

THE NEW VALUE FRONTIER



90° milling with double sided  
4-edge inserts

**MEW**

# MEW Series



Low cutting forces equivalent to positive inserts

Economical 4-edge insert

Improved toolholder durability and insert installation accuracy

Chattering resistance for excellent surface finish

**NEW**

DLC coating for machining aluminum  
Grade PDL025 added to the lineup



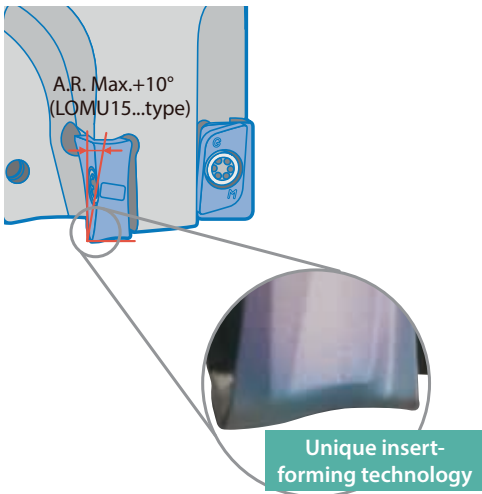
90° end mill with double sided 4-edge insert

# MEW

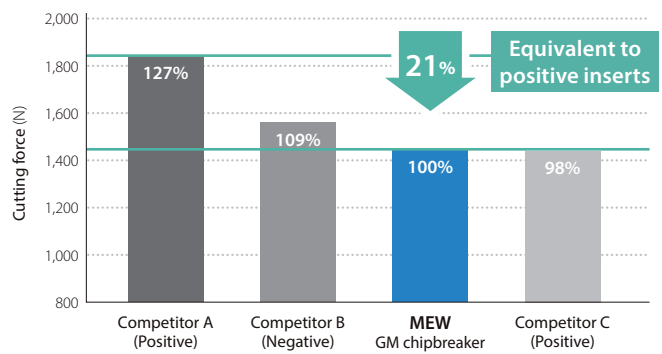
Low cutting forces equivalent to positive inserts with chattering resistance for excellent surface finish. DLC coating PDL025 for machining aluminum added to the lineup for a wide range of milling applications.

## 1 Low cutting force equivalent to positive inserts

Kyocera's unique insert-forming technology reduces cutting force equivalent to positive inserts



Cutting force comparison (In-house evaluation)

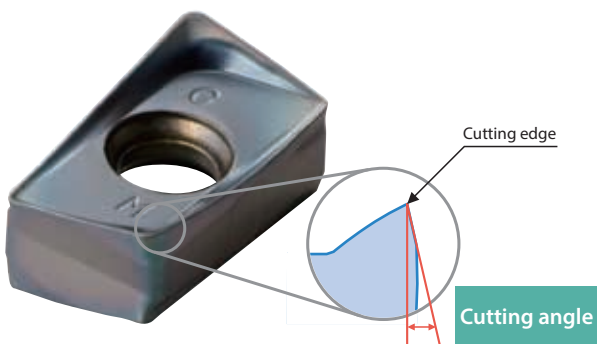


Cutting force is the resultant force of the principal force and the feed force.

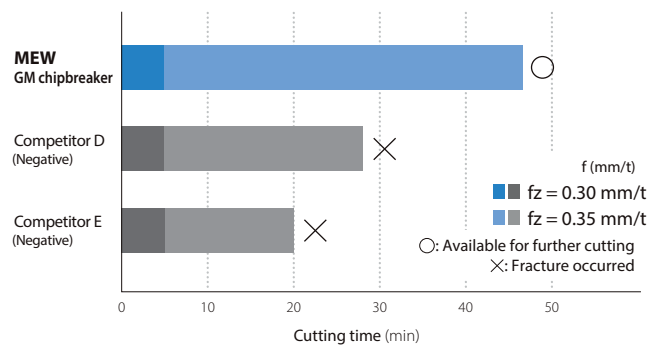
Cutting conditions:  $V_c = 150$  m/min,  $f_z = 0.15$  mm/t,  $a_p \times a_e = 3 \times 15$  mm  
Cutter dia.  $\phi 20$  mm Workpiece : C50

## 2 Excellent fracture resistance

Increased cutting edge toughness for stable machining at high feed rates



Fracture resistance comparison (In-house evaluation)

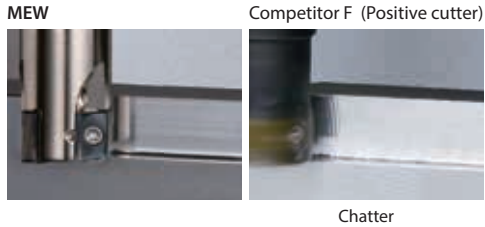


Cutting conditions:  $V_c = 120$  m/min,  $f_z = 0.3 - 0.35$  mm/t,  $a_p \times a_e = 3 \times 10$  mm  
Cutter dia.  $\phi 20$  mm, workpiece : 42CrMo4 (37 - 39 HS)

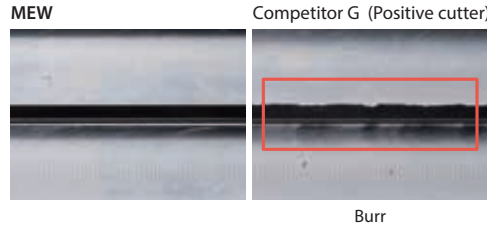
### 3 Improved surface finish & minimized chattering

Sharp cutting and superior resistance to chattering and burrs due to helical cutting edge and optimum axial rake design

Surface of shoulder wall (In-house evaluation)



Burr comparison with positive cutters (In-house evaluation)



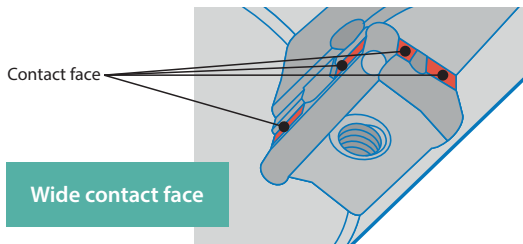
Actual rake angle (In-house evaluation)

MEW GM chipbreaker	+20°
Competitor H (Negative)	+17°
Competitor I (Positive)	+17°

Cutting conditions:  $V_c = 240$  m/min,  $f_z = 0.12$  mm/t,  $a_p \times a_e = 4 \times 5$  mm  
Cutter dia.  $\varnothing 20$  mm, dry Workpiece: 17Cr3

Cutting conditions:  $V_c = 250$  m/min,  $f_z = 0.1$  mm/t,  $a_p \times a_e = 4 \times 5$  mm  
Cutter dia.  $\varnothing 20$  mm, dry, workpiece: C50

### 4 Improved toolholder durability and insert installation accuracy



### 5 Various chipbreakers for a wide range of applications

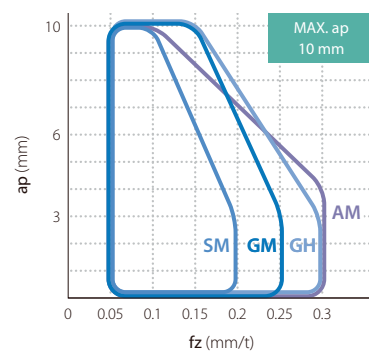
4 types of chipbreakers for a wide range of applications along with a large lineup of corner R (r<sub>ε</sub>) for the GM chipbreaker

Chipbreaker	Application	Shape
GM	General purpose	
SM	Low cutting force	
GH	Heavy milling	
AM	Non-ferrous metals • aluminum	

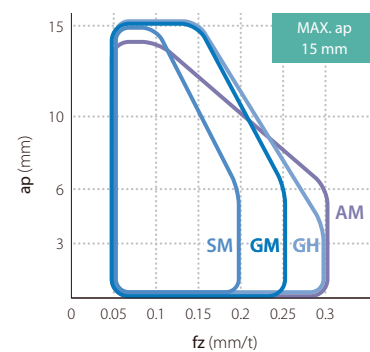
NEW

Chipbreaker recommended applications (Shouldering)

LOMU10type



LOMU15type



Chips (GM chipbreaker)



