1/2"	6	KBSW112H	DIN2184-1 / Fig.2	150.00

TIN Coated available on request. / TIN kaplı olarak ta mevcuttur.

**PG THREAD TAPS DIN40430 HSS-E**  
**PG DİŞ KILAVUZLAR DIN40430 HSS-E**

**PG DIN40430**

PG	Pitch Hatve	Code Kod	Dimensions Boyutlar oalxthreadxØshank tamboyxdışboyuxØsap	EURO
PG 7	20	KPG07	70x20xØ9mm	21.50
PG 9	18	KPG09	70x20xØ12mm	26.50
PG 11	18	KPG11	80x22xØ14mm	32.00
PG 13,5	18	KPG13	80x22xØ16mm	33.00
PG 16	18	KPG16	80x22xØ18mm	41.00
PG 21	16	KPG21	90x22xØ22mm	57.00
PG 29	16	KPG29	100x25xØ28mm	94.00
PG 36	16	KPG36	140x32xØ36mm	135.00
PG 42	16	KPG42	140x32xØ40mm	180.00
PG 48	16	KPG48	160x32xØ45mm	220.00



**TR TRAPEZOIDAL THREAD TAPS DIN103 To1. 7H HSS-E**  
**TR TRAPEZ DİŞ KILAVUZLAR DIN103 To1. 7H HSS-E**

**MS** BRASS  
PİRİNÇ

**TR DIN103 To1. 7H**

TR	Pitch Hatve	Code Kod	Dimensions Boyutlar oalxthreadxØshank tamboyxdışboyuxØsap	EURO
TR 8	1.5	KTR081MS	70x22xØ8mm	55.00
TR 8	2	KTR082MS	70x22xØ8mm	55.00
TR 9	1.5	KTR091MS	70x22xØ8mm	55.00
TR 9	2	KTR092MS	70x22xØ8mm	55.00
TR 10	1.5	KTR101MS	70x22xØ8mm	55.00
TR 10	2	KTR102MS	70x22xØ8mm	55.00
TR 10	3	KTR103MS	70x22xØ8mm	60.00
TR 11	2	KTR112MS	70x22xØ9mm	56.00
TR 11	3	KTR113MS	70x22xØ9mm	62.00
TR 12	2	KTR122MS	70x22xØ9mm	51.00
TR 12	3	KTR123MS	70x22xØ9mm	56.00
TR 14	2	KTR142MS	70x25xØ10mm	62.00
TR 14	3	KTR143MS	70x25xØ10mm	64.00
TR 14	4	KTR144MS	70x25xØ10mm	65.00
TR 16	2	KTR162MS	70x25xØ12mm	66.00
TR 16	4	KTR164MS	70x25xØ12mm	67.00
TR 18	2	KTR182MS	70x28xØ12mm	82.00
TR 18	4	KTR184MS	70x28xØ12mm	84.00
TR 20	2	KTR202MS	70x28xØ15mm	86.00
TR 20	4	KTR204MS	70x28xØ15mm	92.00



**TR LEFT HAND TRAPEZOIDAL THREAD TAPS DIN103 ToI. 7H HSS-E**  
**TR SOL TRAPEZ DİŞ KILAVUZLAR DIN103 ToI. 7H HSS-E**

**MS** BRASS  
PİRİNÇ

**TR LEFT HAND DIN103 ToI. 7H / TR SOL DİŞ DIN103 ToI. 7H**

TR LH TR SOL	Pitch Hatve	Code Kod	Dimensions Boyutlar oalxthreadxØshank tamboyxdışboyuxØsap	EURO
TR 8 LH	2	KTR082LMS	70x22xØ8mm	66.00
TR 9 LH	2	KTR092LMS	70x22xØ8mm	66.00
TR 10 LH	1.5	KTR101LMS	70x22xØ8mm	66.00
TR 10 LH	2	KTR102LMS	70x22xØ8mm	66.00
TR 10 LH	3	KTR103LMS	70x22xØ8mm	76.00
TR 12 LH	2	KTR122LMS	70x22xØ9mm	65.00
TR 12 LH	3	KTR123LMS	70x22xØ9mm	84.00
TR 16 LH	2	KTR162LMS	70x25xØ12mm	98.00
TR 16 LH	4	KTR164LMS	70x25xØ12mm	99.00

**Rd ROUND THREADS TAPS DIN405 HSS-E**  
**Rd YUVARLAK VIDA KILAVUZLAR DIN405 HSS-E**

**MS** BRASS  
PİRİNÇ

**Rd ROUND THREADS DIN405 / Rd YUVARLAK VIDA DIN405**

Rd	Pitch Hatve	Code Kod	Dimensions Boyutlar oalxthreadxØshank tamboyxdışboyuxØsap	EURO
Rd 8	1/10	KRD08MS	70x22xØ8mm	35.00
Rd 9	1/10	KRD09MS	70x22xØ8mm	37.00
Rd 10	1/10	KRD10MS	70x22xØ8mm	37.00
Rd 11	1/10	KRD11MS	80x25xØ8mm	38.00
Rd 12	1/10	KRD12MS	90x25xØ9mm	38.00
Rd 14	1/8	KRD14MS	100x32xØ11mm	40.00
Rd 16	1/8	KRD16MS	100x32xØ12mm	44.00
Rd 18	1/8	KRD18MS	110x32xØ14mm	50.00
Rd 20	1/8	KRD20MS	110x32xØ16mm	54.00



**TAPPING DRILL SIZES**  
**KILAVUZ MATKAP ÇAPLARI**

M. COARSE M. NORMAL	Drill Ø Matkap Ø
M 2	1.60
M 2,2	1.75
M 2,3	1.90
M 2,5	2.05
M 2,6	2.10
M 3	2.50
M 3,5	2.90
M 4	3.30
M 4,5	3.70
M 5	4.20
M 6	5.00
M 7	6.00
M 8	6.80
M 9	7.80
M 10	8.50
M 11	9.50

M. COARSE M. NORMAL	Drill Ø Matkap Ø
M 12	10.20
M 14	12.00
M 16	14.00
M 18	15.50
M 20	17.50
M 22	19.50
M 24	21.00
M 27	24.00
M 30	26.50
M 33	29.50
M 36	32.00
M 39	35.00
M 42	37.50
M 45	40.50
M 48	43.00
M 52	47.00

M. FINE M. İNCE	Drill Ø Matkap Ø
M 4x0,5	3.50
M 4,5x0,5	4.00
M 5x0,5	4.50
M 6x0,5	5.50
M 6x0,75	5.20
M 7x0,75	6.20
M 8x0,5	7.50
M 8x0,75	7.20
M 8x1	7.00
M 9x1	8.00
M 10x0,75	9.20
M 10x1	9.00
M 10x1,25	8.80
M 11x1	10.00
M 12x1	11.00
M 12x1,25	10.80
M 12x1,5	10.50
M 13x1	12.00
M 14x1	13.00
M 14x1,25	12.80
M 14x1,5	12.50
M 15x1	14.00
M 15x1,5	13.50
M 16x1	15.00
M 16x1,5	14.50
M 18x1	17.00
M 18x1,5	16.50
M 18x2	16.00

M. FINE M. İNCE	Drill Ø Matkap Ø
M 20x1	19.00
M 20x1,5	18.50
M 20x2	18.00
M 22x1	21.00
M 22x1,5	20.50
M 22x2	20.00
M 24x1	23.00
M 24x1,5	22.50
M 24x2	22.00
M 25x1	24.00
M 25x1,5	23.50
M 26x1	25.00
M 26x1,5	24.50
M 27x1,5	25.50
M 27x2	25.00
M 28x1,5	26.50
M 28x2	26.00
M 30x1	29.00
M 30x1,5	28.50
M 30x2	28.00
M 32x1,5	30.50
M 33x1,5	31.50
M 33x2	31.00
M 34x1,5	32.50
M 36x1,5	34.50
M 36x2	34.00
M 38x1,5	36.50
M 40x1,5	38.50



## TAPPING DRILL SIZES KILAVUZ MATKAP ÇAPLARI

## TECHNIC / TEKNİK



G	Drill Ø Matkap Ø
G 1/8x28	8.80
G 1/4x19	11.80
G 3/8x19	15.25
G 1/2x14	19.00
G 5/8x14	21.00
G 3/4x14	24.50
G 7/8x14	28.25
G 1 x11	30.75
G 1 1/8x11	35.50
G 1 1/4x11	39.50
G 1 1/2x11	15.25
G 1 3/4x11	51.10
G 2 x11	57.00
G 2 1/2x11	73.00

UNC	Drill Ø Matkap Ø
No. 2x56	1.85
No. 3x48	2.10
No. 4x40	2.35
No. 5x40	2.65
No. 6x32	2.85
No. 8x32	3.50
No. 10x24	3.90
No. 12x24	4.50
1/4x20	5.10
5/16x18	6.60
3/8x16	8.00
7/16x14	9.40
1/2x13	10.80
9/16x12	12.20
5/8x11	13.50
3/4x10	16.50
7/8x9	19.50
1x8	22.25
1 1/8x7	25.00
1 1/4x7	28.00
1 3/8x6	30.75
1 1/2x6	34.00
1 3/4x5	39.50
2 x4,5	45.00

NPT	Drill Ø Matkap Ø
1/16x27	6.20
1/8x27	8.50
1/4x18	11.10
3/8x18	14.55
1/2x14	18.00
3/4x14	23.25
1x11.5	29.20

NPTF	Drill Ø Matkap Ø
1/16x27	6.20
1/8x27	8.50
1/4x18	11.00
3/8x18	14.50
1/2x14	17.80
3/4x14	23.10
1x11.5	29.10

BSPT - Rc	Drill Ø Matkap Ø
1/8x28	8.20
1/4x19	11.00
3/8x19	14.50
1/2x14	18.00
3/4x14	23.40
1x11	29.50

BSW	Drill Ø Matkap Ø
1/8x40	2.00
5/32x32	3.20
3/16x24	3.60
1/4x20	5.10
5/16x18	6.50
3/8x16	7.90
7/16x14	9.30
1/2x12	10.50
9/16x12	12.00
5/8x11	13.50
3/4x10	16.50
7/8x9	19.25
1x8	22.00

**TAPPING DRILL SIZES**  
**KILAVUZ MATKAP ÇAPLARI**

UNF	Drill Ø Matkap Ø
No. 2x64	1.85
No. 3x56	2.15
No. 4x48	2.40
No. 5x44	2.70
No. 6x40	2.95
No. 8x36	3.50
No. 10x32	4.10
No. 12x28	4.60
1/4x28	5.50
5/16x24	6.90
3/8x24	8.50
7/16x20	9.90
1/2x20	11.50
9/16x18	12.90
5/8x18	14.50
3/4x16	17.50
7/8x14	20.40
1x12	23.25
1 1/8x12	26.50
1 1/4x12	29.50
1 3/8x12	32.75
1 1/2x12	36.00

W DIN477	Drill Ø Matkap Ø
W 21.8x1/14	19.75
W 24.32x1.14	22.25
W 19.8x1/14 taper/konik	14.70
W 28.8x1/14 taper/konik	22.70

Rd	Drill Ø Matkap Ø
Rd 8	6.00
Rd 9	7.00
Rd 10	8.00
Rd 11	9.00
Rd 12	10.00
Rd 14	11.50
Rd 16	13.50
Rd 18	15.50
Rd 20	17.50

PG	Drill Ø Matkap Ø
PG 7	11.35
PG 9	13.95
PG 11	17.35
PG 13,5	19.15
PG 16	21.25
PG 21	26.90
PG 29	35.60
PG 36	45.60
PG 42	52.60

Rp	Drill Ø Matkap Ø
Rp 1/8	8.60
Rp 1/4	11.50
Rp 3/8	15.00
Rp 1/2	18.50
Rp 3/4	24.00
Rp 1	30.25
Rp 1-1/4	39.00
Rp 1-1/2	45.00
Rp 2	56.50



**TAPPING DRILL SIZES**  
**KILAVUZ MATKAP ÇAPLARI**


TR	Drill Ø Matkap Ø
TR 8x1,5	6.60
TR 8x2	6.20
TR 9x1,5	7.60
TR 9x2	7.20
TR 10x1,5	8.60
TR 10x2	8.20
TR 10x3	7.50
TR 11x2	9.20
TR 11x3	8.25
TR 12x2	10.20
TR 12x3	9.25
TR 14x2	12.20
TR 14x3	11.25
TR 14x4	10.50
TR 16x2	14.20
TR 16x4	12.25
TR 18x2	16.20
TR 18x4	14.25
TR 20x2	18.20
TR 20x4	16.25

**Cold forming taps drill diameters**  
**Ovalama Kılavuzları için matkap çapları**

M. COARSE M. NORMAL	Drill Ø Matkap Ø
M 3	2.75
M 4	3.65
M 5	4.60
M 6	5.50
M 8	7.40
M 10	9.30
M 12	11.20

**CUTTING SPEEDS FOR TAPS**  
**KILAVUZ KESME HIZLARI**

WORKPIECE MATERIAL İŞLENEN MALZEME	HSS-E TAPS KILAVUZLAR m/min	HSS-E + TIN TAPS KILAVUZLAR m/min	MS BRASS CUTTING TAPS MS PİRİNÇ KILAVUZLARI m/min
STEELS UP TO 150 HB 150 HB YE KADAR ÇELİKLER	6-7	8-12	
150-250 HB STEELS 150-250 HB ÇELİKLER	5-6	7-9	
250-320 HB STEELS 250-320 HB ÇELİKLER	3-4	5-6	
STAINLESS STEELS PASLANMAZ ÇELİKLER	2-3	3-5	
CAST IRON DÖKÜMLER	6-10	10-16	
BRASS SARI PİRİNÇ	10-15	15-20	15-25
ALUMINIUM ALUMİNYUM	8-12		10-20



**CIRCULAR DIES**  
**PAFTALAR**

**METRIC COARSE THREAD DIES DIN 13 DIN EN 22568 HSS**  
**METRİK NORMAL DIŞ PAFTALAR DIN 13 DIN EN 22568 HSS**



Metric Metrik	Pitch Hatve	CODE KOD	EURO
M 1	0.25	P010	30.00
M 1.1	0.25	P011	37.00
M 1.2	0.25	P012	28.00
M 1.4	0.3	P014	26.00
M 1.6	0.35	P016	22.00
M 1.7	0.35	P017	24.00
M 1.8	0.35	P018	24.00
M 2	0.4	P020	15.80
M 2.2	0.45	P022	26.50
M 2.3	0.4	P023	19.50
M 2.5	0.45	P025	14.40
M 2.6	0.45	P026	16.70
M 3	0.5	P030	12.20
M 3.5	0.6	P035	15.50
M 4	0.7	P040	12.20
M 4.5	0.75	P045	25.00
M 5	0.8	P050	12.20
M 6	1	P060	12.20
M 7	1	P070	16.70
M 8	1.25	P080	13.40
M 9	1.25	P090	19.20
M 10	1.5	P100	16.10
M 11	1.5	P110	24.50
M 12	1.75	P120	21.40
M 14	2	P140	21.90
M 16	2	P160	27.80
M 18	2.5	P180	32.60
M 20	2.5	P200	32.60
M 22	2.5	P220	47.00
M 24	3	P240	47.00
M 27	3	P270	71.00
M 30	3	P300	71.00
M 33	3.5	P330	75.00
M 36	4	P360	78.00
M 39	4	P390	130.00
M 42	4.5	P420	130.00
M 45	4.5	P450	195.00
M 48	5	P480	195.00
M 52	5	P520	205.00

## METRIC FINE THREAD DIES DIN 13 DIN EN 22568 HSS

### METRİK İNCE DİŞ PAFTALAR DIN 13 DIN EN 22568 HSS

M.Fine M.ince	Pitch Hatve	CODE KOD	EURO
M 2	0.25	P02002	33.00
M 2.5	0.35	P02503	33.00
M 3	0.35	P03003	23.50
M 3.5	0.35	P03503	29.20
M 4	0.35	P04003	24.10
M 5	0.35	P05003	40.60
M 4	0.5	P04005	18.20
M 4.5	0.5	P04505	24.40
M 5	0.5	P05005	18.20
M 5	0.75	P05007	36.00
M 6	0.5	P06005	18.20
M 6	0.75	P06007	15.20
M 7	0.5	P07005	31.00
M 7	0.75	P07007	21.00
M 8	0.5	P08005	26.00
M 8	0.75	P08007	17.00
M 8	1	P08010	16.80
M 9	0.5	P09005	38.50
M 9	0.75	P09007	26.50
M 9	1	P09010	21.50
M 10	0.5	P10005	35.00
M 10	0.75	P10007	24.70
M 10	1	P10010	20.20
M 10	1.25	P10012	22.00
M 11	0.5	P11005	59.00
M 11	0.75	P11007	36.00
M 11	1	P11010	25.00
M 11	1.25	P11012	37.00
M 12	0.5	P12005	46.00
M 12	0.75	P12007	33.00
M 12	1	P12010	26.40
M 12	1.25	P12012	27.60
M 12	1.5	P12015	24.30
M 13	0.75	P13007	56.50
M 13	1	P13010	33.00
M 14	0.5	P14005	58.00
M 14	0.75	P14007	33.00
M 14	1	P14010	26.60
M 14	1.25	P14012	27.80
M 14	1.5	P14015	24.30
M 15	0.75	P15007	58.00

M.Fine M.ince	Pitch Hatve	CODE KOD	EURO
M 15	1	P15010	34.00
M 15	1.5	P15015	37.50
M 16	0.5	P16005	79.00
M 16	0.75	P16007	59.00
M 16	1	P16010	41.00
M 16	1.25	P16012	49.00
M 16	1.5	P16015	33.30
M 17	1	P17010	49.00
M 18	0.75	P18007	77.00
M 18	1	P18010	41.00
M 18	1.25	P18012	58.30
M 18	1.5	P18015	33.30
M 18	2	P18020	46.00
M 19	0.75	P19007	108.00
M 19	1	P19010	55.00
M 20	0.5	P20005	113.00
M 20	0.75	P20007	101.00
M 20	1	P20010	42.00
M 20	1.25	P20012	105.00
M 20	1.5	P20015	33.30
M 20	2	P20020	42.00
M 21	0.75	P21007	143.00
M 21	1	P21010	59.00
M 21	1.25	P21012	155.00
M 21	1.5	P21015	73.00
M 22	1	P22010	56.50
M 22	1.25	P22012	130.00
M 22	1.5	P22015	48.50
M 22	2	P22020	59.00
M 23	1	P23010	92.00
M 23	1.5	P23010	170.00
M 24	1	P24010	56.50
M 24	1.5	P24015	48.50
M 24	2	P24020	54.00
M 25	1	P25010	71.00
M 25	1.5	P25015	57.50
M 25	2	P25020	76.00
M 26	1	P26010	71.00
M 26	1.5	P26015	57.50
M 26	2	P26020	79.00
M 27	1	P27010	86.00



**METRIC FINE THREAD DIES DIN 13 DIN EN 22568 HSS**  
**METRİK İNCE DİŞ PAFTALAR DIN 13 DIN EN 22568 HSS**



M.Fine M.ince	Pitch Hatve	CODE KOD	EURO
M 27	1.5	P27015	72.00
M 27	2	P27020	83.00
M 28	1	P28010	86.00
M 28	1.5	P28015	72.00
M 28	2	P28020	96.00
M 30	1	P30010	86.00
M 30	1.5	P30015	72.00
M 30	2	P30020	83.00
M 30	3	P30030	139.00
M 32	1	P32010	101.00
M 32	1.5	P32015	74.00
M 32	2	P32020	96.00
M 33	1.5	P33015	76.00
M 33	2	P33020	83.00
M 33	3	P33030	172.00
M 34	1	P34010	111.00
M 34	1.5	P34015	85.00
M 35	1.5	P35015	79.00
M 35	2	P35020	113.00
M 36	1	P36010	111.00
M 36	1.5	P36015	79.00
M 36	2	P36020	85.00
M 36	3	P36030	110.00
M 37	1.5	P37015	275.00
M 38	1.5	P38015	120.00
M 38	2	P38020	144.00
M 39	1.5	P39015	120.00
M 39	2	P39020	137.00
M 39	3	P39030	150.00
M 40	1.5	P40015	120.00
M 40	2	P40020	137.00
M 42	1.5	P42015	120.00
M 42	2	P42020	137.00

M.Fine M.ince	Pitch Hatve	CODE KOD	EURO
M 42	3	P42030	160.00
M 45	1.5	P45015	160.00
M 45	2	P45020	182.00
M 45	3	P45030	200.00
M 48	1.5	P48015	160.00
M 48	2	P48020	182.00
M 48	3	P48030	200.00
M 50	1.5	P50015	160.00
M 50	2	P50020	182.00
M 52	1.5	P52015	160.00
M 52	2	P52020	182.00
M 52	3	P52030	240.00
M 55	1.5	P55015	225.00
M 55	2	P55020	225.00
M 56	1.5	P56015	255.00
M 56	2	P56020	225.00
M 58	1.5	P58015	238.00
M 60	1.5	P60015	222.00
M 60	2	P60020	218.00
M 62	1.5	P62015	282.00
M 64	1.5	P64015	255.00
M 64	2	P64020	233.00
M 65	1.5	P65015	238.00
M 65	2	P65020	233.00
M 70	1.5	P70015	295.00
M 70	2	P70020	286.00
M 72	2	P72020	298.00
M 75	1.5	P75015	317.00
M 75	2	P75020	298.00
M 80	1.5	P80015	395.00
M 80	2	P80020	348.00
M 85	2	P85020	400.00



## HSS-E COBALT METRIC COARSE THREAD DIES DIN 13 DIN EN 22568

### HSS-E COBALT METRİK NORMAL DIŞ PAFTALAR DIN 13 DIN EN 22568

#### HSS-E COBALT METRIC COARSE THREAD / METRİK NORMAL DIŞ

Metric Metrik	Pitch Hatve	CODE KOD	EURO
M 2	0.4	P020C	32.50
M 2.3	0.4	P023C	39.00
M 2.5	0.45	P025C	31.00
M 2.6	0.45	P026C	33.40
M 3	0.5	P030C	20.50
M 3.5	0.6	P035C	23.00
M 4	0.7	P040C	20.50
M 5	0.8	P050C	18.00
M 6	1.0	P060C	18.00
M 8	1.25	P080C	21.70

Metric Metrik	Pitch Hatve	CODE KOD	EURO
M 10	1.5	P100C	25.80
M 12	1.75	P120C	34.50
M 14	2.0	P140C	39.00
M 16	2.0	P160C	46.00
M 18	2.5	P180C	48.00
M 20	2.5	P200C	48.00
M 22	2.5	P220C	73.00
M 24	3.0	P240C	73.00
M 27	3.0	P270C	140.00
M 30	3,5	P300C	140.00



## HSS-E COBALT METRIC FINE THREAD DIES DIN 13 DIN EN 22568

### HSS-E COBALT METRİK İNCE DIŞ PAFTALAR DIN 13 DIN EN 22568

#### HSS-E COBALT METRIC FINE THREAD / METRİK İNCE DIŞ

M.Fine M.ince	Pitch Hatve	CODE KOD	EURO
M 4	0.5	P04005C	33.00
M 5	0.5	P05005C	28.00
M 6	0.5	P06005C	27.00
M 6	0.75	P06007C	24.30
M 8	0.5	P08005C	52.00
M 8	0.75	P08007C	28.80
M 8	1.0	P08010C	25.00
M 10	0.75	P10007C	36.00
M 10	1.0	P10010C	30.00
M 10	1.25	P10012C	51.50
M 12	1.0	P12010C	39.00
M 12	1.25	P12012C	59.00
M 12	1.5	P12015C	37.00
M 14	1.0	P14010C	39.00

M.Fine M.ince	Pitch Hatve	CODE KOD	EURO
M 14	1.5	P14015C	37.00
M 16	1.0	P16010C	54.00
M 16	1.5	P16015C	51.00
M 18	1.0	P18010C	73.00
M 18	1.5	P18015C	53.00
M 20	1.0	P20010C	62.00
M 20	1.5	P20015C	53.00
M 22	1.5	P22015C	75.00
M 24	1.5	P24015C	75.00
M 24	2.0	P24020C	108.00
M 26	1.5	P26015C	108.00
M 30	1.5	P30015C	115.00
M 30	2.0	P30020C	143.00



**MS BRASS CUTTING DIES METRIC COARSE DIN 13 DIN EN 22568 HSS**  
**MS PİRİNÇ PAFTALARI METRİK NORMAL DIN 13 DIN EN 22568 HSS**

**MS** BRASS  
PİRİNÇ

**MS BRASS CUTTING METRIC COARSE / MS PİRİNÇ METRİK NORMAL**

Metric Metrik	Pitch Hatve	CODE KOD	EURO
M 2	0.4	P020MS	35.50
M 2.5	0.45	P025MS	30.00
M 3	0.5	P030MS	23.40
M 3.5	0.6	P035MS	34.00
M 4	0.7	P040MS	20.40
M 5	0.8	P050MS	20.00
M 6	1	P060MS	18.40
M 7	1	P070MS	34.00
M 8	1.25	P080MS	20.40
M 10	1.5	P100MS	24.70
M 12	1.75	P120MS	35.60



**MS BRASS CUTTING DIES METRIC FINE DIN 13 DIN EN 22568 HSS**  
**MS PİRİNÇ PAFTALARI METRİK İNCE DIN 13 DIN EN 22568 HSS**

**MS** BRASS  
PİRİNÇ

**MS BRASS CUTTING METRIC FINE / MS PİRİNÇ METRİK İNCE**

M.Fine M.ince	Pitch Hatve	CODE KOD	EURO
M 4	0.5	P04005MS	31.50
M 4.5	0.5	P04505MS	120.00
M 5	0.5	P05005MS	31.50
M 6	0.5	P06005MS	30.00
M 6	0.75	P06007MS	28.00
M 7	0.75	P07007MS	36.50
M 8	0.75	P08007MS	31.70
M 8	1	P08010MS	24.10
M 10	0.75	P10007MS	51.00
M 10	1	P10010MS	28.10
M 10	1.25	P10012MS	61.00
M 11	1	P11010MS	120.00
M 12	1	P12010MS	37.20
M 12	1.25	P12012MS	120.00
M 12	1.5	P12015MS	38.80
M 13	1	P13010MS	45.00
M 14	1	P14010MS	40.00
M 14	1.25	P14012MS	140.00
M 14	1.5	P14015MS	42.00

M.Fine M.ince	Pitch Hatve	CODE KOD	EURO
M 15	1	P15010MS	45.00
M 16	1	P16010MS	57.50
M 16	1.5	P16015MS	51.00
M 18	1	P18010MS	64.00
M 18	1.5	P18015MS	49.00
M 20	1	P20010MS	57.50
M 20	1.5	P20015MS	56.50
M 21	1	P21010MS	100.00
M 22	1	P22010MS	86.50
M 22	1.5	P22015MS	66.00
M 24	1	P24010MS	130.00
M 24	1.5	P24015MS	68.00
M 25	1	P25010MS	91.00
M 26	1	P26010MS	110.00
M 26	1.5	P26015MS	160.00
M 28	1	P28010MS	210.00
M 28	1.5	P28015MS	180.00
M 30	1.5	P30015MS	180.00



**UNDERSIZED Tol. 6e METRIC COARSE THREAD DIES HSS**  
**KAPLAMA PAYLI Tol. 6e METRİK NORMAL DIŞ PAFTALAR HSS**

**Tol. 6e UNDERSIZE M. COARSE / KAPLAMA PAYLI M. NORMAL**

Metric Metrik	Pitch Hatve	Tol.	CODE KOD	EURO
M 2	0.4	6e	P020K	32.00
M 2.5	0.45	6e	P025K	28.00
M 3	0.5	6e	P030K	21.50
M 4	0.7	6e	P040K	21.00
M 5	0.8	6e	P050K	18.50
M 6	1	6e	P060K	18.50
M 8	1.25	6e	P080K	20.50
M 10	1.5	6e	P100K	24.50
M 12	1.75	6e	P120K	32.50
M 16	2	6e	P160K	54.00



**UNDERSIZED Tol. 6e METRIC FINE THREAD DIES HSS**  
**KAPLAMA PAYLI Tol. 6e METRİK İNCE DIŞ PAFTALAR HSS**

**Tol. 6e UNDERSIZE M. FINE / KAPLAMA PAYLI M. İNCE**

M.Fine M.İnce	Pitch Hatve	Tol.	CODE KOD	EURO
M 4	0.5	6e	P04005K	61.00
M 5	0.5	6e	P05005K	37.80
M 6	0.5	6e	P06005K	39.60
M 6	0.75	6e	P06007K	30.00
M 7	0.75	6e	P07007K	37.20
M 8	0.75	6e	P08007K	34.00
M 8	1	6e	P08010K	25.50
M 10	0.75	6e	P10007K	53.00
M 10	1	6e	P10010K	29.00
M 10	1.25	6e	P10012K	85.00
M 12	1	6e	P12010K	38.00
M 12	1.25	6e	P12012K	96.00
M 12	1.5	6e	P12015K	36.00
M 14	1	6e	P14010K	42.00
M 14	1.25	6e	P14012K	105.00
M 14	1.5	6e	P14015K	36.00
M 16	1	6e	P16010K	56.00
M 16	1.5	6e	P16015K	48.00
M 18	1	6e	P18010K	85.00
M 18	1.5	6e	P18015K	55.00
M 20	1	6e	P20010K	85.00
M 20	1.5	6e	P20015K	60.00
M 22	1	6e	P22010K	118.00
M 22	1.5	6e	P22015K	73.00
M 24	1.5	6e	P24015K	92.00
M 26	1.5	6e	P26015K	105.00



**BELL FORM DIES METRIC COARSE PITCH HSS**  
**UZUN AĞIZLI PAFTALAR METRİK NORMAL DİŞ HSS**

**BELL FORM DIES M.COARSE / UZUN AĞIZLI PAFTALAR M. NORMAL**



Metric Metrik	Pitch Hatve	CODE KOD	EURO
M 2	0.4	P020GL	34.00
M 2.5	0.45	P025GL	34.00
M 3	0.5	P030GL	30.50
M 4	0.7	P040GL	29.50
M 5	0.8	P050GL	31.00
M 6	1	P060GL	31.00
M 8	1.25	P080GL	40.50
M 10	1.5	P100GL	100.00
M 12	1.75	P120GL	100.00

## THREAD ROLLING DIES METRIC COARSE PITCH OVALAMA PAFTALARI METRİK NORMAL DİŞ

Metric Metrik	Pitch Hatve	CODE KOD	TURNING DIA OVALAMA ÇAPI Ømm	EURO
M 1	0.25	PR010	0.80	48.00
M 1.2	0.25	PR012	1.00	48.00
M 1.4	0.3	PR014	1.16	59.00
M 1.6	0.35	PR016	1.32	61.00
M 1.7	0.35	PR017	1.42	61.00
M 1.8	0.35	PR018	1.52	61.00
M 2	0.4	PR020	1.67	61.00
M 2.2	0.45	PR022	1.84	71.00
M 2.3	0.4	PR023	1.98	71.00
M 2.5	0.45	PR025	2.13	71.00
M 2.6	0.45	PR026	2.25	71.00
M 3	0.5	PR030	2.60	71.00
M 3.5	0.6	PR035	3.03	86.00
M 4	0.7	PR040	3.46	86.00
M 4.5	0.75	PR045	3.93	108.00
M 5	0.8	PR050	4.39	108.00
M 6	1	PR060	5.25	121.00



## THREAD ROLLING DIES METRIC FINE PITCH OVALAMA PAFTALARI METRİK İNCE

M.Fine M.ince	Pitch Hatve	CODE KOD	TURNING DIA OVALAMA ÇAPI Ømm	EURO
M 3	0.35	PR03003	2.72	100.00
M 3.5	0.35	PR03503	3.22	100.00
M 4	0.35	PR04003	3.72	100.00
M 4	0.5	PR04005	3.60	140.00
M 5	0.5	PR05005	4.60	154.00
M 6	0.5	PR06005	5.60	169.00
M 6	0.75	PR06007	5.43	180.00
M 8	0.75	PR08007	7.43	180.00
M 8	1	PR08010	7.25	180.00



The turning diameters indicated are approximate sizes and if the right thread profile could not be achieved by given sizes then bigger diameters need to be tried by increasing 0,1mm in each try. It is recommended to have a 15-20° chamfer in the front end of the bar prior to thread rolling.

