KYOCERA

MEC Series

High Efficiency & Low Cutting Force

Milling Cutter Series

MEC Endmills & Face Mills

Standard & Long Shank Lineup
Multiple Corner Radii Available

MECX Endmills & Face Mills

Extra-Fine Pitch for Increased Efficiency
Low Cutting Forces Ideal for Lower Horsepower Machines

MECH Helical Endmills

Improved Chip Evacuation
Maximum Machining Efficiency
Reduced Cutting Forces

NEW **PR1535**
MEGACOAT NANO

For titanium alloy and precipitation hardened stainless steel

NEW **CA6535**
CVD Coated Carbide

For Ni-base heat resistant alloy and martensitic stainless steel

NEW **KYO-CAT**
Taper Adapters

CAT-40 & CAT-50 for endmills and facemills


MEC
MECX
MECH

MEC-Series Milling Line

MEC
Ultra Hurricane Endmills & Facemills

Pages 4-17

- Standard shank and long shank product line expansion
- Corner radius lineup expansion
- JA Chipbreaker and KPD001 (PCD) for Aluminum available

MECX
Ultra Hurricane Fine-Pitch Endmills & Facemills

Pages 18-23

- Extra-fine pitch increases machining efficiency
- Low cutting forces
- Ideal for lower horsepower machines

MECH
Helical Endmills

Pages 24-29

- Improved chip evacuation
- Maximum machining efficiency
- Reduced cutting force

KYO-CAT
CAT40 / CAT50 Taper Adapters

Pages 30-31

MEC

Endmills & Face Mills

Including a Standard & Long Shank lineup
with various Corner Radii available.

1st Choice Grades

Workpiece Material	Carbon Steel / Alloy Steel					Stainless Steel					Cast Iron				Aluminum			
Cutting Range	Finishing ← → Roughing					Finishing ← → Roughing					Finishing ← → Roughing				Finishing ← → Roughing			
Classification	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30	N01	N10	N20	N30
Application Range		PR1225					NEW PR1535 NEW CA6535					PR1210				GW25 KPD001		

Available Corner Radii

Description	Corner Radius (rε)								
	0.008	0.016	0.031	0.047	0.063	0.079	0.094	0.112	0.157
BDMT1103..ER-JT	●	●	●	-	-	-	-	-	-
BDMT11T3..ER-JT	●	●	●	●	●	●	●	●	-
BDMT1704..ER-JT	-	●	●	●	●	●	●	●	●
BDMT1103..ER-JS	●	●	●	-	-	-	-	-	-
BDMT11T3..ER-JS	●	●	●	-	-	-	-	-	-
BDMT1704..ER-JS	-	●	●	-	-	-	-	-	-
BDMT11T3..FR	●	●	-	-	-	-	-	-	-
BDMT1704..FR	●	●	-	-	-	-	-	-	-
BDGT11T3..FR-JA	●	●	●	-	-	-	-	-	-
BDGT1704..FR-JA	-	●	●	-	-	●	-	●	-

New Grades for
Difficult-to-cut Materials

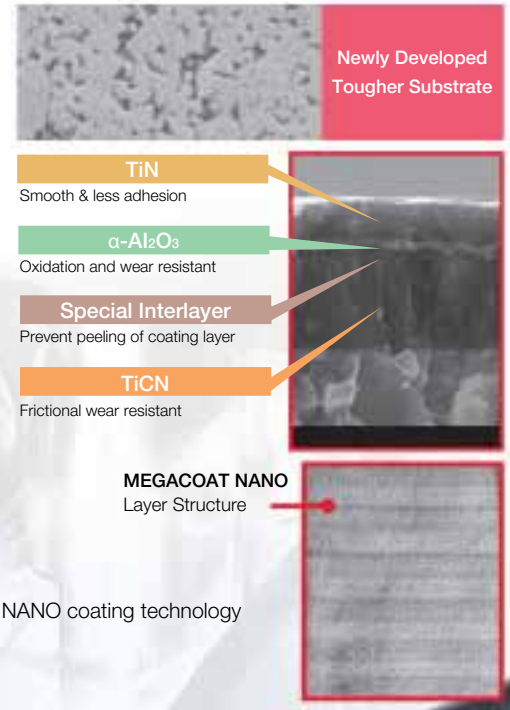
- Stable cutting reduces opportunities for insert fracturing
- Good for high efficiency machining

CA6535

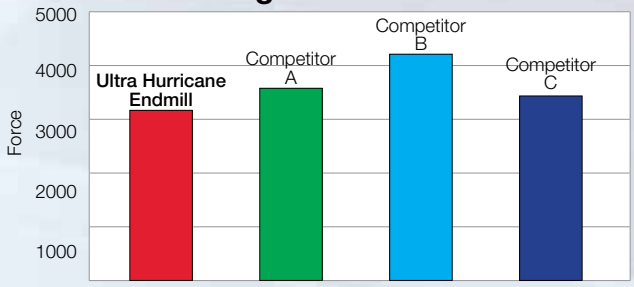
- For Ni-base heat resistant alloys and martensitic stainless steels
- High heat resistance and wear resistance with CVD coating
- Improved stability due to thin film coating technology

PR1535

- For titanium alloys and precipitation hardened stainless steels
- Improved stability due to thin film coating technology
- Stabilized milling operation and long tool life with Kyocera's MEGACOAT NANO coating technology

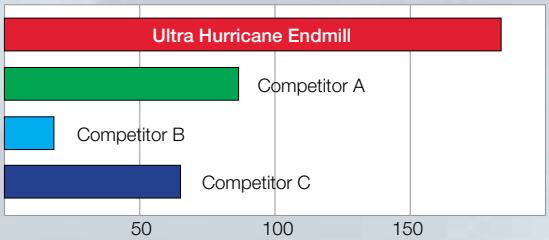


Low Cutting Forces



1049, V= 320 sfm, d x w= 0.354 x 0.394",
f= 0.008 ipt, No coolant

High Feed Rates

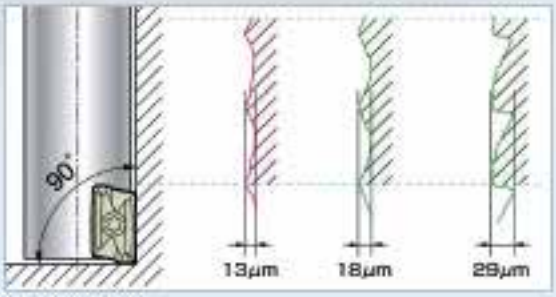


4140, V= 380sfm
d x w= 0.118" x 0.394"
f= 0.011ipt,
No coolant,
1 pass = 0.394"

Excellent Shoulder Wall Surface Finish

1049, V= 380 sfm, d x w= 0.197 x 0.394",
f= 0.004 ipt, No coolant

Perfect 90° Shoulders



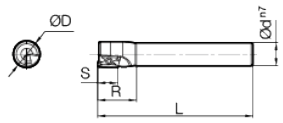


Fig.1

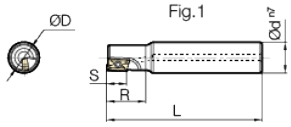


Fig.2

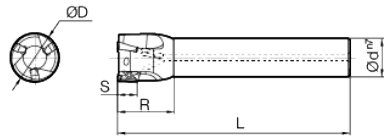


Fig.3

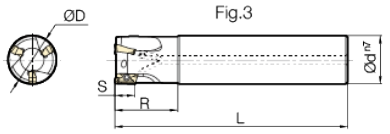


Fig.4

MEC Endmill (inch)

Shank	Part Number	Stock	No. of Inserts	Dimensions (inch) ØD (+0/-0.008)	Ød	L	ℓ	S	Rake Angle A.R. (MAX)	R.R.	Coolant Hole	Drawing	Spare Parts Insert Screw	Wrench	Max. Revolution (min⁻¹)
Standard Shank	MEC 0500-S500-11	●	1	0.500	0.500	2.65	0.787	0.394	12°	-21°	×	Fig.1	SB-2545TR	DTM-8	50,800
	MEC 0625-S500-11T ✻	●	2	0.625	0.500	2.75	0.906	0.394	18°	-14°	✓	Fig.3	SB-2555TRG	DTM-8	43,750
	0625-S625-11T ✻	●	2	0.625	0.625	3.00	1.024	0.394	18°	-14°	✓	Fig.4	SB-2555TRG	DTM-8	43,750
	0750-S625-11T ✻	●	3	0.750	0.625	3.05	1.024	0.394	20°	-10°	✓	Fig.3	SB-2555TRG	DTM-8	41,000
	0750-S750-11T ✻	●	3	0.750	0.750	3.25	1.142	0.394	20°	-10°	✓	Fig.4	SB-2555TRG	DTM-8	41,000
	1000-S750-11T ✻	●	3	1.000	0.750	3.25	1.142	0.394	21°	-10°	✓	Fig.3	SB-2555TRG	DTM-8	37,500
	1000-S100-11T ✻	●	3	1.000	1.000	3.75	1.260	0.394	21°	-10°	✓	Fig.4	SB-2555TRG	DTM-8	37,500
	1250-S100-11T ✻	●	4	1.250	1.000	3.75	1.260	0.394	23°	-9°	✓	Fig.3	SB-2555TRG	DTM-8	33,900
	1250-S125-11T ✻	●	4	1.250	1.250	4.00	1.575	0.394	23°	-9°	✓	Fig.4	SB-2555TRG	DTM-8	33,900
	1500-S125-11T ✻	●	5	1.500	1.250	4.35	1.969	0.394	24°	-8°	✓	Fig.3	SB-2555TRG	DTM-8	30,000
	MEC 1000-S750-17 ✻	●	2	1.000	0.750	3.50	1.417	0.618	16°	-11°	✓	Fig.3	SB-4070TRN	DTM-15	35,000
	1000-S100-17 ✻	●	2	1.000	1.000	3.75	1.417	0.618	16°	-11°	✓	Fig.4	SB-4070TRN	DTM-15	35,000
	1250-S100-17 ✻	●	3	1.250	1.000	4.00	1.575	0.618	17°	-7°	✓	Fig.3	SB-4070TRN	DTM-15	30,000
	1250-S125-17 ✻	●	3	1.250	1.250	4.00	1.575	0.618	17°	-7°	✓	Fig.4	SB-4070TRN	DTM-15	30,000
	1500-S125-17 ✻	●	4	1.500	1.250	4.35	1.969	0.618	19°	-7°	✓	Fig.3	SB-4070TRN	DTM-15	25,000
Long Shank	MEC 0750-S750-5.2-11T ✻	●	2	0.750	0.750	5.20	2.362	0.394	20°	-10°	✓	Fig.4	SB-2555TRG	DTM-8	41,000
	1000-S100-6.3-11T ✻	●	2	1.000	1.000	6.30	2.362	0.394	21°	-10°	✓	Fig.4	SB-2555TRG	DTM-8	37,500
	1250-S125-7.9-11T ✻	●	2	1.250	1.250	7.87	2.559	0.394	23°	-9°	✓	Fig.4	SB-2555TRG	DTM-8	33,900
	1500-S125-9.5-11T ✻	●	2	1.500	1.250	9.45	2.559	0.394	23°	-8°	✓	Fig.3	SB-2555TRG	DTM-8	30,000
	MEC 1000-S100-6.3-17 ✻	●	2	1.000	1.000	6.30	2.362	0.618	16°	-11°	✓	Fig.4	SB-4070TRN	DTM-15	35,000
	1250-S125-7.9-17 ✻	●	2	1.250	1.250	7.87	2.559	0.618	17°	-7°	✓	Fig.4	SB-4070TRN	DTM-15	30,000
	1500-S125-9.5-17 ✻	●	2	1.500	1.250	9.45	2.559	0.618	17°	-7°	✓	Fig.3	SB-4070TRN	DTM-15	25,000

• Caution with Max. Revolution
When running an endmill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

● : U.S. Stock

✻: Available as part of a discounted kit sale!

See ➡ 2014 Milling Kit Sale Brochure (U.S. Prices) See ➡ 2014 Milling Kit Sale Brochure (Canadian Prices)

Applicable Inserts

Milling Cutter	Inserts
MEC 0500-S500-11	BDMT 1103
MEC...-11T	BDMT 11T3
MEC...-17	BDMT 1704

Applicable Insert Selection See ➡ **P11**

Recommended Cutting Conditions ➡ **P12**

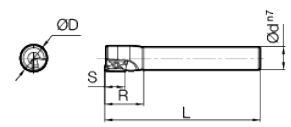


Fig.1

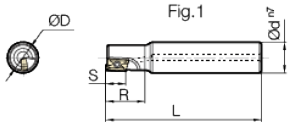


Fig.2

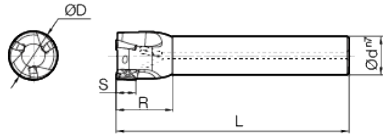


Fig.3

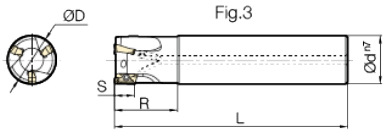


Fig.4

MEC Endmill (metric)

