MITSUBISHI MATERIALS

VOX400

STRONG EDGE INSERT TYPE CUTTER FOR CAST IRON

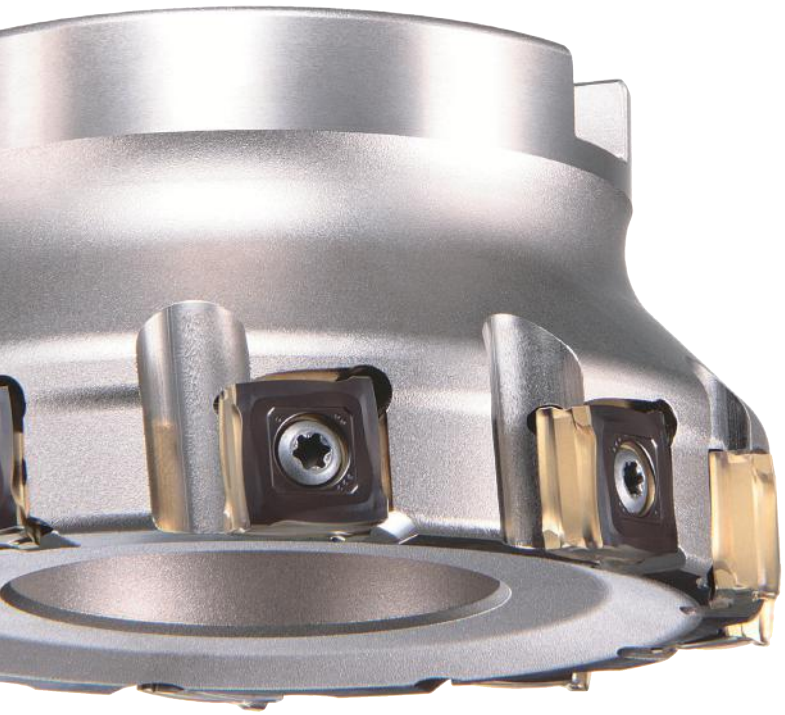




TOOL NEWS **B183A**

Vertical mounted inserts with ideal cutting edge is suitable for a wide range of cast iron rough milling applications

VOX400



Features of Cutter body

High rigidity design

Arranging the inserts vertically absorbs the principal cutting force through the thickness of the insert and achieves extremely high rigidity.

Easy to clamp insert

Inserts are screwed into the side of the holder, this simplifies clamping and unclamping for superior usability.

Wide selection of bodies

VOX400 meets the needs of a wide range of cast iron roughing applications with a coarse pitch type and a high-productivity fine pitch type.

Features of Insert

Long life insert grade

MC5020

- 1st recommendation for cast iron machining.
- Black super even coating technology is utilized to help prevent chip welding for long tool life.
- Dry cutting is recommended.



VP15TF

- A PVD coated grade for application versatility.
- Ideal for ductile cast iron, unstable cutting conditions and low rigidity workpieces.
- Wet cutting is possible.



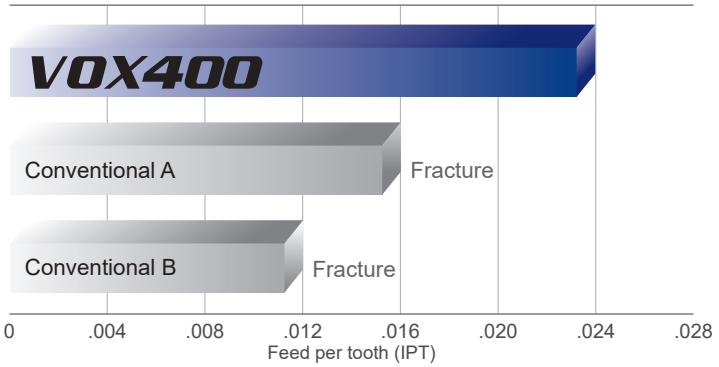
Unique vertical insert

- 8 usable corners with high strength cutting edge.
- The fracture resistance is significantly improved due to a convex curve cutting edge and a specially shaped relief face.
- Maximum depth of cut is 10mm.
- Left hand insert add for the special products.

