

LIEFERPROGRAMM
DELIVERY PROGRAM
PROGRAMME DE VENTE

Hartmetallsorten - Zusammensetzung und Eigenschaften

Carbide grades - Composition and Properties

Nuances de Carbure - Composition et Propriétés

		Feinstkorn submicron grain micrograin			
		EMT100	EMT207	EMT210	EMT212
WC		93%	91.5%	89%	87%
Co		6%	7.5%	10%	12%
Zusatzkarbide Other carbides <i>Autres carbures</i>		1%	1%	1%	1%
Korngrösse Average grain size <i>Dimension des grains</i>	µm	~0.8	~0.8	~0.8	~0.8
Dichte ISO 3369 Density <i>Densité</i>	g/cm ³	14.80 ±0.1	14.70 ±0.1	14.45 ±0.1	14.20 ±0.1
Härte ISO 3878 Hardness <i>Dureté</i>	HV 30	1'800 ±60	1'730 ±50	1'600 ±60	1'505 ±60
Biegefestigkeit Transverse rupture strength <i>Résistance à la flexion</i>	N/mm ²	>3'800	>4'200	>4'200	>4'300
Bruchzähigkeit K _{IC} Fracture toughness <i>Résistance à la rupture</i>	MPa*m ^{1/2}	9.4	9.7	10.0	11.5

		Feinkorn fine grain grain fin		Ultrafeinkorn ultrafine grain grain ultrafin	
		EMT409	EMT412	EMT609	EMT612
WC		90%	87%	89.5%	86.5%
Co		9%	12%	9%	12%
Zusatzkarbide Other carbides <i>Autres carbures</i>		1%	1%	1.5%	1.5%
Korngrösse Average grain size <i>Dimension des grains</i>	µm	~1.2	~1.2	~0.5	~0.5
Dichte ISO 3369 Density <i>Densité</i>	g/cm ³	14.50 ±0.1	14.25 ±0.1	14.40 ±0.1	14.10 ±0.1
Härte ISO 3878 Hardness <i>Dureté</i>	HV 30	1'550 ±60	1'440 ±60	1'880 ±60	1'680 ±60
Biegefestigkeit Transverse rupture strength <i>Résistance à la flexion</i>	N/mm ²	>3'500	>4'000	>4'000	>4'200
Bruchzähigkeit K _{IC} Fracture toughness <i>Résistance à la rupture</i>	MPa*m ^{1/2}	10.5	12.3	7.7	7.8

K_{IC} nach Palmquist
Die Daten in dieser Tabelle sind typische Materialkennwerte. Änderungen der Daten im Rahmen des technischen Fortschritts oder durch betrieblich bedingte Weiterentwicklung behalten wir uns vor. *K_{IC}: Die gemessenen kritischen Spannungs-intensitätsfaktoren (K_{IC}) sind in hohem Masse von der Probengeometrie und Probenpräparation abhängig. Ein direkter Vergleich mit Werten, die mit einer anderen Verfahrensweise ermittelt wurden, ist daher nicht zulässig.

The data in this table are typical material parameters. We reserve the right to modify the data due to technical progress or due to further development within our company. *K_{IC}: The measured critical tension intensity factors (K_{IC}) depend to a high degree on the sample geometry and sample preparation. A direct comparison with parameters which have been determined by means of a different method is therefore not admissible.

Les données figurant dans ce tableau représentent les paramètres spécifiques matière. Nous nous réservons le droit de modifier ces données en fonction des progrès technologiques ou de nos futurs développements. *K_{IC}: Les facteurs critiques d'intensité de contraintes (K_{IC}) dépendent fortement de la géométrie et de la préparation de l'échantillon. Une comparaison directe avec des valeurs obtenues par une autre méthode n'est donc pas possible.

Standardprogramm
Product portfolio
Articles standard

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● Lagergeführte Artikel | Stock-managed items | *Articles gérés en stock*
○ Artikel mit limitierter Lagerhaltung | items with limited stock | *Articles avec stock limité*

Rundstäbe | voll | sinterroh
Round bars | solid | sintered
Barreaux ronds | pleins | bruts

