

 **OSAWA**
D R I L L S & E N D M I L L S

CATALOGUE 2011



MEX - UH

🇬🇧 Mex (micro grain solid carbide and “endless orange” coating) and Uh (nano micro grain carbide and “Uh red” coating): a top-level range of end mills for middle-hard and hard steel, up to 70 HRC.

🇮🇹 Mex (metallo duro micro grana e rivestimento “Endless orange”) ed Uh (nano micro grana e rivestimento “Uh red”): una gamma di altissimo livello per acciai medio duri e duri fino a 70HRC.

🇩🇪 Mex (Feinkorn- Hartmetall und „Endless orange“-Beschichtung) sowie Uh (Nano- Feinkorn und „Uh red“-Beschichtung) Fräser bieten höchste Leistungen für mittel und hoch gehärtete Stähle bis 70 HRC.

🇫🇷 Mex (carbure micro grain et revêtement «Endless orange») et UH (carbure nano micro grain et revêtement «Uh red») : une gamme de fraisage de très haut niveau pour aciers durs jusqu’à 70 HRC.

MEX

UMG

ENDLESS ORANGE COATING

ULTRA FINE MICROGRAIN

~HRC65

UH

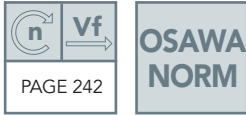
NMG

UH RED COATING

NANO MICROGRAIN

HRC50-70

UH Red HRC50~70

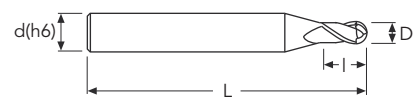


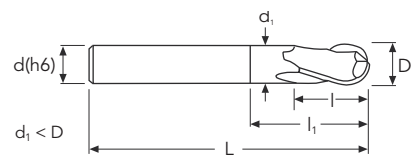
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UHCSB2 - UH250

Ø mm	~6	>6
tol. D µ	0 / -12	0 / -15
tol. R µ	±5	±10












Z2 BALL




Z2 BALL




NMG
UH RED




NMG
UH RED




UH BALL NOSE



UH BALL NOSE



30°



30°

D	d	l	l1	L	Stock	Stock
mm 0.1	6	0.1		40	○	
0.2	6	0.2		40	○	
0.3	6	0.3		40	○	
0.4	6	0.4		40	●	
0.5	6	0.5		40	●	
0.6	6	0.6		40	●	
0.7	6	0.7		40	○	
0.8	6	0.8		40	●	
0.9	6	0.9		40	○	
1	6	1.5		40	●	
1	4	1	2.2	50		●
1.5	6	2.5		40	●	
1.5	4	1.5	3	50		●
2	6	3		40	●	
2	6	2	4	50		●
2.5	6	3		50	●	
3	6	4.5		50	●	
3	6	3	6	60		●
4	6	6		50	●	
4	6	4	8	70		●
5	6	7.5		50	●	
5	6	5	10	80		●
6	6	9		50	●	
6	6	6	12	90		●
8	8	12		50	●	
8	8	8	16	100		●
10	10	15		60	●	
10	10	10	20	100		●
12	12	18		60	●	
12	12	12	24	110		●

● stock standard ○ non-standard stock EX stock exhaustion

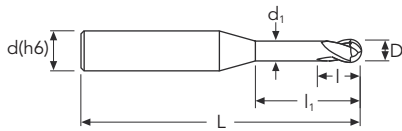
PAGE 242

OSAWA
NORM

UHCRB2

Ø mm	-6
tol. D µ	0 / -12
tol. R µ	±5

UHCRB2



$d_1 < D$

Z2 BALL

NMG

UH RED

UH BALL NOSE

30°

D	d	l	l1	L	Stock
mm 0.1	4	0.1	0.3	45	●
0.2	4	0.2	0.6	45	○
0.2	4	0.2	1	45	●
0.3	4	0.3	2	45	●
0.3	4	0.3	3	45	○
0.4	4	0.4	1	45	●
0.4	4	0.4	3	45	●
0.5	6	0.5	2	45	●
0.5	4	0.5	2	45	○
0.5	6	0.5	4	45	●
0.5	4	0.5	6	45	○
0.6	6	0.6	2	45	○
0.6	6	0.6	4	45	●
0.6	4	0.6	6	45	●
0.6	4	0.6	10	45	○
0.8	6	0.8	2	45	●
0.8	6	0.8	6	45	●
0.8	4	0.8	10	45	○
1	6	1	3	50	●
1	6	1	6	50	●
1	4	1	10	50	●
1	6	1	10	50	●
1	4	1	16	50	●
1	4	1	20	55	●
1.2	6	1.2	4.4	50	○
1.2	6	1.2	8	50	●
1.2	4	1.2	12	50	○
1.5	6	1.5	4	50	●
1.5	6	1.5	10	50	●
1.5	4	1.5	12	50	●
1.5	6	1.5	12	50	●
1.5	4	1.5	20	55	●
2	6	3	6	50	●
2	4	3	10	50	●
2	6	3	12	50	●
2	4	3	16	50	●

● stock standard ○ non-standard stock EX stock exhaustion

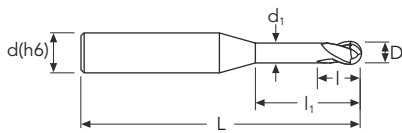

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OSAWA
NORM

UHCRB2

Ø mm	~6
tol. D µ	0 / -12
tol. R µ	±5

UHCRB2



$d_1 < D$



D	d	l	l1	L	Stock
mm 2	6	3	20	50	●
2	4	3	25	60	●
2	4	3	30	70	●
3	6	4	12	55	●
3	6	4	16	55	●
3	6	4	20	60	●
3	6	4	30	70	●
4	6	5	16	55	●
4	6	5	20	60	●
4	6	5	30	70	●
4	6	5	40	80	●

● stock standard ○ non-standard stock EX stock exhaustion


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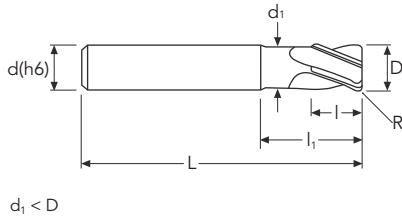
OSAWA
NORM

UHF430

Ø mm	~12
tol. D µ	0 / -20
tol. R µ	±5

NEW

UHF430



 Z4
 NMG
 UH RED
 UH RADIUS
 30°

D	d	l	l1	L	Stock
mm 2 R0.5	6	1	6	70	●
3 R0.5	6	1.2	8	70	●
4 R0.5	6	1.5	10	70	●
5 R0.5	6	2	10	70	●
6 R0.5	6	2.5	12	90	●
6 R1	6	2.5	12	90	●
8 R1	8	3.5	16	100	●
8 R2	8	3.5	16	100	●
10 R1	10	4	20	100	●
10 R2	10	4	20	100	●
12 R2	12	5	25	110	●
12 R3	12	5	25	110	●

● stock standard ○ non-standard stock EX stock exhaustion

	OSAWA NORM
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UHM2 - UHCS2

Ø mm	~6	>6
tol. D µ	0 / -12	0 / -15
tol. R µ	±10	±15



<p>UHM2</p>		
<p>UHCS2</p>		

D	d	l	l1	L	Stock	Stock
mm 0.3	6	0.45		50	●	
0.4	6	0.6		50	●	
0.5 R0.05	6	0.7		50	●	
0.6 R0.05	6	0.9		50	●	
0.8 R0.05	6	1.2		50	●	
1 R0.1	4	2	3	50		●
1 R0.1	6	1.5		50	●	
1.5 R0.1	4	2.5	4	50		●
1.5 R0.15	6	2.2		50	●	
2 R0.15	6	2.2		50	●	
3 R0.1	6	4.5	8	55		●
4 R0.1	6	6	10	55		●
5 R0.2	6	6	11	50		●
6 R0.2	6	9	15	60		●
8 R0.2	8	12	20	65		●
10 R0.2	10	15	25	70		●
12 R0.3	12	18	30	80		●

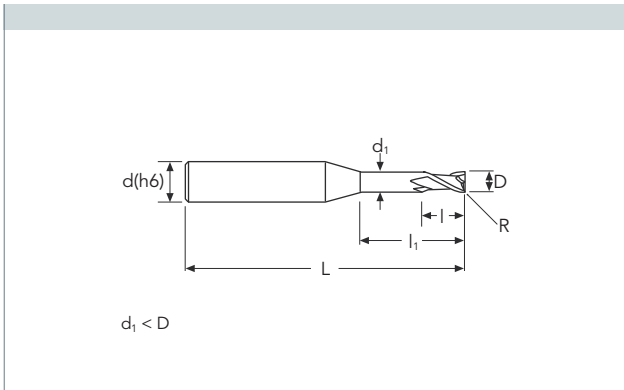
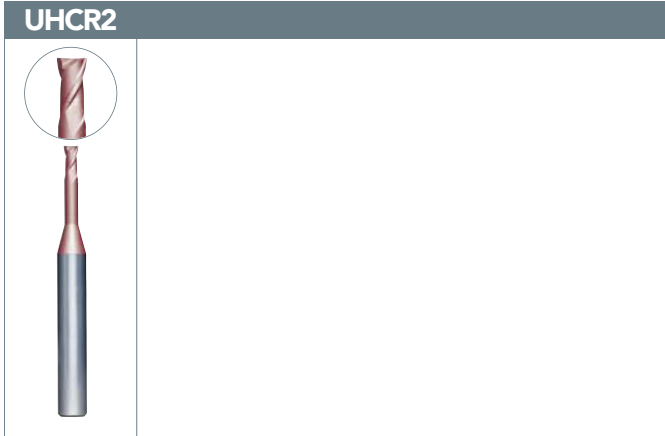
● stock standard ○ non-standard stock EX stock exhaustion

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OSAWA
NORM

UHCR2

Ø mm	~4
tol. D µ	0 / -12



D	d	l	l1	L	Stock
mm 0.1	4	0.15	0.3	45	○
0.2	4	0.3	1	45	●
0.3	4	0.45	1.5	45	●
0.3	4	0.45	3	45	●
0.4	4	0.6	3	45	○
0.4	4	0.6	5	45	●
0.5	4	0.7	2	45	● NEW
0.5	4	0.7	4	45	●
0.5	4	0.7	8	45	○
0.6 R0.05	6	0.9	2	50	EX
0.6 R0.05	6	0.9	4	50	EX
0.6	4	0.9	4	45	● NEW
0.6	4	0.9	6	45	●
0.8 R0.05	6	1.2	5.5	50	EX
0.8	4	1.2	8	45	●
1	4	1.5	4	50	● NEW
1 R0.10	6	1.5	6.7	50	EX
1	4	1.5	8	50	● NEW
1	4	1.5	10	50	●
1	4	1.5	16	50	●
1	4	1.5	20	55	●
1.2	4	1.8	4	50	● NEW
1.2	4	1.8	10	50	● NEW
1.5	4	2.3	6	50	● NEW
1.5	4	2.3	10	50	● NEW
1.5	4	2.3	16	50	●
1.5	4	2.3	20	55	●
2	4	3	6	50	● NEW
2	4	3	12	50	● NEW
2 R0.15	6	2.2	13	50	EX
2	4	3	16	50	●
2	4	3	20	55	●
3	6	4.5	12	55	●
3	6	4.5	16	55	●
3	6	4.5	20	60	●

