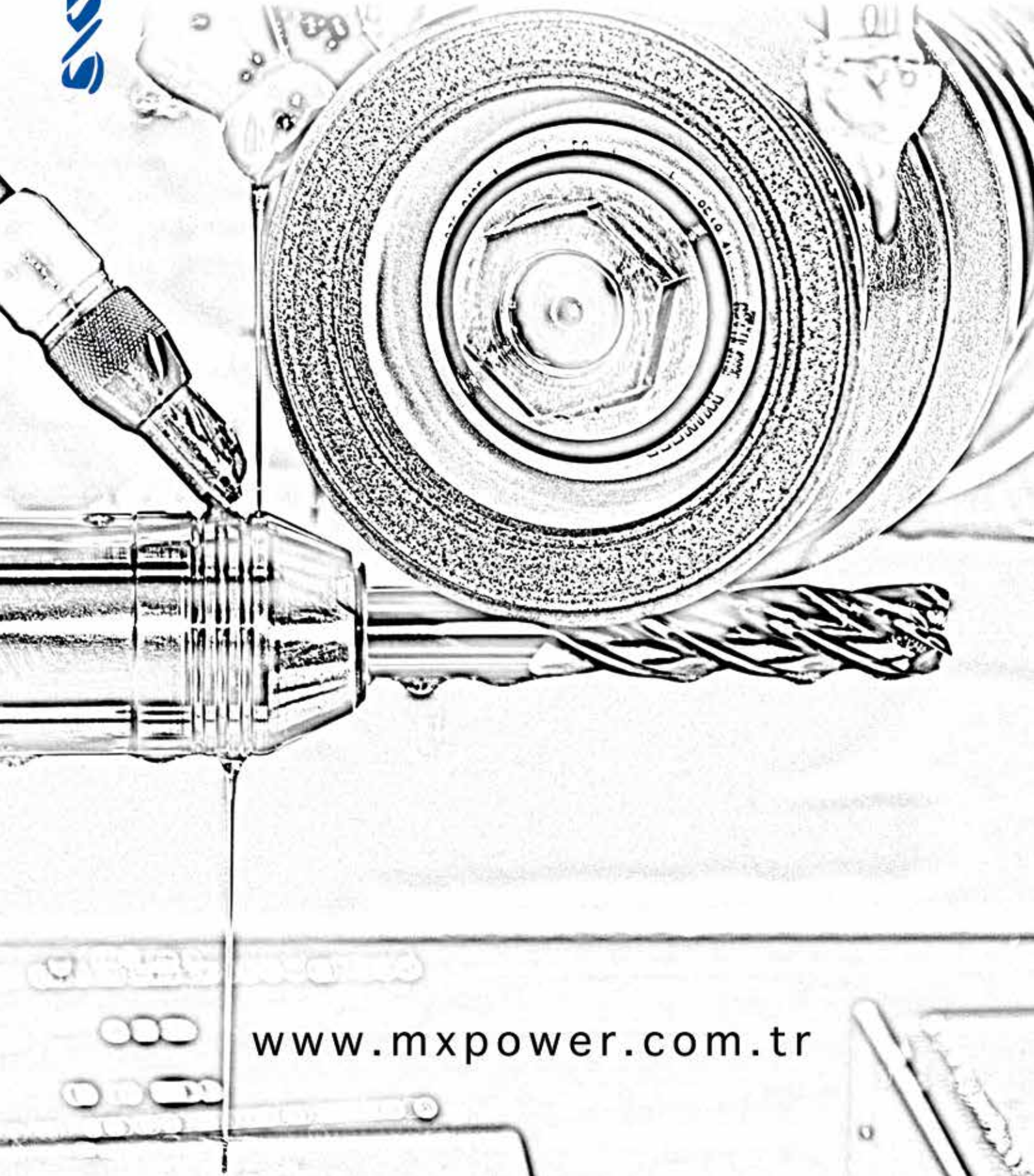


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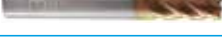
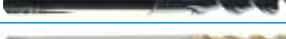
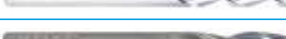
16 Seneyi Aşkın Bir Süredir Kesici Takım Sektöründe Sadece Satış Odaklı Faaliyet Gösteren Firmamız

2015 Yılından İtibaren Karbür Freze, Matkap, Rayba ve özel Takım Üretimine Başlamıştır. Kaydettiğimiz Bu Büyüme Ekseninde Daha Kaliteli Kesici Takım Üretebilmek İçin Kendi Alanında En İyi Alman makinalarıyla Üretim Hattımızı Kurduk.

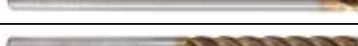
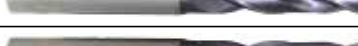
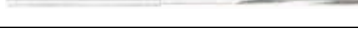
Yıllık 150.000 Adet Karbür Takım Yapabilme Kapasitesine Ulaştık. Her Geçen gün Makine Parkurumuzu Geliştirerek ve Yenileyerek Müşterilerimize Daha İyi Hizmet Vermeyi İlke Edindik.



## İÇİNDEKİLER

| ÜRÜN KODU | AÇIKLAMA                                                     |                                                                                      | HRC | SAYFA |
|-----------|--------------------------------------------------------------|--------------------------------------------------------------------------------------|-----|-------|
| MXDS      | Standart Düz Kaplamalı Freze                                 |    | 52  | 10    |
| MXDU-L-X  | Uzun Düz Kaplamalı Freze                                     |    | 52  | 11    |
| MXDUX-L   | Uzun Helis Düz Kaplamalı Freze                               |    | 52  | 11    |
| MXDXL     | Extra Uzun Düz Kaplamalı Freze                               |    | 52  | 11    |
| MXKS      | Standart Küre Kaplamalı Freze                                |    | 52  | 12    |
| MXKU-L-X  | Uzun Küre Kaplamalı Freze                                    |    | 52  | 13    |
| MXKXL     | Extra Uzun Küre Kaplamalı Freze                              |    | 52  | 13    |
| MXKRS     | Standart Köşe Radius Kaplamalı Freze                         |    | 52  | 14    |
| MXKRU-L-X | Uzun Köşe Radius Kaplamalı Freze                             |    | 52  | 15    |
| MXKRXL    | Extra Uzun Köşe Radius Kaplamalı Freze                       |    | 52  | 16    |
| MXDXLF-L  | Çok Ağızlı Uzun Düz Kaplamalı Freze                          |    | 52  | 17    |
| MXFD      | Dalma Boylu Düz Kaplamalı Freze                              |   | 52  | 18-19 |
| MXFDK     | Dalma Boylu Küre Kaplamalı Freze                             |  | 52  | 20-21 |
| MXFDR     | Dalma Boylu Köşe Radius Kaplamalı Freze                      |  | 52  | 22-23 |
| MXUT      | Chatter Free Kaplamalı Freze                                 |  | 52  | 24    |
| MXKB      | Kabataş Kaplamalı Freze                                      |  | 52  | 25    |
| MXPS      | Değişken Açılı (İNOX) Kaplamalı Freze                        |  | 52  | 25    |
| MXTN      | Finiş Kaplamalı Freze                                        |  | 52  | 26    |
| MXPR      | High Feed (Hızlı Kesim ) Köşe Radius Kaplamalı Freze         |  | 52  | 27    |
| MXAL      | Standart Alüminyum Kaplamasız Freze                          |  | 52  | 28    |
| MXALU     | Uzun Alüminyum Kaplamasız Freze                              |  | 52  | 28-29 |
| MXLT      | Yüksek Performans Alüminyum Kaplamasız Freze                 |  | 52  | 29    |
| MXPF      | Değişken Kanallı Yüksek Performans Alüminyum Kaplamalı Freze |  | 52  | 30    |
| MX3616    | Konik Düz Kaplamalı Freze 1-2-3-5°                           |  | 52  | 32    |
| MX3716    | Konik Küre Kaplamalı Freze 1-2-3-5°                          |  | 52  | 33    |
| MXDSH     | Standart Düz Kaplamalı Freze                                 |  | 70  | 36    |
| MXDU-L-H  | Uzun Düz Kaplamalı Freze                                     |  | 70  | 37    |
| MXDUXH    | Uzun Helis Düz Kaplamalı Freze                               |  | 70  | 37    |
| MXDXLH    | Extra Uzun Düz Kaplamalı Freze                               |  | 70  | 37    |
| MXKSH     | Standart Küre Kaplamalı Freze                                |  | 70  | 38    |

## İÇİNDEKİLER

| ÜRÜN KODU      | AÇIKLAMA                                                       |                                                                                      | HRC | SAYFA |
|----------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------|-----|-------|
| MXKUH-L        | Uzun Küre Kaplamalı Freze                                      |    | 70  | 39    |
| MXKXLH         | Extra Uzun Küre Kaplamalı Freze                                |    | 70  | 39    |
| MXKRSH         | Standart Köşe Radius Kaplamalı Freze                           |    | 70  | 40    |
| MXKRUH-L       | Uzun Köşe Radius Kaplamalı Freze                               |    | 70  | 41    |
| MXKRXLH        | Ekstra Uzun Köşe Radius Kaplamalı Freze                        |    | 70  | 42    |
| MXDXLFH-L      | Çok Ağızlı Uzun Düz Kaplamalı Freze                            |    | 70  | 43    |
| MXFDH          | Dalma Boylu Düz Kaplamalı Freze                                |    | 70  | 44-45 |
| MXFDKH         | Dalma Boylu Küre Kaplamalı Freze                               |    | 70  | 46-47 |
| MXFDRH         | Dalma Boylu Köşe Radius Kaplamalı Freze                        |    | 70  | 48-49 |
| MXPRH          | High Feed (Hızlı Kesim ) Köşe Radius Kaplamalı Freze           |    | 70  | 50    |
| MX3016         | N Tipi Karbür Kaplamasız Matkap 118° DIN 1897                  |   |     | 52-53 |
| MX3017         | N Tipi Karbür Kaplamasız Matkap 118° DIN 338                   |  |     | 54-55 |
| MX3645         | Yüksek Performans Karbür Matkap Kaplamalı 140° 3D              |  |     | 56-58 |
| MX3646         | Yüksek Performans Karbür Matkap Kaplamalı 140° 5D              |  |     | 59-61 |
| MX3687         | Yüksek Performans Sıvı Kanallı Karbür Matkap Kaplamalı 140° 3D |  |     | 62-64 |
| MX3688         | Yüksek Performans Sıvı Kanallı Karbür Matkap Kaplamalı 140° 5D |  |     | 65-67 |
| MX1021         | Karbür Punta Matkabı FORM-A                                    |  |     | 68    |
| MX190-191      | NC Karbür Punta Matkabı 90° / 120°                             |  |     | 70    |
| MX460-490-4120 | Havşa Frezesi 60° / 90° / 120°                                 |  |     | 71    |
| MX6507         | Çift Taraflı Karbür Havşa Kaplamalı 90°                        |  |     | 72    |
| MX5210         | NC Karbür Rayba Kaplamasız                                     |  |     | 73-75 |



STANDART DÜZ FREZE



STANDART KÜRE FREZE



STANDART KÖŞE RADIUS FREZE



ÇOK AĞIZLI DÜZ FREZE



DALMA BOYLU DÜZ FREZE



DALMA BOYLU KÜRE FREZE



DALMA BOYLU KÖŞE RADIUS FREZE



CHATTER FREZE



KABATALAŞ FREZE



FİNİŞ FREZE



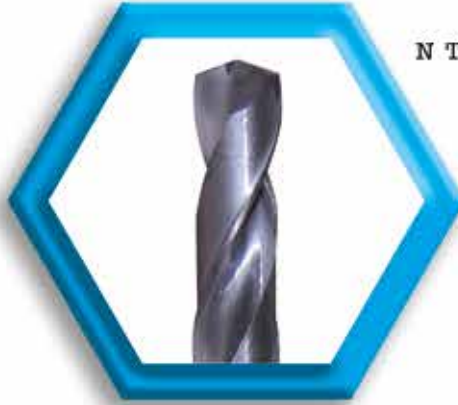
ALÜMİNYUM FREZE



KONİK FREZE



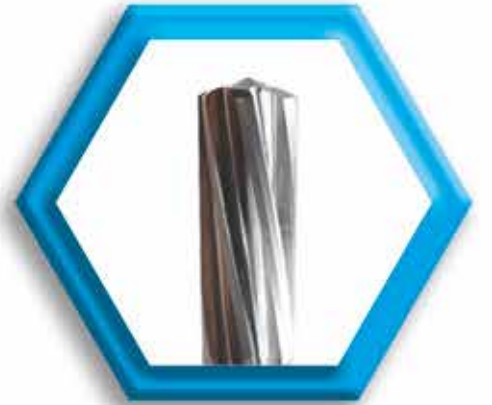
N TİPİ KARBÜR MATKAP (kaplamasız)



KARBÜR MATKAP



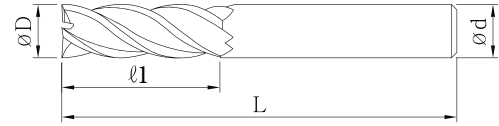
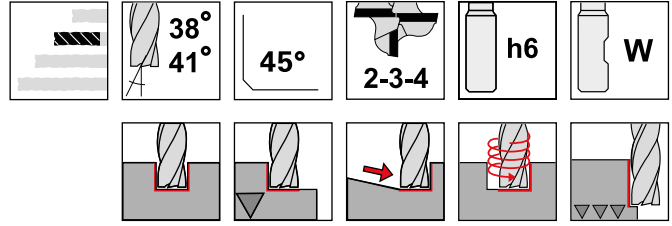
HAVŞA



MAKİNA RAYBASI

## STANDART DÜZ KAPLAMALI FREZE 52 HRC Z=4

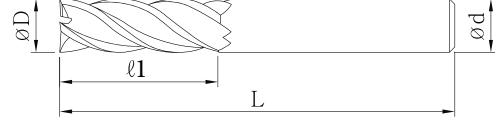
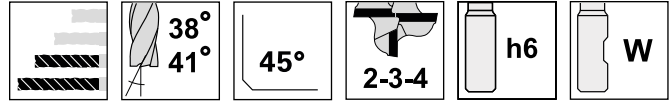
Karbür standart düz freze 52 HRC  
2344-2312-2738-1040-1050  
ve benzeri malzemeler için uygundur



| ÜRÜN KODU  | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|------------|----------|------------------|--------------|----------------|------------------|---------------|
| MXDS 2003  | 0.3      | 0.5              | 50           | 4              | 2                |               |
| MXDS 2004  | 0.4      | 0.5              | 50           | 4              | 2                |               |
| MXDS 2005  | 0.5      | 0.5              | 50           | 4              | 2                |               |
| MXDS 2006  | 0.6      | 0.6              | 50           | 4              | 2                |               |
| MXDS 2007  | 0.7      | 0.6              | 50           | 4              | 2                |               |
| MXDS 2008  | 0.8      | 0.7              | 50           | 4              | 2                |               |
| MXDS 2009  | 0.9      | 0.8              | 50           | 4              | 2                |               |
| MXDS 4010  | 1.0      | 3                | 50           | 4              | 4                |               |
| MXDS 4015  | 1.5      | 4                | 50           | 4              | 4                |               |
| MXDS 4020  | 2.0      | 6                | 50           | 4              | 4                |               |
| MXDS 40206 | 2.0      | 8                | 50           | 6              | 4                |               |
| MXDS 4025  | 2.5      | 6                | 50           | 4              | 4                |               |
| MXDS 40303 | 3.0      | 6                | 50           | 3              | 4                |               |
| MXDS 4030  | 3.0      | 8                | 50           | 4              | 4                |               |
| MXDS 40306 | 3.0      | 9                | 50           | 6              | 4                |               |
| MXDS 4035  | 3.5      | 9                | 50           | 4              | 4                |               |
| MXDS 4040  | 4.0      | 11               | 50           | 4              | 4                |               |
| MXDS 40406 | 4.0      | 11               | 50           | 6              | 4                |               |
| MXDS 40505 | 5.0      | 13               | 50           | 5              | 4                |               |
| MXDS 4050  | 5.0      | 13               | 50           | 6              | 4                |               |
| MXDS 4060  | 6.0      | 13               | 50           | 6              | 4                |               |
| MXDS 4070  | 7.0      | 19               | 63           | 7              | 4                |               |
| MXDS 4080  | 8.0      | 19               | 63           | 8              | 4                |               |
| MXDS 4090  | 9.0      | 22               | 72           | 9              | 4                |               |
| MXDS 4100  | 10       | 22               | 72           | 10             | 4                |               |
| MXDS 4110  | 11       | 25               | 75           | 11             | 4                |               |
| MXDS 4120  | 12       | 26               | 80           | 12             | 4                |               |
| MXDS 4130  | 13       | 26               | 80           | 13             | 4                |               |
| MXDS 4140  | 14       | 26               | 83           | 14             | 4                |               |
| MXDS 4150  | 15       | 32               | 92           | 15             | 4                |               |
| MXDS 4160  | 16       | 32               | 92           | 16             | 4                |               |
| MXDS 4180  | 18       | 32               | 92           | 18             | 4                |               |
| MXDS 4200  | 20       | 40               | 104          | 20             | 4                |               |
| MXDS 4220  | 22       | 40               | 104          | 22             | 4                |               |
| MXDS 4240  | 24       | 40               | 110          | 24             | 4                |               |
| MXDS 4250  | 25       | 40               | 110          | 25             | 4                |               |

## UZUN DÜZ KAPLAMALI FREZE 52 HRC Z=4

Karbür uzun düz freze 52 HRC  
2344-2312-2738-1040-1050  
ve benzeri malzemeler için uygundur



| ÜRÜN KODU  | ÇAP D | KESME BOYU ℓ1 | TAM BOY L | ŞAFT ÇAPI d | AĞIZ SAYISI Z | SİPARİŞ NO |
|------------|-------|---------------|-----------|-------------|---------------|------------|
| MXDU 40303 | 3     | 10            | 75        | 3           | 4             |            |
| MXDU 4040  | 4     | 15            | 75        | 4           | 4             |            |
| MXDUL 4040 | 4     | 20            | 100       | 4           | 4             |            |
| MXDU 4050  | 5     | 15            | 75        | 5           | 4             |            |
| MXDUL 4050 | 5     | 20            | 100       | 5           | 4             |            |
| MXDU 4060  | 6     | 15            | 75        | 6           | 4             |            |
| MXDUL 4060 | 6     | 20            | 100       | 6           | 4             |            |
| MXDX 4060  | 6     | 20            | 120       | 6           | 4             |            |
| MXDU 4080  | 8     | 19            | 75        | 8           | 4             |            |
| MXDUL 4080 | 8     | 22            | 100       | 8           | 4             |            |
| MXDX 4080  | 8     | 25            | 120       | 8           | 4             |            |
| MXDU 4100  | 10    | 22            | 100       | 10          | 4             |            |
| MXDX 4100  | 10    | 30            | 120       | 10          | 4             |            |
| MXDU 4120  | 12    | 26            | 100       | 12          | 4             |            |
| MXDX 4120  | 12    | 35            | 120       | 12          | 4             |            |
| MXDU 4140  | 14    | 40            | 100       | 14          | 4             |            |
| MXDU 4160  | 16    | 40            | 100       | 16          | 4             |            |

## UZUN HELİS DÜZ KAPLAMALI FREZE 52 HRC Z=4

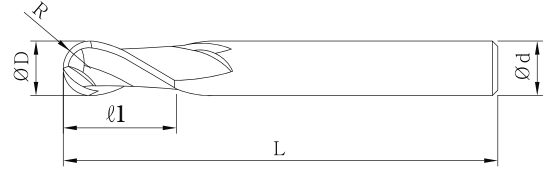
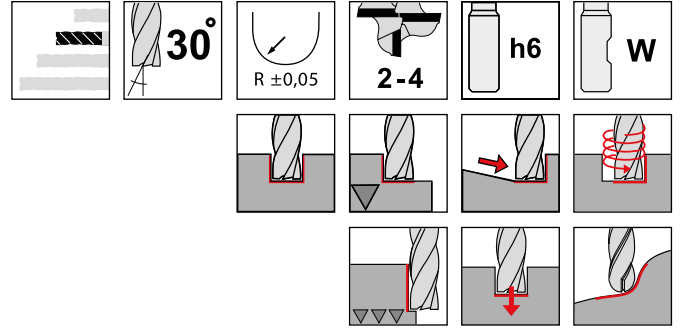
| ÜRÜN KODU   | ÇAP D | KESME BOYU ℓ1 | TAM BOY L | ŞAFT ÇAPI d | AĞIZ SAYISI Z | SİPARİŞ NO |
|-------------|-------|---------------|-----------|-------------|---------------|------------|
| MXDUX 4030  | 3     | 20            | 75        | 3           | 4             |            |
| MXDUX 4040  | 4     | 30            | 75        | 4           | 4             |            |
| MXDUXL 4040 | 4     | 30            | 100       | 4           | 4             |            |
| MXDUX 4060  | 6     | 40            | 100       | 6           | 4             |            |
| MXDUX 4080  | 8     | 45            | 100       | 8           | 4             |            |
| MXDUX 4100  | 10    | 45            | 100       | 10          | 4             |            |
| MXDUX 4120  | 12    | 45            | 100       | 12          | 4             |            |

## EXTRA UZUN DÜZ KAPLAMALI FREZE 52 HRC Z=4

| ÜRÜN KODU  | ÇAP D | KESME BOYU ℓ1 | TAM BOY L | ŞAFT ÇAPI d | AĞIZ SAYISI Z | SİPARİŞ NO |
|------------|-------|---------------|-----------|-------------|---------------|------------|
| MXDXL 4060 | 6     | 40            | 150       | 6           | 4             |            |
| MXDXL 4080 | 8     | 45            | 150       | 8           | 4             |            |
| MXDXL 4100 | 10    | 45            | 150       | 10          | 4             |            |
| MXDXL 4120 | 12    | 50            | 150       | 12          | 4             |            |
| MXDXL 4140 | 14    | 50            | 150       | 14          | 4             |            |
| MXDXL 4160 | 16    | 50            | 150       | 16          | 4             |            |
| MXDXL 4180 | 18    | 50            | 150       | 18          | 4             |            |
| MXDXL 4200 | 20    | 60            | 150       | 20          | 4             |            |
| MXDXL 4250 | 25    | 60            | 150       | 25          | 4             |            |

## STANDART KÜRE KAPLAMALI FREZE 52 HRC Z=2

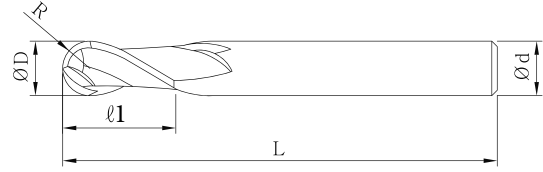
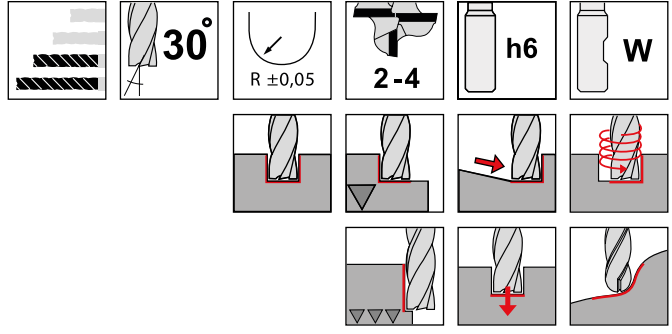
Karbür standart küre freze 52 HRC  
2344-2312-2738-1040-1050  
ve benzeri malzemeler için uygundur



| ÜRÜN KODU  | ÇAP<br>D | KESME BOYU<br>l1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | RADİUS<br>R | SİPARİŞ<br>NO |
|------------|----------|------------------|--------------|----------------|------------------|-------------|---------------|
| MXKS 2003  | 0.3      | 0.5              | 50           | 4              | 2                | 0.15        |               |
| MXKS 2004  | 0.4      | 0.5              | 50           | 4              | 2                | 0.20        |               |
| MXKS 2005  | 0.5      | 0.5              | 50           | 4              | 2                | 0.25        |               |
| MXKS 2006  | 0.6      | 0.6              | 50           | 4              | 2                | 0.30        |               |
| MXKS 2007  | 0.7      | 0.6              | 50           | 4              | 2                | 0.35        |               |
| MXKS 2008  | 0.8      | 0.7              | 50           | 4              | 2                | 0.40        |               |
| MXKS 2009  | 0.9      | 0.8              | 50           | 4              | 2                | 0.45        |               |
| MXKS 2010  | 1.0      | 3                | 50           | 4              | 2                | 0.50        |               |
| MXKS 2015  | 1.5      | 4                | 50           | 4              | 2                | 0.75        |               |
| MXKS 2020  | 2.0      | 4                | 50           | 4              | 2                | 1.00        |               |
| MXKS 20206 | 2.0      | 10               | 50           | 6              | 2                | 1.25        |               |
| MXKS 2025  | 2.5      | 4                | 50           | 4              | 2                | 1.25        |               |
| MXKS 20303 | 3.0      | 6                | 50           | 3              | 2                | 1.50        |               |
| MXKS 2030  | 3.0      | 6                | 50           | 4              | 2                | 1.50        |               |
| MXKS 20306 | 3.0      | 10               | 50           | 6              | 2                | 1.50        |               |
| MXKS 2040  | 4.0      | 8                | 50           | 4              | 2                | 2.00        |               |
| MXKS 20406 | 4.0      | 10               | 50           | 6              | 2                | 2.00        |               |
| MXKS 2050  | 5.0      | 10               | 50           | 6              | 2                | 2.50        |               |
| MXKS 20505 | 5.0      | 10               | 50           | 5              | 2                | 2.50        |               |
| MXKS 2060  | 6.0      | 12               | 50           | 6              | 2                | 3.00        |               |
| MXKS 4060  | 6.0      | 12               | 50           | 6              | 4                | 3.00        |               |
| MXKS 2070  | 7.0      | 15               | 63           | 7              | 2                | 3.50        |               |
| MXKS 2080  | 8.0      | 16               | 63           | 8              | 2                | 4.00        |               |
| MXKS 4080  | 8.0      | 16               | 63           | 8              | 4                | 4.00        |               |
| MXKS 2090  | 9.0      | 20               | 63           | 9              | 2                | 4.50        |               |
| MXKS 2100  | 10       | 20               | 72           | 10             | 2                | 5.00        |               |
| MXKS 4100  | 10       | 24               | 72           | 10             | 4                | 5.00        |               |
| MXKS 2110  | 11       | 24               | 80           | 11             | 2                | 5.50        |               |
| MXKS 2120  | 12       | 26               | 80           | 12             | 2                | 6.00        |               |
| MXKS 4120  | 12       | 26               | 80           | 12             | 4                | 6.00        |               |
| MXKS 2130  | 13       | 26               | 80           | 13             | 2                | 6.50        |               |
| MXKS 2140  | 14       | 26               | 83           | 14             | 2                | 7.00        |               |
| MXKS 2150  | 15       | 32               | 92           | 15             | 2                | 7.50        |               |
| MXKS 2160  | 16       | 32               | 92           | 16             | 2                | 8.00        |               |
| MXKS 2180  | 18       | 32               | 92           | 18             | 2                | 9.00        |               |
| MXKS 2200  | 20       | 40               | 104          | 20             | 2                | 10.00       |               |
| MXKS 2220  | 22       | 40               | 104          | 22             | 2                | 11.00       |               |
| MXKS 2400  | 24       | 40               | 110          | 24             | 2                | 12.00       |               |
| MXKS 2500  | 25       | 40               | 110          | 25             | 2                | 12.50       |               |

## UZUN KÜRE KAPLAMALI FREZE 52 HRC Z=2

Karbür uzun küre freze 52 HRC  
2344-2312-2738-1040-1050  
ve benzeri malzemeler için uygundur



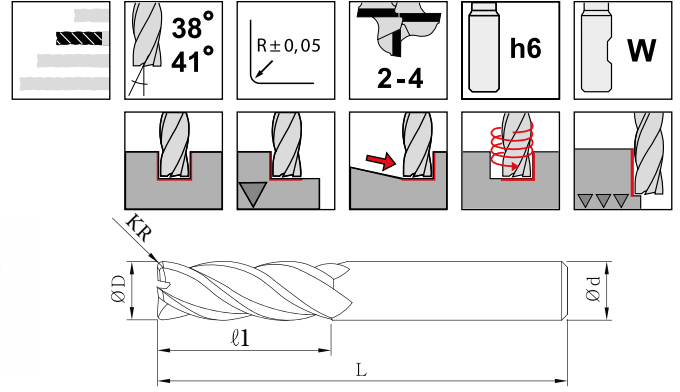
| ÜRÜN KODU   | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | RADİUS<br>R | SİPARİŞ<br>NO |
|-------------|----------|------------------|--------------|----------------|------------------|-------------|---------------|
| MXKU 2030   | 3        | 6                | 75           | 3              | 2                | 1.50        |               |
| MXKU 2040   | 4        | 8                | 75           | 4              | 2                | 2.00        |               |
| MXXKUL 2040 | 4        | 10               | 100          | 4              | 2                | 2.00        |               |
| MXKU 2050   | 5        | 12               | 75           | 5              | 2                | 2.50        |               |
| MXXKUL 2050 | 5        | 12               | 100          | 5              | 2                | 2.50        |               |
| MXKU 2060   | 6        | 12               | 75           | 6              | 2                | 3.00        |               |
| MXXKUL 2060 | 6        | 15               | 100          | 6              | 2                | 3.00        |               |
| MXXKX 2060  | 6        | 15               | 120          | 6              | 2                | 3.00        |               |
| MXKU 2080   | 8        | 16               | 75           | 8              | 2                | 4.00        |               |
| MXXKUL 2080 | 8        | 16               | 100          | 8              | 2                | 4.00        |               |
| MXXKX 2080  | 8        | 20               | 120          | 8              | 2                | 4.00        |               |
| MXKU 2100   | 10       | 20               | 100          | 10             | 2                | 5.00        |               |
| MXXKX 2100  | 10       | 20               | 120          | 10             | 2                | 5.00        |               |
| MXXKUL 2120 | 12       | 25               | 100          | 12             | 2                | 6.00        |               |
| MXXKX 2120  | 12       | 25               | 120          | 12             | 2                | 6.00        |               |

## EXTRA UZUN KÜRE KAPLAMALI FREZE 52 HRC Z=2

| ÜRÜN KODU   | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | RADİUS<br>R | SİPARİŞ<br>NO |
|-------------|----------|------------------|--------------|----------------|------------------|-------------|---------------|
| MXXKXL 4060 | 6        | 30               | 150          | 6              | 2-4              | 3.00        |               |
| MXXKXL 4080 | 8        | 35               | 150          | 8              | 2-4              | 4.00        |               |
| MXXKXL 4100 | 10       | 40               | 150          | 10             | 2-4              | 5.00        |               |
| MXXKXL 4120 | 12       | 40               | 150          | 12             | 2-4              | 6.00        |               |
| MXXKXL 4140 | 14       | 50               | 150          | 14             | 2-4              | 7.00        |               |
| MXXKXL 4160 | 16       | 50               | 150          | 16             | 2-4              | 8.00        |               |
| MXXKXL 4180 | 18       | 50               | 150          | 18             | 2-4              | 9.00        |               |
| MXXKXL 4200 | 20       | 50               | 150          | 20             | 2-4              | 10.00       |               |
| MXXKXL 4250 | 25       | 60               | 150          | 25             | 2-4              | 12.50       |               |

## STANDART KÖŞE RADIUS KAPLAMALI FREZE 52 HRC Z=4

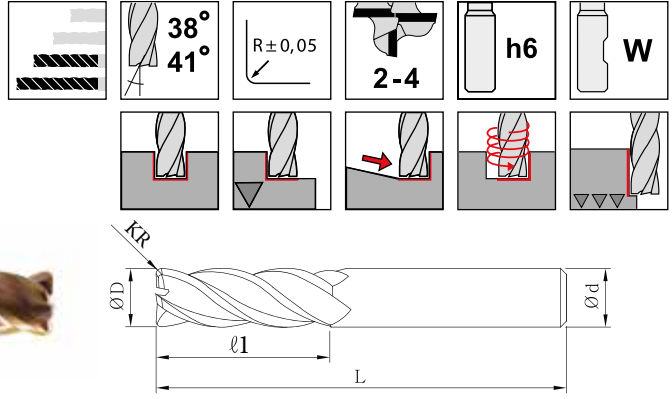
Karbür standart köşe radius 52 HRC  
2344-2312-2738-1040-1050  
ve benzeri malzemeler için uygundur



| ÜRÜN KODU    | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | KÖŞE RADIUS<br>KR | SİPARİŞ<br>NO |
|--------------|----------|------------------|--------------|----------------|------------------|-------------------|---------------|
| MXKRS 40202  | 2        | 6                | 50           | 4              | 4                | R0.2              |               |
| MXKRS 402026 | 2        | 8                | 50           | 6              | 4                | R0.2              |               |
| MXKRS 40205  | 2        | 6                | 50           | 4              | 4                | R0.5              |               |
| MXKRS 402056 | 2        | 8                | 50           | 6              | 4                | R0.5              |               |
| MXKRS 40252  | 2.5      | 6                | 50           | 4              | 4                | R0.2              |               |
| MXKRS 40255  | 2.5      | 6                | 50           | 4              | 4                | R0.5              |               |
| MXKRS 403023 | 3        | 8                | 50           | 3              | 4                | R0.2              |               |
| MXKRS 40302  | 3        | 8                | 50           | 4              | 4                | R0.2              |               |
| MXKRS 403026 | 3        | 9                | 50           | 6              | 4                | R0.2              |               |
| MXKRS 403053 | 3        | 8                | 50           | 3              | 4                | R0.5              |               |
| MXKRS 40305  | 3        | 8                | 50           | 4              | 4                | R0.5              |               |
| MXKRS 403056 | 3        | 9                | 50           | 6              | 4                | R0.5              |               |
| MXKRS 403103 | 3        | 8                | 50           | 3              | 4                | R1.0              |               |
| MXKRS 40310  | 3        | 8                | 50           | 4              | 4                | R1.0              |               |
| MXKRS 403106 | 3        | 9                | 50           | 6              | 4                | R1.0              |               |
| MXKRS 40402  | 4        | 11               | 50           | 4              | 4                | R0.2              |               |
| MXKRS 404026 | 4        | 11               | 50           | 6              | 4                | R0.2              |               |
| MXKRS 40405  | 4        | 11               | 50           | 4              | 4                | R0.5              |               |
| MXKRS 404056 | 4        | 11               | 50           | 6              | 4                | R0.5              |               |
| MXKRS 40410  | 4        | 11               | 50           | 4              | 4                | R1.0              |               |
| MXKRS 404106 | 4        | 11               | 50           | 6              | 4                | R1.0              |               |
| MXKRS 40502  | 5        | 13               | 50           | 5              | 4                | R0.2              |               |
| MXKRS 405026 | 5        | 13               | 50           | 6              | 4                | R0.2              |               |
| MXKRS 40505  | 5        | 13               | 50           | 5              | 4                | R0.5              |               |
| MXKRS 405056 | 5        | 13               | 50           | 6              | 4                | R0.5              |               |
| MXKRS 40510  | 5        | 13               | 50           | 5              | 4                | R1.0              |               |
| MXKRS 405106 | 5        | 13               | 50           | 6              | 4                | R1.0              |               |
| MXKRS 40602  | 6        | 15               | 50           | 6              | 4                | R0.2              |               |
| MXKRS 40605  | 6        | 15               | 50           | 6              | 4                | R0.5              |               |
| MXKRS 40610  | 6        | 15               | 50           | 6              | 4                | R1.0              |               |
| MXKRS 40615  | 6        | 15               | 50           | 6              | 4                | R1.5              |               |
| MXKRS 40620  | 6        | 15               | 50           | 6              | 4                | R2.0              |               |
| MXKRS 40802  | 8        | 19               | 63           | 8              | 4                | R0.2              |               |
| MXKRS 40805  | 8        | 19               | 63           | 8              | 4                | R0.5              |               |
| MXKRS 40810  | 8        | 19               | 63           | 8              | 4                | R1.0              |               |
| MXKRS 40815  | 8        | 19               | 63           | 8              | 4                | R1.5              |               |
| MXKRS 40820  | 8        | 19               | 63           | 8              | 4                | R2.0              |               |
| MXKRS 41002  | 10       | 22               | 75           | 10             | 4                | R0.2              |               |
| MXKRS 41005  | 10       | 22               | 75           | 10             | 4                | R0.5              |               |
| MXKRS 41010  | 10       | 22               | 75           | 10             | 4                | R1.0              |               |
| MXKRS 41015  | 10       | 22               | 75           | 10             | 4                | R1.5              |               |
| MXKRS 41020  | 10       | 22               | 75           | 10             | 4                | R2.0              |               |
| MXKRS 41202  | 12       | 25               | 82           | 12             | 4                | R0.2              |               |
| MXKRS 41205  | 12       | 25               | 82           | 12             | 4                | R0.5              |               |
| MXKRS 41210  | 12       | 25               | 82           | 12             | 4                | R1.0              |               |
| MXKRS 41215  | 12       | 25               | 82           | 12             | 4                | R1.5              |               |
| MXKRS 41220  | 12       | 25               | 82           | 12             | 4                | R2.0              |               |
| MXKRS 41405  | 14       | 26               | 83           | 14             | 4                | R0.5              |               |
| MXKRS 41410  | 14       | 26               | 83           | 14             | 4                | R1.0              |               |
| MXKRS 41605  | 16       | 32               | 92           | 16             | 4                | R0.5              |               |
| MXKRS 41610  | 16       | 32               | 92           | 16             | 4                | R1.0              |               |

## UZUN KÖŞE RADIUS KAPLAMALI FREZE 52 HRC Z=4

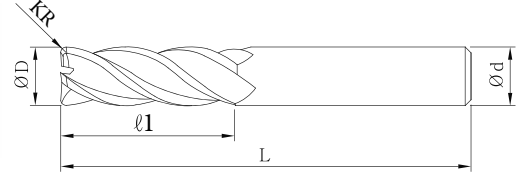
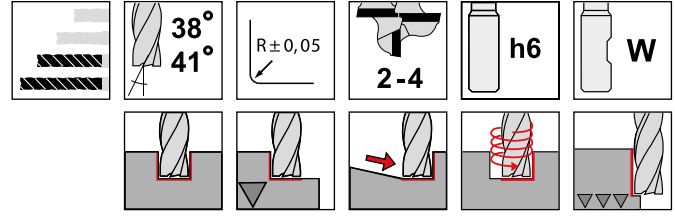
Karbür uzun köşe radius freze 52 HRC  
2344-2312-2738-1040-1050  
ve benzeri malzemeler için uygundur



| ÜRÜN KODU    | ÇAP D | KESME BOYU l1 | TAM BOY L | ŞAFT ÇAPI d | AĞIZ SAYISI Z | KÖŞE RADIUS KR | SİPARİŞ NO |
|--------------|-------|---------------|-----------|-------------|---------------|----------------|------------|
| MXKRU 40302  | 3     | 8             | 75        | 3           | 4             | R0.2           |            |
| MXKRU 40305  | 3     | 8             | 75        | 3           | 4             | R0.5           |            |
| MXKRU 40310  | 3     | 8             | 75        | 3           | 4             | R1.0           |            |
| MXKRU 40402  | 4     | 8             | 75        | 4           | 4             | R0.2           |            |
| MXKRU 40405  | 4     | 8             | 75        | 4           | 4             | R0.5           |            |
| MXKRU 40410  | 4     | 8             | 75        | 4           | 4             | R1.0           |            |
| MXKRUL 40402 | 4     | 11            | 100       | 4           | 4             | R0.2           |            |
| MXKRUL 40405 | 4     | 11            | 100       | 4           | 4             | R0.5           |            |
| MXKRUL 40410 | 4     | 11            | 100       | 4           | 4             | R1.0           |            |
| MXKRU 40502  | 5     | 15            | 75        | 5           | 4             | R0.2           |            |
| MXKRU 40505  | 5     | 15            | 75        | 5           | 4             | R0.5           |            |
| MXKRU 40510  | 5     | 15            | 75        | 5           | 4             | R1.0           |            |
| MXKRUL 40505 | 5     | 15            | 100       | 5           | 4             | R0.5           |            |
| MXKRUL 40510 | 5     | 15            | 100       | 5           | 4             | R1.0           |            |
| MXKRU 40602  | 6     | 15            | 75        | 6           | 4             | R0.2           |            |
| MXKRU 40605  | 6     | 15            | 75        | 6           | 4             | R0.5           |            |
| MXKRU 40610  | 6     | 15            | 75        | 6           | 4             | R1.0           |            |
| MXKRU 40615  | 6     | 15            | 75        | 6           | 4             | R1.5           |            |
| MXKRUL 40602 | 6     | 15            | 100       | 6           | 4             | R0.2           |            |
| MXKRUL 40605 | 6     | 15            | 100       | 6           | 4             | R0.5           |            |
| MXKRUL 40610 | 6     | 15            | 100       | 6           | 4             | R1.0           |            |
| MXKRUL 40615 | 6     | 15            | 100       | 6           | 4             | R1.5           |            |
| MXKRX 40605  | 6     | 20            | 120       | 6           | 4             | R0.5           |            |
| MXKRX 40610  | 6     | 20            | 120       | 6           | 4             | R1.0           |            |
| MXKRU 40802  | 8     | 20            | 75        | 8           | 4             | R0.2           |            |
| MXKRU 40805  | 8     | 20            | 75        | 8           | 4             | R0.5           |            |
| MXKRU 40810  | 8     | 20            | 75        | 8           | 4             | R1.0           |            |
| MXKRU 40815  | 8     | 20            | 75        | 8           | 4             | R1.5           |            |
| MXKRU 40820  | 8     | 20            | 75        | 8           | 4             | R2.0           |            |
| MXKRUL 40802 | 8     | 20            | 100       | 8           | 4             | R0.2           |            |
| MXKRUL 40805 | 8     | 20            | 100       | 8           | 4             | R0.5           |            |
| MXKRUL 40810 | 8     | 20            | 100       | 8           | 4             | R1.0           |            |
| MXKRUL 40815 | 8     | 20            | 100       | 8           | 4             | R1.5           |            |
| MXKRUL 40820 | 8     | 20            | 100       | 8           | 4             | R2.0           |            |
| MXKRX 40805  | 8     | 20            | 120       | 8           | 4             | R0.5           |            |
| MXKRX 40810  | 8     | 20            | 120       | 8           | 4             | R1.0           |            |
| MXKRUL 41002 | 10    | 20            | 100       | 10          | 4             | R0.2           |            |
| MXKRUL 41005 | 10    | 20            | 100       | 10          | 4             | R0.5           |            |
| MXKRUL 41010 | 10    | 20            | 100       | 10          | 4             | R1.0           |            |
| MXKRUL 41015 | 10    | 20            | 100       | 10          | 4             | R1.5           |            |
| MXKRUL 41020 | 10    | 20            | 100       | 10          | 4             | R2.0           |            |
| MXKRX 41005  | 10    | 25            | 120       | 10          | 4             | R0.5           |            |
| MXKRX 41010  | 10    | 25            | 120       | 10          | 4             | R1.0           |            |
| MXKRUL 41202 | 12    | 25            | 100       | 12          | 4             | R0.2           |            |
| MXKRUL 41205 | 12    | 25            | 100       | 12          | 4             | R0.5           |            |
| MXKRUL 41210 | 12    | 25            | 100       | 12          | 4             | R1.0           |            |
| MXKRUL 41215 | 12    | 25            | 100       | 12          | 4             | R1.5           |            |
| MXKRUL 41220 | 12    | 25            | 100       | 12          | 4             | R2.0           |            |
| MXKRX 41205  | 12    | 25            | 120       | 12          | 4             | R0.5           |            |
| MXKRX 41210  | 12    | 25            | 120       | 12          | 4             | R1.0           |            |

## EXTRA UZUN KÖŞE RADIUS KAPLAMALI FREZE 52 HRC Z=4

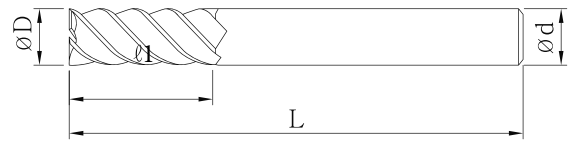
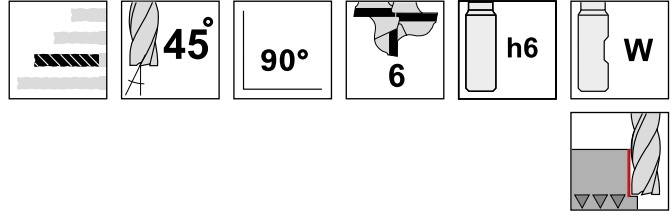
Karbür extra uzun köşe radius freze 52 HRC  
2344-2312-2738-1040-1050  
ve benzeri malzemeler için uygundur



| ÜRÜN KODU    | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | KÖŞE RADIUS<br>KR | SİPARİŞ<br>NO |
|--------------|----------|------------------|--------------|----------------|------------------|-------------------|---------------|
| MXKRXL 40602 | 6        | 30               | 150          | 6              | 4                | R0.2              |               |
| MXKRXL 40605 | 6        | 30               | 150          | 6              | 4                | R0.5              |               |
| MXKRXL 40610 | 6        | 30               | 150          | 6              | 4                | R1.0              |               |
| MXKRXL 40802 | 8        | 35               | 150          | 8              | 4                | R0.2              |               |
| MXKRXL 40805 | 8        | 35               | 150          | 8              | 4                | R0.5              |               |
| MXKRXL 40810 | 8        | 35               | 150          | 8              | 4                | R1.0              |               |
| MXKRXL 41002 | 10       | 40               | 150          | 10             | 4                | R0.2              |               |
| MXKRXL 41005 | 10       | 40               | 150          | 10             | 4                | R0.5              |               |
| MXKRXL 41010 | 10       | 40               | 150          | 10             | 4                | R1.0              |               |
| MXKRXL 41202 | 12       | 40               | 150          | 12             | 4                | R0.2              |               |
| MXKRXL 41205 | 12       | 40               | 150          | 12             | 4                | R0.5              |               |
| MXKRXL 41210 | 12       | 40               | 150          | 12             | 4                | R1.0              |               |

