

E Technical Information for Side Milling Cutters

Adjusting side cutter

Code system

A: Adjusting side cutter
Adjusting

B: Boss type
Cutter type

For half side cutter, minimum width of the cutter will be written only

Max. width of cutter

R A FC B 125 14 18 – R

Insert clamping way

R: Radial type
(Using SDXT)

T: Tangential type
(Using CNHQ)

Insert configuration

FC
Full side cutter

HC
Half side cutter

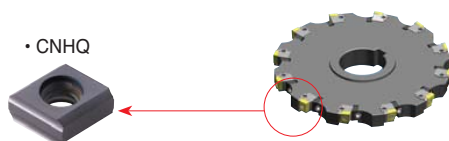
Cutter Dia.

Min. width of cutter

Hand

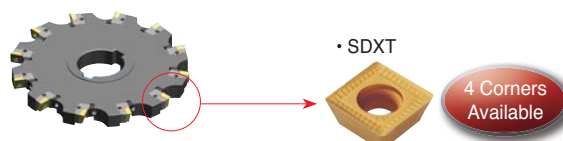
Unmarked	R	L
Neutral	Right	Left
Full side cutter (Plane type)	Half side cutter (Boss type)	

Tangential type (High rigidity)



- Medium/Roughing
- Excellent performance at medium to roughing range (14~30mm) table operation due to the strong rigidity of the cutter
- Good performance in heavy interruption and deep depth of cut application

Radial type (Low cutting load)

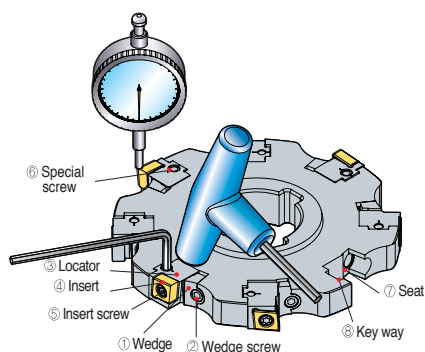


- Medium/Finishing
- Suitable for small width cutting operation (12~24mm)
- 3 dimensional chip breaker provides smooth cutting operation
- Several chip breakers as per applications are available (MF, MM, FA)
- Economical insert using 4 cutting-edges per insert

Insert features

- Precise adjustable side cutter can control the width of the cutter by 5 μ m unit
- Since the width of the cutter is adjustable up to ± 1.5 mm, single cutter can cover various cutting width
- Specially designed clamping system of the locator provides excellent rigidity by using elastic deformation of the locator
- Tangential type clamping system of insert provides enough strength can withstand large width cutting operations
- 3-dimensional chip breaker of insert provides smooth cutting with low cutting load at medium to finishing range

Operating manual



How to assemble the adjusting side cutter

1. Clamp ①wedge slightly on ⑦locator-wedge pocket by using ②wedge screw
2. Put ③locator on ⑦locator-wedge pocket along with the ⑧key-way
3. Tighten the ⑥taper screw little bit to set proper position of locator
4. Tighten the ②wedge screw tightly by using 70~80N.m torque
5. After, put the ④insert on insert pocket of ③locator, clamp it with ⑤insert screw by using 40~50N.m torque

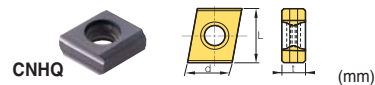
How to adjust Run-out & cutting width

1. Settle the adjusting side cutter after cleaning to the jig for measurement
2. Un-screw the ②Wedge screw first, then tighten ①wedge slightly again by using 8N.m torque
3. Adjusting the height of cutting-edge by using a dial gauge to set the width of the cutter
4. Tighten the ②wedge screw tightly by using 70~80N.m torque
5. To finish the setting, tighten the ⑥taper screw for strong clamp



Tangential type

Cutting width per insert & type of cutter



Designation		Coated		Cutting width for half side cutter (ap)	Cutting width for full side cutter (ap)	L	d	t
		NCM325	PC6510					
CNHQ1005	-C0.5			9.0	14~18	10	10	5.4
	-R0.5							
	-C1.0							
	-R1.0			8.5	14~17			
CNHQ1305	-C0.5			12	18~21/21~24	12.7	10	5.4
	-R0.5							
	-C1.0			11.5	18~21/21~23			
	-R1.0							
	-C1.5							
	-R1.5			11	18~21/21~22			
CNHQ1606	-C0.5			15	24~27/27~30	16	12	6.4
	-R0.5							
	-C1.0			14.5	24~27/27~29			
	-R1.0							
	-C1.5							
	-R1.5			14	24~27/27~28			
	-C2.0							
	-R2.0			13.5	24~27			

Applicable holder E346, E347 Available arbors and bolt E371~E373

Recommended cutting condition

ISO	Grades	vc (m/min)	fz (mm/t)
P	NCM325	190~310	0.10~0.30
	PC3500	160~270	
M	PC5300	90~150	0.10~0.30
	NCM335	180~290	
K	PC6510	140~230	0.10~0.30

Radial type

Cutting width as per insert & type of cutter



Designation		Coated										Uncoated	Cutting width for half side cutter (ap)	Cutting width for full side cutter (ap)	d	t
		NCM325	NCM335	NC5330	NC5340	NC5350	PC3500	PC3600	PC9530	PC6510	PC5300	PC5400				
SDXT	09M405R-MA												8	12~14 14~16	9.525	4
	09M405L-MA															
	09M405R-MF	●					●	●	●	●	●	●				
	09M405L-MF															
	09M405R-MM	●	●				●	●	●	●	●	●				
	09M405L-MM							●		●						
	130508R-MA												10.5	16~18 18~20 20~22 22~24	13.5	5.56
	130508L-MA															
	130508R-MF	●					●	●	●	●	●	●				
	130508L-MF															
	130508R-MM	●	●				●	●	●	●	●	●				
	130508L-MM															

Applicable holder E346, E347 Available arbors and bolt E371~E373

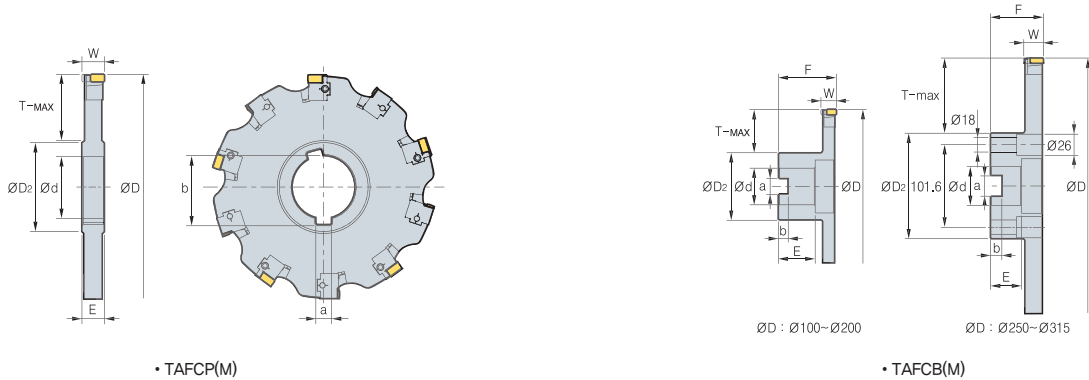
Recommended cutting condition

ISO	Grades	vc (m/min)	fz (mm/t)
P	NCM325	190~310	0.08~0.30
	NCM335	180~290	0.08~0.25
	PC3500	160~270	0.10~0.25
M	PC9530	90~150	0.10~0.25
	PC5300	90~150	
K	PC8110	140~230	0.10~0.25
	PC6510	140~230	



E Side Milling Cutter

Tangential type (Full side cutter)



																		(mm)		
Designation		Ød	E	ØD2	a	b	T-MAX	Designation		Ød	F	ØD2	a	b	E	T-MAX	Dimensions			
																	ØD	W	No. of tooth	
TAFCP (M)	1001418	31.75 (32)	14	48	7.92 (8)	35.2	24	TAFCB (M)	1001418R/L	31.75 (32)	50	54	12.7 (14.4)	8	28	21	100	14-18	6	
	1251418	38.1 (40)	14	56	9.52 (10)	42.3	32		1251418R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	25	125	14-18	8	
	1601418	38.1 (40)	14	56	9.52 (10)	42.3	50		1601418R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	43	160	14-18	10	
	2001418	50.8 (50)	14	72	12.7 (12)	55.8	61		2001418R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	53	200	14-18	12	
	2501418	50.8 (50)	14	72	12.7 (12)	55.8	86		2501418R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	58	250	14-18	16	
	3151418	50.8 (50)	14	72	12.7 (12)	55.8	118		3151418R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	90	315	14-18	20	
TAFCP (M)	1001821	31.75 (32)	18	48	7.92 (8)	35.2	24	TAFCB (M)	1001821R/L	31.75 (32)	50	50	12.7 (14.4)	8	28	21	100	18-21	6	
	1251821	38.1 (40)	18	56	9.52 (10)	42.3	32		1251821R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	25	125	18-21	8	
	1601821	38.1 (40)	18	56	9.52 (10)	42.3	50		1601821R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	43	160	18-21	10	
	2001821	50.8 (50)	18	72	12.7 (12)	55.8	61		2001821R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	53	200	18-21	12	
	2501821	50.8 (50)	18	72	12.7 (12)	55.8	86		2501821R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	58	250	18-21	16	
	3151821	50.8 (50)	18	72	12.7 (12)	55.8	118		3151821R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	90	315	18-21	20	
TAFCP (M)	1002124	31.75 (32)	21	48	7.92 (8)	35.2	24	TAFCB (M)	1002124R/L	31.75 (32)	50	54	12.7 (14.4)	8	28	21	100	21-24	6	
	1252124	38.1 (40)	21	56	9.52 (10)	42.3	32		1252124R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	25	125	21-24	8	
	1602124	38.1 (40)	21	56	9.52 (10)	42.3	50		1602124R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	43	160	21-24	10	
	2002124	50.8 (50)	21	72	12.7 (12)	55.8	61		2002124R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	53	200	21-24	12	
	2502124	50.8 (50)	21	72	12.7 (12)	55.8	86		2502124R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	58	250	21-24	16	
	3152124	50.8 (50)	21	72	12.7 (12)	55.8	118		3152124R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	90	315	21-24	20	
TAFCP (M)	1252427	38.1 (40)	24	56	9.52 (10)	42.3	32	TAFCB (M)	1252427R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	25	125	24-27	8	
	1602427	38.1 (40)	24	56	9.52 (10)	42.3	50		1602427R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	43	160	24-27	10	
	2002427	50.8 (50)	24	72	12.7 (12)	55.8	61		2002427R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	53	200	24-27	12	
	2502427	50.8 (50)	24	72	12.7 (12)	55.8	86		2502427R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	58	250	24-27	16	
	3152427	50.8 (50)	24	72	12.7 (12)	55.8	118		3152427R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	90	315	24-27	20	
TAFCP (M)	1252730	38.1 (40)	27	56	9.52 (10)	42.3	32	TAFCB (M)	1252730R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	25	125	27-30	8	
	1602730	38.1 (40)	27	56	9.52 (10)	42.3	50		1602730R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	43	160	27-30	10	
	2002730	50.8 (50)	27	72	12.7 (12)	55.8	61		2002730R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	53	200	27-30	12	
	2502730	50.8 (50)	27	72	12.7 (12)	55.8	86		2502730R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	58	250	27-30	16	
	3152730	50.8 (50)	27	72	12.7 (12)	55.8	118		3152730R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	90	315	27-30	20	

