

# MILLING CUTTERS

B

LATHE CHUCKS  
LIVE CENTERS

VICE JAWS  
VICE ACCESSORIES

STRAIGHT SHANK  
COLLET HOLDERS

LATHE BUSHINGS  
DRILL CHUCKS

CARBIDE INSERTS  
THREADING/GROOVING

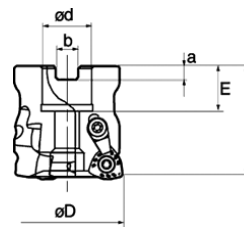
CUTTING TOOLS  
MACHINERY

PRECISION TOOLS  
DEBURRING

COOLANT/FLUIDS  
TOOL STORAGE

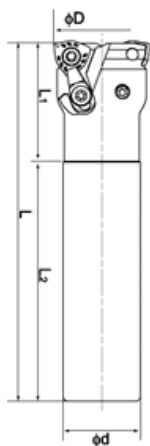
## SUPER HIGH FEED SHELL MILLS & ENDMILLS

- Newly designed cutting edge geometry allows 3-5 times higher feed than conventional tools
- Utilizes thicker inserts and higher clamping stability
- Coolant holes minimize edge damage resulting from chip build up
- Machining Capability:** shouldering, grooving, ramping, plunging, traversing, enlarging hole diameter



### TXP High Feed Milling Cutter

Cutting Dia D	d	E	F	a	b	No. of Inserts	Part Number	Price	Applicable Insert
2.50"	0.750	0.750	1.969	0.197	0.315	6	TO-TXP05250RBU	\$625.00	WPMT05...
3.00"	0.750	0.750	1.969	0.197	0.315	7	TO-TXP05300RBU	\$700.00	
2.00"	0.750	0.750	1.969	0.197	0.315	4	TO-TXP06050RBU	\$338.00	WPMT06...
2.50"	1.000	1.024	2.480	0.236	0.374	5	TO-TXP06250RBU	\$575.00	
3.00"	1.000	1.024	2.480	0.236	0.374	6	TO-TXP06300RBU	\$675.00	
2.00"	0.750	0.750	1.969	0.197	0.315	3	TO-TXP08050RU	\$288.00	WPMT08...
3.00"	1.000	1.024	2.480	0.236	0.375	5	TO-TXP08300RU	\$553.00	
4.00"	1.500	1.260	2.480	0.394	0.625	6	TO-TXP08400RU	\$749.00	
2.50"	0.750	0.750	2.000	0.197	0.315	3	TO-TXP09250RU	\$318.00	
3.00"	1.000	1.024	2.500	0.236	0.374	4	TO-TXP09300RU	\$503.00	WPMT09...
4.00"	1.500	1.500	2.500	0.394	0.626	5	TO-TXP09400RU	\$699.00	
5.00"	1.500	1.500	2.500	0.394	0.626	6	TO-TXP09500RU	\$809.00	
6.00"	2.000	1.500	2.500	0.433	0.748	7	TO-TXP09600RU	\$919.00	



### EXP High Feed Endmill

Cutting Dia D	Shank d	OAL L	L1	L2	Shank Type	No. of Inserts	Part Number	Price	Applicable Insert
0.750"	0.750	4.031	2.00	2.031	Weldon	2	TO-EXP05075RSU	\$205.00	WPM*05H315ZPR
0.750"	0.750	7.000	4.00	3.000	Straight	2	TO-EXP05075RLU	\$230.00	
0.750"	0.750	10.000	5.00	5.000	Straight	2	TO-EXP05075RLLU	\$245.00	
1.000"	1.000	4.781	2.50	2.281	Weldon	2	TO-EXP06100RSU	\$230.00	WPM*06X415ZPR
1.000"	1.000	8.000	5.00	3.000	Straight	2	TO-EXP06100RLU	\$240.00	
1.000"	1.000	12.000	7.00	5.000	Straight	2	TO-EXP06100RLLU	\$255.00	
1.250"	1.250	5.281	3.00	2.281	Weldon	3	TO-EXP06125RSBU	\$280.00	
1.250"	1.250	8.000	5.00	3.000	Straight	3	TO-EXP06125RLBU	\$295.00	WPM*06X415ZPR
1.250"	1.250	12.000	7.00	5.000	Straight	3	TO-EXP06125RLLB	\$310.00	
1.500"	1.250	5.781	3.50	2.281	Weldon	3	TO-EXP06150RSU	\$275.00	
1.500"	1.250	10.000	2.00	8.000	Straight	3	TO-EXP06150RLU	\$295.00	WPM*06X415ZPR
1.500"	1.250	12.000	2.00	10.000	Straight	3	TO-EXP06150RLLU	\$310.00	
2.000"	1.250	4.781	2.50	2.281	Weldon	2	TO-EXP09200RU	\$305.00	WPMT090425Z*R
2.000"	1.250	9.750	2.00	7.750	Weldon	2	TO-EXP09200RLU	\$320.00	

## SUPER HIGH FEED INSERTS

- Newly designed cutting edge geometry allows 3-5 times higher feed than conventional tools
- Utilizes thicker inserts and higher clamping stability
- Machining Capability:** shouldering, grooving, ramping, plunging, traversing, enlarging hole diameter



Industry Reference	Class	Grade					
		AH120		AH140		T3030	
WPMT05H315ZPR-ML	M	TO-8575	\$6.73	TO-8576	\$6.73	TO-8577	\$6.73
WPMT05H315ZPRMH	M	TO-8573	\$6.73	TO-8574	\$6.73	-	-
WPMT060415ZPR-ML	M	TO-8781	\$6.73	TO-8782	\$6.73	TO-8780	\$6.73
WPMT060415ZPR-MH	M	TO-8783	\$6.73	TO-8784	\$6.73	-	-
WPMT080615ZSR	M	TO-8578	\$7.46	TO-8579	\$7.46	TO-8580	\$7.46
WPMT080615ZPR-ML	M	TO-8734	\$7.46	TO-8735	\$7.46	TO-8736	\$7.46
WPMT080615ZSR-MH	M	TO-8742	\$7.46	TO-8743	\$7.46	-	-
WPMT090725ZSR	M	TO-8729	\$8.64	TO-8730	\$8.64	-	-
WPMT090725ZPR-ML	M	TO-8731	\$8.64	TO-8740	\$8.64	TO-8741	\$8.64
WPMT090725ZSR-MH	M	TO-8732	\$8.64	TO-8733	\$8.64	-	-

### REPLACEMENT PARTS

Cutter Model	Clamping Screw	Clamp Set	Wrench
EXP05	TO-CSPB-3.5S	-	TO-IP-15D
EXP06	TO-CSPB-4S	TO-CSY-15	-
EXP09	TO-CSPB-5	TO-CSY-20	TO-IP-20T
TXP05	TO-CSPB-3.5S	-	TO-IP15D
TXP06	TO-CSPB-4S	TO-CSY15	TO-IP15D
TXP08	TO-CSTB5	TO-CSX20	TO-T20T
TXP09	TO-CSTPB5	TO-CSY20	TO-IP20T

Call Us Or Visit Our Website For Our Complete Selection!