Please use lubrication. It is recommended for steel with minimum 8% elongation and up to 900N/mm<sup>2</sup>. The cutting speed is 20-40m/min. 20-25m/min for steel. 30-40m/min for brass (MS63 or higher) gold, bronze.

Yukarıdaki ovalama çapları yaklaşık olarak belirtilmiştir.

Tam vida profili elde edilemezse profil yakalanana kadar 0.1mm lik artışlarla deneyerek ovalama çapınızı tespit ediniz. Bu değer malzemeden malzemeye farklılık gösterebilir. Ovalanacak milin ucuna 15°-20° havşa yapılması önerilir. Kesme yağı kullanınız. Ovalamaya uygun en az %8 uzama oranı olan ve mukavemeti 900N/mm<sup>2</sup> ye kadar çeliklerde kullanılabilir.

Kesme hızı 20-40m/dakika arasındadır. 30-40 kesme hızı altın, pirinç (MS63 ve üstü) ve bronz içindir. Çelikler için 20-25 m/dakika kullanılmalıdır.

## LEFT HAND THREAD DIES HSS SOL DİŞ PAFTALAR HSS

### LEFT HAND METRIC COARSE THREAD DIES SOL DİŞ METRİK NORMAL PAFTALAR

Metric Metrik	Pitch Hatve	CODE KOD	EURO
M 2	0.4	P020L	32.00
M 2.5	0.45	P025L	28.00
M 3	0.5	P030L	22.70
M 3.5	0.6	P035L	34.00
M 4	0.7	P040L	21.60
M 5	0.8	P050L	19.30
M 6	1	P060L	19.30
M 7	1	P070L	29.50
M 8	1.25	P080L	21.20
M 10	1.5	P100L	25.70
M 12	1.75	P120L	34.00
M 14	2	P140L	35.00
M 16	2	P160L	45.00
M 18	2.5	P180L	53.00
M 20	2.5	P200L	47.00
M 22	2.5	P220L	76.00
M 24	3	P240L	67.00
M 27	3	P270L	110.00
M 30	3	P300L	105.00

### LEFT HAND METRIC FINE THREAD DIES SOL DİŞ METRİK İNCE PAFTALAR

M.Fine M.İnce	Pitch Hatve	CODE KOD	EURO
M 4	0.5	P0405L	45.00
M 6	0.75	P0607L	30.50
M 8	0.75	P0807L	40.00
M 8	1	P0810L	26.30
M 10	1	P1010L	31.00
M 10	1.25	P1012L	34.00
M 12	1	P1210L	41.00
M 12	1.25	P1212L	44.00
M 12	1.5	P1215L	40.00
M 14	1.25	P1412L	53.00
M 14	1.5	P1415L	38.00
M 16	1.5	P1615L	52.00
M 18	1.5	P1815L	52.00
M 20	1.5	P2015L	52.00
M 22	1.5	P2215L	74.00
M 24	1.5	P2415L	68.00
M 30	1.5	P3015L	102.00

## BSP-G WITHWORTH PIPE THREAD DIES HSS

### BSP-G BORU DİŞİ PAFTALAR HSS

#### BSP-G

BSP-G	Pitch Hatve	CODE KOD	EURO
G 1/16"	28	PG011	82.00
G 1/8"	28	PG018	23.50
G 1/4"	19	PG014	23.50
G 3/8"	19	PG038	31.50
G 1/2"	14	PG012	31.50
G 5/8"	14	PG058	53.00
G 3/4"	14	PG034	47.50
G 7/8"	14	PG078	79.00
G 1"	11	PG100	70.00
G 1 1/8"	11	PG118	140.00
G 1 1/4"	11	PG114	108.00
G 1 3/8"	11	PG138	198.00
G 1 1/2"	11	PG112	149.00
G 1 3/4"	11	PG134	173.00
G 2"	11	PG200	193.00
G 2 1/4"	11	PG214	265.00
G 2 1/2"	11	PG212	280.00
G 2 3/4"	11	PG234	316.00
G 3"	11	PG300	370.00
G 3 1/2"	11	PG312	720.00
G 4"	11	PG400	770.00



## MS BRASS CUTTING DIES BSP-G WITHWORTH PIPE THREAD HSS

### MS PİRİNÇ PAFTALARI BSP-G BORU DİŞİ HSS

**MS** BRASS  
PİRİNÇ

#### BSP-G MS BRASS CUTTING / BSP-G MS PİRİNÇ İÇİN

BSP-G	pitch Hatve	CODE KOD	EURO
G 1/8"	28	PG018MS	33.50
G 1/4"	19	PG014MS	33.50
G 3/8"	19	PG038MS	44.50
G 1/2"	14	PG012MS	44.50
G 3/4"	14	PG034MS	67.50
G 1"	11	PG100MS	93.00
G 1-1/4"	11	PG114MS	143.00
G 1-3/4"	11	PG134MS	265.00
G 1-1/2"	11	PG112MS	198.00
G 2"	11	PG200MS	380.00
G 2-1/2"	11	PG212MS	425.00



**UNDERSIZED -0.10mm BSP-G MS BRASS CUTTING DIES HSS**  
**KAPLAMA PAYLI -0.10mm BSP-G MS PİRİNÇ PAFTALARI HSS**

**MS** BRASS  
PİRİNÇ

**BSP-G MS BRASS CUTTING UNDERSIZE -0.10mm**  
**BSP-G MS PİRİNÇ İÇİN KAPLAMA PAYLI -0.10mm**

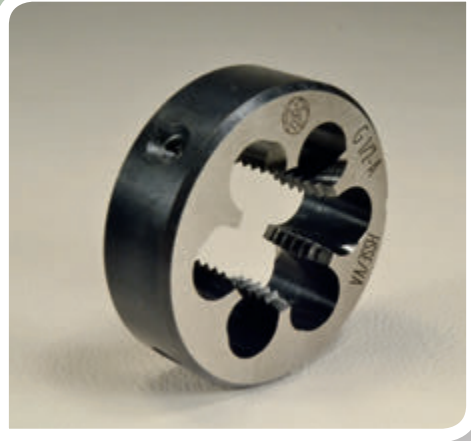
BSP-G	Pitch Hatve	CODE KOD	EURO
G 1/8" - 0.10mm	28	PG018K01	62.50
G 1/4" - 0.10mm	19	PG014K01	51.00
G 3/8" - 0.10mm	19	PG038K01	53.00
G 1/2" - 0.10mm	14	PG012K01	53.00
G 3/4" - 0.10mm	14	PG034K01	80.00
G 1" - 0.10mm	11	PG100K01	111.00



**HSS-E COBALT BSP-G DIES**  
**HSS-E COBALT BSP-G PAFTALAR**

**BSP-G HSS-E COBALT**

BSP-G	Pitch Hatve	CODE KOD	EURO
G 1/8"	28	PG018C	35.00
G 1/4"	19	PG014C	35.00
G 3/8"	19	PG038C	47.00
G 1/2"	14	PG012C	47.00
G 3/4"	14	PG034C	71.00
G 1"	11	PG100C	98.00



**LEFT HAND BSP-G DIES HSS**  
**SOL DİŞ BSP-G PAFTALAR HSS**

**BSP-G LEFT HAND LH / BSP-G SOL DİŞ**

BSP-G	Pitch Hatve	CODE KOD	EURO
G 1/4"	19	PG014L	45.00
G 3/8"	19	PG038L	56.00
G 1/2"	14	PG012L	56.00
G 3/4"	14	PG034L	90.00
G 1"	11	PG100L	139.00





## BELL FORM BSP-G WITHWORTH PIPE THREAD DIES HSS UZUN AĞIZLI BSP-G BORU DIŞ PAFTALAR HSS

### BELL FORM BSP-G MS BRASS CUTTING UZUN AĞIZLI BSP-G MS PİRİNÇ İÇİN

MS BRASS  
PİRİNÇ

BSP-G GL Bell form die Uzun ağızlı	Pitch Hatve	CODE KOD	EURO
G 1/8"	28	PG018GLMS	110.00
G 1/4"	19	PG014GLMS	68.00
G 3/8"	19	PG038GLMS	84.00
G 1/2"	14	PG012GLMS	88.00
G 3/4"	14	PG034GLMS	118.00
G 1"	11	PG100GLMS	170.00



### BELL FORM BSP-G MS BRASS CUTTING UNDERSIZE -0.10mm UZUN AĞIZLI BSP-G MS PİRİNÇ İÇİN KAPLAMA PAYLI -0.10mm

MS BRASS  
PİRİNÇ

BSP-G GL Bell form die Uzun ağızlı	Pitch Hatve	CODE KOD	EURO
G 1/4" -0.10mm	19	PG014GLMSK01	158.00
G 3/8" -0.10mm	19	PG038GLMSK01	183.00
G 1/2" -0.10mm	14	PG012GLMSK01	130.00
G 3/4" -0.10mm	14	PG034GLMSK01	185.00
G 1" -0.10mm	11	PG100GLMSK01	290.00

### BELL FORM BSP-G FOR STEEL CUTTING UZUN AĞIZLI BSP-G ÇELİK İÇİN

BSP-G GL Bell form die Uzun ağızlı	Pitch Hatve	CODE KOD	EURO
G 1/8"	28	PG018GL	110.00
G 1/4"	19	PG014GL	100.00
G 3/8"	19	PG038GL	135.00
G 1/2"	14	PG012GL	155.00
G 3/4"	14	PG034GL	155.00
G 1"	11	PG100GL	235.00

### BELL FORM BSP-G CARBIDE BRAZED TIPPED THREADS UZUN AĞIZLI BSP-G KARBÜR KAYNAKLI DIŞ

MS BRASS  
PİRİNÇ

BSP-G GL Bell form die Uzun ağızlı	Pitch Hatve	CODE KOD	EURO
G 3/8"	19	PG038HMGL	730.00
G 1/2"	14	PG012HMGL	770.00
G 3/4"	14	PG034HMGL	840.00
G 1"	11	PG100HMGL	890.00

## NPT - NPTF TAPER PIPE THREAD DIES HSS NPT - NPTF KONİK BORU DIŞİ PAFTALAR HSS



### NPT

NPT	pitch Hatve	CODE KOD	EURO
NPT 1/16"	27	PNPT011	41.00
NPT 1/8"	27	PNPT018	39.00
NPT 1/4"	18	PNPT014	40.00
NPT 3/8"	18	PNPT038	52.00
NPT 1/2"	14	PNPT012	52.00
NPT 3/4"	14	PNPT034	86.00
NPT 1"	11.5	PNPT100	110.00
NPT 1-1/4"	11.5	PNPT114	160.00
NPT 1-1/2"	11.5	PNPT112	223.00
NPT 2"	11.5	PNPT200	289.00

### NPT MS BRASS CUTTING / NPT MS PİRİNÇ İÇİN

MS BRASS  
PİRİNÇ

NPT	pitch Hatve	CODE KOD	EURO
NPT 1/8"	27	PNPT018MS	110.00
NPT 1/4"	18	PNPT014MS	110.00
NPT 3/8"	18	PNPT038MS	125.00
NPT 1/2"	14	PNPT012MS	85.00
NPT 3/4"	14	PNPT034MS	125.00



### NPTF

NPTF	pitch Hatve	CODE KOD	EURO
NPTF 1/16"	27	PNPTF011	52.00
NPTF 1/8"	27	PNPTF018	48.00
NPTF 1/4"	18	PNPTF014	53.00
NPTF 3/8"	18	PNPTF038	68.00
NPTF 1/2"	14	PNPTF012	71.00
NPTF 3/4"	14	PNPTF034	117.00
NPTF 1"	11.5	PNPTF100	173.00

## BSPT-R TAPER PIPE THREAD DIES HSS

### BSPT-R KONİK BORU DIŞİ PAFTALAR HSS

#### BSPT-R

BSPT - R	pitch Hatve	CODE KOD	EURO
R 1/8"	28	PBSPT018	38.00
R 1/4"	19	PBSPT014	39.00
R 3/8"	19	PBSPT038	51.00
R 1/2"	14	PBSPT012	51.00
R 3/4"	14	PBSPT034	85.00
R 1"	11	PBSPT100	110.00
R 1-1/4"	11	PBSPT114	160.00
R 1-1/2"	11	PBSPT112	225.00
R 2"	11	PBSPT200	300.00



#### BSPT-R MS BRASS CUTTING / BSPT-R MS PİRİNÇ İÇİN **MS** BRASS PİRİNÇ

BSPT - R	pitch Hatve	CODE KOD	EURO
R 1/8"	28	PBSPT018MS	92.00
R 1/4"	19	PBSPT014MS	83.00
R 3/8"	19	PBSPT038MS	100.00
R 1/2"	14	PBSPT012MS	120.00
R 3/4"	14	PBSPT034MS	150.00
R 1"	11	PBSPT100MS	270.00

## DIN 477 VALVE THREAD DIES HSS DIN 477 VALF DİŞİ PAFTALAR HSS

### DIN 477 VALVE MS BRASS CUTTING / VALF MS PİRİNÇ İÇİN **MS** BRASS PİRİNÇ

W - DIN 477	CODE KOD	EURO
W 19.8 x 14 (TAPER-KONİK)	PW198MS	162.00
W 28.8 x 14 (TAPER-KONİK)	PW288MS	232.00
W 21.8 x 14 (PARALLELE-DÜZ)	PW218MS	110.00
W 21.8 x 14 LEFT HAND / SOL (PARALLELE-DÜZ)	PW218LMS	122.00
W 24.32 x 14 (PARALLELE-DÜZ)	PW243MS	185.00

### DIN 477 VALVE STEEL CUTTING / DIN 477 VALF ÇELİK İÇİN

W - DIN 477	CODE KOD	EURO
W 19.8 x 14 (TAPER-KONİK)	PW198	162.00
W 28.8 x 14 (TAPER-KONİK)	PW288	232.00
W 21.8 x 14 (PARALLELE-DÜZ)	PW218	100.00
W 21.8 x 14 LEFT HAND / SOL (PARALLELE-DÜZ)	PW218L	110.00
W 24.32 x 14 (PARALLELE-DÜZ)	PW243	135.00

## PG THREAD DIN 40343 DIES HSS PG DİŞ DIN 40343 PAFTALAR HSS

### PG DIN 40343





DIN 40343 PG	pitch Hatve	CODE KOD	EURO
PG 7	20	PPG07	42.00
PG 9	18	PPG09	42.00
PG 11	18	PPG11	55.00
PG 13.5	18	PPG13	55.00
PG 16	18	PPG16	70.00
PG 21	16	PPG21	96.00
PG 29	16	PPG29	105.00
PG 36	16	PPG36	205.00
PG 42	16	PPG42	400.00
PG 48	16	PPG48	440.00



## TRAPEZOIDAL TR THREAD DIES DIN EN 22568 HSS

### TRAPEZ TR DİŞ PAFTALAR DIN EN 22568 HSS

#### TR DIN EN 22568

TR	CODE KOD	EURO
TR 8x1.5	PTR081	140.00
TR 8x2	PTR082	110.00
TR 8x2 MS 	PTR082MS	110.00
TR 8x2 LH	PTR082L	110.00
TR 8x2 LH MS 	PTR082LMS	110.00
TR 10x2	PTR102	76.00
TR 10x2 MS 	PTR102MS	120.00
TR 10x2 LH	PTR102L	96.00
TR 10x2 LH MS 	PTR102LMS	120.00
TR 10x3	PTR103	100.00
TR 12x2	PTR122	100.00
TR 12x3	PTR123	100.00
TR 12x3 LH	PTR123L	148.00
TR 14x2	PTR142	105.00
TR 14x3	PTR143	105.00
TR 14x4	PTR144	118.00
TR 14x4 LH	PTR144L	210.00
TR 16x2	PTR162	128.00
TR 16x4	PTR164	100.00
TR 16x4 LH	PTR164L	150.00
TR 18x2	PTR182	140.00
TR 18x4	PTR184	115.00
TR 18x4 LH	PTR184L	190.00
TR 20x2	PTR202	140.00
TR 20x4	PTR204	128.00
TR 20x4 LH	PTR204L	178.00
TR 22x5	PTR225	185.00
TR 24x5	PTR245	170.00
TR 24x5 LH	PTR245L	240.00
TR 26x5	PTR265	195.00
TR 28x5	PTR285	215.00
TR 30x6	PTR306	205.00

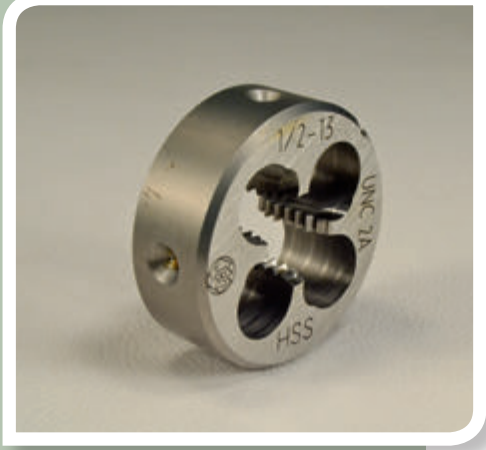


MS Dies are for MS Brass use / MS Paftalar MS piriñ malzeme içindir.  
LH Dies are left hand / LH Paftalar sol diřtir.

## UNC DIES HSS UNC PAFTALAR HSS

### UNC DIES / UNC PAFTALAR

UNC	Pitch Hatve	CODE KOD	EURO
UNC Nr. 1	64	PUNCN01	34.00
UNC Nr. 2	56	PUNCN02	30.00
UNC Nr. 3	48	PUNCN03	38.00
UNC Nr. 4	40	PUNCN04	24.00
UNC Nr. 5	40	PUNCN05	22.00
UNC Nr. 6	32	PUNCN06	21.00
UNC Nr. 8	32	PUNCN08	20.00
UNC Nr. 10	24	PUNCN10	20.00
UNC Nr. 12	24	PUNCN12	22.50
UNC 1/4"	20	PUNC014	17.00
UNC 5/16"	18	PUNC051	19.50
UNC 3/8"	16	PUNC038	22.50
UNC 7/16"	14	PUNC071	23.50
UNC 1/2"	13	PUNC012	29.00
UNC 9/16"	12	PUNC091	33.00
UNC 5/8"	11	PUNC058	38.00
UNC 3/4"	10	PUNC034	39.00
UNC 7/8"	9	PUNC078	59.00
UNC 1"	8	PUNC100	59.00
UNC 1 1/8"	7	PUNC118	115.00
UNC 1 1/4"	7	PUNC114	115.00
UNC 1 3/8"	6	PUNC138	126.00
UNC 1 1/2"	6	PUNC112	160.00
UNC 1 3/4"	5	PUNC134	252.00
UNC 2"	4.5	PUNC200	255.00



## UNF DIES HSS

### UNF PAFTALAR HSS

#### UNF DIES / UNF PAFTALAR

UNF	Pitch Hatve	CODE KOD	EURO
UNF Nr.1	72	PUNFN01	28.00
UNF Nr.2	64	PUNFN02	32.00
UNF Nr.3	56	PUNFN03	37.00
UNF Nr.4	48	PUNFN04	30.50
UNF Nr.5	44	PUNFN05	27.50
UNF Nr.6	40	PUNFN06	26.00
UNF Nr.8	36	PUNFN08	23.50
UNF Nr.10	32	PUNFN10	18.50
UNF Nr.12	28	PUNFN12	21.50
UNF 1/4"	28	PUNF014	17.00
UNF 5/16"	24	PUNF051	19.50
UNF 3/8"	24	PUNF038	22.50
UNF 7/16"	20	PUNF071	23.50
UNF 1/2"	20	PUNF012	28.50
UNF 9/16"	18	PUNF091	29.00
UNF 5/8"	18	PUNF058	38.00
UNF 3/4"	16	PUNF034	38.00
UNF 7/8"	14	PUNF078	54.00
UNF 1"	12	PUNF100	57.00
UNF 1 1/8"	12	PUNF118	94.00
UNF 1 1/4"	12	PUNF114	94.00
UNF 1 3/8"	12	PUNF138	108.00
UNF 1 1/2"	12	PUNF112	135.00



**UNEF - UN - UNS DIES HSS**  
**UNEF - UN - UNS PAFTALAR HSS**

**UNEF DIES / UNEF PAFTALAR**

UNEF	pitch Hatve	CODE KOD	EURO
UNEF Nr.12	32	PUNEFN12	42.00
UNEF 1/4"	32	PUNEF014	29.00
UNEF 5/16"	32	PUNEF051	30.00
UNEF 3/8"	32	PUNEF038	32.00
UNEF 7/16"	28	PUNEF071	39.00
UNEF 1/2"	28	PUNEF012	44.00
UNEF 9/16"	24	PUNEF091	43.00
UNEF 5/8"	24	PUNEF058	55.00
UNEF 11/16"	24	PUNEF011	74.00
UNEF 3/4"	20	PUNEF034	52.00
UNEF 13/16"	20	PUNEF013	90.00
UNEF 7/8"	20	PUNEF078	84.00
UNEF 15/16"	20	PUNEF015	137.00
UNEF 1"	20	PUNEF100	93.00
UNEF 1 1/8"	18	PUNEF118	134.00
UNEF 1 1/4"	18	PUNEF114	150.00

**UN - UNS DIES / UN - UNS PAFTALAR**

UN - UNS	pitch Hatve	CODE KOD	EURO
UNS 1/4"	40	PUNS01440	46.00
UNS 1/4"	36	PUNS01436	35.00
UNS 1/4"	24	PUNS01424	55.00
UNS 7/16"	24	PUNS07124	43.00
UNS 1/2"	24	PUNS01224	60.00
UN 11/16"	20	PUN01120	75.00
UN 11/16"	16	PUN01116	64.00
UNS 1"	14	PUNS10014	76.00
UN 1 1/16"	12	PUN11112	102.00
UN 1 5/16"	12	PUN15112	125.00
UN 1 5/8"	12	PUN15812	150.00
UN 1 3/4"	12	PUN13412	185.00
UN 2"	12	PUN20012	250.00
UN 1 1/8"	8	PUN11808	130.00
UN 1 1/4"	8	PUN11408	130.00
UN 1 3/8"	8	PUN13808	140.00
UN 1 1/2"	8	PUN11208	142.00
UN 1 3/4"	8	PUN13408	195.00
UN 2"	8	PUN20008	195.00



**BSW - BSF DIES HSS**  
**BSW - BSF PAFTALAR HSS**

**BSW DIES / BSW PAFTALAR**

BSW	pitch Hatve	CODE KOD	EURO
BSW 1/16"	60	PBSW116	43.00
BSW 3/32"	48	PBSW332	38.00
BSW 1/8"	40	PBSW018	23.50
BSW 5/32"	32	PBSW053	23.50
BSW 3/16"	24	PBSW031	23.50
BSW 7/32"	24	PBSW073	23.50
BSW 1/4"	20	PBSW014	20.00
BSW 5/16"	18	PBSW051	22.50
BSW 3/8"	16	PBSW038	25.50
BSW 7/16"	14	PBSW071	27.00
BSW 1/2"	12	PBSW012	33.50
BSW 9/16"	12	PBSW091	39.00
BSW 5/8"	11	PBSW058	43.00
BSW 3/4"	10	PBSW034	45.50
BSW 7/8"	9	PBSW078	68.00
BSW 1"	8	PBSW100	68.00
BSW 1 1/8"	7	PBSW118	122.00
BSW 1 1/4"	7	PBSW114	112.00
BSW 1 3/8"	6	PBSW138	130.00
BSW 1 1/2"	6	PBSW112	185.00
BSW 1 3/4"	5	PBSW134	265.00
BSW 2"	4.5	PBSW200	305.00



**BSF DIES / BSF PAFTALAR**

BSF	pitch Hatve	CODE KOD	EURO
BSF 3/16"	32	PBSF031	32.00
BSF 1/4"	26	PBSF014	30.00
BSF 5/16"	22	PBSF051	31.00
BSF 3/8"	20	PBSF038	30.00
BSF 7/16"	18	PBSF071	36.00
BSF 1/2"	16	PBSF012	41.00
BSF 9/16"	16	PBSF091	57.00
BSF 5/8"	14	PBSF058	61.00
BSF 3/4"	12	PBSF034	61.00
BSF 7/8"	11	PBSF078	89.00
BSF 1"	10	PBSF100	89.00



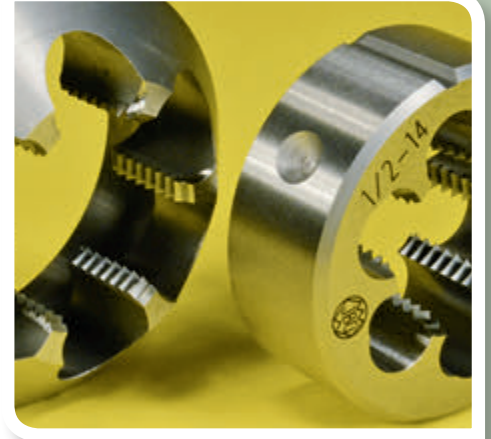
**CUTTING SPEED AND RECOMMENDATION / KESME HIZI VE ÖNERİLER**

WORKPIECE MATERIAL İŞLENEN MALZEME	CUTTING SPEED KESME HIZI m/minute m/dakika	RECOMMENDATIONS ÖNERİLER
ST37- ST50 SOFT STEEL ST37- ST50 YUMUŞAK ÇELİKLER	8-12	Use cutting oil Kesme yağı kullanınız.
CASE HARDENING STEEL SEMENTE ÇELİKLERİ CK15, 16MnCr5, 8620	6-10	Use cutting oil Kesme yağı kullanınız.
HEAT TREATABLE STEEL ISIL İŞLEM GÖREBİLEN ÇELİKLER C45, C35	5-8	Use cutting oil, prefer HSSE dies Kesme yağı kullanınız. HSS E pafta tercih ediniz
STAINLESS STEEL PASLANMAZ ÇELİKLER	4-6	Use cutting oil, prefer HSSE dies Kesme yağı kullanınız. HSS E pafta tercih ediniz
CAST IRON GG15, GG25 DÖKÜMLER GG15, GG25	5-8	Use cutting oil with paraphine Kesme yağı, parafin kullanınız
BRASS (SHORT CHIPPING) PİRİNÇ (KISA TALAŞ VEREN)	20-30	Use cutting oil and prefer MS (brass type) dies Kesme yağı kullanınız. MS pafta tercih ediniz
BRASS (LONG CHIPPING) PİRİNÇ (UZUN TALAŞ VEREN)	12-18	Use cutting oil and prefer MS (brass type) dies Kesme yağı kullanınız. MS pafta tercih ediniz
ALUMINIUM ALLOYS (LONG CHIPPING) ALUMINYUM ALAŞIMLARI (UZUN TALAŞ VEREN)	15-20	Use cutting oil Kesme yağı kullanınız.
ALUMINIUM ALLOYS (SHORT CHIPPING) ALUMINYUM ALAŞIMLARI (KISA TALAŞ VEREN)	8-12	Use cutting oil with paraphine Kesme yağı, parafin kullanınız
BRONZE BRONZ	5-8	Use cutting oil with paraphine Kesme yağı, parafin kullanınız



**TURNING DIAMETERS FOR DIES**  
**PAFTALAR İÇİN TORNALAMA ÇAPLARI**
**TURNING DIAMETERS / TORNALAMA ÇAPLARI**

Nominal diameter Nominal çap Ø mm	Pitch Hatve	maximum/minimum and target turning diameters for 6g tolerance 6g toleransı için önerilen minimum / maximum / hedef tornalama çapı		
		Minimum turning diameter Minimum tornalama çapı	Maximum Turning Diameter Maximum Tornalama Çapı	target turning diameter hedef tornalama çapı
2	0.4	1.89	1.98	1.94
2.5	0.45	2.38	2.48	2.43
3	0.5	2.87	2.98	2.92
3.5	0.6	3.35	3.48	3.41
4	0.7	3.84	3.99	3.91
4.5	0.75	4.34	4.48	4.41
5	0.8	4.83	4.98	4.9
6	1	5.79	5.97	5.88
7	1	6.79	6.97	6.88
8	1.25	7.76	7.97	7.87
10	1.5	9.73	9.96	9.85
12	1.75	11.7	11.97	11.83
14	2	13.68	13.96	13.82
16	2	15.68	15.96	15.82
18	2.5	17.62	17.96	17.79
20	2.5	19.62	19.96	19.79
22	2.5	21.62	21.96	21.79
24	3	23.58	23.95	23.77
27	3	26.58	26.95	26.77
30	3.5	29.52	29.95	29.73



**For finding the turning diameters of the Metric Fine threads:**

Look at the given table turning diameter difference of the same pitch dies on metric coarse thread. Apply the same difference on the Metric fine thread. Eg. For M20x1, look at M6x1 and the datas given on the table 5.79-5.97-5.88 are considered as 19.79 - 19.97 - 19.88.

