



TAKİMSAŞ

since 1987

30 yılı aşan tecrübemizle



Ürün Kataloğu
Product Catalogue
Producktkatalog

BİZLER KİMİZ?

Makine, otomotiv, inşaat, havacılık, savunma vb. sektörlerde ileri teknoloji içeren tezgâhların kullanımı hızla artmaktadır. Kullanılan kesici ve takım tutucularının sayısı da her geçen gün artmaktadır. Bu ihtiyacın karşılanmasından yola çıkan TAKIMSAŞ, standart ve özel takım üretimine 1987 yılı sonlarında, ülkemizde bir marka olarak başlamıştır.

Ülkemiz sanayisi büyüyerek gelişmektedir. Tüm sanayici ve çalışanlarımızın katkılarıyla, ülkemiz ihracat ve ekonomik verilerinin son zamanlarda artması, bizlere de bu başarıda onurlu bir geçmişe sahip olmanın mutluluğunu yaşıyor.

Firmamızın, ileri teknoloji içeren tezgâhlar kullanması ve her geçen gün sayılarının artması, kapasitemizi, kalitemizi geliştirirken, topluma olan sosyal sorumluluğumuzu arttıran saygının bir göstergesi olarak algılanması, bizlere güç vermektedir.

Rekabette vazgeçilmez unsur kabul edilen HIZ ve KALİTE talaşlı imalat operasyonlarında daha hassas, standartlara uygun, verimli, ekonomik ve daha üretken imalat yapılabilmesi bakımından çok büyük öneme sahiptir. İşleme zamanlarını kısaltan, üretkenliği ve verimliliği artıran özel takımların geliştirilmesinin de hızlı üretim teknolojisinde ayrı bir yeri bulunmaktadır.

Firmamız, gerek müşteri ve bayi beklentilerinin gerekse talaşlı imalattaki teknik problemlerin çözümünde büyük öneme sahip olan, standart tutucu ve kesici takımların üretiminin yanında ÖZEL TUTUCU ve TAKIMLARIN da geliştirilmesi, yüksek hız nedeniyle hassaslaştırılması gerektiğinin, yaşadığı yıllara dayalı tecrübelerle bilincine varmıştır.

Takımsaş, büyük oranda DIN standartlarına uygun olarak hazırlanan takım, tutucu ve kesicilerini üreterek ya da ithal ederek müşterilerinin kullanımına sunmakta, problemlerine çözüm ortağı olmaktadır. Bununla beraber, sektörde liderliğini koruyabilmek için ISO 9001 Kalite Yönetim Sistemi, ISO 14001 Çevre Yönetim Sistemi, TS 18001 İş Sağlığı ve Güvenliği Sistem belgelerini almış ve gerekli olanlarını almak için çalışmalarını sürdürmektedir.

Ülkemiz ekonomisine ve talaşlı üretime yıllarca katkıda bulunmanın gönül huzurunu, sevincini ve gururunu sizlerin destekleri sayesinde yaşamaktayız; bunu sizlerle paylaşmaktan da onur duymaktayız.

Bizler kim miyiz? TAKIMSAŞ bayi, müşteri ve çalışanlarıyız...

30 Yılı aşan tecrübemizle...

WHO ARE WE?

In the industry of machinery, automotive, construction, aerospace, defense etc., the use of machining mills equipped high technology has been increasing exponentially. The quantity of toolholders and cutters used in industry is also increasing more and more. Supplying these needs of the industry has become the elementary concept of Takimsas Kesici Takim Makine Sanayi ve Ticaret A.S. and been established in 1987 to manufacture modern and customized tools as a national brand name in this field of business.

Turkish industry is expanding and growing. By regarding recent increases in exports and economic values of our country, we are experiencing the pleasure and proud of having honorable background in this success with the contributions of all our industrialists and employees.

Related to our manufacturing process with high tech machinery and increasing quantity of our products in the market, our capacity and quality is being upgraded with each passing day. We are being motivated and encouraged with our contribution to several industries with our products.

In the competitive market of machining process, the speed and the quality as the accepted indispensable primary matters have great importance in terms of manufacturing features like being more efficient, productive, economical, accurate and up to standard. Developing special tools which increase efficiency, productivity and decrease operation period has also special contribution in serial manufacture.

We can meet the expectations of our dealers and customers because our company gets great advantage of developing and manufacturing customized (special) holders and tools besides of standard holder and cutting tools. These special tools and holders enable to solve some technical problems in the production line. In addition to our technical abilities, our background and experience of several years bring determining the important concepts in production as accuracy of the products.

Takimsas produces or imports tools, holders, cutters and tips most of which complies with ISO standards and offers them to the service of its customers and becomes solution partner.

In order to maintain its leadership in company activities, we have taken some of the standard certificates such as ISO 9001 Quality Management System, ISO 14001 Environment Management System, OHSAS 18001 Health and Safety System. These certificates will be updated each period and some new certificates will be added.

We feel confidence, happiness and pride of go to the economy of our country and taking place in machining production by virtue of you. The most enjoyable and honorable stage of our business is sharing the results with you.

Who We Are? We are TAKIMSAS employees and customers...

Over than 30 years of experience...

WER SIND WIR?

In der Branche der Maschinen hat Automobil-, Bau-, Luftfahrt-, Verteidigungs usw., die Verwendung der Bearbeitung Mühlen ausgestattet hohen Technologie exponentiell. Die Menge dieser Werkzeughalter und Fräser in der Industrie verwendet wird, auch immer mehr zu. Versorgung dieser Bedürfnisse der Industrie hat sich die elementare Konzept der Takimsas Kesici Takim Makine Sanayi ve Ticaret AS und im Jahr 1987 eingerichtet worden, um moderne und maßgeschneiderte Werkzeuge als nationale Marke in diesem Geschäftsfeld zu fertigen.

Türkischen Industrie wächst und wächst. Mit Bezug auf den jüngsten Anstieg der Exporte und wirtschaftliche Werte unseres Landes, erleben wir die Freude und stolz darauf, ehrenvolle Hintergrund in diesem Erfolg mit den Beiträgen aller unserer Industriellen und Mitarbeiter.

Bezug zu unseren Herstellungsprozess mit High-Tech Maschinen und zunehmende Menge unserer Produkte auf dem Markt, ist unsere Kapazität und Qualität mit jedem Tag aktualisiert. Wir werden motiviert und ermutigt, unseren Beitrag für verschiedene Branchen mit unseren Produkten.

Im umkämpften Markt der Bearbeitung, der Geschwindigkeit und der Qualität der akzeptierten unverzichtbare primären Dinge haben eine große Bedeutung in Bezug auf die Herstellung von Features wie ist effizienter, produktiver, wirtschaftlicher, genauer und aktueller Standard. Entwicklung spezieller Werkzeuge, die eficiency zu erhöhen, hat die Produktivität und die Abnahme Betriebsdauer auch besonderen Beitrag in Serienfertigung.

Takimsas produziert oder importiert Werkzeuge, Halter, Messer und Tipps von denen die meisten mit ISO-Standards entspricht und bietet sie in den Dienst seiner Kunden und wird Lösungspartner.

Um seine führende Position im Unternehmen Tätigkeiten erhalten, haben wir einige der Standart-Zertifikate wie ISO 9001 Qualitätsmanagement, ISO 14001 Umwelt-Management-System, OHSAS 18001 Arbeitsgesundheit und Sicherheitsmanagement übernommen. Diese Zertifikate werden in jeder Periode aktualisiert und einige neue certificates hinzugefügt werden.

Wir fühlen uns Vertrauen, Freude und Stolz, einen Beitrag für die Wirtschaft unseres Landes und findet in der spannenden Fertigung durch Sie. Die schönste und ehrenhafte Teil unseres Geschäfts ist, die Ergebnisse mit Ihnen.

Wer wir sind? Wir sind TAKIMSAS Mitarbeiter und Kunden...

Mehr als 30 Jahre Erfahrung...



TORNALAMA / TURNING / DREHEN

DIŞ TORNA KATERLERİ / TURNING - TOOLHOLDER , EXTERNAL

DREHEN - WERKZEUGHALTER, AUßERE

: 11 - 53

DELİK KATERLERİ / TURNING - TOOLHOLDER , INTERNAL

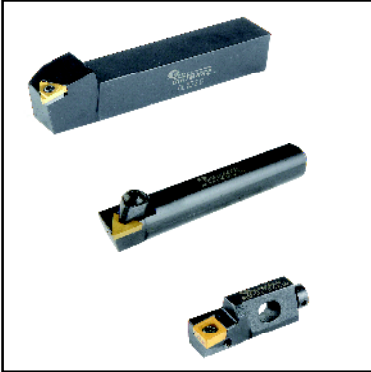
DREHEN - WERKZEUGHALTER, INNERE

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KESME VE KANAL KATERLERİ / TURNING - GROOVING and PART-OFF TOOLS

KLEMMHALTER, ABSTECHEN UND EINSTECHEN

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DIŞ AÇMA KATERLERİ / TOOLHOLDER for THREADING

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DELİK BARALARI / BORING BARS / BOHRSTANGEN

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MATKAPLAR / DRILLS / BOHREN

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AYARLI DELİK İŞLEME KAFASI / ADJUSTABLE ROUGH BORING HEADS

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FOR BORING BARS / KLEMMHALTER FÜR AUSDREHKÖPFE, EINSTELLBAR

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TAKIM TUTUCULARI / TOOLHOLDERS / WERKZEUGHALTER

KILAVUZ ÇEKME TUTUCULARI / TAPPING CHUCK HOLDERS /

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PENS TUTUCULARI / COLLET CHUCK HOLDERS / SPANNZANGHALTER

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FREZE MALAFALARI / SHELL MILL HOLDERS / AUFSTECKFRÄSENHALTER

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WELDON TUTUCULARI / TYPE WELDON HOLDERS / KLEMMHALTER TYPE WELDON

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MORS KONİK TUTUCULARI / MORSE TAPER HOLDERS / MORSEKEGELHALTER

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KANAL FREZE TUTUCULARI / DISC MILL HOLDERS / SCHEIBENFRÄSERHALTER

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ÇEKTİRME VİDASI / PULL STUD / ANZUGBOLZEN

: 220 - 221

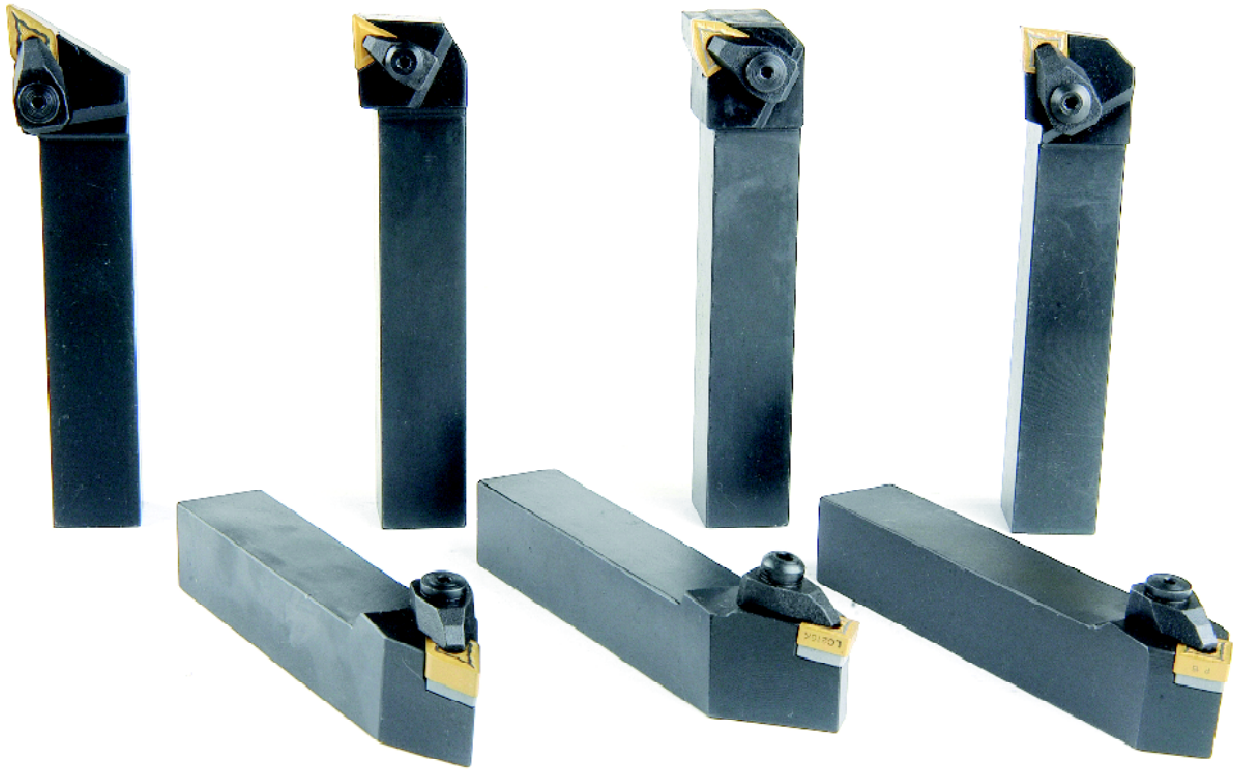
VDI TAKIM TUTUCULARI / VDI HOLDERS / VDI - HALTER

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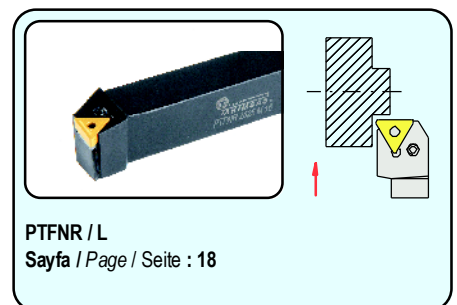
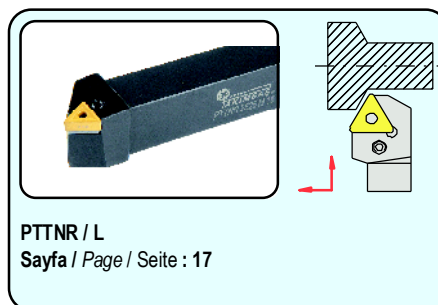
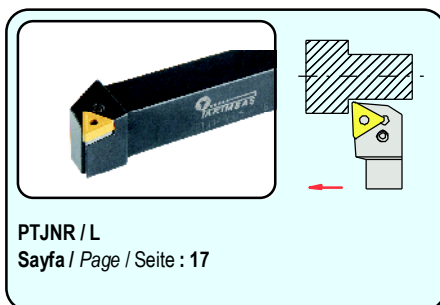
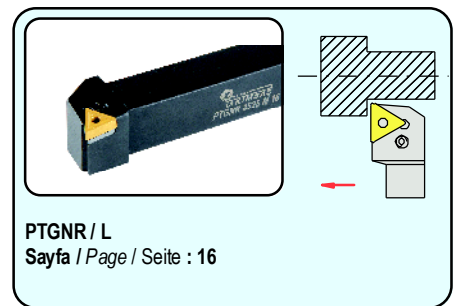
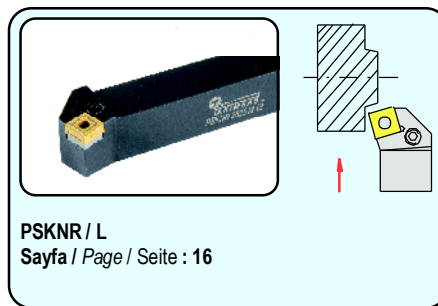
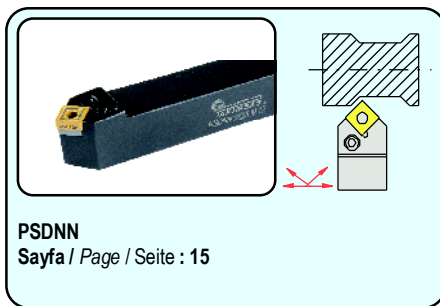
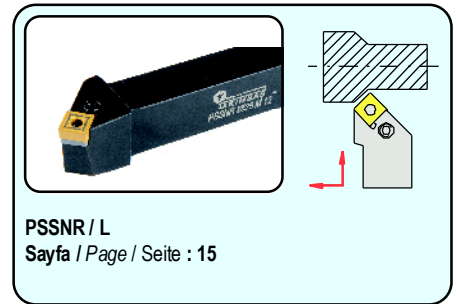
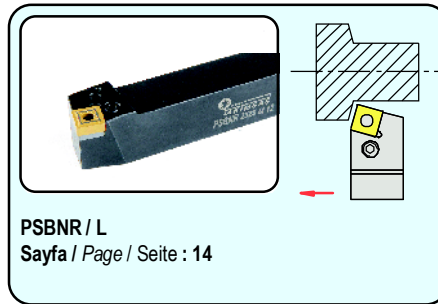
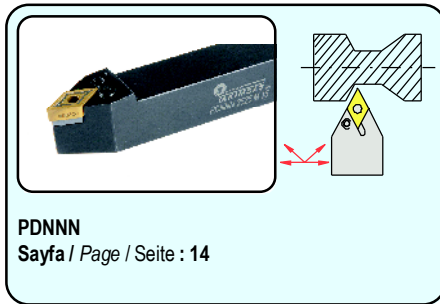
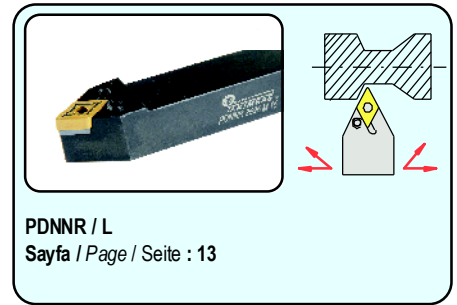
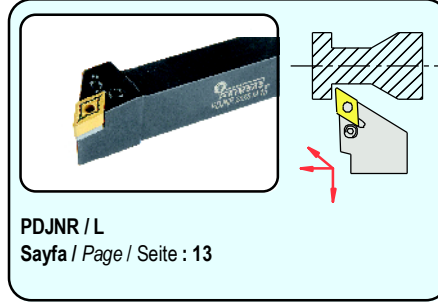
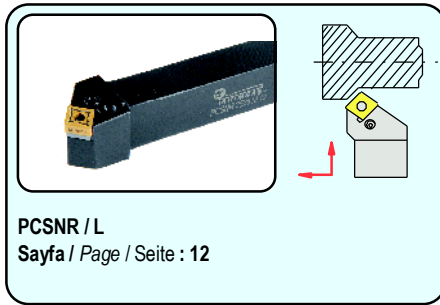
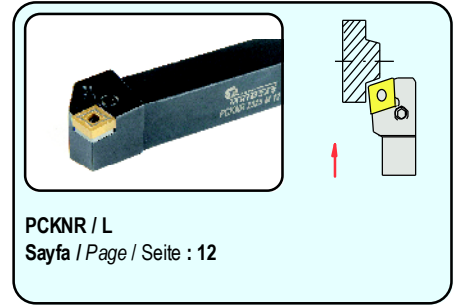
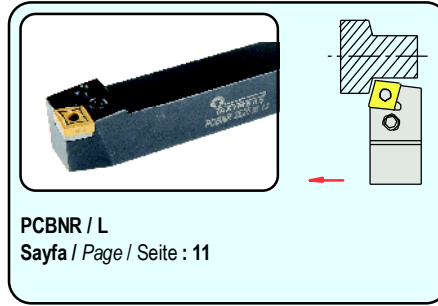
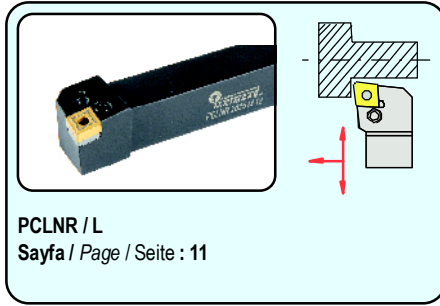
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Diş Torna Katerleri / Turning - Toolholder, External
Drehen - Klemmhalter, Außenbearbeitung

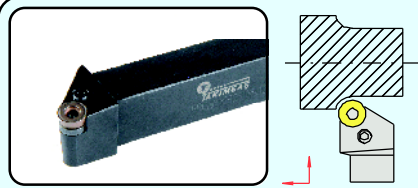


Dış Torna Katerleri / Turning - Toolholder, External

Drehen - Klemmhalter, Außenbearbeitung



PWLNR / L
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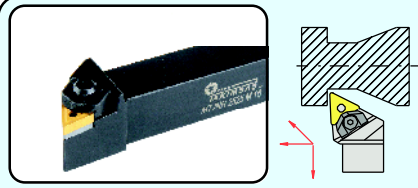
PRGNR / L
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PRGCR / L
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PRDCN
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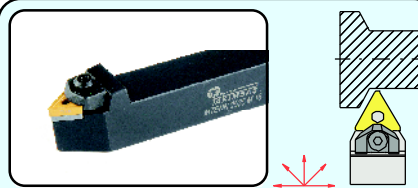
MTJNR / L
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MTGNR / L
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MTTNR / L
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MTENN
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MWLNR / L
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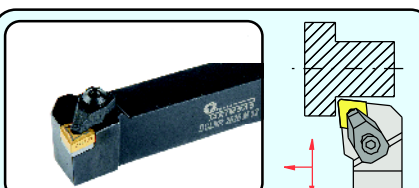
MTFNR / L
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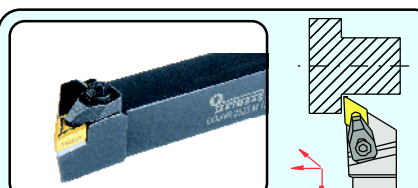
MTXNR / L
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MVJNR / L
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DCLNR / L
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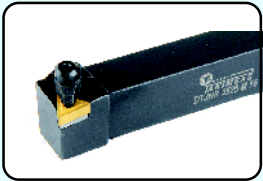
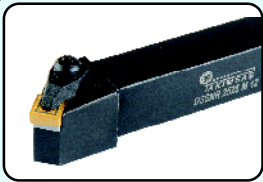
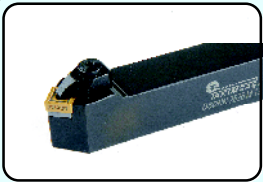
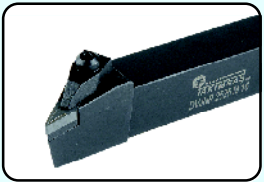
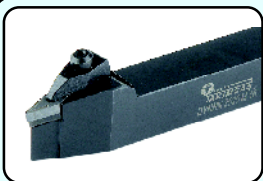
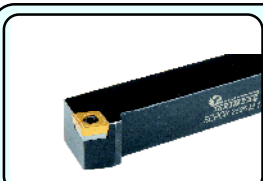
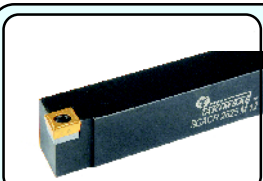
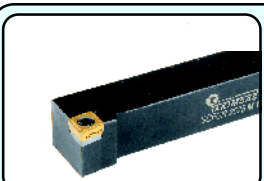
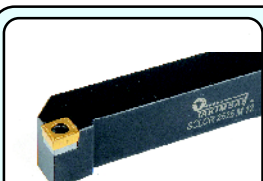
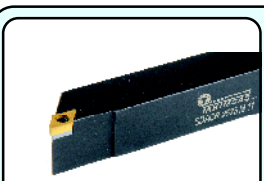


DDJNR / L
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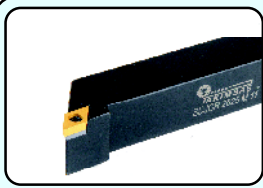
DWLNR / L
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Diş Torna Katerleri / Turning - Toolholder, External
Drehen - Klemmhalter, Außenbearbeitung

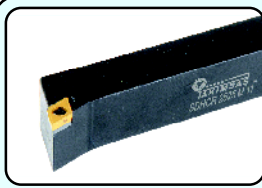
 DTFNR / L Sayfa / Page / Seite : 26	 DTJNR / L Sayfa / Page / Seite : 27	 DDNNN Sayfa / Page / Seite : 27
 DSSNR / L Sayfa / Page / Seite : 28	 DSDNN Sayfa / Page / Seite : 28	 DVJNR / L Sayfa / Page / Seite : 29
 DVNNN Sayfa / Page / Seite : 29	 SCDCR / L Sayfa / Page / Seite : 30	 SCMCN Sayfa / Page / Seite : 30
 SCRCR / L Sayfa / Page / Seite : 31	 SCACR / L Sayfa / Page / Seite : 31	 SCFCR / L Sayfa / Page / Seite : 32
 SCLCR / L Sayfa / Page / Seite : 32	 SDNCN Sayfa / Page / Seite : 33	 SDACR / L Sayfa / Page / Seite : 33

Dış Torna Katerleri / Turning - Toolholder, External

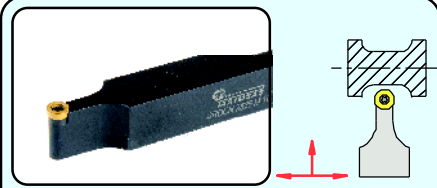
Drehen - Klemmhalter, Außenbearbeitung



SDJCR / L
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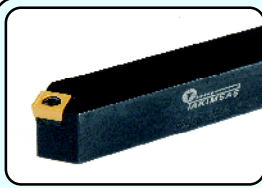
SDHCR / L
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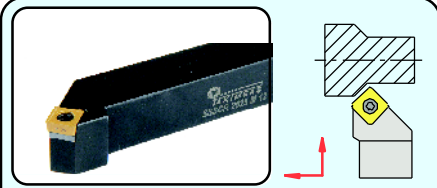
SRDCN
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SRGCR / L
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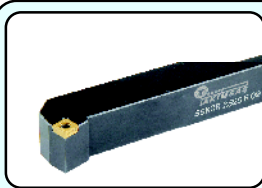
SSDCN
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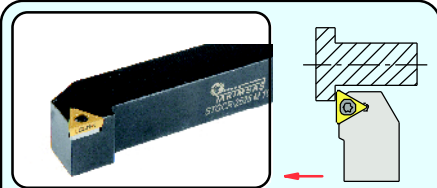
SSSCR / L
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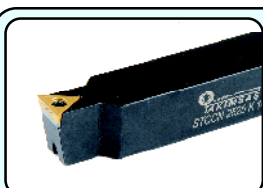
SSBCR / L
Sayfa / Page / Seite : 37



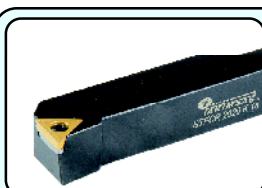
SSKCR / L
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STGCR / L
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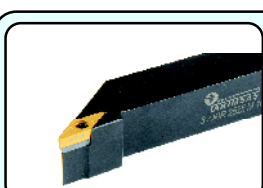
STCCN
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STFCR / L
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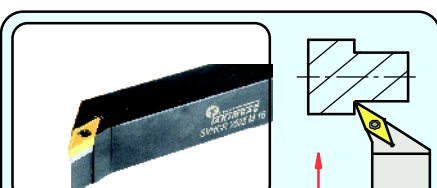
SVVCN
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SVJCR / L
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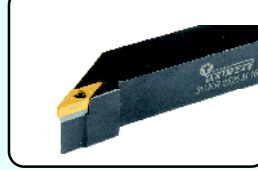
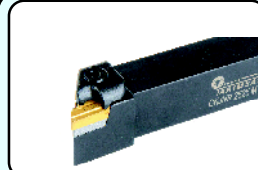
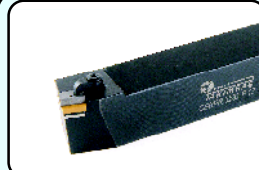
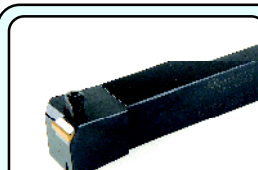
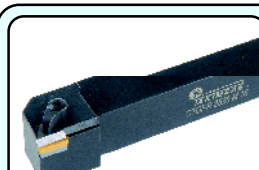
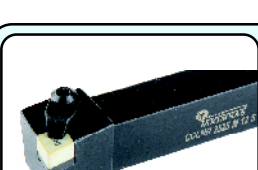
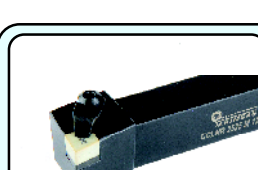
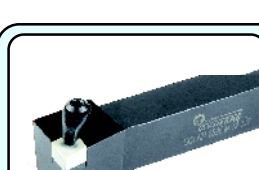
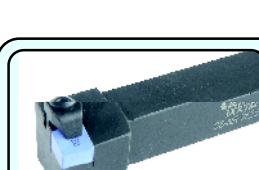


SVZCR / L
Sayfa / Page / Seite : 40



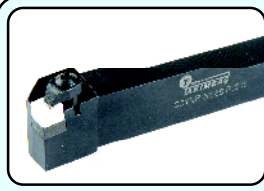
SVHCR / L
Sayfa / Page / Seite : 41

Diş Torna Katerleri / Turning - Toolholder, External
Drehen - Klemmhalter, Außenbearbeitung

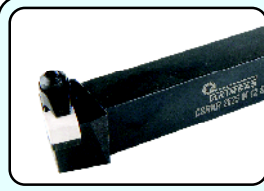
 SVVBN Sayfa / Page / Seite : 41	 SVJBR / L Sayfa / Page / Seite : 42	 SVZBR / L Sayfa / Page / Seite : 42
 SVHBR / L Sayfa / Page / Seite : 43	 CKJNR / L Sayfa / Page / Seite : 43	 CSBPR / L Sayfa / Page / Seite : 44
 CTRPR / L Sayfa / Page / Seite : 44	 CTFPR / L Sayfa / Page / Seite : 45	 CTGPR / L Sayfa / Page / Seite : 45
 CCLNR / L Sayfa / Page / Seite : 46	 CELNR / L Sayfa / Page / Seite : 46	 CCLNR / L .. 1 x 7 Sayfa / Page / Seite : 47
 CDJNR / L Sayfa / Page / Seite : 47	 CDNNR / L Sayfa / Page / Seite : 48	 CS - NR / L Sayfa / Page / Seite : 48

Dış Torna Katerleri / Turning - Toolholder, External

Drehen - Klemmhalter, Außenbearbeitung



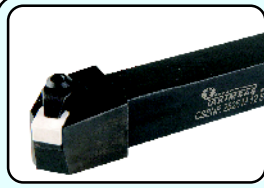
CSYNR / L
Sayfa / Page / Seite : 49



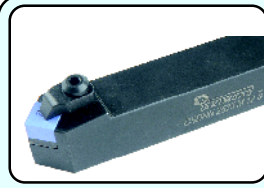
CSRNR / L
Sayfa / Page / Seite : 49



CSKNR / L
Sayfa / Page / Seite : 50



CSSNR / L
Sayfa / Page / Seite : 50



CSDNN
Sayfa / Page / Seite : 51



CTJNR / L
Sayfa / Page / Seite : 51



CTUNR / L
Sayfa / Page / Seite : 52



CRSNR / L
Sayfa / Page / Seite : 52

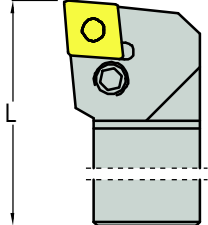
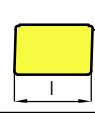
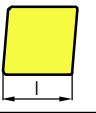
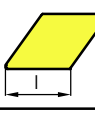
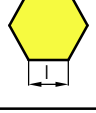
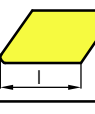
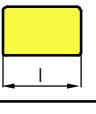
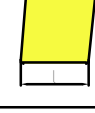
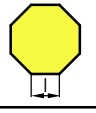
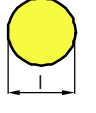
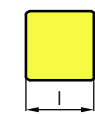
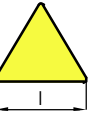
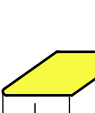


CRDNN
Sayfa / Page / Seite : 53



CRDCN
Sayfa / Page / Seite : 53

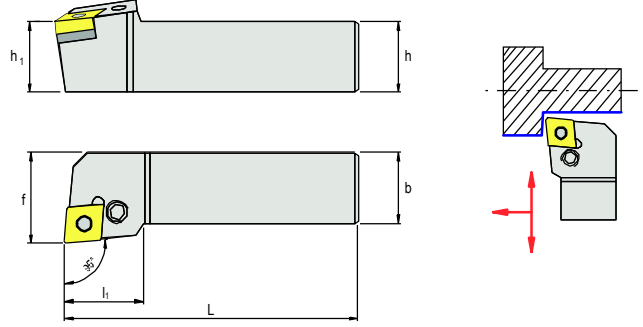
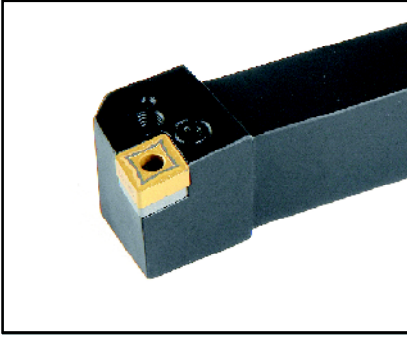
P 1 Sıkma Tipi / Clamping Style Befestigungsart	S 2 Uç Tipi / Insert Type Wendeplattenform	S 3 Yanaşma Açısı / Approach Angle Klemmhalterform	N 4 Uç Serbest Açısı / Insert Clearance Angle Wendeplattenfreiwinkel	R 5 Kesme Yönü / Cutting Direction Schneidrichtung
C  Baskılı Sistem / Top Clamping Von oben geklemmt	A  85° M  84°	   	A  B 	L 
D  Baskılı Sistem / Top Clamping Von oben geklemmt	B  82° O  135°	A  B  C  D 	C  D 	
M  Baskılı ve Pimli Sistem Top and Hole Clamping Von oben und über Bohrung geklemmt	D  55° R  90°	E  F  G  J 	E  F 	N 
P  Leverli Sistem / Lever System Über Bohrung geklemmt	H  120° T  60°	K  L  M  N 	G  N 	R 
S  Vida ile Delikten Sıkma Centre Screw Locking Durch Bohrung geschraubt	K  55° V  35°	R  S  T  U 	P  O 	
	L  90° W  80°	V  W  Y 		

25 6 Kesme Kenar Yüksekliği / Cutting Edge Height Schneidenhöhe	25 7 Şaft Genişliği / Shank width Schäftbreite	M 8 Şaft Boyu / Shank length Werkzeuglänge	12 9 Kesici Kenar Uzunluğu / Cutting edge length Schneidkantenlänge
			A  C 
			D  H 
		Takım Boyu / Tool Length Kennbuchstaben für die Längen l_1	K  L 
		L L mm	M  O 
		A 32	P  R 
		B 40	S  T 
		C 50	V  W 
		D 60	
		E 70	
		F 80	
		G 90	
		H 100	
		J 110	
		K 125	
		L 140	
		M 150	
		N 160	
		P 170	
		Q 180	
		R 200	
		S 250	
		T 300	
		U 350	
		V 400	
		W 450	
		X ÖZEL	
		Y 500	

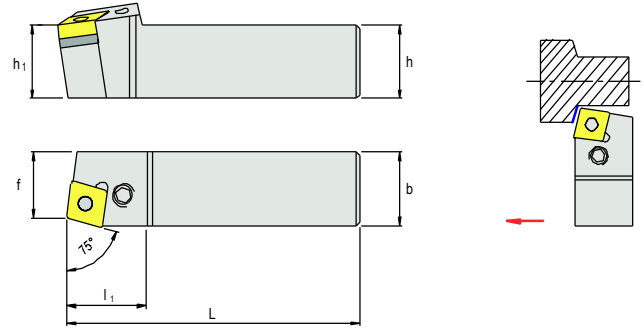
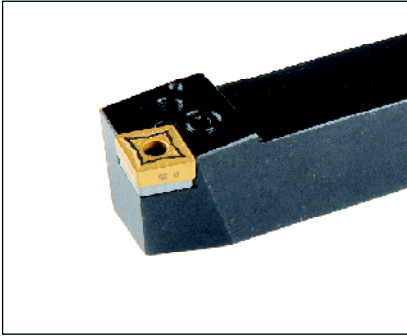
Genel olarak dış torna katerinde h_1 ile h eşittir.

Ingeneral, h_1 is equal to h for external tool holders

Bei Klemmwerkzeugen entspricht der Schneidenhöhe h_1 im allgemeinen der Schafthöhe h_2 . Ausgenommen sind Kurzklemmhalter und Klemmwerkzeuge zum innendrehen.



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Levy Lever Hebel	Levy Vidası Lever Screw Hebel Schraube	Altık Pimi Anvil Pin Rohrstift
	h h ₁	b	L	l ₁	f					
PCLNR/L 16 16 H12T	16	16	100	26	20	CN.....1204	U 112150	H 023441	S 023421	R 023461
20 20 K12T	20	20	125	30	25					
25 25 M12T	25	25	150	30	32					
32 25 P12T	32	25	170	30	32					
32 32 P12T	32	32	170	30	40	CN.....1606	U 000152	H 000840	S 028430	R 025464
25 25 M16T	25	25	150	33	32					
32 25 P16T	32	25	170	33	32					
32 32 P16T	32	32	170	33	40					
32 25 P19T	32	25	170	38	32	CN.....1906	U 123151	H 033442	S033422	R 033462
32 32 P19T	32	32	170	38	40					
40 40 R19T	40	40	200	38	50					
40 40 R25T	40	40	200	47	50					
50 50 S25T	50	50	250	47	60	CN.....2509	U 002540	H 038444	S 038427	R 038465

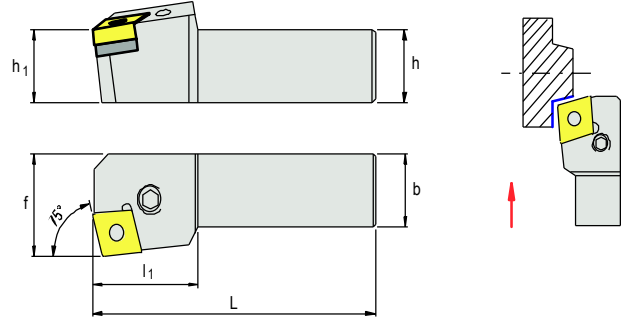
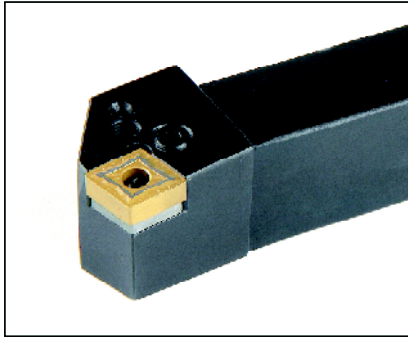


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Levy Lever Hebel	Levy Vidası Lever Screw Hebel Schraube	Altık Pimi Anvil Pin Rohrstift
	h h ₁	b	L	l ₁	f					
PCBNR/L 25 25 M12T	25	25	150	30	22	CN.....1204	U 112150	H 023441	S 023421	R 023461
32 25 P12T	32	25	170	30	22					
25 25 M16T	25	25	150	33	22	CN.....1606	U 000152	H 000840	S 028430	R 025464
32 25 P16T	32	25	170	33	22					
32 32 P16T	32	32	170	33	27	CN.....1906	U 123151	H 033442	S033422	R 033462
32 32 P19T	32	32	170	38	27					
40 40 R19T	40	40	200	38	35	CN.....2509	U 002540	H 038444	S 038427	R 038465
40 40 R25T	40	40	200	47	35					
50 50 S25T	50	50	250	47	45					

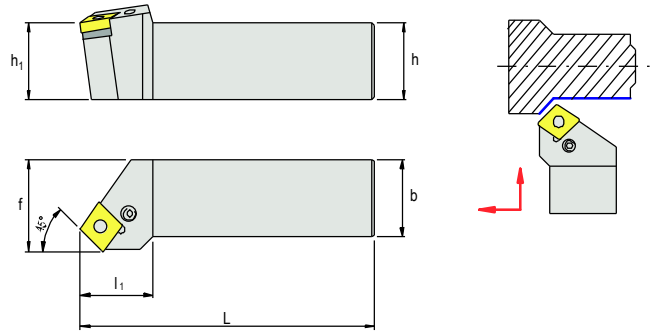
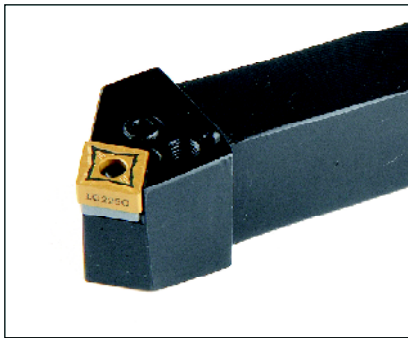
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : PCLNR 25 25 M12

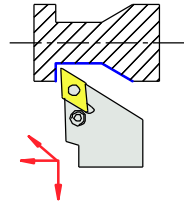
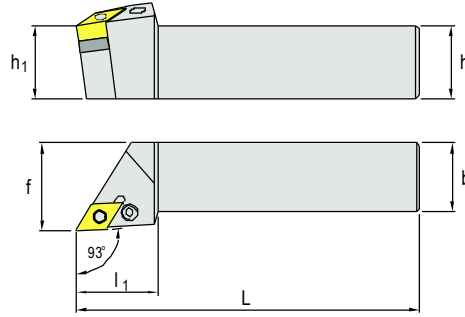
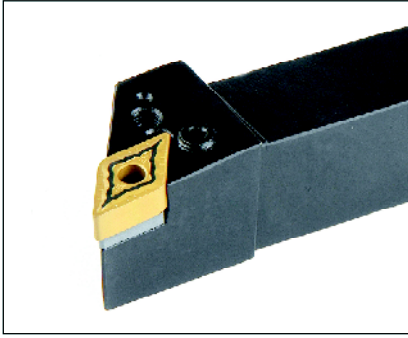
İsteğe bağlı olarak pabuç takviyesi ilave edilmektedir. / Clamp will be supplied according to customer need.



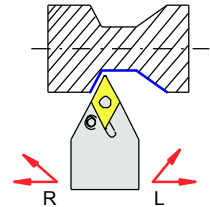
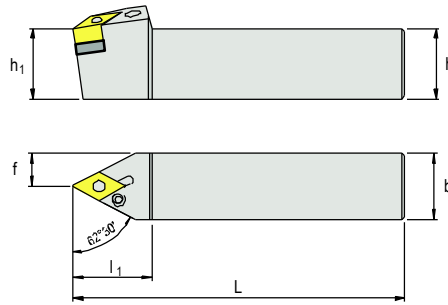
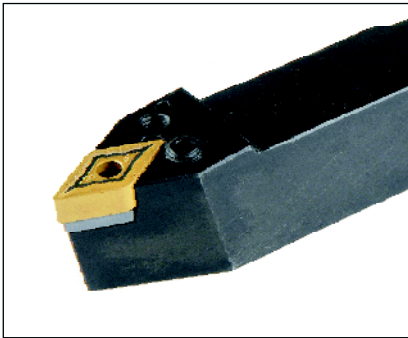
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Levyeye Lever Hebel	Levyeye Vidası Lever Screw Hebel Schraube	Altlık Pimi Anvil Pin Rohrstift
	h h ₁	b	L	l ₁	f					
PCKNR/L 25 25 M12T	25	25	150	30	32	CN.....1204	U 112150	H 023441	S 023421	R 023461
32 25 P12T	32	25	170	30	32					
25 25 M16T	25	25	150	33	32	CN.....1606	U 000152	H 000840	S 028430	R 025464
32 25 P16T	32	25	170	33	32					
32 32 P16T	32	32	170	33	40					
32 25 P16T	32	25	170	38	32					
32 32 P19T	32	32	170	38	40	CN.....1906	U 123151	H 033442	S 033422	R 033462
40 40 R19T	40	40	200	38	50					
40 40 R25T	40	40	200	47	50	CN.....2509	U 002540	H 038444	S 038427	R 038465



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Levyeye Lever Hebel	Levyeye Vidası Lever Screw Hebel Schraube	Altlık Pimi Anvil Pin Rohrstift
	h h ₁	b	L	l ₁	f					
PCSNR/L 20 20 K12T	20	20	125	30	25	CN.....1204	U 112150	H 023441	S 023421	R 023461
25 25 M12T	25	25	150	30	32					
32 25 P12T	32	25	170	30	32					
25 25 M16T	25	25	150	33	32	CN.....1606	U 000152	H 000840	S 028430	R 025464
32 25 P16T	32	25	170	33	32					
32 32 P16T	32	32	170	33	40					
32 25 P19T	32	25	170	38	32					
32 32 P19T	32	32	170	38	40	CN.....1906	U 123151	H 033442	S 033422	R 033462
40 40 R19T	40	40	200	38	50					



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Levyeye Lever Hebel	Levyeye Vidası Lever Screw Hebel Schraube	Altlık Pimi Anvil Pin Rohrstift
	h h1	b	L	l1	f					
PDJNR/L 20 20 K11T	20	20	125	30	25	DN.....1104	DN 11 ALT	H 019445	S 018420	R 018463
25 25 M11T	25	25	150	30	32					
20 20 K15T	20	20	125	30	25	DN.....1506	U 153150	H 024447	S 028430	R 023461
25 25 M15T	25	25	150	30	32					
32 25 P15T	32	25	170	33	32					
32 32 P15T	32	32	170	33	40					
40 25 R15T	40	25	200	38	32					
40 32 R15T	40	32	200	38	40					

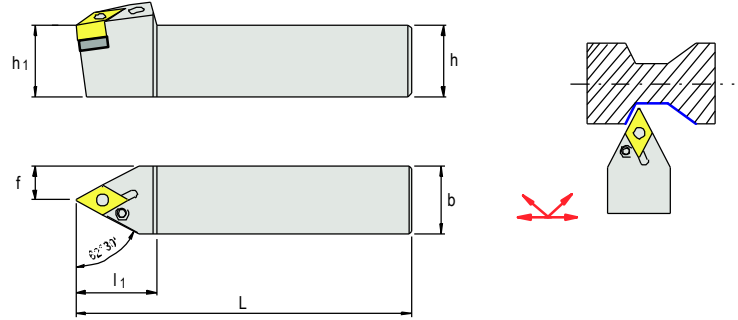
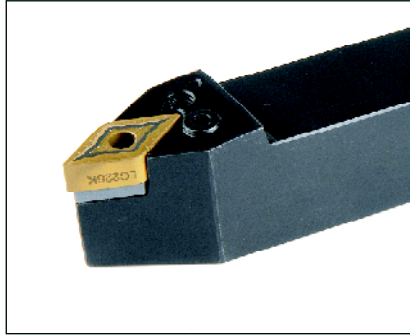


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Levyeye Lever Hebel	Levyeye Vidası Lever Screw Hebel Schraube	Altlık Pimi Anvil Pin Rohrstift
	h h1	b	L	l1	f					
PDNNR/L 25 25 M15T	25	25	150	25	12.5	DN.....1506	U 153150	H 024447	S 028430	R 023461
32 25 P15T	32	25	170	25	12.5					
32 32 P15T	32	32	170	32	16					
40 25 R15T	40	25	200	25	12.5					
40 32 R15T	40	32	200	32	16					

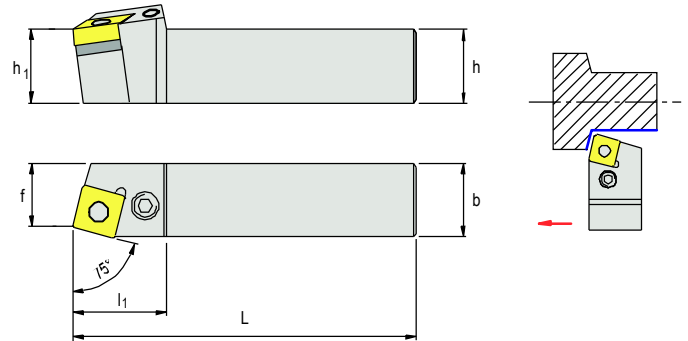
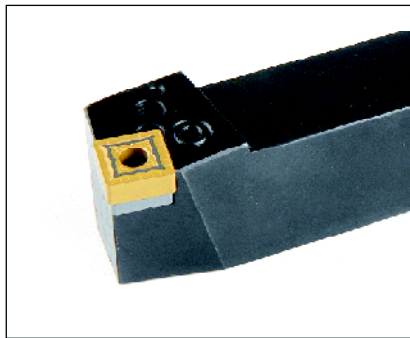
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : PDJNR 25 25 M15

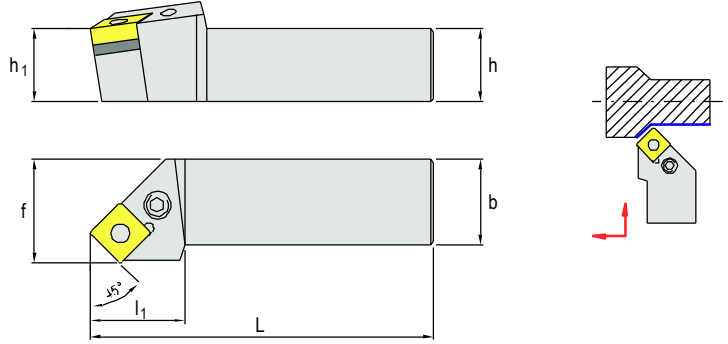
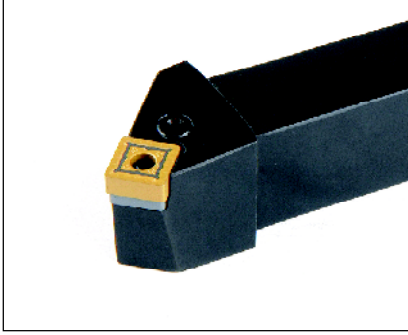
İsteğe bağlı olarak pabuç takviyesi ilave edilmektedir. / Clamp will be supplied according to customer need.



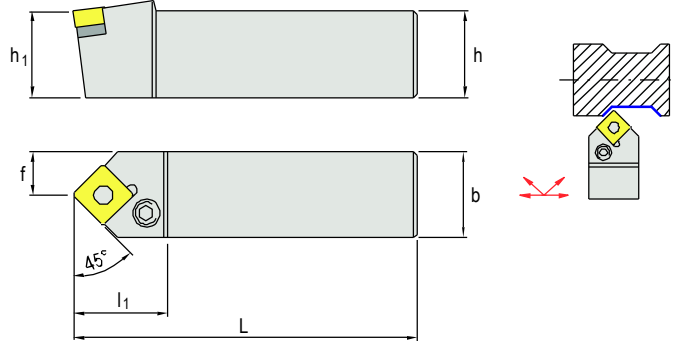
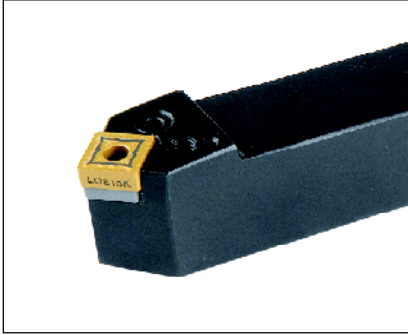
		Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung		h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Levyeye Lever Hebel	Levyeye Vidası Lever Screw Hebel Schraube	Altlık Pimi Anvil Pin Rohrstift
PDNNN 25 25 M15T		25	25	150	25	12.5	DN.....1506	U 153150	H 024447	S 028430	R 023461
32 25 P15T		32	25	170	25	12.5					
32 32 P15T		32	32	170	32	16					
40 25 R15T		40	25	200	25	12.5					
40 32 R15T		40	32	200	32	16					



		Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung		h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Levyeye Lever Hebel	Levyeye Vidası Lever Screw Hebel Schraube	Altlık Pimi Anvil Pin Rohrstift
PSBNR/L 16 16 H09T		16	16	100	23	13	SN.....0903	U 053450	H 018440	S 011429	R 018463
20 20 K12T		20	20	125	28	17	SN.....1204	U 063451	H 023441	S 023421	R 023461
25 25 M12T		25	25	150	28	22					
32 25 P12T		32	25	170	28	22					
25 25 M15T		25	25	150	32	22	SN.....1506	U 000457	H 000840	S 028430	R 025464
32 25 P15T		32	25	170	32	22					
32 32 P15T		32	32	170	32	27					
32 32 P19T		32	32	170	39	27	SN.....1906	U 083452	H 033442	S 033422	R 033462
40 40 R19T		40	40	200	41	35	SN.....2507	U 092453	H 038444	S 038427	R 038465
40 40 R25T		40	40	200	47	35					
50 50 S25T		50	50	250	47	45					



		Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung		h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Levyeye Lever Hebel	Levyeye Vidası Lever Screw Hebel Schraube	Altlık Pimi Anvil Pin Rohrstift
PSSNR/L 16 16 H09T		16	16	100	22	20	SNM...0903	U 053450	H 018440	S 011429	R 018463
20 20 K12T		20	20	125	29	25	SNM...1204	U 063451	H 023441	S 023421	R 023461
25 25 M12T		25	25	150	29	32					
32 25 P12T		32	25	170	29	32	SNM...1506	U 000457	H 000840	S 028430	R 025464
25 25 M15T		25	25	150	34	32					
32 25 P15T		32	25	170	34	32					
32 32 P15T		32	32	170	34	40					
32 32 P19T		32	32	170	41	40	SNM...1906	U 083452	H 033442	S 033422	R 033462
40 40 R19T		40	40	200	41	50					
40 40 R25T		40	40	200	48	50	SNM...2507	U 092453	H 038444	S 038427	R 038465

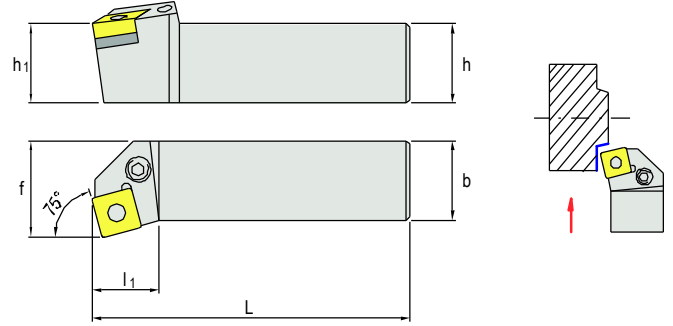
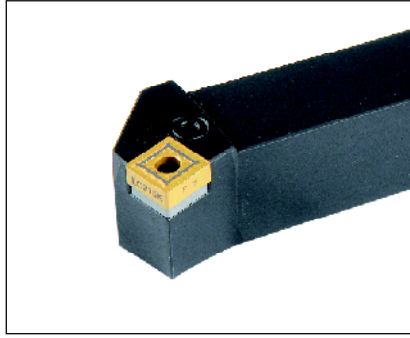


		Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung		h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Levyeye Lever Hebel	Levyeye Vidası Lever Screw Hebel Schraube	Altlık Pimi Anvil Pin Rohrstift
PSDNN 16 16 H09T		16	16	100	20	8	SNM...0903	U 053450	H 018440	S 011429	R 018463
20 20 K12T		20	20	125	28	10	SNM...1204	U 063451	H 023441	S 023421	R 023461
25 25 M12T		25	25	150	28	12.5					
32 25 P12T		32	25	170	28	12.5	SNM...1506	U 000457	H 000840	S 028430	R 025464
25 25 M15T		25	25	150	32	12.5					
32 25 P15T		32	25	170	32	12.5					
32 32 P15T		32	32	170	32	16					
32 25 P19T		32	25	170	32	12.5	SNM...1906	U 083452	H 033442	S 033422	R 033462
32 32 P19T		32	32	170	41	16					
40 40 R19T		40	40	200	41	20	SNM...2507	U 092453	H 038444	S 038427	R 038465
40 40 R25T		40	40	200	48	20					

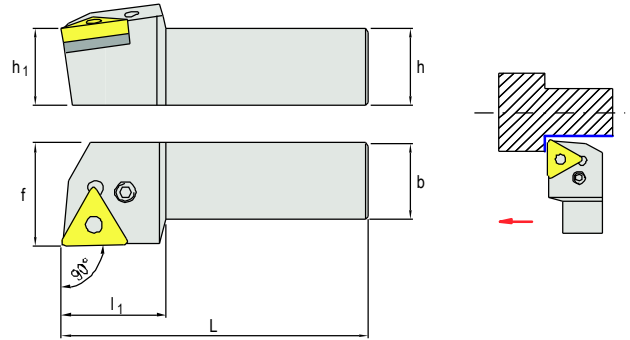
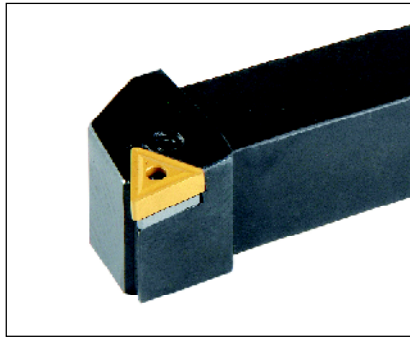
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : PSSNR 25 25 M12

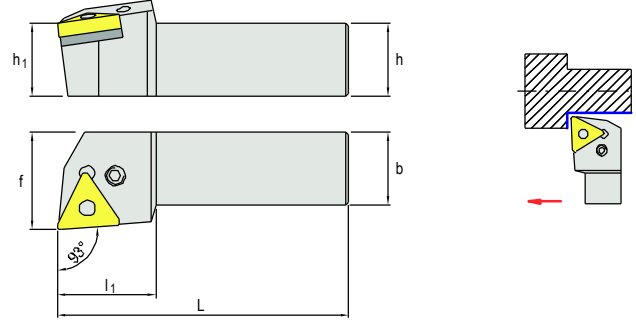
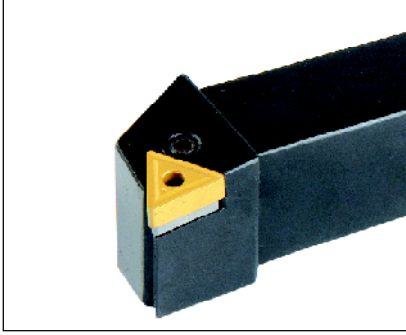
İsteğe bağlı olarak pabuç takviyesi ilave edilmektedir. / Clamp will be supplied according to customer need.



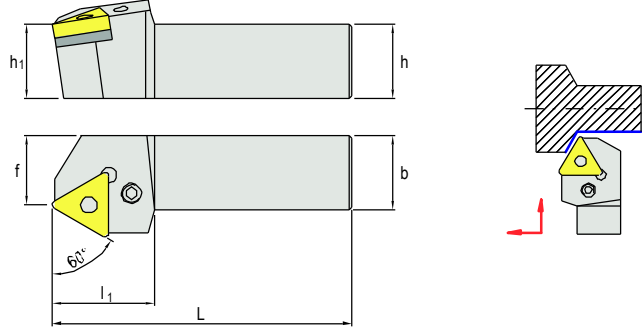
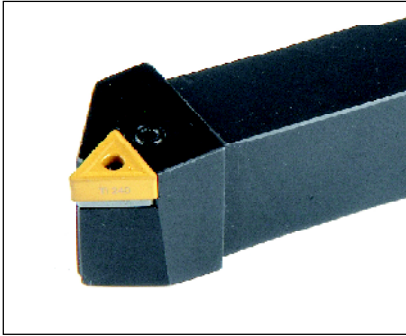
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Levyeye Lever Hebel	Levyeye Vidası Lever Screw Hebel Schraube	Altlık Pimi Anvil Pin Rohrstift
	h h ₁	b	L	l ₁	f					
PSKNR/L 16 16 H09T	16	16	100	16	20	SN.....0903	U 053450	H 018440	S 011429	R 018463
20 20 K12T	20	20	125	23	25	SN.....1204	U 063451	H 023441	S 023421	R 023461
25 25 M12T	25	25	150	23	32					
32 25 P12T	32	25	170	23	32					
25 25 M15T	25	25	150	28	32	SN.....1506	U 000457	H 000840	S 028430	R 025464
32 25 P15T	32	25	170	28	32					
32 32 P15T	32	32	170	28	40					
32 32 P19T	32	32	170	33	40	SN.....1906	U 083452	H 033442	S 033422	R 033462
40 40 R19T	40	40	200	33	50					
40 40 R25T	40	40	200	38	50					
50 50 S25T	50	50	250	38	60	SN.....2507	U 092453	H 038444	S 038427	R 038465



	Ölçüler Dimensions Abmessungen										
Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Levyeye Lever Hebel	Levyeye Vidası Lever Screw Hebel Schraube	Altlık Pimi Anvil Pin Rohrstift	
PTGNR/L	16 16 H11T	16	16	100	18	20	TN.....1103		H 011446	S 011429	
	16 16 H16T	16	16	100	20	20	TN.....1604	U 013950	H 018440	S 018420	R 018463
	20 20 K16T	20	20	125	20	25					
	25 25 M16T	25	25	150	22	32					
	32 25 P16T	32	25	170	22	32					
	25 25 M22T	25	25	150	28	32	TN.....2204	U 023952	H 023441	S 023421	R 023461
	32 25 P22T	32	25	170	28	32					
	32 32 P22T	32	32	170	28	40					
	32 32 P27T	32	32	170	35	40	TN.....2706	U 013954	H 028443	S 000831	R 025464
	40 40 R27T	40	40	200	41	50					



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype	Altılık Anvil Unterlage	Levyeye Lever Hebel	Levyeye Vidası Lever Screw Hebel Schraube	Altılık Pimi Anvil Pin Rohrstift
	h h1	b	L	l1	f					
PTJNR/L 16 16 H16T	16	16	100	20	20	TN.....1604	U 013950	H 018440	S 018420	R 018463
20 20 K16T	20	20	125	20	25					
25 25 M16T	25	25	150	22	32					
32 25 P16T	32	25	170	22	32					
25 25 M22T	25	25	150	28	32	TN.....2204	U 023952	H 023441	S 023421	R 023461
32 25 P22T	32	25	170	28	32					
32 32 P22T	32	32	170	28	40					

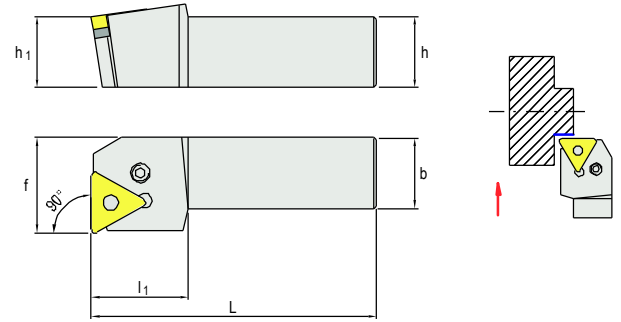
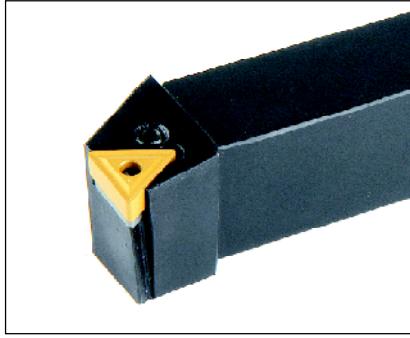


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype	Altılık Anvil Unterlage	Levyeye Lever Hebel	Levyeye Vidası Lever Screw Hebel Schraube	Altılık Pimi Anvil Pin Rohrstift
	h h1	b	L	l1	f					
PTTNR/L 20 20 K16T	20	20	125	26	17	TN.....1604	U 013950	H 018440	S 018420	R 018463
25 25 M16T	25	25	150	26	22					
32 25 P16T	32	25	170	26	22					
25 25 M22T	25	25	150	32	22					
32 25 P22T	32	25	170	32	22	TN.....2204	U 023952	H 023441	S 023421	R 023461
32 32 P22T	32	32	170	32	29					

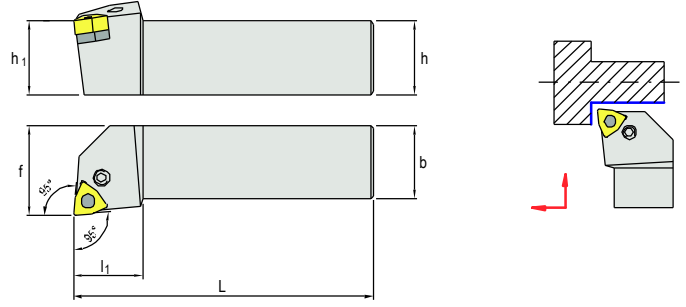
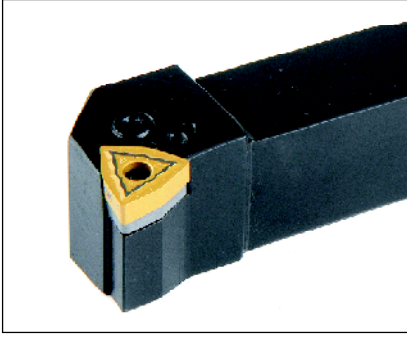
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : PTJNR 25 25 M16

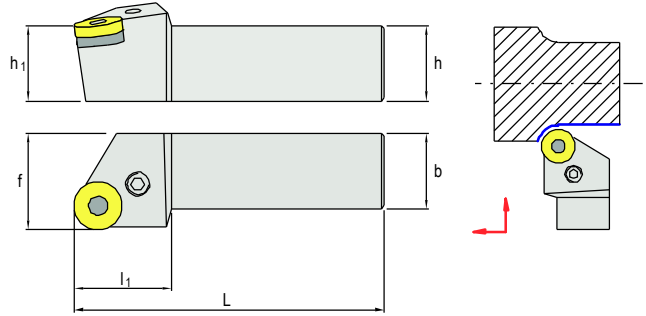
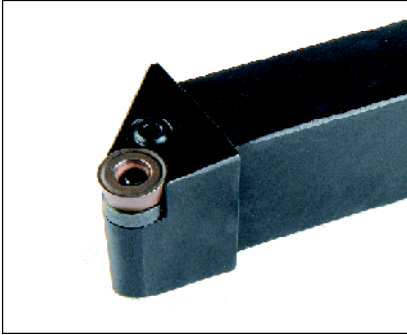
İsteğe bağlı olarak pabuç takviyesi ilave edilmektedir. / Clamp will be supplied according to customer need.



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen									
	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Levy Lever Hebel	Levy Vidası Lever Screw Hebel Schraube	Altık Pimi Anvil Pin Rohrstift
PTFNR/L 16 16 H11T	16	16	100	18	20	TN.....1103	—	H 011446	S 011429	—
16 16 H16T	16	16	100	20	20	TN.....1604	U 013950	H 018440	S 018420	R 018463
20 20 K16T	20	20	125	20	25					
25 25 M16T	25	25	150	22	32					
32 25 P16T	32	25	170	22	32					
25 25 M22T	25	25	150	28	32	TN.....2204	U 023952	H 023441	S 023421	R 023461
32 25 P22T	32	25	170	28	32					
32 32 P22T	32	32	170	28	40					



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Levyeye Lever Hebel	Levyeye Vidası Lever Screw Hebel Schraube	Altlık Pimi Anvil Pin Rohrstift
	h h ₁	b	L	l ₁	f					
PWLNRL 16 16 H06T	16	16	100	20	20	WNM...0604	WNMG 0604 ALT	H 018440	S 018421	R 018463
20 20 K06T	20	20	125	25	25					
25 25 M06T	25	25	150	25	32					
20 20 M08T	20	20	125	25	25	WNM...0804	7853519	H 023441	S 023421	R 023461
25 25 M08T	25	25	150	25	32					
32 25 P08T	32	25	170	25	32					
32 32 P08T	32	32	170	25	40					

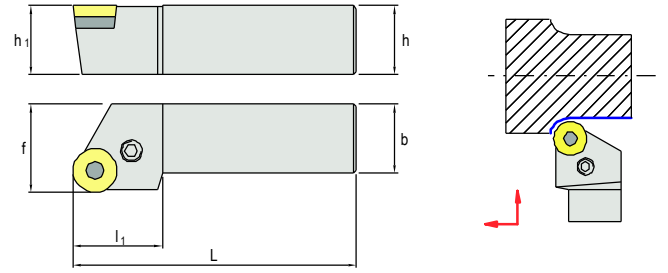
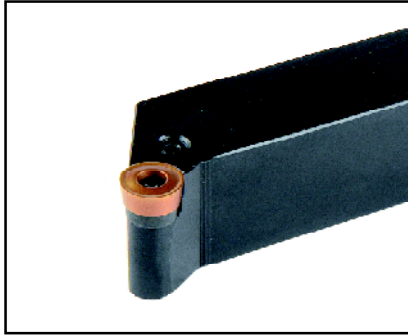


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Levyeye Lever Hebel	Levyeye Vidası Lever Screw Hebel Schraube	Altlık Pimi Anvil Pin Rohrstift
	h h ₁	b	L	l ₁	f					
PRGNRL 20 20 K09T	20	20	125	21	25	RNM...0903	U 000650	H 018440	S 018420	R 018463
25 25 M12T	25	25	150	27	32					
32 25 P12T	32	25	170	27	32	RNM...1204	U 000651	H 023441	S 023421	R 023461
32 32 P12T	32	32	170	27	40					

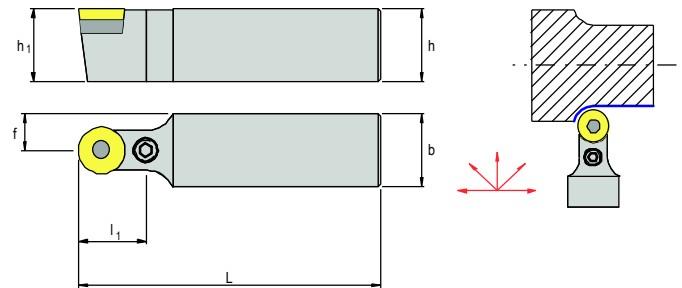
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : PWLNRL 25 25 M08

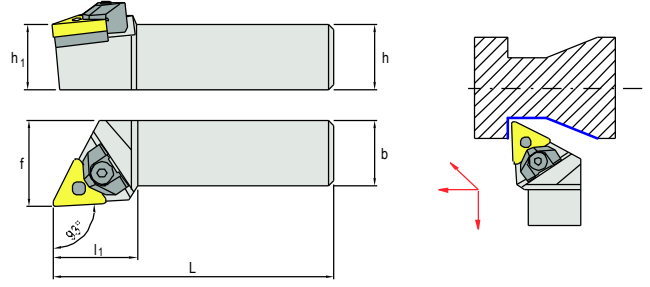
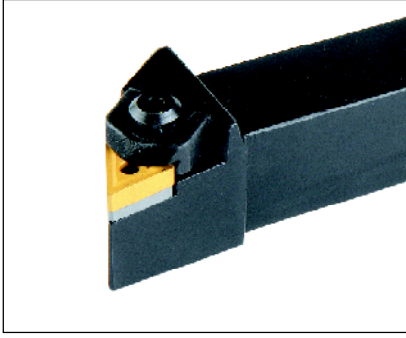
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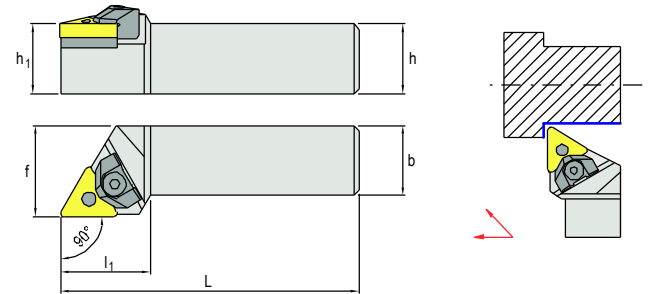
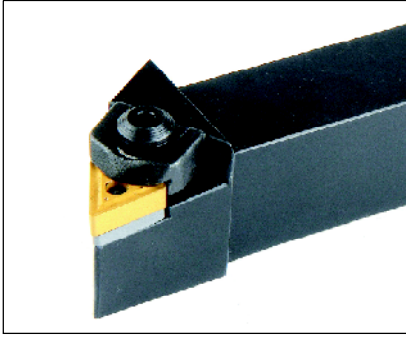
	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Levy Lever Hebel	Levy Vidası Lever Screw Hebel Schraube	Altlık Pimi Anvil Pin Rohrstift
PRGCR/L 20 20 K12T	20	20	125	21	25	RCM...1204	U 000351	H 000341	S 018420	R 018463
25 25 M12T	25	25	150	27	32					
32 25 P12T	32	25	170	27	32					
25 25 M16T	25	25	150	28	32	RCM...1606	U 000352	H 000342	S 000433	R 000467
32 25 P16T	32	25	170	28	32					
32 32 P20T	32	32	170	32	40					
40 40 R25T	40	40	200	40	50	RCM...2507	U 000353	H 000343	S 000425	R 025464
50 50 S32T	50	50	250	50	60	RCM...3209	U 000354	H 000344	S 000432	R 033462
							U 000355	H 000345	S 038427	R 038465



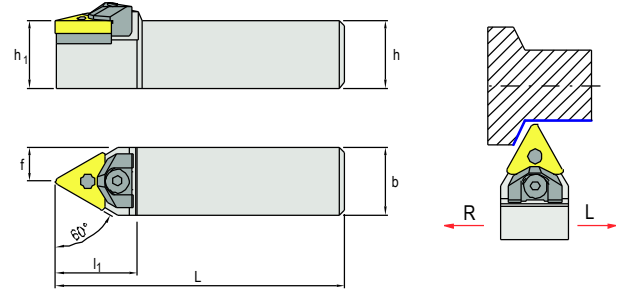
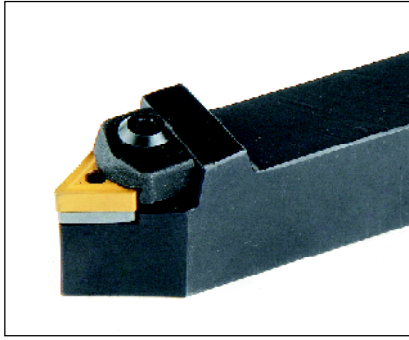
	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Levy Lever Hebel	Levy Vidası Lever Screw Hebel Schraube	Altlık Pimi Anvil Pin Rohrstift
PRDCN 20 20 K12T	20	20	125	21	10	RCM...1204	U 000351	H 000341	S 018420	R 018463
25 25 M12T	25	25	150	27	12.5					
32 25 P12T	32	25	170	27	12.5					
25 25 M16T	25	25	150	28	12.5	RCM...1606	U 000352	H 000342	S 000433	R 000467
32 25 P16T	32	25	170	28	12.5					
32 32 P20T	32	32	170	32	16					
40 40 R25T	40	40	200	40	20	RCM...2507	U 000353	H 000343	S 000425	R 025464
50 50 S32T	50	50	250	50	25	RCM...3209	U 000354	H 000344	S 000432	R 033462
							U 000355	H 000345	S 038427	R 038465



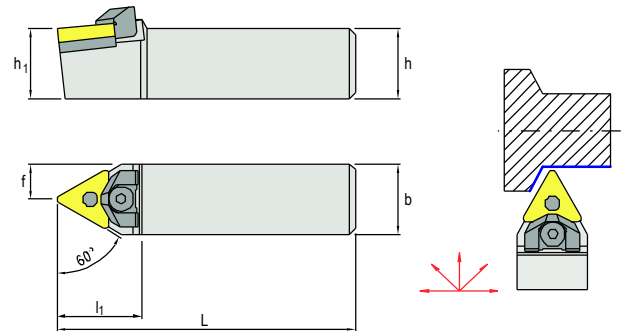
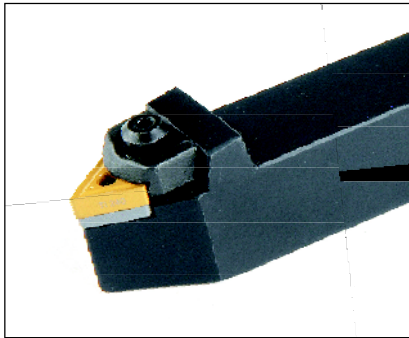
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype	Altılık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Pim Pin Stift
	h h ₁	b	L	l ₁	f					
MTJNR/L 20 20 K16T	20	20	125	31	25	TNM...1604	170.3.852	170.3.820	MTJN 16 M5 BV	170.3.847
25 25 M16T	25	25	150	31	32					
32 25 P16T	32	25	170	31	32					
25 25 M22T	25	25	150	35	32	TNM...2204	170.3.856	170.3.821	MTJN 22 M6 BV	170.3.836
32 25 P22T	32	25	170	35	32					
32 32 P22T	32	32	170	35	40					



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype	Altılık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Pim Pin Stift
	h h ₁	b	L	l ₁	f					
MTGNR/L 20 20 K16T	20	20	125	31	25	TNM...1604	170.3.852	170.3.820	MTJN 16 M5 BV	170.3.847
25 25 M16T	25	25	150	31	32					
32 25 P16T	32	25	170	31	32					
25 25 M22T	25	25	150	35	32	TNM...2204	170.3.856	170.3.821	MTJN 22 M6 BV	170.3.836
32 25 P22T	32	25	170	35	32					
32 32 P22T	32	32	170	35	40					

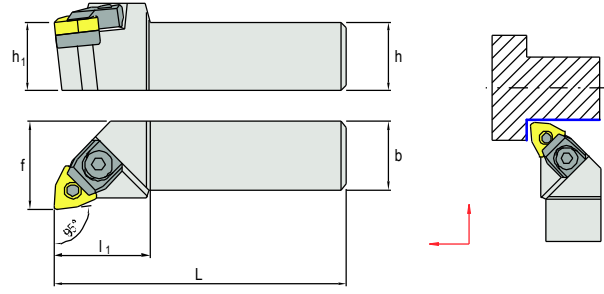
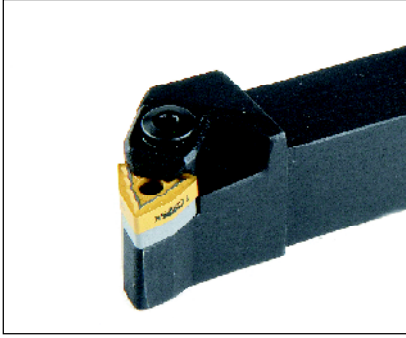


	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Pim Pin Stift
MTNRL 20 20 K16T	20	20	125	31	10	TNM...1604	170.3.852	170.3.820	MTJN 16 M5 BV	170.3.847
25 25 M16T	25	25	150	31	12.5					
32 25 P16T	32	25	170	31	12.5					
25 25 M22T	25	25	150	31	12.5	TNM...2204	170.3.856	170.3.821	MTJN 22 M6 BV	170.3.836
32 25 P22T	32	25	170	35	12.5					
32 32 P22T	32	32	170	35	16					

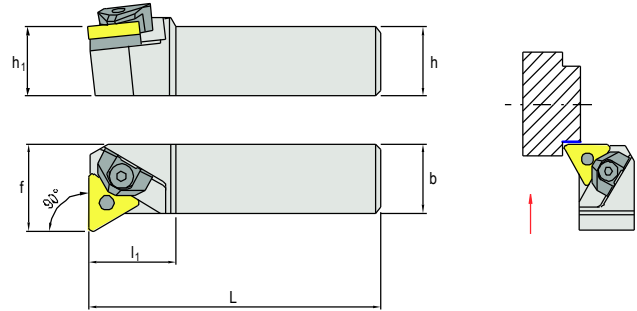
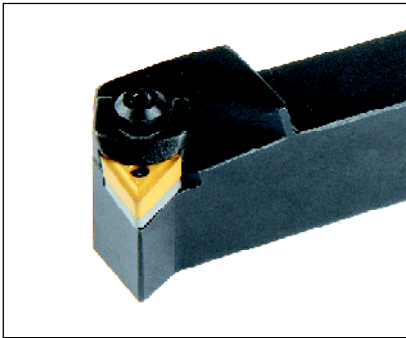


	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Pim Pin Stift
MTENN 25 25 M16T	25	25	150	31	12.5	TNM...1604	170.3.852	170.3.820	MTJN 16 M5 BV	170.3.847
32 25 P16T	32	25	170	35	12.5					
25 25 M22T	25	25	150	31	12.5	TNM...2204	170.3.856	170.3.821	MTJN 22 M6 BV	170.3.836
32 25 P22T	32	25	170	35	12.5					

Dış Torna Katerleri
Turning - Toolholder , External
Drehen - Klemmhalter, Außenbearbeitung



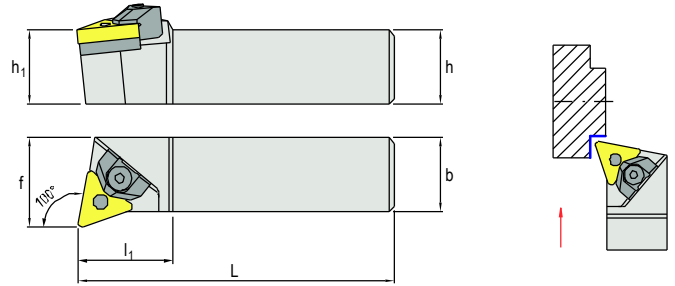
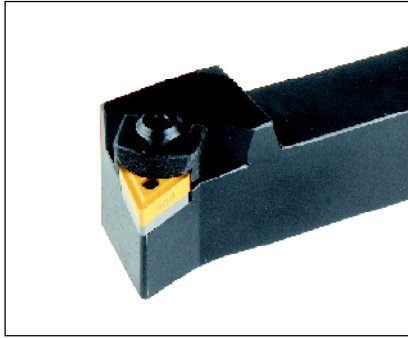
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype	Altılık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Pim Pin Stift
	h h ₁	b	L	L ₁	f					
MWLNR/L 20 20 K08T	20	20	125	35	25	WNM...0804	WN 08 ALT	WN 08 BP	MTJN 22 M6 BV	170.3.836
25 25 M08T	25	25	150	35	32					
32 25 P08T	32	25	170	35	32					
32 32 P08T	32	32	170	35	40					

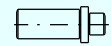


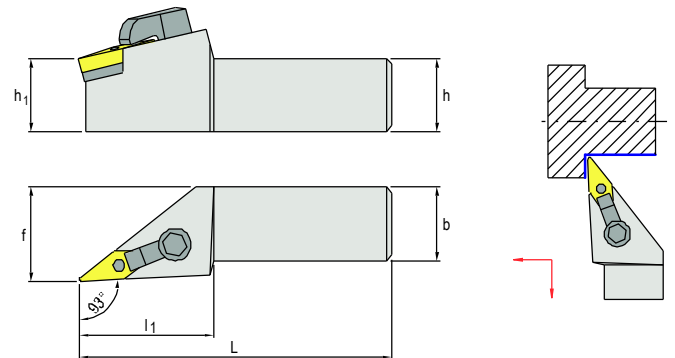
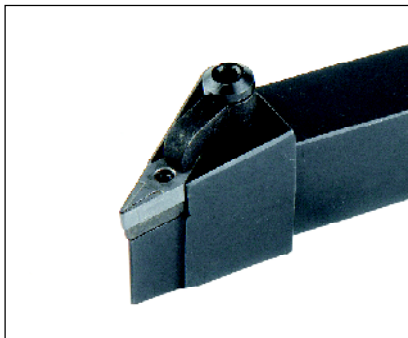
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype	Altılık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Pim Pin Stift
	h h ₁	b	L	L ₁	f					
MTFNR/L 20 20 K16T	20	20	125	31	25	TNM...1604	170.3.852	170.3.820	MTJN 16 M5 BV	170.3.847
25 25 M16T	25	25	150	31	32					
32 25 P16T	32	25	170	31	32					
25 25 M22T	25	25	150	35	32	TNM...2204	170.3.856	170.3.821	MTJN 22 M6 BV	170.3.836
32 25 P22T	32	25	170	35	32					
32 32 P22T	32	32	170	35	40					

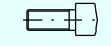
R : Sağ / Right / Rechte L : Sol / Left / Linke

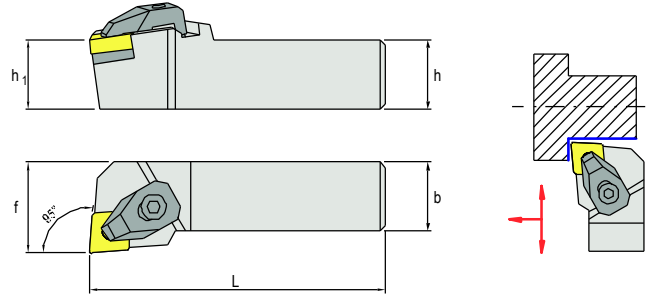
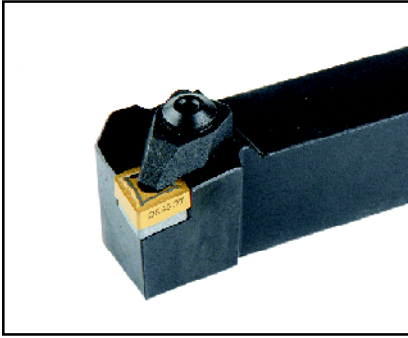
Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : MWLNR 25 25 M08



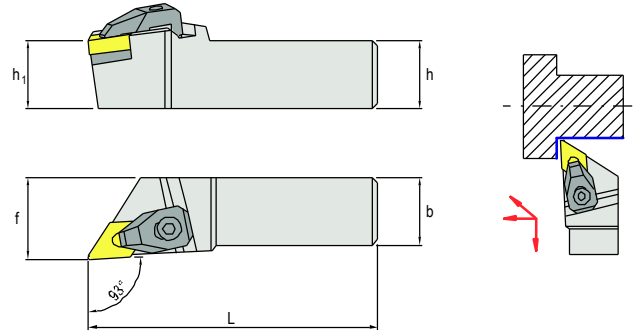
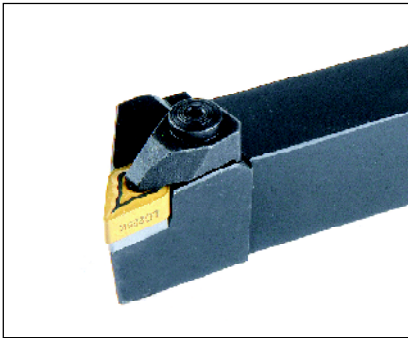
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MTXNR/L 20 20 K16T	20	20	125	31	25	TNM...1604	170.3.852	170.3.820	MTJN 16 M5 BV	170.3.847
25 25 M16T	25	25	150	31	32					
32 25 P16T	32	25	170	31	32					
20 20 K22T	20	20	125	35	25	TNM...2204	170.3.856	170.3.821	MTJN 22 M6 BV	170.3.836
25 25 M22T	25	25	150	35	32					
32 25 P22T	32	25	170	35	32					



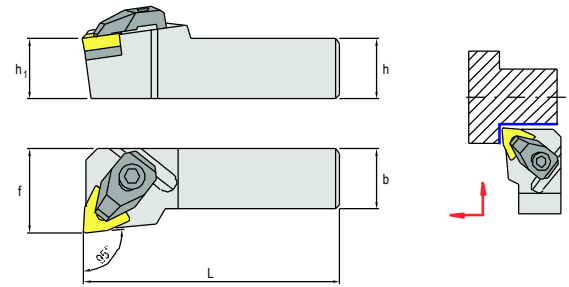
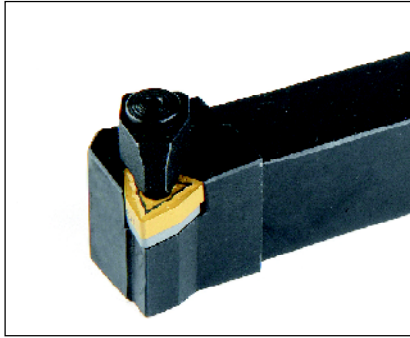
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Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altılık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Uç Vidası Insert Screw Plattenschraube	Baskı Vidası Clamp Screw Klemmschraube
MVJNR/L 20 20 K16	20	20	125	40	25	VNM...1604	VN 16 ALT	TBP 12	M4 NL	70.91.11.BV
25 25 M16	25	25	150	40	32					
32 25 P16	32	25	170	40	32					



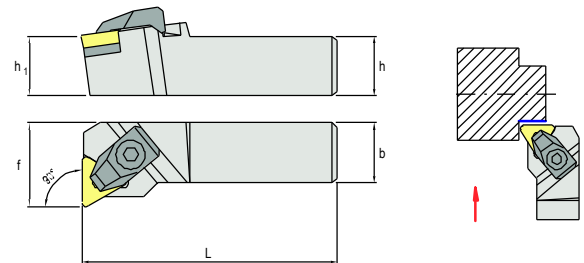
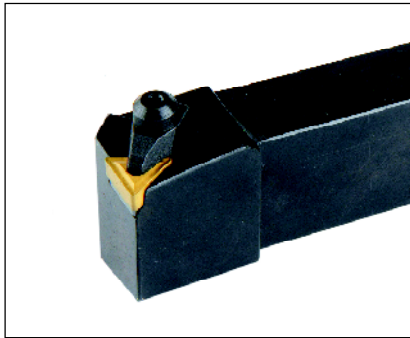
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DCLNR/L 20 20 K12	20	20	125	25	CNM...1204	U 112150	TK DBP	MTJN 22 M6 BV	M4 x 12 AV
25 25 M12	25	25	150	32					
32 25 P12	32	25	170	32					
32 32 P12	32	32	170	40					



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen								
	h h ₁	b	L	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altlık Vidası Anvil Screw Gewindehülse
DDJNR/L 20 20 K15	20	20	125	25	DNM...1506	U 153150	TK DBP	MTJN 22 M6 BV	M4 x 12 AV
25 25 M15	25	25	150	32					
32 25 P15	32	25	170	32					
32 32 P15	32	32	170	40					

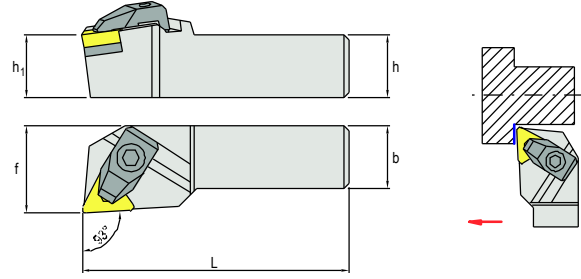
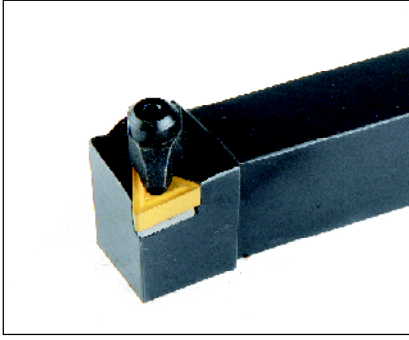


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Uç Tipi Insert Type Plattentype	Altılık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altılık Vidası Anvil Screw Gewindehülse
	h h ₁	b	L	f					
DWLNR/L 20 20 K06	20	20	125	25	WNM...0604	WN 06 ALT	TK DBP	MTJN 22 M6 BV	M3 AV
25 25 M06	25	25	150	32					
25 25 M08	25	25	150	32	WNM...0804	7853519	TK DBP	MTJN 22 M6 BV	M4 x 12 AV
32 25 P08	32	25	170	32					

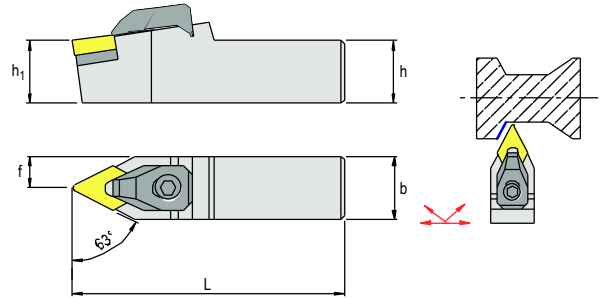
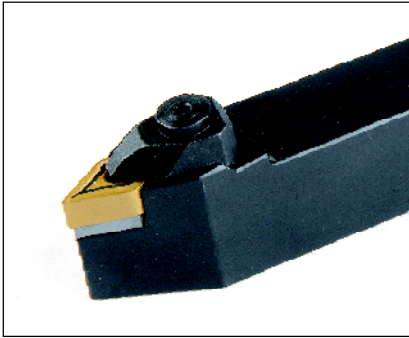


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Uç Tipi Insert Type Plattentype	Altılık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altılık Vidası Anvil Screw Gewindehülse
	h h ₁	b	L	f					
DTFNR/L 20 20 K16	20	20	125	25	TNM...1604	U 013950	TK DBP K	MTJN 22 M6 BV	M4 x 12 AV
25 25 M16	25	25	150	32					
32 25 P16	32	25	170	32					

Dış Torna Katerleri
Turning - Toolholder , External
Drehen - Klemmhalter, Außenbearbeitung



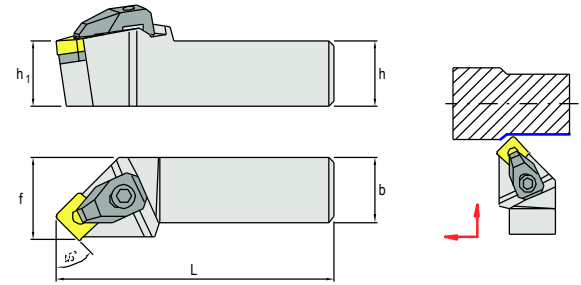
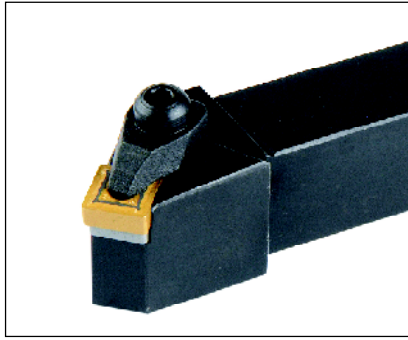
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DTJNR/L 20 20 K16	20	20	125	25	TNM...1604	U 013950	TK DBP K	MTJN 22 M6 BV	M4 x 12 AV
25 25 M16	25	25	150	32					
32 25 P16	32	25	170	32					



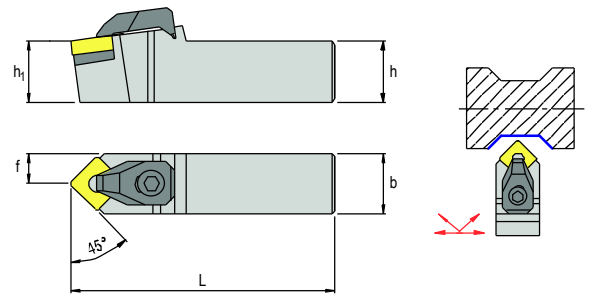
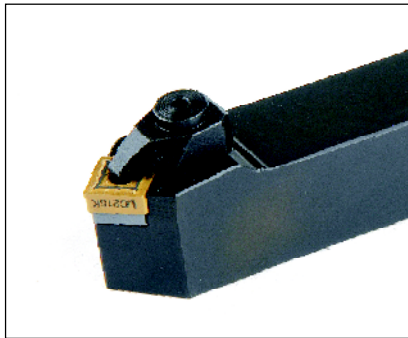
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DDNNN 20 20 K15	20	20	125	10	DNM...1506	U 153150	TK DBP	MTJN 22 M6 BV	M4 x 12 AV
25 25 M15	25	25	150	12.5					
32 25 P15	32	25	170	12.5					

R : Sağ / Right / Rechte L : Sol / Left / Linke

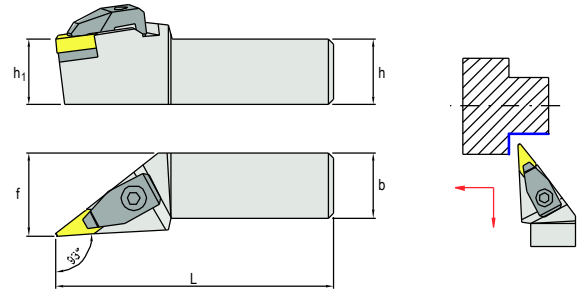
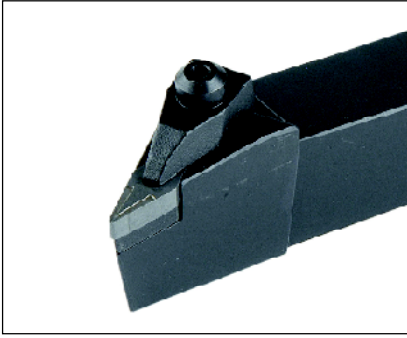
Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : DTJNR 25 25 M16



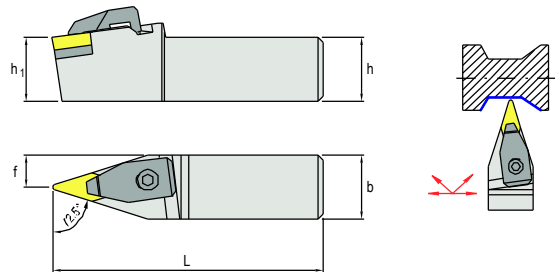
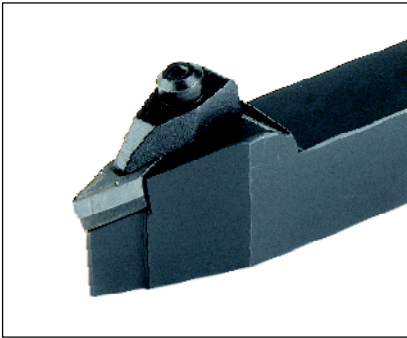
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	h h ₁	b	L	f					
DSSNR/L 20 20 K12	20	20	125	25	SN.....1204	U 063451	TK DBP	MTJN 22 M6 BV	M4 x 12 AV
25 25 M12	25	25	150	32					
32 25 P12	32	25	170	32					



