



# Button / Face

<b>Single-Sided Insert Platform</b>	IM-71
$\frac{3}{8}$ " Series	IM-73
$\frac{1}{2}$ " Series	IM-77
$\frac{5}{8}$ " Series	IM-87
$\frac{3}{4}$ " Series	IM-95
10mm Series	IM-103
12mm Series	IM-107
<b>Double-Sided Insert Platform</b>	IM-111
12mm Series	IM-113



# Button / Face Single-Sided Insert Platform



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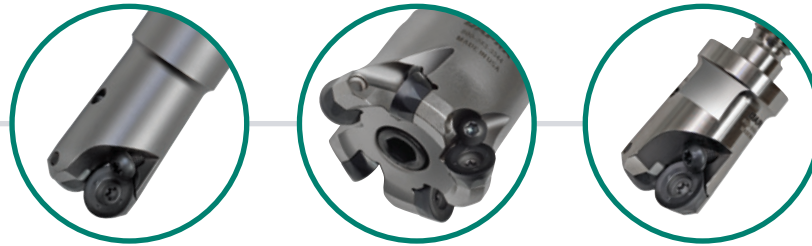
## SINGLE-SIDED BUTTON / FACE INSERT PLATFORM

$3/8$ " Series	IM-73	$3/4$ " Series	IM-95
$1/2$ " Series	IM-77	10mm Series	IM-103
$5/8$ " Series	IM-87	12mm Series	IM-107

Single-sided button / face inserts and cutter bodies combine to offer excellent roughing and 3D contouring capabilities.

- › Variety of insert cutting edge options
- › Wiper offered on octagonal insert style for superior finishes
- › Cutter bodies manufactured from hardened, high-shock tool steel for durability and tool life

### CUTTER BODIES



END MILLS

Steel / Carbide Core

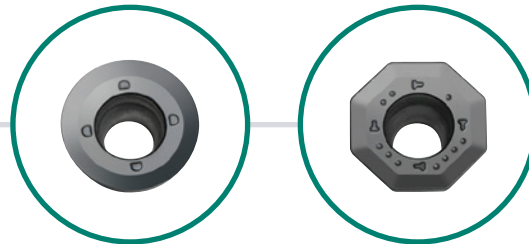
SHELL MILLS

Steel

MODULAR HEADS

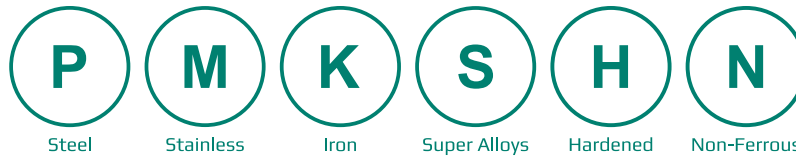
Steel

### INSERTS



BUTTON

OCTAGONAL



Steel

Stainless

Iron

Super Alloys

Hardened

Non-Ferrous



Face

Hole

Pocket

3D Profile

Chamfer

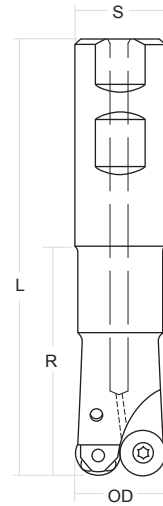


# 3/8" Series Cutter Bodies

## End Mills

EDP	OD	Description	R Effective Length	L Overall Length	S Shank Dia.	Flutes	Insert
80000	.750"	TREM075-200-R3-2C	2.000"	4.030"	.750"	2	Button
80020	.750"	TREM075-300-R3-2C	3.000"	5.030"	.750"	2	Button
80040	1.000"	TREM100-250-R3-2C	2.500"	4.750"	1.000"	2	Button
80060	1.000"	TREM100-250-R3-3C	2.500"	4.750"	1.000"	3	Button

Optional cylindrical shank tools, without Weldon Flats. // Contact Dapra for availability.

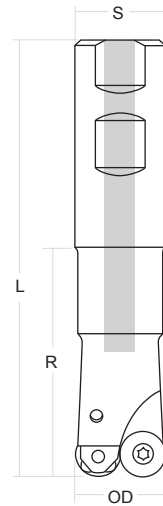


## Carbide Core End Mills

EDP	OD	Description	R Effective Length	L Overall Length	S Shank Dia.	Flutes	Insert
80420	1.000"	CC-TREM100-450-R3-2	4.500"	6.750"	1.000"	2	Button
80440	1.000"	CC-TREM100-450-R3-3	4.500"	6.750"	1.000"	3	Button

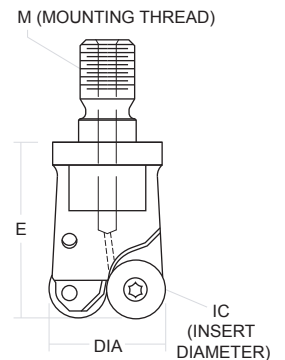
EDP # 80420 and 80440 do not include coolant thru.

Optional cylindrical shank tools, without Weldon Flats. // Contact Dapra for availability.

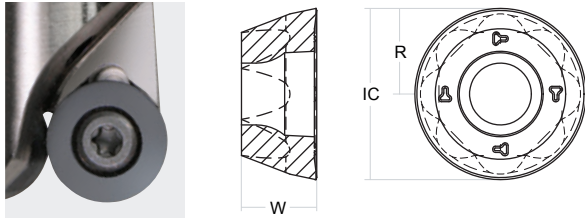
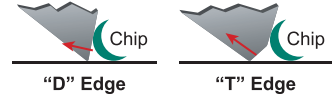


## Modular Heads

EDP	Dia.	Description	M Thread	E Effective Length	Flutes	Wrench	Insert
82505	.750"	TREM075-MOD-R3-2C	M10	1.50"	2	9/16"	Button



# 3/8" Series Inserts



**"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.

## Button Inserts

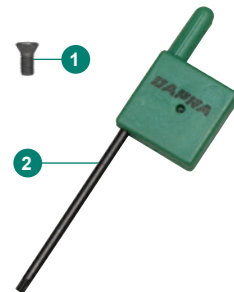
Insert	Edge	IC	W	R	Grade	Coating			
						Uncoated	GLH	TCI	
RPMH-33	D	.375"	.157"	.187"	DMK30	85200	85260	85290	
	T	.375"	.157"	.187"	DMK30	85500	85560		
					DMP25	85600	85660	85690	
					DMK15	85400	85460		
RDCH-32*	D	.375"	.125"	.187"	DMK15	96000			
	T	.375"	.125"	.187"	DMK15	96200		96260	

\* Ground insert.

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

# 3/8" Series Accessories

EDP	Part Number	Description
83040	TRS-3	1 Insert Screw (Torque range: 12-15 in.-lbs.)
83000	T8-F	2 T8 Flag-Style Wrench
41110	ASG-120	Anti-Seize Grease



# 3/8" Series Recommended Cutting Parameters

Style	Edge	Grade	Coating	Speed / Feed	Low-Carbon Steel	Alloy Steel	Tool Steels	Medium Hardened Steel (36-48 Rc)	Hardened Steel (> 48 Rc)	
RPMH-33	D	DMK30	TCI	Speed	<b>500-800</b>	<b>400-700</b>	250-450			
				Feed	<b>.003-.015</b>	<b>.003-.015</b>	.003-.012			
			GLH	Speed	<b>700-1000</b>	<b>500-800</b>	<b>250-600</b>			
				Feed	<b>.003-.015</b>	<b>.003-.015</b>	<b>.003-.012</b>			
	T	DMK30	GLH	Speed	<b>700-1000</b>	<b>500-800</b>	<b>250-600</b>			
				Feed	<b>.003-.020</b>	<b>.003-.015</b>	<b>.003-.012</b>			
			DMP25	TCI	Speed	<b>500-900</b>	<b>400-800</b>	350-550	300-450	
					Feed	<b>.004-.020</b>	<b>.004-.015</b>	.004-.012	.003-.012	
		DMK15	GLH	Speed	<b>700-1200</b>	<b>500-900</b>	<b>350-650</b>	<b>300-500</b>		
				Feed	<b>.004-.020</b>	<b>.004-.015</b>	<b>.004-.012</b>	<b>.003-.012</b>		
			GLH	Speed	700-1200	500-900	350-650	<b>300-500</b>	<b>250-450</b>	
				Feed	.004-.020	.004-.015	.004-.012	<b>.003-.012</b>	<b>.003-.010</b>	
RDCH-32	D	DMK15	Uncoated	Speed						
				Feed						
	T		TCI	Speed	700-1200	500-900	350-650	<b>300-500</b>	<b>250-450</b>	
				Feed	.004-.020	.004-.015	.004-.012	<b>.003-.012</b>	<b>.003-.010</b>	

- › **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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HIGH-FEED

SQUARE SHOULDER

BUTTON / FACE

BALL NOSE / BACK DRAFT

SUPPORTING TOOLS & INFO

Austenitic Stainless	Ferritic / Martensitic Stainless	Tough PH Stainless	Gray Cast Iron	Ductile / Malleable	Ni Co-Based Alloys	9 Series Inconel	Titanium	Copper Alloys	Aluminum / Non-Ferrous
<b>300-500</b>	<b>400-800</b>	250-450	500-800	400-700				400-900	
<b>.004-.012</b>	<b>.004-.015</b>	.003-.012	.004-.020	.003-.015				.004-.015	
<b>300-600</b>	<b>500-900</b>	<b>250-500</b>	600-1000	500-900	<b>55-90</b>	<b>35-65</b>	<b>120-180</b>	400-900	1200+ (cast)
<b>.004-.012</b>	<b>.004-.015</b>	<b>.003-.012</b>	.004-.020	.003-.015	<b>.002-.006</b>	<b>.002-.005</b>	<b>.003-.007</b>	.004-.015	.007-.020
			600-1000	500-900					
			.004-.020	.003-.015					
			500-800	<b>400-700</b>					
			.004-.020	<b>.003-.015</b>					
			600-1000	<b>500-900</b>					
			.004-.020	<b>.003-.015</b>					
			<b>600-1000</b>	<b>500-900</b>					
			<b>.004-.020</b>	<b>.003-.015</b>					
									<b>1500+</b>
									<b>.007-.020</b>
			<b>600-1000</b>	<b>500-900</b>					
			<b>.004-.020</b>	<b>.003-.015</b>					



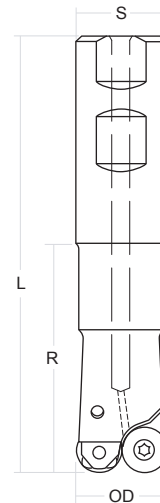
# 1/2" Series Cutter Bodies

## End Mills

EDP	OD	Description	R Effective Length	L Overall Length	S Shank Dia.	Flutes	Insert	
80080	1.000"	TREM100-125-R4-2C	1.250"	3.530"	1.000"	2	Button	Octagonal
80090	1.000"	TREM100-250-R4-2C	2.500"	4.750"	1.000"	2	Button	Octagonal
80110	1.000"	TREM100-450-R4-2C	4.500"	6.750"	1.000"	2	Button	Octagonal
80130	1.250"	TREM125-300-R4-3	3.000"	5.280"	1.250"	3	Button	Octagonal
80160	1.500"	TREM150-350-R4-3	3.500"	5.780"	1.250"	3	Button	Octagonal

EDP # 80130 and 80160 do not include coolant thru.

