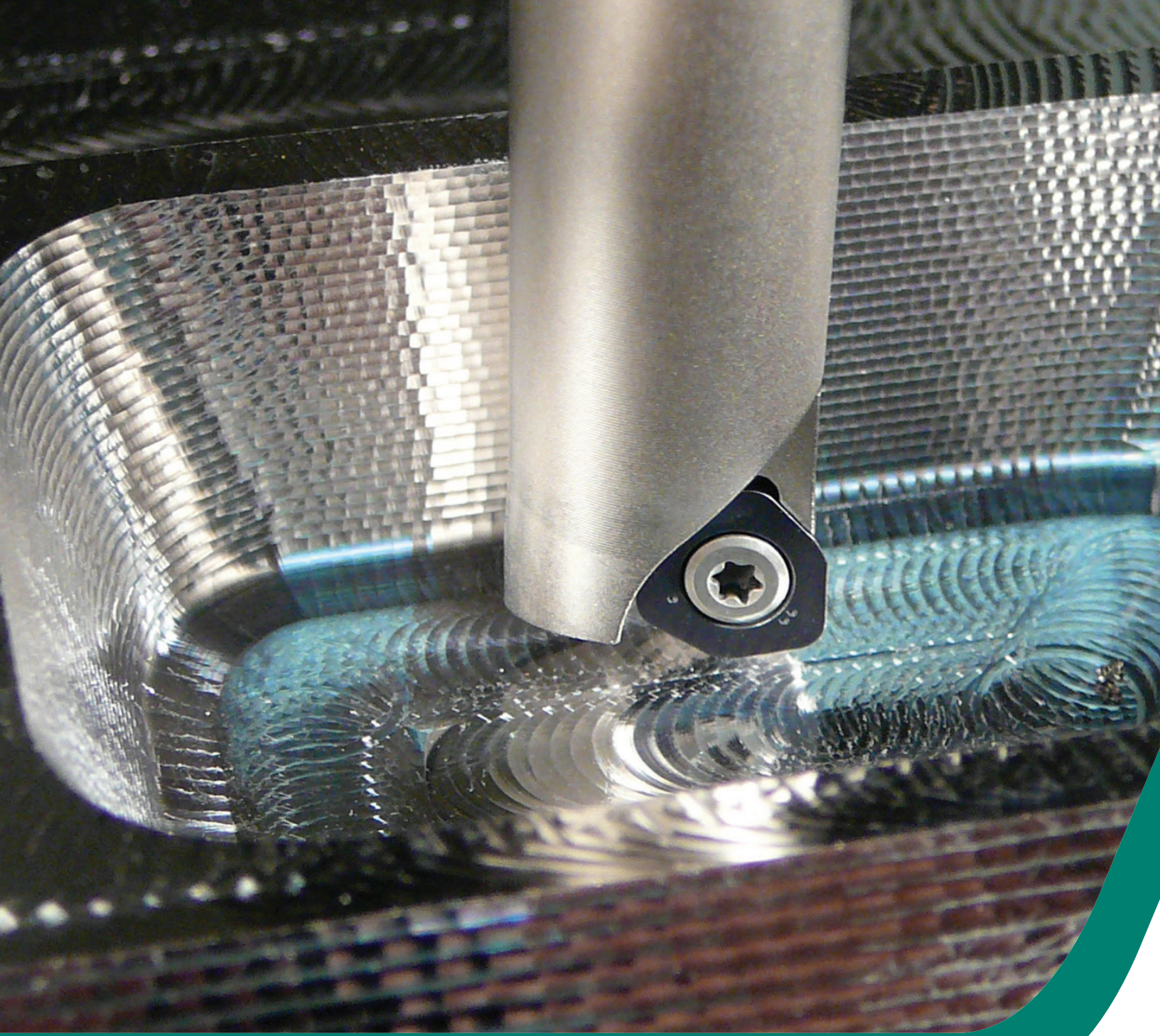




High-Feed

Single-Sided Insert Platform IM-3

8mm Series IM-5

10mm Series IM-9

12mm Series IM-15

Double-Sided Insert Platform IM-21

6mm Series IM-23



High-Feed
Single-Sided Insert Platform

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SINGLE-SIDED HIGH-FEED INSERT PLATFORM

8mm Series	IM-5
10mm Series	IM-9
12mm Series	IM-15

Single-sided High-Feed inserts are designed for increased ramping clearance while maintaining optimal performance.

- Increased edge strength.
- Reduced cutting loads.
- Capable of high MRR in deep cavities.

CUTTER BODIES



END MILLS
Steel

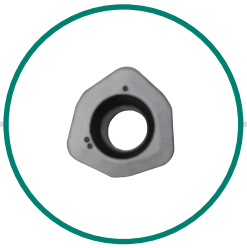


SHELL MILLS
Steel



MODULAR HEADS
Steel

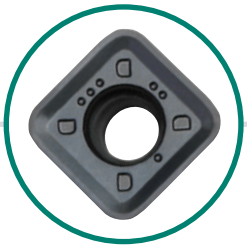
INSERTS



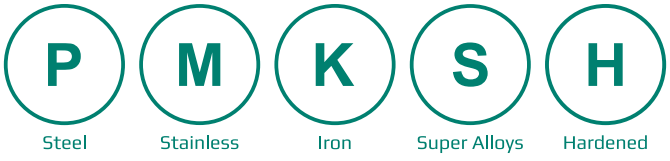
8MM IC

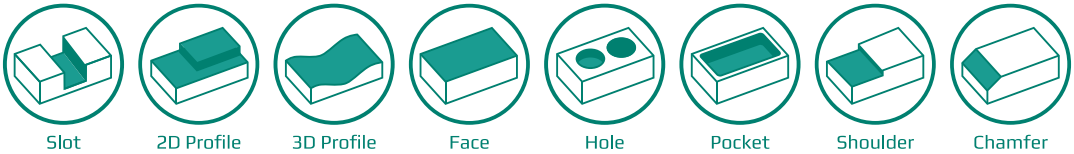


10MM IC



12MM IC

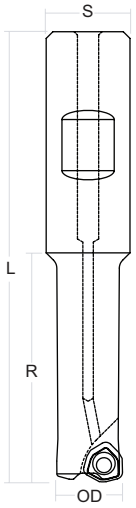




8mm Series Cutter Bodies

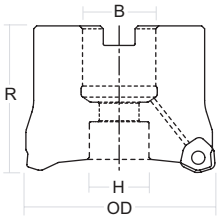
End Mills

EDP	OD	Description	R Effective Length	L Overall Length	S Shank Dia.	Flutes	DOC Max.	Insert
60000	.500”	HFEM050-150-R2-1	1.500”	3.530”	.750”	1	.015”	RF-08
60010	.500”	HFEM050-250-R2-1	2.500”	4.530”	.750”	1	.015”	RF-08
60020	.625”	HFEM063-200-R2-1	2.000”	4.030”	.750”	1	.025”	RF-08
60030	.625”	HFEM063-300-R2-1	3.000”	5.030”	.750”	1	.020”	RF-08
60040	.750”	HFEM075-200-R2-2	2.000”	4.030”	.750”	2	.025”	RF-08
60050	.750”	HFEM075-300-R2-2	3.000”	5.030”	.750”	2	.020”	RF-08
60060	1.000”	HFEM100-250-R2-3	2.500”	4.750”	1.000”	3	.025”	RF-08
60070	1.000”	HFEM100-450-R2-3	4.500”	6.830”	1.000”	3	.025”	RF-08



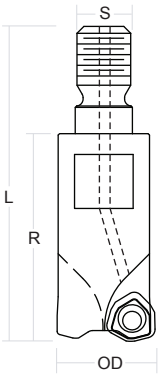
Shell Mills

EDP	OD	Description	R Effective Length	B Arbor Dia.	H Counter Bore Dia.	Flutes	DOC Max.	Insert
60380	2.000”	HFSM200-075-R2-7C	1.500”	0.750”	0.590”	7	.040”	RF-08

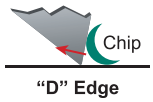


Modular Heads

EDP	OD	Description	R Effective Length	L Overall Length	S Shank Dia.	Flutes	Thread	DOC Max.	Insert
60200	.750”	HFEM075-MOD-R2-2C	1.500”	2.275”	0.413”	2	M10	.020”	RF-08
60210	1.000”	HFEM100-MOD-R2-3C	1.500”	2.375”	0.492”	3	M12	.020”	RF-08

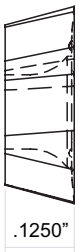


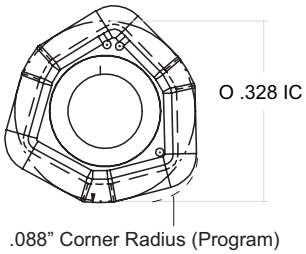
8mm Series Inserts



"D" Edge







"D" Edge: Honed edge provides high-shear cutting action that minimizes tool pressure, temperature build-up, and burr creation.

Insert	Thickness	# of Usable Edges	Corner Radius Actual	Programmed Corner Radius	DOC Max.	DOC Recommended	FPT Compensated
RF-08-D	.125"	3	.062"	.088"	.030"	.010-.025"	.012-.032"

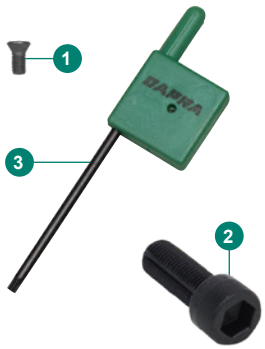
Insert Grade Availability

Insert	Edge	IC	Grade	Coating					
				Uncoated	GLH	TCI	HM	IN	TS
RF-08-D	D	8mm	DMK30	62100	62160	62190	62185		62187
			DMK35	62193			62194	62195	
			DMK25	62000	62060	62090			
			DMP25	62200	62260	62290			

See page IM-155 for insert grade and coating selection.

