

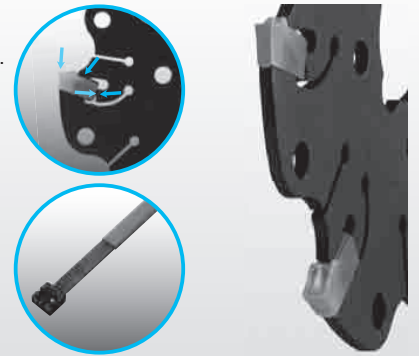
Slot Mill MST



Full range from 1.6mm to 23.3mm in 3 types

Slot Mill MSTA (Slot width 1.6, 2.2, 3.0, 4.0mm)

- Self-clamping type Slot Mill
MSTA Slot Mills have simple self-clamping system to allow for easy attachment by just installing the insert.
- High Rigidity Clamping System
Owing to the highly rigid clamping system - with an end-stopper, the Toolholders enable high operability and stable slotting by maintaining an accurate edge position.
- Double-Prism Clamping System
High replacement precision due to the clamping system with two prisms.
- Easy replacement
The replacement of inserts is easy and quick by using special wrench.

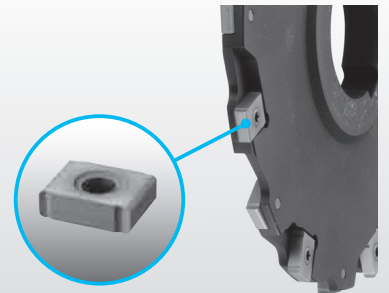


Wrench is not attached. Please purchase it separately.

M

Slot Mill MSTB (Slot width 6.0~13.0mm)

- Up-right type / semi-adjustable slot width
- Easy and secure screw holding
Inserts can be attached to the MSTB Slot Mills very easily by using clamp screws.
- Inserts have four edges and are, therefore, cost-effective
* Inserts for 6mm / 7mm slotting width have two edges.
- Applicable to a variety of slotting by choosing different inserts.
By changing the thickness of inserts, it's applicable to various slotting widths up to max 1mm in 0.5mm increments.

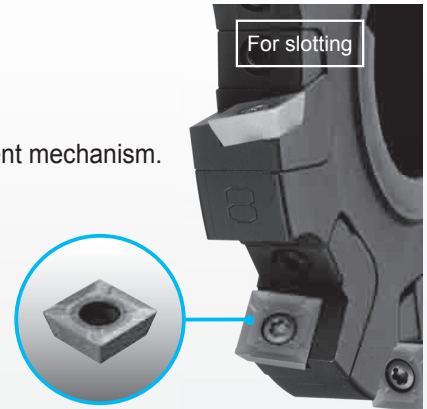


Full lineup of MST Series Slot Mills

Type	Applicable Inserts	Features	Slot Width (mm)														
			1.6	2.2	3	4	6	8	10	13	14	16	18	20	22	24	
MSTA	SLT..	1.6~4mm fixed	●	●	●	●											
MSTB	LNEU12..	6~13mm semi-adjustable					▶ * Adjustable in 0.5mm increments between 6mm and 13mm with the combination of inserts										
MSTC	SP..10T3..	14~18mm full-adjustable									▶ * Adjustable between 14mm and 18mm						
	SD..1204...	18~23.3mm full-adjustable											▶ * Adjustable between 18mm and 23.3mm				

Slot Mill MSTC (Slot width 14.0~23.3mm)

- Lay-down type / fully adjustable slot width
- Applicable to various slotting needs. Slotting widths: 14.0mm to 23.3mm.
Cutter Dia.: from 100mm to 160mm
- Smooth slotting width adjustment is possible owing to unique cam style adjustment mechanism.
- Four-edges inserts that are cost-effective.
- Wide range corner R repertoires are suitable for various work.
- Owing to the wiper edge insert, an excellent surface finish can be expected.
- Owing to numerous insert geometries and grades, they are applicable for various types of workpiece machining.



Features of Insert Grades

Insert			
Symbol	SB	SD	SE
Rake Angle			
Shape			

CA0835

- TiN+TiCN+Al₂O₃ based CVD Coated Carbide
- For carbon steel, alloy steel, stainless steel and nodular cast iron
- For middle to high speed cutting

PR0725

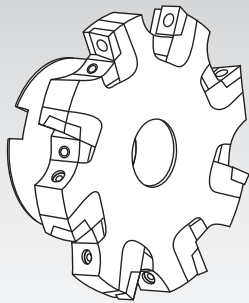
- TiN+TiCN+TiN based PVD Multi-layered Coating
- For carbon steel, alloy steel, stainless steel, heat resistant alloy and nodular cast iron
- For middle speed cutting

PR0110

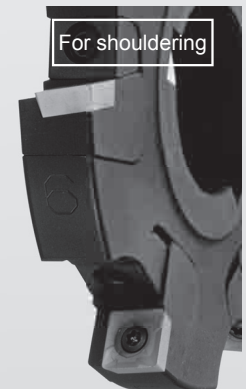
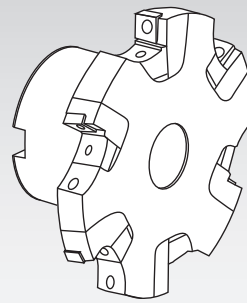
- TiB₂ based PVD Coated Carbide
- For Non-ferrous Metals such as Aluminum Alloy (Si<10%) and Titanium Alloy
- For high speed cutting

With Boss

Right-Hand



Left-hand

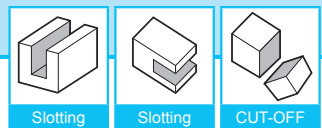


M

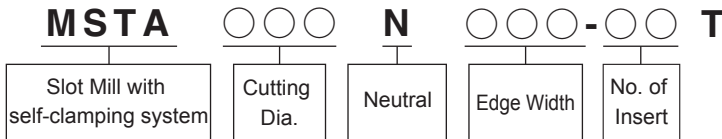


Milling

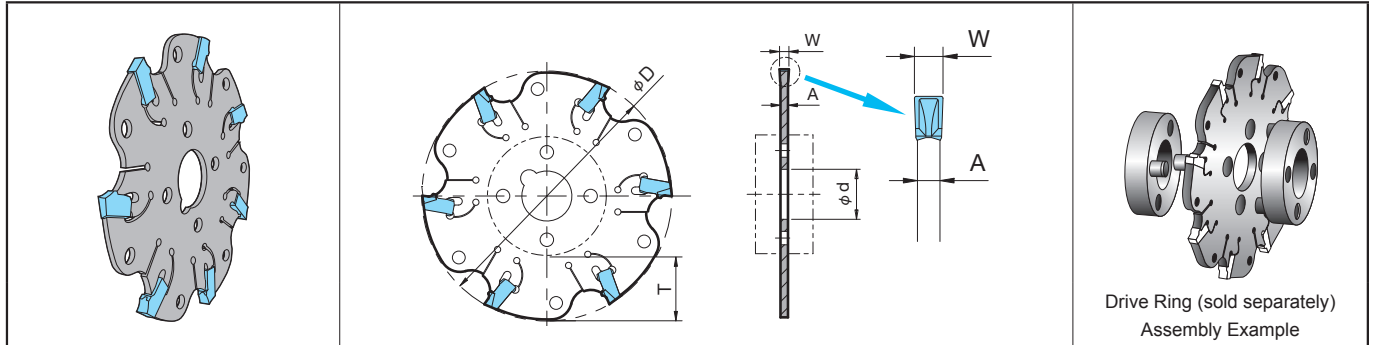
Slot Mill SLT type Insert: Self Clamping type



Identification System



MSTA (Metric)



Toolholder Dimensions

Description	Std.	Edge Width		Slot Depth	No of Inserts	Dimension (mm)			Weight (kg)	Applicable Inserts See page M112	Max. Revolution (min ⁻¹)	Parts Wrench	Recommended Cutting Conditions	Applicable Arbor
		W (mm)	T (mm)			φD	φd (H7)	A						
MSTA 63N16-5T	●	1.6	15	5	63	16	1.3	0.03	SLT16	5,100	MS-FRW1 (Wrench is not attached.) Please purchase it separately ·How to use Wrench →M113	See page M113	See page M133	
80N16-7T	●			7	80			0.04		4,000				
100N16-9T	●			9	100			0.07		3,200				
125N16-11T	●			11	125			0.1		2,600				
MSTA 63N22-5T	●	2.2	15	5	63	16	1.8	0.03	SLT22	5,100				
80N22-7T	●			7	80			0.05		4,000				
100N22-9T	●			9	100			0.08		3,200				
125N22-11T	●			11	125			0.12		2,600				
160N22-14T	●			14	160			0.3		2,000				
MSTA 63N30-4T	●	3.0	15	4	63	16	2.4	0.05	SLT30	5,100				
80N30-6T	●			6	80			0.08		4,000				
100N30-9T	●			9	100			0.13		3,200				
125N30-11T	●			11	125			0.2		2,600				
160N30-14T	●			14	160			0.35		2,000				
MSTA 63N40-4T	●	4.0	15	4	63	16	3.4	0.06	SLT40	5,100				
80N40-6T	●			6	80			0.1		4,000				
100N40-9T	●			9	100			0.15		3,200				
125N40-11T	●			11	125			0.25		2,600				
160N40-14T	●			14	160			0.4		2,000				

Note) 1. Attach the drive ring (sold separately) to MSTA type slot mill to use. Drive ring is sold singularly.

Please purchase two drive rings per one MSTA type slot mill.

2. Do not exceed the max revolution.

3. Do not operate cutting on reverse revolution.

4. Wrench (MS-FRW1) is not attached. Please purchase separately.

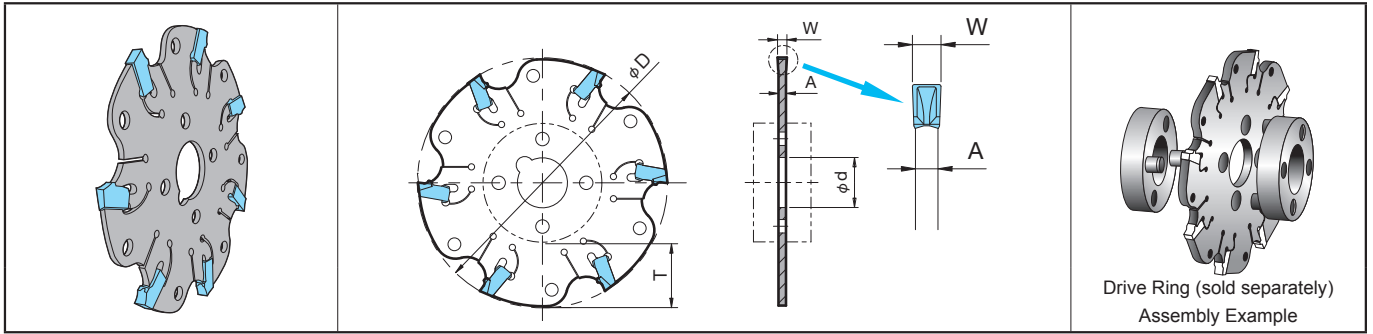
Drive Ring (For Metric)

Shape	Description	Std.	Dimension (mm)					Drawing	Applicable Toolholders
			φd	φD	A1	a	φd1		
	DR16-32A	●	16	32	8	4.1	3	Fig.2	MSTA 63N16-5T
	DR16-32B	●							MSTA 63N22-7T
	DR16-38	●	22	46	10	6.1	5	Fig.3	MSTA 63N30-4T
	DR22-46	●							MSTA 63N40-4T
	DR32-55	●	32	55	12	8.1	6	Fig.3	MSTA 80N○○○T
	DR40-80	●							MSTA 100N○○○T
									MSTA 125N○○○T
									MSTA 160N○○○T

Wrenches and drive rings are sold in 1 piece per 1 box.

● : Std. Item □ : Check Availability

MSTA (inch spec)



Drive Ring (sold separately)
Assembly Example

Toolholder Dimensions

Description	Std.	Edge Width		Slot Depth	No. of Inserts	Dimension (inch)			Weight (kg)	Applicable Inserts See page M112	Max. Revolution (min ⁻¹)	Parts	Recommended Cutting Conditions	Applicable Arbor
		W (inch)	T (inch)			ϕD	ϕd (H7)	A				Wrench		
MSTA 02N063-5T	<input type="checkbox"/>	.063 (1.6mm)	.625 (15.875mm)	5	2.500 (63.5mm)	.625 (15.875mm)	.051 (1.3mm)	0.03	SLT16	5,100	MS-FRW1 (Wrench is not attached.) Please purchase it separately) • How to use Wrench See → M113	See page M113	See page M133	
03N063-7T	<input type="checkbox"/>		.875 (22.225mm)	7	3.000 (76.2mm)	.625 (15.875mm)		0.04		4,000				
04N063-9T	<input type="checkbox"/>		1.063 (27.000mm)	9	4.000 (101.6mm)	1.000 (25.4mm)		0.07		3,200				
05N063-11T	<input type="checkbox"/>		1.375 (34.925mm)	11	5.000 (127mm)	1.250 (31.75mm)		0.1		2,600				
MSTA 03N089-7T	<input type="checkbox"/>	.089 (2.2mm)	.875 (22.225mm)	7	3.000 (76.2mm)	.625 (15.875mm)	.071 (1.8mm)	0.05	SLT22	4,000				
04N089-9T	<input type="checkbox"/>		1.063 (27.000mm)	9	4.000 (101.6mm)	1.000 (25.4mm)		0.08		3,200				
06N089-14T	<input type="checkbox"/>		1.438 (36.525mm)	14	6.000 (152.4mm)	1.250 (31.75mm)		0.3		2,000				
MSTA 02N126-4T	<input type="checkbox"/>	.120 (3.0mm)	.625 (15.875mm)	4	2.500 (63.5mm)	.625 (15.875mm)	.095 (2.4mm)	0.05	SLT30	5,100				
03N126-6T	<input type="checkbox"/>		.875 (22.225mm)	6	3.000 (76.2mm)	.625 (15.875mm)		0.08		4,000				
04N126-9T	<input type="checkbox"/>		1.063 (27.000mm)	9	4.000 (101.6mm)	1.000 (25.4mm)		0.13		3,200				
05N126-11T	<input type="checkbox"/>		1.375 (34.925mm)	11	5.000 (127mm)	1.250 (31.75mm)		0.2		2,600				
06N126-14T	<input type="checkbox"/>		1.438 (36.525mm)	14	6.000 (152.4mm)	1.250 (31.75mm)		0.35		2,000				
MSTA 03N164-6T	<input type="checkbox"/>	.160 (4.0mm)	.875 (22.225mm)	6	3.000 (76.2mm)	.625 (15.875mm)	.134 (3.4mm)	0.1	SLT40	4,000				
04N164-9T	<input type="checkbox"/>		1.063 (27.000mm)	9	4.000 (101.6mm)	1.000 (25.4mm)		0.15		3,200				
05N164-11T	<input type="checkbox"/>		1.375 (34.925mm)	11	5.000 (127mm)	1.250 (31.75mm)		0.25		2,600				

- Note) 1. Attach the drive ring (sold separately) to MSTA type slot mill to use. Drive ring is sold singularly.
Please purchase two drive rings per one MSTA type slot mill.
2. Do not exceed the max revolution.
3. Do not operate cutting on reverse revolution.
4. Wrench (MS-FRW1) is not attached. Please purchase separately.