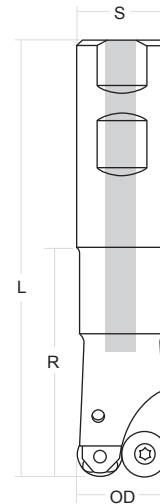
Optional cylindrical shank tools, without Weldon Flats. // Contact Dapra for availability.



## Carbide Core End Mills

EDP	OD	Description	R Effective Length	L Overall Length	S Shank Dia.	Flutes	Insert	
80460*	1.000"	CC-TREM100-450-R4-2	4.500"	6.750"	1.000"	2	Button	Octagonal
80480*	1.250"	CC-TREM125-500-R4-3	5.000"	7.280"	1.250"	3	Button	Octagonal

\* Non-stock standard – made to order. // Does not include coolant thru.

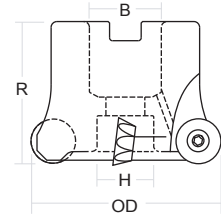


# 1/2" Series Cutters

## Shell Mills

EDP	OD	Description	R Effective Length	B Arbor Dia.	H Counter Bore Dia.	Flutes	Insert	
80710	2.000"	TRSM200-075-R4-4C	1.500"	.750"	.590"	4	Button	Octagonal
80730	2.000"	TRSM200-075-R4-5C	1.500"	.750"	.590"	5	Button	Octagonal
80760	2.500"	TRSM250-100-R4-6C	2.000"	1.000"	.790"	6	Button	Octagonal
80800	3.000"	TRSM300-100-R4-6C	2.000"	1.000"	.790"	6	Button	Octagonal
80870	4.000"	TRSM400-150-R4-7	2.000"	1.500"	2.050"	7	Button	Octagonal
80930	5.000"	TRSM500-150-R4-9	2.000"	1.500"	2.060"	9	Button	Octagonal

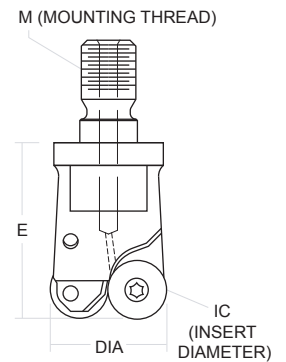
EDP # 80870 and 80930 do not include coolant thru.



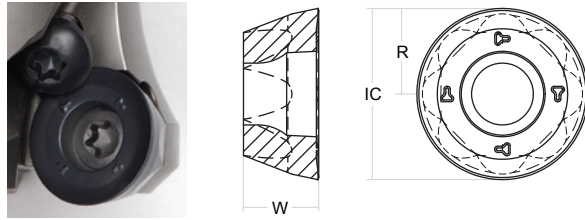
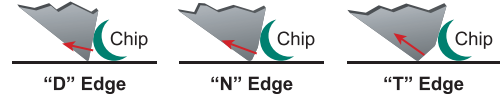
## Modular Heads

EDP	Dia.	Description	M Thread	E Effective Length	Flutes	Wrench	Insert	
82515	1.000"	TREM100-MOD-R4-2C	M12	1.50"	2	1 <sup>1</sup> / <sub>16</sub> "	Button	Octagonal
82525	1.250"	TREM125-MOD-R4-3C	M16	1.75"	3	1 <sup>5</sup> / <sub>16</sub> "	Button	Octagonal
SY00075	1.500"	TREM150-MOD-R4-3	M16	1.75"	3	1 <sup>5</sup> / <sub>16</sub> "	Button	Octagonal

EDP # SY00075 does not include coolant thru.



# 1/2" Series Inserts



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

**"N" Edge:** Enhanced-Flat, T-land insert face combines strength and shear.

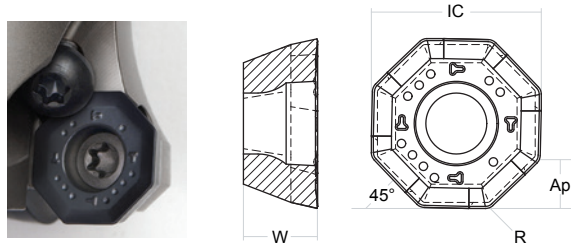
**"T" Edge:** Strong, negative edge directs cutting forces tangentially providing strength and durability.

## Button Inserts

Insert	Edge	IC	W	R	Grade	Coating				
						Uncoated	GLH	TCI	HM	
RPMH-44	D	.500"	.220"	.250"	DMK30	86300	86360	86390		
					DMK25	86200	86260	86290		
					DMP25	86400	86460	86490	86485	
	N	.500"	.220"	.250"	DMK30	87000	87060	87090	87085	
					DMK25	86900	86960			
					DMP25	87100	87160	87190	87185	
	T	.500"	.220"	.250"	DMK15	86800	86860		86885	
					DMK30	86600	86660	86690	86685	
					DMP25	86700	86760	86790	86785	
RDCH-43*	D	.500"	.187"	.250"	DMK30	96500	96560	96590		
	T	.500"	.187"	.250"	DMP25	96700	96760	96790		

\* Ground insert.

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



## Octagonal Inserts

Insert	Edge	IC	W	R	Ap	Grade	Coating				
							Uncoated	GLH	TCI	HM	
OPMH-442	D	.500"	.220"	.031"	.135"	DMK30	90200	90260	90290		
						DMK25	90100	90160			
						DMP25	90300	90360			
	N	.500"	.220"	.031"	.135"	DMK25	90800	90860			
						DMP25	91000	91060	91090	87185	
						DMP25	90600	90660	90690		
	T	.500"	.220"	.031"	.135"	DMK15	90400	90460		90485	

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

# 1/2" Series Accessories

EDP	Part Number	Description
83050	TRS-4	1 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 TORX T-Handle Wrench
41110	ASG-120	Anti-Seize Grease



HIGH-FEED

SQUARE SHOULDER

BUTTON / FACE

BALL NOSE / BACK DRAFT

SUPPORTING TOOLS & INFO



# 1/2" Series Recommended Cutting Parameters

Style	Edge	Grade	Coating	Speed / Feed	Low-Carbon Steel	Alloy Steel	Tool Steels	Medium Hardened Steel (36-48 Rc)	Hardened Steel (> 48 Rc)	
OPMH-442	D	DMK30	TCI	Speed	<b>500-800</b>	<b>400-700</b>	250-450			
				Feed	<b>.003-.014</b>	<b>.003-.013</b>	.003-.010			
			GLH	Speed	<b>700-1000</b>	<b>500-900</b>	<b>250-550</b>			
				Feed	<b>.003-.014</b>	<b>.003-.013</b>	<b>.003-.010</b>			
		HM	Speed	700-1000	500-900	<b>250-550</b>				
			Feed	.003-.014	.003-.013	<b>.003-.010</b>				
		DMK25	GLH	Speed	700-1000	500-900	250-650			
				Feed	.003-.012	.003-.010	.003-.010			
			HM	Speed	700-1000	500-900	250-650			
				Feed	.003-.012	.003-.010	.003-.010			
		DMP25	TCI	Speed	<b>500-900</b>	<b>400-800</b>	350-550	300-450		
				Feed	<b>.003-.013</b>	<b>.003-.012</b>	.003-.010	.003-.009		
	GLH		Speed	<b>700-1200</b>	<b>500-900</b>	<b>350-650</b>	300-500			
			Feed	<b>.003-.013</b>	<b>.003-.012</b>	<b>.003-.010</b>	.003-.009			
	N	DMK25	GLH	Speed	700-1000	500-900	250-650			
				Feed	.003-.012	.003-.010	.003-.010			
			TCI	Speed	<b>500-900</b>	<b>400-800</b>	350-550	300-450		
				Feed	<b>.005-.015</b>	<b>.005-.015</b>	.005-.013	.004-.012		
		DMP25	GLH	Speed	<b>700-1200</b>	<b>500-900</b>	<b>350-650</b>	<b>300-500</b>		
				Feed	<b>.005-.015</b>	<b>.005-.015</b>	<b>.005-.013</b>	<b>.004-.012</b>		
			HM	Speed	700-1200	500-900	<b>350-650</b>	<b>300-500</b>		
				Feed	.005-.015	.005-.015	<b>.005-.013</b>	<b>.004-.012</b>		
		T	DMP25	TCI	Speed	<b>500-900</b>	<b>400-800</b>	350-550	300-450	
					Feed	<b>.005-.015</b>	<b>.005-.015</b>	.005-.013	.004-.012	
GLH				Speed	<b>700-1200</b>	<b>500-900</b>	<b>350-650</b>	<b>300-500</b>		
				Feed	<b>.005-.015</b>	<b>.005-.015</b>	<b>.005-.013</b>	<b>.004-.012</b>		
DMK15	GLH		Speed	700-1200	500-900	350-650	<b>300-500</b>	<b>250-450</b>		
			Feed	.004-.014	.004-.013	.004-.012	<b>.003-.010</b>	<b>.003-.008</b>		
	HM		Speed	700-1200	500-900	350-650	<b>300-500</b>	<b>250-450</b>		
			Feed	.004-.014	.004-.013	.004-.012	<b>.003-.010</b>	<b>.003-.008</b>		

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- › 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	Ni Co-Based Alloys	9 Series Inconel	Titanium	Copper Alloys	Aluminum / Non-Ferrous
<b>300-500</b>	<b>400-800</b>	250-450	500-800	400-700				400-900	
<b>.003-.012</b>	<b>.003-.014</b>	.003-.010	.003-.014	.003-.013				.003-.010	
<b>300-600</b>	<b>500-900</b>	<b>250-500</b>	600-1000	500-900	<b>55-90</b>	<b>35-65</b>	<b>120-180</b>	400-900	
<b>.003-.012</b>	<b>.003-.014</b>	<b>.003-.010</b>	.003-.014	.003-.013	<b>.002-.007</b>	<b>.002-.006</b>	<b>.003-.008</b>	.003-.010	
300-600	<b>500-900</b>	<b>250-500</b>	600-1000	500-900	<b>55-90</b>	<b>35-65</b>	<b>120-180</b>		
.003-.012	<b>.003-.014</b>	<b>.003-.010</b>	.003-.014	.003-.013	<b>.002-.007</b>	<b>.002-.006</b>	<b>.003-.008</b>		
300-600	500-900	250-500	<b>600-1000</b>	<b>500-900</b>	55-90	35-65	120-180	<b>400-900</b>	
.003-.010	.003-.012	.003-.009	<b>.003-.013</b>	<b>.003-.012</b>	.002-.007	.002-.006	.003-.008	<b>.003-.013</b>	
300-600	500-900	250-500	<b>600-1000</b>	<b>500-900</b>	55-90	35-65	120-180		
.003-.010	.003-.012	.003-.009	<b>.003-.013</b>	<b>.003-.012</b>	.002-.007	.002-.006	.003-.008		
			600-900	<b>500-800</b>					
			.003-.013	<b>.003-.012</b>					
			600-1000	<b>500-900</b>					
			.003-.013	<b>.003-.012</b>					
	500-900	250-500	600-1000	<b>500-900</b>					
	.003-.012	.003-.009	.003-.013	<b>.003-.012</b>					
			600-900	<b>500-800</b>					
			.005-.015	<b>.005-.015</b>					
			<b>600-1000</b>	<b>500-900</b>					
			<b>.005-.015</b>	<b>.005-.015</b>					
			600-1000	<b>500-900</b>					
			.005-.015	<b>.005-.015</b>					
			600-900	<b>500-800</b>					
			.005-.015	<b>.005-.015</b>					
			600-1000	<b>500-900</b>					
			.005-.015	<b>.005-.015</b>					
			<b>700-1200</b>	<b>600-900</b>					
			<b>.005-.015</b>	<b>.005-.015</b>					
			<b>700-1200</b>	<b>600-900</b>					
			<b>.005-.015</b>	<b>.005-.015</b>					