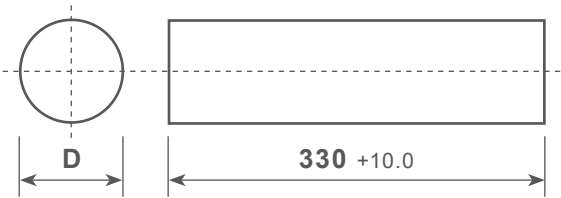


Abmessungen in mm | Dimensions in mm | Dimensions en mm

EMT									
D	Tol	100	207	210	212	409	412	609	612
1.25	-0.05 / +0.15	● 10000000		● 10000001					● 10000002
1.60	-0.05 / +0.15			● 10000006					
1.80	-0.05 / +0.15	● 10000007		● 10000008				● 10000009	● 10000010
2.25	-0.05 / +0.15	● 10000011		● 10000012				● 10000013	● 10000014
2.50	-0.05 / +0.15	● 10000015		● 10000016					
2.75	-0.05 / +0.15	● 10000017		● 10000018					
3.25	-0.05 / +0.15	● 10000019		● 10000020	○ 10000021	● 10000022	● 10000023	● 10000024	● 10000025
3.45	-0.05 / +0.15	● 10000026		● 10000027		○ 10000028	● 10000029	● 10000030	● 10000031
3.75	-0.05 / +0.15	● 10000032		● 10000033					
4.25	-0.05 / +0.15	● 10000034	○ 10000035	● 10000036	○ 10000037	● 10000038	● 10000039	● 10000040	● 10000041
4.75	-0.05 / +0.15	● 10000042		● 10000043					
5.25	-0.05 / +0.15	● 10000046		● 10000047				○ 10000049	● 10000050
5.80	-0.05 / +0.15	● 10000052		● 10000053					
6.30	-0.05 / +0.20	● 10000054	○ 10000055	● 10000056	● 10000057	● 10000058	● 10000059	● 10000060	● 10000061
6.70	-0.05 / +0.20	● 10000062		● 10000063			● 10000064	● 10000065	○ 10000066
7.30	-0.05 / +0.20	● 10000068		● 10000069					
8.30	-0.05 / +0.20	● 10000071	○ 10000072	● 10000073	● 10000074	○ 10000075	● 10000076	○ 10000077	● 10000078
8.80	-0.05 / +0.20	● 10000079		● 10000080					
9.30	-0.05 / +0.20	● 10000081		● 10000082					
9.80	-0.05 / +0.20	● 10000083		● 10000084			○ 10000085		○ 10000086
10.30	-0.05 / +0.20	● 10000087	○ 10000088	● 10000089	○ 10000090	● 10000091	● 10000092	● 10000093	● 10000094
10.80	-0.05 / +0.25	● 10000095		● 10000096					
11.35	-0.05 / +0.25	● 10000097		● 10000098					
12.30	-0.05 / +0.25	● 10000099	○ 10000100	● 10000101	● 10000102	○ 10000103	● 10000104	● 10000105	○ 10000106
13.30	-0.05 / +0.25	● 10000113		● 10000114					
14.30	-0.05 / +0.25	● 10000116		● 10000117		○ 10000119	● 10000120	● 10000121	● 10000122
14.80	-0.05 / +0.25	● 10000123		● 10000124					
15.30	-0.05 / +0.30	● 10000126		● 10000127					
16.30	-0.05 / +0.30	● 10000130	○ 10000131	○ 10000132	○ 10000133	○ 10000134	● 10000135	○ 10000136	○ 10000137
18.30	-0.05 / +0.30	● 10000142		○ 10000143		○ 10000144	○ 10000145	○ 10000146	○ 10000147
19.30	-0.05 / +0.30	○ 10000149		● 10000150					
20.30	-0.05 / +0.30	● 10000153	○ 10000154	● 10000155	○ 10000156	○ 10000157	○ 10000158	○ 10000159	● 10000160
21.30	-0.05 / +0.40			○ 10000161					

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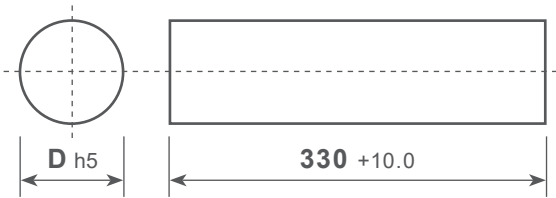
Rundstäbe | voll | sinterroh
Round bars | solid | sintered
Barreaux ronds | pleins | bruts



Abmessungen in mm | Dimensions in mm | Dimensions en mm

EMT									
D	Tol	100	207	210	212	409	412	609	612
22.30	-0.05 / +0.40			● 10000163					
23.30	-0.05 / +0.40	○ 10000166		● 10000167					
24.30	-0.05 / +0.40			○ 10000169					
25.30	-0.05 / +0.40	● 10000170		● 10000171	○ 10000172			○ 10000173	○ 10000174
25.80	-0.05 / +0.40	○ 10000175		● 10000176					
26.30	-0.05 / +0.40	● 10000178		● 10000179					
28.30	-0.05 / +0.50	● 10000180		○ 10000181					
30.30	-0.05 / +0.50	● 10000182		○ 10000183					
32.60	-0.10 / +0.60	○ 10000185		○ 10000186					
36.60	-0.10 / +0.60			● 10000189					
40.60	-0.10 / +0.60			○ 10000190					
50.60	-0.10 / +0.60			● 10000191					

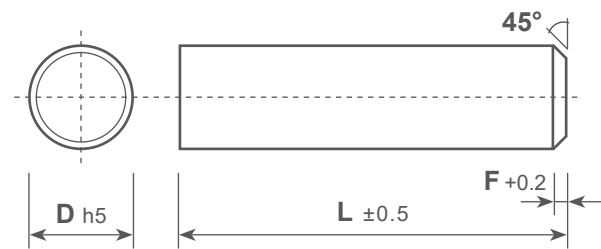
Rundstäbe | voll | geschliffen
Round bars | solid | ground
Barreaux ronds | pleins | rectifiés



Abmessungen in mm | Dimensions in mm | Dimensions en mm

EMT								
D	100	207	210	212	409	412	609	612
1.00	● 10000193		● 10000194					
1.50	● 10000195		● 10000196					
2.00	● 10000197		● 10000198					● 10000202
2.50	● 10000203		● 10000204					
3.00	● 10000213		● 10000214	● 10000215			○ 10000218	● 10000219
3.50	● 10000222		● 10000223					
4.00	● 10000232	○ 10000233	● 10000234	● 10000235	● 10000236		● 10000238	● 10000239
5.00	● 10000250		● 10000251				● 10000254	○ 10000255
5.50			● 10000258					
6.00	● 10000265	○ 10000266	● 10000267	● 10000268	● 10000269	○ 10000270	● 10000271	● 10000272
6.50			○ 10000273					
7.00	○ 10000276		● 10000277					
8.00	● 10000288	○ 10000289	● 10000290	● 10000291	● 10000292	● 10000293	● 10000294	○ 10000295
9.00	● 10000299		● 10000300					
10.00	● 10000306	○ 10000307	● 10000308	○ 10000309	○ 10000310	● 10000311	● 10000312	○ 10000313
11.00			● 10000316					
12.00	● 10000320	○ 10000321	● 10000322	○ 10000323	● 10000324	● 10000325	● 10000326	● 10000327
13.00			● 10000330					
14.00	● 10000334		● 10000335		○ 10000337	○ 10000338	● 10000339	● 10000340
15.00			○ 10000343					
16.00	● 10000345	○ 10000346	● 10000347	○ 10000348	○ 10000349	● 10000350	○ 10000351	● 10000352
18.00	● 10000357		○ 10000358					
20.00	● 10000362	○ 10000363	● 10000364	○ 10000365	○ 10000366	● 10000367	○ 10000368	○ 10000369
22.00	○ 10000372		● 10000373					
25.00	○ 10000376		○ 10000377				○ 10000381	○ 10000382
30.00	○ 10000387		● 10000388					
32.00			○ 10000390					

