

EVO[®] ED "35 SERIES"



| Solid Carbide Drills
| Punta in Metallo Duro Integrale

... THE WAY TO THE FUTURE!

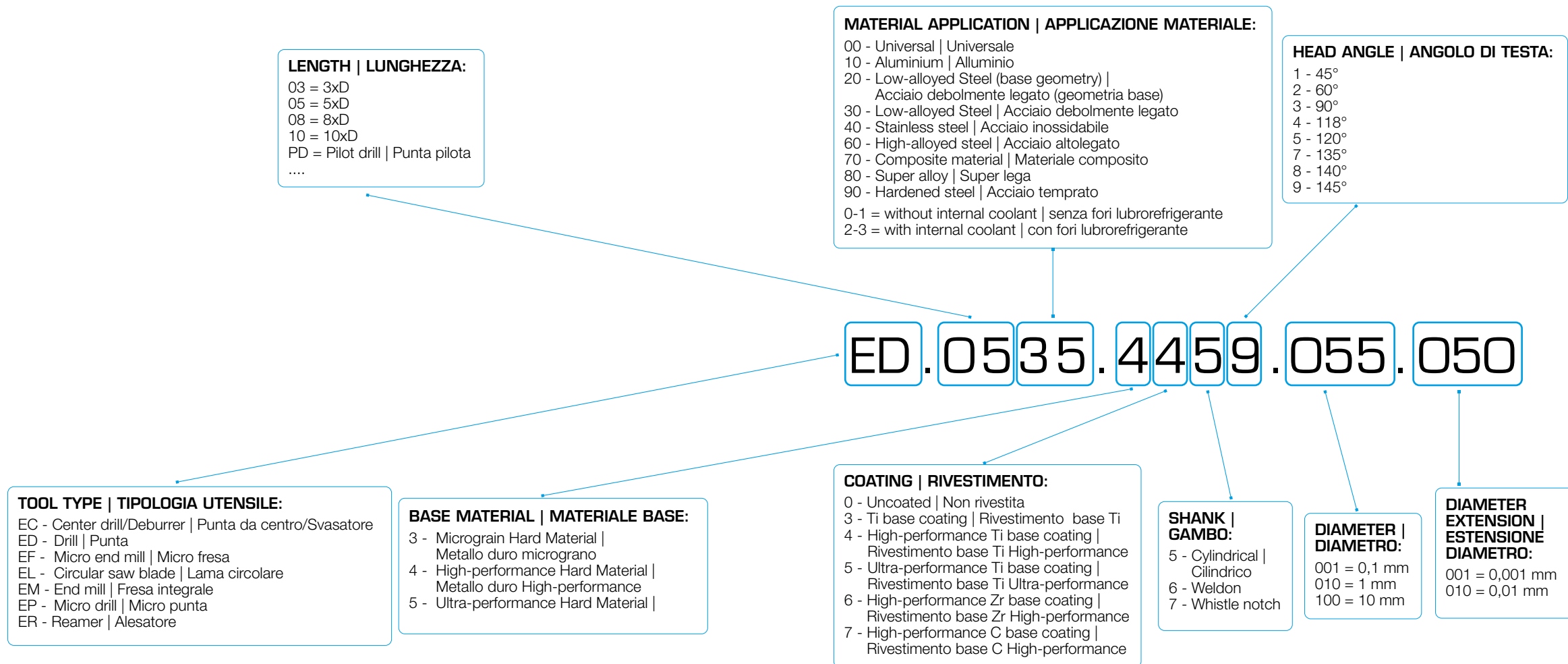


EVO®



| **Solid Carbide Drills**
| **Punte in Metallo Duro Integrale**





EVO[®]



...THE WAY TO THE FUTURE!

EVO International Group Srl

Via Bernocchi, 7

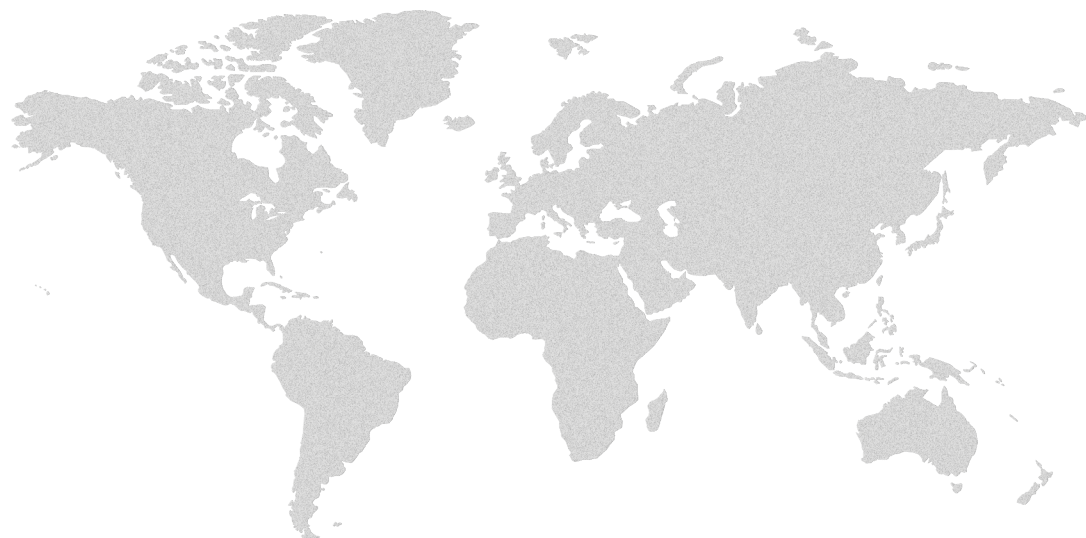
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3xD

ED 0335

	$\frac{\emptyset}{3-20}$		HFC		h7		$\alpha=145^\circ$		30°	P	M	S	K	H	N	6
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5xD

ED 0535

	$\frac{\emptyset}{3-20}$		HFC		h7		$\alpha=145^\circ$		30°	P	M	S	K	H	N	10
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8xD

ED 0835

	$\frac{\emptyset}{3-20}$		HFC		h7		$\alpha=145^\circ$		30°	P	M	S	K	H	N	16
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12xD

ED 1235

	$\frac{\emptyset}{3-16}$		HFC		h7		$\alpha=145^\circ$		30°	P	M	S	K	H	N	20
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Pilot Drill

ED PD35

	$\frac{\emptyset}{3-16}$		PILOT DRILL		m7		$\alpha=145^\circ$		30°	P	M	S	K	H	N	22
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15xD

ED 1535

	$\frac{\emptyset}{3-16}$		HFC		h7		$\alpha=145^\circ$		30°	P	M	S	K	H	N	24
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20xD

ED 2035

	$\frac{\emptyset}{3-16}$		HFC		h7		$\alpha=145^\circ$		30°	P	M	S	K	H	N	26
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25xD

ED 2535

	$\frac{\emptyset}{3-14}$		HFC		h7		$\alpha=145^\circ$		30°	P	M	S	K	H	N	28
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30xD

ED 3035

	$\frac{\emptyset}{3-12}$		HFC		h7		$\alpha=145^\circ$		30°	P	M	S	K	H	N	30
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40xD

ED 4035

	$\frac{\emptyset}{3-9}$		HFC		e7		$\alpha=145^\circ$		30°	P	M	S	K	H	N	32
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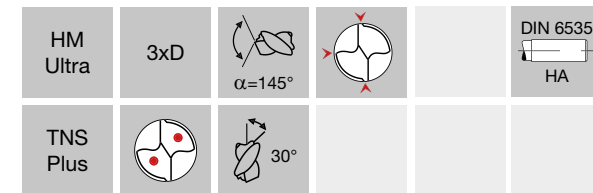
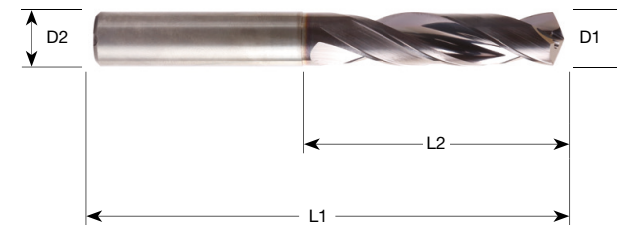
mat.	ø mm	L max mm	Vt m/min	f mm	n rpm	Vf mm/min	Q cm³/min	T sec
P 1.1 Construction steel Acciaio da costruzione	3,0	15,5	180	0,100	12000*	1200	8,5	1,2
	3,5	14,8	180	0,110	12000*	1320	12,7	1,0
	4,0	18,0	180	0,120	12000*	1440	18,1	1,3
	4,5	17,3	180	0,130	12000*	1560	24,8	1,1
	5,0	20,5	180	0,150	11465	1720	33,8	0,7
	6,0	19,0	180	0,160	9554	1529	43,2	0,7
	7,0	23,5	180	0,180	8189	1474	56,7	1,0
≤ 850 N/mm²	8,0	29,0	180	0,200	7166	1433	72,0	1,2
P 2.2 Heat treatable steel Acciaio da bonifica	3,0	15,5	150	0,060	12000*	720	5,1	2,0
	3,5	14,8	150	0,080	12000*	960	9,2	1,4
	4,0	18,0	150	0,090	11943	1075	13,5	1,0
	4,5	17,3	150	0,100	10616	1062	16,9	1,0
	5,0	20,5	150	0,110	9554	1051	20,6	1,2
	6,0	19,0	150	0,130	7962	1035	29,3	1,1
	7,0	23,5	150	0,150	6824	1024	39,4	1,4
≤ 1100 N/mm²	8,0	29,0	150	0,200	5971	1194	60,0	1,5
P 2.3 Heat treatable steel Acciaio da bonifica	3,0	15,5	120	0,060	12000*	720	5,1	2,0
	3,5	14,8	120	0,080	10919	874	8,4	1,0
	4,0	18,0	120	0,090	9554	860	10,8	1,3
	4,5	17,3	120	0,100	8493	849	13,5	1,2
	5,0	20,5	120	0,110	7643	841	16,5	1,5
	6,0	19,0	120	0,130	6369	828	23,4	1,4
	7,0	23,5	120	0,150	5460	819	31,5	1,7
≤ 1300 N/mm²	8,0	29,0	120	0,200	4777	955	48,0	1,8
P 4.2 Cold work tool steel Acciaio da utensili per lavorazioni a freddo 12% Cr	3,0	15,5	100	0,060	10616	637	4,5	1,5
	3,5	14,8	100	0,080	9099	728	7,0	1,2
	4,0	18,0	100	0,090	7962	717	9,0	1,5
	4,5	17,3	100	0,100	7077	708	11,3	1,5
	5,0	20,5	100	0,110	6369	701	13,8	1,8
	6,0	19,0	100	0,130	5308	690	19,5	1,7
	7,0	23,5	100	0,150	4550	682	26,3	2,1
12% Cr	8,0	29,0	100	0,200	3981	796	40,0	2,2
M 2.1 Stainless steel Acciaio inossidabile Aust.	3,0	15,5	100	0,050	10616	531	3,8	1,8
	3,5	14,8	100	0,060	9099	546	5,3	1,6
	4,0	18,0	100	0,070	7962	557	7,0	1,9
	4,5	17,3	100	0,080	7077	566	9,0	1,8
	5,0	20,5	100	0,100	6369	637	12,5	1,9
	6,0	19,0	100	0,120	5308	637	18,0	1,8
	7,0	23,5	100	0,150	4550	682	26,3	2,1
Aust.	8,0	29,0	100	0,180	3981	717	36,0	2,4
M 1.2 Stainless steel Acciaio inossidabile Mart.	3,0	15,5	80	0,050	8493	425	3,0	2,2
	3,5	14,8	80	0,060	7279	437	4,2	2,0
	4,0	18,0	80	0,070	6369	446	5,6	2,4
	4,5	17,3	80	0,080	5662	453	7,2	2,3
	5,0	20,5	80	0,100	5096	510	10,0	2,4
	6,0	19,0	80	0,120	4246	510	14,4	2,2
	7,0	23,5	80	0,150	3640	546	21,0	2,6
Mart.	8,0	29,0	80	0,180	3185	573	28,8	3,0
K 1.2 Cast Iron Ghisa	3,0	15,5	180	0,100	12000*	1200	8,5	1,2
	3,5	14,8	180	0,110	12000*	1320	12,7	1,0
	4,0	18,0	180	0,120	12000*	1440	18,1	1,3
	4,5	17,3	180	0,130	12000*	1560	24,8	1,1
	5,0	20,5	180	0,150	11465	1720	33,8	0,7
	6,0	19,0	180	0,160	9554	1529	43,2	0,7
	7,0	23,5	180	0,180	8189	1474	56,7	1,0
	8,0	29,0	180	0,200	7166	1433	72,0	1,2

Through hole
Foro passante

Vf(c)= Vf - 30%

*rpm limit recommended
limitazione di giri consigliata

Ø 3,0 - 7,5



art.	D1 h7 mm	D2 h6 mm	L1 mm	L2 mm
ED . 0335 . 4459 . 030	3,0	6	62	20
ED . 0335 . 4459 . 032	3,2	6	62	20
ED . 0335 . 4459 . 033	3,3	6	62	20
ED . 0335 . 4459 . 034	3,4	6	62	20
ED . 0335 . 4459 . 035	3,5	6	62	20
ED . 0335 . 4459 . 037	3,7	6	62	20
ED . 0335 . 4459 . 038	3,8	6	66	24
ED . 0335 . 4459 . 039	3,9	6	66	24
ED . 0335 . 4459 . 040	4,0	6	66	24
ED . 0335 . 4459 . 041	4,1	6	66	24
ED . 0335 . 4459 . 042	4,2	6	66	24
ED . 0335 . 4459 . 043	4,3	6	66	24
ED . 0335 . 4459 . 045	4,5	6	66	24
ED . 0335 . 4459 . 046	4,6	6	66	24
ED . 0335 . 4459 . 046 . 050	4,65	6	66	24
ED . 0335 . 4459 . 047	4,7	6	66	24
ED . 0335 . 4459 . 049	4,9	6	66	28
ED . 0335 . 4459 . 050	5,0	6	66	28
ED . 0335 . 4459 . 051	5,1	6	66	28
ED . 0335 . 4459 . 052	5,2	6	66	28
ED . 0335 . 4459 . 055	5,5	6	66	28
ED . 0335 . 4459 . 056	5,6	6	66	28
ED . 0335 . 4459 . 058	5,8	6	66	28
ED . 0335 . 4459 . 059	5,9	6	66	28
ED . 0335 . 4459 . 060	6,0	6	66	28
ED . 0335 . 4459 . 061	6,1	8	79	34
ED . 0335 . 4459 . 062	6,2	8	79	34
ED . 0335 . 4459 . 063	6,3	8	79	34
ED . 0335 . 4459 . 064	6,4	8	79	34
ED . 0335 . 4459 . 065	6,5	8	79	34
ED . 0335 . 4459 . 066	6,6	8	79	34
ED . 0335 . 4459 . 068	6,8	8	79	34
ED . 0335 . 4459 . 069	6,9	8	79	34
ED . 0335 . 4459 . 070	7,0	8	79	34
ED . 0335 . 4459 . 071 . 050	7,15	8	79	41
ED . 0335 . 4459 . 073	7,3	8	79	41
ED . 0335 . 4459 . 074	7,4	8	79	41
ED . 0335 . 4459 . 075	7,5	8	79	41