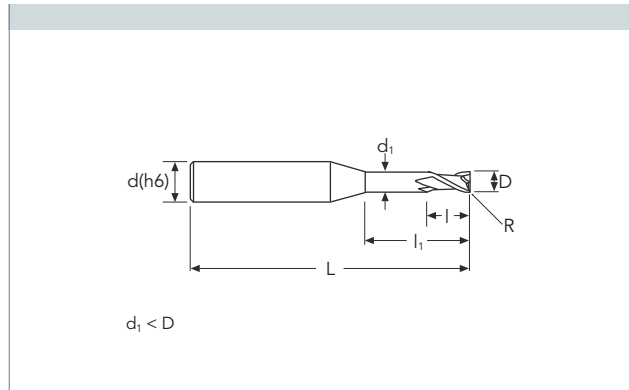
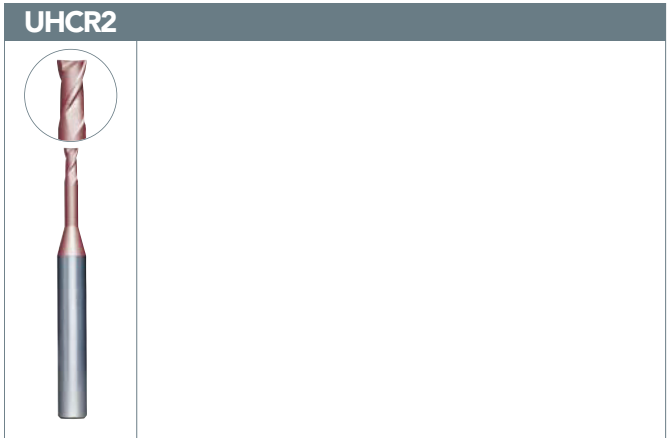
● stock standard ○ non-standard stock EX stock exhaustion

n **Vf**
PAGE 244

OSAWA
NORM

UHCR2

Ø mm	~4
tol. D µ	0 / -12



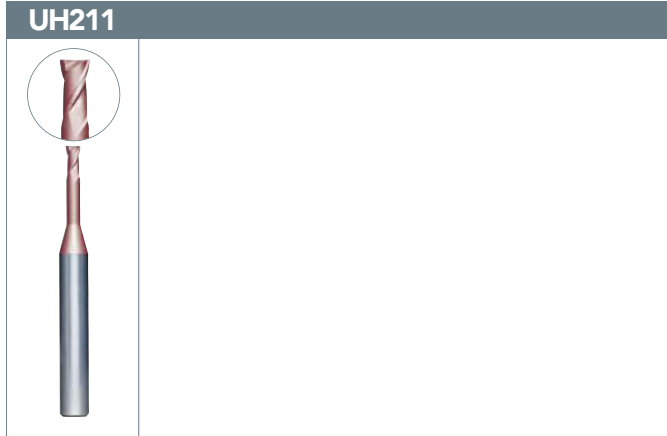
D	d	l	l1	L	Stock
mm 3	6	4.5	30	70	○
4	6	6	20	60	●
4	6	6	30	70	○
4	6	6	40	80	○

● stock standard ○ non-standard stock EX stock exhaustion

	OSAWA NORM
PAGE 246-247	

UH211

Ø mm	~6	>6
tol. D µ	0 / -12	0 / -15
tol. R µ	±10	±15



$d_1 < D$

Z2

NMG

UH RED

UH RADIUS

30°

D	d	l	l1	L	Stock	
0.5	R0.05	4	0.7	1.5	45	● NEW
0.5	R0.05	4	0.7	4	45	● NEW
0.6	R0.05	4	0.9	2	45	● NEW
0.6	R0.05	4	0.9	4	45	● NEW
0.8	R0.05	4	1.2	2	45	● NEW
0.8	R0.05	4	1.2	6	45	● NEW
1	R0.1	4	2	4	50	● NEW
1	R0.1	4	2	6	50	●
1	R0.1	4	2	8	50	● NEW
1	R0.2	4	2	4	50	●
1	R0.2	4	2	8	50	●
1	R0.3	4	2	4	50	●
1	R0.3	4	2	8	50	●
1.5	R0.1	4	2.5	6	50	● NEW
1.5	R0.1	4	2.5	10	50	● NEW
1.5	R0.2	4	2.5	4	50	●
1.5	R0.2	4	2.5	8	50	●
1.5	R0.2	4	2.5	12	50	●
1.5	R0.3	4	2.5	4	50	●
1.5	R0.3	4	2.5	8	50	●
2	R0.1	4	3	6	50	● NEW
2	R0.1	4	3	12	50	● NEW
2	R0.2	4	3	6	50	●
2	R0.2	4	3	12	50	●
2	R0.3	4	3	8	50	●
2	R0.3	4	3	12	50	●
2	R0.3	4	3	16	50	●
2	R0.5	4	3	6	50	●
2	R0.5	4	3	12	50	●
2.5	R0.2	4	3.5	8	55	● NEW
2.5	R0.2	4	3.5	12	55	● NEW
3	R0.2	6	4.5	10	55	●
3	R0.2	6	4.5	16	55	●
3	R0.3	6	4.5	10	55	●
3	R0.3	6	4.5	16	55	●
3	R0.5	6	4.5	10	55	●

● stock standard ○ non-standard stock EX stock exhaustion

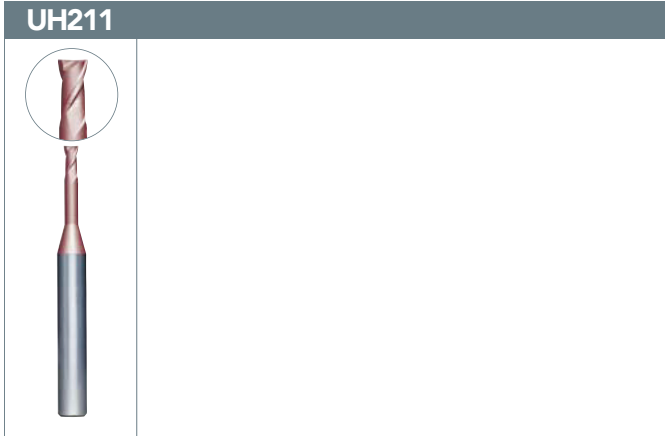


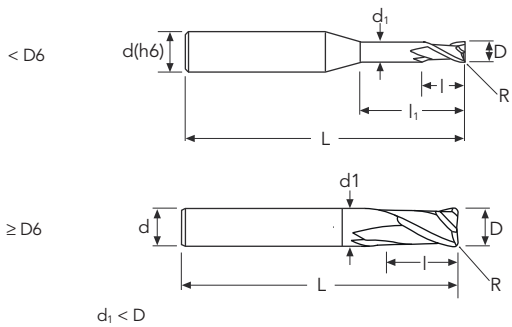
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
OSAWA
NORM

UH211

Ø mm	~6	>6
tol. D µ	0 / -12	0 / -15
tol. R µ	±10	±15





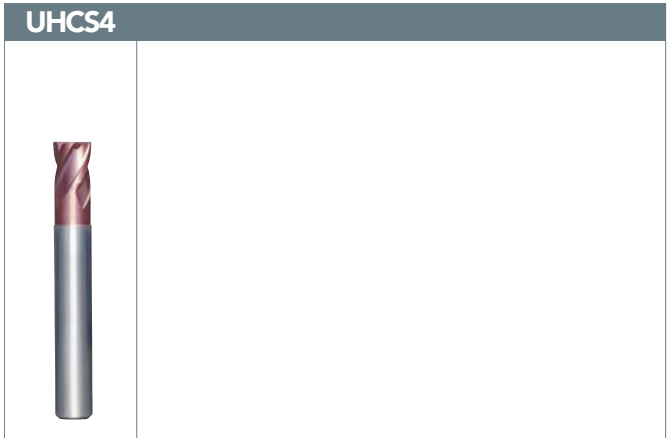






D	d	l	l1	L	Stock
mm 3 R0.5	6	4.5	16	55	●
4 R0.2	6	6	12	55	○
4 R0.2	6	6	20	60	●
4 R0.3	6	6	20	60	●
4 R0.5	6	6	12	55	●
4 R0.5	6	6	20	60	●
4 R1.0	6	6	16	55	●
6 R0.5	6	9	15	60	●
6 R1	6	9	15	60	●
6 R2	6	9	15	60	●
8 R0.5	8	12	20	65	●
8 R1	8	12	20	65	●
8 R2	8	9	25	60	●
10 R0.5	10	15	25	70	●
10 R1	10	15	25	70	●
10 R2	10	15	25	70	●
12 R0.5	12	18	30	80	○
12 R1	12	18	30	80	●
12 R2	12	18	30	80	●

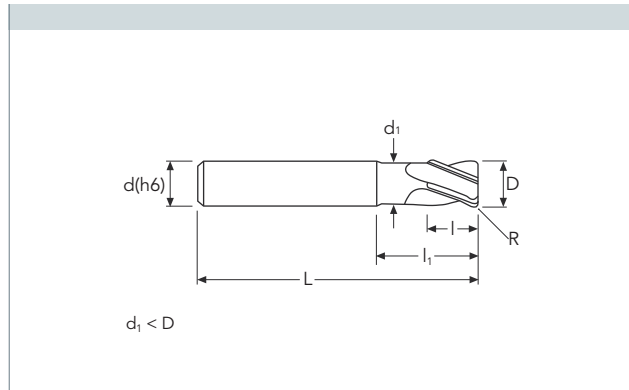
● stock standard ○ non-standard stock EX stock exhaustion

n **Vf**
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OSAWA
NORM



UHCS4	~6	>6
Ø mm		
tol. D µ	0 / -12	0 / -15
tol. R µ	±10	±15



D	d	l	l1	L	Stock
mm 1 R0.1	4	2	3	50	●
1.5 R0.1	4	2.5	4	50	●
2 R0.1	4	3	6	50	●
3 R0.1	6	4	8	55	●
4 R0.1	6	6	10	55	●
5 R0.2	6	6	11	50	●
6 R0.2	6	9	15	60	●
8 R0.2	8	12	20	70	●
10 R0.2	10	15	25	70	●
12 R0.3	12	18	30	80	●