Shank	Part Number	Stock	No. of Inserts	Dimensions (mm) ØD (+0/-0.2)	Ød	L	ℓ	S	Rake Angle A.R. (MAX)	R.R.	Coolant Hole	Drawing	Spare Parts Insert Screw	Wrench	Max. Revolution (min⁻¹)
Standard Shank	MEC 10-S10-11	○	1	10	10	80	17	10	+10°	-24°	×	Fig.1	SB-2545TR	DTM-8	54,800
	10-S16-11	○	1	10	16	80	17	10	+10°	-24°	✓	Fig.2	SB-2545TR	DTM-8	54,800
	12-S10-11	○	1	12	10	80	20	10	+12°	-21°	×	Fig.1	SB-2545TR	DTM-8	50,800
	12-S12-11	○	1	12	12	80	20	10	+12°	-21°	×	Fig.1	SB-2545TR	DTM-8	50,800
	12-S16-11	○	1	12	16	80	20	10	+12°	-21°	✓	Fig.2	SB-2545TR	DTM-8	50,800
	13-S12-11	○	1	13	12	80	20	10	+12°	-19°	×	Fig.1	SB-2545TR	DTM-8	49,200
	14-S12-11	○	1	14	12	80	20	10	+12°	-19°	×	Fig.1	SB-2545TR	DTM-8	47,700
	14-S16-11	○	1	14	16	80	20	10	+12°	-19°	✓	Fig.2	SB-2545TR	DTM-8	47,700
	MEC 16-S12-11T	○	2	16	12	100	23	10	+18°	-14°	×	Fig.1	SB-2555TRG	DTM-8	43,750
	17-S16-11T	○	2	17	16	100	23	10	+18°	-13°	✓	Fig.3	SB-2555TRG	DTM-8	43,500
	18-S16-11T	○	2	18	16	100	23	10	+19°	-13°	✓	Fig.3	SB-2555TRG	DTM-8	43,000
	19-S16-11T	○	3	19	16	100	26	10	+20°	-10°	✓	Fig.3	SB-2555TRG	DTM-8	42,000
	20-S16-11T	○	3	20	16	110	26	10	+20°	-10°	✓	Fig.3	SB-2555TRG	DTM-8	41,000
	21-S20-11T	○	3	21	20	110	26	10	+20°	-9°	✓	Fig.3	SB-2555TRG	DTM-8	40,300
	22-S20-11T	○	3	22	20	110	26	10	+21°	-10°	✓	Fig.3	SB-2555TRG	DTM-8	39,600
	24-S20-11T	○	3	24	20	120	29	10	+21°	-10°	✓	Fig.3	SB-2555TRG	DTM-8	38,200
	25-S20-11T	○	3	25	20	120	29	10	+21°	-10°	✓	Fig.3	SB-2555TRG	DTM-8	37,500
	28-S25-11T	○	3	28	25	120	29	10	+22°	-9°	✓	Fig.3	SB-2555TRG	DTM-8	35,800
	30-S25-11T	○	4	30	25	130	32	10	+23°	-9°	✓	Fig.3	SB-2555TRG	DTM-8	34,800
	32-S25-11T	○	4	32	25	130	32	10	+23°	-9°	✓	Fig.3	SB-2555TRG	DTM-8	33,900
	40-S32-11T	○	5	40	32	150	50	10	+23°	-8°	✓	Fig.3	SB-2555TRG	DTM-8	30,000
	50-S32-11T	○	5	50	32	150	50	10	+23°	-7°	✓	Fig.3	SB-2555TRG	DTM-8	22,500
Same Size	MEC 16-S16-11T	○	2	16	16	100	30	10	+18°	-14°	✓	Fig.4	SB-2555TRG	DTM-8	43,750
	20-S20-11T	○	3	20	20	110	30	10	+20°	-10°	✓	Fig.4	SB-2555TRG	DTM-8	41,000
	25-S25-11T	○	3	25	25	120	32	10	+21°	-10°	✓	Fig.4	SB-2555TRG	DTM-8	37,500
	32-S32-11T	○	4	32	32	130	40	10	+23°	-9°	✓	Fig.4	SB-2555TRG	DTM-8	33,900
Long Shank	MEC 20-S18-170-11T	○	2	20	18	170	30	10	+20°	-10°	✓	Fig.3	SB-2555TRG	DTM-8	41,000
	20-S20-140-11T	○	2	20	20	140	60	10	+20°	-10°	✓	Fig.4	SB-2555TRG	DTM-8	41,000
	20-S20-170-11T	○	2	20	20	170	60	10	+20°	-10°	✓	Fig.4	SB-2555TRG	DTM-8	41,000
	22-S20-170-11T	○	2	22	20	170	30	10	+21°	-10°	✓	Fig.3	SB-2555TRG	DTM-8	39,600
	25-S23-210-11T	○	2	25	23	210	32	10	+21°	-10°	✓	Fig.3	SB-2555TRG	DTM-8	37,500
	25-S25-160-11T	○	2	25	25	160	60	10	+21°	-10°	✓	Fig.4	SB-2555TRG	DTM-8	37,500
	25-S25-210-11T	○	2	25	25	210	60	10	+21°	-10°	✓	Fig.4	SB-2555TRG	DTM-8	37,500
	28-S25-210-11T	○	2	28	25	210	32	10	+22°	-9°	✓	Fig.3	SB-2555TRG	DTM-8	35,800
	32-S30-250-11T	○	2	32	30	250	40	10	+23°	-9°	✓	Fig.3	SB-2555TRG	DTM-8	33,900
	32-S32-200-11T	○	2	32	32	200	65	10	+23°	-9°	✓	Fig.4	SB-2555TRG	DTM-8	33,900
	32-S32-250-11T	○	2	32	32	250	65	10	+23°	-9°	✓	Fig.4	SB-2555TRG	DTM-8	33,900
	35-S32-250-11T	○	2	35	32	250	40	10	+23°	-9°	✓	Fig.3	SB-2555TRG	DTM-8	32,600
	40-S32-240-11T	○	2	40	32	240	65	10	+23°	-8°	✓	Fig.3	SB-2555TRG	DTM-8	30,000
Standard	MEC 25-S20-17	○	2	25	20	120	36	15.7	+16°	-11°	✓	Fig.3	SB-4070TRN	DTM-15	35,000
	32-S25-17	○	3	32	25	130	40	15.7	+17°	-7°	✓	Fig.3	SB-4070TRN	DTM-15	30,000
	40-S32-17	○	4	40	32	150	50	15.7	+19°	-7°	✓	Fig.3	SB-4070TRN	DTM-15	25,000
	50-S32-17	○	4	50	32	150	50	15.7	+19°	-7°	✓	Fig.3	SB-4070TRN	DTM-15	17,000
Same Size	MEC 25-S25-17	○	2	25	25	120	36	15.7	+16°	-11°	✓	Fig.4	SB-4070TRN	DTM-15	35,000
	32-S32-17	○	3	32	32	130	40	15.7	+17°	-7°	✓	Fig.4	SB-4070TRN	DTM-15	30,000
Long Shank	MEC 25-S25-160-17	○	2	25	25	160	60	15.7	+16°	-11°	✓	Fig.4	SB-4070TRN	DTM-15	35,000
	25-S25-210-17	○	2	25	25	210	60	15.7	+16°	-11°	✓	Fig.4	SB-4070TRN	DTM-15	35,000
	28-S25-210-17	○	2	28	25	210	36	15.7	+16°	-11°	✓	Fig.3	SB-4070TRN	DTM-15	32,500
	32-S32-200-17	○	2	32	32	200	65	15.7	+17°	-7°	✓	Fig.4	SB-4070TRN	DTM-15	30,000
	32-S32-250-17	○	2	32	32	250	65	15.7	+17°	-7°	✓	Fig.4	SB-4070TRN	DTM-15	30,000
	35-S32-250-17	○	2	35	32	250	40	15.7	+17°	-7°	✓	Fig.3	SB-4070TRN	DTM-15	27,700
	40-S32-240-17	○	2	40	32	240	65	15.7	+19°	-7°	✓	Fig.3	SB-4070TRN	DTM-15	25,000

• Caution with Max. Revolution

When running an endmill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

○ : World Express (Shipping - 10 Business Days)

Insert Corner R	*Material to be removed from cutter body corner*
0.063	R.040
0.079	R.040
0.122	R.063

When using inserts with corner radii 0.063" or larger, additional modifications of the cutter body will be necessary.

See the chart to the left for the recommended modifications.

Applicable Insert Selection See ➡ **P11**

Recommended Cutting Conditions ➡ **P12**

Applicable Inserts

Milling Cutter	*Inserts*
MEC...-11	BDMT 1103
MEC...-11T	BDMT 11T3
MEC...-17	BDMT 1704

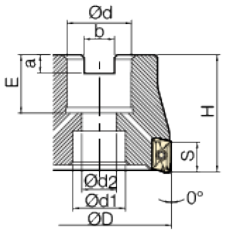


Fig.1

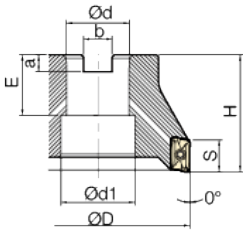


Fig.2

MEC Face Mill (inch)

	Part Number	Stock	No. of Inserts	Dimensions (inch) ØD	Ød	Ød1	Ød2	H	E	a	b	S	Rake Angle A.R. (MAX)	R.R.	Coolant Hole	Drawing	Spare Parts Insert Screw	Wrench	Max. Revolution (min⁻¹)
MEC	1500R-11T-5T	●	5	1.500	0.750	0.630	0.417	1.575	0.807	0.188	0.312	0.394	+23°	-7°	✓	Fig.1	SB-2555TRG	DTM-8	30,700
	2000R-11T-5T	●	5	2.000	0.750	0.646	0.417	1.575	0.819	0.188	0.312	0.394	+23°	-7°	✓	Fig.1	SB-2555TRG	DTM-8	22,300
	2500R-11T-6T	●	6	2.500	0.750	0.630	0.417	1.575	0.819	0.188	0.312	0.394	+23°	-7°	✓	Fig.1	SB-2555TRG	DTM-8	20,400
	3000R-11T-7T	●	7	3.000	1.000	0.827	0.555	1.969	0.878	0.223	0.375	0.394	+23°	-7°	✓	Fig.1	SB-2555TRG	DTM-8	18,500
	4000R-11-9TN	●	9	4.000	1.500	1.969	-	2.480	1.654	0.375	0.625	0.394	+23°	-7°	✓	Fig.1	SB-2555TRG	DTM-8	16,800
MEC	2000R-17-4T	●	4	2.000	0.750	0.646	0.417	1.575	0.819	0.188	0.312	0.618	+17°	-7°	✓	Fig.1	SB-4070TRN	DTM-15	16,800
	2500R-17-5T	●	5	2.500	0.750	0.646	0.417	1.575	0.819	0.188	0.312	0.618	+17°	-7°	✓	Fig.1	SB-4070TRN	DTM-15	14,400
	3000R-17-6T	●	6	3.000	1.000	0.827	0.555	1.969	0.878	0.223	0.375	0.618	+17°	-7°	✓	Fig.1	SB-4070TRN	DTM-15	12,250
	4000R-17-7TN	●	7	4.000	1.500	1.969	-	2.480	1.654	0.375	0.625	0.618	+17°	-7°	✓	Fig.2	SB-4070TRN	DTM-15	10,400

• Caution with Max. Revolution
When running an endmill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

● : U.S. Stock

Applicable Inserts

Milling Cutter	Inserts
MEC...-11	**BDMT 11T3**
MEC...-17	**BDMT 1704**

Applicable Insert Selection See **P11**

Recommended Cutting Conditions **P12**

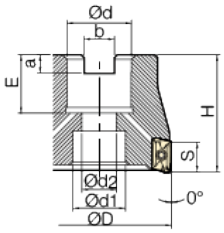


Fig.1

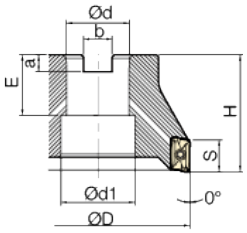


Fig.2

MEC Face Mill (mm)

Bore Dia.		Part Number	Stock	No. of Inserts	Dimensions (mm) ØD	Ød	Ød1	Ød2	H	E	a	b	S	Rake Angle A.R. (MAX)	R.R.	Coolant Hole	Drawing	Spare Parts Insert Screw	Wrench	Max. Revolution (min⁻¹)
Bore Dia. Metric Spec	Standard	MEC 040R-11-5T-M	○	5	40	16	14	8.5	40	20	5.5	8.5	10	+23°	-7°	✓	Fig.1	SB-2555TRG	DTM-8	30,000
		050R-11-5T-M	○	5	50	22	18	12	40	22	6.3	10.4	10	+23°	-7°	✓	Fig.1	SB-2555TRG	DTM-8	22,500
		063R-11-6T-M	○	6	63	22	18	12	40	22	6.3	10.4	10	+23°	-7°	✓	Fig.1	SB-2555TRG	DTM-8	20,500
		080R-11-7T-M	○	7	80	27	20	14	50	26	7	12.4	10	+23°	-7°	✓	Fig.1	SB-2555TRG	DTM-8	18,500
		100R-11-9TN	○	9	100	32	26	17.6	55	26	8	14.4	10	+23°	-7°	✓	Fig.1	SB-2555TRG	DTM-8	17,000
		125R-11-11T-M	○	11	125	40	45	32	63	33	9.5	16.4	10	+23°	-7°	✓	Fig.1	SB-2555TRG	DTM-8	15,000
		160R-11-14T-M	○	14	160	40	68	-	63	33	9.5	16.4	10	+23°	-7°	×	Fig.2	SB-2555TRG	DTM-8	13,900
		MEC 040R-17-4T-M	○	4	40	16	14	8.5	40	20	5.5	8.5	15.7	+19°	-7°	✓	Fig.1	SB-4070TRN	DTM-15	25,000
		050R-17-4T-M	○	4	50	22	18	12	40	22	6.3	10.4	15.7	+19°	-7°	✓	Fig.1	SB-4070TRN	DTM-15	17,000
		063R-17-5T-M	○	5	63	22	18	12	40	22	6.3	10.4	15.7	+19°	-7°	✓	Fig.1	SB-4070TRN	DTM-15	14,500
		080R-17-6T-M	○	6	80	27	20	14	50	26	7	12.4	15.7	+19°	-7°	✓	Fig.1	SB-4070TRN	DTM-15	12,000
		100R-17-7TN	○	7	100	32	26	17.6	55	26	8	14.4	15.7	+19°	-7°	✓	Fig.1	SB-4070TRN	DTM-15	10,500
		125R-17-9T-M	○	9	125	40	45	32	63	33	9.5	16.4	15.7	+19°	-7°	✓	Fig.1	SB-4070TRN	DTM-15	8,900
		160R-17-12T-M	○	12	160	40	68	-	63	33	9.5	16.4	15.7	+19°	-7°	×	Fig.2	SB-4070TRN	DTM-15	7,400
Bore Dia. Inch Spec	Coarse Pitch	MEC 063R-11-6T	○	6	63	25.4	20	14	50	26	6	9.5	10	+23°	-7°	✓	Fig.1	SB-2555TRG	DTM-8	20,500
		080R-11-7T	○	7	80	25.4	20	14	50	26	6	9.5	10	+23°	-7°	✓	Fig.1	SB-2555TRG	DTM-8	18,500
		100R-11-9TN	○	9	100	31.75	26	17.6	63	32	8	12.7	10	+23°	-7°	✓	Fig.1	SB-2555TRG	DTM-8	17,000
		125R-11-11T	○	11	125	38.1	45	32	63	38	10	15.9	10	+23°	-7°	✓	Fig.1	SB-2555TRG	DTM-8	15,000
		160R-11-14T	○	14	160	50.8	70	-	63	47	10	19.1	10	+23°	-7°	✓	Fig.2	SB-2555TRG	DTM-8	13,900
	Fine Pitch	MEC 063R-11-8T	○	8	63	25.4	20	14	50	26	6	9.5	10	+23°	-7°	✓	Fig.1	SB-2555TRG	DTM-8	20,500
		080R-11-10T	○	10	80	25.4	20	14	50	26	6	9.5	10	+23°	-7°	✓	Fig.1	SB-2555TRG	DTM-8	18,500
	Coarse Pitch	MEC 063R-17-5T	○	5	63	25.4	20	14	50	26	6	9.5	15.7	+19°	-7°	✓	Fig.1	SB-4070TRN	DTM-15	14,500
		080R-17-6T	○	6	80	25.4	20	14	50	26	6	9.5	15.7	+19°	-7°	✓	Fig.1	SB-4070TRN	DTM-15	12,000
		100R-17-7TN	○	7	100	31.75	26	17.6	63	32	8	12.7	15.7	+19°	-7°	✓	Fig.1	SB-4070TRN	DTM-15	10,500
		125R-17-9T	○	9	125	38.1	45	32	63	38	10	15.9	15.7	+19°	-7°	✓	Fig.1	SB-4070TRN	DTM-15	8,900
		160R-17-12T	○	12	160	50.8	70	-	63	47	10	19.1	15.7	+19°	-7°	✓	Fig.2	SB-4070TRN	DTM-15	7,400
	Fine Pitch	MEC 063R-17-6T	○	6	63	25.4	20	14	50	26	6	9.5	15.7	+19°	-7°	✓	Fig.1	SB-4070TRN	DTM-15	14,500
		080R-17-8T	○	8	80	25.4	20	14	50	26	6	9.5	15.7	+19°	-7°	✓	Fig.1	SB-4070TRN	DTM-15	12,000
		100R-17-9TN	○	9	100	31.75	26	17.6	63	32	8	12.7	15.7	+19°	-7°	✓	Fig.1	SB-4070TRN	DTM-15	10,500

• Caution with Max. Revolution
When running an endmill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

○ : World Express (Shipping - 10 Business Days)

Applicable Inserts

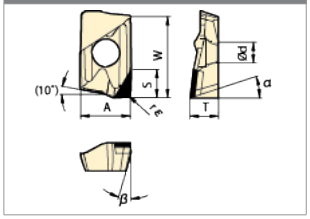
Milling Cutter	*Inserts*
MEC...-11	**BDMT 11T3**
MEC...-17	**BDMT 1704**

Applicable Insert Selection See ➔ **P11**

Recommended Cutting Conditions ➔ **P12**

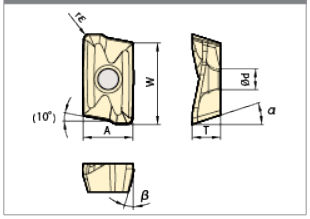
Insert Applications

BDMT...FR



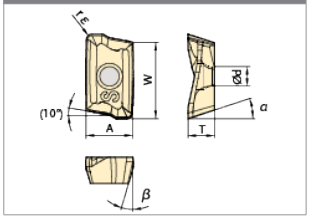
For High Speed Machining of Aluminum

BDMT...ER-JT



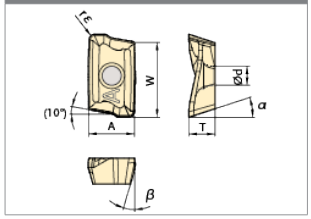
For General Machining of Steel and Cast Iron

