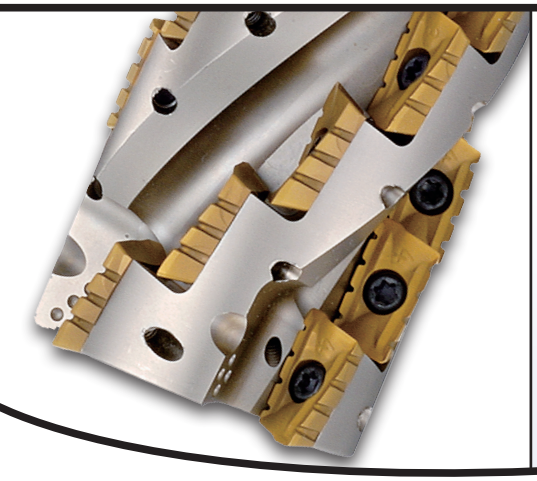
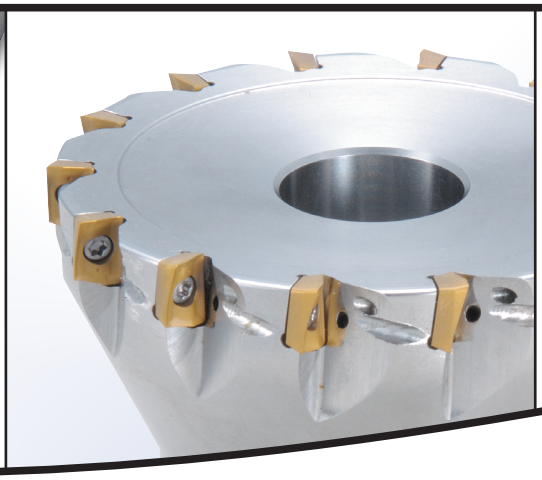
THE NEW VALUE FRONTIER

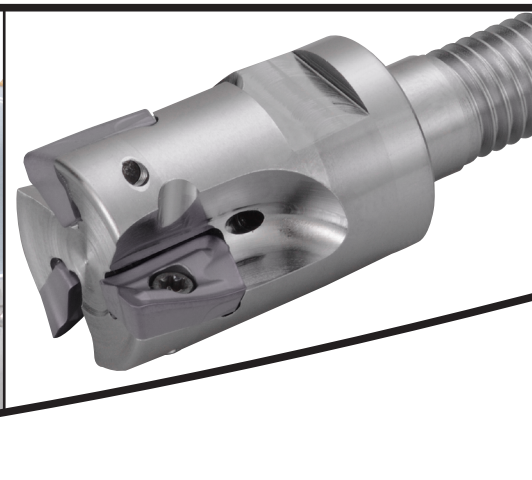
KYOCERA

MEC Series

High efficient end mill and face mill series

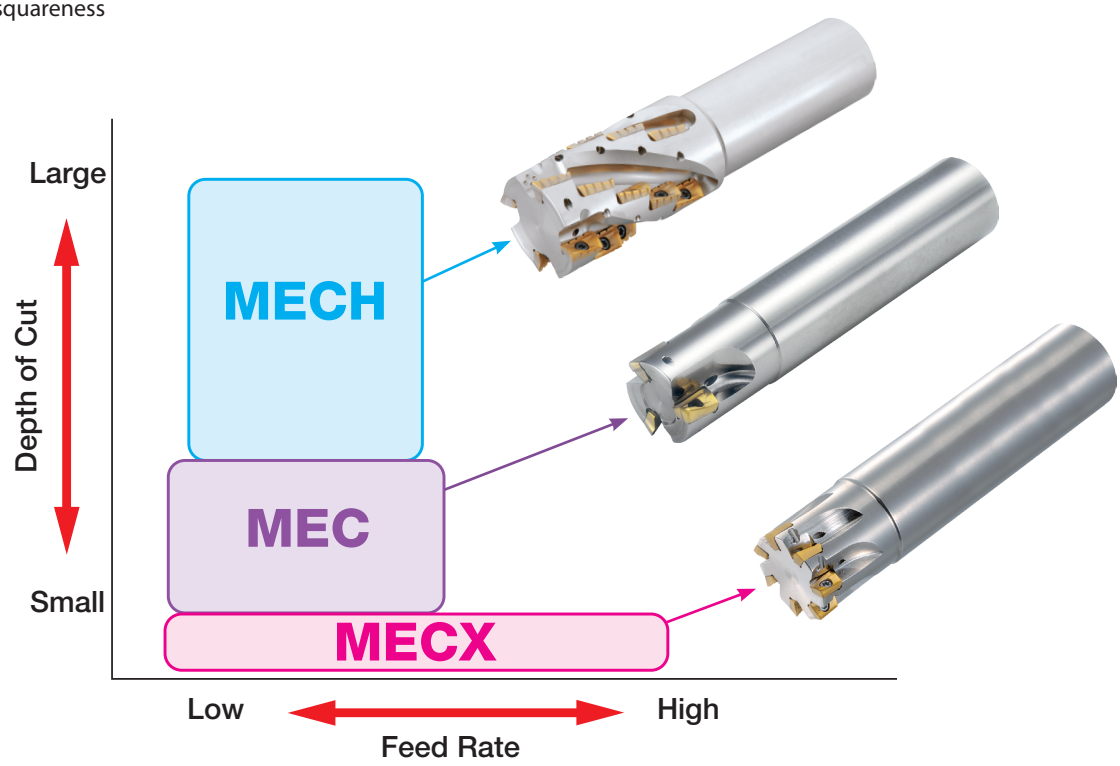






High efficient milling tools

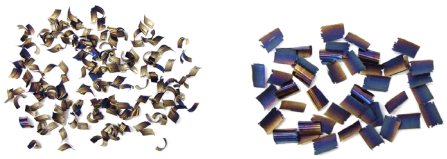
- Long tool life with MEGACOAT
- High quality surface
- High squareness



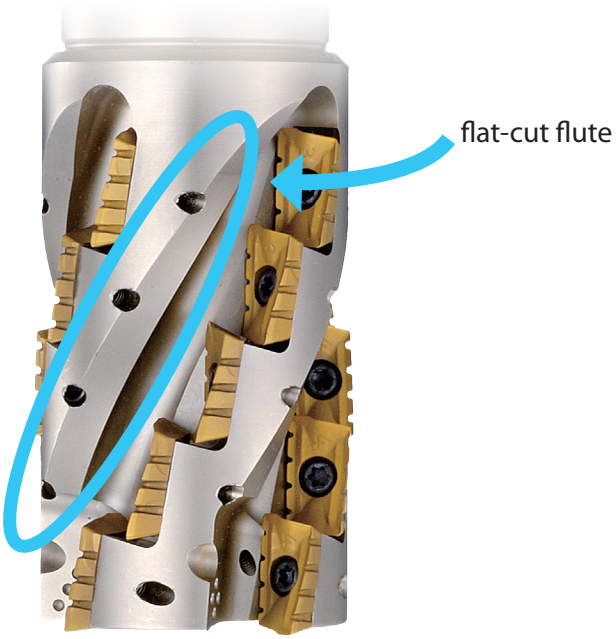
MECH

for heavy milling

Notched insert breaks chips into small pieces and the flat-cut flute provides excellent chip evacuation. The notched insert lowers also cutting foce and reduces chattering.



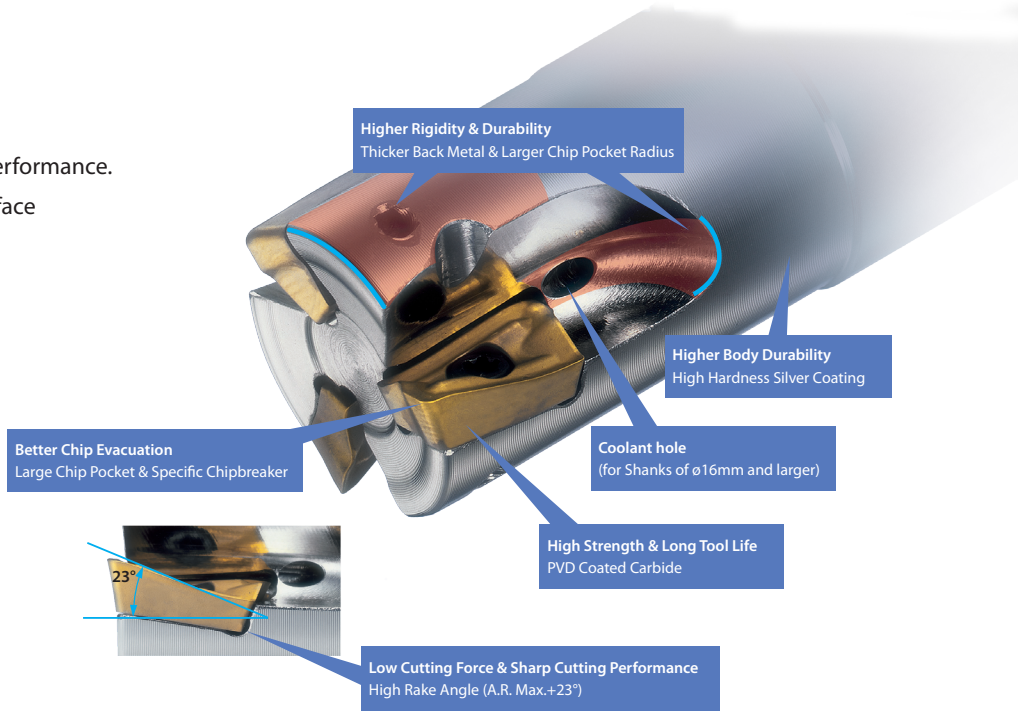
Workpiece Material: 1.0040
Vc = 120 m/min
ap×ae=40mm×10mm,fz = 0.12mm/t
MECH032-S32-11-5-4T



MEC/MECX

High efficient end mill

- Low cutting force and sharp cutting performance.
- Perfect 90° shoulders, and smooth surface of shoulder wall.



Shoulder Wall Surface Finishes

Smoothly finished shoulder wall and high squareness at shouldering with multiple passes.

Cutting conditions:
Workpiece: C50
Vc=120m/min, fz=0.1mm/t, ap×ae=5×10mm
coolant with compressed air

Various products lineup of MEC/MECX (Different usage of MEC and MECX)

i. e. cutter diameter 25mm

MECX25-S25-07-7T

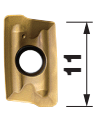
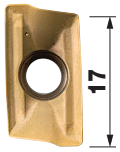
7 teeth

MEC25-S25-11T

3 teeth

MEC25-S25-17

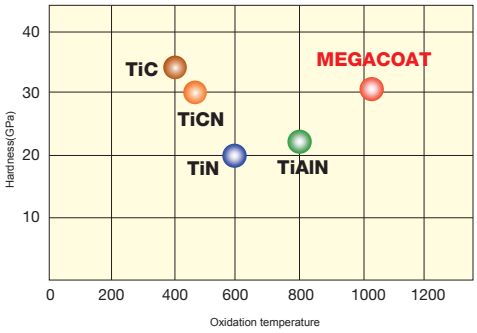
2 teeth

MECX-07 Type	MEC-11 Type	MEC-17 Type
 BDMT070304ER-JT	 BDMT11T308ER-JT	 BDMT170408ER-JT
1) Multiple edges, capable of increasing table feed and high efficiency machining. 2) Design with low resistance and high toughness, optimum for turning mill and small machines.	1) Low resistance and high toughness. 2) High efficiency machining by ensuring toolholder toughness and increasing edge contact.	1) Substantial cut is available. 2) Tough due to 4.9mm thickness.

MEGACOAT

Long tool life with MEGACOAT

Long tool life and high-speed milling due to high hardness and high oxidation resistance.



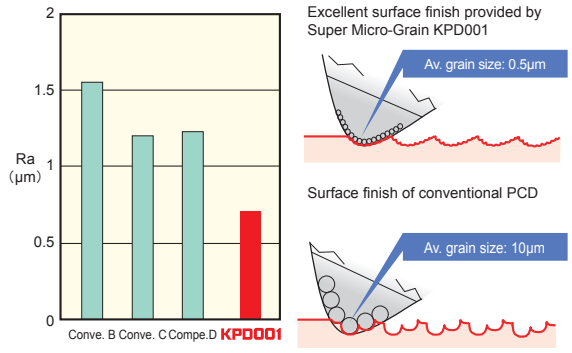
■ Grades

Grade \ Workpiece Material	P	M	S	K
MEGACOAT PVD coated carbide	PR1225, PR1230			PR1210
MEGACOAT NANO PVD coated carbide		PR1535		
CVD coated carbide		CA6535		
Cermet (for finishing)	TN100M			

N

KPD001 - Super Micro Grain PCD
KPD230 - PCD
GW25 - Carbide

Surface Finish Roughness Comparison of Aluminum Cutting

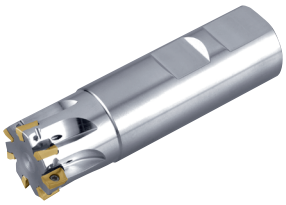


(Grain size affects surface finish quality)

Workpiece Material	Non-ferrous materials (Aluminum / Non-ferrous metals / Non-metals)			
Cutting Range	Finishing ⟷ Roughing			
Classification	N01	N10	N20	N30
Carbide		GW25		
PCD	KPD001			
	KPD230			

MECX Endmill

(Cylindrical)



(Weldon)