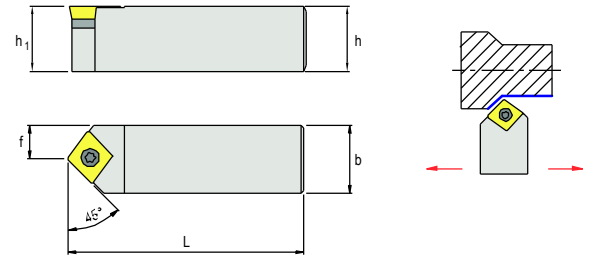
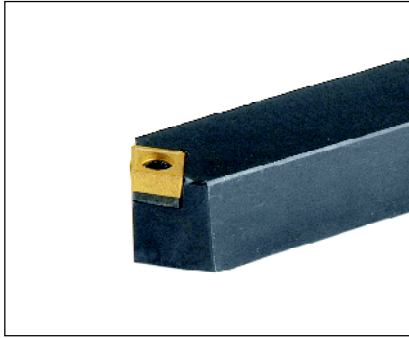
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altık Vidası Anvil Screw Gewindehülse
	h h ₁	b	L	f					
DSDNN 20 20 K12	20	20	125	10	SN.....1204	U 063451	TK DBP	MTJN 22 M6 BV	M4 AV
25 25 M12	25	25	150	12.5					



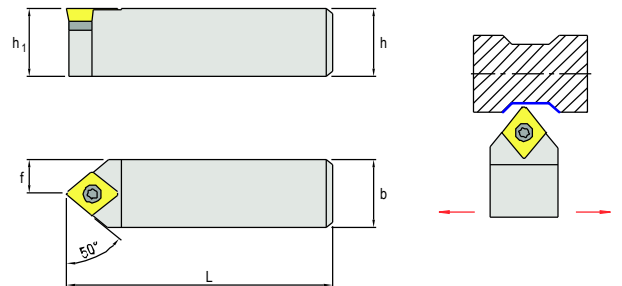
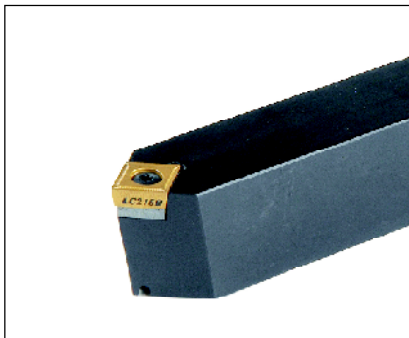
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen								
	h h ₁	b	L	f					
DVJNR/L 20 20 K16	20	20	125	25	VN.....1604	VN 16 ALT	TK DBP 16	MTJN 22 M6 BV	M4 x 12 AV
25 25 M16	25	25	150	32					
32 25 P16	32	25	170	32					



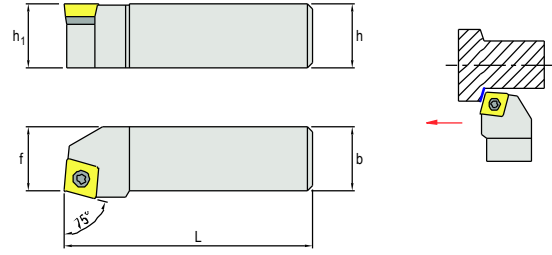
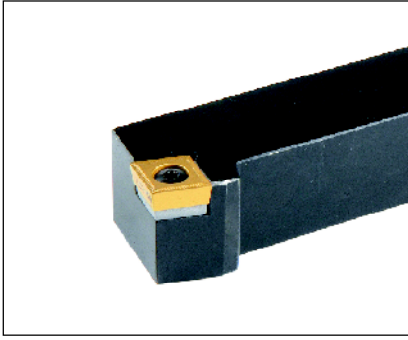
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen								
	h h ₁	b	L	f					
DVVNN 20 20 K16	20	20	125	10	VN.....1604	VN 16 ALT	TK DBP 16	MTJN 22 M6 BV	M4 x 12 AV
25 25 M16	25	25	150	12.5					
32 25 P16	32	25	170	12.5					



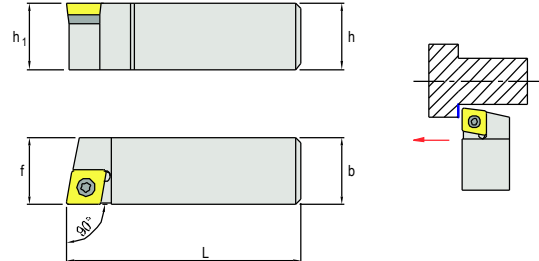
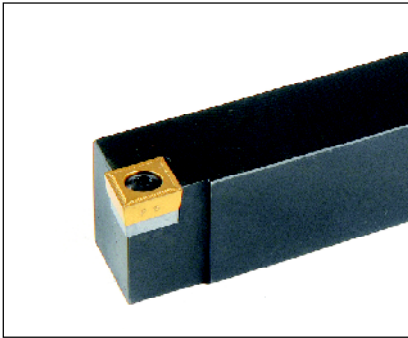
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Kod Code Bezeichnung	h h ₁	b	L	f	Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Altık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
SCDCR/L 08 08 H06	8	8	100	4	CC.....0602	—	—	7815101	T08 IP
10 10 H06	10	10	100	5					
12 12 H09	12	12	100	6	CC.....09T3	—	—	7815102	T15 IP
14 14 H09	14	14	100	7					



	Ölçüler Dimensions Abmessungen								
Kod Code Bezeichnung	h h ₁	b	L	f	Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Altık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
SCMCN 16 16 H09	16	16	100	8	CC.....09T3	—	—	7815102	T15 IP
20 20 K09	20	20	125	10		7883001	7883102		
25 25 M12	25	25	150	12.5	CC.....1204	7883002	7883101		
32 25 P12	32	25	170	12.5					



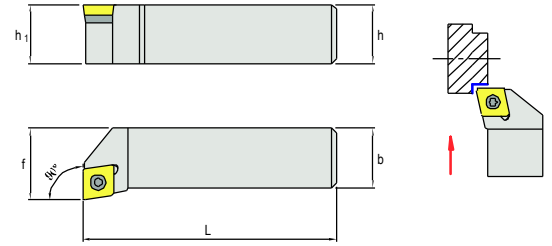
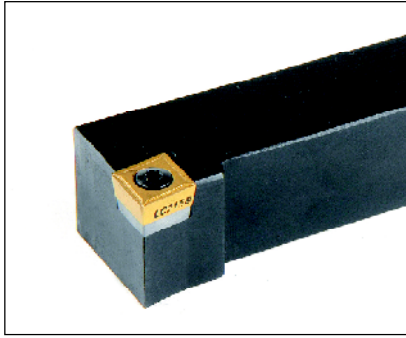
	Ölçüler Dimensions Abmessungen								
Kod Code Bezeichnung	h h ₁	b	L	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
SCRCR/L 08 08 D06	8	8	60	9	CC.....0602	—	—	7815101	T08 IP
10 10 E06	10	10	70	11	CC.....09T3	—	—	7815102	T15 IP
12 12 F09	12	12	80	13		—	—	7815102	
16 16 H09	16	16	100	17		7883001	7883102	7815102	
20 20 K09	20	20	125	22	CC.....1204	7883001	7883102	7815102	T15 IP
16 16 H12	16	16	100	17		—	—	7815102	
20 20 K12	20	20	125	22		7883002	7883101	7883202	
25 25 M12	25	25	150	27					



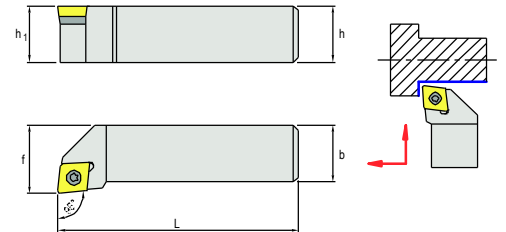
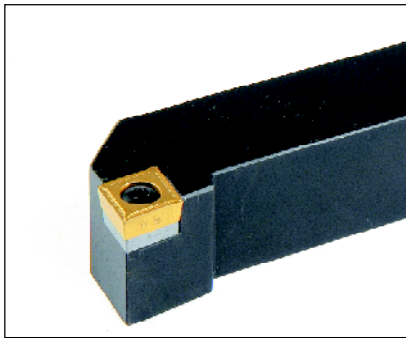
	Ölçüler Dimensions Abmessungen								
Kod Code Bezeichnung	h h ₁	b	L	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
SCACR/L 08 08 D06	8	8	60	8	CC.....0602	—	—	7815101	T08 IP
10 10 E06	10	10	70	10	CC.....09T3	—	—	7815102	T15 IP
12 12 F09	12	12	80	12		—	—	7815102	
16 16 H09	16	16	100	16		7883001	7883102	7815102	
20 20 K09	20	20	125	20	CC.....1204	7883001	7883102	7815102	T15 IP
16 16 H12	16	16	100	16		—	—	7815102	
20 20 K12	20	20	125	20		7883002	7883101	7883202	
25 25 M12	25	25	150	25					

R : Sağ / Right / Rechte L : Sol / Left / Linke

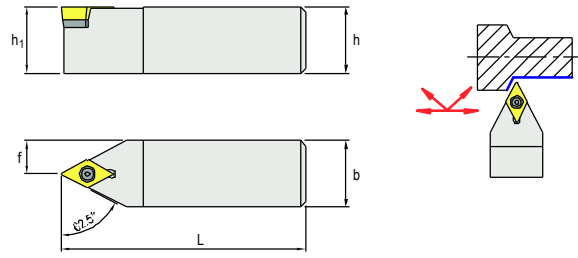
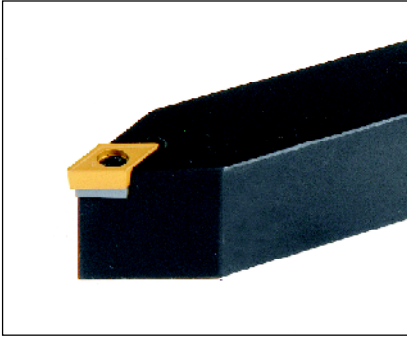
Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : SCRCR 25 25 M12



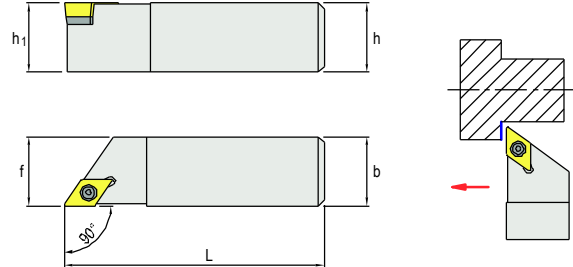
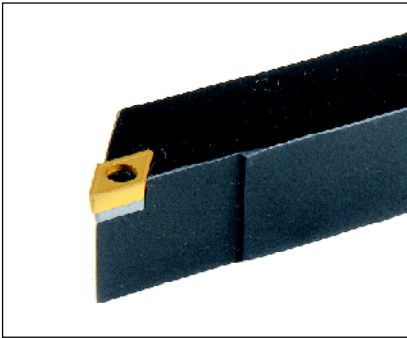
		Ölçüler Dimensions Abmessungen								
Kod Code Bezeichnung		h h ₁	b	L	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
SCFCR/L	08 08 D06	8	8	60	10	CC.....0602	—	—	7815101	T08 IP
	10 10 E06	10	10	70	12		—	—	7815101	
	12 12 F09	12	12	80	16	CC.....09T3	—	—	7815102	T15 IP
	16 16 H09	16	16	100	20		7883001	7883102	7815102	
	20 20 K09	20	20	125	25			7883001	7883102	
	16 16 H12	16	16	100	20	CC.....1204	—	—	7883202	
	20 20 K12	20	20	125	25		7883002	7883101	7883202	
	25 25 M12	25	25	150	32		7883002	7883101	7883202	



	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	h h ₁	b	L	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel	
SCLCR/L	08 08 D06	8	8	60	10	CC.....0602	—	—	7815101	T08 IP
	10 10 E06	10	10	70	12		—	—	7815101	
	12 12 F09	12	12	80	16	CC.....09T3	—	—	7815102	T15 IP
	16 16 H09	16	16	100	20		—	—	7815102	
	20 20 K09	20	20	125	25	7883001	7883102	7815102		
	16 16 H12	16	16	100	20	—	—	7883202		
	20 20 K12	20	20	125	25	7883002	7883101			
	25 25 M12	25	25	150	32	7883002	7883101			



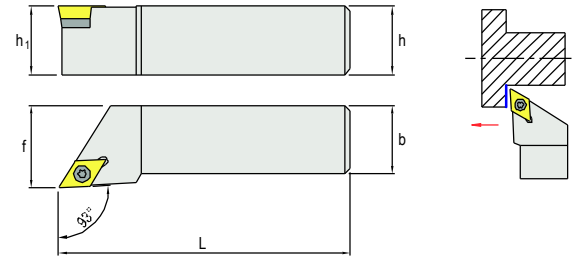
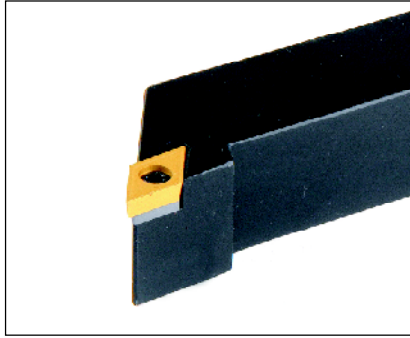
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	h h ₁	b	L	f					
SDNCN 08 08 D07	8	8	60	4	DC.....0702	—	—	7815101	T08 IP
10 10 E07	10	10	70	5					
12 12 F07	12	12	80	6					
16 16 H11	16	16	100	8	DC.....11T3	7815000	7883102	7815102	T15 IP
20 20 K11	20	20	125	10					
25 25 M11	25	25	150	12.5					
32 25 P11	32	25	170	12.5					



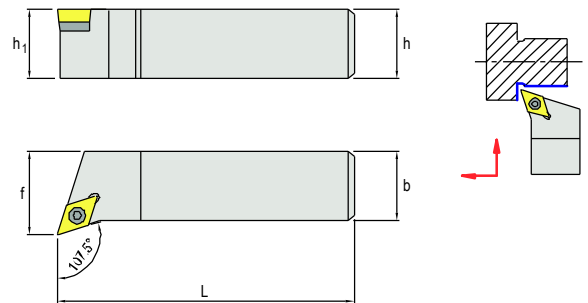
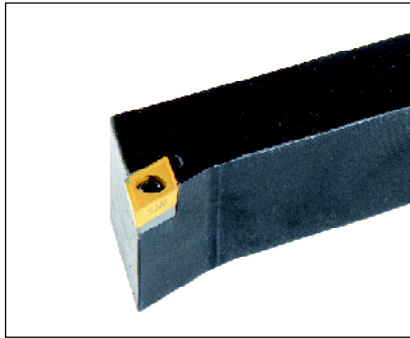
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	h h ₁	b	L	f					
SDACR/L 08 08 D07	8	8	60	8	DC.....0702	—	—	7815101	T08 IP
10 10 E07	10	10	70	10					
12 12 F07	12	12	80	12					
16 16 H11	16	16	100	16	DC.....11T3	7815000	7883102	7815102	T15 IP
20 20 K11	20	20	125	20					
25 25 M11	25	25	150	25					
32 25 P11	32	25	170	25					

R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : SDNCN 25 25 M11

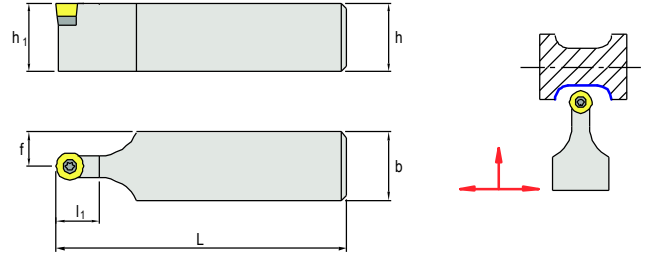
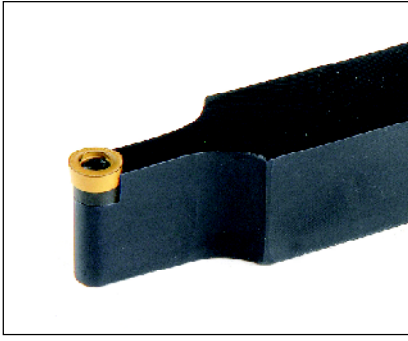


	Ölçüler Dimensions Abmessungen								
Kod Code Bezeichnung	h h ₁	b	L	f	Uç Tipi Insert Type Plattentype	Altılık Anvil Unterlage	Altılık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
SDJCR/L 08 08 D07	8	8	60	8	DC.....0702	—	—	7815101	T08 IP
10 10 E07	10	10	70	10					
12 12 F07	12	12	80	12					
16 16 H11	16	16	100	16	DC.....11T3	—	—	7815102	T15 IP
20 20 K11	20	20	125	20					
25 25 M11	25	25	150	25					
32 25 P11	32	25	170	25					

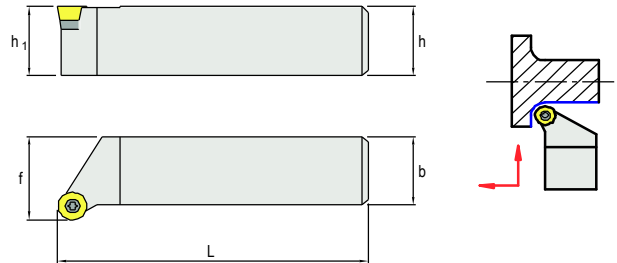
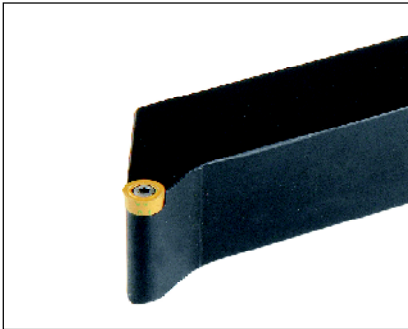


	Ölçüler Dimensions Abmessungen								
Kod Code Bezeichnung	h h ₁	b	L	f	Uç Tipi Insert Type Plattentype	Altılık Anvil Unterlage	Altılık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
SDHCR/L 08 08 D07	8	8	60	8	DC.....0702	—	—	7815101	T08 IP
10 10 E07	10	10	70	10					
12 12 F07	12	12	80	12					
16 16 H11	16	16	100	16	DC.....11T3	—	—	7815102	T15 IP
20 20 K11	20	20	125	20					
25 25 M11	25	25	150	25					
32 25 P11	32	25	170	25					

Dış Torna Katerleri
Turning - Toolholder, External
Drehen - Klemmhalter, Außenbearbeitung



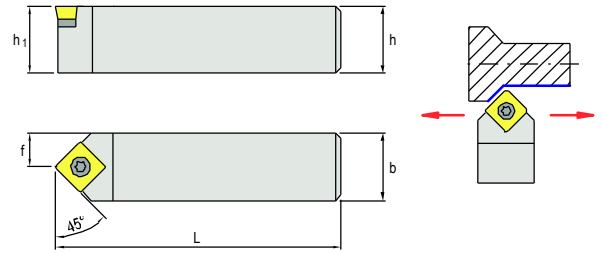
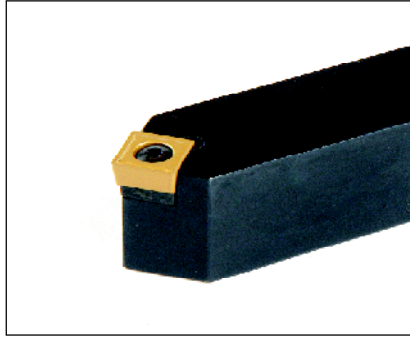
		Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung		h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
SRDCN 12 12 F06	12 12 F06	12	12	80	13	6	RC.....0602	—	—	7815101	T08 IP
	16 16 H06	16	16	100	17	8					
	20 20 K06	20	20	125	21	10					
	25 25 M06	25	25	150	21	12.5					
16 16 H08	16 16 H08	16	16	100	17	8	RC.....0803	—	—	7883203	T08 IP
	20 20 K08	20	20	125	21	10					
	25 25 M08	25	25	150	21	12.5					
	16 16 H10	16	16	100	17	8					
20 20 K10	20 20 K10	20	20	125	21	10	RC.....1003	7817002	7883102	7815102	T15 IP
	25 25 M10	25	25	150	21	12.5					
	20 20 K12	20	20	125	21	10					
	25 25 M12	25	25	150	21	12.5					
32 25 P12	32 25 P12	32	25	170	25	12.5	RC.....1204	7817003	7883101	7883202	



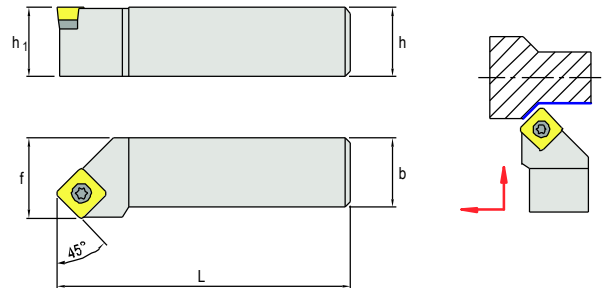
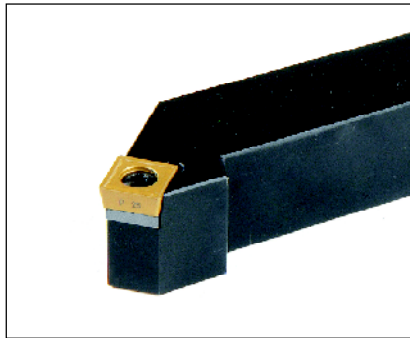
	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	h h ₁	b	L	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel	
SRGCR/L 12 12 F06 16 16 H06 20 20 K06 25 25 M06	12	12	80	16	RC.....0602	—	—	7815101	T08 IP	
	16	16	100	20						
	20	20	125	25						
	25	25	150	32						
16 16 H08 20 20 K08 25 25 M08	16	16	100	20	RC.....0803	—	—	7883203	T08 IP	
	20	20	125	25						
	25	25	150	32						
	16 16 H10	16	16	100						20
20 20 K10 25 25 M10 20 20 K12 25 25 M12 32 25 P12	20	20	125	25	RC.....1003	7817002	7883102	7815102	T15 IP	
	25	25	150	32						
	20	20	125	25						
	25	25	150	32						
	32	25	170	32	RC.....1204	7817003	7883101	7883202		

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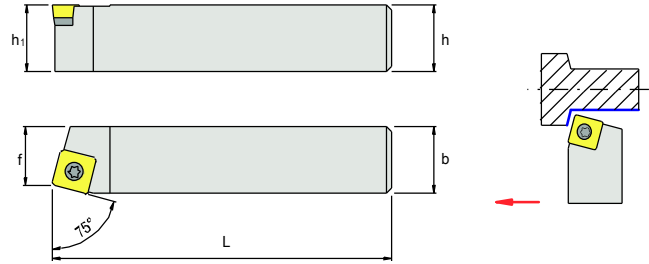
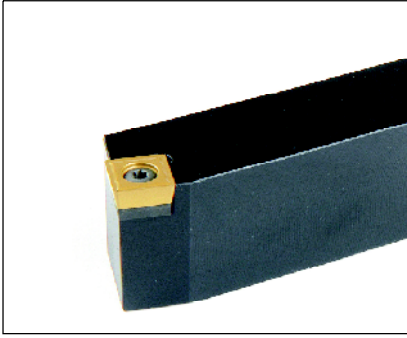
Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : SRDCN 25 25 M12



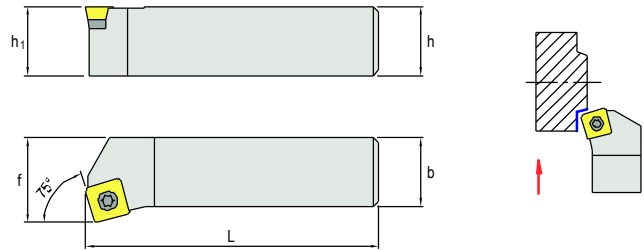
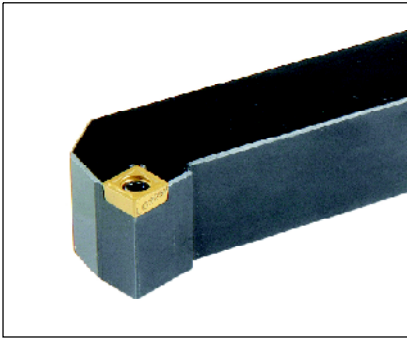
		Ölçüler Dimensions Abmessungen								
Kod Code Bezeichnung		h h ₁	b	L	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
SSDCN	12 12 F09	12	12	80	6	SC.....09T3..	—	—	7815102	T15 IP
	16 16 H09	16	16	100	8		7883003	7883102		
	20 20 K09	20	20	125	10		—	—		
	16 16 H12	16	16	100	8	SC.....1204..	—	—		
	20 20 K12	20	20	125	10		7883004	7883101	7883202	
	25 25 M12	25	25	150	12.5					
	32 25 P12	32	25	170	12.5					



		Ölçüler Dimensions Abmessungen								
Kod Code Bezeichnung		h h ₁	b	L	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
SSSCR/L	12 12 F09	12	12	80	16	SC.....09T3..	—	—	7815102	T15 IP
	16 16 H09	16	16	100	20		7883003	7883102		
	20 20 K09	20	20	125	25		—	—		
	16 16 H12	16	16	100	20	SC.....1204..	—	—		
	20 20 K12	20	20	125	25		7883004	7883101	7883202	
	25 25 M12	25	25	150	32					
	32 25 P12	32	25	170	32					



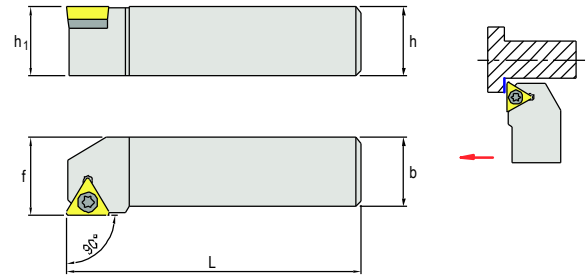
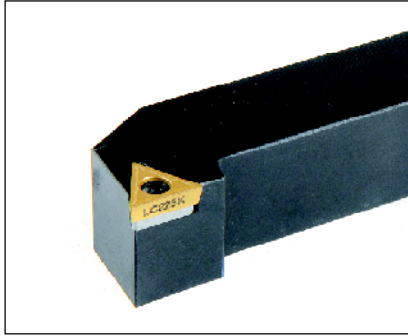
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	h h ₁	b	L	f					
SSBCR/L 12 12 F09	12	12	80	16	SC.....09T3..	—	—	7815102	T 15 IP
16 16 H09	16	16	100	20		7883003	7883102		
20 20 K09	20	20	125	25		—	—		
16 16 H12	16	16	100	20	SC.....1204..	—	—		
20 20 K12	20	20	125	25		7883004	7883101	7883202	
25 25 M12	25	25	150	32					
32 25 P12	32	25	170	32					



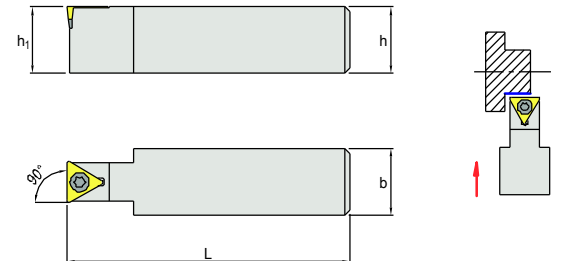
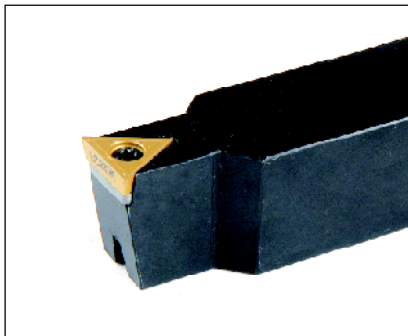
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	h h ₁	b	L	f					
SSKCR/L 12 12 F09	12	12	80	16	SC.....09T3..	—	—	7815102	T 15 IP
16 16 H09	16	16	100	20		7883003	7883102		
20 20 K09	20	20	125	25		—	—		
16 16 H12	16	16	100	20	SC.....1204..	—	—		
20 20 K12	20	20	125	25		7883004	7883101	7883202	
25 25 M12	25	25	150	32					
32 25 P12	32	25	170	32					

R : Sağ / Right / Rechte L : Sol / Left / Linke

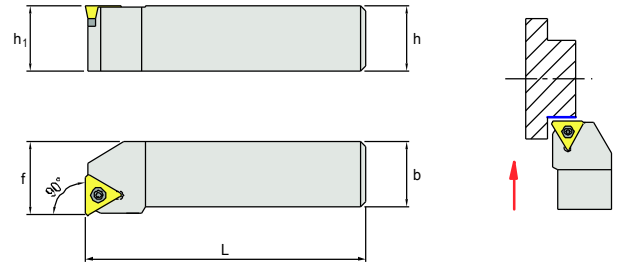
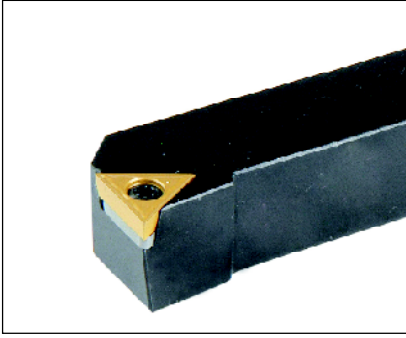
Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : **SSBCR 25 25 M12**



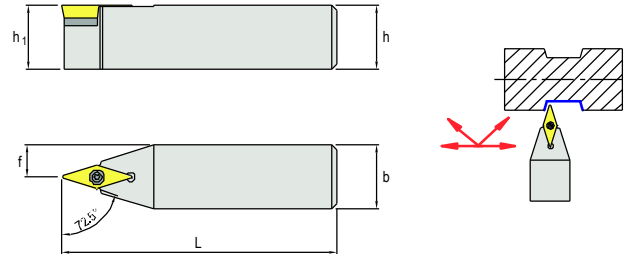
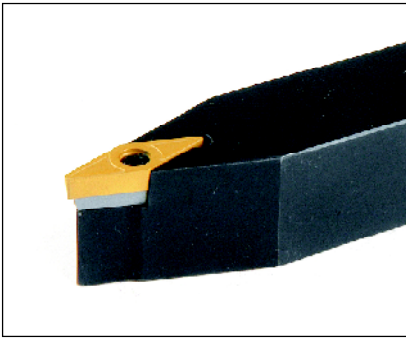
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Altık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	h h ₁	b	L	f					
STGCR/L 10 10 E09	10	10	70	12	TC.....0902..	—	—	7722113	T07
12 12 F11	12	12	80	14	TC.....1102..	—	—	7815101	T08 IP
16 16 H11	16	16	100	20	TC.....16T3..	7883005	7883102	7815102	T15 IP
16 16 H16	16	16	100	20					
20 20 K16	20	20	125	25					
25 25 M16	25	25	150	32					
32 25 P16	32	25	170	32					



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Altık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	h h ₁	b	L	f					
STCCN 10 10 E09	10	10	70	12	TC.....0902..	—	—	7722113	T07
12 12 F11	12	12	80	14	TC.....1102..	—	—	7815101	T08 IP
16 16 H11	16	16	100	20	TC.....16T3..	7883005	7883102	7815102	T15 IP
16 16 H16	16	16	100	20					
20 20 K16	20	20	125	25					
25 25 M16	25	25	150	32					
32 25 P16	32	25	170	32					



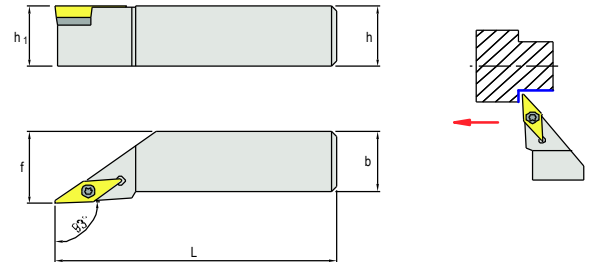
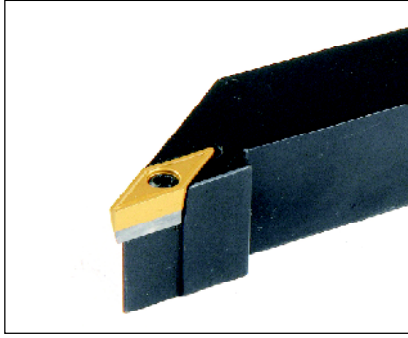
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Altık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	h h ₁	b	L	f					
STFCR/L 10 10 E09	10	10	70	12	TC.....0902..	—	—	7722113	T07
12 12 F11	12	12	80	14	TC.....1102..	—	—	7815101	T08 IP
16 16 H11	16	16	100	20	TC.....16T3..	7883005	7883102	7815102	T15 IP
16 16 H16	16	16	100	20					
20 20 K16	20	20	125	25					
25 25 M16	25	25	150	32					
32 25 P16	32	25	170	32					



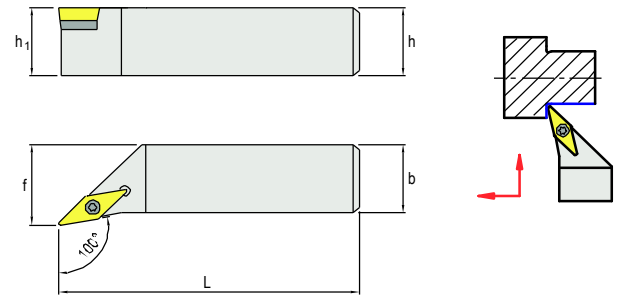
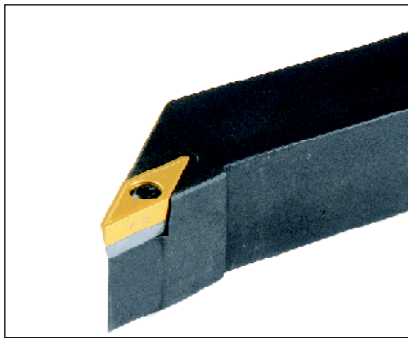
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	h h ₁	b	L	f					
SVVCN 12 12 F11	12	12	80	6	VC.....1103..	—	—	7815101	T08 IP
16 16 H11	16	16	100	8					
20 20 K11	20	20	125	10					
25 25 M11	25	25	150	12.5					
20 20 K16	20	20	125	10	VC.....1604..	7815002	7883102	7815102	T15 IP
25 25 M16	25	25	150	12.5					
32 25 P16	32	25	170	12.5					
25 25 M22	25	25	150	12.5					
32 25 P22	32	25	170	12.5	VC.....2205..	7815004	7883101	7883202	

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Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : STFCR 25 25 M16



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Uç Tipi Insert Type Plattentype	Altılık Anvil Unterlage	Altılık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	h h ₁	b	L	f					
SVJCR/L 12 12 F11	12	12	80	16	VC.....1103..	—	—	7815101	T08 IP
16 16 H11	16	16	100	20					
20 20 K11	20	20	125	25					
25 25 M11	25	25	150	32					
20 20 K16	20	20	125	25	VC.....1604..	7815002	7883102	7815102	T15 IP
25 25 M16	25	25	150	32					
32 25 P16	32	25	170	32					
25 25 M22	25	25	150	32	VC.....2205..	7815004	7883101	7883202	T15 IP
32 25 P22	32	25	170	32					

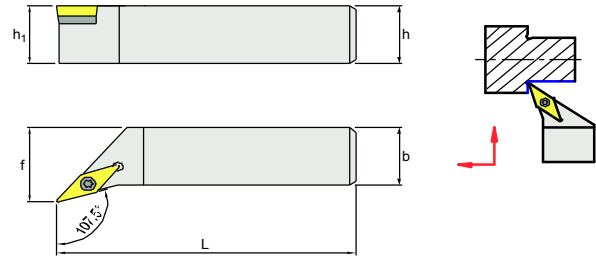
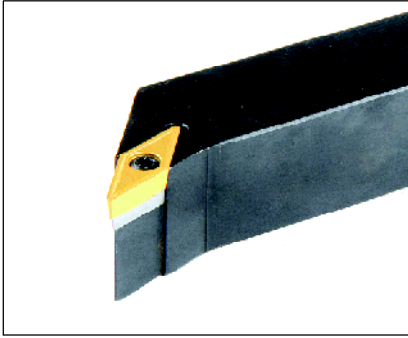


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Uç Tipi Insert Type Plattentype	Altılık Anvil Unterlage	Altılık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	h h ₁	b	L	f					
SVZCR/L 12 12 F11	12	12	80	16	VC.....1103..	—	—	7815101	T08 IP
16 16 H11	16	16	100	20					
20 20 K11	20	20	125	25					
25 25 M11	25	25	150	32					
20 20 K16	20	20	125	25	VC.....1604..	7815002	7883102	7815102	T15 IP
25 25 M16	25	25	150	32					
32 25 P16	32	25	170	32					
25 25 M22	25	25	150	32	VC.....2205..	7815004	7883101	7883202	T15 IP
32 25 P22	32	25	170	32					

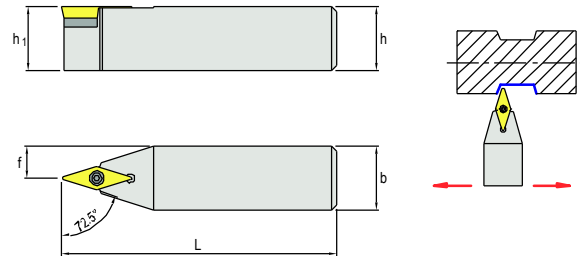
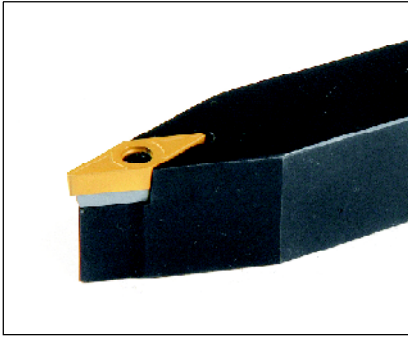
Dış Torna Katerleri

Turning - Toolholder, External

Drehen - Klemmhalter, Außenbearbeitung



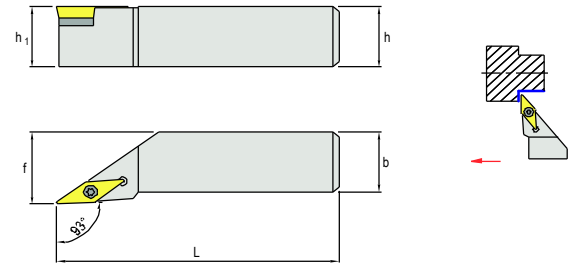
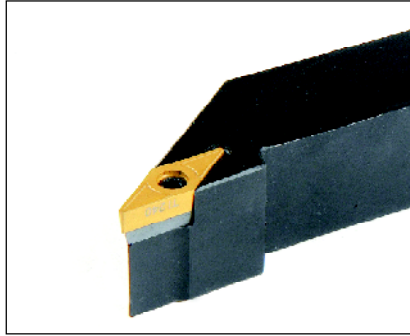
	Ölçüler Dimensions Abmessungen								
Kod Code Bezeichnung	h h ₁	b	L	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
SVHCR/L 12 12 F11	12	12	80	16	VC.....1103..	—	—	7815101	T08 IP
16 16 H11	16	16	100	20					
20 20 K11	20	20	125	25					
25 25 M11	25	25	150	32					
20 20 K16	20	20	125	25	VC.....1604..	7815002	7883102	7815102	T15 IP
25 25 M16	25	25	150	32					
32 25 P16	32	25	170	32					
25 25 M22	25	25	150	32	VC.....2205..	7815004	7883101	7883202	
32 25 P22	32	25	170	32					



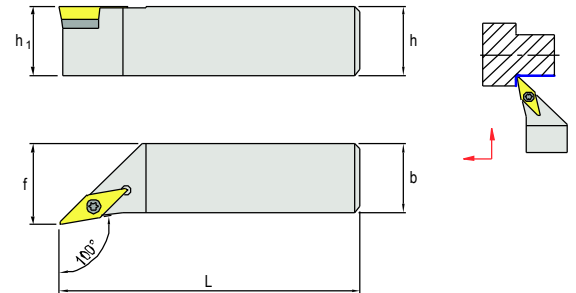
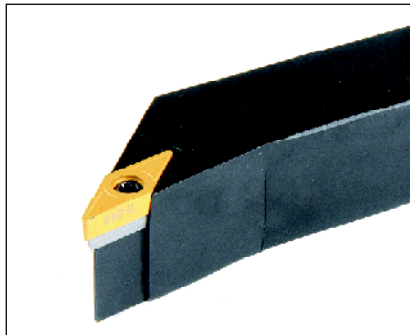
		Ölçüler Dimensions Abmessungen								
Kod Code Bezeichnung		h h ₁	b	L	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
SVVBN	12 12 F11	12	12	80	6	VB.....1103..	—	—	7815101	T08 IP
	16 16 H11	16	16	100	8					
	20 20 K11	20	20	125	10					
	25 25 M11	25	25	150	12.5					
	20 20 K16	20	20	125	10	VB.....1604..	7815002	7883102	7815102	T15 IP
	25 25 M16	25	25	150	12.5					
	32 25 P16	32	25	170	12.5					
	25 25 M22	25	25	150	12.5	VB.....2205..	7815004	7883101	7883202	
	32 25 P22	32	25	170	12.5					

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Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : SVHCR 25 25 M16



	Ölçüler Dimensions Abmessungen								
Kod Code Bezeichnung	h h ₁	b	L	f	Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Altık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
SVJBR/L 12 12 F11	12	12	80	16	VB.....1103..	—	—	7815101	T08 IP
16 16 H11	16	16	100	20					
20 20 K11	20	20	125	25					
25 25 M11	25	25	150	32					
20 20 K16	20	20	125	25	VB.....1604..	7815002	7883102	7815102	T15 IP
25 25 M16	25	25	150	32					
32 25 P16	32	25	170	32					
25 25 M22	25	25	150	32					
32 25 P22	32	25	170	32	VB.....2205..	7815004	7883101	7883202	

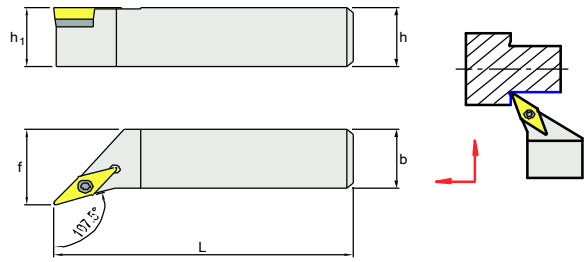
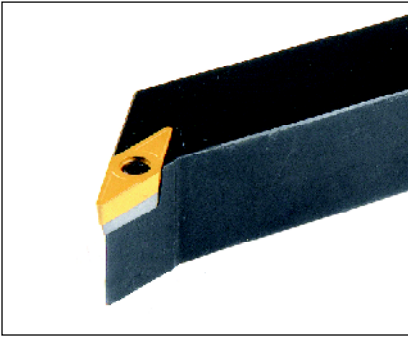


	Ölçüler Dimensions Abmessungen								
Kod Code Bezeichnung	h h ₁	b	L	f	Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Altık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
SVZBR/L 12 12 F11	12	12	80	16	VB.....1103..	—	—	7815101	T08 IP
16 16 H11	16	16	100	20					
20 20 K11	20	20	125	25					
25 25 M11	25	25	150	32					
20 20 K16	20	20	125	25	VB.....1604..	7815002	7883102	7815102	T15 IP
25 25 M16	25	25	150	32					
32 25 P16	32	25	170	32					
25 25 M22	25	25	150	32					
32 25 P22	32	25	170	32	VB.....2205..	7815004	7883101	7883202	

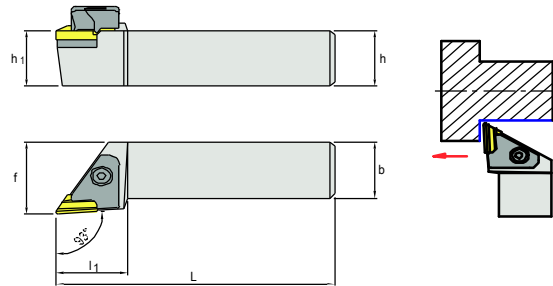
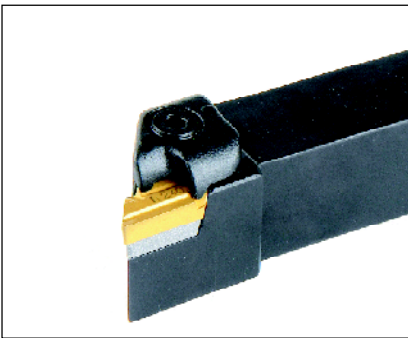
Diş Torna Katerleri

Turning - Toolholder, External

Drehen - Klemmhalter, Außenbearbeitung



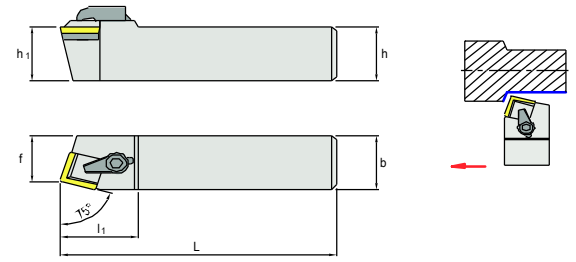
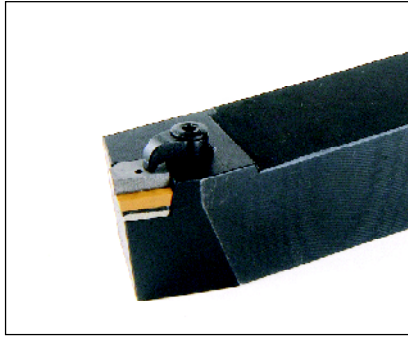
		Ölçüler Dimensions Abmessungen								
Kod Code Bezeichnung		h h ₁	b	L	f	Uç Tipi Insert Type Plattentype	Altılık Anvil Unterlage	Altılık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
SVHBR/L	12 12 F11	12	12	80	16	VB.....1103..	—	—	7815101	T08 IP
	16 16 H11	16	16	100	20					
	20 20 K11	20	20	125	25					
	25 25 M11	25	25	150	32					
	20 20 K16	20	20	125	25	VB.....1604..	7815002	7883102	7815102	T15 IP
	25 25 M16	25	25	150	32					
	32 25 P16	32	25	170	32	VB.....2205..	7815004	7883101	7883202	
	25 25 M22	25	25	150	32					
	32 25 P22	32	25	170	32					



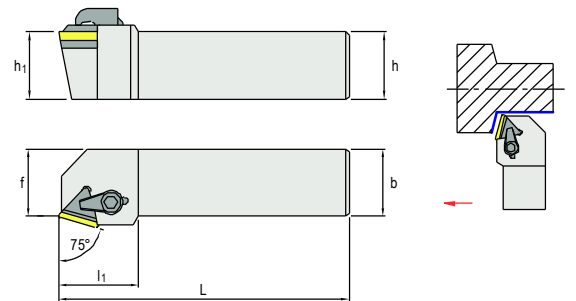
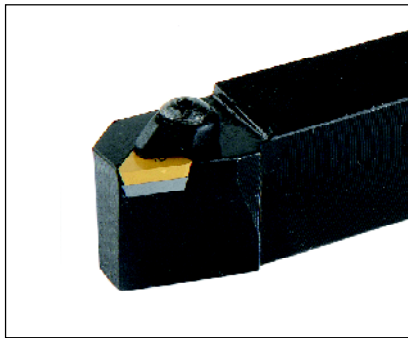
		Ölçüler Dimensions Abmessungen											
Kod Code Bezeichnung		h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	Sağ Baskı Pabucu Clamp Right Re. Klemmung	Sol Baskı Pabucu Clamp Left Li. Klemmung	Baskı Vidası Clamp Screw Klemmschraube	Sağ Altılık Anvil Right Re. Unterlage	Sol Altılık Anvil Left Li. Unterlage	Altılık Pimi Anvil Pin Rohrstift
CKJNR/L 20 20 K16		20	20	125	35	25	KNUX 16...	70.5.824	70.5.825	70.5.865	U 00051R	U 00051L	7480901
25 25 M16		25	25	150	35	32							
32 25 P16		32	25	170	35	32							
32 32 P16		32	32	170	35	40							

R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : CKJNR 25 25 M16



	Ölçüler Dimensions Abmessungen										
Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altlık Pimi Anvil Pin Rohrstift	Talaş Kırıcı Chip Breaker Spanformmille
CSBPR/L 20 20 K12	20	20	125	36	17	SP...1203..	7480315	TBP 16	TBP 16 BV	7480901	SP 12 TK
25 25 M12	25	25	150	36	22						
32 25 P12	32	25	170	36	22						

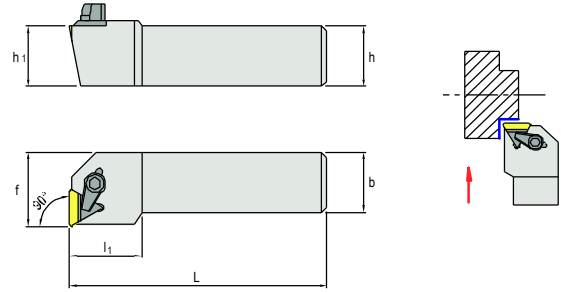
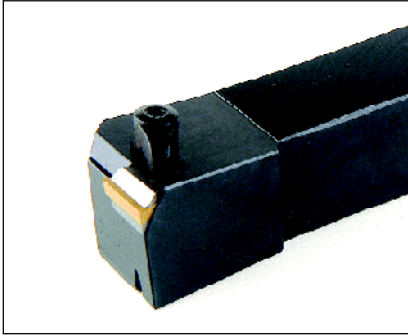


	Ölçüler Dimensions Abmessungen										
Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altlık Pimi Anvil Pin Rohrstift	Talaş Kırıcı Chip Breaker Spanformmille
CTRPR/L 12 12 F11	12	12	80	15	12	TP...1103..	—	7830001	7830002	—	—
16 16 H11	16	16	100	16	16						
20 20 K16	20	20	125	26	20	TP...1603..	7480316	TBP 16	TBP 16 BV	7480901	TP 16 TK
25 25 M16	25	25	150	26	25						
32 25 P16	32	25	170	32	25	TP...2204..	175.11.624	TBP 12	70.91.11.BV	M4 x 12AV	TP 22 TK
25 25 M22	25	25	150	26	25						
32 32 P22	32	32	170	32	32						

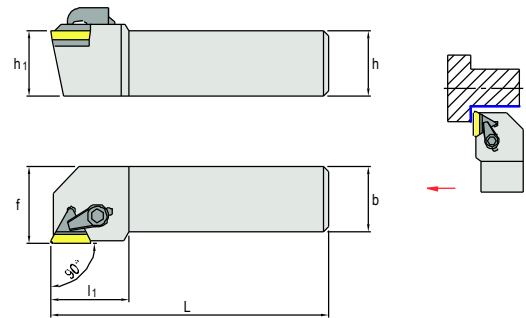
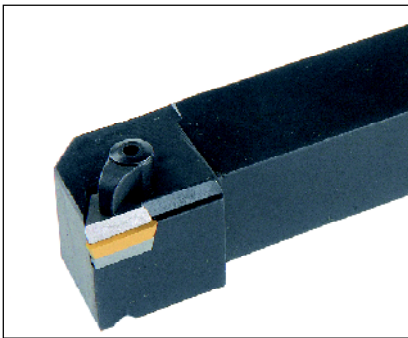
Diş Torna Katerleri

Turning - Toolholder, External

Drehen - Klemmhalter, Außenbearbeitung



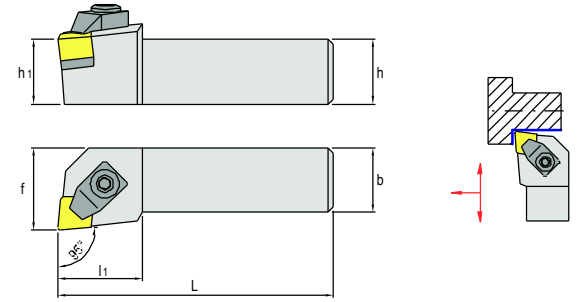
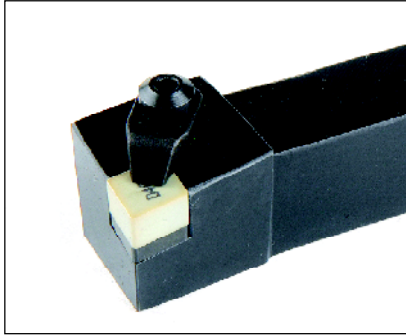
	Ölçüler Dimensions Abmessungen										
Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altlık Pimi Anvil Pin Rohrstift	Talaş Kırıcı Chip Breaker Spanformrille
CTFPR/L 12 12 F11	12	12	80	15	16	TP...1103..	—	7830001	7830002	—	—
16 16 H11	16	16	100	16	20						
20 20 K16	20	20	125	26	25	TP...1603..	7480316	TBP 16	TBP 16 BV	7480901	TP 16 TK
25 25 M16	25	25	150	26	32						
32 25 P16	32	25	170	32	32						
32 32 P16	32	32	170	32	40	TP...2204..	175.11.624	TBP 12	70.91.11.BV	M4 x 12 AV	TP 22 TK
25 25 M22	25	25	150	26	32						
32 32 P22	32	32	170	32	40						



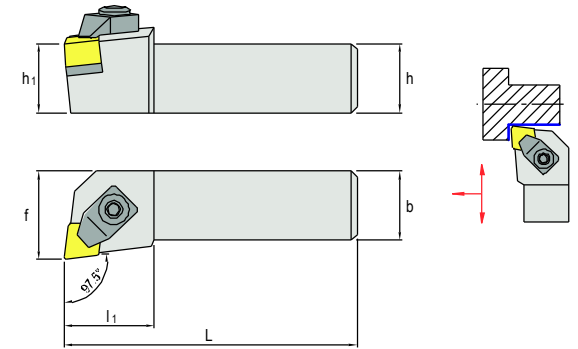
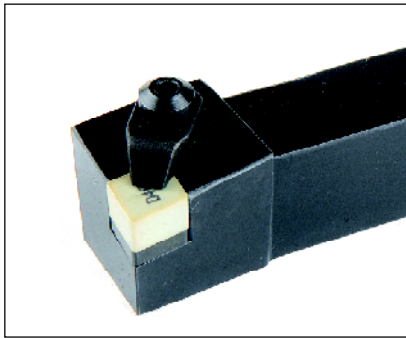
	Ölçüler Dimensions Abmessungen										
Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altlık Pimi Anvil Pin Rohrstift	Talaş Kırıcı Chip Breaker Spanformrille
CTGPR/L 12 12 F11	12	12	80	15	16	TP...1103..	—	7830001	7830002	—	—
16 16 H11	16	16	100	16	20						
20 20 K16	20	20	125	26	25	TP...1603..	7480316	TBP 16	TBP 16 BV	7480901	TP 16 TK
25 25 M16	25	25	150	26	32						
32 25 P16	32	25	170	32	32						
32 32 P16	32	32	170	32	40	TP...2204..	175.11.624	TBP 12	70.91.11.BV	M4 x 12 AV	TP 22 TK
25 25 M22	25	25	150	26	32						
32 32 P22	32	32	170	32	40						

R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : CTGPR 25 25 M16



	Ölçüler Dimensions Abmessungen											
Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	İnce Altlık Anvil Thin Unter. Dünne	Uç Tipi Insert Type Plattentype	Kalın Altlık Anvil Thick Unterlage Dicke	Altlık Vidası Anvil Screw Gewindehülse	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube
CCLNR/L 20 20 K12S	20	20	125	30	25							
25 25 M12S	25	25	150	30	32	CNG....1208...	SRD 12 ALT	CNG....1204...	SRD 12 AL2	M4 x 12 AV	70.91.11.134.0	70.91.11.BV
32 25 P12S	32	25	170	30	32							

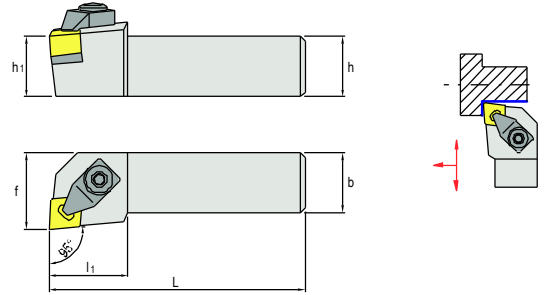
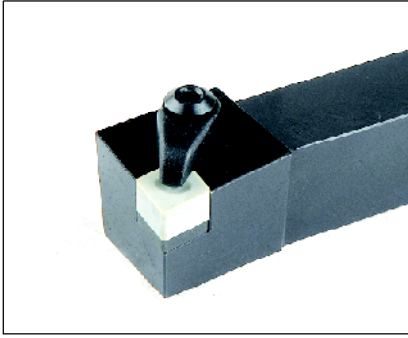


	Ölçüler Dimensions Abmessungen											
Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	İnce Altlık Anvil Thin Unter. Dünne	Uç Tipi Insert Type Plattentype	Kalın Altlık Anvil Thick Unterlage Dicke	Altlık Vidası Anvil Screw Gewindehülse	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube
CELNR/L 20 20 K13S	20	20	125	32	25							
25 25 M13S	25	25	150	32	32	ENG....1308...	SE 12 ALT	ENG....1308..	SE 12 AL2	M4 x 12 AV	70.91.11.134.0	70.91.11.BV
32 25 P13S	32	25	170	32	32							

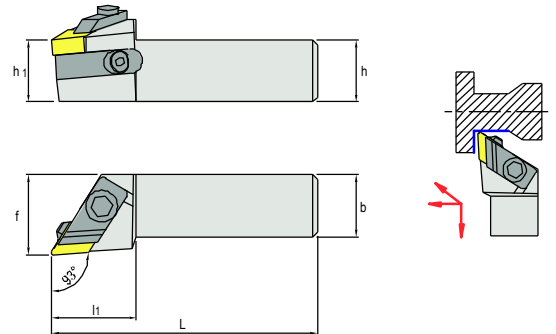
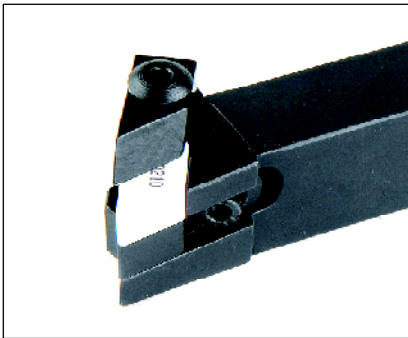
Dış Torna Katerleri

Turning - Toolholder, External

Drehen - Klemmhalter, Außenbearbeitung



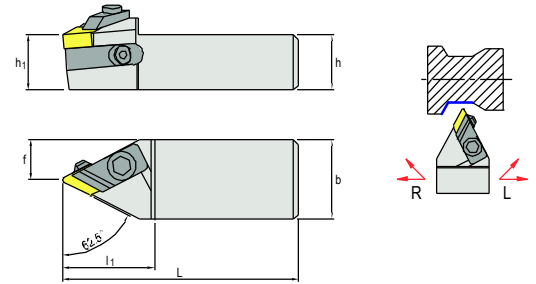
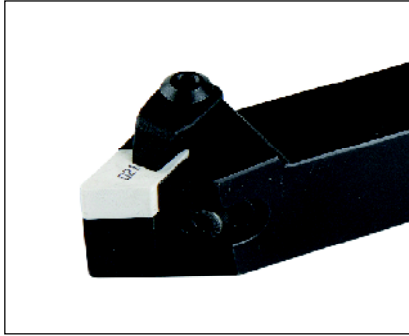
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype	İnce Altlık Anvil Thin Unterlage Dünne	Uç Tipi Insert Type Plattentype	Kalın Altlık Anvil Thick Unterlage Dicke	Altlık Vidası Anvil Screw Gewindehülse	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube
	h h ₁	b	L	l ₁	f							
CCLNR/L 20 20 K12 lx7	20	20	125	30	25	CNGX.1208...	SRD 12 ALT	CNGX.1204..	SRD 12 AL2	M4 x 12 AV	70.91.11.316.0	MTJN22 M6BV
25 25 M12 lx7	25	25	150	33	32							
32 25 P12 lx7	32	25	170	33	32							



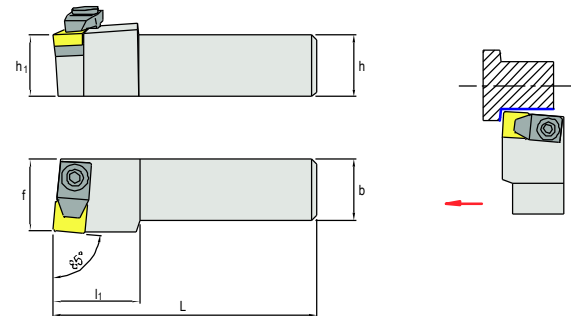
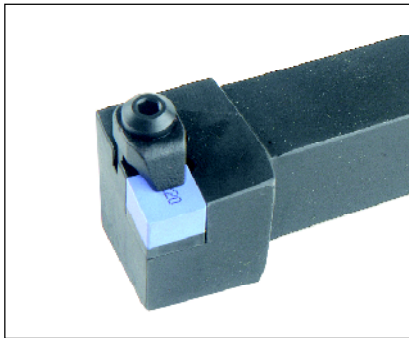
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype	Sağ Altlık Anvil Right Re. Unterlage	Sol Altlık Anvil Left Li. Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Sağ Baskı Papucu Clamp Right Re. Klemmung	Sol Baskı Papucu Clamp Left Li. Klemmung	Baskı Vidası Clamp Screw Klemmschraube
	h h ₁	b	L	l ₁	f							
CDJNR/L 20 20 K15S	20	20	125	32	25	DNG....1506...	70.91.53.681 OR	70.91.53.681 OL	M5	03 BP YTKR	03 BP YTKL	7480210
25 25 M15S	25	25	150	32	32							
32 25 P15S	32	25	170	32	32							

R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : CDJNR 25 25 M15



	Ölçüler Dimensions Abmessungen											
Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	Sağ Altlık Anvil Right Re. Unterlage	Sol Altlık Anvil Left Li. Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Sağ Baskı Papucu Clamp Right Re. Klemmung	Sol Baskı Pabucu Clamp Left Li. Klemmung	Baskı Vidası Clamp Screw Klemmschraube
CDNNR/L 25 25 M15S	25	25	150	32	12.5	DNG....1506...	70.91.53.681 OR	70.91.53.681 OL	M5	03 BP YTKR	03 BP YTKL	7480210
32 25 P15S	32	25	170	32	12.5							
40 25 P15S	40	25	170	32	12.5							

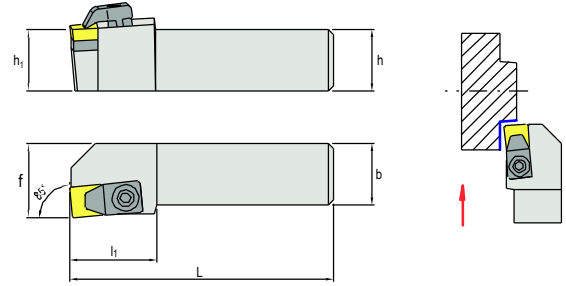
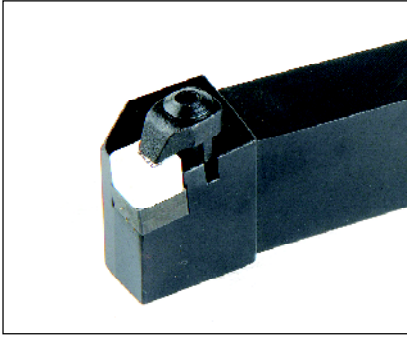


		Ölçüler Dimensions Abmessungen											
Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	İnce Altlık Anvil Thin Unterlage Dünne	Uç Tipi Insert Type Plattentype	Kalın Altlık Anvil Thick Unterlage Dicke	Altlık Vidası Anvil Screw Gewindehülse	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	
CS - NR/L 20 20 K12S	20	20	125	30	25	SNG...1208...	SR 12 ALT	SNG...1204..	SR 12 AL2	M4 x 12 AV	70.91.11.194.0	70.91.11 BV	
25 25 M12S	25	25	150	33	32								
32 25 P12S	32	25	170	33	32								

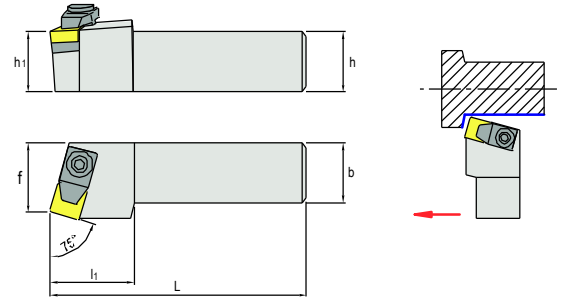
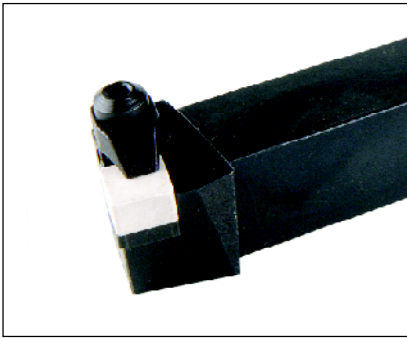
Dış Torna Katerleri

Turning - Toolholder, External

Drehen - Klemmhalter, Außenbearbeitung



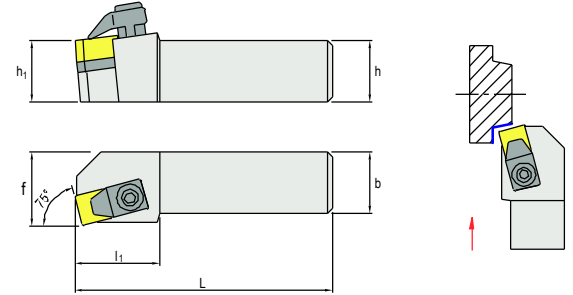
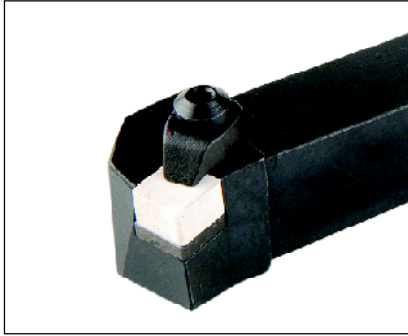
	Ölçüler Dimensions Abmessungen											
Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	İnce Altılık Anvil Thin Unterlage Dünne	Uç Tipi Insert Type Plattentype	Kalın Altılık Anvil Thick Unterlage Dicke	Altılık Vidası Anvil Screw Gewindehülse	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube
CSYNR/L 20 20 K12S	20	20	125	30	25	SNG...1208...	SR 12 ALT	SNG...1204..	SR 12 AL2	M4 x 12 AV	70.91.11.194.0	70.91.11 BV
25 25 M12S	25	25	150	33	32							
32 25 P12S	32	25	170	33	32							



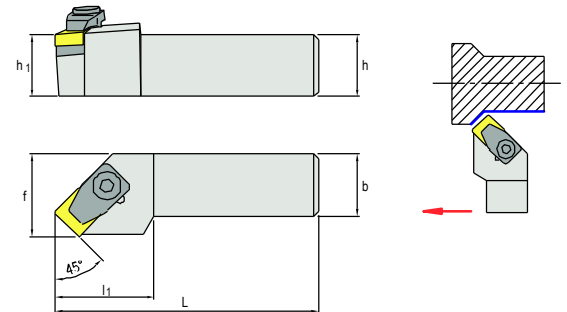
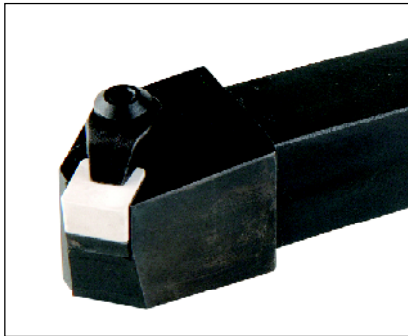
	Ölçüler Dimensions Abmessungen											
Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	İnce Altılık Anvil Thin Unterlage Dünne	Uç Tipi Insert Type Plattentype	Kalın Altılık Anvil Thick Unterlage Dicke	Altılık Vidası Anvil Screw Gewindehülse	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube
CSNR/L 20 20 K12S	20	20	125	30	25	SNG...1208...	SR 12 ALT	SNG...1204..	SR 12 AL2	M4 x 12 AV	70.91.11.194.0	70.91.11 BV
25 25 M12S	25	25	150	33	32							
32 25 P12S	32	25	170	33	32							

R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : CSYNR 25 25 M12



		Ölçüler Dimensions Abmessungen											
Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	İnce Altlık Anvil Thin Unterlage Dünne	Uç Tipi Insert Type Plattentype	Kalın Altlık Anvil Thick Unterlage Dicke	Altlık Vidası Anvil Screw Gewindehülse	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	
CSKNR/L 20 20 K12S	20	20	125	30	25	SNG...1208...	SR 12 ALT	SNG...1204..	SR 12 AL2	M4 x 12 AV	70.91.11.194.0	70.91.11 BV	
25 25 M12S	25	25	150	33	32								
32 25 P12S	32	25	170	33	32								

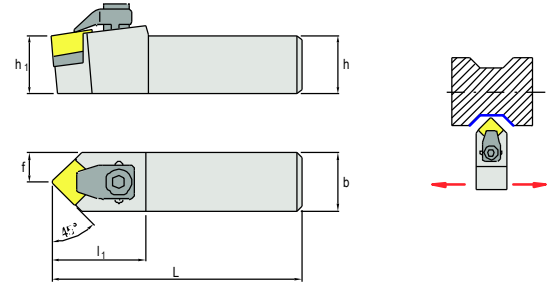
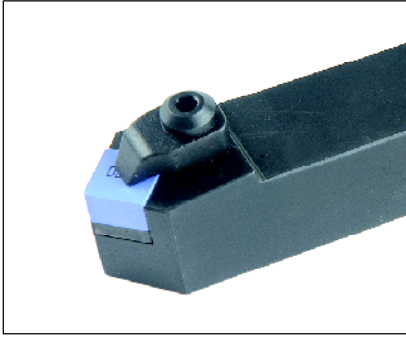


		Ölçüler Dimensions Abmessungen											
Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	İnce Altlık Anvil Thin Unterlage Dünne	Uç Tipi Insert Type Plattentype	Kalın Altlık Anvil Thick Unterlage Dicke	Altlık Vidası Anvil Screw Gewindehülse	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	
CSSNR/L 20 20 K12S	20	20	125	30	25	SNG...1208...	SR 12 ALT	SNG...1204..	SR 12 AL2	M4 x 12 AV	70.91.11.194.0	70.91.11 BV	
25 25 M12S	25	25	150	33	32								
32 25 P12S	32	25	170	33	32								

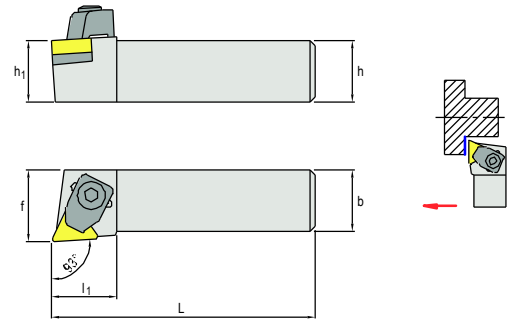
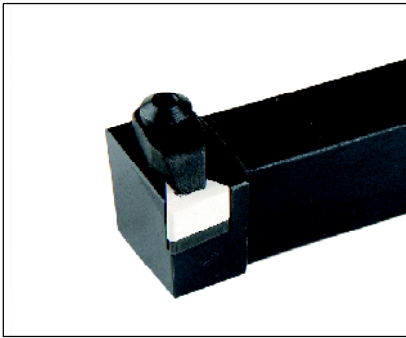
Dış Torna Katerleri

Turning - Toolholder, External

Drehen - Klemmhalter, Außenbearbeitung



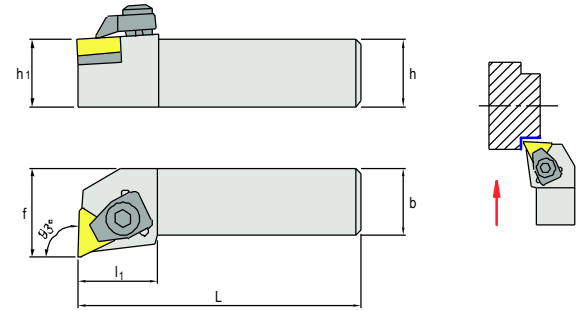
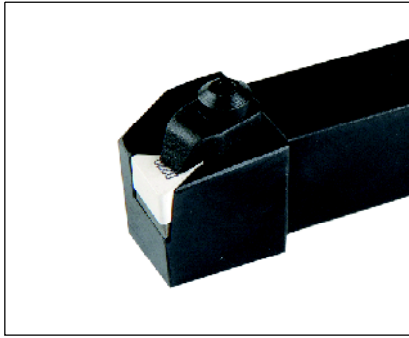
		Ölçüler Dimensions Abmessungen											
Kod Code Bezeichnung		h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	İnce Altlık Anvil Thin Unterlage Dünne	Uç Tipi Insert Type Plattentype	Kalın Altlık Anvil Thick Unterlage Dicke	Altlık Vidası Anvil Screw Gewindehülse	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube
CSDNN	20 20 K12S	20	20	125	30	10	SNG...1208...	SR 12 ALT	SNG...1204..	SR 12 AL2	M4 x 12 AV	70.91.11.134.0	70.91.11 BV
	25 25 M12S	25	25	150	33	12.5							
	32 25 P12S	32	25	170	33	12.5							



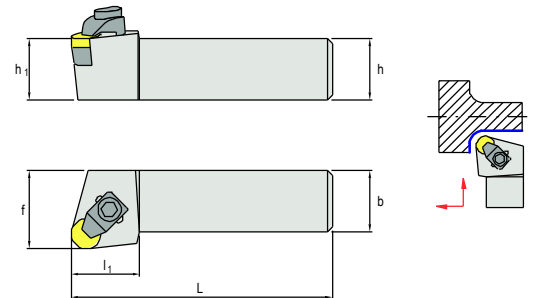
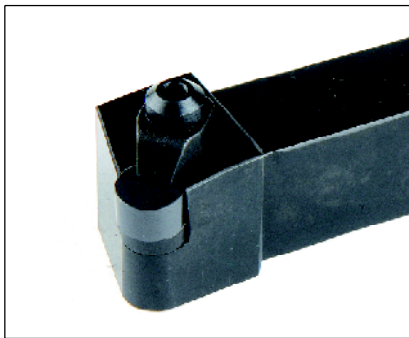
		Ölçüler Dimensions Abmessungen											
Kod Code Bezeichnung		h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	İnce Altlık Anvil Thin Unterlage Dünne	Uç Tipi Insert Type Plattentype	Kalın Altlık Anvil Thick Unterlage Dicke	Altlık Vidası Anvil Screw Gewindehülse	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube
CTJNR/L	20 20 K16S	20	20	125	30	25	TNG...1608...	SR 16 ALT	TNG...1604..	SR 16 AL2	M4 x 12 AV	70.91.11.194.0	70.91.11 BV
	25 25 M16S	25	25	150	33	32							
	32 25 P16S	32	25	170	33	32							

R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : CTJNR 25 25 M16



	Ölçüler Dimensions Abmessungen											
Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	İnce Altlık Anvil Thin Unterlage Dünne	Uç Tipi Insert Type Plattentype	Kalın Altlık Anvil Thick Unterlage Dicke	Altlık Vidası Anvil Screw Gewindehülse	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube
CTUNR/L 20 20 K16S	20	20	125	30	25	TNG...1608...	SR 16 ALT	TNG...1604..	SR 16 AL2	M4 x 12 AV	70.91.11.194.0	70.91.11 BV
25 25 M16S	25	25	150	33	32							
32 25 P16S	32	25	170	33	32							

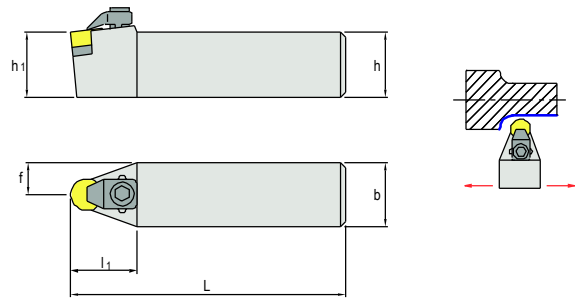
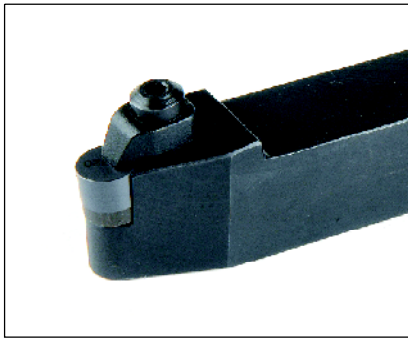


	Ölçüler Dimensions Abmessungen											
Kod Code Bezeichnung	h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	İnce Altlık Anvil Thin Unterlage Dünne	Uç Tipi Insert Type Plattentype	Kalın Altlık Anvil Thick Unterlage Dicke	Altlık Vidası Anvil Screw Gewindehülse	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube
CRSNR/L 20 20 K12S	20	20	125	30	25	RNG...1208...	SRN 12 ALT	RNG...1204..	SRN 12 AL2	M4 x 12 AV	70.91.11.094.0	70.91.11 BV
25 25 M12S	25	25	150	33	32							
32 25 P12S	32	25	170	33	32							

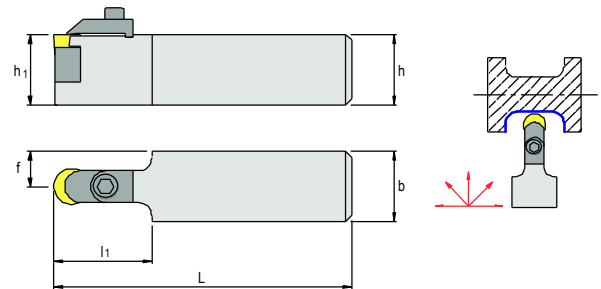
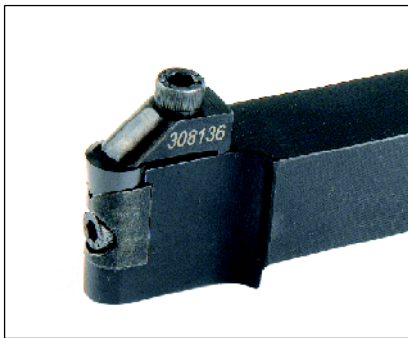
Dış Torna Katerleri

Turning - Toolholder, External

Drehen - Klemmhalter, Außenbearbeitung



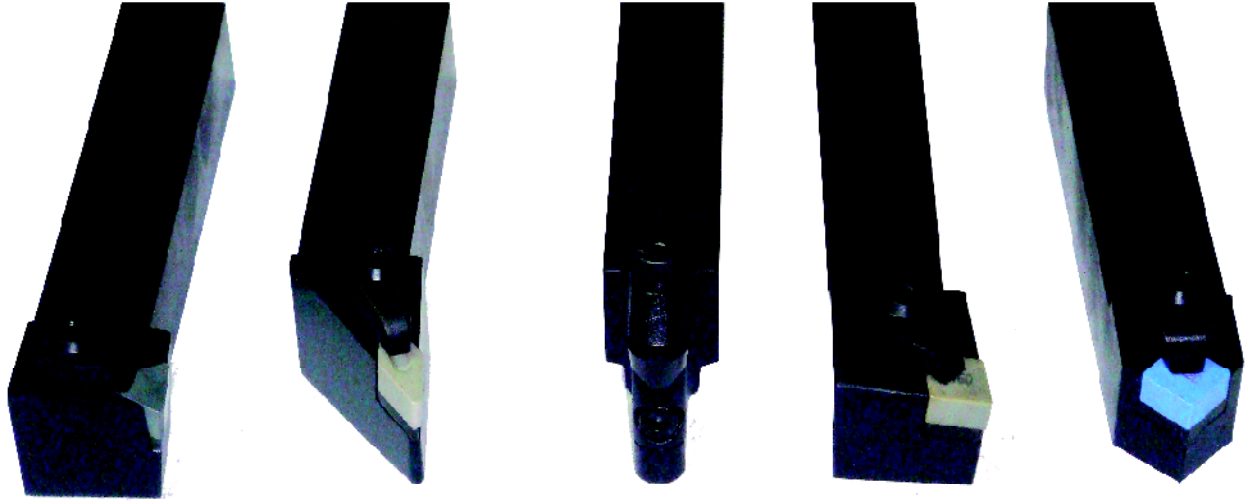
		Ölçüler Dimensions Abmessungen											
Kod Code Bezeichnung		h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	İnce Altlık Anvil Thin Unterlage Dünne	Uç Tipi Insert Type Plattentype	Kalın Altlık Anvil Thick Unterlage Dicke	Altlık Vidası Anvil Screw Gewindehülse	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube
CRDNN 20 20 K12S		20	20	125	30	10	RNG...1208...	SRN 12 ALT	RNG...1204..	SRN 12 AL2	M4 x 12 AV	70.91.11.094.0	70.91.11 BV
25 25 M12S		25	25	150	33	12.5							
32 25 P12S		32	25	170	33	12.5							



		Ölçüler Dimensions Abmessungen										
Kod Code Bezeichnung		h h ₁	b	L	l ₁	f	Uç Tipi Insert Type Plattentype	İnce Altlık Anvil Thin Unterlage Dünne	Altlık Vidası Anvil Screw Gewindehülse	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	
CRDCN	20 20 K12S	20	20	125	30	10	RCG...1208...	414007	M5	308136	M6 x 20	
	25 25 M12S	25	25	150	33	12.5						
	32 25 P12S	32	25	170	33	12.5						

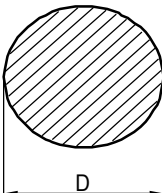
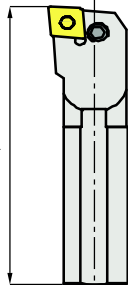
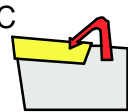
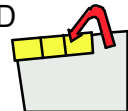
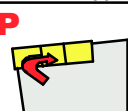
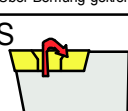
R : Sağ / Right / Rechte L : Sol / Left / Linke

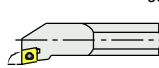
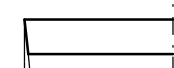
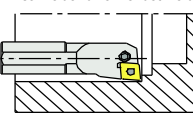
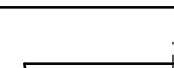
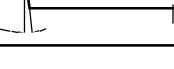
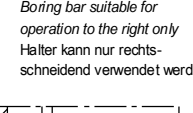
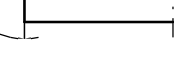
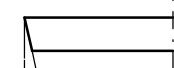
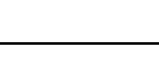
Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : CRDNN 25 25 M12



İç Tornalama Takımları için ISO Kodlama Sistemi
ISO Designation System for Tool Holders , Internal Turning
ISO Bezeichnungssystem für Klemmhalter, Innebearbeitung

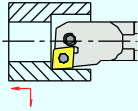


S			32	U	P																																																	
Takım tipi / Type of Boring Bar Werkstoff des Körpers			Şaft Çapı / Shank Diameter Schaftdurchmesser	Şaft Boyu / Length of Shank Werkzeuglänge	Sıkma Tipi / Clamping Style Befestigungsart																																																	
Gösterim harfi Identification letter Kennbuchstabe	Takım malzemesi Material used for main body Werkstoff des Körpers	Konstrüksiyon özellikleri Features of design Konstruktionsmerkmale	 D 08 10 12 16 20 25 32 40 50	 L	 Baskılı Sistem / Top Clamping Von oben geklemmt																																																	
S	Yekpare Çelik Gövde Solid steel Stahlschaft	Standart / none / keine			 Baskılı Sistem / Top Clamping Von oben geklemmt																																																	
A		Soğutma kanallı With internal coolant supply mit innerer Kühlmittelzuführung																																																				
B		Vibrasyon gidericili With Vibration damping mit vibrationsdämpfung																																																				
D		Soğutma kanallı ve vibrasyon giderici With vibration damping and coolant supply mit Vibrationsdämpfung und innerer Kühlmittelzuführung																																																				
C	Çelik başlık ve sert metal gövde Hard metal with steel head Hartmetallschaft mit Stahlkoph	Standart / none / keine				 Baskılı ve Pimli Sistem / Top and Hole Clamping / Von oben und über Bohrung geklemmt																																																
E		Soğutma kanallı With coolant supply mit vibrationsdämpfung																																																				
F		Vibrasyon gidericili With vibration damping mit vibrationsdämpfung																																																				
G		Soğutma kanallı ve vibrasyon giderici with vibration damping and coolant supply mit Vibrationsdämpfung und innerer Kühlmittelzuführung																																																				
H	Ağır metal *) Heavy metal *) Schwermetall*)	Standart / none / keine					 Levye Sistem / Lever System / Über Bohrung geklemmt																																															
J		Soğutma kanallı With internal coolant supply mit innerer Kühlmittelzuführung																																																				
*) Sinterlenmiş alaşımlar , vibrasyon giderilmesinde yukarıdaki etki yapılar, Örneğin : wolfram - bakır gibi. *) Sintered alloys with increased damping effect , e.g. tungsten copper. *) Sinterlegierungen mit erhöhter Dämpfung, z.b. Wolfram - Kupfer.																																																						
			<table><tr><th>L</th><th>L mm</th></tr><tr><td>A</td><td>32</td></tr><tr><td>B</td><td>40</td></tr><tr><td>C</td><td>50</td></tr><tr><td>D</td><td>60</td></tr><tr><td>E</td><td>70</td></tr><tr><td>F</td><td>80</td></tr><tr><td>G</td><td>90</td></tr><tr><td>H</td><td>100</td></tr><tr><td>J</td><td>110</td></tr><tr><td>K</td><td>125</td></tr><tr><td>L</td><td>140</td></tr><tr><td>M</td><td>150</td></tr><tr><td>N</td><td>160</td></tr><tr><td>P</td><td>170</td></tr><tr><td>Q</td><td>180</td></tr><tr><td>R</td><td>200</td></tr><tr><td>S</td><td>250</td></tr><tr><td>T</td><td>300</td></tr><tr><td>U</td><td>350</td></tr><tr><td>V</td><td>400</td></tr><tr><td>W</td><td>450</td></tr><tr><td>X</td><td>Özel/Special/Sonder</td></tr><tr><td>Y</td><td>500</td></tr></table>					L	L mm	A	32	B	40	C	50	D	60	E	70	F	80	G	90	H	100	J	110	K	125	L	140	M	150	N	160	P	170	Q	180	R	200	S	250	T	300	U	350	V	400	W	450	X	Özel/Special/Sonder	Y
L	L mm																																																					
A	32																																																					
B	40																																																					
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D	60																																																					
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F	80																																																					
G	90																																																					
H	100																																																					
J	110																																																					
K	125																																																					
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Q	180																																																					
R	200																																																					
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V	400																																																					
W	450																																																					
X	Özel/Special/Sonder																																																					
Y	500																																																					
			 Vida ile Delikten Sıkma / Centre Screw Locking / Durch Bohrung geschraubt																																																			

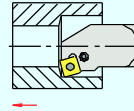
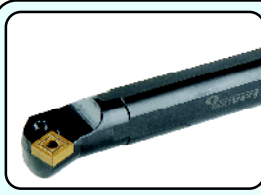
C	L	N	R	12
Uç Tipi / Insert Type Wendeplatten	Yanaşıma Açısı / Approach Angle Klemmhalterform	Uç Serbest Açısı / Insert Clearance angle Wendeplattenfreiwinkel	Kesme Yönü / Cutting Direction Schnitttrichtung	Kesici Kenar Uzunluğu / Cutting Edge Length Schneidkantenlänge
C  80°	F  90°	B  5°	L Sol yönlü kesme Boring bar suitable for operation to the left only Halter kann nur links-schneidend verwendet werden 	C  80°
D  55°	K  75°	C  7°		D  55°
K  55°	L  95°	N  0°	R Sağ yönlü kesme Boring bar suitable for operation to the right only Halter kann nur rechts-schneidend verwendet werden 	K  55°
R  90°		P  11°		R  90°
S  45°	O  8°	S  45°		
T  60°	U  93°	Özel olarak verilecek serbest açı Clearance angle requiring special indications Freiwinkel, bei denen besondere Angaben erforderlich sind.		T  60°
V  35°	Q  107.5°		W  80°	
W  80°			V  35°	



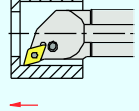
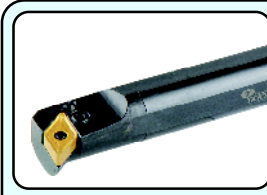
Delik Torna katerleri / Turning - Toolholder , Internal Drehen - Klemmhalter, Innenbearbeitung



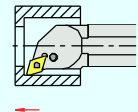
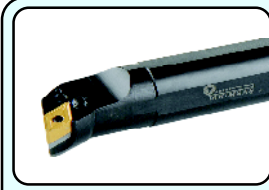
S.... PCLNR / L
Sayfa / Page / Seite : 60



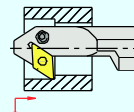
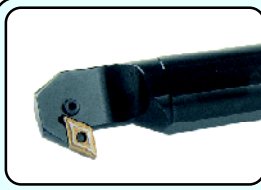
S.... PSKNR / L
Sayfa / Page / Seite : 60



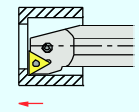
S.... PDUNR / L
Sayfa / Page / Seite : 61



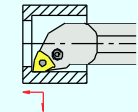
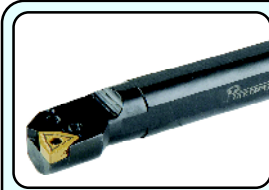
S.... PDQNR / L
Sayfa / Page / Seite : 61



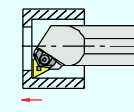
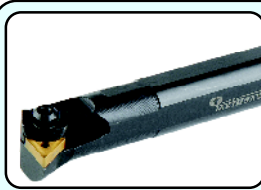
S.... PDXNR / L
Sayfa / Page / Seite : 62



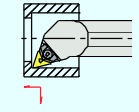
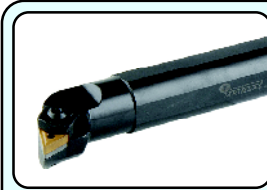
S.... PTFNR / L
Sayfa / Page / Seite : 62



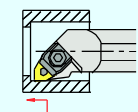
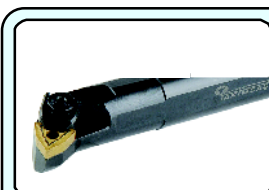
S.... PWLNR / L
Sayfa / Page / Seite : 63



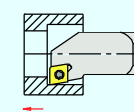
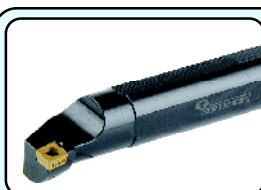
S.... MTUNR / L
Sayfa / Page / Seite : 64



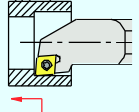
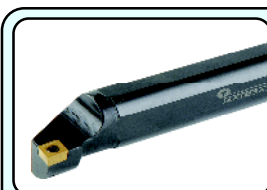
S.... MTQNR / L
Sayfa / Page / Seite : 64



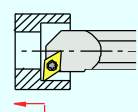
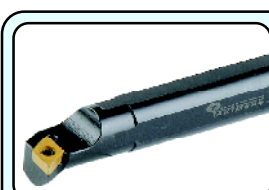
S.... MWLNR / L
Sayfa / Page / Seite : 65



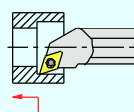
S.... SCFCR / L
Sayfa / Page / Seite : 66



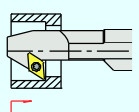
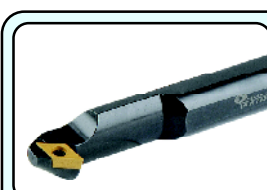
S.... SCLCR / L
Sayfa / Page / Seite : 66



S.... SDUCR / L
Sayfa / Page / Seite : 67

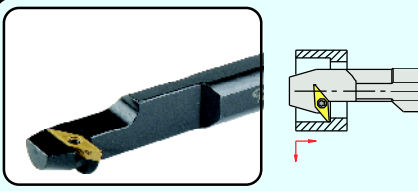


S.... SDQCR / L
Sayfa / Page / Seite : 67



S.... SDXCR / L
Sayfa / Page / Seite : 68

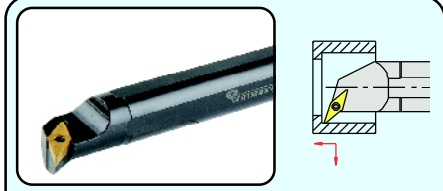
Delik Torna katerleri / Turning - Toolholder , Internal
Drehen - Klemmhalter, Innenbearbeitung



S.... SVXCR / L
Sayfa / Page / Seite : 68



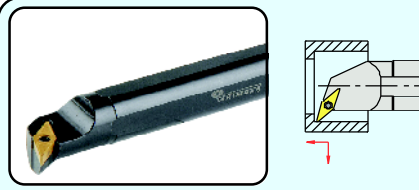
S.... SVUCR / L
Sayfa / Page / Seite : 69



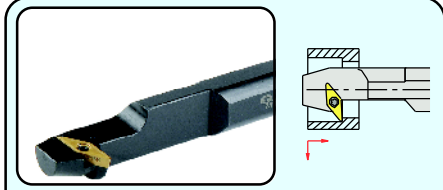
S.... SVQCR / L
Sayfa / Page / Seite : 69



S.... SVUBR/L
Sayfa / Page / Seite : 70



S.... SVQBR / L
Sayfa / Page / Seite : 70



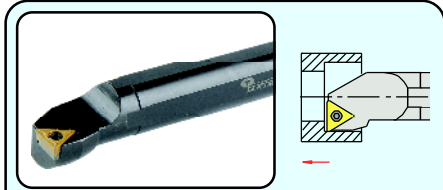
S.... SVXBR / L
Sayfa / Page / Seite : 71



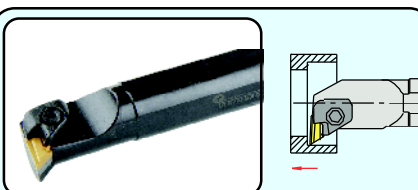
S.... SSKCR / L
Sayfa / Page / Seite : 72



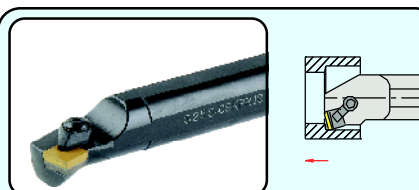
S.... SSSCR/L
Sayfa / Page / Seite : 72



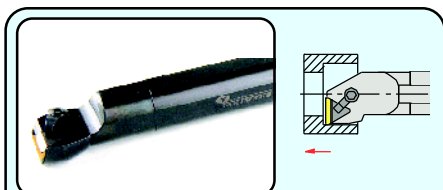
S.... STFCR / L
Sayfa / Page / Seite : 73



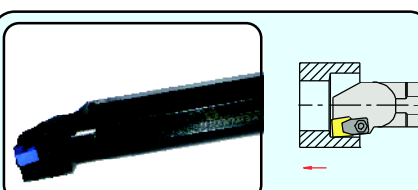
S.... CKUNR / L
Sayfa / Page / Seite : 73



S.... CSKPR / L
Sayfa / Page / Seite : 74



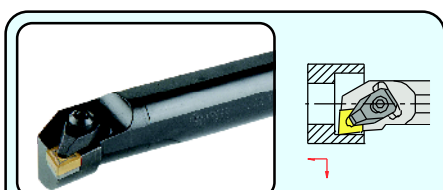
S.... CTFPR / L
Sayfa / Page / Seite : 74



S.... CSYNR / L
Sayfa / Page / Seite : 75

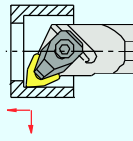
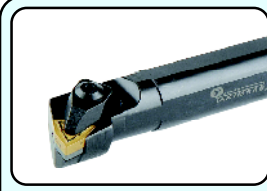


S.... CCLNR / L
Sayfa / Page / Seite : 75

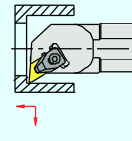
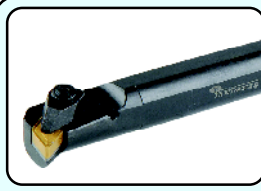


S.... DCLNR / L
Sayfa / Page / Seite : 76

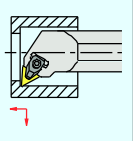
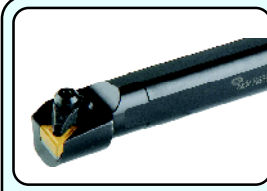
Delik Torna katerleri / Turning - Toolholder , Internal Drehen - Klemmhalter, Innenbearbeitung



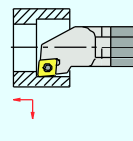
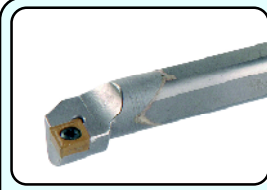
S.... DWLNR / L
Sayfa / Page / Seite : 76



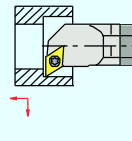
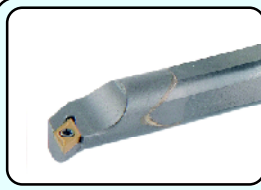
S.... DDUNR / L
Sayfa / Page / Seite : 77



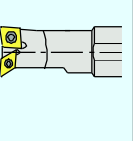
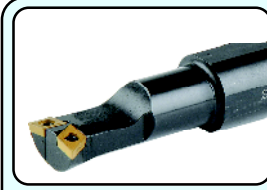
S.... DTUNR / L
Sayfa / Page / Seite : 77



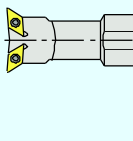
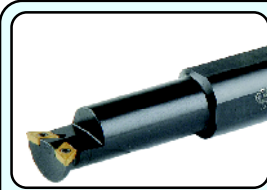
E.... SCLCR/L
Sayfa / Page / Seite : 78



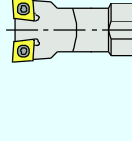
E.... SDUCR / L
Sayfa / Page / Seite : 78



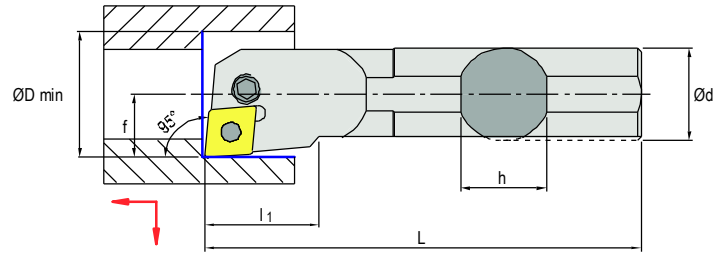
S.... SCR - SD L
S.... SDR - SCL
Sayfa / Page / Seite : 79



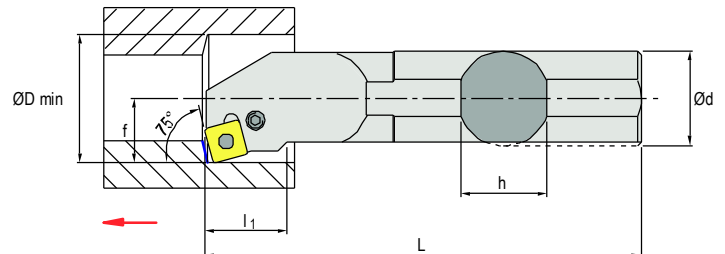
S.... SDR - SDL
Sayfa / Page / Seite : 80



S.... SCR - SCL
Sayfa / Page / Seite : 81



	Ölçüler Dimensions Abmessungen										
Kod Code Bezeichnung	ØDmin	Ød	h	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Levy Lever Hebel	Levy Vidası Lever Screw Hebel Schraube	Altık Pimi Anvil Pin Rohrstift
S 16 R PCLNR/L 09T	21	16	15	200	20	11	CN.....0903	—	H 018440	S 018420	—
S 20 S PCLNR/L 09T	25	20	18	250	20	13			438.3.841	438.3.832	
S 25 T PCLNR/L 12T	32	25	23	300	23	17	CN.....1204	U 112150	H 023441	S 023421	R 023461
S 32 U PCLNR/L 12T	40	32	30	350	26	22			438.3.841	438.3.832	
S 40 V PCLNR/L 12T	50	40	37	400	26	27	CN.....1606	U 000152	H 023441	S 023421	R 023461
S 40 V PCLNR/L 16T	50	40	37	400	32	27			H 000840	S 028430	
S 50 W PCLNR/L 16T	63	50	47	450	32	35			H 000840	S 028430	R 025464

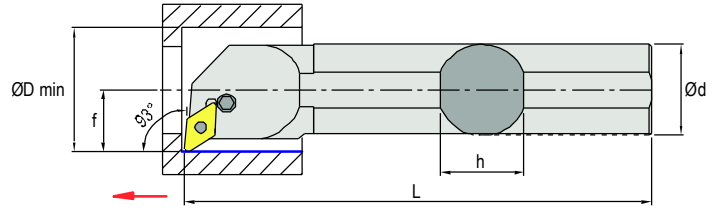


	Ölçüler Dimensions Abmessungen										
Kod Code Bezeichnung	ØDmin	Ød	h	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Levy Lever Hebel	Levy Vidası Lever Screw Hebel Schraube	Altık Pimi Anvil Pin Rohrstift
S 25 T PSKNR/L 12T	32	25	23	300	23	17	SN.....1204	—	438.3.841	438.3.832	—
S 32 U PSKNR/L 12T	40	32	30	350	26	22			438.3.841	438.3.832	
S 40 V PSKNR/L 12T	50	40	37	400	26	27	SN.....1506	U 063451	H 023441	S 023421	R 023461
S 40 V PSKNR/L 15T	50	40	37	400	32	27			H 000840	S 028430	
S 50 W PSKNR/L 15T	63	50	47	450	32	35			H 000840	S 028430	R 025464

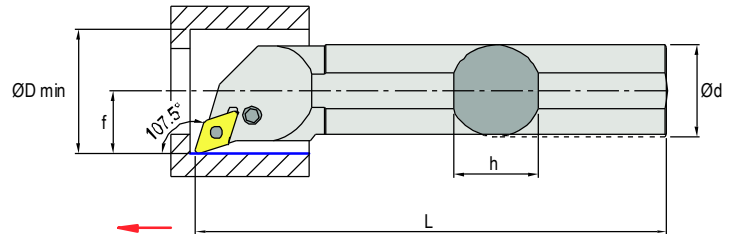
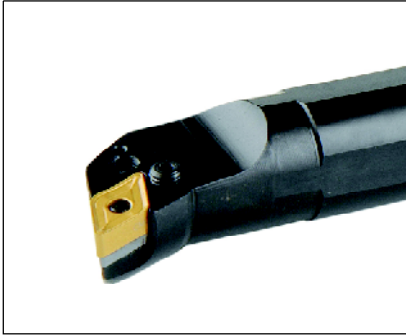
Delik Torna Katerleri

Turning - Toolholder, Internal

Drehen - Klemmhalter, Innenbearbeitung



	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Levy Lever Hebel	Levy Vidası Lever Screw Hebel Schraube	Altık Pimi Anvil Pin Rohrstift
S 16 R PDUNR/L 11	21	16	15	200	11	DN.....1104	—	5432.015.011	438.3.830	—
S 20 S PDUNR/L 11	25	20	18	250	13					
S 25 T PDUNR/L 11	32	25	23	300	17					
S 32 U PDUNR/L 15	40	32	30	350	22	DN.....1506	U 153150	H 024447	S 028430	R 023461
S 40 V PDUNR/L 15	50	40	37	400	27					
S 50 W PDUNR/L 15	63	50	47	450	35					

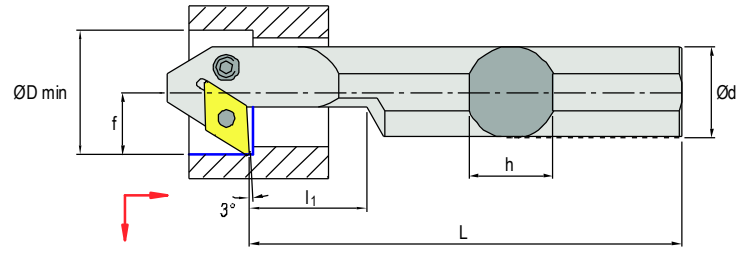
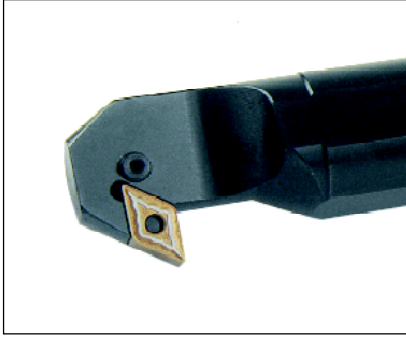


	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Levy Lever Hebel	Levy Vidası Lever Screw Hebel Schraube	Altık Pimi Anvil Pin Rohrstift
S 25 T PDQNR/L 15	32	25	23	300	17	DN.....1506	U 153150	H 024447	S 028430	R 023461
S 32 U PDQNR/L 15	40	32	30	350	22					
S 40 V PDQNR/L 15	50	40	37	400	27					
S 50 W PDQNR/L 15	63	50	47	450	35					

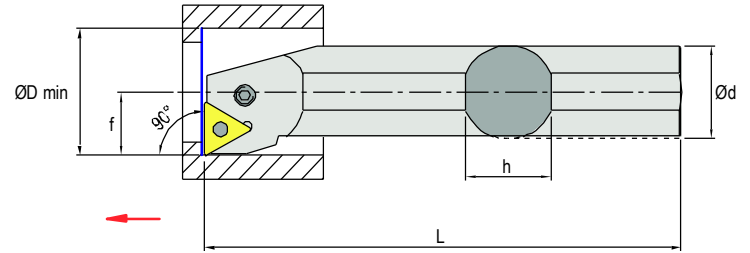
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : S 32 U PDUNR 15

İsteğe bağlı olarak pabuç takviyesi ilave edilmektedir. / Clamp will be supplied according to customer need.



