TyCarb

High Performance Milling

Welcome to the **TyCarb High Performance Milling** product offering. A comprehensive range of advanced milling cutter technologies, engineered into every **TyCarb** product made.

TyCarb Inserts & Tooling utilize industry-leading carbide substrates and high performance coatings. Indexable carbide, PCD and TFC inserts provide milling solutions for every material application.

TyCarb Solid Carbide tools feature an impressive collection of roughing and finishing geometries to suit every machine type.

MaxiCool™ Shell Mill Adaptors feature through-coolant designs to work seamlessly with TyCarb milling cutters – delivering coolant directly to the critical cutting point of the tool

Milling Tool Selection

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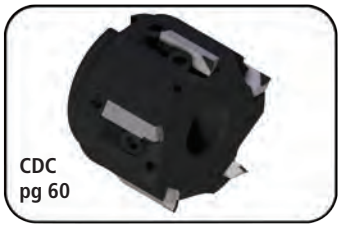
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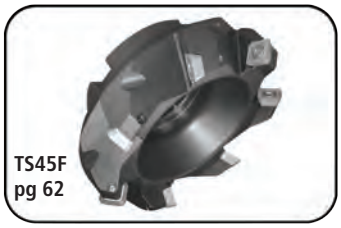
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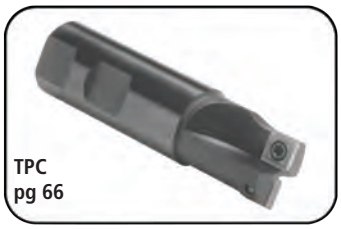
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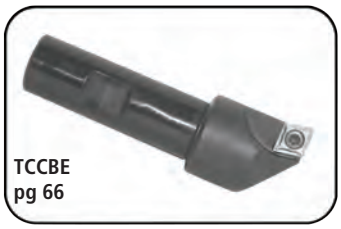
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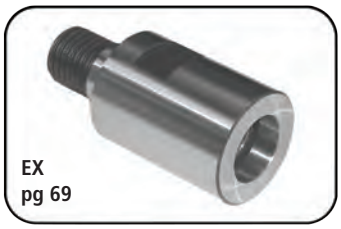
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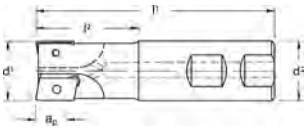
TX90 Square Shoulder Milling Cutters



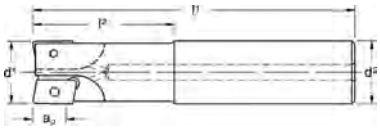
Standard Length End Mills with Coolant Through

Designation	d¹	d²	l¹	l²	Max. ap	flutes
Insert: XDET-090308 / XDHT-0903__-AL						
TXD90-0500C	.500	.625	3.00	1.09	.33	1
TXD90-0625C	.625	.625	3.00	1.09	.33	2
TXD90-0750C	.750	.750	3.50	1.47	.33	2
TXD90-0750FC	.750	.750	3.50	1.47	.33	3
TXD90-0875C	.875	.750	3.50	1.47	.33	3
TXD90-1000C	1.000	.750	3.50	1.47	.33	3
TXD90-1000-4C	1.000	1.000	4.00	1.72	.33	3
TXD90-1000FC	1.000	1.000	4.00	1.72	.33	4
TXD90-1250C	1.250	1.250	4.00	1.72	.33	5
TXD90-1500C	1.500	1.250	4.40	2.12	.33	5
Insert: XPET-160412 / XPHT-1604__ / XPNT-160412-SR / XPNX-160412						
TXP90-0750C	.750	.750	3.50	1.47	.55	1
TXP90-1000C	1.000	.750	3.70	1.67	.55	2
TXP90-1000-4C	1.000	1.000	4.00	1.72	.55	2
TXP90-1250C	1.250	1.250	4.00	1.72	.55	3
TXP90-1500C	1.500	1.250	4.40	2.12	.55	3
TXP90-1500FC	1.500	1.250	4.40	2.12	.55	4
TXP90-2000EMC	2.000	1.250	4.00	1.72	.55	4

Remember to use COPASLIP® anti-seize compound on all insert screws

Featuring:
- Cylindrical Shanks
- Coolant through
- Extra long shanks

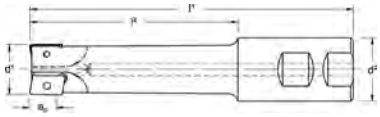
Specifically designed for:
- Milling Chucks
- Hydraulic Chucks
- Shrink-fit Systems



Standard Length Cylindrical Shank End Mills with Coolant Through

Designation	d¹	d²	l¹	l²	Max. ap	flutes
Insert: XDET-090308 / XDHT-0903__-AL						
TXD90CY-0625C	.625	.625	3.00	1.09	.33	2
TXD90CY-0750C	.750	.750	3.50	1.46	.33	2
TXD90CY-1000-4C	1.000	1.000	4.00	1.71	.33	3
Insert: XPET-160412 / XPHT-1604__ / XPNT-160412-SR / XPNX-160412						
TXP90CY-1000-4C	1.000	1.000	4.00	1.71	.55	2
TXP90CY-1250-5C	1.250	1.250	4.00	1.71	.55	3
TXP90CY-1500-5C	1.500	1.250	4.50	2.00	.55	4

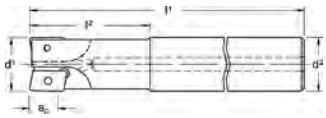
Remember to use COPASLIP® anti-seize compound on all insert screws



Extended Length End Mills with Coolant Through

Designation	d¹	d²	l¹	l²	Max. ap	flutes
Insert: XDET-090308 / XDHT-0903__-AL						
TXD90-0500-XLC	.500	.625	3.91	2.00	.33	1
TXD90-0625-XLC	.625	.750	4.53	2.50	.33	2
TXD90-0750-LC	.750	.750	3.78	1.75	.33	2
TXD90-0750-XLC	.750	1.000	4.81	2.53	.33	2
TXD90-0750-XXLC	.750	1.000	6.31	4.03	.33	2
TXD90-1000-4XXLC	1.000	1.000	8.00	2.25	.33	3
Insert: XPET-160412 / XPHT-1604__ / XPNT-160412-SR / XPNX-160412						
TXP90-1000-4LC	1.000	1.000	5.28	3.00	.55	2
TXP90-1000-4XXLC	1.000	1.000	8.00	2.25	.55	2
TXP90-1000-5LC	1.000	1.250	5.00	2.72	.55	2
TXP90-1000-5XLC	1.000	1.250	6.40	4.12	.55	2
TXP90-1000-5XXLC	1.000	1.250	8.40	6.12	.55	2
TXP90-1250-LC	1.250	1.250	5.00	2.72	.55	3
TXP90-1250-XLC	1.250	1.250	6.40	4.12	.55	3
TXP90-1250-XXLC	1.250	2.000	9.25	6.00	.55	3
TXP90-1250-5XXLC	1.250	1.250	10.00	3.00	.55	3
TXP90-1500-LC	1.500	1.250	6.00	3.72	.55	3
TXP90-1500-XLC	1.500	2.000	7.25	4.00	.55	3
TXP90-1500-5XXLC	1.500	1.250	10.00	7.72	.55	3
TXP90-1500-XXLC	1.500	2.000	9.25	6.00	.55	3

Remember to use COPASLIP® anti-seize compound on all insert screws



Extended Length Cylindrical Shank End Mills with Coolant Through

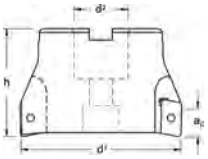
Designation	d¹	d²	l¹	l²	Max. ap	flutes
Insert: XDET-090308 / XDHT-0903__-AL						
TXD90CY-0625-XXLC	.625	.625	6.00	2.00	.33	2
TXD90CY-0750-XXLC	.750	.750	8.00	2.00	.33	2
TXD90CY-1000-4XXLC	1.000	1.000	8.00	2.25	.33	3
Insert: XPET-160412 / XPHT-1604__ / XPNT-160412-SR / XPNX-160412						
TXP90CY-1000-4XXLC	1.000	1.000	8.00	2.25	.55	2
TXP90CY-1250-5XXLC	1.250	1.250	10.00	3.00	.55	3
TXP90CY-1500-5XXLC	1.500	1.250	10.00	7.50	.55	3

Remember to use COPASLIP® anti-seize compound on all insert screws

TX90 Square Shoulder Milling Cutters

Featuring:

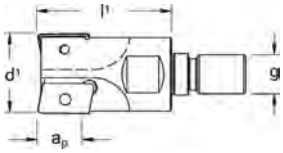
- Specifically designed for aluminum machining
- Allows for full depths of cut and wider widths of cut
- Optimized speeds and feeds while lowering horsepower consumption



Coarse Pitch Face Mills for Aluminum with *Coolant Through*

Designation	d¹	d²	h	Max. ap	flutes	lbs.
Insert: XPET-160412 / XPHT-1604__ / XPNT-160412-SR / XPNX-160412						
TXP90-2000AL-3	2.000	.750	1.50	.55	3	.60
TXP90-2500AL-3	2.500	1.000	2.00	.55	3	1.15
TXP90-3000AL-3	3.000	1.000	2.00	.55	3	1.90
TXP90-4000AL-4X	4.000	1.250	2.00	.55	4	2.70
Standard Non-Through coolant						
TXP90-4000AL-4	4.000	1.500	2.00	.55	4	2.85
TXP90-5000AL-5	5.000	1.500	2.00	.55	5	4.80
TXP90-6000AL-6	6.000	2.000	2.50	.55	6	8.45

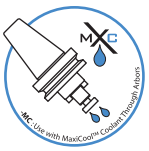
Remember to use COPASLIP® anti-seize compound on all insert screws