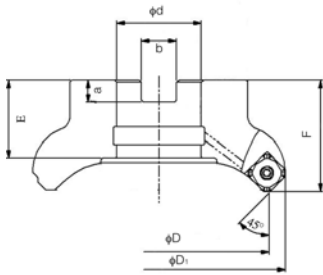
2010-11 Master Catalog

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# 45° & 90° MILLING CUTTERS

## TAW 45° LEAD FACE MILLS

- 45° lead high positive high feed face mill
- Highly rigid cutter, 20-30% lighter than competition
- Features coolant holes and highly accurate pocket design
- Nickel plating for corrosion and wear resistance
- Change from 45° lead to 30° lead using "HJ" chipbreaker
- Unique double relief angle for increased cutting edge strength and increased accuracy

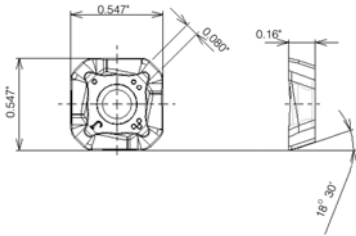


Cutting Dia D	No. of Teeth	D1	d	E	F	a	b	Part Number	Price Each	Coolant Hole
2.00"	3	2.51	0.750	0.750	1.575	0.20	0.32	TO-TAW13R2U7503	\$310.00	YES
	4	2.51	0.750	0.750	1.575	0.20	0.32	TO-TAW13R2U7504	\$345.00	YES
	5	2.51	0.750	0.750	1.575	0.20	0.32	TO-TAW13R2U7505	\$390.00	YES
3.00"	4	3.51	1.000	1.020	1.969	0.24	0.38	TO-TAW13R3U1004	\$395.00	YES
	6	3.51	1.000	1.020	1.969	0.24	0.38	TO-TAW13R3U1006	\$490.00	YES
	8	3.51	1.000	1.020	1.969	0.24	0.38	TO-TAW13R3U1008	\$590.00	YES
4.00"	5	4.52	1.500	1.378	1.969	0.32	0.63	TO-TAW13R4U1505	\$490.00	YES
	7	4.52	1.500	1.378	1.969	0.32	0.63	TO-TAW13R4U1507	\$595.00	YES
	10	4.52	1.500	1.378	1.969	0.32	0.63	TO-TAW13R4U1510	\$710.00	YES
5.00"	6	5.51	1.500	1.457	2.480	0.39	0.63	TO-TAW13R5U1506	\$595.00	YES
	8	5.51	1.500	1.457	2.480	0.39	0.63	TO-TAW13R5U1508	\$735.00	YES
	12	5.51	1.500	1.457	2.480	0.39	0.63	TO-TAW13R5U1512	\$950.00	YES
6.00"	7	6.51	2.000	1.500	2.480	0.39	0.75	TO-TAW13R6U2007	\$810.00	NO
	10	6.51	2.000	1.500	2.480	0.39	0.75	TO-TAW13R6U2010	\$980.00	NO
	16	6.51	2.000	1.500	2.480	0.39	0.75	TO-TAW13R6U2016	\$1,225.00	NO

### INSERTS

### GRADES

Industry Reference	Class	Honing	AH120		AH140		T3030	
SWMT13T3AFPR-MJ	M	With	TO-10021	\$6.37	TO-10022	\$6.37	TO-10025	\$6.37
SWMT13T3AFER-ML	M	With	TO-10016	\$6.37	-	-	-	-
SWMW13T3AFTR	M	With	TO-10028	\$6.37	-	-	TO-10030	\$6.37
SWMT13T3AFPR-HJ	M	With	TO-10017	\$6.37	TO-10018	\$6.37	TO-10020	\$6.37
SWMT13T3AFPR-MS	M	With	-	-	TO-10026	\$6.37	-	-
SWG13T3AFPR-MJ	G	Without	TO-10006	\$9.22	-	-	-	-
Shim TO-FSSA1102	Insert Screw	TO-CSPB-3.5	Shim Screw	TO-DTS5-3.5SS	Shim Wrench	TO-P-3.5	Insert Wrench	TO-IP-15D



## TPW 90° LEAD FACE MILLS

- 90° lead high positive high feed face mill
- Highly rigid cutter, 20-30% lighter than competition
- Features coolant holes and highly accurate pocket design
- Nickel plating for corrosion and wear resistance
- Unique double relief angle for increased cutting edge strength and increased accuracy



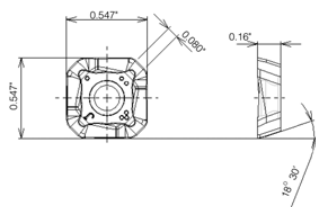
Cutting Dia D	No. of Teeth	d	E	F	a	b	Part Number	Price Each
2.00"	3	0.750	0.750	1.5750	0.20	0.32	TO-TPW13R2U75A3	\$310.00
	4	0.750	0.750	1.5750	0.20	0.32	TO-TPW13R2U7504	\$345.00
	5	0.750	0.750	1.5750	0.20	0.32	TO-TPW13R2U7505	\$390.00
3.00"	4	1.000	1.020	1.9690	0.24	0.38	TO-TPW13R3U1004	\$395.00
	6	1.000	1.020	1.9690	0.24	0.38	TO-TPW13R3U1006	\$490.00
	8	1.000	1.020	1.9690	0.24	0.38	TO-TPW13R3U1008	\$590.00
4.00"	5	1.500	1.378	1.9690	0.32	0.63	TO-TPW13R4U1505	\$490.00
	7	1.500	1.378	1.9690	0.32	0.63	TO-TPW13R4U1507	\$595.00
	10	1.500	1.378	1.9690	0.32	0.63	TO-TPW13R4U1510	\$710.00
5.00"	6	1.500	1.457	2.4800	0.39	0.63	TO-TPW13R5U1506	\$595.00
	8	1.500	1.457	2.4800	0.39	0.63	TO-TPW13R5U1508	\$735.00
	12	1.500	1.457	2.4800	0.39	0.63	TO-TPW13R5U1512	\$950.00
6.00"	8	2.000	1.500	2.4800	0.39	0.75	TO-TPW13R6U2008*	\$870.00
	12	2.000	1.500	2.4800	0.39	0.75	TO-TPW13R6U2012*	\$1,255.00
	15	2.000	1.500	2.4800	0.39	0.75	TO-TPW13R6U0215*	\$1,410.00