Grooving



Shouldering

90° helical end mill with double sided 4-edge inserts

# MEWH

Excellent surface finish and stable machining due to the innovative toolholder design.  
Economical 4-edge inserts

## 1 Improved surface finish & minimized chattering

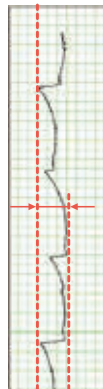
Better surface quality than competitor

Surface finish comparison (In-house evaluation)

MEWH



Competitor J



Smooth surface finish

Cutting conditions:  $V_c = 120$  m/min,  $f_z = 0.1$  mm/t,  $a_p \times a_e = 45 \times 5$  mm, dry  
MEWH040S32-10-5-3T LOMU100408ER-GM (PR1525)  
Workpiece : 34CrMo4

## 2 Excellent chip evacuation

Chips are constantly evacuated in the opposite direction of the cutter feed without clogging

Chipbreaker	Workpiece	$f_z = 0.15$ mm/t	$f_z = 0.2$ mm/t
GM	34CrMo4		
GM	17Cr3		
SM			



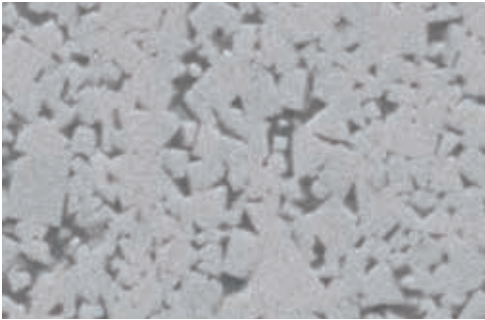
Cutting conditions:  $V_c = 120$  m/min,  $a_p \times a_e = 20 \times 15$  mm, dry

# MEGACOAT NANO PR1535

Fracture resistant with a tough substrate and high heat-resistant coating  
Stable machining of general steel, mold steel, and difficult-to-cut materials

## 1 Toughening by a new cobalt mixing ratio \*In-house evaluation

High toughness carbide base material



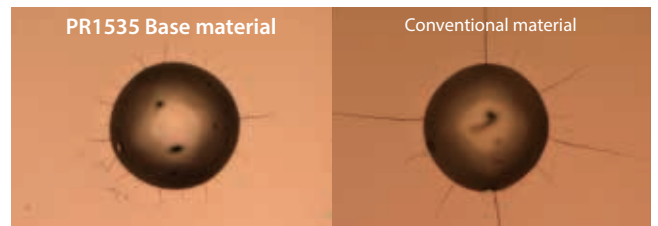
↑  
23%  
Fracture toughness\*

## 2 Stability improvement

The coarse grain structure and uniform particle size correspond to improved heat resistance, with conductivity values decreased by 11%. The uniform structure also reduces crack propagation.

Cracking comparison by diamond indenter (In-house evaluation)

↑  
Shock resistance



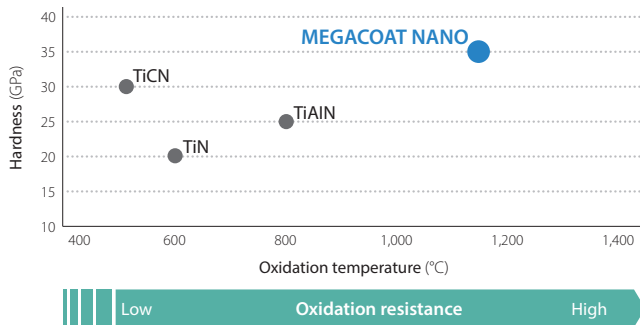
PR1535 Base material

Conventional material

Short cracks

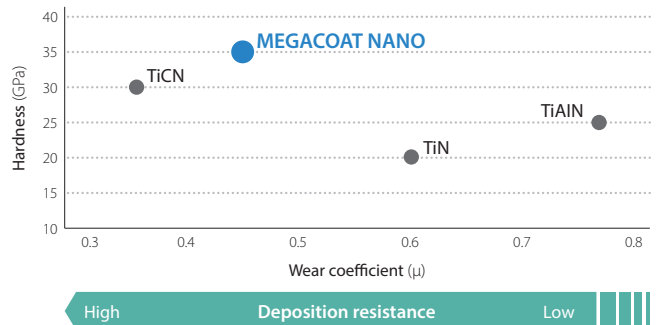
Long cracks

Coating properties (Abrasion resistance)



Achieve long tool life with the combination of a tough substrate and a special nano coating layer.

Coating properties (Deposition resistance)

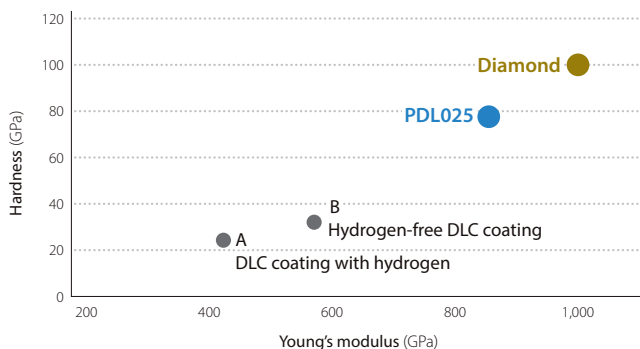


Stable machining with excellent wear resistance.

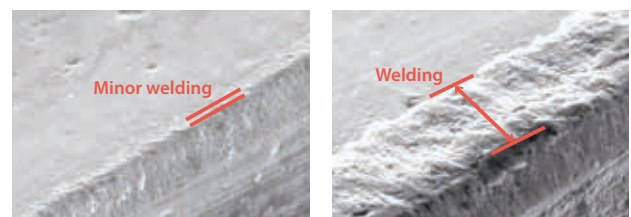
# NEW DLC coated carbide PDL025

High quality and long tool life for machining aluminum  
High hardness with Kyocera's proprietary hydrogen-free DLC coating

Coating properties



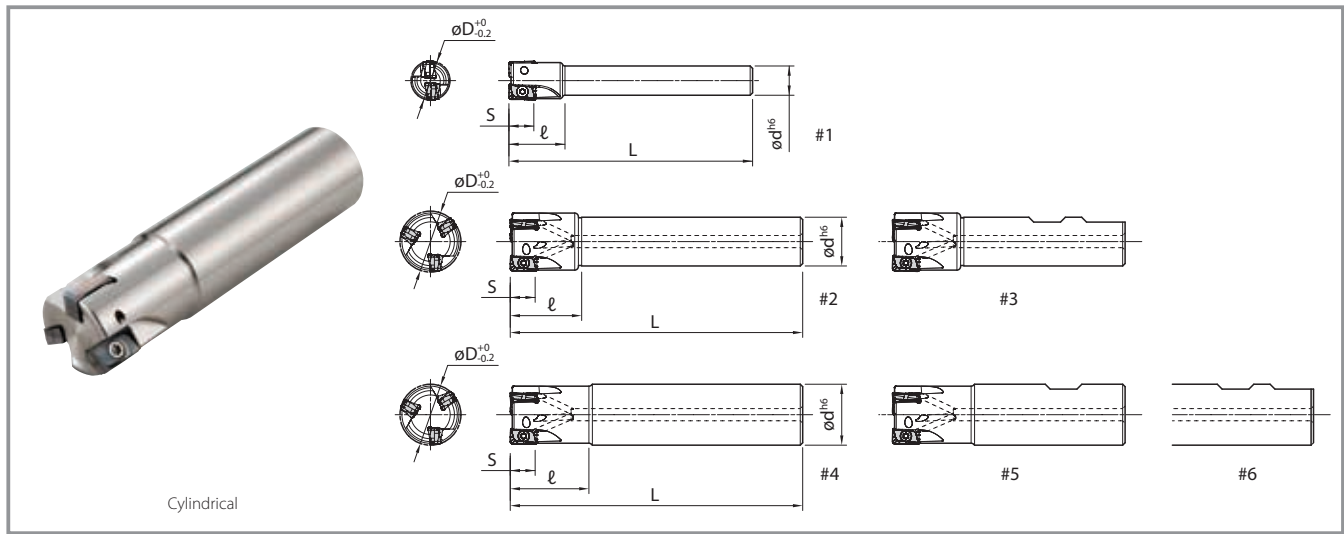
Deposition resistance comparison (In-house evaluation)