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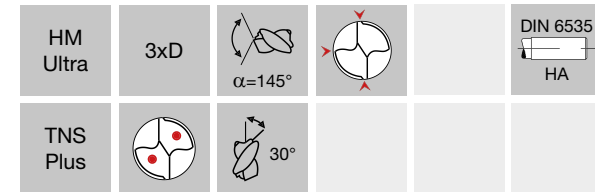
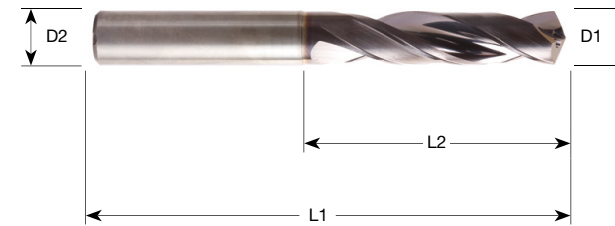


mat.	ø mm	L max mm	Vt m/min	f mm	n rpm	Vf mm/min	Q cm³/min	T sec
P 1.1 Construction steel Acciaio da costruzione	8,0	29,0	180	0,200	7166	1433	72,0	1,2
	10,0	32,0	180	0,220	5732	1261	99,0	1,5
	12,0	37,0	180	0,250	4777	1194	135,0	1,9
	14,0	39,0	180	0,280	4095	1146	176,4	2,0
	16,0	41,0	180	0,300	3583	1075	216,0	2,3
	18,0	46,0	180	0,350	3185	1115	283,5	2,5
	20,0	49,0	180	0,400	2866	1146	360,0	2,6
≤ 850 N/mm²								
P 2.2 Heat treatable steel Acciaio da bonifica	8,0	29,0	150	0,200	5971	1194	60,0	1,5
	10,0	32,0	150	0,220	4777	1051	82,5	1,8
	12,0	37,0	150	0,250	3981	995	112,5	2,2
	14,0	39,0	150	0,280	3412	955	147,0	2,4
	16,0	41,0	150	0,300	2986	896	180,0	2,7
	18,0	46,0	150	0,320	2654	849	216,0	3,2
	20,0	49,0	150	0,350	2389	836	262,5	3,5
≤ 1100 N/mm²								
P 2.3 Heat treatable steel Acciaio da bonifica	8,0	29,0	120	0,200	4777	955	48,0	1,8
	10,0	32,0	120	0,220	3822	841	66,0	2,3
	12,0	37,0	120	0,250	3185	796	90,0	2,8
	14,0	39,0	120	0,280	2730	764	117,6	3,1
	16,0	41,0	120	0,300	2389	717	144,0	3,4
	18,0	46,0	120	0,320	2123	679	172,8	4,1
	20,0	49,0	120	0,350	1911	669	210,0	4,4
≤ 1300 N/mm²								
P 4.2 Cold work tool steel Acciaio da utensili per lavorazioni a freddo 12% Cr	8,0	29,0	100	0,200	3981	796	40,0	2,2
	10,0	32,0	100	0,220	3185	701	55,0	2,7
	12,0	37,0	100	0,250	2654	663	75,0	3,3
	14,0	39,0	100	0,280	2275	637	98,0	3,7
	16,0	41,0	100	0,300	1990	597	120,0	4,1
	18,0	46,0	100	0,320	1769	566	144,0	4,9
	20,0	49,0	100	0,350	1592	557	175,0	5,3
M 2.1 Stainless steel Acciaio inossidabile Aust.	8,0	29,0	100	0,180	3981	717	36,0	2,4
	10,0	32,0	100	0,200	3185	637	50,0	3,0
	12,0	37,0	100	0,220	2654	584	66,0	3,8
	14,0	39,0	100	0,240	2275	546	84,0	4,3
	16,0	41,0	100	0,250	1990	498	100,0	4,9
	18,0	46,0	100	0,280	1769	495	126,0	5,6
	20,0	49,0	100	0,300	1592	478	150,0	6,2
M 1.2 Stainless steel Acciaio inossidabile Mart.	8,0	29,0	80	0,180	3185	573	28,8	3,0
	10,0	32,0	80	0,200	2548	510	40,0	3,8
	12,0	37,0	80	0,220	2123	467	52,8	4,8
	14,0	39,0	80	0,240	1820	437	67,2	5,4
	16,0	41,0	80	0,250	1592	398	80,0	6,2
	18,0	46,0	80	0,280	1415	396	100,8	7,0
	20,0	49,0	80	0,300	1274	382	120,0	7,7
K 1.2 Cast Iron Ghisa	8,0	29,0	180	0,200	7166	1433	72,0	1,2
	10,0	32,0	180	0,220	5732	1261	99,0	1,5
	12,0	37,0	180	0,250	4777	1194	135,0	1,9
	14,0	39,0	180	0,280	4095	1146	176,4	2,0
	16,0	41,0	180	0,300	3583	1075	216,0	2,3
	18,0	46,0	180	0,350	3185	1115	283,5	2,5
	20,0	49,0	180	0,400	2866	1146	360,0	2,6

Through hole
Foro passante

$$Vf(c) = Vf - 30\%$$

Ø 7,6 - 20

P 1.1
≤ 850 N/mm²P 2.2
≤ 1100 N/mm²P 4.2
12% CrM 2.1
Aust.K 1.2
Ghisa

art.	D1 h7 mm	D2 h6 mm	L1 mm	L2 mm
ED .0335 . 4459 . 076	7,6	8	79	41
ED .0335 . 4459 . 077	7,7	8	79	41
ED .0335 . 4459 . 078	7,8	8	79	41
ED .0335 . 4459 . 080	8,0	8	79	41
ED .0335 . 4459 . 082	8,2	10	89	47
ED .0335 . 4459 . 085	8,5	10	89	47
ED .0335 . 4459 . 086	8,6	10	89	47
ED .0335 . 4459 . 087	8,7	10	89	47
ED .0335 . 4459 . 088	8,8	10	89	47
ED .0335 . 4459 . 089	8,9	10	89	47
ED .0335 . 4459 . 090	9,0	10	89	47
ED .0335 . 4459 . 091	9,1	10	89	47
ED .0335 . 4459 . 092	9,2	10	89	47
ED .0335 . 4459 . 093	9,3	10	89	47
ED .0335 . 4459 . 094	9,4	10	89	47
ED .0335 . 4459 . 095	9,5	10	89	47
ED .0335 . 4459 . 096	9,6	10	89	47
ED .0335 . 4459 . 098	9,8	10	89	47
ED .0335 . 4459 . 099	9,9	10	89	47
ED .0335 . 4459 . 100	10,0	10	89	47
ED .0335 . 4459 . 102	10,2	12	102	55
ED .0335 . 4459 . 103	10,3	12	102	55
ED .0335 . 4459 . 105	10,5	12	102	55
ED .0335 . 4459 . 110	11,0	12	102	55
ED .0335 . 4459 . 112	11,2	12	102	55
ED .0335 . 4459 . 115	11,5	12	102	55
ED .0335 . 4459 . 118	11,8	12	102	55
ED .0335 . 4459 . 119	11,9	12	102	55
ED .0335 . 4459 . 120	12,0	12	102	55
ED .0335 . 4459 . 130	13,0	14	107	60
ED .0335 . 4459 . 138	13,8	14	107	60
ED .0335 . 4459 . 140	14,0	14	107	60
ED .0335 . 4459 . 145	14,5	16	115	65
ED .0335 . 4459 . 150	15,0	16	115	65
ED .0335 . 4459 . 160	16,0	16	115	65
ED .0335 . 4459 . 170	17,0	18	123	73
ED .0335 . 4459 . 175	17,5	18	123	73
ED .0335 . 4459 . 180	18,0	18	123	73
ED .0335 . 4459 . 185	18,5	20	131	79
ED .0335 . 4459 . 200	20,0	20	131	79



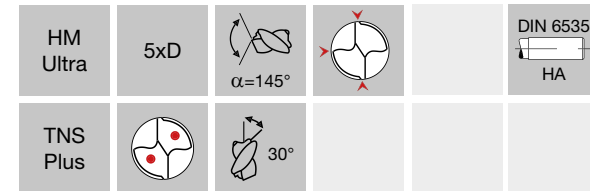
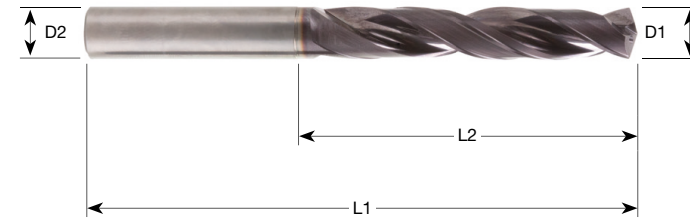
mat.	ø mm	L max mm	Vt m/min	f mm	n rpm	Vf mm/min	Q cm³/min	T sec
P 1.1 Construction steel Acciaio da costruzione	3,0	23,5	180	0,100	12000*	1200	8,5	1,2
	3,5	22,8	180	0,110	12000*	1320	12,7	1,0
	4,0	30,0	180	0,120	12000*	1440	18,1	1,3
	4,5	29,3	180	0,130	12000*	1560	24,8	1,1
	5,0	36,5	180	0,150	11465	1720	33,8	1,3
	6,0	35,0	180	0,160	9554	1529	43,2	1,4
	7,0	42,5	180	0,180	8189	1474	56,7	1,7
≤ 850 N/mm²	8,0	41,0	180	0,200	7166	1433	72,0	1,7
P 2.2 Heat treatable steel Acciaio da bonifica	3,0	23,5	150	0,060	12000*	720	5,1	2,0
	3,5	22,8	150	0,080	12000*	960	9,2	1,4
	4,0	30,0	150	0,090	11943	1075	13,5	1,7
	4,5	29,3	150	0,100	10616	1062	16,9	1,7
	5,0	36,5	150	0,110	9554	1051	20,6	2,1
	6,0	35,0	150	0,130	7962	1035	29,3	2,0
	7,0	42,5	150	0,150	6824	1024	39,4	2,5
≤ 1100 N/mm²	8,0	41,0	150	0,200	5971	1194	60,0	2,1
P 2.3 Heat treatable steel Acciaio da bonifica	3,0	23,5	120	0,060	12000*	720	5,1	2,0
	3,5	22,8	120	0,080	10919	874	8,4	1,6
	4,0	30,0	120	0,090	9554	860	10,8	2,1
	4,5	29,3	120	0,100	8493	849	13,5	2,1
	5,0	36,5	120	0,110	7643	841	16,5	2,6
	6,0	35,0	120	0,130	6369	828	23,4	2,5
	7,0	42,5	120	0,150	5460	819	31,5	3,1
≤ 1300 N/mm²	8,0	41,0	120	0,200	4777	955	48,0	2,6
P 4.2 Cold work tool steel Acciaio da utensili per lavorazioni a freddo 12% Cr	3,0	23,5	100	0,060	10616	637	4,5	2,2
	3,5	22,8	100	0,080	9099	728	7,0	1,9
	4,0	30,0	100	0,090	7962	717	9,0	2,5
	4,5	29,3	100	0,100	7077	708	11,3	2,5
	5,0	36,5	100	0,110	6369	701	13,8	3,1
	6,0	35,0	100	0,130	5308	690	19,5	3,0
	7,0	42,5	100	0,150	4550	682	26,3	3,7
	8,0	41,0	100	0,200	3981	796	40,0	3,1
M 2.1 Stainless steel Acciaio inossidabile Aust.	3,0	23,5	100	0,050	10616	531	3,8	2,7
	3,5	22,8	100	0,060	9099	546	5,3	2,5
	4,0	30,0	100	0,070	7962	557	7,0	3,2
	4,5	29,3	100	0,080	7077	566	9,0	3,1
	5,0	36,5	100	0,100	6369	637	12,5	3,4
	6,0	35,0	100	0,120	5308	637	18,0	3,3
	7,0	42,5	100	0,150	4550	682	26,3	3,7
	8,0	41,0	100	0,180	3981	717	36,0	3,4
M 1.2 Stainless steel Acciaio inossidabile Mart.	3,0	23,5	80	0,050	8493	425	3,0	3,3
	3,5	22,8	80	0,060	7279	437	4,2	3,1
	4,0	30,0	80	0,070	6369	446	5,6	4,0
	4,5	29,3	80	0,080	5662	453	7,2	3,9
	5,0	36,5	80	0,100	5096	510	10,0	4,3
	6,0	35,0	80	0,120	4246	510	14,4	4,1
	7,0	42,5	80	0,150	3640	546	21,0	4,7
	8,0	41,0	80	0,180	3185	573	28,8	4,3
K 1.2 Cast Iron Ghisa	3,0	23,5	180	0,100	12000*	1200	8,5	1,2
	3,5	22,8	180	0,110	12000*	1320	12,7	1,0
	4,0	30,0	180	0,120	12000*	1440	18,1	1,3
	4,5	29,3	180	0,130	12000*	1560	24,8	1,1
	5,0	36,5	180	0,150	11465	1720	33,8	1,3
	6,0	35,0	180	0,160	9554	1529	43,2	1,4
	7,0	42,5	180	0,180	8189	1474	56,7	1,7
	8,0	41,0	180	0,200	7166	1433	72,0	1,7

Through hole
Foro passante

Vf(c)= Vf - 30%

*rpm limit recommended
limitazione di giri consigliata

Ø 3 - 7,2

P 1.1
≤ 850 N/mm²P 2.2
≤ 1100 N/mm²P 4.2
12% CrM 2.1
Aust.K 1.2
Ghisa

art.	D1 h7 mm	D2 h6 mm	L1 mm	L2 mm
ED .0535 .4459 .030	3,0	6	66	28
ED .0535 .4459 .031	3,1	6	66	28
ED .0535 .4459 .032	3,2	6	66	28
ED .0535 .4459 .033	3,3	6	66	28
ED .0535 .4459 .034	3,4	6	66	28
ED .0535 .4459 .035	3,5	6	66	28
ED .0535 .4459 .037	3,7	6	66	28
ED .0535 .4459 .038	3,8	6	74	36
ED .0535 .4459 .040	4,0	6	74	36
ED .0535 .4459 .042	4,2	6	74	36
ED .0535 .4459 .043	4,3	6	74	36
ED .0535 .4459 .045	4,5	6	74	36
ED .0535 .4459 .046 .050	4,65	6	74	36
ED .0535 .4459 .047	4,7	6	74	36
ED .0535 .4459 .048	4,8	6	74	36
ED .0535 .4459 .049	4,9	6	74	36
ED .0535 .4459 .050	5,0	6	74	36
ED .0535 .4459 .051	5,1	6	74	36
ED .0535 .4459 .052	5,2	6	82	44
ED .0535 .4459 .053	5,3	6	82	44
ED .0535 .4459 .054	5,4	6	82	44
ED .0535 .4459 .055	5,5	6	82	44
ED .0535 .4459 .055 .050	5,55	6	82	44
ED .0535 .4459 .056	5,6	6	82	44
ED .0535 .4459 .057	5,7	6	82	44
ED .0535 .4459 .058	5,8	6	82	44
ED .0535 .4459 .059	5,9	6	82	44
ED .0535 .4459 .060	6,0	6	82	44
ED .0535 .4459 .061	6,1	8	82	44
ED .0535 .4459 .062	6,2	8	82	44
ED .0535 .4459 .063	6,3	8	82	44
ED .0535 .4459 .065	6,5	8	91	53
ED .0535 .4459 .067	6,7	8	91	53
ED .0535 .4459 .068	6,8	8	91	53
ED .0535 .4459 .069	6,9	8	91	53
ED .0535 .4459 .070	7,0	8	91	53
ED .0535 .4459 .071	7,1	8	91	53
ED .0535 .4459 .072	7,2	8	91	53

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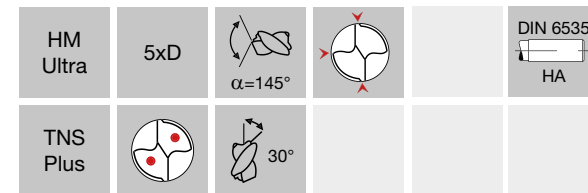
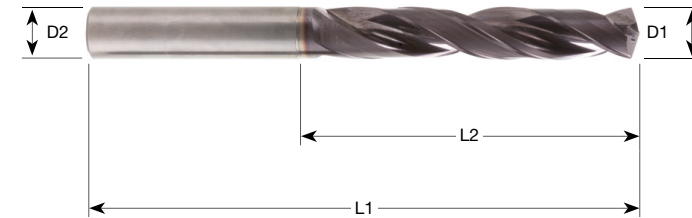
mat.	ø mm	L max mm	Vt m/min	f mm	n rpm	Vf mm/min	Q cm³/min	T sec
P 1.1 Construction steel Acciaio da costruzione	8,0	41,0	180	0,200	7166	1433	72,0	1,7
	10,0	46,0	180	0,220	5732	1261	99,0	2,2
	12,0	53,0	180	0,250	4777	1194	135,0	2,7
	14,0	56,0	180	0,280	4095	1146	176,4	2,9
≤ 850 N/mm²								
P 2.2 Heat treatable steel Acciaio da bonifica	8,0	41,0	150	0,200	5971	1194	60,0	2,1
	10,0	46,0	150	0,220	4777	1051	82,5	2,6
	12,0	53,0	150	0,250	3981	995	112,5	3,2
	14,0	56,0	150	0,280	3412	955	147,0	3,5
≤ 1100 N/mm²								
P 2.3 Heat treatable steel Acciaio da bonifica	8,0	41,0	120	0,200	4777	955	48,0	2,6
	10,0	46,0	120	0,220	3822	841	66,0	3,3
	12,0	53,0	120	0,250	3185	796	90,0	4,0
	14,0	56,0	120	0,280	2730	764	117,6	4,4
≤ 1300 N/mm²								
P 4.2 Cold work tool steel Acciaio da utensili per lavorazioni a freddo 12% Cr	8,0	41,0	100	0,200	3981	796	40,0	3,1
	10,0	46,0	100	0,220	3185	701	55,0	3,9
	12,0	53,0	100	0,250	2654	663	75,0	4,8
	14,0	56,0	100	0,280	2275	637	98,0	5,3
M 2.1 Stainless steel Acciaio inossidabile Aust.	8,0	41,0	100	0,180	3981	717	36,0	3,4
	10,0	46,0	100	0,200	3185	637	50,0	4,3
	12,0	53,0	100	0,220	2654	584	66,0	5,4
	14,0	56,0	100	0,240	2275	546	84,0	6,2
M 1.2 Stainless steel Acciaio inossidabile Mart.	8,0	41,0	80	0,180	3185	573	28,8	4,3
	10,0	46,0	80	0,200	2548	510	40,0	5,4
	12,0	53,0	80	0,220	2123	467	52,8	6,8
	14,0	56,0	80	0,240	1820	437	67,2	7,7
K 1.2 Cast Iron Ghisa	8,0	41,0	180	0,200	7166	1433	72,0	1,7
	10,0	46,0	180	0,220	5732	1261	99,0	2,2
	12,0	53,0	180	0,250	4777	1194	135,0	2,7
	14,0	56,0	180	0,280	4095	1146	176,4	2,9

Through hole
Foro passante

Vf(c)= Vf - 30%



Ø 7,3 - 12,5



P 1.1
≤ 850 N/mm²

P 2.2
≤ 1100 N/mm²

P 4.2
12% Cr

M 2.1
Aust.