	Ölçüler Dimensions Abmessungen										
Kod Code Bezeichnung	ØDmin	Ød	h	L	h ₁	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Levyé Lever Hebel	Levyé Vidası Lever Screw Hebel Schraube	Altlık Pimi Anvil Pin Rohrstift
S 32 U PDXNR/L 15	40	32	30	350	63	22	DN.....1506	U 153150	H 024447	S 028430	R 023461
S 40 V PDXNR/L 15	50	40	37	400	70	27					
S 50 W PDXNR/L 15	63	50	47	450	75	35					

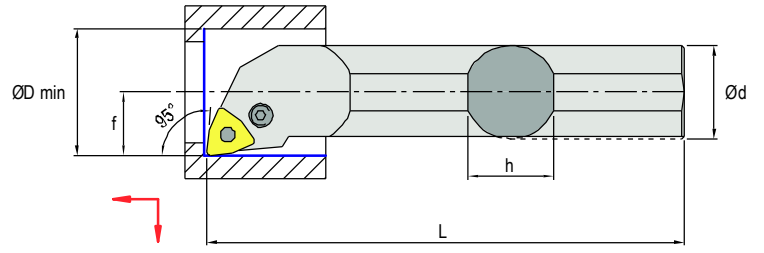


	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Levyé Lever Hebel	Levyé Vidası Lever Screw Hebel Schraube	Altlık Pimi Anvil Pin Rohrstift
S 16 R PTFNR/L 11	21	16	15	200	11	TN.....1103	—	H 011446	S 011429	—
S 20 S PTFNR/L 11	25	20	18	250	13		—	5432.015.011	438.3.830	—
S 25 T PTFNR/L 16	32	25	23	300	17	TN.....1604	U 013950	H 018440	S 018420	R 018463
S 32 U PTFNR/L 16	40	32	30	350	22					
S 40 V PTFNR/L 16	50	40	37	400	27	TN.....2204	U 023952	H 023441	S 023421	R 023461
S 40 V PTFNR/L 22	50	40	37	400	27					
S 50 W PTFNR/L 22	63	50	47	450	35					

Delik Torna Katerleri

Turning - Toolholder, Internal

Drehen - Klemmhalter, Innenbearbeitung



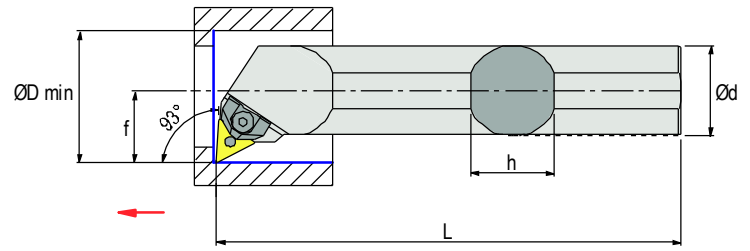
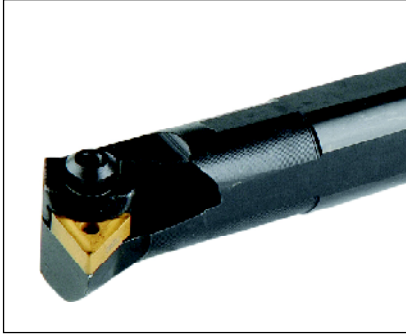
	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Levy Lever Hebel	Levy Vidası Lever Screw Hebel Schraube	Altık Pimi Anvil Pin Rohrstift
S 16 R PWLNR/L 06	21	16	15	200	11	WN.....0604	—	5432.015.011	438.3.832M	—
S 20 S PWLNR/L 06	25	20	18	250	13					
S 25 T PWLNR/L 06	32	25	23	300	17					
S 25 T PWLNR/L 08	32	25	23	300	17	WN.....0804	—	438.3.841	438.3.832M	—
S 32 U PWLNR/L 08	40	32	30	350	22					
S 40 V PWLNR/L 08	50	40	37	400	27					
							7853519	H 023441	S 023421	R 023451



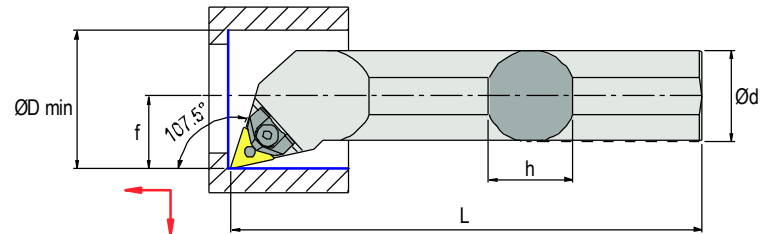
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : S 32 U PWLNR 08

İsteğe bağlı olarak pabuç takviyesi ilave edilmektedir. / Clamp will be supplied according to customer need.



	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altlık Pimi Anvil Pin Rohrstift
S 20 S MTUNR/L 16	25	20	19	200	13	TN.....1604	—	TMB 16	MTJN 16 M5 BV X	170.3.847 X
S 25 S MTUNR/L 16	32	25	23	250	17			170.3.820	MTJN 16 M5 BV	170.3.847
S 32 T MTUNR/L 16	40	32	30	300	22					
S 40 U MTUNR/L 16	50	40	37	350	27					
S 32 T MTUNR/L 22	40	32	30	300	22	TN.....2204	170.3.856	170.3.821	MTJN 22 M6 BV	170.3.836
S 40 U MTUNR/L 22	50	40	37	350	27					
S 50 W MTUNR/L 22	63	50	47	450	35					

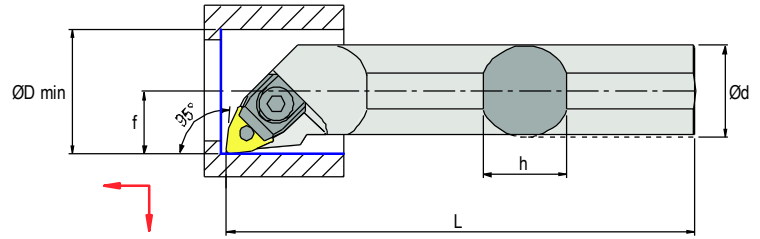
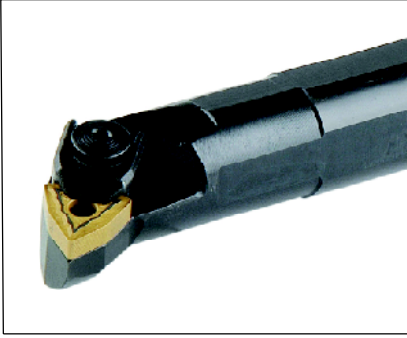


	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altlık Pimi Anvil Pin Rohrstift
S 25 T MTQNR/L 16	32	25	23	300	17	TN.....1604	—	170.3.820	MTJN 16 M5 BV	170.3.847 X
S 32 U MTQNR/L 16	40	32	30	350	22					170.3.847
S 40 V MTQNR/L 16	50	40	37	400	27					
S 32 U MTQNR/L 22	40	32	30	350	22	TN.....2204	170.3.856	170.3.821	MTJN 22 M6 BV	170.3.836
S 40 V MTQNR/L 22	50	40	37	400	27					
S 50 W MTQNR/L 22	63	50	47	450	35					

Delik Torna Katerleri

Turning - Toolholder, Internal

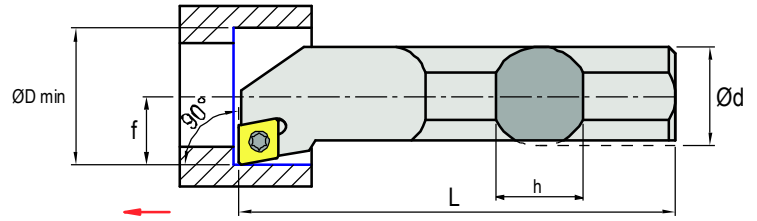
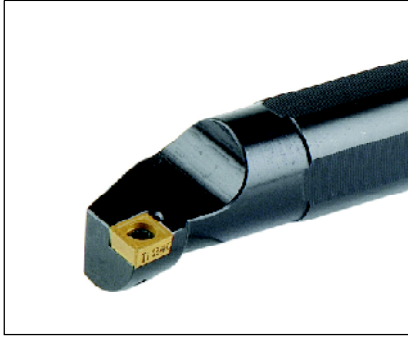
Drehen - Klemmhalter, Innenbearbeitung



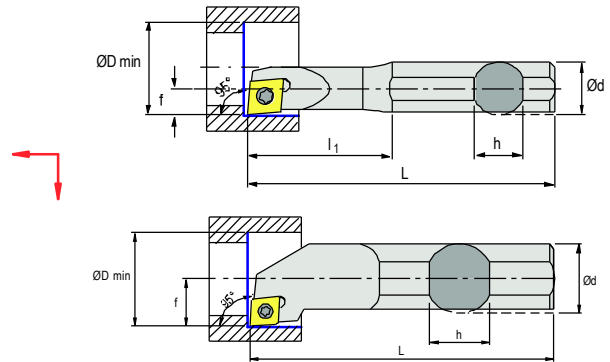
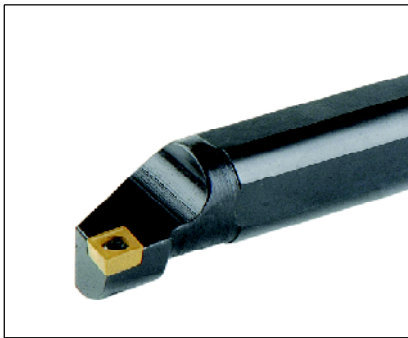
	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altlık Pimi Anvil Pin Rohrstift
S 25 T MWLNR/L 08	32	25	23	300	17	WN.....0804	WN 08 ALT	WN 08 BP	MTJN 22 M6 BV	170.3.836
S 32 U MWLNR/L 08	40	32	30	350	22					
S 40 V MWLNR/L 08	50	40	37	400	27					
S 50 W MWLNR/L 08	63	50	47	450	35					

R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : S 32 U MWLNR 08



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Altık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	ØDmin	Ød	h	L	f					
S 08 H SCFCR/L 06	11	8	7	100	5	CC..0602	—	—	7815101	T08 IP
S 10 K SCFCR/L 06	13.6	10	9	125	7		—	—	7815101	
S 12 Q SCFCR/L 06	17	12	11	180	9		—	—	7815101	
S 16 R SCFCR/L 09	21	16	15	200	11	CC..09T3	—	—	7883209	T15 IP
S 20 S SCFCR/L 09	25	20	18	250	13		7883001	7883102	7815102	
S 25 T SCFCR/L 09	32	25	23	300	17		7883001	7883102	7815102	
S 32 U SCFCR/L 12	40	32	30	350	22	CC..1204	7883002	7883101	7883202	T15 IP
S 40 V SCFCR/L 12	50	40	37	400	27		7883002	7883101	7883202	

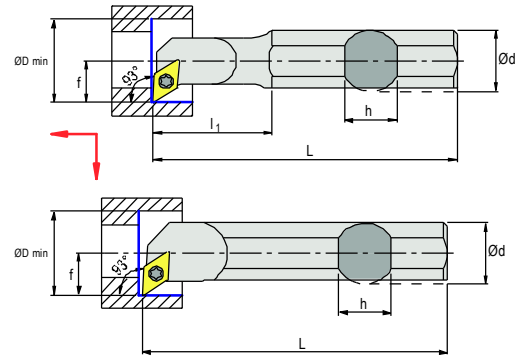
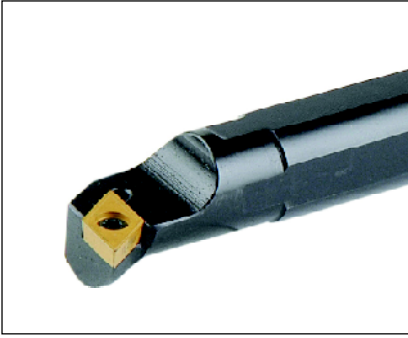


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Altık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	ØDmin	Ød	h	L	l1	f					
S 06 08 H SCLCR/L 06	9.3	8	7	100	25	4	CC..0602	—	—	7815101	T08 IP
S 08 10 H SCLCR/L 06	12	10	9	100	30	6		—	—	7815101	
S 10 12 K SCLCR/L 06	13.6	12	11	125	35	7		—	—	7815101	
S 12 16 M SCLCR/L 06	17.2	16	15	150	40	9		—	—	7815101	
S 16 R SCLCR/L 09	21	16	15	200	—	11	CC..09T3	—	—	7883209	T15 IP
S 20 S SCLCR/L 09	25	20	18	250	—	13		7883001	7883102	7815102	
S 25 T SCLCR/L 09	32	25	23	300	—	17		7883001	7883102	7815102	
S 32 U SCLCR/L 12	40	32	30	350	—	22	CC..1204	7883002	7883101	7883202	T15 IP
S 40 V SCLCR/L 12	50	40	37	400	—	27		7883002	7883101	7883202	

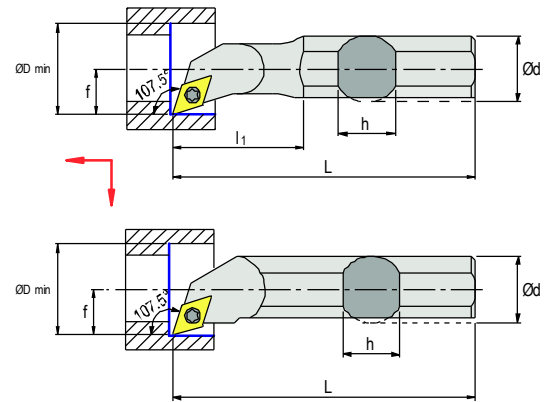
Delik Torna Katerleri

Turning - Toolholder, Internal

Drehen - Klemmhalter, Innenbearbeitung



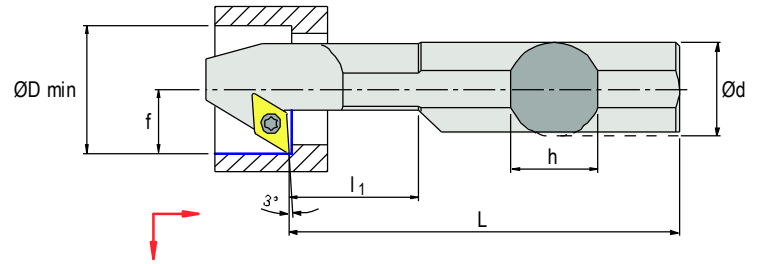
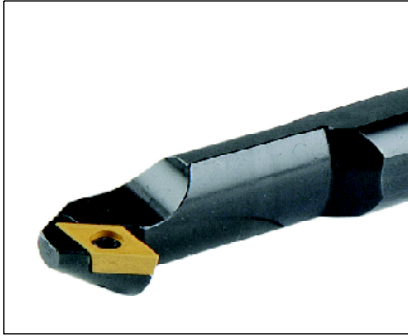
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	ØDmin	Ød	h	L	I ₁	f					
S 08 10 H SDUCR/L 07	12	10	9	100	30	7	DC..0702	—	—	7815101	T08 IP
S 10 12 K SDUCR/L 07	13.6	12	11	125	35	9					
S 12 16 M SDUCR/L 07	17	16	15	150	40	11					
S 16 R SDUCR/L 07	21	16	15	200		11					
S 20 S SDUCR/L 07	25	20	18	250		13					
S 16 R SDUCR/L 11	21	16	15	200		11	DC..11T3	—	—	7883209	T15 IP
S 20 S SDUCR/L 11	25	20	18	250		13					
S 25 T SDUCR/L 11	32	25	23	300		17					
S 32 U SDUCR/L 11	40	32	30	350		22					
S 40 V SDUCR/L 11	50	40	37	400		27					



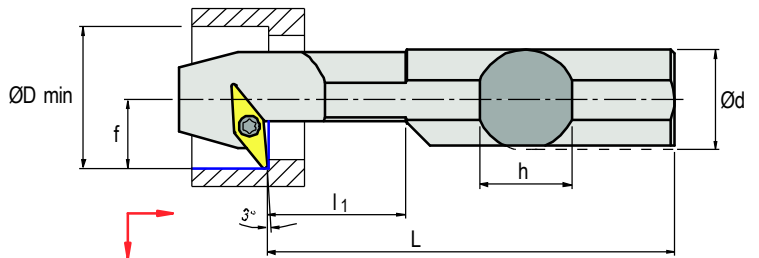
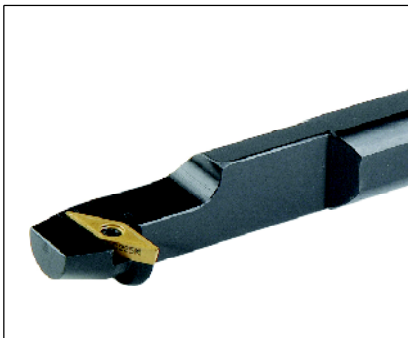
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	ØDmin	Ød	h	L	I ₁	f					
S 08 10 H SDQCR/L 07	12	10	9	100	30	7	DC..0702	—	—	7815101	T08 IP
S 10 12 K SDQCR/L 07	13.6	12	11	125	35	9					
S 12 16 M SDQCR/L 07	17	16	15	150	40	11					
S 16 R SDQCR/L 07	21	16	15	200		11					
S 20 S SDQCR/L 07	25	20	18	200		13					
S 16 R SDQCR/L 11	21	16	15	200		11	DC..11T3	—	—	7883209	T15 IP
S 20 S SDQCR/L 11	25	20	18	200		13					
S 25 T SDQCR/L 11	32	25	23	250		17					
S 32 U SDQCR/L 11	40	32	30	300		22					
S 40 V SDQCR/L 11	50	40	37	350		27					

R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : S 32 U SDUCR 11



	Ölçüler Dimensions Abmessungen										
Kod Code Bezeichnung	ØDmin	Ød	h	L	L ₁	f	Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Altık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
S 12 Q SDXCR/L 07	17	12	11	180	30	9	DC..0702	—	—	—	T08 IP
S 16 R SDXCR/L 07	21	16	15	200	35	11		—	—	7815101	
S 20 S SDXCR/L 07	25	20	18	250	40	13		—	—	7883209	
S 20 S SDXCR/L 11	25	20	18	250	40	13	DC..11T3	—	—	7883209	T15 IP
S 25 T SDXCR/L 11	32	25	23	300	55	17		7815000	7883102	7815102	
S 32 U SDXCR/L 11	40	32	30	350	63	22		—	—	—	
S 40 V SDXCR/L 11	50	40	37	400	70	27		—	—	—	

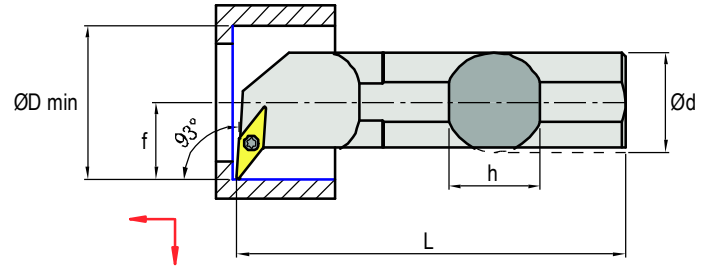
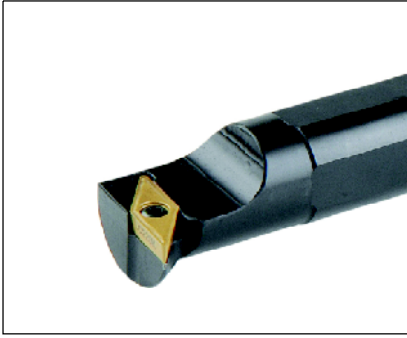


	Ölçüler Dimensions Abmessungen										
Kod Code Bezeichnung	ØDmin	Ød	h	L	L ₁	f	Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Altık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
S 16 R SVXCR/L 11	22	16	15	200	35	13	VC..1103	—	—	7815101	T08 IP
S 20 R SVXCR/L 11	25	20	18	200	40	16		—	—	—	
S 25 T SVXCR/L 11	32	25	23	300	45	18		—	—	—	
S 25 T SVXCR/L 16	32	25	23	300	55	18	VC..1604	—	—	7815102	T15 IP
S 32 U SVXCR/L 16	40	32	30	350	63	22		7815002	7883102	—	
S 40 U SVXCR/L 16	50	40	37	400	70	27		—	—	—	

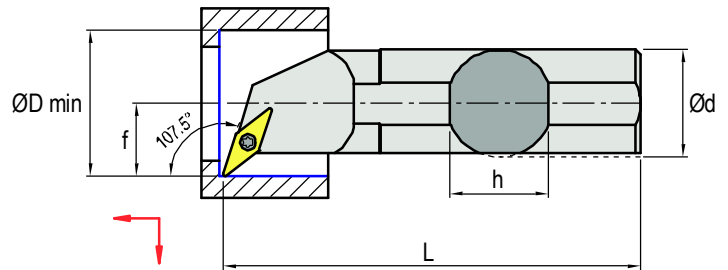
Delik Torna Katerleri

Turning - Toolholder, Internal

Drehen - Klemmhalter, Innenbearbeitung



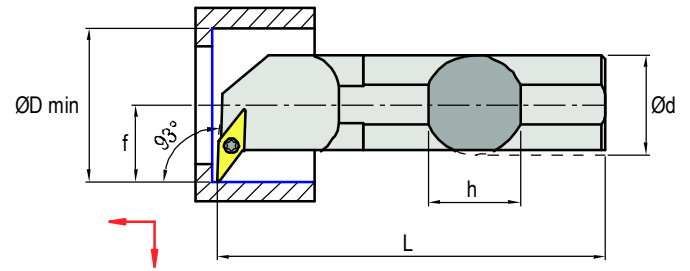
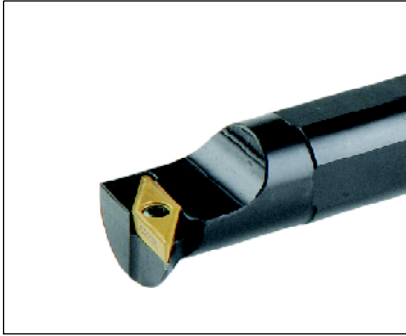
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Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altılık Anvil Unterlage	Altılık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
S 16 R SVUCR/L 11	21	16	15	200	11	VC..1103	—	—	7815101	T08 IP
S 20 S SVUCR/L 11	25	20	18	250	13		—	—	7815101	T08 IP
S 25 T SVUCR/L 16	32	25	23	300	17	VC..1604	—	—	7815102	T15 IP
S 32 U SVUCR/L 16	40	32	30	350	22		7815002	7883102	7815102	T15 IP
S 40 V SVUCR/L 16	50	40	37	400	27		7815002	7883102	7815102	T15 IP



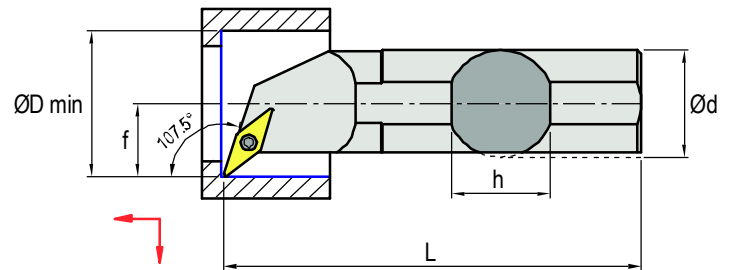
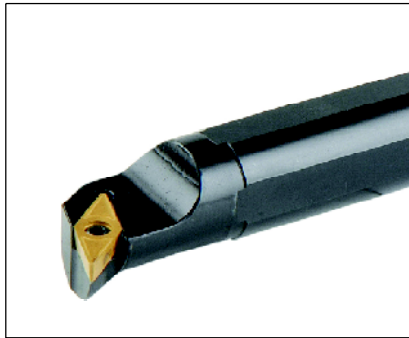
	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altılık Anvil Unterlage	Altılık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
S 16 R SVQCR/L 11	21	16	15	200	11	VC..1103	—	—	7815101	T08 IP
S 20 R SVQCR/L 11	25	20	18	200	13		—	—	7815101	T08 IP
S 25 S SVQCR/L 16	32	25	23	250	17	VC..1604	—	—	7815102	T15 IP
S 32 T SVQCR/L 16	40	32	30	300	22		7815002	7883102	7815102	T15 IP
S 40 U SVQCR/L 16	50	40	37	350	27		7815002	7883102	7815102	T15 IP

R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : S 32 U SVUCR 16



	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Altık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
S 16 R SVUBR/L 11	21	16	15	200	11	VB..1103	—	—	7815101	T08 IP
S 20 S SVUBR/L 11	25	20	18	250	13				7815101	T08 IP
S 25 T SVUBR/L 16	32	25	23	300	17	VB..1604	7815002	7883102	7815102	T15 IP
S 32 U SVUBR/L 16	40	32	30	350	22					
S 40 V SVUBR/L 16	50	40	37	400	27					

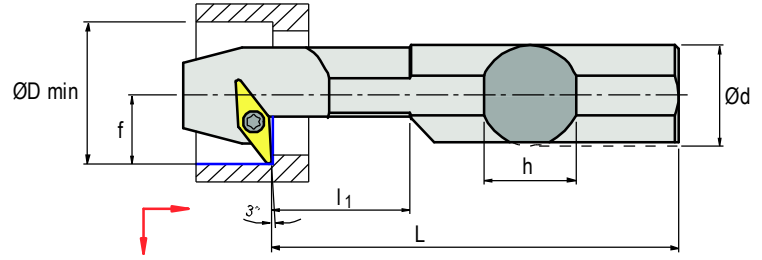
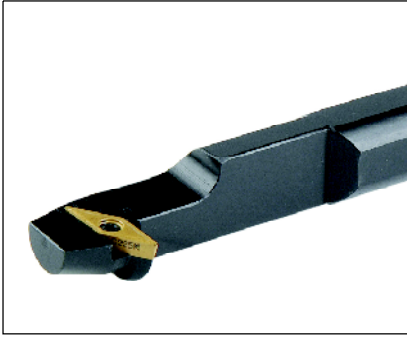


	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Altık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
S 16 R SVQBR/L 11	21	16	15	200	11	VB..1103	—	—	7815101	T08 IP
S 20 S SVQBR/L 11	25	20	18	250	13				7815101	T08 IP
S 25 T SVQBR/L 16	32	25	23	300	17	VB..1604	7815002	7883102	7815102	T15 IP
S 32 U SVQBR/L 16	40	32	30	350	22					
S 40 V SVQBR/L 16	50	40	37	400	27					

Delik Torna Katerleri

Turning - Toolholder, Internal

Drehen - Klemmhalter, Innenbearbeitung

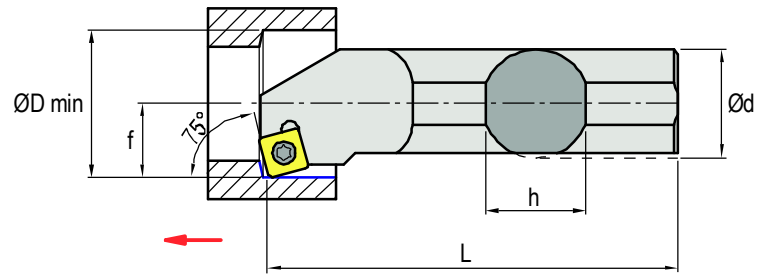
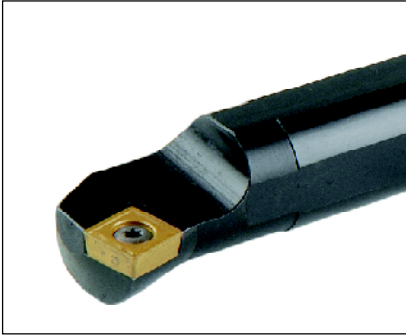


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen										
	ØDmin	Ød	h	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
S 16 R SVXBR/L 11	22	16	15	200	35	13	VB..1103	—	—	7815101	T08 IP
S 20 R SVXBR/L 11	25	20	18	200	40	16					
S 25 T SVXBR/L 11	32	25	23	300	45	18					
S 25 T SVXBR/L 16	32	25	23	300	55	18	VB..1604	7815002	7883102	7815102	T15 IP
S 32 U SVXBR/L 16	40	32	30	350	63	22					
S 40 U SVXBR/L 16	50	40	37	400	70	27					

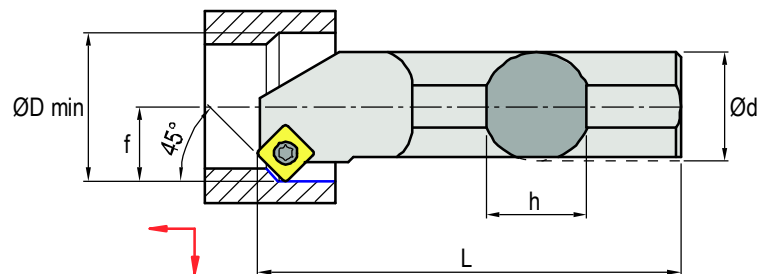


R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : S 32 U SVXBR 16



	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Altık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
S 16 R SSKCR/L 09	21	16	15	200	11	SC..09T3	—	—	7815102	T15 IP
S 20 R SSKCR/L 09	25	20	18	200	13					
S 25 S SSKCR/L 09	32	25	23	250	17					
S 25 S SSKCR/L 12	32	25	23	250	17	SC..1204	—	—	7883202	T15 IP
S 32 T SSKCR/L 12	40	32	30	300	22					
S 40 U SSKCR/L 12	50	40	37	350	27					

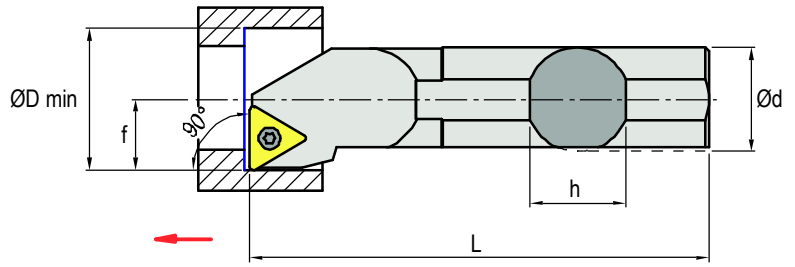
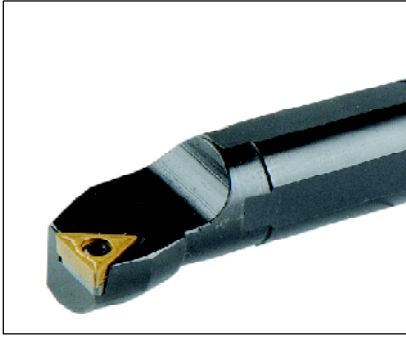


	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Altık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
S 16 R SSSCR/L 09	21	16	15	200	11	SC..09T3	—	—	7815102	T15 IP
S 20 S SSSCR/L 09	25	20	18	250	13					
S 25 T SSSCR/L 09	32	25	23	300	17					
S 25 T SSSCR/L 12	32	25	23	300	17	SC..1204	—	—	7883202	T15 IP
S 32 U SSSCR/L 12	40	32	30	350	22					
S 40 V SSSCR/L 12	50	40	37	400	27					

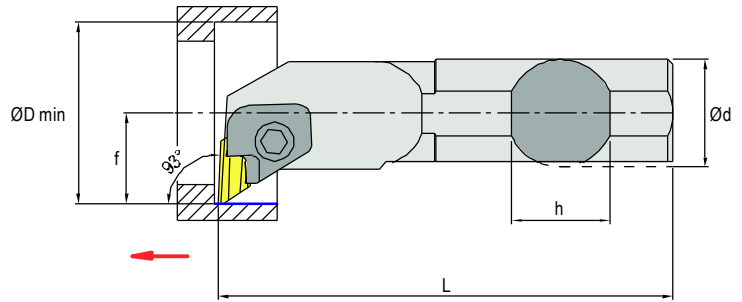
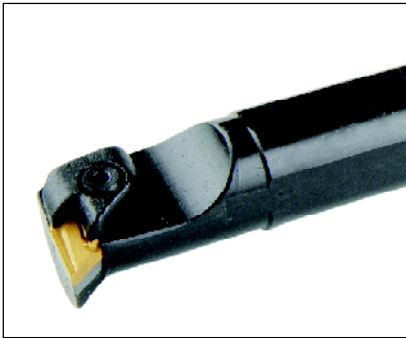
Delik Torna Katerleri

Turning - Toolholder, Internal

Drehen - Klemmhalter, Innenbearbeitung



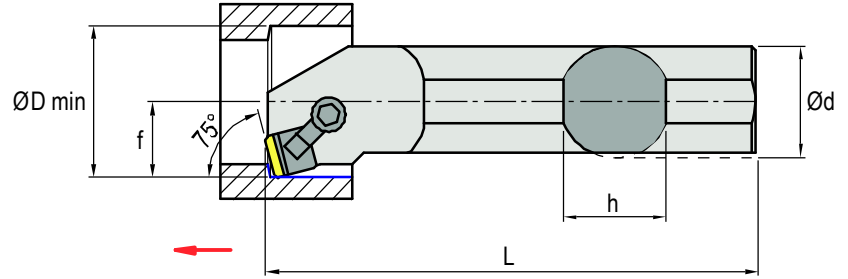
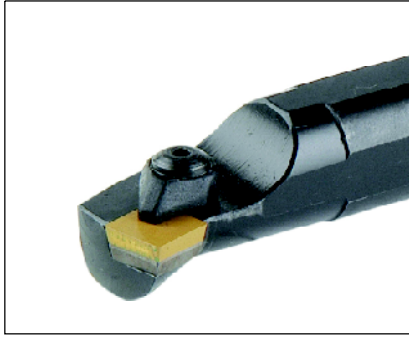
	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
S 10 K STFCR/L 09	13.6	10	9	125	7	TC..0902	—	—	7722113	T07 IP
S 10 K STFCR/L 11	13.6	10	9	125	7	TC..1102	—	—	7815101	T08 IP
S 12 Q STFCR/L 11	17	12	11	180	9		—	—		
S 16 R STFCR/L 11	21	16	15	200	11		—	—		
S 20 S STFCR/L 11	25	20	18	200	13		—	—		
S 16 R STFCR/L 16	21	16	15	200	11	TC..16T3	—	—	7815102	T15 IP
S 20 S STFCR/L 16	25	20	18	200	13		—	—		
S 25 T STFCR/L 16	32	25	23	250	17		7883005	7883102		
S 32 U STFCR/L 16	40	32	30	300	22		7883005	7883102		
S 40 V STFCR/L 16	50	40	37	350	27		7883005	7883102		



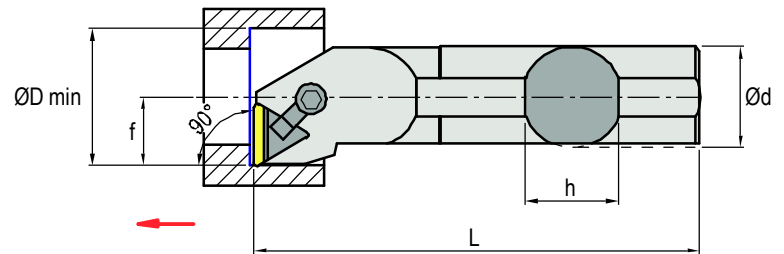
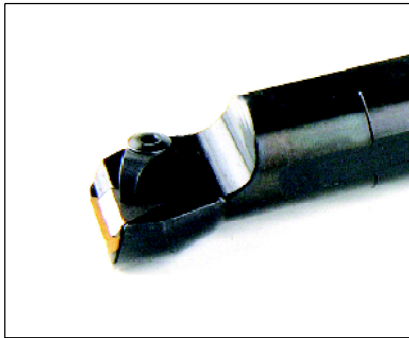
	Ölçüler Dimensions Abmessungen											
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Sağ Baskı Pabucu Clamp Right Re. Klemmung	Sol Baskı Pabucu Clamp Left Li. Klemmung	Baskı Vidası Clamp Screw Klemmschraube	Sağ Altlık Anvil Right Re. Unterlage	Sol Altlık Anvil Left Li. Unterlage	Altlık Pimi Anvil Pin Rohrstift
S 25 T CKUNR/L 16	32	25	23	300	17	KNUX 16...	70.5.824	70.5.825	70.5.865	—	—	—
S 32 U CKUNR/L 16	40	32	30	350	22					—	—	—
S 40 V CKUNR/L 16	50	40	37	400	27					U 00051R	U 00051L	7480901
S 50 W CKUNR/L 16	63	50	47	450	35					U 00051R	U 00051L	7480901

R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : S 32 U STFCR 16



	Ölçüler Dimensions Abmessungen										
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altılık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altılık Pimi Anvil Pin Rohrstift	Talaş Kırıcı Chip Breaker Spanformmille
S 12 Q CSKPR/L 09	17	12	11	180	9	SP...0903..	—	7830001	7830002	—	—
S 16 R CSKPR/L 09	21	16	15	200	11						
S 20 S CSKPR/L 09	25	20	18	200	13						
S 25 T CSKPR/L 12	32	25	23	250	17	SP...1203..	7480315	TBP 16	TBP 16 BV	7480901	SP 12 TK
S 32 U CSKPR/L 12	40	32	30	300	22						
S 40 V CSKPR/L 12	50	40	37	350	27						
S 40 V CSKPR/L 12	50	40	37	350	27						

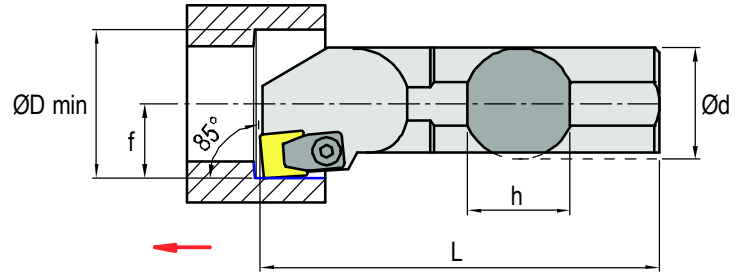
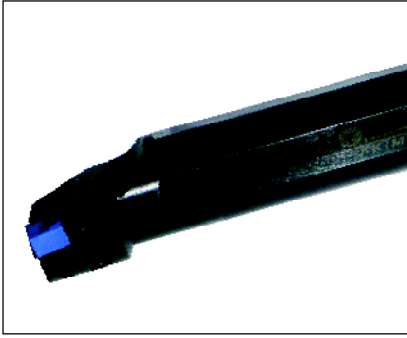


	Ölçüler Dimensions Abmessungen										
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altılık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altılık Pimi Anvil Pin Rohrstift	Talaş Kırıcı Chip Breaker Spanformmille
S 12 Q CTFPR/L 11	17	12	11	180	9	TP...1103..	—	7830001	7830002	—	—
S 16 R CTFPR/L 11	21	16	15	200	11						
S 20 S CTFPR/L 11	25	20	18	250	13						
S 20 S CTFPR/L 16	25	20	18	250	13	TP...1603..	—	TBP 16	TBP 16 BV	7480901	TP 16 TK
S 25 T CTFPR/L 16	32	25	23	300	17						
S 32 U CTFPR/L 16	40	32	30	350	22						
S 40 V CTFPR/L 16	50	40	37	400	27						
S 40 V CTFPR/L 22	50	40	37	400	27	TP...2204..	175.11.624	TBP 12	70.91.11 BV	M4 x12 AV	TP 22 TK
S 50 W CTFPR/L 22	63	50	47	450	35						

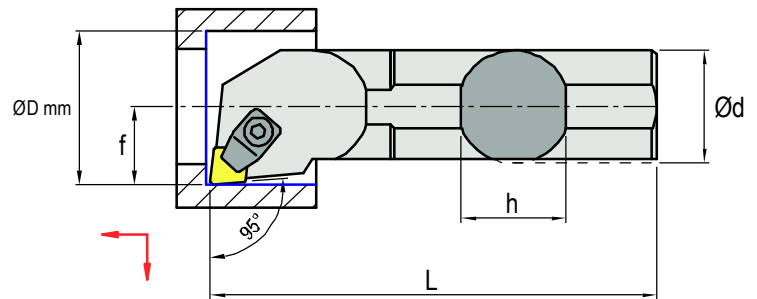
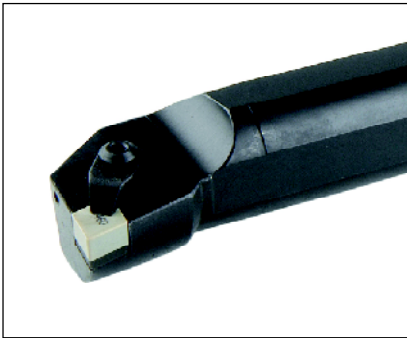
Delik Torna Katerleri

Turning - Toolholder, Internal

Drehen - Klemmhalter, Innenbearbeitung



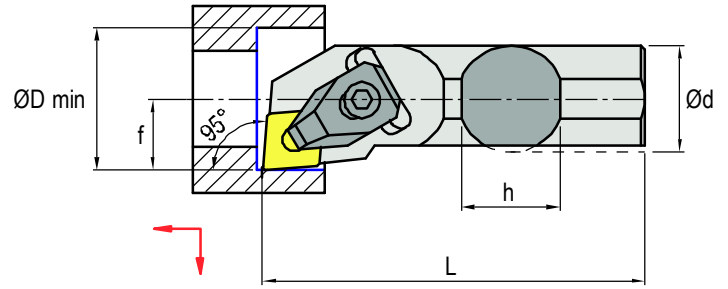
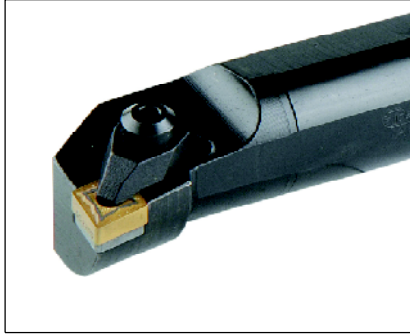
	Ölçüler Dimensions Abmessungen											
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	İnce Altlık Anvil Thin Unterlage Dünne	Uç Tipi Insert Type Plattentype	Kalın Altlık Anvil Thick Unterlage Dicke	Altlık Vidası Anvil Screw Gewindehülse	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube
CSYNR/L 0040 T12S	55	40	37	300	27							
CSYNR/L 0050 U12S	65	50	47	350	35	SNG...1208...	SR 12 ALT	SNG...1204...	SR 12 AL2	M4 x 12 AV	70.91.11.194.0	70.91.11 BV
CSYNR/L 0063 V12S	75	63	60	400	43							



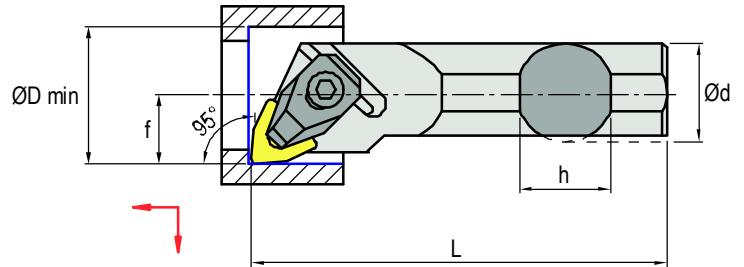
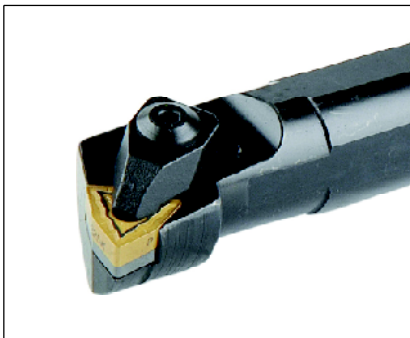
	Ölçüler Dimensions Abmessungen											
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	İnce Altlık Anvil Thin Unterlage Dünne	Uç Tipi Insert Type Plattentype	Kalın Altlık Anvil Thick Unterlage Dicke	Altlık Vidası Anvil Screw Gewindehülse	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube
CCLNR/L 0040 T12S	55	40	37	300	27							
CCLNR/L 0050 U12S	65	50	47	350	35	CNG....1208...	SRD 12 ALT	CNG....1204...	SRD 12 AL2	M4 x 12 AV	70.91.11.134.0	70.91.11.BV
CCLNR/L 0063 V12S	75	63	60	400	43							

R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : CSYNR 0040 T12S



	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altlık Vidası Anvil Screw Gewindehülse
S 25 T DCLNR/L 12T	32	25	23	300	17	CN.....1204	U 112150	TK DBP	MTJN 22 M6 BV	M4 x 12 AV
S 32 U DCLNR/L 12T	40	32	30	350	22					
S 40 V DCLNR/L 12T	50	40	37	400	27					

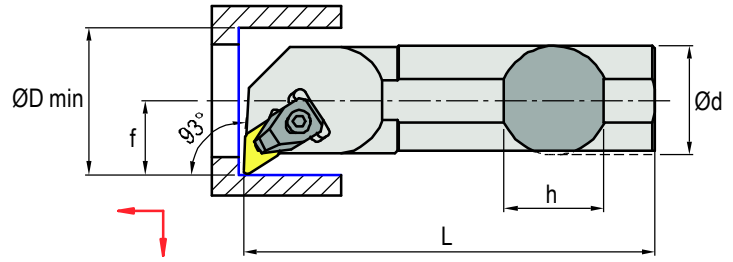
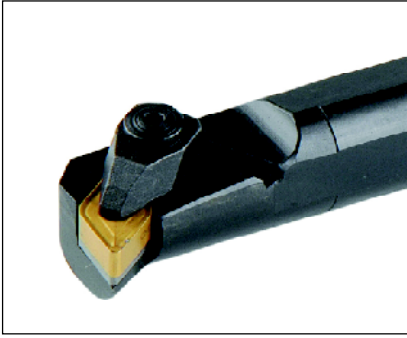


	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altlık Vidası Anvil Screw Gewindehülse
S 25 S DWLNR/L 08T	32	25	23	250	17	WN.....0804	7853519	TK DBP	MTJN 22 M6 BV	M4 x 12 AV
S 32 T DWLNR/L 08T	40	32	30	300	22					
S 40 U DWLNR/L 08T	50	40	37	350	27					

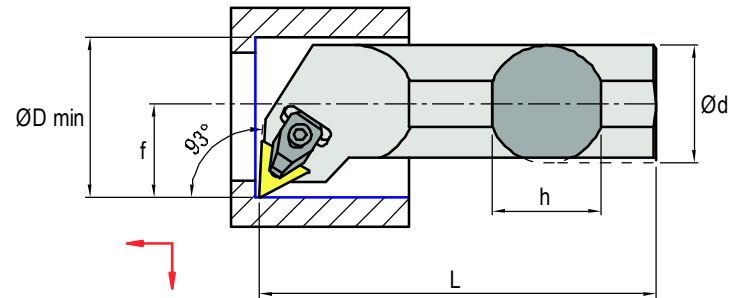
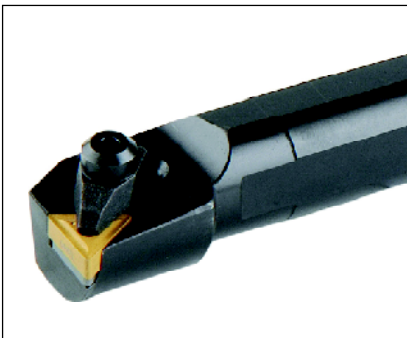
Delik Torna Katerleri

Turning - Toolholder, Internal

Drehen - Klemmhalter, Innenbearbeitung



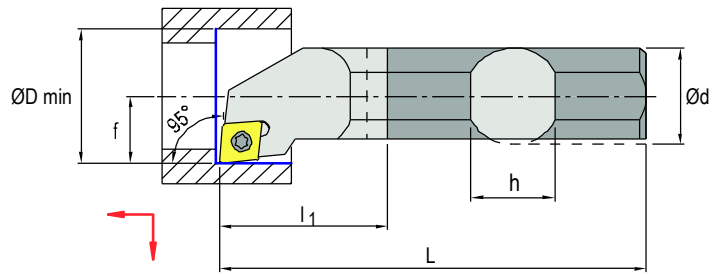
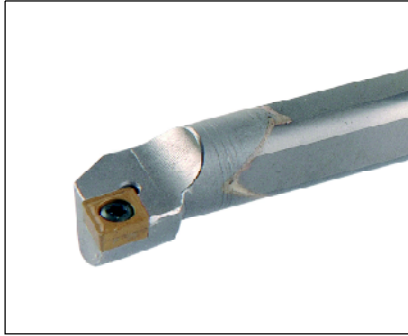
	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altık Vidası Anvil Screw Gewindehülse
S 25 S DDUNR/L 15T	32	25	23	250	17	DN.....1506	U 153150	TK DBP	MTJN 22 M6 BV	M4 x 12 AV
S 32 T DDUNR/L 15T	40	32	30	300	22					
S 40 U DDUNR/L 15T	50	40	37	350	27					



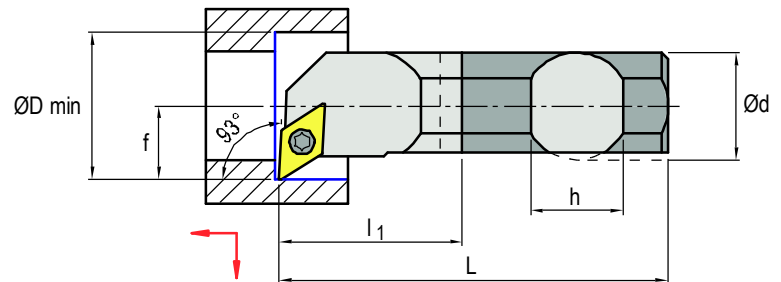
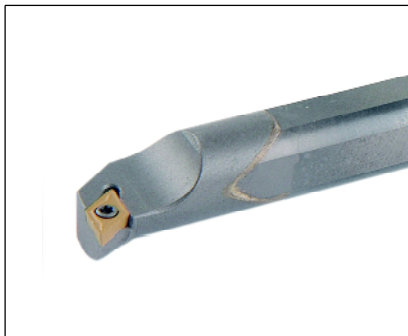
	Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung	ØDmin	Ød	h	L	f	Uç Tipi Insert Type Plattentype	Altık Anvil Unterlage	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altık Vidası Anvil Screw Gewindehülse
S 25 S DTUNR/L 16T	32	25	23	250	17	TN.....1604	U 013950	TK DBP K	MTJN 22 M6 BV	M4 x 12 AV
S 32 T DTUNR/L 16T	40	32	30	300	22					
S 40 U DTUNR/L 16T	50	40	37	350	27					

R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : S 32 U DDUNR 15



	Ölçüler Dimensions Abmessungen										
Kod Code Bezeichnung	ØDmin	Ød	h	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
C 08 K SCLCR/L 06	11	8	7	125	20	5	CC..0602	—	—	7815101	T08 IP
C 10 K SCLCR/L 06	13.6	10	9	125	20	7		—	—	7815101	T08 IP
C 12 Q SCLCR/L 06	17	12	11	180	20	9		—	—	7815101	T08 IP
C 16 R SCLCR/L 06	21	16	15	200	25	11		—	—	7815101	T08 IP
C 16 R SCLCR/L 09	21	16	15	200	30	11	CC..09T3	—	—	7883209	T15 IP
C 20 S SCLCR/L 09	25	20	18	250	40	13		—	—	7883209	T15 IP
C 25 T SCLCR/L 09	32	25	23	300	40	17		—	—	7883209	T15 IP

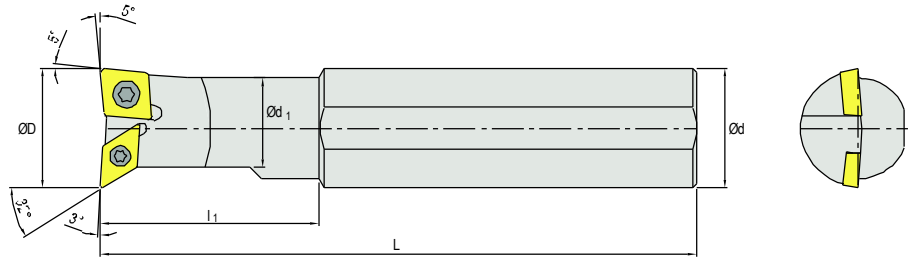
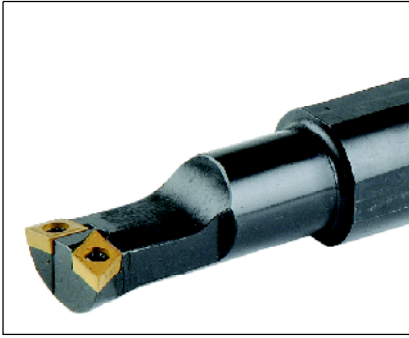


	Ölçüler Dimensions Abmessungen										
Kod Code Bezeichnung	ØDmin	Ød	h	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
C 08 K SDUCR/L 07	12	8	7	125	20	7	DC..0702	—	—	7815101	T08 IP
C 10 K SDUCR/L 07	13.6	10	9	125	20	9		—	—	7815101	T08 IP
C 12 Q SDUCR/L 07	17	12	11	180	20	11		—	—	7815101	T08 IP
C 16 R SDUCR/L 07	21	16	15	200	25	11		—	—	7815101	T08 IP
C 20 S SDUCR/L 07	25	20	18	250	30	13		—	—	7815101	T08 IP
C 20 S SDUCR/L 11	25	20	18	250	40	13	DC..11T3	—	—	7883209	T15 IP
C 25 T SDUCR/L 11	32	25	23	300	40	17		7815000	7883102	7815102	T15 IP

Çift Yönlü Torna Katerleri

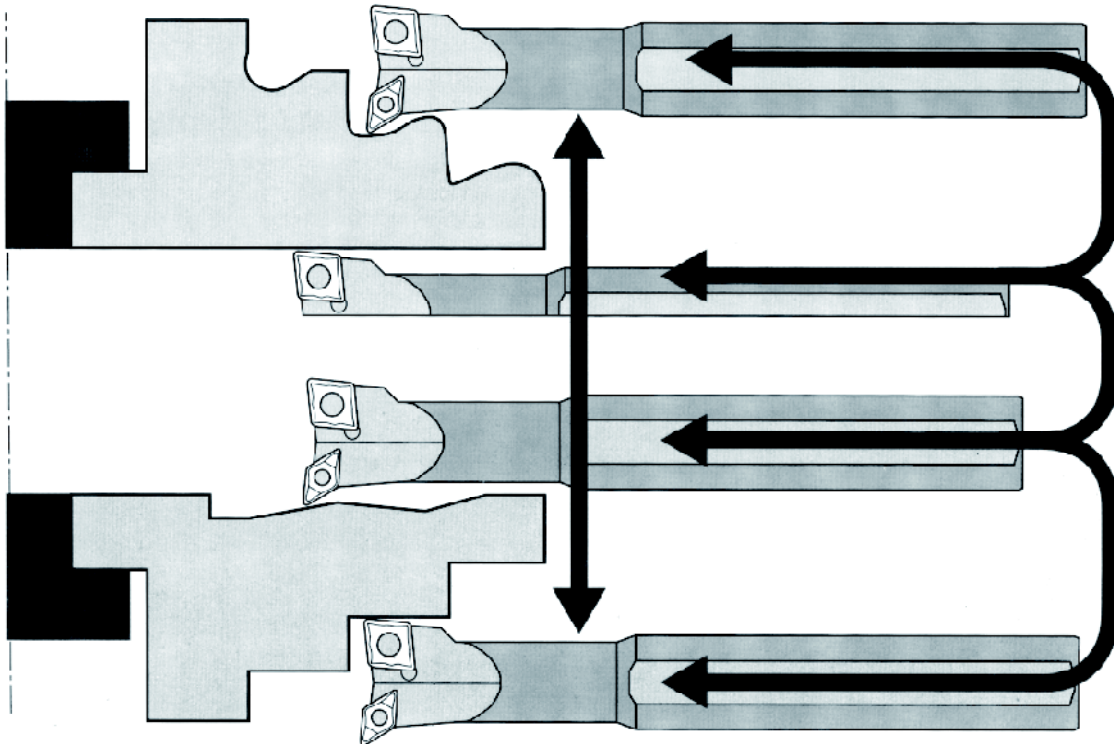
Turning - Toolholder, Both Sided

Drehen - Klemmhalter, Beide Seitenbearbeitet



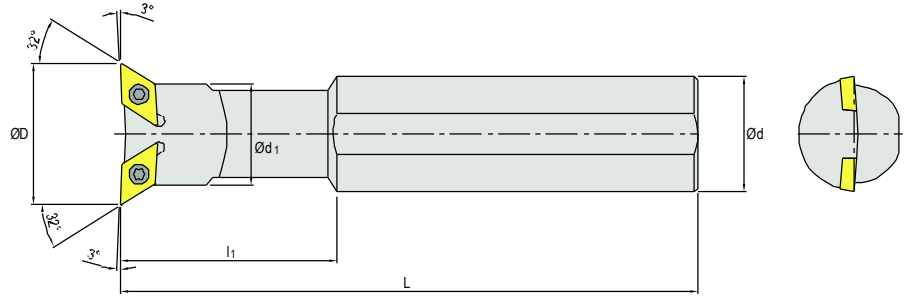
	Ölçüler Dimensions Abmessungen										
Kod Code Bezeichnung	ØD	Ød1	Ød	L1	L	ØDmax	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
S 20 Q SCR - SDL 06 - 07	20	16	20	45	180	24	CC..0602	7815101	DC..0702	7815101	T08 IP
S 20 Q SDR - SCL 07 - 06	20	16	20	45	180	24	CC..0602	7815101	DC..0702	7815101	T08 IP
S 22 R SCR - SDL 09 - 07	22	18	25	50	200	28	CC..09T3	7883209	DC..0702	7815101	T15 IP - T08 IP
S 22 R SDR - SCL 07 - 09	22	18	25	50	200	28	CC..09T3	7883209	DC..0702	7815101	T15 IP - T08 IP
S 29 S SCR - SDL 09 - 11	29	22	32	70	250	32	CC..09T3	7883209	DC..11T3	7883209	T15 IP
S 29 S SDR - SCL 11 - 09	29	22	32	70	250	32	CC..09T3	7883209	DC..11T3	7883209	T15 IP
S 32 T SCR - SDL 12 - 11	32	27	32	85	300	37	CC..1204	7883202	DC..11T3	7883209	T15 IP
S 32 T SDR - SCL 11 - 12	32	27	32	85	300	37	CC..1204	7883202	DC..11T3	7883209	T15 IP

İşleme Şekli / Process Type



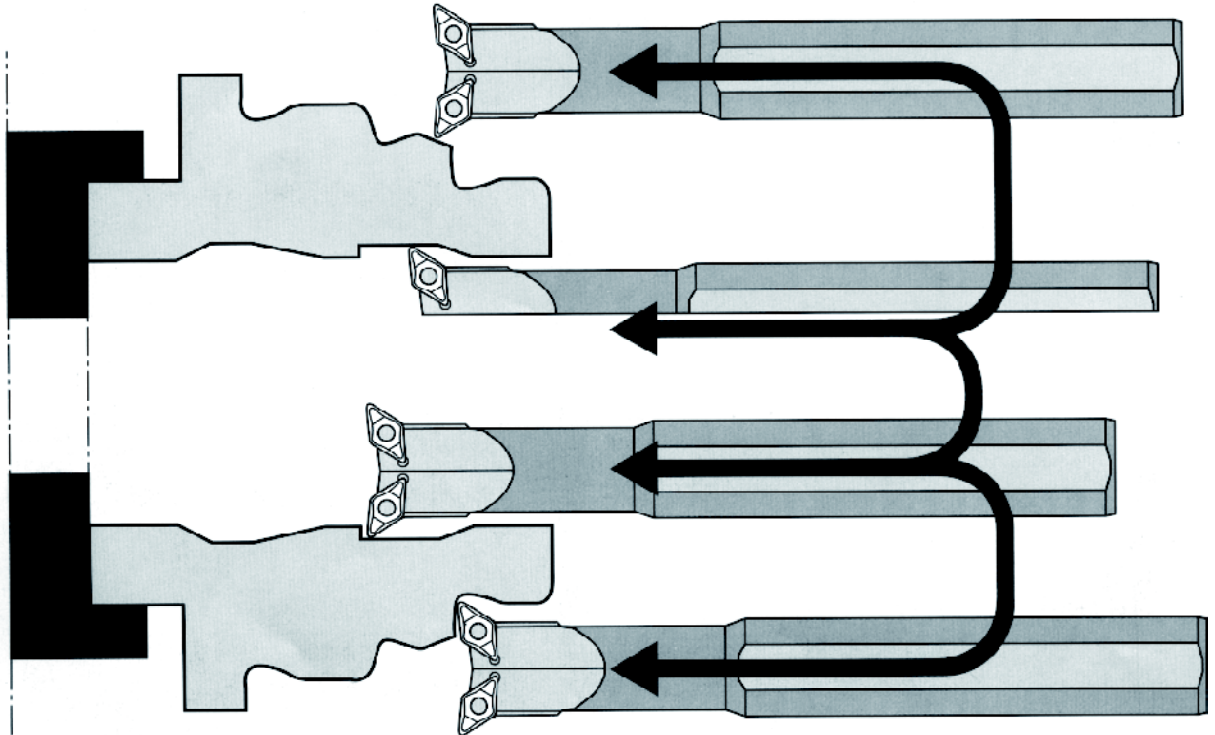
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : S 32 T SCR - SDL 12 - 11



	Ölçüler Dimensions Abmessungen										
Kod Code Bezeichnung	ØD	Ød1	Ød	L1	L	ØDmax	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
S 18 Q SDR - SDL 07 - 07	18	13	20	45	180	24	DC..0702	7815101	DC..0702	7815101	T08 IP
S 22 R SDR - SDL 07 - 07	22	15.5	20	50	200	26					
S 25 S SDR - SDL 07 - 07	25	19	25	60	250	30					
S 28 S SDR - SDL 11 - 11	28	23	32	70	250	34	DC..11T3	7883209	DC..11T3	7883209	T15 IP
S 34 T SDR - SDL 11 - 11	34	27	32	85	300	38					

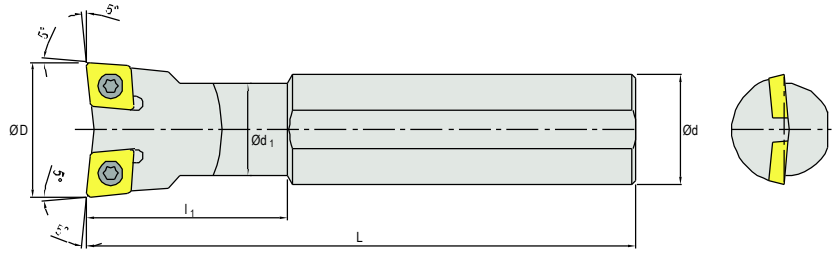
İşleme Şekli / Process Type



Çift Yönlü Torna Katerleri

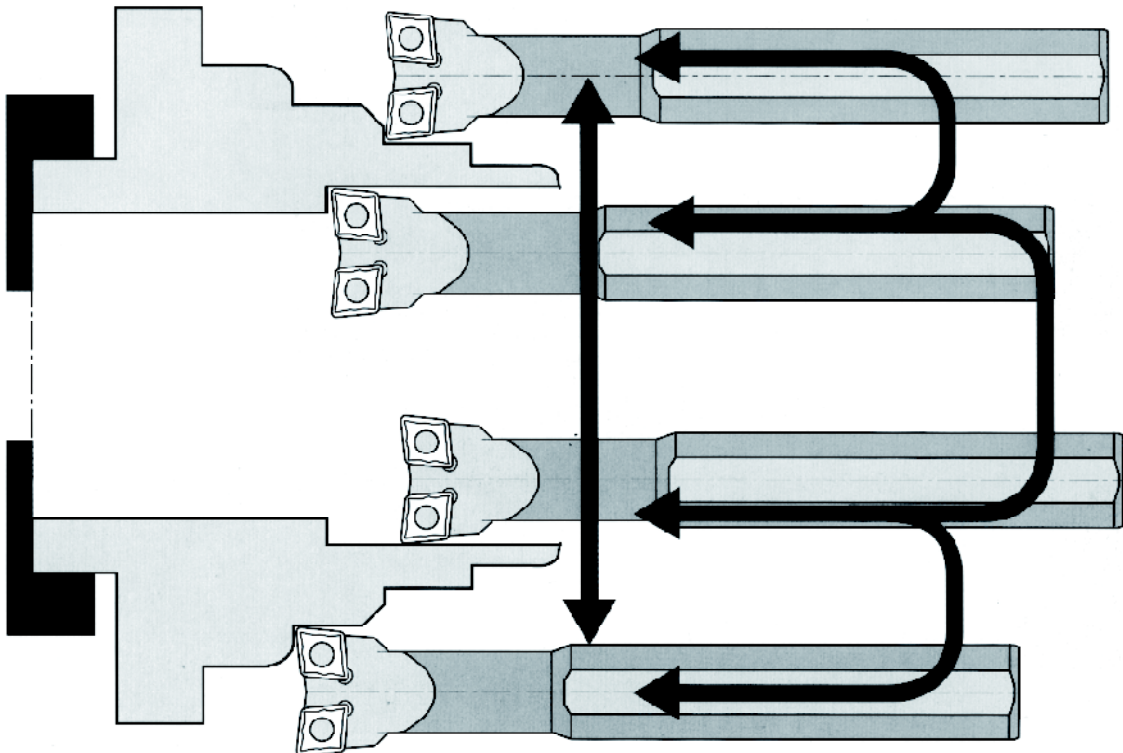
Turning - Toolholder, Both Sided

Drehen - Klemmhalter, Beide Seitenbearbeitet



	Ölçüler Dimensions Abmessungen										
Kod Code Bezeichnung	ØD	Ød1	Ød	L1	L	ØDmax	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
S 16 Q SCR - SCL 06 - 06	16	13	20	40	180	24	CC..0602	7815101	CC..0602	7815101	T08
S 22 R SCR - SCL 09 - 09	22	17.5	25	50	200	29	CC..09T3	7883209	CC..09T3	7883209	T15 IP
S 25 S SCR - SCL 09 - 09	25	20.5	32	70	250	36	CC..09T3	7883209	CC..09T3	7883209	T15 IP
S 28 S SCR - SCL 09 - 12	28	23.5	32	70	250	36	CC..09T3	7883209	CC..1204	7883202	T15 IP
S 36 T SCR - SCL 12 - 12	36	29.5	32	85	300	37	CC..1204	7883202	CC..1204	7883202	T15 IP

İşleme Şekli / Process Type



R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : S 36 T SCR - SCL 12 - 12

Birimler

Gösterim	Tanımlama	Birim
D_m	İşleme Çapı	mm
V_c	Kesme hızı	m / dak
n	Devir Sayısı	dev / dak
T_c	İşleme zamanı	dak
Q	Kaldırılan talaşın hacmi	cm ³ / dak
l_m	İşleme uzunluğu	mm
P_c	Net güç gereksinimi	kW
k_c	Özgül kesme kuvveti	N / mm ²
f_n	İlerleme miktarı	mm / dev
φ	Yanaşma (giriş) açısı	Derece
R_a	Yüzey pürüzlülüğü	μm
R_e	Köşe radyüsü	mm
a_p	Kesme derinliği	mm

Formüller

Kesme hızı (mm / dak)	$V_c = \frac{D_m \cdot \pi \cdot n}{1000}$
Devir sayısı (dev / dak)	$n = \frac{V_c \cdot 1000}{D_m \cdot \pi}$
Talaş hacmi (cm ³ / dak)	$Q = V_c \cdot a_p \cdot f_n$
Güç gereksinimi (kW)	$P_c = \frac{Q \cdot k_c}{D_m \cdot \pi} \left[\frac{0,4}{f_n \sin \varphi} \right]^{0.29}$
İşleme zamanı (dak)	$T_c = \frac{l_m}{f_n \cdot n}$
Profil derinliği (μm)	$R_{max} = \frac{f_n^2}{r_e} \cdot 125$



Problem \ Çözüm	Serbest yüzey aşınması	Krater aşınması	Talaş birikmesi	Kesme kenarında talaş birikmesi	Kesme kenarında çentiklenme	Sert metal uç kırılması	Termal çatlaklar	Plastik deformasyon	Darbeli işlem	İş parçası yüzey hassasiyetinin bozulması	Uzun ve dolanan talaş (başlangıçta değil)	Çok dar talaş oluşumu
Sert metal aşınma dayanımı	↑↑				↑↑			↑↑				
Sert Metal sünekliği				↑↑		↑↑	↑↑		↑↑			
Kesme hızı	↓↓	↓↓	↑↑		↓↓			↓↓	↑↑	↑↑		
İlerleme	↔	↓↓	↓↓					↓↓	↓↓	↓↓	↑↑	↓↓
Kesme derinliği					↔				↓↓		↔	↔
Talaş açısı		↑↑	↑↑	↓↓		↓↓			↔			
Talaş kırıcı geometrisi				↔		↔					↔	↔
Kesme kenar durumu				↔					↔			
Köşe yarıçapı						↑↑			↑↑	↑↑		
Yanaşma açısı				↓↓								
Stabilite				↑↑								
Soğutma		↑↑	↑↑				↑↑	↑↑		↑↑		

↑↑ : Yükseltin

↓↓ : Azaltın

↔ : Optimize edin

Units / Berechnungseinheiten

Code / Kurzbezeichnung	Description / Bezeichnung	Unit / Einheiten
D_m	Machining Diameter / Bearbeitungsdurchmesser	mm
V_c	Cutting speed / Schnittgeschwindigkeit	m / min
n	Revolution per minute (RPM) / Anzahl Spindelumdrehungen	Rev / min
T_c	Cutting time / Eingriffszeit	min
Q	Metal removal volumes / Zerspanungsvolumen	cm ³ / min
l_m	Working Length / Bearbeitungslänge	mm
P_c	Net power consumption / Netto - Antriebsleistung	kW
k_c	Specific cutting force / Spezifische Schnittkraft	N / mm ²
f_n	Feed per revolution / Vorschub pro Umdrehung	mm / rev
κ_r	Approach angle / Anstellwinkel	Degrees
$R_{max.}$	Profile depth / Profiltiefe	μm
r_e	Tip radius / Schneidplattenradius	mm
a_p	Cutting depth / Schnitttiefe	mm

Formulas

Cutting speed (mm / min) Schnittgeschwindigkeit (m / min)	$V_c = \frac{D_m \cdot \pi \cdot n}{1000}$
Revolution per minute (Rev / min) Anzahl Spindelumdrehungen	$n = \frac{V_c \cdot 1000}{D_m \cdot \pi}$
Metal removal volumes (cm ³ / min) Zerspanungsvolumen (cm ³ / min)	$Q = V_c \cdot a_p \cdot f_n$
Power consumption (kW) Antriebsleistung (kW)	$P_c = \frac{Q \cdot k_c}{D_m \cdot \pi} \left[\frac{0,4}{f_n \sin \kappa_r} \right]^{0.29}$
Cutting time (min) Eingriffszeit (min)	$T_c = \frac{l_m}{f_n \cdot n}$
Profile depth (μm) Profiltiefe (μm)	$R_a = \frac{f_n^2}{r_e} \cdot 125$

Problem Option Problem Abhilfe	Clearance face wear Extremer Freiflächen- verschleiß	Extreme crater wear Extremer Kolkverschleiß	Formation of built-up edge Aufbauschneidenbildung	Chip in cutting edge Schneidkantenausbrüche	Notching Kerbverschleiß	Insert breakage Plattenbruch	Thermal cracking Wärmerisse	Plastic deformation Plastische Verformung	Interrupted cut Unterbrochener Schnitt	Poor finish surface Schlechte Werkstückoberfläche	Band / snarl chips (not started up) Band-Wirrspan (nicht angelaufen)	Chip shape too narrow (blueing) Zu enge Spanform (blau angelaufen)
T/C wear resistance T/C Verschleiß	↑↑				↑↑			↑↑				
T/C toughness T/C Zähigkeit				↑↑		↑↑	↑↑		↑↑			
Cutting speed Schnittgeschwindigkeit	↓↓	↓↓	↑↑		↓↓			↓↓	↑↑	↑↑		
Feed Vorschub	↔	↓↓	↓↓					↓↓	↓↓	↓↓	↑↑	↓↓
Depth of cut Schnitttiefe					↔				↓↓		↔	↔
Rake angle Spanwinkel		↑↑	↑↑	↓↓		↓↓			↔			
Chip breaker geometry Spanformgeometrie				↔		↔					↔	↔
Condition of cutting edge Zustand der Schneidkante				↔					↔			
Corner radius Platten-Eckenradius						↑↑			↑↑	↑↑		
Approach angle Anstellwinkel				↓↓								
Stability Stabilität				↑↑								
Cooling Kühlung		↑↑	↑↑				↑↑	↑↑		↑↑		

↑↑ : Increase
Erhöhen, vergrößern

↓↓ : Reduce
Vermindern, verkleinern

↔ : Optimize
Optimieren, kontrollieren

İç tornalama işlemlerinde takım seçerken aşağıdaki noktalara dikkat edilmelidir.

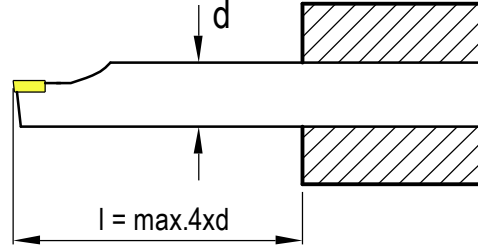
The below points should be taken account while choosing tools for internal turning.

Beachten Sie unterstehende Punkte während der Wahl von Klemmhalter für Innenbearbeitung

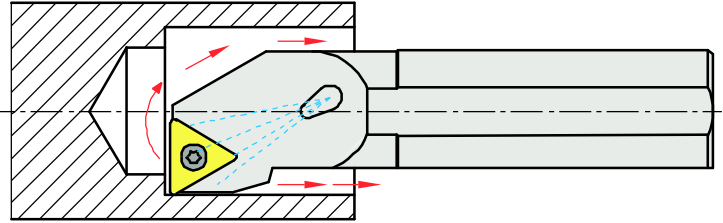
Genel tavsiyeler / General Recommendations / Allgemeine Empfehlungen

- Mümkün olan en büyük şaft çapı seçilmelidir.
Use largest possible shank diameter.
Den größtmöglichen Überhang Wahlen
- Takım mümkün olan en kısa şekilde bağlanmalıdır.
Apply the shortest possible overhang.
Kleinstmöglichen Überhang wahlen
- Doğru ve kuvvetli bağlama sistemi kullanılmalıdır.
Use the correct and stable clamping system.
Korrekte und stabile Einspannung für die Bohrstange wahlen
- Kesme sıvısı veya basınçlı hava kullanılması;
özellikle derin delik ve kör deliklerin tornalanmasında
talaşın dışarıya atılmasında ve yüzey kalitesinde
olumlu etkiler sağlar.
Use of coolant/lubricant or compressed air can
improve chips removal and surface quality
particularly in deep-hole boring and blind hole boring.
Verwendung von Kühlmittel / Schmiermittel oder Druckluft
Chips verbessern Entfernung und Oberflächengüte
insbesondere im Tieflochbohren und Sackloch langweilig.

Uç kaynatılmış iç tornalama takımı / Solid boring bars / Solide Bohrstangen



Mümkün olan en kısa takım çıkıntısı / Smallest possible overhang / Kleinstmöglicher Auskrugung



Vibrasyon oluşabilecek işler için, takımların seçiminde göz önünde bulundurulması gereken faktörler.

Factors to be considered when selecting the tools for workpiece subjects to vibration :

Die zu berücksichtigenden Faktoren bei der Auswahl der Werkzeuge für sein Werkstück Themen zu Vibrationen :

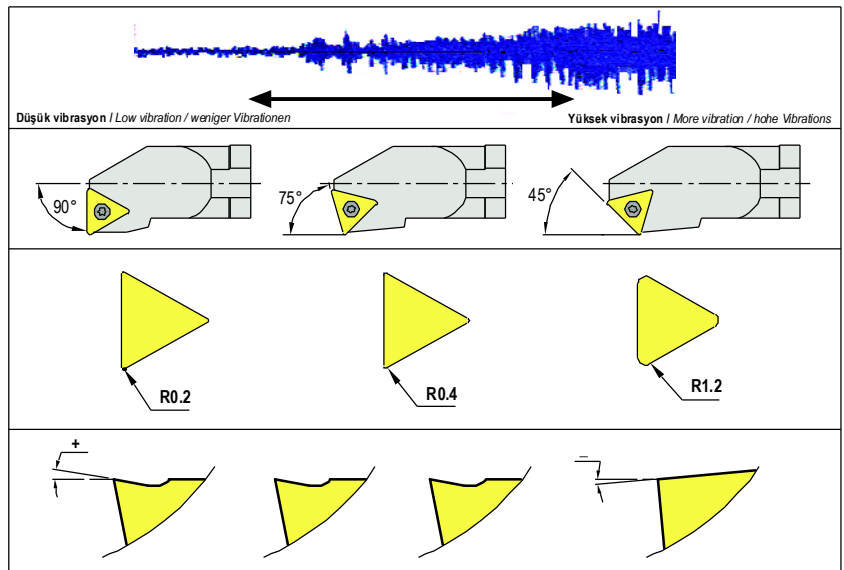
- Yanaşma açısı mümkün olduğunca 90 dereceye yakın olmalı ve 75 dereceden az olmamalıdır.

The setting angle should be as close as possible to 90 degrees and not less than 75 degrees.

Der Einstellwinkel sollte so nahe wie möglich an 90° nicht unter 75° liegen

- Küçük köşe radyüsü seçilmelidir.
Select smaller insert-tip radius.
Kleinen Eckenradius wahlen.

- Pozitif takım ve uçlar kullanılmalıdır.
Use positive holders and inserts.
Positive Halter und Wendschneidplatten wahlen.



Mekanik Sıkmalı Uç Şeklinin Seçilmesi

Selecting Indexable Insert Shape

Wahl der Wendeschneidplattenform



Mekanik Sıkmalı Uç Şekli / Indexable Insert Shape / Wendeschneidplatte Form

- Yandaki şemada yuvarlak şekilden, 35 derece uç açılıra kadar kullanımı en yaygın olan uçlar gösterilmiştir.

The figure at the right shows the most common insert shapes from round tips to 35 degrees.

Die Abbildung zeigt die gebräuchlichsten ISO-Plattenformen von der runden bis hin zur 35° Wendeschneidplatte.

- Şemada okun gösterdiği gibi kesici kenar dayanımı (S), geniş açılı uçlara doğru artar; bununla beraber zor ve dar noktalara ulaşılabilirlik (Z), dar açılı uçlara doğru artar.

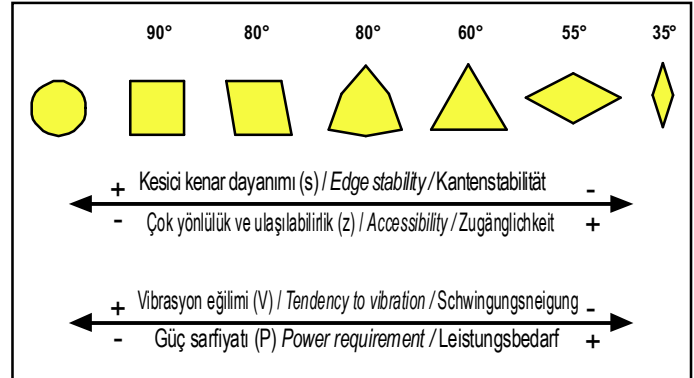
As it's seen on the figure, the stability of cutting edge (s) increases toward the wide angle tips, although the accession to the hard and narrow points gets difficult toward acute angle tips.

Die Pfeilskala zeigt, dass die Schneidkantenstabilität (S) mit größer werdendem Eckenwinkel zunimmt. Je kleiner der Eckenwinkel, umso besser ist die Zugänglichkeit. (Z)

- Vibrasyon eğilimi (V) uç açısı büyüdükçe artmaktadır. Uç açısı küçüldükçe güç (P) gereksinimi azalmaktadır.

The tendency to vibration (V) increases as the tip angle increases whereas the power required (P) decreases as the tip angle decreases.

Die Pfeilskala zeigt, dass die Vibrationsneigung (V) links ansteigt, während Leistungsbedarf (P) recht niedriger ist.



Köşe Radyüsü ve İlerleme / Tip Radius and Feed / Eckenradius und Vorschub

Mekanik sıkmalı uçta köşe radyüsü, işleme esnasında önemli bir faktördür. Örneğin :

The tip radius of an insert is a key factor that results in :

Der Eckenradius der Wendeschneidplatte ist ein Schlüsselfaktor in Bezug auf.

- Kaba tornalama sırasında dayanım,
Stability during rough turning,
Stabilität beim Schruppen.

- Finiş operasyonlarında yüzey kalitesi,
Surface quality during finish turning,
Oberflächengüte beim Schlichten

Kaba Tornalama / Rough Turning / Schruppdrehen

- Kesme kenarı dayanımı yüksek olmalıdır. Bu yüzden mümkün olan en büyük uç radyüsü seçilmelidir.

Use the largest possible tip radius to ensure the greatest degree of stability for the cutting edge.

Größtmöglichen Eckenradius wählen, um eine möglichst stabile Schneidkante zu gewährleisten.

- Uç radyüsünün büyük seçilmesi, daha yüksek ilerleme değerlerine olanak tanır.

Larger tip radius ensures greater feed rate.

Ein großer Eckenradius erlaubt größere Vorschübe.

- Eğer vibrasyon riski varsa uç radyüsü küçük alınmalıdır.

Prefer smaller tip radius if there is risk of vibration.

Bei Vibrationsgefahr kleineren Eckenradius wählen.

- Kaba tomalamada kullanılan uç radyüsleri genellikle 1,2 ve 1,6 mm'dir. The tip radius frequently used for rough turning are 1,2 and 1,6 mm. Die bei der Schruppbearbeitung am häufigsten verwendeten Radien betragen 1,2-1,6 mm.

Uç radyüsüne göre max. ilerleme değerleri

Maximum feed rate for some tip radius

Maximaler Vorschub für einige Spitzenradius

Köşe radyüsü (r) mm Corner Radius (r) mm	0.4	0.8	1.2	1.6	2.4
Tavsiye edilen max. ilerleme değeri (f _n) mm / dev. Recommended max. feed rate (f _n) mm / dev. Empfohlene max. füttern Rate (f _n) mm / dev.	0.25-0.35	0.4-0.7	0.5-1.0	0.7-1.3	1.0-1.8

Bu tabloda tavsiye edilen max. ilerleme değerleri, uç radyüsünün 2/3' üne göre hazırlanmıştır.

The maximum feeding rates recommended reflect two thirds (2/3) of the tip radius.

Die maximalen Preise Fütterung empfohlen spiegeln zwei Drittel (2/3) spitzenradius.

Aşağıdaki durumlarda daha yüksek ilerleme değerleri uygulanabilir.

Greater feed rates are possible in following cases.

Höhere Vorschübe sind in folgenden Fällen möglich.