Available inserts and Recommended cutting condition E345 • The ap (Maximum width of cutter) size written above is the number when using insert having corner size C0.5 or R0.5
() Metric size

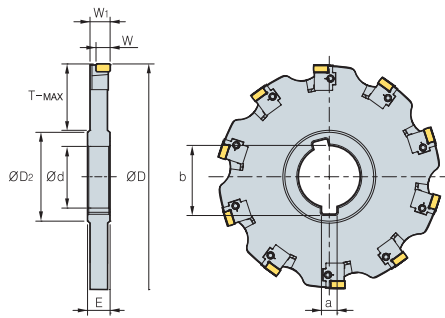
Parts

Specification	Insert	Locator	Wedge	Insert screw	Wedge screw	Locator screw	Insert wrench	Wedge Wrench	Locator Wrench
□□□1418R/L	CNHQ1005-□□□	LSA-CH10R/L	WSA10N	FTKA0410	DHA0617	SHGA0411	TW15S	HW30	-
□□□1821R/L	CNHQ1305-□□□	LSA-CH13R/L	WSA13N	FTKA0410	DHA0821F	SHGA0411	TW15S	HW40	HW30L
□□□2124R/L	CNHQ1305-□□□	LSA-CH13R/L	WSA13N	FTKA0410	DHA0821F	SHGA0411	TW15S	HW40	HW30L
□□□2427R/L	CNHQ1606-□□□	LSA-CH16R/L	WSA13N	FTGA0513-P	DHA0821F	SHGA0411	TW20S	HW40	HW30L
□□□2730R/L	CNHQ1606-□□□	LSA-CH16R/L	WSA13N	FTGA0513-P	DHA0821F	SHGA0411	TW20S	HW40	HW30L

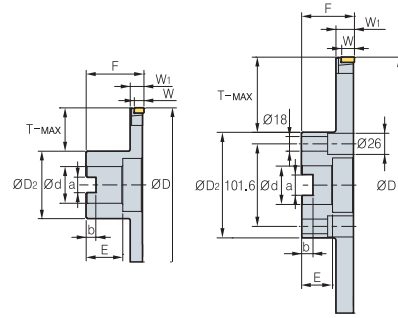
• Note) The Wedge screw for 1001821, 1002124 cutter is DHA0818F



Tangential type (Half side cutter)



• TAHCP(M)



• TAHCB(M)

(mm)

Designation	Ød	E	ØD2	a	b	T-MAX	Designation	Ød	F	ØD2	a	b	E	T-MAX	Dimensions			
															ØD	W	W1	No. of tooth
TAHCP 10014R/L (M)	31.75 (32)	14	48	7.92 (8)	35.2	24	TAHCB 10014R/L (M)	31.75 (32)	50	54	12.7 (14.4)	8	28	21	100	9	13.25	6
	12514R/L	38.1 (40)	14	56	9.52 (10)	42.3		12514R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	125	9	13.25	8
	16014R/L	38.1 (40)	14	56	9.52 (10)	42.3		16014R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	160	9	13.25	10
	20014R/L	50.8 (50)	14	72	12.7 (12)	55.8		20014R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	200	9	13.25	12
	25014R/L	50.8 (50)	14	72	12.7 (12)	55.8		25014R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	250	9	13.25	16
TAHCP 10018R/L (M)	31.75 (32)	18	48	7.92 (8)	35.2	24	TAHCB 10018R/L (M)	31.75 (32)	50	50	12.7 (14.4)	8	28	21	100	12	16.75	6
	12518R/L	38.1 (40)	18	56	9.52 (10)	42.3		12518R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	125	12	16.75	8
	16018R/L	38.1 (40)	18	56	9.52 (10)	42.3		16018R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	160	12	16.75	10
	20018R/L	50.8 (50)	18	72	12.7 (12)	55.8		20018R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	200	12	16.75	12
	25018R/L	50.8 (50)	18	72	12.7 (12)	55.8		25018R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	250	12	16.75	16
TAHCP 10021R/L (M)	31.75 (32)	21	48	7.92 (8)	35.2	24	TAHCB 10021R/L (M)	31.75 (32)	50	54	12.7 (14.4)	8	28	21	100	12	19.75	6
	12521R/L	38.1 (40)	21	56	9.52 (10)	42.3		12521R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	125	12	19.75	8
	16021R/L	38.1 (40)	21	56	9.52 (10)	42.3		16021R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	160	12	19.75	10
	20021R/L	50.8 (50)	21	72	12.7 (12)	55.8		20021R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	200	12	19.75	12
	25021R/L	50.8 (50)	21	72	12.7 (12)	55.8		25021R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	250	12	19.75	16
TAHCP 10024R/L (M)	31.75 (32)	24	48	7.92 (8)	35.2	24	TAHCB 10024R/L (M)	31.75 (32)	50	54	12.7 (14.4)	8	28	21	100	12	19.75	6
	12524R/L	38.1 (40)	24	56	9.52 (10)	42.3		12524R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	125	12	19.75	8
	16024R/L	38.1 (40)	24	56	9.52 (10)	42.3		16024R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	160	12	19.75	10
	20024R/L	50.8 (50)	24	72	12.7 (12)	55.8		20024R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	200	12	19.75	12
	25024R/L	50.8 (50)	24	72	12.7 (12)	55.8		25024R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	250	12	19.75	16
TAHCP 10027R/L (M)	31.75 (32)	27	48	7.92 (8)	35.2	24	TAHCB 10027R/L (M)	31.75 (32)	50	54	12.7 (14.4)	8	28	21	100	12	19.75	6
	12527R/L	38.1 (40)	27	56	9.52 (10)	42.3		12527R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	125	12	19.75	8
	16027R/L	38.1 (40)	27	56	9.52 (10)	42.3		16027R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	160	12	19.75	10
	20027R/L	50.8 (50)	27	72	12.7 (12)	55.8		20027R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	200	12	19.75	12
	25027R/L	50.8 (50)	27	72	12.7 (12)	55.8		25027R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	250	12	19.75	16
TAHCP 100315R/L (M)	31.75 (32)	31	48	7.92 (8)	35.2	24	TAHCB 100315R/L (M)	31.75 (32)	50	54	12.7 (14.4)	8	28	21	100	12	19.75	6
	125315R/L	38.1 (40)	31	56	9.52 (10)	42.3		125315R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	125	12	19.75	8
	160315R/L	38.1 (40)	31	56	9.52 (10)	42.3		160315R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	160	12	19.75	10
	200315R/L	50.8 (50)	31	72	12.7 (12)	55.8		200315R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	200	12	19.75	12
	250315R/L	50.8 (50)	31	72	12.7 (12)	55.8		250315R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	250	12	19.75	16

Available inserts and Recommended cutting condition E345 • The ap (Maximum width of cutter) size written above is the number when using insert having corner size C0.5 or R0.5

() Metric size

Parts

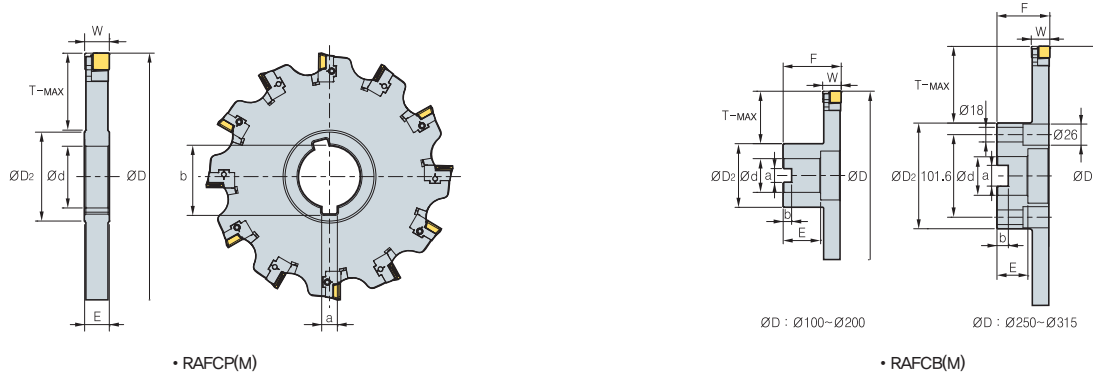
Specification	Insert	Locator	Wedge	Insert screw	Wedge screw	Locator screw	Insert wrench	Wedge Wrench	Locator Wrench
Edge width (TAHCP/B)									
1111181R/L	CNHQ1005-1111	LSA-CH10R/L	WSA10N	FTKA0410	DHA0617	SHGA0411	TW15S	HW30	-
1111821R/L	CNHQ1305-1111	LSA-CH13R/L	WSA13N	FTKA0410	DHA0821F	SHGA0411	TW15S	HW40	HW30L
11112124R/L	CNHQ1305-1111	LSA-CH13R/L	WSA13N	FTKA0410	DHA0821F	SHGA0411	TW15S	HW40	HW30L
11112427R/L	CNHQ1606-1111	LSA-CH16R/L	WSA13N	FTGA0513-P	DHA0821F	SHGA0411	TW20S	HW40	HW30L
11112730R/L	CNHQ1606-1111	LSA-CH16R/L	WSA13N	FTGA0513-P	DHA0821F	SHGA0411	TW20S	HW40	HW30L

