

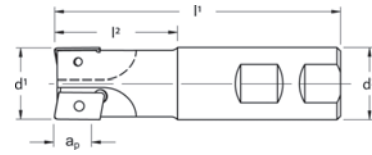
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TX90 HIGH SHEAR SQUARE SHOULDER MILLING CUTTERS



STANDARD LENGTH END MILLS

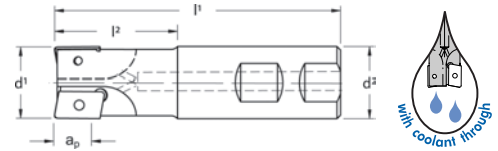


DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d ¹	d ²	l ¹	l ²	Max. a _p	Flutes		Insert Screw	Wrench
TXD90-0500	.500	.625	3.00	1.09	.33	1	222.79.600 222.79.610	214.80.687	214.80.866 (S/D) 214.80.011 (F/T)
TXD90-0625	.625	.625	3.00	1.09	.33	2			
TXD90-0750	.750	.750	3.50	1.47	.33	2			
TXD90-0750F	.750	.750	3.50	1.47	.33	3			
TXD90-0875	.875	.750	3.50	1.47	.33	3			
TXD90-1000	1.000	.750	3.50	1.47	.33	3			
TXD90-1000F	1.000	1.000	4.00	1.72	.33	4	222.79.400 222.79.500 222.79.510 222.79.550 222.79.564	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
TXP90-0750	.750	.750	3.50	1.47	.55	1			
TXP90-1000	1.000	.750	3.70	1.67	.55	2			
TXP90-1000-4	1.000	1.000	4.00	1.72	.55	2			
TXP90-1250	1.250	1.250	4.00	1.72	.55	3			
TXP90-1500	1.500	1.250	4.40	2.12	.55	3			
TXP90-1500F	1.500	1.250	4.40	2.12	.55	4			
TXP90-2000EM	2.000	1.250	4.00	1.72	.55	4			

Using 222.79.510 - 522, 222.79.550 - 552 & 222.79.610 inserts, which are wider due to the higher side rake angles, will cut oversize. Also, when using 222.79.564 inserts with serrated cutting edges, inserts are to be mounted alternating edge I & II, and can only be used with a minimum of 2 teeth. Best results are achieved when used in cutters with an even number of flutes.

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

STANDARD LENGTH END MILLS WITH COOLANT THROUGH



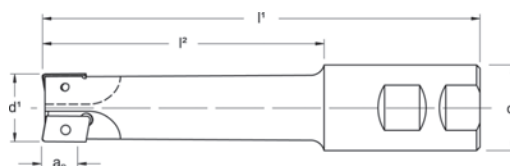
DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d ¹	d ²	l ¹	l ²	Max. a _p	Flutes		Insert Screw	Wrench
TXD90-0500C	.500	.625	3.00	1.09	.33	1	222.79.600 222.79.610	214.80.687	214.80.866 (S/D) 214.80.011 (F/T)
TXD90-0625C	.625	.625	3.00	1.09	.33	2			
TXD90-0750C	.750	.750	3.50	1.47	.33	2			
TXD90-0750FC	.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	222.79.400 222.79.500 222.79.510 222.79.550 222.79.564	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
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			
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			

Using 222.79.510 - 522, 222.79.550 - 552 & 222.79.610 inserts, which are wider due to the higher side rake angles, will cut oversize. Also, when using 222.79.564 inserts with serrated cutting edges, inserts are to be mounted alternating edge I & II, and can only be used with a minimum of 2 teeth. Best results are achieved when used in cutters with an even number of flutes.

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

TX90 HIGH SHEAR SQUARE SHOULDER MILLING CUTTERS

EXTENDED LENGTH END MILLS

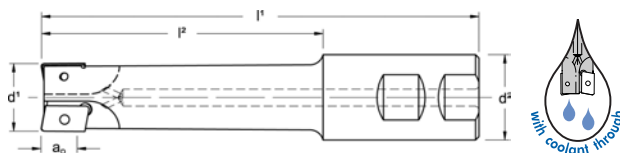


DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d ¹	d ²	l ¹	l ²	Max. a _p	Flutes		Insert Screw	Wrench
TXD90-0500-XL	.500	.625	3.91	2.00	.33	1	222.79.600 222.79.610	214.80.687	214.80.866 (S/D) 214.80.011 (F/T)
TXP90-1000-5L	1.000	1.250	5.00	2.72	.55	2	222.79.400 222.79.500	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
TXP90-1000-5XL	1.000	1.250	6.40	4.12	.55	2	222.79.510 222.79.550		
TXP90-1250-L	1.250	1.250	5.00	2.72	.55	3	222.79.564		
TXP90-1500-L	1.500	1.250	6.00	3.72	.55	3			

Using 222.79.510 - 522, 222.79.550 - 552 & 222.79.610 inserts, which are wider due to the higher side rake angles, will cut oversize. Also, when using 222.79.564 inserts with serrated cutting edges, inserts are to be mounted alternating edge I & II, and can only be used with a minimum of 2 teeth. Best results are achieved when used in cutters with an even number of flutes.

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

EXTENDED LENGTH END MILLS WITH COOLANT THROUGH



DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d ¹	d ²	l ¹	l ²	Max. a _p	Flutes		Insert Screw	Wrench
TXD90-0500-XLC	.500	.625	3.91	2.00	.33	1	222.79.600 222.79.610	214.80.687	214.80.866 (S/D) 214.80.011 (F/T)
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	222.79.400 222.79.500 222.79.510 222.79.564	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
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	1.25	.55	3			
TXP90-1500-XXLC	1.500	2.000	9.25	6.00	.55	3			

Using 222.79.500 - 522 & 222.79.610 inserts, which are wider due to the higher side rake angles, will cut oversize. Also, when using 222.79.564 inserts with serrated cutting edges, inserts are to be mounted alternating edge I & II, and can only be used with a minimum of 2 teeth. Best results are achieved when used in cutters with an even number of flutes.

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

TX90 HIGH SHEAR SQUARE SHOULDER MILLING CUTTERS

Cylindrical Shank End Mills



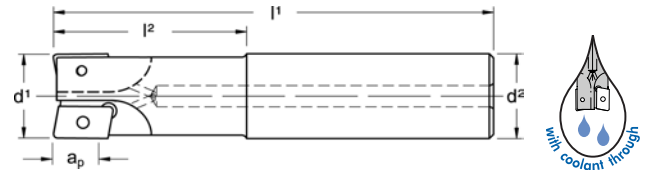
Featuring:

- Cylindrical Shanks
- Coolant through
- Extra long shanks

Specifically designed for:

- Milling Chucks
- Hydraulic Chucks
- Shrink-fit Systems

STANDARD LENGTH END MILLS WITH COOLANT THROUGH

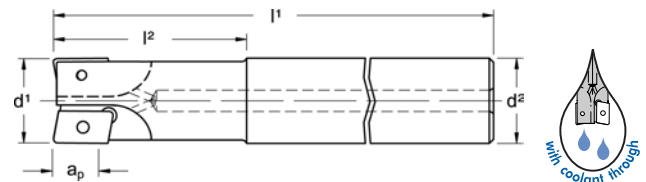


DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d ¹	d ²	l ¹	l ²	Max. a _p	Flutes		Insert Screw	Wrench
TXD90CY-0625C	.625	.625	3.00	1.09	.33	2	222.79.600 222.79.610	214.80.687	214.80.866 (S/D)
TXD90CY-0750C	.750	.750	3.50	1.46	.33	2			214.80.011 (F/T)
TXD90CY-1000-4C	1.000	1.000	4.00	1.71	.33	3			
TXP90CY-1000-4C	1.000	1.000	4.00	1.71	.55	2	222.79.400 222.79.500 222.79.510 222.79.564	214.80.388	214.80.824 (S/D)
TXP90CY-1250-5C	1.250	1.250	4.00	1.71	.55	3			214.80.012 (F/T)
TXP90CY-1500-5C	1.500	1.250	4.50	2.00	.55	4			

Using 222.79.500 - 522 & 222.79.610 inserts, which are wider due to the higher side rake angles, will cut oversize. Also, when using 222.79.564 inserts with serrated cutting edges, inserts are to be mounted alternating edge I & II, and can only be used with a minimum of 2 teeth. Best results are achieved when used in cutters with an even number of flutes.

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

EXTENDED LENGTH END MILL WITH COOLANT THROUGH



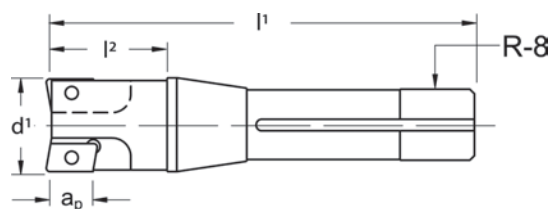
DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d ¹	d ²	l ¹	l ²	Max. a _p	Flutes		Insert Screw	Wrench
TXD90CY-0625-XXLC	.625	.625	6.00	2.00	.33	2	222.79.600 222.79.610	214.80.687	214.80.866 (S/D)
TXD90CY-0750-XXLC	.750	.750	8.00	2.00	.33	2			214.80.011 (F/T)
TXD90CY-1000-4XXLC	1.000	1.000	8.00	2.25	.33	3			
TXP90CY-1000-4XXLC	1.000	1.000	8.00	2.25	.55	2	222.79.400 222.79.500 222.79.510 222.79.550 222.79.564	214.80.388	214.80.824 (S/D)
TXP90CY-1250-5XXLC	1.250	1.250	10.00	3.00	.55	3			214.80.012 (F/T)
TXP90CY-1500-5XXLC	1.500	1.250	10.00	1.25	.55	3			

Using 222.79.510 - 522, 222.79.550 - 552 & 222.79.610 inserts, which are wider due to the higher side rake angles, will cut oversize. Also, when using 222.79.564 inserts with serrated cutting edges, inserts are to be mounted alternating edge I & II, and can only be used with a minimum of 2 teeth. Best results are achieved when used in cutters with an even number of flutes.

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

TX90 HIGH SHEAR SQUARE SHOULDER MILLING CUTTERS

R-8 SHANK MILLING CUTTERS

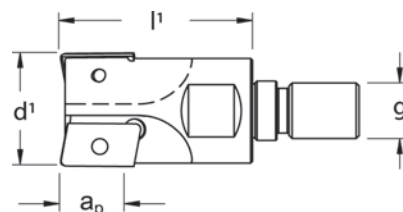


DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d ¹	Shank	l ¹	l ²	Max. a _p	Flutes		Insert Screw	Wrench
TXP90-1250-R8	1.250	R-8	5.63	1.50	.55	3	222.79.400	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
TXP90-1500-R8	1.500	R-8	5.63	1.50	.55	3	222.79.500		
TXP90-2000-R8	2.000	R-8	5.63	1.50	.55	3	222.79.510		
							222.79.564		

Using 222.79.510 - 522 & 222.79.500 - 552 inserts, which are wider due to the higher side rake angles, will cut oversize. Also, when using 222.79.564 inserts with serrated cutting edges, inserts are to be mounted alternating edge I & II, and can only be used with a minimum of 2 teeth. Best results are achieved when used in cutters with an even number of flutes.

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

SCREW-ON MILLING CUTTERS



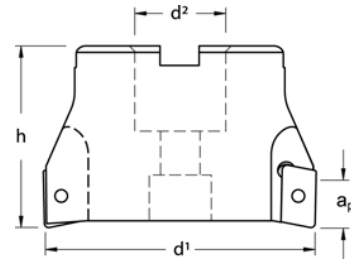
DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d ¹	d ¹ (mm)	g	l ¹	Max. a _p	Flutes		Insert Screw	Wrench
TXD90-0500-TS	.500	12.70	M6	1.10	.33	1	222.79.600 222.79.610	214.80.687	214.80.866 (S/D) 214.80.011 (F/T)
TXD90-0625-TS	.625	15.87	M8	1.10	.33	2			
TXD90-0750-TS	.750	19.05	M10	1.18	.33	2			
TXD90-0984-TS	.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	222.79.400 222.79.500 222.79.510 222.79.550 222.79.564	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
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			

Using 222.79.510 - 522, 222.79.550 - 552 & 222.79.610 inserts, which are wider due to the higher side rake angles, will cut oversize. Also, when using 222.79.564 inserts with serrated cutting edges, inserts are to be mounted alternating edge I & II, and can only be used with a minimum of 2 teeth. Best results are achieved when used in cutters with an even number of flutes.

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

TX90 HIGH SHEAR SQUARE SHOULDER MILLING CUTTERS

STANDARD FACE MILLS



DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d ¹	d ²	h	Max. α_p	Flutes	lbs.		Insert Screw	Wrench
TXD90-1500SM	1.500	.750	1.75	.33	5	.55	222.79.600	214.80.687	214.80.866 (S/D)
TXD90-2000	2.000	.750	1.50	.33	7	.70	222.79.610		214.80.011 (F/T)
TXP90-1500SM	1.500	.750	1.75	.55	4	.45	222.79.400 222.79.500 222.79.510 222.79.564	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
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			
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
Using 222.79.500 - 522 & 222.79.610 inserts, which are wider due to the higher side rake angles, will cut oversize. Also, when using 222.79.564 inserts with serrated cutting edges, inserts are to be mounted alternating edge I & II, and can only be used with a minimum of 2 teeth. Best results are achieved when used in cutters with an even number of flutes.

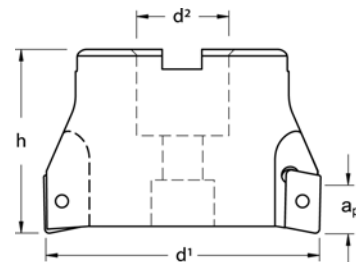
REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

COARSE PITCH FACE MILLS



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



DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d ¹	d ²	h	Max. α_p	Flutes	lbs.		Insert Screw	Wrench
TXP90-2000AL-3	2.000	.750	1.50	.55	3	.60	222.79.400 222.79.500 222.79.510 222.79.550 222.79.564	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
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			
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			

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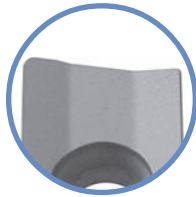
REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

TX90 HIGH SHEAR SQUARE SHOULDER MILLING CUTTERS

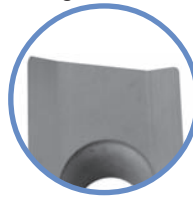
Inserts with optimized geometries and large selection of radii from 1/32" - 5/32" for steel, cast steel and aluminum alloys. Very effective with high metal removal rates in medium and heavy duty milling.



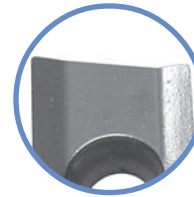
222.79.400



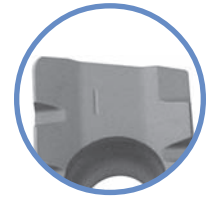
222.79.500/600



222.79.510/610



222.79.550



222.79.564

222.79.400 - This pressed insert has extra chip control molded into the top of the insert allowing for high machining rates in semi-finishing and rough milling operations.

222.79.500 / 600 - High shear radial angles allow for good performance in all applications and materials. Precision ground.

222.79.510 / 610 - Sharp rake angles on this precision ground insert make these inserts the first choice for all aluminum machining applications, as well as other non-ferrous materials.

222.79.550 - Inserts have a polished chip control geometry, which reduces frictional resistance during machining and have sharp

primary wiper edges for reduced cutting forces and burring. The perfect combination of geometry and grade make this insert ideal for aluminum machining, in either high speed or conventional milling applications. This insert achieves greater metal-cutting performance through higher feeds and speeds, longer tool life and reduced tool cost.

222.79.564 - Inserts used in medium and rough milling applications, offering good performance, mainly under poor conditions, i.e., chattering, vibration, unstable situations, long extended tools or shoulder milling with a small width of cut. Smoother cutting action under poor conditions.



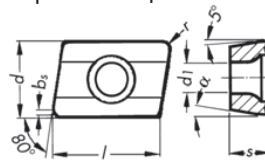
222.79.400



222.79.500 - 610



222.79.564



TX90 INSERTS

										COATED						UNCOATED					CERMET			
										TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	TMM	THR	THM-U	TTI-25	
DESIGNATION	l	s	r	d	d ¹	b _s	α																	
222.79.400	.635	3/16	3/64	3/8	.173	.047	11°		●	●	●	●	●	●		●	●							
222.79.600	.381	1/8	1/32	1/4	.110	.039	15°		●	●	●	●	●	●		●	●			●	●			●
222.79.530	.635	3/16	1/32	3/8	.173	.071	11°		●			●	●	●		●								
222.79.500			3/64			.059			●	●		●	●	●		●	●	●	●					●
222.79.532			1/16			.031			●			●	●	●		●								
222.79.534 ⁽²⁾			5/64			.020						●	●	●		●								
222.79.536 ⁽²⁾			3/32			--							●	●		●								
222.79.538 ⁽²⁾			1/8			--							●	●		●								
222.79.540 ⁽²⁾			5/32			--							●	●		●								
222.79.610 ^{(1)*}	.381	1/8	1/32	.264	.110	.039	15°												●					
222.79.510 ^{(1)*}	.635	3/16	1/32	.386	.173	.067	11°													●				
222.79.512 ^{(1)*}			3/64			.055														●				
222.79.514 ^{(1)*}			1/16			.035														●				
222.79.516 ^{(1,2)*}			5/64			.016														●				
222.79.518 ^{(1,2)*}			3/32			---														●				
222.79.520 ^{(1,2)*}			1/8			---														●				
222.79.522 ^{(1,2)*}			5/32			---														●				
222.79.550 ^{(1)*}	.635	3/16	1/64	.386	.173	.067	11°															●		
222.79.552 ^{(1)*}			1/32			.067																●		
222.79.554 ^{(1)*}			3/64			.067																●		
222.79.564 ⁽³⁾	.635	3/16	3/64	3/8	.173	.067	11°		●			●	●	●		●	●							

Note 1: Due to the higher side rake angles, 222.79.510 - 522, 222.79.550 - 222.79.552 & 222.79.610 inserts are wider and will cut oversize.