-En az 60 derece uç açısına ve iyi bir kesme dayanımına sahip uçların kullanılması halinde,

When the insert having 60 degrees of tip angle and stable cutting edge is used,

Wendeschneidplatten mit stabiler Schneidkante und Spitzwinkel von min. 60°

-Tek taraflı talaş kırıcılı uçların kullanılması durumunda,

When the insert having single side chip breaker is used,

Wenn der Einsatz mit einseitig Spanbrecher verwendet wird,

-90 dereceden daha küçük yanaşma açısının kullanıldığı durumlarda,

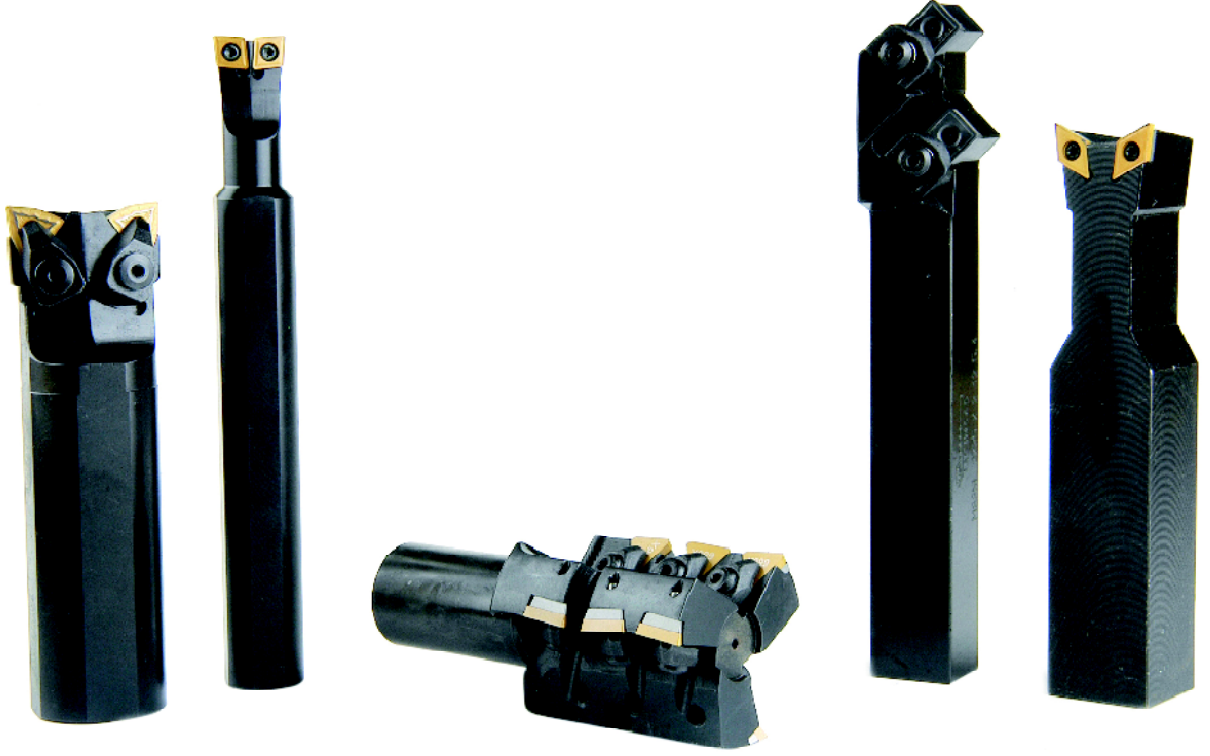
When the insert having setting angle less than 90 degrees is used,

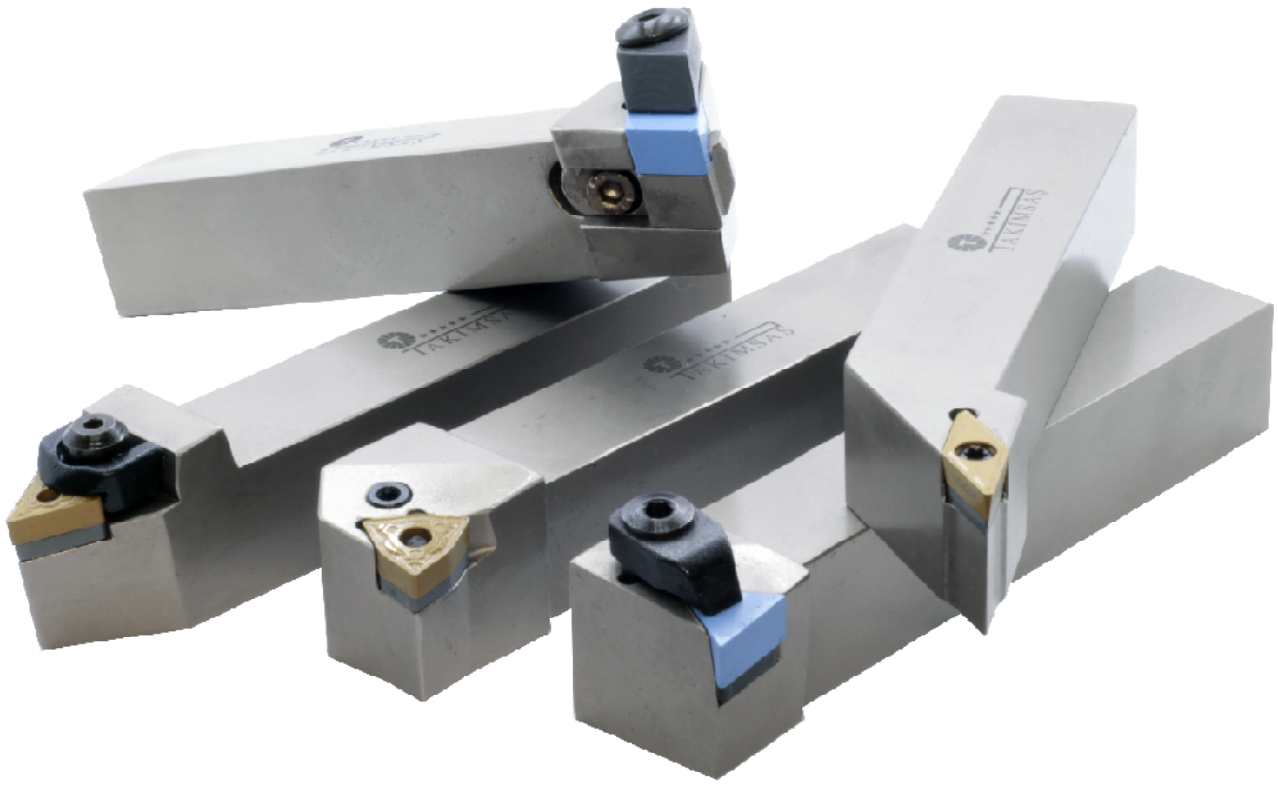
Wenn der Einsatz mit Anstellwinkel kleiner als 90 Grad verwendet wird,

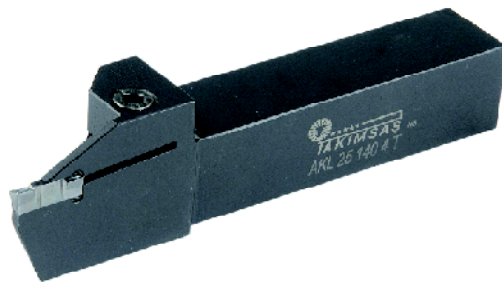
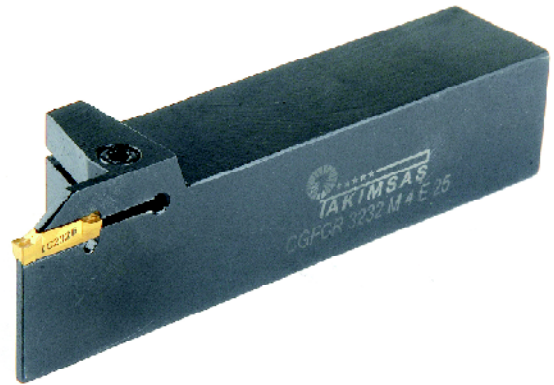
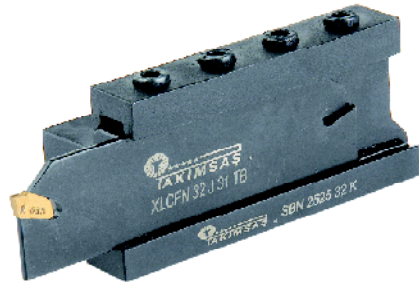
-Normal kesme hızlarında rahat talaş kaldırılabilen malzemelerin işlenmesinde,

Working with the materials that can be machined easily at normal cutting speeds,

Die Arbeit mit den Materialien, die leicht an bearbeitet werden kann normalen Schnittgeschwindigkeiten,



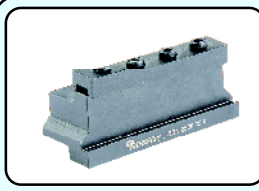




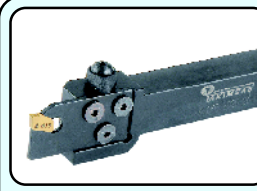
Kanal ve Kesme Katerleri / Turning - Grooving and Parting-off
Klemmhalter, Abstecken und Einstechen



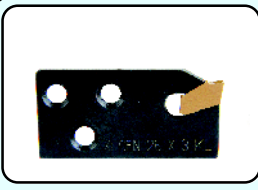
XLCFN TB
Sayfa / Page / Seite : 94



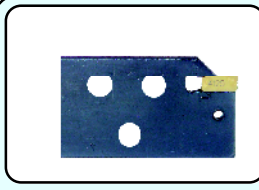
SBN
Sayfa / Page / Seite : 94



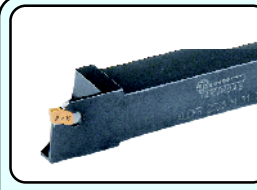
XLCFR/L LTH
Sayfa / Page / Seite : 95



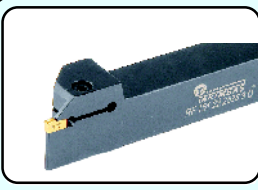
XLCFN KL
Sayfa / Page / Seite : 95



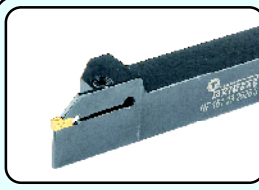
XLCFN N151
Sayfa / Page / Seite : 96



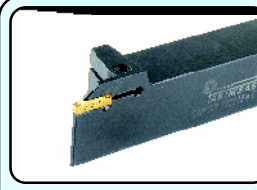
XLCFR TB
Sayfa / Page / Seite : 96



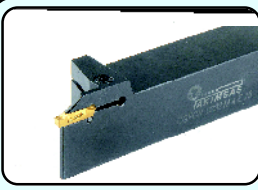
R/LF 151 22
Sayfa / Page / Seite : 97



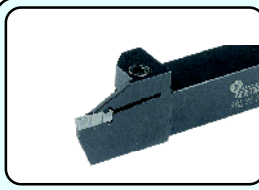
R/LF 151 23
Sayfa / Page / Seite : 97



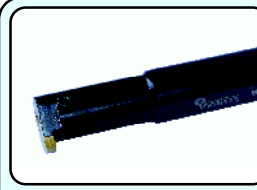
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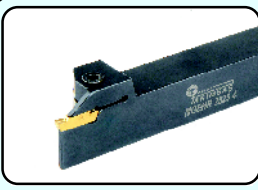
CGFCR / L F6
Sayfa / Page / Seite : 98



CGFCR / L F..
Sayfa / Page / Seite : 99



S.... CGACR / L
Sayfa / Page / Seite : 99



MGEHR / L
Sayfa / Page / Seite : 100

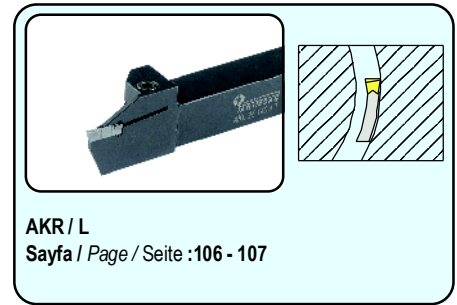
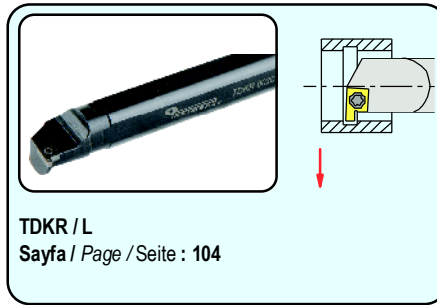
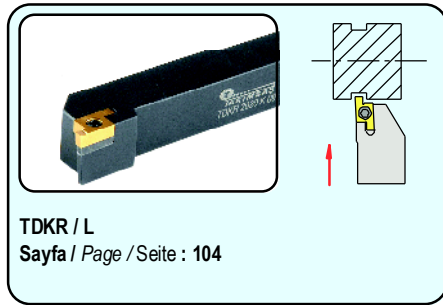
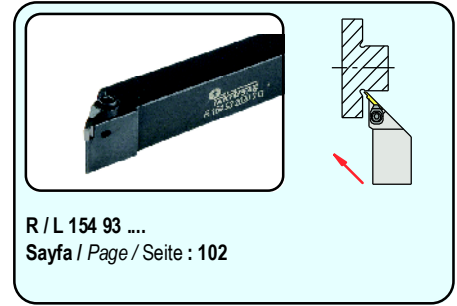
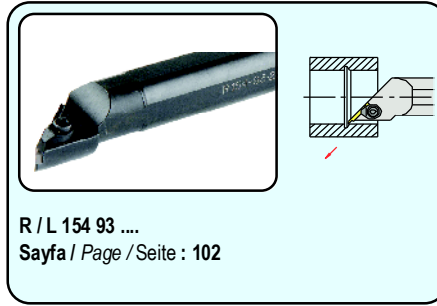
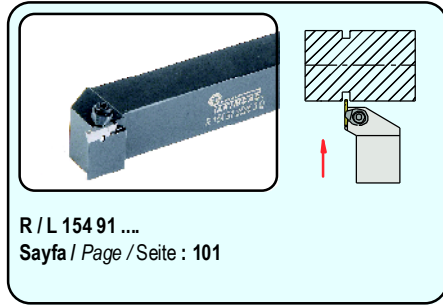


MGIVR / L
Sayfa / Page / Seite : 100



R / L 154 91
Sayfa / Page / Seite : 101

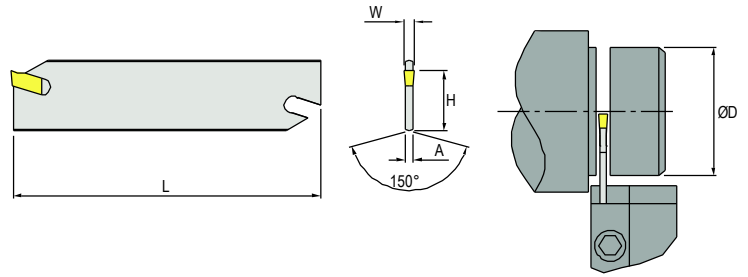
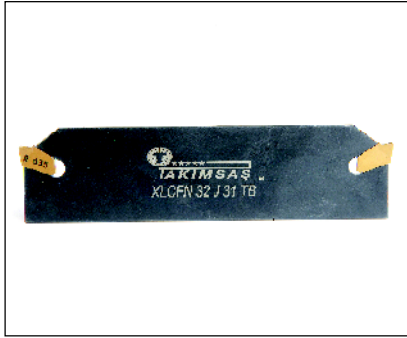
Kanal ve Kesme Katerleri / Turning - Grooving and Parting-off
Klemmhalter, Abstecken und Einstechen



Diş Açma Katerleri / Toolholder - Threading
Klemmhalter, Gewindedrehen

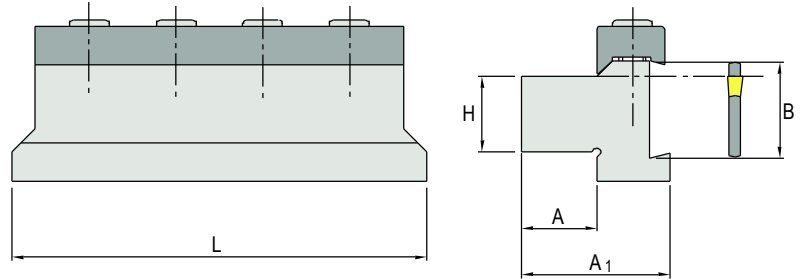
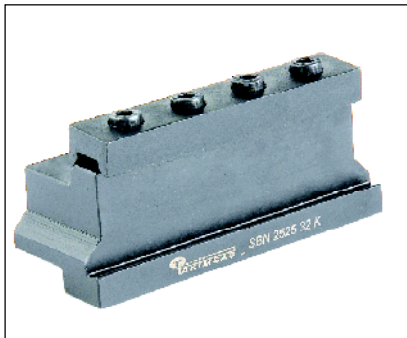






Kod Code Bezeichnung	Çap Diameter ØD	Genişlik Width / Breite W	H	L	A	Anahtar Wrench Schlüssel	Uç Tipi Insert Type Plattentype
XLCFN 26 J21 TB	40	2.2	21.4	110	1.8	TCA 5	STE(N) 2.0
26 J31 TB	80	3.1	21.4	110	2.5		STE(N) 3.0
26 J41 TB	80	4.1	21.4	110	3.4		STE(N) 4.0
26 J51 TB	80	5.1	21.4	110	4.2		STE(N) 5.0
32 J21 TB	40	2.2	25	120	1.8		STE(N) 2.0
32 J31 TB	80	3.1	25	120	2.5		STE(N) 3.0
32 J41 TB	80	4.1	25	120	3.4		STE(N) 4.0
32 J51 TB	80	5.1	25	120	4.2		STE(N) 5.0

Kesme Laması Tutucusu
Turning - Toolholder For Blade
Drehen - Spannblock für Klingen

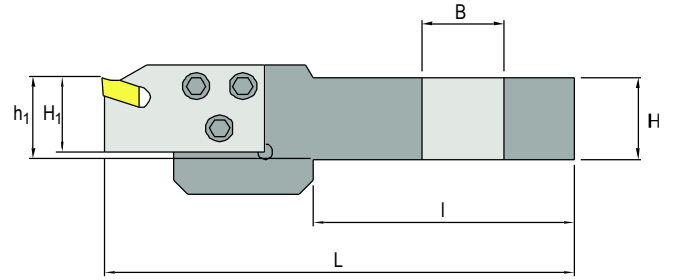
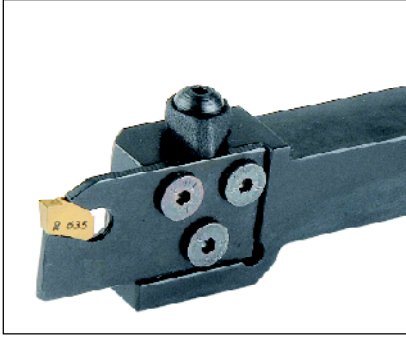


Kod Code Bezeichnung	H	B	A	A ₁	L	Sıkma Vidası Clamping Screw Klemmschraube
SBN 20 20 26K	20	26	20	33	109	M6 x 30
25 20 26K	25	26	20	33	109	
25 25 26K	25	26	25	38	109	
32 25 26K	32	26	25	38	109	
20 20 32K	20	32	20	33	120	
25 20 32K	25	32	20	33	120	
25 25 32K	25	32	25	38	120	
32 25 32K	32	32	25	38	120	

Kısa Kesme Laması Tutucusu

Turning - Toolholder For Short Blade

Drehen - Spannblock für kurze Klingen

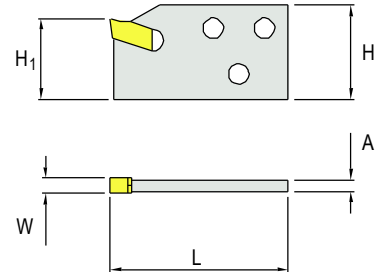
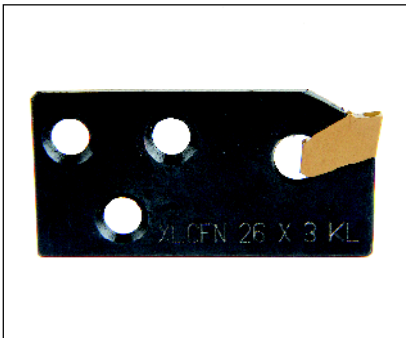


Kod Code Bezeichnung	h_1 H	H_1	B	I	L	Sıkma Vidası Clamping Screw Klemmschraube	Anahtar Wrench Schlüssel
XLCFR/L 20 20 26 LTH	20	21.5	20	105	160	M5 x 15 BV	Ta3
25 25 26 LTH	25		25	110	170		
32 25 26 LTH	32		25	130	190		

Kısa Kesme Laması

Turning - Short Blade , Parting

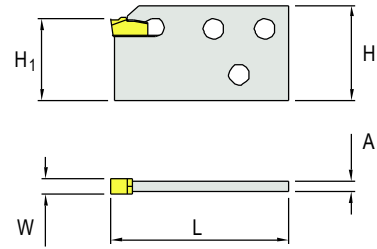
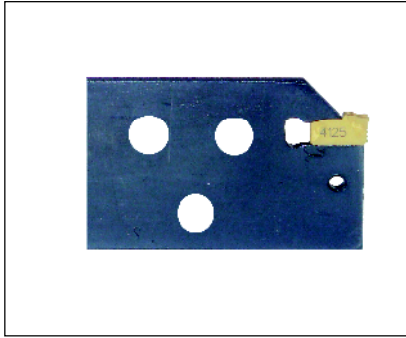
Drehen - kurze Klingen



Kod Code Bezeichnung	H	A	L	H_1	W	Uç Tipi Insert Type Plattentype
XLCFN 26X 2KL	25.2	2.0	50	21.5	2.2	STE(N) 2.0
26X 3KL		2.5			3.1	STE(N) 3.0
26X 4KL		3.4			4.1	STE(N) 4.0
26X 5KL		4.2			5.1	STE(N) 5.0

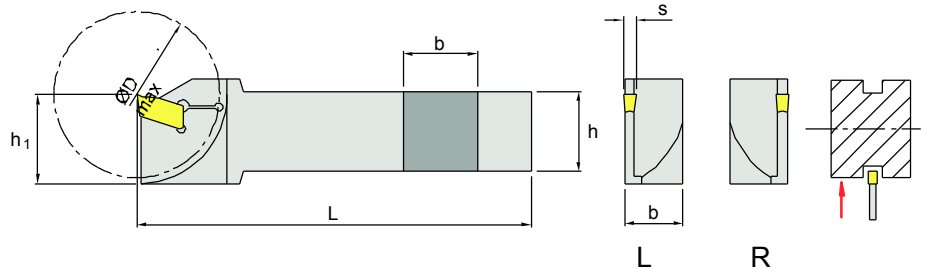
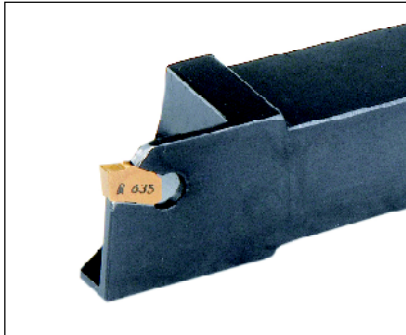
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : XLCFR 20 20 26 LTH

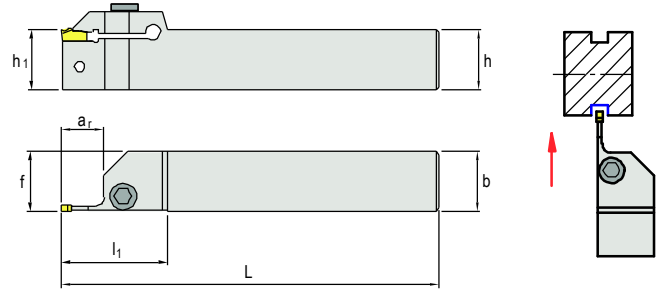
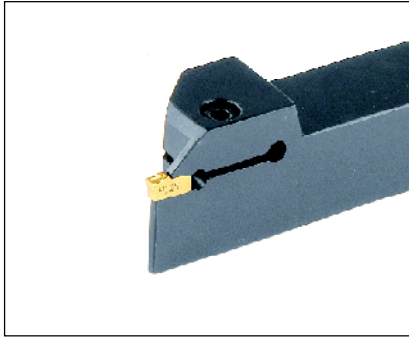


Kod Code Bezeichnung	H	A	L	H ₁	W	Uç Tipi Insert Type Plattentype
XLCFN 26X 3N 151	25.2	2.0	50	21.5	2.1	N151 2 300
26X 4N 151		2.5			3.1	N151 2 400
26X 5N 151		3.4			4.1	N151 2 500

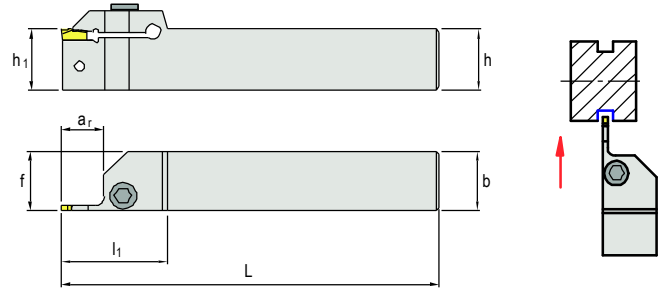
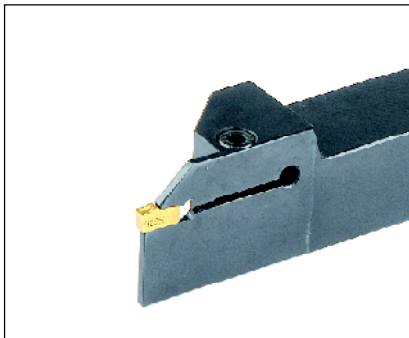
Kesme Katerleri
Turning - Parting and Grooving
Drehen - Klemmhalter, Abstechen und Einstechen



Kod Code Bezeichnung	ØD max	S	h h ₁	b	L	Sıkma Vidası Clamping Screw Klemmschraube	Anahtar Wrench Schlüssel
XLCFR/L 20 20 K31 TB	35	3.1	20	20	125	TCA5	STE(N) 3.0
20 20 K41 TB	35	4.1	20	20	125		STE(N) 4.0
25 20 M31 TB	40	3.1	25	20	150		STE(N) 3.0
25 25 M31 TB	40	3.1	25	25	150		STE(N) 3.0
25 20 M41 TB	40	4.1	25	20	150		STE(N) 4.0
25 25 M41 TB	40	4.1	25	25	150		STE(N) 4.0
25 25 M51 TB	40	5.1	25	25	150		STE(N) 5.0
32 25 P31 TB	50	3.1	32	25	170		STE(N) 3.0
32 25 P41 TB	60	4.1	32	25	170		STE(N) 4.0
32 25 P51 TB	60	5.1	32	25	170		STE(N) 5.0



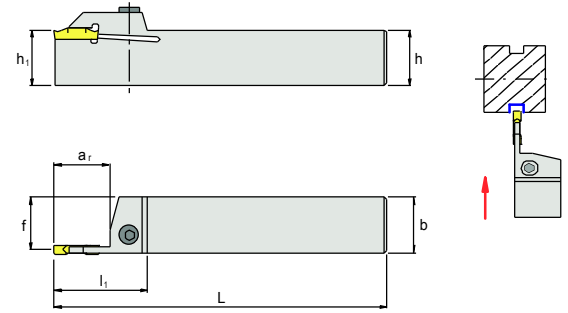
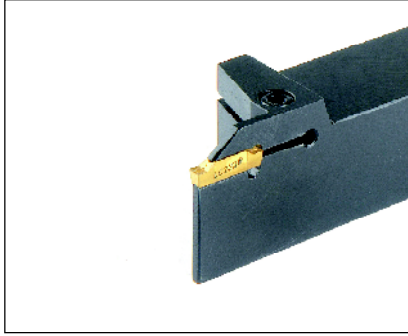
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen							Anahtar Wrench Schlüssel	Sıkma Vidası Clamp screw Klemmschraube	Uç Tipi Insert Type Plattentype
	a _r	b	f	h	h ₁	l ₁	L			
R/LF 151 22 20 20 2Q	8	20	21	20	20	23	125	Ta4	M5 x 15	N 151 22 200
22 25 25 2Q	8	25	26	25	25	23	150			N 151 22 250
22 20 20 2.5Q	10	20	25	20	20	27	125			N 151 22 300
22 25 25 2.5Q	10	25	32	25	25	27	150			N 151 22 400
22 20 20 3Q	10	20	25	20	20	27	125		M5 x 20	N 151 22 500
22 25 25 3Q	10	25	32	25	25	27	150			N 151 22 600
22 20 20 4Q	13	20	25	20	20	31	125	Ta5	M6 x 20	N 151 22 200
22 25 25 4Q	13	25	32	25	25	31	150			N 151 22 250
22 32 25 4Q	13	25	32	32	32	31	170			N 151 22 300
22 25 25 5Q	13	25	32	25	25	31	150			N 151 22 400
22 32 25 5Q	13	25	32	32	32	31	170			N 151 22 500
22 25 25 6Q	16	25	32	25	25	37	150	Ta5	M6 x 20	N 151 22 600
22 32 25 6Q	16	25	32	32	32	37	170			N 151 22 200



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen							Anahtar Wrench Schlüssel	Sıkma Vidası Clamp screw Klemmschraube	Uç Tipi Insert Type Plattentype
	a _r	b	f	h	h ₁	l ₁	L			
R/LF 151 23 20 20 2Q	15	20	21	20	20	39	125	Ta4	M5 x 15	N 151 22 200
23 25 25 2Q	15	25	26	25	25	39	150			N 151 22 250
23 20 20 2.5Q	20	20	21	20	20	40	125			N 151 22 300
23 25 25 2.5Q	20	25	26	25	25	40	150			N 151 22 400
23 16 16 3Q	20	16	17	16	16	41	100		M5 x 20	N 151 22 500
23 20 20 3Q	20	20	21	20	20	41	125			N 151 22 600
23 25 25 3Q	20	25	26	25	25	41	150	Ta5	M6 x 20	N 151 22 200
23 32 25 3Q	20	25	26	32	32	37	170			N 151 22 250
23 20 20 4Q	25	20	21	20	20	47	125			N 151 22 300
23 25 25 4Q	25	25	26	25	25	47	150			N 151 22 400
23 32 25 4Q	25	25	26	32	32	47	170			N 151 22 500
23 25 25 5Q	32	25	26	25	25	31	150	Ta5	M6 x 20	N 151 22 600
23 32 25 5Q	32	25	26	32	32	31	170			N 151 22 200
23 25 25 6Q	32	25	26	25	25	37	150			N 151 22 250
23 32 25 6Q	32	25	26	32	32	37	170			N 151 22 300

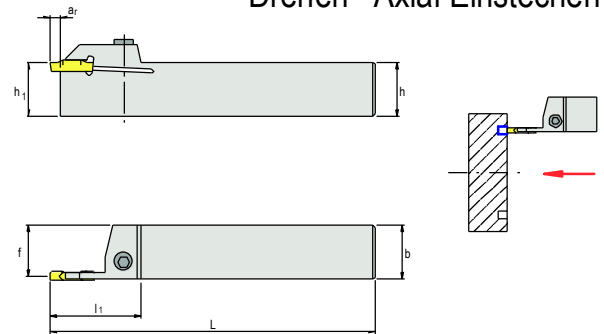
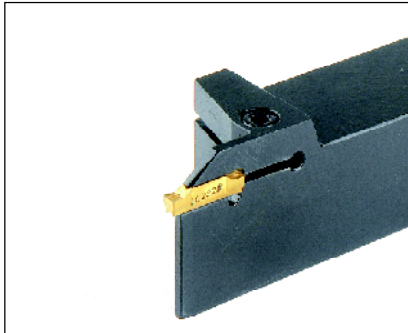
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : RF 151 22 25 25 3Q



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen							Anahtar Wrench Schlüssel	Sıkma Vidası Clamp screw Klemmschraube	Uç Tipi Insert Type Plattentype
	a _r	b	f	h	h ₁	l ₁	L			
CGFCR/L 16 16 J2 E12	12	16	14.95	16	16	32	110	Ta4	M5 x 16	ED LCMR 2.00.....
16 16 J3 E12	12	16	14.95	16	16	32	110			ED LCMR 3.00.....
16 16 J4 E15	15	16	14.55	16	16	32	110			ED LCMR 4.00.....
20 20 K2 E12	12	20	18.95	20	20	32	125			ED LCMR 2.00.....
20 20 K3 E12	12	20	18.95	20	20	32	125			ED LCMR 3.00.....
20 20 K4 E15	15	20	18.55	20	20	32	125	Ta5	M6 x 25	ED LCMR 4.00.....
20 20 K5 E20	20	20	18.05	20	20	37	125			ED LCMR 5.00.....
20 20 K6 E20	20	20	17.55	20	20	37	125			ED LCMR 6.00.....
25 25 M2 E12	12	25	23.95	25	25	32	150	Ta4	M5 x 16	ED LCMR 2.00.....
25 25 M3 E12	12	25	23.95	25	25	32	150			ED LCMR 3.00.....
25 25 M4 E15	15	25	23.55	25	25	32	150			ED LCMR 4.00.....
25 25 M5 E20	20	25	23.05	25	25	37	150	Ta5	M6 x 25	ED LCMR 5.00.....
25 25 M6 E20	20	25	22.55	25	25	37	150			ED LCMR 6.00.....
25 25 M8 E25	25	25	22.05	25	25	42	150			ED LCMR 8.00.....
32 32 P8 E25	25	32	29.05	32	32	42	170			ED LCMR 8.00.....

Alın Kanal Katerleri
Turning - Face Grooving
Drehen - Axial Einstechen

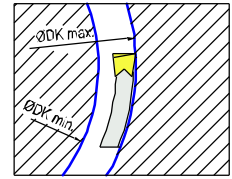
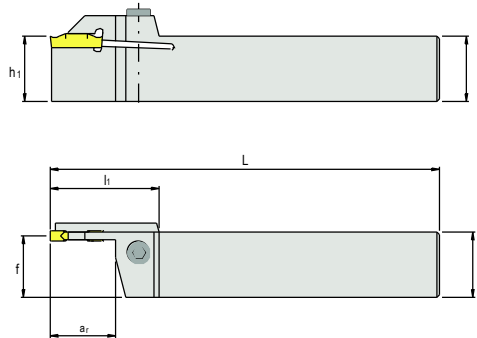
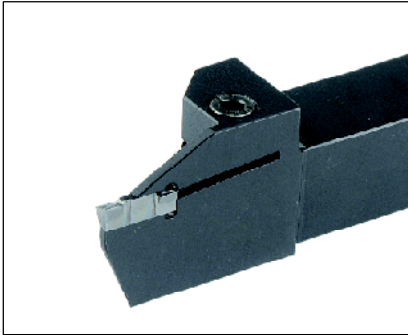


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen							Anahtar Wrench Schlüssel	Sıkma Vidası Clamp screw Klemmschraube	Uç Tipi Insert Type Plattentype
	a _r	b	f	h	h ₁	l ₁	L			
CGFCR/L 16 16 J4 F6	6	16	14.55	16	16	32	110	Ta4	M5 x 16	ED LCMR 4.00.....
20 20 K4 F6	6	20	18.55	20	20	32	125			
25 25 M4 F6	6	25	23.55	25	25	32	150			
20 20 K6 F6	6	20	17.55	20	20	37	125	Ta4	M5 x 25	ED LCMR 6.00.....
25 25 M6 F6	6	25	22.55	25	25	37	150			

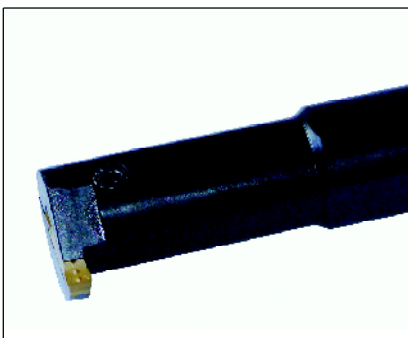
Alın Kanal Katerleri

Turning - Face Grooving

Drehen - Axial Einstechen

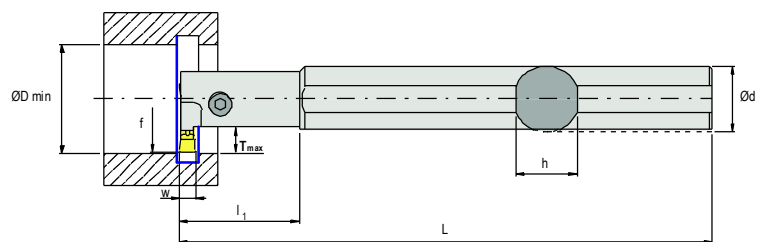


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen							ØDK min.	ØDK max.	Anahtar Wrench Schlüssel	Sıkma Vidası Clamp screw Klemmschraube	Uç Tipi Insert Type Plattentype
		a _r	b	f	h	h ₁	l ₁	L					
CGFCR/L	25 25 M3 F10 D30N	10	25	23.95	25	25	38	150	24	35	Ta5	M6 x 25	ED LCMR 3.00.
	25 25 M3 F10 D35N	10	25	23.95	25	25	38	150	29	42			
	25 25 M3 F10 D42	10	25	23.95	25	25	38	150	36	50			
	25 25 M3 F15 D50N	15	25	23.95	25	25	38	150	44	70			
	25 25 M3 F15 D70	15	25	23.95	25	25	38	150	64	100			ED LCMR 4.00..
	25 25 M4 F10 D30	10	25	23.55	25	25	39	150	22	36			
	25 25 M4 F20 D36	20	25	23.55	25	25	39	150	28	42			
	25 25 M4 F20 D42	20	25	23.55	25	25	39	150	34	50			
	25 25 M4 F20 D50	20	25	23.55	25	25	39	150	42	70			ED LCMR 5.00..
	25 25 M4 F20 D70	20	25	23.55	25	25	39	150	62	120			
	25 25 M4 F20 D120	20	25	23.55	25	25	39	150	112	200			
	25 25 M5 F25 D60	25	25	23.05	25	25	49	150	50	80			ED LCMR 6.00..
	25 25 M5 F25 D80	25	25	23.05	25	25	49	150	70	110			
	25 25 M5 F25 D110	25	25	23.05	25	25	49	150	100	150			
	25 25 M5 F25 D150	25	25	23.05	25	25	49	150	140	200			ED LCMR 6.00..
	25 25 M6 F25 D60	25	25	22.55	25	25	49	150	48	70			
	25 25 M6 F25 D70	25	25	22.55	25	25	49	150	58	100			
	25 25 M6 F25 D100	25	25	22.55	25	25	49	150	88	180			
	25 25 M6 F25 D180	25	25	22.55	25	25	49	150	168	400			



Delik Kanal Katerleri

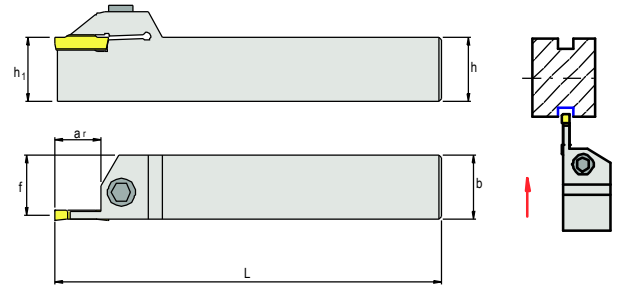
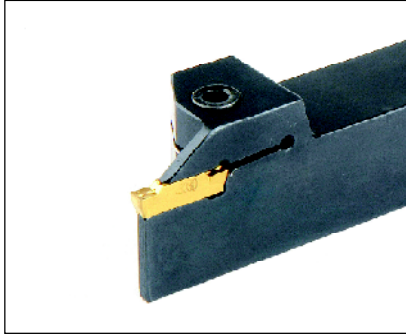
Turning - Internal Grooving / Drehen - Innen Einstechen



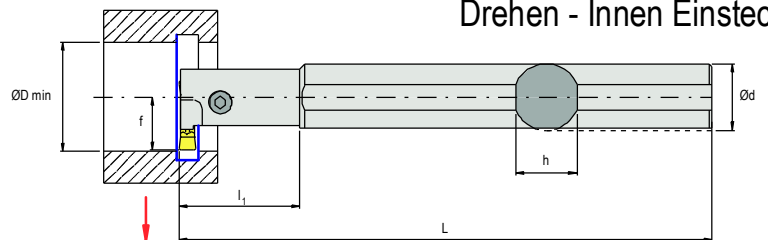
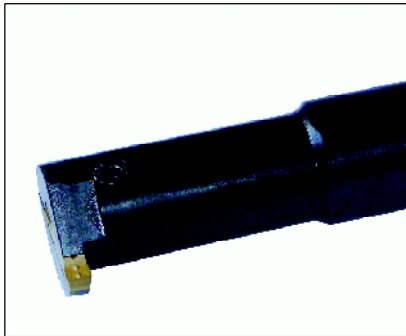
Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen							Anahtar Wrench Schlüssel	Sıkma Vidası Clamp screw Klemmschraube	Uç Tipi Insert Type Plattentype
		Ød	L	l ₁	f	h ₁	W	T _{max}			
S 20S	CGACR/L 3	20	250	40	15.8	9	3	6.5	Ta4	M5 x 16	ED LCMR 3.00.....
	CGACR/L 4	20	250	40	15.8	9	4	6.5			ED LCMR 4.00.....
S 25T	CGACR/L 3	25	300	40	17.5	11.5	3	6.5			ED LCMR 3.00.....
	CGACR/L 4	25	300	40	17.5	11.5	4	6.5			ED LCMR 4.00.....
S 32U	CGACR/L 5	25	300	40	17.5	11.5	5	6.5	Ta5	M6 x 25	ED LCMR 5.00.....
	CGACR/L 4	32	350	60	20.8	14	4	6.5	Ta4	M5 x 16	ED LCMR 4.00.....
	CGACR/L 5	32	350	60	20.8	14	5	6.5	Ta5	M6 x 25	ED LCMR 5.00.....
	CGACR/L 6	32	350	60	20.8	14	6	6.5			ED LCMR 6.00.....
CGACR/L 8	32	350	60	21.3	14.5	8	6.5	ED LCMR 8.00.....			
S 40 U	CGACR/L 8	40	400	65	28.8	19	8	6.5			

R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : CGFCR 25 25 M3 F15 D70



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						Anahtar Wrench Schlüssel	Sıkma Vidası Clamp screw Klemmschraube	Uç Tipi Insert Type Plattentype
	a _r	b	f	h	h ₁	L			
MGEHR/L 16 16 2	14.5	16	16.25	16	16	100	Ta5	M6 x 15	MGMN 200 M
16 16 3	18.5	16	16.35	16	16	100			MGMN 300 M
20 20 2	14.5	20	20.25	20	20	125		M6 x 20	MGMN 200 M
20 20 3	18	20	20.4	20	20	125			MGMN 300 M
20 20 4	18	20	20.4	20	20	125			MGMN 400 M
20 20 5	23	20	20.5	20	20	125			MGMN 500 M
20 20 6	23	20	20.6	20	20	125			MGMN 600 M
25 25 3	18	25	25.4	25	25	150		M6 x 25	MGMN 300 M
25 25 4	18	25	25.4	25	25	150			MGMN 400 M
25 25 5	23	25	25.5	25	25	150			MGMN 500 M
25 25 6	23	25	25.6	25	25	150			MGMN 600 M
25 25 8	28	25	26.1	25	25	150			MGMN 800 M
32 32 3	18	32	32.4	32	32	170			MGMN 300 M
32 32 4	18	32	32.4	32	32	170			MGMN 400 M
32 32 5	23	32	32.5	32	32	170			MGMN 500 M
32 32 6	23	32	32.6	32	32	170			MGMN 600 M
32 32 8	28	32	33.1	32	32	170			MGMN 800 M



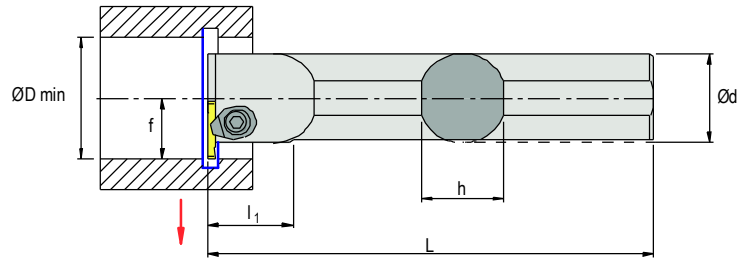
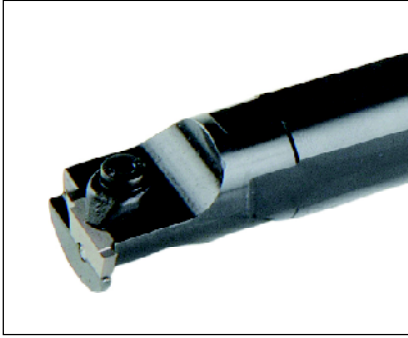
Delik Kanal Katerleri
Turning - Internal Grooving
Drehen - Innen Einstechen

Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						Anahtar Wrench Schlüssel	Sıkma Vidası Clamp screw Klemmschraube	Uç Tipi Insert Type Plattentype
	ØDmin	Ød	h	f	l ₁	L			
MGIVR/L 20 16 2	20	16	15	12.4	35	125	Ta5	M5 x 15	MGMN 200 M
25 20 2	25	20	18	14	45	150			MGMN 300 M
25 20 3	25	20	18	15.6	45	150		M5 x 20	MGMN 400 M
25 20 4	25	20	18	15.6	45	150			MGMN 300 M
31 25 3	31	25	23	18.9	45	200			MGMN 400 M
31 25 4	31	25	23	18.9	45	200			MGMN 500 M
31 25 5	31	25	23	18.9	45	200			MGMN 600 M
31 25 6	31	25	23	18.9	45	200			MGMN 300 M
37 32 3	37	32	30	21.5	65	250			MGMN 400 M
37 32 4	37	32	30	21.5	65	250			MGMN 500 M
37 32 5	37	32	30	21.5	65	250			MGMN 600 M
37 32 6	37	32	30	21.5	65	250			MGMN 300 M

Delik Kanal Katerleri

Turning - Internal Grooving

Drehen - Innen Einstechen

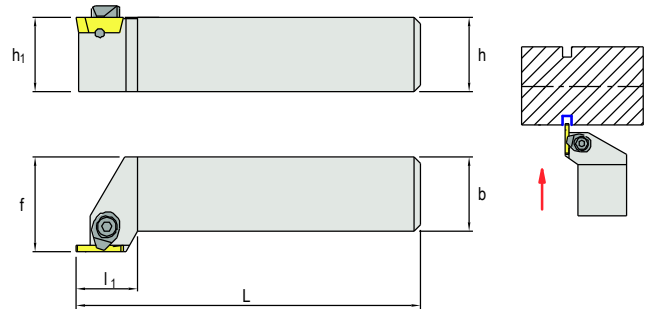
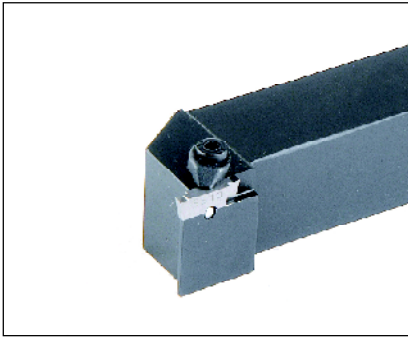


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						Baskı Pabucu Clamp Klemme	Pimi Pin Stift	Baskı Vidası Clamp Screw Klemmschraube	Uç Tipi Insert Type Plattentype
	Ød	h	l ₁	L	f	ØD min				
R/L 154 91 16 3Q	16	15	20	150	11	21	7830001	CKP 3x8	7830002	BKU 1603.....R/L
91 20 3Q	20	18	22	200	13	26				
91 25 3Q	25	23	24	250	17	31				
91 32 3Q	32	30	26	300	21	40				
91 25 5Q	25	23	28	250	17	31	7485865	CKP 3x10	7485860	BKU 2204.....R/L
91 32 5Q	32	30	30	300	21	40				
91 40 5Q	40	38	35	350	27	50				

Kanal Katerleri

Turning - Grooving

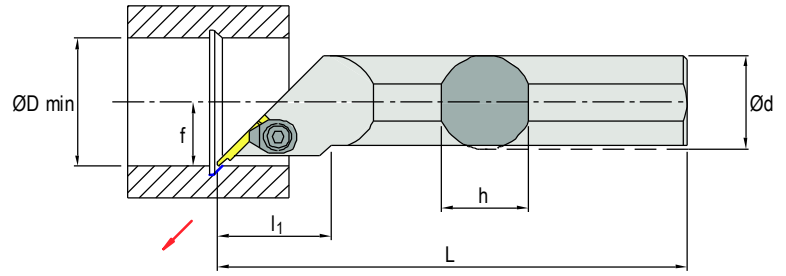
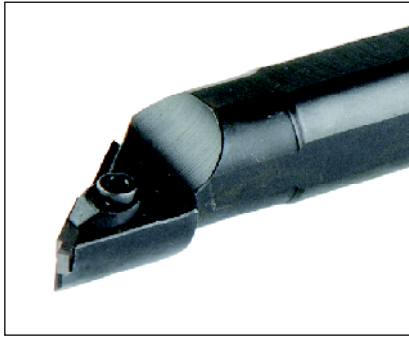
Drehen - Stechen



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						Baskı Pabucu Clamp Klemme	Pim Pin Stift	Baskı Vidası Clamp Screw Klemmschraube	Uç Tipi Insert Type Plattentype
	h	h ₁	b	l ₁	L	f				
R/L 154 91 16 16 3Q	16	16	16	21	100	20	7830001	CKP 3x8	7830002	BKU 1603.....R/L
91 20 20 3Q	20	20	20	21	125	25				
91 25 25 3Q	25	25	25	21	150	32				
91 32 25 3Q	32	32	25	21	170	32				
91 16 16 5Q	16	16	16	26	100	20	7485865	CKP 3x10	7485860	BKU 2204.....R/L
91 20 20 5Q	20	20	20	26	125	25				
91 25 25 5Q	25	25	25	26	150	32				
91 32 25 5Q	32	32	25	26	170	32				

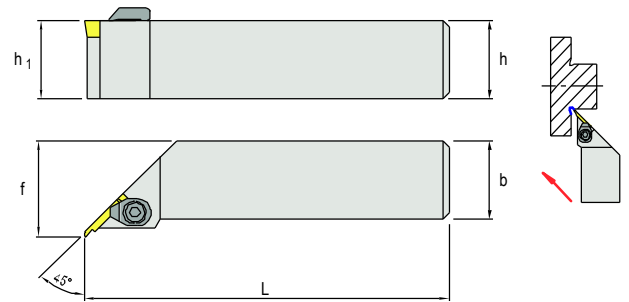
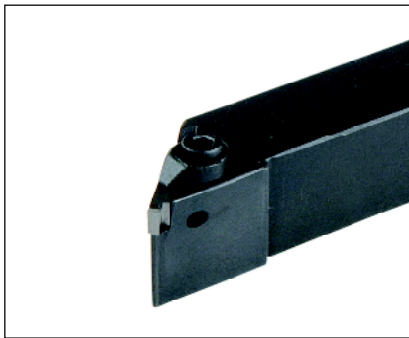
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : R 154 91 16 3Q

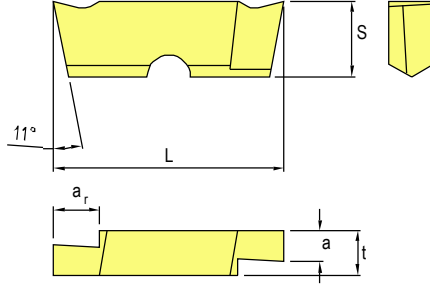


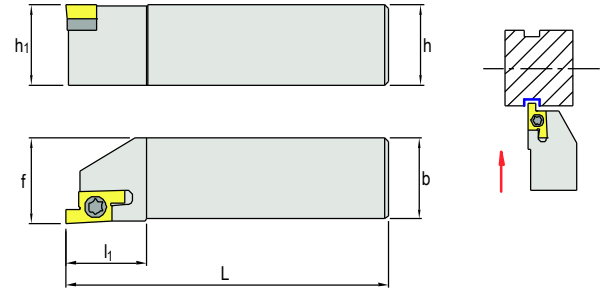
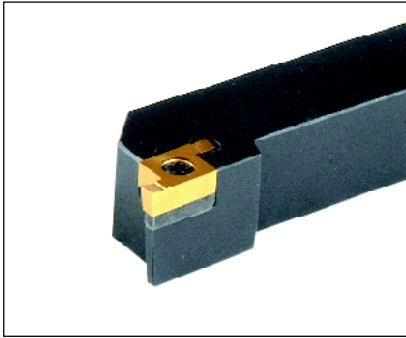
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		Ød	h	l ₁	L	f	ØD min				
R/L 154	93 16 3Q	16	15	20	150	11	21	7830001	CKP 3x8	7830002	BKU 1603.....R/L
	93 20 3Q	20	18	22	200	13	26				
	93 25 3Q	25	23	24	250	17	31				
	93 32 3Q	32	30	26	300	21	40				
	93 25 5Q	25	23	28	250	17	31	7485865	CKP 3x10	7485860	BKU 2204.....R/L
	93 32 5Q	32	30	30	300	21	40				
	93 40 5Q	40	38	35	350	27	50				

Kanal Katerleri
Turning - External Grooving
Drehen - Stechen



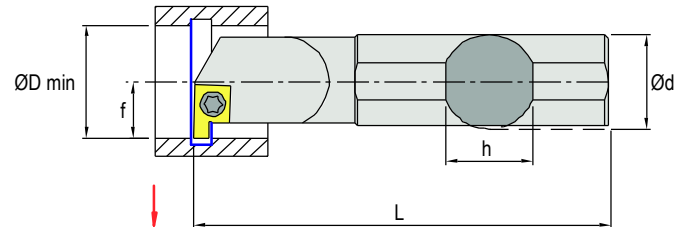
Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					Baskı Pabucu Clamp Klemme	Pimi Pin Stift	Baskı Vidası Clamp Screw Klemmschraube	Uç Tipi Insert Type Plattentype
		h	h ₁	b	L	f				
R/L 154	93 16 16 3Q	16	16	16	100	20	7830001	CKP 3x8	7830002	BKU 1603.....R/L
	93 20 20 3Q	20	20	20	125	25				
	93 25 25 3Q	25	25	25	150	32				
	93 32 25 3Q	32	32	25	170	32				
	93 16 16 5Q	16	16	16	100	20	7485865	CKP 3x10	7485860	BKU 2204.....R/L
	93 20 20 5Q	20	20	20	125	25				
	93 25 25 5Q	25	25	25	150	32				
	93 32 25 5Q	32	32	25	170	32				

Uç Tipi Insert Type Plattentype	Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					
		a	t	S	α	L	a _r
	BKU 1603 110 R/L	1.10	3.1	5.25	11°	16	2.1
	130 R/L	1.30					2.3
	160 R/L	1.60					2.6
	185 R/L	1.85					2.9
	215 R/L	2.15					3.2
	265 R/L	2.65					3.7
	300 R/L	3.00					4.0
	BKU 2204 315 R/L	3.15	5.1	6.25	11°	22	4.2
	415 R/L	4.15					5.2
	500 R/L	5.00					6.2

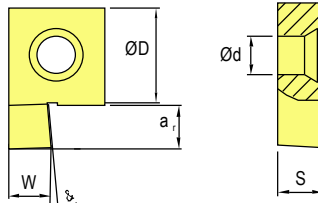


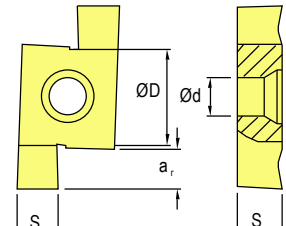
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						Sağ Altılık Anvil Right Re. Unterlage	Sol Altılık Anvil Left Li. Unterlage	Altılık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel	Uç Tipi Insert Type Plattentype
	h	h ₁	b	l ₁	L	f						
TDKR/L	12 12 H06	12	12	18	100	16	—	—	—	7815101	T08 IP	BT KU 0602
	16 16 H06	16	16	18	100	20						
	20 20 K06	20	20	18	125	25						
	25 25 M06	25	25	18	150	32						
	32 25 P06	32	25	18	170	32						
	12 12 H09	12	12	22	100	16	KA 09 R	KA 09 L	7883102	7815102	T15 IP	BT KU 0904
	16 16 H09	16	16	22	100	20						
	20 20 K09	20	20	22	125	25						
	25 25 M09	25	25	22	150	32						
	32 25 P09	32	25	22	170	32						

Delik Kanal Katerleri
Turning - Internal Grooving
Drehen - Innen Einstechen

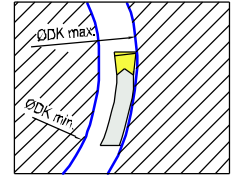
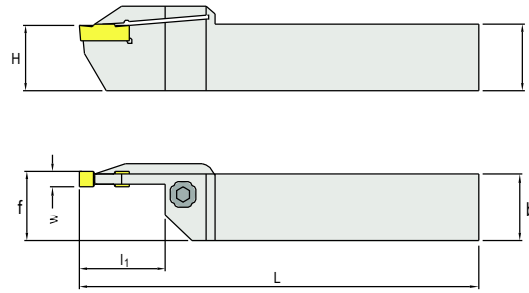
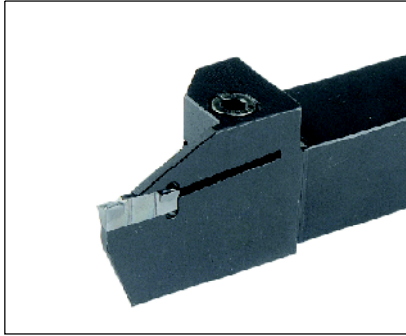


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						Sağ Altlık Anvil Right Re. Unterlage	Sol Altlık Anvil Left Li. Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel	Uç Tipi Insert Type Plattentype
	ØD min.	Ød	h	L	f							
TDKR/L	0010 H06	14	10	9	100	7.5	—	—	—	7815101	T08 IP	BT KU 0602
	0012 K06	17	12	11	125	8.5						
	0016 Q06	20	16	15	180	9.5						
	0020 R06	26	20	19	200	13						
	0025 S06	31	25	24	250	16						
	0032 T06	38	32	30	300	20						
	0016 Q09	20	16	15	180	9.5	—	—	—	7815102	T15 IP	BT KU 0904
	0020 R09	26	20	19	200	13						
	0025 S09	31	25	24	250	16						
	0032 T09	38	32	30	300	20						
	0040 U09	48	40	37	350	24						
	0050 V09	65	50	47	400	29						

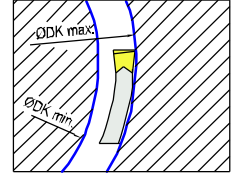
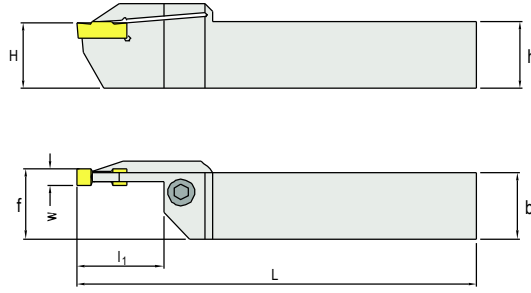
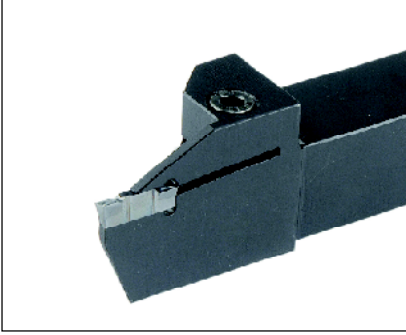
Uç Tipi Insert Type Plattentype	Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					
		ØD (lc)	S	W	&	Ød	a _r
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	06 02 265 R/L			2.65			

Uç Tipi Insert Type Plattentype	Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					
		ØD (lc)	S	W	&	Ød	a _r
	BTKU 09 04 315 R/L	9.52	4.76	3.15	2°	4.4	4.5
	09 04 415 R/L			4.15			

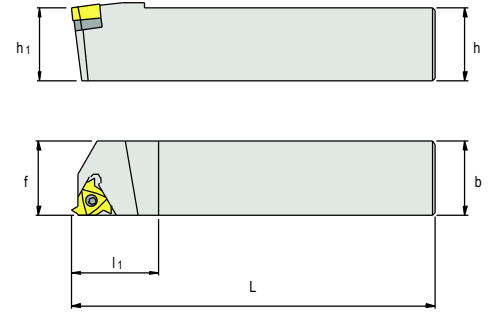
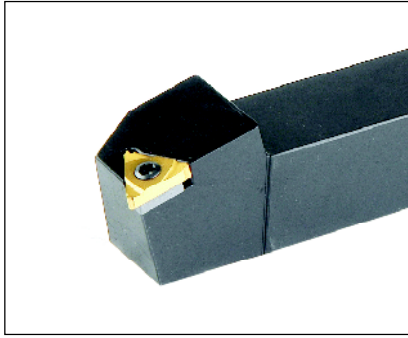




		Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung		H	h	b	l ₁	L	f	W	ØDK min	ØDK max	Uç Tipi Insert Type Plattentype
AKR/L	20 25 3T [25 - 30]	20	20	20	25	140	20.5	3	25	30	HFPR 3003 / HFPR 3015
	20 30 3T [30 - 38]	20	20	20	25	140	20.5	3	30	38	
	20 38 3T [38 - 48]	20	20	20	25	140	20.5	3	38	48	
	20 48 3T [48 - 60]	20	20	20	25	140	20.5	3	48	60	
	20 60 3T [60 - 75]	20	20	20	25	140	20.5	3	60	75	
	20 75 3T [75 - 100]	20	20	20	25	140	20.5	3	75	100	
	25 25 3T [25 - 30]	25	25	25	25	150	25.5	3	25	30	
	25 30 3T [30 - 38]	25	25	25	25	150	25.5	3	30	38	
	25 38 3T [38 - 48]	25	25	25	25	150	25.5	3	38	48	
	25 48 3T [48 - 60]	25	25	25	25	150	25.5	3	48	60	
	25 60 3T [60 - 75]	25	25	25	25	150	25.5	3	60	75	
	25 75 3T [75 - 100]	25	25	25	25	150	25.5	3	75	100	
	20 25 4T [25 - 29]	20	20	20	30	140	20.6	4	25	29	HFPR 4004 / HFPR 4020
	20 29 4T [29 - 34]	20	20	20	30	140	20.6	4	29	34	
	20 34 4T [34 - 40]	20	20	20	30	140	20.6	4	34	40	
	20 40 4T [40 - 48]	20	20	20	30	140	20.6	4	40	48	
	20 48 4T [48 - 60]	20	20	20	30	140	20.6	4	48	60	
	20 60 4T [60 - 75]	20	20	20	30	140	20.6	4	60	75	
	20 75 4T [75 - 100]	20	20	20	30	140	20.6	4	75	100	
	25 25 4T [25 - 29]	25	25	25	30	150	25.6	4	25	29	
	25 29 4T [29 - 34]	25	25	25	30	150	25.6	4	29	34	
	25 34 4T [34 - 40]	25	25	25	30	150	25.6	4	34	40	
	25 40 4T [40 - 48]	25	25	25	30	150	25.6	4	40	48	
	25 48 4T [48 - 60]	25	25	25	30	150	25.6	4	48	60	
	25 60 4T [60 - 75]	25	25	25	30	150	25.6	4	60	75	
	25 75 4T [75 - 100]	25	25	25	30	150	25.6	4	75	100	
	25 100 4T [100 - 140]	25	25	25	30	150	25.6	4	100	140	
	25 140 4T [140 - 240]	25	25	25	30	150	25.6	4	140	240	
	25 240 4T [240 - 800]	25	25	25	30	150	25.6	4	240	800	



		Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung		H	h	B	l ₁	L	f	W	ØDK min	ØDK max	Uç Tipi Insert Type Plattentype
AKR/L	20 25 5T [25 - 30]	20	20	20	32.5	140	21	5	25	30	HFPR 5004 / HFPR 5025
	20 28 3T [28 - 31]	20	20	20	32.5	140	21	5	28	31	
	20 31 5T [31 - 35]	20	20	20	32.5	140	21	5	31	35	
	20 35 5T [35 - 40]	20	20	20	32.5	140	21	5	35	40	
	20 40 5T [40 - 45]	20	20	20	32.5	140	21	5	40	45	
	20 45 5T [45 - 55]	20	20	20	32.5	140	21	5	45	55	
	20 55 5T [55 - 70]	20	20	20	32.5	140	21	5	55	70	
	20 70 5T [70 - 95]	20	20	20	32.5	140	21	5	70	95	
	25 25 5T [25 - 30]	25	25	25	32.5	150	26	5	25	30	
	25 28 3T [28 - 31]	25	25	25	32.5	150	26	5	28	31	
	25 31 5T [31 - 35]	25	25	25	32.5	150	26	5	31	35	
	25 35 5T [35 - 40]	25	25	25	32.5	150	26	5	35	40	
	25 40 5T [40 - 45]	25	25	25	32.5	150	26	5	40	45	
	25 45 5T [45 - 55]	25	25	25	32.5	150	26	5	45	55	
	25 55 5T [55 - 70]	25	25	25	32.5	150	26	5	55	70	
	25 70 5T [70 - 95]	25	25	25	32.5	150	26	5	70	95	
	25 95 5T [95 - 130]	25	25	25	32.5	150	26	5	95	130	
	25 130 5T [130 - 180]	25	25	25	32.5	150	26	5	130	180	
	25 180 5T [180 - 800]	25	25	25	32.5	150	26	5	180	800	
		20 26 6T [26 - 30]	20	20	20	30	140	21.4	6	26	
20 30 6T [30 - 38]		20	20	20	30	140	21.4	6	30	38	
20 38 6T [38 - 50]		20	20	20	30	140	21.4	6	38	50	
20 50 6T [50 - 70]		20	20	20	30	140	21.4	6	50	70	
25 30 6T [30 - 38]		25	25	25	30	150	26.4	6	30	38	
25 38 6T [38 - 50]		25	25	25	30	150	26.4	6	38	50	
25 50 6T [50 - 70]		25	25	25	30	150	26.4	6	50	70	
25 70 6T [70 - 100]		25	25	25	30	150	26.4	6	70	100	
25 100 6T [100 - 180]		25	25	25	30	150	26.4	6	100	180	
25 180 6T [180 - 400]		25	25	25	30	150	26.4	6	180	400	
	25 400 6T [400 - ∞]	25	25	25	30	150	26.4	6	400	∞	

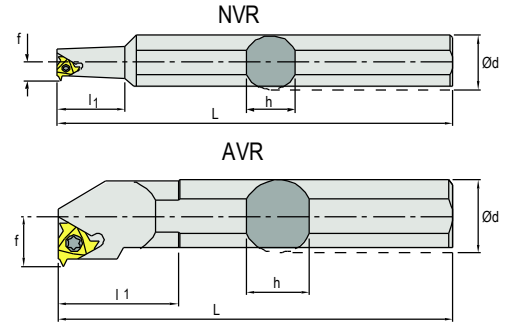


		Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung		h h ₁	b	l ₁	L	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
NL	08 - 2	8	8	13	80	11	11 ER.....ISO	—	—	7815101	T08 IP
	08 - 2 LH	8	8	13	80	11	11 EL.....ISO	—	—	7815101	T08 IP
	12 - 3	12	12	15	100	12	16 ER.....ISO	—	—	7815102	T15 IP
	12 - 3 LH	12	12	15	100	12	16 EL.....ISO	—	—	7815102	T15 IP
AL	16 3C	16	16	16	125	16	16 ER.....ISO	—	—	7815102	T15 IP
	16 3C LH	16	16	16	125	16	16 EL.....ISO	—	—	7815102	T15 IP
	20 3C	20	20	21	125	20	16 ER.....ISO	—	—	7815102	T15 IP
	20 3C LH	20	20	21	125	20	16 EL.....ISO	—	—	7815102	T15 IP
	25 3C	25	25	21	150	25	16 ER.....ISO	—	—	7815102	T15 IP
	25 3C LH	25	25	21	150	25	16 EL.....ISO	—	—	7815102	T15 IP
	32 3C	32	32	21	170	32	16 ER.....ISO	—	—	7815102	T15 IP
	32 3C LH	32	32	21	170	32	16 EL.....ISO	—	—	7815102	T15 IP
	25 4C	25	25	28	150	25	22 ER.....ISO	—	—	7815102	T15 IP
	25 4C LH	25	25	28	150	25	22 EL.....ISO	—	—	7815102	T15 IP
	32 4C	32	32	28	170	32	22 ER.....ISO	—	—	7815102	T15 IP
	32 4C LH	32	32	28	170	32	22 EL.....ISO	—	—	7815102	T15 IP
	40 4C	40	40	28	180	40	22 ER.....ISO	—	—	7815102	T15 IP
	40 4C LH	40	40	28	180	40	22 EL.....ISO	—	—	7815102	T15 IP
	25 5C	25	25	28	150	25	27 ER.....ISO	—	—	7815102	T15 IP
	25 5C LH	25	25	28	150	25	27 EL.....ISO	—	—	7815102	T15 IP
	32 5C	32	32	28	170	32	27 ER.....ISO	—	—	7815102	T15 IP
	32 5C LH	32	32	28	170	32	27 EL.....ISO	—	—	7815102	T15 IP
	40 5C	40	40	28	180	40	27 ER.....ISO	—	—	7815102	T15 IP
	40 5C LH	40	40	28	180	40	27 EL.....ISO	—	—	7815102	T15 IP

Diş Açma Katerleri

Turning - Internal, Threading

Drehen - Ausen gewindedrehen



		Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung		Ød	h	L	l ₁	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
NVR	10 - 2 C	20	18	180	25	7.3	11 IR.....ISO	—	—	7815101	T 08 IP
	10 - 2 C LH	20	18	180	25	7.3	11 IL.....ISO				
	10 - 2 C - 10	10	9	150	25	7.3	11 IR.....ISO				
	10 - 2 C 10 LH	10	9	150	25	7.3	11 IL.....ISO				
	13 - 2 C	20	18	180	32	8.7	11 IR.....ISO				
	13 - 2 C LH	20	18	180	32	8.7	11 IL.....ISO				
AVR	16 - 3C	20	18	180	40	11.77	16 IR.....ISO	—	—	7815102	T15 IP
	16 - 3 C LH	20	18	180	40	11.77	16 IL.....ISO				
	16 - 3 C 16	16	15	180	40	11.77	16 IR.....ISO				
	16 - 3 C 16 LH	16	15	180	40	11.77	16 IL.....ISO				
	20 - 3 C	20	18	180	50	13.4	16 IR.....ISO	—	—		
	20 - 3 C LH	20	18	180	50	13.4	16 IL.....ISO				
	25 - 3 C	32	30	250	60	16	16 IR.....ISO	VIDA 16 ALT R/L	7883102		
	25 - 3 C LH	32	30	250	60	16	16 IL.....ISO				
	25 - 3 C 25	25	23	250	60	16	16 IR.....ISO				
	25 - 3 C 25 LH	25	23	250	60	16	16 IL.....ISO				
	32 - 3 C	32	30	250	60	19.6	16 IR.....ISO				
	32 - 3 C LH	32	30	250	60	19.6	16 IL.....ISO				
	40 - 3 C	40	37	300	60	23.8	16 IR.....ISO				
	40 - 3 C LH	40	37	300	60	23.8	16 IL.....ISO				
	50 - 3 C	50	46	400	60	30.3	16 IR.....ISO				
	50 - 3 C LH	50	46	400	60	30.3	16 IL.....ISO				
	25 - 4 C	32	30	250	60	18.3	22 IR.....ISO	—	—		
	25 - 4 C LH	32	30	250	60	18.3	22 IL.....ISO				
	25 - 4 C 25	25	23	250	60	18.3	22 IR.....ISO				
	25 - 4 C 25 LH	25	23	250	60	18.3	22 IL.....ISO				
32 - 4 C	32	30	250	60	21.5	22 IR.....ISO					
32 - 4 C LH	32	30	250	60	21.5	22 IL.....ISO					
40 - 4 C	40	37	300	60	25.8	22 IR.....ISO					
40 - 4 C LH	40	37	300	60	25.8	22 IL.....ISO					
50 - 4 C	50	46	400	60	30.3	22 IR.....ISO					
50 - 4 C LH	50	46	400	60	30.3	22 IL.....ISO					
	32 - 5 C	32	30	250	60	21.5	27 IR.....ISO	VIDA 22 ALT R/L	7883101		
	32 - 5 C LH	32	30	250	60	21.5	27 IL.....ISO				
	40 - 5 C	40	37	300	60	25.8	27 IR.....ISO				
	40 - 5 C LH	40	37	300	60	25.8	27 IL.....ISO				
	50 - 5 C	50	46	400	60	30.3	27 IR.....ISO				
	50 - 5 C LH	50	46	400	60	30.3	27 IL.....ISO				

R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : AVR 25 3C

Diş açma metodları

Threading methods / Gewindedrehen Methoden

Üretim Metodunun Seçilmesi

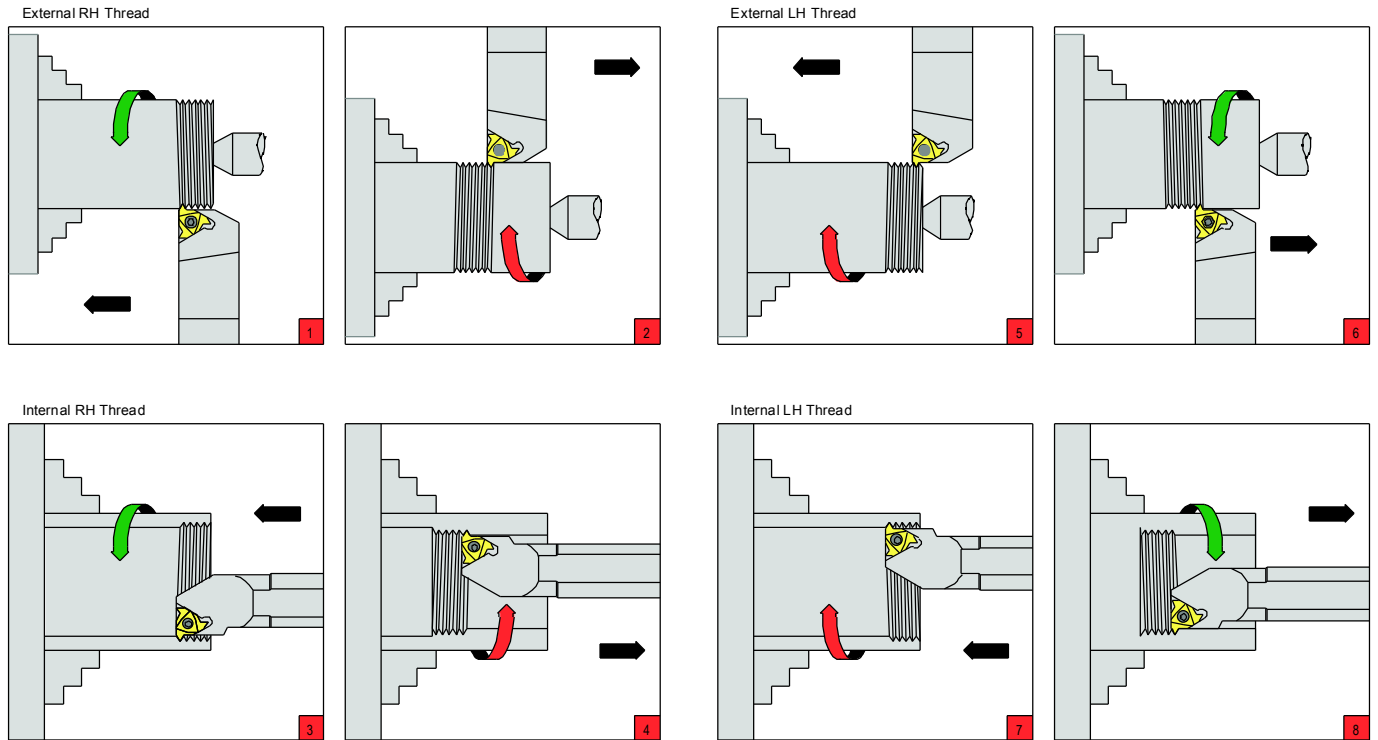
İş parçasının şekline ve takıma uygun olarak, diş açmak için hangi metodun daha uygun olduğuna karar verilir. Genellikle işleme yönü olarak ayna yönüne doğru diş çekme uygulanır. Ayna yönüne ters diş çekmek de mümkün olmakla beraber, ayna yönüne doğru diş çekmek tercih edilir. Kesici takım, çekilecek olan dişin dönüş yönüne göre sağ ve sol olarak seçilmeli ve kullanılmalıdır. Bu durumda sağ diş için sol takım ve sol diş için ise sağ takım kullanılır. Böylece kesici uç ve takım maksimum desteği sağlar. Normal kesme şartlarının yanında tersi de uygulanabilir. Tüm bunlarla birlikte, kater ve kesici uç birbiriyle uyumlu seçilmelidir.

Choosing Threading method

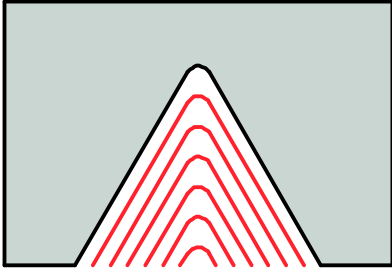
For the threading operation well adapted to process material's form and tool, the most appropriate method is decided. Mostly the selected for threading direction is toward the turning chuck, that is applied. Although threading is possible by diverging from the chuck, threading toward the chuck is preferred. Threading direction is chosen depending on the screwing direction. In this occasion, left tool is used for right screw and right tool is used for left screw. As a result, insert and tool provides maximum support. Besides, for normal cutting conditions, the reverse can be valid too. For all, the

Die Wahl Gewindedrehen Methode

Für das gewindedrehen - Betrieb gut geeignet, um Material der Form und Werkzeugverarbeiten, wird die am besten geeignete Methode entschieden. Meistens sind die zum Einfädeln Richtung ausgewählt ist in Richtung der Dreh-Futter, das angewendet wird. Although Gewindedrehen ist durch divergierende aus dem Futter possible, Einfädeln auf das Futter preferred. Gewindedrehen direction gewählt wird in Abhängigkeit von der Einschraubrichtung. Bei dieser Gelegenheit wird links ttol für rechte Schraube eingesetzt und richtige Werkzeug ist für normalen Schneidenscontitions, der umgekehrte gültigen too. For alles sein, muss der Halter und der Einsatzentsprechend ausgewählt werden.



Vida açma operasyonlarında radyal (dik) paso verme çeşitleri



Vida açma operasyonlarında dört farklı radyal paso verme yöntemi vardır:

Dış çaptan merkeze doğru doğrusal ilerlemeli,

Radyal paso verme işlemine, dış çaptan merkeze doğru düzenli artarak, takıma, iş parçasına ve diş adımına bağlı olarak karar verilir. Konvansiyonel tezgahlarda en çok uygulanan dış açma şeklidir. Talaş formu yumuşaktır ve aynı zamanda kesici uçta aşınma meydana gelir. Normal vida açmak için tercih edilir. Büyük hatveli dişlerde talaş kontrolü kötüdür ve yüzeyde vibrasyon oluşur. Sert malzemeler için uygundur, örneğin austenitik paslanmaz çelik gibi. Radyal paso verme işleminde, diş profilinin her iki yanına da aynı anda yük geldiği için, ucun profili oluşturduğu kısımda, aşırı zorlanma ve aşınma meydana gelir. Aynı zamanda, çıkan talaşın atılması da kolay olmaz ve bu durum kesici ucun kendisine de zarar verir.

The variations of radial pass in threading

There are three kinds of radial pass in threading:

Radial pass towards the center with regular feed

Radial pass from external diameter to the center by regular feed is chosen depending upon the tool, process and pitch.

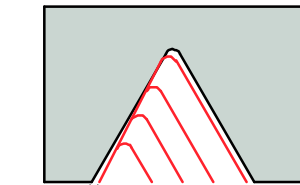
It is the most applied threading method in conventional machines being controlled mechanically. Soft chips form and excess wear on the insert tip are observed together. It is preferred in standart threading methods. Threadings having bigger pitch result in troubles in chip control and vibration occurs, but may practical for hard materials such as austenitic stainless steel. While threading with this method, because of that the both sides of tooth profile loaded at the same time, on the tip section of the insert forming profile, the probability of extra wear and compulsion occurs. Throwing away the chips while threading is not easy and it causes insert being damaged by itself.

Die Schwankungen der Radial-Pass in Gewindedrehen

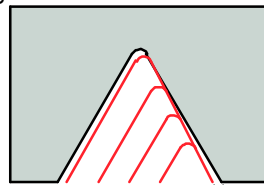
Es gibt drei Arten von Radial-Pass in Gewindedrehen

Radial-Pass zur Mitte hin mit regelmäßigen Feed

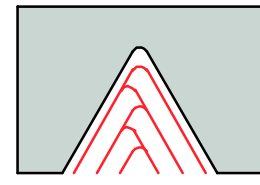
Radial Pass von Außendurchmesser zur Mitte durch regelmäßiges Feedback wird abhängig von der Werkzeug-, Prozess-und Pitch. Es ist die am meisten angewendete Verfahren Gewinde in herkömmlichen Maschinenmechanisch gesteuert. Soft-Chips Form und übermäßigen Verschleiß an dem EinsatzSpitze zusammen beobachtet. Es wird in standart Threading Methoden bevorzugt. Gewinde mit größerer Steigung result in Schwierigkeiten im Chip-Steuerung und Vibrationen auftreten, sondern kann praktisch für harte Materialien wie austenitischer Edelstahl. Während treten bei diesem Verfahren, da der, dass die beiden Seiten des Zahnprofils gleichzeitig geladen werden, auf dem Spitzenabschnitt des Einsatzes bildet Profil, tritt die Wahrscheinlichkeit der zusätzliche Verschleiß und Zwang. Wegwerfen des Chips während Einfädeln ist nicht einfach und es verursacht durch Einsatz selbst beschädigt.



1 - 3°



1 - 3°



Dış çaptan merkeze doğru sağa veya sola ilerlemeli,

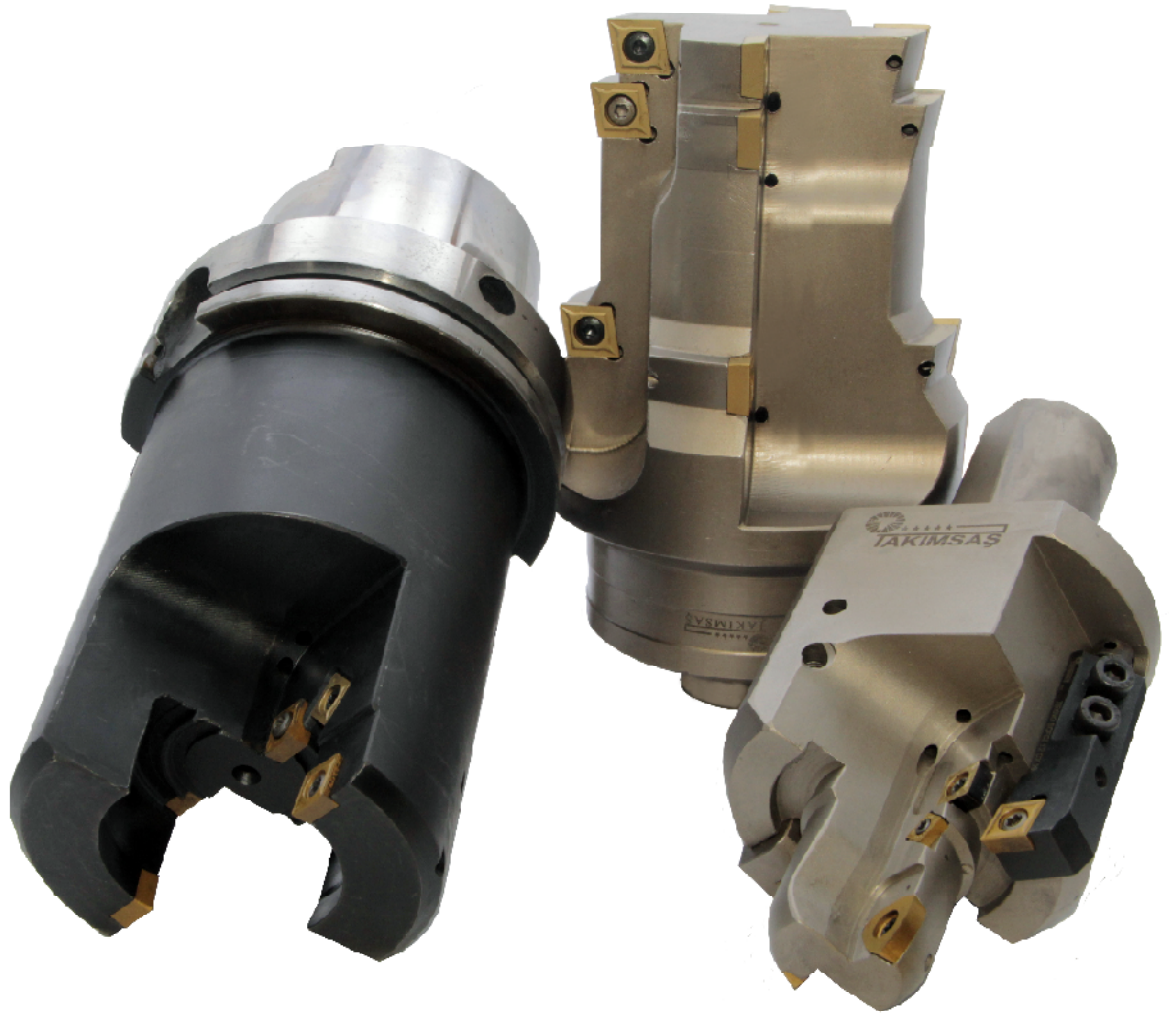
Dış açma operasyonlarında, dişin profilinin kenarından merkeze doğru ilerlerken, sağa ve sola hareketle çalışma mükemmel talaş kontrolü sağlar. Büyük hatveli dişlerde, delik içine diş açma işleminde talaşın dışarıya daha kolay çıkmasına ve vibrasyondan dolayı yüzey bozulmalarına neden olmaması açısından uygun bir dış açma metodudur. Bu yöntemde, yüzey problemlerine dikkat edilmelidir. Giriş açısı 3° - 5° arasında olmalıdır. Bu methodun ancak CNC kontrollü tezgahlarda uygulanabilme imkanı vardır.

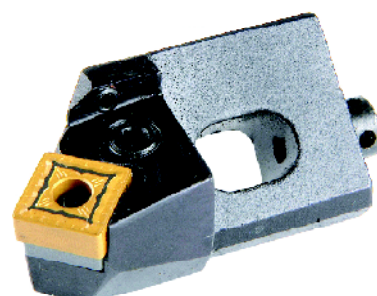
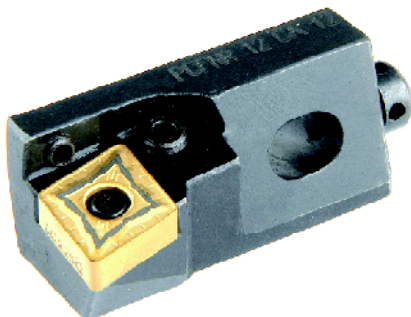
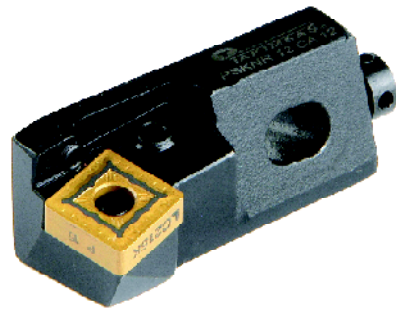
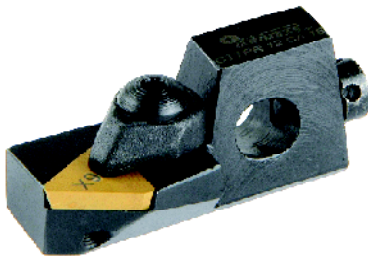
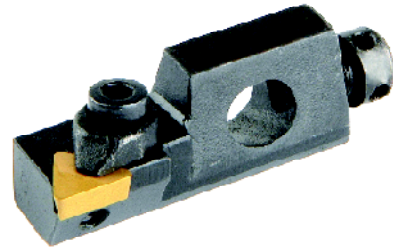
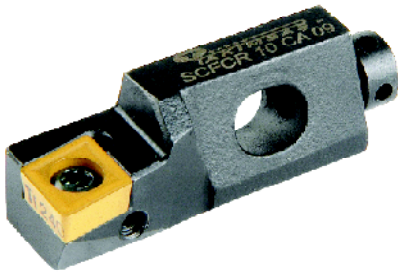
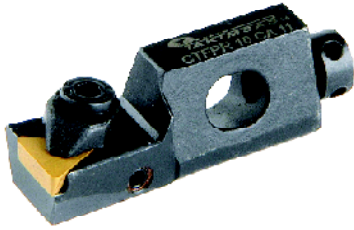
Radial pass towards the center with irregular feed

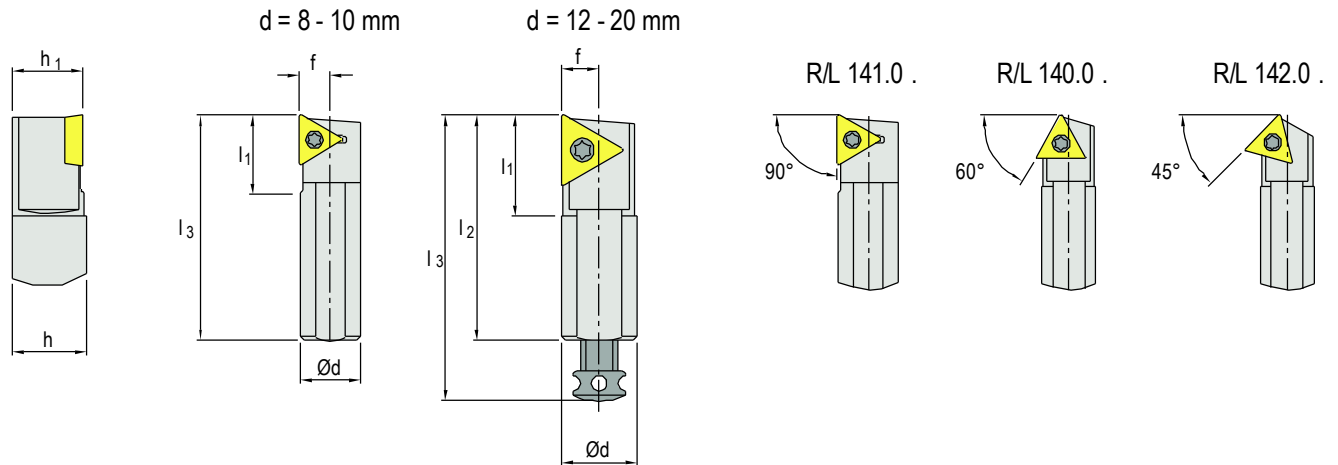
During threading, feeding towards the center provides perfect chip control by right and left stroke. It is convenient for threading having bigger pitch, because it doesn't cause any surface corruption as a result of vibration and it provides perfect chips removal especially for internal threading. Troubles on the surface quality should be avoided. Setting angle must be between 3° and 5°. However this method can be used only in the machines having CNC control.

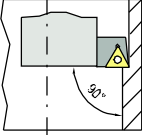
Radial-Pass zur Mitte hin mit unregelmäßigen feed

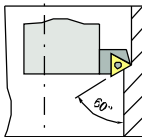
Beim Gewindedrehen, Fütterung zur Mitte hin sorgt für perfekte Spankontrolle durch rechte und linke Schlaganfall. Es ist bequem für das Einfädeln mit größeren Abstand, weil sie nichtdazu führen, jede Oberfläche Korruption als Folge der Vibrationen und bietet perfekteEntfernung Chips speziell für Innengewinde. Troubles auf die Oberflächenqualität sollte vermieden werden. Einstellen muss zwischen 3° und 5° liegen. Allerdings kann diese Methode nur in den Maschinen mit CNC-Steuerung verwendet werden.