• Note) The Wedge screw for 10018, 10021 cutter is DHA0818F



E Side Milling Cutter

Radial type (Full side cutter)



(mm)

Designation		Ød	E	ØD2	a	b	T-MAX	Designation		Ød	F	ØD2	a	b	E	T-MAX	Dimensions		
																	ØD	W	No. of tooth
RAFCP (M)	1001214	31.75 (32)	12	48	7.92 (8)	35.2	24	RAFCB (M)	1001214R/L	31.75 (32)	50	54	12.7 (14.4)	8	28	21	100	12-14	6
	1251214	38.1 (40)	12	56	9.52 (10)	42.3	32		1251214R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	25	125	12-14	8
	1601214	38.1 (40)	12	56	9.52 (10)	42.3	50		1601214R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	43	160	12-14	10
	2001214	50.8 (50)	12	72	12.7 (12)	55.8	61		2001214R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	53	200	12-14	12
	2501214	50.8 (50)	12	72	12.7 (12)	55.8	86		2501214R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	58	250	12-14	16
	3151214	50.8 (50)	12	72	12.7 (12)	55.8	118		3151214R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	90	315	12-14	20
RAFCP (M)	1001416	31.75 (32)	14	48	7.92 (8)	35.2	24	RAFCB (M)	1001416R/L	31.75 (32)	50	50	12.7 (14.4)	8	28	21	100	14-16	6
	1251416	38.1 (40)	14	56	9.52 (10)	42.3	32		1251416R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	25	125	14-16	8
	1601416	38.1 (40)	14	56	9.52 (10)	42.3	50		1601416R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	43	160	14-16	10
	2001416	50.8 (50)	14	72	12.7 (12)	55.8	61		2001416R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	53	200	14-16	12
	2501416	50.8 (50)	14	72	12.7 (12)	55.8	86		2501416R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	58	250	14-16	16
	3151416	50.8 (50)	14	72	12.7 (12)	55.8	118		3151416R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	90	315	14-16	20
RAFCP (M)	1251618	38.1 (40)	16	56	9.52 (10)	42.3	32	RAFCB (M)	1251618R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	25	125	16-18	8
	1601618	38.1 (40)	16	56	9.52 (10)	42.3	50		1601618R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	43	160	16-18	10
	2001618	50.8 (50)	16	72	12.7 (12)	55.8	61		2001618R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	53	200	16-18	12
	2501618	50.8 (50)	16	72	12.7 (12)	55.8	86		2501618R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	58	250	16-18	16
	3151618	50.8 (50)	16	72	12.7 (12)	55.8	118		3151618R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	90	315	16-18	20
RAFCP (M)	1251820	38.1 (40)	18	56	9.52 (10)	42.3	32	RAFCB (M)	1251820R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	25	125	18-20	8
	1601820	38.1 (40)	18	56	9.52 (10)	42.3	50		1601820R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	43	160	18-20	10
	2001820	50.8 (50)	18	72	12.7 (12)	55.8	61		2001820R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	53	200	18-20	12
	2501820	50.8 (50)	18	72	12.7 (12)	55.8	86		2501820R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	58	250	18-20	16
	3151820	50.8 (50)	18	72	12.7 (12)	55.8	118		3151820R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	90	315	18-20	20
RAFCP (M)	1252022	38.1 (40)	20	56	9.52 (10)	42.3	32	RAFCB (M)	1252022R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	25	125	20-22	8
	1602022	38.1 (40)	20	56	9.52 (10)	42.3	50		1602022R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	43	160	20-22	10
	2002022	50.8 (50)	20	72	12.7 (12)	55.8	61		2002022R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	53	200	20-22	12
	2502022	50.8 (50)	20	72	12.7 (12)	55.8	86		2502022R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	58	250	20-22	16
	3152022	50.8 (50)	20	72	12.7 (12)	55.8	118		3152022R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	90	315	20-22	20
RAFCP (M)	1252224	38.1 (40)	22	56	9.52 (10)	42.3	32	RAFCB (M)	1252224R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	25	125	22-24	8
	1602224	38.1 (40)	22	56	9.52 (10)	42.3	50		1602224R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	43	160	22-24	10
	2002224	50.8 (50)	22	72	12.7 (12)	55.8	61		2002224R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	53	200	22-24	12
	2502224	50.8 (50)	22	72	12.7 (12)	55.8	86		2502224R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	58	250	22-24	16
	3152224	50.8 (50)	22	72	12.7 (12)	55.8	118		3152224R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	90	315	22-24	20

➡ Available inserts and Recommended cutting condition E345 • The ap (Maximum width of cutter) size written above is the number when using insert having corner size C0.5 or R0.5
()Metric size

Parts

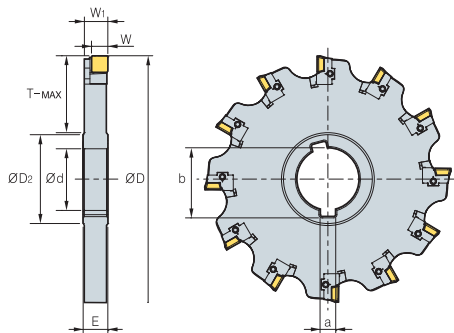
Specification	Insert	Locator	WSD09N	Wedge	WSD09N	WSD09N	WSD09N	WSD09N	WSD09N	WSD09N
Edge width (TAHCP/B)	Insert	Locator	WSD09N	WSD09N	WSD09N	WSD09N	WSD09N	WSD09N	WSD09N	WSD09N
1214R/L	SDXT09M40□R/L	LSD09R/L	WSD09N	WSD09N	FTGA03508	DHA0617	SHGA0409	TW15S	HW30	
1416R/L	SDXT09M40□R/L	LSD09R/L	WSD09N	WSD09N	FTGA03508	DHA0617	SHGA0409	TW15S	HW30	
1618R/L	SDXT13050□R/L	LSD13R/L	WSA10N	WSA10N	FTNC04509	DHA0617	SHGA0411	TW20S	HW30	
1820R/L	SDXT13050□R/L	LSD13R/L	WSA10N	WSA10N	FTNC04509	DHA0617	SHGA0411	TW20S	HW30	
2022R/L	SDXT13050□R/L	LSD13R/L	WSA10N	WSA10N	FTNC04509	DHA0617	SHGA0411	TW20S	HW30	
2224R/L	SDXT13050□R/L	LSD13R/L	WSA10N	WSA10N	FTNC04509	DHA0617	SHGA0411	TW20S	HW30	



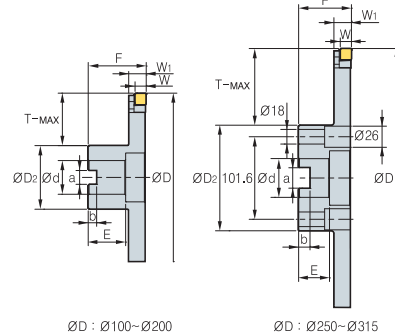
E

Milling

Radial type (Half side cutter)



• RAHCP(M)



ØD : Ø100~Ø200

ØD : Ø250~Ø315

• RAHCB(M)

(mm)