\*Does Not Have Coolant Hole

### INSERTS

### GRADES

Industry Reference	Class	Honing	AH120		AH140		T3030		KS05F		Max. DOC (in)
SWMT1304PDPR-MJ	M	With	TO-10010	\$6.37	TO-10011	\$6.37	TO-10014	\$6.37	-	-	0.39
SWMT1304PDER-ML	M	With	TO-10009	\$6.37	-	-	-	-	-	-	0.39
SWMT1304PDPR-MS	M	With	-	-	TO-10015	\$6.37	-	-	-	-	0.39
SWG1304PDFR-AJ	G	Without	-	-	-	-	-	-	TO-10003	\$9.22	0.39
SWG1304PDPR-MJ	G	With	TO-10003	\$9.22	-	-	-	-	-	-	0.39
Shim TO-FSSP1102	Insert Screw	TO-CSPB-3.5	Shim Screw	TO-DTS5-3.5SS	Shim Wrench	TO-P-3.5	Insert Wrench	TO-IP-15D			



Call Us Today For All Of Your Machine Tool Needs!

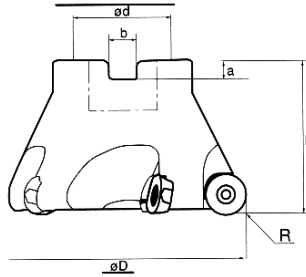
2010-11 Master Catalog

# MILLING CUTTERS

## TRD SERIES JETMILL ROUND INSERT FACE MILL



- High Positive
- Multi-Functional Design
- Capable of Plunging, Ramping and Circle Interpolation
- High Strength Round Insert
- High Feed Capabilities
- Superior Surface Finishes



Corner Angle		-
Rake Angle	Axial	+10°
	Radial	-6° ~ 0°

Reference Number	No. Of Teeth	Cutting Dia		Shank Dia		Dimensions (Inch)			Wt. Lbs.	Part Number	Price Each	Insert
		D (in)	d (in)	R	F	a	b					
TRD12050RU	4	2.000	0.750	0.236	1.563	0.197	0.315	0.600	TO-TRD12050RU	286.00	RDMT 12	
TRD16080RU	4	3.150	1.000	0.315	1.969	0.236	0.374	1.600	TO-TRD16080RU	379.60	RDMT 16	
TRD16100RU	5	3.937	1.250	0.315	1.969	0.315	0.500	2.200	TO-TRD16100RU	494.00	RDMT 16	
TRD16125RU	6	4.921	1.500	0.315	2.480	0.394	0.626	5.300	TO-TRD16125RU	618.80	RDMT 16	

**B**

## INSERTS

**D**

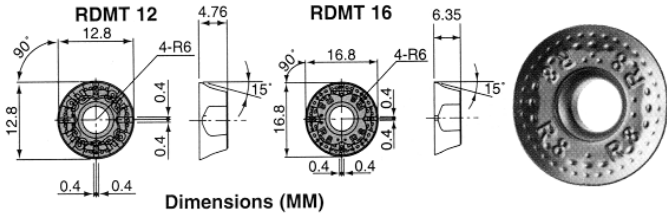
### INSERTS FOR TRD SERIES JETMILL

Reference Number	Class	Grade	Part Number	Price Each
RDMT1204ZDPN-MJ	M	AH120	TO-2051	\$6.62
RDMT1606ZDPN-MJ	M	AH120	TO-2053	\$8.09

### REPLACEMENT PARTS

Part	TO-TRD12050	TO-TRD12080/100/125	Price Each
Screw	TO-CSTB3.5	TO-CSTB5	\$1.02
Wrench	TO-T-15D	TO-T-20D	\$7.16

**B**



Dimensions (MM)

RECOMMENDED CUTTING CONDITIONS						
Work Materials	Recommended Grade	Chip Breaker	Roughing		Finishing	
			sfm	ipt	sfm	ipt
Mild Steels	AH120	MJ	400~700	0.012~0.020	400~700	0.012~0.024
Alloy Steels /300HB	AH120	MJ	350~650	0.008~0.018	350~650	0.008~0.020
Medium Carbon Steels 250HB	AH120	MJ	400~700	0.012~0.020	400~700	0.012~0.024
Stainless Steels	AH120	MJ	300~600	0.006~0.018	300~600	0.008~0.020
Die Steels	AH120	MJ	250~600	0.008~0.014	250~600	0.010~0.018
Cast Irons	AH120	MJ	400~800	0.012~0.020	400~800	0.012~0.024
Super Alloys	AH120	MJ	125~250	0.004~0.010	125~250	0.004~0.012

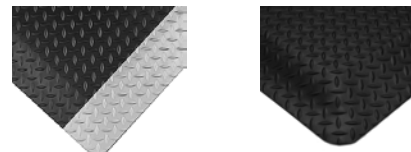
## DIAMOND PLATE SPONGECOTE

### Anti-Fatigue Mats-No. 415

Diamond-Plate SpongeCote is the most popular anti-fatigue mat in the industry because no other offers such a complete package of exceptional comfort, long life, and a high-tech, industrial image. Its exceptionally resilient Nitricell sponge base defines the mat by providing true comfort, enhancing productivity, and reviving morale, all while relieving fatigue throughout the day. The safety-engineered surface adds traction and durability, and is ideal for heavily trafficked areas.



- For use in dry work areas
- Anti-fatigue
- Nitricell sponge base for unparalleled comfort
- Safety beveled edges
- Slip and wear resistant
- **3 Year Warranty**



Size	Thickness	Color	Part Number	Price
2' x 3'	9/16"	Black	WW-415916-2-3BK	\$41.84
		Blk/Yellow	WW-415916-2-3BY	\$47.68
3' x 5'	9/16"	Black	WW-415916-3-5BK	\$101.76
		Blk/Yellow	WW-415916-3-5BY	\$109.76

Please See Our Large Variety Of Safety And Anti-Fatigue Mats On Pages 575-577!