## ÇOK AĞIZLI UZUN DÜZ KAPLAMALI FREZE 52 HRC Z=6

Karbür çok ağızlı uzun düz freze 52 HRC  
2344-2312-2738-1040-1050  
ve benzeri malzemeler için uygundur



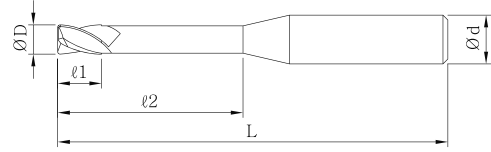
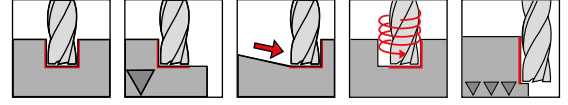
| ÜRÜN KODU    | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|--------------|----------|------------------|--------------|----------------|------------------|---------------|
| MXDXLF 6060  | 6        | 25               | 75           | 6              | 6                |               |
| MXDXLF 6080  | 8        | 40               | 100          | 8              | 6                |               |
| MXDXLF 6100  | 10       | 45               | 100          | 10             | 6                |               |
| MXDXLF 6120  | 12       | 45               | 110          | 12             | 6                |               |
| MXDXLF 6140  | 14       | 50               | 110          | 14             | 6                |               |
| MXDXLF 6160  | 16       | 55               | 110          | 16             | 6                |               |
| MXDXLF 6180  | 18       | 55               | 110          | 18             | 6                |               |
| MXDXLF 6200  | 20       | 60               | 110          | 20             | 6                |               |
| MXDXLFL 6080 | 8        | 50               | 150          | 8              | 6                |               |
| MXDXLFL 6100 | 10       | 55               | 150          | 10             | 6                |               |
| MXDXLFL 6120 | 12       | 55               | 150          | 12             | 6                |               |
| MXDXLFL 6140 | 14       | 65               | 150          | 14             | 6                |               |
| MXDXLFL 6160 | 16       | 65               | 150          | 16             | 6                |               |
| MXDXLFL 6180 | 18       | 65               | 150          | 18             | 6                |               |
| MXDXLFL 6200 | 20       | 70               | 150          | 20             | 6                |               |

## DALMA BOYLU DÜZ KAPLAMALI FREZE 52 HRC Z=2

Karbür dalma boylu düz freze 52 HRC

2344-2312-2738-1040-1050

ve benzeri malzemeler için uygundur



| ÜRÜN KODU   | ÇAP<br>D | KESME BOYU<br>ℓ1 | DALMA BOYU<br>ℓ2 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|-------------|----------|------------------|------------------|--------------|----------------|------------------|---------------|
| MXFD0100L4  | 1.0      | 1.5              | 4                | 50           | 4              | 2                |               |
| MXFD0100L6  | 1.0      | 1.5              | 6                | 50           | 4              | 2                |               |
| MXFD0100L8  | 1.0      | 1.5              | 8                | 50           | 4              | 2                |               |
| MXFD0100L10 | 1.0      | 1.5              | 10               | 50           | 4              | 2                |               |
| MXFD0100L12 | 1.0      | 1.5              | 12               | 50           | 4              | 2                |               |
| MXFD0100L14 | 1.0      | 1.5              | 14               | 50           | 4              | 2                |               |
| MXFD0100L16 | 1.0      | 1.5              | 16               | 50           | 4              | 2                |               |
| MXFD0100L18 | 1.0      | 1.5              | 18               | 50           | 4              | 2                |               |
| MXFD0100L20 | 1.0      | 1.5              | 20               | 50           | 4              | 2                |               |
| MXFD0150L4  | 1.5      | 2.2              | 4                | 50           | 4              | 2                |               |
| MXFD0150L6  | 1.5      | 2.2              | 6                | 50           | 4              | 2                |               |
| MXFD0150L8  | 1.5      | 2.2              | 8                | 50           | 4              | 2                |               |
| MXFD0150L10 | 1.5      | 2.2              | 10               | 50           | 4              | 2                |               |
| MXFD0150L12 | 1.5      | 2.2              | 12               | 50           | 4              | 2                |               |
| MXFD0150L14 | 1.5      | 2.2              | 14               | 50           | 4              | 2                |               |
| MXFD0150L16 | 1.5      | 2.2              | 16               | 50           | 4              | 2                |               |
| MXFD0150L18 | 1.5      | 2.2              | 18               | 50           | 4              | 2                |               |
| MXFD0150L20 | 1.5      | 2.2              | 20               | 50           | 4              | 2                |               |
| MXFD0200L6  | 2.0      | 3.0              | 6                | 50           | 4              | 2                |               |
| MXFD0200L8  | 2.0      | 3.0              | 8                | 50           | 4              | 2                |               |
| MXFD0200L10 | 2.0      | 3.0              | 10               | 50           | 4              | 2                |               |
| MXFD0200L12 | 2.0      | 3.0              | 12               | 50           | 4              | 2                |               |
| MXFD0200L14 | 2.0      | 3.0              | 14               | 50           | 4              | 2                |               |
| MXFD0200L16 | 2.0      | 3.0              | 16               | 50           | 4              | 2                |               |
| MXFD0200L18 | 2.0      | 3.0              | 18               | 50           | 4              | 2                |               |
| MXFD0200L20 | 2.0      | 3.0              | 20               | 50           | 4              | 2                |               |
| MXFD0200L25 | 2.0      | 3.0              | 25               | 60           | 4              | 2                |               |
| MXFD0250L6  | 2.5      | 3.5              | 6                | 50           | 4              | 2                |               |
| MXFD0250L8  | 2.5      | 3.5              | 8                | 50           | 4              | 2                |               |
| MXFD0250L10 | 2.5      | 3.5              | 10               | 50           | 4              | 2                |               |
| MXFD0250L12 | 2.5      | 3.5              | 12               | 50           | 4              | 2                |               |
| MXFD0250L14 | 2.5      | 3.5              | 14               | 50           | 4              | 2                |               |
| MXFD0250L16 | 2.5      | 3.5              | 16               | 50           | 4              | 2                |               |
| MXFD0250L18 | 2.5      | 3.5              | 18               | 50           | 4              | 2                |               |
| MXFD0250L20 | 2.5      | 3.5              | 20               | 50           | 4              | 2                |               |
| MXFD0250L25 | 2.5      | 3.5              | 25               | 60           | 4              | 2                |               |
| MXFD0250L30 | 2.5      | 3.5              | 30               | 60           | 4              | 2                |               |

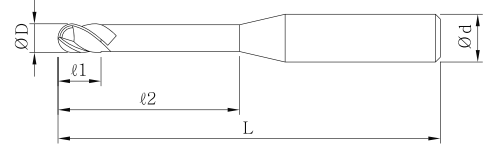
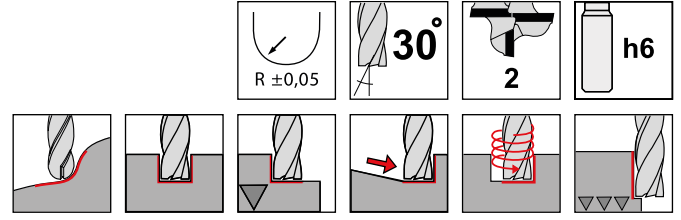
| ÜRÜN KODU   | ÇAP<br>D | KESME BOYU<br>$\ell_1$ | DALMA BOYU<br>$\ell_2$ | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|-------------|----------|------------------------|------------------------|--------------|----------------|------------------|---------------|
| MXFD0300L10 | 3.0      | 4                      | 10                     | 65           | 6              | 2                |               |
| MXFD0300L12 | 3.0      | 4                      | 12                     | 65           | 6              | 2                |               |
| MXFD0300L14 | 3.0      | 4                      | 14                     | 65           | 6              | 2                |               |
| MXFD0300L16 | 3.0      | 4                      | 16                     | 65           | 6              | 2                |               |
| MXFD0300L18 | 3.0      | 4                      | 18                     | 65           | 6              | 2                |               |
| MXFD0300L20 | 3.0      | 4                      | 20                     | 65           | 6              | 2                |               |
| MXFD0300L25 | 3.0      | 4                      | 25                     | 65           | 6              | 2                |               |
| MXFD0300L30 | 3.0      | 4                      | 30                     | 65           | 6              | 2                |               |
| MXFD0300L35 | 3.0      | 4                      | 35                     | 65           | 6              | 2                |               |
| MXFD0400L10 | 4.0      | 6                      | 10                     | 65           | 6              | 2                |               |
| MXFD0400L12 | 4.0      | 6                      | 12                     | 65           | 6              | 2                |               |
| MXFD0400L14 | 4.0      | 6                      | 14                     | 65           | 6              | 2                |               |
| MXFD0400L16 | 4.0      | 6                      | 16                     | 65           | 6              | 2                |               |
| MXFD0400L18 | 4.0      | 6                      | 18                     | 65           | 6              | 2                |               |
| MXFD0400L20 | 4.0      | 6                      | 20                     | 65           | 6              | 2                |               |
| MXFD0400L25 | 4.0      | 6                      | 25                     | 65           | 6              | 2                |               |
| MXFD0400L30 | 4.0      | 6                      | 30                     | 65           | 6              | 2                |               |
| MXFD0400L35 | 4.0      | 6                      | 35                     | 65           | 6              | 2                |               |

## DALMA BOYLU KÜRE KAPLAMALI FREZE 52 HRC Z=2

Karbür dalma boylu küre freze 52 HRC

2344-2312-2738-1040-1050

ve benzeri malzemeler için uygundur

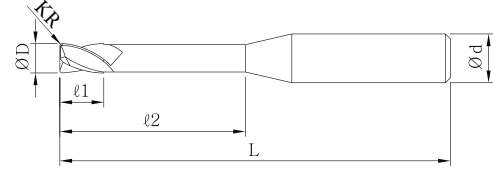
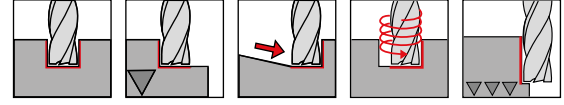
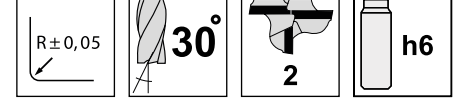


| ÜRÜN KODU    | ÇAP<br>D | KESME BOYU<br>ℓ1 | DALMA BOYU<br>ℓ2 | TAM BOY<br>L | ŞAFT ÇAP<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|--------------|----------|------------------|------------------|--------------|---------------|------------------|---------------|
| MXFDK0100L4  | 1.0      | 1.5              | 4                | 50           | 4             | 2                |               |
| MXFDK0100L6  | 1.0      | 1.5              | 6                | 50           | 4             | 2                |               |
| MXFDK0100L8  | 1.0      | 1.5              | 8                | 50           | 4             | 2                |               |
| MXFDK0100L10 | 1.0      | 1.5              | 10               | 50           | 4             | 2                |               |
| MXFDK0100L12 | 1.0      | 1.5              | 12               | 50           | 4             | 2                |               |
| MXFDK0100L14 | 1.0      | 1.5              | 14               | 50           | 4             | 2                |               |
| MXFDK0100L16 | 1.0      | 1.5              | 16               | 50           | 4             | 2                |               |
| MXFDK0100L18 | 1.0      | 1.5              | 18               | 50           | 4             | 2                |               |
| MXFDK0100L20 | 1.0      | 1.5              | 20               | 50           | 4             | 2                |               |
| MXFDK0150L4  | 1.5      | 2.2              | 4                | 50           | 4             | 2                |               |
| MXFDK0150L6  | 1.5      | 2.2              | 6                | 50           | 4             | 2                |               |
| MXFDK0150L8  | 1.5      | 2.2              | 8                | 50           | 4             | 2                |               |
| MXFDK0150L10 | 1.5      | 2.2              | 10               | 50           | 4             | 2                |               |
| MXFDK0150L12 | 1.5      | 2.2              | 12               | 50           | 4             | 2                |               |
| MXFDK0150L14 | 1.5      | 2.2              | 14               | 50           | 4             | 2                |               |
| MXFDK0150L16 | 1.5      | 2.2              | 16               | 50           | 4             | 2                |               |
| MXFDK0150L18 | 1.5      | 2.2              | 18               | 50           | 4             | 2                |               |
| MXFDK0150L20 | 1.5      | 2.2              | 20               | 50           | 4             | 2                |               |
| MXFDK0200L6  | 2.0      | 3.0              | 6                | 50           | 4             | 2                |               |
| MXFDK0200L8  | 2.0      | 3.0              | 8                | 50           | 4             | 2                |               |
| MXFDK0200L10 | 2.0      | 3.0              | 10               | 50           | 4             | 2                |               |
| MXFDK0200L12 | 2.0      | 3.0              | 12               | 50           | 4             | 2                |               |
| MXFDK0200L14 | 2.0      | 3.0              | 14               | 50           | 4             | 2                |               |
| MXFDK0200L16 | 2.0      | 3.0              | 16               | 50           | 4             | 2                |               |
| MXFDK0200L18 | 2.0      | 3.0              | 18               | 50           | 4             | 2                |               |
| MXFDK0200L20 | 2.0      | 3.0              | 20               | 50           | 4             | 2                |               |
| MXFDK0200L25 | 2.0      | 3.0              | 25               | 60           | 4             | 2                |               |
| MXFDK0250L6  | 2.5      | 3.5              | 6                | 50           | 4             | 2                |               |
| MXFDK0250L8  | 2.5      | 3.5              | 8                | 50           | 4             | 2                |               |
| MXFDK0250L10 | 2.5      | 3.5              | 10               | 50           | 4             | 2                |               |
| MXFDK0250L12 | 2.5      | 3.5              | 12               | 50           | 4             | 2                |               |
| MXFDK0250L14 | 2.5      | 3.5              | 16               | 50           | 4             | 2                |               |
| MXFDK0250L16 | 2.5      | 3.5              | 20               | 50           | 4             | 2                |               |
| MXFDK0250L18 | 2.5      | 3.5              | 25               | 50           | 4             | 2                |               |
| MXFDK0250L20 | 2.5      | 3.5              | 20               | 50           | 4             | 2                |               |
| MXFDK0250L25 | 2.5      | 3.5              | 25               | 60           | 4             | 2                |               |

| ÜRÜN KODU    | ÇAP<br>D | KESME BOYU<br>ℓ1 | DALMA BOYU<br>ℓ2 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|--------------|----------|------------------|------------------|--------------|----------------|------------------|---------------|
| MXFDK0300L10 | 3.0      | 4                | 10               | 65           | 6              | 2                |               |
| MXFDK0300L12 | 3.0      | 4                | 12               | 65           | 6              | 2                |               |
| MXFDK0300L14 | 3.0      | 4                | 14               | 65           | 6              | 2                |               |
| MXFDK0300L16 | 3.0      | 4                | 16               | 65           | 6              | 2                |               |
| MXFDK0300L18 | 3.0      | 4                | 18               | 65           | 6              | 2                |               |
| MXFDK0300L20 | 3.0      | 4                | 20               | 65           | 6              | 2                |               |
| MXFDK0300L25 | 3.0      | 4                | 25               | 65           | 6              | 2                |               |
| MXFDK0300L30 | 3.0      | 4                | 30               | 65           | 6              | 2                |               |
| MXFDK0300L35 | 3.0      | 4                | 35               | 65           | 6              | 2                |               |
| MXFDK0400L10 | 4.0      | 6                | 10               | 65           | 6              | 2                |               |
| MXFDK0400L12 | 4.0      | 6                | 12               | 65           | 6              | 2                |               |
| MXFDK0400L14 | 4.0      | 6                | 14               | 65           | 6              | 2                |               |
| MXFDK0400L16 | 4.0      | 6                | 16               | 65           | 6              | 2                |               |
| MXFDK0400L18 | 4.0      | 6                | 18               | 65           | 6              | 2                |               |
| MXFDK0400L20 | 4.0      | 6                | 20               | 65           | 6              | 2                |               |
| MXFDK0400L25 | 4.0      | 6                | 25               | 65           | 6              | 2                |               |
| MXFDK0400L30 | 4.0      | 6                | 30               | 65           | 6              | 2                |               |
| MXFDK0400L35 | 4.0      | 6                | 35               | 65           | 6              | 2                |               |

## DALMA BOYLU KÖŞE RADIUS KAPLAMALI FREZE 52 HRC Z=2

Karbür dalma boylu köşe radius freze 52 HRC  
2344-2312-2738-1040-1050  
ve benzeri malzemeler için uygundur

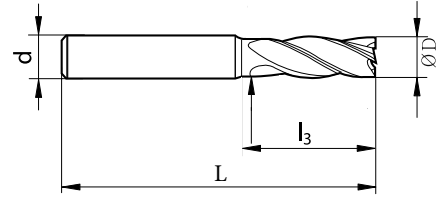
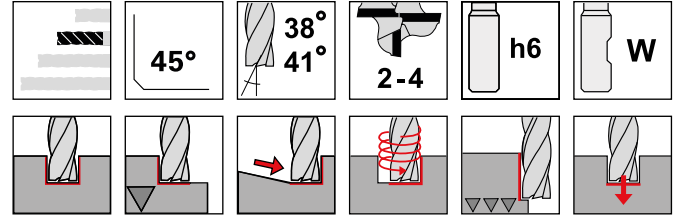


| ÜRÜN KODU      | KÖŞE RADIUS<br>KR | ÇAP<br>D | KESME BOYU<br>ℓ <sub>1</sub> | DALMA BOYU<br>L <sub>2</sub> | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ<br>SAYISI | SİPARİŞ<br>NO |
|----------------|-------------------|----------|------------------------------|------------------------------|--------------|----------------|----------------|---------------|
| MXFD0100R02L4  | R0.2              | 1.0      | 1.5                          | 4                            | 50           | 4              | 2              |               |
| MXFD0100R02L6  | R0.2              | 1.0      | 1.5                          | 6                            | 50           | 4              | 2              |               |
| MXFD0100R02L8  | R0.2              | 1.0      | 1.5                          | 8                            | 50           | 4              | 2              |               |
| MXFD0100R02L10 | R0.2              | 1.0      | 1.5                          | 10                           | 50           | 4              | 2              |               |
| MXFD0100R02L12 | R0.2              | 1.0      | 1.5                          | 12                           | 50           | 4              | 2              |               |
| MXFD0100R02L14 | R0.2              | 1.0      | 1.5                          | 14                           | 50           | 4              | 2              |               |
| MXFD0100R02L16 | R0.2              | 1.0      | 1.5                          | 16                           | 50           | 4              | 2              |               |
| MXFD0100R02L18 | R0.2              | 1.0      | 1.5                          | 18                           | 50           | 4              | 2              |               |
| MXFD0100R02L20 | R0.2              | 1.0      | 1.5                          | 20                           | 50           | 4              | 2              |               |
| MXFD0150R02L4  | R0.2              | 1.5      | 2.2                          | 4                            | 50           | 4              | 2              |               |
| MXFD0150R02L6  | R0.2              | 1.5      | 2.2                          | 6                            | 50           | 4              | 2              |               |
| MXFD0150R02L8  | R0.2              | 1.5      | 2.2                          | 8                            | 50           | 4              | 2              |               |
| MXFD0150R02L10 | R0.2              | 1.5      | 2.2                          | 10                           | 50           | 4              | 2              |               |
| MXFD0150R02L12 | R0.2              | 1.5      | 2.2                          | 12                           | 50           | 4              | 2              |               |
| MXFD0150R02L14 | R0.2              | 1.5      | 2.2                          | 14                           | 50           | 4              | 2              |               |
| MXFD0150R02L16 | R0.2              | 1.5      | 2.2                          | 16                           | 50           | 4              | 2              |               |
| MXFD0150R02L18 | R0.2              | 1.5      | 2.2                          | 18                           | 50           | 4              | 2              |               |
| MXFD0150R02L20 | R0.2              | 1.5      | 2.2                          | 20                           | 50           | 4              | 2              |               |
| MXFD0200R02L6  | R0.2              | 2.0      | 3.0                          | 6                            | 50           | 4              | 2              |               |
| MXFD0200R02L8  | R0.2              | 2.0      | 3.0                          | 8                            | 50           | 4              | 2              |               |
| MXFD0200R02L10 | R0.2              | 2.0      | 3.0                          | 10                           | 50           | 4              | 2              |               |
| MXFD0200R02L12 | R0.2              | 2.0      | 3.0                          | 12                           | 50           | 4              | 2              |               |
| MXFD0200R02L14 | R0.2              | 2.0      | 3.0                          | 14                           | 50           | 4              | 2              |               |
| MXFD0200R02L16 | R0.2              | 2.0      | 3.0                          | 16                           | 50           | 4              | 2              |               |
| MXFD0200R02L18 | R0.2              | 2.0      | 3.0                          | 18                           | 50           | 4              | 2              |               |
| MXFD0200R02L20 | R0.2              | 2.0      | 3.0                          | 20                           | 50           | 4              | 2              |               |
| MXFD0200R02L25 | R0.2              | 2.0      | 3.0                          | 25                           | 60           | 4              | 2              |               |
| MXFD0200R05L6  | R0.5              | 2.0      | 3.0                          | 6                            | 50           | 4              | 2              |               |
| MXFD0200R05L8  | R0.5              | 2.0      | 3.0                          | 8                            | 50           | 4              | 2              |               |
| MXFD0200R05L10 | R0.5              | 2.0      | 3.0                          | 10                           | 50           | 4              | 2              |               |
| MXFD0200R05L12 | R0.5              | 2.0      | 3.0                          | 12                           | 50           | 4              | 2              |               |
| MXFD0200R05L14 | R0.5              | 2.0      | 3.0                          | 14                           | 50           | 4              | 2              |               |
| MXFD0200R05L16 | R0.5              | 2.0      | 3.0                          | 16                           | 50           | 4              | 2              |               |
| MXFD0200R05L18 | R0.5              | 2.0      | 3.0                          | 18                           | 50           | 4              | 2              |               |
| MXFD0200R05L20 | R0.5              | 2.0      | 3.0                          | 20                           | 50           | 4              | 2              |               |
| MXFD0200R05L25 | R0.5              | 2.0      | 3.0                          | 25                           | 60           | 4              | 2              |               |

| ÜRÜN KODU      | RADIUS | ÇAP<br>D | KESME BOYU<br>ℓ <sub>1</sub> | DALMA BOYU<br>L <sub>2</sub> | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ<br>SAYISI | SİPARİŞ<br>NO |
|----------------|--------|----------|------------------------------|------------------------------|--------------|----------------|----------------|---------------|
| MXFD0250R02L6  | R0.2   | 2.5      | 3.5                          | 6                            | 50           | 4              | 2              |               |
| MXFD0250R02L8  | R0.2   | 2.5      | 3.5                          | 8                            | 50           | 4              | 2              |               |
| MXFD0250R02L10 | R0.2   | 2.5      | 3.5                          | 10                           | 50           | 4              | 2              |               |
| MXFD0250R02L12 | R0.2   | 2.5      | 3.5                          | 12                           | 50           | 4              | 2              |               |
| MXFD0250R02L14 | R0.2   | 2.5      | 3.5                          | 14                           | 50           | 4              | 2              |               |
| MXFD0250R02L16 | R0.2   | 2.5      | 3.5                          | 16                           | 50           | 4              | 2              |               |
| MXFD0250R02L18 | R0.2   | 2.5      | 3.5                          | 18                           | 50           | 4              | 2              |               |
| MXFD0250R02L20 | R0.2   | 2.5      | 3.5                          | 20                           | 50           | 4              | 2              |               |
| MXFD0250R02L25 | R0.2   | 2.5      | 3.5                          | 25                           | 60           | 4              | 2              |               |
| MXFD0250R05L6  | R0.5   | 2.5      | 3.5                          | 6                            | 50           | 4              | 2              |               |
| MXFD0250R05L8  | R0.5   | 2.5      | 3.5                          | 8                            | 50           | 4              | 2              |               |
| MXFD0250R05L10 | R0.5   | 2.5      | 3.5                          | 10                           | 50           | 4              | 2              |               |
| MXFD0250R05L12 | R0.5   | 2.5      | 3.5                          | 12                           | 50           | 4              | 2              |               |
| MXFD0250R05L14 | R0.5   | 2.5      | 3.5                          | 14                           | 50           | 4              | 2              |               |
| MXFD0250R05L16 | R0.5   | 2.5      | 3.5                          | 16                           | 50           | 4              | 2              |               |
| MXFD0250R05L18 | R0.5   | 2.5      | 3.5                          | 18                           | 50           | 4              | 2              |               |
| MXFD0250R05L20 | R0.5   | 2.5      | 3.5                          | 20                           | 50           | 4              | 2              |               |
| MXFD0250R05L25 | R0.5   | 2.5      | 3.5                          | 25                           | 60           | 4              | 2              |               |
| MXFD0300R02L10 | R0.2   | 3.0      | 4                            | 10                           | 65           | 6              | 2              |               |
| MXFD0300R02L12 | R0.2   | 3.0      | 4                            | 12                           | 65           | 6              | 2              |               |
| MXFD0300R02L14 | R0.2   | 3.0      | 4                            | 14                           | 65           | 6              | 2              |               |
| MXFD0300R02L16 | R0.2   | 3.0      | 4                            | 16                           | 65           | 6              | 2              |               |
| MXFD0300R02L18 | R0.2   | 3.0      | 4                            | 18                           | 65           | 6              | 2              |               |
| MXFD0300R02L20 | R0.2   | 3.0      | 4                            | 20                           | 65           | 6              | 2              |               |
| MXFD0300R02L25 | R0.2   | 3.0      | 4                            | 25                           | 65           | 6              | 2              |               |
| MXFD0300R02L30 | R0.2   | 3.0      | 4                            | 30                           | 65           | 6              | 2              |               |
| MXFD0300R02L35 | R0.2   | 3.0      | 4                            | 35                           | 65           | 6              | 2              |               |
| MXFD0300R05L10 | R0.5   | 3.0      | 4                            | 10                           | 65           | 6              | 2              |               |
| MXFD0300R05L12 | R0.5   | 3.0      | 4                            | 12                           | 65           | 6              | 2              |               |
| MXFD0300R05L14 | R0.5   | 3.0      | 4                            | 14                           | 65           | 6              | 2              |               |
| MXFD0300R05L16 | R0.5   | 3.0      | 4                            | 16                           | 65           | 6              | 2              |               |
| MXFD0300R05L18 | R0.5   | 3.0      | 4                            | 18                           | 65           | 6              | 2              |               |
| MXFD0300R05L20 | R0.5   | 3.0      | 4                            | 20                           | 65           | 6              | 2              |               |
| MXFD0300R05L25 | R0.5   | 3.0      | 4                            | 25                           | 65           | 6              | 2              |               |
| MXFD0300R05L30 | R0.5   | 3.0      | 4                            | 30                           | 65           | 6              | 2              |               |
| MXFD0300R05L35 | R0.5   | 3.0      | 4                            | 35                           | 65           | 6              | 2              |               |
| MXFD0300R1L10  | R1.0   | 3.0      | 4                            | 10                           | 65           | 6              | 2              |               |
| MXFD0300R1L12  | R1.0   | 3.0      | 4                            | 12                           | 65           | 6              | 2              |               |
| MXFD0300R1L14  | R1.0   | 3.0      | 4                            | 14                           | 65           | 6              | 2              |               |
| MXFD0300R1L16  | R1.0   | 3.0      | 4                            | 16                           | 65           | 6              | 2              |               |
| MXFD0300R1L18  | R1.0   | 3.0      | 4                            | 18                           | 65           | 6              | 2              |               |
| MXFD0300R1L20  | R1.0   | 3.0      | 4                            | 20                           | 65           | 6              | 2              |               |
| MXFD0300R1L25  | R1.0   | 3.0      | 4                            | 25                           | 65           | 6              | 2              |               |
| MXFD0300R1L30  | R1.0   | 3.0      | 4                            | 30                           | 65           | 6              | 2              |               |
| MXFD0300R1L35  | R1.0   | 3.0      | 4                            | 35                           | 65           | 6              | 2              |               |
| MXFD0400R02L10 | R0.2   | 4.0      | 6                            | 10                           | 65           | 6              | 2              |               |
| MXFD0400R02L12 | R0.2   | 4.0      | 6                            | 12                           | 65           | 6              | 2              |               |
| MXFD0400R02L14 | R0.2   | 4.0      | 6                            | 14                           | 65           | 6              | 2              |               |
| MXFD0400R02L16 | R0.2   | 4.0      | 6                            | 16                           | 65           | 6              | 2              |               |
| MXFD0400R02L18 | R0.2   | 4.0      | 6                            | 18                           | 65           | 6              | 2              |               |
| MXFD0400R02L20 | R0.2   | 4.0      | 6                            | 20                           | 65           | 6              | 2              |               |
| MXFD0400R02L25 | R0.2   | 4.0      | 6                            | 25                           | 65           | 6              | 2              |               |
| MXFD0400R02L30 | R0.2   | 4.0      | 6                            | 30                           | 65           | 6              | 2              |               |
| MXFD0400R02L35 | R0.2   | 4.0      | 6                            | 35                           | 65           | 6              | 2              |               |
| MXFD0400R05L10 | R0.5   | 4.0      | 6                            | 10                           | 65           | 6              | 2              |               |
| MXFD0400R05L12 | R0.5   | 4.0      | 6                            | 12                           | 65           | 6              | 2              |               |
| MXFD0400R05L14 | R0.5   | 4.0      | 6                            | 14                           | 65           | 6              | 2              |               |
| MXFD0400R05L16 | R0.5   | 4.0      | 6                            | 16                           | 65           | 6              | 2              |               |
| MXFD0400R05L18 | R0.5   | 4.0      | 6                            | 18                           | 65           | 6              | 2              |               |
| MXFD0400R05L20 | R0.5   | 4.0      | 6                            | 20                           | 65           | 6              | 2              |               |
| MXFD0400R05L25 | R0.5   | 4.0      | 6                            | 25                           | 65           | 6              | 2              |               |
| MXFD0400R05L30 | R0.5   | 4.0      | 6                            | 30                           | 65           | 6              | 2              |               |
| MXFD0400R05L35 | R0.5   | 4.0      | 6                            | 35                           | 65           | 6              | 2              |               |
| MXFD0400R1L10  | R1.0   | 4.0      | 6                            | 10                           | 65           | 6              | 2              |               |
| MXFD0400R1L12  | R1.0   | 4.0      | 6                            | 12                           | 65           | 6              | 2              |               |
| MXFD0400R1L14  | R1.0   | 4.0      | 6                            | 14                           | 65           | 6              | 2              |               |
| MXFD0400R1L16  | R1.0   | 4.0      | 6                            | 16                           | 65           | 6              | 2              |               |
| MXFD0400R1L18  | R1.0   | 4.0      | 6                            | 18                           | 65           | 6              | 2              |               |
| MXFD0400R1L20  | R1.0   | 4.0      | 6                            | 20                           | 65           | 6              | 2              |               |
| MXFD0400R1L25  | R1.0   | 4.0      | 6                            | 25                           | 65           | 6              | 2              |               |
| MXFD0400R1L30  | R1.0   | 4.0      | 6                            | 30                           | 65           | 6              | 2              |               |
| MXFD0400R1L35  | R1.0   | 4.0      | 6                            | 35                           | 65           | 6              | 2              |               |

## CHATTER FREE KAPLAMALI KARBÜR FREZE 52 HRC Z=4

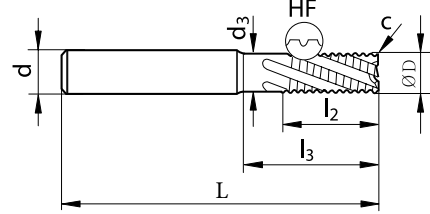
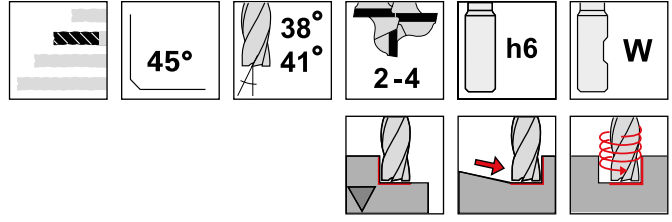
Karbür Super F-UT düz freze 52 HRC  
2344-2312-2738-1040-1050  
ve benzeri malzemeler için uygundur



| ÜRÜN KODU  | ÇAP<br>D | ŞAFT ÇAPI<br>d | TAM BOY<br>L | KESME BOYU<br>l3 | AĞIZ<br>SAYISI | SİPARİŞ<br>NO |
|------------|----------|----------------|--------------|------------------|----------------|---------------|
| MXUT 40206 | 2.0      | 6.0            | 50           | 10               | 4              |               |
| MXUT 40306 | 3.0      | 6.0            | 50           | 11               | 4              |               |
| MXUT 40406 | 4.0      | 6.0            | 50           | 11               | 4              |               |
| MXUT 40506 | 5.0      | 6.0            | 50           | 13               | 4              |               |
| MXUT 4060  | 6.0      | 6.0            | 50           | 13               | 4              |               |
| MXUT 4080  | 8.0      | 8.0            | 63           | 19               | 4              |               |
| MXUT 4100  | 10       | 10             | 72           | 22               | 4              |               |
| MXUT 4120  | 12       | 12             | 80           | 26               | 4              |               |
| MXUT 4140  | 14       | 14             | 83           | 26               | 4              |               |
| MXUT 4160  | 16       | 16             | 92           | 32               | 4              |               |
| MXUT 4180  | 18       | 18             | 92           | 32               | 4              |               |
| MXUT 4200  | 20       | 20             | 104          | 38               | 4              |               |
| MXUT 4250  | 25       | 25             | 110          | 45               | 4              |               |

## KABATALAŞ KAPLAMALI FREZE 52 HRC Z=4

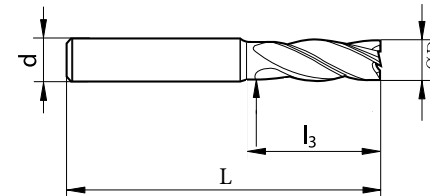
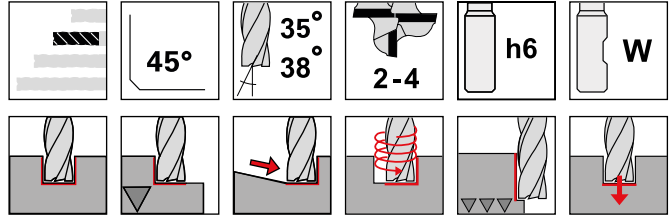
Karbür kabatalaş freze 52 HRC  
2344-2312-2738-1040-1050  
ve benzeri malzemeler için uygundur



| ÜRÜN KODU | ÇAP<br>D | ŞAFT ÇAPI<br>d | BOĞAZ ÇAPI<br>d3 | TAM BOY<br>L | KESME BOYU<br>l1 | HELİS BOYU<br>l3 | AĞIZ<br>SAYISI | SİPARİŞ<br>NO |
|-----------|----------|----------------|------------------|--------------|------------------|------------------|----------------|---------------|
| MXKB 4060 | 6.0      | 6.0            | 5.5              | 57           | 13               | 21               | 4              |               |
| MXKB 4080 | 8.0      | 8.0            | 7.5              | 63           | 19               | 27               | 4              |               |
| MXKB 4100 | 10       | 10             | 9.2              | 72           | 22               | 32               | 4              |               |
| MXKB 4120 | 12       | 12             | 11.2             | 83           | 26               | 38               | 4              |               |
| MXKB 4140 | 14       | 14             | 13.0             | 92           | 32               | 44               | 4              |               |
| MXKB 4160 | 16       | 16             | 15.0             | 92           | 32               | 44               | 4              |               |
| MXKB 4180 | 18       | 18             | 17.0             | 104          | 38               | 54               | 4              |               |
| MXKB 4200 | 20       | 20             | 19.0             | 104          | 38               | 54               | 4              |               |
| MXKB 4250 | 25       | 25             | 23.5             | 110          | 45               | 65               | 4              |               |

## DEĞİŞKEN AÇILI KAPLAMALI KARBÜR FREZE Z=4

Kaba ve Hassas işlemlerde,  
çeliklerde ve yüksek alaşımlı çeliklerde  
48 HRC (1600 N/mm<sup>2</sup>) en zor koşullarda bile  
performans gösterir.  
Paslanmaz malzemeler için de uygundur.



| ÜRÜN KODU  | ÇAP<br>D | ŞAFT ÇAPI<br>d | TAM BOY<br>L | KESME BOYU<br>l3 | AĞIZ<br>SAYISI | SİPARİŞ<br>NO |
|------------|----------|----------------|--------------|------------------|----------------|---------------|
| MXPS 40206 | 2.0      | 6.0            | 50           | 10               | 4              |               |
| MXPS 40306 | 3.0      | 6.0            | 50           | 11               | 4              |               |
| MXPS 40406 | 4.0      | 6.0            | 50           | 11               | 4              |               |
| MXPS 40506 | 5.0      | 6.0            | 50           | 13               | 4              |               |
| MXPS 4060  | 6.0      | 6.0            | 50           | 13               | 4              |               |
| MXPS 4080  | 8.0      | 8.0            | 63           | 19               | 4              |               |
| MXPS 4100  | 10       | 10             | 72           | 22               | 4              |               |
| MXPS 4120  | 12       | 12             | 80           | 26               | 4              |               |
| MXPS 4140  | 14       | 14             | 83           | 26               | 4              |               |
| MXPS 4160  | 16       | 16             | 92           | 32               | 4              |               |
| MXPS 4180  | 18       | 18             | 92           | 32               | 4              |               |
| MXPS 4200  | 20       | 20             | 104          | 38               | 4              |               |
| MXPS 4250  | 25       | 25             | 110          | 45               | 4              |               |

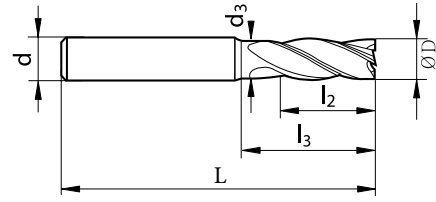
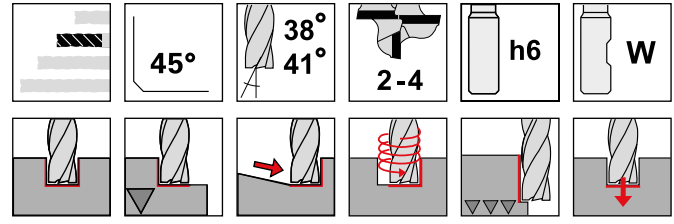
## FİNİŞ FREZESİ KAPLAMALI 52 HRC Z=4

Finiş düz freze, değişken kanal derinliğine sahiptir.

52 HRC

2344-2312-2738-1040-1050

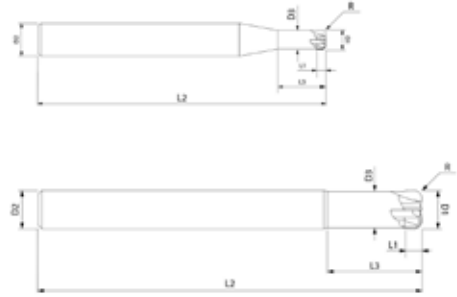
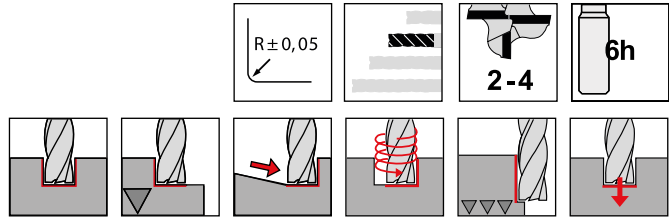
ve benzeri malzemeler için uygundur



| ÜRÜN KODU | ÇAP<br>D | ŞAFT ÇAPI<br>d | TAM BOY<br>L | KESME BOYU<br>$\ell_1$ | AĞIZ<br>SAYISI | SİPARİŞ<br>NO |
|-----------|----------|----------------|--------------|------------------------|----------------|---------------|
| MXTN 4030 | 3.0      | 6.0            | 50           | 8                      | 4              |               |
| MXTN 4040 | 4.0      | 6.0            | 50           | 11                     | 4              |               |
| MXTN 4050 | 5.0      | 6.0            | 50           | 13                     | 4              |               |
| MXTN 4060 | 6.0      | 6.0            | 50           | 13                     | 4              |               |
| MXTN 4080 | 8.0      | 8.0            | 63           | 19                     | 4              |               |
| MXTN 4100 | 10       | 10             | 72           | 22                     | 4              |               |
| MXTN 4120 | 12       | 12             | 80           | 25                     | 4              |               |
| MXTN 4140 | 14       | 14             | 92           | 32                     | 4              |               |
| MXTN 4160 | 16       | 16             | 92           | 32                     | 4              |               |
| MXTN 4200 | 20       | 20             | 105          | 38                     | 4              |               |

## HIGH FEED (HIZLI KESİM) KÖŞE RADIUS FREZE KAPLAMALI 52 HRC Z=4

Kalıpçı çeliklerinde yüksek performans için uygundur.  
Yüksek hız ve yüksek devir ilerleme ile çalışır.

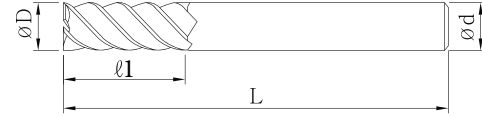
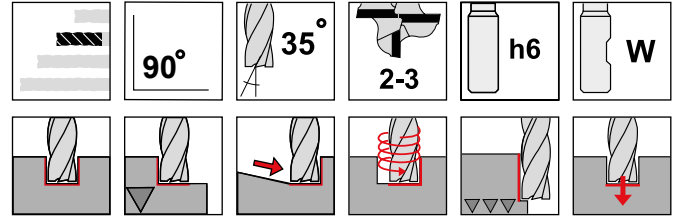


| ÜRÜN KODU | ÇAP<br>D1 | ŞAFT ÇAPI<br>D2 | TAM BOY<br>L2 | DALMA BOYU<br>L3 | KESME BOYU<br>L1 | BOĞAZ ÇAPI<br>D3 | R   | Z | SİPARİŞ<br>NO |
|-----------|-----------|-----------------|---------------|------------------|------------------|------------------|-----|---|---------------|
| MXPR 4040 | 4.0       | 6.0             | 65            | 10               | 1,6              | 3,5              | 0.5 | 4 |               |
| MXPR 4040 | 4.0       | 6.0             | 65            | 10               | 1,6              | 3,5              | 1   | 4 |               |
| MXPR 4050 | 5.0       | 6.0             | 75            | 12               | 2                | 4,5              | 0.5 | 4 |               |
| MXPR 4050 | 5.0       | 6.0             | 75            | 12               | 2                | 4,5              | 1   | 4 |               |
| MXPR 4060 | 6.0       | 6.0             | 75            | 13               | 2,5              | 5,5              | 0.5 | 4 |               |
| MXPR 4060 | 6.0       | 6.0             | 75            | 13               | 2,5              | 5,5              | 1   | 4 |               |
| MXPR 4080 | 8.0       | 8.0             | 100           | 18               | 3,5              | 7,5              | 0.5 | 4 |               |
| MXPR 4080 | 8.0       | 8.0             | 100           | 18               | 3,5              | 7,5              | 1   | 4 |               |
| MXPR 4100 | 10        | 10              | 100           | 20               | 4                | 9,5              | 0.5 | 4 |               |
| MXPR 4100 | 10        | 10              | 100           | 20               | 4                | 9,5              | 1   | 4 |               |
| MXPR 4120 | 12        | 12              | 100           | 25               | 5                | 11,5             | 0.5 | 4 |               |
| MXPR 4120 | 12        | 12              | 100           | 25               | 5                | 11,5             | 1   | 4 |               |

## STANDART ALÜMİNYUM FREZE

Z=2-3

Karbür standart Alüminyum freze



| ÜRÜN KODU | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|-----------|----------|------------------|--------------|----------------|------------------|---------------|
| MXAL 2030 | 3.0      | 10               | 50           | 3              | 2                |               |
| MXAL 2040 | 4.0      | 11               | 50           | 4              | 2                |               |
| MXAL 2050 | 5.0      | 13               | 50           | 5              | 2                |               |
| MXAL 2060 | 6.0      | 13               | 50           | 6              | 2                |               |
| MXAL 2080 | 8.0      | 19               | 63           | 8              | 2                |               |
| MXAL 2100 | 10.0     | 22               | 72           | 10             | 2                |               |
| MXAL 2120 | 12.0     | 26               | 80           | 12             | 2                |               |
| MXAL 2140 | 14.0     | 26               | 83           | 14             | 2                |               |
| MXAL 2160 | 16.0     | 32               | 92           | 16             | 2                |               |
| MXAL 2180 | 18.0     | 32               | 92           | 18             | 2                |               |
| MXAL 2200 | 20.0     | 38               | 104          | 20             | 2                |               |

| ÜRÜN KODU | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|-----------|----------|------------------|--------------|----------------|------------------|---------------|
| MXAL 3030 | 3.0      | 10               | 50           | 3              | 3                |               |
| MXAL 3040 | 4.0      | 11               | 50           | 4              | 3                |               |
| MXAL 3050 | 5.0      | 13               | 50           | 5              | 3                |               |
| MXAL 3060 | 6.0      | 13               | 50           | 6              | 3                |               |
| MXAL 3080 | 8.0      | 19               | 63           | 8              | 3                |               |
| MXAL 3100 | 10.0     | 22               | 72           | 10             | 3                |               |
| MXAL 3120 | 12.0     | 26               | 80           | 12             | 3                |               |
| MXAL 3140 | 14.0     | 26               | 83           | 14             | 3                |               |
| MXAL 3160 | 16.0     | 32               | 92           | 16             | 3                |               |
| MXAL 3180 | 18.0     | 32               | 92           | 18             | 3                |               |
| MXAL 3200 | 20.0     | 38               | 104          | 20             | 3                |               |

## UZUN ALÜMİNYUM FREZE

Z=2

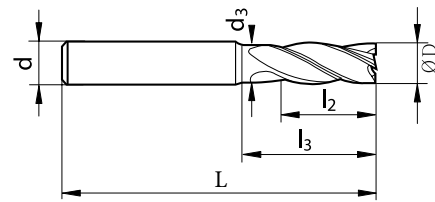
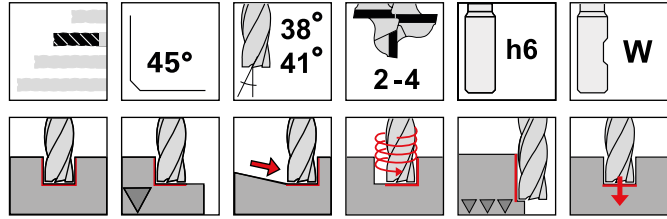
| ÜRÜN KODU  | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|------------|----------|------------------|--------------|----------------|------------------|---------------|
| MXALU 2030 | 3.0      | 16               | 65           | 3              | 2                |               |
| MXALU 2040 | 4.0      | 18               | 65           | 4              | 2                |               |
| MXALU 2050 | 5.0      | 25               | 75           | 5              | 2                |               |
| MXALU 2060 | 6.0      | 25               | 75           | 6              | 2                |               |
| MXALU 2080 | 8.0      | 38               | 100          | 8              | 2                |               |
| MXALU 2100 | 10.0     | 45               | 100          | 10             | 2                |               |
| MXALU 2120 | 12.0     | 45               | 100          | 12             | 2                |               |
| MXALU 2140 | 14.0     | 45               | 100          | 14             | 2                |               |
| MXALU 2160 | 16.0     | 45               | 100          | 16             | 2                |               |
| MXALU 2180 | 18.0     | 50               | 110          | 18             | 2                |               |
| MXALU 2200 | 20.0     | 75               | 150          | 20             | 2                |               |

## UZUN ALÜMİNYUM FREZE Z=3

| ÜRÜN KODU  | ÇAP<br>D | KESME BOYU<br>$\ell_1$ | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|------------|----------|------------------------|--------------|----------------|------------------|---------------|
| MXALU 3030 | 3.0      | 16                     | 65           | 3              | 3                |               |
| MXALU 3040 | 4.0      | 18                     | 65           | 4              | 3                |               |
| MXALU 3050 | 5.0      | 25                     | 75           | 5              | 3                |               |
| MXALU 3060 | 6.0      | 25                     | 75           | 6              | 3                |               |
| MXALU 3080 | 8.0      | 40                     | 100          | 8              | 3                |               |
| MXALU 3100 | 10.0     | 45                     | 100          | 10             | 3                |               |
| MXALU 3120 | 12.0     | 45                     | 100          | 12             | 3                |               |
| MXALU 3140 | 14.0     | 45                     | 100          | 14             | 3                |               |
| MXALU 3160 | 16.0     | 45                     | 100          | 16             | 3                |               |
| MXALU 3180 | 18.0     | 50                     | 110          | 18             | 3                |               |
| MXALU 3200 | 20.0     | 75                     | 150          | 20             | 3                |               |

## YÜKSEK PERFORMANSLI ALÜMİNYUM FREZE

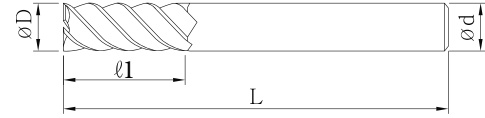
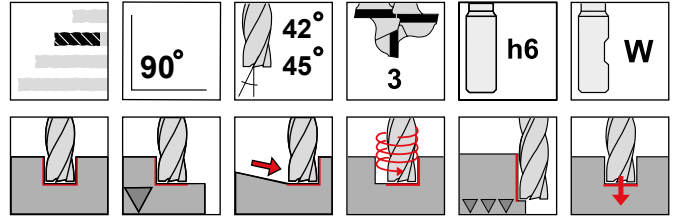
Yüksek hacimli titreşimsiz talaş kaldırma özelliğine sahiptir.  
Alüminyum ve benzeri malzemelerde kullanılabılır.