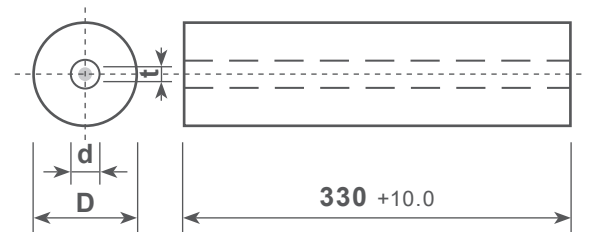
Rundstäbe | voll | geschliffen und gefast
Round bars | solid | ground and chamfered
Barreaux ronds | pleins | rectifiés et chanfreinés



Abmessungen in mm | Dimensions in mm | Dimensions en mm

EMT				
D	L	F	210	612
3.00	39	0.2	● 10000441	● 10000442
3.00	58	0.2	● 10000443	● 10000444
4.00	51	0.3	○ 10000445	● 10000446
4.00	55	0.3	● 10000447	○ 10000448
4.00	58	0.3	● 10000449	● 10000450
5.00	51	0.3	● 10000451	● 10000452
5.00	55	0.3	● 10000453	● 10000454
5.00	58	0.3	● 10000455	● 10000456
6.00	51	0.4	● 10000457	● 10000458
6.00	55	0.4	● 10000459	● 10000460
6.00	58	0.4	● 10000461	○ 10000462
8.00	59	0.4	● 10000463	● 10000464
8.00	64	0.4	● 10000465	● 10000466
10.00	67	0.4	● 10000467	● 10000468
10.00	73	0.4	● 10000469	○ 10000470
12.00	74	0.7	○ 10000471	○ 10000472
12.00	84	0.7	● 10000473	● 10000474
14.00	84	0.7	● 10000477	○ 10000478
16.00	83	0.7	● 10000479	○ 10000480
16.00	93	0.7	○ 10000481	○ 10000482
18.00	85	0.9	● 10000483	
18.00	93	0.9	○ 10000485	
20.00	93	0.9	○ 10000487	
20.00	105	0.9	○ 10000488	● 10000489

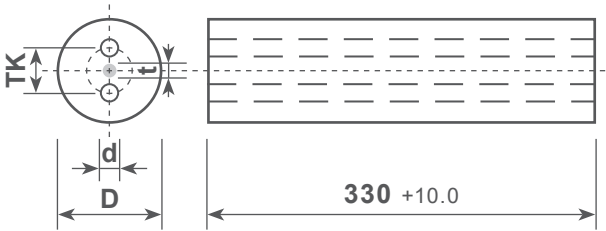
Rundstäbe | 1 Kühlkanal zentral | sinterroh
 Round bars | 1 coolant hole central | sintered
 Barreaux ronds | 1 trou central | bruts



Abmessungen in mm | Dimensions in mm | Dimensions en mm

D	Tol.	d	Tol.	t	EMT			
					100	207	210	412
4.25	-0.05 / +0.15	0.40	-0.05	0.15	● 10000492			
4.25	-0.05 / +0.15	0.60	-0.05	0.15	● 10000493		● 10000494	
4.25	-0.05 / +0.15	1.00	-0.10	0.15	● 10000497		● 10000498	
5.25	-0.05 / +0.15	0.50	-0.05	0.15				● 10000501
5.25	-0.05 / +0.15	1.00	-0.10	0.15	● 10000502			
6.30	-0.05 / +0.20	0.50	-0.05	0.15				● 10000505
6.30	-0.05 / +0.20	0.60	-0.05	0.15		● 10000506	● 10000507	
6.30	-0.05 / +0.20	1.00	-0.10	0.15	● 10000510		● 10000511	● 10000512
6.30	-0.05 / +0.20	1.50	-0.10	0.15	● 10000513		● 10000514	
6.30	-0.05 / +0.20	2.00	-0.10	0.15			● 10000516	
8.30	-0.05 / +0.20	0.50	-0.05	0.15				○ 10000524
8.30	-0.05 / +0.20	0.80	-0.05	0.15		● 10000525	● 10000526	
8.30	-0.05 / +0.20	1.00	-0.10	0.15	○ 10000527			
8.30	-0.05 / +0.20	1.30	-0.10	0.15				● 10000528
8.30	-0.05 / +0.20	1.50	-0.10	0.15	● 10000529		● 10000530	
8.30	-0.05 / +0.20	2.00	-0.10	0.15	● 10000531			
10.30	-0.05 / +0.20	0.50	-0.05	0.20				● 10000535
10.30	-0.05 / +0.20	1.00	-0.10	0.20	● 10000536		● 10000537	
10.30	-0.05 / +0.20	1.50	-0.10	0.20	● 10000538	● 10000539	● 10000540	● 10000541
10.30	-0.05 / +0.20	2.00	-0.10	0.20	● 10000542		● 10000543	
12.30	-0.05 / +0.25	1.50	-0.10	0.20	● 10000546		● 10000548	
12.30	-0.05 / +0.25	2.00	-0.10	0.20	● 10000549		● 10000550	○ 10000551
12.30	-0.05 / +0.25	2.50	-0.10	0.20	● 10000552			
13.30	-0.05 / +0.25	2.50	-0.10	0.25	● 10000556			
14.30	-0.05 / +0.25	2.00	-0.10	0.25	● 10000558		● 10000559	● 10000560
14.30	-0.05 / +0.25	2.50	-0.10	0.25	● 10000561		● 10000562	
16.30	-0.05 / +0.30	2.00	-0.10	0.25		● 10000564	● 10000565	
16.30	-0.05 / +0.30	2.50	-0.10	0.25				○ 10000566
16.30	-0.05 / +0.30	3.00	-0.10	0.25	● 10000567		● 10000568	
18.30	-0.05 / +0.30	2.00	-0.10	0.30			● 10000569	
18.30	-0.05 / +0.30	3.00	-0.10	0.30	● 10000570			
20.30	-0.05 / +0.30	2.00	-0.10	0.30	● 10000571		● 10000572	○ 10000573
20.30	-0.05 / +0.30	2.50	-0.15	0.30		○ 10000574		
20.30	-0.05 / +0.30	3.50	-0.15	0.30	● 10000575		○ 10000576	
22.30	-0.05 / +0.40	3.50	-0.15	0.30	● 10000577		● 10000578	
25.30	-0.05 / +0.40	3.00	-0.10	0.30				○ 10000582
25.30	-0.05 / +0.40	5.00	-0.15	0.30	● 10000583		● 10000584	
30.30	-0.05 / +0.50	3.00	-0.10	0.30				○ 10000585
32.60	-0.10 / +0.60	5.00	-0.15	0.30			● 10000586	

