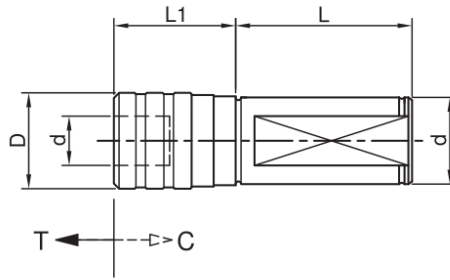




## C KILAVUZ ÇEKME BAŞLIĞI - GİRİŞ VE ÇIKIŞ KOMPANZELİ

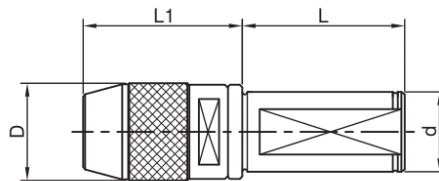
TYP 7400



CNC TORNALARDA  
SORUNSUZ DIŞ ÇEKMEK  
İÇİN KULLANILIR

SİP. NR.	KONİK	KAPASİTE	d (mm)	D (mm)	L (mm)	L <sub>1</sub> (mm)	C-T (mm)
C25.KCB.1	25	M3-M12	19	36,5	60	45	7,5-7,5
C25.KCB.2	25	M8-M20	31	54	60	45	12,5-12,5
C32.KCB.1	32	M3-M12	19	36,5	75	40	7,5-7,5
C32.KCB.2	32	M8-M20	31	54	75	40	12,5-12,5
C32.KCB.3	32	M14-M33	48	78	75	40	20-20

## C MANDRENLİ BAPLIK



ELLE VE ANAHTARLA  
SIKILIP ÇÖZÜLEBİLİR.

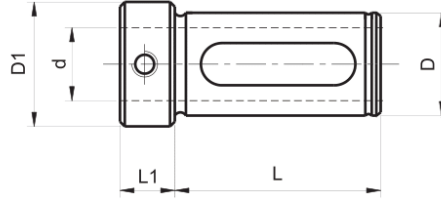
• SALGI: MAX. 0,06 mm

SİP. NR.	KAPASİTE (mm)	d (mm)	D (mm)	L (mm)	L <sub>1</sub> (mm)
C25.0-10	0-10	25	35	50	78
C25.1-13	1-13	25	42	50	88
C32.1-13	1-13	32	42	60	88
C32.1-16	1-16	32	49	60	105
C32.4-20	4-20	32	55	60	115
C40.1-16	1-16	40	49	70	105
C40.4-20	4-20	40	55	70	115



REDÜKSİYON KOVANLARI - SİLİNDİRİK PAFTLAR İÇİN

TYP 7400



CNC TORNALARDA  
DELİK KATERLERİNİ  
VE SİLİNDİRİK ŞAFTLI  
TAKIMLARI BAĞLAMAK  
İÇİN KULLANILIR.

• SALGI: MAX.0,01 mm

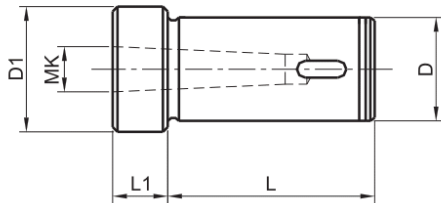
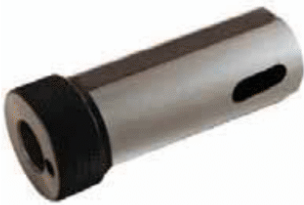
BAĞLAMA CİVATALARIYLA  
BİRLİKTE TESLİM EDİLİR.

\* SU KANALLIDIR.

SİP. NR.	D (mm)	d (mm)	D1 (mm)	L (mm)	L1 (mm)
7420	25	8	32	13	50
7421		10			
7422		12			
7424		16			
7425		20			
7430	32	8	39	14	70
7431		10			
7432		12			
7434		16			
7435		20			
7436		25			
7440	40	8	46,5	15	80
7441		10			
7442		12			
7444		16			
7445		20			
7446		25			
7447		32			

REDÜKSİYON KOVANLARI - MORS KONİK PAFTLAR İÇİN

TYP 7300



CNC TORNALARDA  
KONİK ŞAFTLI TAKIMLARI  
BAĞLAMAK İÇİNDİR.

• SALGI: MAX.0,01 mm

SİP. NR.	D (mm)	MK	L (mm)	L1 (mm)	D1 (mm)
7331	32	MK1	6	70	39
7332		MK2	6		
7333		MK3	20		
7341	40	MK1	6	80	46,5
7342		MK2	6		
7343		MK3	6		
7344		MK4	30		

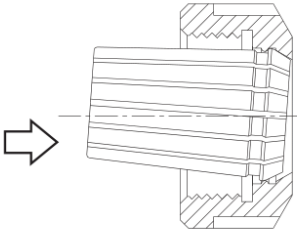


462E  
467E



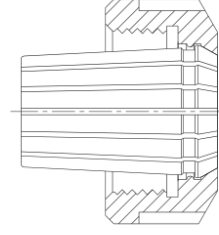
- SERTLİK:56-60 HRc
- SALGI: MAX. 0,003 mm

PENSİN KAPAĞA MONTAJI



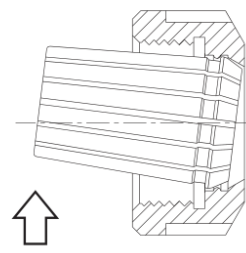
PENSİN KAPAĞA EKSEN DOĞRULTUSUNDA BASTIRILMASIYLA MONTAJ GERÇEKLEŞİR.

KULLANIM POZİSYONU



PENSİN KAPAĞA OTURMASINDAN SONRA İLGİLİ TAKIM PENSE TAKILABİLİR. KAPAK İLE PENS BU HALİYLE BAŞLIĞA TAKILMALIDIR.

PENSİN KAPAKTAN ÇIKARILMASI



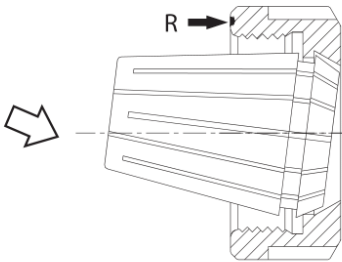
PENSİN EKSENE DİK OLARAK EL İLE ZORLANMASIYLA ÇIKARMA İŞLEMİ GERÇEKLEŞİR. BU İŞLEMİN ÖNCESİNDE TAKIM PENSTEN ÇIKARILMIŞ OLMALIDIR.

ER11 (4008E)  
ER16 (426E)  
ER20 (428E)  
ER25 (430E)  
ER32 (470E)  
ER40 (472E)



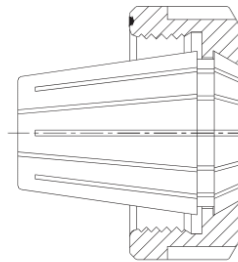
- SERTLİK:56-60 HRc
- SALGI: MAX. 0,003 mm

PENSİN KAPAĞA MONTAJI



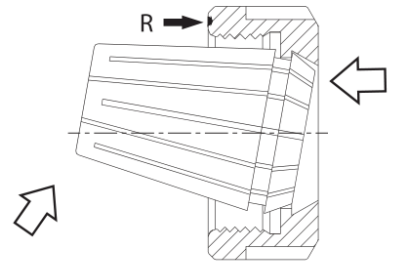
PENSİN (R) İŞARETLİ TARAFTAN OTURTULUP OK YÖNÜNDE BASTIRILMASI İLE MONTAJ KOLAYCA GERÇEKLEŞİR.

KULLANIM POZİSYONU



PENS VE KAPAK EKSENLERİNİN BİRLEŞTİĞİ BU POZİSYONDA TAKIMLAR PENSE TAKILABİLİR. KAPAĞIN BAŞLIĞA TAKILMASI ANCAK BU POZİSYONDA OLUR.

PENSİN KAPAKTAN ÇIKARILMASI




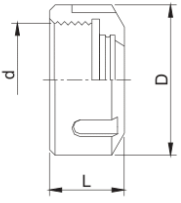
PENSİN OK YÖNÜNDE (R) İŞARETLİ TARAFA BASTIRILMASI İLE ÇIKARMA GERÇEKLEŞİR. BU İŞLEMİN ÖNCESİNDE TAKIM, PENSTEN ÇIKARILMIŞ OLMALIDIR.



## PENS KAPAKLARI


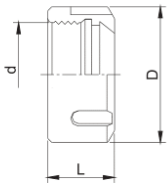
### OZ PENS KAPAKLARI

DIN6388-D / ISO10897

 	SİP. NR.	SIKMA KAPASİTESİ (mm)	d (mm)	D (mm)	L (mm)
	462E.K	3-25	M48X2	60	30
467E.K	3-32	M60X2,5	72	33,5	


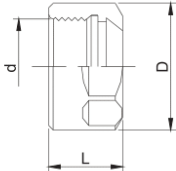
### ER PENS KAPAKLARI

DIN 6499 / ISO15488

 	SİP. NR.	SIKMA KAPASİTESİ (mm)	d (mm)	D (mm)	L (mm)
	ER16.K	1-10	M22x1,5	32	17,5
ER20.K	1-13	M25x1,5	35	19	
ER25.K	1-16	M32x1,5	42	20	
ER32.K	2-20	M40x1,5	50	22,5	
ER40.K	2-26	M50x1,5	63	25,5	

### ER PENS KAPAKLARI - ANAHTAR AĞIZLI


DIN 6499 / ISO 15488

 	SİP. NR.	SIKMA KAPASİTESİ (mm)	d (mm)	D (mm)	L (mm)
	ER11.KA	1-7	M14x0,75	19	11,3
ER16.KA	1-10	M22x1,5	28	17,5	
ER20.KA	1-13	M25x1,5	34	19	




## OZ ANAHTARLAR

DIN1810A

 DIN 6388/D OZ PENS KAPAKLARI İÇİNDİR.	SİP. NR.	SIKMA KAPASİTESİ (mm)	KALINLIK (mm)	BOY (mm)
	462E.A	58-62	8	210
	467E.A	68-75	8	210


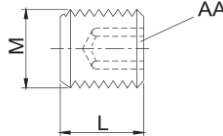
## ER ANAHTARLAR

DIN 6499

 DIN 6499 ER PENS KAPAKLARI İÇİNDİR.	SİP. NR.	SIKMA KAPASİTESİ (mm)	KALINLIK (mm)	BOY (mm)
	ER16.A	32	5	163
	ER20.A	35	5	180
	ER25.A	42	6	206
	ER32.A	50	6	253
	ER40.A	63	8	284

## VELDON CİVATASI

DIN 1835 - B

  MALZEME DAYANIM SINIFI: 10,9 / DIN 267	SİP. NR.	YLGÜLY MALAFA ÇAPI	M (mm)	L (mm)	AA (mm)
	M6.V	6	M6	10	3
	M8.V	8	M8	10	4
	M10.V	10	M10	12	5
	M12.V	12-14	M12	16	6
	M14.V	16-18	M14	16	6
	M16.V	20	M16	16	8
	M18.V	25	M18X2	20	10
	M20.V	32-40	M20X2	20	10

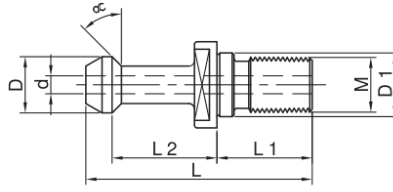


## BT ÇEKTİRME CİVATALARI

MAS 403 - BT / JIS B 6339



A TİPLER SU KANALLIDIR.



BT BAŞLIKLAR İÇİNDİR

- MALZEME: 20 Mn Cr5
- SERTLİK: 56 ± 2 HRc

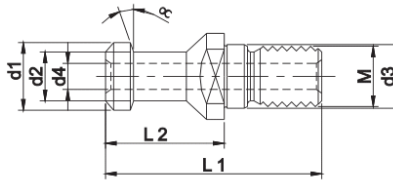
SİP. NR.	α	TİP	D(mm)	D1(mm)	d (mm)	M	L (mm)	L1 (mm)	L2 (mm)
BT30-CV.1-B	45°	B	11	12,5	-	M12	43	20	18
BT40-CV.1-B	45°	B	15	17	-	M16	60	25	28
BT40-CV.1-A		A	15	17	3,3	M16	60	25	28
BT50-CV.1-B	45°	B	23	25	-	M24	85	40	35
BT50-CV.1-A		A	23	25	8,5	M24	85	40	35
BT40-CV.2-B	60°	B	15	17	-	M16	60	25	28
BT50-CV.2-B		B	23	25	-	M24	85	40	35

## SK ÇEKTİRME CİVATALARI

DIN 69872 A/B



A TİPLER SU KANALLIDIR.

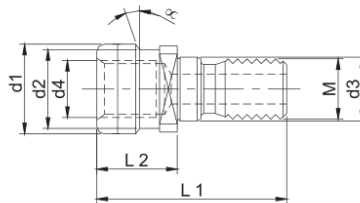


SK BAŞLIKLAR İÇİNDİR

- MALZEME: 20 Mn Cr5
- SERTLİK: 56 ± 2 HRc

SİP. NR.	α	TİP	d1 (mm)	d2 (mm)	d3 (mm)	d4 (mm)	M	L1 (mm)	L2 (mm)
SK30.CV.B	15°	B	13	9	13	-	M12	44	24
SK40.CV.B	15°	B	19	14	17	-	M16	54	26
SK40.CV.A		A	19	14	17	7	M16	54	26
SK50.CV.B	15°	B	28	21	25	-	M24	74	34
SK50.CV.A		A	28	21	25	11,5	M24	74	34

## ISO / DIN 2080 ÇEKTİRME CİVATALARI



BU ÇEKTİRME CİVATALARI BT, SK VE CV BAŞLIKLARIN DIN2079 FENER MİLLERİNE BAĞLANABİLMELERİ İÇİN ADAPTÖR GÖREVİ YAPARLAR .

- MALZEME: 20 Mn Cr5
- SERTLİK: 56 ± 2 HRc

SİP. NR.	α	d1 (mm)	d2 (mm)	d3 (mm)	L1 (mm)	L2 (mm)
ISO 40.BT	15°	25	21	17	56	28
ISO 40.SK		25	21	17	53	25
ISO 50.BT	-	39	32	25	65	25



## ALIN ÇİVATASI

TARAMA MALAFALARINDA VE KOMBİNE MALAFALARDA KULLANILIR.

SİP. NR.	YLGİLİ MALAFA ÇAPI	d (mm)	D (mm)	L (mm)	K (mm)	AA (mm)
TC 16	16	M8	20	16	7	6
TC 22	22	M10	28	18	8	8
TC 27	27	M12	35	22	9	10
TC 32	32	M16	42	26	10	14
TC 40	40	M20	52	30	11	17
TC 50	50	M24	62	40	13	19
TC 60	60	M30	73	45	15	22

## TIRNAKLI PUL

KOMBİNE MALAFALAR İÇİNDİR.

DIN 6366

SİP. NR.	YLGİLİ MALAFA ÇAPI	d (mm)	D (mm)	b (mm)
TP 16	16	16	32	8
TP 22	22	22	40	10
TP 27	27	27	48	12
TP 32	32	32	58	14
TP 40	40	40	68	16
TP 50	50	50	84	18
TP 60	60	60	98	20

## KAMA

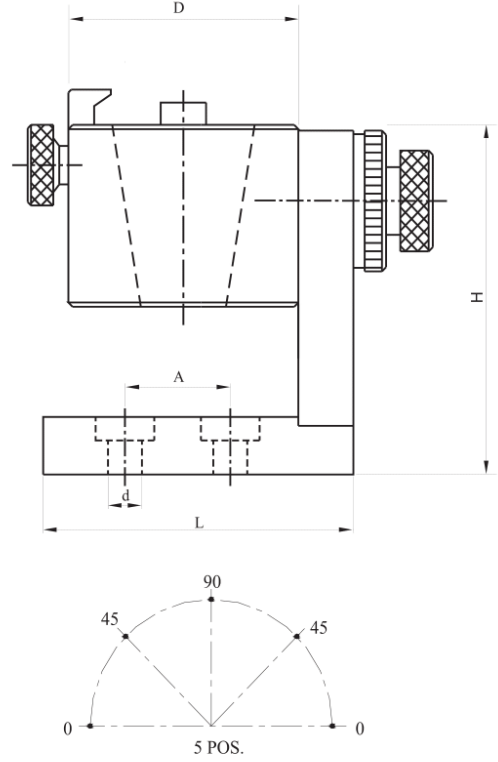
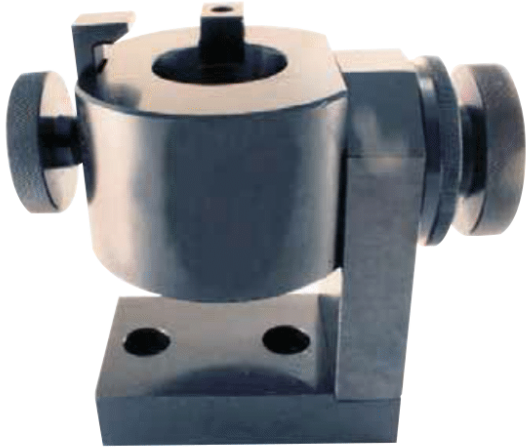
KOMBİNE MALAFALAR İÇİNDİR.

DIN 6885/A

SİP. NR.	YLGİLİ MALAFA ÇAPI	b (mm)	h (mm)	L (mm)
TK 16	16	4	4	20
TK 22	22	6	6	22
TK 27	27	7	7	25
TK 32	32	8	7	28
TK 40	40	10	8	32
TK 50	50	12	8	36
TK 60	60	14	9	50



## MONTAJ APARATLARI (ÇELİK)



SAĞA VE SOLA 90 DERECE DÖNDÜRÜLEBİLİR.  
HER 45 DERECE VE 90 DERECEDE SABİTLENEBİLİR.