● stock standard ○ non-standard stock EX stock exhaustion



UH411 - UH412

Ø mm	~6	>6
tol. D µ	0 / -12	0 / -15
tol. R µ	±10	±15



$d_1 < D$

Z4

NMG

UH RED

UH RADIUS

30°

Z4

NMG

UH RED

UH RADIUS

30°

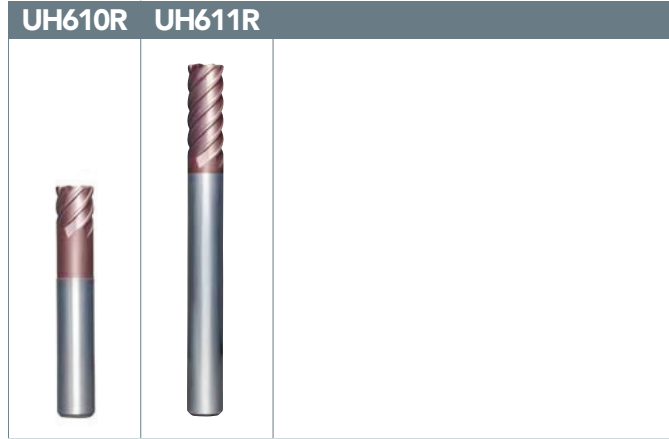
D	d	l	l1	L	Stock	Stock
mm 3 R0.3	6	4	12	55	●	
3 R0.3	6	4	20	60	●	
3 R0.5	6	4	10	55	●	
3 R0.5	6	4	20	60	●	
4 R0.3	6	6	12	55	●	
4 R0.3	6	6	20	60	●	
4 R0.5	6	6	12	55	●	
4 R0.5	6	6	20	60	●	
4 R1.0	6	6	12	55	●	
6 R0.5	6	9	15	60	●	
6 R0.5	6	9	20	90		●
6 R1.0	6	9	15	60	●	
6 R1.0	6	9	20	90		●
8 R0.5	8	12	20	70	●	
8 R0.5	8	12	25	100		●
8 R1.0	8	12	20	70	●	
8 R1.0	8	12	25	100		●
8 R2.0	8	12	20	70	●	
10 R0.5	10	15	25	70	●	
10 R0.5	10	15	32	100		●
10 R1.0	10	15	25	70	●	
10 R1.0	10	15	32	100		●
10 R2.0	10	15	25	70	●	
10 R2.0	10	15	32	100		●
12 R0.5	12	18	30	80	●	
12 R0.5	12	18	38	110		●
12 R1.0	12	18	30	80	●	
12 R1.0	12	18	38	110		●
12 R2.0	12	18	30	80	●	
12 R2.0	12	18	38	110		●

● stock standard ○ non-standard stock EX stock exhaustion

	OSAWA NORM
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UH610R - UH611R

Ø mm	~20
tol. D µ	0 / -30
tol. R µ	±15



$d_1 < D$

Z6
NMG
UH RED
UH RADIUS
45°

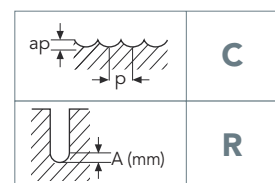
Z6
NMG
UH RED
UH RADIUS
45°

D	d	l	l1	L	Stock	Stock
mm 6	R0.5	6	6	15	●	
6	R0.5	6	15	70		●
8	R0.5	8	8	25	●	
8	R0.5	8	20	100		●
10	R0.5	10	25	30	100	
10	R1.0	10	10	30	70	
10	R1.0	10	25	100		●
12	R1.0	12	12	30	75	
12	R0.5	12	30	110		●
12	R1.0	12	30	110		●
16	R1.0	16	32	130		●
16	R1.5	16	32	130		EX
20	R1.0	20	38	140		○
20	R1.5	20	38	140		EX
20	R2.0	20	38	140		○

● stock standard ○ non-standard stock EX stock exhaustion

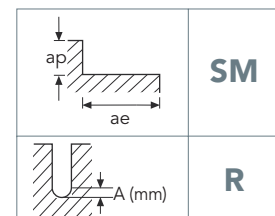
UHCSB2 - UH250												
GROUP GRUPPO GRUPPE GROUPE	5 6 7		7 8									
Vc [m/min]	30~260		30~250		30~230		25~200		20~180		20~160	
HRC	30~40		40~50		50~55		55~60		60~65		65~70	
N/mm ²	1000~1250		1250~									
Ø mm.	n	Vf	n	Vf	n	Vf	n	Vf	n	Vf	n	Vf
0.2	50000	1200	50000	1000	45000	950	40000	770	35000	660	32000	550
0.3	50000	1500	50000	1350	45000	1200	40000	950	35000	840	32000	700
0.4	50000	1900	50000	1700	45000	1500	40000	1200	35000	1000	32000	890
0.5	50000	2400	50000	2100	45000	1900	40000	1500	35000	1300	32000	1100
0.6	50000	2900	50000	2500	45000	2200	40000	1800	35000	1600	32000	1400
0.8	50000	3900	50000	3300	45000	3000	40000	2400	35000	2100	32000	1800
1	50000	4800	50000	4200	45000	3800	40000	3000	34000	2600	32000	2300
1.2	50000	5100	48000	4300	43000	3800	38000	3000	33000	2700	30500	2300
1.5	50000	5400	48000	4500	43000	4000	37000	3100	32000	2700	30000	2300
2	48000	5700	46000	4800	40000	4000	35000	3100	21000	2800	28500	2300
3	33000	6000	32000	5300	27000	4000	24000	3100	16000	2800	19000	2300
4	24900	6000	24000	5300	20000	4000	18000	3100	14300	2800	14500	2300
5	19100	5800	18000	4900	14700	3700	13500	3000	11500	2500	10500	2100
6	14000	4800	14000	4100	11500	3100	10600	2500	9500	2100	8500	1700
8	11500	4200	10800	3500	9200	2700	8000	2100	7200	1800	6400	1500
10	9500	3700	8600	3100	7500	2400	6400	1900	5700	1600	5100	1350
12	7000	2900	6700	2500	6100	1900	5300	1500	4800	1200	4200	1000
C ap x p	0.05Dx0.02D		0.05Dx0.02D		0.05Dx0.02D		0.05Dx0.02D		0.05Dx0.02D		0.05Dx0.02D	

UHCRB2										
GROUP GRUPPO GRUPPE GROUPE	6 7		8				8			
Vc [m/min]	30~80			30~60			30~60			
HRC	30~45			45~55			55~65			
N/mm ²	1000~1500									
Ø mm.	n	Vf	A	n	Vf	A	n	Vf	A	
0.2	50000	300~350	0.005~0.015	50000	260~310	0.005~0.012	50000~	220~260	0.005~0.012	
0.3	48000~50000	480~520	0.010~0.018	48000~50000	440~460	0.008~0.015	46000~49000	390~420	0.006~0.013	
0.4	48000~50000	720~790	0.012~0.030	48000~50000	450~550	0.010~0.025	46000~49000	400~460	0.010~0.025	
0.5	35000~48000	600~870	0.008~0.028	32000~37000	490~540	0.005~0.025	33000~37000	440~480	0.005~0.020	
0.6	30000~41000	590~850	0.008~0.035	26000~31000	490~540	0.005~0.028	27000~30000	440~480	0.005~0.025	
0.8	22000~31000	640~890	0.016~0.065	20000~23500	490~550	0.012~0.050	20000~22500	440~500	0.010~0.045	
1	19000~25000	600~850	0.010~0.080	16000~19000	480~540	0.008~0.065	16000~18000	440~500	0.006~0.055	
1.2	15000~20000	590~780	0.024~0.035	13000~15000	480~540	0.020~0.025	12000~14500	420~480	0.018~0.025	
1.5	12000~15000	580~760	0.030~0.050	10500~12000	480~540	0.025~0.040	10000~12000	420~480	0.020~0.035	
2	9000~12000	590~800	0.025~0.160	8000~9000	480~530	0.020~0.130	8000~9000	440~480	0.020~0.120	
3	6000~8500	730~1000	0.065~0.240	5300~6000	590~650	0.050~0.190	5300~6000	550~620	0.050~0.120	
4	4500~6300	680~990	0.080~0.320	4000~4500	550~620	0.060~0.250	3900~4500	530~570	0.060~0.230	
R ap x ae	AxD			AxD			AxD			



UHF430											
GROUP GRUPPO GRUPPE GROUPE	6 7		7 8		8		8		8		
Vc [m/min]	190~260		150~210		100~170		70~120		60~90		
HRC	30~40		40~50		50~55		55~60		60~65		
N/mm ²	1000~1250		1250~								
Ø mm.	n	Vf	n	Vf	n	Vf	n	Vf	n	Vf	
2	28700	14850	21800	9700	14850	7750	10900	4400	8600	2400	
3	21800	15850	16850	9900	12400	7900	9400	4550	6800	2450	
4	16830	17300	12900	11900	10900	9100	7900	5450	5550	2850	
6	13350	18300	10400	13650	8900	10900	6350	6350	4450	3550	
8	9900	18300	7900	13850	6750	10900	4750	6600	3350	4050	
10	7900	18300	6350	13850	5350	10900	3750	6750	2673	3750	
12	6500	18300	5250	13850	4450	10900	3150	6900	2250	3550	
SM ap x ae	0.1Rx0.3D		0.1Rx0.3D		0.1Rx0.3D		0.1Rx0.3D		0.1Rx0.3D		

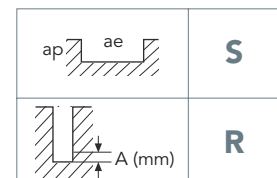
GROUP GRUPPO GRUPPE GROUPE			
17			
Vc [m/min]	30~160		
HRC			
N/mm ²			
Ø mm.	n	Vf	A
0.2	50000	450~530	0.010~0.020
0.3	50000	690~790	0.005~0.025
0.4	50000	1000~1150	0.020~0.050
0.5	48000~50000	1100~1400	0.010~0.040
0.6	43000~49000	1100~1700	0.010~0.050
0.8	32000~45000	1100~2250	0.025~0.095
1	25000~45000	1100~2200	0.010~0.120
1.2	30000~40000	1480~1950	0.035~0.050
1.5	18000~30000	1100~1900	0.045~0.070
2	13000~25000	1100~2100	0.035~0.240
3	12000~18000	1900~2700	0.095~0.360
4	7000~13000	1250~2500	0.120~0.480
R ap x ae	AxD		



UHCS2													
GROUP GRUPPO GRUPPE GROUPE	6 7		7 8		8		8		8		8		
Vc [m/min]	40~250		40~200		30~130		20~100		20~75		18~70		
HRC	30~40		40~50		50~55		55~60		60~65		65~70		
N/mm ²	1000~1250		1250~										
Ø mm.	n	Vf	n	Vf	n	Vf	n	Vf	n	Vf	n	Vf	
0.2	50000	130	50000	120	42000	90	35000	60	35000	45	28000	30	
0.3	50000	190	50000	140	42000	110	35000	70	27000	50	22000	35	
0.4	50000	240	50000	180	42000	140	35000	90	27000	55	22000	40	
0.5	50000	370	50000	280	42000	220	35000	140	27000	96	22000	60	
0.6	50000	470	50000	360	42000	280	32000	160	27000	110	22000	75	
0.8	50000	600	45000	440	32000	290	27000	180	21000	110	17000	80	
0.9	50000	660	42000	520	30000	330	24000	200	19000	125	15000	85	
1	50000	750	40000	570	27000	360	22000	210	18000	135	13500	85	
2	35000	850	28000	680	19000	420	16000	260	12000	160	10400	110	
3	23000	850	19000	680	13000	420	10600	260	8000	160	7000	110	
4	18000	880	14500	700	9500	440	8000	270	6000	170	5000	120	
5	15900	1000	12800	810	8300	500	6400	280	4800	180	4500	130	
6	13300	950	10600	770	6900	480	5300	280	4000	180	3700	130	
8	10000	930	8000	720	5200	450	4000	250	3000	165	2800	120	
10	8000	850	6400	680	4200	420	3200	240	2400	155	2200	110	
12	6700	850	5300	680	3500	420	2700	240	2000	155	1900	110	
S ap x ae	0.05DxD		0.05DxD		0.05DxD		0.05DxD		0.05DxD		0.02DxD		