K 1.2
Ghisa

art.	D1 h7 mm	D2 h6 mm	L1 mm	L2 mm
ED . 0535 . 4459 . 073	7,3	8	91	53
ED . 0535 . 4459 . 074	7,4	8	91	53
ED . 0535 . 4459 . 075	7,5	8	91	53
ED . 0535 . 4459 . 076	7,6	8	91	53
ED . 0535 . 4459 . 078	7,8	8	91	53
ED . 0535 . 4459 . 080	8,0	8	91	53
ED . 0535 . 4459 . 081	8,1	8	103	61
ED . 0535 . 4459 . 082	8,2	10	103	61
ED . 0535 . 4459 . 083	8,3	10	103	61
ED . 0535 . 4459 . 084	8,4	10	103	61
ED . 0535 . 4459 . 085	8,5	10	103	61
ED . 0535 . 4459 . 086	8,6	10	103	61
ED . 0535 . 4459 . 087	8,7	10	103	61
ED . 0535 . 4459 . 088	8,8	10	103	61
ED . 0535 . 4459 . 090	9,0	10	103	61
ED . 0535 . 4459 . 091	9,1	10	103	61
ED . 0535 . 4459 . 093	9,3	10	103	61
ED . 0535 . 4459 . 094	9,4	10	103	61
ED . 0535 . 4459 . 095	9,5	10	103	61
ED . 0535 . 4459 . 097	9,7	10	103	61
ED . 0535 . 4459 . 098	9,8	10	103	61
ED . 0535 . 4459 . 099	9,9	10	103	61
ED . 0535 . 4459 . 100	10,0	10	103	61
ED . 0535 . 4459 . 102	10,2	12	118	71
ED . 0535 . 4459 . 103	10,3	12	118	71
ED . 0535 . 4459 . 105	10,5	12	118	71
ED . 0535 . 4459 . 110	11,0	12	118	71
ED . 0535 . 4459 . 111	11,1	12	118	71
ED . 0535 . 4459 . 112	11,2	12	118	71
ED . 0535 . 4459 . 113	11,3	12	118	71
ED . 0535 . 4459 . 114	11,4	12	118	71
ED . 0535 . 4459 . 115	11,5	12	118	71
ED . 0535 . 4459 . 116	11,6	12	118	71
ED . 0535 . 4459 . 118	11,8	12	118	71
ED . 0535 . 4459 . 119	11,9	12	118	71
ED . 0535 . 4459 . 120	12,0	12	118	71
ED . 0535 . 4459 . 122	12,2	14	124	77
ED . 0535 . 4459 . 125	12,5	14	124	77

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A diagram of a twisted fiber. It consists of a central core and a surrounding sheath. The core is a single strand, and the sheath is a multi-strand braid. The twist is indicated by a curved arrow around the core, showing a right-hand twist.

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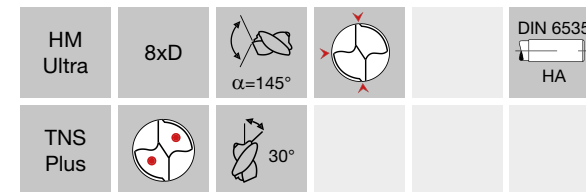
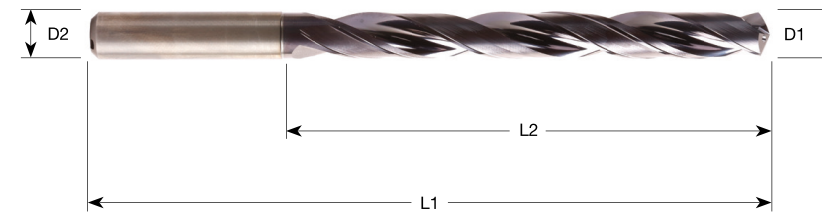
mat.	ø mm	L max mm	Vt m/min	f mm	n rpm	Vf mm/min	Q cm³/min	T sec
P 1.1 Construction steel Acciaio da costruzione	3,0	29,5	150	0,100	10000*	1000	7,1	1,8
	3,5	28,8	150	0,110	10000*	1100	10,6	1,6
	4,0	37,0	150	0,120	10000*	1200	15,1	1,9
	4,5	36,3	150	0,130	10000*	1300	20,7	1,7
	5,0	49,5	150	0,150	9554	1433	28,1	2,1
	6,0	48,0	150	0,160	7962	1274	36,0	2,3
	7,0	65,5	150	0,180	6824	1228	47,3	3,2
≤ 850 N/mm²	8,0	64,0	150	0,200	5971	1194	60,0	3,2
	10,0	80,0	150	0,220	4777	1051	82,5	4,6
P 2.2 Heat treatable steel Acciaio da bonifica	3,0	29,5	140	0,060	10000*	600	4,2	3,0
	3,5	28,8	140	0,080	10000*	800	7,7	2,2
	4,0	37,0	140	0,090	10000*	900	11,3	2,5
	4,5	36,3	140	0,100	9908	991	15,8	2,2
	5,0	49,5	140	0,110	8917	981	19,3	3,0
	6,0	48,0	140	0,130	7431	966	27,3	3,0
	7,0	65,5	140	0,150	6369	955	36,8	4,1
≤ 1100 N/mm²	8,0	64,0	140	0,200	5573	1115	56,0	3,4
	10,0	80,0	140	0,220	4459	981	77,0	4,9
P 2.3 Heat treatable steel Acciaio da bonifica	3,0	29,5	110	0,060	10000*	600	4,2	3,0
	3,5	28,8	110	0,080	10000*	800	7,7	2,2
	4,0	37,0	110	0,090	8758	788	9,9	2,8
	4,5	36,3	110	0,100	7785	778	12,4	2,8
	5,0	49,5	110	0,110	7006	771	15,1	3,9
	6,0	48,0	110	0,130	5839	759	21,5	3,8
	7,0	65,5	110	0,150	5005	751	28,9	5,2
≤ 1300 N/mm²	8,0	64,0	110	0,200	4379	876	44,0	4,4
	10,0	80,0	110	0,220	3503	771	60,5	6,2
P 4.2 Cold work tool steel Acciaio da utensili per lavorazioni a freddo	3,0	29,5	90	0,060	9554	573	4,1	3,1
	3,5	28,8	90	0,080	8189	655	6,3	2,6
	4,0	37,0	90	0,090	7166	645	8,1	3,4
	4,5	36,3	90	0,100	6369	637	10,1	3,4
	5,0	49,5	90	0,110	5732	631	12,4	4,7
	6,0	48,0	90	0,130	4777	621	17,6	4,6
	7,0	65,5	90	0,150	4095	614	23,6	6,4
12% Cr	8,0	64,0	90	0,200	3583	717	36,0	5,4
	10,0	80,0	90	0,220	2866	631	49,5	7,6
M 2.1 Stainless steel Acciaio inossidabile	3,0	29,5	90	0,050	9554	478	3,4	3,7
	3,5	28,8	90	0,060	8189	491	4,7	3,5
	4,0	37,0	90	0,070	7166	502	6,3	4,4
	4,5	36,3	90	0,080	6369	510	8,1	4,3
	5,0	49,5	90	0,100	5732	573	11,3	5,2
	6,0	48,0	90	0,120	4777	573	16,2	5,0
	7,0	65,5	90	0,150	4095	614	23,6	6,4
Aust.	8,0	64,0	90	0,180	3583	645	32,4	6,0
	10,0	80,0	90	0,200	2866	573	45,0	8,4
M 1.2 Stainless steel Acciaio inossidabile	3,0	29,5	80	0,050	8493	425	3,0	4,2
	3,5	28,8	80	0,060	7279	437	4,2	3,9
	4,0	37,0	80	0,070	6369	446	5,6	5,0
	4,5	36,3	80	0,080	5662	453	7,2	4,8
	5,0	49,5	80	0,100	5096	510	10,0	5,8
	6,0	48,0	80	0,120	4246	510	14,4	5,7
	7,0	65,5	80	0,150	3640	546	21,0	7,2
Mart.	8,0	64,0	80	0,180	3185	573	28,8	6,7
	10,0	80,0	80	0,200	2548	510	40,0	9,4
K 1.2 Cast Iron Ghisa	3,0	29,5	160	0,100	10000*	1000	7,1	1,8
	3,5	28,8	160	0,110	10000*	1100	10,6	1,6
	4,0	37,0	160	0,120	10000*	1200	15,1	1,9
	4,5	36,3	160	0,130	10000*	1300	20,7	1,7
	5,0	49,5	160	0,150	10000*	1500	29,4	2,0
	6,0	48,0	160	0,160	8493	1359	38,4	2,1
	7,0	65,5	160	0,180	7279	1310	50,4	3,0
	8,0	64,0	160	0,200	6369	1274	64,0	3,0
	10,0	80,0	160	0,220	5096	1121	88,0	4,3

Through hole
Foro passante

Vf(c)= Vf - 30%

*rpm limit recommended
limitazione di giri consigliata

Ø 3,0 - 9,5

P 1.1
≤ 850 N/mm²P 2.2
≤ 1100 N/mm²P 4.2
12% CrM 2.1
Aust.K 1.2
Ghisa

art.	D1 h7 mm	D2 h6 mm	L1 mm	L2 mm
ED . 0835 . 4459 . 030	3,0	6	72	34
ED . 0835 . 4459 . 031	3,1	6	72	34
ED . 0835 . 4459 . 032	3,2	6	72	34
ED . 0835 . 4459 . 033	3,3	6	72	34
ED . 0835 . 4459 . 034	3,4	6	72	34
ED . 0835 . 4459 . 035	3,5	6	72	34
ED . 0835 . 4459 . 037	3,7	6	72	34
ED . 0835 . 4459 . 040	4,0	6	81	43
ED . 0835 . 4459 . 041	4,1	6	81	43
ED . 0835 . 4459 . 042	4,2	6	81	43
ED . 0835 . 4459 . 043	4,3	6	81	43
ED . 0835 . 4459 . 045	4,5	6	81	43
ED . 0835 . 4459 . 046 . 050	4,65	6	81	43
ED . 0835 . 4459 . 048	4,8	6	95	57
ED . 0835 . 4459 . 049	4,9	6	95	57
ED . 0835 . 4459 . 050	5,0	6	95	57
ED . 0835 . 4459 . 051	5,1	6	95	57
ED . 0835 . 4459 . 052	5,2	6	95	57
ED . 0835 . 4459 . 054	5,4	6	95	57
ED . 0835 . 4459 . 055	5,5	6	95	57
ED . 0835 . 4459 . 055 . 050	5,55	6	95	57
ED . 0835 . 4459 . 056	5,6	6	95	57
ED . 0835 . 4459 . 058	5,8	6	95	57
ED . 0835 . 4459 . 059	5,9	6	95	57
ED . 0835 . 4459 . 060	6,0	6	95	57
ED . 0835 . 4459 . 061	6,1	8	114	76
ED . 0835 . 4459 . 062	6,2	8	114	76
ED . 0835 . 4459 . 065	6,5	8	114	76
ED . 0835 . 4459 . 068	6,8	8	114	76
ED . 0835 . 4459 . 069	6,9	8	114	76
ED . 0835 . 4459 . 070	7,0	8	114	76
ED . 0835 . 4459 . 075	7,5	8	114	76
ED . 0835 . 4459 . 078	7,8	8	114	76
ED . 0835 . 4459 . 080	8,0	8	114	76
ED . 0835 . 4459 . 081	8,1	8	142	95
ED . 0835 . 4459 . 085	8,5	10	142	95
ED . 0835 . 4459 . 090	9,0	10	142	95
ED . 0835 . 4459 . 095	9,5	10	142	95