Note 2: To provide necessary clearance for the inserts with radii over 5/64", the cutter body must be relieved.

Note 3: Cutting edges are serrated and marked I & II, are to be mounted alternating edge I & II, and can only be used with a minimum of 2 teeth.

* Optimized for aluminum.

THX90 HELICAL SQUARE SHOULDER MILLING CUTTERS

The Extended Program:

In addition to the proven helical end mills in the 1" to 2" diameter range, helical shell mills are also available from 2" to 3" diameters with coarse tooth pitches, for low-powered machine tools and slot milling, as well as trimming and shoulder milling.

The parallelogram-shaped indexable inserts, used successfully for years on the TX90 square shoulder mill, are also used with the THX90 helical cutter. The small size 222.79.600 insert can be used for 1", 1¼" and 1½" end mills and the large size 222.79.400/500/510/550/564 insert for 1¼" to 2" THX90 end mills and all shell mills. This appreciably simplifies inventories. The indexable insert 222.79.400, featuring an innovative chip control geometry, is particularly efficient for medium to rough milling operations.

Advantages:

- Robust tools with large flutes for optimum chip removal
- Indexable inserts with reinforced cutting edges for high production reliability
- High-performance hardmetal grades give long service life
- Efficient utilization of each flute makes for high feed rates
- Smooth running action and lower cutting forces



Applications:

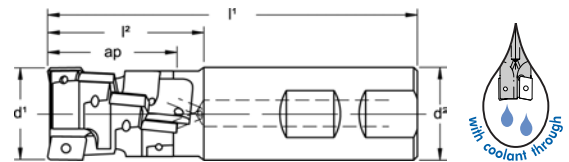
- For slot-milling, profiling, shoulder milling and trimming with large axial depths of cut
- For pre-milling and rough-milling steel castings, as well as cast-iron materials and titanium alloys

Our THX90 helical cutters are ideal for rough-milling large grooves and shoulders. Large overall cutting-edge lengths, and the efficient use of each flute, guarantees a wide range of applications and high performance.

The High Performance Helical Milling Cutter



HELICAL END MILLS WITH COOLANT THROUGH FOR PROFILING & MILLING

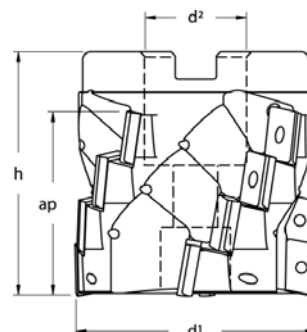
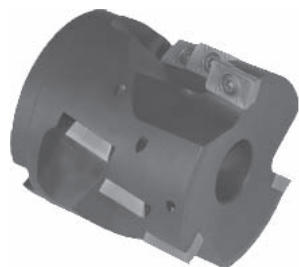


DESIGNATION	DIMENSIONS							INSERT	SPARE PARTS	
	d ¹	d ²	l ¹	l ²	Max. a _p	Flutes	No. of Inserts		Insert Screw	Wrench
THXD90-1000	1.000	1.000	4.00	1.72	1.30	2	8	222.79.600 222.79.610	214.80.800	214.80.866 (S/D) 214.80.011 (F/T)
THXD90-1250	1.250	1.250	4.49	2.21	1.30	3	12			
THXD90-1500	1.500	1.250	4.84	2.56	1.61	3	15			
THXP90-1250	1.250	1.250	4.63	2.35	1.15	2	4	222.79.400 222.79.500 222.79.510 222.79.550 222.79.564	214.80.558	214.80.824 (S/D) 214.80.012 (F/T)
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			
Using 222.79.510 - 522, 222.79.550 - 552 & 222.79.610 inserts, which are wider due to the higher side rake angles, will cut oversize. Also, when using 222.79.564 inserts with serrated cutting edges, inserts are to be mounted alternating edge I & II, and can only be used with a minimum of 2 teeth. Best results are achieved when used in cutters with an even number of flutes.										

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

THX90 HELICAL SQUARE SHOULDER MILLING CUTTERS

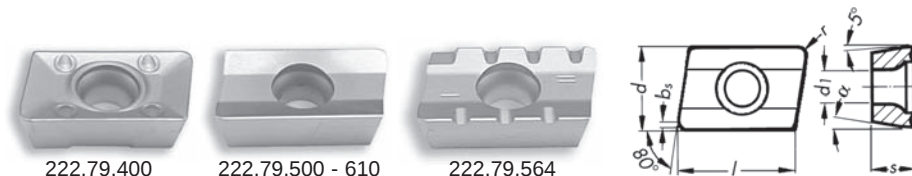
HELICAL SHELL MILLS FOR PROFILING & MILLING



DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d ¹	d ²	h	Max. a _p	Flutes	No. of Inserts		Insert Screw	Wrench
THXP90-2000	2.000	.750	2.00	1.17	3	6	222.79.400 222.79.500 222.79.510 222.79.550 222.79.564	214.80.558	214.80.824 (S/D) 214.80.012 (F/T)
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			

Using 222.79.510 - 522 & 222.79.550 - 552 inserts, which are wider due to the higher side rake angles, will cut oversize. Also, when using 222.79.564 inserts with serrated cutting edges, inserts are to be mounted alternating edge I & II, and can only be used with a minimum of 2 teeth. Best results are achieved when used in cutters with an even number of flutes.

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.



THX90 INSERTS

DESIGNATION	l	s	r	d	d ₁	b _s	α	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	THM-U	TTI-25
222.79.400	.635	3/16	3/64	3/8	.173	.047	11°	●	●	●	●	●	●	●	●	●				
222.79.600	.381	1/8	1/32	1/4	.110	.039	15°	●	●	●	●	●	●	●	●	●	●	●		●
222.79.500	.635	3/16	3/64	3/8	.173	.059	11°	●	●	●	●	●	●	●	●	●	●	●		●
222.79.610 (1)*	.381	1/8	1/32	.264	.110	.039	15°										●			
222.79.510 (1)*	.635	3/16	1/32	.386	.173	.067	11°										●			
222.79.550 (1)*	.635	3/16	1/64	.386	.173	.067	11°												●	
222.79.552 (1)*	.635	3/16	1/32	.386	.173	.067	11°												●	
222.79.564 (2)	.635	3/16	3/64	3/8	.173	.067	11°	●	●	●	●	●	●	●	●					

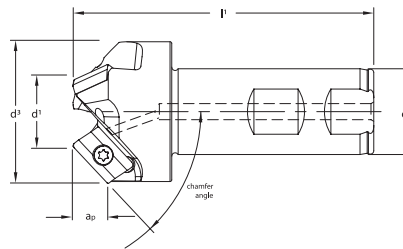
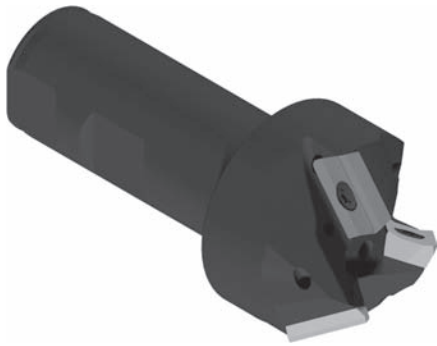
Note 1: Due to the higher side rake angles, 222.79.510 - 522, 222.79.550 - 552 & 222.79.610 inserts are wider and will cut oversize.

Note 2: Cutting edges are serrated and marked I & II, are to be mounted alternating edge I & II, and can only be used with a minimum of 2 teeth.

Best results achieved when used in cutters with an even number of flutes.

* Optimized for aluminum.

TXP CHAMFER MILLS



**New
Addition!**

30° CHAMFER MILLS WITH COOLANT

DESIGNATION	DIMENSIONS							INSERT	SPARE PARTS	
	d ¹	d ²	d ³	l ¹	Chamfer Angle	Max. ap	Flutes		Insert Screw	Wrench
TXP30-0750-CH	.750	.750	1.275	3.00	30°	.50	2	222.79.400 222.79.500 222.79.510 222.79.564	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
TXP30-1000-CH	1.000	1.000	1.525	3.50	30°	.52	3			
TXP30-1250-CH	1.250	1.250	1.775	3.50	30°	.52	3			

41° CHAMFER MILLS WITH COOLANT

DESIGNATION	DIMENSIONS							INSERT	SPARE PARTS	
	d ¹	d ²	d ³	l ¹	Chamfer Angle	Max. ap	Flutes		Insert Screw	Wrench
TXP41-0688-CH	.688	.750	1.375	3.00	41°	.68	2	222.79.400 222.79.500 222.79.510 222.79.564	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
TXP41-0938-CH	.938	1.000	1.625	3.50	41°	.68	3			
TXP41-1188-CH	1.188	1.250	1.875	3.50	41°	.68	3			

45° CHAMFER MILLS WITH COOLANT

DESIGNATION	DIMENSIONS							INSERT	SPARE PARTS	
	d ¹	d ²	d ³	l ¹	Chamfer Angle	Max. ap	Flutes		Insert Screw	Wrench
TXP45-0688-CH	.688	.750	1.425	3.00	45°	.73	2	222.79.400 222.79.500 222.79.510 222.79.564	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
TXP45-0938-CH	.938	1.000	1.675	3.50	45°	.73	3			
TXP45-1188-CH	1.118	1.250	1.925	3.50	45°	.73	3			

60° CHAMFER MILLS WITH COOLANT

DESIGNATION	DIMENSIONS							INSERT	SPARE PARTS	
	d ¹	d ²	d ³	l ¹	Chamfer Angle	Max. ap	Flutes		Insert Screw	Wrench
TXP60-0750-CH	.500	.750	1.355	3.00	60°	.85	2	222.79.400 222.79.500 222.79.510 222.79.564	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
TXP60-1000-CH	.750	1.000	1.605	3.50	60°	.85	3			
TXP60-1250-CH	1.000	1.250	1.855	3.50	60°	.85	3			

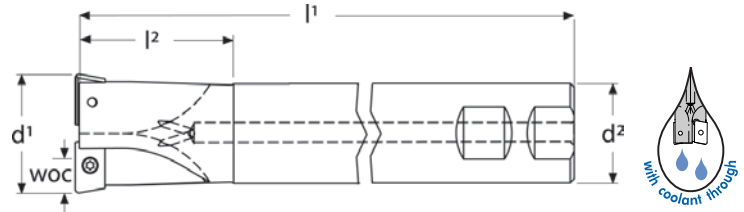
TXP90AF AXIAL FEED MILLING CUTTERS

Features:

- Axial feed or plunge milling
- Decreased tool deflection
- Up to .400" width of cut
- Higher feed rates



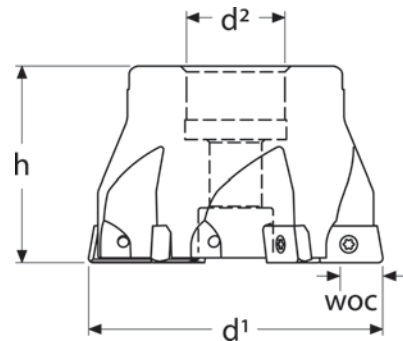
EXTENDED LENGTH END MILLS WITH COOLANT THROUGH



DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d ¹	d ²	l ¹	l ²	W.O.C	Flutes		Insert Screw	Wrench
TXP90AF-1500C	1.500	1.250	8.00	2.00	.40	2	222.79.501	214.80.388	214.80.824 (S/D)
TXP90AF-2000C	2.000	1.250	8.00	2.00	.40	3			214.80.012 (F/T)

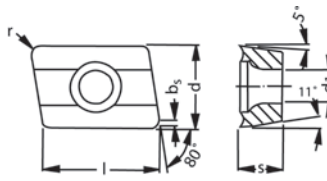
REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

FACE MILLS



DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d ¹	d ²	h	W.O.C	Flutes	lbs.		Insert Screw	Wrench
TXP90AF-2500	2.500	.750	1.50	.40	5	.85	222.79.501	214.80.388	214.80.824 (S/D)
TXP90AF-3000	3.000	1.000	2.00	.40	6	2.15			214.80.012 (F/T)
TXP90AF-4000	4.000	1.500	2.50	.40	7	4.10			

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.



TXP90AF INSERTS

DESIGNATION	l	s	r	d	d ₁	b _s	TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25
222.79.501	.635	.187	.047	.375	.173	.059			●		●	●							

M1200 FACE MILLS

- Engineered for applications requiring higher cutting speeds and feed rates with low cutting forces
- Ideally suited for rough face milling applications in the General Engineering and Automotive industries

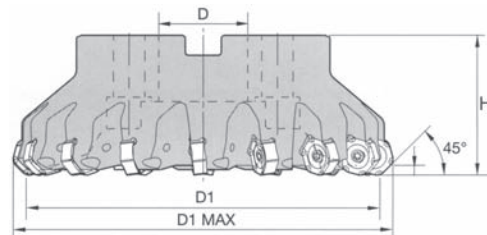
- 12 true cutting edges lower your cost per edge!
- Up to 50% longer tool life!
- Use less horsepower - and gain up to 30% in productivity!

- Easy to use - one screw enables fast, accurate indexing!
- MaxiCool through coolant enabled!
(Coolant through arbors also available)



**New
Addition!**

COARSE PITCH FACE MILLS



DESIGNATION	DIMENSIONS					INSERT	SPARE PARTS	
	D ¹	D	D ¹ max	H	Flutes		Insert Screw	Wrench
M1200-20HN4C	2.00	.750	2.43	1.57	4	HNGJ-LD HNGJ-GD HNGJ-HD	214.60.345	214.80.824 (S/D)
M1200-25HN6C	2.50	.750	2.93	1.57	6			
M1200-30HN6C	3.00	1.000	3.43	1.75	6			
M1200-40HN8C	4.00	1.250	4.43	1.75	8			
M1200-50HN10C	5.00	1.500	5.43	2.38	10			
M1200-60HN12C	6.00	2.000	6.43	2.38	12			

FINE PITCH FACE MILLS

DESIGNATION	DIMENSIONS					INSERT	SPARE PARTS	
	D ¹	D	D ¹ max	H	Flutes		Insert Screw	Wrench
M1200-20HN5M	2.00	.750	2.43	1.57	5	HNGJ-LD HNGJ-GD HNGJ-HD	214.60.345	214.80.824 (S/D)
M1200-25HN7M	2.50	.750	2.93	1.57	7			
M1200-30HN9M	3.00	1.000	3.43	1.75	9			
M1200-40HN11M	4.00	1.250	4.43	1.75	11			
M1200-50HN14M	5.00	1.500	5.43	2.38	14			
M1200-60HN16M	6.00	2.000	6.43	2.38	16			

M1200 INDEXABLE INSERTS

TN5515

Coated carbide MT-CVD/CVD grade for light and medium machining of cast irons

TN6510

Coated carbide PVD - TiAlN multilayer for light machining of cast irons

TN6520

Coated carbide PVD grade for light and medium machining of cast irons

TN6525

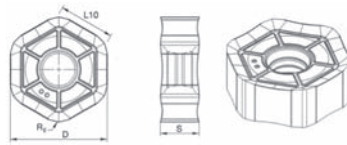
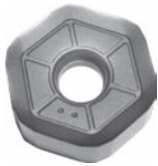
Coated carbide PVD grade for light and medium machining of steels and high-strength nodular cast iron.