PDL025

Competitor K

Cutting conditions: Vc = 800 m/min, fz = 0.1 mm/t, ap × ae = 3 × 5 mm, dry  
Cutter dia. ø25 mm Workpiece: AlMg2.5 Cutting length: 57 m



Cylindrical

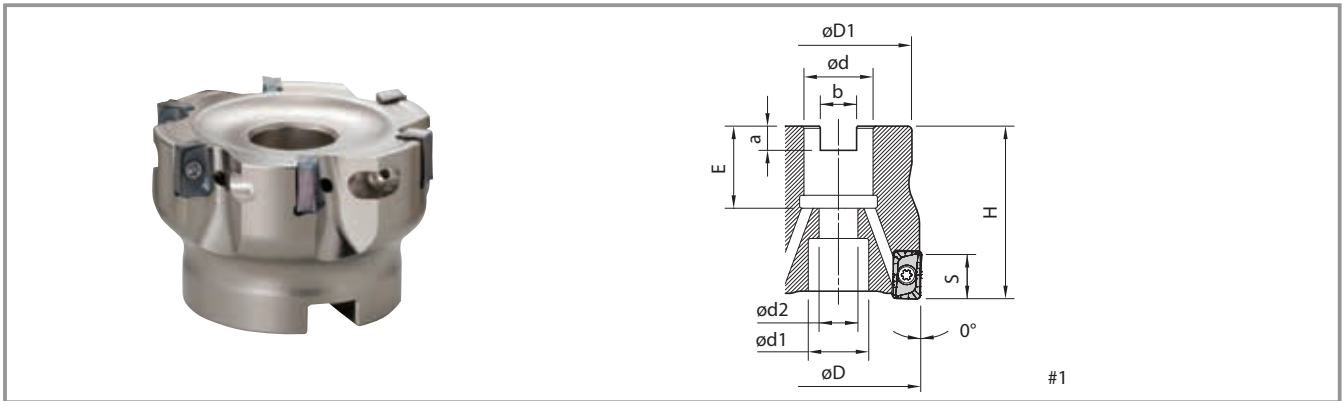
Toolholder dimensions

	Description	Availability	No. of inserts	Dimensions (mm)					A.R.		Coolant hole	Shape	Max. revolution (min-1)						
				$\phi D$	$\phi d$	L	$\ell$	S	A.R. (MAX.)	R.R.									
Cylindrical	Standard (Straight)	MEW 16-S12-10-2T	●	2	16	12	100	23	10	+7°	-22°	-	#1	43,750					
		18-S16-10-2T	●		18	16		25						43,000					
		20-S16-10-2T	●	3	20	20	110	26						-21°	Yes	#2	41,000		
		22-S20-10-3T	●		22												39,600		
		25-S20-10-3T	●	4	25	25	120	29						-20°	Yes	#2	37,500		
		28-S25-10-3T	●		28												35,800		
		30-S25-10-4T	●	5	30	32	130	32						-19°	Yes	#2	34,800		
		32-S25-10-4T	●		32												33,900		
		40-S32-10-5T	●	5	40	32	150	50						-19°	Yes	#2	30,000		
		50-S32-10-5T	●		50		120	40									22,500		
	Same shank size (Straight)	MEW 16-S16-10-2T	●	2	16	16	100	26	10	+7°	-22°	-	#4	43,750					
		20-S20-10-2T	●		20	20	110	30						41,000					
		20-S20-10-3T	●	3	25	25	120	32						-20°	Yes	#4	41,000		
		25-S25-10-2T	●	2													37,500		
		25-S25-10-3T	●	3	32	32	130	40						-20°	Yes	#4	37,500		
		32-S32-10-3T	●														33,900		
		32-S32-10-4T	●	4	33,900														
		Long shank (Straight)	MEW 20-S20-10-150-2T	●	2	20	20	150						40	10	+7°	-20°	Yes	#4
	25-S25-10-170-2T		●	25		25	170	50	37,500										
	Standard (Straight)	MEW 25-S20-15-2T	●	2	25	20	120	29	15	+10°	-22°	Yes	#2	35,000					
32-S25-15-2T		●	32		25	130	32	30,000											
40-S32-15-3T		●	3	40	32	150	50	-21°						Yes	#2	25,000			
40-S32-15-4T		●														25,000			
50-S32-15-4T		●	4	50	120	40	17,000												
Same shank size	MEW 25-S25-15-2T	●	2	25	25	120	32	15	+10°	-22°	Yes	#4	35,000						
	32-S32-15-2T	●		32	32	130	40						30,000						
	32-S32-15-3T	●	3	30,000															
Standard (Weldon)	Standard (Weldon)	MEW 40-W32-10-5T	●	5	40	32	111	50	10	+7°	-19°	Yes	#3	30,000					
		MEW 40-W32-15-4T	●						15	+10°	-21°			25,000					
	Same shank size (Weldon)	MEW 16-W16-10-2T	●	2	16	16	75	25	10	+7°	-22°	Yes	#5	43,750					
			20-W20-10-2T		●	20	20							77	41,000				
		20-W20-10-3T	●	3	25	25	90	32						-20°	Yes	#6	41,000		
		25-W25-10-2T	●	2													37,500		
		25-W25-10-3T	●	3	32	32	102	40						-20°	Yes	#6	37,500		
		32-W32-10-4T	●	3													33,900		
		MEW 25-W25-15-2T	●	2	25	25	90	32						15	+10°	-22°	Yes	#6	35,000
		32-W32-15-3T	●	3	32	32	102	40											30,000

Caution with max. revolution  
When running cutters at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.

● : Available

# MEW face mill



## Toolholder dimensions

Description	Availability	No. of inserts	Dimensions (mm)									A.R.		Coolant hole	Shape	Weight (kg)	Max. revolution (min-1)	
			øD	øD1	ød	ød1	ød2	H	E	a	b	S	A.R. (MAX.)					R.R.
MEW 032R-10-4T-M	●	4	32	30	16	14	9	35	19	5.6	8.4	10	+7°	-20°	Yes	#1	0.1	33,900
MEW 040R-10-5T-M	●	5	40	34				40									0.2	30,000
MEW 050R-10-5T-M	●		50	45	22	18	11	40	21	6.3	10.4	15	+10°	-19°	Yes	#1	0.4	22,500
MEW 063R-10-6T-M	●	6	63	47													0.5	20,500
MEW 040R-15-4T-M	●	4	40	34	16	14	9	40	19	5.6	8.4	15	+10°	-21°	Yes	#1	0.2	25,000
MEW 050R-15-4T-M	●		50	45													0.3	17,000
MEW 063R-15-5T-M	●	5	63	47	27	20	13	50	25	7	12.4	15	+10°	-20°	Yes	#1	0.5	14,500
MEW 080R-15-6T-M	●	6	80	60													25.4	20
MEW 080R-15-6T	●																	

Caution with max. revolution

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

● : Availability

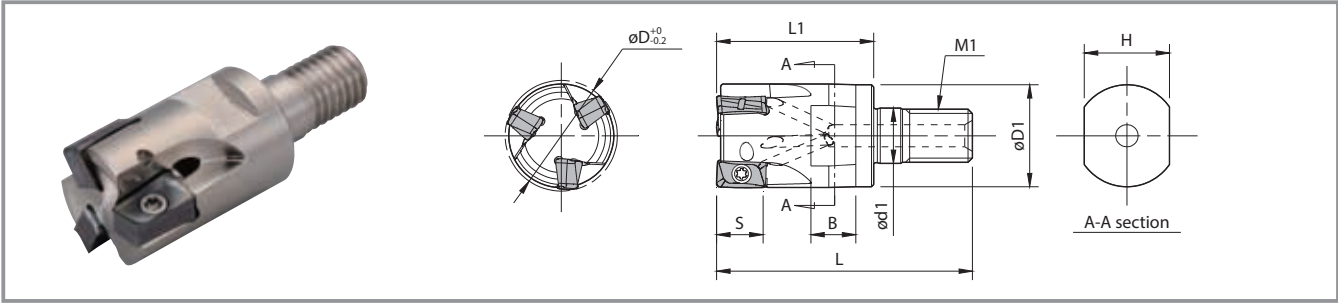
## Spare parts and applicable inserts (Common to end mill and face mill)