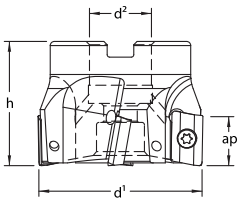


Screw-On Milling Cutters

Designation	d¹	d¹ mm	g	l¹	Max. ap	flutes
Insert: XDET-090308 / XDHT-0903__-AL						
TXD90-0500-TS	.500	12.70	M6	1.10	.33	1
TXD90-0625-TS	.625	15.87	M8	1.10	.33	2
TXD90-0750-TS	.750	19.05	M10	1.18	.33	2
TXD90-0984-TS	.984	25.00	M12	1.18	.33	3
TXD90-1000-TS	1.000	25.40	M12	1.50	.33	3
TXD90-1260-TS	1.260	32.00	M16	1.57	.33	5
Insert: XPET-160412 / XPHT-1604__ / XPNT-160412-SR / XPNX-160412						
TXP90-0975-TS	.975	24.77	M12	1.50	.55	2
TXP90-0984-TS	.984	25.00	M12	1.18	.55	2
TXP90-1000-TS	1.000	25.40	M12	1.50	.55	2
TXP90-1250-TS	1.250	31.75	M16	1.75	.55	3
TXP90-1260-TS	1.260	32.00	M16	1.57	.55	3
TXP90-1378-TS	1.378	35.00	M16	1.57	.55	3
TXP90-1500-TS	1.500	38.10	M16	1.75	.55	3
TXP90-1575-TS	1.575	40.00	M16	1.57	.55	4

Remember to use COPASLIP® anti-seize compound on all insert screws

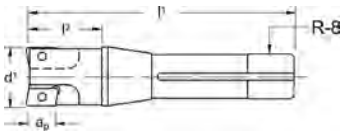




Standard Series Face Mills with *Coolant Through*

Designation	d¹	d²	h	Max. ap	flutes	lbs.
Insert: XDET-090308 / XDHT-0903__-AL						
TXD90-1500SM	1.500	.750	1.75	.33	5	.55
TXD90-2000	2.000	.750	1.50	.33	7	.70
Insert: XPET-160412 / XPHT-1604__ / XPNT-160412-SR / XPNX-160412						
TXP90-1500SM	1.500	.750	1.75	.55	4	.45
TXP90-2000	2.000	.750	1.50	.55	4	.60
TXP90-2000F	2.000	.750	1.50	.55	5	.60
TXP90-2500	2.500	1.000	1.75	.55	5	1.30
TXP90-3000	3.000	1.000	2.00	.55	6	2.25
TXP90-4000	4.000	1.250	2.00	.55	7	3.20
Standard Non-Through coolant						
TXP90-4000F	4.000	1.500	2.00	.55	8	3.35
TXP90-5000	5.000	1.500	2.00	.55	8	5.15
TXP90-6000	6.000	1.500	2.00	.55	9	7.65
TXP90-6000F	6.000	2.000	2.50	.55	10	7.95
TXP90-8000*	8.000	2.500	2.50	.55	12	14.00
*Cutter supplied with 4 holes on a 4" bolt circle						

Remember to use COPASLIP® anti-seize compound on all insert screws



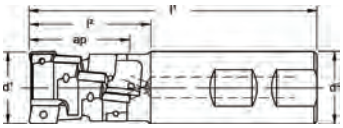
R-8 Shank End Mills

Designation	d¹	Shank	l¹	l²	Max. ap	flutes
Insert: XPET-160412 / XPHT-1604__ / XPNT-160412-SR / XPNX-160412						
TXP90-1250-R8	1.250	R-8	5.63	1.50	.55	3
TXP90-1500-R8	1.500	R-8	5.63	1.50	.55	3
TXP90-2000-R8	2.000	R-8	5.63	1.50	.55	3

Remember to use COPASLIP® anti-seize compound on all insert screws

Spare Parts			
Insert: XD..090308 Series	TX8-687	W-45511	W-37022
Insert: XP..1604__ Series	TX15-388	W-45526	W-37032

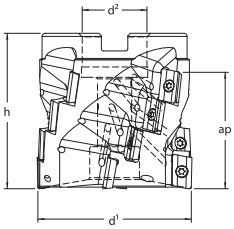
THX90 Helical Square Shoulder Milling Cutters



Helical End Mills with Coolant Through for Profiling & Milling

Designation	d¹	d²	l¹	l²	Max. ap	flutes	No. of inserts
Insert: XDET-090308 / XDHT-0903__-AL							
THXD90-1000	1.000	1.000	4.00	1.72	1.30	2	8
THXD90-1250	1.250	1.250	4.49	2.21	1.30	3	12
THXD90-1500	1.500	1.250	4.84	2.56	1.61	3	15
Insert: XPET-160412 / XPHT-1604__ / XPNT-160412-SR / XPNX-160412							
THXP90-1250	1.250	1.250	4.63	2.35	1.15	2	4
THXP90-1250L	1.250	1.250	4.84	2.56	1.70	2	6
THXP90-1500	1.500	1.250	5.01	2.73	1.17	3	6
THXP90-1500L	1.500	1.250	5.01	2.73	1.70	3	9
THXP90-1750	1.750	1.250	5.01	2.73	1.17	3	6
THXP90-2000EM	2.000	1.250	5.25	2.97	2.25	3	12

Remember to use COPASLIP® anti-seize compound on all insert screws



Helical Shell Mills with Coolant Through for Profiling & Milling

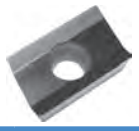
Designation	d¹	d²	h	Max. ap	flutes	No. of inserts
Insert: XPET-160412 / XPHT-1604__ / XPNT-160412-SR / XPNX-160412						
THXP90-2000	2.000	.750	2.00	1.17	3	6
THXP90-2000L	2.000	.750	2.50	1.65	3	9
THXP90-2500	2.500	1.000	2.50	1.65	3	9
THXP90-2500L	2.500	1.000	3.00	2.13	3	12
THXP90-3000	3.000	1.250	3.00	2.25	4	16

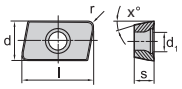
Remember to use COPASLIP® anti-seize compound on all insert screws

Spare Parts			
Insert: XD..090308 Series	TX8-687	W-45511	W-37022
Insert: XP..1604__ Series	TX15-388	W-45526	W-37032

Inserts for TX90 & THX90 Square Shoulder Milling Cutters

Inserts with optimized geometries and large selection of radii from 1/32" - 1/8" for steel, cast steel and aluminum alloys. Very effective with high metal removal rates in medium and heavy duty milling.





Designation	l	d	s	d¹	X	r	RP35AP	RP35MP	RP40AP	RP40MP	TK15MC	RK15MC	TK10M	TP30MC	TP35MP	TK30MD
XDET-090308	.381	1/4	1/8	.110	15°	1/32	●	●	●	●						
XDHT-090302-AL	.381	1/4	1/8	.110		.008							●			
XDHT-090304-AL						1/64							●			
XDHT-090308-AL						1/32							●			
XDHT-090316-AL						1/16							●			
XPET-160412	.635	3/8	3/16	.173	11°	3/64		●	●	●						
XPNT-160412	.635	3/8	3/16	.173		3/64								●	●	
XPNT-160412-SR														●	●	
XPNX-160412	.635	3/8	3/16	.173		3/64						●		●	●	
XPHT-160408	.635	3/8	3/16	.173		1/32									●	
XPHT-160412						3/64					●			●	●	
XPHT-160416						1/16								●	●	●
XPHT-160432						1/8								●	●	
XPHT-160408-AL	.635	3/8	3/196	.173		1/32							●			
XPHT-160412-AL						3/64							●			
XPHT-160416-AL						1/16							●			
XPHT-160420-AL						5/64							●			
XPHT-160424-AL						3/32							●			
XPHT-160432-AL						1/8							●			

-AL inserts designed specifically for aluminum

TyCarb PCD Milling Program

With the TyCarb line of adjustable milling tools for aluminum and non-ferrous metals you can achieve the best possible finishes with the best and most advanced TFC and PCD grades on the market today. The TCP90 cutter is specifically designed for the highest speeds and least amount of cutting pressures, combined with Becker TFC diamond you will achieve excellent tool life.

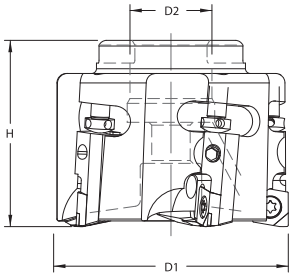
This range includes many wiper geometries for all of your application requirements. The CDC90 tool is a low cost adjustable milling tool for aluminum and non-ferrous materials with a large range of wiper geometries and corner radii to choose from. These tools also include the outstanding performance of the Becker TFC and PCD diamond grades.

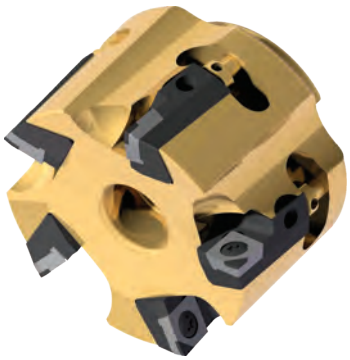
TCP90 Face Mills for PCD Milling Applications

Aluminum face milling cutter program engineered for high speed machining of all non-ferrous materials

- New advanced milling cutter program engineered for high speed machining of non-ferrous materials
- Ultra precise finishing with unique wiper radius PCD / TFC inserts and micro-adjustable cartridges
- Milling cutter bodies made from lightweight 7075-T6 aviation grade aluminum
- MaxiCool through coolant enabled for maximum chip evacuation and temperature control
- New TFC diamond grade for extreme tool life!

Engineered for High Speed Machining!

