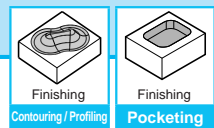
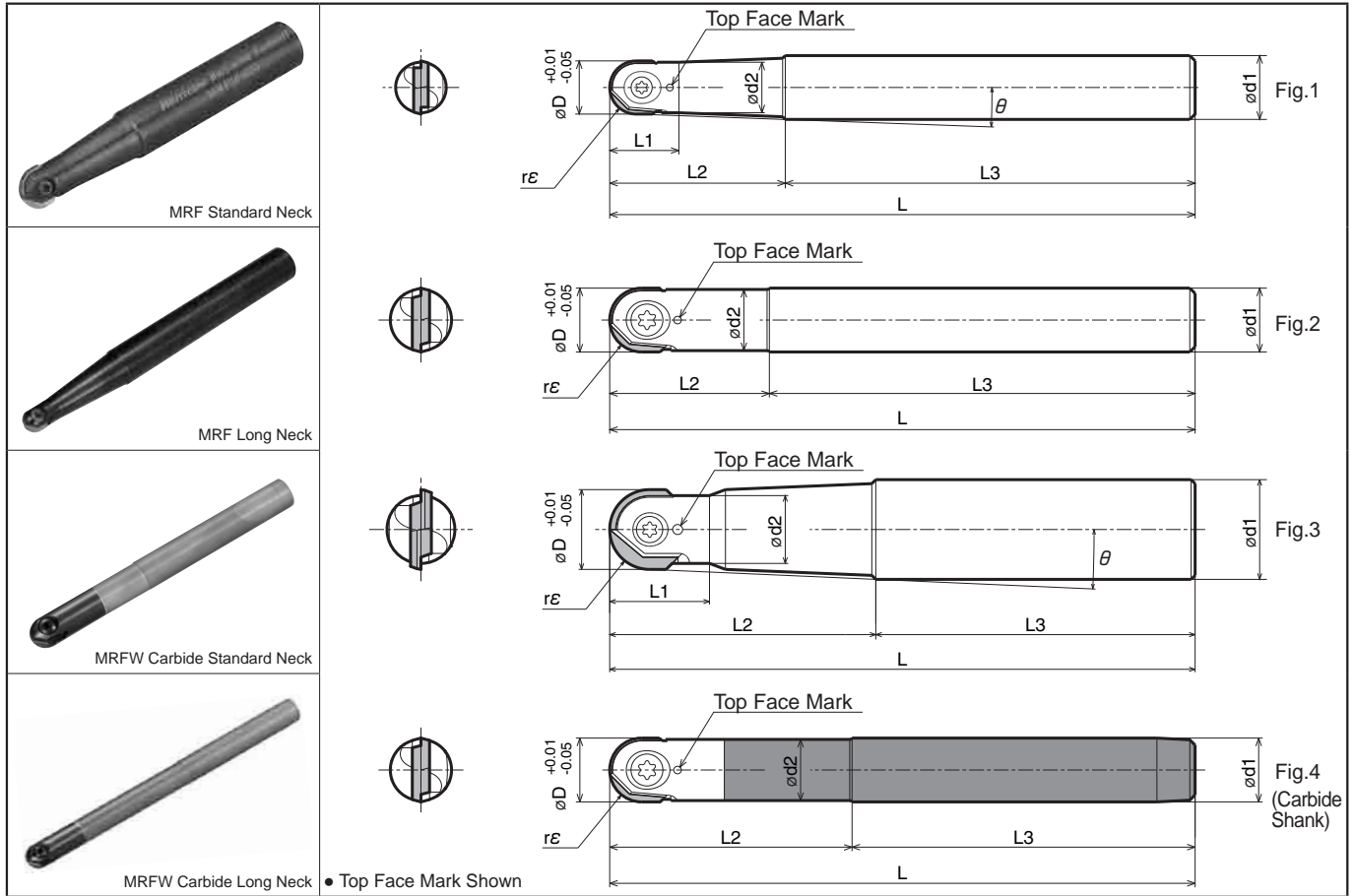


Ball-Nose Endmill



MRF / MRFW (Carbide Shank)