*Metrik ince diş paftaların tornalama ölçülerini tespit için:*

*Aynı hatvedeki metrik normal vidanın yukarıda belirtilen tornalama farkı kadar fark metrik incedeki çapa uygulanır. Örneğin. M 20x1 için hatvesi 1mm olan M 6 ye bakılır, 5,79 - 5,97 - 5,88 olan değerler 19,79 - 19,97 - 19,88 olarak tespit edilir.*





**CARBIDE THREAD MILLING CUTTERS**  
*KARBÜR VİDA FREZELERİ*

## Advantages of thread milling Vida frezelemenin avantajları

- \* Threads to different tolerance classes can be produced with the same cutter
- \* Tool breakage does not necessarily entail scrapping of the workpiece
- \* Less power needed for cutting internal thread
- \* Short machining time due to high cutting speed
- \* Excellent thread surface finish
- \* Short chips hence no chip problems
- \* Right and left hand threads can be produced in blind or through holes by the same cutter
- \* Low cutting forces enable threads to be cut in thin wall workpieces
- \* Cutting speed and feed can be matched individually to workpiece material so no need different tool for different raw material workpiece
- \* No change of cutter spindle direction of rotation required
- \* No special tapping chucks required, standard chucks suffice
- \* Threads can be cut to exact depth.
- \* Threads can be cut to near bottom of blind holes
- \* Start of the thread accurately determined by NC programme

Specific advantages of different types of thread milling cutters

**GFS type :**

High productivity due to chamfering and thread milling with just one tool without tool changing.

**GFM type :**

Cutter can cut thread of identical pitch on a wide range of diameters  
Low tooling costs of large threads, neck between cutter teeth and chank allows deeper threads to be cut by a second thread milling cycle

**BGF type :**

High productivity due to drilling chamfering and thread milling with just one tool without tool changing

**GFE / GFT type :**

Small diameter threads starting from M 1 can be produced  
Deep threads 3xD can be produced

**BGFS-W / BGFS-H type.**

Allows the usage of drill thread milling cutters in soft and hardened steel materials.

- \* *Vida ölçü toleransları kontrol altındadır ve ayarlanabilir, aynı takımla farklı toleransta vidalar üretilebilir.*
- \* *Takım kırılmaları tamamen iş parçasının zayi olmasına sebep olmaz.*
- \* *Kılavuza kıyasla daha az güç tüketimi.*
- \* *Yüksek kesme değerleri sayesinde çok daha kısa işlem süresi.*
- \* *Mükemmel vida profili ve yüzey kalitesi.*
- \* *Talaşların küçük parçacıklara bölünmesi sayesinde talaş sıkışma sorunu aşılır.*
- \* *Sağ ve sol vida, ayrıca kör ve açık delik aynı takım ile işlenebilir.*
- \* *Çok az güç gerektirdiği için ince çeperli malzemelerde dahi dış çekebilir.*
- \* *Kesme hızları her malzemeye göre ayrı ayrı ayarlanabilir. Aynı evsafda takım gerekmez.*
- \* *Tezgah fener milinin dönüş yönü değiştirmeden vida çekme işlemi gerçekleşir.*
- \* *Vida çekmek üzere özel bir başlık veya bir aparat gerektirmez. Standart pensli başlıklar vs. kullanılabilir.*
- \* *Kör deliklerde deliğin dibine çok yakın mesafeye kadar dış çekebilir.*
- \* *Zor malzemelere kolayca dış çeker.*
- \* *Vidanın başlama noktası hassas bir şekilde belirlenebilir.*

Tiplerine göre bazı vida freze avantajları

**GFS tipi:**

Havşalama ve viade frezeleme aynı takım ile takım değiştirmeden yapıldığı için yüksek verimlilik.

**GFM tipi :**

Aynı takım, aynı hatvedeki diğer büyük çaplara da dış açabilir.

Büyük çaplı vidalarda takım maliyeti çok düşer. Takımın dış kısmı ile sapı arasındaki boşluk kadar derinlikte ikinci operasyonla oldukça uzun boyda vida çekilebilir.

**BGF tipi :**

Delme, vida frezeleme ve havşa aynı takıma takım değiştirmeden yapılabilir verimlilik artar.

**GFE / GFT tipi :**

M 1 den başlayan küçük dişlere vida çekilebilir . 3xD kadar uzun boyda vida çekilebilir

**BGFS-W / BGFS-H tipi:**

Vida frezesini yumuşak ve de sertleşmiş çeliklerde de kullanımına olanak tanır. Aynı takım ile takım değiştirmeden delme vida çekme havşalama işlemini yapar verimlilik artar.



## DRILL THREAD MILLING CUTTER SOLID CARBIDE COATED TYPE: BGF MATKAPLI VİDA FREZESİ SERT METAL KAPLAMALI TİP: BGF

### M. COARSE 1.5xD Thread lenght / M. NORMAL 1.5xD Diş boyu

Metric coarse Metrik Normal	CODE KOD	overall lenght tamboy	Thread lenght Diş boyu 1.5 x D	sap	Drill lenght matkap boyu	EURO
M 3	BGFM03D15T	48	5.4	6	0.5	221.00
M 4	BGFM04D15T	48	6.6	6	0.7	196.00
M 5	BGFM05D15T	54	8.6	6	0.8	192.00
M 6	BGFM06D15T	62	10.7	8	1	186.00
M 8	BGFM08D15T	74	13.4	10	1.25	235.00
M 10	BGFM10D15T	80	17.7	12	1.5	279.00
M 12	BGFM12D15T	90	20.3	14	1.5	385.00

### M. COARSE 2xD Thread lenght / M. NORMAL 2xD Diş boyu

Metric coarse Metrik Normal	CODE KOD	overall lenght tamboy	Thread lenght Diş boyu 2 x D	sap	Drill lenght matkap boyu	EURO
M 3	BGFM03D20T	48	6.9	6	0.5	221.00
M 4	BGFM04D20T	48	8.7	6	0.5	196.00
M 5	BGFM05D20T	54	11.0	6	0.8	192.00
M 6	BGFM06D20T	62	13.7	8	1	186.00
M 8	BGFM08D20T	74	18.4	10	1.3	235.00
M 10	BGFM10D20T	80	22.2	12	1.5	279.00
M 12	BGFM12D20T	90	25.5	14	1.5	385.00
M 14	BGFM14D20T	102	31.0	16	1.5	563.00
M 16	BGFM16D20T	102	35.1	18	1.5	563.00

### METRIC FINE 1.5xD Thread lenght / METRİK İNCE 1.5xD Diş boyu

Metric fine Metrik ince	CODE KOD	overall lenght tamboy	Thread lenght Diş boyu 1.5 x D	sap	Drill lenght matkap boyu	EURO
M 6x0.75	BGFM0607D15T	62	9.6	8	0.8	217.00
M 8x1	BGFM0810D15T	74	13.8	10	1	258.00
M 10x1	BGFM1010D15T	80	16.0	12	1	308.00
M 10x1.25	BGFM1012D15T	80	16.0	12	1.3	319.00
M 12x1	BGFM1210D15T	90	19.0	14	1	414.00
M 12x1.5	BGFM1215D15T	90	20.7	14	1.5	414.00

### METRIC FINE 2xD Thread lenght / METRİK İNCE 2xD Diş boyu

Metric fine Metrik ince	CODE KOD	overall lenght tamboy	Thread lenght Diş boyu 2 x D	sap	Drill lenght matkap boyu	EURO
M 6x0.75	BGFM0607D20T	62	12.6	8	0.8	217.00
M 8x1	BGFM0810D20T	74	16.8	10	1	258.00
M 10x1	BGFM1010D20T	80	21.0	12	1	308.00
M 10x1.25	BGFM1012D20T	80	21.0	12	1.3	319.00
M 12x1	BGFM1210D20T	90	25.0	14	1	414.00
M 12x1.5	BGFM1215D20T	90	26.7	14	1.5	414.00
M 14x1.5	BGFM1415D20T	102	29.7	16	1.5	611.00
M 16x1.5	BGFM1615D20T	102	32.9	18	1.5	683.00



TYPE - TİP : BGF  
DRILLING - COUNTERSINKING 45° -  
THREADING : 3 OPERATIONS WITH SAME  
TOOL IN SECONDS  
DELME - HAVŞALAMA 45° - VİDA  
ÇEKME : 3 İŞLEM TEK TAKIMLA  
SANİYELER İÇİNDE

Internal coolant type, 2.5xD thread lenght  
and other sizes are also available, please  
ask for quotation.

İçten soğutmalı tip, 2.5xD diş boyu ve diğer  
dişler mevcuttur, lütfen fiyat isteyiniz.

## THREAD MILLING CUTTERS SOLID CARBIDE COATED TYPE: GFM VİDA FREZESİ SERT METAL KAPLAMALI TİP: GFM

### METRIC COARSE / METRIC FINE METRİK NORMAL / METRİK İNCE

Tool diameter Takım çapı	Pitch Hatve	CODE KOD	Overall length tamboy	D > For thread diameters Ø > Diş çekebileceği çaplar Ø >	Max thread length Max Diş Boy	sap	Z	EURO
6	0.5	GFMM0605T	54	8	12.0	6	4	159.00
6	1	GFMM0610T	54	8	12.0	6	4	150.00
8	0.5	GFMM0805T	64	10	16.0	8	4	194.00
8	0.75	GFMM0807T	64	10	16.0	8	4	191.00
8	1	GFMM0810T	64	10	16.0	8	4	170.00
10	0.75	GFMM1007T	70	12	25.0	10	4	240.00
10	1	GFMM1010T	70	12	25.0	10	4	205.00
10	1.25	GFMM1012T	70	12	25.0	10	4	220.00
10	1.5	GFMM1015T	70	12	25.0	10	4	194.00
12	1	GFMM1210T	80	16	31.0	12	4	249.00
12	1.25	GFMM1212T	80	16	31.0	12	4	274.00
12	1.5	GFMM1215T	80	16	31.0	12	4	250.00
16	1	GFMM1610T	90	22	40.0	16	5	347.00
16	1.5	GFMM1615T	90	22	40.0	16	5	312.00
16	2	GFMM1620T	90	22	40.0	16	5	322.00
16	2.5	GFMM1625T	90	22	40.0	16	5	347.00

TYPE - TİP : GFM  
SAME TOOL CAN MAKE DIFFERENT  
DIAMETER THREAD HAVING THE SAME  
PITCH  
AYNI TAKIM AYNI HATVEDE OLAN FARKLI  
ÇAPLARA DIŞ AÇABİLİR

### BSP - G WITHWORTH PARALLELE PIPE THREADS BSP - G WITHWORTH DÜZ BORU DIŞLERİ

Tool diameter Takım çapı	Pitch Hatve	CODE KOD	Overall length tamboy	D > For thread diameters Ø > Diş çekebileceği çaplar Ø >	Max thread length Max Diş Boy	sap	Z	EURO
10	sap19	GFMG1019T	70	G1/4 ve üstü	25.0	10	4	219.00
16	sap14	GFMG1614T	90	G1/2 ve üstü	40.0	16	5	352.00
20	sap11	GFMG2011T	105	G1" ve üstü	50.0	20	5	506.00
25	sap11	GFMG2511T	115	G1-1/2" ve üstü	57.0	25	6	702.00

GFM G thread milling cutters are suitable for internal and external threads  
GFM G vida frezeleri hem iç hem dış vida frezeleyebilmektedir.  
All are coated and internal coolant type cutters / Tamamı kaplamalı ve içten soğutmalı takımlardır



## THREAD MILLING CUTTERS SOLID CARBIDE COATED TYPE: GFS VİDA FREZESİ SERT METAL KAPLAMALI TİP: GFS

### METRIC COARSE / METRİK NORMAL

METRIC COARSE METRİK NORMAL	Pitch Hatve	CODE KOD	overlall lenght tamboy	Thread lenght Diş Boyu 2 x D	Shank sap Ø	Z	EURO
M 3*	0.5	GFSM0305D20T	48	6.75	6	3	146.00
M 4	0.7	GFSM0407D20T	48	8.75	6	3	131.00
M 5	0.8	GFSM0508D20T	54	10.75	6	3	134.00
M 6	1	GFSM0610D20T	62	13.50	8	3	157.00
M 8	1.25	GFSM0812D20T	74	18.10	10	3	188.00
M 10	1.5	GFSM1015D20T	80	21.70	12	4	218.00
M 12	1.75	GFSM1217D20T	90	25.30	14	4	272.00
M 14	2	GFSM1420D20T	102	30.95	16	4	331.00
M 16	2	GFSM1620D20T	102	34.95	18	4	398.00

\* coated but not internal coolant, all others are coated and internal coolant  
\* kaplamalı fakat içten soğutmalı değildir, tüm diğerleri kaplamalı ve içten soğutmalıdır

### METRIC FINE / METRİK İNCE

METRIC FINE METRİK İNCE	Pitch Hatve	CODE KOD	overlall lenght tamboy	Thread lenght Diş Boyu 2 x D	Shank sap Ø	Z	EURO
M 6	0.75	GFSM0607D20T	62	13.10	8	3	180.00
M 8	0.75	GFSM0807D20T	74	16.85	10	3	205.00
M 8	1	GFSM0810D20T	74	17.45	10	3	199.00
M 10	1	GFSM1010D20T	80	21.45	12	4	238.00
M 10	1.25	GFSM1012D20T	80	21.85	12	4	230.00
M 12	1	GFSM1210D20T	90	25.45	14	4	305.00
M 12	1.5	GFSM1215D20T	90	26.20	14	4	293.00
M 14	1.5	GFSM1415D20T	102	30.70	16	4	351.00
M 16	1.5	GFSM1615D20T	102	33.70	18	4	418.00

All is coated and internal coolant / Tamamı kaplamalı ve içten soğutmalıdır



TYPE - TİP : GFS  
COUNTERSINKING AND THREAD  
MILLING WITH THE SAME TOOL IN  
SAME OPERATION  
HAVŞALAMA VE VİDA FREZELEME AYNI  
KATIMLA AYNI OPERASYONLA





**THREAD GAUGES**  
**VİDA MASTARLARI**

**METRIC COARSE THREAD PLUG GAUGES Tol. 6H**  
**METRİK NORMAL DIŐ TAMPON MASTARLAR Tol. 6H**

**METRIC COARSE PLUG GAUGE / METRİK NORMAL TAMPON MASTAR**



METRIC METRİK	PITCH HATVE	CODE KOD	EURO
M 1	0.25	M010E	135.00
M 1.2	0.25	M012E	115.00
M 1.4	0.3	M014E	93.00
M 1.6	0.35	M016E	84.00
M 1.7	0.35	M017E	96.00
M 1.8	0.35	M018E	80.00
M 2	0.4	M020E	67.00
M 2.2	0.45	M022E	75.00
M 2.3	0.4	M023E	78.00
M 2.5	0.45	M025E	58.00
M 2.6	0.45	M026E	74.00
M 3	0.5	M030E	44.00
M 3.5	0.6	M035E	52.00
M 4	0.7	M040E	41.00
M 4.5	0.75	M045E	67.00
M 5	0.8	M050E	40.00
M 6	1	M060E	40.00
M 7	1	M070E	48.00
M 8	1.25	M080E	40.00
M 9	1.25	M090E	61.00
M 10	1.5	M100E	43.00
M 11	1.5	M110E	65.00
M 12	1.75	M120E	46.00
M 14	2	M140E	50.00
M 16	2	M160E	53.00
M 18	2.5	M180E	61.00
M 20	2.5	M200E	65.00
M 22	2.5	M220E	69.00
M 24	3	M240E	78.00
M 27	3	M270E	91.00
M 30	3.5	M300E	101.00
M 33	3.5	M330E	116.00
M 36	4	M360E	125.00
M 39	4	M390E	138.00
M 42*	4.5	M420E	173.00
M 45*	4.5	M450E	190.00
M 48*	5	M480E	205.00
M 52*	5	M520E	220.00
M 56*	5.5	M560E	240.00
M 60*	5.5	M600E	270.00



\* indicated plug gauges have go and nogo separate 2 pcs and the price is for set of total 2 pcs.

\* işaretli tampon mastarlar geçer ve geçmez olarak 2 parçalıdır, fiyat toplam 2 parçalı takım fiyatıdır.

**METRIC COARSE RING GAUGES Tol. 6g**  
**METRİK NORMAL HALKA MASTARLAR Tol. 6g**

**METRIC COARSE RING GAUGE / METRİK NORMAL HALKA MASTAR**

METRIC METRİK	PITCH HATVE	CODE KOD	EURO
M 1	0.25	M010D	230.00
M 1.2	0.25	M012D	215.00
M 1.4	0.3	M014D	190.00
M 1.6	0.35	M016D	162.00
M 1.7	0.35	M017D	205.00
M 1.8	0.35	M018D	150.00
M 2	0.4	M020D	132.00
M 2.2	0.45	M022D	151.00
M 2.3	0.4	M023D	255.00
M 2.5	0.45	M025D	105.00
M 2.6	0.45	M026D	140.00
M 3	0.5	M030D	72.00
M 3.5	0.6	M035D	84.00
M 4	0.7	M040D	66.00
M 4.5	0.75	M045D	125.00
M 5	0.8	M050D	66.00
M 6	1	M060D	66.00
M 7	1	M070D	90.00
M 8	1.25	M080D	68.00
M 9	1.25	M090D	108.00
M 10	1.5	M100D	78.00
M 11	1.5	M110D	125.00
M 12	1.75	M120D	87.00
M 14	2	M140D	93.00
M 16	2	M160D	103.00
M 18	2.5	M180D	120.00
M 20	2.5	M200D	132.00
M 22	2.5	M220D	146.00
M 24	3	M240D	156.00
M 27	3	M270D	191.00
M 30	3.5	M300D	209.00
M 33	3.5	M330D	231.00
M 36	4	M360D	250.00
M 39	4	M390D	270.00
M 42	4.5	M420D	300.00
M 45	4.5	M450D	320.00
M 48	5	M480D	340.00
M 52	5	M520D	370.00
M 56	5.5	M560D	400.00
M 60	5.5	M600D	520.00



Ring gauges have go and nogo separate 2 pcs and the price is for set of total 2 pcs.  
 Halka masterlar geçer ve geçmez olarak 2 parçalıdır, fiyat toplam 2 parçalı takım fiyatıdır.

**METRIC FINE PITCH PLUG GAUGES Tol. 6H**  
**METRİK İNCE DIŞ TAMPON MASTARLAR Tol. 6H**

**METRIC FINE PLUG GAUGE / METRİK İNCE TAMPON MASTAR**



M. FINE M. İNCE	CODE KOD	EURO
M 1 x 0.2	M01002E	284.00
M 1.2 x 0.2	M01202E	282.00
M 1.4 x 0.2	M01402E	275.00
M 1.6 x 0.2	M01602E	262.00
M 1.8 x 0.2	M01802E	257.00
M 2 x 0.2	M02002E	251.00
M 2 x 0.25	M020025E	183.00
M 2.5 x 0.25	M02502E	178.00
M 3 x 0.25	M03002E	178.00
M 3 x 0.35	M03003E	117.00
M 3.5 x 0.35	M03503E	117.00
M 4 x 0.35	M04003E	110.00
M 4 x 0.5	M04005E	81.00
M 4.5 x 0.5	M04505E	95.00
M 5 x 0.5	M05005E	82.00
M 6 x 0.5	M06005E	82.00
M 6 x 0.75	M06007E	51.00
M 7 x 0.5	M07005E	87.00
M 7 x 0.75	M07007E	59.00
M 8 x 0.5	M08005E	87.00
M 8 x 0.75	M08007E	51.00
M 8 x 1.0	M08010E	47.00
M 9 x 0.5	M09005E	101.00
M 9 x 0.75	M09007E	65.00
M 9 x 1.0	M09010E	55.00
M 10 x 0.5	M10005E	97.00
M 10 x 0.75	M10007E	57.00
M 10 x 1.0	M10010E	49.00
M 10 x 1.25	M10012E	57.00
M 11 x 0.5	M11005E	112.00
M 11 x 0.75	M11007E	70.00
M 11 x 1.0	M11010E	59.00
M 12 x 0.5	M12005E	106.00
M 12 x 0.75	M12007E	63.00
M 12 x 1.0	M12010E	53.00
M 12 x 1.25	M12012E	61.00
M 12 x 1.5	M12015E	49.00
M 13 x 0.75	M13007E	72.00
M 13 x 1.0	M13010E	69.00

M. FINE M. İNCE	CODE KOD	EURO
M 13 x 1.5	M13015E	109.00
M 14 x 0.5	M14005E	116.00
M 14 x 0.75	M14007E	72.00
M 14 x 1.0	M14010E	57.00
M 14 x 1.25	M14012E	70.00
M 14 x 1.5	M14015E	52.00
M 15 x 0.75	M15007E	80.00
M 15 x 1.0	M15010E	71.00
M 15 x 1.5	M15015E	72.00
M 16 x 0.5	M16005E	129.00
M 16 x 0.75	M16007E	77.00
M 16 x 1.25	M16012E	183.00
M 16 x 1.0	M16010E	64.00
M 16 x 1.5	M16015E	54.00
M 17 x 1.0	M17010E	77.00
M 17 x 1.5	M17015E	100.00
M 18 x 0.5	M18005E	146.00
M 18 x 0.75	M18007E	82.00
M 18 x 1.0	M18010E	68.00
M 18 x 1.25	M18012E	224.00
M 18 x 1.5	M18015E	58.00
M 18 x 2.0	M18020E	71.00
M 19 x 0.75	M19007E	96.00
M 19 x 1.0	M19010E	84.00
M 19 x 1.5	M19015E	153.00
M 20 x 0.5	M20005E	164.00
M 20 x 0.75	M20007E	90.00
M 20 x 1.0	M20010E	72.00
M 20 x 1.25	M20012E	235.00
M 20 x 1.5	M20015E	62.00
M 20 x 2.0	M20020E	73.00
M 21 x 1.0	M21010E	95.00
M 21 x 1.5	M21015E	165.00
M 22 x 0.75	M22007E	106.00
M 22 x 1.0	M22010E	81.00
M 22 x 1.25	M22012E	244.00
M 22 x 1.5	M22015E	69.00
M 22 x 2.0	M22020E	77.00
M 23 x 1.0	M23010E	102.00

**METRIC FINE PITCH PLUG GAUGES Tol. 6H**  
**METRİK İNCE DİŞ TAMPON MASTARLAR Tol. 6H**

**METRIC FINE PLUG GAUGE / METRİK İNCE TAMPON MASTAR**

M. FINE M. İNCE	CODE KOD	EURO
M 24 x 1.0	M24010E	86.00
M 24 x 1.25	M24012E	249.00
M 24 x 1.5	M24015E	73.00
M 24 x 2.0	M24020E	82.00
M 25 x 1.0	M25010E	100.00
M 25 x 1.5	M25015E	86.00
M 25 x 2.0	M25020E	90.00
M 26 x 1.0	M26010E	103.00
M 26 x 1.5	M26015E	82.00
M 26 x 2.0	M26020E	92.00
M 27 x 1.0	M27010E	106.00
M 27 x 1.5	M27015E	91.00
M 27 x 2.0	M27020E	92.00
M 28 x 1.0	M28010E	110.00
M 28 x 1.5	M28015E	87.00
M 28 x 2.0	M28020E	98.00
M 30 x 1.0	M30010E	110.00
M 30 x 1.5	M30015E	94.00
M 30 x 2.0	M30020E	100.00
M 30 x 3.0	M30030E	123.00
M 32 x 1.0	M32010E	114.00
M 32 x 1.5	M32015E	94.00
M 32 x 2.0	M32020E	105.00
M 33 x 1.0	M33010E	119.00
M 33 x 1.5	M33015E	98.00
M 33 x 2.0	M33020E	108.00
M 33 x 3.0	M33030E	126.00
M 34 x 1.0	M34010E	122.00
M 34 x 1.5	M34015E	109.00
M 34 x 2.0	M34020E	145.00
M 35 x 1.0	M35010E	135.00
M 35 x 1.5	M35015E	112.00
M 35 x 2.0	M35020E	150.00
M 36 x 1.0	M36010E	136.00

M. FINE M. İNCE	CODE KOD	EURO
M 36 x 1.5	M36015E	110.00
M 36 x 2.0	M36020E	118.00
M 36 x 3.0	M36030E	131.00
M 38 x 1.0	M38010E	147.00
M 38 x 1.5	M38015E	122.00
M 38 x 2.0	M38020E	130.00
M 39 x 1.0	M39010E	195.00
M 39 x 1.5	M39015E	133.00
M 39 x 2.0	M39020E	133.00
M 39 x 3.0	M39030E	153.00
M 40 x 1.0	M40010E	159.00
M 40 x 1.5	M40015E	125.00
M 40 x 2.0	M40020E	139.00
M 42 x 1.0 *	M42010E	180.00
M 42 x 1.5 *	M42015E	147.00
M 42 x 2.0*	M42020E	158.00
M 45 x 1.0*	M45010E	190.00
M 45 x 1.5*	M45015E	156.00
M 45 x 2.0*	M45020E	168.00
M 48 x 1.5*	M48015E	166.00
M 48 x 2.0*	M48020E	178.00
M 50 x 1.5*	M50015E	170.00
M 50 x 2.0*	M50020E	183.00
M 52 x 1.5*	M52015E	185.00
M 52 x 2.0*	M52020E	190.00
M 55 x 1.5*	M55015E	198.00
M 55 x 2.0*	M55020E	202.00
M 56 x 1.5*	M56015E	202.00
M 56 x 2.0*	M56020E	206.00
M 58 x 1.5*	M58015E	208.00
M 58 x 2.0*	M58020E	214.00
M 60 x 1.5*	M60015E	215.00
M 60 x 2.0*	M60020E	222.00
M 62 x 1.5 *	M62015E	230.00



\* indicated plug gauges have go and nogo separate 2 pcs and the price is for set of total 2 pcs.  
 \* işaretli tampon mastarlar geçer ve geçmez olarak 2 parçalıdır, fiyat toplam 2 parçalı takım fiyatıdır.

**METRIC FINE PITCH RING GAUGES Tol. 6g**  
**METRİK İNCE DIŞ HALKA MASTARLAR Tol. 6g**

**METRIC FINE RING GAUGE / METRİK İNCE HALKA MASTAR**



M. FINE M. İNCE	CODE KOD	EURO
M 1 x 0.2	M01002D	753.00
M 1.2 x 0.2	M01202D	736.00
M 1.4 x 0.2	M01402D	715.00
M 1.6 x 0.2	M01602D	690.00
M 1.8 x 0.2	M01802D	660.00
M 2 x 0.2	M02002D	650.00
M 2 x 0.25	M020025D	490.00
M 2.5 x 0.25	M02502D	490.00
M 3 x 0.25	M03002D	468.00
M 3 x 0.35	M03003D	146.00
M 3.5 x 0.35	M03503D	145.00
M 4 x 0.35	M04003D	130.00
M 4 x 0.5	M04005D	112.00
M 4.5 x 0.5	M04505D	150.00
M 5 x 0.5	M05005D	115.00
M 6 x 0.5	M06005D	115.00
M 6 x 0.75	M06007D	82.00
M 7 x 0.5	M07005D	125.00
M 7 x 0.75	M07007D	113.00
M 8 x 0.5	M08005D	121.00
M 8 x 0.75	M08007D	85.00
M 8 x 1.0	M08010D	78.00
M 9 x 0.5	M09005D	144.00
M 9 x 0.75	M09007D	122.00
M 9 x 1.0	M09010D	108.00
M 10 x 0.5	M10005D	142.00
M 10 x 0.75	M10007D	100.00
M 10 x 1.0	M10010D	87.00
M 10 x 1.25	M10012D	102.00
M 11 x 0.5	M11005D	180.00
M 11 x 0.75	M11007D	141.00
M 11 x 1.0	M11010D	120.00
M 12 x 0.5	M12005D	163.00
M 12 x 0.75	M12007D	115.00
M 12 x 1.0	M12010D	99.00
M 12 x 1.25	M12012D	130.00
M 12 x 1.5	M12015D	93.00
M 13 x 0.75	M13007D	161.00
M 13 x 1.0	M13010D	145.00

M. FINE M. İNCE	CODE KOD	EURO
M 13 x 1.5	M13015D	242.00
M 14 x 0.5	M14005D	190.00
M 14 x 0.75	M14007D	137.00
M 14 x 1.0	M14010D	111.00
M 14 x 1.25	M14012D	144.00
M 14 x 1.5	M14015D	100.00
M 15 x 0.75	M15007D	170.00
M 15 x 1.0	M15010D	152.00
M 15 x 1.5	M15015D	146.00
M 16 x 0.5	M16005D	216.00
M 16 x 0.75	M16007D	151.00
M 16 x 1.25	M16012D	434.00
M 16 x 1.0	M16010D	122.00
M 16 x 1.5	M16015D	109.00
M 17 x 1.0	M17010D	149.00
M 17 x 1.5	M17015D	171.00
M 18 x 0.5	M18005D	245.00
M 18 x 0.75	M18007D	163.00
M 18 x 1.0	M18010D	138.00
M 18 x 1.25	M18012D	466.00
M 18 x 1.5	M18015D	123.00
M 18 x 2.0	M18020D	152.00
M 19 x 0.75	M19007D	196.00
M 19 x 1.0	M19010D	171.00
M 19 x 1.5	M19015D	255.00
M 20 x 0.5	M20005D	272.00
M 20 x 0.75	M20007D	175.00
M 20 x 1.0	M20010D	150.00
M 20 x 1.25	M20012D	484.00
M 20 x 1.5	M20015D	136.00
M 20 x 2.0	M20020D	152.00
M 21 x 1.0	M21010D	192.00
M 21 x 1.5	M21015D	355.00
M 22 x 0.75	M22007D	210.00
M 22 x 1.0	M22010D	168.00
M 22 x 1.25	M22012D	516.00
M 22 x 1.5	M22015D	145.00
M 22 x 2.0	M22020D	161.00
M 23 x 1.0	M23010D	202.00

Ring gauges have go and nogo separate. 2 pcs and the price is for set of total 2 pcs.  
Halka masterlar geçer ve geçmez olarak 2 parçalıdır, fiyat toplam 2 parçalı takım fiyatıdır.