Description	Spare parts				Applicable inserts				
	Clamp screw	Wrench	Anti-Seize compound	Mounting bolt					
MEW ...-10-_T	SB-3065TRP	DTPM-8	P-37	—	LOMU 1004 · ER-GM	LOMU 100408ER-SM	LOMU 100408ER-GH	LOGT 100408FR-AM	
MEW 032R-10-4T-M				HH8×25					
MEW 040R-10-5T-M				Recommended torque for insert clamp 1.2 N · m					HH10×30
MEW 050R-10-5T-M									
MEW 063R-10-6T-M									
MEW ...-15-_T	SB-4090TRP	DTPM-15	P-37	—	LOMU 1505 · ER-GM	LOMU 150508ER-SM	LOMU 150508ER-GH	LOGT 150508FR-AM	
MEW 040R-15-4T-M				HH8×25					
MEW 050R-15-4T-M				Recommended torque for insert clamp 3.5 N · m					HH10×30
MEW 063R-15-5T-M									
MEW 080R-15-6T(-M)									HH12×35

Coat anti-seize compound (MP-1) thinly on portion of taper and thread prior to installation.

Recommended cutting conditions → P14

# MEW Screw on type



## Toolholder dimensions

Description	Availability	No. of inserts	Dimensions (mm)									A.R.		Coolant hole	Applicable inserts	Max. revolution (min-1)
			$\phi D$	$\phi D1$	$\phi d1$	L	L1	M1	H	B	S	A.R. (MAX.)	R.R.			
MEW 16-M08-10-2T	●	2	16	14.7	8.5	43	25	M8×P1.25	12	8	10	+7°	-22°	Yes	LOMU1004 LOGT1004	43,750
20-M10-10-2T	●		20	18.7	10.5	49	30	M10×P1.5	15	9						41,000
20-M10-10-3T	●	25	23	12.5	57	35	M12×P1.75	19	10	41,000						
25-M12-10-3T	●	3	25	23	12.5	57	35	M12×P1.75	19	10		+7°	-20°			37,500
32-M16-10-4T	●		32	30	17	63	40	M16×P2.0	24	12						33,900
MEW 25-M12-15-2T	●	2	25	23	12.5	57	35	M12×P1.75	19	10		15	+10°			-22°
32-M16-15-3T	●	32	30	17	63	40	M16×P2.0	24	12	30,000						

Caution with max. revolution  
When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

● : Available

## Spare parts and applicable inserts

Description	Spare parts			Applicable inserts			
	Clamp screw	Wrench	Anti-Seize compound				
MEW 16-M08-10-2T	SB-3065TRP Recommended torque for insert clamp 1.2 N·m	DTPM-8	P-37	General purpose	Low cutting force	Tough edge (Heavy milling)	Non-ferrous metals • Aluminum
20-M10-10-2T				LOMU 1004 • ER-GM	LOMU 100408ER-SM	LOMU 100408ER-GH	LOGT 100408FR-AM
20-M10-10-3T							
25-M12-10-3T							
32-M16-10-4T							
MEW 25-M12-15-2T	SB-4090TRP Recommended torque for insert clamp 3.5 N·m	DTPM-15	P-37	LOMU 1505 • ER-GM	LOMU 150508ER-SM	LOMU 150508ER-GH	LOGT 150508FR-AM
32-M16-15-3T							

Coat anti-seize compound thinly on portion of taper and thread when insert is fixed.

## Identification system for screw on type

**MEW 16 - M08 - 10 - 2T**

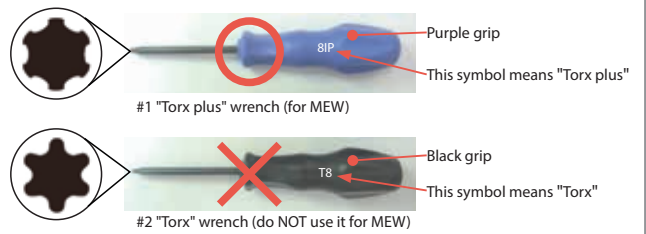
Series      Cutting dia.      Thread size      Insert size      No. of inserts

Wrenches and clamp screws are "Torx plus":

- 1) See #1 for "Torx plus" wrench (Purple grip).
- 2) See #2 for "Torx" wrench (Black grip).

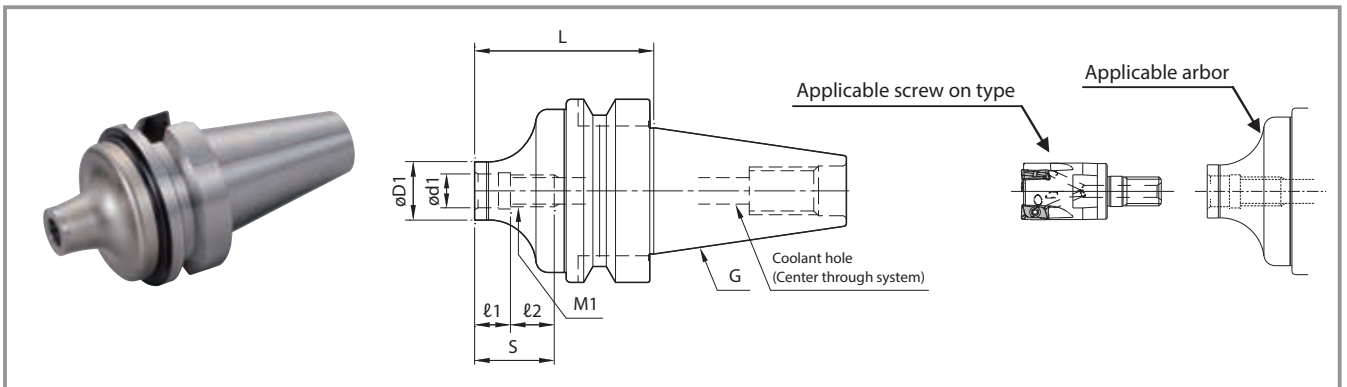
"Torx plus" wrench and "Torx" wrench have different top shapes. Please use a "Torx plus" wrench.

If a "Torx" wrench is used to tighten, the screw head might become damaged and then the screw cannot be removed.





## BT arbor (For screw on type / two face contact)



### Arbor dimensions

Description	Availability	Dimensions (mm)							Coolant hole	Arbor (two-face clamping) G	Applicable screw on type	
		L	øD1	ød1	S	ℓ1	ℓ2	M1				
BT30K-	M08-45	●	45	14.7	8.5	20	9	11	M8×P1.25	Yes	BT30	MEW16-M08-
	M10-45	●		18.7	10.5	21		12	M10×P1.5			MEW20-M10-
	M12-45	●		23	12.5	24		15	M12×P1.75			MEW25-M12-
BT40K-	M08-55	●	55	14.7	8.5	20	9	11	M8×P1.25	Yes	BT40	MEW16-M08-
	M10-60	●	60	18.7	10.5	21		12	M10×P1.5			MEW20-M10-
	M12-55	●	55	23	12.5	24		15	M12×P1.75			MEW25-M12-
	M16-65	●	65	30	17	25		16	M16×P2.0			MEW32-M16-

● : Available

### Effective depth of assembled tool

Arbor description	Applicable screw on type			Effective depth of assembled tool (mm)		
	Description	Cutting dia.	Dimension	M	L2	
		øD	L1			
BT30K- M08-45	MEW16-M08-	ø16	25	31.8	6.8	
	MEW20-M10-	ø20	30	36.8	6.8	
	MEW25-M12-	ø25	35	42.8	7.8	
BT40K-	M08-55	MEW16-M08-	ø16	25	31.7	6.7
	M10-60	MEW20-M10-	ø20	30	38.7	8.7
	M12-55	MEW25-M12-	ø25	35	44.6	9.6
	M16-65	MEW32-M16-	ø32	40	51.2	11.2