Designation	Ød	E	ØD2	a	b	T-MAX	Designation	Ød	F	ØD2	a	b	E	T-MAX	Dimensions			
															ØD	W	W1	No. of tooth
RAHCP 10012R/L (M)	31.75 (32)	12	48	7.92 (8)	35.2	24	RAHCB 10012R/L (M)	31.75 (32)	50	54	12.7 (14.4)	8	28	21	100	8	11.1	6
12512R/L	38.1 (40)	12	56	9.52 (10)	42.3	32	12512R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	25	125	8	11.1	8
16012R/L	38.1 (40)	12	56	9.52 (10)	42.3	50	16012R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	43	160	8	11.1	10
20012R/L	50.8 (50)	12	72	12.7 (12)	55.8	61	20012R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	53	200	8	11.1	12
25012R/L	50.8 (50)	12	72	12.7 (12)	55.8	86	25012R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	58	250	8	11.1	16
31512R/L	50.8 (50)	12	72	12.7 (12)	55.8	118	31512R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	90	315	8	11.1	20
RAHCP 10014R/L (M)	31.75 (32)	14	48	7.92 (8)	35.2	24	RAHCB 10014R/L (M)	31.75 (32)	50	50	12.7 (14.4)	8	28	21	100	8	13.1	6
12514R/L	38.1 (40)	14	56	9.52 (10)	42.3	32	12514R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	25	125	8	13.1	8
16014R/L	38.1 (40)	14	56	9.52 (10)	42.3	50	16014R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	43	160	8	13.1	10
20014R/L	50.8 (50)	14	72	12.7 (12)	55.8	61	20014R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	53	200	8	13.1	12
25014R/L	50.8 (50)	14	72	12.7 (12)	55.8	86	25014R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	58	250	8	13.1	16
31514R/L	50.8 (50)	14	72	12.7 (12)	55.8	118	31514R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	90	315	8	13.1	20
RAHCP 12516R/L (M)	38.1 (40)	16	56	9.52 (10)	42.3	32	RAHCB 12516R/L (M)	38.1 (40)	60	70	15.9 (16.4)	10	30	25	125	10.5	15	8
16016R/L	38.1 (40)	16	56	9.52 (10)	42.3	50	16016R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	43	160	10.5	15	10
20016R/L	50.8 (50)	16	72	12.7 (12)	55.8	61	20016R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	53	200	10.5	15	12
25016R/L	50.8 (50)	16	72	12.7 (12)	55.8	86	25016R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	58	250	10.5	15	16
31516R/L	50.8 (50)	16	72	12.7 (12)	55.8	118	31516R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	90	315	10.5	15	20
RAHCP 12518R/L (M)	38.1 (40)	18	56	9.52 (10)	42.3	32	RAHCB 12518R/L (M)	38.1 (40)	60	70	15.9 (16.4)	10	30	25	125	10.5	17	8
16018R/L	38.1 (40)	18	56	9.52 (10)	42.3	50	16018R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	43	160	10.5	17	10
20018R/L	50.8 (50)	18	72	12.7 (12)	55.8	61	20018R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	53	200	10.5	17	12
25018R/L	50.8 (50)	18	72	12.7 (12)	55.8	86	25018R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	58	250	10.5	17	16
31518R/L	50.8 (50)	18	72	12.7 (12)	55.8	118	31518R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	90	315	10.5	17	20
RAHCP 12520R/L (M)	38.1 (40)	20	56	9.52 (10)	42.3	32	RAHCB 12520R/L (M)	38.1 (40)	60	70	15.9 (16.4)	10	30	25	125	10.5	19	8
16020R/L	38.1 (40)	20	56	9.52 (10)	42.3	50	16020R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	43	160	10.5	19	10
20020R/L	50.8 (50)	20	72	12.7 (12)	55.8	61	20020R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	53	200	10.5	19	12
25020R/L	50.8 (50)	20	72	12.7 (12)	55.8	86	25020R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	58	250	10.5	19	16
31520R/L	50.8 (50)	20	72	12.7 (12)	55.8	118	31520R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	90	315	10.5	19	20
RAHCP 12522R/L (M)	38.1 (40)	22	56	9.52 (10)	42.3	32	RAHCB 12522R/L (M)	38.1 (40)	60	70	15.9 (16.4)	10	30	25	125	10.5	21	8
16022R/L	38.1 (40)	22	56	9.52 (10)	42.3	50	16022R/L	38.1 (40)	60	70	15.9 (16.4)	10	30	43	160	10.5	21	10
20022R/L	50.8 (50)	22	72	12.7 (12)	55.8	61	20022R/L	50.8 (40)	65	90	19.0 (16.4)	11	30	53	200	10.5	21	12
25022R/L	50.8 (50)	22	72	12.7 (12)	55.8	86	25022R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	58	250	10.5	21	16
31522R/L	50.8 (50)	22	72	12.7 (12)	55.8	118	31522R/L	47.625 (60)	65	130	25.4 (25.7)	14	38	90	315	10.5	21	20

Available inserts and Recommended cutting condition E345

• The ap (Maximum width of cutter) size written above is the number when using insert having corner size R0.5. The ap is subject to change as per insert corner size

• The ap (Maximum width of cutter) size written above is the number when using SDXT09M405R-MM. The ap is subject to change as per insert corner size
()Metric size

Parts

Specification	Insert	Locator	WSD09N	Wedge	WSA10N	Insert screw	Wedge screw	Locator screw	Insert wrench	Wedge, locator wrench
□□□1214R/L	SDXT09M40□R/L	LSD09R/L	WSD09N	FTGA03508	DHA0617	SHGA0409	TW15S	HW30		
□□□1416R/L	SDXT09M40□R/L	LSD09R/L	WSD09N	FTGA03508	DHA0617	SHGA0409	TW15S	HW30		
□□□1618R/L	SDXT13050□R/L	LSD13R/L	WSA10N	FTNC04509	DHA0617	SHGA0411	TW20S	HW30		
□□□1820R/L	SDXT13050□R/L	LSD13R/L	WSA10N	FTNC04509	DHA0617	SHGA0411	TW20S	HW30		
□□□2022R/L	SDXT13050□R/L	LSD13R/L	WSA10N	FTNC04509	DHA0617	SHGA0411	TW20S	HW30		
□□□2224R/L	SDXT13050□R/L	LSD13R/L	WSA10N	FTNC04509	DHA0617	SHGA0411	TW20S	HW30		



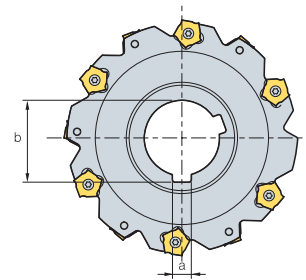
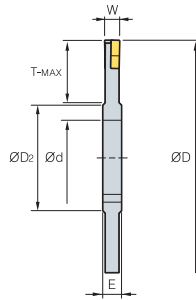
Milling

E

SPP(M)



•AR: -2°
•RR: -28°



(mm)

Designation			ØD	W	T-MAX	Ød	a	b	E	ØD2	Insert	Screw	Wrench
SPP (SPPM)	080-04	8	80	4	20	25.4 (27)	6.35 (7)	28.04 (29.8)	8	40	PNEJ1223N	PTMA0403F	TW15S
	080-05	8	80	5	20	25.4 (27)	6.35 (7)	28.04 (29.8)	8	40	PNEJ1230N	PTMA0404F	TW15S
	080-06	8	80	6	20	25.4 (27)	6.35 (7)	28.04 (29.8)	8	40	PNEJ1235N	PTMA0405F	TW15S
	100-04	10	100	4	24	31.75 (32)	7.94 (8)	35.18 (34.8)	8	47	PNEJ1223N	PTMA0403F	TW15S
	100-05	10	100	5	24	31.75 (32)	7.94 (8)	35.18 (34.8)	8	47	PNEJ1230N	PTMA0404F	TW15S
	100-06	10	100	6	25	31.75 (32)	7.94 (8)	35.18 (34.8)	8	47	PNEJ1235N	PTMA0405F	TW15S
	100-07	10	100	7	25	31.75 (32)	7.94 (8)	35.18 (34.8)	10	47	PNEJ1240N	PTMA0406F	TW15S
	100-08	10	100	8	25	31.75 (32)	7.94 (8)	35.18 (34.8)	10	47	PNEJ1245N	PTKA0407F	TW15S
	100-09	10	100	9	25	31.75 (32)	7.94 (8)	35.18 (34.8)	12	47	PNEJ1250N	PTKA0408F	TW15S
	100-10	10	100	10	25	31.75 (32)	7.94 (8)	35.18 (34.8)	12	47	PNEJ1255N	PTKA0409F	TW15S
	125-04	12	125	4	30	38.1 (40)	9.53 (10)	42.32 (43.5)	8	56	PNEJ1223N	PTMA0403F	TW15S
	125-05	12	125	5	32	38.1 (40)	9.53 (10)	42.32 (43.5)	8	56	PNEJ1230N	PTMA0404F	TW15S
	125-06	12	125	6	32	38.1 (40)	9.53 (10)	42.32 (43.5)	8	56	PNEJ1235N	PTMA0405F	TW15S
	125-07	12	125	7	32	38.1 (40)	9.53 (10)	42.32 (43.5)	10	56	PNEJ1240N	PTMA0406F	TW15S
	125-08	12	125	8	32	38.1 (40)	9.53 (10)	42.32 (43.5)	10	56	PNEJ1245N	PTKA0407F	TW15S
	125-09	12	125	9	32	38.1 (40)	9.53 (10)	42.32 (43.5)	12	56	PNEJ1250N	PTKA0408F	TW15S
	125-10	12	125	10	32	38.1 (40)	9.53 (10)	42.32 (43.5)	12	56	PNEJ1255N	PTKA0409F	TW15S
	160-04	16	160	4	45	38.1 (40)	9.53 (10)	42.32 (43.5)	8	66	PNEJ1223N	PTMA0403F	TW15S
	160-05	16	160	5	45	38.1 (40)	9.53 (10)	42.32 (43.5)	8	66	PNEJ1230N	PTMA0404F	TW15S
	160-06	16	160	6	45	38.1 (40)	9.53 (10)	42.32 (43.5)	8	66	PNEJ1235N	PTMA0405F	TW15S
	160-07	16	160	7	45	38.1 (40)	9.53 (10)	42.32 (43.5)	10	66	PNEJ1240N	PTMA0406F	TW15S
	160-08	16	160	8	45	38.1 (40)	9.53 (10)	42.32 (43.5)	10	66	PNEJ1245N	PTKA0407F	TW15S
	160-09	16	160	9	45	38.1 (40)	9.53 (10)	42.32 (43.5)	12	66	PNEJ1250N	PTKA0408F	TW15S
	160-10	16	160	10	45	38.1 (40)	9.53 (10)	42.32 (43.5)	12	66	PNEJ1255N	PTKA0409F	TW15S
	160-11	16	160	11	45	38.1 (40)	9.53 (10)	42.32 (43.5)	14	66	PNEJ1260N	PTKA0410F	TW15S
	160-12	16	160	12	45	38.1 (40)	9.53 (10)	42.32 (43.5)	14	66	PNEJ1265N	PTKA0411F	TW15S
	160-13	16	160	13	45	38.1 (40)	9.53 (10)	42.32 (43.5)	16	66	PNEJ1270N	PTKA0412F	TW15S
	160-14	16	160	14	45	38.1 (40)	9.53 (10)	42.32 (43.5)	16	66	PNEJ1275N	PTKA0413F	TW15S
200-06	18	200	6	60	50.8 (50)	12.7 (12)	55.83 (53.5)	8	70	PNEJ1235N	PTMA0405F	TW15S	
200-07	18	200	7	60	50.8 (50)	12.7 (12)	55.83 (53.5)	10	70	PNEJ1240N	PTMA0406F	TW15S	
200-08	18	200	8	60	50.8 (50)	12.7 (12)	55.83 (53.5)	10	70	PNEJ1245N	PTKA0407F	TW15S	
200-09	18	200	9	60	50.8 (50)	12.7 (12)	55.83 (53.5)	12	70	PNEJ1250N	PTKA0408F	TW15S	
200-10	18	200	10	60	50.8 (50)	12.7 (12)	55.83 (53.5)	12	70	PNEJ1255N	PTKA0409F	TW15S	
200-11	18	200	11	60	50.8 (50)	12.7 (12)	55.83 (53.5)	14	70	PNEJ1260N	PTKA0410F	TW15S	
200-12	18	200	12	60	50.8 (50)	12.7 (12)	55.83 (53.5)	14	70	PNEJ1265N	PTKA0411F	TW15S	
200-13	18	200	13	60	50.8 (50)	12.7 (12)	55.83 (53.5)	16	70	PNEJ1270N	PTKA0412F	TW15S	
200-14	18	200	14	60	50.8 (50)	12.7 (12)	55.83 (53.5)	16	70	PNEJ1275N	PTKA0413F	TW15S	

