Member IMC Group

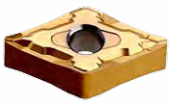
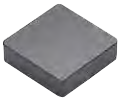
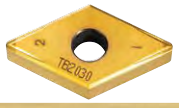
Ingersoll Cutting Tools

FINE GOLD

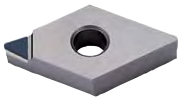
2016/2017

Turning

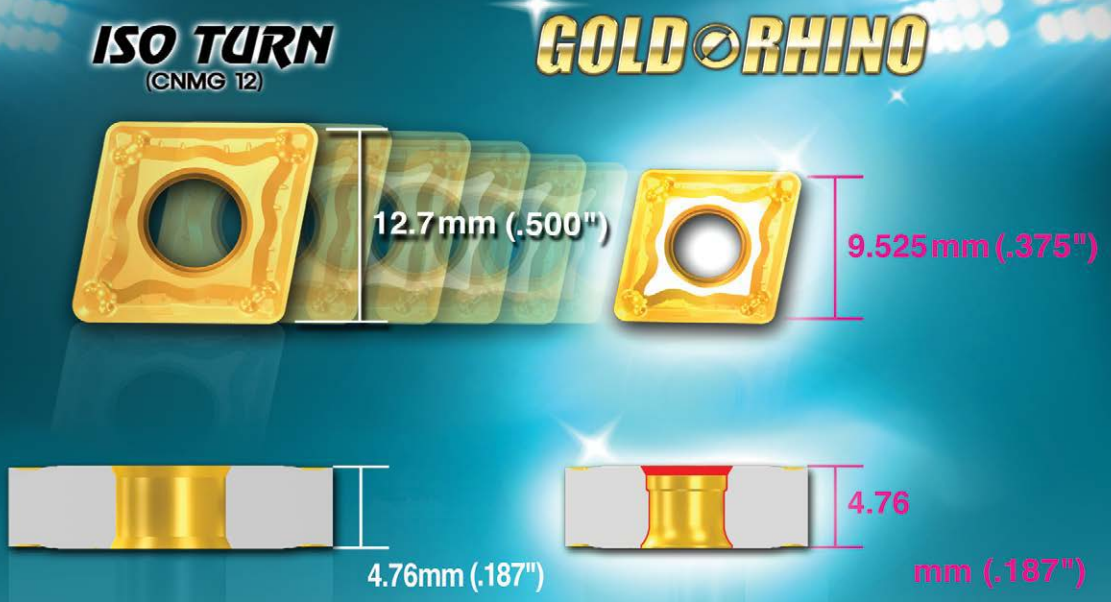
GOLD RUSH

TURNING	DESCRIPTION	SERIES	PAGE
	GOLD RHINO	"Size Technology" Turning Inserts	174
	GOLD RHINO	"Size Technology" Turning Holders	210
	T-MINI™	Inserts for Small Dia. Boring Bars	232
	T-MINI™	Small Dia. Boring Bars	235
	GOLD-LIFE+™	Grade TT8105 for High Speed Turning in Steels	242
	T-TURN™	Grade TT8080 for Stainless and High Temperature Alloys	244
	T-TURN™	"FA" Chipbreaker for Super Finishing	246
	T-TURN™	"FX" Chipbreaker for Ball Stud and Pulley Turning	249
	T-TURN™	"KT" Chipbreaker for Rough Turning Cast Iron	250
	GOLD-DUTY™	CNMX Inserts with "HB" Chipbreaker	253
	GOLD-DUTY™	CNMX Holders	254
	T-TURN™	Ceramic Grades TC3020, TC3030 for Turning High-Temperature Alloys	256
	T-TURN™	CBN Grade with Chipbreaker - TB2030	260

FINE GOLD

TURNING	DESCRIPTION	SERIES	PAGE
	T-TURN™	PCD Grade TD810 for Turning in Aluminum and Non-Ferrous Mat'ls	264
	T-CLAMP ULTRA+™	Full Radius Turn/Groove Inserts	270
	T-CLAMP ULTRA+™	Coolant-Thru Turn/Groove Holders	272
	T-CLAMP ULTRA+™	Internal Face Grooving Holders	276
	GOLD-FLEX™	4-Edge Inserts for Precision Grooving, Parting, Recessing and Threading	280
	GOLD-FLEX™	Coolant-Thru Turn/Groove Holders	284
	T-GROOVE	Special Form Grooving Inserts	286
	T-GROOVE	Holders for Special Form Grooving Inserts	287

SMALL inserts with superior durability and the SAME THICKNESS as ISO inserts

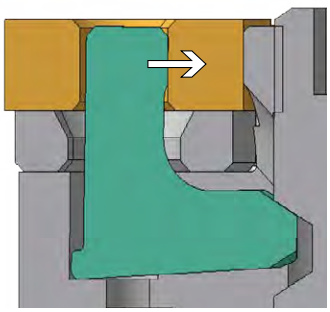


Current trends in manufacturing feature work piece components with reduced stock conditions due to improved casting and forging technology. In these cases, depths of cut in rough turning are predominantly in the range of .040"~.080" per side, rendering conventional ISO turning inserts with .500" long cutting edges inefficient due to their disproportionate size. With an eye toward cost reduction, Ingersoll is pleased to launch Gold-Rhino, a series of smaller, but robust, ISO turning inserts to meet the manufacturing industry's needs of reduced machining costs and increased competitiveness.

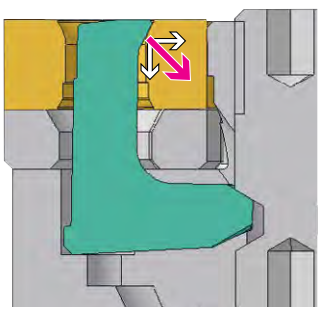
Clamp Features

- Exceptionally stable machining due to multi-directional clamping forces over the existing conventional ISO lever holder's single direction clamping force
- Excellent productivity and longer, stable tool life in high feed turning applications
- Optimal performance in interrupted cutting on weak/old machine set-ups

Conventional ISO clamping structure
Single directional clamping force

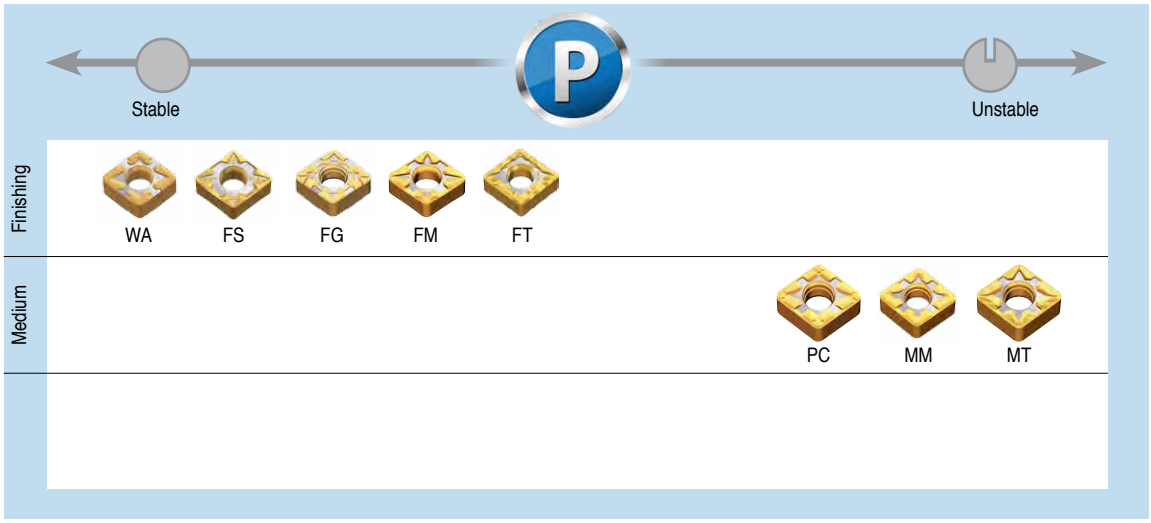


GOLD RHINO clamping structure
Multi-directional clamping forces

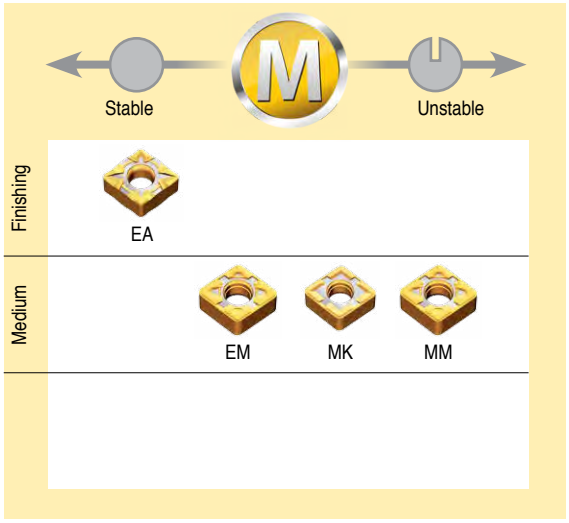


Geometry recommendations for GOLD RHINO (Negative)