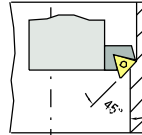


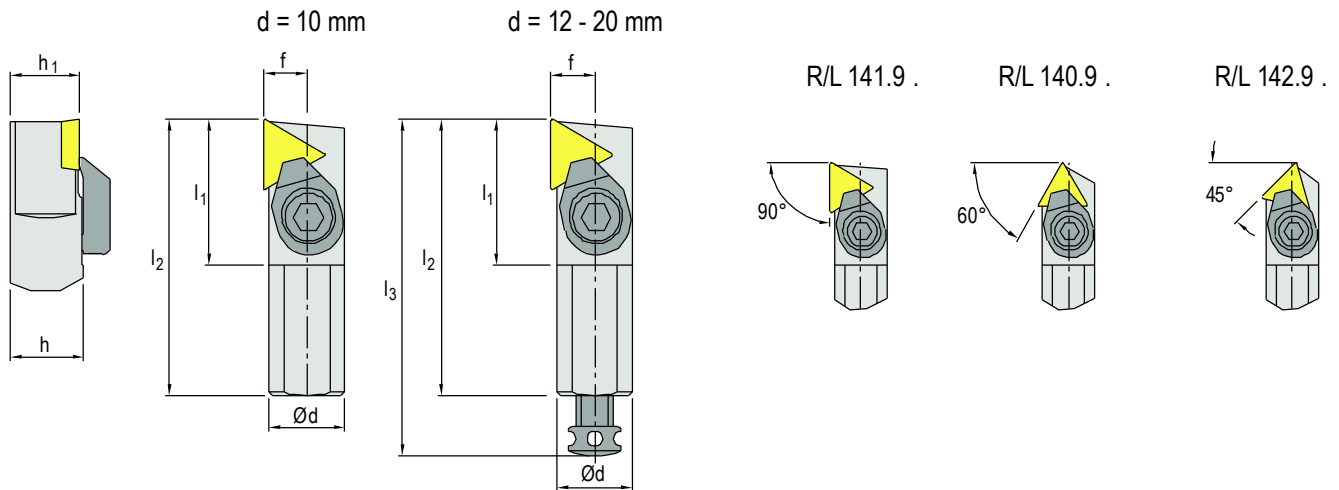




Uygulama Application Anwendung	Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen								Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
		h	h ₁	Ød	l ₁	l ₂	l ₃	f				
	RL 141 0	8 06	7	7	8	30	10.5	—	4.0	TC....0602..	7722113	T07
		10 09	8.5	8.5	10	50	14.0	—	5.1	TC....0902..	7815101	T08 IP
		12 11	10.5	10.5	12	68	15.3	60	6.0	TC....1103..		
		16 11	14.0	14.0	16	98	15.3	90	7.5			
		20 16	17.0	17.0	20	128	19.0	120	10.7	TC....16T3..	7815102	T15 IP

Uygulama Application Anwendung	Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen								Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
		h	h ₁	Ød	l ₁	l ₂	l ₃	f				
	R/L 140 0	8 06	7	7	8	30	10.5	—	1.47	TC....0602..	7722113	T07
		10 09	8.5	8.5	10	50	14.0	—	1.7	TC....0902..	7815101	T08 IP
		12 11	10.5	10.5	12	68	15.3	60	2.2	TC....1103..		
		16 11	14.0	14.0	16	98	15.3	90	2.2			
		20 16	17.0	17.0	20	128	19.0	120	2.3	TC....16T3..	7815102	T15 IP

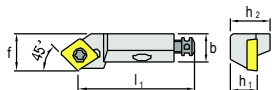
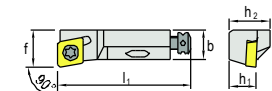
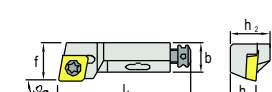
Uygulama Application Anwendung	Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen								Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
		h	h ₁	Ød	l ₁	l ₂	l ₃	f				
	R/L 142 0	8 06	7	7	8	30	10.5	—	0.39	TC....0602..	7722113	T07
		10 09	8.5	8.5	10	50	14.0	—	0.23	TC....0902..	7815101	T08 IP
		12 11	10.5	10.5	12	68	15.3	60	0.5	TC....1103..		
		16 11	14.0	14.0	16	98	15.3	90	0.5			
		20 16	17.0	17.0	20	128	19.0	120	-0.7	TC....16T3..	7815102	T15 IP

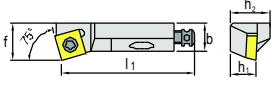
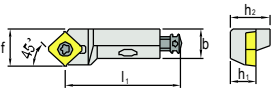


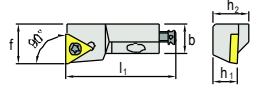
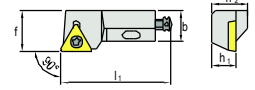
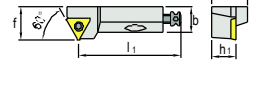
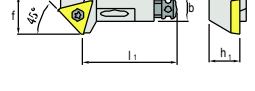
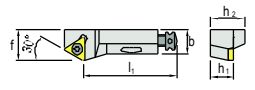
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		h	h ₁	Ød	l ₁	l ₂	l ₃	f					
	R/L 141 9	10 09	8.5	8.5	10	50	14.0	—	5.1	TP....0903..	7830001	7830002	Ta3
		12 11	10.5	10.5	12	68	15.3	60	6.0	TP....1103..			
		16 11	14.0	14.0	16	98	15.3	90	7.5	TP....16T3..	7485865	7485860	Ta4
		20 16	17.0	17.0	20	128	19.0	120	10.7	TP....16T3..	7485865	7485860	Ta4

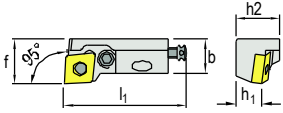
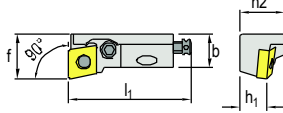
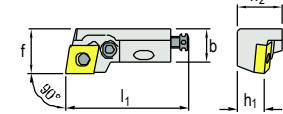
Uygulama Application Anwendung	Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen							Uç Tipi Insert Type Plattentype	Baskı Pabucu Clamp Klemme	Uç Vidası Insert Screw Plattenschraube	Anahtar Wrench Schlüssel	
		h	h ₁	Ød	l ₁	l ₂	l ₃	f					
	R/L 140 9	10 09	8.5	8.5	10	50	14	—	1.7	TP....0903..	7830001	7830002	Ta3
		12 11	10.5	10.5	12	68	15.3	60	2.2	TP....1103..			
		16 11	14	14	16	98	15.3	90	2.2	TP....16T3..	7485865	7485860	Ta4
		20 16	17	17	20	128	19	120	2.4	TP....16T3..	7485865	7485860	Ta4

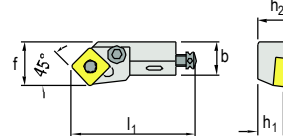
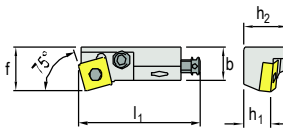
Uygulama Application Anwendung	Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen							Uç Tipi Insert Type Plattentype	Baskı Pabucu Clamp Klemme	Uç Vidası Insert Screw Plattenschraube	Anahtar Wrench Schlüssel	
		h	h ₁	Ød	l ₁	l ₂	l ₃	f					
	R/L 142 9	10 09	8.5	8.5	10	50	14	—	0.23	TP...0903..	7830001	7830002	Ta3
		12 11	10.5	10.5	12	68	15.3	60	0.5	TP...1103..			
		16 11	14	14	16	98	15.3	90	0.5	TP...16T3..	7485865	7485860	Ta4
		20 16	17	17	20	128	19	120	0.7	TP...16T3..	7485865	7485860	Ta4

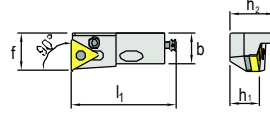
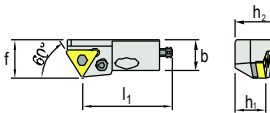
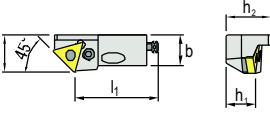
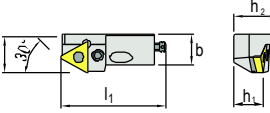
		Ölçüler Dimensions Abmessungen										
	Kod Code Bezeichnung	h_1	h_2	b	l_1	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel	
	SCSCR/L 06 CA 06	6	8	6	21	8	CC... 0602..	—	—	7815101	T08 IP	
	10 CA 09	10	15	11	44	14	CC... 09T3..			7815102	T15 IP	
	12 CA 12	12	18	15	47	20	CC... 1204..			7883202	T15 IP	
	SCFCR/L 06 CA 06	6	8.5	6	25	8	CC... 0602..	—	—	7815101	T08 IP	
	08 CA 06	8	11	8	32	10						
	10 CA 09	10	15	11	50	14	CC... 09T3..	—	—	7815102		
	12 CA 12	12	18	15	55	20	CC... 1204..	—	—	7883202	T15 IP	
	16 CA 12	16	21	20	63	25		7883002	7883101			
	SCGCR/L 06 CA 06	6	8.5	6	25	8	CC... 0602..	—	—	7815101	T08 IP	
	08 CA 06	8	11	8	32	10						
	10 CA 09	10	15	11	50	14	CC... 09T3..	—	—	7815102	T15 IP	

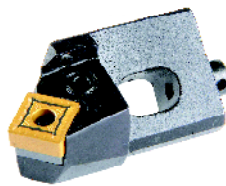
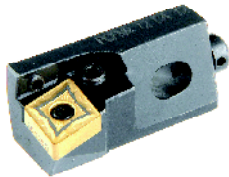
		Ölçüler Dimensions Abmessungen									
	Kod Code Bezeichnung	h_1	h_2	b	l_1	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	SSKCR/L 10 CA 09	10	15	10.5	50	14	SC... 09T3..	—	—	7815102	T15 IP
	12 CA 12	12	20	15	55	20	SC... 1204..			7883004	
	16 CA 12	16	21	20	63	25					
	SSSCR/L 10 CA 09	10	15	10.5	44	14	SC... 09T3..	—	—	7815102	T15 IP
	12 CA 12	12	20	15	47	20	SC... 1204..			7883004	
	16 CA 12	16	21	20	53	25					

		Ölçüler Dimensions Abmessungen									
	Kod Code Bezeichnung	h_1	h_2	b	l_1	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Vidası Anvil Screw Gewindehülse	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	STFCR/L 10 CA 11	10	15	11	50	14	TC... 1102..	—	—	7815101	T08 IP
	12 CA 16	12	20	15	55	20	TC... 16T3..	—	—	7815102	T15 IP
	16 CA 16	16	21	20	63	25	TC... 16T3..	7883005	7883102	—	—
	STGCR/L 10 CA 11	10	15	10.5	50	14	TC... 1102..	—	—	—	—
	12 CA 16	12	20	15	55	20	TC... 16T3..	—	—	7815102	T15 IP
	16 CA 16	16	21	20	63	25	TC... 16T3..	7883005	7883102	—	—
	STWCR/L 08 CA 09	8	11	8	28	10	TC... 0902..	—	—	7722113	T07
	10 CA 11	10	15	11	44	14	TC... 1102..	—	—	7815101	T08 IP
	STSCR/L 08 CA 09	8	9.5	6.5	25.7	10	TC... 0902..	—	—	7722113	T07
	10 CA 11	10	15	11	44	14	TC... 1102..	—	—	7815101	T08 IP
	STTCR/L 08 CA 09	8	9.5	6.5	24	5.7	TC... 0902..	—	—	7722113	T07
	10 CA 11	10	15	11	41.3	13.9	TC... 1102..	—	—	7815101	T08 IP

		Ölçüler Dimensions Abmessungen									
	Kod Code Bezeichnung	h_1	h_2	b	l_1	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Levyte Vidası Lever Screw Hebel Schraube	Levyte Lever Hebel	Altlık Pimi Anvil Pin Rohrstift
	PCLNR/L 12 CA 12	12	20	15	55	20	CN... 1204..	—	438.3.832	438.3.841	—
	16 CA 12	16	25	20	63	25		U 112150	S 023441	H 023441	R 023461
	20 CA 16	20	30	20	70	25	CN... 1606..	U 000152	S 000831	H 000840	R 025464
	25 CA 19	25	38	25	100	32	CN... 1906..	U 123151	S 033422	H 033442	R 033462
	PCFNR/L 12 CA 12	12	20	15	55	20	CN... 1204..	—	438.3.832	438.3.841	—
	16 CA 12	16	25	20	63	25		U 112150	S 023441	H 023441	R 023461
	20 CA 16	20	30	20	70	25	CN... 1606..	U 000152	S 000831	H 000840	R 025464
	25 CA 19	25	38	25	100	32	CN... 1906..	U 123151	S 033422	H 033442	R 033462
	PCGNR/L 12 CA 12	12	20	15	55	20	CN... 1204..	—	438.3.832	438.3.841	—
	16 CA 12	16	25	20	63	25		U 112150	S 023441	H 023441	R 023461
	20 CA 16	20	30	20	70	25	CN... 1606..	U 000152	S 000831	H 000840	R 025464
	25 CA 19	25	38	25	100	32	CN... 1906..	U 123151	S 033422	H 033442	R 033462

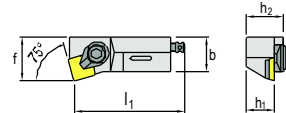
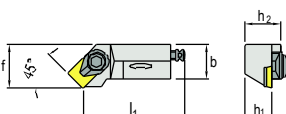
		Ölçüler Dimensions Abmessungen										
	Kod Code Bezeichnung	h_1	h_2	b	l_1	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Levyte Vidası Lever Screw Hebel Schraube	Levyte Lever Hebel	Altlık Pimi Anvil Pin Rohrstift	
	PSSNR/L 12 CA 12	12	20	15	55	20	SN... 1204..	—	438.3.832	438.3.841	—	
	16 CA 12	16	25	20	63	25		U 063451	S 023441	H 023441	R 023461	
	20 CA 15	20	30	20	70	25	SN... 1506..	U 000457	S 000831	H 000840	R 025464	
	25 CA 19	25	38	25	100	32	SN... 1906..	U 083452	S 033422	H 033442	R 033462	
	PSKNR/L 12 CA 12	12	20	15	55	20	SN... 1204..	—	438.3.832	438.3.841	—	
	16 CA 12	16	25	20	63	25		U 063451	S 023441	H 023441	R 023461	
	20 CA 15	20	30	20	70	25	SN... 1506..	U 000457	S 000831	H 000840	R 025464	
	25 CA 19	25	38	25	100	32	SN... 1906..	U 083452	S 033422	H 033442	R 033462	

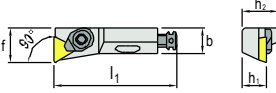
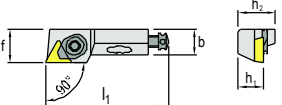
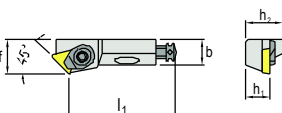
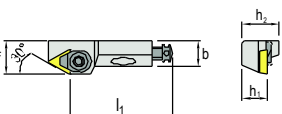
		Ölçüler Dimensions Abmessungen									
	Kod Code Bezeichnung	h_1	h_2	b	l_1	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Levy Vidası Lever Screw Hebel Schraube	Levy Lever Hebel	Altlık Pimi Anvil Pin Rohrstift
	PTFNR/L 12 CA 16	12	20	15	55	20	TN... 1604..	—	438.3.830	5432 015 011	—
	16 CA 16	16	25	20	63	25	TN... 1604..	U 013950	S 018421	H 018440	R 018663
	20 CA 22	20	30	20	70	25	TN... 2204..	U 023952	S 023421	H 023441	R 023461
	25 CA 22	25	38	25	100	32	TN... 2204..	U 023952	S 023421	H 023441	R 023461
	PTWNR/L 12 CA 16	12	20	15	47	20	TN... 1604..	—	438.3.830	5432 015 011	—
	16 CA 16	16	25	20	53	25	TN... 1604..	U 013950	S 018421	H 018440	R 018663
	20 CA 22	20	30	20	60	25	TN... 2204..	U 023952	S 023421	H 023441	R 023461
	PTSNR/L 12 CA 16	12	20	15	47	20	TN... 1604..	—	438.3.830	5432 015 011	—
	16 CA 16	16	25	20	53	25	TN... 1604..	U 013950	S 018421	H 018440	R 018663
	20 CA 22	20	30	20	60	25	TN... 2204..	U 023952	S 023421	H 023441	R 023461
	PTTNR/L 12 CA 16	12	20	15	55	20	TN... 1604..	—	438.3.830	5432 015 011	—
	16 CA 16	16	25	20	63	25	TN... 1604..	U 013950	S 018421	H 018440	R 018663
	20 CA 22	20	30	20	70	25	TN... 2204..	U 023952	S 023421	H 023441	R 023461



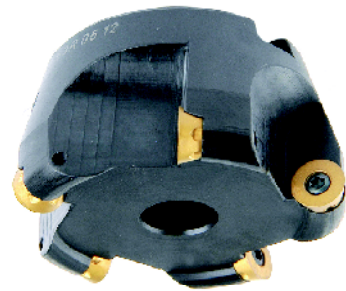
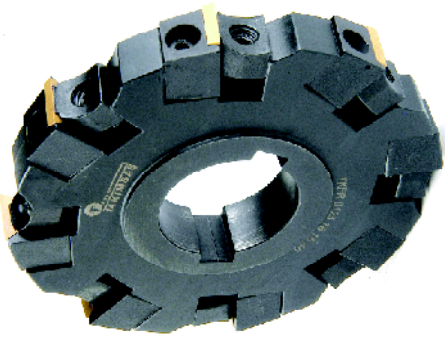
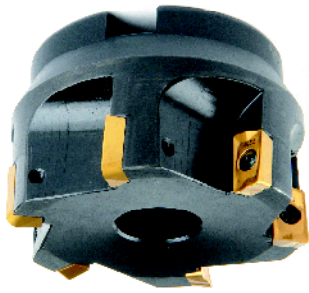
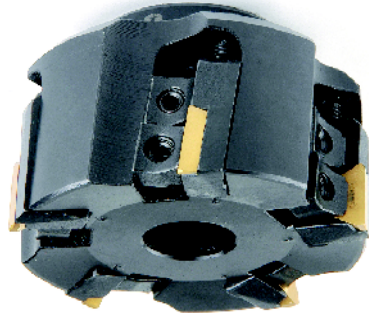
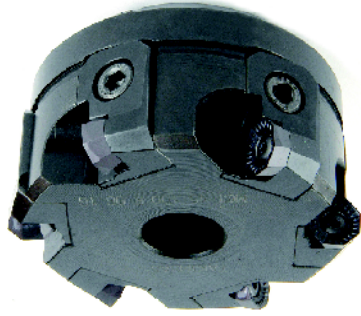
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : PTFNR 12 CA 16

		Ölçüler Dimensions Abmessungen										
	Kod Code Bezeichnung	h_1	h_2	b	l_1	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Pimi Anvil Pin Rohrstift	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	
	CSKPR/L 10 CA 09	10	15	10.5	50	14	SP... 0903rr	—	—	7830001		
	12 CA 12	12	20	15	55	20	SP... 1203rr			7485865	7485860	
	16 CA 12	16	21	20	63	25	SP... 1203rr	7480315	7480901	7485869	7480210	
	CSSPR/L 10 CA 09	10	15	10.5	50	14	SP... 0903rr	—	—	7830001		
	12 CA 12	12	20	15	55	20	SP... 1203rr			7485865	7485860	

		Ölçüler Dimensions Abmessungen										
	Kod Code Bezeichnung	h_1	h_2	b	l_1	f	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Altlık Pimi Anvil Pin Rohrstift	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	
	CTFPR/L 10 CA 11	10	15	10.5	50	14	TP... 1103rr	—	—	7830001	7485860	
	12 CA 16	12	20	15	55	20	TP... 1603rr			7485865		
	16 CA 16	16	21	20	63	25	TP... 1603rr	7480316	7480901	7485869	7480210	
	CTGPR/L 10 CA 11	10	15	10.5	50	14	TP... 1103rr	—	—	7830001	7485860	
	12 CA 16	12	20	15	55	20	TP... 1603rr			7485865		
	CTSPR/L 10 CA 11	10	15	10.5	50	14	TP... 1103rr	—	—	7830001	7485860	
	12 CA 16	12	20	15	55	20	TP... 1603rr			7485865		
	CTTPR/L 10 CA 11	10	15	10.5	50	14	TP... 1103rr	—	—	7830001	7485860	
	12 CA 16	12	20	15	55	20	TP... 1603rr			7485865		

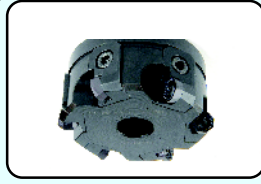




Freze Kafaları / Milling - Side and Face Mills
Fräsen - Scheiben und Planfräsen



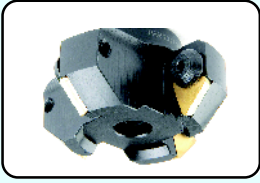
FCT 45
Sayfa / Page / Seite : 125



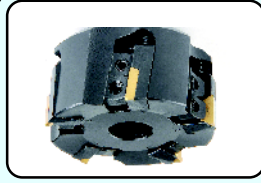
MCT 45
Sayfa / Page / Seite : 126



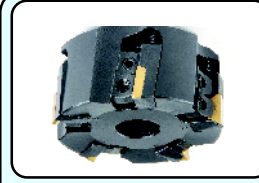
FKR / L 20 17...
Sayfa / Page / Seite : 127



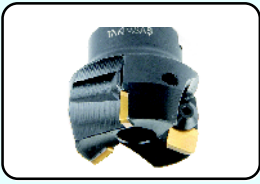
PFR / L 20 47
Sayfa / Page / Seite : 127



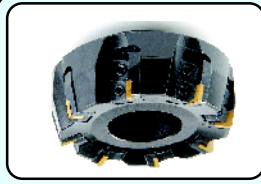
FKR / L 9016
Sayfa / Page / Seite : 128



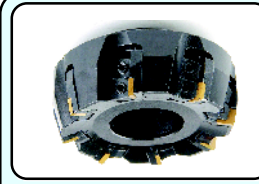
FKR / L 90 22
Sayfa / Page / Seite : 128



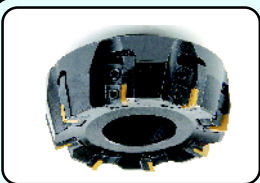
AFR / L 20 27
Sayfa / Page / Seite : 129



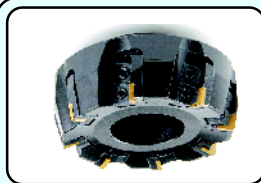
AFR / L 75 12
Sayfa / Page / Seite : 129



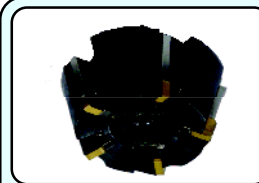
AFR / L 75 12S
Sayfa / Page / Seite : 130



AFR / L 75 15
Sayfa / Page / Seite : 130



AFR / L 75 12 AL
Sayfa / Page / Seite : 131



NFR / L 75 12
Sayfa / Page / Seite : 131



A 270
Sayfa / Page / Seite : 132

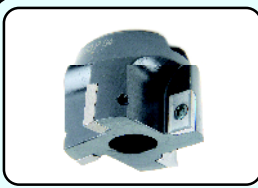


A 290
Sayfa / Page / Seite : 132

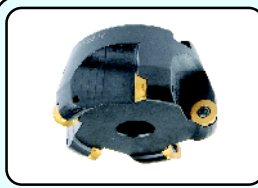


T 90 A / T 90 AS
Sayfa / Page / Seite : 133

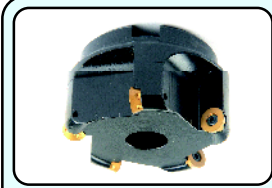
Freze Kafaları / Milling - Side and Face Mills
Fräsen - Scheiben und Planfräsen



A 240
Sayfa / Page / Seite : 133



A 250
Sayfa / Page / Seite : 134



TSRF
Sayfa / Page / Seite : 134

Kanal Frezeler / Milling - Disc Mills
Fräsen - Schaftfräser



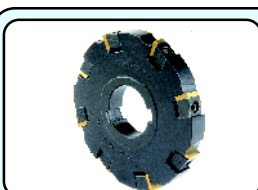
TKF 16
Sayfa / Page / Seite : 135



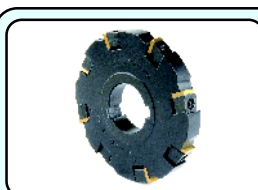
TKF 11
Sayfa / Page / Seite : 136



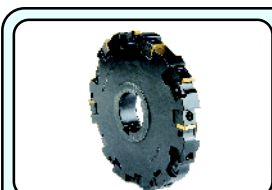
TKFR / L
Sayfa / Page / Seite : 136



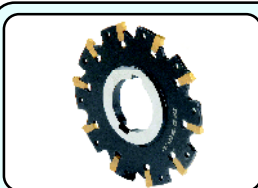
S 2
Sayfa / Page / Seite : 137



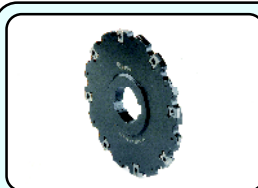
TDK
Sayfa / Page / Seite : 137



TSK
Sayfa / Page / Seite : 138



330 20
Sayfa / Page / Seite : 138



TK 125SLN N / R
Sayfa / Page / Seite : 139

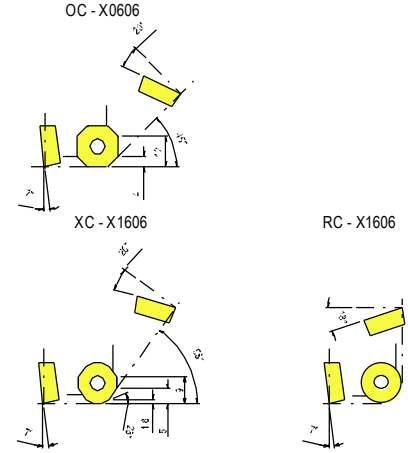
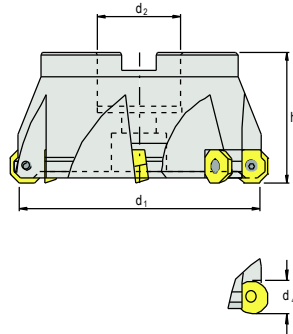


TK 125 SCN
Sayfa / Page / Seite : 140

Yüzey Freze Kafası

Milling - Face Mill

Fräsen - Planfräsen

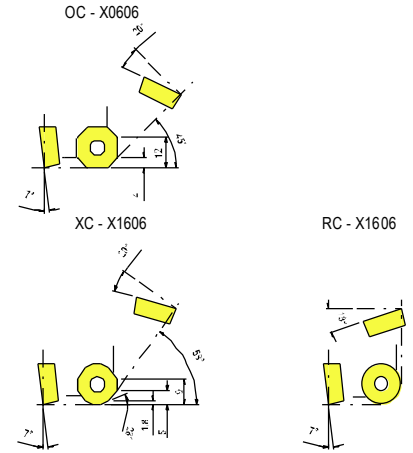
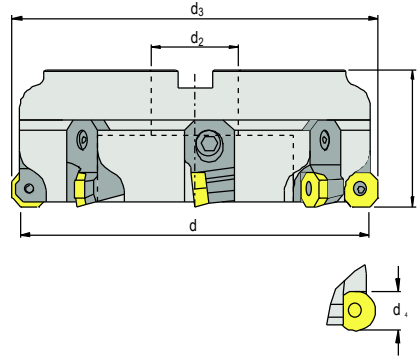
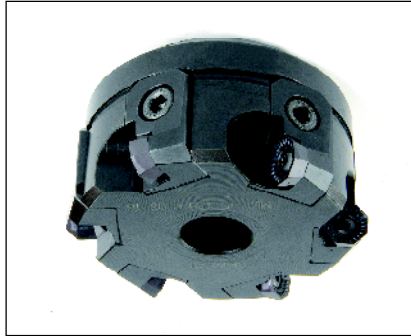


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Z	Ölçüler Dimensions Abmessungen			Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	d ₁	d ₄	h	d ₂						
FCT 45	52 R04 16	16	40	22	4	OCKX 0606 AD - TR	XCKX 1606 AD - TR	RCKX 1606 MO - TR	7883202	T 15
	66 R05 16	16	50	27	5					
	80 R06 16	16	50	27	6					
	100 R07 16	16	50	32	7					
	125 R08 16	16	63	40	8					



R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : FCT 45 100 R07 16



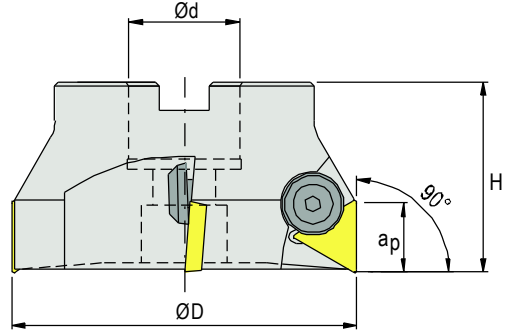
Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype			Altlık Anvil Unterlage	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
		d	d ₃	h	d ₂							
MCT 45	160 R10 16	160	168	63	40	8	OCKX 0606 AD - TR	XCKX 1606 AD - TR	RCKX 1606 MO - TR	MCT 45 ALT	7883202	T15 IP
	200 R10 16	200	208	63	60	10						
	250 R12 16	250	258	63	60	12						
	315 R16 16	315	323	80	60	16						
	400 R18 16	400	408	80	60	18						
	500 R22 16	500	508	80	60	22						

Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype			Altlık Anvil Unterlage	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
		d	d ₃	h	d ₂							
MCT 45 S	125 R08 16	125	133	63	40	8	OCKX 0606 AD - TR	XCKX 1606 AD - TR	RCKX 1606 MO - TR	MCT 45 ALT	7883202	T15 IP
	160 R12 16	160	168	63	40	12						
	200 R14 16	200	208	63	60	14						
	250 R18 16	250	258	63	60	18						
	315 R22 16	315	323	80	60	22						
	400 R26 16	400	408	80	60	26						
	500 R32 16	500	508	80	60	32						

Yüzey Freze Kafası

Milling - Face Mill

Fräsen - Planfräsen

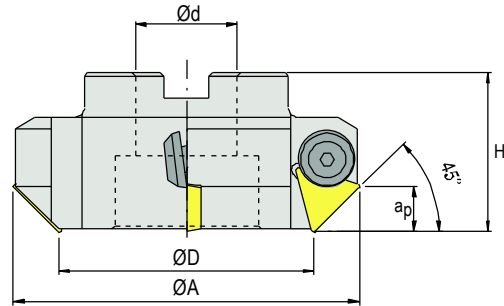
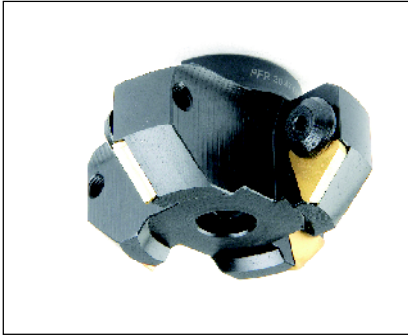


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				 Z	Uç Tipi Insert Type Plattentype	Baskı Vidası Clamp Screw Klemmschraube	Anahtar Wrench Schlüssel	
	ØD	Ød	H	ap					
FKR/L	20 17 0040	40	16	43	14.5	3	TPK.. 1603..	C16 644	Ta3
	20 17 0050	50	22	51	14.5	3			
	20 17 0063	63	22	51	22	3	TPK.. 2204..	C16 648	Ta4
	20 17 0080	80	32	55	22	4			
	20 17 0100	100	40	55	22	5			

Yüzey Freze Kafası

Milling - Face Mill

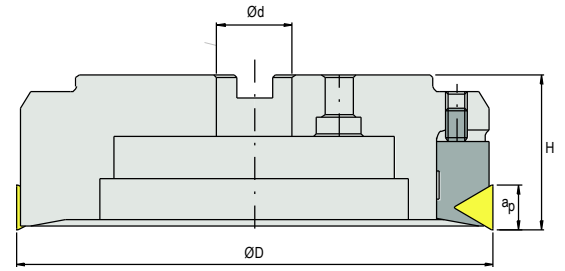
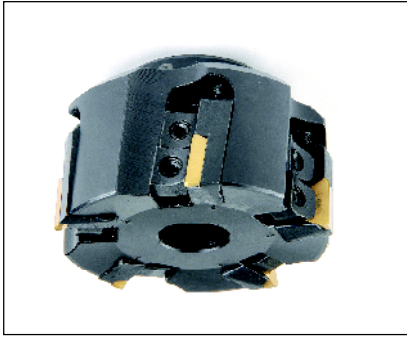
Fräsen - Planfräsen



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					 Z	Uç Tipi Insert Type Plattentype	Baskı Vidası Clamp Screw Klemmschraube	Anahtar Wrench Schlüssel	
	ØD	Ød	ØA	H	ap					
PFR/L	20 47 0040	40	16	65	43	9	3	TPK.. 1603..	C16 644	Ta3
	20 47 0050	50	22	75	50	9	3			
	20 47 0063	63	22	88	50	13	3	TPK.. 2204..	C16 648	Ta4
	20 47 0080	80	32	95	50	13	4			
	20 47 0100	100	40	115	50	13	5			

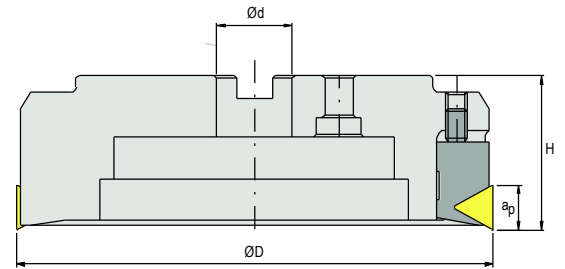
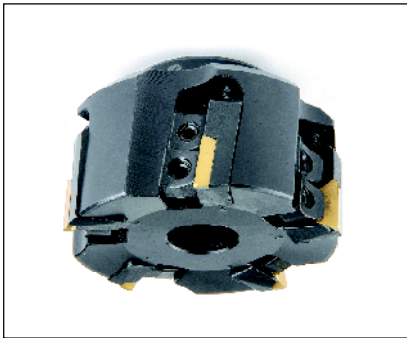
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : FKR 20 17 0100



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Z	Uç Tipi Insert Type Plattentype	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altlık Anvil Unterlage	Uç Vidası Insert Screw Plattenschraube	Anahtar Wrench Schlüssel
	ØD	Ød	H	ap							
FKR/L 90 0080 16	80	27	55	13	6	TPKN 1603..	FB 12	FR 650	FK16R/L	M8 x 10	Ta4
0100 16	100	32	57	13	8						
0125 16	125	40	57	13	8						
0160 16	160	40	57	13	12						
0200 16	200	60	60	13	15						
0250 16	250	60	60	13	18						
0315 16	315	70	60	13	24						
0400 16	400	75	60	13	32						

Kasetli Freze Kafası
Milling - Side Mill, Casette
Fräsen - Planfräsen, Kassetten

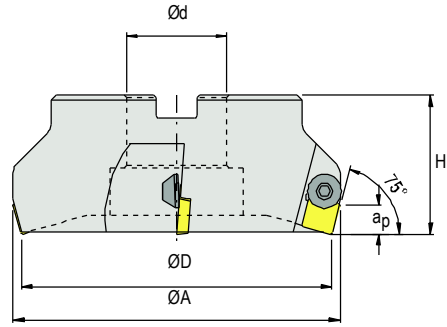


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Z	Uç Tipi Insert Type Plattentype	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altlık Anvil Unterlage	Uç Vidası Insert Screw Plattenschraube	Anahtar Wrench Schlüssel
	ØD	Ød	H	ap							
FKR/L 90 0100 22	100	32	62	18	5	TPKN 2204..	FB 12	FR 650	FK22R/L	M8 x 10	Ta4
0125 22	125	40	62	18	6						
0160 22	160	40	62	18	10						
0200 22	200	60	62	18	12						
0250 22	250	60	62	18	15						
0315 22	315	60	72	18	18						
0400 22	400	60	74	18	24						
0500 22	500	60	80	18	30						

Yüzey Freze Kafası

Milling - Face Mill

Fräsen - Planfräsen

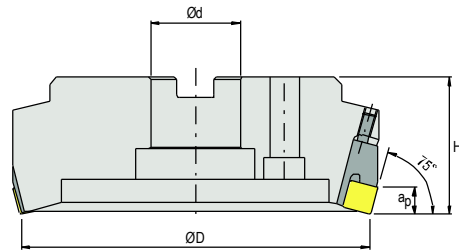
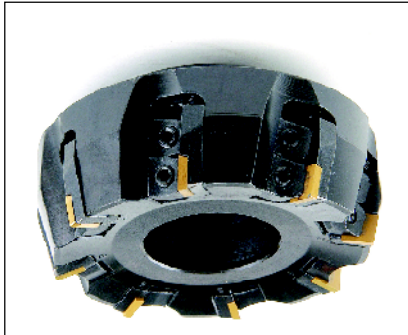


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Z	Uç Tipi Insert Type Plattentype	Baskı Vidası Clamp Screw Klemmschraube	Anahtar Wrench Schlüssel
	ØD	Ød	ØA	H	ap				
AFRL 20 27 0050	50	22	56	50	8	3	SPK.. 1203..	C16 644	Ta3
20 27 0063	63	22	69	50	8	4			
20 27 0080	80	32	86	50	8	5			
20 27 0100	100	32	106	50	8	6			

Kasetli Freze Kafası

Milling - Face Mill, Cassette

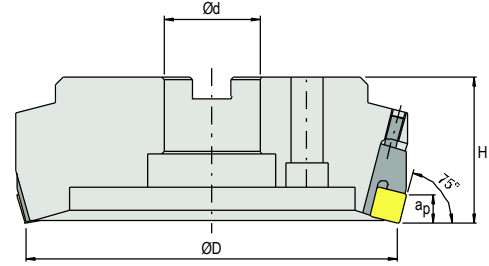
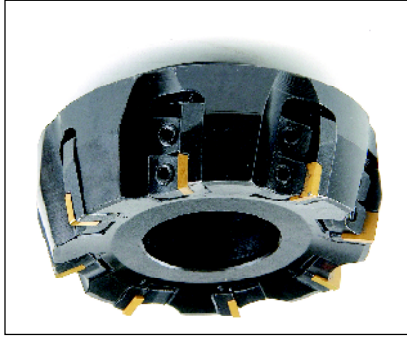
Fräsen - Planfräsen, Kassetten



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Z	Uç Tipi Insert Type Plattentype	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altlık Anvil Unterlage	Uç Vidası Insert Screw Plattenschraube	Anahtar Wrench Schlüssel
	ØD	Ød	H	ap							
AFRL 75 0080 12	80	27	55	6	6	SPK.. 1203..	FB 12	FR 650	FA 12PR/L	M8 x 10	Ta4
0100 12	100	32	57	6	8						
0125 12	125	40	57	6	8						
0160 12	160	40	57	6	12						
0200 12	200	60	60	6	15						
0250 12	250	60	60	6	18						
0315 12	315	60	70	6	24						
0400 12	400	60	75	6	32						
0500 12	500	60	75	6	40						

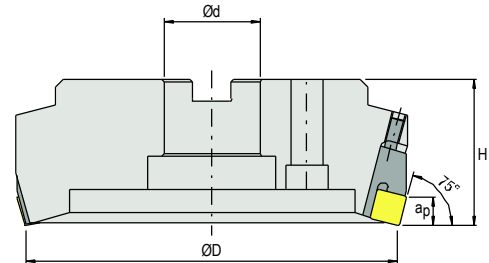
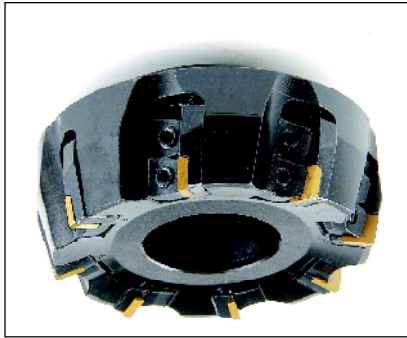
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : AFR 20 27 0100



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Z	Uç Tipi Insert Type Plattentype	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altlık Anvil Unterlage	Uç Vidası Insert Screw Plattenschraube	Anahtar Wrench Schlüssel
	ØD	Ød	H	ap							
AFR/L 75 0125 12 S	125	40	57	6	10	SPK.. 1203..	FBO 12	FR 650	FA012PRL	M8 x 10	Ta4
0160 12 S	160	40	57	6	18						
0200 12 S	200	60	60	6	20						
0250 12 S	250	60	60	6	24						
0315 12 S	315	60	70	6	32						
0400 12 S	400	60	75	6	40						
0500 12 S	500	60	75	6	48						

Kasetli Freze Kafası
Milling - Face Mill, Cassette
Fräsen - Planfräsen, Kassetten

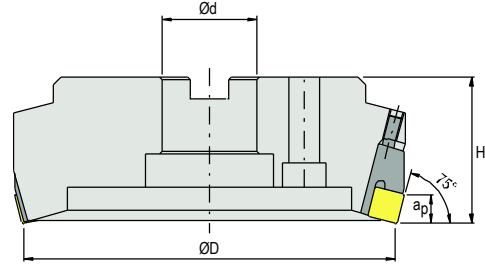
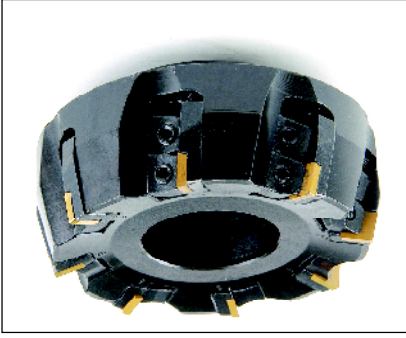


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Z	Uç Tipi Insert Type Plattentype	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altlık Anvil Unterlage	Uç Vidası Insert Screw Plattenschraube	Anahtar Wrench Schlüssel
	ØD	Ød	H	ap							
AFR/L 75 0100 15	100	32	62	8	6	SPK.. 1504..	FB 12	FR 650	FA15PR/L	M8 x 10	Ta4
0125 15	125	40	62	8	8						
0160 15	160	40	62	8	12						
0200 15	200	60	62	8	15						
0250 15	250	60	62	8	18						
0315 15	315	60	70	8	24						
0400 15	400	60	75	8	32						
0500 15	500	60	75	8	40						

Kasetli Freze Kafası

Milling - Face Mill, Cassette

Fräsen - Planfräsen, Kassetten

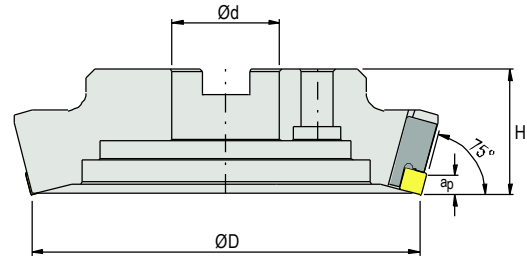
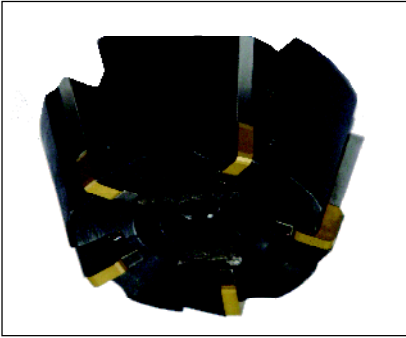


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Z	Uç Tipi Insert Type Plattentype	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altılık Anvil Unterlage	Uç Vidası Insert Screw Plattenschraube	Anahtar Wrench Schlüssel
	ØD	Ød	H	ap							
AFR/L 75 0080 12 AL	80	27	58	6	5	SFAN 1203EF	FB 12	FR 650	FA12ALR/L	M8 x 10	Ta4
0100 12 AL	100	32	58	6	6						
0125 12 AL	125	40	61	6	6						
0160 12 AL	160	40	61	6	10						
0200 12 AL	200	60	62	6	12						
0250 12 AL	250	60	62	6	15						
0315 12 AL	315	60	68	6	20						
0400 12 AL	400	60	74	6	24						
0500 12 AL	500	60	74	6	32						

Kasetli Freze Kafası

Milling - Face Mill, Cassette

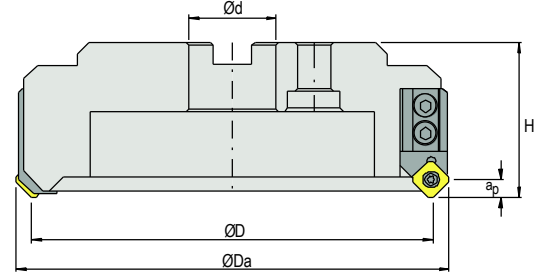
Fräsen - Planfräsen, Kassetten



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Z	Uç Tipi Insert Type Plattentype	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Altılık Anvil Unterlage	Uç Vidası Insert Screw Plattenschraube	Anahtar Wrench Schlüssel
	ØD	Ød	H	ap							
NFR/L 75 0080 12	80	27	56	6	5	SNG.. 1204EN	FB 12 N	FR 650	NFA 12	M8 x 10	Ta4
0100 12	100	32	56	6	6						
0125 12	125	40	56	6	8						
0160 12	160	40	60	6	12						
0200 12	200	60	60	6	15						
0250 12	250	60	60	6	18						
0315 12	315	60	62	6	24						
0400 12	400	60	70	6	32						
0500 12	500	60	74	6	40						

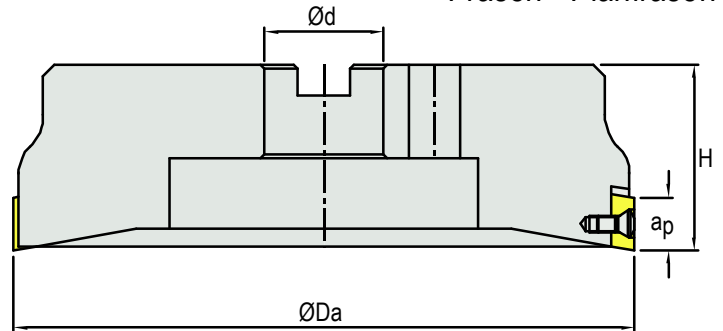
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : AFR 75 0100 12 AL



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Z	Uç Tipi Insert Type Plattentype	Altlık Anvil Unterlage	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	ØD	Ød	ØDa	H	ap					
A 270	40 R03 12	40	16	54	40	6	SDH.. 1204AE	—	7883202	T15 IP
	50 R03 12	50	22	64	40	6				
	63 R04 12	63	22	77	40	6				
	80 R05 12	80	27	94	50	6				
	100 R06 12	100	32	114	50	6				
	125 R06 12	125	40	139	63	6				
	160 R08 12	160	40	174	68	6				
	200 R10 12	200	60	214	68	6				
	250 R12 12	250	60	264	70	6				
	315 R16 12	315	60	329	70	6		A 270 ALT		

Yüzey Freze Kafası
Milling - Face Mill
Fräsen - Planfräsen

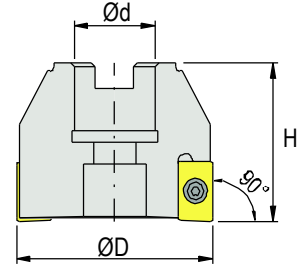
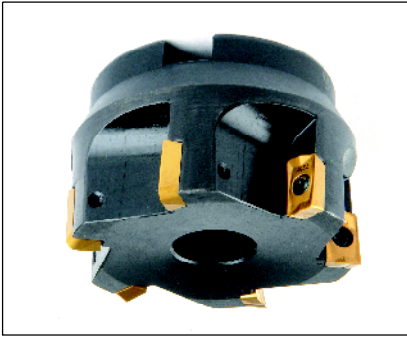


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Z	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	ØD	Ød	H	ap				
A 290	63 R05 12	63	22	40	8	CNHW 1205	7815102	T15 IP
	80 R08 12	80	27	50	8			
	100 R10 12	100	32	50	8			
	125 R12 12	125	40	56	8			
	160 R16 12	160	40	62	8			

Yüzey Freze Kafası

Milling - Face Mill

Fräsen - Planfräsen

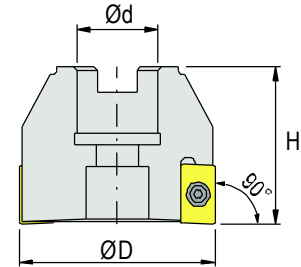


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen			Z	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	ØD	Ød	H				
T90A	50 R04 22	50	22	40	APKT 1604..	7815102	T15 IP
	63 R05 22	63	22	40			
	80 R06 27	80	27	50			
	100 R07 32	100	32	50			
T90AS	63 R06 22	63	22	40			
	80 R08 27	80	27	50			
	100 R10 32	100	32	50			

Yüzey Freze Kafası

Milling - Face Mill

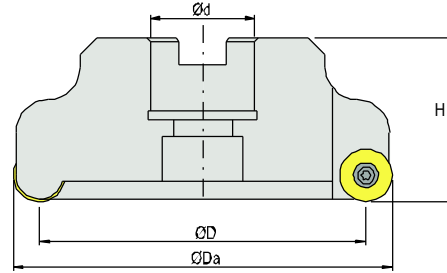
Fräsen - Planfräsen



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen			Z	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	ØD	Ød	H				
A 240	40 R04	40	16	40	LDHT / LDHW 15T308	7883209	T15 IP
	50 R05	50	22	40			
	63 R06	63	22	40			
	80 R06	80	27	50			
	100 R08	100	32	50			
	125 R09	125	40	63			
	160 R12	160	40	63			
	200 R16	200	63	63			
	250 R18	250	63	63			

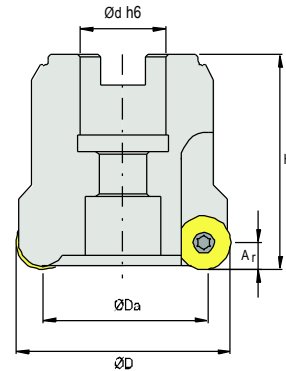
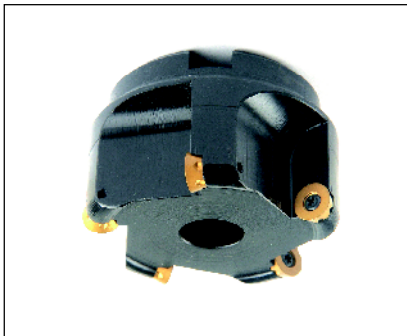
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : T 90A 100 R07 32



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						Z	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	ØD	Ød	ØDa	H	L					
A 250	40 R04 12	40	16	52	40	19	4	RP... 1204	7883202	T15 IP
	50 R04 12	50	22	62	40	20	4			
	63 R05 12	63	22	75	40	20	5			
	80 R06 12	80	27	92	50	22	6			
	100 R06 12	100	32	112	50	26	6			
	125 R07 12	125	40	137	63	30	7			

Yüzey Freze Kafası
Milling - Face Mill
Fräsen - Planfräsen

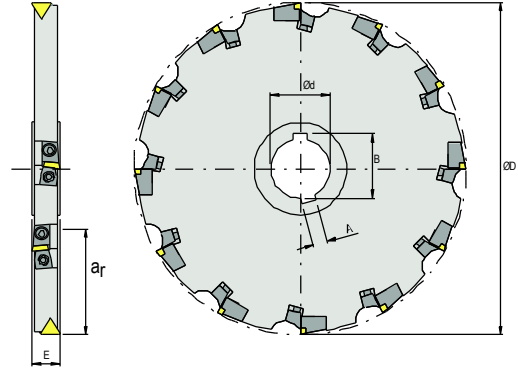


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel	
	ØD	Ød H6	ØDa	H	Ar					Z
TSRF A	40 R04 10	40	16	30	40	5	4	RDHX 1003 MOT	7883209	T15
	50 R05 10	50	22	40	40	5	5			
	63 R06 10	63	22	53	40	5	6	RDHX 12T3 MOT		
	80 R05 12	80	27	68	50	6	5			
	100 R06 12	100	32	88	50	6	6			

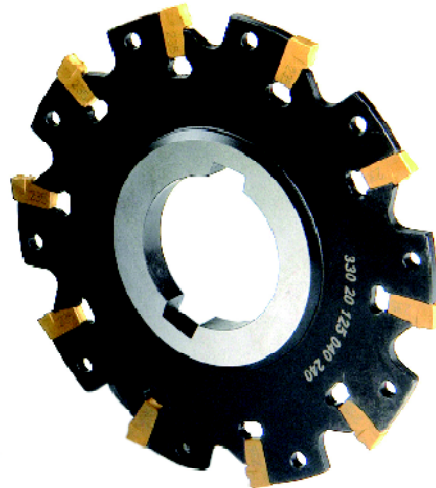
Çapraz Açılı Kanal Freze

Milling - Disc Mill

Fräsen - Scheibenfräsen

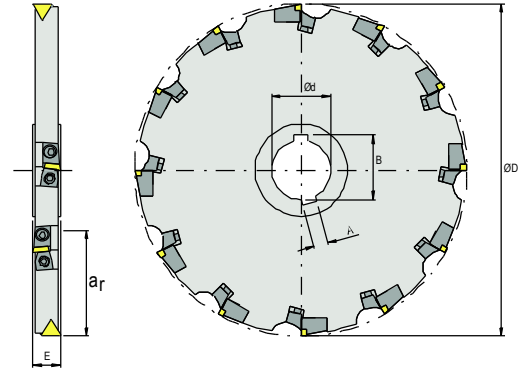


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen							Uç Tipi Insert Type Plattentype	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Sağ Altlık Anvil Right Re. Unterlage	Sol Altlık Anvil Left Li. Unterlage	Uç Vidası Insert Screw Plattenschraube	Anahtar Wrench Schlüssel
		ØD	Ød	E	A	ar	B								
TKF	125 18 16	125	40	18	10	30	43.8	8	TP... 1603PPN	FB 12	FR 650	FK 16 P-R	FK 16 P-L	M4 x 15	Ta4
	125 20 16	125	40	20	10	30	43.8	8							
	160 18 16	160	40	18	10	45	43.8	10							
	160 20 16	160	40	20	10	45	43.8	10							
	200 20 16	200	50	20	12	60	53.6	12							
	200 24 16	200	50	24	12	60	53.6	12							
	250 20 16	250	50	20	12	60	53.6	16							
	250 24 16	250	50	24	12	60	53.6	16							
	315 24 16	315	60	24	14	70	64	20							
	400 24 16	400	60	24	14	80	64	24							



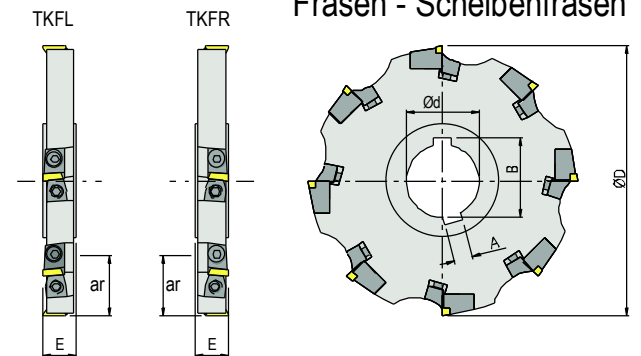
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : TKF 125 20 16



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen							Uç Tipi Insert Type Plattentype	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Sağ Altlık Anvil Right Re. Unterlage	Sol Altlık Anvil Left Li. Unterlage	Uç Vidası Insert Screw Plattenschraube	Anahtar Wrench Schlüssel
	ØD	Ød	E	A	ar	B	Z							
TKF 80 10 11	80	27	10	7	15	29.8	6	TP... 1103PPN	331.2.851	FR 649	R331 2 832	L331 2 833	M3 x 12	Ta3
80 12 11	80	27	12	7	15	29.8	6							
100 10 11	100	32	10	8	24	34.8	8							
100 12 11	100	32	12	8	24	34.8	8							
125 10 11	125	40	10	10	30	43.8	10							
125 12 11	125	40	12	10	30	43.8	10							
160 10 11	160	40	10	10	45	43.8	12							
160 12 11	160	40	12	10	45	43.8	12							
160 14 11	160	40	14	10	45	43.8	12							
200 10 11	200	50	10	12	60	53.6	16							
200 12 11	200	50	12	12	60	53.6	16							
200 14 11	200	50	14	12	60	53.6	16							

Kanal Freze
Milling - Disc Mill
Fräsen - Scheibenfräsen

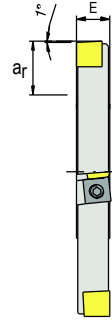
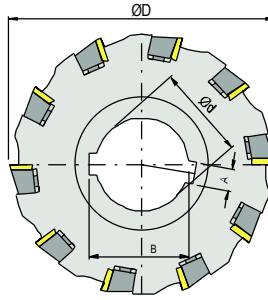
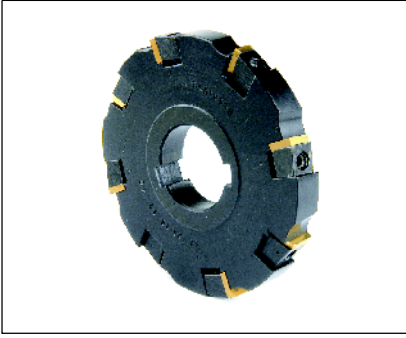


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen							Uç Tipi Insert Type Plattentype	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Sağ Altlık Anvil Right Re. Unterlage	Sol Altlık Anvil Left Li. Unterlage	Uç Vidası Insert Screw Plattenschraube	Anahtar Wrench Schlüssel
	ØD	Ød	E	A	ar	B	Z							
TKFR/L 125 18 16	125	40	18	10	30	43.8	8	TP... 1603PPN	FB 12	FR 650	FK 16 P-R	FK 16 P-L	M4 x 15	Ta4
125 20 16	125	40	20	10	30	43.8	8							
160 18 16	160	40	18	10	45	43.8	10							
160 20 16	160	40	20	10	45	43.8	10							
200 20 16	200	50	20	12	60	53.6	12							
200 24 16	200	50	24	12	60	53.6	12							
250 20 16	250	50	20	12	60	53.6	16							
250 24 16	250	50	24	12	60	53.6	16							
315 24 16	315	60	24	14	70	64	20							
400 24 16	400	60	24	14	80	64	24							

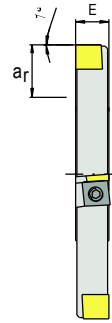
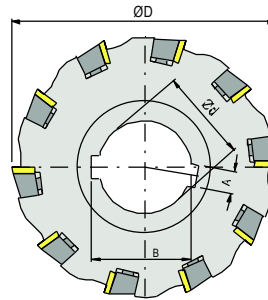
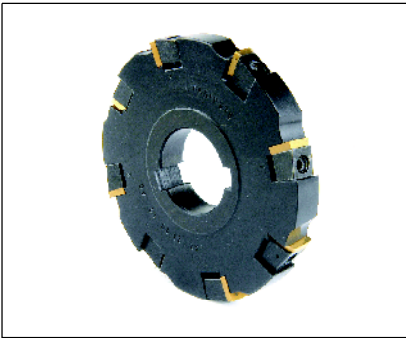
Çapraz Açılı Kanal Freze

Milling - Disc Mill

Fräsen - Scheibenfräsen



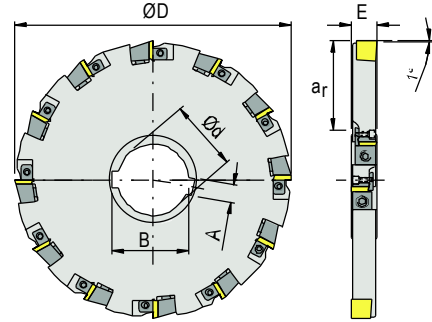
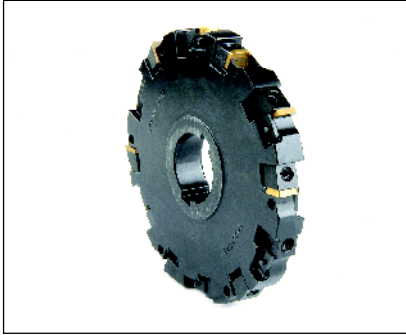
Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen							Uç Tipi Insert Type Plattentype	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Anahtar Wrench Schlüssel
		ØD	Ød	E	A	a _r	B					
S2	100 14 12	100	32	14	8	24	34.8	10	SPUN 1203..	S2 12 R/L	FR 650	Ta4
	100 16 12	100	32	16	8	24	34.8	10				
	125 14 12	125	40	14	10	30	43.8	12				
	125 16 12	125	40	16	10	30	43.8	12				
	160 14 12	160	40	14	10	45	43.8	16				
	160 16 12	160	40	16	10	45	43.8	16				
	200 14 12	200	50	14	12	60	53.6	18				
	200 16 12	200	50	16	12	60	53.6	18				
	250 14 12	250	50	14	12	60	53.6	24				
	250 16 12	250	50	16	12	60	53.6	24				



Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen							Uç Tipi Insert Type Plattentype	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Anahtar Wrench Schlüssel
		ØD	Ød	E	A	a _r	B					
TDK	80 10 09	80	27	10	7	18	29.8	6	SPUN 0903..	TDB 09 R/L	FR 648	Ta3
	100 10 09	100	32	10	8	24	34.8	10				
	100 12 09	100	32	12	8	24	34.8	10				
	125 10 09	125	40	10	10	30	43.8	12				
	125 12 09	125	40	12	10	30	43.8	12				
	160 10 09	160	40	10	10	45	43.8	18				
	160 12 09	160	40	12	10	45	43.8	18				
	200 10 09	200	50	10	12	60	53.6	22				
	200 12 09	200	50	12	12	60	53.6	22				

R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : S2 100 14 12

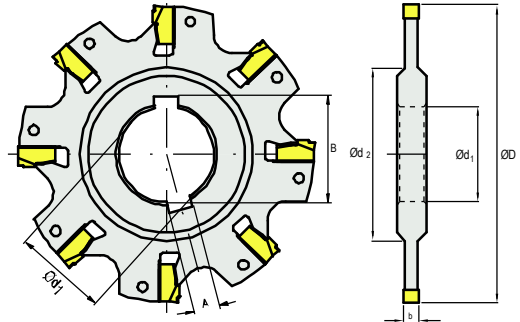
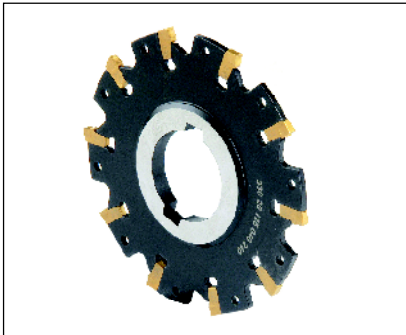


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen							Uç Tipi Insert Type Plattentype	Baskı Pabucu Clamp Klemme	Baskı Vidası Clamp Screw Klemmschraube	Anahtar Wrench Schlüssel
	ØD	Ød	E	A	ar	B	Z				
TSK 100 16 12	100	32	16	8	24	34.8	8	SPUN 1203..	S2 12 R/L	FR 650	Ta4
100 18 12	100	32	18	8	24	34.8	8				
125 16 12	125	40	16	10	30	43.8	10				
125 18 12	125	40	18	10	30	43.8	10				
160 16 12	160	40	16	10	45	43.8	12				
160 18 12	160	40	18	10	45	43.8	12				
200 16 12	200	50	16	12	60	53.6	18				
200 18 12	200	50	18	12	60	53.6	18				
250 16 12	250	50	16	12	60	53.6	20				
250 18 12	250	50	18	12	60	53.6	20				

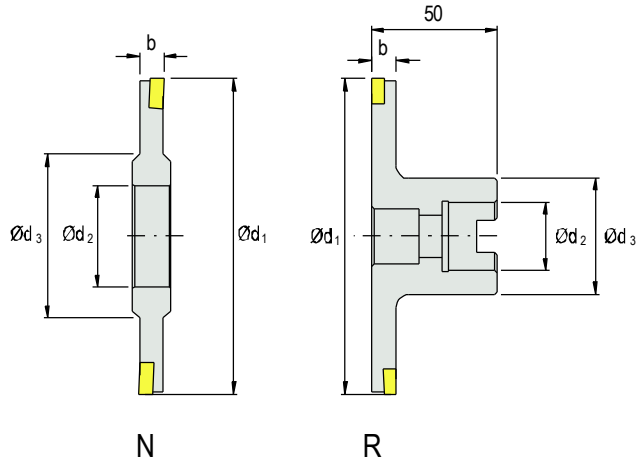
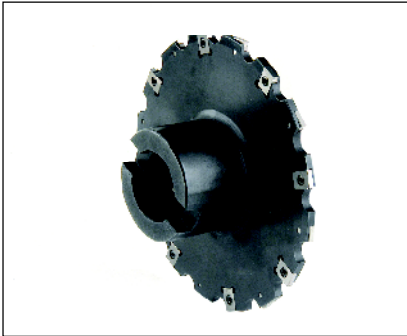
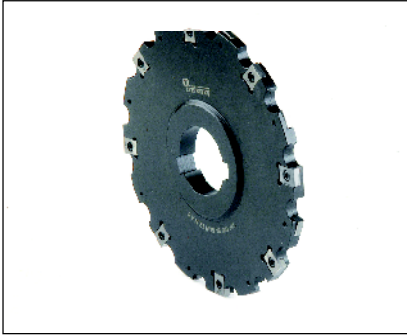
Dar Kanal Freze

Milling - Disc Mill

Fräsen - Scheibenfräsen



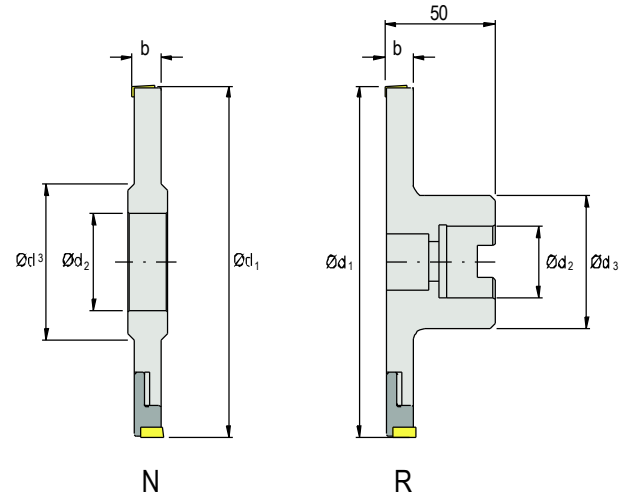
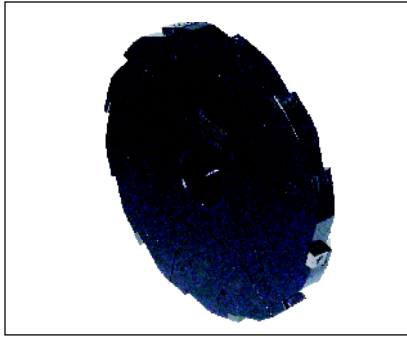
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						Uç Tipi Insert Type Plattentype
	ØD	Ød ₁	b	Ød ₂	A	B	
330 20 080 030 230	80	27	3	45	7	29.8	N 151 2 300
100 030 230	100	32	3	58	8	34.8	
125 030 230	125	40	3	62	10	43.8	
160 030 230	160	40	3	62	10	43.8	
080 040 240	80	27	4	45	7	29.8	N 151 2 400
100 040 240	100	32	4	58	8	34.8	
125 040 240	125	40	4	62	10	43.8	
160 040 240	160	40	4	62	10	43.8	
080 050 250	80	27	5	45	7	29.8	N 151 2 500
100 050 250	100	32	5	58	8	34.8	
125 050 250	125	40	5	62	10	43.8	
160 050 250	160	40	5	62	10	43.8	
080 060 260	80	27	6	45	7	29.8	N 151 2 600
100 060 260	100	32	6	58	8	34.8	
125 060 260	125	40	6	62	10	43.8	
160 060 260	160	40	6	62	10	43.8	



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Z	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	Ød ₁	Ød ₂	b	Ød ₃				
TK 80 93 SLN12 N06	80	27	6-7	44	8	LNEW 1235 / LNEW 1240	M3.5 x 5	T15 IP
80 93 SLN12 N08	80	27	8-9	44	8	LNEW 1240 / LNEW 1245	M3.5 x 6	
100 93 SLN12 N06	100	32	6-7	52	10	LNEW 1235 / LNEW 1240	M3.5 x 5	
100 93 SLN12 N08	100	32	8-9	52	10	LNEW 1240 / LNEW 1245	M3.5 x 6	
125 93 SLN12 N06	125	40	6-7	63	12	LNEW 1235 / LNEW 1240	M3.5 x 5	
125 93 SLN12 N08	125	40	8-9	63	12	LNEW 1240 / LNEW 1245	M3.5 x 6	
125 93 SLN12 N10	125	40	10-11	63	12	LNEW 1245 / LNEW 1250	M3.5 x 7	
160 93 SLN12 N06	160	40	6-7	63	16	LNEW 1235 / LNEW 1240	M3.5 x 5	
160 93 SLN12 N08	160	40	8-9	63	16	LNEW 1240 / LNEW 1245	M3.5 x 6	
160 93 SLN12 N10	160	40	10-11	63	16	LNEW 1245 / LNEW 1250	M3.5 x 8	
160 93 SLN12 N12	160	40	12-13	63	16	LNEW 1245 / LNEW 1250	M3.5 x 9	
200 93 SLN12 N06	200	50	6-7	75	18	LNEW 1235 / LNEW 1240	M3.5 x 5	
200 93 SLN12 N08	200	50	8-9	75	18	LNEW 1240 / LNEW 1245	M3.5 x 6	
200 93 SLN12 N10	200	50	10-11	75	18	LNEW 1245 / LNEW 1250	M3.5 x 8	
200 93 SLN12 N12	200	50	12-13	75	18	LNEW 1245 / LNEW 1250	M3.5 x 9	
80 93 SLN12 R06	80	22	6-7	42	8	LNEW 1235 / LNEW 1240	M3.5 x 5	
80 93 SLN12 R08	80	22	8-9	42	8	LNEW 1240 / LNEW 1245	M3.5 x 6	
100 93 SLN12 R06	100	27	6-7	50	10	LNEW 1235 / LNEW 1240	M3.5 x 5	
100 93 SLN12 R08	100	27	8-9	50	10	LNEW 1240 / LNEW 1245	M3.5 x 6	
125 93 SLN12 R06	125	40	6-7	70	12	LNEW 1235 / LNEW 1240	M3.5 x 5	
125 93 SLN12 R08	125	40	8-9	70	12	LNEW 1240 / LNEW 1245	M3.5 x 6	
125 93 SLN12 R10	125	40	10-11	70	12	LNEW 1245 / LNEW 1250	M3.5 x 7	
160 93 SLN12 R06	160	40	6-7	70	16	LNEW 1235 / LNEW 1240	M3.5 x 5	
160 93 SLN12 R08	160	40	8-9	70	16	LNEW 1240 / LNEW 1245	M3.5 x 6	
160 93 SLN12 R10	160	40	10-11	70	16	LNEW 1245 / LNEW 1250	M3.5 x 8	

R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : TK 160 93 SLN12 N08



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Sağ Kartuş Cartridge Right Re. Kurzklammhalten	Sol Kartuş Cartridge Left Li. Kurzklammhalten	Dayama Parçası Limit Piece	Torx Anahtar Torx Wrench Torx Schlüssel
	Ød ₁	Ød ₂	b	Ød ₃	Z						
TK 125 93 SCN10 N14	125	40	14-18	60	8	CNHW(T) 1005	7883203	93 SCN10 KFA R	93 SCN10 KFA L	93 SCN10 AP	T08 IP
125 93 SCN12 N18	125	40	18-22	60	8	CNHW(T) 1205	7883209	93 SCN12 KFA R	93 SCN12 KFA L	93 SCN12 AP	T15 IP
160 93 SCN10 N14	160	40	14-18	63	10	CNHW(T) 1005	7883203	93 SCN10 KFA R	93 SCN10 KFA L	93 SCN10 AP	T08 IP
160 93 SCN12 N18	160	40	18-22	70	10	CNHW(T) 1205	7883209	93 SCN12 KFA R	93 SCN12 KFA L	93 SCN12 AP	T15 IP
200 93 SCN10 N14	200	50	14-18	75	12	CNHW(T) 1005	7883203	93 SCN10 KFA R	93 SCN10 KFA L	93 SCN10 AP	T08 IP
200 93 SCN12 N18	200	50	18-22	75	12	CNHW(T) 1205	7883209	93 SCN12 KFA R	93 SCN12 KFA L	93 SCN12 AP	T15 IP
250 93 SCN10 N14	250	50	14-18	75	16	CNHW(T) 1005	7883203	93 SCN10 KFA R	93 SCN10 KFA L	93 SCN10 AP	T08 IP
250 93 SCN12 N18	250	50	18-22	75	16	CNHW(T) 1205	7883209	93 SCN12 KFA R	93 SCN12 KFA L	93 SCN12 AP	T15 IP
125 93 SCN10 R14	125	40	14-18	60	8	CNHW(T) 1005	7883203	93 SCN10 KFA R	93 SCN10 KFA L	93 SCN10 AP	T08 IP
125 93 SCN12 R18	125	40	18-22	60	8	CNHW(T) 1205	7883209	93 SCN12 KFA R	93 SCN12 KFA L	93 SCN12 AP	T15 IP
160 93 SCN10 R14	160	40	14-18	63	10	CNHW(T) 1005	7883203	93 SCN10 KFA R	93 SCN10 KFA L	93 SCN10 AP	T08 IP
160 93 SCN12 R18	160	40	18-22	70	10	CNHW(T) 1205	7883209	93 SCN12 KFA R	93 SCN12 KFA L	93 SCN12 AP	T15 IP
200 93 SCN10 R14	200	50	14-18	75	12	CNHW(T) 1005	7883203	93 SCN10 KFA R	93 SCN10 KFA L	93 SCN10 AP	T08 IP
200 93 SCN12 R18	200	50	18-22	75	12	CNHW(T) 1205	7883209	93 SCN12 KFA R	93 SCN12 KFA L	93 SCN12 AP	T15 IP
250 93 SCN10 R14	250	50	14-18	75	16	CNHW(T) 1005	7883203	93 SCN10 KFA R	93 SCN10 KFA L	93 SCN10 AP	T08 IP
250 93 SCN12 R18	250	50	18-22	75	16	CNHW(T) 1205	7883209	93 SCN12 KFA R	93 SCN12 KFA L	93 SCN12 AP	T15 IP

UYGULAMA TAVSİYELERİ

- 93 SCN DISC MILL Tipinde dar kanal frezeler, özel kartuş konstrüksiyonları ile 4 mm'ye kadar ayar imkanı olarak sağlar.
- Standart formunda, montajlı kartuşlar ve ara parçalar ile birlikte kanal genişliği (b)14 mm'dir.
 - Eğer bir taraftaki kartuşun altındaki ayar parçası kaldırılırsa genişlik (b)16 mm'ye arttırılır.
 - Maksimum kanal genişliğini elde etmek için freze, ayar ara parçaları olmadan monte edilmelidir. Bu konumda kanal genişliği (b)18 mm'dir.

APPLICATION

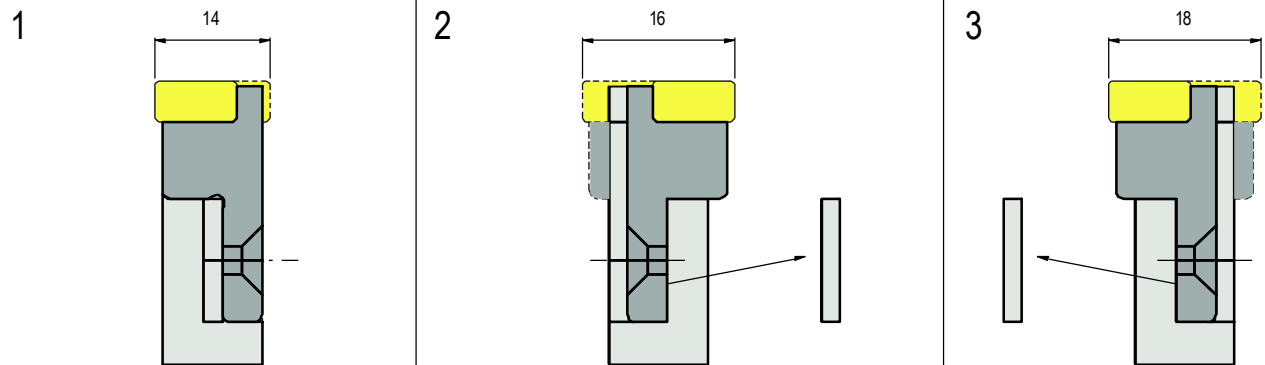
Disc mill type 93 SCN, provides the possibility of adjusting up to 4 mm by special cartridge.

- In standard form, cartridge and fastening parts provides width of (b) 14 mm.
- If the adjustment of cartridge in one side are cancelled, width is enlarged to (b)16 mm.
- Maximum width can be achieved without adjustment parts. In that way the width becomes (b) 18 mm.

ANWENDUNGSEMPFEHLUNGEN

Disc-Mühle Typ 93 SCN, bietet die Möglichkeit der Anpassung bis zu 4 mm durch spezielle Patrone.

- In der Standardausführung bietet der Breite der Kurzklammhalten und Befestigungstechnik (b) 147 mm.
- Wenn die Einstellung der Kurzklammhalten in einer Seite abgebrochen werden, wird die Breite (b) 16 mm vergrößert.
- Maximale Breite Einstellung ohne Teile erreicht werden kann. Auf diese Weise wird die Breite (b) 18 mm.



Parmak Frezeler / Milling - End Mills

Fräsen - Schafffräser



FKR / L 15 17
Sayfa / Page / Seite : 144



PFR / L 15 17
Sayfa / Page / Seite : 144



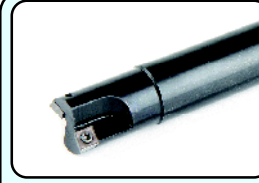
A 246
Sayfa / Page / Seite : 145



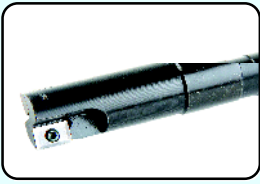
A 150 CW
Sayfa / Page / Seite : 145



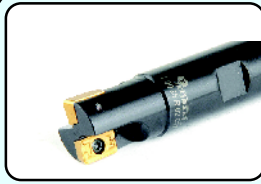
A 150 MK
Sayfa / Page / Seite : 146



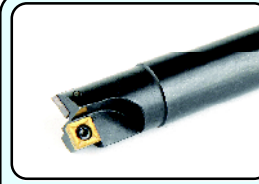
C 130
Sayfa / Page / Seite : 147



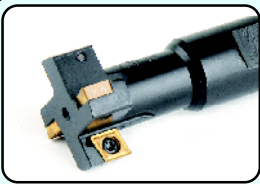
C 140
Sayfa / Page / Seite : 147



T 90
Sayfa / Page / Seite : 148



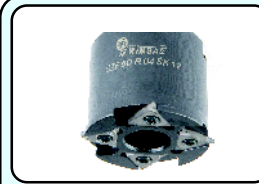
C 135
Sayfa / Page / Seite : 148



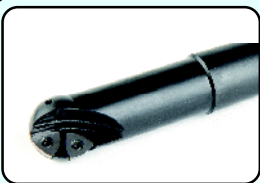
CNF
Sayfa / Page / Seite : 149



CZF CW
Sayfa / Page / Seite : 149



CZF SK
Sayfa / Page / Seite : 150



TCKF
Sayfa / Page / Seite : 150

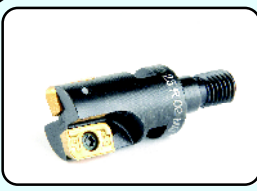


TKUF
Sayfa / Page / Seite : 151

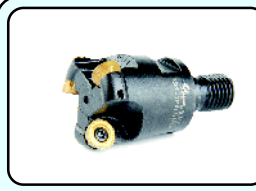


TSRF
Sayfa / Page / Seite : 151

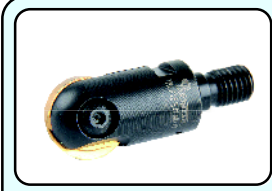
Parmak Frezeler / Milling - End Mills
Fräsen - Schafffräser



T 90 MD..
Sayfa / Page / Seite : 152



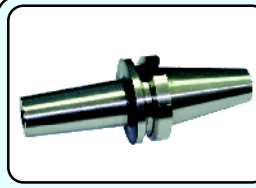
TSRF MD..
Sayfa / Page / Seite : 152



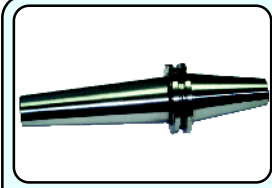
TKUF MD..
Sayfa / Page / Seite : 153



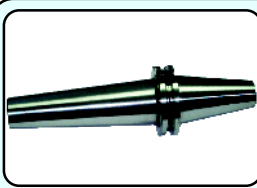
CW...MDS....
Sayfa / Page / Seite : 154



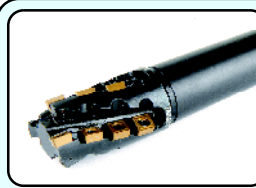
BT...MDS....
Sayfa / Page / Seite : 154



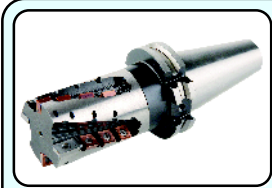
CAT...MDS....
Sayfa / Page / Seite : 155



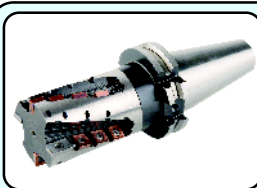
IT...MDS....
Sayfa / Page / Seite : 155



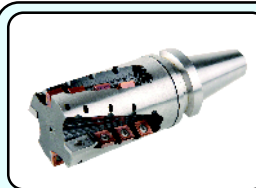
C 144
Sayfa / Page / Seite : 157



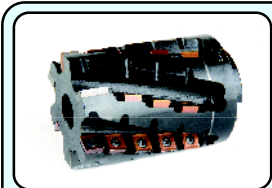
C 149 DIN 69871
Sayfa / Page / Seite : 157



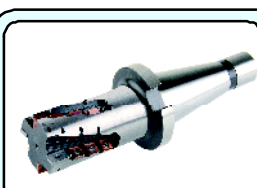
C 149 (A.N.S.I) CAT
Sayfa / Page / Seite : 158



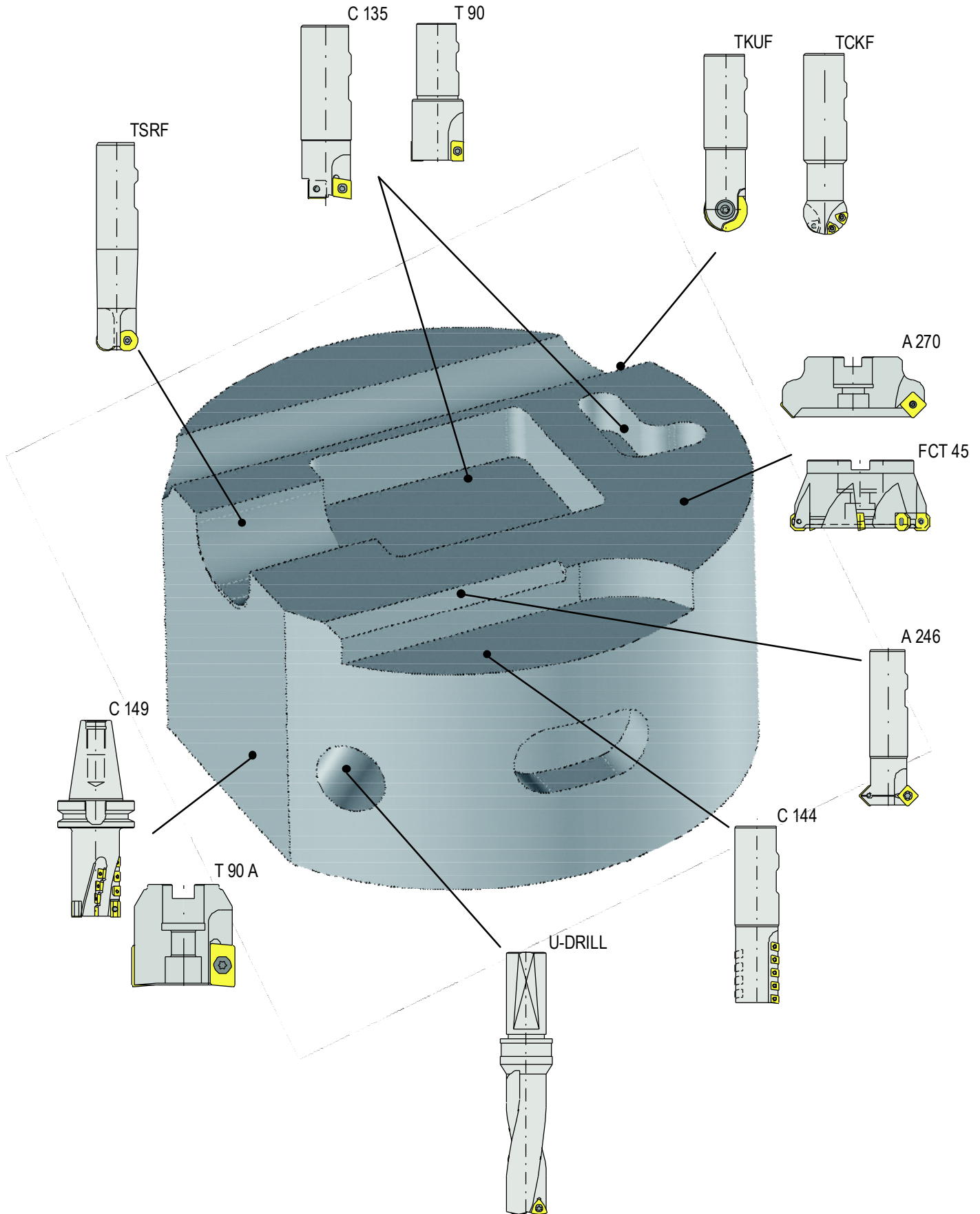
C 149 BT MAS
Sayfa / Page / Seite : 158

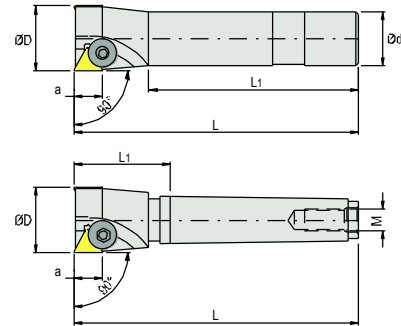
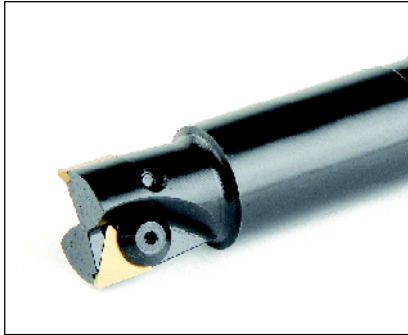


C 149 M
Sayfa / Page / Seite : 159



C 149 DIN 2080
Sayfa / Page / Seite : 159

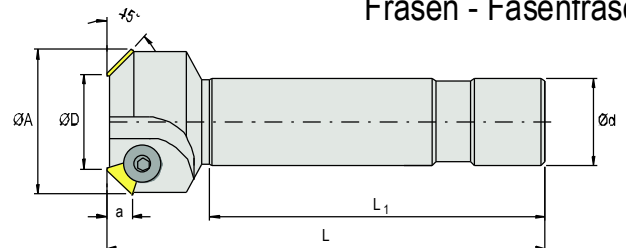




Kod Code Bezeichnung			Ölçüler Dimensions Abmessungen							Uç Tipi Insert Type Plattentype	Baskı Vidası Clamp Screw Klemmschraube	Anahtar Wrench Schlüssel
			ØD	Ød	L	L ₁	M	a				
FK 15 17	20 20 11	20	20	105	75		9	2	TP.... 1103....	C16 636	Ta3	
	20 22 11	22	20	105	75		9	2				
	25 25 11	25	25	105	75		9	2				
	25 28 11	28	25	105	85		9	2				
	32 32 16	32	32	125	90		14.5	2	TP.... 1603....	C16 644	Ta4	
	32 36 16	36	32	125	90		14.5	2				
	32 40 16	40	32	125	90		14.5	3				
	30 22.2	22	MK3	115	35	M12	9	2	TP.... 1103....	C16 636	Ta3	
	30 25.2	25	MK3	115	35	M12	9	2				
	30 28.2	28	MK3	115	35	M12	9	2				
	30 32.2	32	MK3	120	35	M12	14.5	2	TP.... 1603....	C16 644	Ta4	
	30 36.2	36	MK3	120	35	M12	14.5	2				
	30 40.2	40	MK4	120	40	M16	14.5	3				

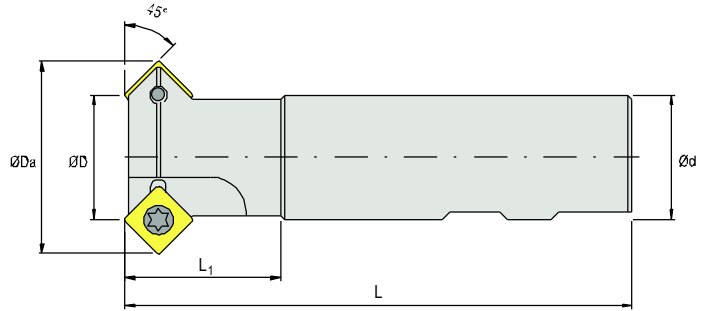
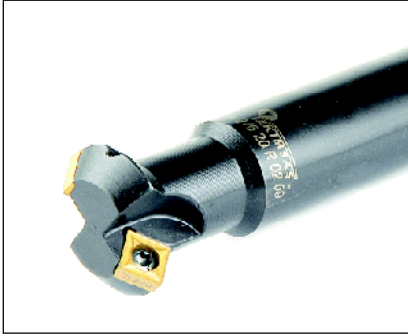


Parmak Freze
Milling - Chamfer Mill
Fräsen - Fasenfräsen



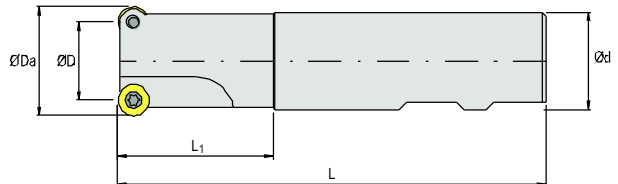
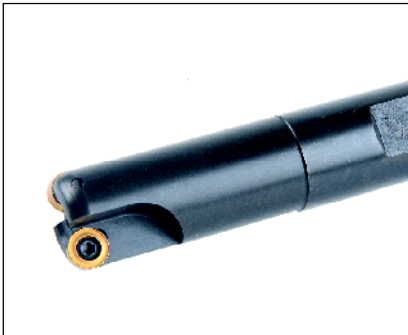
Kod Code Bezeichnung			Ölçüler Dimensions Abmessungen							Uç Tipi Insert Type Plattentype	Baskı Vidası Clamp Screw Klemmschraube	Anahtar Wrench Schlüssel
			ØD	Ød	ØA	L	L ₁	a				
PF 15 17	25 20	20	25	34.4	100	70	6	2	TP.... 1103...	C16 636	Ta3	
	25 25	25	25	38.4	125	95	9	2				
	25 28	28	25	41.4	125	95	9	2				
	32 32	32	32	52.3	125	95	9	2	TP.... 1603...	C16 644	Ta3	
	32 36	36	32	56.3	125	95	9	2				
	32 40	40	32	60.3	125	95	9	3				

Parmak Freze
Milling - Chamfer Mill
Fräsen - Fassenfräsen



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						Z	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	ØD	ØDa	Ød	L	L ₁					
A 246	12 R01 09	12	24.8	16	100	29	1	SCMT 09T308	7883209	T15 IP
	16 R02 09	16	28.8	20	105	32	2			
	20 R02 09	20	32.8	25	110	35	2			
	22 R02 09	22	34.8	25	115	35	2			
	25 R02 12	25	42.3	32	120	38	2	SPMT 120408	7883202	
	28 R02 12	28	45.3	32	125	40	2			
	32 R03 12	32	49.3	32	130	40	3			

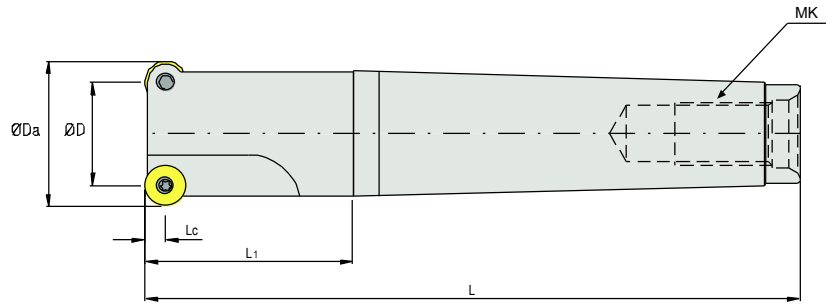
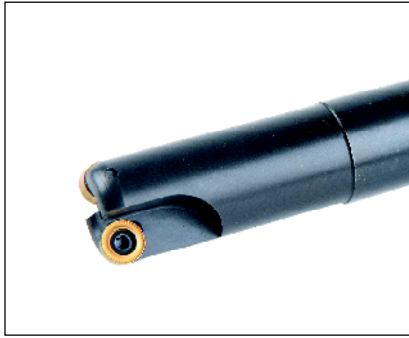
Parmak Freze
Milling - Copy Mill
Fräsen - Kopiertfräsen



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						Z	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	ØD	ØDa	Ød	L	L ₁					
A 150	12 R01 08 CW	12	20	16	100	50	1	RCM...0803..	7883203	T08 IP
	16 R01 08 CW	16	24	20	110	65	2			
	20 R02 08 CW	20	28	25	110	40	2			
	20 R02 08 CWU	20	28	25	140	65	2			
	25 R02 10 CW	25	35	32	110	50	3	RCM...1003..	7883209	T15 IP
	25 R02 10 CWU	25	35	32	140	75	3			
	32 R02 10 CW	32	42	32	140	75	3			
	32 R02 10 CWU	32	42	32	170	110	3			
	40 R02 10 CW	40	50	32	150	90	4			

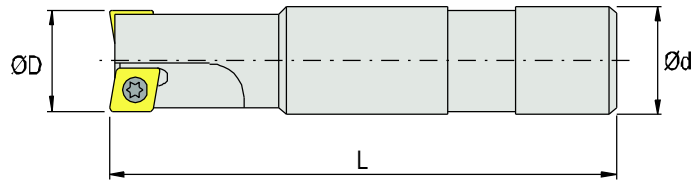
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : A 246 20 R02 09



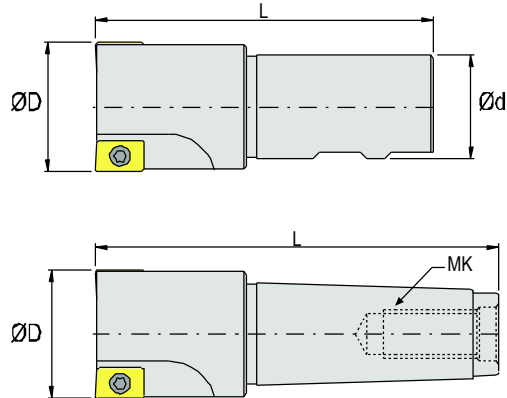
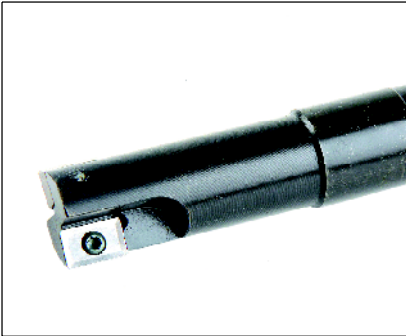
Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen						 Z	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
		ØD	MK	ØDa	L	L ₁	Lc				
A 150	25 R02 08 MK	25	3	33	135	55	4	2	RCM...0803..	7883203	T15 IP
	32 R02 10 MK	32	3	42	135	55	5	2	RCM...1003..	7883209	
	36 R02 12 MK	36	4	46	157	60	6	2	RCM...1204..	7883202	
	40 R02 12 MK	40	4	52	167	65	6	3			
	50 R02 12 MK	50	4	62	167	65	6	4			





Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen			 Z	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
		ØD	Ød	L				
C 130	10 R01 CW	10	12	80	1	CPMT 060304	7815101	T08 IP
	12 R01 CW	12	12	80	1			
	14 R02 CW	14	16	80	2			
	16 R02 CW	16	16	90	2			
	18 R02 CW	18	20	100	2			
	20 R02 CW	20	20	105	2			
	22 R02 CW	22	25	110	2			
	25 R02 CW	25	25	115	2	CPMT 09T308	7883209	T15 IP
	28 R02 CW	28	25	115	2			
	32 R02 CW	32	25	120	3			

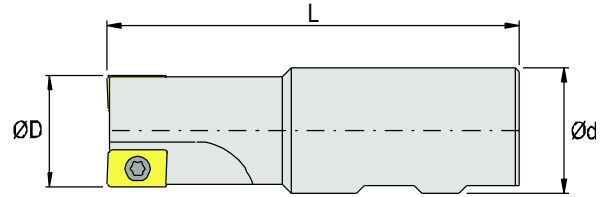
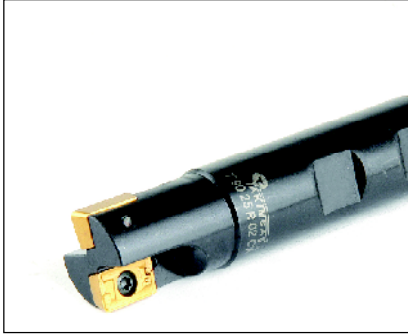
Parmak Freze
Milling - Slot Mill
Fräsen - Bohrnutenfräsen



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Z	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	ØD	Ød	L	MK				
C 140	22 R02 CW	22	20	90	---	LD.. 15T308	7883209	T15 IP
	25 R02 CW	25	25	120	---			
	25 R02 MK	25	---	135	3			
	28 R02 CW	28	25	120	---			
	28 R02 MK	28	---	135	3			
	32 R03 CW	32	32	120	---			
	32 R03 MK	32	---	140	3			
	36 R03 CW	36	32	120	---			
	36 R03 MK	36	---	140	3			
	40 R04 CW	40	32	125	---			
	40 R04 MK	40	---	156	4			

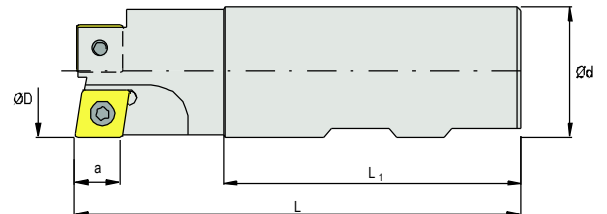
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : C 130 20 R02 CW



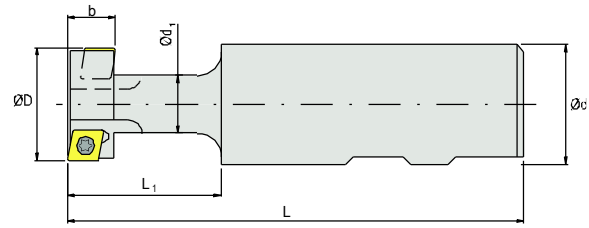
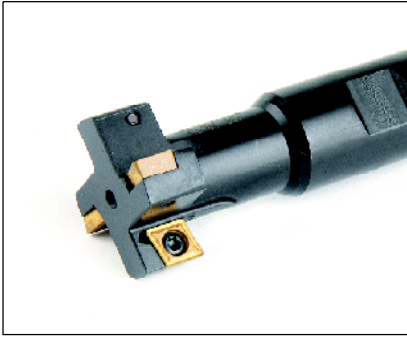
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				Z	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	ØD	Ød	L					
T90	16 R02 CW	16	16	90	2	APKT 1003...PD-R	7815101	T08 IP
	20 R02 CW	20	20	105	2			
	22 R02 CW	22	20	105	2	APKT 1604...PD-R	7815102	T15 IP
	25 R02 CW	25	25	105	2			
	28 R02 CW	28	25	105	2			
	32 R03 CW	32	32	120	3			
	40 R04 CW	40	32	120	4			

Parmak Freze
Milling - Slot Mill
Fräsen - Bohrnutenfräsen



Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					 Z	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
		ØD	Ød	L	L ₁	a				
C135	20 18 4 06T	18	20	105	75	4	2	CPMT 060304	7815101	T08 IP
	20 20 4 06T	20	20	105	75	4	2			
	25 25 4 09T	25	25	115	80	6	2	CPMT 09T308 / SPMT 09T308	7815102	T15 IP
	32 32 4 12T	32	32	120	80	8	2	CPMT 120408 / SPMT 120408	7883202	
	32 36 4 12T	36	32	120	80	8	2			
	32 40 4 12T	40	32	120	80	8	2			

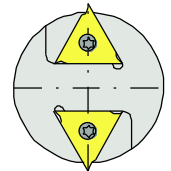
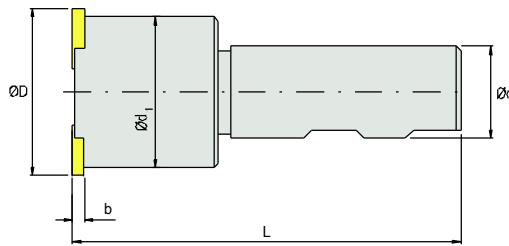
“T” Kanal Freze
Milling - “T” Slot Mill
Fräsen - “T” Nutenfräsen



Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen						 Z	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
		ØD	Ød	Ød ₁	L	L ₁	b				
CNF	17 R01 CW	17.5	16	10	80	25	8.5	2	CPMT 060304	7815101	T08 IP
	20 R01 CW	20.5	16	11	85	30	9	2			
	23 R01 CW	23.5	20	12	95	32	10	2			
	30 R02 CW	30.5	25	16	100	40	12	2			
	32 R02 CW	32.5	32	16	105	40	12	2			
	37 R02 CW	37.5	32	17	115	50	16	2	CPMT 09T304	7883209	T15 IP
	42 R02 CW	42.5	32	19	120	50	17	4			
	47 R02 CW	47	32	25	125	60	20	4	CPMT 120408	7883202	
	52 R02 CW	52	32	25	125	60	21	4			
	55 R02 CW	55	32	25	125	60	22	4			

Kanal Açma Frezesi

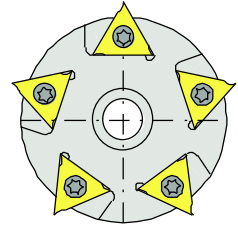
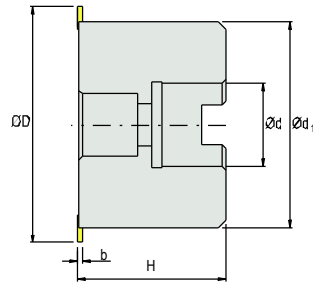
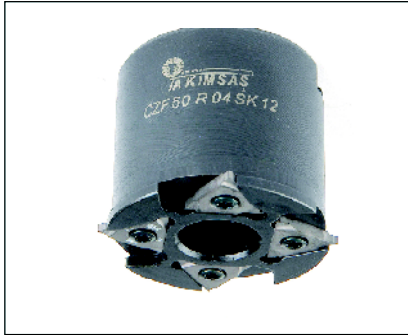
Milling - Disc Mill for Grooving
Fräsen - Scheibenmühle zum Einstechen



Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					 Z	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
		ØD	Ød	Ød ₁	L	b				
CZF	20 R01 CW	20	20	15	100	1.1/2.65/4.15	1	R 154.3.16.....	7883209	T15 IP
	25 R01 CW	25	20	19	100	1.1/2.65/4.15	1			
	32 R02 CW	32	25	26	115	1.1/2.65/4.15	2			
	36 R03 CW	36	32	30	120	1.1/2.65/4.15	3			
	40 R03 CW	40	32	34	125	1.1/2.65/4.15	3			
	50 R04 CW	50	32	42	130	1.1/2.65/4.15	4			
	63 R05 CW	63	40	55	135	1.1/2.65/4.15	5			
	80 R06 CW	80	40	72	140	1.1/2.65/4.15	6			

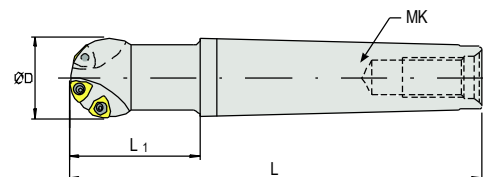
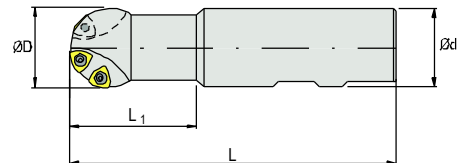
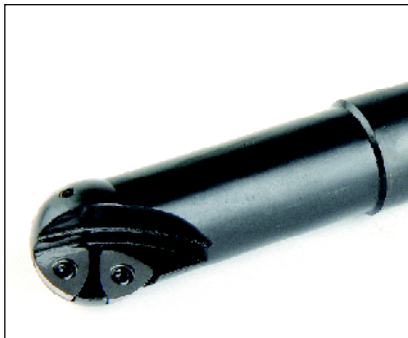
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : CNF 42 R02 CW



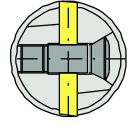
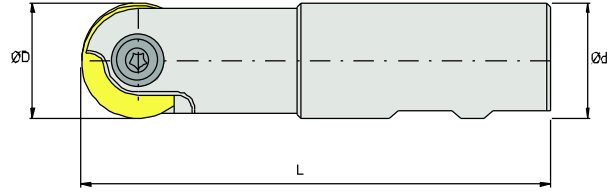
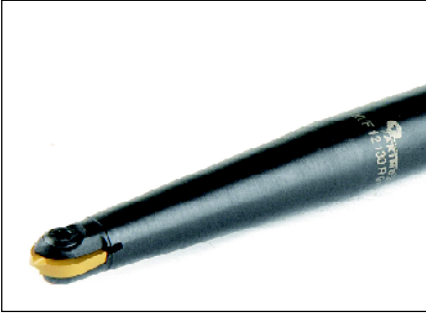
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Z	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	ØD	Ød	Ød ₁	H	b				
CZF 40 R03 SK 16	40	16	33	40	1.1/2.65/4.15	3	R 154.3.16.....	7883209	T15
50 R04 SK 16	50	22	42	45	1.1/2.65/4.15	4			
63 R05 SK 16	63	22	55	45	1.1/2.65/4.15	5			
80 R06 SK 16	80	27	72	45	1.1/2.65/4.15	6			

Küresel Freze
Milling - Form Mill
Fräsen - Kugelfräsen



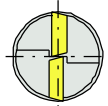
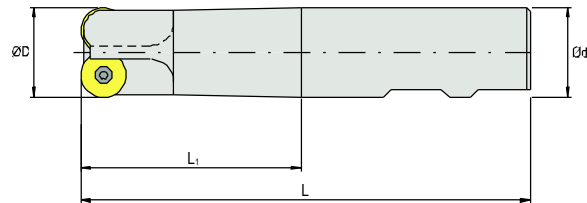
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Z	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	ØD	Ød	L	L ₁	MK				
TCKF 2016 OCR	16	20	130	50	—	2	RT 19 080T	7815101	T08 IP
2520 OCR	20	25	140	60	—	2	RT 19 100T		
3225 OCR	25	32	162	82	—	2	RT 19 125T		
3232 OCR	32	32	168	88	—	2	RT 19 160T	7883209	T15 IP
2016 3 17M	16	—	109	40	2	2	RT 19 080T	7815101	T08 IP
2020 3 22M	20	—	111	42	2	2	RT 19 100T	7883209	T15 IP
3032 3 30M	32	—	141	55	3	2	RT 19 160T		