BDMT...ER-JS



For General Machining of Stainless Steel and Low Carbon Steel

BDGT...FR-JA



For General Machining of Aluminum

Chipbreaker Lineup

General Purpose
JT Chipbreaker

Low Resistance
JS Chipbreaker

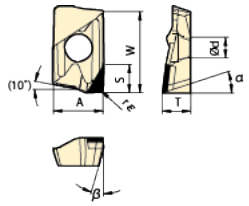
Aluminum
JA Chipbreaker

Applicable Insert Selection Guide

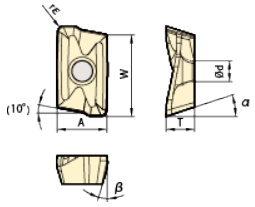
Description	*Applicable Inserts See ➔ P13*			
				
MEC...-11	BDMT1103○○ER-JT	BDMT1103○○ER-JS	-	-
MEC...-1103				
MEC...-11T	BDMT11T3○○ER-JT	BDMT11T3○○ER-JS	BDGT11T3○○FR-JA	BDMT11T3○○FR
MEC...-11T3				
MEC...-17	BDMT1704○○ER-JT	BDMT1704○○ER-JS	BDGT1704○○FR-JA	BDMT11T3○○FR
MEC...-1704				

Applicable Inserts

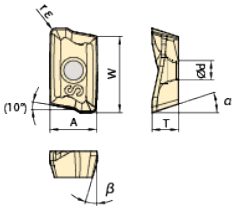
BDMT...FR



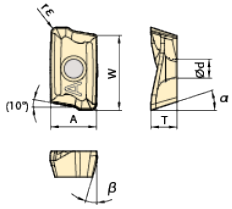
BDMT...ER-JT



BDMT...ER-JS



BDGT...ER-JA



Usage Classification

★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(When hardness is under 45HRC)

		TN100M *Cermet*	CA6535 *CVD Carbide*	PR1535 *MEGACOAT NANO*	PR1225 *MEGACOAT PVD*	PR1210 *PVD*	PR1025 *PVD*	PR905 *PVD*	PR830 *PVD*	GW25 *Carbide*	KPD001 *PCD*
P	Carbon Steel / Alloy Steel	■			★		☆		☆		
	Mold Steel	■			★		☆		☆		
M	Austenitic Stainless Steel			★	☆		☆		☆		
	Martensitic Stainless Steel		★	☆							
	Precipitation Hardened Stainless Steel			★							
K	Gray Cast Iron					★		☆			
	Nodular Cast Iron					★		☆			
N	Non-Ferrous Metal									★	■
S	Heat Resistant Alloy (Ni-base)		★		☆		☆				
	Titanium Alloy			★		☆				☆	■
H	Hard Materials				□				□		

Insert		*Part Number*	*Dimensions (in)* A	T	Ød	W	rε	S	*Angle* α	β	TN100M	CA6535	PR1535	PR1225	PR1210	PR1025	PR905	PR830	GW25	KPD001	*Applicable Toolholder*
 General Purpose (Steel & Cast Iron)	BDMT	110302ER-JT	0.248	0.118	0.110	0.443	0.008	-	18°	15°				●	●		●	○			
		110304ER-JT	0.248	0.118	0.110	0.443	0.016	-	18°	15°				●	●		●	●			
		110308ER-JT	0.248	0.118	0.110	0.443	0.031	-	18°	15°				●	●		●	●			
	BDMT	11T302ER-JT	0.264	0.150	0.110	0.433	0.008	-	18°	13°		○	○	●	●		●	●			
		11T304ER-JT	0.264	0.150	0.110	0.433	0.016	-	18°	13°	●	●	●	●	●		●	●			
		11T308ER-JT	0.264	0.150	0.110	0.433	0.031	-	18°	13°	○	●	●	●	●		●	●			
		11T312ER-JT	0.264	0.150	0.110	0.433	0.047	-	18°	13°		○	○	●	●		●	●			
		11T316ER-JT	0.264	0.150	0.110	0.433	0.063	-	18°	13°		●	●	●	●		●	●			
		11T320ER-JT	0.264	0.150	0.110	0.433	0.079	-	18°	13°		○	○	●	●		●	●			
		11T324ER-JT	0.264	0.150	0.110	0.433	0.094	-	18°	13°		○	○	●	●		○	●			
		11T331ER-JT	0.264	0.150	0.110	0.433	0.122	-	18°	13°		○	○	●	●		●	●			
	BDMT	170404ER-JT	0.378	0.193	0.173	0.669	0.016	-	18°	13°		●	●	●	●		●	●			
		170408ER-JT	0.378	0.193	0.173	0.669	0.031	-	18°	13°	●	●	●	●	●		●	●			
		170412ER-JT	0.378	0.193	0.173	0.669	0.047	-	18°	13°		○	○	●	●			●			
		170416ER-JT	0.378	0.193	0.173	0.669	0.063	-	18°	13°		●	●	●	●		●	●			
		170420ER-JT	0.378	0.193	0.173	0.669	0.079	-	18°	13°		○	○	●	●		●	●			
		170424ER-JT	0.378	0.193	0.173	0.669	0.094	-	18°	13°		○	○	●	●		●	●			
		170431ER-JT	0.378	0.193	0.173	0.669	0.122	-	18°	13°		●	●	●	●		○	●			
		170440ER-JT	0.378	0.193	0.173	0.669	0.157	-	18°	13°		○	○	●	●		○	●			
 General Purpose (Stainless Steel & Low Carbon Steel)	BDMT	110302ER-JS	0.248	0.118	0.110	0.443	0.008	-	18°	15°				●		○		○			P6-9
		110304ER-JS	0.248	0.118	0.110	0.443	0.016	-	18°	15°				●		●		●			
		110308ER-JS	0.248	0.118	0.110	0.443	0.031	-	18°	15°				●		●		●			
		11T302ER-JS	0.264	0.150	0.110	0.433	0.008	-	18°	13°		○	○	●		○		●			
		11T304ER-JS	0.264	0.150	0.110	0.433	0.016	-	18°	13°		●	●	●		●		●			
		11T308ER-JS	0.264	0.150	0.110	0.433	0.031	-	18°	13°		●	●	●		●		●			
	BDMT	170404ER-JS	0.378	0.193	0.173	0.669	0.016	-	18°	13°		○	○	●		●		●			
		170408ER-JS	0.378	0.193	0.173	0.669	0.031	-	18°	13°		●	●	●		●		●			
 General Purpose (Aluminum)	BDGT	11T302FR-JA	0.264	0.150	0.110	0.433	0.008	-	18°	13°									○		
		11T304FR-JA	0.264	0.150	0.110	0.433	0.016	-	18°	13°									●		
		11T308FR-JA	0.264	0.150	0.110	0.433	0.031	-	18°	13°									●		
	BDGT	170404FR-JA	0.378	0.193	0.173	0.669	0.016	-	18°	13°									●		
		170408FR-JA	0.378	0.193	0.173	0.669	0.031	-	18°	13°									●		
		170420FR-JA	0.378	0.193	0.173	0.669	0.079	-	18°	13°									●		
 High Speed (Aluminum)	BDMT	11T302FR	0.264	0.150	0.110	0.433	0.008	3.6	18°	13°										●	
		11T304FR	0.264	0.150	0.110	0.433	0.016	3.6	18°	13°										●	
	BDMT	170402FR	0.378	0.193	0.173	0.669	0.008	4.4	18°	13°										●	
		170404FR	0.378	0.193	0.173	0.669	0.016	4.4	18°	13°										●	

● : U.S. Stock ○ : World Express (Shipping - 10 Business Days)

Recommended Cutting Conditions

Chipbreaker	Workpiece Material	Toolholder fz (ipt) MEC0500~MEC0750 MEC10~MEC19	Toolholder fz (ipt) MEC1000~MEC1500 MEC20~MEC40 / MEC1500R~MEC4000R MEC040R~MEC160R	Recommended Insert Grade Vc (sfm) MEGACOAT NANO PR1535	MEGACOAT PR1225	MEGACOAT PR1210	CVD Coated Carbide CA6535
JT	Carbon Steel	0.002~**0.004**~0.006	0.003~**0.006**~0.010	-	★ 390~**590**~820	-	-
	Alloy Steel	0.002~**0.004**~0.005	0.003~**0.006**~0.008	-	★ 330~**520**~720	-	-
	Mold Steel	0.002~**0.003**~0.004	0.003~**0.005**~0.008	-	★ 260~**460**~590	-	-
	Austenitic Stainless Steel	0.002~**0.003**~0.004	0.003~**0.005**~0.006	☆ 330~**520**~660	☆ 330~**520**~660	-	-
	Martensitic Stainless Steel	0.002~**0.003**~0.004	0.003~**0.005**~0.008	☆ 490~**660**~820	-	-	★ 590~**790**~980
	Precipitation Hardened Stainless Steel	0.002~**0.003**~0.004	0.003~**0.005**~0.008	★ 300~**390**~490	-	-	-
	Gray Cast Iron	0.002~**0.004**~0.006	0.003~**0.007**~0.010	-	-	★ 390~**590**~820	-
	Nodular Cast Iron	0.002~**0.003**~0.004	0.003~**0.006**~0.008	-	-	★ 330~**490**~660	-
	Ni-base Heat Resistant Alloy	0.002~**0.003**~0.004	0.003~**0.005**~0.006	☆ 70~**100**~160	-	-	★ 70~**100**~160
	Titanium Alloy	0.002~**0.003**~0.004	0.003~**0.006**~0.008	☆ 130~**200**~260	-	☆ 100~**160**~230	-
JS	Carbon Steel	0.002~**0.004**~0.005	0.003~**0.006**~0.007	-	★ 390~**590**~820	-	-
	Alloy Steel	0.002~**0.003**~0.004	0.003~**0.005**~0.006	-	★ 330~**520**~720	-	-
	Mold Steel	0.002~**0.003**~0.004	0.003~**0.004**~0.005	-	★ 260~**460**~590	-	-
	Austenitic Stainless Steel	0.002~**0.003**~0.004	0.003~**0.004**~0.005	★ 330~**520**~660	☆ 330~**520**~660	-	-
	Martensitic Stainless Steel	0.002~**0.003**~0.004	0.003~**0.004**~0.005	☆ 490~**660**~820	-	-	★ 590~**790**~980
	Precipitation Hardened Stainless Steel	0.002~**0.003**~0.004	0.003~**0.004**~0.005	☆ 300~**390**~490	-	-	-
	Ni-base Heat Resistant Alloy	0.002~**0.003**~0.004	0.003~**0.004**~0.005	☆ 70~**100**~160	-	-	☆ 70~**100**~160
	Titanium Alloy	0.002~**0.003**~0.004	0.003~**0.004**~0.005	★ 130~**200**~260	-	-	-

※ Machining with coolant is recommended for Ni-base Heat Resistant Alloys and Titanium Alloys.

★ 1st Recommendation ☆ 2nd Recommendation

※ The figure in bold font is the starting value of the recommended cutting conditions.
Adjust the cutting speed and the feed rate within the above conditions according to the actual machining situation.

JA Chipbreaker

Workpiece Material	fz (ipt)	Insert Grades (Cutting Speed: sfm) Carbide **GW25**
Aluminum Alloys (Si 13% or less)	0.002~0.012	660~2620
Aluminum Alloys (Si 13% or above)	0.002~0.008	660~980

PCD

Workpiece Material	fz (ipt)	Insert Grades (Cutting Speed: sfm) PCD **KPD230 (KPD001)**
Aluminum Alloys (Si 13% or less)	0.002~0.008	1640~4920
Aluminum Alloys (Si 13% or above)	0.002~0.006	980~3280

⚠ Warning

Please observe below precautions fully.
Failure to observe the precautions may cause serious bodily harm to operators / bystanders.

Warning about Max. Revolution indicated on main body

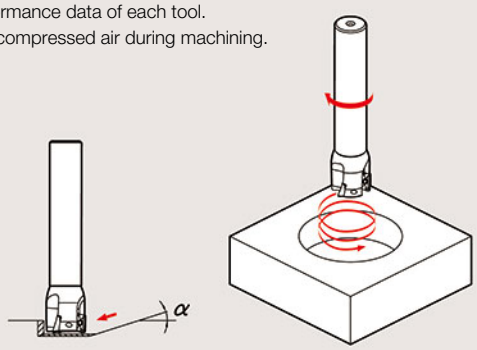
1. When running the endmill and the face mill at revolutions exceeding the maximum revolution limit, the inserts or toolholder may be damaged due to the centrifugal force.
2. For actual practical revolution, please set within recommended cutting condition.
3. When using at a higher revolution (over 10,000min^{-1}),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

Ramping, Helical Milling, and Vertical Milling with the MEC

Ramping, Helical Milling

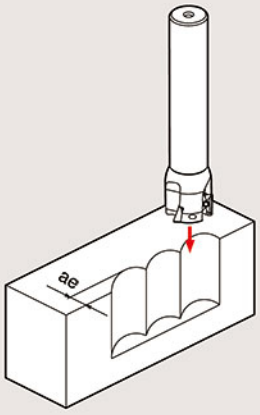
- Ramping Angle should be Under α°
- For plunge depth per revolution when helical milling, see the cutting performance data of each tool.
  Use compressed air during machining.



Cutting Dia.	Applicable Insert	Max. Ramping Angle (α°)
Ø0.625" Ø16mm, Ø18mm	BDMT11T3 type BDGT11T3 type	3°
Ø0.750"; Ø20mm		5°
Ø1.000" Ø22mm, Ø25mm		2.5°
Ø1.250" Ø28~Ø32mm		1.5°
Ø1.500"; Ø40mm		0.7°
Ø50mm		Not Recommended
Ø1.000"; Ø25mm	BDMT1704 type BDGT1704 type	8°
Ø1.250"; Ø32mm;		5°
Ø1.500"; Ø40mm		2.5°
Ø50mm		Not Recommended

BDMT1103 inserts are not recommended for Ramping or Helical Milling.

Vertical Milling



Cutting Dia.	Applicable Insert	Max. W.O.C. (ae)
Ø0.625" Ø16mm, Ø18mm	BDMT11T3 type BDGT11T3 type	0.05"
Ø0.750"~Ø4.000" Ø20mm~Ø160mm	BDMT11T3 type BDGT11T3 type	0.20"
Ø1.000"~Ø4.000" Ø25mm~Ø160mm	BDMT1704 type BDGT1704 type	0.30"

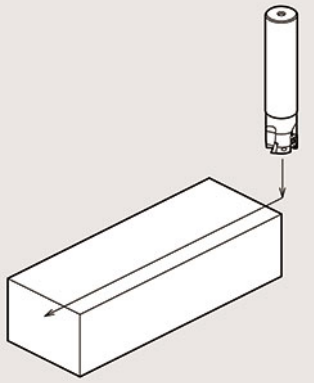
BDMT1103 inserts are not recommended for Vertical Milling.

MEC Case Studies

RC55
(Prehardened Tool Steel)

- Test Piece (54~56HRC)
- Vc=175 sfm (n=800min^{-1})
- ap×ae=0.08" × 0.55"
- fz=0.005 ipt (Vf=11.8 ipm)
- Dry
- MEC20-S20-11T
- 3 Teeth
- BDMT11T308ER-JT

(PR830)



MEC	Metal Removal Volume=4.35 in^3 (continuable)
Competitor A	Metal Removal Volume=0.18 in^3 (Chipping)

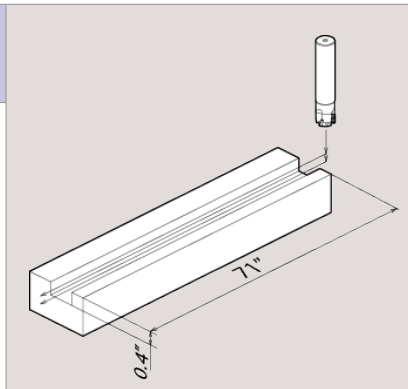
- Competitor A (Ø25 : 2 Teeth) caused chipping after 10 minutes machining with the conditions of Vc=131 sfm, fz=0.003 ipt, apxae=0.08"×0.12", and it was noisy. Also, higher feed rate was not possible because it would cause breakage.
- MEC maintained a good edge condition even after 10 minutes and was still available for further machining.