()Metric size

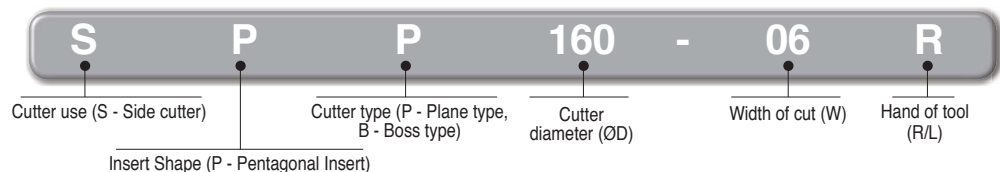
Available arbors

Designation	NC arbors		
	BT30	BT40	BT50
SPP 080-04~06	BT30-SCA25.4-60	BT40-SCA25.4-75/120	BT50-SCA25.4-90/135
100-04~10	-	BT40-SCA31.75-105	BT50-SCA31.75-90/135
125-04~09	-	-	BT50-SCA38.1-90/135
160-04~14	-	-	BT50-SCA38.1-90/135
200-06~14	-	-	-
SPPM 080-04~06	-	BT40-SCA27-75/120	BT50-SCA27-90/135
100-04~10	-	BT40-SCA32-105	BT50-SCA32-90/135
125-04~09	-	-	BT50-SCA40-90/135
160-04~14	-	-	BT50-SCA40-90/135
200-06~14	-	-	-

Recommended cutting condition

Workpiece	Cutting condition		Grades
	vc (m/min)	fz (mm/t)	
P	190~310 160~270 60~100	0.10~0.25 0.10~0.30 0.10~0.25	NCM325 PC3500 ST30A
M	90~150 80~150	0.10~0.25 0.10~0.30	PC9530 ST30A
K	140~230 50~90	0.10~0.35 0.10~0.40	PC6510 G10

Code system

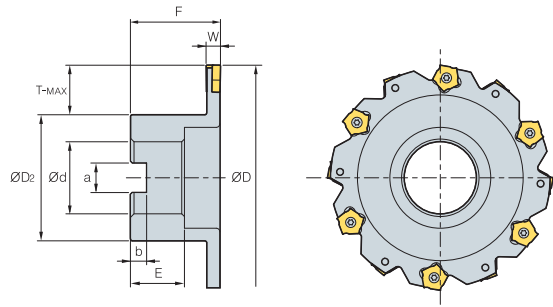


Available inserts E15 Available arbors and bolt E371~E373



SPB(M)

•AR: -2°
•RR: 28°



(mm)

Designation			ØD	W	T-MAX	ØD2	Ød	a	b	F	E	Insert	Screw	Wrench
SPB (SPBM)	080-04R/L	8	80	4	18	40	25.4 (27)	9.5 (12.4)	6 (7)	50	25 (22)	PNEJ1223N	PTMA0403F	TW15S
	080-05R/L	8	80	5	18	40	25.4 (27)	9.5 (12.4)	6 (7)	50	25 (22)	PNEJ1230N	PTMA0404F	TW15S
	080-06R/L	8	80	6	18	40	25.4 (27)	9.5 (12.4)	6 (7)	50	25 (22)	PNEJ1235N	PTMA0405F	TW15S
	100-04R/L	10	100	4	21	54	31.75 (32)	12.7 (14.4)	8 (8)	50	32 (28)	PNEJ1223N	PTMA0403F	TW15S
	100-05R/L	10	100	5	21	54	31.75 (32)	12.7 (14.4)	8 (8)	50	32 (28)	PNEJ1230N	PTMA0404F	TW15S
	100-06R/L	10	100	6	21	54	31.75 (32)	12.7 (14.4)	8 (8)	50	32 (28)	PNEJ1235N	PTMA0405F	TW15S
	100-07R/L	10	100	7	21	54	31.75 (32)	12.7 (14.4)	8 (8)	50	32 (28)	PNEJ1240N	PTMA0406F	TW15S
	100-08R/L	10	100	8	21	54	31.75 (32)	12.7 (14.4)	8 (8)	50	32 (28)	PNEJ1245N	PTMA0407F	TW15S
	100-09R/L	10	100	9	21	54	31.75 (32)	12.7 (14.4)	8 (8)	50	32 (28)	PNEJ1250N	PTMA0408F	TW15S
	100-10R/L	10	100	10	21	54	31.75 (32)	12.7 (14.4)	8 (8)	50	32 (28)	PNEJ1255N	PTMA0409F	TW15S
	125-04R/L	12	125	4	25	70	38.1 (40)	15.9 (16.4)	10 (9)	60 (50)	38 (30)	PNEJ1223N	PTMA0403F	TW15S
	125-05R/L	12	125	5	25	70	38.1 (40)	15.9 (16.4)	10 (9)	60 (50)	38 (30)	PNEJ1230N	PTMA0404F	TW15S
	125-06R/L	12	125	6	25	70	38.1 (40)	15.9 (16.4)	10 (9)	60 (50)	38 (30)	PNEJ1235N	PTMA0405F	TW15S
	125-07R/L	12	125	7	25	70	38.1 (40)	15.9 (16.4)	10 (9)	60 (50)	38 (30)	PNEJ1240N	PTMA0406F	TW15S
	125-08R/L	12	125	8	25	70	38.1 (40)	15.9 (16.4)	10 (9)	60 (50)	38 (30)	PNEJ1245N	PTKA0407F	TW15S
	125-09R/L	12	125	9	25	70	38.1 (40)	15.9 (16.4)	10 (9)	60 (50)	38 (30)	PNEJ1250N	PTKA0408F	TW15S
	125-10R/L	12	125	10	25	70	38.1 (40)	15.9 (16.4)	10 (9)	60 (50)	38 (30)	PNEJ1255N	PTKA0409F	TW15S
	160-04R/L	16	160	4	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60 (50)	38 (30)	PNEJ1223N	PTMA0403F	TW15S
	160-05R/L	16	160	5	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60 (50)	38 (30)	PNEJ1230N	PTMA0404F	TW15S
	160-06R/L	16	160	6	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60 (50)	38 (30)	PNEJ1235N	PTMA0405F	TW15S
	160-07R/L	16	160	7	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60 (50)	38 (30)	PNEJ1240N	PTMA0406F	TW15S
	160-08R/L	16	160	8	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60 (50)	38 (30)	PNEJ1245N	PTKA0407F	TW15S
	160-09R/L	16	160	9	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60 (50)	38 (30)	PNEJ1250N	PTKA0408F	TW15S
	160-10R/L	16	160	10	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60 (50)	38 (30)	PNEJ1255N	PTKA0409F	TW15S
	160-11R/L	16	160	11	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60 (50)	38 (30)	PNEJ1260N	PTKA0410F	TW15S
	160-12R/L	16	160	12	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60 (50)	38 (30)	PNEJ1265N	PTKA0411F	TW15S
	160-13R/L	16	160	13	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60 (50)	38 (30)	PNEJ1270N	PTKA0412F	TW15S
	160-14R/L	16	160	14	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60 (50)	38 (30)	PNEJ1275N	PTKA0413F	TW15S
	200-06R/L	18	200	6	53	90	50.8 (40)	19 (16.4)	11 (9)	65	38 (30)	PNEJ1235N	PTMA0405F	TW15S
	200-07R/L	18	200	7	53	90	50.8 (40)	19 (16.4)	11 (9)	65	38 (30)	PNEJ1240N	PTMA0406F	TW15S
	200-08R/L	18	200	8	53	90	50.8 (40)	19 (16.4)	11 (9)	65	38 (30)	PNEJ1245N	PTKA0407F	TW15S
	200-09R/L	18	200	9	53	90	50.8 (40)	19 (16.4)	11 (9)	65	38 (30)	PNEJ1250N	PTKA0408F	TW15S
	200-10R/L	18	200	10	53	90	50.8 (40)	19 (16.4)	11 (9)	65	38 (30)	PNEJ1255N	PTKA0409F	TW15S
	200-11R/L	18	200	11	53	90	50.8 (40)	19 (16.4)	11 (9)	65	38 (30)	PNEJ1260N	PTKA0410F	TW15S
	200-12R/L	18	200	12	53	90	50.8 (40)	19 (16.4)	11 (9)	65	38 (30)	PNEJ1265N	PTKA0411F	TW15S
	200-13R/L	18	200	13	53	90	50.8 (40)	19 (16.4)	11 (9)	65	38 (30)	PNEJ1270N	PTKA0412F	TW15S
	200-14R/L	18	200	14	53	90	50.8 (40)	19 (16.4)	11 (9)	65	38 (30)	PNEJ1275N	PTKA0413F	TW15S

() Metric size

Recommended cutting condition

Workpiece	Cutting condition		Grades
	vc (m/min)	fz (mm/t)	
P	190~310	0.10~0.25	NCM325 PC3500 ST30A
	160~270	0.10~0.30	
	60~100	0.10~0.25	
M	90~150	0.10~0.25	PC9530 ST30A
	80~150	0.10~0.30	
K	140~230	0.10~0.35 0.10~0.40	PC6510 G10