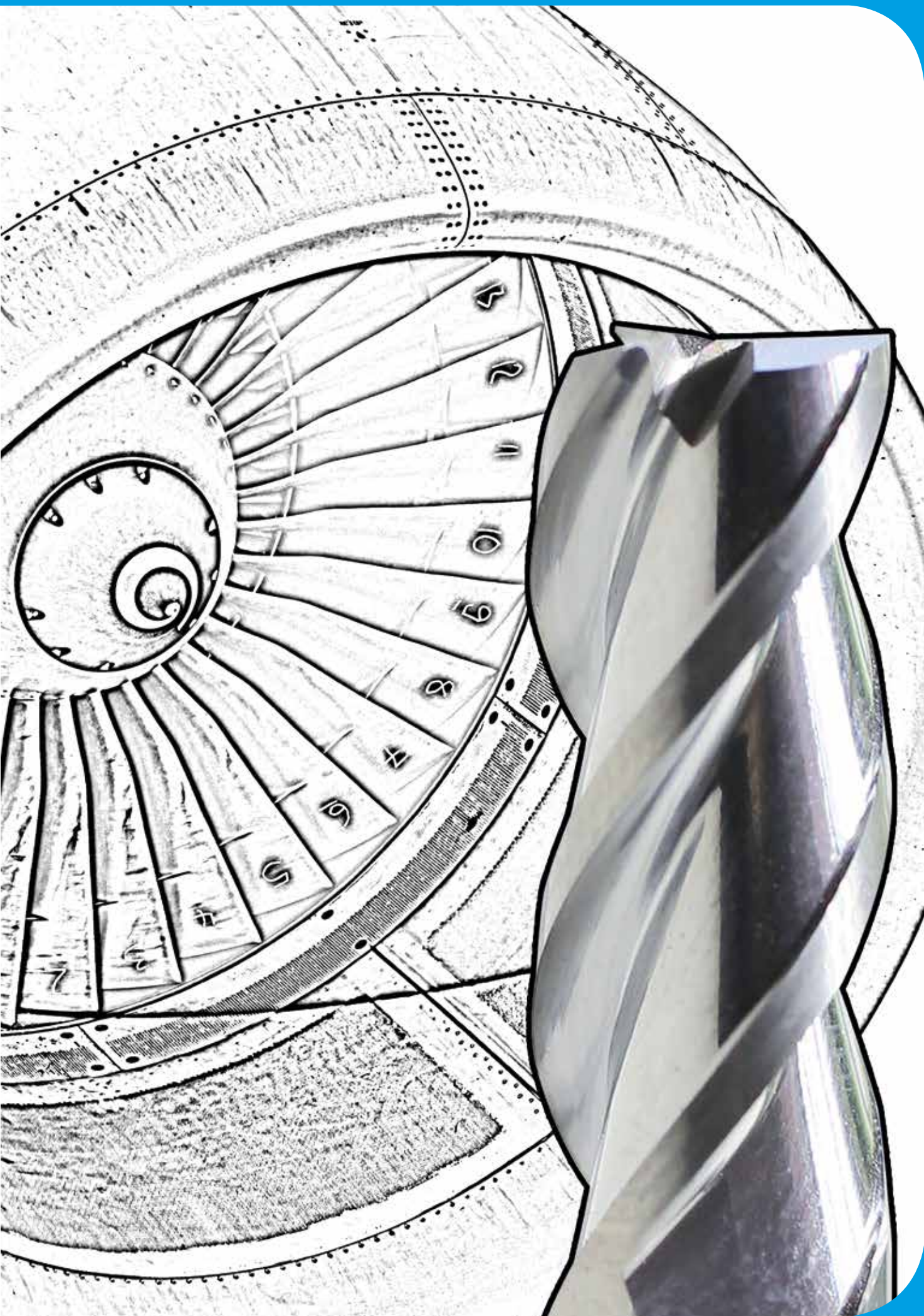
| ÜRÜN KODU | ÇAP<br>D | ŞAFT ÇAPI<br>d | BOĞAZ ÇAPI<br>d3 | TAM BOY<br>L | KESME BOYU<br>$\ell_1$ | HELİS BOYU<br>L3 | AĞIZ<br>SAYISI | SİPARİŞ<br>NO |
|-----------|----------|----------------|------------------|--------------|------------------------|------------------|----------------|---------------|
| MXLT 4030 | 3.0      | 6.0            | 2.8              | 57           | 8                      | 12               | 3              |               |
| MXLT 4040 | 4.0      | 6.0            | 3.8              | 57           | 11                     | 15               | 3              |               |
| MXLT 4050 | 5.0      | 6.0            | 4.8              | 57           | 13                     | 18               | 3              |               |
| MXLT 4060 | 6.0      | 6.0            | 5.8              | 57           | 13                     | 18               | 3              |               |
| MXLT 4080 | 8.0      | 8.0            | 7.8              | 63           | 19                     | 22               | 3              |               |
| MXLT 4100 | 10       | 10             | 9.8              | 72           | 22                     | 25               | 3              |               |
| MXLT 4120 | 12       | 12             | 11.8             | 83           | 25                     | 27               | 3              |               |
| MXLT 4140 | 14       | 14             | 13.8             | 92           | 32                     | 38               | 3              |               |
| MXLT 4160 | 16       | 16             | 15.8             | 92           | 35                     | 38               | 3              |               |
| MXLT 4200 | 20       | 20             | 19.8             | 105          | 38                     | 44               | 3              |               |

## DEĞİŞKEN KANALLI YÜKSEK PERFORMANSLI ALÜMİNYUM FREZE KAPLAMALI Z=3

Yüksek hacimli titreşimsiz talaş kaldırma özelliğine sahiptir.  
Alüminyum ve benzeri malzemelerde kullanılabilir.



| ÜRÜN KODU | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|-----------|----------|------------------|--------------|----------------|------------------|---------------|
| MXPF 3030 | 3.0      | 8                | 50           | 3              | 3                |               |
| MXPF 3040 | 4.0      | 11               | 50           | 4              | 3                |               |
| MXPF 3050 | 5.0      | 13               | 50           | 5              | 3                |               |
| MXPF 3060 | 6.0      | 13               | 50           | 6              | 3                |               |
| MXPF 3080 | 8.0      | 19               | 63           | 8              | 3                |               |
| MXPF 3100 | 10.0     | 22               | 72           | 10             | 3                |               |
| MXPF 3120 | 12.0     | 26               | 80           | 12             | 3                |               |
| MXPF 3160 | 16.0     | 32               | 92           | 16             | 3                |               |
| MXPF 3200 | 20.0     | 38               | 100          | 20             | 3                |               |

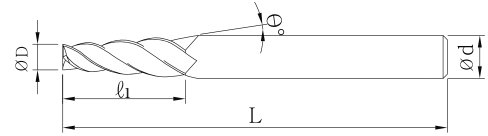
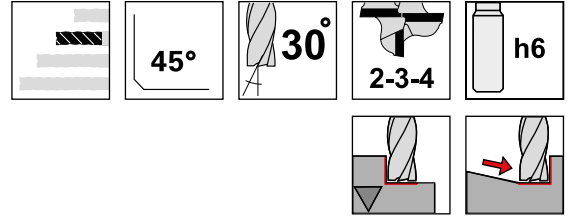


## KONİK DÜZ KAPLAMALI FREZE 52 HRC Z=3 / Z=2 1-2-3-5°

Karbür konik freze 52 HRC

2344-2312-2738-1040-1050

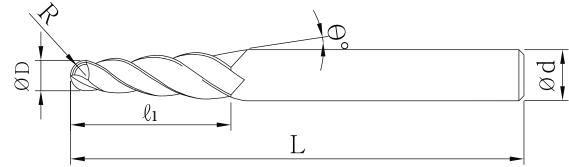
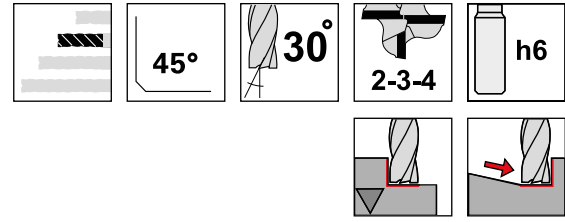
ve benzeri malzemeler için uygundur



| ÜRÜN KODU   | ÇAP<br>D | DERECE<br>θ° | KESME BOYU<br>ℓ <sub>1</sub> | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ<br>SAYISI | SİPARİŞ<br>NO |
|-------------|----------|--------------|------------------------------|--------------|----------------|----------------|---------------|
| MX3616 0201 | 2        | 1            | 20                           | 65           | 4              | Z= 2-3         |               |
| MX3616 0301 | 3        | 1            | 28                           | 65           | 4              | Z= 2-3         |               |
| MX3616 0401 | 4        | 1            | 28                           | 65           | 6              | Z= 2-3         |               |
| MX3616 0501 | 5        | 1            | 28                           | 68           | 6              | Z= 2-3         |               |
| MX3616 0601 | 6        | 1            | 40                           | 88           | 8              | Z= 2-3         |               |
| MX3616 0801 | 8        | 1            | 45                           | 100          | 10             | Z= 2-3         |               |
| MX3616 1001 | 10       | 1            | 45                           | 100          | 12             | Z= 2-3         |               |
| MX3616 1201 | 12       | 1            | 45                           | 100          | 14             | Z= 2-3         |               |
| MX3616 0202 | 2        | 2            | 20                           | 65           | 4              | Z= 2-3         |               |
| MX3616 0302 | 3        | 2            | 28                           | 65           | 6              | Z= 2-3         |               |
| MX3616 0402 | 4        | 2            | 28                           | 68           | 6              | Z= 2-3         |               |
| MX3616 0502 | 5        | 2            | 42                           | 88           | 8              | Z= 2-3         |               |
| MX3616 0602 | 6        | 2            | 45                           | 100          | 10             | Z= 2-3         |               |
| MX3616 0802 | 8        | 2            | 45                           | 100          | 12             | Z= 2-3         |               |
| MX3616 1002 | 10       | 2            | 45                           | 100          | 14             | Z= 2-3         |               |
| MX3616 1202 | 12       | 2            | 45                           | 100          | 16             | Z= 2-3         |               |
| MX3616 0203 | 2        | 3            | 19                           | 65           | 4              | Z= 2-3         |               |
| MX3616 0303 | 3        | 3            | 28                           | 68           | 6              | Z= 2-3         |               |
| MX3616 0403 | 4        | 3            | 38                           | 88           | 8              | Z= 2-3         |               |
| MX3616 0503 | 5        | 3            | 48                           | 100          | 10             | Z= 2-3         |               |
| MX3616 0603 | 6        | 3            | 48                           | 100          | 12             | Z= 2-3         |               |
| MX3616 0803 | 8        | 3            | 48                           | 100          | 14             | Z= 2-3         |               |
| MX3616 1003 | 10       | 3            | 48                           | 100          | 16             | Z= 2-3         |               |
| MX3616 1203 | 12       | 3            | 48                           | 100          | 18             | Z= 2-3         |               |
| MX3616 0205 | 2        | 5            | 20                           | 68           | 6              | Z= 2-3         |               |
| MX3616 0305 | 3        | 5            | 28                           | 88           | 8              | Z= 2-3         |               |
| MX3616 0405 | 4        | 5            | 34                           | 100          | 10             | Z= 2-3         |               |
| MX3616 0505 | 5        | 5            | 40                           | 100          | 12             | Z= 2-3         |               |
| MX3616 0605 | 6        | 5            | 45                           | 100          | 14             | Z= 2-3         |               |
| MX3616 0805 | 8        | 5            | 45                           | 100          | 16             | Z= 2-3         |               |
| MX3616 1005 | 10       | 5            | 45                           | 100          | 18             | Z= 2-3         |               |
| MX3616 1205 | 12       | 5            | 45                           | 100          | 20             | Z= 2-3         |               |

# KONİK KÜRE KAPLAMALI FREZE 52 HRC Z=2 1-2-3-5°

Karbür konik küre freze 52 HRC  
2344-2312-2738-1040-1050  
ve benzeri malzemeler için uygundur



| ÜRÜN KODU   | ÇAP<br>D | DERECE<br>θ° | KESME BOYU<br>ℓ <sub>1</sub> | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ<br>SAYISI | SİPARİŞ<br>NO |
|-------------|----------|--------------|------------------------------|--------------|----------------|----------------|---------------|
| MX3716 0201 | 2        | 1            | 20                           | 65           | 4              | Z= 2           |               |
| MX3716 0301 | 3        | 1            | 28                           | 65           | 4              | Z= 2           |               |
| MX3716 0401 | 4        | 1            | 28                           | 65           | 6              | Z= 2           |               |
| MX3716 0501 | 5        | 1            | 28                           | 68           | 6              | Z= 2           |               |
| MX3716 0601 | 6        | 1            | 40                           | 88           | 8              | Z= 2           |               |
| MX3716 0801 | 8        | 1            | 45                           | 100          | 10             | Z= 2           |               |
| MX3716 1001 | 10       | 1            | 45                           | 100          | 12             | Z= 2           |               |
| MX3716 1201 | 12       | 1            | 45                           | 100          | 14             | Z= 2           |               |
| MX3716 0202 | 2        | 2            | 20                           | 65           | 4              | Z= 2           |               |
| MX3716 0302 | 3        | 2            | 28                           | 65           | 6              | Z= 2           |               |
| MX3716 0402 | 4        | 2            | 28                           | 68           | 6              | Z= 2           |               |
| MX3716 0502 | 5        | 2            | 42                           | 88           | 8              | Z= 2           |               |
| MX3716 0602 | 6        | 2            | 45                           | 100          | 10             | Z= 2           |               |
| MX3716 0802 | 8        | 2            | 45                           | 100          | 12             | Z= 2           |               |
| MX3716 1002 | 10       | 2            | 45                           | 100          | 14             | Z= 2           |               |
| MX3716 1202 | 12       | 2            | 45                           | 100          | 16             | Z= 2           |               |
| MX3716 0203 | 2        | 3            | 19                           | 65           | 4              | Z= 2           |               |
| MX3716 0303 | 3        | 3            | 28                           | 68           | 6              | Z= 2           |               |
| MX3716 0403 | 4        | 3            | 38                           | 88           | 8              | Z= 2           |               |
| MX3716 0503 | 5        | 3            | 48                           | 100          | 10             | Z= 2           |               |
| MX3716 0603 | 6        | 3            | 48                           | 100          | 12             | Z= 2           |               |
| MX3716 0803 | 8        | 3            | 48                           | 100          | 14             | Z= 2           |               |
| MX3716 1003 | 10       | 3            | 48                           | 100          | 16             | Z= 2           |               |
| MX3716 1203 | 12       | 3            | 48                           | 100          | 18             | Z= 2           |               |
| MX3716 0205 | 2        | 5            | 20                           | 68           | 6              | Z= 2           |               |
| MX3716 0305 | 3        | 5            | 28                           | 88           | 8              | Z= 2           |               |
| MX3716 0405 | 4        | 5            | 34                           | 100          | 10             | Z= 2           |               |
| MX3716 0505 | 5        | 5            | 40                           | 100          | 12             | Z= 2           |               |
| MX3716 0605 | 6        | 5            | 45                           | 100          | 14             | Z= 2           |               |
| MX3716 0805 | 8        | 5            | 45                           | 100          | 16             | Z= 2           |               |
| MX3716 1005 | 10       | 5            | 45                           | 100          | 18             | Z= 2           |               |
| MX3716 1205 | 12       | 5            | 45                           | 100          | 20             | Z= 2           |               |

70

HRC



STANDART DÜZ FREZE



STANDART KÜRE FREZE



STANDART KÖŞE RADIUS FREZE



ÇOK AĞIZLI DÜZ FREZE



DALMA BOYLU DÜZ FREZE



DALMA BOYLU KÜRE FREZE



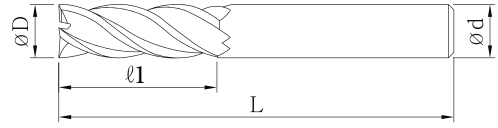
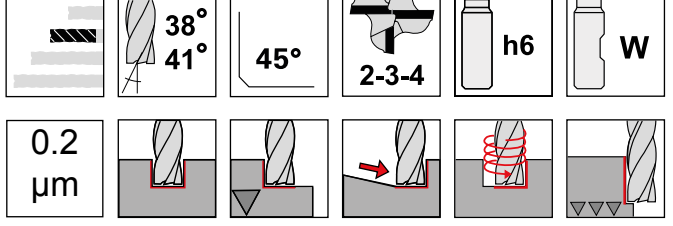
DALMA BOYLU KÖŞE RADIUS FREZE



HIGH FEED FREZE

## STANDART DÜZ KAPLAMALI FREZE 70 HRC Z=4

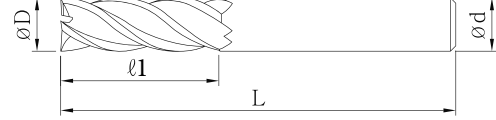
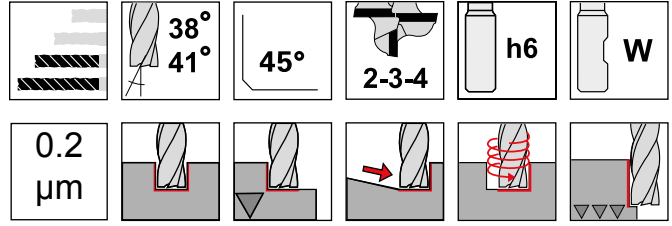
52 HRC üzeri malzemeler için uygundur  
Yüksek mukavemetlidir.



| ÜRÜN KODU   | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|-------------|----------|------------------|--------------|----------------|------------------|---------------|
| MXDSH 4010  | 1.0      | 3                | 50           | 4              | 4                |               |
| MXDSH 4015  | 1.5      | 4                | 50           | 4              | 4                |               |
| MXDSH 4020  | 2.0      | 6                | 50           | 4              | 4                |               |
| MXDSH 40206 | 2.0      | 8                | 50           | 6              | 4                |               |
| MXDSH 4025  | 2.5      | 6                | 50           | 4              | 4                |               |
| MXDSH 40303 | 3.0      | 6                | 50           | 3              | 4                |               |
| MXDSH 4030  | 3.0      | 8                | 50           | 4              | 4                |               |
| MXDSH 40306 | 3.0      | 8                | 50           | 6              | 4                |               |
| MXDSH 4035  | 3.5      | 8                | 50           | 4              | 4                |               |
| MXDSH 4040  | 4.0      | 11               | 50           | 4              | 4                |               |
| MXDSH 40406 | 4.0      | 11               | 50           | 6              | 4                |               |
| MXDSH 40505 | 5.0      | 13               | 50           | 5              | 4                |               |
| MXDSH 40506 | 5.0      | 13               | 50           | 6              | 4                |               |
| MXDSH 4060  | 6.0      | 15               | 50           | 6              | 4                |               |
| MXDSH 4070  | 7.0      | 16               | 63           | 7              | 4                |               |
| MXDSH 4080  | 8.0      | 19               | 63           | 8              | 4                |               |
| MXDSH 4090  | 9.0      | 20               | 72           | 9              | 4                |               |
| MXDSH 4100  | 10       | 22               | 72           | 10             | 4                |               |
| MXDSH 4110  | 11       | 25               | 80           | 11             | 4                |               |
| MXDSH 4120  | 12       | 26               | 80           | 12             | 4                |               |
| MXDSH 4130  | 13       | 26               | 80           | 13             | 4                |               |
| MXDSH 4140  | 14       | 26               | 83           | 14             | 4                |               |
| MXDSH 4150  | 15       | 32               | 92           | 15             | 4                |               |
| MXDSH 4160  | 16       | 32               | 92           | 16             | 4                |               |
| MXDSH 4180  | 18       | 32               | 92           | 18             | 4                |               |
| MXDSH 4200  | 20       | 40               | 104          | 20             | 4                |               |
| MXDSH 4220  | 22       | 40               | 104          | 22             | 4                |               |
| MXDSH 4240  | 24       | 40               | 110          | 24             | 4                |               |
| MXDSH 4250  | 25       | 40               | 110          | 25             | 4                |               |

## UZUN DÜZ KAPLAMALI FREZE 70 HRC Z=4

52 HRC üzeri malzemeler için uygundur  
Yüksek mukavemetlidir.



| ÜRÜN KODU   | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|-------------|----------|------------------|--------------|----------------|------------------|---------------|
| MXDUH 4030  | 3        | 10               | 75           | 3              | 4                |               |
| MXDUH 4040  | 4        | 10               | 75           | 4              | 4                |               |
| MXDULH 4040 | 4        | 15               | 100          | 4              | 4                |               |
| MXDUH 4050  | 5        | 15               | 75           | 5              | 4                |               |
| MXDULH 4050 | 5        | 15               | 100          | 5              | 4                |               |
| MXDUH 4060  | 6        | 15               | 75           | 6              | 4                |               |
| MXDULH 4060 | 6        | 20               | 100          | 6              | 4                |               |
| MXDXH 4060  | 6        | 20               | 120          | 8              | 4                |               |
| MXDUH 4080  | 8        | 19               | 75           | 8              | 4                |               |
| MXDULH 4080 | 8        | 22               | 100          | 8              | 4                |               |
| MXDXH 4080  | 8        | 25               | 120          | 8              | 4                |               |
| MXDUH 4100  | 10       | 22               | 100          | 10             | 4                |               |
| MXDXH 4100  | 10       | 30               | 120          | 10             | 4                |               |
| MXDUH 4120  | 12       | 26               | 100          | 12             | 4                |               |
| MXDXH 4120  | 12       | 35               | 120          | 12             | 4                |               |

## UZUN HELİS DÜZ KAPLAMALI FREZE 70 HRC Z=4

| ÜRÜN KODU    | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|--------------|----------|------------------|--------------|----------------|------------------|---------------|
| MXDUXH 4030  | 3        | 20               | 75           | 3              | 4                |               |
| MXDUXH 4040  | 4        | 30               | 75           | 4              | 4                |               |
| MXDUXLH 4040 | 4        | 30               | 100          | 4              | 4                |               |
| MXDUXH 4060  | 6        | 40               | 100          | 6              | 4                |               |
| MXDUXH 4080  | 8        | 45               | 100          | 8              | 4                |               |
| MXDUXH 4100  | 10       | 45               | 100          | 10             | 4                |               |
| MXDUXH 4120  | 12       | 45               | 100          | 12             | 4                |               |

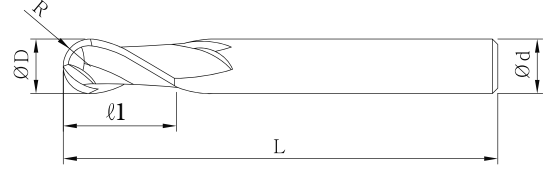
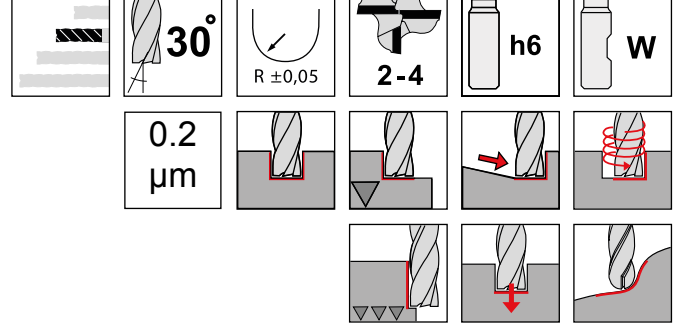
## EXTRA UZUN DÜZ KAPLAMALI FREZE 70 HRC Z=4

| ÜRÜN KODU   | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|-------------|----------|------------------|--------------|----------------|------------------|---------------|
| MXDXLH 4060 | 6        | 30               | 150          | 6              | 4                |               |
| MXDXLH 4080 | 8        | 35               | 150          | 8              | 4                |               |
| MXDXLH 4100 | 10       | 40               | 150          | 10             | 4                |               |
| MXDXLH 4120 | 12       | 40               | 150          | 12             | 4                |               |
| MXDXLH 4140 | 14       | 50               | 150          | 14             | 4                |               |
| MXDXLH 4160 | 16       | 50               | 150          | 16             | 4                |               |
| MXDXLH 4180 | 18       | 50               | 150          | 18             | 4                |               |
| MXDXLH 4200 | 20       | 50               | 150          | 20             | 4                |               |
| MXDXLH 4250 | 25       | 60               | 150          | 25             | 4                |               |

300 mm özel boy üretim yapılabilir

## STANDART KÜRE KAPLAMALI FREZE 70 HRC Z=2

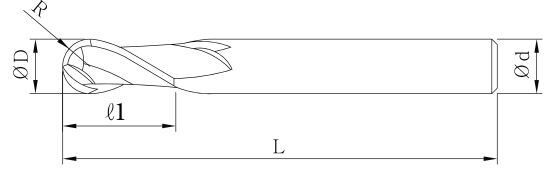
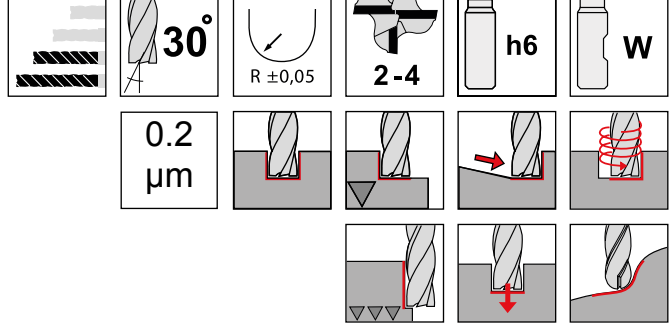
52 HRC üzeri malzemeler için uygundur  
Yüksek mukavemetlidir.



| ÜRÜN KODU   | ÇAP D | KESME BOYU l1 | TAM BOY L | ŞAFT ÇAPI d | AĞIZ SAYISI Z | RADİUS R | SİPARİŞ NO |
|-------------|-------|---------------|-----------|-------------|---------------|----------|------------|
| MXKSH 2010  | 1.0   | 3             | 50        | 4           | 2             | 0.50     |            |
| MXKSH 2015  | 1.5   | 4             | 50        | 4           | 2             | 0.75     |            |
| MXKSH 2020  | 2.0   | 4             | 50        | 4           | 2             | 1.00     |            |
| MXKSH 20206 | 2.0   | 10            | 50        | 6           | 2             | 1.25     |            |
| MXKSH 2025  | 2.5   | 4             | 50        | 4           | 2             | 1.25     |            |
| MXKSH 20303 | 3.0   | 6             | 50        | 3           | 2             | 1.50     |            |
| MXKSH 2030  | 3.0   | 6             | 50        | 4           | 2             | 1.50     |            |
| MXKSH 20306 | 3.0   | 10            | 50        | 6           | 2             | 1.50     |            |
| MXKSH 2040  | 4.0   | 8             | 50        | 4           | 2             | 2.00     |            |
| MXKSH 20406 | 4.0   | 10            | 50        | 6           | 2             | 2.00     |            |
| MXKSH 2050  | 5.0   | 10            | 50        | 6           | 2             | 2.50     |            |
| MXKSH 20505 | 5.0   | 10            | 50        | 5           | 2             | 2.50     |            |
| MXKSH 2060  | 6.0   | 12            | 50        | 6           | 2             | 3.00     |            |
| MXKSH 4060  | 6.0   | 12            | 50        | 6           | 4             | 3.00     |            |
| MXKSH 2070  | 7.0   | 15            | 63        | 7           | 2             | 3.50     |            |
| MXKSH 2080  | 8.0   | 16            | 63        | 8           | 2             | 4.00     |            |
| MXKSH 4080  | 8.0   | 16            | 63        | 8           | 4             | 4.00     |            |
| MXKSH 2090  | 9.0   | 20            | 72        | 9           | 2             | 4.50     |            |
| MXKSH 2100  | 10    | 20            | 72        | 10          | 2             | 5.00     |            |
| MXKSH 4100  | 10    | 24            | 72        | 10          | 4             | 5.00     |            |
| MXKSH 2110  | 11    | 24            | 80        | 11          | 2             | 5.50     |            |
| MXKSH 2120  | 12    | 26            | 80        | 12          | 2             | 6.00     |            |
| MXKSH 4120  | 12    | 26            | 80        | 12          | 4             | 6.00     |            |
| MXKSH 2130  | 13    | 26            | 80        | 13          | 2             | 6.50     |            |
| MXKSH 2140  | 14    | 26            | 83        | 14          | 2             | 7.00     |            |
| MXKSH 2150  | 15    | 32            | 92        | 15          | 2             | 7.50     |            |
| MXKSH 2160  | 16    | 32            | 92        | 16          | 2             | 8.00     |            |
| MXKSH 2180  | 18    | 32            | 92        | 18          | 2             | 9.00     |            |
| MXKSH 2200  | 20    | 40            | 104       | 20          | 2             | 10.00    |            |
| MXKSH 2220  | 22    | 40            | 104       | 22          | 2             | 11.00    |            |
| MXKSH 2400  | 24    | 40            | 110       | 24          | 2             | 12.00    |            |
| MXKSH 2500  | 25    | 40            | 110       | 25          | 2             | 12.50    |            |

## UZUN KÜRE KAPLAMALI FREZE 70 HRC Z=2

52 HRC üzeri malzemeler için uygundur  
Yüksek mukavemetlidir.



| ÜRÜN KODU    | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | RADİUS<br>R | SİPARİŞ<br>NO |
|--------------|----------|------------------|--------------|----------------|------------------|-------------|---------------|
| MXKUH 2030   | 3        | 6                | 75           | 3              | 2                | 1.50        |               |
| MXKUH 2040   | 4        | 8                | 75           | 4              | 2                | 2.00        |               |
| MXXKULH 2040 | 4        | 10               | 100          | 4              | 2                | 2.00        |               |
| MXKUH 2050   | 5        | 12               | 75           | 5              | 2                | 2.50        |               |
| MXXKULH 2050 | 5        | 12               | 100          | 5              | 2                | 2.50        |               |
| MXKUH 2060   | 6        | 12               | 75           | 6              | 2                | 3.00        |               |
| MXXKULH 2060 | 6        | 12               | 100          | 6              | 2                | 3.00        |               |
| MXKXH 2080   | 6        | 15               | 120          | 6              | 2                | 3.00        |               |
| MXKUH 2080   | 8        | 16               | 75           | 8              | 2                | 4.00        |               |
| MXXKULH 2080 | 8        | 16               | 100          | 8              | 2                | 4.00        |               |
| MXKXH 2080   | 8        | 20               | 120          | 8              | 2                | 4.00        |               |
| MXKUH 2100   | 10       | 20               | 100          | 10             | 2                | 5.00        |               |
| MXKXH 2100   | 10       | 20               | 120          | 10             | 2                | 5.00        |               |
| MXXKULH 2120 | 12       | 25               | 100          | 12             | 2                | 6.00        |               |
| MXKXH 2120   | 12       | 25               | 120          | 12             | 2                | 6.00        |               |

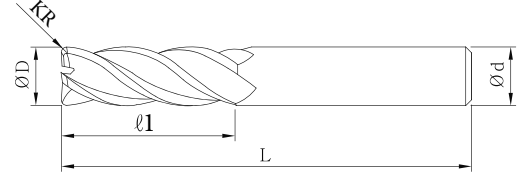
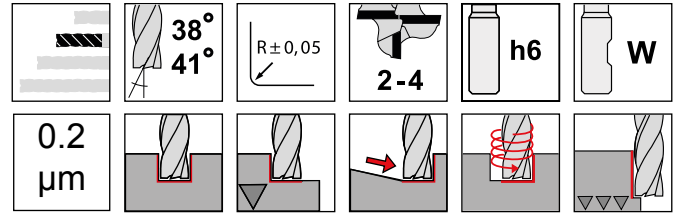
## EXTRA UZUN KÜRE KAPLAMALI FREZE 70 HRC Z=2

| ÜRÜN KODU   | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | RADİUS<br>R | SİPARİŞ<br>NO |
|-------------|----------|------------------|--------------|----------------|------------------|-------------|---------------|
| MXKXLH 4060 | 6        | 30               | 150          | 6              | 2-4              | 3.00        |               |
| MXKXLH 4080 | 8        | 35               | 150          | 8              | 2-4              | 4.00        |               |
| MXKXLH 4100 | 10       | 40               | 150          | 10             | 2-4              | 5.00        |               |
| MXKXLH 4120 | 12       | 40               | 150          | 12             | 2-4              | 6.00        |               |
| MXKXLH 4140 | 14       | 50               | 150          | 14             | 2-4              | 7.00        |               |
| MXKXLH 4160 | 16       | 50               | 150          | 16             | 2-4              | 8.00        |               |
| MXKXLH 4180 | 18       | 50               | 150          | 18             | 2-4              | 9.00        |               |
| MXKXLH 4200 | 20       | 50               | 150          | 20             | 2-4              | 10.00       |               |
| MXKXLH 4250 | 25       | 60               | 150          | 25             | 2-4              | 12.50       |               |

300 mm özel boy üretim yapılabilir

## STANDART KÖŞE RADIUS KAPLAMALI FREZE 70 HRC Z=4

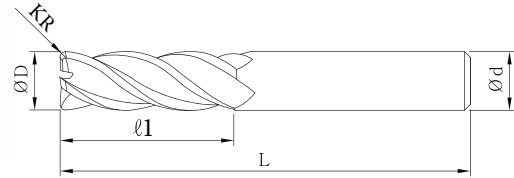
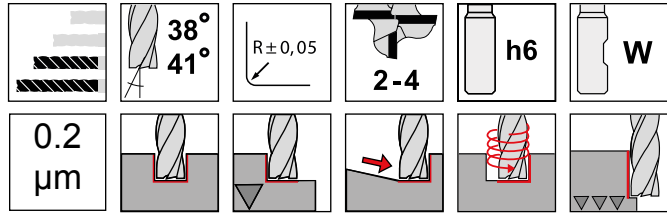
52 HRC üzeri malzemeler için uygundur  
Yüksek mukavemetlidir.



| ÜRÜN KODU    | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | KÖŞE RADIUS<br>KR | SİPARİŞ<br>NO |
|--------------|----------|------------------|--------------|----------------|------------------|-------------------|---------------|
| MXKRSH 40202 | 2        | 6                | 50           | 4              | 4                | R0.2              |               |
| MXKRSH 40205 | 2        | 6                | 50           | 4              | 4                | R0.5              |               |
| MXKRSH 40252 | 2        | 6                | 50           | 4              | 4                | R0.2              |               |
| MXKRSH 40255 | 2        | 6                | 50           | 4              | 4                | R0.5              |               |
| MXKRSH 40302 | 3        | 8                | 50           | 3              | 4                | R0.2              |               |
| MXKRSH 40305 | 3        | 8                | 50           | 3              | 4                | R0.5              |               |
| MXKRSH 40310 | 3        | 8                | 50           | 3              | 4                | R1.0              |               |
| MXKRSH 40402 | 4        | 8                | 50           | 4              | 4                | R0.2              |               |
| MXKRSH 40405 | 4        | 8                | 50           | 4              | 4                | R0.5              |               |
| MXKRSH 40410 | 4        | 8                | 50           | 4              | 4                | R1.0              |               |
| MXKRSH 40502 | 5        | 11               | 50           | 5              | 4                | R0.2              |               |
| MXKRSH 40505 | 5        | 11               | 50           | 5              | 4                | R0.5              |               |
| MXKRSH 40510 | 5        | 11               | 50           | 5              | 4                | R1.0              |               |
| MXKRSH 40602 | 6        | 15               | 50           | 6              | 4                | R0.2              |               |
| MXKRSH 40605 | 6        | 15               | 50           | 6              | 4                | R0.5              |               |
| MXKRSH 40610 | 6        | 15               | 50           | 6              | 4                | R1.0              |               |
| MXKRSH 40615 | 6        | 15               | 50           | 6              | 4                | R1.5              |               |
| MXKRSH 40802 | 8        | 19               | 63           | 8              | 4                | R0.2              |               |
| MXKRSH 40805 | 8        | 19               | 63           | 8              | 4                | R0.5              |               |
| MXKRSH 40810 | 8        | 19               | 63           | 8              | 4                | R1.0              |               |
| MXKRSH 40815 | 8        | 19               | 63           | 8              | 4                | R1.5              |               |
| MXKRSH 40820 | 8        | 19               | 63           | 8              | 4                | R2.0              |               |
| MXKRSH 41002 | 10       | 22               | 75           | 10             | 4                | R0.2              |               |
| MXKRSH 41005 | 10       | 22               | 75           | 10             | 4                | R0.5              |               |
| MXKRSH 41010 | 10       | 22               | 75           | 10             | 4                | R1.0              |               |
| MXKRSH 41015 | 10       | 22               | 75           | 10             | 4                | R1.5              |               |
| MXKRSH 41020 | 10       | 22               | 75           | 10             | 4                | R2.0              |               |
| MXKRSH 41202 | 12       | 25               | 80           | 12             | 4                | R0.2              |               |
| MXKRSH 41205 | 12       | 25               | 80           | 12             | 4                | R0.5              |               |
| MXKRSH 41210 | 12       | 25               | 80           | 12             | 4                | R1.0              |               |
| MXKRSH 41215 | 12       | 25               | 80           | 12             | 4                | R1.5              |               |
| MXKRSH 41220 | 12       | 25               | 80           | 12             | 4                | R2.0              |               |

## UZUN KÖŞE RADIUS KAPLAMALI FREZE 70 HRC Z=4

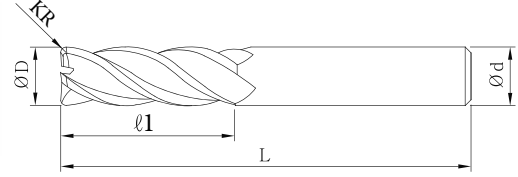
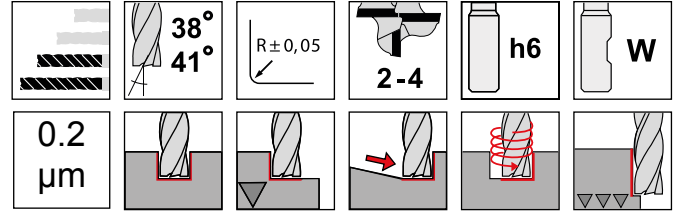
52 HRC üzeri malzemeler için uygundur  
Yüksek mukavemetlidir.



| ÜRÜN KODU     | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | KÖŞE RADIUS<br>KR | SİPARİŞ<br>NO |
|---------------|----------|------------------|--------------|----------------|------------------|-------------------|---------------|
| MXKRUH 40302  | 3        | 8                | 75           | 3              | 4                | R0.2              |               |
| MXKRUH 40305  | 3        | 8                | 75           | 3              | 4                | R0.5              |               |
| MXKRUH 40310  | 3        | 8                | 75           | 3              | 4                | R1.0              |               |
| MXKRUH 40402  | 4        | 8                | 75           | 4              | 4                | R0.2              |               |
| MXKRUH 40405  | 4        | 8                | 75           | 4              | 4                | R0.5              |               |
| MXKRUH 40410  | 4        | 8                | 75           | 4              | 4                | R1.0              |               |
| MXKRULH 40402 | 4        | 11               | 100          | 4              | 4                | R0.2              |               |
| MXKRULH 40405 | 4        | 11               | 100          | 4              | 4                | R0.5              |               |
| MXKRULH 40410 | 4        | 11               | 100          | 4              | 4                | R1.0              |               |
| MXKRUH 40502  | 5        | 15               | 75           | 5              | 4                | R0.2              |               |
| MXKRUH 40505  | 5        | 15               | 75           | 5              | 4                | R0.5              |               |
| MXKRUH 40510  | 5        | 15               | 75           | 5              | 4                | R1.0              |               |
| MXKRUH 40602  | 6        | 15               | 75           | 6              | 4                | R0.2              |               |
| MXKRUH 40605  | 6        | 15               | 75           | 6              | 4                | R0.5              |               |
| MXKRUH 40610  | 6        | 15               | 75           | 6              | 4                | R1.0              |               |
| MXKRUH 40615  | 6        | 15               | 75           | 6              | 4                | R1.5              |               |
| MXKRULH 40602 | 6        | 15               | 100          | 6              | 4                | R0.2              |               |
| MXKRULH 40605 | 6        | 15               | 100          | 6              | 4                | R0.5              |               |
| MXKRULH 40610 | 6        | 15               | 100          | 6              | 4                | R1.0              |               |
| MXKRULH 40615 | 6        | 15               | 100          | 6              | 4                | R1.5              |               |
| MXKRXH 40605  | 6        | 20               | 120          | 6              | 4                | R0.5              |               |
| MXKRXH 40610  | 6        | 20               | 120          | 6              | 4                | R1.0              |               |
| MXKRUH 40802  | 8        | 20               | 75           | 8              | 4                | R0.2              |               |
| MXKRUH 40805  | 8        | 20               | 75           | 8              | 4                | R0.5              |               |
| MXKRUH 40810  | 8        | 20               | 75           | 8              | 4                | R1.0              |               |
| MXKRUH 40815  | 8        | 20               | 75           | 8              | 4                | R1.5              |               |
| MXKRUH 40820  | 8        | 20               | 75           | 8              | 4                | R2.0              |               |
| MXKRULH 40802 | 8        | 20               | 100          | 8              | 4                | R0.2              |               |
| MXKRULH 40805 | 8        | 20               | 100          | 8              | 4                | R0.5              |               |
| MXKRULH 40810 | 8        | 20               | 100          | 8              | 4                | R1.0              |               |
| MXKRULH 40815 | 8        | 20               | 100          | 8              | 4                | R1.5              |               |
| MXKRULH 40820 | 8        | 20               | 100          | 8              | 4                | R2.0              |               |
| MXKRXH 40805  | 8        | 20               | 120          | 8              | 4                | R0.5              |               |
| MXKRXH 40810  | 8        | 20               | 120          | 8              | 4                | R1.0              |               |
| MXKRULH 41002 | 10       | 20               | 100          | 10             | 4                | R0.2              |               |
| MXKRULH 41005 | 10       | 20               | 100          | 10             | 4                | R0.5              |               |
| MXKRULH 41010 | 10       | 20               | 100          | 10             | 4                | R1.0              |               |
| MXKRULH 41015 | 10       | 20               | 100          | 10             | 4                | R1.5              |               |
| MXKRULH 41020 | 10       | 20               | 100          | 10             | 4                | R2.0              |               |
| MXKRXH 41005  | 10       | 20               | 120          | 10             | 4                | R0.5              |               |
| MXKRXH 41010  | 10       | 20               | 120          | 10             | 4                | R1.0              |               |
| MXKRULH 41202 | 12       | 25               | 100          | 12             | 4                | R0.2              |               |
| MXKRULH 41205 | 12       | 25               | 100          | 12             | 4                | R0.5              |               |
| MXKRULH 41210 | 12       | 25               | 100          | 12             | 4                | R1.0              |               |
| MXKRULH 41215 | 12       | 25               | 100          | 12             | 4                | R1.5              |               |
| MXKRULH 41220 | 12       | 25               | 100          | 12             | 4                | R2.0              |               |
| MXKRXH 41205  | 12       | 25               | 120          | 12             | 4                | R0.5              |               |
| MXKRXH 41210  | 12       | 25               | 120          | 12             | 4                | R1.0              |               |