User Evaluation

Structural Steel

- Plate
- Vc=300 sfm (n=1400min^{-1})
- ap=0.20"×2 Passes
- fz=0.005 ipt (Vf=19.7 ipm)
- Dry
- MEC20-S20-11T
- 3 Teeth
- BDMT11T308ER-JT

(PR830)



MEC	23 pcs/edge
Competitor B	10~11 pcs/edge

- MEC doubled Competitor B's tool life under the same machining conditions.

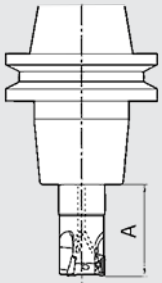
User Evaluation

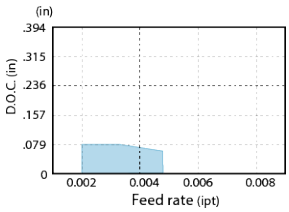
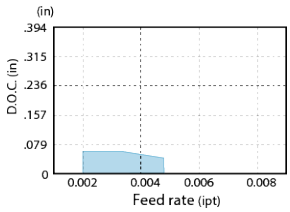
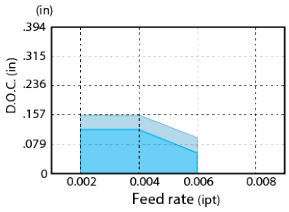
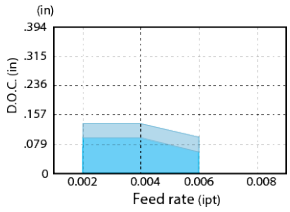
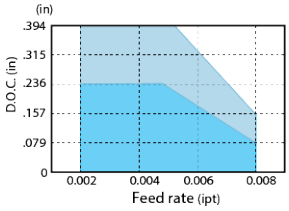
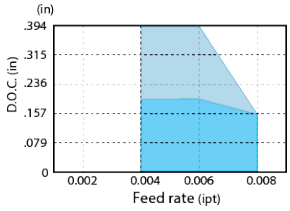
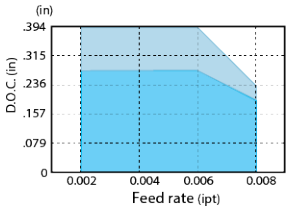
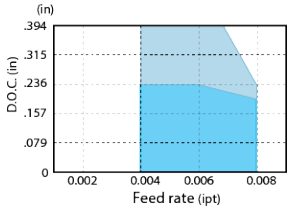
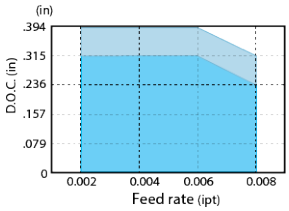
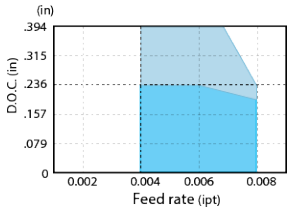
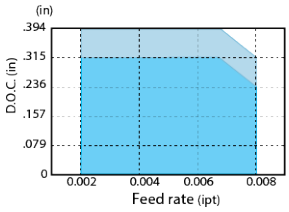
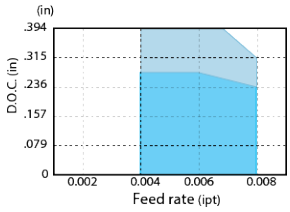
Overhang Length When Using BDMT 11mm-type Insert
(Standard / Straight Shank)

(JT chipbreaker Vc=400sfm Workpiece :1049)

Cutting Dia.	*Description* ***inch size*** *metric size*	Overhang Length A (in)	
Ø8mm	MEC10-S10-11	0.670	-
Ø0.500" Ø12mm	**MEC0500...** MEC12-S16-11	0.787	1.180
Ø0.625" Ø16mm	**MEC0625-S625-11T** MEC16-S16-11T	1.180	1.790
Ø0.750" Ø20mm	**MEC0750-S750-11T** MEC20-S20-11T	1.180	1.790
Ø1.000" Ø25mm	**MEC1000-S100-11T** MEC25-S25-11T	1.260	1.890
Ø1.250" Ø32mm	**MEC1250-S125-11T** MEC32-S32-11T	1.580	2.360

Shape



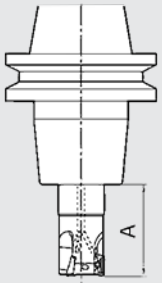
Description	**Shouldering** (Cutting Width ae=ØD/2)	**Slotting Ramping Helical Milling**
MEC10-S10-11		
MEC0500... MEC12-S16-11		
MEC0625-S625-11T MEC16-S16-11T		
MEC0750-S750-11T MEC20-S20-11T		
MEC1000-S100-11T MEC25-S25-11T		
MEC1250-S125-11T MEC32-S32-11T		

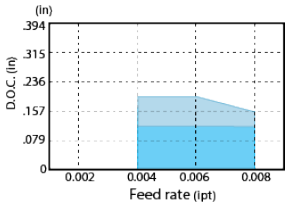
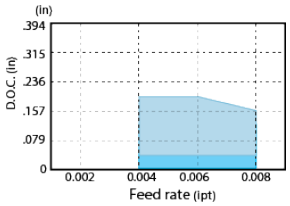
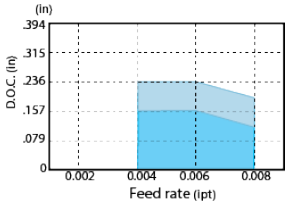
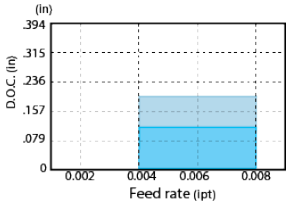
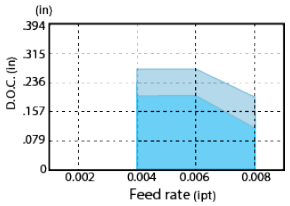
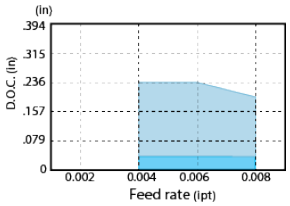
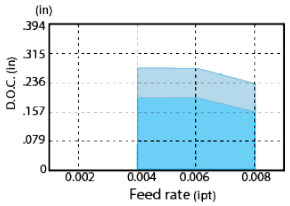
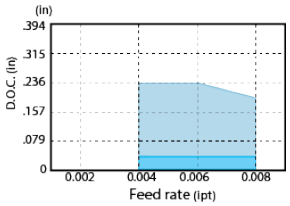
Overhang Length When Using BDMT 11mm-type Insert
(Long Shank)

(JT chipbreaker Vc=400sfm Workpiece :1049)

Cutting Dia.	*Description* ***inch size*** *metric size*	Overhang Length A (in)	
Ø0.750" Ø20mm (Long Shank)	**MEC0750-S750-5.2-11T** MEC20-S20-140-11T	2.362	3.543
Ø1.000" Ø25mm (Long Shank)	**MEC1000-S100-6.3-11T** MEC25-S25-160-11T	2.362	3.957
Ø1.250" Ø32mm (Long Shank)	**MEC1250-S125-7.9-11T** MEC32-S32-200-11T	3.957	5.118
Ø1.500" Ø40mm (Long Shank)	**MEC1500-S125-9.5-11T** MEC40-S32-240-11T	3.957	5.118

Shape



Description	**Shouldering** (Cutting Width ae=ØD/2)	**Slotting Ramping Helical Milling**
MEC0750-S750-5.2-11T MEC20-S20-140-11T Long Shank		
MEC1000-S100-6.3-11T MEC25-S25-160-11T Long Shank		
MEC1250-S125-7.9-11T MEC32-S32-200-11T Long Shank		
MEC1500-S125-9.5-11T MEC40-S32-240-11T Long Shank		

Maximum Revolution

When running the endmill at revolutions exceeding the maximum revolution limit, the inserts or toolholder may be damaged due to the centrifugal force.

When using at a higher revolution (over 10,000/min), refer to the table to adjust the balance of MEC and suitable arbor

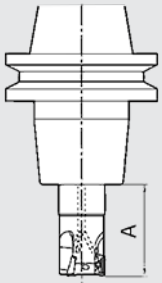
Max. Revolution	JIS ISO
~20,000	G16
~30,000	G6.3
30,000~	G2.5

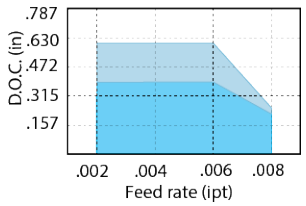
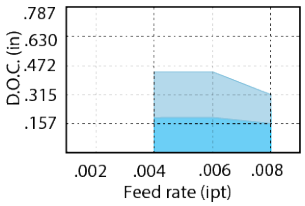
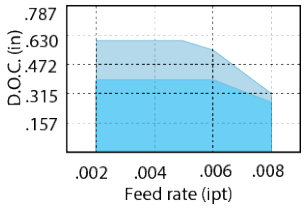
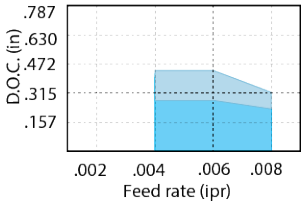
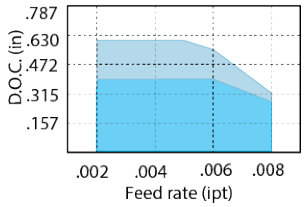
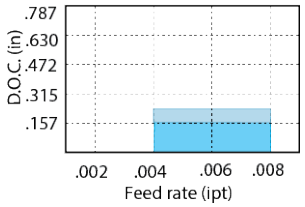
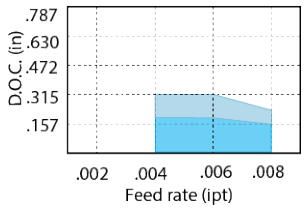
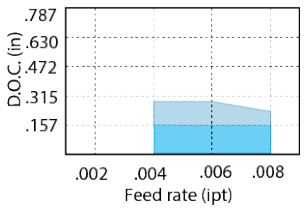
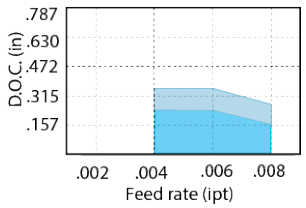
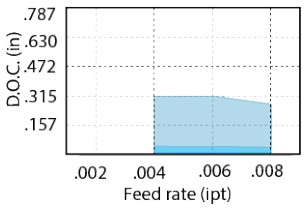
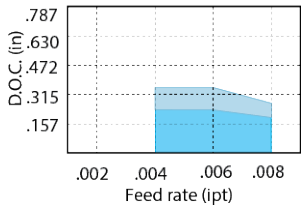
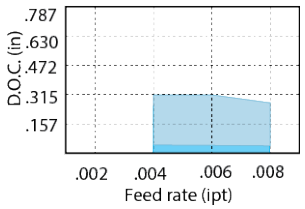
Overhang Length When Using BDMT 17mm-type Insert

(JT chipbreaker Vc=400sfm Workpiece :1049)

Cutting Dia.	*Description* ***inch size*** *metric size*	Overhang Length A (in)	
Ø1.000" Ø25mm	**MEC1000-S100-17** MEC25-S25-17	1.417	2.126
Ø1.250" Ø32mm	**MEC1250-S125-17** MEC32-S32-17	1.575	2.362
Ø1.500" Ø40mm	**MEC1500-S125-17** MEC40-S32-17	1.969	2.953
Ø1.000" Ø25mm (Long Shank)	**MEC1000-S100-6.3-17** MEC25-S25-160-17	2.362	3.937
Ø1.250" Ø32mm (Long Shank)	**MEC1250-S125-7.9-17** MEC32-S32-200-17	3.937	5.118
Ø1.500" Ø40mm (Long Shank)	**MEC1500-S125-9.5-17** MEC40-S32-240-17	3.937	5.118

Shape



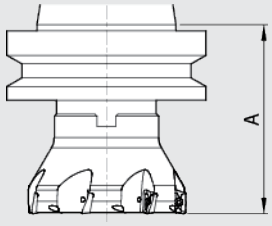
Description	**Shouldering** (Cutting Width ae=ØD/2)	**Slotting Ramping Helical Milling**
MEC1000-S100-17 MEC25-S25-17		
MEC1250-S125-17 MEC32-S32-17		
MEC1500-S125-17 MEC40-S32-17		
MEC1000-S100-6.3-17 MEC25-S25-160-17 Long Shank		
MEC1250-S125-7.9-17 MEC32-S32-200-17 Long Shank		
MEC1500-S125-9.5-17 MEC40-S32-240-17 Long Shank		

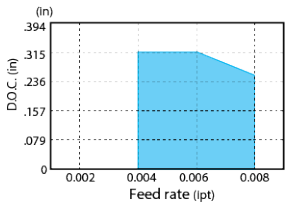
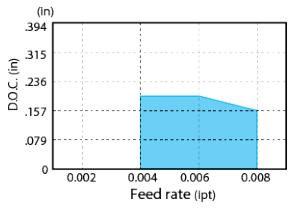
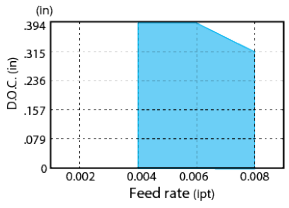
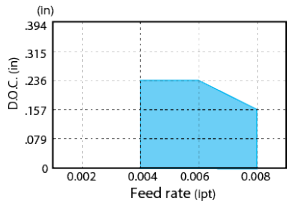
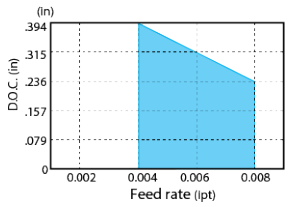
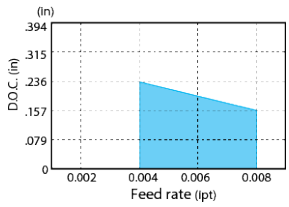
Overhang Length When Using BDMT 11mm-type Insert

(JT chipbreaker Vc=400sfm Workpiece :1049)

Cutting Dia.	*Description* ***inch size*** *metric size*	Overhang Length A (in)
Ø1.500" Ø40mm	**MEC1500R-11T-5T** MEC040R-11-5T-M	4.528
Ø2.000" Ø50mm	**MEC2000R-11T-5T** MEC050R-11-○T-M	3.937
Ø2.500" Ø63mm	**MEC2500R-11T-6T** MEC063R-11-○T(-M)	3.740
Ø3.000" Ø80mm	**MEC3000R-11T-7T** MEC080R-11-○T(-M)	3.740
Ø4.000" Ø100m	**MEC4000R-11-9TN** MEC100R-11-9TN	4.252
Ø125mm	MEC125R-11-11T(-M)	4.252
Ø160mm	MEC160R-11-14T(-M)	4.252

Shape



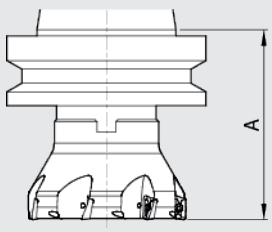
Description	**Shouldering** (Cutting Width ae=ØD/2)	**Slotting Ramping Helical Milling**
MEC1500R-11T-5T MEC040R-11-5T-M		
MEC2000R-○T-○T ≀ **MEC4000R-○T-○T** MEC050R-11-○T-M ≀ MEC100R-11-9TN MEC100R-11-9T-MN		
MEC125R-11-11T(-M) MEC160R-11-14T(-M)		