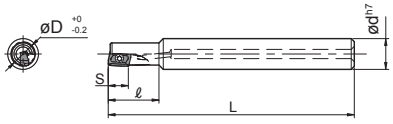


Fig.1

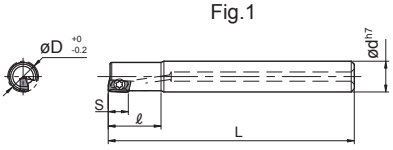


Fig.2

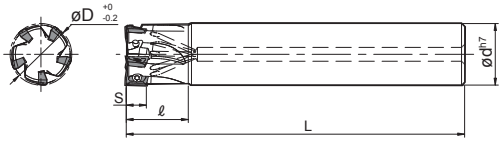


Fig.4

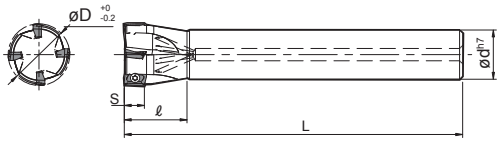


Fig.3

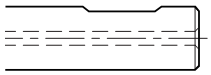


Fig.5

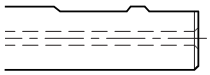


Fig.6

Toolholder Dimensions

Description			Std.	No. of Inserts	Dimension (mm)					Rake Angle (°)		Coolant Hole	Drawing	Spare Parts		Applicable Inserts ➔ 26	Max. Revolution (min^{-1})
					øD	ød	L	ℓ	S	A.R. (MAX)	R.R.			Clamp Screw	Wrench		
Cylindrical	Coarse Pitch	MECX 08-S10-07-1T	●	1	8	10	80	16	6	11.7°	-24.0°	Yes	Fig.1	SB-2035TRG	DTM-6	BDMT0703	48,100
		MECX 14-S12-07-2T	●	2	14	12		18		16.3°	-12.1°		Fig.3				44,800
		MECX 17-S16-07-3T	●	3	17	16	100	20			-11.0°			SB-2042TRG			42,400
		MECX 18-S16-07-3T	●		18						-10.9°						41,600
		MECX 20-S16-07-4T	●	4	20		110				-10.4°						40,200
		MECX 21-S20-07-4T	●		21	20					-10.1°						39,500
		MECX 25-S20-07-5T	●	5	25		120	25			-9.7°						37,000
		MECX 26-S25-07-5T	●		26	25					-9.5°						36,500
		MECX 33-S32-07-6T	●	6	33	32	130	30			-8.8°						33,100
	Fine pitch	MECX 20-S16-07-5T	●	5	20	16	110	20	6	16.3°	-10.4°	Yes	Fig.3	SB-2042TRG	DTM-6	BDMT0703	40,200
		MECX 25-S20-07-7T	●	7	25	20	120	25			-9.7°						37,000
Cylindrical	Coarse Pitch	MECX 10-S10-07-1T	●	1	10	10	80	17	6	12.8°	-18.7°	Yes	Fig.2	SB-2035TRG	DTM-6	BDMT0703	47,100
		MECX 12-S12-07-2T	●	2	12	12		18		14.3°	-13.7°		Fig.4				46,200
		MECX 16-S16-07-3T	●	3	16	16	100	20		16.3°	-11.3°			SB-2042TRG			43,200
		MECX 20-S20-07-4T	●	4	20	20	110				-10.4°						40,200
		MECX 25-S25-07-5T	●	5	25	25	120	25			-9.7°						37,000
		MECX 32-S32-07-6T	●	6	32	32	130	30			-8.9°						33,600
	Fine pitch	MECX 16-S16-07-4T	●	4	16	16	100	20	6	16.3°	-11.3°	Yes	Fig.4	SB-2042TRG	DTM-6	BDMT0703	43,200
		MECX 20-S20-07-5T	●	5	20	20	110				-10.4°						40,200
		MECX 25-S25-07-7T	●	7	25	25	120	25			-9.7°						37,000
		MECX 32-S32-07-8T	●	8	32	32	130	30			-8.9°						33,600
Cylindrical Long Shank	Coarse Pitch	MECX 17-S16-130-07-3T	●	3	17	16	130	20	6	16.3°	-11.0°	Yes	Fig.3	SB-2042TRG	DTM-6	BDMT0703	42,400
		MECX 21-S20-140-07-4T	●	4	21	20	140				-10.1°						39,500
		MECX 26-S25-160-07-5T	●	5	26	25	160	25			-9.5°						36,500
		MECX 33-S32-200-07-6T	●	6	33	32	200	30			-8.8°						33,100
Weldon	Coarse Pitch	MECX 16-W16-07-3T	●	3	16	16	68	20	6	16.3°	-11.3°	Yes	Fig.5	SB-2042TRG	DTM-6	BDMT0703	43,200
		MECX 20-W20-07-4T	●	4	20	20	81				-10.4°		Fig.6				40,200
		MECX 25-W25-07-5T	●	5	25	25	88	25			-9.7°						37,000
	Fine pitch	MECX 16-W16-07-4T	●	6	16	16	68	20	6	16.3°	-11.3°	Yes	Fig.5	SB-2042TRG	DTM-6	BDMT0703	43,200
		MECX 20-W20-07-5T	●	5	20	20	81				-10.4°		Fig.6				40,200
		MECX 25-W25-07-7T	●	7	25	25	88	25			-9.7°						37,000

● : Standard Item

Max. Revolution
When running the endmill and cutter at the maximum revolution, the insert or holder may be damaged by centrifugal force. For more details, see "Warning" below.
For good shoulder finishes by MECX multistage ap. In order to obtain smooth cutting wall surface by MECX multistage ap set ap within 5mm for each cut.

⚠ Warning Please observe below precautions fully.
Failure to observe the precautions may cause serious damage to human body.

Warning about Max. Revolution indicated on main body

1. When running the endmill and the facemill at revolutions exceeding the maximum revolution limit, the inserts or toolholder may be damaged due to the centrifugal force.
2. For actual practical revolution, please set within recommended cutting condition.
3. When using at a higher revolution (over 10,000min-1), refer to the table to adjust the balance of MECX and suitable arbor.

Max. Revolution (min^{-1})	Balance quality grade G ISO 1940-1 / 8821 (JIS B0905)
~20,000	G16
~30,000	G6.3
30,000~	G2.5

MECX Face Mill

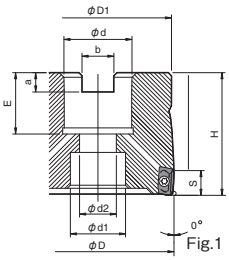


Fig.1

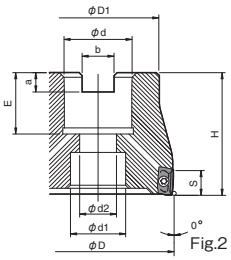
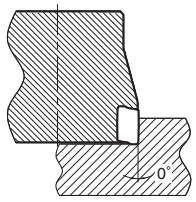


Fig.2



Toolholder Dimensions

Description		Std.	No. of Inserts	Dimension (mm)										Rake Angle (°)		Coolant Hole	Drawing	Weight (kg)	Spare Parts		Max. Revolution (min^{-1})
				øD	øD1	ød	ød1	ød2	H	E	a	b	S	A.R. (MAX)	R.R.				Clamp Screw	Wrench	
MECX	032R-07-8T-M	●	8	32	30	16	14	8.5	40	20	5.5	8.5	6	+16.3°	-8.9°	Yes	Fig.1	0.15	SB-2042TRG	DTM-6	33,600
	040R-07-10T-M	●	10	40	38	22	18	12		22	6.3	10.4			-8.4°			0.25			30,500
	050R-07-12T-M	●	12	50	40										-8.3°		Fig.2	0.35			27,700
	063R-07-14T-M	●	14	63											-7.9°			0.50			24,900

Max. Revolution
When running the endmill and cutter at the maximum revolution, the insert or holder may be damaged by centrifugal force. For more details, see "Warning" on page 5.
For good shoulder finishes by MECX multistage ap. In order to obtain smooth cutting wall surface by MECX multistage ap set ap within 5mm for each cut.
MECX032R comes with arbor screw (HH8X25H) and MECX040R/050R/063R comes with arbor bolt (HH10X30H).

Recommended Cutting Conditions

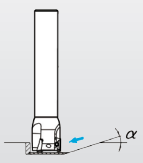
Workpiece Material	fz (mm/t)		Insert Grade (Cutting Speed Vc : m/min)				
	JS Chipbreaker	JT Chipbreaker	MEGACOAT		PVD Coated Carbide		
			PR1225	PR1210	PR830	PR1025	PR905
Stainless Steel	0.03~0.04~0.05	0.05~0.06~0.07	★ 120~180~250	-	-	☆ 100~160~200	-
Carbon Steel	0.04~0.08~0.1	0.06~0.1~0.12	★ 120~180~250	-	☆ 120~150~180	-	-
Alloy Steel	0.04~0.06~0.08	0.06~0.08~0.1	★ 100~160~220	-	☆ 100~140~180	-	-
Mold Steel	0.04~0.06~0.08	0.06~0.08~0.1	★ 80~140~180	-	☆ 80~120~150	-	-
Gray Cast Iron	0.04~0.08~0.1	0.08~0.1~0.15	-	★ 120~180~250	-	-	☆ 100~140~180
Nodular Cast Iron	0.04~0.06~0.08	0.08~0.1~0.12	-	★ 100~150~200	-	-	☆ 80~120~160
Titanium Alloys	0.04~0.06~0.08	0.08~0.1~0.12	-	★ 30~50~70	-	-	☆ 20~35~50

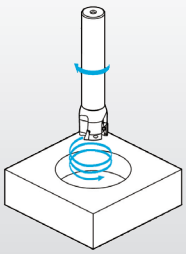
*Cutting with coolant is recommended for Titanium Alloys.

★: 1. Recommendation ☆: 2 Recommendation

Ramping, Helical Milling

- **Ramping angle is recommended under α°.**
- **Refer each tool's cutting performance list for depth of helical milling per one revolution.**
- **Use compressed air during cutting.**





Cutting Dia.	Applicable Inserts	Maximum ramping angle (α°)
ø8	BDMT0703 type	Not recommended.
ø10		1.5°
ø12, ø14		2°
ø16		3°
ø17, ø18		1.5°
ø20		2°
ø21		1.8°
ø25		1.3°
ø26		1.2°
ø32		0.8°
ø33		0.5°

Guidance of minimum cutting dia by helical cutting

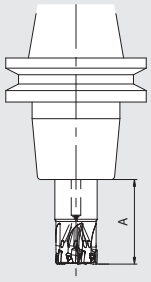
MECX	Holder Dia	ø8	ø10	ø12	ø14	ø16	ø17	ø18	ø20
BDMT0703	Guidance of minimum cutting dia for helical cutting.	Helical cutting is not recommended.	ø14	ø18	ø22	ø26	ø28	ø30	ø34
	Guidance of minimum cutting dia in case of flatting bottom after helical cutting.		ø17	ø21	ø25	ø29	ø31	ø33	ø37

MECX	Holder Dia	ø21	ø25	ø26	ø32	ø33
BDMT0703	Guidance of minimum cutting dia for helical cutting.	ø36	ø44	ø46	ø58	ø60
	Guidance of minimum cutting dia in case of flatting bottom after helical cutting.	ø39	ø47	ø49	ø61	ø63

Cutting Performance of MECX Endmill

Cutter Dia.	Description	Overhang Length A (mm)	
ø8	**MECX08-S10-07-1T**	16	-
ø10	**MECX10-S10-07-1T**	17	-
ø12	**MECX12-S12-07-2T**	18	30
ø16	**MECX16-S16-07-3T**	20	40
ø20	**MECX20-S20-07-4T**	20	40
ø25	**MECX25-S25-07-5T**	25	50
ø32	**MECX32-S32-07-6T**	30	50

Shape



*Machining with extended overhang length is not recommended for ø8 and ø10.

*The cutting performance list shows applicable range of JT Chipbreaker (PR830) with Standard flute-number type.

For Multi-Edge type, use with 70% or less of ap.

*Cutting conditions of JS Chipbreaker

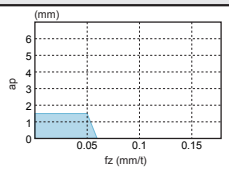
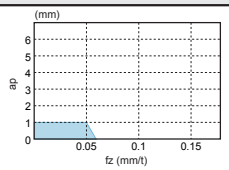
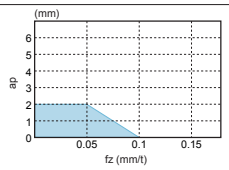
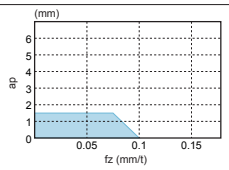
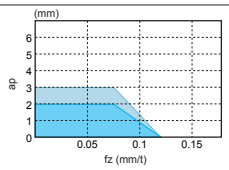
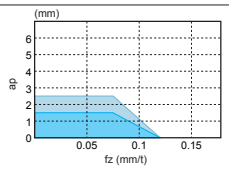
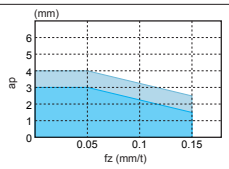
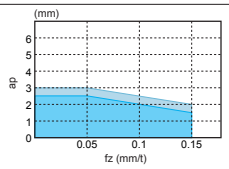
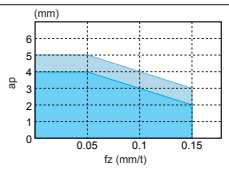
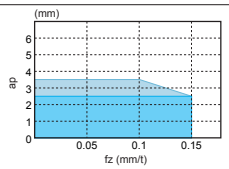
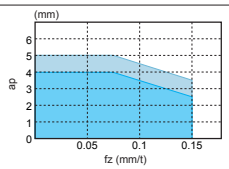
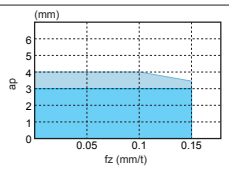
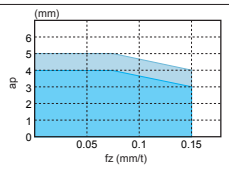
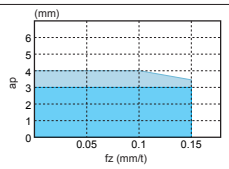
①For MECX08~MECX12

Decrease the feed rate by 25% according to cutting capability list.

②For MECX16 and over

Decrease the feed rate and ap by 30% according to cutting capability list.

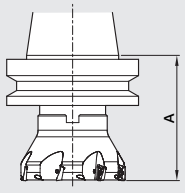
[**JT** chipbreaker Vc=150m/min Workpiece material: C50 (S50C)]

Description	■ Shouldering (Cutting width ae = øD/2)	■ Slotting ■ Ramping and Helical Milling
MECX08-S10-07-1T		
MECX10-S10-07-1T		
MECX12-S12-07-2T		
MECX16-S16-07-3T		
MECX20-S20-07-4T		
MECX25-S25-07-5T		
MECX32-S32-07-6T		

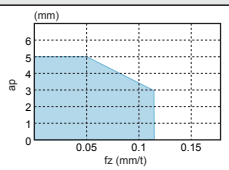
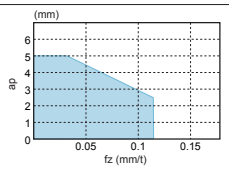
Cutting Performance of MECX Milling Cutter

Cutter Dia.	Description	Overhang Length A (mm)
ø32	**MECX032R-07-8T-M**	100
ø40	**MECX040R-07-10T-M**	
ø50	**MECX050R-07-12T-M**	
ø63	**MECX063R-07-14T-M**	

Shape



[**JT** chipbreaker Vc=150m/min Workpiece material: C50 (S50C)]

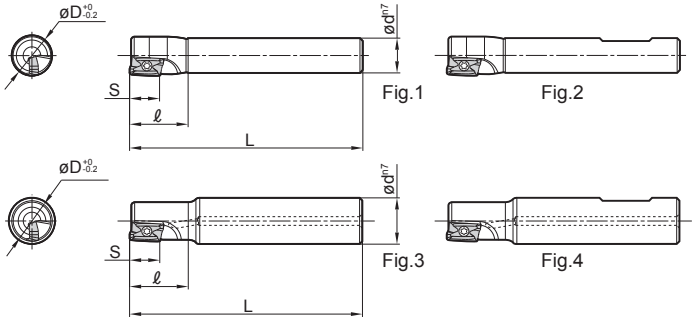
Description	■ Shouldering (Cutting width ae = øD/2)
MECX032R-07-8T-M **MECX040R-07-10T-M**	
MECX050R-07-12T-M **MECX063R-07-14T-M**	

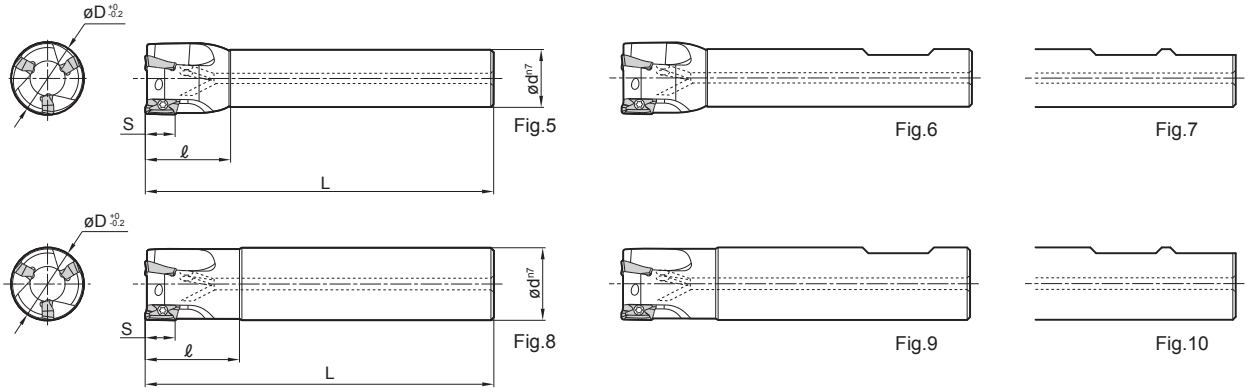
※Not Recommended for Slotting.