Rundstäbe | 2 Kühlkanäle parallel | sinterroh
Round bars | 2 coolant holes linear | sintered
Barreaux ronds | 2 trous parallèles | bruts



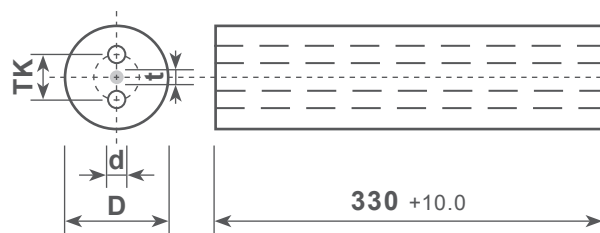
Abmessungen in mm | Dimensions in mm | Dimensions en mm

D	Tol.	TK	Tol.	t	d	Tol.	EMT 100
5.25	-0.05 / +0.15	2.00	-0.15	0.13	0.90	-0.05	10000589
6.30	-0.05 / +0.20	1.10	-0.20	0.15	0.50	-0.05	10000590
6.30	-0.05 / +0.20	1.70	-0.20	0.15	0.80	-0.05	10000591
6.30	-0.05 / +0.20	2.00	-0.20	0.15	0.90	-0.05	10000592
6.30	-0.05 / +0.20	2.30	-0.20	0.15	0.90	-0.05	10000593
6.30	-0.05 / +0.20	3.00	-0.20	0.15	0.90	-0.05	10000595
6.30	-0.05 / +0.20	3.00	-0.20	0.15	1.20	-0.10	10000596
7.30	-0.05 / +0.20	2.00	-0.20	0.15	0.90	-0.05	10000597
8.30	-0.05 / +0.20	1.70	-0.30	0.15	0.80	-0.05	10000600
8.30	-0.05 / +0.20	2.00	-0.30	0.15	0.90	-0.05	10000601
8.30	-0.05 / +0.20	2.60	-0.30	0.15	1.20	-0.10	10000602
8.30	-0.05 / +0.20	3.00	-0.30	0.15	1.20	-0.10	10000603
8.30	-0.05 / +0.20	3.30	-0.30	0.15	0.90	-0.05	10000604
8.30	-0.05 / +0.20	3.50	-0.30	0.15	1.50	-0.10	10000605
8.30	-0.05 / +0.20	4.00	-0.30	0.15	0.90	-0.05	10000606
8.30	-0.05 / +0.20	4.00	-0.30	0.15	1.20	-0.10	10000607
10.30	-0.05 / +0.20	1.70	-0.30	0.20	0.80	-0.05	10000609
10.30	-0.05 / +0.20	2.60	-0.30	0.20	1.20	-0.10	10000610
10.30	-0.05 / +0.20	3.50	-0.30	0.20	1.50	-0.10	10000611
10.30	-0.05 / +0.20	4.00	-0.30	0.20	1.50	-0.10	10000612
10.30	-0.05 / +0.20	5.00	-0.30	0.20	1.20	-0.10	10000613
10.30	-0.05 / +0.20	5.00	-0.30	0.20	2.00	-0.10	10000614
11.35	-0.05 / +0.25	3.50	-0.30	0.28	1.50	-0.10	10000615
12.30	-0.05 / +0.25	3.50	-0.30	0.30	0.90	-0.05	10000617
12.30	-0.05 / +0.25	3.50	-0.30	0.30	1.50	-0.10	10000618
12.30	-0.05 / +0.25	4.00	-0.30	0.30	1.50	-0.10	10000619
12.30	-0.05 / +0.25	5.00	-0.30	0.30	2.00	-0.10	10000621
12.30	-0.05 / +0.25	6.20	-0.30	0.30	1.50	-0.10	10000622
12.30	-0.05 / +0.25	6.20	-0.30	0.30	2.00	-0.10	10000623
14.30	-0.05 / +0.25	2.60	-0.30	0.37	0.90	-0.05	10000627
14.30	-0.05 / +0.25	3.50	-0.30	0.37	1.50	-0.10	10000628
14.30	-0.05 / +0.25	5.00	-0.30	0.37	2.00	-0.10	10000629
14.30	-0.05 / +0.25	7.00	-0.30	0.37	1.50	-0.10	10000630
14.30	-0.05 / +0.25	7.00	-0.30	0.37	2.00	-0.10	10000631

Fortsetzung auf nächster Seite | Continued on next page | Suite page suivante

t = Mittenversatz: Das Zentrum vom TK muss im Ø t liegen und mit der Basisachse fluchten.
t = Concentricity: The centre of TK has to be in Ø t and has to align with the base axle.
t = Concentricité: Le centre de TK doit être dans le Ø t et doit s'aligner avec l'axe de base.