## EXTRA UZUN KÖŞE RADIUS KAPLAMALI FREZE 70 HRC Z=4

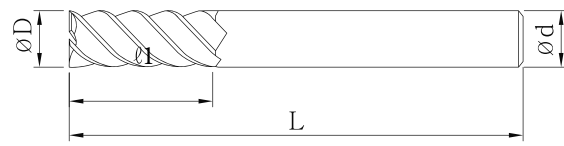
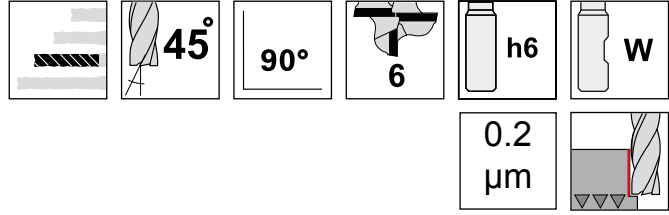
52 HRC üzeri malzemeler için uygundur  
Yüksek mukavemetlidir.



| ÜRÜN KODU     | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | KÖŞE RADIUS<br>KR | SİPARİŞ<br>NO |
|---------------|----------|------------------|--------------|----------------|------------------|-------------------|---------------|
| MXKRXLH 40602 | 6        | 30               | 150          | 6              | 4                | R0.2              |               |
| MXKRXLH 40605 | 6        | 30               | 150          | 6              | 4                | R0.5              |               |
| MXKRXLH 40610 | 6        | 30               | 150          | 6              | 4                | R1.0              |               |
| MXKRXLH 40802 | 8        | 35               | 150          | 8              | 4                | R0.2              |               |
| MXKRXLH 40805 | 8        | 35               | 150          | 8              | 4                | R0.5              |               |
| MXKRXLH 40810 | 8        | 35               | 150          | 8              | 4                | R1.0              |               |
| MXKRXLH 41002 | 10       | 40               | 150          | 10             | 4                | R0.2              |               |
| MXKRXLH 41005 | 10       | 40               | 150          | 10             | 4                | R0.5              |               |
| MXKRXLH 41010 | 10       | 40               | 150          | 10             | 4                | R1.0              |               |
| MXKRXLH 41202 | 12       | 40               | 150          | 12             | 4                | R0.2              |               |
| MXKRXLH 41205 | 12       | 40               | 150          | 12             | 4                | R0.5              |               |
| MXKRXLH 41210 | 12       | 40               | 150          | 12             | 4                | R1.0              |               |

## ÇOK AĞIZLI UZUN DÜZ KAPLAMALI FREZE 70 HRC Z=6

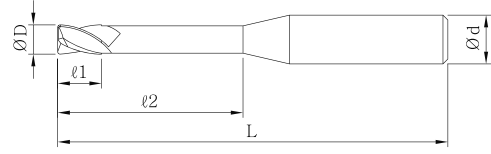
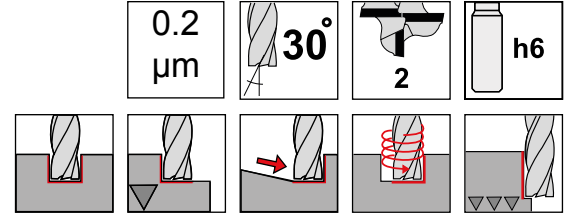
52 HRC üzeri malzemeler için uygundur  
Yüksek mukavemetlidir.



| ÜRÜN KODU     | ÇAP<br>D | KESME BOYU<br>ℓ1 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|---------------|----------|------------------|--------------|----------------|------------------|---------------|
| MXDXLFH 6060  | 6        | 25               | 75           | 6              | 6                |               |
| MXDXLFH 6080  | 8        | 40               | 100          | 8              | 6                |               |
| MXDXLFH 6100  | 10       | 45               | 100          | 10             | 6                |               |
| MXDXLFH 6120  | 12       | 45               | 110          | 12             | 6                |               |
| MXDXLFH 6140  | 14       | 50               | 110          | 14             | 6                |               |
| MXDXLFH 6160  | 16       | 55               | 110          | 16             | 6                |               |
| MXDXLFH 6180  | 18       | 55               | 110          | 18             | 6                |               |
| MXDXLFH 6200  | 20       | 60               | 110          | 20             | 6                |               |
| MXDXLFLH 6080 | 8        | 50               | 150          | 8              | 6                |               |
| MXDXLFLH 6100 | 10       | 55               | 150          | 10             | 6                |               |
| MXDXLFLH 6120 | 12       | 55               | 150          | 12             | 6                |               |
| MXDXLFLH 6140 | 14       | 65               | 150          | 14             | 6                |               |
| MXDXLFLH 6160 | 16       | 65               | 150          | 16             | 6                |               |
| MXDXLFLH 6180 | 18       | 65               | 150          | 18             | 6                |               |
| MXDXLFLH 6200 | 20       | 70               | 150          | 20             | 6                |               |

## DALMA BOYLU KAPLAMALI DÜZ FREZE 70 HRC Z=2

52 HRC üzeri malzemeler için uygundur  
Yüksek mukavemetlidir.



| ÜRÜN KODU    | ÇAP<br>D | KESME BOYU<br>ℓ1 | DALMA BOYU<br>ℓ2 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|--------------|----------|------------------|------------------|--------------|----------------|------------------|---------------|
| MXFDH0100L4  | 1.0      | 1.5              | 4                | 50           | 4              | 2                |               |
| MXFDH0100L6  | 1.0      | 1.5              | 6                | 50           | 4              | 2                |               |
| MXFDH0100L8  | 1.0      | 1.5              | 8                | 50           | 4              | 2                |               |
| MXFDH0100L10 | 1.0      | 1.5              | 10               | 50           | 4              | 2                |               |
| MXFDH0100L12 | 1.0      | 1.5              | 12               | 50           | 4              | 2                |               |
| MXFDH0100L14 | 1.0      | 1.5              | 14               | 50           | 4              | 2                |               |
| MXFDH0100L16 | 1.0      | 1.5              | 16               | 50           | 4              | 2                |               |
| MXFDH0100L18 | 1.0      | 1.5              | 18               | 50           | 4              | 2                |               |
| MXFDH0100L20 | 1.0      | 1.5              | 20               | 50           | 4              | 2                |               |
| MXFDH0150L4  | 1.5      | 2.2              | 4                | 50           | 4              | 2                |               |
| MXFDH0150L6  | 1.5      | 2.2              | 6                | 50           | 4              | 2                |               |
| MXFDH0150L8  | 1.5      | 2.2              | 8                | 50           | 4              | 2                |               |
| MXFDH0150L10 | 1.5      | 2.2              | 10               | 50           | 4              | 2                |               |
| MXFDH0150L12 | 1.5      | 2.2              | 12               | 50           | 4              | 2                |               |
| MXFDH0150L14 | 1.5      | 2.2              | 14               | 50           | 4              | 2                |               |
| MXFDH0150L16 | 1.5      | 2.2              | 16               | 50           | 4              | 2                |               |
| MXFDH0150L18 | 1.5      | 2.2              | 18               | 50           | 4              | 2                |               |
| MXFDH0150L20 | 1.5      | 2.2              | 20               | 50           | 4              | 2                |               |
| MXFDH0200L6  | 2.0      | 3.0              | 6                | 50           | 4              | 2                |               |
| MXFDH0200L8  | 2.0      | 3.0              | 8                | 50           | 4              | 2                |               |
| MXFDH0200L10 | 2.0      | 3.0              | 10               | 50           | 4              | 2                |               |
| MXFDH0200L12 | 2.0      | 3.0              | 12               | 50           | 4              | 2                |               |
| MXFDH0200L14 | 2.0      | 3.0              | 14               | 50           | 4              | 2                |               |
| MXFDH0200L16 | 2.0      | 3.0              | 16               | 50           | 4              | 2                |               |
| MXFDH0200L18 | 2.0      | 3.0              | 18               | 50           | 4              | 2                |               |
| MXFDH0200L20 | 2.0      | 3.0              | 20               | 50           | 4              | 2                |               |
| MXFDH0200L25 | 2.0      | 3.0              | 25               | 60           | 4              | 2                |               |
| MXFDH0250L6  | 2.5      | 3.5              | 6                | 50           | 4              | 2                |               |
| MXFDH0250L8  | 2.5      | 3.5              | 8                | 50           | 4              | 2                |               |
| MXFDH0250L10 | 2.5      | 3.5              | 10               | 50           | 4              | 2                |               |
| MXFDH0250L12 | 2.5      | 3.5              | 12               | 50           | 4              | 2                |               |
| MXFDH0250L14 | 2.5      | 3.5              | 14               | 50           | 4              | 2                |               |
| MXFDH0250L16 | 2.5      | 3.5              | 16               | 50           | 4              | 2                |               |
| MXFDH0250L18 | 2.5      | 3.5              | 18               | 50           | 4              | 2                |               |
| MXFDH0250L20 | 2.5      | 3.5              | 20               | 50           | 4              | 2                |               |
| MXFDH0250L25 | 2.5      | 3.5              | 25               | 60           | 4              | 2                |               |

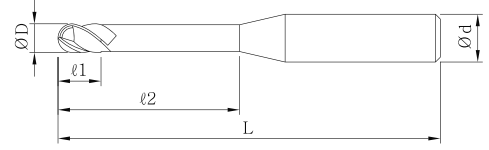
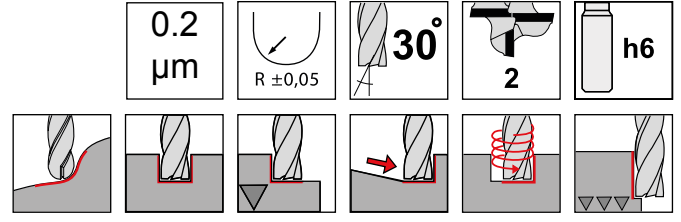
| ÜRÜN KODU    | ÇAP<br>D | KESME BOYU<br>ℓ <sub>1</sub> | DALMA BOYU<br>ℓ <sub>2</sub> | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|--------------|----------|------------------------------|------------------------------|--------------|----------------|------------------|---------------|
| MXFDH0300L10 | 3.0      | 4                            | 10                           | 65           | 6              | 2                |               |
| MXFDH0300L12 | 3.0      | 4                            | 12                           | 65           | 6              | 2                |               |
| MXFDH0300L14 | 3.0      | 4                            | 14                           | 65           | 6              | 2                |               |
| MXFDH0300L16 | 3.0      | 4                            | 16                           | 65           | 6              | 2                |               |
| MXFDH0300L18 | 3.0      | 4                            | 18                           | 65           | 6              | 2                |               |
| MXFDH0300L20 | 3.0      | 4                            | 20                           | 65           | 6              | 2                |               |
| MXFDH0300L25 | 3.0      | 4                            | 25                           | 65           | 6              | 2                |               |
| MXFDH0300L30 | 3.0      | 4                            | 30                           | 65           | 6              | 2                |               |
| MXFDH0300L35 | 3.0      | 4                            | 35                           | 65           | 6              | 2                |               |
| MXFDH0400L10 | 4.0      | 6                            | 10                           | 65           | 6              | 2                |               |
| MXFDH0400L12 | 4.0      | 6                            | 12                           | 65           | 6              | 2                |               |
| MXFDH0400L14 | 4.0      | 6                            | 14                           | 65           | 6              | 2                |               |
| MXFDH0400L16 | 4.0      | 6                            | 16                           | 65           | 6              | 2                |               |
| MXFDH0400L18 | 4.0      | 6                            | 18                           | 65           | 6              | 2                |               |
| MXFDH0400L20 | 4.0      | 6                            | 20                           | 65           | 6              | 2                |               |
| MXFDH0400L25 | 4.0      | 6                            | 25                           | 65           | 6              | 2                |               |
| MXFDH0400L30 | 4.0      | 6                            | 30                           | 65           | 6              | 2                |               |
| MXFDH0400L35 | 4.0      | 6                            | 35                           | 65           | 6              | 2                |               |

FREZELER

END MILL

## DALMA BOYLU KAPLAMALI KÜRE FREZE 70 HRC Z=2

52 HRC üzeri malzemeler için uygundur  
Yüksek mukavemetlidir.

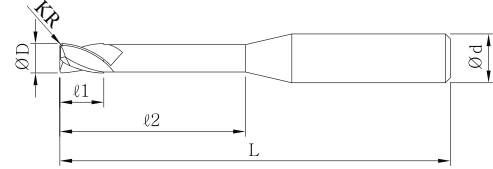
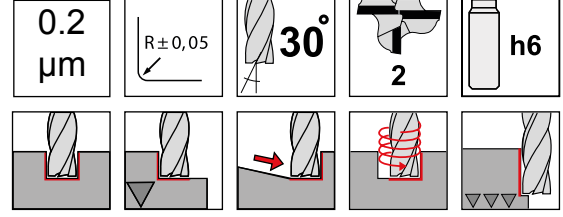


| ÜRÜN KODU     | ÇAP<br>D | KESME BOYU<br>ℓ1 | DALMA BOYU<br>ℓ2 | TAM BOY<br>L | ŞAFT ÇAP<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|---------------|----------|------------------|------------------|--------------|---------------|------------------|---------------|
| MXFDKH0100L4  | 1.0      | 1.5              | 4                | 50           | 4             | 2                |               |
| MXFDKH0100L6  | 1.0      | 1.5              | 6                | 50           | 4             | 2                |               |
| MXFDKH0100L8  | 1.0      | 1.5              | 8                | 50           | 4             | 2                |               |
| MXFDKH0100L10 | 1.0      | 1.5              | 10               | 50           | 4             | 2                |               |
| MXFDKH0100L12 | 1.0      | 1.5              | 12               | 50           | 4             | 2                |               |
| MXFDKH0100L14 | 1.0      | 1.5              | 14               | 50           | 4             | 2                |               |
| MXFDKH0100L16 | 1.0      | 1.5              | 16               | 50           | 4             | 2                |               |
| MXFDKH0100L18 | 1.0      | 1.5              | 18               | 50           | 4             | 2                |               |
| MXFDKH0100L20 | 1.0      | 1.5              | 20               | 50           | 4             | 2                |               |
| MXFDKH0150L4  | 1.5      | 2.2              | 4                | 50           | 4             | 2                |               |
| MXFDKH0150L6  | 1.5      | 2.2              | 6                | 50           | 4             | 2                |               |
| MXFDKH0150L8  | 1.5      | 2.2              | 8                | 50           | 4             | 2                |               |
| MXFDKH0150L10 | 1.5      | 2.2              | 10               | 50           | 4             | 2                |               |
| MXFDKH0150L12 | 1.5      | 2.2              | 12               | 50           | 4             | 2                |               |
| MXFDKH0150L14 | 1.5      | 2.2              | 14               | 50           | 4             | 2                |               |
| MXFDKH0150L16 | 1.5      | 2.2              | 16               | 50           | 4             | 2                |               |
| MXFDKH0150L18 | 1.5      | 2.2              | 18               | 50           | 4             | 2                |               |
| MXFDKH0150L20 | 1.5      | 2.2              | 20               | 50           | 4             | 2                |               |
| MXFDKH0200L6  | 2.0      | 3.0              | 6                | 50           | 4             | 2                |               |
| MXFDKH0200L8  | 2.0      | 3.0              | 8                | 50           | 4             | 2                |               |
| MXFDKH0200L10 | 2.0      | 3.0              | 10               | 50           | 4             | 2                |               |
| MXFDKH0200L12 | 2.0      | 3.0              | 12               | 50           | 4             | 2                |               |
| MXFDKH0200L14 | 2.0      | 3.0              | 14               | 50           | 4             | 2                |               |
| MXFDKH0200L16 | 2.0      | 3.0              | 16               | 50           | 4             | 2                |               |
| MXFDKH0200L18 | 2.0      | 3.0              | 18               | 50           | 4             | 2                |               |
| MXFDKH0200L20 | 2.0      | 3.0              | 20               | 50           | 4             | 2                |               |
| MXFDKH0200L25 | 2.0      | 3.0              | 25               | 60           | 4             | 2                |               |
| MXFDKH0250L6  | 2.5      | 3.5              | 6                | 50           | 4             | 2                |               |
| MXFDKH0250L8  | 2.5      | 3.5              | 8                | 50           | 4             | 2                |               |
| MXFDKH0250L10 | 2.5      | 3.5              | 10               | 50           | 4             | 2                |               |
| MXFDKH0250L12 | 2.5      | 3.5              | 12               | 50           | 4             | 2                |               |
| MXFDKH0250L14 | 2.5      | 3.5              | 16               | 50           | 4             | 2                |               |
| MXFDKH0250L16 | 2.5      | 3.5              | 20               | 50           | 4             | 2                |               |
| MXFDKH0250L18 | 2.5      | 3.5              | 25               | 50           | 4             | 2                |               |
| MXFDKH0250L20 | 2.5      | 3.5              | 20               | 50           | 4             | 2                |               |
| MXFDKH0250L25 | 2.5      | 3.5              | 25               | 60           | 4             | 2                |               |

| ÜRÜN KODU     | ÇAP<br>D | KESME BOYU<br>ℓ1 | DALMA BOYU<br>ℓ2 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|---------------|----------|------------------|------------------|--------------|----------------|------------------|---------------|
| MXFDKH0300L10 | 3.0      | 4                | 10               | 65           | 6              | 2                |               |
| MXFDKH0300L12 | 3.0      | 4                | 12               | 65           | 6              | 2                |               |
| MXFDKH0300L14 | 3.0      | 4                | 14               | 65           | 6              | 2                |               |
| MXFDKH0300L16 | 3.0      | 4                | 16               | 65           | 6              | 2                |               |
| MXFDKH0300L18 | 3.0      | 4                | 18               | 65           | 6              | 2                |               |
| MXFDKH0300L20 | 3.0      | 4                | 20               | 65           | 6              | 2                |               |
| MXFDKH0300L25 | 3.0      | 4                | 25               | 65           | 6              | 2                |               |
| MXFDKH0300L30 | 3.0      | 4                | 30               | 65           | 6              | 2                |               |
| MXFDKH0300L35 | 3.0      | 4                | 35               | 65           | 6              | 2                |               |
| MXFDKH0400L10 | 4.0      | 6                | 10               | 65           | 6              | 2                |               |
| MXFDKH0400L12 | 4.0      | 6                | 12               | 65           | 6              | 2                |               |
| MXFDKH0400L14 | 4.0      | 6                | 14               | 65           | 6              | 2                |               |
| MXFDKH0400L16 | 4.0      | 6                | 16               | 65           | 6              | 2                |               |
| MXFDKH0400L18 | 4.0      | 6                | 18               | 65           | 6              | 2                |               |
| MXFDKH0400L20 | 4.0      | 6                | 20               | 65           | 6              | 2                |               |
| MXFDKH0400L25 | 4.0      | 6                | 25               | 65           | 6              | 2                |               |
| MXFDKH0400L30 | 4.0      | 6                | 30               | 65           | 6              | 2                |               |
| MXFDKH0400L35 | 4.0      | 6                | 35               | 65           | 6              | 2                |               |

## DALMA BOYLU KAPLAMALI KÖŞE RADIUS FREZE 70 HRC Z=2

52 HRC üzeri malzemeler için uygundur  
Yüksek mukavemetlidir.



| ÜRÜN KODU       | KÖŞE RADIUS<br>KR | ÇAP<br>D | KESME BOYU<br>L1 | DALMA BOYU<br>L2 | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ<br>SAYISI | SİPARİŞ<br>NO |
|-----------------|-------------------|----------|------------------|------------------|--------------|----------------|----------------|---------------|
| MXFDH0100R02L4  | R0.2              | 1.0      | 1.5              | 4                | 50           | 4              | 2              |               |
| MXFDH0100R02L6  | R0.2              | 1.0      | 1.5              | 6                | 50           | 4              | 2              |               |
| MXFDH0100R02L8  | R0.2              | 1.0      | 1.5              | 8                | 50           | 4              | 2              |               |
| MXFDH0100R02L10 | R0.2              | 1.0      | 1.5              | 10               | 50           | 4              | 2              |               |
| MXFDH0100R02L12 | R0.2              | 1.0      | 1.5              | 12               | 50           | 4              | 2              |               |
| MXFDH0100R02L14 | R0.2              | 1.0      | 1.5              | 14               | 50           | 4              | 2              |               |
| MXFDH0100R02L16 | R0.2              | 1.0      | 1.5              | 16               | 50           | 4              | 2              |               |
| MXFDH0100R02L18 | R0.2              | 1.0      | 1.5              | 18               | 50           | 4              | 2              |               |
| MXFDH0100R02L20 | R0.2              | 1.0      | 1.5              | 20               | 50           | 4              | 2              |               |
| MXFDH0150R02L4  | R0.2              | 1.5      | 2.2              | 4                | 50           | 4              | 2              |               |
| MXFDH0150R02L6  | R0.2              | 1.5      | 2.2              | 6                | 50           | 4              | 2              |               |
| MXFDH0150R02L8  | R0.2              | 1.5      | 2.2              | 8                | 50           | 4              | 2              |               |
| MXFDH0150R02L10 | R0.2              | 1.5      | 2.2              | 10               | 50           | 4              | 2              |               |
| MXFDH0150R02L12 | R0.2              | 1.5      | 2.2              | 12               | 50           | 4              | 2              |               |
| MXFDH0150R02L14 | R0.2              | 1.5      | 2.2              | 14               | 50           | 4              | 2              |               |
| MXFDH0150R02L16 | R0.2              | 1.5      | 2.2              | 16               | 50           | 4              | 2              |               |
| MXFDH0150R02L18 | R0.2              | 1.5      | 2.2              | 18               | 50           | 4              | 2              |               |
| MXFDH0150R02L20 | R0.2              | 1.5      | 2.2              | 20               | 50           | 4              | 2              |               |
| MXFDH0200R02L6  | R0.2              | 2.0      | 3.0              | 6                | 50           | 4              | 2              |               |
| MXFDH0200R02L8  | R0.2              | 2.0      | 3.0              | 8                | 50           | 4              | 2              |               |
| MXFDH0200R02L10 | R0.2              | 2.0      | 3.0              | 10               | 50           | 4              | 2              |               |
| MXFDH0200R02L12 | R0.2              | 2.0      | 3.0              | 12               | 50           | 4              | 2              |               |
| MXFDH0200R02L14 | R0.2              | 2.0      | 3.0              | 14               | 50           | 4              | 2              |               |
| MXFDH0200R02L16 | R0.2              | 2.0      | 3.0              | 16               | 50           | 4              | 2              |               |
| MXFDH0200R02L18 | R0.2              | 2.0      | 3.0              | 18               | 50           | 4              | 2              |               |
| MXFDH0200R02L20 | R0.2              | 2.0      | 3.0              | 20               | 50           | 4              | 2              |               |
| MXFDH0200R02L25 | R0.2              | 2.0      | 3.0              | 25               | 60           | 4              | 2              |               |
| MXFDH0200R05L6  | R0.5              | 2.0      | 3.0              | 6                | 50           | 4              | 2              |               |
| MXFDH0200R05L8  | R0.5              | 2.0      | 3.0              | 8                | 50           | 4              | 2              |               |
| MXFDH0200R05L10 | R0.5              | 2.0      | 3.0              | 10               | 50           | 4              | 2              |               |
| MXFDH0200R05L12 | R0.5              | 2.0      | 3.0              | 12               | 50           | 4              | 2              |               |
| MXFDH0200R05L14 | R0.5              | 2.0      | 3.0              | 14               | 50           | 4              | 2              |               |
| MXFDH0200R05L16 | R0.5              | 2.0      | 3.0              | 16               | 50           | 4              | 2              |               |
| MXFDH0200R05L18 | R0.5              | 2.0      | 3.0              | 18               | 50           | 4              | 2              |               |
| MXFDH0200R05L20 | R0.5              | 2.0      | 3.0              | 20               | 50           | 4              | 2              |               |
| MXFDH0200R05L25 | R0.5              | 2.0      | 3.0              | 25               | 60           | 4              | 2              |               |

| ÜRÜN KODU       | RADIUS | ÇAP<br>D | KESME BOYU<br>ℓ <sub>1</sub> | DALMA BOYU<br>ℓ <sub>2</sub> | TAM BOY<br>L | ŞAFT ÇAPI<br>d | AĞIZ<br>SAYISI | SİPARİŞ<br>NO |
|-----------------|--------|----------|------------------------------|------------------------------|--------------|----------------|----------------|---------------|
| MXFDH0250R02L6  | R0.2   | 2.5      | 3.5                          | 6                            | 50           | 4              | 2              |               |
| MXFDH0250R02L8  | R0.2   | 2.5      | 3.5                          | 8                            | 50           | 4              | 2              |               |
| MXFDH0250R02L10 | R0.2   | 2.5      | 3.5                          | 10                           | 50           | 4              | 2              |               |
| MXFDH0250R02L12 | R0.2   | 2.5      | 3.5                          | 12                           | 50           | 4              | 2              |               |
| MXFDH0250R02L14 | R0.2   | 2.5      | 3.5                          | 14                           | 50           | 4              | 2              |               |
| MXFDH0250R02L16 | R0.2   | 2.5      | 3.5                          | 16                           | 50           | 4              | 2              |               |
| MXFDH0250R02L18 | R0.2   | 2.5      | 3.5                          | 18                           | 50           | 4              | 2              |               |
| MXFDH0250R02L20 | R0.2   | 2.5      | 3.5                          | 20                           | 50           | 4              | 2              |               |
| MXFDH0250R02L25 | R0.2   | 2.5      | 3.5                          | 25                           | 60           | 4              | 2              |               |
| MXFDH0250R05L6  | R0.5   | 2.5      | 3.5                          | 6                            | 50           | 4              | 2              |               |
| MXFDH0250R05L8  | R0.5   | 2.5      | 3.5                          | 8                            | 50           | 4              | 2              |               |
| MXFDH0250R05L10 | R0.5   | 2.5      | 3.5                          | 10                           | 50           | 4              | 2              |               |
| MXFDH0250R05L12 | R0.5   | 2.5      | 3.5                          | 12                           | 50           | 4              | 2              |               |
| MXFDH0250R05L14 | R0.5   | 2.5      | 3.5                          | 14                           | 50           | 4              | 2              |               |
| MXFDH0250R05L16 | R0.5   | 2.5      | 3.5                          | 16                           | 50           | 4              | 2              |               |
| MXFDH0250R05L18 | R0.5   | 2.5      | 3.5                          | 18                           | 50           | 4              | 2              |               |
| MXFDH0250R05L20 | R0.5   | 2.5      | 3.5                          | 20                           | 50           | 4              | 2              |               |
| MXFDH0250R05L25 | R0.5   | 2.5      | 3.5                          | 25                           | 60           | 4              | 2              |               |
| MXFDH0300R02L10 | R0.2   | 3.0      | 4                            | 10                           | 65           | 6              | 2              |               |
| MXFDH0300R02L12 | R0.2   | 3.0      | 4                            | 12                           | 65           | 6              | 2              |               |
| MXFDH0300R02L14 | R0.2   | 3.0      | 4                            | 14                           | 65           | 6              | 2              |               |
| MXFDH0300R02L16 | R0.2   | 3.0      | 4                            | 16                           | 65           | 6              | 2              |               |
| MXFDH0300R02L18 | R0.2   | 3.0      | 4                            | 18                           | 65           | 6              | 2              |               |
| MXFDH0300R02L20 | R0.2   | 3.0      | 4                            | 20                           | 65           | 6              | 2              |               |
| MXFDH0300R02L25 | R0.2   | 3.0      | 4                            | 25                           | 65           | 6              | 2              |               |
| MXFDH0300R02L30 | R0.2   | 3.0      | 4                            | 30                           | 65           | 6              | 2              |               |
| MXFDH0300R02L35 | R0.2   | 3.0      | 4                            | 35                           | 65           | 6              | 2              |               |
| MXFDH0300R05L10 | R0.5   | 3.0      | 4                            | 10                           | 65           | 6              | 2              |               |
| MXFDH0300R05L12 | R0.5   | 3.0      | 4                            | 12                           | 65           | 6              | 2              |               |
| MXFDH0300R05L14 | R0.5   | 3.0      | 4                            | 14                           | 65           | 6              | 2              |               |
| MXFDH0300R05L16 | R0.5   | 3.0      | 4                            | 16                           | 65           | 6              | 2              |               |
| MXFDH0300R05L18 | R0.5   | 3.0      | 4                            | 18                           | 65           | 6              | 2              |               |
| MXFDH0300R05L20 | R0.5   | 3.0      | 4                            | 20                           | 65           | 6              | 2              |               |
| MXFDH0300R05L25 | R0.5   | 3.0      | 4                            | 25                           | 65           | 6              | 2              |               |
| MXFDH0300R05L30 | R0.5   | 3.0      | 4                            | 30                           | 65           | 6              | 2              |               |
| MXFDH0300R05L35 | R0.5   | 3.0      | 4                            | 35                           | 65           | 6              | 2              |               |
| MXFDH0300R1L10  | R1.0   | 3.0      | 4                            | 10                           | 65           | 6              | 2              |               |
| MXFDH0300R1L12  | R1.0   | 3.0      | 4                            | 12                           | 65           | 6              | 2              |               |
| MXFDH0300R1L14  | R1.0   | 3.0      | 4                            | 14                           | 65           | 6              | 2              |               |
| MXFDH0300R1L16  | R1.0   | 3.0      | 4                            | 16                           | 65           | 6              | 2              |               |
| MXFDH0300R1L18  | R1.0   | 3.0      | 4                            | 18                           | 65           | 6              | 2              |               |
| MXFDH0300R1L20  | R1.0   | 3.0      | 4                            | 20                           | 65           | 6              | 2              |               |
| MXFDH0300R1L25  | R1.0   | 3.0      | 4                            | 25                           | 65           | 6              | 2              |               |
| MXFDH0300R1L30  | R1.0   | 3.0      | 4                            | 30                           | 65           | 6              | 2              |               |
| MXFDH0300R1L35  | R1.0   | 3.0      | 4                            | 35                           | 65           | 6              | 2              |               |
| MXFDH0400R02L10 | R0.2   | 4.0      | 6                            | 10                           | 65           | 6              | 2              |               |
| MXFDH0400R02L12 | R0.2   | 4.0      | 6                            | 12                           | 65           | 6              | 2              |               |
| MXFDH0400R02L14 | R0.2   | 4.0      | 6                            | 14                           | 65           | 6              | 2              |               |
| MXFDH0400R02L16 | R0.2   | 4.0      | 6                            | 16                           | 65           | 6              | 2              |               |
| MXFDH0400R02L18 | R0.2   | 4.0      | 6                            | 18                           | 65           | 6              | 2              |               |
| MXFDH0400R02L20 | R0.2   | 4.0      | 6                            | 20                           | 65           | 6              | 2              |               |
| MXFDH0400R02L25 | R0.2   | 4.0      | 6                            | 25                           | 65           | 6              | 2              |               |
| MXFDH0400R02L30 | R0.2   | 4.0      | 6                            | 30                           | 65           | 6              | 2              |               |
| MXFDH0400R02L35 | R0.2   | 4.0      | 6                            | 35                           | 65           | 6              | 2              |               |
| MXFDH0400R05L10 | R0.5   | 4.0      | 6                            | 10                           | 65           | 6              | 2              |               |
| MXFDH0400R05L12 | R0.5   | 4.0      | 6                            | 12                           | 65           | 6              | 2              |               |
| MXFDH0400R05L14 | R0.5   | 4.0      | 6                            | 14                           | 65           | 6              | 2              |               |
| MXFDH0400R05L16 | R0.5   | 4.0      | 6                            | 16                           | 65           | 6              | 2              |               |
| MXFDH0400R05L18 | R0.5   | 4.0      | 6                            | 18                           | 65           | 6              | 2              |               |
| MXFDH0400R05L20 | R0.5   | 4.0      | 6                            | 20                           | 65           | 6              | 2              |               |
| MXFDH0400R05L25 | R0.5   | 4.0      | 6                            | 25                           | 65           | 6              | 2              |               |
| MXFDH0400R05L30 | R0.5   | 4.0      | 6                            | 30                           | 65           | 6              | 2              |               |
| MXFDH0400R05L35 | R0.5   | 4.0      | 6                            | 35                           | 65           | 6              | 2              |               |
| MXFDH0400R1L10  | R1.0   | 4.0      | 6                            | 10                           | 65           | 6              | 2              |               |
| MXFDH0400R1L12  | R1.0   | 4.0      | 6                            | 12                           | 65           | 6              | 2              |               |
| MXFDH0400R1L14  | R1.0   | 4.0      | 6                            | 14                           | 65           | 6              | 2              |               |
| MXFDH0400R1L16  | R1.0   | 4.0      | 6                            | 16                           | 65           | 6              | 2              |               |
| MXFDH0400R1L18  | R1.0   | 4.0      | 6                            | 18                           | 65           | 6              | 2              |               |
| MXFDH0400R1L20  | R1.0   | 4.0      | 6                            | 20                           | 65           | 6              | 2              |               |
| MXFDH0400R1L25  | R1.0   | 4.0      | 6                            | 25                           | 65           | 6              | 2              |               |
| MXFDH0400R1L30  | R1.0   | 4.0      | 6                            | 30                           | 65           | 6              | 2              |               |
| MXFDH0400R1L35  | R1.0   | 4.0      | 6                            | 35                           | 65           | 6              | 2              |               |

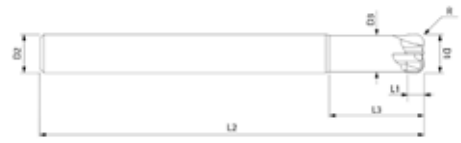
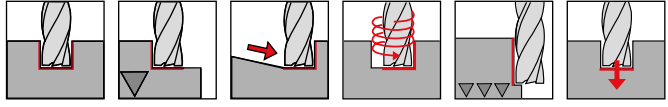
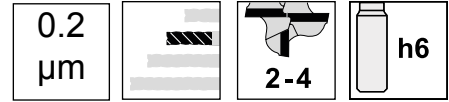
**HIGH FEED (HIZLI KESİM) KÖŞE RADIUS FREZE KAPLAMALI 52 HRC Z=4**

Finış düz freze, değişken kanal derinliğine sahiptir.

52 HRC

2344-2312-2738-1040-1050

ve benzeri malzemeler için uygundur



| ÜRÜN KODU  | ÇAP<br>D1 | ŞAFT ÇAPI<br>D2 | TAM BOY<br>L2 | DALMA BOYU<br>L3 | KESME BOYU<br>L1 | BOĞAZ ÇAPI<br>D3 | R   | Z | SİPARİŞ<br>NO |
|------------|-----------|-----------------|---------------|------------------|------------------|------------------|-----|---|---------------|
| MXPRH 4040 | 4.0       | 6.0             | 65            | 10               | 1,6              | 3,5              | 0.5 | 4 |               |
| MXPRH 4040 | 4.0       | 6.0             | 65            | 10               | 1,6              | 3,5              | 1   | 4 |               |
| MXPRH 4050 | 5.0       | 6.0             | 75            | 12               | 2                | 4,5              | 0.5 | 4 |               |
| MXPRH 4050 | 5.0       | 6.0             | 75            | 12               | 2                | 4,5              | 1   | 4 |               |
| MXPRH 4060 | 6.0       | 6.0             | 75            | 13               | 2,5              | 5,5              | 0.5 | 4 |               |
| MXPRH 4060 | 6.0       | 6.0             | 75            | 13               | 2,5              | 5,5              | 1   | 4 |               |
| MXPRH 4080 | 8.0       | 8.0             | 100           | 18               | 3,5              | 7,5              | 0.5 | 4 |               |
| MXPRH 4080 | 8.0       | 8.0             | 100           | 18               | 3,5              | 7,5              | 1   | 4 |               |
| MXPRH 4100 | 10        | 10              | 100           | 20               | 4                | 9,5              | 0.5 | 4 |               |
| MXPRH 4100 | 10        | 10              | 100           | 20               | 4                | 9,5              | 1   | 4 |               |
| MXPRH 4120 | 12        | 12              | 100           | 25               | 5                | 11,5             | 0.5 | 4 |               |
| MXPRH 4120 | 12        | 12              | 100           | 25               | 5                | 11,5             | 1   | 4 |               |



N TİPİ KARBÜR MATKAP (kaplamasız)



KARBÜR MATKAP



KARBÜR PUNTA MATKAP UCU



NC KARBÜR MATKAP



KARBÜR HAVŞA



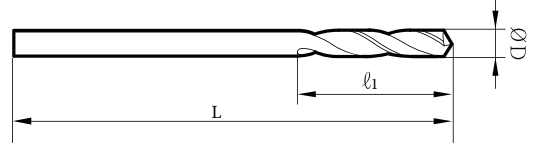
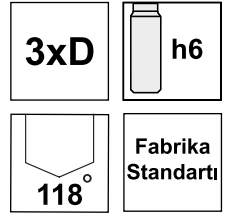
ÇİFT TARAFLI HAVŞA



KARBÜR MAKİNA RAYBASI

## N TİPİ KARBÜR KISA MATKAP UCU DIN 1897

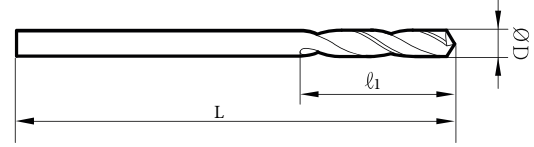
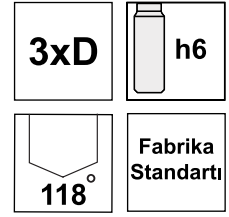
N tipi karbür kaplamasız kısa matkap ucu çelik, döküm, mangan, sertleştirilmiş çelikler, bronz ve hafif metaller için uygundur. Lif takviyeli plastikler ve duro plastik gibi ürünler için kısıtlı kullanılır.



| ÜRÜN KODU   | ÇAP<br>D | KESME BOYU<br>l <sub>1</sub> | TAM BOY<br>L | SİPARİŞ<br>NO |
|-------------|----------|------------------------------|--------------|---------------|
| MX3016 0050 | 0.50     | 4                            | 22           |               |
| MX3016 0055 | 0.55     | 4                            | 22           |               |
| MX3016 0060 | 0.60     | 5                            | 22           |               |
| MX3016 0065 | 0.65     | 5                            | 22           |               |
| MX3016 0070 | 0.70     | 5                            | 24           |               |
| MX3016 0075 | 0.75     | 5                            | 24           |               |
| MX3016 0080 | 0.80     | 5                            | 24           |               |
| MX3016 0085 | 0.85     | 5                            | 24           |               |
| MX3016 0090 | 0.90     | 6                            | 26           |               |
| MX3016 0095 | 0.95     | 6                            | 26           |               |
| MX3016 0100 | 1.00     | 6                            | 26           |               |
| MX3016 0105 | 1.05     | 6                            | 26           |               |
| MX3016 0110 | 1.10     | 7                            | 28           |               |
| MX3016 0115 | 1.15     | 7                            | 28           |               |
| MX3016 0120 | 1.20     | 8                            | 30           |               |
| MX3016 0125 | 1.25     | 8                            | 32           |               |
| MX3016 0130 | 1.30     | 8                            | 32           |               |
| MX3016 0135 | 1.35     | 9                            | 32           |               |
| MX3016 0140 | 1.40     | 9                            | 32           |               |
| MX3016 0145 | 1.45     | 9                            | 32           |               |
| MX3016 0150 | 1.50     | 9                            | 32           |               |
| MX3016 0155 | 1.55     | 10                           | 34           |               |
| MX3016 0160 | 1.60     | 10                           | 34           |               |
| MX3016 0165 | 1.65     | 11                           | 34           |               |
| MX3016 0170 | 1.70     | 11                           | 34           |               |
| MX3016 0175 | 1.75     | 11                           | 36           |               |
| MX3016 0180 | 1.80     | 12                           | 36           |               |
| MX3016 0185 | 1.85     | 12                           | 36           |               |
| MX3016 0190 | 1.90     | 12                           | 36           |               |
| MX3016 0195 | 1.95     | 12                           | 38           |               |
| MX3016 0200 | 2.00     | 13                           | 38           |               |
| MX3016 0205 | 2.05     | 13                           | 38           |               |
| MX3016 0210 | 2.10     | 13                           | 38           |               |
| MX3016 0215 | 2.15     | 14                           | 40           |               |
| MX3016 0220 | 2.20     | 14                           | 40           |               |
| MX3016 0225 | 2.25     | 14                           | 40           |               |
| MX3016 0230 | 2.30     | 14                           | 40           |               |
| MX3016 0235 | 2.35     | 14                           | 40           |               |
| MX3016 0240 | 2.40     | 15                           | 43           |               |
| MX3016 0245 | 2.45     | 15                           | 43           |               |
| MX3016 0250 | 2.50     | 15                           | 43           |               |
| MX3016 0255 | 2.55     | 15                           | 43           |               |
| MX3016 0260 | 2.60     | 15                           | 43           |               |
| MX3016 0265 | 2.65     | 16                           | 46           |               |
| MX3016 0270 | 2.70     | 17                           | 46           |               |
| MX3016 0275 | 2.75     | 17                           | 46           |               |
| MX3016 0280 | 2.80     | 17                           | 46           |               |
| MX3016 0285 | 2.85     | 17                           | 46           |               |

## N TİPİ KARBÜR KISA MATKAP UCU DIN 1897

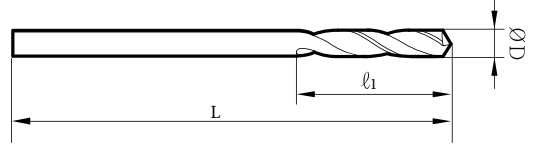
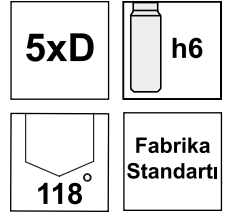
N tipi karbür kaplamasız kısa matkap ucu çelik, döküm, mangan, sertleştirilmiş çelikler, bronz ve hafif metaller için uygundur. Lif takviyeli plastikler ve duro plastik gibi ürünler için kısıtlı kullanılır.



| ÜRÜN KODU   | ÇAP D | KESME BOYU $l_1$ | TAM BOY L | SİPARİŞ NO |
|-------------|-------|------------------|-----------|------------|
| MX3016 0290 | 2.90  | 17               | 46        |            |
| MX3016 0295 | 2.95  | 17               | 46        |            |
| MX3016 0300 | 3.00  | 17               | 46        |            |
| MX3016 0310 | 3.10  | 19               | 49        |            |
| MX3016 0320 | 3.20  | 19               | 49        |            |
| MX3016 0330 | 3.30  | 19               | 49        |            |
| MX3016 0340 | 3.40  | 21               | 52        |            |
| MX3016 0350 | 3.50  | 21               | 52        |            |
| MX3016 0360 | 3.60  | 21               | 52        |            |
| MX3016 0370 | 3.70  | 21               | 52        |            |
| MX3016 0380 | 3.80  | 23               | 55        |            |
| MX3016 0390 | 3.90  | 23               | 55        |            |
| MX3016 0400 | 4.00  | 23               | 55        |            |
| MX3016 0410 | 4.1   | 23               | 55        |            |
| MX3016 0420 | 4.2   | 24               | 55        |            |
| MX3016 0430 | 4.3   | 25               | 58        |            |
| MX3016 0440 | 4.4   | 25               | 58        |            |
| MX3016 0450 | 4.5   | 25               | 58        |            |
| MX3016 0460 | 4.6   | 25               | 58        |            |
| MX3016 0470 | 4.7   | 25               | 58        |            |
| MX3016 0480 | 4.8   | 27               | 62        |            |
| MX3016 0490 | 4.9   | 27               | 62        |            |
| MX3016 0500 | 5.0   | 27               | 62        |            |
| MX3016 0520 | 5.2   | 27               | 62        |            |
| MX3016 0550 | 5.5   | 29               | 66        |            |
| MX3016 0580 | 5.8   | 29               | 66        |            |
| MX3016 0600 | 6.0   | 29               | 66        |            |
| MX3016 0650 | 6.5   | 32               | 70        |            |
| MX3016 0680 | 6.8   | 35               | 74        |            |
| MX3016 0700 | 7.0   | 35               | 74        |            |
| MX3016 0750 | 7.5   | 35               | 74        |            |
| MX3016 0780 | 7.8   | 38               | 79        |            |
| MX3016 0800 | 8.0   | 38               | 79        |            |
| MX3016 0850 | 8.5   | 38               | 79        |            |
| MX3016 0880 | 8.8   | 41               | 84        |            |
| MX3016 0900 | 9.0   | 41               | 84        |            |
| MX3016 0950 | 9.5   | 41               | 84        |            |
| MX3016 0980 | 9.8   | 44               | 89        |            |
| MX3016 1000 | 10.0  | 44               | 89        |            |
| MX3016 1020 | 10.2  | 44               | 89        |            |
| MX3016 1050 | 10.5  | 44               | 89        |            |
| MX3016 1080 | 10.8  | 48               | 95        |            |
| MX3016 1100 | 11.0  | 48               | 95        |            |
| MX3016 1150 | 11.5  | 48               | 95        |            |
| MX3016 1180 | 11.8  | 48               | 95        |            |
| MX3016 1200 | 12.0  | 52               | 102       |            |

