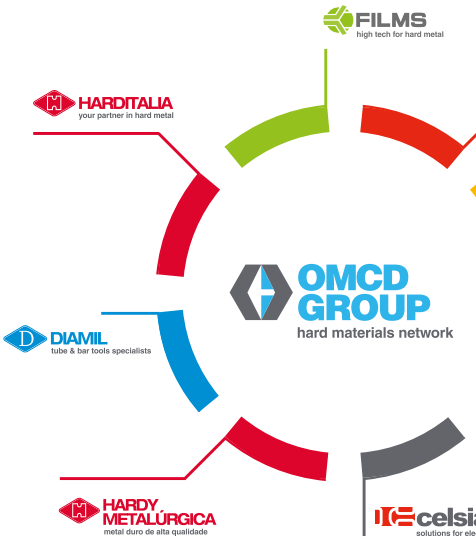
DIAMIL
tube & bar tools specialists
OMCD GROUP

Bar peeling

We manufacture exactly what you need

This is our approach to customers and this is the way we design hard metal parts. Direct contact with our skilled technicians is the way to get it. Discover the value of a special supplier!

A presentation OMDC's Group
Tuned Synergy FOR THE BEST



"WE KNOW-HOW TO SHAPE YOUR NEEDS"

Our mission is to exceed the expectations of our customers, turning complexity into simplicity, working side by side to convert problems into opportunities.

In a world of increasing challenges, we strive to give our customers a strong sense of security.