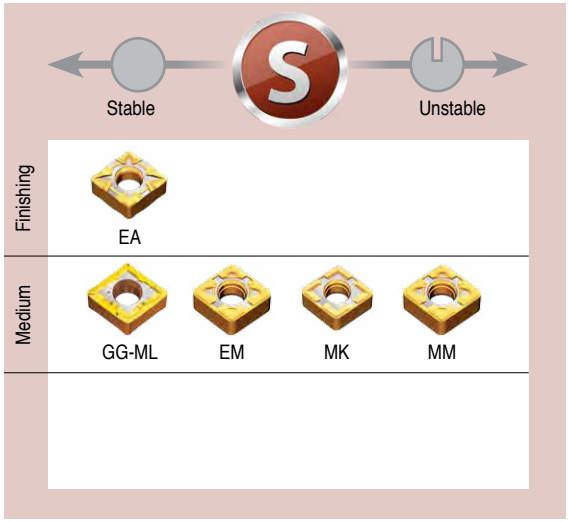
Steel



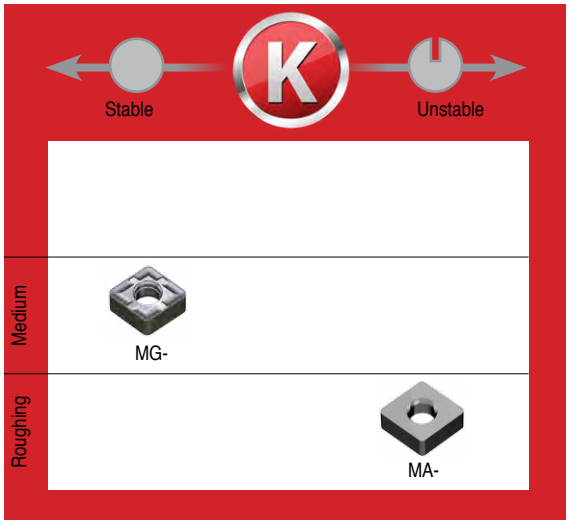
Stainless Steel



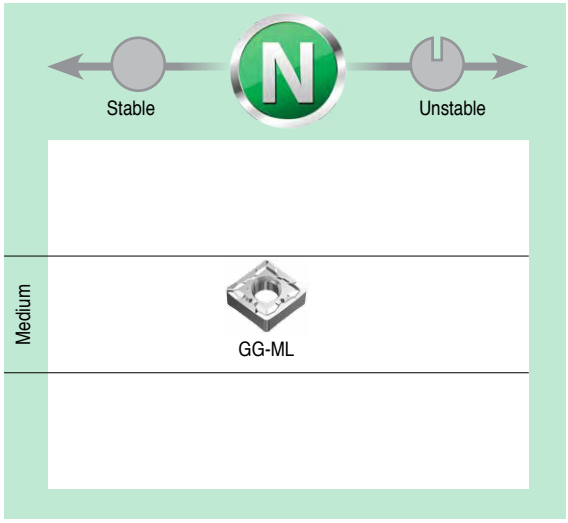
High Temp. Alloys



Cast Iron

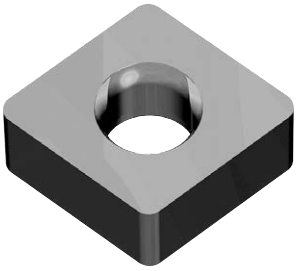


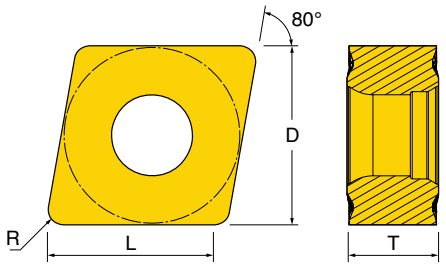
Non-ferrous



GOLD RHINO SERIES CNMA FLAT TOP

NEGATIVE 80° RHOMBIC FLAT TOP INSERTS FOR ROUGHING

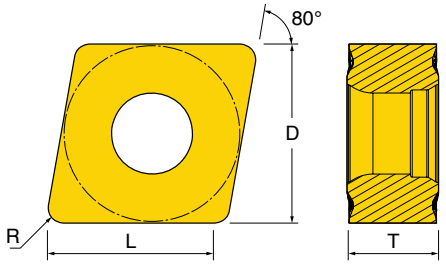




ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT7005	TT7015
CNMA332	CNMA090408	.006	.024	.039	.157	.346	.375	.187	.031		●	●
CNMA333	CNMA090412	.006	.028	.039	.157	.332	.375	.187	.047		●	●

GOLD RHINO SERIES CNMG EA CHIPBREAKER

NEGATIVE 80° RHOMBIC INSERTS FOR SUPER FINISHING

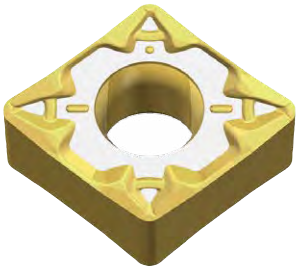


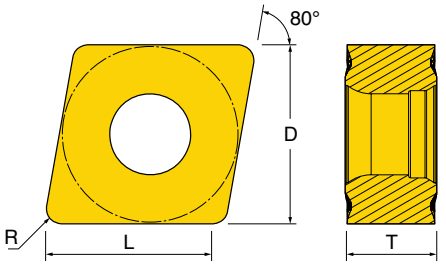
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5080	TT9080	TT9215	TT9225	TT9235
CNMG331EA	CNMG090404EA	.002	.012	.012	.060	.362	.375	.187	.016		◐	◐	○	○	○
CNMG332EA	CNMG090408EA	.003	.020	.012	.060	.346	.375	.187	.031		◐	◐	○	○	○

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES CNMG FS CHIPBREAKER

NEGATIVE 80° RHOMBIC INSERTS FOR SUPER FINISHING

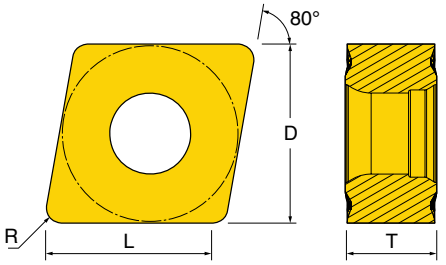




ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades CT3000	PV3010	TT8115	TT8125
CNMG330.5FS	CNMG090402FS	.002	.010	.008	.060	.374	.375	.187	.008				
CNMG331FS	CNMG090404FS	.003	.012	.012	.060	.362	.375	.187	.016				
CNMG332FS	CNMG090408FS	.004	.012	.020	.060	.346	.375	.187	.031				

GOLD RHINO SERIES CNMG FG CHIPBREAKER

NEGATIVE 80° RHOMBIC INSERTS FOR FINISHING

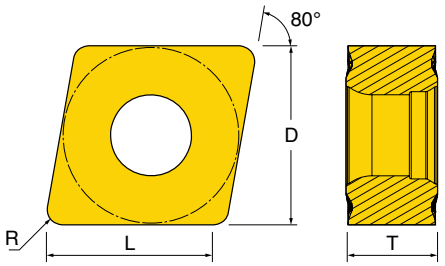


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades TT5100	TT8115	TT8125
CNMG331FG	CNMG090404FG	.003	.012	.008	.080	.362	.375	.187	.016			
CNMG332FG	CNMG090408FG	.004	.014	.020	.080	.346	.375	.187	.031			
CNMG333FG	CNMG090412FG	.006	.016	.020	.080	.332	.375	.187	.047			

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES CNMG FM CHIPBREAKER

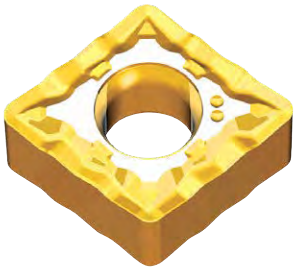
NEGATIVE 80° RHOMBIC INSERTS FOR FINISHING

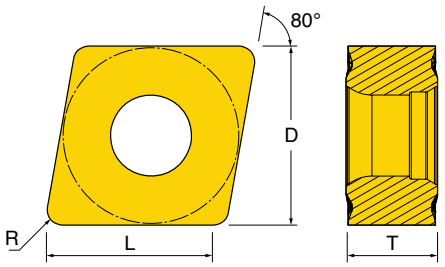


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	CT3000	TT5100	TT8105	TT8115	TT8125	TT8135
CNMG331FM	CNMG090404FM	.003	.012	.010	.080	.362	.375	.187	.016		●		●	●	●	●
CNMG332FM	CNMG090408FM	.004	.014	.012	.080	.346	.375	.187	.031		●		●	●	●	●
CNMG333FM	CNMG090412FM	.006	.016	.014	.080	.332	.375	.187	.047		●	●	●	●	●	●

GOLD RHINO SERIES CNMG FT CHIPBREAKER

NEGATIVE 80° RHOMBIC INSERTS FOR MEDIUM



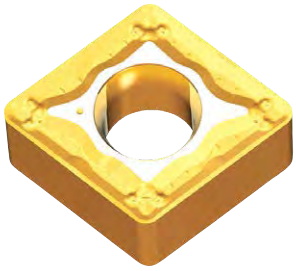


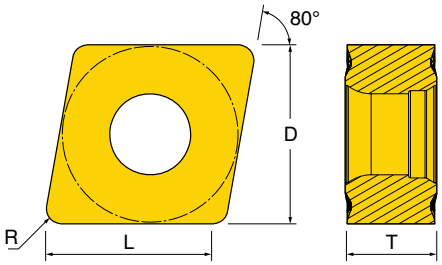
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5100	TT8105	TT8115	TT8125	TT8135
CNMG331FT	CNMG090404FT	.003	.012	.016	.125	.362	.375	.187	.016		●	●	●	●	●
CNMG332FT	CNMG090408FT	.004	.016	.020	.125	.346	.375	.187	.031		●	●	●	●	●
CNMG333FT	CNMG090412FT	.006	.020	.024	.125	.332	.375	.187	.047		●	●	●	●	●

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES CNMG PC CHIPBREAKER

NEGATIVE 80° RHOMBIC INSERTS FOR MEDIUM

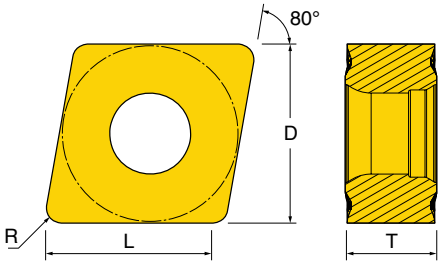




ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5100	TT8105	TT8115	TT8125	TT8135
CNMG331PC	CNMG090404PC	.004	.012	.016	.125	.362	.375	.187	.016		◔	●	●	●	●
CNMG332PC	CNMG090408PC	.006	.016	.020	.125	.346	.375	.187	.031		◔	●	●	●	●
CNMG333PC	CNMG090412PC	.007	.020	.024	.125	.332	.375	.187	.047		◔	●	●	●	●

GOLD RHINO SERIES CNGG ML CHIPBREAKER

NEGATIVE 80° RHOMBIC GROUND INSERTS FOR MEDIUM

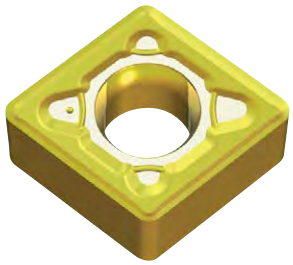


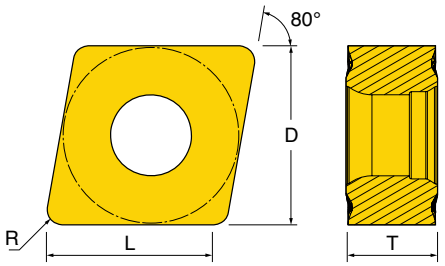
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	K10	TT5080
CNGG330ML	CNGG090401ML	.001	.004	.004	.040	.378	.375	.187	.004		◔	◑
CNGG330.5ML	CNGG090402ML	.002	.006	.008	.047	.374	.375	.187	.008		◔	◑
CNGG331ML	CNGG090404ML	.004	.012	.031	.118	.362	.375	.187	.016		◔	◑
CNGG332ML	CNGG090408ML	.005	.014	.039	.118	.346	.375	.187	.031		◔	◑

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES CNMG EM CHIPBREAKER

NEGATIVE 80° RHOMBIC INSERTS FOR MEDIUM

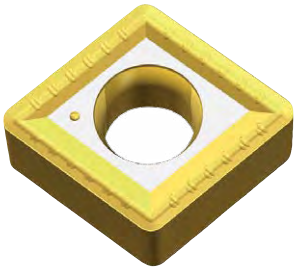


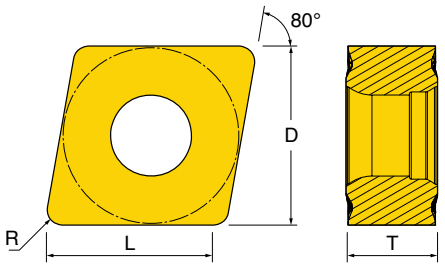


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5080	TT9080	TT9215	TT9225	TT9235
CNMG332EM	CNMG090408EM	.005	.020	.020	.125	.346	.375	.187	.031		●	●	○	○	○
CNMG333EM	CNMG090412EM	.006	.020	.028	.125	.332	.375	.187	.047		●	●	○	○	○

GOLD RHINO SERIES CNMG MK CHIPBREAKER

NEGATIVE 80° RHOMBIC INSERTS FOR MEDIUM



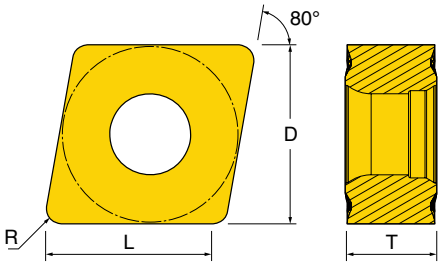


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5080	TT8020	TT9080	TT9225	TT9235
CNMG331MK	CNMG090404MK	.006	.016	.028	.125	.362	.375	.187	.016		●		●	○	○
CNMG332MK	CNMG090408MK	.008	.018	.040	.125	.346	.375	.187	.031		●	●	●	○	○
CNMG333MK	CNMG090412MK	.009	.020	.060	.125	.332	.375	.187	.047		●		●	○	○

