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## ŞİRKETİMİZ BAŞARANLAR CNC LTD.

Şirketimiz Başaranlar Talaşlı imalat ve Makina San. Ltd. Şti. Ünvanıyla 1997 senesinde kuruldu. Bu tarihten başlayarak, bünyesinde barındırdığı nitelikli ve tecrübeli çalışanlarıyla, CNC takım tezgahlarında makina imalatçılarına, döküm ve otomotiv sanayisine seri metal işleme alanında hizmet sundu. Bu hizmetinin yanısıra 2000 li yıllara HASSTAK markası ile hassas makina takımları imalatını başlatarak adım attı. HASSTAK çatısı altında Türkiyede ilk olarak HASSbara markasıyla Ayarlanabilir Hassas Delik Büyütme Takımlarını, sanayimizin ihtiyaç ve beklentilerini dikkate alarak, makina takımları pazarına sundu.

HASSTAK ailesine kanal freze takımları HASSkanal, ağaç işleme takımları HASSmara da eklenerek ürün yelpazesi genişleyerek devam etmiştir. HASSbara hassas delik baralama takımlarıyla kalıp imalatçılarına, seri üretim yapan metal işleme atölyelerine, fabrikaların talaşlı imalat bölümlerine çözüm ortağı olarak hizmet vermekteyiz. Aynı zamanda sanayimizin önde gelen kuruluşlarına ve makina imalatçılarına seri metal işleme alanında da talaşlı imalat yapmaya devam etmekteyiz. Bugün gerek metal işleme alanında ve gerekse makina takımları imalatında müşteri memnuniyetini en üst seviyede gerçekleştirmeyi düstur edinmiş yönetici ve çalışanlarıyla şirketimiz dünyaya ve insanlığa sunabileceği hizmetlerinin bulunduğu inancıyla, sorumluluklarının bilinci içinde çalışmalarını sürdürmektedir.

## OUR COMPANY BASARANLAR CNC LTD

Our company was founded in 1997 with the firm name of Başaranlar Talasli Imalat ve Makina San. Ltd. Sti. Since from that date, it, thanks to its qualified and experienced staff, has served to machine manufacturers of CNC machine tools, casting and automotive industries in the field of serial metal processing.

In addition to the aforementioned services, it entered the new millennium by manufacturing machine tools under the HASSTAK brand.

Taking the needs and expectations of our industry, it put the HASSbara branded Adjustable Precise Hole Boring Sets on market under the umbrella of HASSTAK for the first time in Turkey. With the inclusion of HASSkanal branded disc mills and HASSmara branded wood working machines in the product range, HASSTAK product family expanded. With our HASSbara bar cutting tools, we serve as a solution partner to die manufacturers, mass-producer metal processing workshops and the machining departments of factories. Besides, we still do machining works of mass metal processing for the leading companies and machine manufacturers of the industry.

Today, with its managers and staff having adopted achieving maximum customer satisfaction as its principle in the fields of both metal processing and machine tools manufacturing, our company carry on its operations being aware of its responsibilities and believing that it has services to provide to the world and to the mankind.

## UNSER UNTERNEHMEN BASARANLAR CNC LTD

Unser Unternehmen wurde 1997 unter dem Namen Başaranlar Talasli Imalat ve Makina San. Ltd. Şti. gegründet. Seit der Gründung unserem Unternehmens sind wir als Zulieferer für Automobil und Maschinenindustrie tätig. Ab dem Jahr 2000 haben wir, unter dem Namen HASSTAK unsere Werkzeugfertigung gegründet. Als Unternehmen HASSTAK, haben wir als einziges Unternehmen in der Türkei mit der Fertigung und Entwicklung von Feinspindelwerkzeugen, Scheibenfräsern, Sonderwerkzeugen und Verlängerungen begonnen und beliefern den Markt hier in der Türkei. Wir fertigen Werkzeuge für Form – ,Gesenkbau-und Schreinerindustrien. Ziel unseres Unternehmens ist, unsere Kunden mit hochwertigem und qualitativen Werkzeugen und Produkten Weltweit zu beliefern. Wir sind dabei unser Vertrieb in Richtung EU auszubauen.

## ÜRETİM / KALİTE

Başaranlar CNC, 600 m<sup>2</sup> kapalı alanda, nitelikli ve tecrübeli çalışanlarıyla imalat yapmaktadır. Üretimi için gerek duyduğu teknolojiye sahip olarak bünyesinde bulundurduğu CNC takım tezgahları ve diğer makina tehzizatıyla üretimini gerçekleştirmektedir. Hammadde ve yardımcı hammaddeelerde en kaliteli ürünleri kullanarak, proje ve tasarımdan üretime ve de montaja, hatta satış sonrası hizmetlerine kadar ürünlerinin takipçisi bir kuruluştur. Ar-Ge çalışmalarını çok önemli gören, taklit değil tasarım geliştirip marka olmak için oluşturduğu bir araştırma grubuyla çalışmalarını yürütmektedir. Başaranlar CNC ürünleriyle ve markalarıyla ortaya koyduğu kalitesini, DIN EN ISO 9001-2000 kalite belgesiyle de onaylatmıştır.

## PRODUCTION/QUALITY

Basaranlar CNC manufactures with its qualified and experienced staff in a closed area of 600 square meters. Having the required technology for manufacturing, it performs its manufacturing operations by the CNC machine tools and other machine equipment it owns. It uses the most quality products for raw and auxiliary materials and follows up its products from project and design stage to manufacturing and installation and even after-sale services. It attaches a special importance to and carries out R&D studies under the leadership of a research team which it has formed to become a brand by not imitating the other products but developing its own designs. Basaranlar CNC had its quality that it proves by its products and brand certified with DIN EN ISO 9001-2000 quality certificate.

## PRODUKTION/QUALITÄT

Unsere Produktionsfläche Basaranlar CNC ist 600 m<sup>2</sup> groß. Mit einem modernen und guten CNC und konventionellen Maschinenpark fertigen wir unsere Werkzeuge und Produkte selber. Bei uns verwenden wir, für die Fertigung der Werkzeuge und Produkte, hochwertige Werkstoffe und Zukaufteile. Wir betreuen unsere Kunden vom Projekt, Entwicklung bis zum Einsatz der Werkzeuge und Produkte, um qualitativen hohen Ansprüchen gerecht zu werden. Wir arbeiten mit der Ar-Ge Gruppe zusammen, die darauf achtet das nicht Nachbauten sondern Eigenentwicklungen und Fertigungen betrieben werden. Als Basaranlar CNC sind wir nach den Standarts von DIN EN ISO 9001- 2000 zertifiziert.

## PRODUCTION/QUALITY

Basaranlar CNC produce con personale qualificato e di grande esperienza in un area coperta di 600 metri quadrati. Possedendo la necessaria tecnologia per produrre svolge le lavorazioni con macchine CNC ed altre attrezzature di sua proprietà. Si utilizzano materie prime e materiali ausiliari di primaria qualità, segue i prodotti dalla progettazione e disegno fino alla fabbricazione ed offre un servizio di installazione e post-vendita. Si attribuisce una particolare importanza al lavoro di ricerca e sviluppo svolto sotto le direttive di un gruppo di ricerca che si è formato con il fine di diventare un marchio, non imitando altri prodotti, ma sviluppando i propri progetti. La qualità di Basaranlar CNC è provata attraverso i suoi prodotti ed il marchio certificato DIN EN ISO 9001-2000



**HASSbara®** Hassas delik işleme işlemlerinde raybaya göre daha güvenilir, seri, kullanışlı ve performansı yüksek bir çözüm. ISO Standartlarına uygun imal ettiğimiz kater ve kartuş uç yuvaları sayesinde birçok farklı markanın uçlarını kullanma imkanınız vardır. **HASSbara®** delik baralama takımlarının kartuşlarını ters ( yukarıya bakacak şekilde) bağıladığınızda ters baralama da yapabilirsiniz.\*

IT6 tolerans işleme Yüksek yüzey kalitesi Kompakt ve rijid gövde. **HASSbara®** delik büyütme takımlarının çap ayar skalası yardımı ile çapta 0,005~0,01 mm ayar yapabilmek mümkündür.

**HASSbara®**, a more reliable, efficient and quicker and higher-performance solution for fine boring operations compared to reamers. Thanks to the tool holds and cartridge insert socket we manufacture in compliance with ISO Standards, you can use the inserts of different brands. You can also perform back boring by attaching the cartridges of **HASSbara®** boring tools in reverse direction (to face upwards).\*

IT6 tolerance processing High Quality surface, Compact and rigid body. The diameter adjusting scale of **HASSbara®** fine boring tools enable a diameter adjustment by 0,005~0,01mm.

**HASSbara®** Unser modulares Feinbohrstangensystem ist effektiv und ergonomisch. Wir fertigen nach ISO Standarts, unsere Schnittstellen, Plattenhaltern und Plattensitze. Damit unsere Kunden nicht systemgebunden sind und ISO Schneidstoffe und Aufnahmen verwenden können. Also sind unsere kunden unabhängig von Herstellersystemen. **HASSbara®** Bei unseren Feinbohrstangen, können sie die Plattenhalter wie auf dem Bild (sene rechts), für eine Rückwärtsbearbeitung montieren und verwenden. Bei der Rückwärtsbearbeitung ist zu beachten, dass das Werkzeug gegen den Uhrzeigersinn gelaufen lassen muss/oder laufen muss. Die Fertigung mit der IT6 Toleranz unserer Werkzeuge führt zu einer hohen Genauigkeit. **HASSbara®** Die Skala der Feineinstellung unserer Werkzeuge, hat eine Genauigkeit von 0,005~0,01 mm im Durchmesser.

**HASSbara®** è una soluzione per lavorazioni di barenatura fine più affidabile, efficiente, veloce e con prestazioni più elevate paragonato agli alesatori Grazie al portautensile ed alla cartuccia porta inserto costruite in conformità con gli standard ISO, potete utilizzare inserti ISO standard di marchi differenti. Potete anche effettuare lavorazioni di retro-barenatura installando le cartucce **HASSbara®** in posizione rovesciata.\*

Lavorazione con Tolleranza IT6, superficie di alta qualità, Corpo rigido. Il nonio degli utensili per barenatura fine **Hassbara®** consente una regolazione sul diametro di 0.005~0.01mm.

\* Ters baralama(back boring) yaparken iş mili saat yönünün tersine(CCW)dönmelidir.

\* While back boring, the spindle should rotate counter-clockwise (CCW).

\* Bei rückwärtsbearbeitungen ist darauf zu achten, dass die spindeldrehrichtung im uhrzeigersinn ist.

\* Nelle lavorazioni di retro barenatura il mandrino dovrebbe ruotare in senso antiorario.





\* İçten soğutma sıvısı temini  
\* With inner coolant supply  
\* Mit Innenkühlung

## İNCE TALAŞ İŞLEMLERİNDE DİKKAT EDİLECEK HUSUSLAR

- HASSbara® ince talaş işlemlerinde gerekli yüzey kalitesi için seçilecek ucun köşe radyusu büyük önem arzeder.
- Silicili bir uç geometrisi yüksek bir ilerleme imkanı verebilir. Fakat aynı zamanda daha fazla radyal kuvvetlere maruz kalacağı için titreşim olasılığı artar. Bu sebeple kesici uç geometrisi ve uç radyusu dikkatli seçilmelidir.
- Genellikle bu seçimde küçük uç radyusu 0,2 mm kullanılmalıdır. 0,4 mm radyusun üzerine çıkılmamalıdır. Talaş derinliği ap: 0,03~ 0,3 mm arası olabilir.

## POINTS TO CONSIDER IN FINE CHIP OPERATIONS

- The corner radius of the selected insert is of vital importance for the desired surface quality in HASSbara® fine chip operations.
- A wiper insert geometry may ensure a high driving potential. At the same time, however, the vibration potential will increase as well, since it will be exposed to more of radial forces. Therefore, the cutter insert geometry and insert radius should be carefully selected.
- Generally, 0,2 mm of small insert radius should be selected. 0,4 mm radius should not be exceeded.

## BEIM FEINSPINDELN ZU BEACHTENDE HINWEISE

- HASSbara® Um eine gute und genaue Oberfläche der zu bearbeitenden Bohrung erreichen zu können, ist die Auswahl des Eckenradius einer Wendeschneidplatte wichtig.
- Ist der Eckenradius z. B. zu groß, neigt das Werkzeug bei Überlänge zu schwingen.
- Daher empfehlen wir Eckenradien von 0,2mm bis max 0,4mm und ein ap: von 0,03mm bis 0,3mm.

## CONSIDERAZIONI NELLE LAVORAZIONI DI FINITURA

- Il raggio dell'inserto utilizzato è di vitale importanza per l'ottenimento della finitura desiderata nelle lavorazioni di finitura con HASSbara®
- La scelta di inserti con raggio grande assicura una buona guida, allo stesso tempo tuttavia possono aumentare le vibrazioni dovute al maggiore sforzo radiale, quindi è necessario prestare molta attenzione alla geometria dell'inserto.
- Generalmente dovrebbe essere scelto un inserto con raggio 0,2mm, non dovrebbe essere superato il raggio 0.4mm

## HASSbara PERFORMANS

### PERFORMANS SET Ø 8-170



H101P BA 8-170P Ø 8-170 mm

### PERFORMANS SET Ø 8-30



H121P BA 8-30P Ø 8-30 mm

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### PERFORMANS SET Ø 29-40



H131P BA 29-40P Ø 29-40 mm

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### PERFORMANS SET Ø 39-54



H141P BA 39-54P Ø 39-54 mm

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### PERFORMANS SET Ø 52-80



H151P BA 52-80P Ø 52-80 mm

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### PERFORMANS SET Ø 78-170



H161P BA 78-170P Ø 78-170 mm

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- \* Bütün ürünlerde özel ölçü takım ihtiyaçlarınız için arayınız.
- \* Please contact us for your special tool size requirements for all products.
- \* Sonderanfertigung und Größen der Werkzeuge bitte anfragen.
- \* Non esitate a cotattarci per utensili co misure speciali.

## EKONOMİ SET Ø 8-170



H201E BA 8-170E Ø 8-170 mm

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## EKONOMİ SET Ø 8-250



H203E BT40 8-250E Ø 8-250 mm

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## ALU-LİNE Ø 150-446



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## ANTI-VIBRATION TOOL Ø 18-29



BA18-22 BA22-29 Ø 18-29 mm

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## ALU-LİNE SET Ø 78-170



H171P BA 78-170AL-P Ø 78-170 mm

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- Kompakt gövde tasarımı ile yüksek yüzey kalitesi ve IT6 toleranslarında hassas delik işlemi yapılabilir.
- Takımların tüm yedek parçaları stoklarımızda mevcuttur.
- Compact body desing enables a high surface quality at IT6 tolerances.
- All spare parts of the tools are available in our stock.
- Alle Spindelwerkzeuge und Ersatzteile sind Lagerartikel.
- Sonderanfertigungen und Größen der Werkzeuge bitte anfragen.
- Il corpo compatto consente di ottenere una elevata qualità superficiale e tolleranza IT6
- Tutti i ricambi degli utensili sono disponibili a magazzino

## EKSANTRİK ADAPTÖR / ECCENTRIC SLEEVE EXCENTER BÜCHSEN / MANICOTTI ECCENTRIC

- Buçuklu veya ondalıklı U-Drill ihtiyacınıza ekonomik bir alternatif.
- An economic alternative for your half and decimal U-drills.
- Eine effektive und kostengünstige Alternative zur Sonderdurchmessern von Bohren.
- Una alternativa economica per le Vostre punte U-drill decimali.
- $\varnothing 13\text{--}\varnothing 45$  mm arası delik delebilen U-Drill matkapların çapta (0,25mm) küçülterek veya (+0,5mm) büyüterek delik delebilmelerini sağlayan ve ondalıklı ayar yapılabilmesine imkan veren araçtır.
- It allows U-drills capable of drilling  $\varnothing 13\text{--}\varnothing 45$  mm holes to drill by reducing (0,25mm) or increasing (+0,5 mm) the diameter and enables decimal adjustments.
- Für Bohrer ab  $\varnothing 13\text{--}\varnothing 45$  mm geeignet. Mit der Excenterbüchse kann ein Bohrer um 0,25mm kleiner oder um 0,5mm größer im Durchmesser verstellt werden.
- Consente di regolare le punte U-drill  $\varnothing 13\text{--}\varnothing 45$  mm incrementando (+0,5mm) o riducendo (-0,25mm) il diametro di foratura.



EKS 25-20



EKS 32-25



EKS 40-32

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## MIKROBOR

- Özel amaçlı baralama takım imalatında kullanmak için "hassas ayarlı baralama ünitesi"
- Precision boring cartridge "for use in manufacturing special purpose boring tool"
- Feineinstellpatronen für Sonderanfertigungen
- Cartucce di precisione per l'utilizzo in utensili speciali



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## KANAL FREZE / DISC MILLING W.P.SCHEIBENFRÄSER / FRESE A DISCO

- Derin olsun veya olmasın, uzun ve dar (4mm,5mm,6mm) kanal açma işlemleri için parmak frezeye kıyasla oldukça ekonomik ve seri bir alternatif **HASSkanal**
- **HASSkanal** is fairly economic and quick alternative compared to end mill in grooving operations whether deep, long or narrow (4 mm, 5 mm, 6mm).
- **HASSkanal** Scheibenfräser ab (4 mm bis 12 mm) Breite sind eine sehr gute Auswahl.
- **HASSkanal**, un'alternativa economica e veloce per la fresatura di scanalature sia profonde che lunghe o strette (4 mm, 5 mm, 6mm).
- KF 80-250 KANAL FREZE  $\varnothing 80\text{--}250$  mm ince kanallarda yüksek performans (4mm,5mm,6mm) dört köşeli kesici uçlarla ekonomik kanal açma uzun ömürlü takım gövdesi.
- KF 80-250 DISC MILLS -High performance in the thin grooves of (4 mm, 5 mm, 6 mm) Economic boring thanks to the square cutting inserts, long-lived tool body.
- KF 80-250 Scheibenfräser gibt es bei uns von D=80mm bis D=250mm
- Soluzione veloce ed economica nei lavori di scanalatura profondo o di lunghi tratti ( L. 4, 5, 6 mm )



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## HASSbara ALUMİNYUM GÖVDE ALUMINIUM BODY / ALUMINIUMBRÜCKE

### HASSMULTİBOR KABA ve İNCE DELİK BARALAMA TAKIMLARI ROUGH AND FINE BORING TOOLS SCHRUPP-UND SCHLICHTBOHRSTANGEN

- Alüminyum gövde yapısı
- Standart tutuculara monte edilebilir DIN6357
- İçten soğutma sıvısı temini
- Balans dengeleyici sistem
- Kullanım kolaylığı
- Aluminium body
- Mountable to standart tool holders DIN6357
- With inner coolant supply
- The system can be balanced
- Easy to use
- Aluminiumbrücken
- Kann auf Standardaufnahmen montiert werden DIN6357
- Mit Innenkühlung
- System mit Auswucht möglichkeit
- Einfache Bedienung



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## MATKAP UZATMALARI DRILL EXTENSIONS BOHRER VERLANGERUNGE

- Matkap uzatmaları
- Standart veldon modüler sistem
- Standart veldon tutucular ile kullanılır
- Derin yerlerde kısa delikler için, uzun HSS matkaplara farklı bir alternatif
- Montaj edilirken alından çekerek kuvvetli bağlama
- Drill extensions
- Standart veldon modular system
- Used with standart veldon holders
- A variant alternative to HSS drills for short holes at deep areas
- Whilst mounting strong binding by pulling the front
- Bohrer Verlängerungen
- Modulares Standart Weldon System
- Kann mit Standart Weldon Systemen verwendet werden
- Bei langer Auskräglänge und kurzen Bohrungen ist es eine gute Alternative zu langen HSS-Spiralbohrern
- Bei der Montage mit einer viertel Umdrehung ( montieren/festziehen )



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## HASSkaba AYARLI KABA BARALAR Ø20-170 / ROUGH BORING TOOLS SCHRUPPBOHRSTANGEN

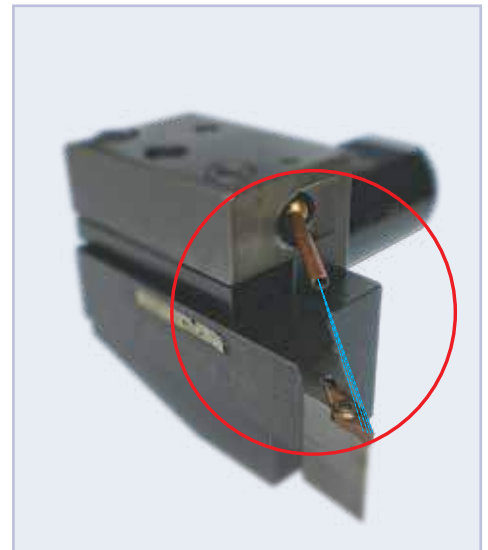
- Ø20 - Ø170mm kaba baralama takımlarımız ile hızlı bir şekilde işleme yapılabilir.
- Takımlarımızın ayarlanması kolaydır.
- Takımlarımızın içten su verme tertibatı vardır.
- Bu sayede kesici ucu soğutma ve talaş uzaklaştırma sorun oluşturmaz.
- Ø80 mm den sonrası Alüminyum gövdeli, çelik kartuşlu olup hafiftir, tezgahınızı yormaz.
- Kaba bara takımları uzatma takılarak ta kullanılabilir.
- Fast processing with our Ø20 - Ø170mm rough boring tools
- Easy to use our tools
- Inner coolant supply system is included
- Cutting edge cooling and chip removal is not a problem.
- With aluminium body and steel cartridge above Ø80 mm, it is light and will not tire your CNC machine
- Rough boring bars can be used with extensions.
- D=20m – D=170mm Spindel Werkzeuge ( Schrupp ).
- Werkzeuge sind einstellbar.
- Werkzeuge haben Innenkühlung.
- Ab D=80mm gibt es Alu Träger mit Stahl Plattenhalter , was zur Gewicht – Einsparung führt
- Diese Spindel – Werkzeuge ( Schrupp ) haben eine Weldon Aufnahme als Schnittstelle , was von hohem Vorteil für Kunden ist , aufgrund der Flexibilität.
- Schruppbohrstangen können mit Verlängerungen bei bedarf verlängert werden.