Efficient cutting performance

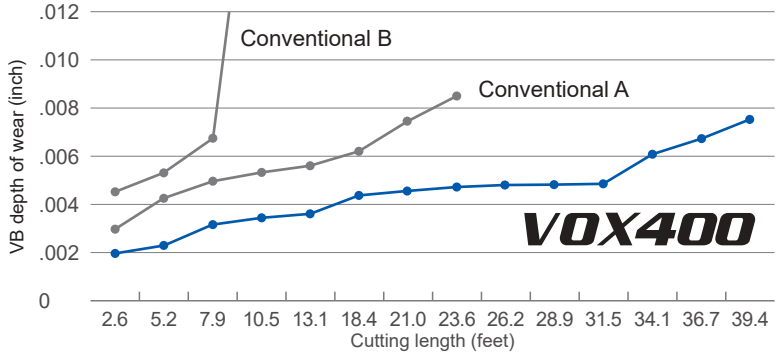
The original insert shape with convex cutting edge and shaped relief face offers excellent sharpness and extraordinary fracture resistance.

Fracture resistance



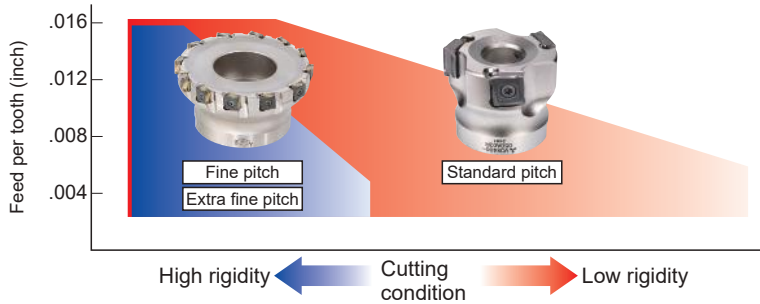
<Cutting Conditions>
Tool : VOX400UR0308C(ø80)
Insert : SONX1206PER(MC5020)
Workpiece : Ductile iron
Cutting Speed : 655 SFM
Feed : Var.
Depth of Cut : ap=.197 inch, ae=1.575 inch
Cutting mode : Dry Cut

Test results of VP15TF tool life



<Cutting Conditions>
Tool : VOX400UR0308C(ø80)
Insert : SONX1206PER(VP15TF)
Workpiece : Ductile iron
Cutting Speed : 390 SFM
Feed : .008 IPT
Depth of Cut : ap=.12 inch, ae=1.969 inch
Cutting mode : Wet Cut

Selection of number of teeth

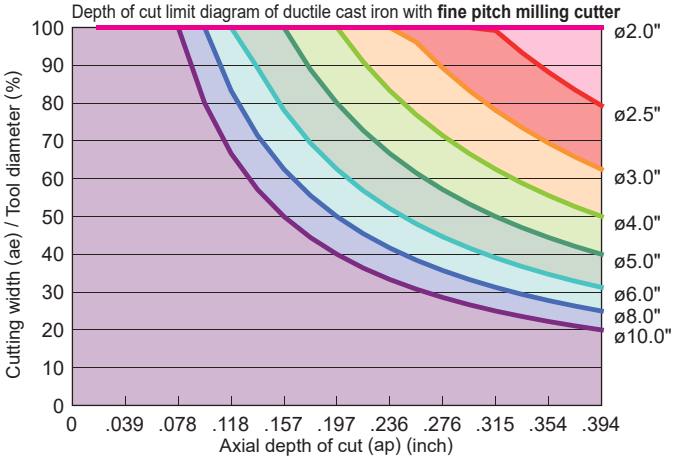


With stable workpiece and machine conditions, it is possible to increase the number of teeth used to promote higher efficiency. In these cases we recommend fine and super fine pitch cutters when machining gray cast iron.

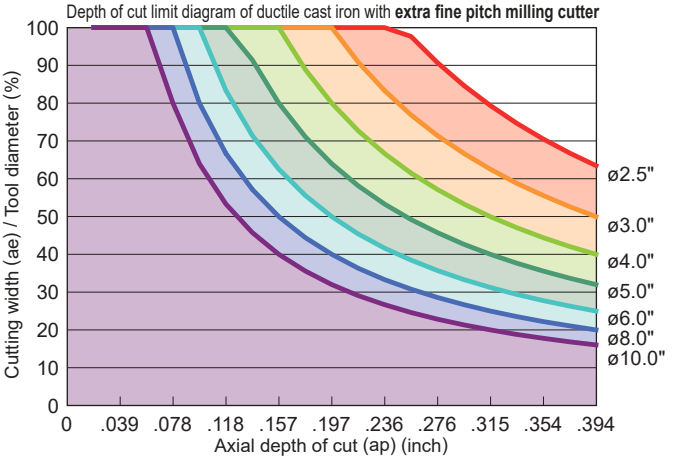
How to use fine pitch and extra fine pitch.

When using fine and extra fine pitch cutters, care must be taken regarding elongated chips on materials such as FCD because the chip pocket is relatively small.
Refer to the charts below and ensure the axial depth and percentage of width of the cutter is not exceeded.