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES CNMG MM CHIPBREAKER

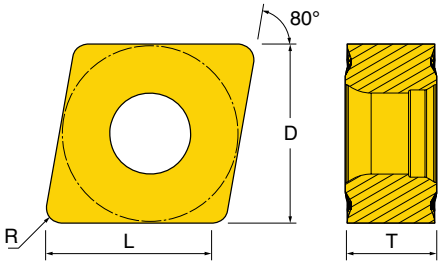
NEGATIVE 80° RHOMBIC INSERTS FOR MEDIUM



ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5100	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235
CNMG331MM	CNMG090404MM	.006	.018	.016	.125	.362	.375	.187	.016		◔	●	●	●	○	○	○
CNMG332MM	CNMG090408MM	.008	.020	.020	.125	.346	.375	.187	.031		◔	●	●	●	○	○	○
CNMG333MM	CNMG090412MM	.009	.020	.028	.125	.332	.375	.187	.047		◔	●	●	●	○	○	○

GOLD RHINO SERIES CNMG MT CHIPBREAKER

NEGATIVE 80° RHOMBIC INSERTS FOR MEDIUM

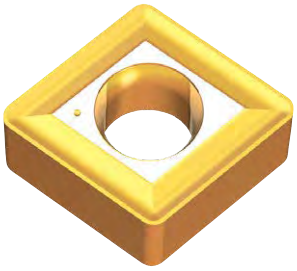


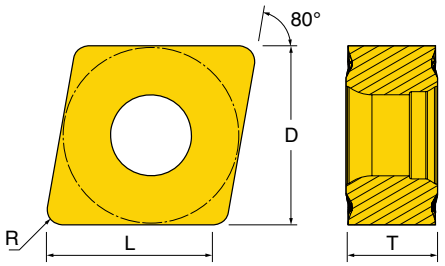
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5100	TT8105	TT8115	TT8125	TT8135
CNMG331MT	CNMG090404MT	.004	.014	.031	.125	.362	.375	.187	.016		◔	●	●	●	●
CNMG332MT	CNMG090408MT	.006	.018	.039	.125	.346	.375	.187	.031		◔	●	●	●	●
CNMG333MT	CNMG090412MT	.008	.022	.047	.125	.332	.375	.187	.047		◔	●	●	●	●

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES CNMG COMMON CHIPBREAKER

NEGATIVE 80° RHOMBIC COMMON TYPE INSERTS WITH CHIPBREAKER FOR MEDIUM

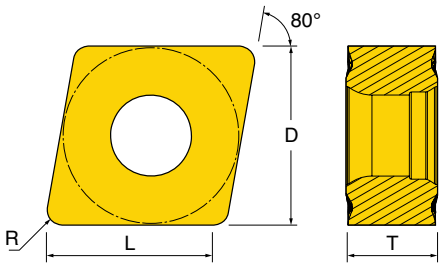




ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT7005	TT7015
CNMG331	CNMG090404	.004	.018	.020	.125	.362	.375	.187	.016		●	●
CNMG332	CNMG090408	.004	.020	.020	.125	.346	.375	.187	.031		●	●
CNMG333	CNMG090412	.004	.022	.020	.125	.332	.375	.187	.047		●	●

GOLD RHINO SERIES CNMG WA CHIPBREAKER

NEGATIVE 80° RHOMBIC INSERTS FOR FINISHING TO MEDIUM WIPER

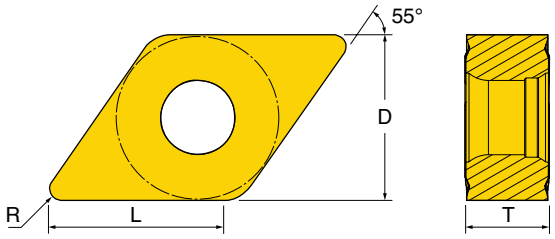


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	CT3000	PV3010	TT5100	TT7005	TT7015	TT8105	TT8115	TT8125
CNMG331WA	CNMG090404WA	.003	.010	.010	.098	.362	.375	.187	.016		◔	◔	◔	●	●	●	●	●
CNMG332WA	CNMG090408WA	.004	.016	.010	.118	.346	.375	.187	.031		◔	◔	◔	●	●	●	●	●
CNMG333WA	CNMG090412WA	.008	.020	.016	.118	.332	.375	.187	.047		◔	◔	◔	●	●	●	●	●

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES DNMG EA CHIPBREAKER

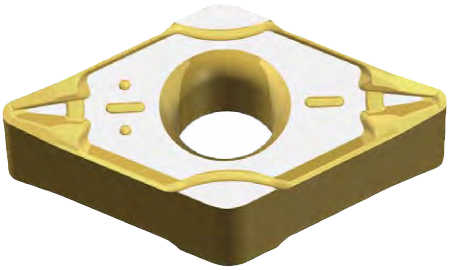
NEGATIVE 55° RHOMBIC INSERTS FOR SUPER FINISHING

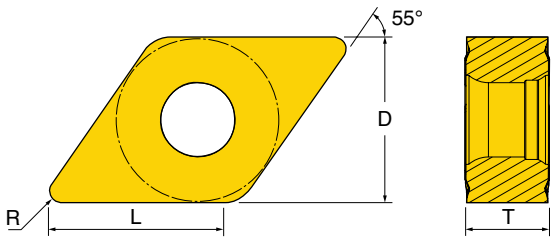


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5080	TT9080	TT9215	TT9225	TT9235
DNMG3.53.51EA	DNMG130504EA	.002	.012	.005	.059	.511	.438	.219	.016						
DNMG3.53.52EA	DNMG130508EA	.003	.016	.006	.059	.489	.438	.219	.031						

GOLD RHINO SERIES DNMG FS CHIPBREAKER

NEGATIVE 55° RHOMBIC INSERTS FOR SUPER FINISHING



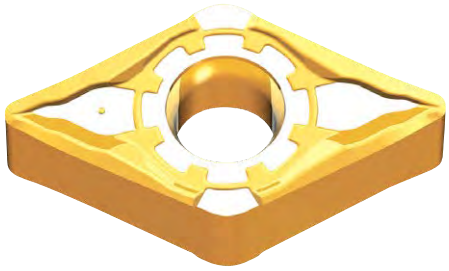


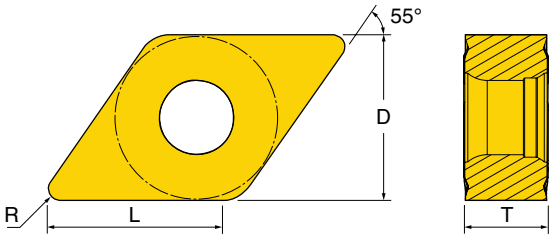
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	CT3000	PV3010	TT8115	TT8125
DNMG3.53.50.5FS	DNMG130502FS	.002	.010	.008	.080	.523	.438	.219	.008					
DNMG3.53.51FS	DNMG130504FS	.003	.012	.012	.080	.511	.438	.219	.016					
DNMG3.53.52FS	DNMG130508FS	.004	.012	.020	.080	.489	.438	.219	.031					

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES DNMG FG CHIPBREAKER

NEGATIVE 55° RHOMBIC INSERTS FOR FINISHING

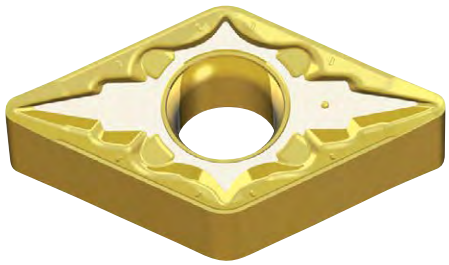


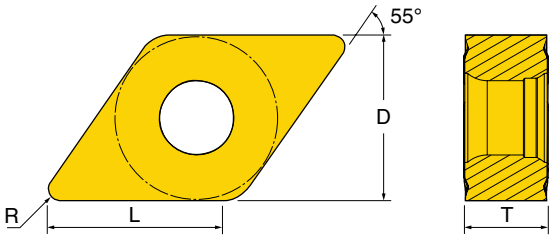


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5100	TT8115	TT8125
DNMG3.53.51FG	DNMG130504FG	.003	.012	.008	.079	.511	.438	.219	.016		◔	●	●
DNMG3.53.52FG	DNMG130508FG	.004	.014	.020	.079	.489	.438	.219	.031		◔	●	●
DNMG3.53.53FG	DNMG130512FG	.006	.016	.020	.079	.466	.438	.219	.047		◔	●	●

GOLD RHINO SERIES DNMG FM CHIPBREAKER

NEGATIVE 55° RHOMBIC INSERTS FOR FINISHING



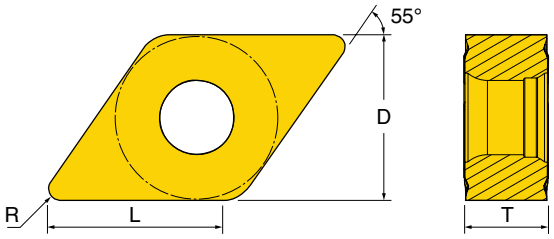


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	CT3000	TT5100	TT8115	TT8125	TT8135
DNMG3.53.51FM	DNMG130504FM	.003	.012	.010	.079	.511	.438	.219	.016		◔	◔	●	●	●
DNMG3.53.52FM	DNMG130508FM	.004	.014	.012	.079	.489	.438	.219	.031		◔	◔	●	●	●
DNMG3.53.53FM	DNMG130512FM	.006	.016	.014	.079	.466	.438	.219	.047		◔	◔	●	●	●

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES DNMG FT CHIPBREAKER

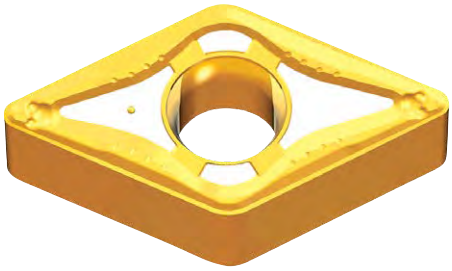
NEGATIVE 55° RHOMBIC INSERTS FOR MEDIUM

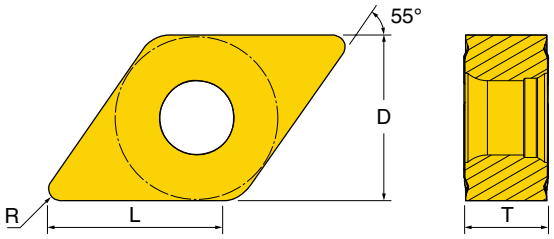


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades TT5100	TT8115	TT8125	TT8135
DNMG3.53.51FT	DNMG130504FT	.003	.012	.010	.138	.511	.438	.219	.016				
DNMG3.53.52FT	DNMG130508FT	.004	.016	.012	.138	.489	.438	.219	.031				
DNMG3.53.53FT	DNMG130512FT	.006	.020	.014	.138	.466	.438	.219	.047				

GOLD RHINO SERIES DNMG PC CHIPBREAKER

NEGATIVE 55° RHOMBIC INSERTS FOR MEDIUM



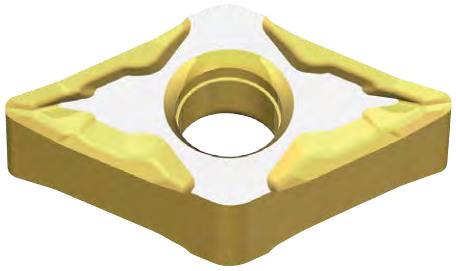


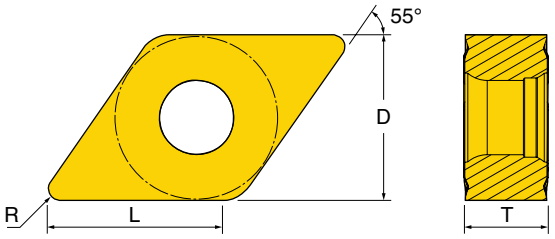
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades TT5100	TT8115	TT8125	TT8135
DNMG3.53.51PC	DNMG130504PC	.004	.012	.016	.157	.511	.438	.219	.016				
DNMG3.53.52PC	DNMG130508PC	.006	.016	.020	.157	.489	.438	.219	.031				
DNMG3.53.53PC	DNMG130512PC	.007	.020	.024	.157	.466	.438	.219	.047				