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## SU VERME MİSKETLERİ / BALL COOLANT NOZZLES / KUGELSPRITZDÜSE

- Küre mafsal şeklinde hareket edebilir ve ucuna bakır boru takılabilir.
- Sphere can act as joint and copper pipes can be mounted to the tip.
- Der Kugel kann wie ein Gelenk sich bewegen und es kein ein Kupferrohr an die Spitze montiert werden.



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## • HASSBARA TAKIMLARININ VELDON TUTUCULARA BAĞLANMASI • HOLDING OF HASSBARA TOOLS BY WELDON TOOL HOLDERS • HASSBARA HALTERSISTEME SIND WELDON SYSTEME



Hassbara takımları, özel tutucuya ihtiyaç olmadan her atölyede bulunabilen veya düşük maliyetli ve genel amaçlı kullanılabilen standart veldon tutuculara bağlanabilecek şekilde tasarlanmıştır. Hassbara takımının sapındaki konik yuva, veldon tutucunun civatasına denk gelecek şekilde yerleştirilir. Civata sıkıldığında takım sapı karşı yöne yaslanır. Saptaki konik yuva, veldon civatası merkezinden bir miktar aşağıda olduğundan, aynı zamanda yukarıya doğru çekilir. Alın yüzeyler kenetlenmiş olur. Bu sabitleme yöntemi aşağıda gösterilmiştir.

Hassbara tools are designed so that they can be hold, without any special tool holders, by the standard veldon tool holders which may be found in every workshop or used for general purpose despite their low costs. The conical socket on the handle of Hassbara tool is inserted so that it is fit into the veldon tool holder bolt. When the bolt is screwed, tool handle leans against the opposite wall of the socket. Since the conical socket on the handle is below the center of the veldon bolt, it, at the same time, will be driven up. So, face surfaces will interlock.

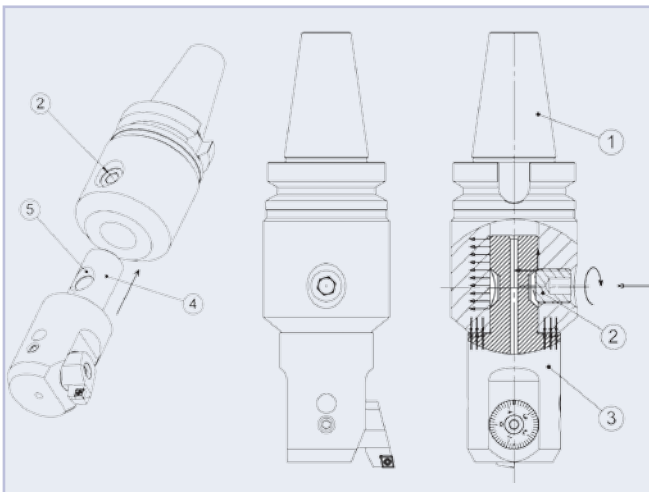
This fixing method is shown below:

Hassbara Halter Systeme sind ISO Weldon Systeme, welche von Vorteil ist. Unser ISO Weldon System sind nicht herstellerepezifisch, so dass NICHT And Ein Hersteller oder Lieferant gebunden ist. Der Kunde braucht keine teuren Schnittstellen, zwischen verschiedenen Lieferanten, dass führt zu einer hohen Flexibilität der Werkzeugen von Hasstak.

Spannsystem Weldon:

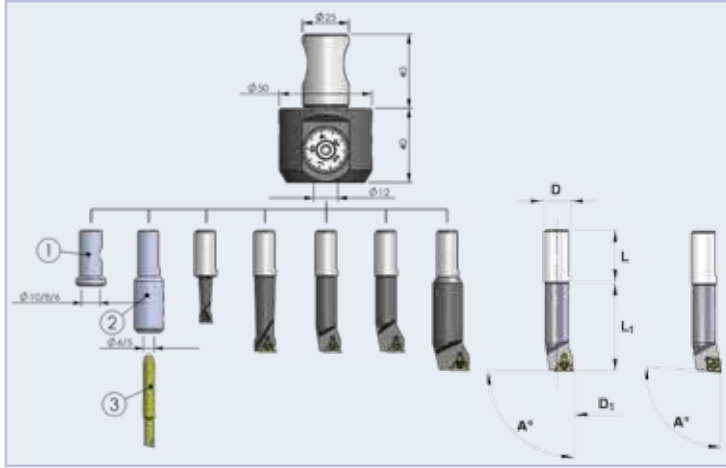
Gli utensili per barenatura HASSbara sono una soluzione affidabile, efficiente e veloce per ottenere fori di precisione. Tutte le cartucce ed i barenati utilizzano inserti ISO standard. Con gli utensili HASSbara si possono eseguire barenature o lamature in trazione montando la cartuccia al contrario (in questo caso il mandrino deve ruotare in senso antiorario) Tolleranza di barenatura IT6, regolazione con salti di 0,005 e 0,01mm La scelta del raggio dell'inserto è determinate per l'ottenimento dei valori di qualità superficiali richiesti, generalmente si utilizza r0.2 max r0.4 Gli utensili HASSbara sono progettati per poter essere utilizzati con normali mandrini standard attacco Weldon.

Il gambo Weldon è configurato per allinearsi perfettamente quando viene serrato al mandrino.




1. STANDART VELDON TUTUCU / STANDARD WELDON TOOL HOLDER  
STANDART WELDON HALTER / MANDRINO WELDON STANDARD
2. SETSKUR CIVATA / SETSCREW  
KLEMMSCHRAUBE / GRANO DI SERRAGGIO
3. HASSBARA TAKIM GÖVDESİ /  
HASSBARA TOOL BODY / HASSBARA  
SPINDELWERKZEUG / TESTINA HASSBARA
4. TAKIM SAPI / TOOL SHAFT  
WELDON SCHAFT / GAMBO
5. KONİK YUVA / CONICAL SOCKET  
KONISCHE SPANNFLÄSCHE /  
SVASATURA DI TRAZIONE / ALLINEAMENTO


## PERFORMANS Ø8~30 P



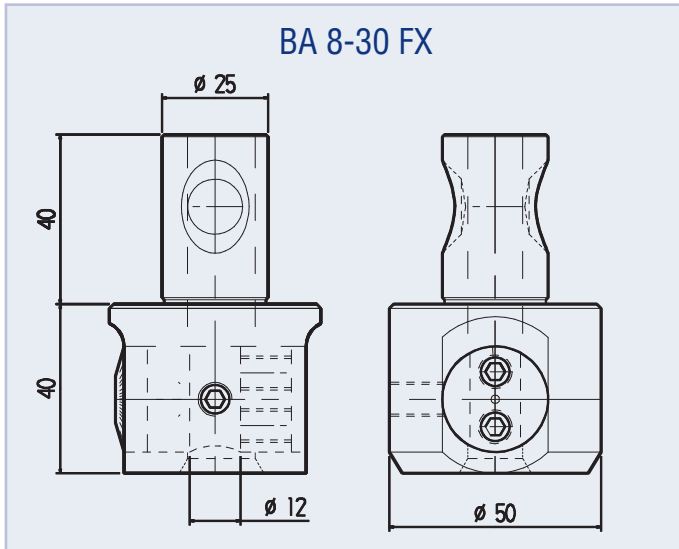
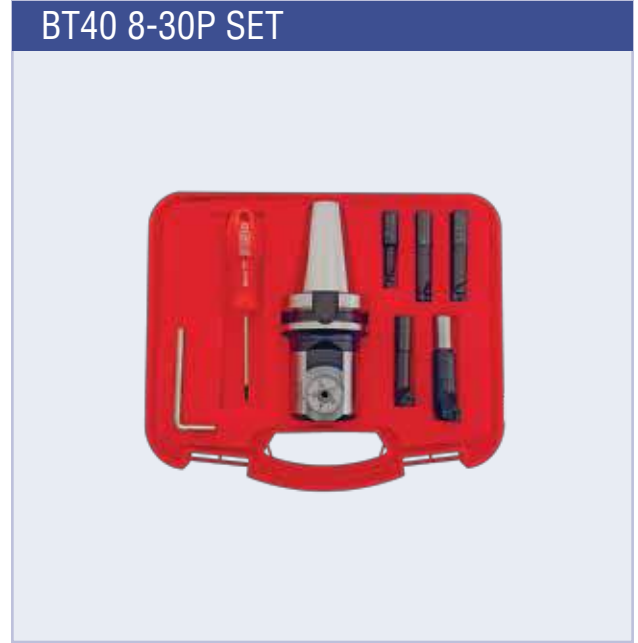
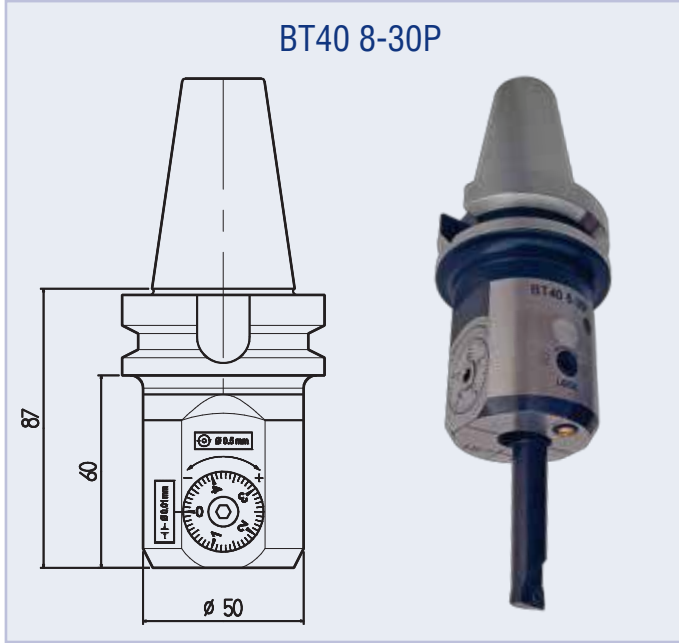
H121P BA 8-30P SET

Kod No / Stock No Bestellnummer / Cod.	Kod / Code Bezeichnung / Articolo	Ø D1 (min-max)	D	L	L1	Uç/Insert W.P. Inserto	A		Torks Torx
H121P	BA 8-30P SET	8-30							
H122P	BA 201 8-30P GÖVDE	8-30							
H1221K	BA 201 K8-14 T	8-14	12	25	25	TC..06	90°	M2	T06
H1231K	BA 201 K12-18 T	12-18	12	25	40	TC..09	90°	M2,2	T07
H1241K	BA 201 K16-22 T	16-22	12	25	40	TC..09	90°	M2,2	T07
H1251K	BA 201 K20-26 T	20-26	12	25	40	TC..09	90°	M2,2	T07
H1261K	BA 201 K24-30 T	24-30	12	25	50	TC..11	90°	M2,5	T08
H1232K	BA 201 K12-18C	12-18	12	25	40	CC..06	95°	M2,5	T08
H1242K	BA 201 K16-22C	16-22	12	25	40	CC..06	95°	M2,5	T08
H1252K	BA 201 K20-26C	20-26	12	25	40	CC..06	95°	M2,5	T08
H1262K	BA 201 K24-30C	24-30	12	25	50	CC..06	95°	M2,5	T08

## Ø8~30 UZUN KATERLER / LONG BORING BARS / LANGE HALTER

Kod No / Stock No Bestellnummer / Cod.	Kod / Code Bezeichnung / Articolo	Ø D1 (min-max)	D	L	L1	Uç/Insert W.P. Inserto	A		Torks Torx
H1222K	BA 201 K8-14 30 CC06 95	Ø8-14	12	25	30	CC..06	95°	M2,5	T08
H1223K	BA 201 K10-16 40 CC06 95	Ø10-16	12	25	40	CC..06	95°	M2,5	T08
H1233K	BA 201 K12-18 50 CC06 95	Ø12-18	12	25	50	CC..06	95°	M2,5	T08
H1243K	BA 201 K16-22 50 CC06 95	Ø16-22	12	25	50	CC..06	95°	M2,5	T08
H1244K	BA 201 K16-22 60 CC06 95	Ø16-22	12	25	60	CC..06	95°	M2,5	T08
H1245K	BA 201 K16-22 70 CC06 95	Ø16-22	12	25	70	CC..06	95°	M2,5	T08
H1253K	BA 201 K20-26 50 CC06 95	Ø20-26	12	25	50	CC..06	95°	M2,5	T08
H1254K	BA 201 K20-26 60 CC06 95	Ø20-26	12	25	60	CC..06	95°	M2,5	T08
H1255K	BA 201 K20-26 70 CC06 95	Ø20-26	12	25	70	CC..06	95°	M2,5	T08
H1263K	BA 201 K24-30 60 CC06 95	Ø24-30	12	25	60	CC..06	95°	M2,5	T08
H1264K	BA 201 K24-30 70 CC06 95	Ø24-30	12	25	70	CC..06	95°	M2,5	T08
H1225K	BA 201 K10-16 40 TC09 93	Ø10-16	12	25	40	TC..09	93°	M2,2	T07
H1256K	BA 201 K 20-26 50 CC06 90	Ø20-26	12	25	50	CC..06	90°	M2,5	T08
H1257K	BA 201 K 20-26 60 CC06 90	Ø20-26	12	25	60	CC..06	90°	M2,5	T08
H1258K	BA 201 K 20-26 70 CC06 90	Ø20-26	12	25	70	CC..06	90°	M2,5	T08
H1259K	BA 201 K 20-26 50 TC09 90	Ø20-26	12	25	50	TC..09	90°	M2,2	T07
H1260K	BA 201 K 20-26 60 TC09 90	Ø20-26	12	25	60	TC..09	90°	M2,2	T07
H1265K	BA 201 K 20-26 70 TC09 90	Ø20-26	12	25	70	TC..09	90°	M2,2	T07
H1266K	BA 201 K 20-26 50 TC09 93	Ø20-26	12	25	50	TC..09	93°	M2,2	T07
H1267K	BA 201 K 20-26 60 TC09 93	Ø20-26	12	25	60	TC..09	93°	M2,2	T07
H1268K	BA 201 K 20-26 70 TC09 93	Ø20-26	12	25	70	TC..09	93°	M2,2	T07

## PERFORMANS Ø8~30 P HASSAS BARA İLAVELER / ADDITIONS / ADDITIONEN



Kod No / Stock No / Bestellnummer / Cod.	Kod / Code / Bezeichnung / Articolo	Ø
H123P	BT40 8-30P GÖVDE (YENİ)	8-30
H125P	BT40 8-30P SET (YENİ)	8-30
H124P	8-30P FX GÖVDE (YENİ)	8-30

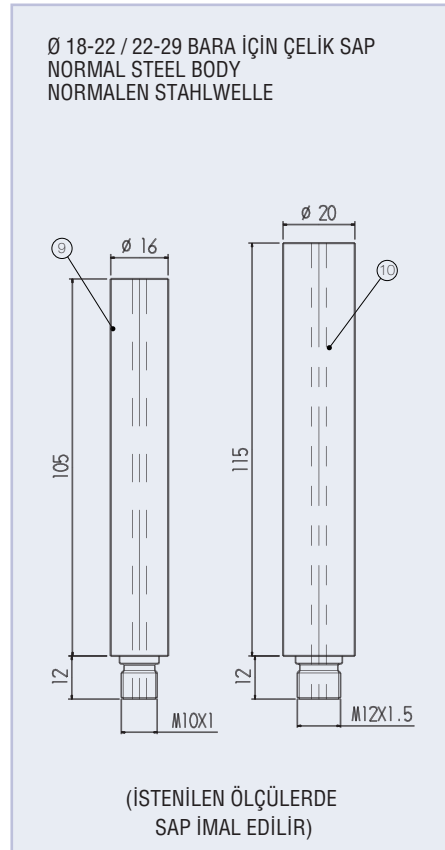
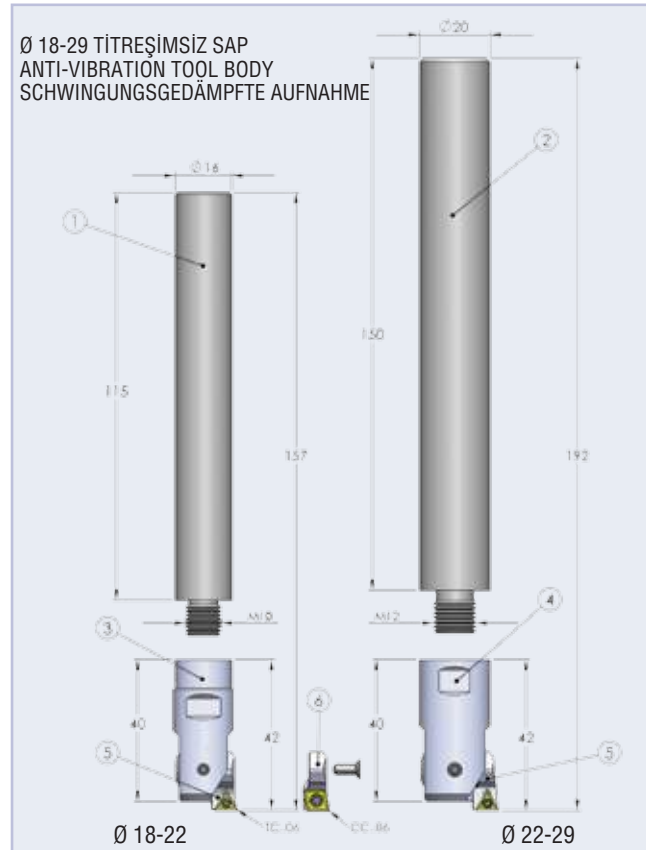
## Ø12 / 5-6-8-10 REDÜKSİYON / REDUCTION / REDUZIERUNG / RIDUZIONE

Kod No / Stock No / Bestellnummer / Cod.	Kod / Code / Bezeichnung / Articolo	Ø	FIGÜR NO
H1210R	BA 201 12/5 RED. UZUN	5	2
H1211R	BA 201 12/6 RED. UZUN	6	2
H1212R	BA 201 12/6 RED. FX	6	1
H1213R	BA 201 12/8 RED. FX	8	1
H1214R	BA 201 12/10 RED. FX	10	1

## TİTREŞİMSİZ DERİN DELİK İŞLEME TAKIMLARI

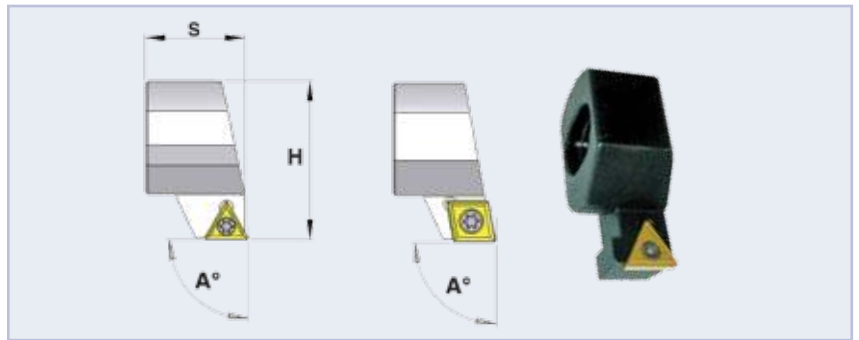
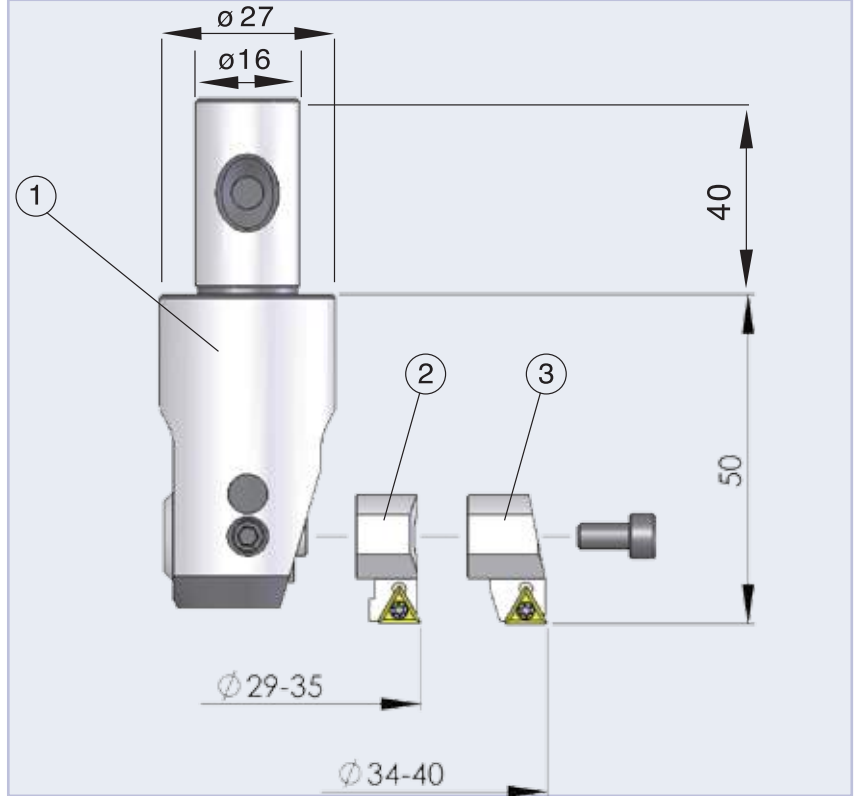
### HASSbara TİTREŞİM SÖNÜMLEYİCİ GÖVDE ANTI-VIBRATION TOOL BODY SCHWINGUNGSGEDÄMPFTE AUFNAHME

- Titreşim sönmleyici sap malzemesi, derin deliklerin işlenebilmesi için özel olarak imal edilmiştir. Bu tip deliklerin hassas işlenmesinde, titreşimi sönmleyerek yüksek yüzey kalitesi ve ölçü hassasiyeti elde edilir.
- Um tiefe Bohrungen bearbeiten zu können, sind schwingungsgedämpfte Aufnahmen von uns angefertigt worden. Man kann mit dieser schwingungsgedämpften Aufnahme (bei tiefen Bohrungen) Qualität und Maßhaltigkeit erzielen.
- The anti-vibration tool holder is specially produced to process deep holes. Whilst processing such precision holes, by ending absorbability high surface quality and measurement sensitivity is absorbed.




