



SUMITOMO

CARBIDE - CBN - DIAMOND

VT Valley Tool

WFX Series



High Performance Milling Systems

Four-cornered shoulder mill for steel, stainless steel, and cast iron machining



for exceptional squareness & surface finish



Features & Benefits

WFX WaveMill is a screw-down type cutter capable of using 4-cornered inserts. Ideal cutting edge design offers exceptional squareness.

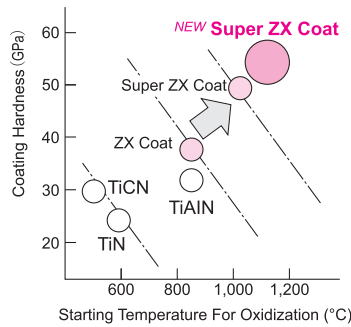
Characteristics

The insert shape is optimized for shoulder milling; when combined with a high-precision body it leaves a superior machined surface finish.

- Maximum depth of cut (a_p) = 0.394" (10.0mm)
- With oil hole = $\varnothing 5"$ or less (125 mm)
- 3 types of chipbreakers

Grades

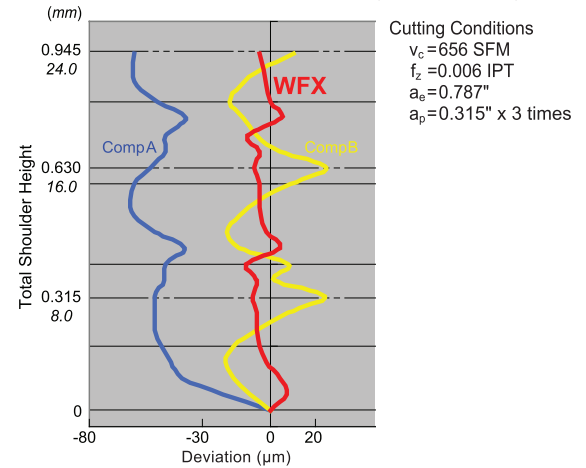
The WFX type is the first series to offer the newly developed multi-layer PVD coating structure on these grades: **ACP200**, **ACP300**, and **ACK300**. With excellent resistance against wear, fracture, and adhesion, the grades achieve 1.5 times longer tool life than conventional coating.



Performance

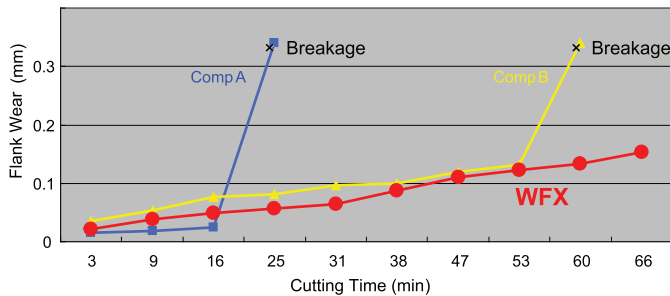
(1) Squareness

Work material: 1049 Tool: WFX12100R ($\varnothing 3.94"$ x 5 flutes)



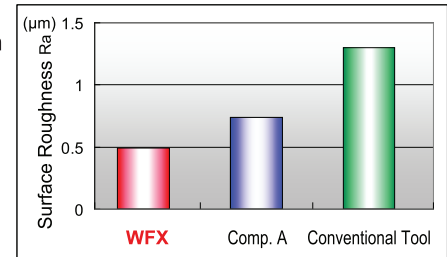
(2) Wear Resistance

Work material: 4140 Tool: WFX12100R ($\varnothing 3.94"$ x 1 flute test)
 Cutting Conditions $v_c = 656$ SFM $f_z = 0.006$ IPT $a_e = 1.181"$ $a_p = 0.1969"$