TN6540

Coated carbide PVD grade for medium and heavy machining of steels and stainless steel

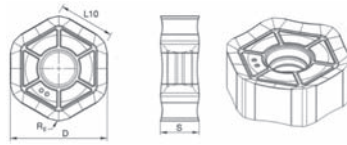
TN7535

Coated carbide MT-CVD/CVD grade for medium and heavy machining of steels and nodular cast irons. Works well in unfavourable conditions



Edge prep. with hone • for light machining

DESIGNATION	Cutting Edges	D	S	L10	R	COATED					
HNGJ-53.5-ANEN-LD	12	.625	.219	.338	.047	●	●	●	●	●	●



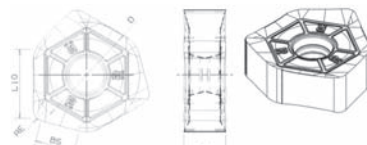
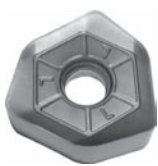
Chamfer • for general machining

DESIGNATION	Cutting Edges	D	S	L10	R	COATED					
HNGJ-53.5-ANSN-GD	12	.625	.219	.338	.047	●	●	●	●	●	●



Edge prep. with hone + T-Land • for heavy machining

DESIGNATION	Cutting Edges	D	S	L10	R	COATED					
HNGJ-53.5-ANSN-HD	12	.625	.219	.338	.047	●	●	●	●	●	●
HNGJ-53.511-ANSN-HD	12	.625	.219	.338	.169			●	●		



Wiper

Edge prep. with hone + T-Land • for consistent performance

DESIGNATION	Cutting Edges	D	S	L10	R	COATED					
XNGJ-53.5-ANSN-GD3W	6	.625	.246	.377	.063			●	●	●	

HNGJ-LD

TN5515	TN6520	TN6525	TN6540	TN7535							
●	●	●	●	●							

HNGJ-GD

TN5515	TN6520	TN6525	TN6540	TN7535							
●	●	●	●	●							

HNGJ-HD

TN5515	TN6520	TN6525	TN6540	TN7535							
●	●	●	●								

XNGJ-3W

TN5515	TN6520	TN6525	TN6540	TN6510							
		●	●	●							

TS90 SQUARE SHOULDER MILLING CUTTERS

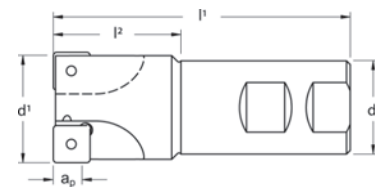
The TS90 Square Shoulder Milling Cutters are an ideal tool for 90° slot and shoulder milling. They are available in diameters from 1½" to 6", using ½" I.C. inserts, and 2" to 10" using ⅝" I.C. inserts.

The cutter bodies are manufactured with premium hardened steel for rigidity. The TS90s use indexable inserts with four effective cutting edges, which are securely clamped with Torx® screws.

The TS90 cutter delivers optimum milling performance with outstanding chip evacuation. The cutters operate smoothly with low power requirements. These cutters are ideal for slot milling, edge trimming, square shoulder milling and face milling, in materials ranging from low alloy steels to stainless and high alloy steels, as well as grey, ductile and nodular cast iron.

For Economy & Performance

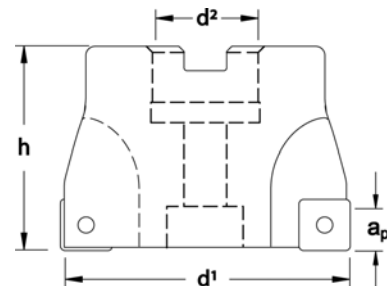
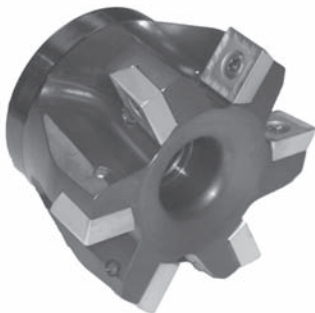
END MILLS USING ½" I.C. INSERTS



DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d ¹	d ²	l ¹	l ²	Max. a _p	Flutes		Insert Screw	Wrench
TS90E-1.5SD4	1.500	1.250	4.00	1.72	.40	3	SDMT-1204 PDR	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
TS90E-2SD4	2.000	1.250	4.00	1.72	.40	4			

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

FACE MILLS USING ½" I.C. INSERTS

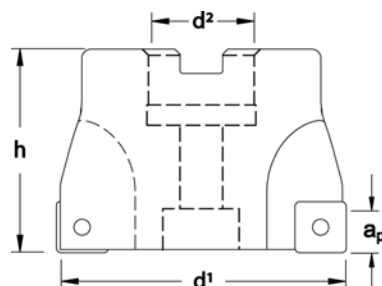
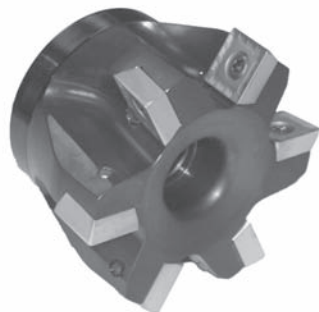


DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d ¹	d ²	h	Max. a _p	Flutes	lbs.		Insert Screw	Wrench
TS90-2SD4	2.000	.750	1.50	.40	4	.50	SDMT-1204 PDR	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
TS90-2SD4F	2.000	.750	1.50	.40	5	.50			
TS90-2.5SD4	2.500	1.000	1.75	.40	5	1.00			
TS90-2.5SD4F	2.500	1.000	1.75	.40	6	1.35			
TS90-3SD4	3.000	1.000	2.00	.40	6	2.00			
TS90-4SD4	4.000	1.500	2.00	.40	8	2.70			
TS90-5SD4F	5.000	1.500	2.00	.40	9	5.25			
TS90-6SD4	6.000	2.000	2.50	.40	10	8.15			

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

TS90 SQUARE SHOULDER MILLING CUTTERS

FACE MILLS USING 5/8" I.C. INSERTS



DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d ¹	d ²	h	Max. a _p	Flutes	lbs.		Insert Screw	Wrench
TS90-2SD5	2.000	.750	1.50	.50	4	.50	SDMT-1506 PDR	214.80.073	214.80.994 (S/D) 214.80.076 (F/T)
TS90-2.5SD5	2.500	1.000	1.75	.50	5	1.00			
TS90-3SD5	3.000	1.000	2.00	.50	6	2.00			
TS90-4SD5	4.000	1.500	2.00	.50	8	2.70			
TS90-5SD5	5.000	1.500	2.00	.50	9	5.25			
TS90-6SD5	6.000	2.000	2.50	.50	10	8.15			
TS90-8SD5*	8.000	2.500	2.50	.50	13	14.40			
TS90-10SD5*	10.000	2.500	2.50	.50	16	22.70			

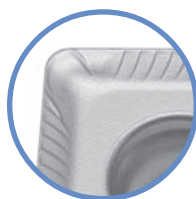
* Cutter supplied with 4 holes on a 4" bolt circle

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

These inserts are available in two sizes, two styles and nine grades. They are equipped with positive geometries and four strong, effective cutting edges which allow for problem free machining of most materials.



-MH - Geometry is the first choice for most milling applications.



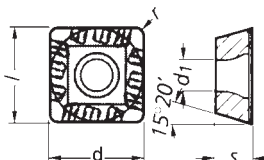
-ML - Geometry is principally used for machining cast iron, finish milling of steel and cast iron, as well as non-rigid machines and workpiece setups.



MH



ML



TS90 INSERTS

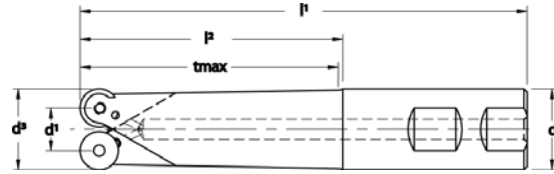
DESIGNATION	l	s	r	d	d ¹	b _s	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
SDMT-1204 PDR-MH	.500	3/16	3/64	1/2	.173	---	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SDMT-1506 PDR-MH	.625	1/4	3/64	5/8	.217	---	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SDMT-1204 PDR-ML	.500	3/16	3/64	1/2	.173	---	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SDMT-1506 PDR-ML	.625	1/4	3/64	5/8	.217	---	●	●	●	●	●	●	●	●	●	●	●	●	●	●

TR360 COPY MILLING CUTTERS



New Sizes Available!
see www.tysonstool.com

END MILLS WITH COOLANT THROUGH
USING 15° POSITIVE INSERTS
FOR PROFILING & CONTOURING



DESIGNATION	DIMENSIONS								INSERT	SPARE PARTS	
	d	d ¹	d ²	l ¹	l ²	t _{max}	Ramp Angle	Flutes		Insert Screw	Wrench
TR360-0500-36	.500	.185	.625	3.65	1.74	1.64	10°	1	RDMT-0802MOT RDMW-0802MOT RDHT-0802MOT	214.80.013	214.80.866 (S/D) 214.80.011 (F/T)
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	RDMT-1003MOT RDMW-1003MOT RDHT-1003MOT	214.80.951	214.80.824 (S/D) 214.80.012 (F/T)
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			
TR360-0750-37	.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			
TR360-1000-47	1.000	.528	1.000	4.78	2.50	2.49	50°	2	RDMT-1204MOT-X RDMW-1204MOT-X RDHT-1204MOT-X	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
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			
TR360-1500-54	1.500	.870	1.250	5.40	3.12	3.11	27°	2	RDMT-1605MOT-X RDMW-1605MOT-X RDHT-1605MOT-X	214.80.072	214.80.994 (S/D) 214.80.076 (F/T)
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.

TR360 COPY MILLING CUTTERS

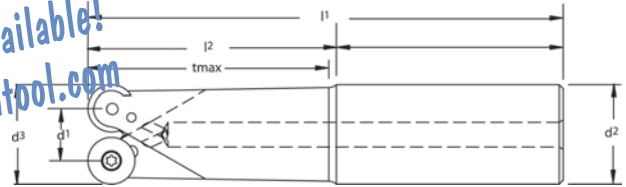
Featuring:

- Cylindrical Shanks
- Coolant through
- Extra long shanks

CYLINDRICAL SHANK END MILLS WITH COOLANT THROUGH
USING 15° POSITIVE INSERTS
FOR PROFILING AND CONTOURING



New Sizes Available!
see www.tysonstool.com



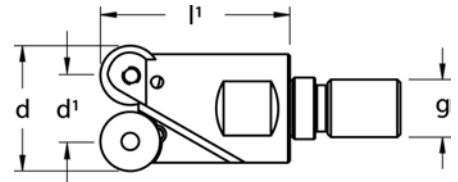
DESIGNATION	DIMENSIONS								INSERT	SPARE PARTS	
	d	d ¹	d ²	l ¹	l ²	t _{max}	Ramp Angle	Flutes		Insert Screw	Wrench
TR360CY-0500-36	.500	.185	.625	3.65	1.74	1.64	10°	1	RDMT-0802MOT RDMW-0802MOT RDHT-0802MOT	214.80.013	214.80.866 (S/D) 214.80.011 (F/T)
TR360CY-0500-51	.500	.185	.625	5.15	3.24	3.14	10°	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-1000-47	1.000	.528	1.000	4.78	2.50	2.49	50°	2	RDMT-1204MOT RDMW-1204MOT RDHT-1204MOT	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
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.

SCREW-ON MILLS USING 15° POSITIVE INSERTS
FOR COPYING & FACE MILLING



New Sizes Available!
see www.tysonstool.com



DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d	d _(mm)	d ¹	g	l ¹	Flutes		Insert Screw	Wrench
TR360-0500-TS	.500	12.70	.185	M6	1.10	1	RDMT-0802MOT RDMW-0802MOT RDHT-0802MOT	214.80.013	214.80.866 (S/D) 214.80.011 (F/T)
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			
TR360-0984-TS	.984	25.00	.591	M12	1.18	2	RDMT-1003MOT RDMW-1003MOT RDHT-1003MOT	214.80.951	214.80.824 (S/D) 214.80.012 (F/T)
TR360-1181-TS	1.181	30.00	.787	M16	1.57	3			
TR360-0945-TS	.945	24.00	.472	M12	1.18	2	RDMT-1204MOT-X RDMW-1204MOT-X RDHT-1204MOT-X	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
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			
TR360-1260-TS	1.260	32.00	.630	M16	1.57	2	RDMT-1605MOT-X RDMW-1605MOT-X RDHT-1605MOT-X	214.80.072	214.80.994 (S/D) 214.80.076 (F/T)

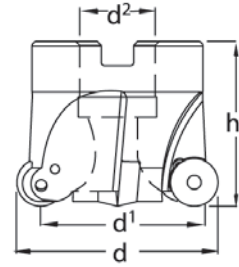
REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

TR360 COPY MILLING CUTTERS



New Sizes Available!
see www.tysonstool.com

FACE MILLS USING 15° POSITIVE INSERTS
FOR COPYING & FACE MILLING



DESIGNATION	DIMENSIONS							INSERT	SPARE PARTS	
	d	d ¹	d ²	h	Ramp Angle	Flutes	lbs.		Insert Screw	Wrench
TR360-2RD12	2.000	1.530	.750	1.63	10°	4	.65	RDMT-1204MOT-X RDMW-1204MOT-X RDHT-1204MOT-X	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
TR360-2RD12F	2.000	1.530	.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			
TR360-2RD16	2.000	1.370	.750	1.63	12°	3	.55	RDMT-1605MOT-X RDMW-1605MOT-X RDHT-1605MOT-X	214.80.072	214.80.994 (S/D) 214.80.076 (F/T)
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			
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			

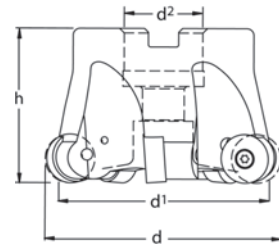
* Cutter supplied with 4 holes on a 4" bolt circle

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.



New Sizes Available!
see www.tysonstool.com

FACE MILLS USING 7° POSITIVE INSERTS
FOR MILLING, DUPLICATING & DRILLING

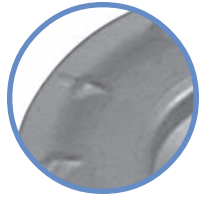


DESIGNATION	DIMENSIONS							INSERT	SPARE PARTS	
	d	d ¹	d ²	h	Ramp Angle	Flutes	lbs.		Insert Screw	Wrench
TR360-2RC16	2.000	1.370	.750	1.63	12°	3	.60	RCMT-1606MOT-X RCMT-1606MO-43M	214.80.072	214.80.994 (S/D) 214.80.076 (F/T)
TR360-2.5RC16	2.500	1.870	1.000	1.75	8°	4	1.10			
TR360-3RC16	3.000	2.370	1.000	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			
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			

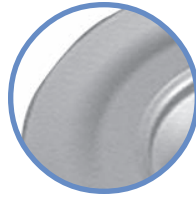
* Cutter supplied with 4 holes on a 4" bolt circle

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

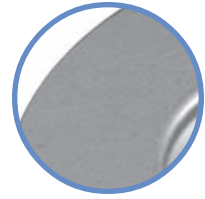
TR360 COPY MILLING CUTTERS



RCMT-43M



RCMT / RDHT / RDMT



RDMW

RCMT-43 - Free-cutting geometry for roughing and finishing, provides excellent surface finish. Outstanding chip control, especially with light depths of cut. Preferred geometry for alloy and plain carbon steels.

RCMT - Particularly used for face and drill milling, or in particularly rigid conditions.

RDHT - Tolerance class H with ground diameter of $\pm 13 \mu\text{m}$ tolerance for semi-finishing and finishing.

RDMT - Particularly for milling with long overhangs

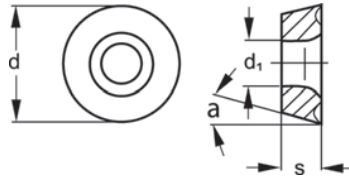
RDMW - Ideal for vibration-prone applications because the insert is less positive.



RCMT-43M



RCMT-X



DESIGNATION	l	s	r	d	d ¹	a
RCMT-1606MO-43M*	---	1/4	---	.630	.217	7°
RCMT-1606MOT-X*	---	1/4	---	.630	.217	7°

* Inserts have integrated anti-rotation lock



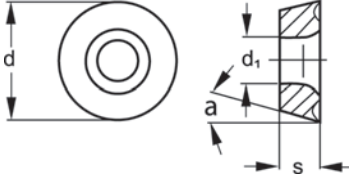
RDHT



RDMT



RDMW



DESIGNATION	l	s	r	d	d ¹	a
RDHT-0802MOT	--	3/32	--	.315	.134	15°
RDHT-1003MOT	--	1/8	--	.394	.173	15°
RDHT-1204MOT-X*	--	3/16	--	.472	.173	15°
RDHT-1605MOT-X*	--	7/32	--	.630	.217	15°
RDMT-0802MOT	--	3/32	--	.315	.134	15°
RDMT-1003MOT	--	1/8	--	.394	.173	15°
RDMT-1204MOT-X*	--	3/16	--	.472	.173	15°
RDMT-1605MOT-X*	--	7/32	--	.630	.217	15°
RDMW-0802MOT	--	3/32	--	.315	.134	15°
RDMW-1003MOT	--	1/8	--	.394	.173	15°
RDMW-1204MOT-X*	--	3/16	--	.472	.173	15°
RDMW-1605MOT-X*	--	7/32	--	.630	.217	15°

* Inserts have integrated anti-rotation lock

TR360 7° INSERTS

COATED								UNCOATED				CERMET	
TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR		TTI-25
	●		●	●	●		●						●
●	●	●	●	●	●	●	●	●		●			

TR360 15° INSERTS

COATED								UNCOATED				CERMET	
TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR		TTI-25
			●		●		●	●					●
			●		●		●	●					●
			●				●	●					●
			●				●	●					●
			●	●	●			●		●			
			●		●			●		●			
		●	●		●			●		●			
		●	●		●			●		●			
	●				●		●	●		●			●
	●		●		●		●	●		●			●
	●				●		●	●		●			●
	●				●		●	●		●			●

TBNR ROUGHING BALL NOSE MILLING CUTTERS

Performance and Versatility

The TBNR copy-milling cutter works equally well on conventional milling machines, copy milling machines and NC machines.

Mainly employed in the production of molds and dies, this universal tool is also proven in volume production, e.g. in housing manufacture. It not only performs all kinds of copy-milling operations, but can also plunge-cut at an angle. Its capabilities even include drilling from the solid. The key to this exemplary versatility lies in the cutter design and in the special arrangement of the indexable inserts.