No.	Kod No / Stock No / Bestellnummer / Cod.	Kod / Code / Bezeichnung / Articolo	Ø
1	H5002	BA 18 - 22 16 115 SAP	18 - 22
2	H5003	BA 22 - 29 20 150 SAP	22 - 29
3	H5004	BA 18 - 22 GÖVDE	18 - 22
4	H5005	BA 22 - 29 GÖVDE	22 - 29
5	H5006	KS 18-29 T	-
6	H5007	KS 18-29 C	-
	H5024	BA 18 - 22 SET	18 - 22
	H5035	BA 22 - 29 SET	22 - 29
9	H50022	BA 18 - 22 16 105 ÇELİK SAP	18 - 22
10	H50033	BA 22 - 29 20 115 ÇELİK SAP	22 - 29
	H50240	BA 18 - 22 ÇELİK SAPLI SET	18 - 22
	H50350	BA 22 - 29 ÇELİK SAPLI SET	22 - 29

## PERFORMANS Ø29~40 P

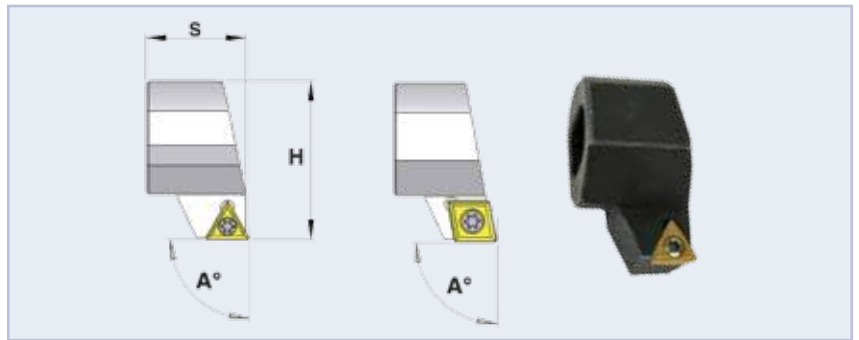
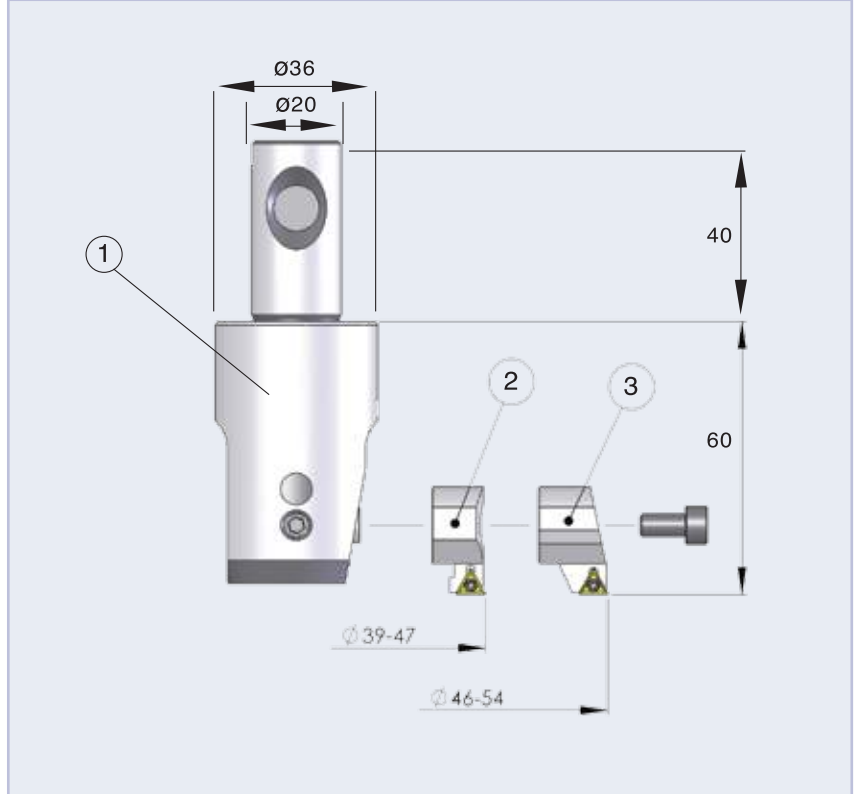


No.	Kod No / Stock No / Bestellnummer / Cod.	Kod / Code / Bezeichnung / Articolo	Ø
	H131P	BA 29-40P SET	29-40
1	H132P	BA 301 29-40P GÖVDE	29-40

## KARTUŞLAR / CARTRIDGES / PLATTENHALTER / CARTUCCIA

No.	Kod No / Stock No / Bestellnummer / Cod.	Kod / Code / Bezeichnung / Articolo	Ø D1 (min-max)	S	H	Uç/Insert W.P. Inserto	A		Torks Torx
2	H1321K	BA 301 KS 29-35 T	29-35	10	20	TC..06	90°	M2	T06
3	H1331K	BA 301 KS 34-40 T	34-40	12	20	TC..06	90°	M2	T06
2	H1322K	BA 301 KS 29-35 C	29-35	10	20	CC..06	90°	M2.5	T08
3	H1332K	BA 301 KS 34-40 C	34-40	12	20	CC..06	90°	M2.5	T08

## PERFORMANS Ø39~54 P



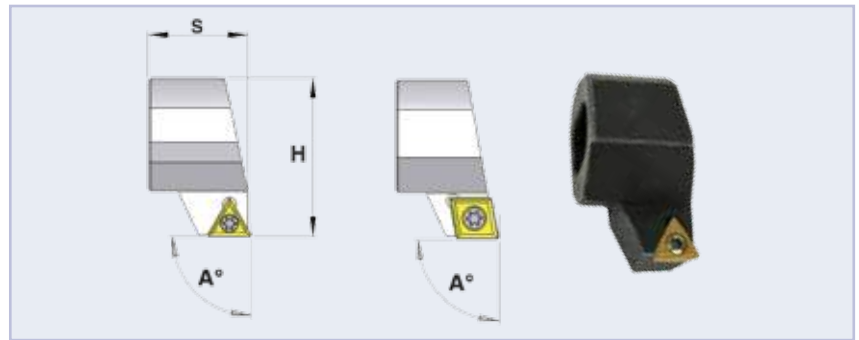
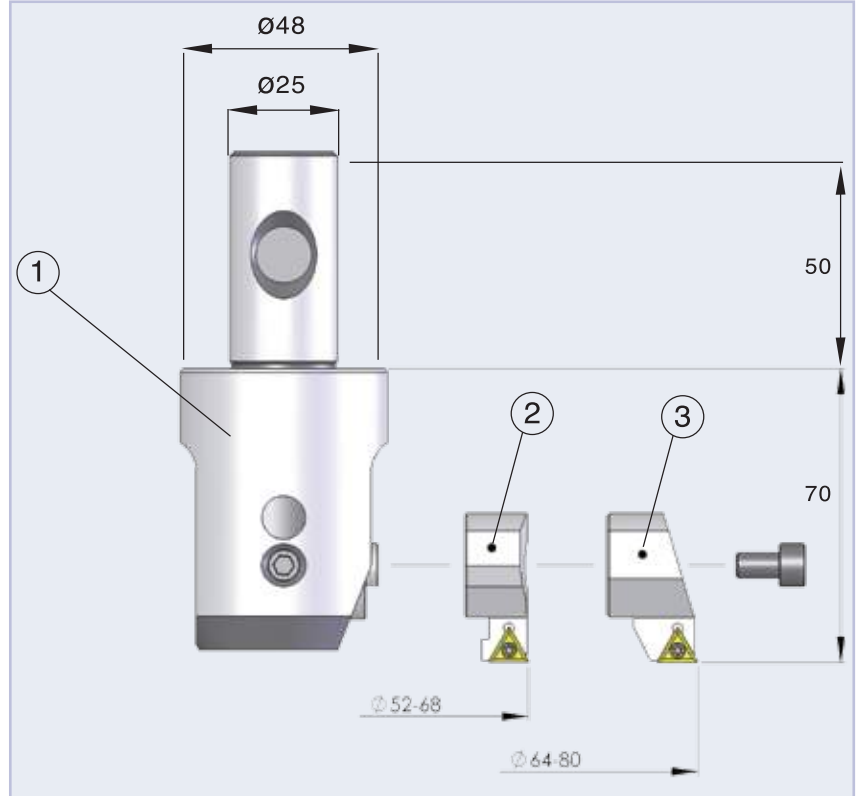
No.	Kod No / Stock No / Bestellnummer / Cod.	Kod / Code / Bezeichnung / Articolo	Ø
	H141P	BA 39-54P SET	39-54
1	H142P	BA 401 39-54P GÖVDE	39-54

## KARTUŞLAR / CARTRIDGES / PLATTENHALTER / CARTUCCIA

No.	Kod No / Stock No / Bestellnummer / Cod.	Kod / Code / Bezeichnung / Articolo	Ø D1 (min-max)	S	H	Uç/Insert W.P. Inserto	A		Torks Torx
2	H1421K	BA 401 KS 39-47 T	39-47	12	24	TC..06	90°	M2	T06
3	H1431K	BA 401 KS 46-54 T	46-54	15	24	TC..06	90°	M2	T06
2	H1422K	BA 401 KS 39-47 C	39-47	12	24	CC..06	90°	M2.5	T08
3	H1432K	BA 401 KS 46-54 C	46-54	15	24	CC..06	90°	M2.5	T08




## PERFORMANS Ø52~80 P

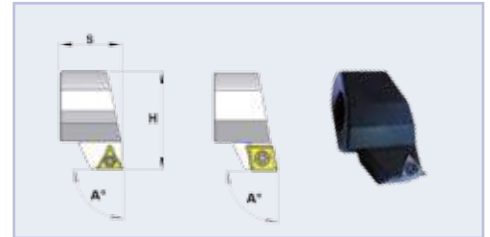
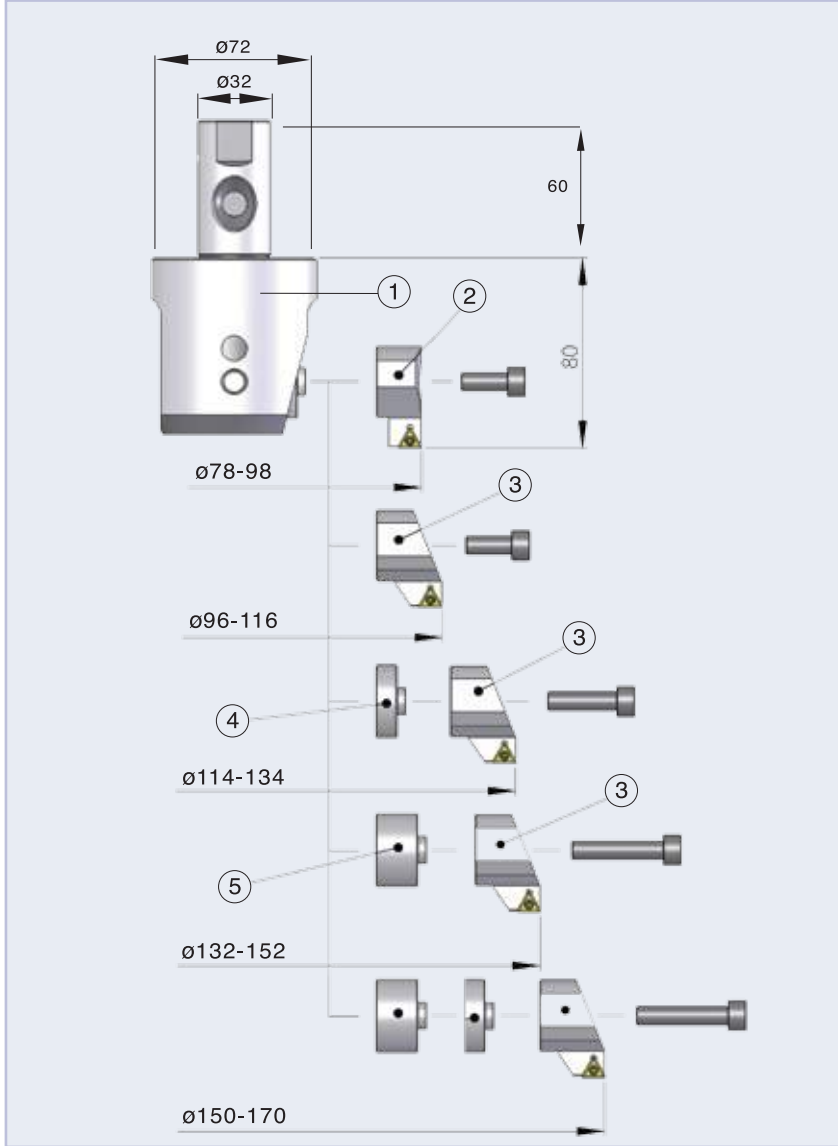


No.	Kod No / Stock No / Bestellnummer / Cod.	Kod / Code / Bezeichnung / Articolo	Ø
	H151P	BA 52-80P SET	52-80
1	H152P	BA 501 52-80P GÖVDE	52-80

## KARTUŞLAR / CARTRIDGES / PLATTENHALTER / CARTUCCIA


No.	Kod No / Stock No / Bestellnummer / Cod.	Kod / Code / Bezeichnung / Articolo	Ø D1 (min-max)	S	H	Uç/Insert W.P. / Inserto	A		Torks Torx
2	H1521K	BA 501 KS 52-68 T	52-68	15	35	TC..09	90°	M2,2	T07
3	H1531K	BA 501 KS 64-80 T	64-80	21	35	TC..09	90°	M2,2	T07
2	H1522K	BA 501 KS 52-68 C	52-68	15	35	CC..06	90°	M2,5	T08
3	H1532K	BA 501 KS 64-80 C	64-80	21	35	CC..06	90°	M2,5	T08

## PERFORMANS Ø78~170 P

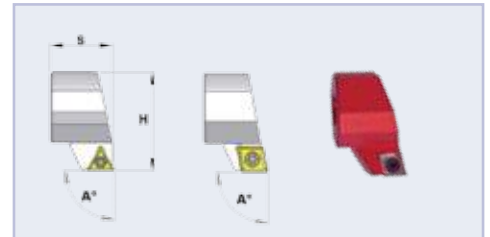
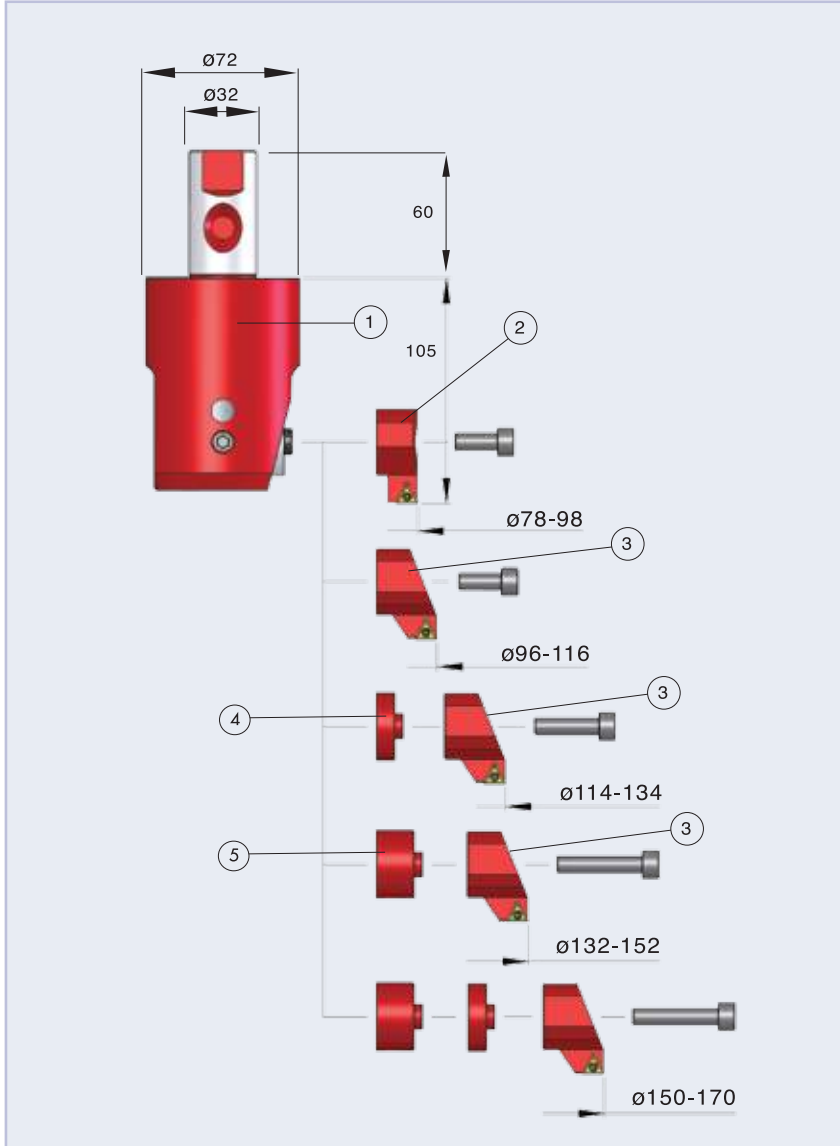


No.	Kod No / Stock No / Bestellnummer / Cod.	Kod / Code / Bezeichnung / Articolo	Ø
	H161P	BA 78-170P SET	78-170
1	H162P	BA 601 78-170P GÖVDE	78-170

## KARTUŞLAR / CARTRIDGES / PLATTENHALTER / CARTUCCIA


No.	Kod No / Stock No / Bestellnummer / Cod.	Kod / Code / Bezeichnung / Articolo	Ø D1 (min-max)	S	H	Uç/Insert / W.P. / Inserto	A		Torks / Torx
2	H1621K	BA 601 KS 78-98 T	78-98	20	44	TC..11	90°	M2,5	T08
3	H1631K	BA 601 KS 96-116 T	96-116	30	44	TC..11	90°	M2,5	T08
2	H1622K	BA 601 KS 78-98 C	78-98	20	44	CC..09	90°	M3,5	T15
3	H1632K	BA 601 KS 96-116 C	96-116	30	44	CC..09	90°	M3,5	T15
4	H1611Y	BA 601 KU114-134	114-134	-	-	-	-	-	-
5	H1612Y	BA 601 KU132-152	132-152	-	-	-	-	-	-

## PERFORMANS Ø78~170 AL-P



No.	Kod No / Stock No / Bestellnummer / Cod.	Kod / Code / Bezeichnung / Articolo	Ø
1	H171P	BA 78-170 AL-P SET	78-170
	H172P	BA 601 78-170 AL-P GÖVDE	78-170