SİP. NR.	TİP	D (mm)	d (mm)	H (mm)	A (mm)	L (mm)
SK.30	SK 30	88	11	127	50	105
SK.40	SK 40	93	11	127	50	105
SK.50	SK 50	118	11	172	50	105
HSK.32	HSK 32	83	11	127	50	105
HSK.40	HSK 40	88	11	127	50	105
HSK.50	HSK 50	93	11	127	50	105
HSK.63	HSK 63	98	11	127	50	105
HSK.80	HSK 80	117	11	127	50	105
HSK.100	HSK 100	135	11	127	50	105
VDI.30	VDI 30	93	11	127	50	105
VDI.40	VDI 40	102	11	127	50	105
VDI.50	VDI 50	118	11	127	50	105





## TEKERLEKLİ TAKIM ARABASI



SİP. NR.	TİP	TAKIM ADEDİ	EN (cm)	BOY (cm)	YÜKSEKLİK (cm)
SK30.TAS	SK30/BT30/ISO30	70	60	70	120
SK40.TAS	SK40/BT40/ISO40	60	60	70	120
SK50.TAS	SK50/BT50/ISO50	50	60	70	120

## MASAÜSTÜ TAKIM SEHPASI

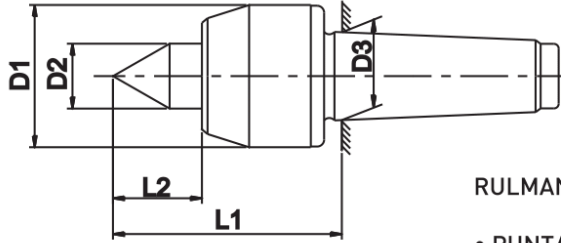


SİP. NR.	TİP	TAKIM ADEDİ	EN (cm)	BOY (cm)	YÜKSEKLİK (cm)
SK30.MTS	SK30/BT30/ISO30	21	40	70	50
SK40.MTS	SK40/BT40/ISO40	18	40	70	50
SK50.MTS	SK50/BT50/ISO50	15	40	70	50



DÖNER PUNTALAR - NORMAL UÇLU

TÝP 100



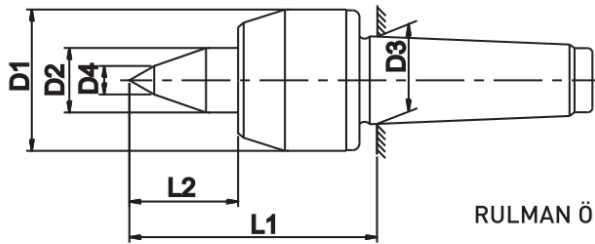
RULMAN ÖMRÜ 2000 İŞ SAATİDİR.

- PUNTA UCU SERTLİĞİ: 60-62 HRc
- SALGI: MAX. 0,008 mm

SİP. NR.	KONİK	D1 (mm)	D2 (mm)	D3 (mm)	L1 (mm)	L2 (mm)	DEVİR d/d (max)	PARÇA AĞIRLIĞI KG (max)
102	MK2	45	20	17.780	65	24	6000	150
103	MK3	60	25	23.825	83	31	4300	300
104	MK4	70	32	31.267	102	40	3500	600
105	MK5	90	40	44.399	129	50	2500	1100
106	MK6	105	50	63.348	151	57	1900	2000

DÖNER PUNTALAR - KOPYE UÇLU

TÝP 110



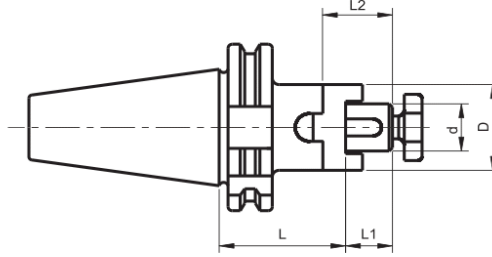
RULMAN ÖMRÜ 2000 İŞ SAATİDİR.

- PUNTA UCU SERTLİĞİ 60-62 HRc
- SALGI: MAX. 0,008mm

SİP. NR.	KONİK	D1 (mm)	D2 (mm)	D3 (mm)	D4 (mm)	L1 (mm)	L2 (mm)	DEVİR d/d (max)	PARÇA AĞIRLIĞI KG (max)
114	MK4	70	32	31.267	12	108	46	3500	450
115	MK5	90	40	44.399	15	135	56	2500	850



ALIN ÇİVATASI, TIRNAKLI PUL VE  
KAMA İLE BİRLİKTE TESLİM EDİLİR.



## DIN 6358

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

### • İÇTEN SU VERME SİSTEMİ OPSİYONELDİR. (SİPARİŞ ÜZERİNE ÜRETİLİR)

SİP. NR.	KONİK	d (mm)	D (mm)	L (mm)	L1 (mm)	L2 (mm)
SK30.16.K	SK30	16	32	50	17	27
SK30.22.K	SK30	22	40	50	19	31
SK30.22.K-100	SK30	22	40	100	19	31
SK30.27.K	SK30	27	48	55	21	33
SK40.16.K	SK40	16	32	55	17	27
SK40.16.K-100	SK40	16	32	100	17	27
SK40.16.K-160	SK40	16	32	160	17	27
SK40.22.K	SK40	22	40	55	19	31
SK40.22.K-100	SK40	22	40	100	19	31
SK40.22.K-160	SK40	22	40	160	19	31
SK40.27.K	SK40	27	48	55	21	33
SK40.27.K-100	SK40	27	48	100	21	33
SK40.27.K-160	SK40	27	48	160	21	33
SK40.32.K	SK40	32	58	60	24	38
SK40.32.K-100	SK40	32	58	100	24	38
SK40.32.K-160	SK40	32	58	160	24	38
SK40.40.K	SK40	40	70	60	27	41
SK40.40.K-100	SK40	40	70	100	27	41
SK40.40.K-160	SK40	40	70	160	27	41
SK50.16.K	SK50	16	32	55	17	27
SK50.22.K	SK50	22	40	55	19	31
SK50.27.K	SK50	27	48	55	21	33
SK50.32.K	SK50	32	58	55	24	38
SK50.40.K	SK50	40	70	55	27	41
SK50.50.K	SK50	50	85	70	30	46
SK50.60.K	SK50	60	98	70	50	66

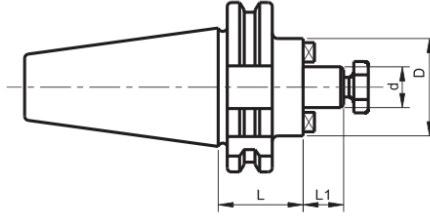


SK TARAMA MALAFALARI - ALIN KAMALI

DIN 69871



ALIN CİVATASI İLE BİRLİKTE  
TESLİM EDİLİR.



ISO 3937

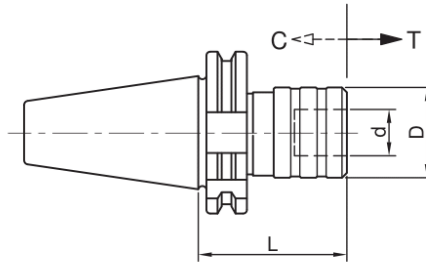
- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

• İÇTEN SU VERME SİSTEMİ OPSİYONELDİR. (SİPARİŞ ÜZERİNE ÜRETİLİR)

SİP. NR.	KONİK	d (mm)	D (mm)	L (mm)	L1 (mm)
SK40.16.T	SK40	16	40	40	17
SK40.22.T	SK40	22	50	40	19
SK40.27.T	SK40	27	60	40	21
SK40.32.T	SK40	32	78	50	24
SK40.40.T	SK40	40	88	50	27
SK50.16.T	SK50	16	40	40	17
SK50.22.T	SK50	22	50	40	19
SK50.27.T	SK50	27	60	40	21
SK50.32.T	SK50	32	78	50	24
SK50.40.T	SK50	40	88	50	27
SK50.50.T	SK50	50	118	60	30

SK KILAVUZ ÇEKME BAŞLIĞI - GİRİŞ VE ÇIKIŞ KOMPANZELİ

DIN 69871



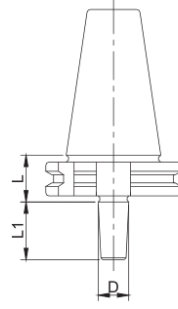
- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3

SİP. NR.	KONİK	KAPASİTE	d (mm)	D (mm)	L (mm)	C-T (mm)
SK40.KCB.1	SK40	M3-M12	19	36,5	63	7,5-7,5
SK40.KCB.2	SK40	M8-M20	31	54	97	12,5-12,5
SK40.KCB.3	SK40	M14-M33	48	78	145	20-20
SK50.KCB.1	SK50	M3-M12	19	36,5	60	7,5-7,5
SK50.KCB.2	SK50	M8-M20	31	54	87	12,5-12,5
SK50.KCB.3	SK50	M14-M33	48	78	145	20-20



## SK MANDREN MALAFALARI

DIN 69871



## DIN 238

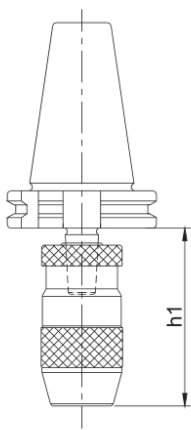
- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc (Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

SİP. NR.	KONÛK	MANDREN KONÛĐY	L (mm)	D (mm)	L1 (mm)
SK40.B16	SK40	B16	24	15,733	24
SK40.B18	SK40	B18	24	17,780	32

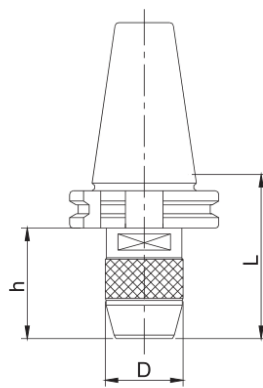
## SK MANDRENLY BAĐLIKLAR

DIN 69871

MANDREN MALAFASI İLE BAĐLAMA



MANDRENLY BAĐLIK



ELLE VE ANAHTARLA SIKILIP ÇÖZÜLEBİLİR

- SALGI: MAX. 0,06 mm



MANDRENLY BAĐLIK İLE  
DAHA KISA h MESAFESİ SAĐLANIR.

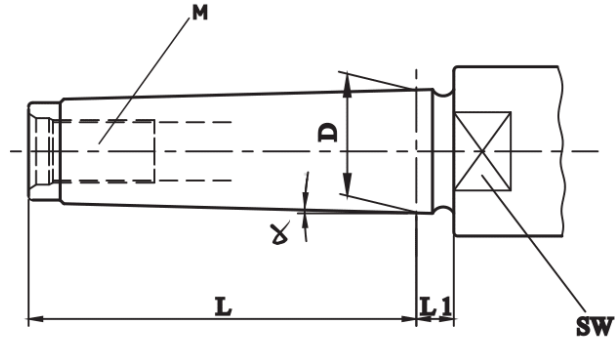
SİP. NR.	KONÛK	KAPASİTE (mm)	L (mm)	D (mm)	h (mm)
SK40.1-13	SK40	1-13	80	42	61
SK40.1-16	SK40	1-16	95	49	76



## MK PAFT ÖLÇÜLERİ

DIN 228A -ÇEKTİRMELİ

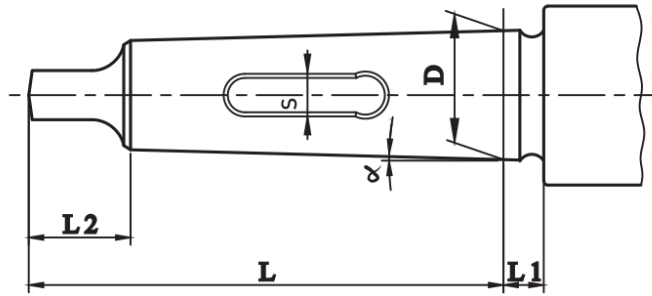
DIN 2207



MK	$\alpha$	D	L	L1	SW	M
2	1°25'50"	17,780	64	5	-	M10
3	1°26'16"	23,825	81	5	24	M12
4	1°29'15"	31,267	102,5	6,5	32	M16
5	1°30'26"	44,399	129,5	6,5	45	M20

DIN 228 B -KAMALI

DIN 1806



MK	$\alpha$	D	L	L1	S
2	1°25'50"	17,780	75	5	-
3	1°26'16"	23,825	94	5	8,3
4	1°29'15"	31,267	117,5	6,5	8,3
5	1°30'26"	44,399	149,5	6,5	12,4

- MALZEME: ALAŞIMLI SEMENTE ÇELİĞİ- min. 900 N/mm<sup>2</sup>
- SERTLİK 56-60 HRc/ SERTLİK DERİNLİĞİ 0,6-0,9 mm
- AÇI HASSASİYETİ: DIN 7178-1 / AT3



## MK PENS TAKIMLARI - ÇEKTİRMELİ

DIN228 FORM A

OZ TİP

DIN 2207



### DIN 6388-B ISO 10897

TAKIM KUTUSU İÇİNDEKİLER :

- 1- MK / OZ ÇEKTİRMELİ PENS BAŞLIĞI ( 1 ADET )
- 2- OZ PENS KAPAĞI ( 1 ADET )
- 3- OZ ANAHTAR ( 1 ADET )
- 4- OZ PENSLER ( 16 ADET )

SİP. NR.	KAPASİTE (mm)	KUTU İÇİNDEKİ PENSLERİN ÇAP ÖLÇÜLERİ (mm)
MK3.C.462E.T	4-25	4-5-6-7-8-9-10-11-12-14-16-18-20-22-24-25
MK4.C.462E.T	4-25	4-5-6-7-8-9-10-11-12-14-16-18-20-22-24-25
MK4.C.467E.T	5-32	5-6-7-8-10-12-14-16-18-20-22-24-25-28-30-32
MK5.C.462E.T	4-25	4-5-6-7-8-9-10-11-12-14-16-18-20-22-24-25
MK5.C.467E.T	5-32	5-6-7-8-10-12-14-16-18-20-22-24-25-28-30-32

## MK PENS TAKIMLARI - KAMALI

DIN228 FORM B

OZ TİP

DIN 1806



### DIN 6388-B ISO 10897

TAKIM KUTUSU İÇİNDEKİLER :

- 1- MK / OZ KAMALI PENS BAŞLIĞI ( 1 ADET )
- 2- OZ PENS KAPAĞI ( 1 ADET )
- 3- OZ ANAHTAR ( 1 ADET )
- 4- OZ PENSLER ( 16 ADET )

SİP. NR.	KAPASİTE (mm)	KUTU İÇİNDEKİ PENSLERİN ÇAP ÖLÇÜLERİ (mm)
MK3.K.462E.T	4-25	4-5-6-7-8-9-10-11-12-14-16-18-20-22-24-25
MK4.K.462E.T	4-25	4-5-6-7-8-9-10-11-12-14-16-18-20-22-24-25
MK4.K.467E.T	5-32	5-6-7-8-10-12-14-16-18-20-22-24-25-28-30-32
MK5.K.462E.T	4-25	4-5-6-7-8-9-10-11-12-14-16-18-20-22-24-25
MK5.K.467E.T	5-32	5-6-7-8-10-12-14-16-18-20-22-24-25-28-30-32

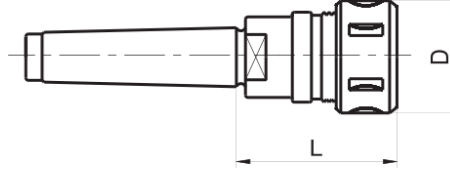


## MK PENS BAĞLIKLARI -ÇEKTİRMELİ

DIN 228 FORM A

### OZ TİP

DIN 2207



KAPAK İLE BİRLİKTE TESLİM EDİLİR.

### DIN 6388 ISO 10897

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3
- SALGI: MAX. 0,006 mm

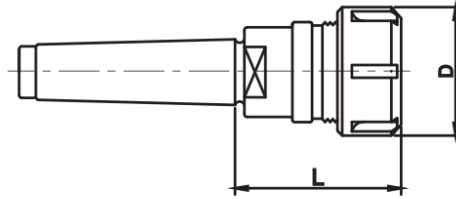
SİP. NR.	KONUK	KAPASİTE (mm)	L (mm)	D (mm)
MK3.C.462E	MK3	3-25	92	60
MK4.C.462E	MK4	3-25	78	60
MK4.C.467E	MK4	3-32	109	72
MK5.C.462E	MK5	3-25	74	60
MK5.C.467E	MK5	3-32	88	72

## MK PENS BAĞLIKLARI -ÇEKTİRMELİ

DIN 228 FORM A

### ER TİP

DIN 2207



KAPAK İLE BİRLİKTE TESLİM EDİLİR.

### DIN 6499 ISO 15488

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3
- SALGI: MAX. 0,006 mm

SİP. NR.	KONUK	KAPASİTE (mm)	L (mm)	D (mm)
MK2.C.ER25	MK2	1-16	52	42
MK2.C.ER32	MK2	2-20	60	50
MK3.C.ER25	MK3	1-16	52	42
MK3.C.ER32	MK3	2-20	70	50
MK3.C.ER40	MK3	2-26	82	63
MK4.C.ER32	MK4	2-20	62	50
MK4.C.ER40	MK4	2-26	82	63



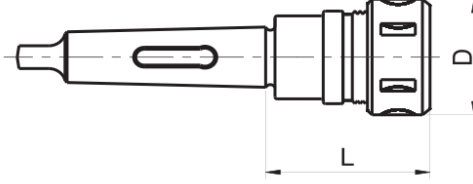


MK PENS BAĞLIKLARI -KAMALI

DIN 228 FORM B

OZ TİP

DIN 1806



**DIN 6388**  
**ISO 10897**

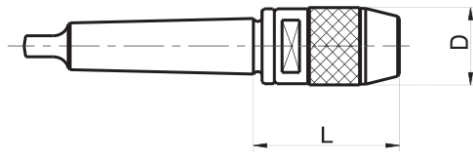
- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc (Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3
- SALGI: MAX. 0,006 mm

KAPAK İLE BİRLİKTE TESLİM EDİLİR.

SİP. NR.	KONİK	KAPASİTE (mm)	L (mm)	D (mm)
MK3.K.462E	MK3	3-25	77	60
MK4.K.462E	MK4	3-25	78	60
MK4.K.467E	MK4	3-32	89	72
MK5.K.462E	MK5	3-25	74	60
MK5.K.467E	MK5	3-32	88	72

MK MANDRENLİ BAĞLIKLAR

DIN228 FORM B



ELLE VE ANAHTARLA SIKILIP ÇÖZÜLEBİLİR.

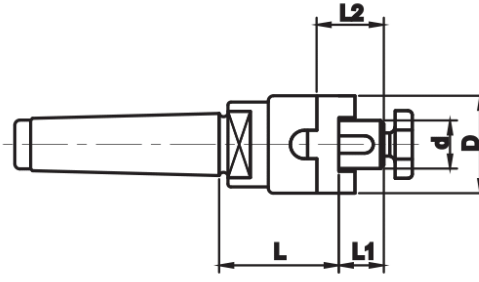
- SALGI: MAX. 0,06 mm

SİP. NR.	KONİK	KAPASİTE (mm)	D (mm)	L (mm)
MK3.0-10	MK3	0-10	35	75
MK3.1-13	MK3	1-13	42	85
MK3.1-16	MK3	1-16	49	100
MK3.4-20	MK3	4-20	55	110
MK4.1-13	MK4	1-13	42	85
MK4.1-16	MK4	1-16	49	100
MK4.4-20	MK4	4-20	55	115



## MK KOMBİNE MALAFALAR - ÇEKTİRMELİ

DIN 228 FORM A



ALIN CİVATASI, TIRNAKLI PUL VE KAMA İLE BİRLİKTE TESLİM EDİLİR.