Drive Ring (For Inch spec)

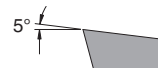
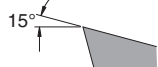
Shape	Description	Std.	Dimensions (inch)					Drawing	Applicable Toolholders
			ϕd	ϕD	A1	a	$\phi d1$		
	DR0625-1250A	<input type="checkbox"/>					.158 (4mm)	Fig.1	MSTA 02N126-4T
	DR0625-1250B	<input type="checkbox"/>	.625 (15.875mm)	1.250 (31.75mm)	.315 (8mm)	.130 (3.3mm)		Fig.2	MSTA 02N063-5T
	DR0625-1250C	<input type="checkbox"/>					.120 (3mm)		MSTA 03N○○○-T
	DR1000-1875	<input type="checkbox"/>	1.000 (25.4mm)	1.875 (47.625mm)		.256 (6.5mm)	.200 (5mm)	Fig.3	MSTA 04N○○○-T
	DR1250-2250	<input type="checkbox"/>	1.250 (31.75mm)	2.250 (57.15mm)	.394 (10mm)	.319 (8.1mm)	.240 (6mm)		MSTA 05N○○○-T
	DR1250-3125	<input type="checkbox"/>	1.250 (31.75mm)	3.125 (79.375mm)	.472 (12mm)	.319 (8.1mm)	.472 (12mm)		MSTA 06N○○○-T

● : Std. Item □ : Check Availability

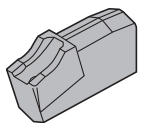
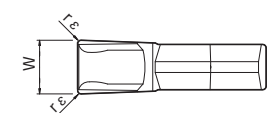
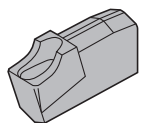
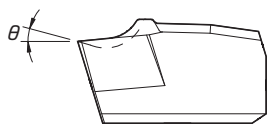
Wrenches and drive rings are sold in 1 piece per 1 box.

Slot Mill SLT Insert: Self Clamping

Inserts Identification System

SLT		16 - 15		S	KB				
①		②		③	④		⑤		
① Insert Symbol		② Edge Width		③ Corner R($r\epsilon$)		④ Cutting Edge Spec.		⑤ Chipbreaker Symbol	
Symbol	Edge Width	Symbol	Corner-R	Symbol	Cutting Edge Spec.	Symbol	Rake Angle		
16	1.6mm	15	0.15mm	S	Chamfer + R-honed	KB	5° 		
22	2.2mm	20	0.2mm			KD	15° 		

SLT

Classification of usage ● : 1st Choice ○ : 2nd Choice	P	Carbon Steel / Alloy Steel	●	○	Ref. Page for Applicable Toolholder			
	M	Stainless Steel	○	●				
	K	Cast Iron	○					
	N	Non-ferrous Metals						
	S	Heat-resistant alloy		●				
		Titanium Alloy						
Insert	Description	Dimension (mm)		Rake Angle (°)	CVD Coated Carbide	PVD Coated Carbide	Ref. Page for Applicable Toolholder	
		W	$r\epsilon$	θ	CA0835	PR0735		
		SLT 16-15SKB	1.6 ⁺⁰ _{-0.1}	0.15	5°	●	●	M110 M111
		22-20SKB	2.2 ^{+0.08} _{-0.05}	0.2		●	●	
		30-20SKB	3.05 ^{+0.15} ₋₀			●	●	
		40-20SKB	4.05 ^{+0.15} ₋₀			●	●	
		SLT 16-15SKD	1.6 ⁺⁰ _{-0.1}		0.15	15°	●	
		22-20SKD	2.2 ^{+0.08} _{-0.05}	0.2	●		●	
		30-20SKD	3.05 ^{+0.15} ₋₀		●		●	
		40-20SKD	4.05 ^{+0.15} ₋₀		●		●	

Chipbreaker selection

- KB Chipbreaker General use chipbreaker for Steel and Cast Iron
- KD Chipbreaker Low cutting force chipbreaker for Stainless Steel

Features of Insert Grades

CA0835

- TiN+TiCN+Al₂O₃ based CVD Coated Carbide
- For Carbon Steel, Alloy steel, Stainless Steel and nodular cast iron
- For middle to high speed cutting

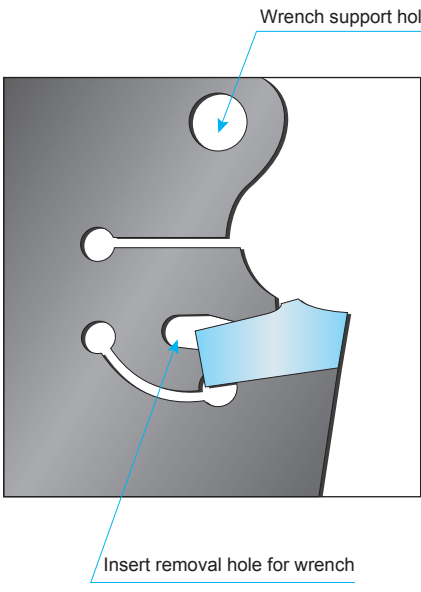
PR0735

- TiN based PVD Coated Carbide
- For Stainless Steel, Heat-Resistant Alloy, etc
- For low to middle speed cutting

Inserts are sold in 10 piece boxes.

● : Std. Item □ : Check Availability

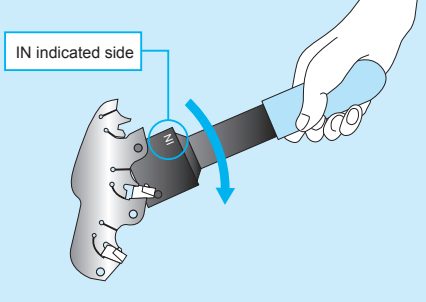
Set up



Wrench support hole

Insert removal hole for wrench

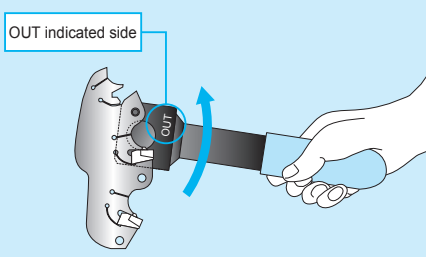
How to attach inserts



IN indicated side

1. Put insert inside the slot mill.
2. Insert one of the pins on the wrench (on IN indicated side) into the wrench support hole.
3. Using the other pin, push the front relief surface of the insert.
4. Rotate the wrench until insert's back end makes contact with slot mill.

How to detach inserts



OUT indicated side

1. Insert one of the pin on the wrench (on OUT indicated side) into the wrench support hole, and insert other pin into the hole on releasing wrench.
2. Insert can be uninstalled by rotating the wrench counter clock wise. (A magnet is installed on the outside)

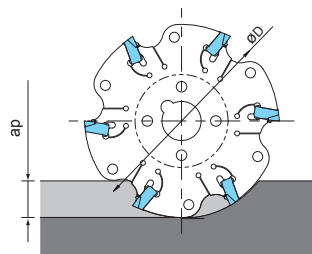
Note) Use appropriate wrench for set up.

◆ Recommended Cutting Conditions

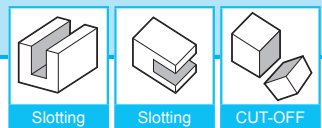
Workpiece Material		Hardness (HB)	Insert Grade (Cutting Speed Vc: m/min)		fz (mm/t)				Remarks
			CVD Coated Carbide	PVD Coated Carbide	Edge Width (mm)				
			CA0835	PR0735	1.6	2.2	3.0	4.0	
Low Carbon Steel	St42-2 C10E~C25	125	250-310	200-250	0.03-0.12	0.04-0.14	0.06-0.18	0.08-0.20	With coolant
Carbon Steel	C30~C60 (Annealed)	190	160-190	130-160	0.03-0.12	0.04-0.14	0.06-0.18	0.08-0.20	
	C30~C60 (Heat treated)	250	140-180	110-150	0.03-0.12	0.04-0.14	0.06-0.18	0.08-0.20	
Alloy Steel	34CrMo4 (Annealed)	180	140-180	110-150	0.03-0.12	0.04-0.14	0.06-0.18	0.08-0.20	
	34CrMo4 (Heat treated)	275	120-160	100-130	0.03-0.10	0.04-0.12	0.06-0.16	0.08-0.18	
High Carbon Carbide	X40CrMoV51, etc.	280	100-140	80-120	0.03-0.10	0.04-0.12	0.06-0.16	0.08-0.18	
Stainless Steel	X5CrNi1810, etc.	220	150-190	80-120	0.03-0.10	0.04-0.12	0.06-0.16	0.08-0.18	
	X10Cr13, etc.	300	140-180	60-80	0.03-0.10	0.04-0.12	0.06-0.16	0.08-0.18	
Gray Cast Iron	GG25~GG35	260	160-200	-	0.03-0.12	0.04-0.14	0.06-0.18	0.08-0.20	Dry
Nodular Cast Iron	GGG40~GGG50	160	130-160	-	0.03-0.12	0.04-0.14	0.06-0.18	0.08-0.20	
	GGG60~GGG80	250	110-140	-	0.03-0.12	0.04-0.14	0.06-0.18	0.08-0.20	

Note) 1. Use down-cut cutting.

2. If ap is under 1/10 of Cutter Dia.(ϕD), it is possible to increase feed per tooth(fz) 40%.



Slot Mill Up-right: LN Insert



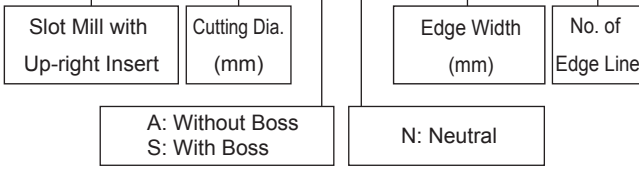
Identification System

MSTB Slot Mill

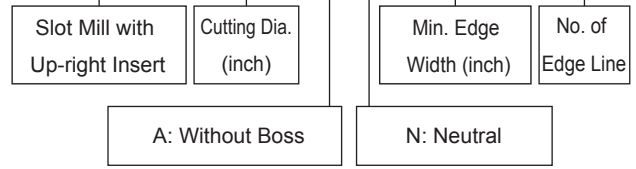
Metric

Inch spec

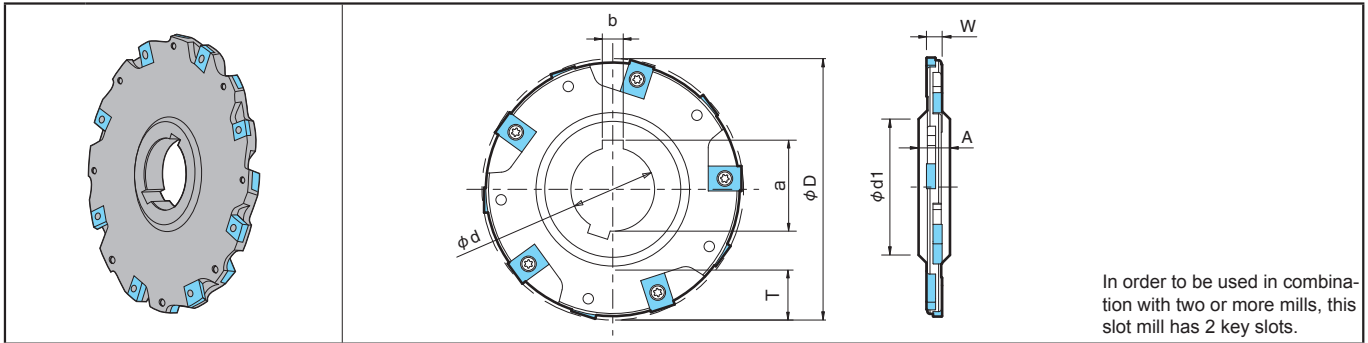
MSTB ○○○○ **AN** ○○○○ - ○ **T**



MSTB ○○○○ **AN** ○○○○ - ○ **T**



Without Boss



In order to be used in combination with two or more mills, this slot mill has 2 key slots.