Depth of cut limit diagram of ductile cast iron with **fine pitch milling cutter**



Depth of cut limit diagram of ductile cast iron with **extra fine pitch milling cutter**



SHOULDER MILLING

<STRONG EDGE TYPE FOR CAST IRON>

Roughing

VOX400

P M **K** N S H



Fig.1

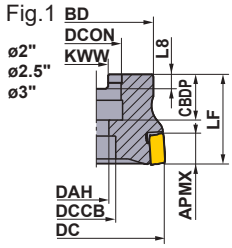


Fig.2

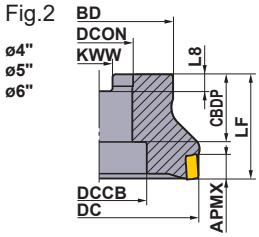
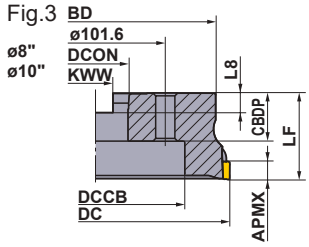


Fig.3



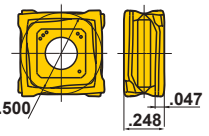
Right hand tool holder only.

ARBOR TYPE

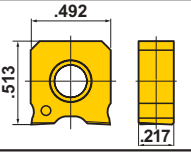
Type	Order Number	Stock R	Number of Teeth	Dimensions (inch) DC	LF	DCON	CBDP	DAH	DCCB	BD	KWW	L8	WT* (lbs)	APMX (inch)	Type (Fig.)
Coarse Pitch	**VOX400UR0203C**	●	3	2.000	2.000	1.000	1.339	.539	.787	1.93	.375	.219	.8	.394	1
	VOX400UR**2504C**	●	4	2.500	2.000	1.000	1.339	.539	.787	2.19	.375	.219	1.7	.394	1
	VOX400UR**0304C**	●	4	3.000	2.000	1.000	1.339	.539	.787	2.19	.375	.219	2.2	.394	1
	VOX400UR**0406E**	●	6	4.000	2.000	1.500	1.024	—	2.205	3.81	.625	.375	4.3	.394	2
	VOX400UR**0508E**	●	8	5.000	2.000	1.500	1.024	—	2.205	3.81	.625	.375	6.0	.394	2
	VOX400UR**0610F**	●	10	6.000	2.500	2.000	1.024	—	3.228	4.88	.750	.437	10.2	.394	2
	VOX400UR**0812M**	●	12	8.000	2.500	2.500	1.378	—	5.512	6.89	1.000	.560	17.6	.394	3
	VOX400UR**1016M**	●	16	10.000	2.500	2.500	1.378	—	7.078	8.66	1.000	.560	29.4	.394	3
Fine Pitch	**VOX400UR0205C**	●	5	2.000	2.000	1.000	1.339	.539	.787	1.93	.375	.219	.8	.394	1
	VOX400UR**2506C**	●	6	2.500	2.000	1.000	1.339	.539	.787	2.19	.375	.219	1.7	.394	1
	VOX400UR**0308C**	●	8	3.000	2.000	1.000	1.339	.539	.787	2.19	.375	.219	2.2	.394	1
	VOX400UR**0410E**	●	10	4.000	2.000	1.500	1.024	—	2.205	3.81	.625	.375	4.3	.394	2
	VOX400UR**0512E**	●	12	5.000	2.000	1.500	1.024	—	2.205	3.81	.625	.375	6.0	.394	2
	VOX400UR**0616F**	●	16	6.000	2.500	2.000	1.024	—	3.228	4.88	.750	.437	10.2	.394	2
	VOX400UR**0820M**	●	20	8.000	2.500	2.500	1.378	—	5.512	6.89	1.000	.560	17.6	.394	3
	VOX400UR**1024M**	●	24	10.000	2.500	2.500	1.378	—	7.078	8.66	1.000	.560	29.4	.394	3
Extra Fine Pitch	**VOX400UR2508C**	●	8	2.500	2.000	1.000	1.024	.539	.787	2.19	.375	.219	1.5	.394	1
	VOX400UR**0310C**	●	10	3.000	2.000	1.000	1.024	.539	.787	2.19	.375	.219	2.0	.394	1
	VOX400UR**0412E**	●	12	4.000	2.000	1.500	1.024	—	2.205	3.81	.625	.375	4.1	.394	2
	VOX400UR**0516E**	●	16	5.000	2.000	1.500	1.024	—	2.205	3.81	.625	.375	5.6	.394	2
	VOX400UR**0620F**	●	20	6.000	2.500	2.000	1.024	—	3.228	4.88	.750	.437	9.8	.394	2
	VOX400UR**0826M**	●	26	8.000	2.500	2.500	1.378	—	5.512	6.89	1.000	.560	17.1	.394	3
	VOX400UR**1034M**	●	34	10.000	2.500	2.500	1.378	—	7.087	8.66	1.000	.560	28.7	.394	3

1) * WT : Mass
2) Set bolt not included.