8mm Series Accessories

EDP	Part Number	Description
83040	TRS-3	1 8mm Insert Screw (Torque range: 12-15 in-lbs.)
QM07041	TC-3/8-SHCS	2 Shell Mill Socket Head Cap Screw with Coolant for 2" shell mills (3/8-24 x 1" long)
83000	T8-F	3 T8 Flag Wrench
41110	ASG-120	Anti-Seize Grease



8mm Series Recommended Parameters

Style	Edge	Grade	Coating	Speed / Feed / DOC		Low-Carbon Steel	Alloy Steel	Tool Steels	Medium Hardened Steel (36-48 Rc)	Hardened Steel (> 48 Rc)
RF-08	D	DMK30	TCI	Speed		450-700	350-600	250-450		
				Feed*		.012-.032	.012-.032	.010-.030		
				DOC	< 3xD	.010-.025	.010-.025	.010-.025		
					> 3xD	.010-.015	.010-.015	.010-.015		
			GLH / TS	Speed		**550-800**	**450-700**	**250-450**	250-450	
				Feed*		**.012-.032**	**.012-.032**	**.010-.030**	.010-.025	
				DOC	< 3xD	**.010-.025**	**.010-.025**	**.010-.025**	.010-.020	
					> 3xD	**.010-.015**	**.010-.015**	**.010-.015**	.010-.015	
			HM	Speed				250-450	**250-450**	
				Feed*				.010-.030	**.010-.025**	
				DOC	< 3xD			.010-.025	**.010-.020**	
					> 3xD			.010-.015	**.010-.015**	
		DMK35	HM	Speed						
				Feed*						
				DOC	< 3xD					
					> 3xD					
			IN	Speed						
				Feed*						
				DOC	< 3xD					
					> 3xD					
			TS	Speed						
				Feed*						
				DOC	< 3xD					
					> 3xD					
		DMK25	HM	Speed						
				Feed*						
				DOC	< 3xD					
					> 3xD					
			GLH / TS	Speed		450-800	400-700	300-600		
				Feed*		.010-.030	.010-.030	.010-.030		
				DOC	< 3xD	.010-.025	.010-.025	.010-.025		
					> 3xD	.010-.015	.010-.015	.010-.015		
		DMP25	TCI	Speed		400-700	350-600			
				Feed*		.012-.032	.012-.032			
				DOC	< 3xD	.010-.025	.010-.025			
					> 3xD	.010-.015	.010-.015			
			GLH / TS	Speed		450-800	400-700	**300-600**	**300-500**	**250-400**
				Feed*		.012-.032	.012-.032	**.010-.030**	**.010-.025**	**.007-.020**
				DOC	< 3xD	.010-.025	.010-.025	**.010-.025**	**.010-.020**	**.005-.015**
					> 3xD	.010-.015	.010-.015	**.010-.015**	**.010-.015**	**.005-.010**
			HM	Speed		450-800	400-700	**300-600**	**300-500**	**250-400**
				Feed*		.012-.032	.012-.032	**.010-.030**	**.010-.025**	**.007-.020**
				DOC	< 3xD	.010-.025	.010-.025	**.010-.025**	**.010-.020**	**.005-.015**
					> 3xD	.010-.015	.010-.015	**.010-.015**	**.010-.015**	**.005-.010**

* Feed Rate Compensation for DOC:
DOC < .025" Feed = 100%
DOC > .025" Feed = 75%

› **Bold text** indicates best choice for material shown.
› The parameters provided are suggested starting operating parameters.
› See page IM-155 for insert grade and coating selection.

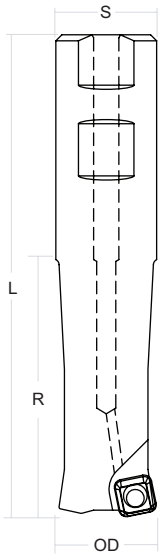
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Austenitic Stainless	Ferritic / Martensitic Stainless	Tough PH Stainless	Gray Cast Iron	Ductile / Malleable	Copper Alloys	Ni Co-Based Alloys	9 Series Inconel	Titanium
250-550	350-600	250-450	400-750	300-600	400-600			
.010-.030	.010-.030	.010-.025	.012-.032	.012-.032	.012-.032			
.010-.025	.010-.025	.010-.025	.010-.025	.010-.025	.010-.025			
.010-.015	.010-.015	.010-.015	.010-.015	.010-.015	.010-.015			
300-600	**400-700**	**250-550**	500-800	450-700	400-600	50-150	35-90	**120-180**
.010-.030	**.010-.030**	**.010-.025**	.012-.032	.012-.032	.012-.032	.008-.020	.008-.020	**.010-.030**
.010-.025	**.010-.025**	**.010-.025**	.010-.025	.010-.025	.010-.025	.010-.020	.010-.020	**.010-.020**
.010-.015	**.010-.015**	**.010-.015**	.010-.015	.010-.015	.010-.015	.010-.015	.010-.015	**.010-.015**
300-600	400-700	**250-550**	500-800	450-700		50-150	35-90	**120-180**
.010-.030	.010-.030	**.010-.025**	.012-.032	.012-.032		.008-.020	.008-.020	**.010-.030**
.010-.025	.010-.025	**.010-.025**	.010-.025	.010-.025		.010-.020	.010-.020	**.010-.020**
.010-.015	.010-.015	**.010-.015**	.010-.015	.010-.015		.010-.015	.010-.015	**.010-.015**
		250-500				**50-150**	**35-90**	120-180
		.010-.025				**.008-.025**	**.008-.025**	.010-.030
		.010-.025				**.010-.020**	**.010-.020**	.010-.020
		.010-.015				**.010-.015**	**.010-.015**	.010-.015
		250-500				**50-150**	**35-90**	120-180
		.010-.025				**.008-.025**	**.008-.025**	.010-.030
		.010-.025				**.010-.020**	**.010-.020**	.010-.020
		.010-.015				**.010-.015**	**.010-.015**	.010-.015
								120-180
								.010-.030
								.010-.020
								.010-.015
300-700	400-850	250-600	**500-900**	**400-800**	**400-650**			
.010-.030	.010-.030	.010-.030	**.010-.030**	**.010-.030**	**.010-.030**			
.010-.025	.010-.025	.010-.025	**.010-.025**	**.010-.025**	**.010-.025**			
.010-.015	.010-.015	.010-.015	**.010-.015**	**.010-.015**	**.010-.015**			
300-600	400-700	250-600	**400-800**	**350-700**	**400-650**			
.010-.030	.010-.030	.010-.030	**.010-.030**	**.010-.030**	**.010-.030**			
.010-.025	.010-.025	.010-.025	**.010-.025**	**.010-.025**	**.010-.025**			
.010-.015	.010-.015	.010-.015	**.010-.015**	**.010-.015**	**.010-.015**			
			450-800	300-750	**400-600**			
			.012-.032	.012-.032	**.012-.032**			
			.010-.025	.010-.025	**.010-.025**			
			.010-.015	.010-.015	**.010-.015**			
			450-800	**300-750**	**400-600**			
			.012-.032	**.012-.032**	**.012-.032**			
			.010-.025	**.010-.025**	**.010-.025**			
			.010-.015	**.010-.015**	**.010-.015**			
			450-800	**300-750**				
			.012-.032	**.012-.032**				
			.010-.025	**.010-.025**				
			.010-.015	**.010-.015**				

10mm Series Cutter Bodies

End Mills

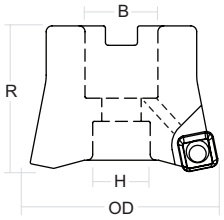
EDP	OD	Description	R Effective Length	L Overall Length	S Shank Dia.	Flutes	DOC Max.	Insert
60300	1.000”	HFEM100-250-R3-2	2.500”	4.750”	1.000”	2	.040”	RF-10
60310	1.000”	HFEM100-450-R3-2	4.500”	6.750”	1.000”	2	.030”	RF-10
60320	1.250”	HFEM125-300-R3-3	3.000”	5.280”	1.250”	3	.040”	RF-10
60330	1.250”	HFEM125-500-R3-3	5.000”	7.280”	1.250”	3	.030”	RF-10
60340	1.500”	HFEM150-350-R3-3	3.500”	5.780”	1.250”	3	.040”	RF-10
60350	1.500”	HFEM150-550-R3-3	5.500”	7.780”	1.250”	3	.030”	RF-10



Shell Mills

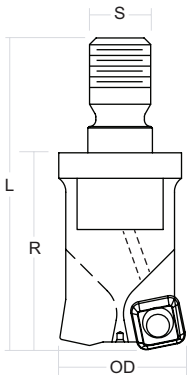
EDP	OD	Description	R Effective Length	B Arbor Dia.	H Counter Bore Dia.	Flutes	DOC Max.	Insert
60400	2.000”	HFSM200-075-R3-5C	2.000”	0.750”	0.590”	5	.040”	RF-10
60410*	3.000”	HFSM300-100-R3-6C	2.000”	1.000”	0.790”	6	.040”	RF-10

* Non-stock standard – made to order.