Toolholder Dimensions (Metric)

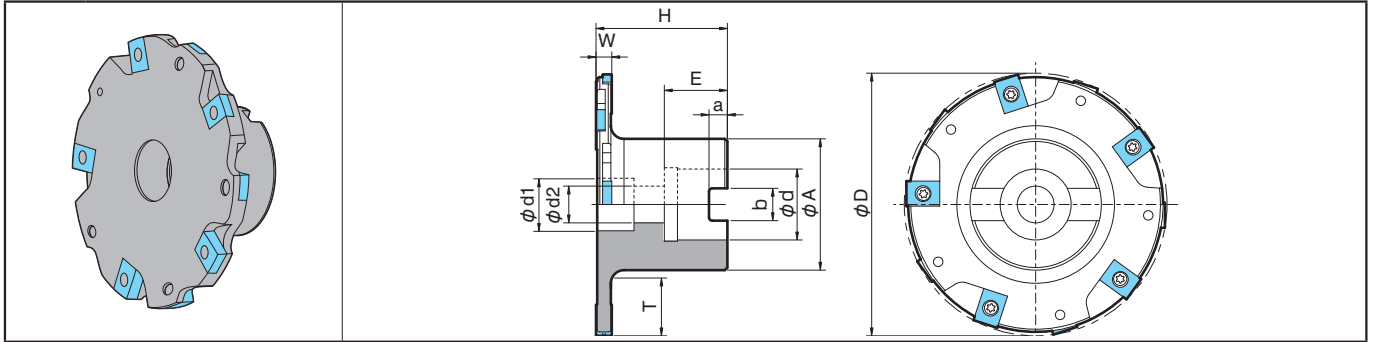
Description	Std.	Edge Width (mm)		Slot Depth T (mm)	No. of Inserts	No. of Edge Lines	Dimension (mm)					Weight (kg)	Max. Revolution (min ⁻¹)	
		W (min)	W (max)				øD	ød (H7)	ød1	A	a			b
MSTB 80AN0607-4T	●	6	7	15	8	4	80	27	44	12	29.8	7	0.3	9,240
100AN0607-5T	●			21	10	5	100	32	52					
125AN0607-6T	●			28	12	6	125	40	63					
160AN0607-8T	●			45.5	16	8	160	40	63					
MSTB 80AN0809-4T	●	8	9	16	8	4	80	27	44	12	29.8	7	0.4	9,240
100AN0809-5T	●			22	10	5	100	32	52					
160AN0809-8T	●			45.5	16	8	160	40	63					
MSTB 125AN1011-4T	●	10	11	30	12	4	125	40	63	12	43.5	10	0.9	7,390
160AN1011-5T	●			47.5	15	5							160	1.6
MSTB 160AN1213-5T	●	12	13	48.5	15	5	160			12	43.5	10	1.6	6,540

Toolholder Dimensions (Inch spec)

Description	Std.	Edge Width (inch)		Slot Depth T (inch)	No. of Inserts	No. of Edge Lines	Dimension (inch)					Weight (kg)	Max. Revolution (min ⁻¹)	
		W (min)	W (max)				øD	ød (H7)	ød1	A	a			b
MSTB 3000AN250-4T	□	.250 (6.35mm)	.289 (7.34mm)	.625 (15.875mm)	8	4	3.000 (76.2mm)	1.000 (25.4mm)	1.500 (38.1mm)	.500 (12.7mm)	1.106 (28.1mm)	.250 (6.35mm)	0.3	9,470
4000AN250-5T	□			.935 (23.8mm)	10	5	4.000 (101.6mm)	1.250 (31.75mm)	1.880 (47.8mm)					
5000AN250-6T	□			1.435 (36.4mm)	12	6	5.000 (127mm)	1.250 (31.75mm)	1.880 (47.8mm)					
6000AN250-8T	□			1.750 (44.45mm)	16	8	6.000 (152.4mm)	1.500 (38.1mm)	2.250 (57.2mm)					
MSTB 4000AN312-5T	□	.312 (7.92mm)	.351 (8.91mm)	.966 (24.5mm)	10	5	4.000 (101.6mm)	1.250 (31.75mm)	1.880 (47.8mm)	.500 (12.7mm)	1.386 (35.2mm)	.312 (7.92mm)	0.5	7,400
5000AN312-6T	□			1.466 (37.2mm)	12	6	5.000 (127mm)	1.250 (31.75mm)	1.880 (47.8mm)					
6000AN312-8T	□			1.781 (45.2mm)	16	8	6.000 (152.4mm)	1.500 (38.1mm)	2.250 (57.2mm)					
MSTB 4000AN375-3T	□	.375 (9.525mm)	.414 (10.52mm)	1.000 (25.4mm)	9	3	4.000 (101.6mm)	1.250 (31.75mm)	1.880 (47.8mm)	.500 (12.7mm)	1.386 (35.2mm)	.312 (7.92mm)	0.5	7,400
5000AN375-4T	□			1.500 (38.1mm)	12	4	5.000 (127mm)	1.250 (31.75mm)	1.880 (47.8mm)					
6000AN375-5T	□			1.812 (46.0mm)	15	5	6.000 (152.4mm)	1.500 (38.1mm)	2.250 (57.2mm)					
MSTB 4000AN500-3T	□	.500 (12.7mm)	.539 (13.69mm)	1.060 (26.9mm)	9	3	4.000 (101.6mm)	1.250 (31.75mm)	1.880 (47.8mm)	.500 (12.7mm)	1.386 (35.2mm)	.312 (7.92mm)	0.6	4,900
5000AN500-4T	□			1.560 (39.6mm)	12	4	5.000 (127mm)	1.250 (31.75mm)	1.880 (47.8mm)					
6000AN500-5T	□			1.875 (47.6mm)	15	5	6.000 (152.4mm)	1.500 (38.1mm)	2.250 (57.2mm)					

● : Std. Item □ : Check Availability

With Boss



Toolholder Dimensions (Metric)

Description	Std.	Edge Width (mm)		Slot Depth T (mm)	No. of Inserts	No. of Edge Lines	Dimension (mm)						Weight (kg)	Max. Revolution (min ⁻¹)			
		W (min)	W (max)				φD	φd (H7)	φA	H (min)	E	a			b	φd1	φd2
MSTB 80SN0607-4T	●	6	7	16	8	4	80	22	40	50	23	6.3	10.4	18	12	0.7	9,240
100SN0607-5T	●			21	10	5	100	27	50		24	7	12.4	20	14	1.0	8,270
160SN0607-8T	●			41	16	8	160	40	70		28	9	16.4	33	22	1.9	6,540
MSTB 80SN0809-4T	●	8	9	16	8	4	80	22	40		23	6.3	10.4	18	12	0.8	9,240
100SN0809-5T	●			21	10	5	100	27	50		24	7	12.4	20	14	1.2	8,270
160SN0809-8T	●			41	16	8	160									2.2	6,540
MSTB 125SN1011-4T	●	10	11	26	12	4	125	40	70		28	9	16.4	33	22	2.0	7,390
160SN1011-5T	●			43	15	5	160									2.5	6,540

Note) H(min) dimension shows in case of minimum of edge width.

Spare Parts and Applicable Inserts

Spare Parts

Description		Spare Parts				Applicable Inserts	Recommend-ed Cutting Conditions	Applicable Arbor	
		Clamp Screw	Wrench	Anti-seize Compound	Arbor Clamp Screw				
Metric	Without Boss	MSTB ○○○AN0607-○T	SE-40050TR	TT-15L	MP-1	-	See page LN12... M116, M117	See page M118	See page M133
		○○○AN0809-○T	SE-40068TR						
		○○○AN1011-○T	SE-40090TR						
		160AN1213-5T	SE-40090TR						
	With Boss	MSTB 80SN0607-4T	SE-40050TR	TT-15L	MP-1	-			
		100SN0607-5T							
		160SN0607-8T							
		MSTB 80SN0809-4T	SE-40068TR						
		100SN0809-5T							
160SN0809-8T									
MSTB ○○○SN1011-○T	SE-40068TR								
Inch spec	Without Boss	MSTB ○○○○AN250-○T	SE-40055TR	TT-15L	MP-1	-			
		○○○○AN312-○T	SE-40068TR						
		○○○○AN375-○T	SE-40068TR						
		○○○○AN500-○T	SE-40090TR						

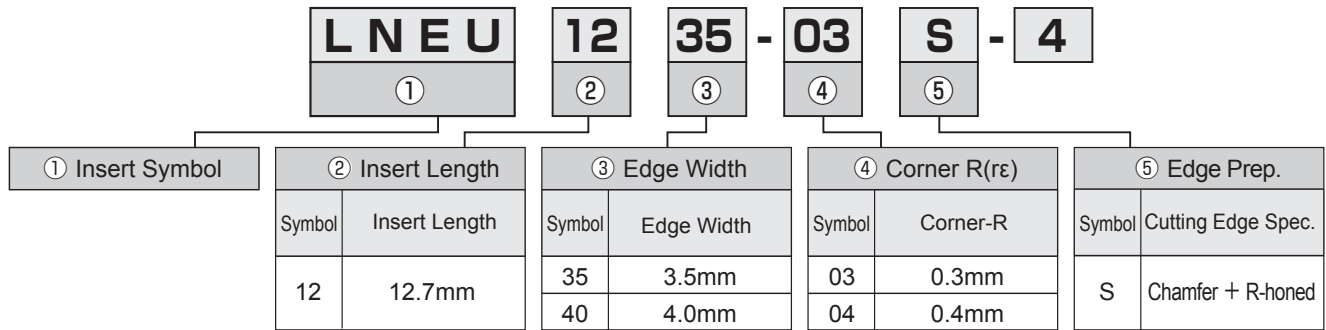
Coat anti-seize compound (MP-1) thinly on clamp screw when insert is fixed.

● : Std. Item □ : Check Availability

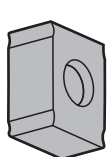
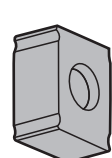


Slot Mill Up-right: LN Insert

Inserts Identification System



LN

Description	W	A	ød	Classification of usage ● : 1st Choice ○ : 2nd Choice	P Carbon Steel / Alloy Steel ● M Stainless Steel ● K Cast Iron ○ N Non-ferrous Metal S Heat-resistant alloy ● Titanium Alloy ○	Applicable Clamp Screw	Ref. Page for Toolholder	Ref. Page for Recommended Cutting Conditions
Insert	Description			No. of Edge	T	rε	PR0725	
 Honed	LNEU 1235-03-4			4	3.5	0.3	●	SE-40050TR
	1240-08-4			4	4.0	0.8	●	SE-40055TR
	1245-04			4	4.5	0.4	●	SE-40068TR
	1245-08					0.8	●	
	1250-04			4	5.0	0.4	●	SE-40080TR
	1250-08					0.8	●	
	1255-04			4	5.5	0.4	●	SE-40090TR
	1255-08					0.8	●	
1260-04			4	6.0	0.4	●	SE-40100TR	
 Tough Edge	LNEU 1235-03S-4			4	3.5	0.3	●	SE-40050TR
	1240-03S-4			4	4.0	0.3	●	SE-40055TR
	1245-04S			4	4.5	0.4	●	SE-40068TR
	1245-08S					0.8	●	
	1250-04S			4	5.0	0.4	●	SE-40080TR
	1250-08S					0.8	●	

Note) 1. Please select the applicable clamp screw depending on each insert description.
 2. See M107 for insert description and applicable clamp screw depending on edge width.

Features of Insert Grades

PR0725

- TiN+TiCN+TiN based Multi-layer PVD Coated Carbide
- For carbon steel, alloy steel, stainless steel, heat resistant alloy and nodular cast iron
- For middle speed cutting

Inserts are sold in 10 piece boxes.