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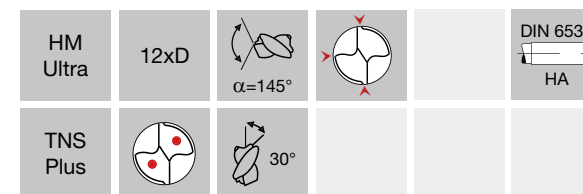
mat.	ø mm	L max mm	Vt m/min	f mm	n rpm	Vf mm/min	Q cm³/min	T sec
P 1.1 Construction steel Acciaio da costruzione	3,0	49,5	130	0,080	8000*	640	4,5	4,6
	4,0	58,0	130	0,100	8000*	800	10,0	4,4
	5,0	70,5	130	0,120	8000*	960	18,8	4,4
	6,0	69,0	130	0,130	6900	897	25,4	4,6
	8,0	96,0	130	0,160	5175	828	41,6	7,0
	10,0	105,0	130	0,180	4140	745	58,5	8,5
	12,0	138,0	130	0,200	3450	690	78,0	12,0
≤ 850 N/mm²	14,0	161,0	130	0,220	2957	651	100,1	14,8
	16,0	184,0	130	0,240	2588	621	124,8	17,8
P 2.2 Heat treatable steel Acciaio da bonifica	3,0	49,5	120	0,080	8000*	640	4,5	4,6
	4,0	58,0	120	0,100	8000*	800	10,0	4,4
	5,0	70,5	120	0,120	7643	917	18,0	4,6
	6,0	69,0	120	0,130	6369	828	23,4	5,0
	8,0	96,0	120	0,160	4777	764	38,4	7,5
	10,0	105,0	120	0,180	3822	688	54,0	9,2
	12,0	138,0	120	0,200	3185	637	72,0	13,0
≤ 1100 N/mm²	14,0	161,0	120	0,220	2730	601	92,4	16,1
	16,0	184,0	120	0,240	2389	573	115,2	19,3
P 2.3 Heat treatable steel Acciaio da bonifica	3,0	49,5	100	0,050	8000*	400	2,8	7,4
	4,0	58,0	100	0,070	7962	557	7,0	6,2
	5,0	70,5	100	0,090	6369	573	11,3	7,4
	6,0	69,0	100	0,100	5308	531	15,0	7,8
	8,0	96,0	100	0,160	3981	637	32,0	9,0
	10,0	105,0	100	0,180	3185	573	45,0	11,0
	12,0	138,0	100	0,200	2654	531	60,0	15,6
≤ 1300 N/mm²	14,0	161,0	100	0,220	2275	500	77,0	19,3
	16,0	184,0	100	0,240	1990	478	96,0	23,1
P 4.2 Cold work tool steel Acciaio da utensili per lavorazioni a freddo	3,0	49,5	80	0,050	8000*	400	2,8	7,4
	4,0	58,0	80	0,070	6369	446	5,6	7,8
	5,0	70,5	80	0,090	5096	459	9,0	9,2
	6,0	69,0	80	0,100	4246	425	12,0	9,7
	8,0	96,0	80	0,160	3185	510	25,6	11,3
	10,0	105,0	80	0,180	2548	459	36,0	13,7
	12,0	138,0	80	0,200	2123	425	48,0	19,5
	14,0	161,0	80	0,220	1820	400	61,6	24,1
12% Cr	16,0	184,0	80	0,240	1592	382	76,8	28,9
M 2.1 Stainless steel Acciaio inossidabile	3,0	49,5	80	0,040	8000*	320	2,3	9,3
	4,0	58,0	80	0,050	6369	318	4,0	10,9
	5,0	70,5	80	0,070	5096	357	7,0	11,9
	6,0	69,0	80	0,080	4246	340	9,6	12,2
	8,0	96,0	80	0,120	3185	382	19,2	15,1
	10,0	105,0	80	0,140	2548	357	28,0	17,7
	12,0	138,0	80	0,160	2123	340	38,4	24,4
Aust.	14,0	161,0	80	0,180	1820	328	50,4	29,5
	16,0	184,0	80	0,200	1592	318	64,0	34,7
M 1.2 Stainless steel Acciaio inossidabile	3,0	49,5	70	0,040	7431	297	2,1	10,0
	4,0	58,0	70	0,050	5573	279	3,5	12,5
	5,0	70,5	70	0,070	4459	312	6,1	13,6
	6,0	69,0	70	0,080	3715	297	8,4	13,9
	8,0	96,0	70	0,120	2787	334	16,8	17,2
	10,0	105,0	70	0,140	2229	312	24,5	20,2
	12,0	138,0	70	0,160	1858	297	33,6	27,9
Mart.	14,0	161,0	70	0,180	1592	287	44,1	33,7
	16,0	184,0	70	0,200	1393	279	56,0	39,6
K 1.2 Cast Iron Ghisa	3,0	49,5	140	0,080	8000*	640	4,5	4,6
	4,0	58,0	140	0,100	8000*	800	10,0	4,4
	5,0	70,5	140	0,120	8000*	960	18,8	4,4
	6,0	69,0	140	0,130	7431	966	27,3	4,3
	8,0	96,0	140	0,160	5573	892	44,8	6,5
	10,0	105,0	140	0,180	4459	803	63,0	7,9
	12,0	138,0	140	0,200	3715	743	84,0	11,1
	14,0	161,0	140	0,220	3185	701	107,8	13,8
	16,0	184,0	140	0,240	2787	669	134,4	16,5

Through hole
Foro passante

Vf(c)= Vf - 30%

*rpm limit recommended
limitazione di giri consigliata

Ø 3 - 16



P 1.1
≤ 850 N/mm²

P 2.2
≤ 1100 N/mm²

P 4.2
12% Cr

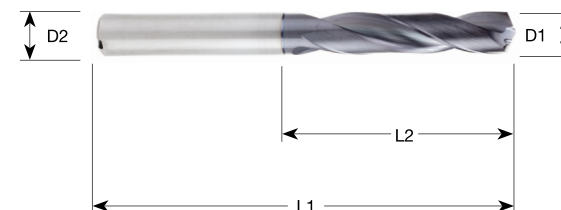
M 2.1
Aust.

K 1.2
Ghisa

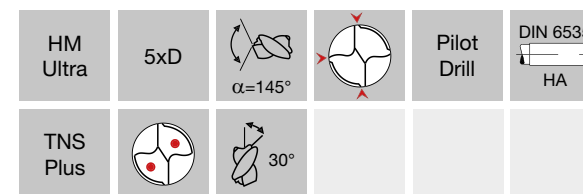
art.	D1 h7 mm	D2 h6 mm	L1 mm	L2 mm				
ED . 1235 . 4459 . 030	3,0	6	92	54				
ED . 1235 . 4459 . 032	3,2	6	92	54				
ED . 1235 . 4459 . 033	3,3	6	92	54				
ED . 1235 . 4459 . 034	3,4	6	92	54				
ED . 1235 . 4459 . 035	3,5	6	92	54				
ED . 1235 . 4459 . 037	3,7	6	92	54				
ED . 1235 . 4459 . 040	4,0	6	102	64				
ED . 1235 . 4459 . 041	4,1	6	102	64				
ED . 1235 . 4459 . 042	4,2	6	102	64				
ED . 1235 . 4459 . 043	4,3	6	102	64				
ED . 1235 . 4459 . 045	4,5	6	102	64				
ED . 1235 . 4459 . 048	4,8	6	116	78				
ED . 1235 . 4459 . 050	5,0	6	116	78				
ED . 1235 . 4459 . 051	5,1	6	116	78				
ED . 1235 . 4459 . 052	5,2	6	116	78				
ED . 1235 . 4459 . 054	5,4	6	116	78				
ED . 1235 . 4459 . 055	5,5	6	116	78				
ED . 1235 . 4459 . 058	5,8	6	116	78				
ED . 1235 . 4459 . 060	6,0	6	116	78				
ED . 1235 . 4459 . 061	6,1	8	146	108				
ED . 1235 . 4459 . 065	6,5	8	146	108				
ED . 1235 . 4459 . 068	6,8	8	146	108				
ED . 1235 . 4459 . 070	7,0	8	146	108				
ED . 1235 . 4459 . 075	7,5	8	146	108				
ED . 1235 . 4459 . 078	7,8	8	146	108				
ED . 1235 . 4459 . 080	8,0	8	146	108				
ED . 1235 . 4459 . 085	8,5	10	162	120				
ED . 1235 . 4459 . 090	9,0	10	162	120				
ED . 1235 . 4459 . 095	9,5	10	162	120				
ED . 1235 . 4459 . 098	9,8	10	162	120				
ED . 1235 . 4459 . 100	10,0	10	162	120				
ED . 1235 . 4459 . 102	10,2	12	204	156				
ED . 1235 . 4459 . 105	10,5	12	204	156				
ED . 1235 . 4459 . 110	11,0	12	204	156				
ED . 1235 . 4459 . 118	11,8	12	204	156				
ED . 1235 . 4459 . 120	12,0	12	204	156				
ED . 1235 . 4459 . 125	12,5	14	230	182				
ED . 1235 . 4459 . 130	13,0	14	230	182				
ED . 1235 . 4459 . 135	13,5	14	230	182				
ED . 1235 . 4459 . 140	14,0	14	230	182				
ED . 1235 . 4459 . 150	15,0	16	260	208				
ED . 1235 . 4459 . 160	16,0	16	260	208				



22



K 1.2
Ghisa

[illegible]

A diagram showing a single fiber being twisted between two parallel plates. The fiber is represented by a series of overlapping, curved lines that spiral around each other, indicating the twisting motion. The plates are shown as two vertical rectangular blocks on either side of the fiber.

24



K 1.2
Ghisa

HM Ultra	15xD	 $\alpha=145^\circ$			DIN 65812 HA
TNS Plus		 30°			

[illegible]

*rpm limit recommended limitazione di giri consigliata

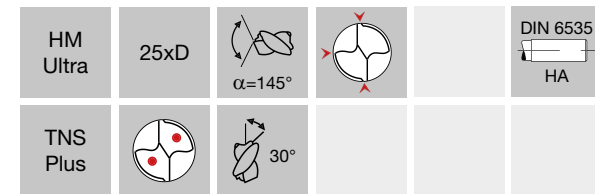


K 1.2
Ghisa

HM Ultra	20xD	 $\alpha=145^\circ$			DIN 6535 HA
TNS Plus			 30°		

[illegible]

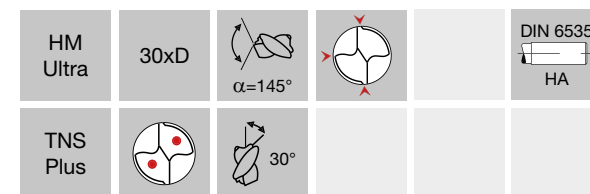
*rpm limit recommended
limitazione di giri consigliata

[illegible]

*rpm limit recommended limitazione di giri consigliata



K 1.2
Ghisa

[illegible]

32

EVO®



...THE WAY TO THE FUTURE!



| Info 36

| Materials list

| Lista dei materiali 38





D1	Tools diameter (mm)	Diametro dell'utensile (mm)
D2	Shank diameter (mm)	Diametro del gambo (mm)
D3	Tapering diameter (mm)	Diametro di rastrematura (mm)
L1	Total length (mm)	Lunghezza totale (mm)
L2	Cutter length (mm)	Lunghezza tagliente (mm)
L3	Tapering length (mm)	Lunghezza di rastrematura (mm)
Z	Teeth number	Numero di taglienti
f	Feed per revolution (mm)	Avanzamento al giro (mm)
Vt	Cutting speed (m/min)	Velocità di taglio (m/min)
n	Revolution per minute (rpm)	Numero di giri (rpm)
Vf	Feed rate (mm/min)	Velocità di avanzamento (mm/min)
ap	Axial depth (mm)	Profondità assiale (mm)
ae	Radial depth (mm)	Profondità radiale (mm)
Q	Chip volume (cm ³ /min)	Volume truciolo (cm ³ /min)
A	Chip thickness	Sezione truciolo
Rm	Tensile strenght to tensile stress (N/mm ²)	Carico di rottura alla trazione (N/mm ²)
HRC	Rockwell C hardness	Durezza Rockwell C
HB	Brinell hardness	Durezza Brinell

Formulas | Formule



$$A = (D1 \times f) / 2$$

$$Q = (\pi D1^2 / 4) \times Vf$$

$$n = Vt \times 1000 / D1 / \pi$$

$$Vt = (D1 \times \pi \times n) / 1000$$

$$Vf = f \times n$$

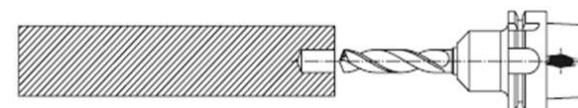


Deep holes

1. Pilot hole

A. For the pilot hole we suggest to use EVO ED.PD35 drill

B. Pilot hole depth is about 3xD



2. Go into the pilot hole with the long drill

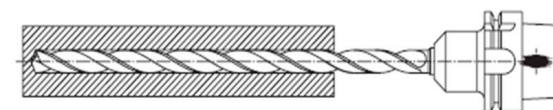
A. Go into the pilot hole with lower rpm (n=300 rpm) and a lower controlled feedrate (Vf=1000 mm/min) (es.G01 F1000)

B. Stop drill about 1 or 2 mm before the end of pilot hole, switch on coolant and increase rpm until the correct value



3. Deep drilling

A. Use the correct feedrate to go to the end of hole (no need intermediate steps)



4. Go out

A. Go back about 1 mm from the end of hole

B. Reduce rpm (n=300 rpm), switch off coolant and go out of hole



Foratura profonda

1. Foro pilota

A. Per il foro pilota si consiglia di impiegare la punta EVO ED.PD35

B. La profondità di foratura consigliata è ca.3xD

2. Entrata nel foro pilota con la punta lunga

A. Entrare nel foro pilota con un numero di giri basso (n=300 rpm) e un avanzamento controllato basso (Vf=1000 mm/min) (es.G01 F1000)

B. Fermarsi a circa 1-2 mm prima del fondo del foro pilota, accendere il lubrorefrigerante e impostare il numero di giri corretto

3. Foratura profonda

A. Portare l'avanzamento al valore corretto ed eseguire il foro senza step intermedi fino alla profondità necessaria

4. Uscita dal foro

A. Arretrare di circa 1 mm rispetto al fondo del foro

B. Ridurre il numero di giri (n=300 rpm), spegnere il lubrorefrigerante e uscire dal foro

EVO code	Rm N/mm²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR	 BS	EN	 UNI	 UNE	 JIS	 SIS	 AISI/SAE/ASTM
P Free-machining steels Acciai alta velocità														
1.1	> 500	9			1.0711	9 S 20	-	220 M 07	-	CF 9 S 22	-	SUM 21	-	1212
	380-570	8			1.0715	9 SMn 28	S 250	230 M 07	-	CF 9 SMn 28	11SMn28	SUM 22	1912	1213
	380-570	8			1.0718	9 SMnPb 28	S 250 Pb	-	-	CF 9 SMnPb 2	11SMnPb28	SUM 22 L	1914	12 L 13
	360-530	9			1.0721	10 S 20	10 F 1	210 M 15	-	CF 10 S 20	10S20	-	-	1108
	360-530	9			1.0722	10 SPb 20	10 PbF 2	-	-	CF 10 SPb 20	10SPb20	-	-	11 L 08
	380-570	8			1.0723	15 S 20	-	210 A 15	-	-	F,210,F	SUM 32	1922	-
	390-590	7			1.0736	9 SMn 36	S 300	240 M 07	1B	CF 9 SMn 36	12SMn36	-	-	1215
	390-580	7			1.0737	9 SMnPb 36	S 300 Pb	-	-	CF 9 SMnPb 36	12SMNPb36	-	1926	12 L 14
	580-730	8			1.0726	35 S 20	35 MF 4	212 M 36	8M	-	F210G	-	1957	1140
	660-800	7			1.0727	45 S 20	45 MF 4	212 M 44	-	-	-	-	1973	1146
	740-880	7			1.0728	60 S 20	60 MF 4	-	-	-	-	-	-	-
P Alloyed structural steels Acciai da costruzione														
1.1	440-590	24			1.5415	15 Mo 3	15 D 3	1501-240	-	16 Mo 3	16Mo3	-	2912	A 204 Gr. A
	450-590	21			1.5423	16 Mo 5	-	1503-245-420	-	16 Mo 5	16Mo5	-	-	4520
	490-640	20			1.5622	14 Ni 6	16 N 6	-	-	14 Ni 6	15Ni6	-	-	A 350-LF 5
	530-710	20			1.5680	12 Ni 19	Z 18 N 5	-	-	-	-	-	-	2515
	450-660	20			1.7335	13 CrMo 4 4	15 CD 3.5	1501-620 Gr. 27	-	14 CrMo 4 5	14CrMo45	-	2216	A 182-F11; F12
	540-690	20			1.7337	16 CrMo 4 4	15 CD 4.5	1501-620 Gr. 27	-	15 CrMo 4 5	-	-	2216	A 387 Gr. 12 C
	480-630	18			1.7380	10 CrMo 9 10	10 CD 9.10	1501-622 Gr. 31; 45	-	12 CrMo 9 10	-	-	2218	A 182-F22
	700-850	16			1.7709	21 CrMoV 5 7	-	-	-	-	-	-	-	-
	490-640	20			1.7715	14 MoV 6 3	14 Mo 6	1503-660-440	-	-	13MoCrV6	-	-	-
P Construction steels Acciai da costruzione non legati														
1.1	> 500	25			1.0037	St 37-2	-	-	-	-	-	STKM 12 C	-	-
	410-560	21			1.0044	St 44-2	E 28-2	4360-43 B	-	Fe 430 B FN	-	SM 41 B	1412	A 570 Gr. 40
	340-470	25			1.0116	St 37-3	E 24-3; E 24-4	4360-40 C	-	Fe 360 D FF	-	-	1312; 1313	A 573 Gr. 58
	410-560	21			1.0144	St 44-3	E 28-3; E 28-4	4360-43 C	-	Fe 430 D FF	-	SM 41 C	1412; 1414	A 573 Gr. 70
	470-610	19			1.0050	St 50-2	A 50-2	4360-50 B	-	Fe 490	-	SS 50	2172	A 570 Gr. 50
	490-630	21			1.0570	St 52-3	E 36-3; E 36-4	4360-50 B	-	Fe 510 B; C; D	-	SM 50 YA	2132	-
	570-710	15			1.0060	St 60-2	A 60-2	4360-SSE; SS	-	Fe 590; Fe 600	-	SM 58	-	-
	340-470	25		< 82	1.0038	RSt37-2	E24-2 Ne	4360 40C	1A	-	-	STKM 12A;C	1311	A570.36
P Steel castings Ghise d'acciaio														
1.2	> 380	25			1.0420	GS-38	-	AM 1	-	-	-	-	-	A 27
	700-800				1.1118	GS-24 Mn 6	-	-	-	-	-	-	-	-
	480-620	20			1.1120	GS-20 Mn 5	-	-	-	-	F.8310	-	-	-
	>500	22			1.5419	GS-22 Mo 4	-	245	-	-	-	SCPH 11	-	-
	>500				1.5633	GS-24 Ni 8	-	-	-	-	-	-	-	-
	>500				1.5681	GS-10 Ni 19	-	-	-	-	-	-	-	A 757
	>500				1.6309	GS-20 Mn MoNi 5 5	-	-	-	-	-	-	-	-
	<850	10			1.6582	GS-34 CrNiMo 6	-	-	24	-	-	SNCM 9	2541	-
	>800	11			1.6748	GS-40 NiCrMo 6 5 6	-	-	-	-	-	-	-	-
	>800				1.6750	GS-20 NiCrMo 3 7	-	-	-	-	-	-	-	-
	>800				1.6760	GS-22 NiMoCr 5 6	-	-	-	-	-	-	-	-
	490-640	20			1.7357	GS-17 CrMo 5 5	-	621	-	-	F-8383	SCPH 21	-	A 217
	>500	18			1.7379	GS-18 CrMo 9 10	-	622	-	-	-	SCPH 32	-	-