**METRIC FINE PITCH RING GAUGES Tol. 6g**  
**METRİK İNCE DİŞ HALKA MASTARLAR Tol. 6g**

**METRIC FINE RING GAUGE / METRİK İNCE HALKA MASTAR**

M. FINE M. İNCE	CODE KOD	EURO
M 24 x 1.0	M24010D	178.00
M 24 x 1.25	M24012D	566.00
M 24 x 1.5	M24015D	154.00
M 24 x 2.0	M24020D	168.00
M 25 x 1.0	M25010D	197.00
M 25 x 1.5	M25015D	170.00
M 25 x 2.0	M25020D	185.00
M 26 x 1.0	M26010D	197.00
M 26 x 1.5	M26015D	175.00
M 26 x 2.0	M26020D	185.00
M 27 x 1.0	M27010D	209.00
M 27 x 1.5	M27015D	181.00
M 27 x 2.0	M27020D	190.00
M 28 x 1.0	M28010D	210.00
M 28 x 1.5	M28015D	185.00
M 28 x 2.0	M28020D	196.00
M 30 x 1.0	M30010D	214.00
M 30 x 1.5	M30015D	194.00
M 30 x 2.0	M30020D	205.00
M 30 x 3.0	M30030D	232.00
M 32 x 1.0	M32010D	245.00
M 32 x 1.5	M32015D	205.00
M 32 x 2.0	M32020D	221.00
M 33 x 1.0	M33010D	251.00
M 33 x 1.5	M33015D	210.00
M 33 x 2.0	M33020D	221.00
M 33 x 3.0	M33030D	252.00
M 34 x 1.0	M34010D	255.00
M 34 x 1.5	M34015D	226.00
M 34 x 2.0	M34020D	286.00
M 35 x 1.0	M35010D	262.00
M 35 x 1.5	M35015D	221.00
M 35 x 2.0	M35020D	291.00
M 36 x 1.0	M36010D	271.00

M. FINE M. İNCE	CODE KOD	EURO
M 36 x 1.5	M36015D	226.00
M 36 x 2.0	M36020D	240.00
M 36 x 3.0	M36030D	264.00
M 38 x 1.0	M38010D	350.00
M 38 x 1.5	M38015D	240.00
M 38 x 2.0	M38020D	260.00
M 39 x 1.0	M39010D	281.00
M 39 x 1.5	M39015D	260.00
M 39 x 2.0	M39020D	262.00
M 39 x 3.0	M39030D	279.00
M 40 x 1.0	M40010D	305.00
M 40 x 1.5	M40015D	249.00
M 40 x 2.0	M40020D	275.00
M 42 x 1.0	M42010D	315.00
M 42 x 1.5	M42015D	263.00
M 42 x 2.0	M42020D	279.00
M 45 x 1.0	M45010D	338.00
M 45 x 1.5	M45015D	275.00
M 45 x 2.0	M45020D	293.00
M 48 x 1.5	M48015D	290.00
M 48 x 2.0	M48020D	310.00
M 50 x 1.5	M50015D	304.00
M 50 x 2.0	M50020D	324.00
M 52 x 1.5	M52015D	316.00
M 52 x 2.0	M52020D	336.00
M 55 x 1.5	M55015D	340.00
M 55 x 2.0	M55020D	358.00
M 56 x 1.5	M56015D	350.00
M 56 x 2.0	M56020D	363.00
M 58 x 1.5	M58015D	358.00
M 58 x 2.0	M58020D	372.00
M 60 x 1.5	M60015D	372.00
M 60 x 2.0	M60020D	389.00
M 62 x 1.5	M62015D	385.00



Ring gauges have go and nogo separate 2 pcs and the price is for set of total 2 pcs.  
Halka mastarlar geçer ve geçmez olarak 2 parçalıdır, fiyat toplam 2 parçalı takım fiyatıdır.

## UNC PLUG GAUGES ToI.2B UNC TAMPON MASTARLAR ToI.2B

### UNC PLUG GAUGE / UNC TAMPON MASTAR



UNC	PITCH HATVE	CODE KOD	EURO
UNC Nr. 1	64	MUNCN01E	109.00
UNC Nr. 2	56	MUNCN02E	82.00
UNC Nr. 3	48	MUNCN03E	82.00
UNC Nr. 4	40	MUNCN04E	65.00
UNC Nr. 5	40	MUNCN05E	65.00
UNC Nr. 6	32	MUNCN06E	55.00
UNC Nr. 8	32	MUNCN08E	55.00
UNC Nr. 10	24	MUNCN10E	55.00
UNC Nr. 12	24	MUNCN12E	55.00
UNC 1/4"	20	MUNC014E	50.00
UNC 5/16"	18	MUNC051E	50.00
UNC 3/8"	16	MUNC038E	51.00
UNC 7/16"	14	MUNC071E	55.00
UNC 1/2"	13	MUNC012E	57.00
UNC 9/16"	12	MUNC091E	62.00
UNC 5/8"	11	MUNC058E	64.00
UNC 3/4"	10	MUNC034E	72.00
UNC 7/8"	9	MUNC078E	88.00
UNC 1"	8	MUNC100E	99.00
UNC 1 1/8"	7	MUNC118E	116.00
UNC 1 1/4"	7	MUNC114E	124.00
UNC 1 3/8"	6	MUNC138E	145.00
UNC 1 1/2"	6	MUNC112E	162.00
UNC 1 3/4" *	5	MUNC134E	230.00
UNC 2" *	4.5	MUNC200E	262.00
UNC 2 1/4" *	4.5	MUNC214E	285.00
UNC 2 1/2" *	4	MUNC212E	320.00



\* indicated plug gauges have go and nogo separate 2 pcs and the price is for set of total 2 pcs.

\* işaretli tampon mastarlar geçer ve geçmez olarak 2 parçalıdır, fiyat toplam 2 parçalı takım fiyatıdır.

## UNC RING GAUGES Tol. 2A UNC HALKA MASTARLAR Tol. 2A

### UNC RING GAUGE / UNC HALKA MASTAR

UNC	PITCH HATVE	CODE KOD	EURO
UNC Nr. 1	64	MUNCN01D	184.00
UNC Nr. 2	56	MUNCN02D	146.00
UNC Nr. 3	48	MUNCN03D	168.00
UNC Nr. 4	40	MUNCN04D	119.00
UNC Nr. 5	40	MUNCN05D	110.00
UNC Nr. 6	32	MUNCN06D	93.00
UNC Nr. 8	32	MUNCN08D	89.00
UNC Nr. 10	24	MUNCN10D	89.00
UNC Nr. 12	24	MUNCN12D	93.00
UNC 1/4"	20	MUNC014D	82.00
UNC 5/16"	18	MUNC051D	88.00
UNC 3/8"	16	MUNC038D	95.00
UNC 7/16"	14	MUNC071D	104.00
UNC 1/2"	13	MUNC012D	114.00
UNC 9/16"	12	MUNC091D	125.00
UNC 5/8"	11	MUNC058D	134.00
UNC 3/4"	10	MUNC034D	156.00
UNC 7/8"	9	MUNC078D	200.00
UNC 1"	8	MUNC100D	217.00
UNC 1 1/8"	7	MUNC118D	266.00
UNC 1 1/4"	7	MUNC114D	290.00
UNC 1 3/8"	6	MUNC138D	324.00
UNC 1 1/2"	6	MUNC112D	345.00
UNC 1 3/4"	5	MUNC134D	475.00
UNC 2"	4.5	MUNC200D	545.00
UNC 2 1/4"	4.5	MUNC214D	622.00
UNC 2 1/2"	4	MUNC212D	694.00



Ring gauges have go and nogo separate 2 pcs and the price is for set of total 2 pcs.  
Halka masterlar geer ve gemez olarak 2 paralıdır, fiyat toplam 2 paralı takım fiyatıdır.

**UNF PLUG GAUGES Tol.2B**  
**UNF TAMPON MASTARLAR Tol.2B**

**UNF PLUG GAUGE / UNF TAMPON MASTAR**



UNF	PITCH HATVE	CODE KOD	EURO
UNF Nr.1	72	MUNFN01E	91.00
UNF Nr.2	64	MUNFN02E	100.00
UNF Nr.3	56	MUNFN03E	96.00
UNF Nr.4	48	MUNFN04E	76.00
UNF Nr.5	44	MUNFN05E	69.00
UNF Nr.6	40	MUNFN06E	58.00
UNF Nr.8	36	MUNFN08E	55.00
UNF Nr.10	32	MUNFN10E	55.00
UNF Nr.12	28	MUNFN12E	55.00
UNF 1/4"	28	MUNF014E	50.00
UNF 5/16"	24	MUNF051E	50.00
UNF 3/8"	24	MUNF038E	51.00
UNF 7/16"	20	MUNF071E	53.00
UNF 1/2"	20	MUNF012E	57.00
UNF 9/16"	18	MUNF091E	60.00
UNF 5/8"	18	MUNF058E	64.00
UNF 3/4"	16	MUNF034E	71.00
UNF 7/8"	14	MUNF078E	83.00
UNF 1"	12	MUNF100E	91.00
UNF 1 1/8"	12	MUNF118E	110.00
UNF 1 1/4"	12	MUNF114E	116.00
UNF 1 3/8"	12	MUNF138E	130.00
UNF 1 1/2"	12	MUNF112E	143.00

## UNF RING GAUGES Tol. 2A UNF HALKA MASTARLAR Tol. 2A

### UNF RING GAUGE / UNF HALKA MASTAR

UNF	PITCH HATVE	CODE KOD	EURO
UNF Nr.1	72	MUNFN01D	180.00
UNF Nr.2	64	MUNFN02D	169.00
UNF Nr.3	56	MUNFN03D	169.00
UNF Nr.4	48	MUNFN04D	137.00
UNF Nr.5	44	MUNFN05D	108.00
UNF Nr.6	40	MUNFN06D	106.00
UNF Nr.8	36	MUNFN08D	97.00
UNF Nr.10	32	MUNFN10D	85.00
UNF Nr.12	28	MUNFN12D	94.00
UNF 1/4"	28	MUNF014D	82.00
UNF 5/16"	24	MUNF051D	88.00
UNF 3/8"	24	MUNF038D	95.00
UNF 7/16"	20	MUNF071D	102.00
UNF 1/2"	20	MUNF012D	113.00
UNF 9/16"	18	MUNF091D	122.00
UNF 5/8"	18	MUNF058D	135.00
UNF 3/4"	16	MUNF034D	157.00
UNF 7/8"	14	MUNF078D	192.00
UNF 1"	12	MUNF100D	217.00
UNF 1 1/8"	12	MUNF118D	252.00
UNF 1 1/4"	12	MUNF114D	275.00
UNF 1 3/8"	12	MUNF138D	300.00
UNF 1 1/2"	12	MUNF112D	322.00



Ring gauges have go and nogo separate 2 pcs and the price is for set of total 2 pcs.  
Halka masterlar geçer ve geçmez olarak 2 parçalıdır, fiyat toplam 2 parçalı takım fiyatıdır.

**BSP - G DIN EN ISO 228 PLUG GAUGES Tol. A**  
**BSP - G DIN EN ISO 228 TAMPON MASTARLAR Tol. A**

**BSP - G PLUG GAUGE / BSP - G TAMPON MASTAR**



BSP - G	PITCH HATVE	CODE KOD	EURO
G 1/16"	28	MG011E	84.00
G 1/8"	28	MG018E	48.00
G 1/4"	19	MG014E	53.00
G 3/8"	19	MG038E	61.00
G 1/2"	14	MG012E	70.00
G 5/8"	14	MG058E	87.00
G 3/4"	14	MG034E	81.00
G 7/8"	14	MG078E	113.00
G 1"	11	MG100E	99.00
G 1 1/8"	11	MG118E	135.00
G 1 1/4" *	11	MG114E	150.00
G 1 1/2" *	11	MG112E	170.00
G 1 3/4" *	11	MG134E	225.00
G 2" *	11	MG200E	215.00
G 2 1/4" *	11	MG214E	280.00
G 2 1/2" *	11	MG212E	280.00
G 2 3/4" *	11	MG234E	325.00
G 3" *	11	MG300E	345.00
G 3 1/2" *	11	MG312E	405.00
G 4" *	11	MG400E	490.00
G 4 1/2" *	11	MG412E	625.00
G 5" *	11	MG500E	690.00
G 5 1/2" *	11	MG512E	745.00
G 6" *	11	MG600E	820.00



\* indicated plug gauges have go and nogo seperate 2 pcs and the price is for set of total 2 pcs.

\* işaretli tampon mastarlar geçer ve geçmez olarak 2 parçalıdır, fiyat toplam 2 parçalı takım fiyatıdır.

**BSP - G DIN EN ISO 228 RING GAUGES Tol.A**  
**BSP - G DIN EN ISO 228 HALKA MASTARLAR Tol. A**

**BSP - G RING GAUGE / BSP - G HALKA MASTAR**

BSP - G	PITCH HATVE	CODE KOD	EURO
G 1/16"	28	MG011D	190.00
G 1/8"	28	MG018D	86.00
G 1/4"	19	MG014D	100.00
G 3/8"	19	MG038D	116.00
G 1/2"	14	MG012D	136.00
G 5/8"	14	MG058D	180.00
G 3/4"	14	MG034D	166.00
G 7/8"	14	MG078D	234.00
G 1"	11	MG100D	202.00
G 1 1/8"	11	MG118D	276.00
G 1 1/4"	11	MG114D	276.00
G 1 1/2"	11	MG112D	306.00
G 1 3/4"	11	MG134D	360.00
G 2"	11	MG200D	380.00
G 2 1/4"	11	MG214D	474.00
G 2 1/2"	11	MG212D	510.00
G 2 3/4"	11	MG234D	576.00
G 3"	11	MG300D	620.00
G 3 1/2	11	MG312D	750.00
G 4"	11	MG400D	870.00
G 4 1/2"	11	MG412D	1,150.00
G 5"	11	MG500D	1,320.00
G 5 1/2"	11	MG512D	1,500.00
G 6"	11	MG600D	1,650.00



Ring gauges have go and nogo separate 2 pcs and the price is for set of total 2 pcs.  
 Halka mastarlar geçer ve geçmez olarak 2 parçalıdır, fiyat toplam 2 parçalı takım fiyatıdır.

## NPT GAUGES NPT MASTARLAR

### NPT PLUG GAUGE / NPT TAMPON MASTAR

NPT (Taper) NPT (Konik)	PITCH HATVE	CODE KOD	EURO
1/16"	27	MNPT011E	140.00
1/8"	27	MNPT018E	127.00
1/4"	18	MNPT014E	135.00
3/8"	18	MNPT038E	145.00
1/2"	14	MNPT012E	160.00
3/4"	14	MNPT034E	180.00
1"	11.5	MNPT100E	210.00
1 1/4"	11.5	MNPT114E	276.00
1 1/2"	11.5	MNPT112E	310.00
2"	11.5	MNPT200E	390.00
2 1/2"	8	MNPT212E	460.00
3"	8	MNPT300E	555.00
3 1/2"	8	MNPT312E	730.00
4"	8	MNPT400E	830.00

NPT taper plug gauges have go and no go on one single side.  
NPT konik tampon mastarlarda geçer ve geçmez tek taraftadır.

### NPT RING GAUGE / NPT HALKA MASTAR

NPT (Taper) NPT (Konik)	PITCH HATVE	CODE KOD	EURO
1/16"	27	MNPT011D	235.00
1/8"	27	MNPT018D	210.00
1/4"	18	MNPT014D	215.00
3/8"	18	MNPT038D	225.00
1/2"	14	MNPT012D	245.00
3/4"	14	MNPT034D	266.00
1"	11.5	MNPT100D	301.00
1 1/4"	11.5	MNPT114D	370.00
1 1/2"	11.5	MNPT112D	410.00
2"	11.5	MNPT200D	500.00
2 1/2"	8	MNPT212D	575.00
3"	8	MNPT300D	730.00
3 1/2"	8	MNPT312D	1,000.00
4"	8	MNPT400D	1,200.00

NPT taper ring gauges have go and no go on one single piece.  
NPT konik halka mastarlarda geçer ve geçmez tek parça üzerindedir.



## NPTF GAUGES NPTF MASTARLAR

### NPTF PLUG GAUGE / NPTF TAMPON MASTAR

NPTF (Taper) NPTF (Konik)	PITCH HATVE	CODE KOD	EURO
1/16"	27	MNPTF011E	150.00
1/8"	27	MNPTF018E	155.00
1/4"	18	MNPTF014E	165.00
3/8"	18	MNPTF038E	180.00
1/2"	14	MNPTF012E	195.00
3/4"	14	MNPTF034E	215.00
1"	11.5	MNPTF100E	250.00
1 1/4"	11.5	MNPTF114E	315.00
1 1/2"	11.5	MNPTF112E	355.00
2"	11.5	MNPTF200E	440.00
2 1/2"	8	MNPTF212E	520.00
3"	8	MNPTF300E	630.00

NPTF taper plug gauges have go and no go on one single side.  
NPTF konik tampion mastarlarda geçer ve geçmez tek taraftadır.



### NPTF RING GAUGE / NPTF HALKA MASTAR

NPTF (Taper) NPTF (Konik)	PITCH HATVE	CODE KOD	EURO
1/16"	27	MNPTF011D	260.00
1/8"	27	MNPTF018D	240.00
1/4"	18	MNPTF014D	245.00
3/8"	18	MNPTF038D	260.00
1/2"	14	MNPTF012D	280.00
3/4"	14	MNPTF034D	305.00
1"	11.5	MNPTF100D	350.00
1 1/4"	11.5	MNPTF114D	410.00
1 1/2"	11.5	MNPTF112D	450.00
2"	11.5	MNPTF200D	550.00
2 1/2"	8	MNPTF212D	630.00
3"	8	MNPTF300D	800.00

NPTF taper ring gauges have go and no go on one single piece.  
NPTF konik halka mastarlarda geçer ve geçmez tek parça üzerindedir.



## DIN2999 - R GAUGES

### DIN2999 - R MASTARLAR

#### DIN2999 - R PLUG GAUGE / DIN2999 - R TAMPON MASTAR

DIN2999 R Taper / Konik	PITCH HATVE	CODE KOD	EURO
R 1/8"	28	M2999018E	155.00
R 1/4"	19	M2999014E	165.00
R 3/8"	19	M2999038E	180.00
R 1/2"	14	M2999012E	195.00
R 3/4"	14	M2999034E	215.00
R 1"	11	M2999100E	255.00
R 1 1/4"	11	M2999114E	315.00
R 1 1/2"	11	M2999112E	350.00
R 2"	11	M2999200E	430.00
R 2 1/2"	11	M2999212E	510.00
R 3"	11	M2999300E	600.00
R 4"	11	M2999400E	850.00

DIN2999 taper plug gauges have go and no go on one single side.  
DIN2999 konik tampon mastarlarda geçer ve geçmez tek taraftadır.

#### DIN2999 - R RING GAUGE / DIN2999 - R HALKA MASTAR

DIN2999 R	PITCH HATVE	CODE KOD	EURO
R 1/8"	28	M2999018D	110.00
R 1/4"	19	M2999014D	120.00
R 3/8"	19	M2999038D	142.00
R 1/2"	14	M2999012D	170.00
R 3/4"	14	M2999034D	195.00
R 1"	11	M2999100D	210.00
R 1 1/4"	11	M2999114D	260.00
R 1 1/2"	11	M2999112D	320.00
R 2"	11	M2999200D	350.00
R 2 1/2"	11	M2999212D	390.00
R 3"	11	M2999300D	450.00
R 4"	11	M2999400D	550.00

DIN2999 parallele ring gauges have go and no go on one single piece.  
DIN2999 düz halka mastarlarda geçer ve geçmez tek parça üzerindedir.



Withworth taper pipe thread  
DIN 2999

Internal parallele and external  
taper thread

Withworth konik boru dişi  
DIN 2999

İç vida düz ve dış vida konik

DIN2999 Plug gauges are taper  
DIN2999 Tampon mastarlar koniktir



Withworth pipe thread DIN 2999  
Internal parallele and external  
taper thread

Withworth boru dişi DIN 2999  
İç vida düz ve dış vida konik

DIN2999 Ring gauges are parallele  
DIN2999 Halka mastarlar düzdür

## ISO7-2:2000 and DIN EN 10226-3 GAUGES

### ISO7-2:2000 ve DIN EN 10226-3 MASTARLAR

## ISO7-2:2000 and DIN EN 10226-3 PLUG GAUGE

### ISO7-2:2000 ve DIN EN 10226-3 TAMPON MASTAR

ISO 7-2:2000 R Taper / Konik	PITCH HATVE	CODE KOD	EURO
R 1/8"	28	MISO7018E	175.00
R 1/4"	19	MISO7014E	180.00
R 3/8"	19	MISO7038E	195.00
R 1/2"	14	MISO7012E	215.00
R 3/4"	14	MISO7034E	240.00
R 1"	11	MISO7100E	280.00
R 1 1/4"	11	MISO7114E	350.00
R 1 1/2"	11	MISO7112E	400.00
R 2"	11	MISO7200E	480.00
R 2 1/2"	11	MISO7212E	570.00
R 3"	11	MISO7300E	670.00
R 4"	11	MISO7400E	950.00

ISO7-2:2000 taper plug gauges have go and no go on one single side.  
ISO7-2:2000 konik tampon mastarlarda geçer ve geçmez tek taraftadır.



Withworth taper pipe thread ISO7 ve DIN EN10226  
Internal parallele and taper, external taper thread  
ISO 7-2:2000 Plug gauges are taper  
Marked as "ISO7 Rc/Rp No1"  
They are used for gauging ISO7-1 and DIN EN10226 Rp parallele internal or Rc taper internal threads

Withworth konik boru dişi ISO7 ve DIN EN10226  
İç vida düz ve konik , dış vida konik  
ISO 7-2:2000 Tampon mastarlar koniktir  
"ISO7 Rc/Rp No1" olarak markalanmıştır  
ISO7-1 veya DIN EN10226 Rp düz iç vida veya Rc konik iç vida kontrolü içindir

## ISO7-2:2000 and DIN EN 10226-3 RING GAUGE

### ISO7-2:2000 ve DIN EN 10226-3 HALKA MASTAR

ISO 7-2:2000 R	PITCH HATVE	CODE KOD	EURO
R 1/8"	28	MISO7018D	125.00
R 1/4"	19	MISO7014D	135.00
R 3/8"	19	MISO7038D	160.00
R 1/2"	14	MISO7012D	195.00
R 3/4"	14	MISO7034D	220.00
R 1"	11	MISO7100D	240.00
R 1 1/4"	11	MISO7114D	290.00
R 1 1/2"	11	MISO7112D	350.00
R 2"	11	MISO7200D	400.00
R 2 1/2"	11	MISO7212D	430.00
R 3"	11	MISO7300D	500.00
R 4"	11	MISO7400D	610.00

ISO7-2:2000 parallele ring gauges have go and no go on one single piece.  
ISO7-2:2000 düz halka mastarlarda geçer ve geçmez tek parça üzerindedir.



Withworth taper pipe thread ISO7 ve DIN EN10226  
Internal parallele and taper, external taper thread  
ISO 7-2:2000 Ring gauges are parallele  
Marked as "ISO7 R No3"  
They are used for gauging R ISO7-1 and DIN EN10226 external taper threads

Withworth konik boru dişi ISO7 ve DIN EN10226  
İç vida düz ve konik , dış vida konik  
ISO 7-2:2000 Halka mastarlar düzdür  
"ISO7 R No3" olarak markalanmıştır  
R ISO7-1 veya DIN EN10226 konik dış vida kontrolü içindir

**PG - DIN 40430 GAUGES**  
**PG - DIN 40430 MASTARLAR**



**PG PLUG GAUGE DIN40430 / PG TAMPON MASTAR DIN40430**

PG	PITCH HATVE	CODE KOD	EURO
PG 7	20	MPG07E	66.00
PG 9	18	MPG09E	73.00
PG 11	18	MPG11E	83.00
PG 13.5	18	MPG13E	89.00
PG 16	18	MPG16E	95.00
PG 21	16	MPG21E	113.00
PG 29	16	MPG29E	150.00

PG	PITCH HATVE	GO PLUG GAUGE GEÇER TAMPON MASTAR	EURO	NO GO PLUG GAUGE GEÇMEZ TAMPON MASTAR	EURO
PG 36 *	16	MPG36GE	135.00	MPG36NGE	75.00
PG 42 *	16	MPG42GE	155.00	MPG42NGE	85.00
PG 48 *	16	MPG48GE	165.00	MPG48NGE	95.00

\* indicated plug gauges have go and nogo separate 2 pcs and each of them are separately priced.

\* işaretli tampion mastarlar geçer ve geçmez olarak 2 parçalıdır, geçer ve geçmez olarak ayrı ayrı fiyatları vardır

No go plug gauge side has no thread and checks only the minor diameter.  
Geçmez tampion mastar kısmı vidasız silindirik olup sadece dış dibi çapını kontrol eder.

**PG RING GAUGE DIN40430 / PG HALKA MASTAR DIN40430**

PG	PITCH HATVE	GO RING GAUGE GEÇER HALKA MASTAR	EURO	NO GO RING GAUGE GEÇMEZ HALKA MASTAR	EURO
PG 7	20	MPG07GD	100.00	MPG07NGD	45.00
PG 9	18	MPG09GD	105.00	MPG09NGD	47.00
PG 11	18	MPG11GD	115.00	MPG11NGD	50.00
PG 13.5	18	MPG13GD	125.00	MPG13NGD	53.00
PG 16	18	MPG16GD	130.00	MPG16NGD	55.00
PG 21	16	MPG21GD	160.00	MPG21NGD	60.00
PG 29	16	MPG29GD	200.00	MPG29NGD	70.00
PG 36	16	MPG36GD	250.00	MPG36NGD	75.00
PG 42	16	MPG42GD	280.00	MPG42NGD	90.00
PG 48	16	MPG48GD	320.00	MPG48NGD	95.00

No go plug gauge side has no thread and checks only the major diameter.  
Geçmez halka mastar kısmı vidasız silindirik olup sadece dış üstü çapını kontrol eder.

## BSW GAUGES BSW MASTARLAR

### BSW PLUG GAUGE / BSW TAMPON MASTAR

BSW	PITCH HATVE	CODE KOD	EURO
BSW 1/8"	40	MBSW018E	105.00
BSW 3/16"	24	MBSW031E	73.00
BSW 1/4"	20	MBSW014E	71.00
BSW 5/16"	18	MBSW051E	72.00
BSW 3/8"	16	MBSW038E	74.00
BSW 7/16"	14	MBSW071E	76.00
BSW 1/2"	12	MBSW012E	80.00
BSW 9/16"	12	MBSW091E	88.00
BSW 5/8"	11	MBSW058E	92.00
BSW 3/4"	10	MBSW034E	105.00
BSW 7/8"	9	MBSW078E	120.00
BSW 1"	8	MBSW100E	140.00



### BSW RING GAUGE / BSW HALKA MASTAR

ISO 7-2:2000 R	PITCH HATVE	CODE KOD	EURO
BSW 1/8"	40	MBSW018D	180.00
BSW 3/16"	24	MBSW031D	134.00
BSW 1/4"	20	MBSW014D	127.00
BSW 5/16"	18	MBSW051D	140.00
BSW 3/8"	16	MBSW038D	145.00
BSW 7/16"	14	MBSW071D	152.00
BSW 1/2"	12	MBSW012D	160.00
BSW 9/16"	12	MBSW091D	182.00
BSW 5/8"	11	MBSW058D	195.00
BSW 3/4"	10	MBSW034D	215.00
BSW 7/8"	9	MBSW078D	255.00
BSW 1"	8	MBSW100D	280.00



Ring gauges have go and no-go separate 2 pcs and the price is for set of total 2 pcs.  
Halka mastarlar geçer ve geçmez olarak 2 parçalıdır, fiyat toplam 2 parçalı takım fiyatıdır.