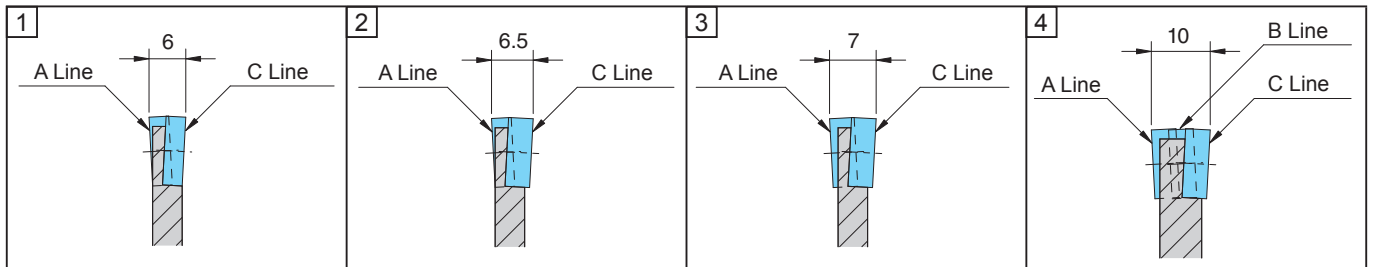
● : Std. Item □ : Check Availability

Combination of Applicable Inserts

Description	Clamp Screw (Standard attachment parts)	Edge Width		A Line		B Line		C Line		Wrench For Clamp Screw	Tightening Torque (Nm)	
		mm	inch (mm)	Applicable Insert	Clamp Screw	Applicable Insert	Clamp Screw	Applicable Insert	Clamp Screw			
Metric	MSTB ○○○AN0607-○T ○○○SN0607-○T	SE-40050TR	6	-	LNEU1235..	SE-40050TR	-	-	LNEU1235..	SE-40050TR	TT-15L	3
			6.5		LNEU1240..	SE-40055TR			LNEU1240..	SE-40055TR		
			7		LNEU1240..	SE-40055TR			LNEU1240..	SE-40055TR		
	MSTB ○○○AN0809-○T ○○○SN0809-○T	SE-40068TR	8	-	LNEU1245..	SE-40068TR	-	-	LNEU1245..	SE-40068TR		
			8.5		LNEU1250..	SE-40080TR			LNEU1250..	SE-40080TR		
			9		LNEU1250..	SE-40080TR			LNEU1250..	SE-40080TR		
	MSTB ○○○AN1011-○T ○○○SN1011-○T	SE-40068TR	10	-	LNEU1245..	SE-40068TR	LNEU1245..	SE-40068TR	LNEU1245..	SE-40068TR		
			10.5		LNEU1250..	SE-40080TR	LNEU1250..	SE-40080TR	LNEU1250..	SE-40080TR		
			11		LNEU1250..	SE-40080TR	LNEU1250..	SE-40080TR	LNEU1250..	SE-40080TR		
	MSTB ○○○AN1213-○T	SE-40090TR	12	-	LNEU1255..	SE-40090TR	LNEU1255..	SE-40090TR	LNEU1255..	SE-40090TR		
			12.5		LNEU1260..	SE-40100TR	LNEU1260..	SE-40100TR	LNEU1260..	SE-40100TR		
			13		LNEU1260..	SE-40100TR	LNEU1260..	SE-40100TR	LNEU1260..	SE-40100TR		
	Inch spec	MSTB ○○○○AN250-○T	SE-40055TR	-	-	.250 (6.35mm)	LNEU1240..	SE-40055TR	-	-		
.270 (6.86mm)				LNEU1245..		SE-40068TR	LNEU1245..	SE-40068TR				
.289 (7.34mm)				LNEU1245..		SE-40068TR	LNEU1245..	SE-40068TR				
MSTB ○○○○AN312-○T		SE-40068TR	-	-	.312 (7.92mm)	LNEU1245..	SE-40068TR	-	-	LNEU1245..	SE-40068TR	
			.332 (8.43mm)		LNEU1250..	SE-40080TR	LNEU1250..			SE-40080TR		
			.351 (8.91mm)		LNEU1250..	SE-40080TR	LNEU1250..			SE-40080TR		
MSTB ○○○○AN375-○T		SE-40068TR	-	-	.375 (9.525mm)	LNEU1245..	SE-40068TR	LNEU1245..	SE-40068TR	LNEU1245..	SE-40068TR	
			.395 (10.33mm)		LNEU1250..	SE-40080TR	LNEU1250..	SE-40080TR	LNEU1250..	SE-40080TR		
			.414 (10.52mm)		LNEU1250..	SE-40080TR	LNEU1250..	SE-40080TR	LNEU1250..	SE-40080TR		
MSTB ○○○○AN500-○T		SE-40090TR	-	-	.500 (12.7mm)	LNEU1255..	SE-40090TR	LNEU1255..	SE-40090TR	LNEU1255..	SE-40090TR	
			.520 (13.21mm)		LNEU1260..	SE-40100TR	LNEU1260..	SE-40100TR	LNEU1260..	SE-40100TR		
			.539 (13.69mm)		LNEU1260..	SE-40100TR	LNEU1260..	SE-40100TR	LNEU1260..	SE-40100TR		

* For clamp screw, above listed "Standard attachment parts" are attached. In case of necessity of another size of clamp screw by changing slotting width, please purchase separately.

Slot width (edge width) adjustment



● The Slot width (edge width) of MSTB-Type slot Mills is adjustable by a maximum of 1mm (.039") with the combination of inserts.

1. In the case of MSTB ○○○AN0607-○T the width (W) is 6mm by installing LNEU1235 on both A line and C line.
2. By replacing C line only with LNEU1240 the width (W) is 6.5mm.
3. By replacing A line and C line with LNEU1240 the width (W) is 7mm.
4. If the slotting width (edge width) is 10mm (.375"), the B line (middle edge) is necessary.

* Caution

- 1) There is no description such as "A line", "B line", and "C line" on the actual slot Mill. These are only for explanation of the combination of insert.
- 2) Use proper clamp screws for applicable inserts on the basis of the above chart.
- 3) Please do not use any slot mills, that have a difference of width of more than 1mm (.039").

Bottom cutting shape of MSTB Slot Mill

Slot bottom shape will be (Fig.1) convex shape.

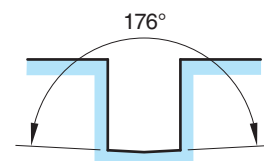


Fig.1 Convex bottom shape

M



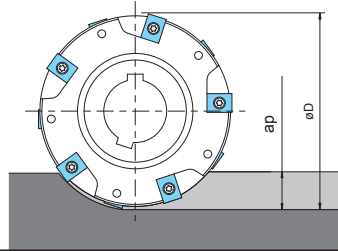
Milling

Slot Mill Up-right: LN Insert

◆ Recommended Cutting Conditions

Workpiece Material		Hardness (HB)	Insert Grade (Cutting Speed Vc: m/min)	fz (mm/t)		Remarks
			PVD Coated Carbide	Insert Thickness (mm)		
			PR0725	3.5~4.0	4.5~6.0	
Low Carbon Steel	St42-2 C10E~C25	125	170-210	0.07-0.20	0.10-0.22	Dry
Carbon Steel	C30~C60 (Annealed)	190	100-140	0.07-0.20	0.10-0.22	
	C30~C60 (Heat treated)	250	90-120	0.07-0.20	0.10-0.22	
Alloy Steel	34CrMo4 (Annealed)	180	90-120	0.07-0.20	0.10-0.22	
	34CrMo4 (Heat treated)	275	80-110	0.05-0.18	0.08-0.20	
High Carbon Carbide	X40CrMoV51, etc.	280	70-90	0.05-0.18	0.08-0.20	With coolant
Stainless Steel	X5CrNi1810, etc.	220	110-140	0.05-0.18	0.08-0.20	
	X10Cr13, etc.	300	100-120	0.05-0.18	0.08-0.20	
Heat-resistant Alloy	Inconel 718, etc.	350	15-30	0.05-0.18	0.08-0.20	
Titanium Alloy	TiAl6V4, etc.	270	20-50	0.05-0.18	0.08-0.20	
Gray Cast Iron	GG25~GG35	260	110-130	0.07-0.22	0.10-0.25	Dry
Nodular Cast Iron	GGG40~GGG50	160	80-100	0.07-0.22	0.10-0.25	
	GGG60~GGG80	250	70-90	0.07-0.22	0.10-0.25	

- Note) 1. Use down-cut cutting.
 2. If ap is under 1/10 of Cutter Dia.(ϕD), it is possible to increase feed per tooth(fz) 40%.



M



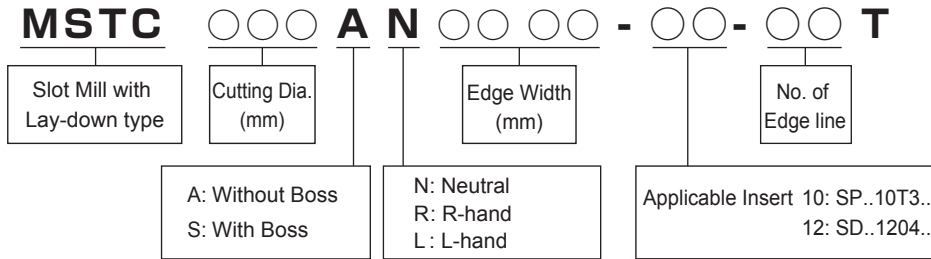
Milling

Slot Mill Lay-down type / Half Side Slot Mill

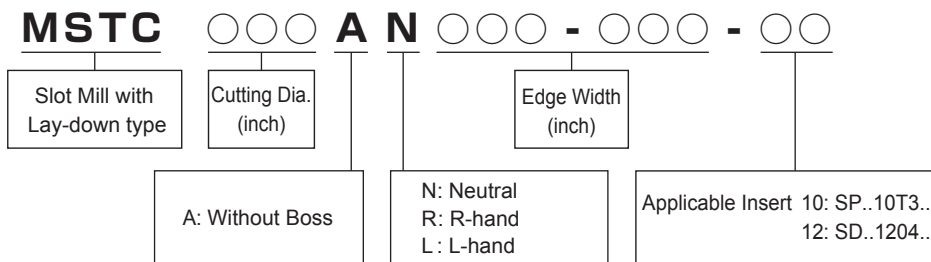
Identification System

MSTC Slot Mill

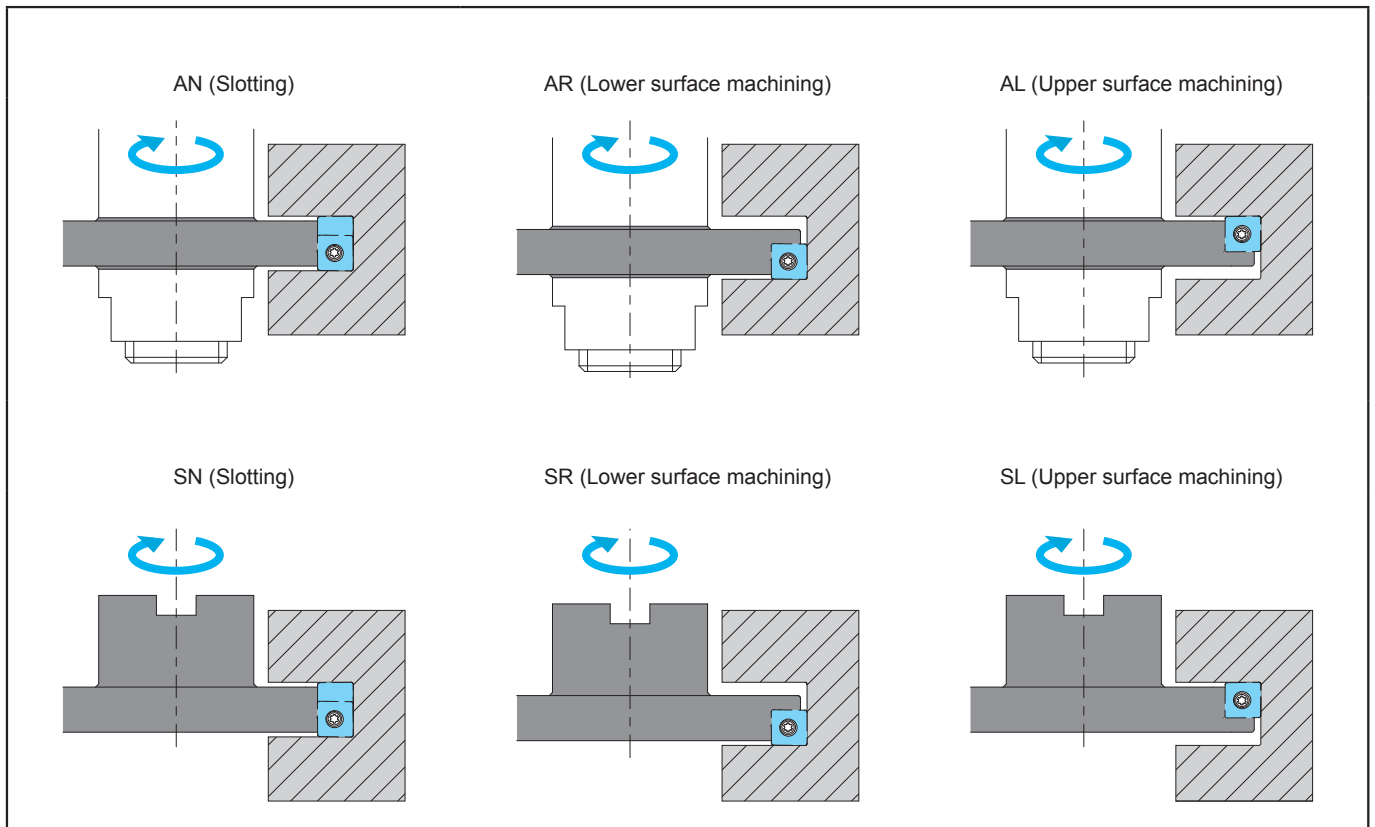
Metric



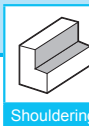
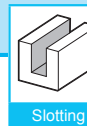
Inch spec



Cutting Direction of MSTC Slot Mill



Slot Mill Lay-down type

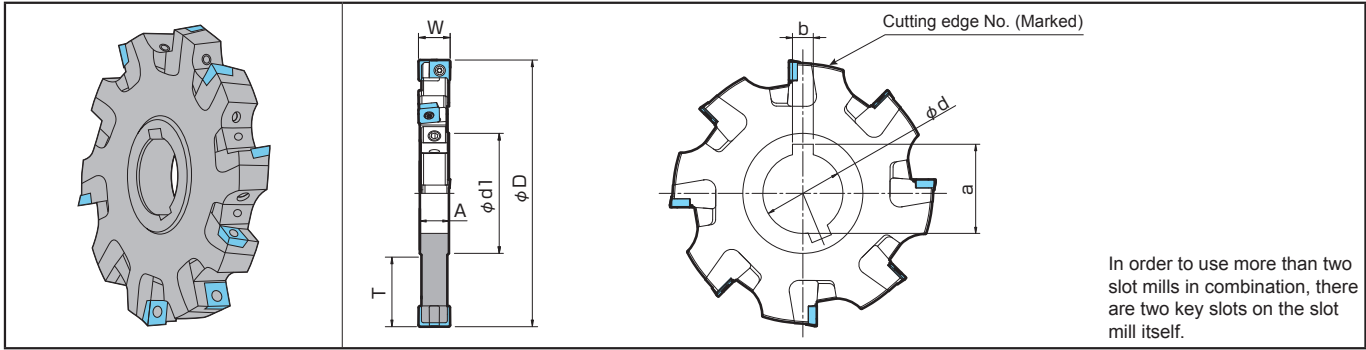


Slotting

Slotting

Shouldering

Without Boss



In order to use more than two slot mills in combination, there are two key slots on the slot mill itself.