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LATHE CHUCKS  
LIVE CENTERS

WISE JAWS  
WISE ACCESSORIES

STRAIGHT SHANK  
COLLET HOLDERS

LATHE BUSHINGS  
DRILL CHUCKS

CARBIDE INSERTS  
THREADING/GROOVING

CUTTING TOOLS  
MACHINERY

PRECISION TOOLS  
DEBURRING

COOLANT/FLUIDS  
TOOL STORAGE

# MILLING CUTTERS

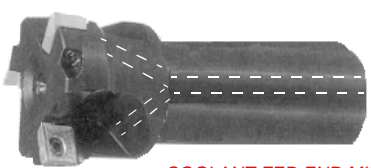
## TUNGALOY STYLE 90° MILLING CUTTERS



*High Positive Design  
Free Cutting  
Excellent Chip Control*



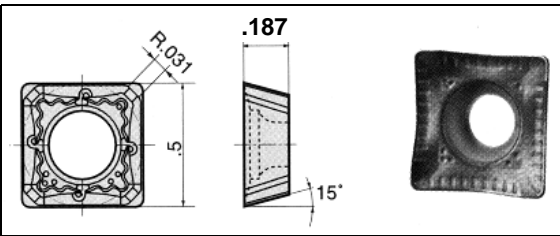
SHELL MILL



COOLANT FED END MILL

Description	Dia.	Shank Dia.	No. Of Teeth	Part Number	Milling Cutter		Extra Screws		Wrench
					Price Each	Quantity Discounts	Extra Screw \$ 1.00	Quantity Discounts	
ENDMILLS	1.00	0.75	1	TB-100-75	\$87.00	1 pc. LIST	SC-01	1-9 LIST	TX-20F Flag Style \$2.00
	1.00	1.00	1	TB-100-10	\$87.00				
	1.25	1.00	2	TB-120-10	\$108.00				
	1.25	1.25	2	TB-120-12	\$108.00				
	1.50	1.25	3	TB-150-12	\$130.00				
SHELL MILLS	2.00	0.75	4	TB-2000	\$173.00	2 pcs. 10% OFF	SC-01	20% OFF	TX-20S Screwdriver Style \$5.00
	2.00	0.75	5	TB-2005	\$235.00				
	3.00	1.00	6	TB-3000	\$216.00				
	4.00	1.25	7	TB-4000	\$292.00				
							40% OFF		
							500 + 50% OFF		

## INSERTS



G

INSERTS FOR TB MILLING CUTTERS				Quantity Discounts
MATERIAL	Reference Number	Polished	Coated	
For Aluminum, Copper, Brass	SDGT1204PDFR-AJ-TH10	US-820 \$ 9.80	-	10-29 LIST 30-39 15% OFF
For Mild Steel, Stainless Steel, Super Alloys	SDMT1204PDPR-ML-AH120	-	US-821 \$6.95	40-49 18% OFF 50-79 20% OFF
For Alloy Steels, Die Steels, Cast Iron	SDMT1204PDSR-MJ-AH120	-	US-822 \$6.95	80-99 23% OFF 100+ 25% OFF

RECOMMENDED CUTTING CONDITIONS					
Work Materials	Recommended Grade	Roughing		Finishing	
		sfm	ipt	sfm	ipt
Mild Steels	US-821	400~800	0.002~0.008	450~825	0.002~0.008
Alloy Steels	US-822	300~700	0.002~0.008	300~800	0.002~0.010
Stainless Steels	US-821	300~600	0.002~0.005	300~700	0.002~0.008
Die Steels	US-822	300~500	0.002~0.008	300~600	0.002~0.008
Cast Irons	US-822	300~800	0.004~0.007	300~800	0.004~0.008
Super Alloys	US-821	100~200	0.002~0.006	125~225	0.002~0.006
Aluminum Alloys	US-820	800~2500	0.004~0.014	1500~3300	0.002~0.008

Call Us Today For All Of Your Machine Tool Needs!

2010-11 Master Catalog

# MILLING CUTTERS



## CARBOLOY STYLE INDEXABLE MILLING CUTTERS

- Cutting diameters from 5/8" to 2"
- End mills and shell mills available
- Made in USA



### End Mills

Cutting Dia	Shank Dia	No. Of Teeth	Part Number	Price Each	Inserts- APKT 1604 PDER			
					Grade PV 311	Grade NN 52	Grade DHCP35M	Grade DASK25M
5/8"	0.625	1	EM-APFT-625	\$54.00	US-811	US-812	DN94884	DN94893
3/4"	0.750	1	EM-APFT-750	\$65.00				
1"	0.750	2	EM-APFT-1075	\$87.00				
1"	1.000	2	EM-APFT-1000	\$87.00				
1-1/4"	1.250	3	EM-APFT-1250	\$108.00				
1-1/2"	1.000	4	EM-APFT-1510	\$130.00				
1-1/2"	1.250	4	EM-APFT-1512	\$130.00				

### Accessories

Description	Part Number	Price
Screws - C04011	SC-51	\$1.00
Torx wrench	TX-215	\$5.00

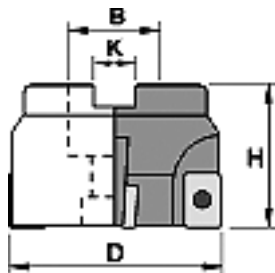
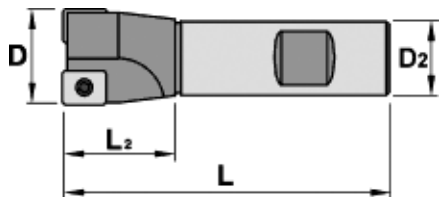
Part Number/Grade	Grade Information
US-811 PV 311	recommended for milling of stainless steels and other high temperature materials
US-812 NN52	The ideal choice for machining steels and stainless steels
DN94884 DHCP35M	for machining carbon steel, alloy steel, and stainless steel
DN94893 DASK25M	For medium to difficult milling operations in dry or wet conditions

### Shell Mills

Cutting Dia	Shank Dia	No. Of Teeth	Part Number	Price Each	Inserts- APKT 1604 PDER			
					Part Number	Grade NN 52	Grade DHCP35M	Grade DASK25M
2"	0.750	5	SM-APFT-2000	\$152.00	US-811	US-812	DN94884	DN94893
					\$7.37	\$7.37	\$7.25	\$8.95

