Type C - Semi-finishing

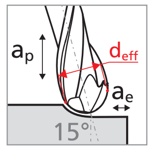
v_c [m/min] | **[SFM]**
f_z [mm] | **[IPT]**
d_{eff} [mm] | **[inch]**

RECOMMENDATION FOR USE
● Excellent | ◐ Good | ○ Acceptable | ⊠ Not recommended

P ●	N ●	S_3 ●
M ●	S_1 ●	H_1 ●
K ●	S_2 ●	H_2 ⊠

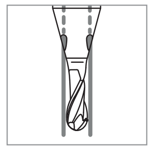
MILLING WITH INTEGRATED COOLING | CUTTING DATA OVERVIEW

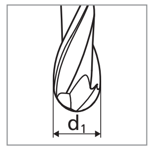
Semi-finishing



- **$a_p = 0.25 \times d_1$** ($Ød_1 \leq 0.5$ mm | **.020"**)
- **$a_p = 0.5 \times d_1$** ($Ød_1 > 0.5$ mm | **.020"**)
- **$a_e = 0.1 \times d_1$**

Machining angle = 15°





Materials group	Material	Mat. no.	DIN	AISI/ASTM/ UNS
P	Unalloyed carbon steel Rm < 800 N/mm²	1.0301 1.0401 1.1191 1.0044 1.0715	C10 C15 C45E/CK45 S275JR 11SMn30	AISI 1010 AISI 1015 AISI 1045 AISI 1020 AISI 1215
P	Low alloyed steel Rm > 900 N/mm²	1.5752 1.7131 1.3505 1.7225 1.2842	15NiCr13 16MnCr5 100Cr6 42CrMo4 90MnCrV8	ASTM 3415 AISI 5115 AISI 52100 AISI 4140 AISI O2
P	High alloyed tool steel Rm<1200N/mm²	1.2379 1.2436 1.3343 1.3355	X153CrMoV12 X210CrW12 HS6-5-2C HS18-0-1	AISI D2 AISI D4/D6 AISI M2 AISI T1
M	Stainless steel ferritic	1.4016 1.4105	X6Cr17 X6CrMoS17	AISI 430 AISI 430F
M	Stainless steel martensitic	1.4034 1.4112	X46Cr13 X90CrMoV18	AISI 420C AISI 440B
M	Stainless steel martensitic – PH	1.4542 1.4545	X5CrNiCuNb 16-4 X5CrNiCuNb 15-5	AISI 630 ASTM 15-5PH
M	Stainless steel austenitic	1.4301 1.4435 1.4441 1.4539	X5CrNi 18-10 X2CrNiMo 18-14-3 X2CrNiMo 18-15-3 X1NiCrMoCu25-20-5	AISI 304 AISI 316L AISI 316LM AISI 904L
K	Cast iron	0.6020 0.6030 0.7040 0.7060	GG20 GG30 GGG40 GGG60	ASTM 30 ASTM 40B ASTM60-40-18 ASTM80-60-03
N	Aluminium alloy wrought	3.2315 3.4365	AlMgSi1 AlZnMgCu1.5	ASTM 6351 ASTM 7075
N	Aluminium alloy cast	3.2163 3.2381	GD-AlSi9Cu3 GD-AlSi10Mg	ASTM A380 UNS A03590
N	Copper	2.004 2.0065	Cu-OF / CW008A Cu-ETP / CW004A	UNS C10100 UNS C11000
N	Brass lead free	2.0321 2.036	CuZn37 CW508L CuZn40 CW509L	UNS C27400 UNS C28000
N	Brass, Bronze Rm < 400 N/mm²	2.0401 2.102	CuZn39Pb3 CuSn6	UNS C38500 UNS C51900
N	Bronze Rm < 600 N/mm²	2.0966 2.096	CuAl10Ni5Fe4 CuAl9Mn2	UNS C63000 UNS C63200
S_1	Super alloys	2.4856 2.4668 2.4617 2.4665	 NiMo28 NiCr22Fe18Mo	Inconel 625 Inconel 718 Hastelloy B-2 Hastelloy X
S_2	Titanium pure	3.7035 3.7065	Gr.2 Gr.4	ASTM B348 ASTM B348
S_2	Titanium alloys	3.7165 9.9367	TiAl6V4 TiAl6Nb7	ASTM B348 ASTM F1295
S_3	CrCo alloys	2.4964	CoCr20W15Ni CrCoMo28	Haynes 25 ASTM F1537
H_1	Hardened steel < 55 HRC	1.2510	100MnCrMoW4	AISI O1
H_2	Hardened steel ≥ 55 HRC	1.2379	X153CrMoV12	AISI D2