## N TİPİ KARBÜR STANDART MATKAP UCU DIN 338

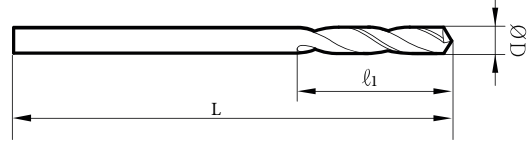
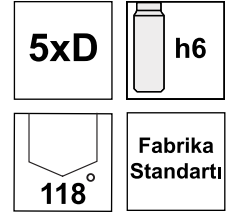
N tipi karbür kaplamasız kısa matkap ucu çelik, döküm, mangan, sertleştirilmiş çelikler, bronz ve hafif metaller için uygundur. Lif takviyeli plastikler ve duro plastik gibi ürünler için kısıtlı kullanılır.



| ÜRÜN KODU   | ÇAP<br>D | KESME BOYU<br>l <sub>1</sub> | TAM BOY<br>L | SİPARİŞ<br>NO |
|-------------|----------|------------------------------|--------------|---------------|
| MX3017 0050 | 0.50     | 7                            | 22           |               |
| MX3017 0055 | 0.55     | 7                            | 22           |               |
| MX3017 0060 | 0.60     | 8                            | 24           |               |
| MX3017 0065 | 0.65     | 8                            | 24           |               |
| MX3017 0070 | 0.70     | 10                           | 28           |               |
| MX3017 0075 | 0.75     | 10                           | 28           |               |
| MX3017 0080 | 0.80     | 11                           | 30           |               |
| MX3017 0085 | 0.85     | 11                           | 30           |               |
| MX3017 0090 | 0.90     | 12                           | 32           |               |
| MX3017 0095 | 0.95     | 12                           | 32           |               |
| MX3017 0100 | 1.00     | 13                           | 34           |               |
| MX3017 0105 | 1.05     | 13                           | 34           |               |
| MX3017 0110 | 1.10     | 15                           | 36           |               |
| MX3017 0115 | 1.15     | 15                           | 36           |               |
| MX3017 0120 | 1.20     | 17                           | 38           |               |
| MX3017 0125 | 1.25     | 17                           | 38           |               |
| MX3017 0130 | 1.30     | 17                           | 38           |               |
| MX3017 0135 | 1.35     | 17                           | 38           |               |
| MX3017 0140 | 1.40     | 19                           | 40           |               |
| MX3017 0145 | 1.45     | 19                           | 40           |               |
| MX3017 0150 | 1.50     | 19                           | 40           |               |
| MX3017 0155 | 1.55     | 21                           | 43           |               |
| MX3017 0160 | 1.60     | 21                           | 43           |               |
| MX3017 0165 | 1.65     | 21                           | 43           |               |
| MX3017 0170 | 1.70     | 21                           | 43           |               |
| MX3017 0175 | 1.75     | 23                           | 46           |               |
| MX3017 0180 | 1.80     | 23                           | 46           |               |
| MX3017 0185 | 1.85     | 23                           | 46           |               |
| MX3017 0190 | 1.90     | 23                           | 46           |               |
| MX3017 0195 | 1.95     | 25                           | 49           |               |
| MX3017 0200 | 2.00     | 25                           | 49           |               |
| MX3017 0205 | 2.05     | 25                           | 49           |               |
| MX3017 0210 | 2.10     | 25                           | 49           |               |
| MX3017 0215 | 2.15     | 28                           | 53           |               |
| MX3017 0220 | 2.20     | 28                           | 53           |               |
| MX3017 0225 | 2.25     | 28                           | 53           |               |
| MX3017 0230 | 2.30     | 28                           | 53           |               |
| MX3017 0235 | 2.35     | 31                           | 57           |               |
| MX3017 0240 | 2.40     | 31                           | 57           |               |
| MX3017 0245 | 2.45     | 31                           | 57           |               |
| MX3017 0250 | 2.50     | 31                           | 57           |               |
| MX3017 0255 | 2.55     | 31                           | 57           |               |
| MX3017 0260 | 2.60     | 31                           | 57           |               |
| MX3017 0265 | 2.65     | 34                           | 61           |               |
| MX3017 0270 | 2.70     | 34                           | 61           |               |
| MX3017 0275 | 2.75     | 34                           | 61           |               |
| MX3017 0280 | 2.80     | 34                           | 61           |               |
| MX3017 0285 | 2.85     | 34                           | 61           |               |

## N TİPİ KARBÜR STANDART MATKAP UCU DIN 338

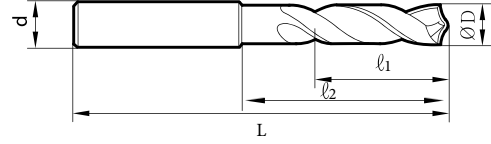
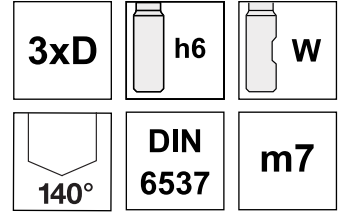
N tipi karbür standart matkap ucu  
çelik, döküm, mangan, sertleştirilmiş çelikler,  
bronz ve hafif metaller için uygundur.  
Lif takviyeli plastikler ve duro plastik gibi  
ürünler için kısıtlı kullanılır.



| ÜRÜN KODU   | ÇAP<br>D | KESME BOYU<br>$l_1$ | TAM BOY<br>L | SİPARİŞ<br>NO |
|-------------|----------|---------------------|--------------|---------------|
| MX3017 0290 | 2.90     | 34                  | 61           |               |
| MX3017 0295 | 2.95     | 34                  | 61           |               |
| MX3017 0300 | 3.00     | 34                  | 61           |               |
| MX3017 0310 | 3.10     | 37                  | 65           |               |
| MX3017 0320 | 3.20     | 37                  | 65           |               |
| MX3017 0330 | 3.30     | 37                  | 65           |               |
| MX3017 0340 | 3.40     | 40                  | 70           |               |
| MX3017 0350 | 3.50     | 40                  | 70           |               |
| MX3017 0360 | 3.60     | 40                  | 70           |               |
| MX3017 0370 | 3.70     | 40                  | 70           |               |
| MX3017 0380 | 3.80     | 44                  | 75           |               |
| MX3017 0390 | 3.90     | 44                  | 75           |               |
| MX3017 0400 | 4.00     | 44                  | 75           |               |
| MX3017 0410 | 4.1      | 44                  | 75           |               |
| MX3017 0420 | 4.2      | 44                  | 75           |               |
| MX3017 0430 | 4.3      | 48                  | 80           |               |
| MX3017 0440 | 4.4      | 48                  | 80           |               |
| MX3017 0450 | 4.5      | 48                  | 80           |               |
| MX3017 0460 | 4.6      | 48                  | 80           |               |
| MX3017 0470 | 4.7      | 48                  | 80           |               |
| MX3017 0480 | 4.8      | 53                  | 86           |               |
| MX3017 0490 | 4.9      | 53                  | 86           |               |
| MX3017 0500 | 5.0      | 53                  | 86           |               |
| MX3017 0520 | 5.2      | 53                  | 86           |               |
| MX3017 0550 | 5.5      | 57                  | 93           |               |
| MX3017 0580 | 5.8      | 57                  | 93           |               |
| MX3017 0600 | 6.0      | 57                  | 93           |               |
| MX3017 0650 | 6.5      | 63                  | 101          |               |
| MX3017 0680 | 6.8      | 69                  | 109          |               |
| MX3017 0700 | 7.0      | 69                  | 109          |               |
| MX3017 0750 | 7.5      | 69                  | 109          |               |
| MX3017 0780 | 7.8      | 75                  | 117          |               |
| MX3017 0800 | 8.0      | 75                  | 117          |               |
| MX3017 0850 | 8.5      | 75                  | 117          |               |
| MX3017 0880 | 8.8      | 82                  | 125          |               |
| MX3017 0900 | 9.0      | 82                  | 125          |               |
| MX3017 0950 | 9.5      | 82                  | 125          |               |
| MX3017 0980 | 9.8      | 87                  | 133          |               |
| MX3017 1000 | 10.0     | 87                  | 133          |               |
| MX3017 1020 | 10.2     | 87                  | 133          |               |
| MX3017 1050 | 10.5     | 87                  | 133          |               |
| MX3017 1080 | 10.8     | 94                  | 142          |               |
| MX3017 1100 | 11.0     | 94                  | 142          |               |
| MX3017 1150 | 11.5     | 94                  | 142          |               |
| MX3017 1180 | 11.8     | 94                  | 142          |               |
| MX3017 1200 | 12.0     | 101                 | 151          |               |

## KARBÜR MATKAP UCU KAPLAMALI SIVI KANALSIZ

Yüksek performanslı olan matkap ucu kısa ve uzun talaş veren yapı ve ıslah çeliği, çelik döküm, sementasyon çelikleri, çekme mukavemeti yaklaşık 1200 N/mm<sup>2</sup> kadar olan alaşımlı malzemelerde kullanılır. Kendinden puntalama özelliği mevcuttur.

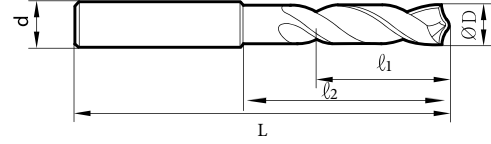
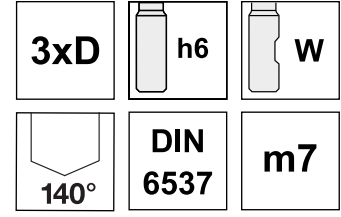


| ÜRÜN KODU | ÇAP<br>D | ŞAFT ÇAP<br>d | TAM BOY<br>L | Tmax BOYU<br>l <sub>1</sub> | HELİS BOYU<br>l <sub>2</sub> | SİPARİŞ<br>NO |
|-----------|----------|---------------|--------------|-----------------------------|------------------------------|---------------|
|-----------|----------|---------------|--------------|-----------------------------|------------------------------|---------------|

|        |       |      |     |    |    |    |  |
|--------|-------|------|-----|----|----|----|--|
| MX3645 | 1.00  | 1.0  | 3.0 | 38 | 3  | 8  |  |
| MX3645 | 1.10  | 1.1  | 3.0 | 38 | 3  | 8  |  |
| MX3645 | 1.20  | 1.2  | 3.0 | 38 | 3  | 8  |  |
| MX3645 | 1.30  | 1.3  | 3.0 | 38 | 3  | 8  |  |
| MX3645 | 1.40  | 1.4  | 3.0 | 38 | 3  | 8  |  |
| MX3645 | 1.50  | 1.5  | 3.0 | 50 | 5  | 8  |  |
| MX3645 | 1.600 | 1.6  | 3.0 | 50 | 5  | 8  |  |
| MX3645 | 1.700 | 1.7  | 3.0 | 50 | 7  | 9  |  |
| MX3645 | 1.800 | 1.8  | 3.0 | 50 | 7  | 9  |  |
| MX3645 | 1.900 | 1.9  | 3.0 | 50 | 7  | 9  |  |
| MX3645 | 2.000 | 2.0  | 3.0 | 50 | 10 | 16 |  |
| MX3645 | 2.100 | 2.1  | 3.0 | 50 | 10 | 16 |  |
| MX3645 | 2.200 | 2.2  | 3.0 | 50 | 10 | 16 |  |
| MX3645 | 2.300 | 2.3  | 3.0 | 50 | 10 | 16 |  |
| MX3645 | 2.400 | 2.4  | 3.0 | 50 | 10 | 16 |  |
| MX3645 | 2.500 | 2.5  | 3.0 | 50 | 14 | 20 |  |
| MX3645 | 2.600 | 2.6  | 3.0 | 50 | 14 | 20 |  |
| MX3645 | 2.700 | 2.7  | 3.0 | 50 | 14 | 20 |  |
| MX3645 | 2.800 | 2.8  | 3.0 | 50 | 14 | 20 |  |
| MX3645 | 2.900 | 2.9  | 3.0 | 50 | 14 | 20 |  |
| MX3645 | 3.000 | 3.0  | 6.0 | 62 | 14 | 20 |  |
| MX3645 | 3.100 | 3.1  | 6.0 | 62 | 14 | 20 |  |
| MX3645 | 3.200 | 3.2  | 6.0 | 62 | 14 | 20 |  |
| MX3645 | 3.300 | 3.3  | 6.0 | 62 | 14 | 20 |  |
| MX3645 | 3.400 | 3.4  | 6.0 | 62 | 14 | 20 |  |
| MX3645 | 3.500 | 3.5  | 6.0 | 62 | 14 | 20 |  |
| MX3645 | 3.600 | 3.6  | 6.0 | 62 | 14 | 20 |  |
| MX3645 | 3.700 | 3.7  | 6.0 | 62 | 14 | 20 |  |
| MX3645 | 3.800 | 3.8  | 6.0 | 66 | 17 | 24 |  |
| MX3645 | 3.900 | 3.9  | 6.0 | 66 | 17 | 24 |  |
| MX3645 | 4.000 | 4.0  | 6.0 | 66 | 17 | 24 |  |
| MX3645 | 4.100 | 4.1  | 6.0 | 66 | 17 | 24 |  |
| MX3645 | 4.200 | 4.2  | 6.0 | 66 | 17 | 24 |  |
| MX3645 | 4.300 | 4.3  | 6.0 | 66 | 17 | 24 |  |
| MX3645 | 4.400 | 4.4  | 6.0 | 66 | 17 | 24 |  |
| MX3645 | 4.500 | 4.5  | 6.0 | 66 | 17 | 24 |  |
| MX3645 | 4.600 | 4.6  | 6.0 | 66 | 17 | 24 |  |
| MX3645 | 4.650 | 4.65 | 6.0 | 66 | 17 | 24 |  |
| MX3645 | 4.700 | 4.7  | 6.0 | 66 | 17 | 24 |  |
| MX3645 | 4.800 | 4.8  | 6.0 | 66 | 20 | 28 |  |
| MX3645 | 4.900 | 4.9  | 6.0 | 66 | 20 | 28 |  |
| MX3645 | 5.000 | 5.0  | 6.0 | 66 | 20 | 28 |  |
| MX3645 | 5.100 | 5.1  | 6.0 | 66 | 20 | 28 |  |
| MX3645 | 5.200 | 5.2  | 6.0 | 66 | 20 | 28 |  |
| MX3645 | 5.300 | 5.3  | 6.0 | 66 | 20 | 28 |  |
| MX3645 | 5.400 | 5.4  | 6.0 | 66 | 20 | 28 |  |

## KARBÜR MATKAP UCU KAPLAMALI SIVI KANALSIZ

Yüksek performanslı olan matkap ucu kısa ve uzun talaş veren yapı ve ıslah çeliği, çelik döküm, sementasyon çelikleri, çekme mukavemeti yaklaşık 1200 N/mm<sup>2</sup> kadar olan alaşımlı malzemelerde kullanılır. Kendinden puntalama özelliği mevcuttur.

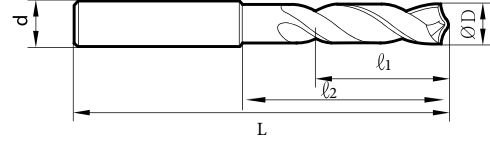
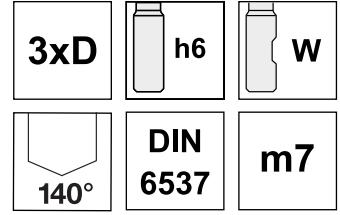


| ÜRÜN KODU | ÇAP<br>D | ŞAFT ÇAPI<br>d | TAM BOY<br>L | Tmax BOYU<br>l <sub>1</sub> | HELİS BOYU<br>l <sub>2</sub> | SİPARİŞ<br>NO |
|-----------|----------|----------------|--------------|-----------------------------|------------------------------|---------------|
|-----------|----------|----------------|--------------|-----------------------------|------------------------------|---------------|

|        |       |      |      |    |    |    |  |
|--------|-------|------|------|----|----|----|--|
| MX3645 | 5.500 | 5.5  | 6.0  | 66 | 20 | 28 |  |
| MX3645 | 5.550 | 5.55 | 6.0  | 66 | 20 | 28 |  |
| MX3645 | 5.600 | 5.6  | 6.0  | 66 | 20 | 28 |  |
| MX3645 | 5.700 | 5.7  | 6.0  | 66 | 20 | 28 |  |
| MX3645 | 5.800 | 5.8  | 6.0  | 66 | 20 | 28 |  |
| MX3645 | 5.900 | 5.9  | 6.0  | 66 | 20 | 28 |  |
| MX3645 | 6.000 | 6.0  | 6.0  | 66 | 20 | 28 |  |
| MX3645 | 6.100 | 6.1  | 8.0  | 79 | 24 | 34 |  |
| MX3645 | 6.200 | 6.2  | 8.0  | 79 | 24 | 34 |  |
| MX3645 | 6.300 | 6.3  | 8.0  | 79 | 24 | 34 |  |
| MX3645 | 6.400 | 6.4  | 8.0  | 79 | 24 | 34 |  |
| MX3645 | 6.500 | 6.5  | 8.0  | 79 | 24 | 34 |  |
| MX3645 | 6.600 | 6.6  | 8.0  | 79 | 24 | 34 |  |
| MX3645 | 6.700 | 6.7  | 8.0  | 79 | 24 | 34 |  |
| MX3645 | 6.800 | 6.8  | 8.0  | 79 | 24 | 34 |  |
| MX3645 | 6.900 | 6.9  | 8.0  | 79 | 24 | 34 |  |
| MX3645 | 7.000 | 7.0  | 8.0  | 79 | 24 | 34 |  |
| MX3645 | 7.100 | 7.1  | 8.0  | 79 | 29 | 41 |  |
| MX3645 | 7.200 | 7.2  | 8.0  | 79 | 29 | 41 |  |
| MX3645 | 7.300 | 7.3  | 8.0  | 79 | 29 | 41 |  |
| MX3645 | 7.400 | 7.4  | 8.0  | 79 | 29 | 41 |  |
| MX3645 | 7.500 | 7.5  | 8.0  | 79 | 29 | 41 |  |
| MX3645 | 7.600 | 7.6  | 8.0  | 79 | 29 | 41 |  |
| MX3645 | 7.700 | 7.7  | 8.0  | 79 | 29 | 41 |  |
| MX3645 | 7.800 | 7.8  | 8.0  | 79 | 29 | 41 |  |
| MX3645 | 7.900 | 7.9  | 8.0  | 79 | 29 | 41 |  |
| MX3645 | 8.000 | 8.0  | 8.0  | 79 | 29 | 41 |  |
| MX3645 | 8.100 | 8.1  | 10.0 | 89 | 35 | 47 |  |
| MX3645 | 8.200 | 8.2  | 10.0 | 89 | 35 | 47 |  |
| MX3645 | 8.300 | 8.3  | 10.0 | 89 | 35 | 47 |  |
| MX3645 | 8.400 | 8.4  | 10.0 | 89 | 35 | 47 |  |
| MX3645 | 8.500 | 8.5  | 10.0 | 89 | 35 | 47 |  |
| MX3645 | 8.600 | 8.6  | 10.0 | 89 | 35 | 47 |  |
| MX3645 | 8.700 | 8.7  | 10.0 | 89 | 35 | 47 |  |
| MX3645 | 8.800 | 8.8  | 10.0 | 89 | 35 | 47 |  |
| MX3645 | 8.900 | 8.9  | 10.0 | 89 | 35 | 47 |  |
| MX3645 | 9.000 | 9.0  | 10.0 | 89 | 35 | 47 |  |
| MX3645 | 9.100 | 9.1  | 10.0 | 89 | 35 | 47 |  |
| MX3645 | 9.200 | 9.2  | 10.0 | 89 | 35 | 47 |  |
| MX3645 | 9.250 | 9.25 | 10.0 | 89 | 35 | 47 |  |
| MX3645 | 9.300 | 9.3  | 10.0 | 89 | 35 | 47 |  |
| MX3645 | 9.400 | 9.4  | 10.0 | 89 | 35 | 47 |  |
| MX3645 | 9.500 | 9.5  | 10.0 | 89 | 35 | 47 |  |
| MX3645 | 9.600 | 9.6  | 10.0 | 89 | 35 | 47 |  |
| MX3645 | 9.700 | 9.7  | 10.0 | 89 | 35 | 47 |  |
| MX3645 | 9.800 | 9.8  | 10.0 | 89 | 35 | 47 |  |

## KARBÜR MATKAP UCU KAPLAMALI SIVI KANALSIZ

Yüksek performanslı olan matkap ucu kısa ve uzun talaş veren yapı ve ıslah çeliği, çelik döküm, sementasyon çelikleri, çekme mukavemeti yaklaşık 1200 N/mm<sup>2</sup> kadar olan alaşımlı malzemelerde kullanılır. Kendinden puntalama özelliği mevcuttur.

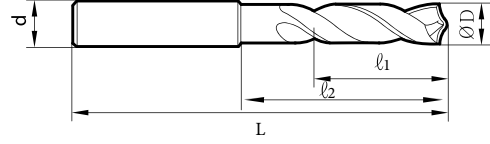
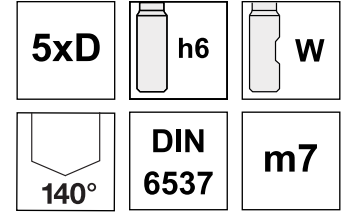


| ÜRÜN KODU | ÇAP D | ŞAFT ÇAPI d | TAM BOY L | Tmax BOYU L <sub>1</sub> | HELİS BOYU L <sub>2</sub> | SİPARİŞ NO |
|-----------|-------|-------------|-----------|--------------------------|---------------------------|------------|
|-----------|-------|-------------|-----------|--------------------------|---------------------------|------------|

|        |        |      |      |     |    |    |  |
|--------|--------|------|------|-----|----|----|--|
| MX3645 | 9.900  | 9.9  | 10.0 | 89  | 35 | 47 |  |
| MX3645 | 10.000 | 10.0 | 10.0 | 89  | 35 | 47 |  |
| MX3645 | 10.100 | 10.1 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 10.200 | 10.2 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 10.300 | 10.3 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 10.400 | 10.4 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 10.500 | 10.5 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 10.600 | 10.6 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 10.700 | 10.7 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 10.800 | 10.8 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 10.900 | 10.9 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 11.000 | 11.0 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 11.100 | 11.1 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 11.200 | 11.2 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 11.300 | 11.3 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 11.400 | 11.4 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 11.500 | 11.5 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 11.600 | 11.6 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 11.700 | 11.7 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 11.800 | 11.8 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 11.900 | 11.9 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 12.000 | 12.0 | 12.0 | 102 | 40 | 55 |  |
| MX3645 | 12.100 | 12.1 | 14.0 | 107 | 43 | 60 |  |
| MX3645 | 12.200 | 12.2 | 14.0 | 107 | 43 | 60 |  |
| MX3645 | 12.500 | 12.5 | 14.0 | 107 | 43 | 60 |  |
| MX3645 | 12.700 | 12.7 | 14.0 | 107 | 43 | 60 |  |
| MX3645 | 12.800 | 12.8 | 14.0 | 107 | 43 | 60 |  |
| MX3645 | 13.000 | 13.0 | 14.0 | 107 | 43 | 60 |  |
| MX3645 | 13.500 | 13.5 | 14.0 | 107 | 43 | 60 |  |
| MX3645 | 13.700 | 13.7 | 14.0 | 107 | 43 | 60 |  |
| MX3645 | 13.800 | 13.8 | 14.0 | 107 | 43 | 60 |  |
| MX3645 | 14.000 | 14.0 | 14.0 | 107 | 43 | 60 |  |
| MX3645 | 14.200 | 14.2 | 16.0 | 115 | 45 | 65 |  |
| MX3645 | 14.500 | 14.5 | 16.0 | 115 | 45 | 65 |  |
| MX3645 | 14.700 | 14.7 | 16.0 | 115 | 45 | 65 |  |
| MX3645 | 15.000 | 15.0 | 16.0 | 115 | 45 | 65 |  |
| MX3645 | 15.500 | 15.5 | 16.0 | 115 | 45 | 65 |  |
| MX3645 | 15.700 | 15.7 | 16.0 | 115 | 45 | 65 |  |
| MX3645 | 15.800 | 15.8 | 16.0 | 115 | 45 | 65 |  |
| MX3645 | 16.000 | 16.0 | 16.0 | 115 | 45 | 65 |  |
| MX3645 | 16.500 | 16.5 | 18.0 | 123 | 51 | 73 |  |
| MX3645 | 17.000 | 17.0 | 18.0 | 123 | 51 | 73 |  |
| MX3645 | 17.500 | 17.5 | 18.0 | 123 | 51 | 73 |  |
| MX3645 | 18.000 | 18.0 | 18.0 | 123 | 51 | 73 |  |
| MX3645 | 18.500 | 18.5 | 20.0 | 131 | 55 | 79 |  |
| MX3645 | 19.000 | 19.0 | 20.0 | 131 | 55 | 79 |  |
| MX3645 | 19.500 | 19.5 | 20.0 | 131 | 55 | 79 |  |
| MX3645 | 20.000 | 20.0 | 20.0 | 131 | 55 | 79 |  |

## KARBÜR MATKAP UCU KAPLAMALI SIVI KANALSIZ

Yüksek performanslı olan matkap ucu kısa ve uzun talaş veren yapı ve ıslah çeliği, çelik döküm, sementasyon çelikleri, çekme mukavemeti yaklaşık 1200 N/mm<sup>2</sup> kadar olan alaşımlı malzemelerde kullanılır. Kendinden puntalama özelliği mevcuttur.

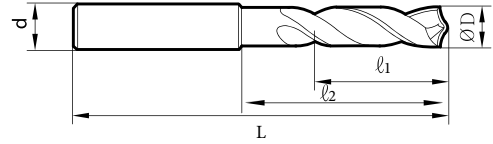
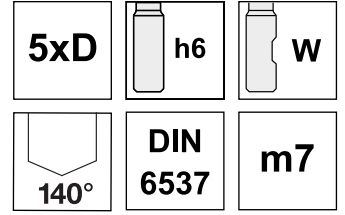


| ÜRÜN KODU | ÇAP<br>D | ŞAFT ÇAP<br>d | TAM BOY<br>L | Tmax BOYU<br>l <sub>1</sub> | HELİS BOYU<br>l <sub>2</sub> | SİPARİŞ<br>NO |
|-----------|----------|---------------|--------------|-----------------------------|------------------------------|---------------|
|-----------|----------|---------------|--------------|-----------------------------|------------------------------|---------------|

|        |       |      |     |    |    |    |  |
|--------|-------|------|-----|----|----|----|--|
| MX3646 | 1.000 | 1.0  | 3.0 | 55 | 7  | 10 |  |
| MX3646 | 1.100 | 1.1  | 3.0 | 55 | 10 | 12 |  |
| MX3646 | 1.200 | 1.2  | 3.0 | 55 | 10 | 12 |  |
| MX3646 | 1.300 | 1.3  | 3.0 | 55 | 10 | 12 |  |
| MX3646 | 1.400 | 1.4  | 3.0 | 55 | 10 | 12 |  |
| MX3646 | 1.500 | 1.5  | 3.0 | 55 | 10 | 12 |  |
| MX3646 | 1.600 | 1.6  | 3.0 | 55 | 13 | 16 |  |
| MX3646 | 1.700 | 1.7  | 3.0 | 55 | 13 | 16 |  |
| MX3646 | 1.800 | 1.8  | 3.0 | 55 | 13 | 16 |  |
| MX3646 | 1.900 | 1.9  | 3.0 | 55 | 13 | 16 |  |
| MX3646 | 2.000 | 2.0  | 3.0 | 55 | 16 | 21 |  |
| MX3646 | 2.100 | 2.1  | 3.0 | 55 | 16 | 21 |  |
| MX3646 | 2.200 | 2.2  | 3.0 | 55 | 16 | 21 |  |
| MX3646 | 2.300 | 2.3  | 3.0 | 55 | 16 | 21 |  |
| MX3646 | 2.400 | 2.4  | 3.0 | 55 | 16 | 21 |  |
| MX3646 | 2.500 | 2.5  | 3.0 | 55 | 16 | 21 |  |
| MX3646 | 2.600 | 2.6  | 3.0 | 55 | 19 | 21 |  |
| MX3646 | 2.700 | 2.7  | 3.0 | 55 | 19 | 21 |  |
| MX3646 | 2.800 | 2.8  | 3.0 | 55 | 19 | 21 |  |
| MX3646 | 2.900 | 2.9  | 3.0 | 55 | 19 | 21 |  |
| MX3646 | 3.000 | 3.0  | 6.0 | 66 | 23 | 28 |  |
| MX3646 | 3.100 | 3.1  | 6.0 | 66 | 23 | 28 |  |
| MX3646 | 3.200 | 3.2  | 6.0 | 66 | 23 | 28 |  |
| MX3646 | 3.300 | 3.3  | 6.0 | 66 | 23 | 28 |  |
| MX3646 | 3.400 | 3.4  | 6.0 | 66 | 23 | 28 |  |
| MX3646 | 3.500 | 3.5  | 6.0 | 66 | 23 | 28 |  |
| MX3646 | 3.600 | 3.6  | 6.0 | 66 | 23 | 28 |  |
| MX3646 | 3.700 | 3.7  | 6.0 | 66 | 23 | 28 |  |
| MX3646 | 3.800 | 3.8  | 6.0 | 74 | 29 | 36 |  |
| MX3646 | 3.900 | 3.9  | 6.0 | 74 | 29 | 36 |  |
| MX3646 | 4.000 | 4.0  | 6.0 | 74 | 29 | 36 |  |
| MX3646 | 4.100 | 4.1  | 6.0 | 74 | 29 | 36 |  |
| MX3646 | 4.200 | 4.2  | 6.0 | 74 | 29 | 36 |  |
| MX3646 | 4.300 | 4.3  | 6.0 | 74 | 29 | 36 |  |
| MX3646 | 4.400 | 4.4  | 6.0 | 74 | 29 | 36 |  |
| MX3646 | 4.500 | 4.5  | 6.0 | 74 | 29 | 36 |  |
| MX3646 | 4.600 | 4.6  | 6.0 | 74 | 29 | 36 |  |
| MX3646 | 4.650 | 4.65 | 6.0 | 74 | 29 | 36 |  |
| MX3646 | 4.700 | 4.7  | 6.0 | 74 | 29 | 36 |  |
| MX3646 | 4.800 | 4.8  | 6.0 | 82 | 35 | 44 |  |
| MX3646 | 4.900 | 4.9  | 6.0 | 82 | 35 | 44 |  |
| MX3646 | 5.000 | 5.0  | 6.0 | 82 | 35 | 44 |  |
| MX3646 | 5.100 | 5.1  | 6.0 | 82 | 35 | 44 |  |
| MX3646 | 5.200 | 5.2  | 6.0 | 82 | 35 | 44 |  |
| MX3646 | 5.300 | 5.3  | 6.0 | 82 | 35 | 44 |  |
| MX3646 | 5.400 | 5.4  | 6.0 | 82 | 35 | 44 |  |
| MX3646 | 5.500 | 5.5  | 6.0 | 82 | 35 | 44 |  |
| MX3646 | 5.550 | 5.55 | 6.0 | 82 | 35 | 44 |  |

## KARBÜR MATKAP UCU KAPLAMALI SIVI KANALSIZ

Yüksek performanslı olan matkap ucu kısa ve uzun talaş veren yapı ve ıslah çeliği, çelik döküm, sementasyon çelikleri, çekme mukavemeti yaklaşık 1200 N/mm<sup>2</sup> kadar olan alaşımlı malzemelerde kullanılır. Kendinden puntalama özelliği mevcuttur.

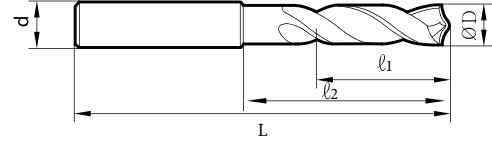
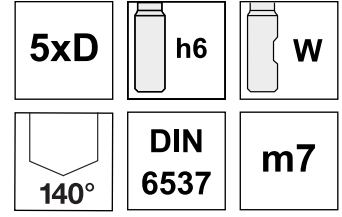


| ÜRÜN KODU | ÇAP D | ŞAFT ÇAPİ d | TAM BOY L | Tmax BOYU l <sub>1</sub> | HELİS BOYU l <sub>2</sub> | SİPARİŞ NO |
|-----------|-------|-------------|-----------|--------------------------|---------------------------|------------|
|-----------|-------|-------------|-----------|--------------------------|---------------------------|------------|

|        |        |      |      |     |    |    |  |
|--------|--------|------|------|-----|----|----|--|
| MX3646 | 5.600  | 5.6  | 6.0  | 82  | 35 | 44 |  |
| MX3646 | 5.700  | 5.7  | 6.0  | 82  | 35 | 44 |  |
| MX3646 | 5.800  | 5.8  | 6.0  | 82  | 35 | 44 |  |
| MX3646 | 5.900  | 5.9  | 6.0  | 82  | 35 | 44 |  |
| MX3646 | 6.000  | 6.0  | 6.0  | 82  | 35 | 44 |  |
| MX3646 | 6.100  | 6.1  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 6.200  | 6.2  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 6.300  | 6.3  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 6.400  | 6.4  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 6.500  | 6.5  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 6.600  | 6.6  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 6.700  | 6.7  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 6.800  | 6.8  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 6.900  | 6.9  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 7.000  | 7.0  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 7.100  | 7.1  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 7.200  | 7.2  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 7.300  | 7.3  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 7.400  | 7.4  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 7.500  | 7.5  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 7.600  | 7.6  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 7.700  | 7.7  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 7.800  | 7.8  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 7.900  | 7.9  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 8.000  | 8.0  | 8.0  | 91  | 43 | 53 |  |
| MX3646 | 8.100  | 8.1  | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 8.200  | 8.2  | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 8.300  | 8.3  | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 8.400  | 8.4  | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 8.500  | 8.5  | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 8.600  | 8.6  | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 8.700  | 8.7  | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 8.800  | 8.8  | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 8.900  | 8.9  | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 9.000  | 9.0  | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 9.100  | 9.1  | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 9.200  | 9.2  | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 9.250  | 9.25 | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 9.300  | 9.3  | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 9.400  | 9.4  | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 9.500  | 9.5  | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 9.600  | 9.6  | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 9.700  | 9.7  | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 9.800  | 9.8  | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 9.900  | 9.9  | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 10.000 | 10.0 | 10.0 | 103 | 49 | 61 |  |
| MX3646 | 10.100 | 10.1 | 12.0 | 118 | 56 | 71 |  |

## KARBÜR MATKAP UCU KAPLAMALI SIVI KANALSIZ

Yüksek performanslı olan matkap ucu kısa ve uzun talaş veren yapı ve ıslah çeliği, çelik döküm, sementasyon çelikleri, çekme mukavemeti yaklaşık 1200 N/mm<sup>2</sup> kadar olan alaşımlı malzemelerde kullanılır. Kendinden puntalama özelliği mevcuttur.



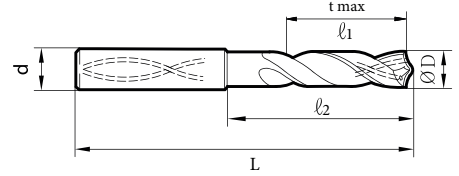
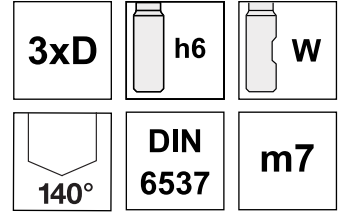
| ÜRÜN KODU | ÇAP<br>D | ŞAFT ÇAPI<br>d | TAM BOY<br>L | Tmax BOYU<br>l <sub>1</sub> | HELİS BOYU<br>l <sub>2</sub> | SİPARİŞ<br>NO |
|-----------|----------|----------------|--------------|-----------------------------|------------------------------|---------------|
|-----------|----------|----------------|--------------|-----------------------------|------------------------------|---------------|

|        |        |      |      |     |    |     |  |
|--------|--------|------|------|-----|----|-----|--|
| MX3646 | 10.200 | 10.2 | 12.0 | 118 | 56 | 71  |  |
| MX3646 | 10.300 | 10.3 | 12.0 | 118 | 56 | 71  |  |
| MX3646 | 10.400 | 10.4 | 12.0 | 118 | 56 | 71  |  |
| MX3646 | 10.500 | 10.5 | 12.0 | 118 | 56 | 71  |  |
| MX3646 | 10.600 | 10.6 | 12.0 | 118 | 56 | 71  |  |
| MX3646 | 10.700 | 10.7 | 12.0 | 118 | 56 | 71  |  |
| MX3646 | 10.800 | 10.8 | 12.0 | 118 | 56 | 71  |  |
| MX3646 | 10.900 | 10.9 | 12.0 | 118 | 56 | 71  |  |
| MX3646 | 11.000 | 11.0 | 12.0 | 118 | 56 | 71  |  |
| MX3646 | 11.100 | 11.1 | 12.0 | 118 | 56 | 71  |  |
| MX3646 | 11.200 | 11.2 | 12.0 | 118 | 56 | 71  |  |
| MX3646 | 11.300 | 11.3 | 12.0 | 118 | 56 | 71  |  |
| MX3646 | 11.400 | 11.4 | 12.0 | 118 | 56 | 71  |  |
| MX3646 | 11.500 | 11.5 | 12.0 | 118 | 56 | 71  |  |
| MX3646 | 11.600 | 11.6 | 12.0 | 118 | 56 | 71  |  |
| MX3646 | 11.700 | 11.7 | 12.0 | 118 | 56 | 71  |  |
| MX3646 | 11.800 | 11.8 | 12.0 | 118 | 56 | 71  |  |
| MX3646 | 11.900 | 11.9 | 12.0 | 118 | 56 | 71  |  |
| MX3646 | 12.000 | 12.0 | 12.0 | 118 | 56 | 71  |  |
| MX3646 | 12.100 | 12.1 | 14.0 | 124 | 60 | 77  |  |
| MX3646 | 12.200 | 12.2 | 14.0 | 124 | 60 | 77  |  |
| MX3646 | 12.500 | 12.5 | 14.0 | 124 | 60 | 77  |  |
| MX3646 | 12.700 | 12.7 | 14.0 | 124 | 60 | 77  |  |
| MX3646 | 12.800 | 12.8 | 14.0 | 124 | 60 | 77  |  |
| MX3646 | 13.000 | 13.0 | 14.0 | 124 | 60 | 77  |  |
| MX3646 | 13.500 | 13.5 | 14.0 | 124 | 60 | 77  |  |
| MX3646 | 13.700 | 13.7 | 14.0 | 124 | 60 | 77  |  |
| MX3646 | 13.800 | 13.8 | 14.0 | 124 | 60 | 77  |  |
| MX3646 | 14.000 | 14.0 | 14.0 | 124 | 60 | 77  |  |
| MX3646 | 14.200 | 14.2 | 16.0 | 133 | 63 | 83  |  |
| MX3646 | 14.500 | 14.5 | 16.0 | 133 | 63 | 83  |  |
| MX3646 | 14.700 | 14.7 | 16.0 | 133 | 63 | 83  |  |
| MX3646 | 15.000 | 15.0 | 16.0 | 133 | 63 | 83  |  |
| MX3646 | 15.500 | 15.5 | 16.0 | 133 | 63 | 83  |  |
| MX3646 | 15.700 | 15.7 | 16.0 | 133 | 63 | 83  |  |
| MX3646 | 15.800 | 15.8 | 16.0 | 133 | 63 | 83  |  |
| MX3646 | 16.000 | 16.0 | 16.0 | 133 | 63 | 83  |  |
| MX3646 | 16.500 | 16.5 | 18.0 | 143 | 71 | 93  |  |
| MX3646 | 17.000 | 17.0 | 18.0 | 143 | 71 | 93  |  |
| MX3646 | 17.500 | 17.5 | 18.0 | 143 | 71 | 93  |  |
| MX3646 | 18.000 | 18.0 | 18.0 | 143 | 71 | 93  |  |
| MX3646 | 18.500 | 18.5 | 20.0 | 153 | 77 | 101 |  |
| MX3646 | 19.000 | 19.0 | 20.0 | 153 | 77 | 101 |  |
| MX3646 | 19.500 | 19.5 | 20.0 | 153 | 77 | 101 |  |
| MX3646 | 20.000 | 20.0 | 20.0 | 153 | 77 | 101 |  |

## KARBÜR MATKAP UCU KAPLAMALI SIVI KANALLI

Yüksek performanslı olan matkap ucu kısa ve uzun talaş veren yapı ve ıslah çeliği, çelik döküm, sementasyon çelikleri, çekme mukavemeti yaklaşık 1200 N/mm<sup>2</sup> kadar olan alaşımlı malzemelerde kullanılır. Kendinden puntalama özelliği mevcuttur.

Contalı Pens ile Kullanılması tavsiye edilmektedir



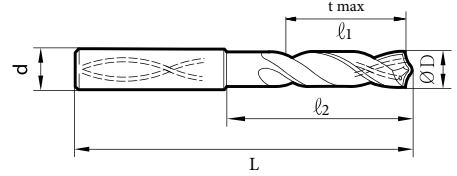
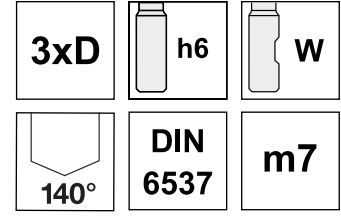
| ÜRÜN KODU | ÇAP<br>D | ŞAFT ÇAPI<br>d | TAM BOY<br>L | Tmax BOYU<br>l <sub>1</sub> | HELİS BOYU<br>l <sub>2</sub> | SİPARİŞ<br>NO |
|-----------|----------|----------------|--------------|-----------------------------|------------------------------|---------------|
|-----------|----------|----------------|--------------|-----------------------------|------------------------------|---------------|

|        |       |      |     |    |    |    |  |
|--------|-------|------|-----|----|----|----|--|
| MX3687 | 1.00  | 1.0  | 3.0 | 38 | 3  | 8  |  |
| MX3687 | 1.10  | 1.1  | 3.0 | 38 | 3  | 8  |  |
| MX3687 | 1.20  | 1.2  | 3.0 | 38 | 3  | 8  |  |
| MX3687 | 1.30  | 1.3  | 3.0 | 38 | 3  | 8  |  |
| MX3687 | 1.40  | 1.4  | 3.0 | 38 | 3  | 8  |  |
| MX3687 | 1.50  | 1.5  | 3.0 | 50 | 5  | 8  |  |
| MX3687 | 1.600 | 1.6  | 3.0 | 50 | 5  | 8  |  |
| MX3687 | 1.700 | 1.7  | 3.0 | 50 | 7  | 9  |  |
| MX3687 | 1.800 | 1.8  | 3.0 | 50 | 7  | 9  |  |
| MX3687 | 1.900 | 1.9  | 3.0 | 50 | 7  | 9  |  |
| MX3687 | 2.000 | 2.0  | 3.0 | 50 | 10 | 16 |  |
| MX3687 | 2.100 | 2.1  | 3.0 | 50 | 10 | 16 |  |
| MX3687 | 2.200 | 2.2  | 3.0 | 50 | 10 | 16 |  |
| MX3687 | 2.300 | 2.3  | 3.0 | 50 | 10 | 16 |  |
| MX3687 | 2.400 | 2.4  | 3.0 | 50 | 10 | 16 |  |
| MX3687 | 2.500 | 2.5  | 3.0 | 50 | 14 | 20 |  |
| MX3687 | 2.600 | 2.6  | 3.0 | 50 | 14 | 20 |  |
| MX3687 | 2.700 | 2.7  | 3.0 | 50 | 14 | 20 |  |
| MX3687 | 2.800 | 2.8  | 3.0 | 50 | 14 | 20 |  |
| MX3687 | 2.900 | 2.9  | 3.0 | 50 | 14 | 20 |  |
| MX3687 | 3.000 | 3.0  | 6.0 | 62 | 14 | 20 |  |
| MX3687 | 3.100 | 3.1  | 6.0 | 62 | 14 | 20 |  |
| MX3687 | 3.200 | 3.2  | 6.0 | 62 | 14 | 20 |  |
| MX3687 | 3.300 | 3.3  | 6.0 | 62 | 14 | 20 |  |
| MX3687 | 3.400 | 3.4  | 6.0 | 62 | 14 | 20 |  |
| MX3687 | 3.500 | 3.5  | 6.0 | 62 | 14 | 20 |  |
| MX3687 | 3.600 | 3.6  | 6.0 | 62 | 14 | 20 |  |
| MX3687 | 3.700 | 3.7  | 6.0 | 62 | 14 | 20 |  |
| MX3687 | 3.800 | 3.8  | 6.0 | 66 | 17 | 24 |  |
| MX3687 | 3.900 | 3.9  | 6.0 | 66 | 17 | 24 |  |
| MX3687 | 4.000 | 4.0  | 6.0 | 66 | 17 | 24 |  |
| MX3687 | 4.100 | 4.1  | 6.0 | 66 | 17 | 24 |  |
| MX3687 | 4.200 | 4.2  | 6.0 | 66 | 17 | 24 |  |
| MX3687 | 4.300 | 4.3  | 6.0 | 66 | 17 | 24 |  |
| MX3687 | 4.400 | 4.4  | 6.0 | 66 | 17 | 24 |  |
| MX3687 | 4.500 | 4.5  | 6.0 | 66 | 17 | 24 |  |
| MX3687 | 4.600 | 4.6  | 6.0 | 66 | 17 | 24 |  |
| MX3687 | 4.650 | 4.65 | 6.0 | 66 | 17 | 24 |  |
| MX3687 | 4.700 | 4.7  | 6.0 | 66 | 17 | 24 |  |
| MX3687 | 4.800 | 4.8  | 6.0 | 66 | 20 | 28 |  |
| MX3687 | 4.900 | 4.9  | 6.0 | 66 | 20 | 28 |  |
| MX3687 | 5.000 | 5.0  | 6.0 | 66 | 20 | 28 |  |
| MX3687 | 5.100 | 5.1  | 6.0 | 66 | 20 | 28 |  |
| MX3687 | 5.200 | 5.2  | 6.0 | 66 | 20 | 28 |  |
| MX3687 | 5.300 | 5.3  | 6.0 | 66 | 20 | 28 |  |
| MX3687 | 5.400 | 5.4  | 6.0 | 66 | 20 | 28 |  |

## KARBÜR MATKAP UCU KAPLAMALI SIVI KANALLI

Yüksek performanslı olan matkap ucu kısa ve uzun talaş veren yapı ve ıslah çeliği, çelik dö-küm, sementasyon çelikleri, çekme mukavemeti yaklaşık 1200 N/mm<sup>2</sup> kadar olan alaşımlı malzemelerde kullanılır. Kendinden puntalama özelliği mevcuttur.