## Arbor identification system

**BT30** **K** - **M08** - **45**

Arbor size

Two-Face  
clamping  
spindle

Thread size

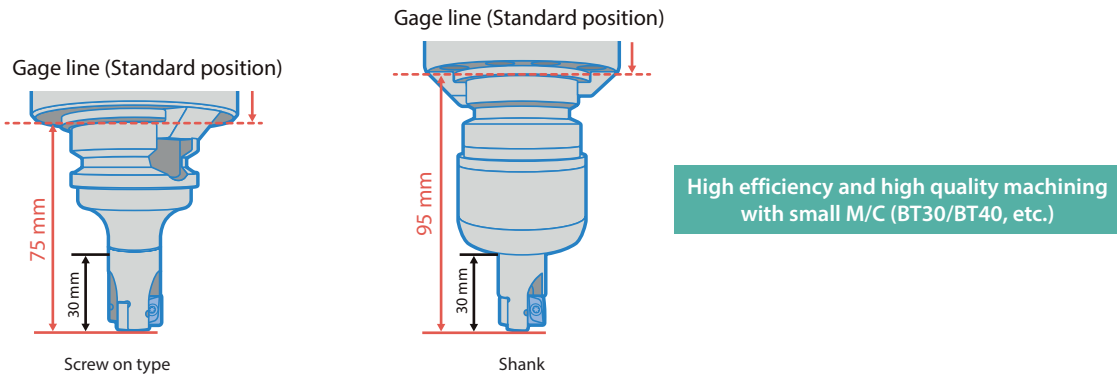
Length L

# Advantages of screw on type

BT30 M/C (two-face clamping spindle) + cutting dia.:  $\varnothing 20$  comparison with MEW end mill

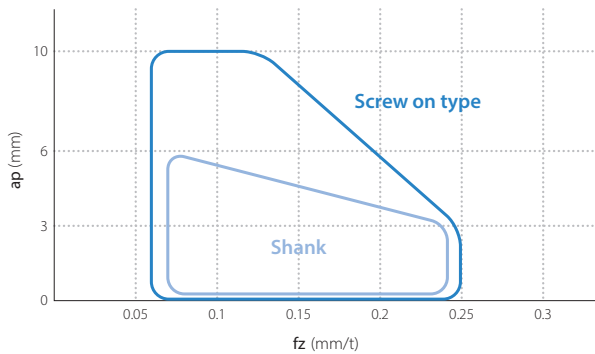
## 1 Low gage line reduces chattering

The distance from the cutting edge to the gage line is shorter with the same overhang length (30 mm)



## 2 Applicable to a wide range of applications

For a wide range of applications even in BT30 M/C



Cutting conditions:  $V_c = 150$  m/min,  $a_e = 10$  mm, shouldering, dry  
Workpiece: C55 BT30 M/C

Screw on type  
Head: MEW20-M10-10-3T, arbor: BT30K-M10-45  
Insert: LOMU100408ER-GM(PR1525)

Shank  
Holder: MEW20-S20-10-3T, arbor: BT30 milling chuck (two-face clamping)  
Insert: LOMU100408ER-GM (PR1525)

## 3 Smooth surface finish



Screw on type



Chattering

Shank

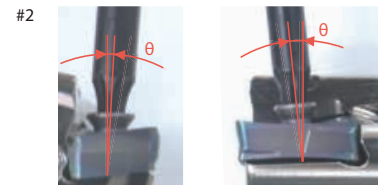
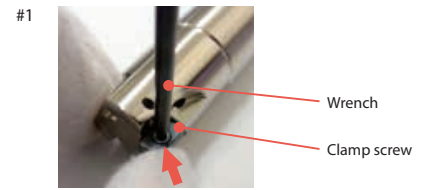
Cutting conditions:  $V_c = 150$  m/min,  $f_z = 0.15$  mm/t,  $a_e = 10$  mm, shouldering, dry  
Workpiece: C55 BT30 M/C

Screw on type  
Head: MEW20-M10-10-3T, arbor: BT30K-M10-45  
Insert: LOMU100408ER-GM (PR1525)

Shank  
Holder: MEW20-S20-10-3T, arbor: BT30 milling chuck (two-face clamping)  
Insert: LOMU100408ER-GM (PR1525)

## How to mount the inserts

1. Be sure to remove dust and chips from the insert mounting pocket.
2. Apply anti-seize compound on portion of taper and thread of clamp screw. Attach the screw (magnetic head) to the front end of the wrench. While lightly pressing the insert against the pocket walls, put the screw into the hole of the insert and tighten (see #1). Tighten M3 screws (SB-3065TRP) slightly inclined from the insert surface (see #2).
3. When tightening the screw, make sure that the wrench is parallel to the screw. For recommended torque (see table 1)
4. After tightening the screw, make sure that there is no clearance between the insert seat surface and the pocket floor of the holder or between the insert side surfaces and the pocket walls of the holder. If there is any clearance, remove the insert and mount it again according to the above steps.

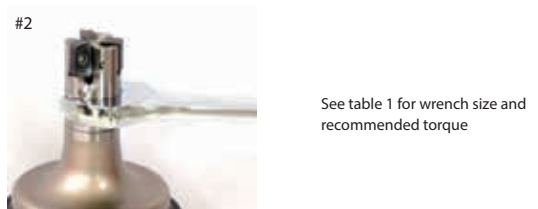
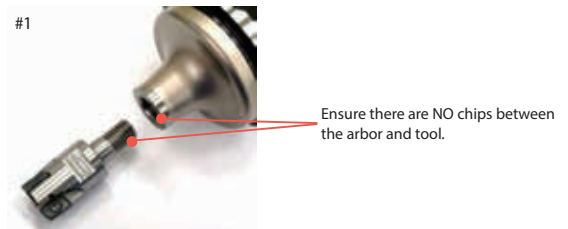


## How to attach MEW screw on type

1. When clamping the tool on the arbor, make sure there is no dust or chips inside (#1). Do NOT put lubricant on the clamping portion.
2. Attach the tool on the arbor and fix it using the wrench (#2). See table 1 for recommended torque. Note: The wrench is NOT included with product.
3. Confirm that the tool is fixed firmly on the arbor (#3).

Table 1: Recommended head torque

Thread dia. tolerance	Wrench width across flat (mm)	Recommended torque (N·m)
M8	12	23
M10	15	46
M12	19	80
M16	24	90