Rundstäbe | 2 Kühlkanäle parallel | sinterroh
 Round bars | 2 coolant holes linear | sintered
 Barreaux ronds | 2 trous parallèles | bruts



Abmessungen in mm | Dimensions in mm | Dimensions en mm

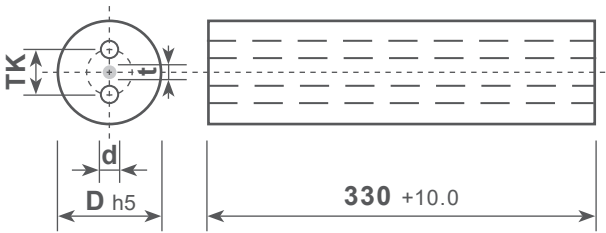
D	Tol.	TK	Tol.	t	d	Tol.	EMT 100
16.30	-0.05 / +0.30	3.50	-0.30	0.40	1.50	-0.10	10000633
16.30	-0.05 / +0.30	5.00	-0.30	0.40	2.00	-0.10	10000634
16.30	-0.05 / +0.30	6.20	-0.30	0.40	2.00	-0.10	10000635
16.30	-0.05 / +0.30	8.00	-0.30	0.40	2.00	-0.10	10000636
18.30	-0.05 / +0.30	5.00	-0.30	0.50	2.00	-0.10	10000638
18.30	-0.05 / +0.30	6.20	-0.30	0.50	2.00	-0.10	10000639
18.30	-0.05 / +0.30	7.00	-0.30	0.50	2.50	-0.10	10000640
18.30	-0.05 / +0.30	9.00	-0.30	0.50	2.00	-0.10	10000641
20.30	-0.05 / +0.30	3.50	-0.40	0.50	1.50	-0.10	10000642
20.30	-0.05 / +0.30	6.20	-0.40	0.50	2.00	-0.10	10000643
20.30	-0.05 / +0.30	7.00	-0.40	0.50	2.50	-0.10	10000644
20.30	-0.05 / +0.30	10.00	-0.40	0.50	2.50	-0.10	10000645
21.30	-0.05 / +0.40	6.20	-0.40	0.50	2.00	-0.10	10000646
21.30	-0.05 / +0.40	10.00	-0.40	0.50	2.50	-0.10	10000647
22.30	-0.05 / +0.40	7.00	-0.40	0.50	2.00	-0.10	10000648
22.30	-0.05 / +0.40	7.00	-0.40	0.50	2.50	-0.10	10000649
22.30	-0.05 / +0.40	11.00	-0.40	0.50	2.50	-0.10	10000650
23.30	-0.05 / +0.40	7.00	-0.40	0.50	2.50	-0.10	10000651
23.30	-0.05 / +0.40	11.00	-0.40	0.50	2.50	-0.10	10000652
24.30	-0.05 / +0.40	6.20	-0.50	0.50	2.00	-0.10	10000653
24.30	-0.05 / +0.40	7.00	-0.50	0.50	2.50	-0.10	10000654
24.30	-0.05 / +0.40	12.00	-0.50	0.50	3.00	-0.10	10000655
25.30	-0.05 / +0.40	8.00	-0.50	0.50	2.50	-0.10	10000656
25.30	-0.05 / +0.40	12.00	-0.50	0.50	3.00	-0.10	10000657
26.30	-0.05 / +0.40	12.00	-0.50	0.50	3.00	-0.10	10000658
28.30	-0.05 / +0.50	10.00	-0.50	0.50	2.00	-0.10	10000660
28.30	-0.05 / +0.50	13.00	-0.50	0.50	3.00	-0.10	10000661
30.30	-0.05 / +0.50	13.00	-0.50	0.50	3.00	-0.10	10000662
32.60	-0.10 / +0.60	13.00	-0.50	0.50	3.00	-0.10	10000663

t = Mittenversatz: Das Zentrum vom TK muss im Ø t liegen und mit der Basisachse fluchten.

t = Concentricity: The centre of TK has to be in Ø t and has to align with the base axle.

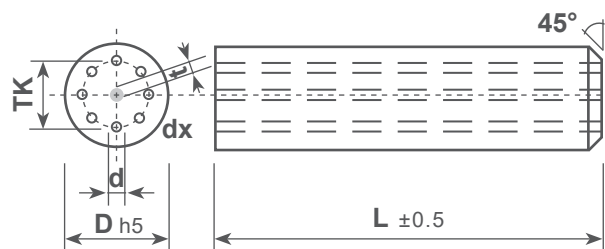
t = Concentricité: Le centre de TK doit être dans le Ø t et doit s'aligner avec l'axe de base.