Toolholder Dimensions

Description	Std.	No. of Inserts	Dimension (mm)								Drawing	Spare Parts			Applicable Inserts ● M19				
			r	øD	ød1	ød2	L	L1	L2	L3		Clamp Screw	Wrench DT	Anti-seize Compound MP-1					
Standard Neck	●	1	4	8		7.5	100	10	22	78	6°20'	Fig.1	SC-30067	DT-8	MP-1	RDFG08FR			
			5	10	12	9.5		13	25	75	3°					Fig.1	SC-35085	DT-10	RDFG10FR
			6	12		11.5	110	-	30		-	Fig.2	SC-40100	DT-15		RDFG12FR			
			8	16	20	14	130	20	50	80	2°50'	Fig.1	SC-50130	DT-20		RDFG16FR			
			10	20	25	17	140	25	60		3°	Fig.3	SC-60160	TT-25		RDFG20FR			
			12.5	25	32	22	150	31	70		3°30'		SC-60210	TT-30		RDFG25FR			
Long Neck	●	1	4	8	12	7.5	130	10	50	80	2°30'	Fig.1	SC-30067	DT-8	MP-1	RDFG08FR			
			5	10		9.5	150	15		100	3°50'					Fig.1	SC-35085	DT-10	RDFG10FR
			6	12	16	11.5	160	16	60		2°10'	Fig.3	SC-40100	DT-15		RDFG12FR			
			8	16	20	14	160	20	65	95	2°		SC-50130	DT-20		RDFG16FR			
			10	20	25	17	180	25	80	100	2°10'	Fig.3	SC-60160	TT-25		RDFG20FR			
			12.5	25	32	22	200	31	90	110	2°40'		SC-60210	TT-30		RDFG25FR			
Carbide Standard Neck	●	1	4	8	8	7.4	100	-	30	70	-	Fig.4	SC-30067	DT-8	MP-1	RDFG08FR			
			5	10	10	9.5	100	-	35	65	-					Fig.4	SC-35085	DT-10	RDFG10FR
			6	12	12	11.5	110	-	45		-					Fig.4	SC-40100	DT-15	RDFG12FR
Carbide Long Neck	●	1	4	8	8	7.4	130	-	65		-	Fig.4	SC-30067	DT-8	MP-1	RDFG08FR			
			5	10	10	9.5	140	-	75	65	-					Fig.4	SC-35085	DT-10	RDFG10FR
			6	12	12	11.5	150	-	85		-					Fig.4	SC-40100	DT-15	RDFG12FR


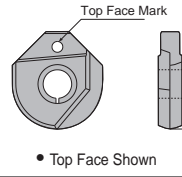
· θ (Toolholder's interference angle) is the angle formed by the tangential line from insert dia. to toolholder's shank dia.



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

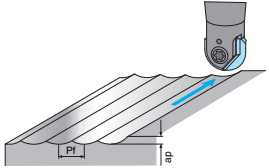
● : Std. Item □ : Check Availability

● Applicable Inserts

Shape		Description
		RDFG 08FR 10FR 12FR 16FR 20FR 25FR
• Top Face Shown		

• Check the Top Face Mark of both insert and toolholder.

● Recommended ap

Description		ap	Pf	Application
Standard Neck	MRF08-S12	0.2 (Max0.3)	0.8	
	MRF10-S12	0.2	1	
	MRF12-S12	0.5	1.2	
	MRF16-S20	0.5	1.6	
	MRF20-S25	1	2	
	MRF25-S32	1	2.5	
Long Neck	MRF08-S12-130	0.2 (Max0.3)	0.8	
	MRF10-S12-150	0.2	1	
	MRF12-S12-160	0.5	1.2	
	MRF16-S20-160	0.5	1.6	
	MRF20-S25-180	1	2	
	MRF25-S32-200	1	2.5	
Carbide Standard Neck	MRFW08-S08	0.2 (Max0.3)	0.8	
	MRFW10-S10	0.2	1	
	MRFW12-S12	0.5	1.2	
Carbide Long Neck	MRFW08-S08-130	0.2 (Max0.3)	0.8	
	MRFW10-S10-140	0.2	1	
	MRFW12-S12-150	0.5	1.2	

For ø8, Holder may be broken because of over load if ap exceeds 0.3mm.

