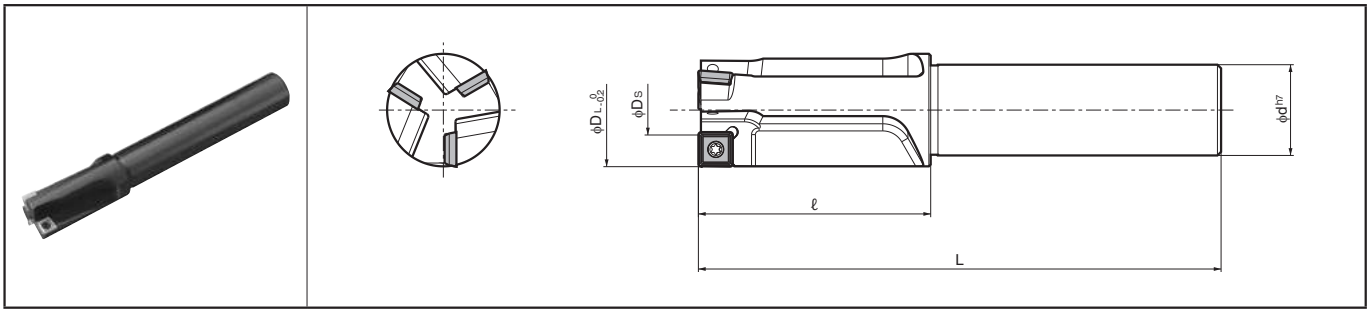
Bolt Countersink End Mill MEF

MEF

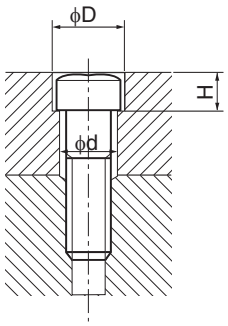


Toolholder Dimensions

Description		Std.	No. of Inserts	Dimension (mm) φDL	φDs	φd	L	ℓ	Std. Corner-R(rε)	Rake Angle A.R.	R.R.	Objective Bolt Size	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Inserts ➔ M24
MEF	11-S10	●	1	11	3.0	10	103	23	0.4	+5°	-13°	M6	SB-2250TR	DT-7	SPMT060204E-Z 060208E-Z
	14-S12	●	1	14	4.5	12	108	28	0.4	+5°	-13°	M8	SB-2260TR	DT-7	SPMT060204E-Z 060208E-Z
	17-S16	●	2	17.5	7.3	16	115	35	0.4	+5°	-13°	M10	SB-2260TR	DT-7	SPMT060204E-Z 060208E-Z
	18-S16	●	2	18	7.7	16	117	38	0.4	+5°	-13°	-	SB-2260TR	DT-7	SPMT060204E-Z 060208E-Z
	20-S16	●	3	20	9.5	16	120	40	0.4	+5°	-12°	M12	SB-2260TR	DT-7	SPMT060204E-Z 060208E-Z
	22-S20	●	3	22	11.4	20	124	44	0.4	+5°	-12°	-	SB-2260TR	DT-7	SPMT060204E-Z 060208E-Z
	23-S20	●	3	23	12.4	20	126	46	0.4	+5°	-12°	M14	SB-2260TR	DT-7	SPMT060204E-Z 060208E-Z
	24-S20	●	3	24	13.4	20	128	48	0.4	+5°	-12°	-	SB-2260TR	DT-7	SPMT060204E-Z 060208E-Z
	25-S20	●	3	25	14.4	20	130	50	0.4	+5°	-12°	-	SB-2260TR	DT-7	SPMT060204E-Z 060208E-Z
	26-S25	●	3	26	9.8	25	132	52	0.8	+5°	-13°	M16	SB-3080TR	DT-10	SPMT090304E-Z 090308E-Z
	27-S25	●	3	27	10.6	25	134	54	0.8	+5°	-13°	-	SB-3080TR	DT-10	SPMT090304E-Z 090308E-Z
	28-S25	●	3	28	11.5	25	136	56	0.8	+5°	-13°	-	SB-3080TR	DT-10	SPMT090304E-Z 090308E-Z
	29-S25	●	3	29	12.6	25	138	58	0.8	+5°	-13°	M18	SB-3080TR	DT-10	SPMT090304E-Z 090308E-Z
	30-S25	●	3	30	13.5	25	140	60	0.8	+5°	-13°	-	SB-3080TR	DT-10	SPMT090304E-Z 090308E-Z
	32-S25	●	3	32	15.5	25	144	64	0.8	+5°	-13°	M20	SB-3080TR	DT-10	SPMT090304E-Z 090308E-Z
	35-S32	●	3	35	18.4	32	150	70	0.8	+5°	-13°	M22	SB-3080TR	DT-10	SPMT090304E-Z 090308E-Z
	39-S32	●	4	39	22.5	32	158	78	0.8	+5°	-13°	M24	SB-3080TR	DT-10	SPMT090304E-Z 090308E-Z
	43-S32	●	4	43	26.2	32	166	86	0.8	+5°	-12°	M27	SB-3080TR	DT-10	SPMT090304E-Z 090308E-Z
	48-S32	●	4	48	31.3	32	176	96	0.8	+5°	-12°	M30	SB-3080TR	DT-10	SPMT090304E-Z 090308E-Z

・Although Corner-R(rε) pertains to MEF11-S10, φDs=3.0mm.