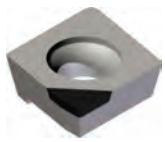


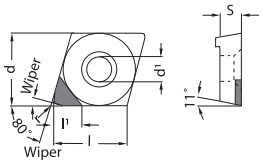


TCP90 Face Mills for PCD / TFC Milling Applications

Designation	D1	D2	H	Flutes	Insert	Cartridge	Cartridge Clamp Screw	Insert Torx Screw	Height Adj. Screw
TCP90-2000-AL	2.00	.75	2.00	3	CPGX-32.51...	BC10X50	M5 SHBS	TX15-951	HAS6823
TCP90-2500-AL	2.50	1.00	2.00	5					
TCP90-3000-AL	3.00	1.00	2.00	7					
TCP90-4000-AL	4.00	1.25	2.00	10					
TCP90-5000-AL	5.00	1.50	2.50	11					
TCP90-6000-AL	6.00	1.50	2.50	13					
TCP90-8000-AL	8.00	2.00	2.50	16					

CPGX Milling Insert with Wiper





Designation	d	d¹	s	l	l¹	r	TFC PD	PDC-CU-S DP
CPGX-32.51PDR	.375	.173	.156	.382	.169	.016	●	●
CPGX-32.51NWR							●	●
CPGX-32.51FLW							●	●
CPGX-32.51SFR							●	●

Application: TCP90 Milling Cutter

Milling the face of a cast aluminum oil pan.
Material is A380 Aluminum consisting of 9% silicon.

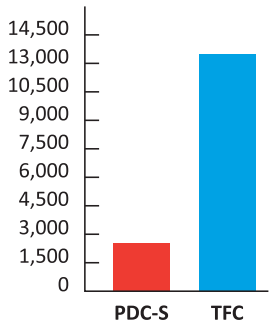
Cutting Data:

4.00" diameter cutter (Z=10)
8000 RPM (through tool coolant)
213 IPM feed rate
0.040 - 0.080" D.O.C.
32 RMS

Part life:

PDC-S= 2,500 pieces
TFC= 13,500 pieces

540% Increase in tool life using TFC!



Chipbreaker Information	
PDR	Crown radius wiper. Suitable for general purpose applications with stable set-ups.
NWR	Full radius insert with no wiper facet. Suitable for unstable set-ups or thin wall parts. Excellent for sealing surfaces.
FLW	Flat wiper facet for general machining and unstable set-ups.
SFR	Very large crown radius wiper facet. Suitable for super finishing on very stable thick wall parts.

TCP90 Face Mills for PCD Milling Applications

PDC-CU-S

Performance: Polycrystalline carbide reinforced diamond of coarse grit size, good edge sharpness and low cutting pressure allowing close tolerances. Best performances for milling. High flank wear resistance and toughness.

Application: Finishing, general purpose and milling of all non-metallics with medium to high content of abrasive reinforcement or silicon.

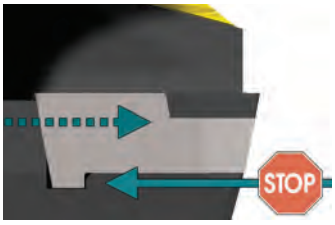
TFC

Performance: Solid diamond with no structure. Cutting edge is extremely sharp and without micro fractures generating no cutting pressure, allowing burr-free results with tolerances close to zero. Extremely flank wear resistant with maximum thermal conductivity, and good toughness.

Application: Super finishing to roughing of all nonferrous metals and non-metallics with abrasive reinforcement or silicon. (HSC - High Tech)

Security Features

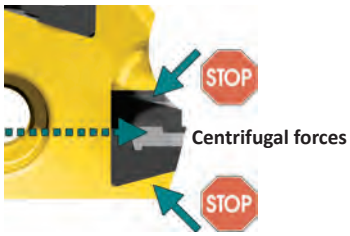
Insert Double Lock



Secondary insert step locks against matching step on insert cartridge

Designed to act as a double lock in conjunction with the tapered insert screw

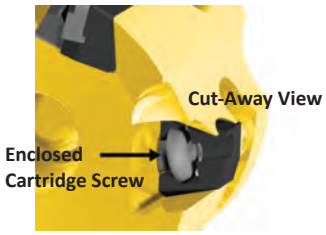
Cartridge Dovetail Lock



Insert cartridge is fitted into cutter body with dovetail design

Centrifugal forces acting on insert cartridge are neutralized by wedge profile of cartridge and matching shape on cutter body

Enclosed Cartridge Clamping Screw



Unique cartridge shrouds cartridge clamp screw within steel body

Potential screw breakage is contained within steel of cartridge – the screw has no place to eject

Performance Features

Micro Adjustable

Easily pre-set cartridges to within microns

All new milling cutters are factory pre-set in height to within ± 0.0004 with a master gauge insert

Through Coolant Enabled

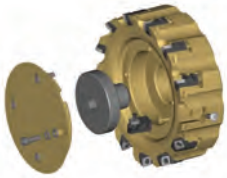
Coolant ports are directed at the cutting edge to extend tool life and improve surface finishes

Wiper Radius

Unique wiper is a compound radius that outperforms traditional wiper flats

With every insert in the cutter loaded with the wiper radius, super finishing is easily attained

Coolant Caps



- **Optional Coolant Caps available for larger cutter diameters to provide 360° direct coolant supply at the cutting edge**
- **Balanced by design and mounted securely to maintain constant coolant supply at maximum RPM**
- **Made from the same lightweight 7075-T6 aviation grade aluminum as cutter bodies for reliable long term use and service**

Cutter Designation	Thru Coolant Cap Screw	Coolant Cap	Mounting Cap Screw	Lock Washer	Washer
TCP90-5000-AL	CCS-125	CTP-125	SHCS-M4	LW-M4	W-M4
TCP90-6000-AL	CCS-160	CTP-160	SHCS-M5	LW-M5	W-M5
TCP90-8000-AL	--	CTP-200	SHCS-M8	LW-M8	W-M8

When ordering Coolant Caps, Mounting Cap Screws and Washers are included. Thru Coolant Cap Screw must be purchased separately.

Materials	Conditions of Chip Removal	Application Range - Cutting Speed N01 - N40		
	High-Speed Milling	N01 - N20 (HSC)	N20 - N30 (HSC)	N25 - N40 (HSC)
		3.2µin - 100µin	100µin - 200µin	200µin - 400µin
N Nonferrous metals Aluminum alloys without silicon	continuous	TFC	PDC-CU-S / TFC	PDC-CU-S / TFC
		2600-14625	2600-13000	2600-8125
	heavily + slightly interrupted	PDC-CU-S / TFC	PDC-CU-S / TFC	PDC-CU-S
		2600-14625	2600-13000	2600-8125
N Nonferrous metals Aluminum alloys with less than 12% silicon	continuous	PDC-CU-S / TFC	PDC-CU-S / TFC	PDC-CU-S / TFC
		2600-1300	2600-11375	2600-8775
	heavily + slightly interrupted	PDC-CU-S / TFC	PDC-CU-S / TFC	PDC-CU-S
		2600-13000	2600-11375	2600-8775
N Nonferrous metals Copper and copper alloys brass, bronze, precious metals	continuous	PDC-CU-S / TFC	PDC-CU-S / TFC	PDC-CU-S / TFC
		2600-9750	2600-8125	2275-7150
	heavily + slightly interrupted	PDC-CU-S / TFC	PDC-CU-S / TFC	PDC-CU-S
		2600-9750	2600-8125	2275-7150
N Non-metallics with re-inforcement (GFK/CFK/Graphite)	continuous	TFC	PDC-CU-S / TFC	PDC-CU-S
		1000-7000	700-6000	500-5000
	heavily + slightly interrupted	PDC-CU-S / TFC	PDC-CU-S / TFC	PDC-CU-S
		1000-7000	700-6000	500-5000

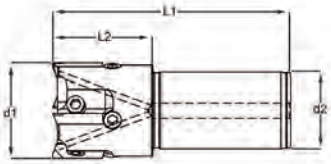
Coolant: Flood or through coolant | Proper wiper radius required for application

CDC90 Milling Cutters

The TyCarb CDC90 milling cutter is one of the most economical height adjustable milling cutters using PCD on the market. This milling cutter was designed for performance and economy in mind. With the use of the high quality Becker PCD and TFC diamond tipped milling blades, superior part quality is quite easily achievable.
The milling blades are available with 3 different radii, 2 different wiper configurations, 3 different cutting edge lengths and for chip control problems, 2 different chipbreakers lasered right into the cutting edge.

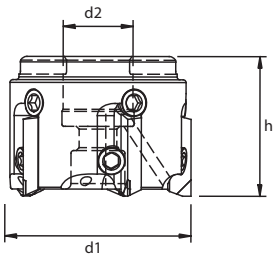
CDC90 Features

- Easily adjustable axially to maintain tolerance within microns
- Rigid clamping system
- Strong and stable insert location
- MaxiCool through coolant capable
- Ground shanks for use in hydraulic and shrink-fit holders



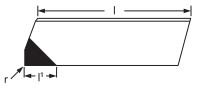
CDC90 End Mills with *Coolant Through*

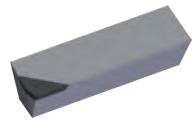
Designation	Dimensions					Insert	Spare Parts
	d1	d2	l1	l2	Fl		Locking & Adjusting Screw
CDC90-1000-EM-ED2	1.000	.750	4.00	1.65	2	"BF" STYLE	EMV-32LH
CDC90-1250-EM-ED3	1.250	1.000	4.00	1.65	3		
CDC90-1500-EM-ED4	1.500	1.250	4.00	1.65	4		
CDC90-2000-EM-ED5	2.000	1.250	4.00	1.65	5		



CDC90 Face Mills with *Coolant Through*

Designation	Dimensions				Insert	Spare Parts
	d1	d2	h	Fl		Locking & Adjusting Screw
CDC90-2000-SM-ED5	2.000	.750	1.50	5	"BF" STYLE	EMV-32LH