The TBNR can also be fitted with precision-ground inserts if required. The inserts are held in place by countersunk screws, ensuring optimum chip flow since there are no interfering top clamping elements.

The TBNR ball nose copy-milling cutter is supplied in diameters ranging from $\frac{5}{8}$ " to 2".

Roughing Ball Nose Cutters Cover a Wide Range of Applications



**END MILLS
WITH COOLANT THROUGH**



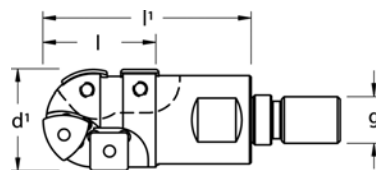
DESIGNATION	DIMENSIONS					INSERT		SPARE PARTS	
	d ¹	d ²	l ¹	l ²	l ³	Radius (Qty.)	Square (Qty.)	Insert Lock Screw	Screw Driver Type Wrench
REGULAR LENGTH:									
TBNR-0625R	.625	.750	3.50	1.47	.71	222.67.102 (2)	SPNX-21.51 (2)	214.80.061(Rad.) 214.80.687(Sq.)	214.80.059 214.80.866
TBNR-0750R	.750	.750	4.00	1.97	.75	222.67.104 (2)	SPNX-21.51 (2)	214.80.687	214.80.866
TBNR-1000R	1.000	1.000	4.00	1.72	1.11	222.67.106 (2)	SDNT-322 (2)	214.80.951	214.80.824
TBNR-1250R	1.250	1.250	5.00	2.72	1.22	222.67.108 (2)	SDNT-322 (2)	214.80.388	214.80.824
TBNR-1500R	1.500	1.250	5.00	2.72	1.37	222.67.112 (2)	SDNT-322 (2)	214.80.388	214.80.824
TBNR-2000R	2.000	2.000	6.25	3.00	1.81	222.67.114 (3)	SPNT-432 (2)	214.80.072	214.80.994
EXTENDED LENGTH:									
TBNR-0625	.625	.750	4.00	1.97	.71	222.67.102 (2)	SPNX-21.51 (2)	214.80.061(Rad.) 214.80.687(Sq.)	214.80.059 214.80.866
TBNR-0750	.750	.750	5.00	2.97	.75	222.67.104 (2)	SPNX-21.51 (2)	214.80.687	214.80.866
TBNR-1000	1.000	1.000	5.00	2.72	1.11	222.67.106 (2)	SDNT-322 (2)	214.80.951	214.80.824
TBNR-1250	1.250	1.250	6.00	3.72	1.22	222.67.108 (2)	SDNT-322 (2)	214.80.388	214.80.824
TBNR-1500	1.500	1.250	6.00	3.72	1.38	222.67.112 (2)	SDNT-322 (2)	214.80.388	214.80.824
TBNR-2000	2.000	2.000	7.25	4.00	1.81	222.67.114 (3)	SPNT-432 (2)	214.80.072	214.80.994
EXTRA LONG LENGTH:									
TBNR-2000LX	2.000	2.000	10.00	6.75	1.81	222.67.114 (3)	SPNT-432 (3)	214.80.072	214.80.994
TBNR-2000L	2.000	2.000	10.00	6.75	3.00	222.67.114 (3)	SPNT-432 (5)	214.80.072	214.80.994

All of the above TBNR Ball Nose Cutters have a straight shank with Weldon flats, also the TBNR-2000 & TBNR-2000L have the positiv-lok system.

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

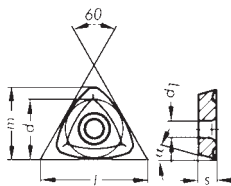
TBNR ROUGHING BALL NOSE MILLING CUTTERS

SCREW-ON MILLING CUTTERS



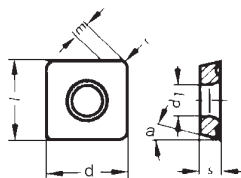
DESIGNATION	DIMENSIONS					INSERT		SPARE PARTS	
	d ¹	g	l ¹	l	Flutes	Radius (Qty.)	Square (Qty.)	Insert Lock Screw	Screw Driver Type Wrench
TBNR-0625-TS	.625	M8	1.50	.71	1	222.67.102 (2)	SPNX-21.51 (2)	214.80.061(Rad.) 214.80.687(Sq.)	214.80.059 214.80.866
TBNR-0750-TS	.750	M10	1.50	.75	1	222.67.104 (2)	SPNX-21.51 (2)	214.80.687	214.80.866
TBNR-1000-TS	1.000	M12	2.00	1.10	1	222.67.106 (2)	SDNT-322 (2)	214.80.951	214.80.824
TBNR-1250-TS	1.250	M16	1.75	1.22	1	222.67.108 (2)	SDNT-322 (2)	214.80.388	214.80.824

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.



TBNR RADIUS INSERTS

DESIGNATION	l	s	r	d	d ₁	m	α	COATED								UNCOATED				CERMET	
								TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
222.67.102 ^(5/8")	---	3/32	---	7/32	.100	.263	11°	●	●	●	●	●	●	●	●	●	●	●	●	●	●
222.67.104 ^(3/4")	---	7/64	---	1/4	.110	.303	11°	●	●	●	●	●	●	●	●	●	●	●	●	●	●
222.67.106 ^(1")	---	1/8	---	3/8	.173	.446	15°	●	●	●	●	●	●	●	●	●	●	●	●	●	●
222.67.108 ^(1 1/4")	---	3/16	---	13/32	.173	.500	15°	●	●	●	●	●	●	●	●	●	●	●	●	●	●
222.67.112 ^(1 1/2")	---	3/16	---	1/2	.173	.611	11°	●	●	●	●	●	●	●	●	●	●	●	●	●	●
222.67.114 ^(2")	---	3/16	---	1/2	.217	.593	11°	●	●	●	●	●	●	●	●	●	●	●	●	●	●



TBNR SQUARE INSERTS

DESIGNATION	l	s	r	d	d ₁	m	α	COATED								UNCOATED				CERMET	
								TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
SDNT-322	.375	1/8	1/32	3/8	.173	.065	15°	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SPNT-432	.500	3/16	1/32	1/2	.217	.091	11°	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SPNX-21.51	.250	7/64	1/64	1/4	.110	.045	11°	●	●	●	●	●	●	●	●	●	●	●	●	●	●

M270 BALL NOSE CUTTERS

Performance Features:

The indexable insert has two flutes covering an arc of 230° to give a wider range of applications when compared with tools having semicircular inserts.

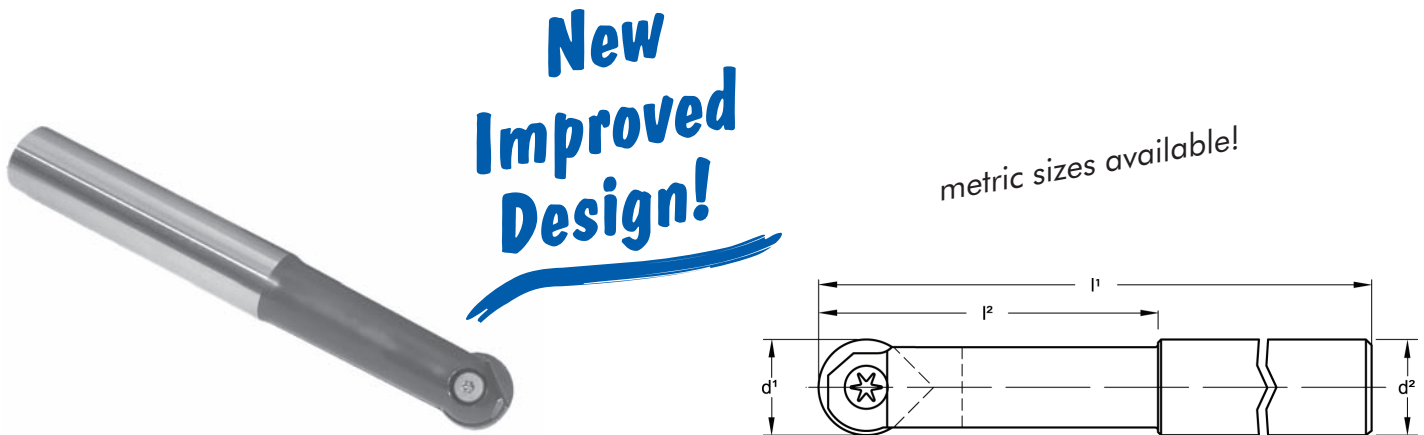
Outstanding cutting performance is guaranteed by exact insert positioning and secure screw locking. The positive cutting edge geometry results in superior surface finishes, especially on inclined work surfaces. All inserts are precision ground to ensure precise milling of workpiece contours.

The RH insert, being precision ground all over, meets the most exacting demands. Together with our TBNR ball-nose cutter for roughing, there is now a complete and cost-effective contour milling system available from one source.

Range:

A choice of five cutter diameters from 3/8" to 1" are available in two popular shank styles. To allow you to select the best cutting material for your operation, four different grades are available, from the high-productivity grade TN6525 to the proven hardmetal grades TTM and THM.

For the finish milling of parts with convex and concave contours, we now offer a line of replaceable insert ballnose cutters that completely fulfill toolmakers' needs. Offering outstanding cost-efficiency, the M270 ball-nose finishing mill replaces conventional solid and brazed end mills in the manufacture of molds and dies.



EXTENDED LENGTH STEEL SHANK END MILL WITH CYLINDRICAL SHANK

DESIGNATION	DIMENSIONS				INSERT	SPARE PARTS	
	$\varnothing d^1$	d^2	l^1	l^2		Insert Screw	Wrench
M270BN-0375-CY	.375	.500	5.500	1.800	R_-0375	274.86.105	274.97.262
M270BN-0500-CY	.500	.500	5.750	2.000	R_-0500	274.86.106	274.97.262
M270BN-0625-CY	.625	.625	6.000	2.300	R_-0625	274.86.107	274.97.993
M270BN-0750-CY	.750	.750	7.000	2.800	R_-0750	274.86.108	274.97.993
M270BN-1000-CY	1.000	1.000	8.000	3.500	R_-1000	274.86.109	274.97.898

EXTENDED LENGTH CARBIDE SHANK END MILL WITH CYLINDRICAL SHANK

DESIGNATION	DIMENSIONS				INSERT	SPARE PARTS	
	$\varnothing d^1$	d^2	l^1	l^2		Insert Screw	Wrench
M270BN-0375-CS	.375	.500	5.500	1.800	R_-0375	274.86.105	274.97.262
M270BN-0500-CS	.500	.500	5.750	2.000	R_-0500	274.86.106	274.97.262
M270BN-0625-CS	.625	.625	6.000	2.300	R_-0625	274.86.107	274.97.993
M270BN-0750-CS	.750	.750	7.000	2.800	R_-0750	274.86.108	274.97.993

M270 CORNER RADIUS END MILLS



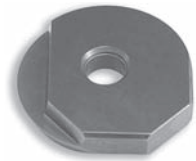
**New
Addition!**

metric sizes available!

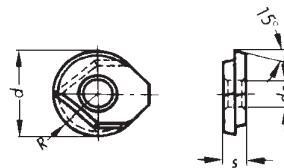


CORNER RADIUS END MILL WITH STRAIGHT CARBIDE SHANK BACKDRAFT

DESIGNATION	DIMENSIONS			INSERT	SPARE PARTS	
	ø d ¹	l ¹	l ²		Insert Screw	Wrench
M270BD-0375-CS	.375	5.500	1.800	BP-0375-R0031	274.86.105	274.97.262
M270BD-0500-CS	.500	5.750	2.000	BP-0500-R0063	274.86.106	274.97.262
M270BD-0625-CS	.625	6.000	2.300	BP-0625-R0094	274.86.107	274.97.993
M270BD-0750-CS	.750	7.000	2.800	BP-0750-R0125	274.86.108	274.97.993



metric sizes available!

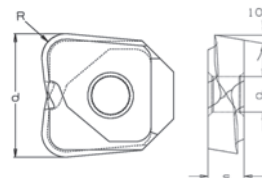


M270 Inserts

DESIGNATION	d	s	d ¹	COATED				UNCOATED		
				TN6525	TN2505	TN2510	TN2525	TTM	TTR	THM
RH-0375	.375	.094	.138		●			●		●
RH-0500	.500	.125	.138		●			●		●
RH-0625	.625	.187	.181		●			●		●
RH-0750	.750	.187	.181		●			●		●
RH-1000	1.000	.187	.220		●			●		●
RG-0375	.375	.094	.138	●		●		●		
RG-0500	.500	.125	.138	●		●		●		
RG-0625	.625	.187	.181	●		●		●		
RG-0750	.750	.187	.181	●		●		●		
RG-1000	1.000	.187	.220	●		●		●		



metric sizes available!



M270 Inserts

DESIGNATION	d	d ¹	s	r	COATED				UNCOATED		
					TN6525	TN2505	TN2510	TN2525	TTM	TTR	THM
BP-0375-R0031	.375	.138	.094	.031		●		●			
BP-0500-R0063	.500	.138	.125	.063		●		●			
BP-0625-R0094	.625	.181	.187	.094		●		●			
BP-0750-R0125	.750	.181	.187	.125		●		●			

MODULAR MILLING SYSTEM

Die sinking is a key manufacturing process. To improve competitiveness, it is vital to reduce machining costs in the production of often very complex die shapes. Our Modular System, a high performance milling system with a wide range of applications, offers the ideal solution.

The System:

The versatile modular system consists of the following:

- Taper and straight shank basic holders in varying lengths.
- Screw-on milling heads with indexable inserts to suit a variety of applications.

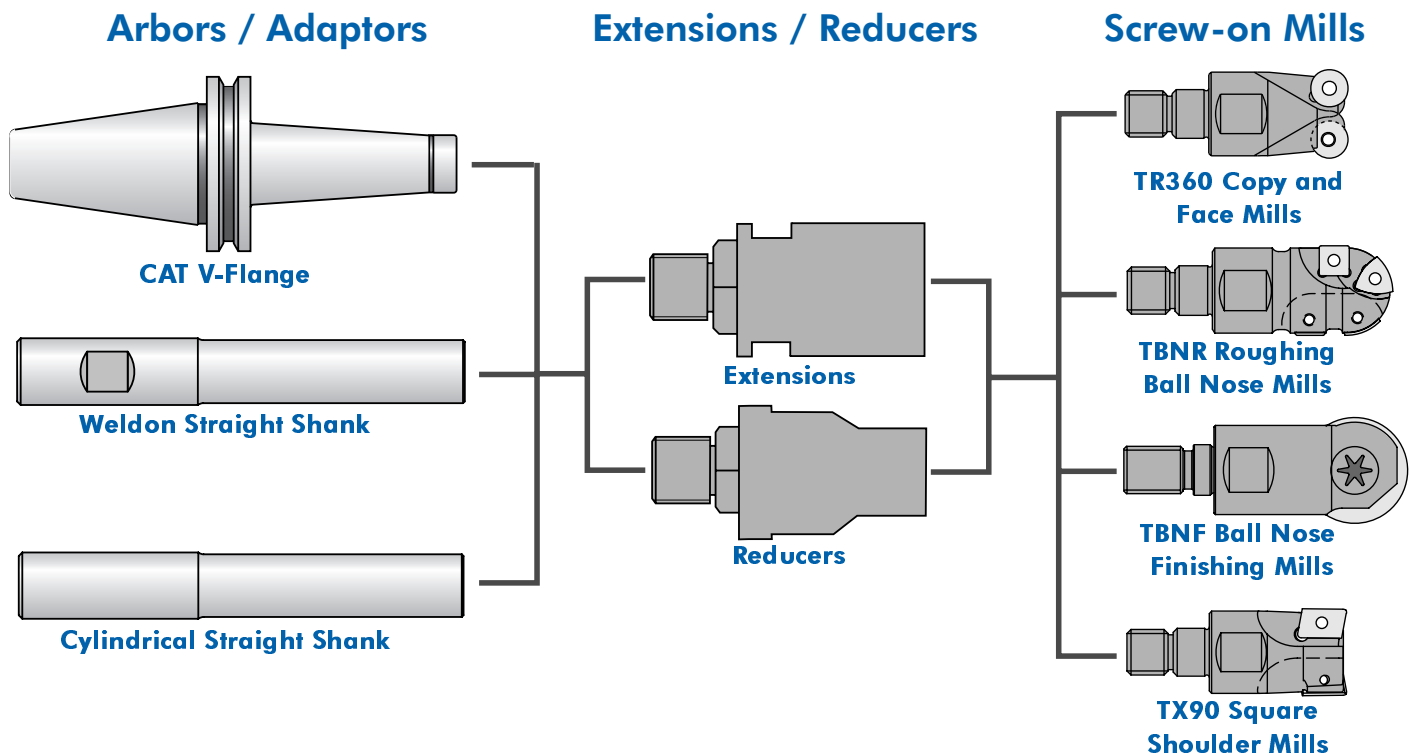
Applications:

- Face, square-shoulder and contour milling with long overhangs in tool making and mold and die manufacturing
- Rough and finish machining of complex tool shapes and difficult to machine work materials.