INSERTS

Shape	Order Number	Class	Horning	Coated MC5020	Coated VP15TF	Geometry (inch)
	**SONX1206PER**	N	E	●	●	
	NEW SONX**1206PEL**	N	E		●	

WIPER INSERTS

Shape	Order Number	Class	Horning	Coated MC5020	Coated VP15TF	Geometry (inch)
	**WOEX1206PER5C**	E	E		●	

* Left hand insert use for the special products. (Ex. Side cutter, Left hand cutter)

● : Inventory maintained. (10 inserts in a case) ★ : Inventory maintained in Japan.



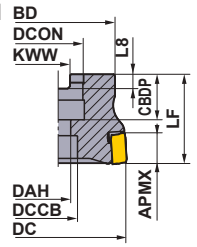
Fig.1


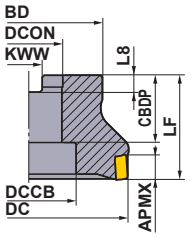
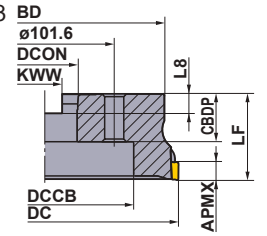
Fig.2


Fig.3


Right hand tool holder only.

METRIC Standard

For inch arbors

ARBOR TYPE

Type	Order Number	Stock	Number of Teeth	Dimensions (mm) [inch]									WT* (kg)	APMX (mm)	Type (Fig.)
		R		DC	LF	DCON	CBDP	DAH	DCCB	BD	KWW	L8			
Coarse Pitch	**VOX400R08004C**	★	4	80	50	25.4 [1.0"]	26	13	20	55	9.5	6	1.0	10	1
	VOX400**R10006D**	★	6	100	50	31.75 [1.25"]	32	—	45	70	12.7	8	1.5	10	2
	VOX400**R12508E**	★	8	125	63	38.1 [1.5"]	40	—	60	80	15.9	10	2.7	10	2
	VOX400**R16010F**	★	10	160	63	50.8 [2.0"]	43	—	80	120	19.1	11	5.3	10	2
	VOX400**R20012K**	★	12	200	63	47.625 [1.875"]	35	—	130	175	25.4	14.22	8.5	10	3
	VOX400**R25016K**	★	16	250	63	47.625 [1.875"]	35	—	180	220	25.4	14.22	13.3	10	3
Fine Pitch	**VOX400R08008C**	★	8	80	50	25.4 [1.0"]	26	13	20	55	9.5	6	1.0	10	1
	VOX400**R10010D**	★	10	100	50	31.75 [1.25"]	32	—	45	70	12.7	8	1.5	10	2
	VOX400**R12512E**	★	12	125	63	38.1 [1.5"]	40	—	60	80	15.9	10	2.7	10	2
	VOX400**R16016F**	★	16	160	63	50.8 [2.0"]	43	—	80	120	19.1	11	5.3	10	2
	VOX400**R20020K**	★	20	200	63	47.625 [1.875"]	35	—	130	175	25.4	14.22	8.5	10	3
	VOX400**R25024K**	★	24	250	63	47.625 [1.875"]	35	—	180	220	25.4	14.22	13.3	10	3
Extra Fine Pitch	**VOX400R08010C**	★	10	80	50	25.4 [1.0"]	26	13	20	55	9.5	6	1.0	10	1
	VOX400**R10012D**	★	12	100	50	31.75 [1.25"]	32	—	45	70	12.7	8	1.4	10	2
	VOX400**R12516E**	★	16	125	63	38.1 [1.5"]	40	—	60	80	15.9	10	2.6	10	2
	VOX400**R16020F**	★	20	160	63	50.8 [2.0"]	43	—	80	120	19.1	11	5.1	10	2
	VOX400**R20026K**	★	26	200	63	47.625 [1.875"]	35	—	130	175	25.4	14.22	8.2	10	3
	VOX400**R25034K**	★	34	250	63	47.625 [1.875"]	35	—	180	220	25.4	14.22	13.0	10	3

1) ★ WT : Mass
2) Set bolt not included.

