

RECOMMENDED CUTTING CONDITIONS

VOX400 (Standard pitch)

Work Material	Tensile Strength	Insert Grade	Cutting Speed (m/min)	φ50—φ250		
				Radial Depth of Cut a_e (mm)	Depth of Cut a_p (mm)	Feed per Tooth f_z (mm/tooth)
Gray Cast Iron	≤200MPa	MC5020	300(250—350)	≤D ₁	≤10	0.4(0.3—0.5)
		VP15TF	250(200—300)	≤D ₁	≤10	0.4(0.3—0.5)
	≤350MPa	MC5020	220(150—300)	≤D ₁	≤10	0.3(0.2—0.4)
		VP15TF	200(150—300)	≤D ₁	≤10	0.3(0.2—0.4)
Ductile Cast Iron	≤450MPa	MC5020	200(150—250)	≤D ₁	≤10	0.3(0.2—0.4)
		VP15TF	170(150—200)	≤D ₁	≤10	0.3(0.2—0.4)
	≤800MPa	MC5020	170(150—200)	≤D ₁	≤10	0.2(0.1—0.3)
		VP15TF	150(100—200)	≤D ₁	≤10	0.2(0.1—0.3)

VOX400 (Fine pitch)

Work Material	Tensile Strength	Insert Grade	Cutting Speed (m/min)	φ50, φ63			φ80		
				Radial Depth of Cut a_e (mm)	Depth of Cut a_p (mm)	Feed per Tooth f_z (mm/tooth)	Radial Depth of Cut a_e (mm)	Depth of Cut a_p (mm)	Feed per Tooth f_z (mm/tooth)
Gray Cast Iron	≤200MPa	MC5020	300(250—350)	≤D ₁	≤10	0.4(0.3—0.5)	≤D ₁	≤10	0.4(0.3—0.5)
		VP15TF	250(200—300)	≤D ₁	≤10	0.4(0.3—0.5)	≤D ₁	≤10	0.4(0.3—0.5)
	≤350MPa	MC5020	220(150—300)	≤D ₁	≤10	0.3(0.2—0.4)	≤D ₁	≤10	0.3(0.2—0.4)
		VP15TF	200(150—300)	≤D ₁	≤10	0.3(0.2—0.4)	≤D ₁	≤10	0.3(0.2—0.4)
Ductile Cast Iron	≤450MPa	MC5020	200(150—250)	≤0.8D ₁	≤10	0.3(0.2—0.4)	≤0.6D ₁	≤10	0.3(0.2—0.4)
		VP15TF	170(150—200)	≤0.8D ₁	≤10	0.3(0.2—0.4)	≤0.6D ₁	≤10	0.3(0.2—0.4)
	≤800MPa	MC5020	170(150—200)	≤0.8D ₁	≤10	0.2(0.1—0.3)	≤0.6D ₁	≤10	0.2(0.1—0.3)
		VP15TF	150(100—200)	≤0.8D ₁	≤10	0.2(0.1—0.3)	≤0.6D ₁	≤10	0.2(0.1—0.3)

Work Material	Tensile Strength	Insert Grade	Cutting Speed (m/min)	φ100			φ125		
				Radial depth of cut a_e (mm)	Depth of Cut a_p (mm)	Feed per Tooth f_z (mm/tooth)	Radial Depth of Cut a_e (mm)	Depth of Cut a_p (mm)	Feed per Tooth f_z (mm/tooth)
Gray Cast Iron	≤200MPa	MC5020	300(250—350)	≤D ₁	≤10	0.4(0.3—0.5)	≤D ₁	≤10	0.4(0.3—0.5)
		VP15TF	250(200—300)	≤D ₁	≤10	0.4(0.3—0.5)	≤D ₁	≤10	0.4(0.3—0.5)
	≤350MPa	MC5020	220(150—300)	≤D ₁	≤10	0.3(0.2—0.4)	≤D ₁	≤10	0.3(0.2—0.4)
		VP15TF	200(150—300)	≤D ₁	≤10	0.3(0.2—0.4)	≤D ₁	≤10	0.3(0.2—0.4)
Ductile Cast Iron	≤450MPa	MC5020	200(150—250)	≤0.5D ₁	≤10	0.3(0.2—0.4)	≤0.4D ₁	≤10	0.3(0.2—0.4)
		VP15TF	170(150—200)	≤0.5D ₁	≤10	0.3(0.2—0.4)	≤0.4D ₁	≤10	0.3(0.2—0.4)
	≤800MPa	MC5020	170(150—200)	≤0.5D ₁	≤10	0.2(0.1—0.3)	≤0.4D ₁	≤10	0.2(0.1—0.3)
		VP15TF	150(100—200)	≤0.5D ₁	≤10	0.2(0.1—0.3)	≤0.4D ₁	≤10	0.2(0.1—0.3)