DIAMIL
tube & bar tools specialists

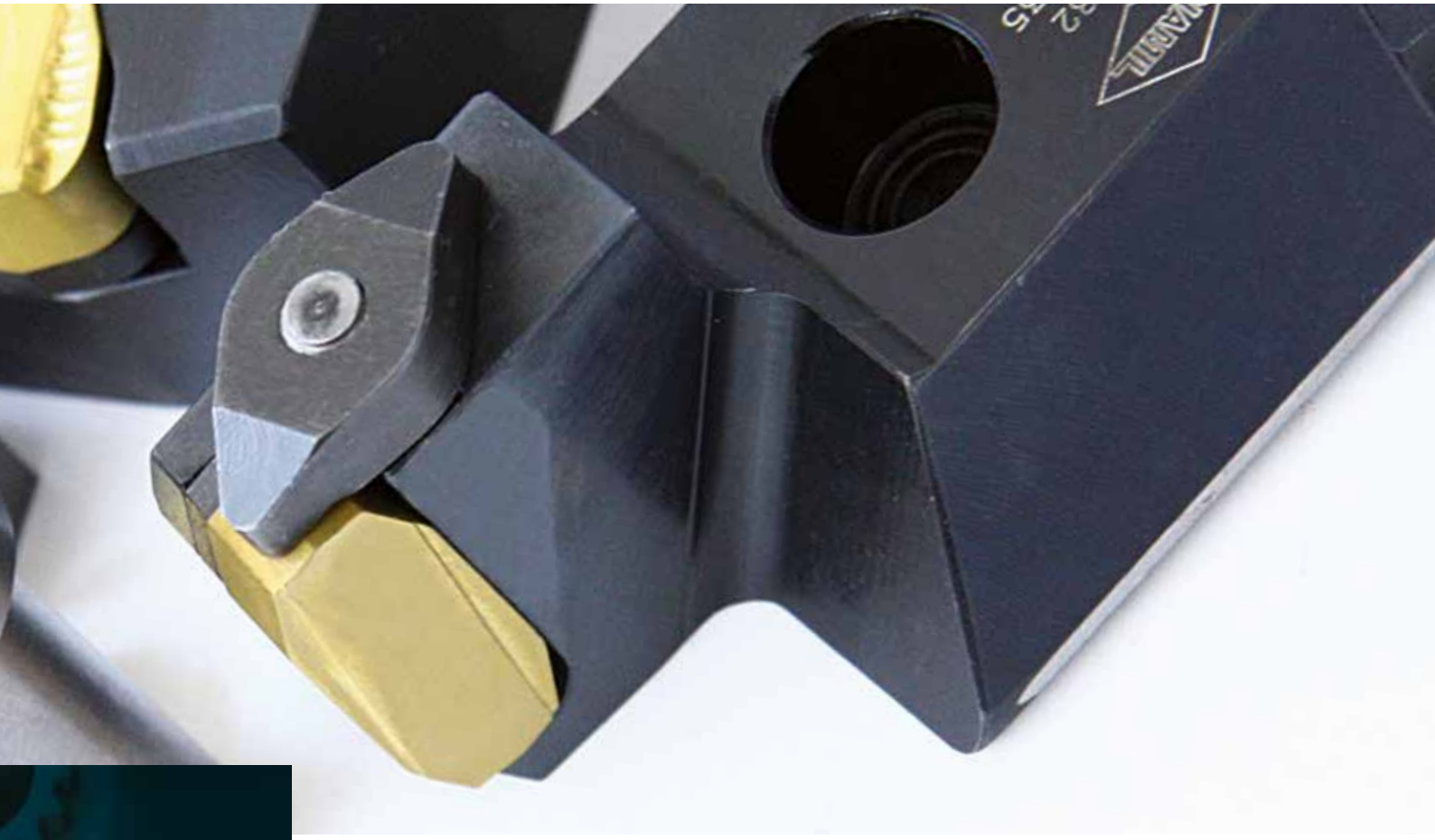
The company

Diamil is the trade mark of OMCD Group, specialized in inserts and tools dedicated to bar and tube industries.
We guarantee full customer's satisfaction with our pre&after sale team offering promptly answer to any customer need. Technical advices to achieve the best productive result, shared know-how, ready on shelf delivery and flexible approach to customer inquiry are the keys of our success.
Being partner of a Group which is a network of dedicated competences in hard material applications we are able to offer a wider range of solutions with products constantly at the top in the market.
Full customer satisfaction is what we look for everyday!

OMCD GROUP
hard materials network

DIAMIL
tube & bar tools specialists

- Bar peeling inserts
- Skiving inserts
- Bar peeling toolings
- Chamfering inserts and toolings



Inserts and toolings

The Diamil's catalogue shows a wide range of inserts designed to optimize the peeling operation whatever the steel, the machine and the coolant used.
The very flexible organisation plus the know-how collected through a continuous monitoring of the market has brought us to better understand our costumer needs.
Diamil continuously introduces new grades and new geometries to provide products that can satisfy the more and more challanging demands created by the market in order to achieve the full costumers'satisfaction.

DIAMIL
tube & bar tools specialists

Grade choice according to steel hardness

R kg/mm²	HB Brinell	HRC Rockwell C	HV Vickers	Diamil grade
52	145		145	C912GPlus
53	148		148	
54	150		150	
55	152		152	
56	154		154	
57	158		158	
58	160		160	
59	162		162	
60	168		168	
61	171		171	
62	177		177	
63	183		183	
64	186		186	
65	189		189	
66	193		193	
67	197		197	
69	201		201	P712GPlus
71	206		206	
73	215		215	
75	220		220	
77	225		225	
79	230		230	
81	235	22	235	

R kg/mm²	HB Brinell	HRC Rockwell C	HV Vickers	Diamil grade
83	240	23	240	P812GPlus
85	247	24	247	
87	253	25	253	
89	259	26	259	
91	265	27	265	
93	272	28	272	P612GPlus
95	279	29	279	
97	286	30	286	
101	294	31	296	
104	301	32	304	B612GPlus
107	308	33	314	
110	318	34	323	
113	327	35	332	
116	337	36	341	
119	347	37	357	
122	357	38	371	

Our grades

Inserts' grade choice can be made according to several parameters such as steel hardness and composition, bar tips status, machine status, etc.