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES DNGG ML CHIPBREAKER

NEGATIVE 55° RHOMBIC GROUND INSERT FOR MEDIUM

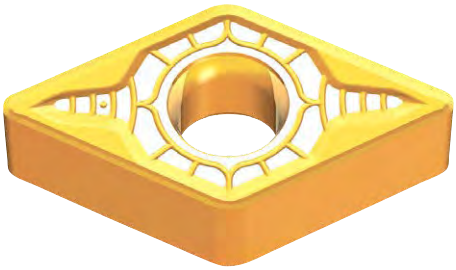


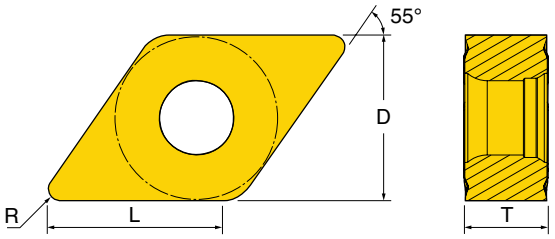


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	K10	TT5080
DNGG3.53.50ML	DNGG130501ML	.001	.004	.004	.040	.528	.437	.219	.004			
DNGG3.53.50.5ML	DNGG130502ML	.002	.006	.008	.047	.523	.437	.219	.008			
DNGG3.53.51ML	DNGG130504ML	.004	.012	.031	.138	.511	.437	.219	.016			
DNGG3.53.52ML	DNGG130508ML	.005	.014	.039	.138	.489	.437	.219	.031			

GOLD RHINO SERIES DNMG EM CHIPBREAKER

NEGATIVE 55° RHOMBIC INSERTS FOR MEDIUM



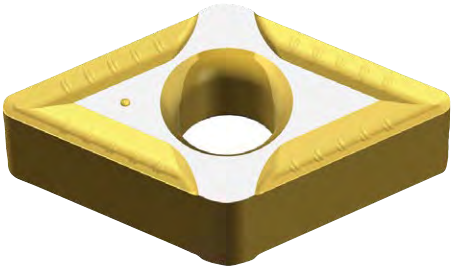


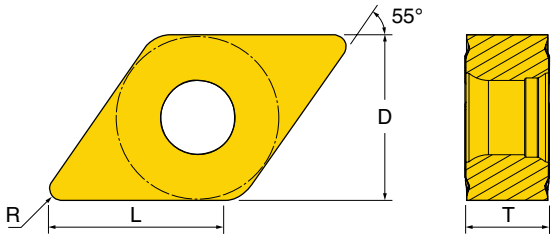
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5080	TT9080	TT9215	TT9225	TT9235
DNMG3.53.52EM	DNMG130508EM	.005	.016	.020	.157	.489	.438	.219	.031						
DNMG3.53.53EM	DNMG130512EM	.006	.016	.028	.157	.466	.438	.219	.047						

= P = M = K = N = S = H

GOLD RHINO SERIES DNMG MK CHIPBREAKER

NEGATIVE 55° RHOMBIC INSERTS FOR MEDIUM

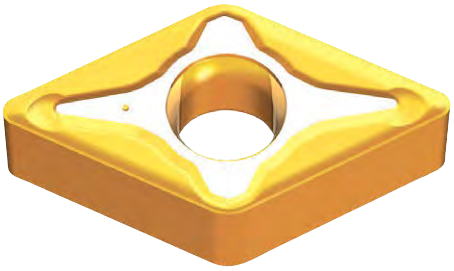


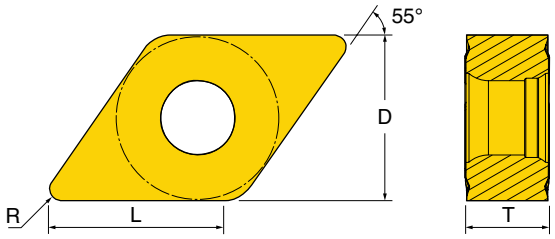


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades TT5080	TT9080	TT9225	TT9235
DNMG3.53.51MK	DNMG130504MK	.006	.016	.028	.157	.511	.438	.219	.016				
DNMG3.53.52MK	DNMG130508MK	.008	.018	.040	.157	.489	.438	.219	.031				
DNMG3.53.53MK	DNMG130512MK	.009	.020	.060	.157	.466	.438	.219	.047				

GOLD RHINO SERIES DNMG MM CHIPBREAKER

NEGATIVE 55° RHOMBIC INSERTS FOR MEDIUM



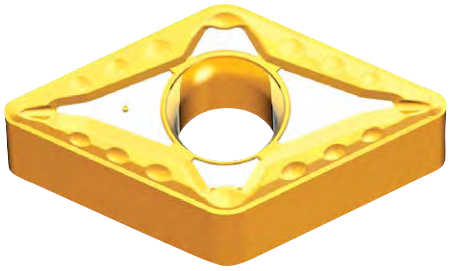


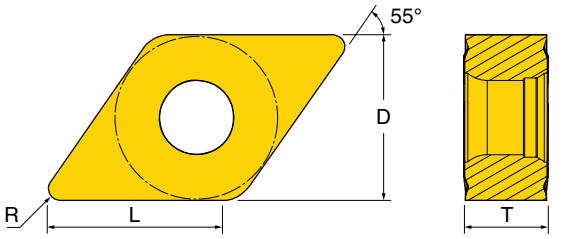
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades TT5080	TT5100	TT8115	TT8125	TT8135	TT9080	TT9215	TT9225	TT9235
DNMG3.53.51MM	DNMG130504MM	.006	.016	.016	.177	.511	.438	.219	.016									
DNMG3.53.52MM	DNMG130508MM	.008	.020	.020	.177	.489	.438	.219	.031									
DNMG3.53.53MM	DNMG130512MM	.009	.020	.028	.177	.466	.438	.219	.047									

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES DNMG MT CHIPBREAKER

NEGATIVE 55° RHOMBIC INSERTS FOR MEDIUM

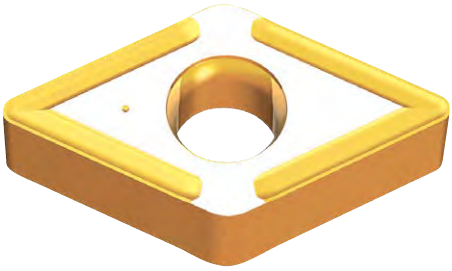


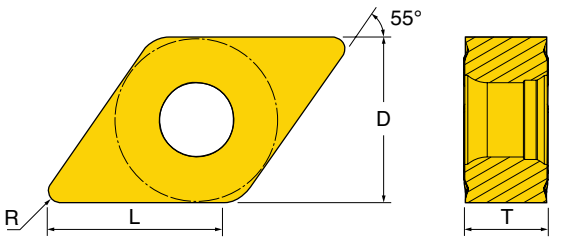


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5100	TT8115	TT8125	TT8135
DNMG3.53.51MT	DNMG130504MT	.004	.014	.031	.177	.511	.438	.219	.016		●	●	●	●
DNMG3.53.52MT	DNMG130508MT	.006	.018	.039	.177	.489	.438	.219	.031		●	●	●	●
DNMG3.53.53MT	DNMG130512MT	.008	.022	.047	.177	.466	.438	.219	.047		●	●	●	●

GOLD RHINO SERIES DNMG COMMON CHIPBREAKER

NEGATIVE 55° RHOMBIC COMMON TYPE WITH CHIPBREAKER FOR MEDIUM



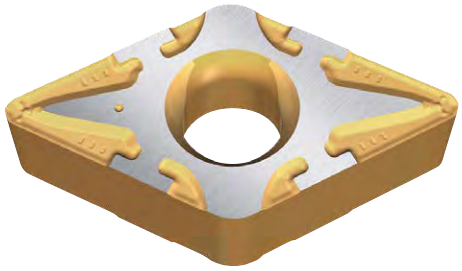


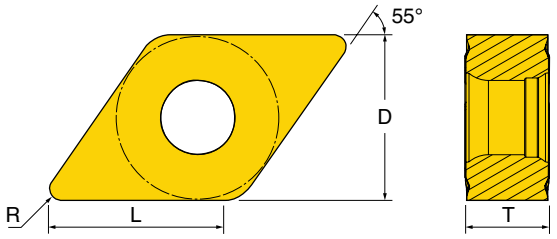
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT7005	TT7015
DNMG3.53.51	DNMG130504	.004	.018	.020	.157	.511	.438	.219	.016		●	●
DNMG3.53.52	DNMG130508	.004	.020	.020	.157	.489	.438	.219	.031		●	●
DNMG3.53.53	DNMG130512	.004	.022	.020	.157	.466	.438	.219	.047		●	●

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES DNMG WA CHIPBREAKER

NEGATIVE 55° RHOMBIC INSERTS FOR FINISHING TO MEDIUM WIPER

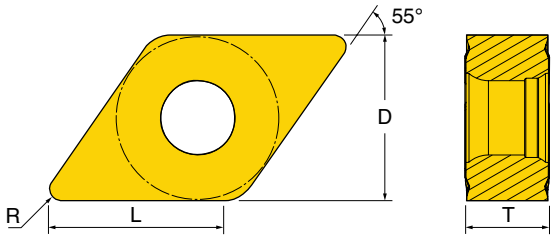




ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	CT3000	PV3010	TT5100	TT7005	TT7015	TT8105	TT8115	TT8125
DNMG3.53.51WA	DNMG130504WA	.003	.010	.010	.098	.511	.438	.219	.016		●	●	●	●	●	●	●	●
DNMG3.53.52WA	DNMG130508WA	.004	.014	.010	.118	.489	.438	.219	.031		●	●	●		●	●	●	●
DNMG3.53.53WA	DNMG130512WA	.006	.018	.016	.138	.466	.438	.219	.047		●	●	●	●	●	●	●	●

GOLD RHINO SERIES DNUX R/L 11 CHIPBREAKER

NEGATIVE 55° RHOMBIC INSERTS FOR MEDIUM

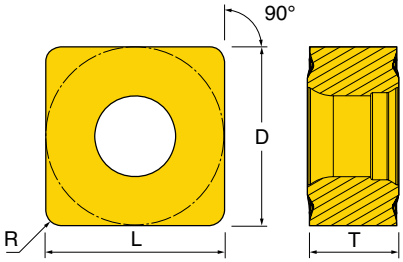


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5100	TT8115	TT8125	TT9080	TT9225
DNUX3.53.51L11	DNUX130504L11	.006	.014	.060	.200	-	.438	.219	.016		●	●	●	●	●
DNUX3.53.51R11	DNUX130504R11	.006	.014	.060	.200	-	.438	.219	.016		●	●	●	●	●
DNUX3.53.52L11	DNUX130508L11	.008	.018	.080	.200	-	.438	.219	.031		●	●	●	●	●
DNUX3.53.52R11	DNUX130508R11	.008	.018	.080	.200	-	.438	.219	.031		●	●	●	●	●