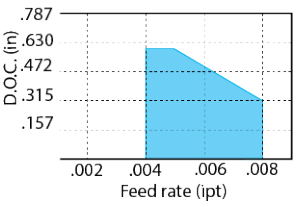
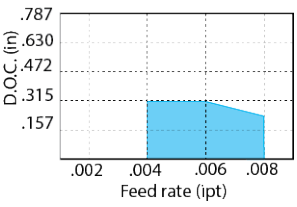
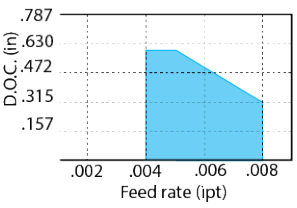
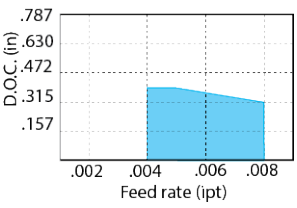
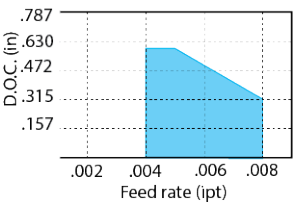
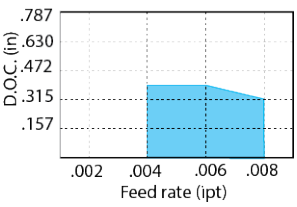
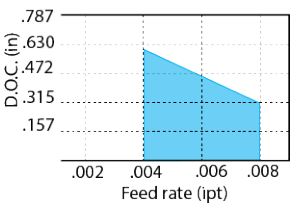
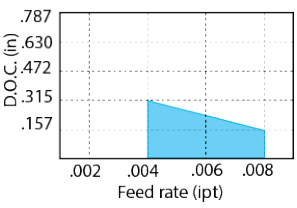
Overhang Length When Using BDMT 17mm-type Insert

(JT chipbreaker Vc=400sfm Workpiece :1049)

Cutting Dia.	*Description* ***inch size*** *metric size*	Overhang Length A (in)
Ø40mm	MEC040R-17-4T-M	4.528
Ø2.000" Ø50mm	**MEC2000R-17-4T** MEC050R-17-○T-M	3.937
Ø2.500" Ø63mm	**MEC2500R-17-4T** MEC063R-17-○T	3.740
	MEC063R-17-○T-M	
Ø3.000" Ø80mm	**MEC3000R-17-6T** MEC080R-17-○T	3.740
Ø4.000" Ø100m	**MEC4000R-17-○TN** MEC100R-17-○TN	3.740
Ø125mm	MEC125-17-9T(-M)	4.252
Ø160mm	MEC160R-17-12T(-M)	4.252

Shape



Description	**Shouldering** (Cutting Width ae=ØD/2)	**Slotting Ramping Helical Milling**
MEC040R-17-4T-M		
MEC2000R-17-4T MEC050R-17-○T-M		
MEC2500R-17-○T ≀ **MEC4000R-17-○TN** MEC063R-17-○T(-M) ≀ MEC100R-17-○TN MEC100R-17-7T-MN		
MEC125R-17-9T(-M) MEC160R-17-12T(-M)		

MECX

Endmills & Face Mills

Extra-fine pitch increases machining efficiency with low cutting forces which make the MECX ideal for lower horsepower machines.

1st Choice Grades

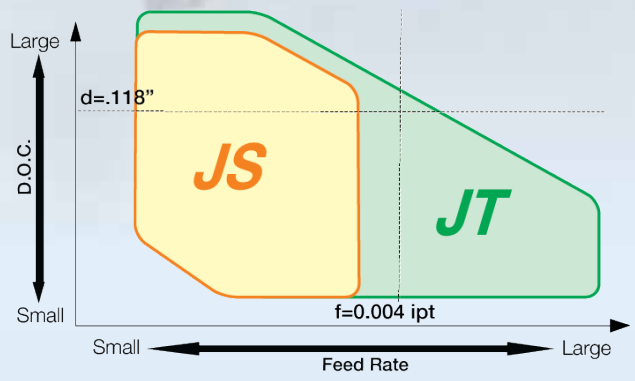
Workpiece Material	Carbon Steel / Alloy Steel					Stainless Steel					Cast Iron			
Cutting Range	Finishing ←				→ Roughing	Finishing ←				→ Roughing	Finishing ←			→ Roughing
Classification	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30
Application Range		PR1225					PR1225					PR1210		

MECX Chipbreaker Lineup

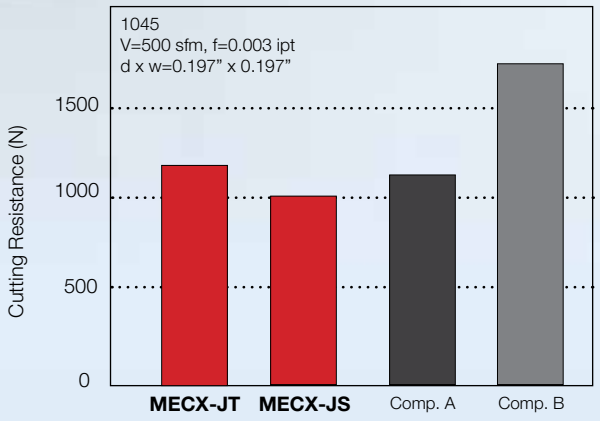
JT Chipbreaker — General Purpose (tough edge)

JS Chipbreaker — Low Resistance (sharp edge)

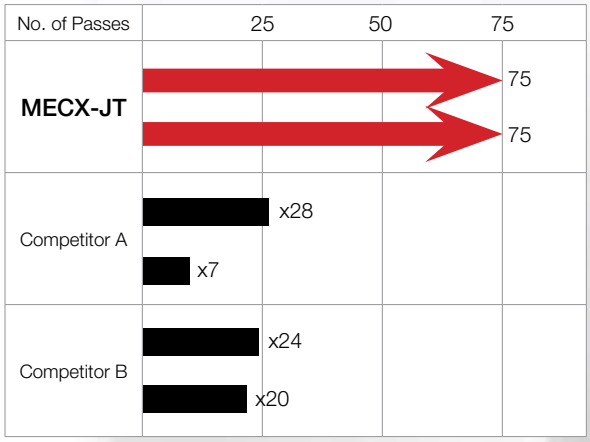
■ Chipbreaker Application Chart



■ Low Cutting Forces: 4140 Steel

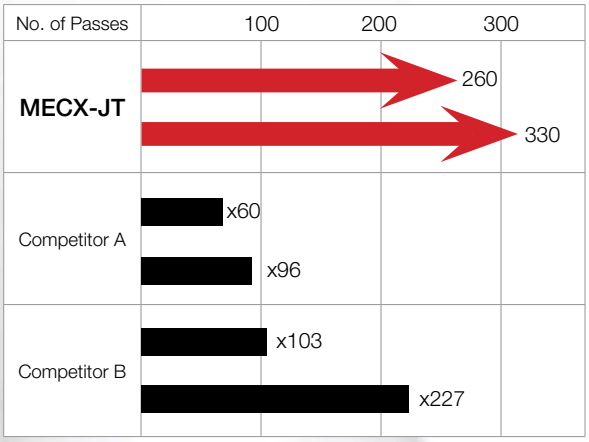


Cutting Edge Strength Comparison



4140 Steel V=400sfm, f=0.008ipt d x w = 0.08" x 0.4"

Holder Strength Comparison

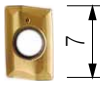
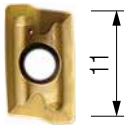


1049 Cutting Diameter 0.787", V=400sfm, f=0.006ipt, d x w = 0.2" x 0.275"

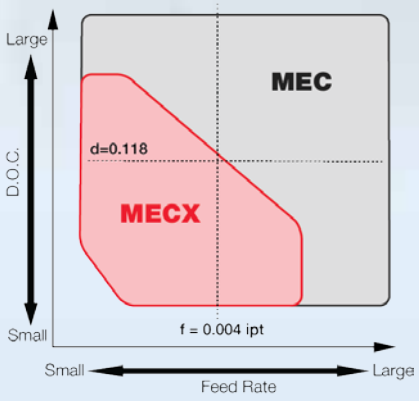
MECX vs MEC

(1" diameter cutter)

MECX1000-S100-07-7T | MEC1000-S100-11T | MEC1000-S100-17

MECX-07	MEC-11	MEC-17
 BDMT070304ER-JT	 BDMT11T308ER-JT	 BDMT170408ER-JT
1) Multiple inserts promote increased table feeds and efficiency machining 2) Low resistance and high toughness, optimum for low horsepower machines	1) Low resistance and high toughness with an 11mm insert 2) High efficiency machining by ensuring toolholder toughness and increased edge contact	1) 17mm edge length insert provides larger depths of cut

■ MEC & MECX Application Ranges



■ MECX Face Mill Series

Cutter Dia: Ø1.25", Ø1.5", Ø2", Ø2.5"

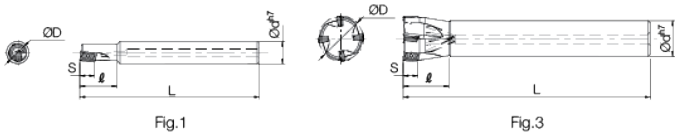


Fig.1 Fig.3

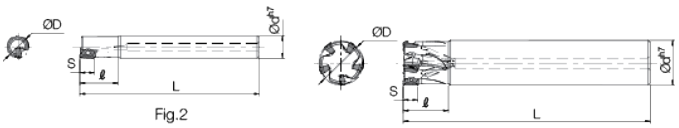


Fig.2 Fig.4

MECX Endmill

*ØD Tolerance is +0/-0.008 for inch-sized endmills and +0/-0.2 for metric sizes. See "Unit" column.

Shank		Part Number	Stock	Unit	No. of Inserts	Dimensions *ØD	Ød	L	ℓ	S	Rake Angle A.R. (MAX)	R.R.	Coolant Hole	Drawing	Spare Parts Insert Screw	Wrench	Max. Revolution (min⁻¹)
Standard Shank		MECX 0375-S375-07-1T	●	inch	1	0.375	0.375	3.00	0.669	0.236	12.8°	-19.7	✓	Fig. 2	SB-2035TRG	DTM-6	47,150
		0500-S500-07-2T	●		2	0.500	0.500	3.27	0.709	0.236	14.3°	-12.9	✓	Fig. 2	SB-2035TRG	DTM-6	45,800
		0625-S625-07-3T	●		3	0.625	0.625	3.50	0.787	0.236	16.3°	-11.3°	✓	Fig. 2	SB-2042TRG	DTM-6	43,300
		0750-S625-07-4T	●		4	0.750	0.625	4.00	0.787	0.236	16.3°	-10.9°	✓	Fig. 3	SB-2042TRG	DTM-6	40,900
		0750-S625-07-5T	●		5	0.750	0.625	4.00	0.787	0.236	16.3°	-10.9°	✓	Fig. 3	SB-2042TRG	DTM-6	40,900
		0750-S750-07-4T	●		4	0.750	0.750	4.00	0.787	0.236	16.3°	-10.9°	✓	Fig. 2	SB-2042TRG	DTM-6	40,900
		0750-S750-07-5T	●		5	0.750	0.750	4.00	0.787	0.236	16.3°	-10.9°	✓	Fig. 2	SB-2042TRG	DTM-6	40,900
		1000-S100-07-5T	●			1.000	1.000	4.50	0.984	0.236	16.3°	-9.5°	✓	Fig. 2	SB-2042TRG	DTM-6	36,900
		1000-S100-07-7T	●		7	1.000	1.000	4.50	0.984	0.236	16.3°	-9.5°	✓	Fig. 2	SB-2042TRG	DTM-6	36,900
		1000-S750-07-5T	●		5	1.000	0.750	4.50	0.984	0.236	16.3°	-9.5°	✓	Fig.3	SB-2042TRG	DTM-6	36,900
		1000-S750-07-7T	●		7	1.000	0.750	4.50	0.984	0.236	16.3°	-9.5°	✓	Fig.3	SB-2042TRG	DTM-6	36,900
		1250-S125-07-6T	●		6	1.250	1.250	5.00	1.181	0.236	16.3°	-8.9°	✓	Fig.2	SB-2035TRG	DTM-6	33,700
		1250-S125-07-8T	●		8	1.250	1.250	5.00	1.181	0.236	16.3°	-8.9°	✓	Fig.4	SB-2035TRG	DTM-6	33,700
Long Shank		MECXL 0625-S625-07-3T	●	inch	3	0.625	0.625	5.10	2.175	0.236	16.3°	-11.3°	✓	Fig.4	SB-2042TRG	DTM-6	43,300
		0750-S750-07-4T	●		4	0.750	0.750	5.50	2.362	0.236	16.3°	-10.9°	✓	Fig.4	SB-2042TRG	DTM-6	40,900
		1000-S100-07-5T	●		5	1.000	1.000	6.30	2.362	0.236	16.3°	-9.5°	✓	Fig.4	SB-2042TRG	DTM-6	36,900
		1250-S125-07-6T	●		6	1.250	1.250	7.90	2.559	0.236	16.3°	-8.9°	✓	Fig.4	SB-2042TRG	DTM-6	33,700
Standard Shank	Standard	MECX 08-S10-07-1T	○	mm	1	8	10	80	16	6	11.7°	-24.0°	✓	Fig.1	SB-2035TRG	DTM-6	48,100
		14-S12-07-2T	○		2	14	12	80	18	6	16.3°	-12.1°	✓	Fig.3	SB-2035TRG	DTM-6	44,800
		17-S16-07-3T	○		3	17	16	100	20	6	16.3°	-11.0°	✓	Fig.3	SB-2042TRG	DTM-6	42,400
		18-S16-07-3T	○		3	18	16	100	20	6	16.3°	-10.9°	✓	Fig.3	SB-2042TRG	DTM-6	41,600
		20-S16-07-4T	○		4	20	16	110	20	6	16.3°	-10.4°	✓	Fig.3	SB-2042TRG	DTM-6	40,200
		21-S20-07-4T	○		4	21	20	110	20	6	16.3°	-10.1°	✓	Fig.3	SB-2042TRG	DTM-6	39,500
		25-S20-07-5T	○		5	25	20	120	25	6	16.3°	-9.7°	✓	Fig.3	SB-2042TRG	DTM-6	37,000
		26-S25-07-5T	○		5	26	25	120	25	6	16.3°	-9.5°	✓	Fig.3	SB-2042TRG	DTM-6	36,500
		33-S32-07-6T	○		6	33	32	130	30	6	16.3°	-8.8°	✓	Fig.3	SB-2042TRG	DTM-6	33,100
	Fine Pitch	MECX 20-S16-07-5T	○	mm	5	20	16	110	20	6	16.3°	-10.4°	✓	Fig.3	SB-2042TRG	DTM-6	40,200
		25-S20-07-7T	○		7	25	20	120	25	6	16.3°	-9.7°	✓	Fig.3	SB-2042TRG	DTM-6	37,000
Same Size Shank	Standard	MECX 10-S10-07-1T	○	mm	1	10	10	80	17	6	12.8°	-18.7°	✓	Fig.2	SB-2035TRG	DTM-6	47,100
		12-S12-07-2T	○		2	12	12	80	18	6	14.3°	-13.7°	✓	Fig.4	SB-2035TRG	DTM-6	46,200
		16-S16-07-3T	○		3	16	16	100	20	6	16.3°	-11.3°	✓	Fig.4	SB-2042TRG	DTM-6	43,200
		20-S20-07-4T	○		4	20	20	110	20	6	16.3°	-10.4°	✓	Fig.4	SB-2042TRG	DTM-6	40,200
		25-S25-07-5T	○		5	25	25	120	25	6	16.3°	-9.7°	✓	Fig.4	SB-2042TRG	DTM-6	37,000
		32-S32-07-6T	○		6	32	32	130	30	6	16.3°	-8.9°	✓	Fig.4	SB-2042TRG	DTM-6	33,600
	Fine Pitch	MECX 16-S16-07-4T	○	mm	4	16	16	100	20	6	16.3°	-11.3°	✓	Fig.4	SB-2042TRG	DTM-6	43,200
		20-S20-07-5T	○		5	20	20	110	20	6	16.3°	-10.4°	✓	Fig.4	SB-2042TRG	DTM-6	40,200
		25-S25-07-7T	○		7	25	25	120	25	6	16.3°	-9.7°	✓	Fig.4	SB-2042TRG	DTM-6	37,000
		32-S32-07-8T	○		8	32	32	130	30	6	16.3°	-8.9°	✓	Fig.4	SB-2042TRG	DTM-6	33,600
Long Shank	Standard	MECX 17-S16-130-07-3T	○	mm	3	17	16	130	20	6	16.3°	-11.0°	✓	Fig.3	SB-2042TRG	DTM-6	42,400
		21-S20-140-07-4T	○		4	21	20	140	20	6	16.3°	-10.1°	✓	Fig.3	SB-2042TRG	DTM-6	39,500
		26-S25-160-07-5T	○		5	26	25	160	25	6	16.3°	-9.5°	✓	Fig.3	SB-2042TRG	DTM-6	36,500
		33-S32-200-07-6T	○		6	33	32	200	30	6	16.3°	-8.8°	✓	Fig.3	SB-2042TRG	DTM-6	33,100

● : U.S. Stock ○ : World Express (Shipping - 10 Business Days)

• Caution with Max. Revolution
When running an endmill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

• For good shoulder finish with MECX multistage ap
In order to obtain smooth cutting wall surface with MECX multistage ap, set ap within 0.197" for each cut.