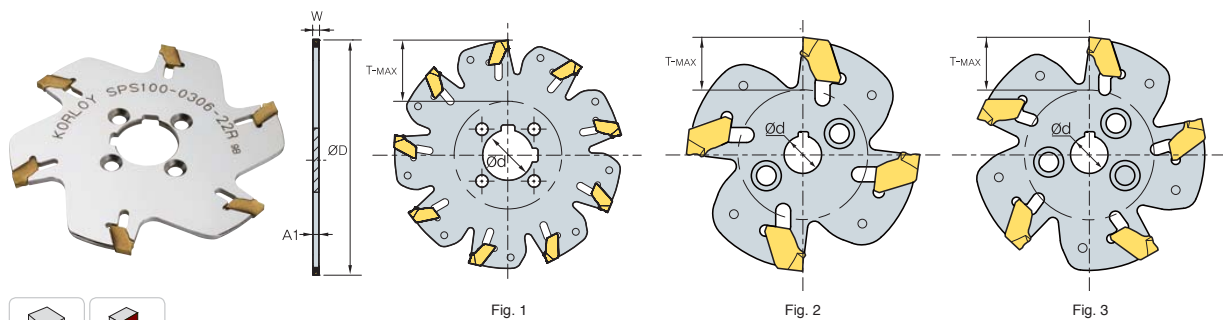
Available inserts **E15** Available arbors and bolt **E371~E373**

Notice (When mounting inserts)

- Insert chip breaker should face chip pocket of the cutter
- Fasten screw after insert contacts securely on its seat
- If there is a gap between insert and its seat after mounting it may cause tool troubles



SPS

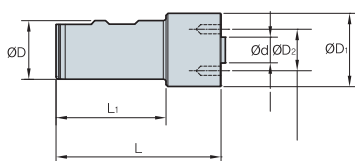


(mm)

Designation				ØD	W	T-MAX	Ød	A1	Fig.	Insert	Adaptor		Wrench
		WS	DF										
SPS	050-0204-08R	4	50	2.2	11	8	1.8	2	SPFN 200 - ()	WS2528-M4	-	SW17P (separately ordered)	
	063-0205-10R	5	63	2.2	15.5	10	1.8	3		WS2532-M5	-		
	080-0207-22R/F	7	80	2.2	20 (17)	22	1.8	1		WS3240-M5	DF22-46		
	100-0209-22R/F	9	100	2.2	30 (27)	22	1.8	1		WS3240-M5	DF22-46		
	125-0211-32F	11	125	2.2	35	32	1.8	1		-	DF32-55		
	160-0214-32F	14	160	2.2	52.5	32	1.8	3		-	DF32-55		
	063-0305-10R	5	63	3	15.5	10	2.55	1	SPFN 300 - ()	WS2532-M5	-		
	080-0307-22R/F	7	80	3	20 (17)	22	2.55	1		WS3240-M5	DF22-46		
	100-0309-22R/F	9	100	3	30 (27)	22	2.55	1		WS3240-M5	DF22-46		
	125-0311-32F	11	125	3	35	32	2.55	1		-	DF32-55		
	160-0314-32F	14	160	3	52.5	32	2.55	1		-	DF32-55		
	200-0318-40F	18	200	3	60	40	2.55	1		-	DF40-80		
	080-0406-22R/F	6	80	4	20 (17)	22	3.4	1	SPFN 400 - ()	WS3240-M5	DF22-46		
	100-0408-22R/F	8	100	4	30 (27)	22	3.4	1		WS3240-M5	DF22-46		
	125-0410-32F	10	125	4	35	32	3.4	1		-	DF32-55		
	160-0413-32F	13	160	4	52.5	32	3.4	1		-	DF32-55		
	200-0417-40F	17	200	4	60	40	3.4	1		-	DF40-80		

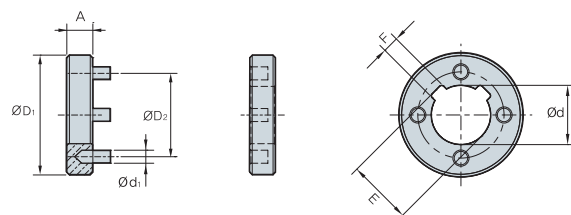
() Metric size

WS()-() (Weldon shank)



Designation	L	L1	D	D1	D2	d	Screw
WS2528-M4	110	85	25	28	18	8	PTKA0408
WS2532-M5	110	85	25	32	22	10	PTKA0515
WS3240-M5	120	90	32	40	32	22	PTKA0515

DF()-() (Drive flange set)



Designation	D1	D2	d	d1	A	E	F
DF22-46	46	32	22	5	10	24.1	6
DF32-55	55	45	32	6	10	34.8	8
DF40-80	80	63	40	11	12	43.5	10
DF50-110	110	80	50	14	14	53.6	12

Recommended cutting condition

Workpiece	Cutting condition		Grades
	vc (m/min)	fz (mm/t)	
P	160~270	0.13~0.25	PC3500
M	90~150	0.10~0.22	PC5300
K	110~180	0.10~0.25	PC6510

Available inserts E25 Available arbors and bolt E371~E373



For slotting workpieces with corner radii of varying sizes and widths

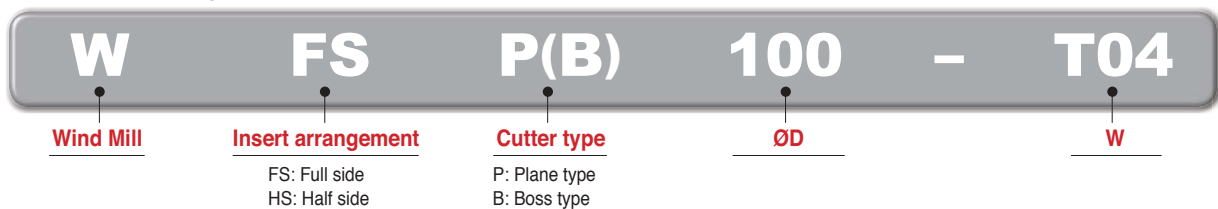
Wind Mill

- Optimal machining for slotting applications
- A unique recess design on the minor cutting-edge reduces cutting load and improves tool life
- Special clamping system prevents incorrect clamping and fracture

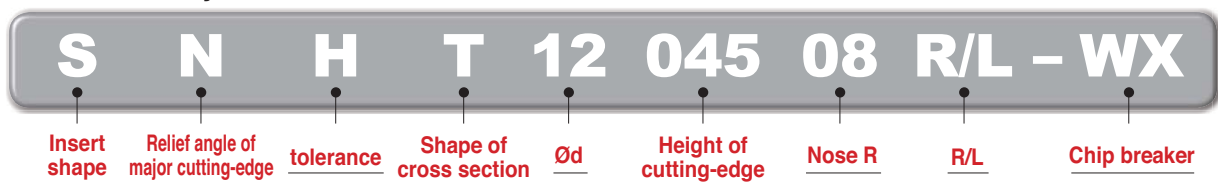
Item description



Cutter code system

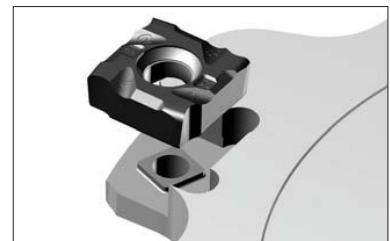
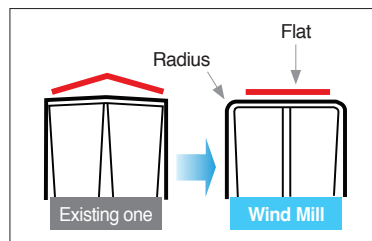


Insert code system

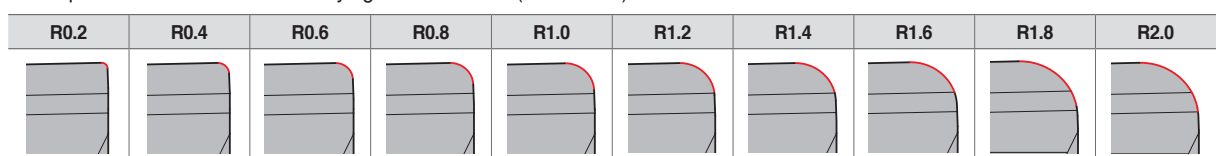


Features

- Ideal geometry for superior surface roughness and extended tool life
- Perpendicular slot
- Protruded part on tip seat prevents wrong clamping and fracture



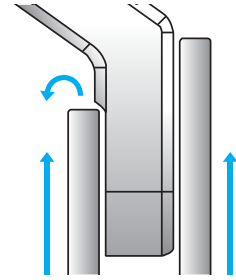
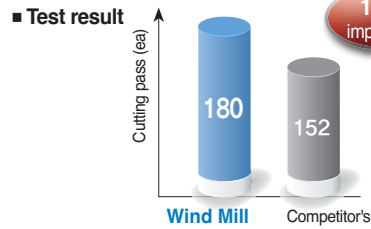
- Workpieces with corner radii of varying size and width (R0.2~R2.0)



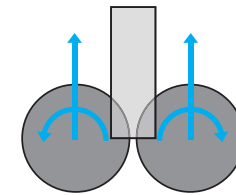
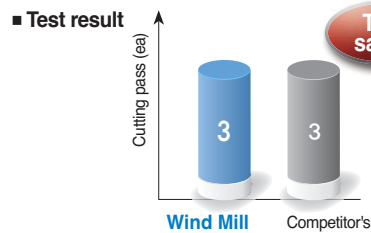
E Technical Information for Wind Mill

Application example

- **Use** Carriers for Motor Vehicles
- **Workpiece** FCD500K
- **Cutting conditions**
 - vc (m/min) = 200
 - fz (mm/t) = 0.2
 - vf (mm/min) = 600
 - ap (mm) = 2~3
- **Tool** KSF140R-T14-HM-2
SNHT1205408R/L-WX (PC5300)