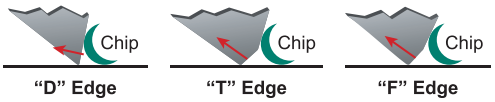


Modular Heads

EDP	OD	Description	R Effective Length	L Overall Length	S Shank Dia.	Flutes	Thread	DOC Max.	Insert
60500	1.000”	HFEM100-MOD-R3-2C	1.500”	2.375”	0.492”	2	M12	.030”	RF-10
60510	1.250”	HFEM125-MOD-R3-3C	1.750”	2.750”	0.669”	3	M16	.030”	RF-10
60520	1.500”	HFEM150-MOD-R3-3C	1.750”	2.750”	0.669”	3	M16	.030”	RF-10

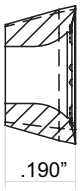


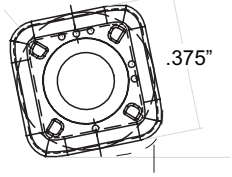
10mm Series Inserts



"D" Edge "T" Edge "F" Edge







.105" Programmed Corner Radius

"D" Edge: Honed edge provides high-shear cutting action that minimizes tool pressure, temperature build-up, and burr creation.

"T" Edge: Strong, negative edge directs cutting forces tangentially providing strength and durability.

"F" Edge: Specifically reinforced for the heaviest feeds and the most abusive applications in steels and irons.

Insert	Thickness	# of Usable Edges	Corner Radius Actual	Programmed Corner Radius	DOC Max.	DOC Recommended	FPT Compensated
RF-10-D	.190"	4	.075"	.105"	.045"	.015-.040"	.015-.050"
RF-10-T	.190"	4	.075"	.105"	.045"	.015-.040"	.020-.060"
RF-10-F	.190"	4	.075"	.105"	.045"	.015-.040"	.030-.065"

Insert Grade Availability

Insert	Edge	IC	Grade	Coating					
				Uncoated	GLH	TCI	HM	IN	TS
RF-10	D	10mm	DMK30	63100	63160	63190	63185		63187
			DMK35	63193			63194	63195	
			DMK25	63000	63060	63090			
			DMP25	63200	63260	63285			
RF-10	T	10mm	DMK30	63300	63360	63390	63385		63395
			DMP25	63400	63460	63490	63485		63487
			DMK15	63290	63292	63298	63296		63297
RF-10	F	10mm	DMK30	63500	63560	63590			63595

See page IM-155 for insert grade and coating selection.

10mm Series Accessories

EDP	Part Number	Description
22610	SSTX-15-S	1 10mm Insert Screw (Torque range: 30-35 in-lbs.)
QM07041	TC-3/8-SHCS	2 Shell Mill Socket Head Cap Screw with Coolant for 1.5" and 2" shell mills (3/8-24 x 1" long)
QM07051	TC-1/2-SHCS	3 Shell Mill Socket Head Cap Screw with Coolant for 2.5" and 3" shell mills (1/2-20 x 1-1/4" long)
83010	T15-T	4 T15 T-Handle Wrench
41110	ASG-120	Anti-Seize Grease



10mm Series Recommended Parameters

Style	Edge	Grade	Coating	Speed / Feed / DOC		Low-Carbon Steel	Alloy Steel	Tool Steels	Medium Hardened Steel (36-48 Rc)	Hardened Steel (> 48 Rc)
RF-10	D	DMK30	TCI	Speed		450-700	350-600	300-500		
				Feed*		.015-.050	.015-.050	.015-.040		
				DOC	< 3xD	.020-.060	.020-.060	.020-.050		
					> 3xD	.010-.030	.010-.030	.010-.025		
			GLH / TS	Speed		**550-800**	450-700	350-550		
				Feed*		**.015-.050**	.015-.050	.015-.040		
				DOC	< 3xD	**.020-.060**	.020-.060	.020-.050		
					> 3xD	**.010-.030**	.010-.030	.010-.025		
			HM	Speed				350-550		
				Feed*				.015-.040		
				DOC	< 3xD			.020-.050		
					> 3xD			.010-.025		
		DMK35	HM	Speed						
				Feed*						
				DOC	< 3xD					
					> 3xD					
			IN	Speed						
				Feed*						
				DOC	< 3xD					
					> 3xD					
			TS	Speed						
				Feed*						
				DOC	< 3xD					
					> 3xD					
		DMK25	HM	Speed						
				Feed*						
				DOC	< 3xD					
					> 3xD					
			GLH / TS	Speed		450-800	400-700	300-550		
				Feed*		.015-.040	.015-.040	.015-.030		
				DOC	< 3xD	.015-.050	.015-.050	.015-.045		
					> 3xD	.010-.025	.010-.025	.010-.025		
		DMP25	TCI	Speed		**400-700**	350-650			
				Feed*		**.015-.040**	.015-.040			
				DOC	< 3xD	**.020-.060**	.020-.060			
					> 3xD	**.010-.030**	.010-.030			
			GLH / TS	Speed		**450-800**	400-700	300-550		
				Feed*		**.015-.040**	.015-.040	.015-.030		
				DOC	< 3xD	**.020-.060**	.020-.060	.020-.050		
					> 3xD	**.010-.030**	.010-.030	.010-.025		
			HM	Speed		450-800	400-700	300-550		
				Feed*		.015-.040	.015-.040	.015-.030		
				DOC	< 3xD	.020-.060	.020-.060	.020-.050		
					> 3xD	.010-.030	.010-.030	.010-.025		

* Feed Rate Compensation for DOC:
DOC < .035" Feed = 100%
DOC > .035" Feed = 75%

› **Bold text** indicates best choice for material shown.
› The parameters provided are suggested starting operating parameters.
› See page IM-155 for insert grade and coating selection.

Continued on next page

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Austenitic Stainless	Ferritic / Martensitic Stainless	Tough PH Stainless	Gray Cast Iron	Ductile / Malleable	Copper Alloys	Ni Co-Based Alloys	9 Series Inconel	Titanium
250-500	350-600	250-450	400-750	300-600	400-600			
.015-.040	.015-.040	.010-.035	.015-.045	.015-.040	.015-.045			
.010-.035	.015-.040	.010-.030	.015-.040	.015-.040	.015-.040			
.010-.025	.010-.025	.010-.020	.010-.025	.010-.025	.010-.025			
250-550	**400-700**	**250-500**	500-800	450-700	400-600	50-150	35-90	**120-180**
.015-.040	**.015-.040**	**.010-.035**	.015-.045	.015-.040	.015-.045	.008-.025	.008-.025	**.010-.030**
.010-.035	**.015-.040**	**.010-.030**	.015-.040	.015-.040	.015-.040	.010-.030	.010-.025	**.010-.035**
.010-.025	**.010-.025**	**.010-.020**	.010-.025	.010-.025	.010-.025	.010-.020	.010-.020	**.010-.025**
250-550	400-700	**250-500**	500-800	450-700		50-150	35-90	**120-180**
.015-.040	.015-.040	**.010-.035**	.015-.045	.015-.040		.008-.025	.008-.025	**.010-.030**
.010-.035	.015-.040	**.010-.030**	.015-.040	.015-.040		.010-.030	.010-.025	**.010-.035**
.010-.025	.010-.025	**.010-.020**	.010-.025	.010-.025		.010-.020	.010-.020	**.010-.025**
		250-500				**50-150**	**35-90**	120-180
		.010-.035				**.008-.025**	**.008-.025**	.010-.030
		.010-.030				**.010-.030**	**.010-.025**	.010-.035
		.010-.020				**.010-.020**	**.010-.020**	.010-.025
		250-500				**50-150**	**35-90**	**120-180**
		.010-.035				**.008-.025**	**.008-.025**	**.010-.030**
		.010-.030				**.010-.030**	**.010-.025**	**.010-.035**
		.010-.020				**.010-.020**	**.010-.020**	**.010-.025**
								120-180
								.010-.030
								.010-.035
								.010-.025
250-500	350-600	250-450	400-750	300-600	**400-600**			
.015-.030	.015-.030	.010-.025	.015-.040	.015-.035	**.015-.040**			
.015-.030	.015-.035	.015-.030	.015-.040	.015-.040	**.015-.040**			
.010-.025	.010-.025	.010-.025	.010-.025	.010-.025	**.010-.025**			
250-550	400-700	250-500	500-800	450-700	**400-700**			
.015-.030	.015-.030	.010-.025	.015-.040	.015-.035	**.015-.040**			
.015-.030	.015-.035	.015-.030	.015-.040	.015-.040	**.015-.040**			
.010-.025	.010-.025	.010-.025	.010-.025	.010-.025	**.010-.025**			
			400-750	300-600	400-600			
			.015-.040	.015-.035	.015-.040			
			.015-.040	.015-.040	.015-.040			
			.010-.025	.010-.025	.010-.025			
			500-800	450-700	400-700			
			.015-.040	.015-.035	.015-.040			
			.015-.040	.015-.040	.015-.040			
			.010-.025	.010-.025	.010-.025			
			500-800	450-700				
			.015-.040	.015-.035				
			.015-.040	.015-.040				
			.010-.025	.010-.025				