Ød1 — cutting data (upper value metric, lower value **inch**)

Material	0.3 mm / **.012"** v_c	d_{eff}	f_z	1/64" 0.4 mm / **.016"** v_c	d_{eff}	f_z	0.5 mm / **.020"** v_c	d_{eff}	f_z	0.6 mm / **.024"** v_c	d_{eff}	f_z
P Unalloyed carbon steel	55 **180**	0.29 **.011**	0.005 **.00020**	73 **240**	0.39 **.015**	0.007 **.00028**	92 **302**	0.48 **.019**	0.010 **.00039**	100 **328**	0.60 **.024**	0.012 **.00047**
P Low alloyed steel	55 **180**	0.29 **.011**	0.004 **.00016**	73 **240**	0.39 **.015**	0.006 **.00024**	92 **302**	0.48 **.019**	0.009 **.00035**	100 **328**	0.60 **.024**	0.011 **.00043**
P High alloyed tool steel	55 **180**	0.29 **.011**	**0.004** **.00016**	73 **240**	0.39 **.015**	0.006 **.00024**	92 **302**	0.48 **.019**	0.008 **.00031**	100 **328**	0.60 **.024**	0.009 **.00035**
M Stainless steel ferritic	55 **180**	0.29 **.011**	0.005 **.00020**	73 **240**	0.39 **.015**	0.007 **.00028**	92 **302**	0.48 **.019**	0.010 **.00039**	100 **328**	0.60 **.024**	0.012 **.00047**
M Stainless steel martensitic	55 **180**	0.29 **.011**	0.004 **.00016**	73 **240**	0.39 **.015**	0.006 **.00024**	92 **302**	0.48 **.019**	0.009 **.00035**	100 **328**	0.60 **.024**	0.010 **.00039**
M Stainless steel martensitic – PH	55 **180**	0.29 **.011**	0.004 **.00016**	73 **240**	0.39 **.015**	0.006 **.00024**	92 **302**	0.48 **.019**	0.009 **.00035**	100 **328**	0.60 **.024**	0.010 **.00039**
M Stainless steel austenitic	55 **180**	0.29 **.011**	0.004 **.00016**	73 **240**	0.39 **.015**	0.006 **.00024**	92 **302**	0.48 **.019**	0.008 **.00031**	100 **328**	0.60 **.024**	0.010 **.00039**
K Cast iron	55 **180**	0.29 **.011**	0.003 **.00012**	73 **240**	0.39 **.015**	0.005 **.00020**	92 **302**	0.48 **.019**	0.006 **.00024**	100 **328**	0.60 **.024**	0.008 **.00030**
N Aluminium alloy wrought	55 **180**	0.29 **.011**	0.006 **.00024**	73 **240**	0.39 **.015**	0.008 **.00031**	92 **302**	0.48 **.019**	0.012 **.00047**	100 **328**	0.60 **.024**	0.014 **.00055**
