



Sinter Sud

metallo**duro**
hardmetal



Sinter Sud



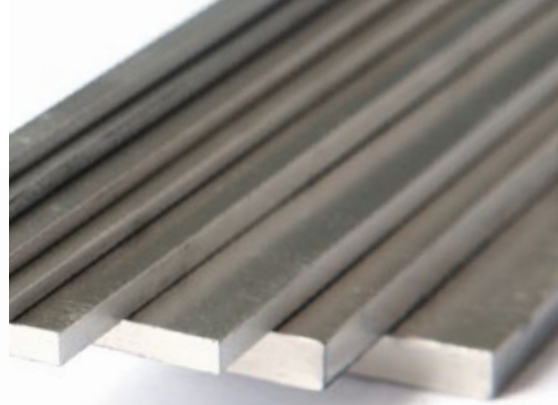
Barre

Grezze a sezione quadra e rettangolare - lunghezze 335 mm

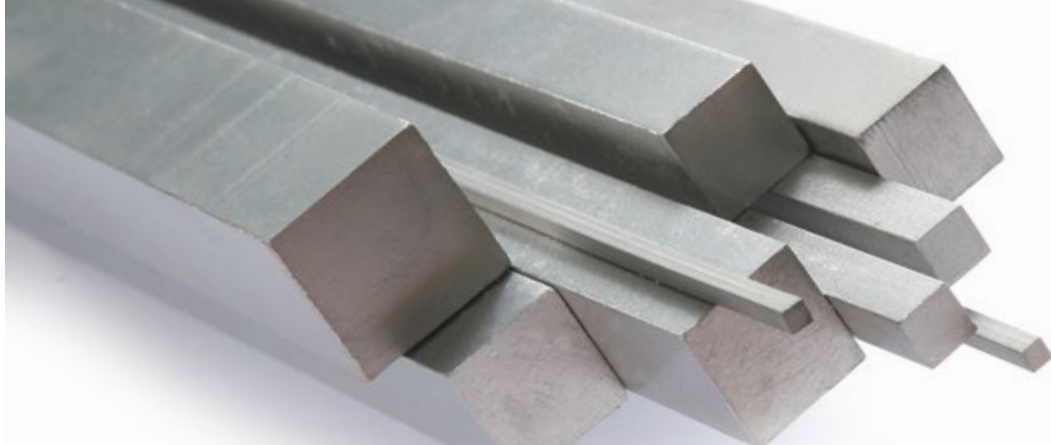
Unground square and rectangular bars - length 335 mm

Rohe Quadrat - und Rechteckstäbe - Länge 335 mm

Barreaux brut carres et rectangulaires - longueur 335 mm



GRADO GRADE SORTE NUANCE		K10F L335mm	K30 L335mm
a mm	b mm	Codice Articolo Item Code Artikel-Code Code Article	Codice Articolo Item Code Artikel-Code Code Article
1,5	3	K10FB01.503335	K30B01.503335
1,5	4	K10FB01.504335	K30B01.504335
1,5	6	K10FB01.506335	K30B01.506335
1,5	8	K10FB01.508335	K30B01.508335
2,0	2	K10FB02.002335	K30B02.002335
2,0	4	K10FB02.004335	K30B02.004335
2,0	5	K10FB02.005335	K30B02.005335
2,0	6	K10FB02.006335	K30B02.006335
2,0	7	K10FB02.007335	K30B02.007335
2,0	8	K10FB02.008335	K30B02.008335
2,0	9	K10FB02.009335	K30B02.009335
2,0	10	K10FB02.010335	K30B02.010335
2,0	12	K10FB02.012335	K30B02.012335
2,0	14	K10FB02.014335	K30B02.014335
2,0	16	K10FB02.016335	K30B02.016335
2,0	18	K10FB02.018335	K30B02.018335
2,0	20	K10FB02.020335	K30B02.020335
2,5	6	K10FB02.506335	K30B02.506335
2,5	8	K10FB02.508335	K30B02.508335
2,5	10	K10FB02.510335	K30B02.510335
2,5	12	K10FB02.512335	K30B02.512335
2,5	14	K10FB02.514335	K30B02.514335
2,5	16	K10FB02.516335	K30B02.516335
2,5	18	K10FB02.518335	K30B02.518335
2,5	20	K10FB02.520335	K30B02.520335
3,0	3	K10FB03.003335	K30B03.003335
3,0	5	K10FB03.005335	K30B03.005335
3,0	6	K10FB03.006335	K30B03.006335
3,0	7	K10FB03.007335	K30B03.007335
3,0	8	K10FB03.008335	K30B03.008335
3,0	10	K10FB03.010335	K30B03.010335
3,0	12	K10FB03.012335	K30B03.012335
3,0	13	K10FB03.013335	K30B03.013335
3,0	14	K10FB03.014335	K30B03.014335