In the two charts on the side a suggestion is give according to steel composition and hardness. Non the less we strongly suggest to ask to our technicians for the best solution fitting your machining.

Grade	Application
B612GPlus P612GPlus	**Austempering steel, martensitic inoxidable steel, duplex, Ti, spring steel, tool steel**
P612GPlus P812GPlus	**Austenitic inoxidable steel, construction steel, valve steel**
C912GPlus P712GPlus	**Low carbon steel, Super alloy, duplex**

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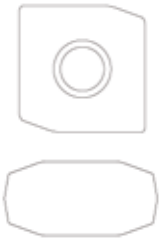
tube & bar tools specialists

Insert's geometry



Type L e S
Suitable for finishing operations. General purpose geometry for removal up to 3mm on diameter. Available in different lenghts to optimize cutting speed and chip flow in peeling head

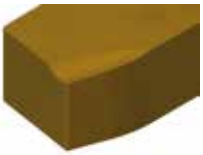
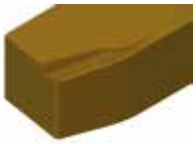
Type W
Suitable for medium rough operations. It has better cutting performance comparing to L and T type when material to remove his higher than 2mm.

Type T
Suitable for finishing operations. Same application as type L but with two additional cutting edges. A good cost saving choice where process is time controlled.

Type R
Suitable for rough operations only. It has to be used in tandem with a finishing insert.

Bar peeling inserts

Chip breaker types:

Type	Chipbreaker	Geometry	Description
2H			Classical general purpose chipbreaker
3F			The new generation of general purpose chipbreaker. It's an evolution of type 2H. Offering a better chip control and a reduction in heat generated in cutting.
2F			Innovative chipbreaker with high performance in minimizing chip lenght. Requires very stable machine and a good coolant flow

Type L

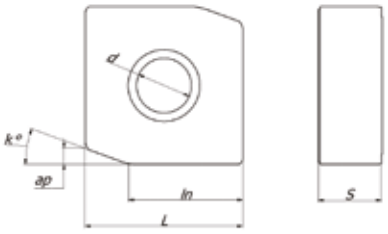
Code	k	ap	ln	T	l	d	s
LNGF 2206-2D	15°	1,5	10	4	22,0	10,00	6,5
LNGF 3107-3D	15°	3,0	14	4	31,0	12,00	7,5
LNGF 3712-2D	15°	3,0	16	4	37,0	17,80	12,0

Code	k	ap	ln	T	l	d	s
LNGF 3108-2H	20°	2,0	17	4	31,0	12,0	7,5
LNGF 3712-2H	20°	2,0	18	4	37,0	17,8	12,0
LNGF 3712-3F	20°	2,0	18	4	37,0	18,0	12,0
LNGF 3712-2F	20°	3,0	18	4	37,0	17,8	12,0
LNGF 4312-2H	20°	2,0	26	4	43,2	17,8	12,0

Code	k	ap	ln	T	l	d	s
LNGF 4010-2F	25°	3,5	22	4	40,0	1,0	10,2
LNGF 4010-3F	25°	3,5	22	4	40,0	20,0	10,2
LNGF 4012-2F	25°	3,5	22	4	40,0	20,0	12,2
LNGF 4012-3F	25°	3,5	22	4	40,0	20,0	12,2

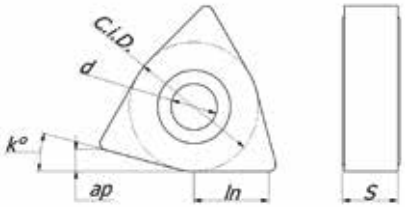
Code	k	ap	ln	T	l	d	s
LNGR 3812-2H	20°	2,5	25	2	38,1	17,46	12,0
LNGR 3812-3F	20°	3,0	25	2	38,1	17,46	12,0
LNGR 3812-2F	20°	3,0	25	2	38,1	17,46	12,0