N Aluminium alloy cast	55 **180**	0.29 **.011**	0.006 **.00024**	73 **240**	0.39 **.015**	0.008 **.00031**	92 **302**	0.48 **.019**	0.012 **.00047**	100 **328**	0.60 **.024**	0.014 **.00055**
N Copper	55 **180**	0.29 **.011**	0.006 **.00024**	73 **240**	0.39 **.015**	0.008 **.00031**	92 **302**	0.48 **.019**	0.014 **.00055**	100 **328**	0.60 **.024**	0.016 **.00063**
N Brass lead free	55 **180**	0.29 **.011**	0.006 **.00024**	73 **240**	0.39 **.015**	0.008 **.00031**	92 **302**	0.48 **.019**	0.014 **.00055**	100 **328**	0.60 **.024**	0.016 **.00063**
N Brass, Bronze	55 **180**	0.29 **.011**	0.006 **.00024**	73 **240**	0.39 **.015**	0.008 **.00031**	92 **302**	0.48 **.019**	0.014 **.00055**	100 **328**	0.60 **.024**	0.016 **.00063**
N Bronze	55 **180**	0.29 **.011**	0.006 **.00024**	73 **240**	0.39 **.015**	0.008 **.00031**	92 **302**	0.48 **.019**	0.012 **.00047**	100 **328**	0.60 **.024**	0.014 **.00055**
S_1 Super alloys	55 **180**	0.29 **.011**	0.003 **.00012**	73 **240**	0.39 **.015**	0.004 **.00016**	92 **302**	0.48 **.019**	0.004 **.00016**	100 **328**	0.60 **.024**	0.005 **.00020**
S_2 Titanium pure	55 **180**	0.29 **.011**	0.004 **.00016**	73 **240**	0.39 **.015**	0.004 **.00016**	92 **302**	0.48 **.019**	0.008 **.00031**	100 **328**	0.60 **.024**	0.009 **.00035**
S_2 Titanium alloys	55 **180**	0.29 **.011**	0.004 **.00016**	73 **240**	0.39 **.015**	0.004 **.00016**	92 **302**	0.48 **.019**	0.008 **.00031**	100 **328**	0.60 **.024**	0.009 **.00035**
S_3 CrCo alloys	55 **180**	0.29 **.011**	0.003 **.00012**	73 **240**	0.39 **.015**	0.003 **.00012**	92 **302**	0.48 **.019**	0.005 **.00020**	100 **328**	0.60 **.024**	0.005 **.00020**
H_1 Hardened steel < 55 HRC	55 **180**	0.29 **.011**	0.004 **.00016**	73 **240**	0.39 **.015**	0.006 **.00024**	92 **302**	0.48 **.019**	0.007 **.00028**	80 **262**	0.60 **.024**	0.008 **.00031**
H_2 Hardened steel ≥ 55 HRC												