GRADO GRADE SORTE NUANCE		K10F L335mm	K30 L335mm
a mm	b mm	Codice Articolo Item Code Artikel-Code Code Article	Codice Articolo Item Code Artikel-Code Code Article
3,0	15	K10FB03.015335	K30B03.015335
3,0	16	K10FB03.016335	K30B03.016335
3,0	18	K10FB03.018335	K30B03.018335
3,0	20	K10FB03.020335	K30B03.020335
3,0	22	K10FB03.022335	K30B03.022335
3,0	25	K10FB03.025335	K30B03.025335
3,0	30	K10FB03.030335	K30B03.030335
4,0	4	K10FB04.004335	K30B04.004335
4,0	5	K10FB04.005335	K30B04.005335
4,0	6	K10FB04.006335	K30B04.006335
4,0	8	K10FB04.008335	K30B04.008335
4,0	10	K10FB04.010335	K30B04.010335
4,0	12	K10FB04.012335	K30B04.012335
4,0	13	K10FB04.013335	K30B04.013335
4,0	14	K10FB04.014335	K30B04.014335
4,0	16	K10FB04.016335	K30B04.016335
4,0	18	K10FB04.018335	K30B04.018335
4,0	20	K10FB04.020335	K30B04.020335
4,0	22	K10FB04.022335	K30B04.022335
4,0	25	K10FB04.025335	K30B04.025335
4,0	30	K10FB04.030335	K30B04.030335
5,0	5	K10FB05.005335	K30B05.005335
5,0	7	K10FB05.007335	K30B05.007335
5,0	8	K10FB05.008335	K30B05.008335
5,0	10	K10FB05.010335	K30B05.010335
5,0	12	K10FB05.012335	K30B05.012335
5,0	14	K10FB05.014335	K30B05.014335
5,0	16	K10FB05.016335	K30B05.016335
5,0	18	K10FB05.018335	K30B05.018335
5,0	20	K10FB05.020335	K30B05.020335
5,0	25	K10FB05.025335	K30B05.025335
5,0	30	K10FB05.030335	K30B05.030335
5,0	32	K10FB05.032335	K30B05.032335
6,0	6	K10FB06.006335	K30B06.006335

GRADO GRADE SORTE NUANCE		K10F L335mm	K30 L335mm
a mm	b mm	Codice Articolo Item Code Artikel-Code Code Article	Codice Articolo Item Code Artikel-Code Code Article
6,0	8	K10FB06.008335	K30B06.008335
6,0	10	K10FB06.010335	K30B06.010335
6,0	12	K10FB06.012335	K30B06.012335
6,0	14	K10FB06.014335	K30B06.014335
6,0	16	K10FB06.016335	K30B06.016335
6,0	18	K10FB06.018335	K30B06.018335
6,0	20	K10FB06.020335	K30B06.020335
6,0	25	K10FB06.025335	K30B06.025335
6,0	30	K10FB06.030335	K30B06.030335
8,0	8	K10FB08.008335	K30B08.008335
10,0	10	K10FB10.010335	K30B10.010335
12,0	12	K10FB12.012335	K30B12.012335
14,0	14	K10FB14.014335	K30B14.014335
16,0	16	K10FB16.016335	K30B16.016335
18,0	18	K10FB18.018335	K30B18.018335
20,0	20	K10FB20.020335	K30B20.020335

A richiesta disponibili anche altre misure.
Other sizes available on demand.
Weitere Maße nach Kunden Anfrage verfügbar.
Autres dimensions disponible sur demande.