- **Use** Lug for Vessel
- **Workpiece** Mild steel
- **Cutting conditions**
 - vc (m/min) = 560
 - fz (mm/t) = 0.09
 - vf (mm/min) = 750
 - ap (mm) = 6
- **Tool** WFSP178R/L-T06
SNHT1203508R/L-WX (PC5300)



Recommended cutting condition

Workpiece	Cutting conditions		Grades
	vc (m/min)	fz (mm/t)	
P	150~250	0.10~0.25	PC5300
M	120~200	0.10~0.30	PC5300
K	100~150	0.10~0.30	PC5300



List of inserts

Designation	Coated	Dimensions (mm)					Nose R	Configuration
	PC5300	Ød	Ød ₁	t	W			
SNHT 11023□□R/L-WX	●	11.0	4	2.30	4.0		0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6	
1103□□R/L-WX	●	11.0	4	3.00	5.0		0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6	
1203□□R/L-WX		12.7	5	3.25	5.5		0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	
12035□□R/L-WX	●	12.7	5	3.54	6.0		0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	
1204□□R/L-WX		12.7	5	4.00	7.0		0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	
12045□□R/L-WX	●	12.7	5	4.54	8.0		0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	
1205□□R/L-WX	●	12.7	5	5.00	9.0		0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	
12054□□R/L-WX	●	12.7	5	5.47	10.0		0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	
1206□□R/L-WX		12.7	5	6.00	11.0		0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	
12065□□R/L-WX		12.7	5	6.50	12.0		0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	
1207□□R/L-WX		12.7	5	7.00	13.0		0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	
12075□□R/L-WX		12.7	5	7.50	14.0		0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 2.0	

- Inserts with various nose R sizes can be supplied in 2~3 weeks
- Available cutter stock requires to be asked separately



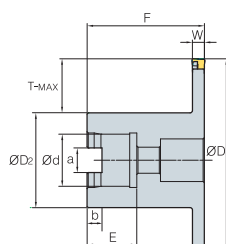
WFSB(M) (Boss type)

Fig. 1

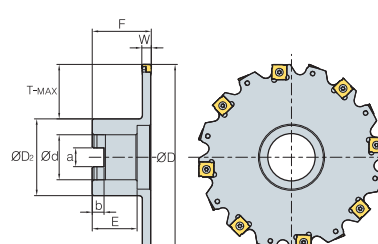


Fig. 2



•AR: -2°
•RR: -12°

(mm)

Designation			ØD	W	T-MAX	ØD ₂	Ød	a	b	F	E	Insert	Screw	Wrench
WFSBM	080R/L-T04	8	80	4	17	40	22	10.4	6.3	50	21	SNHT11023R/L-WX	PTMA03503	TW09S
	080R/L-T05	8	80	5	17	40	22	10.4	6.3	50	21	SNHT1103R/L-WX	PTMA03504	TW09S
	080R/L-T06	8	80	6	17	40	22	10.4	6.3	50	21	SNHT12035R/L-WX	PTMA04045F	TW15S
WFSB (WFSBM)	100R/L-T04	10	100	4	21	50 (48)	25.4 (27)	9.5 (12.4)	6 (7)	50	25	SNHT11023R/L-WX	PTMA03503	TW09S
	100R/L-T05	10	100	5	21	50 (48)	25.4 (27)	9.5 (12.4)	6 (7)	50	25	SNHT1103R/L-WX	PTMA03504	TW09S
	100R/L-T06	10	100	6	21	50 (48)	25.4 (27)	9.5 (12.4)	6 (7)	50	25	SNHT12035R/L-WX	PTMA04045F	TW15S
	100R/L-T07	10	100	7	21	50 (48)	25.4 (27)	9.5 (12.4)	6 (7)	50	25	SNHT1204R/L-WX	PTMA0405F	TW15S
	100R/L-T08	10	100	8	21	50 (48)	25.4 (27)	9.5 (12.4)	6 (7)	50	25	SNHT12045R/L-WX	PTMA0406F	TW15S
	100R/L-T09	10	100	9	21	50 (48)	25.4 (27)	9.5 (12.4)	6 (7)	50	25	SNHT1205R/L-WX	PTMA0407F	TW15S
	100R/L-T10	10	100	10	21	50 (48)	25.4 (27)	9.5 (12.4)	6 (7)	50	25	SNHT12054R/L-WX	PTMA0408F	TW15S
	125R/L-T04	12	125	4	30	60 (58)	31.75 (32)	12.7 (14.4)	8	50	32 (30)	SNHT11023R/L-WX	PTMA03503	TW09S
	125R/L-T05	12	125	5	30	60 (58)	31.75 (32)	12.7 (14.4)	8	50	32 (30)	SNHT1103R/L-WX	PTMA03504	TW09S
	125R/L-T06	12	125	6	30	60 (58)	31.75 (32)	12.7 (14.4)	8	50	32 (30)	SNHT12035R/L-WX	PTMA04045F	TW15S
	125R/L-T07	12	125	7	30	60 (58)	31.75 (32)	12.7 (14.4)	8	50	32 (30)	SNHT1204R/L-WX	PTMA0405F	TW15S
	125R/L-T08	12	125	8	30	60 (58)	31.75 (32)	12.7 (14.4)	8	50	32 (30)	SNHT12045R/L-WX	PTMA0406F	TW15S
	125R/L-T09	12	125	9	30	60 (58)	31.75 (32)	12.7 (14.4)	8	50	32 (30)	SNHT1205R/L-WX	PTMA0407F	TW15S
	125R/L-T10	12	125	10	30	60 (58)	31.75 (32)	12.7 (14.4)	8	50	32 (30)	SNHT12054R/L-WX	PTMA0408F	TW15S
	160R/L-T04	16	160	4	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60	38 (32)	SNHT11023R/L-WX	PTMA03503	TW09S
	160R/L-T05	16	160	5	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60	38 (32)	SNHT1103R/L-WX	PTMA03504	TW09S
	160R/L-T06	16	160	6	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60	38 (32)	SNHT12035R/L-WX	PTMA04045F	TW15S
	160R/L-T07	16	160	7	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60	38 (32)	SNHT1204R/L-WX	PTMA0405F	TW15S
	160R/L-T08	16	160	8	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60	38 (32)	SNHT12045R/L-WX	PTMA0406F	TW15S
	160R/L-T09	16	160	9	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60	38 (32)	SNHT1205R/L-WX	PTMA0407F	TW15S
	160R/L-T10	16	160	10	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60	38 (32)	SNHT12054R/L-WX	PTMA0408F	TW15S
	160R/L-T11	16	160	11	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60	38 (32)	SNHT1206R/L-WX	PTKA0409F	TW15S
	160R/L-T12	16	160	12	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60	38 (32)	SNHT12065R/L-WX	PTKA0410F	TW15S
	160R/L-T13	16	160	13	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60	38 (32)	SNHT1207R/L-WX	PTKA0411F	TW15S
	160R/L-T14	16	160	14	43	70	38.1 (40)	15.9 (16.4)	10 (9)	60	38 (32)	SNHT12075R/L-WX	PTKA0412F	TW15S
200R/L-T06	18	200	6	53	90	50.8 (40)	19.1 (16.4)	11 (9)	65	38 (32)	SNHT12035R/L-WX	PTMA04045F	TW15S	
200R/L-T07	18	200	7	53	90	50.8 (40)	19.1 (16.4)	11 (9)	65	38 (32)	SNHT1204R/L-WX	PTMA0405F	TW15S	
200R/L-T08	18	200	8	53	90	50.8 (40)	19.1 (16.4)	11 (9)	65	38 (32)	SNHT12045R/L-WX	PTMA0406F	TW15S	
200R/L-T09	18	200	9	53	90	50.8 (40)	19.1 (16.4)	11 (9)	65	38 (32)	SNHT1205R/L-WX	PTMA0407F	TW15S	
200R/L-T10	18	200	10	53	90	50.8 (40)	19.1 (16.4)	11 (9)	65	38 (32)	SNHT12054R/L-WX	PTMA0408F	TW15S	
200R/L-T11	18	200	11	53	90	50.8 (40)	19.1 (16.4)	11 (9)	65	38 (32)	SNHT1206R/L-WX	PTKA0409F	TW15S	
200R/L-T12	18	200	12	53	90	50.8 (40)	19.1 (16.4)	11 (9)	65	38 (32)	SNHT12065R/L-WX	PTKA0410F	TW15S	
200R/L-T13	18	200	13	53	90	50.8 (40)	19.1 (16.4)	11 (9)	65	38 (32)	SNHT1207R/L-WX	PTKA0411F	TW15S	
200R/L-T14	18	200	14	53	90	50.8 (40)	19.1 (16.4)	11 (9)	65	38 (32)	SNHT12075R/L-WX	PTKA0412F	TW15S	
250R/L-T06	20	250	6	73 (78)	100 (90)	50.8 (40)	19.1 (16.4)	11 (9)	65	38 (32)	SNHT12035R/L-WX	PTMA04045F	TW15S	
250R/L-T07	20	250	7	73 (78)	100 (90)	50.8 (40)	19.1 (16.4)	11 (9)	65	38 (32)	SNHT1204R/L-WX	PTMA0405F	TW15S	
250R/L-T08	20	250	8	73 (78)	100 (90)	50.8 (40)	19.1 (16.4)	11 (9)	65	38 (32)	SNHT12045R/L-WX	PTMA0406F	TW15S	
250R/L-T09	20	250	9	73 (78)	100 (90)	50.8 (40)	19.1 (16.4)	11 (9)	65	38 (32)	SNHT1205R/L-WX	PTMA0407F	TW15S	
250R/L-T10	20	250	10	73 (78)	100 (90)	50.8 (40)	19.1 (16.4)	11 (9)	65	38 (32)	SNHT12054R/L-WX	PTMA0408F	TW15S	
250R/L-T11	20	250	11	73 (78)	100 (90)	50.8 (40)	19.1 (16.4)	11 (9)	65	38 (32)	SNHT1206R/L-WX	PTKA0409F	TW15S	
250R/L-T12	20	250	12	73 (78)	100 (90)	50.8 (40)	19.1 (16.4)	11 (9)	65	38 (32)	SNHT12065R/L-WX	PTKA0410F	TW15S	
250R/L-T13	20	250	13	73 (78)	100 (90)	50.8 (40)	19.1 (16.4)	11 (9)	65	38 (32)	SNHT1207R/L-WX	PTKA0411F	TW15S	
250R/L-T14	20	250	14	73 (78)	100 (90)	50.8 (40)	19.1 (16.4)	11 (9)	65	38 (32)	SNHT12075R/L-WX	PTKA0412F	TW15S	