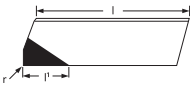


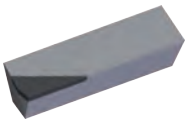


BFMW Milling Blade with wiper, for Face Milling Only

Designation	PDC-CU-S			TFC			l	l¹	r
	Neutral	CB1	CB2	Neutral	CB1	CB2			
BFMW-280504-3.5	●		●	●	●				.016
BFMW-280508-3.5	●		●	●	●		.900	.140	.031
BFMW-280516-3.5	●		●	●	●				.063

fz = .001 - .012 in ap = .003 - .08 in

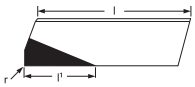


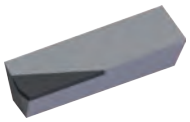


BFSM Milling Blade no wiper, Face and Shoulder Milling

Designation	PDC-CU-S			TFC			l	l¹	r
	Neutral	CB1	CB2	Neutral	CB1	CB2			
BFSM-280504-5.5				●	●				.016
BFSM-280508-5.5				●	●		.900	.220	.031
BFSM-280516-5.5				●	●				.063

fz = .001 - .012 in ap = .004 - .16 in





BSM Milling Blade no wiper, Shoulder Milling Only

Designation	PDC-CU-S			TFC			l	l¹	r
	Neutral	CB1	CB2	Neutral	CB1	CB2			
BSM-280504-8.0	●		●						.016
BSM-280508-8.0	●		●				.900	.315	.031
BSM-280516-8.0	●		●						.063

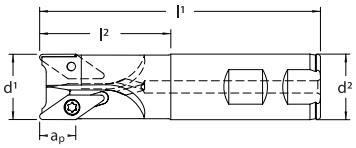
fz = .002 - .016 in ap = .010 - .24 in

TV90 for Non-Ferrous & Plastic Materials

Application

High speed milling of:

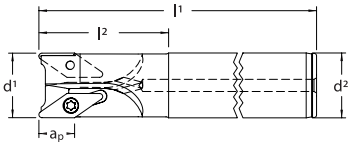
- Aluminum alloys
- Copper alloys
- Plastic materials
- Can be used for edge and slot milling, as well as axial plunge milling
- Excellent for deep cavity work
- Suitable for soft non-ferrous materials
- Up to .500" depth of cut
- Exceptionally high feed rates (over 200 IPM)
- Maximum metal removal on any machine
- Wide range of product available



End Mills Optimized Design for Aluminum with *Coolant Through*

Designation	d¹	d²	l¹	l²	Max. ap	Max Plunge	flutes
Insert: VPGT-221-ALM							
TVP90-0750C	.750	.750	3.28	1.25	.40	.200	2
TVP90-1000XC	1.000	1.000	4.28	2.00	.40	.200	3
*Insert: VPGT-333-ALM / VPGT-33PPFR-ALM**							
TVP90-1000C	1.000	1.000	4.28	2.00	.53	.250	2
TVP90-1250C	1.250	1.250	4.28	2.00	.53	.250	2
TVP90-1500C	1.500	1.250	4.28	2.00	.53	.250	3
** To provide necessary clearance when using VPGT-33PPFR-ALM inserts, the cutter body must be relieved*							

Remember to use COPASLIP® anti-seize compound on all insert screws



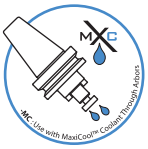
Extra Length End Mills Optimized Design for Aluminum with *Coolant Through*

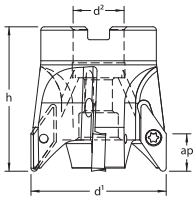
Designation	d¹	d²	l¹	l²	Max. ap	Max Plunge	flutes
Insert: VPGT-221-ALM							
TVP90CY-0750-XLC	.750	.750	6.75	1.25	.40	.200	2
TVP90CY-1000X-XLC	1.000	1.000	8.00	2.00	.40	.200	3
*Insert: VPGT-333-ALM / VPGT-33PPFR-ALM**							
TVP90CY-1000-XLC	1.000	1.000	8.00	2.00	.53	.250	2
TVP90CY-1250-XLC	1.250	1.250	8.00	2.00	.53	.250	2
TVP90CY-1500-XLC	1.500	1.250	8.00	2.00	.53	.250	3
** To provide necessary clearance when using VPGT-33PPFR-ALM inserts, the cutter body must be relieved*							

Remember to use COPASLIP® anti-seize compound on all insert screws

Features / Benefits

- High positive geometry insert with wave shape topography eliminates edge build-up and provides efficient chip removal
- End mills designed with coolant holes directed toward cutting edges
- Insert grade TK10MP is specifically designed for the machining of aluminum and non-ferrous materials that require high cutting speeds

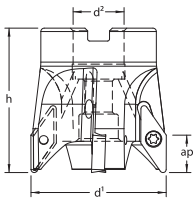




Face Mills Optimized Design for Aluminum with *Coolant Through*

Designation	d¹	d²	h	Max. ap	Max Plunge	No. of inserts
*Insert: VPGT-333-ALM / VPGT-33PPFR-ALM**						
TVP90-2000	2.000	.750	2.12	.53	.250	4
Insert: VCGT-43.58-ALM						
TVC90-2000	2.000	.750	2.12	.59	.300	3
TVC90-2500	2.500	1.000	2.12	.59	.300	4
TVC90-3000	3.000	1.000	2.12	.59	.300	5
Standard Non-Through Coolant						
TVC90-4000	4.000	1.500	2.12	.59	.300	6
** To provide necessary clearance when using VPGT-33PPFR-ALM inserts, the cutter body must be relieved*						

Remember to use COPASLIP® anti-seize compound on all insert screws

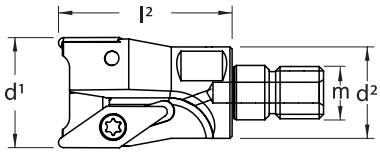


Face Mills Optimized Design for Aluminum with *Coolant Through*

Designation	d¹	d²	h	Max. ap	Max Plunge	No. of inserts
Insert: VCGT-43.58-ALM						
TVC90-2500AL-3	2.500	1.000	2.12	.59	.300	3
TVC90-3000AL-3	3.000	1.000	2.12	.59	.300	3
Standard Non-Through Coolant						
TVC90-4000AL-4	4.000	1.500	2.12	.59	.300	4

Remember to use COPASLIP® anti-seize compound on all insert screws

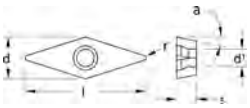
Spare Parts			
Insert: VPGT-221-ALM	TX8-1625	W-45511	W-37022
Insert: VPGT-33...-ALM	TX15-1640	W-45526	W-37032
Insert: VCGT-43.58-ALM	TX20-1250	W-45531	W-37036



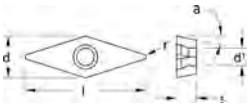
Screw-On Milling Cutters
Optimized Design for Aluminum

Designation	d¹	d²	l²	m	Max. ap	Max Plunge	flutes
Insert: VPGT-221-ALM							
Standard Non-Through Coolant							
TVP90-0750-TS	.750	.709	1.18	M10	.40	.200	2
Through Coolant Enabled							
TVP90-1000XC-TS	1.000	.827	1.57	M12	.40	.200	3
*Insert: VPGT-333-ALM / VPGT-33PPFR-ALM**							
TVP90-1000C-TS	1.000	.827	1.57	M12	.53	.250	2
TVP90-1250C-TS	1.250	1.142	1.97	M16	.53	.250	2
TVP90-1500C-TS	1.500	1.142	1.97	M16	.53	.250	3
** To provide necessary clearance when using VPGT-33PPFR-ALM inserts, the cutter body must be relieved*							

Remember to use COPASLIP® anti-seize compound on all insert screws



Designation	l	d	s	d¹	r	TK10MP	TK10M				
						VCGT-...					
VCGT-43.58-ALM	.870	1/2	.219	.216	1/8	●	●				



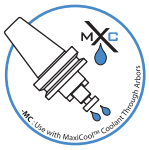
Designation	l	d	s	d¹	r	TK10MP	TK10M				
						VPGT-...					
VPGT-221-ALM	.437	1/4	.125	.110	1/64	●	●				
VPGT-333-ALM	.654	3/8	.187	.173	3/64	●	●				
VPGT-33PDFR-ALM					--	●	●				

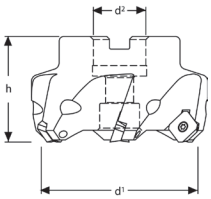
Spare Parts			
Insert: VPGT-221-ALM	TX8-1625	W-45511	W-37022
Insert: VPGT-33...-ALM	TX15-1640	W-45526	W-37032
Insert: VCGT-43.58-ALM	TX20-1250	W-45531	W-37036

TS45F Super Positive Milling Cutters

Super milling cutter with 45° entering angle that decreases cutting forces and allows a high feed on limited capacity machines. Inserts are mounted using Torx® locking screws for uninterrupted chip flow.

TS45F cutters use thicker inserts, allowing for high feed rates. This face milling cutter works well on steels, stainless steels, alloyed steels, cast iron and aluminum alloys.