HIGH-FEED

SQUARE SHOULDER

BUTTON / FACE

BALL NOSE / BACK DRAFT

SUPPORTING TOOLS & INFO

# 1/2" Series Recommended Cutting Parameters

Style	Edge	Grade	Coating	Speed / Feed	Low-Carbon Steel	Alloy Steel	Tool Steels	Medium Hardened Steel (36-48 Rc)	Hardened Steel (> 48 Rc)
RPMH-44	D	DMK30	TCI	Speed	<b>500-800</b>	<b>400-700</b>	250-450		
				Feed	<b>.007-.020</b>	<b>.005-.015</b>	.005-.012		
			GLH	Speed	<b>700-1000</b>	<b>500-800</b>	<b>250-600</b>		
				Feed	<b>.007-.020</b>	<b>.005-.015</b>	<b>.005-.012</b>		
		DMK25	TCI	Speed	500-900	400-800	350-550		
				Feed	.007-.020	.005-.015	.005-.012		
			GLH	Speed	700-1200	500-900	350-650		
				Feed	.007-.020	.005-.015	.005-.012		
		DMP25	TCI	Speed	<b>500-900</b>	<b>400-800</b>	350-550		
				Feed	<b>.007-.020</b>	<b>.005-.015</b>	.005-.012		
			GLH	Speed	<b>700-1200</b>	<b>500-900</b>	<b>350-650</b>		
				Feed	<b>.007-.020</b>	<b>.005-.015</b>	<b>.005-.012</b>		
	HM	Speed	700-1200	500-900	<b>350-650</b>				
		Feed	.007-.020	.005-.015	<b>.005-.012</b>				
	N	DMK30	TCI	Speed	<b>500-800</b>	<b>400-700</b>	250-600		
				Feed	<b>.007-.020</b>	<b>.007-.020</b>	.005-.015		
			GLH	Speed	<b>700-1000</b>	<b>500-800</b>	<b>250-600</b>		
				Feed	<b>.007-.020</b>	<b>.007-.020</b>	<b>.005-.015</b>		
			HM	Speed	700-1000	500-800	<b>250-600</b>		
				Feed	.007-.020	.007-.020	<b>.005-.015</b>		
		DMK25	GLH	Speed	700-1200	500-900	350-650	300-500	
				Feed	.007-.020	.007-.020	.005-.015	.004-.012	
		DMP25	TCI	Speed	<b>500-900</b>	<b>400-800</b>	350-550	300-450	
				Feed	<b>.007-.020</b>	<b>.007-.020</b>	.005-.015	.004-.012	
GLH			Speed	<b>700-1200</b>	<b>500-900</b>	<b>350-650</b>	<b>300-500</b>		
			Feed	<b>.007-.020</b>	<b>.007-.020</b>	<b>.005-.015</b>	<b>.004-.012</b>		
HM	Speed	700-1200	500-900	<b>350-650</b>	<b>300-500</b>				
	Feed	.007-.020	.007-.020	<b>.005-.015</b>	<b>.004-.012</b>				
DMK15	GLH	Speed	700-1200	500-900	350-650	300-500			
		Feed	.007-.020	.007-.020	.005-.015	.004-.012			
T	DMK30	TCI	Speed	<b>500-800</b>	<b>400-700</b>	250-600			
			Feed	<b>.007-.020</b>	<b>.007-.020</b>	.005-.015			
		GLH	Speed	<b>700-1000</b>	<b>500-800</b>	<b>250-600</b>			
			Feed	<b>.007-.020</b>	<b>.007-.020</b>	<b>.005-.015</b>			
		HM	Speed	700-1000	500-800	<b>250-600</b>			
			Feed	.007-.020	.007-.020	<b>.005-.015</b>			
	DMP25	TCI	Speed	<b>500-900</b>	<b>400-800</b>	350-550	300-450		
			Feed	<b>.007-.020</b>	<b>.007-.020</b>	.005-.015	.004-.012		
		GLH	Speed	<b>700-1200</b>	<b>500-900</b>	<b>350-650</b>	<b>300-500</b>		
			Feed	<b>.007-.020</b>	<b>.007-.020</b>	<b>.005-.015</b>	<b>.004-.012</b>		
		HM	Speed	700-1200	500-900	<b>350-650</b>	<b>300-500</b>		
			Feed	.007-.020	.007-.020	<b>.005-.015</b>	<b>.004-.012</b>		
DMK15	TCI	Speed	500-900	400-800	350-550	300-450			
		Feed	.007-.020	.007-.020	.005-.015	.004-.012			
	GLH	Speed	700-1200	500-900	350-650	<b>300-500</b>	<b>250-450</b>		
		Feed	.007-.020	.007-.020	.005-.015	<b>.004-.012</b>	<b>.003-.012</b>		
	HM	Speed	700-1200	500-900	350-650	<b>300-500</b>	<b>250-450</b>		
		Feed	.007-.020	.007-.020	.005-.015	<b>.004-.012</b>	<b>.003-.012</b>		

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- › 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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HIGH-FEED

SQUARE SHOULDER

BUTTON / FACE

BALL NOSE / BACK DRAFT

SUPPORTING TOOLS & INFO

Austenitic Stainless	Ferritic / Martensitic Stainless	Tough PH Stainless	Gray Cast Iron	Ductile / Malleable	Ni Co-Based Alloys	9 Series Inconel	Titanium	Copper Alloys	Aluminum / Non-Ferrous
<b>300-500</b>	<b>400-800</b>	250-450	500-800	400-700				400-900	
<b>.005-.015</b>	<b>.005-.020</b>	.003-.012	.004-.020	.003-.015				.004-.015	
<b>300-600</b>	<b>500-900</b>	<b>250-500</b>	600-1000	500-900	<b>55-90</b>	<b>35-65</b>	<b>120-180</b>	400-900	
<b>.005-.015</b>	<b>.005-.020</b>	<b>.003-.012</b>	.004-.020	.003-.015	<b>.002-.006</b>	<b>.002-.005</b>	<b>.003-.007</b>	.004-.015	
			<b>600-900</b>	<b>500-800</b>				<b>400-900</b>	
			<b>.004-.020</b>	<b>.003-.015</b>				<b>.004-.015</b>	
			<b>600-1000</b>	<b>500-900</b>			120-180	<b>400-900</b>	
			<b>.004-.020</b>	<b>.003-.015</b>			.003-.007	<b>.004-.015</b>	
			600-900	<b>500-800</b>					
			.004-.020	<b>.003-.015</b>					
			600-1000	<b>500-900</b>					
			.004-.020	<b>.003-.015</b>					
			600-1000	<b>500-900</b>					
			.004-.020	<b>.003-.015</b>					
	<b>400-800</b>	250-450	500-800	400-700					
	<b>.005-.020</b>	.003-.012	.007-.020	.006-.020					
	<b>500-900</b>	<b>250-500</b>	600-1000	500-900					
	<b>.005-.020</b>	<b>.003-.012</b>	.007-.020	.006-.020					
	500-900	<b>250-500</b>	600-1000	500-900					
	.005-.020	<b>.003-.012</b>	.007-.020	.006-.020					
			<b>600-1000</b>	<b>500-900</b>					
			<b>.007-.020</b>	<b>.006-.020</b>					
			600-900	<b>500-800</b>					
			.007-.020	<b>.006-.020</b>					
			600-1000	<b>500-900</b>					
			.007-.020	<b>.006-.020</b>					
			600-1000	<b>500-900</b>					
			.007-.020	<b>.006-.020</b>					
			<b>700-1200</b>	<b>600-900</b>					
			<b>.007-.020</b>	<b>.006-.015</b>					
			500-800	400-700					
			.007-.020	.006-.020					
			600-1000	500-900					
			.007-.020	.006-.020					
			600-1000	500-900					
			.007-.020	<b>500-800</b>					
			.007-.020	<b>.006-.020</b>					
			600-1000	<b>500-900</b>					
			.007-.020	<b>.006-.020</b>					
			600-1000	<b>500-900</b>					
			.007-.020	<b>.006-.020</b>					
			<b>600-1000</b>	<b>600-900</b>					
			<b>.007-.020</b>	<b>.006-.020</b>					
			<b>700-1200</b>	<b>600-900</b>					
			<b>.007-.020</b>	<b>.006-.020</b>					
			<b>700-1200</b>	<b>600-900</b>					
			<b>.007-.020</b>	<b>.006-.020</b>					



# 1/2" Series Recommended Cutting Parameters

Style	Edge	Grade	Coating	Speed / Feed	Low-Carbon Steel	Alloy Steel	Tool Steels	Medium Hardened Steel (36-48 Rc)	Hardened Steel (> 48 Rc)
RDCH-43	D	DMK30	TCI	Speed	<b>500-800</b>	<b>400-700</b>	250-450		
				Feed	<b>.007-.020</b>	<b>.005-.015</b>	.005-.012		
			GLH	Speed	<b>700-1000</b>	<b>500-800</b>	<b>250-600</b>		
				Feed	<b>.007-.020</b>	<b>.005-.015</b>	<b>.005-.012</b>		
			Uncoated	Speed					
				Feed					
	T	DMP25	TCI	Speed	<b>500-900</b>	<b>400-800</b>	350-550	300-450	
				Feed	<b>.007-.020</b>	<b>.007-.020</b>	.005-.015	.004-.012	
			GLH	Speed	<b>700-1200</b>	<b>500-900</b>	<b>350-650</b>	<b>300-500</b>	
				Feed	<b>.007-.020</b>	<b>.007-.020</b>	<b>.005-.015</b>	<b>.004-.012</b>	

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- › 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	Ni Co-Based Alloys	9 Series Inconel	Titanium	Copper Alloys	Aluminum / Non-Ferrous
<b>300-500</b>	<b>400-800</b>	250-450	500-800	400-700					
<b>.005-.015</b>	<b>.005-.020</b>	.003-.012	.004-.020	.003-.015					
<b>300-600</b>	<b>500-900</b>	<b>250-500</b>	600-1000	500-900	<b>55-90</b>	<b>35-65</b>	<b>120-180</b>	<b>400-900</b>	<b>1200+ (Cast)</b>
<b>.005-.015</b>	<b>.005-.020</b>	<b>.003-.012</b>	.004-.020	.003-.015	<b>.002-.006</b>	<b>.002-.005</b>	<b>.003-.007</b>	<b>.003-.012</b>	<b>.007-.020</b>
									<b>1500+</b>
									<b>.010-.020</b>
			600-900	<b>500-800</b>					
			.007-.020	<b>.006-.020</b>					
			600-1000	<b>500-900</b>					
			.007-.020	<b>.006-.020</b>					

HIGH-FEED

SQUARE SHOULDER

BUTTON / FACE

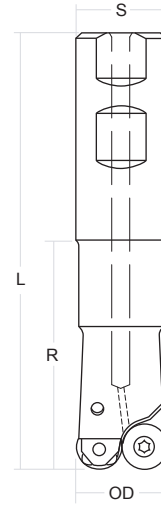
BALL NOSE / BACK DRAFT

SUPPORTING TOOLS & INFO

# 5/8" Series Cutter Bodies

## End Mills

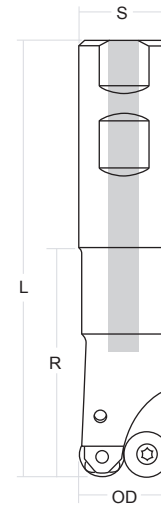
EDP	OD	Description	R Effective Length	L Overall Length	S Shank Dia.	Flutes	Insert	
80150	1.250"	TREM125-300-R5-2C	3.000"	5.250"	1.250"	2	Button	Octagonal



## Carbide Core End Mills

EDP	OD	Description	R Effective Length	L Overall Length	S Shank Dia.	Flutes	Insert	
80490	1.250"	CC-TREM125-500-R5-2	5.000"	7.250"	1.250"	2	Button	Octagonal

EDP # 80490 does not include coolant thru.