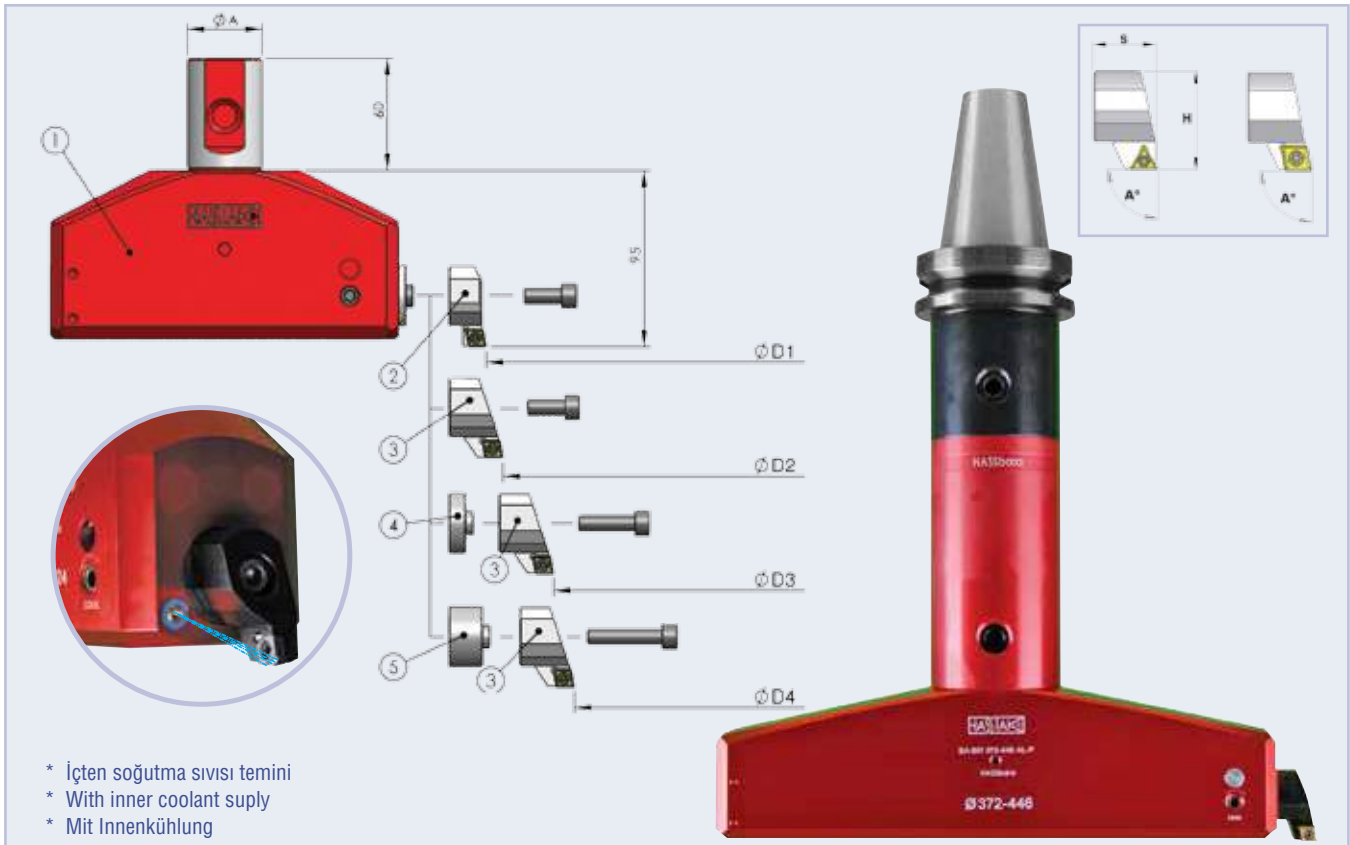
## KARTUŞLAR / CARTRIDGES / PLATTENHALTER / CARTUCCIA

No.	Kod No / Stock No / Bestellnummer / Cod.	Kod / Code / Bezeichnung / Articolo	Ø D1 (min-max)	S	H	Uç/Insert W.P. / Inserto	A		Torks Torx
2	H1721K	BA 601 KS 78-98 T AL	78-98	20	44	TC..11	90°	M2,5	T08
3	H1731K	BA 601 KS 96-116 T AL	96-116	30	44	TC..11	90°	M2,5	T08
2	H1722K	BA 601 KS 78-98 C AL	78-98	20	44	CC..09	90°	M3,5	T15
3	H1732K	BA 601 KS 96-116 C AL	96-116	30	44	CC..09	90°	M3,5	T15
4	H1711Y	BA 601 KU114-134 AL	114-134	-	-	-	-	-	-
5	H1712Y	BA 601 KU132-152 AL	132-152	-	-	-	-	-	-


## ALU-LINE FINISH Ø150~Ø446

### HASSbara ALUMİNYUM GÖVDE / ALUMINIUM BODY / ALUMINIUM BRÜCKE

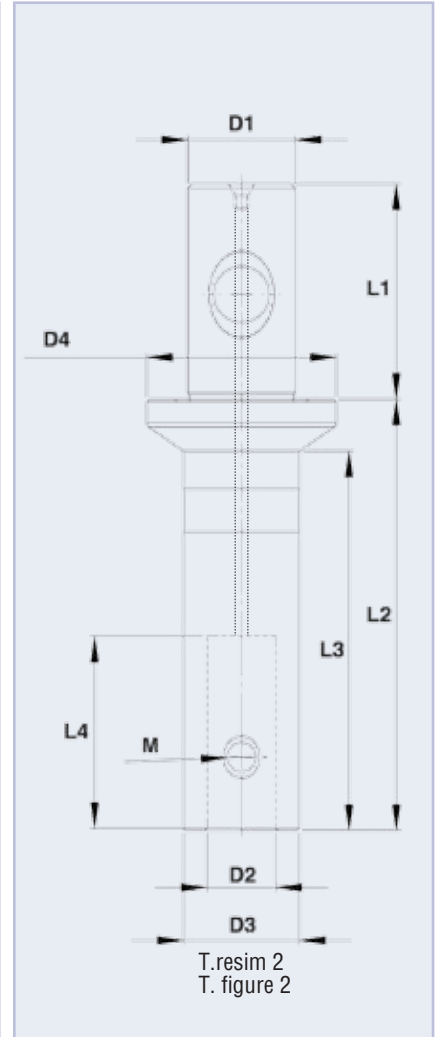
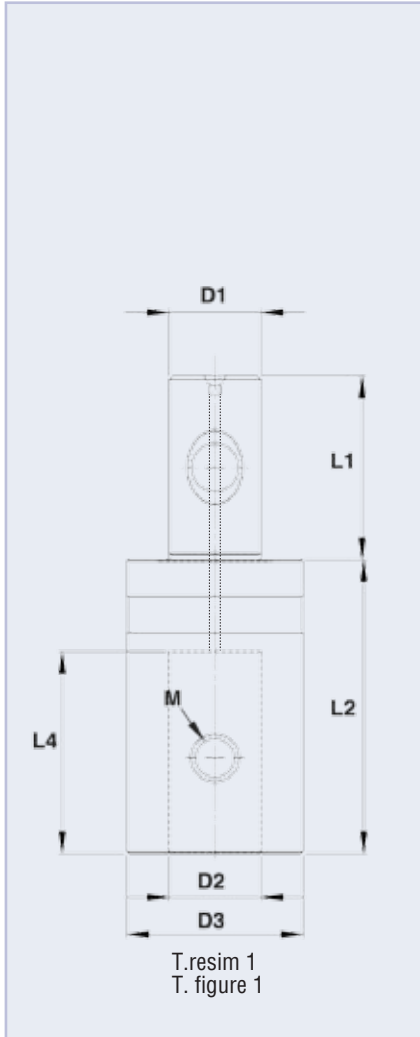
### ALU-LINE Ø150~Ø446 mm FINIS DELİK BARALAMA TAKIMLARI / FINE BORING TOOLS FEINSPINDELWERKZEUGE / BARENATURA



Kod No / Stock No Bestellnummer / Cod.	Kod / Code Bezeichnung / Articolo	Ø Dmin - Ø Dmax	Ø D1	Ø D2	Ø D3	Ø D4	Ø A
H181P	BA 150-224 AL-P SET	Ø150 - 224	Ø150 - 170	Ø168 - 188	Ø186 - 206	Ø204 - 224	32
H191P	BA 224-298 AL-P SET	Ø224 - 298	Ø224 - 244	Ø242 - 262	Ø260 - 280	Ø278 - 298	40
H201P	BA 298-372 AL-P SET	Ø298 - 372	Ø298 - 318	Ø316 - 336	Ø334 - 354	Ø352 - 372	40
H211P	BA 372-446 AL-P SET	Ø372 - 446	Ø372 - 392	Ø390 - 410	Ø408 - 428	Ø426 - 446	40

No.	Kod No / Stock No Bestellnummer / Cod.	Kod / Code Bezeichnung / Articolo	S	H	Uç/Insert W.P. Inserto	A		Torks Torx
2	H1721K	BA 601 KS 78-98 T AL	20	44	TC..11	90°	M2,5	T08
3	H1731K	BA 601 KS 96-116 T AL	30	44	TC..11	90°	M2,5	T08
2	H1722K	BA 601 KS 78-98 C AL	20	44	CC..09	90°	M3.5	T15
3	H1732K	BA 601 KS 96-116 C AL	30	44	CC..09	90°	M3.5	T15
4	H1711Y	BA 601 KU114-134 AL	-	-	-	-	-	-
5	H1712Y	BA 601 KU132-152 AL	-	-	-	-	-	-
1	H182P	BA 601 150-224 AL-P BODY	-	-	-	-	-	-
1	H192P	BA 601 224-298 AL-P BODY	-	-	-	-	-	-
1	H202P	BA 601 298-372 AL-P BODY	-	-	-	-	-	-
1	H212P	BA 601 372-446 AL-P BODY	-	-	-	-	-	-

## UZATMALAR EXTENSIONS / VERLÄNGERUNG / PROLUNGHE



No.	Kod No / Stock No Bestellnummer / Cod.	Kod / Code Bezeichnung / Articolo	Ø	D1	D2	D3	D4	L1	L2	L3	L4	M	T.r./f. V-R
1	H1371U	U 301 29-40 90	29-40	25	16	27	44	50	100	88	44	M8	2
2	H1372U	U 301 29-40 60	29-40	25	16	27	44	50	60	50	44	M8	2
3	H1373U	U 301 29-40 50	29-40	16	16	27	*	40	50	-	44	M8	1
4	H1471U	U 401 39-54 100	39-54	25	20	36	44	50	110	98	55	M10	2
5	H1472U	U 401 39-54 60	39-54	25	20	36	44	50	60	50	55	M10	2
6	H1473U	U 401 39-54 50	39-54	20	20	36	-	40	50	-	44	M10	1
7	H1571U	U501 52-80 80	52-80	25	25	48	-	50	80	-	55	M12	1
8	H1572U	U501 52-80 150	52-80	32	25	48	-	60	150	-	55	M12	1
9	H1671U	U601 78-170 80	78-152	32	32	72	-	60	80	-	65	M20	1
10	H1672U	U601 78-170 80 AL	78-152	32	32	72	-	60	80	-	65	M20	1
11	H1673U	U601 78-170 120 AL	78-152	32	32	72	-	60	120	-	65	M20	1
12	H1674U	U701 224-446 100 AL	224-446	40	40	80	-	60	100	-	65	M20	1
13	H1675U	U701 224-446 150 AL	224-446	40	40	80	-	60	150	-	65	M20	1

## KULLANIM REHBERİ Ø8~30 P

### OPERATING MANUAL Ø 8~30 P / BENUTZERHANDBUCH Ø 8~30 P CARATTERISTICHE PERFORMANCE Ø 8~30 P

1. GÖVDE / BODY / FEINBOHRSTANGE / CORPO UTENSILE
2. SABİTLEME VİDASI / FIXING SCREW / KLEMMSCHRAUBE / GRANO BLOCCAGGIO NONIO
3. SKALA / SCALE / SKALA / NONIO
4. KATER YUVASI / BORING BAR SOCKET  
AUFNAHME PLATTENHALTER / ALLOGGIAMENTO BARENO
5. KATER / BORING BAR / PLATTENHALTER / BARENO
6. KATER SABİTLEME VİDASI / BORING BAR FIXING SCREW  
KLEMMSCHRAUBE FÜR PLATTENHALTER / GRANO SERRAGGIO BARENO
7. GRESÖRLÜK / GREASE NIPPLE / SCHMIERNIPPEL / INGRASSATORE

### TANIMLAMA VE KULLANIM

- Kateri, sapındaki düzliğe KATER SABİTLEME VİDASI (6) basacak şekilde takınız.
- Çap ayarını SKALA'dan (3) yapmadan önce SABİTLEME VİDASI nı (2) gevşetiniz.
- Çap ayarını daima skalayı saat yönünde çevirerek yapınız.
- Özellikle çap küçültmek istendiğinde, SKALA (3) İstlenen değerden en az 20 çizgi geri alınarak (saat yönünün tersine çevirerek) tekrardan istenen değere (saat yönüne çevirerek ) gelinmelidir.
- Ayar bittiğinde SABİTLEME VİDASI nı (2) sıkmayı UNUTMAYINIZ!

### DESCRIPTION AND USE

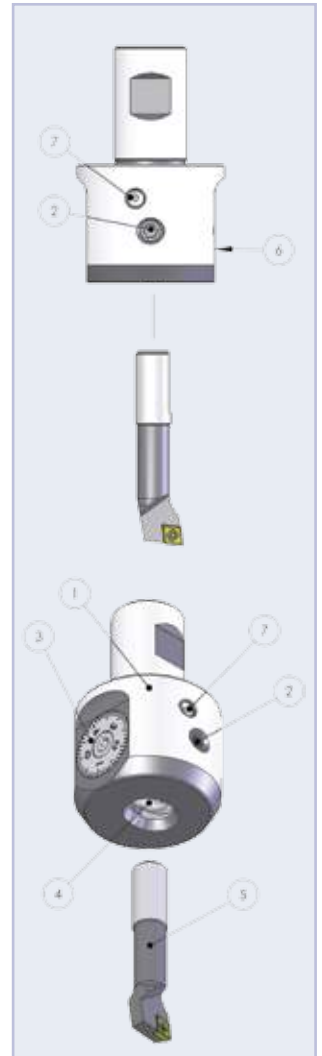
- Install the boring bar so that the BORING BAR FIXING SCREW (6) presses onto the flat point on its handle.
- Before making diameter adjustment from SCALE (3), loose FIXING SCREW (2).
- Adjust the diameter always by rotating the scale clockwise.
- If you wish specifically to reduce the diameter, adjust SCALE (3) back to at least twenty marks less the desired value (by rotating it counter-clockwise), then re-adjust it to the desired value (by rotating it clockwise).
- DO NOT FORGET to tighten the FIXING SCREW (2) when you complete the adjustment!

### MONTAGE ANLEITUNG

- Plattenhalter in die Aufnahme (4) einführen und mit der Klemmschraube (6) fixieren.
- Bitte die Klemmschraube (2) vor der Feineinstellung des Werkzeuges lösen.
- Die Feineinstellung sollte immer in Richtung Uhrzeigersinn sein, damit dem Totgang in der Spindel (3) entgegen gewirkt wird.
- Bitte nach der Einstellung die Klemmschraube (2) wieder anziehen.

### MANUAL DI UTILIZZO

- Installare il bareno(5) nella sua sade(4) con il pianetto rivolto verso il grano di fissaggio(6).
- Prima di fare regolazioni di diametro tramite il nonio(3) allentare il grano di bloccaggio(2).
- Regolare il diametro ruotando sempre in senso orario.
- Se vi è la necessità di ridurre il diametro ruotare il nonio oltre la posizione desiderata di almeno di 20 posizioni e poi procedere nuovamente in senso orario fino al valore desiderato.
- Non dimenticarsi di serrare il grano di bloccaggio nonio(2) a regolazione avvenuta.

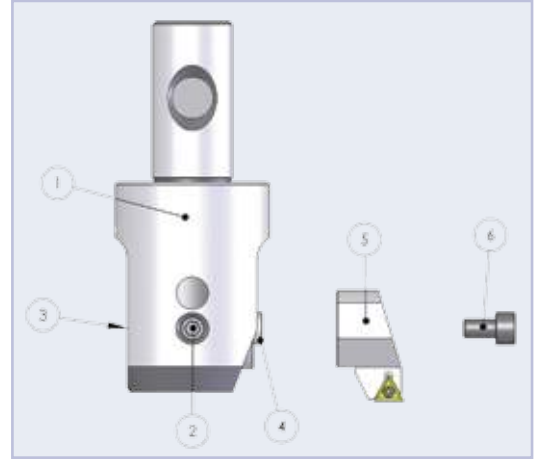


## KULLANIM REHBERİ Ø29~446 P / AL-P

### OPERATING MANUAL / BENUTZERHANDBUCH

### MANUAL DI UTILIZZO Ø 29~446 P/AL-P

1. GÖVDE / BODY / FEINBOHRSTANGE / CORPO UTENSILE
2. SABİTLEME VİDASI / FIXING SCREW / KLEMMSCHRAUBE  
GRANO BLOCCAGGIO NONIO
3. SKALA / SCALE / SKALER / NONIO
4. KARTUŞ YUVASI / CARTRIDGE SOCKET  
BEFESTIGUNGSSCHRAUBE / ALLOGGIAMENT CARTUCCIA
5. KARTUŞ / CARTRIDGE / PLATTENHALTER / CARTUCCIA
6. KARTUŞ SABİTLEME VİDASI / CARTRIDGE FIXING SCREW  
KLEMMSCHRAUBE FÜR PLATTENHALTER  
VITE SERRAGGIO CARTUCCIA



## HASSbara BA 29-40P / BA 39-54P / BA 52-80P / BA 78-170P / BA 78-170 AL-P / BA 150-224 AL-P / BA 224-298 AL-P / BA 298-372 AL-P / BA 372-446 AL-P ÜRÜNLERİ İÇİN TANIMLAMA VE KULLANIM REHBERİ

- KARTUŞU (5) yerine monte etmeden önce SABİTLEME VİDASINI (2) sıkınız. Daha sonra Kartuşu (5) yuvasına (4) takarak imbus vidası ile (6) sabitleyiniz
- Çap ayarını SKALA'dan (3) yapmadan önce SABİTLEME VİDASI nı (2) gevşetiniz.
- Çap ayarını daima skalayı saat yönünde çevirerek yapınız.
- Özellikle çap küçültmek istendiğinde, SKALA (3) İstlenen değerden en az 20 çizgi geri alınarak (saat yönünün tersine çevirerek) tekrardan istenen değere ( saat yönünde çevirerek ) gelinmelidir.
- Ayar bittiğinde SABİTLEME VİDASI nı (2) sıkmayı UNUTMAYINIZ!

### PRODUCT DESCRIPTION AND OPERATING MANUAL FOR

### HASSbara BA29-40P / BA39-54P / BA52-80P / BA78-170P / BA78-170AL-P / BA 150-224 AL-P / BA 224-298 AL-P / BA 298-372 AL-P / BA 372-446 AL-P

- Before mounting CARTRIDGE (5) in place, tighten FIXING SCREW (2). Then, mount cartridge (5) in its socket (4) and fix with Imbus screw (6).
- Before adjusting diameter from SCALE (3), loose FIXING SCREW (2).
- Adjust the diameter always by rotating the scale clockwise.
- If you wish specifically to reduce the diameter, adjust SCALE (3) back to at least twenty marks less the desired value (by rotating it counter-clockwise), then re-adjust it to the desired value (by rotating it clockwise).
- DO NOT FORGET to tighten the FIXING SCREW (2) when you complete the adjustment!

### MONTAGE ANLEITUNG

### HASSbara BA29-40P / BA39-54P / BA52-80P / BA78-170P / BA78-170AL-P / BA 150-224 AL-P / BA 224-298 AL-P / BA 298-372 AL-P / BA 372-446 AL-P

- Plattenhalter (5) auf die Schnittstelle (4) mit der Befestigungsschraube (6) montieren.
- Bitte darauf achten, dass die Klemmschraube (2) angezogen ist.
- Vor der Feineinstellung , sollte diese wieder gelöst werden.
- Die Feineinstellung sollte immer in Richtung Uhrzeigersinn sein damit dem Totengang in der Spindel (3) entgegen gewirkt wird
- Nach der Feineinstellung muss die Klemmschraube (2) wieder angezogen werden.

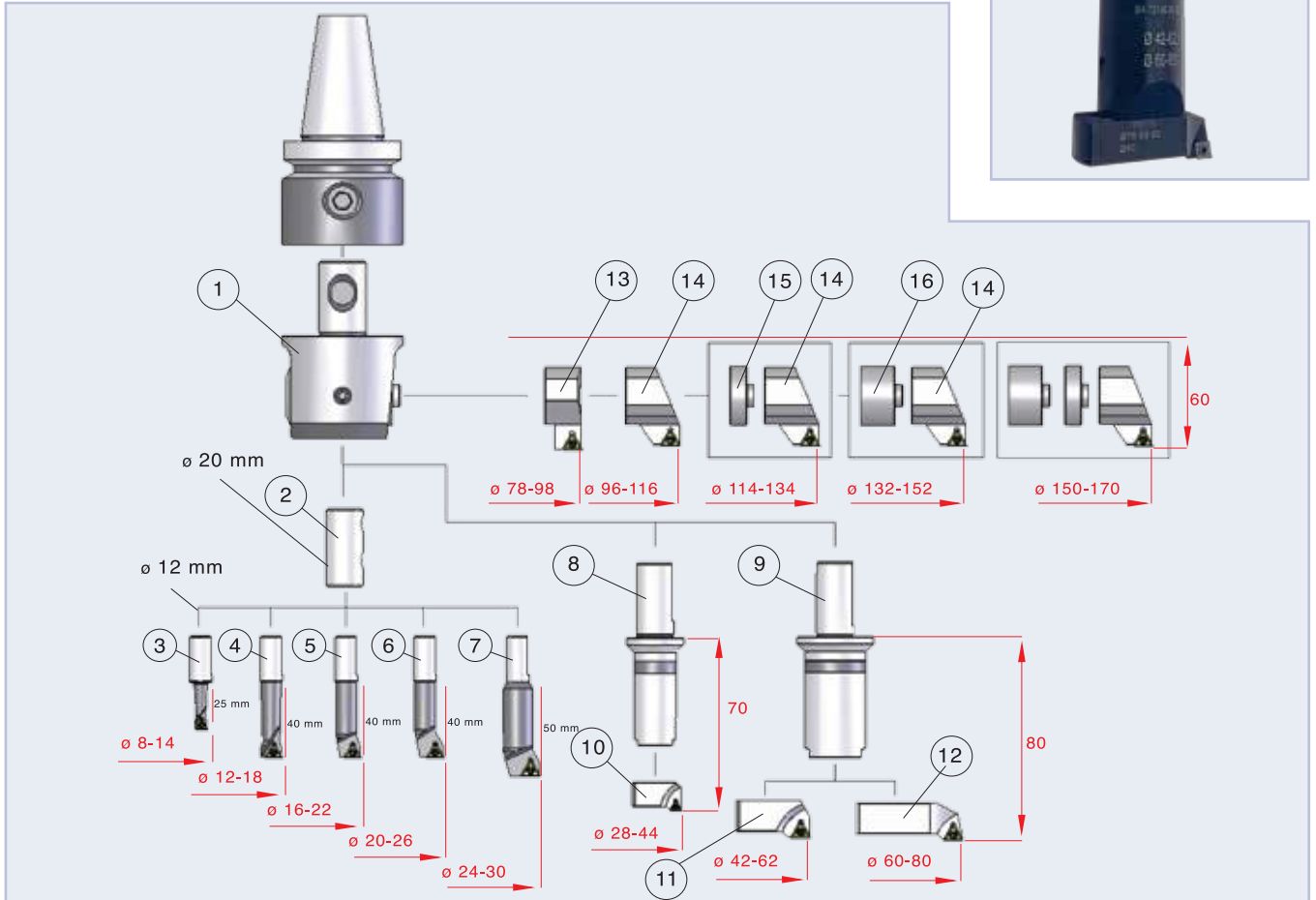
### MANUAL DI UTILIZZO

### HASSbara BA29-40P / BA39-54P / BA52-80P / BA78-170P / BA78-170AL-P / BA 150-224 AL-P / BA 224-298 AL-P / BA 298-372 AL-P / BA 372-446 AL-P

- Prima di installare la cartuccia(5) nella sua sede(4) e fissarlo con la vite(6) serrare in grano di bloccaggio nonio(2).
- Prima di fare regolazioni di diametro tramite il nonio(3) allentare il grano di bloccaggio(2).
- Regolare il diametro ruotando sempre in senso orario.
- Se vi è la necessità di ridurre il diametro ruotare il nonio oltre la posizione desiderata di almeno di 20 posizioni e poi procedere nuovamente in senso orario fino al valore desiderato.
- Non dimenticarsi di serrare il grano di bloccaggio nonia(2) a regolazione avvenuta.