Applicable Inserts

Milling Cutter	*Inserts*
MECX...-07...	**BDMT 0703**

Applicable Insert Selection See ➡ **P21**

Recommended Cutting Conditions ➡ **P22**

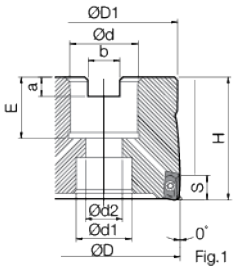


Fig.1

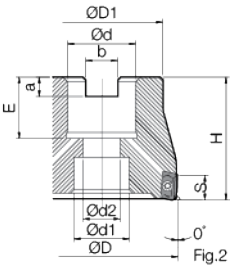


Fig.2

MECX Endmill

Part Number	Stock	Unit	No. of Inserts	Dimensions ØD	ØD1	Ød	Ød1	Ød2	H	E	a	b	S	Rake Angle A.R. (MAX)	R.R.	Coolant Hole	Drawing	Spare Parts Insert Screw	Wrench	Arbor Bolt	Max. Revolution (min⁻¹)
MECX 1250R-07-8T	●	inch	8	1.250	1.181	0.750	0.630	0.417	1.575	0.807	0.187	0.313	0.236	+7°	-8.9°	✓	Fig.5	SB-2042TRG	DTM-6	HH3/8-1.25H	33,600
1500R-07-10T	●		10	1.500	1.496	0.750	0.630	0.417	1.575	0.807	0.187	0.313	0.236	+7°	-8.4°	✓	Fig.5				30,500
2000R-07-12T	●		12	2.000	1.575	0.750	0.646	0.417	1.575	0.819	0.187	0.313	0.236	+7°	-8.3°	✓	Fig.6				27,700
2500R-07-14T	●		14	2.500	1.575	0.750	0.630	0.417	1.575	0.819	0.187	0.313	0.236	+7°	-7.9°	✓	Fig.6				24,900
MECX 032R-07-8T-M	○	mm	8	32	30	16	14	8.5	40	20	5.5	8.5	6	+16.3°	-8.9°	✓	Fig.1	SB-2042TRG	DTM-6	HH8x25H	33,600
040R-07-10T-M	○		10	40	38	22	18	12	40	22	6.3	10.4	6	+16.3°	-8.4°	✓	Fig.1			HH10x30H	30,500
050R-07-12T-M	○		12	50	40	22	18	12	40	22	6.3	10.4	6	+16.3°	-8.3°	✓	Fig.2				27,700
063R-07-14T-M	○		14	63	40	22	18	12	40	22	6.3	10.4	6	+16.3°	-7.9°	✓	Fig.2				24,900

● : U.S. Stock ○ : World Express (Shipping - 10 Business Days)

• Caution with Max. Revolution
When running an endmill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

• For good shoulder finish with MECX multistage ap
In order to obtain smooth cutting wall surface with MECX multistage ap, set ap within 0.197" for each cut.

Recommended Cutting Conditions ➔ **P22**

Applicable Inserts

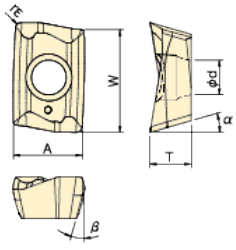
Milling Cutter	Inserts
MECX...-07...	BDMT 0703

Applicable Inserts

Usage Classification

★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(When hardness is under 45HRC)

							Applicable Toolholder
P	Carbon Steel / Alloy Steel	★		☆		☆	
	Mold Steel	★		☆		☆	
M	Austenitic Stainless Steel	☆		☆		☆	
	Martensitic Stainless Steel						
	Precipitation Hardened Stainless Steel						
K	Gray Cast Iron		★		☆		
	Nodular Cast Iron		★		☆		
N	Non-Ferrous Metal						
S	Heat Resistant Alloy (Ni-base)	★		☆			
	Titanium Alloy		★				
H	Hard Materials	□				□	

Insert	Part Number	Dimensions (in) A	T	Ød	W	rε	Angle α	β	MEGACOAT PR1225	PR1210	PVD PR1025	PR905	PR830	Applicable Toolholder
 	BDMT 070302ER-JT	0.181	0.102	0.091	0.264	0.008	16°	15°	●	●	●	○	●	P 20-21
	070304ER-JT	0.181	0.102	0.091	0.264	0.016	16°	15°	●	○	●	●	●	
	070308ER-JT	0.181	0.102	0.091	0.264	0.031	16°	15°	●	○	●	●	●	
	BDMT 070302ER-JS	0.181	0.102	0.091	0.264	0.008	16°	15°	●		●	●	●	
	070304ER-JS	0.181	0.102	0.091	0.264	0.016	16°	15°	●		●	●	●	
	070308ER-JS	0.181	0.102	0.091	0.264	0.031	16°	15°	●		●	●	●	

● : U.S. Stock ○ : World Express (Shipping - 10 Business Days)

Recommended Cutting Conditions

Workpiece Material	*Feed Rate* fz (ipt)		*Recommended Insert Grade* Vc (sfm)				
	JS Chipbreaker	JT Chipbreaker	MEGACOAT		PVD		
			PR1225	PR1210	PR830	PR1025	PR905
Carbon Steel	0.002~**0.003**~0.004	0.002~**0.004**~0.005	★ 390~**590**~820	-	☆ 390~**490**~590	-	-
Alloy Steel	0.002~**0.0025**~0.003	0.002~**0.003**~0.004	★ 330~**520**~720	-	☆ 330~**460**~590	-	-
Mold Steel	0.002~**0.0025**~0.003	0.002~**0.003**~0.004	★ 260~**460**~590	-	☆ 260~**390**~490	-	-
Austenitic Stainless Steel	0.001~**0.0015**~0.002	0.002~**0.0025**~0.003	★ 390~**590**~820	-	-	☆ 330~**520**~660	-
Gray Cast Iron	0.002~**0.003**~0.004	0.003~**0.004**~0.006	-	★ 390~**590**~820	-	-	☆ 330~**460**~590
Nodular Cast Iron	0.002~**0.0025**~0.003	0.003~**0.004**~0.005	-	★ 330~**490**~660	-	-	☆ 260~**390**~520
Titanium Alloy	0.002~**0.0025**~0.003	0.003~**0.004**~0.005	-	★ 100~**160**~230	-	-	☆ 70~**110**~160

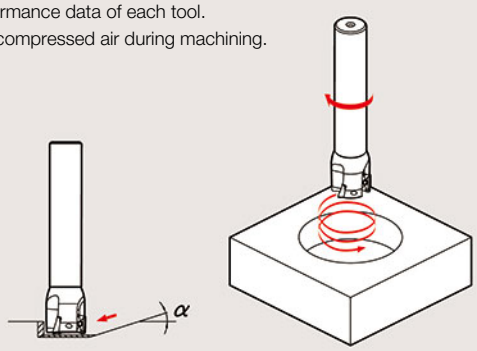
※ Machining with coolant is recommended for Titanium Alloy.

★ 1st Recommendation ☆ 2nd Recommendation

※ The figure in bold font is the starting value of the recommended cutting conditions.
Adjust the cutting speed and the feed rate within the above conditions according to the actual machining situation.

Ramping & Helical Milling

- Ramping Angle should be Under α°
- For plunge depth per revolution when helical milling, see the cutting performance data of each tool.
  Use compressed air during machining.



Cutting Dia.	Applicable Insert	Max. Ramping Angle (α°)
Ø0.375", Ø8mm	BDMT0703	Not Recommended
Ø10mm		1.5°
Ø0.500" Ø12mm, Ø14mm		2°
Ø0.625", Ø16mm		3°
Ø17mm, Ø18mm		1.5°
Ø0.750", Ø20mm		2°
Ø21mm		1.8°
Ø1.000", Ø25mm		1.3°
Ø26mm		1.2°
Ø1.250", Ø32mm		0.8°
Ø33mm		0.5°

BDMT1103 inserts are not recommended for Ramping or Helical Milling.

Warning

Please observe below precautions fully.
Failure to observe the precautions may cause serious bodily harm to operators / bystanders.

Warning about Max. Revolution indicated on main body

1. When running the endmill and the face mill 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 MEC and suitable arbor.

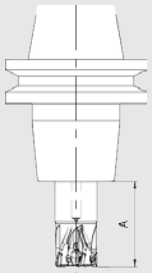
Max. Revolution (min^{-1})	Balance quality grade G ISO 1940-1 / 8821 (JIS B0905)
~20,000	G16
~30,000	G6.3
30,000~	G2.5

MECX Endmill Cutting Performance

(JT chipbreaker Vc=400sfm Workpiece :1049)

Cutting Dia.	*Description* ***inch size*** *metric size*	Overhang Length A (in)	
Ø8mm	MECX08-S10-07-1T	0.630	-
Ø0.375" Ø10mm	**MECX0375-S375-07-1T** MECX10-S10-07-1T	0.670	-
Ø0.500" Ø12mm	**MECX0500-S500-07-2T** MECX12-S12-07-2T	0.709	1.180
Ø0.625" Ø16mm	**MECX0625-S625-07-3T** MECX16-S16-07-3T	0.787	1.570
Ø0.750" Ø20mm	**MECX0750-S750-07-4T** MECX20-S20-07-4T	0.787	1.570
Ø1.000" Ø25mm	**MECX1000-S100-07-5T** MECX25-S25-07-5T	1.000	1.970
Ø1.250" Ø32mm	**MECX1250-S125-07-6T** MECX32-S32-07-6T	1.180	1.970

Shape



- Machining with extended overhang length is not recommended for ø0.315in and ø0.394in.
- The cutting performance list shows applicable range of JT Chipbreaker (PR830) with Standard flute-number type.

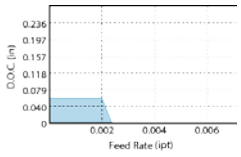
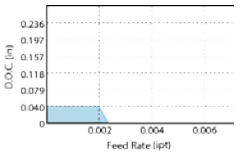
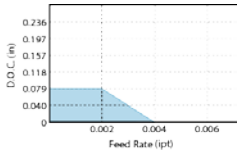
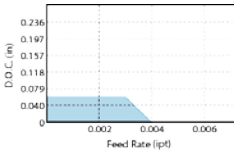
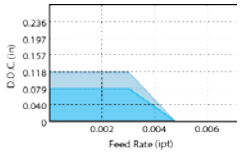
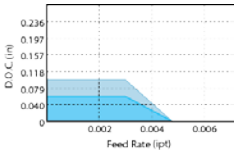
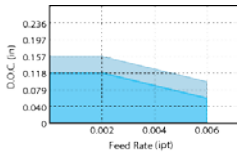
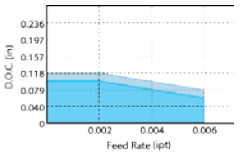
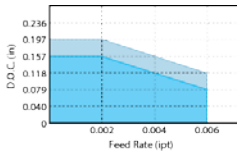
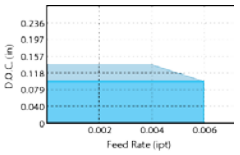
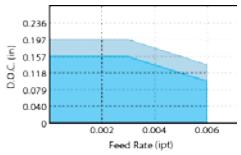
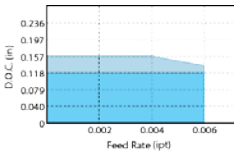
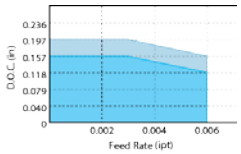
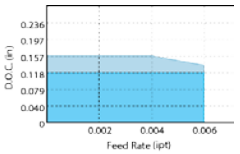
  For Multi-Edge type, use with 70% or less of ap.
- Cutting conditions of JS Chipbreaker

(1) For MECX0375~MECX0500 / MECX08~MECX12

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

(2) For MECX 0625 / MECX16 and over

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

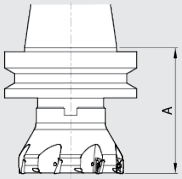
Description	**Shouldering** (Cutting Width ae=ØD/2)	**Slotting Ramping Helical Milling**
MECX08-S10-07-1T		
MECX0375-S375-07-1T MECX10-S10-07-1T		
MECX0500-S500-07-2T MECX12-S12-07-2T		
MECX0625-S625-07-3T MECX16-S16-07-3T		
MECX0750-S750-07-4T MECX20-S20-07-4T		
MECX1000-S100-07-5T MECX25-S25-07-5T		
MECX1250-S125-07-6T MECX32-S32-07-6T		

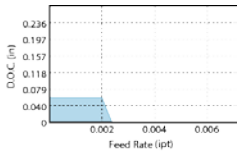
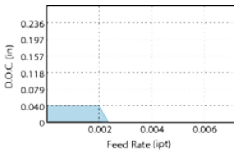
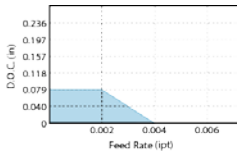
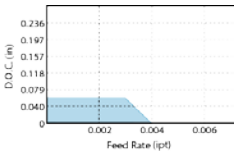
MECX Face Mill Cutting Performance

(JT chipbreaker Vc=400sfm Workpiece :1049)

Cutting Dia.	*Description* ***inch size*** *metric size*	Overhang Length A (in)
Ø1.250" Ø32mm	**MECX1250R-07-8T** MECX032R-07-8T-M	3.937
Ø1.500" Ø40mm	**MECX1500R-07-10T** MECX040R-07-10T-M	
Ø2.000" Ø50mm	**MECX2000R-07-12T** MECX050R-07-12T-M	
Ø2.500" Ø63mm	**MECX2500R-07-14T** MECX063R-07-14T-M	

Shape



Description	**Shouldering** (Cutting Width ae=ØD/2)	**Ramping Helical Milling**
MECX08-S10-07-1T		
MECX0375-S375-07-1T MECX10-S10-07-1T		

- Not recommended for slotting

MECH

Helical Endmills

The MECH Helical Endmill has improved chip evacuation which increases your maximum machining efficiency and reduces your cutting costs

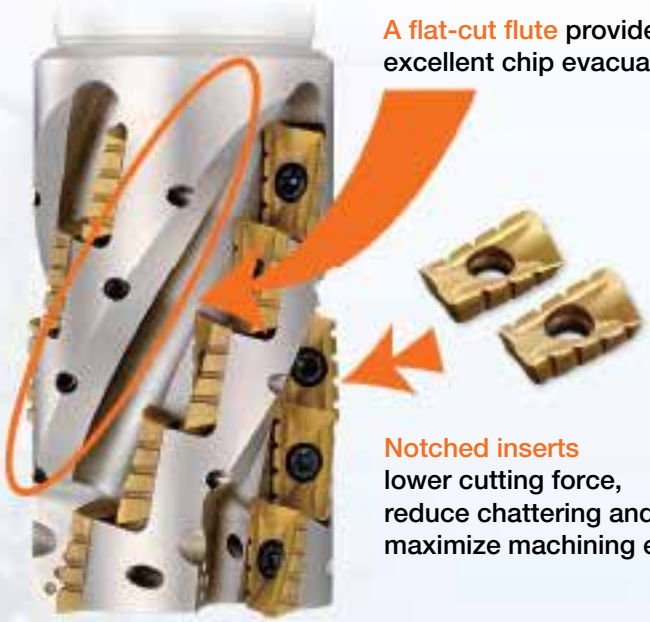
Improved Chip Evacuation

Notched inserts *break chips into small pieces*

MECH

Competitor A

Work Material: Structural Steel
Vc = 400sfm
ap×ae = 1.57"×0.40"
fz = 0.0047ipt
MECH032-S32-11-5-4T