Features and Benefits:

- Modular design offers various tool combinations.
- Available in 3", 5" and 7" lengths for greater flexibility.
- One basic holder for different applications, therefore, reduced inventories.
- Sturdy coupling between the arbor and the screw-on mill with a cylindrical fit, face contact and central screw fastening, add safety and reliability in machining. No spare parts.
- Screw-on mills are available in various styles and diameters for greater versatility in a comprehensive range of applications.
- Standard milling inserts with positive cutting edge geometries in proven grades.

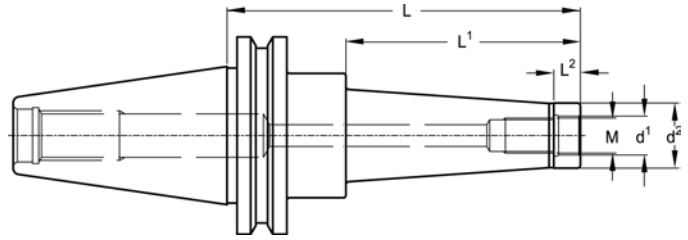
The Versatile System for Mold and Die Making.



- Flexibility
- Reliability
- Modularity
- Variety
-

MODULAR MILLING SYSTEM

CAT V-FLANGE ARBORS



DESIGNATION	DIMENSIONS					
	Shank Taper	M	d ¹ H6	d ²	L	L ¹
CV40-M8-3	CAT-40	M8	.334	.511	3.00	1.62
CV40-M8-4.5	CAT-40	M8	.334	.511	4.50	3.12
CV40-M10-3	CAT-40	M10	.413	.708	3.00	1.62
CV40-M10-5	CAT-40	M10	.413	.708	5.00	3.62
CV40-M12-3*	CAT-40	M12	.492	.826	3.00	1.62
CV40-M12-5*	CAT-40	M12	.492	.826	5.00	3.62
CV40-M16-3*	CAT-40	M16	.669	1.141	3.00	1.62
CV40-M16-5*	CAT-40	M16	.669	1.141	5.00	3.62
CV40-M16-7*	CAT-40	M16	.669	1.141	7.00	5.62
CV50-M12-3*	CAT-50	M12	.492	.826	3.00	1.62
CV50-M12-5*	CAT-50	M12	.492	.826	5.00	3.62
CV50-M16-3*	CAT-50	M-16	.669	1.141	3.00	1.62
CV50-M16-5*	CAT-50	M-16	.669	1.141	5.00	3.62
CV50-M16-7*	CAT-50	M-16	.669	1.141	7.00	5.62

* with internal coolant supply

OTHER ARBORS STYLES AVAILABLE ON REQUEST



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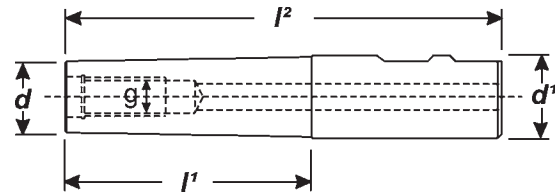
DIN 69871-A



MAS 403 BT

MODULAR MILLING SYSTEM

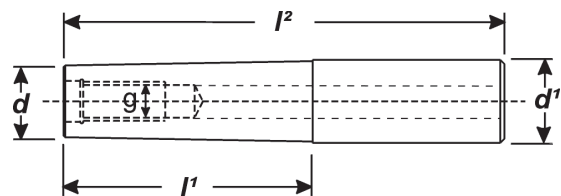
WELDON STRAIGHT SHANKS



DESIGNATION	DIMENSIONS				
	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



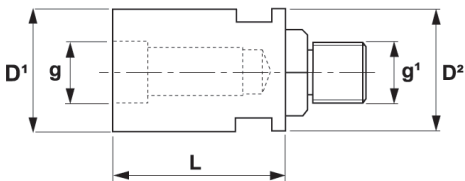
DESIGNATION	DIMENSIONS				
	g	d	d¹	l¹	l²
SS050CY-M6-2	M6	.382	.500	2.00	3.78
SS050CY-M6-3	M6	.382	.500	3.00	4.78
SS063CY-M8-2	M8	.512	.625	2.00	3.90
SS063CY-M8-3	M8	.512	.625	3.00	4.90
SS063CY-M8-4	M8	.512	.625	4.00	5.90
SS075CY-M10-3	M10	.709	.750	3.00	5.03
SS075CY-M10-5	M10	.709	.750	5.00	7.03
SS100CY-M12-3*	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

MODULAR MILLING SYSTEM

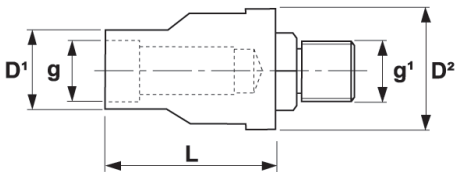
Precision manufactured extensions and reducers enhance the capability of the modular milling system. If you need to extend an existing tool or add a smaller tool to your existing arbor, the extensions and reducers shown below should meet your requirements.

EXTENSIONS



DESIGNATION	DIMENSIONS				
	g	g ¹	D ¹	D ²	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



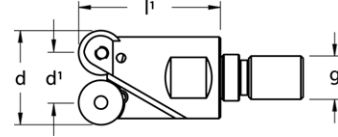
DESIGNATION	DIMENSIONS				
	g	g ¹	D ¹	D ²	L
RD-M8/M6	M6	M8	.382	.512	.98
RD-M10/M8	M8	M10	.512	.709	1.18
RD-M12/M10	M10	M12	.709	.827	1.38
RD-M16/M12*	M12	M16	.827	1.142	1.57
* with internal coolant supply					

MODULAR MILLING SYSTEM

TR360 COPYING SCREW-ON MILLS



- Multi-functional milling
- 15° positive insert
- Round insert has a strong cutting edge
- Ideally suited for mold & die manufacturing



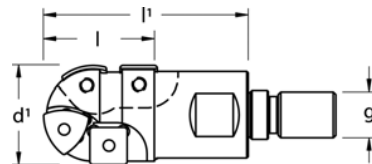
DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d	d' (mm)	d'	g	l'	Flutes		Insert Screw	Wrench
TR360-0500-TS	.500	12.70	.185	M6	1.10	1	RDMT-0802MOT RDMW-0802MOT RDHT-0802MOT	214.80.013	214.80.866 (S/D) 214.80.011 (F/T)
TR360-0500L-TS	.500	12.70	.185	M8	2.00	1			
TR360-0625-TS	.625	15.87	.310	M8	1.10	2			
TR360-0750-TS	.750	19.05	.435	M10	1.18	2			
TR360-0984-TS	.984	25.00	.591	M12	1.18	2	RDMT-1003MOT RDMW-1003MOT RDHT-1003MOT	214.80.951	214.80.824 (S/D) 214.80.012 (F/T)
TR360-1181-TS	1.181	30.00	.787	M16	1.57	3			
TR360-0945-TS	.945	24.00	.472	M12	1.18	2	RDMT-1204MOT-X RDMW-1204MOT-X RDHT-1204MOT-X	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
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			
TR360-1260-TS	1.260	32.00	.630	M16	1.57	2	RDMT-1605MOT-X RDMW-1605MOT-X RDHT-1605MOT-X	214.80.072	214.80.994 (S/D) 214.80.076 (F/T)

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

TBNR ROUGHING BALL NOSE SCREW-ON MILLS



- Roughing ball nose mills
- Used for copy and contour milling
- Suitable for roughing in small to medium size molds
- Performance and versatility covering a wide range of applications



DESIGNATION	DIMENSIONS					INSERT		SPARE PARTS	
	d'	g	l'	l	Flutes	Radius (Qty.)	Square (Qty.)	Insert Lock Screw	Screw Driver Type Wrench
TBNR-0625-TS	.625	M8	1.50	.71	1	222.67.102 (2)	SPNX-21.51 (2)	214.80.061(Rad.) 214.80.687(Sq.)	214.80.059 214.80.866
TBNR-0750-TS	.750	M10	1.50	.75	1	222.67.104 (2)	SPNX-21.51 (2)	214.80.687	214.80.866
TBNR-1000-TS	1.000	M12	2.00	1.10	1	222.67.106 (2)	SDNT-322 (2)	214.80.951	214.80.824
TBNR-1250-TS	1.250	M16	1.75	1.22	1	222.67.108 (2)	SDNT-322 (2)	214.80.388	214.80.824

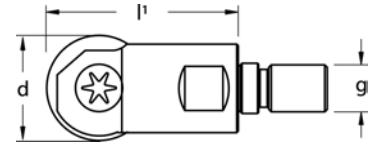
REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

MODULAR MILLING SYSTEM

TBNF FINISHING BALL NOSE SCREW-ON MILLS



- Finishing ball nose mills
- Positive cutting edge geometry results in a superior surface finish
- High productivity in contour finish milling



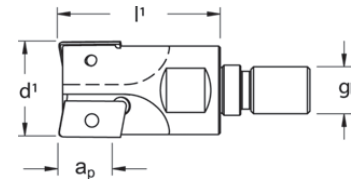
DESIGNATION	DIMENSIONS				INSERT	SPARE PARTS	
	d	g	l'	Flutes		Insert Screw	Wrench
TBNF-1000-TS	1.000	M12	1.969	2	238.57.412	274.86.076	214.80.994
TBNF-1250-TS	1.250	M16	1.969	2	238.57.414	274.86.077	214.60.063

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

TX90 SQUARE SHOULDER SCREW-ON MILLS



- For slot milling and square shoulder milling
- High performance and reliability
- High machining rates



DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d'	d' (mm)	g	l'	Max. a _p	Flutes		Insert Screw	Wrench
TXD90-0500-TS	.500	12.70	M6	1.10	.33	1	222.79.600 222.79.610	214.80.687	214.80.866 (S/D) 214.80.011 (F/T)
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	222.79.400 222.79.500 222.79.510 222.79.550 222.79.564	214.80.388	214.80.824 (S/D) 214.80.012 (F/T)
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			

Using 222.79.510 - 522, 222.79.550 - 552 & 222.79.610 inserts, which are wider due to the higher side rake angles, will cut oversize. Also, when using 222.79.564 inserts with serrated cutting edges, inserts are to be mounted alternating edge I & II, and can only be used with a minimum of 2 teeth. Best results are achieved when used in cutters with an even number of flutes.

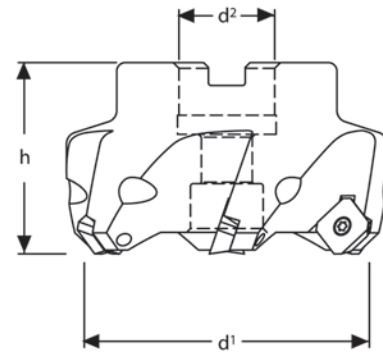
REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

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.

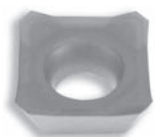
TS45F cutters use thicker inserts, allowing for high feed rates. This face milling cutter works well on steels, stainless steels, alloyed steels, cast iron and aluminum alloys.

FACE MILLS



DESIGNATION	DIMENSIONS					INSERT	SPARE PARTS	
	d ¹	d ²	h	Flutes	lbs		Insert Screw	Wrench
TS45F-20SE43X	2.000	.750	1.75	4	1.05	SEHT-43 SEHW-43 SEKT-43 SEKW-43	214.80.072	214.80.076 (S/D)
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			
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.



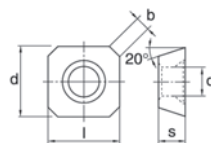
SEHT-ALC



SEHT / SEKT



SEHW / SEKW

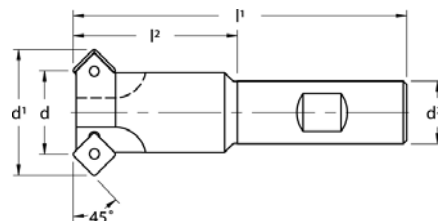


TS45F INSERTS

							COATED				UNCOATED			CERMET						
SEHT-ALC	SEHT / SEKT	SEHW / SEKW					TP30MC	TP40MP					TK10MP		TP25M	TK10M				
DESIGNATION	l	s	r	d	d ₁	b														
SEHT-43 AF	.500	3/16	---	1/2	.217	.062		●												
SEHT-43 AFFN-ALC	.500	3/16	---	1/2	.217	.062							●		●					
SEHW-43 AF	.500	3/16	---	1/2	.217	.062		●												
SEKT-43 AFSN	.500	3/16	---	1/2	.217	.062	●								●					
SEKW-43 AFSN	.500	3/16	---	1/2	.217	.062	●													

TS45 45° CHAMFER MILLING CUTTERS

END MILLS

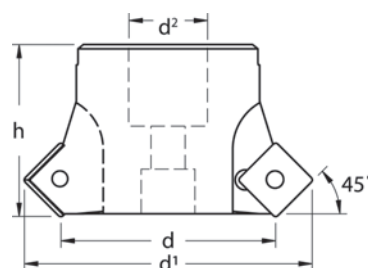


DESIGNATION	DIMENSIONS							INSERT	SPARE PARTS	
	d	d ¹	d ²	l ¹	l ²	Flutes	Chamfer Min-Max		Insert Screw	Wrench
REGULAR LENGTH:										
TSD45-0625	.625	1.130	.750	3.00	.97	2	.67 - 1.11	SDMW-322 SDNT-322	214.80.951	214.80.824 (S/D) 214.80.012 (F/T)
TSD45-0750	.750	1.255	.750	3.30	1.27	2	.79 - 1.23			
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			
TSP45-1500	1.500	2.182	1.250	4.00	1.72	3	1.54 - 2.11	SPMW-432 SPNT-432	214.80.072	214.80.994 (S/D) 214.80.076 (F/T)
EXTENDED LENGTH:										
TSD45-0625-L	.625	1.130	.750	8.00	1.49	2	.67 - 1.11	SDMW-322 SDNT-322	214.80.951	214.80.824 (S/D) 214.80.012 (F/T)
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.



FACE MILLS



DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d	d ¹	d ²	h	Flutes	Chamfer Min-Max		Insert Screw	Wrench
TSP45-2000	2.000	2.680	.750	1.60	4	2.04 - 2.66	SPMW-432 SPNT-432	214.80.072	214.80.994 (S/D) 214.80.076 (F/T)

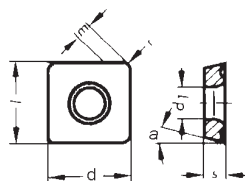
REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.



SDMW / SPMW



SDNT / SPNT



TS45 INSERTS

DESIGNATION	l	s	r	d	d ¹	m	α	TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25
SDMW-322	.375	1/8	1/32	3/8	.173	.065	15°									●	●	●		
SPMW-432	.500	3/16	1/32	1/2	.217	.091	11°						●			●	●	●	●	
SDNT-322	.375	1/8	1/32	3/8	.173	.065	15°		●		●	●	●			●	●	●		
SPNT-432	.500	3/16	1/32	1/2	.217	.091	11°		●		●	●	●			●	●	●	●	

TSN45 HIGH SHEAR MILLING CUTTERS

Our Tools:

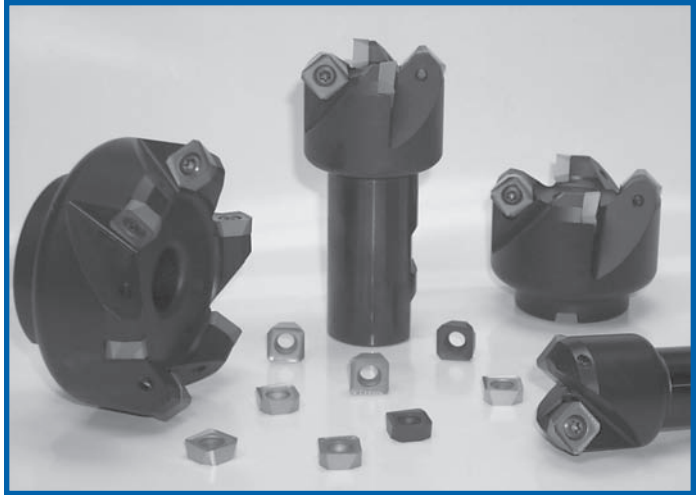
The range of TSN45 milling cutters encompasses end mills with diameters from 1" to 2" and face mills with diameters from 2" to 8". All tools are fitted with a uniform square insert, which is clamped securely by means of a countersunk screw. Compared with other clamping systems, TSN45 milling cutters have optimum sized chip gullets and require no further spare parts. The compact cutter body is provided with ample clearance to create sufficient space between the tool and the workpiece.

End and face mills with a 42° cutting edge angle are ideal tools for use on machining centres. High feed rates and favourable cutting force distribution guarantee high productivity and reliability.

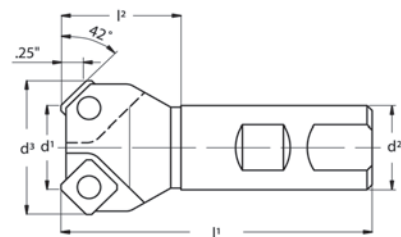
Application:

- Preferably on machining centres and low powered machine tools
- Smooth running, cost-efficient
- Face and rough-milling at high feed rates
- Milling with long overhangs
- Milling under difficult conditions, e.g. weld or forging scale
- Prevention of burring (steel) and edge chipping (cast iron) during face milling.