## INDEXABLE MILLING CUTTERS ENDMILLS & SHELL MILLS

Using AP\_



### Endmills Using AP\_10 an AP\_16 Inserts

Uses Insert	Cutting Dia	Shank Dia	OAL		Flute Length	No of Flutes	Industry Reference	Part Number	Price Each
			D	L					
AP_10	0.375	0.500	30	0.80	1	1220.21.0037	EM-AP10-37-30C	\$79.67	
AP_10	0.437	0.625	3.25	1.00	1	1220.21.0043	EM-AP10-43-32C	\$79.67	
AP_10	0.625	0.625	3.25	1.00	2	1220.21.0062	EM-AP10-62-32C	\$79.67	
AP_16	0.750	0.75	3.50	1.25	1	1230.21.0075	EM-AP16-75-35C	\$91.24	
AP_16	0.750	0.75	3.50	1.25	3	1220.21.0075	EM-AP10-75-35C	\$91.24	
AP_16	1.000	1.00	3.50	1.25	2	1230.21.0100	EM-AP16-10-35C	\$103.40	
AP_10	1.000	1.00	3.50	1.25	4	1220.21.0100	EM-AP10-10-35C	\$103.40	
AP_16	1.250	1.00	3.75	1.25	3	1230.21.0125	EM-AP16-12-37C	\$109.48	
AP_10	1.250	1.00	3.75	1.25	5	1220.21.0125	EM-AP10-12-37C	\$109.48	
AP_16	1.500	1.25	4.00	1.25	4	1230.21.0150	EM-AP16-15-40C	\$118.61	
AP_10	1.500	1.25	4.00	1.25	6	1220.21.0150	EM-AP10-15-40C	\$118.61	

### Long Reach Endmills Using AP\_10 an AP\_16 Inserts

Uses Insert	Cutting Dia	Shank Dia	OAL	Flute Length	No of Flutes	Industry Reference	Part Number	Price Each
AP_10	0.375	0.500	6	0.80	1	1220.22.0037	EM-AP10-37-60C	\$79.67
AP_10	0.437	0.625	6	1.00	1	1220.22.0043	EM-AP10-43-60C	\$79.67
AP_10	0.625	0.625	6	1.00	2	1220.22.0062	EM-AP10-62-60C	\$79.67
AP_16	0.750	0.750	8	1.25	1	1230.22.0075	EM-AP16-75-80C	\$91.24
AP_10	0.750	0.750	8	1.25	3	1220.22.0075	EM-AP10-75-80C	\$91.24
AP_16	1.000	1.000	8	1.25	2	1230.22.0100	EM-AP16-10-80C	\$103.40
AP_10	1.000	1.000	8	1.25	4	1220.22.0100	EM-AP10-10-80C	\$103.40
AP_16	1.250	1.000	10	1.25	3	1230.22.0125	EM-AP16-12-10C	\$109.48
AP_10	1.250	1.000	10	1.25	5	1220.22.0125	EM-AP10-12-10C	\$109.48
AP_16	1.500	1.250	10	1.25	4	1230.22.0150	EM-AP16-15-10C	\$118.61
AP_10	1.500	1.250	10	1.25	6	1220.22.0150	EM-AP10-15-10C	\$121.25

### Shell Mills Using AP\_16 Inserts

Cutting Dia	Height	Key Width	Shank Dia	No of Flutes	Industry Reference	Part Number	Price Each
1.50	1.75	0.250	0.500	4	1230.90.0150	SM-AP16-15-C	\$115.08
2.00	1.75	0.312	0.750	5	1230.90.0200	SM-AP16-20-C	\$122.50
2.50	2.00	0.375	1.000	6	1230.90.0250	SM-AP16-25-C	\$150.18
3.00	2.00	0.375	1.000	7	1230.90.0300	SM-AP16-30-C	\$180.30
4.00	2.00	0.500	1.250	8	1230.90.0400	SM-AP16-40-C	\$265.86
5.00	2.00	0.625	1.500	8	1230.90.0500	SM-AP16-50-C	\$365.37
6.00	2.00	0.625	1.500	9	1230.90.0600	SM-AP16-60-C	\$464.14
8.00	2.50	1.000	2.500	11	1230.90.0800	SM-AP16-80-C	\$567.84

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# MILLING INSERTS

## MULTI-MATERIAL GRADE CARBIDE MILLING INSERTS

One Grade Offers Outstanding Performance On All Materials



Lamina Technologies

**MADE IN SWITZERLAND**

**One Grade Does It All!**

- Lamina's "Multi-MAT®" technology works on any material-Always have the correct grade available and reduce machine idle time!
- Only one grade is needed for all materials, reducing inventory and costs
- Swiss made inserts offer unparalleled quality that can perform as good as, if not better, than dedicated insert grades of competitors
- Easier to use! Less grades means less confusion for machinists. Exact cutting data is printed on each box!

- Steel**
- Stainless Steel**
- Cast Iron**
- Super Alloys**

**Grade LT30:**  
Lamina's top quality milling insert grade excels in Super Alloys



Insert Designation	Grade	Insert Shape	Clearance Angle	Cutting Edge Length L	Thick. S	Radius	Lead Angle P	Relief Angle D	Part Number	Price Each	10 + Price
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**ADKT\_\_ Inserts-Right Hand Direction- Chamfered (CH) or Honed (H)**

Insert Designation	Grade	Insert Shape	Clearance Angle	Cutting Edge Length L	Thick. S	Radius	Lead Angle P	Relief Angle D	Part Number	Price Each	10 + Price
ADKT1505 PDTR	LT 30	85° Parallelogram	15° POS.	0.6 (15mm)	0.22	-	90°	15°	ADKT1505PDTR-LA	\$7.70	\$6.93
APLX 1003 PDTR	LT 30		11° POS.	0.370 (10mm)	1/8	-	90°	15°	APLX1003PDTR-LA	\$6.23	\$5.61
APLX 100308 TR	LT 30				1/8	0.031	-	-	APLX100308TR-LA	\$6.23	\$5.61
APLX 100340 TR	LT 30				1/8	0.148	-	-	APLX100340TR-LA	\$6.23	\$5.61
APKT 1604 PDTR	LT 30		11° POS.	0.630 (16mm)	3/16	-	90°	15°	APKT1604PDTR-LA	\$7.36	\$6.62
APKT 160424 ER	LT 30				3/16	0.091	-	-	APKT160424ER-LA	\$9.02	\$8.12
APGT 1604 PDER - Alu	LT10	3/16			-	90°	15°	APGT1604ALU-LA	\$7.97	\$7.17	