A flat-cut flute provides excellent chip evacuation

Notched inserts lower cutting force, reduce chattering and maximize machining efficiency

■ Maximum Machining Efficiency

Improved Efficiency

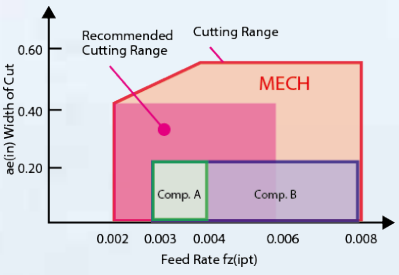
MECH
Ø32mm
4 Flutes
→ 22.76 in³/min (ae=0.512")
3.5 times higher metal removal rate

Comp. A
Ø32mm
3 Flutes
→ 6.52 in³/min (ae=0.197")

Comp. B
Ø32mm
3 Flutes
→ 6.52 in³/min (ae=0.197")

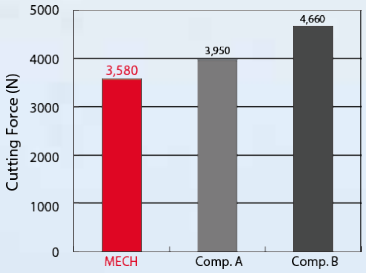
Work Material : S50C
Vc = 400sfm
ap = 1.57"
ae = 0.197"~0.512"
fz = 0.006ipt

■ Low Cutting Forces



Work Material : S50C
V = 400sfm
ap×ae = 1.57"×0.20"~0.512"
fz = 0.0023 ~ 0.008ipt
MECH032-S32-11-5-4T

■ Cutting Force (Principle Force)



Work Material : S50C
Vc = 400sfm
ap×ae = 1.57"×0.40"
fz = 0.004ipt
MECH032-S32-11-5-4T

Internal Evaluation

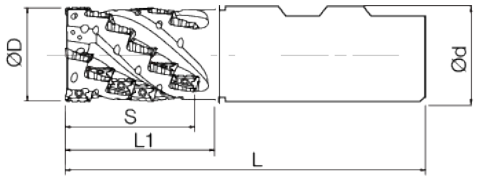


Fig.1

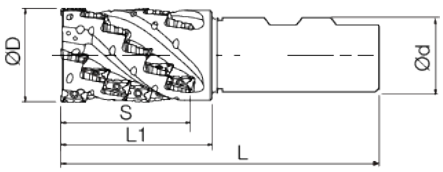


Fig.2

MECH Helical Endmill (Weldon Shank / Inch)

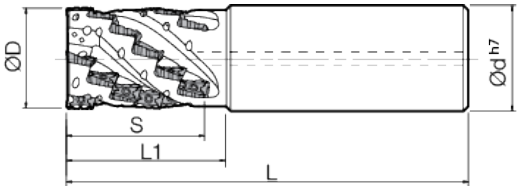
	Part Number	Stock	No. of Flutes	No. of Stages	No. of Inserts	Dimensions (in) ØD	Ød	L	L1	S	Rake Angle A.R. (MAX)	R.R.	Drawing	Spare Parts: Insert Screw	Wrench	Anti-Seize Compound	Applicable Inserts P27
MECH	1000-W1000-11-4-2T	●	2	4	8	1.00	1.00	4.17	1.81	1.46	+21°	-10°	Fig.1	SB-2555TRG	DTM-8	MP-1	BDMT11T308ER-N2 BDMT11T308ER-N3
	1250-W1250-11-5-2T	●	2	5	10	1.25	1.25	4.52	2.17	1.81	+23°	-9°	Fig.1				
	1250-W1250-11-5-4T	●	4	5	20	1.25	1.25	4.52	2.17	1.81	+23°	-9°	Fig.1				
	1500-W1250-11-6-4T	●	4	6	24	1.50	1.25	4.90	2.52	2.16	+23°	-8°	Fig.2				
	1500-W1500-11-6-4T	●	4	6	24	1.50	1.50	5.28	2.52	2.16	+23°	-8°	Fig.1				
	2000-W1500-11-7-4T	●	4	7	28	2.00	1.50	5.73	2.95	2.52	+23°	-7°	Fig.2				
	2000-W1500-11-7-6T	●	6	7	42	2.00	1.50	5.73	2.95	2.52	+23°	-7°	Fig.2				
MECH	1500-W1250-17-4-2T	●	2	4	8	1.50	1.25	5.26	2.87	2.32	+19°	-7°	Fig.2	SB-4070TRN	DTM-15	MP-1	BDMT170408ER-N3 BDMT170408ER-N4
	1500-W1500-17-4-2T	●	2	4	8	1.50	1.50	5.64	2.87	2.32	+19°	-7°	Fig.1				
	2000-W1500-17-5-4T	●	4	5	20	2.00	1.50	6.26	3.46	2.91	+19°	-7°	Fig.2				

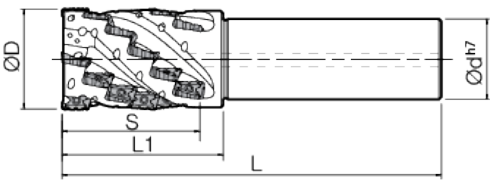
Coat Anti-seize Compound (MP-1) thinly on insert screw when insert is fixed

● : U.S. Stock

Applicable Insert Selection See P27

Recommended Cutting Conditions P28





MECH Helical Endmill (Cylindrical Shank / Metric) (Coolant Hole for Bottom Insert Row)

	Part Number	Stock	No. of Flutes	No. of Stages	No. of Inserts	Dimensions (mm) ØD	Ød	L	L1	S	Rake Angle A.R. (MAX)	R.R.	Drawing	Spare Parts: Insert Screw	Wrench	Anti-Seize Compound	Applicable Inserts P27
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	○	2	5	10	32	32	140	55	46	+23°	-9°	Fig.1				
	032-S32-11-5-4T	○	4	5	20	32	32	140	55	46	+23°	-9°	Fig.1				
	040-S32-11-6-4T	○	4	6	24	40	32	150	64	55	+23°	-8°	Fig.2				
	040-S42-11-6-4T	○	4	6	24	40	42	160	64	55	+23°	-8°	Fig.1				
	050-S42-11-7-4T	○	4	7	28	50	42	172	75	64	+23°	-7°	Fig.2				
	050-S42-11-7-6T	○	6	7	42	50	42	172	75	64	+23°	-7°	Fig.2				
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	○	2	4	8	40	42	170	73	59	+19°	-7°	Fig.1				
	050-S42-17-5-4T	○	4	5	20	50	42	185	88	74	+19°	-6°	Fig.2				

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

○ : World Express (Shipping - 10 Business Days)

Applicable Insert Selection See P27

Recommended Cutting Conditions P28

MECH Shell Mill / BT50 Integral Arbor Type (Without Coolant Hole)

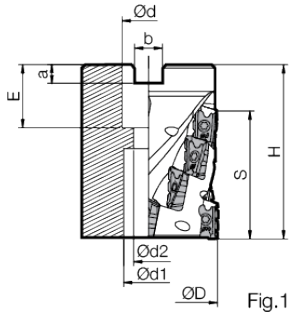


Fig.1

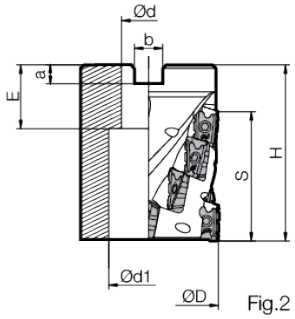


Fig.2

Rake Angle		
Part Number	**A.R.** (MAX)	**R.R.**
MECH...-11-	+23°	-8°
MECH...-17-	+19°	-7°

MECH Shell Mill (Without Coolant Hole)

	Part Number	Stock	No. of Flutes	No. of Stages	No. of Inserts	Unit	Dimensions ØD	Ød	Ød1	Ød2	H	E	a	b	S	Drawing	Spare Parts: Insert Screw	Wrench	Anti-Seize Compound	Arbor Bolt	Applicable Inserts ➡ P27
MECH	2000R-11-5-6T	●	6	5	30	inch	2.00	0.75	0.63	0.417	2.480	0.750	0.197	0.313	1.811	Fig.1	SB-2555TRG	DTM-8	MP-1	HH3/8-1.5	BDMT11T308ER-N2 BDMT11T308ER-N3
	2000R-17-2-4T	●	4	2	8		2.00	0.75	0.63	0.417	2.047	0.750	0.197	0.313	1.181	Fig.1	SB-4070TRN	DTM-15	MP-1	HH3/8-1.25	BDMT170408ER-N3 BDMT170408ER-N4
	2000R-17-4-4T	●	4	4	16		2.00	0.75	0.63	0.417	3.070	0.750	0.197	0.313	2.322	Fig.1	SB-4070TRN	DTM-15	MP-1	HH3/8-1.25	
MECH	040R-11-4-4T-M	○	4	4	16	mm	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	Fig.1	SB-2555TRG	DTM-8	MP-1	HH10X30	
MECH	050R-17-2-4T-M	○	4	2	8		50	22	18	11	52	21	6.3	10.4	30	Fig.1	SB-4070TRN	DTM-15	MP-1	HH10X30	BDMT170408ER-N3 BDMT170408ER-N4
	050R-17-4-4T-M	○		4	16		50	22	18	11	78	21	6.3	10.4	59	Fig.1	SB-4070TRN	DTM-15	MP-1	HH10X40	
	063R-17-3-4T-M	○	4	3	12		63	27	20	14	70	24	7	12	45	Fig.1	SB-4070TRN	DTM-15	MP-1	HH12X35	
	080R-17-4-6T-M	○	6	4	24		80	32	26	18	85	28	8	14	59	Fig.1	SB-4070TRN	DTM-15	MP-1	HH16X45	
	100R-17-4-6T-M	○	6	4	24		100	40	56	-	85	30	9	16	59	Fig.2	SB-4070TRN	DTM-15	MP-1	-	
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	Fig.1	SB-4070TRN	DTM-15	MP-1	HH16X45	
	100R-17-4-6T	○	6	4	24		100	38.1	56	-	85	38	10	16	59	Fig.2	SB-4070TRN	DTM-15	MP-1	-	

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

● : U.S. Stock ○ : World Express (Shipping - 10 Business Days)

Applicable Insert Selection See ➡ **P27**

Recommended Cutting Conditions ➡ **P28**

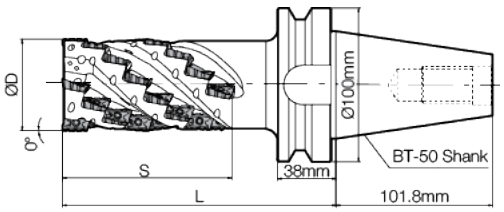


Fig.1

Rake Angle		
Part Number	**A.R.** (MAX)	**R.R.**
MECH...-11-	+23°	-7°
MECH...-17-	+19°	-7°

MECH-BT50 Integral Arbor Type (Without Coolant Hole)

	Part Number	Stock	No. of Flutes	No. of Stages	No. of Inserts	Dimensions (mm) ØD	L	S	Drawing	Spare Parts: Insert Screw	Wrench	Anti-Seize Compound	Applicable Inserts ➡ P27
MECH	050R11-8-4T-BT50	○	4	8	32	50	143	73	Fig.1	SB-555TRG	DTM-8	MP-1	BDMT11T308ER-N2 BDMT11T308ER-N3
MECH	050R17-7-4T-BT50	○	4	7	28	50	173	104	Fig.1	SB-070TRN	DTM-15	MP-1	BDMT170408ER-N3 BDMT170408ER-N4
	063R17-7-4T-BT50	○	4	7	28	63	173	104					
	080R17-7-4T-BT50	○	4	7	28	80	173	104					
	100R17-7-6T-BT50	○	6	7	42	100	173	104					

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

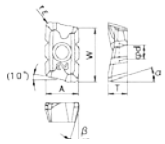
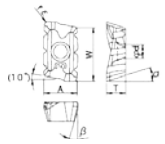
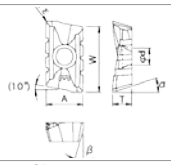
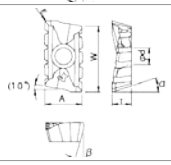
● : U.S. Stock ○ : World Express (Shipping - 10 Business Days)

Applicable Insert Selection See ➡ **P27**

Recommended Cutting Conditions ➡ **P28**

Applicable Inserts

Usage Classification								Applicable Toolholder
★ Roughing / 1st Choice ☆ Roughing / 2nd Choice ■ Finishing / 1st Choice □ Finishing / 2nd Choice *(When hardness is under 45HRC)*	*P*	Carbon Steel / Alloy Steel	★	★			☆	
		Mold Steel	★	★			☆	
	M	Austenitic Stainless Steel	☆	☆			☆	
		Martensitic Stainless Steel						
		Precipitation Hardened Stainless Steel						
	K	Gray Cast Iron			★	☆		
		Nodular Cast Iron			★	☆		
	N	Non-Ferrous Metal						
	S	Heat Resistant Alloy (Ni-base)	★	★				
		Titanium Alloy			★			
	H	Hard Materials		□			□	

Insert		***Part Number***	*Dimensions (in)* A	T	Ød	W	rε	*Angle* α	β	*MEGACOAT* PR1230	PR1225	PR1210	*PVD* PR905	PR830	*Applicable Toolholder*
 2-Notch		**BDMT 11T308ER-N2**	0.264	0.150	0.110	0.433	0.031	18°	13°	●	●	○	●	●	**P 25-27**
 3-Notch		**BDMT 11T308ER-N3**	0.264	0.150	0.110	0.433	0.031	18°	13°	●	●	○	●	●	
 3-Notch		**BDMT 170408ER-N3**	0.378	0.193	0.173	0.669	0.031	18°	13°	●	●	●	●	●	
 4-Notch		**BDMT 170408ER-N4**	0.378	0.193	0.173	0.669	0.031	18°	13°	●	●	●	●	●	

● : U.S. Stock ○ : World Express (Shipping - 10 Business Days)

Installed Inserts - MECH Endmill

	Description **inch size** / metric size	No. of **Flutes**	No. of **Inserts**	No. of **Inserts** *BDMT11T308ER-* N2	*BDMT11T308ER-* N3	*BDMT170408ER-* N3	*BDMT170408ER-* N4
Endmill	**MECH 1000-W1000-11-4-2T** 025-S25-11-4-2T	2	8	4	4	-	-
	1250-W1250-11-5-2T 032-S32-11-5-2T	2	10	5	5	-	-
	1250-W1250-11-5-4T 032-S32-11-5-4T	4	20	10	10	-	-
	1500-W1250-11-6-2T 040-S32-11-6-4T	4	24	12	12	-	-
	1500-W1500-11-6-4T 040-S42-11-6-4T	4	24	12	12	-	-
	2000-W1500-11-7-4T 050-S42-11-7-4T	4	28	14	14	-	-
	2000-W1500-11-7-6T 050-S42-11-7-6T	6	42	21	21	-	-
	MECH 040-S32-17-4-2T	2	8	-	-	4	4
	040-S42-17-4-2T	2	8	-	-	4	4
	050-S42-17-5-4T	4	20	-	-	10	10

Installed Inserts - MECH Shell Mill / MECH-BT50

	Description **inch size** / metric size	No. of **Flutes**	No. of **Inserts**	No. of **Inserts** *BDMT11T308ER-* N2	*BDMT11T308ER-* N3	*BDMT170408ER-* N3	*BDMT170408ER-* N4
Shell Mill	**MECH** 040R-11-4-4T-M	4	16	8	8	-	-
	2000R-11-5-6T 050R-11-5-6T-M	6	30	15	15	-	-
	MECH 2000R-17-2-4T 050R-17-2-4T-M	4	8	-	-	4	4
	2000R-17-4-4T 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
BT50	**MECH** 050R11-8-4T-BT50	4	32	16	16	-	-
	050R17-7-4T-BT50	4	28	-	-	14	14
	063R17-7-4T-BT50	4	28	-	-	14	14
	080R17-7-4T-BT50	4	28	-	-	14	14
	100R17-7-6T-BT50	6	42	-	-	21	21

Precautions when installing inserts with notches

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

< Insert Number and Holder Marks >

Insert Size	*11 Type*		*17 Type*	
Insert Number	2	3	3	4
Marks				

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

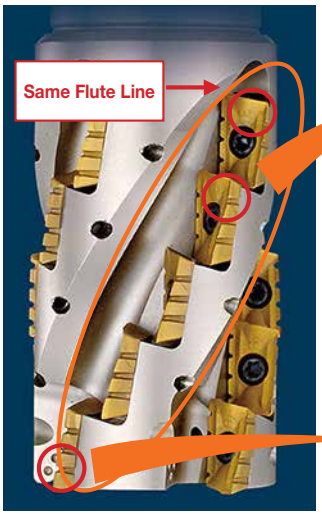


Fig.1 Same Flute Line

Fig.2 Insert Number

Fig.3 Holder Marks

Recommended Cutting Conditions

Workpiece Material	*Feed Rate* **fz (ipt)**	*Recommended Insert Grade* **Vc (sfm)**				
		MEGACOAT			PVD	
		PR1225	**PR1230**	**PR1210**	**PR830**	**PR905**
Carbon Steel	0.003~**0.004**~0.006	☆ 390~**590**~820	★ 390~**590**~720	-	☆ 330~**460**~590	-
Alloy Steel	0.003~**0.004**~0.006	☆ 330~**520**~720	★ 330~**520**~660	-	☆ 330~**460**~590	-
Mold Steel	0.003~**0.004**~0.006	☆ 260~**460**~590	★ 260~**460**~520	-	☆ 330~**390**~490	-
Gray Cast Iron	0.003~**0.006**~0.007	-	-	☆ 390~**590**~820	-	☆ 330~**460**~590
Nodular Cast Iron	0.003~**0.006**~0.007	-	-	☆ 330~**490**~720	-	☆ 330~**390**~490
Titanium Alloy	0.003~**0.004**~0.006	-	-	☆ 100~**160**~230	-	☆ 70~**110**~160

※ Machining with coolant is recommended for Titanium Alloy.