Küresel Freze
Milling - Form Mill
Fräsen - Kugelfräsen



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen			Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	ØD	Ød	L			
TKUF 10 R01 CW12	10	12	115	WPR 10 N	GWS 10	T15 IP
12 R01 CW16	12	16	115	WPR 12 N	GWS 12	T20
16 R01 CW20	16	20	115	WPR 16 N	GWS 16	
20 R01 CW25	20	25	130	WPR 20 N	GWS 20	
25 R01 CW25	25	25	140	WPR 25 N	GWS 25	
32 R01 CW32	32	32	160	WPR 32 N	GWS 32	T15 IP
10 130 R01 CW12	10	12	130	WPR 10 N	GWS 10	
12 130 R01 CW16	12	16	130	WPR 12 N	GWS 12	
16 140 R01 CW20	16	20	140	WPR 16 N	GWS 16	
20 180 R01 CW25	20	25	180	WPR 20 N	GWS 20	T20
25 190 R01 CW25	25	25	190	WPR 25 N	GWS 25	
32 200 R01 CW32	32	32	200	WPR 32 N	GWS 32	

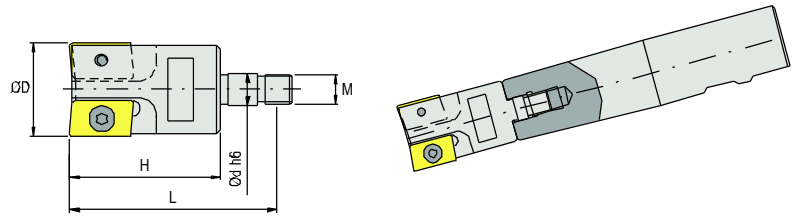
Parmak Freze
Milling - Copy Mill
Fräsen - Kopiertfräsen



Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen				 Z	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel		
		ØD	Ød	L	L ₁						
TSRF	20 R02 CW20 - 10	20	20	100	49	2	RDHX 1003 MOT	7883209	T15 IP		
	25 R02 CW25 - 10	25	25	120	60	2					
	25 R03 CW25 - 10	25	25	120	60	3					
	25 R03 CW32 - U10	25	32	180	100	2					
	32 R03 CW32 - 10	32	32	125	55	3					
	32 R03 CW40 - U10	32	40	200	100	3					
	40 R04 CW40 - 10	40	40	150	70	4					
	25 R02 CW25 - 12	25	25	120	60	2	RDHX 12T3 MOT	7883209		T15 IP	
	32 R03 CW32 - 12	32	32	125	55	3					
	32 R03 CW32 - U12	32	32	200	120	3					
	32 R02 CW32 - 16	32	32	200	120	2	RDHX 1604 MOT	7883202			T15 IP
	32 R02 CW32 - U16	32	32	250	170	2					
	40 R03 CW40 - 16	40	40	200	120	3					
	40 R03 CW40 - U16	40	40	250	170	3					

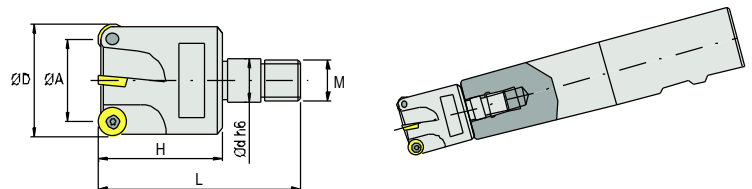
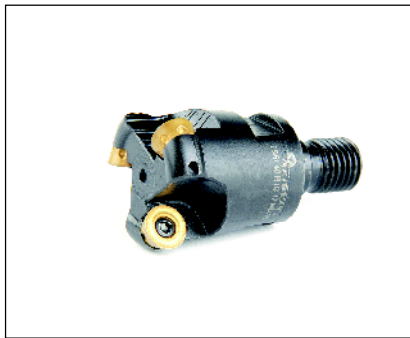
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : TKUF 25 R01 CW25

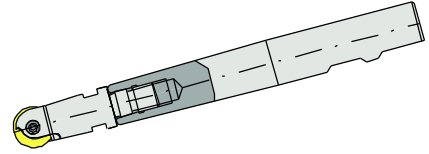
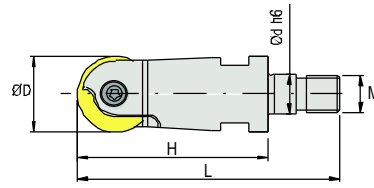


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					 Z	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
		ØD	Ød h6	M	H	L				
T 90	16 R02 MD8	16	8.5	M8	24	38	2	APKT 1003	7815101	T08
	20 R03 MD10	20	10.5	M10	26	45	3			
	25 R04 MD12	25	12.5	M12	33	55	4			
	25 R02 MD12	25	12.5	M12	33	55	2	APKT 1604	7883209	T15
	32 R03 MD16	32	17	M16	43	66	3			
	40 R04 MD16	40	17	M16	43	66	4			

Parmak Freze
Milling - End Mill
Fräsen - Schaftfräsen



Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen							Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
		ØD	Ød h6	ØA	M	H	L				
TSRF	16 R02 07 MD8	16	8.5	8	M8	24	38	2	RDHX 0702 MOT	7815101	T08 IP
	20 R03 10 MD10	20	10.5	10	M10	26	45	3	RDHX 1003 MOT		
	25 R03 10 MD12	25	12.5	15	M12	33	55	3			
	25 R02 12 MD12	25	12.5	13	M12	33	55	2	RDHX 12T3 MOT	7883209	T15 IP
	32 R03 10 MD16	32	17	22	M16	43	66	3	RDHX 1003 MOT		
	32 R03 12 MD16	32	17	20	M16	43	66	3			
	40 R04 12 MD16	40	17	28	M16	43	66	4	RDHX 12T3 MOT		

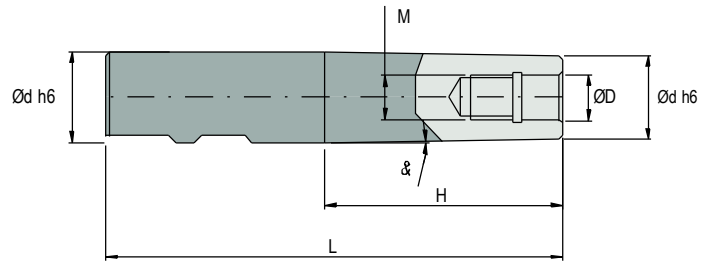
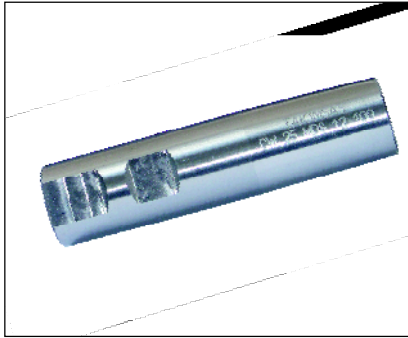


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Z	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	ØD	Ød h6	M	H	L				
TKUF 16 R01 MD8	16	8.5	M8	40	54	1	WPR 16 N	GWS 16	T20
20 R01 MD10	20	10.5	M10	40	59	1	WPR 20 N	GWS 20	
25 R01 MD12	25	12.5	M12	45	67	1	WPR 25 N	GWS 25	



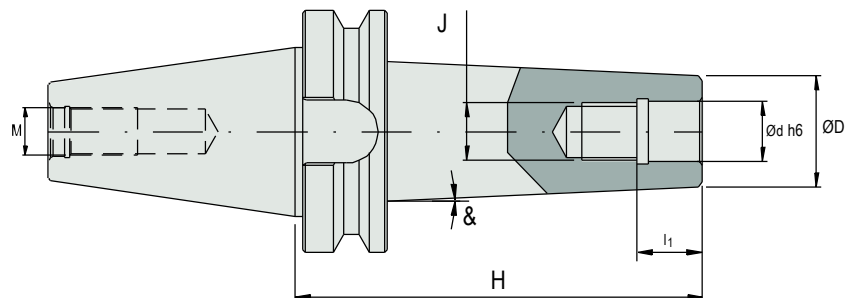
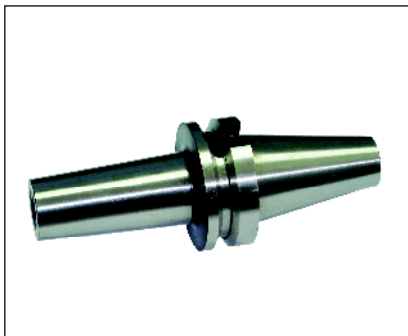
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : TKUF 16 R01 MD8



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						
	ØD	ØA	Ød H6	H	L	M	&
CW20 MDS8 40	14	8.5	20	40	90	M8	3°
CW20 MDS8 80	14	8.5	20	80	130	M8	1°
CW25 MDS8 40	14	8.5	25	40	96	M8	3°
CW25 MDS8 80	14	8.5	25	80	136	M8	1°
CW20 MDS10 40	18	10.5	20	40	90	M10	3°
CW20 MDS10 80	18	10.5	20	80	130	M10	1°
CW25 MDS10 40	18	10.5	25	40	96	M10	3°
CW25 MDS10 100	18	10.5	25	100	156	M10	1°
CW25 MDS12 50	22	12.5	25	50	106	M12	3°
CW25 MDS12 100	22	12.5	25	100	156	M12	1°
CW32 MDS12 50	22	12.5	32	50	110	M12	3°
CW32 MDS12 100	22	12.5	32	100	165	M12	1°
CW32 MDS16 50	28	17	32	50	110	M16	3°
CW32 MDS16 100	28	17	32	100	160	M16	1°
CW32 MDS16 150	28	17	32	150	210	M16	1°

Modüler Sistem Freze Tutucuları BT MAS - Form A
Milling - Toolholder , Arbor BT MAS - Form A
Fräsen - Werkzeughalter, BT MAS - Form A

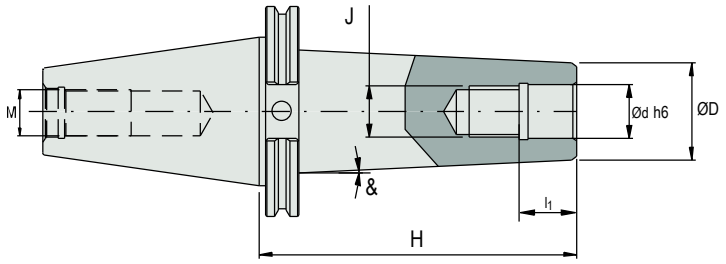
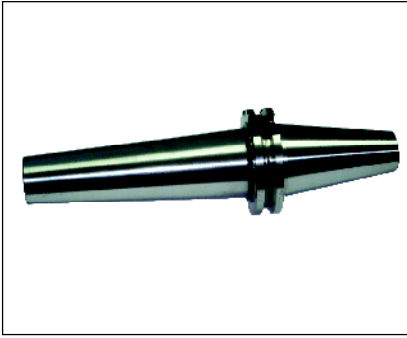


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen						
		ØD	Ød H6	H	l ₁	J	M	&
BT40	MDS8 80	14	8.5	80	6.5	M8	M16	1°
	MDS10 100	18	10.5	100	6.5	M10		
	MDS12 105	22	12.5	105	7	M12		
	MDS16 150	28	17	150	8	M16		
BT50	MDS8 80	14	8.5	80	6.5	M8	M24	
	MDS10 100	18	10.5	100	6.5	M10		
	MDS12 105	22	12.5	105	7	M12		
	MDS16 150	28	17	150	8	M16		

Modüler Sistem Freze Tutucuları (A.N.S.I) CAT - Form A

Milling - Toolholder , Arbor (A.N.S.I) CAT - Form A

Fräsen - Werkzeughalter, (A.N.S.I) CAT - Form A

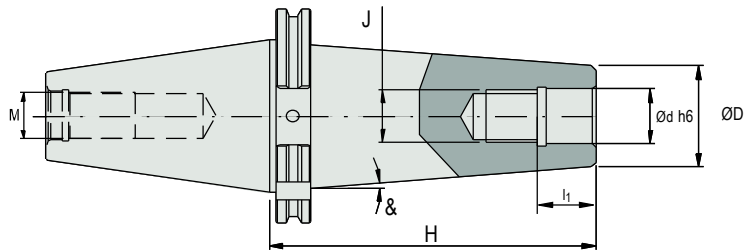
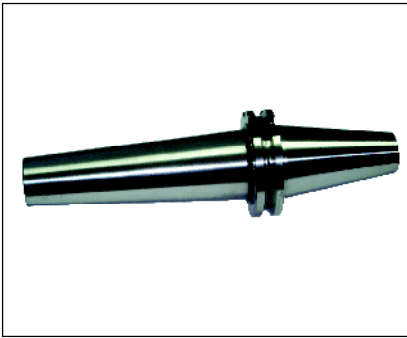


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						
	ØD	Ød H6	H	l1	J	M	&
CAT40	MDS8 80	14	8.5	80	6.5	M8	1°
	MDS10 100	18	10.5	100	6.5	M10	
	MDS12 105	22	12.5	105	7	M12	
	MDS16 150	28	17	150	8	M16	
CAT50	MDS8 80	14	8.5	80	6.5	M8	
	MDS10 100	18	10.5	100	6.5	M10	
	MDS12 105	22	12.5	105	7	M12	
	MDS16 150	28	17	150	8	M16	

Modüler Sistem Freze Tutucuları DIN 69871 - Form A

Milling - Toolholder , Arbor DIN 69871 - Form A

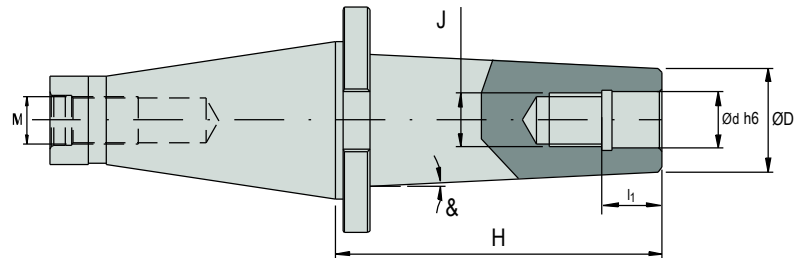
Fräsen - Werkzeughalter, DIN 69871 - Form A



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						
	ØD	Ød H6	H	l1	J	M	&
IT40	MDS8 80	14	8.5	80	6.5	M8	1°
	MDS10 100	18	10.5	100	6.5	M10	
	MDS12 105	22	12.5	105	7	M12	
	MDS16 150	28	17	150	8	M16	
IT50	MDS8 80	14	8.5	80	6.5	M8	
	MDS10 100	18	10.5	100	6.5	M10	
	MDS12 105	22	12.5	105	7	M12	
	MDS16 150	28	17	150	8	M16	

R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : IT40 MDS8 80



Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					
		ØD	Ød H6	H	l ₁	J	M
ISO40	MDS8 80	14	8.5	80	6.5	M8	M16
	MDS10 100	18	10.5	100	6.5	M10	
	MDS12 105	22	12.5	105	7	M12	
	MDS16 150	28	17	150	8	M16	
ISO50	MDS8 80	14	8.5	80	6.5	M8	M24
	MDS10 100	18	10.5	100	6.5	M10	
	MDS12 105	22	12.5	105	7	M12	
	MDS16 150	28	17	150	8	M16	

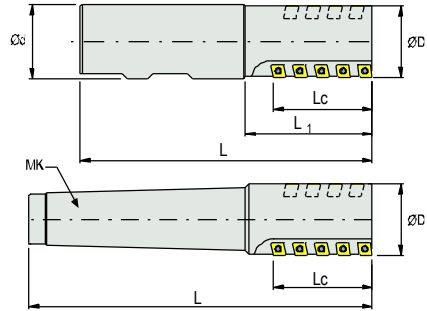
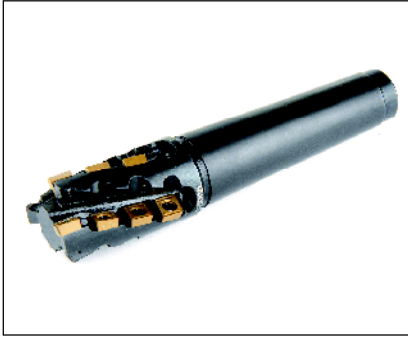
1°



Helis Freze

Milling - Helical Mill

Fräsen - Helikalen Fräsen

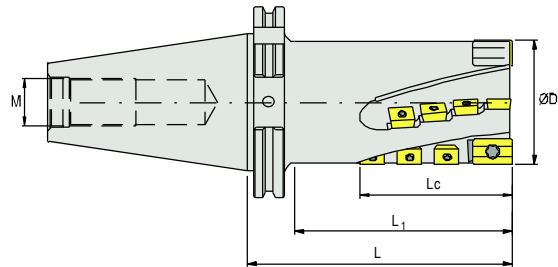
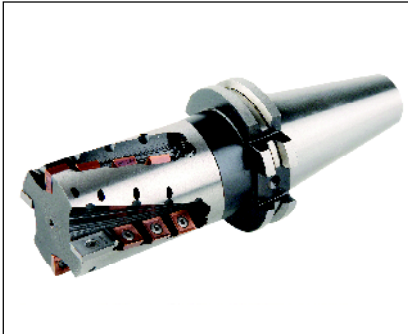


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						Z	Uç Sayısı Insert Number Plattenzahl	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
	ØD	Ød	L	L ₁	MK	Lc					
C144 20 R01 CW	20	20	90	45	—	25	2	5	CPMT 060304	7815101	T08 IP
20 R01 MK	20	—	90	45	2	25	2	5			
25 R02 CW	25	25	100	55	—	30	4	12			
25 R02 MK	25	—	100	55	3	30	4	12			
32 R02 CW	32	32	115	60	—	38	4	16			
32 R02 MK	32	—	115	60	4	38	4	16			
36 R02 CW	36	32	125	70	—	48	4	16	CPMT 09T304	7883209	T15 IP
36 R02 MK	36	—	125	70	4	48	4	16			
40 R02 CW	40	32	125	70	—	48	4	14			
40 R02 MK	40	—	125	70	4	48	4	14			

Helis Freze - DIN 69871 - Form A

Milling - Helical Mill-DIN 69871 - Form A

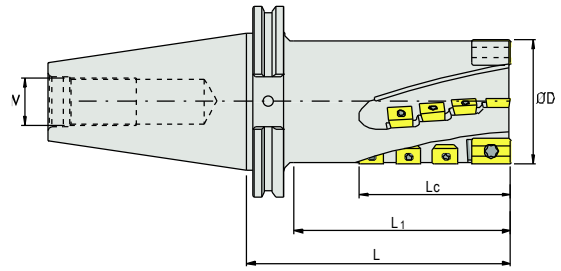
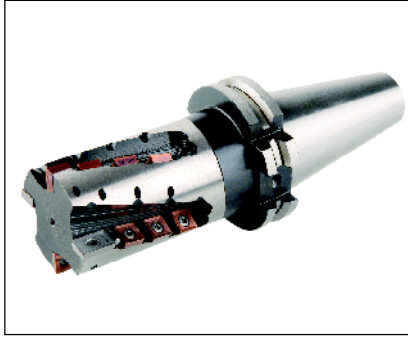
Fräsen - Helikalen Fräsen DIN 69871 - Form A



Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					 Z	Uç Sayısı Insert Number Plattenzahl	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
		ØD	M	L	L ₁	Lc					
C149	50 R02 IT40	50	M16	120	95	65	4	12	LPHT 200408 / SPMT 120408	7883202	T15 IP
	50 R02 IT50	50	M24	120	95	65	4	12			
	63 R02 IT40	63	M16	135	110	80	4	14			
	63 R02 IT50	63	M24	135	110	80	4	14			
	80 R03 IT50	80	M24	150	125	95	6	30			
	100 R04 IT50	100	M24	175	150	120	8	44			

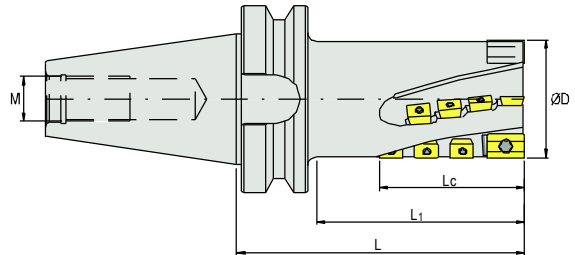
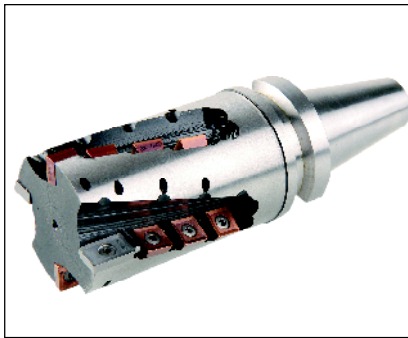
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : C 144 40 R02 CW



Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen						Uç Sayısı Insert Number Plattenzahl	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
		ØD	M	L	L ₁	L _c					
C149	50 R02 C40	50	M16	120	95	65	4	12	LPHT 200408 / SPMT 120408	7883202	T15 IP
	50 R02 C50	50	M24	120	95	65	4	12			
	63 R02 C40	63	M16	135	110	80	4	14			
	63 R02 C50	63	M24	135	110	80	4	14			
	80 R03 C50	80	M24	150	125	95	6	30			
	100 R04 C50	100	M24	175	150	120	8	44			

Helis Freze - BT MAS - Form A
Milling - Helical Mill - BT MAS - Form A
Fräsen - Helikalen Fräsen - BT MAS - Form A

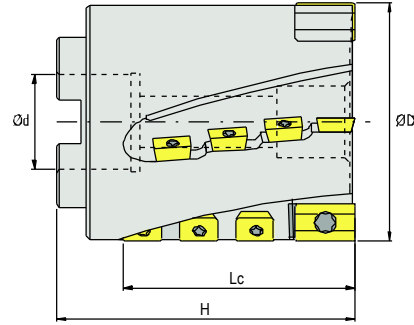
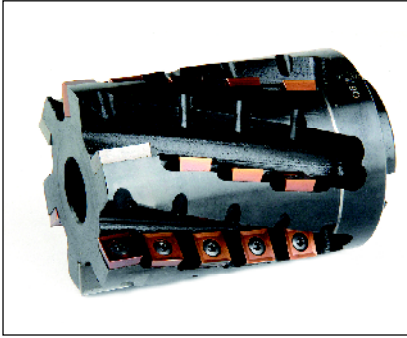


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					 Z	Uç Sayısı Insert Number Plattenzahl	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
		ØD	M	L	L ₁	L _c					
C149	50 R02 B40	50	M16	120	95	65	4	12	LPHT 200408 / SPMT 120408	7883202	T15 IP
	50 R02 B50	50	M24	130	95	65	4	12			
	63 R02 B40	63	M16	140	110	80	4	14			
	63 R02 B50	63	M24	145	110	80	4	14			
	80 R03 B50	80	M24	160	125	95	6	30			
	100 R04 B50	100	M24	180	150	120	8	44			

Helis Freze

Milling - Helical Mill

Fräsen - Helikalen Fräsen

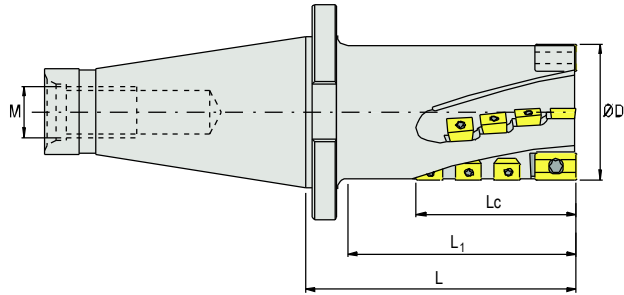
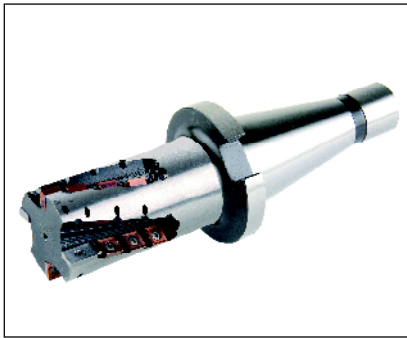


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				 Z	Uç Sayısı Insert Number Plattenzahl	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel	
	ØD	Ød	H	Lc						
C149	63 R02 M54	63	27	74	54	4	2/10	LPHT 200408/SPMT 120408	7883202	T15 IP
	80 R03 M80	80	32	100	80	6	3/21			
	100 R04 M90	100	40	110	90	8	4/48			
	125 R05 M100	125	50	120	100	10	5/58			

Helis Freze - DIN 2080 - Form A

Milling - Helical Mill - DIN 2080 - Form A

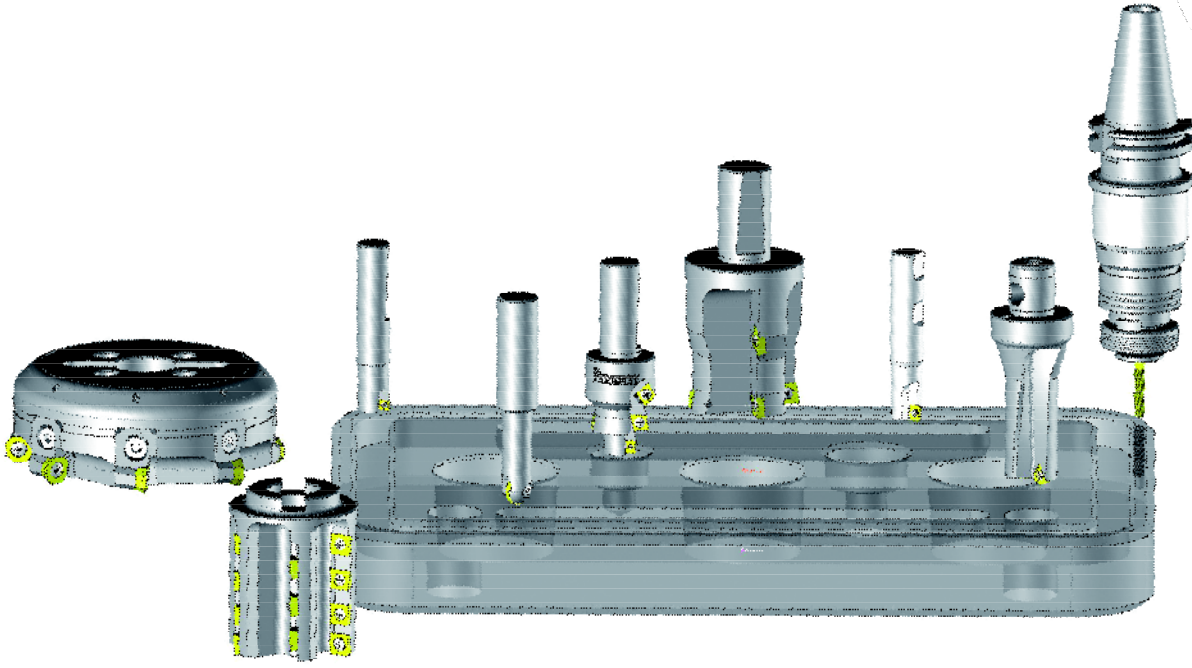
Fräsen - Helikalen Fräsen - DIN 2080 - Form A



Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					 Z	Uç Sayısı Insert Number Plattenzahl	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
		ØD	M	L	L ₁	Lc					
C149	50 R02 D40	50	M16	115	95	65	4	12	LPHT 200408 / SPMT 120408	7883202	T15 IP
	50 R02 D50	50	M24	115	95	65	4	12			
	63 R02 D40	63	M16	130	110	80	4	14			
	63 R02 D50	63	M24	130	110	80	4	14			
	80 R03 D50	80	M24	145	125	95	6	30			
	100 R04 D50	100	M24	170	150	120	8	44			
	125 R05 D50	125	M24	180	160	130	10	54			

R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : C 149 80 R03 M80



Problem \ Çözüm	Aşırı serbest yüzey aşınması	Aşırı krater aşınması	Talaş birikmesi (kaynaması)	Kesme kenarının ufak parçalar halinde kopması	Plastik deformasyon	Termal çatlaklar (kırıklar)	Kesme kenarının çentiklenmesi	Kötü iş parçası yüzeyi	İş parçasının küçük parçalar halinde kopması
Uç kalitesinin aşınma dayanımı	↑↑	↑↑			↑↑			↑↑	
Uç kalitesinin sünekliği				↑↑		↑↑			
Kesme hızı	↓↓	↓↓	↑↑	↑↑	↓↓			↑↑	
Diş başına ilerleme	↑↑	↓↓	↑↑	↓↓	↓↓				↓↓
Kesme derinliği			↓↓	↔				↔	↓↓
Yanaşma açısı			↔						↓↓
Kesme kenar pahi	↑↑				↑↑			↓↓	↓↓
Stabilite					↑↑			↑↑	
Soğutma		↑↑	↑↑					↔	

↑↑ : Yükseltin

↓↓ : Azaltın

↔ : Uygun hale getirin

Kesme hızı (m/dak)	$V_c = \frac{D_m \cdot \pi \cdot n}{1000}$
Tabla ilerleme hızı (mm/dak)	$V_f = f_z \cdot z \cdot n$
Ortalama talaş kalınlığı (mm)	$h_m = f_z \cdot \sqrt{\frac{a_e}{d_1}}$
Talaş hacmi (cm ³ /dak)	$v = \frac{a_p \cdot a_e \cdot V_f}{1000}$

a_p ... Kesme derinliği (mm)
 a_e ... Frezeleme genişliği (mm)
 f_z ... Uç (insert) başına ilerleme (mm/uç)
 d_1 ... Freze kafa çapı (mm)
 n ... Devir sayısı (dev/dak)

Problem / Option	Extreme flank wear Extremer Freiflankenverschleiß	Extreme crater wear Extremer Kolkverschleiß	Edge build up Aufbauschneidenbildung	Chipping of cutting edge Schneidkantenausbürste	Plastic deformation Plastische Verformung	Thermal crack Warmerisse	Notch wear Kerbsverschleiß	Poor workpiece surface Schlechte Werkstückoberfläche	Chipping of workpiece Chippen von Werkstück
Carbide wear resistance Verschleißfestigkeit	↑↑	↑↑			↑↑			↑↑	
Carbide toughness Zähigkeit				↑↑		↑↑			
Cutting speed Schnittgeschwindigkeit	↓↓	↓↓	↑↑	↑↑	↓↓			↑↑	
Feed per tooth Vorschub pro Zahn	↑↑	↓↓	↑↑	↓↓	↓↓				↓↓
Cutting depth Schnitttiefe			↓↓	↔				↔	↓↓
Lead angle Anstellwinkel			↔						↓↓
Cutting edge chamfer Platten-Eckenradius	↑↑				↑↑			↓↓	↓↓
Stability Stabilität					↑↑			↑↑	
Cooling Kühlung		↑↑	↑↑					↔	

↑↑ : Increase
: Erhöhen

↓↓ : Reduce
: Verkleinern

↔ : Optimize
: Optimieren

Cutting speed (m/min) Schnittgeschwindigkeit (m/min)	$V_c = \frac{D_m \cdot \pi \cdot n}{1000}$
Feed speed (mm/min) Vorschubgeschwindigkeit (mm/min)	$V_f = f_z \cdot z \cdot n$
Average chip thickness (mm) Mittlere Spandicke (mm)	$h_m = f_z \cdot \sqrt{\frac{a_e}{d_1}}$
Metal removal rate (cm ³ /min) Zerspanungsvolumen (cm ³ /min)	$v = \frac{a_p \cdot a_e \cdot V_f}{1000}$

a_p ... Cutting depth (mm)
Schnitttiefe (mm)

a_e ... Depth of cut (mm)
Frasenbreite (mm)

f_z ... Feed per tooth (mm)
Vorschub pro Zahn (mm)

d_1 ... Cutter diameter (mm)
Schnittdurchschnitt (mm)

n ... Revolution per minute (Rev/min)
Drehzahl pro Minute (Rev/min)

Değiştirilebilir Uçlu Matkaplar (U - delme) / Indexable Insert Drills (U - Drill)

Wendeplattenbohrer (U - Bohrer)



1.5 DHB

Sayfa / Page / Seite : 164



3 DHB

Sayfa / Page / Seite : 165

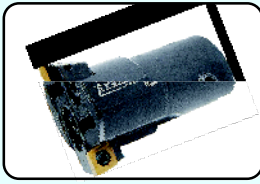


TKM

Sayfa / Page / Seite : 167

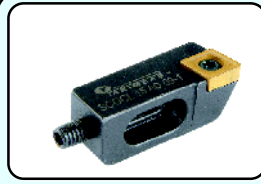
Ayarlı Delik İşleme Kafası ve Tutucuları / Rough Boring heads and Holder

Einstellbaren Klemmhalter Für Ausdrehköpfe



ADIK

Sayfa / Page / Seite : 178



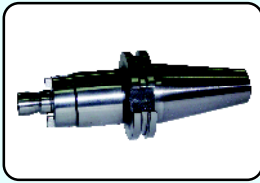
SCGCL / SCBCL

Sayfa / Page / Seite : 179



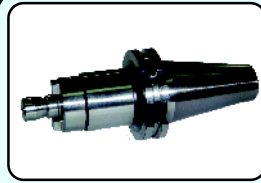
ADM TUTUCU BT MAS - Form A

Sayfa / Page / Seite : 180



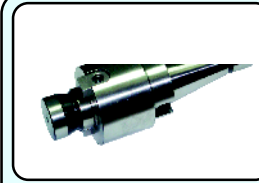
ADM TUTUCU (A.N.S.I) CAT - Form A

Sayfa / Page / Seite : 180



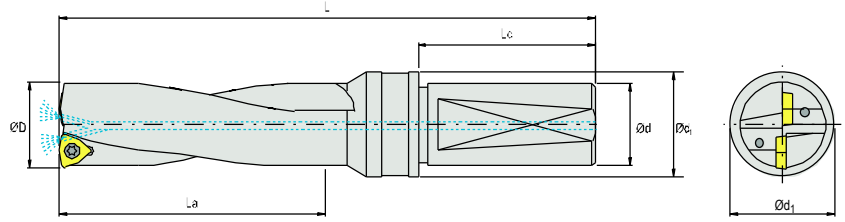
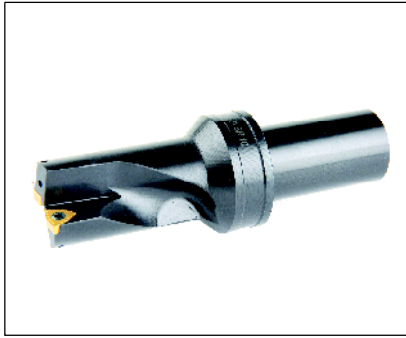
ADM TUTUCU DIN 69871 - Form A

Sayfa / Page / Seite : 181



ADM TUTUCU DIN 2080 - Form A

Sayfa / Page / Seite : 181

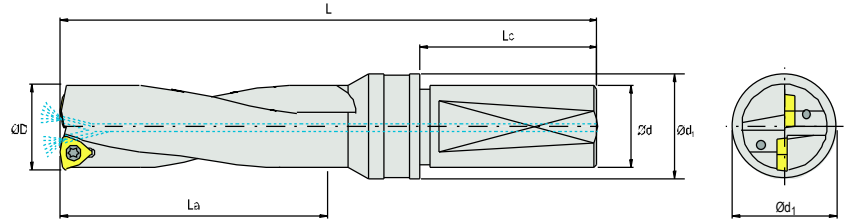


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen						Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
		ØD	Ød	Ød1	La	Lc	L			
1.5 DHB	200 25 R/L 10	20	25	32	34	54	115	WCMX 040204	7815101	T08 IP
	210 25 R/L 10	21	25	32	36	54	115			
	220 25 R/L 10	22	25	32	37	54	115			
	230 25 R/L 10	23	25	32	38	54	115			
	240 25 R/L 10	24	25	32	41	54	125	WCMX 050308	7883203	
	250 25 R/L 10	25	25	32	43	54	125			
	260 25 R/L 10	26	25	32	45	54	125			
	270 25 R/L 10	27	25	32	46	54	130			
	280 25 R/L 10	28	25	32	47	54	130			
290 25 R/L 10	29	25	32	49	54	130	WCMX 06T308	7883209	T15 IP	
300 32 R/L 10	30	32	49	49	58	140				
310 32 R/L 10	31	32	49	50	58	140				
320 32 R/L 10	32	32	49	55	58	145				
330 32 R/L 10	33	32	49	56	58	145				
340 32 R/L 10	34	32	49	58	58	145				
350 32 R/L 10	35	32	49	59	58	145				
360 32 R/L 10	36	32	49	59	58	150				
370 32 R/L 10	37	32	49	61	58	150				
380 32 R/L 10	38	32	49	62	58	150				
390 32 R/L 10	39	32	49	63	58	150				
400 32 R/L 10	40	32	49	65	58	150				
410 32 R/L 10	41	32	49	66	58	155				
420 32 R/L 10	42	32	49	68	58	155				
430 32 R/L 10	43	32	49	68	58	155				
440 32 R/L 10	44	32	49	72	58	155	WCMX 080412	7815102		
450 40 R/L 10	45	40	59	73	68	170				
460 40 R/L 10	46	40	59	74	68	170				
470 40 R/L 10	47	40	59	75	68	170				
480 40 R/L 10	48	40	59	78	68	180				
490 40 R/L 10	49	40	59	80	68	180				
500 40 R/L 10	50	40	59	82	68	180				
510 40 R/L 10	51	40	59	84	68	180				
520 40 R/L 10	52	40	59	86	68	180				
530 40 R/L 10	53	40	59	88	68	182				
540 40 R/L 10	54	40	59	89	68	182				
550 40 R/L 10	55	40	59	90	68	185				
560 40 R/L 10	56	40	59	91	68	185				

Değiştirilebilir Uçlu Matkaplar - 3 D

Indexable Insert Drill - 3 D

Wendeplattenbohrer - 3 D



Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen						Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel	
		ØD	Ød	Ød ₁	La	Lc	L				
3 DHB	200 25 R/L 10	20	25	32	63	54	138	WCMX 040204	7815101	T08 IP	
	210 25 R/L 10	21	25	32	64	54	138				
	220 25 R/L 10	22	25	32	69	54	138				
	230 25 R/L 10	23	25	32	70	54	138				
	240 25 R/L 10	24	25	32	75	54	150	WCMX 050308	7883203		
	250 25 R/L 10	25	25	32	77	54	150				
	260 25 R/L 10	26	25	32	82	54	150				
	270 25 R/L 10	27	25	32	85	54	150				
	280 25 R/L 10	28	25	32	88	54	160				
	290 25 R/L 10	29	25	32	91	54	160				
	300 32 R/L 10	30	32	49	92	58	160	WCMX 06T308	7883209	T15 IP	
	310 32 R/L 10	31	32	49	94	58	175				
	320 32 R/L 10	32	32	49	103	58	175				
	330 32 R/L 10	33	32	49	104	58	190				
	340 32 R/L 10	34	32	49	105	58	190				
	350 32 R/L 10	35	32	49	107	58	190				
	360 32 R/L 10	36	32	49	115	58	190				
	370 32 R/L 10	37	32	49	117	58	205				
	380 32 R/L 10	38	32	49	119	58	205				
	390 32 R/L 10	39	32	49	121	58	205				
	400 32 R/L 10	40	32	49	123	58	205				
	410 32 R/L 10	41	32	49	129	58	205				
	420 32 R/L 10	42	32	49	131	58	205				
	430 32 R/L 10	43	32	49	132	58	205				
	440 32 R/L 10	44	32	49	133	58	205				
	450 40 R/L 10	45	40	59	142	68	205				WCMX 080412
	460 40 R/L 10	46	40	59	143	68	225				
	470 40 R/L 10	47	40	59	144	68	225				
	480 40 R/L 10	48	40	59	151	68	225				
	490 40 R/L 10	49	40	59	153	68	240				
	500 40 R/L 10	50	40	59	155	68	240				
	510 40 R/L 10	51	40	59	157	68	240				
	520 40 R/L 10	52	40	59	159	68	240				
	530 40 R/L 10	53	40	59	161	68	240				
	540 40 R/L 10	54	40	59	162	68	240				
	550 40 R/L 10	55	40	59	163	68	242				
	560 40 R/L 10	56	40	59	163	68	242				

R : Sağ / Right / Rechte L : Sol / Left / Linke

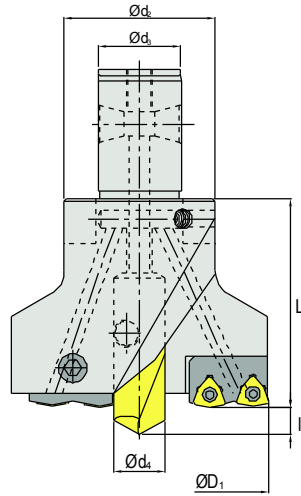
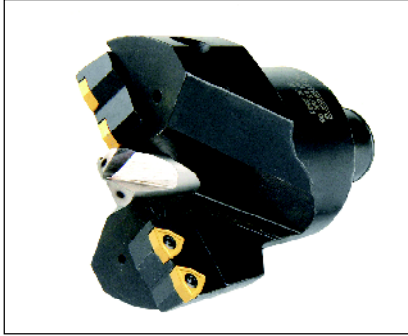
Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : 3 DHB 250 25 R10



Kılavuz Matkaplı Delme Kafası

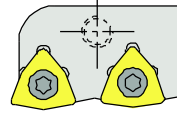
Drill Head with Pilot Drill

Zentrierbohrer



İç Kartuş
Interior Cartridges
Kurzklemmhalters Innere

for 2 inserts
für 2 kurzklemmhalters

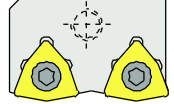


for 3 inserts
für 3 kurzklemmhalters



Dış Kartuş
Exterior Cartridges
Kurzklemmhalters Außere

for 2 inserts
für 2 kurzklemmhalters



for 3 inserts
für 3 kurzklemmhalters



ØD ₁	2 to 4 x ØD ₁	4 to 6 x ØD ₁	> 6 x ØD ₁
	L ₁	L ₁	L ₁
45 - 58	3.0	3.4	3.8
58 - 73	4.0	4.3	4.6
73 - 96	6.2	6.5	6.8
96 - 122	8.1	8.4	8.7
122 - 150	10.5	10.9	11.3

Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					Kartuş / Cartridge Kurzklemmhalten		Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel	
	ØD ₁	Ød ₂	Ød ₃	Ød ₄	L	İç Interior Innere	Dış Exterior Äußere				
TKM	45 AK 04	45	28	13	8	50	DIK 45 L	DIK 45 R	WCMX 040204	7815101	T 08 IP
	50 AK 04	50	28	13	8	50	DIK 50 L	DIK 50 R			
	55 AK 05	55	32	16	8	60	DIK 55 L	DIK 55 R	WCMX 050308	7883203	
	58 AK 05	58	32	16	10	60	DIK 58 L	DIK 58 R			
	63 AK 05	63	32	16	10	60	DIK 63 L	DIK 63 R			
	68 AK 05	68	40	22	10	70	DIK 68 L	DIK 68 R			
	73 AK 05	73	40	22	15	70	DIK 73 L	DIK 73 R			
	78 AK 05	78	40	22	15	70	DIK 78 L	DIK 78 R			
	84 AK 06	84	48	27	15	70	DIK 84 L	DIK 84 R	WCMX 06T308	7883209	T 15 IP
	90 AK 06	90	48	27	15	70	DIK 90 L	DIK 90 R			
	96 AK 06	96	58	32	20	80	DIK 96 L	DIK 96 R			
	102 AK 06	102	58	32	20	80	DIK 102 L	DIK 102 R			
	108 AK 06	108	58	32	20	80	DIK 108 L	DIK 108 R			
	115 AK 06	115	70	40	20	90	DIK 115 L	DIK 115 R			
	122 AK 06	122	70	40	25	90	DIK 122 L	DIK 122 R			
	130 AK 06	130	70	40	25	90	DIK 130 L	DIK 130 R			
	140 AK 06	140	80	50	25	100	DIK 140 L	DIK 140 R			
	150 AK 06	150	80	50	25	100	DIK 150 L	DIK 150 R			

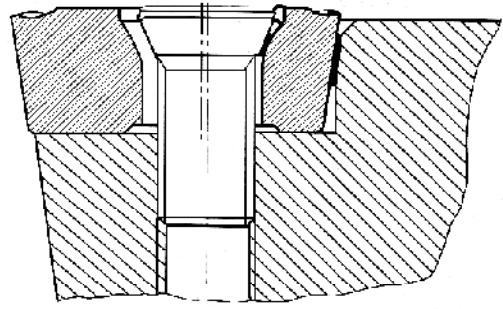
R : Sağ / Right / Rechte L : Sol / Left / Linke

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : TKM 84 AK 06



Emniyet Bilgileri

- Kesici takımın sabit tutulup işleme parçasının döndürüldüğü hallerde kesim sonunda keskin ve ince bir disk oluşabilecektir. Bir koruyucu MUHAFAZA tavsiye edilir.
- Eğer matkap dönüyor ve soğutma RİNGİ kullanılıyorsa soğutma RİNGİ'nin dönmesi önemlidir.
- Saçılan talaşlardan korunmak için koruyucu MUHAFAZA kullanılması önerilir.

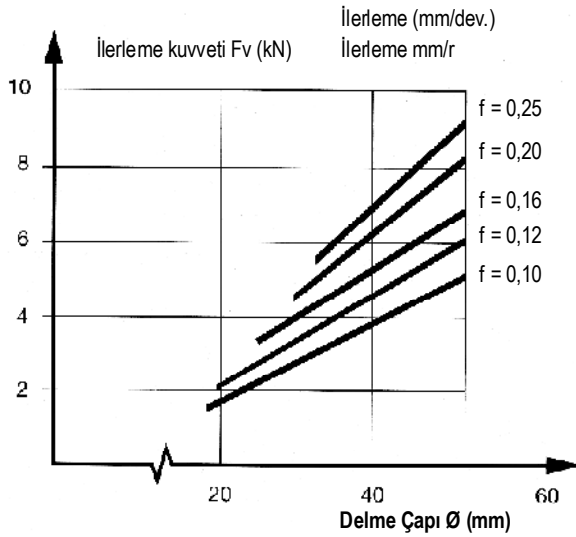


İlerleme Kuvveti

İlerleme kuvvetleri kesme hızları için belirlenmiştir.

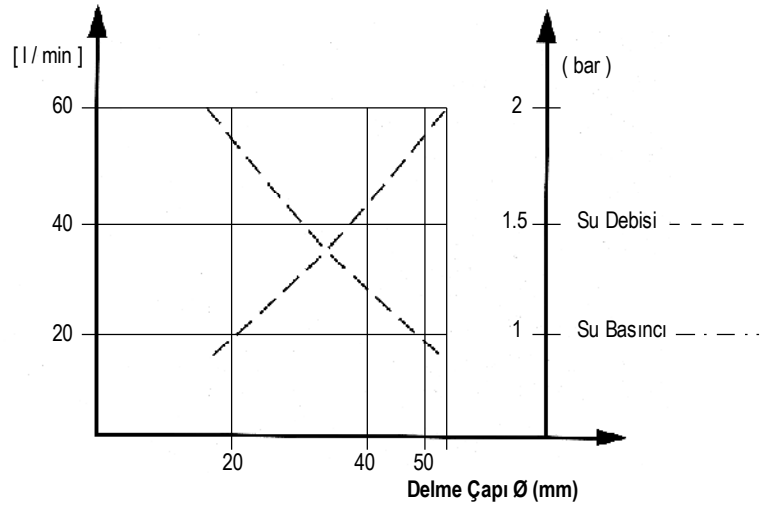
$v_c = 120$ m/dak.

Malzeme 900 N/mm²

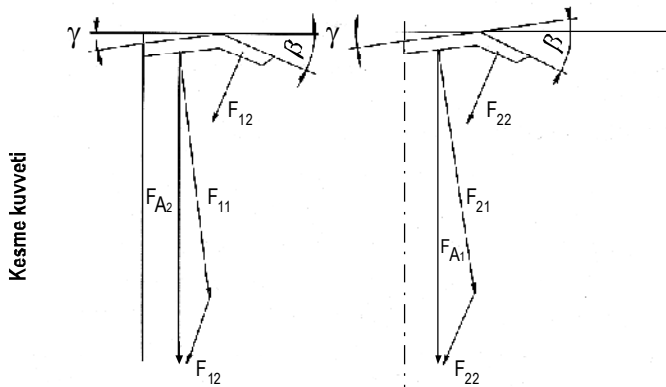


Su Besleme

Takım dönerken su basıncı normalin üzerinde olduğu zaman talaş takım üzerinden daha iyi akar.

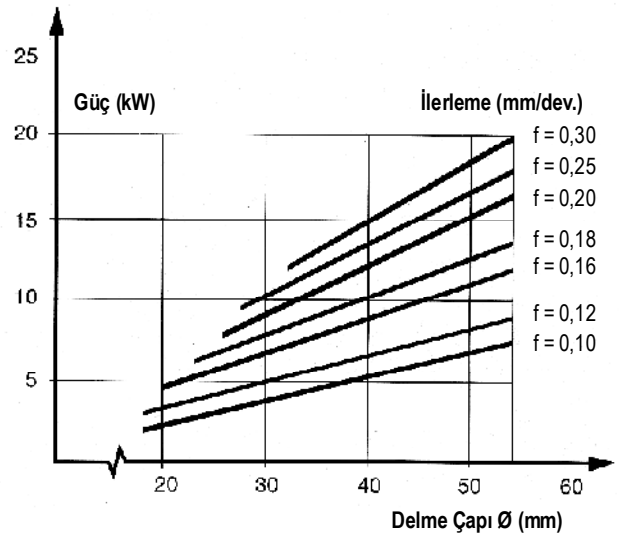


Kesme Kuvvetlerinin Dengelenmesi



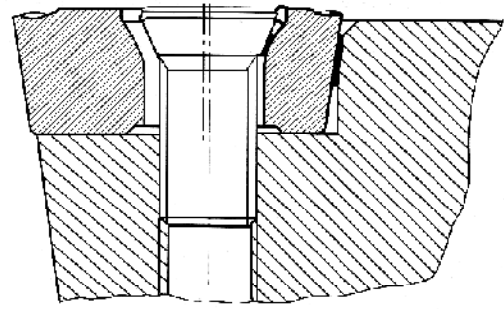
Bağlama sistemi

Takım üzerine Uçlar Takımsaş maxilock-S sistem vida ile basit ve iyi bir şekilde bağlanır.



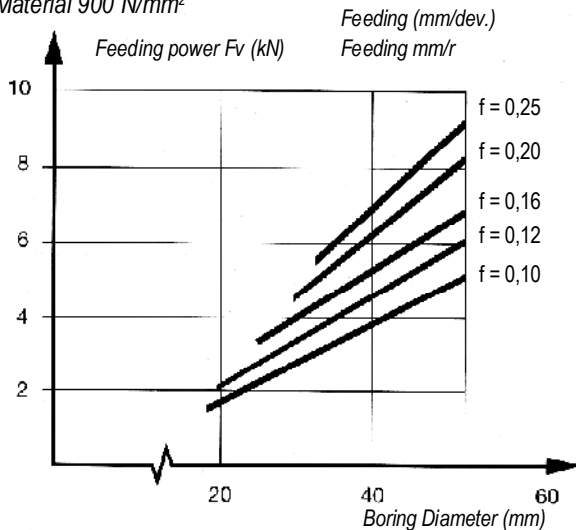
Security Information

- At the end of cutting process and in the case of cutting tool being stabilized, process material being rotated, a sharp and thin disc occurs. A protective cover is recommended.
 - If the drill rotates by using cooler RING, rotation of RING is important.
 - Using protective cover is recommended to prevent any damage of scattered stones.
- Am Ende der Schneidvorgang tritt eine scharfe und dünne Scheibe auf, indem Schneidwerkzeug stabilisiert wird, wobei das Material gedreht wird. Eine Schutzabdeckung wird empfohlen.
- Wenn der Bohrer durch Kühler Ring dreht, ist die Drehung des RING wichtig.
- Die Schutzabdeckung wird empfohlen, um Schaden vom verstreuten Span zu verhindern.



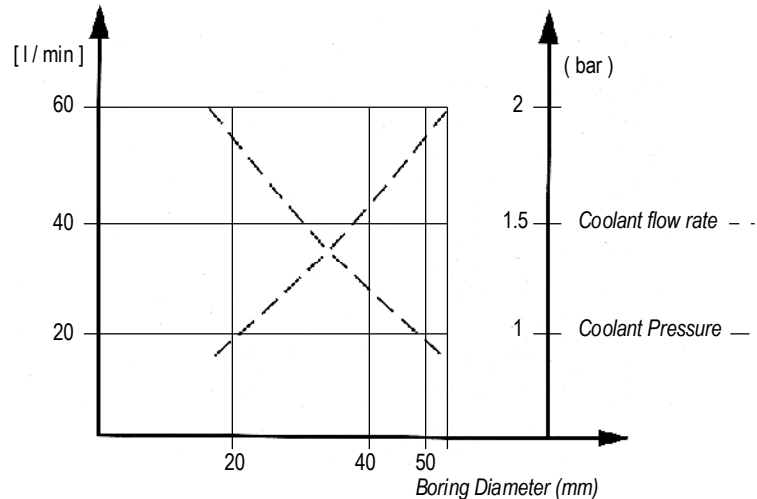
Feeding Power / Vorschubkraft:

Feeding Power has been determined for cutting speed
 Vorschubkräfte wurden für die Schnittgeschwindigkeiten ermittelt.
 $v_c = 120 \text{ m/dak}$
 Material 900 N/mm²

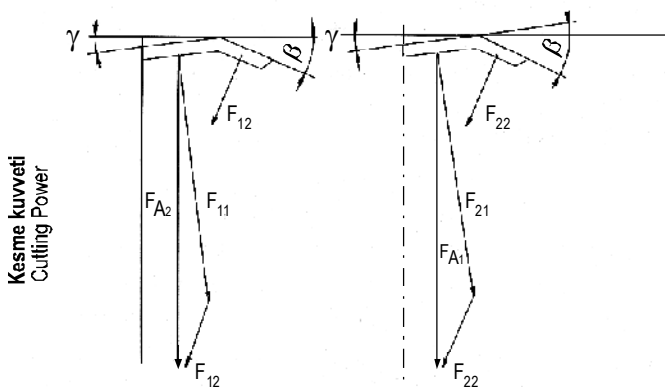


Water Supply / Wasserleitung:

Chips can flow over rotating tool easily if water pressure is more than standard. Mostly, Water pressure from water supply to tool is adequate.
 Der Span kann über den drehenden Werkzeug einfacher fließen, wenn der Wasserdruck höher als dem Standard-Druck.



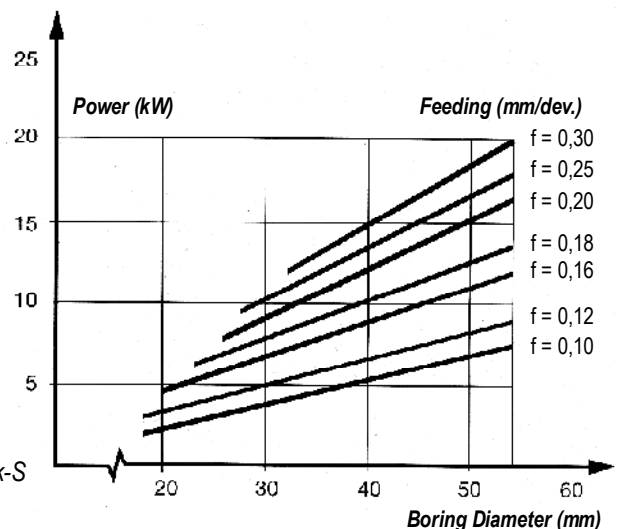
Balance of Cutting Powers / Die Balance der Vorschubkräfte:



Clamping System / Klemmsystem:

Inserts can be connected on the tools perfectly by simply Takımsaş maxilock-S system screw.

Die Platten können an Werkzeugen durch Takımsaş maxilock-S Schraubensystem perfekt verbunden werden.



Mekanik Şartlar;

Değiştirilebilir uçlu matkapların, amaca uygun kullanıldıkları zaman, oldukça avantajlı ve etkili takımlar olduklarını görebiliriz. Kullanım esnasında mekanik şartların var olması ve hatta tam olarak olması gerekmektedir.

- Kesme hızları kullanılan ucun kalitesi için uygun olmalıdır.
- Fener milinin, ucun gerektirdiği şartlar için yeterli olması gereklidir (1000N/mm²'den daha yukarı mukavemetteki çelikler için). Fener milinin delinecek delik çapı için, yeterli motor gücüne sahip olması gereklidir.
- Delinecek iş parçası tezgah tablasına rijit olarak bağlanmalıdır. Tezgah ve bağlanan iş parçasında, vibrasyon olmamalıdır.
- Takımın ilerlemesi uygun seçilmelidir.
- Soğutma sıvısı ve yağ, yeterli basınç ve debiye sahip olmalıdır.
- Delme esnasında emniyet tedbirlerinin tam olarak alınması gereklidir.

İşlenecek parça malzemesi

Kesme işlemi sırasında, talaş formu açısından, kısa talaş açığa çıkaran malzemeler ile uzun talaş açığa çıkaran malzemeler arasında gözle görülür farklılıklar vardır. Talaşın uygun bir şekilde atılmasında; kısa talaş açığa çıkaran malzemelerin, uzun talaş açığa çıkaran malzemelere göre daha az problemli oldukları görülür. Bütün çelik çeşitleri ve demir içermeyen (non-ferrous) malzemeler işleme anında uzun talaş açığa çıkarırlar.

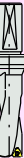
Delinecek malzemeler için kullanılacak ucun, talaş kırıcı formunun ideal bir şekilde seçilmiş olması ve buna göre kesme şartlarının uygulanmış olması durumunda, tüm çelik çeşitleri ve demir içermeyen (non-ferrous) malzemelerde başarılı sonuç alınabilir. Değiştirilebilir uç olarak WCMK-WCMT ve benzeri uçlarla iyi sonuç alınabilir.

Genel olarak, kesme kenarları ekstra yuvarlatılmış olan uçlar tercih edilmelidir (ISO'ya göre S tipi). Bununla beraber, bütün çelik ve döküm çeşitlerinde; MOLIBDEN TZM, hafif metaller ve demir içermeyen (non-ferrous) metallerde kullanılan uçlar ise (ISO'ya göre F tipi) keskin kenarlı olanlardır ve uygulamada daha iyi sonuç verirler.

Kesmede ideal olan kısa talaşı elde etmek, malzemenin cinsine, ucun kalitesine ve kesme şartlarına bağlıdır.

Uç seçimi

İdeal şartlarda kesmeyi sağlamak için, işlenecek parça ile seçilen uç arasında iyi bir eşleşme olmalıdır; bunun için WXM-WCMT ve benzeri uçlar uygundur. Yüksek kesme hızları için çok katlı kaplama yapılmış uçlar tavsiye edilir (örnek : TiC, Ti(C,N), TiN-P35 ve Al₂O₃ P15/K15). Düşük kesme hızları için kaplamasız uçlar (P25, P35, K15) tavsiye edilir. Kaplamalı ve kaplamasız kalitelerde (P25-P35) kesme kenarları yuvarlatılmış veya negatif pah olabilir. Kısa talaş açığa çıkaran malzemelerde (döküm) kullanılan K20 ve K30 tipi uçların kesme kenarları ise keskindir (F). Delme esnasındaki kesme hızı, kesici uç radiusuna uygun olursa (dış çapa), merkezde kesme yapan ucun o çaptaki kesme hızı (V_c = 0) sıfır olur. Merkezdeki kesme hızının düşük olması (V_c), merkezdeki ucun dışarıdaki uca göre daha fazla yüke maruz kalmasına sebep olur. Darbeli kesmelerde talaş merkezdeki ucun üzerine yapışır ve ucun üzerine gelen basıncın artmasına neden olur. Bu yüzden, merkezdeki ucu aşınmaya karşı değil, kırılmaya karşı daha dayanıklı seçmemiz gerekir, örneğin P30-P40 gibi.



Mechanical Conditions

When the drills having indexable insert are used on exactly relevant process, we can get all advantages and efficiency of modern technology. During process, mechanical conditions must be convenient.

- *Cutting speeds must be compatible with the insert quality*
- *Tool spindle must be adequate for cutting conditions (for the steels having resistance higher than 1000N/mm²). Tool spindle must have adequate engine power.*
- *The work piece to be drilled must be fixed to the workbench tightly to prevent vibration.*
- *Feeding must be chosen appropriately.*
- *Cooling water and lubricant must have adequate pressure and flow rate during process.*
- *During process all safety precautions must be applied exactly.*

The Work Piece Material

During process, we can observe reasonable differences between the chips arising from materials in terms of chip form. For easy chip removing, the materials having short shaped chips have less problems than the materials having long shaped chips. All steel qualities and nonferrous materials form long chips.

When the chip breaker is chosen properly for the material and cutting condition the application is perfect and successful for especially steel and nonferrous materials. The most suitable insert type is WCMX-WCMT or similars.

In general we prefer inserts having rounded cutting edges (type S according to ISO). However the best results for steels, cast iron, MOLIBDEN TZM, light and nonferrous metals can be achieved using inserts having sharp cutting edge, type F in ISO.

To achive short chips that is preferable depends to the material, insert quality and cutting conditions.

Choosing Insert

There should be a good corrolation between the insert and material to be machined for ideal cutting; for this, WCMX-WCMT and similar type of inserts are suitable. The inserts having multiple layer coating are recommended for higher level cutting speeds (e.g. TiC, Ti(cn), TiN-P35 and AIO3P15/K15). The inserts without coating are recommended for low level cutting speeds (e.g. P25, P35 and K15). Both inserts coated or un-coated (P25-P35) may have cutting edges rounded or chamfered negatively. The inserts used for some casted materials producing short chips like K20 and K30 have sharp cutting edges (F). While drilling, if the cutting speed is properly chosen for the insert radius (external diameter), the cutting speed of the insert on the center is $V_c = 0$ according to the diameter. Lower cutting speed of the central insert results in higher pressure and load on the outer insert. Especially while intermittent cutting, chips stack on central insert and causes excess pressure on the insert. So, inserts on the center must be chosen as resistant to breaking not resistant to wear.

Mechanische Bedingen:

Wenn Wendeplattenbohrer werden auf genau entsprechendes Prozess verwendet, kann man alle Vorteile und Leistungsfahigkeitn bekommen. Während des Prozess müssen die mechanischen Bedingungen zweckmäßig sein.

- Die Schnittgeschwindigkeit muss vereinbar mit der Qualität sein.
- Die Werkzeugspindel muss angemessen für die Schnittbedingungen sein. (für Stahl mit Widerstand hoher als 1000 N/mm²) Die Spindel muss einen angemessenen Motorkraft haben.
- Das Werkstück, das gebohrt wird, muss ganz fest an der Bohrentisch befestigt werden, um die Vibration zu verhindern.
- Der Vorschub muss angemessen gewählt werden.
- Das Kühlwasser und Schmiermittel müssen ausreichenden Druck und Durchfluss haben.
- Während des Prozess müssen alle Sicherheitsvorkehrungen genau angewendet werden.

Das Werkstückmaterial

Während des Vorgans können wir vernünftige Unterschiede zwischen den Span aus Werkstoffe in Bezug auf die Spanform beobachten. Werkstoffe, die kurze Spanform haben, wenige Probleme als Werkstoffe mit der langen Spanform bei der Entfernung vom Span. Alle Stahllarten und Nichteisenmetalle haben lange Spanform.

Wenn die Spanformrille wird korrekt für das Material und die Schneidbedingungen gewählt, ist die Anwendung perfekt und erfolgreich besonders für Stahl und Nichteisenmetalle. Die am besten geeignete Art der Wendeplatte ist WCMX-WCMT oder die ähnlichen. Im Allgemeinen bevorzugen wir die Platten mit der abgerundeten Schnittkanten. (Typ S nach ISO-Standard). Allerdings erreicht man das beste Ergebnis für den Stahl, Gusseisen, Molybdan TZM und Leichtmetall, indem die Platten mit der scharfen Schnittkanten benutzt werden.

Wendeplatte wahlen:

Für den optimalen Schnitt soll es eine gute Zusammenhang zwischen der Platte und dem Material, die bearbeitet werden. Dafür passt das Plattentyp WCMX-WCMT oder die ähnlichen. Die mehrfach beschichtete Platten werden für die hohe Schnittgeschwindigkeiten empfohlen. (z.B TiC, Ti(cn), TiN-P35 und AIO3P15/K15). Die nicht geschichtete Platten ist geeignet für die niedrige Schnittgeschwindigkeiten . (z.B.P25, P35 und K15). Die beide Platten , beschichtet oder nicht beschichtet haben runden und negativ Geschwindigkeit der Platte in der Mitte $V_c=0$ je nach dem Durchmesser. Die niedrige abgeschrägten Schnittkanten . Die Platten (K20- K30), die für kurz Spanform produzierte Materialien geeignet wird, haben scharfen Schnittkanten. Wenn die Schnittgeschwindigkeit ist korrekt für den Plattendurchmesser beim Bohren gewählt wird, ist die Geschwindigkeit der zentralen Platte führt zu einem höheren Druck an der äußeren Platte. Besonders stapelt der Span auf die zentrale Platte und das verursacht einen Überdruck auf der Platte. Also die zentralen Platten sollen je nach dem Gegenstand gegen Bruch gewählt werden; nicht gegen Verschleiß.

Kesme değerleri**Kesme değerlerinin optimizasyonu**

Genel olarak, ilerleme arttırıldığı zaman kısa talaş elde edilir. Diğer taraftan ilerleme sabit tutulup kesme hızı arttırıldığı zaman daha uzun talaş elde edilir ki, bu da tavsiye edilmez. Daima kısa talaş açığa çıkaracak kesme şartları oluşturulmalıdır.

Soğutma Sıvısı

Talaşın dışarıya kolay atılabilmesi için kesme sıvısı ve yağ veya basınçlı hava kullanılır. Özellikle derin deliklerde (>1x nominal çap) veya matkabın dik olarak kullanılması durumunda talaş kanallarının tıkanmasına meydan vermemek için, çıkan talaşın kısa ve küçük, kesme sıvısının basınç ve debisinin yeterli olmasına dikkat etmeliyiz. Soğutma sıvısı ve yağ veya basınçlı hava, kesme esnasında delik içerisinde oluşan ısıyı önler, bu da kesici ucun ömrünü artırır, talaşın uygun şekilde kırılmasına ve gerekli ölçünün daha düzgün elde edilmesine yardımcı olur.

Takım ömrünü etkileyen faktörler

Kesme kenarının aşınması takım ömrü için önemli göstergedir. Müsaade edilen oran kesici ucun kalınlığının 1/10'udur. İdeal kesme şartlarında, delinecek parçanın malzemesine bağlı olarak, kesme kenarı başına ortalama 8000 mm'lik delme uzunluğu sağlanabilir (Yaklaşık 1000 N/mm²).

Kesme kuvvetleri, kesici ucun kesme kenarının aşınmasıyla artar ve bu yüzden takım veya makineye ekstra yükler biner. Eğer kesme kuvvetini otomatik olarak denetleyen bir sistem yok ise, kesme kenarının aşınmasını mutlaka düzenli olarak kontrol etmeliyiz. Aşırı aşınma sonucu kesici ucun üzerine ağır yükler geliyor ise, kesici uç kırılır ve takım büyük zararlar görebilir; hatta kullanamaz hale gelebilir.

Kesici uç değiştirirken, uç yuvasının temiz olmasına ve kesici uç kenarında yapışmış talaş ve herhangi bir kırık olmadığına dikkat etmeliyiz, aksi takdirde elde edilecek delik çapı nominal delik çapından daha küçük olur.

Delik delme

Değiştirilebilir uçlu matkap döndürülerek, işlenecek parça sabitken yatay veya dikey delme işlemi yapılabilir. İşlenecek parça dönerken ve takım sabitken delme ekseninin sapma ihtimali vardır, bu durumda nominal çapa göre eksen düzeltilerek uygun delik elde edilir. Aksi takdirde delik küçük veya büyük çıkacağı gibi, takım da zarar görebilir.

Değiştirilebilir uçlu matkap ile delme yapılırken delinecek malzemenin yüzeyi düzgün değilse, ilerleme hızı ona göre hesaplanmalıdır. Kavisli (iç bükey / dış bükey) yüzeyler delinirken ilk temasta dıştaki veya merkezdeki uçlardan sadece bir tanesi kesme yapar. Bu durumda radyal kuvvetler dengelenemez. İç bükey ve dış bükey yüzeylerde delme işlemi yaparken tam temas (her iki uçtan) sağlanıncaya kadar ilerleme yarıya düşürülür ve tam temas (her iki uç) sağlanınca ilerleme tam olarak uygulanır.



Cutting Values

Generally, increasing feeding results in short chips. On the other side, if you keep feeding speed constant while cutting speed is increasing, you get long chips that is not recommended. Always it should be provided cutting condition as to produce short chips.

Coolant

In several cases, a convenient mixture of water and oil emission or air pressure are used to flow chips out easily. It should be taken care of that the chips arised is short and the pressure/flow rate of the coolant is convenient to prevent blockage along chip channels while especially deep drilling ($>1 \times$ nominal diameter) or vertical drilling. Water/oil mixture or air pressure for cooling prevent chips accumulation in drilling hole and keeps the heat stable during cutting process, whereupon it increases the life time of the insert, enables correct dimensioning and broken chips conveniently.

Factors Effecting Tool Life

Wear on cutting edges is an impotant indicator for tool life. Permitted ratio for wear indication is 1/10 of the insert thickness. Under the ideal cutting conditions, it can be drilled 8000 mm of length in average depending upon the material specifications (approximately 1000 N/mm²).

Cutting forces increase as the wear on cutting edges increase, this causes extra loads on the machine and the tools. If there is not any system to control cutting forces, wear on cutting edges must be checked regularly. If over load occurs on the insert as a result of wearing, the insert will be possibly broken and the tool also will be damaged.

As an addition, while changing the insert, the insert seat must be clean and there must not be any chip stacked on the insert edge and must not be any broken part. Otherwise, the drilled diameter can be smaller than the nominal hole diameter.

Drilling

Drilling can be done vertically and horizontally while the part is stabilized and the drill hold fixed on the toolholder is rotating. When there is probability of deviation, in this condition, according to the nominal diameter, a convenient running can be got by correcting the position of axis. Otherwise decisive hole diameter can be smaller or larger than the needed one and tool can be damaged.

During drilling the feeding speed must be chosen according to the surface quality.

While drilling thru concave or convex surfaces, in the first contact, only one insert touches the surface, outer or inner. In this situation, radial forces can not be balanced. When drilling thru concave or convex surfaces, feeding speed should be chosen as half of that should be up to full contact then adjusted to normal level.

Schnittwerte

In der Regel ergibt die Erhöhung des Vorschubs kurze Spanform. Wenn man andererseits die Vorschubgeschwindigkeit konstant haltet, bekommt man lange Spanform, während die Schnittgeschwindigkeit erhöht wird. Man soll immer die Schnittbedingungen so feststellen, dass kurze Spanform hergestellt wird.

praktische Mischung von Wasser und Öl oder Druckluft verwendet, damit der Span leicht entfernt wird. Man soll darauf achten, dass die Spanform kurz entstanden wird und dass Druck/Fluss Rate der Kühlmittel zweckmäßig.

Kühlmittel

In mehreren Fällen wird eine ist, um die Verstopfung zu verhindern, besonders während des Tieflochbohrns und vertikalen Bohrens. Wasser / Öl Mischung oder die Druckluft für die Abkühlung verhindert die Ansammlung des Spans im Bohrloch und haltet die Hitze stabil beim Bohren.

Faktoren für Werkzeugstand

Der Verschleiß an der Schneidkanten ist eine wichtige Angabe für die Standzeit. Das zullasigeVerhältnis vom Verschleiß ist 10 % von der Plattendicke. Under idealen Schnittbedingungen kann man durchschnittdie Länge von 8000 mm je nach Werkstoff-Spezifikationen bohren. (ca. 1000 N/m²)

Die Schnittkräfte wird vergrößert, da der Verschleiß an der Schnittkanten vergrößert wird und es verursacht zusätzliche Belastungen auf de Maschine und dem Werkzeug. Wenn es kein Kontrikksystem für die Schnittkräfte gibt, muss der Verschleiß an der Schnittkanten regelmäßig überprüft werden. Wenn die Platte als Folge von dem Verschleiß überlastet, wird sie möglicherweise gebrochen und so wird auch das Werkzeug beschädigt.

Beim Wechsel der Platte muss der Plattensitz gereinigt sein und kein Span oder gebrochene Teile müssen sich an der Spankante befinden. Sonst kann der gebohrte Durchmesser kleiner als den nominalen Durchmesser.

Bohren

Man kann das Mateial vertikal und horizontal bohren während der Werkstoff stabil ist und der am Halter festge Bohrer gedreht wird. Wenn es eine Möglichkeit der Abweichung vom nominalen Durchmesser gibt, muss man die Position der Achse korrigieren. Sonst kann der entschiedene Bohrungsdurchmesser kleiner oder größer als die benötigte sein. So kann das Werkzeug beschädigt werden.

Beim Bohren soll dieVorschubgeschwindigkeit nach der Qualität der Oberfläche gewählt werden. Während des Bohrens der konkaven oder konvexen Oberfläche berührt nur eine Platte auf die Oberfläche-die Innere oder Äußere. In diesem Fall können die radialen Krafte nicht ausgeglichen werden. So soll man die Vorschubgeschwindigkeit um die Halfte reduzieren, bis der vollständige Kontakt entstanden wird. Dann kann man die vole Vorschubgeschwindigkeit verwenden.

Delinecek yüzey örnekleri

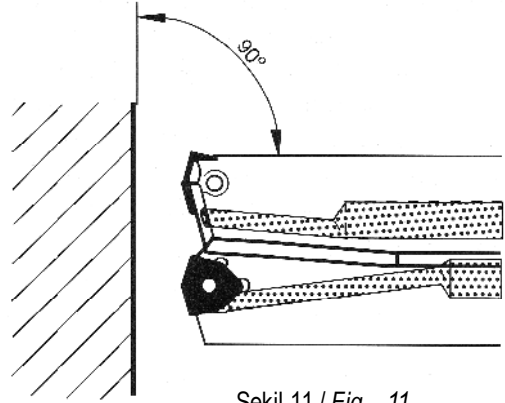
Drilling processes for different surfaces

Bohrer fahren für verschieden Oberflächen

Şekil 11 ' deki gibi takımın düz bir yüzeye girişi en ideal olanıdır.

As in figure 11, the ideal entering position to drill is thru flat surface.

Wie in der Abbildung 11 zu sehen, wird das ideale Bohren auf der ebenen Oberfläche verwendet.

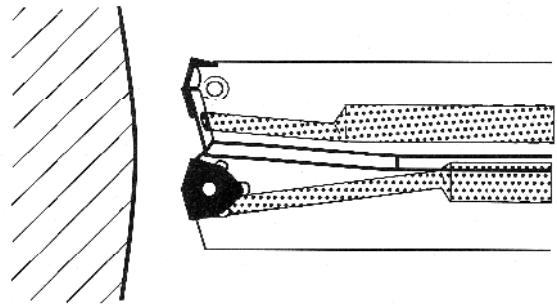


Şekil-11 / Fig. - 11

Şekil 12 'deki gibi dış bükey yüzeye delme yapılırken, önce merkezdeki uç malzemeye temas eder. Tam temas sağlanıncaya kadar ilerleme hızı olması gereken değerin yarısı alınmalıdır.

As in figure 12, while drilling thru convex surface the insert at the center touches first. The feeding speed should be kept half of that should be up to full contact.

Wie in der Abbildung 12 zu sehen, berührt erst die mittlere Wendeplatte die Oberfläche beim konvexen Bohren. Die Vorschubgeschwindigkeit soll um die Hälfte bis zum vollständigen Kontakt reduziert werden.

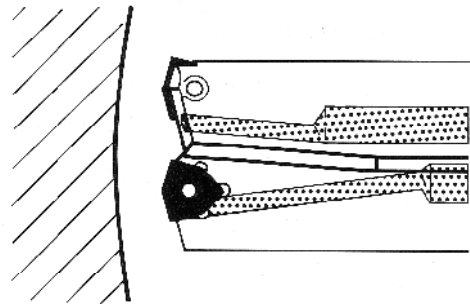


Şekil-12 / Fig. - 12

Şekil 13 ' deki gibi iç bükey yüzeye delme yapılırken, önce dıştaki uç malzemeye temas eder. Tam temas sağlanıncaya kadar ilerleme hızı olması gereken değerin yarısı alınmalıdır. Aksi taktirde, uca gelen yükün artmasından dolayı uç ve uç yuvası zarar görebilir.

As in figure 13, while drilling thru concave surface the outer insert touches first. The feeding speed should be half of that should be up to full contact. Otherwise the insert and the seat may be damaged by overload on the insert.

Wie in der Abbildung 13 zu sehen, berührt erst die äußere Wendeplatte die Oberfläche beim konkaven Bohren. Die Vorschubgeschwindigkeit soll um die Hälfte bis zum vollständigen Kontakt reduziert werden. Sonst kann die Wendeplatte wegen der Überlastung beschädigt werden.

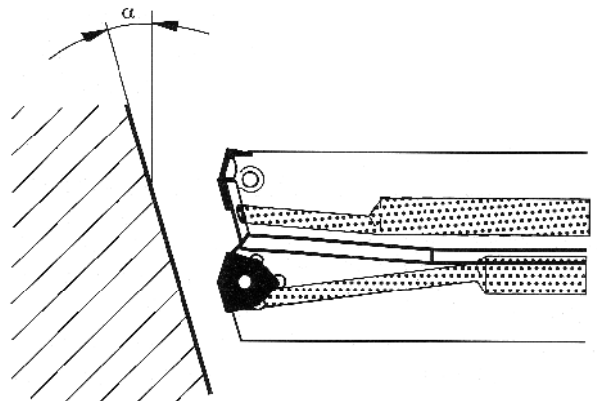


Şekil-13 / Fig. - 13

Şekil 14 ' deki gibi eğimli yüzeye delme yapılırken, önce dıştaki uç malzemeye temas eder. Tam temas sağlanıncaya kadar ilerleme hızı olması gereken değerin yarısı alınmalıdır.

As in figure 14, while drilling thru inclined surface the outer insert touches first. The feeding speed should be half of that should be up to full contact.

Wie in der Abbildung 14 zu sehen, erst die äußere Wendeplatte die Oberfläche beim geneigte Bohren. Die Vorschubgeschwindigkeit soll um die Hälfte bis zum vollständigen Kontakt reduziert werden.

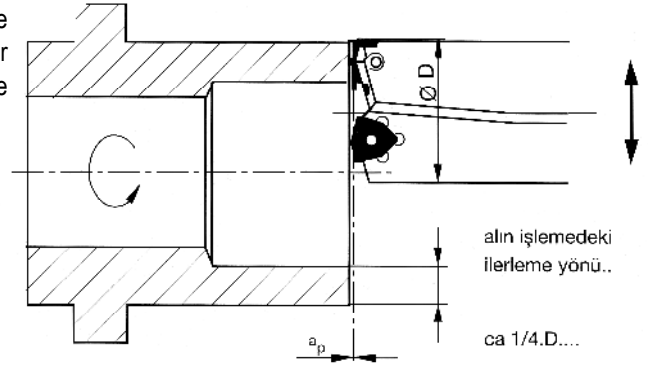


Şekil-14 / Fig. - 14

Alın yüzey işleme

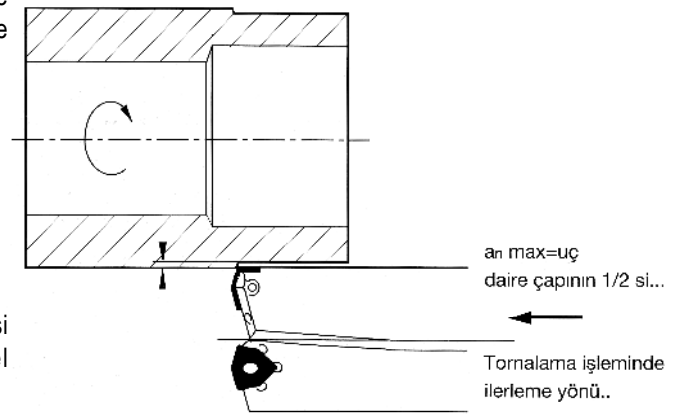
Değiştirilebilir uçlu matkaplar belirli limitler dahilinde yüzey işleme işlemleri için de kullanılabilirler. Yüzey işleme işlemi yalnızca bir taraftaki uçla kısıtlı olarak yapılabilir. Kesme derinlikleri ucun ölçüsü ve matkabin yapısına bağlıdır.

İşlenebilecek yüzey çapı, takımın nominal çapına bağlıdır.



Tornalama

Değiştirilebilir uçlu matkaplar ile yapılabilecek tornalama işlemleri de matkabin çapı ve kesici ucun ölçüsü ile sınırlıdır. Olabilecek kesme derinliği, takımın çapına bağlıdır. Şekil 16'da verilmiş örnekteki gibi.

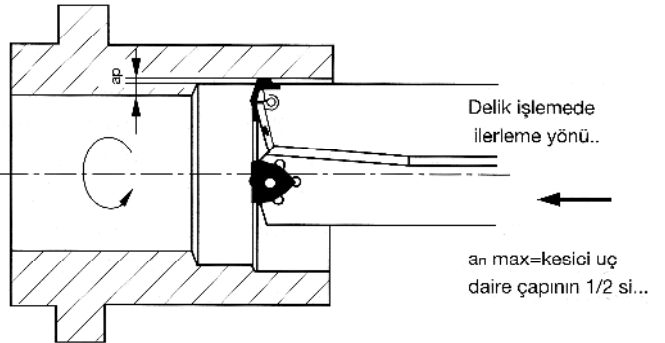


Delik delme

Delme esnasında, tornalama işleminde verilen sınırlamaların hepsi geçerlidir. Matkap öncelikle delme takımıdır. Ve sadece, bazı özel durumlarda asıl fonksiyonu dışında kullanılabilir.

Dönerek / durarak çalışan takımlar

Değiştirilebilir uçlu matkaplar, delik delme işlemi için en ekonomik ve avantajlı takımlardır. Delinecek malzeme ve delme takımının rijit bağlanmış olması ve yeterli soğutma önemlidir. Takımın veya delinen malzemenin dönmesi ile birlikte takımın dikey veya yatay kullanılması önemli değildir. Takımın sabit parçanın dönmesi durumunda, iş parçasının bağlandığı ayna veya pens kafasının, delme işlemini yapacak olan takım ile aynı ekseninde olması gerekir. Eksen ayarı iyi yapılmadığı takdirde nominal delme çapında sapma olur ve delme işlemi sırasında takım hasar görebilir.



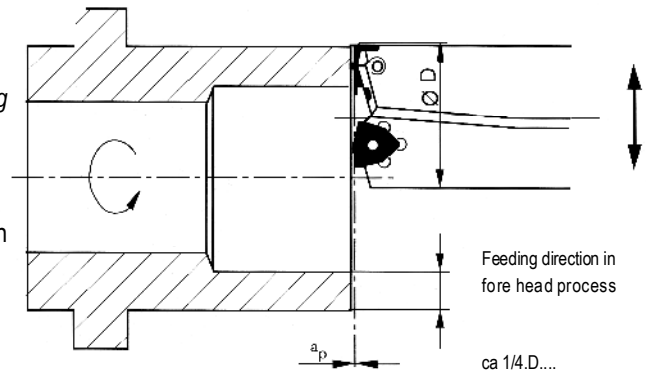
Merkezden kaçık delme işlemi

Değiştirilebilir uçlu matkaplar, iş parçasıyla aynı merkezli olmayacak şekilde ayarlanmış ise buna merkezden kaçık delme işlemi denir. Bu durumda delik, nominal delme çapından büyük veya küçük olacaktır. Eğer kasıtlı olarak merkezden kaçık işlem yaptırıyorsak bu işlem sadece dış çaptaki ucun kesme kenarına paralel yapılmalıdır ve bu delinecek çapı belirleyecektir. Eğer merkezden uzakta pozisyonlama yapılıyorsa ve çap ölçüsünü küçültüyorsa, matkap gövde çapının delinen deliğin çeperine sürtünme olasılığı artar ve de bu takımın gövde yüzeylerinin kullanılamaz duruma gelmesi ile birçok problemi yaşamamıza ve hatta takımın devre dışı kalmasına neden olur. Ayrıca işlenecek delik zarar görebilir ve hatta iş bozuk olabilir. Müsaade edilebilir ayar limitleri, takımın nominal çapına bağlıdır.

Face Turning / Plandrehen

The drills having interchangeable insert can be used also for face turning in certain limits. Face turning can be done only with one of the insert. Cutting depth is limited by the form of the insert and mechanical structure of the drill. On the other side, diameter of cut depends on the tool's nominal diameter.

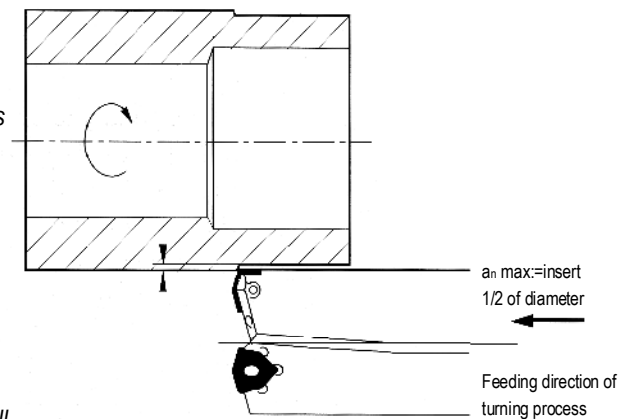
Der Bohrer mit der Wendeplatte kann auch zum Plandrehen in bestimmten Grenzwerten benutzt werden. Das Plandrehen kann aber nur mit einer von der Wendeplatten durchgeführt werden. Die Schneidtiefe wird durch die Plattenform und die mechanische Aufbau des Bohrers begrenzt. Der Schnittdurchmesser ist abhängig vom nominalen Durchmesser des Werkzeugs.



Turning / Drehen

Turning with the drills having interchangeable insert is limited with the diameter of the drill and form of the insert. Possible cutting depth depends on the diameter of tool as in the example of figure 16.

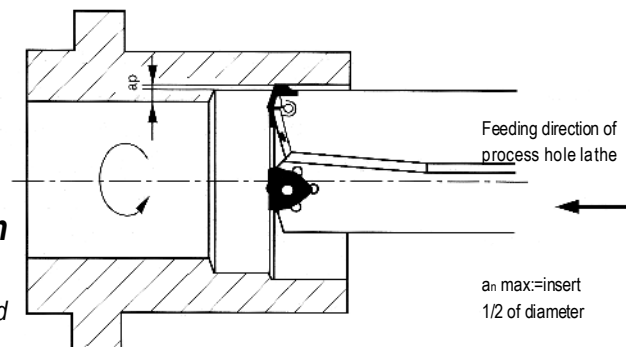
Das Drehen mit der Wendeplatte wird durch den Bohrdurchmesser und die Plattenform begrenzt. Die mögliche Schneidtiefe ist abhängig vom Durchmesser des Werkzeugs wie in der Abbildung 16 zu sehen ist.



Drilling / Bohren

While drilling, all the constraints given for the turning are valid. First, the drill should be categorized as boring tools and it shouldn't be used for turning except some special conditions.

Beim Bohren sind alle Beschränkungen gültig, die man beim Drehen hat. Zunächst ist der Bohrer ein Bohrwerkzeug und soll nicht beim Drehen außer manchen besonderen Bedingungen verwendet werden.



Drills working by turning or stationary position

The drills having interchangeable inserts are the most economical drilling tools and carries advantages when they are adjusted for full bore. It should be taken account that the workpiece and the tool must be clamped tight ; and to supply coolant as well . It is not important whether the workpiece or the tool turns, or whether tool is positioned as vertically or horizontally.

If the tool is stationary and workpiece turning, the axis of the chuck or collet should be same with the axis of the tool. If it is not, it should be adjusted; otherwise, there will be a deviation on the nominal diameter and the tool possibly will get some damages during drilling.

Bohrer drehen oder Werkstoff drehen:

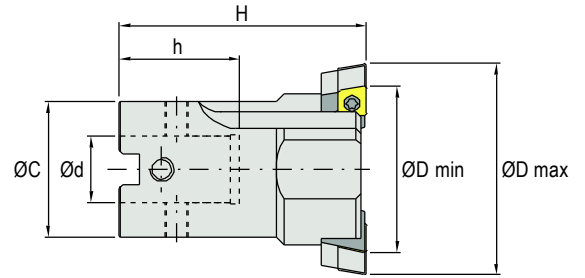
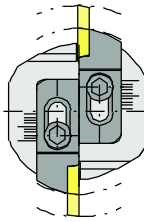
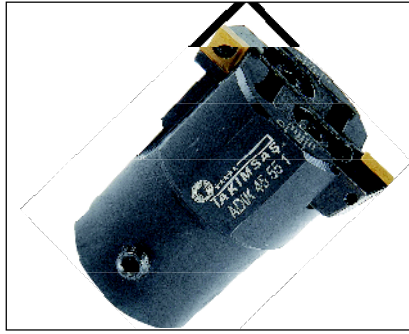
Der Wendeplattenbohrer sind wirtschaftlichste und günstige Bohrwerkzeuge. Man soll beachten, dass das Werkzeug und der Werkstoff festgeklammert werden. Dabei soll man es gut abkühlen. Es ist nicht wichtig, ob das Werkzeug oder der Werkstoff gedreht wird; oder ob das Werkzeug vertikal oder horizontal angeordnet wird.

Wenn der Werkstoff gedreht wird, sollen Achsen des Spanfutters und der Spanzange gleich zur Achse des Werkzeugs sein. Sonst soll man es verbessern. Wenn man das nicht tut, gibt es eine Abweichung im nominalen Durchmesser und das Werkzeug kann beim Bohren beschädigt werden.

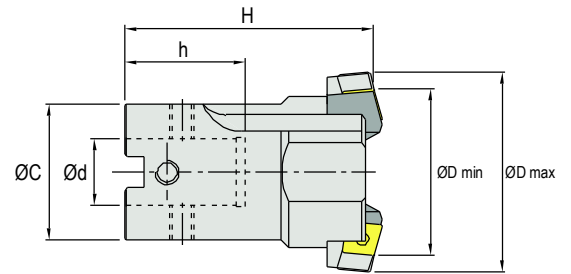
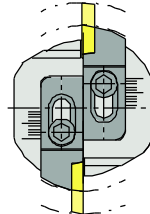
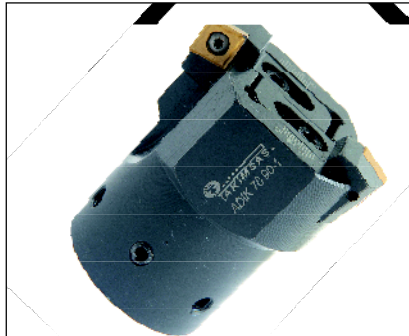
Drilling out of center / Bohren außerhalb der Mitte:

If the drills having interchangeable insert are adjusted to be in different centers, it is called drilling out of center. In this situation, the hole diameter can be smaller or greater than nominal drilling diameter. If the tool is adjusted as to be out of center willingly, the cutting must be applied only in a parallel position to the cutting edge of external insert. This positioning decreases hole diameter, then the probability of friction between drill's body and hole wall increases, whereupon it causes damages on tool's body and tool may become out of order. Permissible adjusting limits depends on nominal tool diameter.

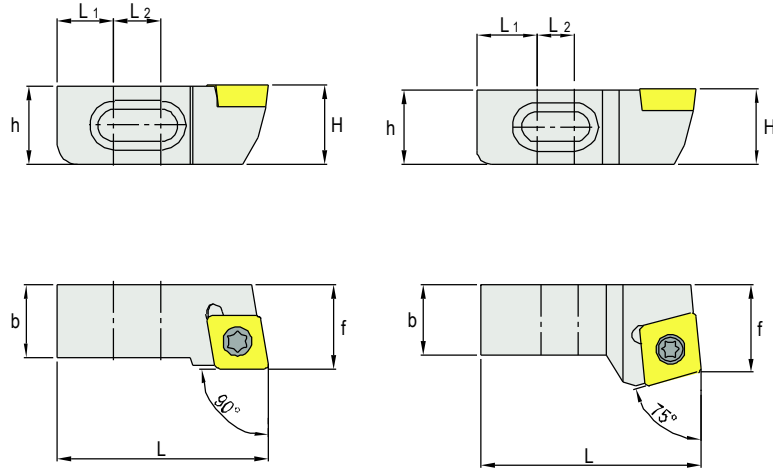
Wenn die Wendeplattenbohrer in verschiedenen Zentren eingestellt werden, nennt man es, "Bohren außerhalb der mitte." In diesem Fall kann der Lochdurchmesser kleiner oder größer als den nominalen Bohrungsdurchmesser sein. Wenn man das Werkzeug absichtlich außerhalb der Mitte einstellt, soll das Bohren nur parallel zur Schneidkante der äußeren Platte angewandt werden. So wenn der Lochdurchmesser bei dieser Art des Bohrens verkleinert wird, dann ist eine Reibung zwischen Bohrer und Lochwand möglich und darauf verursacht es Schaden am Werkzeug. Zulässige Grenzwerte der Einstellung sind abhängig vom nominalen Werkzeugdurchmesser.



Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen						Kod Code Bezeichnung		Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel	Ayar Vidası Set Screw Schraube	Kartuş Bağ.Vidası Screw Schraube	Montaj Vidası Screw Schraube
		ØD min	ØD max	Ød	ØC	H	h								
ADIK	35 45-1	35	45	16	34.5	65	25	SCGCL 15x15 CC09	CCMT 09T308	7815102	T15 IP	M4	KBV 5	MV 4	
	45 55-1	45	55	16	36	65	25	13 AD 09-1							
	50 61-1	50	61	22	40	78	40	13 AD 09-1							
	53 65-1	53	65	22	42	82	40	14 AD 09-1							
	55 70-1	55	70	22	47	82	40	15 AD 09-1							
	65 78-1	65	78	27	53	83	41	18 AD 12-1	CCMT 120408	7883202		FR650	KBV 6	MV 6	
	70 90-1	70	90	27	56	83	41	19 AD 12-1							
	78 98-1	78	98	32	65	83	43	19 AD 12-1							
	90 110-1	90	110	40	72	83	45	20 AD 12-1							
	98 120-1	98	120	40	72	85	45	20 AD 12-1							
	100 130-1	100	130	40	75	88	48	21 AD 12-1					FR651	KBV 8	MV 8
	118 146-1	118	146	40	78	92	50	25 AD 12-1							
	130 150-1	130	150	60	86	94	55	25 AD 12-1							
	144 174-1	144	174	60	92	105	55	30 AD 12-1							
	174 220-1	174	220	60	100	111	60	35 AD 12-1							



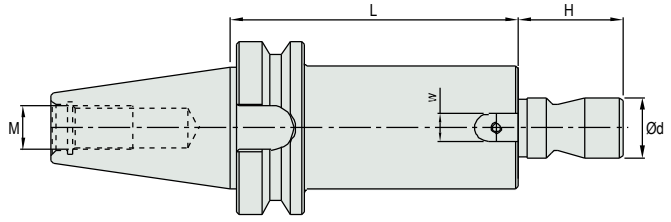
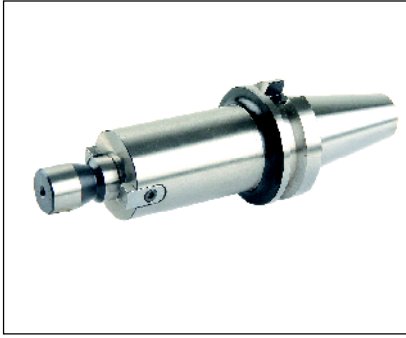
Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen						Kod Code Bezeichnung		Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel	Ayar Vidası Set Screw Schraube	Kartuş Bağ.Vidası Screw Schraube	Montaj Vidası Screw Schraube
		ØD min	ØD max	Ød	ØC	H	h								
ADIK	45 55-2	45	55	16	36	65	25	SCBCL 13 AD 09-2	CCMT 09T308	7815102	T15 IP	FR649	KBV 5	MV 5	
	50 61-2	50	61	22	40	78	40	13 AD 09-2							
	53 65-2	53	65	22	42	82	40	14 AD 09-2							
	55 70-2	55	70	22	47	82	40	15 AD 09-2							
	65 78-2	65	78	27	53	83	41	18 AD 12-2	CCMT 120408	7883202		FR650	KBV 6	MV 6	
	70 90-2	70	90	27	56	83	41	19 AD 12-2							
	78 98-2	78	98	32	65	83	43	19 AD 12-2							
	90 110-2	90	110	40	72	83	45	20 AD 12-2							
	98 120-2	98	120	40	72	85	45	20 AD 12-2							
	100 130-2	100	130	40	75	88	48	21 AD 12-2					KBV 8	MV 8	
	118 146-2	118	146	40	78	92	50	25 AD 12-2							
	130 150-2	130	150	60	86	94	55	25 AD 12-2							
	144 174-2	144	174	60	92	105	55	30 AD 12-2							
	174 220-2	174	220	60	100	111	60	35 AD 12-2							
										FR651	KBV 10	MV 10			
												MV 12			



SCGCL...Serisi
Serial SCGCL.....