**DIN 6358**

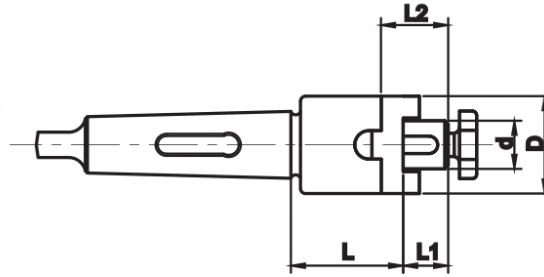
DIN 2207

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc (Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3
- SALGI: MAX. 0,006 mm

SİP. NR.	KONÛK	d (mm)	D (mm)	L (mm)	L1 (mm)	L2 (mm)
MK4.C.16.K	MK4	16	32	50	17	27
MK4.C.22.K	MK4	22	40	50	19	31
MK4.C.27.K	MK4	27	48	60	21	33
MK4.C.32.K	MK4	32	58	60	24	38
MK4.C.40.K	MK4	40	70	65	27	41
MK5.C.16.K	MK5	16	32	60	17	27
MK5.C.22.K	MK5	22	40	60	19	31
MK5.C.27.K	MK5	27	48	65	21	33
MK5.C.32.K	MK5	32	58	70	24	38
MK5.C.40.K	MK5	40	70	70	27	41

## MK KOMBİNE MALAFALAR - KAMALI

DIN 228 FORM B



ALIN CİVATASI, TIRNAKLI PUL VE KAMA İLE BİRLİKTE TESLİM EDİLİR.

**DIN 6358**

DIN 1806

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc (Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3
- SALGI: MAX. 0,006 mm

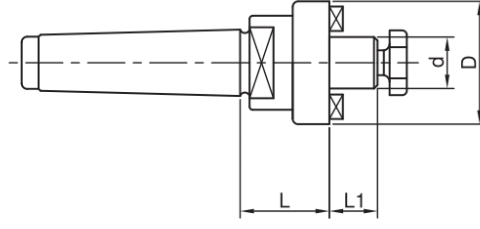
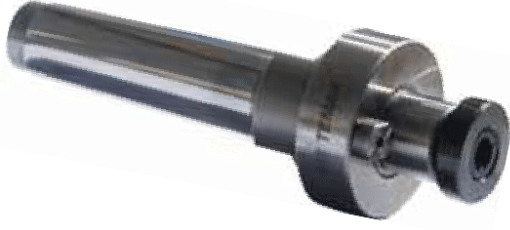
SİP. NR.	KONÛK	d (mm)	D (mm)	L (mm)	L1 (mm)	L2 (mm)
MK4.K.16.K	MK4	16	32	50	17	27
MK4.K.22.K	MK4	22	40	50	19	31
MK4.K.27.K	MK4	27	48	50	21	33
MK4.K.32.K	MK4	32	58	60	24	38
MK4.K.40.K	MK4	40	70	60	27	41
MK5.K.16.K	MK5	16	32	50	17	27
MK5.K.22.K	MK5	22	40	50	19	31
MK5.K.27.K	MK5	27	48	50	21	33
MK5.K.32.K	MK5	32	58	50	24	38
MK5.K.40.K	MK5	40	70	50	27	41



MK TARAMA MALAFALARI-ÇEKTİRMELİ

DIN 228 FORM A

DIN 2207



ISO 3937

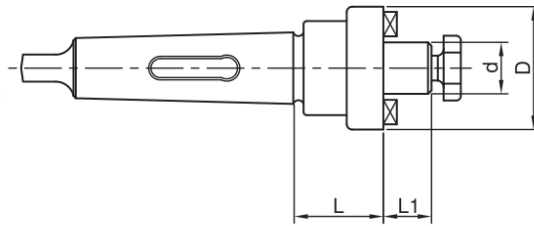
- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3
- SALGI: MAX. 0,006 mm

SİP. NR.	KONÛK	d (mm)	D (mm)	L (mm)	L1 (mm)
MK3.C.16.T	MK3	16	40	40	17
MK3.C.22.T	MK3	22	50	40	19
MK3.C.27.T	MK3	27	60	45	21
MK3.C.32.T	MK3	32	78	45	24
MK4.C.16.T	MK4	16	40	40	17
MK4.C.22.T	MK4	22	50	45	19
MK4.C.27.T	MK4	27	60	50	21
MK4.C.32.T	MK4	32	78	50	24
MK4.C.40.T	MK4	40	88	55	27
MK5.C.16.T	MK5	16	40	50	17
MK5.C.22.T	MK5	22	50	55	19
MK5.C.27.T	MK5	27	60	55	21
MK5.C.32.T	MK5	32	78	60	24
MK5.C.40.T	MK5	40	88	60	27

MK TARAMA MALAFALARI-KAMALI

DIN 228 FORM B

DIN 1806



ISO 3937

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3
- SALGI: MAX. 0,006 mm

SİP. NR.	KONÛK	d (mm)	D (mm)	L (mm)	L1 (mm)
MK4.K.16.T	MK4	16	40	40	17
MK4.K.22.T	MK4	22	50	40	19
MK4.K.27.T	MK4	27	60	50	21
MK4.K.32.T	MK4	32	78	50	24
MK4.K.40.T	MK4	40	88	50	27
MK5.K.16.T	MK5	16	40	50	17
MK5.K.22.T	MK5	22	50	50	19
MK5.K.27.T	MK5	27	60	55	21
MK5.K.32.T	MK5	32	78	60	24
MK5.K.40.T	MK5	40	88	60	27

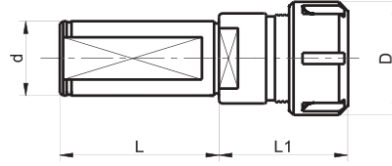


## C PENS BAŞLIKLARI-SİLİNDİRİK PAFTLI

### ER TİPİ



KAPAK İLE BİRLİKTE TESLİM EDİLİR.



**DIN 6499**  
**ISO 15488**

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc
- SALGI: MAX. 0,006 mm

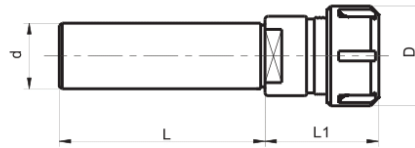
SİP. NR.	KAPASİTE (mm)	d (mm)	D (mm)	L (mm)	L1 (mm)
C.25.ER32	2-20	25	50	50	53
C.32.ER25	1-16	32	42	60	42
C.32.ER32	2-20	32	50	60	38
C.32.ER40	2-26	32	63	60	59,5
C.40.ER32	2-20	40	50	70	38
C.40.ER40	2-26	40	63	70	59,5

## CY PENS BAŞLIKLARI-SİLİNDİRİK PAFTLI

### ER TİPİ



KAPAK İLE BİRLİKTE TESLİM EDİLİR.



**DIN 6499**  
**ISO 15488**

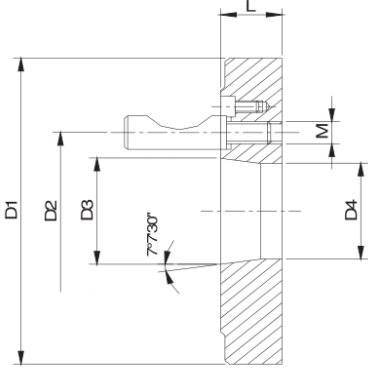
- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc
- SALGI: MAX. 0,006 mm

SİP. NR.	KAPASİTE (mm)	d (mm)	AA (mm)	D (mm)	L (mm)	L1 (mm)
CY.16.ER11-100	1-07	16	17	19	100	26,5
CY.16.ER16-70	1-10	16	19	28 (32)	70	36,5
CY.16.ER16-150	1-10	16	19	28 (32)	150	36,5
CY.16.ER20-100	1-13	16	22	34 (35)	100	46,5
CY.20.ER16-50	1-10	20	19	28 (32)	50	30,5
CY.20.ER16-70	1-10	20	19	28 (32)	70	30,5
CY.20.ER16-100	1-10	20	19	28 (32)	100	30,5
CY.20.ER16-150	1-10	20	19	28 (32)	150	30,5
CY.20.ER20-100	1-13	20	22	34 (35)	100	46,5
CY.20.ER25-50	1-16	20	28	42	50	47
CY.20.ER25-100	1-16	20	28	42	100	47
CY.25.ER25-50	1-16	25	28	42	50	47
CY.25.ER25-100	1-16	25	28	42	100	47
CY.25.ER25-150	1-16	25	28	42	150	47
CY.25.ER32-150	2-20	25	36	50	150	53
CY.32.ER25-150	1-16	32	28	42	150	42
CY.32.ER32-150	2-20	32	36	50	150	38



## AYNA FLANŞLARI - CAMLOCK SAPLAMALI

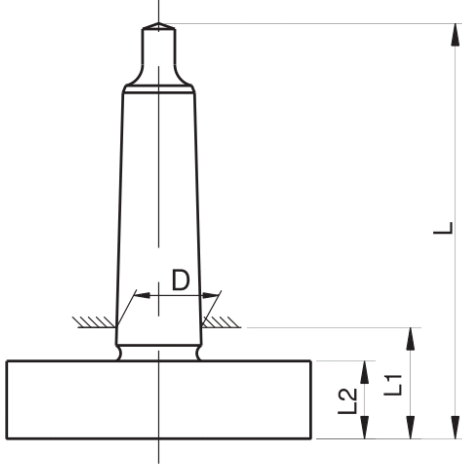
DIN 55029



- DÖKÜM GÖVDELİDİR.
- SAPLAMALARI İLE BİRLİKTE TESLİM EDİLİR.

- AYNALARIN TORNA TEZGAHLARINA BAĞLANABİLMESİ İÇİN ADAPTÖR GÖREVİ YAPARLAR.
- BU BAĞLANTIDAN İYİ SONUÇ ALABİLMEK İÇİN TORNA AYNASI VE FLANŞLARIN KULLANIM TALİMATLARINA EKSİKSİZ OLARAK UYMANIZI ÖNERİRİZ.
- AYNA FLANŞLARININ HASSAS OLARAK İŞLENMİŞ OLAN TEZGAH TARAFI, MONTAJA HAZIR HALDEDİR. AYNANIN BAĞLANACAĞI TARAF İSE KABA OLARAK BIRAKILMIŞ OLUP MONTAJ ESNASINDA KULLANICI TARAFINDAN İŞLENECEKTİR.

SİP. NR.	D1 (mm)	NO	D2 (mm)	D3 (mm)	D4 (mm)	L (mm)	M (mm)	SAPLAMA ADEDİ
160.4.C	160	4	82,55	63,525	60,6	25	M12x1	3
160.5.C		5	104,8	82,563	79,4	28	M12x1	6
160.6.C		6	133,4	106,375	103	33	M16x1,5	6
200.5.C	200	5	104,8	82,563	79,4	28	M12x1	6
200.6.C		6	133,4	106,375	103	33	M16x1,5	6
200.8.C		8	171,4	139,719	136	38	M20x1,5	6
250.5.C	250	5	104,8	82,563	79,4	33	M12x1	6
250.6.C		6	133,4	106,375	103	33	M16x1,5	6
250.8.C		8	171,4	139,719	136	38	M20x1,5	6
315.6.C	315	6	133,4	106,375	103	35	M16x1,5	6
315.8.C		8	171,4	139,719	136	38	M20x1,5	6
315.11.C		11	235	196,869	192,5	44	M22x1,5	6
400.6.C	400	6	133,4	106,375	103	40	M16x1,5	6
400.8.C		8	171,4	139,719	136	40	M20x1,5	6
400.11.C		11	235	196,869	192,5	45	M22x1,5	6
500.8.C	500	8	171,4	139,719	136	45	M20x1,5	6
500.11.C		11	235	196,869	192,5	45	M22x1,5	6



- MORSLU FLANŞLAR, AYNALARIN TEZGAHLARA MİNİMUM SALGI İLE BAĞLANMASINI SAĞLARLAR.
- KABA İŞLENMİŞ OLAN TARAF AYNA ÖLÇÜLERİNE UYGUN OLARAK DELİNİP TORNALANDIKTAN SONRA AYNANIN BAĞLANMASI GERÇEKLEŞTİRİLİR.
- MORSLU TARAF SERTLEŞTİRİLMİŞ VE TAŞLANMIŞ OLUP, AYNA TARAFI SERTLEŞTİRİLMEMİŞTİR.

SÝP.NR.	DİP ÇAP (mm)	MK	D (mm)	L (mm)	L1 (mm)	L2 (mm)
6102	80	2	17,780	104	27	18
6103		3	23,825	123	29	18
6104		4	31,267	147	30	18
6113	100	3	23,825	123	29	18
6114		4	31,267	147	30	18
6123	125	3	23,825	125	31	20
6124		4	31,267	149	32	20
6133	160	3	23,825	125	31	20
6134		4	31,267	149	32	20
6135**		5	44,399	183	33	20



## OZ PENSLER

DIN 6388-B

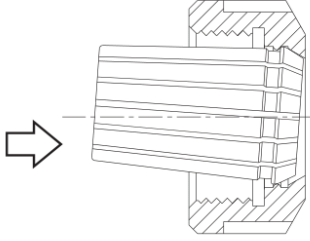
ISO 10897

462E  
467E



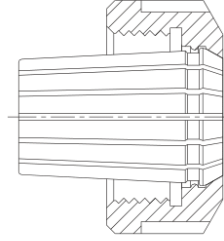
- SIKMA KAPASİTESİ:0,5 mm
- SERTLİK:45-49 HRc
- SALGI: DIN 6388 / 1.SINIF

### PENSİN KAPAĞA MONTAJI



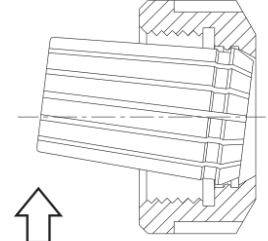
PENSİN KAPAĞA EKSEN DOĞRULTUSUNDA BASTIRILMASIYLA MONTAJ GERÇEKLEŞİR.

### KULLANIM POZİSYONU



PENSİN KAPAĞA OTURMASINDAN SONRA İLGİLİ TAKIM PENSE TAKILABİLİR. KAPAK İLE PENS BU HALİYLE BAŞLIĞA TAKILMALIDIR.

### PENSİN KAPAKTAN ÇIKARILMASI



PENSİN EKSENE DİK OLARAK EL İLE ZORLANMASIYLA ÇIKARMA İŞLEMİ GERÇEKLEŞİR. BU İŞLEMİN ÖNCESİNDE TAKIM PENSTEN ÇIKARILMIŞ OLMALIDIR.

## ER PENSLER

DIN 6499 - B

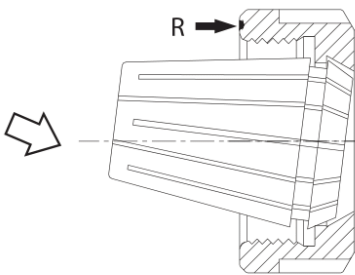
ISO 15488

ER11 (4008E)  
ER16 (426E)  
ER20 (428E)  
ER25 (430E)  
ER32 (470E)  
ER40 (472E)



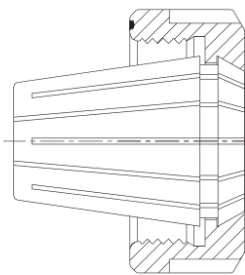
- SIKMA KAPASİTESİ : 1 mm
- SERTLİK : 45-49 HRc
- SALGI : DIN 6499 / 1.SINIF

### PENSİN KAPAĞA MONTAJI



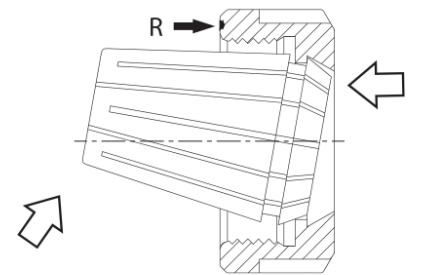
PENSİN (R) İŞARETLİ TARAFTAN OTURTULUP OK YÖNÜNDE BASTIRILMASI İLE MONTAJ KOLAYCA GERÇEKLEŞİR.

### KULLANIM POZİSYONU

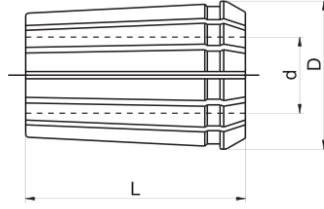


PENS VE KAPAK EKSENLERİNİN BİRLEŞTİĞİ BU POZİSYONDA TAKIMLAR PENSE TAKILABİLİR. KAPAKIN BAŞLIĞA TAKILMASI ANCAK BU POZİSYONDA OLUR.

### PENSİN KAPAKTAN ÇIKARILMASI



PENSİN OK YÖNÜNDE (R) İŞARETLİ TARAFA BASTIRILMASI İLE ÇIKARMA GERÇEKLEŞİR. BU İŞLEMİN ÖNCESİNDE TAKIM, PENSTEN ÇIKARILMIŞ OLMALIDIR.



- SIKMA KAPASİTESİ : 0,5 mm
- SERTLİK : 45-49 HRc
- SALGI : DIN 6388 / 1.SINIF

**462 E PENSLER**

D=35,05 mm / L=52 mm

SİP. NR.	d (mm)	SIKMA KAPASİTESİ (mm)
462E-3	3	3-2,5
462E-4	4	4-3,5
462E-5	5	5-4,5
462E-6	6	6-5,5
462E-7	7	7-6,5
462E-8	8	8-7,5
462E-9	9	9-8,5
462E-10	10	10-9,5
462E-11	11	11-10,5
462E-12	12	12-11,5
462E-13	13	13-12,5
462E-14	14	14-13,5
462E-15	15	15-14,5
462E-16	16	16-15,5
462E-17	17	17-16,5
462E-18	18	18-17,5
462E-19	19	19-18,5
462E-20	20	20-19,5
462E-21	21	21-20,5
462E-22	22	22-21,5
462E-23	23	23-22,5
462E-24	24	24-23,5
462E-25	25	25-24,5

**467 E PENSLER**

D=43,7 mm / L=60 mm

SİP. NR.	d (mm)	SIKMA KAPASİTESİ (mm)
467E-3	3	3-2,5
467E-4	4	4-3,5
467E-5	5	5-4,5
467E-6	6	6-5,5
467E-7	7	7-6,5
467E-8	8	8-7,5
467E-9	9	9-8,5
467E-10	10	10-9,5
467E-11	11	11-10,5
467E-12	12	12-11,5
467E-13	13	13-12,5
467E-14	14	14-13,5
467E-15	15	15-14,5
467E-16	16	16-15,5
467E-17	17	17-16,5
467E-18	18	18-17,5
467E-19	19	19-18,5
467E-20	20	20-19,5
467E-21	21	21-20,5
467E-22	22	22-21,5
467E-23	23	23-22,5
467E-24	24	24-23,5
467E-25	25	25-24,5
467E-26	26	26-25,5
467E-27	27	27-26,5
467E-28	28	28-27,5
467E-29	29	29-28,5
467E-30	30	30-29,5
467E-31	31	31-30,5
467E-32	32	32-31,5

**462 E PENS SETİ**



SET İÇİNDE 16 ADET PENS VARDIR.