## BSF GAUGES BSF MASTARLAR



### BSF PLUG GAUGE / BSF TAMPON MASTAR

BSF	PITCH HATVE	CODE KOD	EURO
BSF 3/16"	32	MBSF031E	92.00
BSF 7/32"	28	MBSF073E	100.00
BSF 1/4"	26	MBSF014E	86.00
BSF 5/16"	22	MBSF051E	86.00
BSF 3/8"	20	MBSF038E	89.00
BSF 7/16"	18	MBSF071E	98.00
BSF 1/2"	16	MBSF012E	93.00
BSF 9/16"	16	MBSF091E	102.00
BSF 5/8"	14	MBSF058E	104.00
BSF 3/4"	12	MBSF034E	117.00
BSF 7/8"	11	MBSF078E	131.00
BSF 1"	10	MBSF100E	160.00



### BSF RING GAUGE / BSF HALKA MASTAR

BSF	PITCH HATVE	CODE KOD	EURO
BSF 3/16"	32	MBSF031D	170.00
BSF 7/32"	28	MBSF073D	184.00
BSF 1/4"	26	MBSF014D	160.00
BSF 5/16"	22	MBSF051D	160.00
BSF 3/8"	20	MBSF038D	172.00
BSF 7/16"	18	MBSF071D	197.00
BSF 1/2"	16	MBSF012D	190.00
BSF 9/16"	16	MBSF091D	212.00
BSF 5/8"	14	MBSF058D	216.00
BSF 3/4"	12	MBSF034D	246.00
BSF 7/8"	11	MBSF078D	276.00
BSF 1"	10	MBSF100D	332.00

Ring gauges have go and nogo separate 2 pcs and the price is for set of total 2 pcs.  
Halka mastarlar geçer ve geçmez olarak 2 parçalıdır, fiyat toplam 2 parçalı takım fiyatıdır.

## TR TRAPEZOIDAL THREAD GAUGES DIN103

### TR TRAPEZ VİDA MASTARLAR DIN103

#### TR PLUG GAUGE / TR TAMPON MASTAR

Tol. 7H

TR	PITCH HATVE	CODE KOD	EURO
TR 8	1.5	MTR08E	166.00
TR 10	2	MTR10E	172.00
TR 11	2	MTR11E	172.00
TR 12	3	MTR12E	172.00
TR 14	3	MTR14E	177.00
TR 16	4	MTR16E	183.00
TR 18	4	MTR18E	190.00
TR 20	4	MTR20E	195.00
TR 22	5	MTR22E	205.00
TR 24	5	MTR24E	215.00
TR 26	5	MTR26E	225.00
TR 28	5	MTR28E	235.00
TR 30	6	MTR30E	250.00
TR 32	6	MTR32E	255.00



#### TR RING GAUGE / TR HALKA MASTAR

Tol. 7e

TR	PITCH HATVE	CODE KOD	EURO
TR 8	1.5	MTR08D	445.00
TR 10	2	MTR10D	455.00
TR 11	2	MTR11D	465.00
TR 12	3	MTR12D	465.00
TR 14	3	MTR14D	475.00
TR 16	4	MTR16D	490.00
TR 18	4	MTR18D	500.00
TR 20	4	MTR20D	520.00
TR 22	5	MTR22D	540.00
TR 24	5	MTR24D	570.00
TR 26	5	MTR26D	590.00
TR 28	5	MTR28D	620.00
TR 30	6	MTR30D	650.00
TR 32	6	MTR32D	660.00



Ring gauges have go and nogo separate 2 pcs and the price is for set of total 2 pcs.  
Halka mastarlar geçer ve geçmez olarak 2 parçalıdır, fiyat toplam 2 parçalı takım fiyatıdır.

## UNEF GAUGES UNEF MASTARLAR



### UNEF PLUG GAUGE / UNEF TAMPON MASTAR

**Tol. 2B**

UNEF	PITCH HATVE	CODE KOD	EURO
UNEF 1/4"	32	MUNEF014E	70.00
UNEF 5/16	32	MUNEF051E	75.00
UNEF 3/8"	32	MUNEF038E	76.00
UNEF 7/16"	28	MUNEF071E	78.00
UNEF 1/2"	28	MUNEF012E	80.00
UNEF 9/16"	24	MUNEF091E	83.00
UNEF 5/8"	24	MUNEF058E	85.00
UNEF 11/16"	24	MUNEF111E	88.00
UNEF 3/4"	20	MUNEF034E	90.00
UNEF 13/16"	20	MUNEF131E	96.00
UNEF 7/8"	20	MUNEF078E	100.00
UNEF 15/16"	20	MUNEF151E	105.00
UNEF 1"	20	MUNEF100E	110.00



### UNEF RING GAUGE / UNEF HALKA MASTAR

**Tol. 2A**

UNEF	PITCH HATVE	CODE KOD	EURO
UNEF 1/4"	32	MUNEF014D	121.00
UNEF 5/16	32	MUNEF051D	133.00
UNEF 3/8"	32	MUNEF038D	140.00
UNEF 7/16"	28	MUNEF071D	146.00
UNEF 1/2"	28	MUNEF012D	156.00
UNEF 9/16"	24	MUNEF091D	168.00
UNEF 5/8"	24	MUNEF058D	184.00
UNEF 11/16"	24	MUNEF011D	196.00
UNEF 3/4"	20	MUNEF034D	205.00
UNEF 13/16"	20	MUNEF013D	220.00
UNEF 7/8"	20	MUNEF078D	240.00
UNEF 15/16"	20	MUNEF015D	254.00
UNEF 1"	20	MUNEF100D	164.00

Ring gauges have go and nogo separate 2 pcs and the price is for set of total 2 pcs.  
Halka mastarlar geçer ve geçmez olarak 2 parçalıdır, fiyat toplam 2 parçalı takım fiyatıdır.

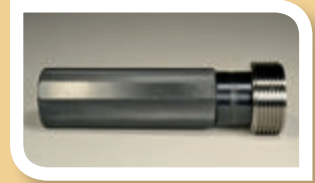


## UNS - UN GAUGES

### UNS - UN MASTARLAR

#### UNS - UN PLUG GAUGE / UNS - UN TAMPON MASTAR Tol. 2B

UNS - UN	PITCH / HATVE	CODE / KOD	EURO
UNS 1/4"	36	MUNS014E	180.00
UN 1"	32	MUN10032E	310.00
UN 11/16"	16	MUN011E	255.00
UN 13/16"	16	MUN013E	260.00
UN 7/8"	16	MUN078E	285.00
UN 1"	14	MUN10014E	270.00
UN 1 1/16"	12	MUN1116E	250.00
UN 1 3/16"	12	MUN1316E	265.00
UN 1 5/16"	12	MUN1516E	300.00
UN 1 5/8" *	12	MUN158E	470.00
UN 1 3/4" *	12	MUN134E	470.00
UN 1 7/8" *	12	MUN178E	520.00
UN 2" *	12	MUN200E	560.00
UN 1 1/8"	8	MUN118E	320.00
UN 1 1/4"	8	MUN114E	370.00
UN 1 3/8"	8	MUN138E	400.00
UN 1 1/2"	8	MUN112E	400.00
UN 1 5/8" *	8	MUN158E	530.00
UN 1 3/4" *	8	MUN134E	550.00
UN 2" *	8	MUN200E	630.00



\* indicated plug gauges have go and nogo separate 2 pcs and the price is for set of total 2 pcs.  
\* işaretli tampon mastarlar geçer ve geçmez olarak 2 parçalıdır, fiyat toplam 2 parçalı takım fiyatıdır.

#### UNS - UN RING GAUGE / UNS - UN HALKA MASTAR Tol. 2A

UNS - UN	PITCH / HATVE	CODE / KOD	EURO
UNS 1/4"	36	MUNS014D	360.00
UN 1"	32	MUN10032D	720.00
UN 11/16"	16	MUN011D	600.00
UN 13/16"	16	MUN013D	530.00
UN 7/8"	16	MUN078D	540.00
UN 1"	14	MUN10014D	500.00
UN 1-1/16"	12	MUN1116D	550.00
UN 1 3/16"	12	MUN1316D	630.00
UN 1 5/16"	12	MUN1516D	630.00
UN 1 5/8"	12	MUN158D	800.00
UN 1 3/4"	12	MUN134D	780.00
UN 1 7/8"	12	MUN178D	830.00
UN 2"	12	MUN200D	850.00
UN 1 1/8"	8	MUN118D	620.00
UN 1 1/4"	8	MUN114D	620.00
UN 1 3/8"	8	MUN138D	660.00
UN 1 1/2"	8	MUN112D	800.00
UN 1 5/8"	8	MUN158D	840.00
UN 1 3/4"	8	MUN134D	960.00
UN 2"	8	MUN200D	1,030.00



Ring gauges have go and nogo separate 2 pcs and the price is for set of total 2 pcs.  
Halka mastarlar geçer ve geçmez olarak 2 parçalıdır, fiyat toplam 2 parçalı takım fiyatıdır.





**DRILLS**  
**MATKAP UÇLARI**

**DIN 338 DRILL HSSE / DIN 338 MATKAP UCU HSSE**



Dia / Çap Ø mm	CODE KOD	Flute lenght Helis boyu	Overall lenght tamboy	EURO
0.5	338005	6	22	1.90
0.8	338008	10	30	1.90
1	338010	12	34	0.50
1.5	338015	18	40	0.38
2	338020	24	49	0.75
2.5	338025	30	57	0.75
3	338030	33	61	0.80
3.3	338033	36	65	1.00
3.5	338035	39	70	1.00
4	338040	43	75	1.10
4.2	338042	43	75	1.25
4.5	338045	52	80	1.30
5	338050	52	86	1.40
5.5	338055	57	93	1.75
6	333060	57	93	1.80
6.5	338065	63	101	2.30
6.8	338068	69	109	3.00
7	338070	69	109	2.80
7.5	338075	69	109	3.10
8	338080	75	117	3.30
8.5	338085	75	117	3.90
9	338090	81	125	4.40
9.5	338095	81	125	5.00
10	338100	87	133	5.30
10.2	338102	87	133	7.20
10.5	338105	87	133	6.50
11	338110	94	142	7.40
11.5	338115	94	142	7.80
12	338120	101	151	8.50
12.5	338125	101	151	9.20
13	338130	101	151	9.80
13.5	338135	108	160	17.00
14	338140	108	160	17.50
14.5	338145	114	169	20.00
15	338150	114	169	20.50
15.5	338155	120	178	21.50
16	338160	120	178	23.00

**HP HIGH PERFORMANCE CARBIDE DRILLS Coated**  
**YÜKSEK PERFORMANS SERT METAL MATKAPLAR Kaplamalı**

**CARBIDE DRILL / SERT METAL MATKAP UCU**

Dia / Çap Ø mm	CODE KOD	Flute lenght Helis boyu	Overall lenght tamboy	Shank Dia Sap Çapı	EURO
3	215030	21	50	3	11.00
3.3	215033	25	60	4	14.00
3.5	215035	25	60	4	14.00
4	215040	28	60	4	14.00
4.2	215042	31	75	5	17.50
4.5	215045	33	75	5	17.50
5	215050	35	75	5	17.50
5.5	215055	38	80	6	20.00
6	215060	40	80	6	20.00
6.5	215065	45	90	8	27.00
6.8	215068	45	90	8	27.00
7	215070	45	90	8	27.00
7.5	215075	50	90	8	27.00
8	215080	50	90	8	27.00
8.5	215085	52	100	10	39.00
9	215090	55	100	10	39.00
9.5	215095	56	100	10	39.00
10	215100	60	100	10	39.00
10.2	215102	60	110	12	54.00
10.5	215105	60	110	12	54.00
11	215110	65	110	12	54.00
11.5	215115	65	110	12	54.00
12	215120	70	110	12	54.00
12.5	215125	73	120	14	78.00



**CENTRE DRILLS DIN 333**  
**PUNTA MATKAPLARI DIN 333**

**DIN 333 CENTRE DRILL HSS / DIN 333 PUNTA MATKABI HSS**

Point dia Punta çapı Ømm	CODE KOD	body dia gövde çapı	point lenght punta boyu	overall lenght tamboy	EURO
1.6	33316	4	2	35	2.20
2	33320	5	2.5	40	2.80
2.5	33325	6.3	3.1	45	3.60
3.15	33331	8	3.9	50	4.20
4	33340	10	5	56	5.50
5	33350	12.5	6.3	63	7.80

**DIN 333 CENTRE DRILL CARBIDE / DIN 333 PUNTA MATKABI SERT METAL**

Point dia Punta çapı Ømm	CODE KOD	body dia gövde çapı	point lenght punta boyu	overall lenght tamboy	EURO
1.6	33316SM	4	2	35	14.00
2	33320SM	5	2.5	40	15.00
2.5	33325SM	6.3	3.1	45	17.00
3.15	SSS31SM	8	3.9	50	22.00
4	33340SM	10	5	56	29.00
5	33350SM	12.5	6.3	63	36.00

**SPEED AND FEED DATAS FOR HSS DRILLS**
**HSS MATKAPLAR İÇİN DEVİR VE İLERLEME DEĞERLERİ**

Workpiece material İşlenen malzeme türü	Cutting speed Kesme hızı Metre/ minute metre/ dakika	FEED RATE ACCORDING TO DRILL DIAMETER (FEED PER REVOLUTION) m/rev. MATKAP ÇAPLARINA GÖRE İLERLEME (devir başına ilerleme) mm/ devir											
		Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø8	Ø10	Ø12	Ø15	Ø16	Ø20
STEEL < 200 HB ÇELİK < 200 HB	20-25	0.020	0.060	0.090	0.100	0.110	0.130	0.160	0.190	0.200	0.230	0.250	0.280
STEEL 200-300 HB ÇELİK 200-300 HB	12-20	0.018	0.050	0.070	0.080	0.095	0.110	0.140	0.170	0.180	0.200	0.210	0.230
ÇELİK 300-350 HB	10-12	0.016	0.035	0.050	0.060	0.065	0.075	0.095	0.110	0.125	0.140	0.150	0.180
STAINLESS STEEL PASLANMAZ ÇELİK	12-18	0.016	0.035	0.050	0.060	0.065	0.075	0.095	0.110	0.125	0.140	0.150	0.180
CAST IRON DÖKÜM	20-30	0.018	0.050	0.070	0.080	0.095	0.110	0.140	0.170	0.180	0.200	0.210	0.230
CUPPER, BRONZE, BRASS BAKIR BRONZ PİRİNÇ	20-35	0.018	0.050	0.070	0.080	0.095	0.110	0.140	0.170	0.180	0.200	0.210	0.230
ALUMINIUM ALUMINYUM	25-35	0.020	0.060	0.090	0.100	0.110	0.130	0.160	0.190	0.200	0.230	0.250	0.280

Indicated datas are for HSS Cobalt drills, for HSS drills please reduce these datas by 30%  
Yukarıdaki değerleri HSS Cobalt matkaplarda kullanınız, HSS matkaplarda bu değerleri %30 düşürünüz.



**SPEED AND FEED DATAS FOR CARBIDE DRILLS**  
**SERT METAL MATKAPLAR İÇİN DEVİR VE İLERLEME DEĞERLERİ**

Workpiece material İşlenen malzeme türü	Cutting speed Kesme hızı Metre/ minute metre/ dakika	FEED RATE ACCORDING TO DRILL DIAMETER (FEED PER REVOLUTION) m/rev.											
		MATKAP ÇAPLARINA GÖRE İLERLEME (devir başına ilerleme) mm/ devir											
		Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø8	Ø10	Ø12	Ø15	Ø16	Ø20
STEEL < 200 HB ÇELİK < 200 HB	70-80	0.007	0.012	0.020	0.025	0.030	0.035	0.050	0.075	0.095	0.120	0.130	0.140
STEEL 200-300 HB ÇELİK 200-300 HB	55-70	0.007	0.012	0.020	0.025	0.030	0.035	0.050	0.075	0.095	0.120	0.130	0.140
STEEL 300-350 HB ÇELİK 300-350 HB	35-55	0.007	0.012	0.020	0.025	0.030	0.035	0.050	0.075	0.095	0.120	0.130	0.140
STEEL 40-50 HRC ÇELİK 40-50 HRC	20-30	0.007	0.012	0.018	0.022	0.028	0.033	0.045	0.065	0.085	0.110	0.120	0.130
STEEL 50-55 HRC ÇELİK 50-55 HRC	16-20	0.006	0.012	0.016	0.020	0.025	0.030	0.040	0.060	0.080	0.100	0.110	0.120
STAINLESS STEEL PASLANMAZ ÇELİK	20-30	0.007	0.012	0.018	0.022	0.028	0.033	0.045	0.065	0.085	0.110	0.120	0.130
CAST IRON DÖKÜM	50-70	0.012	0.022	0.032	0.040	0.050	0.060	0.085	0.095	0.110	0.130	0.140	0.160
CUPPER, BRONZE, BRASS BAKIR BRONZ PİRİNÇ	100-200	0.025	0.050	0.070	0.080	0.100	0.125	0.160	0.200	0.240	0.270	0.300	0.300
ALUMINIUM ALUMİNYUM	60-150	0.025	0.050	0.070	0.080	0.100	0.125	0.160	0.200	0.240	0.270	0.300	0.300

Finding the revolution using cutting speed rate  
Kesme hızından deviri bulmak için

$$\frac{\text{Cutting speed (m/minute) Kesme hızı (m/dakika)} \times 1000}{3,14 \times \text{tool (drill) diameter takım (matkap) çapı}} = \text{DEVİR/DAKİKA (RPM)}$$

All given datas are to make user to have reference point to make a start.

The machine, coolant, workpiece fixing, toolholding accuracy, workpiece characteristics and many other inputs may lead you to change these datas

Having made a start with these given datas, by adjusting them you can reach the optimun datas of your particular application.

Do NOT start with the upper level of the given datas. Start from the lower level then gradually increase it.

Tüm verilen değerler işleme başlangıç yapabilmemiz için referans alabileceğiniz değerlerdir.

Tezgah, soğutucu, parça bağlama, takım tutucu hassasiyeti, malzeme özelliği ve diğer tüm etkenler bu değerleri değiştirmenizi gerektirebilir.

Başlangıcı yukarıdaki değerlerle yaptıktan sonra kesme değerlerini değiştirerek işleme uygun optimum kesme değerine ulaşabilirsiniz.

Tabloda belirtilen değer aralıklarının üst sınırlarıyla başlangıç yapmayınız. Alt sınırdan başlayarak değerlerinizi kademeli olarak artırınız.







**CARBIDE END MILLS**  
*SERT METAL PARMAK FREZELER*

**SOLID CARBIDE END MILLS UNEQUAL HELIX/PITCH**  
**SERT METAL PARMAK FREZELER EŞİTSİZ HELİS / HATVE**

**CARBIDE END MILL 4 FLUTED STANDARD LENGHT**  
**SERT METAL PARMAK FREZE 4 AĞIZLI STANDART BOY**

Ø mm	CODE KOD	Cutting length Kesici boy	Overall length tamboy	Shank Dia Sap Çapı	Nr of flute Kanal adeti	EURO
2	114020A	7	50	6	4	14.50
3	114030A1	8	50	3	4	10.00
3	114030A	8	50	6	4	14.50
4	114040A1	11	50	4	4	10.50
4	114040A	11	50	6	4	14.50
5	114050A	13	57	6	4	15.00
6	114060A	13	57	6	4	15.00
8	114080A	19	63	8	4	19.00
10	114100A	22	70	10	4	25.00
12	114120A	26	83	12	4	37.00
14	114140A	28	83	14	4	55.00
16	114160A	32	92	16	4	70.00
18	114180A	32	92	18	4	95.00
20	114200A	40	100	20	4	100.00
25	114250A	40	100	25	4	145.00

**CARBIDE END MILL 4 FLUTED LONG LENGHT**  
**SERT METAL PARMAK FREZE 4 AĞIZLI UZUN BOY**

Ø mm	CODE KOD	Cutting length Kesici boy	Overall length tamboy	Shank Dia Sap Çapı	Nr of flute Kanal adeti	EURO
3	148030A	25	65	3	4	12.50
4	148040A	25	75	4	4	14.00
5	148050A	25	75	5	4	15.00
6	148060A	40	100	6	4	19.00
8	148080A	40	100	8	4	25.00
10	148100A	40	100	10	4	33.00
12	148120A	75	160	12	4	81.00
16	148160A	75	160	16	4	124.00
20	148200A	75	160	20	4	170.00
25	148250A	75	160	25	4	225.00

**BALL NOSED SOLID CARBIDE END MILLS UNEQUAL HELIX/PITCH**  
**KÜRE UÇLU SERT METAL PARMAK FREZELER EŞİTSİZ HELİS / HATVE**

**BALL NOSED CARBIDE END MILL 4 FLUTED**  
**KÜRE UÇLU SERT METAL PARMAK FREZE 4 AĞIZLI**

Ø mm	CODE KOD	Cutting length Kesici boy	Overall length tamboy	Shank Dia Sap Çapı	Nr of flute Kanal adeti	EURO
3	128030	25	75	6	4	20.00
4	128040	25	75	6	4	20.00
5	128050	25	75	6	4	20.00
6	128060	40	100	6	4	24.00
8	128080	40	100	8	4	30.00
10	128100	40	100	10	4	39.00
12	128120	45	100	12	4	52.00



**CUTTING DATAS FOR CARBIDE MILLING CUTTERS  
SERT METAL FREZELER KESME DEĞERLERİ**
**Cutting speed / Kesme Hızı**

Steels below 20 HRC - 20 HRC altında çelikler: 75 - 150 m/minute m/dakika

Steels 20 - 40 HRC - 20 - 40 HRC çelikler için: 30 - 100 m/minute m/dakika

Steels 40 - 55 HRC - 40 - 55 HRC çelikler için: 25 - 50 m/minute m/dakika

$$\text{RPM revolution} = \frac{\text{Cutting speed (m/minute)}}{\text{3.14 x tool diameter}}$$

*Devir / Dakika = Kesme hızı (m/dakika) x 1000 / 3.14 x takım çapı*

**Feed / İlerleme**

tool diamter takım çapı	Feed per teeth (mm per teeth) İlerleme (kesici ağız başına)
Ø1 - 2 mm	0.010 - 0.012 mm
Ø3 - 4 mm	0.013 - 0.018 mm
Ø5 - 6 mm	0.018 - 0.025 mm
Ø8 - 10 mm	0.025 - 0.050 mm
Ø12 - 16 mm	0.050 - 0.080 mm
Ø18 - 20 mm	0.060 - 0.090 mm





**STRAIGHT SHANK HSS MILLING CUTTERS**  
*SİLİNDİRİK SAPLI HSS FREZE BIÇAKLARI*

**END MILLS HSS Cobalt DIN 844**  
**PARMAK FREZELER HSS Cobalt DIN 844**



**END MILL DIN 844 SHORT / PARMAK FREZE DIN 844 KISA**

Dia Çap Ø mm	CODE KOD	Flute lenght Helis boyu	Overall lenght tamboy	Shank Sap Ø	z	EURO
2	611020	7	51	6	3	6.00
2.5	611025	8	52	6	3	6.30
3	611030	8	52	6	4	4.50
4	611040	11	55	6	4	4.50
5	611050	13	57	6	4	4.50
6	611060	13	57	6	4	4.50
7	611070	16	66	10	4	6.00
8	611080	19	69	10	4	5.50
10	611100	22	72	10	4	6.30
11	611110	22	79	12	4	9.00
12	611120	26	83	12	4	8.00
14	611140	26	83	12	4	11.00
16	611160	32	92	16	4	12.50
18	611180	32	92	16	4	15.00
20	611200	38	104	20	4	18.00
22	611220	38	104	20	6	24.00
25	611250	45	121	25	6	33.00
28	611280	45	121	25	6	40.00
30	611300	45	121	25	6	45.00
32	611320	53	133	32	6	50.00
36	611360	53	133	32	6	60.00
40	611400	63	155	40	6	70.00



**END MILL DIN 844 LONG / PARMAK FREZE DIN 844 UZUN**

Dia Çap Ø mm	CODE KOD	Flute lenght Helis boyu	Overall lenght tamboy	Shank Sap Ø	z	EURO
6	612060	24	68	6	4	5.50
8	612080	38	88	10	4	7.00
10	612100	45	95	10	4	8.00
12	612120	53	110	12	4	10.00
14	612140	53	110	12	4	14.00
16	612160	63	123	16	4	16.50
18	612180	63	123	16	4	20.00
20	612200	75	141	20	4	24.00
22	612220	75	141	20	4	30.00
25	612250	90	166	25	6	40.00
28	612280	90	166	25	6	50.00
30	612300	90	166	25	6	55.00
32	612320	106	186	32	6	60.00
36	612360	106	186	32	6	65.00
40	612400	125	217	40	8	75.00

## ROUGHING END MILL HSS Cobalt DIN 844

### KABATALAŞ PARMAK FREZELER HSS Cobalt DIN 844

#### ROUGHING END MILL SHORT / KABATALAŞ PARMAK FREZE KISA

Dia Çap Ø mm	CODE KOD	Flute lenght Helis boyu	Overall lenght tamboy	Shank Sap Ø	z	EURO
6	521060	13	57	6	4	10.00
8	521080	19	69	10	4	10.00
10	521100	22	72	10	4	12.00
12	521120	26	83	12	4	15.00
14	521140	26	83	12	4	20.00
16	521160	32	92	16	4	23.00
18	521180	32	92	20	4	28.00
20	521200	38	104	20	4	33.00
22	521220	38	104	25	5	40.00
25	521250	45	121	25	5	50.00
28	521280	45	121	25	6	70.00
30	521300	45	121	25	6	75.00
32	521320	53	133	32	6	79.00
36	521360	53	133	32	6	90.00
40	521401	63	143	32	6	100.00
40	521400	63	155	40	6	105.00



#### ROUGHING END MILL LONG / KABATALAŞ PARMAK FREZE UZUN

Dia Çap Ø mm	CODE KOD	Flute lenght Helis boyu	Overall lenght tamboy	Shank Sap Ø	z	EURO
6	522060	24	68	6	4	14.00
8	522080	38	88	10	4	14.00
10	522100	45	95	12	4	15.00
12	522120	53	110	12	4	19.00
14	522140	53	110	12	4	26.00
16	522160	63	123	16	4	30.00
18	522180	63	123	20	4	35.00
20	522200	75	141	20	4	40.00
22	522220	75	141	25	5	50.00
25	522250	90	166	25	5	60.00
28	522280	90	166	25	6	80.00
30	522300	90	166	25	6	85.00
32	522320	106	186	32	6	90.00
36	522360	106	186	32	6	100.00
40	522401	106	205	32	6	120.00
40	522400	125	217	40	6	125.00



**2 FLUTED SLOT DRILL HSS Cobalt DIN 327**  
**2 AĞIZLI PARMAK FREZE HSS Cobalt DIN 327**



**SLOT DRILL DIN 327 / 2 AĞIZLI PARMAK FREZE DIN 327**

Dia Çap Ø mm	CODE KOD	Flute lenght Helis boyu	Overall lenght tamboy	Shank Sap Ø	z	EURO
2	621020	4	48	6	2	5.00
3	621030	5	49	6	2	5.00
4	621040	7	51	6	2	5.00
5	621050	8	52	6	2	5.00
6	621060	8	52	6	2	5.00
7	621070	10	60	10	2	6.00
8	621080	11	61	10	2	6.00
10	621100	13	63	10	2	7.50
12	621120	16	73	12	2	9.00
14	621140	16	73	12	2	12.00
16	621160	19	79	16	2	13.00
18	621180	19	79	16	2	15.00
20	621200	22	88	20	2	17.00
22	621220	22	88	20	2	22.00
24	621240	26	102	25	2	25.00
25	621250	26	102	25	2	30.00
28	621280	26	102	25	2	35.00
30	621300	26	102	25	2	40.00
32	621320	32	112	32	2	45.00



## WOODRUFF CUTTER DIN850/B HSS Cobalt T YARIK FREZE DIN850/B HSS Cobalt

### DIN 850/B WOODRUFF CUTTER / DIN 850/B T YARIK FREZE

ØDia x Thickness Øçapxkalınlık mm	CODE KOD	Shank Dia sap çapı Ø mm	Overall length tamboy	EURO
7,5 x 1,5	8500701	6	50	17.00
7,5 x 2	8500802	6	50	17.00
10,5 x 2	8501002	6	50	17.00
10,5 x 2,5	85010025	6	50	17.00
10,5 x 3	8501003	6	50	17.00
13,5 x 2	8501302	10	56	18.00
13,5 x 3	8501303	10	56	18.00
13,5 x 4	8501304	10	56	18.00
16,5 x 3	8501603	10	56	20.00
16,5 x 4	8501604	10	56	20.00
16,5 x 5	8501605	10	56	20.00
19,5 x 3	8501903	10	56	22.00
19,5 x 4	8501904	10	56	22.00
19,5 x 5	8501905	10	56	22.00
19,5 x 6	8501906	10	56	22.00
22,5 x 4	8502204	10	56	25.00
22,5 x 5	8502205	10	56	25.00
22,5 x 6	8502206	10	56	25.00
22,5 x 8	8502208	10	56	25.00
25,5 x 5	8502505	10	56	28.00
25,5 x 6	8502506	10	56	28.00
25,5 x 8	8502508	10	56	28.00
28,5 x 6	8502806	10	56	33.00
28,5 x 8	8502808	10	56	33.00
28,5 x 10	8502510	12	63	33.00
32,5 x 6	8503206	10	56	42.00
32,5 x 8	8503208	10	56	42.00
32,5 x 10	8503210	12	63	42.00
45,5 x 10	8504510	12	63	55.00



**T SLOT CUTTER DIN 851 HSS Cobalt**  
**T KANAL FREZE DIN 851 HSS Cobalt**



**DIN 851 T SLOT CUTTER / DIN 851 T KANAL FREZE**

ØDia x Thickness Øçapxkalınlık mm	CODE KOD	Shank Dia sap çapı Ø mm	Overall length tamboy	EURO
12,5 x 6	8511206	10	57	22.00
16 x 8	8511608	10	62	27.00
18 x 8	8511808	10	70	30.00
19 x 9	8511909	10	70	31.00
21x9	8512109	12	74	34.00
22x10	8512210	12	74	36.00
25x11	8512511	12	82	41.00
28 x 12	8512812	12	85	47.00
32 x 14	8513214	16	90	55.00
36 x 16	8513616	25	103	68.00
40 x 18	8514018	25	108	75.00
45 x 20	8514520	25	113	80.00
50 x 22	8515022	32	123	90.00
60 x 28	8516028	32	140	95.00

## CORNER ROUNDING CUTTER HSS Cobalt

### KÖŞE YUVARLAMA FREZE HSS Cobalt

#### CORNER ROUNDING CUTTER / KÖŞE YUVARLAMA FREZE

Radius Radüs	CODE KOD	Head Dia Kafa çapı Ømm	Shank Dia sap çapı Ømm	Overall length Tam boy	EURO
R 1	6518010	8	10	60	13.00
R 1.5	6518015	9	10	60	13.00
R 2	6518020	10	10	60	13.00
R 2.5	6518025	11	10	60	15.00
R 3	6518030	12	12	60	19.00
R 3.5	6518035	13	12	60	22.00
R 4	6518040	14	12	60	20.00
R 5	6518050	16	12	60	22.00
R 6	6518060	20	16	67	25.00
R 7	6518070	22	16	71	30.00
R 8	6518080	24	16	71	28.00
R 9	6518090	26	25	85	34.00
R 10	6518100	28	25	85	31.00
R 11	6518110	32	25	90	41.00
R 12	6518120	34	25	90	41.00
R 12,5	6518125	41	25	100	47.00
R 13	6518130	42	25	100	65.00
R 14	6518140	44	25	100	65.00
R 15	6518150	46	25	100	85.00
R 16	6518160	48	25	100	85.00
R 18	6518170	52	32	112	110.00
R 20	6518180	56	32	112	120.00



**DOVETAIL CUTTER DIN 1833-A HSS Cobalt**  
**KIRLANGIÇ FREZE DIN 1833 A HSS Cobalt**



**DOVETAIL CUTTER FORM A / KIRLANGIÇ FREZE FORM A**

ØDia x Thickness Øçapxkalınlık mm	CODE KOD	Shank Dia sap çapı Ø mm	Overall length tamboy	EURO
16 x 45°	1833A1645	12	60	18.00
16 x 60°	1833A1660	12	60	18.00
20 x 45°	1833A2045	12	63	22.00
20 x 60°	1833A2060	12	63	22.00
25 x 45°	1833A2545	16	67	30.00
25 x 60°	1833A2560	16	67	30.00
32 x 45°	1833A3245	16	71	38.00
32 x 60°	1833A3260	16	71	38.00

**INVERSE DOVETAIL CUTTER DIN 1833-B HSS Cobalt**  
**KIRLANGIÇ FREZE DIN 1833 B HSS Cobalt**



**DOVETAIL CUTTER FORM B / KIRLANGIÇ FREZE FORM B**

ØDia x Thickness Øçapxkalınlık mm	CODE KOD	Shank Dia sap çapı Ø mm	Overall length tamboy	EURO
16 x 45°	1833B1645	12	60	18.00
16 x 60°	1833B1645	12	60	18.00
20 x 45°	1833B2045	12	63	22.00
20 x 60°	1833B2060	12	63	22.00
25 x 45°	1833B2545	16	67	30.00
25 x 60°	1833B2560	16	67	30.00
32 x 45°	1833B3245	16	71	38.00
32 x 60°	1833B3260	16	71	38.00

**CUTTING DATAS FOR HSS MILLING CUTTERS  
HSS FREZELER İÇİN KESME DEĞERLERİ**
**CUTTING SPEED - RPM / KESME HIZI - DEVİR**

**RPM - Devir/dakika**

1- Select the cutting speed m/minute from the table on the right according to workpiece

1- Sağdaki tablodan malzemenize göre m/dakika cinsinden kesme hızınızı bulunuz.