MEC Endmill

(Cylindrical)

(Weldon)





Toolholder Dimensions

Description			Std.	No. of Inserts	Dimension (mm)					Rake Angle (°)		Coolant Hole	Drawing	Spare Parts		Max. Revolution (min^{-1})
					øD	ød	L	ℓ	S	A.R. (MAX)	R.R.			Clamp Screw	Wrench	
Weldon	Standard Shank	MEC 10-W10-1103	●	1	10	10	60	17	10	+10°	-24°	No	Fig.2	SB-2545TR	DTM-8	54,800
		10-W16-1103-H	●			16	68					Yes	Fig.4			
		12-W10-1103	●		12	10	60	20		+12°	-21°	No	Fig.2			50,800
		12-W16-1103-H	●			16	68					Yes	Fig.4			
		14-W12-1103	●		14	12	68			+12°	-19°	No	Fig.2			47,700
		14-W16-1103-H	●			16						Yes	Fig.4			
		MEC 16-W12-11T3	●	2	16	12	68	23	10	+18°	-14°	No	Fig.2	SB-2555TRG	DTM-8	43,750
		18-W16-11T3-H	●		18	16				+19°	-13°	Yes	Fig.6			43,000
		20-W16-11T3-H	●	3	20			25		+20°	-10°					41,000
		22-W20-11T3-H	●		22	20	81	26		+21°						39,600
		25-W20-11T3-H	●		25			29								37,500
		28-W25-11T3-H	●		28	25	88			+22°	-9°		Fig.7			35,800
		30-W25-11T3-H	●	4	30			32		+23°						34,800
		32-W25-11T3-H	●		32											33,900
		40-W32-11T3-H	●	5	40	32	110	50			-8°					30,000
	Same Shank Size	MEC 16-W16-11T3-H	●	2	16	16	68	25	10	+18°	-14°	Yes	Fig.9	SB-2555TRG	DTM-8	43,750
		20-W20-11T3-H	●	3	20	20	81	30		+20°	-10°					41,000
		25-W25-11T3-H	●		25	25	88	32		+21°			Fig.10			37,500
		32-W32-11T3-H	●	4	32	32	100	40		+23°	-9°					33,900
	Standard Shank	MEC 25-W20-1704-H	●	2	25	20	86	36	15.7	+16°	-11°	Yes	Fig.6	SB-4070TRN	DTM-15	35,000
		32-W25-1704-H	●	3	32	25	92			+17°	-7°		Fig.7			30,000
		40-W32-1704-H	●	4	40	32	110	50		+19°						25,000
	Same Shank Size	MEC 25-W25-1704-H	●	2	25	25	92	36	15.7	+16°	-11°	Yes	Fig.10	SB-4070TRN	DTM-15	35,000
		32-W32-1704-H	●	3	32	32	100	40		+17°	-7°					30,000

● : Std. Item □ : Check Availability

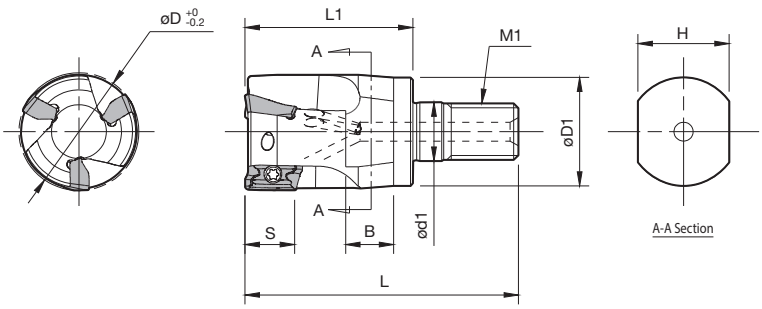
Toolholder Dimensions

Description				Std.	No. of Inserts	Dimension (mm)					Rake Angle (°)		Coolant Hole	Drawing	Spare Parts		Max. Revolution (min^{-1})
						øD	ød	L	ℓ	S	A.R. (MAX)	R.R.			Clamp Screw	Wrench	
Cylindrical	Standard Shank	MEC	10-S10-11	●	1	10	10	80	17	10	+10°	-24°	No	Fig.1	SB-2545TR	DTM-8	54,800
			10-S16-11	●			16						Yes	Fig.3			
			12-S10-11	●		12	10		20		+12°	-21°	No	Fig.1			50,800
			12-S12-11	●			12										
			12-S16-11	●			16						Yes	Fig.3			
			13-S12-11	●		13	12					-19°	No	Fig.1			49,200
			14-S12-11	●		14	12										47,700
			14-S16-11	●			16						Yes	Fig.3			
		MEC	16-S12-11T	●	2	16	12	100	23	10	+18°	-14°	No	Fig.1	SB-2555TRG	DTM-8	43,750
			17-S16-11T	●		17	16					-13°	Yes	Fig.3			43,500
			18-S16-11T	●		18					+19°	-13°					43,000
			19-S16-11T	●	3	19			26		+20°	-10°					42,000
			20-S16-11T	●		20		110									41,000
			21-S20-11T	●		21	20					-9°					40,300
			22-S20-11T	●		22					+21°	-10°					39,600
			24-S20-11T	●		24		120	29								38,200
			25-S20-11T	●		25											37,500
			28-S25-11T	●		28	25				+22°	-9°					35,800
			30-S25-11T	●	4	30		130	32		+23°						34,800
			32-S25-11T	●		32											33,900
			40-S32-11T	●	5	40	32	150	50			-8°					30,000
			50-S32-11T	●		50						-7°					22,500
	Same Shank Size	MEC	16-S16-11T	●	2	16	16	100	30	10	+18°	-14°	Yes	Fig.8	SB-2555TRG	DTM-8	43,750
			20-S20-11T	●	3	20	20	110			+20°	-10°					41,000
			25-S25-11T	●		25	25	120	32		+21°						37,500
			32-S32-11T	●	4	32	32	130	40		+23°	-9°					33,900
	Long Shank	MEC	20-S18-170-11T	●	2	20	18	170	30	10	+20°	-10°	Yes	Fig.5	SB-2555TRG	DTM-8	41,000
			20-S20-140-11T	●			20	140	60					Fig.8			
			20-S20-170-11T	●				170									
			22-S20-170-11T	●		22			30		+21°			Fig.5			39,600
			25-S23-210-11T	●		25	23	210	32								37,500
			25-S25-160-11T	●			25	160	60					Fig.8			
			25-S25-210-11T	●				210									
			28-S25-210-11T	●		28			32		+22°	-9°		Fig.5			35,800
			32-S30-250-11T	●		32	30	250	40		+23°						33,900
			32-S32-200-11T	●			32	200	65					Fig.8			
			32-S32-250-11T	●				250									
			35-S32-250-11T	●		35			40					Fig.5			32,600
			40-S32-240-11T	●		40		240	65			-8°					30,000
	Standard Shank	MEC	25-S20-17	●	2	25	20	120	36	15.7	+16°	-11°	Yes	Fig.5	SB-4070TRN	DTM-15	35,000
			32-S25-17	●	3	32	25	130	40		+17°	-7°					30,000
			40-S32-17	●	4	40	32	150	50		+19°						25,000
			50-S32-17	●		50											17,000
	Same Shank Size	MEC	25-S25-17	●	2	25	25	120	36	15.7	+16°	-11°	Yes	Fig.8	SB-4070TRN	DTM-15	35,000
			32-S32-17	●	3	32	32	130	40		+17°	-7°					30,000
	Long Shank	MEC	25-S25-160-17	●	2	25	25	160	60	15.7	+16°	-11°	Yes	Fig.8	SB-4070TRN	DTM-15	35,000
			25-S25-210-17	●				210									
			28-S25-210-17	●		28			36					Fig.5			32,500
			32-S32-200-17	●		32	32	200	65		+17°	-7°		Fig.8			30,000
			32-S32-250-17	●				250									
			35-S32-250-17	●		35			40					Fig.5			27,700
			40-S32-240-17	●		40		240	65		+19°						25,000

Max. Revolution
When running the endmill and cutter at the maximum revolution, the insert or holder may be damaged by centrifugal force. For more details, see "Warning" on page 5.

● : Std. Item □ : Check Availability

MEC Screw on type NEW



Toolholder Dimensions

Description		Std.	No. of Inserts	Dimension (mm)									Rake Angle (°)		Coolant Hole	Applicable Inserts ➔ 26	Max. Revolution (min^{-1})
				øD	øD1	ød1	L	L1	M1	H	B	S	A.R. (MAX)	R.R.			
MEC	16-M08-11T-2T	●	2	16	14.7	8.5	43	25	M8×P1.25	12	8	10	+18°	-14°	Yes	BDMT11T3 BDGT11T3	43,750
	20-M10-11T-2T	●	2	20	18.7	10.5	49	30	M10×P1.5	15	9		+20°	-10°			41,000
	20-M10-11T-3T	●	3	20	18.7	10.5	49	30	M10×P1.5	15	9		+20°	-10°			41,000
	25-M12-11T-3T	●	3	25	23	12.5	57	35	M12×P1.75	19	10		+21°	-10°			37,500
	32-M16-11T-4T	●	4	32	30	17	63	40	M16×P2	24	12		+23°	-9°			33,900
MEC	25-M12-17-2T	●	2	25	23	12.5	57	35	M12×P1.75	19	10	15.7	+16°	-11°	Yes	BDMT1704 BDGT1704	35,000
	32-M16-17-3T	●	3	32	30	17	63	40	M16×P2	24	12		+17°	-7°			30,000

Max. Revolution

When running the endmill and cutter at the maximum revolution, the insert or holder may be damaged by centrifugal force. For more details, see “Warning” on page 5.

Spare Parts

Description		Spare Parts		
		Clamp Screw	Wrench	Anti-seize Compound
				
MEC	16-M08-11T-2T	SB-2555TRG for Insert Clamp Recommended torque is 1.2 Nm.	DTM-8	MP-1
	20-M10-11T-2T			
	20-M10-11T-3T			
	25-M12-11T-3T			
	32-M16-11T-4T			
MEC	25-M12-17-2T	SB-4070TRN for Insert Clamp Recommended torque is 3.5 Nm.	DTM-15	MP-1
	32-M16-17-3T			

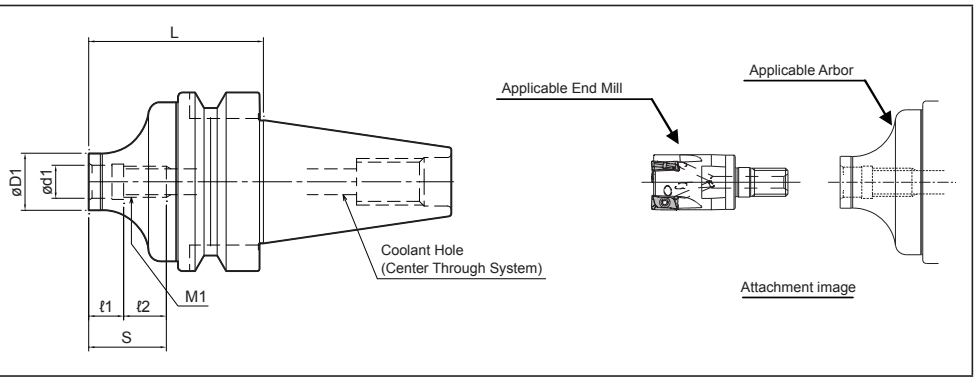

Coat Anti-seize Compound (MP-1) thinly on clamp screw when insert is fixed.