EVO code	Rm N/mm²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR	 BS	EN	 UNI	 UNE	 JIS	 SIS	 AISI/SAE/ASTM	
P Case hardening steels Acciai da cementazione															
1.1	<500	15		< 82	1.0301	C 10	AF 34 C 10; XC 10		045 M 10	-	C 10	-	S 10 C	-	1010
	<500	13		< 82	1.0401	C 15	AF 34 C 12; XC 18		080 M 15	-	C 15; C 16	F.111	-	1350	1015
	<500	14		< 82	1.1121	CK 10	XC 10		045 M 10	-	C 10	-	S 10 C; S 9 CK	1265	1010
	<500	13		< 82	1.1141	CK 15	XC 15; XC 18		080 M 15	32C	C 15; C 16	C15K	S 15 C; S 15 CK	1370	1015
	<500	15		< 82	1.7012	13 Cr 2	-		-	-	-	-	-	-	-
	500-700	10		82-96	1.7015	15 Cr 3	12 C 3		523 M 15	-	-	-	SCR 415 (H)	-	5015
	500-700	11		82-96	1.5732	14 NiCr 10	14 NC 11		-	-	16 NiCr 11	15NiCr11	SNC 415 (H)	-	3415
	700-850	10	<24		1.5752	14 NiCr 14	12 NC 15		655 M 13	36A	-	-	SNC 815 (H)	-	3310; 9314
	700-850	7	<24		1.5860	14 NiCr 18	-		-	-	-	-	-	-	-
	700-850	9	< 24		1.5919	15 CrNi 6	16 NC 6		S 107	-	16 CrNi 4	-	-	-	-
	700-850	7	< 24		1.5920	18 NiCr 8	20 NC 6		-	-	-	-	-	-	-
	700-850	10	< 24		1.6523	21 NiCrMo 2	20 NCD 2		805 M 20	362	20 NiCrMo 2	20NiCrMo2	SNCM 220 (H)	2506	8620
	700-850	8	< 24		1.6587	17 CrNiMo 6	18 NCD 6		820 A 16	-	18 NiCrMo 7	14NiCrMo13	-	-	-
	700-850	10	< 24		1.7131	16 MnCr 5	16 MC 5		527 M 17	-	16 MnCr 5	16MnCr5	SCR 415	2511	5115
	700-850	10	< 24		1.7139	16 MnCrS 5	-		-	-	-	-	-	-	-
	700-850	8	< 24		1.7147	20 MnCr 5	20 MC 5		-	-	20 MnCr 5	-	SMnC 420 (H)	-	5120
	700-850	8	< 24		1.7149	20 MnCrS 5	-		-	-	-	-	-	-	-
	700-850	10	< 24		1.7262	15 CrMo 5	12 CD 4		-	-	12 CrMo 4	F.155	SCM 415 (H)	-	-
	700-850	8	< 24		1.7264	20 CrMo 5	18 CD 4		-	-	-	-	SCM 421	-	-
	700-850	8	< 24		1.7271	23 CrMoB 3 3	-		-	-	-	-	-	-	-
	500-700	10	< 24		1.7311	20 CrMo 2	-		-	-	-	-	-	-	-
	700-850	10	< 24		1.7321	20 MoCr 4	-		-	-	-	-	-	-	-
	700-850	10	< 24		1.7323	20 MoCrS 4	-		-	-	-	-	-	-	-
	700-850	8	< 24		1.7325	25 MoCr 4	-		-	-	-	-	-	-	-
	700-850	8	< 24		1.7326	25 MoCrS 4	-		-	-	-	-	-	-	-
	<500	13		< 82	1.0402	C22		CC20		050 A 20	2C	C20;C21	F.112	-	1450
P Spring steels Acciai per molle															
2.1	< 850	6	< 24		1.0904	55 Si 7	55 S 7		250 A 53	45	55 Si 8	-	-	2085; 2090	9255
	< 850	6	< 24		1.0961	60 SiCr 7	60 SC 7		-	-	60 SiCr 8	-	SUP 7	-	9262
	< 850	6	< 24		1.1231	CK 67	XC 68		060 A 67	-	C 70	-	-	1770	1070
	< 850	6	< 24		1.1248	CK 75	XC 75		060 A 78	-	C 75	-	-	1774; 1778	1078; 1080
	< 850	6	< 24		1.1274	CK 101	XC 100		060 A 96	-	-	-	SUP 4	1870	1095
	< 850	5	< 24		1.7103	67 SiCr 5	-		-	-	-	-	-	-	-
	< 850	6	< 24		1.7176	55 Cr 3	55 C 3		527 A 60	48	55 Cr 3	-	SUP 9 (A)	2253	5155
	<850	10	< 24		1.8159	50 CrV 4	50 CV 4		735 A 50	47	51 CrV 4	51CrV4	SUP 10	2230	6150
	< 850	6	< 24		1.5026	55 Si 7	55 S 7		250 A 53	-	55 Si 8	-	-	2085; 2090	9255
P Alloyed heat-treatable steels Acciai da bonifica legati															
2.2	<800	22	< 21		1.1133	20 Mn 5	20 M 5		120 M 19	-	G 22 Mn 3	-	-	-	1022; 1518
	<800	11	< 21		1.7735	14 CrMoV 6 9	15 CDV 6		-	-	-	-	-	-	-
	<800		< 21		1.3505	100 Cr 6	100 C 6		534 A 99	31	100 Cr 6	-	SUJ 2	2258	52100
	<800	12	< 21		1.5120	38 MnSi 4	-		-	-	-	-	-	-	-
	<800	12	< 21		1.5121	46 MnSi 4	-		-	-	-	-	-	-	-
	<800	12	< 21		1.5141	53 MnSi 4	-		-	-	-	-	-	-	-
	<800	13	< 21		1.5710	36 NiCr 6	35 NC 6		640 A 35	111A	-	-	SNC 236	-	3135
	<800		< 21		1.6546	40 NiCrMo 2 2	40 NCD 2		311-Type7	-	40 NiCrMo 2 (KB)	40NiCrMo2	SNCM 240	-	8740
	<800		< 21		1.6565	40 NiCrMo 6	-		311-Type6	-	-	-	SNCM 439	-	4340

EVO code	Rm N/mm²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR	 BS	EN	 UNI	 UNE	 JIS	 SIS	 AISI/SAE/ASTM
P Alloyed heat-treatable steels Acciai da bonifica legati														
2.2	<800	14	< 21		1.7003	38 Cr 2	38 C 2	-	-	38 Cr 2	-	-	-	-
	<800	12	< 21		1.7006	46 Cr 2	42 C 2	-	-	45 Cr 2	-	-	-	5045
	<800	15	< 21		1.7020	32 Cr 2	-	-	-	-	-	-	-	-
	<800	14	< 21		1.7030	28 Cr 4	-	530 A 30	-	-	-	-	-	5130
	<800	14	< 21		1.7033	34 Cr 4	32 C 4	530 A 32	18B	34 Cr 4 (KB)	35Cr4	SCr 430 (H)		5132
	<800	14	< 21		1.7218	25 CrMo 4	25 CD 4 S	1717 CDS 110	-	25 CrMo 4 (KB)	55Cr3	SCM 420; SCM 430	2225	4130
	<800	12	< 21		1.7220	34 CrMo 4	35 CD 4	708 A 37	19B	35 CrMo4	34CrMo4	SCM 432; SCCrM 3	2234	4135; 4137
	<800	10	< 21		1.7223	41 CrMo 4	42 CD 4 TS	708 M 40	19A	41 CrMo 4	42CrMo4	SCM 440	2244	4142; 4140
	<800	10	< 21		1.7225	42 CrMo 4	42 CD 4 TS	708 M 40	19A	41 CrMo 4	F-1252	SCM 440	2244	4142; 4140
	<800	9	< 21		1.7228	50 CrMo 4	-	708 A 47	-	-	-	SCM 445 (H)	-	4150
	>800-1000	12	> 21 - 30		1.1157	40 Mn 4	35 M 5	150 M 36	15	-	-	-	-	1039
	>800-1000	14	> 21 - 30		1.1165	30 Mn 5	35 M 5	120 M 36	-	-	-	SMn 433 H; SCMn 2	-	1330
	>800-1000	10	> 21 - 30		1.1167	36 Mn 5	40 M 5	150 M 36	-	-	-	SMn 438 H; SCMn 3	2120	1335
	>800-1000	13	> 21 - 30		1.1170	28 Mn 5	20 M 5	150 M 28	14A	C 28 Mn	-	SCMn 1	-	1330
	>800-1000	12	> 21 - 30		1.3561	44 Cr 2			-	-	-		-	-
	>800-1000	12	> 21 - 30		1.3563	43 CrMo 4	-		-	-	-		-	-
	>800-1000	11	> 21 - 30		1.3565	48 CrMo 4	-	817 M 40	-	-	-	SNC 836	-	-
	>800-1000	12	> 21 - 30		1.5120	38 MnSi 4	-	-	-	-	-	-	-	-
	>800-1000	12	> 21 - 30		1.5121	46 MnSi 4	-	-	-	-	-	-	-	-
	>800-1000	12	> 21 - 30		1.5122	37 MnSi 4	-	-	-	-	-	-	-	-
	>800-1000	11	> 21 - 30		1.5131	50 MnSi4	-	-	-	-	-	-	-	-
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	>800-1000	11	> 21 - 30		1.5223	42 MnV 7	-	-	-	-	-	-	-	-
	>800-1000	13	> 21 - 30		1.5710	36 NiCr 6	35 NC 6	640 A 35	111A	-	-	SNC 236	-	3135
	>800-1000	12	> 21 - 30		1.5736	36 NiCr 10	30 NC 11	-	-	35 NiCr 9	-	SNC 631 (H)	-	3435
	>800-1000	11	> 21 - 30		1.5755	31 NiCr 14	18 NC 13	653 M 31	-	-	-	SNC 836	-	-
	>800-1000	11	> 21 - 30		1.6511	36 CrNiMo 4	40 NCD 3	816 M 40	110	38 NiCrMo 4 (KB)	33NiCrMo4	SNC 836	-	9840
	>800-1000	13	> 21 - 30		1.6513	28 NiCrMo 4	-	-	-	-	-	-	-	-
	>800-1000	14	> 21 - 30		1.7003	38 Cr 2	38 C 2	-	-	38 Cr 2	-	-	-	-
	>800-1000	13	> 21 - 30		1.7006	46 Cr 2	42 C 2	-	-	45 Cr 2	-	-	-	5045
	>800-1000	12	> 21 - 30		1.7030	28 Cr 4	-	530 A 30	-	-	-	-	-	5130
	>800-1000	14	> 21 - 30		1.7033	34 Cr 4	32 C 4	530 A 32	18B	34 Cr 4 (KB)	35Cr4	SCr 430 (H)	-	5132
	>800-1000	13	> 21 - 30		1.7034	37 Cr 4	38 C 4	530 A 36	-	38 Cr 4	-	SCr 435 (H)	-	5135
	>800-1000	12	> 21 - 30		1.7035	41 Cr 4	42 C 4	530 M 40	18	41 Cr 4	42Cr4	SCr 440 (H)	-	5140
	>800-1000	14	> 21 - 30		1.7218	25 CrMo 4	25 CD 4 S	1717 CDS 110	-	25 CrMo 4 (KB)	55Cr3	SCM 420; SCM 430	2225	4130
	>800-1000	14	> 21 - 30		1.7220	34 CrMo 4	35 CD 4	708 A 37	19B	35 CrMo4	34CrMo4	SCM 432; SCCrM 3	2234	4135; 4137
	>800-1000		> 21 - 30		1.7223	41 CrMo 4	42 CD 4 TS	708 M 40	19A	41 CrMo 4	42CrMo4	SCM 440	2244	4142; 4140
	>800-1000	12	> 21 - 30		1.7225	42 CrMo 4	42 CD 4 TS	708 M 40	19A	41 CrMo 4	F-1252	SCM 440	2244	4142; 4140
	>800-1000	13	> 21 - 30		1.7228	50 CrMo 4	-	708 A 47	-	-	-	SCM 445 (H)	-	4150
	>800-1000	13	> 21 - 30		1.7561	42 CrV 6	-	-	-	-	-	-	-	-
	>800-1000	11	> 21 - 30		1.7735	14 CrMoV 6 9	15 CDV 6	-	-	-	-	-	-	-
	>800-1000	10	> 24 - 30		1.8159	50 CrV 4	50 CV 4	735 A 50	47	51 CrV 4	51CrV4	SUP 10	2230	6150
2.3	>1000 -1300	10	> 30 - 40		1.3563	43 CrMo 4	-	-	-	-	-	-	-	-
	>1000 -1300	9	> 30 - 40		1.3565	48 CrMo 4	-	817 M 40	-	-	-	SNC 836	-	-
	>1000 -1300	11	> 30 - 40		1.5120	38 MnSi 4	-	-	-	-	-	-	-	-
	>1000 -1300	11	> 30 - 40		1.5121	46 MnSi 4	-	-	-	-	-	-	-	-
	>1000 -1300	11	> 30 - 40		1.5122	37 MnSi 4	-	-	-	-	-	-	-	-