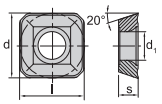


Face Mills

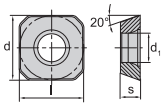
Designation	d¹	d²	h	Flutes	lbs
Insert: SEKT-43 / SEKW-43					
Through Coolant Enabled					
TS45F-20SE43X	2.000	.750	1.75	4	1.05
TS45F-25SE43X	2.500	1.000	2.00	5	2.00
TS45F-30SE43X	3.000	1.000	2.00	6	2.65
TS45F-40SE43X	4.000	1.250	2.00	7	3.50
Standard Non-Through Coolant					
TS45F-50SE43X	5.000	1.500	2.00	8	5.95
TS45F-60SE43X	6.000	1.500	2.00	9	8.90

Remember to use COPASLIP® anti-seize compound on all insert screws

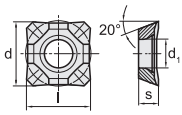
Spare Parts			
Insert: SE..._ -43	TX20-072	W-45531	W-37036



Designation	l	d	s	d¹	r	TP25MP	TP30MC	TP35MP	TP25M	TM45MP	TK15MC
						SEKT/SEHT					
SEKT-43AFSN	.500	1/2	.187	.218	--		●	●	●		
SEHT-43-AFSN-TMK	.500	1/2	.187	.218	--					●	



Designation	l	d	s	d¹	r	TP25MP	TP30MC	TP35MP	TP25M	TM45MP	RK15MC	TK15MC
						SEKW-...						
SEKW-43AFEN	.500	1/2	.187	.218	--					●		
SEKW-43AFSN	.500	1/2	.187	.218	--	●	●	●	●	●	●	●



Designation	l	d	s	d¹	r	TK10MP	TK10M	TP35MP	TP25M	TM45MP	RK15MC	TK15MC
						SEHT-...						
SEHT-43-AFFN-RAL	.500	1/2	.187	.218	--	●	●					

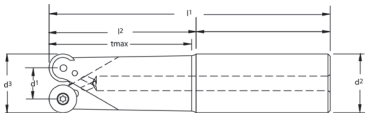
-RAL inserts designed specifically for aluminum

TR360 Copy Milling Cutters

End Mills with Coolant Through using 15° Positive Inserts for Profiling & Contouring

Designation	d³	d¹	d²	l¹	l²	tmax	ramp angle	flutes
Insert: RDGT-0802MOT / RDMT-0802MOT / RDMW-0802MOT								
TR360-0500-36	.500	.185	.625	3.65	1.74	1.64	10°	1
TR360-0500-44	.500	.185	.625	4.40	2.49	2.39	10°	1
TR360-0500-51	.500	.185	.625	5.15	3.24	3.14	10°	1
TR360-0625-36A	.625	.310	.625	3.65	1.74	1.74	10°	1
TR360-0625-36	.625	.310	.625	3.65	1.74	1.74	60°	2
TR360-0625-44A	.625	.310	.625	4.40	2.49	2.49	10°	1
TR360-0625-44	.625	.310	.625	4.40	2.49	2.49	60°	2
TR360-0625-52A	.625	.310	.750	5.28	3.25	3.14	10°	1
TR360-0625-52	.625	.310	.750	5.28	3.25	3.14	60°	2
TR360-0625-60	.625	.310	.750	6.03	4.00	3.89	60°	2
TR360-0625-70	.625	.310	1.000	7.03	4.75	1.65	60°	2
TR360-0750-37X	.750	.435	.750	3.78	1.75	1.74	22°	2
TR360-0750-45X	.750	.435	.750	4.53	2.50	2.40	22°	2
TR360-0750-55X	.750	.435	1.000	5.53	3.25	3.06	22°	2
TR360-0750-70X	.750	.435	1.000	7.03	4.75	4.56	22°	2
TR360-1000R08-47	1.000	.685	1.000	4.78	2.50	2.50	10°	3
TR360-1000R08-55	1.000	.685	1.000	5.53	3.25	3.25	10°	3
TR360-1000R08-67	1.000	.685	1.000	6.78	4.50	4.50	10°	3
TR360-1250R08-47	1.250	.935	1.250	4.78	2.50	2.50	6°	5
TR360-1250R08-62	1.250	.935	1.250	6.28	4.00	4.00	6°	5
Insert: RDGT-1003MOT / RDMT-1003MOT / RDMW-1003MOT								
TR360-0750-37	.750	.356	.750	3.78	1.75	1.74	40°	2
TR360-0750-45	.750	.356	.750	4.53	2.50	2.49	40°	2
TR360-0750-55	.750	.356	1.000	5.53	3.25	3.06	40°	2
TR360-0750-62	.750	.356	1.000	6.28	4.00	3.81	40°	2
TR360-0750-70	.750	.356	1.000	7.03	4.75	4.56	40°	2
TR360-1000-52X	1.000	.606	1.000	5.28	3.00	2.94	17°	2
TR360-1000-67X	1.000	.606	1.250	6.78	4.50	4.44	17°	2
TR360-1000-74X	1.000	.606	1.250	7.46	5.19	5.12	17°	2
TR360-1000R10-40	1.000	.606	1.000	4.00	1.71	1.71	86°	3
TR360-1000R10-52	1.000	.606	1.000	5.28	3.00	3.00	94°	3
TR360-1000R10-67	1.000	.606	1.000	6.78	4.50	4.50	97°	3
TR360-1250R10-40	1.250	.856	1.250	4.00	1.71	1.71	105°	4
TR360-1250R10-52	1.250	.856	1.250	5.28	3.00	3.00	109°	4
TR360-1250R10-67	1.250	.856	1.250	6.78	4.50	4.50	119°	4
Insert: RDMT-1204MOT-X / RDMW-1204MOT-X								
TR360-1000-47	1.000	.528	1.000	4.78	2.50	2.49	50°	2
TR360-1000-55	1.000	.528	1.000	5.53	3.25	3.19	50°	2
TR360-1000-64	1.000	.528	1.250	6.40	4.12	3.93	50°	2
TR360-1000-71	1.000	.528	1.250	7.15	4.87	4.68	50°	2
TR360-1250-54	1.250	.778	1.250	5.40	3.12	3.11	23°	2
TR360-1250-61	1.250	.778	1.250	6.15	3.87	3.86	23°	2
TR360-1250-72	1.250	.778	1.500	7.25	4.56	4.34	23°	2
TR360-1250-80	1.250	.778	1.500	8.00	5.31	5.09	23°	2
TR360-1500-56X	1.500	1.028	1.250	5.65	3.37	3.25	27°	3
TR360-1500-71X	1.500	1.028	1.250	7.15	4.87	4.75	27°	3
Insert: RDMT-1605MOT-X / RDMW-1605MOT-X								
TR360-1500-54	1.500	.870	1.250	5.40	3.12	3.11	27°	2
TR360-1500-61	1.500	.870	1.250	6.15	3.87	3.86	27°	2
TR360-1500-72	1.500	.870	1.500	7.25	4.56	4.56	27°	2
TR360-1500-80	1.500	.870	1.500	8.00	5.31	5.31	27°	2

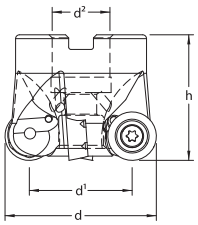
Remember to use COPASLIP® anti-seize compound on all insert screws



Cylindrical Shank End Mills with Coolant Through using 15° Positive Inserts for Profiling & Contouring

Designation	d³	d¹	d²	l¹	l²	tmax	ramp angle	flutes
Insert: RDGT-0802MOT / RDMT-0802MOT / RDMW-0802MOT								
TR360CY-0500-36	.500	.185	.625	3.65	1.74	1.64	10°	1
TR360CY-0500-51	.500	.185	.625	5.15	3.24	3.14	10°	1
TR360CY-0625-36	.625	.310	.625	3.65	1.74	1.74	60°	2
TR360CY-0625-44	.625	.310	.625	4.40	2.49	2.49	60°	2
TR360CY-0625-60	.625	.310	.750	6.03	4.00	3.89	60°	2
TR360CY-0750-37X	.750	.435	.750	3.78	1.75	1.74	22°	2
TR360CY-0750-45X	.750	.435	.750	4.53	2.50	2.49	22°	2
TR360CY-0750-62X	.750	.435	.750	6.28	4.25	4.24	22°	2
TR360CY-1250R08-62	1.250	.935	1.250	6.28	4.00	4.00	6°	5
Insert: RDMT-1204MOT-X / RDMW-1204MOT-X								
TR360CY-1000-47	1.000	.528	1.000	4.78	2.50	2.49	50°	2
TR360CY-1000-71	1.000	.528	1.250	7.15	4.87	4.68	50°	2

Remember to use COPASLIP® anti-seize compound on all insert screws

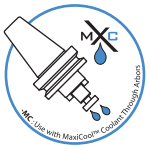


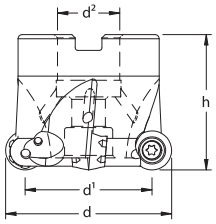
Face Mills using 15° Positive Inserts for Copying & Face Milling with Coolant Through

Designation	d	d¹	d²	h	ramp angle	flutes	lbs
Insert: RDGT-0802MOT / RDMT-0802MOT / RDMW-0802MOT							
TR360-2RD08	2.000	1.685	.750	1.63	1.8°	7	.85
Insert: RDGT-1003MOT / RDMT-1003MOT / RDMW-1003MOT							
TR360-2RD10	2.000	1.606	.750	1.63	4	5	.65
TR360-2.5DR10	2.500	2.106	1.000	1.75	3	6	1.20
TR360-3RD10	3.000	2.608	1.000	2.00	2.5°	8	2.00
Insert: RDMT-1204MOT-X / RDMW-1204MOT-X							
TR360-2RD12	2.000	1.528	.750	1.63	10°	4	.65
TR360-2RD12F	2.000	1.528	.750	1.63	10°	5	.65
TR360-2.5RD12F	2.500	2.028	1.000	1.75	8°	6	1.20
TR360-3RD12F	3.000	2.528	1.000	2.00	5°	7	2.00
Insert: RDMT-1605MOT-X / RDMW-1605MOT-X							
TR360-2RD16	2.000	1.370	.750	1.63	12°	3	.55
TR360-2.5RD16	2.500	1.870	1.000	1.75	8°	4	1.05
TR360-3RD16	3.000	2.370	1.000	2.00	11°	5	1.65
TR360-4RD16	4.000	3.370	1.250	2.00	7°	6	2.55
Standard Non Through Coolant							
TR360-6RD16	6.000	5.370	1.500	2.00	7°	7	6.65
TR360-8RD16*	8.000	7.370	2.000	2.50	8°	8	12.75
** Cutter supplied with 4 holes on a 4" bolt circle*							

