Cutting recommendations for the HELIDO 690-16 complete line

- The table below defines initial feed rates
- For initial cutting speeds refer to **ISCAR**'s recommendations for carbide grades

Calculating cutting feed rate:
$f_z = f_{z0} \times Kef \times Ks$ where
f_{z0} - Basic feed (Table 1),
Kef - Engagement factor (Table 2),
Ks - Stability factor (Table 3)

Table 1 - Basic feed, f_{z0}, mm/tooth

ISO	Maw		Condition	Tensile Strength [N/mm²]	Hardness HB	Material No. (1)	f_{z0} mm/tooth
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	1	0.22
		>= 0.25 %C	Annealed	650	190	2	
		< 0.55 %C	Quenched and tempered	850	250	3	
		>= 0.55 %C	Annealed	750	220	4	
			Quenched and tempered	1000	300	5	
	Low alloy steel and cast steel		Annealed	600	200	6	0.20
	(less than 5% of alloying elements)		Quenched and tempered	930	275	7	
				1000	300	8	
				1200	350	9	0.20
	High alloyed steel, cast steel, and tool steel		Annealed	680	200	10	0.18
			Quenched and tempered	1100	325	11	
	Stainless steel and cast steel		Ferritic/martensitic	680	200	12	0.18
			Martensitic	820	240	13	
M	Stainless steel and cast steel		Austenitic	600	180	14	0.16
K	Grey cast iron (GG)		Ferritic/pearlitic		180	15	0.22
			Pearlitic		260	16	
	Cast iron nodular (GGG)		Ferritic		160	17	0.20
			Pearlitic		250	18	
	Malleable cast iron		Ferritic		130	19	
			Pearlitic		230	20	
S	High temp. alloys	Fe based	Annealed		200	31	0.07
			Cured		280	32	
		Ni or Co based	Annealed		250	33	
			Cured		350	34	
			Cast		320	35	
	Titanium alloys		Pure	Rm = 400 (2)		36	0.09
			Alpha+beta alloys cured	Rm = 1050		37	
H	Hardened steel		Hardened		55 HRC	38	0.07
					60 HRC	39	-
	Chilled cast iron		Cast		400	40	0.07
	Cast iron		Hardened		55 HRC	41	0.07

(1) in accordance with VDI3323 standard

(2) Rm - ultimate tensile strength, MPa

Table 2 - Engagement factor Kef

a_e/D	1…0.5	0.25 up to 0.5	less than 0.25
Ke	1	1.1	1.3

a_e - Width of cut
D - cutting diameter

Table 3 - Stability factor Ks

Stability	High	Moderate
Ks	1	0.9