Recommended Torque

Thread Type	Wrench Size	Recommended torque Nm
M8	12	23
M10	15	46
M12	19	80
M16	24	90

● : Std. Item □ : Check Availability

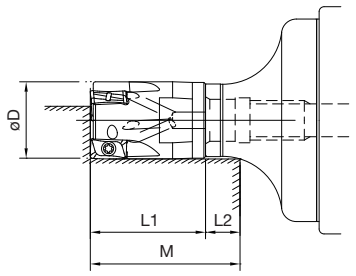
BT Arbor NEW



Arbor Dimensions

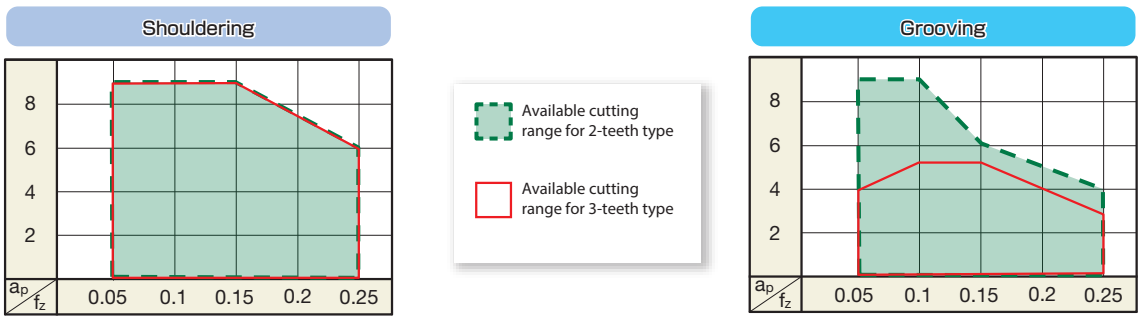
Description		Std	Dimension (mm)							Coolant Hole	Arbor Size	Applicable End Mill
			L	øD1	ød1	S	ℓ1	ℓ2	M1			
BT30K-	**M08-45**	□	45	14.7	8.5	20	9	11	M8×P1.25	Yes	BT30	MEC16-M08··
	M10-45	□		18.7	10.5	21		12	M10×P1.5			MEC20-M10··
	M12-45	□		23	12.5	24		15	M12×P1.75			MEC25-M12··
BT40K-	**M08-55**	□	55	14.7	8.5	20	9	11	M8×P1.25	Yes	BT40	MEC16-M08··
	M10-60	□	60	18.7	10.5	21		12	M10×P1.5			MEC20-M10··
	M12-55	□	55	23	12.5	24		15	M12×P1.75			MEC25-M12··
	M16-65	□	65	30	17	25		16	M16×P2			MEC32-M16··

Effective depth of assembled tool



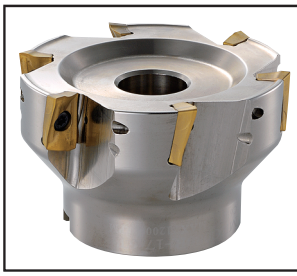
Arbor Description		Description	Dimension			
			øD	L1	M	L2
BT30K-	**M08-45**	MEC16-M08··	ø16	25	31.8	6.8
	M10-45	MEC20-M10··	ø20	30	36.8	6.8
	M12-45	MEC25-M12··	ø25	35	42.8	7.8
BT40K-	**M08-55**	MEC16-M08··	ø16	25	31.7	6.7
	M10-60	MEC20-M10··	ø20	30	38.7	8.7
	M12-55	MEC25-M12··	ø25	35	44.6	9.6
	M16-65	MEC32-M16··	ø32	40	51.2	11.2

Available cutting range of MEC screw on type



● : Std. Item □ : Check Availability

MEC Face Mill



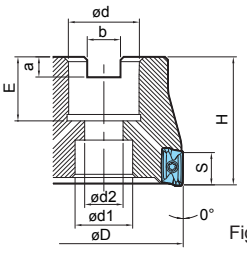


Fig.1

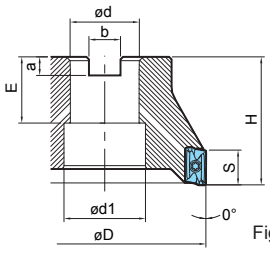
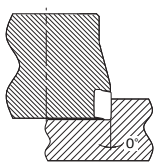


Fig.2

Rake Angle (°)
11Type A.R.(MAX): +23° R.R. : -7°
17Type A.R.(MAX): +19° R.R. : -7°



Toolholder Dimensions

Description				Std.	No. of Inserts	Dimension (mm)									Coolant Hole	Drawing	Weight (kg)	Spare Parts		Max. Revolution (min^{-1})
						øD	ød	ød1	ød2	H	E	a	b	S				Clamp screw	Wrench	
METRIC	Standard	MEC	040R-11-5T-M	●	5	40	16	14	8.5	40	20	5.5	8.5	10	Yes	Fig.1	0.2	SB-2555TRG	DTM-8	30,000
			050R-11-5T-M	●	5	50	22	18	12		22	6.3	10.4				0.3			22,500
			063R-11-6T-M	●	6	63											0.7			20,500
			080R-11-7T-M	●	7	80	27	20	14	50	26	7	12.4				1.0			18,500
			100R-11-9T-MN	●	9	100	32	26	17.6	55		8	14.4				1.6			17,000
			125R-11-11T-M	●	11	125	40	45	32	63	33	9.5	16.4				3.1			15,000
			160R-11-14T-M	●	14	160		68	-						No	Fig.2	4.5			13,900
	Standard	MEC	040R-17-4T-M	●	4	40	16	14	8.5	40	20	5.5	8.5	15.7	Yes	Fig.1	0.3	SB-4070TRN	DTM-15	25,000
			050R-17-4T-M	●	4	50	22	18	12		22	6.3	10.4				0.4			17,000
			063R-17-5T-M	●	5	63											0.6			14,500
			080R-17-6T-M	●	6	80	27	20	14	50	26	7	12.4				1.0			12,000
			100R-17-7T-MN	●	7	100	32	26	17.6	55		8	14.4				1.8			10,500
			125R-17-9T-M	●	9	125	40	45	32	63	33	9.5	16.4				3.1			8,900
			160R-17-12T-M	●	12	160		68	-						No	Fig.2	4.5			7,400
INCH	Coarse pitch	MEC	063R-11-6T	□	6	63	25.4	20	14	50	26	6	9.5	10	Yes	Fig.1	0.8	SB-2555TRG	DTM-8	20,500
			080R-11-7T	□	7	80											1.0			18,500
			100R-11-9TN	□	9	100	31.75	26	17.6	63	32	8	12.7				1.8			17,000
			125R-11-11T	□	11	125	38.1	45	32		38	10	15.9				3.4			15,000
			160R-11-14T	□	14	160	50.8	70	-		47	10	19.1			Fig.2	4.4			13,900
	Fine pitch	MEC	063R-11-8T	□	8	63	25.4	20	14	50	26	6	9.5	10	Yes	Fig.1	0.8	SB-2555TRG	DTM-8	20,500
			080R-11-10T	□	10	80											1.0			18,500
	Coarse pitch	MEC	063R-17-5T	□	5	63	25.4	20	14	50	26	6	9.5	15.7	Yes	Fig.1	0.8	SB-4070TRN	DTM-15	14,500
			080R-17-6T	□	6	80											1.0			12,000
			100R-17-7TN	□	7	100	31.75	26	17.6	63	32	8	12.7				1.8			10,500
			125R-17-9T	□	9	125	38.1	45	32		38	10	15.9				3.4			8,900
			160R-17-12T	□	12	160	50.8	70	-		47	10	19.1			Fig.2	4.5			7,400
	Fine pitch	MEC	063R-17-6T	□	6	63	25.4	20	14	50	26	6	9.5	15.7	Yes	Fig.1	0.8	SB-4070TRN	DTM-15	14,500
			080R-17-8T	□	8	80											1.0			12,000
			100R-17-9TN	□	9	100	31.75	26	17.6	63	32	8	12.7				1.8			10,500

Max. Revolution
When running the endmill and cutter at the maximum revolution, the insert or holder may be damaged by centrifugal force. For more details, see "Warning" on page 5.

Applicable Inserts

Toolholder	Applicable Inserts ➔ 26			
				
MEC·····-11···	BDMT 1103 ○○ ER-JT	BDMT 1103 ○○ ER-JS	-	-
MEC·····-11T··· **MEC··R-11···**	BDMT 11T3 ○○ ER-JT	BDMT 11T3 ○○ ER-JS	BDGT 11T3 ○○ FR-JA	BDMT 11T3 ○○ FR
MEC·····-17··· **MEC··R-17···**	BDMT 1704 ○○ ER-JT	BDMT 1704 ○○ ER-JS	BDGT 1704 ○○ FR-JA	BDMT 1704 ○○ FR

● : Std. Item □ : Check Availability

Recommended Cutting Conditions (MEC Endmill / Face Mill)

• JT Chipbreaker

Workpiece Material	fz (mm/t)		Insert Grade (Cutting Speed: m/min)						
	Holder		Cermet	MEGACOAT NANO	MEGACOAT		PVD Carbide		CVD Carbide
	MEC10~MEC19	MEC20~MEC40 MEC040R~MEC160R	**TN100M**	**PR1535**	**PR1225**	**PR1210**	**PR830**	**PR905**	**CA6535**
Austenitic Stainless Steel	0.06~0.08~0.1	0.08~0.12~0.15	-	☆ 100~160~200	☆ 100~160~200	-	☆ 100~140~180	-	
Martensitic Stainless Steel	0.06~0.08~0.1	0.08~0.12~0.2		☆ 150~200~250					★ 180~240~300
Precipitation Hardened Stainless Steel	0.06~0.08~0.1	0.08~0.12~0.2		★ 90~120~150					
Carbon Steel	0.06~0.1~0.15	0.08~0.15~0.25	☆ 120~160~200		★ 120~180~250	-	☆ 120~160~200	-	
Alloy Steel	0.06~0.1~0.12	0.08~0.15~0.2	☆ 100~140~180		★ 100~160~220	-	☆ 100~140~180	-	
Mold Steel	0.06~0.08~0.1	0.08~0.12~0.2	☆ 80~120~150		★ 80~140~180	-	☆ 80~120~150	-	
Gray Cast Iron	0.06~0.1~0.15	0.08~0.18~0.25	-		-	★ 120~180~250	-	☆ 100~140~180	
Nodular Cast Iron	0.06~0.08~0.1	0.08~0.15~0.2	-		-	★ 100~150~200	-	☆ 80~120~160	
Ni-base high heat resistant alloy	0.06~0.08~0.1	0.08~0.15~0.15		☆ 20~30~50					★ 20~30~50
Titanium Alloys	0.06~0.08~0.1	0.08~0.15~0.2	-	☆ 40~60~80	-	☆ 30~50~70	-	☆ 20~35~50	

*Machining with coolant is recommended for Ni-base Heat Resistant Alloy and Titanium Alloy.

★: 1. Recommendation ☆: 2. Recommendation

• JS Chipbreaker

Workpiece Material	fz (mm/t)		Insert Grade (Cutting Speed: m/min)				
	Holder		MEGACOAT NANO	MEGACOAT	PVD Carbide		CVD Carbide
	MEC10~MEC19	MEC20~MEC40 MEC040R~MEC160R	**PR1535**	**PR1225**	**PR830**	**PR1025**	**CA6535**
Austenitic Stainless Steel	0.06~0.08~0.1	0.08~0.1~0.12	★ 100~160~200	☆ 100~160~200	☆ 100~140~180	☆ 100~140~180	
Martensitic Stainless Steel	0.06~0.08~0.1	0.08~0.1~0.12	☆ 150~200~250				★ 180~240~300
Precipitation Hardened Stainless Steel	0.06~0.08~0.1	0.08~0.1~0.12	☆ 90~120~150				
Carbon Steel	0.06~0.1~0.12	0.08~0.15~0.18		★ 120~180~250	☆ 120~160~200	☆ 100~120~150	
Alloy Steel	0.06~0.08~0.1	0.08~0.12~0.15		★ 100~160~220	☆ 100~140~180	-	
Mold Steel	0.06~0.08~0.1	0.08~0.1~0.12		★ 80~140~180	☆ 80~120~150	-	
Ni-base high heat resistant alloy	0.06~0.08~0.1	0.08~0.1~0.12	☆ 20~30~50				★ 20~30~50
Titanium Alloys	0.06~0.08~0.1	0.08~0.1~0.12	★ 40~60~80				

★: 1. Recommendation ☆: 2. Recommendation

• JA Chipbreaker

Workpiece Material	fz (mm/t)	Insert Grade (Cutting Speed: m/min)
		Carbide
		GW25
Aluminium Alloys (Si 13% or below)	0.05~0.3	200~800
Aluminium Alloys (Si 13% or above)	0.05~0.2	200~300

• PCD

Workpiece Material	fz (mm/t)	Insert Grade (Cutting Speed: m/min)
		PCD
		KPD230 (KPD001)
Aluminium Alloys (Si 13% or bellow)	0.05~0.2	500~1,500
Aluminium Alloys (Si 13% or above)	0.05~0.15	300~1,000

●When using Center-through Air / Coolant / Mist

If Center Through air (Coolant, Mist) is used, please use appropriate arbor and clamp with arbor bolt. (Table1)

Table1

Toolholder	Arbor clamp bolt (Attachment)	Wrench
MEC040R·····-M	HH8×25H	LW-5 (Double width 5mm)
MEC050R·····-M MEC063R·····-M	HH10×30H	LW-6 (Double width 6mm)
MEC063R····· MEC080R·····	HH12×35H	LW-8 (Double width 8mm)
MEC100R·····-(M) N	HH16×52H	LW-12 (Double width 12mm)
MEC125R·····-(M) MEC160R·····-M	HF20×53H	LW-14 (Double width 14mm)
MEC160R·····	HF24×60H	LW-17 (Double width 17mm)

Wrench is not included. Please purchase separately.

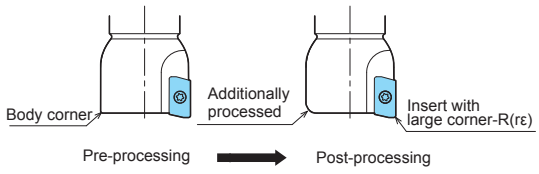
●MEC's surface finish when shouldering with multiple passes

In order to obtain smoothly finished shoulder wall by multiple passes of MEC Milling Cutter, please keep ap less than 5.5mm for 11T3 type and also keep ap less than 9mm for 1704 type.

■ When using inserts with corner R1.6 or larger, additional modifications of the cutter body will be necessary. See the chart below for the recommended modifications.

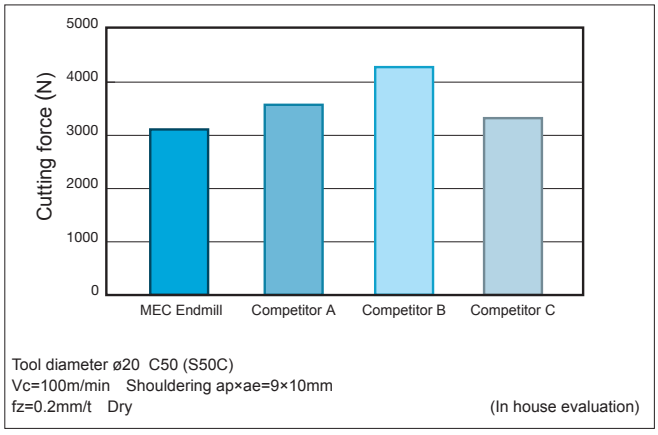
Insert Corner-R(rε)	Material to be removed from cutter body corner
1.6	R1.0
2.0	
2.4	R1.2
3.1	R1.6
4.0	R2.5

* R shape is recommended for additional processing to the body corner.
When applying chamfer shaped additional processing, do not cut away too much.