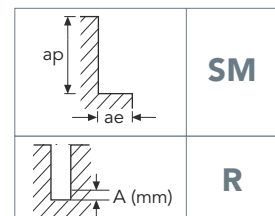
↓ Z axis : Vf = -50%

UHCR2										
GROUP GRUPPO GRUPPE GROUPE	6 7			8			8			
Vc [m/min]	30~65			30~45			30~35			
HRC	30~45			45~55			55~65			
N/mm ²	1000~1500									
Ø mm.	n	Vf	A	n	Vf	A	n	Vf	A	
0.2	50000	300~350	0.005~0.015	50000	260~310	0.005~0.012	50000	220~260	0.005~0.012	
0.3	43000~50000	330~420	0.006~0.016	40000~47000	260~310	0.005~0.012	24000~33000	110~190	0.005~0.008	
0.4	32000~50000	350~600	0.005~0.028	31000~36000	300~340	0.005~0.020	18000~25000	120~200	0.003~0.012	
0.5	26000~33000	360~480	0.005~0.035	24000~26000	290~320	0.005~0.025	14000~18000	120~140	0.003~0.015	
0.6	21000~36000	330~550	0.008~0.030	20000~22000	260~290	0.005~0.021	12000~16000	100~120	0.003~0.014	
0.8	17000~27000	350~600	0.010~0.040	15000~17000	280~320	0.006~0.030	9000~12000	110~130	0.005~0.018	
1	12500~19000	350~550	0.010~0.028	11000~12000	250~280	0.008~0.020	6000~8000	100~120	0.005~0.012	
1.2	11000~18000	350~600	0.025~0.070	9000~10000	250~280	0.015~0.040	5500~7000	100~120	0.010~0.025	
1.5	9000~18000	450~850	0.015~0.075	7000~8000	250~280	0.012~0.050	4500~5500	100~120	0.007~0.035	
2	6500~11000	350~550	0.020~0.140	6000~7000	270~300	0.015~0.100	3500~4700	100~120	0.010~0.060	
3	4500~7000	550~900	0.060~0.210	4000~4600	450~520	0.040~0.150	2500~3300	110~300	0.025~0.090	
4	3500~5000	400~680	0.070~0.280	3000~3500	330~380	0.050~0.200	1900~2500	80~230	0.030~0.120	
R ap x ae	AxD			AxD			AxD			



UHCS2													
GROUP GRUPPO GRUPPE GROUPE	6 7		7 8		8		8		8		8		
Vc [m/min]	160~250		125~200		85~130		70~100		55~75		45~70		
HRC	30~40		40~50		50~55		55~60		60~65		65~70		
N/mm ²	1000~1250		1250~										
Ø mm.	n	fn	n	fn	n	fn	n	fn	n	fn	n	fn	
1	50000	1050	40000	820	27000	510	22000	310	18000	190	13500	120	
2	35000	1200	28000	970	19000	600	16000	370	12000	230	10400	170	
3	23000	1200	19000	970	13000	600	10600	370	8000	230	7000	170	
4	18000	1250	14500	1000	9500	625	8000	390	6000	240	5000	170	
5	15900	1450	12800	1150	8300	710	6400	410	4800	260	4500	190	
6	13300	1350	10600	1100	6900	690	5300	400	4000	260	3700	180	
8	10000	1320	8000	1030	5200	640	4000	370	3000	240	2800	170	
10	8000	1200	6400	970	4200	590	3200	340	2400	220	2200	160	
12	6700	1200	5300	970	3500	590	2700	340	2000	220	1900	160	
SM ap x ae	Dx0.03D		Dx0.03D		Dx0.03D		Dx0.03D		Dx0.03D		Dx0.03D		

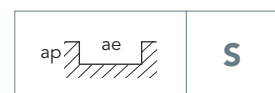
GROUP GRUPPO GRUPPE GROUPE	17		
Vc [m/min]	30~125		
HRC			
N/mm ²			
Ø mm.	n	Vf	A
0.2	50000	450~530	0.010~0.020
0.3	50000	550~650	0.010~0.025
0.4	50000	800~920	0.010~0.045
0.5	50000	800~1150	0.010~0.060
0.6	38000~50000	780~1250	0.010~0.050
0.8	29000~47000	780~1300	0.015~0.070
1	23000~35000	800~1300	0.020~0.050
1.2	23000~32000	950~1350	0.040~0.100
1.5	15000~25000	800~1350	0.030~0.130
2	12000~19000	780~1250	0.035~0.240
3	9000~13000	1400~2100	0.100~0.360
4	7000~10000	1050~1580	0.130~0.480
R ap x ae	AxD		



UHM2												
GROUP GRUPPO GRUPPE GROUPE	6 7		7 8		8		8		8			
Vc [m/min]	50~210		45~160		40~110		35~90		25~70			
HRC	30~40		40~50		50~55		55~60		60~65			
N/mm ²	1000~1250		1250~									
Ø mm.	n	Vf	n	Vf	n	Vf	n	Vf	n	Vf		
0.3	50000	190	48000	140	42000	120	35000	70	27000	40		
0.4	50000	230	48000	180	42000	140	35000	90	27000	55		
0.5	50000	370	48000	280	42000	220	35000	140	27000	90		
0.6	50000	470	48000	360	42000	290	32000	160	27000	110		
0.8	50000	600	43000	440	32000	300	27000	180	20000	110		
1	50000	750	40000	570	27000	360	22000	220	17000	130		
1.2	46000	790	36000	640	24000	380	21000	250	15500	140		
1.5	40000	800	33000	670	22000	410	18000	250	14000	150		
2	33400	850	25500	680	17600	420	14400	260	11200	160		
S ap x ae	0.05DxD		0.05DxD		0.05DxD		0.02DXD		0.02DXD			

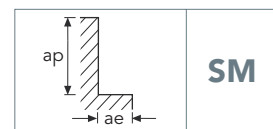
UH211														
GROUP GRUPPO GRUPPE GROUPE	6 7		7 8		8		8		8		8			
Vc [m/min]	70~250		70~200		60~130		50~100		40~75		30~70			
HRC	30~40		40~50		50~55		55~60		60~65		65~70			
N/mm ²	1000~1250		1250~											
Ø mm.	n	Vf	n	Vf	n	Vf	n	Vf	n	Vf	n	Vf		
0.5	50000	290	45000	220	40000	170	33000	110	26000	60	20000	40		
0.6	50000	370	45000	290	40000	220	30000	120	26000	80	20000	50		
0.8	50000	480	45000	350	30000	230	25000	140	19000	90	16000	60		
1	48000	600	38000	450	26000	280	21000	170	16000	110	13000	70		
2	35000	680	26000	550	18000	330	15000	200	12000	130	10000	90		
3	22000	680	18000	550	12000	330	10600	200	8000	130	7000	90		
4	18000	700	13500	560	9000	350	8000	210	6000	140	5000	95		
5	15900	800	12800	650	8300	400	6400	230	4800	140	4500	110		
6	13300	760	10600	620	6900	380	5300	220	4000	140	3700	105		
8	10000	750	8000	580	5200	350	4000	200	3000	130	2800	95		
10	8000	680	6400	550	4200	330	3200	190	2400	120	2200	90		
12	6700	680	5300	550	3500	330	2700	190	2000	120	1900	90		
S ap x ae	0.05DxD		0.05DxD		0.05DxD		0.05DxD		0.05DxD		0.02DxD			

↓ Z axis : Vf = -50%



UH211													
GROUP GRUPPO GRUPPE GROUPE	6 7		7 8		8		8		8		8		
Vc [m/min]	70~250		70~200		60~130		50~100		40~75		30~70		
HRC	30~40		40~50		50~55		55~60		60~65		65~70		
N/mm ²	1000~1250		1250~										
Ø mm.	n	Vf	n	Vf	n	Vf	n	Vf	n	Vf	n	Vf	
0.5	50000	200	45000	160	40000	120	33000	80	26000	45	20000	30	
0.6	50000	260	45000	200	40000	160	30000	90	19000	60	20000	35	
0.8	50000	330	45000	250	30000	160	25000	100	16000	65	16000	40	
1	48000	840	38000	650	26000	400	21000	250	23900	150	13000	100	
2	35000	950	26000	750	18000	480	15000	300	12000	180	10000	130	
3	22000	950	18000	750	12000	480	10600	300	8000	180	7000	130	
4	18000	1000	13500	800	9000	500	8000	300	6000	190	5000	135	
5	15900	1150	12800	920	8300	560	6400	320	4800	210	4500	150	
6	13300	1100	10600	880	6900	550	5300	320	4000	200	3700	145	
8	10000	1050	8000	820	5200	500	4000	290	3000	190	2800	135	
10	8000	950	6400	750	4200	460	3200	270	2400	175	2200	130	
12	6700	950	5300	750	3500	460	2700	270	2000	175	1900	130	
SM ap x ae	Dx0.03D		Dx0.03D		Dx0.03D		Dx0.03D		Dx0.03D		Dx0.03D		

UHCS4													
GROUP GRUPPO GRUPPE GROUPE	6 7		7 8		8		8		8		8		
Vc [m/min]	150~250		120~200		80~130		65~100		50~75		40~70		
HRC	30~40		40~50		50~55		55~60		60~65		65~70		
N/mm ²	1000~1250		1250~										
Ø mm.	n	Vf	n	Vf	n	Vf	n	Vf	n	Vf	n	Vf	
1	48000	1480	38000	1100	26000	710	21000	430	16000	270	13000	170	
2	33000	1750	26000	1250	17500	850	14500	520	11000	320	9500	230	
3	22000	1750	17000	1250	11500	850	9600	520	7500	320	6500	230	
4	17000	1800	13000	1300	9000	880	7500	540	6000	330	4800	240	
5	15900	2000	12500	1500	8300	1000	6400	580	4800	370	4500	270	
6	13300	1950	10600	1400	6900	950	5300	560	4000	350	3700	260	
8	10000	1900	8000	1350	5200	900	4000	520	3000	330	2800	240	
10	8000	1750	6400	1250	4200	850	3200	480	2400	310	2200	220	
12	6700	1750	5300	1250	3500	850	2700	480	2000	300	1900	220	
16	5000	1500	4000	1100	2600	730	2000	420	1500	270	1400	200	
20	4000	1300	3200	950	2100	650	1600	380	1200	250	1100	180	
SM ap x ae	Dx0.03D		Dx0.03D		Dx0.03D		Dx0.03D		Dx0.03D		Dx0.03D		