10mm Series Recommended Parameters

Style	Edge	Grade	Coating	Speed / Feed / DOC		Low-Carbon Steel	Alloy Steel	Tool Steels	Medium Hardened Steel (36-48 Rc)	Hardened Steel (> 48 Rc)
RF-10	T	DMK30	TCI	Speed		450-700	350-600	300-500	250-450	
				Feed*		.020-.050	.020-.050	.020-.045	.020-.040	
				DOC	< 3xD	.015-.040	.015-.040	.015-.035	.010-.030	
					> 3xD	.010-.025	.010-.025	.010-.025	.010-.020	
			GLH / TS	Speed		**550-800**	**450-700**	**350-550**	250-450	
				Feed*		**.020-.050**	**.020-.050**	**.020-.045**	.020-.040	
				DOC	< 3xD	**.015-.040**	**.015-.040**	**.015-.035**	.010-.020	
					> 3xD	**.010-.025**	**.010-.025**	**.010-.025**	.010-.015	
			HM	Speed				350-550	250-450	
				Feed*				.020-.045	.020-.040	
				DOC	< 3xD			.015-.035	.010-.020	
					> 3xD			.010-.025	.010-.015	
		DMP25	TCI	Speed		400-700	350-650			
				Feed*		.020-.050	.020-.050			
				DOC	< 3xD	.015-.040	.015-.040			
					> 3xD	.010-.025	.010-.025			
			GLH / TS	Speed		**450-800**	**400-700**	**300-550**	**300-500**	250-400
				Feed*		**.020-.050**	**.020-.050**	**.020-.045**	**.020-.040**	.010-.025
				DOC	< 3xD	**.015-.040**	**.015-.040**	**.015-.035**	**.010-.025**	.005-.020
					> 3xD	**.010-.025**	**.010-.025**	**.010-.025**	**.010-.015**	.005-.015
			HM	Speed		**450-800**	**400-700**	**300-550**	**300-500**	250-400
				Feed*		**.020-.050**	**.020-.050**	**.020-.045**	**.020-.040**	.010-.025
				DOC	< 3xD	**.015-.040**	**.015-.040**	**.015-.035**	**.010-.025**	.005-.020
					> 3xD	**.010-.025**	**.010-.025**	**.010-.025**	**.010-.015**	.005-.015
		DMK15	TCI	Speed		450-700	350-600			
				Feed*		.020-.040	.020-.040			
				DOC	< 3xD	.015-.040	.015-.040			
					> 3xD	.010-.025	.010-.025			
			GLH / TS	Speed		450-800	400-700	300-600	**300-500**	**250-450**
				Feed*		.020-.040	.020-.040	.020-.040	**.015-.040**	**.010-.025**
				DOC	< 3xD	.015-.040	.015-.040	.015-.035	**.010-.025**	**.005-.020**
					> 3xD	.010-.025	.010-.025	.010-.025	**.010-.015**	**.005-.015**
			HM	Speed		450-800	400-700	300-600	**300-500**	**250-400**
				Feed*		.020-.050	.020-.050	.020-.040	**.015-.040**	**.010-.025**
				DOC	< 3xD	.015-.040	.015-.040	.015-.035	**.010-.025**	**.005-.020**
					> 3xD	.010-.025	.010-.025	.010-.025	**.010-.015**	**.005-.015**
	F	DMK30	TCI	Speed		**450-700**	350-600	300-500	250-450	
				Feed*		**.020-.055**	.020-.055	.020-.050	.020-.040	
				DOC	< 3xD	**.015-.040**	.015-.040	.015-.035	.010-.030	
					> 3xD	**.010-.025**	.010-.025	.010-.025	.010-.020	
			GLH / TS	Speed		**550-800**	**450-700**	350-550	250-450	
				Feed*		**.020-.055**	**.020-.055**	.020-.050	.020-.040	
					< 3xD	**.015-.040**	**.015-.040**	.015-.035	.010-.030	
					> 3xD	**.010-.025**	**.010-.025**	.010-.025	.010-.020	

* Feed Rate Compensation for DOC:
DOC < .035" Feed = 100%
DOC > .035" Feed = 75%

› **Bold text** indicates best choice for material shown.
› The parameters provided are suggested starting operating parameters.
› See page IM-155 for insert grade and coating selection.

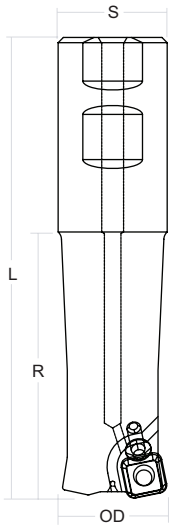
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Austenitic Stainless	Ferritic / Martensitic Stainless	Tough PH Stainless	Gray Cast Iron	Ductile / Malleable	Copper Alloys	Ni Co-Based Alloys	9 Series Inconel	Titanium
			400-750	300-600				
			.020-.050	.020-.050				
			.015-.040	.015-.040				
			.010-.025	.010-.025				
			500-800	450-700				
			.020-.050	.020-.050				
			.015-.040	.015-.040				
			.010-.025	.010-.025				
			500-800	450-700				
			.020-.050	.020-.050				
			.015-.040	.015-.040				
			.010-.025	.010-.025				
			400-750	300-600				
			.020-.050	.020-.045				
			.015-.040	.015-.040				
			.010-.025	.010-.025				
			500-800	**450-700**				
			.020-.050	**.020-.045**				
			.015-.040	**.015-.040**				
			.010-.025	**.010-.025**				
			500-800	**450-700**				
			.020-.050	**.020-.045**				
			.015-.040	**.015-.040**				
			.010-.025	**.010-.025**				
			400-750	300-750				
			.020-.050	.020-.045				
			.015-.040	.015-.040				
			.010-.025	.010-.025				
			450-800	**300-750**				
			.020-.050	**.020-.045**				
			.015-.040	**.015-.040**				
			.010-.025	**.010-.025**				
			450-800	**300-750**				
			.020-.050	**.020-.045**				
			.015-.040	**.015-.040**				
			.010-.025	**.010-.025**				
			400-750	300-600				
			.020-.050	.020-.045				
			.015-.040	.015-.040				
			.010-.025	.010-.025				
			500-800	450-700				
			.020-.050	.020-.045				
			.015-.040	.015-.040				
			.010-.025	.010-.025				

12mm Series Cutter Bodies

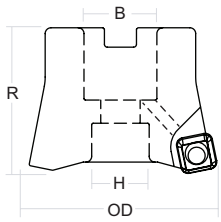
End Mills

EDP	OD	Description	R Effective Length	L Overall Length	S Shank Dia.	Flutes	DOC Max.	Insert
60600	1.250”	HFEM125-300-R4-2	3.000”	5.280”	1.250”	2	.050”	RF-12
60610	1.250”	HFEM125-500-R4-2	5.000”	7.280”	1.250”	2	.040”	RF-12
60620	1.500”	HFEM150-350-R4-3	3.500”	5.780”	1.250”	3	.050”	RF-12
60630	1.500”	HFEM150-550-R4-3	5.500”	7.780”	1.250”	3	.040”	RF-12



Shell Mills

EDP	OD	Description	R Effective Length	B Arbor Dia.	H Counter Bore Dia.	Flutes	DOC Max.	Insert
60700	2.000”	HFSM200-075-R4-4C	1.500”	.750”	0.590”	4	.060”	RF-12
60710	2.000”	HFSM200-075-R4-5C	2.000”	.750”	0.590”	5	.060”	RF-12
60720	2.500”	HFSM250-100-R4-5C	2.000”	1.000”	0.790”	5	.060”	RF-12
60730	3.000”	HFSM300-100-R4-6C	2.000”	1.000”	0.790”	6	.060”	RF-12
60740	4.000”	HFSM400-150-R4-8	2.000”	1.500”	2.060”	8	.060”	RF-12
60750	5.000”	HFSM500-150-R4-8	2.000”	1.500”	2.060”	8	.060”	RF-12
60760	6.000”	HFSM600-200-R4-9	2.000”	2.000”	2.875”	9	.060”	RF-12



12mm Series Inserts



"D" Edge



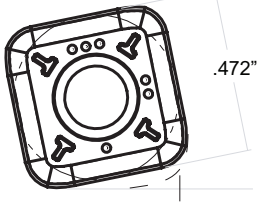
"T" Edge



"F" Edge







"D" Edge: Honed edge provides high-shear cutting action that minimizes tool pressure, temperature build-up, and burr creation.

"T" Edge: Strong, negative edge directs cutting forces tangentially providing strength and durability.

"F" Edge: Specifically reinforced for the heaviest feeds and the most abusive applications in steels and irons.

Insert	Thickness	# of Usable Edges	Corner Radius Actual	Programmed Corner Radius	DOC Max.	DOC Recommended	FPT Compensated
RF-12-D	.220"	4	.094"	.135"	.060"	.020-.050"	.020-.055"
RF-12-T	.220"	4	.094"	.135"	.060"	.020-.050"	.025-.070"
RF-12-F	.220"	4	.094"	.135"	.060"	.020-.050"	.035-.080"

Insert Grade Availability

Insert	Edge	IC	Grade	Coating					
				Uncoated	GLH	TCI	HM	IN	TS
RF-12	D	12mm	DMK30	64000	64060	64090	64085	64062	64087
			DMK35	64093			64094	64095	
			DMP25	64100	64160	64185	64125		
RF-12	T	12mm	DMK30	64200	64260	64290	64285		64295
			DMP25	64300	64360	64390	64385		64395
			DMK15	64190	64192	64198	64196		64197
RF-12	F	12mm	DMK30	64600	64660	64690	64685		64695

See page IM-155 for insert grade and coating selection.