●Low cutting force

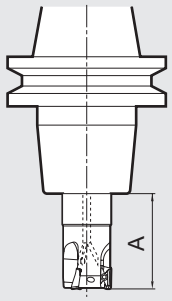
<Cutting Force Comparison>



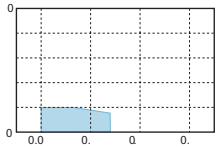
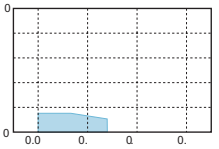
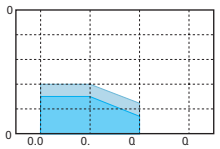
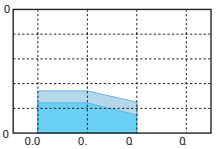
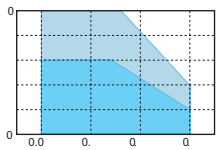
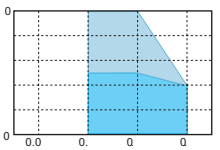
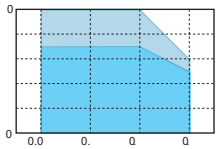
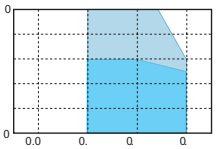
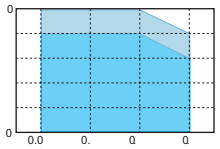
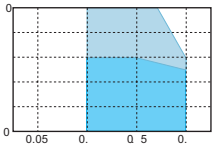
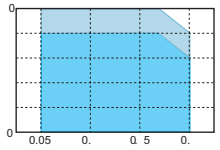
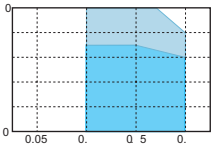
Tool diameter ø20 C50 (S50C)
Vc=100m/min Shouldering ap×ae=9×10mm
fz=0.2mm/t Dry
(In house evaluation)

■ Cutting Performance of MEC Endmill

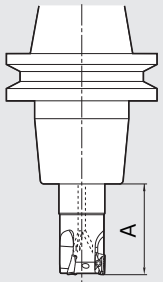
①Cutting edge length 10mm Type (BDMT11...)
(Standard / Straight Shank)

Cutter Dia.	Description	Overhang Length A (mm)		Shape
ø8	**MEC10-S10-11**	17	-	
ø12	**MEC12-S16-11**	20	30	
ø16	**MEC16-S16-11T**	30	45	
ø20	**MEC20-S20-11T**	30	45	
ø25	**MEC25-S25-11T**	32	48	
ø32	**MEC32-S32-11T**	40	60	

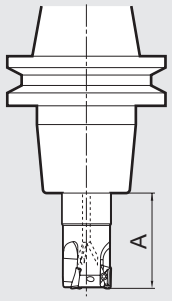
[**JT** chipbreaker Vc=120m/min Workpiece material: C50 (S50C)]

Description	■ Shouldering (Cutting width ae = øD/2)	■ Slotting ■ Ramping and Helical Milling
MEC10-S10-11		
MEC12-S16-11		
MEC16-S16-11T		
MEC20-S20-11T		
MEC25-S25-11T		
MEC32-S32-11T		

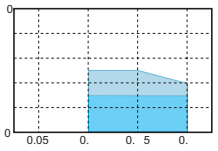
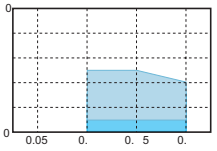
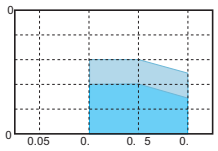
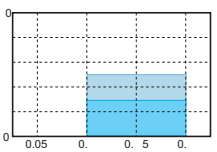
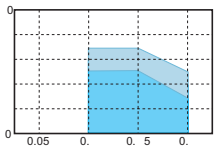
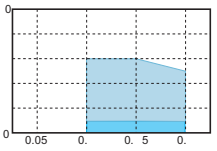
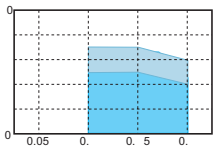
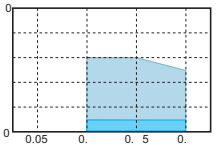
②Cutting edge length 10mm Type (BDMT11...)
(Long Shank)

Cutter Dia.	Description	Overhang Length A (mm)		Shape
ø20 Long Shank	**MEC20-S20-140-11T**	60	90	
ø25 Long Shank	**MEC25-S25-160-11T**	60	100	
ø32 Long Shank	**MEC32-S32-200-11T**	100	130	
ø40 Long Shank	**MEC40-S32-240-11T**	100	130	

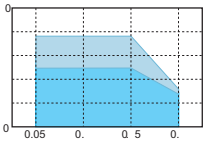
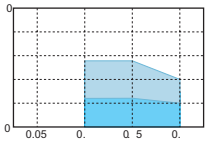
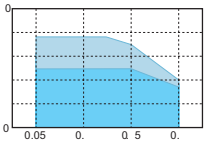
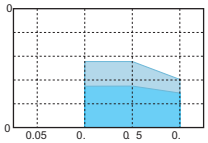
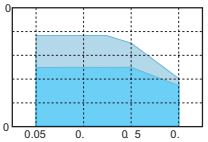
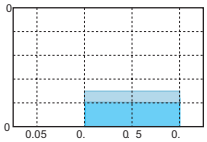
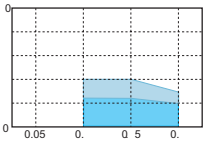
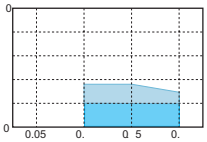
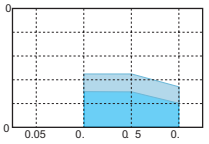
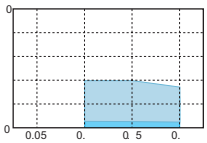
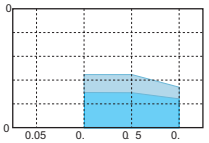
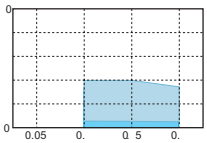
③Cutting edge length 15.7mm Type (BDMT11...)

Cutter Dia.	Description	Overhang Length A (mm)		Shape
ø25	**MEC25-S25-17**	36	54	
ø32	**MEC32-S32-17**	40	60	
ø40	**MEC40-S32-17**	50	75	
ø25 Long Shank	**MEC25-S25-160-17**	60	100	
ø32 Long Shank	**MEC32-S32-200-17**	100	130	
ø40 Long Shank	**MEC40-S32-240-17**	100	130	

[**JT** chipbreaker Vc=120m/min Workpiece material: C50 (S50C)]

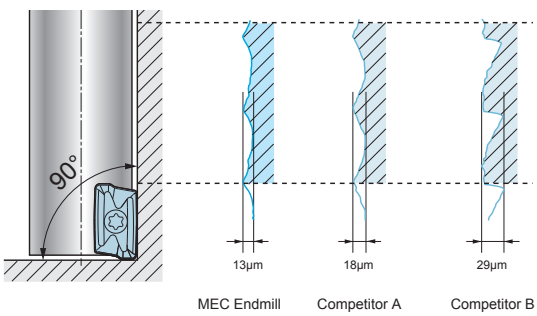
Description	■ Shouldering (Cutting width ae = øD/2)	■ Slotting ■ Ramping and Helical Milling
MEC20 -S20-140-11T Long Shank		
MEC25 -S25-160-11T Long Shank		
MEC32 -S32-200-11T Long Shank		
MEC40 -S32-240-11T Long Shank		

[**JT** chipbreaker Vc=120m/min Workpiece material: C50 (S50C)]

Description	■ Shouldering (When cutting width ae = øD/2)	■ Slotting ■ Ramping and Helical Milling
MEC25-S25-17		
MEC32-S32-17		
MEC40-S32-17		
MEC25 -S25-160-17 Long Shank		
MEC32 -S32-200-17 Long Shank		
MEC40 -S32-240-17 Long Shank		

● Good squareness

<Cutting Surface Comparison>



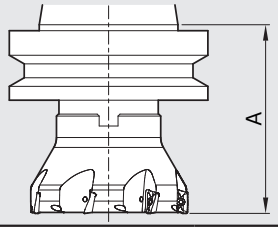
(In house evaluation)

Cutting Performance of MEC Milling Cutter

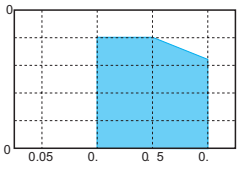
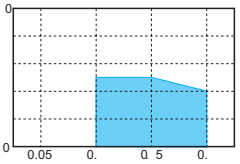
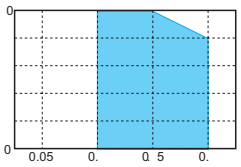
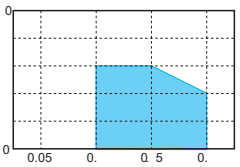
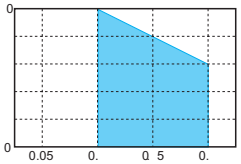
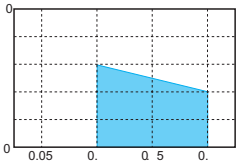
Cutting edge length 10mm Type (BDMT11...)

Cutter Dia	Description	Overhang Length A (mm)
ø40	**MEC040R-11-5T-M**	115
ø50	**MEC050R-11-○T-M**	100
ø63	**MEC063R-11-○T (-M)**	95
	MEC063R-11-○T-M	
ø80	**MEC080R-11-○T (-M)**	95
ø100	**MEC100R-11-9TN**	108
	MEC100R-11-9T-MN	100
ø125	**MEC125R-11-11T (-M)**	108
ø160	**MEC160R-11-14T (-M)**	

Shape



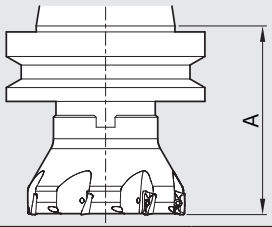
[**JT** chipbreaker Vc=120m/min Workpiece material: C50 (S50C)]

Description	■ Shouldering (When cutting width ae = øD/2)	■ Slotting
MEC040R -11-5T-M		
MEC050R -11-○T-M ≀ MEC100R -11-9TN MEC100R -11-9T-MN		
MEC125R -11-11T (-M) MEC160R -11-11T (-M)		

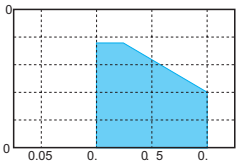
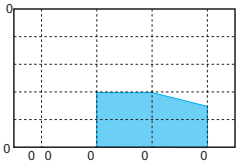
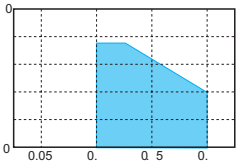
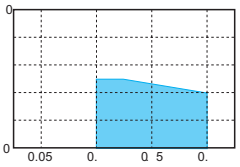
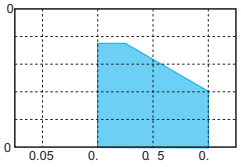
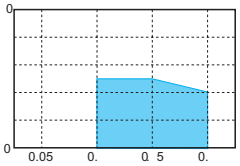
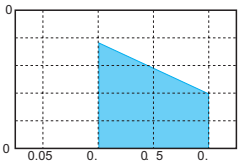
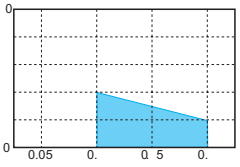
Cutting edge length 15.7mm Type (BDMT17...)

Cutter Dia	Description	Overhang Length A (mm)
ø40	**MEC040R-17-4T-M**	115
ø50	**MEC050R-17-○T-M**	100
ø63	**MEC063R-17-○T**	95
	MEC063R-17-○T-M	
ø80	**MEC080R-17-○T**	95
ø100	**MEC100R-17-○TN**	108
	MEC100R-17-7T-MN	100
ø125	**MEC125R-17-9T (-M)**	108
ø160	**MEC160R-17-12T (-M)**	

Shape



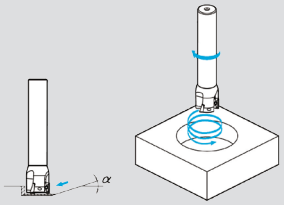
[**JT** chipbreaker Vc=120m/min Workpiece material: C50 (S50C)]

Description	■ Shouldering (When cutting width ae = øD/2)	■ Slotting
MEC040R -17-4T-M		
MEC050R -17-○T-M		
MEC063R -17-○T (-M) ≀ MEC100R -17-○TN MEC100R -17-7T-MN		
MEC125R -17-9T (-M) MEC160R -17-12T (-M)		

Ramping, Helical milling and Vertical milling

Ramping, Helical Milling

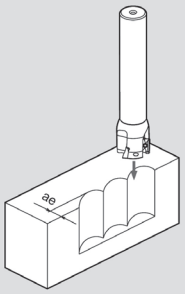
- **Ramping angle is recommended under α°.**
- **Refer to each tool's cutting performance list for depth of helical milling per one revolution. Use compressed air during cutting.**



Cutting Dia.	Applicable Inserts	Maximum ramping angle (α°)
ø16ø18	BDMT11T3 type BDGT11T3 type	3°
ø20		5°
ø22, ø25		2.5°
ø28~ø32		1.5°
ø40		0.7°
ø50 and over		Not recommended.
ø25	BDMT1704 type BDGT1704 type	8°
ø32		5°
ø40		2.5°
ø50 and over		Not recommended.

BDMT/BDGT1103 Type is not recommended for ramping and helical milling.

Vertical milling



Cutting Dia.	Applicable Inserts	Maximum Width of Cut (ae)
ø16 ø18	BDMT11T3 type BDGT11T3 type	1.5mm
ø20 ~ ø160	BDMT11T3 type BDGT11T3 type	5mm
ø25 ~ ø160	BDMT1704 type BDGT1704 type	8mm

BDMT1103 Type is not recommended for vertical milling.

Guidance of minimum cutting dia by helical cutting.