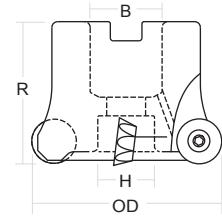
# 5/8" Series Cutter Bodies

## Shell Mills

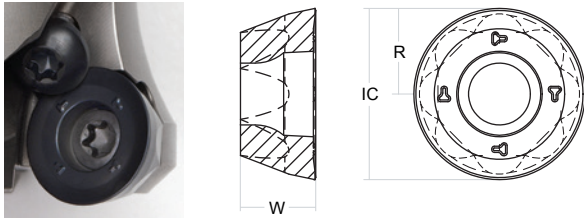
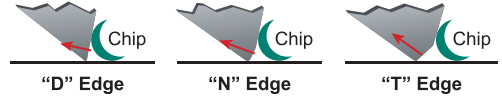
EDP	OD	Description	R Effective Length	B Arbor Dia.	H Counter Bore Dia.	Flutes	Insert	
80740	2.000"	TRSM200-075-R5-3C	1.500"	.750"	.590"	3	Button	Octagonal
80780	2.500"	TRSM250-100-R5-4C	2.000"	1.000"	.790"	4	Button	Octagonal
80830	3.000"	TRSM300-100-R5-5C	2.000"	1.000"	.790"	5	Button	Octagonal
80840	3.430"	TRSM343-100-R5-5	2.000"	1.000"	.790"	5	Button	Octagonal
80890	4.000"	TRSM400-150-R5-6	2.000"	1.500"	2.060"	6	Button	Octagonal
80900*	4.430"	TRSM443-150-R5-6	2.000"	1.500"	2.060"	6	Button	Octagonal
80960*	5.000"	TRSM500-150-R5-8	2.000"	1.500"	2.060"	8	Button	Octagonal
81000	6.000"	TRSM600-200-R5-10	2.000"	2.000"	2.875"	10	Button	Octagonal
81010	6.430"	TRSM643-200-R5-10	2.000"	2.000"	2.875"	10	Button	Octagonal

\* Non-stock standard – made to order.

EDP # 80840, 80890, 80900, 80960, 81000, and 81010 do not include coolant thru.



# 5/8" Series Inserts



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

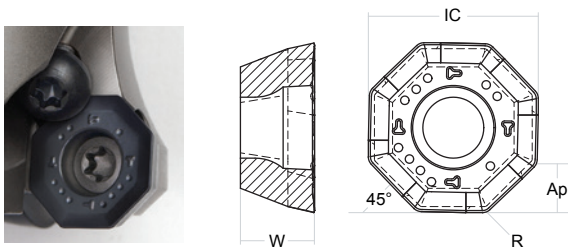
**"N" Edge:** Enhanced-Flat, T-land insert face combines strength and shear.

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

## Button Inserts

Insert	Edge	IC	W	R	Grade	Coating				
						Uncoated	GLH	TCI	HM	
RPMH-54	D	.625"	.220"	.312"	DMK30	87400	87460			
					DMK25	87300	87360			
	N	.625"	.220"	.312"	DMK30	88100	88160	88190	87085	
					DMK25	88000	88060			
					DMP25	88200	88260	88290	87185	
	T	.625"	.220"	.312"	DMK30	87700	87760	87790	86685	
DMP25					87800	87860	87890	86785		

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



## Octagonal Inserts

Insert	Edge	IC	W	R	Ap	Grade	Coating				
							Uncoated	GLH	TCI	HM	
OPMH-544	D	.625"	.220"	.062"	.165"	DMK30	91300	91360	91390		
						DMP25	91400	91460			
						DMK15	91100	91160			
	N	.625"	.220"	.062"	.165"	DMK30	92000	92060	92090		
						DMK15	91800	91860			
	T	.625"	.220"	.062"	.165"	DMP25	91700	91760	91790		
DMK15						91500	91560		91585		
OXCH-534*	D	.625"	.187"	.062"	.165"	DMK30	98100	98160	98190		

\* Ground insert.

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

# 5/8" Series Accessories

EDP	Part Number	Description
83080	TRS-6	1 Insert Screw (Torque range: 40-50 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)
83020	T20-T	5 T20 TORX T-Handle Wrench
41110	ASG-120	Anti-Seize Grease



HIGH-FEED

SQUARE SHOULDER

BUTTON / FACE

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SUPPORTING TOOLS & INFO

# 5/8" Series Recommended Cutting Parameters

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OPMH-544	D	DMK30	TCI	Speed	<b>500-800</b>	<b>400-700</b>	250-450			
				Feed	<b>.003-.014</b>	<b>.003-.013</b>	.003-.010			
			GLH	Speed	<b>700-1000</b>	<b>500-900</b>	<b>250-550</b>			
				Feed	<b>.003-.014</b>	<b>.003-.013</b>	<b>.003-.010</b>			
		DMP25	GLH	Speed	<b>700-1200</b>	<b>500-900</b>	<b>350-650</b>	300-500		
				Feed	<b>.003-.013</b>	<b>.003-.012</b>	<b>.003-.010</b>	.003-.009		
		DMK15	GLH	Speed						
				Feed						
	N	DMK30	TCI	Speed	<b>500-800</b>	<b>400-700</b>	250-550			
				Feed	<b>.005-.015</b>	<b>.005-.015</b>	.005-.013			
			GLH	Speed	<b>700-1000</b>	<b>500-800</b>	<b>250-550</b>			
				Feed	<b>.005-.015</b>	<b>.005-.015</b>	<b>.005-.013</b>			
		DMK15	GLH	Speed	700-1200	500-900	350-650	300-500	250-450	
				Feed	.004-.014	.004-.013	.004-.012	.003-.010	.003-.008	
		T	DMP25	TCI	Speed	<b>500-900</b>	<b>400-800</b>	350-550	300-450	
					Feed	<b>.005-.015</b>	<b>.005-.015</b>	.005-.013	.004-.012	
	GLH			Speed	<b>700-1200</b>	<b>500-900</b>	<b>350-650</b>	<b>300-500</b>		
				Feed	<b>.005-.015</b>	<b>.005-.015</b>	<b>.005-.013</b>	<b>.004-.012</b>		
	DMK15		GLH	Speed	700-1200	500-900	350-650	<b>300-500</b>	<b>250-450</b>	
				Feed	.004-.014	.004-.013	.004-.012	<b>.003-.010</b>	<b>.003-.008</b>	
			HM	Speed	700-1200	500-900	350-650	<b>300-500</b>	<b>250-450</b>	
				Feed	.004-.014	.004-.013	.004-.012	<b>.003-.010</b>	<b>.003-.008</b>	
	OXCH-543	D	DMK30	TCI	Speed	<b>500-800</b>	<b>400-700</b>	250-450		
					Feed	<b>.003-.014</b>	<b>.003-.013</b>	.003-.010		
GLH				Speed	<b>700-1000</b>	<b>500-900</b>	<b>250-550</b>			
				Feed	<b>.003-.014</b>	<b>.003-.013</b>	<b>.003-.010</b>			
Uncoated				Speed						
				Feed						

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Continued on next page

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<b>300-500</b>	<b>400-800</b>	250-450	500-800	400-700				400-900	
<b>.003-.012</b>	<b>.003-.014</b>	.003-.010	.003-.014	.003-.013				.003-.010	
<b>300-600</b>	<b>500-900</b>	<b>250-500</b>	600-1000	500-900	<b>55-90</b>	<b>35-65</b>	<b>120-180</b>	400-900	
<b>.003-.012</b>	<b>.003-.014</b>	<b>.003-.010</b>	.003-.014	.003-.013	<b>.002-.007</b>	<b>.002-.006</b>	<b>.003-.008</b>	.003-.010	
			600-1000	<b>500-900</b>					
			.003-.013	<b>.003-.012</b>					
			<b>600-1000</b>	<b>500-900</b>				<b>400-900</b>	<b>1000+ (Cast)</b>
			<b>.003-.013</b>	<b>.003-.012</b>				<b>.003-.013</b>	<b>.007-.020</b>
	<b>400-800</b>	250-450	500-800	400-700					
	<b>.003-.013</b>	.003-.010	.005-.015	.005-.015					
	<b>500-900</b>	<b>250-500</b>	600-1000	500-900					
	<b>.003-.013</b>	<b>.003-.010</b>	.005-.015	.005-.015					
			<b>700-1200</b>	<b>600-900</b>					
			<b>.005-.015</b>	<b>.005-.015</b>					
			600-900	<b>500-800</b>					
			.005-.015	<b>.005-.015</b>					
			600-1000	<b>500-900</b>					
			.005-.015	<b>.005-.015</b>					
			<b>700-1200</b>	<b>600-900</b>					
			<b>.005-.015</b>	<b>.005-.015</b>					
			<b>700-1200</b>	<b>600-900</b>					
			<b>.005-.015</b>	<b>.005-.015</b>					
<b>300-500</b>	<b>400-800</b>	250-450	500-800	400-700				<b>400-900</b>	
<b>.003-.012</b>	<b>.003-.014</b>	.003-.010	.003-.014	.003-.013				<b>.003-.010</b>	
<b>300-600</b>	<b>500-900</b>	<b>250-500</b>	600-1000	500-900	<b>55-90</b>	<b>35-65</b>	<b>120-180</b>	400-900	<b>1000+ (Cast)</b>
<b>.003-.012</b>	<b>.003-.014</b>	<b>.003-.010</b>	.003-.014	.003-.013	<b>.002-.007</b>	<b>.002-.006</b>	<b>.003-.008</b>	<b>.003-.010</b>	<b>.007-.020</b>
									<b>1500+</b>
									<b>.007-.020</b>