Type S



Code	k	ap	ln	T	l	d	s
SNGH 2510-2H	20°	2,0	16,5	2	25	25	10

Type W



Code	k	ap	T	ln	C.i.D	d	s
WNGF 2210-3F	25°	4,5	6	10	22,0	-	10
WNGF 3113-3F	25°	5,5	6	17	31,75	-	13,0
WNGF 3114-3F	25°	5,5	6	17	31,75	-	14,0

Code	k	ap	T	ln	C.i.D	d	s
WNGF 2809-2N	30°	3,0	6	16,9	28,58	-	9,0
WNGF 2809-2F	30°	3,0	6	16,9	28,58	-	9,0

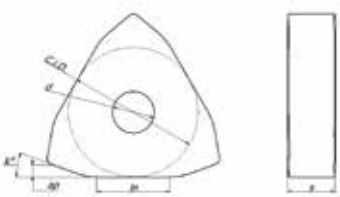
Code	k	ap	T	ln	C.i.D	d	s
WNGJ 1106-2H	15°	1,5	6	8	15,88	6,4	6,5
WNGJ 2209-2H	15°	3,0	6	10	22,22	8,0	9,5
WNGJ 2209-2F	15°	3,0	6	10	22,22	8,0	9,5

Code	k	ap	T	ln	C.i.D	d	s
WNGJ 1806-2H	24°	2,0	6	11,2	18,00	5,4	6,4

Code	k	ap	T	ln	C.i.D	d	s
WNGJ 3113-3F	25°	5,5	6	17	31,75	9,0	13,0
WNGJ 3114-3F	25°	5,5	6	17	31,75	9,0	14,0

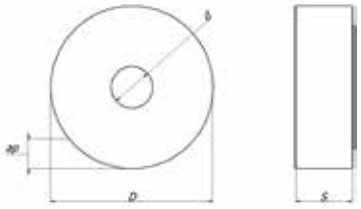
Code	k	ap	T	ln	C.i.D	d	s
WNMU 0804-2N	20°	1,0	6	7,7	12,70	5,2	4,8

Type T



Code	k	ap	T	ln	C.i.D	d	s
TNGJ 2208-2H	20°	1,5	6	16	22,0	7,0	8,0
TNGJ 2208-3F	20°	1,5	6	16	22,0	7,0	8,0
TNGJ 2810-2H	20°	2,5	6	20	28,5	7,0	10,0
TNGJ 2810-3F	20°	3,0	6	20	28,5	7,0	10,0

Type R



Code	ap	D	d	s
RNMJ 2509-2H	3,0	25,4	9,12	9,5

Code	ap	D	d	s
RNGH 3812-3F	7,5	38,1	12,8	12,7

Code	ap	D	d	s
RNGH 5018-2F	5,0	50,0	12,8	18,0

Code	ap	D	d	s
RNGH 5018-2H	9,0	50,0	12,8	18,0

Code	ap	D	d	s
RCMT 3209	1,5	32,0	9,12	9,5

Skiving inserts

Diamil is offering the two types of skaving inserts: the one used in clapmping tools and the one used in screw fixed tools.

In order to cover all the internal skiving operations at the best, Diamil is now offering a combination of different chipbreakers and sizes

Inserts for clamping tools

Code	k	ap	In	T	l	d	s
LNGF 1503-2E	8°	0,3	9,4	2	14,9	5,50	3,5

Code	k	ap	In	T	l	d	s
LNGF 1505-2E	10°	0,3	7,7	2	14,9	5,00	5,0

Code	k	ap	In	T	l	d	s
LNGF 2006-2E	8°	0,8	9,5	4	20,4	8,00	6,0
LNGF 2006-2F	8°	0,6	9,8	4	20,5	7,98	6,0
LNMF 2506-2E	8°	1,0	11,5	4	25,4	10,00	6,0