Material	1/32" 0.8 mm / **.032"** v_c	d_{eff}	f_z	1.0 mm / **.039"** v_c	d_{eff}	f_z	1.2 mm / **.047"** v_c	d_{eff}	f_z	1/16" 1.5 / **.059"** v_c	d_{eff}	f_z
P Unalloyed carbon steel	100 **328**	0.80 **.032**	0.014 **.00055**	140 **459**	1.00 **.039**	0.015 **.00059**	140 **459**	1.20 **.047**	0.017 **.00067**	200 **656**	1.50 **.059**	0.024 **.00094**
P Low alloyed steel	100 **328**	0.80 **.032**	0.012 **.00047**	140 **459**	1.00 **.039**	0.014 **.00055**	140 **459**	1.20 **.047**	0.016 **.00063**	200 **656**	1.50 **.059**	0.022 **.00087**
P High alloyed tool steel	100 **328**	0.80 **.032**	0.011 **.00043**	140 **459**	1.00 **.039**	0.011 **.00043**	140 **459**	1.20 **.047**	0.013 **.00051**	200 **656**	1.50 **.059**	0.020 **.00079**
M Stainless steel ferritic	100 **328**	0.80 **.032**	0.014 **.00055**	140 **459**	1.00 **.039**	0.016 **.00063**	140 **459**	1.20 **.047**	0.018 **.00071**	200 **656**	1.50 **.059**	0.024 **.00094**
M Stainless steel martensitic	100 **328**	0.80 **.032**	0.012 **.00047**	140 **459**	1.00 **.039**	0.015 **.00059**	140 **459**	1.20 **.047**	0.017 **.00067**	200 **656**	1.50 **.059**	0.022 **.00087**
M Stainless steel martensitic – PH	100 **328**	0.80 **.032**	0.012 **.00047**	140 **459**	1.00 **.039**	0.015 **.00059**	140 **459**	1.20 **.047**	0.017 **.00067**	200 **656**	1.50 **.059**	0.022 **.00087**
M Stainless steel austenitic	100 **328**	0.80 **.032**	0.011 **.00043**	140 **459**	1.00 **.039**	0.012 **.00047**	140 **459**	1.20 **.047**	0.014 **.00055**	200 **656**	1.50 **.059**	0.016 **.00063**
K Cast iron	100 **328**	0.80 **.032**	0.009 **.00035**	120 **394**	1.00 **.039**	0.011 **.00043**	120 **394**	1.20 **.047**	0.022 **.00087**	140 **459**	1.50 **.059**	0.024 **.00094**
N Aluminium alloy wrought	100 **328**	0.80 **.032**	0.016 **.00063**	140 **459**	1.00 **.039**	0.018 **.00071**	140 **459**	1.20 **.047**	0.020 **.00079**	200 **656**	1.50 **.059**	0.026 **.00102**
N Aluminium alloy cast	100 **328**	0.80 **.032**	0.016 **.00063**	140 **459**	1.00 **.039**	0.018 **.00071**	140 **459**	1.20 **.047**	0.020 **.00079**	200 **656**	1.50 **.059**	0.026 **.00102**
N Copper	100 **328**	0.80 **.032**	0.018 **.00071**	140 **459**	1.00 **.039**	0.020 **.00079**	140 **459**	1.20 **.047**	0.022 **.00087**	200 **656**	1.50 **.059**	0.026 **.00102**
N Brass lead free	100 **328**	0.80 **.032**	0.018 **.00071**	140 **459**	1.00 **.039**	0.020 **.00079**	140 **459**	1.20 **.047**	0.022 **.00087**	200 **656**	1.50 **.059**	0.026 **.00102**
N Brass, Bronze	100 **328**	0.80 **.032**	0.018 **.00071**	140 **459**	1.00 **.039**	0.020 **.00079**	140 **459**	1.20 **.047**	0.022 **.00087**	200 **656**	1.50 **.059**	0.026 **.00102**
N Bronze	100 **328**	0.80 **.032**	0.016 **.00063**	140 **459**	1.00 **.039**	0.018 **.00071**	140 **459**	1.20 **.047**	0.020 **.00079**	200 **656**	1.50 **.059**	0.026 **.00102**
S_1 Super alloys	100 **328**	0.80 **.032**	0.006 **.00024**	120 **394**	1.00 **.039**	0.007 **.00028**	120 **394**	1.20 **.047**	0.008 **.00031**	130 **427**	1.50 **.059**	0.009 **.00035**
S_2 Titanium pure	100 **328**	0.80 **.032**	0.011 **.00043**	120 **394**	1.00 **.039**	0.016 **.00063**	120 **394**	1.20 **.047**	0.018 **.00071**	130 **427**	1.50 **.059**	0.020 **.00079**
S_2 Titanium alloys	100 **328**	0.80 **.032**	0.011 **.00043**	120 **394**	1.00 **.039**	0.016 **.00063**	120 **394**	1.20 **.047**	0.018 **.00071**	130 **427**	1.50 **.059**	0.020 **.00079**
S_3 CrCo alloys	100 **328**	0.80 **.032**	0.006 **.00024**	140 **459**	1.00 **.039**	0.007 **.00028**	140 **459**	1.20 **.047**	0.008 **.00031**	180 **591**	1.50 **.059**	0.009 **.00035**
H_1 Hardened steel < 55 HRC	80 **262**	0.80 **.032**	0.009 **.00035**	100 **328**	1.00 **.039**	0.010 **.00039**	100 **328**	1.20 **.047**	0.012 **.00047**	140 **459**	1.50 **.059**	0.014 **.00055**
H_2 Hardened steel ≥ 55 HRC												