4	5	6	7	8	9	10	11
12	14	16	18	20	22	24	25

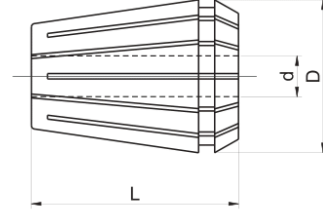
**467 E PENS SETİ**



SET İÇİNDE 16 ADET PENS VARDIR.

5	6	7	8	10	12	14	16
18	20	22	24	25	28	30	32





- SIKMA KAPASİTESİ : 1 mm
- SERTLİK : 45-49 HRc
- SALGI : DIN 6499 / 1.SINIF

ER 11 PENSLER ( 4008E )
D=11,5 mm / L=18 mm

ER 16 PENSLER ( 426E )
D=17 mm / L=27,5 mm

ER 20 PENSLER ( 428E )
D=21 mm / L=31,5 mm

SİP. NR.	d (mm)	SIKMA KAPASİTESİ (mm)
ER11-1	1	1-0,5
ER11-2	2	2-1,5
ER11-3	3	3-2,5
ER11-4	4	4-3,5
ER11-5	5	5-4,5
ER11-6	6	6-5,5
ER11-7	7	7-6,5

SİP. NR.	d (mm)	SIKMA KAPASİTESİ (mm)
ER16-2	2	2-1,5
ER16-3	3	3-2
ER16-4	4	4-3
ER16-5	5	5-4
ER16-6	6	6-5
ER16-7	7	7-6
ER16-8	8	8-7
ER16-9	9	9-8
ER16-10	10	10-9

SİP. NR.	d (mm)	SIKMA KAPASİTESİ (mm)
ER20-2	2	2-1,5
ER20-3	3	3-2
ER20-4	4	4-3
ER20-5	5	5-4
ER20-6	6	6-5
ER20-7	7	7-6
ER20-8	8	8-7
ER20-9	9	9-8
ER20-10	10	10-9
ER20-11	11	11-10
ER20-12	12	12-11
ER20-13	13	13-12



3-2	4-3	5-4	6-5	7-6	8-7	9-8	10-9
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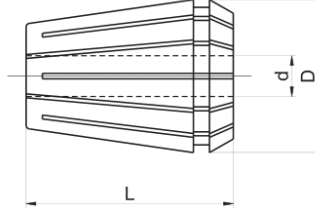
2-1	3-2	4-3	5-4	6-5	7-6
8-7	9-8	10-9	11-10	12-11	13-12



ER PENSLER

DIN 6499-B

ISO 15488



- SIKMA KAPASİTESİ : 1 mm
- SERTLİK : 45-49 HRc
- SALGI : DIN 6499 / 1.SINIF

ER 25 PENSLER ( 430E )
D=26 mm / L=34 mm

ER 32 PENSLER ( 470E )
D=33 mm / L=40 mm

ER 40 PENSLER ( 472E )
D=41 mm / L=46 mm

SİP. NR.	d (mm)	SIKMA KAPASİTESİ (mm)
ER25-2	2	2-1,5
ER25-3	3	3-2
ER25-4	4	4-3
ER25-5	5	5-4
ER25-6	6	6-5
ER25-7	7	7-6
ER25-8	8	8-7
ER25-9	9	9-8
ER25-10	10	10-9
ER25-11	11	11-10
ER25-12	12	12-11
ER25-13	13	13-12
ER25-14	14	14-13
ER25-15	15	15-14
ER25-16	16	16-15

SİP. NR.	d (mm)	SIKMA KAPASİTESİ (mm)
ER32-3	3	3-2
ER32-4	4	4-3
ER32-5	5	5-4
ER32-6	6	6-5
ER32-7	7	7-6
ER32-8	8	8-7
ER32-9	9	9-8
ER32-10	10	10-9
ER32-11	11	11-10
ER32-12	12	12-11
ER32-13	13	13-12
ER32-14	14	14-13
ER32-15	15	15-14
ER32-16	16	16-15
ER32-17	17	17-16
ER32-18	18	18-17
ER32-19	19	19-18
ER32-20	20	20-19

SİP. NR.	d (mm)	SIKMA KAPASİTESİ (mm)
ER40-3	3	3-2
ER40-4	4	4-3
ER40-5	5	5-4
ER40-6	6	6-5
ER40-7	7	7-6
ER40-8	8	8-7
ER40-9	9	9-8
ER40-10	10	10-9
ER40-11	11	11-10
ER40-12	12	12-11
ER40-13	13	13-12
ER40-14	14	14-13
ER40-15	15	15-14
ER40-16	16	16-15
ER40-17	17	17-16
ER40-18	18	18-17
ER40-19	19	19-18
ER40-20	20	20-19
ER40-21	21	21-20
ER40-22	22	22-21
ER40-23	23	23-22
ER40-24	24	24-23
ER40-25	25	25-24
ER40-26	26	26-25

ER25 PENS SETİ

SET İÇİNDE 12 ADET PENS VARDIR.

ER32 PENS SETİ

SET İÇİNDE 16 ADET PENS VARDIR.

ER40 PENS SETİ

SET İÇİNDE 16 ADET PENS VARDIR.

3-2	4-3	5-4	6-5	7-6	8-7
9-8	10-9	11-10	12-11	14-13	16-15

3-2	4-3	5-4	6-5	7-6	8-7
9-8	10-9	11-10	12-11	13-12	14-13
15-14	16-15	18-17	20-19		

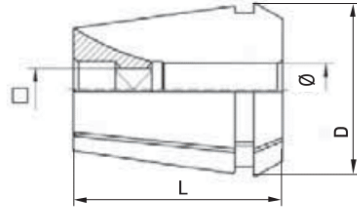
4-3	5-4	6-5	7-6	8-7	9-8
10-9	12-11	14-13	16-15	18-17	20-19
22-21	24-23	25-24	26-25		



## ER KILAVUZ PENSLERİ

DIN 6499-B

ISO 15488



- SERTLİK : 45-49 HRc
- SALGI : DIN 6499 / 1.SINIF

ER 16 KILAVUZ PENSLERİ
D=16,7 mm / L=27,5 mm

ER 20 KILAVUZ PENSLERİ
D=20,7 mm / L=31,5 mm

ER 25 KILAVUZ PENSLERİ
D=25,7 mm / L=34 mm

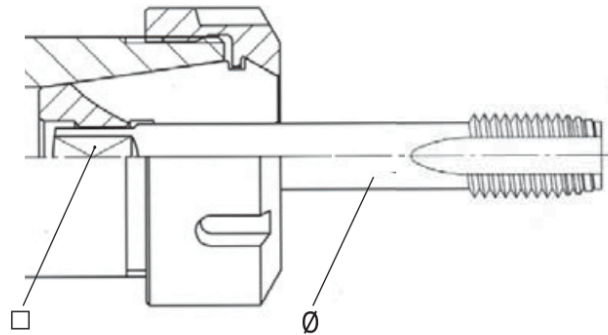
SİP. NR.	Ø (mm)	□ (mm)
ER16-3,5x2,7	3,5	2,7
ER16-4x3,2	4	3,2
ER16-4,5x3,4	4,5	3,4
ER16-6x4,9	6	4,9
ER16-7x5,5	7	5,5
ER16-8x6,3	8	6,3

SİP. NR.	Ø (mm)	□ (mm)
ER20-3,5x2,7	3,5	2,7
ER20-4x3,2	4	3,2
ER20-4,5x3,4	4,5	3,4
ER20-6x4,9	6	4,9
ER20-7x5,5	7	5,5
ER20-8x6,3	8	6,3
ER20-9x7,1	9	7,1
ER20-10x8	10	8
ER20-11x9	11	9
ER20-12x9	12	9

SİP. NR.	Ø (mm)	□ (mm)
ER25-3,5x2,7	3,5	2,7
ER25-4x3,2	4	3,2
ER25-4,5x3,4	4,5	3,4
ER25-6x4,9	6	4,9
ER25-7x5,5	7	5,5
ER25-8x6,3	8	6,3
ER25-9x7,1	9	7,1
ER25-10x8	10	8
ER25-11x9	11	9
ER25-12x9	12	9
ER25-14x11,2	14	11,2
ER25-16x12,5	16	12,5

### KILAVUZ ÖLÇÜLERİ VE STANDARTLAR

Øx□ (mm)	STANDARTT
3,5x2,7	DIN
4x3,2	ISO / JIS
4,5x3,4	DIN
6x4,9	DIN
7x5,5	DIN / JIS
8x6,3	DIN / ISO
9x7,1	DIN / ISO
10x8	DIN / ISO
11x9	DIN
12x9	DIN
14x11,2	DIN / ISO / JIS
16x12,5	DIN / ISO

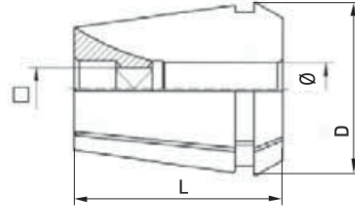




## ER KILAVUZ PENSLERİ

DIN 6499-B

ISO 15488



- SERTLİK: 45-49 HRC
- SALGI: DIN 6499 / 1.SINIF

### ER 32 KILAVUZ PENSLERİ

D=32,7 mm / L=40 mm

### ER 40 KILAVUZ PENSLERİ

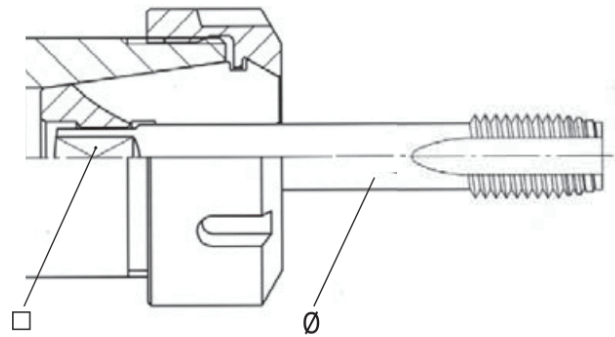
D=40,7 mm / L=46 mm

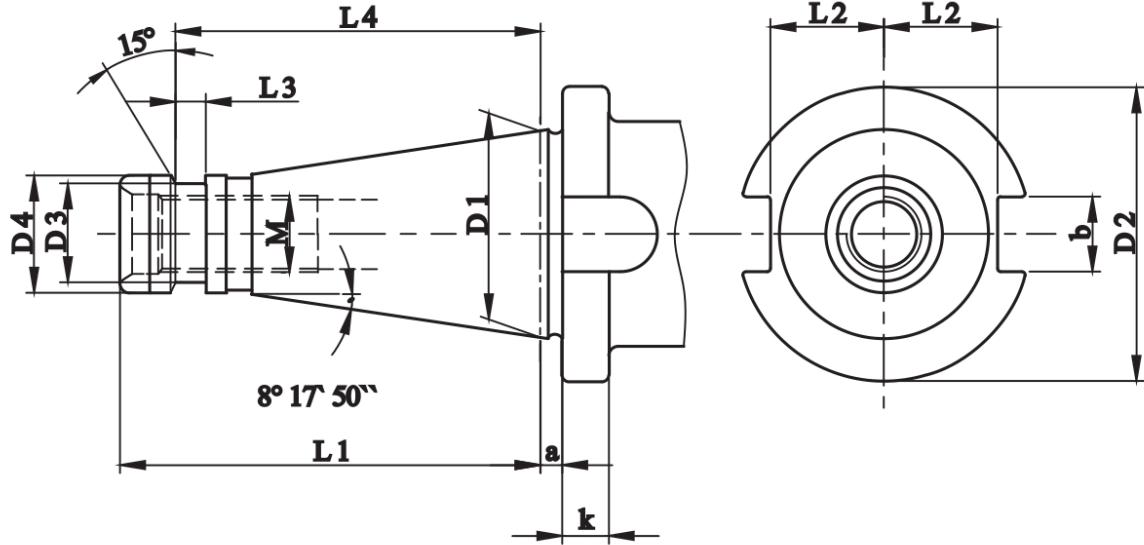
SİP. NR.	Ø (mm)	□ (mm)
ER32-3,5x2,7	3,5	2,7
ER32-4x3,2	4	3,2
ER32-4,5x3,4	4,5	3,4
ER32-6x4,9	6	4,9
ER32-7x5,5	7	5,5
ER32-8x6,3	8	6,3
ER32-9x7,1	9	7,1
ER32-10x8	10	8
ER32-11x9	11	9
ER32-12x9	12	9
ER32-14x11,2	14	11,2
ER32-16x12,5	16	12,5
ER32-18x14,5	18	14,5
ER32-20x16	20	16

SİP. NR.	Ø (mm)	□ (mm)
ER40-3,5x2,7	3,5	2,7
ER40-4x3,2	4	3,2
ER40-4,5x3,4	4,5	3,4
ER40-6x4,9	6	4,9
ER40-7x5,5	7	5,5
ER40-8x6,3	8	6,3
ER40-9x7,1	9	7,1
ER40-10x8	10	8
ER40-11x9	11	9
ER40-12x9	12	9
ER40-14x11,2	14	11,2
ER40-16x12,5	16	12,5
ER40-18x14,5	18	14,5
ER40-20x16	20	16
ER40-22x18	22	18
ER40-25x20	25	20

### KILAVUZ ÖLÇÜLERİ VE STANDARTLAR

Øx□ (mm)	STANDART
3,5x2,7	DIN
4x3,2	ISO / JIS
4,5x3,4	DIN
6x4,9	DIN
7x5,5	DIN / JIS
8x6,3	DIN / ISO
9x7,1	DIN / ISO
10x8	DIN / ISO
11x9	DIN
12x9	DIN
14x11,2	DIN / ISO / JIS
16x12,5	DIN / ISO
18x14,5	DIN / ISO
20x16	DIN / ISO
22x18	DIN
25x20	DIN





ISO	D1	D2 0 -0,4	D3	D4	M	a ±0,2	b H12	K ±0,15	L1	L2 max.	L3	L4
30	31,75	50	16,5	17,1	M12	1,6	16,1	8	68,4	16,2	-	-
40	44,45	63	21,1	25	M16	1,6	16,1	10	93,4	22,5	7	82
50	69,85	97,5	38	39,2	M24	3,2	25,7	12	126,8	35,3	-	-

- MALZEME: ALAŞIMLI SEMENTE ÇELİĞİ- min. 900 N/mm<sup>2</sup>
- SERTLİK 56-60 HRC/ SERTLİK DERİNLİĞİ 0,6-0,9 mm
- AÇI HASSASİYETİ: DIN 7178-1 / AT3  
DIN 2080-1 / AT3



ISO PENS TAKIMLARI

DIN 2080

OZ TİP

ISO 2583



## DIN 6388-B ISO 10897

TAKIM KUTUSU ÜÇÜNDEKİLER :

- 1- ISO / OZ PENS BAŞLIĞI ( 1 ADET )
- 2- OZ PENS KAPAĞI ( 1 ADET )
- 3- OZ ANAHTAR ( 1 ADET )
- 4- OZ PENSLER ( 16 ADET )

SİP. NR.	KAPASİTE (mm)	KUTU ÜÇÜNDEKİ PENSLERİN ÇAP ÖLÇÜLERİ ( mm )
ISO30.462E.T	4-25	4-5-6-7-8-9-10-11-12-14-16-18-20-22-24-25
ISO40.462E.T	4-25	4-5-6-7-8-9-10-11-12-14-16-18-20-22-24-25
ISO40.467E.T	5-32	5-6-7-8-10-12-14-16-18-20-22-24-25-28-30-32
ISO50.462E.T	4-25	4-5-6-7-8-9-10-11-12-14-16-18-20-22-24-25
ISO50.467E.T	5-32	5-6-7-8-10-12-14-16-18-20-22-24-25-28-30-32

ISO PENS TAKIMLARI

DIN 2080

ER TİP

ISO 2583



## DIN 6499-B ISO 15488

TAKIM KUTUSU ÜÇÜNDEKİLER :

- 1- ISO / ER PENS BAŞLIĞI ( 1 ADET )
- 2- ER PENS KAPAĞI ( 1 ADET )
- 3- ER ANAHTAR ( 1 ADET )
- 4- ER PENSLER ( 16 ADET )

SİP. NR.	KAPASİTE (mm)	KUTU ÜÇÜNDEKİ PENSLERİN ÇAP ÖLÇÜLERİ ( mm )
ISO30.ER32.T	3-20	3-2/4-3/5-4/6-5/7-6/8-7/9-8/10-9/11-10/12-11/13-12/14-13/15-14/16-15/18-17/20-19
ISO40.ER32.T	3-20	3-2/4-3/5-4/6-5/7-6/8-7/9-8/10-9/11-10/12-11/13-12/14-13/15-14/16-15/18-17/20-19
ISO40.ER40.T	4-26	4-3/5-4/6-5/7-6/8-7/9-8/10-9/12-11/14-13/16-15/18-17/20-19/22-21/24-23/25-24/26-25
ISO50.ER40.T	4-26	4-3/5-4/6-5/7-6/8-7/9-8/10-9/12-11/14-13/16-15/18-17/20-19/22-21/24-23/25-24/26-25



## ÖZELLİKLER

- MATKAP UÇLARININ SERİ OLARAK BAĞLANMASI VE YİNE AYNI ŞEKİLDE SÖKÜLMESİ İÇİN UYGUNDUR.
- ÇALIŞMA ESNASINDA AYAKLARDA OLUŞAN MOMENT OTOMATİK OLARAK SIKMA KUVVETİNİ ARTIRIR.
- AYAKLAR YÜKSEK MUKAVEMETLİ ALAŞIMLI ÇELİKTE ÜRETİLMİŞ OLUP SERTLİK DEĞERİ  $61 \pm 2$  HRc DİR.
- **PARÇA DEĞİŞİMİ GEREKİRSE, PARÇALARI YEDEK OLARAK FİRMAMIZDAN TEMİN EDEBİLİRSİNİZ.**

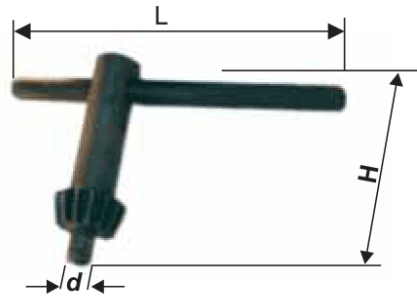
SİP. NR.	SIKMA KAPASİTESİ (mm)	BAĞLANTI TYPİ	DİP ÇAP (mm)	KAPALI BOY (mm)	AÇIK BOY (mm)	SIKMA MOMENTİ Nm	MAX. SALGI (mm)
510	0-10	B12	35	78	71	9	0,07
503	0-10	3/8-24	35	78	71	9	0,07
501	0-10	1/2-20	35	78	71	9	0,07
513	1-13	B16	42	96	87	12	0,07
533	1-13	3/8-24	42	96	87	12	0,07
531	1-13	1/2-20	42	96	87	12	0,07
515	1-16	B16	49	112	103	14	0,07
516	1-16	B18	49	112	103	14	0,07
561	1-16	1/2-20	49	112	103	14	0,07
565	1-16	5/8-16	49	112	103	14	0,07
520	4-20	B22	55	131	122	15	0,07



### ÖZELLİKLER

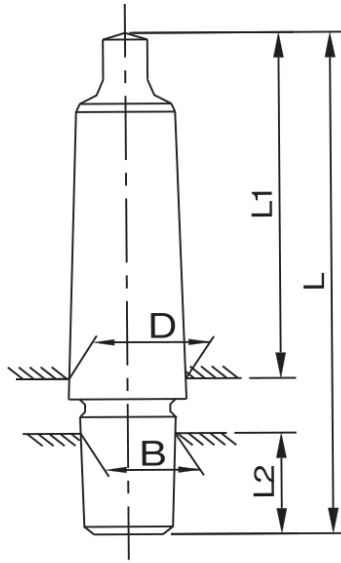
- ENDÜSTRİYEL HİZMET İÇİN BELİRLENEN STANDART ÖLÇÜLERDEDİR.
- DARBELERE VE AĞIR İŞ ORTAMINA DAYANIKLIDIR.
- SAĞ VE SOL YÖNLÜ OLARAK EMNİYETLE KULLANILABİLİR.
- ANAHTARI İLE BİRLİKTE TESLİM EDİLİR.