● Toolholder Dimensions (Metric)

Description	Std.	Edge Width (mm)		Slot Depth T	No. of Inserts	No. of Edge Lines	Dimension (mm)						Weight (kg)	Max. Revolution (min ⁻¹)
		W	W				øD	ød (H7)	ød1	A	a	b		
MSTC 100AN1416-10-3T	●	14	16	25.9	6	3	100	32	46.8	13.9	34.8	8	0.5	17,250
MSTC 125AN1416-10-4T	●			34.4	8	4	125	40	54.8					
MSTC 160AN1416-10-5T	●			51.9	10	5	160							
MSTC 125AN1618-10-4T	●	16	18	34.4	8	4	125			15.9	43.5	10	1.0	15,450
MSTC 160AN1618-10-5T	●			51.9	10	5	160							
MSTC 125AN1820-12-4T	●	18	20.7	34	8	4	125	18.2	43.5					
MSTC 160AN1820-12-5T	●			51.5	10	5	160							
MSTC 125AN2123-12-4T	●	21	23.3	34	8	4	125			20.8	43.5	10	1.2	10,350
MSTC 160AN2123-12-5T	●			51.5	10	5	160							

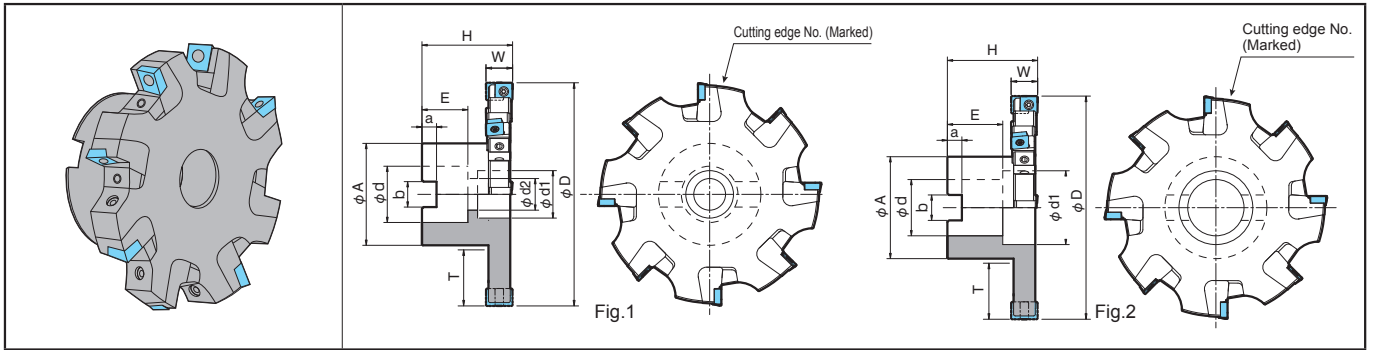
● Toolholder Dimensions (Inch spec)

Description	Std.	Edge Width (inch)		Slot Depth T (inch)	No. of Inserts	No. of Edge Lines	Dimension (inch)						Weight (kg)	Max. Revolution (min ⁻¹)
		W (min)	W (max)				øD	ød (H7)	ød1	A	a	b		
MSTC 400AN551-630-10	□	.551 (14.0mm)	.630 (16.0mm)	1.030 (26.1mm)	6	3	4.000 (101.6mm)	1.250 (31.75mm)	1.880 (47.75mm)	.545 (13.84mm)	.312 (7.92mm)	0.6	17,100	
MSTC 500AN551-630-10	□			1.345 (34.1mm)	8	4	5.000 (127.0mm)	1.500 (38.1mm)	2.250 (57.15mm)					
MSTC 600AN551-630-10	□			1.845 (46.8mm)	10	5	6.000 (152.4mm)							
MSTC 500AN630-709-10	□	.630 (16.0mm)	.709 (18.0mm)	1.345 (34.1mm)	8	4	5.000 (127.0mm)			1.500 (38.1mm)	2.250 (57.15mm)	.624 (15.85mm)	1.665 (42.3mm)	.375 (9.52mm)
MSTC 600AN630-709-10	□			1.845 (46.8mm)	10	5	6.000 (152.4mm)							
MSTC 500AN709-813-12	□	.709 (18.0mm)	.813 (20.6mm)	1.331 (33.8mm)	8	4	5.000 (127.0mm)	1.500 (38.1mm)	2.250 (57.15mm)					
MSTC 600AN709-813-12	□			1.831 (46.5mm)	10	5	6.000 (152.4mm)							
MSTC 500AN813-917-12	□	.813 (20.6mm)	.917 (23.2mm)	1.331 (33.8mm)	8	4	5.000 (127.0mm)			1.500 (38.1mm)	2.250 (57.15mm)	.820 (20.8mm)	1.665 (42.3mm)	.375 (9.52mm)
MSTC 600AN813-917-12	□			1.831 (46.5mm)	10	5	6.000 (152.4mm)							

● : Std. Item □ : Check Availability



With Boss



Toolholder Dimensions (Metric)

Description	Std.	Edge Width (mm)		Slot Depth (mm)	No. of Inserts	No. of Edge Lines	Dimension (mm)								Drawing	Weight (kg)	Max. Revolution (min ⁻¹)	
		W (min)	W (max)				φD	φd (H7)	φA	H (min)	E	a	b	φd1				φd2
MSTC 100SN1416-10-3T	●	14	16	24.4	6	3	100	27	48	50.8	24	7	12.4	20	14	Fig.1	1.0	17,250
	●			31.9	8	4	125	32	58		26	8	14.4	27	18			
	●			43.4	10	5	160	40	70		30	9	16.4	56	-			
MSTC 125SN1618-10-4T	●	16	18	31.9	8	4	125	32	58	50.8	26	8	14.4	27	18	Fig.1	1.7	15,450
	●			43.4	10	5	160	40	70		30	9	16.4	56	-			
MSTC 125SN1820-12-4T	●	18	20.7	31.9	8	4	125	32	58	51.0	26	8	14.4	27	18	Fig.1	1.6	10,350
	●			43.4	10	5	160	40	70		30	9	16.4	56	-			
MSTC 125SN2123-12-4T	●	20.7	23.3	31.9	8	4	125	32	58	51.0	26	8	14.4	27	18	Fig.1	1.7	10,350
	●			43.4	10	5	160	40	70		30	9	16.4	56	-			

Note) H(min) dimension shows in case of minimum of edge width.

Applicable Inserts (common to Inch spec / Metric)

Description	Edge No. (Marked)	Applicable Inserts See page M128-M129	
		With hand	Neutral
MSTC...AN...10.. MSTC...SN...10..	Odd Number	SP..10T3...R...	SP..10T3...N...
	Even Number	SP..10T3...L...	
MSTC...AN...12.. MSTC...SN...12..	Odd Number	SD..1204...R...	SD..1204...N...
	Even Number	SD..1204...L...	

* When installing handed inserts to slot mill above, the number of R-hand and L-hand inserts needs to match with the number of edge line.

For recommended cutting conditions, see page M130

Spare Parts (common to Inch spec / Metric)

• For spare parts, see page M126.

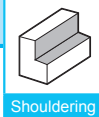
Slot width (edge width) adjustment

• See page M131~M132.

Applicable Arbor

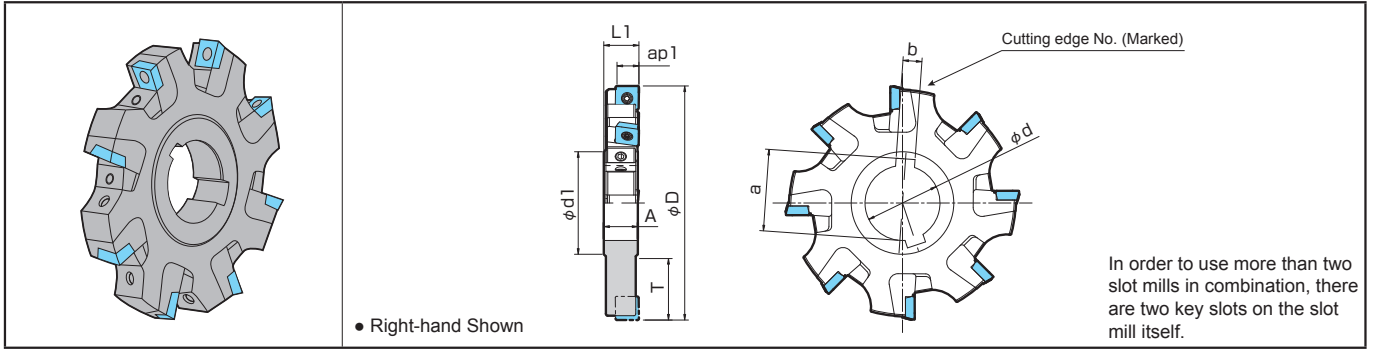
• See page M133.

Half Side Slot Mill



Shouldering

Without Boss (R-hand)



Toolholder Dimensions (Metric)

Description	Std.	No. of Inserts	Dimension (mm)										Weight (kg)	Max. Revolution (min ⁻¹)	
			øD	ød (H7)	ød1	A	L1		T	ap1 (max)	a	b			
MSTC 100AR1416-10-6T	●	6	100	32	46.8	13.9	13.9	14.9	25.9	9.1	34.8	8	0.5	17,250	
MSTC 125AR1416-10-8T	●	8	125	40	54.8				34.4						
MSTC 160AR1416-10-10T	●	10	160						51.9						
MSTC 125AR1618-10-8T	●	8	125	40	54.8	15.9	15.2	16.2	34.4	43.5	10	1.0	15,450		
MSTC 160AR1618-10-10T	●	10	160						51.9						
MSTC 125AR1820-12-8T	●	8	125	40	54.8	18.2	18.1	19.4	34.0					11.7	43.5
MSTC 160AR1820-12-10T	●	10	160						51.5						
MSTC 125AR2123-12-8T	●	8	125	40	54.8	20.8	20.7	22.0	34.0	11.7	43.5	10	1.2		
MSTC 160AR2123-12-10T	●	10	160						51.5						

Toolholder Dimensions (Inch spec)

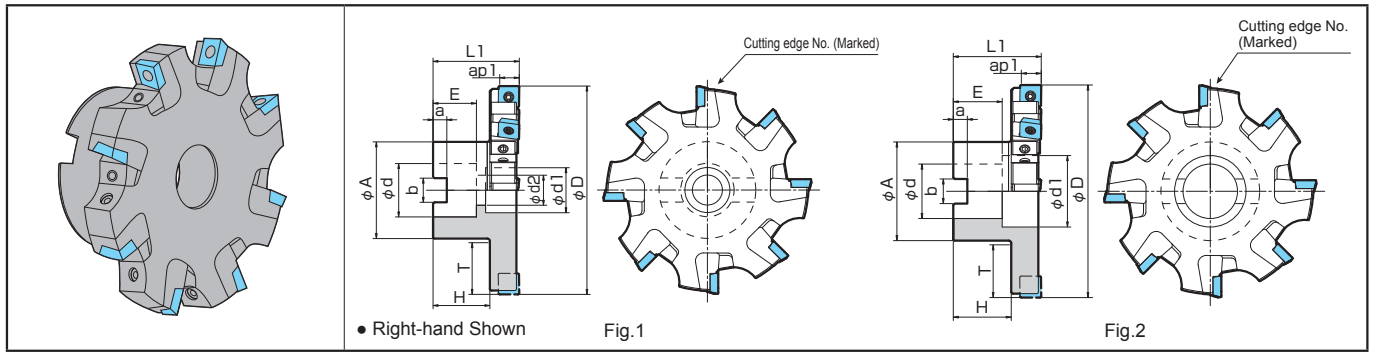
Description	Std.	No. of Inserts	Dimension (inch)										Weight (kg)	Max. Revolution (min ⁻¹)			
			øD	ød (H7)	ød1	A	L1		T	ap1 (max)	a	b					
MSTC 400AR551-630-10	□	6	4.000 (101.6mm)	1.250 (31.75mm)	1.880 (47.75mm)	.545 (13.84mm)	.548 (13.92mm)	.588 (14.94mm)	1.030 (26.1mm)	.359 (9.1mm)	1.386 (35.2mm)	.312 (7.92mm)	0.6	17,100			
MSTC 500AR551-630-10	□	8	5.000 (127.0mm)	1.500 (38.1mm)	2.250 (57.15mm)				.624 (15.85mm)						.627 (15.93mm)	.667 (16.94mm)	1.345 (34.1mm)
MSTC 600AR551-630-10	□	10	6.000 (152.4mm)						1.845 (46.8mm)								
MSTC 500AR630-709-10	□	8	5.000 (127.0mm)	1.500 (38.1mm)	2.250 (57.15mm)	.624 (15.85mm)	.627 (15.93mm)	.667 (16.94mm)	1.345 (34.1mm)	1.665 (42.3mm)	.375 (9.52mm)	1.1	15,300				
MSTC 600AR630-709-10	□	10	6.000 (152.4mm)						1.845 (46.8mm)								
MSTC 500AR709-813-12	□	8	5.000 (127.0mm)	1.500 (38.1mm)	2.250 (57.15mm)	.716 (18.2mm)	.712 (18.1mm)	.764 (19.4mm)	1.331 (33.8mm)					.461 (11.7mm)	1.665 (42.3mm)	.375 (9.52mm)	1.1
MSTC 600AR709-813-12	□	10	6.000 (152.4mm)						1.831 (46.5mm)								
MSTC 500AR813-917-12	□	8	5.000 (127.0mm)	1.500 (38.1mm)	2.250 (57.15mm)	.820 (20.8mm)	.816 (20.7mm)	.868 (22.04mm)	1.331 (33.8mm)	.461 (11.7mm)	1.665 (42.3mm)	.375 (9.52mm)	1.3				
MSTC 600AR813-917-12	□	10	6.000 (152.4mm)						1.831 (46.5mm)								

● : Std. Item □ : Check Availability



Milling

With Boss (R-hand)



Toolholder Dimensions (Metric)

Description	Std.	No. of Inserts	Dimension (mm)												Drawing	Weight (kg)	Max. Revolution (min ⁻¹)	
			φD	φd (H7)	φA	H	L1		T	ap1 (max)	E	a	b	φd1				φd2
MSTC 100SR1416-10-6T	●	6	100	27	48	37.7	50.8	51.8	24.4	9.1	24	7	12.4	20	14	Fig.1	1.0	17,250
MSTC 125SR1416-10-8T	●	8	125	32	58				31.9		26	8	14.4	27	18		1.6	15,450
MSTC 160SR1416-10-10T	●	10	160	40	70				43.4		30	9	16.4	56	-		2.0	13,650
MSTC 125SR1618-10-8T	●	8	125	32	58	35.7	51.0	52.3	31.9	11.7	26	8	14.4	27	18	Fig.1	1.7	15,450
MSTC 160SR1618-10-10T	●	10	160	40	70				43.4		30	9	16.4	56	-	Fig.2	2.3	13,650
MSTC 125SR1820-12-8T	●	8	125	32	58	34.0	51.0	52.3	31.9	11.7	26	8	14.4	27	18	Fig.1	1.6	10,350
MSTC 160SR1820-12-10T	●	10	160	40	70				43.4		30	9	16.4	56	-	Fig.2	2.3	9,150
MSTC 125SR2123-12-8T	●	8	125	32	58	31.4	51.0	52.3	31.9	11.7	26	8	14.4	27	18	Fig.1	1.7	10,350
MSTC 160SR2123-12-10T	●	10	160	40	70				43.4		30	9	16.4	56	-	Fig.2	2.6	9,150

Applicable Inserts (common to Inch spec / Metric)

Description	Applicable Inserts See page M128-M129	
	With hand	Neutral
MSTC...AR...10.. MSTC...SR...10..	SP..10T3...R...	SP..10T3...N...
MSTC...AR...12.. MSTC...SR...12..	SD..1204...R...	SD..1204...N...