Contalı Pens ile Kullanılması tavsiye edilmektedir



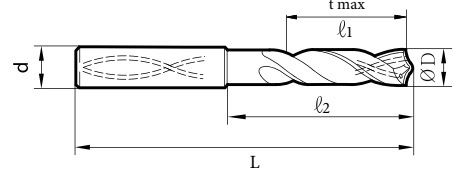
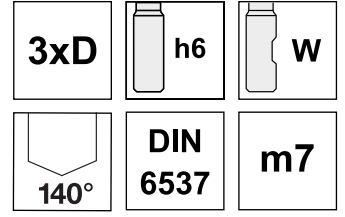
| ÜRÜN KODU | ÇAP<br>D | ŞAFT ÇAPI<br>d | TAM BOY<br>L | Tmax BOYU<br>l1 | HELİS BOYU<br>l2 | SİPARİŞ<br>NO |
|-----------|----------|----------------|--------------|-----------------|------------------|---------------|
|-----------|----------|----------------|--------------|-----------------|------------------|---------------|

|        |       |      |      |    |    |    |
|--------|-------|------|------|----|----|----|
| MX3687 | 5.500 | 5.5  | 6.0  | 66 | 20 | 28 |
| MX3687 | 5.550 | 5.55 | 6.0  | 66 | 20 | 28 |
| MX3687 | 5.600 | 5.6  | 6.0  | 66 | 20 | 28 |
| MX3687 | 5.700 | 5.7  | 6.0  | 66 | 20 | 28 |
| MX3687 | 5.800 | 5.8  | 6.0  | 66 | 20 | 28 |
| MX3687 | 5.900 | 5.9  | 6.0  | 66 | 20 | 28 |
| MX3687 | 6.000 | 6.0  | 6.0  | 66 | 20 | 28 |
| MX3687 | 6.100 | 6.1  | 8.0  | 79 | 24 | 34 |
| MX3687 | 6.200 | 6.2  | 8.0  | 79 | 24 | 34 |
| MX3687 | 6.300 | 6.3  | 8.0  | 79 | 24 | 34 |
| MX3687 | 6.400 | 6.4  | 8.0  | 79 | 24 | 34 |
| MX3687 | 6.500 | 6.5  | 8.0  | 79 | 24 | 34 |
| MX3687 | 6.600 | 6.6  | 8.0  | 79 | 24 | 34 |
| MX3687 | 6.700 | 6.7  | 8.0  | 79 | 24 | 34 |
| MX3687 | 6.800 | 6.8  | 8.0  | 79 | 24 | 34 |
| MX3687 | 6.900 | 6.9  | 8.0  | 79 | 24 | 34 |
| MX3687 | 7.000 | 7.0  | 8.0  | 79 | 24 | 34 |
| MX3687 | 7.100 | 7.1  | 8.0  | 79 | 29 | 41 |
| MX3687 | 7.200 | 7.2  | 8.0  | 79 | 29 | 41 |
| MX3687 | 7.300 | 7.3  | 8.0  | 79 | 29 | 41 |
| MX3687 | 7.400 | 7.4  | 8.0  | 79 | 29 | 41 |
| MX3687 | 7.500 | 7.5  | 8.0  | 79 | 29 | 41 |
| MX3687 | 7.600 | 7.6  | 8.0  | 79 | 29 | 41 |
| MX3687 | 7.700 | 7.7  | 8.0  | 79 | 29 | 41 |
| MX3687 | 7.800 | 7.8  | 8.0  | 79 | 29 | 41 |
| MX3687 | 7.900 | 7.9  | 8.0  | 79 | 29 | 41 |
| MX3687 | 8.000 | 8.0  | 8.0  | 79 | 29 | 41 |
| MX3687 | 8.100 | 8.1  | 10.0 | 89 | 35 | 47 |
| MX3687 | 8.200 | 8.2  | 10.0 | 89 | 35 | 47 |
| MX3687 | 8.300 | 8.3  | 10.0 | 89 | 35 | 47 |
| MX3687 | 8.400 | 8.4  | 10.0 | 89 | 35 | 47 |
| MX3687 | 8.500 | 8.5  | 10.0 | 89 | 35 | 47 |
| MX3687 | 8.600 | 8.6  | 10.0 | 89 | 35 | 47 |
| MX3687 | 8.700 | 8.7  | 10.0 | 89 | 35 | 47 |
| MX3687 | 8.800 | 8.8  | 10.0 | 89 | 35 | 47 |
| MX3687 | 8.900 | 8.9  | 10.0 | 89 | 35 | 47 |
| MX3687 | 9.000 | 9.0  | 10.0 | 89 | 35 | 47 |
| MX3687 | 9.100 | 9.1  | 10.0 | 89 | 35 | 47 |
| MX3687 | 9.200 | 9.2  | 10.0 | 89 | 35 | 47 |
| MX3687 | 9.250 | 9.25 | 10.0 | 89 | 35 | 47 |
| MX3687 | 9.300 | 9.3  | 10.0 | 89 | 35 | 47 |
| MX3687 | 9.400 | 9.4  | 10.0 | 89 | 35 | 47 |
| MX3687 | 9.500 | 9.5  | 10.0 | 89 | 35 | 47 |
| MX3687 | 9.600 | 9.6  | 10.0 | 89 | 35 | 47 |
| MX3687 | 9.700 | 9.7  | 10.0 | 89 | 35 | 47 |
| MX3687 | 9.800 | 9.8  | 10.0 | 89 | 35 | 47 |

## KARBÜR MATKAP UCU KAPLAMALI SIVI KANALLI

Yüksek performanslı olan matkap ucu kısa ve uzun talaş veren yapı ve ıslah çeliği, çelik dö-küm, sementasyon çelikleri, çekme mukavemeti yaklaşık 1200 N/mm<sup>2</sup> kadar olan alaşımlı malzeme-lerde kullanılır. Kendinden puntalama özelli-ği mevcuttur.

Contalı Pens ile Kullanılması tavsiye edilmektedir



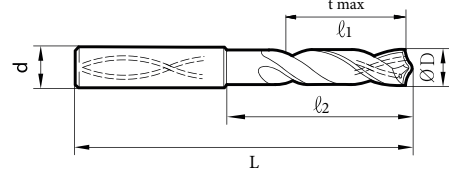
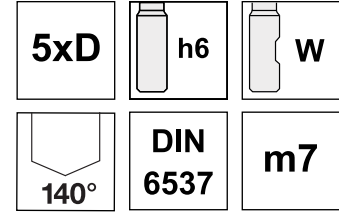
| ÜRÜN KODU | ÇAP<br>D | ŞAFT ÇAP<br>d | TAM BOY<br>L | Tmax BOYU<br>l1 | HELİS BOYU<br>l2 | SİPARİŞ<br>NO |
|-----------|----------|---------------|--------------|-----------------|------------------|---------------|
|-----------|----------|---------------|--------------|-----------------|------------------|---------------|

|        |        |      |      |     |    |    |  |
|--------|--------|------|------|-----|----|----|--|
| MX3687 | 9.900  | 9.9  | 10.0 | 89  | 35 | 47 |  |
| MX3687 | 10.000 | 10.0 | 10.0 | 89  | 35 | 47 |  |
| MX3687 | 10.100 | 10.1 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 10.200 | 10.2 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 10.300 | 10.3 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 10.400 | 10.4 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 10.500 | 10.5 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 10.600 | 10.6 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 10.700 | 10.7 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 10.800 | 10.8 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 10.900 | 10.9 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 11.000 | 11.0 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 11.100 | 11.1 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 11.200 | 11.2 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 11.300 | 11.3 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 11.400 | 11.4 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 11.500 | 11.5 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 11.600 | 11.6 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 11.700 | 11.7 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 11.800 | 11.8 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 11.900 | 11.9 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 12.000 | 12.0 | 12.0 | 102 | 40 | 55 |  |
| MX3687 | 12.100 | 12.1 | 14.0 | 107 | 43 | 60 |  |
| MX3687 | 12.200 | 12.2 | 14.0 | 107 | 43 | 60 |  |
| MX3687 | 12.500 | 12.5 | 14.0 | 107 | 43 | 60 |  |
| MX3687 | 12.700 | 12.7 | 14.0 | 107 | 43 | 60 |  |
| MX3687 | 12.800 | 12.8 | 14.0 | 107 | 43 | 60 |  |
| MX3687 | 13.000 | 13.0 | 14.0 | 107 | 43 | 60 |  |
| MX3687 | 13.500 | 13.5 | 14.0 | 107 | 43 | 60 |  |
| MX3687 | 13.700 | 13.7 | 14.0 | 107 | 43 | 60 |  |
| MX3687 | 13.800 | 13.8 | 14.0 | 107 | 43 | 60 |  |
| MX3687 | 14.000 | 14.0 | 14.0 | 107 | 43 | 60 |  |
| MX3687 | 14.200 | 14.2 | 16.0 | 115 | 45 | 65 |  |
| MX3687 | 14.500 | 14.5 | 16.0 | 115 | 45 | 65 |  |
| MX3687 | 14.700 | 14.7 | 16.0 | 115 | 45 | 65 |  |
| MX3687 | 15.000 | 15.0 | 16.0 | 115 | 45 | 65 |  |
| MX3687 | 15.500 | 15.5 | 16.0 | 115 | 45 | 65 |  |
| MX3687 | 15.700 | 15.7 | 16.0 | 115 | 45 | 65 |  |
| MX3687 | 15.800 | 15.8 | 16.0 | 115 | 45 | 65 |  |
| MX3687 | 16.000 | 16.0 | 16.0 | 115 | 45 | 65 |  |
| MX3687 | 16.500 | 16.5 | 18.0 | 123 | 51 | 73 |  |
| MX3687 | 17.000 | 17.0 | 18.0 | 123 | 51 | 73 |  |
| MX3687 | 17.500 | 17.5 | 18.0 | 123 | 51 | 73 |  |
| MX3687 | 18.000 | 18.0 | 18.0 | 123 | 51 | 73 |  |
| MX3687 | 18.500 | 18.5 | 20.0 | 131 | 55 | 79 |  |
| MX3687 | 19.000 | 19.0 | 20.0 | 131 | 55 | 79 |  |
| MX3687 | 19.500 | 19.5 | 20.0 | 131 | 55 | 79 |  |
| MX3687 | 20.000 | 20.0 | 20.0 | 131 | 55 | 79 |  |

## KARBÜR MATKAP UCU KAPLAMALI SIVI KANALLI

Yüksek performanslı olan matkap ucu kısa ve uzun talaş veren yapı ve ıslah çeliği, çelik döküm, sementasyon çelikleri, çekme mukavemeti yaklaşık 1200 N/mm<sup>2</sup> kadar olan alaşımlı malzemelerde kullanılır. Kendinden puntalama özelliği mevcuttur.

Contalı Pens ile Kullanılması tavsiye edilmektedir



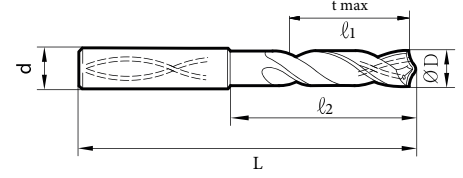
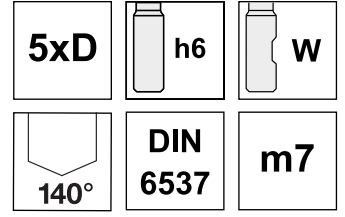
| ÜRÜN KODU | ÇAP<br>D | ŞAFT ÇAP<br>d | TAM BOY<br>L | Tmax BOYU<br>l <sub>1</sub> | HELİS BOYU<br>l <sub>2</sub> | SİPARİŞ<br>NO |
|-----------|----------|---------------|--------------|-----------------------------|------------------------------|---------------|
|-----------|----------|---------------|--------------|-----------------------------|------------------------------|---------------|

|        |       |      |     |    |    |    |  |
|--------|-------|------|-----|----|----|----|--|
| MX3688 | 1.000 | 1.0  | 3.0 | 55 | 7  | 10 |  |
| MX3688 | 1.100 | 1.1  | 3.0 | 55 | 10 | 12 |  |
| MX3688 | 1.200 | 1.2  | 3.0 | 55 | 10 | 12 |  |
| MX3688 | 1.300 | 1.3  | 3.0 | 55 | 10 | 12 |  |
| MX3688 | 1.400 | 1.4  | 3.0 | 55 | 10 | 12 |  |
| MX3688 | 1.500 | 1.5  | 3.0 | 55 | 10 | 12 |  |
| MX3688 | 1.600 | 1.6  | 3.0 | 55 | 13 | 16 |  |
| MX3688 | 1.700 | 1.7  | 3.0 | 55 | 13 | 16 |  |
| MX3688 | 1.800 | 1.8  | 3.0 | 55 | 13 | 16 |  |
| MX3688 | 1.900 | 1.9  | 3.0 | 55 | 13 | 16 |  |
| MX3688 | 2.000 | 2.0  | 3.0 | 55 | 16 | 21 |  |
| MX3688 | 2.100 | 2.1  | 3.0 | 55 | 16 | 21 |  |
| MX3688 | 2.200 | 2.2  | 3.0 | 55 | 16 | 21 |  |
| MX3688 | 2.300 | 2.3  | 3.0 | 55 | 16 | 21 |  |
| MX3688 | 2.400 | 2.4  | 3.0 | 55 | 16 | 21 |  |
| MX3688 | 2.500 | 2.5  | 3.0 | 55 | 16 | 21 |  |
| MX3688 | 2.600 | 2.6  | 3.0 | 55 | 19 | 21 |  |
| MX3688 | 2.700 | 2.7  | 3.0 | 55 | 19 | 21 |  |
| MX3688 | 2.800 | 2.8  | 3.0 | 55 | 19 | 21 |  |
| MX3688 | 2.900 | 2.9  | 3.0 | 55 | 19 | 21 |  |
| MX3688 | 3.000 | 3.0  | 6.0 | 66 | 23 | 28 |  |
| MX3688 | 3.100 | 3.1  | 6.0 | 66 | 23 | 28 |  |
| MX3688 | 3.200 | 3.2  | 6.0 | 66 | 23 | 28 |  |
| MX3688 | 3.300 | 3.3  | 6.0 | 66 | 23 | 28 |  |
| MX3688 | 3.400 | 3.4  | 6.0 | 66 | 23 | 28 |  |
| MX3688 | 3.500 | 3.5  | 6.0 | 66 | 23 | 28 |  |
| MX3688 | 3.600 | 3.6  | 6.0 | 66 | 23 | 28 |  |
| MX3688 | 3.700 | 3.7  | 6.0 | 66 | 23 | 28 |  |
| MX3688 | 3.800 | 3.8  | 6.0 | 74 | 29 | 36 |  |
| MX3688 | 3.900 | 3.9  | 6.0 | 74 | 29 | 36 |  |
| MX3688 | 4.000 | 4.0  | 6.0 | 74 | 29 | 36 |  |
| MX3688 | 4.100 | 4.1  | 6.0 | 74 | 29 | 36 |  |
| MX3688 | 4.200 | 4.2  | 6.0 | 74 | 29 | 36 |  |
| MX3688 | 4.300 | 4.3  | 6.0 | 74 | 29 | 36 |  |
| MX3688 | 4.400 | 4.4  | 6.0 | 74 | 29 | 36 |  |
| MX3688 | 4.500 | 4.5  | 6.0 | 74 | 29 | 36 |  |
| MX3688 | 4.600 | 4.6  | 6.0 | 74 | 29 | 36 |  |
| MX3688 | 4.650 | 4.65 | 6.0 | 74 | 29 | 36 |  |
| MX3688 | 4.700 | 4.7  | 6.0 | 74 | 29 | 36 |  |
| MX3688 | 4.800 | 4.8  | 6.0 | 82 | 35 | 44 |  |
| MX3688 | 4.900 | 4.9  | 6.0 | 82 | 35 | 44 |  |
| MX3688 | 5.000 | 5.0  | 6.0 | 82 | 35 | 44 |  |
| MX3688 | 5.100 | 5.1  | 6.0 | 82 | 35 | 44 |  |
| MX3688 | 5.200 | 5.2  | 6.0 | 82 | 35 | 44 |  |
| MX3688 | 5.300 | 5.3  | 6.0 | 82 | 35 | 44 |  |
| MX3688 | 5.400 | 5.4  | 6.0 | 82 | 35 | 44 |  |
| MX3688 | 5.500 | 5.5  | 6.0 | 82 | 35 | 44 |  |
| MX3688 | 5.550 | 5.55 | 6.0 | 82 | 35 | 44 |  |

## KARBÜR MATKAP UCU KAPLAMALI SIVI KANALLI

Yüksek performanslı olan matkap ucu kısa ve uzun talaş veren yapı ve ıslah çeliği, çelik dö-küm, sementasyon çelikleri, çekme mukavemeti yaklaşık 1200 N/mm<sup>2</sup> kadar olan alaşımlı malzeme-lerde kullanılır. Kendinden puntalama özelli-ği mevcuttur.

Contalı Pens ile Kullanılması tavsiye edilmektedir



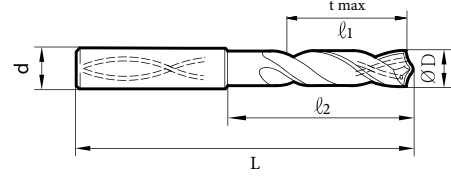
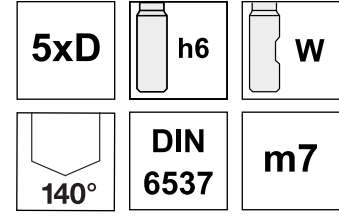
| ÜRÜN KODU | ÇAP<br>D | ŞAFT ÇAPI<br>d | TAM BOY<br>L | Tmax BOYU<br>l <sub>1</sub> | HELİS BOYU<br>l <sub>2</sub> | SİPARİŞ<br>NO |
|-----------|----------|----------------|--------------|-----------------------------|------------------------------|---------------|
|-----------|----------|----------------|--------------|-----------------------------|------------------------------|---------------|

|        |        |      |      |     |    |    |  |
|--------|--------|------|------|-----|----|----|--|
| MX3688 | 5.600  | 5.6  | 6.0  | 82  | 35 | 44 |  |
| MX3688 | 5.700  | 5.7  | 6.0  | 82  | 35 | 44 |  |
| MX3688 | 5.800  | 5.8  | 6.0  | 82  | 35 | 44 |  |
| MX3688 | 5.900  | 5.9  | 6.0  | 82  | 35 | 44 |  |
| MX3688 | 6.000  | 6.0  | 6.0  | 82  | 35 | 44 |  |
| MX3688 | 6.100  | 6.1  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 6.200  | 6.2  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 6.300  | 6.3  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 6.400  | 6.4  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 6.500  | 6.5  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 6.600  | 6.6  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 6.700  | 6.7  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 6.800  | 6.8  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 6.900  | 6.9  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 7.000  | 7.0  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 7.100  | 7.1  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 7.200  | 7.2  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 7.300  | 7.3  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 7.400  | 7.4  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 7.500  | 7.5  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 7.600  | 7.6  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 7.700  | 7.7  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 7.800  | 7.8  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 7.900  | 7.9  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 8.000  | 8.0  | 8.0  | 91  | 43 | 53 |  |
| MX3688 | 8.100  | 8.1  | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 8.200  | 8.2  | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 8.300  | 8.3  | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 8.400  | 8.4  | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 8.500  | 8.5  | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 8.600  | 8.6  | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 8.700  | 8.7  | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 8.800  | 8.8  | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 8.900  | 8.9  | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 9.000  | 9.0  | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 9.100  | 9.1  | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 9.200  | 9.2  | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 9.250  | 9.25 | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 9.300  | 9.3  | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 9.400  | 9.4  | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 9.500  | 9.5  | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 9.600  | 9.6  | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 9.700  | 9.7  | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 9.800  | 9.8  | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 9.900  | 9.9  | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 10.000 | 10.0 | 10.0 | 103 | 49 | 61 |  |
| MX3688 | 10.100 | 10.1 | 12.0 | 118 | 56 | 71 |  |

## KARBÜR MATKAP UCU KAPLAMALI SIVI KANALLI

Yüksek performanslı olan matkap ucu kısa ve uzun talaş veren yapı ve ıslah çeliği, çelik dö-küm, sementasyon çelikleri, çekme mukavemeti yaklaşık 1200 N/mm<sup>2</sup> kadar olan alaşımlı mal-zemelerde kullanılır. Kendinden puntalama özelliği mevcuttur.

Contalı Pens ile Kullanılması tavsiye edilmektedir

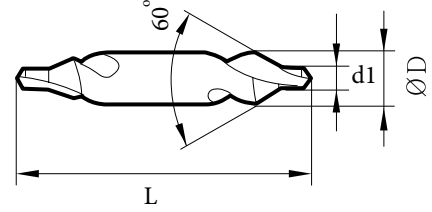
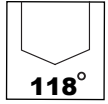


| ÜRÜN KODU | ÇAP<br>D | ŞAFT ÇAP<br>d | TAM BOY<br>L | Tmax BOYU<br>l <sub>1</sub> | HELİS BOYU<br>l <sub>2</sub> | SİPARİŞ<br>NO |
|-----------|----------|---------------|--------------|-----------------------------|------------------------------|---------------|
|-----------|----------|---------------|--------------|-----------------------------|------------------------------|---------------|

|        |        |      |      |     |    |     |  |
|--------|--------|------|------|-----|----|-----|--|
| MX3688 | 10.200 | 10.2 | 12.0 | 118 | 56 | 71  |  |
| MX3688 | 10.300 | 10.3 | 12.0 | 118 | 56 | 71  |  |
| MX3688 | 10.400 | 10.4 | 12.0 | 118 | 56 | 71  |  |
| MX3688 | 10.500 | 10.5 | 12.0 | 118 | 56 | 71  |  |
| MX3688 | 10.600 | 10.6 | 12.0 | 118 | 56 | 71  |  |
| MX3688 | 10.700 | 10.7 | 12.0 | 118 | 56 | 71  |  |
| MX3688 | 10.800 | 10.8 | 12.0 | 118 | 56 | 71  |  |
| MX3688 | 10.900 | 10.9 | 12.0 | 118 | 56 | 71  |  |
| MX3688 | 11.000 | 11.0 | 12.0 | 118 | 56 | 71  |  |
| MX3688 | 11.100 | 11.1 | 12.0 | 118 | 56 | 71  |  |
| MX3688 | 11.200 | 11.2 | 12.0 | 118 | 56 | 71  |  |
| MX3688 | 11.300 | 11.3 | 12.0 | 118 | 56 | 71  |  |
| MX3688 | 11.400 | 11.4 | 12.0 | 118 | 56 | 71  |  |
| MX3688 | 11.500 | 11.5 | 12.0 | 118 | 56 | 71  |  |
| MX3688 | 11.600 | 11.6 | 12.0 | 118 | 56 | 71  |  |
| MX3688 | 11.700 | 11.7 | 12.0 | 118 | 56 | 71  |  |
| MX3688 | 11.800 | 11.8 | 12.0 | 118 | 56 | 71  |  |
| MX3688 | 11.900 | 11.9 | 12.0 | 118 | 56 | 71  |  |
| MX3688 | 12.000 | 12.0 | 12.0 | 118 | 56 | 71  |  |
| MX3688 | 12.100 | 12.1 | 14.0 | 124 | 60 | 77  |  |
| MX3688 | 12.200 | 12.2 | 14.0 | 124 | 60 | 77  |  |
| MX3688 | 12.500 | 12.5 | 14.0 | 124 | 60 | 77  |  |
| MX3688 | 12.700 | 12.7 | 14.0 | 124 | 60 | 77  |  |
| MX3688 | 12.800 | 12.8 | 14.0 | 124 | 60 | 77  |  |
| MX3688 | 13.000 | 13.0 | 14.0 | 124 | 60 | 77  |  |
| MX3688 | 13.500 | 13.5 | 14.0 | 124 | 60 | 77  |  |
| MX3688 | 13.700 | 13.7 | 14.0 | 124 | 60 | 77  |  |
| MX3688 | 13.800 | 13.8 | 14.0 | 124 | 60 | 77  |  |
| MX3688 | 14.000 | 14.0 | 14.0 | 124 | 60 | 77  |  |
| MX3688 | 14.200 | 14.2 | 16.0 | 133 | 63 | 83  |  |
| MX3688 | 14.500 | 14.5 | 16.0 | 133 | 63 | 83  |  |
| MX3688 | 14.700 | 14.7 | 16.0 | 133 | 63 | 83  |  |
| MX3688 | 15.000 | 15.0 | 16.0 | 133 | 63 | 83  |  |
| MX3688 | 15.500 | 15.5 | 16.0 | 133 | 63 | 83  |  |
| MX3688 | 15.700 | 15.7 | 16.0 | 133 | 63 | 83  |  |
| MX3688 | 15.800 | 15.8 | 16.0 | 133 | 63 | 83  |  |
| MX3688 | 16.000 | 16.0 | 16.0 | 133 | 63 | 83  |  |
| MX3688 | 16.500 | 16.5 | 18.0 | 143 | 71 | 93  |  |
| MX3688 | 17.000 | 17.0 | 18.0 | 143 | 71 | 93  |  |
| MX3688 | 17.500 | 17.5 | 18.0 | 143 | 71 | 93  |  |
| MX3688 | 18.000 | 18.0 | 18.0 | 143 | 71 | 93  |  |
| MX3688 | 18.500 | 18.5 | 20.0 | 153 | 77 | 101 |  |
| MX3688 | 19.000 | 19.0 | 20.0 | 153 | 77 | 101 |  |
| MX3688 | 19.500 | 19.5 | 20.0 | 153 | 77 | 101 |  |
| MX3688 | 20.000 | 20.0 | 20.0 | 153 | 77 | 101 |  |

## KARBÜR PUNTA MATKABI FORM A DIN 333

Çelik, Döküm, Paslanmaz vb. malzemeler için uygundur.

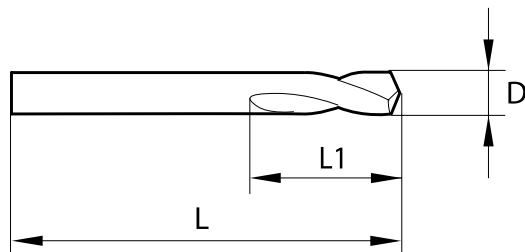
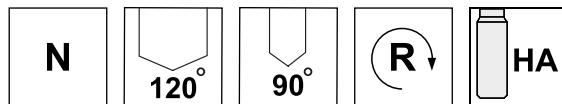


| ÜRÜN KODU    | ÇAP<br>d1 | ŞAFT ÇAPI<br>D | TAM BOY<br>L | SİPARİŞ<br>NO |
|--------------|-----------|----------------|--------------|---------------|
| MX1021 0500  | 0.50      | 3.15           | 25.00        |               |
| MX1021 0800  | 0.80      | 3.15           | 25.00        |               |
| MX1021 1000  | 1.00      | 3.15           | 31.50        |               |
| MX1021 1250  | 1.25      | 3.15           | 31.50        |               |
| MX1021 1600  | 1.60      | 4.00           | 35.50        |               |
| MX1021 2000  | 2.00      | 5.00           | 40.00        |               |
| MX1021 2500  | 2.50      | 6.30           | 45.00        |               |
| MX1021 3150  | 3.15      | 8.00           | 50.00        |               |
| MX1021 4000  | 4.00      | 10.00          | 56.00        |               |
| MX1021 5000  | 5.00      | 12.50          | 63.00        |               |
| MX1021 6300  | 6.30      | 16.00          | 71.00        |               |
| MX1021 8000  | 8.00      | 20.00          | 80.00        |               |
| MX1021 10000 | 10.00     | 25.00          | 100.00       |               |
| MX1021 12500 | 12.50     | 31.50          | 125.00       |               |

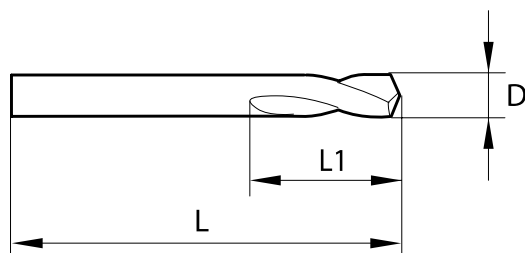


## NC KARBÜR PUNTA MATKAP UCU 90°

Hızlı şekilde puntalama ve havşalama işlerinde kullanılır.



| ÜRÜN KODU    | ÇAP<br>D | KESME BOYU<br>L1 | TAM BOY<br>L | SİPARİŞ<br>NO |
|--------------|----------|------------------|--------------|---------------|
| MX190 4.000  | 4.00     | 10.00            | 50           |               |
| MX190 5.000  | 5.00     | 10.00            | 50           |               |
| MX190 6.000  | 6.00     | 10.00            | 50           |               |
| MX190 8.000  | 8.00     | 15.00            | 63           |               |
| MX190 10.000 | 10.00    | 20.00            | 72           |               |
| MX190 12.000 | 12.00    | 22.00            | 83           |               |
| MX190 16.000 | 16.00    | 30.00            | 100          |               |
| MX190 20.000 | 20.00    | 36.00            | 100          |               |

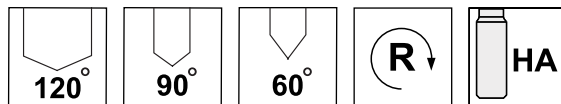


## NC KARBÜR PUNTA MATKAP UCU 120°

| ÜRÜN KODU    | ÇAP<br>D | KESME BOYU<br>L1 | TAM BOY<br>L | SİPARİŞ<br>NO |
|--------------|----------|------------------|--------------|---------------|
| MX191 4.000  | 4.00     | 10.00            | 50           |               |
| MX191 5.000  | 5.00     | 10.00            | 50           |               |
| MX191 6.000  | 6.00     | 10.00            | 50           |               |
| MX191 8.000  | 8.00     | 15.00            | 63           |               |
| MX191 10.000 | 10.00    | 20.00            | 72           |               |
| MX191 12.000 | 12.00    | 22.00            | 83           |               |
| MX191 16.000 | 16.00    | 30.00            | 100          |               |
| MX191 20.000 | 20.00    | 36.00            | 100          |               |

## HAVŞA FREZESİ KAPLAMALI 60°

Özel pah kırma ve havşalama işlerinde kullanılır.



| ÜRÜN KODU    | ÇAP<br>D | ŞAFT ÇAPI<br>d1 | TAM BOY<br>L | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|--------------|----------|-----------------|--------------|------------------|---------------|
| MX460 4.000  | 4.00     | 4.00            | 50           | 4                |               |
| MX460 6.000  | 6.00     | 6.00            | 50           | 4                |               |
| MX460 8.000  | 8.00     | 8.00            | 63           | 4                |               |
| MX460 10.000 | 10.00    | 10.00           | 72           | 4                |               |
| MX460 12.000 | 12.00    | 12.00           | 83           | 4                |               |

## HAVŞA FREZESİ KAPLAMALI 90°

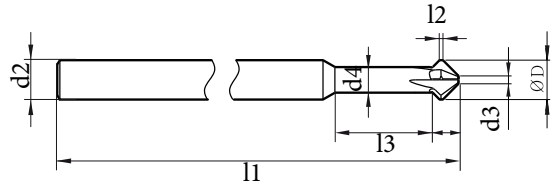
| ÜRÜN KODU    | ÇAP<br>D | ŞAFT ÇAPI<br>d1 | TAM BOY<br>L | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|--------------|----------|-----------------|--------------|------------------|---------------|
| MX490 4.000  | 4.00     | 4.00            | 50           | 4                |               |
| MX490 6.000  | 6.00     | 6.00            | 50           | 4                |               |
| MX490 8.000  | 8.00     | 8.00            | 63           | 4                |               |
| MX490 10.000 | 10.00    | 10.00           | 72           | 4                |               |
| MX490 12.000 | 12.00    | 12.00           | 83           | 4                |               |

## HAVŞA FREZESİ KAPLAMALI 120°

| ÜRÜN KODU     | ÇAP<br>D | ŞAFT ÇAPI<br>d1 | TAM BOY<br>L | AĞIZ SAYISI<br>Z | SİPARİŞ<br>NO |
|---------------|----------|-----------------|--------------|------------------|---------------|
| MX4120 4.000  | 4.00     | 4.00            | 50           | 4                |               |
| MX4120 6.000  | 6.00     | 6.00            | 50           | 4                |               |
| MX4120 8.000  | 8.00     | 8.00            | 63           | 4                |               |
| MX4120 10.000 | 10.00    | 10.00           | 72           | 4                |               |
| MX4120 12.000 | 12.00    | 12.00           | 83           | 4                |               |

## ÇİFT TARAFLI KARBÜR HAVŞA KAPLAMALI 90°

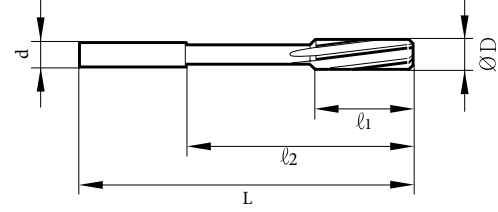
Özel pah kırma ve havşalama frezesi



| ÜRÜN KODU | D<br>mm | d2 h6<br>mm | d3<br>mm | d4<br>mm | l1<br>mm | l2<br>mm | l3<br>mm | SİPARİŞ<br>NO |
|-----------|---------|-------------|----------|----------|----------|----------|----------|---------------|
| MX6507    | 3.000   | 4.000       | 0.600    | 2.200    | 75       | 0.50     | 9.40     |               |
| MX6507    | 4.000   | 4.000       | 0.800    | 2.900    | 75       | 0.50     | 12.40    |               |
| MX6507    | 5.000   | 5.000       | 1.000    | 3.900    | 75       | 0.50     | 15.00    |               |
| MX6507    | 6.000   | 6.000       | 1.200    | 3.900    | 100      | 0.50     | 14.30    |               |
| MX6507    | 8.000   | 6.000       | 1.600    |          | 100      | 0.50     | 59.00    |               |
| MX6507    | 10.000  | 6.000       | 2.000    |          | 100      | 0.50     | 53.00    |               |
| MX6507    | 12.000  | 6.000       | 2.400    |          | 100      | 0.50     | 46.00    |               |

## NC KARBÜR RAYBA KAPLAMASIZ

Tüm çelikler ve hafif metaller için uygundur.  
Seri imalatlarda kullanılabilir.  
Sol Helis 8°



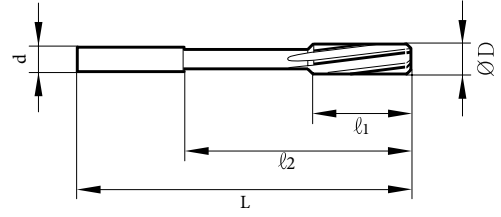
| ÜRÜN KODU | ÇAP<br>D | ŞAFT ÇAPI<br>d | TAM BOY<br>L | DALMA BOYU<br>l2 | KESME BOYU<br>l1 | SİPARİŞ<br>NO |
|-----------|----------|----------------|--------------|------------------|------------------|---------------|
|-----------|----------|----------------|--------------|------------------|------------------|---------------|

|        |      |      |     |    |    |    |  |
|--------|------|------|-----|----|----|----|--|
| MX5210 | 1.00 | 1.00 | 3.0 | 49 | 20 | 10 |  |
| MX5210 | 1.10 | 1.10 | 3.0 | 49 | 20 | 10 |  |
| MX5210 | 1.20 | 1.20 | 3.0 | 49 | 20 | 10 |  |
| MX5210 | 1.30 | 1.30 | 3.0 | 49 | 20 | 10 |  |
| MX5210 | 1.40 | 1.40 | 3.0 | 49 | 20 | 10 |  |
| MX5210 | 1.50 | 1.50 | 3.0 | 49 | 20 | 10 |  |
| MX5210 | 1.60 | 1.60 | 3.0 | 49 | 20 | 10 |  |
| MX5210 | 1.70 | 1.70 | 3.0 | 49 | 20 | 10 |  |
| MX5210 | 1.80 | 1.80 | 3.0 | 49 | 22 | 10 |  |
| MX5210 | 1.90 | 1.90 | 3.0 | 49 | 22 | 10 |  |
| MX5210 | 2.00 | 2.00 | 3.0 | 49 | 24 | 10 |  |
| MX5210 | 2.10 | 2.10 | 3.0 | 49 | 24 | 11 |  |
| MX5210 | 2.20 | 2.20 | 3.0 | 53 | 25 | 12 |  |
| MX5210 | 2.30 | 2.30 | 3.0 | 53 | 25 | 12 |  |
| MX5210 | 2.40 | 2.40 | 3.0 | 57 | 29 | 14 |  |
| MX5210 | 2.50 | 2.50 | 3.0 | 57 | 29 | 14 |  |
| MX5210 | 2.60 | 2.60 | 3.0 | 57 | 29 | 14 |  |
| MX5210 | 2.70 | 2.70 | 3.0 | 61 | 33 | 15 |  |
| MX5210 | 2.80 | 2.80 | 3.0 | 61 | 33 | 15 |  |
| MX5210 | 2.90 | 2.90 | 3.0 | 61 | 33 | 15 |  |
| MX5210 | 3.00 | 3.00 | 3.0 | 61 | 33 | 15 |  |
| MX5210 | 3.10 | 3.10 | 4.0 | 65 | 37 | 16 |  |
| MX5210 | 3.20 | 3.20 | 4.0 | 65 | 37 | 16 |  |
| MX5210 | 3.30 | 3.30 | 4.0 | 65 | 37 | 16 |  |
| MX5210 | 3.40 | 3.40 | 4.0 | 70 | 42 | 18 |  |
| MX5210 | 3.50 | 3.50 | 4.0 | 70 | 42 | 18 |  |
| MX5210 | 3.60 | 3.60 | 4.0 | 70 | 42 | 18 |  |
| MX5210 | 3.70 | 3.70 | 4.0 | 70 | 42 | 18 |  |
| MX5210 | 3.80 | 3.80 | 4.0 | 75 | 47 | 19 |  |
| MX5210 | 3.90 | 3.90 | 4.0 | 75 | 47 | 19 |  |
| MX5210 | 4.00 | 4.00 | 4.0 | 75 | 47 | 19 |  |
| MX5210 | 4.10 | 4.10 | 6.0 | 75 | 47 | 19 |  |
| MX5210 | 4.20 | 4.20 | 6.0 | 75 | 47 | 19 |  |
| MX5210 | 4.30 | 4.30 | 6.0 | 80 | 52 | 21 |  |
| MX5210 | 4.40 | 4.40 | 6.0 | 80 | 52 | 21 |  |
| MX5210 | 4.50 | 4.50 | 6.0 | 80 | 52 | 21 |  |
| MX5210 | 4.60 | 4.60 | 6.0 | 80 | 52 | 21 |  |
| MX5210 | 4.70 | 4.70 | 6.0 | 80 | 52 | 21 |  |
| MX5210 | 4.80 | 4.80 | 6.0 | 86 | 58 | 23 |  |
| MX5210 | 4.90 | 4.90 | 6.0 | 86 | 58 | 23 |  |
| MX5210 | 5.00 | 5.00 | 5.0 | 86 | 58 | 23 |  |
| MX5210 | 5.10 | 5.10 | 6.0 | 86 | 58 | 23 |  |
| MX5210 | 5.20 | 5.20 | 6.0 | 86 | 58 | 23 |  |
| MX5210 | 5.30 | 5.30 | 6.0 | 86 | 58 | 23 |  |

## NC KARBÜR RAYBA KAPLAMASIZ

Tüm çelikler ve hafif metaller için uygundur.  
Seri imalatlarda kullanılabilir.  
Sol Helis 8°

H7



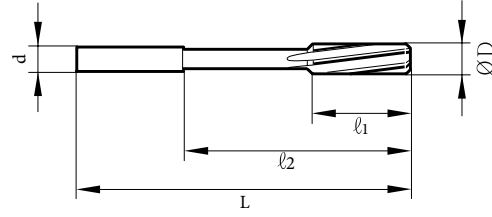
| ÜRÜN KODU | ÇAP<br>D | ŞAFT ÇAPI<br>d | TAM BOY<br>L | DALMA BOYU<br>l <sub>2</sub> | KESME BOYU<br>l <sub>1</sub> | SİPARİŞ<br>NO |
|-----------|----------|----------------|--------------|------------------------------|------------------------------|---------------|
| MX5210    | 5.40     | 5.40           | 93           | 57                           | 26                           |               |
| MX5210    | 5.50     | 5.50           | 93           | 57                           | 26                           |               |
| MX5210    | 5.60     | 5.60           | 93           | 57                           | 26                           |               |
| MX5210    | 5.70     | 5.70           | 93           | 57                           | 26                           |               |
| MX5210    | 5.80     | 5.80           | 93           | 57                           | 26                           |               |
| MX5210    | 5.90     | 5.90           | 93           | 57                           | 26                           |               |
| MX5210    | 6.00     | 6.00           | 93           | 57                           | 26                           |               |
| MX5210    | 6.10     | 6.10           | 101          | 65                           | 28                           |               |
| MX5210    | 6.20     | 6.20           | 101          | 65                           | 28                           |               |
| MX5210    | 6.30     | 6.30           | 101          | 65                           | 28                           |               |
| MX5210    | 6.40     | 6.40           | 101          | 65                           | 28                           |               |
| MX5210    | 6.50     | 6.50           | 101          | 65                           | 28                           |               |
| MX5210    | 6.60     | 6.60           | 101          | 65                           | 28                           |               |
| MX5210    | 6.70     | 6.70           | 101          | 65                           | 28                           |               |
| MX5210    | 6.80     | 6.80           | 109          | 73                           | 31                           |               |
| MX5210    | 6.90     | 6.90           | 109          | 73                           | 31                           |               |
| MX5210    | 7.00     | 7.00           | 109          | 73                           | 31                           |               |
| MX5210    | 7.10     | 7.10           | 109          | 73                           | 31                           |               |
| MX5210    | 7.20     | 7.20           | 109          | 73                           | 31                           |               |
| MX5210    | 7.30     | 7.30           | 109          | 73                           | 31                           |               |
| MX5210    | 7.40     | 7.40           | 109          | 73                           | 31                           |               |
| MX5210    | 7.50     | 7.50           | 109          | 73                           | 31                           |               |
| MX5210    | 7.60     | 7.60           | 117          | 81                           | 33                           |               |
| MX5210    | 7.70     | 7.70           | 117          | 81                           | 33                           |               |
| MX5210    | 7.80     | 7.80           | 117          | 81                           | 33                           |               |
| MX5210    | 7.90     | 7.90           | 117          | 81                           | 33                           |               |
| MX5210    | 8.00     | 8.00           | 117          | 81                           | 33                           |               |
| MX5210    | 8.10     | 8.10           | 117          | 81                           | 33                           |               |
| MX5210    | 8.20     | 8.20           | 117          | 81                           | 33                           |               |
| MX5210    | 8.30     | 8.30           | 117          | 81                           | 33                           |               |
| MX5210    | 8.40     | 8.40           | 117          | 81                           | 33                           |               |
| MX5210    | 8.50     | 8.50           | 117          | 81                           | 33                           |               |
| MX5210    | 8.60     | 8.60           | 125          | 85                           | 36                           |               |
| MX5210    | 8.70     | 8.70           | 125          | 85                           | 36                           |               |
| MX5210    | 8.80     | 8.80           | 125          | 85                           | 36                           |               |
| MX5210    | 8.90     | 8.90           | 125          | 85                           | 36                           |               |
| MX5210    | 9.00     | 9.00           | 125          | 85                           | 36                           |               |
| MX5210    | 9.10     | 9.10           | 125          | 85                           | 36                           |               |
| MX5210    | 9.20     | 9.20           | 125          | 85                           | 36                           |               |

## NC KARBÜR RAYBA KAPLAMASIZ

Tüm çelikler ve hafif metaller için uygundur.  
Seri imalatlarda kullanılabilir.  
Sol Helis 8°

H7

HA



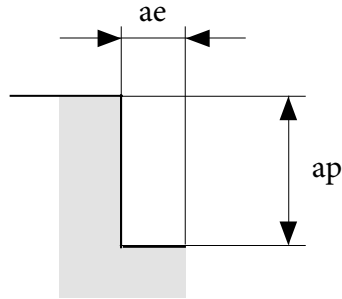
| ÜRÜN KODU    | ÇAP<br>D | ŞAFT ÇAPI<br>d | TAM BOY<br>L | DALMA BOYU<br>l <sub>2</sub> | KESME BOYU<br>l <sub>1</sub> | SİPARİŞ<br>NO |
|--------------|----------|----------------|--------------|------------------------------|------------------------------|---------------|
| MX5210 9.30  | 9.30     | 10.0           | 125          | 85                           | 36                           |               |
| MX5210 9.40  | 9.40     | 10.0           | 125          | 85                           | 36                           |               |
| MX5210 9.50  | 9.50     | 10.0           | 125          | 85                           | 36                           |               |
| MX5210 9.60  | 9.60     | 10.0           | 133          | 93                           | 38                           |               |
| MX5210 9.70  | 9.70     | 10.0           | 133          | 93                           | 38                           |               |
| MX5210 9.80  | 9.80     | 10.0           | 133          | 93                           | 38                           |               |
| MX5210 9.90  | 9.90     | 10.0           | 133          | 93                           | 38                           |               |
| MX5210 10.00 | 10.00    | 10.0           | 133          | 93                           | 38                           |               |
| MX5210 11.00 | 11.00    | 12.0           | 142          | 102                          | 41                           |               |
| MX5210 12.00 | 12.00    | 12.0           | 151          | 111                          | 44                           |               |
| MX5210 13.00 | 13.00    | 14.0           | 151          | 111                          | 44                           |               |
| MX5210 14.00 | 14.00    | 14.0           | 160          | 115                          | 47                           |               |
| MX5210 15.00 | 15.00    | 16.0           | 162          | 117                          | 50                           |               |
| MX5210 16.00 | 16.00    | 16.0           | 170          | 125                          | 52                           |               |
| MX5210 17.00 | 17.00    | 18.0           | 175          | 130                          | 54                           |               |
| MX5210 18.00 | 18.00    | 18.0           | 182          | 137                          | 56                           |               |
| MX5210 19.00 | 19.00    | 20.0           | 189          | 141                          | 58                           |               |
| MX5210 20.00 | 20.00    | 20.0           | 195          | 147                          | 60                           |               |



## DS / DSH SERİSİ DEVİR İLERLEME TABLOSU

KISA ve UZUN DÜZ FREZELER İÇİN GEÇERLİDİR

| Malzeme<br>Material | HRC 30 - 45  |                  | HRC 45 - 55  |                  | HRC 55 - 70  |                  |
|---------------------|--------------|------------------|--------------|------------------|--------------|------------------|
| Çap<br>Diameter     | Hız<br>Speed | İlerleme<br>Feed | Hız<br>Speed | İlerleme<br>Feed | Hız<br>Speed | İlerleme<br>Feed |
|                     | min          | mm/min           | min          | mm/min           | min          | mm/min           |
| 0.30                | 24.000       | 300              | 24.000       | 200              | 24.000       | 100              |
| 0.40                | 24.000       | 300              | 24.000       | 200              | 24.000       | 100              |
| 0.50                | 24.000       | 350              | 24.000       | 220              | 24.000       | 110              |
| 0.60                | 24.000       | 450              | 24.000       | 250              | 24.000       | 125              |
| 0.70                | 20.000       | 500              | 20.000       | 275              | 20.000       | 140              |
| 0.80                | 20.000       | 550              | 20.000       | 300              | 20.000       | 150              |
| 0.90                | 20.000       | 650              | 20.000       | 400              | 20.000       | 200              |
| 1.00                | 10.000       | 1150             | 10.000       | 800              | 6.000        | 600              |
| 1.50                | 10.000       | 1200             | 10.000       | 800              | 6.000        | 600              |
| 2.00                | 8.000        | 1300             | 8.000        | 1000             | 5.000        | 500              |
| 2.50                | 8.000        | 1500             | 8.000        | 1200             | 5.000        | 500              |
| 3.00                | 7.500        | 1400             | 7.500        | 1200             | 5.500        | 500              |
| 4.00                | 7.500        | 1650             | 7.500        | 1250             | 5.500        | 450              |
| 5.00                | 6.000        | 1700             | 6.000        | 1400             | 5.000        | 450              |
| 6.00                | 6.000        | 2000             | 6.000        | 1600             | 4.500        | 450              |
| 8.00                | 5.000        | 2500             | 5.000        | 2000             | 3.500        | 400              |
| 10.00               | 4.500        | 2500             | 4.500        | 2000             | 3.000        | 400              |
| 12.00               | 4.200        | 2200             | 4.200        | 2000             | 2.800        | 360              |
| 14.00               | 3.000        | 1800             | 3.000        | 1500             |              |                  |
| 16.00               | 2.500        | 1500             | 2.500        | 1400             |              |                  |
| 18.00               | 2.000        | 1200             | 2.000        | 1000             |              |                  |
| 20.00               | 1.800        | 1000             | 1.800        | 900              |              |                  |

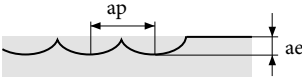
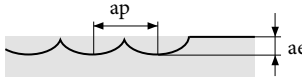


100 mm ve üzeri boylarda kesme parametreleri %10 daha düşük kullanılmalıdır.