12mm Series Accessories

EDP	Part Number	Description
83090	TRS-4L	1 12mm Insert Screw (Torque range: 30-35 in-lbs.)
QM07041	TC-3/8-SHCS	2 Shell Mill Socket Head Cap Screw with Coolant for 1.5" and 2" shell mills (3/8-24 x 1" long)
QM07051	TC-1/2-SHCS	3 Shell Mill Socket Head Cap Screw with Coolant for 2.5" and 3" shell mills (1/2-20 x 1-1/4" long)
QM07061	TC-3/4-SHCS	4 Shell Mill Socket Head Cap Screw with Coolant for 4" shell mills (3/4-16 x 1-1/2" long)
83010	T15-T	5 T15 T-Handle Wrench
41110	ASG-120	Anti-Seize Grease



12mm Series Recommended Parameters

Style	Edge	Grade	Coating	Speed / Feed / DOC		Low-Carbon Steel	Alloy Steel	Tool Steels	Medium Hardened Steel (36-48 Rc)	Hardened Steel (> 48 Rc)
RF-12	D	DMK30	TCI	Speed		450-700	350-600	300-500		
				Feed*		.015-.050	.015-.050	.015-.040		
				DOC	< 3xD	.020-.060	.020-.060	.020-.050		
					> 3xD	.010-.030	.010-.030	.010-.025		
			GLH / TS	Speed		**550-800**	450-700	350-550		
				Feed*		**.015-.050**	.015-.050	.015-.040		
				DOC	< 3xD	**.020-.060**	.020-.060	.020-.050		
					> 3xD	**.010-.030**	.010-.030	.010-.025		
			HM	Speed				350-550		
				Feed*				.015-.040		
				DOC	< 3xD			.020-.050		
					> 3xD			.010-.025		
		DMK35	HM	Speed						
				Feed*						
				DOC	< 3xD					
					> 3xD					
			IN	Speed						
				Feed*						
				DOC	< 3xD					
					> 3xD					
			TS	Speed						
				Feed*						
				DOC	< 3xD					
					> 3xD					
		DMK25	HM	Speed						
				Feed*						
				DOC	< 3xD					
					> 3xD					
			GLH / TS	Speed		450-800	400-700	300-550		
				Feed*		.015-.040	.015-.040	.015-.030		
				DOC	< 3xD	.015-.050	.015-.050	.015-.045		
					> 3xD	.010-.025	.010-.025	.010-.025		
		DMP25	TCI	Speed		**400-700**	350-650			
				Feed*		**.015-.040**	.015-.040			
				DOC	< 3xD	**.020-.060**	.020-.060			
					> 3xD	**.010-.030**	.010-.030			
			GLH / TS	Speed		**450-800**	400-700	300-550		
				Feed*		**.015-.040**	.015-.040	.015-.030		
				DOC	< 3xD	**.020-.060**	.020-.060	.020-.050		
					> 3xD	**.010-.030**	.010-.030	.010-.025		
			HM	Speed		450-800	400-700	300-550		
				Feed*		.015-.040	.015-.040	.015-.030		
				DOC	< 3xD	.020-.060	.020-.060	.020-.050		
					> 3xD	.010-.030	.010-.030	.010-.025		

* Feed Rate Compensation for DOC:
DOC < .050" Feed = 100%
DOC > .050" Feed = 75%

› **Bold text** indicates best choice for material shown.
› The parameters provided are suggested starting operating parameters.
› See page IM-155 for insert grade and coating selection.

Continued on next page

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Austenitic Stainless	Ferritic / Martensitic Stainless	Tough PH Stainless	Gray Cast Iron	Ductile / Malleable	Copper Alloys	Ni Co-Based Alloys	9 Series Inconel	Titanium
250-500	350-600	250-450	400-750	300-600	400-600			
.015-.040	.015-.040	.010-.035	.015-.050	.015-.050	.015-.050			
.020-.050	.020-.060	.020-.050	.020-.060	.020-.060	.020-.060			
.010-.025	.010-.030	.010-.025	.010-.030	.010-.030	.010-.030			
250-550	**400-700**	**250-500**	500-800	450-700	400-600	50-150	35-90	**120-180**
.015-.040	**.015-.040**	**.010-.035**	.015-.050	.015-.050	.015-.050	.008-.030	.008-.025	**.010-.035**
.020-.050	**.020-.060**	**.020-.050**	.020-.060	.020-.060	.020-.060	.010-.030	.010-.030	**.010-.035**
.010-.025	**.010-.030**	**.010-.025**	.010-.030	.010-.030	.010-.030	.010-.020	.010-.020	**.010-.025**
250-550	400-700	**250-500**	500-800	450-700		50-150	35-90	**120-180**
.015-.040	.015-.040	**.010-.035**	.015-.050	.015-.050		.008-.030	.008-.025	**.010-.035**
.020-.050	.020-.060	**.020-.050**	.020-.060	.020-.060		.010-.030	.010-.030	**.010-.035**
.010-.025	.010-.030	**.010-.025**	.010-.030	.010-.030		.010-.020	.010-.020	**.010-.025**
		250-500				**50-150**	**35-90**	120-180
		.010-.035				**.008-.025**	**.008-.025**	.010-.035
		.020-.050				**.010-.030**	**.010-.030**	.010-.035
		.010-.025				**.010-.020**	**.010-.020**	.010-.025
		250-500				**50-150**	**35-90**	**120-180**
		.010-.035				**.008-.025**	**.008-.025**	**.010-.035**
		.020-.050				**.010-.030**	**.010-.030**	**.010-.035**
		.010-.025				**.010-.020**	**.010-.020**	**.010-.025**
								120-180
								.010-.035
								.010-.035
								.010-.025
250-500	350-600	250-450	400-750	300-600	**400-600**			
.015-.030	.015-.030	.010-.025	.015-.040	.015-.035	**.015-.040**			
.020-.030	.020-.035	.020-.030	.020-.050	.020-.050	**.020-.060**			
.010-.025	.010-.025	.010-.025	.010-.025	.010-.025	**.010-.030**			
250-550	400-700	250-500	500-800	450-700	**400-700**			
.015-.030	.015-.030	.010-.025	.015-.040	.015-.035	**.015-.040**			
.020-.030	.020-.035	.020-.030	.020-.050	.020-.050	**.020-.060**			
.010-.025	.010-.025	.010-.025	.010-.025	.010-.025	**.010-.030**			
			400-750	300-600	400-600			
			.015-.040	.015-.035	.015-.040			
			.020-.050	.020-.050	.020-.060			
			.010-.025	.010-.025	.010-.030			
			500-800	450-700	400-700			
			.015-.040	.015-.035	.015-.040			
			.020-.050	.020-.050	.020-.060			
			.010-.025	.010-.025	.010-.030			
			500-800	450-700				
			.015-.040	.015-.035				
			.020-.050	.020-.050				
			.010-.025	.010-.025				

12mm Series Recommended Parameters

Style	Edge	Grade	Coating	Speed / Feed / DOC		Low-Carbon Steel	Alloy Steel	Tool Steels	Medium Hardened Steel (36-48 Rc)	Hardened Steel (> 48 Rc)
RF-12	T	DMK30	TCI	Speed		450-700	350-600	300-500	250-450	
				Feed*		.020-.060	.020-.060	.020-.050	.020-.040	
				DOC	< 3xD	.020-.060	.020-.060	.020-.050	.015-.050	
					> 3xD	.015-.030	.015-.030	.015-.030	.015-.030	
			GLH / TS	Speed		**550-800**	**450-700**	**350-550**	250-450	
				Feed*		**.020-.060**	**.020-.060**	**.020-.050**	.020-.040	
				DOC	< 3xD	**.020-.060**	**.020-.060**	**.020-.050**	.015-.050	
					> 3xD	**.015-.030**	**.015-.030**	**.015-.030**	.015-.030	
			HM	Speed				350-550	250-450	
				Feed*				.020-.050	.020-.040	
				DOC	< 3xD			.020-.050	.015-.050	
					> 3xD			.015-.030	.015-.030	
		DMP25	TCI	Speed		400-700	350-650			
				Feed*		.020-.060	.020-.060			
				DOC	< 3xD	.020-.060	.020-.060			
					> 3xD	.015-.030	.015-.030			
			GLH / TS	Speed		**450-800**	**400-700**	**300-550**	**300-500**	250-400
				Feed*		**.020-.060**	**.020-.060**	**.020-.050**	**.020-.040**	.010-.030
				DOC	< 3xD	**.020-.060**	**.020-.060**	**.020-.050**	**.015-.050**	.005-.030
					> 3xD	**.015-.030**	**.015-.030**	**.015-.030**	**.015-.030**	.005-.020
			HM	Speed		**450-800**	**400-700**	**300-550**	**300-500**	250-400
				Feed*		**.020-.060**	**.020-.060**	**.020-.050**	**.020-.040**	.010-.030
				DOC	< 3xD	**.020-.060**	**.020-.060**	**.020-.050**	**.015-.050**	.005-.030
					> 3xD	**.015-.030**	**.015-.030**	**.015-.030**	**.015-.030**	.005-.020
		DMK15	TCI	Speed		450-700	350-600			
				Feed*		.020-.050	.020-.050			
				DOC	< 3xD	.020-.050	.020-.050			
					> 3xD	.015-.030	.015-.030			
			GLH / TS	Speed		450-800	400-700	300-600	**300-500**	**250-450**
				Feed*		.020-.050	.020-.050	.020-.040	**.015-.040**	**.010-.030**
				DOC	< 3xD	.020-.050	.020-.050	.020-.050	**.015-.050**	**.005-.030**
					> 3xD	.015-.030	.015-.030	.015-.030	**.015-.030**	**.005-.015**
			HM	Speed		450-800	400-700	300-600	**300-500**	**250-400**
				Feed*		.020-.050	.020-.050	.020-.040	**.015-.040**	**.010-.030**
				DOC	< 3xD	.020-.050	.020-.050	.020-.050	**.015-.050**	**.005-.030**
					> 3xD	.015-.030	.015-.030	.015-.030	**.015-.030**	**.005-.015**
	F	DMK30	TCI	Speed		**450-700**	350-600	300-500	250-450	
				Feed*		**.020-.065**	.020-.065	.020-.060	.020-.045	
				DOC	< 3xD	**.020-.060**	.020-.060	.020-.050	.015-.050	
					> 3xD	**.015-.030**	.015-.030	.015-.030	.015-.030	
			GLH / TS	Speed		**550-800**	**450-700**	350-550	250-450	
				Feed*		**.020-.065**	**.020-.065**	.020-.060	.020-.045	
					< 3xD	**.020-.060**	**.020-.060**	.020-.050	.015-.050	
					> 3xD	**.015-.030**	**.015-.030**	.015-.030	.015-.030	

* Feed Rate Compensation for DOC:
DOC < .050" Feed = 100%
DOC > .050" Feed = 75%

› **Bold text** indicates best choice for material shown.
› The parameters provided are suggested starting operating parameters.
› See page IM-155 for insert grade and coating selection.