K10F - Pronto magazzino
K06F/K30 - Su richiesta

K10F - On stock
K06F/K30 - On demand

K10F - Auf Lager
K06F/K30 - Auf Anfrage

K10F - En stock
K06F/K30 - Sur demandé

Gradi metallo duro - Composizione

Hard Metal grades - Specifications

Hartmetall Sorten - Zusammensetzung

Carbure Nuances - Spécifications

Grado Grade HM - Sorte Nuance	WC Incl. Doping %	Co %	Grana Grain size Korngröße Grosseur de grain micron	Densità Density Dichte Densité g/cm ³	Durezza Hardness Härte Dureté HRA	Durezza Hardness Härte Dureté HV30	Resistenza alla flessione Transverse rupture strenght Biegefestigkeit Resistance a la flexion N/mm ²
MK12	88	12	Ultra-fine	14,20	92,5	1730	4500

Adatto alla lavorazione, sia in sgrossatura che in finitura, di acciai con durezza comprese tra i 40 ed i 55 HRC, acciai per trattamenti superficiali, nichel e leghe di nichel. Adatto alla lavorazione di finitura con microfrese su acciai

Suitable for finishing processing and roughing of steels with hardness between 40 and 55 HRC, steels for surface treatments, nickel and nickel alloys. Suitable for manufacturing with micro end mills on steels applications

Convient pour le traitement, soit pour l'ébauche que pour finition des aciers de dureté comprise entre 40 et 55 HRC, aciers pour traitements de surface, nickel, alliages de nickel. Aussi pour le travail de finition les aciers Micro.

(Geeignet für) Veredelung von Stählen mit Härte zwischen 40 und 55 HRC, Nickel und Nickellegierungen; geeignet für die Veredelung durch Mikrofräsen auf Stählen.

GF70	91,5	8,5	Ultra-fine	14,50	93,8	1950	4700
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Adatto alle lavorazioni di finitura ad alta velocità per acciai di durezza comprese tra i 55 ed i 65 HRC tra cui acciaio rapido e acciaio temperato. Lavorazioni di fresatura e foratura ad alta velocità di ghisa, non ferrosi, leghe leggere, compositi, laminati di carta, plastica, grafite.

Suitable for finishing manufacturing high speed steels with hardness between 55 and 65 HRC as HS and tempered steels. Suitable for high speed milling and drilling of cast iron, non ferrous metals, light alloys, composites, laminates of paper, plastic, graphite.

Convient pour la finition des aciers rapides de la dureté comprise entre 55 et 65 HRC (acier trempé, acier rapide). D'usinage et de fraisage à haute vitesse de forage de la fonte, les métaux non ferreux, alliages légers, composites, produits laminé de papier et de plastique, graphite.

(Geeignet für) Hochgeschwindigkeitsveredelung von Stählen mit Härte zwischen 55 und 65 HRC (Schnellarbeits- und getemperten Stählen). Hochgeschwindigkeits-Fräsen und Bohren von Gusseisen, eisenlosen Metallen, Leichtmetallen, Verbundwerkstoffen von Papier, Holz und Plastik.

K10F	90	10,0	Sub-Micron	14,42	92,1	1620	3700
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Grado adatto alla lavorazione di acciai anche non temprati, specie quando la durezza è minore di 40 HRC. Idoneo alla lavorazione di leghe di alluminio, alluminio magnesio, ghisa, materiali non ferrosi.

Suitable for steels manufacturing including non tempered steels with hardness up to 40 HRC. For aluminium alloys, aluminium magnesium, cast iron, non-ferrous material.