Rundstäbe | 2 Kühlkanäle parallel | geschliffen
Round bars | 2 coolant holes linear | ground
Barreaux ronds | 2 trous parallèles | rectifiés



D	TK	Tol.	t	d	Tol.	EMT 207
6.00	1.50	-0.20	0.15	0.90	-0.05	○ 10016979
6.00	3.00	-0.20	0.15	0.90	-0.05	● 10016980
6.00	3.00	-0.20	0.15	1.20	-0.10	● 10016981
8.00	1.70	-0.30	0.15	0.80	-0.05	● 10016982
8.00	2.00	-0.30	0.15	0.90	-0.05	● 10016983
8.00	2.60	-0.30	0.15	1.20	-0.10	● 10016984
8.00	4.00	-0.30	0.15	0.90	-0.05	● 10016985
10.00	2.60	-0.30	0.20	1.20	-0.10	● 10016986
10.00	5.00	-0.30	0.20	1.20	-0.10	● 10016987
12.00	3.50	-0.30	0.30	0.90	-0.05	○ 10016988
12.00	3.50	-0.30	0.30	1.50	-0.10	● 10016989
12.00	6.20	-0.30	0.30	1.50	-0.10	● 10016990
14.00	5.00	-0.30	0.37	2.00	-0.10	● 10016991
14.00	7.00	-0.30	0.37	2.00	-0.10	● 10016992
16.00	5.00	-0.30	0.40	2.00	-0.10	● 10016993
16.00	8.00	-0.30	0.40	2.00	-0.10	● 10016994
18.00	6.20	-0.30	0.50	2.00	-0.10	○ 10016995
18.00	9.00	-0.30	0.50	2.00	-0.10	○ 10016996
20.00	6.20	-0.40	0.50	2.00	-0.10	○ 10016997
20.00	10.00	-0.40	0.50	2.50	-0.10	○ 10016998
25.00	8.00	-0.50	0.50	2.50	-0.10	○ 10016999
25.00	12.00	-0.50	0.50	3.00	-0.10	○ 10017000

Rundstäbe | Power Micro Jet | geschliffen
Round bars | Power Micro Jet | ground
Barreaux ronds | Power Micro Jet | rectifiés

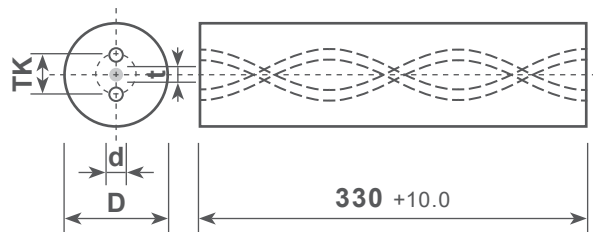


Abmessungen in mm | Dimensions in mm | Dimensions en mm

D	TK	Tol.	t	d	dx	L	F	EMT 210
4.00	3.10	±0.10	0.20	0.50	8	40.00	0.40	10016419
4.00	3.10	±0.10	0.20	0.50	8	50.00	0.40	10016420
4.00	3.10	±0.10	0.20	0.50	8	60.00	0.40	10016422
4.00	3.10	±0.10	0.20	0.50	8	80.00	0.40	10016423
6.00	4.90	±0.10	0.20	0.60	10	50.00	0.60	10016427
6.00	4.90	±0.10	0.20	0.60	10	60.00	0.60	10016425
8.00	6.90	±0.15	0.20	0.60	16	63.00	0.80	10016429
8.00	6.90	±0.15	0.20	0.60	16	68.10	0.80	10016428
8.00	6.90	±0.15	0.20	0.60	16	84.00	0.80	10016430
10.00	8.90	±0.15	0.20	0.50	16	72.00	1.00	10016431
10.00	8.90	±0.15	0.20	0.50	16	84.00	1.00	10016432
10.00	8.90	±0.15	0.20	0.50	16	93.00	1.00	10016433
12.00	10.90	±0.15	0.30	0.50	18	83.00	1.20	10016434
12.00	10.90	±0.15	0.30	0.50	18	101.00	1.20	10016435

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Rundstäbe | 2 Kühlkanäle 30° - 40° gedreht | sinterroh
Round bars | 2 coolant holes 30° - 40° twisted | sintered
Barreaux ronds | 2 trous hélicoïdaux 30° - 40° | bruts