SCBCL...Serisi
Serial SCBCL.....

		Ölçüler Dimensions Abmessungen									
Kod Code Bezeichnung		H	h	b	L ₁	L ₂	L	f	Uç Tipi Insert Type Plattentype	Uç Vidası Insert Screw Plattenschraube	Torx Anahtar Torx Wrench Torx Schlüssel
SCGCL	13 AD 09 - 1	13.2	13	11	10	6	33	13	CC.. 09T3..	7815102	T15 IP
	14 AD 09 - 1	14.2	14	12	11	6.5	34.5	14			
	15 AD 09 - 1	14.2	14	13	10.2	8.5	38	15			
	15 AD 09 - 1	14.2	14	13	10.2	8.5	38	15			
	18 AD 12 - 1	16.2	16	15	13	8	47.5	18	CC.. 1204..	7883202	
	19 AD 12 - 1	18.2	18	16	13	11	50	19			
	20 AD 12 - 1	20.2	20	17	14	13	67	20			
	21 AD 12 - 1	20.2	20	18	15	15.5	69	21			
	25 AD 12 - 1	25.2	25	22	18	32	70	25			
	30 AD 12 - 1	30.2	30	25	20	43	94	30			
35 AD 12 - 1	32.2	32	30	26	60	115	35				
SCBCL	13 AD 09 - 2	13.2	13	11	10	6	33	13	CC.. 09T3..	7815102	
	14 AD 09 - 2	14.2	14	12	11	6.5	34.5	14			
	15 AD 09 - 2	14.2	14	13	10.2	8.5	38	15			
	15 AD 09 - 2	14.2	14	13	10.2	8.5	38	15			
	18 AD 12 - 2	16.2	16	15	13	8	47.5	18	CC.. 1204..	7883202	
	19 AD 12 - 2	18.2	18	16	13	11	50	19			
	20 AD 12 - 2	20.2	20	17	14	13	67	20			
	21 AD 12 - 2	20.2	20	18	15	15.5	69	21			
	25 AD 12 - 2	25.2	25	22	18	32	70	25			
	30 AD 12 - 2	30.2	30	25	20	43	94	30			
35 AD 12 - 2	32.2	32	30	26	60	115	35				

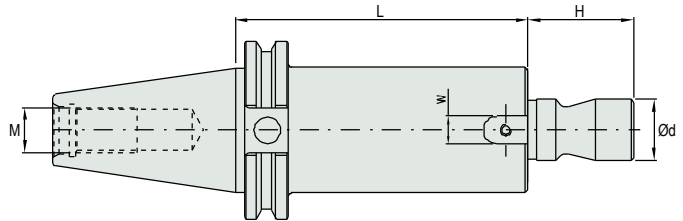
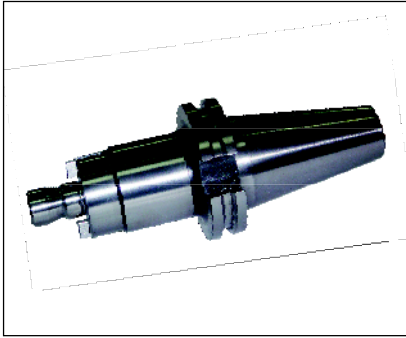


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				
	Ød	H	L	W	M
BT40	ADM 16 75	16	24	75	10
	ADM 22 75	22	38	75	10
	ADM 27 90	27	39	90	12
	ADM 32 90	32	39	90	14
	ADM 40 105	40	39	105	16
	ADM 60 120	60	54	120	25
BT50	ADM 16 75	16	24	75	10
	ADM 22 75	22	38	75	10
	ADM 27 90	27	39	90	12
	ADM 32 90	32	39	90	14
	ADM 40 105	40	39	105	16
	ADM 60 120	60	54	120	25

Ayarlı Delik İşleme Kafası Tutucuları - (A.N.S.I) CAT - Form A

Toolholder for Boring Bars - (A.N.S.I) CAT - Form A

Werkzeughalter für Bohrstangen - (A.N.S.I) CAT - Form A

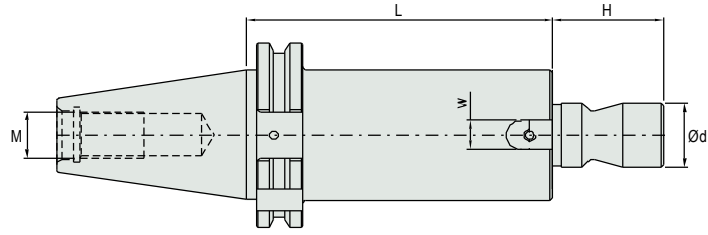
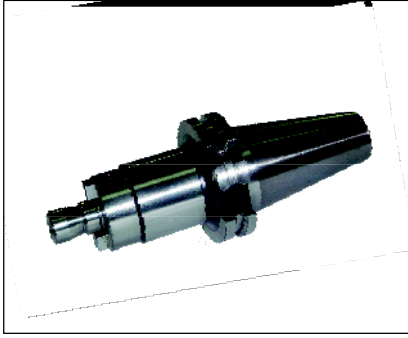


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				
	Ød	H	L	W	M
CAT40	ADM 16 75	16	24	75	10
	ADM 22 75	22	38	75	10
	ADM 27 90	27	39	90	12
	ADM 32 90	32	39	90	14
	ADM 40 105	40	39	105	16
	ADM 60 120	60	54	120	25
CAT50	ADM 16 75	16	24	75	10
	ADM 22 75	22	38	75	10
	ADM 27 90	27	39	90	12
	ADM 32 90	32	39	90	14
	ADM 40 105	40	39	105	16
	ADM 60 120	60	54	120	25

Ayarlı Delik İşleme Kafası Tutucuları - DIN 69871 - Form A

Toolholder for Boring Bars - DIN 69871 A - Form A

Werkzeughalter für Bohrstangen - DIN 69871 A - Form A

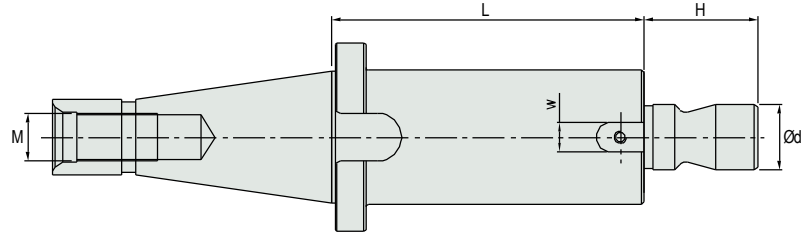
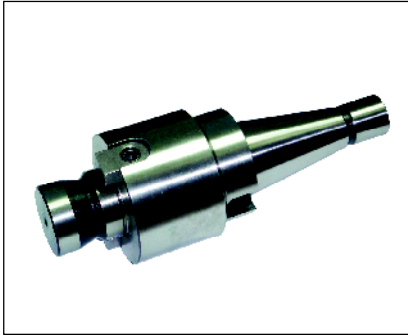


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				
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	ADM 22 75	22	38	75	10
	ADM 27 90	27	39	90	12
	ADM 32 90	32	39	90	14
	ADM 40 105	40	39	105	16
	ADM 60 120	60	54	120	25
IT50	ADM 16 75	16	24	75	10
	ADM 22 75	22	38	75	10
	ADM 27 90	27	39	90	12
	ADM 32 90	32	39	90	14
	ADM 40 105	40	39	105	16
	ADM 60 120	60	54	120	25

Ayarlı Delik İşleme Kafası Tutucuları - DIN 2080 - Form A

Toolholder for Boring Bars - DIN 2080 - Form A

Werkzeughalter für Bohrstangen - DIN 2080 - Form A



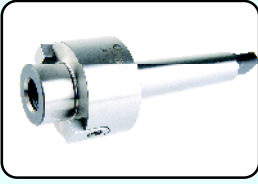
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				
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ISO40	ADM 16 75	16	24	75	10
	ADM 22 75	22	38	75	10
	ADM 27 90	27	39	90	12
	ADM 32 90	32	39	90	14
	ADM 40 105	40	39	105	16
	ADM 60 120	60	54	120	25
ISO50	ADM 16 75	16	24	75	10
	ADM 22 75	22	38	75	10
	ADM 27 90	27	39	90	12
	ADM 32 90	32	39	90	14
	ADM 40 105	40	39	105	16
	ADM 60 120	60	54	120	25

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : IT40 ADM16 75

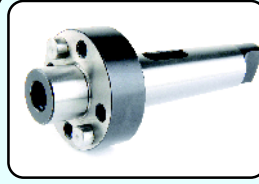


Tutucular / Toolholders

Werkzeughalter



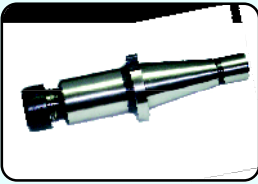
Freze Tutucu - DIN 2087 / 6362 - Form A
 Shell Mill Holder - DIN 2087 / 6362 - Form A
 Aufsteckfräsenhalter - 2087 / 6362 - Form A
 Sayfa / Page / Seite : 186



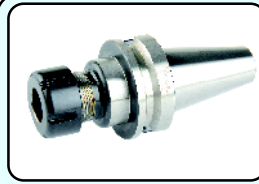
Freze Tutucu - DIN 2087 / 6362 - Form A
 Shell Mill Holder - DIN 2087 / 6362 - Form A
 Aufsteckfräsenhalter - DIN 2087 / 6362 Form A
 Sayfa / Page / Seite : 186



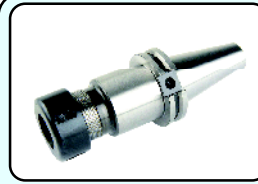
Klavuz Tutucu - Form A
 Tapping Chuck Holder - Form A
 Gewindeschneidhalter - Form A
 Sayfa / Page / Seite : 187



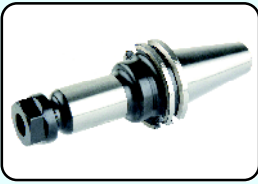
Pens Tutucu DIN 6499 / DIN 2080 - Form AD
 Toolholder - Collet Chuck DIN 6499 / DIN 2080 - Form AD
 Spannzanghalter DIN 6499 / DIN 2080 - Form AD
 Sayfa / Page / Seite : 188



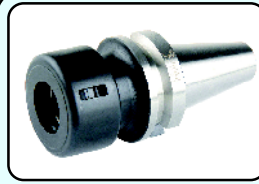
Pens Tutucu DIN 6499 / BT MAS - Form AD
 Toolholder - Collet Chuck DIN 6499 / BT MAS - Form AD
 Spannzanghalter DIN 6499 / BT MAS - Form AD
 Sayfa / Page / Seite : 188



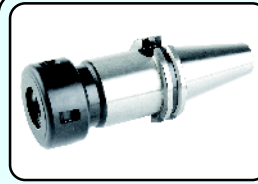
Pens Tutucu DIN 6499 / (A.N.S.I) CAT - Form AD
 Toolholder - Collet Chuck DIN 6499 / (A.N.S.I) CAT - Form AD
 Spannzanghalter DIN 6499 / (A.N.S.I) CAT - Form AD
 Sayfa / Page / Seite : 189



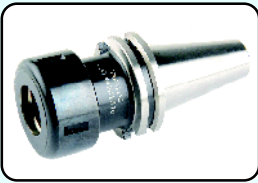
Pens Tutucu DIN 6499 / DIN 69871 - Form AD
 Toolholder - Collet Chuck DIN 6499 / DIN 69871 - Form AD
 Spannzanghalter DIN 6499 / DIN 69871 - Form AD
 Sayfa / Page / Seite : 189



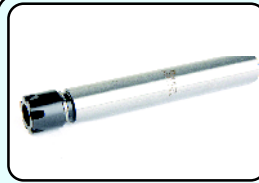
Pens Tutucu DIN 6388 / BT MAS - Form AD
 Toolholder - Collet Chuck DIN 6388 / BT MAS - Form AD
 Spannzanghalter DIN 6388 / BT MAS - Form AD
 Sayfa / Page / Seite : 190



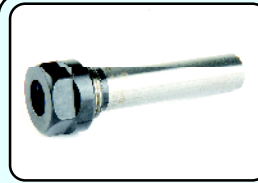
Pens Tutucu DIN 6388 / DIN 69871 - Form AD
 Toolholder - Collet Chuck DIN 6388 / DIN 69871 - Form AD
 Spannzanghalter DIN 6388 / DIN 69871 - Form AD
 Sayfa / Page / Seite : 190



Pens Tutucu DIN 6388 / (A.N.S.I) CAT - Form AD
 Toolholder - Collet Chuck DIN 6388 / (A.N.S.I) CAT - Form AD
 Spannzanghalter DIN 6388 / (A.N.S.I) CAT - Form AD
 Sayfa / Page / Seite : 191



Silindirik Şaftlı Pens Tutucu DIN 6499 - Form A
 Toolholder-Collet Chuck With Cylindrical Shunk DIN 6499 - Form A
 Spannzanghalter mit der zylindrischen Schaft DIN 6499 - Form A
 Sayfa / Page / Seite : 191



Silindirik Şaftlı Pens Tutucu DIN 6499 - Form A
 Toolholder-Collet Chuck With Cylindrical Shunk DIN 6499 - Form A
 Spannzanghalter mit der zylindrischen Schaft DIN 6499 - Form A
 Sayfa / Page / Seite : 192



Silindirik Şaftlı Pens Tutucu DIN 6499 - Form A
 Toolholder-Collet Chuck With Cylindrical Shunk DIN 6499 - Form A
 Spannzanghalter mit der zylindrischen Schaft DIN 6499 - Form A
 Sayfa / Page / Seite : 192

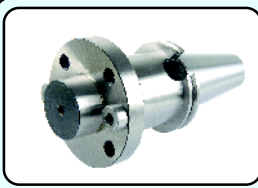


Freze Tutucu - DIN 2080 - Form A
 Toolholder - Shell Mill Holder - DIN 2080 - Form A
 Aufsteckfräsenhalter - DIN 2080 - Form A
 Sayfa / Page / Seite : 194

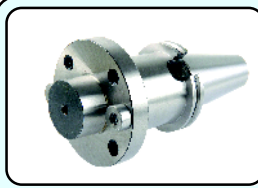


Freze Tutucu - BT MAS - Form A
 Toolholder - Shell Mill Holder - BT MAS - Form A
 Aufsteckfräsenhalter - BT MAS - Form A
 Sayfa / Page / Seite : 194

Tutucular / Toolholders
Werkzeughalter



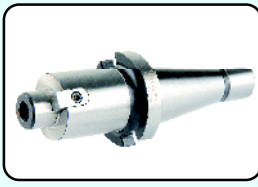
Freze Tutucu - DIN 69871 - Form A
Toolholder - Shell Mill Holder - DIN 69871
Aufsteckfräsenhalter - DIN 69871
Sayfa / Page / Seite : 195



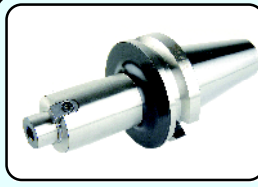
Freze Tutucu - (A.N.S.I) CAT - Form A
Toolholder - Shell Mill Holder - (A.N.S.I) CAT - Form A
Aufsteckfräsenhalter - (A.N.S.I) CAT - Form A
Sayfa / Page / Seite : 195



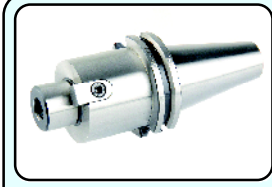
Freze Merkezleme Tutucusu - DIN 2080 - Form A
Toolholder - Arbor For Centering - DIN 2080 - Form A
Fräsendome für Zentrierung - DIN 2080 - Form A
Sayfa / Page / Seite : 196



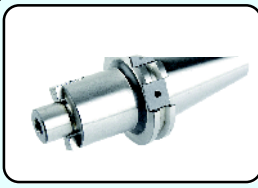
Freze Tutucu - DIN 2080 - Form A
Toolholder - Shell Mill Holder - DIN 2080 - Form A
Aufsteckfräsenhalter - DIN 2080 - Form A
Sayfa / Page / Seite : 197



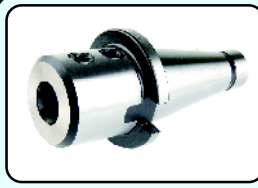
Freze Tutucusu - BT MAS - Form A
Toolholder - Shell Mill Holder - BT MAS - Form A
Aufsteckfräsenhalter - BT MAS - Form A
Sayfa / Page / Seite : 198



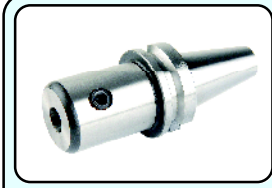
Freze Tutucusu - (A.N.S.I) CAT - Form A
Toolholder - Shell Mill Holder - (A.N.S.I) CAT - Form A
Aufsteckfräsenhalter - (A.N.S.I) CAT - Form A
Sayfa / Page / Seite : 199



Freze Tutucu - DIN 69871 - Form A
Toolholder - Shell Mill Holder - DIN 69871 - Form A
Aufsteckfräsenhalter - DIN 69871
Sayfa / Page / Seite : 200



Weldon Tutucu - DIN 2080 - Form AD
Toolholder - Type Weldon - DIN 2080 - Form AD
Werkzeughalter - Type Weldon - DIN 2080 - Form AD
Sayfa / Page / Seite : 201



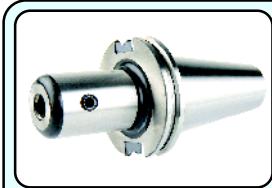
Weldon Tutucu - BT MAS - Form AD
Toolholder - Type Weldon - BT MAS - Form AD
Werkzeughalter - Type Weldon - BT MAS - Form AD
Sayfa / Page / Seite : 202



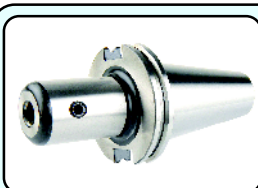
Weldon Tutucu - DIN 69871 - Form AD
Toolholder - Type Weldon - DIN 69871 - Form AD
Werkzeughalter - Type Weldon - DIN 69871 - Form AD
Sayfa / Page / Seite : 203



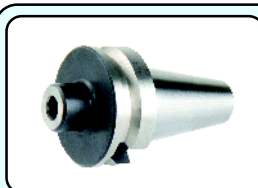
Weldon Tutucu - DIN 69871 - Form AD-B
Toolholder - Type Weldon - DIN 69871 - Form AD-B
Werkzeughalter - Type Weldon - DIN 69871 - Form AD-B
Sayfa / Page / Seite : 204



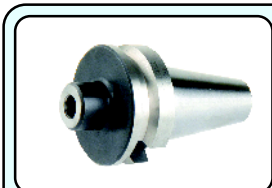
Weldon Tutucu - (A.N.S.I) CAT - Form AD
Toolholder - Type Weldon - (A.N.S.I) CAT - Form AD
Toolholder - Type Weldon - (A.N.S.I) CAT - Form AD
Sayfa / Page / Seite : 205



Weldon Tutucu - (A.N.S.I) CAT - Form AD-B
Toolholder - Type Weldon - (A.N.S.I) CAT - Form AD-B
Werkzeughalter - Type Weldon - (A.N.S.I) CAT - Form AD-B
Sayfa / Page / Seite : 206



Morskonik Tutucu DIN 228 - 2 Form C - Form A
Toolholder - Morse Taper DIN 228 - 2 Form C - Form A
Werkzeughalter - Morsekegel DIN 228 - 2 Form C - Form A
Sayfa / Page / Seite : 207



Morskonik Tutucu DIN 228 - 2 Form D - BT MAS - Form A
Toolholder - Morse Taper DIN 228 - 2 Form D - BT MAS - Form A
Werkzeughalter - Morsekegel DIN 228 - 2 Form D - BT MAS - Form A
Sayfa / Page / Seite : 208

Tutucular / Toolholders

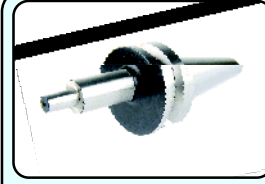
Werkzeughalter



Mors konik Tutucu DIN 228 - 2 Form D - (A.N.S.I) CAT - Form A
 Toolholder - Morse Taper DIN 228 - 2 Form D - (A.N.S.I) CAT - Form A
 Werkzeughalter - Morsekegel DIN 228 - 2 Form D - (A.N.S.I) CAT - Form A
Sayfa / Page / Seite : 209



Mors konik Tutucu DIN 228 - 2 Form D - DIN 69871 - Form A
 Toolholder - Morse Taper DIN 228 - 2 Form D - DIN 69871 - Form A
 Werkzeughalter - Morsekegel DIN 228 - 2 Form D - DIN 69871 - Form A
Sayfa / Page / Seite : 210



Mandren Tutucular - DIN 238 - Form A
 Drill Chuck - DIN 238 - Form A
 Bohrenwerkzeughalter - DIN 238 - Form A
Sayfa / Page / Seite : 211



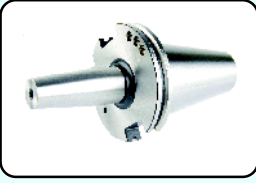
Kanal Freze Tutucuları / BT MAS - Form A
 Disc Mill Holders - BT MAS - Form A
 Werkzeughalter für Scheibenfräsen - BT MAS - Form A
Sayfa / Page / Seite : 212



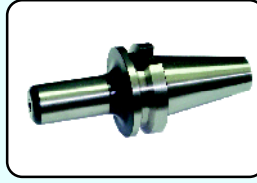
Kanal Freze Tutucuları / (A.N.S.I) CAT - Form A
 Disc Mill Holders (A.N.S.I) CAT - Form A
 Werkzeughalter für Scheibenfräsen (A.N.S.I) CAT - Form A
Sayfa / Page / Seite : 213



Kanal Freze Tutucuları / DIN 69871 - Form A
 Disc Mill Holders - DIN 69871 - Form A
 Werkzeughalter für Scheibenfräsen - DIN 69871 - Form A
Sayfa / Page / Seite : 214



Isıtmalı Tutucular / DIN 69871 - Form AD-B
 Shiring Chuck Holders - DIN 69871 - Form AD-B
 Schrumpfspannfutter - DIN 69871 - Form AD-B
Sayfa / Page / Seite : 215 - 216



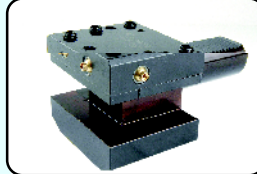
Isıtmalı Tutucular / BT MAS - Form AD-B
 Shiring Chuck Holders / BT MAS - Form AD-B
 Schrumpfspannfutter / BT MAS - Form AD-B
Sayfa / Page / Seite : 217



Isıtmalı Tutucular / (A.N.S.I) CAT - Form AD-B
 Shiring Chuck Holders (A.N.S.I) CAT - Form AD-B
 Schrumpfspannfutter (A.N.S.I) CAT - Form AD-B
Sayfa / Page / Seite : 218



Çektirme Vidası
 Pull Stud
 Anzugsbolzen
Sayfa / Page / Seite : 220 - 221



VDI Takım Tutucu / DIN 69880
 VDI Holder / DIN 69880
 VDI Werkzeughalter / DIN 69880
Sayfa / Page / Seite : 223 - 228



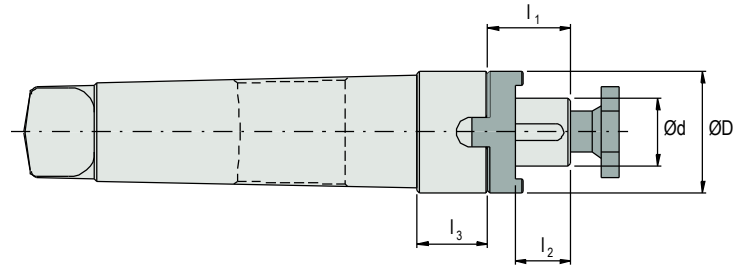
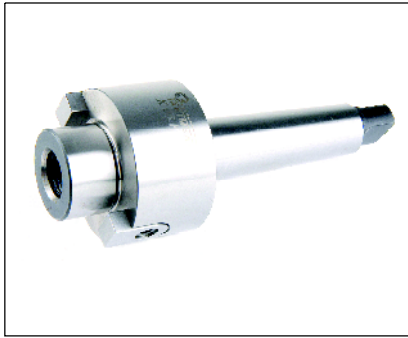
Adaptör
 Adaptor
 Adapter
Sayfa / Page / Seite : 229



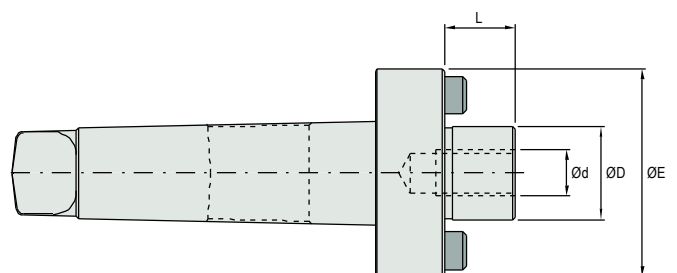
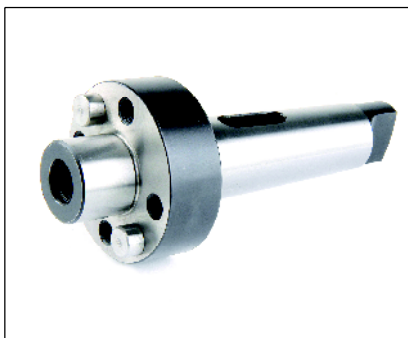
Weldon Tutucu / DIN 69893 (HSK)
 Toolholder - Type Weldon / DIN 69893 (HSK)
 Werkzeughalter - Type Weldon / DIN 69893 (HSK)
Sayfa / Page / Seite : 231



Pens Tutucu / ER Tip / DIN 6499 / DIN 69893 (HSK)
 Toolholder - Collet Chuck / Type ER / DIN 6499 / DIN 69893 (HSK)
 Spannzanghalter / Type ER / DIN 6499 / DIN 69893 (HSK)
Sayfa / Page / Seite : 232



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					
	ØD	Ød	L ₁	L ₂	L ₃	MK
X 06 K - 01	32	16	27	17	15	4
K - 02	40	22	31	19	13	
K - 03	48	27	33	21	13	
K - 04	58	32	38	24	11	
K - 05	70	40	41	27	11	
K - 06	40	22	31	19	28	5
K - 07	48	27	33	21	28	
K - 08	58	32	38	24	26	
K - 09	70	40	41	27	26	
K - 10	90	50	46	30	24	
K - 11	48	27	33	21	28	6
K - 12	58	32	38	24	26	
K - 13	70	40	41	27	26	
K - 14	90	50	46	30	24	
K - 15	110	60	66	50	24	
K - 16	48	27	33	21	28	metr.80
K - 17	58	32	38	24	26	
K - 18	70	40	41	27	26	
K - 19	90	50	46	30	24	
K - 20	110	60	66	50	24	

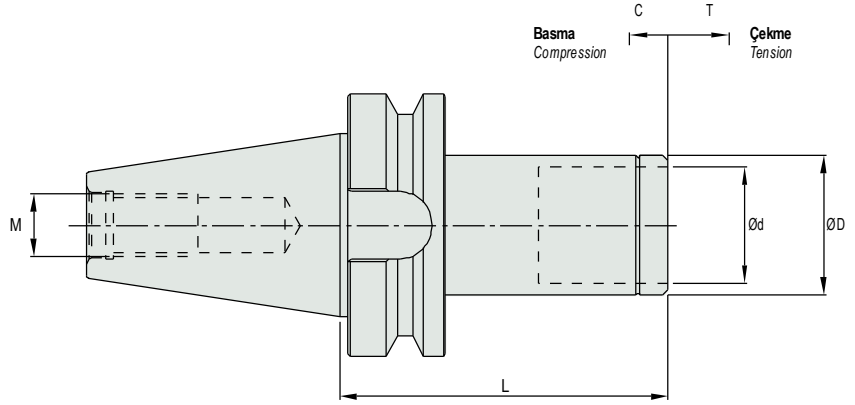
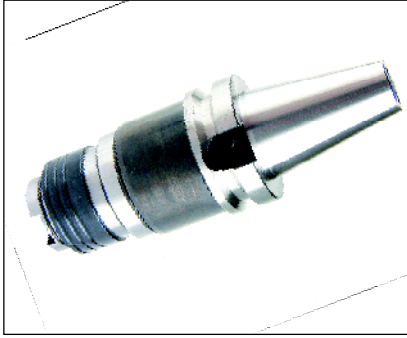


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				
	ØE	ØD (h6)	Ød	L	MK
X 08 - 01	69.832	32	M16	30	5
- 02	88.832	40	M20	30	
- 03	128.57	60	M30	40	
- 04	88.832	40	M20	30	6
- 05	128.57	60	M30	40	
- 06	88.832	40	M20	30	
- 07	128.57	60	M30	40	metr.80

Hızlı Değişirmeli; Kompanzasyonlu Kılavuz Tutucu - Form A

Quick - Change Tap Holder; Lenght Compensation - Form A

Schnellwechsel - Gewindeschneidhalter mit Langenausgleich - Form A

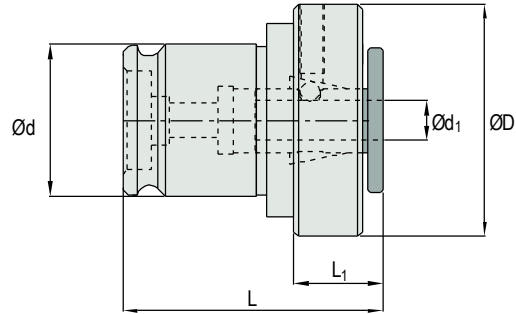


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen	ØD	L	G	C	T
		Ød					
BT40	TKÇB 31 95 (M4.5 - M20)	31	53.8	95	M16	8.5	15
BT50	TKÇB 31 95 (M4.5 - M20)				M24		
CAT40	TKÇB 31 95 (M4.5 - M20)				M16		
CAT50	TKÇB 31 95 (M4.5 - M20)				M24		
IT40	TKÇB 31 95 (M4.5 - M20)				M16		
IT50	TKÇB 31 95 (M4.5 - M20)				M24		
D40	TKÇB 31 95 (M4.5 - M20)				M16		
D50	TKÇB 31 95 (M4.5 - M20)				M24		
VDI40	TKÇB 31 95 (M4.5 - M20)				—		

Hızlı Değişirmeli Kılavuz Adaptörü

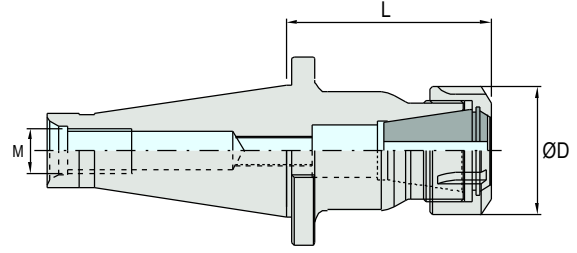
Quick - Change Tap Adaptor

Schnellwechsel - Gewindeschneidadapter



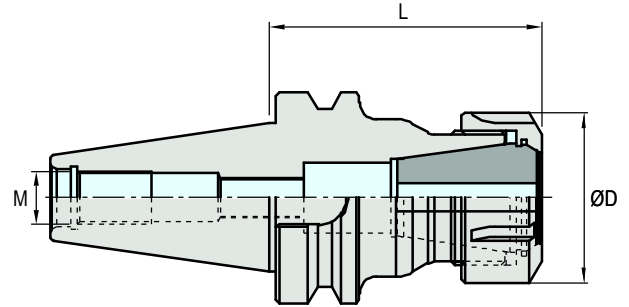
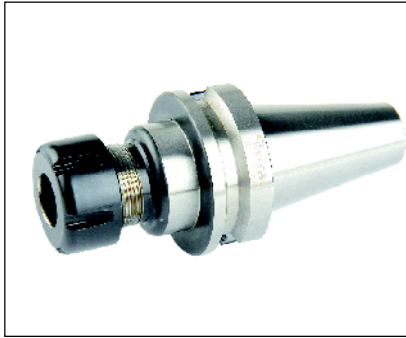
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen				
	Ød ₁	Ød	ØD	L	L ₁
TKÇB A 6	6	31	47.4	54.8	19.8
7	7				
8	8				
9	9				
10	10				
11	11				
12	12				
14	14				
16	16				
18	18				

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : BT40 TKCB31 95



Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					
		Tip Type Type	Somun Collet Nut Spannmutter	Sıkma Aralığı Clamping Range Spannbereich	L	ØD	M
ISO30	ER16 75	ER16	TM 16 FM	1.0 - 10.0	75	28	M12
	ER25 75	ER25	TM 25 FM	2.0 - 16.0	75	42	
ISO40	ER16 75	ER16	TM 16 FM	1.0 - 10.0	75	28	M16
	ER16 105	ER16	TM 16 FM	1.0 - 10.0	105	28	
	ER20 75	ER20	TM 20 FM	1.0 - 13.0	75	34	
	ER25 75	ER25	TM 25 FM	2.0 - 16.0	75	42	
	ER25 105	ER25	TM 25 FM	2.0 - 16.0	105	42	
	ER32 75	ER32	TM 32 FM	3.0 - 20.0	75	50	
ISO50	ER20 105	ER20	TM 20 FM	1.0 - 13.0	105	34	M24
	ER20 125	ER20	TM 20 FM	1.0 - 13.0	125	34	
	ER25 105	ER25	TM 25 FM	2.0 - 16.0	105	42	
	ER32 105	ER32	TM 32 FM	3.0 - 20.0	105	50	

Pens Tutucu / ER Tip / DIN 6499 / BT MAS - Form AD
Toolholder - Collet Chuck / Type ER / DIN 6499 / BT MAS - Form AD
Spannzanghalter / Type ER / DIN 6499 / BT MAS - Form AD

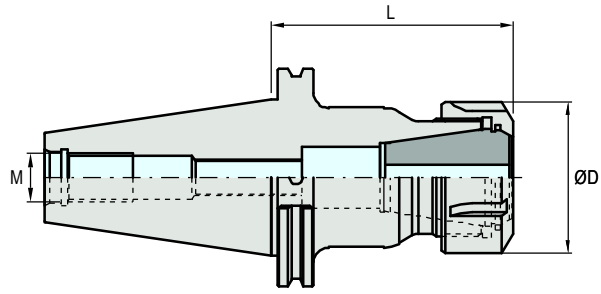
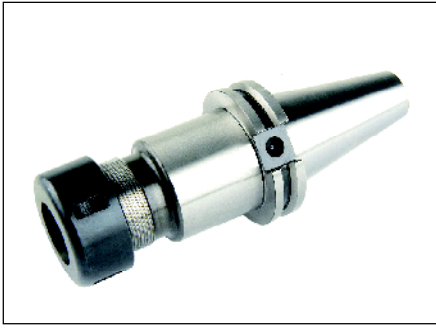


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					
		Tip Type Type	Somun Collet Nut Spannmutter	Sıkma Aralığı Clamping Range Spannbereich	L	ØD	M
BT40	ER16 105	ER16	TM 16 FM	1.0 - 10.0	105	28	M16
	ER16 150	ER16	TM 16 FM	1.0 - 10.0	150	28	
	ER20 75	ER20	TM 20 FM	1.0 - 13.0	75	34	
	ER20 150	ER20	TM 20 FM	1.0 - 13.0	150	34	
	ER25 75	ER25	TM 25 FM	2.0 - 16.0	75	42	
	ER25 105	ER25	TM 25 FM	2.0 - 16.0	105	42	
BT50	ER16 105	ER16	TM 16 FM	1.0 - 10.0	105	28	M24
	ER16 150	ER16	TM 16 FM	1.0 - 10.0	150	28	
	ER20 75	ER20	TM 20 FM	1.0 - 13.0	75	34	
	ER20 150	ER20	TM 20 FM	1.0 - 13.0	150	34	
	ER25 75	ER25	TM 25 FM	2.0 - 16.0	75	42	
	ER25 105	ER25	TM 25 FM	2.0 - 16.0	105	42	
	ER25 150	ER25	TM 25 FM	2.0 - 16.0	150	42	
	ER32 105	ER32	TM 32 FM	3.0 - 20.0	105	50	

Pens Tutucu / ER Tip / DIN 6499 / (A.N.S.I) CAT - Form AD

Toolholder - Collet Chuck / Type ER / DIN 6499 / (A.N.S.I) CAT - Form AD

Spannzanghalter / Type ER / DIN 6499 / (A.N.S.I.) CAT - Form AD

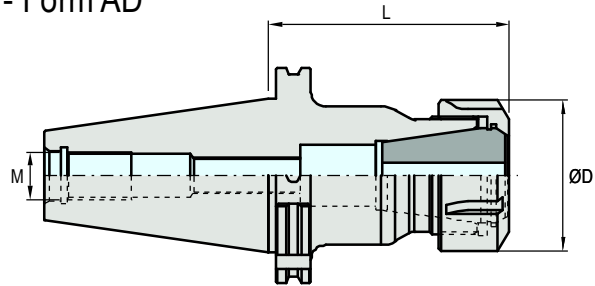
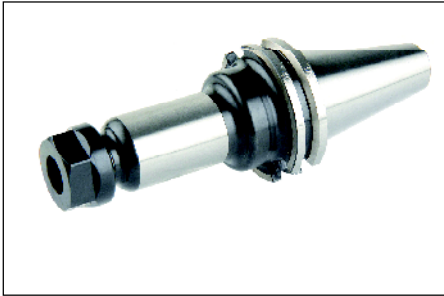


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					
	Tip Type Type	Somun Collet Nut Spannmutter	Sıkma Aralığı Clamping Range Spannbereich	L	ØD	M
CAT40	ER16 105	ER16	TM 16 FM	1.0 - 10.0	105	28
	ER16 150	ER16	TM 16 FM	1.0 - 10.0	150	28
	ER20 75	ER20	TM 20 FM	1.0 - 13.0	75	34
	ER20 150	ER20	TM 20 FM	1.0 - 13.0	150	34
	ER25 75	ER25	TM 25 FM	2.0 - 16.0	75	42
	ER25 105	ER25	TM 25 FM	2.0 - 16.0	105	42
CAT50	ER16 105	ER16	TM 16 FM	1.0 - 10.0	105	28
	ER16 150	ER16	TM 16 FM	1.0 - 10.0	150	28
	ER20 75	ER20	TM 20 FM	1.0 - 13.0	75	34
	ER20 150	ER20	TM 20 FM	1.0 - 13.0	150	34
	ER25 75	ER25	TM 25 FM	2.0 - 16.0	75	42
	ER25 105	ER25	TM 25 FM	2.0 - 16.0	105	42
	ER25 150	ER25	TM 25 FM	2.0 - 16.0	150	42
	ER32 105	ER32	TM 32 FM	3.0 - 20.0	105	50

Pens Tutucu / ER Tip / DIN 6499 / DIN 69871- Form AD

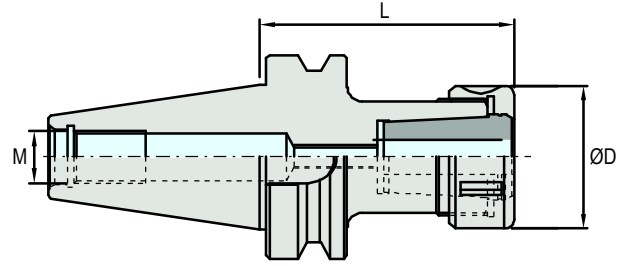
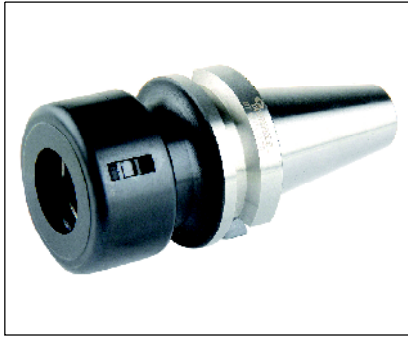
Toolholder - Collet Chuck / Type ER / DIN 6499 / DIN 69871 - Form AD

Spannzanghalter / Type ER / DIN 6499 / DIN 69871 - Form AD



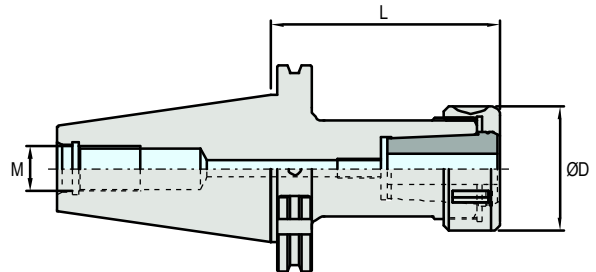
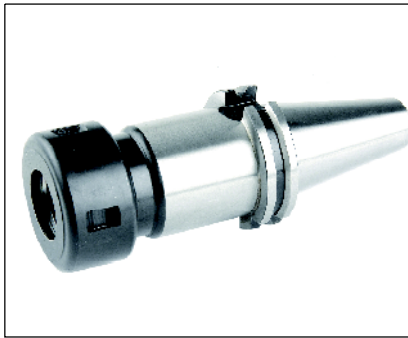
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					
	Tip Type Type	Somun Collet Nut Spannmutter	Sıkma Aralığı Clamping Range Spannbereich	L	ØD	M
IT40	ER16 105	ER16	TM 16 FM	1.0 - 10.0	105	28
	ER16 150	ER16	TM 16 FM	1.0 - 10.0	150	28
	ER20 75	ER20	TM 20 FM	1.0 - 13.0	75	34
	ER20 150	ER20	TM 20 FM	1.0 - 13.0	150	34
	ER25 75	ER25	TM 25 FM	2.0 - 16.0	75	42
	ER25 105	ER25	TM 25 FM	2.0 - 16.0	105	42
IT50	ER16 105	ER16	TM 16 FM	1.0 - 10.0	105	34
	ER16 150	ER16	TM 16 FM	1.0 - 10.0	150	28
	ER20 75	ER20	TM 20 FM	1.0 - 13.0	75	28
	ER20 150	ER20	TM 20 FM	1.0 - 13.0	150	34
	ER25 75	ER25	TM 25 FM	2.0 - 16.0	75	42
	ER25 105	ER25	TM 25 FM	2.0 - 16.0	105	42
	ER25 150	ER25	TM 25 FM	2.0 - 16.0	150	42
	ER32 105	ER32	TM 32 FM	3.0 - 20.0	105	50

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : CAT40 ER16 105



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					
	Tip Type Type	Somun Collet Nut Spannmutter	Sıkma Aralığı Clamping Range Spannbereich	L	ØD	M
BT40	PK25 75	PK25	TM 225 FM	4.0 - 25.0	75	60
	PK25 105	PK25	TM 225 FM	4.0 - 25.0	105	60
BT50	PK25 75	PK25	TM 225 FM	4.0 - 25.0	75	60
	PK25 105	PK25	TM 225 FM	4.0 - 25.0	105	60
	PK32 105	PK32	TM 432 FM	4.0 - 32.0	105	74

Pens Tutucu / N Tip / DIN 6388 / DIN 69871 - Form AD
Toolholder - Collet Chuck / Type N / DIN 6388 / DIN 69871 - Form AD
Spannzanghalter / Type N / DIN 6388 / DIN 69871 - Form AD

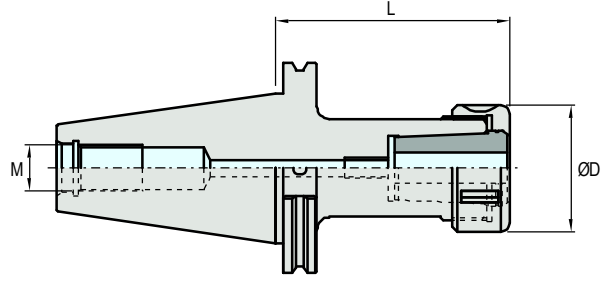


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					
	Tip Type Type	Somun Collet Nut Spannmutter	Sıkma Aralığı Clamping Range Spannbereich	L	ØD	M
IT40	PK25 75	PK25	TM 225 FM	4.0 - 25.0	75	60
	PK25 105	PK25	TM 225 FM	4.0 - 25.0	105	60
IT50	PK25 75	PK25	TM 225 FM	4.0 - 25.0	75	60
	PK25 105	PK25	TM 225 FM	4.0 - 25.0	105	60
	PK32 105	PK32	TM 432 FM	4.0 - 32.0	105	74

Pens Tutucu / N Tip / DIN 6388 / (A.N.S.I.) CAT - Form AD

Toolholder - Collet Chuck / Type N / DIN 6388 / (A.N.S.I.) CAT - Form AD

Spannzanghalter / Type N / DIN 6388 / (A.N.S.I.) CAT - Form Ad

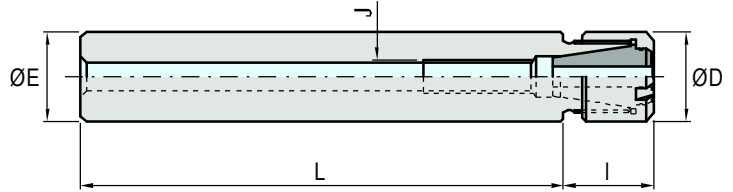


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen					
	Tip Type Type	Somun Collet Nut Spannmutter	Sıkma Aralığı Clamping Range Spannbereich	L	ØD	M
CAT40	PK25 75	PK25	TM 225 FM	4.0 - 25.0	75	60
	PK25 105	PK25	TM 225 FM	4.0 - 25.0	105	60
CAT50	PK25 75	PK25	TM 225 FM	4.0 - 25.0	75	60
	PK25 105	PK25	TM 225 FM	4.0 - 25.0	105	60
	PK32 105	PK32	TM 432 FM	4.0 - 32.0	105	74

ER Tip Silindirik Şaftlı Pens Tutucular - DIN 6499 - Form A

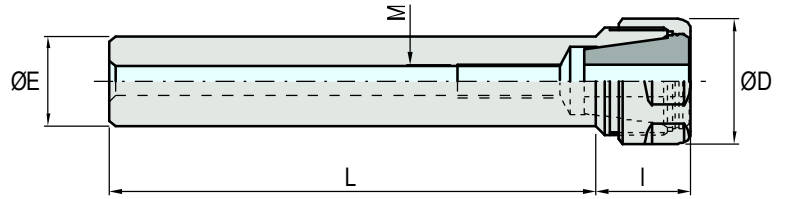
Toolholder - Collet Chuck With Cylindrical Shank , Type ER - DIN 6499 - Form A

Spannzanghalter mit der zylindrischen Schaft, Type ER - DIN 6499 - Form A

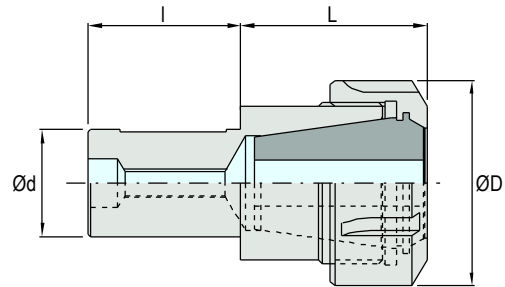


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen							
		ØE	Tip Type Type	Somun Collet Nut Spannmutter	Sıkma Aralığı Clamping Range Spannbereich	L	I	ØD	J
VS16	ER11 105 S	16	ER11	TM 11 FM S	1.0 - 6.0	105	25	16	M8
VS20	ER11 150 S	20	ER11	TM 11 FM S	1.0 - 6.0	150	25	16	M8
VS16	ER16 105 S	16	ER16	TM 16 FM S	1.0 - 10.0	105	32	22	M10
VS20	ER16 150 S	20	ER16	TM 16 FM S	1.0 - 10.0	150	32	22	M10
	ER20 105 S	20	ER20	TM 20 FM S	1.0 - 13.0	105	38	28	M12
	ER20 150 S	20	ER20	TM 20 FM S	1.0 - 13.0	150	38	28	M12

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : CAT40 PK25 75



Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen							
		ØE	Tip Type Type	Somun Collet Nut Spannmutter	Sıkma Aralığı Clamping Range Spannbereich	L	I	ØD	M
VS16	ER11 105	16	ER11	TM 11 FM	1.0 - 6.0	105	22	20	M8
	ER11 150	16	ER11	TM 11 FM	1.0 - 6.0	150	22	20	M8
	ER16 105	16	ER16	TM 16 FM	1.0 - 10.0	105	28	28	M10
VS20	ER11 105	20	ER11	TM 11 FM	1.0 - 6.0	105	22	20	M8
	ER11 150	20	ER11	TM 11 FM	1.0 - 6.0	150	22	20	M8
	ER16 105	20	ER16	TM 16 FM	1.0 - 10.0	105	28	28	M10
VS25	ER16 150	25	ER16	TM 16 FM	1.0 - 10.0	150	28	28	M10
	ER20 105	25	ER20	TM 20 FM	1.0 - 13.0	105	40	34	M12
	ER20 150	25	ER20	TM 20 FM	1.0 - 13.0	150	40	34	M12



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen							
	Ød	Tip Type Type	Somun Collet Nut Spannmutter	Sıkma Aralığı Clamping Range Spannbereich	L	I	ØD	J
CNC32 ER25 50	32	ER25	TM 25 FM	2.0 - 16.0	50	80	42	M12
CNC40 ER25 50	40	ER25	TM 25 FM	2.0 - 16.0	50	100	42	M12
CNC32 ER32 50	32	ER32	TM 32 FM	3.0 - 20.0	50	80	50	M16
CNC40 ER32 50	40	ER32	TM 32 FM	3.0 - 20.0	50	100	50	M16

BT MAS
Kılavuz Tutucular
Tapping Holders
Gewindeschneidhalter

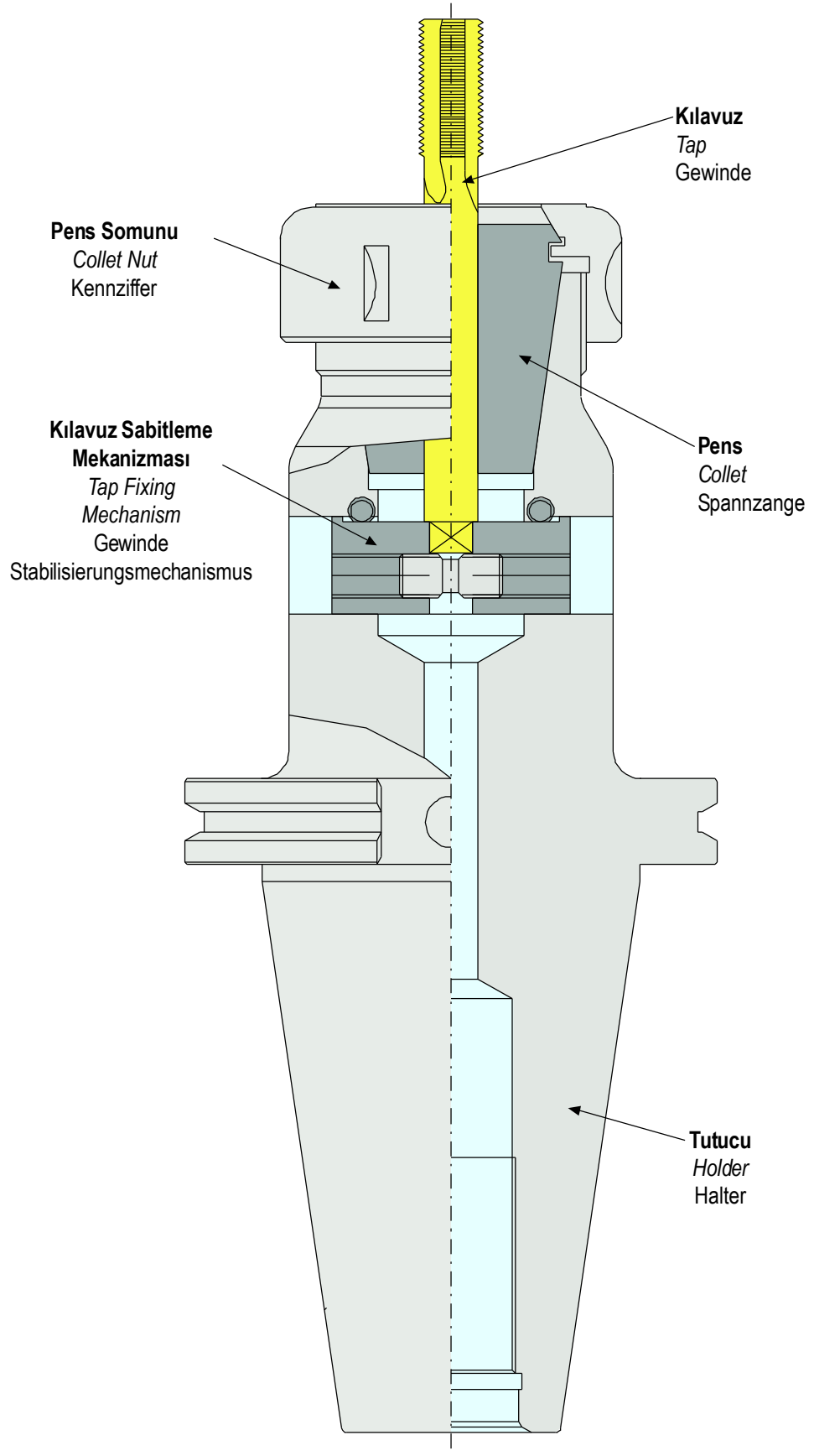
BT40 ER25 105 KT
BT40 ER32 105 KT
BT50 ER25 105 KT
BT50 ER32 105 KT
BT50 ER40 120 KT

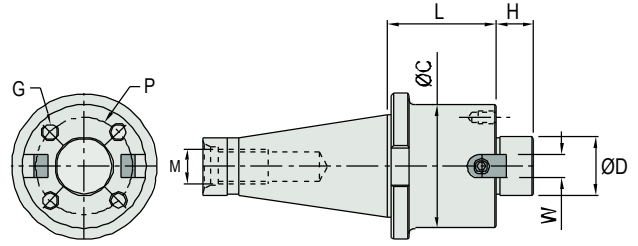
DIN 69871
Kılavuz Tutucular
Tapping Holders
Gewindeschneidhalter

IT40 ER25 105 KT
IT40 ER32 105 KT
IT50 ER25 105 KT
IT50 ER32 105 KT
IT50 ER40 120 KT

(A.N.S.I) CAT
Kılavuz Tutucular
Tapping Holders
Gewindeschneidhalter

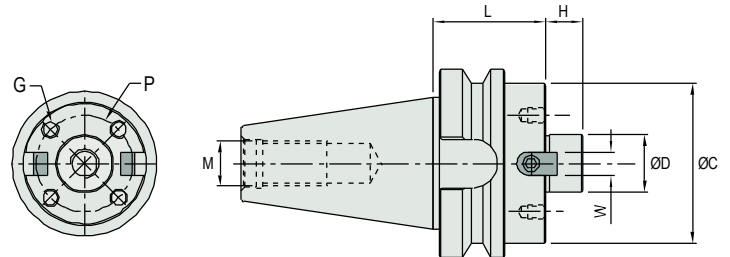
CAT40 ER25 105 KT
CAT40 ER32 105 KT
CAT50 ER25 105 KT
CAT50 ER32 105 KT
CAT50 ER40 120 KT





Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen							
	ØD	ØC	H	L	W	P	G	M
ISO40 FMB40 45	40	85	30	45	16	66.7	—	M16
FMB60 45	60	140	40	45	25.4	101.6	M12	
ISO50 FMB40 45	40	85	30	45	16	66.7	—	M24
FMB60 45	60	140	40	45	25.4	101.6	M16	

Freze Tutucu - BT MAS - Form A
Toolholder - Shell Mill Holder , BT MAS - Form A
 Aufsteckfräsenhalter BT MAS - Form A

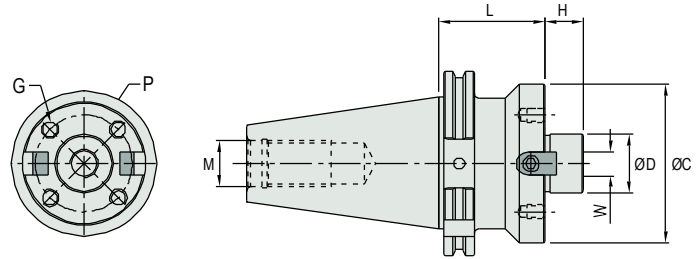
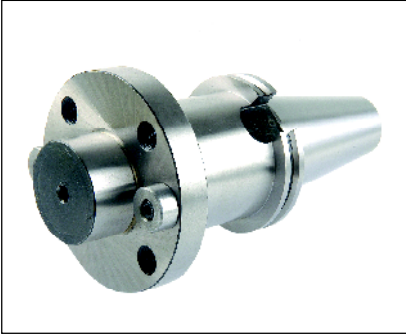


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen							
	ØD	ØC	H	L	W	P	G	M
BT40 FMB40 45	40	85	30	45	16	66.7	—	M16
FMB60 45	60	140	40	45	25.4	101.6	M12	
BT50 FMB40 45	40	85	30	45	16	66.7	—	M24
FMB60 45	60	140	40	45	25.4	101.6	M16	

Freze Tutucusu - DIN 69871 - Form A

Toolholder - Shell Mill Holder, DIN 69871 - Form A

Aufsteckfräsenhalter, DIN 69871 - Form A

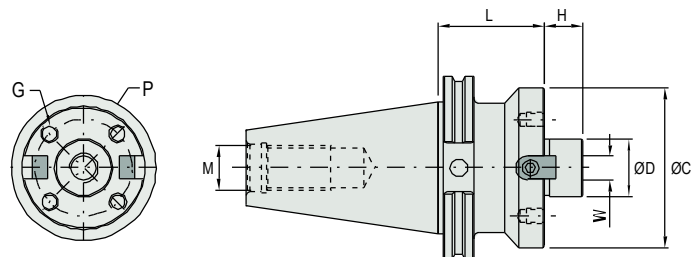
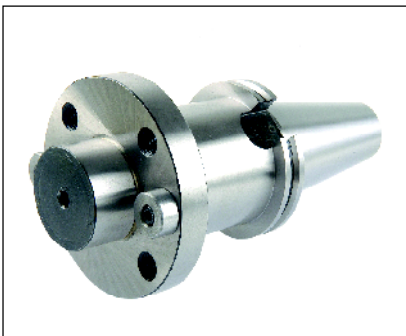


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen							
		ØD	ØC	H	L	W	P	G	M
IT40	FMB40 45	40	85	30	45	16	66.7	—	M16
	FMB60 45	60	140	40	45	25.4	101.6	M12	
IT50	FMB40 45	40	85	30	45	16	66.7	—	M24
	FMB60 45	60	140	40	45	25.4	101.6	M16	

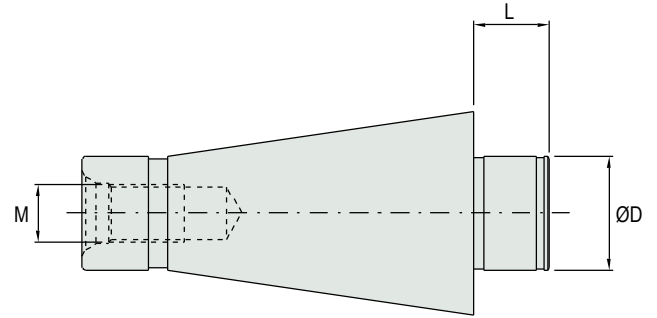
Freze Tutucusu - (A.N.S.I) CAT - Form A

Toolholder - Shell Mill Holder, (A.N.S.I) CAT - Form A

Aufsteckfräsenhalter, (A.N.S.I) CAT - Form A



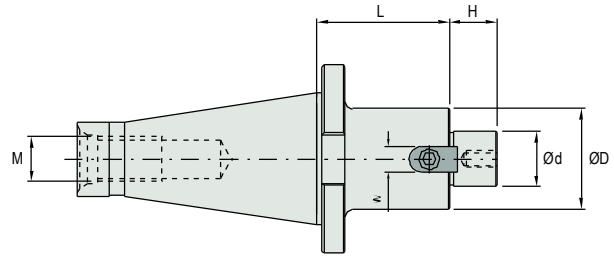
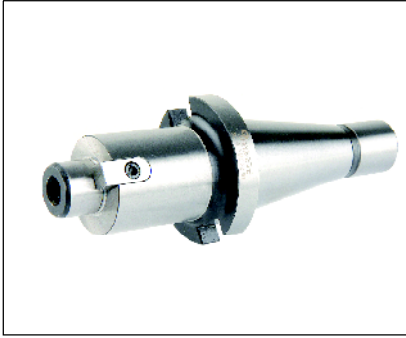
Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen							
		ØD	ØC	H	L	W	P	G	M
CAT40	FMB40 45	40	85	30	45	16	66.7	—	M16
	FMB60 45	60	140	40	45	25.4	101.6	M12	
CAT50	FMB40 45	40	85	30	45	16	66.7	—	M24
	FMB60 45	60	140	40	45	25.4	101.6	M16	



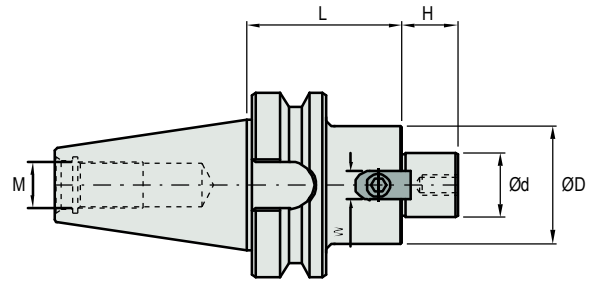
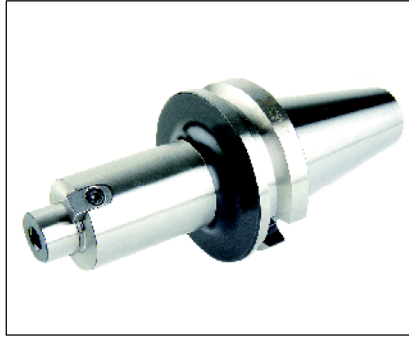
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen			
	ØD	L	Tanımlama	H
ISO40 MR40 32	40	32	MERKEZLEME TUTUCUSU	M16
ISO50 MR60 40	50	40	MERKEZLEME TUTUCUSU	M24



Freze Tutucusu - DIN 2080 - Form A
Toolholder - Shell Mill Holder, DIN 2080 - Form A
Aufsteckfräsenhalter, DIN 2080 - Form A



Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					
		Ød	ØD	H	L	W	M
ISO40	SMS16 60	16	32	14	60	8	M16
	SMS16 120	16	32	14	120	8	
	SMS22 60	22	42	16	60	10	
	SMS22 120	22	42	16	120	10	
	SMS27 60	27	50	18	60	12	
	SMS32 45	32	60	20	45	14	
	SMS32 75	32	60	20	75	14	
ISO50	SMS16 60	16	32	14	60	8	M24
	SMS16 120	16	32	14	120	8	
	SMS22 75	22	42	16	75	10	
	SMS22 120	22	42	16	120	10	
	SMS27 60	27	50	18	60	12	
	SMS27 105	27	50	18	105	12	
	SMS32 45	32	60	20	45	14	
	SMS32 75	32	60	20	75	14	
	SMS40 45	40	70	23	45	16	
	SMS40 75	40	70	23	75	16	



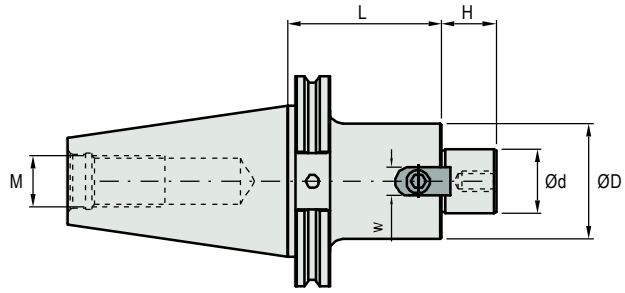
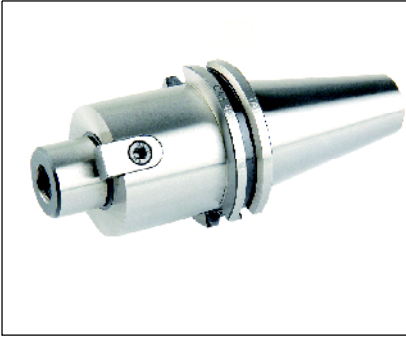
Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					
		Ød	ØD	H	L	W	M
BT40	SMS16 60	16	32	14	60	8	M16
	SMS16 120	16	32	14	120	8	
	SMS22 60	22	42	16	60	10	
	SMS22 120	22	42	16	120	10	
	SMS27 60	27	50	18	60	12	
	SMS32 45	32	60	20	45	14	
	SMS32 75	32	60	20	75	14	
BT50	SMS16 60	16	32	14	60	8	M24
	SMS16 120	16	32	14	120	8	
	SMS22 75	22	42	16	75	10	
	SMS22 120	22	42	16	120	10	
	SMS27 60	27	50	18	60	12	
	SMS27 105	27	50	18	105	12	
	SMS32 45	32	60	20	45	14	
	SMS32 75	32	60	20	75	14	
	SMS40 45	40	70	23	45	16	
	SMS40 75	40	70	23	75	16	



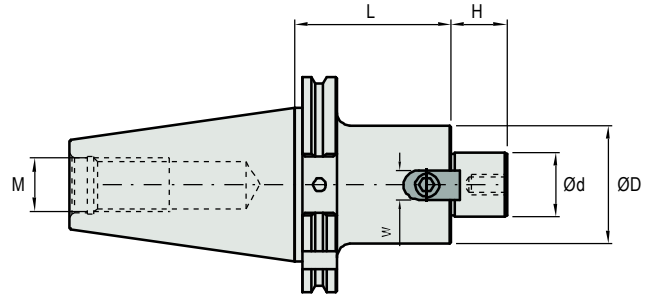
Freze Tutucu - (A.N.S.I) CAT - Form A

Toolholder - Shell Mill Holder , (A.N.S.I) CAT - Form A

Aufsteckfräsenhalter, (A.N.S.I) CAT - Form A



Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					
		Ød	ØD	H	L	W	M
CAT40	SMS16 60	16	32	14	60	8	M16
	SMS16 120	16	32	14	120	8	
	SMS22 60	22	42	16	60	10	
	SMS22 120	22	42	16	120	10	
	SMS27 60	27	50	18	60	12	
	SMS32 45	32	60	20	45	14	
	SMS32 75	32	60	20	75	14	
CAT50	SMS16 60	16	32	14	60	8	M24
	SMS16 120	16	32	14	120	8	
	SMS22 75	22	42	16	75	10	
	SMS22 120	22	42	16	120	10	
	SMS27 60	27	50	18	60	12	
	SMS27 105	27	50	18	105	12	
	SMS32 45	32	60	20	45	14	
	SMS32 75	32	60	20	75	14	
	SMS40 45	40	70	23	45	16	
	SMS40 75	40	70	23	75	16	

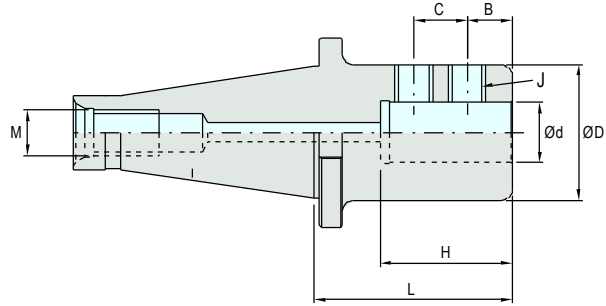


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					
		Ød	ØD	H	L	W	M
IT40	SMS16 60	16	32	14	60	8	M16
	SMS16 120	16	32	14	120	8	
	SMS22 60	22	42	16	60	10	
	SMS22 120	22	42	16	120	10	
	SMS27 60	27	50	18	60	12	
	SMS32 45	32	60	20	45	14	
	SMS32 75	32	60	20	75	14	
IT50	SMS16 60	16	32	14	60	8	M24
	SMS16 120	16	32	14	120	8	
	SMS22 75	22	42	16	75	10	
	SMS22 120	22	42	16	120	10	
	SMS27 60	27	50	18	60	12	
	SMS27 105	27	50	18	105	12	
	SMS32 45	32	60	20	45	14	
	SMS32 75	32	60	20	75	14	
	SMS40 45	40	70	23	45	16	
	SMS40 75	40	70	23	75	16	

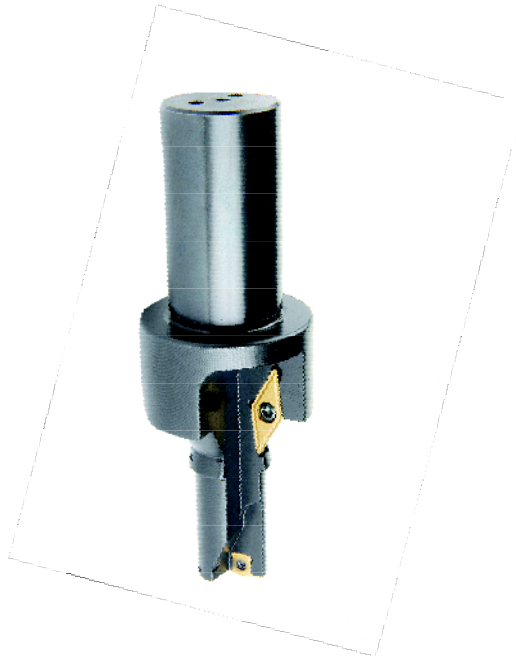
Weldon Tutucu DIN 2080 - Form AD

Toolholder - Type Weldon , DIN 2080 - Form AD

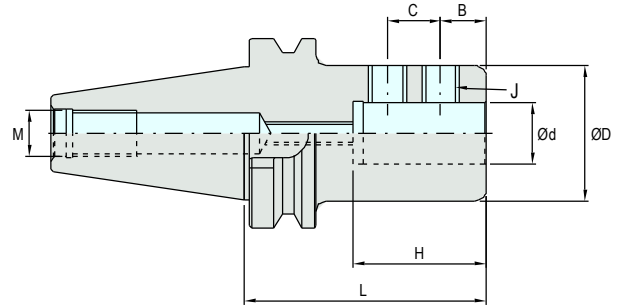
Werkzeughalter - Type Weldon, DIN 2080 - Form AD



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen							
	Ød	ØD	J	H	L	B	C	M
ISO40	SLN6 90	6	25	M6	35 - 40	90	18	M16
	SLN8 90	8	28	M8	35 - 40	90	18	
	SLN10 90	10	35	M10	39 - 44	90	20	
	SLN12 90	12	42	M12	44 - 49	90	22.5	
	SLN16 90	16	48	M14	47 - 52	90	24	
	SLN20 90	20	52	M16	49 - 54	90	25	
	SLN25 105	25	65	M18 x 2	54 - 59	105	24	
	SLN32 105	32	72	M20 x 2	58 - 63	105	24	
ISO50	SLN6 90	6	25	M6	35 - 40	90	18	M24
	SLN8 90	8	28	M8	35 - 40	90	18	
	SLN10 90	10	35	M10	39 - 44	90	20	
	SLN12 90	12	42	M12	44 - 49	90	22.5	
	SLN16 90	16	48	M14	47 - 52	90	24	
	SLN20 90	20	52	M16	49 - 54	90	25	
	SLN25 105	25	65	M18 x 2	54 - 59	105	24	
	SLN32 105	32	72	M20 x 2	58 - 63	105	24	
	SLN40 120	40	90	M20 x 2	68 - 73	120	30	32



Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : ISO40 SLN20 90

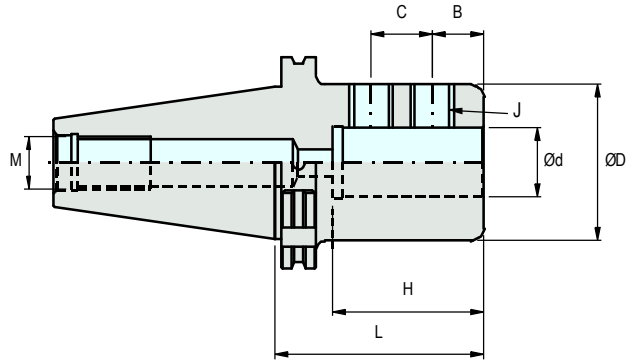


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen							M
		Ød	ØD	J	H	L	B	C	
BT40	SLN6 90	6	25	M6	35 - 40	90	18	—	M16
	SLN8 90	8	28	M8	35 - 40	90	18		
	SLN10 90	10	35	M10	39 - 44	90	20		
	SLN12 90	12	42	M12	44 - 49	90	22.5		
	SLN16 90	16	48	M14	47 - 52	90	24		
	SLN20 90	20	52	M16	49 - 54	90	25		
	SLN25 105	25	65	M18 x 2	54 - 59	105	24	25	
	SLN32 105	32	72	M20 x 2	58 - 63	105	24	28	
BT50	SLN6 90	6	25	M6	35 - 40	90	18	—	M24
	SLN8 90	8	28	M8	35 - 40	90	18		
	SLN10 90	10	35	M10	39 - 44	90	20		
	SLN12 90	12	42	M12	44 - 49	90	22.5		
	SLN16 90	16	48	M14	47 - 52	90	24		
	SLN20 90	20	52	M16	49 - 54	90	25		
	SLN25 105	25	65	M18 x 2	54 - 59	105	24	25	
	SLN32 105	32	72	M20 x 2	58 - 63	105	24	28	
	SLN40 120	40	90	M20 x 2	68 - 73	120	30	32	

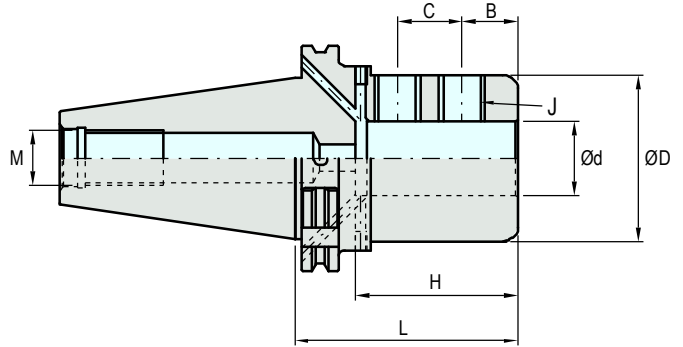
Weldon Tutucu DIN 69871 - Form AD

Toolholder - Type Weldon , DIN 69871 - Form AD

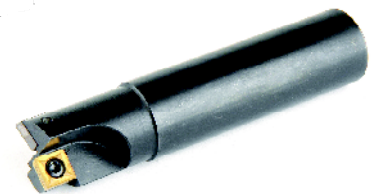
Werkzeughalter - Type Weldon, DIN 69871 - Form AD



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen							
	Ød	ØD	J	H	L	B	C	M
IT40	SLN6 90	6	25	M6	35 - 40	90	18	M16
	SLN8 90	8	28	M8	35 - 40	90	18	
	SLN10 90	10	35	M10	39 - 44	90	20	
	SLN12 90	12	42	M12	44 - 49	90	22.5	
	SLN16 90	16	48	M14	47 - 52	90	24	
	SLN20 90	20	52	M16	49 - 54	90	25	
	SLN25 105	25	65	M18 x 2	54 - 59	105	24	
	SLN32 105	32	72	M20 x 2	58 - 63	105	24	
IT50	SLN6 90	6	25	M6	35 - 40	90	18	M24
	SLN8 90	8	28	M8	35 - 40	90	18	
	SLN10 90	10	35	M10	39 - 44	90	20	
	SLN12 90	12	42	M12	44 - 49	90	22.5	
	SLN16 90	16	48	M14	47 - 52	90	24	
	SLN20 90	20	52	M16	49 - 54	90	25	
	SLN25 105	25	65	M18 x 2	54 - 59	105	24	
	SLN32 105	32	72	M20 x 2	58 - 63	105	24	
	SLN40 120	40	90	M20 x 2	68 - 73	120	30	32



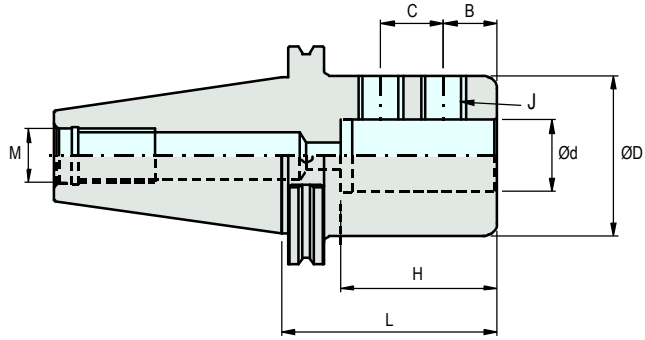
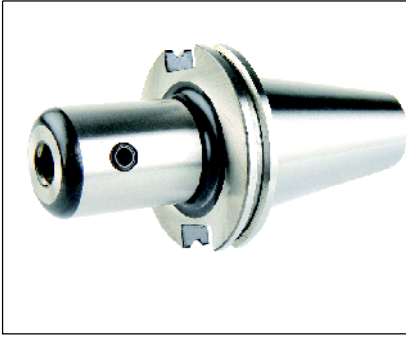
Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen						
		Ød	ØD	J	H	L	B	C
IT40	SLN6 90 B	6	25	M6	35 - 40	90	18	—
	SLN8 90 B	8	28	M8	35 - 40	90	18	
	SLN10 90 B	10	35	M10	39 - 44	90	20	
	SLN12 90 B	12	42	M12	44 - 49	90	22.5	
	SLN16 90 B	16	48	M14	47 - 52	90	24	
	SLN20 90 B	20	52	M16	49 - 54	90	25	
	SLN25 105 B	25	65	M18 x 2	54 - 59	105	24	25
	SLN32 105 B	32	72	M20 x 2	58 - 63	105	24	28
IT50	SLN6 90 B	6	25	M6	35 - 40	90	18	—
	SLN8 90 B	8	28	M8	35 - 40	90	18	
	SLN10 90 B	10	35	M10	39 - 44	90	20	
	SLN12 90 B	12	42	M12	44 - 49	90	22.5	
	SLN16 90 B	16	48	M14	47 - 52	90	24	
	SLN20 90 B	20	52	M16	49 - 54	90	25	
	SLN25 105 B	25	65	M18 x 2	54 - 59	105	24	25
	SLN32 105 B	32	72	M20 x 2	58 - 63	105	24	28
	SLN40 120 B	40	90	M20 x 2	68 - 73	120	30	32



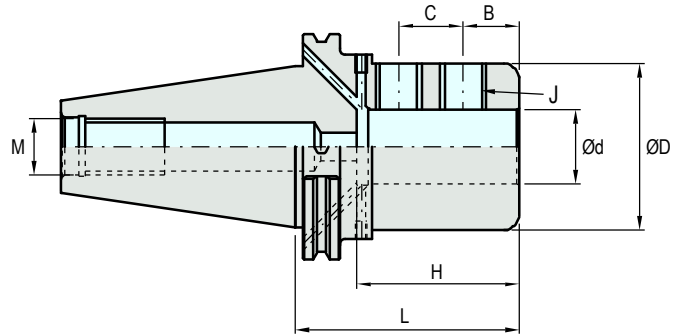
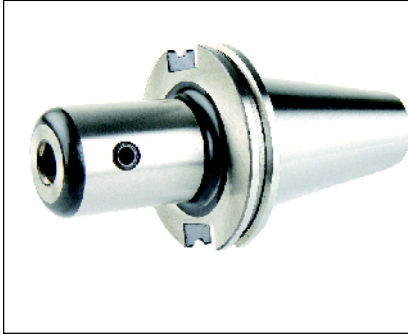
Weldon Tutucu (A.N.S.I) CAT - Form AD

Toolholder - Type Weldon , (A.N.S.I) CAT - Form AD

Werkzeughalter - Type Weldon, (A.N.S.I) CAT - Form AD



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen							
	Ød	ØD	J	H	L	B	C	M
CAT40	SLN6 90	6	25	M6	35 - 40	90	18	M16
	SLN8 90	8	28	M8	35 - 40	90	18	
	SLN10 90	10	35	M10	39 - 44	90	20	
	SLN12 90	12	42	M12	44 - 49	90	22.5	
	SLN16 90	16	48	M14	47 - 52	90	24	
	SLN20 90	20	52	M16	49 - 54	90	25	
	SLN25 105	25	65	M18 x 2	54 - 59	105	24	
	SLN32 105	32	72	M20 x 2	58 - 63	105	24	
CAT50	SLN6 90	6	25	M6	35 - 40	90	18	M24
	SLN8 90	8	28	M8	35 - 40	90	18	
	SLN10 90	10	35	M10	39 - 44	90	20	
	SLN12 90	12	42	M12	44 - 49	90	22.5	
	SLN16 90	16	48	M14	47 - 52	90	24	
	SLN20 90	20	52	M16	49 - 54	90	25	
	SLN25 105	25	65	M18 x 2	54 - 59	105	24	
	SLN32 105	32	72	M20 x 2	58 - 63	105	24	
	SLN40 120	40	90	M20 x 2	68 - 73	120	30	32



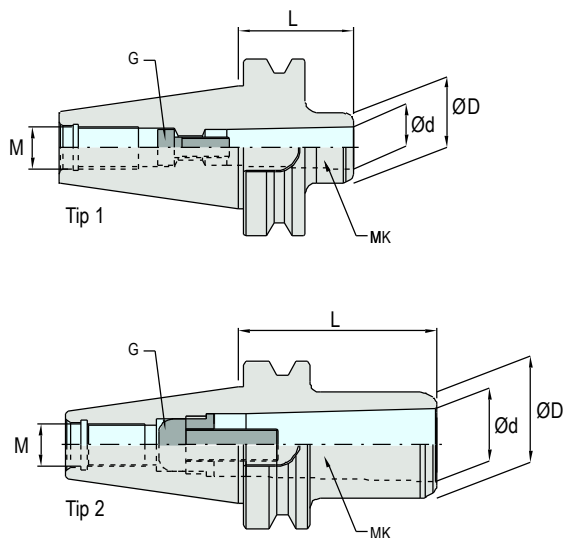
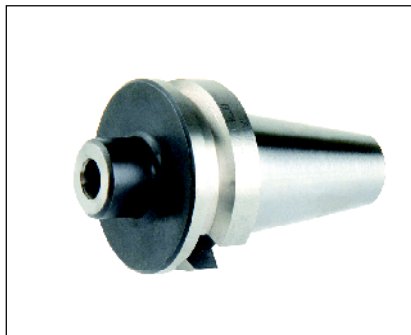
Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen							
		Ød	ØD	J	H	L	B	C	M
CAT40	SLN6 90 B	6	25	M6	35 - 40	90	18	—	M16
	SLN8 90 B	8	28	M8	35 - 40	90	18		
	SLN10 90 B	10	35	M10	39 - 44	90	20		
	SLN12 90 B	12	42	M12	44 - 49	90	22.5		
	SLN16 90 B	16	48	M14	47 - 52	90	24		
	SLN20 90 B	20	52	M16	49 - 54	90	25		
	SLN25 105 B	25	65	M18 x 2	54 - 59	105	24	25	28
	SLN32 105 B	32	72	M20 x 2	58 - 63	105	24		
CAT50	SLN6 90 B	6	25	M6	35 - 40	90	18	—	M24
	SLN8 90 B	8	28	M8	35 - 40	90	18		
	SLN10 90 B	10	35	M10	39 - 44	90	20		
	SLN12 90 B	12	42	M12	44 - 49	90	22.5		
	SLN16 90 B	16	48	M14	47 - 52	90	24		
	SLN20 90 B	20	52	M16	49 - 54	90	25		
	SLN25 105 B	25	65	M18 x 2	54 - 59	105	24	25	28
	SLN32 105 B	32	72	M20 x 2	58 - 63	105	24		
	SLN40 120 B	40	90	M20 x 2	68 - 73	120	30	32	



Mors konik tutucu DIN 228 - 2 Form C - Form A

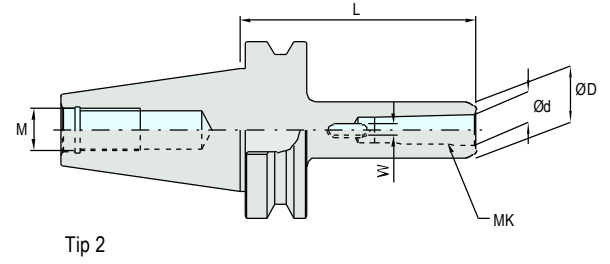
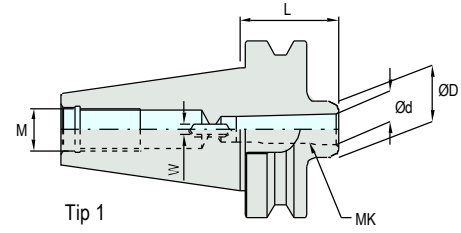
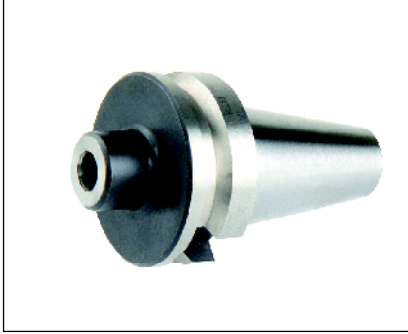
Toolholder - Morse Taper - DIN 228 - 2 Form C - Form A

Werkzeughalter - Morsekegel - DIN 228 - 2 Form C - Form A



Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					
		MK	Ød	ØD	L	Tip	G
BT40	MTB1 45	1	12.065	25	45	1	M6x1
	MTB2 60	2	17.780	32	60	1	M10x1.5
	MTB3 45	3	23.825	40	45	2	M12x1.75
	MTB4 85	4	31.267	50	85	2	M16x2
CAT40	MTB1 45	1	12.065	25	45	1	M6x1
	MTB2 60	2	17.780	32	60	1	M10x1.5
	MTB3 45	3	23.825	40	45	2	M12x1.75
	MTB4 85	4	31.267	50	85	2	M16x2
IT40	MTB1 45	1	12.065	25	45	1	M6x1
	MTB2 60	2	17.780	32	60	1	M10x1.5
	MTB3 45	3	23.825	40	45	2	M12x1.75
	MTB4 85	4	31.267	50	85	2	M16x2
BT50	MTB1 45	1	12.065	25	45	1	M6x1
	MTB2 45	2	17.780	32	45	1	M10x1.5
	MTB3 60	3	23.825	40	60	1	M12x1.75
	MTB4 75	4	31.267	50	75	1	M16x2
	MTB5 105	5	44.399	70	105	2	M20x2.5
CAT50	MTB1 45	1	12.065	25	45	1	M6x1
	MTB2 45	2	17.780	32	45	1	M10x1.5
	MTB3 60	3	23.825	40	60	1	M12x1.75
	MTB4 75	4	31.267	50	75	1	M16x2
	MTB5 105	5	44.399	70	105	2	M20x2.5
IT50	MTB1 45	1	12.065	25	45	1	M6x1
	MTB2 45	2	17.780	32	45	1	M10x1.5
	MTB3 60	3	23.825	40	60	1	M12x1.75
	MTB4 75	4	31.267	50	75	1	M16x2
	MTB5 105	5	44.399	70	105	2	M20x2.5

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : BT40 MTB1 45

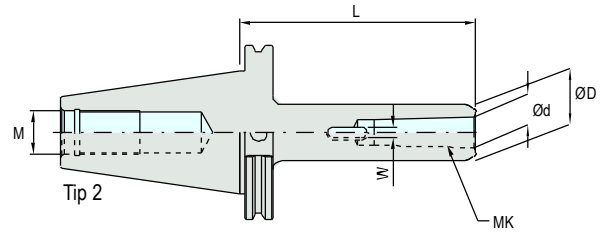
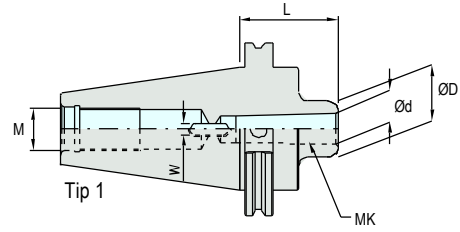


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen						
		MK	Ød	ØD	L	Tip	W	M
BT40	MTA1 45	1	12.065	25	45	1	5.6	M16
	MTA1 120	1	12.065	25	120	2	5.6	
	MTA2 45	2	17.780	32	45	1	6.6	
	MTA2 135	2	17.780	32	135	2	6.6	
	MTA3 75	3	23.825	40	75	1	8.4	
	MTA3 150	3	23.825	40	150	2	8.4	
	MTA4 90	4	31.267	50	90	1	12.4	
	MTA4 180	4	31.267	50	180	2	12.4	
BT50	MTA1 45	1	12.065	25	45	1	5.6	M24
	MTA1 120	1	12.065	25	120	2	5.6	
	MTA1 180	1	12.065	25	180	2	5.6	
	MTA2 45	2	17.780	32	45	1	6.6	
	MTA2 135	2	17.780	32	135	2	6.6	
	MTA2 180	2	17.780	32	180	2	6.6	
	MTA3 45	3	23.825	40	45	1	8.4	
	MTA3 150	3	23.825	40	150	2	8.4	
	MTA3 180	3	23.825	40	180	2	8.4	
	MTA4 75	4	31.267	50	75	1	12.4	
	MTA4 180	4	31.267	50	180	2	12.4	
	MTA5 105	5	44.399	65	105	1	16.5	

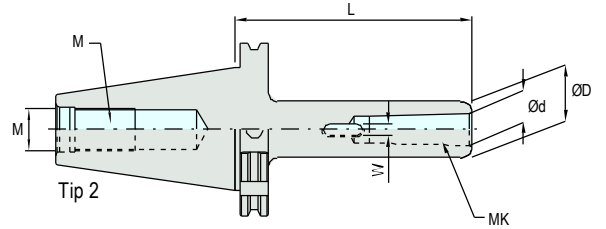
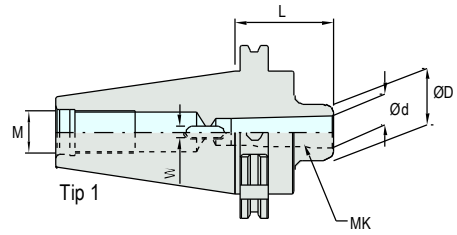
Mors konik tutucu DIN 228-2 Form D - (A.N.S.I) CAT - Form A

Toolholder - Morse Taper - DIN 228-2 Form D - (A.N.S.I) CAT - Form A

Werkzeughalter - Morsekegel - DIN 228 - 2 Form D - (A.N.S.I) CAT - Form A



Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen						
		MK	Ød	ØD	L	Tip	W	M
CAT40	MTA1 45	1	12.065	25	45	1	5.6	M16
	MTA1 120	1	12.065	25	120	2	5.6	
	MTA2 45	2	17.780	32	45	1	6.6	
	MTA2 135	2	17.780	32	135	2	6.6	
	MTA3 75	3	23.825	40	75	1	8.4	
	MTA3 150	3	23.825	40	150	2	8.4	
	MTA4 90	4	31.267	50	90	1	12.4	
	MTA4 180	4	31.267	50	180	2	12.4	
CAT50	MTA1 45	1	12.065	25	45	1	5.6	M24
	MTA1 120	1	12.065	25	120	2	5.6	
	MTA1 180	1	12.065	25	180	2	5.6	
	MTA2 45	2	17.780	32	45	1	6.6	
	MTA2 135	2	17.780	32	135	2	6.6	
	MTA2 180	2	17.780	32	180	2	6.6	
	MTA3 45	3	23.825	40	45	1	8.4	
	MTA3 150	3	23.825	40	150	2	8.4	
	MTA3 180	3	23.825	40	180	2	8.4	
	MTA4 75	4	31.267	50	75	1	12.4	
	MTA4 180	4	31.267	50	180	2	12.4	
	MTA5 105	5	44.399	65	105	1	16.5	

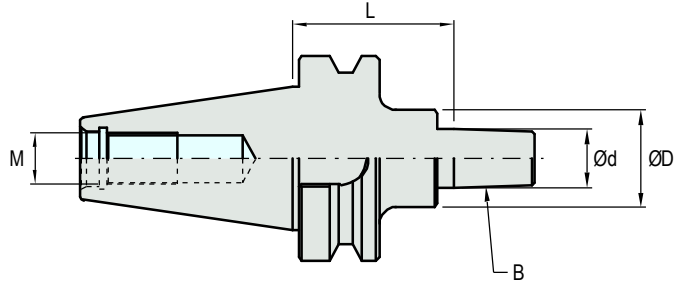
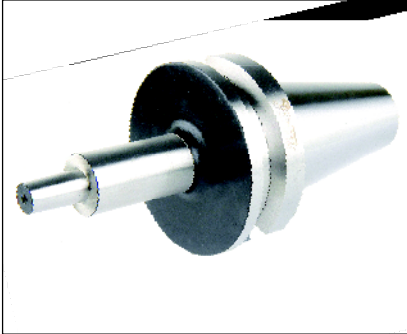


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					
		MK	Ød	ØD	L	Tip	M
IT40	MTA1 45	1	12.065	25	45	1	5.6
	MTA1 120	1	12.065	25	120	2	5.6
	MTA2 45	2	17.780	32	45	1	6.6
	MTA2 135	2	17.780	32	135	2	6.6
	MTA3 75	3	23.825	40	75	1	8.4
	MTA3 150	3	23.825	40	150	2	8.4
	MTA4 90	4	31.267	50	90	1	12.4
	MTA4 180	4	31.267	50	180	2	12.4
IT50	MTA1 45	1	12.065	25	45	1	5.6
	MTA1 120	1	12.065	25	120	2	5.6
	MTA1 180	1	12.065	25	180	2	5.6
	MTA2 45	2	17.780	32	45	1	6.6
	MTA2 135	2	17.780	32	135	2	6.6
	MTA2 180	2	17.780	32	180	2	6.6
	MTA3 45	3	23.825	40	45	1	8.4
	MTA3 150	3	23.825	40	150	2	8.4
	MTA3 180	3	23.825	40	180	2	8.4
	MTA4 75	4	31.267	50	75	1	12.4
	MTA4 180	4	31.267	50	180	2	12.4
	MTA5 105	5	44.399	65	105	1	16.5

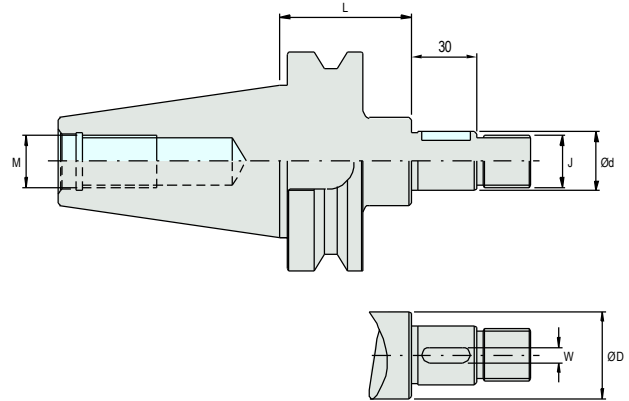
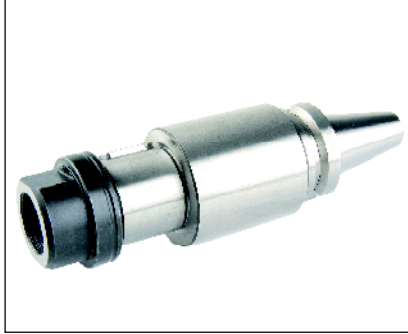
Mandren Tutucular - Form A

Toolholder - Drill Chuck Holder - DIN 238 - Form A

Bohrenwerkzeughalter - DIN 238 - Form A

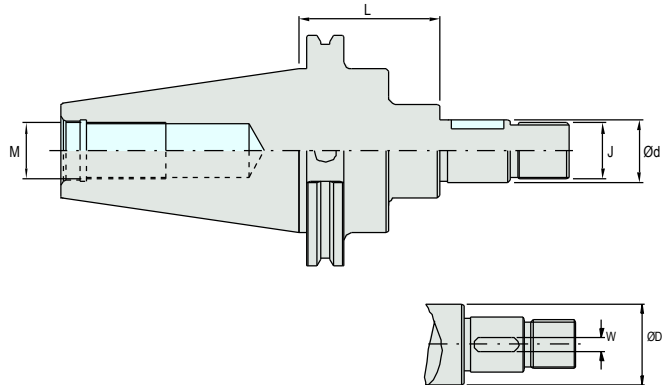


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen				
		Ød	B	ØD	L	M
BT40	B12 45	12.065	B12	18.5	45	M16
	B16 45	15.733	B16	24	45	
	B18 45	17.431	B18	24	45	
CAT40	B12 45	12.065	B12	18.5	45	
	B16 45	15.733	B16	24	45	
	B18 45	17.431	B18	24	45	
IT40	B12 45	12.065	B12	18.5	45	
	B16 45	15.733	B16	24	45	
	B18 45	17.431	B18	24	45	
BT50	B12 45	12.065	B12	18.5	45	M24
	B16 45	15.733	B16	24	45	
	B18 45	17.431	B18	24	45	
CAT50	B12 45	12.065	B12	18.5	45	
	B16 45	15.733	B16	24	45	
	B18 45	17.431	B18	24	45	
IT50	B12 45	12.065	B12	18.5	45	
	B16 45	15.733	B16	24	45	
	B18 45	17.431	B18	24	45	