Inserts for screw fixed tools

Code	k	ap	In	T	l	d	s
LNGX 1002-2N	7°	0,3	6	2	10,0	7,50	2,4

Code	k	ap	In	T	l	d	s
LNGX 12T3-2H	8°	0,5	11,1	2	12,0	8,00	4,0
LNGX 1704-2H	8°	0,7	16	2	17,0	12,00	4,8

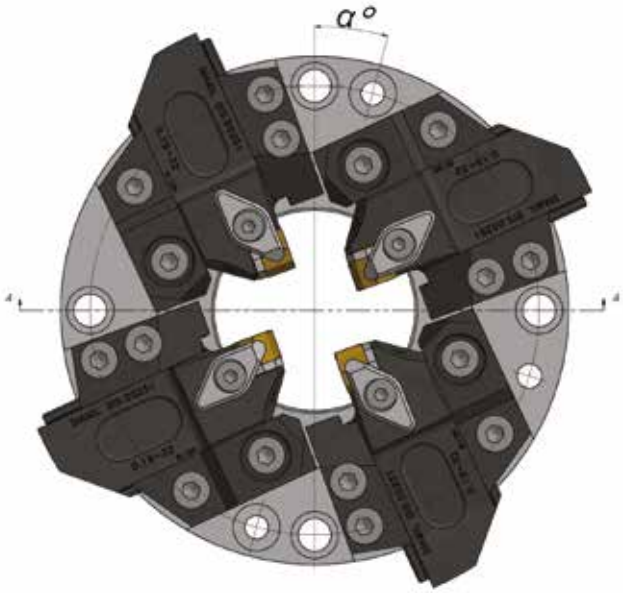
Bar peeling toolings

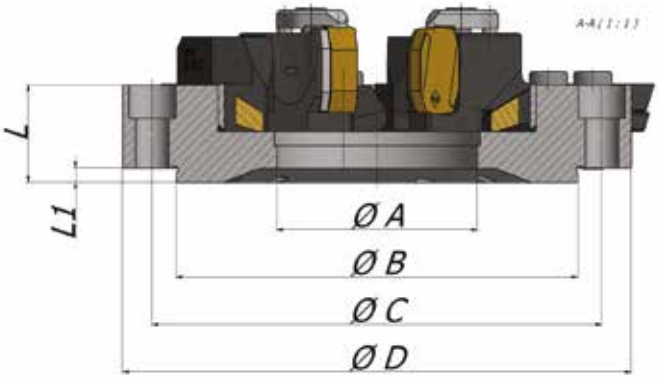
Diamil is currently designing and manufacturing toolings and carbide spare parts for all the peeling machines.
Whether the customer is interested in spare parts only or in a new project to improve machine performance we are able to fullfill its needs.