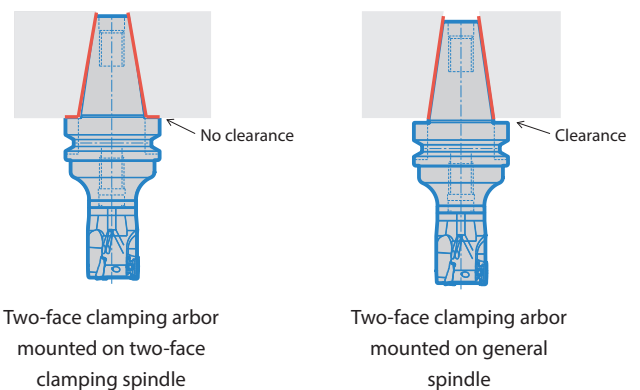


## Frequently asked question

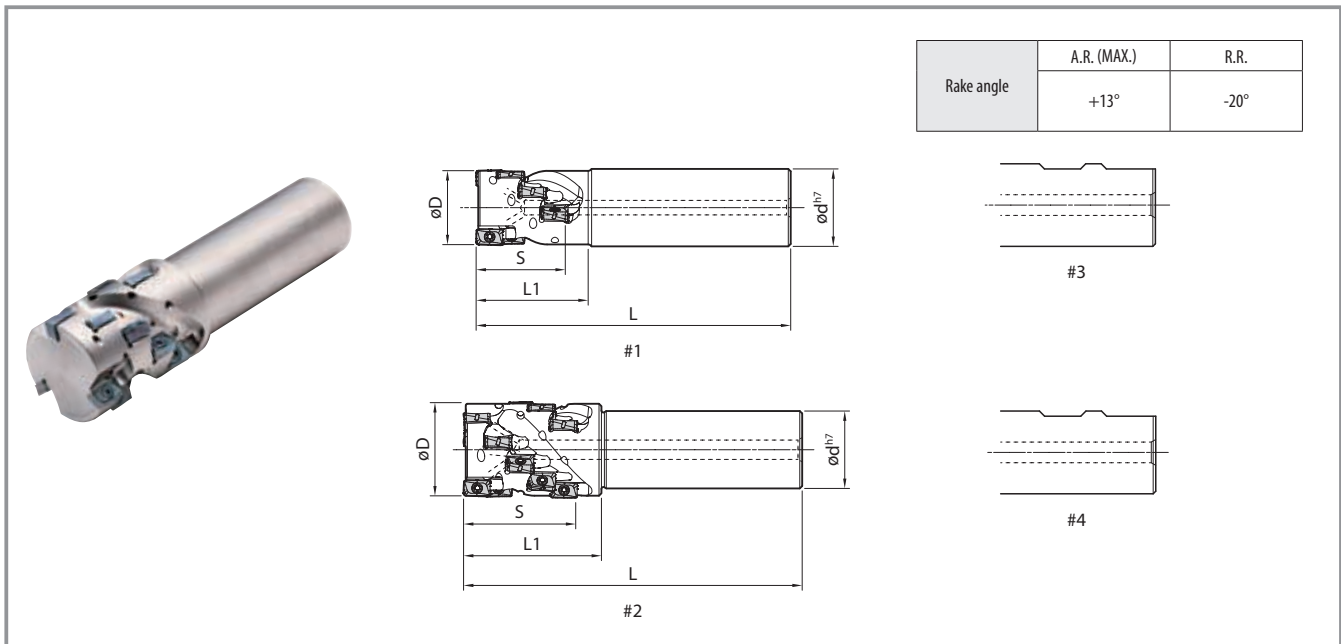
**Q** Can the two-face clamping arbor be mounted on a general BT spindle?

**A** Yes. It can be used as a general BT arbor with a general BT spindle.

It can be used as a general BT arbor, though the advantage of the two-face clamping will not apply.



# MEWH End Mill (Coolant hole for bottom insert)



## Toolholder dimensions

Description	Availability	No. of flute	No. of stage	No. of insert	Dimensions (mm)					Coolant hole	Shape	Spare parts			Applicable inserts
					øD	ød	L	L1	S			Clamp screw	Wrench	Anti-Seize compound	
MEWH 025-S25-10-3-2T	●	2	3	6	25	25	120	37	28	Yes	#1	SB-3065TRP	DTPM-8	P-37	LOMU1004-
032-S32-10-4-2T	●				4	8	32		130						
040-S32-10-5-2T	●		5	10	40	32	140	57	46		#2	Recommended torque for insert clamp 1.2 N • m			
040-S32-10-5-3T	●											15			
MEWH 040-S32-15-4-2T	●	2	4	8	40	32	160	63	53	Yes	#2	SB-4090TRP	DTPM-15	P-37	LOMU1505-
050-S42-15-4-2T	●				50	42									
050-S42-15-4-3T	●		3	12											
MEWH 025-W25-10-3-2T	●	2	3	6	25	25	95	37	28		Yes	#3	SB-3065TRP		
032-W32-10-4-2T	●				4	8	32		108	46				37	
040-W32-10-5-2T	●		5	10	40	32	119	57	46	#4		Recommended torque for insert clamp 1.2 N • m			
040-W32-10-5-3T	●											15			
MEWH 040-W32-15-4-2T	●	2	4	8	40	32	125	63	53	Yes	#4	SB-4090TRP	DTPM-15	P-37	LOMU1505-
050-W40-15-4-2T	●				50	40	135								
050-W40-15-4-3T	●		3	12											

Coat anti-seize compound thinly on portion of taper and thread when insert is fixed. Aluminum machining is not recommended (AM chipbreaker is not available for MEWH)

● : Available

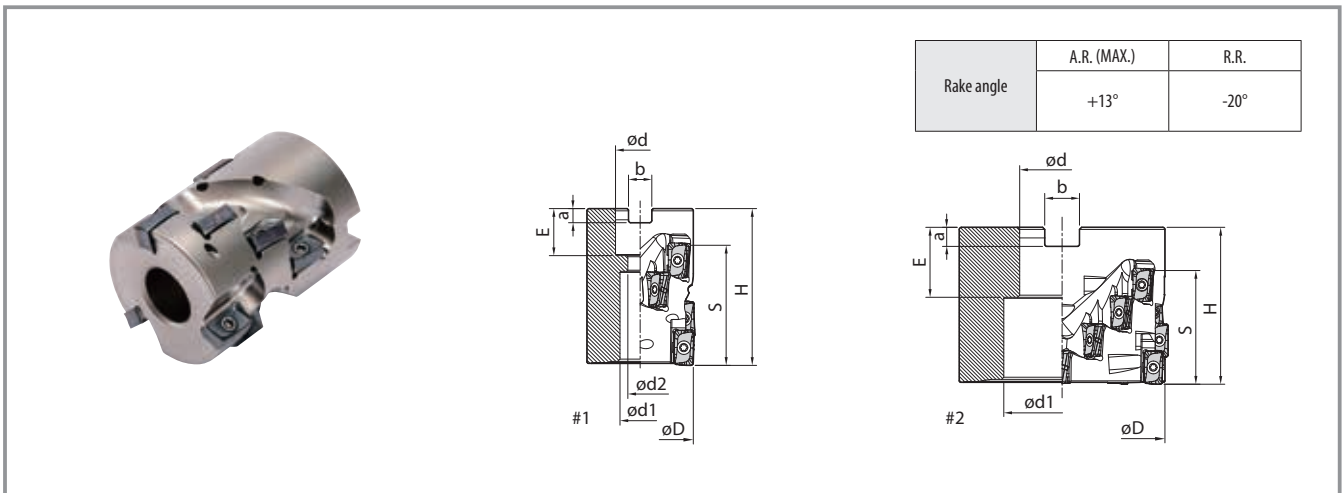
Recommended cutting conditions → P14

## Applicable insert for MEWH

Insert location Indication	Toolholder description										
	MEWH---10--					MEWH--15---					
	Corner R(re) (mm)					Corner R(re) (mm)					
Bottom edge	0.4	0.8	1.2	1.6	2.0	0.4	0.8	1.0	1.2	1.6	2.0
* Middle edge	0.4/0.8	0.4/0.8	0.4/0.8	0.4	0.4	0.4-1.6	0.4-1.6	0.4-1.6	0.4-1.6	0.4-1.6	0.4-1.6

\* For middle edges, it is not recommended to use the insert with larger corner R (re) than shown in the table, because it will make finished surface uneven.

# MEWH Shell mill (without coolant hole)



## Toolholder dimensions

Description	Availability	No. of flute	No. of stage	No. of insert	Dimensions (mm)									Shape	Spare parts				Applicable inserts
					$\phi D$	$\phi d$	$\phi d1$	$\phi d2$	H	E	a	b	S		Clamp Screw	Wrench	Anti-Seize compound	Mounting bolt	
MEWH 040R-10-4-3T-M	●	3	4	12	40	16	15	9	53	19	5.6	8.4	37	#1	SB-3065TRP	DTPM-8	P-37	HH8X25	LOMU1004-
050R-10-5-3T-M	●		5	15	50	22	18	11	64	21	6.3	10.4	46		Recommended torque for insert clamp 1.2 N·m			HH10X30	
MEWH 050R-15-4-3T-M	●	3	4	12	50	22	18	11	70	21	6.3	10.4	53	#1	SB-4090TRP	DTPM-15	P-37	HH10X30	LOMU1505-
063R-15-3-3T-M	●		3	9	63	27	20	13	58	24	7	12.4	41		Recommended torque for insert clamp 3.5 N·m			HH12X35	
080R-15-4-4T-M	●	4	4	16	80	32	26	18	70	28	8	14.4	53	#2			—		
100R-15-4-5T-M	●		5	20	100	40	55	—	74	33	9	16.4							

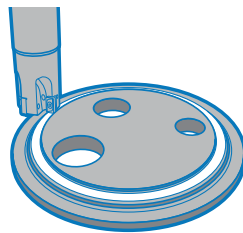
Coat anti-seize compound thinly on portion of taper and thread when insert is fixed. Aluminum machining is not recommended (AM chipbreaker is not available).