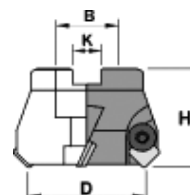
**SDKT\_\_ Inserts-Neutral-Chamfered (0.031 Corner Edge)**

Insert Designation	Grade	Insert Shape	Clearance Angle	Cutting Edge Length L	Thick. S	Radius	Lead Angle P	Relief Angle D	Part Number	Price Each	10 + Price
SDKT1204 AETN	LT 30	Square	15° POS.	0.472 (12mm)	3/16	-	45°	20°	SDKT1204AETN-LA	\$8.26	\$7.43

**SEKN\_\_ Inserts-Neutral-Chamfered (0.031 Corner Edge)**

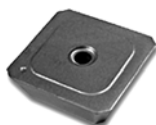
Insert Designation	Grade	Insert Shape	Clearance Angle	Cutting Edge Length L	Thick. S	Radius	Lead Angle P	Relief Angle D	Part Number	Price Each	10 + Price
SEKN 42 AFTN	LT 30	Square	20° POS.	0.472 (12mm)	3/16	-	45°	25°	SEKN1203AFTN-LA	\$6.65	\$5.99
SEKN 43 AFTN					3/16	-	45°	25°	SEKN1204AFTN-LA	\$6.65	\$5.99

## SEKN SHELL MILL CUTTERS Using SE\_\_ 42 Inserts



D	H	K	B	z	Reference	Part Number	Price Each	Clamp Screw	Clamp	Seat	Seat Screw	Wrench
2.0	1.75	0.312	0.75	4	0748.90.0200	SM-SEKN4-20-C	\$134.97	CA-1006L	CA-2063	CA-3010	CA-4012	CA-5004
2.5	2.0	0.375	1.00	5	0748.90.0250	SM-SEKN4-25-C	\$174.26					
3.0	2.0	0.375	1.00	6	0748.90.0300	SM-SEKN4-30-C	\$246.82					
4.0	2.0	0.500	1.25	6	0748.90.0400	SM-SEKN4-40-C	\$289.76					
5.0	2.0	0.625	1.50	8	0748.99.0500	SM-SEKN4-50-C	\$490.91					
6.0	2.0	0.625	1.50	10	0748.99.0600	SM-SEKN4-60-C	\$623.56					
8.0	2.5	1.000	2.50	12	0748.99.0800	SM-SEKN4-80-C	\$809.37	CA-1077	CA-5620	CA-6488	CA-6489	CA-6918
10.0	2.5	1.000	2.50	16	0748.99.1000	SM-SEKN4-100-C	\$1,008.38					
12.0	2.5	1.000	2.50	20	0748.99.1200	SM-SEKN4-120-C	\$1,185.01					

## SEKN INSERTS



Inch No	Metric No	TUNGALOY GRADE				LAMINA GRADE
		AH330	AH120	TH10	UX30	LT30
SEKN42AFTN	SEKN1203AFTN	TO-2142 \$6.05	TO-2141 \$6.05	-	TO-2145 \$4.88	SEKN1203AFTN-LA \$6.65
SEKN42AFFN	SEKN1203AFFN	-	-	TO-2140 \$4.88	-	SEKN1204AFTN-LA \$6.65

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# INDEXABLE MILLING CUTTERS

B

LATHES CHUCKS  
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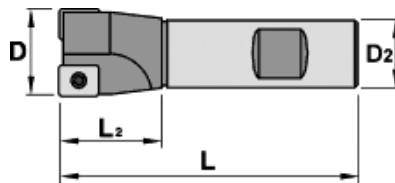
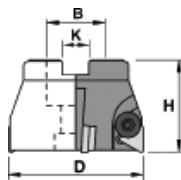
LATHES BUSHINGS  
DRILL CHUCKS

CARBIDE INSERTS  
THREADING/GROOVING

CUTTING TOOLS  
MACHINERY

PRECISION TOOLS  
DEBURRING

COOLANT/FLUIDS  
TOOL STORAGE



## MILLING CUTTERS Using TP\_\_ 22/32 Inserts

### SHELL MILLS

Uses Insert	D	H	K	B	z	Reference	Part Number	Price Each	Clamp Screw	Wrench	Clamp
TP__32	1.5	1.75	0.250	0.50	3	0130.90.0150	SM-TP32-15-C	\$115.08	CA-1006	CA-5004	CA-2064
TP__32	2.0	1.75	0.312	0.75	4	0130.90.0200	SM-TP32-40-C	\$122.50			
TP__32	2.5	2.00	0.375	1.00	4	0130.90.0250	SM-TP32-25-C	\$150.18			
TP__32	3.0	2.00	0.375	1.00	5	0130.90.0300	SM-TP32-30-C	\$207.35			
TP__32	4.0	2.00	0.500	1.25	6	0130.90.0400	SM-TP32-40-C	\$265.86			

### END MILLS

Uses Insert	D	D2	L	L2	z	Reference	Part Number	Price Each	Screw	Wrench	Clamp
TP__22	0.75	0.75	3.50	1.25	2	0120.21.0075	EM-TP22-75-35C	\$103.40	CA-1005	CA-5025	CA-2010
TP__22	1.00	1.00	3.50	1.25	2	0120.21.0100	EM-TP22-10-35C	\$103.40			
TP__32	1.00	1.00	3.50	1.25	2	0130.21.0100	EM-TP32-10-35C	\$103.40	CA-1016	CA-5004	CA-2064
TP__32	1.25	1.00	3.75	1.25	2	0130.21.0125	EM-TP32-12-37C	\$109.48			
TP__32	1.50	1.25	4.00	1.25	3	0130.21.0150	EM-TP32-15-40C	\$118.61			

## INSERTS

		GRADE					
Inch No	Metric No	AH120	T3030	T325	NS540	TH10	UX30
TPU221	TPMN110304	-	-	-	TO-3076 \$2.25	TO-3078 \$2.25	TO-3079 \$2.25
TPU222	TPMN110308	-	-	TO-3081 \$2.94	-	TO-3083 \$2.25	TO-3084 \$2.25
TPU321	TPMN160304	TO-3085 \$4.19	TO-8023 \$4.11	TO-3087 \$4.19	-	TO-3089 \$3.21	TO-3090 \$3.21
TPU322	TPMN160308	TO-3091 \$4.19	-	TO-3093 \$4.19	TO-3097 \$3.21	TO-3095 \$3.21	TO-3096 \$3.21