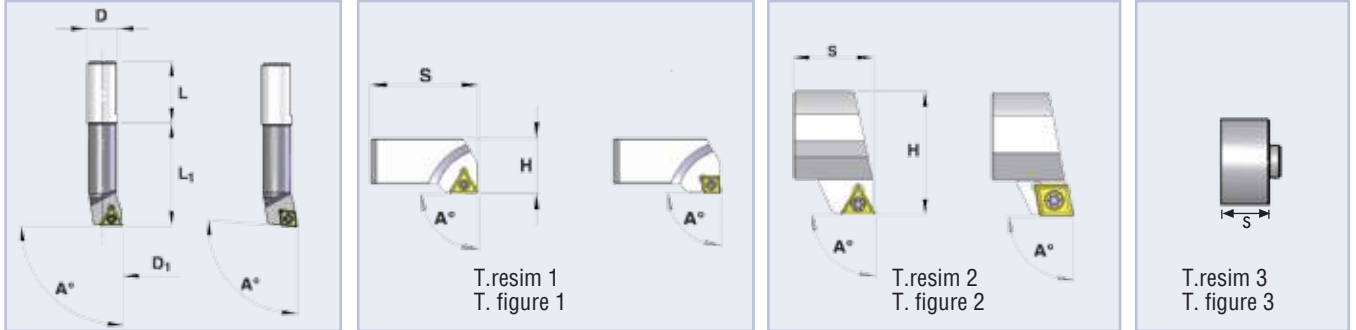
## EKONOMİ SET Ø8~170 E



No.	Kod No / Stock No / Bestellnummer / Cod.	Kod / Code / Bezeichnung / Articolo	Ø
1	H201E	BA 8-170 E-SET	8-170
	H702E	BA 701 8-170 E GÖVDE	8-170
	H202E	BA 8-250 E-SET	8-250
	H703E	BT40 8-250E GÖVDE (YENİ)	8-250
	H203E	BT40 8-250E SET (YENİ)	8-250
2	H2010R16	ADP 26 20 16 45 (YENİ)	-
	H2010R08	ADP 26 20 08 45 (YENİ)	-
	H2010R	ADP 20 26 12 45	-



## EKONOMİ SET Ø08~170 E



## KATERLER / BORING BARS / BOHRSTANGEN / BARENI

No.	Kod No / Stock No Bestellnummer / Cod.	Kod / Code Bezeichnung / Articolo	Ø D1 (min-max)	D	L	L1	Uç/Insert W.P. Inserto	A		Torks Torx
3	H1221K	BA 201 K8-14 T	8-14	12	25	25	TC..06	90°	M2	T06
4	H1231K	BA 201 K12-18 T	12-18	12	25	40	TC..09	90°	M2,2	T07
5	H1241K	BA 201 K16-22 T	16-22	12	25	40	TC..09	90°	M2,2	T07
6	H1251K	BA 201 K20-26 T	20-26	12	25	40	TC..09	90°	M2,2	T07
7	H1261K	BA 201 K24-30 T	24-30	12	25	50	TC..11	90°	M2,5	T08
4	H1232K	BA 201 K12-18C	12-18	12	25	40	CC..06	95°	M2,5	T08
5	H1242K	BA 201 K16-22C	16-22	12	25	40	CC..06	95°	M2,5	T08
6	H1252K	BA 201 K20-26C	20-26	12	25	40	CC..06	95°	M2,5	T08
7	H1262K	BA 201 K24-30C	24-30	12	25	50	CC..06	95°	M2,5	T08

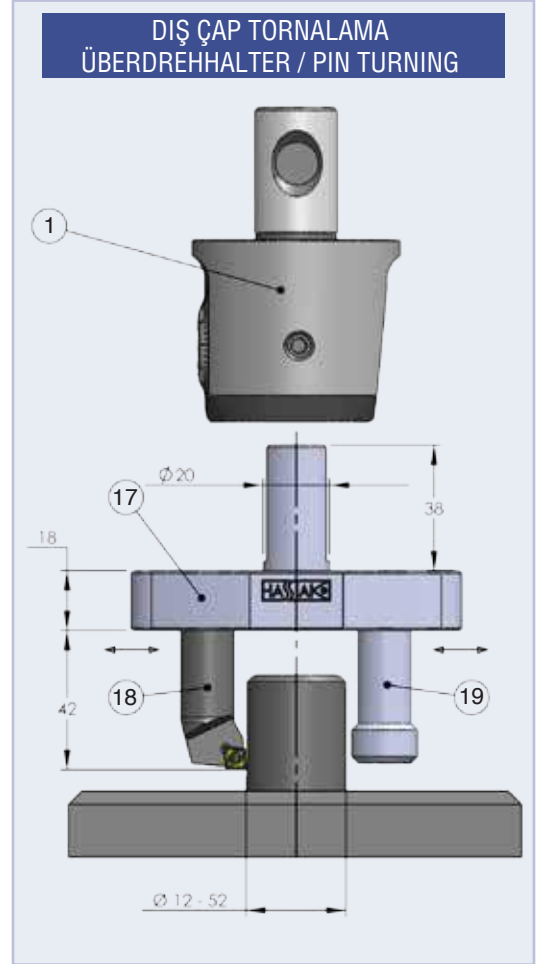
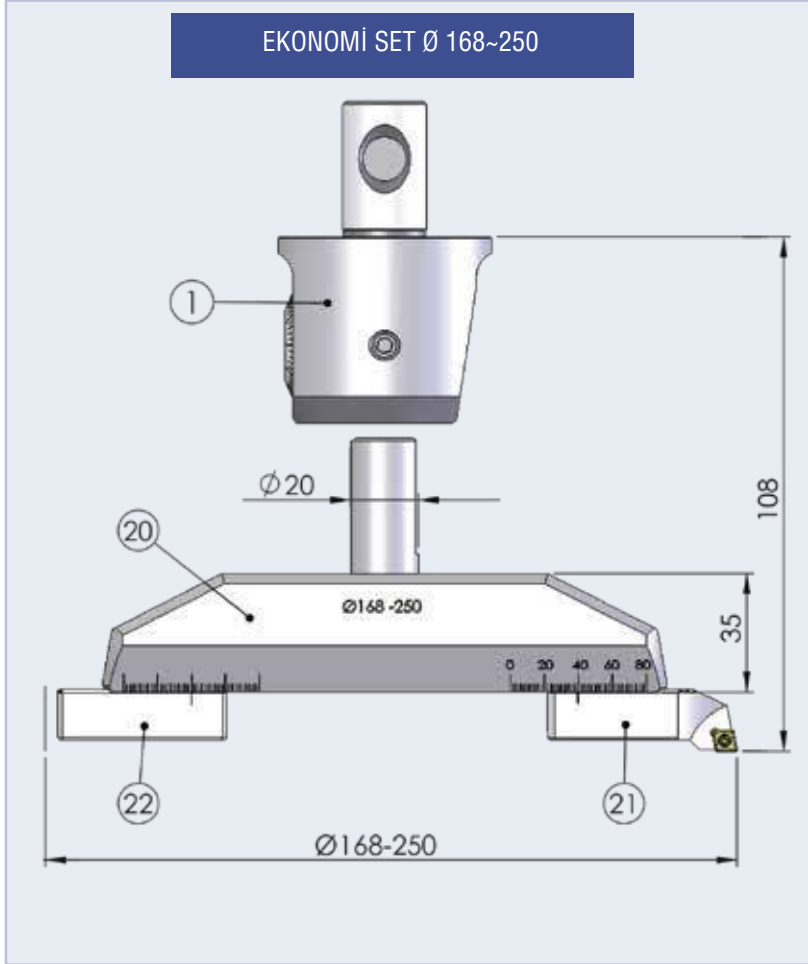
## KARTUŞ ADAPTÖRLERİ / CARTRIDGE BARS / AUFNAHME / ADAPTATORECARTUCCIA

No.	Kod No / Stock No / Bestellnummer / Cod.	Kod / Code / Bezeichnung / Articolo	Ø
8	H2011A	BA 701-28-44 70	28-44
9	H2012A	BA 701-42-80 80	42-80

## KARTUŞLAR / CARTRIDGES / PLATTENHALTER / CARTUCCIA

No.	Kod No / Stock No Bestellnummer / Cod.	Kod / Code Bezeichnung / Articolo	Ø	H	S	Uç/Insert W.P. Inserto	A		Torks Torx	T.r/f. V-R
10	H2121K	BA 701 KS 28-44 T	28-44	16	26	TC..09	90°	M2,2	T07	1
11	H2131K	BA 701 KS 42-62 T	42-62	20	39	TC..11	90°	M2,5	T08	1
12	H2141K	BA 701 KS 60-80 T	60-80	20	56	TC..11	90°	M2,5	T08	1
10	H2122K	BA 701 KS 28-44 C	28-44	16	26	CC..06	90°	M2,5	T08	1
11	H2132K	BA 701 KS 42-62 C	42-62	20	39	CC..06	90°	M2,5	T08	1
12	H2142K	BA 701 KS 60-80 C	60-80	20	56	CC..06	90°	M2,5	T08	1
13	H1621K	BA 601 KS 78-98 T	78-98	44	20	TC..11	90°	M2,5	T08	2
14	H1631K	BA 601 KS 96-116 T	96-116	44	30	TC..11	90°	M2,5	T08	2
13	H1622K	BA 601 KS 78-98C	78-98	44	20	CC..09	90°	M3,5	T15	2
14	H1632K	BA 501 KS 96-116C	96-116	44	30	CC..09	90°	M3,5	T15	2
15	H1611Y	BA 601 KU 114-134	114-134		9					3
16	H1612Y	BA 601 KU 132-152	132-152		18					3

## EKONOMİ SET İLAVELER / ADDITIONS / ADDITIONEN



No.	Kod No / Stock No / Bestellnummer / Cod.	Kod / Code / Bezeichnung / Articolo	Ø
17	H2213	BA D12-52 42 20	12-52
18	H2214	BA DK 12-52 42	12-52
19	H2215	DBA 12-52	12-52
20	H2015	KZ 168-250 ALU	-
21	H2016	K 168-250 CC06 90	-
22	H2017	BLS 168-250	-

## UZUN KARTUŞ ADAPTÖRLERİ / LONG CARTRIDGE BARS

No.	Kod No / Stock No / Bestellnummer / Cod.	Kod / Code / Bezeichnung / Articolo	Ø
8	H2013A	BA 701-28-44 100	28-44
9	H2014A	BA 701-42-80 120	42-80

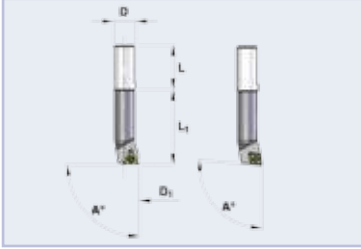
\* Bütün ürünlerde özel ölçü takım ihtiyaçlarınız için arayınız.

\* Please contact us for your special tool size requirements for all products.


\* Sonderanfertigung und Größen der Werkzeuge bitte anfragen.

\* Non esitate a cotattarci per utensili co misure speciali.


## UZUN KATERLER / LONG BORING BARS / LANGEN-HALTER / BARENI



### Ø8~30 UZUN KATERLER / LONG BORING BARS / LANGE HALTER

Kod No / Stock No Bestellnummer / Cod.	Kod / Code Bezeichnung / Articolo	Ø D1 (min-max)	D	L	L1	Uç/Insert W.P. Inserto	A		Torks Torx
H1222K	BA 201 K8-14 30 CC06 95	Ø8-14	12	25	30	CC..06	95°	M2.5	T08
H1223K	BA 201 K10-16 40 CC06 95	Ø10-16	12	25	40	CC..06	95°	M2.5	T08
H1233K	BA 201 K12-18 50 CC06 95	Ø12-18	12	25	50	CC..06	95°	M2.5	T08
H1243K	BA 201 K16-22 50 CC06 95	Ø16-22	12	25	50	CC..06	95°	M2.5	T08
H1244K	BA 201 K16-22 60 CC06 95	Ø16-22	12	25	60	CC..06	95°	M2.5	T08
H1245K	BA 201 K16-22 70 CC06 95	Ø16-22	12	25	70	CC..06	95°	M2.5	T08
H1253K	BA 201 K20-26 50 CC06 95	Ø20-26	12	25	50	CC..06	95°	M2.5	T08
H1254K	BA 201 K20-26 60 CC06 95	Ø20-26	12	25	60	CC..06	95°	M2.5	T08
H1255K	BA 201 K20-26 70 CC06 95	Ø20-26	12	25	70	CC..06	95°	M2.5	T08
H1263K	BA 201 K24-30 60 CC06 95	Ø24-30	12	25	60	CC..06	95°	M2.5	T08
H1264K	BA 201 K24-30 70 CC06 95	Ø24-30	12	25	70	CC..06	95°	M2.5	T08
H1225K	BA 201 K10-16 40 TC09 93	Ø10-16	12	25	40	TC..09	93°	M2.2	T07
H1256K	BA 201 K 20-26 50 CC06 90	Ø20-26	12	25	50	CC..06	90°	M2.5	T08
H1257K	BA 201 K 20-26 60 CC06 90	Ø20-26	12	25	60	CC..06	90°	M2.5	T08
H1258K	BA 201 K 20-26 70 CC06 90	Ø20-26	12	25	70	CC..06	90°	M2.5	T08
H1259K	BA 201 K 20-26 50 TC09 90	Ø20-26	12	25	50	TC..09	90°	M2.2	T07
H1260K	BA 201 K 20-26 60 TC09 90	Ø20-26	12	25	60	TC..09	90°	M2.2	T07
H1265K	BA 201 K 20-26 70 TC09 90	Ø20-26	12	25	70	TC..09	90°	M2.2	T07
H1266K	BA 201 K 20-26 50 TC09 93	Ø20-26	12	25	50	TC..09	93°	M2.2	T07
H1267K	BA 201 K 20-26 60 TC09 93	Ø20-26	12	25	60	TC..09	93°	M2.2	T07
H1268K	BA 201 K 20-26 70 TC09 93	Ø20-26	12	25	70	TC..09	93°	M2.2	T07

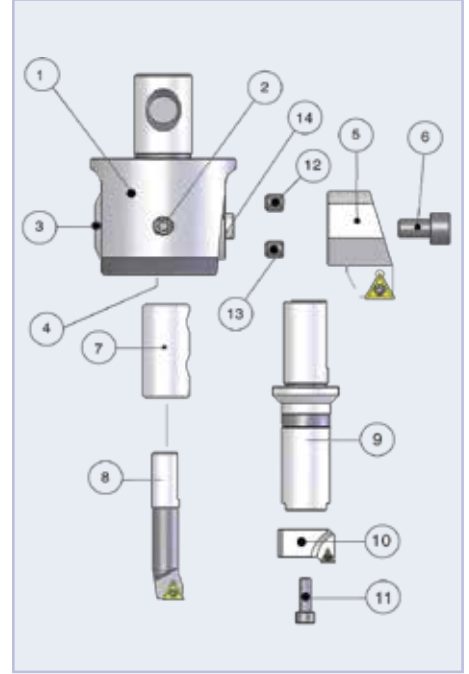
### Ø8~170 EKONOMİ SET UZUN KATERLER / Ø8~170 ECONOMY SET LONG BORING BAR Ø8~170 ECONOMY SET LANGEN-HALTER / BARENI Ø8~170E ECONOMY

Kod No / Stock No Bestellnummer / Cod.	Kod / Code Bezeichnung / Articolo	Ø D1 (min-max)	D	L	L1	Uç/Insert W.P. Inserto	A		Torks Torx
H1271K	BA 701 K 16-22 60 CC06 90	16-22	20	40	60	CC..06	90°	M2,5	T08
H1272K	BA 701 K 16-22 60 CC06 95	16-22	20	40	60	CC..06	95°	M2,5	T08
H1273K	BA 701 K 16-22 60 TC09 90	16-22	20	40	60	TC..09	90°	M2,2	T07
H1274K	BA 701 K 16-22 60 TC09 93	16-22	20	40	60	TC..09	93°	M2,2	T07
H1281K	BA 701 K 20-26 70 CC06 90	20-26	20	40	70	CC..06	90°	M2,5	T08
H1282K	BA 701 K 20-26 70 CC06 95	20-26	20	40	70	CC..06	95°	M2,5	T08
H1283K	BA 701 K 20-26 70 TC09 90	20-26	20	40	70	TC..09	90°	M2,2	T07
H1284K	BA 701 K 20-26 70 TC09 93	20-26	20	40	70	TC..09	93°	M2,2	T07
H1291K	BA 701 K 24-30 80 CC06 90	24-30	20	40	80	CC..06	90°	M2,5	T08
H1292K	BA 701 K 24-30 80 CC06 95	24-30	20	40	80	CC..06	95°	M2,5	T08
H1293K	BA 701 K 24-30 80 CC09 90	24-30	20	40	80	CC..09	90°	M3,5	T15
H1294K	BA 701 K 24-30 80 CC09 95	24-30	20	40	80	CC..09	95°	M3,5	T15
H1295K	BA 701 K 24-30 80 TC11 90	24-30	20	40	80	TC..11	90°	M2,5	T08
H1296K	BA 701 K 24-30 80 TC11 93	24-30	20	40	80	TC..11	93°	M2,5	T08

## KULLANIM REHBERİ Ø 8~250 E

### DESCRIPTION AND OPERATING MANUAL MONTAGE ANLEITUNG / MANUALDI UTILIZZO

1. GÖVDE / BODY / FEINSPINDELWERKZEUG / CORPO
2. SABİTLEME VİDASI / FIXING SCREW  
KLEMMSCHRAUBE / GRANO BLOCCAGGIO NONIO
3. SKALA / SCALE / SKALA / NONIO
4. KATER YUVASI / BORING BAR SOCKET  
AUFNAHME PLATTENHALTER / ALLOGGIAMENTO BARENO
5. KARTUŞ / CARTRIDGE / PLATTENHALTER / CARTUCCIA
6. KARTUŞ SABİTLEME / CARTRIDGE FIXING SCREW  
BEFESTIGUNGSSCHRAUBE / VITE FISSAGGIO CARTUCCIA
7. Ø20/12 REDÜKSİYON / Ø20/12 REDUCTION  
Ø20/12 REDUZIERUNG / RIDUZIONE Ø20/12MM
8. KATER / BORING BAR / PLATTENHALTER /BARENO
9. KARTUŞ ADAPTÖRÜ / CARTRIDGE BAR  
AUFNAHME PLATTENHALTER / BARENO CON CARTUCCIA
10. KARTUŞ / CARTRIDGE / PLATTENHALTER /CARTUCCIA
11. KARTUŞ VİDASI / CARTRIDGE SCREW / BEFESTIGUNGSSCHRAUBE  
VITE CARTUCCIA
12. REDÜKSİYON SABİTLEME VİDASI / REDUCTION FIXING SECREW  
BEFESTIGUNGSSCHRAUBE-REDUZIERUNG / GRANO FISSAGGIO RIDUZIONE
13. KATER SABİTLEME VİDASI / BORING BAR FIXING SCREW  
BEFESTIGUNGSSCHRAUBE-PLATTENHALTER / GRANO FISSAGGIO BARENO
14. KARTUŞ YUVASI / CARTRIDGE SOCKET  
AUFNAHME PLATTENHALTER / ALLOGGIAMENTO CARTUCCIA



#### Ø 8 - 30 UYGULAMASI

- A- Kater ve Redüksiyonu takmadan önce SABİTLEME VİDASI nı (2) sıkınız
- B- REDÜKSİYONU (7), Kater yuvasına (4) taktıktan sonra (12) nolu vidayı sıkarak sabitleyin
- C- Kateri, sapındaki düzlüğe (13) nolu vida basacak şekilde REDÜKSİYONA (7) takınız ve (13) nolu vidayı sıkınız.
- D- Çap ayarını SKALA DAN (3) yapmadan önce SABİTLEME VİDASI nı (2) gevşetiniz.
- E- Çap ayarını daima merkezden dışa doğru yapınız. (Saat yönünde döndür)
- F- Özellikle çap küçültmek istendiğinde, SKALA (3) istenen değerden en az 20 çizgi geri alınarak (saat yönünün aksine çevirerek) tekrardan istenen değere (saat yönüne çevirerek) gelinmelidir.
- G- Ayar bittiğinde SABİTLEME VİDASI nı (2) sıkımayı UNUTMAYINIZ!