Visit **generalcuttingtools.com** for technical reference & application information

Austenitic Stainless	Ferritic / Martensitic Stainless	Tough PH Stainless	Gray Cast Iron	Ductile / Malleable	Copper Alloys	Ni Co-Based Alloys	9 Series Inconel	Titanium
			400-750	300-600				
			.020-.060	.020-.060				
			.020-.060	.020-.060				
			.010-.030	.010-.030				
			500-800	450-700				
			.020-.060	.020-.060				
			.020-.060	.020-.060				
			.010-.030	.010-.030				
			500-800	450-700				
			.020-.060	.020-.060				
			.020-.060	.020-.060				
			.010-.030	.010-.030				
			400-750	300-600				
			.020-.060	.020-.060				
			.020-.060	.020-.060				
			.010-.030	.010-.030				
			500-800	**450-700**				
			.020-.060	**.020-.060**				
			.020-.060	**.020-.060**				
			.010-.030	**.010-.030**				
			500-800	450-700				
			.020-.060	.020-.060				
			.020-.060	.020-.060				
			.010-.030	.010-.030				
			400-750	300-600				
			.020-.060	.020-.060				
			.020-.060	.020-.060				
			.010-.030	.010-.030				
			500-800	**450-700**				
			.020-.060	**.020-.060**				
			.020-.060	**.020-.060**				
			.010-.030	**.010-.030**				
			500-800	**450-700**				
			.020-.060	**.020-.060**				
			.020-.060	**.020-.060**				
			.010-.030	**.010-.030**				
			400-750	300-600				
			.020-.065	.020-.065				
			.020-.060	.020-.060				
			.010-.030	.010-.030				
			500-800	450-700				
			.020-.065	.020-.065				
			.020-.060	.020-.060				
			.010-.030	.010-.030				

VAPOR™

DAPRA NEXT TECHNOLOGY
DNT
FALL 2023



High-Feed
Double-Sided Insert Platform

Visit **generalcuttingtools.com**
for technical reference &
application information

DOUBLE-SIDED HIGH-FEED INSERT PLATFORM

6mm Series IM-23

VAPOR was developed for lighter, faster cutting capitalizing on modern high-feed machining principles.

- TRI-X2™ double-sided, six-edged insert reduces overall manufacturing costs.
- Extreme metal removal rates due to low depth of cut and high feed rates.
- Best-in-class insert screw size – for ease of indexing and screw longevity.
- Reduced vibration tendencies on long-reach tools.

CUTTER BODIES



END MILLS
Steel

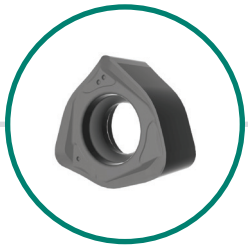


SHELL MILLS
Steel

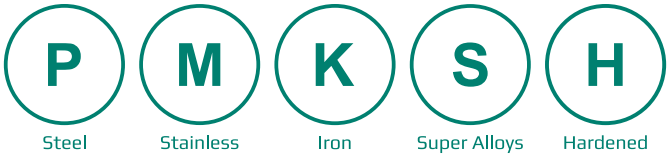


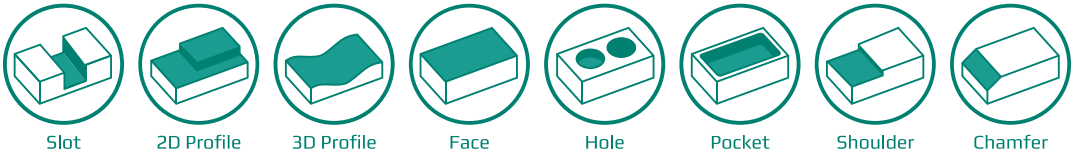
MODULAR HEADS
Steel

INSERTS



6MM IC

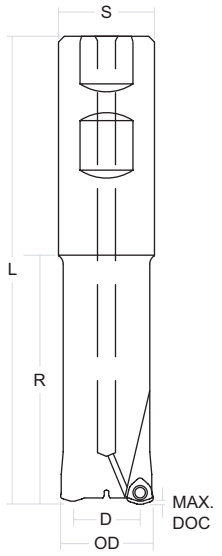




6mm Series Cutter Bodies

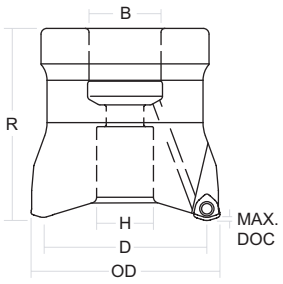
End Mills

EDP	OD	Description	D Effective Dia.	R Effective Length	L Overall Length	S Shank Dia.	Flutes	Insert	DOC Max.
72000	0.500”	DTMEM050-150-R2-1C	0.230”	1.500”	3.720”	0.750”	1	DTM-06	.040”
72005	0.500”	DTMEM050-250-R2-1C	0.230”	2.500”	4.720”	0.750”	1	DTM-06	.040”
72010	0.625”	DTMEM063-200-R2-2C	0.355”	2.000”	4.180”	0.750”	2	DTM-06	.040”
72015	0.625”	DTMEM063-300-R2-2C	0.355”	3.000”	5.180”	0.750”	2	DTM-06	.040”
72020	0.750”	DTMEM075-200-R2-3C	0.480”	2.000”	4.180”	0.750”	3	DTM-06	.040”
72025	0.750”	DTMEM075-300-R2-3C	0.480”	3.000”	6.180”	0.750”	3	DTM-06	.040”
72030	1.000”	DTMEM100-250-R2-4C	0.730”	2.500”	4.875”	1.000”	4	DTM-06	.040”
72040	1.000”	DTMEM100-250-R2-5C	0.730”	2.500”	4.875”	1.000”	5	DTM-06	.040”
72045	1.000”	DTMEM100-450-R2-5C	0.730”	4.500”	6.875”	1.000”	5	DTM-06	.040”
72050	1.250”	DTMEM125-300-R2-5C	0.980”	3.000”	5.400”	1.250”	5	DTM-06	.040”
72060	1.500”	DTMEM150-350-R2-6C	1.230”	3.500”	5.780”	1.250”	6	DTM-06	.040”
72065	1.500”	DTMEM150-550-R2-6C	1.230”	5.500”	7.780”	1.250”	6	DTM-06	.040”



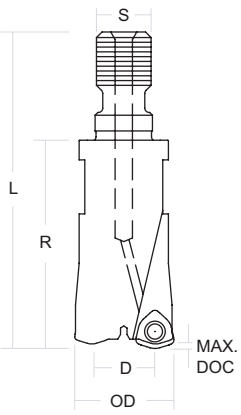
Shell Mills

EDP	OD	Description	D Effective Diameter	R Effective Length	B Arbor Dia.	Flutes	Insert	DOC Max.
72100	1.500”	DTMSM150-050-R2-6C	1.230”	2.000”	0.500”	6	DTM-06	.040”
72105	2.000”	DTMSM200-075-R2-7C	1.730”	2.000”	0.750”	7	DTM-06	.040”

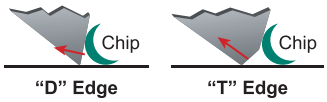


Modular Heads

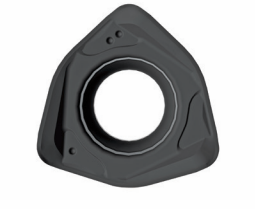
EDP	OD	Description	D Effective Dia.	R Effective Length	L Overall Length	S Shank Dia.	Flutes	Insert	DOC Max.	Thread
72200	0.750”	DTMEM075-MOD-R2-3C	0.480”	1.500”	2.275”	0.413”	3	DTM-06	.040”	M10
72205	1.000”	DTMEM100-MOD-R2-4C	0.730”	1.500”	2.375”	0.492”	4	DTM-06	.040”	M12
72206	1.000”	DTMEM100-MOD-R2-5C	0.730”	1.500”	2.375”	0.492”	5	DTM-06	.040”	M12
72210	1.250”	DTMEM125-MOD-R2-5C	0.980”	1.750”	2.750”	0.669”	5	DTM-06	.040”	M16

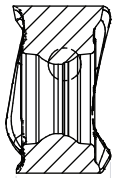


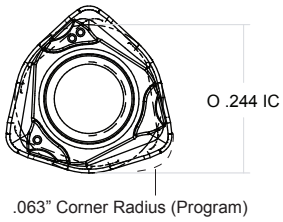
6mm Series Tri-X2 Inserts



"D" Edge "T" Edge







"D" Edge: Honed edge provides high-shear cutting action that minimizes tool pressure, temperature build-up, and burr creation.