EVO code	Rm N/mm²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR	 BS	EN	 UNI	 UNE	 JIS	 SIS	 AISI/SAE/ASTM	
P Alloyed heat-treatable steels Acciai da bonifica legati															
2.3	>1000 -1300	10	> 30 - 40		1.5223	42 MnV 7	-	-	-	-	-	-	-	-	
	>1000 -1300	11	> 30 - 40		1.5710	36 NiCr 6	35 NC 6	640 A 35	111A	-	-	SNC 236	-	3135	
	>1000 -1300		> 30 - 40		1.5736	36 NiCr 10	30 NC 11	-	-	35 NiCr 9	-	SNC 631 (H)	-	3435	
	>1000 -1300	7	> 30 - 40		1.5864	35 NiCr 18	-	-	-	-	-	-	-	-	
	>1000 -1300	10	> 30 - 40		1.6511	36 CrNiMo 4	40 NCD 3	816 M 40	110	38 NiCrMo 4 (KB)	33NiCrMo4	SNC 836	-	9840	
	>1000 -1300	9	> 30 - 40		1.6580	30 CrNiMo 8	30 CND 8	823 M 30	-	30 NiCrMo 8		SNCM 431	-	-	
	>1000 -1300	9	> 30 - 40		1.6582	34 CrNiMo 6	35 NCD 6	817 M 40	24	35 NiCrMo 6 (KW)		SNCM 447	2541	4340	
	>1000 -1300	12	> 30 - 40		1.7033	34 Cr 4	32 C 4	530 A 32	18B	34 Cr 4 (KB)	35Cr4	SCr 430 (H)	-	5132	
	>1000 -1300	11	> 30 - 40		1.7034	37 Cr 4	38 C 4	530 A 36	-	38 Cr 4	-	SCr 435 (H)	-	5135	
	>1000 -1300	11	> 30 - 40		1.7035	41 Cr 4	42 C 4	530 M 40	18	41 Cr 4	42Cr4	SCr 440 (H)	-	5140	
	>1000 -1300		> 30 - 40		1.7045	42 Cr 4	42 C 4 TS	530 A 40	-	41 Cr 4	42Cr4	SCr 440	2245	5140	
	>1000 -1300	12	> 30 - 40		1.7218	25 CrMo 4	25 CD 4 S	1717 CDS 110	-	25 CrMo 4 (KB)	55Cr3	SCM 420; SCM 430	2225	4130	
	>1000 -1300	11	> 30 - 40		1.7220	34 CrMo 4	35 CD 4	708 A 37	19B	35 CrMo4	34CrMo4	SCM 432; SCCrM 3	2234	4135; 4137	
	>1000 -1300	11	> 30 - 40		1.7223	41 CrMo 4	42 CD 4 TS	708 M 40	19A	41 CrMo 4	42CrMo4	SCM 440	2244	4142; 4140	
	>1000 -1300	10	> 30 - 40		1.7225	42 CrMo 4	42 CD 4 TS	708 M 40	19A	41 CrMo 4	F-1252	SCM 440	2244	4142; 4140	
	>1000 -1300	9	> 30 - 40		1.7228	50 CrMo 4	-	708 A 47	-	-	-	SCM 445 (H)	-	4150	
	>1000 -1300	9	> 30 - 40		1.7361	32 CrMo 12	30 CD 12	722 M 24	40B	31 CrMo 12	F.124.A	-	2240	-	
	>1000 -1300	10	> 30 - 40		1.7561	42 CrV 6	-	-	-	-	-	-	-	-	
	>1000 -1300	9	> 30 - 40		1.7707	30 CrMoV 9	-	-	-	-	-	-	-	-	
	>1000 -1300	10	> 30 - 40		1.7735	14 CrMoV 6 9	15 CDV 6	-	-	-	-	-	-	-	
	>1000 -1300	9	> 30 - 40		1.8159	50 CrV 4	50 CV 4	735 A 50	47	51 CrV 4	51CrV4	SUP 10	2230	6150	
	>1000 -1300	8	> 30 - 40		1.8161	58 CrV 4	-	-	-	-	-	-	-	-	
P Unalloyed heat-treatable steels Acciai da bonifica non legati															
2.2	<800	20	< 21		1.0402	C 22	AF 42 C 20	050 A 20	2D	C 20; C 21	F.112	-	1450	1020	
	<800	19	< 21		1.0406	C 25	AF 50 C 30	070 M 26	-	C 25	-	-	-	1025	
	<800	17	< 21		1.0501	C 35	AF 55 C 35	060 A 35	-	C 35	F.113	-	1550	1035	
	<800	14	< 21		1.0503	C 45	AF 65 C 45	080 M 46	-	C 45	F.114	-	1650	1045	
	<800	16	< 21		1.0511	C 40	AF 60 C 40	-	-	C 40	-	-	-	1040	
	<800	18	< 21		1.0528	C 30	-	-	-	-	-	-	-	-	
	<800	20	< 21		1.1151	Ck 22	XC 25; XC 18	050 A 20	-	C 20	-	S 20 C; S 20 CK	-	1023	
	<800	19	< 21		1.1158	Ck 25	XC 25	070 M 26	-	C 25	-	S 25 C	-	1025	
	<800	18	< 21		1.1178	Ck 30	-	-	-	-	-	-	-	-	
	<800	17	< 21		1.1181	Ck 35	XC 38 H1; XC 32	080 M 36	-	C 35	-	S 35 C	1572	1035	
	<800	16	< 21		1.1186	Ck 40	XC 42 H1	080 M 40	-	C 40	-	S 40 C	-	1040	
	<800	14	< 21		1.1191	Ck 45	XC 42	080 M 46	-	C 45	C45K	S 45 C	1672	1045	
	>800-1000	12	> 21 - 30		1.0535	C 55	-	070 M 55	-	C 55	-	-	1655	1055	
	>800-1000	13	> 21 - 30		1.0540	C 50	-	-	-	-	-	-	-	-	
	>800-1000	11	> 21 - 30		1.0601	C 60	CC 55	080 A 62	43D	C 60	-	-	-	1060	
	>800-1000	12	> 21 - 30		1.1203	Ck 55	XC 55	070 M 55	-	C 50	C55K	S 55 C	-	1055	
	>800-1000	13	> 21 - 30		1.1206	Ck 50	XC 48 H1	080 M 50	-	-	-	-	-	1050	
	>800-1000	11	> 21 - 30		1.1221	Ck 60	XC 60	080 A 62	43D	C 60	-	S 58 C	1665; 1678	1060	
P Cold work tool steels Acciai da utensili per lavorazione a freddo															
4.2	760		19		1.2067	100 Cr 6	Y 100 C 6	BL 3	-	-	100Cr6	-	-	L 3	
	750		99	99	1.2101	62 SiMnCr 4	-	-	-	-	-	-	-	-	
	760		19		1.2103	58 SiCr 8	-	-	-	-	-	-	-	-	
	760		19		1.2108	90 CrSi 5	-	-	-	-	-	-	-	-	
	720			97	1.2162	21 MnCr 5	20 NC 5	-	-	-	-	SCR 420 H			

EVO code	Rm N/mm ²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR		 BS	EN	 UNI	 UNE	 JIS	 SIS	 AISI/SAE/ASTM
P Cold work tool steels Acciai da utensili per lavorazione a freddo															
4.2	730			98	1.2210	115 CrV 3	100 C 3		-	-	107 CrV 3 KU	-	-	-	L 2
	730			98	1.2330	35 CrMo 4	34 CD 4		708 A 37	-	35 CrMo4	-	-	2234	4135
	750			99	1.2332	47 CrMo 4	42 CD 4		709 M 40	-	40 CrMo 4	-	-	2244	4142
	760		19		1.2419	105 WCr 6	105 WC 13		-	-	107 WCr 5 KU	105WCr5	SKS 31	-	-
	720			97	1.2510	100 MnCrW 4	90 MWCV 5		BO 1	-	95 MnWCr 5 KU	-	SKS 3	2140	O 1
	730			98	1.2516	120 W 4	110 WC 20		BF 1	-	110 W 4 KU	-	-	-	-
	750			99	1.2542	45 WCrV 7	-		BS 1	-	45 WCrV 8 KU	45WCrSi8	-	2710	S 1
	750			99	1.2550	60 WCrV 7	55 WC 20		-	-	55 WCrV 8 KU	-	-	-	-
	830		23		1.2721	50 NiCr 13	-		-	-	-	-	-	-	-
	670			95	1.2735	15 NiCr 14	10 NC 12		-	-	-	-	SNC 22	-	-
	710			97	1.2762	75 CrMoNiW 6 7	-		-	-	-	-	-	-	-
	750			99	1.2826	60 MnSiCr 4	-		-	-	-	-	-	-	-
	760		19		1.2833	100 V 1	Y1 105 V		BW 2	-	102 V 2 KU	-	SKS 43	-	W 210
	730			98	1.2842	90 MnCrV 8	90 MV 8		BO 2	-	90 MnVCr 8 KU	-	-	-	O 2
	830		23		1.2080	X 210 Cr 12	Z 200 C 12		BD 3	-	X 210 Cr 13 KU	X210Cr12	SKD 1	-	D 3
	380			63	1.2341	X 6 CrMo 4	-		-	-	-	-	-	-	-
	760		19		1.2363	X 100 CrMoV 5 1	Z 100 CDV 5		BA 2	-	X 100 CrMoV 5 1KU	-	SKD 12	2260	A 2
	640-840	18			1.5662	X8 Ni9	9 Ni		1501.509	-	X 10Ni9	XBNI09	STBL 690	-	A353
	760		19		1.2379	X 155 CrVMo12 1	Z 160 CDV 12		BD 2	-	X 155 CrVMo 12 1KU	-	SKD 11	-	D 2
	760		19		1.2436	X 210 CrW 12	-		-	-	X 215 CrW 12 1 KU	X210CrW12	SKD 2	2312	-
	760		19		1.2601	X 165 CrMoV 12	-		-	-	X 165 CrMoV 12 KU	X160crMoV12	-	2310	-
P Unalloyed tool steels Acciai da utensili non legato															
4.1	640			93	1.1520	C 70 W1	-		-	-	-	-	-	-	-
	640			93	1.1525	C 80 W1	Y1 90; Y1 80		-	-	C 80 KU	-	-	-	W 108
	640			93	1.1545	C 105 W1	Y1 105		-	-	C 100 KU	-	-	-	W 110
	640			93	1.1620	C 70 W2	-		-	-	-	-	-	-	-
	640			93	1.1625	C 80 W2	Y1 80		BW 1B	-	C 80 KU	-	SKC 3; SK 5; SK 6	-	W 1
	640			93	1.1645	C105 W2	Y1 105		-	-	C 100 KU	-	SK 3	-	-
	660			94	1.1654	C 110 W	-		-	-	-	-	-	-	-
	710			97	1.1663	C 125 W	Y2 120		-	-	C 120 KU	-	SK 2	-	W 112
	760		19		1.1673	C 135 W	Y2 140		-	-	C 140 KU	-	SK 1	-	-
	640			93	1.1730	C 45 W	Y3 42		-	-	-	-	-	-	-
	760		19		1.1740	C 60 W	Y3 55		-	-	-	-	SK 7	-	-
	730			98	1.1744	C 67 W	-		-	-	-	-	-	-	-
	730			98	1.1750	C 75 W	-		BW 1A	-	-	-	-	-	W 1
	570			88	1.1820	C 55 W	-		-	-	-	-	-	-	-
	750			99	1.1830	C 85 W	Y3 90		-	-	-	-	SK 5	-	-
P Hot work tool steels Acciai da utensili per lavorazione a caldo															
3.1	<770				1.2311	40 CrMnMo 7	-		-	-	35 CrMo8	-	-	-	-
	<770				1.2312	40 CrMnMoS 8 6	-		-	-	40 CrMnMo 7	F-5302	-	-	-
	<770				1.2711	54 NiCrMoV 6	55 NCDV 6		-	-	-	-	-	-	-
	<800				1.2713	55 NiCrMoV 6	55 NCDV 7		Bh 224	-	-	F.520.S	SKT 4	-	L 6
	>800				1.2738	40 CrMnNiMo 8	-		-	-	-	-	-	-	P20
	<840				1.2744	57 NiCrMoV 77	-		-	-	-	-	-	-	-
	>860				1.2764	X 19 NiCrMo 4	-		-	-	-	-	-	-	-
	<870				1.2767	X 45 NiCrMo 4	Y 35 NCD 16		-	-	42 NiCrMo 15 7	-	-	-	-
	<770				1.2083	X 42 Cr 13	Z 40 C 14		-	-	X 41 Cr 13 KU	F-5263	SUS 420 J 2	-	-

EVO code	Rm N/mm²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR	 BS	EN	 UNI	 UNE	 JIS	 SIS	 AISI/SAE/ASTM	
P Hot work tool steels Acciai da utensili per lavorazione a caldo															
3.1	<800				1.2343	X 38 CrMoV 5 1	Z 38 CDV 5	BH 11	-	X 37 CrMoV 5 1 KU	F-5317	SKD 6	-	H 11	
	<800				1.2344	X 40 CrMoV 5 1	Z 40 CDV 5	BH 13	-	X 40 CrMoV 5 1 1 KU	F-5318	SKD 61	-	H 13	
	<800				1.2365	X 32 CrMoV 3 3	Z 32 CDV 28	BH 10	-	X 30 CrMoV 12 27 KU	F-5313	SKD 7	-	H 10	
	<800				1.2567	X 30 WCrV 5 3	Z 32 WCV 5	-	-	X 30 WCrV 5 3 KU	-	SKD 4	-	-	
	<800				1.2581	X 30 WCrV 9 3	Z 30 WCV 9	BH 21	-	X 30 WCrV 9 3 KU	X30WCrV9	SKD 5	-	H 21	
	<770				1.2885	X 32 CrMoV 3 3 3	-	BH 10 A	-	-	F-5314	-	-	-	
	<840				1.2316	X 36 CrMo 17	-	-	-	X 38 CrMo 16 1 KU	F-5267	-	-	-	
	1080	16	>29		Toolox 33	-	-	-	-	-	-	-	-	Toolox 33	
	1250	10	43		Hardox 400	-	-	-	-	-	-	-	-	Hardox 400	
1450	13	45		Toolox 44	-	-	-	-	-	-	-	-	Toolox 44		
P Nitriding steels Acciai da nitrurazione															
3.2	<1000	14	< 30		1.8504	34 CrAl 6	-	-	-	-	-	-	-	-	
	<1000	12	< 30		1.8506	34 CrAlS 5	-	-	-	-	-	-	-	-	
	<1000	14	< 30		1.8507	34 CrAlMo 5	30 CAD 6.12	905 M 31	-	34 CrAlMo 7	-	-	-	A 355 Cl. D	
	<1000	12	< 30		1.8509	41 CrAlMo 7	40 CAD 6.12	905 M 39	41B	41 CrAlMo 7	41CrAlMo7	SACM 645	2940	A 355 Cl. A	
	>1000	10	> 30		1.8515	31 CrMo 12	30 CD 12	722 M 24	-	31 CrMo 12	-	-	2240	-	
	>1000	9	> 30		1.8519	31 CrMoV 9	-	-	-	-	-	-	-	-	
	>1000	10	> 30		1.8521	15 CrMoV 5 9	-	-	-	-	-	-	-	-	
	>1000	8	>30		1.8523	39 CrMoV 13 9	-	897 M 39	40C	39 CrMoV 13 9	-	-	-	-	
	>1000	12	> 30		1.8550	34 CrAlNi 7	-	-	-	-	-	-	-	-	
M Stainless steels - ferritic Acciai inox ferritici															
1.1	400-600	17			1.4002	X 6 CrAl 13	Z 6 CA 13	405 S 17	-	X 6 CrAl 13	-	SUS 405	2302	405	
	380-560	25			1.4512	X 5 CrTi 12	Z 6 CT 12	409 S 19	-	X 6 CrTi 12	-	SUH 409	-	409	
	400-600	19			1.4000	X 6 Cr 13	Z 6 C 13	403 S 17	-	X 6 Cr 13	F,3110	SUS 403	2301	403	
	450-600	18			1.4016	X 6 Cr 17	Z 8 C 17	430 S 15	960	X 8 Cr 17	F,3113	SUS 430	2320	430	
	500-700	12			1.4742	X 10 CrAlSi 18	Z 10 CAS 18	430 S 15	60	X 8 Cr 17	F-3153	SUS 430; SUH 21	-	430	
	450-630	18			1.4113	X 6 CrMo 17	Z 8 CD 17.01	434 S 17	-	X 8 CrMo 17	F,3116	SUS 434	2325	434	
	420-600	23			1.4510	X 3 CrTi 17	Z 8 CT 17	-	-	X 6 CrTi 17	-	SUS 430 LX	-	XM 8; 430 Ti	
	400-600	20			1.4521	X 2 CrMoTi 18-2	Z 3 CDT 18-02	-	-	-	F-3123	SUS 444	2326	444	
	450-650	15			1.4724	X 10 CrAlSi 13	Z 13 C 13	-	-	-	F-3152	-	-	-	
520-720	15			1.4762	X 10 CrAl 24	Z 10 CAS 24	-	-	X 16 Cr 26	F,3154	SUH 446	-	446		
M Stainless steels - austenitic Acciai inox austenitici															
2.1	750-950	40			1.4372	X 12 CrMnNiN 17-7-5	Z 12 CMN 17-07 Az	-	-	-	-	-	-	201	
	680-880	35			1.4373	X 12 CrMnNiN 18-9-5	-	284 S 16	-	-	-	-	-	202	
	600-950	40			1.4310	X 10 CrNi 18-8; X 12 CrNi 17 7	Z 11 CN 17-08	301 S 21	-	X10CrNi18-8	F-3517	SUS 301	2331	301	
	630-850	35			1.4318	X 2 CrNiN 18-7	Z 3 CN 18-07 Az	-	-	-	-	-	-	301LN	
	500-700	35			1.4305	X 10 CrNiS 18 9	Z 10 CNF 18.09	303 S 21	58M	X 10 CrNi 18 9	F,3508	SUS 303	2346	303	
	600-951	36			1.4350	X 5 CrNi18 9	Z 6 CN 18.09	304 S 31	58E	X 5 CrNi 18 10	F,3551	SUS 302	-	304	
	520-720	45			1.4301	X 5 CrNi 18 9	Z 6 CN 18.09	304 S 15	58E	X 5 CrNi 18 10	F,3551	SUS 304	2332; 2333	304; 304 H	
	460-680	45			1.4306	X 2 CrNi 19 11	Z 2 CN 18.10	304 S 12	-	X 2 CrNi 18 11	F,3503	SCS 19	2352; 2333	304 L	
	550-750	40			1.4311	X 2 CrNiN 18 10	Z 2 CN 18.10	304 S 62	-	X 2 CrNiN 18 11	-	SUS 304 LN	2371	304 LN	
	510-710	45			1.4948	X 6 CrNi 18-11	-	304 S 50	-	-	-	-	-	304H	
	520-700	45			1.4307	X 2 CrNi 18-9	Z 2 CN 19-09	-	-	-	-	-	-	304 L	
	500-750	40			1.4315	X 5 CrNiN 19-9	-	-	-	-	-	-	-	304 N	
	500-650	45			1.4303	X 5 CrNi 18 12	Z 8 CN 18.12	305 S 19	-	X 8 CrNi 19 10	-	SUS 305	-	308; 305	
	500-700	33			1.4833	X 12 CrNi 23-13	Z 15 CN 23-13	309 S 24	-	X 6 CrNi 23 14	-	SUS 309S	-	309 S	
	500-700	33			1.4845	X 8 CrNi 25-21	Z 8 CN 25-20	310 S 24	-	X 6 CrNi 25 20	F,331	SUS 310S	2361	310 S	