SPARE PARTS

Tool Holder Number	 * Clamp Screw	 Wrench
VOX400	CS401160T	TKY15T

★ Clamp Torque (lbf-in) : CS401160T=31

STRONG EDGE INSERT TYPE CUTTER FOR CAST IRON



Fig.1

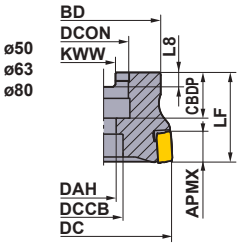


Fig.2

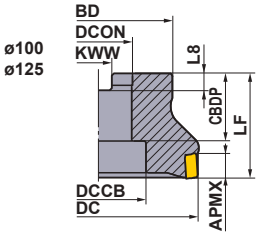
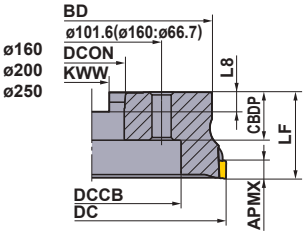


Fig.3



METRIC Standard

For metric arbors

Right hand tool holder only.

ARBOR TYPE

Type	Order Number	Stock	Number of Teeth	Dimensions (mm)									* WT (kg)	APMX (mm)	Type (Fig.)
		R		DC	LF	DCON	CBDP	DAH	DCCB	BD	KWW	L8			
Coarse Pitch	**VOX400-050A03R**	★	3	50	40	22	20	11	17	41	10.4	6.3	0.3	10	1
	VOX400-063A04R	★	4	63	40	22	20	11	17	50	10.4	6.3	0.6	10	1
	VOX400-080A04R	★	4	80	50	27	23	13	20	56	12.4	7	1	10	1
	VOX400-100B06R	★	6	100	50	32	32	—	45	78	14.4	8	1.7	10	2
	VOX400-125B08R	★	8	125	63	40	32	—	56	89	16.4	9	3	10	2
	VOX400-160C10R	★	10	160	63	40	29	—	56	120	16.4	9	5.4	10	3
	VOX400-200C12R	★	12	200	63	60	32	—	130	175	25.7	14.22	8.1	10	3
	VOX400-250C16R	★	16	250	63	60	32	—	180	210	25.7	14.22	11.8	10	3
Fine Pitch	**VOX400-050A05R**	★	5	50	40	22	20	11	17	41	10.4	6.3	0.3	10	1
	VOX400-063A06R	★	6	63	40	22	20	11	17	50	10.4	6.3	0.6	10	1
	VOX400-080A08R	★	8	80	50	27	23	13	20	56	12.4	7	1	10	1
	VOX400-100B10R	★	10	100	50	32	32	—	45	78	14.4	8	1.7	10	2
	VOX400-125B12R	★	12	125	63	40	32	—	56	89	16.4	9	3	10	2
	VOX400-160C16R	★	16	160	63	40	29	—	56	120	16.4	9	5.4	10	3
	VOX400-200C20R	★	20	200	63	60	32	—	130	175	25.7	14.22	8.1	10	3
	VOX400-250C24R	★	24	250	63	60	32	—	180	210	25.7	14.22	11.8	10	3
Extra Fine Pitch	**VOX400-063A08R**	★	8	63	40	22	20	11	17	50	10.4	6.3	0.5	10	1
	VOX400-080A10R	★	10	80	50	27	23	13	20	56	12.4	7	1.0	10	1
	VOX400-100B12R	★	12	100	50	32	32	—	45	78	14.4	8	1.6	10	2
	VOX400-125B16R	★	16	125	63	40	32	—	56	89	16.4	9	2.8	10	2
	VOX400-160C20R	★	20	160	63	40	29	—	56	120	16.4	9	5.2	10	3
	VOX400-200C26R	★	26	200	63	60	32	—	130	175	25.7	14.22	7.9	10	3
	VOX400-250C34R	★	34	250	63	60	32	—	180	210	25.7	14.22	11.5	10	3

1) ✶ WT : Mass
2) Set bolt not included.

SPARE PARTS

Tool Holder Number	 * Clamp Screw	 Wrench
VOX400	CS401160T	TKY15T

✶ Clamp Torque (lbf-in) : CS401160T=31

★ : **Inventory maintained in Japan.**

Memo

RECOMMENDED CUTTING CONDITIONS

VOX400 (Standard pitch)