For recommended cutting conditions, see page M130

Spare Parts (common to Inch spec / Metric)

• For spare parts, see page M127.

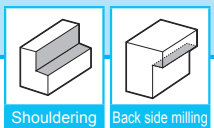
Slot width (edge width) adjustment

• See page M131-M132.

Applicable Arbor

• See page M133.

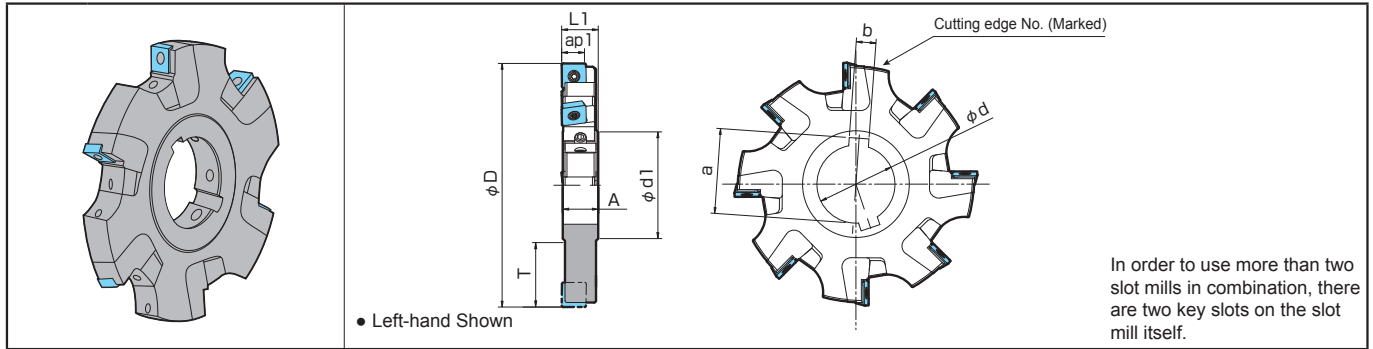
Half Side Slot Mill



Shouldering

Back side milling

Without Boss (L-hand)



In order to use more than two slot mills in combination, there are two key slots on the slot mill itself.

Toolholder Dimensions (Metric)

Description	Std.	No. of Inserts	Dimension (mm)										Weight (kg)	Max. Revolution (min ⁻¹)
			ϕD	ϕd (H7)	$\phi d1$	A	L1		T	ap1 (max)	a	b		
							(min)	(max)						
MSTC 100AL1416-10-6T	●	6	100	32	46.8				25.9	9.1	34.8	8	0.5	17,250
125AL1416-10-8T	●	8	125	40	54.8	13.9	13.9	14.9	34.4				0.8	15,450
160AL1416-10-10T	●	10	160			15.9	15.2	16.2	51.9				1.5	13,650
MSTC 125AL1618-10-8T	●	8	125			15.9	15.2	16.2	34.4	1.0	15,450			
160AL1618-10-10T	●	10	160	18.2	18.1	19.4	51.9	1.8	13,650					
MSTC 125AL1820-12-8T	●	8	125	40	54.8	18.2	18.1	19.4	34.0	11.7	43.5	10	1.0	10,350
160AL1820-12-10T	●	10	160						51.5				1.8	9,150
MSTC 125AL2123-12-8T	●	8	125						20.8				20.7	22.0
160AL2123-12-10T	●	10	160	51.5	2.1	9,150								

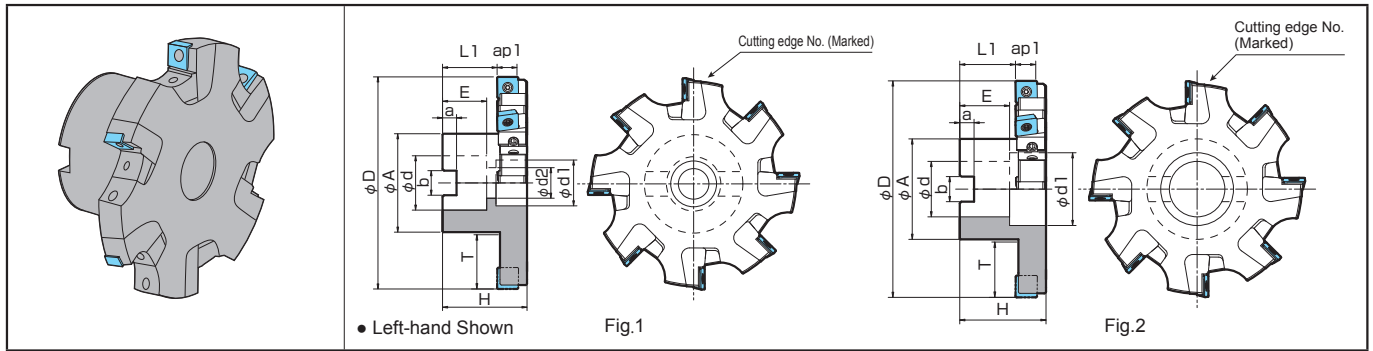
Toolholder Dimensions (Inch spec)

Description	Std.	No. of Inserts	Dimension (inch)										Weight (kg)	Max. Revolution (min ⁻¹)
			ϕD	ϕd (H7)	$\phi d1$	A	L1		T	ap1 (max)	a	b		
							(min)	(max)						
MSTC 400AL551-630-10	□	6	4.000 (101.6mm)	1.250 (31.75mm)	1.880 (47.75mm)				1.030 (26.1mm)	.359 (9.1mm)	1.386 (35.2mm)	.312 (7.92mm)	0.6	17,100
500AL551-630-10	□	8	5.000 (127.0mm)	1.500 (38.1mm)	2.250 (57.15mm)	.545 (13.84mm)	.548 (13.92mm)	.588 (14.94mm)	1.345 (34.1mm)				0.9	15,300
600AL551-630-10	□	10	6.000 (152.4mm)			.624 (15.85mm)	.627 (15.93mm)	.667 (16.94mm)	1.845 (46.8mm)				1.4	14,000
MSTC 500AL630-709-10	□	8	5.000 (127.0mm)			.624 (15.85mm)	.627 (15.93mm)	.667 (16.94mm)	1.345 (34.1mm)	1.1	15,300			
600AL630-709-10	□	10	6.000 (152.4mm)	1.845 (46.8mm)	1.665 (42.3mm)	.375 (9.52mm)	1.6	14,000						
MSTC 500AL709-813-12	□	8	5.000 (127.0mm)	1.500 (38.1mm)	2.250 (57.15mm)	.716 (18.2mm)	.712 (18.1mm)	.764 (19.4mm)	1.331 (33.8mm)	.461 (11.7mm)	1.665 (42.3mm)	.375 (9.52mm)	1.1	10,300
600AL709-813-12	□	10	6.000 (152.4mm)			.820 (20.8mm)	.816 (20.7mm)	.868 (22.04mm)	1.831 (46.5mm)				1.7	9,400
MSTC 500AL813-917-12	□	8	5.000 (127.0mm)			.820 (20.8mm)	.816 (20.7mm)	.868 (22.04mm)	1.331 (33.8mm)				1.3	10,300
600AL813-917-12	□	10	6.000 (152.4mm)	1.831 (46.5mm)	2.0	9,400								

● : Std. Item □ : Check Availability



With Boss (L-hand)



Toolholder Dimensions (Metric)

Description	Std.	No. of Inserts	Dimension (mm)												Drawing	Weight (kg)	Max. Revolution (min ⁻¹)	
			øD	ød (H7)	øA	H	L1		T	ap1 (max)	E	a	b	ød1				ød2
MSTC 100SL1416-10-6T	●	6	100	27	48	50	35.8	36.8	24.4	9.1	24	7	12.4	20	14	Fig.1	1.0	17,250
	●	8	125	32	58				31.9		26	8	14.4	27	18		1.6	15,450
	●	10	160	40	70				43.4		30	9	16.4	56	-	Fig.2	2.0	13,650
MSTC 125SL1618-10-8T	●	8	125	32	58		33.8	34.8	31.9	11.7	26	8	14.4	27	18	Fig.1	1.7	15,450
	●	10	160	40	70				43.4		30	9	16.4	56	-	Fig.2	2.3	13,650
MSTC 125SL1820-12-8T	●	8	125	32	58		31.7	33.0	31.9	11.7	26	8	14.4	27	18	Fig.1	1.6	10,350
	●	10	160	40	70				43.4		30	9	16.4	56	-	Fig.2	2.3	9,150
MSTC 125SL2123-12-8T	●	8	125	32	58		29.1	30.4	31.9	11.7	26	8	14.4	27	18	Fig.1	1.7	10,350
	●	10	160	40	70				43.4		30	9	16.4	56	-	Fig.2	2.6	9,150

Applicable Inserts (common to Inch spec / Metric)

Description	Applicable Inserts See page M128-M129	
	With hand	Neutral
MSTC...AL...10.. MSTC...SL...10..	SP..10T3...L...	SP..10T3...N...
MSTC...AL...12.. MSTC...SL...12..	SD..1204...L...	SD..1204...N...

For recommended cutting conditions, see page M130

Spare Parts (common to Inch spec / Metric)

- For spare parts, see page M127.

Slot width (edge width) adjustment

- See page M131-M132.


Applicable Arbor

- See page M133.



Slot Mill Lay-down type

Spare Parts (common to Inch spec / Metric)

Description		Spare Parts											
		Cartridge		Wedge	Wedge Screw	Cam Pin	Clamp Screw	Wrench			Anti-seize Compound	Mounting Bolt	
		R-hand	L-hand					for Wedge Screw	for Cam Pin	for Clamp Screw			
Without Boss	Metric	MSTC 100AN1416-10-3T	C90SP1416-10R	C90SP1416-10L	WC-14	W6 X 18	AP-1416	SE-3070TRP	TH-3L	LW-2.5	DTP-9	MP-1	-
		MSTC 125AN1416-10-4T				W6 X 20							
		MSTC 160AN1416-10-5T				W6 X 20							
		MSTC 125AN1618-10-4T	C90SP1618-10R	C90SP1618-10L	WC-16	W6 X 20							
		MSTC 160AN1618-10-5T				W6 X 20							
		MSTC 125AN1820-12-4T				C90SD1820-12R							
	MSTC 160AN1820-12-5T	W6 X 20											
	MSTC 125AN2123-12-4T	C90SD2023-12R	C90SD2023-12L	WC-20	W6 X 20								
	MSTC 160AN2123-12-5T				W6 X 20								
	MSTC 400AN551-630-10				C90SP1416-10R	C90SP1416-10L	WC-14	W6 X 18					
	MSTC 500AN551-630-10	W6 X 20											
	MSTC 600AN551-630-10	W6 X 20											
Inch spec	MSTC 500AN630-709-10	C90SP1618-10R	C90SP1618-10L	WC-16	W6 X 20	AP-1820	SB-3590TRP	TH-3L	LW-3	DTP-15			
	MSTC 600AN630-709-10				W6 X 20								
	MSTC 500AN709-813-12				W6 X 20								
	MSTC 600AN709-813-12	W6 X 20											
	MSTC 500AN813-917-12	C90SD2023-12R	C90SD2023-12L	WC-20	W6 X 20								
	MSTC 600AN813-917-12				W6 X 20								
With Boss	Metric	MSTC 100SN1416-10-3T	C90SP1416-10R	C90SP1416-10L	WC-14	W6 X 20	AP-1416	SE-3070TRP	TH-3L	LW-2.5	DTP-9	MP-1	HH12 X 35
		MSTC 125SN1416-10-4T				W6 X 20							HH16 X 35
		MSTC 160SN1416-10-5T				W6 X 20							-
		MSTC 125SN1618-10-4T	C90SP1618-10R	C90SP1618-10L	WC-16	W6 X 20							HH16 X 35
		MSTC 160SN1618-10-5T				W6 X 20							-
		MSTC 125SN1820-12-4T				C90SD1820-12R							C90SD1820-12L
		MSTC 160SN1820-12-5T	W6 X 20	-									
		MSTC 125SN2123-12-4T	C90SD2023-12R	C90SD2023-12L	WC-20		W6 X 20	HH16 X 35					
		MSTC 160SN2123-12-5T				W6 X 20	-						

 Coat anti-seize compound (MP-1) thinly on clamp screw when insert is fixed.