# 5/8" Series Recommended Cutting Parameters

Style	Edge	Grade	Coating	Speed / Feed	Low-Carbon Steel	Alloy Steel	Tool Steels	Medium Hardened Steel (36-48 Rc)	Hardened Steel (> 48 Rc)
RPMH-54	D	DMK30	GLH	Speed	<b>700-1000</b>	<b>500-800</b>	<b>250-600</b>		
				Feed	<b>.007-.020</b>	<b>.005-.015</b>	<b>.005-.012</b>		
		DMK25	GLH	Speed	700-1200	500-900	350-650		
				Feed	.007-.020	.005-.015	.005-.012		
	N	DMK30	TCI	Speed	<b>500-800</b>	<b>400-700</b>	250-600		
				Feed	<b>.007-.020</b>	<b>.007-.020</b>	.005-.015		
			GLH	Speed	<b>700-1000</b>	<b>500-800</b>	<b>250-600</b>		
				Feed	<b>.007-.020</b>	<b>.007-.020</b>	<b>.005-.015</b>		
		DMK25	GLH	Speed	700-1200	500-900	350-650	300-500	
				Feed	.007-.020	.007-.020	.005-.015	.004-.012	
			TCI	Speed	<b>500-900</b>	<b>400-800</b>	350-550	300-450	
				Feed	<b>.007-.020</b>	<b>.007-.020</b>	.005-.015	.004-.012	
		DMP25	GLH	Speed	<b>700-1200</b>	<b>500-900</b>	<b>350-650</b>	<b>300-500</b>	
				Feed	<b>.007-.020</b>	<b>.007-.020</b>	<b>.005-.015</b>	<b>.004-.012</b>	
			HM	Speed	700-1200	500-900	<b>350-650</b>	<b>300-500</b>	
				Feed	.007-.020	.007-.020	<b>.005-.015</b>	<b>.004-.012</b>	
	T	DMK30	TCI	Speed	<b>500-800</b>	<b>400-700</b>	250-600		
				Feed	<b>.007-.020</b>	<b>.007-.020</b>	.005-.015		
			GLH	Speed	<b>700-1000</b>	<b>500-800</b>	<b>250-600</b>		
				Feed	<b>.007-.020</b>	<b>.007-.020</b>	<b>.005-.015</b>		
		DMP25	TCI	Speed	<b>500-900</b>	<b>400-800</b>	350-550	300-450	
				Feed	<b>.007-.020</b>	<b>.007-.020</b>	.005-.015	.004-.012	
			GLH	Speed	<b>700-1200</b>	<b>500-900</b>	<b>350-650</b>	<b>300-500</b>	
				Feed	<b>.007-.020</b>	<b>.007-.020</b>	<b>.005-.015</b>	<b>.004-.012</b>	
HM		Speed	700-1200	500-900	<b>350-650</b>	<b>300-500</b>			
		Feed	.007-.020	.007-.020	<b>.005-.015</b>	<b>.004-.012</b>			

- › **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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application information



HIGH-FEED

SQUARE SHOULDER

BUTTON / FACE

BALL NOSE / BACK DRAFT

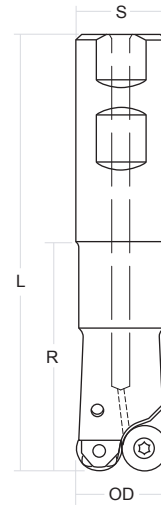
SUPPORTING TOOLS & INFO

Austenitic Stainless	Ferritic / Martensitic Stainless	Tough PH Stainless	Gray Cast Iron	Ductile / Malleable	Ni Co-Based Alloys	9 Series Inconel	Titanium	Copper Alloys	Aluminum / Non-Ferrous
<b>300-600</b>	<b>500-900</b>	<b>250-500</b>	600-1000	500-900	<b>55-90</b>	<b>35-65</b>	<b>120-180</b>	400-900	
<b>.005-.015</b>	<b>.005-.020</b>	<b>.003-.012</b>	.004-.020	.003-.015	<b>.002-.006</b>	<b>.002-.005</b>	<b>.003-.007</b>	.004-.015	
			<b>600-1000</b>	<b>500-900</b>			120-180	<b>400-900</b>	
			<b>.004-.020</b>	<b>.003-.015</b>			.003-.007	<b>.004-.015</b>	
	<b>400-800</b>	250-450	500-800	400-700					
	<b>.005-.020</b>	.003-.012	.007-.020	.006-.020					
	<b>500-900</b>	<b>250-500</b>	600-1000	500-900					
	<b>.005-.020</b>	<b>.003-.012</b>	.007-.020	.006-.020					
			<b>600-1000</b>	<b>500-900</b>					
			<b>.007-.020</b>	<b>.006-.020</b>					
			600-900	<b>500-800</b>					
			.007-.020	<b>.006-.020</b>					
			600-1000	<b>500-900</b>					
			.007-.020	<b>.006-.020</b>					
			600-1000	<b>500-900</b>					
			.007-.020	<b>.006-.020</b>					
			500-800	400-700					
			.007-.020	.006-.020					
			600-1000	500-900					
			.007-.020	.006-.020					
			600-900	<b>500-800</b>					
			.007-.020	<b>.006-.020</b>					
			600-1000	<b>500-900</b>					
			.007-.020	<b>.006-.020</b>					
			600-1000	<b>500-900</b>					
			.007-.020	<b>.006-.020</b>					

# 3/4" Series Cutter Bodies

## End Mills

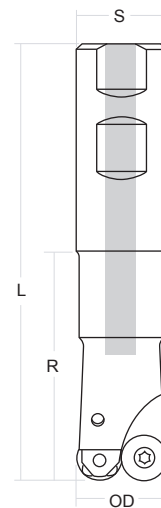
EDP	OD	Description	R Effective Length	L Overall Length	S Shank Dia.	Flutes	Insert	
80180	1.500"	TREM150-350-R6-2C	3.500"	6.190"	1.500"	2	Button	Octagonal



## Carbide Core End Mills

EDP	OD	Description	R Effective Length	L Overall Length	S Shank Dia.	Flutes	Insert	
80505	1.500"	CC-TREM150-550-R6-2	5.500"	8.190"	1.500"	2	Button	Octagonal

EDP # 80505 does not include coolant thru.

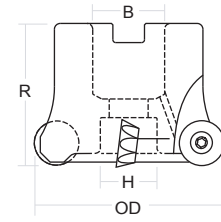


# 3/4" Series Cutter Bodies

## Shell Mills

EDP	OD	Description	R Effective Length	B Arbor Dia.	H Counter Bore Dia.	Flutes	Insert	
80850C	3.000"	TRSM300-100-R6-4C	2.000"	1.000"	.790"	4	Button	Octagonal
80860	3.500"	TRSM350-100-R6-4	2.000"	1.000"	.790"	4	Button	Octagonal
80920	4.500"	TRSM450-150-R6-6	2.000"	1.500"	2.060"	6	Button	Octagonal
81040	6.500"	TRSM650-200-R6-8	2.000"	2.000"	2.875"	8	Button	Octagonal
80620	8.440"	TRSM850-FM-R6-10 FLANGE MOUNTED	2.380"	2.500"	4.0" B/C	10	Button	Octagonal

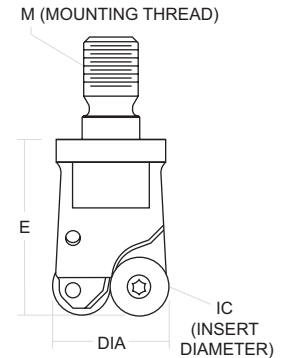
EDP # 80860, 80920, 81040, and 80620 do not include coolant thru.



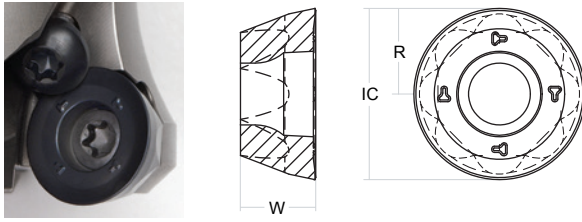
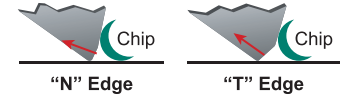
## Modular Heads

EDP	Dia.	Description	M Thread	E Effective Length	Flutes	Wrench	Insert	
SY00080	1.500"	TREM150-MOD-R6-2	M16	1.75"	2	15/16"	Button	Octagonal

EDP # SY0080 does not include coolant thru.



# 3/4" Series Inserts



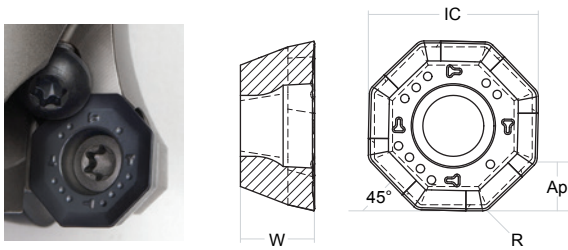
**"N" Edge:** Enhanced-Flat, T-land insert face combines strength and shear.

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

## Button Inserts

Insert	Edge	IC	W	R	Grade	Coating				
						Uncoated	GLH	TCI		
RPMH-64	N	.750"	.220"	.375"	DMK25	89100	89160			
					DMP25	89300	89360			
	T	.750"	.220"	.375"	DMK30	88800	88860			
					DMP25	88900	88960	88990		

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



## Octagonal Inserts

Insert	Edge	IC	W	R	Ap	Grade	Coating				
							Uncoated	GLH			
OPMH-644	N	.750"	.220"	.062"	.200"	DMK30	93100	93160			
						DMK25	93000	93060			
						DMK15	92900	92960			
	T	.750"	.220"	.062"	.200"	DMK30	92700	92760			
						DMP25	92800	92860			
						DMK15	92600	92660			
OXCH-634*	T	.750"	.187"	.062"	.200"	DMK15	98600	98660			

\* Ground insert.