Work Material	Tensile Strength	Insert Grade	Cutting Speed (m/min)	φ160			φ200—φ250		
				Radial Depth of Cut a_e (mm)	Depth of Cut a_p (mm)	Feed per Tooth f_z (mm/tooth)	Radial Depth of Cut a_e (mm)	Depth of Cut a_p (mm)	Feed per Tooth f_z (mm/tooth)
Gray Cast Iron	≤200MPa	MC5020	300(250—350)	≤D ₁	≤10	0.4(0.3—0.5)	≤D ₁	≤10	0.4(0.3—0.5)
		VP15TF	250(200—300)	≤D ₁	≤10	0.4(0.3—0.5)	≤D ₁	≤10	0.4(0.3—0.5)
	≤350MPa	MC5020	220(150—300)	≤D ₁	≤10	0.3(0.2—0.4)	≤D ₁	≤10	0.3(0.2—0.4)
		VP15TF	200(150—300)	≤D ₁	≤10	0.3(0.2—0.4)	≤D ₁	≤10	0.3(0.2—0.4)
Ductile Cast Iron	≤450MPa	MC5020	200(150—250)	≤0.3D ₁	≤10	0.3(0.2—0.4)	≤0.2D ₁	≤10	0.3(0.2—0.4)
		VP15TF	170(150—200)	≤0.3D ₁	≤10	0.3(0.2—0.4)	≤0.2D ₁	≤10	0.3(0.2—0.4)
	≤800MPa	MC5020	170(150—200)	≤0.3D ₁	≤10	0.2(0.1—0.3)	≤0.2D ₁	≤10	0.2(0.1—0.3)
		VP15TF	150(100—200)	≤0.3D ₁	≤10	0.2(0.1—0.3)	≤0.2D ₁	≤10	0.2(0.1—0.3)

(Note 1) D₁ is cutter diameter.

(Note 2) When using wiper insert, please reduce the feed per tooth to half the normal rate.

VOX400 (Extra fine pitch)

Work Material	Tensile Strength	Insert Grade	Cutting Speed (m/min)	φ63			φ80		
				Radial Depth of Cut ae (mm)	Depth of Cut ap (mm)	Feed per Tooth fz (mm/tooth)	Radial Depth of Cut ae (mm)	Depth of Cut ap (mm)	Feed per Tooth fz (mm/tooth)
K Gray Cast Iron	≤200MPa	MC5020	300(250-350)	≤D1	≤10	0.4(0.3-0.5)	≤D1	≤10	0.4(0.3-0.5)
		VP15TF	250(200-300)	≤D1	≤10	0.4(0.3-0.5)	≤D1	≤10	0.4(0.3-0.5)
	≤350MPa	MC5020	220(150-300)	≤D1	≤10	0.3(0.2-0.4)	≤D1	≤10	0.3(0.2-0.4)
		VP15TF	200(150-300)	≤D1	≤10	0.3(0.2-0.4)	≤D1	≤10	0.3(0.2-0.4)
Ductile Cast Iron	≤450MPa	MC5020	200(150-250)	≤0.6D1	≤10	0.3(0.2-0.4)	≤0.5D1	≤10	0.3(0.2-0.4)
		VP15TF	170(150-200)	≤0.6D1	≤10	0.3(0.2-0.4)	≤0.5D1	≤10	0.3(0.2-0.4)
	≤800MPa	MC5020	170(150-200)	≤0.6D1	≤10	0.2(0.1-0.3)	≤0.5D1	≤10	0.2(0.1-0.3)
		VP15TF	150(100-200)	≤0.6D1	≤10	0.2(0.1-0.3)	≤0.5D1	≤10	0.2(0.1-0.3)