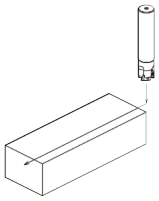
MEC	Helder Dia	ø16	ø18	ø20	ø22	ø25	ø28	ø30	ø32	ø40	ø50
BD_T11T3	Guidance of minimum cutting dia for helical cutting.	ø21	ø25	ø29	ø33	ø39	ø45	ø49	ø53	ø69	Helical cutting is not recommended.
	Guidance of minimum cutting dia in case of flatting bottom after helical cutting.	ø28	ø32	ø36	ø40	ø46	ø52	ø56	ø60	ø76	

MEC	Helder Dia	ø25	ø32	ø40	ø50
BD_T1704	Guidance of minimum cutting dia for helical cutting.	ø34	ø48	ø64	Helical cutting is not recommended.
	Guidance of minimum cutting dia in case of flatting bottom after helical cutting.	ø46	ø60	ø76	

Case Studies

RC55 (Pre-hardened Tool Steel)

- Test piece (40~45HRC)
- Vc=50m/min (n=800min^{-1})
- apxae=2x14mm
- fz=0.125mm/t (Vf=300mm/min)
- Dry
- MEC20-S20-11T
- 3 flutes
- BDMT11T308ER-JT (PR830)

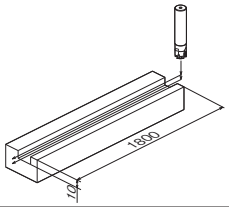


MEC	Chip Removal Amount = 71.3cm^3 (Sustainable)
Competitor's Endmill A	Chip Removal Amount = 2.9cm^3 (Chipping occurred)

Competitor's Endmill A [ø25 (2 flutes) Vc=40m/min fz=0.075mm/t apxae= 2x3mm] had chipping occurred in 10 minutes and had loud cutting sound. MEC could increase the feed rate, and the cutting edge remained in extremely good condition and is still sustainable for further cutting.
(Evaluation by the user)

St42-2 (SS400)

- Plate
- Vc=88m/min (n=1400min^{-1})
- ap=5mm×2 passes
- fz=0.12mm/t (Vf=500mm/min)
- Dry
- MEC20-S20-11T
- 3 flutes
- BDMT11T308ER-JT (PR830)

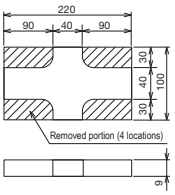


MEC	23pcs/edge
Competitor's Endmill B	10~11pcs/edge

MEC extended the tool life by more than twice.
(Evaluation by the user)

X5CrNi1810 (SUS304)

- Plate
- Vc=125m/min (n =1600min^{-1})
- ap =9.0mm
- fz =0.1mm/t (Vf=320mm/min)
- Dry
- MEC25- S25-17
- 2 flutes
- BDMT170408ER-JT (PR830)

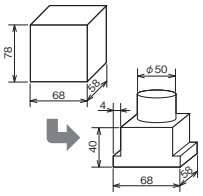


MEC	4pcs/edge or more
Competitor's Endmill C	1pcs/edge or less

Competitor's Endmill C (Slow Away Roughing Endmill) had high cutting force and had insert breakage, but MEC had no insert breakage and was still usable for further cutting after cutting 4 pieces (16 points).
(Evaluation by the user)

DAC10 (Hot Work Tool Steel)

- Mold
- Vc=130m/min (n =1040min^{-1})
- ap × ae =(~3)×(~5) (Varies depending on machining point)
- fz =0.18mm/t(Vf=936mm/min)
- Dry (Compressed Air)
- MEC40- S32-11T • 5 flutes
- BDMT11T308ER-JT (PR830)

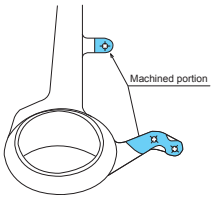


MEC	2 hours (Small Wear: Extendible)
Competitor's Endmill D	2 hours (halted due to insert breakage)

MEC had better cutting performance / insert life comparing to Competitor's Endmill D, and the insert had only small wear and was usable for further cutting after used for cutting of the same duration as Competitor's Endmill D. Competitor's Endmill D (6 flutes type) was used with Vf=936mm/min (fz=0.15mm/t).
(Evaluation by the user)

20CrMo4 (SCM420)

- Knuckle Steering
- Vc=150m/min (n=1,200min^{-1})
- ap=0.5~5mm (Shouldering)
- fz=0.1mm/t (Vf=478mm/min)
- Dry
- MEC40-S32-17
- 4 flutes
- BDMT170408ER-JT (PR830)

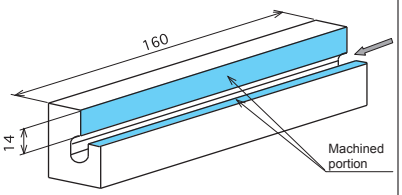


MEC	150pcs/edge
Competitor's Endmill E	40pcs/edge

MEC had a better finished surface comparing to Competitor's Endmill E and also improved the tool life by more than 3 times.

Inconel

- Turbine parts
- Vc=15m/min (n=120min^{-1})
- ap=0.5mm
- fz=0.08mm/t (Vf=38mm/min)
- Wet
- MEC040R-17-4T-M
- 4 flutes
- BDMT170408ER-JS PR1025 (PR925)



MEC	9pcs/edge
Competitor's Endmill F	1pcs/edge or less

Competitor's Endmill H (Coated Insert) could not finish cutting of 1 workpiece, but MEC could cut 9pcs/edge and the finished surface was good.

MECH Endmill (with coolant hole for bottom insert)

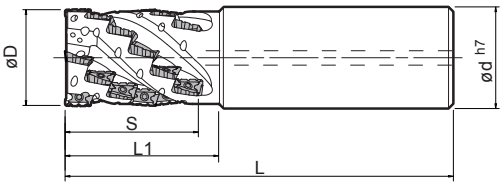


Fig.1

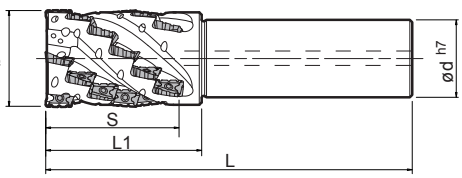


Fig.2

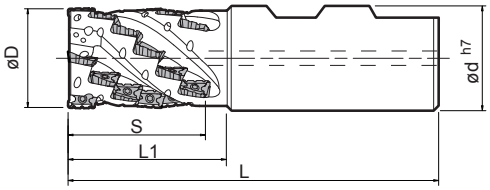


Fig.3

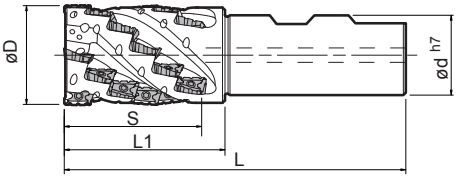


Fig.4

Toolholder Dimensions

	Description	Std.	No. of Flutes	No. of Stages	No. of Inserts	Dimension (mm) øD	Dimension (mm) ød	Dimension (mm) L	Dimension (mm) L1	Dimension (mm) S	Rake Angle (°) A.R. (MAX)	Rake Angle (°) R.R.	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench	Spare Parts: Anti-seize Compound	Applicable Inserts ➔27
Cylindrical	MECH 025-S25-11-4-2T	●	2	4	8	25	25	120	46	37	+21°	-10°	Fig.1	SB-2555TRG	DTM-8	MP-1	BDMT11T308ER-N2 BDMT11T308ER-N3
	032-S32-11-5-2T	●		5	10	32	32	140	55	46	+23°	-9°					
	032-S32-11-5-4T	●	4		20												
	040-S32-11-6-4T	●		6	24	40		150	64	55		-8°	Fig.2				
	040-S42-11-6-4T	●					42	160					Fig.1				
	050-S42-11-7-4T	●		7	28	50		170	75	64		-7°	Fig.2				
	050-S42-11-7-6T	●	6		42												
	MECH 040-S32-17-4-2T	●	2	4	8	40	32	160	73	59	+19°	-7°	Fig.2	SB-4070TRN	DTM-15	MP-1	BDMT170408ER-N3 BDMT170408ER-N4
	040-S42-17-4-2T	●					42	170					Fig.1				
	050-S42-17-5-4T	●	4	5	20	50		185	88	74			Fig.2				
Weldon	MECH 025-W25-11-4-2T	●	2	4	8	25	25	104	46	37	+21°	-10°	Fig.3	SB-2555TRG	DTM-8	MP-1	BDMT11T308ER-N2 BDMT11T308ER-N3
	032-W32-11-5-2T	●		5	10	32	32	117	55	46	+23°	-9°					
	032-W32-11-5-4T	●	4		20												
	040-W32-11-6-4T	●		6	24	40		126	64	55		-8°	Fig.4				
	050-W40-11-7-4T	●		7	28	50	40	147	75	64		-7°					
	050-W40-11-7-6T	●	6		42												
	MECH 040-W32-17-4-2T	●	2	4	8	40	32	136	73	59	+19°	-7°	Fig.4	SB-4070TRN	DTM-15	MP-1	BDMT170408ER-N3 BDMT170408ER-N4
	050-W40-17-5-4T	●	4	5	20	50	40	161	88	74							

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

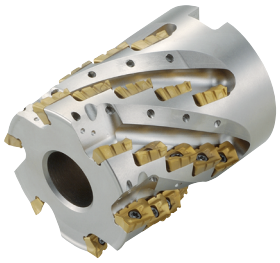
Applicable Inserts

Toolholder	Applicable Inserts ➔27			
	2-Notched	3-Notched	3-Notched	4-Notched
MECH····-11-	BDMT 11T308ER-N2	BDMT 11T308ER-N3	–	–
MECH····-17-	–	–	BDMT 170408ER-N3	BDMT 170408ER-N4

Recommended Cutting Conditions ➔23

● : Std. Item □ : Check Availability

MECH Shell Mill (without coolant hole)



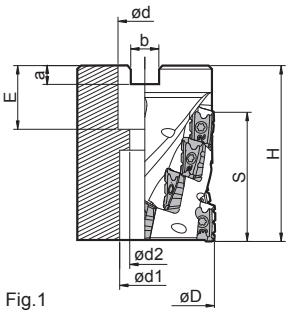


Fig.1

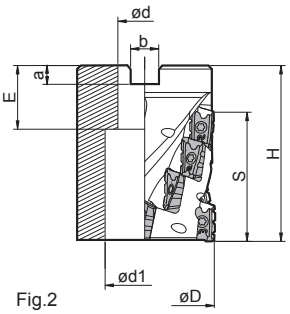


Fig.2

Rake Angle (°)		
Description	A.R. (MAX)	R.R.
MECH•••-11-	+23°	-8°
MECH•••-17-	+19°	-7°

Toolholder Dimensions

Description		Std.	No. of Flutes	No. of Stages	No. of Inserts	Dimension (mm)									Drawing	Spare Parts				Applicable Inserts ➔ 27
						øD	ød	ød1	ød2	H	E	a	b	S		Clamp Screw	Wrench	Anti-seize Compound	Mounting Bolt	
MECH	040R-11-4-4T-M	●	4	4	16	40	16	15	9	50	19	5.6	8.4	37	Fig.1	SB-2555TRG	DTM-8	MP-1	HH8X25	BDMT11T308ER-N2 BDMT11T308ER-N3
	050R-11-5-6T-M	●	6	5	30	50	22	18	11	63	21	6.3	10.4	46					HH10X30	
MECH	050R-17-2-4T-M	●	4	2	8	50	22	18	11	52	21	6.3	10.4	30		SB-4070TRN	DTM-15	MP-1	HH10X30	BDMT170408ER-N3 BDMT170408ER-N4
	050R-17-4-4T-M	●		4	16					78				59					HH10X40	
	063R-17-3-4T-M	●	4	3	12	63	27	20	14	70	24	7	12	45					HH12X35	
	080R-17-4-6T-M	●	6	4	24	80	32	26	18	85	28	8	14	59					HH16X45	
	100R-17-4-6T-M	●	6	4	24	100	40	56	-	85	30	9	16	59	Fig.2				-	
MECH	063R-17-3-4T	□	4	3	12	63	25.4	20	14	70	26	6	9.5	45	Fig.1	SB-4070TRN	DTM-15	MP-1	HH12X35	
	080R-17-4-6T	□	6	4	24	80	31.75	26	18	85	32	8	13	59					HH16X45	
	100R-17-4-6T	□	6	4	24	100	38.1	56	-	85	38	10	16	59	Fig.2				-	

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

MECH-BT50 / MECH-SK (Integral Arbor type, without coolant hole)

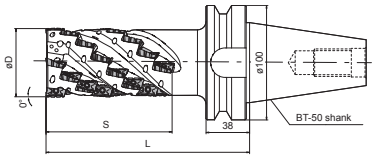


Fig.1

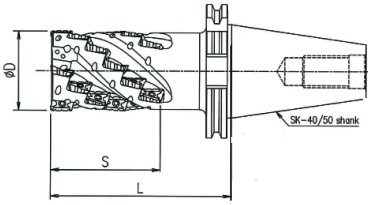


Fig.2

Rake Angle (°)		
Description	A.R. (MAX)	R.R.
MECH•••-11-	+23°	-7°
MECH•••-17-	+19°	-7°

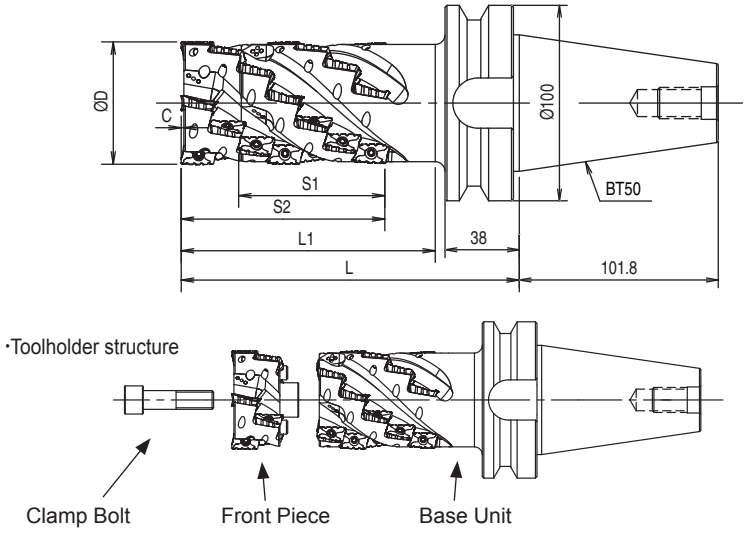
Toolholder Dimensions

Description		Std.	No. of Flutes	No. of Stages	No. of Inserts	Dimension (mm)			Drawing	Weight (kg)	Spare Parts			Applicable Inserts ➔ 27
						øD	L	S			Clamp Screw	Wrench	Anti-seize Compound	
MECH	050R11-8-4T-BT50	□	4	8	32	50	143	73	Fig.1	4.8	SB-2555TRG	DTM-8	MP-1	BDMT11T308ER-N2 BDMT11T308ER-N3
MECH	050R17-7-4T-BT50	□	4	7	28	50	173	104		4.9	SB-4070TRN	DTM-15	MP-1	BDMT170408ER-N3 BDMT170408ER-N4
	063R17-7-4T-BT50	□				63				5.9				
	080R17-7-4T-BT50	□				80				7.8				
	100R17-7-6T-BT50	□	6		42	100				10.2				
MECH	040R11-6-4T-SK40	●	4	6	24	40	92	55	Fig.2	1.3	SB-2555TRG	DTM-8	MP-1	BDMT11T308ER-N2 BDMT11T308ER-N3
MECH	050R11-8-4T-SK50	●		8	32	50	124	73		3.8				BDMT11T308ER-N2 BDMT11T308ER-N3
	050R17-7-4T-SK50	●		7	28		154	104		6.8	SB-4070TRN	DTM-15	MP-1	BDMT170408ER-N3 BDMT170408ER-N4

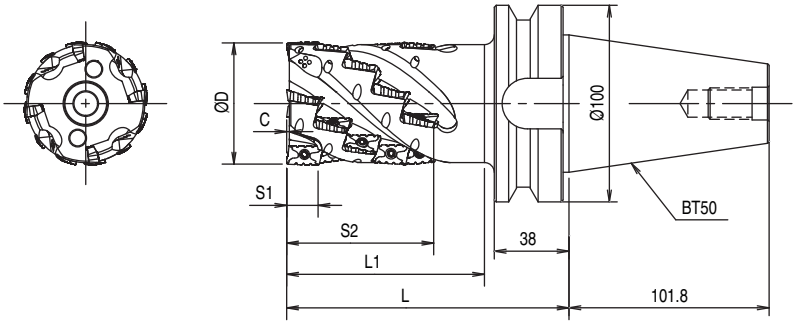
Coat Anti-seize Compound (MP-1) thinly on clamp screw when insert is fixed.