Work Material		Tensile Strength	Insert Grade	Cutting Speed (SFM)	ϕ2"—ϕ10"		
					Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)
K	Gray Cast Iron	≤200MPa	MC5020	985(820—1150)	≤DC	≤.394	.016(.012—.020)
			VP15TF	820(655—985)	≤DC	≤.394	.016(.012—.020)
		≤350MPa	MC5020	720(490—985)	≤DC	≤.394	.012(.008—.016)
			VP15TF	655(490—985)	≤DC	≤.394	.012(.008—.016)
	Ductile Cast Iron	≤450MPa	MC5020	655(490—820)	≤DC	≤.394	.012(.008—.016)
			VP15TF	555(490—655)	≤DC	≤.394	.012(.008—.016)
		≤800MPa	MC5020	555(490—655)	≤DC	≤.394	.008(.004—.012)
			VP15TF	490(330—655)	≤DC	≤.394	.008(.004—.012)

VOX400 (Fine pitch)

Work Material		Tensile Strength	Insert Grade	Cutting Speed (SFM)	ϕ2.5"			ϕ3"		
					Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)	Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)
K	Gray Cast Iron	≤200MPa	MC5020	985(820—1150)	≤DC	≤.394	.016(.012—.020)	≤DC	≤.394	.016(.012—.020)
			VP15TF	820(655—985)	≤DC	≤.394	.016(.012—.020)	≤DC	≤.394	.016(.012—.020)
		≤350MPa	MC5020	720(490—985)	≤DC	≤.394	.012(.008—.016)	≤DC	≤.394	.012(.008—.016)
			VP15TF	655(490—985)	≤DC	≤.394	.012(.008—.016)	≤DC	≤.394	.012(.008—.016)
	Ductile Cast Iron	≤450MPa	MC5020	655(490—820)	≤0.8DC	≤.394	.012(.008—.016)	≤0.6DC	≤.394	.012(.008—.016)
			VP15TF	555(490—655)	≤0.8DC	≤.394	.012(.008—.016)	≤0.6DC	≤.394	.012(.008—.016)
		≤800MPa	MC5020	555(490—655)	≤0.8DC	≤.394	.008(.004—.012)	≤0.6DC	≤.394	.008(.004—.012)
			VP15TF	490(330—655)	≤0.8DC	≤.394	.008(.004—.012)	≤0.6DC	≤.394	.008(.004—.012)

Work Material		Tensile Strength	Insert Grade	Cutting Speed (SFM)	ϕ4"			ϕ5"		
					Radial depth of cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)	Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)
K	Gray Cast Iron	≤200MPa	MC5020	985(820—1150)	≤DC	≤.394	.016(.012—.020)	≤DC	≤.394	.016(.012—.020)
			VP15TF	820(655—985)	≤DC	≤.394	.016(.012—.020)	≤DC	≤.394	.016(.012—.020)
		≤350MPa	MC5020	720(490—985)	≤DC	≤.394	.012(.008—.016)	≤DC	≤.394	.012(.008—.016)
			VP15TF	655(490—985)	≤DC	≤.394	.012(.008—.016)	≤DC	≤.394	.012(.008—.016)
	Ductile Cast Iron	≤450MPa	MC5020	655(490—820)	≤0.5DC	≤.394	.012(.008—.016)	≤0.4DC	≤.394	.012(.008—.016)
			VP15TF	555(490—655)	≤0.5DC	≤.394	.012(.008—.016)	≤0.4DC	≤.394	.012(.008—.016)
		≤800MPa	MC5020	555(490—655)	≤0.5DC	≤.394	.008(.004—.012)	≤0.4DC	≤.394	.008(.004—.012)
			VP15TF	490(330—655)	≤0.5DC	≤.394	.008(.004—.012)	≤0.4DC	≤.394	.008(.004—.012)

Work Material		Tensile Strength	Insert Grade	Cutting Speed (SFM)	ϕ6"			ϕ8", ϕ10"		
					Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)	Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)
K	Gray Cast Iron	≤200MPa	MC5020	985(820—1150)	≤DC	≤.394	.016(.012—.020)	≤DC	≤.394	.016(.012—.020)
			VP15TF	820(655—985)	≤DC	≤.394	.016(.012—.020)	≤DC	≤.394	.016(.012—.020)
		≤350MPa	MC5020	720(490—985)	≤DC	≤.394	.012(.008—.016)	≤DC	≤.394	.012(.008—.016)
			VP15TF	655(490—985)	≤DC	≤.394	.012(.008—.016)	≤DC	≤.394	.012(.008—.016)
	Ductile Cast Iron	≤450MPa	MC5020	655(490—820)	≤0.3DC	≤.394	.012(.008—.016)	≤0.2DC	≤.394	.012(.008—.016)
			VP15TF	555(490—655)	≤0.3DC	≤.394	.012(.008—.016)	≤0.2DC	≤.394	.012(.008—.016)
		≤800MPa	MC5020	555(490—655)	≤0.3DC	≤.394	.008(.004—.012)	≤0.2DC	≤.394	.008(.004—.012)
			VP15TF	490(330—655)	≤0.3DC	≤.394	.008(.004—.012)	≤0.2DC	≤.394	.008(.004—.012)