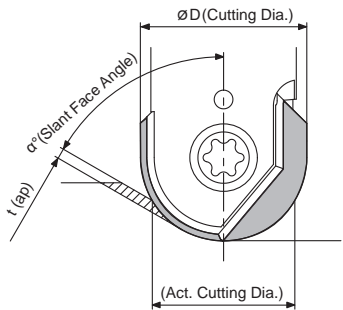
◆ Recommended Cutting Conditions (At Cutting Dia. øD)

Workpiece Material	Insert Grade	Vc (m/min)	fz (mm/t)	ø8		ø10		ø12	
				Vc (m/min) (n: min ⁻¹)	fz (mm/t) (Vf: mm/min)	Vc (m/min) (n: min ⁻¹)	fz (mm/t) (Vf: mm/min)	Vc (m/min) (n: min ⁻¹)	fz (mm/t) (Vf: mm/min)
Stainless Steel	PR915	50~150	0.1~0.2	100 (3980)	0.15 (1190)	100 (3180)	0.15 (950)	100 (2650)	0.15 (800)
Carbon Steel	PR915	100~200	0.1~0.3	150 (5970)	0.2 (2930)	150 (4770)	0.2 (1190)	150 (3980)	0.2 (1590)
Alloy Steel	PR915	80~180	0.1~0.3	130 (5170)	0.2 (2070)	130 (4140)	0.2 (1660)	130 (3450)	0.2 (1380)
Mold Steel	PR915	50~150	0.1~0.2	100 (3980)	0.15 (1190)	100 (3180)	0.15 (950)	100 (2650)	0.15 (800)
Cast Iron	PR915	100~200	0.2~0.4	150 (5970)	0.3 (3580)	150 (4770)	0.3 (2860)	150 (3980)	0.3 (2390)
Workpiece Material	Insert Grade	Vc (m/min)	fz (mm/t)	ø16		ø20		ø25	
				Vc (m/min) (n: min ⁻¹)	fz (mm/t) (Vf: mm/min)	Vc (m/min) (n: min ⁻¹)	fz (mm/t) (Vf: mm/min)	Vc (m/min) (n: min ⁻¹)	fz (mm/t) (Vf: mm/min)
Stainless Steel	PR915	50~150	0.1~0.2	100 (1990)	0.15 (600)	100 (1590)	0.15 (480)	100 (1270)	0.15 (380)
Carbon Steel	PR915	100~200	0.1~0.3	150 (2980)	0.2 (1190)	150 (2390)	0.2 (950)	150 (1910)	0.2 (760)
Alloy Steel	PR915	80~180	0.1~0.3	130 (2950)	0.2 (1030)	130 (2070)	0.2 (830)	130 (1660)	0.2 (660)
Mold Steel	PR915	50~150	0.1~0.2	100 (1990)	0.15 (600)	100 (1590)	0.15 (480)	100 (1270)	0.15 (380)
Cast Iron	PR915	100~200	0.2~0.4	150 (2980)	0.3 (1790)	150 (2390)	0.3 (1430)	150 (1910)	0.3 (1150)

◆ Actual Cutting Speed (Vd) Conversion Coefficient Table

The actual Vc varies depending on ap and slant face angle.

Vd can be obtained by dividing the conversion coefficient into the recommended cutting speed.

Model		Tool Dia.(øD)	ø8		ø10		ø12	
	ap(t:mm)		0.1	0.2	0.1	0.2	0.2	0.5
	Slant Face Angle (°)	15°	1.00	1.00	1.00	1.00	1.00	1.00
		30°	1.05	1.02	1.05	1.03	1.04	1.01
		45°	1.18	1.12	1.20	1.14	1.16	1.07
		60°	1.47	1.34	1.51	1.38	1.42	1.24
		75°	2.15	1.82	2.24	1.92	2.02	1.60
	90°(Horizontal Plane)	4.48	3.22	5.06	3.57	3.92	2.50	
		Tool Dia.(øD)	ø16		ø20		ø25	
Slant Face Angle (°)	ap(t:mm)		0.2	0.5	0.5	1	0.5	1
	15°	1.00	1.00	1.00	1.02	1.00	1.01	
	30°	1.05	1.01	1.02	1.00	1.03	1.00	
	45°	1.18	1.10	1.12	1.06	1.14	1.08	
	60°	1.47	1.30	1.34	1.21	1.38	1.25	
	75°	2.14	1.73	1.83	1.53	1.93	1.62	
90°(Horizontal Plane)	4.48	2.87	3.20	2.29	3.57	2.55		

E.g.: Suppose tool dia. 8mm, ap=0.1mm, slant face angle 90°:The actual cutting speed Vd for carbon steel machining, when Vc is 150m/min at the biggest diameter, Vd can be obtained as Vd=150 ÷4.48=33.5m/min