● : Std. Item □ : Check Availability

MECH-BT50SA (Without coolant hole) Arbor Integral Type (Base Unit+1 Front Piece+Clamp Bolt)



MECH-BT50-A (Without coolant hole) Base Unit



Toolholder Dimensions

Description			Std.	No. of Flutes	No. of Stages	No. of Inserts	Dimension (mm)						Rake Angle(°)		Weight (kg)
							øD	L	L1	C	S1	S2	A.R.	R.R.	
Arbor Integral Type	MECH	050R11-4T-BT50SA	□	4	8	32	50	143	99	0.7	55	73	+23°	-7°	4.8
		063R17-4T-BT50SA	□		7	28	63	173	130	1.3	75	104	+19°	-7°	5.8
		080R17-4T-BT50SA	□				80								7.6
		100R17-6T-BT50SA	□	6	7	42	100								9.8
Base Unit	MECH	050R11-4T-BT50-A	□	4	6	24	50	125	81	0.7	10	55	+23°	-7°	4.6
		063R17-4T-BT50-A	□		5	20	63	143	100	1.3	16	75	+19°	-7°	5.4
		080R17-4T-BT50-A	□				80								6.8
		100R17-6T-BT50-A	□	6	5	30	100								8.5

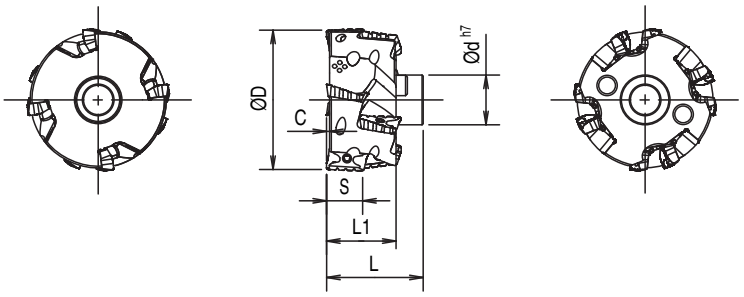
Recommended Cutting Conditions 23

Toolholder structure

Endmill			Base Unit		Front Piece (1pcs)		Clamp Bolt
MECH	050R11-4T-BT50SA	=	MECH050R11-4T-BT50-A	+	MECH050R11-4T-F	+	HH12X35
	063R17-4T-BT50SA		MECH063R17-4T-BT50-A		MECH063R17-4T-F		HH12X40
	080R17-4T-BT50SA		MECH080R17-4T-BT50-A		MECH080R17-4T-F		HH16X40
	100R17-6T-BT50SA		MECH100R17-6T-BT50-A		MECH100R17-6T-F		HH20X40

□ : Check Availability

MECH-F (Without coolant hole) Front Piece



Toolholder Dimensions

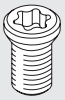
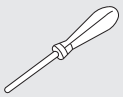
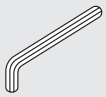
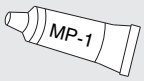
Description		Std.	No. of Flutes	No. of Stages	No. of Inserts	Dimension (mm)						Rake Angle(°)		Weight (kg)
						øD	ød	L	L1	C	S	A.R.	R.R.	
MECH	050R11-4T-F	□	4	2	8	50	22	44	30	1.3	16	+19°	-7°	0.2
	063R17-4T-F	□				63	22							0.4
	080R17-4T-F	□				80	32							0.8
	100R17-6T-F	□	6	2	12	100	45							1.3

Applicable Inserts

Endmill		Base Unit	Front Piece	Applicable Inserts ➔ 27
MECH	050R11-4T-BT50SA	MECH050R11-4T-BT50-A	MECH050R11-4T-F	BDMT11T308ER-N2 BDMT11T308ER-N3
	063R17-4T-BT50SA	MECH063R17-4T-BT50-A	MECH063R17-4T-F	
	080R17-4T-BT50SA	MECH080R17-4T-BT50-A	MECH080R17-4T-F	BDMT170408ER-N3 BDMT170408ER-N4
	100R17-6T-BT50SA	MECH100R17-6T-BT50-A	MECH100R17-6T-F	

・For installation of notched inserts, see page ➔ **22**.

Spare Parts

Description			Spare Parts				
			Clamp Screw	Wrench (for Clamp Screw)	Clamp Bolt	Wrench (for Clamp Bolt)	Anti-seize Compound
							
Arbor Integral Type (Set)	MECH	050R11-4T-BT50SA	SB-2555TRG	DTM-8	HH12X35	LW-10	MP-1
		063R17-4T-BT50SA	SB-4070TRN	DTM-15	HH12X40	LW-10	
		080R17-4T-BT50SA			HH16X40	LW-14	
		100R17-6T-BT50SA			HH20X40	LW-17	
Base Unit	MECH	050R11-4T-BT50-A	SB-2555TRG	DTM-8	HH12X35	LW-10	
		063R17-4T-BT50-A	SB-4070TRN	DTM-15	HH12X40	LW-10	
		080R17-4T-BT50-A			HH16X40	LW-14	
		100R17-6T-BT50-A			HH20X40	LW-17	
Front Piece	MECH	050R11-4T-F	SB-2555TRG	-	-	-	
		063R17-4T-F	SB-4070TRN				
		080R17-4T-F					
		100R17-6T-F					

・If you purchased the front piece only, wrench (for clamp screw) / clamp bolt and wrench (for clamp bolt) is not included.

When using the anti-seize compound (MP-1), apply it in a thin layer to the clamp screw.

□ : Check Availability

Number of Inserts Installed

Description		No. of Flutes	No. of Inserts	No. of Inserts BDMT11T308ER- N2	BDMT11T308ER- N3	BDMT170408ER- N3	BDMT170408ER- N4
MECH	025-○25-11-4-2T	2	8	4	4	-	-
	032-○32-11-5-2T		10	5	5		
	032-○32-11-5-4T	4	20	10	10		
	040-○32-11-6-4T		24	12	12		
	040-S42-11-6-4T						
	050-S42-11-7-4T		28	14	14		
	050-W40-11-7-4T						
	050-S42-11-7-6T	6	42	21	21		
	050-W40-11-7-6T						
MECH	040-○32-17-4-2T	2	8	-	-	4	4
	040-S42-17-4-2T						
	050-S42-17-5-4T	4	20			10	10
	050-W40-17-5-4T						
MECH	040R-11-4-4T-M	4	16	8	8	-	-
	050R-11-5-6T-M	6	30	15	15		
MECH	050R-17-2-4T-M	4	8	-	-	4	4
	050R-17-4-4T-M	4	16			8	8
	063R-17-3-4T-M	4	12	-	-	6	6
	080R-17-4-6T-M	6	24			12	12
	100R-17-4-6T-M	6	24			12	12
MECH	063R-17-3-4T	4	12	-	-	6	6
	080R-17-4-6T	6	24			12	12
	100R-17-4-6T	6	24			12	12
MECH	040R11-6-4T-SK40	4	24	12	12	-	-
MECH	050R11-8-4T-BT50	4	32	16	16		
	050R11-8-4T-SK50						
MECH	050R17-7-4T-BT50	4	28	-	-	14	14
	050R17-7-4T-SK50						
	063R17-7-4T-BT50						
	080R17-7-4T-BT50						
MECH	100R17-7-6T-BT50	6	42	-	-	21	21

Description		No. of Flutes	No. of Inserts	No. of Inserts BDMT11T308ER- N2	BDMT11T308ER- N3	BDMT170408ER- N3	BDMT170408ER- N4
MECH	050R11-4T-BT50SA	4	32	16	16	-	-
	063R17-4T-BT50SA	4	28	-	-	14	14
	080R17-4T-BT50SA						
	100R17-6T-BT50SA	6	42	-	-	21	21
MECH	050R11-4T-BT50-A	4	24	12	12	-	-
	063R17-4T-BT50-A	4	20	-	-	10	10
	080R17-4T-BT50-A						
	100R17-6T-BT50-A	6	30	-	-	15	15
MECH	050R11-4T-F	4	8	4	4	-	-
	063R17-4T-F	4	8	-	-	4	4
	080R17-4T-F						
	100R17-6T-F	6	12	-	-	6	6

Precautions when installing notched inserts.

1. Install notched inserts by cutting the insert with the number of marks on the holder body.

<Insert Number and Holder Marks>

Insert Size	11 type		17 type	
Insert No.	2	3	3	4
Marks				

*Using the cutter with the inserts installed incorrectly will damage the holder.

2. When installing notched inserts in flute line, ensure that the number on the insert is the same as the insert in first stage.
See Fig.1, 2 and 3.

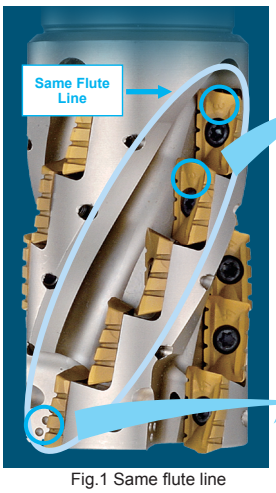


Fig.1 Same flute line


Fig.2 Insert No.


Fig.3 Marks

Recommended Cutting Conditions (When using a notched insert)

Workpiece Material	fz (mm/t)	Insert Grade (Cutting Speed Vc : m/min)				
		MEGACOAT			PVD Coated Carbide	
		PR1225	**PR1230**	**PR1210**	**PR830**	**PR905**
Carbon Steel	0.08~0.1~0.15	☆ 120~180~250	★ 120~180~220	-	☆ 100~140~180	-
Alloy Steel	0.08~0.1~0.15	☆ 100~160~220	★ 100~160~200	-	☆ 100~140~180	-
Mold Steel	0.08~0.1~0.15	☆ 80~140~180	★ 80~140~160	-	☆ 100~120~150	-
Groy Cast Iron	0.08~0.15~0.18	-	-	★ 120~180~250	-	☆ 100~140~180
Nodular Cast Iron	0.08~0.15~0.18	-	-	★ 100~150~220	-	☆ 100~120~150
Titanium Alloys	0.08~0.1~0.15	-	-	★ 30~50~70	-	☆ 20~35~50

★:1st Recommendation ☆:2nd Recommendation

※ Cutting with coolant is recommended for titanium alloy.

1. The recommended cutting conditions above are for notched inserts.
2. If using an insert without notch, the cutting depth (ap) and width (ae) should be less than 60% of those of a notched insert.

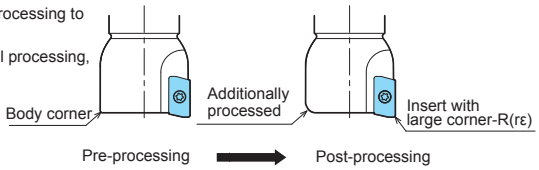
• JA Chipbreaker

Workpiece Material	fz (mm/t)	Recommended Insert Grade (Cutting Speed Vc : m/min)
		Carbide
		GW25
Aluminium Alloy (Si 13% or below)	0.05~0.3	200~800
Aluminium Alloy (Si 13% or above)	0.05~0.2	200~300

■ When using inserts with corner radii R1.6 or larger, additional modifications of the cutter body will be necessary. See the chart below for the recommended modifications.

Insert Corner-R(rε)	Material to be removed from cutter body corner
1.6	R1.0
2.0	
2.4	R1.2
3.1	R1.6
4.0	R2.5

* R shape is recommended for additional processing to the body corner.
When applying chamfer shaped additional processing, do not cut away too much.

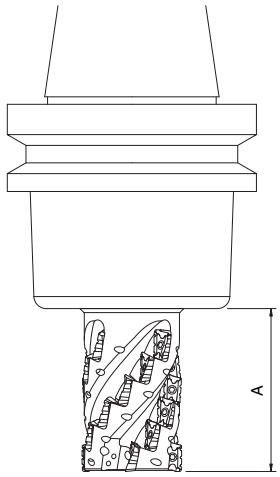


Cutting Performance (Used Machine: Machining center equivalent to AC15 / 18.5kw)

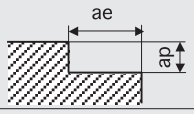
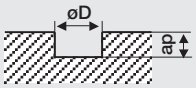
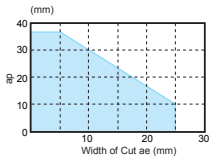
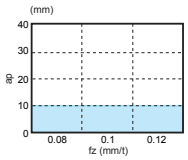
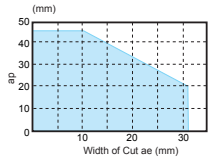
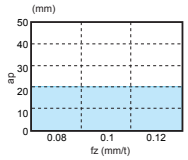
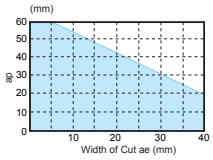
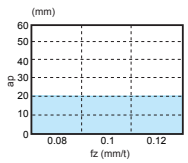
MECH Endmill Type

Cutter Dia	Description	Overhang Length A (mm)
ø25	**MECH025-S25-11-4-2T**	48
	MECH025-W25-11-4-2T	
ø32	**MECH032-S32-11-5-2T**	57
	MECH032-W32-11-5-2T	
	MECH032-S32-11-5-4T	
	MECH032-W32-11-5-4T	
ø40	**MECH040-S32-11-6-4T**	65
	MECH040-W32-11-6-4T	
	MECH040-S42-11-6-4T	
ø50	**MECH050-S42-11-7-4T**	76
	MECH050-W40-11-7-4T	
	MECH050-S42-11-7-6T	
	MECH050-W40-11-7-6T	
ø40	**MECH040-S32-17-4-2T**	74
	MECH040-W32-17-4-2T	
	MECH040-S42-17-4-2T	
ø50	**MECH050-S42-17-5-4T**	89
	MECH050-W40-17-5-4T	

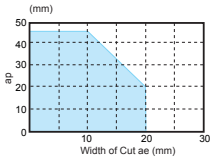
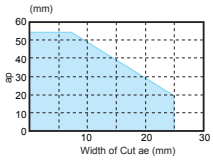
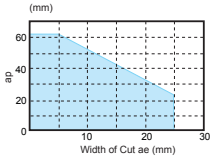
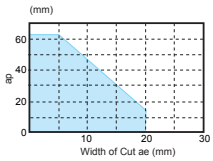
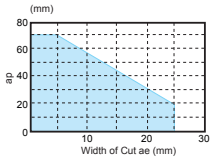
Shape



2 Flute Type [Workpiece material: C50 (S50C)]

Description	■ Shouldering	■ Slotting
		
	Cutting speed: Vc=100~180m/min Feed Rate: fz=0.08~0.15mm/t	Cutting speed: Vc=100~120m/min Feed Rate: fz=0.08~0.12mm/t
MECH025-S25-11-4-2T MECH025-W25-11-4-2T		
MECH032-S32-11-5-2T MECH032-W32-11-5-2T		
MECH040-S32-17-4-2T MECH040-S42-17-4-2T MECH040-W32-17-4-2T		

4 Flute / 6 Flute Type

MECH032-S32-11-5-4T MECH032-W32-11-5-4T	
MECH040-S32-11-6-4T MECH040-W32-11-6-4T MECH040-W32-11-6-4T	
MECH050-S42-11-7-4T MECH050-W40-11-7-4T	
MECH050-S42-11-7-6T MECH050-W40-11-7-6T	
MECH050-S42-17-5-4T MECH050-W40-17-5-4T	

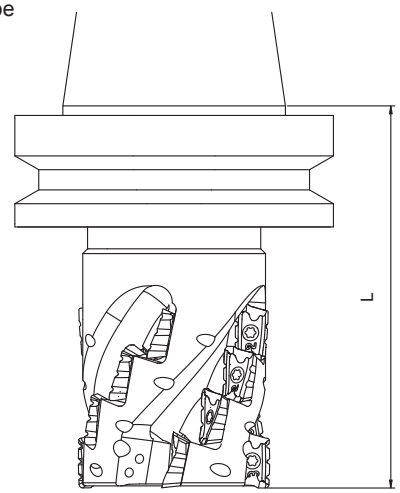
4 Flute / 6 Flute Type are not recommended for Slotting.