Material	1.8 mm / **.071"** v_c	d_{eff}	f_z	2.0 mm / **.079"** v_c	d_{eff}	f_z	3/32" 2.5 mm / **.098"** v_c	d_{eff}	f_z	1/8" 3.0 mm / **.118"** v_c	d_{eff}	f_z
P Unalloyed carbon steel	200 **656**	1.80 **.071**	0.026 **.00102**	220 **722**	2.00 **.079**	0.034 **.00134**	220 **722**	2.50 **.098**	0.036 **.00142**	240 **787**	3.00 **.118**	0.040 **.00157**
P Low alloyed steel	200 **656**	1.80 **.071**	0.024 **.00094**	220 **722**	2.00 **.079**	0.032 **.00126**	220 **722**	2.50 **.098**	0.034 **.00134**	240 **787**	3.00 **.118**	0.038 **.00150**
P High alloyed tool steel	200 **656**	1.80 **.071**	0.022 **.00087**	220 **722**	2.00 **.079**	0.030 **.00118**	220 **722**	2.50 **.098**	0.032 **.00126**	240 **787**	3.00 **.118**	0.035 **.00138**
M Stainless steel ferritic	200 **656**	1.80 **.071**	0.026 **.00102**	220 **722**	2.00 **.079**	0.034 **.00134**	220 **722**	2.50 **.098**	0.036 **.00142**	240 **787**	3.00 **.118**	0.040 **.00157**
M Stainless steel martensitic	200 **656**	1.80 **.071**	0.024 **.00094**	220 **722**	2.00 **.079**	0.032 **.00126**	220 **722**	2.50 **.098**	0.034 **.00134**	240 **787**	3.00 **.118**	0.036 **.00142**
M Stainless steel martensitic – PH	200 **656**	1.80 **.071**	0.024 **.00094**	220 **722**	2.00 **.079**	0.032 **.00126**	220 **722**	2.50 **.098**	0.034 **.00134**	240 **787**	3.00 **.118**	0.036 **.00142**
M Stainless steel austenitic	200 **656**	1.80 **.071**	0.018 **.00071**	220 **722**	2.00 **.079**	0.030 **.00118**	220 **722**	2.50 **.098**	0.032 **.00126**	240 **787**	3.00 **.118**	0.034 **.00134**
K Cast iron	140 **459**	1.80 **.071**	0.026 **.00102**	160 **525**	2.00 **.079**	0.028 **.00110**	160 **525**	2.50 **.098**	0.036 **.00142**	180 **591**	3.00 **.118**	0.042 **.00165**
N Aluminium alloy wrought	200 **656**	1.80 **.071**	0.028 **.00110**	220 **722**	2.00 **.079**	0.036 **.00142**	220 **722**	2.50 **.098**	0.040 **.00157**	240 **787**	3.00 **.118**	0.058 **.00228**
N Aluminium alloy cast	200 **656**	1.80 **.071**	0.028 **.00110**	220 **722**	2.00 **.079**	0.036 **.00142**	220 **722**	2.50 **.098**	0.040 **.00157**	240 **787**	3.00 **.118**	0.058 **.00228**
N Copper	200 **656**	1.80 **.071**	0.028 **.00110**	220 **722**	2.00 **.079**	0.036 **.00142**	220 **722**	2.50 **.098**	0.040 **.00157**	240 **787**	3.00 **.118**	0.058 **.00228**
N Brass lead free	200 **656**	1.80 **.071**	0.028 **.00110**	220 **722**	2.00 **.079**	0.036 **.00142**	220 **722**	2.50 **.098**	0.040 **.00157**	240 **787**	3.00 **.118**	0.058 **.00228**
N Brass, Bronze	200 **656**	1.80 **.071**	0.028 **.00110**	220 **722**	2.00 **.079**	0.036 **.00142**	220 **722**	2.50 **.098**	0.040 **.00157**	240 **787**	3.00 **.118**	0.058 **.00228**
N Bronze	200 **656**	1.80 **.071**	0.028 **.00110**	220 **722**	2.00 **.079**	0.036 **.00142**	220 **722**	2.50 **.098**	0.040 **.00157**	240 **787**	3.00 **.118**	0.058 **.00228**
S_1 Super alloys	130 **427**	1.80 **.071**	0.010 **.00039**	140 **459**	2.00 **.079**	0.010 **.00039**	140 **459**	2.50 **.098**	0.012 **.00047**	150 **492**	3.00 **.118**	0.015 **.00059**
S_2 Titanium pure	130 **427**	1.80 **.071**	0.022 **.00087**	140 **459**	2.00 **.079**	0.028 **.00110**	140 **459**	2.50 **.098**	0.030 **.00118**	150 **492**	3.00 **.118**	0.034 **.00134**
S_2 Titanium alloys	130 **427**	1.80 **.071**	0.022 **.00087**	140 **459**	2.00 **.079**	0.028 **.00110**	140 **459**	2.50 **.098**	0.030 **.00118**	150 **492**	3.00 **.118**	0.034 **.00134**
S_3 CrCo alloys	180 **591**	1.80 **.071**	0.010 **.00039**	200 **656**	2.00 **.079**	0.010 **.00039**	200 **656**	2.50 **.098**	0.012 **.00047**	220 **722**	3.00 **.118**	0.015 **.00059**
H_1 Hardened steel < 55 HRC	140 **459**	1.80 **.071**	0.018 **.00071**	180 **591**	2.00 **.079**	0.020 **.00079**	180 **591**	2.50 **.098**	0.026 **.00102**	200 **656**	3.00 **.118**	0.030 **.00118**
H_2 Hardened steel ≥ 55 HRC												