#### Ø 28 - 80 UYGULAMASI

- H- Kartuş adaptörünü (9) kater yuvasına(4) takmadan önce sabitleme vidasını(2)sıkınız
- I- Redüksiyonu(12)numaralı vidayı gevşeterek çıkartınız.
- J- Kartuş adaptörünü sapındaki düzlüğe 13 numaralı vida basacak şekilde kater yuvasına (4) takınız ve 12 ile 13 numaralı vidalar ile adaptörü (9) sabitleyiniz.
- K- İşleme yapacağınız çapa uygun kartuş(10) tipini kartuş adaptörüne (9) 11 numaralı imbus civata ile sabitleyiniz.
- L- Çap ayarlamasını D/E/F/G ye göre yapınız.

#### Ø 78 - 250 UYGULAMASI

- M- Kartuşu ø 78-250 (5) yerine monte etmeden önce SABİTLEME VİDASINI (2) sıkınız. Daha sonra kartuşu (5) yuvasına (14) takarak imbus vidası ile (6) sabitleyiniz.
- N- Çap ayarlamasını D/E/F/G'ye göre yapınız.

#### APPLICATION OF Ø 8 - 30

- A - Tighten FIXING SCREW (2) before mounting Boring bar and Reduction
- B - Place REDUCTION (7) in Boring bar socket (4) and fasten it by tightening the screw no (12).
- C - Mount the boring bar so that the screw no (13) press onto the flat point on its handle and tighten the screw no (13).
- D - Loosen FIXING SCREW (2) before adjusting the diameter from SCALE (3)
- E - Adjust the diameter outwardly (by rotating clockwise)
- F - Specifically, if you wish to reduce the diameter, adjust SCALE (3) back to at least twenty marks less the desired value (by rotating it counter-clockwise), then re-adjust it to the desired value (by rotating it clockwise).
- G - DO NOT FORGET to tighten FIXING SCREW (2) when you complete the adjustment!

#### APPLICATION OF Ø 28 - 80

- H - Tighten fixing screw (2) before mounting cartridge bar (9) in boring bar socket (4)
- I - Tighten and remove the reduction no. (12)
- J - Mount the cartridge bar so that the screw no (13) press onto the flat point on its handle and fasten the sleeve by the screws no. (12) and (13).
- K - Fasten the cartridge (10) type suitable for the desired diameter onto the cartridge bar (9) by Imbus bolt no.(11)
- L - Adjust diameter i according to D/E/F/G.

#### APPLICATION OF Ø 78 - 250

- M - Tighten fixing screw (2) before mounting cartridge Ø 78-250 (5) in its place. Then install the cartridge in its socket (14) and fasten it with Imbus screw (6).
- N - Adjust diameter according to D/E/F/G.

#### MONTAGE ANLEITUNG Ø 8 - 30

- A - Vor der Montage der Reduzierung oder Plattenhalter, bitte die Klemmschraube (2) anziehen.
- B - Bauen Sie die Reduzierung (7) in die Aufnahme (4) und klemmen Sie es mit der Schraube (7).
- C - Den Plattenhalter (8) in die Reduzierung (7) einbauen und mit der Schraube (13) anziehen.
- D - Vor der Feineinstellung an der Skala (3), bitte die Schraube (2) lösen.
- E - Die Feineinstellung möglichst im Uhrzeigersinn ausführen.
- F - Den Totengang entgegen zu wirken.
- G - Bitte die Schraube (2) nach Verstellung anziehen.

#### MONTAGE ANLEITUNG Ø 28 - 80

- H - Die Reduzierung (7) bitte ausbauen, indem Sie die Schraube (12) lösen.
- I - Vor der Montage der Aufnahme (9) in die Aufnahme (4), bitte die Klemmschraube (2) anziehen.
- J - Bauen Sie die Reduzierung (9) in die Aufnahme (4) ein und befestigen Sie es mit den Schrauben (12 / 13).
- K - Die Feineinstellung wie D/E/F/G ausführen.

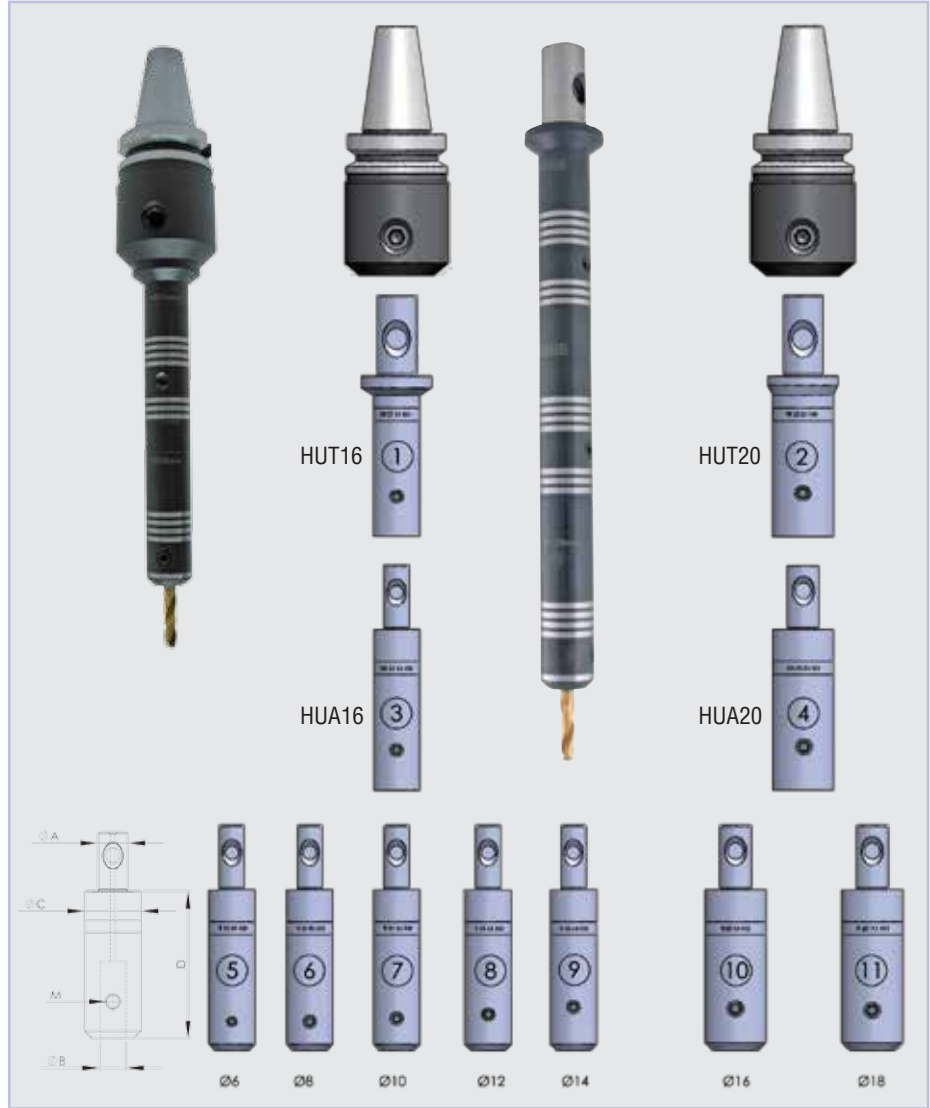
#### MONTAGE ANLEITUNG Ø 78 - 250

- L - Vor der Montage des Plattenhalters (5) in die Aufnahme (14), bitte die Klemmschraube (2) anziehen.
- M - Die Feineinstellung wie D/E/F/G ausführen.

## MATKAP UZATMALARI

## MATKAP UZATMALARI / DRILL EXTENSIONS / BOHRER VERLÄNGERUNGEN

- Matkap uzatmaları
- Standart veldon modüler sistem
- Standart veldon tutucular ile kullanılır
- Derin yerlerde kısa delikler için, uzun HSS matkaplara farklı bir alternatif
- Montaj edilirken alından çekerek kuvvetli bağlama
- İçten su verebilme
- Drill extensions
- Standart veldon modular system
- Used with standart veldon holders
- A variant alternative to HSS drills for short holes at deep areas
- Whilst mounting strong binding by pulling the front
- With inner coolant suply
- Bohrer Verlängerungen
- Modulares Standart Weldon System
- Kann mit Standart Weldon Systemen verwendet werden
- Bei langer Auskraglänge und kurzen Bohrungen ist es eine gute Alternative zu langen HSS-Spiralbohrern
- Bei der Montage mit einer viertel Umdrehung (montieren/festziehen)
- Mit Innenkühlung



No.	Kod No / Stock No Bestellnummer / Cod.	Kod / Code Bezeichnung / Articolo	Ø A	Ø B	Ø C	D	M
1	HUT16	UT 25 16 100	25	16	29	100	M8
2	HUT20	UT 25 20 100	25	20	38	100	M10
3	HUA16	UA 16 16 100	16	16	29	100	M8
4	HUA20	UA 20 20 100	20	20	38	100	M10
5	HU06	U 16 06 100	16	6	29	100	M6
6	HU08	U 16 08 100	16	8	29	100	M8
7	HU10	U 16 10 100	16	10	29	100	M8
8	HU12	U 16 12 100	16	12	29	100	M8
9	HU14	U 16 14 100	16	14	29	100	M8
10	HU16	U 20 16 100	20	16	38	100	M10
11	HU18	U 20 18 100	20	18	38	100	M10

## HASSkaba AYARLI KABA BARALAR Ø20-170 / ROUGH BORING TOOLS SCHRUPPBOHRSTANGEN



## HASSkaba AYARLI KABA BARALAR SETLER Ø20-170 ROUGH BORING TOOLS SETS / SCHRUPPBOHRSTANGEN


No.	Kod No / Stock No Bestellnummer / Cod.	Kod / Code Bezeichnung / Articolo	Dmin-Dmax	D1	D2	L1	L2	H
1	H700KB1	AKB 20 24 60 SET	Ø20-24	20	19	45	50	60
2	H701KB1	AKB 20 24 80 SET	Ø20-24	20	19	45	70	80
3	H702KB1	AKB 20 24 90 SET	Ø20-24	20	19	45	80	90
4	H703KB1	AKB 20 24 110 SET	Ø20-24	20	19	45	100	110
5	H710KB2	AKB 24 30 62 SET	Ø24-30	25	24	50	50	62
6	H711KB2	AKB 24 30 82 SET	Ø24-30	25	24	50	70	82
7	H712KB2	AKB 24 30 102 SET	Ø24-30	25	24	50	90	102
8	H720KB3	AKB 30 40 65 SET	Ø30-40	16	27	40	50	65
9	H730KB4	AKB 40 54 80 SET	Ø40-54	20	36	40	60	80
10	H740KB5	AKB 52 68 90 SET	Ø52-68	25	48	50	70	92
11	H750KB6	AKB 64 80 100 SET	Ø64-80	25	48/59	50	80	102
12	H760KB7	AKB 80 110 110 ALU SET	Ø80-110	32	72	60	80	110
13	H770KB8	AKB 110 140 110 ALU SET	Ø110-140	40	80/98	60	80	110
14	H780KB9	AKB 140 170 110 ALU SET	Ø140-170	40	80/118	60	80	110

## HASSkaba AYARLI KABA BARALAR Ø20-170 / ROUGH BORING TOOLS SCHRUPPBOHRSTANGEN



### GÖVDELER / BODIES / BRUCKEN

### KARTUŞLAR / CARTRIDGES / PLATTENHALTER / CARTUCCIA

No.	Kod No / Stock No Bestellnummer / Cod.	Kod / Code Bezeichnung / Articolo	Kod No / Stock No Bestellnummer / Cod.	Kod / Code Bezeichnung / Articolo	E°	A	B	C	İMBUS (3)	INSERT (4)		Torks Torx
1	H700KB	AKB 20 24 60 GÖVDE	H705KK	KK 20-24 CC06 90	90	8,5	17,5	12	M4	CC..06	M2,5	T8
2	H701KB	AKB 20 24 80 GÖVDE										
3	H702KB	AKB 20 24 90 GÖVDE										
4	H703KB	AKB 20 24 100 GÖVDE										
5	H710KB	AKB 24 30 60 GÖVDE	H715KK	KK 24-30 CC06 91	90	10	20	13	M4	CC..06	M2,5	T8
6	H711KB	AKB 24 30 82 GÖVDE										
7	H712KB	AKB 24 30 102 GÖVDE										
8	H720KB	AKB 30 40 65 GÖVDE										
9	H730KB	AKB 40 54 80 GÖVDE	H735KK	KK 40-54 CC09 90	90	15,4	32	20	M6	CC..09	M3.5	T15
			H775KK	KK 40-54 CC09 75	75	15,4	32	20	M6	CC..09	M3.5	T15
			H745KK	KK 52-80 CC09 90	90	19	42	24	M8	CC..09	M3.5	T15
			H746KK	KK 52-80 CC12 90	90	19	42	24	M8	CC..12	M5	T15
10	H740KB	AKB 52 68 90 GÖVDE	H785KK	KK 52-80 CC09 75	75	19	42	24	M8	CC..09	M3.5	T15
			H745KK	KK 52-80 CC09 90	90	19	42	24	M8	CC..09	M3.5	T15
			H746KK	KK 52-80 CC12 90	90	19	42	24	M8	CC..12	M5	T15
11	H750KB	AKB 64 80 100 GÖVDE	H785KK	KK 52-80 CC09 75	75	19	42	24	M8	CC..09	M3.5	T15
			H765KK	KK 80-170 CC12 90	90	25,8	65	32	M8	CC..12	M5	T15
			H795KK	KK 80 170 CC12 75	75	25,8	65	32	M8	CC..12	M5	T15
12	H760KB	AKB 80 110 110 ALU GÖVDE	H765KK	KK 80-170 CC12 90	90	25,8	65	32	M8	CC..12	M5	T15
			H795KK	KK 80 170 CC12 75	75	25,8	65	32	M8	CC..12	M5	T15
13	H770KB	AKB 110 140 110 ALU GÖVDE	H765KK	KK 80-170 CC12 90	90	25,8	65	32	M8	CC..12	M5	T15
			H795KK	KK 80 170 CC12 75	75	25,8	65	32	M8	CC..12	M5	T15
14	H780KB	AKB 140 170 110 ALU GÖVDE	H765KK	KK 80-170 CC12 90	90	25,8	65	32	M8	CC..12	M5	T15
			H795KK	KK 80 170 CC12 75	75	25,8	65	32	M8	CC..12	M5	T15

Kaba Bara Seti, Bir Gövde ve İki Kartuştan İbaretir.

In Set, One Body And Two Cartridges.

Schruppbohrstange besteht aus einem Zahnkörper und zwei Plattenhaltern

\* Kaba Baralar Uzatma Takılarak Da Kullanılabilir.

\* Rough Boring Bars Can Be Used With Extension.

\* Schruppbohrstangen können mit Verlängerungen bei bedarf verlängert werden.

KABA : IT 9-10

## HASSMULTİBOR Ø150 - 1320 KABA VE İNCE

HASSbara ALUMİNYUM GÖVDE / ALUMINIUM BODY / ALUMINIUM BRÜCKE

HASSMULTİBOR KABA ve İNCE DELİK BARALAMA TAKIMLARI

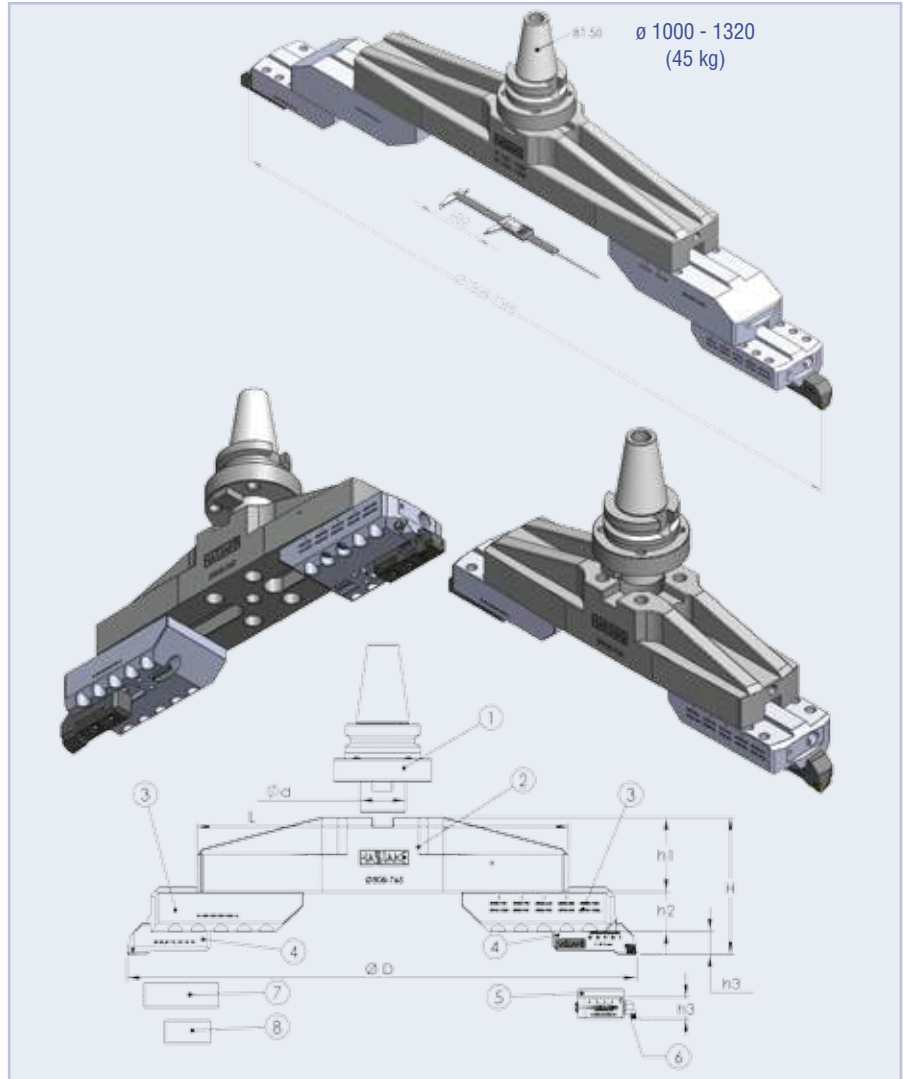
HASSMULTİBOR ROUGH AND FINE BORING TOOLS

HASSMULTİBOR SCHRUPP-UND SCHLICHTBOHRSTANGEN

1. ALIN KAMALI TUTUCU (DIN 6357)
2. KAMALI GÖVDE (ALU)
3. KIZAKLI GÖVDE (ALU)
4. KABA PASO KATERİ
5. HASSAS AYARLI FİNİŞ BOR (Ø 0,01 mm)
6. KARTUŞ ( CC..06)
7. KARŞI AĞIRLIK
8. KARŞI AĞIRLIK 2

1. PASSFEDER NUT MIT DIN6357
2. ALU BRÜCKE / ALU SCHLITTEN
3. BRÜCKE MIT NUT
4. SCHRUPP PLATTENHALTER
5. FEINEINSTELLUNG MIT 0,01MM (FEINBOHRKÖPFE)
6. WENDEPLATTENHALTER
7. GEGENGEWICHT 1
8. GEGENGEWICHT 2

1. HOLDING ARBOR DIN6357
2. MAIN BODY
3. BODY SLIDE
4. ROUGH BORING TOOLHOLDERS
5. FINISH BORING TOOLHOLDER
6. INSERT HOLDER
7. COUNTERWEIGHT 1
8. COUNTERWEIGHT 2



Ø Dmin - Ø Dmax	L	d	h1	h2	h3	H
Ø 150-230	134	Weldon	79	-	30	110
Ø 150-210	140	60	90	-	30	120
Ø 205-285	196	60	90	-	30	120
Ø 280-360	270	60	90	-	30	120
Ø 355-435	346	60	90	-	30	120
Ø 430-510	420	60	90	-	30	120
Ø 505-765	490	60	95	50	30	175
Ø 760-1020	740	60	95	50	30	175
Ø 1000-1320	740	60	118	52	30	272



## HASSMULTİBOR KABA VE İNCE

### HASSbara ALUMİNYUM GÖVDE / ALUMINIUM BODY / ALUMINIUMBRÜCKE

- Alüminyum gövde yapısı
- Standart tutuculara monte edilebilir DIN6357
- İçten soğutma sıvısı temini
- Balans dengeleyici sistem
- Kullanım kolaylığı

- Aluminium body
- Mountable to standart tool holders DIN6357
- With inner coolant supply
- The system can be balanced
- Easy to use

- Aluminiumbrücken
- Kann auf Standartaufnahmen montiert werden DIN6357
- Mit Innenkühlung
- System mit Ausuchtmöglichkeit
- Einfache Bedienung



Fig. No.	Kod No / Stock No / Bestellnummer / Cod.	Kod / Code / Bezeichnung / Articolo	Ø	Ağırlık (kg) Weight
	H4040	BA GK 150-230 AL (WELDON) GÖVDE	Ø 150-230	2,2
2	H404	BA 850 GK 150-210 AL	Ø 150-210	2,3
2	H414	BA 850 GK 205-285 AL	Ø 205-285	3,4
2	H424	BA 850 GK 280-360 AL	Ø 280-360	4,2
2	H434	BA 850 GK 355-435 AL	Ø 355-435	5,3
2	H444	BA 850 GK 430-510 AL	Ø 430-510	6,5
2	H454	BA 850 GK 505-765 AL	Ø 505-765	9,1
2	H464	BA 850 GK 760-1320 AL	Ø 760-1320	18,4
3	H474	BA 850 GKZ 505-1020	Ø 505-1020	2,6
5	H401	MLB 38 48 60 18		0,38
7	H484	BA 850 BLS 30 36 100		0,8
8	H485	BA 850 BLS 30 30 60		0,38
4	H410 K	KK 30-40-110 CC12 90 R		0,8
4	H411 K	KK 30-40-110 CC12 75 R		0,8
6	H1432 K	BA 401 KS46-54C		0,02
3	H495	BA 850 GKZ 1000-1320 AL	Ø 1000-1320	5,5

BT50 Ø40 WELDON MİNİMUM 75 MAKSİMUM 100 MM DERİNLİK KAZANDIRIR.