● **MECH** Shell Mill Type

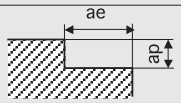
[Workpiece material: C50 (S50C)]

Cutter Dia	Description	Overhang Length A (mm)
ø40	**MECH040R-11-4-4T-M**	125
ø50	**MECH050R-11-5-6T-M**	123
	MECH050R-17-2-4T-M	112
	MECH050R-17-4-4T-M	138
ø63	**MECH063R-17-3-4T-○**	115
ø80	**MECH080R-17-4-6T-○**	130
ø100	**MECH100R-17-4-6T-○**	130

Shape

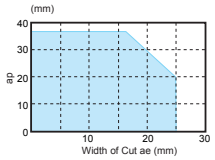


■ Shouldering

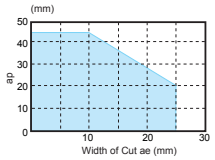


Cutting Speed: Vc=100~180m/min
Feed Rate: fz=0.08~0.15mm/t

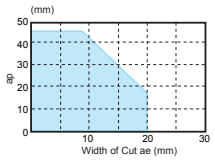
MECH040R -11-4-4T-M



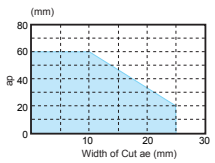
MECH063R -17-3-4T-○



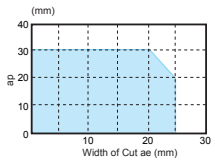
MECH050R -11-5-6T-M



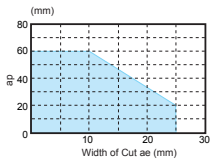
MECH080R -17-4-6T-○



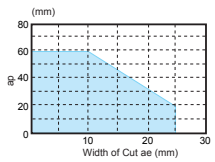
MECH050R -17-2-4T-M



MECH100R -17-4-6T-○



MECH050R -17-4-4T-M



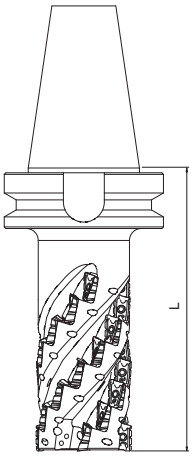
Not Recommended for Slotting.

● **MECH-BT50** (Integral Arbor type) / **MECH-SK50** (Integral Arbor type)
MECH-BT50 SA (Head exchangeable type / Integral Arbor type)

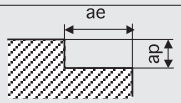
[Workpiece material: C50 (S50C)]

Cutting Dia.	Description	Overhang Length A (mm)
ø40	**MECH040R11-6-4T-SK40**	92
ø50	**MECH050R11-8-4T-SK50**	124
	MECH050R17-7-4T-SK50	154
	MECH050R11-8-4T-BT50 **MECH050R11-4T-BT50SA**	143
	MECH050R17-7-4T-BT50	173
ø63	**MECH063R17-7-4T-BT50** **MECH063R17-4T-BT50SA**	
ø80	**MECH080R17-7-4T-BT50** **MECH080R17-4T-BT50SA**	
ø100	**MECH100R17-7-6T-BT50** **MECH100R17-6T-BT50SA**	

Shape

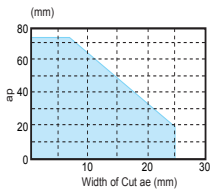


■ Shouldering

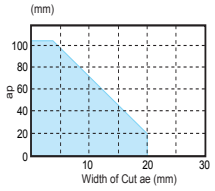


Cutting Speed: Vc=100~180m/min
Feed Rate: fz=0.08~0.15mm/t

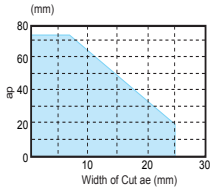
MECH040R11 -6-4T-SK40



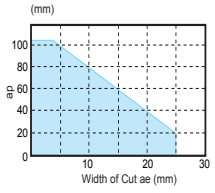
MECH063R17 -7-4T-BT50
MECH063R17 -4T-BT50SA



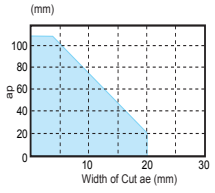
MECH050R11 -8-4T-BT50
MECH050R11 -4T-BT50SA
MECH050R11 -4T-BT50SA



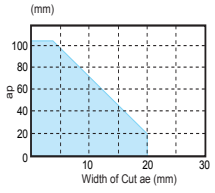
MECH080R17 -7-4T-BT50
MECH080R17 -4T-BT50SA



MECH050R17 -7-4T-BT50
MECH050R17 -7-4T-SK



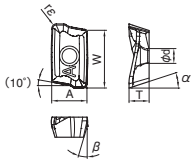
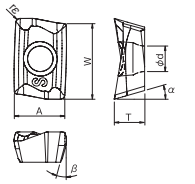
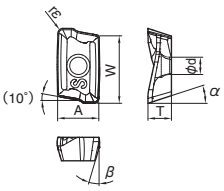
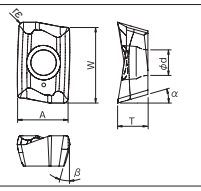
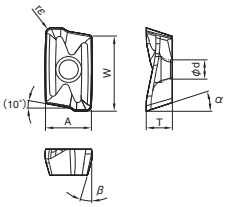
MECH100R17 -7-6T-BT50
MECH100R17 -6T-BT50SA

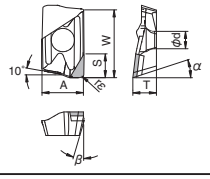


Not Recommended for Slotting.

Inserts

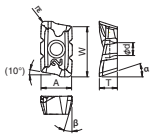
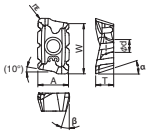
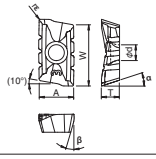
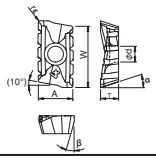
Classification of usage			Cermet	PVD coated carbide			MEGACOAT carbide		MEGACOAT NANO	Carbide	CVD coated carbide	Ref. Page for Toolholder
★ : Roughing / 1st Choice ☆ : Roughing / 2nd Choice ■ : Finishing / 1st Choice □ : Finishing / 2nd Choice ● : Copying / 1st Choice ○ : Copying / 2nd Choice (In case hardness is under 45HRC)			TN100M	PR830	PR905	PR1025	PR1210	PR1225	PR1535	GW25	CA6535	
	P	Carbon Steel / Alloy Steel	■	☆		☆		★				
		Mold Steel	■	☆		☆		★				
	M	Stainless Steel		☆		☆		☆	★		☆	
	K	Gray Cast Iron			☆		★					
		Nodular Cast Iron			☆		★					
	N	Non-ferrous Metals								★		
	S	Heat-resistant alloy				☆			☆		★	
		Titanium Alloy					☆		★	☆		
	H	Hard Materials		□				□				

Insert (Right-hand shown)	Description	Dimension (mm) A	T	ød	W	rε	Angle (°) α	β	γ	Ref. Page for Toolholder
 	**BDGT 11T302FR-JA** **11T304FR-JA** **11T308FR-JA**	6.7	3.80	2.8	11.0	0.2 0.4 0.8	18°	13°	-	10
	BDGT 170404FR-JA **170408FR-JA** **170420FR-JA** **170431FR-JA**	9.6	4.90	4.4	17.0	0.4 0.8 2.0 3.1	18°	13°	-	- 12
 	**BDMT 070302ER-JS** **070304ER-JS** **070308ER-JS**	4.6	2.6	2.3	6.7	0.2 0.4 0.8	16°	15°		6 - 7
 	**BDMT 110302ER-JS** **110304ER-JS** **110308ER-JS**	6.3	3.00	2.8	11.0	0.2 0.4 0.8	18°	15°	-	
	BDMT 11T302ER-JS **11T304ER-JS** **11T308ER-JS**	6.7	3.80	2.8	11.0	0.2 0.4 0.8	18°	13°	-	10 - 12
	BDMT 170404ER-JS **170408ER-JS**	9.6	4.90	4.4	17.0	0.4 0.8	18°	13°	-	
 	**BDMT 070302ER-JT** **070304ER-JT** **070308ER-JT**	4.6	2.6	2.3	6.7	0.2 0.4 0.8	16°	15°		6 - 7
 	**BDMT 110302ER-JT** **110304ER-JT** **110308ER-JT**	6.3	3.00	2.8	11.0	0.2 0.4 0.8	18°	15°	-	
	BDMT 11T302ER-JT **11T304ER-JT** **11T308ER-JT** **11T312ER-JT** **11T316ER-JT** **11T320ER-JT** **11T324ER-JT** **11T331ER-JT**	6.7	3.80	2.8	11.0	0.2 0.4 0.8 1.2 1.6 2.0 2.4 3.1	18°	13°	-	10 - 12
	BDMT 170404ER-JT **170408ER-JT** **170412ER-JT** **170416ER-JT** **170420ER-JT** **170424ER-JT** **170431ER-JT** **170440ER-JT**	9.6	4.90	4.4	17.0	0.4 0.8 1.2 1.6 2.0 2.4 3.1 4.0	18°	13°	-	

Insert	Description	Dimension (mm) A	T	ød	W	rε	S	Angle (°) α	β	PCD KPD001	KPD230	Ref. Page for Toolholder
 	**BDMT 11T302FR**	6.7	3.80	2.8	11.0	0.2	3.6	18°	13°	●	●	10-12
	11T304FR					0.4				●	●	
	BDMT 170402FR	9.6	4.90	4.4	17.0	0.2	4.4	18°	13°	●	●	
	170404FR					0.4				●	●	

Inserts

Classification of usage											
★ : Roughing / 1st Choice ☆ : Roughing / 2nd Choice ■ : Finishing / 1st Choice □ : Finishing / 2nd Choice ● : Copying / 1st Choice ○ : Copying / 2nd Choice (In case hardnessunder is under 45HRC)	P	Carbon Steel / Alloy Steel				☆			★	★	
		Mold Steel				☆			★	★	
	M	Stainless Steel				☆			★		
	K	Gray Cast Iron					☆	★			
		Nodular Cast Iron					☆	★			
	N	Non-ferrous Metals									
	S	Heat-resistant alloy							★		
		Titanium Alloy						★			
	H	Hard Materials				□			□	□	

Insert (Right-hand shown)		Description	Dimension (mm)					Angle (°)			Cermet		Carbide						Ref. Page for Toolholder
													PVD coated			MEGACOAT			
			A	T	ød	W X	rε Z	α	β	γ	TN100M			PR830	PR905	PR1210	PR1225	PR1230	
 2-Notched		**BDMT 11T308ER-N2**	6.7	3.80	2.8	11.0	0.8	18°	13°	-				●	●	●	●	●	18-21
 3-Notched		**BDMT 11T308ER-N3**	6.7	3.80	2.8	11.0	0.8	18°	13°	-				●	●	●	●	●	
 3-Notched		**BDMT 170408ER-N3**	9.6	4.90	4.4	17.0	0.8	18°	13°	-				●	●	●	●	●	
 4-Notched		**BDMT 170408ER-N4**	9.6	4.90	4.4	17.0	0.8	18°	13°	-				●	●	●	●	●	

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www.kyocera-unimerco.com

GERMANY
KYOCERA UNIMERCO Tooling GmbH
Hammfelddamm 6 · 41460 Neuss
Phone +49 (0)2131 1637 115
Fax +49 (0)2131 1637 152
kutde@kyocera-unimerco.com

ITALY
KYOCERA UNIMERCO Tooling GmbH, Italy Branch
Via Torino 51 · 20123 Milan
Phone +39-02 00620 845
Fax +39-02 00620 848
kutde@kyocera-unimerco.com

SPAIN
KYOCERA UNIMERCO Tooling GmbH, Spain Branch
Avenida Manacor 4 · 28290 Las Matas, Madrid
Phone +34-91-631-83-92-802
Fax +34-91-631-82-19
kutde@kyocera-unimerco.com

POLAND
KYOCERA UNIMERCO Tooling Sp. z o.o.
ul. Gwiaździsta 66, 53-413 Wrocław
Phone (+48) 71 381 12 15
Fax (+48) 71 381 12 16
kutde@kyocera-unimerco.com

FRANCE
KYOCERA Fineceramics S.A.S.
21 Rue de Villeneuve · 94583 Rungis
Phone +33 (0) 1 41 73 73 40
Fax +33 (0) 1 56 72 18 94
kutde@kyocera-unimerco.com

DENMARK
KYOCERA UNIMERCO Tooling A/S
Drejervej 2 · DK-7451 Sunds
Phone +45 97 14 14 11
Fax +45 97 14 14 86
umdk@unimerco.com

NORWAY
KYOCERA UNIMERCO Tooling A/S
Karihaugveien 89 · 1086 Oslo
Phone +47 22 72 06 02
Fax +47 22 30 92 20
umno@unimerco.com

SWEDEN
KYOCERA UNIMERCO Tooling AB
Sagaholmsvägen 9 · 553 02 Jönköping
Phone +46 036-34 46 00
Fax +46 036-31 32 00
umse@unimerco.com

UNITED KINGDOM
KYOCERA UNIMERCO Tooling Ltd.
101 Attercliffe Road · Sheffield S4 7WW
Phone +44 (0)1142 788787
Fax +44 (0)1142 757155
uksales@unimerco.com

TZE00052