Work Material	Tensile Strength	Insert Grade	Cutting Speed (m/min)	φ100			φ125		
				Radial Depth of Cut ae (mm)	Depth of Cut ap (mm)	Feed per Tooth fz (mm/tooth)	Radial Depth of Cut ae (mm)	Depth of Cut ap (mm)	Feed per Tooth fz (mm/tooth)
K Gray Cast Iron	≤200MPa	MC5020	300(250-350)	≤D1	≤10	0.4(0.3-0.5)	≤D1	≤10	0.4(0.3-0.5)
		VP15TF	250(200-300)	≤D1	≤10	0.4(0.3-0.5)	≤D1	≤10	0.4(0.3-0.5)
	≤350MPa	MC5020	220(150-300)	≤D1	≤10	0.3(0.2-0.4)	≤D1	≤10	0.3(0.2-0.4)
		VP15TF	200(150-300)	≤D1	≤10	0.3(0.2-0.4)	≤D1	≤10	0.3(0.2-0.4)
Ductile Cast Iron	≤450MPa	MC5020	200(150-250)	≤0.4D1	≤10	0.3(0.2-0.4)	≤0.3D1	≤10	0.3(0.2-0.4)
		VP15TF	170(150-200)	≤0.4D1	≤10	0.3(0.2-0.4)	≤0.3D1	≤10	0.3(0.2-0.4)
	≤800MPa	MC5020	170(150-200)	≤0.4D1	≤10	0.2(0.1-0.3)	≤0.3D1	≤10	0.2(0.1-0.3)
		VP15TF	150(100-200)	≤0.4D1	≤10	0.2(0.1-0.3)	≤0.3D1	≤10	0.2(0.1-0.3)

Work Material	Tensile Strength	Insert Grade	Cutting Speed (m/min)	φ160			φ200-φ250		
				Radial Depth of Cut ae (mm)	Depth of Cut ap (mm)	Feed per Tooth fz (mm/tooth)	Radial Depth of Cut ae (mm)	Depth of Cut ap (mm)	Feed per Tooth fz (mm/tooth)
K Gray Cast Iron	≤200MPa	MC5020	300(250-350)	≤D1	≤10	0.4(0.3-0.5)	≤D1	≤10	0.4(0.3-0.5)
		VP15TF	250(200-300)	≤D1	≤10	0.4(0.3-0.5)	≤D1	≤10	0.4(0.3-0.5)
	≤350MPa	MC5020	220(150-300)	≤D1	≤10	0.3(0.2-0.4)	≤D1	≤10	0.3(0.2-0.4)
		VP15TF	200(150-300)	≤D1	≤10	0.3(0.2-0.4)	≤D1	≤10	0.3(0.2-0.4)
Ductile Cast Iron	≤450MPa	MC5020	200(150-250)	≤0.25D1	≤10	0.3(0.2-0.4)	≤0.15D1	≤10	0.3(0.2-0.4)
		VP15TF	170(150-200)	≤0.25D1	≤10	0.3(0.2-0.4)	≤0.15D1	≤10	0.3(0.2-0.4)
	≤800MPa	MC5020	170(150-200)	≤0.25D1	≤10	0.2(0.1-0.3)	≤0.15D1	≤10	0.2(0.1-0.3)
		VP15TF	150(100-200)	≤0.25D1	≤10	0.2(0.1-0.3)	≤0.15D1	≤10	0.2(0.1-0.3)

(Note 1) D1 is cutter diameter.

(Note 2) When using wiper insert, please reduce the feed per tooth to half the normal rate.