(3) Surface Finish

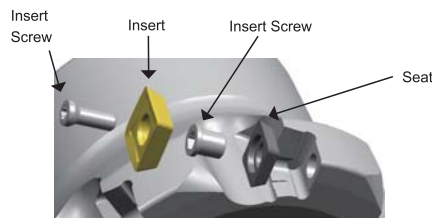
Work material: 4140
 Tool: WFX12100R ($\varnothing 3.94"$ x 5 flutes)
 Cutting Conditions
 $v_c = 656$ SFM
 $f_z = 0.004$ IPT
 $a_e = 3.543"$
 $a_p = 0.118"$



Spare Parts

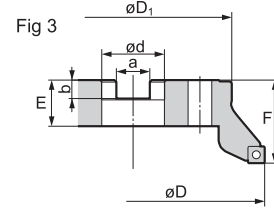
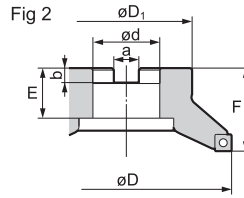
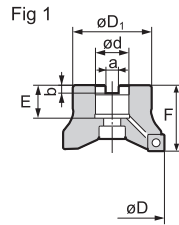
Applicable Cutters	Seat	Seat Screw	Insert Screw	Torque	Wrench (insert)	Wrench (seat)
WFX12040E	-	-	BFTX03512IP	3.0N * m	TRDR15IP	-
Other WFX types	WFXS4R	BW0507F	BFTX03512IP	3.0N * m	TRDR15IP	LH035

Coolant Through Bolts	
Catalog Number	Cutter Size
BFXH 3/8 x 1	2.00"
BFXH 1/2 x 1 1/4	2.50"
BFXH 1/2 x 1 1/4	3.00"
BFXH 5/8 x 1 1/4	4.00"
BFXH 3/4 x 1 1/2	5.00"



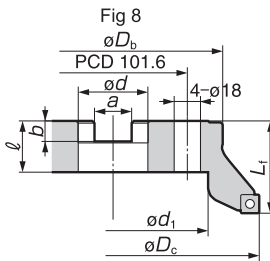
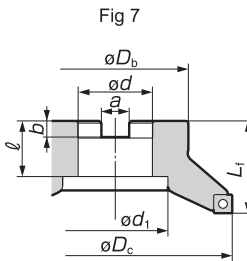
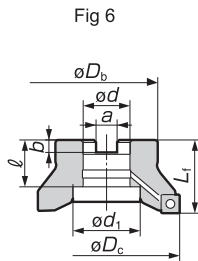
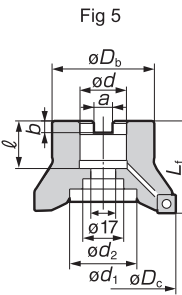
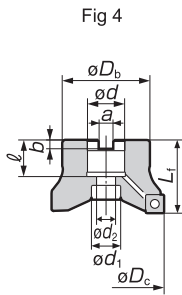
Recommended Cutting Conditions

ISO	Work Material	Rating	Cutting Speed v_c (SFM/m/min)		Feed Rate f_z (IPT/mm/t)		D.O.C. (In/mm)	Grades
			Min.-Optimum-Max	Min.-Optimum-Max	Min.-Optimum-Max	Min.-Optimum-Max		
P	General Steel	G	492-656-820	0.004-0.006-0.008	< 0.394	ACP200		
			150-200-250	0.10-0.15-0.20	< 10.0	ACP300		
	Soft Steel	G	591-869-1148	0.004-0.006-0.008	< 0.394	ACP200		
M	Die Steel	S	328-492-656	0.004-0.006-0.008	< 0.236	ACP200		
			100-150-200	0.10-0.15-0.20	< 6.0	ACP300		
K	Stainless Steel	S	525-672-820	0.004-0.006-0.008	< 0.394	ACP300		
			160-205-250	0.10-0.15-0.20	< 10.0	ACP300		
K	Cast Iron	S	328-574-820	0.004-0.006-0.008	< 0.394	ACK200		
			100-175-250	0.10-0.15-0.20	< 10.0	ACK300		