SİP. NR.	SIKMA KAPASİTESİ (mm)	BAĐLANTI TYPİ	DİP ÇAP (mm)	AÇIK BOY (mm)	KAPALI BOY (mm)	ANAHTAR KODU
615	1-16	B16	56	80	100	S3
616	1-16	B18	56	80	100	S3
620	1-20	B22	65	92	114	S4
626	1-26	B24	80	120	150	S4



SİP. NR.	KODU	H (mm)	L (mm)	d (mm)
653	S3	50	90	8
654	S4	54	110	9





- MANDRENLERİN EN AZ SALGI İLE TEZGAHA BAĞLANABİLMELERİNİ SAĞLAR.
- KOMPLE SERTLEŞTİRİLİP TAŞLANMIŞTIR.
- KONİKLER ARASI MAX. SALGI : 0,01 mm

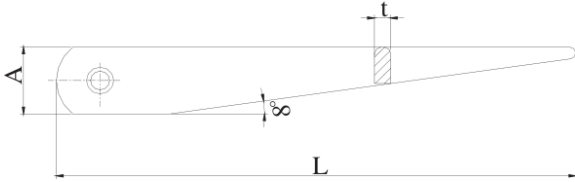
SİP. NR.	MK DIN 228-B	B		D (mm)	L1 (mm)	L2 (mm)	L (mm)
		KONİK	ÖLÇÜ (mm)				
6000	MK0	B10	10,095	9,045	56,5	14,5	79
6001	MK1	B10	10,095	12,065	62	14,5	86
6011	MK1	B12	12,065	12,065	62	18,5	89
6002	MK2	B10	10,095	17,780	75	14,5	103
6012	MK2	B12	12,065	17,780	75	18,5	106
6022	MK2	B16	15,733	17,780	75	24	110
6032	MK2	B18	17,780	17,780	75	32	117
6013	MK3	B12	12,065	23,825	94	18,5	125
6023	MK3	B16	15,733	23,825	94	24	133
6033	MK3	B18	17,780	23,825	94	32	140
6043	MK3	B22	21,793	23,825	94	40,5	147
6053	MK3	B24	23,825	23,825	94	50,5	158
6024	MK4	B16	15,733	31,267	117,5	24	158
6034	MK4	B18	17,780	31,267	117,5	32	168
6044	MK4	B22	21,793	31,267	117,5	40,5	175
6054	MK4	B24	23,825	31,267	117,5	50,5	185



## MORS KAMALARI

DIN 317

TİP 7200



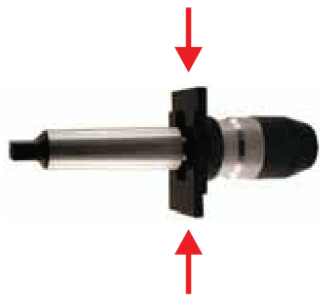
MORS KOVANLARININ VE MANDREN SAPLARININ BİRBİRLERİNDEN VEYA TEZGAHTAN KOLAYCA SÖKÜLMELERİNİ SAĞLAR

- SERTLİK: 35 ± 2HRc

SİP. NR.	ÝLGÝLÝ KONÝK	A (mm)	L (mm)	t (mm)
7202	MK1/MK2	20	140	5
7203	MK3	25	190	7
7204	MK4	30	225	10

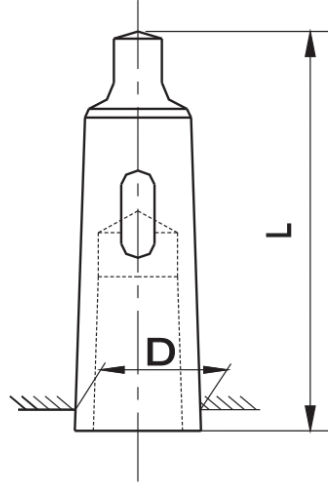
## MANDREN SÖKME KAMALARI

TİP 7500



- MANDREN İLE MANDREN SAPINI BİRBİRİNDEN AYIRMAK İÇİN KULLANILIRLAR.
- SERTLİK: 35 ± 2 HRC
- TAKIM OLARAK TESLİM EDİLİR.
- 1 TAKIM 2 ADETTİR.

SİP. NR.	ÝLGÝLÝ KONÝK	EN (mm)	BOY (mm)	KALINLIK (mm)
7512	B12	30	58	8
7516	B16	36	68	8
7518	B18	42	75	8
7522	B22	48	86	8



## ÖZELLİKLER

- MORS KONİK SAFTLI TAKIMLARIN TEZGAHLARA VEYA BİRBİRLERİNE EN AZ SALGI İLE BAĞLANMALARINI SAĞLAYAN ADAPTÖRDÜR.
- KOMPLE SERTLEŞTİRİLİP TAŞLANMIŞTIR.
- DIŞ VE İÇ KONİK ARASINDAKİ MAX. SALGI : 0,01 mm

SİP. NR.	DIŞ KONİK	İÇ KONİK	D (mm)	D1 (mm)	L (mm)
7121	MK2	MK1	17,780	12,065	92
7131	MK3	MK1	23,825	12,065	99
7132	MK3	MK2	23,825	17,780	112
7141	MK4	MK1	31,267	12,065	124
7142	MK4	MK2	31,267	17,780	124
7143	MK4	MK3	31,267	23,825	140
7151	MK5	MK1	44,399	12,065	156
7152	MK5	MK2	44,399	17,780	156
7153	MK5	MK3	44,399	23,825	156
7154	MK5	MK4	44,399	31,267	171
7165	MK6	MK5	63,348	44,399	218



## TORNA AYNALARI

DIN 6350 /A

### 3 AYAKLI TORNA AYNALARI DÖKÜM GÖVDELİ 3 ZG



### 4 AYAKLI TORNA AYNALARI DÖKÜM GÖVDELİ 4 ZG



SİP. NR.	AYNA ÇAPI (mm)
TM.080.3	80
TM.100.3	100
TM.125.3	125
TM.160.3	160
TM.200.3	200
TM.250.3	250
TM.315.3	315
TM.400.3	400

SİP. NR.	AYNA ÇAPI (mm)
TM.125.4	125
TM.160.4	160
TM.200.4	200
TM.250.4	250
TM.315.4	315
TM.400.4	400

#### STANDARTT AKSESUARLAR

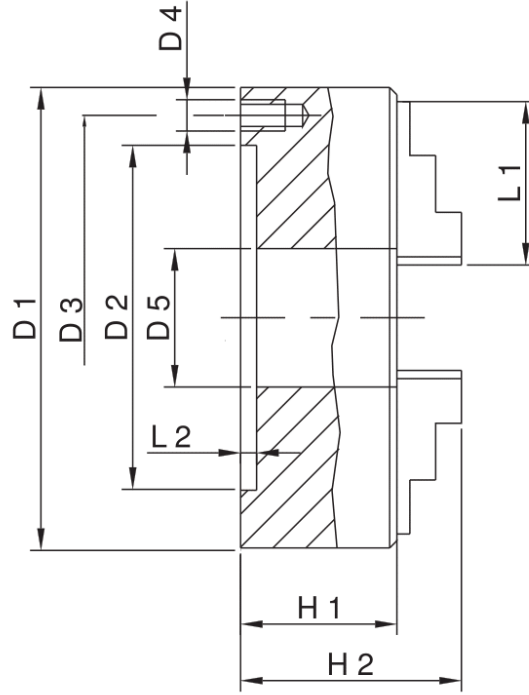
- 1) DÜZ AYAK - 1 TAKIM / 3 ADET
- 2) TERS AYAK - 1 TAKIM / 3 ADET
- 3) ANAHTAR - 1 ADET
- 4) FLANŞ BAĞLAMA CİVATASI 3 ADET

#### STANDARTT AKSESUARLAR

- 1) DÜZ AYAK - 1 TAKIM / 4 ADET
- 2) TERS AYAK - 1 TAKIM / 4 ADET
- 3) ANAHTAR - 1 ADET
- 4) FLANŞ BAĞLAMA CİVATASI 3 ADET

\* 3 VE 4 AYAKLI, MERKEZİ SIKMALI TORNA AYNALARIMIZIN YEDEK PARÇALARINI FİRMAMIZDAN TEMİN EDEBİLİRSİNİZ.





#### ÖZELLİKLER

- KONSTRÜKSİYONU VE ÖLÇÜLERİ DIN 6350' YE UYGUNDUR.
- İŞ BAĞLAMA KAPASİTESİ, SALGI, YALPA, SERTLİK VE TORK GÜCÜ GİBİ TEKNİK DEĞERLER DIN 6386 SINIRLARI İÇİNDEDİR.
- KUVVET İLETMEYİ SAĞLAYAN, SİRİAL, PİNYON VE AYAKLAR SERTLEŞTİRİLİP TAŞLANMIŞTIR.
- ÜNİVERSAL TORNA TEZGAHLARINDA FENER MİLİNE FLANŞ İLE BAĞLANIR.
- AYRICA FREZE VE MATKAP TEZGAHLARI İLE TABLALARDA DA KULLANILIR.

AYNA ÇAPI D1 (mm)	D2 (mm)	D3 (mm)	D4 (mm)	D5 (mm)	H1 (mm)	H2 (mm)	L1 (mm)	L2 (mm)
80	56	67	M6	16	50	66	32	3
100	70	83	M8	22	55	74	43	3,5
125	95	108	M8	30	55	78	55	4
160	125	140	M8	42	65	93	70	4,5
200	160	176	M10	60	75	110	85	5
250	200	224	M12	80	80	122	106	5,5
315	260	286	M16	100	90	142	126	6
400	330	362	M16	130	100	171	139	7


**TORNA AYNALARI - TEKNİK BİLGİLER**

DIN 6386

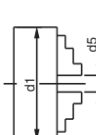
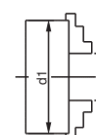
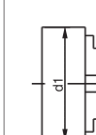
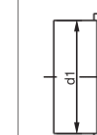
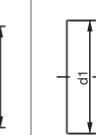
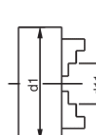
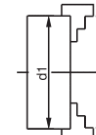
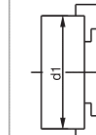
AYNA ÇAPI (mm)	DÖNME HIZI DEVİR/DAKİKA (max.)		SIKMA KUVVETİ** (min.) (daN) 1 daN=1 kgf	UYGULANACAK TORK GÜCÜ (max.) (kg-m)	SALGI (max.) (mm)	YALPA (max.) (mm)
	Çelik Gövde	Döküm Gövde				
80	7000	4000	1000	5,5	0,04	0,02
100	6000	3100	1700	7	0,04	0,02
125	4800	2750	2400	8	0,04	0,03
160	3800	2150	3100	10	0,04	0,03
200	3000	1700	3700	11	0,06	0,03
250	2400	1350	4600	12	0,06	0,03
315	1900	1050	5500	14	0,08	0,04
400	1500	850	6500	16	0,08	0,04

SALGI VE YALPA: BU DEĞERLER, DIN 6386 DA BELİRTİLEN TEKNİK ÖZELLİKLERDE ÜRETİLMİŞ OLAN MALAFA VE DİSKLERLE ÖLÇÜM YAPILARAK ELDE EDİLİR.

DÖNME HIZLARI : AYNAYA BAĞLANABİLECEK EN BÜYÜK ÖLÇÜDEKİ İŞ PARÇASINA GÖRE TESPİT EDİLMİŞTİR. DENGESİZ VE EKSANTRİK PARÇA BAĞLANMASI VE AYNANIN BAKIMSIZ OLMASI DURUMUNDA LİSTEDEKİ DEĞERLER GEÇERSİZ KALIR.

UYGULANACAK TORK VE SIKMA KUVVETİ : AYNANIN ANAHTARINA İLAVE PARÇA, BORU, V.S BAĞLANMADAN SADECE EL İLE SIKMA YAPILARAK LİSTEDEKİ DEĞERLERE ULAŞILMALIDIR.

**YİP BAĞLAMA KAPASİTELERİ**

d1 AYNA ÇAPI (mm)	DÜZ AYAK İLE					TERS AYAK İLE		
	 d5 min.	 d6 max.	 d7 min.	 d8 max.	 d9 max.	 d11 min.	 d12 max.	 d13 max.
80	2	22	25	70	86	23	63	86
100	3	32	30	88	115	32	80	115
125	3	40	37	122	148	38	110	148
160	4	56	50	158	196	55	145	195
200	5	86	64	198	255	65	200	255
250	6	110	79	248	312	90	250	312
315	10	140	94	312	386	100	315	386
400	16	206	118	390	480	120	400	480

**NOT: YUKARIDAKİ DEĞERLERİ APARAK ÇALIŞMAK CÜDDÜ TEHLİKELER YARATABİLİR..**



## TORNA AYNASI YEDEKLERİ

SİP. NR.	DÜZ AYAK 3 AYAKLI AYNALAR
803TA	
103TA	
123TA	
163TA	
203TA	
253TA	
313TA	
403TA	
	SERTLEŞTİRİLMİŞ TAŞLANMIŞTIR.

SİP. NR.	DÜZ AYAK 4 AYAKLI AYNALAR
124TA	
164TA	
204TA	
254TA	
314TA	
404TA	
	SERTLEŞTİRİLMİŞ TAŞLANMIŞTIR.

SİP. NR.	TERS AYAK 3 AYAKLI AYNALAR
803TB	
103TB	
123TB	
163TB	
203TB	
253TB	
313TB	
403TB	
	SERTLEŞTİRİLMİŞ TAŞLANMIŞTIR.

SİP. NR.	TERS AYAK 4 AYAKLI AYNALAR
124TB	
164TB	
204TB	
254TB	
314TB	
404TB	
	SERTLEŞTİRİLMİŞ TAŞLANMIŞTIR.

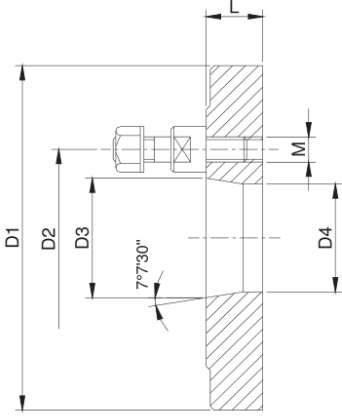
SİP. NR.	YUMUŞAK AYAK 3 AYAKLI AYNALAR
123TY	
163TY	
203TY	
253TY	
313TY	
403TY	

SİP. NR.	YUMUŞAK AYAK 4 AYAKLI AYNALAR
124TY	
164TY	
204TY	
254TY	
314TY	
404TY	

SİP. NR.	SPİRAL
80TS	
100TS	
125TS	
160TS	
200TS	
250TS	
315TS	
400TS	
	SERTLEŞTİRİLMİŞ TAŞLANMIŞTIR.

SİP. NR.	PİNYON
80TP	
100TP	
125TP	
160TP	
200TP	
250TP	
315TP	
400TP	
	SERTLEŞTİRİLMİŞ TAŞLANMIŞTIR.

SİP. NR.	ANAHTAR	YLGÜLY AYNA	AA (mm)	H (mm)	L (mm)
80K	<p>GÖVDESİ SERTLEŞTİRİLMİŞTİR.</p>	80	8	74	110
100K		100	8	74	110
125K		125	10	84	170
160K		160	12	104	180
200K		200	12	104	250
250K		250	12	104	250
315K		315	14	114	310
400K		400	15	134	375



- DÖKÜM GÖVDELİDİR.
- SAPLAMA VE SOMUNLARI İLE BİRLİKTE TESLİM EDİLİR.

- AYNALARIN TORNA TEZGAHLARINA BAĞLANABİLMESİ İÇİN ADAPTÖR GÖREVİ YAPARLAR
- BU BAĞLANTIDAN İYİ SONUÇ ALABİLMEK İÇİN TORNA AYNASI VE FLANŞLARIN KULLANIM TALİMATLARINA EKSİKSİZ OLARAK UYMANIZI ÖNERİRİZ.
- AYNA FLANŞLARININ HASSAS OLARAK İŞLENMİŞ OLAN TEZGAH TARAFI, MONTAJA HAZIR HALDEDİR. AYNANIN BAĞLANACAĞI TARAF İSE KABA OLARAK BIRAKILMIŞ OLUP MONTAJ ESNASINDA KULLANICI TARAFINDAN İŞLENECEKTİR.

SİP. NR.	D1 (mm)	NO	D2 (mm)	D3 (mm)	D4 (mm)	L (mm)	M (mm)	SAPLAMA ADEDİ
160.4.F	160	4	85	63,525	60,6	25	M10	3
160.5.F		5	104,8	82,563	79,4	25	M10	4
160.6.F		6	133,4	106,375	103	25	M12	4
200.5.F	200	5	104,8	82,563	79,4	25	M10	4
200.6.F		6	133,4	106,375	103	25	M12	4
200.8.F		8	171,4	139,719	136	25	M16	4
250.5.F	250	5	104,8	82,563	79,4	30	M10	4
250.6.F		6	133,4	106,375	103	30	M12	4
250.8.F		8	171,4	139,719	136	30	M16	4
315.6.F	315	6	133,4	106,375	103	35	M12	4
315.8.F		8	171,4	139,719	136	35	M16	4
315.11.F		11	235	196,869	192,5	35	M20	6
400.6.F	400	6	133,4	106,375	103	36	M12	4
400.8.F		8	171,4	139,719	136	36	M16	4
400.11.F		11	235	196,869	192,5	36	M20	6
500.8.F	500	8	171,4	139,719	136	40	M16	4
500.11.F		11	235	196,869	192,5	40	M20	6



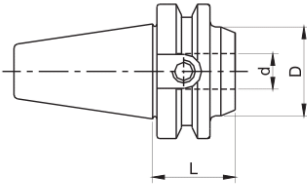


**DIN 6359  
DIN 1835-B  
DIN 6535-HB**

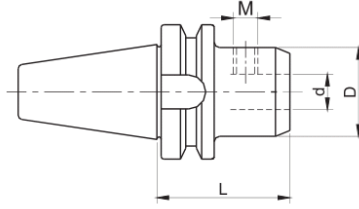


DIN 1835-B VELDON CİVATALARI  
İLE BİRLİKTE TESLİM EDİLİR.