Bolt Countersink (Hexagon Socket Head Cap Screw)



Nominal Screw Size	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30
φD (mm)	11	14	17.5	20	23	26	29	32	35	39	43	48
H (mm)	6.5	8.6	10.8	13	15.2	17.5	19.5	21.5	23.5	25.5	29	32
φd (mm)	6.6	9	11	14	16	18	20	22	24	26	30	33
Applicable End Mill	MEF11	MEF14	MEF17	MEF20	MEF23	MEF26	MEF29	MEF32	MEF35	MEF39	MEF43	MEF48

● : Std. Item

◆ Recommended Cutting Conditions

Workpiece Material	fz (mm/t)	Recommended Insert Grades (Cutting Speed Vc: m/min)		
		MEGACOAT		Carbide
		PR1225	**PR1210**	**KW10**
Carbon Steel	0.1~0.15	★ 120~220	-	-
Alloy Steel	0.1~0.15	★ 120~220	-	-
Mold Steel	0.05~0.1	★ 100~180	-	-
Stainless Steel	0.05~0.1	★ 80~180	-	-
Cast Iron	0.1~0.2	-	★ 100~220	☆ 80~120
Non-ferrous Metals	0.1~0.2	-	-	★ 100~300

★ : 1st Recommendation ☆ : 2nd Recommendation

■ Points at Bolt Countersinking

(1) Carbon Steel

Increase the feed rate to fz=0.1~0.15 (mm/t) for preventing long chips at low feed rates.
Chip control is good when setting (Vc=80m/min) for MEF11~MEF25, and (Vc=120m/min) for MEF26~MEF48.

Description	Cutting Speed Vc (m/min)	fz (mm/t)
MEF11~MEF25	80	0.1~0.15
MEF26~MEF48	120	0.1~0.15

(2) Sticky Materials

Step feed is recommended for good chip control
Increase the feed rate to fz=0.1~0.15 (mm/t) for preventing long chips at low feed rate (fz=0.05mm/t).
Use cover to prevent accidents or injury by thick chips at higher feed rates.

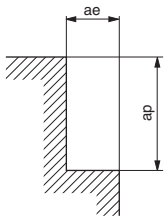
Description	Cutting Speed Vc (m/min)	fz (mm/t)	Step Feed (mm)
MEF11~MEF48	80~150	0.1~0.15	0.5~1.5

(3) Stainless Steel

Use a lower Cutting Speed. High Cutting Speeds cause chattering.

■ Cutting Performance when Shouldering

MEF Bolt Countersink End Mill is also recommended of shouldering.



Vc=80~120m/min
S55C
Dry
Overhang Length:
Same as ℓ in the dimension table

・When shouldering, both side edge and bottom edges function.
Both edges wear at the same time depending on ap.
The insert uses 2 edges instead of 4. (Ref. to Fig.1)

・MEF type's side edge is designed to have a slight clearance for the countersinking.
Therefore, worked side wall is approx. 1° inclined against the vertical face. (Ref. to Fig.2)

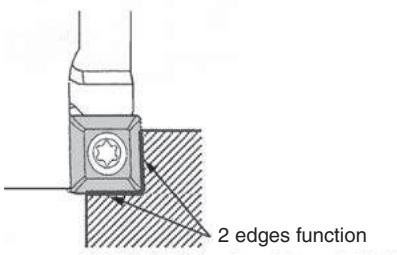


Fig.1

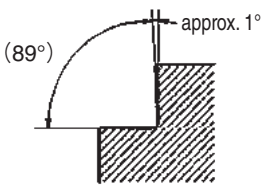
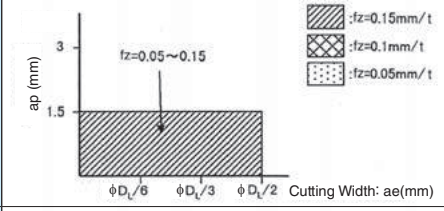
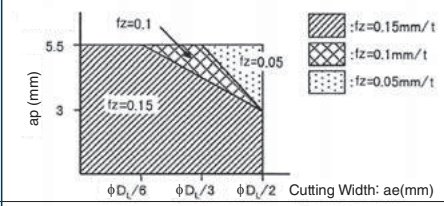
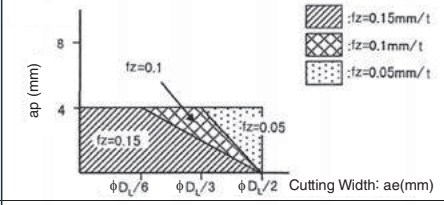


Fig.2

Description	Cutting Range
MEF11-S12 **MEF14-S12** **MEF17-S16** **MEF18-S16**	
MEF20-S16 **MEF22-S20** ≀ **MEF25-S20**	
MEF26-S25 ≀ **MEF32-S25** **MEF35-S32**	
MEF39-S32 **MEF43-S32** **MEF48-S32**