Convient pour l'usinage des aciers, y compris les non trempés, en particulier lorsque la dureté est inférieure à 40 HRC. Approprié pour l'aluminium, aluminium magnesium, fonte, métaux non ferreux.

(Geeignet für) die Bearbeitung von Stählen mit Härten bis 40 HRC. Verarbeitung von Aluminium-Legierungen, Aluminium, Magnesium, Guseisen und eisenlosen Materialien.

K12F	88	12	Sub-Micron	14,22	91,1	1480	3740
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Adatto alla lavorazione di acciai inossidabili, leghe a base nichel, titanio, leghe di titanio, leghe speciali (nimonic, inconel, Monel, Hastelloy), ottone, bronzo. Adatto alla foratura e sgrossatura di superfici irregolari o ondulate di acciai teneri o tenaci. Non indicato nella lavorazione di acciai induriti.

Suitable for stainless steels manufacturing, nickel alloys, titanium, titanium alloys, special alloys (nimonic, inconel, monel, hastelloy), brass, bronze. Suitable also for roughing and drilling tender steels with irregular surfaces.

Convient pour l'usinage de l'acier inoxydable, des alliages à base de nickel, titanium, alliages de titanium, alliages specials (nimonic, inconel, Monel, Hastelloy), laiton, bronze. Convient aussi pour le forage et l'ébauche des aciers légers avec des surfaces irrégulieres.

(Geeignet für) die Bearbeitung vom Edelstahl, Nickellegierungen, Titan, Titanlegierungen, Sonderlegierungen (Nimonic, Inconel, Monel, Hastelloy), Messing und Bronze. Bohren von Edelstählen mit unregelmäßigen Oberflächen.

K30	91	9,0	Medium	14,58	91,0	1520	2900
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Adatto ad applicazioni ove è richiesta una modesta resistenza all'usura, ma molta tenacità. Ideale, quindi, per la lavorazione del legno e per lavorazioni con taglio interrotto.

Suitable for applications where a modest wear resistance is required, but high toughness. Suitable also for woodworking and cutting cut manufacturing.

Convient pour des applications ou on demande une baisse resistance à l'usure, mais avec haute ténacité. Ideal donc pour le travaux du bois et coupe interrompue.

(Geeignet für) Anwendungen, wo eine bescheidene Beständigkeit benötigt wird. Ideal für Holzbearbeitung und für Bearbeitungen mit unterbrochenem Schnitt.

K06	94	6,0	Sub-Micron	14,80	93,4	1890	2600
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Idoneo alla foratura e fresatura di compositi plastici, PCB, ceramiche, legni in particolare legni duri e truciolati (MDF). Adatto anche a foratura su acciai.

Suitable for drilling and milling of plastic composites, PCB, ceramics, woods in particular hard woods and composite woods (MDF). Suitable also for drilling steels.

Convient pour la forage et la fraisage de matériaux composites, de plastique, PCB, ceramiques, bois en particulier bois durs et bois composites (MDF). Convient aussi pour le forage des aciers.

(Geeignet für) Bohren und Fräsen von Keramik, Plastikverbundwerkstoffen, PCB, Holz, Holzverbundmaterial (MDF). Bohren von Stählen.

Classificazione della grana del metallo duro Hard metal grain size classification Hartmetallkorngröße Klassifizierung Classification de grosseur de grain	Dimensione della grana Grain size Korngröße Grosseur de grain	Classificazione Classification Klassifizierung Classification
	> 0,2	nano
	> 0,2 - 0,5	ultrafine
	> 0,5 - 0,8	sub-micron
	> 0,8 - 1,3	fine
	> 1,3 - 2,5	medium
	> 2,5 - 6,0	coarse
	> 6,0	extra-coarse



Dati Tecnici

Tolleranze

Technical data: Tolerances
Technische daten: Toleranzen
Données techniques: Tolérances