WFX Cutter Bodies - INCH

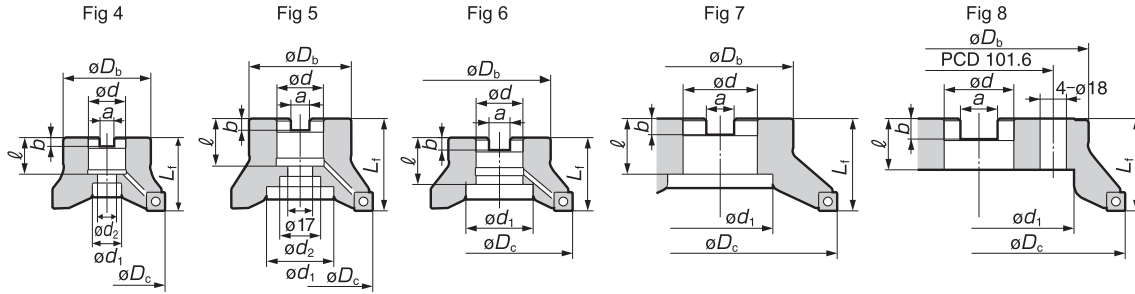
Cat. No.	Stock	Dimensions (inch)							No. of Teeth	Pitch	Fig	
		ϕD	ϕD_1	F	ϕd	a	b	E				
WFX42000R	●	2.000	1.500	1.750	0.750	0.312	0.187	0.750	3	Coarse	1	
WFX42500R	●	2.500	1.750	1.750	1.000	0.375	0.218	0.750	4		1	
WFX43000R	●	3.000	2.250	1.750	1.000	0.375	0.218	0.750	4		1	
WFX44000R	●	4.000	2.870	2.000	1.250	0.500	0.280	0.750	5		1	
WFX45000R	●	5.000	3.750	2.500	1.500	0.625	0.380	1.000	6		1	
WFX46000R	●	6.000	4.380	2.500	1.500	0.625	0.380	1.060	8		2	
WFX48000R	●	8.000	5.120	2.500	2.500	1.000	0.560	1.595	10		3	
WFXF42000R	●	2.000	1.500	1.750	0.750	0.312	0.187	1.020	4		Fine	1
WFXF42500R	●	2.500	1.750	1.750	1.000	0.375	0.218	1.020	5			1
WFXF43000R	●	3.000	2.250	1.750	1.000	0.375	0.218	1.020	6			1
WFXF44000R	●	4.000	2.870	2.000	1.250	0.500	0.280	1.060	7	1		
WFXF45000R	●	5.000	3.750	2.500	1.500	0.625	0.380	1.060	8	1		
WFXF46000R	●	6.000	4.380	2.500	1.500	0.625	0.380	1.060	12	2		
WFXF48000R	●	8.000	5.120	2.500	2.500	1.000	0.560	1.595	16	3		
WFXX42000R	●	2.000	1.500	1.750	0.750	0.312	0.187	1.020	5	Super Fine	1	
WFXX42500R	●	2.500	1.750	1.750	1.000	0.375	0.218	1.020	6		1	
WFXX43000R	●	3.000	2.250	1.750	1.000	0.375	0.218	1.020	8		1	
WFXX44000R	●	4.000	2.870	2.000	1.250	0.500	0.280	1.060	10		1	
WFXX45000R	●	5.000	3.750	2.500	1.500	0.625	0.380	1.060	12		1	



WFX Cutter Bodies - METRIC (Coarse Pitch)

Cat. No.	Stock	Dimensions (mm)									No. of Teeth	Weight (kg)	Fig
		ϕD_c	ϕD_b	Lf	ϕd	a	b	ℓ	ϕd_1	ϕd_2			
WFX 12050RS	★	50	40	40	22	10.4	6.3	20	18	11	3	0.2	4
WFX 12063RS	★	63	50	40	22	10.4	6.3	20	18	11	4	0.4	4
WFX 12080RS	★	80	60	50	27	12.4	7	25	20	13.5	4	0.9	4
WFX 12100RS	★	100	70	50	32	14.4	8.5	32	46	-	5	1.3	6
WFX 12080R	★	80	60	50	25.4	9.5	6	25	20	13	4	0.9	4
WFX 12100R	★	100	70	63	31.75	12.7	8	32.5	46	28	5	1.7	5
WFX 12125R	★	125	80	63	38.1	15.9	10	35.5	55	30	6	2.4	4
WFX 12160R	★	160	100	63	50.8	19	11	38	72	-	8	3.7	7
WFX 12200R	★	200	150	63	47.625	25.4	14	35	130	-	10	6.3	8
WFX 12250R	★	250	190	63	47.625	25.4	14	35	150	-	12	11.0	8

