

Standard cutting conditions TAW13 type

Work material	Recommended insert grade	Cutting speed Vc (sfm)	Roughing (Depth of cut: $ap \geq .040''$)					
			Feed per tooth: fz (ipt)					
			MJ	ML	HJ	MS	Flat top	AJ
Mild steels Low carbon steels ($< 180\text{HB}$)	AH120 (First choice)	330 - 890	.002 - .012	.002 - .010	.008 - .024	—	.002 - .012	—
	T3130 (Priority on wear resistance)	500 - 985	.002 - .012	—	.008 - .024	—	.002 - .012	—
	AH130 / AH140 (Priority on impact resistance)	260 - 590	.002 - .012	—	—	.004 - .010	—	—
	NS740 (Priority on surface finish)	330 - 985	.002 - .009	—	—	—	.002 - .009	—
Carbon steels Alloy steels ($< 300\text{HB}$)	AH120 (First choice)	330 - 760	.002 - .010	.002 - .008	.008 - .020	—	.002 - .010	—
	T3130 (Priority on wear resistance)	490 - 920	.002 - .010	—	.008 - .020	—	.002 - .010	—
	AH130 / AH140 (Priority on impact resistance)	260 - 490	.002 - .010	—	.008 - .020	—	—	—
	NS740 (Priority on surface finish)	330 - 760	.002 - .008	—	—	—	.002 - .008	—
Die steels ($< 30\text{HRC}$)	AH120 (First choice)	330 - 590	.002 - .008	.002 - .006	.008 - .016	—	.002 - .008	—
	T3130 (Priority on wear resistance)	330 - 590	.002 - .008	—	.008 - .016	—	.002 - .008	—
Stainless steels ($< 250\text{HB}$)	AH130 / AH140 (First choice)	260 - 660	.004 - .010	—	.008 - .020	.004 - .008	—	—
	AH120 (Priority on wear resistance)	490 - 820	.004 - .010	.004 - .008	.008 - .020	—	.004 - .010	—
Gray cast irons	T1115 (First choice)	590 - 1000	.002 - .010	—	.008 - .024	—	.002 - .010	—
	AH120 (Priority on impact resistance)	500 - 820	.002 - .010	.002 - .008	.008 - .024	—	.002 - .010	—
Ductile cast irons	T1115 (First choice)	400 - 660	.002 - .010	—	.008 - .024	—	.002 - .010	—
	AH120 (Priority on impact resistance)	330 - 590	.002 - .010	.002 - .008	.008 - .024	—	.002 - .010	—
Aluminum alloys (Si $< 13\%$)	DS1100 / KS05F (First choice)	985 - 3300	—	—	—	—	—	.002 - .008
Aluminum alloys (Si $\geq 13\%$)	DS1100 / KS05F (First choice)	260 - 985	—	—	—	—	—	.002 - .008
Copper alloys	DS1100 / KS05F (First choice)	660 - 1650	—	—	—	—	—	.002 - .008

Work material	Recommended insert grade	Cutting speed Vc (sfm)	Light cutting to finishing (Depth of cut: $ap \leq .040''$)					
			Feed per tooth: fz (ipt)					
			MJ	ML	HJ	MS	Flat top	AJ
Mild steels Low carbon steels ($< 180\text{HB}$)	AH120 (First choice)	330 - 890	.002 - .010	.002 - .008	.008 - .024	—	.002 - .010	—
	T3130 (Priority on wear resistance)	500 - 985	.002 - .010	—	.008 - .024	—	.002 - .010	—
	AH130 / AH140 (Priority on impact resistance)	260 - 590	.002 - .010	—	—	.002 - .008	—	—
	NS740 (Priority on surface finish)	330 - 985	.002 - .008	—	—	—	.002 - .008	—
Carbon steels Alloy steels ($< 300\text{HB}$)	AH120 (First choice)	330 - 760	.002 - .008	.002 - .006	.008 - .020	—	.002 - .008	—
	T3130 (Priority on wear resistance)	490 - 920	.002 - .008	—	.008 - .020	—	.002 - .008	—
	AH130 / AH140 (Priority on impact resistance)	260 - 490	.002 - .008	—	.008 - .020	—	—	—
	NS740 (Priority on surface finish)	330 - 760	.002 - .007	—	—	—	.002 - .007	—
Die steels ($< 30\text{HRC}$)	AH120 (First choice)	330 - 590	.002 - .007	.002 - .005	.008 - .016	—	.002 - .007	—
	T3130 (Priority on wear resistance)	330 - 590	.002 - .007	—	.008 - .016	—	.002 - .007	—
Stainless steels ($< 250\text{HB}$)	AH130 / AH140 (First choice)	260 - 660	.004 - .008	—	.008 - .020	.004 - .007	—	—
	AH120 (Priority on wear resistance)	490 - 820	.004 - .008	.004 - .007	.008 - .020	—	.004 - .008	—
Gray cast irons	T1115 (First choice)	590 - 1000	.002 - .008	—	.008 - .024	—	.002 - .008	—
	AH120 (Priority on impact resistance)	500 - 820	.002 - .008	.002 - .007	.008 - .024	—	.002 - .008	—
Ductile cast irons	T1115	400 - 660	.002 - .008	—	.008 - .024	—	.002 - .008	—
	AH120	330 - 590	.002 - .008	.002 - .007	.008 - .024	—	.002 - .008	—
Aluminum alloys (Si $< 13\%$)	DS1100 / KS05F (First choice)	985 - 3300	—	—	—	—	—	.002 - .008
Aluminum alloys (Si $\geq 13\%$)	DS1100 / KS05F (First choice)	260 - 985	—	—	—	—	—	.002 - .008
Copper alloys	DS1100 / KS05F (First choice)	660 - 1650	—	—	—	—	—	.002 - .008

Notes:

- When machining at large depth of cut or large cutting width, Vc and fz should be reduced.
- As a rule, dry machining (including air blow) is recommended. But, for excessive chip welding, such as when machining stainless steels, use a water soluble cutting fluid. In this

case, use AH140 and set the cutting speed to $Vc \leq .040''$.

- When machining mild steel, carbon steel or alloy steel in wet conditions the T3130 is 8 recommended. In this case, Vc and fz should be reduced.
- TAW13 type can not be used for ramping, plunging and drilling.