Remember to use COPASLIP® anti-seize compound on all insert screws

TR360 Copy Milling Cutters

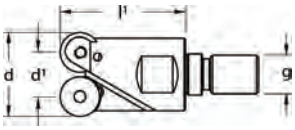




Face Mills using 7° Positive Inserts for Milling, Duplicating, & Drilling with *Coolant Through*

Designation	d	d¹	d²	h	ramp angle	flutes	lbs
Insert: RCMT-1606MOT-X							
TR360-2RC16	2.000	1.370	.750	1.63	12°	3	.60
TR360-2.5RC16	2.500	1.870	1.000	1.75	8°	4	1.10
TR360-3RC16	3.000	2.370	1.000	2.00	11°	5	1.70
TR360-3RC16X	3.000	2.370	1.250	2.00	11°	5	2.60
TR360-4RC16	4.000	3.370	1.250	2.00	7°	7	2.60
TR360-4RC16X	4.000	3.370	1.500	2.00	7°	7	2.65
Standard Non Through Coolant							
TR360-6RC16	6.000	5.370	1.500	2.00	7°	9	6.60
TR360-6RC16X	6.000	5.370	2.000	2.50	7°	9	7.15
TR360-8RC16*	8.000	7.370	2.000	2.50	8°	11	14.25
** Cutter supplied with 4 holes on a 4" bolt circle*							

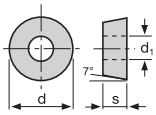
Remember to use COPASLIP® anti-seize compound on all insert screws



Screw-On Milling Cutters using 15° Positive Inserts for Copying & Face Milling

Designation	d	d mm	d¹	g	l¹	flutes
Insert: RDGT-0802MOT / RDMT-0802MOT / RDMW-0802MOT						
TR360-0500-TS	.500	12.70	.185	M6	1.10	1
TR360-0500L-TS	.500	12.70	.185	M8	2.00	1
TR360-0625-TS	.625	15.87	.310	M8	1.10	2
TR360-0750-TS	.750	19.05	.435	M10	1.18	2
TR360-1000R08-TS	1.000	25.40	.685	M12	1.50	3
TR360-1250R08-TS	1.250	31.75	.935	M16	1.75	5
Insert: RDGT-1003MOT / RDMT-1003MOT / RDMW-1003MOT						
TR360-0984-TS	.984	25.00	.591	M12	1.18	2
TR360-1000R10-TS	1.000	25.40	.606	M12	1.50	3
TR360-1181-TS	1.181	30.00	.787	M16	1.57	3
TR360-1250R10-TS	1.250	31.75	.856	M16	1.75	4
Insert: RDMT-1204MOT-X / RDMW-1204MOT-X						
TR360-0945-TS	.945	24.00	.472	M12	1.18	2
TR360-1000-TS	1.000	25.40	.528	M12	1.50	2
TR360-1250-TS	1.250	31.75	.778	M16	1.75	2
TR360-1378-TS	1.378	35.00	.906	M16	1.57	3
TR360-1500-TS	1.500	38.10	1.028	M16	1.75	3
TR360-1575-TS	1.575	40.00	1.102	M16	1.57	4
Insert: RDMT-1605MOT-X / RDMW-1605MOT-X						
TR360-1260-TS	1.260	32.00	.630	M16	1.57	2

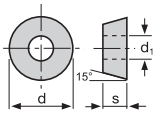
Remember to use COPASLIP® anti-seize compound on all insert screws



RCMT-...-MOT

Designation	l	d	s	d¹	r	TP30AP	TP30MP	TM30MP	TP35MC		
RCMT-1606MOT-X*	--	.630	1/4	.217	--	●	●	●	●		

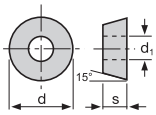
*Inserts have integrated anti-rotation lock



RDGT-...-AL

Designation	l	d	s	d¹	r	TK10M					
RDGT-0802MO-AL	--	.315	3/32	.134	--	●					
RDGT-0803MO-AL	--	.315	1/8	.134	--	●					
RDGT-1003MO-AL	--	.394	1/8	.173	--	●					

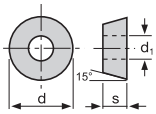
-AL inserts designed specifically for aluminum



RDMT-...-MOT

Designation	l	d	s	d¹	r	TP30AP	TP30MP	TM30MP	TP35MC		
RDMT-0802MOT	--	.315	3/32	.134	--	●	●	●	●		
RDMT-1003MOT	--	.394	1/8	.173	--	●	●	●	●		
RDMT-1204MOT-X*	--	.472	3/16	.173	--	●	●	●	●		
RDMT-1605MOT-X*	--	.630	7/32	.217	--	●	●	●	●		

*Inserts have integrated anti-rotation lock



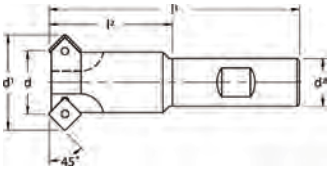
RDMW-...-MOT

Designation	l	d	s	d¹	r	TP30AP	TP30MP	TM30MP	TP35MC		
RDMW-0802MOT	--	.315	3/32	.134	--	●	●	●	●		
RDMW-1003MOT	--	.394	1/8	.173	--	●	●	●	●		
RDMW-1204MOT-X*	--	.472	3/16	.173	--	●	●	●	●		
RDMW-1605MOT-X*	--	.630	7/32	.217	--	●	●	●	●		
RDMW-2006MOT-X*	--	.787	1/4	.259	--	●	●	●	●		

*Inserts have integrated anti-rotation lock

Spare Parts			
Insert: RD..-0802MOT	TX8-013	W-45511	W-37022
Insert: RD..-1003MOT	TX15-951	W-45526	W-37032
Insert: RD..-1204MOT-X	TX15-388	W-45526	W-37032
Insert: RD..-1605MOT-X	TX20-072	W-45531	W-37036
Insert: RC..-1606MOT-X	TX20-072	W-45531	W-37036

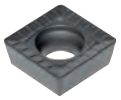
TS45 45° Chamfer Milling Cutters

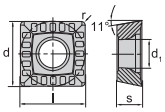


End Mills

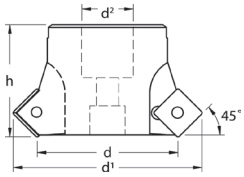
Designation	d	d¹	d²	l¹	l²	Flutes	Chamfer Min-Max
Regular Length							
Insert: SDMT-322							
TSD45-0625	.625	1.130	.750	3.00	.97	2	.67 - 1.11
TSD45-0750	.750	1.255	.750	3.30	1.27	2	.79 - 1.235
TSD45-1000	1.000	1.505	.750	4.00	1.97	2	1.04 - 1.48
TSD45-1250	1.250	1.755	1.250	4.00	1.72	3	1.29 - 1.73
Insert: SPMT-432 / SPMW-432							
TSP45-1500	1.500	2.182	1.250	4.00	1.72	3	1.54 - 2.11
Extended Length							
Insert: SDMT-322							
TSD45-0625-L	.625	1.130	.750	8.00	1.49	2	.67 - 1.11
TSD45-1000-L	1.000	1.505	1.000	8.00	1.49	2	1.04 - 1.48

Remember to use COPASLIP® anti-seize compound on all insert screws





Designation	l	d	s	d¹	r	TP25MP	TP30MC	TP35MP	TP25M		
						SPMT-...					
SPMT-432-SN-P	.500	1/2	.187	.205	1/32		●				

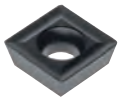


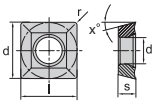
Face Mills

Designation	d	d¹	d²	h	Flutes	Chamfer Min-Max
Insert: SPMT-432 / SPMW-432						
TSP45-2000	2.000	2.680	.750	1.60	4	2.04 - 2.66

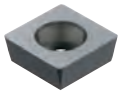
Remember to use COPASLIP® anti-seize compound on all insert screws

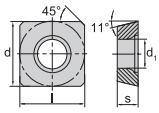
Spare Parts			
Insert: SDM-322	TX15-951	W-45526	W-37032
Insert: SPM-432	TX20-072	W-45531	W-37036





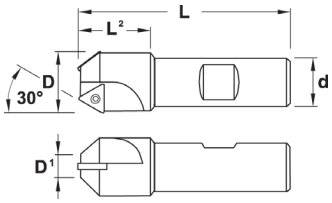
Designation	l	d	s	d¹	r	x	TP25MP	TP30MC	TP35MP	TP25M	
							SDMT/SPMT				
SDMT-322	.375	3/8	.125	.159	1/32	15°	●			●	
SPMT-432-SN	.500	1/2	.187	.218	1/32	11°		●	●		





Designation	l	d	s	d¹	r	RK15MC	TK15MC				
						SPMW-...					
SPMW-432	.500	1/2	.187	.205	1/32	●	●				

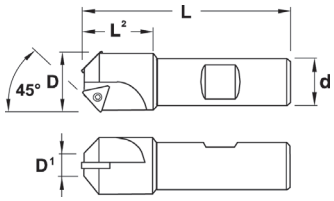
TT30E / TT45E Chamfer & Countersink Milling Cutters



Style "A" - 30°

Designation	D	D¹	d	L	L²	Flutes
*Insert: TCM_-21.5_*						
TT30E-062TC2	.625	.213	.500	2.75	.94	1
TT30E-102TC2	1.020	.622	.750	3.54	1.18	2

Remember to use COPASLIP® anti-seize compound on all insert screws



Style "B" - 45°

Designation	D	D¹	d	L	L²	Flutes
*Insert: TCM_-21.5_*						
TT45E-062TC2	.625	.047	.500	2.75	.94	1
TT45E-083TC2	.830	.244	.750	3.54	1.10	2

Remember to use COPASLIP® anti-seize compound on all insert screws

TCMT

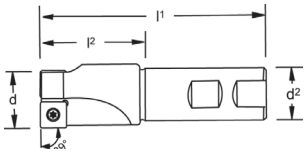
Designation	l	d	s	d¹	r	RP25K					
						TCMT-...					
TCMT-21.51-TMU	.433	1/4	3/32	.110	1/64	●					
TCMT-21.52-TMU					1/32	●					

Spare Parts		
Insert: TCM_-21.5_	TX7-1425	W-37019

TPC Plunge Milling Cutters

The TPC cutter permits the machine operator to drill and side mill with the same tool. Drilling depths of 3/4 of the insert height are possible. (Deeper holes are attainable, but chip evacuation is extremely important.)