Not: BT 50 Tutucu ağırlığı = 8 kg



## HASSMULTİBOR KABA VE İNCE HASSbara ALUMİNYUM GÖVDE / ALUMINIUM BODY / ALUMINIUMBRÜCKE

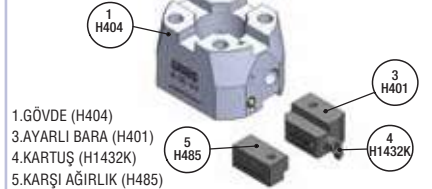
### SETLER / SETS

### SET İÇİNDEKİLER / IN SET / IM SET ENTHALTEN

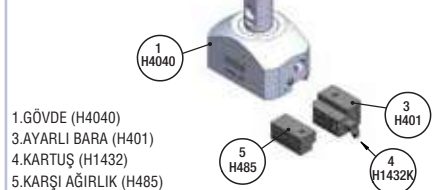
No.	Kod No / Stock No Bestellnummer / Cod.	Kod / Code Bezeichnung / Articolo	Ana Köprü Main Bridge Alu Brücke	Kaba Kater Rough Bar Schrupp Plattenhalter	Hassas Paso Ünitesi Finish Boring Unit Fein Einstellungen	İnce Paso Kartuşu Fine Cartridge Fein Wendepaltenhalter	Balans Ağırlığı Balance Weigh Gegengewicht	Alt Kızak Lower Bridge Brücke Mit Nut	Alt Kızak 2 Lower Bridge 2 Brücke Mit Nut 2	Ağırlık Gr. Weight Gr.
1	H404TS	BA 150-210 AL P Multi TÛM SET (ALL SET)	H404	H410K x 2	H401	H1432K	H485			6300
2	H404KS	BA 150-210 AL P Multi KABA SET (ROUGH SET)	H404	H410K x 2						5350
3	H404FS	BA 150-210 AL P Multi Finish SET (FINISH SET)	H404		H401	H1432K	H485			4200
4	H414TS	BA 205-285 AL P Multi TÛM SET (ALL SET)	H414	H410K x 2	H401	H1432K	H485			7300
5	H414KS	BA 205-285 AL P Multi KABA SET (ROUGH SET)	H414	H410K x 2						6350
6	H414FS	BA 205-285 AL P Multi Finish SET (FINISH SET)	H414		H401	H1432K	H485			5300
7	H424TS	BA 280-360 AL P Multi TÛM SET (ALL SET)	H424	H410K x 2	H401	H1432K	H485			8500
8	H424KS	BA 280-360 AL P Multi KABA SET (ROUGH SET)	H424	H410K x 2						7550
9	H424FS	BA 280-360 AL P Multi Finish SET (FINISH SET)	H424		H401	H1432K	H485			6400
10	H434TS	BA 355-435 AL P Multi TÛM SET (ALL SET)	H434	H410K x 2	H401	H1432K	H485			9600
11	H434KS	BA 355-435 AL P Multi KABA SET (ROUGH SET)	H434	H410K x 2						8650
12	H434FS	BA 355-435 AL P Multi Finish SET (FINISH SET)	H434		H401	H1432K	H485			7500
13	H444TS	BA 430-510 AL P Multi TÛM SET (ALL SET)	H444	H410K x 2	H401	H1432K	H485			10900
14	H444KS	BA 430-510 AL P Multi KABA SET (ROUGH SET)	H444	H410K x 2						9950
15	H444FS	BA 430-510 AL P Multi Finish SET (FINISH SET)	H444		H401	H1432K	H485			8900
16	H454TS	BA 505-765 AL P Multi TÛM SET (ALL SET)	H454	H410K x 2	H401	H1432K	H485	H474 x 2		19300
17	H454KS	BA 505-765 AL P Multi KABA SET (ROUGH SET)	H454	H410K x 2				H474 x 2		18350
18	H454FS	BA 505-765 AL P Multi Finish SET (FINISH SET)	H454		H401	H1432K	H485	H474 x 2		17200
19	H464TS	BA 760-1020 AL P Multi TÛM SET (ALL SET)	H464	H410K x 2	H401	H1432K	H485	H474 x 2		28200
20	H464KS	BA 760-1020 AL P Multi KABA SET (ROUGH SET)	H464	H410K x 2				H474 x 2		27250
21	H464FS	BA 760-1020 AL P Multi Finish SET (FINISH SET)	H464		H401	H1432K	H485	H474 x 2		26300
22	H495TS	BA 760-1320 AL MULTI TÛM SET (ALL SET)	H464	H410K x 2	H401	H1432K	H485	H474 x 2	H495 x 2	40000
23	H495KS	BA 760-1320 AL MULTI KABA SET (ROUGH SET)	H464	H410K x 2				H474 x 2	H495 x 2	39020
24	H495FS	BA 760-1320 AL MULTI Finish SET (FINISH SET)	H464		H401	H1432K	H485	H474 x 2	H495 x 2	38000
25	H4040TS	BA GK 150-230 AL P Multi TÛM SET (ALL SET)	H4040	H410K x 2	H401	H1432K	H485			5200
26	H4040KS	BA GK 150-230 AL P Multi Kaba SET (ROUGH SET)	H4040	H410K x 2						4220
27	H4040FS	BA GK 150-230 AL P Multi Finish SET (FINISH SET)	H4040		H401	H1432K	H485			3160

### HASSAS / FINISH / FEIN

BA 150-210 AL-P MULTİ FINISH SET Ø150-210  
• STOK NO: H404FS

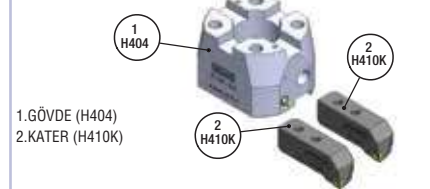


BA 150-230 AL-P MULTİ FINISH SET Ø150-230  
STOK NO: H4040 FS

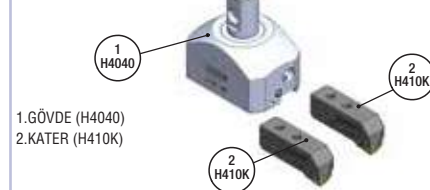


### KABA / ROUGH / SCHRUPP

BA 150-210 AL-P MULTİ KABA SET Ø150-210  
• STOK NO: H404KS

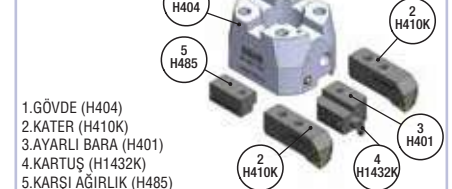


BA 150-230 AL-P MULTİ KABA SET Ø150-230  
STOK NO: H4040 KS



### TÛM / ALL / ALLE

BA 150-210 AL-P MULTİ TÛM SET Ø150-210  
• STOK NO: H404TS

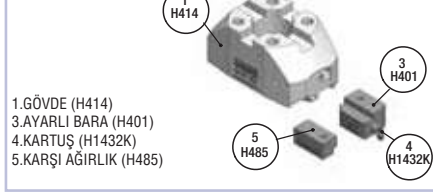


BA 150-230 AL-P MULTİ TÛM SET Ø150-230  
STOK NO: H4040 TS



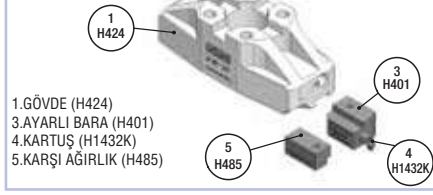
## HASSAS / FINISH / FEIN

BA 205-285 AL-P MULTİ FINISH SET Ø205-285  
STOK NO : H414FS



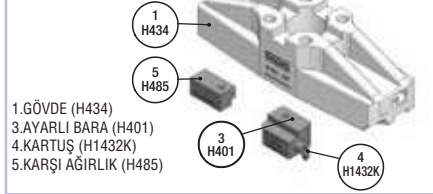
- 1.GÖVDE (H414)
- 3.AYARLI BARA (H401)
- 4.KARTUŞ (H1432K)
- 5.KARŞI AĞIRLIK (H485)

BA 280-360 AL-P MULTİ FINISH SET Ø280-360  
STOK NO : H424FS



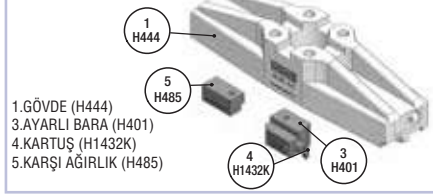
- 1.GÖVDE (H424)
- 3.AYARLI BARA (H401)
- 4.KARTUŞ (H1432K)
- 5.KARŞI AĞIRLIK (H485)

BA 355-435 AL-P MULTİ FINISH SET Ø355-435  
STOK NO : H434FS



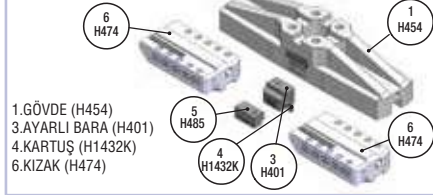
- 1.GÖVDE (H434)
- 3.AYARLI BARA (H401)
- 4.KARTUŞ (H1432K)
- 5.KARŞI AĞIRLIK (H485)

BA 430-510 AL-P MULTİ FINISH SET Ø430-510  
STOK NO : H444FS



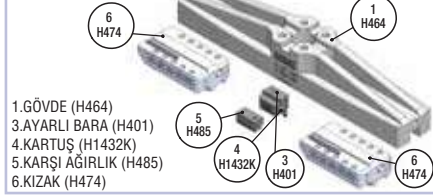
- 1.GÖVDE (H444)
- 3.AYARLI BARA (H401)
- 4.KARTUŞ (H1432K)
- 5.KARŞI AĞIRLIK (H485)

BA 505-765 AL-P MULTİ FINISH SET Ø505-765  
STOK NO : H454FS



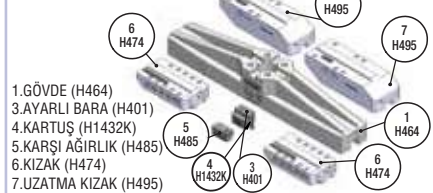
- 1.GÖVDE (H454)
- 3.AYARLI BARA (H401)
- 4.KARTUŞ (H1432K)
- 6.KIZAK (H474)

BA 760-1020 AL-P MULTİ FINISH SET Ø760-1020  
STOK NO : H464FS



- 1.GÖVDE (H464)
- 3.AYARLI BARA (H401)
- 4.KARTUŞ (H1432K)
- 5.KARŞI AĞIRLIK (H485)
- 6.KIZAK (H474)

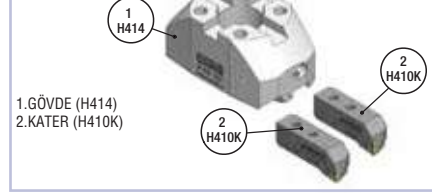
BA 760-1320 AL-P MULTİ FINISH SET Ø760-1320  
STOK NO : H474FS



- 1.GÖVDE (H464)
- 3.AYARLI BARA (H401)
- 4.KARTUŞ (H1432K)
- 5.KARŞI AĞIRLIK (H485)
- 6.KIZAK (H474)
- 7.UZATMA KIZAK (H495)

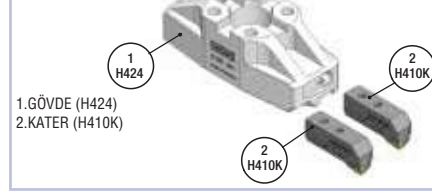
## KABA / ROUGH / SCHRUPP

BA 205-285 AL-P MULTİ KABA SET Ø205-285  
STOK NO : H414KS



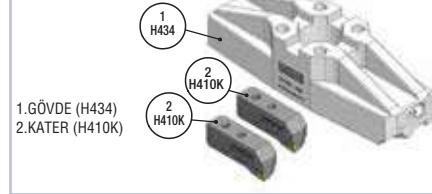
- 1.GÖVDE (H414)
- 2.KATER (H410K)

BA 280-360 AL-P MULTİ KABA SET Ø280-360  
STOK NO : H424KS



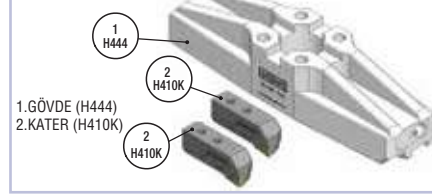
- 1.GÖVDE (H424)
- 2.KATER (H410K)

BA 355-435 AL-P MULTİ KABA SET Ø355-435  
STOK NO : H434KS



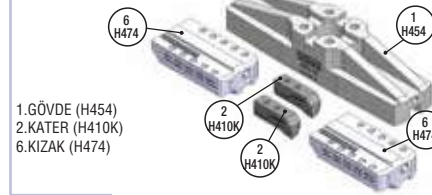
- 1.GÖVDE (H434)
- 2.KATER (H410K)

BA 430-510 AL-P MULTİ KABA SET Ø430-510  
STOK NO : H444KS



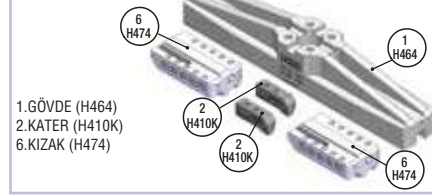
- 1.GÖVDE (H444)
- 2.KATER (H410K)

BA 505-765 AL-P MULTİ KABA SET Ø505-765  
STOK NO : H454KS



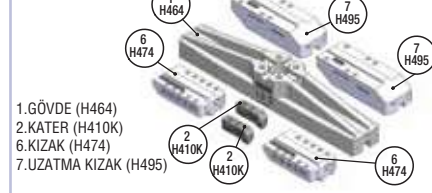
- 1.GÖVDE (H454)
- 2.KATER (H410K)
- 6.KIZAK (H474)

BA 760-1020 AL-P MULTİ KABA SET Ø760-1020  
STOK NO : H464KS



- 1.GÖVDE (H464)
- 2.KATER (H410K)
- 6.KIZAK (H474)

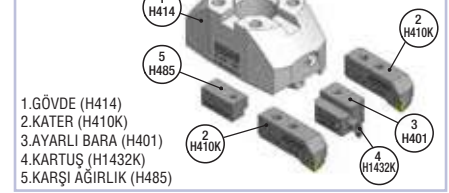
BA 760-1320 AL-P MULTİ KABA SET Ø760-1320  
STOK NO : H474KS



- 1.GÖVDE (H464)
- 2.KATER (H410K)
- 6.KIZAK (H474)
- 7.UZATMA KIZAK (H495)

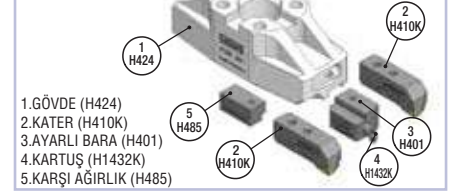
## TÜM / ALL / ALLE

BA 205-285 AL-P MULTİ TÜM SET Ø205-285  
STOK NO : H414TS



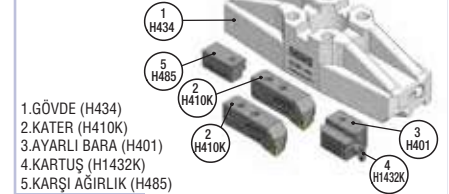
- 1.GÖVDE (H414)
- 2.KATER (H410K)
- 3.AYARLI BARA (H401)
- 4.KARTUŞ (H1432K)
- 5.KARŞI AĞIRLIK (H485)

BA 280-360 AL-P MULTİ TÜM SET Ø280-360  
STOK NO : H424TS



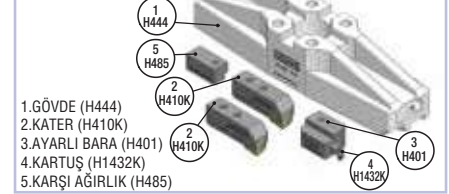
- 1.GÖVDE (H424)
- 2.KATER (H410K)
- 3.AYARLI BARA (H401)
- 4.KARTUŞ (H1432K)
- 5.KARŞI AĞIRLIK (H485)

BA 355-435 AL-P MULTİ TÜM SET Ø355-435  
STOK NO : H434TS



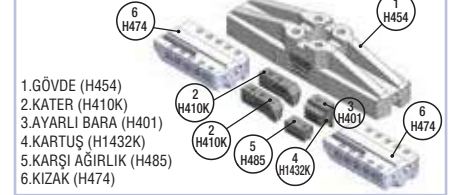
- 1.GÖVDE (H434)
- 2.KATER (H410K)
- 3.AYARLI BARA (H401)
- 4.KARTUŞ (H1432K)
- 5.KARŞI AĞIRLIK (H485)

BA 430-510 AL-P MULTİ TÜM SET Ø430-510  
STOK NO : H444TS



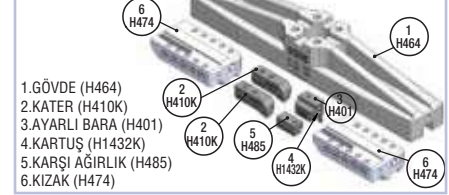
- 1.GÖVDE (H444)
- 2.KATER (H410K)
- 3.AYARLI BARA (H401)
- 4.KARTUŞ (H1432K)
- 5.KARŞI AĞIRLIK (H485)

BA 505-765 AL-P MULTİ TÜM SET Ø505-765  
STOK NO : H454TS



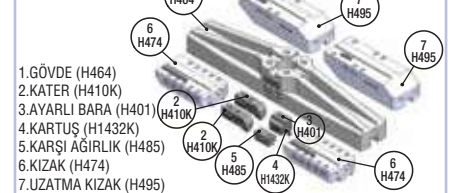
- 1.GÖVDE (H454)
- 2.KATER (H410K)
- 3.AYARLI BARA (H401)
- 4.KARTUŞ (H1432K)
- 5.KARŞI AĞIRLIK (H485)
- 6.KIZAK (H474)

BA 760-1020 AL-P MULTİ TÜM SET Ø760-1020  
STOK NO : H464TS



- 1.GÖVDE (H464)
- 2.KATER (H410K)
- 3.AYARLI BARA (H401)
- 4.KARTUŞ (H1432K)
- 5.KARŞI AĞIRLIK (H485)
- 6.KIZAK (H474)

BA 760-1320 AL-P MULTİ TÜM SET Ø760-1320  
STOK NO : H474TS



- 1.GÖVDE (H464)
- 2.KATER (H410K)
- 3.AYARLI BARA (H401)
- 4.KARTUŞ (H1432K)
- 5.KARŞI AĞIRLIK (H485)
- 6.KIZAK (H474)
- 7.UZATMA KIZAK (H495)

## EKSANTRİK ADAPTÖR

### ECCENTRIC SLEEVE / EXCENTER BÜCHSEN / MANICOTTI ECCENTRIC

- Hassentrik'in standart bir veldon tutucu ile kullanılabilmesi ekonomik avantaj sağlar.
- Hassentrik kann man mit einer Standart - Weldon - Aufnahme verwenden, was von Vorteil ist.
- Ability to use Hassentrik with a standard veldon holder gives an economic advantage.



### EKSANTRİK ADAPTÖR NE İŞE YARAR ?

Bu adaptör U-Drill matkaplar ile delik delme işleminde çap ölçüsünü  $\varnothing+0.5\sim\varnothing-0.25$  arasında ondalıklı olarak ayarlayan araçtır.

Örnek:  $\varnothing24$  Standart U-dril matkap ile eksantrik adaptör kullanılarak  $\varnothing23.75$  mm ile  $\varnothing24.5$  mm arasında delik delinebilir.

### WOFÜR SIND EXCENTERBÜCHSEN GUT?

Verstellbereich von  $\varnothing + 0.5\text{mm} / \varnothing - 0.25\text{mm}$  Beispiel: Ein W.P.Bohrer  $D=24\text{mm}$  kann mit der Excenterbüchse verstellt werden. Entweder kleiner auf  $D=23,75\text{mm}$  oder größer  $24,5\text{mm}$ . Eine schnelle und einfache Lösung gegenüber Sonderdurchmessern.