## KS / KSH SERİSİ DEVİR İLERLEME TABLOSU

KISA ve UZUN KÜRE FREZELER İÇİN GEÇERLİDİR



| Malzeme<br>Material | HRC 30 - 45                                                                                                          |                  | HRC 45 - 55  |                  | HRC 55 - 70                                                                                                            |                  |
|---------------------|----------------------------------------------------------------------------------------------------------------------|------------------|--------------|------------------|------------------------------------------------------------------------------------------------------------------------|------------------|
| Çap<br>Diameter     | Hız<br>Speed                                                                                                         | İlerleme<br>Feed | Hız<br>Speed | İlerleme<br>Feed | Hız<br>Speed                                                                                                           | İlerleme<br>Feed |
|                     | min                                                                                                                  | mm/min           | min          | mm/min           | min                                                                                                                    | mm/min           |
| 0.30                | 24.000                                                                                                               | 2000             | 24.000       | 1800             | 24.000                                                                                                                 | 1300             |
| 0.40                | 24.000                                                                                                               | 2000             | 24.000       | 1800             | 24.000                                                                                                                 | 1300             |
| 0.50                | 24.000                                                                                                               | 2300             | 24.000       | 2000             | 24.000                                                                                                                 | 1100             |
| 0.60                | 24.000                                                                                                               | 2500             | 24.000       | 2300             | 24.000                                                                                                                 | 1300             |
| 0.70                | 20.000                                                                                                               | 2800             | 20.000       | 2500             | 20.000                                                                                                                 | 1300             |
| 0.80                | 20.000                                                                                                               | 2800             | 20.000       | 2500             | 20.000                                                                                                                 | 1800             |
| 0.90                | 20.000                                                                                                               | 3000             | 20.000       | 2000             | 20.000                                                                                                                 | 1800             |
| 1.00                | 11.000                                                                                                               | 3100             | 10.000       | 2500             | 6.000                                                                                                                  | 1500             |
| 1.50                | 11.000                                                                                                               | 3800             | 10.000       | 2750             | 6.000                                                                                                                  | 1500             |
| 2.00                | 9.000                                                                                                                | 4000             | 8.000        | 3000             | 5.000                                                                                                                  | 1100             |
| 2.50                | 9.000                                                                                                                | 4200             | 8.000        | 3300             | 5.000                                                                                                                  | 1100             |
| 3.00                | 8.500                                                                                                                | 4200             | 7.500        | 3000             | 5.500                                                                                                                  | 1200             |
| 4.00                | 8.500                                                                                                                | 4200             | 7.500        | 2850             | 5.500                                                                                                                  | 1200             |
| 5.00                | 7.000                                                                                                                | 4500             | 6.000        | 3200             | 5.000                                                                                                                  | 1200             |
| 6.00                | 7.000                                                                                                                | 4500             | 6.000        | 3200             | 4.500                                                                                                                  | 1200             |
| 8.00                | 6.000                                                                                                                | 4000             | 5.000        | 2900             | 3.500                                                                                                                  | 1400             |
| 10.00               | 5.500                                                                                                                | 3500             | 4.500        | 2500             | 3.000                                                                                                                  | 1400             |
| 12.00               | 5.200                                                                                                                | 3400             | 4.200        | 2300             | 2.800                                                                                                                  | 1200             |
|                     |  <p>ae = 0.02D<br/>ap = 0.05D</p> |                  |              |                  |  <p>ae = 0.01D<br/>ap = 0.05D</p> |                  |

100 mm ve üzeri boylarda kesme parametreleri %10 daha düşük kullanılmalıdır.

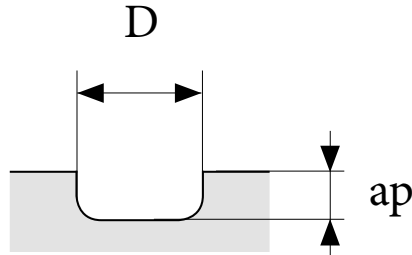


## KR / KRH SERİSİ DEVİR İLERLEME TABLOSU

KISA ve UZUN KÖŞE RADIUS FREZELER İÇİN GEÇERLİDİR

| Malzeme<br>Material | HRC 30 - 45  |                  |    | HRC 45 - 55  |                  |    | HRC 55 - 70  |                  |    |
|---------------------|--------------|------------------|----|--------------|------------------|----|--------------|------------------|----|
| Çap<br>Diameter     | Hız<br>Speed | İlerleme<br>Feed | ap | Hız<br>Speed | İlerleme<br>Feed | ap | Hız<br>Speed | İlerleme<br>Feed | ap |
|                     | min          | mm/min           | mm | min          | mm/min           | mm | min          | mm/min           | mm |

|       |                |      |      |                |      |      |                |      |      |
|-------|----------------|------|------|----------------|------|------|----------------|------|------|
| 1.00  | 8.000 - 15.000 | 1000 | 0.10 | 8.000 - 15.000 | 850  | 0.05 | 8.000 - 15.000 | 700  | 0.05 |
| 1.50  | 8.000 - 15.000 | 1300 | 0.10 | 8.000 - 15.000 | 1100 | 0.05 | 8.000 - 15.000 | 800  | 0.05 |
| 2.00  | 8.000 - 15.000 | 1400 | 0.10 | 8.000 - 15.000 | 1300 | 0.05 | 8.000 - 15.000 | 800  | 0.05 |
| 2.50  | 8.000 - 15.000 | 1500 | 0.10 | 8.000 - 15.000 | 1400 | 0.10 | 8.000 - 15.000 | 1000 | 0.05 |
| 3.00  | 7.000 - 12.000 | 1500 | 0.10 | 6.000 - 15.000 | 1400 | 0.10 | 7.000 - 12.000 | 1000 | 0.05 |
| 4.00  | 5.000 - 12.000 | 1500 | 0.15 | 4.000 - 13.000 | 1300 | 0.15 | 5.000 - 12.000 | 900  | 0.10 |
| 5.00  | 5.000 - 12.000 | 1800 | 0.15 | 4.000 - 13.000 | 2300 | 0.15 | 5.000 - 12.000 | 1500 | 0.10 |
| 6.00  | 5.000 - 12.000 | 2000 | 0.15 | 4.000 - 13.000 | 2300 | 0.15 | 5.000 - 12.000 | 1500 | 0.10 |
| 8.00  | 4.000 - 9.000  | 2200 | 0.15 | 4.000 - 9.000  | 2000 | 0.15 | 4.000 - 9.000  | 1200 | 0.15 |
| 10.00 | 3.000 - 6.000  | 2000 | 0.20 | 3.000 - 6.000  | 1500 | 0.20 | 3.000 - 6.000  | 1000 | 0.15 |
| 12.00 | 2.000 - 5.000  | 2000 | 0.20 | 3.000 - 5.000  | 1500 | 0.20 | 2.000 - 5.000  | 1000 | 0.15 |



100 mm ve üzeri boylarda kesme parametreleri %10 daha düşük kullanılmalıdır.

**DXLF / DXLFH SERİSİ DEVİR İLERLEME TABLOSU**

ÇOK AĞIZLI FREZELER İÇİN GEÇERLİDİR



| Malzeme<br>Material | HRC 30 - 45  |                  | HRC 45 - 55  |                  | HRC 55 - 70  |                  |
|---------------------|--------------|------------------|--------------|------------------|--------------|------------------|
| Çap<br>Diameter     | Hız<br>Speed | İlerleme<br>Feed | Hız<br>Speed | İlerleme<br>Feed | Hız<br>Speed | İlerleme<br>Feed |
|                     | min          | mm/min           | min          | mm/min           | min          | mm/min           |
| 6.00                | 5.500        | 1000             | 4.500        | 850              | 3.800        | 650              |
| 8.00                | 4.000        | 1000             | 3.500        | 850              | 3.000        | 650              |
| 10.00               | 3.300        | 1000             | 3.100        | 850              | 2.400        | 650              |
| 12.00               | 3.000        | 900              | 2.500        | 700              | 2.000        | 600              |
| 14.00               | 3.000        | 900              | 2.500        | 700              | 2.000        | 600              |
| 16.00               | 2.500        | 700              | 2.000        | 550              | 1.500        | 450              |
| 18.00               | 2.200        | 600              | 1.800        | 500              | 1.300        | 400              |
| 20.00               | 1.800        | 550              | 1.500        | 420              | 1.200        | 380              |

**DXLFL / DXLFLH SERİSİ DEVİR İLERLEME TABLOSU**

ÇOK AĞIZLI UZUN BOY FREZELER İÇİN GEÇERLİDİR



| Malzeme<br>Material | HRC 30 - 45          |                  | HRC 45 - 55          |                  | HRC 55 - 70          |                  |
|---------------------|----------------------|------------------|----------------------|------------------|----------------------|------------------|
| Çap<br>Diameter     | Hız / Devir<br>Speed | İlerleme<br>Feed | Hız / Devir<br>Speed | İlerleme<br>Feed | Hız / Devir<br>Speed | İlerleme<br>Feed |
|                     | min                  | mm/min           | min                  | mm/min           | min                  | mm/min           |
| 6.00                | 1.900                | 400              | 1.500                | 300              | 1.200                | 220              |
| 8.00                | 1.500                | 380              | 1.100                | 280              | 900                  | 200              |
| 10.00               | 1.200                | 360              | 850                  | 260              | 750                  | 190              |
| 12.00               | 1.000                | 340              | 700                  | 230              | 650                  | 180              |
| 14.00               | 1.000                | 340              | 700                  | 230              | 650                  | 180              |
| 16.00               | 750                  | 280              | 550                  | 200              | 450                  | 150              |
| 18.00               | 700                  | 250              | 500                  | 180              | 400                  | 140              |
| 20.00               | 600                  | 240              | 450                  | 170              | 350                  | 120              |



## FD / FDH SERİSİ DEVİR İLERLEME TABLOSU

DALMA BOYLU DÜZ FREZELER İÇİN GEÇERLİDİR

| Malzeme<br>Material | HRC 30 - 45     |                  |      | HRC 45 - 55     |                  |      | HRC 55 - 70     |                  |      |
|---------------------|-----------------|------------------|------|-----------------|------------------|------|-----------------|------------------|------|
| Çap<br>Diameter     | Hız<br>Speed    | İlerleme<br>Feed | ap   | Hız<br>Speed    | İlerleme<br>Feed | ap   | Hız<br>Speed    | İlerleme<br>Feed | ap   |
|                     | min             | mm/min           | mm   | min             | mm/min           | mm   | min             | mm/min           | mm   |
| 1.00                | 10.000 - 18.000 | 400 - 1000       | 0.05 | 10.000 - 18.000 | 400 - 1000       | 0.05 | 10.000 - 18.000 | 400 - 1000       | 0.05 |
| 1.50                | 9.000 - 16.000  | 400 - 1000       | 0.05 | 9.000 - 16.000  | 400 - 1000       | 0.05 | 9.000 - 16.000  | 400 - 1000       | 0.05 |
| 2.00                | 7.000 - 15.000  | 400 - 1000       | 0.05 | 7.000 - 15.000  | 400 - 1000       | 0.05 | 7.000 - 15.000  | 400 - 1000       | 0.05 |
| 2.50                | 7.000 - 15.000  | 400 - 1000       | 0.07 | 7.000 - 15.000  | 400 - 1000       | 0.07 | 7.000 - 15.000  | 400 - 1000       | 0.07 |
| 3.00                | 5.000 - 10.000  | 700 - 1500       | 0.08 | 5.000 - 10.000  | 700 - 1500       | 0.08 | 5.000 - 10.000  | 700 - 1500       | 0.08 |
| 4.00                | 3.500 - 9.000   | 700 - 1500       | 0.10 | 3.500 - 9.000   | 700 - 1500       | 0.10 | 3.500 - 9.000   | 700 - 1500       | 0.10 |



## FDK / FDKH SERİSİ DEVİR İLERLEME TABLOSU

DALMA BOYLU KÜRE FREZELER İÇİN GEÇERLİDİR

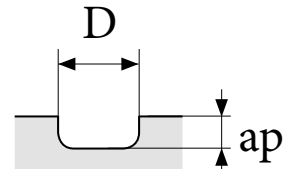
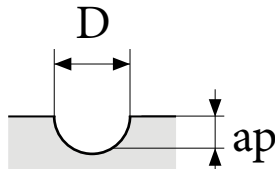
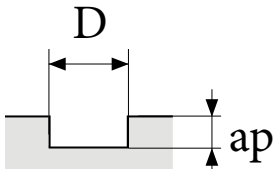
| Malzeme<br>Material | HRC 30 - 45     |                  |             | HRC 45 - 55     |                  |             | HRC 55 - 70     |                  |             |
|---------------------|-----------------|------------------|-------------|-----------------|------------------|-------------|-----------------|------------------|-------------|
| Çap<br>Diameter     | Hız<br>Speed    | İlerleme<br>Feed | ap          | Hız<br>Speed    | İlerleme<br>Feed | ap          | Hız<br>Speed    | İlerleme<br>Feed | ap          |
|                     | min             | mm/min           | mm          | min             | mm/min           | mm          | min             | mm/min           | mm          |
| 1.00                | 10.000 - 18.000 | 400 - 1000       | 0.05 - 0.10 | 10.000 - 18.000 | 400 - 1000       | 0.05 - 0.10 | 10.000 - 18.000 | 400 - 1000       | 0.05 - 0.10 |
| 1.50                | 9.000 - 16.000  | 400 - 1000       | 0.05 - 0.10 | 9.000 - 16.000  | 400 - 1000       | 0.05 - 0.10 | 9.000 - 16.000  | 400 - 1000       | 0.05 - 0.10 |
| 2.00                | 7.000 - 15.000  | 400 - 1000       | 0.05 - 0.10 | 7.000 - 15.000  | 400 - 1000       | 0.05 - 0.10 | 7.000 - 15.000  | 400 - 1000       | 0.05 - 0.10 |
| 2.50                | 7.000 - 15.000  | 400 - 1000       | 0.05 - 0.10 | 7.000 - 15.000  | 400 - 1000       | 0.05 - 0.10 | 7.000 - 15.000  | 400 - 1000       | 0.05 - 0.10 |
| 3.00                | 5.000 - 10.000  | 700 - 1500       | 0.05 - 0.20 | 5.000 - 10.000  | 700 - 1500       | 0.05 - 0.20 | 5.000 - 10.000  | 700 - 1500       | 0.05 - 0.20 |
| 4.00                | 3.500 - 9.000   | 700 - 1500       | 0.05 - 0.20 | 3.500 - 9.000   | 700 - 1500       | 0.05 - 0.20 | 3.500 - 9.000   | 700 - 1500       | 0.05 - 0.20 |



## FDKR / FDKRH SERİSİ DEVİR İLERLEME TABLOSU

DALMA BOYLU KÖŞE RADIUS FREZELER İÇİN GEÇERLİDİR

| Malzeme<br>Material | HRC 30 - 45     |                  |             | HRC 45 - 55     |                  |             | HRC 55 - 70     |                  |             |
|---------------------|-----------------|------------------|-------------|-----------------|------------------|-------------|-----------------|------------------|-------------|
| Çap<br>Diameter     | Hız<br>Speed    | İlerleme<br>Feed | ap          | Hız<br>Speed    | İlerleme<br>Feed | ap          | Hız<br>Speed    | İlerleme<br>Feed | ap          |
|                     | min             | mm/min           | mm          | min             | mm/min           | mm          | min             | mm/min           | mm          |
| 1.00                | 10.000 - 18.000 | 800 - 1500       | 0.05 - 0.10 | 10.000 - 18.000 | 800 - 1500       | 0.05 - 0.10 | 10.000 - 18.000 | 800 - 1500       | 0.05 - 0.10 |
| 1.50                | 10.000 - 18.000 | 800 - 1500       | 0.05 - 0.10 | 10.000 - 18.000 | 800 - 1500       | 0.05 - 0.10 | 10.000 - 18.000 | 800 - 1500       | 0.05 - 0.10 |
| 2.00                | 10.000 - 18.000 | 800 - 1500       | 0.05 - 0.10 | 10.000 - 18.000 | 800 - 1500       | 0.05 - 0.10 | 10.000 - 18.000 | 800 - 1500       | 0.05 - 0.10 |
| 2.50                | 7.000 - 15.000  | 800 - 1500       | 0.05 - 0.10 | 7.000 - 15.000  | 800 - 1500       | 0.05 - 0.10 | 7.000 - 15.000  | 800 - 1500       | 0.05 - 0.10 |
| 3.00                | 5.000 - 12.000  | 800 - 1500       | 0.05 - 0.20 | 5.000 - 12.000  | 800 - 1500       | 0.05 - 0.20 | 5.000 - 12.000  | 800 - 1500       | 0.05 - 0.20 |
| 4.00                | 5.000 - 12.000  | 800 - 1500       | 0.05 - 0.20 | 5.000 - 12.000  | 800 - 1500       | 0.05 - 0.20 | 5.000 - 12.000  | 800 - 1500       | 0.05 - 0.20 |



## UT SERİSİ DEVİR İLERLEME TABLOSU

CHATTER FREE FREZELER İÇİN GEÇERLİDİR

UT

| Malzeme<br>Material | ÇELİK                |                  |         | PASLANMAZ            |                  |         |
|---------------------|----------------------|------------------|---------|----------------------|------------------|---------|
| Çap<br>Diameter     | Hız / Devir<br>Speed | İlerleme<br>Feed | ap      | Hız / Devir<br>Speed | İlerleme<br>Feed | ap      |
|                     | Vc                   | Fz               | mm      | Vc                   | Fz               | mm      |
| 2.00                | 80 - 120             | 0.010            | 2 - 4   | 60 - 100             | 0.010            | 2 - 4   |
| 3.00                | 80 - 120             | 0.010            | 2 - 4   | 60 - 100             | 0.010            | 2 - 4   |
| 4.00                | 80 - 120             | 0.015            | 4 - 6   | 60 - 100             | 0.015            | 4 - 6   |
| 5.00                | 80 - 130             | 0.015            | 5 - 7   | 60 - 100             | 0.015            | 5 - 7   |
| 6.00                | 80 - 130             | 0.020            | 6 - 8   | 60 - 100             | 0.020            | 6 - 8   |
| 8.00                | 80 - 130             | 0.025            | 8 - 10  | 60 - 100             | 0.025            | 8 - 10  |
| 10.00               | 80 - 130             | 0.030            | 10 - 12 | 60 - 100             | 0.030            | 10 - 12 |
| 12.00               | 80 - 130             | 0.035            | 12 - 14 | 60 - 100             | 0.035            | 12 - 14 |
| 14.00               | 80 - 130             | 0.040            | 14 - 16 | 60 - 100             | 0.040            | 14 - 16 |
| 16.00               | 80 - 130             | 0.050            | 16 - 18 | 60 - 100             | 0.050            | 16 - 18 |
| 18.00               | 80 - 130             | 0.050            | 18 - 20 | 60 - 100             | 0.050            | 18 - 20 |
| 20.00               | 80 - 130             | 0.055            | 20 - 22 | 60 - 100             | 0.055            | 20 - 22 |

## AL SERİSİ DEVİR İLERLEME TABLOSU

ALÜMİNYUM FREZELER İÇİN GEÇERLİDİR

AL

| MALZEME<br>Material | ALAŞIM<br>Alloy | Kesme Değeri<br>Cutting Speed<br>Vc=m/dk | DIŞ BAŞI İLERLEME / Fz mm/devir<br>Feed Per Tooth |      |      |      |      |      |      |      |
|---------------------|-----------------|------------------------------------------|---------------------------------------------------|------|------|------|------|------|------|------|
|                     |                 |                                          | Ø4                                                | Ø6   | Ø8   | Ø10  | Ø12  | Ø14  | Ø16  | Ø20  |
| Alüminyum           | <:%10 Si        | 500                                      | 0.04                                              | 0.05 | 0.07 | 0.09 | 0.11 | 0.14 | 0.14 | 0.16 |
| Alüminyum           | >:%10 Si        | 400                                      | 0.03                                              | 0.05 | 0.06 | 0.07 | 0.08 | 0.10 | 0.10 | 0.12 |
| Plastik             |                 | 400                                      | 0.03                                              | 0.05 | 0.06 | 0.07 | 0.08 | 0.10 | 0.10 | 0.12 |
| Bakır               |                 | 350                                      | 0.03                                              | 0.05 | 0.06 | 0.07 | 0.08 | 0.10 | 0.10 | 0.12 |

## LT SERİSİ DEVİR İLERLEME TABLOSU

ALÜMİNYUM YÜKSEK PERFORMANS FREZELER İÇİN GEÇERLİDİR

LT

| MALZEME<br>Material | ALAŞIM<br>Alloy | Kesme Değeri<br>Cutting Speed<br>Vc=m/dk | DIŞ BAŞI İLERLEME / Fz mm/devir<br>Feed Per Tooth |      |      |      |      |      |      |      |
|---------------------|-----------------|------------------------------------------|---------------------------------------------------|------|------|------|------|------|------|------|
|                     |                 |                                          | Ø4                                                | Ø6   | Ø8   | Ø10  | Ø12  | Ø14  | Ø16  | Ø20  |
| Alüminyum           | <:%10 Si        | 500                                      | 0.04                                              | 0.06 | 0.08 | 0.10 | 0.12 | 0.15 | 0.16 | 0.18 |
| Alüminyum           | >:%10 Si        | 400                                      | 0.03                                              | 0.05 | 0.07 | 0.08 | 0.09 | 0.11 | 0.11 | 0.13 |
| Bakır               |                 | 350                                      | 0.03                                              | 0.05 | 0.07 | 0.08 | 0.09 | 0.11 | 0.11 | 0.13 |

3616

3617

## 3616 - 3617 DEVİR İLERLEME TABLOSU

DÜZ ve KÜRE KONİK FREZELER İÇİN GEÇERLİDİR

| MALZEME<br>Material |                       | Gerilme Dayanımı                   | DIN          | Malzeme No<br>Material No | Kesme Değeri<br>Cutting Speed<br>Vc=m/dk | DIŞ BAŞI İLERLEME / Fz mm/devir<br>Feed Per Tooth |       |       |       |       |       |       |       |
|---------------------|-----------------------|------------------------------------|--------------|---------------------------|------------------------------------------|---------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|
|                     |                       | Tensile Strength<br>Hardness N/mm² |              |                           |                                          | Ø2                                                | Ø3    | Ø4    | Ø5    | Ø6    | Ø8    | Ø10   | Ø12   |
| Çelik               | Alaşımsız Çelik       | <450                               | St 37        | 1010                      | 80-100                                   | 0.005                                             | 0.008 | 0.015 | 0.020 | 0.026 | 0.035 | 0.043 | 0.052 |
|                     | İmalat Çeliği         | 450-550                            | CK40         | 1040                      | 80-100                                   | 0.005                                             | 0.008 | 0.015 | 0.020 | 0.026 | 0.035 | 0.043 | 0.052 |
|                     | İslah Çeliği          | 550-900                            | 42CrMo4      | 4140                      | 60-80                                    | 0.005                                             | 0.008 | 0.013 | 0.017 | 0.021 | 0.029 | 0.036 | 0.053 |
|                     | Soğuk İş Takım Çeliği | 900-1200                           | 2379 - 2080  | D2-D3                     | 60-80                                    | 0.004                                             | 0.006 | 0.009 | 0.011 | 0.015 | 0.020 | 0.025 | 0.030 |
|                     | Sıcak İş Takım Çeliği | 900-1200                           | 2344         | H13                       | 60-80                                    | 0.004                                             | 0.006 | 0.009 | 0.011 | 0.015 | 0.020 | 0.025 | 0.030 |
| Paslanmaz Çelik     | Paslanmaz Çelik       | 500-950                            | X5CrNi1810   | X5CrNi1810                | 40-60                                    | 0.006                                             | 0.010 | 0.020 | 0.025 | 0.030 | 0.040 | 0.045 | 0.055 |
| Döküm               | Gri Dökme Demir       | ≤550                               | GG25         | GG25                      | 80-100                                   | 0.005                                             | 0.008 | 0.015 | 0.020 | 0.026 | 0.035 | 0.043 | 0.052 |
|                     | Alaşımlı Dökme Demir  | 300-700                            | GGL-NiCr35 2 | GGL-NiCr35 2              | 70-90                                    | 0.005                                             | 0.008 | 0.015 | 0.020 | 0.026 | 0.035 | 0.043 | 0.052 |
|                     | Hassas Döküm          | 400-750                            | GTS55        | GTS55                     | 20-40                                    | 0.004                                             | 0.006 | 0.009 | 0.011 | 0.015 | 0.020 | 0.025 | 0.030 |
| Titanyum            | Titanyum              | 140-900                            |              | TiAl6Sn2                  | 20-40                                    | 0.004                                             | 0.006 | 0.009 | 0.011 | 0.015 | 0.020 | 0.025 | 0.030 |

TN

## TN DEVİR İLERLEME TABLOSU

FİNİŞ FREZELER İÇİN GEÇERLİDİR

| MALZEME<br>Material | Gerilme Dayanımı<br>Tensile Strength<br>Hardness N/mm² | DIN      | Malzeme No<br>Material No | Kesme Değeri<br>Cutting Speed<br>Vc=m/dk | DİŞ BAŞI İLERLEME / Fz mm/devir<br>Feed Per Tooth |       |       |       |       |       |       |       |       |
|---------------------|--------------------------------------------------------|----------|---------------------------|------------------------------------------|---------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
|                     |                                                        |          |                           |                                          | Ø3                                                | Ø4    | Ø5    | Ø6    | Ø8    | Ø10   | Ø12   | ≥Ø14  |       |
| Çelik               | Alaşımsız Çelik                                        | <450     | St 37                     | 1010                                     | 120-140                                           | 0.017 | 0.017 | 0.030 | 0.030 | 0.045 | 0.060 | 0.070 | 0.100 |
|                     | İmalat Çeliği                                          | 450-550  | CK40                      | 1040                                     | 100-130                                           | 0.017 | 0.017 | 0.030 | 0.030 | 0.045 | 0.060 | 0.070 | 0.100 |
|                     | İslah Çeliği                                           | 550-900  | 42CrMo4                   | 4140                                     | 100-120                                           | 0.017 | 0.017 | 0.030 | 0.030 | 0.045 | 0.060 | 0.070 | 0.100 |
|                     | Soğuk İş Takım Çeliği                                  | 900-1200 | 2379 - 2080               | D2-D3                                    | 99-110                                            | 0.017 | 0.017 | 0.030 | 0.030 | 0.045 | 0.060 | 0.070 | 0.100 |
|                     | Sıcak İş Takım Çeliği                                  | 900-1200 | 2344                      | H13                                      | 80-100                                            | 0.015 | 0.015 | 0.020 | 0.020 | 0.025 | 0.030 | 0.040 | 0.080 |
| Paslanmaz Çelik     | Paslanmaz Çelik                                        | 500-950  | X5CrNi1810                | X5CrNi1810                               | 30-50                                             | 0.020 | 0.020 | 0.025 | 0.025 | 0.040 | 0.050 | 0.060 | 0.100 |
| Döküm               | Gri Dökme Demir                                        | ≤550     | GG25                      | GG25                                     | 100-120                                           | 0.020 | 0.020 | 0.035 | 0.035 | 0.050 | 0.060 | 0.070 | 0.100 |
|                     | Alaşımlı Dökme Demir                                   | 300-700  | GGL-NiCr35 2              | GGL-NiCr35 2                             | 80-100                                            | 0.020 | 0.020 | 0.035 | 0.035 | 0.050 | 0.060 | 0.070 | 0.100 |
|                     | Hassas Döküm                                           | 400-750  | GTS55                     | GTS55                                    | 70-90                                             | 0.020 | 0.020 | 0.035 | 0.035 | 0.050 | 0.060 | 0.070 | 0.100 |
| Titanyum            | Titanyum                                               | 140-900  |                           | TiAl6Sn2                                 | 30-50                                             | 0.015 | 0.015 | 0.025 | 0.025 | 0.030 | 0.040 | 0.060 | 0.080 |

**PR ve PRH SERİSİ DEVİR İLERLEME TABLOSU**

HIGH FEED FREZELER İÇİN GEÇERLİDİR



| Malzeme<br>Material | HRC 30 - 45  |                  | HRC 45 - 55  |                  | HRC 55 - 70  |                  |
|---------------------|--------------|------------------|--------------|------------------|--------------|------------------|
| Çap<br>Diameter     | Hız<br>Speed | İlerleme<br>Feed | Hız<br>Speed | İlerleme<br>Feed | Hız<br>Speed | İlerleme<br>Feed |
|                     | min          | mm/min           | min          | mm/min           | min          | mm/min           |
| 4.00 R0.5           | 16.000       | 10.000           | 12.000       | 9.000            | 9.000        | 6.000            |
| 4.00 R1             | 16.000       | 10.000           | 12.000       | 9.000            | 9.000        | 6.000            |
| 5.00 R0.5           | 12.000       | 10.000           | 10.000       | 9.000            | 7.500        | 7.000            |
| 5.00 R1             | 12.000       | 10.000           | 10.000       | 9.000            | 7.500        | 7.000            |
| 6.00 R0.5           | 9.000        | 10.000           | 8.500        | 9.000            | 6.400        | 7.000            |
| 6.00 R1             | 9.000        | 10.000           | 8.500        | 9.000            | 6.400        | 7.000            |
| 8.00 R0.5           | 7.000        | 10.000           | 6.500        | 9.000            | 4.800        | 7.000            |
| 8.00 R1             | 7.000        | 10.000           | 6.500        | 9.000            | 4.800        | 7.000            |
| 10.00 R0.5          | 6.000        | 10.000           | 5.100        | 9.000            | 3.800        | 7.000            |
| 10.00 R1            | 6.000        | 10.000           | 5.100        | 9.000            | 3.800        | 7.000            |
| 12.00 R0.5          | 5.000        | 10.000           | 4.200        | 9.000            | 3.200        | 7.000            |
| 12.00 R1            | 5.000        | 10.000           | 4.200        | 9.000            | 3.200        | 7.000            |

3016

3017

## 3016 - 3017 SERİSİ DEVİR İLERLEME TABLOSU

N TİPİ KARBÜR MATKAPLAR İÇİN GEÇERLİDİR

| MALZEME<br>Material |                                          | İLERLEME / F mm/devir<br>Feed |              |             |             |             |             |             |
|---------------------|------------------------------------------|-------------------------------|--------------|-------------|-------------|-------------|-------------|-------------|
|                     |                                          | Vc m/min                      | Ø 0,5-2      | Ø 2-4       | Ø 4-6       | Ø 6-8       | Ø 8-10      | Ø 10-12     |
| Çelik               | Genel Çelik <500 N/mm                    | 60 - 80                       | 0.015 - 0.05 | 0.6 - 0.10  | 0.12 - 0.14 | 0.14 - 0.16 | 0.16 - 0.18 | 0.18 - 0.20 |
|                     | Genel Çelik <700 N/mm                    | 60 - 80                       | 0.015 - 0.05 | 0.6 - 0.10  | 0.12 - 0.14 | 0.14 - 0.16 | 0.16 - 0.18 | 0.18 - 0.20 |
|                     | Genel Çelik <850 N/mm                    | 60 - 80                       | 0.015 - 0.05 | 0.6 - 0.10  | 0.12 - 0.14 | 0.14 - 0.16 | 0.16 - 0.18 | 0.18 - 0.20 |
|                     | Genel Çelik <1000 N/mm                   | 50 - 70                       | 0.015 - 0.05 | 0.6 - 0.10  | 0.12 - 0.14 | 0.14 - 0.16 | 0.16 - 0.18 | 0.18 - 0.20 |
|                     | Genel Çelik <1400 N/mm                   | 30 - 50                       | 0.01 - 0.05  | 0.06 - 0.10 | 0.10 - 0.12 | 0.12 - 0.14 | 0.14 - 0.16 | 0.16 - 0.20 |
|                     | Sertleştirilmiş çelikler <1000 N/mm      | 50 - 70                       | 0.01 - 0.05  | 0.06 - 0.10 | 0.10 - 0.12 | 0.12 - 0.14 | 0.14 - 0.16 | 0.16 - 0.20 |
|                     | Nitrasyonlu çelikler <1000 N/mm          | 30 - 50                       | 0.01 - 0.05  | 0.06 - 0.10 | 0.10 - 0.12 | 0.12 - 0.14 | 0.14 - 0.16 | 0.16 - 0.20 |
|                     | Isıl işlemlı Çelikler <850 N/mm          | 30 - 50                       | 0.01 - 0.05  | 0.06 - 0.10 | 0.10 - 0.12 | 0.12 - 0.14 | 0.14 - 0.16 | 0.16 - 0.20 |
| Paslanmaz Çelik     | Takım Çeliği                             | 25 - 60                       | 0.01 - 0.05  | 0.06 - 0.10 | 0.10 - 0.12 | 0.12 - 0.14 | 0.14 - 0.16 | 0.16 - 0.20 |
|                     | Paslanmaz Çelikler <700 N/mm             | 20 - 40                       | 0.01 - 0.05  | 0.6 - 0.10  | 0.10 - 0.12 | 0.12 - 0.14 | 0.14 - 0.16 | 0.16 - 0.20 |
|                     | Paslanmaz Çelikler >700 N/mm             | 15 - 30                       | 0.01 - 0.05  | 0.6 - 0.10  | 0.10 - 0.12 | 0.12 - 0.14 | 0.14 - 0.16 | 0.16 - 0.20 |
| Döküm               | Döküm <180HB                             | 70 - 100                      | 0.01 - 0.05  | 0.6 - 0.10  | 0.12 - 0.14 | 0.14 - 0.16 | 0.16 - 0.18 | 0.18 - 0.20 |
|                     | Temper Döküm                             | 70 - 100                      | 0.015 - 0.05 | 0.6 - 0.10  | 0.12 - 0.14 | 0.14 - 0.16 | 0.16 - 0.18 | 0.18 - 0.20 |
|                     | Pik Döküm                                | 60 - 80                       | 0.01 - 0.05  | 0.6 - 0.01  | 0.10 - 0.12 | 0.12 - 0.14 | 0.14 - 0.16 | 0.16 - 0.20 |
| Alüminyum           | Alüminyum ve Alüminyum Alaşımları <6%Si  | 100 - 220                     | 0.015 - 0.05 | 0.6 - 0.10  | 0.12 - 0.14 | 0.14 - 0.16 | 0.16 - 0.18 | 0.18 - 0.20 |
|                     | Alüminyum ve Alüminyum Alaşımları <12%Si | 120 - 170                     | 0.015 - 0.05 | 0.6 - 0.10  | 0.12 - 0.14 | 0.14 - 0.16 | 0.16 - 0.18 | 0.18 - 0.20 |
|                     | Alüminyum ve Alüminyum Alaşımları >12%Si | 100 - 160                     | 0.015 - 0.05 | 0.6 - 0.10  | 0.12 - 0.14 | 0.14 - 0.16 | 0.16 - 0.18 | 0.18 - 0.20 |
|                     | Pirinç - Bakır - Bronz                   | 100 - 180                     | 0.01 - 0.05  | 0.06 - 0.10 | 0.10 - 0.12 | 0.12 - 0.14 | 0.14 - 0.16 | 0.16 - 0.20 |
|                     | Termo Plastikler                         |                               |              |             |             |             |             |             |
| Titanyum            | Titanyum ve Titanyum Alaşımları          | 20 - 35                       | 0.01 - 0.04  | 0.04 - 0.08 | 0.08 - 0.12 | 0.12 - 0.13 | 0.14 - 0.16 | 0.16 - 0.18 |
|                     | Nikel                                    | 15 - 30                       | 0.01 - 0.04  | 0.04 - 0.08 | 0.08 - 0.12 | 0.12 - 0.13 | 0.14 - 0.16 | 0.16 - 0.18 |

## 3645 SERİSİ DEVİR İLERLEME TABLOSU

YÜKSEK PERFORMANS MATKAPLAR İÇİN GEÇERLİDİR

3645  
3D

| MALZEME<br>Material |                                          | İLERLEME / F mm/devir<br>Feed |             |             |             |             |
|---------------------|------------------------------------------|-------------------------------|-------------|-------------|-------------|-------------|
|                     |                                          | Vc m/min                      | Ø 1-6       | Ø 6-10      | Ø 10-16     | Ø 16-20     |
| Çelik               | Genel Çelik <500 N/mm                    | 80 - 100                      | 0.08 - 0.15 | 0.15 - 0.20 | 0.20 - 0.25 | 0.25 - 0.35 |
|                     | Genel Çelik <700 N/mm                    | 80 - 100                      | 0.08 - 0.15 | 0.15 - 0.20 | 0.20 - 0.25 | 0.25 - 0.35 |
|                     | Genel Çelik <850 N/mm                    | 80 - 100                      | 0.08 - 0.15 | 0.15 - 0.20 | 0.20 - 0.25 | 0.25 - 0.35 |
|                     | Genel Çelik <1000 N/mm                   | 70 - 90                       | 0.08 - 0.15 | 0.15 - 0.20 | 0.20 - 0.25 | 0.25 - 0.35 |
|                     | Genel Çelik <1400 N/mm                   | 30 - 50                       | 0.06 - 0.12 | 0.12 - 0.15 | 0.15 - 0.20 | 0.20 - 0.30 |
|                     | Sertleştirilmiş çelikler <1000 N/mm      | 60 - 80                       | 0.07 - 0.13 | 0.13 - 0.16 | 0.16 - 0.22 | 0.22 - 0.30 |
|                     | Nitrasyonlu çelikler <1000 N/mm          | 60 - 80                       | 0.07 - 0.13 | 0.13 - 0.16 | 0.16 - 0.22 | 0.22 - 0.30 |
|                     | Isıl işlemlili Çelikler <850 N/mm        | 50 - 70                       | 0.07 - 0.13 | 0.13 - 0.16 | 0.16 - 0.22 | 0.22 - 0.30 |
| Paslanmaz Çelik     | Takım Çeliği                             | 30 - 50                       | 0.06 - 0.12 | 0.12 - 0.15 | 0.15 - 0.20 | 0.20 - 0.30 |
|                     | Paslanmaz Çelikler <700 N/mm             | 30 - 50                       | 0.06 - 0.10 | 0.10 - 0.15 | 0.15 - 0.18 | 0.18 - 0.25 |
|                     | Paslanmaz Çelikler >700 N/mm             | 25 - 40                       | 0.06 - 0.10 | 0.10 - 0.15 | 0.15 - 0.18 | 0.18 - 0.25 |
| Döküm               | Döküm <180HB                             | 100 - 120                     | 0.05 - 0.13 | 0.13 - 0.17 | 0.17 - 0.22 | 0.22 - 0.35 |
|                     | Temper Döküm                             | 100 - 120                     | 0.05 - 0.13 | 0.13 - 0.17 | 0.17 - 0.22 | 0.22 - 0.35 |
|                     | Pik Döküm                                | 80 - 110                      | 0.05 - 0.13 | 0.13 - 0.17 | 0.17 - 0.22 | 0.22 - 0.35 |
| Alüminyum           | Alüminyum ve Alüminyum Alaşımları <6%Si  | 200 - 250                     | 0.08 - 0.15 | 0.15 - 0.20 | 0.20 - 0.25 | 0.25 - 0.35 |
|                     | Alüminyum ve Alüminyum Alaşımları <12%Si | 160 - 200                     | 0.08 - 0.15 | 0.15 - 0.20 | 0.20 - 0.25 | 0.25 - 0.35 |
|                     | Alüminyum ve Alüminyum Alaşımları >12%Si | 120 - 180                     | 0.08 - 0.15 | 0.15 - 0.20 | 0.20 - 0.25 | 0.25 - 0.35 |
|                     | Pirinç - Bakır - Bronz                   | 100 - 200                     | 0.08 - 0.15 | 0.15 - 0.20 | 0.20 - 0.25 | 0.25 - 0.35 |
| Titanyum            | Titanyum ve Titanyum Alaşımları          | 25 - 40                       | 0.06 - 0.10 | 0.10 - 0.15 | 0.15 - 0.18 | 0.18 - 0.25 |

## 3646 SERİSİ DEVİR İLERLEME TABLOSU

YÜKSEK PERFORMANS MATKAPLAR İÇİN GEÇERLİDİR

3646  
5D

| MALZEME<br>Material |                                          | İLERLEME / F mm/devir<br>Feed |             |             |             |             |
|---------------------|------------------------------------------|-------------------------------|-------------|-------------|-------------|-------------|
|                     |                                          | Vc m/min                      | Ø 1-6       | Ø 6-10      | Ø 10-16     | Ø 16-20     |
| Çelik               | Genel Çelik <500 N/mm                    | 100 - 130                     | 0.12 - 0.18 | 0.18 - 0.23 | 0.23 - 0.27 | 0.27 - 0.30 |
|                     | Genel Çelik <700 N/mm                    | 100 - 130                     | 0.12 - 0.18 | 0.18 - 0.23 | 0.23 - 0.27 | 0.27 - 0.30 |
|                     | Genel Çelik <850 N/mm                    | 100 - 130                     | 0.12 - 0.18 | 0.18 - 0.23 | 0.23 - 0.27 | 0.27 - 0.30 |
|                     | Genel Çelik <1000 N/mm                   | 90 - 120                      | 0.12 - 0.18 | 0.18 - 0.23 | 0.23 - 0.27 | 0.27 - 0.30 |
|                     | Genel Çelik <1400 N/mm                   | 35 - 55                       | 0.06 - 0.09 | 0.09 - 0.15 | 0.15 - 0.20 | 0.20 - 0.23 |
|                     | Sertleştirilmiş çelikler <1000 N/mm      | 80 - 100                      | 0.10 - 0.16 | 0.16 - 0.20 | 0.20 - 0.22 | 0.22 - 0.25 |
|                     | Nitrasyonlu çelikler <1000 N/mm          | 80 - 100                      | 0.10 - 0.16 | 0.16 - 0.20 | 0.20 - 0.22 | 0.22 - 0.25 |
|                     | Isıl işlemlı Çelikler <850 N/mm          | 80 - 100                      | 0.10 - 0.16 | 0.16 - 0.20 | 0.20 - 0.22 | 0.22 - 0.25 |
|                     | Takım Çeliği                             | 50 - 80                       | 0.10 - 0.16 | 0.16 - 0.20 | 0.20 - 0.22 | 0.22 - 0.25 |
| Alüminyum           | Alüminyum ve Alüminyum Alaşımları <6%Si  | 220 - 260                     | 0.15 - 0.25 | 0.25 - 0.38 | 0.38 - 0.42 | 0.42 - 0.55 |
|                     | Alüminyum ve Alüminyum Alaşımları <12%Si | 220 - 260                     | 0.15 - 0.25 | 0.25 - 0.38 | 0.38 - 0.42 | 0.42 - 0.55 |
|                     | Pirinç - Bakır - Bronz                   | 90 - 110                      | 0.15 - 0.22 | 0.22 - 0.30 | 0.30 - 0.40 | 0.40 - 0.50 |