★ : Worldwide Warehouse Item



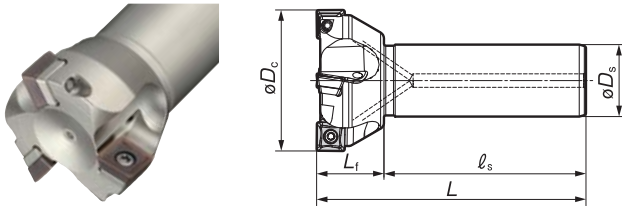
WFX Cutter Bodies - METRIC (Fine Pitch)

Cat. No.	Stock	Dimensions (mm)									No. of Teeth	Weight (kg)	Fig
		øD _c	øD _b	L _f	ød	a	b	l	ød ₁	ød ₂			
WFXF 12050RS	★	50	40	40	22	10.4	6.3	20	18	11	4	0.2	1
WFXF 12063RS	★	63	50	40	22	10.4	6.3	20	18	11	5	0.4	1
WFXF 12080RS	★	80	60	50	27	12.4	7	25	20	13.5	6	0.9	1
WFXF 12100RS	★	100	70	50	32	14.4	8.5	32	46	-	7	1.2	3
WFXF 12080R	★	80	60	50	25.4	9.5	6	25	20	13	6	0.9	1
WFXF 12100R	★	100	70	63	31.75	12.7	8	32.5	46	28	7	1.6	2
WFXF 12125R	★	125	80	63	38.1	15.9	10	35.5	55	30	8	2.4	1
WFXF 12160R	★	160	100	63	50.8	19	11	38	72	-	12	3.5	4
WFXF 12200R	★	200	150	63	47.625	25.4	14	35	130	-	16	6.2	5
WFXF 12250R	★	250	190	63	47.625	25.4	14	35	150	-	18	10.9	5

★: Worldwide Warehouse Item

Inserts are not included. * Cutters ø160 mm or above do not have coolant holes.

Please use JISB1176 "hexagonal bolt" (ø80: M12 × 30-35mm, ø100: M16 × 40-45mm) for securing the ø80 or ø100 cutter to the arbor.



Body (Shank Type)							
Cat. No.	Stock	Dimensions (mm)					No. of Teeth
		øD _c	øD _s	L _f	l _s	L	
WFX 12040E	★	40	32	30	90	120	3
WFX 12050E	★	50	32	30	90	120	3
WFX 12063E	★	63	32	30	90	120	4
WFX 12080E	★	80	32	30	90	120	4

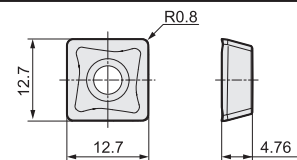
Body (Shank, Fine Pitched Type)							
Cat. No.	Stock	Dimensions (mm)					No. of Teeth
		øD _c	øD _s	L _f	l _s	L	
WFXF 12050E	★	50	32	30	90	120	4
WFXF 12063E	★	63	32	30	90	120	5
WFXF 12080E	★	80	32	30	90	120	6

★: Worldwide Warehouse Item

ø40 mm cutters do not have a seat.

Inserts

Cat. No.	Coated Carbide					Carbide			Cermet	
	ACP100	ACP200	ACP300	ACK200	ACK300					
SOMT 120408PDER-L		●	●		●					
SOMT 120408PDER-G	●	●	●	●	●					
SOMT 120408PDER-H		●	●		●					





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