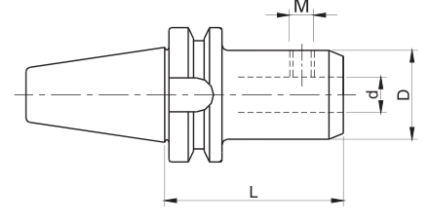
- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRC  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm



TİP 1 ( KISA BOY )



TİP 2 ( NORMAL BOY )



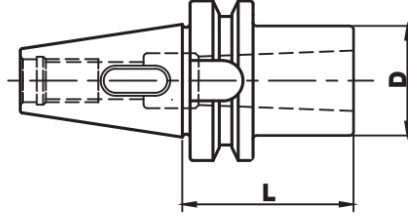
TİP 3 ( UZUN BOY )

SİP. NR.	KONİK	d (mm)	L (mm)	D (mm)	VELDON CİVATASI	CİVATA ADEDİ	TİP
BT40.18.V	BT40	18	63	50	M14x16	1	2
BT40.18.V-100	BT40	18	100	50	M14x16	1	3
BT40.20.V-35	BT40	20	35	50	M14x12	1	1
BT40.20.V	BT40	20	63	52	M16x16	1	2
BT40.20.V-100	BT40	20	100	52	M16x16	1	3
BT40.25.V-35	BT40	25	35	60	M14x12	1	1
BT40.25.V	BT40	25	90	65	M18x2x20	2	2
BT40.32.V	BT40	32	100	72	M20x2x20	2	2
BT40.40.V	BT40	40	120	80	M20x2x20	2	2
BT50.16.V	BT50	16	80	48	M14x16	1	2
BT50.18.V	BT50	18	80	50	M14x16	1	2
BT50.20.V	BT50	20	80	52	M16x16	1	2
BT50.20.V-160	BT50	20	160	52	M16x16	1	3
BT50.25.V	BT50	25	100	65	M18x2x20	2	2
BT50.25.V-160	BT50	25	160	65	M18x2x20	2	3
BT50.32.V	BT50	32	105	72	M20x2x20	2	2
BT50.32.V-160	BT50	32	160	72	M20x2x20	2	3
BT50.40.V	BT50	40	110	80	M20x2x20	2	2
BT50.40.V-160	BT50	40	160	80	M20x2x20	2	3



BT KAMALI MORS ADAPTÖRÜ

MAS 403- BT/JIS B 6339



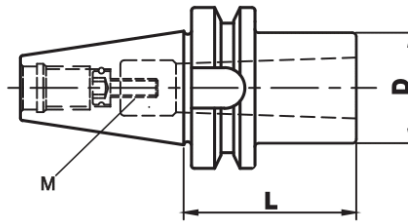
**DIN 6383**

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc (Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

SİP. NR.	KONÏK	ÏÇ KONÏK	D (mm)	L (mm)
BT40.K.MK1	BT40	MK1	25	50
BT40.K.MK2	BT40	MK2	32	50
BT40.K.MK3	BT40	MK3	40	70
BT40.K.MK4	BT40	MK4	48	95
BT50.K.MK3	BT50	MK3	40	65
BT50.K.MK4	BT50	MK4	48	95
BT50.K.MK5	BT50	MK5	63	105

BT ÇEKTİRME CİVATALI MORS ADAPTÖRÜ

MAS 403-BT/JIS B 6339



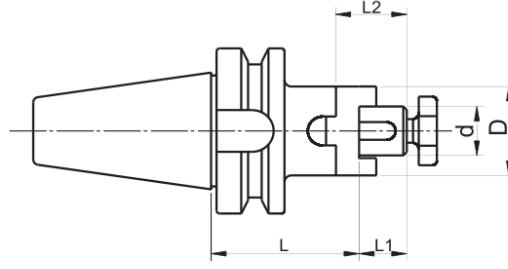
**DIN 6364**

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc (Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

SİP. NR.	KONÏK	ÏÇ KONÏK	D (mm)	L (mm)	M (mm)
BT40.C.MK1	BT40	MK1	25	50	M6
BT40.C.MK2	BT40	MK2	32	50	M10
BT40.C.MK3	BT40	MK3	40	70	M12
BT40.C.MK4	BT40	MK4	63	95	M16



ALIN ÇİVATASI, TIRNAKLI PUL VE  
KAMA İLE BİRLİKTE TESLİM EDİLİR.



## DIN 6358

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

### • İÇTEN SU VERME SİSTEMİ OPSİYONELDİR. (SİPARİŞ ÜZERİNE ÜRETİLİR)

SİP. NR.	KONİK	d (mm)	D (mm)	L (mm)	L1 (mm)	L2 (mm)
BT30.16.K	BT30	16	32	45	17	27
BT30.22.K	BT30	22	40	47	19	31
BT30.22.K-100	BT30	22	40	100	19	31
BT30.27.K	BT30	27	48	49	21	33
BT40.16.K	BT40	16	32	55	17	27
BT40.16.K-100	BT40	16	32	100	17	27
BT40.16.K-160	BT40	16	32	160	17	27
BT40.22.K	BT40	22	40	55	19	31
BT40.22.K-100	BT40	22	40	100	19	31
BT40.22.K-160	BT40	22	40	160	19	31
BT40.27.K	BT40	27	48	55	21	33
BT40.27.K-100	BT40	27	48	100	21	33
BT40.27.K-160	BT40	27	48	160	21	33
BT40.32.K	BT40	32	58	60	24	38
BT40.32.K-100	BT40	32	58	100	24	38
BT40.32.K-160	BT40	32	58	160	24	38
BT40.40.K	BT40	40	70	60	27	41
BT40.40.K-100	BT40	40	70	100	27	41
BT40.40.K-160	BT40	40	70	160	27	41
BT50.16.K	BT50	16	32	70	17	27
BT50.16.K-100	BT50	16	32	100	17	27
BT50.16.K-160	BT50	16	32	160	17	27
BT50.22.K	BT50	22	40	70	19	31
BT50.22.K-100	BT50	22	40	100	19	31
BT50.22.K-160	BT50	22	40	160	19	31
BT50.27.K	BT50	27	48	70	21	33
BT50.27.K-100	BT50	27	48	100	21	33
BT50.27.K-160	BT50	27	48	160	21	33
BT50.32.K	BT50	32	58	70	24	38
BT50.32.K-100	BT50	32	58	100	24	38
BT50.32.K-160	BT50	32	58	160	24	38
BT50.40.K	BT50	40	70	70	27	41
BT50.40.K-100	BT50	40	70	100	27	41
BT50.40.K-160	BT50	40	70	160	27	41
BT50.50.K	BT50	50	85	75	30	46
BT50.60.K	BT50	60	98	75	50	66

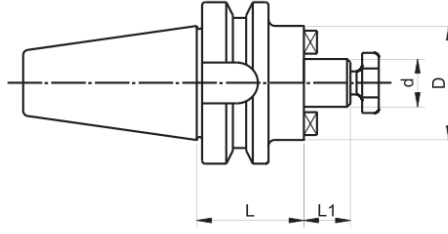


BT TARAMA MALAFALARI - ALIN KAMALI

MAS 403 - BT / JIS B 6339



ALIN CİVATASI İLE BİRLİKTE  
TESLİM EDİLİR.



ISO 3937

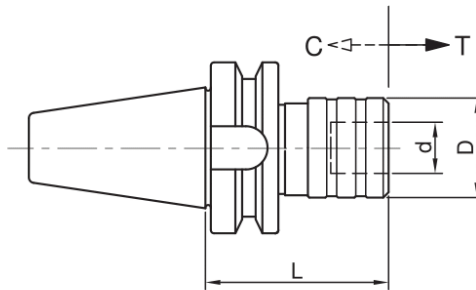
- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

• İÇTEN SU VERME SİSTEMİ OPSİYONELDİR. (SİPARİŞ ÜZERİNE ÜRETİLİR)

SİP. NR.	KONİK	d (mm)	D (mm)	L (mm)	L1 (mm)
BT40.16.T	BT40	16	40	40	17
BT40.22.T	BT40	22	50	40	19
BT40.27.T	BT40	27	60	40	21
BT40.32.T	BT40	32	78	50	24
BT40.40.T	BT40	40	88	55	27
BT50.16.T	BT50	16	40	55	17
BT50.22.T	BT50	22	50	55	19
BT50.27.T	BT50	27	60	55	21
BT50.32.T	BT50	32	78	55	24
BT50.40.T	BT50	40	88	55	27
BT50.50.T	BT50	50	118	60	30

BT KILAVUZ ÇEKME BAŞLIĞI - GİRİŞ VE ÇIKIŞ KOMPANZELİ

MAS 403 - BT / JIS B 6339



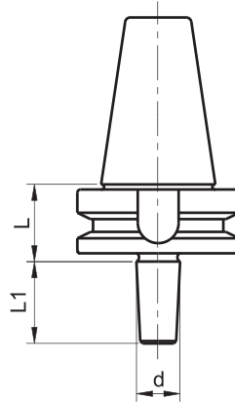
- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3

SİP. NR.	KONİK	KAPASİTE	d (mm)	D (mm)	L (mm)	C-T (mm)
BT40.KCB.1	BT40	M3-M12	19	36,5	67	7,5-7,5
BT40.KCB.2	BT40	M8-M20	31	54	94	12,5-12,5
BT40.KCB.3	BT40	M14-M33	48	78	145	20-20
BT50.KCB.1	BT50	M3-M12	19	36,5	77	7,5-7,5
BT50.KCB.2	BT50	M8-M20	31	54	102	12,5-12,5
BT50.KCB.3	BT50	M14-M33	48	78	145	20-20



## BT MANDREN MALAFALARI

MAS403-BT / JIS B 6339



### DIN 238

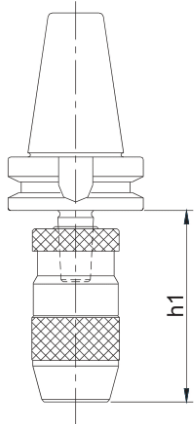
- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 Hrc  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

SİP. NR.	KONÛK	MANDREN KONÛĐÛ	d (mm)	L (mm)	L1 (mm)
BT40.B16	BT40	B16	15,733	32	24
BT40.B18	BT40	B18	17,780	32	32

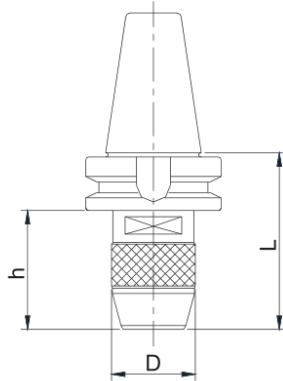
## BT MANDRENLİ BAŞLIKLAR

MAS403-BT / JIS B 6339

### MANDREN MALAFASI İLE BAĞLAMA



### MANDRENLİ BAŞLIK



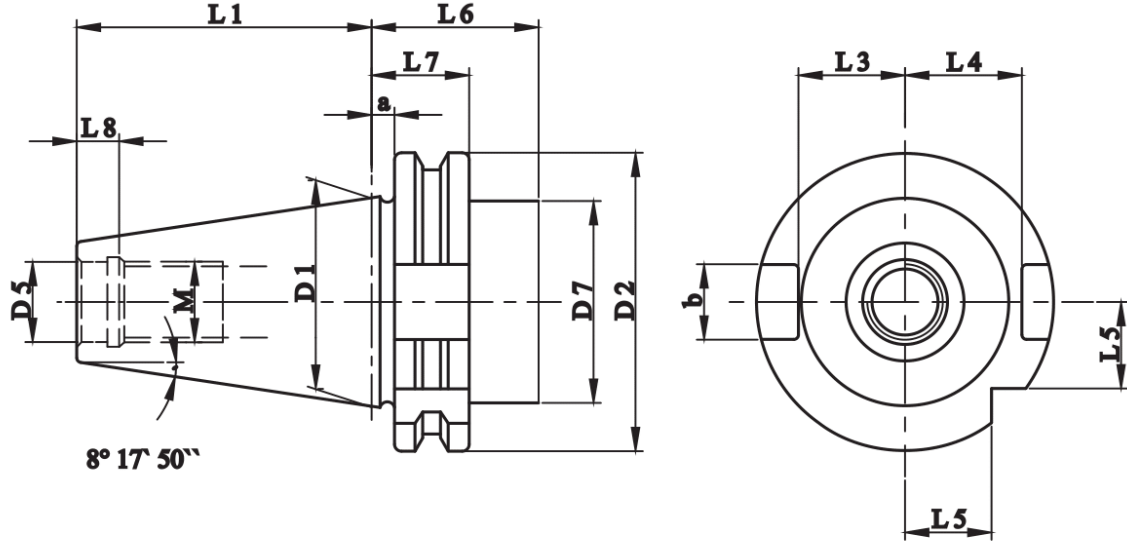
ELLE VE ANAHTARLA SIKILIP ÇÖZÜLEBİLİR

- SALGI: MAX. 0,06 mm



MANDRENLİ BAŞLIK İLE  
DAHA KISA h MESAFESİ SAĞLANIR.

SİP. NR.	KONÛK	KAPASİTE (mm)	D (mm)	L (mm)	h (mm)
BT40.1-13	BT40	1-13	42	85	58
BT40.1-16	BT40	1-16	49	100	73



SK	D1	D2 0 -0,1	D5 H7	M 6H	a ±0,1	b +0,2 0	L1 0 -0,3	L3 0 -0,3	L4 0 -0,3	L5 0 -0,3	L6 min.	L7 0 -0,1	L8 max.	D7 max.
30	31,75	50	13	M12	3,2	16,1	47,8	16,3	18,8	15	35	19,1	6	45
40	44,45	63,55	17	M16	3,2	16,1	68,4	22,7	25	18,5	35	19,1	8,7	50
50	69,85	97,50	25	M24	3,2	25,7	101,75	35,5	37,7	30	35	19,1	12	80

- MALZEME: ALAŞIMLI SEMENTE ÇELİĞİ- min. 900 N/mm<sup>2</sup>
- SERTLİK 56-60 HRC/ SERTLİK DERİNLİĞİ 0,6-0,9 mm
- AÇI HASSASİYETİ: DIN 7178-1 / AT3  
DIN 2080-1 / AT3



## SK PENS TAKIMLARI

DIN 69871

### OZ TİP



## DIN 6388-B ISO 10897

TAKIM KUTUSU İÇİNDEKİLER :

- 1- SK / OZ PENS BAŞLIĞI ( 1 ADET )
- 2- OZ PENS KAPAĞI ( 1 ADET )
- 3- OZ ANAHTAR ( 1 ADET )
- 4- OZ PENSLER ( 16 ADET)
- 5- SK ÇEKTİRME CİVATASI ( 1 ADET )

SİP. NR.	KAPASİTE (mm)	KUTU İÇİNDEKİ PENSLERİN ÇAP ÖLÇÜLERİ (mm)
SK40.462E.T	4-25	4-5-6-7-8-9-10-11-12-14-16-18-20-22-24-25
SK40.467E.T	5-32	5-6-7-8-10-12-14-16-18-20-22-24-25-28-30-32
SK50.467E.T	5-32	5-6-7-8-10-12-14-16-18-20-22-24-25-28-30-32

## SK PENS TAKIMLARI

DIN 69871

### ER TİP



## DIN 6499-B ISO 15488

TAKIM KUTUSU İÇİNDEKİLER :

- 1- SK / ER PENS BAŞLIĞI ( 1 ADET )
- 2- ER PENS KAPAĞI ( 1 ADET )
- 3- ER ANAHTAR ( 1 ADET )
- 4- ER PENSLER ( 16 ADET)  
( SK40.ER25.T TİPİNDE 12 ADETTİR.)
- 5- SK ÇEKTİRME CİVATASI

SİP. NR.	KAPASİTE (mm)	KUTU İÇİNDEKİ PENSLERİN ÇAP ÖLÇÜLERİ (mm)
SK30.ER25.T	2-16	3-2/4-3/5-4/6-5/7-6/8-7/9-8/10-9/11-10/12-11/14-13/16-15
SK30.ER32.T	3-20	3-2/4-3/5-4/6-5/7-6/8-7/9-8/10-9/11-10/12-11/13-12/14-13/15-14/16-15/18-17/20-19
SK40.ER25.T	2-16	3-2/4-3/5-4/6-5/7-6/8-7/9-8/10-9/11-10/12-11/14-13/16-15
SK40.ER32.T	3-20	3-2/4-3/5-4/6-5/7-6/8-7/9-8/10-9/11-10/12-11/13-12/14-13/15-14/16-15/18-17/20-19
SK40.ER40.T	4-26	4-3/5-4/6-5/7-6/8-7/9-8/10-9/12-11/14-13/16-15/18-17/20-19/22-21/24-23/25-24/26-25
SK50.ER40.T	4-26	4-3/5-4/6-5/7-6/8-7/9-8/10-9/12-11/14-13/16-15/18-17/20-19/22-21/24-23/25-24/26-25



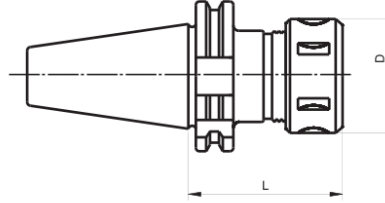
## SK PENS BAŞLIKLARI

DIN 69871

### OZ TİP



KAPAK İLE BİRLİKTE TESLİM EDİLİR.



### DIN 6388 ISO 10897

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc (Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

SİP. NR.	KONÛK	KAPASİTE (mm)	D (mm)	L (mm)
SK40.462E	SK40	3-25	60	70
SK40.462E-100	SK40	3-25	60	100
SK40.467E	SK40	3-32	72	90

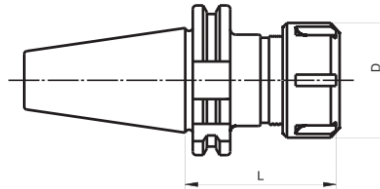
## SK PENS BAŞLIKLARI

DIN 69871

### ER TİP



KAPAK İLE BİRLİKTE TESLİM EDİLİR.