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## 021 SERİSİ DEVİR İLERLEME TABLOSU

KARBÜR PUNTA MATKAPLAR İÇİN GEÇERLİDİR

| MALZEME<br>Material |                                          | İLERLEME / F mm/devir<br>Feed |             |             |             |             |
|---------------------|------------------------------------------|-------------------------------|-------------|-------------|-------------|-------------|
|                     |                                          | Vc m/min                      | Ø 0,5-1,25  | Ø 1,6-2,5   | Ø 3,15-4    | Ø 5-6,3     |
| Çelik               | Genel Çelik <500 N/mm                    | 80                            | 0.02 - 0.03 | 0.08 - 0.10 | 0.10 - 0.13 | 0.13 - 0.20 |
|                     | Genel Çelik <700 N/mm                    | 80                            | 0.02 - 0.03 | 0.08 - 0.10 | 0.10 - 0.13 | 0.13 - 0.20 |
|                     | Genel Çelik <850 N/mm                    | 75                            | 0.02 - 0.03 | 0.08        | 0.08 - 0.10 | 0.10 - 0.15 |
|                     | Genel Çelik <1000 N/mm                   | 70                            | 0.02 - 0.03 | 0.08        | 0.08 - 0.10 | 0.10 - 0.15 |
|                     | Genel Çelik <1400 N/mm                   | 35                            | 0.01 - 0.02 | 0.06 - 0.08 | 0.08 - 0.10 | 0.10 - 0.15 |
|                     | Sertleştirilmiş çelikler <1000 N/mm      | 65                            | 0.01 - 0.02 | 0.06 - 0.08 | 0.08 - 0.10 | 0.10 - 0.15 |
|                     | Nitrasyonlu çelikler <1000 N/mm          | 65                            | 0.01 - 0.02 | 0.06 - 0.08 | 0.08 - 0.10 | 0.10 - 0.15 |
|                     | Isıl işlemlili Çelikler <850 N/mm        | 65                            | 0.01 - 0.02 | 0.06 - 0.08 | 0.08 - 0.10 | 0.10 - 0.15 |
|                     | Takım Çeliği                             | 40                            | 0.01 - 0.02 | 0.06 - 0.08 | 0.08 - 0.10 | 0.10 - 0.15 |
| Paslanmaz Çelik     | Paslanmaz Çelikler <700 N/mm             | 30                            | 0.01        | 0.02        | 0.02 - 0.03 | 0.03 - 0.07 |
|                     | Paslanmaz Çelikler >700 N/mm             | 25                            | 0.01        | 0.02        | 0.02 - 0.03 | 0.03 - 0.07 |
| Döküm               | Döküm <180HB                             | 70                            | 0.04        | 0.07 - 0.08 | 0.08 - 0.13 | 0.13 - 0.18 |
|                     | Temper Döküm                             | 70                            | 0.02        | 0.06 - 0.08 | 0.08 - 0.10 | 0.10 - 0.15 |
|                     | Pik Döküm                                | 70                            | 0.02        | 0.06 - 0.08 | 0.08 - 0.10 | 0.10 - 0.15 |
| Alüminyum           | Alüminyum ve Alüminyum Alaşımları <6%Si  | 200                           | 0.01        | 0.02        | 0.02 - 0.03 | 0.03 - 0.07 |
|                     | Alüminyum ve Alüminyum Alaşımları <12%Si | 180                           | 0.01        | 0.02        | 0.02 - 0.03 | 0.03 - 0.07 |
|                     | Alüminyum ve Alüminyum Alaşımları >12%Si | 160                           | 0.01        | 0.02        | 0.02 - 0.03 | 0.03 - 0.07 |
|                     | Pirinç - Bakır - Bronz                   | 100                           | 0.01        | 0.01        | 0.01 - 0.02 | 0.02 - 0.06 |
|                     | Termo Plastikler                         | 45                            | 0.05        | 0.05        | 0.05        | 0.10 - 0.14 |
| Titanyum            | Titanyum ve Titanyum Alaşımları          | 25                            | 0.01 - 0.02 | 0.02        | 0.02 - 0.03 | 0.03 - 0.07 |

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## 190 - 191 SERİSİ DEVİR İLERLEME TABLOSU 90° - 120°

NC KARBÜR PUNTA MATKAPLAR İÇİN GEÇERLİDİR

| MALZEME<br>Material |                                          | İLERLEME / F mm/devir<br>Feed |             |             |             |         |
|---------------------|------------------------------------------|-------------------------------|-------------|-------------|-------------|---------|
|                     |                                          | Vc m/min                      | Ø 3-5       | Ø 5-6       | Ø 6-12      | Ø 12-20 |
| Çelik               | Genel Çelik <500 N/mm                    | 70 - 80                       | 0.06 - 0.11 | 0.11 - 0.14 | 0.14 - 0.16 | 0.16    |
|                     | Genel Çelik <700 N/mm                    | 65 - 75                       | 0.06 - 0.11 | 0.11 - 0.14 | 0.14 - 0.16 | 0.16    |
|                     | Genel Çelik <850 N/mm                    | 55 - 65                       | 0.06 - 0.11 | 0.11 - 0.14 | 0.14 - 0.16 | 0.16    |
|                     | Genel Çelik <1000 N/mm                   | 40 - 60                       | 0.05 - 0.09 | 0.09 - 0.12 | 0.12 - 0.14 | 0.14    |
|                     | Genel Çelik <1400 N/mm                   | 25 - 35                       | 0.05 - 0.09 | 0.09 - 0.12 | 0.12 - 0.14 | 0.14    |
|                     | Sertleştirilmiş çelikler <1000 N/mm      | 30 - 40                       | 0.05 - 0.09 | 0.09 - 0.12 | 0.12 - 0.14 | 0.14    |
|                     | Nitrasyonlu çelikler <1000 N/mm          | 30 - 40                       | 0.05 - 0.09 | 0.09 - 0.12 | 0.12 - 0.14 | 0.14    |
|                     | Isıl işlemlı Çelikler <850 N/mm          | 40 - 50                       | 0.05 - 0.09 | 0.09 - 0.12 | 0.12 - 0.14 | 0.14    |
| Paslanmaz Çelik     | Takım Çeliği                             | 25 - 35                       | 0.05 - 0.09 | 0.09 - 0.12 | 0.12 - 0.14 | 0.14    |
|                     | Paslanmaz Çelikler <700 N/mm             | 20 - 30                       | 0.01 - 0.03 | 0.03 - 0.07 | 0.07        | 0.07    |
| Döküm               | Paslanmaz Çelikler >700 N/mm             | 20 - 25                       | 0.01 - 0.03 | 0.03 - 0.07 | 0.07        | 0.07    |
|                     | Döküm <180HB                             | 60 - 70                       | 0.04 - 0.09 | 0.09 - 0.11 | 0.11 - 0.13 | 0.13    |
|                     | Temper Döküm                             | 60 - 70                       | 0.04 - 0.09 | 0.09 - 0.11 | 0.11 - 0.13 | 0.13    |
|                     | Pik Döküm                                | 60 - 70                       | 0.04 - 0.09 | 0.09 - 0.11 | 0.11 - 0.13 | 0.13    |
| Alüminyum           | Alüminyum ve Alüminyum Alaşımları <6%Si  | 180 - 200                     | 0.02 - 0.03 | 0.03 - 0.07 | 0.07        | 0.07    |
|                     | Alüminyum ve Alüminyum Alaşımları <12%Si | 160 - 180                     | 0.02 - 0.03 | 0.03 - 0.07 | 0.07        | 0.07    |
|                     | Alüminyum ve Alüminyum Alaşımları >12%Si | 140 - 160                     | 0.02 - 0.03 | 0.03 - 0.07 | 0.07        | 0.07    |
|                     | Pirinç - Bakır - Bronz                   | 60 - 80                       | 0.01 - 0.02 | 0.02 - 0.06 | 0.07        | 0.07    |
|                     | Termo Plastikler                         | 40 - 50                       | 0.01 - 0.02 | 0.02 - 0.04 | 0.04 - 0.06 | 0.07    |
| Titanyum            | Titanyum ve Titanyum Alaşımları          | 25 - 35                       | 0.01 - 0.03 | 0.03 - 0.07 | 0.07        | 0.07    |
|                     | Nikel                                    | 25 - 35                       | 0.01 - 0.03 | 0.03 - 0.07 | 0.07        | 0.07    |

## 460 - 490 - 4120 SERİSİ DEVİR İLERLEME TABLOSU

HAVŞA FREZELERİ İÇİN GEÇERLİDİR  
60° - 90° - 120°

460  
490  
4120

| MALZEME<br>Material |                                          | İLERLEME / F mm/devir<br>Feed |             |             |
|---------------------|------------------------------------------|-------------------------------|-------------|-------------|
|                     |                                          | Vc m/min                      | Ø 4-6-8     | Ø 10-12     |
| Çelik               | Genel Çelik <500 N/mm                    | 190                           | 0.04 - 0.07 | 0.07 - 0.12 |
|                     | Genel Çelik <700 N/mm                    | 170                           | 0.04 - 0.07 | 0.02 - 0.04 |
|                     | Genel Çelik <850 N/mm                    | 170                           | 0.04 - 0.07 | 0.02 - 0.04 |
|                     | Genel Çelik <1000 N/mm                   | 140                           | 0.04 - 0.07 | 0.02 - 0.04 |
|                     | Genel Çelik <1400 N/mm                   | 85                            | 0.02 - 0.05 | 0.04 - 0.06 |
|                     | Sertleştirilmiş çelikler <1000 N/mm      | 120                           | 0.02 - 0.05 | 0.05 - 0.07 |
|                     | Nitrasyonlu çelikler <1000 N/mm          | 120                           | 0.02 - 0.05 | 0.05 - 0.07 |
|                     | Isıl işlemlı Çelikler <850 N/mm          | 160                           | 0.02 - 0.05 | 0.05 - 0.07 |
|                     | Takım Çeliği                             | 95                            | 0.02 - 0.05 | 0.04 - 0.06 |
| Paslanmaz Çelik     | Paslanmaz Çelikler <700 N/mm             | 110                           | 0.02 - 0.04 | 0.04 - 0.05 |
|                     | Paslanmaz Çelikler >700 N/mm             | 75                            | 0.02 - 0.04 | 0.04 - 0.05 |
| Döküm               | Döküm <180HB                             | 150                           | 0.03 - 0.04 | 0.07 - 0.08 |
|                     | Temper Döküm                             | 70                            | 0.04 - 0.06 | 0.08 - 0.09 |
|                     | Pik Döküm                                | 100                           | 0.04 - 0.06 | 0.08 - 0.09 |
| Alüminyum           | Alüminyum ve Alüminyum Alaşımları <6%Si  | 700                           | 0.04 - 0.07 | 0.12        |
|                     | Alüminyum ve Alüminyum Alaşımları <12%Si | 700                           | 0.04 - 0.07 | 0.12        |
|                     | Alüminyum ve Alüminyum Alaşımları >12%Si | 40                            | 0.04 - 0.07 | 0.12        |
|                     | Pirinç - Bakır - Bronz                   | 300                           | 0.04 - 0.07 | 0.12        |
| Titanyum            | Titanyum ve Titanyum Alaşımları          | 60                            | 0.02 - 0.04 | 0.07        |
|                     | Nikel                                    | 60                            | 0.02 - 0.04 | 0.07        |

## 6507 SERİSİ DEVİR İLERLEME TABLOSU

ÇİFT TARAFLI HAVŞA FREZESİ İÇİN GEÇERLİDİR

6507

| MALZEME<br>Material |                                          | İLERLEME / F mm/devir<br>Feed |               |               |               |               |               |
|---------------------|------------------------------------------|-------------------------------|---------------|---------------|---------------|---------------|---------------|
|                     |                                          | Vc m/min                      | Ø 1-3         | Ø 4-6         | Ø 6-8         | Ø 8-10        | Ø 10-12       |
| Çelik               | Genel Çelik <500 N/mm                    | 60 - 80                       | 0.004 - 0.007 | 0.007 - 0.014 | 0.014 - 0.018 | 0.018 - 0.022 | 0.022 - 0.030 |
|                     | Genel Çelik <700 N/mm                    | 60 - 80                       | 0.002 - 0.006 | 0.006 - 0.014 | 0.014 - 0.018 | 0.018 - 0.022 | 0.022 - 0.030 |
|                     | Genel Çelik <850 N/mm                    | 60 - 80                       | 0.002 - 0.006 | 0.006 - 0.014 | 0.014 - 0.018 | 0.018 - 0.022 | 0.022 - 0.030 |
|                     | Genel Çelik <1000 N/mm                   | 50 - 70                       | 0.002 - 0.006 | 0.006 - 0.014 | 0.014 - 0.018 | 0.018 - 0.022 | 0.022 - 0.030 |
|                     | Genel Çelik <1400 N/mm                   | 30 - 50                       | 0.004 - 0.006 | 0.006 - 0.010 | 0.010 - 0.012 | 0.014         | 0.014 - 0.021 |
|                     | Sertleştirilmiş çelikler <1000 N/mm      | 40 - 60                       | 0.004 - 0.006 | 0.006 - 0.010 | 0.010 - 0.012 | 0.014         | 0.014 - 0.021 |
|                     | Nitrasyonlu çelikler <1000 N/mm          | 35 - 55                       | 0.004 - 0.006 | 0.006 - 0.010 | 0.010 - 0.012 | 0.014         | 0.014 - 0.021 |
|                     | Isıl işlemlili Çelikler <850 N/mm        | 35 - 55                       | 0.004 - 0.006 | 0.006 - 0.010 | 0.010 - 0.012 | 0.014         | 0.014 - 0.021 |
|                     | Takım Çeliği                             | 25 - 40                       | 0.004 - 0.006 | 0.006 - 0.010 | 0.010 - 0.012 | 0.014         | 0.014 - 0.021 |
| Paslanmaz Çelik     | Paslanmaz Çelikler <700 N/mm             | 35 - 55                       | 0.004 - 0.006 | 0.006 - 0.010 | 0.010 - 0.012 | 0.014         | 0.014 - 0.021 |
|                     | Paslanmaz Çelikler >700 N/mm             | 30 - 50                       | 0.002 - 0.006 | 0.006 - 0.010 | 0.010 - 0.012 | 0.014         | 0.014 - 0.021 |
| Döküm               | Döküm <180HB                             | 30 - 50                       | 0.004 - 0.007 | 0.007 - 0.014 | 0.014 - 0.018 | 0.022         | 0.022 - 0.030 |
|                     | Temper Döküm                             | 30 - 50                       | 0.004 - 0.007 | 0.007 - 0.014 | 0.014 - 0.018 | 0.022         | 0.022 - 0.030 |
|                     | Pik Döküm                                | 30 - 50                       | 0.004 - 0.007 | 0.007 - 0.014 | 0.014 - 0.018 | 0.022         | 0.022 - 0.030 |
| Alüminyum           | Alüminyum ve Alüminyum Alaşımları <6%Si  | 220 - 250                     | 0.006 - 0.009 | 0.009 - 0.015 | 0.015 - 0.020 | 0.023         | 0.025 - 0.035 |
|                     | Alüminyum ve Alüminyum Alaşımları <12%Si | 110 - 130                     | 0.006 - 0.009 | 0.009 - 0.015 | 0.015 - 0.020 | 0.023         | 0.025 - 0.035 |
|                     | Alüminyum ve Alüminyum Alaşımları >12%Si | 70 - 100                      | 0.006 - 0.009 | 0.009 - 0.015 | 0.015 - 0.020 | 0.023         | 0.025 - 0.035 |
|                     | Pirinç - Bakır - Bronz                   | 60 - 80                       | 0.004 - 0.007 | 0.007 - 0.014 | 0.014 - 0.018 | 0.023         | 0.025 - 0.035 |
|                     | Termo Plastikler                         | 110 - 130                     | 0.004 - 0.007 | 0.007 - 0.014 | 0.014 - 0.018 | 0.023         | 0.025 - 0.035 |
|                     | Grafit                                   | 30 - 50                       | 0.004 - 0.007 | 0.007 - 0.014 | 0.014 - 0.018 | 0.023         | 0.025 - 0.035 |

5210

## 5210 SERİSİ DEVİR İLERLEME TABLOSU

KARBÜR RAYBALAR İÇİN GEÇERLİDİR

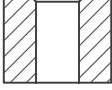
| MALZEME<br>Material |                                          | İLERLEME / F mm/devir<br>Feed |             |             |             |             |             |
|---------------------|------------------------------------------|-------------------------------|-------------|-------------|-------------|-------------|-------------|
|                     |                                          | Vc m/min                      | Ø 1-2,99    | Ø 3-5,99    | Ø 6-9,99    | Ø 10-15,99  | Ø 16-20     |
| Çelik               | Genel Çelik <500 N/mm                    | 30 -40                        | 0.08 - 0.10 | 0.10 - 0.15 | 0.15 - 0.20 | 0.20 - 0.25 | 0.25 - 0.30 |
|                     | Genel Çelik <700 N/mm                    | 25 - 35                       | 0.08 - 0.10 | 0.10 - 0.15 | 0.15 - 0.20 | 0.20 - 0.25 | 0.25 - 0.30 |
|                     | Genel Çelik <850 N/mm                    | 25 - 35                       | 0.08 - 0.10 | 0.10 - 0.15 | 0.15 - 0.20 | 0.20 - 0.25 | 0.25 - 0.30 |
|                     | Genel Çelik <1000 N/mm                   | 25 - 35                       | 0.06 - 0.08 | 0.08 - 0.10 | 0.10 - 0.14 | 0.14 - 0.20 | 0.20 - 0.30 |
|                     | Genel Çelik <1400 N/mm                   | 10 - 15                       | 0.06 - 0.08 | 0.08 - 0.10 | 0.10 - 0.14 | 0.14 - 0.20 | 0.20 - 0.30 |
|                     | Sertleştirilmiş çelikler <1000 N/mm      | 10 - 20                       | 0.08 - 0.10 | 0.10        | 0.12 - 0.16 | 0.16 - 0.25 | 0.25 - 0.30 |
|                     | Nitrasyonlu çelikler <1000 N/mm          | 10 - 20                       | 0.06 - 0.08 | 0.08        | 0.10 - 0.14 | 0.14 - 0.20 | 0.20 - 0.30 |
|                     | Isıl işlemlili Çelikler <850 N/mm        | 15 - 20                       | 0.06 - 0.08 | 0.08        | 0.10 - 0.14 | 0.14 - 0.20 | 0.20 - 0.30 |
| Paslanmaz Çelik     | Takım Çeliği                             | 10 - 15                       | 0.06 - 0.08 | 0.08        | 0.10 - 0.14 | 0.14 - 0.20 | 0.20 - 0.30 |
|                     | Paslanmaz Çelikler <700 N/mm             | 10 - 15                       | 0.06 - 0.08 | 0.08        | 0.10 - 0.14 | 0.14 - 0.20 | 0.20 - 0.30 |
| Döküm               | Paslanmaz Çelikler >700 N/mm             | 8 - 15                        | 0.06 - 0.08 | 0.08        | 0.10 - 0.14 | 0.14 - 0.20 | 0.20 - 0.30 |
|                     | Döküm <180HB                             | 12 - 20                       | 0.12 - 0.18 | 0.18        | 0.20 - 0.23 | 0.23 - 0.30 | 0.30 - 0.35 |
| Alüminyum           | Temper Döküm                             | 10 - 15                       | 0.10 - 0.12 | 0.12        | 0.16 - 0.18 | 0.18 - 0.25 | 0.25 - 0.30 |
|                     | Alüminyum ve Alüminyum Alaşımları <6%Si  | 30 - 60                       | 0.12 - 0.18 | 0.18        | 0.20 - 0.23 | 0.23 - 0.30 | 0.30 - 0.35 |
|                     | Alüminyum ve Alüminyum Alaşımları <12%Si | 20 - 40                       | 0.12 - 0.18 | 0.18        | 0.20 - 0.23 | 0.23 - 0.30 | 0.30 - 0.35 |
|                     | Alüminyum ve Alüminyum Alaşımları >12%Si | 15 - 30                       | 0.12 - 0.18 | 0.18        | 0.20 - 0.23 | 0.23 - 0.30 | 0.30 - 0.35 |
|                     | Pirinç - Bakır - Bronz                   | 20 - 30                       | 0.15 - 0.20 | 0.20        | 0.25 - 0.32 | 0.32 - 0.40 | 0.40 - 0.45 |
|                     | Termo Plastikler                         | 15 - 30                       | 0.08 - 0.10 | 0.10        | 0.15 - 0.20 | 0.20 - 0.25 | 0.25 - 0.30 |
| Titanyum            | Titanyum ve Titanyum Alaşımları          | 5 - 10                        | 0.06 - 0.08 | 0.08        | 0.10 - 0.14 | 0.14 - 0.20 | 0.20 - 0.30 |



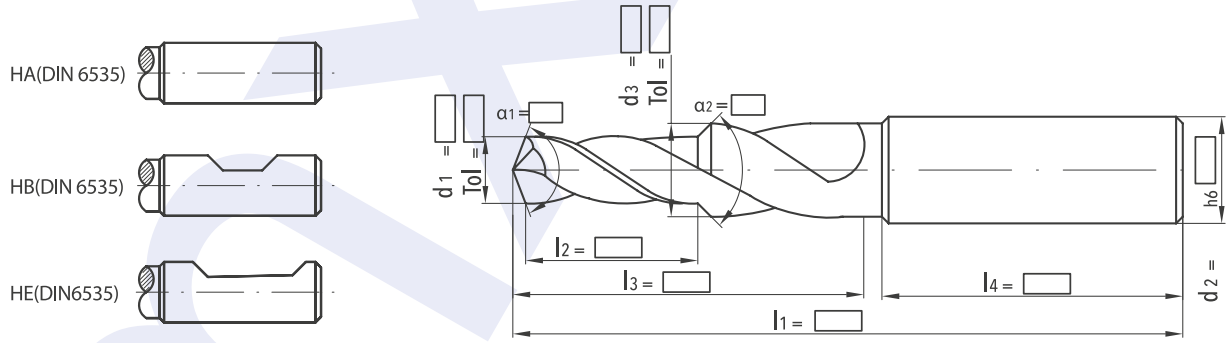
## KARBÜR KADEMELİ MATKAP SİPARİŞ FORMU

## Karbür Kademeli Matkap

Lütfen işleme şeklinizi ve ihtiyacınız olan özel takımı tanımlayınız

|                                                   |                                       |                                                                                   |                          |                                                                                   |                                                      |                                                |
|---------------------------------------------------|---------------------------------------|-----------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------|
| İşleme şekli                                      | <input type="checkbox"/>              |  | <input type="checkbox"/> |  | İşlenecek malzeme                                    |                                                |
|                                                   |                                       |                                                                                   |                          |                                                                                   | <input type="checkbox"/> Alaşımsız çelik             | <input type="checkbox"/> Alüminyum Si>%10      |
| Delik tipi                                        | <input type="checkbox"/> Açık delik   | <input type="checkbox"/> Kör delik                                                |                          |                                                                                   | <input type="checkbox"/> Dökme çelik                 | <input type="checkbox"/> Alüminyum Si<%10      |
|                                                   |                                       |                                                                                   |                          |                                                                                   | <input type="checkbox"/> Alaşımlı çelik              | <input type="checkbox"/> Bakır                 |
| İşleme metodu                                     | <input type="checkbox"/> Sulu         | <input type="checkbox"/> Kuru                                                     |                          |                                                                                   | <input type="checkbox"/> Inox                        | <input type="checkbox"/> Prinç                 |
|                                                   | <input type="checkbox"/> min. Yağlama |                                                                                   |                          |                                                                                   | <input type="checkbox"/> Paslanmaz / Aside dayanıklı | <input type="checkbox"/> Bronz                 |
|                                                   |                                       |                                                                                   |                          |                                                                                   | <input type="checkbox"/> Gri dökme demir             | <input type="checkbox"/> Titanyum alaşımları   |
| Soğutma şekli                                     | <input type="checkbox"/> Dıştan       | <input type="checkbox"/> İçten                                                    |                          |                                                                                   | <input type="checkbox"/> Alaşımlı dökme demir        | <input type="checkbox"/> Nikel alaşımları      |
|                                                   |                                       |  |                          |  | <input type="checkbox"/> Sfrero döküm                | <input type="checkbox"/> Soğuk dökme demir     |
|                                                   |                                       |                                                                                   |                          |                                                                                   | <input type="checkbox"/> Dövme çelik                 | <input type="checkbox"/> Sertleştirilmiş çelik |
| Sertlik(HRC,HB,etc)                               | Çekme mukavemeti(N/mm <sup>2</sup> )  |                                                                                   |                          |                                                                                   |                                                      | Standart No                                    |
| Kesme yönü                                        |                                       |                                                                                   |                          |                                                                                   |                                                      | <input type="checkbox"/> Sağ                   |
| Belirtilmediği takdirde Sağ olarak kabul edilir / |                                       |                                                                                   |                          |                                                                                   |                                                      | <input type="checkbox"/> Sol                   |
| Kaplama İsteği                                    |                                       |                                                                                   |                          |                                                                                   |                                                      |                                                |

## Şaft formu



Not

Firma İsmi

Yetkili kişi

Adres

Tel/Faks

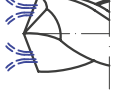
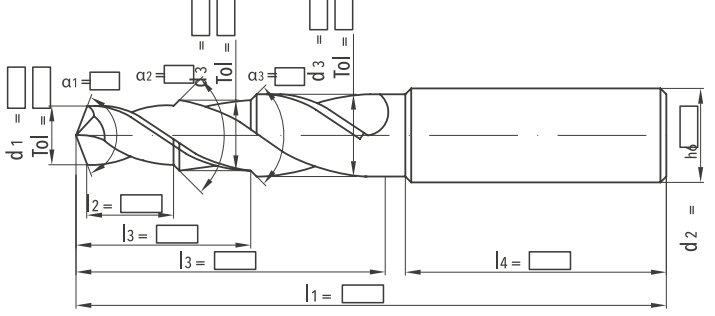
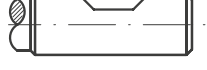
e-posta

Tarih/İmza

## KARBÜR ÇOK KADEMELİ MATKAP SİPARİŞ FORMU

## Karbür Çok Kademeli Matkap

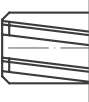
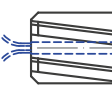
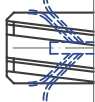
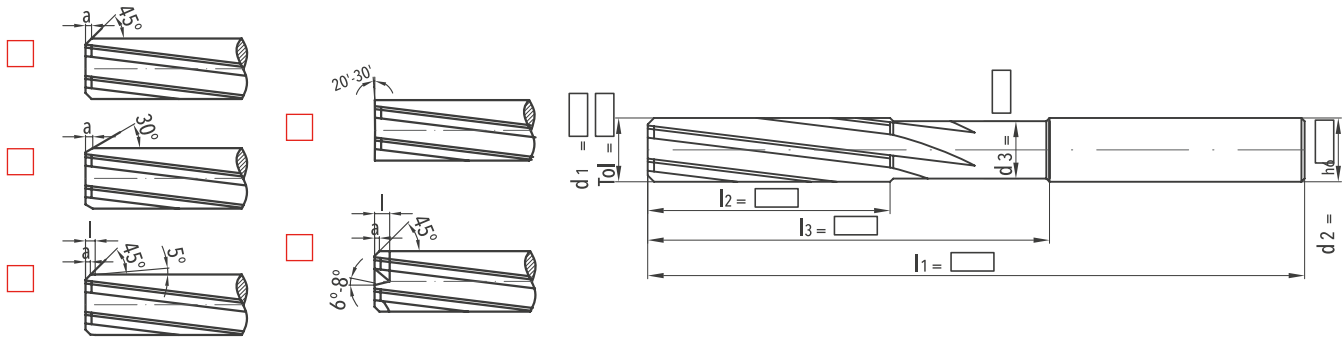
Lütfen işleme şeklinizi ve ihtiyacınız olan özel takımı tanımlayınız

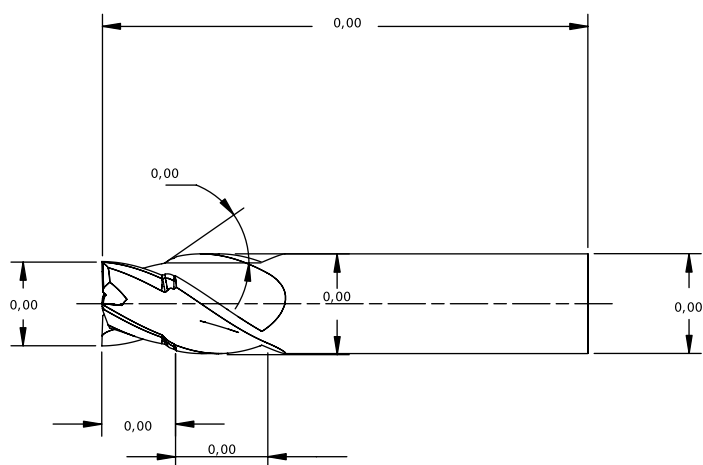
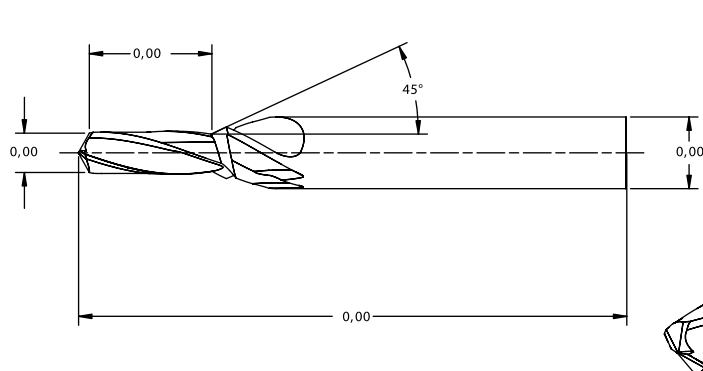
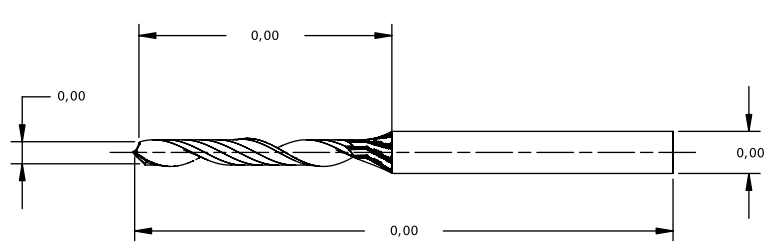
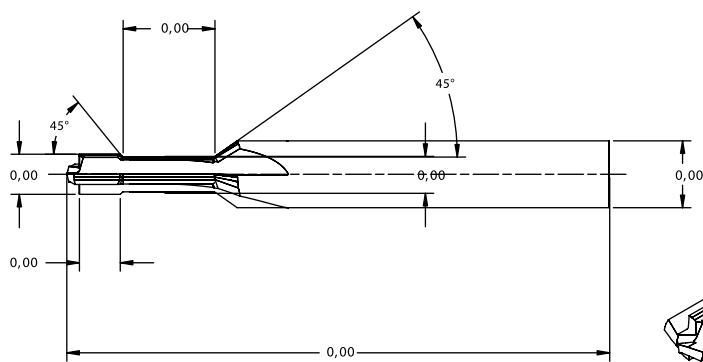
|                                                                                |                                                                                                            |                                                                                                            |                                                      |                                                |
|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------|
| İşleme şekli                                                                   | <input type="checkbox"/>  | <input type="checkbox"/>  | İşlenecek malzeme                                    |                                                |
|                                                                                |                                                                                                            |                                                                                                            | <input type="checkbox"/> Alaşımsız çelik             | <input type="checkbox"/> Alüminyum Si>%10      |
| Delik tipi                                                                     | <input type="checkbox"/> Açık delik                                                                        | <input type="checkbox"/> Kör delik                                                                         | <input type="checkbox"/> Dökme çelik                 | <input type="checkbox"/> Alüminyum Si<%10      |
|                                                                                |                                                                                                            |                                                                                                            | <input type="checkbox"/> Alaşımlı çelik              | <input type="checkbox"/> Bakır                 |
| İşleme metodu                                                                  | <input type="checkbox"/> Sulu                                                                              | <input type="checkbox"/> Kuru                                                                              | <input type="checkbox"/> Inox                        | <input type="checkbox"/> Prinç                 |
|                                                                                | <input type="checkbox"/> min. Yağlama                                                                      |                                                                                                            | <input type="checkbox"/> Paslanmaz / Aside dayanıklı | <input type="checkbox"/> Bronz                 |
|                                                                                |                                                                                                            |                                                                                                            | <input type="checkbox"/> Gri dökme demir             | <input type="checkbox"/> Titanyum alaşımları   |
| Soğutma şekli                                                                  | <input type="checkbox"/> Dıştan                                                                            | <input type="checkbox"/> İçten                                                                             | <input type="checkbox"/> Alaşımlı dökme demir        | <input type="checkbox"/> Nikel alaşımları      |
|                                                                                |                           |                           | <input type="checkbox"/> Sfrero döküm                | <input type="checkbox"/> Soğuk dökme demir     |
|                                                                                |                                                                                                            |                                                                                                            | <input type="checkbox"/> Dövme çelik                 | <input type="checkbox"/> Sertleştirilmiş çelik |
| Sertlik(HRc,HB,etc)                                                            | Çekme mukavemeti(N/mm <sup>2</sup> )                                                                       |                                                                                                            |                                                      | Standart No                                    |
| Kesme yönü                                                                     | <input type="checkbox"/> Sağ                                                                               |                                                                                                            |                                                      | <input type="checkbox"/> Sol                   |
| Belirtilmediği takdirde Sağ olarak kabul edilir / if stated we will assume RH. |                                                                                                            |                                                                                                            |                                                      |                                                |
| Kaplama İsteği                                                                 |                                                                                                            |                                                                                                            |                                                      |                                                |
| Şaft formu                                                                     |                                                                                                            |                                                                                                            |                                                      |                                                |
| HA(DIN 6535)                                                                   |                         |                        |                                                      |                                                |
| HB(DIN 6535)                                                                   |                         |                                                                                                            |                                                      |                                                |
| HE(DIN6535)                                                                    |                         |                                                                                                            |                                                      |                                                |
| Not                                                                            |                                                                                                            |                                                                                                            |                                                      |                                                |
| Firma İsmi                                                                     |                                                                                                            |                                                                                                            |                                                      |                                                |
| Yetkili kişi                                                                   |                                                                                                            |                                                                                                            |                                                      |                                                |
| Adres                                                                          |                                                                                                            |                                                                                                            |                                                      |                                                |
| Tel/Faks                                                                       |                                                                                                            |                                                                                                            |                                                      |                                                |
| e-posta                                                                        |                                                                                                            |                                                                                                            |                                                      |                                                |
| Tarih/İmza                                                                     |                                                                                                            |                                                                                                            |                                                      |                                                |

## ÖZEL KARBÜR RAYBA SİPARİŞ FORMU

## Özel Karbür Rayba

Lütfen işleme şeklinizi ve ihtiyacınız olan özel takımı tanımlayınız

|                                                                                      |                                                                                   |                                                                                   |                                                      |                                                |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------|
| Delik tipi                                                                           | <input type="checkbox"/> Açık delik                                               | <input type="checkbox"/> Kör delik                                                | <input type="checkbox"/> Alaşimsız çelik             | <input type="checkbox"/> Alüminyum Si>%10      |
|                                                                                      |                                                                                   |                                                                                   | <input type="checkbox"/> Dökme çelik                 | <input type="checkbox"/> Alüminyum Si<%10      |
| İşleme metodu                                                                        | <input type="checkbox"/> Sulu                                                     | <input type="checkbox"/> Kuru                                                     | <input type="checkbox"/> Alaşımli çelik              | <input type="checkbox"/> Bakır                 |
|                                                                                      | <input type="checkbox"/> min. Yağlama                                             |                                                                                   | <input type="checkbox"/> Inox                        | <input type="checkbox"/> Prinç                 |
| Soğutma şekli                                                                        |                                                                                   |                                                                                   | <input type="checkbox"/> Paslanmaz / Aside dayanıklı | <input type="checkbox"/> Bronz                 |
| <input type="checkbox"/> Dıştan                                                      | <input type="checkbox"/> İçten                                                    | <input type="checkbox"/> İçten                                                    | <input type="checkbox"/> Gri dökme demir             | <input type="checkbox"/> Titanyum alaşımları   |
|     |  |  | <input type="checkbox"/> Alaşımli dökme demir        | <input type="checkbox"/> Nikel alaşımları      |
|                                                                                      |                                                                                   |                                                                                   | <input type="checkbox"/> Sfrero döküm                | <input type="checkbox"/> Soğuk dökme demir     |
| Kaplama İsteği                                                                       |                                                                                   |                                                                                   | <input type="checkbox"/> Dövme çelik                 | <input type="checkbox"/> Sertleştirilmiş çelik |
|                                                                                      |                                                                                   |                                                                                   |                                                      |                                                |
| Sertlik(HRC,HB,etc) :                                                                | Çekme mukavemeti(N/mm <sup>2</sup> ):                                             |                                                                                   |                                                      | Standart No                                    |
| Kesme yönü                                                                           | <input type="checkbox"/> Sağ                                                      |                                                                                   |                                                      | <input type="checkbox"/> Sol                   |
| Belirtilmediği takdirde Sağ olarak kabul edilir                                      |                                                                                   |                                                                                   |                                                      |                                                |
| Rayba formu                                                                          |                                                                                   |                                                                                   |                                                      |                                                |
|  |                                                                                   |                                                                                   |                                                      |                                                |
| Not                                                                                  |                                                                                   |                                                                                   |                                                      |                                                |
| Firma İsmi                                                                           |                                                                                   |                                                                                   |                                                      |                                                |
| Yetkili kişi                                                                         |                                                                                   |                                                                                   |                                                      |                                                |
| Adres                                                                                |                                                                                   |                                                                                   |                                                      |                                                |
| Tel/Faks                                                                             |                                                                                   |                                                                                   |                                                      |                                                |
| e-posta                                                                              |                                                                                   |                                                                                   |                                                      |                                                |
| Tarih/İmza                                                                           |                                                                                   |                                                                                   |                                                      |                                                |



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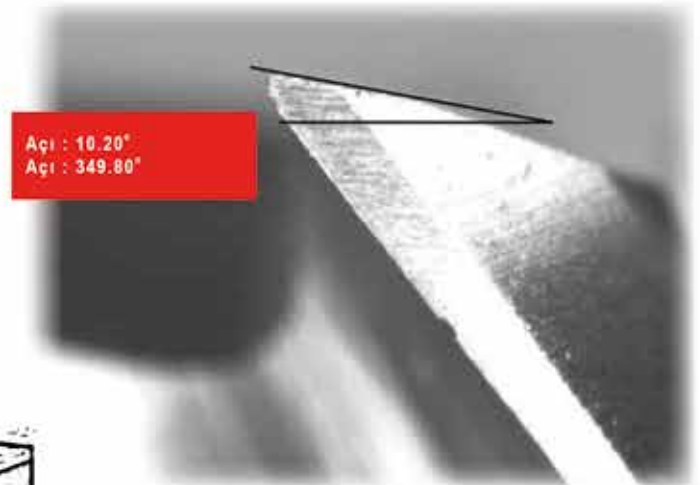
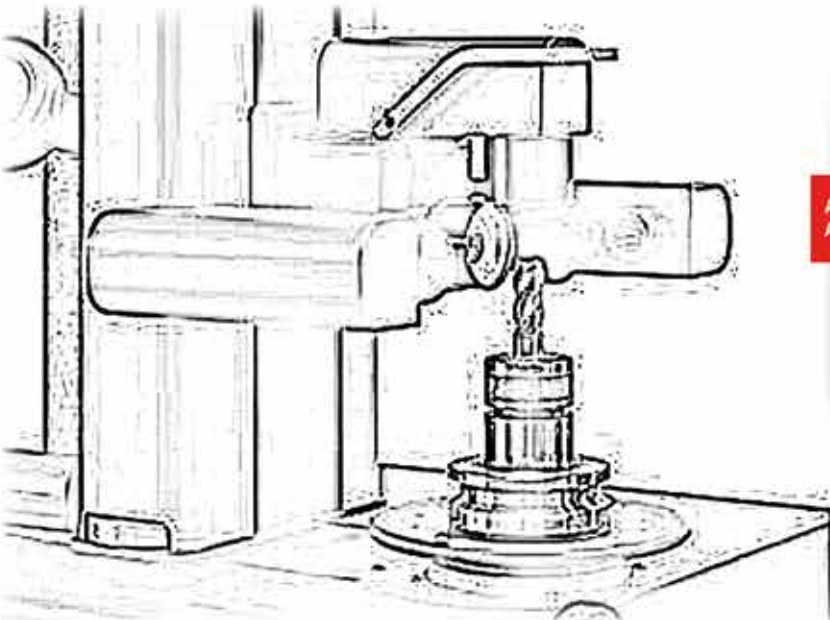
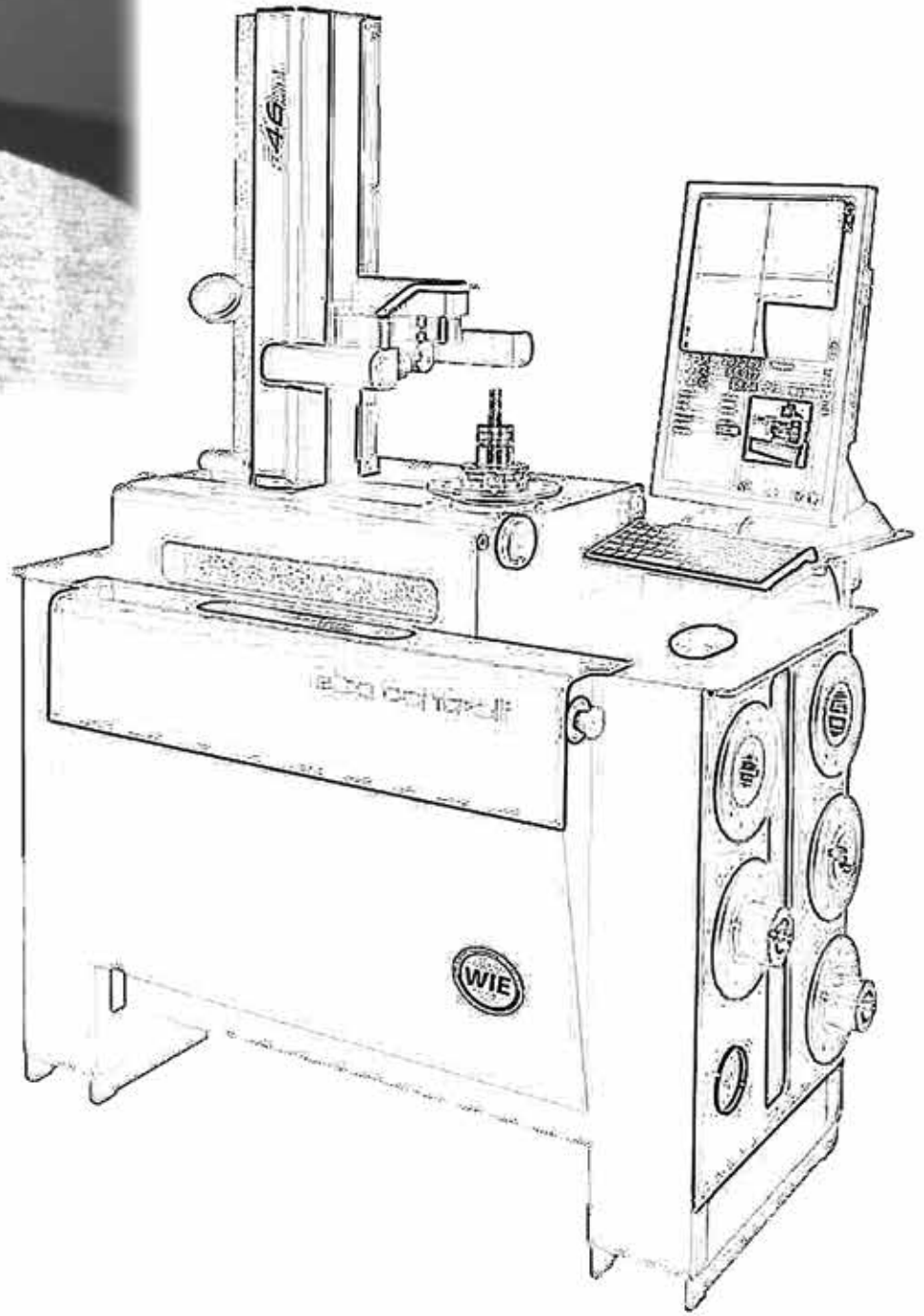
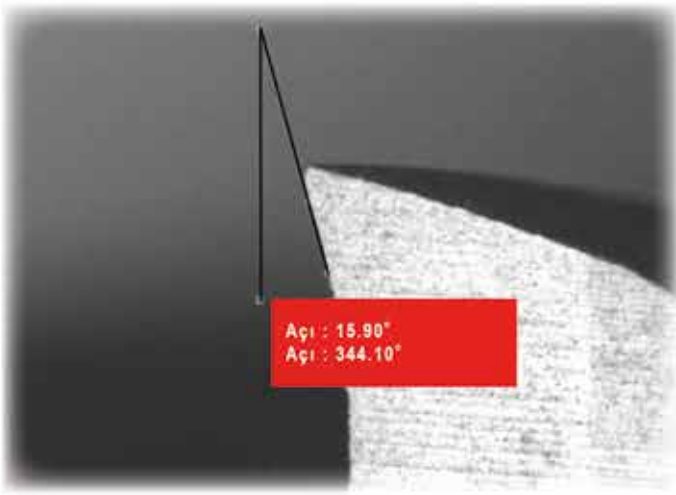
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