"T" Edge: Strong, negative edge directs cutting forces tangentially providing strength and durability.

Insert	Thickness	# of Usable Edges	Corner Radius Actual	Programmed Corner Radius	DOC Max.	DOC Recommended	FPT Compensated
DTM-06-D	.160"	6	.031"	.063"	.040"	.030"	.012-.030"
DTM-06-T	.160"	6	.031"	.063"	.040"	.030"	.015-.035"

Insert Grade Availability

Insert	Edge	IC	Grade	Coating			
				Uncoated	GLH	HM	UHT
DNT DTM-06	D	6mm	DMM25	11000053			11000054
DTM-06	T	6mm	DMK30	74100	74160	74185	
			DMP25	74200	74260	74285	
			DMK15	74000	74060	74085	

See page IM-155 for insert grade and coating selection.

6mm Series Accessories

EDP	Part Number	Description
22600L	SSTX-08-SL	1 6mm Insert Screw (Torque setting: 12 in-lbs. / 1.0 Nm)
QM07035	1/4-SHCS	2 Socket Head Cap Screw for 1.5" VAPOR shell mills (1/4-28 x 1" long)
QM07041	TC-3/8-SHCS	3 Socket Head Cap Screw with Coolant for 2" VAPOR shell mills (3/8-24 x 1" long)
83000	T8-F	4 T8 Flag-Style Wrench
41110	ASG-120	Anti-Seize Grease



6mm Series Recommended Parameters

Style	Edge	Grade	Coating	Speed / Feed / DOC		Low-Carbon Steel	Alloy Steel	Tool Steels	Medium Hardened Steel (36-48 Rc)
DTM-06	D	DMM25	UHT	Speed		**550-800**	**400-700**	**400-550**	300-500
				Feed*		**.020-.040**	**.020-.040**	**.020-.035**	.015-.030
				DOC	< 3xD	**.015-.030**	**.015-.030**	**.015-.030**	.010-.030
					> 3xD	**.010-.020**	**.010-.020**	**.010-.020**	.010-.020
	T	DMK30	GLH	Speed		**550-800**	**400-700**	400-550	
				Feed*		**.020-.040**	**.020-.040**	.020-.035	
				DOC	< 3xD	**.015-.030**	**.015-.030**	.015-.030	
					> 3xD	**.010-.025**	**.010-.025**	.010-.020	
			HM	Speed		550-800	450-750	400-600	
				Feed*		.020-.040	.020-.040	.020-.035	
				DOC	< 3xD	.015-.030	.015-.030	.015-.030	
					> 3xD	.010-.025	.010-.025	.010-.020	
		DMP25	GLH	Speed		**550-800**	**400-700**	**400-550**	**300-500**
				Feed*		**.020-.040**	**.020-.040**	**.020-.035**	**.015-.030**
				DOC	< 3xD	**.015-.030**	**.015-.030**	**.015-.030**	**.010-.030**
					> 3xD	**.010-.025**	**.010-.025**	**.010-.020**	**.010-.020**
			HM	Speed		550-800	450-750	**400-600**	**300-500**
				Feed*		.020-.040	.020-.040	**.020-.035**	**.015-.030**
				DOC	< 3xD	.015-.030	.015-.030	**.015-.030**	**.010-.030**
					> 3xD	.010-.025	.010-.025	**.010-.020**	**.010-.020**
		DMK15	GLH	Speed		550-800	400-700	400-550	**300-500**
				Feed*		.015-.035	.015-.035	.015-.030	**.015-.030**
				DOC	< 3xD	.015-.030	.015-.030	.015-.030	**.010-.030**
					> 3xD	.010-.025	.010-.025	.010-.020	**.010-.020**
			HM	Speed		550-800	450-750	400-600	**300-500**
				Feed*		.015-.035	.015-.035	.015-.030	**.015-.030**
				DOC	< 3xD	.015-.030	.015-.030	.015-.030	**.010-.030**
					> 3xD	.010-.025	.010-.025	.010-.020	**.010-.020**

* Feed Rate Compensation for DOC:
DOC < .030” Feed = 100%
DOC > .030” Feed = 75%
Max. DOC .040” Feed = 60%

› **Bold text** indicates best choice for material shown.
› The parameters provided are suggested starting operating parameters.
› See page IM-155 for insert grade and coating selection.

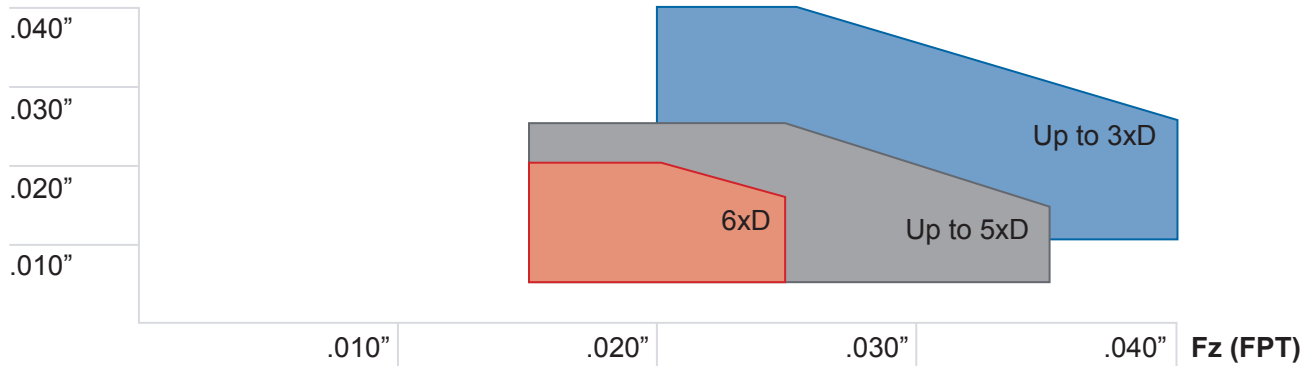
Visit **generalcuttingtools.com** for technical reference & application information

Hardened Steel (> 44 Rc)	Austenitic Stainless	Ferritic / Martensitic Stainless	Tough PH Stainless	Gray Cast Iron	Ductile / Malleable	Ni Co-Based Alloys	9 Series Inconel	Titanium
	300-600	**400-700**	**250-550**	500-800	500-700	**50-150**	**35-75**	**120-180**
	.010-.030	**.010-.030**	**.010-.025**	.020-.040	.020-.040	**.007-.018**	**.007-.015**	**.010-.025**
	.010-.030	**.010-.030**	**.010-.030**	.015-.030	.015-.030	**.010-.020**	**.010-.020**	**.010-.025**
	.010-.020	**.010-.020**	**.010-.020**	.010-.020	.010-.020	**.010-.015**	**.010-.015**	**.010-.015**
				500-800	500-700			
				.020-.040	.020-.040			
				.015-.030	.015-.030			
				.010-.025	.010-.025			
				500-800	500-700			
				.020-.040	.020-.040			
				.015-.030	.015-.030			
				.010-.025	.010-.025			
250-400				500-800	**500-700**			
.015-.030				.020-.040	**.020-.040**			
.010-.020				.015-.030	**.015-.030**			
.010-.015				.010-.025	**.010-.025**			
250-400				500-800	**500-700**			
.015-.030				.020-.040	**.020-.040**			
.010-.020				.015-.030	**.015-.030**			
.010-.015				.010-.025	**.010-.025**			
250-400				**500-800**	**500-700**			
.015-.030				**.020-.040**	**.020-.040**			
.010-.020				**.015-.030**	**.015-.030**			
.010-.015				**.010-.025**	**.010-.025**			
250-400				**500-800**	**500-700**			
.015-.030				**.020-.040**	**.020-.040**			
.010-.020				**.015-.030**	**.015-.030**			
.010-.015				**.010-.025**	**.010-.025**			

Feed per Tooth & Depth of Cut Comparison

(Typical parameters for Alloyed Steel)

Ap (DOC)



Carbide Core Modular Extensions

Ideal for Standard Inch End Mill Holders

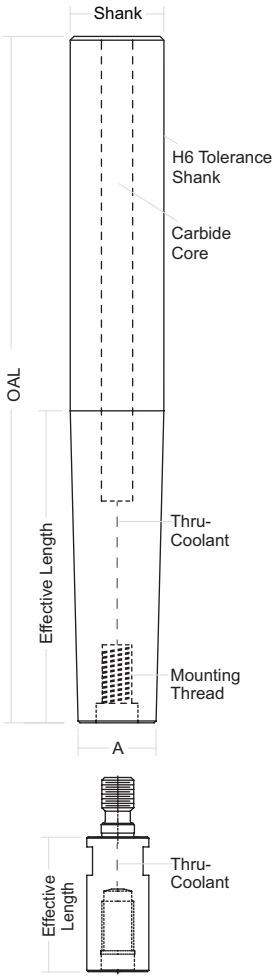
- All styles of modular extensions are universal – use them with any of our screw-on modular heads, as well as many competitors' modular heads
- Cylindrical inch shanks, providing adaptation for end mill holders (add your own flat), milling chucks and heat-shrink holders
- 3 sizes to accommodate modular head sizes from 3/4" to 1-1/2"
- Carbide core for enhanced vibration dampening capability; reduced deflection and improved rigidity
- Optional add-on extensions for additional 2" reach – screw on to base extensions (for 3/4" to 1-1/2" modular heads)
- Thru-coolant for delivery of air or coolant right at the cutting edge