Tightening Torque

Wrench	TH-3L	DTP-9	DTP-15
			
Tightening Torque (Nm)	5-6	1.5	4

M

Milling

Half Side Slot Mill

Spare Parts (common to Inch spec / Metric)

Description		Spare Parts													
		Cartridge		Wedge	Wedge Screw	Cam Pin	Clamp Screw	Wrench			Anti-seize Compound	Mounting Bolt			
		R-hand	L-hand					for Wedge Screw	for Cam Pin	for Clamp Screw					
Without Boss	Metric	MSTC 100AR1416-10-6T 125AR1416-10-8T 160AR1416-10-10T	C90SP1416-10R	-	WC-14	W6 X 18 W6 X 20	AP-1416	SE-3070TRP	TH-3L	LW-2.5	DTP-9	MP-1	-		
		MSTC 125AR1618-10-8T 160AR1618-10-10T	C90SP1618-10R	-	WC-16	W6 X 20									
		MSTC 125AR1820-12-8T 160AR1820-12-10T	C90SD1820-12R	-	WC-18	W6 X 20	AP-1820	SB-3590TRP			LW-3			DTP-15	
		MSTC 125AR2123-12-8T 160AR2123-12-10T	C90SD2023-12R	-	WC-20										
		MSTC 100AL1416-10-6T 125AL1416-10-8T 160AL1416-10-10T	C90SP1416-10L	-	WC-14	W6 X 18 W6 X 20	AP-1416	SE-3070TRP			LW-2.5			DTP-9	
		MSTC 125AL1618-10-8T 160AL1618-10-10T	C90SP1618-10L	-	WC-16	W6 X 20									
		MSTC 125AL1820-12-8T 160AL1820-12-10T	C90SD1820-12L	-	WC-18	W6 X 20	AP-1820	SB-3590TRP			LW-3			DTP-15	
		MSTC 125AL2123-12-8T 160AL2123-12-10T	C90SD2023-12L	-	WC-20										
		MSTC 400AR551-630-10 500AR551-630-10 600AR551-630-10	C90SP1416-10R	-	WC-14	W6 X 18 W6 X 20	AP-1416	SE-3070TRP			LW-2.5			DTP-9	
		MSTC 500AR630-709-10 600AR630-709-10	C90SP1618-10R	-	WC-16	W6 X 20									
	MSTC 500AR709-813-12 600AR709-813-12	C90SD1820-12R	-	WC-18	W6 X 20	AP-1820	SB-3590TRP		LW-3	DTP-15					
	MSTC 500AR813-917-12 600AR813-917-12	C90SD2023-12R	-	WC-20											
	MSTC 400AL551-630-10 500AL551-630-10 600AL551-630-10	C90SP1416-10L	-	WC-14	W6 X 18 W6 X 20	AP-1416	SE-3070TRP		LW-2.5	DTP-9					
	MSTC 500AL630-709-10 600AL630-709-10	C90SP1618-10L	-	WC-16	W6 X 20										
	MSTC 500AL709-813-12 600AL709-813-12	C90SD1820-12L	-	WC-18	W6 X 20	AP-1820	SB-3590TRP		LW-3	DTP-15					
	MSTC 500AL813-917-12 600AL813-917-12	C90SD2023-12L	-	WC-20											
	With Boss	Metric	MSTC 100SR1416-10-6T 125SR1416-10-8T 160SR1416-10-10T	C90SP1416-10R	-	WC-14	W6 X 20	AP-1416	SE-3070TRP	TH-3L	LW-2.5	DTP-9	MP-1	HH12 X 35	
			MSTC 125SR1618-10-8T 160SR1618-10-10T	C90SP1618-10R	-	WC-16								HH16 X 35	
			MSTC 125SR1820-12-8T 160SR1820-12-10T	C90SD1820-12R	-	WC-18	W6 X 20	AP-1820	SB-3590TRP			LW-3		DTP-15	HH16 X 35
			MSTC 125SR2123-12-8T 160SR2123-12-10T	C90SD2023-12R	-	WC-20									HH16 X 35
MSTC 100SL1416-10-6T 125SL1416-10-8T 160SL1416-10-10T			C90SP1416-10L	-	WC-14	W6 X 20	AP-1416	SE-3070TRP			LW-2.5	DTP-9		HH12 X 35	
MSTC 125SL1618-10-8T 160SL1618-10-10T			C90SP1618-10L	-	WC-16									HH16 X 35	
MSTC 125SL1820-12-8T 160SL1820-12-10T			C90SD1820-12L	-	WC-18	W6 X 20	AP-1820	SB-3590TRP			LW-3	DTP-15		HH16 X 35	
MSTC 125SL2123-12-8T 160SL2123-12-10T			C90SD2023-12L	-	WC-20									HH16 X 35	

Coat anti-seize compound (MP-1) thinly on clamp screw when insert is fixed.

Tightening Torque

Wrench	TH-3L	DTP-9	DTP-15
Tightening Torque (Nm)	5-6	1.5	4



Slot Mill Lay-down type / Half Side Slot Mill

Inserts Identification System

Symbol	Hand	Symbol	Tolerance				Symbol	Corner-R	Symbol	Hand
S	Square	C	Corner Height	Thickness	I.C. Size		16	1.6mm	N	Neutral
		E	±0.013mm	±0.025mm	±0.025mm		12	1.2mm	L	L-hand
① Shape		③ Tolerance			⑤ Edge Length	⑦ Corner R(rε)		⑨ Hand		
② Relief Angle		④ Hole / Chipbreaker			⑥ Thickness		⑧ Edge Prep.		⑩ Chipbreaker	
Symbol	Relief Angle	Symbol	Shape			Symbol	Thickness	Symbol	Cutting Edge Spec.	
D	15°	T	 1 edge chipbreaker, with hole			T3	3.97mm	E	Honing	
P	11°					04	4.76mm	F	Sharp Edge	
						S	Chamfer + R-honed		SB	5°
								SD	15°	
								SE	20°	

SP..10T3

Applicable Inserts (mm)

Description	A	T	φd	α
SP..10T3	10.0	3.97	3.4	11°

Classification of usage ● : 1st Choice ○ : 2nd Choice	P	Carbon Steel / Alloy Steel	●	●		
	M	Stainless Steel	○	●		
	K	Cast Iron	○	●		
	N	Non-ferrous Metals			●	
	S	Heat-resistant alloy			●	
		Titanium Alloy			●	○

Insert	Description	No. of Edges	Dimension (mm)		CVD Coated Carbide			PVD Coated Carbide		
			rε	Z (Wiper Edge)	CA0835	PR0725	PR0110			
 Handed Insert shows Right-hand	SPCT 10T316EN-SD	4	1.6	-			●			
 With Wiper Edge	SPCT 10T308E ^{F/L} -SD 10T312E ^{F/L} -SD		0.8	2.5			●			
 Sharp Edge	SPCT 10T316FN-SE		1.2	1.8			●			
 Sharp Edge / With Wiper Edge	SPCT 10T308F ^{F/L} -SE 10T312F ^{F/L} -SE		1.6	-					●	
 Sharp Edge / With Wiper Edge	SPCT 10T308F ^{F/L} -SE 10T312F ^{F/L} -SE		0.8	2.7					●	
 With Wiper Edge	SPET 10T308E ^{F/L} -SB		1.2	2.2					●	
 With Wiper Edge Tough Edge	SPET 10T308S ^{F/L} -SB		0.8	2.7	●	●				

Inserts are sold in 10 piece boxes.

● : Std. Item □ : Check Availability

SD..1204

Applicable Inserts

Description	A	T	ød	α
SD..1204	12.7	4.76	4.4	15°

Classification of usage ● : 1st Choice ○ : 2nd Choice	P	Carbon Steel / Alloy Steel	●	●	
	M	Stainless Steel	○	●	
	K	Cast Iron	○	●	
	N	Non-ferrous Metals			●
	S	Heat-resistant alloy Titanium Alloy		●	○

Insert Handed Insert shows Right-hand	Description	No. of Edges	Dimension (mm)		CVD Coated Carbide CA0835	PVD Coated Carbide	
			rε	Z (Wiper Edge)		PR0725	PR0110
	SDCT 120416EN-SD	4	1.6	-		●	
	SDCT 120408E ^{R/L} -SD		0.8	2.5		●	
	SDCT 120412E ^{R/L} -SD		1.2	1.8		●	
	SDCT 120416FN-SE		1.6	-			●
	SDCT 120408F ^{R/L} -SE		0.8	2.7			●
	SDCT 120412F ^{R/L} -SE		1.2	1.9			●
	SDET 120408E ^{R/L} -SB		0.8	2.5	●	●	
	SDET 120412E ^{R/L} -SB		1.2	1.8	●	●	
	SDET 120416SN-SB	1.6	-	●	●		
	SDET 120408S ^{R/L} -SB	0.8	2.5	●	●		

Features of Insert Grades

CA0835

- TiN+TiCN+Al₂O₃ based CVD Coated Carbide
- For carbon steel, alloy steel, stainless steel and nodular cast iron.
- For middle to high speed cutting

PR0725

- TiN+TiCN+TiN based Multi-layer PVD Coated Carbide
- For carbon steel, alloy steel, stainless steel, heat resistant alloy and nodular cast iron.
- For middle speed cutting

PR0110

- TiB₂ based PVD Coated Carbide
- For non ferrous metals such as aluminum alloy (Si<10%) and titanium alloy
- For high speed cutting

● : Std. Item □ : Check Availability

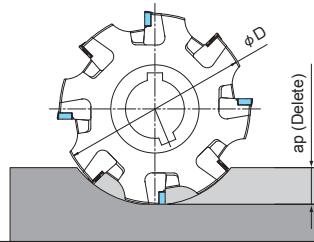
Inserts are sold in 10 piece boxes.

Slot Mill Lay-down type / Half Side Slot Mill

◆ Recommended Cutting Conditions (For CA0835 / PR0725)

Workpiece Material		Hardness (HB)	Insert Grade (Cutting Speed Vc: m/min)		fz (mm/t)			Remarks
			CVD Coated Carbide	PVD Coated Carbide	Chipbreaker			
			CA0835	PR0725	EN-SD ER-SD EL-SD	ER-SB EL-SB	SN-SB SR-SB SL-SB	
Low Carbon Steel	St42-2 C10E~C25	125	250-310	170-210	0.07-0.20	0.10-0.22	0.15-0.3	Dry
Carbon Steel	C30~C60 (Annealed)	190	160-190	100-140	0.07-0.20	0.10-0.22	0.15-0.3	
	C30~C60 (Heat treated)	250	140-180	90-120	0.07-0.20	0.10-0.22	0.15-0.3	
Alloy Steel	34CrMo4 (Annealed)	180	140-180	90-120	0.07-0.20	0.10-0.22	0.15-0.3	
	34CrMo4 (Heat treated)	275	120-160	80-110	0.05-0.18	0.08-0.20	0.12-0.25	
High Carbon Carbide	X40CrMoV51, etc.	280	110-130	70-90	0.05-0.18	0.08-0.20	0.12-0.25	
Stainless Steel	X5CrNi1810, etc.	220	160-200	110-140	0.05-0.18	0.08-0.20	0.12-0.25	Coolant
	X10Cr13, etc.	300	150-180	100-120	0.05-0.18	0.08-0.20	0.12-0.25	
Heat-resistant Alloy	Inconel 718, etc.	350	-	15-30	0.05-0.18	0.08-0.20	0.12-0.25	
Titanium Alloy	Ti-6Al-4V, etc.	270	-	20-50	0.05-0.18	0.08-0.20	0.12-0.25	
Gray Cast Iron	GG25~GG35	260	160-200	110-130	0.07-0.22	0.10-0.25	0.15-0.35	Dry
Nodular Cast Iron	GGG40~GGG50	160	130-160	80-100	0.07-0.22	0.10-0.25	0.15-0.35	
	GGG60~GGG80	250	110-140	70-90	0.07-0.22	0.10-0.25	0.15-0.35	

- Note) 1. Use down-cut machining.
2. If ap is under 1/10 of Cutter Dia.(ϕD), it is possible to increase feed per tooth(fz) 40%.



M



Milling

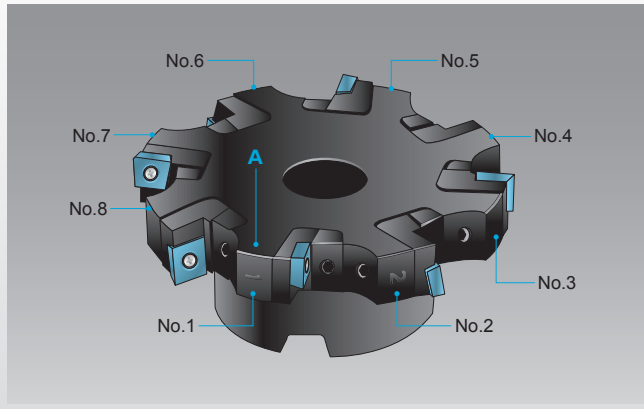
◆ Recommended Cutting Conditions (For PR0110)

Workpiece Material		Hardness (HB)	Insert Grade (Cutting Speed Vc: m/min)		fz (mm/t)		Remarks
			PVD Coated Carbide		Chipbreaker		
			PR0110		FN-SE FR-SE FL-SE		
Non-ferrous Metals	AlZnMgCu1.5, G-AISI7Mg	-	750-950		0.07-0.20		Coolant

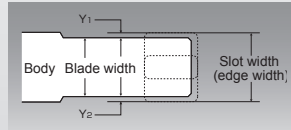
- Note) 1. Use down-cut machining.
2. If ap is under 1/10 of Cutter Dia.(ϕD), it is possible to increase feed per tooth(fz) 40%.