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

# 3/4" Series Accessories

EDP	Part Number	Description
83080	TRS-6	1 Insert Screw (Torque range: 40-50 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)
83020	T20-T	5 T20 TORX T-Handle Wrench
41110	ASG-120	Anti-Seize Grease



HIGH-FEED

SQUARE SHOULDER

BUTTON / FACE

BALL NOSE / BACK DRAFT

SUPPORTING TOOLS & INFO

# 3/4" Series Recommended Cutting Parameters

Style	Edge	Grade	Coating	Speed / Feed	Low-Carbon Steel	Alloy Steel	Tool Steels	Medium Hardened Steel (36-48 Rc)	Hardened Steel (> 48 Rc)
OPMH-644	N	DMK30	GLH	Speed	<b>700-1000</b>	<b>500-800</b>	<b>250-550</b>		
				Feed	<b>.005-.015</b>	<b>.005-.015</b>	<b>.005-.013</b>		
		DMK25	GLH	Speed	700-1000	500-900	250-650		
				Feed	.003-.012	.003-.010	.003-.010		
		DMK15	GLH	Speed	700-1200	500-900	350-650	300-500	250-450
				Feed	.004-.014	.004-.013	.004-.012	.003-.010	.003-.008
	T	DMK30	GLH	Speed	<b>700-1000</b>	<b>500-800</b>	250-550		
				Feed	<b>.005-.015</b>	<b>.005-.015</b>	.005-.013		
		DMP25	GLH	Speed	<b>700-1200</b>	<b>500-900</b>	<b>350-650</b>	<b>300-500</b>	
				Feed	<b>.005-.015</b>	<b>.005-.015</b>	<b>.005-.013</b>	<b>.004-.012</b>	
		DMK15	GLH	Speed	700-1200	500-900	350-650	<b>300-500</b>	<b>250-450</b>
				Feed	.004-.014	.004-.013	.004-.012	<b>.003-.010</b>	<b>.003-.008</b>
OXCH-634	T	DMK15	GLH	Speed	700-1200	500-900	350-650	<b>300-500</b>	<b>250-450</b>
				Feed	.004-.014	.004-.013	.004-.012	<b>.003-.010</b>	<b>.003-.008</b>

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- › 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	Ni Co-Based Alloys	9 Series Inconel	Titanium	Copper Alloys	Aluminum / Non-Ferrous
	<b>500-900</b>	<b>250-500</b>	600-1000	500-900					
	<b>.003-.013</b>	<b>.003-.010</b>	.005-.015	.005-.015					
	500-900	250-500	<b>600-1000</b>	<b>500-900</b>					
	.003-.012	.003-.009	<b>.003-.013</b>	<b>.003-.012</b>					
			<b>700-1200</b>	<b>600-900</b>					
			<b>.005-.015</b>	<b>.005-.015</b>					
			600-1000	500-900					
			.005-.015	.005-.015					
			600-1000	<b>500-900</b>					
			.005-.015	<b>.005-.015</b>					
			<b>700-1200</b>	<b>600-900</b>					
			<b>.005-.015</b>	<b>.005-.015</b>					
			<b>700-1200</b>	<b>600-900</b>					
			<b>.005-.015</b>	<b>.005-.015</b>					

HIGH-FEED

SQUARE SHOULDER

BUTTON / FACE

BALL NOSE / BACK DRAFT

SUPPORTING TOOLS & INFO



# 3/4" Series Recommended Cutting Parameters

Style	Edge	Grade	Coating	Speed / Feed	Low-Carbon Steel	Alloy Steel	Tool Steels	Medium Hardened Steel (36-48 Rc)	Hardened Steel (> 48 Rc)
RPMH-64	N	DMK25	GLH	Speed	700-1200	500-900	350-650	300-500	
				Feed	.007-.020	.007-.020	.005-.015	.004-.012	
		DMP25	GLH	Speed	<b>700-1200</b>	<b>500-900</b>	<b>350-650</b>	<b>300-500</b>	
				Feed	<b>.007-.020</b>	<b>.007-.020</b>	<b>.005-.015</b>	<b>.004-.012</b>	
	T	DMK30	GLH	Speed	<b>700-1000</b>	<b>500-800</b>	<b>250-600</b>		
				Feed	<b>.007-.020</b>	<b>.007-.020</b>	<b>.005-.015</b>		
		DMP25	TCI	Speed	<b>500-900</b>	<b>400-800</b>	350-550	300-450	
				Feed	<b>.007-.020</b>	<b>.007-.020</b>	.005-.015	.004-.012	
			GLH	Speed	<b>700-1200</b>	<b>500-900</b>	<b>350-650</b>	<b>300-500</b>	
				Feed	<b>.007-.020</b>	<b>.007-.020</b>	<b>.005-.015</b>	<b>.004-.012</b>	

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Austenitic Stainless	Ferritic / Martensitic Stainless	Tough PH Stainless	Gray Cast Iron	Ductile / Malleable	Ni Co-Based Alloys	9 Series Inconel	Titanium	Copper Alloys	Aluminum / Non-Ferrous
			<b>600-1000</b>	<b>500-900</b>					
			<b>.007-.020</b>	<b>.006-.020</b>					
			600-1000	<b>500-900</b>					
			.007-.020	<b>.006-.020</b>					
			600-1000	500-900					
			.007-.020	.006-.020					
			600-900	<b>500-800</b>					
			.007-.020	<b>.006-.020</b>					
			600-1000	<b>500-900</b>					
			.007-.020	<b>.006-.020</b>					

HIGH-FEED

SQUARE SHOULDER

BUTTON / FACE

BALL NOSE / BACK DRAFT

SUPPORTING TOOLS & INFO

# 10mm Series Cutter Bodies

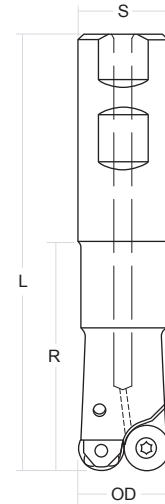
## Metric End Mills

EDP	OD	Description	R Effective Length	L Overall Length	S Shank Dia.	Flutes	Insert
82000	20mm	TREM20-50-R5-2	50mm	103mm	20mm	2	Button
82020	20mm	TREM20-75-R5-2C-WOF**	75mm	128mm	20mm	2	Button
82050	25mm	TREM25-65-R5-3	65mm	121mm	25mm	3	Button
82050C	25mm	TREM25-65-R5-3C	65mm	121mm	25mm	3	Button
82060	25mm	TREM25-115-R5-3	115mm	171mm	25mm	3	Button

\*\* Cylindrical shank – no Weldon flats.

EDP # 82000, 82050, and 82060 do not include coolant thru.

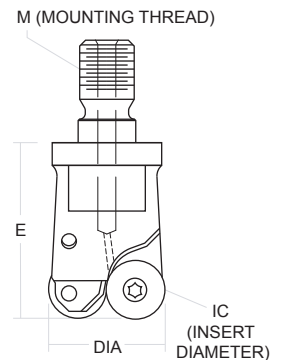
Additional cylindrical shank tools are available without Weldon Flats. // Contact Dapra for availability.



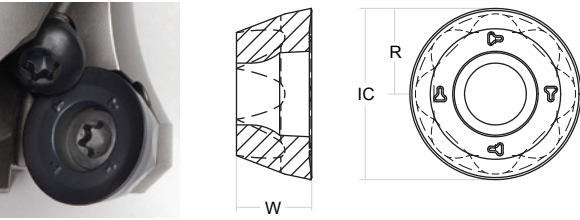
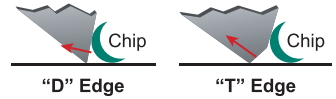
## Metric Modular Heads

EDP	OD	Description	M Thread	E Effective Length	IC	Flutes	Insert
82550	20mm	TREM20-MOD-R5-2C	M10	38mm	10mm	2	Button
82560*	25mm	TREM25-MOD-R5-2C	M12	38mm	10mm	2	Button
82565	25mm	TREM25-MOD-R5-3C	M12	38mm	10mm	3	Button

\* Non-stock standard – made to order.



# 10mm Series Inserts



**“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.

## Metric Button Inserts

Insert	Edge	IC	W	R	Grade	Coating			
						Uncoated	GLH	TCI	
RDCH-10	D	10mm	3.18mm	5mm	DMK30	99050	99080	99095	
					DMP25	99100	99130		
					DMK15	99000	99030		
	T	10mm	3.18mm	5mm	DMK30	99200	99230	99245	
					DMP25	99250	99280	99295	
					DMK15	99150	99180	99195	

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

# 10mm Series Accessories

EDP	Part Number	Description
83040	TRS-3	1 Insert Screw (Torque range: 1.5-1.7 nM)
83000	T8-F	2 T8 Flag-Style Wrench
41110	ASG-120	Anti-Seize Grease



# 10mm Series Recommended Cutting Parameters

Style	Edge	Grade	Coating	Speed / Feed	Low-Carbon Steel	Alloy Steel	Tool Steels	Medium Hardened Steel (36-48 Rc)	Hardened Steel (> 48 Rc)
RDCH-10	D	DMK30	TCI	Speed	<b>500-800</b>	<b>400-700</b>	250-450		
				Feed	<b>.003-.015</b>	<b>.003-.015</b>	.003-.012		
		GLH	Speed	<b>700-1000</b>	<b>500-800</b>	<b>250-600</b>			
			Feed	<b>.003-.015</b>	<b>.003-.015</b>	<b>.003-.012</b>			
		DMP25	GLH	Speed	<b>500-900</b>	<b>400-800</b>	<b>350-550</b>		
				Feed	<b>.003-.015</b>	<b>.003-.012</b>	<b>.003-.012</b>		
	DMK15	GLH	Speed						
			Feed						
	T	DMK30	TCI	Speed	<b>500-800</b>	<b>400-700</b>	250-450		
				Feed	<b>.003-.020</b>	<b>.003-.015</b>	.003-.012		
			GLH	Speed	<b>700-1000</b>	<b>500-800</b>	<b>250-600</b>		
				Feed	<b>.003-.020</b>	<b>.003-.015</b>	<b>.003-.012</b>		
		DMP25	TCI	Speed	<b>500-900</b>	<b>400-800</b>	350-550	300-450	
				Feed	<b>.004-.020</b>	<b>.004-.015</b>	.004-.012	.003-.012	
			GLH	Speed	<b>700-1200</b>	<b>500-900</b>	<b>350-650</b>	<b>300-500</b>	
				Feed	<b>.004-.020</b>	<b>.004-.015</b>	<b>.004-.012</b>	<b>.003-.012</b>	
		DMK15	TCI	Speed	500-900	400-800	350-550		
				Feed	.004-.020	.004-.015	.004-.012		
GLH			Speed	700-1200	500-900	350-650	<b>300-500</b>	<b>250-450</b>	
			Feed	.004-.020	.004-.015	.004-.012	<b>.003-.012</b>	<b>.003-.012</b>	

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

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HIGH-FEED

SQUARE SHOULDER

BUTTON / FACE

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SUPPORTING TOOLS & INFO

Austenitic Stainless	Ferritic / Martensitic Stainless	Tough PH Stainless	Gray Cast Iron	Ductile / Malleable	Ni Co-Based Alloys	9 Series Inconel	Titanium	Copper Alloys	Aluminum / Non-Ferrous
<b>300-500</b>	<b>400-800</b>	250-450	500-800	400-700				400-900	
<b>.004-.012</b>	<b>.004-.015</b>	.003-.012	.004-.020	.003-.015				.004-.015	
<b>300-600</b>	<b>500-900</b>	<b>250-500</b>	600-1000	500-900	<b>55-90</b>	<b>35-65</b>	<b>120-180</b>	400-900	1200+ (Cast)
<b>.004-.012</b>	<b>.004-.015</b>	<b>.003-.012</b>	.004-.020	.003-.015	<b>.002-.006</b>	<b>.002-.005</b>	<b>.003-.007</b>	.004-.015	.007-.020
			600-1000	<b>500-900</b>					
			.004-.015	<b>.003-.012</b>					
			<b>600-1000</b>	500-900				<b>400-900</b>	<b>1200+ (Cast)</b>
			<b>.004-.015</b>	.003-.012				<b>.004-.015</b>	<b>.007-.020</b>
			500-800	400-700					
			.004-.020	.003-.015					
			600-1000	500-900					
			.004-.020	.003-.015					
			500-800	<b>400-700</b>					
			.004-.020	<b>.003-.015</b>					
			600-1000	<b>500-900</b>					
			.004-.020	<b>.003-.015</b>					
			<b>500-800</b>	<b>400-700</b>					
			<b>.004-.020</b>	<b>.003-.015</b>					
			<b>600-1000</b>	<b>500-900</b>					
			<b>.004-.020</b>	<b>.003-.015</b>					

# 12mm Series Cutter Bodies

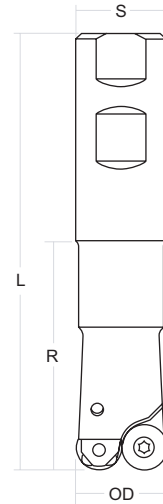
## Metric End Mills

EDP	OD	Description	R Effective Length	L Overall Length	S Shank Dia.	Flutes	Insert
82070	25mm	TREM25-65-R6-2	65mm	121mm	25mm	2	Button
82080	25mm	TREM25-115-R6-2	115mm	171mm	25mm	2	Button
82090	32mm	TREM32-75-R6-2	75mm	133mm	32mm	2	Button
82110	32mm	TREM32-130-R6-2-WOF**	130mm	184mm	32mm	2	Button

\*\* Cylindrical shank – no Weldon flats.