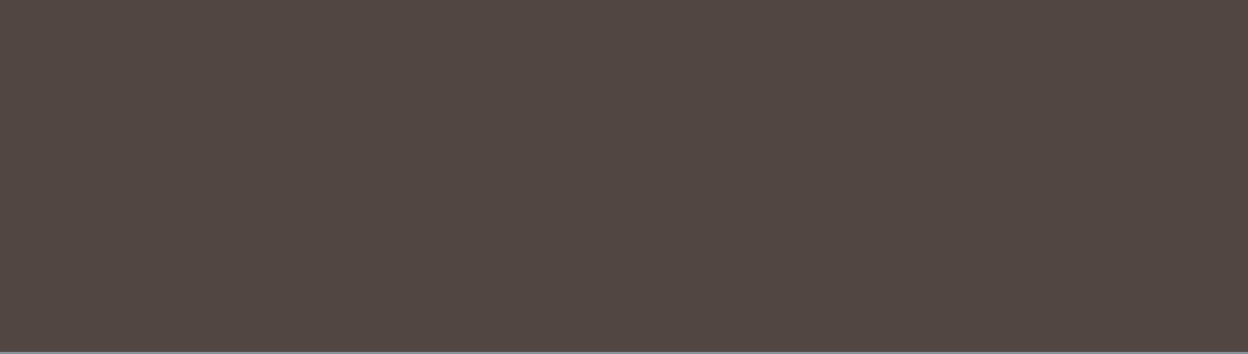
EVO code	Rm N/mm²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR	 BS	EN	 UNI	 UNE	 JIS	 SIS	 AISI/SAE/ASTM	
M Stainless steels - austenitic Acciai inox austenitici															
2.1	550-750	30			1.4841	X 15 CrNiSi 25-21	Z 15 CNS 25-20	314 S 25	-	-	F.3310	SUH 310	-	314	
	520-680	40			1.4401	X 5 CrNiMo 18 10	Z 6 CND 17.11	316 S 16	58J	X 5 CrNiMo 17 12	F.3543	SUS 316	2347	316	
	530-730	40			1.4436	X 5 CrNiMo 17 13 3	Z 6 CND 17.12	316 S 16	-	X 5 CrNiMo 17 13	F.3538	SUS 316	2343	316	
	520-680	40			1.4404	X 2 CrNiMo 17 13 2	Z 2 CND 17.12	316 S 11	-	X 2 CrNiMo 17 12	F.3533	SUS 316 L	2348	316 L	
	520-700	40			1.4435	X 2 CrNiMo 18 14 3	Z 2 CND 17.13	317 S 12	-	X 2 CrNiMo 17 13	-	SCS 16; SUS 316 L	2353	316 L	
	520-700	40			1.4432	X 2 CrNiMo 17-12-3	Z 3 CND 17-02-03	316 S 13	-	X 2 CrNiMo 17-12-3	F-3537	-	-	316 L	
	580-780	40			1.4406	X 2 CrNiMoN 17 12 2	Z 2 CND 17.12 AZ	316 S 61	58C	X 2 CrNiMoN 17 12	F-3542	SUS 316 LN	-	316 LN	
	580-780	35			1.4429	X 2 CrNiMoN 17 13 3	Z 2 CND 17.13 AZ	316 S 62	-	X 2 CrNiMoN 17 13	F-3543	SUS 316 LN	2375	316 LN	
	490-740	40			1.4573	X 10 CrNiMoTi 18 12	-	320 S 33	-	X 6 CrNiMoTi 17 13	-	SUS 316 Ti	-	316 Ti	
	520-690	40			1.4571	X 6 CrNiMoTi 17 12 2	Z 6 CNT 17.12	320 S 31	58J	X 6 CrNiMoTi 17 12	F.3535	SUS 316 Ti	2350	316 Ti	
	520-720	40			1.4580	X 6 CrNiMoNb 17 12 2	Z 6 CNDNb 17.12	318 S 17	-	X 6 CrNiMoNb 17 12	F.3536	-	-	316 Cb	
	550-700	35			1.4438	X 2 CrNiMo 18 16 4	Z 2 CND 19.15	317 S 12	-	X 2 CrNiMo 18 15	F-3539	SUS 317 L	2367	317 L	
	580-780	35			1.4439	X 2 CrNiMoN 17-13-5	Z 3 CND 18-14-05 Az	-	-	-	F-3544	-	-	317 LMN	
	490-740	40			1.4583	X 10 CrNiMoNb 18 12	-	-	-	X 6 CrNiMoNb 17 13	-	-	-	318	
	500-720	40			1.4541	X 6 CrNiTi 18 10	Z 6 CNT 18.10	321 S 12	58B	X 6 CrNiTi 18 11	F.3553; F.3523	SUS 321	2337	321	
	500-720	40			1.4878	X 8 CrNiTi 18-10	Z 6 CNT 18-10	321 S 31	-	-	-	SUS 321	-	321 H	
	500-720	40			1.4550	X 6 CrNiNb 18 10	Z 6 CNNb 18.10	347 S 17	58F	X 6 CrNiNb 18 11	F.3552; F.3524	SUS 347	2338	347	
	500-700	40			1.4563	X 1 NiCrMoCu 31-27-4	Z 2 NCDU 31-27	-	-	-	-	-	2584	B 668	
	520-730	35			1.4539	X 1 NiCrMoCu 25-20-5	Z 2 NCDU 25-20	904 S 13	-	-	-	-	2562	904 L	
	550-750	30			1.4864	X12NiCrSi35-16	Z 20 NCS 33-16	NA 17	-	-	F.3313	SUH 330	-	330	
	620-880	20			1.4460	X 8 CrNiMo 27 5	Z 5 CND 27-05	-	-	-	F-35552	SUS 329 J 1	2324	329	
	500-740	30			1.4546	X 5 CrNiNb 18 10	Z 6 CNNb 18.10	347 S 18	58F	X 6 CrNiNb 18 11	F-3524	SUS 347	2338	348	
M Stainless steels - DUPLEX Acciai inox DUPLEX															
3.1	340-950	20			1.4462	X 2 CrNiMoN 22-5-3	Z 3 CND 22-05 Az	318 S 13	-	-	-	SUS 329J3L	2377	2205	
	630-850	20			1.4362	X 2 CrNiN 23-4	Z 3 CN 23-04 Az	-	-	-	-	-	2327	2304	
	730-1000	15			1.4410	X 2 CrNiMoN 25-7-4	Z 3 CND 25-06	-	-	-	-	SCS 14A	2328	2507	
	730-1000	17			1.4507	X 2 CrNiMoCuN 25-6-3	Z 3 CNDU 25-06	-	-	-	-	-	-	255	
	730-1000	17			1.4507	X 2 CrNiMoCuN 25-6-3	Z 3 CNDU 25-06	-	-	-	-	-	-	255	
M Stainless steels - martensitic Acciai inox martensitici															
1.2	>600	20			1.4006	X 10 Cr 13	Z 12 C 13	410 S 21	56A	X 12 Cr 13	F.3401	SUS 410	2302	410; CA-15	
	650-850	12			1.4005	X 12 CrS 13	Z 12 CF 13	416 S 21	-	X 12 CrS 13	-	SUS 416	2380	416	
	>700	15			1.4021	X 20 Cr 13	Z 20 C 13	420 S 37	-	X 20 Cr 13	-	SUS 420 J 1	2303	420	
	>740	15			1.4028	X 30 Cr 13	Z 30 C 13	420 S 45	-	X 30 Cr 13	-	SUS 420 J 2	2304	420	
	>760	12			1.4031	X 38 Cr 13	Z 40 C 14	-	-	X 40 Cr 14	-	SUS 420 J 2	2304	420	
	>780	12			1.4034	X 46 Cr 13	Z 40 CM	420 S 45	56D	X 40 Cr 14	F.3405	SUS 420 J 2	2304	420	
	>850	12			1.4116	X 50 CrMoV 15	Z 50 CD 15	-	-	-	F-3422	-	-	-	
	>900	12			1.4122	X 39 CrMo 17-1	Z 38 CD 16-01	-	-	-	-	-	-	-	
	780-1100	11			1.4313	X 5 CrNi 13 4	Z 5 CN 13.4	425 C 11	-	X 6 CrNi 13 04	-	SCS 5	2385	CA 6-NM	
	840-1100	14			1.4418	X 4 CrNiMo 6-5-1	Z 6 CND 16-05-01	-	-	-	-	-	2387	-	
	>650	14			1.4024	X15Cr13	Z 12 C 13 M	420 S 29	56B	-	-	SUS 410J1	-	420	
	640-840	11			1.4104	X 14 CrMoS 17	Z 13 CF 17	-	-	X 14 CrS 17	F-3431	SUS 430 F	2383	430 F	
	750-950	14			1.4057	X 17 CrNi 16 2	Z 15 CN 16.02	431 S 29	57	X 16 CrNi 16	F-3427	SUS 431	2321	431	
					1.4747	X 80 CrNiSi 20	Z 80 CSN 20.02	443 S 65	59	X 80 CrSiNi 20	F.320.B	SUH 4	-	HNv 6	
		<900			1.4125	X 105 CrMo 17	Z 100 CD 17	-	-	X 105 CrMo 17	-	SUS 440 C	-	440 C	
M Stainless steels - hardened Acciai inox induriti															
1.3	>1275	5			1.4542	X5CrNiCuNb16-4	Z 7 CNU 15-05	-	-	-	-	SCS 630	-	630	
	>1030	19			1.4568	X7CrNiAl17-7	Z 9 CNA 17-07	301 S 81	-	-	-	SUS 631	2388	631	

EVO code	Rm N/mm ²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR	 BS	EN	 UNI	 UNE	 JIS	 SIS	 AISI/SAE/ASTM
S Nickel- /Cobalt- alloys Leghe nichel/cobalto resistenti al calore														
2.1	900-1100	14			1.4718	X 45 CrSi 9 3	Z 45 CS 9	401 S 45	52	X 45 CrSi 8	-	SUH 1	-	HNv 3
	500-750	30			1.4828	X 15 CrNiSi 20 12	Z 15 CNS 20.12	309 S 24	-	-	-	SUH 309	-	309
	550-800	30			1.4841	X 15 CrNiSi 25 20	Z 15 CNS 25.20	-	-	X 16 CrNiSi 25 20	-	SUH 310	-	314; 310
	500-750	35			1.4845	X 12 CrNi 25 21	Z 12 CN 25.20	310 S 24	-	X 6 CrNi 26 20	F.331	SUH 310; SUS 310 S	-	310 S
	550-800	30			1.4864	X 12 NiCrSi 36 16	Z 12 NCS 37.18	NA 17	-	-	-	SUH 330	-	330
	950-1200	8			1.4871	X 53 CrMnNiN 21 9	Z 52 CMN 21.09	349 S 54	-	X 53 CrMnNiN 21 9	-	SUH 35; SUH 36	-	EV 8
	500-750	30			1.4876	X 10 NiCrAlTi 33 20	Z 8 NC 32.21	NA 15 (H)	-	-	-	NCF 800	-	B 163
	500-750	40			1.4878	X 12 CrNiTi 18 9	Z 6 CNT 18.12 (B)	321 S 20	-	X 6 CrNiTi 18 11	-	SUS 321	2337	321
	500-700	35			2.4360	NiCu30Fe	Nu 30	NA 13	-	-	-	-	-	Monel 400
	620-850	17			2.4375	NiCu30Al	Nu 30 AT	NA 18	-	-	-	-	-	Monel K-500
	>690	40			2.4685	G-NiMo28	-	-	-	-	-	-	-	Hastelloy B
	>740	42			2.4610	NiMo16Cr16Ti	-	-	-	-	-	-	-	Hastelloy C-4
	>760	40			2.4617	G-NiMo30	-	-	-	-	-	-	-	Hastelloy B-2
	700-800	26			2.4630, 2.4951	NiCr20Ti	NC 20 T	HR 5	-	-	-	-	-	Nimonic 75
2.2	800-1000	12			2.4631	NiCr20TiAl	-	HR 401; 601	-	-	-	NCF 80 A	-	Nimonic 80 A
	1200	17			2.4632	NiCr20Co18Ti	-	-	-	-	-	-	-	Nimonic 90
	1180	25			2.4634	NiCo20Cr15MoAlTi	-	-	-	-	-	-	-	Nimonic 105
	<770	15			2.4662	NiCr13Mo6Ti3	-	HR 53	-	-	-	-	-	Nimonic 901
	900-1200				2.4670	-	-	-	-	-	-	-	-	Nimocast 713
	900-1200				2.4674	-	-	-	-	-	-	-	-	Nimocast PK 24
	1270	23			2.6554	-	-	-	-	-	-	-	-	Waspaloy
2.3	890	50			2.4856	NiCr22Mo9Nb	NC 22 FeDNb	NA 21	-	-	-	-	-	Inconel 625
	<1400	25			2.4668	NiCr19FeNbMo	NC 19Fe Nb	-	-	-	-	-	-	Inconel 718
S Pure titanium, Titanium alloys Titanio puro, Leghe di titanio														
1.1	290-410	30			3.7025	Ti99.5 / Ti Gr.1	-	-	-	-	-	-	-	-
	380-540	20			3.7035	Ti99.4 / Ti Gr.2	-	TA 1	-	-	-	-	-	-
1.2	460-590	18			3.7055	Ti99.3 / Ti Gr.3	-	TA 2	-	-	-	-	-	-
	540-740	16			3.7065	Ti99.2 / Ti Gr.4	-	TA 3	-	-	-	-	-	-
	390-540	20			3.7235	Ti 2 Pd / Ti Gr.2Pd	-	-	-	-	-	-	-	-
1.3	>890	>10			3.7165	TiAl6V4 / Ti Gr. 5	T-A6V	TA 28	-	-	-	-	-	R56400
	>1000	9			3.7185	TiAl 4 Mo 4 Sn 2	-	-	-	-	-	-	-	-
K Cast iron - lamellar graphite Ghise con grafite lamellare														
1.1	100-200				0.6010	EN-JL 100 (GG-10)	Ft 10 D	-	-	G 10	-	FC 10	01 10-00	A48-20 B
	150-250				0.6015	EN-JL 150 (GG-15)	Ft 15 D	Grade 150	-	G 15	FG 15	FC 15	01 15-00	A48-25 B
	200-300				0.6020	EN-JL 200 (GG-20)	Ft 20 D	Grade 220	-	G 20	FG 20	FC 20	01 200	A48-30 B
	250-350				0.6025	EN-JL 250 (GG-25)	Ft 25 D	Grade 260	-	G 25	FG 25	FC 25	01 250	A48-40 B
	300-400				0.6030	EN-JL 300 (GG-30)	Ft 30 D	Grade 300	-	G 30	FG 30	FC 30	1 300	A48-45 B
	350-450				0.6035	EN-JL 350 (GG-35)	Ft 35 D	Grade 350	-	G 35	FG 35	FC 35	1 350	A48-50 B
	400-500				0.6040	EN-JL Z (GG-40)	Ft 40 D	Grade 400	-	-	-	-	1 400	A48-60 B
	>170				0.6655	GGL-NiCuCr 15 6 2	L-NUC 15 6 2	L-NUC 15 6 2	-	-	-	-	-	A-436 Type 1
	>170	2			0.6660	GGL-NiCr 20-2	L-NC 20 2	L-NC 20 2	-	-	-	-	-	A-436 Type 2
	>190	1			0.6676	GGL-NiCr 30-3	L-NC 30 3	L-NC 30 3	-	-	-	-	-	A-436 Type 3
1.2	>170				0.6680	GGL-NiSiCr 30-5-5	L-NSC 30 5 5	L-NSC 30 5 5	-	-	-	-	-	A-436 Type 4
K Cast iron - nodular graphite Ghise con grafite sferoidale														
1.2	370-400	14			0.7040	EN-GJS-400-15 (GGG-40)	FGS 400-12	SNG 420/12	-	GS 400-12	GGG 40	FCD 40	0717-02	60-40-18
	420-500	7			0.7050	EN-GJS-500-7 (GGG-50)	FGS 500-7	SNG 500/7	-	GS 500/7	GGG 50	FCD 50	0727-02	65-45-12
	550-600	3			0.7060	EN-GJS-600-3 (GGG-60)	FGS 600-3	SNG 600/3	-	GS 600/3		FCD 60	0732-03	80-55-06