● = P ● = M ● = K ● = N ● = S ● = H

GOLD RHINO SERIES SNMG EA CHIPBREAKER

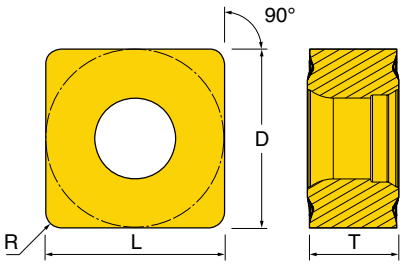
NEGATIVE SQUARE INSERTS FOR FINISHING



ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5080	TT9080	TT9215	TT9225	TT9235
SNMG331EA	SNMG090404EA	.002	.012	.005	.059	.358	.375	.187	.016		●	●	○	○	○
SNMG332EA	SNMG090408EA	.003	.016	.006	.059	.343	.375	.187	.031		●	●	○	○	○

GOLD RHINO SERIES SNMG FG CHIPBREAKER

NEGATIVE SQUARE INSERTS FOR FINISHING

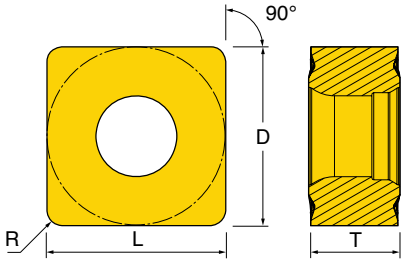


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	CT3000	TT5100	TT8115	TT8125
SNMG331FG	SNMG090404FG	.003	.012	.008	.079	.358	.375	.187	.016			●	●	●
SNMG332FG	SNMG090408FG	.004	.014	.020	.079	.343	.375	.187	.031		●	●	●	●
SNMG333FG	SNMG090412FG	.006	.016	.020	.079	.328	.375	.187	.047			●	●	●

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES SNMG FM CHIPBREAKER

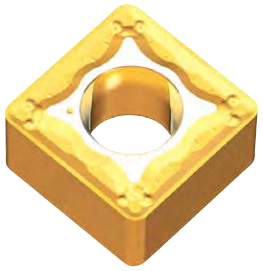
NEGATIVE SQUARE INSERTS FOR FINISHING

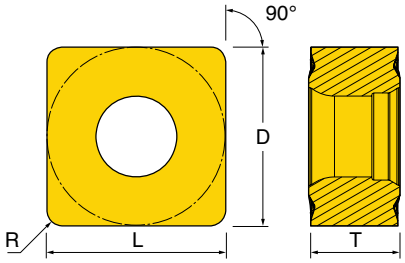


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	CT3000	TT5100	TT8115	TT8125	TT8135
SNMG331FM	SNMG090404FM	.003	.012	.010	.079	.358	.375	.187	.016		●	●	●	●	●
SNMG332FM	SNMG090408FM	.004	.014	.012	.079	.343	.375	.187	.031		●	●	●	●	●
SNMG333FM	SNMG090412FM	.006	.016	.014	.079	.328	.375	.187	.047		●	●	●	●	●

GOLD RHINO SERIES SNMG PC CHIPBREAKER

NEGATIVE SQUARE INSERTS FOR MEDIUM



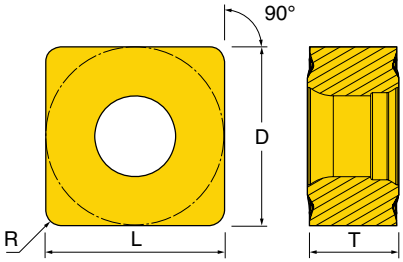


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5100	TT8115	TT8125	TT8135
SNMG331PC	SNMG090404PC	.004	.012	.016	.125	.358	.375	.187	.016		●	●	●	●
SNMG332PC	SNMG090408PC	.006	.016	.020	.125	.343	.375	.187	.031		●	●	●	●
SNMG333PC	SNMG090412PC	.007	.020	.024	.125	.328	.375	.187	.047		●	●	●	●

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES SNMG EM CHIPBREAKER

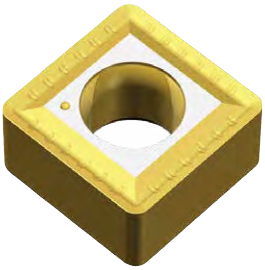
NEGATIVE SQUARE INSERTS FOR MEDIUM

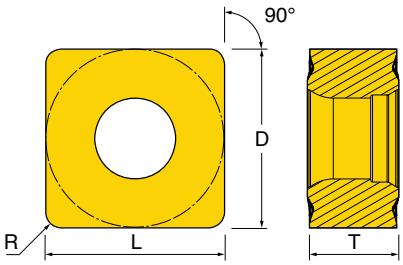


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5080	TT9080	TT9215	TT9225	TT9235
SNMG332EM	SNMG090408EM	.005	.016	.020	.125	.343	.375	.187	.031		◐	◐●	○	○	○
SNMG333EM	SNMG090412EM	.006	.016	.028	.125	.328	.375	.187	.047		◐	◐●	○	○	○

GOLD RHINO SERIES SNMG MK CHIPBREAKER

NEGATIVE SQUARE INSERTS FOR MEDIUM



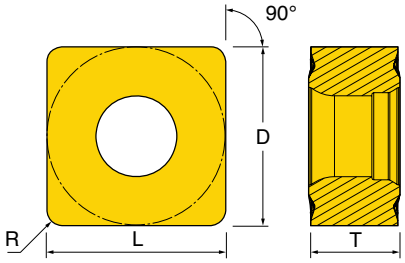


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5080	TT9080	TT9225	TT9235
SNMG331MK	SNMG090404MK	.006	.016	.028	.125	.358	.375	.187	.016		◐	◐●	○	○
SNMG332MK	SNMG090408MIK	.008	.018	.040	.125	.343	.375	.187	.031		◐	◐●	○	○
SNMG333MK	SNMG090412MK	.009	.020	.060	.125	.328	.375	.187	.047		◐	◐●	○	○

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES SNMG MM CHIPBREAKER

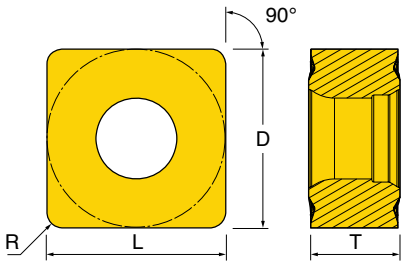
NEGATIVE SQUARE INSERTS FOR MEDIUM



ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5100	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235
SNMG331MM	SNMG090404MM	.006	.018	.016	.125	.358	.375	.187	.016		◐	●	●	●	○	○	○
SNMG332MM	SNMG090408MM	.008	.020	.020	.125	.343	.375	.187	.031		◐	●	●	●	○	○	○
SNMG333MM	SNMG109412MM	.009	.020	.028	.125	.328	.375	.187	.047		◐	●	●	●	○	○	○

GOLD RHINO SERIES SNMG MT CHIPBREAKER

NEGATIVE SQUARE INSERTS FOR MEDIUM

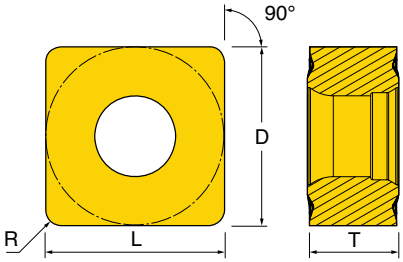


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5100	TT8115	TT8125	TT8135
SNMG331MT	SNMG090404MT	.004	.014	.031	.125	.358	.375	.187	.016		◐	●	●	●
SNMG332MT	SNMG090408MT	.006	.018	.039	.125	.343	.375	.187	.031		◐	●	●	●
SNMG333MT	SNMG0904012MT	.008	.022	.047	.125	.328	.375	.187	.047		◐	●	●	●

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES SNMG COMMON CHIPBREAKER

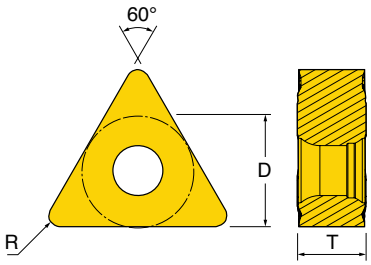
NEGATIVE SQUARE COMMON-TYPE INSERTS WITH CHIPBREAKER FOR MEDIUM



ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	CT3000	TT7005	TT7015
SNMG331	SNMG090404	.004	.018	.020	.125	.358	.375	.187	.016			●	●
SNMG332	SNMG090408	.004	.020	.020	.125	.343	.375	.187	.031		◔	●	●
SNMG333	SNMG090412	.004	.022	.020	.125	.328	.375	.187	.047			●	●

GOLD RHINO SERIES TNGG R/L HOOK CHIPBREAKER

NEGATIVE TRIANGULAR GROUND INSERTS FOR MEDIUM

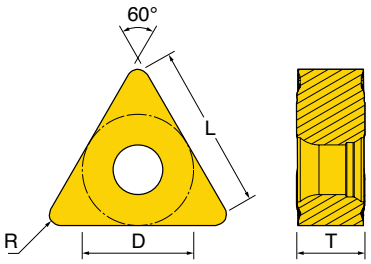


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	CT3000
TNGG2.531L	TNGG130404L	.005	.012	.039	.125	.518	.313	.187	.016		◔
TNGG2.531R	TNGG130404R	.005	.012	.039	.125	.518	.313	.187	.016		◔
TNGG2.532L	TNGG130408L	.006	.014	.051	.125	.495	.313	.187	.031		◔
TNGG2.532R	TNGG130408R	.006	.014	.051	.125	.495	.313	.187	.031		◔

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES TNMG COMMON CHIPBREAKER

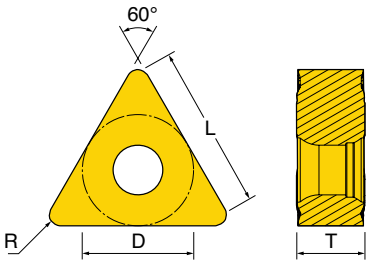
NEGATIVE TRIANGULAR COMMON-TYPE INSERTS WITH CHIPBREAKER FOR MEDIUM



ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT7005	TT7015
TNMG2.531	TNMG130404	.004	.018	.020	.138	.518	.313	.187	.016		●	●
TNMG2.532	TNMG130408	.004	.020	.020	.138	.495	.313	.187	.031		●	●
TNMG2.533	TNMG130412	.004	.022	.020	.138	.473	.313	.187	.047		●	●

GOLD RHINO SERIES TNMG EA CHIPBREAKER

NEGATIVE TRIANGULAR INSERTS FOR SUPER FINISHING

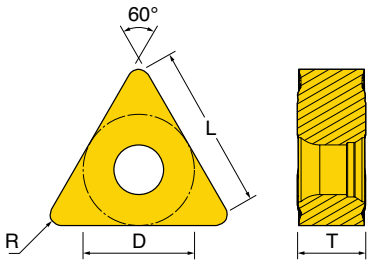


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5080	TT9080	TT9215	TT9225	TT9235
TNMG2.531EA	TNMG130404EA	.002	.012	.008	.059	.518	.313	.187	.016		◐	◐	○	○	○
TNMG2.532EA	TNMG130408EA	.003	.016	.012	.059	.495	.313	.187	.031		◐	◐	○	○	○

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES TNMG-FS CHIPBREAKER

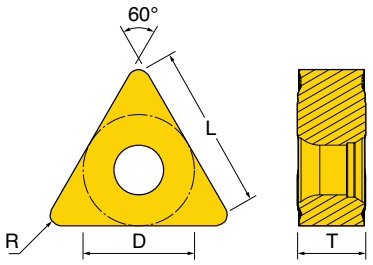
NEGATIVE TRIANGULAR INSERTS FOR FINE-FINISHING



ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades CT3000	PV3010	TT8115	TT8125
TNMG2.530.5FS	TNMG130402FS	.002	.010	.008	.040	.530	.313	.187	.008				
TNMG2.531FS	TNMG130404FS	.003	.012	.012	.040	.518	.313	.187	.016				
TNMG2.532FS	TNMG130408FS	.004	.012	.020	.040	.495	.313	.187	.031				