## INDEXABLE MILLING CUTTERS



C

- FEATURES:**
- Uses APKT 1003 PDR Inserts (not included)
  - Durable and unique chrome nickel coated holder
  - Positive chip control

### INDEXABLE MILLING CUTTERS

Nomenclature	Cutter Dia	Shank Dia	OAL	DOC	No. Of Flutes	Part Number	Price Each
BAAP 1216 2	3/8	1/2	3	1 1/2	1	MI-311216	\$89.34
BAAP 1616 2	1/2	1/2	3	1 1/2	1	MI-311616	\$99.85
BAAP 1816 2	5/8	1/2	3	1 1/2	2	MI-311816	\$110.36
BAAP 2424 2	3/4	3/4	4 3/8	2	3	MI-312424	\$152.40
BAAP 3224 2	1	3/4	4 3/8	2	4	MI-313224	\$162.91
BAAP 4024 2	1 1/4	3/4	4 3/8	2	5	MI-314024	\$242.78

Uses APKT 1003 PDR Inserts

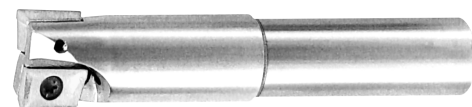
### INDEXABLE COOLANT-THRU MILLING CUTTERS

Nomenclature	Cutter Dia	Shank Dia	OAL	DOC	No. Of Flutes	Part Number	Price Each
AAAP 1216 2	3/8	1/2	3	1 1/2	1	MI-301216	\$110.36
AAAP 1616 2	1/2	1/2	3	1 1/2	1	MI-301616	\$120.87
AAAP 1816 2	5/8	1/2	3	1 1/2	2	MI-301816	\$131.90
AAAP 2424 2	3/4	3/4	4 3/8	2	3	MI-302424	\$155.34
AAAP 3224 2	1	3/4	4 3/8	2	4	MI-303224	\$249.09
AAAP 4024 2	1 1/4	3/4	4 3/8	2	5	MI-304024	\$266.95

Uses APKT 1003 PDR Inserts

### 3 PIECE COOLANT-THRU MILLING SET

Shank Dia	Cutter Dia	No. Of Flutes	Description	Part Number	Set Price
1/2	3/8 1/2 5/8	1 1 2	Set of 3 pcs. AAAP with APKT 1003 PDR Insert, Torx Screw & Torx Key	MI-603003	\$245.00



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CHUCK JAWS  
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TAP HOLDERS

INDEXABLE DRILLS  
TURNING & BORING

ENDMILLS, DRILLS  
TAPS & REAMERS

ABRASIVES  
MEASURING TOOLS

MRO & SAFETY  
FLAT STOCK/DRILL ROD

# ISCAR MILLING INSERTS

B

Iscar



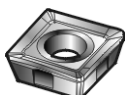
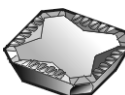
Iscar Reference Number	GRADE				
	IC-250	IC-328	IC-635	IC-928	IC-950
ADKR 1505 PDR-HM	CAR-2101 \$11.80	CAR-2102 \$11.80	--	CAR-2104 \$12.40	CAR-2105 \$12.40
ADKT 1505 16R-HM	CAR-2121 \$11.80	CAR-2122 \$11.80	CAR-2123 \$10.66	CAR-2124 \$12.40	CAR-2125 \$12.40
ADKT 1505 24R-HM	CAR-2141 \$11.80	CAR-2142 \$11.80	CAR-2143 \$10.66	CAR-2144 \$12.40	--
ADKT 1505 32R-HM	CAR-2161 \$11.80	CAR-2162 \$11.80	CAR-2163 \$10.66	CAR-2164 \$12.40	--
ADKT 1505 50R-HM	--	CAR-2182 \$11.80	CAR-2183 \$10.66	CAR-2184 \$12.40	CAR-2185 \$12.40
ADKT 1505 64R-HM	CAR-2201 \$11.80	CAR-2202 \$11.80	CAR-2203 \$10.66	CAR-2204 \$12.40	--
ADKT 1505 ADR-HM	CAR-2221 \$11.80	CAR-2222 \$11.80	CAR-2223 \$10.66	--	--
ADKT 1505 PDR-HM	CAR-2241 \$11.80	CAR-2242 \$11.80	CAR-2243 \$10.66	CAR-2244 \$12.40	--
ADKT 1505 PDTR-76	CAR-2261 \$9.98	CAR-2262 \$9.98	CAR-2263 \$9.05	CAR-2264 \$10.50	CAR-2265 \$10.50
ADKT 1505 PDTR-RM	CAR-2281 \$9.98	CAR-2282 \$9.98	CAR-2283 \$9.05	CAR-2284 \$10.50	CAR-2285 \$10.50
ADMT 1503 PDR-HM	CAR-2301 \$9.57	CAR-2302 \$9.57	CAR-2303 \$8.63	--	--
ADMT 1505 PDR-HS	CAR-2321 \$11.80	CAR-2322 \$11.80	CAR-2323 \$10.66	--	--
APKT 100308 PDTR-RM	CAR-2341 \$11.03	CAR-2342 \$11.03	CAR-2343 \$9.90	--	--
APKT 100312 TR-RM	--	CAR-2362 \$11.03	CAR-2363 \$9.90	--	--
APKT 100316 PDTR-RM	CAR-2381 \$11.03	CAR-2382 \$11.03	--	--	--
APKT 100320 PDTR-RM	CAR-2401 \$11.03	CAR-2402 \$11.03	--	--	--
APKT 100332 TR-RM	CAR-2421 \$11.03	CAR-2422 \$11.03	--	--	--
APKT 1003 PDR-HM	CAR-2441 \$11.03	CAR-2442 \$11.03	CAR-2443 \$9.90	--	--
APKT 1003 PDTR-76	CAR-2461 \$9.37	CAR-2462 \$9.37	CAR-2463 \$8.41	--	--
APKT 1003 PDTR-RM	CAR-2481 \$9.37	CAR-2482 \$9.37	CAR-2483 \$8.41	--	--
O45MT 050505-RM	--	CAR-2502 \$9.76	--	--	CAR-2505 \$10.25
OEMT 060405 AER-76	CAR-2521 \$10.38	CAR-2522 \$10.38	--	CAR-2524 \$10.90	CAR-2525 \$10.90
OFMT 07T3-AER-76	CAR-2541 \$11.30	CAR-2542 \$11.30	--	CAR-2544 \$11.86	CAR-2545 \$11.86
R90MT 43-RM	--	CAR-2562 \$9.10	--	--	CAR-2565 \$9.55
R90MT 1205-RM	--	CAR-2582 \$9.10	--	--	CAR-2585 \$9.55
REMT 1505 LM-76	--	CAR-2602 \$9.18	--	CAR-2604 \$9.65	CAR-2605 \$9.65
RFMT 1905 LM-76	--	CAR-2622 \$9.98	--	--	--