EDP # 82070, 82080, 82090, and 82110 do not include coolant thru.

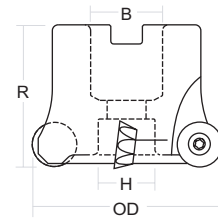
Additional cylindrical shank tools are available without Weldon Flats. // Contact Dapra for availability.



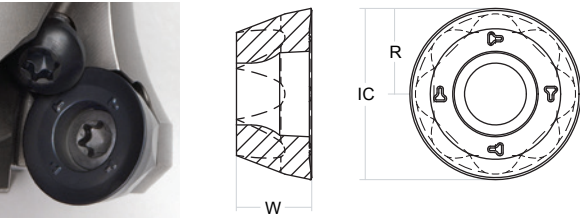
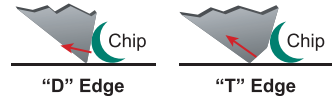
## Metric Shell Mills

EDP	OD	Description	R Effective Length	B Arbor Dia.	H Counter Bore Dia.	Flutes	Insert
82300	50mm	TRSM50-22-R6-4	38mm	22mm	10.4mm	4	Button
82310	63mm	TRSM63-27-R6-5	50mm	27mm	12.4mm	5	Button

EDP # 82300 and 82310 do not include coolant thru.



# 12mm Series Inserts



**“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.

## Metric Button Inserts

Insert	Edge	IC	W	R	Grade	Coating			
						Uncoated	GLH	TCI	
RDCH-12	D	12mm	4.75mm	6mm	DMK30	99350	99380		
					DMP25	99400	99430		
					DMK15	99300	99330		
	T	12mm	4.75mm	6mm	DMK30	99500	99530	99545	
					DMP25	99550	99580	99595	
					DMK15	99450	99480	99495	

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

# 12mm Series Accessories

EDP	Part Number	Description
83050	TRS-4	1 Insert Screw (Torque range: 3.5-4.0 nM)
83010	T15-T	2 T15 TORX T-Handle Wrench
41110	ASG-120	Anti-Seize Grease





# 12mm Series Recommended Cutting Parameters

Style	Edge	Grade	Coating	Speed / Feed	Low-Carbon Steel	Alloy Steel	Tool Steels	Medium Hardened Steel (36-48 Rc)	Hardened Steel (> 48 Rc)
RDCH-12	D	DMK30	GLH	Speed	<b>700-1000</b>	<b>500-800</b>	<b>250-600</b>		
				Feed	<b>.003-.020</b>	<b>.003-.015</b>	<b>.003-.012</b>		
		DMP25	GLH	Speed	<b>700-1200</b>	<b>500-900</b>	<b>350-650</b>		
				Feed	<b>.007-.020</b>	<b>.005-.015</b>	<b>.005-.012</b>		
		DMK15	GLH	Speed					
				Feed					
	T	DMK30	TCI	Speed	<b>500-800</b>	<b>400-700</b>	250-450		
				Feed	<b>.004-.020</b>	<b>.004-.020</b>	.004-.015		
			GLH	Speed	<b>700-1000</b>	<b>500-800</b>	<b>250-600</b>		
				Feed	<b>.004-.020</b>	<b>.004-.020</b>	<b>.004-.015</b>		
		DMP25	TCI	Speed	<b>500-900</b>	<b>400-800</b>	350-550	300-450	
				Feed	<b>.004-.020</b>	<b>.004-.020</b>	.004-.015	.003-.012	
			GLH	Speed	<b>700-1200</b>	<b>500-900</b>	<b>350-650</b>	<b>300-500</b>	
				Feed	<b>.004-.020</b>	<b>.004-.020</b>	<b>.004-.015</b>	<b>.003-.012</b>	
		DMK15	TCI	Speed	500-900	400-800	350-550		
				Feed	.004-.020	.004-.015	.004-.012		
GLH	Speed		700-1200	500-900	350-650	<b>300-500</b>	<b>250-450</b>		
	Feed		.004-.020	.004-.015	.004-.012	<b>.003-.012</b>	<b>.003-.012</b>		

- › **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 [dapra.com/TORref](http://dapra.com/TORref)  
for technical reference &  
application information



Austenitic Stainless	Ferritic / Martensitic Stainless	Tough PH Stainless	Gray Cast Iron	Ductile / Malleable	Ni Co-Based Alloys	9 Series Inconel	Titanium	Copper Alloys	Aluminum / Non-Ferrous
<b>300-600</b>	<b>500-900</b>	<b>250-500</b>	600-1000	500-900	<b>55-90</b>	<b>35-65</b>	<b>120-180</b>	<b>400-900</b>	<b>1200+ (Cast)</b>
<b>.004-.015</b>	<b>.004-.020</b>	<b>.003-.012</b>	.004-.020	.004-.015	<b>.002-.006</b>	<b>.002-.005</b>	<b>.003-.007</b>	<b>.004-.015</b>	<b>.007-.020</b>
			600-1000	<b>500-900</b>					
			.004-.015	<b>.004-.015</b>					
			<b>600-1000</b>	500-900				<b>400-900</b>	<b>1200+ (Cast)</b>
			<b>.004-.015</b>	.004-.015				<b>.004-.015</b>	<b>.007-.020</b>
			500-800	400-700					
			.004-.020	.004-.015					
			600-1000	500-900					
			.004-.020	.004-.015					
			500-800	<b>400-700</b>					
			.004-.020	<b>.004-.015</b>					
			600-1000	<b>500-900</b>					
			.004-.020	<b>.004-.015</b>					
			<b>500-800</b>	<b>400-700</b>					
			<b>.004-.020</b>	<b>.004-.015</b>					
			<b>600-1000</b>	<b>500-900</b>					
			<b>.004-.020</b>	<b>.004-.015</b>					

HIGH-FEED

SQUARE SHOULDER

BUTTON / FACE

BALL NOSE / BACK DRAFT

SUPPORTING TOOLS & INFO



# Button / Face Double-Sided Insert Platform



Visit [dapra.com/DTBref](https://dapra.com/DTBref)  
for technical reference &  
application information

## DOUBLE-SIDED BUTTON / FACE INSERT PLATFORM

12mm Series IM-113

- › EDGE<sup>2</sup> DTB inserts allow 12 usable indexes.
- › Inserts perform well in hardened steel applications.
- › Cutter bodies manufactured from hardened, high-shock tool steel for durability and tool life.

### CUTTER BODIES



**END MILLS**  
Steel  
Carbide Core,  
Long-Reach



**SHELL MILLS**  
Steel



**MODULAR HEADS**  
Steel

### INSERTS



**BUTTON**



Steel



Stainless



Iron



Super Alloys



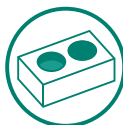
Hardened



Non-Ferrous



Face



Hole



Pocket



3D Profile

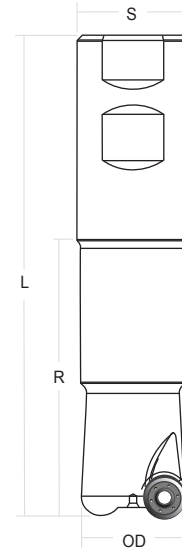


Chamfer

# 12mm Series Cutter Bodies

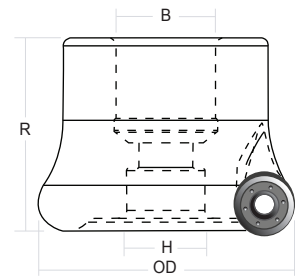
## End Mills

EDP	OD	Description	S Shank Dia.	L Overall Length	R Effective Length	Flutes
70060	1.250"	DTEM125-300-R4-3	3.00"	5.40"	1.25"	3
70080	1.500"	DTEM150-350-R4-3	3.50"	5.90"	1.25"	3



## Carbide Core, Long-Reach End Mills

EDP	OD	Description	S Shank Dia.	L Overall Length	R Effective Length	Flutes
70240	1.250"	CC-DTEM125-500-R4-3	5.00"	7.40"	1.25"	3
70260	1.500"	CC-DTEM150-550-R4-3	5.50"	7.90"	1.25"	3

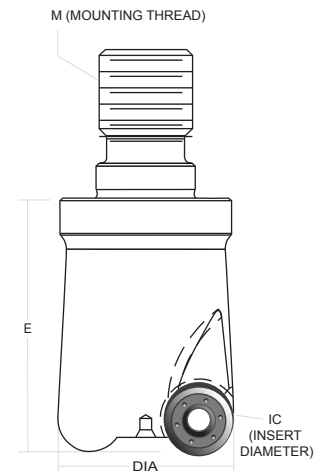


## Shell Mills

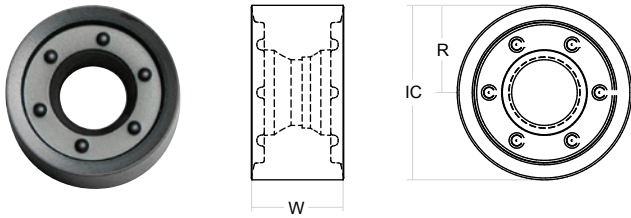
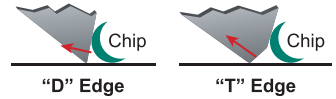
EDP	OD	Description	R Effective Length	B Arbor Dia.	H Counter Bore Dia.	Flutes
70120	2.000"	DTSM200-075-R4-5	1.50"	0.75"	0.59"	5
70140	2.500"	DTSM250-100-R4-6	1.75"	1.00"	0.79"	6
70160	3.000"	DTSM300-100-R4-7	2.00"	1.00"	0.79"	7
70180	4.000"	DTSM400-150-R4-8	2.25"	1.50"	1.10"	8
70180C	4.000"	DTSM400-150-R4-8C	2.25"	1.50"	1.10"	8

## Modular Heads

EDP	Dia.	Description	M Thread	E Effective Length	Flutes	Wrench
70340	1.250"	DTEM125-MOD-R4-2	M16	1.75"	2	15/16"
70360	1.500"	DTEM150-MOD-R4-2	M16	1.75"	2	15/16"



# 12mm Series Inserts



**“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.

## Button Inserts

Insert	Edge	IC	W	R	Grade	Coating				
						Uncoated	GLH	TCI	TS	HM
DTB-12	D	12mm	.250"	6mm	DMK30	70450	70460	70480	70485	70454
	T	12mm	.250"	6mm	DMK30	70600	70610	70630	70635	70625
					DMP25	70650	70660	70680	70695	70675
					DMK15	70550	70560	70580	70585	70575