2- Place the cutting speed on the formula below to find the RPM

2- Alttaki formülde yerine koyarak devir / dakika cinsinden devirinizi bulunuz

$$\text{RPM revolution} = \frac{\text{Cutting speed (m/minute)}}{3.14 \times \text{tool diameter}}$$

Devir / Dakika =  $\frac{\text{Kesme hızı (m/dakika)} \times 1000}{3.14 \times \text{takım çapı}}$

**Feed / İlerleme**

3- On the feed table below select your "letter" according to your operation and stock removal

3- Aşağıdaki ilerleme tablosundaki işlem şekli ve talaş miktarınıza göre belirtilen harfi bulunuz

4- On the bottom table across your "letter" you will find the feed rate according to your speed that you already found

4- En alttaki tabloda bu harfin bulunduğu satırda kesme hızınıza göre ilerleme hızınızı bulacaksınız.

Materila To Cut Malzeme	Cutting speed m/min. Kesme Hızı m/dakika
Below 180HB soft steels 180 HB altı yumuşak çelikler	32-40
180-250 HB carbon and low alloyed steel 180-250 HB karbonlu çelikler ve az alaşımlı çelikler	20-25
25-33 HRC alloyed steels 25-33 HRC alaşımlı çelikler	12-20
33-42 HRC alloyed steels, hardened steels 33-42 HRC alaşımlı çelikler, sertleşmiş çelikler	10-12
Stainless steels Paslanmaz çelikler	12-20
Cast iron GG10-GG40 Dökümler GG10 - GG40	25-32
Cas iron GGG40-GGG70 200-300 HB Dökümler GGG40-GGG70 200-300 HB	20-25
Titanium - Nickel alloys Titanyum ve nikel alaşımları	8-25
Cupper Bakır	70-80
Bronze Bronz	35-45
Brass Pirinç	40-50
Alloyed Bronze Alaşımı Bronz	12-16
non- alloyed Aluminium Aluminyum alaşımsız	80-100
Aluminium Si < 0.5 % Aluminyum Si < 0.5 %	70-80
Aluminium Si 0.5 % - 10 % Aluminyum Si 0.5 % - 10 %	50-60
Aluminium Si > 10 % Aluminyum Si > 10 %	40-50
Plastic Plastik	50-80

## FEED / İLERLEME

STOCK REMOVAL TALAŞ MİKTARI	PROFILING PROFİL İŞLEME												SLOTTING KANAL AÇMA				"T" SIDE MILLING "T" KANAL YARIK		SURFACE MILLING ALIN TARAMA	
	0,125xD			0,25xD			0,375xD			0,75xD			1.0XD				1.0 XD	0,25 XD	0,75XD	
Radial cutting depth Dairesel kesme derinliği	1,25 xD	1,5 xD	2.0 xD	1,25 xD	1,5 xD	2.0 xD	1,25 xD	1,5 xD	2.0 xD	1,25 xD	1,5 xD	2 xD	0,5 XD	1.0 XD	1,5 XD	2.0 XD	0,5 XD	0,5 XD	3-5 mm	6-10 mm
2 FLUTED END MILL 2 AĞIZLI FREZE DIN327																				
MULTI FLUTE END MILL ÇOK AĞIZLI FREZE DIN 844	İ	İ	D	Ş	T	A	L	A	R											
ROUGHING END MILL KABATALAŞ FREZE DIN 844							N	N	N	N	K	Ü	N	N	Ü	N				
T SLOT CUTTER T KANAL FREZE DIN 851																	N			
WOODRUF CUTTER T YARIK FREZE DIN 850																		G		
DOVETAIL CUTTER KIRLANGIÇ FREZE DIN 1833																		R		
SHELL MILL CUTTER VALS ALIN FREZE DIN 1880																			N	K
SIDE & FACE CUTTER DAİRESEL KANAL FREZE DIN 885																	N			

CUTTING SPEED m/minute KESME HIZI m/Dakika	6	8	10	12	16	20	25	32	40	50	60	80	100	125
FEED mm/minute İLERLEME mm/dakika														
G	10	12	16	20	25	32	40	50	60	80	100	120	160	200
Ü	11	14	18	22	28	35	45	55	70	90	110	140	180	220
R	12	16	20	25	32	40	50	60	80	100	120	160	200	250
K	14	18	22	28	35	45	55	70	90	110	140	180	220	280
A	16	20	25	32	40	50	60	80	100	120	160	200	250	320
N	18	22	28	35	45	55	70	90	110	140	180	220	280	350
L	20	25	32	40	50	60	80	100	120	160	200	250	320	400
T	22	28	35	45	55	70	90	110	140	180	220	280	350	450
D	25	32	40	50	60	80	100	120	160	200	250	320	400	500
Ş	28	35	45	55	70	90	110	140	180	220	280	350	450	560
İ	35	45	55	70	90	110	140	180	220	280	350	450	560	700



**REAMERS & COUNTERSINKS**  
*RAYBALAR & HAVŞA FREZELER*

## CARBIDE REAMER SERT METAL RAYBA



### CARBIDE REAMER / SERT METAL RAYBA

Dia/Çap Ø mm H7	CODE KOD	Flute lenght Helis boyu	Overall lenght tamboy	Shank Dia sap çapı Ø mm	EURO
2	220020	12	58	2	14.00
3	220030	12	58	3	15.00
4	220040	18	63	4	19.00
5	220050	22	75	5	24.00
6	220060	25	75	6	28.00
7	220070	25	75	7	30.00
8	220080	28	82	8	32.00
9	220090	35	100	9	45.00
10	220100	35	100	10	50.00
11	220110	35	100	11	57.00
12	220120	35	100	12	60.00

### TECHNIC / TEKNİK

#### SPEED & FEED RECOMMENDATIONS FOR CARBIDE REAMERS SERT METAL RAYBALARDA ÖNERİLEN DEVİR & İLERLEME DEĞERLERİ

Workpiece material	FEED - KESME HIZI	FEED RATE ACCORDING TO REAMER DIAMETER mm / revolution RAYBA ÇAPLARINA GÖRE İLERLEME (devir başına ilerleme) mm/ devir							
		Ø2	Ø3	Ø4	Ø5	Ø6	Ø8	Ø10	Ø12
İşlenen Malzeme Türü	m/min - m/dak.								
STEEL - ÇELİK < 200 HB	14-24 m/min - m/dak.	0.035	0.060	0.070	0.080	0.100	0.120	0.150	0.180
STEEL - ÇELİK 200-300 HB	9-14 m/min - m/dak.	0.030	0.050	0.060	0.075	0.090	0.140	0.012	0.150
STEEL - ÇELİK 300-350 HB	6-9 m/min - m/dak.	0.020	0.030	0.040	0.060	0.080	0.090	0.100	0.130
STEEL - ÇELİK 38-45 HRC	5-7 m/min - m/dak.	0.015	0.020	0.030	0.050	0.060	0.070	0.080	0.100
STAINLESS STEEL PASLANMAZ ÇELİK	5-10 m/min - m/dak.	0.025	0.030	0.035	0.040	0.050	0.060	0.060	0.080
CAST IRON - DÖKÜM	8-25 m/min - m/dak.	0.035	0.060	0.080	0.095	0.110	0.140	0.150	0.180
CUPPER BRONZE BRASS BAKIR BRONZ PİRİNÇ	20-30 m/min - m/dak.	0.035	0.060	0.080	0.095	0.110	0.140	0.160	0.180
ALUMINIUM ALUMINYUM	20-50 m/min - m/dak.	0.035	0.060	0.100	0.110	0.130	0.160	0.180	0.200

#### STOCK REMOVAL RECOMMENDED IN THE HOLE TO BE REAMED RAYBALANACAK DELİKTE BIRAKILMASI GEREKEN TALAŞ MİKTARI

Reamer Diameter Rayba çapı	Ø Stock removal recommended on diameter Çaptaki raybalama payı mm
1.0-3.0	0.07-0.15
3.1-6.0	0.15-0.20
6.1-10.0	0.20-0.30
10.1-13.0	0.25-0.35



## COUNTERSINK 3 FLUTED HSS

### HAVŞA FREZE 3 AĞIZLI HSS

#### COUNTERSINK 3 FLUTED 90° / HAVŞA FREZE 3 AĞIZLI 90°

ØDia mm x Angle ° Øçap mm x Açl °	CODE KOD	EURO
8.3 x 90°	335C0890	6.50
10.4 x 90°	335C1090	7.50
12.4 x 90°	335C1290	8.00
16.5 x 90°	335C1690	10.00
20.5 x 90°	335C2090	14.00
25 x 90°	335C2590	19.00
31.5 x 90°	335C3190	33.00



#### COUNTERSINK 3 FLUTED 60° / HAVŞA FREZE 3 AĞIZLI 60°

ØDia mm x Angle ° Øçap mm x Açl °	CODE KOD	EURO
8 x 60°	334C0860	7.50
10 x 60°	334C1060	8.50
12.5 x 60°	334C1260	9.00
16.5 x 60°	334C1660	11.00
20 x 60°	334C2060	15.00
25 x 60°	334C2560	20.00
31 x 60°	334C3160	34.00



## COUNTERSINK MULTI FLUTED HSS HAVŞA FREZE ÇOK AĞIZLI HSS



### COUNTERSINK MULTI FLUTED 90° / HAVŞA FREZE ÇOK AĞIZLI 90°

ØDia mm x Angle ° Øçap mm x Açıl °	CODE KOD	EURO
8 x 90°	335A0890	6.00
10 x 90°	335A1090	6.00
12,5 x 90°	335A1290	7.00
16 x 90°	335A1690	8.00
20 x 90°	335A2090	11.00
25 x 90°	335A2590	14.00
31,5 x 90°	335A3190	25.00
40x 90°	335A4090	40.00
45x 90°	335A4590	50.00



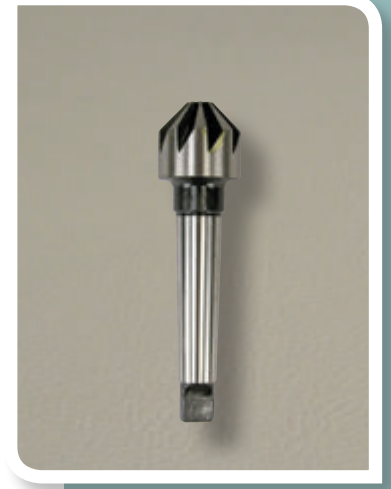
### COUNTERSINK MULTI FLUTED 60° / HAVŞA FREZE ÇOK AĞIZLI 60°

ØDia mm x Angle ° Øçap mm x Açıl °	CODE KOD	EURO
8 x 60°	334A0860	6.00
10 x 60°	334A1060	6.00
12,5 x 60°	334A1260	7.00
16 x 60°	334A1660	8.00
20 x 60°	334A2060	11.00
25 x 60°	334A2560	14.00
31,5 x 60°	334A3160	25.00

## COUNTERSINK MULTI FLUTE MORSE TAPER SHANK HAVŞA FREZE ÇOK AĞIZLI MORS KONİK SAPLI

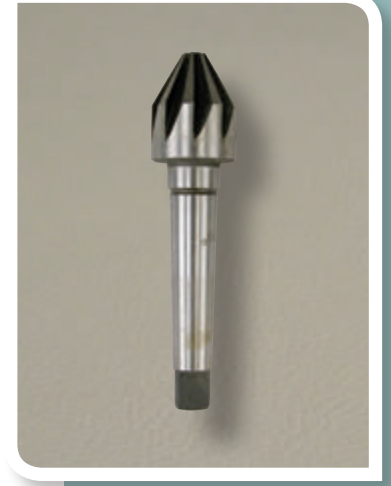
### COUNTERSINK MULTI FLUTE MORSE TAPER SHANK 90° HAVŞA FREZE ÇOK AĞIZLI MORS KONİK SAPLI 90°

ØDia mm x Angle ° Øçap mm x Açl °	CODE KOD	EURO
25 x 90°	335B2590	20.00
31,5 x 90°	335B3190	24.00
40 x 90°	335B4090	38.00
45 x 90°	335B4590	48.00
50 x 90°	335B5090	55.00
63 x 90°	335B6390	90.00
80 x 90°	335B8090	145.00



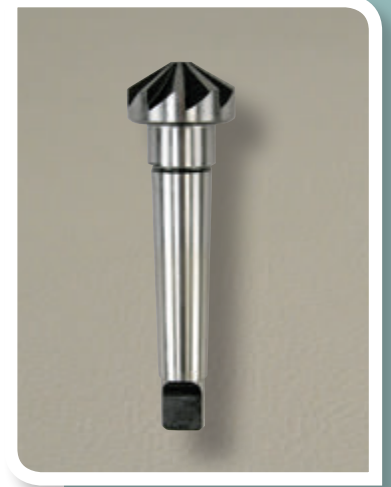
### COUNTERSINK MULTI FLUTE MORSE TAPER SHANK 60° HAVŞA FREZE ÇOK AĞIZLI MORS KONİK SAPLI 60°

ØDia mm x Angle ° Øçap mm x Açl °	CODE KOD	EURO
25 x 60°	334B2560	20.00
31,5 x 60°	334B3160	24.00
40 x 60°	334B4060	38.00
45 x 60°	334B4560	48.00
50 x 60°	334B5060	55.00
63 x 60°	334B6360	90.00
80 x 60°	334B8060	145.00



### COUNTERSINK MULTI FLUTE MORSE TAPER SHANK 120° HAVŞA FREZE ÇOK AĞIZLI MORS KONİK SAPLI 120°

ØDia mm x Angle ° Øçap mm x Açl °	CODE KOD	EURO
25 x 120°	347B25120	20.00
31,5 x 120°	347B31120	24.00
40 x 120°	347B40120	38.00
45 x 120°	347B45120	48.00
50 x 120°	347B50120	55.00
63 x 120°	347B63120	90.00
80 x 120°	347B80120	145.00



**COUNTERBORES STRAIGHT SHANK DIN 373 HSS**  
**İMBUS VİDA YERİ FREZESİ DÜZ SAPLI DIN 373 HSS**



**DIN 373 COUNTERBORE / DIN 373 İMBUS VİDA YERİ FREZESİ**

Screw size Metric İmbus Vida Ölçüsü Metrik	CODE KOD	EURO
M 3	37303	8.00
M 4	37304	8.00
M 5	37305	9.00
M 6	37306	11.00
M 8	37308	13.00
M 10	37310	15.00
M 12	37312	17.00
M 14	37314	25.00
M 16	37316	30.00
M 20	37320	45.00

**MACHINE REAMER STRAIGHT SHANK DIN 212/B HSS Cobalt**  
**MAKİNA RAYBASI DÜZ SAPLI DIN 212/B HSS Cobalt**

**DIN 212/B MACHINE REAMER / DIN 212/B MAKİNA RAYBASI**

Dia/Çap Ø mm H7	CODE KOD	Flute length Helis boyu	Overall length tamboy	Shank Dia sap çapı Ø mm	EURO
2	212020	11	49	2	9.00
3	212030	15	61	3	9.00
4	212040	19	75	4	9.00
5	212050	23	86	5	9.00
6	212060	26	93	5.6	10.00
7	212070	31	109	7.1	12.00
8	212080	33	117	8.0	13.00
9	212090	36	125	9	14.00
10	212100	38	133	10	15.00
11	212110	41	142	10	18.00
12	212120	44	151	10	20.00
13	212130	44	151	10	22.00
14	212140	47	160	12.5	25.00
15	212150	50	162	12.5	26.00
16	212160	52	170	12.5	27.00
17	212170	54	175	14	30.00
18	212180	56	182	14	35.00
19	212190	58	189	16	38.00
20	212200	60	195	16	38.00



**MACHINE REAMER MORSE TAPER SHANK DIN 208/B HSS**  
**MAKİNA RAYBASI MORS KONİK SAPLI DIN 208/B HSS**



**DIN 208/B MACHINE REAMER / DIN 208/B MAKİNA RAYBASI**

Dia/Çap Ø mm H7	CODE KOD	Flute lenght Helis boyu	Overall lenght tamboy	Morse taper No Mors Konik No.	EURO
10	208100	38	168	1	20.00
11	208110	41	175	1	20.00
12	208120	44	182	1	22.00
13	208130	44	182	1	25.00
14	208140	47	189	1	26.00
15	208150	50	204	2	30.00
16	208160	52	210	2	30.00
17	208170	54	214	2	33.00
18	208180	56	219	2	35.00
19	208190	58	223	2	37.00
20	208200	60	228	2	37.00
21	208210	62	232	2	40.00
22	208220	64	237	2	40.00
23	208230	66	241	2	44.00
24	208240	68	268	3	45.00
25	208250	68	268	3	46.00
26	208260	70	273	3	50.00
27	208270	71	277	3	58.00
28	208280	71	277	3	60.00
29	208290	73	281	3	62.00
30	208300	73	281	3	65.00
31	208310	75	285	3	66.00
32	208320	77	317	4	70.00
33	208330	77	317	4	73.00
34	208340	78	321	4	80.00
35	208350	79	325	4	82.00
36	208360	79	325	4	83.00
37	208370	79	325	4	85.00
38	208380	81	329	4	90.00
39	208390	81	329	4	92.00
40	208400	82	333	4	95.00
42	208420	82	333	4	97.00
45	208450	84	340	4	100.00

## HAND REAMERS DIN206/B HSS

### EL RAYBASI DIN206/B HSS

#### DIN 206/B HAND REAMER / DIN 206/B EL RAYBASI

Dia/Çap Ø mm H7	CODE KOD	Flute lenght Helis boyu	Overall lenght tamboy	Shank Dia sap çapı Ø mm	EURO
2	206020	25	50	2	10.00
3	206030	31	62	3	10.00
4	206040	38	76	4	10.00
5	206050	44	87	5	11.00
6	206060	47	93	6	11.00
7	206070	54	107	7	12.00
8	206080	58	115	8	13.00
9	206090	62	124	9	14.00
10	206100	66	133	10	14.00
11	206110	71	142	11	15.00
12	206120	76	152	12	16.00
13	206130	76	152	13	19.00
14	206140	81	163	14	21.00
15	206150	81	163	15	22.00
16	206160	87	175	16	24.00
17	206170	87	175	17	27.00
18	206180	93	188	18	30.00
19	206190	93	188	19	32.00
20	206200	100	201	20	35.00
21	206210	100	201	21	37.00
22	206220	107	215	22	40.00
23	206230	107	215	23	42.00
24	206240	115	231	24	45.00
25	206250	115	231	25	48.00
26	206260	115	231	26	50.00
27	206270	124	247	27	55.00
28	206280	124	247	28	58.00
29	206290	124	247	29	62.00
30	206300	124	247	30	64.00
31	206310	133	265	31	75.00
32	206320	133	265	32	78.00
33	206330	133	265	33	82.00
34	206340	142	284	34	88.00
35	206350	142	284	35	90.00
36	206360	142	284	36	93.00
37	206370	142	284	37	96.00
38	206380	152	305	38	110.00
39	206390	152	305	39	112.00
40	206400	152	305	40	115.00



## TAPER REAMERS HSS KONİK RAYBALAR HSS



### DIN 9 TAPER PIN REAMER 1:50 TAPER DIN 9 KONİK PİM RAYBASI 1:50 KONİK

Front Dia Uç çapı Ø mm	CODE KOD	EURO
2	915002	12.00
2.5	9150025	12.00
3	915003	12.00
4	915004	13.00
5	915005	15.00
6	915006	16.00
7	915007	20.00
8	915008	24.00
10	915009	32.00
12	915012	40.00
13	915013	50.00
14	915014	55.00
16	915016	60.00
20	915020	70.00



### TAPER REAMER 1:10 TAPER KONİK RAYBA 1:10 KONİK

Front- Back Dia Uç -Arka çapı Ø mm	CODE KOD	EURO
3-10	1100310	26.00
5-15	1100515	34.00
10-25	1101025	58.00





**CIRCULAR MILLING CUTTERS**  
*DAİRESEL FREZELER*

## CIRCULAR SAWS HSS DIN 1837 DAİRE TESTERELER HSS DIN 1837

### DIN 1837 CIRCULAR SAW / DIN 1837 DAİRE TESTERE



ØDiaxthicknessxØbore mm Øçap x kalınlık x Ødelik mm	CODE KOD	EURO
25x0.8x8	183702508	6.00
25x1.0x8	183702510	6.00
25x1.2x8	183702512	6.50
25x1.6x8	183702516	7.00
25x2.0x8	183702520	7.50
32x0.8x8	183703208	6.50
32x1.0x8	183703210	6.50
32x1.2x8	183703212	7.00
32x1.6x8	183703216	7.50
32x2.0x8	183703220	8.00
40x0.8x10	183704008	7.00
40x1.0x10	183704010	7.00
40x1.2x10	183704012	7.50
40x1.6x10	183704016	8.00
40x2.0x10	183704020	8.50
50x0.8x13	183705008	7.50
50x1.0x13	183705010	7.50
50x1.2x13	183705012	8.50
50x1.6x13	183705016	9.00
50x2.0x13	183705020	10.00
50x2.5x13	183705025	11.00
50x3.0x13	183705030	12.50
63x0.8x16	183706308	9.00
63x1.0x16	183706310	9.00
63x1.2x16	183706312	9.50
63x1.6x16	183706316	10.50
63x2.0x16	183706320	11.50
63x2.5x16	183706325	12.50
63x3.0x16	183706330	13.00
80x0.8x22	183708008	12.00
80x1.0x22	183708010	12.00
80x1.2x22	183708012	12.00
80x1.6x22	183708016	13.00
80x2.0x22	183708020	14.00
80x2.5x22	183708025	16.00
80x3.0x22	183708030	18.00
80x4.0x22	183708040	23.00
100x1.0x22	183710010	14.50
100x1.2x22	183710012	15.00
100x1.6x22	183710016	17.50
100x2.0x22	183710020	20.00
100x2.5x22	183710025	22.00
100x3.0x22	183710030	25.00
100x4.0x22	183710040	31.00
125x1.6x22	183712516	24.00
125x2.0x22	183712520	26.00
125x2.5x22	183712525	30.00
125x3.0x22	183712530	33.00
125x4.0x22	183712540	41.00
160x1.6x32	183716016	33.00
160x2.0x32	183716020	35.00
160x2.5x32	183716025	43.00
160x3.0x32	183716030	52.00
160x4.0x32	183716040	70.00

This range is available while stocks last  
Bu ürün grubu stoklarla sınırlıdır

**SIDE AND FACE CUTTER STAGGERED TEETH DIN 885A HSS Cobalt**  
**KANAL FREZE DAİRESEL ÇAPRAZ DİŞLİ DIN 885A HSS Cobalt**

**DIN 885/A SIDE AND FACE CUTTER / DIN 885/A KANAL FREZE**

ØDiaxthicknessxØbore mm Øçap x kalınlık x Ødelik mm	CODE KOD	EURO
50x4x16	885A05004	25.00
50x5x16	885A05005	26.00
50x6x16	885A05006	27.00
50x8x16	885A05008	30.00
50x10x16	885A05010	33.00
63x4x22	885A06304	27.00
63x5x22	885A06305	28.00
63x6x22	885A06306	29.00
63x8x22	885A06308	32.00
63x10x22	885A06310	35.00
63x12x22	885A06312	38.00
80x4x27	885A08004	30.00
80x5x27	885A08005	32.00
80x6x27	885A08006	34.00
80x8x27	885A08008	37.00
80x10x27	885A08010	40.00
80x12x27	885A08012	44.00
80x14x27	885A08014	48.00
80x16x27	885A08016	52.00
100x6x32	885A10006	42.00
100x8x32	885A10008	46.00
100x10x32	885A10010	50.00
100x12x32	885A10012	54.00
100x14x32	885A10014	58.00
100x16x32	885A10016	62.00
100x18x32	885A10018	67.00
100x20x32	885A10020	72.00
125x8x32	885A12508	56.00
125x10x32	885A12510	64.00
125x12x32	885A12512	68.00
125x14x32	885A12514	72.00
125x16x32	885A12516	76.00
125x18x32	885A12518	80.00
125x20x32	885A12520	84.00
160x6x40	885A16006	70.00
160x8x40	885A16008	74.00
160x10x40	885A16010	78.00
160x12x40	885A16012	82.00
160x14x40	885A16014	86.00
160x16x40	885A16016	90.00
160x18x40	885A16018	95.00
160x20x40	885A16020	100.00
200x10x40	885A20010	100.00
200x12x40	885A20012	110.00
200x14x40	885A20014	120.00
200x16x40	885A20016	130.00
200x18x40	885A20018	140.00
200x20x40	885A20020	150.00
200x25x40	885A20025	165.00



## SINGLE ANGLE CUTTER DIN 842 HSS Cobalt TEK AÇI FREZE DIN 842 HSS Cobalt



### DIN 842 SINGLE ANGLE CUTTER HSS Cobalt 45° DIN 842 TEK AÇI FREZE HSS Cobalt 45°

Ø dia x thickness x Ø bore mm x angle ° Ø çap x kalınlık x Ø delik mm x açı °	CODE KOD	EURO
40x10x10-45°	84204045	33.00
50x13x13-45°	84205045	36.00
63x18x16-45°	84206345	44.00
80x22x22-45°	84208045	60.00
100x28x27-45°	84210045	95.00
125x36x32-45°	84212545	140.00

### DIN 842 SINGLE ANGLE CUTTER HSS Cobalt 60° DIN 842 TEK AÇI FREZE HSS Cobalt 60°

Ø dia x thickness x Ø bore mm x angle ° Ø çap x kalınlık x Ø delik mm x açı °	CODE KOD	EURO
40x13x10-60°	84204060	33.00
50x16x13-60°	84205060	36.00
63x20x16-60°	84206360	44.00
80x25x22-60°	84208060	60.00
100x32x27-60°	84210060	95.00
125x40x32-60°	84212560	140.00

50° ve 55° of those sizes are also available at same price as 60°  
Yukarıdaki ölçülerde 50° ve 55° de mevcuttur fiyatı 60° ile aynıdır.