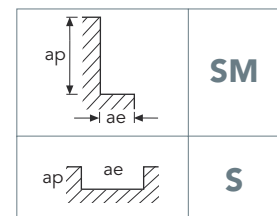
SM

UH411 - UH412													
GROUP GRUPPO GRUPPE GROUPE	6 7		7 8		8		8		8		8		
Vc [m/min]	150~250		120~200		80~130		65~100		50~75		40~70		
HRC	30~40		40~50		50~55		55~60		60~65		65~70		
N/mm ²	1000~1250		1250~										
Ø mm.	n	Vf	n	Vf	n	Vf	n	Vf	n	Vf	n	Vf	
1	48000	1200	38000	850	26000	550	21000	350	16000	220	13000	140	
2	34000	1400	26000	1000	18000	670	15000	420	12000	260	10000	190	
3	22000	1400	18000	1000	12000	670	10000	420	8000	260	7000	190	
4	17000	1450	14000	1050	9000	700	8000	430	6000	270	5000	190	
5	15900	1600	12800	1200	8300	800	6400	460	4800	300	4500	220	
6	13300	1550	10600	1150	6900	750	5300	450	4000	280	3700	210	
8	10000	1500	8000	1100	5200	720	4000	420	3000	270	2800	190	
10	8000	1400	6400	1000	4200	650	3200	390	2400	250	2200	180	
12	6700	1400	5300	1000	3500	650	2700	390	2000	240	1900	180	
16	5000	1200	4000	880	2600	580	2000	330	1500	220	1400	160	
20	4000	1050	3200	780	2100	520	1600	300	1200	200	1100	150	
SM ap x ae	Dx0.03D		Dx0.03D		Dx0.03D		Dx0.03D		Dx0.03D		Dx0.03D		

UH610 - UH611													
GROUP GRUPPO GRUPPE GROUPE	6 7		7 8		8		8		8		8		
Vc [m/min]	450~500		430~480		280~320		230~270		180~210		140~160		
HRC	30~40		40~50		50~55		55~60		60~65		65~70		
N/mm ²	1000~1250		1250~										
Ø mm.	n	Vf	n	Vf	n	Vf	n	Vf	n	Vf	n	Vf	
6	25000	5300	23500	4900	16000	4900	13500	3300	10500	2100	8000	1450	
8	20000	5500	19000	5000	12000	4600	10000	3100	8000	2000	6000	1400	
10	16000	4900	15500	4500	9500	4100	8000	2900	6400	1800	4800	1300	
12	13000	4500	12500	4100	8000	3800	6600	2500	5300	1600	4000	1150	
16	10000	4000	9700	3700	6000	3400	5000	2300	4000	1250	3000	850	
20	8000	3300	7800	3400	4800	3200	4000	2100	3200	1050	2400	700	
SM ap x ae	Dx0.05D		Dx0.05D		Dx0.05D		Dx0.03D		Dx0.03D		Dx0.03D		

MDC2203													
GROUP GRUPPO GRUPPE GROUPE	GRAPHITE												
Vc [m/min]	80~250												
HRC													
N/mm ²													
Ø mm.	n	fn											
0.6	40000	650											
0.8	40000	800											
1	40000	960											
1.2	40000	1200											
1.5	40000	1450											
2	40000	1600											
S ap x ae	0.5DxD												

↓ Z axis : Vf = -50%



Parameters

GROUPS / GRUPPI / GRUPPE / GROUPES	AISI	W-stoff	DIN	BS	SS
1 <450 N/mm² LOW CARBON AND FREE CUTTING STEEL ACCIAI A BASSO TENORE DI CARBONIO ED AUTOMATICI KOHLENSTOFFARME STÄHLE ACIERS BAS CARBONE ET POUR DÉCOLLETAGE	A570-36	1.0038	RSt 37-2	4360 40 C	1311
	A36	1.0044	St 44-2	4360 43 A	1411
	A573-81 65	1.0116	St 37-3	4360 40 B	1312
	1006	1.0201	St 36	-	1160
	A515-65	1.0345	H I	1501 161	1330
	1015	1.0401	C 15	080 M 15	1350
	1020	1.0402	C22	050 A 20	1450
	-	1.0425	H II	-	1432
	1213	1.0715	9 SMn 28	230 M 07	1912
	(12L13)	1.0718	9 SMnPb 28	-	1914
	-	1.0723	15 S 20	210 A 15	1922
	1140	1.0726	35 S 20	212 M 36	1957
	1146	1.0727	45 S 20	212 M 44	1973
	1215	1.0736	9 SMn 36	240 M 07	-
	-	1.0765	-	-	-
	1010	1.1121	Ck 10	045 M 10	1265
	-	1.1121	St 37-1	4360 40 A	1300
	1022	1.1133	GS-20Mn 5	120 M 19	1410
	1015	1.1141	Ck 15	080 M 15	1370
	1025	1.1158	Ck 25	070 M 26	1450
1018	-	-	-	-	
2 450-700 N/mm² MEDIUM CARBON STEEL ACCIAI A MEDIO TENORE DI CARBONIO MITTELGEKOHLTE FLUSSTÄHLE ACIERS MOYEN CARBONE	A662 C	1.0436	ASt 45	1501 224	2103
	1035	1.0501	C 35	060 A 35	1550
	1035	1.0501	C 35	080 M 36	1550
	1045	1.0503	C 45	080 M 46	1650
	1040	1.0511	C 40	080 M 40	-
	1055	1.0535	C 55	070 M 55	1655
	-	1.0570	St 52-3	4360 50 B	2132
	A738	1.0577	ASt 52	1501 224	2107
	1039	1.1157	40Mn4	150 M 36	-
	1035	1.1181	Ck 35	060 A 35	1572
	1035	1.1183	Cf 35	080 M 36	1572
	1045	1.1191	Ck 45	808 M 46	1672
	1055	1.1203	Ck55	070 M 55	-
	1050	1.1213	Cf 53	060 A 52	1674
	1045	1.1730	C45W	En 43 B	1672
	A572-60	1.8900	StE 380	4360 55 E	2145
	-	1.8905	StE 460	HP 6	-
3 550-850 N/mm² HIGH CARBON STEEL ACCIAI AD ELEVATO TENORE DI CARBONIO KOHLENSTOFFREICHE STÄHLE ACIERS HAUT CARBONE	1060	1.0601	C60	060 A 62	-
	1064	1.1221	Ck 60	060 A 62	1678
	1070	1.1231	Ck 67	070 A 72	1770
	1080	1.1248	Ck 75	060 A 78	1774
	1095	1.1274	Ck 101	060 A 96	1870
4 600-900 N/mm² LOW ALLOY STEEL ACCIAI DEBOLMENTE LEGATI NIEDRIGLEGIERTE STÄHLE ACIERS FAIBLEMENT ALLIÉS	9255	1.0904	55 Si 7	250 A 53	2090
	1335	1.1167	36 Mn 5	150 M 36	2120
	1330	1.1170	28 Mn 6	150 M 28	-
	P4	1.2341	X6 CrMo 4	-	-
	52100	1.3505	100 Cr 6	534 A 99	2258
	A204A	1.5415	15 Mo 3	1501 240	2912
	8620	1.6523	21 NiCrMo 2	805 M 20	2506
	8740	1.6546	40NiCrMo22	311-Type 7	-
	-	1.6587	17CrNiMo6	820 A 16	-
	5132	1.7033	34 Cr 4	530 A 32	-
	5140	1.7035	41 Cr 4	530 A 40	-
	5140	1.7035	41 Cr 4	530 A 40	-
	5140	1.7045	42 Cr 4	530 A 40	2245
	5115	1.7131	16 MnCr 5	(527 M 20)	2511
	5155	1.7176	55 Cr 3	527 A 60	2253
	4130	1.7218	25 CrMo 4	1717CDS 110	2225
	4135 (4137)	1.7220	35 CrMo 4	708 A 37	2234
	4142	1.7223	41 CrMo 4	708 M 40	2244
	4140	1.7225	42 CrMo 4	708 M 40	2244
	4137	1.7225	42 CrMo 4	708 M 40	2244
	A387 12-2	1.7337	16 CrMo 4 4	1501 620	2216
	-	1.7361	32CrMo12	722 M 24	2240
	A182 F-22	1.7380	10 CrMo9 10	1501 622	2218
	6150	1.8159	50 CrV 4	735 A 50	2230
	-	1.8515	31 CrMo 12	722 M 24	2240
	-	-	-	-	-

AFNOR	U.N.E. / I.H.A.	JIS	UNI	EN	ISO	TRADE MARK
E 24-2 Ne	-	SS 34	Fe 360B FN	-	-	-
NFA 35-501 E 28	-	-	-	-	-	-
E 24-U	-	-	Fe37-3	-	-	-
Fd 5	-	-	-	-	-	-
A 37 CP	F.1110	SGV 410	-	-	-	-
CC 12	F.111	S 15 C	080 M 15	-	-	-
CC20	F.112	-	C20C21	-	-	-
A 42 CP	A42 RCI	SGV 410	Fe 410 1KW	-	-	-
S 250	11SMn28	SUM 22	CF9SMn28	-	-	AVP
S 250 Pb	11SMnPb28	SUM 22 L	CF9SMnPb28	-	-	-
-	F.210.F	SUM 32	-	-	-	-
35 MF 6	F.210.G	-	-	-	-	-
45 MF 4	-	-	-	-	-	-
S 300	12 SMn 35	SUM 25	CF 9 SMn 36	-	-	AVZ
-	-	-	36SMnPb14	-	-	PR 80
XC 10	F.1510	S 10 C	C10	-	-	-
-	-	S 10 C	-	-	-	-
20 M 5	F.1515	SMnC 420	G22Mn3	-	-	-
XC 18	F.1511	S 15 Ck	080 M 15	-	-	-
XC 25	F.1120	S 25 C	C25	-	-	-
-	-	SS400	Fe 360 B	-	-	-
A 48 FP	-	-	-	-	-	-
CC 35	F.113	S 35 C	C35	-	-	-
CC 35	F.113	S 35 C	C35	-	-	-
CC45	F.114	S 45 C	C45	-	-	-
AF 60 C 40	F.114.A	-	C40	-	-	-
AF 70 C 55	F.115	S 55 C	C55	-	-	-
E 36-3	-	SM 490 A, B, C	Fe 510	-	-	-
A 52 FP	-	-	-	-	-	-
35 M 5	-	-	-	-	-	-
XC 38	F.1130	S 35 C	C35	-	-	-
XC 38 TS	-	S 35 C	C36	-	-	-
XC 45	F.1140	S 45 C	C45	-	-	-
XC 55	F.1203	S55 C	C50	-	-	-
XC 48 TS	-	S 50 C	C53	-	-	-
Y342	F.1140	-	-	-	-	-
-	-	-	FeE390KG	-	-	-
-	-	-	-	-	-	-
CC55	-	-	C60	-	-	-
XC 65	F.1150	S 58 C	C60	-	-	-
XC 68	F.5103	-	C70	-	-	-
XC 75	F.5107	-	-	-	-	-
XC 100	F.5117	SUP 4	-	-	-	-
55 S 7	56Si7	-	55Si8	-	-	-
40 M 5	36Mn5	SMn 438(H)	-	-	-	-
20 M 5	-	SCMn1	C28MN	-	-	-
-	-	-	-	-	-	-
100 C 6	F.131	SUJ 2	100Cr6	-	-	-
15 D 3	16 Mo3	STBA 12	16Mo3 KW	-	-	-
20 NCD 2	F.1522	SNCM 220(H)	20NiCrMo2	-	-	-
40 NCD 2	F.129	SNCM 240	40NiCrMo2(KB)	-	-	-
18 NCD 6	14NiCrMo13	-	-	-	-	-
32 C 4	35Cr4	SCr430(H)	34Cr4(KB)	-	-	-
42 C 2	42 Cr 4	SCr 440 (H)	40Cr4	-	-	-
42 C 2	42 Cr 4	SCr 440 (H)	41Cr4 KB	-	-	-
42 C 4 TS	F.1207	SCr 440	-	-	-	-
16 MC 5	F.1516	-	16MnCr5	-	-	-
55 C 3	-	SUP 9(A)	55Cr3	-	-	-
25 CD 4	F.1251/55Cr3	SCM 420 / SCM430	25CrMo4(KB)	-	-	-
35 CD 4	34 CrMo 4	SCM 432	34CrMo4KB	-	-	-
42 CD 4 TS	42 CrMo 4	SCM 440	41 CrMo 4	-	-	-
40 CD 4	F.1252	SCM 440	40CrMo4	-	-	-
42 CD 4	F.1252	SCM 440	42CrMo4	-	-	-
15 CD 4.5	-	-	12CrMo910	-	-	-
30 CD 12	F.124.A	-	30CrMo12	-	-	-
12 CD 9, 10	F.155 / TU.H	-	12CrMo9 10	-	-	-
50 CV 4	F.143	SUP 10	50CrV4	-	-	-
30 CD 12	F.1712	-	30CrMo12	-	-	-
-	-	-	-	-	-	Weldox 500