GOLD RHINO SERIES TNMG FG CHIPBREAKER

NEGATIVE TRIANGULAR INSERTS FOR FINISHING

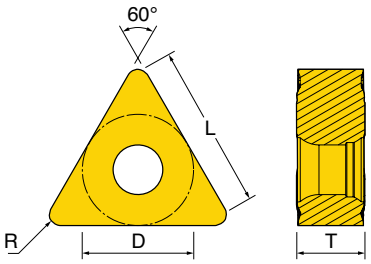


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades TT5100	TT8115	TT8125
TNMG2.531FG	TNMG130404FG	.003	.012	.010	.059	.518	.313	.187	.016			
TNMG2.532FG	TNMG130408FG	.004	.014	.012	.059	.495	.313	.187	.031			
TNMG2.533FG	TNMG130412FG	.006	.016	.014	.059	.473	.313	.187	.047			

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES TNMG FM CHIPBREAKER

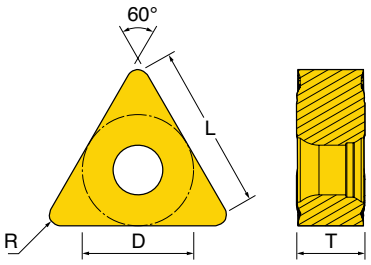
NEGATIVE TRIANGULAR INSERTS FOR FINISHING



ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades CT3000	TT5100	TT8115	TT8125	TT8135
TNMG2.531FM	TNMG130404FM	.003	.012	.010	.059	.518	.313	.187	.016					
TNMG2.532FM	TNMG130408FM	.004	.014	.012	.059	.495	.313	.187	.031					
TNMG2.533FM	TNMG130412FM	.006	.016	.014	.059	.473	.313	.187	.047					

GOLD RHINO SERIES TNMG FT CHIPBREAKER

NEGATIVE TRIANGULAR INSERTS FOR MEDIUM

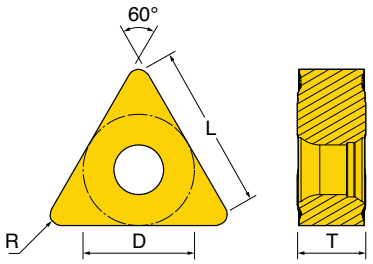


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades TT5100	TT8115	TT8125	TT8135
TNMG2.531FT	TNMG130404FT	.003	.012	.010	.098	.518	.313	.187	.016				
TNMG2.532FT	TNMG130408FT	.004	.016	.012	.098	.495	.313	.187	.031				
TNMG2.533FT	TNMG130412FT	.006	.020	.014	.098	.473	.313	.187	.047				

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES TNMG PC CHIPBREAKER

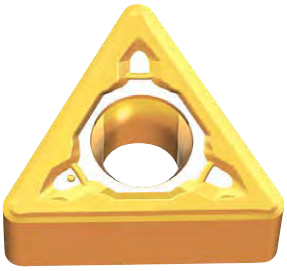
NEGATIVE TRIANGULAR INSERTS FOR MEDIUM

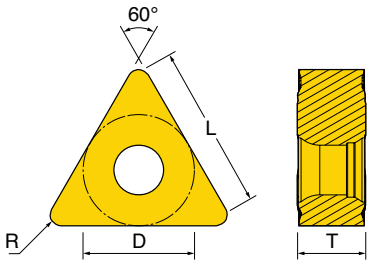


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades TT5100	TT8115	TT8125	TT8135
TNMG2.531PC	TNMG130404PC	.004	.012	.016	.118	.518	.313	.187	.016				
TNMG2.532PC	TNMG130408PC	.006	.016	.020	.118	.495	.313	.187	.031				
TNMG2.533PC	TNMG130412PC	.007	.020	.024	.118	.473	.313	.187	.047				

GOLD RHINO SERIES TNMG EM CHIPBREAKER

NEGATIVE TRIANGULAR INSERTS FOR MEDIUM



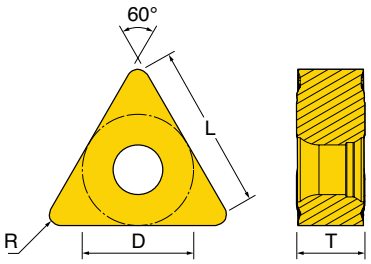


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades TT5080	TT9080	TT9215	TT9225	TT9235
TNMG2.532EM	TNMG130408EM	.005	.016	.020	.125	.495	.313	.187	.031					
TNMG2.533EM	TNMG130412EM	.006	.016	.028	.125	.473	.313	.187	.047					

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES TNMG MK CHIPBREAKER

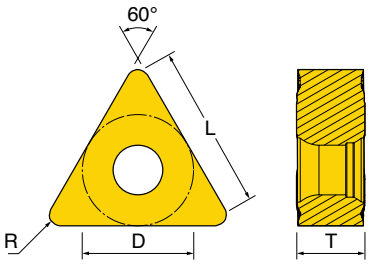
NEGATIVE TRIANGULAR INSERTS FOR MEDIUM



ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5080	TT9080	TT9225	TT9235
TNMG2.531MK	TNMG130404MK	.006	.016	.028	.118	.518	.313	.187	.016					
TNMG2.532MK	TNMG130408MK	.008	.018	.040	.118	.495	.313	.187	.031					
TNMG2.533MK	TNMG130412MK	.009	.020	.060	.118	.473	.313	.187	.047					

GOLD RHINO SERIES TNMG MM CHIPBREAKER

NEGATIVE TRIANGULAR INSERTS FOR MEDIUM

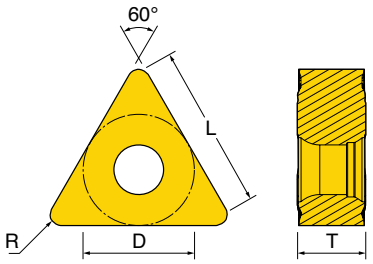


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5100	TT8115	TT8125	TT8135	TT9215	TT9225	TT9235
TNMG2.531MM	TNMG130404MM	.006	.018	.016	.125	.518	.313	.187	.016								
TNMG2.532MM	TNMG130408MM	.008	.020	.020	.125	.495	.313	.187	.031								
TNMG2.533MM	TNMG130412MM	.009	.020	.028	.125	.473	.313	.187	.047								

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES TNMG MT CHIPBREAKER

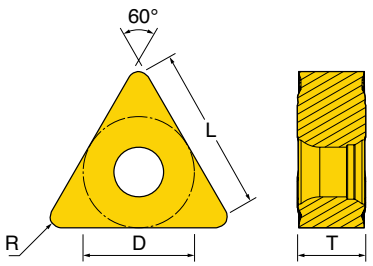
NEGATIVE TRIANGULAR INSERTS FOR MEDIUM



ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5100	TT8115	TT8125	TT8135
TNMG2.531MT	TNMG130404MT	.004	.014	.031	.125	.518	.313	.187	.016		◐	●	●	●
TNMG2.532MT	TNMG130408MT	.006	.018	.040	.125	.495	.313	.187	.031		◐	●	●	●
TNMG2.533MT	TNMG130412MT	.008	.022	.047	.125	.473	.313	.187	.047		◐	●	●	●

GOLD RHINO SERIES TNMG WA CHIPBREAKER

NEGATIVE TRIANGULAR INSERTS FOR FINISHING TO MEDIUM WIPER

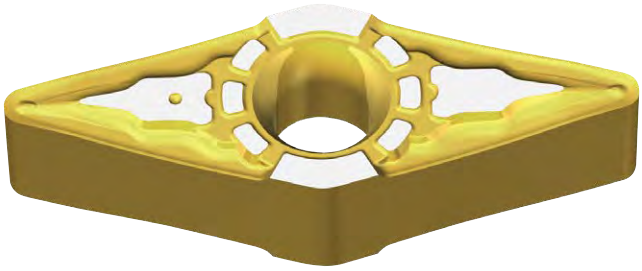


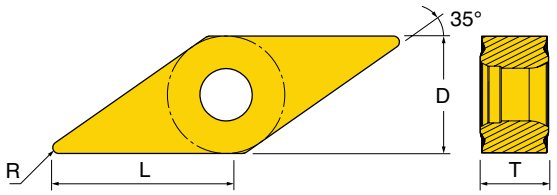
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	CT3000	PV3010	TT5100	TT7005	TT7015	TT8105	TT8115	TT8125
TNMG2.531WA	TNMG130404WA	.003	.010	.010	.098	.518	.313	.187	.016		◐	◐	◐	●	●	●	●	●
TNMG2.532WA	TNMG130408WA	.004	.014	.010	.118	.495	.313	.187	.031		◐	◐	◐	●	●	●	●	●
TNMG2.533WA	TNMG130412WA	.006	.018	.016	.138	.473	.313	.187	.047		◐	◐	◐	●	●	●	●	●

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES VNMX FG CHIPBREAKER

NEGATIVE 35° RHOMBIC INSERTS FOR FINISHING

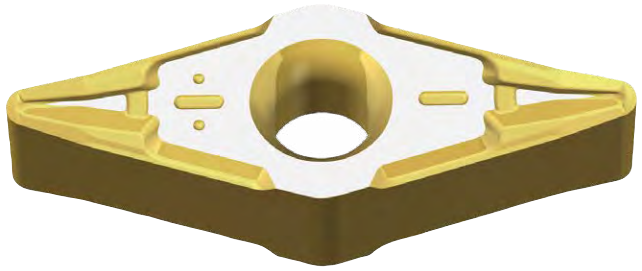


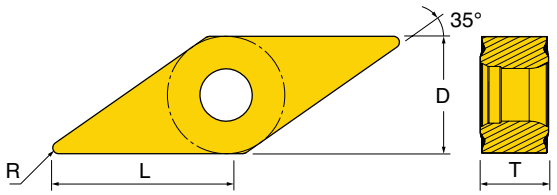


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	CT3000	TT5080	TT5100	TT8115	TT8125	TT9080
VNMX2.531FG	VNMX130404FG	.003	.008	.002	.079	.465	.313	.187	.016		●	◑	●	●	●	●
VNMX2.532FG	VNMX130408FG	.004	.009	.002	.079	.425	.313	.187	.031		●	◑	●	●	●	●

GOLD RHINO SERIES VNMX FS CHIPBREAKER

NEGATIVE 35° RHOMBIC INSERTS FOR SUPER-FINISHING



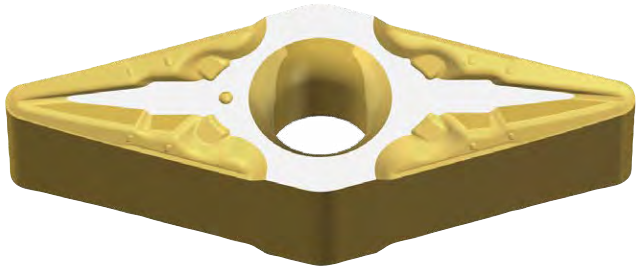


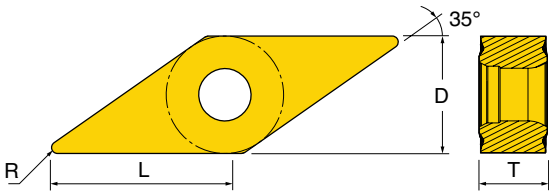
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	CT3000	PV3010	TT5080	TT8105	TT8115	TT8125
VNMX2.530.5FS	VNMX130402FS	.002	.010	.008	.039	.505	.313	.187	.008		●	●	◑		●	●
VNMX2.531FS	VNMX130404FS	.003	.012	.012	.039	.465	.313	.187	.016		●	●			●	●
VNMX2.532FS	VNMX130408FS	.004	.012	.020	.039	.425	.313	.187	.031		●	●		●	●	●