## DOUBLE ANGLE CUTER DIN 847 HSS ÇİFT AÇI FREZE DIN 847 HSS

DIN 847 DOUBLE ANGLE CUTER HSS 45° - 60° - 90°  
DIN 847 ÇİFT AÇI FREZE HSS 45° - 60° - 90°

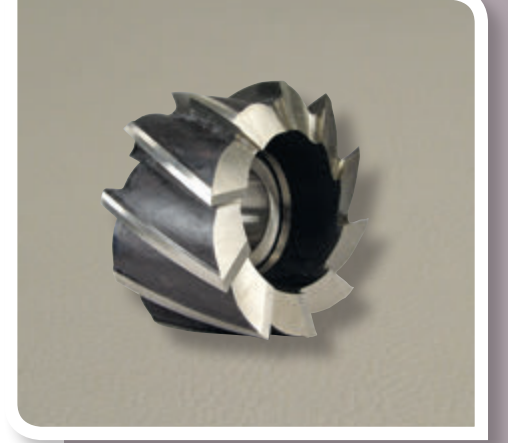
ØDiaxthicknessxØbore mm Øçap x kalınlık x Ødelik mm	CODE KOD	EURO
56x10x16-45°	84705645	35.00
63x12x22-45°	84706345	40.00
80x12x22-45°	84708045	55.00
100x18x27-45°	84710045	85.00
56x12x16-60°	84705660	38.00
63x16x22-60°	84706360	43.00
80x18x22-60°	84708060	58.00
100x25x27-60°	84710060	88.00
56x14x16-90°	84705690	40.00
63x18x22-90°	84706390	45.00
80x22x22-90°	84708090	60.00
100x28x27-90°	84710090	90.00



## SHELL END MILL DIN 1880 HSS VALS ALIN FREZE DIN 1880 HSS

DIN 1880 SHELL END MILL / DIN 1880 VALS ALIN FREZE

ØDiaxthicknessxØbore mm Øçap x kalınlık x Ødelik mm	CODE KOD	EURO
40x32x16	1880040	35.00
50x36x22	1880050	40.00
63x40x27	1880063	50.00
80x45x27	1880080	65.00
100x50x27	1880100	95.00
125x56x40	1880125	140.00



## CONCAVE MILLING CUTTER DIN 855 HSS KONKAV FREZE DIN 855 HSS

### DIN 855 CONCAVE CUTTER / DIN 855 KONKAV FREZE

RADIUS RADÜS	CODE KOD	Ø dia x thickness x Ø bore mm Ø çap x kalınlık x Ø delik mm	EURO
R 2	855020	50x9x16	35.00
R 2.5	855025	63x10x22	38.00
R 3	855030	63x12x22	40.00
R 3.5	855035	63x14x22	45.00
R 4	855040	63x16x22	45.00
R 5	855050	63x20x22	55.00
R 6	855060	80x24x27	60.00
R 7	855070	80x28x27	70.00
R 8	855080	80x32x27	80.00
R 9	855090	100x36x32	90.00
R 10	855100	100x40x32	110.00
R 20	855200	125x70x32	200.00

## CONVEX MILLING CUTTER DIN 856 HSS KONVEKS FREZE DIN 856 HSS

### DIN 856 CONVEX CUTTER / DIN 856 KONVEKS FREZE

RADIUS RADÜS	CODE KOD	Ø dia x thickness x Ø bore mm Ø çap x kalınlık x Ø delik mm	EURO
R 1	856010	50x4x16	30.00
R 1.5	856015	50x4x16	30.00
R 2	856020	50x4x16	30.00
R 2.5	856025	63x5x22	35.00
R 3	856030	63x6x22	35.00
R 3.5	856035	63x7x22	40.00
R 4	856040	63x8x22	40.00
R 4,5	856045	63x9x22	45.00
R 5	856050	63x10x22	45.00
R 6	856060	80x12x27	55.00
R 7	856070	80x14x27	65.00
R 8	856080	80x16x27	70.00
R 9	856090	100x18x32	85.00
R 10	856100	100x20x32	95.00
R 11	856110	100x22x32	105.00
R 12	856120	100x24x32	110.00
R 12.5	856125	100x25x32	120.00

**CUTTING DATAS FOR HSS MILLING CUTTERS**  
**HSS FREZELER İÇİN KESME DEĞERLERİ**
**CUTTING SPEED - RPM / KESME HIZI - DEVİR**

Materila To Cut Malzeme	Cutting speed m/min. Kesme Hızı m/dakika
Below 180HB soft steels 180 HB altı yumuşak çelikler	32-40
180-250 HB carbon and low alloyed steel 180-250 HB karbonlu çelikler ve az alaşımlı çelikler	20-25
25-33 HRC alloyed steels 25-33 HRC alaşımlı çelikler	12-20
33-42 HRC alloyed steels, hardened steels 33-42 HRC alaşımlı çelikler, sertleşmiş çelikler	10-12
Stainless steels Paslanmaz çelikler	12-20
Cast iron GG10-GG40 Dökümler GG10 - GG40	25-32
Cas iron GGG40-GGG70 200-300 HB Dökümler GGG40-GGG70 200-300 HB	20-25
Titanium - Nickel alloys Titanyum ve nikel alaşımları	8-25
Copper Bakır	70-80
Bronze Bronz	35-45
Brass Pirinç	40-50
Alloyed Bronze Alaşımlı Bronz	12-16
non- alloyed Aluminium Aluminyum alaşımsız	80-100
Aluminium Si < 0.5 % Aluminyum Si < 0.5 %	70-80
Aluminium Si 0.5 % - 10 % Aluminyum Si 0.5 % - 10 %	50-60
Aluminium Si > 10 % Aluminyum Si > 10 %	40-50
Plastic Plastik	50-80


**RPM - Devir/dakika**

- 1- Select the cutting speed m/minute from the table on the left according to workpiece  
1- Soldaki tablodan malzemenize göre m/dakika cinsinden kesme hızınızı bulunuz.
- 2- Place the cutting speed on the formula below to find the RPM  
2- Alttaki formülde yerine koyarak devir / dakika cinsinden devirinizi bulunuz

$$\text{RPM revolution} = \frac{\text{Cutting speed (m/minute)}}{3.14 \times \text{tool diameter}}$$

Devir / Dakika =  $\frac{\text{Kesme hızı (m/dakika)} \times 1000}{3.14 \times \text{takım çapı}}$

**Feed / İlerleme**

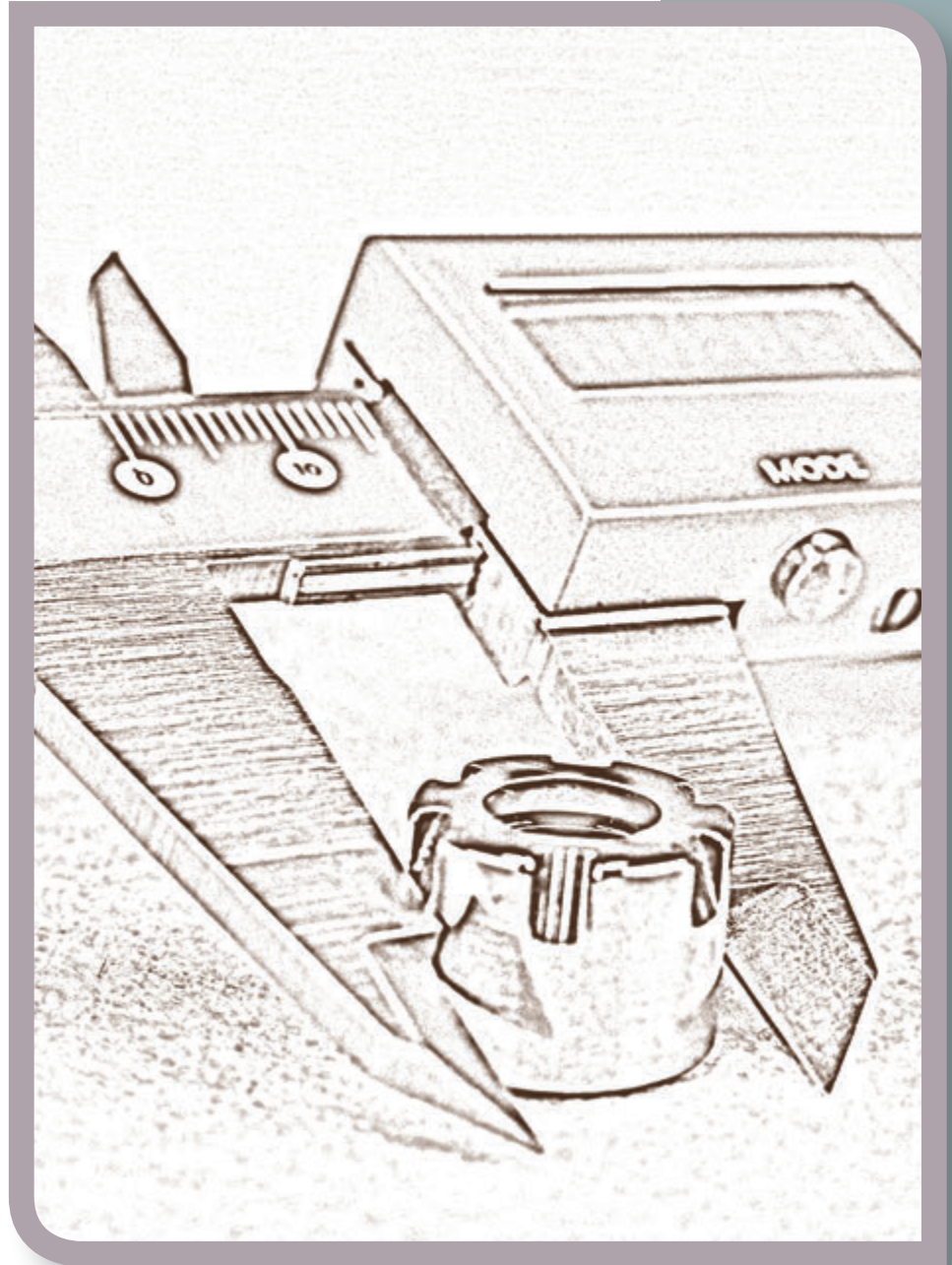
- 3- On the feed table below select your "letter" according to your operation and stock removal  
3- Aşağıdaki ilerleme tablosundaki işlem şekli ve talaş miktarınıza göre belirtilen harfi bulunuz
- 4- On the bottom table across your "letter" you will find the feed rate according to your speed that you already found  
4- En alttaki tabloda bu harfin bulunduğu satırda kesme hızınıza göre ilerleme hızınızı bulacaksınız.

## FEED / İLERLEME

STOCK REMOVAL TALAŞ MİKTARI	PROFILING PROFİL İŞLEME												SLOTTING KANAL AÇMA				"T" SIDE MILLING "T" KANAL YARIK		SURFACE MILLING ALIN TARAMA		
	0,125xD			0,25xD			0,375xD			0,75xD			1.0XD				1.0 XD	0,25 XD	0,75XD		
Radial cutting depth Dairesel kesme derinliği	1,25 xD	1,5 xD	2.0 xD	1,25 xD	1,5 xD	2.0 xD	1,25 xD	1,5 xD	2.0 xD	1,25 xD	1,5 xD	2 xD	0,5 XD	1.0 XD	1,5 XD	2.0 XD	0,5 XD	0,5 XD	3-5 mm	6-10 mm	
2 FLUTED END MILL 2 AĞIZLI FREZE DIN327																					
MULTI FLUTE END MILL ÇOK AĞIZLI FREZE DIN 844	İ	İ	D	Ş	T	A	L	A	R												
ROUGHING END MILL KABATALAŞ FREZE DIN 844							N	N	N	N	K	Ü	N	N	Ü	N					
T SLOT CUTTER T KANAL FREZE DIN 851																	N				
WOODRUF CUTTER T YARIK FREZE DIN 850																		G			
DOVETAIL CUTTER KIRLANGIÇ FREZE DIN 1833																		R			
SHELL MILL CUTTER VALS ALIN FREZE DIN 1880																			N	K	
SIDE & FACE CUTTER DAİRESEL KANAL FREZE DIN 885																	N				

CUTTING SPEED m/minute KESME HIZI m/Dakika	6	8	10	12	16	20	25	32	40	50	60	80	100	125
FEED mm/minute İLERLEME mm/dakika														
G	10	12	16	20	25	32	40	50	60	80	100	120	160	200
Ü	11	14	18	22	28	35	45	55	70	90	110	140	180	220
R	12	16	20	25	32	40	50	60	80	100	120	160	200	250
K	14	18	22	28	35	45	55	70	90	110	140	180	220	280
A	16	20	25	32	40	50	60	80	100	120	160	200	250	320
N	18	22	28	35	45	55	70	90	110	140	180	220	280	350
L	20	25	32	40	50	60	80	100	120	160	200	250	320	400
T	22	28	35	45	55	70	90	110	140	180	220	280	350	450
D	25	32	40	50	60	80	100	120	160	200	250	320	400	500
Ş	28	35	45	55	70	90	110	140	180	220	280	350	450	560
İ	35	45	55	70	90	110	140	180	220	280	350	450	560	700





**TECHNICAL INFORMATION**  
*TEKNİK BİLGİLER*

**TECHNICAL INFO - BANDSAWS**  
**TEKNİK BİLGİLER - ŞERİT TESTERELER**

**Bi- metal bandsaw tooth selection guide (according to workpiece dia or thickness )**  
**Bi-Metal Şerit testere diş seçim tablosu (Malzeme çap ve et kalınlığına göre)**

Solid Ø Dolu Ø	Tooth Diş
2-5 mm	14 - 10/14
6-12 mm	10 - 8/12
13-20 mm	8 - 6/10
20-30 mm	6 - 5/8
30-50 mm	4/6
50-90 mm	4 - 3/4
90-120 mm	3/4
120-200 mm	2/3
200-400 mm	1.3 - 1,4 /2.5

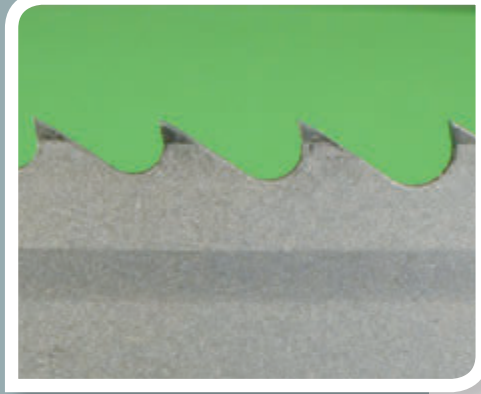
Pipe / profile etc.. Wall thickness Boru profil vs. et kalınlığı	Tooth Diş
1,5-3mm	14 - 10/14
3-5mm	10 - 8/12
5-7 mm	6/10
7-10 mm	5/8
10-20 mm	4/6
20-40 mm	3/4
40 - + mm	2/3

**Note: Tooth selection guide is only general guide and could well vary according to materials' characteristics and also cutting conditions Please consult our company for further recommendations.**

**Not: Diş seçimi genel olarak belirtilmiş olup kesilen malzeme evsafı ve kesim şartları bu seçimi değiştirebilir. Ayrıntılı bilgi için lütfen firmamızla irtibata geçiniz.**

**Performance: When you mount your new blade while keeping the speed constant reduce your feed by half. Having cut for 15 minutes with half the feed gradually increase your feed up to your standard level. The very sharp cutting edges of your new blades will not be damaged in the very first cuts, thus this will improve the life of your blade**

**Performans: Yeni testerenizi taktığınızda devir sabit kalmak koşulu ile normal testere iniş hızınızı (ilerleme) yarıya düşürünüz. 15 dk. kesim yaptıktan sonra yavaş yavaş eski haline getiriniz ve normal ilerlemenizle devam ediniz. Yeni testerenizin çok keskin diş uçlarında küçük kırılmalar engellenecek ve testerenizin ömrü artacaktır.**


**SOLVING THE PROBLEM BY WATCHING THE CHIPS**

Problems can be identified by watching the chips created during cutting operation,

**Chips : thin and curled silver color**  
**Speed : GOOD**  
**Feed : GOOD**  
**Other : Speed / feed and tooth selection is OK.**

**Chips : Thick, Hard and Short , blue or brown color**  
**Speed : Decrease**  
**Feed : Decrease**  
**Other : Check the cutting oil**

**Chips : powder in silver color**  
**Speed : Decrease**  
**Feed : Increase**

**Chips : Thin and Tightly Curled in silver color**  
**Speed : OK**  
**Feed : Decrease**  
**Other : May be wrong tooth selection**

**TALAŞLARI İZLEYEREK PROBLEM ÇÖZME**

Kesim esnasında çıkan talaşları inceleyerek problemleri bulabilir ve çözebilirsiniz.

**Talaş : ince kıvrımlı ve gri metal renkte**

**Devir : uygun**

**İlerleme : uygun**

**Diğer : devir ilerleme ve diş seçiminiz uygundur**

**Talaş : Kısa, kalın, sert ve mavi veya kahve renkte**

**Devir : düşürün**

**İlerleme : düşürün**

**Diğer : kesme yağını kontrol edin.**

**Talaş : Toz halinde ve gri**

**Devir : düşürün**

**İlerleme : arttırın**

**Talaş : ince ve çok sıkı kıvrımlı ve gri renkte**

**Devir : kesme hızı uygun**

**İlerleme : düşürün.**

**Diğer : yanlış diş seçimi olabilir.**

**CARBIDE BURRS OPERATION SPEED**
**SERT METAL ÇAPAK FREZE KULLANIM HIZLARI**

Workpiece İşlenilen malzeme	Rpm range according to tool diameter Takım çapına göre devir aralığı				
	Ø 3mm	Ø 6mm	Ø 10mm	Ø 12mm	Ø 16mm
<b>Steel</b> Çelik	60.000- 80.000	35.000- 45.000	22.000- 35.000	20.000- 30.000	15.000- 20.000
<b>Hard Steel</b> Sert Çelik	60.000- 80.000	30.000- 45.000	19.000- 30.000	15.000- 22.000	12.000- 18.000
<b>Stainless steel</b> Paslanmaz Çelik	60.000- 80.000	30.000- 45.000	19.000- 30.000	15.000- 22.000	12.000- 18.000
<b>Cast iron</b> Döküm	45.000- 80.000	22.000- 45.000	15.000- 35.000	11.000- 30.000	9.000- 20.000
<b>Titanium</b> Titanyum	60.000- 80.000	30.000- 45.000	19.000- 30.000	15.000- 22.000	12.000- 18.000
<b>Nickel</b> Nikel	60.000- 80.000	30.000- 45.000	19.000- 30.000	15.000- 22.000	12.000- 18.000
<b>Copper and Copper alloys</b> Bakır ve alaşımları	45.000- 80.000	22.000- 45.000	15.000- 35.000	11.000- 30.000	9.000- 20.000
<b>Aluminium</b> Aluminyum	30.000- 80.000	15.000- 45.000	10.000- 35.000	7.000- 30.000	6.000- 20.000
<b>Plastics</b> Plastik	30.000- 80.000	15.000- 45.000	10.000- 35.000	7.000- 30.000	6.000- 20.000



**SPEED AND FEED DATAS FOR HSS DRILLS**
**HSS MATKAPLAR İÇİN DEVİR VE İLERLEME DEĞERLERİ**

Workpiece material İşlenen malzeme türü	Cutting speed Kesme hızı Metre/ minute metre/ dakika	FEED RATE ACCORDING TO DRILL DIAMETER (FEED PER REVOLUTION) m/rev. MATKAP ÇAPLARINA GÖRE İLERLEME (devir başına ilerleme) mml devir											
		Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø8	Ø10	Ø12	Ø15	Ø16	Ø20
STEEL < 200 HB ÇELİK < 200 HB	20-25	0.020	0.060	0.090	0.100	0.110	0.130	0.160	0.190	0.200	0.230	0.250	0.280
STEEL 200-300 HB ÇELİK 200-300 HB	12-20	0.018	0.050	0.070	0.080	0.095	0.110	0.140	0.170	0.180	0.200	0.210	0.230
ÇELİK 300-350 HB	10-12	0.016	0.035	0.050	0.060	0.065	0.075	0.095	0.110	0.125	0.140	0.150	0.180
STAINLESS STEEL PASLANMAZ ÇELİK	12-18	0.016	0.035	0.050	0.060	0.065	0.075	0.095	0.110	0.125	0.140	0.150	0.180
CAST IRON DÖKÜM	20-30	0.018	0.050	0.070	0.080	0.095	0.110	0.140	0.170	0.180	0.200	0.210	0.230
CUPPER, BRONZE, BRASS BAKIR BRONZ PİRİNÇ	20-35	0.018	0.050	0.070	0.080	0.095	0.110	0.140	0.170	0.180	0.200	0.210	0.230
ALUMINIUM ALUMINYUM	25-35	0.020	0.060	0.090	0.100	0.110	0.130	0.160	0.190	0.200	0.230	0.250	0.280

Indicated datas are for HSS Cobalt drills, for HSS drills please reduce these datas by 30%  
Yukarıdaki değerleri HSS Cobalt matkaplarda kullanınız, HSS matkaplarda bu değerleri %30 düşürünüz.



**SPEED AND FEED DATAS FOR CARBIDE DRILLS**
**SERT METAL MATKAPLAR İÇİN DEVİR VE İLERLEME DEĞERLERİ**

Workpiece material İşlenen malzeme türü	Cutting speed Kesme hızı Metre/ minute metre/ dakika	FEED RATE ACCORDING TO DRILL DIAMETER (FEED PER REVOLUTION) m/rev.											
		MATKAP ÇAPLARINA GÖRE İLERLEME (devir başına ilerleme) mm/ devir											
		Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø8	Ø10	Ø12	Ø15	Ø16	Ø20
STEEL < 200 HB ÇELİK < 200 HB	70-80	0.007	0.012	0.020	0.025	0.030	0.035	0.050	0.075	0.095	0.120	0.130	0.140
STEEL 200-300 HB ÇELİK 200-300 HB	55-70	0.007	0.012	0.020	0.025	0.030	0.035	0.050	0.075	0.095	0.120	0.130	0.140
STEEL 300-350 HB ÇELİK 300-350 HB	35-55	0.007	0.012	0.020	0.025	0.030	0.035	0.050	0.075	0.095	0.120	0.130	0.140
STEEL 40-50 HRC ÇELİK 40-50 HRC	20-30	0.007	0.012	0.018	0.022	0.028	0.033	0.045	0.065	0.085	0.110	0.120	0.130
STEEL 50-55 HRC ÇELİK 50-55 HRC	16-20	0.006	0.012	0.016	0.020	0.025	0.030	0.040	0.060	0.080	0.100	0.110	0.120
STAINLESS STEEL PASLANMAZ ÇELİK	20-30	0.007	0.012	0.018	0.022	0.028	0.033	0.045	0.065	0.085	0.110	0.120	0.130
CAST IRON DÖKÜM	50-70	0.012	0.022	0.032	0.040	0.050	0.060	0.085	0.095	0.110	0.130	0.140	0.160
CUPPER, BRONZE, BRASS BAKIR BRONZ PİRİNÇ	100-200	0.025	0.050	0.070	0.080	0.100	0.125	0.160	0.200	0.240	0.270	0.300	0.300
ALUNIMIUM ALUMINYUM	60-150	0.025	0.050	0.070	0.080	0.100	0.125	0.160	0.200	0.240	0.270	0.300	0.300

Finding the revolution using cutting speed rate

Kesme hızından deviri bulmak için

$$\frac{\text{Cutting speed (m/minute) Kesme hızı (m/dakika) x 1000}}{3,14 \times \text{tool (drill) diameter takım (matkap) çapı}} = \text{DEVİR/DAKİKA (RPM)}$$

All given datas are to make user to have reference point to make a start.

The machine, coolant, workpiece fixing, toolholding accuracy, workpiece characteristics and many other inputs may lead you to change these datas

Having made a start with these given datas, by adjusting them you can reach the optimum datas of your particular application.

Do NOT start with the upper level of the given datas. Start from the lower level then gradually increase it.

Tüm verilen değerler işlemeye başlangıç yapabilmemiz için referans alabileceğiniz değerlerdir.

Tezgah, soğutucu, parça bağlama, takım tutucu hassasiyeti, malzeme özelliği ve diğer tüm etkenler bu değerleri değiştirmenizi gerektirebilir.

Başlangıcı yukarıdaki değerlerle yaptıktan sonra kesme değerlerini değiştirerek işleminize uygun optimum kesme değerine ulaşabilirsiniz.

Tabloda belirtilen değer aralıklarının üst sınırlarıyla başlangıç yapmayınız. Alt sınırdan başlayarak değerlerinizi kademeli olarak artırınız.



## TAPPING DRILL SIZES KILAVUZ MATKAP ÇAPLARI

## TECHNIC / TEKNİK



M. COARSE M. NORMAL	Drill Ø Matkap Ø
M 2	1.60
M 2,2	1.75
M 2,3	1.90
M 2,5	2.05
M 2,6	2.10
M 3	2.50
M 3,5	2.90
M 4	3.30
M 4,5	3.70
M 5	4.20
M 6	5.00
M 7	6.00
M 8	6.80
M 9	7.80
M 10	8.50
M 11	9.50

M. COARSE M. NORMAL	Drill Ø Matkap Ø
M 12	10.20
M 14	12.00
M 16	14.00
M 18	15.50
M 20	17.50
M 22	19.50
M 24	21.00
M 27	24.00
M 30	26.50
M 33	29.50
M 36	32.00
M 39	35.00
M 42	37.50
M 45	40.50
M 48	43.00
M 52	47.00

M. FINE M. İNCE	Drill Ø Matkap Ø
M 4x0,5	3.50
M 4,5x0,5	4.00
M 5x0,5	4.50
M 6x0,5	5.50
M 6x0,75	5.20
M 7x0,75	6.20
M 8x0,5	7.50
M 8x0,75	7.20
M 8x1	7.00
M 9x1	8.00
M 10x0,75	9.20
M 10x1	9.00
M 10x1,25	8.80
M 11x1	10.00
M 12x1	11.00
M 12x1,25	10.80
M 12x1,5	10.50
M 13x1	12.00
M 14x1	13.00
M 14x1,25	12.80
M 14x1,5	12.50
M 15x1	14.00
M 15x1,5	13.50
M 16x1	15.00
M 16x1,5	14.50
M 18x1	17.00
M 18x1,5	16.50
M 18x2	16.00

M. FINE M. İNCE	Drill Ø Matkap Ø
M 20x1	19.00
M 20x1,5	18.50
M 20x2	18.00
M 22x1	21.00
M 22x1,5	20.50
M 22x2	20.00
M 24x1	23.00
M 24x1,5	22.50
M 24x2	22.00
M 25x1	24.00
M 25x1,5	23.50
M 26x1	25.00
M 26x1,5	24.50
M 27x1,5	25.50
M 27x2	25.00
M 28x1,5	26.50
M 28x2	26.00
M 30x1	29.00
M 30x1,5	28.50
M 30x2	28.00
M 32x1,5	30.50
M 33x1,5	31.50
M 33x2	31.00
M 34x1,5	32.50
M 36x1,5	34.50
M 36x2	34.00
M 38x1,5	36.50
M 40x1,5	38.50

## TAPPING DRILL SIZES KILAVUZ MATKAP ÇAPLARI

## TECHNIC / TEKNİK

G	Drill Ø Matkap Ø
G 1/8x28	8.80
G 1/4x19	11.80
G 3/8x19	15.25
G 1/2x14	19.00
G 5/8x14	21.00
G 3/4x14	24.50
G 7/8x14	28.25
G 1 x11	30.75
G 1 1/8x11	35.50
G 1 1/4x11	39.50
G 1 1/2x11	15.25
G 1 3/4x11	51.10
G 2 x11	57.00
G 2 1/2x11	73.00

UNC	Drill Ø Matkap Ø
No. 2x56	1.85
No. 3x48	2.10
No. 4x40	2.35
No. 5x40	2.65
No. 6x32	2.85
No. 8x32	3.50
No. 10x24	3.90
No. 12x24	4.50
1/4x20	5.10
5/16x18	6.60
3/8x16	8.00
7/16x14	9.40
1/2x13	10.80
9/16x12	12.20
5/8x11	13.50
3/4x10	16.50
7/8x9	19.50
1x8	22.25
1 1/8x7	25.00
1 1/4x7	28.00
1 3/8x6	30.75
1 1/2x6	34.00
1 3/4x5	39.50
2 x4,5	45.00

NPT	Drill Ø Matkap Ø
1/16x27	6.20
1/8x27	8.50
1/4x18	11.10
3/8x18	14.55
1/2x14	18.00
3/4x14	23.25
1x11.5	29.20

NPTF	Drill Ø Matkap Ø
1/16x27	6.20
1/8x27	8.50
1/4x18	11.00
3/8x18	14.50
1/2x14	17.80
3/4x14	23.10
1x11.5	29.10

BSPT - Rc	Drill Ø Matkap Ø
1/8x28	8.20
1/4x19	11.00
3/8x19	14.50
1/2x14	18.00
3/4x14	23.40
1x11	29.50

BSW	Drill Ø Matkap Ø
1/8x40	2.00
5/32x32	3.20
3/16x24	3.60
1/4x20	5.10
5/16x18	6.50
3/8x16	7.90
7/16x14	9.30
1/2x12	10.50
9/16x12	12.00
5/8x11	13.50
3/4x10	16.50
7/8x9	19.25
1x8	22.00