GROUPS / GRUPPI / GRUPPE / GROUPES	AISI	W-stoff	DIN	BS	SS
5 700-1000 N/mm ² ALLOY STEEL ACCIAI LEGATI LEGIERTE STÄHLE ACIERS ALLIÉS	W1	1.1545	C105W1	BW1A	1880
	L3	1.2067	100Cr6	BL 3	(2140)
	L2	1.2210	115 CrV 3	-	-
	P20 + S	1.2312	40 CrMnMoS 8 6	-	-
	-	1.2419	105WCr6	-	2140
	O1	1.2510	100 MnCrW 4	BO1	-
	S1	1.2542	45 WCrV 7	BS1	2710
	4340	1.6582	34 CrNiMo 6	817 M 40	2541
	5120	1.7147	20 MnCr 5	-	-
	-	-	-	-	-
6 900-1200 N/mm ² TOOL AND HIGH ALLOY STEEL ACCIAI DA UTENSILI E ALTO LEGATI WERKZEUG- UND HOCHLEGIERTE STÄHLE ACIERS POUR OUTILS ET FORTEMENT ALLIÉS	D3	1.2080	X210 Cr 12	BD3	2710
	P20	1.2311	40 CrMnMo 7	-	-
	H13	1.2344	X40CrMoV 5 1	BH13	2242
	A2	1.2363	X100 CrMoV 5 1	BA2	2260
	D2	1.2379	X155 CrMoV 12 1	BD2	2310
	D4 (D6)	1.2436	X210 CrW 12	BD6	2312
	H21	1.2581	X30WCrV9 3	BH21	-
	L6	1.2713	55NiCrMoV 6	-	-
	M 35	1.3243	S6/5/2/5	BM 35	2723
	M 2	1.3343	S6/5/2	BM2	2722
	M 7	1.3348	S2/9/2	-	2782
	HW 3	1.4718	X45CrSi 9 3	401 S 45	-
	-	1.7321	20 MoCr 4	-	2625
7 1200-1500 N/mm ² (35-45HRC) HIGH TENSILE STRENGTH STEEL ACCIAI AD ELEVATA RESISTENZA HOCHFESTE STÄHLE ACIERS HAUTE RÉSIDANCE	A128 (A)	1.3401	G-X120 Mn 12	BW10	2183
8 45-63HRC HARDENED STEEL ACCIAI TEMPRATI GEHÄRTETE STÄHLE ACIERS TREMPÉS	-	-	-	-	-
9 MARTENSITIC AND FERRITIC STAINLESS STEEL ACCIAI INOSSIDABILI MARTENSITICI E FERRITICI MARTENSITISCHE UND FERRITISCHE ROSTFREIE STÄHLE ACIERS INOXYDABLES MARTENSITIQUE ET FERRITIQUE	420 C	1.4034	X43Cr16	-	-
	440 B/1	1.4112	X90 Cr Mo V18	-	-
	-	1.2083	X42 Cr 13	-	2314
	403	1.4000	X6Cr13	403 S 17	2301
	(410S)	1.4001	X7 Cr 14	(403 S17)	2301
	405	1.4002	X6 CrAl 13	405 S 17	-
	416	1.4005	X12 CrS 13	416 S 21	2380
	410	1.4006	X 10 Cr 13	410 S21	2302
	430	1.4016	X6 Cr 17	430 S 17	2320
	420	1.4021	X20 Cr 13	420 S 37	2303
	420F	1.4028	X30 Cr 13	420 S 45	(2304)
	(420)	1.4031	X39Cr13	420 S 45	(2304)
	431	1.4057	X20 CrNi 17 2	431 S 29	2321
	430F	1.4104	X12 CrMoS 17	-	2383
	434	1.4113	X6 CrMo 17	434 S 17	2325
	430Ti	1.4510	X6 CrTi 17	-	-
	409	1.4512	X5 CrTi 12	409 S 17	-
10 AUSTENITIC STAINLESS STEEL (V2A) ACCIAI INOSSIDABILI AUSTENITICI (V2A) AUSTENITISCHE ROSTFREIE STÄHLE (V2A) ACIERS INOXYDABLES AUSTENITIQUE (V2A)	304	1.4301	X5 CrNi 18 9	304 S 15	2332
	305	1.4303	X5 CrNi 18 12	305 S 19	-
	303	1.4305	X12 CrNiS 18 8	303 S 21	2346
	304L	1.4306	X2 CrNiS 18 9	304 S 12	2352
	301	1.4310	X12 CrNi 17 7	-	2331
	304	1.4350	X5 CrNi 18 9	304 S 31	2332
	304	1.4350	X5 CrNi 18 9	304 S 31	2333
11 AUSTENITIC STAINLESS STEEL (V4A) ACCIAI INOSSIDABILI AUSTENITICI (V4A) AUSTENITISCHE ROSTFREIE STÄHLE (V4A) ACIERS INOXYDABLES AUSTENITIQUE (V4A)	304LN	1.4311	X2 CrNiN 18 10	304 S 62	2371
	316	1.4401	X5 CrNiMo 18 10	316 S 16	2347
	316L	1.4404	-	316 S 12/13/14/22/24	2348
	316LN	1.4429	X2 CrNiMoN 18 13	-	2375
	316L	1.4435	X2 CrNiMo 18 12	316 S 12/13/14/22/24	2353
	316	1.4436	-	316 S 33	2343
	317L	1.4438	X2 CrNiMo 18 16	317 S 12	2367
	329	1.4460	X3 CrNiMoN 27 5 2	-	2324
	321	1.4541	X10 CrNiTi 18 9	321 S 12	2337
	347	1.4550	X10 CrNiNb 18 9	347 S 17	2338
	316Ti	1.4571	X10 CrNiMoTi 18 10	320 S 17	2350
	309	1.4828	X15 CrNiSi 20 12	309 S 24	-
	330	1.4864	X12 NiCrSi 36 16	-	-

AFNOR	U.N.E. / I.H.A.	JIS	UNI	EN	ISO	TRADE MARK
Y 105	F.5118	SK 3	C100 KU	-	-	-
Y 100 C 6	F.520 L	-	-	-	-	-
-	-	-	-	-	-	-
40 CMD 8 +S	X210CrW12	-	-	-	-	Holdax
105W C 13	F.5233	SKS 31	107WCr5KU	-	-	-
90MnWCrV5	F.5220	(SK53)	95MnWCr5KU	-	-	-
55W20	F.5241	-	45WCrV8KU	-	-	-
35 NCD 6	F.1280	SNCM 447	35NiCrMo6KB	-	-	-
20 MC 5	-	-	-	-	-	-
-	-	-	-	-	-	Weldox 700
Z200 C 12	F.5212	SKD 1	X210Cr13KU	-	-	K 100
40 CMD 8	F.5263	-	-	-	-	-
Z 40 CDV 5	F.5318	SKD 61	X40CrMoV511KU	-	-	-
Z 100 CDV 5	F.5227	SKD 12	X100CrMoV51KU	-	-	-
Z 160 CDV 12	F.520.A	SKD11	X155CrVMo121KU	-	-	K 110
Z 200 CD 12	F.5213	SKD 2	X215CrW121KU	-	-	-
Z 30 WCV 9	F.526	SKD5	X30WCrV 9 3 KU	-	-	-
55 NCDV 7	F.520.S	SKT4	-	-	-	-
6-5-2-5	F.5613	SKH 55	HS6-5-5	-	-	-
Z 85 WDCV	F.5603	SKH 51	HS6-5-2-2	-	-	-
2 9 2	-	-	HS2-9-2	-	-	-
Z 45 CS 9	F.3220	SUH1	X45CrSi8	-	-	-
-	F.1523	-	30CrMo4	-	-	-
Z 120 M 12	F.8251	SCMnH 1	GX120Mn12	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	WRB WRA
Z 40 C 14	F.5263	SUS 420 J1	-	-	-	-
Z 6 C 13	F.3110	SUS 403	X6Cr13	-	-	-
Z 8 C 13	F.3110	SUS 410 S	X6Cr13	-	-	-
Z 8 CA 12	F.3111	SUS 405	X6 CrAl 13	-	-	-
Z 11 CF 13	F.3411	SUS 416	X12CrS13	-	-	-
Z 10 C 14	F.3401	SUS 410	X12Cr13	-	-	-
Z 8 C 17	F.3113	SUS 430	X8Cr17	-	-	-
Z 20 C 13	F.3402	SUS 420 J1	X20Cr13	-	-	-
Z 30 C 13	F.3403	SUS 420 J2	X30Cr13	-	-	-
Z 40 C 14	F.3404	(SUS 420 J1)	-	-	-	-
Z 15 CNi 16.02	F.3427	SUS 431	X16CrNi16	-	-	-
Z 10 CF 17	F.3117	SUS 430 F	X10CrS17	-	-	-
Z 8 CD 17.01	-	SUS 434	X8CrMo17	-	-	-
Z 4 CT 17	-	SUS 430 LX	X6CrTi17	-	-	-
Z 6 CT 12	-	SUH 409	X6CrTi12	-	-	-
Z 6 CN 18.09	F.3551	SUS 304	X5CrNi18 10	-	-	-
Z 8 CN 18.12	-	SUS 305	X8CrNi19 10	-	-	-
Z 10 CNF 18.09	F.3508	SUS 303	X10CrNiS 18 09	-	-	-
Z 2 CN 18.10	F.3503	SUS 304L	X2CrNi18 11	-	-	-
Z 12 CN 17.07	F.3517	SUS 301	X12CrNi17 07	-	-	-
Z 6 CN 18.09	F.3551	SUS 304	X5CrNi18 10	-	-	-
Z 6 CN 18.09	F.3551	SUS 304	X5CrNi18 10	-	-	-
Z 2 CN 18.10	-	SUS 304 LN	-	-	-	-
Z 6 CND 17.11	F.3543	SUS 316	X5CrNiMo17 12	-	-	-
Z 2 CND 17.13	-	SUS316L	X2CrNiMo17 12	-	-	-
Z 2 CND 17.13	-	SUS 316 LN	-	-	-	-
Z 2 CND 17.13	-	SUS316L	X2CrNiMo17 12	-	-	-
Z 6 CND18-12-03	-	-	X8CrNiMo 17 13	-	-	-
Z 2 CND 19.15	-	SUS 317 L	X2CrNiMo18 16	-	-	-
Z5 CND 27.05.Az	F.3309	SUS 329 J1	-	-	-	-
Z 6 CND 18.10	F.3553	SUS 321	X6CrNiTi18 11	-	-	-
Z 6 CNNb 18.10	F.3552	SUS 347	X6CrNiNb18 11	-	-	-
Z 6 CNDT 17.12	F.3535	-	X6CrNiMoTi 17 12	-	-	-
Z 15 CNS 20.12	-	SUH 309	X16 CrNi 24 14	-	-	-
Z 12 NCS 35.16	-	SUH 330	-	-	-	-