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

# 12mm Series Accessories

EDP	Part Number	Description
83090	TRS-4L	1 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 TORX T-Handle Wrench
41110	ASG-120	Anti-Seize Grease



# 12mm Series Recommended Cutting Parameters

Style	Edge	Grade	Coating	Speed / Feed	Low-Carbon Steel	Alloy Steel	Tool Steels	Medium Hardened Steel (36-48 Rc)	Hardened Steel (> 48 Rc)
DTB-12	D	DMK30	TCI	Speed	<b>500-800</b>	<b>400-700</b>	250-450		
				Feed	<b>.007-.020</b>	<b>.005-.015</b>	.005-.012		
			GLH	Speed	<b>700-1000</b>	<b>500-800</b>	250-600		
				Feed	<b>.007-.020</b>	<b>.005-.015</b>	.005-.012		
			HM	Speed	700-1000	<b>500-800</b>	250-600		
				Feed	.007-.020	<b>.005-.015</b>	.005-.012		
			TS	Speed	700-1000	500-800	250-600		
				Feed	.007-.020	.005-.015	.005-.012		
	T	DMK30	TCI	Speed	<b>500-800</b>	400-700	250-600		
				Feed	<b>.007-.020</b>	.007-.020	.005-.015		
			GLH	Speed	<b>700-1000</b>	500-800	250-600		
				Feed	<b>.007-.020</b>	.007-.020	.005-.015		
			HM	Speed	700-1000	500-800	250-600		
				Feed	.007-.020	.007-.020	.005-.015		
			TS	Speed	700-1000	500-800	250-600		
				Feed	.007-.020	.007-.020	.005-.015		
		DMP25	TCI	Speed	<b>500-900</b>	<b>400-800</b>	350-550	300-450	
				Feed	<b>.007-.020</b>	<b>.007-.020</b>	.005-.015	.004-.012	
			GLH	Speed	<b>700-1200</b>	<b>500-900</b>	<b>350-650</b>	<b>300-500</b>	
				Feed	<b>.007-.020</b>	<b>.007-.020</b>	<b>.005-.015</b>	<b>.004-.012</b>	
			HM	Speed	700-1200	500-900	<b>350-650</b>	<b>300-500</b>	
				Feed	.007-.020	.007-.020	<b>.005-.015</b>	<b>.004-.012</b>	
			TS	Speed	700-1200	500-900	<b>350-650</b>	<b>300-500</b>	
				Feed	.007-.020	.007-.020	<b>.005-.015</b>	<b>.004-.012</b>	
DMK15	TCI	Speed	500-900	400-800	350-550	300-450			
		Feed	.007-.020	.007-.020	.005-.015	.004-.012			
	GLH	Speed	700-1200	500-900	<b>350-650</b>	<b>300-500</b>	<b>250-450</b>		
		Feed	.007-.020	.007-.020	<b>.005-.015</b>	<b>.004-.012</b>	<b>.003-.012</b>		
	HM	Speed	700-1200	500-900	<b>350-650</b>	<b>300-500</b>	<b>250-450</b>		
		Feed	.007-.020	.007-.020	<b>.005-.015</b>	<b>.004-.012</b>	<b>.003-.012</b>		
	TS	Speed	700-1200	500-900	<b>350-650</b>	<b>300-500</b>	<b>250-450</b>		
		Feed	.007-.020	.007-.020	<b>.005-.015</b>	<b>.004-.012</b>	<b>.003-.012</b>		

- › **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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HIGH-FEED

SQUARE SHOULDER

BUTTON / FACE

BALL NOSE / BACK DRAFT

SUPPORTING TOOLS & INFO

Austenitic Stainless	Ferritic / Martensitic Stainless	Tough PH Stainless	Gray Cast Iron	Ductile / Malleable	Ni Co-Based Alloys	9 Series Inconel	Titanium	Copper Alloys
<b>300-500</b>	<b>400-800</b>	250-450	500-800	400-700				<b>400-900</b>
<b>.005-.015</b>	<b>.005-.020</b>	.003-.012	.004-.020	.003-.015				<b>.004-.015</b>
<b>300-600</b>	<b>500-900</b>	<b>250-500</b>	600-1000	500-900	<b>55-90</b>	<b>35-65</b>	<b>120-180</b>	<b>400-900</b>
<b>.005-.015</b>	<b>.005-.020</b>	<b>.003-.012</b>	.004-.020	.003-.015	<b>.002-.006</b>	<b>.002-.005</b>	<b>.003-.007</b>	<b>.004-.015</b>
<b>300-600</b>	<b>500-900</b>	<b>250-500</b>	600-1000	500-900	<b>55-90</b>	<b>35-65</b>	<b>120-180</b>	
<b>.005-.015</b>	<b>.005-.020</b>	<b>.003-.012</b>	.004-.020	.003-.015	<b>.002-.006</b>	<b>.002-.005</b>	<b>.003-.007</b>	
<b>300-600</b>	<b>500-900</b>	<b>250-500</b>	600-1000	500-900	<b>55-90</b>	<b>35-65</b>	<b>120-180</b>	
<b>.005-.015</b>	<b>.005-.020</b>	<b>.003-.012</b>	.004-.020	.003-.015	<b>.002-.006</b>	<b>.002-.005</b>	<b>.003-.007</b>	
			500-800	400-700				
			.007-.020	.006-.020				
			600-1000	500-900				
			.007-.020	.006-.020				
			600-1000	500-900				
			.007-.020	.006-.020				
			600-1000	500-900				
			.007-.020	.006-.020				
			600-900	<b>500-800</b>				
			.007-.020	<b>.006-.020</b>				
			600-1000	<b>500-900</b>				
			.007-.020	<b>.006-.020</b>				
			600-1000	<b>500-900</b>				
			.007-.020	<b>.006-.020</b>				
			<b>600-1000</b>	<b>600-900</b>				
			<b>.007-.020</b>	<b>.006-.015</b>				
			<b>700-1200</b>	<b>600-900</b>				
			<b>.007-.020</b>	<b>.006-.015</b>				
			<b>700-1200</b>	<b>600-900</b>				
			<b>.007-.020</b>	<b>.006-.015</b>				
			<b>700-1200</b>	<b>600-900</b>				
			<b>.007-.020</b>	<b>.006-.015</b>				



# 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  $\frac{3}{4}$ " to  $1\text{-}\frac{1}{2}$ "
- › 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  $\frac{3}{4}$ " to  $1\text{-}\frac{1}{2}$ " modular heads)
- › Thru-coolant for delivery of air or coolant right at the cutting edge



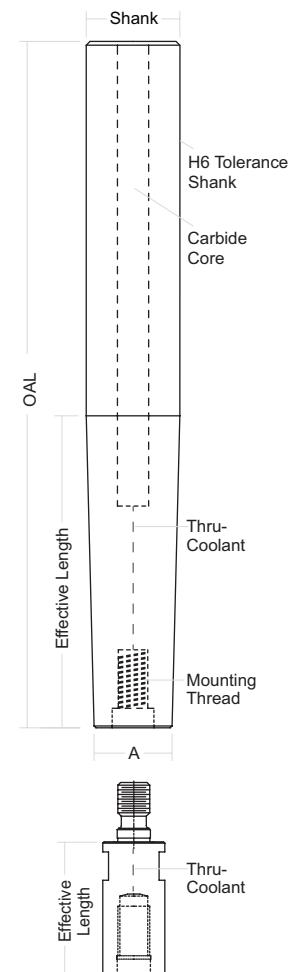
## Carbide Core Modular Extensions

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	$\frac{3}{8}$ " x 4.0"	.660"
22485	.750" / 20mm	CC-ME-0750-3500-C-SS	.750"	3.7"	5.8"	M10	$\frac{3}{8}$ " x 4.0"	.660"
22480	.750" / 20mm	CC-ME-0750-3500-C	1.000"	3.7"	6.0"	M10	$\frac{7}{16}$ " x 4.0"	.660"
22495	1.000" / 25mm	CC-ME-1000-2500-5500-C	1.000"	2.5"	5.5"	M12	$\frac{7}{16}$ " x 4.0"	.935"
22500	1.000" / 25mm	CC-ME-1000-4500-C	1.000"	4.7"	7.0"	M12	$\frac{7}{16}$ " x 5.0"	.935"
22505	1.250" / 1.500"	CC-ME-1250-3250-C	1.250"	3.5"	5.8"	M16	$\frac{1}{2}$ " x 4.0"	1.175"
22510	1.250" / 1.500"	CC-ME-1250-5500-C	1.250"	5.7"	8.0"	M16	$\frac{1}{2}$ " 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

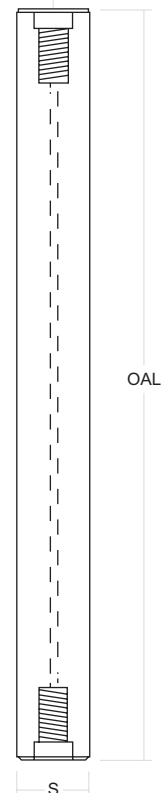
EDP	For Head Dia.	Description	Shank Dia.	Effective Length	OAL	Thread	A
22550-6	.500"	SC-ME-0500-6500-C-M6	.500"	1.500"	6.5"	M6	.460"
22560	.750"	SC-ME-0750-7700-C	.750"	2.250"	7.7"	M10	.709"
22570	1.000"	SC-ME-1000-8300-C	1.00"	5.000"	8.3"	M12	.890" / .950"

# 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



M  
(MOUNTING THREAD,  
BOTH ENDS)



## 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 T-Handle: TW-TS-10	Straight Handle: TW-SS-15 T-Handle: TW-TS-15	Straight Handle: TW-SS-20 T-Handle: TW-TS-20

## Individual Pieces

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



# Insert Grade & Coating Selection

**TOUGHEST**  
(Shock Resistant)

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**HARDEST**  
(Wear Resistant)

Grade	Materials		Machining Conditions			Coating			Coolant	
			Roughing	Medium	Light	1st Choice	2nd Choice	3rd Choice		
			Severe	Moderate	Rigid					
<b>DMK35</b>	High-Temp. Alloys	S20-S40	■	■	■	IN	HM	TS	●	
	Stainless Steel	M20-M40	■	■	■	HM	IN		●	
<b>DMP35</b>	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	●	
<b>DMK30</b> (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	●	
<b>DMK30</b> (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		●	
<b>DMP30</b>	Steel	P25-P35	□	■	□	HM	GLH	TCI	★ ○	
	Iron (Ductile)	K20-K30	■	■	□	HM	GLH	TCI	◆	
	Hardened Steel (< 45 Rc)	H20-H30	□	■	■	HM	GLH	TS	★ ○	
<b>DMP25</b>	Steel	P25-P35	□	■	□	GLH	HM	TCI	★	
	Iron (Ductile)	K20-K30	■	■	□	HM	GLH	TCI	◆	
	Hardened Steel (< 45 Rc)	H20-H30	□	■	■	HM	GLH	TS	★ ○	
<b>DMK25</b> (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		●	
<b>DMK25</b> (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	★ ○	
<b>DMK15</b>	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.