Slot width (edge width) adjustment of MSTC slot mills

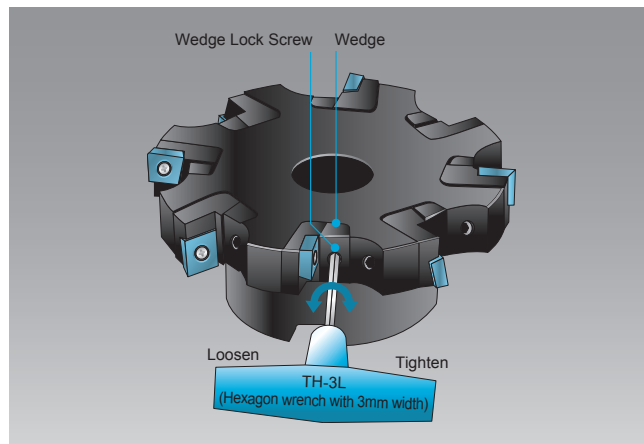
Slot width (edge width) measurement



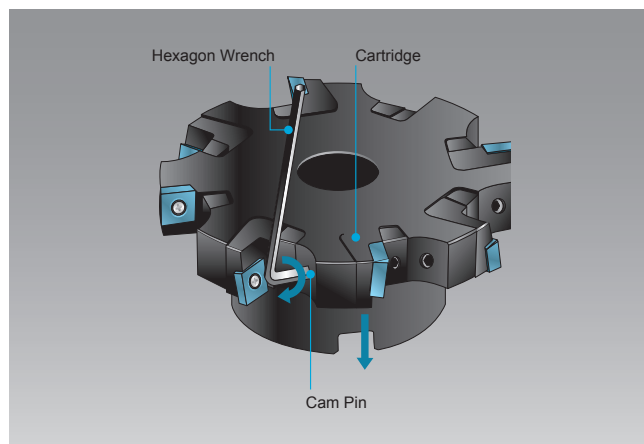
- 1) Please check slot mill edge location number.
(The edge location number is marked on the slot mill body.)
- 2) Set up the slot mill on length measuring equipment such as tool presettlers.
- 3) Place the point A of the slot mill body near the position No. 1 to "0 (zero)" of the length measuring equipment.
- 4) Move the length measuring equipment to the insert corner part and measure the step (Y1) between the point A and the insert No. 1.
- 5) Likewise, measure the step between the slot mill body and the insert, and you will obtain the slot width (edge width).



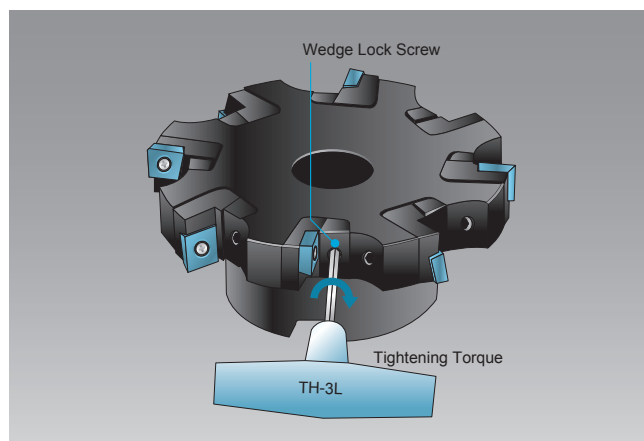
In the case of changing the slot width (edge width)



- 1) Set up the slot mill on length measuring equipment such as tool presettlers.
- 2) Insert a 3mm Hexagon wrench (TH-3L) into the wedge screw.
- 3) Turn TH-3L counterclockwise to loosen the Wedge.
- 4) Turn TH-3L clockwise by the torque of 1 Nm to tighten the wedge lightly and make the wedge contact the cartridge and the slot mill body. In doing so, some resistance occurs against the cartridge.

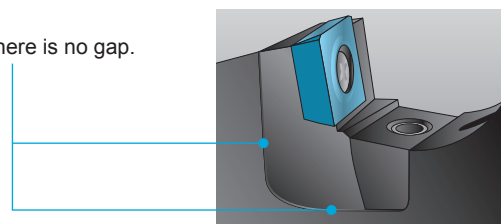


- 5) Insert a Hexagon wrench (LW-2.5 or LW-3) into the Cam Pin on the back of the cartridge.
- 6) Turn the wrench and adjust the position of the Cartridge.
- 7) To secure the adjustment, back-turn the Cam Pin and make sure that it does not touch the groove surface of the back of the Cartridge.
- 8) Remove the Hexagon wrench from the Cam Pin.



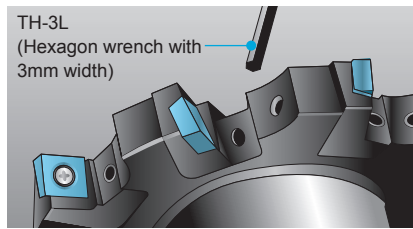
- 9) Insert TH-3L into the Wedge Screw.
- 10) Tighten the Wedge Screw by the torque of 5-6Nm.
(Use a torque wrench to get the correct torque.)
- 11) Make sure there is no gap between the Cartridge and the Slot Mill body.

Make sure there is no gap.

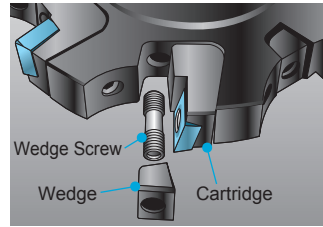
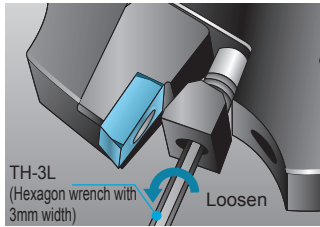


Replacement of the Cartridge

Follow the instructions below to replace the Cartridge.

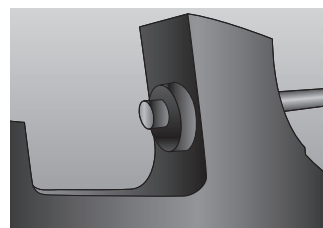
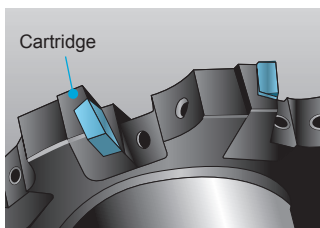


1) Insert Hexagon wrench with 3mm width (TH-3L) into the Wedge Screw.

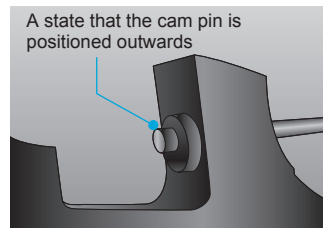
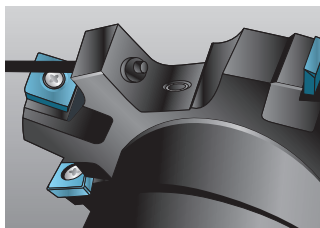


2) Loosen the Wedge Screw.

3) Remove the Wedge Screw and Wedge.

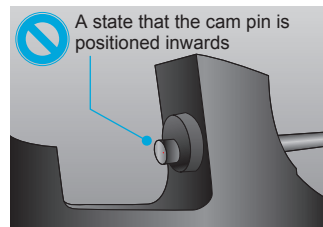


4) Remove the Cartridge.

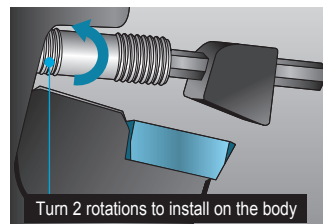
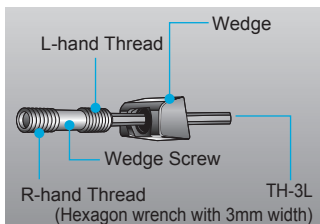


5) Before replacing the Cartridge, make sure that the Cam Pin is positioned radially-outwards.

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6) If the Cam Pin is in the position shown in the left diagram, assembling the Cartridge is not possible.

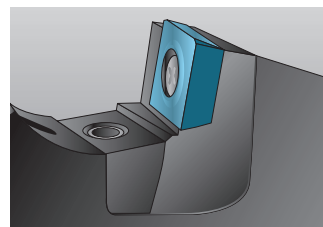


7) Place the wedge so that its larger slant surface faces toward the Cartridge.

8) Turn the Wedge Screw two times to install the Wedge to the body.

9) When installing the Wedge Screw to the body, keep the Wedge from rotating and screw it in.

10) Tighten the Wedge Screw by the torque of 5-6Nm. Keep the Screw head and the Wedge even (prevent either of those from sticking out)



Slot Mill Applicable Arbor

BT Shank

Shape	Ref. Page	Toolholder	Bore Dia. (ød)	BT Shank				
				BIG	MST	NIKKEN	NT TOOL	SHOWA
Without Boss	M110	MSTA 63N..	16			BT00-SCA16..	BT00-SCA16..	
		80N..	16			BT00-SCA16..	BT00-SCA16..	
		100N..	22			BT00-SCA22..	BT00-SCA22..	
		125N..	32			BT00-SCA32..	BT00-SCA32..	
		160N..	40			BT00-SCA40..	BT00-SCA40..	
	M111	MSTA 02N..	.625 (15.875)			BT00-SCA15.875..	BT00-SCA15.875..	BT00-SCA15.875..
		03N..	.625 (15.875)			BT00-SCA15.875..	BT00-SCA15.875..	BT00-SCA15.875..
		04N..	1.000 (25.4)	BT00-SCA25.4..	BT00-SCA25.4..	BT00-SCA25.4..	BT00-SCA25.4..	BT00-SCA25.4..
		05N..	1.250 (31.75)	BT00-SCA31.75..	BT00-SCA31.75..	BT00-SCA31.75..	BT00-SCA31.75..	BT00-SCA31.75..
		06N..	1.250 (31.75)	BT00-SCA31.75..	BT00-SCA31.75..	BT00-SCA31.75..	BT00-SCA31.75..	BT00-SCA31.75..
	M114	MSTB 80AN..	27			BT00-SCA27..	BT00-SCA27..	
		100AN..	32			BT00-SCA32..	BT00-SCA32..	
		125AN..	40			BT00-SCA40..	BT00-SCA40..	
		160AN..	40			BT00-SCA40..	BT00-SCA40..	
		MSTB 3000AN..	1.000 (25.4)	BT00-SCA25.4..	BT00-SCA25.4..	BT00-SCA25.4..	BT00-SCA25.4..	BT00-SCA25.4..
		4000AN..	1.250 (31.75)	BT00-SCA31.75..	BT00-SCA31.75..	BT00-SCA31.75..	BT00-SCA31.75..	BT00-SCA31.75..
		5000AN..	1.250 (31.75)	BT00-SCA31.75..	BT00-SCA31.75..	BT00-SCA31.75..	BT00-SCA31.75..	BT00-SCA31.75..
	M120 M122 M124	MSTC 100A0..	32			BT00-SCA32..	BT00-SCA32..	
		125A0..	40			BT00-SCA40..	BT00-SCA40..	
		160A0..	40			BT00-SCA40..	BT00-SCA40..	
		MSTC 400A0..	1.250 (31.75)	BT00-SCA31.75..	BT00-SCA31.75..	BT00-SCA31.75..	BT00-SCA31.75..	BT00-SCA31.75..
		500A0..	1.500 (38.1)	BT00-SCA38.1..		BT00-SCA38.1..	BT00-SCA38.1..	BT00-SCA38.1..
		600A0..	1.500 (38.1)	BT00-SCA38.1..		BT00-SCA38.1..	BT00-SCA38.1..	BT00-SCA38.1..
With Boss	M115	MSTB 80SN..	22	BBT00-FMC22..		BT00-FMC22..	BT00-FMC22..	BT00-FMC22..
		100SN..	27	BBT00-FMC27..		BT00-FMC27..	BT00-FMC27..	BT00-FMC27..
		125SN..	40	BBT00-FMB40..		BT00-FMB40..	BT00-FMB40..	BT00-FMB40..
		160SN..	40	BBT00-FMB40..		BT00-FMB40..	BT00-FMB40..	BT00-FMB40..
	M121 M123 M124 M125	MSTC 100S0..	27	BBT00-FMC27..		BT00-FMC27..	BT00-FMC27..	BT00-FMC27..
		125S0..	32	BBT00-FMC32..		BT00-FMC32..	BT00-FMC32..	BT00-FMC32..
		160S0..	40	BBT00-FMB40..		BT00-FMB40..	BT00-FMB40..	BT00-FMB40..

Straight Shank

Shape	Ref. Page	Toolholder	Bore Dia. (ød)	Straight Shank				
				BIG	MST	NIKKEN	NT TOOL	SHOWA
Without Boss	M110	MSTA 63N..	16					
		80N..	16					
		100N..	22					
		125N..	32					
		160N..	40					
	M111	MSTA 02N..	.625 (15.875)					ST00-SCA15.875..
		03N..	.625 (15.875)					ST00-SCA15.875..
		04N..	1.000 (25.4)		S00-SCA25.4..	K00-SCA25.4..		ST00-SCA25.4..
		05N..	1.250 (31.75)					ST00-SCA31.75..
		06N..	1.250 (31.75)					ST00-SCA31.75..
	M114	MSTB 80AN..	27					
		100AN..	32					
		125AN..	40					
		160AN..	40					
		MSTB 3000AN..	1.000 (25.4)		S00-SCA25.4..	K00-SCA25.4..		ST00-SCA25.4..
		4000AN..	1.250 (31.75)					ST00-SCA31.75..
		5000AN..	1.250 (31.75)					ST00-SCA31.75..
	M120 M122 M124	MSTC 100A0..	32					
		125A0..	40					
		160A0..	40					
		MSTC 400A0..	1.250 (31.75)					ST00-SCA31.75..
		500A0..	1.500 (38.1)					ST00-SCA38.1..
		600A0..	1.500 (38.1)					ST00-SCA38.1..

This table is created, based on companies' catalogues and publications, and not officially approved by those companies.

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Milling