Facing the Challenge with TSN45 Milling Cutters



END MILLS FOR HIGH METAL REMOVAL



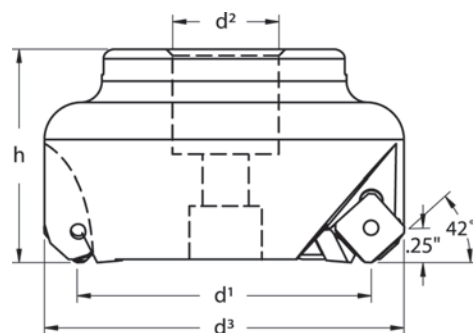
DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d ¹	d ²	d ³	l ¹	l ²	Flutes		Insert Screw	Wrench
TSN45-1000	1.000	1.000	1.54	3.75	1.47	2	SNKT-1205 SNMT-1205 XNKT-1205	214.80.072	214.80.994 (S/D) 214.80.076 (F/T)
TSN45-1250	1.250	1.250	1.79	4.00	1.72	3			
TSN45-1500	1.500	1.250	2.04	4.00	1.72	4			
TSN45-2000EM	2.000	1.250	2.52	4.00	1.72	4			

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

TSN45 HIGH SHEAR MILLING CUTTERS



FACE MILLS FOR HIGH METAL REMOVAL

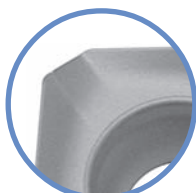


DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	d ¹	d ²	d ³	h	Flutes	lbs.		Insert Screw	Wrench
TSN45-2000	2.000	.750	2.52	2.00	4	1.45	SNKT-1205 SNMT-1205 XNKT-1205	214.80.073	214.80.994 (S/D) 214.80.076 (F/T)
TSN45-2500	2.500	1.000	3.02	2.00	5	2.20			
TSN45-3000	3.000	1.000	3.56	2.00	6	3.00			
TSN45-4000	4.000	1.250	4.58	2.00	7	3.70			
TSN45-5000	5.000	1.500	5.52	2.00	8	5.75			
TSN45-6000	6.000	1.500	6.52	2.00	10	8.65			
TSN45-8000*	8.000	2.500	8.52	2.50	12	17.45			

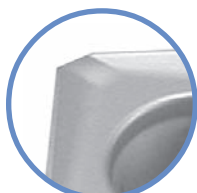
* Cutter supplied with 4 holes on a 4" bolt circle

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

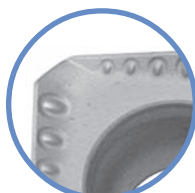
Five geometries with positive rake angles and reinforced cutting edges to reduce cutting forces and improve milling performance.



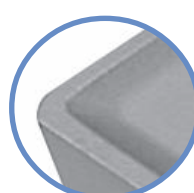
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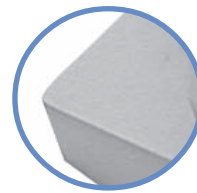
-21



-31



XNKT-11



XNKT-12

-20 - Particularly positive geometry for light alloy milling work

XNKT-11 - Wiper edge for cast iron

-21 - General milling of cast irons, and finishing of steel

XNKT-12 - Wiper edge for steel

-31 - Roughing and finishing of steel



TSN45 INSERTS

DESIGNATION	l	s	r	d	d ₁	b _s	TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25
SNKT-1205 AZER-20	.500	7/32	---	1/2	.217	.061	●	●	●	●	●	●	●	●					●
SNKT-1205 AZR-21	.500	7/32	---	1/2	.217	.061	●	●	●	●	●	●	●	●			●		●
SNKT-1205 AZR-31	.500	7/32	---	1/2	.217	.061	●	●	●	●	●	●	●	●	●				
SNMT-1205 AZR-31	.500	7/32	---	1/2	.217	.061	●	●	●	●	●	●	●	●	●				
XNKT-1205 AZER-11	.500	7/32	--	1/2	.217	.315	●	●	●	●	●	●	●	●			●		●
XNKT-1205 AZTR-12	.500	7/32	--	1/2	.217	.315	●	●	●	●	●	●	●	●			●		●

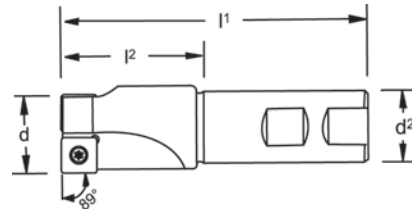
TPC PLUNGE MILLING CUTTERS

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.

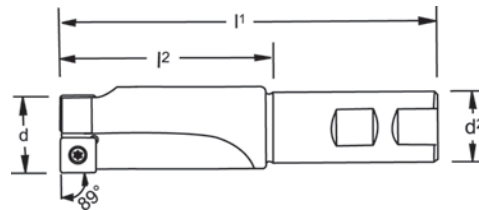
STANDARD LENGTH END MILLS FOR DRILLING AND MILLING



DESIGNATION	DIMENSIONS					INSERT	SPARE PARTS	
	d	d²	l¹	l²	Flutes		Insert Screw	Wrench
TPC-0730	.730	.750	3.03	1.00	1	SDMW-322 SDNT-322	214.80.951	214.80.824 (S/D)
TPC-1000	1.000	1.000	3.50	1.25	2			214.80.012 (F/T)
TPC-1000-3	1.000	.750	3.25	1.25	2			
TPC-1250	1.250	1.000	4.00	1.50	2	SPMW-432 SPNT-432	214.80.072	214.80.994 (S/D)
TPC-1500	1.500	1.250	4.00	1.50	2			214.80.076 (F/T)

REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.

EXTENDED LENGTH END MILLS FOR DRILLING AND MILLING



DESIGNATION	DIMENSIONS					INSERT	SPARE PARTS	
	d	d²	l¹	l²	Flutes		Insert Screw	Wrench
TPC-0730-XL	.730	.750	3.53	1.50	1	SDMW-322 SDNT-322	214.80.951	214.80.824 (S/D)
TPC-1000-XL	1.000	1.000	4.31	2.03	2			214.80.012 (F/T)
TPC-1250-XL	1.250	1.000	4.81	2.50	2	SPMW-432 SPNT-432	214.80.072	214.80.994 (S/D)
TPC-1500-XL	1.500	1.250	5.40	3.00	2			214.80.076 (F/T)

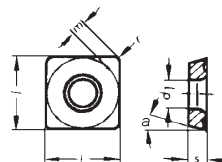
REMEMBER TO USE COPASLIP® ANTI-SEIZE COMPOUND ON ALL INSERT SCREWS.



SDMW / SPMW



SDNT / SPNT

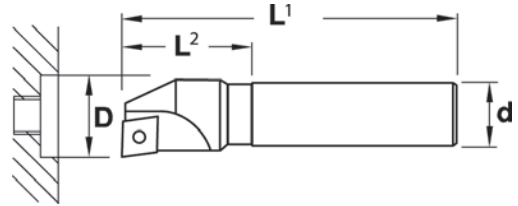


TPC INSERTS

DESIGNATION	l	s	r	d	d¹	m	a	TPC INSERTS							
								COATED				UNCOATED		CERMET	
								TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515
SDMW-322	.375	1/8	1/32	3/8	.173	.065	15°								
SPMW-432	.500	3/16	1/32	1/2	.217	.091	11°								
SDNT-322	.375	1/8	1/32	3/8	.173	.065	15°								
SPNT-432	.500	3/16	1/32	1/2	.217	.091	11°								

TCCBE COUNTERBORE MILLING CUTTERS

END MILLS FOR COUNTERBORING



Inch

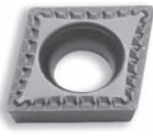
DESIGNATION	DIMENSIONS					INSERT	SPARE PARTS	
	D	d	L¹	L²	Cap Screw Size		Insert Lock Screw #	Wrench #
TCCBE-025-CC2	.406	.500	3.00	.59	1/4	CCM_-21.5_	C-1425	C-5507
TCCBE-031-CC2	.500	.500	3.00	.74	5/16			
TCCBE-037-CC3	.594	.625	3.50	1.18	3/8	CCM_-32.5_	C-1440	C-5515
TCCBE-050-CC3	.781	.625	3.50	1.26	1/2			
TCCBE-062-CC3	.969	.750	3.50	1.26	5/8			
TCCBE-075-CC3	1.188	.750	3.50	1.26	3/4			

Metric

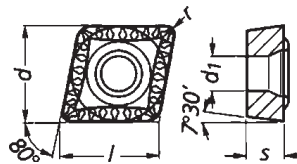
DESIGNATION	DIMENSIONS					INSERT	SPARE PARTS	
	D	d	L¹	L²	Cap Screw Size		Insert Lock Screw #	Wrench #
TCCBE-M6-CC2	11	12	85	15	M6	CCM_-21.5_	C-1425	C-5507
TCCBE-M8-CC2	14	12	85	19	M8			
TCCBE-M10-CC3	17	16	95	30	M10	CCM_-32.5_	C-1440	C-5515
TCCBE-M12-CC3	19	16	95	32	M12			
TCCBE-M14-CC3	22	16	95	32	M14			
TCCBE-M16-CC3	25	16	95	32	M16			



CCMT



CCMT-MU



TCCBE INSERTS

DESIGNATION	l	s	r	d	d₁	COATED								UNCOATED				CERMET	
						TN7010	TN7015	TN7025	TN7035	TN35	TN8025	TN5015	TN5020	TTM	TTR	THM	THR	TTI-25	
CCMT-21.51	.254	3/32	1/64	1/4	.114			●	●		●	●			●	●			
CCMT-21.51T			1/64										●		●	●			
CCMT-21.52			1/32					●	●	●									
CCMT-32.51	.380	5/32	1/64	3/8	.173			●	●	●	●				●	●			
CCMT-32.52			1/32					●	●	●				●	●	●			
CCMT-32.53			3/64					●	●	●					●				
CCMT-32.51-MU	.380	5/32	1/64	3/8	.173			●	●	●	●	●							
CCMT-32.52-MU			1/32					●	●	●	●	●							

TCP90-AL MILLING CUTTERS

Featuring BECKER PCD Inserts

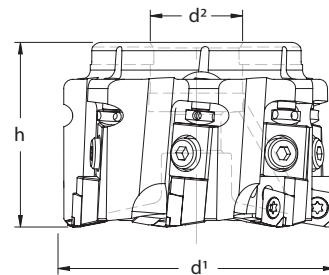
- New advanced milling cutter program engineered for high speed machining of non-ferrous materials
- Ultra precise finishing with unique wiper-radius PCD inserts and micro-adjustable cartridges

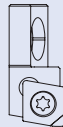
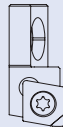
**New
Addition!**

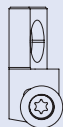
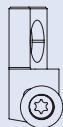


- Copy Milling configuration also available using PCD full faced RDHX-1003MO inserts
- Milling cutter bodies made from lightweight 7075-T6 aviation grade aluminum
- Maxicool through coolant enabled for maximum chip evacuation and temperature control

FACE MILLS FOR PCD MILLING APPLICATIONS



DESIGNATION	DIMENSIONS				INSERT	SPARE PARTS			
	d ¹	d ²	h	Flutes		Cartridge	Cartridge Clamp Screw	Insert Torx Screw	Height Adj. Screw
Through Coolant Enabled					CPGW-32.51PDR	TT2057	CSM5X16	214.80.388	HAS6823
TCP90-2000-AL	2.000	.750	2.00	3					
TCP90-2500-AL	2.500	1.000	2.00	5					
TCP90-3000-AL	3.000	1.000	2.00	7					
TCP90-4000-AL	4.000	1.250	2.00	10					
Standard Non-Through Coolant									
TCP90-5000-AL	5.000	1.500	2.00	11					
TCP90-6000-AL	6.000	1.500	2.00	13					

DESIGNATION	DIMENSIONS				INSERT	SPARE PARTS			
	d ¹	d ²	h	Flutes		Cartridge	Cartridge Clamp Screw	Insert Torx Screw	Height Adj. Screw
Through Coolant Enabled					RDHX-1003MO	TT2176	CSM5X16	214.80.388	HAS6823
RD390-2000-AL	2.000	.750	2.00	3					
RD390-2500-AL	2.500	1.000	2.00	5					
RD390-3000-AL	3.000	1.000	2.00	7					
RD390-4000-AL	4.000	1.250	2.00	10					
Standard Non-Through Coolant									
RD390-5000-AL	5.000	1.500	2.00	11					
RD390-6000-AL	6.000	1.500	2.00	13					

TCP90-AL *FEATURING BECKER PCD INSERTS*

PDC - Performance:

Polycrystalline, carbide reinforced diamond of fine grit size, good cutting edge sharpness and low cutting pressure allowing close tolerances. Increased flank wear resistance and toughness.

Application:

Finishing and general purpose of all nonferrous metals and nonmetallics with low content of abrasive reinforcement or silicon.

PDC-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:

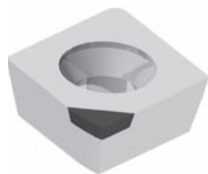
Finishing, general purpose and milling of all nonmetallics with medium to high content of abrasive reinforcement or silicon.

PDC-L - Performance:

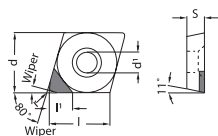
Polycrystalline, carbide reinforced diamond of ultrafine grit size, high cutting edge sharpness, minimal cutting pressure allowing close tolerances. Good flank wear resistance and toughness.

Application:

Finishing of all pure nonferrous materials and nonmetallics with verylow content of abrasive reinforcement or silicon.

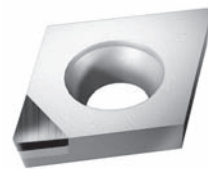


Milling Insert with Wiper

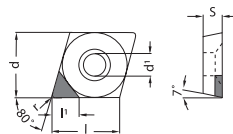


TCP90 Inserts

DESIGNATION	d	d ¹	s	l	l ¹	r	DP
CPGW-32.51PDR	.375	.173	.156	.382	.169	.016	●

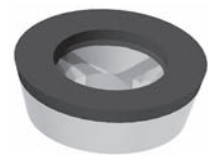


Milling Insert Neutral (No Wiper)

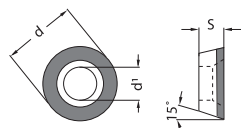


TCP90 Inserts

DESIGNATION	d	d ¹	s	l	l ¹	r	DP
CPMW-32.51	.375	.173	.156	.382	.169	.016	●
CPMW-32.52	.375	.173	.156	.382	.161	.031	●



Fullface Milling Insert

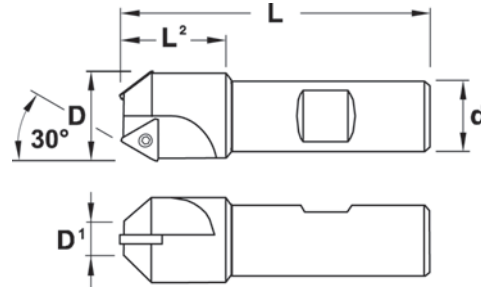


TCP90 Inserts

DESIGNATION	d	d ¹	s	l	l ¹	r	DP
RDHX-1003MO	.394	.150	.125	--	--	--	●

TT30E/TT45E CHAMFER & COUNTERSINK CUTTERS

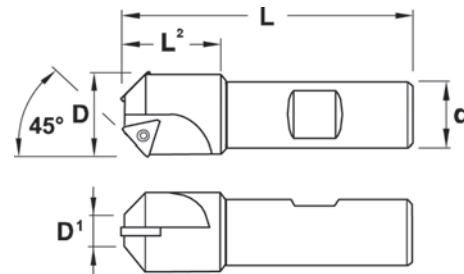
END MILLS FOR CHAMFERING & COUNTERSINKING



STYLE "A" - 30°

Inch

DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	D	D ¹	d	L	L ²	Flutes		Insert Lock Screw #	Wrench #
TT30E-062TC2	.625	.213	.500	2.75	.94	1	TCM_-21.5_	C-1425	C-5507
TT30E-102TC2	1.020	.622	.750	3.54	1.18	2			



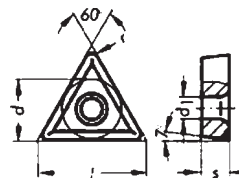
STYLE "B" - 45°

Inch

DESIGNATION	DIMENSIONS						INSERT	SPARE PARTS	
	D	D ¹	d	L	L ²	Flutes		Insert Lock Screw #	Wrench #
TT45E-062TC2	.625	.047	.500	2.75	.94	1	TCM_-21.5_	C-1425	C-5507
TT45E-083TC2	.830	.244	.750	3.54	1.10	2			



TCMT



DESIGNATION	l	s	r	d	d ₁
TCMT-21.51	.433	3/32	1/64	1/4	.110
TCMT-21.52			1/32		

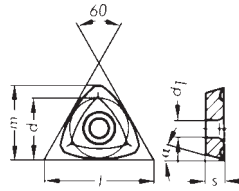
TT30E/TT45E INSERTS

COATED								UNCOATED				CERMET	
TN7010	TN7015	TN7025	TN7035	TN35	TN8025	TN5015	TN5020	TTM	TTR	THM	THR	TTI-25	
					●	●	●		●	●			
					●	●	●			●			

INDEXABLE INSERTS FOR MILLING INDEX

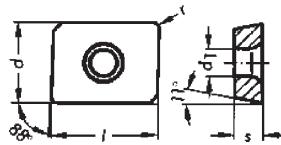
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INDEXABLE INSERTS FOR MILLING



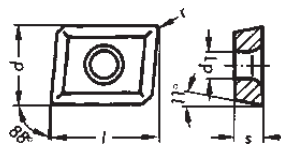
222.67.1 ..