### DIN 6499 ISO 15488

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc (Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

SİP. NR.	KONÛK	KAPASİTE (mm)	D (mm)	L (mm)
SK30.ER11-100	SK30	1-7	19	100
SK30.ER16	SK30	1-10	28	60
SK30.ER16-100	SK30	1-10	28	100
SK30.ER25	SK30	1-16	42	60
SK30.ER32	SK30	2-20	50	63
SK30.ER32-OM*	SK30	2-20	50	60
SK40.ER11-100	SK40	1-7	19	100
SK40.ER11-160	SK40	1-7	19	160
SK40.ER16	SK40	1-10	28	60
SK40.ER16-100	SK40	1-10	28	100
SK40.ER16-160	SK40	1-10	28	160
SK40.ER25	SK40	1-16	42	60
SK40.ER25-100	SK40	1-16	42	100
SK40.ER25-160	SK40	1-16	42	160
SK40.ER32	SK40	2-20	50	70
SK40.ER32-OM*	SK40	2-20	50	70
SK40.ER32-100	SK40	2-20	50	100
SK40.ER32-160	SK40	2-20	50	160
SK40.ER40	SK40	2-26	63	80
SK40.ER40-100	SK40	2-26	63	100
SK40.ER40-160	SK40	2-26	63	160

\* OM TIPLERİ AHSAP İŞLEYEN MARANGOZ CNC TEZGAHLARI İÇİNDİR



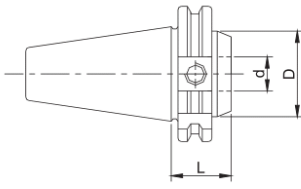




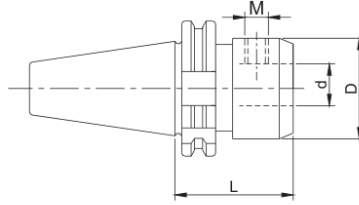
DIN 1835-B VELDON ÇİVATALARI  
İLE BİRLİKTE TESLİM EDİLİR.

**DIN 6359**  
**DIN 1835-B**  
**DIN 6535-HB**

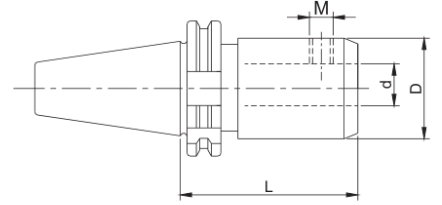
- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm



TİP 1 ( KISA BOY )



TİP 2 ( NORMAL BOY )



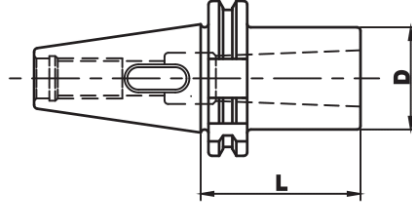
TİP 3 ( UZUN BOY )

SİP. NR.	KONİK	d (mm)	L (mm)	D (mm)	VELDON ÇİVATASI	ÇİVATA ADEDİ	TİP
SK40.06.V	SK40	6	50	25	M6x10	1	2
SK40.06.V-100	SK40	6	100	25	M6x10	1	3
SK40.08.V	SK40	8	50	28	M8x10	1	2
SK40.08.V-100	SK40	8	100	28	M8x10	1	3
SK40.10.V	SK40	10	50	35	M10x12	1	2
SK40.10.V-100	SK40	10	100	35	M10x12	1	3
SK40.12.V	SK40	12	50	42	M12x16	1	2
SK40.12.V-100	SK40	12	100	42	M12x16	1	3
SK40.14.V	SK40	14	50	44	M12x16	1	2
SK40.14.V-100	SK40	14	100	44	M12x16	1	3
SK40.16.V-35	SK40	16	35	45	M14x16	1	1
SK40.16.V	SK40	16	63	48	M14x16	1	2
SK40.16.V-100	SK40	16	100	48	M14x16	1	3
SK40.18.V	SK40	18	63	50	M14x16	1	2
SK40.18.V-100	SK40	18	100	50	M14x16	1	3
SK40.20.V-35	SK40	20	35	45	M14x12	1	1
SK40.20.V	SK40	20	63	52	M16x16	1	2
SK40.20.V-100	SK40	20	100	52	M16x16	1	3
SK40.25.V-35	SK40	25	35	50	M14x12	1	1
SK40.25.V	SK40	25	100	65	M18x2x20	2	2
SK40.32.V	SK40	32	100	72	M20x2x20	2	2
SK40.40.V	SK40	40	120	80	M20x2x20	2	2



## SK KAMALI MORS ADAPTÖRÜ

DIN 69871



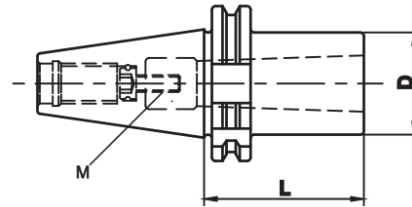
### DIN 6383

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc (Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

SİP. NR.	KONÛK	ÛÇ KONÛK	D (mm)	L (mm)
SK40.K.MK1	SK40	MK1	25	50
SK40.K.MK2	SK40	MK2	32	50
SK40.K.MK3	SK40	MK3	40	70
SK40.K.MK4	SK40	MK4	48	95
SK50.K.MK3	SK50	MK3	40	65
SK50.K.MK4	SK50	MK4	48	95
SK50.K.MK5	SK50	MK5	63	105

## SK ÇEKTİRME CİVATALI MORS ADAPTÖRÜ

DIN 69871



### DIN 6364

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc (Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

SİP. NR.	KONÛK	ÛÇ KONÛK	L (mm)	D (mm)	M (mm)
SK40.C.MK1	SK40	MK1	50	25	M6
SK40.C.MK2	SK40	MK2	50	32	M10
SK40.C.MK3	SK40	MK3	70	40	M12
SK40.C.MK4	SK40	MK4	95	63	M16

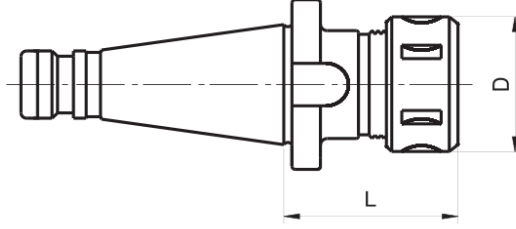


## ISO PENS BAŞLIKLARI

DIN 2080

### OZ TİP

ISO 2583



KAPAK İLE BİRLİKTE TESLİM EDİLİR.

## DIN 6388 ISO 10897

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc (Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

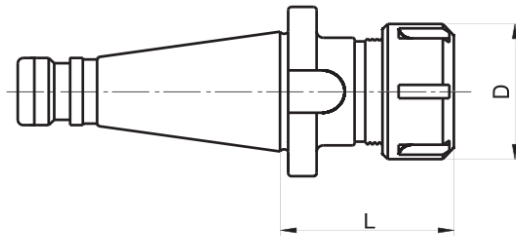
SİP. NR.	KONÛK	KAPASİTE (mm)	L (mm)	D (mm)
ISO30.462E	ISO 30	3-25	75	60
ISO40.462E	ISO 40	3-25	65	60
ISO40.462E-100	ISO 40	3-25	100	60
ISO40.462E-125	ISO 40	3-25	125	60
ISO40.462E-150	ISO 40	3-25	150	60
ISO40.467E	ISO 40	3-32	95	72
ISO50.462E	ISO 50	3-25	70	60
ISO50.467E	ISO 50	3-32	70	72

## ISO PENS BAŞLIKLARI

DIN 2080

### ER TİP

ISO 2583



KAPAK İLE BİRLİKTE TESLİM EDİLİR.

## DIN 6499 ISO 15488

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc (Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

SİP. NR.	KONÛK	KAPASİTE (mm)	L (mm)	D (mm)
ISO30.ER32	ISO 30	2-20	50	50
ISO40.ER32	ISO 40	2-20	50	50
ISO40.ER32-100	ISO 40	2-20	100	50
ISO40.ER40	ISO 40	2-26	60	63
ISO40.ER40-100	ISO 40	2-26	100	63
ISO50.ER40	ISO 50	2-26	60	63
ISO50.ER40-100	ISO 50	2-26	100	63



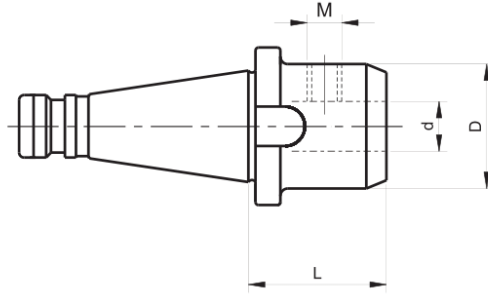
ISO VELDON TUTUCULAR

DIN 2080

ISO 2583



DIN 1835-B VELDON CİVATALARI İLE  
BİRLİKTE TESLİM EDİLİR.



**DIN 6359**  
**DIN 1835-B**

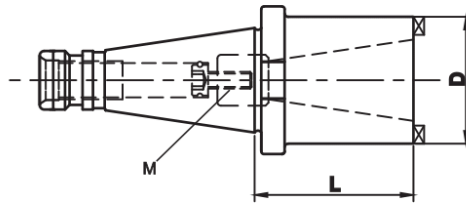
- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

SİP. NR.	KONİK	d (mm)	L (mm)	D (mm)	VELDON CİVATASI	CİVATA ADEĐY
ISO40.06.V	ISO 40	6	50	25	M6x10	1
ISO40.08.V	ISO 40	8	50	28	M8x10	1
ISO40.10.V	ISO 40	10	50	35	M10x12	1
ISO40.12.V	ISO 40	12	50	42	M12x16	1
ISO40.14.V	ISO 40	14	50	44	M12x16	1
ISO40.16.V	ISO 40	16	63	48	M14x16	1
ISO40.18.V	ISO 40	18	63	50	M14x16	1
ISO40.20.V	ISO 40	20	63	52	M16x16	1
ISO40.25.V	ISO 40	25	80	64	M18x2x20	2
ISO40.32.V	ISO 40	32	80	72	M20x2x20	2
ISO40.40.V	ISO 40	40	90	80	M20x2x20	2
ISO50.20.V	ISO 50	20	63	52	M16x16	1
ISO50.25.V	ISO 50	25	80	64	M18x2x20	2
ISO50.32.V	ISO 50	32	80	72	M20x2x20	2
ISO50.40.V	ISO 50	40	90	80	M20x2x20	2

ISO REDÜKSİYON - ÇEKİTİRME CİVATALI

DIN 2080

ISO 2583



- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

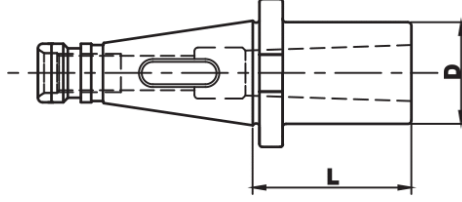
SİP. NR.	KONİK	YÇ KONİK	L (mm)	D (mm)	M (mm)
ISO40.30	ISO 40	ISO 30	50	50	M12
ISO40.40	ISO 40	ISO 40	100	63	M16
ISO50.40	ISO 50	ISO 40	50	70	M16



ISO KAMALI MORS ADAPTÖRÜ

DIN 2080

ISO 2583



**DIN 6383**

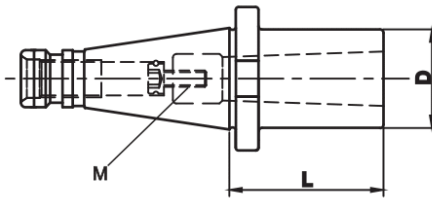
- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

SİP. NR.	KONİK	İÇ KONİK	D (mm)	L (mm)
ISO40.K.MK1	ISO 40	MK1	25	50
ISO40.K.MK2	ISO 40	MK2	32	50
ISO40.K.MK3	ISO 40	MK3	40	65
ISO40.K.MK4	ISO 40	MK4	48	95
ISO50.K.MK3	ISO 50	MK3	40	65
ISO50.K.MK4	ISO 50	MK4	48	70
ISO50.K.MK5	ISO 50	MK5	63	105

ISO ÇEKTİRME CİVATALI MORS ADAPTÖRÜ

DIN 2080

ISO 2583



**DIN 6364**

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

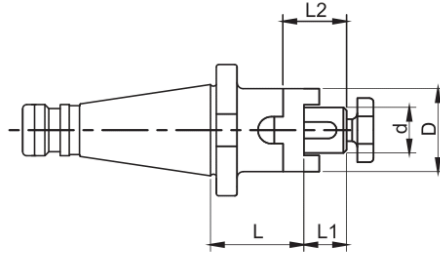
SİP. NR.	KONİK	İÇ KONİK	D (mm)	L (mm)	M (mm)
ISO40.C.MK1	ISO 40	MK1	25	50	M6
ISO40.C.MK2	ISO 40	MK2	32	50	M10
ISO40.C.MK3	ISO 40	MK3	40	65	M12
ISO40.C.MK4	ISO 40	MK4	63	95	M16



## ISO KOMBİNE MALAFALAR

DIN 2080

ISO 2583



ALIN CİVATASI, TIRNAKLI PUL VE  
KAMA İLE BİRLİKTE TESLİM EDİLİR.

### DIN 6358

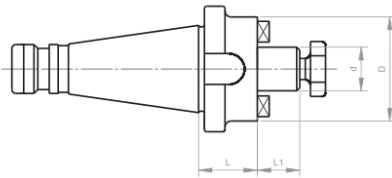
- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

SİP. NR.	KONİK	d (mm)	D (mm)	L (mm)	L1 (mm)	L2 (mm)
ISO40.16.K	ISO 40	16	32	52	17	27
ISO40.22.K	ISO 40	22	40	52	19	31
ISO40.27.K	ISO 40	27	48	52	21	33
ISO40.32.K	ISO 40	32	58	52	24	38
ISO40.40.K	ISO 40	40	70	52	27	41
ISO50.16.K	ISO 50	16	32	55	17	27
ISO50.22.K	ISO 50	22	40	55	19	31
ISO50.27.K	ISO 50	27	48	55	21	33
ISO50.32.K	ISO 50	32	58	55	24	38
ISO50.40.K	ISO 50	40	70	55	27	41
ISO50.50.K	ISO 50	50	85	55	30	46
ISO50.60.K	ISO 50	60	97	55	50	66

## ISO TARAMA MALAFALARI-ALIN KAMALI

DIN 2080

ISO 2583



ALIN CİVATASI İLE BİRLİKTE TESLİM EDİLİR.

### ISO 3937

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

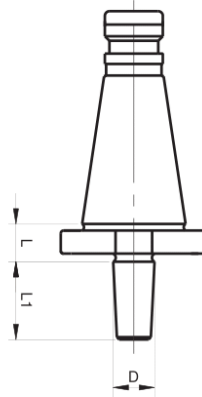
SİP. NR.	KONİK	d (mm)	D (mm)	L (mm)	L1 (mm)
ISO40.16.T	ISO 40	16	40	28	17
ISO40.22.T	ISO 40	22	50	28	19
ISO40.27.T	ISO 40	27	60	26	21
ISO40.32.T	ISO 40	32	78	26	24
ISO40.40.T	ISO 40	40	88	35	27
ISO50.22.T	ISO 50	22	50	36	19
ISO50.27.T	ISO 50	27	60	36	21
ISO50.32.T	ISO 50	32	78	36	24
ISO50.40.T	ISO 50	40	88	36	27
ISO50.50.T	ISO 50	50	118	40	30



ISO MANDREN MALAFALARI

DIN 2080

ISO 2583



**DIN 238**

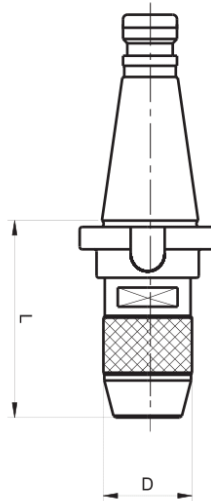
- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc (Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

SİP. NR.	KONİK	MANDREN KONİİ	D (mm)	L (mm)	L1 (mm)
ISO40.B16	ISO 40	B16	15,733	17	24
ISO40.B18	ISO 40	B18	17,780	17	32

ISO MANDRENLI BAŞLIKLAR

DIN 2080

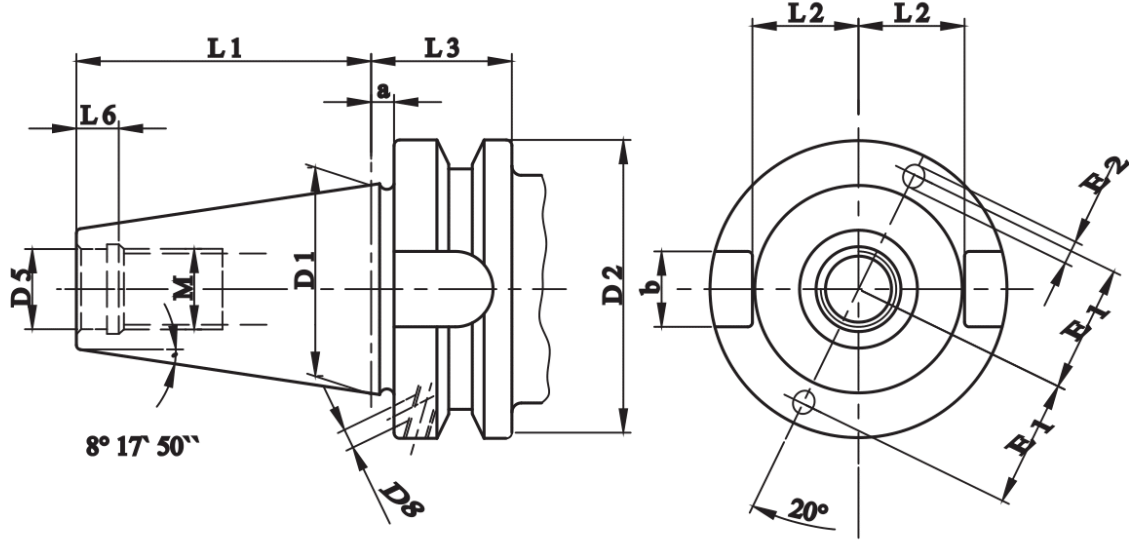
ISO 2583



ELLE VE ANAHTARLA  
SIKILIP ÇÖZÜLEBİLİR.