GROUPS / GRUPPI / GRUPPE / GROUPES	AISI	W-stoff	DIN	BS	SS
12 DUPLEX	S32750	1.4410	X 2 CrNiMoN 25 7 4	-	2328
	S31500	1.4417	X 2 CrNiMoSi 19 5	-	2376
	S31803	1.4462	X 2 CrNiMoN 22 5 3	-	2377
	S32760	1.4501	X 3 CrNiMoN 25 7	-	-
	630	1.4542	X5CrNiCNb16-4	-	-
	A564/630	-	-	-	-
13 GREY CAST IRON GHISA GRIGIA GRAUGUSS FONTE GRISE	A48-20B	0.6010	GG-10	Grade 100	0110-00
	A48-25B	0.6015	GG-15	Grade 150	0115-00
	A48-30B	0.6020	GG-20	Grade 200	0120-00
	A48-40B	0.6025	GG-25	Grade 250	0125-00
	A48-45B	0.6030	GG-30	Grade 300	0130-00
	A48-50B	0.6035	GG-35	Grade 350	0135-00
	A48-60B	0.6040	GG-40	Grade 400	0140-00
	32510	-	GTS-35	B340/12	0815-00
	A220-40010	0.8145	GTS-45	P440/7	0852-00
	A220-50005	0.8155	GTS-55-04	P510/4	0854-00
	A220-70003	0.8165	GTS-65-02	P570/3	0856-00
	A220-70003	-	GTS-65	P570/3	0858
A220-80002	0.8170	GTS-70-02	P690/2	0862-00	
14 NODULAR CAST IRON GHISA SFEROIDALE SPHÄROGUSS FONTE NODULAIRE	-	0.7033	GGG-35.3	350/22L40	0717-15
	60/40/18	0.7040	GGG-40	420/12	0717-02
	(60/40/18)	0.7043	GGG-40.3	370/17	0717-12
	65/45/12	0.7050	GGG-50	500/7	0727-02
	80/55/06	0.7060	GGG-60	600/3	0727-03
	100/70/03	0.7070	GGG-70	700/2	0737-01
	120/90/02	0.7080	GGG-80	800/2	-
15 WROUGHT (ROLLED) ALUMINIUM ALLUMINIO LAMINATO GEWALZTES ALUMINIUM ALUMINIUM LAMINÉ	1200	3.0205	Al 99	1C	4010
	1050	3.0255	Al 99,5	1B	4007
	1350	3.0257	E-Al	E1E	-
	1070	3.0275	Al 99,7	-	-
	1080	3.0285	Al 99,8	1A	-
	1099	3.0385	AL99,98R	1	-
	3105	3.0505	AlMn0,5Mg0,5	N31	-
	3103	3.0515	AlMn1	N3	4054
	3003	3.0517	AlMn	N3	-
	3005	3.0525	AlMn1Mg0,5	-	-
	3004	3.0526	AlMn1Mg1	-	-
	6012	3.0615	AlMgSiPb	-	-
	2014	3.1255	AlCuSiMn	H15	4338
	2117	3.1305	AlCuMg0,5	L86	-
	2017	3.1325	AlCuMg 1	(H14)	-
	2024	3.1355	AlCuMg 2	DTD5090	-
	2030	3.1645	AlCuMgPb	-	4335
	2011	3.1655	AlCuBiPb	FC1	4355
	6082	3.2315	AlMgSi 1	H30	4212
	6060	3.3206	AlMgSi0,5	H9	4103/4104
	6005	3.3210	AlMgSi0,7	-	-
	6061	3.3211	AlMg1SiCu	H20	-
	5005	3.3315	AlMg1	N41	4106
	5050	3.3316	AlMg1,5	-	-
	5052	3.3523	AlMg2,5	-	4120
	5251	3.3525	AlMg2Mn0,3	N4	-
	5154	3.3535	AlMg3	N5/N56	-
	5454	3.3537	AlMg2,7Mn	N51	-
	5086	3.3545	AlMg4Mn	-	-
	5083	3.3547	AlMg4,5Mn	N8	4140
	5056	3.3555	AlMg5	N6	-
7020	3.4335	AlZn4,5Mg1	H17	4425	
7075	3.4365	AlZnMgCu1,5	2L95	-	
3304	-	AlMgMn	-	-	
7010	-	AlZn6MgCu	DTD5130	-	
16 DIE-CAST ALUMINIUM (SI<12%) ALLUMINIO PRESSOFUSO (SI<12%) AL-GUSSLEGIERUNGEN (SI<12%) ALUMINIUM MOULÉ SOUS PRESSION (SI<12%)	A356	3.2371	G-AlSi7Mg	LM25	4244
	-	3.2373	G-AlSi9Mg	-	-
	A360	3.2381	G-AlSi10Mg	LM9	4253
	A413.2	3.2581	G-AlSi12	LM6	4261
	A413.0	3.2582	GD-AlSi12	-	4247
	A413.1	3.2583	G-AlSi12(Cu)	LM20	4260
	-	3.3561	G-AlMg5	LM5	4252
	-	3.5101	G-MgZn4SE1Zr1	MAG5	-
	-	3.5103	MgSE3Zn2Zr1	MAG6	-
	-	3.5106	G-MgAg3SE2Zr1	MAG 12	-

AFNOR	U.N.E. / I.H.A.	JIS	UNI	EN	ISO	TRADE MARK
Z3 CND 25.06 Az	-	-	-	-	-	-
Z2 CND 18.05.03	-	-	-	-	-	-
Z 3 CND 22.05 (Az)	-	-	-	-	-	-
Z 3 CND 25.06 Az	-	-	-	-	-	ZERON 100
-	-	-	-	-	-	-
-	-	-	-	-	-	17/4 PH
-	-	FC 100	G 10	-	-	-
Ft 15 D	FG 15	FC 150	G 15	-	-	-
Ft 20 D	FG 20	FC 200	G 20	-	-	-
Ft 25 D	FG 25	FC 250	G 25	-	-	-
Ft 30 D	FG 30	FC 300	G 30	-	-	-
Ft 35 D	FG 35	FC 350	G 35	-	-	-
Ft 40 D	-	FC 40	-	-	-	-
MN 35-10	-	FCMW 330	-	-	-	-
MN 450	-	FCMP 440/490	GMN 45	-	-	-
MP 50-5	-	FCMP 490	GMN 55	-	-	-
MN 650-3	-	FCMP 590	GMN 65	-	-	-
MN 60-3	-	FCMP 540	-	-	-	-
MN 700-2	-	FCMP 690	GMN 70	-	-	-
FGS 370/17	-	-	-	-	-	-
FGS 400/12	FGE 38-17	FCD 400	GS 400-12	-	-	-
FGS 370/17	-	-	GSO 42-12	-	-	-
FGS 500/7	FGE 50-7	FCD 500	GS 500-7	-	-	-
FGS 600/3	FGE 60-2	FCD 600	GS 600-3	-	-	-
FGS 700/2	FGS 70-2	FCD 700	GS 700-2	-	-	-
FGS 800/2	-	-	GS-800/2	-	-	-
A4	L-3001	A1x3	9001/1	-	-	-
A5	L-3051	A1x1	9001/2	-	-	-
-	-	-	-	-	-	-
A7	-	-	-	-	-	-
A8	-	-	-	-	-	-
A99	-	-	-	-	-	-
-	-	-	-	-	-	-
-	L-3811	-	9003/3	-	-	-
AM1	L-3810	A2x3	9003/1	-	-	Aluman 100
AMG0,5	-	-	9003/4	-	-	-
AM1G	L-3820	-	9003/2	-	-	-
ASGPB	-	-	-	-	-	-
AU4SG	L-3130	A3x1	9002/3	-	-	Avional 660
AU2G	-	-	9002/1	-	-	Avional 050
AU4G	L-3120	A3x2	9002/2	-	-	Avional 100
AU4G1	L-3140	A3x4	9002/4	-	-	Avional 150
AU4Pb	L-3121	-	9002/8	-	-	-
AU5PbBi	L-3192	-	9002/5	-	-	Recidal 11
ASGM 0,7	L-3451	-	9006/4	-	-	Anticorodal 100
AGS	L-3441	A2x5	9006/1	-	-	Anticorodal 063
ASG0,5	L-3454	A6NO1	9006/6	-	-	-
AGSUC	L-3420	A2x4	9006/2	-	-	Anticorodal 061
AG0,6	L-3350	A2x8	9005/1	-	-	Peraluman 080
-	-	-	9005/7	-	-	Peraluman 150
AG2,5C	L-3360	A2x1	9005/2	-	-	Peraluman 250
AG2M	L-3361	-	-	-	-	-
AG3	-	-	9005/8	-	-	Peraluman 350
AG2,5MC	L-3391	A2x9	9005/3	-	-	-
AG4MC	L-3322	-	9005/4	-	-	-
AG4,5MC	L-3321	A2x7	9005/5	-	-	Peraluman 440
A-G5	-	-	-	-	-	Peraluman 500
AZ5G	L-3741	-	9007/1	-	-	-
AZ5GU	L-3710	A34x6	9007/2	-	-	Ergal 55
AM1G	-	-	-	-	-	-
-	-	-	9007/4	-	-	-
A-S7G	-	AC4C	-	42000	AlSi7Mg	-
-	-	-	-	-	-	-
A-S10G	-	-	-	43100	Al Si 10 Mg	-
A-S12U	-	AC3A	-	44100	Al Si 12	-
-	-	-	-	-	-	-
A-S12	-	-	-	47000	Al Si 12 (Cu)	-
A-SU12	-	AC4A	-	51300	ALMg 6	-
G-Z4TR	-	-	-	-	-	-
G-TR3Z2	-	-	-	-	-	-
G-Ag22,5	-	-	-	-	-	-