●: Available  
Recommended cutting conditions → P14

## Case studies (MEW)

### Construction equipment's part 17Cr3

Vc = 250 m/min  
 fz = 0.14 mm/t (Vf = 1,350 mm/min)  
 ap × ae = 4 × 20 mm  
 Wet  
 MEW32-S32-10-4T (4 inserts)  
 LOMU100408ER-GM (PR1525)



Chip removal rate

**PR1525** **108 cc/min**

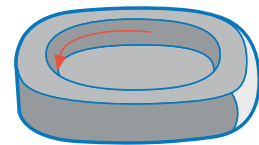
Competitor L (Positive cutter) **72 cc/min**

MEW showed stable milling without chattering at higher feed, improving the cutting efficiency by 150%. Burrs are prevented and excellent surface finish is achieved.

(User evaluation)

### Mold Part SKD61 (45HRC)

Vc = 100 m/min  
 fz = 0.1mm/t (Vf = 400 mm/min)  
 ap × ae = 3.5 × 30 mm  
 Dry  
 MEW32-S32-10-4T (4 inserts)  
 LOMU100408ER-GH (PR1525)



Chip removal rate

**PR1525** **42 cc/min (further milling possible)**

Competitor M (Positive cutter) **21 cc/min** (unable to continue cutting)

MEW doubled cutting efficiency. Furthermore, MEW inserts have double number of edges (4-edge), which enables a drastic cost reduction.







(User evaluation)

# Applicable inserts

Classification of usage	P	Carbon steel • Alloy steel	☆	★									Applicable toolholder	
		Die steel	☆	★										
		M	Austenitic stainless steel (X5CrNi1810, etc.)	★	☆					★				
Martensitic stainless steel (X6Cr13, etc.)	☆								★					
Precipitation hardened stainless steel	★													
K	Gray cast iron							★						
	Nodular cast iron							★						
N	Non-ferrous metals aluminum										★	☆		
	Ni-base heat-resistant alloy (Inconel®718, etc.)	☆								★				
S	Titanium alloy (Ti-6Al-4V)	★						☆						
	High hardness steel								□					
Insert	Description	Dimension (mm)						MEGACOAT NANO			CVD coated carbide	DLC coated carbide	Carbide	
		A	T	ød	W	Z	rε	PR1535	PR1525	PR1510	CA6535	PDL025	GW25	
General purpose	LOMU 100404ER-GM	6.6	4.0	3.4	10.9	2.1	0.4	●	●	●	●			MEW...-10.. MEWH...-10..
	LOMU 100408ER-GM					1.7	0.8	●	●	●	●			
	LOMU 100412ER-GM					1.3	1.2	●	●	●	●			
	LOMU 100416ER-GM					1.0	1.6	●	●	●	●			
	LOMU 100420ER-GM					1.0	2.0	●	●	●	●			
Low cutting force	LOMU 150504ER-GM	9.2	5.6	4.8	15.7	2.2	0.4	●	●	●	●		MEW...-15.. MEWH...-15..	
	LOMU 150508ER-GM					1.8	0.8	●	●	●	●			
	LOMU 150510ER-GM					1.6	1.0	●	●	●	●			
	LOMU 150512ER-GM					1.4	1.2	●	●	●	●			
	LOMU 150516ER-GM					1.0	1.6	●	●	●	●			
	LOMU 150520ER-GM					0.6	2.0	●	●	●	●			
Tough edge (Heavy milling)	LOMU 100408ER-SM	6.6	4.0	3.4	10.9	1.7	0.8	●	●	●	●		MEW...-10.. MEWH...-10..	
	LOMU 150508ER-SM	9.2	5.6	4.8	15.7	1.8	0.8	●	●	●	●		MEW...-15.. MEWH...-15..	
NEW Non-ferrous metals - Aluminum (2-edge insert)	LOGT 100408FR-AM	6.8	4.0	3.6	11.1	2.8	0.8					●	●	MEW...-10..
	LOGT 150508FR-AM	8.9	5.6	4.9	15.9	2.8	0.8					●	●	MEW...-15..

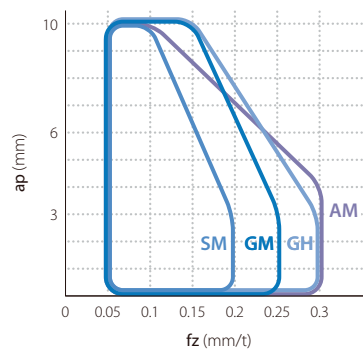
● : Available

## Appearance of LOMU...ER-GM

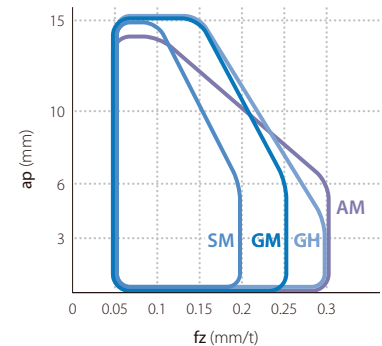
LOMU100404ER-GM LOMU150504ER-GM	LOMU100408ER-GM LOMU150508ER-GM
 04 Marking on insert	 08 Has no dimension marking
LOMU150510ER-GM	LOMU100412ER-GM LOMU150512ER-GM
 10 marking on insert	 12 marking on insert
LOMU100416ER-GM LOMU150516ER-GM	LOMU100420ER-GM LOMU150520ER-GM
 16 marking on insert	 20 marking on insert

## Applicable chipbreaker range (Shouldering)

LOMU10type



LOMU15type



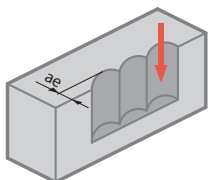
Cutting conditions: Vc = 150 m/min, ae = øD/2 Workpiece: C50