- SALGI: MAX. 0,06 mm

SİP. NR.	KONİK	SIKMA KAPASİTESİ (mm)	D (mm)	L (mm)
ISO40.1-13	ISO 40	1-13	42	80
ISO40.1-16	ISO 40	1-16	49	100



BT	D1	D2 h8	D5 H8	D8 Max.	E1	E2 Max.	M 6H	a ±0,4	b +0,2 0	L1 ±0,2	L2 0 -0,3	L3 Min.	L6 Max.
30	31,75	46	12,5	2	20	2,5	M12	2	16,1	48,4	16,3	22	7,5
40	44,45	63	17	4	27	5	M16	2	16,1	65,4	22,6	27	9,5
50	69,85	100	25	6	42	7,4	M24	3	25,7	101,8	35,3	38	13,5

- MALZEME : ALAŞIMLI SEMENTE ÇELİĞİ - min. 900 N/mm<sup>2</sup>
- SERTLİK : 56-60 HRC / SERTLİK DERİNLİĞİ 0,6-0,9 mm
- AÇI HASSASİYETİ : DIN 7178-1 / AT3  
DIN 2080-1 / AT3
- SU DELİKLERİ: AD / B





OZ TİP



**DIN 6388-B**  
**ISO 10897**

TAKIM KUTUSU İÇİNDEKİLER :

- 1- BT / OZ PENS BAŞLIĞI ( 1 ADET )
- 2- OZ PENS KAPAĞI ( 1 ADET )
- 3- OZ ANAHTAR ( 1 ADET )
- 4- OZ PENSLER ( 16 ADET)
- 5- BT ÇEKTİRME CİVATASI ( 1 ADET )

SİP. NR.	KAPASİTE (mm)	KUTU İÇİNDEKİ PENSLERİN ÇAP ÖLÇÜLERİ (mm)
BT40.462E.T	4-25	4-5-6-7-8-9-10-11-12-14-16-18-20-22-24-25
BT40.467E.T	5-32	5-6-7-8-10-12-14-16-18-20-22-24-25-28-30-32
BT50.467E.T	5-32	5-6-7-8-10-12-14-16-18-20-22-24-25-28-30-32

ER TİP



**DIN 6499-B**  
**ISO 15488**

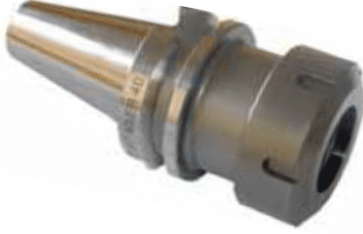
TAKIM KUTUSU İÇİNDEKİLER :

- 1- BT / ER PENS BAŞLIĞI ( 1 ADET )
- 2- ER PENS KAPAĞI ( 1 ADET )
- 3- ER ANAHTAR ( 1 ADET )
- 4- ER PENSLER ( 16 ADET)  
( ER25 TİPLERDE 12 ADETTİR. )
- 5-BT ÇEKTİRME CİVATASI ( 1 ADET )

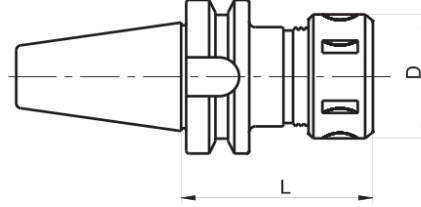
SİP. NR.	KAPASİTE (mm)	KUTU İÇİNDEKİ PENSLERİN ÇAP ÖLÇÜLERİ (mm)
BT30.ER25.T	2-16	3-2/4-3/5-4/6-5/7-6/8-7/9-8/10-9/11-10/12-11/14-13/16-15
BT30.ER32.T	3-20	3-2/4-3/5-4/6-5/7-6/8-7/9-8/10-9/11-10/12-11/13-12/14-13/15-14/16-15/18-17/20-19
BT40.ER25.T	2-16	3-2/4-3/5-4/6-5/7-6/8-7/9-8/10-9/11-10/12-11/14-13/16-15
BT40.ER32.T	3-20	3-2/4-3/5-4/6-5/7-6/8-7/9-8/10-9/11-10/12-11/13-12/14-13/15-14/16-15/18-17/20-19
BT40.ER40.T	4-26	4-3/5-4/6-5/7-6/8-7/9-8/10-9/12-11/14-13/16-15/18-17/20-19/22-21/24-23/25-24/26-25
BT50.ER40.T	4-26	4-3/5-4/6-5/7-6/8-7/9-8/10-9/12-11/14-13/16-15/18-17/20-19/22-21/24-23/25-24/26-25



ER TİP



KAPAK İLE BİRLİKTE TESLİM EDİLİR.



**DIN 6499**  
**ISO 15488**

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

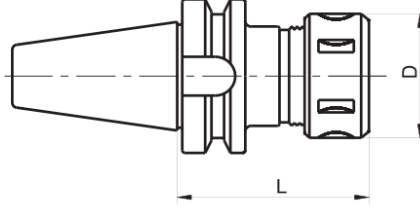
SİP. NR.	KONİK	KAPASİTE (mm)	L (mm)	D (mm)
BT30.ER11-100	BT30	1-7	100	19
BT30.ER16	BT30	1-10	60	28 [32]
BT30.ER16-100	BT30	1-10	100	28 [32]
BT30.ER25	BT30	1-16	60	42
BT30.ER25-100	BT30	1-16	100	42
BT30.ER32	BT30	2-20	60	50
BT30.ER32-100	BT30	2-20	100	50
BT30.ER32-OM*	BT30	2-20	60	50
BT30.ER40	BT30	2-26	70	63
BT30.ER40-100	BT30	2-26	100	63
BT40.ER11-100	BT40	1-7	100	19
BT40.ER11-160	BT40	1-7	160	19
BT40.ER16	BT40	1-10	60	28 [32]
BT40.ER16-100	BT40	1-10	100	28 [32]
BT40.ER16-160	BT40	1-10	160	28 [32]
BT40.ER25	BT40	1-16	60	42
BT40.ER25-100	BT40	1-16	100	42
BT40.ER25-160	BT40	1-16	160	42
BT40.ER32	BT40	2-20	60	50
BT40.ER32-100	BT40	2-20	100	50
BT40.ER32-160	BT40	2-20	160	50
BT40.ER40	BT40	2-26	80	63
BT40.ER40-100	BT40	2-26	100	63
BT40.ER40-160	BT40	2-26	160	63
BT50.ER32	BT50	2-20	70	50
BT50.ER32-100	BT50	2-20	100	50
BT50.ER32-160	BT50	2-20	160	50
BT50.ER40	BT50	2-26	80	63
BT50.ER40-100	BT50	2-26	100	63
BT50.ER40-160	BT50	2-26	160	63

\* OM TİPLERİ AHAŞAP İŞLEYEN MARANGOZ CNC TEZGAHLARI İÇİNDİR.





OZ TİP

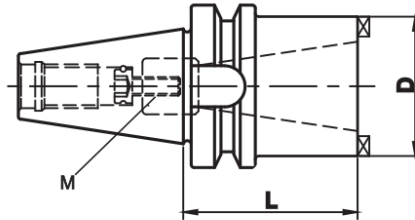


**DIN 6388**  
**ISO 10897**

- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc (Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

KAPAK İLE BİRLİKTE TESLİM EDİLİR.

SİP. NR.	KONİK	KAPASİTE (mm)	L (mm)	D (mm)
BT40.462E	BT40	3-25	70	60
BT40.462E-100	BT40	3-25	100	60
BT40.467E	BT40	3-32	90	72
BT50.462E	BT50	3-25	90	60
BT50.467E	BT50	3-32	90	72



- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRc (Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm

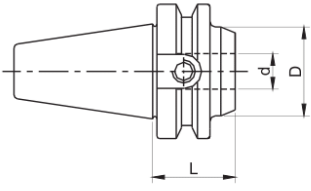
SİP. NR.	KONİK	YÇ KONİK	L (mm)	D (mm)	M (mm)
BT40.ISO30	BT40	ISO 30	60	50	M12
BT40.ISO40	BT40	ISO 40	100	63	M16
BT50.ISO40	BT50	ISO 40	70	70	M16



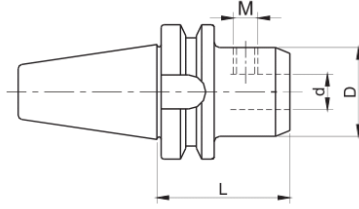
DIN 1835-B VELDON ÇİVATALARI  
İLE BİRLİKTE TESLİM EDİLİR.

**DIN 6359**  
**DIN 1835-B**  
**DIN 6535-HB**

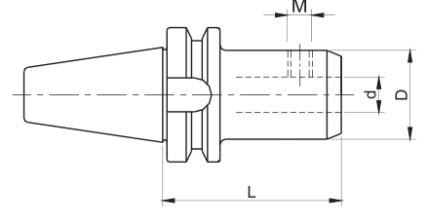
- MALZEME: 20 Mn Cr5
- SERTLİK: 58 ± 2 HRC  
(Derinlik 0,6-0,9 mm)
- AÇI: DIN 7178-1/AT3  
DIN 2080-1/AT3
- SALGI: MAX. 0,006 mm



TİP 1 ( KISA BOY )



TİP 2 ( NORMAL BOY )



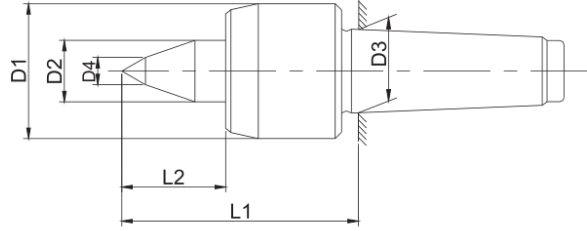
TİP 3 ( UZUN BOY )

SİP. NR.	KONİK	d (mm)	L (mm)	D (mm)	VELDON ÇİVATASI	ÇİVATA ADEDİ	TİP
BT30.12.V	BT30	12	50	42	M12x16	1	2
BT30.14.V	BT30	14	50	44	M12x16	1	2
BT30.16.V	BT30	16	63	48	M14x16	1	2
BT30.16.V-100	BT30	16	100	48	M14x16	1	3
BT30.18.V	BT30	18	63	50	M14x16	1	2
BT30.18.V-100	BT30	18	100	50	M14x16	1	3
BT30.20.V	BT30	20	63	52	M16x16	1	2
BT30.20.V-100	BT30	20	100	52	M16x16	1	3
BT40.06.V	BT40	6	50	25	M6x10	1	2
BT40.06.V-100	BT40	6	100	25	M6x10	1	3
BT40.08.V	BT40	8	50	28	M8x10	1	2
BT40.08.V-100	BT40	8	100	28	M8x10	1	3
BT40.10.V	BT40	10	63	35	M10x12	1	2
BT40.10.V-100	BT40	10	100	35	M10x12	1	3
BT40.12.V	BT40	12	63	42	M12x16	1	2
BT40.12.V-100	BT40	12	100	42	M12x16	1	3
BT40.14.V	BT40	14	63	44	M12x16	1	2
BT40.14.V-100	BT40	14	100	44	M12x16	1	3
BT40.16.V-35	BT40	16	35	48	M14x16	1	1
BT40.16.V	BT40	16	63	48	M14x16	1	2
BT40.16.V-100	BT40	16	100	48	M14x16	1	3



## DÖNER PUNTALAR - CNC TORNALAR İÇİN

TYP 140



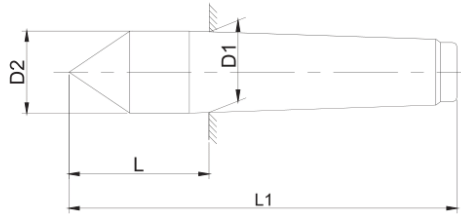
RULMAN ÖMRÜ 2000 İŞ SAATİDİR.

- PUNTA UCU SERTLİĞİ 60-62 HRC
- SALGI: MAX. 0,008 mm

SİP. NR.	KONİK	D1 (mm)	D2 (mm)	D3 (mm)	D4 (mm)	L1 (mm)	L2 (mm)	DEVİR d/d (max)	PARÇA AĞIRLIĞI KG (max)
144	MK4	70	32	31.267	12	102	40	5000	500
145	MK5	90	40	44.399	15	129	50	4000	850

## SABİT PUNTALAR - NORMAL UÇLU

TYP 400



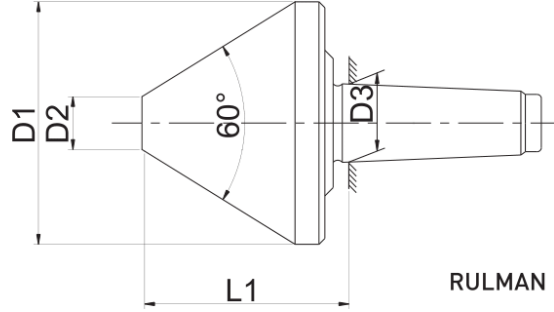
- KOMPLE SERTLEŞTİRİLİP TAŞLANMIŞTIR
- PUNTA UCU SERTLİĞİ 60-62 HRC
- SALGI: MAX. 0,005 mm

SİP. NR.	KONİK	D1 (mm)	D2 (mm)	L (mm)	L1 (mm)
402	MK2	17.780	18	36	100
403	MK3	23.825	24.1	44	125
404	MK4	31.267	31.6	57.5	160
405	MK5	44.399	44.7	70.5	200
406	MK6	63.348	63.8	88	270



BORU PUNTALARI - 60 DERECE UÇ AÇILI

TYP 200



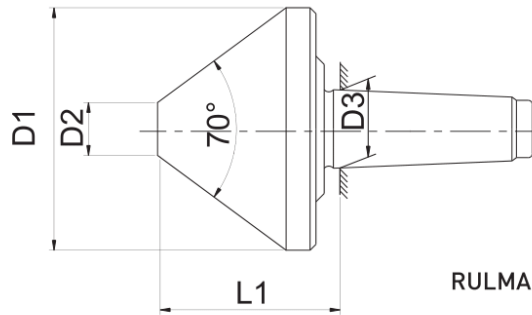
RULMAN ÖMRÜ 2000 İŞ SAATİDİR.

- PUNTA UCU SERTLİĞİ 60-62 HRc
- SALGI: MAX. 0,01 mm

SİP. NR.	KONİK	D1 (mm)	D2 (mm)	D3 (mm)	L1 (mm)	DEVİR d/d (max)	YİP PARÇASI AĞIRLIĞI KG (MAX.)
203	MK3	80	25	23.825	70	3000	300
213	MK3	100	32	23.825	85	2400	500
204	MK4	120	38	31.267	90	2400	500
205	MK5	120	38	44.399	90	2400	500
224	MK4	140	40	31,267	105	1800	600
225	MK5	140	40	44,399	105	1800	600
215	MK5	170	50	44.399	100	1500	1000

BORU PUNTALARI - 70 DERECE UÇ AÇILI

TYP 210/230



RULMAN ÖMRÜ 2000 İŞ SAATİDİR.

- PUNTA UCU SERTLİĞİ 60-62 HRc
- SALGI: MAX. 0,01 mm

SİP. NR.	KONİK	D1 (mm)	D2 (mm)	D3 (mm)	L1 (mm)	DEVİR d/d (max)	YİP PARÇASI AĞIRLIĞI KG (MAX.)
235	MK5	200	70	44.399	125	800	1000
216	MK6	250	75	63.348	147	800	1500

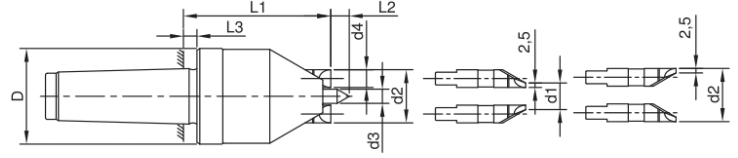


TIRNAKLI PUNTALAR - BASMA ÇAPI 15 MM - 30 MM

TYP 320

SALGISI 0,02 mm' YE KADAR AYARLANABİLİR.

MEKANİK KİLİTLEMELİ



3 ADET YEDEK TIRNAK İLE BİRLİKTE TESLİM EDİLİR.

MİL VE TIRNAKLARDA SERTLİK: 60-63 Hrc

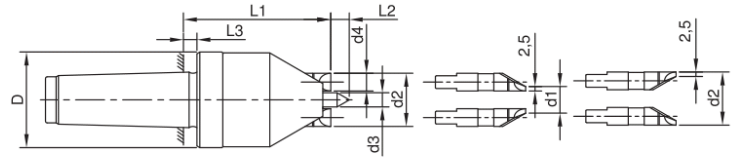
SİP. NR.	KONİK	d1 (mm)	d2 (mm)	d3 (mm)	d4 (mm)	TORNALAMA ÇAPI (mm)		D (mm)	L1 (mm)	L2 (mm)	L3 (mm)	TIRNAK SAYISI
						MİN.	MAX.					
323	MK3	15	30	8	10	16	60	54	80	7,5	5	3+3
324	MK4	15	30	8	10	16	60	54	80	7,5	5	3+3
325	MK5	15	30	8	10	16	60	54	80	7,5	5	3+3

TIRNAKLI PUNTALAR - BASMA ÇAPI 24 MM - 45 MM

TYP 340

SALGISI 0,02 mm' YE KADAR AYARLANABİLİR.

MEKANİK KİLİTLEMELİ



6 ADET YEDEK TIRNAK İLE BİRLİKTE TESLİM EDİLİR.

MİL VE TIRNAKLARDA SERTLİK: 60-63 Hrc

SİP. NR.	KONİK	d1 (mm)	d2 (mm)	d3 (mm)	d4 (mm)	TORNALAMA ÇAPI (mm)		D (mm)	L1 (mm)	L2 (mm)	L3 (mm)	TIRNAK SAYISI
						MİN.	MAX.					
344	MK4	24	45	17	13	25	90	69	94	15	5	6+6
345	MK5	24	45	17	13	25	90	69	94	15	5	6+6



İŞ PARÇASI ÜZERİNDEKİ PUNTA DELİĞİNİN VEYA ALIN PROFİLİNİN DURUMUNA GÖRE BASINÇ BASİT OLARAK AYARLANABİLİR.

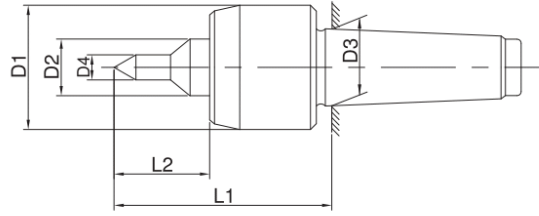


TIRNAKLAR VEYA MİLİN DEFORME OLMASI HALİNDE PARÇALAR EKONOMİK VE PRATİK OLARAK DEĞİŞTİRİLEBİLİR.



## DÖNER PUNTALAR - İNCE UÇLU

TYP 120



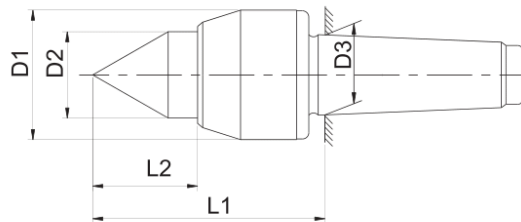
RULMAN ÖMRÜ 2000 İŞ SAATİDİR.

- PUNTA UCU SERTLİĞİ 60-62 HRc
- SALGI: MAX. 0,008 mm

SİP. NR.	KONÛK	D1 (mm)	D2 (mm)	D3 (mm)	D4 (mm)	L1 (mm)	L2 (mm)	DEVİR d/d (max)	PARÇA AĐIRLIĐI KG (max)
124	MK4	70	32	31.267	12	102	40	3500	450
125	MK5	90	40	44.399	15	129	50	2500	800

## DÖNER PUNTALAR - BÜYÜK MÝL ÇAPLI

TYP 150



RULMAN ÖMRÜ 2000 İŞ SAATİDİR.

- PUNTA UCU SERTLİĞİ 60-62 HRc
- SALGI: MAX. 0,008 mm

SİP. NR.	KONÛK	D1 (mm)	D2 (mm)	D3 (mm)	L1 (mm)	L2 (mm)	DEVİR d/d (max)	PARÇA AĐIRLIĐI KG (max)
154	MK4	70	48	31.267	108	46	3500	600
155	MK5	90	56	44.399	135	56	2500	1000