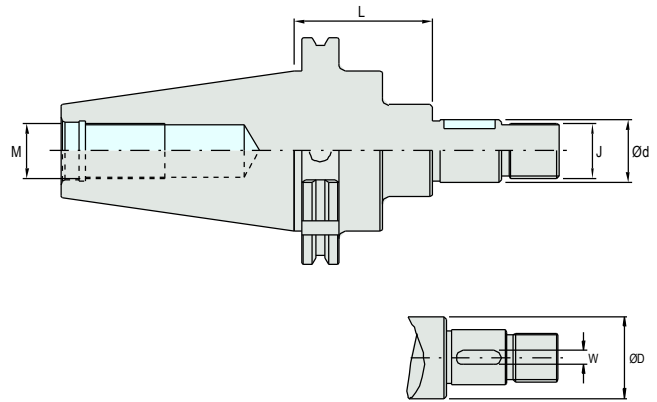


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					
		Ød	ØD	L	J	W	M
BT40	SCA16 75	16	26	75	M14x1.5	4	M16
	SCA16 105	16	26	105	M14x1.5	4	
	SCA22 75	22	34	75	M20x1.5	6	
	SCA22 120	22	34	120	M20x1.5	6	
	SCA27 75	27	40	75	M24x2	7	
	SCA27 135	27	40	135	M24x2	7	
	SCA32 90	32	46	90	M30x2	8	
BT50	SCA16 75	16	26	75	M14x1.5	4	M24
	SCA16 120	16	26	120	M14x1.5	4	
	SCA22 75	22	34	75	M20x1.5	6	
	SCA22 135	22	34	135	M20x1.5	6	
	SCA27 75	27	40	75	M24x2	7	
	SCA27 135	27	40	135	M24x2	7	
	SCA32 90	32	46	90	M30x2	8	
	SCA32 135	32	46	135	M30x2	8	
	SCA40 90	40	55	90	M36x2	10	
	SCA40 135	40	55	135	M36x2	10	

Kanal Freze Tutucuları / (A.N.S.I) CAT - Form A
Toolholder - Disc Mill Holder / (A.N.S.I) CAT - Form A
Werkzeughalter für Schibenfräsen / (A.N.S.I) CAT - Form A



Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					
		Ød	ØD	L	J	W	M
CAT40	SCA16 75	16	26	75	M14x1.5	4	M16
	SCA16 105	16	26	105	M14x1.5	4	
	SCA22 75	22	34	75	M20x1.5	6	
	SCA22 120	22	34	120	M20x1.5	6	
	SCA27 75	27	40	75	M24x2	7	
	SCA27 135	27	40	135	M24x2	7	
	SCA32 90	32	46	90	M30x2	8	
CAT50	SCA16 75	16	26	75	M14x1.5	4	M24
	SCA16 120	16	26	120	M14x1.5	4	
	SCA22 75	22	34	75	M20x1.5	6	
	SCA22 135	22	34	135	M20x1.5	6	
	SCA27 75	27	40	75	M24x2	7	
	SCA27 135	27	40	135	M24x2	7	
	SCA32 90	32	46	90	M30x2	8	
	SCA32 135	32	46	135	M30x2	8	
	SCA40 90	40	55	90	M36x2	10	
	SCA40 135	40	55	135	M36x2	10	

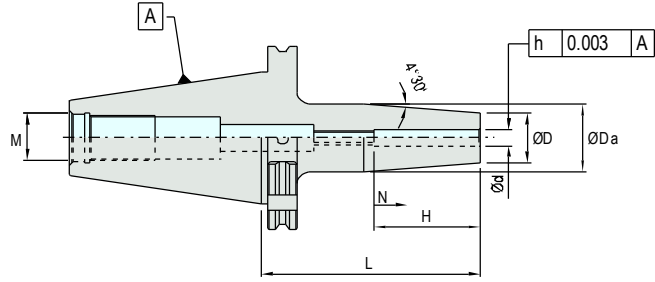
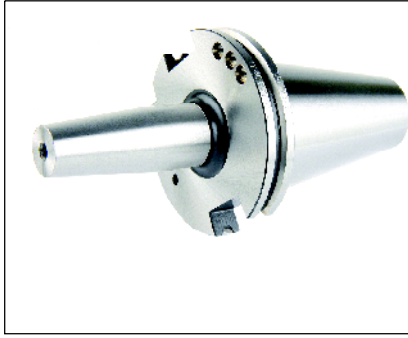


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen					
		Ød	ØD	L	J	W	M
IT40	SCA16 75	16	26	75	M14x1.5	4	M16
	SCA16 105	16	26	105	M14x1.5	4	
	SCA22 75	22	34	75	M20x1.5	6	
	SCA22 120	22	34	120	M20x1.5	6	
	SCA27 75	27	40	75	M24x2	7	
	SCA27 135	27	40	135	M24x2	7	
	SCA32 90	32	46	90	M30x2	8	
IT50	SCA16 75	16	26	75	M14x1.5	4	M24
	SCA16 120	16	26	120	M14x1.5	4	
	SCA22 75	22	34	75	M20x1.5	6	
	SCA22 135	22	34	135	M20x1.5	6	
	SCA27 75	27	40	75	M24x2	7	
	SCA27 135	27	40	135	M24x2	7	
	SCA32 90	32	46	90	M30x2	8	
	SCA32 135	32	46	135	M30x2	8	
	SCA40 90	40	55	90	M36x2	10	
	SCA40 135	40	55	135	M36x2	10	

Isıtmalı Tutucu - DIN 69871 - Form AD

Shrink Chuck Holder - DIN 69871 - Form AD

Schrumpfspannfutter - DIN 69871 - Form AD

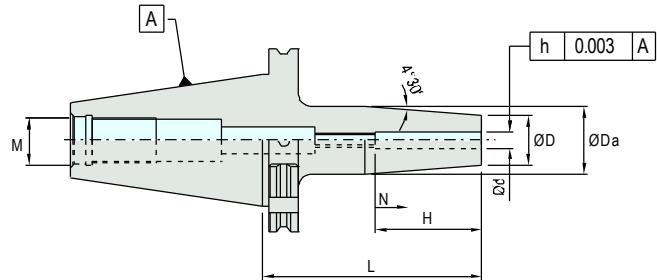
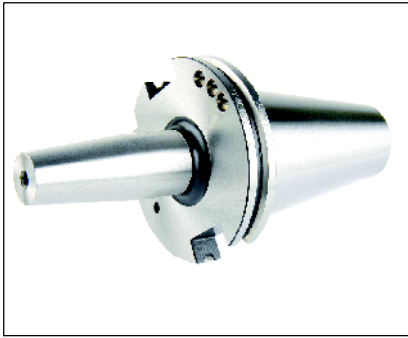


Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						
	Ød	ØD	ØDa	H	L	N	M
IT40 SGT06 80	6	21	27	36	80	10	M16
SGT08 80	8	21	27	36			
SGT10 80	10	24	32	42			
SGT12 80	12	24	32	47			
SGT14 80	14	27	34	47			
SGT16 80	16	27	34	50			
SGT18 80	18	33	42	50			
SGT20 80	20	33	42	52			
SGT25 80	25	44	53	58			

Isıtmalı Tutucu - DIN 69871 - Form AD-B

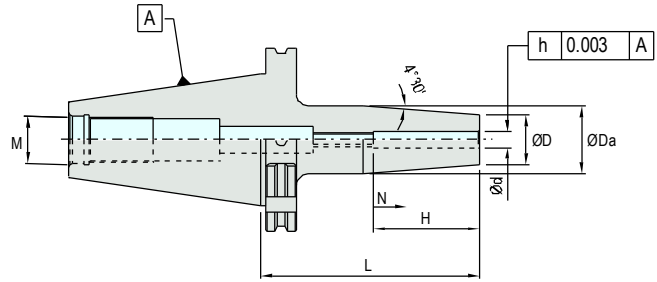
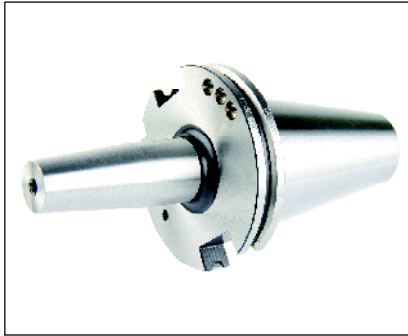
Shrink Chuck Holder- DIN 69871 - Form AD-B

Schrumpfspannfutter - DIN 69871 - Form AD-B



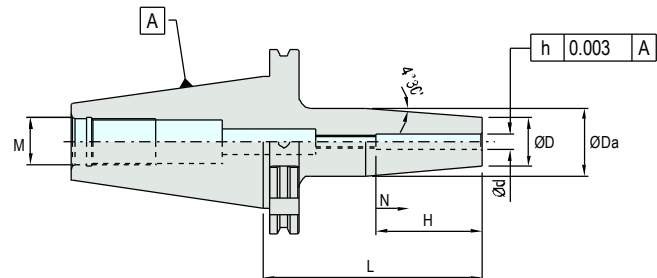
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						
	Ød	ØD	ØDa	H	L	N	M
IT40 SGT06 80 B	6	21	27	36	80	10	M16
SGT08 80 B	8	21	27	36			
SGT10 80 B	10	24	32	42			
SGT12 80 B	12	24	32	47			
SGT14 80 B	14	27	34	47			
SGT16 80 B	16	27	34	50			
SGT18 80 B	18	33	42	50			
SGT20 80 B	20	33	42	52			
SGT25 80 B	25	44	53	58			

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : IT40 SGT10 80



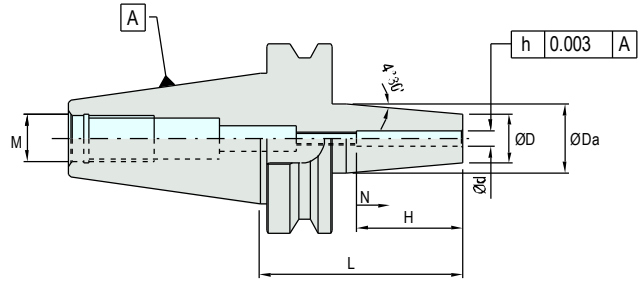
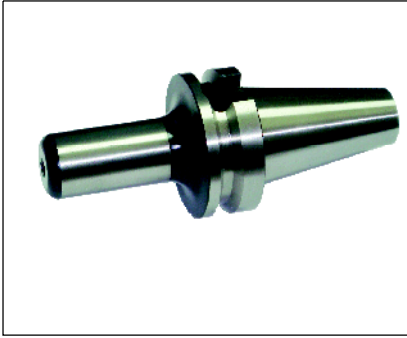
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						
	Ød	ØD	ØDa	H	L	N	M
IT50 SGT06 80	6	21	27	36	80	10	M24
SGT08 80	8	21	27	36			
SGT10 80	10	24	32	42			
SGT12 80	12	24	32	47			
SGT14 80	14	27	34	47			
SGT16 80	16	27	34	50			
SGT18 80	18	33	42	50			
SGT20 80	20	33	42	52			
SGT25 80	25	44	53	58			

Isıtmalı Tutucu - DIN 69871 - Form AD-B
Shrink Chuck Holder - DIN 69871 - Form AD-B
Schrumpfspannfutter - DIN 69871 - Form AD-B



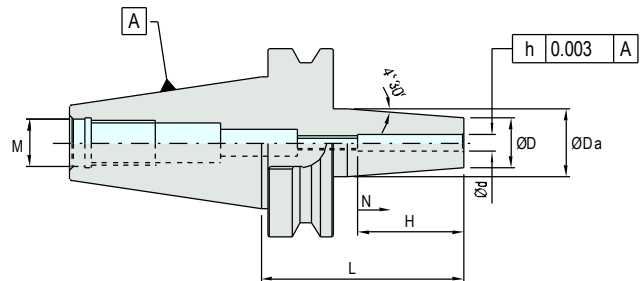
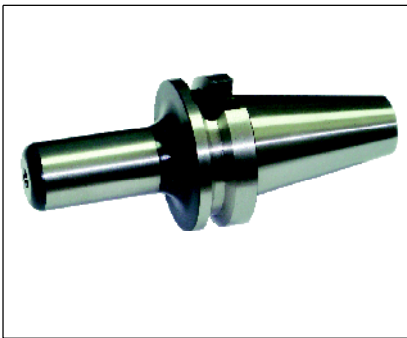
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						
	Ød	ØD	ØDa	H	L	N	M
IT50 SGT06 80 B	6	21	27	36	80	10	M24
SGT08 80 B	8	21	27	36			
SGT10 80 B	10	24	32	42			
SGT12 80 B	12	24	32	47			
SGT14 80 B	14	27	34	47			
SGT16 80 B	16	27	34	50			
SGT18 80 B	18	33	42	50			
SGT20 80 B	20	33	42	52			
SGT25 80 B	25	44	53	58			

Isıtmalı Tutucu- BT MAS - Form AD
Shrink Chuck Holder - BT MAS - Form AD
Schrumpfspannfutter - BT MAS - Form AD



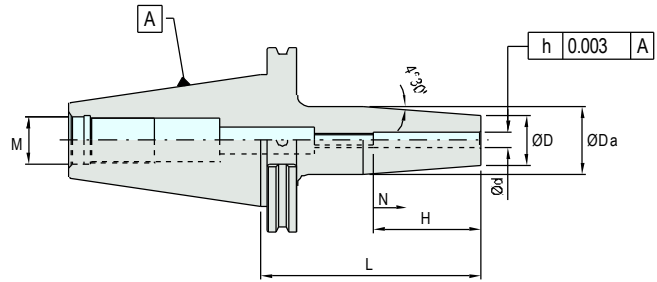
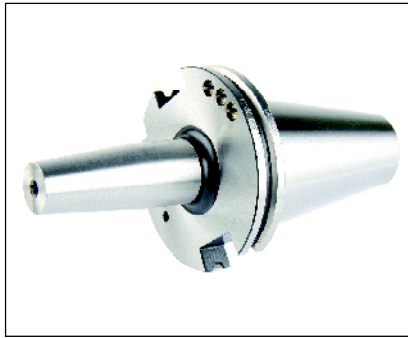
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						
	Ød	ØD	ØDa	H	L	N	M
BT40 SGT06 80	6	21	27	36	80	10	M16
SGT08 80	8	21	27	36			
SGT10 80	10	24	32	42			
SGT12 80	12	24	32	47			
SGT14 80	14	27	34	47			
SGT16 80	16	27	34	50			
SGT18 80	18	33	42	50			
SGT20 80	20	33	42	52			
SGT25 80	25	44	53	58			

Isıtmalı Tutucu - BT MAS - Form AD
Shrink Chuck Holder - BT MAS - Form AD
Schrumpfspannfutter - BT MAS - Form AD



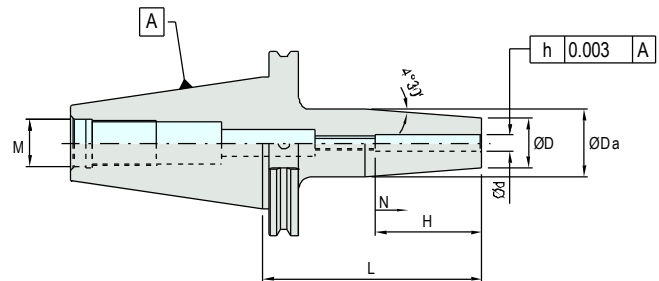
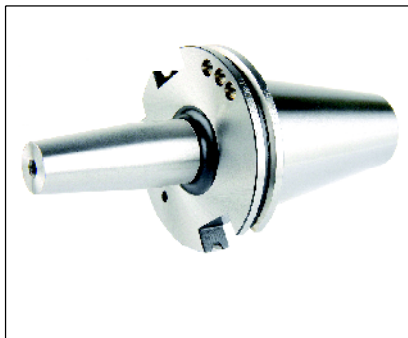
Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						
	Ød	ØD	ØDa	H	L	N	M
BT50 SGT06 80 B	6	21	27	36	80	10	M24
SGT08 80 B	8	21	27	36			
SGT10 80 B	10	24	32	42			
SGT12 80 B	12	24	32	47			
SGT14 80 B	14	27	34	47			
SGT16 80 B	16	27	34	50			
SGT18 80 B	18	33	42	50			
SGT20 80 B	20	33	42	52			
SGT25 80 B	25	44	53	58			

Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : BT40 SGT10 80



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						
	Ød	ØD	ØDa	H	L	N	M
CAT40 SGT06 80	6	21	27	36	80	10	M16
SGT08 80	8	21	27	36			
SGT10 80	10	24	32	42			
SGT12 80	12	24	32	47			
SGT14 80	14	27	34	47			
SGT16 80	16	27	34	50			
SGT18 80	18	33	42	50			
SGT20 80	20	33	42	52			
SGT25 80	25	44	53	58			

Isıtmalı Tutucu - (A.N.S.I) CAT - Form AD
Shrink Chuck Holder - (A.N.S.I) CAT - Form AD
Schrumpfspannfutter - (A.N.S.I) CAT - Form AD



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen						
	Ød	ØD	ØDa	H	L	N	M
CAT50 SGT06 80 B	6	21	27	36	80	10	M24
SGT08 80 B	8	21	27	36			
SGT10 80 B	10	24	32	42			
SGT12 80 B	12	24	32	47			
SGT14 80 B	14	27	34	47			
SGT16 80 B	16	27	34	50			
SGT18 80 B	18	33	42	50			
SGT20 80 B	20	33	42	52			
SGT25 80 B	25	44	53	58			

ÖZELLİĞİ

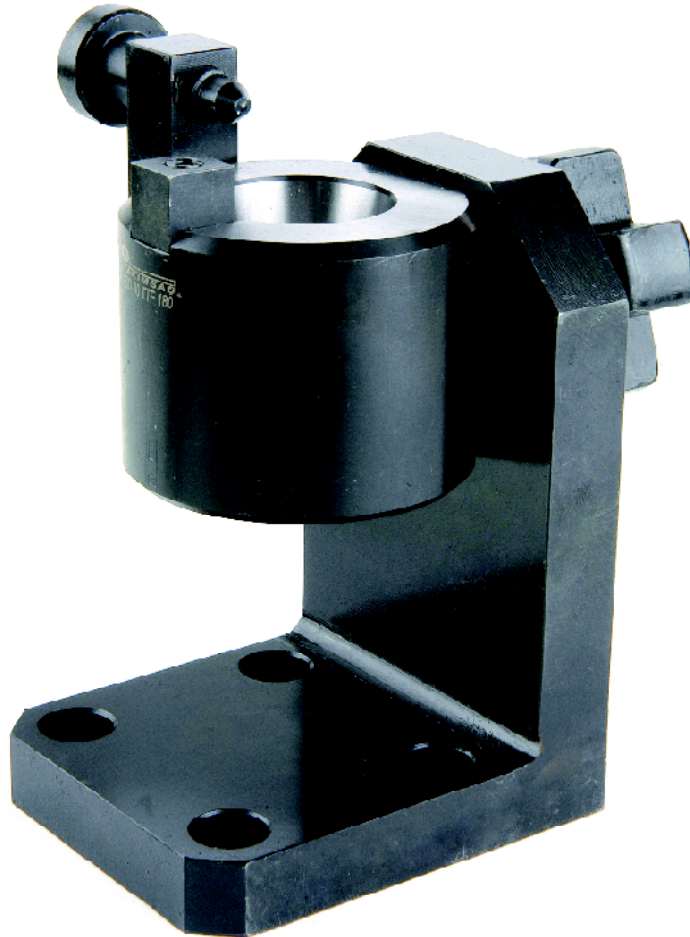
1. Kesici takımların ve çekirme vidalarının kolayca sökölüp takılabılmesine olanak verir.
2. Takım sökme ve takma fikstürünü 5 değişik pozisyonda ayarlayıp kullanabilirsiniz.
3. Maximum kullanım kolaylığına olanak verecek şekilde dizayn edilmiştir.
4. İş masasına veya herhangi bir takım masasına kolayca monte edilebilecek şekilde dizayn edilmiştir.
5. Takım tutucu kısmı sertleştirilmiş ve hassas işlenmiştir.

FUNCTIONS

1. It provides the possibility of easily mounting and dismounting of cutting tools.
2. You can use tool dismounting and mounting fixture by adjusting 5 different position.
3. It has been designed to get maximum usage friendly.
4. It has been designed to be assembled on any tool table or worktable.
5. The side of toolholder has been hardened and processed delicately.

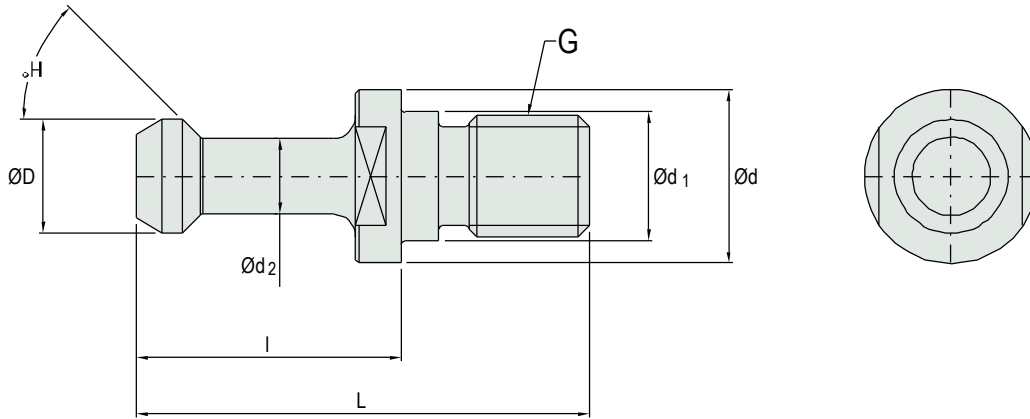
FUNKTIONEN

1. Es bietet die Möglichkeit, sehr einfach Montage und Demontage der Schneidwerkzeuge
2. Sie können mit Werkzeug Demontage und Montage Befestigung durch Verstellen 5 verschiedene Position.
3. Es wurde entwickelt, um maximale Nutzung freundlich.
4. Es wurde entwickelt, um auf jedem Werkzeug-Tabella oder Arbeitstisch montiert werden.
5. Die Seite der Werkzeughalter wurde gehärtet und fein verarbeitet.

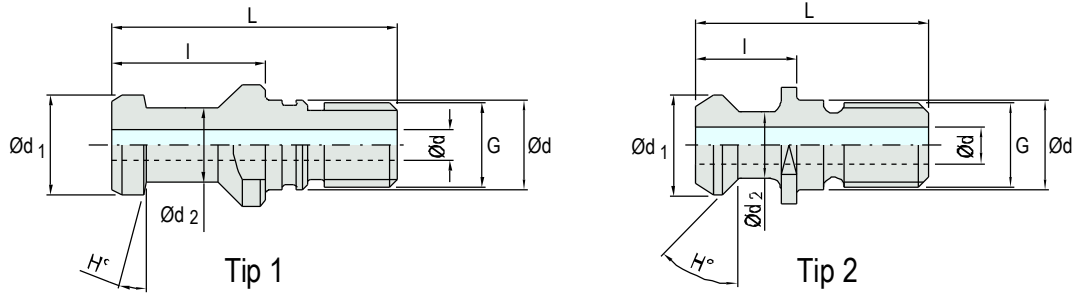


Sipariş Örneği / Ordering Example / Bestellbeispiel :

**ISO40 TTF 180
ISO50 TTF 180**



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen							
	$\varnothing D$	$\varnothing d$	$\varnothing d_1$	$\varnothing d_2$	L	I	G	H°
PS 1T	15	23	17	10	60	35	M16	45°
PS 2T	15	23	17	10	60	35	M16	60°
PS 3T	19	31	21	14	70	40	M20	45°
PS 4T	19	31	21	14	70	40	M20	60°
PS 5T	23	38	25	17	85	45	M24	45°
PS 6T	23	38	25	17	85	45	M24	60°
PS 8T	15	23	17	10	108	35	M16	45°
PS 10T	15	23	17	10	108	35	M16	60°
PS 15T	23	38	25	17	157	45	M24	45°
PS 61T	23	38	25	17	157	45	M24	60°
PS 0T	23	38	25	17	85	45	M24	90°
PS 02T	19	31	21	14	70	40	M20	90°
PS 05T	19	31	21	14	125	40	M20	90°
PS 08T	15	23	17	10	60	35	M16	90°
PS PT	24	36	25	18	71	31	M24	90°
PS P5T	15	23	17	10	50	25	M16	90°
PS G4T	29	37	25	21	65.2	25.2	M24	45°
PS G5T	18.8	22	17	12.4	44.1	19.1	M16	45°
PS S2T	25	39	25	18	95	55	M24	60°
PS B1T	22	38	25	16	112	72	M24	60°
PS H1T	22	38	25	17	111	73	M24	45°
PS 80T 50	28	38	25	21	74	34	M24	75°
PS 80T 40	19	23	17	14	54	29	M16	75°
PS CT	21	39	25	15	105.1	63.1	M24	45°
PS 30T	15	23	17	11	60	35	M16	60°
PS 302T	19	23	17	14	54	26	M16	75°
PS Q4T	15	23	17	10	62.85	37.85	M16	45°
PS Q5T	15	23	17	10	60.3	35.3	M16	45°
PS Q6T	15	23	17	10	52.5	27.5	M16	45°
PS 309T	19	23	17	14	54	26	M16	75°
PS 512T	28	36	25	21	74	34	M24	75°
PS A1T	19	23	17	14	54	26	M16	75°
PS A3T	28	36	25	21	74	34	M24	75°
PS A4T	18.95	22.5	17	12.95	44.5	16.4	M16	45°
PS A6T	29.1	37	25	19.6	65.5	25.55	M24	45°



Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen									Tutucu Tipi Holder Type Haltertyp
	Ød ₁	Ød ₂	Ød ₃	L	I	G	Ød	H°	Fig	
PS 212 CAT	18.95	17	12.9	38	16.2	M16	7	15°	2	(A.N.S.I.) CAT
PS 312 CAT	24.05	21	16.2	48	20.8	M20	9.5	15°	2	
PS 412 CAT	29.10	25	19.05	59	25.4	M24	11.5	15°	2	

Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen									Tutucu Tipi Holder Type Haltertyp
	Ød ₁	Ød ₂	Ød ₃	L	I	G	Ød	H°	Fig	
PS 213 IT	19	17		54	26	M16	7	15°	1	DIN 69871
PS 313 IT	23	21		65	30	M20	9.5	15°	1	
PS 413 IT	28	25		74	34	M24	11.5	15°	1	

Kod Code Bezeichnung	Ölçüler Dimensions Abmessungen									Tutucu Tipi Holder Type Haltertyp
	Ød ₁	Ød ₂	Ød ₃	L	I	G	Ød	H°	Fig	
PS 214 IT	19	17		54	26	M16	7	45°	2	DIN 69871 AD-B
PS 314 IT	23	21		65	30	M20	9.5	45°	2	
PS 414 IT	28	25		74	34	M24	11.5	45°	2	





VDI Takım Tutucu DIN 69880

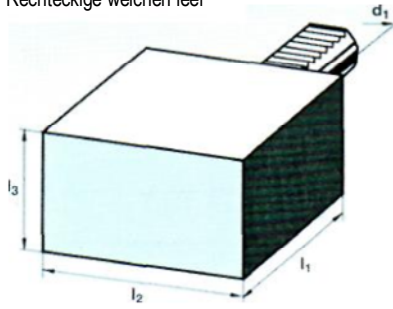
VDI Holder DIN 69880

VDI Werkzeughalter DIN 69880



Kater tutucu özel takım yapma amaçlı

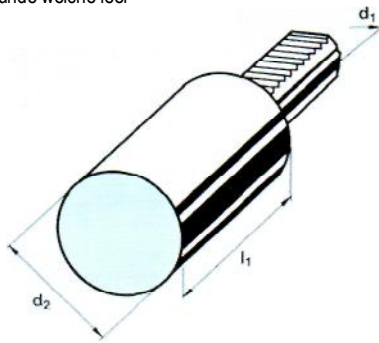
Rectangular soft blank
Rechteckige weichen leer



Tutucu Kod No: Code No: Bezeichnung No:	DIN 69880	d ₁	d ₂	d ₃	h ₁	h ₅	h ₆		l ₁	l ₂	l ₃
VDI 39 70 004	A1 - 30 x 85	30	-	-	-	-	-	-	85	130	76
70 006	A1 - 40 x 100	40	-	-	-	-	-	-	100	151	96
70 008	A1 - 50 x 125	50	-	-	-	-	-	-	125	160	120
70 010	A1 - 60 x 140	60	-	-	-	-	-	-	140	170	135

Kater tutucu özel takım yapma amaçlı

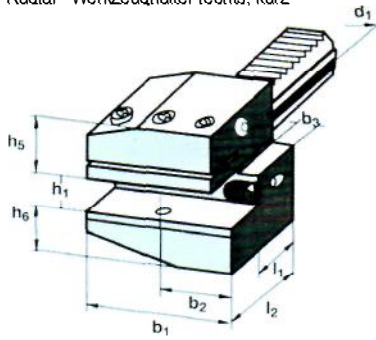
Round soft blank
Runde weiche leer



Tutucu Kod No: Code No: Bezeichnung No:	DIN 69880	d ₁	d ₂						l ₁		
VDI 39 70 104	A2 - 30 x 100	30	68	-	-	-	-	-	100	-	-
70 106	A2 - 30 x 240	30	68	-	-	-	-	-	240	-	-
70 108	A2 - 40 x 120	40	83	-	-	-	-	-	120	-	-
70 110	A2 - 40 x 320	40	83	-	-	-	-	-	320	-	-
70 112	A2 - 50 x 135	50	98	-	-	-	-	-	135	-	-
70 114	A2 - 50 x 400	50	98	-	-	-	-	-	400	-	-
70 116	A2 - 60 x 140	60	125	-	-	-	-	-	140	-	-
70 118	A2 - 60 x 425	60	125	-	-	-	-	-	425	-	-

Radyal kater tutucu sağ tip , kısa

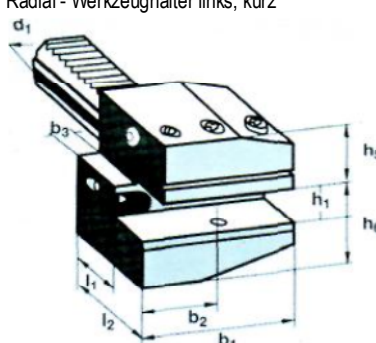
Radial - Toolholder right , short
Radial - Werkzeughalter rechts, kurz



Tutucu Kod No: Code No: Bezeichnung No:	DIN 69880	d ₁	b ₁	b ₂	b ₃	h ₁	h ₅	h ₆	l ₁	l ₂	l ₃
VDI 39 72 006	B1 - 30 x 20 x 40	30	70	35	10	20	28	38	22	40	-
72 008	B1 - 30 x 20 x 60	30	70	35	10	20	28	38	42	60	-
72 010	B1 - 40 x 25 x 44	40	85	42.5	12.5	25	32.5	48	22	44	-
72 012	B1 - 50 x 32 x 55	50	100	50	16	32	35	60	30	55	-
72 014	B1 - 60 x 32 x 60	60	125	62.5	16	32	35	62.5	30	60	-

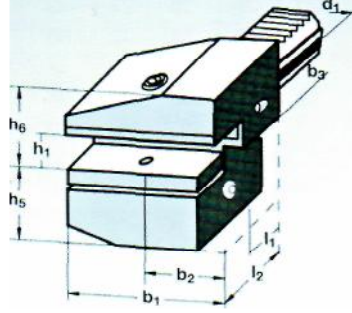
Radyal kater tutucu sol tip , kısa

Radial - Toolholder left , short
Radial - Werkzeughalter links, kurz



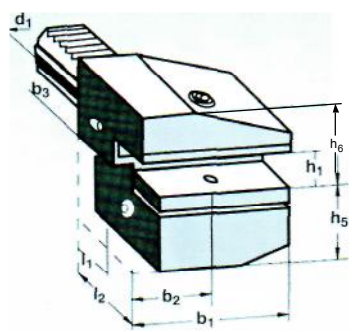
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VDI 39 72 056	B2 - 30 x 20 x 40	30	70	35	10	20	28	38	22	40	-
72 058	B2 - 30 x 20 x 60	30	70	35	10	20	28	38	42	60	-
72 060	B2 - 40 x 25 x 44	40	85	42.5	12.5	25	32.5	48	22	44	-
72 062	B2 - 50 x 32 x 55	50	100	50	16	32	35	60	30	55	-
72 064	B2 - 60 x 40 x 60	60	125	62.5	16	32	35	62.5	30	60	-

Radyal kater tutucu ters sağ tip , kısa
Radial - Toolholder inverted right , short
Radial - Werkzeughalter invertiert rechts, kurz



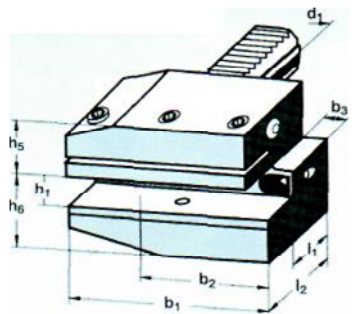
Tutucu Kod No: Code No: Bezeichnung No:		DIN 69880	d ₁	b ₁	b ₂	b ₃	h ₁	h ₅	h ₆	l ₁	l ₂	l ₃
VDI 39	72 106	B3 - 30 x 20 x 40	30	70	35	10	20	28	38	22	40	-
	72 108	B3 - 30 x 20 x 60	30	70	35	10	20	28	38	42	60	-
	72 110	B3 - 40 x 25 x 44	40	85	42.5	12.5	25	32.5	48	22	44	-
	72 112	B3 - 50 x 32 x 55	50	100	50	16	32	35	60	30	55	-
	72 114	B3 - 60 x 40 x 60	60	125	62.5	16	32	35	62.5	30	60	-

Radyal kater tutucu ters sol tip , kısa
Radial - Toolholder inverted left , short
Radial - Werkzeughalter invertiert links, kurz



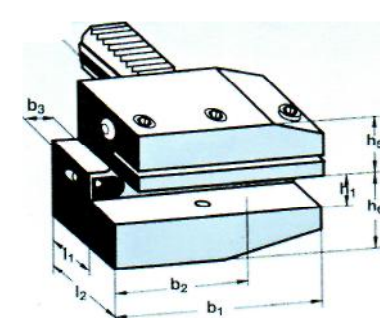
Tutucu Kod No: Code No: Bezeichnung No:		DIN 69880	d ₁	b ₁	b ₂	b ₃	h ₁	h ₅	h ₆	l ₁	l ₂	l ₃
VDI 39	72 156	B4 - 30 x 20 x 40	30	70	35	10	20	28	38	22	40	-
	72 158	B4 - 30 x 20 x 60	30	70	35	10	20	28	38	42	60	-
	72 160	B4 - 40 x 25 x 44	40	85	42.5	12.5	25	32.5	48	22	44	-
	72 162	B4 - 50 x 32 x 55	50	100	50	16	32	35	60	30	55	-
	72 164	B4 - 60 x 40 x 60	60	125	62.5	16	32	35	62.5	30	60	-

Radyal kater tutucu sağ tip , uzun
Radial - Toolholder right , long
Radial - Werkzeughalter rechts, lang



Tutucu Kod No: Code No: Bezeichnung No:		DIN 69880	d ₁	b ₁	b ₂	b ₃	h ₁	h ₅	h ₆	l ₁	l ₂	
VDI 39	72 206	B5 - 30 x 20 x 40	30	100	65	10	20	28	38	22	40	
	72 208	B5 - 30 x 20 x 60	30	100	65	10	20	28	38	42	60	
	72 210	B5 - 40 x 25 x 44	40	118	75.5	12.5	25	32.5	48	22	44	
	72 212	B5 - 50 x 32 x 55	50	130	80	16	32	35	60	30	55	
	72 214	B5 - 60 x 40 x 60	60	145	82.5	16	32	35	62.5	30	60	

Radyal kater tutucu sol tip , uzun
Radial - Toolholder left , long
Radial - Werkzeughalter links, lang

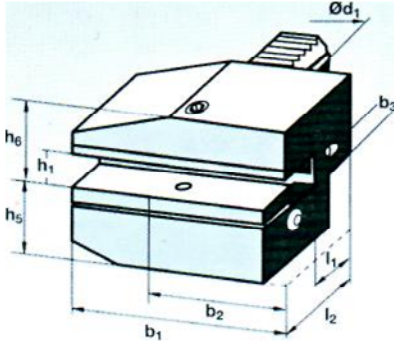


Tutucu Kod No: Code No: Bezeichnung No:		DIN 69880	d ₁	b ₁	b ₂	b ₃	h ₁	h ₅	h ₆	l ₁	l ₂	
VDI 39	72 256	B6 - 30 x 20 x 40	30	100	65	10	20	28	38	22	40	
	72 258	B6 - 30 x 20 x 60	30	100	65	10	20	28	38	42	60	
	72 260	B6 - 40 x 25 x 44	40	118	75.5	12.5	25	32.5	48	22	44	
	72 262	B6 - 50 x 32 x 55	50	130	80	16	32	35	60	30	55	
	72 264	B6 - 60 x 40 x 60	60	145	82.5	16	32	35	62.5	30	60	

VDI Takım Tutucu DIN 69880
VDI Holder DIN 69880
VDI Werkzeughalter DIN 69880

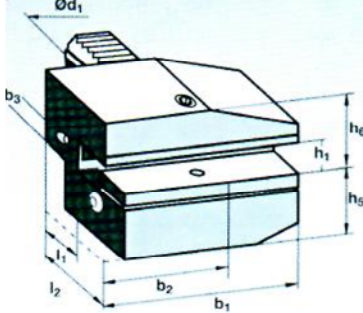


Radyal kater tutucu ters sağ tip , uzun
Radial - Toolholder inverted right , long
 Radial - Werkzeughalter invertiert rechts, lang



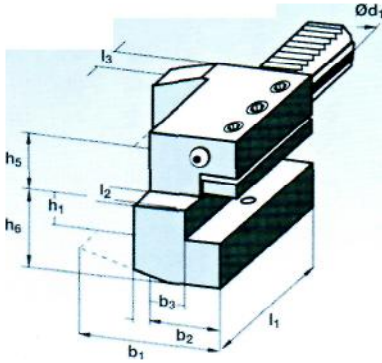
Tutucu Kod No: Code No: Bezeichnung No:		DIN 69880	d ₁	b ₁	b ₂	b ₃	h ₁	h ₅	h ₆	l ₁	l ₂	
VDI 39	72 306	B7 - 30 x 20 x 40	30	100	65	10	20	28	38	22	40	
	72 308	B7 - 30 x 20 x 60	30	100	65	10	20	28	38	42	60	
	72 310	B7 - 40 x 25 x 44	40	118	75.5	12.5	25	32.5	48	22	44	
	72 312	B7 - 50 x 32 x 55	50	130	80	16	32	35	60	30	55	
	72 314	B7 - 60 x 40 x 60	60	145	82.5	16	32	35	62.5	30	60	

Radyal kater tutucu ters sol tip , uzun
Radial - Toolholder inverted left , long
 Radial - Werkzeughalter invertiert linke, lange



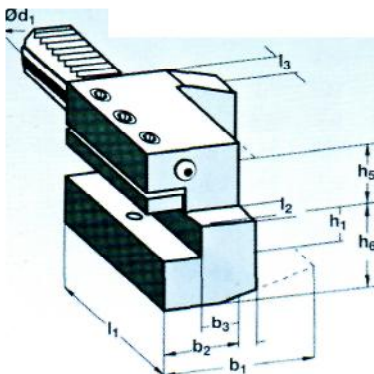
Tutucu Kod No: Code No: Bezeichnung No:		DIN 69880	d ₁	b ₁	b ₂	b ₃	h ₁	h ₅	h ₆	l ₁	l ₂	
VDI 39	72 356	B8 - 30 x 20 x 40	30	100	65	10	20	28	38	22	40	
	72 358	B8 - 30 x 20 x 60	30	100	65	10	20	28	38	42	60	
	72 360	B8 - 40 x 25 x 44	40	118	75.5	12.5	25	32.5	48	22	44	
	72 362	B8 - 50 x 32 x 55	50	130	80	16	32	35	60	30	55	
	72 364	B8 - 60 x 40 x 60	60	145	82.5	16	32	35	62.5	30	60	

Aksiyal kater tutucu ters sağ tip
Axial - Toolholder inverted right
 Axial - Werkzeughalter invertiert rechts



Tutucu Kod No: Code No: Bezeichnung No:		DIN 69880	d ₁	b ₁	b ₂	b ₃	h ₁	h ₅	h ₆	l ₁	l ₂	l ₃
VDI 39	74 006	C1 - 30 x 20 x 70	30	70	35	17	20	28	38	70	10	30
	74 008	C1 - 40 x 25 x 85	40	85	42.5	20.5	25	32.5	48	85	12.5	30
	74 010	C1 - 50 x 32 x 100	50	100	50	25.5	32	35	60	100	16	40
	74 012	C1 - 60 x 40 x 125	60	125	62.5	32.5	32	42.5	62.5	125	16	40

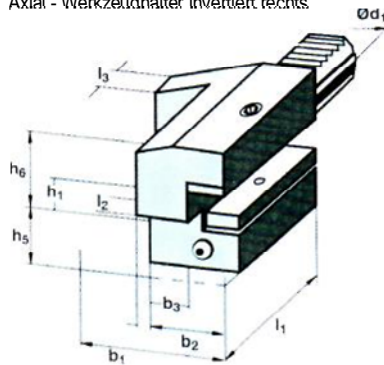
Aksiyal kater tutucu ters sol tip
Axial - Toolholder inverted left
 Axial - Werkzeughalter links invertiert



Tutucu Kod No: Code No: Bezeichnung No:		DIN 69880	d ₁	b ₁	b ₂	b ₃	h ₁	h ₅	h ₆	l ₁	l ₂	l ₃
VDI 39	74 054	C2 - 30 x 20 x 70	30	70	35	17	20	28	38	70	10	30
	74 056	C2 - 40 x 25 x 85	40	85	42.5	20.5	25	32.5	48	85	12.5	30
	74 058	C2 - 50 x 32 x 100	50	100	50	25.5	32	35	60	100	16	40
	74 060	C2 - 60 x 40 x 125	60	125	62.5	32.5	32	42.5	62.5	125	16	40

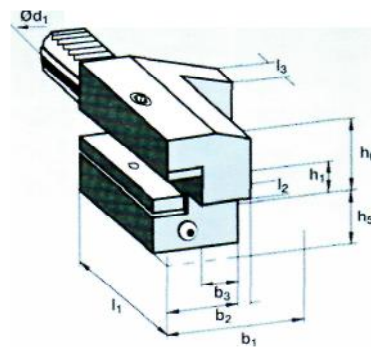
Sipariş Örneği / Ordering Example / Bestellbeispiel ab Lager : VDI 39 72 306 (B7 - 30 x 20 x 40)

Aksiyal kater tutucu ters sağ tip
Axial - Toolholder inverted right
Axial - Werkzeughalter invertiert rechts



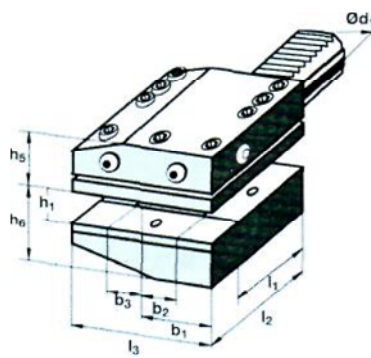
Tutucu Kod No: Code No: Bezeichnung No:	DIN 69880	d ₁	b ₁	b ₂	b ₃	h ₁	h ₅	h ₆	l ₁	l ₂	l ₃
VDI 39 74 106	C3 - 30 x 20 x 70	30	70	35	17	20	28	38	70	10	30
74 108	C3 - 40 x 25 x 85	40	85	42.5	20.5	25	32.5	48	85	12.5	30
74 110	C3 - 50 x 32 x 100	50	100	50	25.5	32	35	60	100	16	40
74 112	C3 - 60 x 40 x 125	60	125	62.5	32.5	32	42.5	62.5	125	16	40

Aksiyal kater tutucu ters sol tip
Axial - Toolholder inverted left
Axial - Werkzeughalter links invertiert



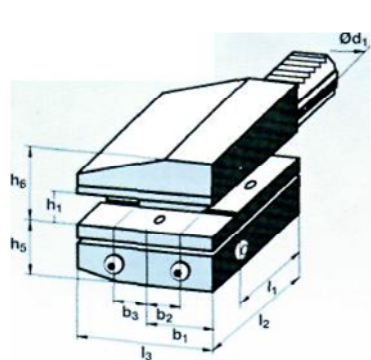
Tutucu Kod No: Code No: Bezeichnung No:	DIN 69880	d ₁	b ₁	b ₂	b ₃	h ₁	h ₅	h ₆	l ₁	l ₂	l ₃
VDI 39 74 156	C4 - 30 x 20 x 70	30	70	35	17	20	28	38	70	10	30
74 158	C4 - 40 x 25 x 85	40	85	42.5	20.5	25	32.5	48	85	12.5	30
74 160	C4 - 50 x 32 x 100	50	100	50	25.5	32	35	60	100	16	40
74 162	C4 - 60 x 40 x 125	60	125	62.5	32.5	32	42.5	62.5	125	16	40

Çok yönlü kater tutucu
Multiple - Square Toolholder
Mehrere - Square Werkzeughalter



Tutucu Kod No: Code No: Bezeichnung No:	DIN 69880	d ₁	b ₁	b ₂	b ₃	h ₁	h ₅	h ₆	l ₁	l ₂	l ₃
VDI 39 75 002	D1 - 30 x 20	30	35	17	23	20	28	38	42	60	76
75 004	D1 - 40 x 25	40	42.5	20.5	25.5	25	32.5	48	50	72	90
75 006	D1 - 50 x 32	50	50	25.5	30.5	32	35	60	60	85	105
75 008	D1 - 60 x 40	60	57.5	32.5	32.5	32	42.5	62.5	85	110	125

Çok yönlü kater tutucu ters
Multiple - Square Toolholder, inverted
Mehrere - Square Werkzeughalter, invertiert

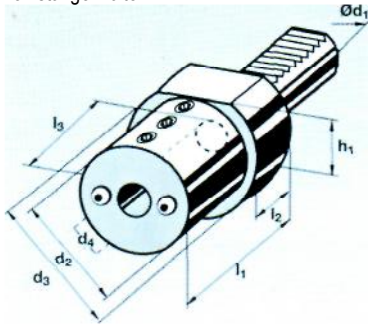


Tutucu Kod No: Code No: Bezeichnung No:	DIN 69880	d ₁	b ₁	b ₂	b ₃	h ₁	h ₅	h ₆	l ₁	l ₂	l ₃
VDI 39 75 102	D2 - 30 x 20	30	35	17	23	20	28	38	42	60	76
75 104	D2 - 40 x 25	40	42.5	20.5	25.5	25	32.5	48	50	72	90
75 106	D2 - 50 x 32	50	50	25.5	30.5	32	35	60	60	85	105
75 108	D2 - 60 x 40	60	57.5	32.5	32.5	32	42.5	62.5	85	110	125

VDI Takım Tutucu DIN 69880
VDI Holder DIN 69880
VDI Werkzeughalter DIN 69880

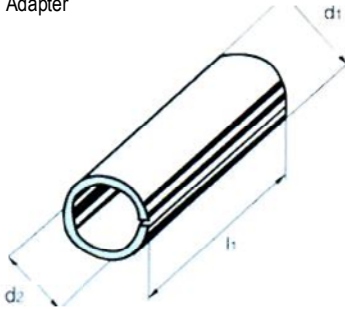


Delik kater tutucusu
Boring bar holder
Bohrstangenhalter



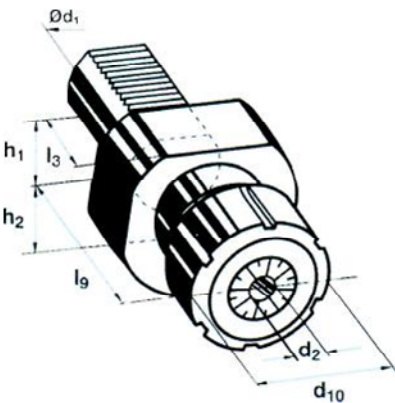
Tutucu Kod No: Code No: Bezeichnung No:	DIN 69880	d ₁	d ₂	d ₃	d _{4h7}	h ₁	l ₁	h ₂	l ₃
VDI 39 76 114	E2 - 30 x 8	30	42	68	8	28	60	22	51
76 116	E2 - 30 x 10	30	45	68	10	28	60	22	51
76 118	E2 - 30 x 12	30	48	68	12	28	60	22	51
76 120	E2 - 30 x 16	30	50	68	16	28	60	22	51
76 122	E2 - 30 x 20	30	55	68	20	28	60	22	51
76 124	E2 - 30 x 25	30	60	68	25	28	60	22	51
76 126	E2 - 30 x 32	30	68	68	32	28	60	22	51
76 127	E2 - 40 x 10	40	68	68	10	32.5	75	22	61
76 128	E2 - 40 x 12	40	45	68	12	32.5	75	22	61
76 130	E2 - 40 x 16	40	50	83	16	32.5	75	22	61
76 132	E2 - 40 x 20	40	55	83	20	32.5	75	22	61
76 134	E2 - 40 x 25	40	60	83	25	32.5	75	22	61
76 136	E2 - 40 x 32	40	68	83	32	32.5	75	22	61
76 138	E2 - 40 x 40	40	83	83	40	32.5	75	22	61
76 140	E2 - 50 x 16	50	50	83	16	35	90	30	76
76 142	E2 - 50 x 20	50	55	98	20	35	90	30	76
76 144	E2 - 50 x 25	50	60	98	25	35	90	30	76
76 146	E2 - 50 x 32	50	68	98	32	35	90	30	76
76 148	E2 - 50 x 40	50	83	98	40	35	90	30	76
76 150	E2 - 50 x 50	50	90	98	50	35	100	30	86
76 152	E2 - 60 x 16	60	50	98	16	42.5	90	30	76
76 154	E2 - 60 x 20	60	55	123	20	42.5	90	30	76
76 156	E2 - 60 x 25	60	60	123	25	42.5	90	30	76
76 158	E2 - 60 x 32	60	68	123	32	42.5	90	30	76
76 160	E2 - 60 x 40	60	83	123	40	42.5	90	30	76
76 162	E2 - 60 x 50	60	90	123	50	42.5	100	30	86
76 164	E2 - 60 x 63	60	105	123	63	42.5	120	30	100

Adaptör
Adaptor
Adapter



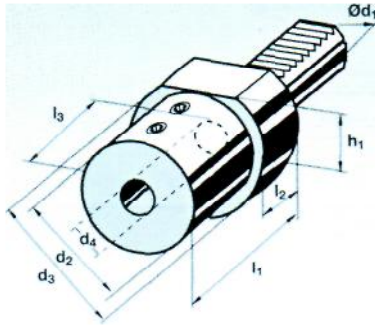
Tutucu Kod No: Code No: Bezeichnung No:	DIN 69880	d ₁	d ₂	d ₃	l ₁				
VDI 39 76 352	E2 - 2 x 25	25	16	-	60				
76 354	E2 - 2 x 32	32	25	-	70				
76 356	E2 - 2 x 40	40	32	-	80				
76 358	E2 - 2 x 50	50	40	-	90				

Pens başlığı
Collet chuck holder
Spannzangenhalter

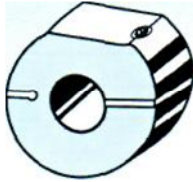


Tutucu Kod No: Code No: Bezeichnung No:	DIN 69880	d ₁	d ₂	d ₆	d ₁₀ max.	h ₁	h ₂	l ₃	l ₉ max.
VDI 20 ER16 CNC	E3 - 20 x 1 - 13	20	1 - 13	50	28	23	23	18	57
VDI 20 ER25 CNC	E3 - 20 x 2 - 16	20	2 - 16	50	42	23	23	18	62
VDI 30 ER16 CNC	E3 - 30 x 1 - 13	30	1 - 13	68	28	28	30	22	57
VDI 30 ER25 CNC	E3 - 30 x 2 - 16	30	2 - 16	68	42	28	30	22	62
VDI 40 ER16 CNC	E3 - 40 x 1 - 13	40	1 - 13	83	28	32.5	-	22	75
VDI 40 ER25 CNC	E3 - 40 x 2 - 16	40	2 - 16	83	42	32.5	-	22	75
VDI 50 ER16 CNC	E3 - 50 x 1 - 13	50	1 - 13	98	28	35	-	25	80
VDI 50 ER25 CNC	E3 - 50 x 2 - 16	50	2 - 16	98	42	35	-	25	80
VDI 60 ER16 CNC	E3 - 60 x 1 - 13	60	1 - 13	123	28	42.5	-	25	90
VDI 60 ER25 CNC	E3 - 60 x 2 - 16	60	2 - 16	123	42	42.5	-	25	90

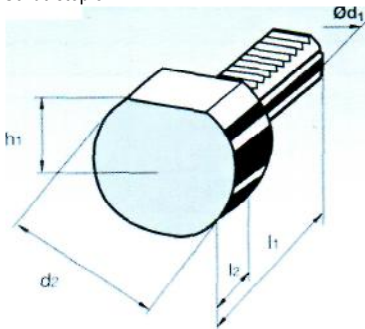
Matkap tutucu
Drill holder
 Bohrerhalter



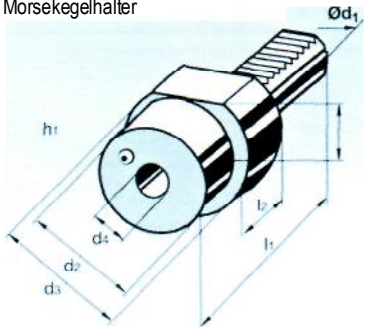
Bağlama ringi
Ring holder type
 Ringhalter Typ



Metal kör tapa
Protective plug
 Schutzstopfen



Mors konik turucu
Holder for mors taper shank
 Morsekegelhalter

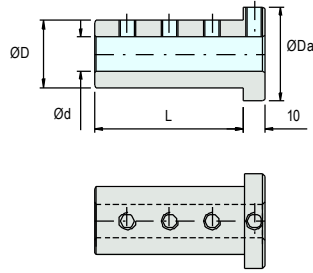


Tutucu Kod No: Code No: Bezeichnung No:	DIN 69880	d ₁	d ₂	d ₃	d ₄ h ₇	h ₁	l ₁	h ₂	l ₃
VDI 39 76 006	E1 - 30 x 20	30	40	68	20	28	67	22	54
76 008	E1 - 30 x 25	30	45	68	25	28	71	22	59
76 010	E1 - 30 x 32	30	52	68	32	28	75	22	63
76 012	E1 - 40 x 20	40	40	83	20	32.5	67	22	54
76 014	E1 - 40 x 25	40	45	83	25	32.5	75	22	59
76 016	E1 - 40 x 32	40	52	83	32	32.5	75	22	63
76 018	E1 - 40 x 40	40	60	83	40	32.5	90	22	73
76 020	E1 - 50 x 20	50	40	98	20	35	67	30	54
76 022	E1 - 50 x 25	50	45	98	25	35	80	30	59
76 024	E1 - 50 x 32	50	52	98	32	35	80	30	63
76 026	E1 - 50 x 40	50	60	98	40	35	100	30	73
76 028	E1 - 50 x 50	50	70	98	50	35	100	30	83

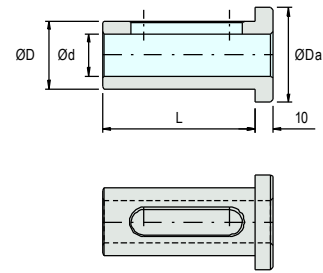
Tutucu Kod No: Code No: Bezeichnung No:	DIN 69880	d ₁	d ₂	d ₃	d ₄ h ₇	h ₁	l ₁	l ₂	l ₃
RING 39 78 104	Z1 - 30	30	68			28	22		
78 106	Z1 - 40	40	83			32.5	22		
78 108	Z1 - 50	50	98			35	30		

Tutucu Kod No: Code No: Bezeichnung No:	DIN 69880	d ₁	d ₂	d ₃	d ₄ h ₇	h ₁	l ₁	h ₂	l ₃
TAPA 39 78 202	Z2 - 20	20	50			23	56	16	
78 204	Z2 - 30	30	68			28	71	16	
78 206	Z2 - 40	40	83			32.5	83	20	
78 208	Z2 - 50	50	98			35	98	20	
78 210	Z2 - 60	60	123			42.5	114	20	
78 212	Z2 - 80	80	158			55	144	20	

Tutucu Kod No: Code No: Bezeichnung No:	DIN 69880	d ₁	d ₂	d ₃	MK	d ₄	h ₁	l ₁	l ₂
VDI 39 78 004	F - 30 - MK - D1	30	-	68	1	12.065	28	27	-
78 006	F - 30 - MK - D2	30	-	68	2	17.780	28	27	-
78 008	F - 40 - MK - D2	40	55	83	2	17.780	32.5	36	22
78 010	F - 40 - MK - D3	40	58	83	3	23.825	32.5	36	22
78 012	F - 40 - MK - D4	40	68	83	4	31.267	32.5	80	22
78 014	F - 50 - MK - D2	50	55	98	2	17.780	35	36	30
78 016	F - 50 - MK - D3	50	58	98	3	23.825	35	36	30
78 018	F - 50 - MK - D4	50	68	98	4	31.267	35	50	30



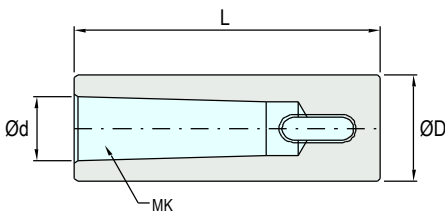
Tip 1



Tip 2

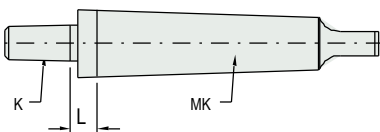
Kod Code Bezeichnung	DIN 69980	Ölçüler Dimensions Abmessungen				
		ØD	Ød	ØDa	L	Tip
ADPT 39 76 202	E2 - 1 - 25 x 8	25	8	30	60	1
39 76 204	E2 - 1 - 25 x 10	25	10	30	60	1
39 76 206	E2 - 1 - 25 x 12	25	12	30	60	1
39 76 208	E2 - 1 - 32 x 8	32	8	40	70	1
39 76 210	E2 - 1 - 32 x 10	32	10	40	70	1
39 76 212	E2 - 1 - 32 x 12	32	12	40	70	1
39 76 214	E2 - 1 - 32 x 16	32	16	40	70	1
39 76 216	E2 - 1 - 32 x 20	32	20	40	70	2
39 76 218	E2 - 1 - 40 x 8	40	8	45	80	1
39 76 220	E2 - 1 - 40 x 10	40	10	45	80	1
39 76 222	E2 - 1 - 40 x 12	40	12	45	80	1
39 76 224	E2 - 1 - 40 x 16	40	16	45	80	1
39 76 226	E2 - 1 - 40 x 20	40	20	45	80	2
39 76 228	E2 - 1 - 40 x 25	40	25	45	80	2
39 76 230	E2 - 1 - 50 x 16	50	16	55	90	1
39 76 232	E2 - 1 - 50 x 20	50	20	55	90	2
39 76 234	E2 - 1 - 50 x 25	50	25	55	90	2
39 76 236	E2 - 1 - 50 x 32	50	32	55	90	2

Mors Konik Adaptör
Adaptor Morse Taper
Adapter Morsekegel

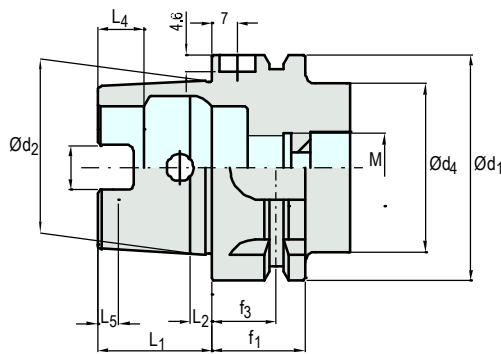


Kod Code Bezeichnung	DIN 69980	Ölçüler Dimensions Abmessungen			
		ØDa	MK	Ød	L
ADPT 39 76 302	E2 - 3 - 32 x 2	32	2	17.780	90
39 76 304	E2 - 3 - 32 x 3	32	3	23.825	110
39 76 306	E2 - 3 - 40 x 2	40	2	17.780	90
39 76 308	E2 - 3 - 40 x 3	40	3	23.825	110
39 76 310	E2 - 3 - 50 x 2	50	2	17.780	90
39 76 312	E2 - 3 - 50 x 3	50	3	23.825	110
39 76 316	E2 - 3 - 50 x 4	50	4	31.267	135

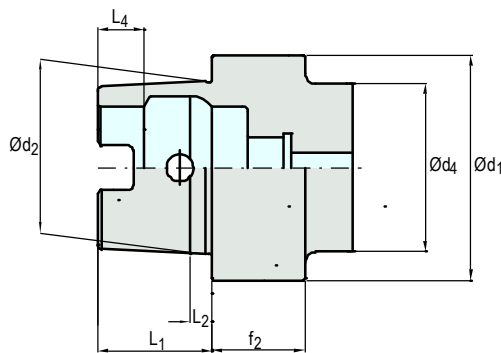
Mandren Tutucu
Drill Chuck Holder
Bohrenwerkzeughalter



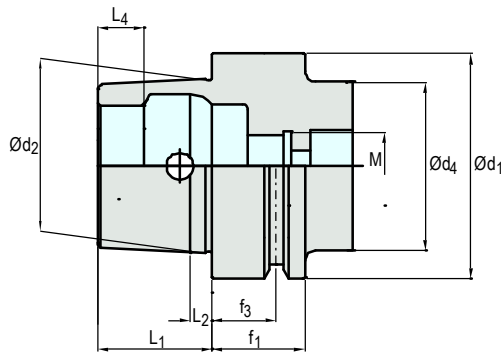
Kod Code Bezeichnung	DIN 69980	Ölçüler Dimensions Abmessungen		
		MK	K	L
ADPT 51 40 254	MK1 x B10	1	B10	11.5
51 40 255	MK2 x B10	2	B10	13
51 40 258	MK1 x B12	1	B12	10.5
51 40 259	MK2 x B12	2	B12	12.5
51 40 262	MK1 x B16	1	B16	14
51 40 263	MK2 x B16	2	B16	15
51 40 264	MK3 x B16	3	B16	16
51 40 267	MK1 x B18	1	B18	12.5
51 40 268	MK2 x B18	2	B18	13
51 40 269	MK3 x B18	3	B18	15.5
51 40 270	MK4 x B18	4	B18	18.5



DIN 69893 HSK Form-A



DIN 69893 HSK Form-C



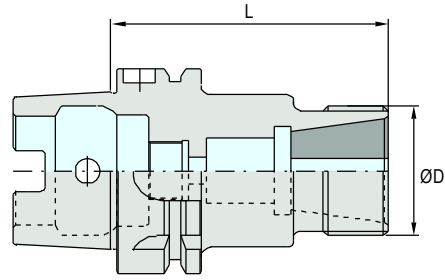
DIN 69893 HSK Form-E

$\emptyset d_1$	$\emptyset d_2$	$\emptyset d_4$	L_1	L_2	L_4	L_5	M	f_1	f_2	f_3	b_1	b_2	b_3	h_2
32	24	26	16	3.2	5.0	3.0	M10x1	20	19	16	7.05	7	9	9.5
40	30	34	20	4.0	6.0	3.5	M12x1	20	23	16	8.05	9	11	12
50	38	42	25	5.0	7.5	4.5	M16x1	26	29	18	10.54	12	14	15.5
63	48	53	32	6.3	10.0	6.0	M18x1	26	37	18	12.54	16	18	20
80	60	67	40	8.0	12.0	8.0	M20x1.5	26	46	18	16.04	18	20	25
100	75	85	50	10.0	15.0	10.0	M24x1.5	29	58	20	20.02	20	22	31.5

Pens Tutucu / ER Tip / DIN 6499 / DIN 69893 (HSK)

Toolholder - Collet Chuck / Type ER / DIN 6499 / DIN 69893 (HSK)

Spannzanghalter / Type ER / DIN 6499 / DIN 69893 (HSK)

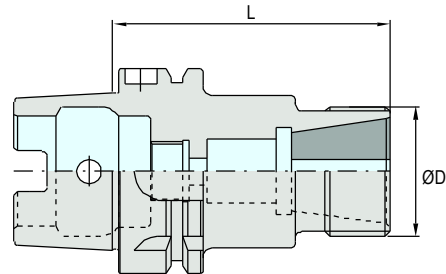


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen				
		Tip Type Type	Somun Collet Nut Spannmutter	Sıkma Aralığı Clamping Range Spannbereich	L	ØD
HSK 50	ER16 105	ER16	TM 16 FM	1.0 - 10.0	105	28
	ER16 150	ER16	TM 16 FM	1.0 - 10.0	150	28
	ER20 75	ER20	TM 20 FM	1.0 - 13.0	75	34
	ER20 150	ER20	TM 20 FM	1.0 - 13.0	150	34
	ER25 75	ER25	TM 25 FM	2.0 - 16.0	75	42
	ER25 105	ER25	TM 25 FM	2.0 - 16.0	105	42
HSK 63	ER16 105	ER16	TM 16 FM	1.0 - 10.0	105	28
	ER16 150	ER16	TM 16 FM	1.0 - 10.0	150	28
	ER20 75	ER20	TM 20 FM	1.0 - 13.0	75	34
	ER20 150	ER20	TM 20 FM	1.0 - 13.0	150	34
	ER25 75	ER25	TM 25 FM	2.0 - 16.0	75	42
	ER25 105	ER25	TM 25 FM	2.0 - 16.0	105	42
	ER25 150	ER25	TM 25 FM	2.0 - 16.0	150	42
	ER32 105	ER32	TM 32 FM	3.0 - 20.0	105	50

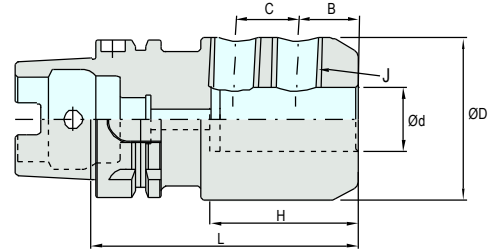
Pens Tutucu / ER Tip / DIN 6499 / DIN 69893 (HSK)

Toolholder - Collet Chuck / Type ER / DIN 6499 / DIN 69893 (HSK)

Spannzanghalter / Type ER / DIN 6499 / DIN 69893 (HSK)

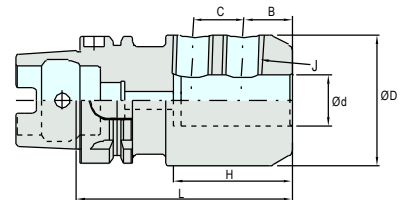


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen				
		Tip Type Type	Somun Collet Nut Spannmutter	Sıkma Aralığı Clamping Range Spannbereich	L	ØD
HSK 80	ER16 105	ER16	TM 16 FM	1.0 - 10.0	105	28
	ER16 150	ER16	TM 16 FM	1.0 - 10.0	150	28
	ER20 75	ER20	TM 20 FM	1.0 - 13.0	75	34
	ER20 150	ER20	TM 20 FM	1.0 - 13.0	150	34
	ER25 75	ER25	TM 25 FM	2.0 - 16.0	75	42
	ER25 105	ER25	TM 25 FM	2.0 - 16.0	105	42
HSK 100	ER16 105	ER16	TM 16 FM	1.0 - 10.0	105	28
	ER16 150	ER16	TM 16 FM	1.0 - 10.0	150	28
	ER20 75	ER20	TM 20 FM	1.0 - 13.0	75	34
	ER20 150	ER20	TM 20 FM	1.0 - 13.0	150	34
	ER25 75	ER25	TM 25 FM	2.0 - 16.0	75	42
	ER25 105	ER25	TM 25 FM	2.0 - 16.0	105	42
	ER25 150	ER25	TM 25 FM	2.0 - 16.0	150	42
	ER32 105	ER32	TM 32 FM	3.0 - 20.0	105	50

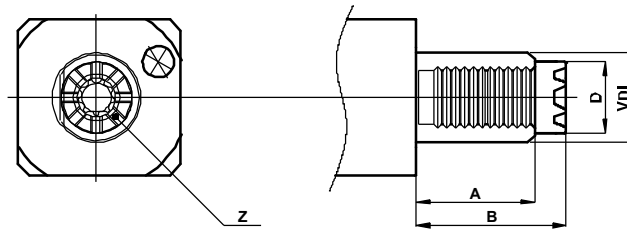


Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen						
		Ød	ØD	J	H	L	B	C
HSK 50	SLN6 90	6	25	M6	35 - 40	90	18	—
	SLN8 90	8	28	M8	35 - 40	90	18	
	SLN10 90	10	35	M10	39 - 44	90	20	
	SLN12 90	12	42	M12	44 - 49	90	22.5	
	SLN16 90	16	48	M14	47 - 52	90	24	
	SLN20 90	20	52	M16	49 - 54	90	25	
	SLN25 105	25	65	M18 x 2	54 - 59	105	24	25
	SLN32 105	32	72	M20 x 2	58 - 63	105	24	28
HSK 63	SLN6 90	6	25	M6	35 - 40	90	18	—
	SLN8 90	8	28	M8	35 - 40	90	18	
	SLN10 90	10	35	M10	39 - 44	90	20	
	SLN12 90	12	42	M12	44 - 49	90	22.5	
	SLN16 90	16	48	M14	47 - 52	90	24	
	SLN20 90	20	52	M16	49 - 54	90	25	
	SLN25 105	25	65	M18 x 2	54 - 59	105	24	25
	SLN32 105	32	72	M20 x 2	58 - 63	105	24	28
	SLN40 120	40	90	M20 x 2	68 - 73	120	30	32

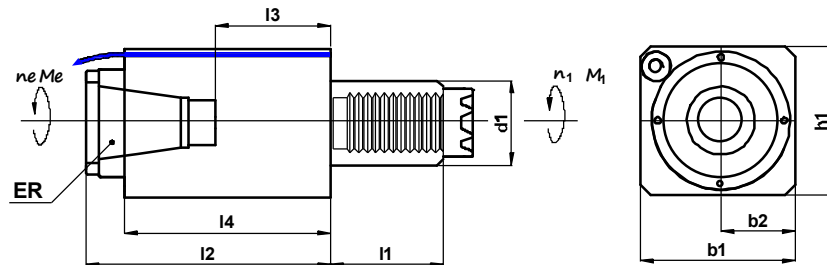
Weldon Tutucu DIN 69893 (HSK)
Toolholder - Type Weldon, DIN 69893 (HSK)
 Werkzeughalter - Type Weldon, DIN 69893 (HSK)



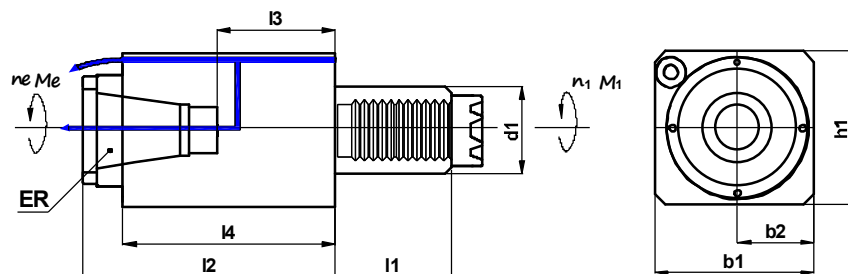
Kod Code Bezeichnung		Ölçüler Dimensions Abmessungen						
		Ød	ØD	J	H	L	B	C
HSK 80	SLN6 90	6	25	M6	35 - 40	90	18	—
	SLN8 90	8	28	M8	35 - 40	90	18	
	SLN10 90	10	35	M10	39 - 44	90	20	
	SLN12 90	12	42	M12	44 - 49	90	22.5	
	SLN16 90	16	48	M14	47 - 52	90	24	
	SLN20 90	20	52	M16	49 - 54	90	25	
	SLN25 105	25	65	M18 x 2	54 - 59	105	24	25
	SLN32 105	32	72	M20 x 2	58 - 63	105	24	28
HSK 100	SLN6 90	6	25	M6	35 - 40	90	18	—
	SLN8 90	8	28	M8	35 - 40	90	18	
	SLN10 90	10	35	M10	39 - 44	90	20	
	SLN12 90	12	42	M12	44 - 49	90	22.5	
	SLN16 90	16	48	M14	47 - 52	90	24	
	SLN20 90	20	52	M16	49 - 54	90	25	
	SLN25 105	25	65	M18 x 2	54 - 59	105	24	25
	SLN32 105	32	72	M20 x 2	58 - 63	105	24	28
	SLN40 120	40	90	M20 x 2	68 - 73	120	30	32



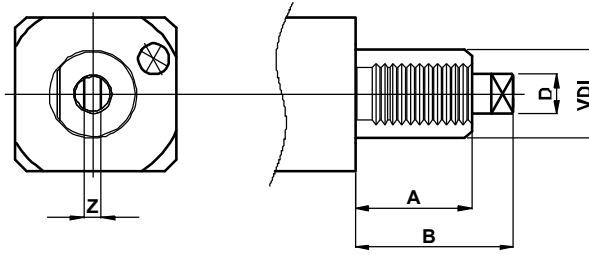
VDI	A	B	D	Z
20	35	44	19	6
30	45/53	59	24	6
40	53	68	32	8
50	70	84	40	8
60	83	100	43	8



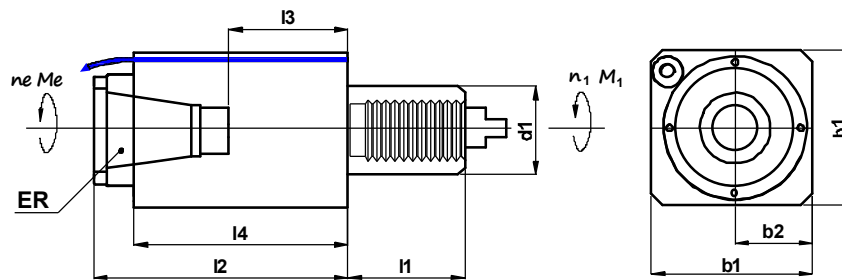
Tutucu Kod No: Code No: Bezeichnung No:	d ₁	ER	I ₁	I ₂	I ₃	I ₄	b ₁	b ₂	h ₁	M ₂ Nm	n ₂ min-1	kw
VDI 39 73 001	20	20	35	90	49	61	50	25	56	13	6000	5
73 002	20	20	35	65	25	37	50	25	56	13	6000	5
73 003	30	25	45	94	39	88	62	31	64	32	5000	8
73 004	30	25	45	66	21	59	62	31	64	32	5000	8
73 005	40	32	53	117	57	99	73	35	70	63	4000	10
73 006	40	32	53	95	34	77	73	35	70	63	4000	10
73 007	50	40	70	120	45	102	88	44	88	100	4000	12
73 008	50	40	70	88	25	69	88	44	88	100	4000	12
73 009	60	50	83	170	69	109	110	55	110	160	3200	15



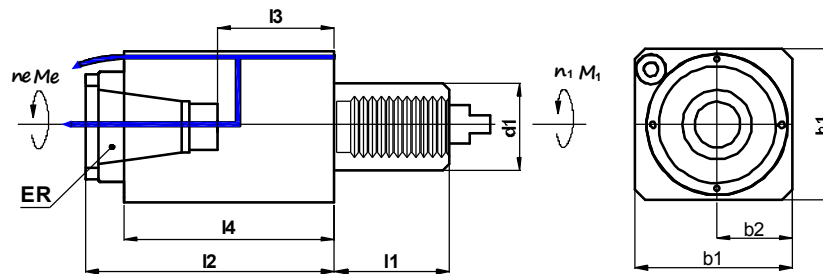
Tutucu Kod No: Code No: Bezeichnung No:	d ₁	ER	I ₁	I ₂	I ₃	I ₄	b ₁	b ₂	h ₁	M ₂ Nm	n ₂ min-1	kw
VDI 39 73 010	30	25	45	94	39	88	62	31	64	32	5000	8
73 011	40	32	53	115	54	97	73	35	70	63	4000	10
73 012	40	32	53	95	34	77	73	35	70	63	4000	10
73 013	50	40	70	120	45	102	88	44	88	100	4000	12
73 014	60	50	83	170	69	109	110	55	100	160	3200	15



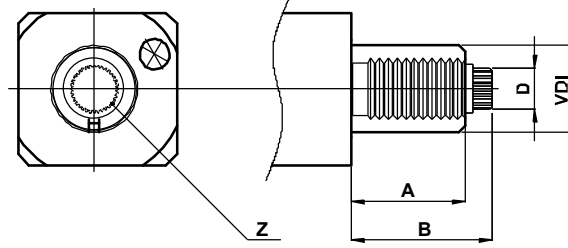
VDI	A	B	D	Z
20	35	48	10	5
30	45	62	12	6
40	53	72	18	8
50	78	92	24	13
60	83	110	29	14



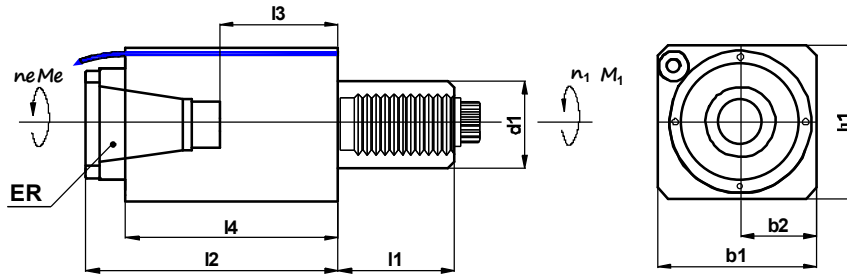
Tutucu Kod No:		d ₁	ER	l ₁	l ₂	l ₃	l ₄	b ₁	b ₂	h ₁	M ₂ Nm	n ₂ min-1	kw
Code No:													
Bezeichnung No:													
VDI 39	73 015	20	20	35	65	25	37	50	25	56	13	6000	5
	73 016	20	20	35	90	49	61	50	25	56	13	6000	5
	73 017	30	25	45	94	39	88	62	31	64	32	5000	8
	73 018	30	25	45	66	21	59	62	31	64	32	5000	8
	73 019	40	32	53	115	54	97	73	35	70	63	4000	10
	73 020	40	32	53	95	34	77	73	35	70	63	4000	10
	73 021	50	40	70	120	45	102	88	44	88	100	4000	12
	73 022	50	40	70	88	69	25	88	44	88	100	4000	12
	73 023	60	50	83	170	69	109	110	55	110	160	3200	15



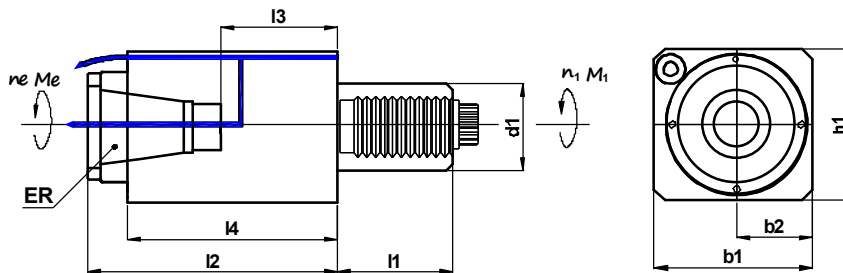
Tutucu Kod No:		d ₁	ER	l ₁	l ₂	l ₃	l ₄	b ₁	b ₂	h ₁	M ₂ Nm	n ₂ min-1	kw
Code No:													
Bezeichnung No:													
VDI 39	73 024	30	25	45	94	39	88	62	31	64	32	5000	8
	73 025	40	32	53	115	54	97	73	35	70	63	4000	10
	73 026	40	32	53	95	34	77	73	35	70	63	4000	10
	73 027	50	40	70	120	45	102	88	44	88	100	4000	12
	73 028	60	50	83	170	69	109	110	55	110	160	3200	15



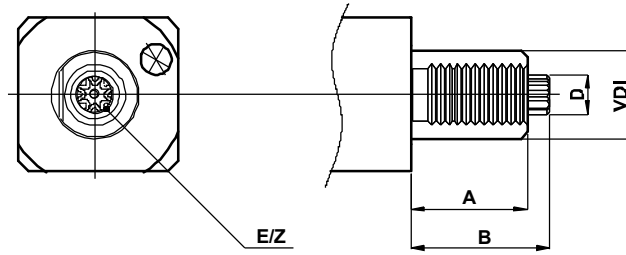
VDI	A	B	D	Z
20	35	51	10.8	12
25	48	57	13.8	16
30	55	67	15.8	18
40	63	75	19.8	24
50	78	93	23.8	18



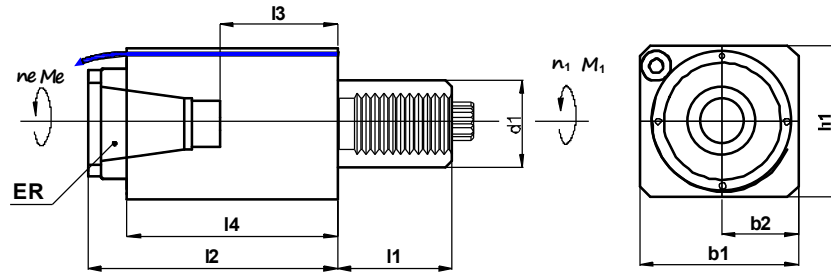
Tutucu Kod No: Code No: Bezeichnung No:	d ₁	ER	l ₁	l ₂	l ₃	l ₄	b ₁	b ₂	h ₁	M ₂ Nm	n ₂ min ⁻¹	kw
VDI 39 73 029	20	20	40	60	21	54.5	54	27	56	13	6000	5
73 030	25	20	48	60	21	54.5	54	27	56	20	6000	6
73 031	30	25	55	66	21	59	62	31	64	32	5000	8
73 032	30	25	55	94	39	88	62	31	64	32	5000	8
73 033	40	32	63	95	34	77	73	35	70	63	4000	10
73 034	40	32	63	115	54	97	73	35	70	63	4000	10
73 035	50	40	78	88	25	69	88	44	88	100	4000	12
73 036	50	40	78	120	45	102	88	44	88	100	4000	12



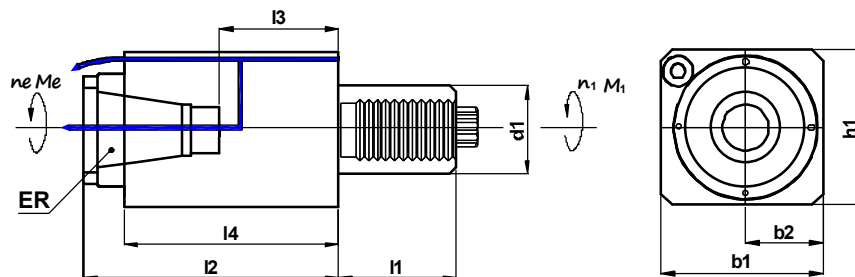
Tutucu Kod No: Code No: Bezeichnung No:	d ₁	ER	l ₁	l ₂	l ₃	l ₄	b ₁	b ₂	h ₁	M ₂ Nm	n ₂ min ⁻¹	kw
VDI 39 73 037	20	20	40	89	41.5	74	54	27	56	13	6000	5
73 038	25	20	48	89	41.5	74	54	27	56	20	6000	6
73 039	30	25	55	66	21	59	62	31	64	32	5000	8
73 040	30	25	55	94	39	88	62	31	64	32	5000	8
73 041	40	32	63	95	34	77	73	35	70	63	4000	10
73 042	40	32	63	115	54	97	73	35	70	63	4000	10
73 043	50	40	78	120	45	102	88	44	88	100	4000	12
73 044	50	40	78	155	45	102	88	44	88	100	4000	12



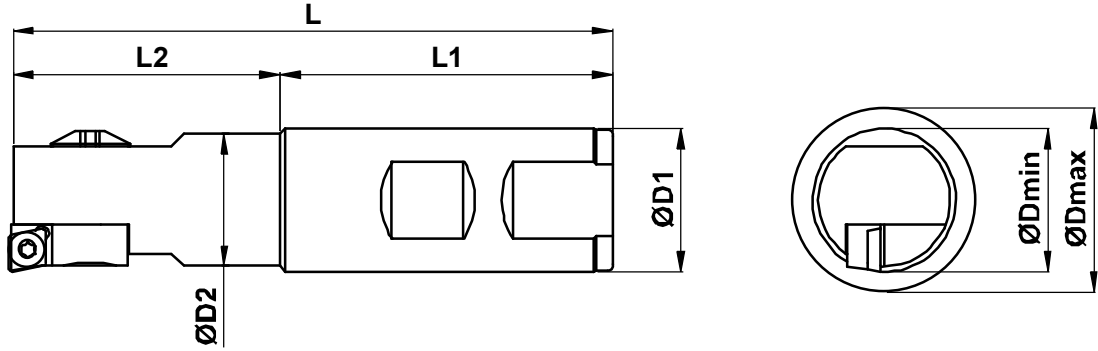
VDI	A	B	D	E	Z
30	45	55	14.5	B15X12	8
40	53	63	16.5	B17X14	9
50	78	93	19.5	B20X17	11
60	94	108	24.5	B25X22	14

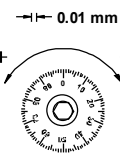


Tutucu Kod No:		d1	ER	l1	l2	l3	l4	b1	b2	h1	M2 Nm	n2 min-1	kw
Code No:													
Bezeichnung No:													
VDI 39	73 045	30	25	45	94	39	88	62	31	64	32	5000	8
	73 046	30	25	45	66	21	59	62	31	64	32	5000	8
	73 047	40	32	53	115	54	97	73	35	70	63	4000	10
	73 048	40	32	53	95	34	77	73	35	70	63	4000	10
	73 049	50	40	78	150	75	142	88	44	88	100	4000	12
	73 050	60	50	94	220	110	168	110	55	110	160	3200	15



Tutucu Kod No:		d1	ER	l1	l2	l3	l4	b1	b2	h1	M2 Nm	n2 min-1	kw
Code No:													
Bezeichnung No:													
VDI 39	73 051	30	25	45	94	39	88	62	31	64	32	5000	8
	73 052	40	32	53	115	54	97	73	35	70	63	4000	10
	73 053	40	32	53	95	34	77	73	35	70	63	4000	10
	73 054	50	40	78	133	45	112	88	44	88	100	4000	12
	73 055	60	50	94	228	110	168	110	55	100	160	3200	15

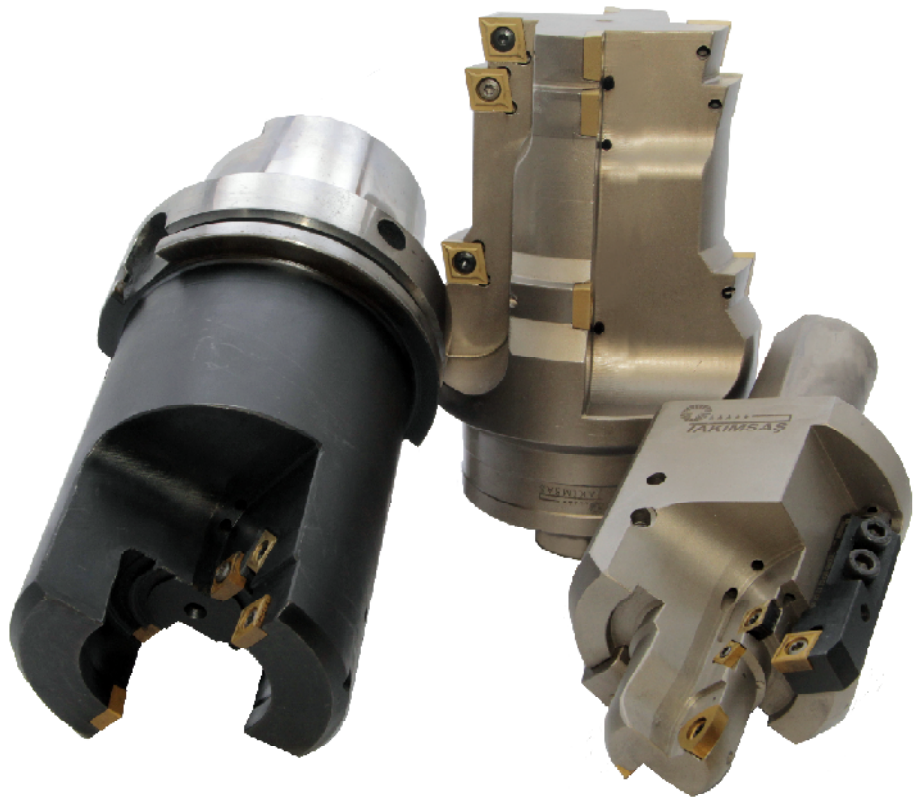


Kod Code Bezeichnung	Ürün Kodu Product Code Produkt - Code	Ölçüler Dimensions Abmessungen							Uç Tipi Insert Type Plattentype	Hassasiyet Fine Fein
		ØDmin	ØDmax	L2	ØD1	L1	ØD2	L		
TMFİT 010	25 - 32 L050 CC..06	25	32	50	25	50	23	100	CC..0602	
TMFİT 020	25 - 32 L100 CC..06	25	32	100	25	50	23	150		
TMFİT 030	32 - 40 L055 CC..06	32	40	55	25	56	29	110		
TMFİT 040	32 - 40 L100 CC..06	32	40	100	25	56	29	155		
TMFİT 050	40 - 50 L065 CC..06	40	50	65	32	55	36	120		
TMFİT 060	40 - 50 L110 CC..06	40	50	110	32	55	36	165		
TMFİT 070	40 - 50 L190 CC..06	40	50	190	32	55	36	245		
TMFİT 080	50 - 65 L065 CC..09	50	65	65	32	60	47	125	CC..09T3	
TMFİT 090	50 - 65 L130 CC..09	50	65	130	32	60	47	190		
TMFİT 100	50 - 65 L220 CC..09	50	65	220	32	60	47	280		
TMFİT 110	65 - 80 K085 CC..09	65	80	85	32	60	60	145		
TMFİT 120	65 - 80 L130 CC..09	65	80	130	32	60	60	190		
TMFİT 130	65 - 80 L220 CC..09	65	80	220	32	60	60	280		

ØDmin ØDmax	Kartuşlar Cartridges Kartusche	Uç Tipi Insert Type Plattentype	Sıkma Vidası Clamp Screw Klemmschraube	Sabitleme Civatası Locking Screw Verriegelungs Sch.	Ayar Civatası Adjustment Screw Einstellschraube	Torx Anahtar Torx Wrench Torx Schlüssel
25 - 32	ATK 140	CC..0602	M2.5	SC M6x6	AV M5x17	T8 IP
32 - 40	ATK 150	CC..0602	M2.5	SC M5x6	AV M5x19	T8 IP
40 - 50	ATK 160	CC..0602	M2.5	SC M6x6	AV M5x17	T8 IP
50 - 65	ATK 170	CC..09T3	M3.5	SC M8x8	AV M8x30	T15 IP
65 - 80	ATK 180	CC..09T3	M3.5	SC M8x8	AV M8x30	T15 IP

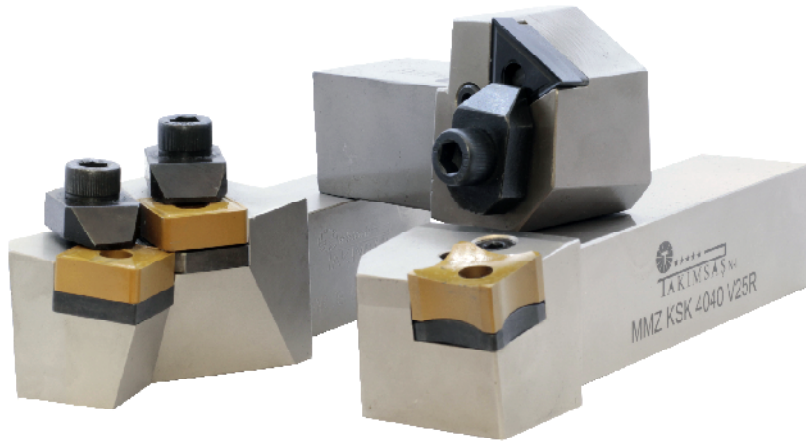


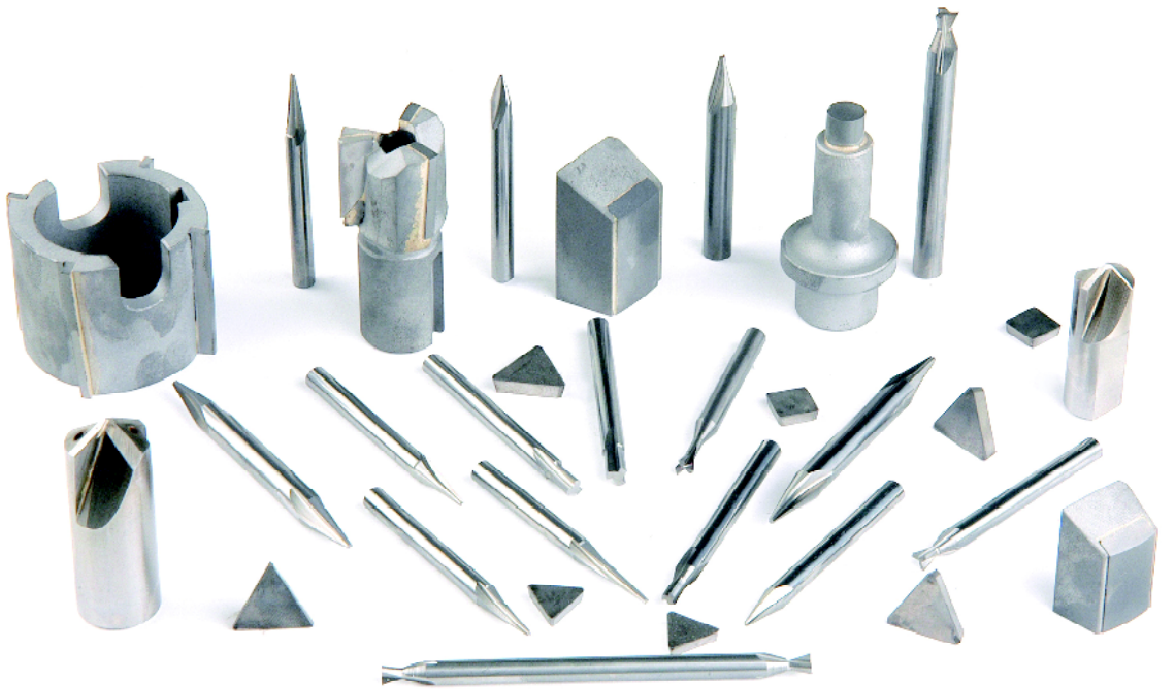
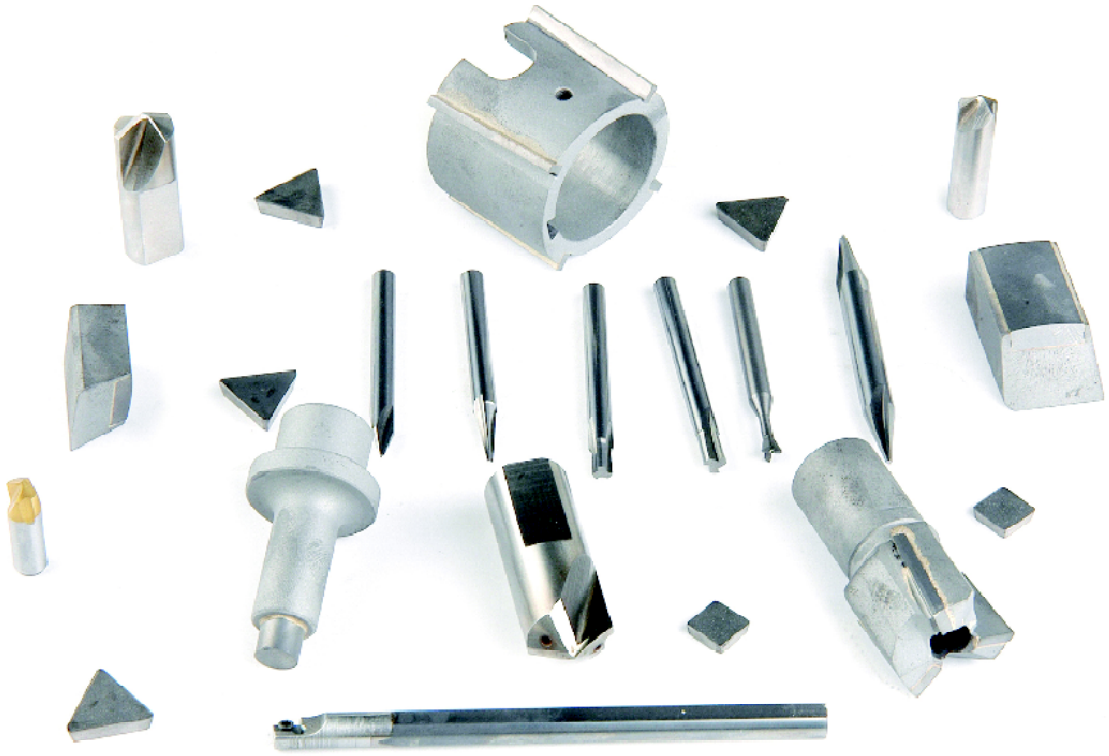
















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📍 **Takımsaş Kesici Takım ve Makina Tic. A.Ş**
Merkez Mah. Çınar Cad. Kavak Sk.
No : 26/3 34197 Yenibosna - Bahçelievler
İstanbul-Türkiye
✉ takimsas@takimsas.com.tr

☎ +90 (212) 639 15 00

📠 +90 (212) 639 19 29

📞 +90 (533) 524 83 14

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