Available inserts E23

• Ø80: Fig. 1, Ø100~Ø250: Fig. 2 () Metric size

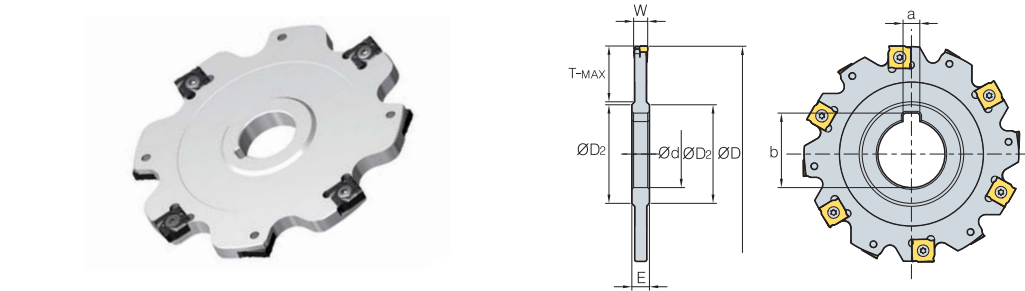


Milling

E

355

WFSP(M) (Plane type)



•AR: -2°
•RR: -12°

(mm)

Designation			ØD	W	T-MAX	ØD ₂	Ød	a	b	E	Insert	Screw	Wrench
WFSP (WFSBM)	080-T04	8	80	4	20	40	25.4 (27)	6.35 (7)	28 (29.8)	8	SNHT11023R/L-WX	PTMA03503	TW09S
	080-T05	8	80	5	20	40	25.4 (27)	6.35 (7)	28 (29.8)	8	SNHT1103R/L-WX	PTMA03504	TW09S
	080-T06	8	80	6	20	40	25.4 (27)	6.35 (7)	28 (29.8)	8	SNHT12035R/L-WX	PTMA04045F	TW15S
	100-T04	10	100	4	24	47	31.75 (32)	7.92 (8)	35.2 (34.8)	8	SNHT11023R/L-WX	PTMA03503	TW09S
	100-T05	10	100	5	24	47	31.75 (32)	7.92 (8)	35.2 (34.8)	8	SNHT1103R/L-WX	PTMA03504	TW09S
	100-T06	10	100	6	24	47	31.75 (32)	7.92 (8)	35.2 (34.8)	8	SNHT12035R/L-WX	PTMA04045F	TW15S
	100-T07	10	100	7	24	47	31.75 (32)	7.92 (8)	35.2 (34.8)	10	SNHT1204R/L-WX	PTMA0405F	TW15S
	100-T08	10	100	8	24	47	31.75 (32)	7.92 (8)	35.2 (34.8)	10	SNHT12045R/L-WX	PTMA0406F	TW15S
	100-T09	10	100	9	24	47	31.75 (32)	7.92 (8)	35.2 (34.8)	12	SNHT1205R/L-WX	PTMA0407F	TW15S
	100-T10	10	100	10	24	47	31.75 (32)	7.92 (8)	35.2 (34.8)	12	SNHT12054R/L-WX	PTMA0408F	TW15S
	125-T04	12	125	4	32	56	38.1 (40)	9.52 (10)	42.3 (43.5)	8	SNHT11023R/L-WX	PTMA03503	TW09S
	125-T05	12	125	5	32	56	38.1 (40)	9.52 (10)	42.3 (43.5)	8	SNHT1103R/L-WX	PTMA03504	TW09S
	125-T06	12	125	6	32	56	38.1 (40)	9.52 (10)	42.3 (43.5)	8	SNHT12035R/L-WX	PTMA04045F	TW15S
	125-T07	12	125	7	32	56	38.1 (40)	9.52 (10)	42.3 (43.5)	10	SNHT1204R/L-WX	PTMA0405F	TW15S
125-T08	12	125	8	32	56	38.1 (40)	9.52 (10)	42.3 (43.5)	10	SNHT12045R/L-WX	PTMA0406F	TW15S	
125-T09	12	125	9	32	56	38.1 (40)	9.52 (10)	42.3 (43.5)	12	SNHT1205R/L-WX	PTMA0407F	TW15S	
125-T10	12	125	10	32	56	38.1 (40)	9.52 (10)	42.3 (43.5)	12	SNHT12054R/L-WX	PTMA0408F	TW15S	
160-T04	16	160	4	45	66	38.1 (40)	9.52 (10)	42.3 (43.5)	8	SNHT11023R/L-WX	PTMA03503	TW09S	
160-T05	16	160	5	45	66	38.1 (40)	9.52 (10)	42.3 (43.5)	8	SNHT1103R/L-WX	PTMA03504	TW09S	
160-T06	16	160	6	45	66	38.1 (40)	9.52 (10)	42.3 (43.5)	8	SNHT12035R/L-WX	PTMA04045F	TW15S	
160-T07	16	160	7	45	66	38.1 (40)	9.52 (10)	42.3 (43.5)	10	SNHT1204R/L-WX	PTMA0405F	TW15S	
160-T08	16	160	8	45	66	38.1 (40)	9.52 (10)	42.3 (43.5)	10	SNHT12045R/L-WX	PTMA0406F	TW15S	
160-T09	16	160	9	45	66	38.1 (40)	9.52 (10)	42.3 (43.5)	12	SNHT1205R/L-WX	PTMA0407F	TW15S	
160-T10	16	160	10	45	66	38.1 (40)	9.52 (10)	42.3 (43.5)	12	SNHT12054R/L-WX	PTMA0408F	TW15S	
160-T11	16	160	11	45	66	38.1 (40)	9.52 (10)	42.3 (43.5)	14	SNHT1206R/L-WX	PTKA0409F	TW15S	
160-T12	16	160	12	45	66	38.1 (40)	9.52 (10)	42.3 (43.5)	14	SNHT12065R/L-WX	PTKA0410F	TW15S	
160-T13	16	160	13	45	66	38.1 (40)	9.52 (10)	42.3 (43.5)	16	SNHT1207R/L-WX	PTKA0411F	TW15S	
160-T14	16	160	14	45	66	38.1 (40)	9.52 (10)	42.3 (43.5)	16	SNHT12075R/L-WX	PTKA0412F	TW15S	
200-T06	18	200	6	60	70	50.8 (50)	12.7 (12)	55.8 (53.5)	8	SNHT12035R/L-WX	PTMA04045F	TW15S	
200-T07	18	200	7	60	70	50.8 (50)	12.7 (12)	55.8 (53.5)	10	SNHT1204R/L-WX	PTMA0405F	TW15S	
200-T08	18	200	8	60	70	50.8 (50)	12.7 (12)	55.8 (53.5)	10	SNHT12045R/L-WX	PTMA0406F	TW15S	
200-T09	18	200	9	60	70	50.8 (50)	12.7 (12)	55.8 (53.5)	12	SNHT1205R/L-WX	PTMA0407F	TW15S	
200-T10	18	200	10	60	70	50.8 (50)	12.7 (12)	55.8 (53.5)	12	SNHT12054R/L-WX	PTMA0408F	TW15S	
200-T11	18	200	11	60	70	50.8 (50)	12.7 (12)	55.8 (53.5)	14	SNHT1206R/L-WX	PTKA0409F	TW15S	
200-T12	18	200	12	60	70	50.8 (50)	12.7 (12)	55.8 (53.5)	14	SNHT12065R/L-WX	PTKA0410F	TW15S	
200-T13	18	200	13	60	70	50.8 (50)	12.7 (12)	55.8 (53.5)	16	SNHT1207R/L-WX	PTKA0411F	TW15S	
200-T14	18	200	14	60	70	50.8 (50)	12.7 (12)	55.8 (53.5)	16	SNHT12075R/L-WX	PTKA0412F	TW15S	
250-T06	20	250	6	88	70	50.8 (50)	12.7 (12)	55.8 (53.5)	8	SNHT12035R/L-WX	PTMA04045F	TW15S	
250-T07	20	250	7	88	70	50.8 (50)	12.7 (12)	55.8 (53.5)	10	SNHT1204R/L-WX	PTMA0405F	TW15S	
250-T08	20	250	8	88	70	50.8 (50)	12.7 (12)	55.8 (53.5)	10	SNHT12045R/L-WX	PTMA0406F	TW15S	
250-T09	20	250	9	88	70	50.8 (50)	12.7 (12)	55.8 (53.5)	12	SNHT1205R/L-WX	PTMA0407F	TW15S	
250-T10	20	250	10	88	70	50.8 (50)	12.7 (12)	55.8 (53.5)	12	SNHT12054R/L-WX	PTMA0408F	TW15S	
250-T11	20	250	11	88	70	50.8 (50)	12.7 (12)	55.8 (53.5)	14	SNHT1206R/L-WX	PTKA0409F	TW15S	
250-T12	20	250	12	88	70	50.8 (50)	12.7 (12)	55.8 (53.5)	14	SNHT12065R/L-WX	PTKA0410F	TW15S	
250-T13	20	250	13	88	70	50.8 (50)	12.7 (12)	55.8 (53.5)	16	SNHT1207R/L-WX	PTKA0411F	TW15S	
250-T14	20	250	14	88	70	50.8 (50)	12.7 (12)	55.8 (53.5)	16	SNHT12075R/L-WX	PTKA0412F	TW15S	

() Metric size

Available inserts **E23**