Enclosed pockets are an ideal application for the TPC end mill. Several different insert styles are available, both in coated and uncoated milling grades.



Standard Length End Mills for Drilling and Milling

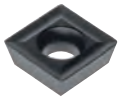
Designation	d	d²	l¹	l²	Flutes
Insert: SDMT-322					
TPC-0730	.730	.750	3.03	1.00	1
TPC-1000	1.000	1.000	3.50	1.25	2
TPC-1000-3	1.000	.750	3.25	1.25	2
Insert: SPMT-432 / SPMW-432					
TPC-1250	1.250	1.000	4.00	1.50	2
TPC-1500	1.500	1.250	4.00	1.50	2

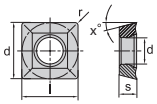
Remember to use COPASLIP® anti-seize compound on all insert screws

Extended Length End Mills for Drilling and Milling

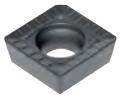
Designation	d	d²	l¹	l²	Flutes
Insert: SDMT-322					
TPC-0730-XL	.730	.750	3.53	1.50	1
TPC-1000-XL	1.000	1.000	4.31	2.03	2
Insert: SPMT-432 / SPMW-432					
TPC-1250-XL	1.250	1.000	4.81	2.50	2
TPC-1500-XL	1.500	1.250	5.40	3.00	2

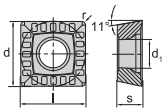
Remember to use COPASLIP® anti-seize compound on all insert screws



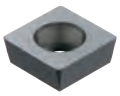


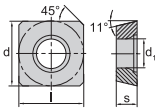
Designation	l	d	s	d¹	r	x	SDMT/SPMT TP25MP	TP30MC	TP35MP	TP25M	
SDMT-322	.375	3/8	.125	.159	1/32	15°	●			●	
SPMT-432-SN	.500	1/2	.187	.218	1/32	11°		●	●		





Designation	l	d	s	d¹	r	SPMT-... TP25MP	TP30MC	TP35MP	TP25M	
SPMT-432-SN-P	.500	1/2	.187	.205	1/32		●			





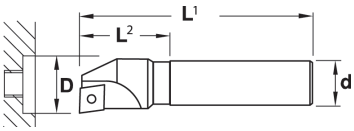
Designation	l	d	s	d¹	r	SPMW-... RK15MC	TK15MC			
SPMW-432	.500	1/2	.187	.205	1/32	●	●			

Spare Parts			
Insert: SDM-322	TX15-951	W-45526	W-37032
Insert: SPM-432	TX20-072	W-45526	W-37032

TCCBE Counterbore Milling Cutters

Range*: 1/4" to 3/4" or M6 to M16 not inclusive

- Positive insert geometry for smooth cutting action
- Recommended for use on N/C machining centers and conventional milling machines



End Mills for Counterboring - INCH

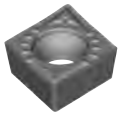
Designation	Cap Screw Size	D	d	L¹	L²
*Insert: CCM_-21.5_*					
TCCBE-025-CC2	1/4	.406	.500	3.00	.59
TCCBE-031-CC2	5/16	.500	.500	3.00	.74
*Insert: CCM_-32.5_*					
TCCBE-037-CC3	3/8	.594	.625	3.50	1.18
TCCBE-050-CC3	1/2	.781	.625	3.50	1.26
TCCBE-062-CC3	5/8	.969	.750	3.50	1.26
TCCBE-075-CC3	3/4	1.188	.750	3.50	1.26

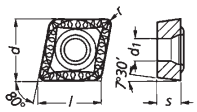
Remember to use COPASLIP® anti-seize compound on all insert screws

End Mills for Counterboring - METRIC

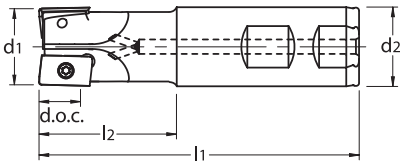
Designation	Cap Screw Size	D	d	L¹	L²
*Insert: CCM_-21.5_*					
TCCBE-M6-CC2	M6	11	12	85	15
TCCBE-M8-CC2	M8	14	12	85	19
*Insert: CCM_-32.5_*					
TCCBE-M10-CC3	M10	17	16	95	30
TCCBE-M12-CC3	M12	19	16	95	32
TCCBE-M14-CC3	M14	22	16	95	32
TCCBE-M16-CC3	M16	25	16	95	32

Remember to use COPASLIP® anti-seize compound on all insert screws



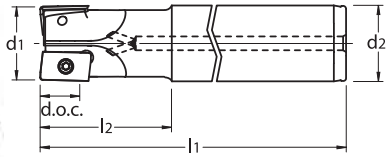


Designation	l	d	s	d¹	r	CCMT-... RP25K					
CCMT-21.51-TMU	.254	1/4	3/32	.114	1/64	●					
CCMT-21.52-TMU					1/32	●					
CCMT-32.51-TMU	.380	3/8	5/32	.173	1/64	●					
CCMT-32.52-TMU					1/32	●					



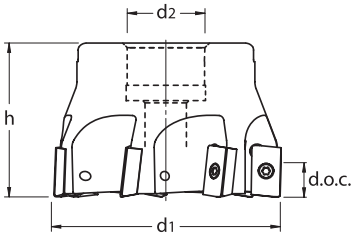
90° ISO End Mills - EMP90
Std. Length with Coolant Through

Cutter Body No.	d¹	d²	l¹	l²	d.o.c	fl
Inserts: APHT-1003-PDFR-RAL / APKT-1003-PDSR-BM / APKT-1003-PDSR-BP						
EMP90-A10-050WCI	0.500	.625	3.00	1.09	.33	1
EMP90-A10-062WCI	0.625	.625	3.00	1.09	.33	2
EMP90-A10-075WDI	0.750	.750	3.50	1.46	.33	2
EMP90-A10-075WDFI	0.750	.750	3.50	1.46	.33	3
EMP90-A10-100WEI	1.000	1.000	4.00	1.71	.33	3
EMP90-A10-100WEFI	1.000	1.000	4.00	1.71	.33	4
EMP90-A10-125WFI	1.250	1.250	4.00	1.71	.33	5
EMP90-A10-150WFI	1.500	1.250	4.00	1.71	.33	6
Inserts: APHT-1604-PDFR-RAL / APKT-160416-SR-BP / APKT-160424-SR-BP / APKT-160432-SR-BP / APKT-1604-PDSR						
EMP90-A16-075WDI	0.750	.750	3.50	1.47	.55	1
EMP90-A16-100WDI	1.000	1.000	4.00	1.71	.55	2
EMP90-A16-125WDI	1.250	1.250	4.00	1.71	.55	3
EMP90-A16-150WDI	1.500	1.250	4.00	1.71	.55	3



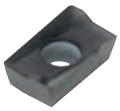
90° ISO End Mills - EMP90
Long Length with Coolant Through

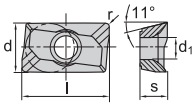
Cutter Body No.	d¹	d²	l¹	l²	d.o.c	fl
Inserts: APHT-1003-PDFR-RAL / APKT-1003-PDSR-BM / APKT-1003-PDSR-BP						
EMP90-A10-050SCI-XL	0.500	.625	4.00	2.09	.33	1
EMP90-A10-062SCI-XL	0.625	.625	4.00	2.09	.33	2
EMP90-A10-075SDI-XL	0.750	.750	5.00	2.96	.33	2
EMP90-A10-100SEI-XL	1.000	1.000	6.00	3.71	3.3	3
Inserts: APHT-1604-PDFR-RAL / APKT-160416-SR-BP / APKT-160424-SR-BP / APKT-160432-SR-BP / APKT-1604-PDSR						
EMP90-A16-100SEI-XXL	1.000	1.000	8.00	2.62	.55	2
EMP90-A16-125SFI-XXL	1.250	1.250	8.00	2.62	.55	3
EMP90-A16-150SFI-XXL	1.500	1.250	8.00	---	.55	3



90° ISO Face Mills - FMP90

Cutter Body No.	d¹	d²	h	d.o.c	fl
Inserts: APHT-1003-PDFR-RAL / APKT-1003-PDSR-BM / APKT-1003-PDSR-BP					
FMP90-A10-200AA	2.000	.750	1.500	.33	7
Inserts: APHT-1604-PDFR-RAL / APKT-160416-SR-BP / APKT-160432-SR-BP / APKT-1604-PDSR					
FMP90-A16-200AA	2.000	.750	1.50	.55	5
FMP90-A16-250AB	2.500	1.000	1.75	.55	6
FMP90-A16-300ABF	3.000	1.000	2.00	.55	7
FMP90-A16-400AD	4.000	1.500	2.00	.55	8
FMP90-A16-500AD	5.000	1.500	2.00	.55	9
FMP90-A16-600AE	6.000	2.000	2.50	.55	10