## TAPPING DRILL SIZES KILAVUZ MATKAP ÇAPLARI

## TECHNIC / TEKNİK



UNF	Drill Ø Matkap Ø
No. 2x64	1.85
No. 3x56	2.15
No. 4x48	2.40
No. 5x44	2.70
No. 6x40	2.95
No. 8x36	3.50
No. 10x32	4.10
No. 12x28	4.60
1/4x28	5.50
5/16x24	6.90
3/8x24	8.50
7/16x20	9.90
1/2x20	11.50
9/16x18	12.90
5/8x18	14.50
3/4x16	17.50
7/8x14	20.40
1x12	23.25
1 1/8x12	26.50
1 1/4x12	29.50
1 3/8x12	32.75
1 1/2x12	36.00

W DIN477	Drill Ø Matkap Ø
W 21.8x1/14	19.75
W 24.32x1.14	22.25
W 19.8x1/14 taper/konik	14.70
W 28.8x1/14 taper/konik	22.70

Rd	Drill Ø Matkap Ø
Rd 8	6.00
Rd 9	7.00
Rd 10	8.00
Rd 11	9.00
Rd 12	10.00
Rd 14	11.50
Rd 16	13.50
Rd 18	15.50
Rd 20	17.50

PG	Drill Ø Matkap Ø
PG 7	11.35
PG 9	13.95
PG 11	17.35
PG 13,5	19.15
PG 16	21.25
PG 21	26.90
PG 29	35.60
PG 36	45.60
PG 42	52.60

Rp	Drill Ø Matkap Ø
Rp 1/8	8.60
Rp 1/4	11.50
Rp 3/8	15.00
Rp 1/2	18.50
Rp 3/4	24.00
Rp 1	30.25
Rp 1-1/4	39.00
Rp 1-1/2	45.00
Rp 2	56.50



**TAPPING DRILL SIZES**
**KILAVUZ MATKAP ÇAPLARI**

TR	Drill Ø Matkap Ø
TR 8x1,5	6.60
TR 8x2	6.20
TR 9x1,5	7.60
TR 9x2	7.20
TR 10x1,5	8.60
TR 10x2	8.20
TR 10x3	7.50
TR 11x2	9.20
TR 11x3	8.25
TR 12x2	10.20
TR 12x3	9.25
TR 14x2	12.20
TR 14x3	11.25
TR 14x4	10.50
TR 16x2	14.20
TR 16x4	12.25
TR 18x2	16.20
TR 18x4	14.25
TR 20x2	18.20
TR 20x4	16.25

**Cold forming taps drill diameters**  
*Ovalama Kılavuzları için matkap çapları*

M. COARSE M. NORMAL	Drill Ø Matkap Ø
M 3	2.75
M 4	3.65
M 5	4.60
M 6	5.50
M 8	7.40
M 10	9.30
M 12	11.20


**CUTTING SPEEDS**
**KILAVUZ KESME HIZLARI**

WORKPIECE MATERIAL İŞLENEN MALZEME	HSS-E TAPS KILAVUZLAR m/min	HSS-E + TIN TAPS KILAVUZLAR m/min	BRASS CUTTING TAPS MS SARI İÇİN ÖZEL KILAVUZLAR m/min
STEELS UP TO 150 HB 150 HB YE KADAR ÇELİKLER	6-7	8-12	
150-250 HB STEELS 150-250 HB ÇELİKLER	5-6	7-9	
250-320 HB STEELS 250-320 HB ÇELİKLER	3-4	5-6	
STAINLESS STEELS PASLANMAZ ÇELİKLER	2-3	3-5	
CAST IRON DÖKÜMLER	6-10	10-16	
BRASS SARI PİRİNÇ	10-15	15-20	15-25
ALUMINIUM ALUMİNYUM	8-12		10-20

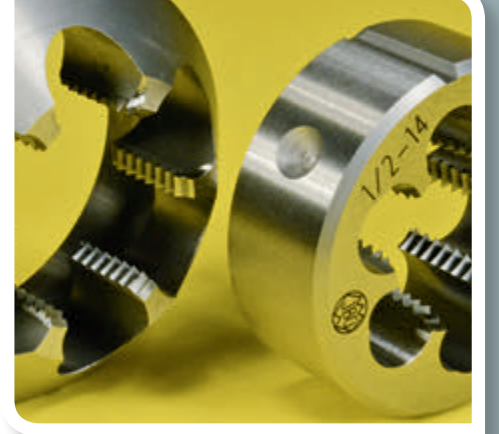
**CUTTING SPEED AND RECOMMENDATION / KESME HIZI VE ÖNERİLER**

WORKPIECE MATERIAL İŞLENEN MALZEME	CUTTING SPEED KESME HIZI m/minute m/dakika	RECOMMENDATIONS ÖNERİLER
ST37- ST50 SOFT STEEL ST37- ST50 YUMUŞAK ÇELİKLER	8-12	Use cutting oil Kesme yağı kullanınız.
CASE HARDENING STEEL SEMENTE ÇELİKLERİ CK15, 16MnCr5, 8620	6-10	Use cutting oil Kesme yağı kullanınız.
HEAT TREATABLE STEEL ISIL İŞLEM GÖREBİLEN ÇELİKLER C45, C35	5-8	Use cutting oil, prefer HSSE dies Kesme yağı kullanınız. HSS E pafta tercih ediniz
STAINLESS STEEL PASLANMAZ ÇELİKLER	4-6	Use cutting oil, prefer HSSE dies Kesme yağı kullanınız. HSS E pafta tercih ediniz
CAST IRON GG15, GG25 DÖKÜMLER GG15, GG25	5-8	Use cutting oil with paraphine Kesme yağı, parafin kullanınız
BRASS (SHORT CHIPPING) PİRİNÇ (KISA TALAŞ VEREN)	20-30	Use cutting oil and prefer MS (brass type) dies Kesme yağı kullanınız. MS pafta tercih ediniz
BRASS (LONG CHIPPING) PİRİNÇ (UZUN TALAŞ VEREN)	12-18	Use cutting oil and prefer MS (brass type) dies Kesme yağı kullanınız. MS pafta tercih ediniz
ALUMINIUM ALLOYS (LONG CHIPPING) ALUMINYUM ALAŞIMLARI (UZUN TALAŞ VEREN)	15-20	Use cutting oil Kesme yağı kullanınız.
ALUMINIUM ALLOYS (SHORT CHIPPING) ALUMINYUM ALAŞIMLARI (KISA TALAŞ VEREN)	8-12	Use cutting oil with paraphine Kesme yağı, parafin kullanınız
BRONZE BRONZ	5-8	Use cutting oil with paraphine Kesme yağı, parafin kullanınız



**TURNING DIAMETERS FOR DIES**
**PAFTALAR İÇİN TORNALAMA ÇAPLARI**
**TURNING DIAMETERS / TORNALAMA ÇAPLARI**

Nominal diameter Nominal çap Ø mm	Pitch Hatve	maximum/minimum and target turning diameters for 6g tolerance 6g toleransı için önerilen minimum / maximum / hedef tornalama çapı		
		Minimum turning diameter Minimum tornalama çapı	Maximum Turning Diameter Maximum Tornalama Çapı	target turning diameter hedef tornalama çapı
2	0.4	1.89	1.98	1.94
2.5	0.45	2.38	2.48	2.43
3	0.5	2.87	2.98	2.92
3.5	0.6	3.35	3.48	3.41
4	0.7	3.84	3.99	3.91
4.5	0.75	4.34	4.48	4.41
5	0.8	4.83	4.98	4.9
6	1	5.79	5.97	5.88
7	1	6.79	6.97	6.88
8	1.25	7.76	7.97	7.87
10	1.5	9.73	9.96	9.85
12	1.75	11.7	11.97	11.83
14	2	13.68	13.96	13.82
16	2	15.68	15.96	15.82
18	2.5	17.62	17.96	17.79
20	2.5	19.62	19.96	19.79
22	2.5	21.62	21.96	21.79
24	3	23.58	23.95	23.77
27	3	26.58	26.95	26.77
30	3.5	29.52	29.95	29.73



**For finding the turning diameters of the Metric Fine threads:**

Look at the given table turning diameter difference of the same pitch dies on metric coarse thread. Apply the same difference on the Metric fine thread. Eg. For M20x1, look at M6x1 and the datas given on the table 5.79-5.97-5.88 are considered as 19.79 - 19.97 - 19.88.

*Metrik ince diş paftaların tornalama ölçülerini tespit için:*

*Aynı hatvedeki metrik normal vidanın yukarıda belirtilen tornalama farkı kadar fark metrik incedeki çapa uygulanır. Örneğin. M 20x1 için hatvesi 1mm olan M 6 ye bakılır, 5,79 - 5,97 - 5,88 olan değerler 19,79 - 19,97 - 19,88 olarak tespit edilir.*

**CUTTING DATAS FOR CARBIDE MILLING CUTTERS  
SERT METAL FREZELER KESME DEĞERLERİ****Cutting speed / Kesme Hızı**

Steels below 20 HRC - 20 HRC altında çelikler: 75 - 150 m/minute m/dakika

Steels 20 - 40 HRC - 20 - 40 HRC çelikler için: 30 - 100 m/minute m/dakika

Steels 40 - 55 HRC - 40 - 55 HRC çelikler için: 25 - 50 m/minute m/dakika

$$\begin{array}{l} \text{RPM revolution} \\ \text{Devir / Dakika} \end{array} = \frac{\text{Cutting speed (m/minute)} \\ \text{Kesme hızı (m/dakika)} \times 1000}{3.14 \times \text{tool diameter} \\ 3.14 \times \text{takım çapı}}$$

**Feed / İlerleme**

tool diameter takım çapı	Feed per teeth (mm per teeth) ilerleme (kesici ağız başına)
Ø1 - 2 mm	0.010 - 0.012 mm
Ø3 - 4 mm	0.013 - 0.018 mm
Ø5 - 6 mm	0.018 - 0.025 mm
Ø8 - 10 mm	0.025 - 0.050 mm
Ø12 - 16 mm	0.050 - 0.080 mm
Ø18 - 20 mm	0.060 - 0.090 mm

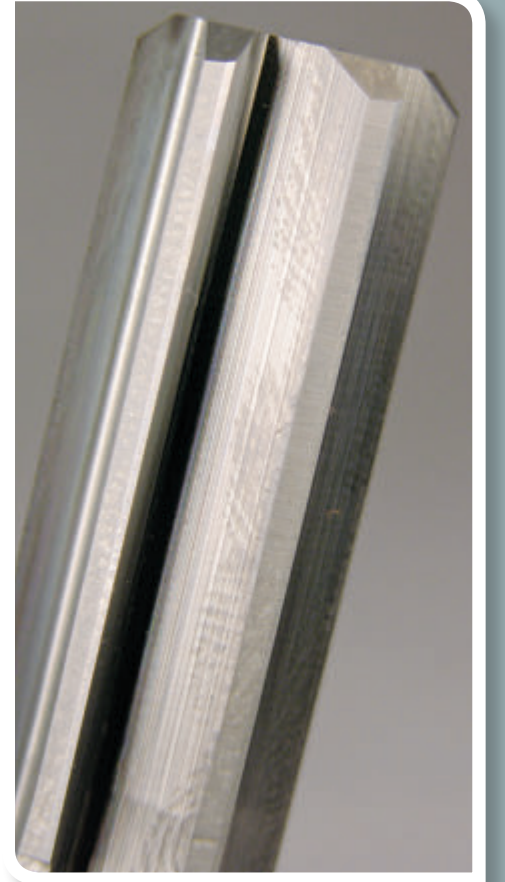


**SPEED & FEED RECOMMENDATIONS FOR CARBIDE REAMERS**  
**SERT METAL RAYBALARDA ÖNERİLEN DEVİR & İLERLEME DEĞERLERİ**

Workpiece material	FEED - KESME HIZI	FEED RATE ACCORDING TO REAMER DIAMETER mm / revolution							
		RAYBA ÇAPLARINA GÖRE İLERLEME (devir başına ilerleme) mm/ devir							
İşlenen Malzeme Türü	m/min - m/dak.	Ø2	Ø3	Ø4	Ø5	Ø6	Ø8	Ø10	Ø12
STEEL - ÇELİK < 200 HB	14-24 m/min - m/dak.	0.035	0.060	0.070	0.080	0.100	0.120	0.150	0.180
STEEL - ÇELİK 200-300 HB	9-14 m/min - m/dak.	0.030	0.050	0.060	0.075	0.090	0.140	0.012	0.150
STEEL - ÇELİK 300-350 HB	6-9 m/min - m/dak.	0.020	0.030	0.040	0.060	0.080	0.090	0.100	0.130
STEEL - ÇELİK 38-45 HRC	5-7 m/min - m/dak.	0.015	0.020	0.030	0.050	0.060	0.070	0.080	0.100
STAINLESS STEEL PASLANMAZ ÇELİK	5-10 m/min - m/dak.	0.025	0.030	0.035	0.040	0.050	0.060	0.060	0.080
CAST IRON - DÖKÜM	8-25 m/min - m/dak.	0.035	0.060	0.080	0.095	0.110	0.140	0.150	0.180
CUPPER BRONZE BRASS BAKIR BRONZ PİRİNÇ	20-30 m/min - m/dak.	0.035	0.060	0.080	0.095	0.110	0.140	0.160	0.180
ALUMINIUM ALUMINYUM	20-50 m/min - m/dak.	0.035	0.060	0.100	0.110	0.130	0.160	0.180	0.200

**STOCK REMOVAL RECOMMENDED IN THE HOLE TO BE REAMED**  
**RAYBALANACAK DELİKTE BIRAKILMASI GEREKEN TALAŞ MİKTARI**

Reamer Diameter Rayba çapı	Ø Stock removal recommended on diameter Çaptaki raybalama payı mm
1.0-3.0	0.07-0.15
3.1-6.0	0.15-0.20
6.1-10.0	0.20-0.30
10.1-13.0	0.25-0.35



**CUTTING DATAS FOR HSS MILLING CUTTERS**  
**HSS FREZELER İÇİN KESME DEĞERLERİ**
**CUTTING SPEED - RPM / KESME HIZI - DEVİR**

Materila To Cut Malzeme	Cutting speed m/min. Kesme Hızı m/dakika
<b>Below 180HB soft steels</b> 180 HB altı yumuşak çelikler	32-40
<b>180-250 HB carbon and low alloyed steel</b> 180-250 HB karbonlu çelikler ve az alaşımlı çelikler	20-25
<b>25-33 HRC alloyed steels</b> 25-33 HRC alaşımlı çelikler	12-20
<b>33-42 HRC alloyed steels, hardened steels</b> 33-42 HRC alaşımlı çelikler, setleşmiş çelikler	10-12
<b>Stainless steels</b> Paslanmaz çelikler	12-20
<b>Cast iron GG10-GG40</b> Dökümler GG10 - GG40	25-32
<b>Cas iron GGG40-GGG70</b> 200-300 HB Dökümler GGG40-GGG70 200-300 HB	20-25
<b>Titanium - Nickel alloys</b> Titanyum ve nikel alaşımları	8-25
<b>Cupper</b> Bakır	70-80
<b>Bronze</b> Bronz	35-45
<b>Brass</b> Pirinç	40-50
<b>Alloyed Bronze</b> Alaşımlı Bronz	12-16
<b>non- alloyed Aluminium</b> Aluminyum alaşımsız	80-100
<b>Aluminium Si &lt; 0.5 %</b> Aluminyum Si < 0.5 %	70-80
<b>Aluminium Si 0.5 % - 10 %</b> Aluminyum Si 0.5 % - 10 %	50-60
<b>Aluminium Si &gt; 10 %</b> Aluminyum Si > 10 %	40-50
<b>Plastic</b> Plastik	50-80


**RPM - Devir/dakika**

- 1- Select the cutting speed m/minute from the table on the left according to workpiece  
1- Soldaki tablodan malzemenize göre m/dakika cinsinden kesme hızınızı bulunuz.
- 2- Place the cutting speed on the formula below to find the RPM  
2- Alttaki formülde yerine koyarak devir / dakika cinsinden devirinizi bulunuz

$$\text{RPM revolution} = \frac{\text{Cutting speed (m/minute)}}{3.14 \times \text{tool diameter}}$$

Devir / Dakika =  $\frac{\text{Kesme hızı (m/dakika)} \times 1000}{3.14 \times \text{takım çapı}}$

**Feed / İlerleme**

- 3- On the feed table below select your "letter" according to your operation and stock removal  
3- Aşağıdaki ilerleme tablosundaki işlem şekli ve talaş miktarınıza göre belirtilen harfi bulunuz
- 4- On the bottom table across your "letter" you will find the feed rate according to your speed that you already found  
4- En alttaki tabloda bu harfin bulunduğu satırda kesme hızınıza göre ilerleme hızınızı bulacaksınız.

## FEED / İLERLEME

STOCK REMOVAL TALAŞ MİKTARI	PROFILING PROFİL İŞLEME												SLOTTING KANAL AÇMA				"T" SIDE MILLING "T" KANAL YARIK		SURFACE MILLING ALIN TARAMA		
	0,125xD			0,25xD			0,375xD			0,75xD			1.0xD				1.0 xD	0,25 xD	0,75xD		
Radial cutting depth Dairesel kesme derinliği	1,25 xD	1,5 xD	2.0 xD	1,25 xD	1,5 xD	2.0 xD	1,25 xD	1,5 xD	2.0 xD	1,25 xD	1,5 xD	2 xD	0,5 xD	1.0 xD	1,5 xD	2.0 xD	0,5 xD	0,5 xD	3-5 mm	6-10 mm	
2 FLUTED END MILL 2 AĞIZLI FREZE DIN327																					
MULTI FLUTE END MILL ÇOK AĞIZLI FREZE DIN 844	İ	İ	D	Ş	T	A	L	A	R												
ROUGHING END MILL KABATALAŞ FREZE DIN 844							N	N	N	N	K	Ü	N	N	Ü	N					
T SLOT CUTTER T KANAL FREZE DIN 851																	N				
WOODRUF CUTTER T YARIK FREZE DIN 850																		G			
DOVETAIL CUTTER KIRLANGIÇ FREZE DIN 1833																		R			
SHELL MILL CUTTER VALS ALIN FREZE DIN 1880																			N	K	
SIDE & FACE CUTTER DAİRESEL KANAL FREZE DIN 885																	N				

CUTTING SPEED m/minute KESME HIZI m/Dakika	6	8	10	12	16	20	25	32	40	50	60	80	100	125
FEED mm/minute İLERLEME mm/dakika														
G	10	12	16	20	25	32	40	50	60	80	100	120	160	200
Ü	11	14	18	22	28	35	45	55	70	90	110	140	180	220
R	12	16	20	25	32	40	50	60	80	100	120	160	200	250
K	14	18	22	28	35	45	55	70	90	110	140	180	220	280
A	16	20	25	32	40	50	60	80	100	120	160	200	250	320
N	18	22	28	35	45	55	70	90	110	140	180	220	280	350
L	20	25	32	40	50	60	80	100	120	160	200	250	320	400
T	22	28	35	45	55	70	90	110	140	180	220	280	350	450
D	25	32	40	50	60	80	100	120	160	200	250	320	400	500
Ş	28	35	45	55	70	90	110	140	180	220	280	350	450	560
İ	35	45	55	70	90	110	140	180	220	280	350	450	560	700

**HOLE DIAMETER TOLERANCES**  
**DELİK ÖLÇÜLERİ TOLERANS CETVELİ DIN 7161**

TOLERANCES - TOLERANSLAR												
From Ømm to Ømm Ømm den Ømm ye kadar	E5	E6	E7	E8	E9	F5	F6	F7	F8	F9	G6	G7
Ø 1 - Ø 3	+18 +14	+20 +14	+24 +14	+28 +14	+39 +14	+10 +6	+12 +6	+16 +6	+20 +6	+31 +6	+8 +2	+12 +2
Ø 3 - Ø 6	+25 +20	+28 +20	+32 +20	+38 +20	+50 +20	+15 +10	+18 +10	+22 +10	+28 +10	+40 +10	+12 +4	16 +4
Ø 6 - Ø 10	+31 +25	+34 +25	+40 +25	+47 +25	+61 +25	+19 +13	+22 +13	+28 +13	+35 +13	+49 +13	+14 +5	+20 +5
Ø 10 - Ø 18	+40 +32	+43 +32	+50 +32	+59 +32	+75 +32	+24 +16	+27 +16	+34 +16	+43 +16	+59 +16	+17 +6	+24 +6
Ø 18 - Ø 30	+49 +40	+53 +40	+61 +40	+73 +40	+92 +40	+29 +20	+33 +20	+41 +20	+53 +20	+72 +20	+20 +7	+28 +7
Ø 30 - Ø 50	+61 +50	+66 +50	+75 +50	+89 +50	+112 +50	+36 +25	+41 +25	+50 +25	+64 +25	+87 +25	+25 +9	+34 +9
Ø 50 - Ø 80	+73 +60	+79 +60	+90 +60	+106 +60	+134 +60	+43 +30	+49 +30	+60 +30	+76 +30	+104 +30	+29 +10	+40 +10

TOLERANCES - TOLERANSLAR												
From Ømm to Ømm Ømm den Ømm ye kadar	H5	H6	H7	H8	H9	H10	H11	H12	J7	J8	JS9	K6
Ø 1 - Ø 3	+4 0	+6 0	+10 0	+14 0	+25 0	+40 0	+60 0	+100 0	+4 -2	+6 -8	+12 -12	0 -6
Ø 3 - Ø 6	+5 0	+8 0	+12 0	+18 0	+30 0	+48 0	+75 0	+120 0	+6 -6	+10 -8	+15 -15	+2 -6
Ø 6 - Ø 10	+6 0	+9 0	+15 0	+22 0	+36 0	+58 0	+90 0	+150 0	+8 -7	+12 -10	+18 -18	+2 -7
Ø 10 - Ø 18	+8 0	+11 0	+18 0	+27 0	+43 0	+70 0	+110 0	+180 0	+10 -8	+15 -12	+21 -21	+2 -9
Ø 18 - Ø 30	+9 0	+13 0	+21 0	+33 0	+52 0	+84 0	+130 0	+210 0	+12 -9	+20 -13	+26 -26	+2 -11
Ø 30 - Ø 50	+11 0	+16 0	+25 0	+39 0	+62 0	+100 0	+160 0	+250 0	+14 -11	+24 -15	+31 -31	+3 -13
Ø 50 - Ø 80	+13 0	+19 0	+30 0	+46 0	+74 0	+120 0	+190 0	+300 0	+18 -12	+28 -18	+37 -37	+4 -15

TOLERANCES - TOLERANSLAR												
From Ømm to Ømm Ømm den Ømm ye kadar	K7	K8	M6	M7	M8	N7	N8	N9	R5	R6	R7	R8
Ø 1 - Ø 3	0 -10	0 -14	-2 -8	-2 -12		-4 -14	-4 -18	-4 -29	-10 -14	-10 -16	-10 -20	-10 -24
Ø 3 - Ø 6	+3 -9	+5 -13	-1 -9	0 -12	+2 -16	-4 -16	-2 -20	0 -30	-14 -19	-12 -20	-11 -23	-15 -33
Ø 6 - Ø 10	+5 -10	+6 -16	-3 -12	0 -15	+1 -21	-4 -19	-3 -25	0 -36	-17 -23	-16 -25	-13 -28	-19 -41
Ø 10 - Ø 18	+6 -12	+8 -19	-4 -15	0 -18	+2 -25	-5 -23	-3 -30	0 -43	-20 -28	-20 -31	-16 -34	-23 -50
Ø 18 - Ø 30	+6 -15	+10 -23	-4 -17	0 -21	+4 -29	-7 -28	-3 -36	0 -52	-25 -34	-24 -37	-20 -41	-28 -61
Ø 30 - Ø 50	+7 -18	+12 -27	-4 -20	0 -25	+5 -34	-8 -33	-3 -42	0 -62	-30 -41	-29 -45	-25 -50	-34 -73
Ø 50 - Ø 80	+9 -21	+14 -32	-5 -24	0 -30	+5 -41	-9 -39	-4 -50	0 -74	-39 -49	-35 -54	-30 -60	-41 -87

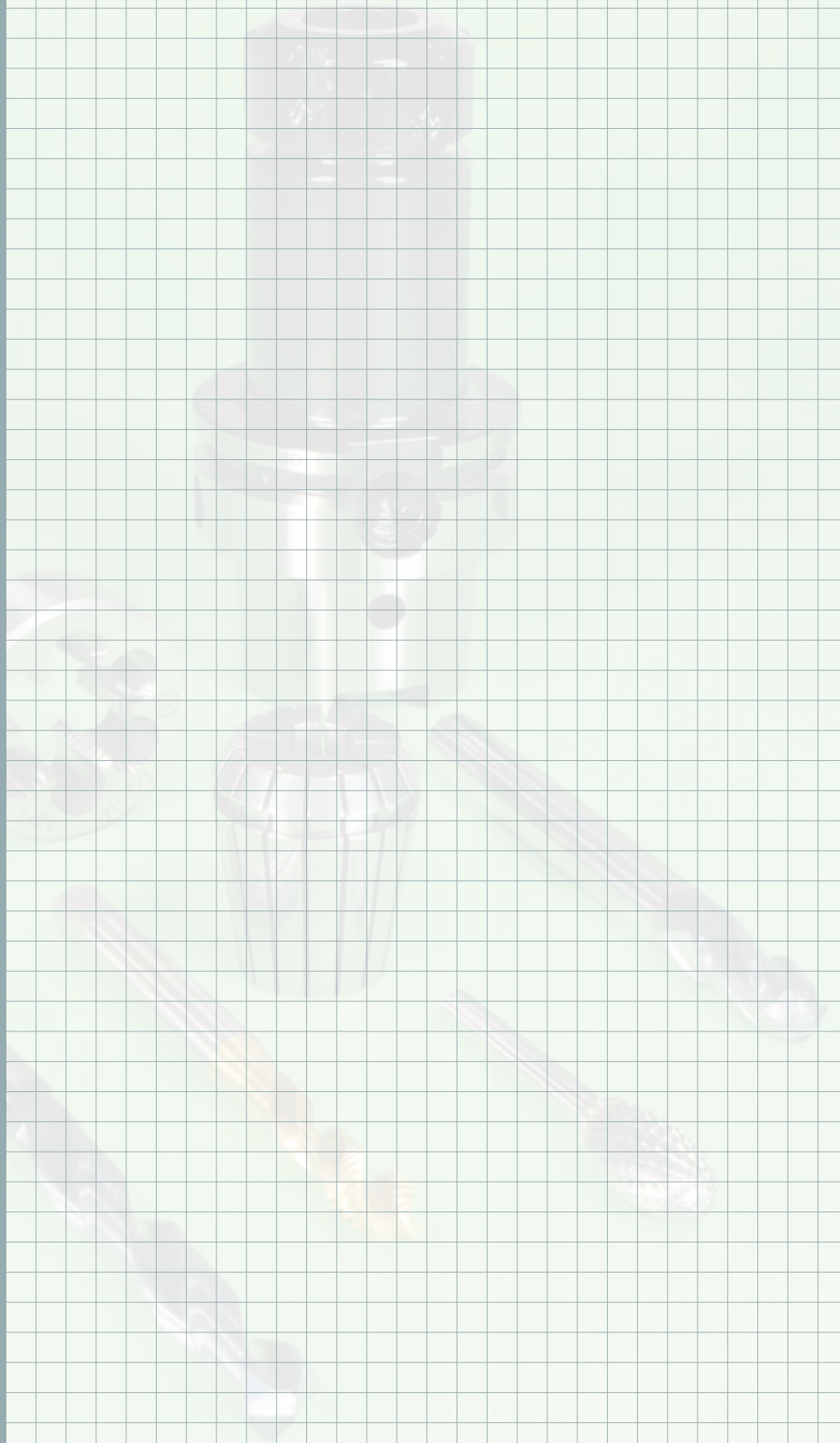


**HARDNESS CONVERSION CHART**  
**MALZEME SERTLİĞİ DÖNÜŞÜM CETVELİ**

HRC	HB30	Rm (N/mm <sup>2</sup> )	HV10
	71	240	75
	76	255	80
	81	270	85
	86	285	90
	90	305	95
	95	320	100
	100	335	105
	105	350	110
	109	370	115
	114	385	120
	119	400	125
	124	415	130
	128	430	135
	133	450	140
	138	465	145
	143	480	150
	147	495	155
	152	510	160
	157	530	165
	162	545	170
	166	560	175
	171	575	180
	176	595	185
	181	610	190
	185	625	195
	190	640	200
	195	660	205
	199	675	210
	204	690	215
	209	705	220
	214	720	225
	219	740	230
	223	755	235
	228	770	240
	233	785	245
22	238	800	250
23	242	820	255
24	247	835	260
25	255	860	268
26	258	870	272
27	266	900	280

HRC	HB30	Rm (N/mm <sup>2</sup> )	HV10
28	273	920	287
29	278	940	293
30	287	970	302
31	295	995	310
32	301	1020	317
33	311	1050	327
34	319	1080	336
35	328	1110	345
36	337	1140	355
37	346	1170	364
38	354	1200	373
39	363	1230	382
40	372	1260	392
41	383	1300	403
42	393	1330	413
43	402	1360	423
44	413	1400	434
45	424	1440	446
46	435	1480	458
47	449	1530	473
48	460	1570	484
49	472	1620	497
50	488	1680	514
51	501	1730	527
52	517	1790	544
53	532	1845	560
54	549	1910	578
55	567	1980	596
56	584	2050	615
57	607	2140	639
58	622	2180	655
59			675
60			698
61			720
62			745
63			773
64			800
65			829
66			864
67			900
68			940

**NOTES**







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