- DC is cutter diameter.
- 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 (SFM)	ϕ2.5"			ϕ3"		
					Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)	Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)
K	Gray Cast Iron	≤200MPa	MC5020	985(820－1150)	≤DC	≤.394	.016(.012－.020)	≤DC	≤.394	.016(.012－.020)
			VP15TF	820(655－985)	≤DC	≤.394	.016(.012－.020)	≤DC	≤.394	.016(.012－.020)
		≤350MPa	MC5020	720(490－985)	≤DC	≤.394	.012(.008－.016)	≤DC	≤.394	.012(.008－.016)
			VP15TF	655(490－985)	≤DC	≤.394	.012(.008－.016)	≤DC	≤.394	.012(.008－.016)
	Ductile Cast Iron	≤450MPa	MC5020	655(490－820)	≤0.6DC	≤.394	.012(.008－.016)	≤0.5DC	≤.394	.012(.008－.016)
			VP15TF	555(490－655)	≤0.6DC	≤.394	.012(.008－.016)	≤0.5DC	≤.394	.012(.008－.016)
		≤800MPa	MC5020	555(490－655)	≤0.6DC	≤.394	.008(.004－.012)	≤0.5DC	≤.394	.008(.004－.012)
			VP15TF	490(330－655)	≤0.6DC	≤.394	.008(.004－.012)	≤0.5DC	≤.394	.008(.004－.012)

	Work Material	Tensile Strength	Insert Grade	Cutting Speed (SFM)	ϕ4"			ϕ5"		
					Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)	Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)
K	Gray Cast Iron	≤200MPa	MC5020	985(820－1150)	≤DC	≤.394	.016(.012－.020)	≤DC	≤.394	.016(.012－.020)
			VP15TF	820(655－985)	≤DC	≤.394	.016(.012－.020)	≤DC	≤.394	.016(.012－.020)
		≤350MPa	MC5020	720(490－985)	≤DC	≤.394	.012(.008－.016)	≤DC	≤.394	.012(.008－.016)
			VP15TF	655(490－985)	≤DC	≤.394	.012(.008－.016)	≤DC	≤.394	.012(.008－.016)
	Ductile Cast Iron	≤450MPa	MC5020	655(490－820)	≤0.4DC	≤.394	.012(.008－.016)	≤0.3DC	≤.394	.012(.008－.016)
			VP15TF	555(490－655)	≤0.4DC	≤.394	.012(.008－.016)	≤0.3DC	≤.394	.012(.008－.016)
		≤800MPa	MC5020	555(490－655)	≤0.4DC	≤.394	.008(.004－.012)	≤0.3DC	≤.394	.008(.004－.012)
			VP15TF	490(330－655)	≤0.4DC	≤.394	.008(.004－.012)	≤0.3DC	≤.394	.008(.004－.012)

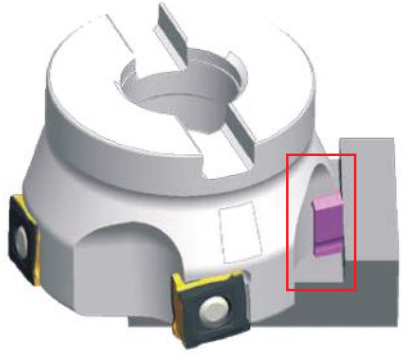
	Work Material	Tensile Strength	Insert Grade	Cutting Speed (SFM)	ϕ6"			ϕ8", ϕ10"		
					Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)	Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)
K	Gray Cast Iron	≤200MPa	MC5020	985(820－1150)	≤DC	≤.394	.016(.012－.020)	≤DC	≤.394	.016(.012－.020)
			VP15TF	820(655－985)	≤DC	≤.394	.016(.012－.020)	≤DC	≤.394	.016(.012－.020)
		≤350MPa	MC5020	720(490－985)	≤DC	≤.394	.012(.008－.016)	≤DC	≤.394	.012(.008－.016)
			VP15TF	655(490－985)	≤DC	≤.394	.012(.008－.016)	≤DC	≤.394	.012(.008－.016)
	Ductile Cast Iron	≤450MPa	MC5020	655(490－820)	≤0.25DC	≤.394	.012(.008－.016)	≤0.15DC	≤.394	.012(.008－.016)
			VP15TF	555(490－655)	≤0.25DC	≤.394	.012(.008－.016)	≤0.15DC	≤.394	.012(.008－.016)
		≤800MPa	MC5020	555(490－655)	≤0.25DC	≤.394	.008(.004－.012)	≤0.15DC	≤.394	.008(.004－.012)
			VP15TF	490(330－655)	≤0.25DC	≤.394	.008(.004－.012)	≤0.15DC	≤.394	.008(.004－.012)