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES VNMX FM CHIPBREAKER

NEGATIVE 35° RHOMBIC INSERTS FOR FINISHING

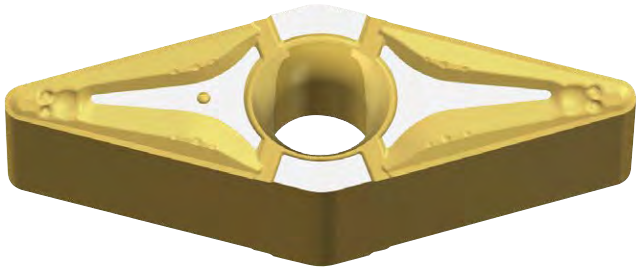


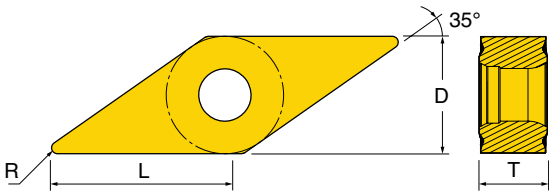


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	CT3000	TT5080	TT5100	TT8105	TT8115	TT8125	TT8135	TT9080
VNMX2.531FM	VNMX130404FM	.003	.012	.010	.059	.465	.313	.187	.016									
VNMX2.532FM	VNMX130408FM	.004	.014	.012	.059	.425	.313	.187	.031									

GOLD RHINO SERIES VNMX PC CHIPBREAKER

NEGATIVE 35° RHOMBIC INSERTS FOR MEDIUM



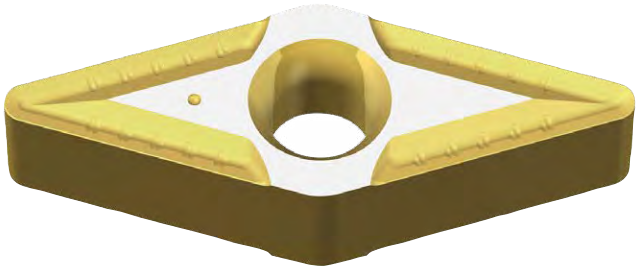


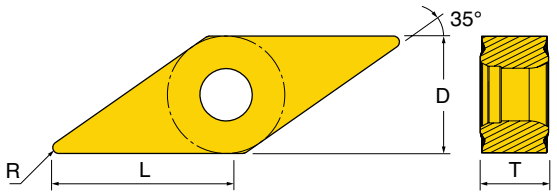
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5080	TT5100	TT8105	TT8115	TT8125	TT8135	TT9080
VNMX2.531PC	VNMX130404PC	.006	.014	.016	.118	.465	.313	.187	.016								
VNMX2.532PC	VNMX130408PC	.007	.014	.020	.118	.425	.313	.187	.031								
VNMX2.533PC	VNMX130412PC	.008	.016	.039	.118	.385	.313	.187	.047								

= P = M = K = N = S = H

GOLD RHINO SERIES VNMX MK CHIPBREAKER

NEGATIVE 35° RHOMBIC INSERTS FOR MEDIUM

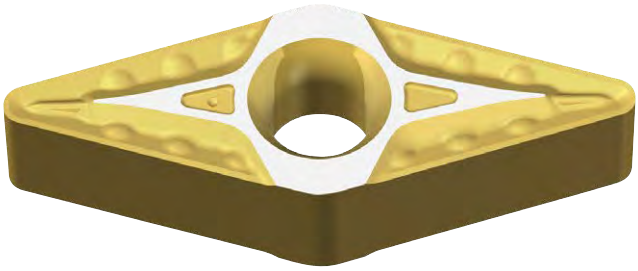


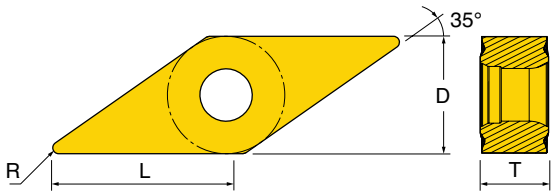


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5080	TT9080	TT9225	TT9235
VNMX2.531MK	VNMX130404MK	.007	.014	.028	.118	.465	.313	.187	.016		●	●	○	○
VNMX2.532MK	VNMX130408MK	.008	.016	.039	.118	.425	.313	.187	.031		●	●	○	○

GOLD RHINO SERIES VNMX MT CHIPBREAKER

NEGATIVE 35° RHOMBIC INSERTS FOR MEDIUM



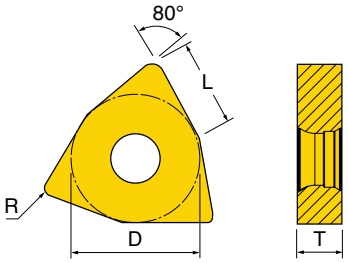


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	CT3000	TT5080	TT5100	TT7005	TT7015	TT8105	TT8115	TT8125	TT8135	TT9080
VNMX2.531MT	VNMX130404MT	.006	.014	.031	.118	.465	.313	.187	.016		●	●	●			●	●	●	●	●
VNMX2.532MT	VNMX130408MT	.007	.014	.040	.118	.425	.313	.187	.031		●	●	●	●	●	●	●	●	●	●
VNMX2.533MT	VNMX130412MT	.008	.016	.059	.118	.385	.313	.187	.047			●	●	●	●	●	●	●	●	●

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES WNMX FS CHIPBREAKER

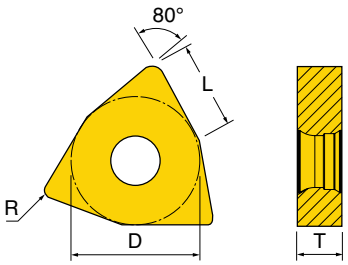
NEGATIVE 80° TRIGON INSERTS FOR SUPER FINISHING



ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades CT3000	PV3010	TT8115	TT8125
WNMX331FS	WNMX060404FS	.003	.012	.012	.060	.244	.375	.187	.016				
WNMX332FS	WNMX060408FS	.004	.012	.020	.060	.240	.375	.187	.031				

GOLD RHINO SERIES WNMX FG CHIPBREAKER

NEGATIVE 80° TRIGON INSERTS FOR FINISHING

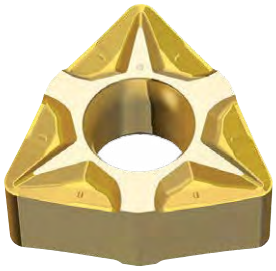


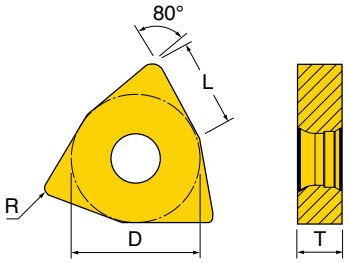
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades CT3000	PV3010	TT5080	TT5100	TT8115	TT8125
WNMX331FG	WNMX060404FG	.003	.012	.008	.079	.244	.375	.187	.016						
WNMX332FG	WNMX060408FG	.004	.014	.020	.079	.240	.375	.187	.031						

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES WNMX FM CHIPBREAKER

NEGATIVE 80° TRIGON INSERTS FOR FINISHING

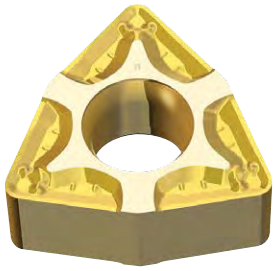


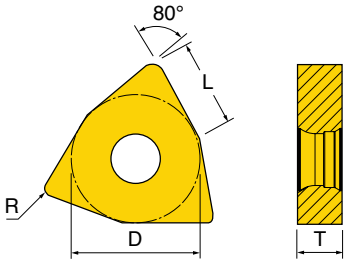


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades CT3000	TT5100	TT8105	TT8115	TT8125
WNMX331FM	WNMX060404FM	.003	.012	.010	.079	.244	.375	.187	.016	◔	◔	●	●	●
WNMX332FM	WNMX060408FM	.004	.014	.012	.079	.240	.375	.187	.031	◔	◔	●	●	●
WNMX333FM	WNMX060412FM	.006	.016	.014	.079	.236	.375	.187	.047	◔	◔	●	●	●

GOLD RHINO SERIES WNMX PC CHIPBREAKER

NEGATIVE 80° TRIGON INSERTS FOR MEDIUM



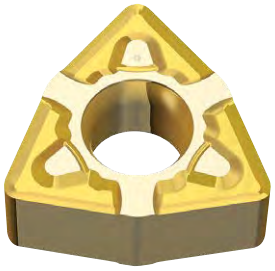


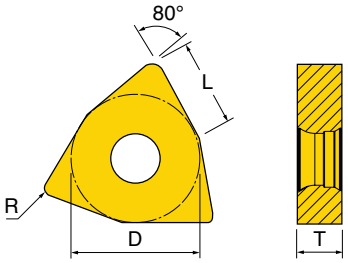
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades TT8105	TT8115	TT8125	TT9080
WNMX331PC	WNMX060404PC	.004	.012	.016	.125	.240	.375	.187	.016	●	●	●	
WNMX332PC	WNMX060408PC	.006	.016	.020	.125	.240	.375	.187	.031	●	●	●	◔
WNMX333PC	WNMX060412PC	.007	.020	.024	.125	.236	.375	.187	.047	●	●	●	◔

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES WNMX EM CHIPBREAKER

NEGATIVE 80° RHOMBIC INSERTS FOR MEDIUM

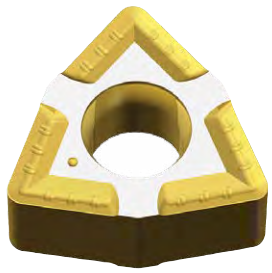


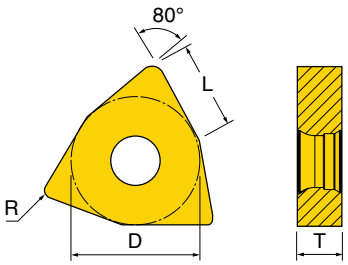


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5080	TT9080	TT9215	TT9225	TT9235
WNMX331EM	WNMX060404EM	.004	.014	.016	.125	.244	.375	.187	.016		●	●	○	○	○
WNMX332EM	WNMX060408EM	.005	.016	.020	.125	.240	.375	.187	.031		●	●	○	○	○
WNMX333EM	WNMG060412EM	.006	.016	.028	.125	.236	.375	.187	.047		●	●	○	○	○

GOLD RHINO SERIES WNMX MK CHIPBREAKER

NEGATIVE 80° TRIGON INSERTS FOR MEDIUM



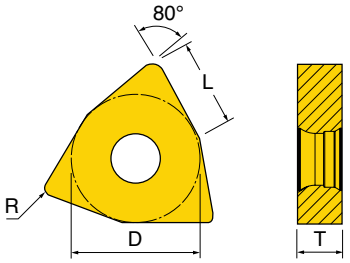


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5080	TT9080	TT9225	TT9235
WNMX331MK	WNMX060404MK	.006	.016	.028	.118	.244	.375	.187	.016		●	●	○	○
WNMX332MK	WNMX060408MK	.008	.018	.040	.118	.240	.375	.187	.031		●	●	○	○
WNMX333MK	WNMX060412MK	.009	.020	.060	.118	.236	.375	.187	.047		●	●	○	○

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD RHINO SERIES WNMX MM CHIPBREAKER