CILINDRI grezzi solid rods as sintered VHM- Rundstäbe roh Barreaux ronds brut	
Diametro Diameter Durchmesser Diametre mm	Tolleranze Tolerances Toleranzen Tolerances mm
0,5 - 3,5	+0,25 / +0,35
4,0 - 6,0	+0,25 / +0,40
6,5 - 12,0	+0,30 / +0,45
12,5 - 16,0	+0,35 / +0,50
16,5 - 22,0	+0,40 / +0,55
22,5 - 45,0	+0,45 / +0,60
Lunghezza Length Länge Longueur mm	Tolleranze Tolerances Toleranzen Tolerances mm
fino a 100,0	+0,50 / +1,00
100,0 - 165,0	+1,00 / +2,50
165,0 - 335,0	+1,00 / +6,00
Rettilinearità Straightness Geradeheit Rectitude Ø mm	Tolleranze Tolerances Toleranzen Tolerances mm
0,6 - 4	0,10
4,5 - 8	0,12
8,5 - 12,0	0,15
12,5 - 20	0,20
≥20,5	0,24

CILINDRI Rettificati h6 Solid rods ground h6 VHM- Rundstäbe geschliffen h6 Barreaux ronds rectifiés h6	
Diametro Diameter Durchmesser Diametre mm	Tolleranze Tolerances Toleranzen Tolerances mm
fino a 100,0	+0,50 / +1,00
100,0 - 165,0	+1,00 / +2,50
165,0 - 335,0	+1,00 / +6,00

Tutti i diametri.
All diameters.
Alle Durchmesser.
Toutes les diamètres.

h6

Lunghezza Length Länge Longueur mm	Tolleranze Tolerances Toleranzen Tolerances mm
fino a 100,0	+0,50 / +1,00
100,0 - 165,0	+1,00 / +2,50
165,0 - 335,0	+1,00 / +6,00
Rettilinearità Straightness Geradeheit Rectitude Ø mm	Tolleranze Tolerances Toleranzen Tolerances mm
<4,0	0,07
4,5 - 5	0,06
5,5 - 12	0,05
>12,50	0,04

Rotondità Circularity Rundheit Circularité Ø mm	Tolleranze Tolerances Toleranzen Tolerances mm
< 3,0	2,0 micron
3,0 - 6,0	2,5 micron
6,1 - 10,0	3,0 micron
10,1 - 18,0	3,5 micron
18,1 - 30,0	4,0 micron
30,1 - 50,0	5,0 micron

Tolleranza decentramento foro dei cilindri con 1 foro centrale solid rods as sintered VHM- Rundstäbe roh Barreaux ronds brut	
Diametro Diameter Durchmesser Diametre mm	Max decentramento Max hole distance from center Max Bohrung Abstand von der Mitte Distance maximale du centre du trou mm
4,0 - 8,0	0,15
9,0 - 12,0	0,20
13,0 - 16,0	0,30
17,0 - 18,0	0,40
> 20,0	0,50

Tolleranza interasse foro dei cilindri con due fori paralleli ad interasse minore 2 holes axial approx. 2 Bohrungen Dezentralisation Rapprochement 2 trous axial					
Diametro Diameter Durchmesser Diametre mm	Interasse fori Bolt circle Teilkreis Distance entre 2 trous mm	Interasse fori Bolt circle Teilkreis Distance entre 2 trous mm		a	
6,0	2,00	-0,20/0	0,80	±0,10	0,15
7,0	2,00	-0,20/0	0,80	±0,10	0,15
8,0	2,60	-0,30/0	1,00	±0,10	0,15
9,0	2,60	-0,30/0	1,00	±0,10	0,20
10,0	2,60	-0,30/0	1,00	±0,10	0,20
11,0	3,50	-0,30/0	1,20	±0,15	0,28
12,0	3,50	-0,30/0	1,20	±0,15	0,30
13,0	3,50	-0,30/0	1,20	±0,15	0,34
14,0	5,00	-0,30/0	1,50	±0,15	0,37
15,0	5,00	-0,30/0	1,50	±0,15	0,40
16,0	5,00	-0,30/0	1,50	±0,15	0,40
18,0	6,20	-0,30/0	2,00	±0,20	0,50
20,0	6,20	-0,40/0	2,00	±0,20	0,50
22,0	6,20	-0,40/0	2,00	±0,20	0,50
24,0	7,50	-0,40/0	2,00	±0,20	0,50
25,0	7,50	-0,40/0	2,00	±0,20	0,50
26,0	8,50	-0,50/0	2,00	±0,20	0,50
28,0	8,50	-0,50/0	2,00	±0,20	0,50
≥30,0	8,50	-0,50/0	3,00	±0,25	0,50