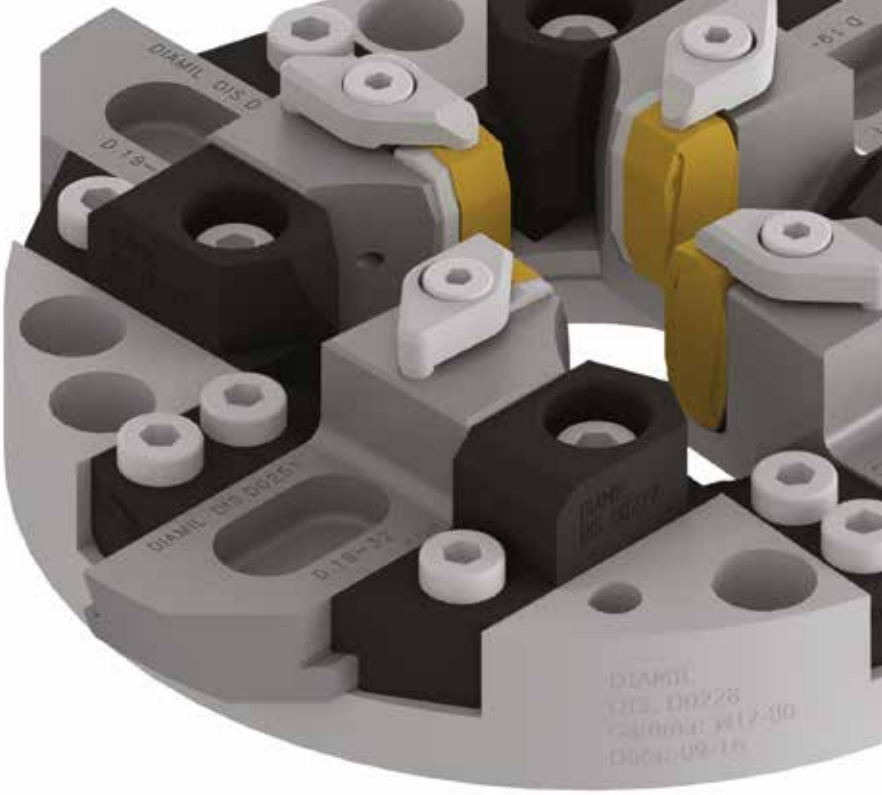
We design, manufacture and develop peeling head, both single and tandem insert's and antiwear parts to be used in the bar guiding system. The wide range of inserts in our peeling program and the wide experience developed in the past 20 years allows us to find the best solution for every machine and type of machining.

In order to facilitate data collection we created the following chart and relative drawings with the main dimensions needed to quote a tools and create a draft for an alternative solution.

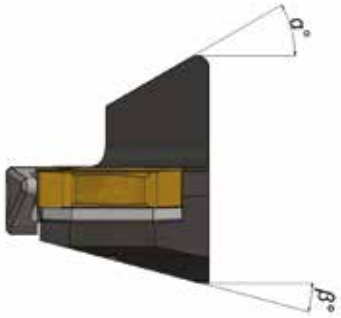
Parameter	Description
L	Head Total Height
L1	Centering Gap
α	Fixing Plug Angle
Ø A	Inner Diameter
Ø B	Centering Diameter
Ø C	Fixing Diameter
Ø D	External Diameter

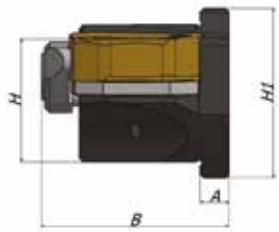






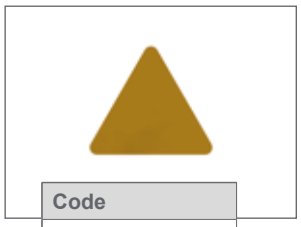
Parameter	Description
L	Total Length
H	Cutting Egde Height
H1	Total Height
A	Insert Seat Shoulder
B	Total Width





Chamfering Inserts

Inserts for turning



Code
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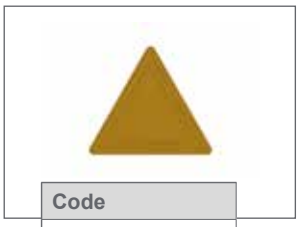
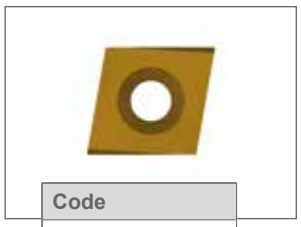
TPUN 220412
TPUN 270616
TPUN 330613



Code
TPMR 160308
TPMR 220408
TPMR 270616

Inserts for milling



Code
CNCQ 150604

Code
SPCT 1504-AP-5A

Formulas for bar peeling

Cutting speed [m/min]

$$V_c = \frac{d_1 * \pi * n}{1000}$$

Revolutions of spindle [rev/min]

$$n = \frac{v_c * 1000}{d_1 * \pi}$$

Through feed speed [m/min]

$$v_f = f * n$$

Feed [mm/rev.]