DESIGNATION	l	s	r	d	d ₁	m	α	TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
222.67.102	--	3/32	--	7/32	.100	.263	11°	●			●	●				●	●	●			
222.67.104	--	7/64	--	1/4	.110	.303	11°	●			●	●				●	●	●			
222.67.106	--	1/8	--	3/8	.173	.446	15°	●			●	●	●			●	●	●			
222.67.108	--	3/16	--	13/32	.173	.498	15°	●			●	●	●			●	●	●			
222.67.112	--	3/16	--	1/2	.173	.611	15°									●	●	●			
222.67.114	--	3/16	--	1/2	.217	.593	11°	●			●	●				●	●	●			
222.67.132	--	3/16	--	1/2	.217	.644	11°									●	●	●			



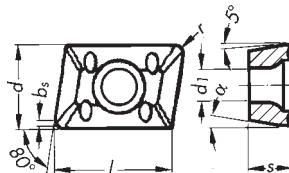
222.79.1 ..

DESIGNATION	l	s	r	d	d ₁	m	TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25
222.79.100	.590	1/8	1/32	3/8	.173	--									●	●	●		
222.79.110	.625	3/16	3/64	1/2	.217	--						●			●	●	●	●	



222.79.112

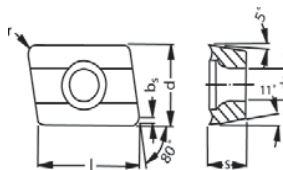
DESIGNATION	I s r d d ₁ m						TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25
222.79.112	.625	3/16	3/64	1/2	.217	--					●	●			●	●	●	●	



222.79.400

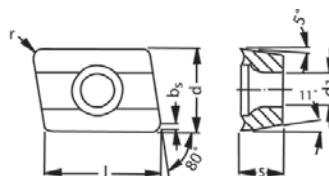
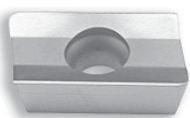
DESIGNATION	l	s	r	d	d ₁	b _s	α	TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25
222.79.400	.635	3/16	3/64	3/8	.173	.047	11°	●	●	●	●	●		●	●					

INDEXABLE INSERTS FOR MILLING



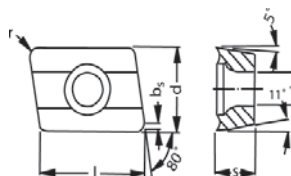
222.79.500/600

DESIGNATION	l	s	r	d	d ₁	b _s	α	COATED												UNCOATED				CERMET	
								TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	TTI-35	TTI-45			
222.79.530	.635	3/16	1/32	3/8	.173	.071	11°		●			●	●	●	●		●								
222.79.500			3/64		9	.05			●	●		●	●	●	●		●	●	●	●					●
222.79.532			1/16		2	.03			●			●	●	●	●		●								
222.79.534			5/64		0	.02						●	●	●	●		●								
222.79.536			3/32		-	-						●	●	●	●		●								
222.79.538			1/8		-	-						●	●	●	●		●								
222.79.540			5/32		-	-						●	●	●	●		●								
222.79.600	.381	1/8	1/32	1/4	.110	.039	15°		●	●	●	●	●	●	●		●	●	●	●				●	



222.79.501

DESIGNATION	l	s	r	d	d ₁	b _s	α	TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25
222.79.501	.635	.187	3/64	.375	.173	.059	11°			●		●	●							

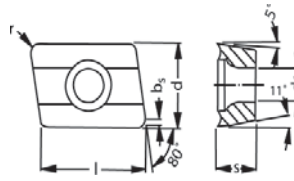


222.79.510/610

DESIGNATION	l	s	r	d	d ₁	b _s	α	TN25	TN25	TN25	TN75	TN75	TN45	TN55	TN55	TTM	TTR	THM	THR	TTI-2
222.79.510 *	.635	.183	1/32	.386	.173	.067	11°											●		
222.79.512 *			3/64		5	.05												●		
222.79.514 *			1/16		5	.03												●		
222.79.516 *			5/64		6	.01												●		
222.79.518 *			3/32		-	-												●		
222.79.520 *			1/8		-	-												●		
222.79.522 *			5/32		-	-												●		
222.79.610 *	.381	1/8	1/32	.264	.110	--	15°											●		

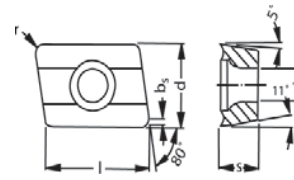
* Optimized for aluminum

INDEXABLE INSERTS FOR MILLING



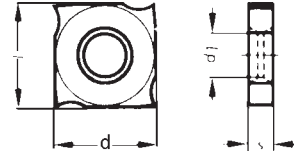
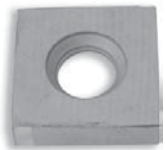
222.79.55 .

DESIGNATION	l	s	r	d	d ₁	b _s	α	COATED								UNCOATED				CERMET	
								TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THM-U	TTI-25	
222.79.550	.635	.184	1/64	.386	.173	.067	11°														
222.79.552			1/32																●		
222.79.554			3/64																●		



222.79.564

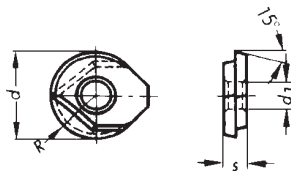
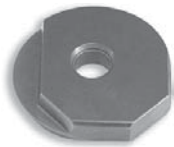
DESIGNATION	l	s	r	d	d ₁	b _s	α	COATED								UNCOATED				CERMET	
								TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
222.79.564	.635	.184	3/64	3/8	.173	.067	11°		●		●	●	●		●	●					



235.06. ...

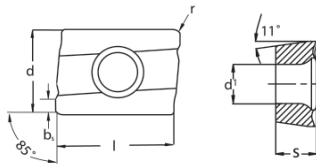
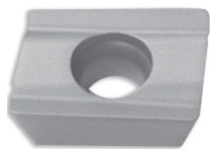
DESIGNATION	l	s	r	d	d ₁	m	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
235.06.599	.433	.091	--	.433	.142	--				●		●	●	●	●	●	●			
235.06.600	.433	.106	--	.433	.142	--				●		●	●	●	●	●	●			
235.06.601	.500	1/8	--	1/2	.197	--				●		●	●	●	●	●	●			
235.06.602	.500	.213	--	1/2	.197	--				●		●	●	●	●	●	●			

INDEXABLE INSERTS FOR MILLING



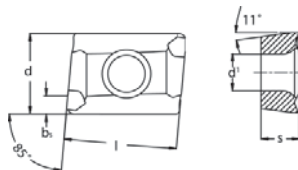
238.57. ...

DESIGNATION	l	s	r	d	d ₁	m	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
238.57.004	--	3/32	.197	10mm	.138	--	●	●							●		●		●	
238.57.006	--	1/8	.236	12mm	.138	--	●	●							●		●		●	
238.57.008	--	3/16	.315	16mm	.181	--	●	●							●		●		●	
238.57.010	--	3/16	.394	20mm	.181	--	●	●							●		●		●	
238.57.012	--	3/16	.492	25mm	.220	--	●	●							●		●		●	
238.57.014	--	3/16	.630	32mm	.260	--	●	●							●		●		●	
238.57.404	--	3/32	3/16	3/8	.138	--	●								●		●		●	
238.57.406	--	1/8	1/4	1/2	.138	--	●								●		●		●	
238.57.408	--	3/16	5/16	5/8	.181	--	●								●		●		●	
238.57.410	--	3/16	3/8	3/4	.181	--	●								●		●		●	
238.57.412	--	3/16	1/2	1	.220	--	●								●		●		●	
238.57.414	--	3/16	5/8	1-1/4	.260	--									●		●		●	



AONT- ... -MH

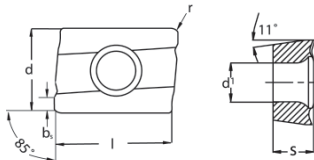
DESIGNATION	l	s	r	d	d ₁	b _s	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
AONT-10T308-MH	.407	.156	.031	.297	.134	.039				●	●	●		●	●				●	



AONT- ... -ML

DESIGNATION	l	s	r	d	d ₁	b _s	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
AONT-10T08-ML	.407	.156	.031	.297	.134	.039				●	●	●		●			●		●	

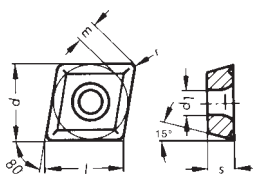
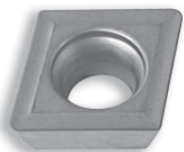
INDEXABLE INSERTS FOR MILLING



DESIGNATION	l	s	r	d	d ₁	b ₅
AONT-10T308-MM	.407	.156	.031	.297	.134	.039

AONT- ... -MM

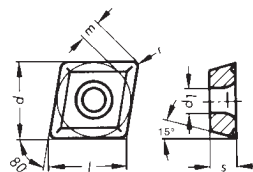
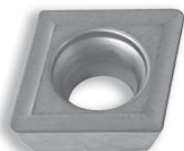
COATED								UNCOATED				CERMET	
TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
			●	●	●		●	●		●		●	



DESIGNATION	l	s	r	d	d ₁	m
CDNT-2.551T	.250	3/32	1/64	1/4	.110	.078
CDNT-32.5T	.375	5/32	1/32	3/8	.173	.087

CDNT- ...

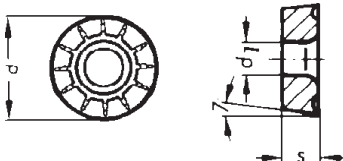
COATED								UNCOATED				CERMET	
TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
								●			●		
								●					



DESIGNATION	l	s	r	d	d ₁	m
CPNT-21.51T	.250	3/32	1/64	1/4	.110	.061
CPNT-2.522T	.313	1/8	1/32	5/16	.134	.069
CPNT-32.52T	.375	5/32	1/32	3/8	.173	.087
CPNT-432T	.500	3/16	1/32	1/2	.217	.121

CPNT- ...

COATED								UNCOATED				CERMET	
TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
				●				●	●	●			
				●				●	●	●			
				●				●	●	●			
				●				●	●	●			



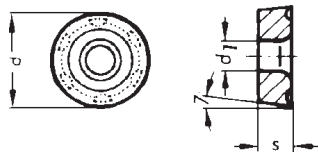
DESIGNATION	l	s	r	d	d ₁	m
RCMT-1606MO-43M*	--	1/4	--	.630	.213	--

RCMT- ... -43M

COATED								UNCOATED				CERMET	
TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
	●		●	●	●		●					●	

* Inserts have integrated anti-rotation lock

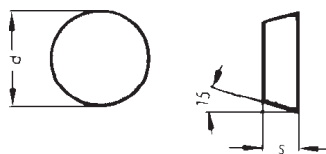
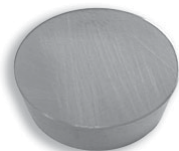
INDEXABLE INSERTS FOR MILLING



RCMT- ... -X

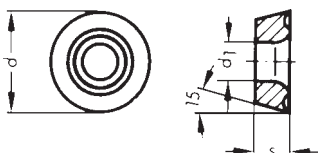
DESIGNATION	l	s	r	d	d ₁	m	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
RCMT-1606MOT-X*	--	1/4	--	.630	.217	--	●			●	●	●		●	●		●			

* Inserts have integrated anti-rotation lock



RDH- ...

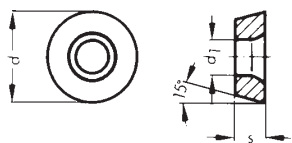
DESIGNATION	l	s	r	d	d ₁	m	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
RDH-16M	--	3/16	--	.630	--	--									●					



RDHT- ...

DESIGNATION	l	s	r	d	d ₁	m	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
RDHT-0802MOT	--	3/32	--	.315	.134	--				●		●		●	●				●	
RDHT-1003MOT	--	1/8	--	.394	.173	--				●		●		●	●				●	
RDHT-1204MOT-X *	--	3/16	--	.472	.173	--				●				●	●				●	
RDHT-1605MOT-X *	--	7/32	--	.630	.217	--				●				●	●				●	

* Inserts have integrated anti-rotation lock

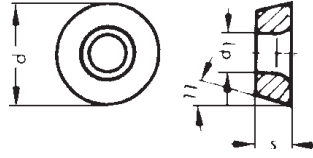


RDHW- ... -MH

DESIGNATION	l	s	r	d	d ₁	m	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
RDHW-0802MO-MH	---	3/32	---	.315	.134	---	●													
RDHW-1003MO-MH	---	1/8	---	.394	.173	---	●													
RDHW-1204MO-MH*	---	3/16	---	.472	.173	---	●													
RDHW-1605MOT-MH*	---	7/32	---	.630	.217	---	●													

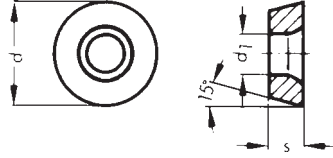
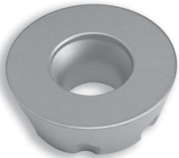
* Inserts have integrated anti-rotation lock

INDEXABLE INSERTS FOR MILLING



RDHW- ... - MH

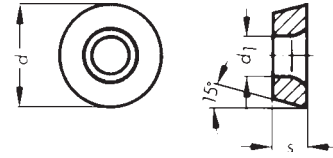
DESIGNATION	l	s	r	d	d ₁	m	TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25
RDHW-12T3MOT-MH	---	5/32	---	.472	.217	---		●			●				●	●			
RDHW-1604MOT-MH	---	3/16	---	.630	.217	---		●			●				●	●			



RDHW- ... -ML

DESIGNATION	l	s	r	d	d ₁	m	TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25
RDHW-0802MO-ML	---	3/32	---	.315	.134	---	●												
RDHW-1003MO-ML	---	1/8	---	.394	.173	---	●												
RDHW-1204MOT-ML*	---	3/16	---	.472	.173	---	●												
RDHW-1605MOT-ML*	---	7/32	---	.630	.217	---	●												

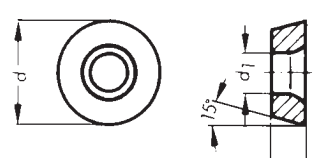
* Inserts have integrated anti-rotation lock



RDMT- ...

							COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR		
DESIGNATION	l	s	r	d	d ₁	m				●	●	●		●	●					
RDMT-0802MOT	--	3/32	--	.315	.134	--				●		●		●	●					
RDMT-1003MOT	--	1/8	--	.394	.173	--				●		●		●	●					
RDMT-1204MOT-X*	--	3/16	--	.472	.173	--			●	●		●		●	●					
RDMT-1605MOT-X*	--	7/32	--	.630	.217	--			●	●		●		●	●					

* Inserts have integrated anti-rotation lock

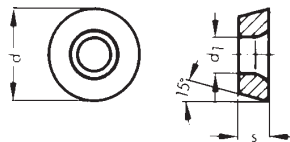


RDMW- ...

							COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR		
DESIGNATION	l	s	r	d	d ₁	m														
RDMW-0802MOT	--	3/32	--	.315	.134	--		●			●	●		●			●			
RDMW-1003MOT	--	1/8	--	.394	.173	--		●		●	●	●		●			●			
RDMW-1204MOT-X*	--	3/16	--	.472	.173	--		●			●	●		●			●			
RDMW-1605MOT-X*	--	7/32	--	.630	.217	--		●			●	●		●			●			

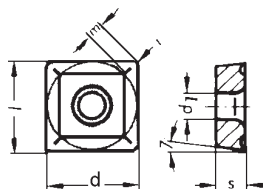
* Inserts have integrated anti-rotation lock

INDEXABLE INSERTS FOR MILLING



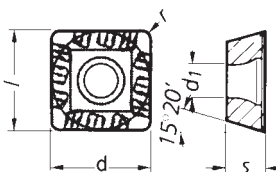
RPMA- ...

DESIGNATION							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25		
	l	s	r	d	d ₁	m															
RPMA-08M	--	3/32	--	.315	.134	--									●						
RPMA-10M	--	1/8	--	.394	.173	--									●						
RPMA-12M	--	3/16	--	.472	.173	--			●						●						



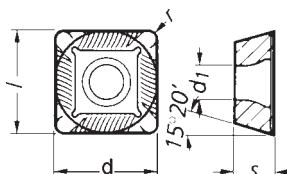
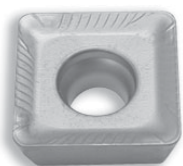
SCKM- ...