Material	5/32" 4.0 mm / **.158"** v_c	d_{eff}	f_z	3/16–7/32–1/4" 6.0 mm / **.236"** v_c	d_{eff}	f_z	8.0 mm / **.315"** v_c	d_{eff}	f_z
P Unalloyed carbon steel	260 **853**	4.00 **.158**	0.050 **.00197**	260 **853**	6.00 **.236**	0.050 **.00197**	260 **853**	8.00 **.315**	0.050 **.00197**
P Low alloyed steel	260 **853**	4.00 **.158**	0.044 **.00173**	260 **853**	6.00 **.236**	0.048 **.00189**	260 **853**	8.00 **.315**	0.048 **.00189**
P High alloyed tool steel	260 **853**	4.00 **.158**	0.044 **.00173**	260 **853**	6.00 **.236**	0.044 **.00173**	260 **853**	8.00 **.315**	0.044 **.00173**
M Stainless steel ferritic	260 **853**	4.00 **.158**	0.048 **.00189**	260 **853**	6.00 **.236**	0.048 **.00189**	260 **853**	8.00 **.315**	0.048 **.00189**
M Stainless steel martensitic	260 **853**	4.00 **.158**	0.046 **.00181**	260 **853**	6.00 **.236**	0.046 **.00181**	260 **853**	8.00 **.315**	0.046 **.00181**
M Stainless steel martensitic – PH	260 **853**	4.00 **.158**	0.046 **.00181**	260 **853**	6.00 **.236**	0.046 **.00181**	260 **853**	8.00 **.315**	0.046 **.00181**
M Stainless steel austenitic	260 **853**	4.00 **.158**	0.044 **.00173**	260 **853**	6.00 **.236**	0.044 **.00173**	260 **853**	8.00 **.315**	0.044 **.00173**
K Cast iron	200 **656**	4.00 **.158**	0.052 **.00205**	200 **656**	6.00 **.236**	0.052 **.00205**	200 **656**	8.00 **.315**	0.052 **.00205**
N Aluminium alloy wrought	260 **853**	4.00 **.158**	0.055 **.00217**	260 **853**	6.00 **.236**	0.055 **.00217**	260 **853**	8.00 **.315**	0.055 **.00217**
N Aluminium alloy cast	260 **853**	4.00 **.158**	0.055 **.00217**	260 **853**	6.00 **.236**	0.055 **.00217**	260 **853**	8.00 **.315**	0.055 **.00217**
N Copper	260 **853**	4.00 **.158**	0.055 **.00217**	260 **853**	6.00 **.236**	0.055 **.00217**	260 **853**	8.00 **.315**	0.055 **.00217**
N Brass lead free	260 **853**	4.00 **.158**	0.055 **.00217**	260 **853**	6.00 **.236**	0.055 **.00217**	260 **853**	8.00 **.315**	0.055 **.00217**
N Brass, Bronze	260 **853**	4.00 **.158**	0.055 **.00217**	260 **853**	6.00 **.236**	0.055 **.00217**	260 **853**	8.00 **.315**	0.055 **.00217**
N Bronze	260 **853**	4.00 **.158**	0.055 **.00217**	260 **853**	6.00 **.236**	0.055 **.00217**	260 **853**	8.00 **.315**	0.055 **.00217**
S_1 Super alloys	170 **558**	4.00 **.158**	0.020 **.00079**	170 **558**	6.00 **.236**	0.020 **.00079**	170 **558**	8.00 **.315**	0.020 **.00079**
S_2 Titanium pure	170 **558**	4.00 **.158**	0.042 **.00165**	170 **558**	6.00 **.236**	0.042 **.00165**	170 **558**	8.00 **.315**	0.042 **.00165**
S_2 Titanium alloys	170 **558**	4.00 **.158**	0.042 **.00165**	170 **558**	6.00 **.236**	0.042 **.00165**	170 **558**	8.00 **.315**	0.042 **.00165**
S_3 CrCo alloys	240 **787**	4.00 **.158**	0.020 **.00079**	240 **787**	6.00 **.236**	0.020 **.00079**	240 **787**	8.00 **.315**	0.020 **.00079**
H_1 Hardened steel < 55 HRC	240 **787**	4.00 **.158**	0.032 **.00126**	240 **787**	6.00 **.236**	0.032 **.00126**	240 **787**	8.00 **.315**	0.032 **.00126**
H_2 Hardened steel ≥ 55 HRC									