Tolleranza interasse cilindri con due fori paralleli ad interasse maggiore 2 holes axial approx. 2 Bohrungen Dezentralisation Rapprochement 2 trous axial					
Diametro Diameter Durchmesser Diametre mm	Interasse fori Bolt circle Teilkreis Distance entre 2 trous mm	Diametro foro Bolt circle Teilkreis Distance barreou rond mm		a	
4,0	1,80	-0,15	0,80	±0,10	0,10
5,0	2,00	-0,15	0,80	±0,10	0,13
6,0	3,00	-0,20	1,00	±0,10	0,15
7,0	3,50	-0,20	1,00	±0,15	0,15
8,0	4,00	-0,30	1,00	±0,15	0,15
9,0	4,00	-0,30	1,40	±0,15	0,20
10,0	5,00	-0,30	1,40	±0,15	0,20
11,0	5,00	-0,30	1,40	±0,15	0,28
12,0	6,00	-0,30	1,75	±0,15	0,30
13,0	6,00	-0,30	1,75	±0,15	0,34
14,0	7,00	-0,30	1,75	±0,15	0,37
15,0	7,00	-0,30	2,00	±0,20	0,40
16,0	8,00	-0,30	2,00	±0,20	0,40
17,0	8,00	-0,30	2,00	±0,20	0,40
18,0	9,00	-0,30	2,00	±0,20	0,50
20,0	10,00	-0,40	2,60	±0,25	0,50
22,0	11,00	-0,40	2,60	±0,25	0,50
24,0	12,00	-0,50	3,00	±0,25	0,50
25,0	12,00	-0,50	3,00	±0,25	0,50
26,0	13,00	-0,50	3,00	±0,25	0,50
≥28,0	14,00	-0,50	3,00	±0,25	0,50



BARRE quadre e rettangolari

Square and rectangular bars
Quadrat- und Rechteckstäbe
Barreaux carres et rectang

Lunghezza Length Länge Longueur mm	Tolleranze Tolerances Toleranzen Tolerances mm
fino a 100,0	+0,50 / +1,50
100,0 - 165,0	+1,00 / +2,50
165,0 - 335,0	+1,00 / +6,00

Spessore/Altezza Thickness/Height Stärke/Höhe Epaisseur/Hauteur mm	Tolleranze Tolerances Toleranzen Tolerances mm
1,5	0,25 ÷ 0,50
2,0	0,25 ÷ 0,50
2,5	0,25 ÷ 0,52
3,0	0,25 ÷ 0,55
4,0	0,25 ÷ 0,55
5,0	0,25 ÷ 0,60
6,0	0,25 ÷ 0,60
7,0	0,25 ÷ 0,60
8,0	0,25 ÷ 0,60
9,0	0,25 ÷ 0,60
10,0	0,25 ÷ 0,60
12,0	0,25 ÷ 0,60
14,0	0,25 ÷ 0,60
16,0	0,25 ÷ 0,60
18,0	0,25 ÷ 0,60
20,0	0,30 ÷ 0,65
22,0	0,30 ÷ 0,65
24,0	0,30 ÷ 0,65
25,0	0,30 ÷ 0,80
26,0	0,30 ÷ 0,80
28,0	0,30 ÷ 0,80
30,0	0,30 ÷ 0,80
32,0	0,30 ÷ 0,80
35,0	0,30 ÷ 0,80
> 35,0	0,35 ÷ 0,80



Sinter Sud srl

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