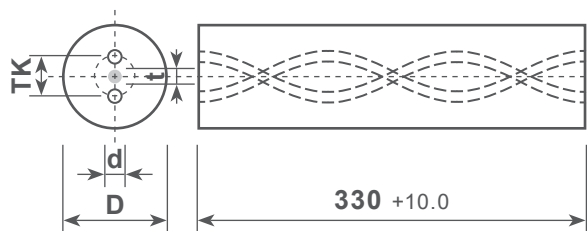


Abmessungen in mm | Dimensions in mm | Dimensions en mm

D	Tol.	TK	Tol.	t	d	Tol.	Steigung Pitch Pas	EMT 210
3.30	+0.25 / +0.60	1.50	-0.30	0.10	0.40	±0.05	16.66	10000664
4.30	+0.25 / +0.60	2.10	-0.40	0.15	0.50	±0.10	23.04	10000670
5.30	+0.25 / +0.60	2.60	-0.40	0.15	0.70	±0.10	28.38	10000673
6.30	+0.45 / +0.80	1.60	-0.30	0.10	0.50	±0.10	18.59	10000682
6.30	+0.45 / +0.80	1.60	-0.30	0.10	0.50	±0.10	23.53	10000684
6.30	+0.45 / +0.80	1.90	-0.40	0.15	0.60	±0.10	34.42	10000675
6.30	+0.45 / +0.80	2.00	-0.40	0.15	0.50	±0.10	23.56	10000685
6.30	+0.45 / +0.80	2.10	-0.40	0.15	0.60	±0.10	23.38	10000686
6.30	+0.45 / +0.80	2.20	-0.40	0.15	0.80	±0.10	34.74	10000678
6.30	+0.45 / +0.80	2.60	-0.40	0.15	0.70	±0.10	34.14	10000677
6.80	+0.45 / +0.80	2.20	-0.40	0.15	0.50	±0.10	24.92	10000691
6.80	+0.45 / +0.80	3.50	-0.50	0.20	1.00	±0.15	37.27	10000688
7.30	+0.45 / +0.80	2.40	-0.40	0.15	0.65	±0.10	26.97	10000693
8.30	+0.55 / +1.00	2.70	-0.50	0.20	0.65	±0.10	31.27	10000698
8.30	+0.55 / +1.00	3.50	-0.50	0.20	0.90	±0.15	35.40	10000700
8.30	+0.55 / +1.00	4.00	-0.50	0.20	1.00	±0.15	46.23	10000695
9.30	+0.65 / +1.10	3.20	-0.50	0.20	0.75	±0.10	35.46	10000702
10.30	+0.65 / +1.10	2.70	-0.50	0.20	0.80	±0.15	39.04	10000707
10.30	+0.65 / +1.10	3.50	-0.50	0.20	0.80	±0.15	39.06	10000706
10.30	+0.65 / +1.10	4.50	-0.50	0.25	1.10	±0.15	45.85	10000708
10.30	+0.65 / +1.10	4.80	-0.50	0.25	1.40	±0.15	57.61	10000704
12.30	+0.65 / +1.20	4.20	-0.60	0.25	0.90	±0.15	47.15	10000715
12.30	+0.65 / +1.20	5.40	-0.60	0.25	1.50	±0.15	68.76	10000711
12.30	+0.65 / +1.20	5.70	-0.60	0.25	1.40	±0.15	57.14	10000716
12.30	+0.65 / +1.20	5.90	-0.60	0.25	1.70	±0.15	68.46	10000712
13.30	+0.65 / +1.20	4.40	-0.60	0.25	0.90	±0.15	50.48	10000720
13.30	+0.65 / +1.20	6.50	-0.60	0.30	1.75	±0.15	74.71	10000718
14.30	+0.65 / +1.20	4.70	-0.60	0.25	1.00	±0.15	52.95	10000725
14.30	+0.65 / +1.20	7.10	-0.60	0.30	1.75	±0.15	80.34	10000722
14.30	+0.65 / +1.20	7.10	-0.60	0.30	2.00	±0.20	80.00	10000723
15.30	+0.65 / +1.20	5.10	-0.60	0.25	1.10	±0.15	56.16	10000728
15.30	+0.65 / +1.20	7.70	-0.60	0.35	1.75	±0.15	86.10	10000727
16.30	+0.65 / +1.20	5.50	-0.60	0.25	1.20	±0.15	61.71	10000733
16.30	+0.65 / +1.20	8.30	-0.60	0.35	1.75	±0.15	92.31	10000730
16.30	+0.65 / +1.20	8.60	-0.60	0.35	2.50	±0.20	91.99	10000731

Fortsetzung auf nächster Seite | Continued on next page | Suite page suivante

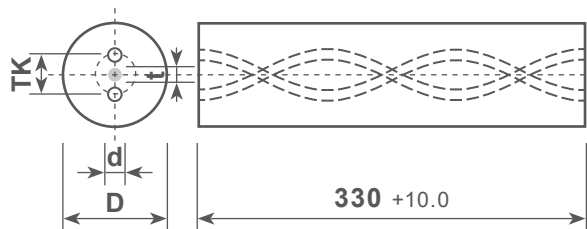
Rundstäbe | 2 Kühlkanäle 30° - 40° gedrallt | sinterroh
 Round bars | 2 coolant holes 30° - 40° twisted | sintered
 Barreaux ronds | 2 trous hélicoïdaux 30° - 40° | bruts



Abmessungen in mm | Dimensions in mm | Dimensions en mm

D	Tol.	TK	Tol.	t	d	Tol.	Steigung Pitch Pas	EMT 210
18.30	+0.65 / +1.20	6.30	-0.60	0.30	1.50	±0.15	69.77	10000738
18.30	+0.65 / +1.20	9.50	-0.60	0.40	2.00	±0.20	104.00	10000735
18.30	+0.65 / +1.20	9.70	-0.60	0.40	2.80	±0.20	102.41	10000736
19.30	+0.65 / +1.20	10.10	-0.60	0.40	2.50	±0.20	109.37	10000739
20.30	+0.65 / +1.20	7.10	-0.60	0.30	1.50	±0.15	77.60	10000744
20.30	+0.65 / +1.20	10.40	-0.60	0.40	2.80	±0.20	113.22	10000741
20.30	+0.65 / +1.20	10.70	-0.60	0.40	3.20	±0.25	116.39	10000742

Rundstäbe | 2 Kühlkanäle 15° gedrallt | sinterroh
 Round bars | 2 coolant holes 15° twisted | sintered
 Barreaux ronds | 2 trous hélicoïdaux 15° | bruts



Abmessungen in mm | Dimensions in mm | Dimensions en mm

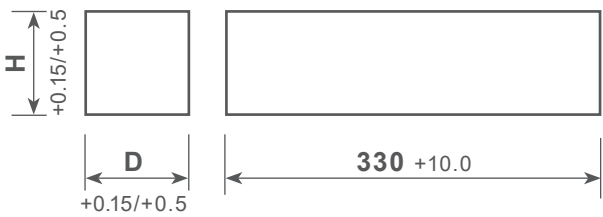
D	Tol	TK	Tol	t	d	Tol	Steigung Pitch Pas	EMT 210
6.30	+0.45 / +0.80	2.50	-0.40	0.15	0.70	±0.10	75.47	10000674
8.30	+0.55 / +1.00	3.50	-0.50	0.20	1.30	±0.15	106.57	10000694
10.30	+0.65 / +1.10	5.00	-0.60	0.25	1.50	±0.15	119.42	10000703
12.30	+0.65 / +1.20	6.20	-0.60	0.30	1.60	±0.15	142.83	10000709
14.30	+0.65 / +1.20	7.00	-0.60	0.30	2.00	±0.20	164.95	10000721
16.30	+0.65 / +1.20	8.00	-0.60	0.35	2.00	±0.20	185.92	10000729
18.30	+0.65 / +1.20	9.00	-0.60	0.40	2.20	±0.20	214.45	10000734
20.30	+0.65 / +1.20	10.00	-0.60	0.40	2.50	±0.20	242.39	10000740

t = Mittenversatz: Das Zentrum vom TK muss im Ø t liegen und mit der Basisachse fluchten.

t = Concentricity: The centre of TK has to be in Ø t and has to align with the base axle.

t = Concentricité: Le centre de TK doit être dans le Ø t et doit s'aligner avec l'axe de base.