Inserts	l	s	d	d¹	r	APKT-... TK10MP	TK10M	TM45MP	TP25MP	TP30MP	TP35MP	TK15MC	RK15MC
APHT-1003PDFR-RAL	.431	.138	.262	.110	.020	●	●						
APKT-1003PDSR-BM	.431	.138	.262	.110	.020			●					
APKT-1003PDSR-BP	.431	.138	.262	.110	.020				●	●	●	●	●
Inserts	**l**	**s**	**d**	**d¹**	**r**								
APHT-1604-PDFR-RAL	.642	.207	.375	.177	.031	●							
APKT-160416-SR-BP	.642	.207	.375	.177	.062					●			
APKT-160424-SR-BP	.642	.207	.375	.177	.094					●			
APKT-160432-SR-BP	.642	.207	.375	.177	.125					●			
APKT-1604-PDSR-BM	.642	.207	.375	.177	.031			●					
APKT-1604-PDSR-BP	.642	.207	.375	.177	.031				●	●	●	●	●

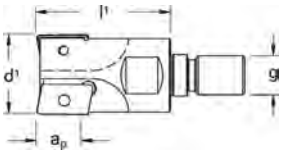
-RAL inserts designed specifically for aluminum

Spare Parts			
Insert: AP..-10..	TX8-687	W-45511	W-37022
Insert: AP..-16..	TX15-388	W-45526	W-37032

Modular Milling System- Screw-On Milling Cutters

Modular tool design offering many combinations:

- Cylindrical Shank holders
- Complete range of extensions & reducers
- Milling cutters with M6, M8, & M10 thread-on shanks
- Strong connection between the adaptor and the screw-on mill by means of a cylindrical fit, face contact and a thread-on screw
- Common holder for different applications, thereby reducing inventories

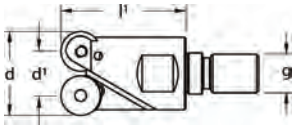


Screw-On Milling Cutters

Designation	d¹	d¹ mm	g	l¹	Max. ap	flutes
Insert: XDET-090308 / XDHT-0903__-AL						
TXD90-0500-TS	.500	12.70	M6	1.10	.33	1
TXD90-0625-TS	.625	15.87	M8	1.10	.33	2
TXD90-0750-TS	.750	19.05	M10	1.18	.33	2
TXD90-0984-TS	.984	25.00	M12	1.18	.33	3
TXD90-1000-TS	1.000	25.40	M12	1.50	.33	3
TXD90-1260-TS	1.260	32.00	M16	1.57	.33	5
Insert: XPET-160412 / XPHT-1604__ / XPNT-160412-SR / XPNX-160412						
TXP90-0975-TS	.975	24.77	M12	1.50	.55	2
TXP90-0984-TS	.984	25.00	M12	1.18	.55	2
TXP90-1000-TS	1.000	25.40	M12	1.50	.55	2
TXP90-1250-TS	1.250	31.75	M16	1.75	.55	3
TXP90-1260-TS	1.260	32.00	M16	1.57	.55	3
TXP90-1378-TS	1.378	35.00	M16	1.57	.55	3
TXP90-1500-TS	1.500	38.10	M16	1.75	.55	3
TXP90-1575-TS	1.575	40.00	M16	1.57	.55	4

Remember to use COPASLIP® anti-seize compound on all insert screws

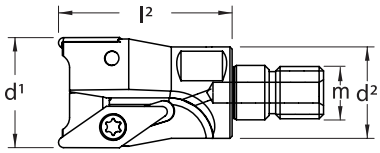
Spare Parts			
Insert: XD..-090308-...	TX8-687	W-45511	W-37022
Insert: XP..-1604__-...	TX15-388	W-45526	W-37032
Insert: RD..-0802MOT	TX8-013	W-45511	W-37022
Insert: RD..-1003MOT	TX15-951	W-45526	W-37032
Insert: RD..-1204MOT-X	TX15-388	W-45526	W-37032
Insert: RD..-1605MOT-X	TX20-072	W-45531	W-37036
Insert: VPGT-221-ALM	TX8-1625	W-45511	W-37022
Insert: VPGT-33...-ALM	TX15-1640	W-45526	W-37032



Screw-On Milling Cutters using 15° Positive Inserts for Copying & Face Milling

Designation	d	d mm	d¹	g	l¹	flutes
Insert: RDGT-0802MOT / RDMT-0802MOT / RDMW-0802MOT						
TR360-0500-TS	.500	12.70	.185	M6	1.10	1
TR360-0500L-TS	.500	12.70	.185	M8	2.00	1
TR360-0625-TS	.625	15.87	.310	M8	1.10	2
TR360-0750-TS	.750	19.05	.435	M10	1.18	2
TR360-1000R08-TS	1.000	25.40	.685	M12	1.50	3
TR360-1250R08-TS	1.250	31.75	.935	M16	1.75	5
Insert: RDGT-1003MOT / RDMT-1003MOT / RDMW-1003MOT						
TR360-0984-TS	.984	25.00	.591	M12	1.18	2
TR360-1000R10-TS	1.000	25.40	.606	M12	1.50	3
TR360-1181-TS	1.181	30.00	.787	M16	1.57	3
TR360-1250R10-TS	1.250	31.75	.856	M16	1.75	4
Insert: RDMT-1204MOT-X / RDMW-1204MOT-X						
TR360-0945-TS	.945	24.00	.472	M12	1.18	2
TR360-1000-TS	1.000	25.40	.528	M12	1.50	2
TR360-1250-TS	1.250	31.75	.778	M16	1.75	2
TR360-1378-TS	1.378	35.00	.906	M16	1.57	3
TR360-1500-TS	1.500	38.10	1.028	M16	1.75	3
TR360-1575-TS	1.575	40.00	1.102	M16	1.57	4
Insert: RDMT-1605MOT-X / RDMW-1605MOT-X						
TR360-1260-TS	1.260	32.00	.630	M16	1.57	2

Remember to use COPASLIP® anti-seize compound on all insert screws

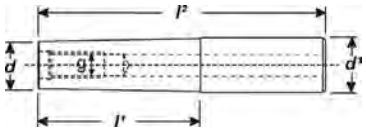


Screw-On Milling Cutters Optimized Design for Aluminum

Designation	d¹	d²	l²	m	Max. ap	Max Plunge	flutes
Insert: VPGT-221-ALM							
Standard Non-Through Coolant							
TVP90-0750-TS	.750	.709	1.18	M10	.40	.200	2
Through Coolant Enabled							
TVP90-1000XC-TS	1.000	.827	1.57	M12	.40	.200	3
*Insert: VPGT-333-ALM / VPGT-33PPFR-ALM**							
Through Coolant Enabled							
TVP90-1000C-TS	1.000	.827	1.57	M12	.53	.250	2
TVP90-1250C-TS	1.250	1.142	1.97	M16	.53	.250	2
TVP90-1500C-TS	1.500	1.142	1.97	M16	.53	.250	3
** To provide necessary clearance when using VPGT-33PPFR-ALM inserts, the cutter body must be relieved*							

Remember to use COPASLIP® anti-seize compound on all insert screws

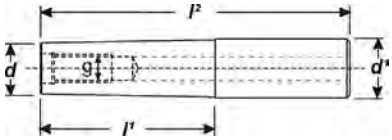
Modular Milling System- Straight Shanks



Weldon Straight Shanks

Designation	g	d	d¹	l¹	l²
SS050-M6-2	M6	.382	.500	2.00	3.78
SS050-M6-3	M6	.382	.500	3.00	4.78
SS063-M8-2	M8	.512	.625	2.00	3.90
SS063-M8-3	M8	.512	.625	3.00	4.90
SS063-M8-4	M8	.512	.625	4.00	5.90
SS075-M10-3	M10	.709	.750	3.00	5.03
SS075-M10-5	M10	.709	.750	5.00	7.03
SS100-M12-3*	M12	.827	1.000	3.00	5.28
SS125-M12-5*	M12	.827	1.250	5.00	7.28
SS125-M16-3*	M16	1.142	1.250	3.00	5.28
SS125-M16-5*	M16	1.142	1.250	5.00	7.28
SS125-M16-7*	M16	1.142	1.250	7.00	9.28

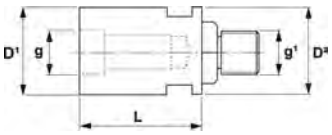
** With internal coolant supply*



Cylindrical Straight Shanks

Designation	g	d	d¹	l¹	l²
SS050CY-M6-2	M6	.382	.500	2.00	3.78
SS050CY-M6-3	M6	.382	.500	3.00	4.78
SS063CY-M8-2	M8	.512	.625	2.00	3.90
SS063CY-M8-3	M8	.512	.625	3.00	4.90
SS063CY-M8-4	M8	.512	.625	4.00	5.90
SS075CY-M10-3	M10	.709	.750	3.00	5.03
SS075CY-M10-5	M10	.709	.750	5.00	7.03
SS100CY-M12-3*	M12	.827	1.000	3.00	5.28
SS125CY-M12-5*	M12	.827	1.250	5.00	7.28
SS125CY-M16-3*	M16	1.142	1.250	3.00	5.28
SS125CY-M16-5*	M16	1.142	1.250	5.00	7.28
SS125CY-M16-7*	M16	1.142	1.250	7.00	9.28

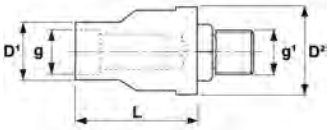
** With internal coolant supply*



Extensions

Designation	g	g¹	D¹	D²	L
EX-M6	M6	M6	.382	.382	.98
EX-M8	M8	M8	.512	.512	1.18
EX-M10	M10	M10	.709	.709	1.37
EX-M12*	M12	M12	.827	.827	1.57
EX-M16*	M16	M16	1.142	1.142	1.57

** With internal coolant supply*



Reducers

Designation	g	g¹	D¹	D²	L
RD-M8/M6	M6	M8	.382	.512	.98
RD-M10/M8	M8	M10	.512	.709	1.18
RD-M12/M10	M10	M12	.709	.827	1.38
RD-M16/M12*	M12	M16	.827	1.142	1.57

** With internal coolant supply*