DESIGNATION	I s r d d ₁ m						TN2505	TN2510	TN25M	TN35M	TPC35	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25
SCKM-1205 ACTR	.500	.197	--	1/2	.215	--				●	●				●	●			



SDMT- ... -MH

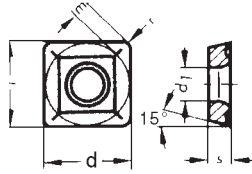
DESIGNATION	l	s	r	d	d ₁	m	TN2505	TN2510	TN2515	TN7525	TN7535	TN4505	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25
SDMT-1204PDR-MH	.500	3/16	3/64	1/2	.173	--		●	●	●	●	●		●	●		●		●
SDMT-1506PDR-MH	.625	1/4	3/64	5/8	.217	--		●		●	●	●		●	●				●



SDMT- ... -ML

DESIGNATION	l	s	r	d	d ₁	m	TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25
SDMT-1204PDR-ML	.500	3/16	3/64	1/2	.173	--		●	●	●	●	●		●			●		●
SDMT-1506PDR-ML	.625	1/4	3/64	5/8	.217	--		●		●	●	●		●	●				●

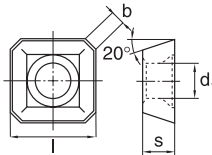
INDEXABLE INSERTS FOR MILLING



DESIGNATION	l	s	r	d	d ₁	m
SDNT-21.51T	.250	3/32	1/64	1/4	.110	.045
SDNT-322	.375	1/8	1/32	3/8	.173	.065

SDNT- ...

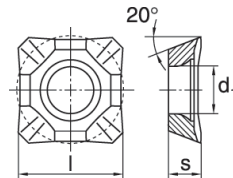
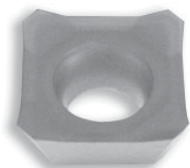
COATED								UNCOATED				CERMET	
TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
								●					
●		●	●	●				●	●	●			



DESIGNATION	l	s	r	d	d ₁	b _s
SEHT-43 AF	.500	3/18	---	1/2	.217	.062

SEHT- ... -AF

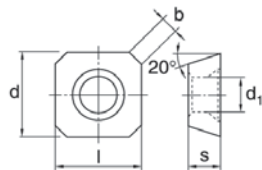
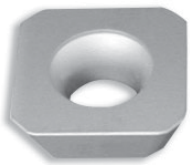
COATED								UNCOATED				CERMET	
TP30MC	TP40MP					TK10MP		TP25M	TK10M				
●													



DESIGNATION	l	s	r	d	d ₁	b _s
SEHT-43 AFFN-ALC	.500	3/16	---	1/2	.217	.062

SEHT- ... AFFN-AL

COATED								UNCOATED				CERMET	
TP30MC	TP40MP					TK10MP		TP25M	TK10M				
						●		●					

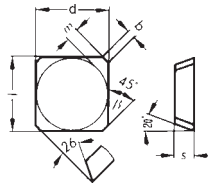


DESIGNATION	l	s	r	d	d ₁	b _s
SEHW-43 AF	.500	3/16	---	1/2	.217	.062

SEHW- ... AF

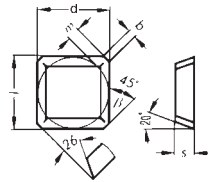
COATED								UNCOATED				CERMET	
TP30MC	TP40MP					TK10MP		TP25M	TK10M				
●													

INDEXABLE INSERTS FOR MILLING



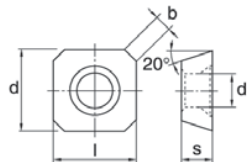
SEK- ...

DESIGNATION	l	s	r	d	b _s	m	TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25
SEK-42 AFN-1	.500	1/8	--	1/2	.077	.065			●	●	●	●		●	●	●		●	●
SEK-43 AFN-1	.500	3/16	--	1/2	.077	.065			●	●	●	●		●	●	●	●		●
SEK-53 AFN-1	.625	3/16	--	5/8	.075	.089			●	●	●	●		●	●	●			●



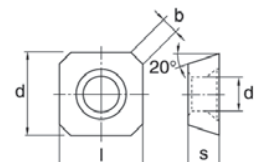
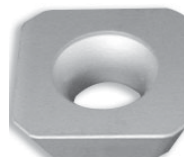
SEKR- ...

DESIGNATION	l	s	r	d	b _s	m	TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25
SEKR-42 AFN-1	.500	1/8	--	1/2	.065	.065			●	●	●	●		●	●		●	●	
SEKR-43 AFN-1	.500	3/16	--	1/2	.065	.065			●	●	●	●		●	●		●	●	
SEKR-53 AFN-1	.625	3/16	--	5/8	.075	.089			●	●	●	●		●				●	



SEKT- ... AFSN

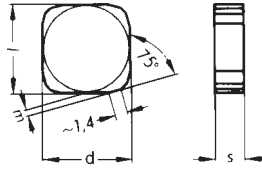
DESIGNATION	l	s	r	d	d ₁	b _s	TP30	TP40						TK10		TP25	TK10					
SEKT-43 AFSN	.500	3/16	---	1/2	.217	.062	●									●						



SEKW- ... AFSN

DESIGNATION	l	s	r	d	d ₁	b _s	TP30	TP40					TK10		TP25	TK10				
SEKW-43 AFSN	.500	3/16	---	1/2	.217	.062	●													

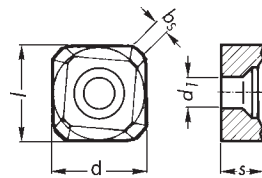
INDEXABLE INSERTS FOR MILLING



DESIGNATION	l	s	r	d	d ₁	m
SNK-43 EN	.500	3/16	--	1/2	--	.031
SNK-53 EN	.625	3/16	--	5/8	--	.045

SNK- ...

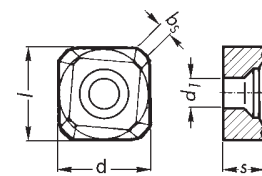
COATED								UNCOATED				CERMET	
TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
								●					
								●					



DESIGNATION	l	s	r	d	d ₁	b _s
SNKT-1205 AZER-20	.500	7/32	---	1/2	.217	.061

SNKT- ... -20

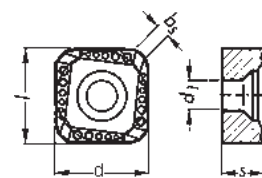
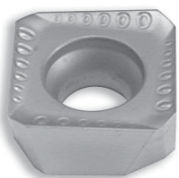
COATED								UNCOATED				CERMET	
TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
	●		●	●	●	●	●					●	



DESIGNATION	l	s	r	d	d ₁	b _s
SNKT-1205 AZER-20	.500	7/32	---	1/2	.217	.061

SNKT- ... -20

COATED								UNCOATED				CERMET	
TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
	●		●	●	●	●	●					●	

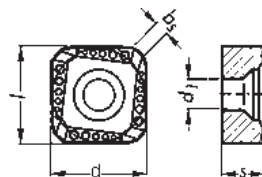


DESIGNATION	l	s	r	d	d ₁	b _s
SNKT-1205 AZR-31	.500	7/32	--	1/2	.217	.061
SNKT-1505 AZR-31	.625	7/32	--	5/8	.217	.079

SNKT- ... -31

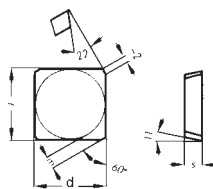
COATED								UNCOATED				CERMET	
TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
	●		●	●	●		●	●					
	●		●	●	●		●						

INDEXABLE INSERTS FOR MILLING



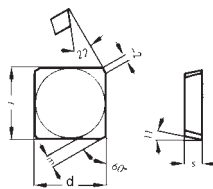
SNMT- ... -31

DESIGNATION	l	s	r	d	d ¹	b _s	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
SNMT-1205 AZR-31	.500	7/32	---	1/2	.217	.061	•	•	•	•	•	•	•	•	•					
SNMT-1505 AZR-31	.625	7/32	---	5/8	.217	.079	•	•	•	•	•	•	•	•	•					



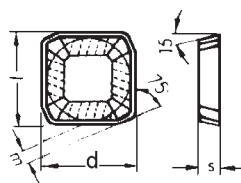
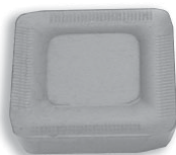
SPK- ..

DESIGNATION	l	s	r	d	d ₁	m	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
SPK-42 EDL	.500	1/8	--	1/2	---	.035			•				•		•		•			
SPK-53 EDL	.625	3/16	--	5/8	---	.049									•		•			
SPK-42 EDR	.500	1/8	--	1/2	---	.035			•	•	•	•	•	•	•	•	•		•	
SPK-53 EDR	.625	3/16	--	5/8	---	.049			•	•	•	•	•	•	•	•	•		•	



SPK- .. DER

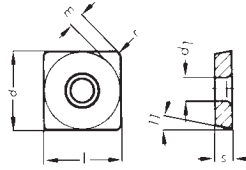
DESIGNATION	l	s	r	d	d ₁	m	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
SPK-64 DER	.750	1/4	--	3/4	--	.098									•					
SPK-8.54 DER	1.063	1/4	--	1.063	--	.158-										•	•			



SPKR- ..

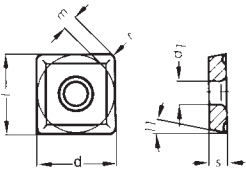
DESIGNATION	l	s	r	d	d ¹	m	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
SPKR-42 EDL	.500	1/8	--	1/2	---	.035				•		•		•			•			
SPKR-42 EDR	.500	1/8	--	1/2	---	.035			•	•	•	•		•	•		•	•	•	

INDEXABLE INSERTS FOR MILLING



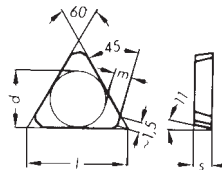
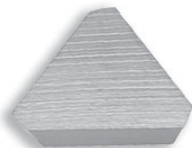
SPMW- ...

DESIGNATION	l	s	r	d	d ₁	m	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
SPMW-432	.500	3/16	1/32	1/2	.217	.091						●			●	●	●	●		



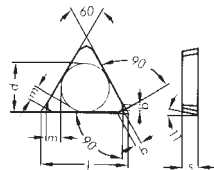
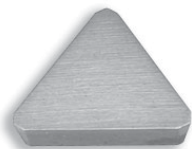
SPNT/SPNX - ...

DESIGNATION	l	s	r	d	d ₁	m	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
SPNT-432	.500	3/16	1/32	1/2	.217	.091		●		●	●	●			●	●	●	●		
SPNX-21.51	.250	7/64	1/64	1/4	.110	.045		●		●	●				●	●	●			



TPA- ...

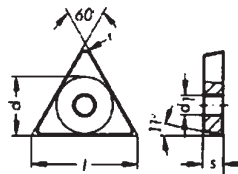
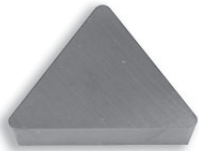
DESIGNATION	l	s	r	d	d ₁	m	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
TPA-32 AER	.650	1/8	--	3/8	--	.106									●		●	●		
TPA-42 AER	.866	1/8	--	1/2	--	.165									●		●			



TPA- ... PP

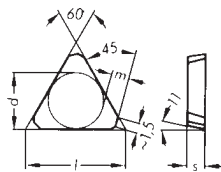
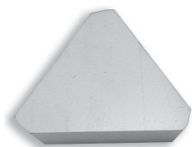
DESIGNATION	l	s	r	d	d ₁	m	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
TPA-22 PP	.433	1/8	--	1/4	--	.068			●						●	●	●			
TPA-32 PP	.650	1/8	--	3/8	--	.097			●				●		●	●	●	●		

INDEXABLE INSERTS FOR MILLING



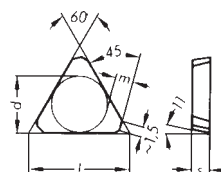
TPG- ...

DESIGNATION	l	s	r	d	d ₁	m	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
TPG-21.51	.433	3/32	1/64	1/4	--	.359									●					
TPG-21.52			1/32			.344									●					
TPG-322	.650	1/8	1/32	3/8	--	.531									●		●			
TPG-323			3/64			.515											●			



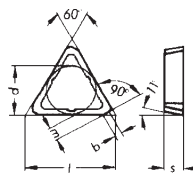
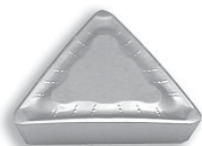
TPJ- ..

DESIGNATION	l	s	r	d	d ₁	m	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
TPJ-32 AEL	.650	1/8	--	3/8	--	.106			●						●					
TPJ-42 AEL	.866	1/8	--	1/2	--	.165									●					
TPJ-32 AER	.650	1/8	--	3/8	--	.106			●	●	●	●		●	●	●	●		●	
TPJ-42 AER	.866	1/8	--	1/2	--	.165			●	●	●	●		●	●	●	●			
TPJ-47 AER	.866	5/32	--	1/2	--	.151			●			●		●	●					



TPK- ..

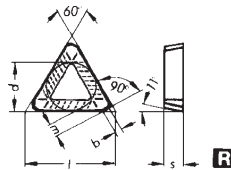
DESIGNATION	l	s	r	d	d ₁	m	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
TPK-32 PDL	.650	1/8	--	3/8	--	.097				●				●	●		●			
TPK-43 PDL	.866	3/16	--	1/2	--	.140				●				●	●					
TPK-32 PDR	.650	1/8	--	3/8	--	.097			●	●	●	●		●	●		●		●	
TPK-43 PDR	.866	3/16	--	1/2	--	.140			●	●	●	●		●	●	●	●		●	



TPKR- ..

DESIGNATION	l	s	r	d	d ₁	m	COATED								UNCOATED				CERMET	
							TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
TPKR-43 PDR	.866	3/16	--	1/2	--	.140									●					

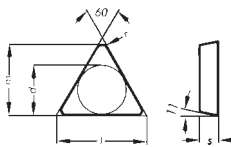
INDEXABLE INSERTS FOR MILLING



DESIGNATION	l	s	r	d	d ₁	m
TPKR-32 PDR-MS	.650	1/8	--	3/8	--	.097
TPKR-43 PDR-MS	.866	3/16	--	1/2	--	.140

TPKR- ... -MS

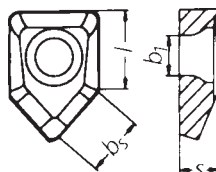
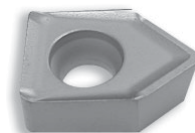
COATED								UNCOATED				CERMET	
TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
		●	●	●	●	●	●	●					
		●	●	●	●	●	●	●					



DESIGNATION	l	s	r	d	d ₁	m
TPU-21.51	.433	3/32	1/64	1/4	--	.359
TPU 21.52			1/32			.344
TPU-321	.650	1/8	1/64	3/8	--	.530
TPU-322			1/32			.531
TPU-323			3/64			.515
TPU-432	.866	3/16	1/32	1/2	--	.718
TPU-433			3/64			.703
TPU-434			1/16			.688

TPU- ...

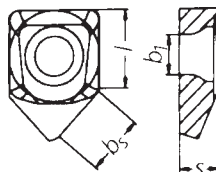
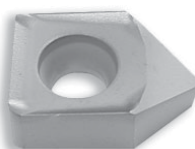
COATED								UNCOATED				CERMET	
TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	TTS	TTI-25	
								●					
								●					
								●	●	●	●		
								●	●	●	●		
								●		●			
								●	●	●			
								●		●			



DESIGNATION	l	s	r	d	d ₁	b _s
XNKT-1205 AZER-11	.500	7/32	--	1/2	.217	.315

XNKT- ... -11

COATED								UNCOATED				CERMET	
TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
●	●		●			●	●			●		●	

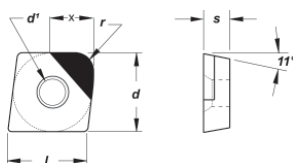
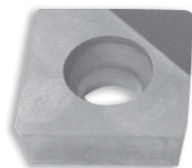


DESIGNATION	l	s	r	b _s	d ₁	b _s
XNKT-1205 AZTR-12	.500	7/32	--	1/2	.217	.315

XNKT- ... -12

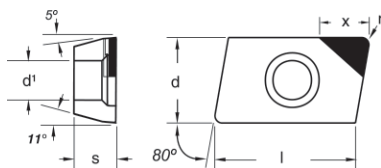
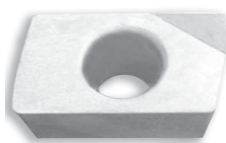
COATED								UNCOATED				CERMET	
TN2505	TN2510	TN25M	TN7525	TN7535	TN450	TN5505	TN5515	TTM	TTR	THM	THR	TTI-25	
	●		●			●	●			●		●	

PCD/CBN INDEXABLE INSERTS FOR MILLING



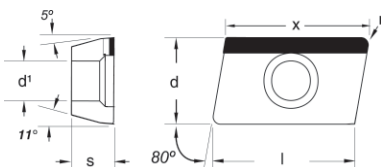
FPCW- ...

DESIGNATION	l	s	r	d	d ₁	x	PCD		CBN	
							E20	E30	CG60	CH25
FPCW-432R	.500	.188	1/32	1/2	.195	.237	●	●		
FPCW-436R			3/32				●	●		



XPHW- ... F20

DESIGNATION	l	s	r	d	d ₁	x	PCD		CBN	
							E20	E30	CG60	CH25
XPHW-160408F20 (MAX. Depth of Cut.200")	.630	3/16	1/32	3/8	.173	.250	●	●		
XPHW-160408F20-R0815 (MAX. Depth of Cut.200")	.815	3/16	1/32	3/8	.173	.250			●	
XPHW-160408F20-R0525 (MAX. Depth of Cut.075")	.075		1/32			.250				●



XPHW- ... F50

DESIGNATION	l	s	r	d	d ₁	x	PCD		CBN	
							E20	E30	CG60	CH25
XPHW-160408F50 (MAX. Depth of Cut.500")	.630	3/16	1/32	3/8	.173	.600	●	●		