$$f = \frac{V_f}{n}$$

Chip removal rate [cm³ / min]

$$Q = a_p * f * v_c$$

Steel designation comparison chart

W-Nr.	DIN	UNI	AISI/SAE	Cutting speed Vc= m/min Reduction of diameter up to 2mm	Advanced per round mm	Material Group
			Constructional steel			
1.0401	C15	C15C16	1015	110 – 180	5 – 20	P
1.0402	C22	C20C21	1020			
1.0501	C35	C35	1035			
1.0503	C45	C45	1045			
1.0535	C55	C55	1055			
1.0601	C60	C60	1060			
1.0715	9SMn28	CF9SMn28	1213			
1.0718	9SMnPb28	CF9SMnPb28	12L13			
1.0722	10SPb20	CF10SPb20	-			
1.0726	35S20	-	1140			
1.0736	9SMn36	CF9SMn36	1215			
1.0737	9SMnPb36	CF9SMnPb36	12L14			
1.0904	55Si7	55Si8	9255			
1.0961	60SiCr7	60SiCr8	9262			
1.1141	Ck15	C16	1015			
1.1157	40Mn4	-	1039			
1.1158	Ck25	-	1025			
1.1167	36Mn5	-	1335			
1.1170	28Mn6	C28Mn	1330			
1.1183	Cf35	C36	1035			
1.1191	Ck45	C45	1045			
1.1203	Ck55	C50	1055			
1.1213	Cf53	C53	1050			
1.1221	Ck60	C60	1060			
1.1274	Ck101	-	1095	90 – 140	5 – 15	
1.3401	X120Mn12	XG120Mn12	-			
1.3505	100Cr6	100Cr6	52100			
1.5415	15Mo3	16Mo3KW	ASTM A204Gr.A			
1.5423	16Mo5	16Mo5	4520			
1.5622	14Ni6	14Ni6	ASTM A350LF5			
1.5662	X8Ni9	X10Ni9	ASTM A353			
1.5680	12Ni19	-	2515			
1.5710	36NiCr6	-	3135			
1.5732	14NiCr10	16NiCr11	3415			
1.5752	14NiCr14	-	3415;3310			
1.6511	36CrNiMo4	38NiCrMo4(KB)	9840	80 – 120	4 – 14	
1.6523	21NiCrMo2	20NiCrMo2	8620			
1.6546	40NiCrMo22	40NiCrMo2(KB)	8740			
1.6582	34CrNiMo6	35NiCrMo6(KB)	4340			
1.6587	17CrNiMo6	-	-			
1.6657	14NiCrMo134	15NiCrMo13	-			
1.7015	15Cr3	-	5015			
1.7033	34Cr4	34Cr4(KB)	5132			
1.7035	41Cr4	41Cr4	5140			
1.7045	42Cr4	-	5140			
1.7131	16MnCr5	16MnCr5	5115			
1.7176	55Cr3	-	5155			
1.7218	25CrMo4	25CrMo4(KB)	4130			
1.7220	34CrMo4	35CrMo4	4137;4135			
1.7223	41CrMo4	41CrMo4	4140;4142			
1.7225	42CrMo4	42CrMo4	4140			
1.7262	15CrMo5	-	-			
1.7335	13CrMo4 4	14CrMo4 5	ASTM A182			
			F11;F12			
1.7361	32CrMo12	32CrMo12	-			
1.7380	10CrMo9, 10	12CrMo9,10	ASTM A182			
			F.22			
1.7715	14MoV6 3	-	-			
1.8159	50CrV4	50CrV4	6150			
1.8509	41CrAlMo7	41CrAlMo7	-			
1.8523	39CrMoV13 9	36CrMoV12				