# Recommended cutting conditions ★ 1st recommendation ☆ 2nd recommendation

Chipbreaker	Workpiece	fz: mm/t			Recommended insert grade (Vc: m/min)						
		Toolholder descriptions			MEGACOAT NANO			CVD coated carbide	DLC coated carbide	Carbide	
		MEW16 – MEW18	MEW20 – MEW40 MEW040R – MEW080R	MEWH025 – MEWH050 (Helical end mill)	PR1535	PR1525	PR1510	CA6335	PDL025	GW25	
GM	Carbon steel (SXXC)	0.06 – 0.1 – 0.2	0.08 – 0.15 – 0.25	0.06 – 0.1 – 0.2	☆ 120 – 180 – 250	★ 120 – 180 – 250	—	—	—	—	
	Alloy steel (SCM, etc.)	0.06 – 0.1 – 0.14	0.08 – 0.15 – 0.2	0.06 – 0.1 – 0.14	☆ 100 – 160 – 220	★ 100 – 160 – 220	—	—	—	—	
	Die steel (SKD, etc.)	0.06 – 0.08 – 0.12	0.08 – 0.12 – 0.2	0.06 – 0.08 – 0.12	☆ 80 – 140 – 180	★ 80 – 140 – 180	—	—	—	—	
	Austenitic stainless steel (X5CrNi1810, etc.)	0.06 – 0.08 – 0.12	0.08 – 0.12 – 0.15	0.06 – 0.08 – 0.12	☆ 100 – 160 – 200	☆ 100 – 160 – 200	—	—	—	—	
	Martensitic stainless steel (X6Cr13, etc.)	0.06 – 0.08 – 0.12	0.08 – 0.12 – 0.2	0.06 – 0.08 – 0.1	☆ 150 – 200 – 250	—	—	★ 180 – 240 – 300	—	—	
	Precipitation hardened stainless steel (X5CrNiCuNb16-4, etc.)	0.06 – 0.08 – 0.12	0.08 – 0.12 – 0.2	0.06 – 0.08 – 0.1	★ 90 – 120 – 150	—	—	—	—	—	
	Gray cast iron (FC)	0.06 – 0.1 – 0.17	0.08 – 0.18 – 0.25	0.06 – 0.1 – 0.17	—	—	★ 120 – 180 – 250	—	—	—	
	Nodular cast iron (FCD)	0.06 – 0.08 – 0.12	0.08 – 0.15 – 0.2	0.06 – 0.08 – 0.12	—	—	★ 100 – 150 – 200	—	—	—	
	Ni-base heat-resistant alloy (Inconel® 718, etc.)	0.06 – 0.08 – 0.12	0.08 – 0.12 – 0.15	0.06 – 0.08 – 0.1	☆ 20 – 30 – 50	—	—	★ 20 – 30 – 50	—	—	
	Titanium alloy (Ti-6Al-4V)	0.06 – 0.08 – 0.12	0.08 – 0.15 – 0.2	0.06 – 0.08 – 0.12	☆ 40 – 60 – 80	—	☆ 30 – 50 – 70	—	—	—	
SM	Carbon steel (SXXC)	0.06 – 0.1 – 0.17	0.08 – 0.15 – 0.2	0.06 – 0.1 – 0.17	☆ 120 – 180 – 250	★ 120 – 180 – 250	—	—	—	—	
	Alloy steel (SCM, etc.)	0.06 – 0.08 – 0.12	0.08 – 0.12 – 0.18	0.06 – 0.08 – 0.12	☆ 100 – 160 – 220	★ 100 – 160 – 220	—	—	—	—	
	Die steel (SKD, etc.)	0.06 – 0.08 – 0.12	0.08 – 0.1 – 0.15	0.06 – 0.08 – 0.12	☆ 80 – 140 – 180	★ 80 – 140 – 180	—	—	—	—	
	Austenitic stainless steel (X5CrNi1810, etc.)	0.06 – 0.08 – 0.12	0.08 – 0.1 – 0.15	0.06 – 0.08 – 0.12	★ 100 – 160 – 200	☆ 100 – 160 – 200	—	—	—	—	
	Martensitic stainless steel (X6Cr13, etc.)	0.06 – 0.08 – 0.12	0.08 – 0.1 – 0.15	0.06 – 0.08 – 0.1	☆ 150 – 200 – 250	—	—	★ 180 – 240 – 300	—	—	
	Precipitation hardened stainless steel (X5CrNiCuNb16-4, etc.)	0.06 – 0.08 – 0.12	0.08 – 0.1 – 0.15	0.06 – 0.08 – 0.1	☆ 90 – 120 – 150	—	—	—	—	—	
	Ni-base heat-resistant alloy (Inconel® 718, etc.)	0.06 – 0.08 – 0.1	0.08 – 0.1 – 0.12	0.06 – 0.08 – 0.1	☆ 20 – 30 – 50	—	—	★ 20 – 30 – 50	—	—	
	Titanium alloy (Ti-6Al-4V)	0.06 – 0.08 – 0.12	0.08 – 0.12 – 0.15	0.06 – 0.08 – 0.12	★ 40 – 60 – 80	—	☆ 30 – 50 – 70	—	—	—	
	GH	Carbon steel (SXXC)	0.06 – 0.1 – 0.2	0.08 – 0.2 – 0.3	0.06 – 0.1 – 0.2	☆ 120 – 180 – 250	★ 120 – 180 – 250	—	—	—	—
		Alloy steel (SCM, etc.)	0.06 – 0.1 – 0.14	0.08 – 0.2 – 0.25	0.06 – 0.1 – 0.14	☆ 100 – 160 – 220	★ 100 – 160 – 220	—	—	—	—
Die Steel (SKD, etc.)		0.06 – 0.08 – 0.12	0.08 – 0.15 – 0.22	0.06 – 0.08 – 0.12	☆ 80 – 140 – 180	★ 80 – 140 – 180	—	—	—	—	
Austenitic stainless steel (X5CrNi1810, etc.)		0.06 – 0.08 – 0.12	0.08 – 0.12 – 0.15	0.06 – 0.08 – 0.12	☆ 100 – 160 – 200	☆ 100 – 160 – 200	—	—	—	—	
Martensitic stainless steel (X6Cr13, etc.)		0.06 – 0.08 – 0.12	0.08 – 0.12 – 0.2	0.06 – 0.08 – 0.1	☆ 150 – 200 – 250	—	—	☆ 180 – 240 – 300	—	—	
Precipitation hardened stainless steel (X5CrNiCuNb16-4, etc.)		0.06 – 0.08 – 0.12	0.08 – 0.12 – 0.2	0.06 – 0.08 – 0.1	☆ 90 – 120 – 150	—	—	—	—	—	
Gray cast iron (FC)		0.06 – 0.1 – 0.2	0.08 – 0.22 – 0.3	0.06 – 0.1 – 0.2	—	—	☆ 120 – 180 – 250	—	—	—	
Nodular cast iron (FCD)		0.06 – 0.08 – 0.15	0.08 – 0.18 – 0.25	0.06 – 0.08 – 0.15	—	—	☆ 100 – 150 – 200	—	—	—	
Ni-base heat-resistant alloy (Inconel® 718, etc.)		0.06 – 0.08 – 0.12	0.08 – 0.12 – 0.15	0.06 – 0.08 – 0.1	☆ 20 – 30 – 50	—	—	☆ 20 – 30 – 50	—	—	
Titanium alloy (Ti-6Al-4V)		0.06 – 0.08 – 0.12	0.08 – 0.15 – 0.2	0.06 – 0.08 – 0.12	☆ 40 – 60 – 80	—	☆ 30 – 50 – 70	—	—	—	
AM	Aluminum (Si less 13%)	0.05 – 0.12 – 0.2	0.05 – 0.18 – 0.3	NOT Recommend	—	—	—	—	★ 200 – 900	☆ 200 – 300	
	Aluminum (Si over 13%)	0.05 – 0.08 – 0.12	0.05 – 0.12 – 0.2		—	—	—	—	—	—	

Bold numbers in the graph indicates the most recommended value of feed (f). Adjust cutting speed and feed rate according to the actual machining conditions.  
Coolant is recommended for Ni-base heat resistant alloy and titanium alloy with MEW.  
Coolant is recommended for stainless steel, Ni-base heat resistant alloy and titanium alloy with MEWH.

## Vertical milling



Available for vertical milling

Insert description	Maximum width of cut (ae)
LOMU10 LOGT10	5 mm
LOMU15 LOGT15	7 mm

NOT available for ramping and helical milling, because interference between workpiece and insert may occur.

# MEW cutting performance

## LOMU1004 type

Description	Shouldering ( $ae = \phi D/2$ )	Slotting
MEW16 • • • -10 MEW18 • • • -10		
MEW20 • • • -10 MEW50 • • • -10		
MEW20-S20 -10-150-2T MEW25-S25 -10-170-2T (Long shank)		
MEW032R • • • -10 MEW063R • • • -10		

## LOMU1505 type

Description	Shouldering ( $ae = \phi D/2$ )	Slotting
MEW25 • • • -15 MEW50 • • • -15		
MEW040R • • • -15 MEW080 • • • -15		

Cutting conditions:  $V_c = 180$  m/min, GM Chipbreaker Workpiece : C50

Overhang length

1. End mill : Overhang length is "L" of the dimension list

2. Face mill : Overhang length is "H" of the dimension list + minimum arbor overhang

# MEWH cutting performance

## LOMU1004 type

Cutting dia.	Description	2 flute	Description	3 flute
		( $ap \times ae$ )		( $ap \times ae$ )
ø25	MEWH025 -S25-10-3-2T		—	—
ø32	MEWH032 -S32-10-4-2T		—	—
ø40	MEWH040 -S32-10-5-2T		MEWH040 -S32-10-5-3T	

## LOMU1505 type

Cutting dia.	Description	2 flute	Description	3 flute
		( $ap \times ae$ )		( $ap \times ae$ )
ø40	MEWH040 -S32-15-4-2T		—	—
ø50	MEWH050 -S42-15-4-2T		MEWH050 -S42-15-4-3T	

Cutting conditions:  $V_c = 120$  m/min,  $f_z = 0.08 - 0.12$  mm/t, GM chipbreaker Workpiece: 34CrMo4

Overhang length

End mill: Overhang length is "L1" of the dimension list.