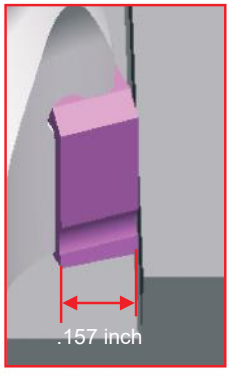
- DC is cutter diameter.
- When using wiper insert, please reduce the feed per tooth to half the normal rate.

Usable cutting edge width of wiper inserts

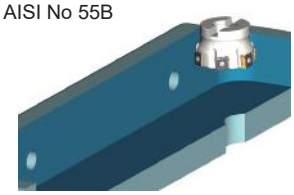
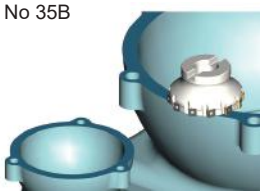
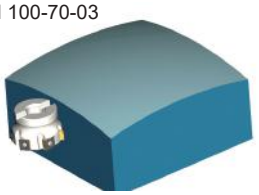
The width of the wiper insert itself is .217 inch, however the actual functioning cutting edge width after installation to the body is .177 inch, as shown in the diagram.

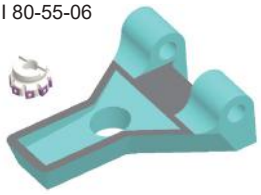
With one wiper insert, it is possible to machine up to fr=.157 inch feed per revolution. When exceeding fr=.157 inch, use two or more wiper inserts. Note that there is a possibility to exceed fr=.157 inch when using a holder with more than 24 inserts.





APPLICATION EXAMPLES

	Tool	VOX400UR2506C	VOX400UR0512E	VOX400UR2506C
	Workpiece	AISI No 55B 	AISI No 35B 	AISI 100-70-03 
	Component	Press mold base	Gear case	Press mold part
Cutting Conditions	Cutting Speed (SFM)	750	395	655
	Table Feed (IPM)	80.6	28.9	31.5
	Feed per Tooth (IPT)	.012	.008	.005
	Radial Depth of cut ap (inch)	.197	1.575	.669
	Axial Depth of cut ae (inch)	.394	.118	.118
	Cutting mode	Dry cutting	Dry cutting	Dry cutting
	Results	Conventional products required the axial depth of cut to be set at .197" for stable milling. But the VOX400 allowed stable milling with twice the depth of cut and produced a good wall surface accuracy.	Due to the unstable workpiece, conventional products were usually damaged and became unusable. VOX400 is more stable and gave 3 times tool life.	Due to high cutting resistance of some products, the width of cut was limited to .335". The VOX400 low cutting resistance design allowed for stable cutting at twice the width of cut.

	Tool	VOX400-080B10R (MC5020)	VOX400-063A08R (VP15TF)	VOX400-125B16R (Wiper Insert)
	Workpiece	AISI No 45 B 	AISI 80-55-06 	AISI 60-40-18 
	Component	Gear case	Automobile part	Exhaust part
Cutting Conditions	Cutting Speed (SFM)	2295	935-1165	770
	Table Feed (IPM)	165.4	74.8-90.6	31.1
	Feed per Tooth (IPT)	.006	.006	.004
	Radial Depth of cut ae (inch)	-	-	3.937
	Axial Depth of cut ap (inch)	.059-.079	.079-.157	.006-.010
	Cutting mode	Dry cutting	Dry cutting	Dry cutting
	Results	Vibration and chipping occurred with conventional products due to the low rigidity clamping. VOX400 allowed a more stable cutting performance without chipping and costs were reduced by 25%.	Compared to conventional products tool life was improved 30% and cutting resistance was reduced by 25%.	The surface finish was improved compared to the conventional products.

●With reference to the above examples, adjust the cutting conditions according to the machine specifications, workpiece geometry and clamping method used.

Memo

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FOR YOUR SAFETY

- Don't handle inserts and chips without gloves.
- Please machine within the recommended application range and exchange expired tools with new ones in advance of breakage.
- Please use safety covers and wear safety glasses.
- When using compounded cutting oils, please take fire precautions.
- When attaching inserts or spare parts, please use only the correct wrench or driver.
- When using rotating tools, please make a trial run to check run-out, vibration and abnormal sounds etc.

www.mmc-carbide.com/us

Tools specifications subject to change without notice.

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