★ 1st Recommendation ☆ 2nd Recommendation

※ The figure in bold font is the starting value of the recommended cutting conditions.
Adjust the cutting speed and the feed rate within the above conditions according to the actual machining situation.

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.

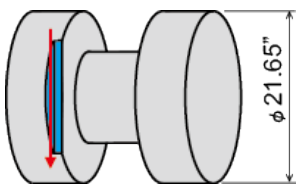
MECH Case Studies

1045

- Ship parts
- Vc=500sfm
- ap×ae=2.75" × 0.40"
- fz=0.008ipt (Vf=30ipm)
- Dry
- MECH050-S42-17-5-4T
- 4 Flutes
- BDMT170408ER-N3
- BDMT170408ER-N4

(PR830)

Shouldering
(Down Cut)



MECH Metal Removal Volume=32.58 in^3/min

Competitor A Metal Removal Volume=7.01 in^3/min

- MECH machining efficiency improved 4.6 times that of Competitor A

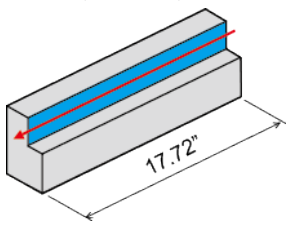
Customer Evaluation

Structural Steel

- Plate
- Vc=500sfm
- ap×ae=2.75" × 0.40"
- fz=0.008ipt
- Dry
- MECH050-S42-17-5-4T
- 4 Flutes
- BDMT170408ER-N3
- BDMT170408ER-N4

(PR830)

Shouldering
(Down Cut)



MECH Metal Removal Volume=32.46 in^3/min

Competitor B Metal Removal Volume=10.37 in^3/min

- MECH machining efficiency improved 3.1 times that of Competitor B and had an excellent wall finish

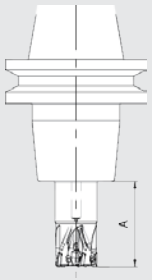
Customer Evaluation

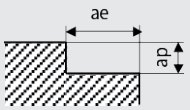
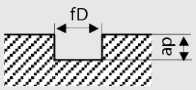
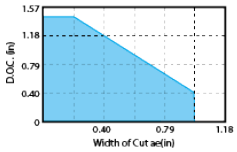
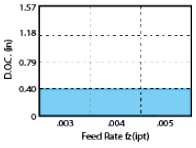
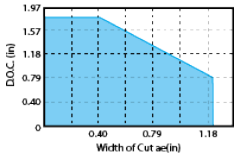
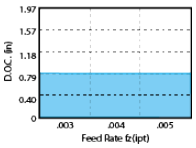
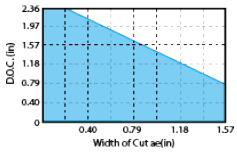
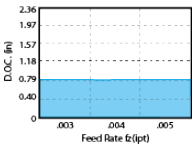
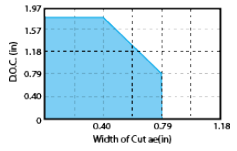
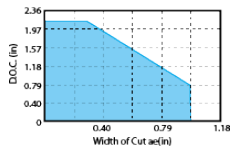
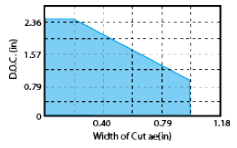
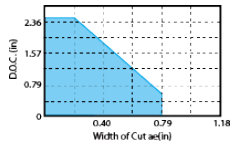
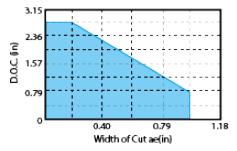
MECH Endmill Cutting Performance

(Workpiece :1049)

Cutting Dia.	*Description* **inch size** *metric size*	Overhang Length A (in)
Ø1.000" Ø25mm	**MECH1000-W1000-11-4-2T** MECH025-S25-11-4-2T	1.89
Ø1.250" Ø32mm	**MECH1250-W1250-11-5-2T** MECH032-S32-11-5-2T	2.24
	MECH1250-W1250-11-5-4T MECH032-S32-11-5-4T	
Ø1.500" Ø40mm	**MECH1500-W1250-11-6-4T** MECH040-S32-11-6-4T	2.56
	MECH1500-W1500-11-6-4T MECH040-S42-11-6-4T	
Ø2.000" Ø50mm	**MECH2000-W1500-11-7-4T** MECH050-S42-11-7-4T	2.99
	MECH2000-W1500-11-7-6T MECH050-S42-11-7-6T	
Ø1.500" Ø40mm	**MECH1500-W1250-17-4-2T** MECH040-S32-17-4-2T	2.91
	MECH1500-W1500-17-4-2T MECH040-S42-17-4-2T	
Ø2.000" Ø50mm	**MECH2000-W1500-17-5-4T** MECH050-S42-17-5-4T	3.5

Shape



Description	**Shouldering**  Cutting Speed: Vc=325~590sfm Feed: fz=0.003~0.006ipt	**Slotting**  Cutting speed: Vc=325~400sfm Feed: fz=0.003~0.005 ipt
2 Flute Type		
MECH1000-W1000-11-4-2T MECH025-S25-11-4-2T		
MECH1250-W1250-11-5-2T MECH032-S32-11-5-2T		
MECH1500-W1250-17-4-2T MECH040-S32-17-4-2T **MECH1500-W1500-17-4-2T** MECH040-S42-17-4-2T		
4 Flute / 6 Flute Type		
MECH1250-W1250-11-5-4T MECH032-S32-11-5-4T		
MECH1500-W1250-11-6-4T MECH040-S32-11-6-4T **MECH1500-W1500-11-6-4T** MECH040-S42-11-6-4T		
MECH2000-W1500-11-7-4T MECH050-S42-11-7-4T		
MECH2000-W1500-11-7-6T MECH050-S42-11-7-6T		
MECH2000-W1500-17-5-4T MECH050-S42-17-5-4T		

KYO-CAT Taper Adapters

NEW

CAT40
Face Mill Toolholders

- Made from 8620 Alloy Steel
- Concentricity is less than .0002 at face and arbor
- All critical surfaces are precision ground
- Case hardened to 54-58 RC
- Case depth is .03-.04
- Balanced to G2.5 @ 20,000 rpm
- Rear thread for pull stud is 5/8-11
- Coolant through capable

CAT40
Endmill Toolholders

- Made from 8620 Alloy Steel
- All critical surfaces are precision ground
- Case hardened to 56-58 RC
- Case depth is .03-.04
- Balanced to G2.5 @ 20,000 rpm
- Concentricity is .0001 or less
- Rear thread for pull stud is 5/8-11
- Coolant through capable

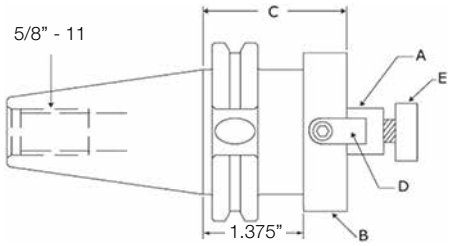


Fig.1

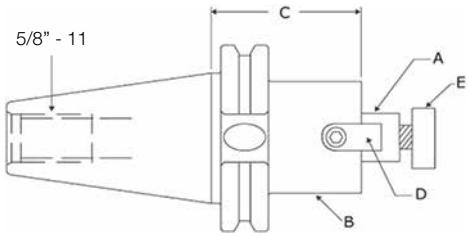


Fig.2

CAT40 Face Mill Holder

Part Number		Stock	Dimensions (in) Arbor Diameter (A)	O.D. (B)	Gage Length (C)	Key Width (D)	Screw (E)	Fig.	Suggested Retail Price
KYO-CAT40-	FM.75-2.0	●	0.750	1.750	2.000	5/16	3/8-24	2	$139
	FM1.0-2.0	●	1.000	2.180	2.000	3/8	1/2-20	1	$139
	FM1.25-2.0	●	1.250	2.440	2.000	1/2	5/8-18	1	$139
	FM1.5-2.0	●	1.500	2.520	2.000	5/8	3/4-16	1	$139

● : U.S. Stock

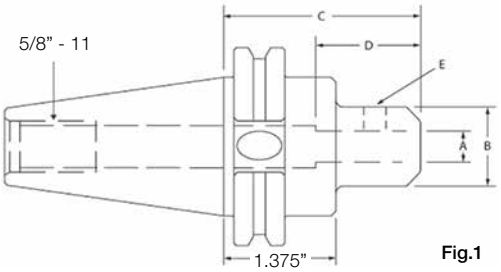


Fig.1

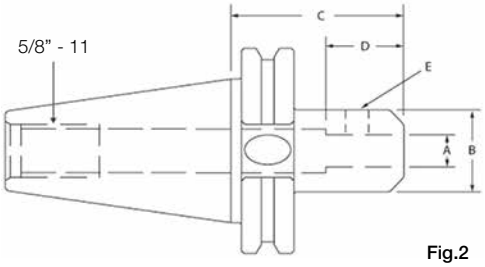


Fig.2

CAT40 Endmill Holder

Part Number		Stock	Dimensions (in) I.D. (A)	O.D. (B)	Gage Length (C)	Tool Depth (D)	Set Screw (E)	Fig.	Suggested Retail Price
KYO-CAT40-	EM.500-1.75	●	0.500	1.375	1.750	N/A	7/16-20	2	$109
	EM.625-1.75	●	0.625	1.500	1.750	2.100	9/16-18	2	$109
	EM.75-1.75	●	0.750	1.750	1.750	2.500	5/8-18	2	$109
	EM1.0-1.75	●	1.000	1.750	1.750	2.600	5/8-18	2	$109
	EM1.25-2.5	●	1.250	2.500	2.500	2.750	3/4-16	1	$114
	EM1.5-4.0	●	1.500	2.620	4.000	3.000	2x – 3/4-16	2※	$129

※ This tool holder does not have a safety zone for the tool changer.
Although most machines do not require a safety zone, please be sure to check your machine tool requirements.

● : U.S. Stock

CAT50
Face Mill Toolholders

- Made from 8620 Alloy Steel
- Concentricity is less than .0002 at face and arbor
- All critical surfaces are precision ground
- Case hardened to 54-58 RC
- Case depth is .03-.04
- Balanced to G2.5 @ 20,000 rpm
- Rear thread for pull stud is 1" x 8
- Coolant through capable

CAT50
Endmill Toolholders

- Made from 8620 Alloy Steel
- All critical surfaces are precision ground
- Case hardened to 56-58 RC
- Case depth is .03-.04
- Balanced to G2.5 @ 20,000 rpm
- Concentricity is .0002 or less
- Rear thread for pull stud is 1" x 8
- Coolant through capable

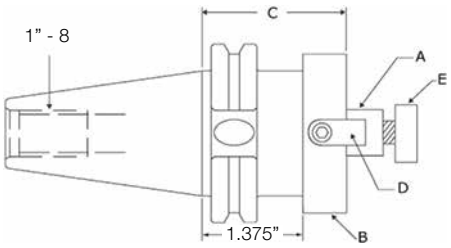


Fig.1

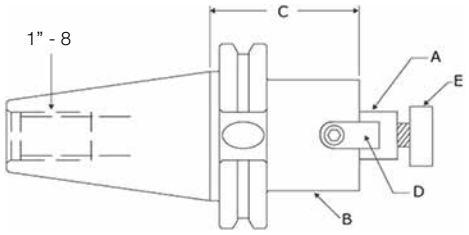


Fig.2

CAT50 Face Mill Holder

Part Number		Stock	Dimensions (in) Arbor Diameter (A)	O.D. (B)	Gage Length (C)	Key Width (D)	Screw (E)	Fig.	Suggested Retail Price
KYO-CAT50-	FM.75-3.0	●	0.750	1.750	3.000	5/16	3/8-24	2	***$199***
	FM1.0-3.0	●	1.000	2.180	3.000	3/8	1/2-20	2	***$199***
	FM1.25-3.0	●	1.250	2.440	3.000	1/2	5/8-18	2	***$199***
	FM1.5-3.0	●	1.500	2.740	3.000	5/8	3/4-16	2	***$199***
	FM2.0-3.0	●	2.000	3.700	3.000	3/4	1-14	1	***$229***
	FM2.5-3.0	●	2.500	4.000	3.000	1.0	1-14	1	***$229***

● : U.S. Stock

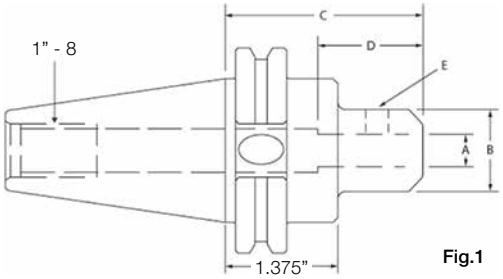


Fig.1

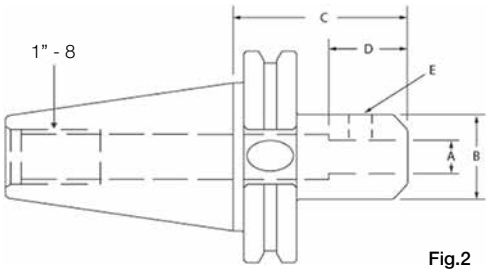


Fig.2

CAT50 Endmill Holder

Part Number		Stock	Dimensions (in) I.D. (A)	O.D. (B)	Gage Length (C)	Tool Depth (D)	Set Screw (E)	Fig.	Suggested Retail Price
KYO-CAT50-	EM.500-3.0	●	0.500	1.375	3.000	N/A	7/16-20	1	***$169***
	EM.625-3.0	●	0.625	1.500	3.000	N/A	9/16-18	1	***$169***
	EM.75-3.0	●	0.750	1.750	3.000	N/A	5/8-18	1	***$169***
	EM1.0-4.0	●	1.000	1.900	4.000	2.750	5/8-18	1	***$179***
	EM1.25-4.0	●	1.250	2.500	4.000	2.750	3/4-16	1	***$179***
	EM1.5-4.5	●	1.500	2.750	4.500	3.000	2x – 3/4-16	1	***$189***
	EM2.0-5.0	●	2.000	3.500	5.000	3.500	2x – 1.0-14	2※	***$214***

※ This tool holder does not have a safety zone for the tool changer.
Although most machines do not require a safety zone, please be sure to check your machine tool requirements.

● : U.S. Stock

KYOCERA

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06/14, 5K Printed in U.S.A.

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