GROUPS / GRUPPI / GRUPPE / GROUPES	AISI	W-stoff	DIN	BS	SS
16 DIE-CAST ALUMINIUM (SI<12%) ALLUMINIO PRESSOFUSO (SI<12%) AL-GUSSLEGIERUNGEN (SI<12%) ALUMINIUM MOULÉ SOUS PRESSION (SI<12%)	-	3.5812	G-MgAl8Zn1	MAG1	-
	-	3.5912	G-MgAl9Zn1	MAG7	-
	355.1	-	G-AISi5	LM16	-
	A380	-	G-AISi8Cu3	LM24	4250
	319	-	G-AISi6Cu4	LM21	-
	319.2	-	G-AISi6Cu4	LM22	-
17 COPPER RAME KUPFER CUIVRE	C10200	2.0040	OF Cu	C103	-
	C11000	2.0060	E-Cu57	C101	-
	-	2.0065	E-Cu58	-	-
	C10300	2.0070	SE Cu	-	-
	C12200	2.0090	SF Cu	C106	-
	C12500	-	Cu-FRTP	C104	-
	C70320	2.0857	-	-	-
	C14200	2.1202	SB Cu	C107	-
	-	2.1356	Cu Mn 3	-	-
	-	2.1522	Cu Si2 Mn	-	-
	C16200	-	-	C108	-
	C18200	-	-	CC101	-
	C191010	-	-	-	-
	C70250	-	-	CC102	-
	C17200	-	-	CB101	-
	C17300	-	-	-	-
	C17510	-	-	-	-
	C17500	-	-	C112	-
	C15000	-	-	-	-
	C65100	-	-	-	-
	C65500	-	-	CS101	-
	C14500	-	-	C109	-
	C14700	-	-	C111	-
C18700	-	-	-	-	
18 BRASS OTTONE MESSING LAITON	C21000	2.0220	CuZn5	CZ125	-
	C22000	2.0230	CuZn10	Cz101	-
	C23000	2.0240	CuZn15	CZ102	-
	C24000	2.0250	CuZn20	CZ103	-
	C25600	-	CuZn28	-	-
	C26000	2.0265	CuZn30	CZ106	-
	C26800	2.0280	CuZn33	-	-
	C27200	-	CuZn36	-	-
	C27200	2.0321	CuZn37	CZ108	-
	C27000	2.0335	CuZn36	CZ107	-
	C28000	2.0360	CuZn40	CZ109	-
19 DIE-CAST BRASS OTTONE DA FUSIONE GUSSMESSING LAITON MOULÉ SOUS PRESSION	C33500	-	CuZn37Pb0.5	-	-
	C34000	-	CuZn35Pb1	CZ118	-
	C34500	2.0331	CuZn36Pb1,5	CZ119	-
	C34000	2.0331	CuZn36Pb1,5	CZ119	-
	C35300	2.0371	CuZn38Pb1,5	CZ128	-
	C36500	2.0372	CuZn39Pb0,5	CZ123	-
	C36000	2.0375	CuZn36Pb3	CZ124	-
	C37700	2.0380	CuZn39Pb2	CZ 131 / (CZ128)	-
	C38500	2.0401	CuZn39Pb3	CZ121	-
	C38000	2.0402	CuZn40Pb2	CZ122	-
	-	2.0410	CuZn44Pb2	CZ130	-
	C68700	2.0460	CuZn20Al2	CZ110	-
	C44300	2.0470	CuZn28Sn1	CZ111	-
	-	2.0530	CuZn38Sn1	-	-
	-	2.0550	CuZn40Al2	-	-
	-	2.0561	CuZn40Al1	-	-
	-	2.0572	CuZn40Mn2	CZ136	-
C61400	2.0932	CuAl8Fe3	-	-	
C63000	2.0966	CuAl10Ni5Fe4	CA104	-	
20 BRONZE BRONZO BRONZE BRONZE	C50700	2.1010	CuSn2	-	-
	C51100	2.1016	CuSn4	PB101	-
	C51000	-	CuSn5	PB102	-
	C51900	2.1020	CuSn6	PB103	-
	C52100	2.1030	CuSn8	PB104	-
	-	-	CuSn10	-	-
	-	-	CUSn11	-	-
21 AMPCO	-	-	-	-	-
	-	-	-	-	-
	-	-	-	-	-

AFNOR	U.N.E. / I.H.A.	JIS	UNI	EN	ISO	TRADE MARK
G-A9	-	-	-	-	-	-
G-A9Z1	-	-	-	-	-	-
AS4GU	-	-	-	45300	ALSi5Cu 1	-
A-S9U3	-	AC4B	-	46500	Al Si9 Cu3 (Fe) (Zn)	-
A-S5UZ	-	AC2A	-	45000	Al Si 6 Cu 4	-
A-S5U	-	AC2A	-	45400	Al Si 5 Cu 3	-
Cu/c1	-	C1020	-	CW008A	Cu-OF	-
Cu/a1	-	C1100	E-Cu57	CW004A	Cu-ETP	-
-	-	-	-	-	-	-
-	-	-	-	CW021A	-	-
Cu/b	-	C1220	-	CW024A	Cu-DHP	-
Cu/A3	-	-	-	CR006A	-	-
-	-	-	-	CW112C	CuNi3Si	-
-	-	-	-	-	Cu-AsP	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	CuCd1	-
-	-	-	-	CW105C	CuCr1	-
-	-	-	-	CW109C	CuNi1Si	-
-	-	-	-	CW111C	CuNi2Si	-
-	-	-	-	CW101C	CuBe2	-
-	-	-	-	CW102C	CuBe2Pb	-
-	-	-	-	CW110C	CuNi2Be	-
-	-	-	-	CW104C	CuCo2Be	-
-	-	-	-	CW120C	CuZr	-
-	-	-	-	CW115C	CuSi2Mn	-
-	-	-	-	CW116C	CuSi3Mn1	-
-	-	-	-	CW118C	CuTeP	-
-	-	-	-	CW114C	CuSP	-
-	-	-	-	CW113C	CuPb1P	-
-	-	C2100	-	CW500L	-	-
-	-	C2200	-	CW501L	-	-
-	-	C2300	-	CW502L	-	-
-	-	C2400	-	CW503L	-	-
-	-	-	CuZn28	-	-	-
-	-	C2600	-	CW505L	-	-
-	-	C2680	-	CW506L	-	-
-	-	-	-	-	-	-
-	-	C2700	-	CW508L	-	-
-	-	C2700	-	CW507L	-	-
-	-	C2800	-	CW509L	-	-
-	-	-	-	-	-	-
-	-	C3501	-	-	-	-
-	-	-	-	CW601N	-	-
-	-	C3501	-	CW600N	-	-
-	-	-	-	-	-	-
-	-	-	-	CW610N	-	-
-	-	C3601	-	CW603N	-	-
-	-	C3771	-	CW612N	-	-
-	-	C3603	-	CW614N	-	-
-	-	-	-	CW617N	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	CW723R	-	-
-	-	-	-	CW303G	-	-
-	-	-	-	CW307G	-	-
-	-	-	-	-	-	-
-	-	C5111	-	CW450K	-	-
-	-	C5102	-	CW451K	-	-
-	-	C5191	-	CW452K	-	-
-	-	C5212	-	CW453K	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	AMPCO 18
-	-	-	-	-	-	AMPCO 21
-	-	-	-	-	-	AMPCO 22

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GROUPS / GRUPPI / GRUPE / GROUPES	AISI	W-stoff	DIN	BS	SS
22 <30HRC NICKEL-BASE ALLOYS LEGHE DI NICKEL NICKELLEGIERUNGEN ALLIAGES DE NICKEL	N08800	1.4876	X10NiCrAlTi32-21	3075(NA15)	-
	N06075	2.4630	NiCr20Ti	HR5,203-4	-
	N07080	2.4631	NiCr20TiAl	HR401,601	-
	N06617	2.4663	-	-	-
	N06002	2.4665	NiCr22FeMo	HR6,204	-
	N06600	2.4816	-	-	-
	N06601	2.4851	NiCr23Fe	-	-
	N06625	2.4856	NiCr22Mo9Nb	-	-
	N08825	2.4858	NiCr21Mo	3072-76	-
23 >30HRC NICKEL-BASE ALLOYS LEGHE DI NICKEL NICKELLEGIERUNGEN ALLIAGES DE NICKEL	N10665	2.4617	NiMo28	-	-
	N10002	-	NiCr17Mo17FeW	-	-
	N10003	-	-	-	-
	-	2.4642	-	-	-
	-	-	NiCo29Cr15MOAlTi	-	-
	N07718	2.4668	NiCr19Fe19NbMo	Hr8	-
	-	-	NiCr16FeTi	-	-
	N07725	-	-	-	-
	N07750	2.4669	NiCr 15 Fe 7 TiAl	HR505	-
N07751	2.4694	-	-	-	
24 HARDOX 400, STAVAX, RAMAX	-	-	-	-	-
	-	1.2365	-	-	-
	-	-	-	-	-
25 HARDOX 500	-	-	-	-	-
	-	-	-	-	-
26 TITANIUM ALLOYS LEGHE DI TITANIO TITAN-LEGIERUNGEN ALLIAGES DE TITANE	-	3.7025	Ti 99,8	-	-
	-	3.7035	Ti 99,7a	-	-
	-	3.7055	Ti 99,6	-	-
	-	3.7065	Ti 99,5	-	-
	-	3.7115	TiAl5Sn2.5	TA14/17	-
	-	3.7164	TiAl6V4	TA10-13/TA29	-
	-	3.7175	TiAl6V6Sn2	-	-
-	3.7185	TiAl4Mo4Sn2	-	-	

AFNOR	U.N.E. / I.H.A.	JIS	UNI	EN	ISO	TRADE MARK
-	-	-	-	-	-	Incoloy 800
NC20T	-	-	-	-	-	Nimonic 75
NC20TA	-	-	-	-	-	Nimonic 80A
-	-	-	-	-	-	Inconel 617
NC22FeD	-	-	-	-	-	Hastelloy X
NC15Fe	-	-	-	-	-	Inconel 600
-	-	-	-	-	-	Inconel 601
NC22DNb	-	-	-	-	-	Inconel 625
NC21FeDU	-	-	-	-	-	Incoloy 825
-	-	-	-	-	-	Hastelloy B
NC17DWY	-	-	-	-	-	Hastelloy C
-	-	-	-	-	-	Hastelloy N
-	-	-	-	-	-	Inconel 690
NK27CADT	-	-	-	-	-	Inconel 700
Nc19FeNb	-	-	-	-	-	Inconel 718
Nc16FeTi	-	-	-	-	-	Inconel 722
-	-	-	-	-	-	Inconel 725
NC19FeNB	-	-	-	-	-	Inconel 750-X
-	-	-	-	-	-	Inconel 751
-	-	-	-	-	-	Hardox 400
-	-	-	-	-	-	Ramax
-	-	-	-	-	-	Stavax
-	-	-	-	-	-	Hardox 500
TA 1	-	-	-	-	-	-
TA 2-5	-	-	-	-	-	-
-	-	-	-	-	-	-
TA 6	-	-	-	-	-	-
-A6V	-	-	-	-	-	-
T-A5E	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

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