Quadrat - und Rechteckstäbe | sinterroh
 Square and Rectangular bars | sintered
 Barreaux carrés et méplats | bruts



Abmessungen in mm | Dimensions in mm | Dimensions en mm

		EMT	
H	D	100	210
2.00	3.00	● 10000801	● 10000802
2.00	4.00	● 10000803	● 10000804
2.00	5.00	● 10000805	● 10000806
2.00	6.00	● 10000807	● 10000808
2.00	8.00	● 10000811	● 10000812
2.00	10.00	● 10000813	○ 10000814
3.00	3.00		● 10000897
3.00	4.00	● 10000828	● 10000829
3.00	6.00	● 10000832	● 10000833
3.00	8.00	● 10000835	● 10000836
3.00	10.00	● 10000837	● 10000838
3.00	12.00	● 10000839	● 10000840
3.00	14.00	○ 10000842	● 10000843
3.00	16.00	● 10000845	● 10000846
3.00	18.00		● 10000848
3.00	25.00		● 10000851
3.00	30.00		○ 10000853
4.00	4.00		○ 10000898
4.00	6.00	● 10000857	● 10000858
4.00	8.00	● 10000859	
4.00	10.00	● 10000861	● 10000862
4.00	12.00	● 10000863	● 10000864
4.00	13.00	● 10000865	
4.00	16.00	● 10000871	● 10000872
4.00	20.00		● 10000873
4.00	25.00		○ 10000874
5.00	5.00		● 10001576
5.00	13.00	● 10000879	○ 10000880
5.00	25.00		○ 10000885
5.00	35.00		● 10000887
6.00	6.00		10000901
6.00	20.00		● 10000890
6.00	30.00		● 10000892
8.00	8.00		● 10000902
10.00	10.00		● 10001749

andere Abmessungen auf Anfrage

other dimensions on demand

autres dimensions sur demande

Fertigungstoleranzen

Production tolerances

Tolérances de fabrication

Abmessungen in mm | Dimensions in mm | Dimensions en mm

Rundstäbe | voll | sinterroh

Round bars | solid | sintered

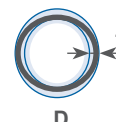
Barreaux ronds | pleins | bruts

Geradheit | straightness | rectitude



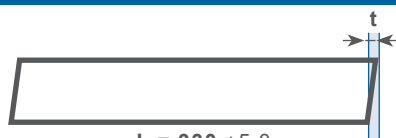
$L = 330 + 5.0$
 $t = \max. 0.3$

Rundheit | roundness | circularité



D
 $t = \max. 0.05$

Rechtwinkligkeit | perpendicularity | perpendicularité



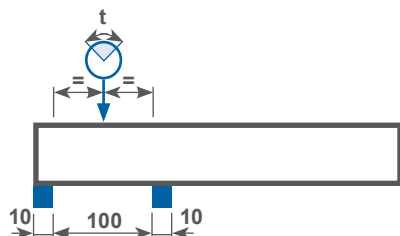
$L = 330 + 5.0$
 $t = \max. 0.3$

Rundstäbe | voll | geschliffen

Round bars | solid | ground

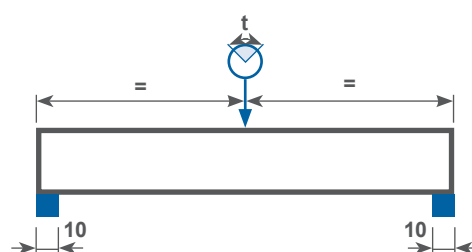
Barreaux ronds | pleins | rectifiés

330 mm Rundlauf | concentricity | concentricité



$D \varnothing$
 $> 1.5 - 3.0$
 $t \max. 0.06$

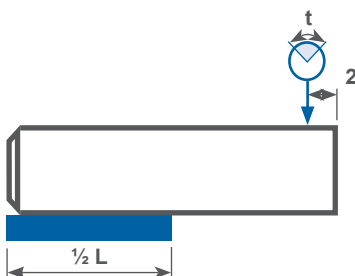
An beiden Enden gemessen
measured on both ends
mesuré sur les deux extrémités



RRG

$D \varnothing$	$t \max.$
$> 3.0 - 4.0$	0.07
$> 4.0 - 5.0$	0.06
$> 5.0 - 10.0$	0.05
$> 10.0 - 14.0$	0.04

Fixlänge Rundlauf | cut lengths concentricity | longueurs fixes concentricité



FHG

$D \varnothing$	L	t max.
3.0 – <4.0	– 50	0.008
	> 50 – 80	0.010
4.0 – <6.0	> 50 – 80	0.010
6.0 – <12.0	> 50 – 80	0.005
	> 80 – 100	0.010
12.0 – <20.0	> 50 – 80	0.005
	> 80 – 100	0.010
20.0	> 80 – 120	0.010

Kundenlösungen
auf Anfrage

Customer Solutions
on demand

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