Carbide Core Modular Extensions

EDP	For Head Dia.	Description	Shank Dia.	Effective Length	OAL	Thread	CC	A
22475	.750" / 20mm	CC-ME-0750-2500-5500-C	.750"	2.5"	5.5"	M10	3/8" x 4.0"	.660"
22485	.750" / 20mm	CC-ME-0750-3500-C-SS	.750"	3.7"	5.8"	M10	3/8" x 4.0"	.660"
22480	.750" / 20mm	CC-ME-0750-3500-C	1.000"	3.7"	6.0"	M10	7/16" x 4.0"	.660"
22495	1.000" / 25mm	CC-ME-1000-2500-5500-C	1.000"	2.5"	5.5"	M12	7/16" x 4.0"	.935"
22500	1.000" / 25mm	CC-ME-1000-4500-C	1.000"	4.7"	7.0"	M12	7/16" x 5.0"	.935"
22505	1.250" / 1.500"	CC-ME-1250-3250-C	1.250"	3.5"	5.8"	M16	1/2" x 4.0"	1.175"
22510	1.250" / 1.500"	CC-ME-1250-5500-C	1.250"	5.7"	8.0"	M16	1/2" x 6.0"	1.175"

Extensions feature a cylindrical shank, with no Weldon flats. Hold with high-performance milling chucks or heat / mechanical shrink holders, or mill Weldon flats and use a short-length solid end mill holder.



2" Add-On Extensions

EDP	For Head Dia.	Description	Effective Length	Thread
22520	.750" / 20mm	ME-0750-2C Extension Adapter	2.0"	M10
22530	1.000" / 25mm	ME-1000-2C Extension Adapter	2.0"	M12
22540	1.250" / 1.500"	ME-1250-2C Extension Adapter	2.0"	M16

Solid Carbide Modular Extensions

- Optimum rigidity reduces deflection and chatter
- No braze joints
- Best option for finishing with modular heads
- Thru-coolant for delivery of air or coolant right at the cutting edge



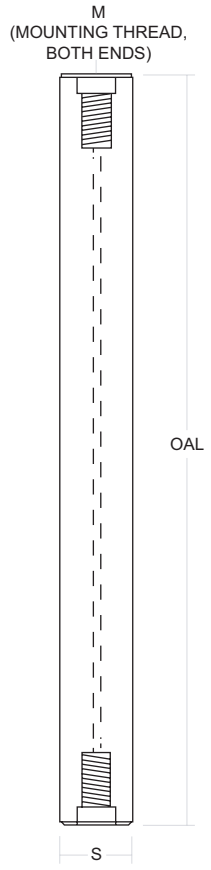
Solid Carbide Modular Extensions

EDP	For Head Dia.	Description	Shank Dia.	Effective Length	OAL	Thread	A
22550-6	.500”	SC-ME-0500-6500-C-M6	.500”	1.500”	6.5”	M6	.460”
22560	.750”	SC-ME-0750-7700-C	.750”	2.250”	7.7”	M10	.709”
22570	1.000”	SC-ME-1000-8300-C	1.00”	5.000”	8.3”	M12	.890” / .950”

Heavy Metal Modular Extensions

- Made of high-density tungsten, providing extra resistance to vibration and deflection
- Machined on both ends; can be cut in half and used with two different modular heads
- Metric shank diameter provides clearance for each inch size modular head
- Thru-coolant equipped





Heavy Metal Modular Extensions

EDP	For Head Dia.	Description	Shank Dia.	OAL	M
22440	.750” / 20mm	ME-0750-18MM-900-C	18mm	9”	M10
22460	1.000” / 25mm	ME-1000-25MM-1100-C	25mm	11”	M12
22470	1.250” / 1.500”	ME-125/150-25MM-1200-C	25mm	12”	M16

Torque Wrench Systems

- Accurate, repeatable application of torque to insert screws – no over-tightening, stripping or binding
- More secure grip and leverage when compared to typical flag-style wrenches, with choice of two handle styles
- Color-coded adapters and bits for quick identification of the correct size for your application
- Each adapter has a preset torque value – simply tighten until you hear a click



T-Handle Torque Driver
TW-TH with TW-AD-20 and TW-BT-20

Complete Set Part Numbers

T10	T15	T20
Straight Handle: TW-SS-10	Straight Handle: TW-SS-15	Straight Handle: TW-SS-20
T-Handle: TW-TS-10	T-Handle: TW-TS-15	T-Handle: TW-TS-20

Individual Pieces

Torque Driver Handle: Straight Handle – TW-SH-L T-Handle – TW-TH	Torque Driver Handle: Straight Handle – TW-SH-L T-Handle – TW-TH	Torque Driver Handle: Straight Handle – TW-SH-L T-Handle – TW-TH
Adapter: TW-AD-10	Adapter: TW-AD-15	Adapter: TW-AD-20
TORX® Bits: TW-BT-10	TORX® Bits: TW-BT-15	TORX® Bits: TW-BT-20



T10 Torque Adapter
TW-AD-10



T15 Torque Adapter
TW-AD-15



T20 Torque Adapter
TW-AD-20



Straight-Handle Torque Driver
TW-SH-L



T-Handle Torque Driver
TW-TH



T10 TORX® Bits (set of 6)
TW-BT-10



T15 TORX® Bits (set of 6)
TW-BT-15



T20 TORX® Bits (set of 6)
TW-BT-20



Straight-Handle Torque Driver
TW-SH-L with TW-AD-10 and TW-BT-10

TORX® is a registered trademark of Camcar/Textron.

Notes

Insert Grade & Coating Selection

TOUGHEST (Shock Resistant)

HARDEST (Wear Resistant)

Grade	Materials		Machining Conditions			Coating			Coolant
			Roughing	Medium	Light				
			Severe	Moderate	Rigid	1st Choice	2nd Choice	3rd Choice	
DMK35	**High-Temp. Alloys**	S20-S40	■	■	■	IN	HM	TS	●
	Stainless Steel	M20-M40	■	■	■	HM	IN		●
DMP35	**Steel**	P30-P40	■	■	◪	HM	GLH	TCI	★ ○
	Iron	K25-K40	■	◪	□	HM	GLH	TCI	◆
	High-Temp. Alloys	S20-S35	◪	◪	◪	HM	TS	GLH	●
	Stainless Steel	M20-M35	◪	◪	◪	HM	GLH	TCI	●
DMK30 (High-Feed, Button / Face)	**Steel**	P30-P40	■	■	◪	GLH	HM	TCI	★
	Iron	K25-K40	■	◪	□	HM	GLH	TCI	◆
	High-Temp. Alloys	S20-S35	◪	◪	◪	HM	TS	GLH	●
	Stainless Steel	M20-M35	◪	◪	◪	HM	GLH	TCI	●
DMK30 (Square Shoulder)	Steel	P15-P25	◪	◪	◪	HM	GLH	TCI	★ ○
	Iron	K15-K25	◪	■	◪	HM	GLH	TCI	◆
	Stainless Steel	M15-M25	□	□	◪	HM	GLH	TCI	●
	Copper Alloys	N20-N30	■	■	■	GLH	TCI		●
DMP30	**Steel**	P25-P35	◪	■	◪	HM	GLH	TCI	★ ○
	Iron (Ductile)	K20-K30	■	■	◪	HM	GLH	TCI	◆
	Hardened Steel (< 45 Rc)	H20-H30	◪	■	■	HM	GLH	TS	★ ○
DMP25	**Steel**	P25-P35	◪	■	◪	GLH	HM	TCI	★
	Iron (Ductile)	K20-K30	■	■	◪	HM	GLH	TCI	◆
	Hardened Steel (< 45 Rc)	H20-H30	◪	■	■	HM	GLH	TS	★ ○
DMK25 (High-Feed, Button / Face)	Steel	P15-P25	◪	◪	◪	GLH	HM	TCI	★
	Iron	K15-K25	◪	■	◪	HM	GLH	TCI	◆
	Stainless Steel	M15-M25	□	□	◪	HM	GLH	TCI	●
	Copper Alloys	N20-N30	■	■	■	GLH	TCI		●
DMK25 (Square Shoulder)	**Hardened Steel (> 45 Rc)**	H10-H30	□	◪	■	HM	GLH	TS	★ ○
	Iron	K10-K30	◪	■	■	HM	GLH	TCI	◆
	Non-Ferrous	N10-N30	■	■	■	GLH	TCI	Uncoated	●
	Non-Ferrous (Alu, Graph)	N10-N30	◪	■	■	PCD	DL	Uncoated	●
	Steel	P10-P25	□	◪	■	GLH	HM	TCI	★ ○
DMK15	**Hardened Steel (> 45 Rc)**	H10-H30	□	◪	■	HM	GLH	TS	★ ○
	Iron	K10-K30	◪	■	■	HM	GLH	TCI	◆
	Non-Ferrous	N10-N30	■	■	■	Uncoated	GLH	TCI	●
	Steel	P10-P25	□	◪	■	GLH	HM	TCI	★

■ Highly Recommended
◪ Recommended
□ Not Recommended

● Coolant Beneficial
◆ Coolant Optional
○ Coolant Detrimental
★ Air Preferred

› **Bold text** indicates preferred material.