EVO code	Rm N/mm²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR	 BS	EN	 UNI	 UNE	 JIS	 SIS	 AISI/SAE/ASTM
K Cast iron - nodular graphite Ghise con grafite sferoidale														
1.2	660-700	2			0.7070	EN-GJS-700-2 (GGG-70)	FGS 700-2	SNG 700/2	-	GS 700/2	GGG 70	FCD 70	0737-01	100-70-03
	800	2			0.7080	EN-GJS-800-2 (GGG-80)	FGS 800-2	SNG 800/2	-	GS 800/2	-	-	-	120-90-02
	370-480	7			0.7660	GGG-NiCr 20 2	S-NC 20 2	S-NiCr 20 2	-	-	F 43000	-	-	A 439 Type D-2
	>390	7			0.7661	GGG-NiCr 20 3	S-NC 20 3	S-NiCr 20 3	-	-	F 43001	-	-	A 439 Type D-2B
	370-450	20			0.7670	EN-GJSA-XNi22	S-N 22	S-Ni 22	-	-	F 43002	-	-	A 439 Type D-2C
	440-480	25			0.7673	EN-GJSA-XNiMn23-4	S-NM 23 4	S-NiMn 23 4	-	-	F 43003	-	-	A 439 Type D-2M
	370-480	7			0.7676	EN-GJSA-XNiCr30-3	S-NC 30 3	S-NiCr 30 3	-	-	-	-	-	A 439 Type D-3
	>370	13			0.7677	GGG-NiCr 30 1	S-NC 30 1	S-NiCr 30 1	-	-	F 43004	-	-	A 439 Type D-3A
	390-500	1			0.7680	EN-GJSA-XNiSiCr30-5-5	S-NSC 30 5 5	S-NiSiCr 30 5 5	-	-	F 43005	-	-	A 439 Type D-4
	370-420	20			0.7683	EN-GJSA-XNi35	S-N 35	S-Ni 35	-	-	F 43006	-	-	A 439 Type D-5
	370-450	7			0.7685	EN-GJSA-XNiCr35-3	S-NC 35 3	S-NiCr 35 3	-	-	-	-	-	A 439 Type D-5B
K Cast iron - vermicular graphite Ghise con grafite vermicolare														
1.3	300-375	1,5				EN-GJV 300	-	-	-	-	-	-	-	-
	350-425	1,5				EN-GJV 350	-	-	-	-	-	-	-	-
	400-475	1				EN-GJV 400	-	-	-	-	-	-	-	-
	450-525	1				EN-GJV 450	-	-	-	-	-	-	-	-
	500-575	0,5				EN-GJV 500	-	-	-	-	-	-	-	-
K Malleable cast iron Ghise malleabili														
2.1	>350	10			0.8135	EN-GJMB 350-10	MN35-10	B340/12	-	-	GTS 35	-	0810	32510
	>450	6			0.8145	EN-GJMB 450-6	-	P440/7	-	-	GTS 45	-	0852	40010
	>550	4			0.8155	EN-GJMB 550-4	MP50-5	P510/4	-	-	GTS 55	-	0854	50005
	>650	2			0.8165	EN-GJMB 650-2	MP60-3	P570/3	-	-	GTS 65	-	0856	70003
	>700	2			0.8170	EN-GJMB 700-2	M870-2	P690/2	-	-	GTS 70	-	0862; 0864	90001
	270-360	3			0.8035	EN-GJMW-350-4	MB35-7	W340/3	-	-	GTW 35	FCMW 330	-	MB 350-4
	300-420	4			0.8040	EN-GJMW-400-5	MB40-10	W410/4	-	GMB 40	GTW 40	FCMW 370	-	MB 400-5
	330-480	4			0.8045	EN-GJMW-450-7	-	-	-	GMB 45	GTW 45	FCMWP 440	-	MB 450-7
	490-570	3			0.8055	EN-GJMW-550-4	-	-	-	-	GTW 55	-	-	-
K Hard casting Ghise in conchiglia														
3.1	<1400		<45		0.9620	GJH-X 260 NiCr 4-2	-	Grade 2 A	-	-	-	-	0512-00	A532 I B
	<1400		<45		0.9625	GJH-X 330 NiCr 4-2	-	Grade 2 B	-	-	-	-	0513-00	A532 I A
	<1400		<45		0.9630	GJH-X 300 CrNiSi 9-5-2	-	Grade 2 C	-	-	-	-	-	A532 I D
	<1400		<45		0.9635	GJH-X 300 CrMo 15-3	-	Grade 3 A	-	-	-	-	-	A532 IIC 15%
	1000	5				GJS-1000-5	-	-	-	-	-	-	-	-
	1200	2				GJS-1200-2	-	-	-	-	-	-	-	-
	1400	1				GJS-1400-1	-	-	-	-	-	-	-	-
H Hardened steels Acciai temprati														
1.1	1250-1550	8	<50		Weldox 1100	-	-	-	-	-	-	-	-	Weldox 1100
1.2	1600-1800		<55		Hardox 500	-	-	-	-	-	-	-	-	Hardox 500
	1820-1900		<55		Hardox 550	-	-	-	-	-	-	-	-	Hardox 550
1.3	~1860		<55		1.2713	55 NiCrMoV 6	55 NCDV 7	-	-	-	F.520.S	SKT 4	-	L 6
	1995-2300		<60		Armox 600T	-	-	-	-	-	-	-	-	Armox 600T
	~2100		<60		1.2542	45 WCrV 7	-	BS 1	-	45 WCrV 8 KU	45WCrSi8	-	2710	S 1
1.4			<63		Ferro-Titanit	-	-	-	-	-	-	-	-	Ferro-Titanit
			<63		1.2379	X 155 CrVMo12 1	Z 160 CDV 12	BD 2	-	X 155 CrVMo 12 1KU	-	SKD 11	-	D 2
			<66		HSSE	-	-	-	-	-	-	-	-	HSSE
			<66		1.2436	X 210 CrW 12	-	-	-	X 215 CrW 12 1 KU	X210CrW12	SKD 2	2312	-

EVO code	Rm N/mm ²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR	 BS	EN	 UNI	 UNE	 JIS	 SIS	 AISI/SAE/ASTM
N	Aluminum unalloyed Alluminio non legato													
1.1	65-150	<40			3.0225	Al99.5	A5	1B	-	4507	L-3051	A1x1	-	-
	40-100	<33			3.0305	Al99.9	A9	-	-	-	-	-	-	-
N	Aluminum wrought alloys - not hardened Leghe malleabili - non indurite													
1.1	100-125	>1			3.0505	AlMn0.5Mg0.5	-	N31	-	-	-	-	-	3105
	80-230	>2			3.0515	AlMn1	-	N3	-	3568	L-3810	144054	-	-
	115-290	4			3.0525	AlMn1Mg0.5	A-M1G0.5	-	-	-	-	-	-	-
	100-205	>4			3.3315	AlMg1	A-G0.6	N41	-	5764	L-3350	A2x8	144106	-
	180-310	>3			3.3535	AlMg3	A-G3M	N5	-	3575	L-3390	-	-	-
N	Aluminum wrought alloys - hardened Leghe malleabili di alluminio - indurite													
1.2	150-400	>2			3.1325	AlCuMg1	A-U4G	H14	-	3579	L-3120	-	-	-
	180-460	>3			3.1355	AlCuMg2	A-U4G1	2L97	-	3579	L-3140	A3x4	-	-
	130-360	>2			3.2315	AlMgSi1	A-SGM0.7	H30	-	3571	L-3451	-	144212	-
	130-270	>8			3.3206	AlMgSi0.5	-	H9	-	3569	L-3441	A2x5	144103	-
	120-300	>2			3.3211	AlMg1SiCu	-	H20	-	-	-	-	-	-
	410-490	>3			3.4345	AlZnMgCu0.5	AZ 4 GU/9051	L86	-	811-04	-	-	-	7050
	180-560	>1			3.4365	AlZnMgCu1.5	AZ 4 GU/9050 C	L87	-	811-05	-	-	-	7075
N	Aluminum cast alloys Si <5% Leghe fuse di alluminio con Si <5%													
1.3	280-300	<1			3.2134	G-AlSi5Cu1Mg	-	-	-	-	-	-	-	-
	140-300	>2			3.3241	G-AlMg3Si	-	-	-	-	-	-	-	-
	200	1			3.3292	GD-AlMg9	A-G10S	-	-	5080	-	-	-	-
	140-210	>4			3.3541	GD-AlMg3	A-G3T	-	-	3059	-	ADC6	-	-
N	Aluminum cast alloys Si <5-12% Leghe fuse di alluminio con Si <5-12%													
1.4	160-200	1			3.2161	G-AlSi8Cu3	-	-	-	-	-	-	-	-
	230-360	>2			3.2373	G-AlSi9Mg	A-S9G	-	-	3051	-	AC4A	-	-
	240-350	<3			3.2163	G-AlSi9Cu3	A-S9U3	LM24	-	5075	-	-	-	-
	150-340	>1			3.2381	G-AlSi10Mg	A-S10G	LM9	-	3051	L-2560	-	4253	-
	160	1			3.2383	G-AlSi10Mg(Cu)	A-S10GU	LM 9	-	-	-	-	4253	A 360.2
	150-170	5			3.2581	G-AlSi12	A-S13	LM 6	-	3051	-	AC3	4261	A 413.2
	150-290	>1			3.2583	G-AlSi12(Cu)	A-S12U	LM 20	-	3048	-	-	4260	A 413.1
N	Aluminum cast alloys Si >12% Leghe fuse di alluminio con Si >12%													
1.5	165-370	<1				G-AlSi 17 Cu 4 Mg	-	-	-	-	-	-	-	-
	180-220	<1				G-AlSi 18 CuNiMg	-	-	-	-	-	-	-	-
	200-240	<1				G-AlSi 21 CuNiMg	-	-	-	-	-	-	-	-
	230-300	<1,5				G-AlSi 25 CuNiMg	-	-	-	-	-	-	-	-
N	Pure copper, low alloyed copper Rame puro, Rame poco legato													
2.1	<600	>10			2.0240	CuZn15	CuZn15	CZ 102	-	-	-	C2300	-	C23000
	<800	>10			2.0265	CuZn30	CuZn30	CZ 106	-	-	-	C2600	-	C26000
N	Copper-zinc alloys (brass) (long-chipping) Leghe rame-zinco (ottone) (truciolo lungo)													
2.2	<800	>10			2.0321	CuZn37	CuZn37	CZ 108	-	-	-	C 2700	-	C27200
	<800	>12			2.0335	CuZn36	Ms63	CZ 108	-	P-CuZn35	-	C 2700	-	C27000
	340-480	25			2.0360	CuZn40	Ms60	DCB1	-	-	-	-	-	C28000
N	Copper-zinc alloys (brass) (short-chipping) Leghe rame-zinco (ottone) (truciolo corto)													
2.2	340-570	>11			2.0401	CuZn39Pb3	Ms58	-	-	-	-	-	-	C38500
N	Copper-tin alloys (bronze) (long-chipping) Leghe rame-stagno (bronzo) (truciolo lungo)													
2.4	<900	50			2.1016	CuSn4	-	-	-	-	-	C 5111	-	C51100
	390-620	>15			2.1030	CuSn8P	-	-	-	-	-	C5210	-	C52100

EVO code	Rm N/mm²	A5 %	HRC	HB	Mat. - Nr.	 DIN	 AFNOR	 BS	EN	 UNI	 UNE	 JIS	 SIS	 AISI/SAE/ASTM
N	Copper-zinc alloys (bronze) (short-chip.) Leghe rame-zinco (bronzo) (truciolo corto)													
2.3	200-250	6			2.1097	G-CuSn5ZnPb	Rg5	-	-	-	-	H 5111	-	C83600
	230-320	12			2.1090.01	G-CuSn7ZnPb	Rg7	-	-	-	-	-	-	C93200
	280	18			2.1086.01	G-CuSn10Zn	Rg10	-	-	-	-	-	-	-
	600-650	7			2.0975	G-CuAl10Ni	CuNiAl11	-	-	-	-	-	-	-
N	Copper-Aluminum alloys Leghe rame-alluminio													
2.5	>550	40			Ampco 8	-	-	-	-	-	-	-	-	-
	>750	1			Ampco 21	-	-	-	-	-	-	-	-	-
	>500	0			Ampco 25	-	-	-	-	-	-	-	-	-
	>810	15			Ampco 45	-	-	-	-	-	-	-	-	-
	>1000	8			Ampco M-4	-	-	-	-	-	-	-	-	-
N	Magmesium, wrought alloys Leghe malleabili di magnesio													
3.1	>270	6			3.5612	MgAl 6 Zn	-	-	-	-	-	-	-	-
	>240	2			3.5912	G-MgAl9Zn1	-	-	-	-	-	-	-	-
N	Synthetics Materie plastiche													
4.1					Bakelit	-	-	-	-	-	-	-	-	-
					Pertinax	-	-	-	-	-	-	-	-	-
4.2					PMMA	-	-	-	-	-	-	-	-	-
					POM	-	-	-	-	-	-	-	-	-
					PVC	-	-	-	-	-	-	-	-	-
N	Fibre-reinforced synthetics Resine epossidiche rinforzate													
4.3	155-365				GFK	Fiberglass Vetroresina Fibra di Vetro		-	-	-	-	-	-	-
	190-210				CFK uni.	Carbon fiber Fibra di Carbonio		-	-	-	-	-	-	-
	190-210				CFK multi.	Carbon fiber Fibra di Carbonio		-	-	-	-	-	-	-
					AFK	Aramide fiber Fibra di Aramide		-	-	-	-	-	-	-
					BFK	Boro fiber Fibra di Boro		-	-	-	-	-	-	-
					MFK	Metal fiber Fibre Metalliche		-	-	-	-	-	-	-
					SFK	Synthetic fiber Fibre Sintetiche		-	-	-	-	-	-	-
N	Sandwich													
4.5					P-M-H	Plastic-Metal-Wood Plastica-Metallo-Legno		-	-	-	-	-	-	-
					Honeycomb	-		-	-	-	-	-	-	-
					Metall	-		-	-	-	-	-	-	-
N	Graphite													
5.0						Graphite standard Grafite standard		-	-	-	-	-	-	-
5.1						Wear-resistant Graphite Grafite resistente all'usura		-	-	-	-	-	-	-



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