Steel designation comparison chart

W-Nr.	DIN	UNI	AISI/SAE	Cutting speed Vc= m/min Reduction of diameter up to 2mm	Advanced per round mm	Material Group
Tool Steels						
1.1545	C105W1	C98KU	W.110	60 – 100	4 – 14	P
		C100KU				
1.1663	C125W	C120KU	W.112			
1.2067	100Cr6	-	L3			
1.2080	X210Cr12	X210Cr13KU	D3			
		X250Cr12KU				
1.2344	X40CrMoV51	X35CrMoV05KU	H13			
		X40CrMoV511KU				
1.2363	X100CrMoV51	X100CrMoV51KU	A2			
1.2419	105WCr6	10WCr6	-			
1.2436	X210CrW12	X215CrW121KU	-			
1.2542	45WCrV7	45WCrV8KU	S1			
1.2581	X30WCrV9 3	X28W09KU	H21			
	X30WCrV9 3KU	X30WCrV9 3KU				
1.2601	X165CrMoV12	X165CrMoW12KU	-			
1.2713	55NiCrMoV6	-	L6			
1.2833	100V1	-	W210			
High speed steels						
1.3243	S 6-5-2-5	HS 6-5-2-5	-	110 – 180	8 – 20	M
1.3255	S 18-1-2-5	X78WCo1805KU	T4			
1.3343	S 6-5-2	X82WMo0605KU	M2			
1.3348	S 2-9-2	HS 2-9-2	M7			
1.3355	S 18-0-1	X75W18KU	T1			
Stainless and heat resisting steels						
1.4000	X6Cr13	X6Cr13	403	80 – 110	4 – 14	M
1.4001	X7Cr14					
1.4006	X10Cr13	X12Cr13	410			
1.4016	X6Cr17	X8Cr17	430			
1.4027	G-X200Cr14	-	-			
1.4034	X46Cr13	X40Cr14	-			
1.4057	X20CrNi172	X16CrNi16	431			
1.4104	X12CrMoS17	X10CrS17	430F			
1.4113	X6CrMo171	X8CrMo17	434			
1.4313	X5CrNi134	-	-			
1.4408	G-X6CrNiMo1810	-				
1.4718	X45CrSi93	X45CrSi8	HW3			
1.4724	X10CrAl13	X10CrA112	405			
1.4742	X10CrAl18	X8Cr17	430			
1.4747	X80CrNiSi20	X8CrSiNi20	HNV6			
1.4762	X10CrAl24	X16Cr26	446			
1.4301	X5CrNi1810	X5CrNi1810	304	60 – 90	4 – 12	
1.4305	X10CrNiS189	X10CrNiS18.09	303			
1.4306	X2CrNi1911	X2CrNi18.11	304L			
1.4308	G-X6CrNi18 9	-	-			
1.4310	X12CrNi177	X12CrNi1707	301			
1.4311	X2CrNiN1810	-	304LN			
1.4401	X5CrNiMo17122	X5CrNiMo1712	316			
1.4429	X2CrNiMoN17133	-	316LN			
1.4435	X2CrNiMo18143	X2CrNiMo1713	316L			
1.4438	X2CrNiMo17133	X2CrNiMo1816	317L			
1.4460	X8CrNiMo275	-	329			
1.4541	X6CrNiTi1810	X6CrNiTi1811	321			
1.4550	X6CrNiNb1810	X6CrNiNb1811	347			
1.4571	X6CrNiMoTi17122	X6CrNiMoTi1712	316Ti			
1.4581	G-X5CrNi	XG8CrNiMo1811	-	40 – 80	4 – 12	
	MoNb1810					
1.4583	X10CrNi	X6CrNiMoNb1713	318			
	MoNb1812					
1.4828	X15CrNiSi2012	-	309			
1.4845	X12CrNi25 21	X6CrNi2520	310S			
1.4864	X12NiCrSi3616	-	330			
1.4865	G-X40NiCrSi3818	XG50NiCr3919	-			
1.4871	X53CrMnNiN219	X53CrMnNiN219	EV8			
1.4878	X12CrNiTi189	X6CrNiTi1811	321			

Tuned Synergy
FOR THE BEST

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