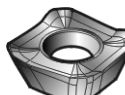
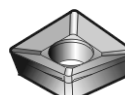
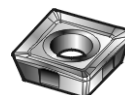
Grade Chart	Ansi	Workpiece Material	Recommended Applications
IC250 PVD COATING	C6-C7	Steel and cast steel. Stainless steel.	Roughing. Medium speed. High feed. Interrupted cut.
IC328 PVD COATING	C3-C2	Alloy steel. Aluminum alloys. Austenitic stainless steel. Carbon steel. Cast steel. Copper alloys. Exotic alloys.	Roughing. Low speed. High speed. High feed. Interrupted cut. High resistance to mechanical & thermal shock.
IC635 CVD COATED	C6-C5	Carbon steel. Allot steel. Stainless steel.	Low speed, high feed and unfavorable conditions.
IC928 PVD COATING	C6-C5	Alloy steel. Aluminum alloys. Austenitic stainless steel. Carbon steel. Cast steel. Copper alloys. Exotic alloys.	Roughing. Low speed. High speed. High feed. Interrupted cut. High resistance to mechanical & thermal shock.
IC950 PVD COATING	C7-C5	For carbon and alloy steels. Also for gray cast irons.	High speed milling at medium feed, no coolant needed

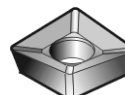
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**RFMT 1905-LM-76**

**S45MT 1106AP-N**

**S90MT 1106PC-R**

**SDMT 1205PDR-HQ  
SDMT 1606PDR-HQ**

**SEKR 42AFN-76**

**SEKR 42AF-R-HS**

**SEKT 43 AFR-HM**

**SOMT 060204-HQ**

**SPMT 100408TR-HQ**

**TPKR 43PDTR-HS**

**XOMT 060204-HQ**

Iscar Reference Number	GRADE				
	IC-250	IC-328	IC-635	IC-928	IC-950
RFMT 1905-LM-76	CAR-2641 \$9.98	CAR-2642 \$9.98	--	CAR-2644 \$10.48	CAR-2645 \$10.48
RPMT 43	CAR-2661 \$9.41		CAR-2663 \$8.53	--	--
S45MT 1106AP-N	--	CAR-2682 \$11.47	--	--	CAR-2685 \$12.07
S90MT 1106PC-R	--	CAR-2702 \$11.47	--	--	CAR-2705 \$12.07
SDMT 1205PDR-HQ	CAR-2721 \$11.47	CAR-2722 \$11.47	CAR-2723 \$10.10	CAR-2724 \$12.03	CAR-2725 \$12.03
SDMT 1606PDR-HQ	CAR-2741 \$17.48	CAR-2742 \$17.48	CAR-2743 \$15.27	--	--
SEKR 42AFN-42	CAR-2761 \$6.30	CAR-2762 \$6.30	CAR-2763 \$5.74	--	--
SEKR 42AFN-76	CAR-2781 \$6.30	CAR-2782 \$6.30	CAR-2783 \$5.74	CAR-2784 \$6.64	CAR-2785 \$6.64
SEKR 42AF-R-HS	--	CAR-2802 \$8.41	CAR-2803 \$7.70	--	--
SEKR 42AFTR-HS	CAR-2821 \$8.41	--	--	--	--
SEKR 43 AFTR-HS	CAR-2841 \$10.16	CAR-2842 \$10.16	CAR-2843 \$10.16	--	--
SEKR 53 AFTR-HS	CAR-2861 \$12.48	CAR-2862 \$12.48	CAR-2863 \$11.47	--	--
SEKT 43 AFR-HM	CAR-2881 \$11.65	CAR-2882 \$11.65	CAR-2883 \$10.52	CAR-2884 \$12.22	--
SEMT 43AF-R-HS	CAR-2901 \$11.65	CAR-2902 \$11.65	CAR-2903 \$10.52	--	--
SOMT 060204-HQ	CAR-2921 \$9.19	CAR-2922 \$9.19	--	CAR-2924 \$9.64	CAR-2925 \$9.64
SOMT 060204TR-HQ	--	--	CAR-2943 \$7.90	--	--
SPKR 42EDTR-HS	CAR-2961 \$8.58	CAR-2962 \$8.58	CAR-2963 \$7.62	--	--
SPMT 100408R-HQ	CAR-2981 \$10.75	--	--	--	--
SPMT 100408TR-HQ	--	CAR-3002 \$10.75	CAR-3003 \$9.80	CAR-3004 \$11.32	CAR-3005 \$11.32
TPKR 32PPTR-HS	CAR-3021 \$10.10	CAR-3022 \$10.10	CAR-3023 \$9.03	--	--
TPKR 43PDTR-HS	CAR-3041 \$13.79	CAR-3042 \$13.79	CAR-3043 \$12.66	--	--
XOMT 060204-HQ	CAR-3061 \$8.92	CAR-3062 \$8.92	--	CAR-3064 \$9.36	CAR-3065 \$9.36
XOMT 060204TR-HQ	CAR-3081 \$8.92	--	--	--	--

Grade Chart	Ansi	Workpiece Material	Recommended Applications
IC250 PVD COATING	C6-C7	Steel and cast steel. Stainless steel.	Roughing. Medium speed. High feed. Interrupted cut.
IC328 PVD COATING	C3-C2	Alloy steel. Aluminum alloys. Austenitic stainless steel. Carbon steel. Cast steel. Copper alloys. Exotic alloys.	Roughing. Low speed. High speed. High feed. Interrupted cut. High resistance to mechanical & thermal shock.
IC635 CVD COATED	C6-C5	Carbon steel. Alloy steel. Stainless steel.	Low speed, high feed and unfavorable conditions.
IC928 PVD COATING	C6-C5	Alloy steel. Aluminum alloys. Austenitic stainless steel. Carbon steel. Cast steel. Copper alloys. Exotic alloys.	Roughing. Low speed. High speed. High feed. Interrupted cut. High resistance to mechanical & thermal shock.
IC950 PVD COATING	C7-C5	For carbon and alloy steels. Also for gray cast irons.	High speed milling at medium feed, no coolant needed

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