1. U DRILL MATKAP / U-DRILL  
W.P.Bohrer / PUNTA U-DRILL
2. EKSANTRİK ADAPTÖR / ECCENTRIC SLEEVE  
EXCENTERBÜCHSE / MANICOTTI ECCENTRIC
3. VELDON TUTUCU / WELDON TOOL HOLDER  
WELDON WERKZEUGHALTER / MANDRINO WELDON
4. KADEMELİ SETSKUR / STEP SETSCREW  
KLEMMSCHRAUBE /GRANO PER HASSENTRIK

### MONTAJDA DİKKAT EDİLECEK HUSUS

HASSentrik ile beraber verilen setiskur civatasını (4) sıkarken U-drill in dış ucu setiskur civatasının sol tarafında kalması gerekmektedir.

### POINT TO CONSIDER DURING MOUNTING

While tightening setscrew bolt (4) provided with HASSentrik, The outer insert of U-drill should remain on the left hand side of setscrew bolt.

### WICHTIGE MONTAGE HINWEISE

Bei der Montage ist zu beachten, dass die mitgelieferte Schraube Pos.(4) verwendet wird und die Aussenschniede des Bohrers in Richtung Schraube zeigt.

### IMPORTANTE

Quando serrate il grano HASSentrik (4) l'inserto esterno della punta U-drilli dovrebbe rimanere sul lato sinistro rispetto al grano(4)

### WHAT ECCENTRIC SLEEVE IS USED FOR?

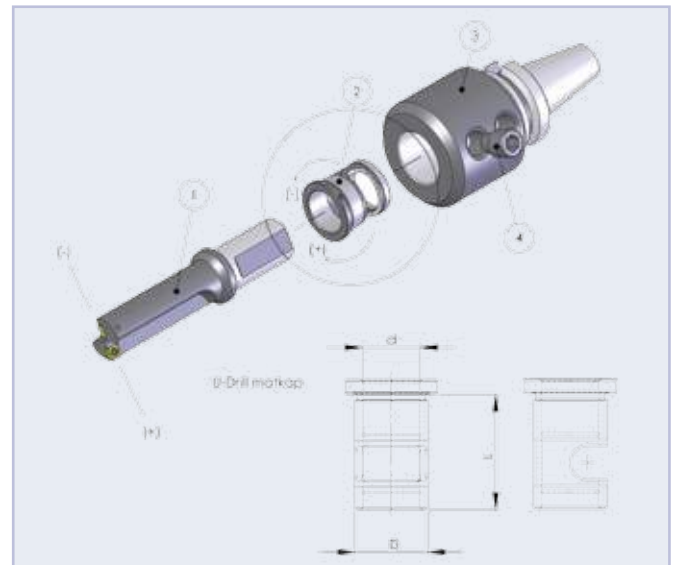
This sleeve is used for adjusting diameter value in decimals between  $\varnothing+0.5\sim\varnothing-0.25\text{mm}$  in drilling with U-drill.

Example: Holes of  $\varnothing23.75$  mm to  $\varnothing24.5$  can be bored with  $\varnothing24$  Standard U-drill by using eccentric sleeve.

### A COSA SERVE UN MANICOTTO ECCENTRICO?

Consente di regolare le punte U-drill  $\varnothing13-45\text{mm}$  incrementando  $(+0.5\text{mm})$  o riducendo  $(-0.25\text{mm})$  il diametro di foratura.

Ad esempio con una punta U-drill  $\varnothing 24\text{mm}$  potete forare da  $\varnothing 23.75$  a  $24.5\text{mm}$  utilizzando il sistema HASSentrik.



Kod No / Stock No Bestellnummer / Cod.	Kod / Code Bezeichnung / Articolo	D	d	L
EKS 220	EKS 25-20	25	20	40
EKS 325	EKS 32-25	32	25	40
EKS 432	EKS 40-32	40	32	40

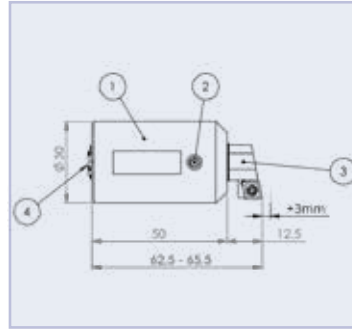
## MIKROBOR

- Özel amaçlı baralama takım imalatında kullanmak için "hassas ayarlı baralama ünitesi"
- Precision boring cartridge "for use in manufacturing special purpose boring tool"
- Feineinstellpatronen für Sonderanfertigungen
- Cartucce di precisione per l'utilizzo in utensili speciali

1. GÖVDE (ALÜ) / BODY (ALU)  
HALTER (ALU) / CORPO (ALUMINIO)
2. SABİTLEME VİDASI / FIXING SCREW  
KLEMMSCHRAUBE / GRANO DI SERRAGGIO CARTAININSERTO
3. KARTUŞ (CC..06) / CARTRIDGE (CC.06)  
PLATTENHALTER (CC..06) / CARTUCCIA PORTAININSERTO
4. SKALA (0,01mm) / SCALE (0,01 mm)  
SKALA (0,01 mm) / NONIO 0,01 mm

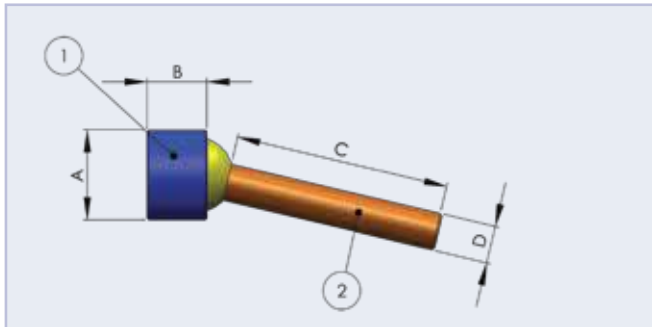
Kod No / Stock No Bestellnummer / Cod.	Kod / Code Bezeichnung / Articolo
H305MB	BA 910 MB 30-50-14 CC06
H1331K	BA 301 KS 34-40 (TCMT 06)
H1332K	BA 301 KS 34-40C (CCMT 06)

- \* Mikroborun özel takımında uygulanması.
- \* Application of Mikrobor in special tool.
- \* Beispiele zur Verwendung.
- \* Applicazione di Mikrobor in utensili speciali



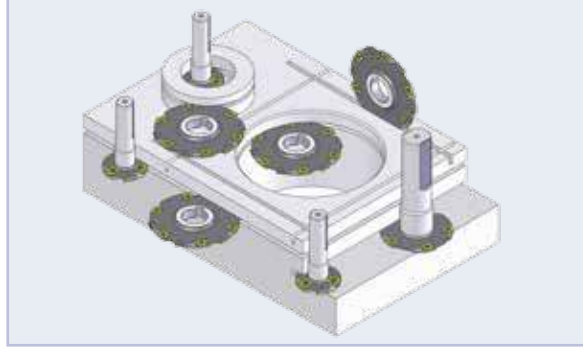
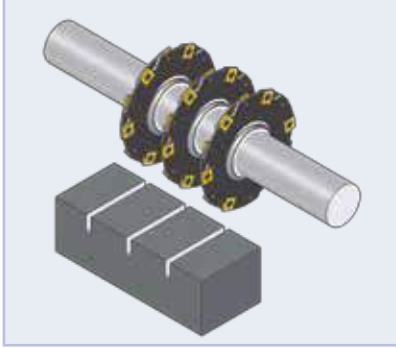
## HASSMULTİBOR SU VERME MİSKETLERİ

### SU VERME MİSKETLERİ / BALL COOLANT NOZZLES / KUGELSPRITZDÜSE



Kod No / Stock No / Bestellnummer / Cod.	Kod / Code / Bezeichnung / Articolo	Ø A	B	C	Ø D	FIGÜR NO
SVM01	SUVER 08	8	6	-	-	1
SVM02	SUVER 10	10	7	-	-	1
SVM03	SUVER 12	12	8	-	-	1
SVBB01	BB 08 01	-	-	27	4	2
SVBB02	BB 08 02	-	-	47	4	2
SVBB03	BB 10 03	-	-	27	4	2
SVBB04	BB 10 04	-	-	47	4	2
SVBB05	BB 12 05	-	-	25	5	2
SVBB06	BB 12 06	-	-	45	5	2

## SAPLI KANAL FREZELER / CYLINDRICAL - WELDON SHANK DISC MILLS / W.P.SCHEIBENFRÄSER / FRESE A DISCO



### ANA GÖVDE / MAIN BODY

Kod No / Stock No Bestellnummer Cod.	Kod / Code Bezeichnung / Articolo	Ø D	S -0,05 +0,15	Z	Tmax	Uç/Insert W.P. Inserto	Uç Kalınlık
KFS4035	KFS 06 40 35 4	40	3,5	2X2	11	SNHX1102	2,3
KFS404	KFS 06 40 04 4	40	4	2X2	11	SNHX1102	2,3
KFS4045	KFS 06 40 45 4	40	4,5	2X2	11	SNHX1102	2,3
KFS405	KFS 06 40 05 4	40	5	2X2	11	SNHX1103	2,7

KFS5035	KFS 06 50 35 6	50	3,5	2X3	12	SNHX1102	2,3
KFS504	KFS 06 50 04-6	50	4	2X3	12	SNHX1102	2,3
KFS5045	KFS 06 50 45 6	50	4,5	2X3	12	SNHX1102	2,3
KFS505	KFS 06 50 05-6	50	5	2X3	12	SNHX1103	2,7
KFS5055	KFS 06 50 55 6	50	5,5	2X3	12	SNHX1203	3,2
KFS506	KFS 06 50 06 6	50	6	2X3	12	SNHX1203	3,2

KFS6335	KFS 08 63 35 8	63	3,5	2X4	15	SNHX1102	2,3
KFS634	KFS 08 63 04-8	63	4	2X4	15	SNHX1102	2,3
KFS6345	KFS 08 63 45 8	63	4,5	2X4	15	SNHX1102	2,3
KFS635	KFS 08 63 05-8	63	5	2X4	15	SNHX1103	2,7
KFS6355	KFS 08 63 55 8	63	5,5	2X4	15	SNHX1203	3,2
KFS636	KFS 08 63 06 8	63	6	2X4	15	SNHX1203	3,2

KFS804	KFS 10 080 04-10	80	4	2X5	22	SNHX1102	2,3
KFS805	KFS 10 080 05-10	80	5	2X5	22	SNHX1103	2,7
KFS806	KFS 10 080 06-8	80	6	2X4	22	SNHX1203	3,2

KFS201	KFS 12 100 04-12	100	4	2X6	28	SNHX1102	2,3
KFS202	KFS 12 100 05-12	100	5	2X6	28	SNHX1103	2,7
KFS203	KFS 12 100 06-10	100	6	2X5	28	SNHX1203	3,2
KFS204	KFS 12 100 08-10	100	8	2X5	28	SNHX1205	5,4

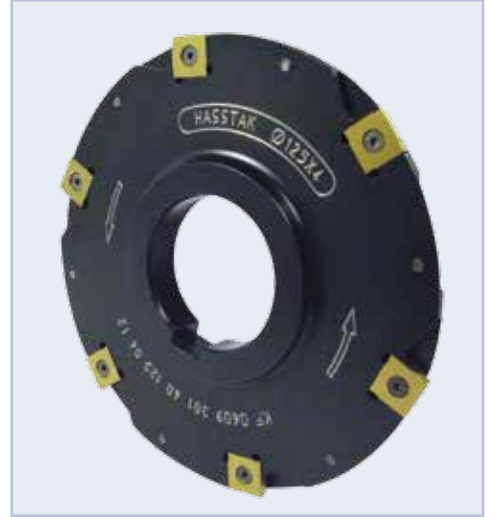
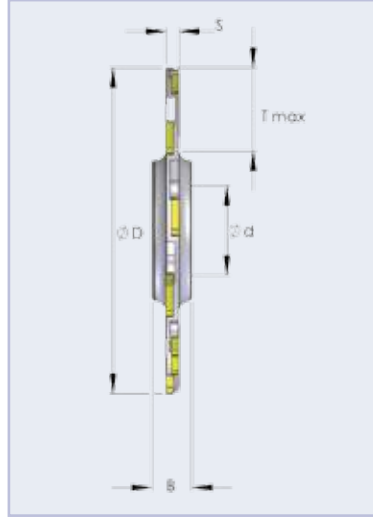
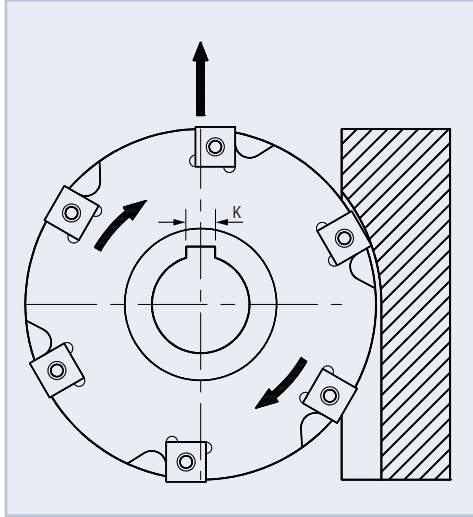


### MALAFALAR / WELDON SHANK / WELDON SCHAFT

Kod No / Stock No Bestellnummer / Cod.	Kod / Code Bezeichnung / Articolo	Ø A	Ø B	L1	L2	L
KFS01	KFS 20 25 80 50	20	25	60	20	80
KFS02	KFS 25 32 100 63	25	32	75	25	100
KFS03	KFS 32 36 120 80	32	36	90	30	120
KFS03	KFS 32 36 120 80	32	36	90	30	120
KFS04	KFS 32 40 120 100	32	40	90	30	120
KFS 05	KFS 20 16 80 40	16	20	60	20	80

## KANAL FREZE

### DISC MILLS / W.P.SCHEIBENFRÄSER / FRESE A DISCO



No.	Kod No / Stock No Bestellnummer / Cod.	Kod / Code Bezeichnung / Articolo	Ø d	Ø D	S -0,05 +0,15	Z	B	T max	K	Uç/Insert W.P. Inserto	Uç Kalınlığı Insert Thickness
1	KF 101	KF 101 22 080 04-8	22	80	4	2X4	12	20	6	SNHX1102	2,3 mm
2	KF 102	KF 102 22 080 05-8	22	80	5	2X4	12	20	6	SNHX1103	2,7 mm
3	KF 103	KF 103 22 080 06-8	22	80	6	2X4	12	20	6	SNHX1203	3,2 mm
4	KF 104	KF 104 22 080 08-8	22	80	8	2X4	12	20	6	SNHX1205	5,4 mm
5	KF 105	KF 105 22 080 10-8	22	80	10	2X4	12	20	6	SNHX1205	5,4 mm

6	KF 201	KF 201 27 100 04-12	27	100	4	2X6	12	26	8	SNHX1102	2,3 mm
7	KF 202	KF 202 27 100 05-12	27	100	5	2X6	12	26	8	SNHX1103	2,7 mm
8	KF 203	KF 203 27 100 06-10	27	100	6	2X5	12	26	8	SNHX1203	3,2 mm
9	KF 204	KF 204 27 100 08-10	27	100	8	2X5	12	26	8	SNHX1205	5,4 mm
10	KF 205	KF 205 27 100 10-10	27	100	10	2X5	12	26	8	SNHX1205	5,4 mm
11	KF 206	KF 206 27 100 12-10	27	100	12	2X5	12	26	8	SNHX1207	7 mm

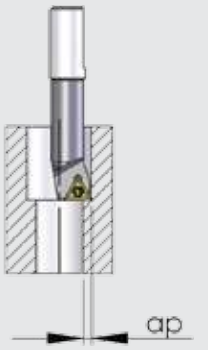
12	KF 301	KF 301 40 125 04-14	40	125	4	2X7	12	31	10	SNHX1102	2,3 mm
13	KF 302	KF 302 40 125 05-14	40	125	5	2X7	12	31	10	SNHX1103	2,7 mm
14	KF 303	KF 303 40 125 06-12	40	125	6	2X6	12	31	10	SNHX1203	3,2 mm
15	KF 304	KF 304 40 125 08-12	40	125	8	2X6	12	31	10	SNHX1205	5,4 mm
16	KF 305	KF 305 40 125 10-12	40	125	10	2X6	12	31	10	SNHX1205	5,4 mm
17	KF 306	KF 306 40 125 12-12	40	125	12	2X6	12	31	10	SNHX1207	7 mm

18	KF 401	KF 401 40 160 04-18	40	160	4	2X9	12	43	10	SNHX1102	2,3 mm
19	KF 402	KF 402 40 160 05-18	40	160	5	2X9	12	43	10	SNHX1103	2,7 mm
20	KF 403	KF 403 40 160 06-16	40	160	6	2X8	12	43	10	SNHX1203	3,2 mm
21	KF 404	KF 404 40 160 08-16	40	160	8	2X8	12	43	10	SNHX1205	5,4 mm
22	KF 405	KF 405 40 160 10-16	40	160	10	2X8	12	43	10	SNHX1205	5,4 mm
23	KF 406	KF 406 40 160 12-16	40	160	12	2X8	12	43	10	SNHX1207	7 mm

## TEKNİK BİLGİ

### TECHNICAL DATA / TECHNISCHE INFORMATIONEN / DATI TECNICI

TABLO 1 / TABLE 1 / TABELLE 1 / TABELLA 1

Malzeme / Material Materialien / Materiale	Kesme Hızı Cutting Speed Vc Velocità Di Taglio	İlerleme (uç Radyusuna Göre) =fn(mm/revir) Feed (according To Insert Radius) =fn(mm/rotation) fn (abhängig vom Radius der WSP) Avanzamento (mm/giro)			ap=0.1 - 0.2
		R=0.2	R=0.4	R=0.8	
Alışsız Çelik / Non-alloyed steel Niedriglegiertem Stahl / Acciai non legati	150-250	0,04-0,08	0,07-0,1	0,08-0,15	
Alışlı Çelik / Alloyed steel Stahl / Acciai legati	100-200	0,04-0,08	0,07-0,1	0,08-0,15	
Pazlanmaz / Stainless Stahl rostfrei / Inox	100-150	0,04-0,08	0,1-0,15	0,1-0,15	
Döküm / Cast Grauguss / Ghisa	90-140	0,05-0,08	0,08-0,15	0,08-0,15	
Alüminyum / Aluminum Aluminium / Alluminio	200-300	0,04-0,08	0,05-0,7	0,08-0,2	
Isıl İşlemli Çelik / Heat-resistant steel Hitze beständigen Stahl/ Acciao temprato	80-120	0,03-0,08	0,04-0,05	0,05-0,07	

**NOT 1 :** Tabloya göre uygulanan devir (n) hesabının sonucu 6000 dev/dk nın üzerinde çıkan hesaplamalarda n= 6000 dev/dk olarak alınmalıdır.

**NOT 2 :** İşleme derinliği işleme çapının 4 katına çıkarsa kesme hızı %20 işleme derinliği işleme çapının 6-7 katına çıkarsa kesme hızı %40 düşürülmelidir. Ve "op" değeri 0.025~0.05 mm arası olmalıdır.

**NOTE 1 :** For the calculations giving a value greater than 6000rpm as a result of the above rotation calculation (n), n=6000 rpm is based.


**NOTE 2 :** The processing speed should be reduced by 20% and 40%, respectively, if processing depth increases up to four times and 6-7 times of processing diameter.

**HINWEIS 1 :** Sollte die Drehzahl ( N ) , laut ihrer Berechnung über 6000 U/min sein, ist die nicht zu überschreiten ( max. 6000 U/min ).

**HINWEIS 2 :** Wenn die Bearbeitungstiefe über das vierfache vom Durchmesser der zu bearbeitenden Bohrung ist, muss der Vorschub um 20% gesenkt werden. Bei Durchmessern um das 6-7 fache, muss der Vorschub um 40% gesenkt werden. Die Empfehlung für ap in diesen Fällen ist 0,025 – 0,05mm.

**NOTA 1 :** l'avanzamento calcolato è basato su una velocità di rotazione di 6000g/min.

**NOTA 2 :** Se la profondità di lavoro è da 4 a 6 volte maggiore del diametro di lavora, la velocità di taglio va ridotta rispettivamente di un -20% e-40%.

VC : Kesme hızı / Cutting Speed / Vc / Velocità di taglio (m/dk)	VC = $\pi \cdot D \cdot n / 1000$	
D : İşleme çapı / Processing diameter / Diametro di lavoro (mm)	n = $Vc \cdot 1000 / \pi \cdot D$	
n : Devir / Rotation / Rotazione (devir/dk)	Vf = n · fn	
Vf : Kesme ilerlemesi / Cutting feed / Avanzamento (mm/dk) (mm/dak)	(L/d > 4) → Vc = Vcx0.8	
fn : (mm/devir)	(L/d > 6) → Vc = Vcx0.6	
π : 3,14		
<b>Örnek / Example Ausbund / Esempio 1</b>	D = Ø12 H7 L = 30 n = 3800 dev/dk VC = 140 Vf = 300 mm/dk (R0,4) Malzeme / Material / Metariale GG20	
<b>Örnek / Example Ausbund / Esempio 2</b>	D = Ø 55 L = 220 n = 1389 dev/dk Vc = 300x0,8 (L/D>4) Vf = 120 mm/dk (R0, 4 uç için/insert) Malzeme / Material / Metariale Al.	
<b>Örnek / Example Ausbund / Esempio 3</b>	D = Ø 30,5 L = 100 n = 2500 dev/dk Vc = 240 Vf = 180 mm/dk (R0, 4 / ap=0,03) Malzeme / Material / Metariale CK45	