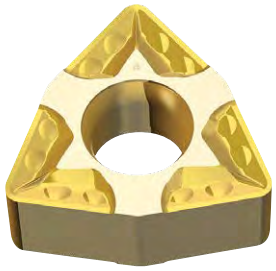
NEGATIVE 80° TRIGON INSERTS FOR MEDIUM

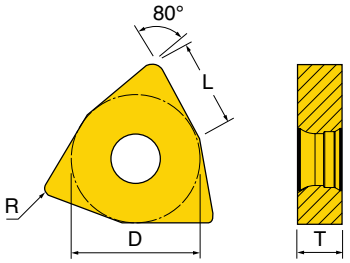


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5080	TT5100	TT8020	TT8125	TT9080	TT9215	TT9225	TT9235
WNMX331MM	WNMX060404MM	.006	.018	.016	.125	.244	.375	.187	.016		●				●	●	●	●
WNMX332MM	WNMX060408MM	.008	.020	.020	.125	.240	.375	.187	.031		●	●	●	●	●	●	●	●
WNMX333MM	WNMX060412MM	.009	.020	.028	.125	.236	.375	.187	.047		●				●	●	●	●

GOLD RHINO SERIES WNMX MT CHIPBREAKER

NEGATIVE 80° TRIGON INSERTS FOR MEDIUM

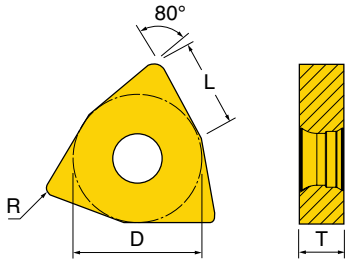




ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT5080	TT5100	TT7005	TT7015	TT8105	TT8115	TT8125	TT9215	TT9225	TT9235
WNMX331MT	WNMX060404MT	.004	.014	.031	.125	.244	.375	.187	.016		●	●			●	●	●	●	●	●
WNMX332MT	WNMX060408MT	.006	.018	.039	.125	.240	.375	.187	.031		●	●	●	●	●	●	●	●	●	●
WNMX333MT	WNMX060412MT	.008	.022	.047	.125	.236	.375	.187	.047			●	●	●	●	●	●			

● = P ● = M ● = K ● = N ● = S ● = H

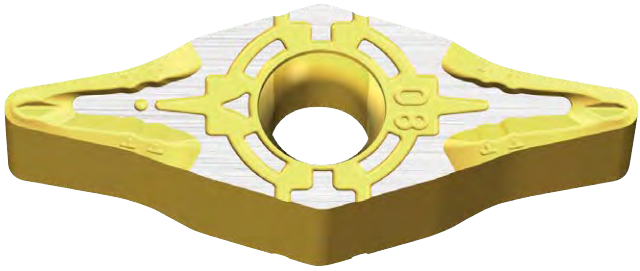
NEGATIVE 80° TRIGON INSERTS FOR FINISHING TO MEDIUM WIPER

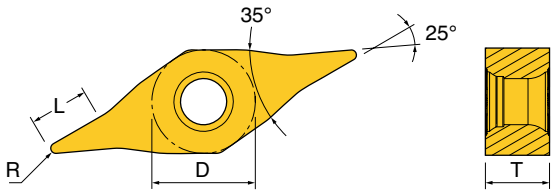


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	CT3000	PV3010	TT5100	TT7005	TT7015	TT8105	TT8115	TT8125
WNMX331WA	WNMX060404WA	.003	.010	.010	.098	.244	.375	.187	.016									
WNMX332WA	WNMX060408WA	.004	.016	.010	.118	.240	.375	.187	.031									
WNMX333WA	WNMX060412WA	.008	.020	.016	.118	.236	.375	.187	.047									

● = P ○ = M ● = K ● = N ● = S ○ = H

NEGATIVE 25° RHOMBIC INSERTS FOR SUPER-FINISHING

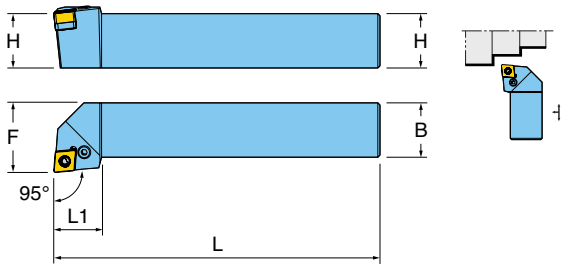




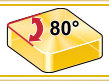
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	CT3000	PV3010	TT5080	TT8105	TT8115	TT9080
YNMG2.531FS	YNMG130404FS	.003	.008	.012	.039	.185	.313	.187	.016							
YNMG2.532FS	YNMG130408FS	.003	.010	.020	.059	.165	.313	.187	.031							

● = P ○ = M ● = K ● = N ● = S ○ = H

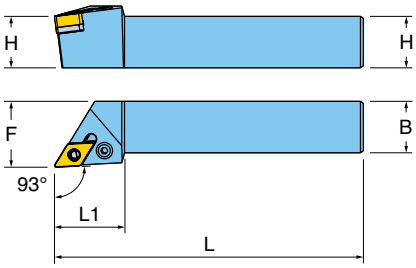
HOOK-LEVER HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE 80° RHOMBIC INSERTS



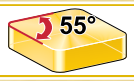
Designation	H	B	L	L1	F
HCLNL08-33C-SH	0.500	0.500	6.000	0.708	0.500
HCLNR08-33C-SH	0.500	0.500	6.000	0.708	0.500
HCLNL10-33C-SH	0.625	0.625	6.000	0.787	0.625
HCLNR10-33C-SH	0.625	0.625	6.000	0.787	0.625
HCLNL10-33A	0.625	0.625	4.000	0.870	0.750
HCLNR10-33A	0.625	0.625	4.000	0.870	0.750
HCLNL12-33B	0.750	0.750	4.500	0.870	1.000
HCLNR12-33B	0.750	0.750	4.500	0.870	1.000
HCLNL16-33D	1.000	1.000	6.000	0.870	1.250
HCLNR16-33D	1.000	1.000	6.000	0.870	1.250
HCLNL20-33D	1.250	1.250	6.000	0.870	1.375
HCLNR20-33D	1.250	1.250	6.000	0.870	1.375

HARDWARE							
	Insert Reference	Lever	Lever Screw	Seat	Seat Pin	Lever Screw Wrench	Seat Pin Punch
HCLNR/L08	CN_ _33_	LCL09B-NX	LCS3B	-	-	L-W2	-
HCLNR/L10	CN_ _33_	LCL09-NX	LCS3	LSC32A	LSP3A	L-W2.5	SPP3-4
HCLNR/L12	CN_ _33_	LCL09-NX	LCS3	LSC32A	LSP3A	L-W2.5	SPP3-4
HCLNR/L16	CN_ _33_	LCL09-NX	LCS3	LSC32A	LSP3A	L-W2.5	SPP3-4
HCLNR/L20	CN_ _33_	LCL09-NX	LCS3	LSC32A	LSP3A	L-W2.5	SPP3-4

HOOK-LEVER-HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE 55° RHOMBIC INSERTS

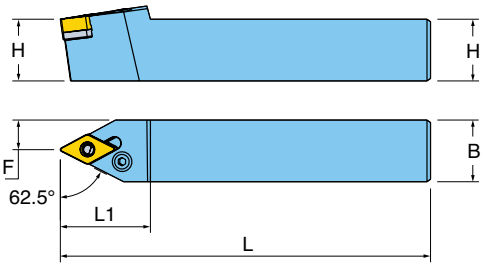


Designation	H	B	L	L1	F
HDJNL12-3.53.5B	0.750	0.750	4.500	1.340	1.000
HDJNR12-3.53.5B	0.750	0.750	4.500	1.340	1.000
HDJNL16-3.53.5D	1.000	1.000	6.000	1.340	1.250
HDJNR16-3.53.5D	1.000	1.000	6.000	1.340	1.250
HDJNL20-3.53.5D	1.250	1.250	6.000	1.340	1.500
HDJNR20-3.53.5D	1.250	1.250	6.000	1.340	1.500

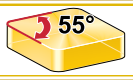
HARDWARE							
	Insert Reference	Lever	Lever Screw	Seat Pin	Lever Screw Wrench	Seat	Seat Pin Punch
	DN_ _3.53.5_	LCL11-NX	LCS4	LSP4	L-W3	LSD3.52	SPP3-4

GOLD RHINO SERIES HDNNR/L

HOOK-LEVER HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE 55° RHOMBIC INSERTS

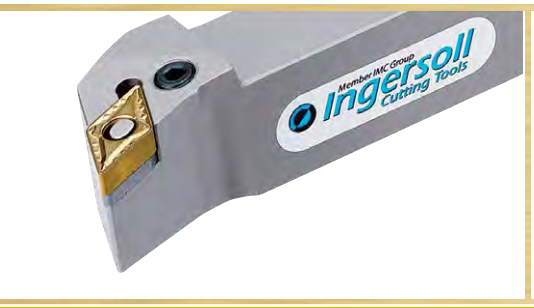


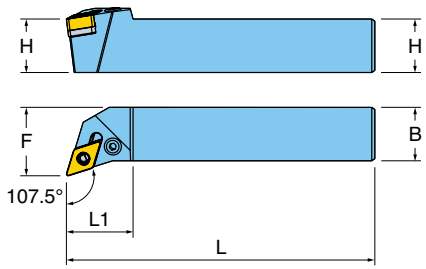
Designation	H	B	L	L1	F
HDNNL12-3.53.5B	0.750	0.750	4.500	1.440	0.375
HDNNR12-3.53.5B	0.750	0.750	4.500	1.440	0.375
HDNNL16-3.53.5D	1.000	1.000	6.000	1.440	0.500
HDNNR16-3.53.5D	1.000	1.000	6.000	1.440	0.500

HARDWARE							
	Insert Reference	Lever	Lever Screw	Seat Pin	Lever Screw Wrench	Seat	Seat Pin Punch
	DN_ _3.53.5_	LCL11-NX	LCS4	LSP4	L-W3	LSD3.52	SPP3-4

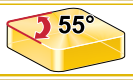
GOLD RHINO SERIES HDQNR/L

HOOK-LEVER HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE 55° RHOMBIC INSERTS



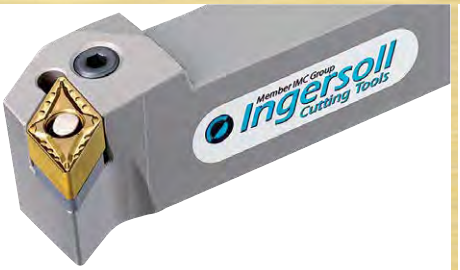


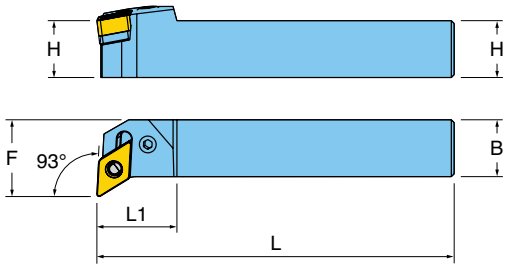
Designation	H	B	L	L1	F
HDQNL12-3.53.5B	0.750	0.750	4.500	1.220	1.000
HDQNR12-3.53.5B	0.750	0.750	4.500	1.220	1.000
HDQNL16-3.53.5D	1.000	1.000	6.000	1.220	1.250
HDQNR16-3.53.5D	1.000	1.000	6.000	1.220	1.250

HARDWARE							
	Insert Reference	Lever	Lever Screw	Seat Pin	Lever Screw Wrench	Seat	Seat Pin Punch
	DN_ _3.53.5_	LCL11-NX	LCS4	LSP4	L-W3	LSD3.52	SPP3-4

GOLD RHINO SERIES HDUNR/L

HOOK-LEVER-HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE 55° RHOMBIC INSERTS



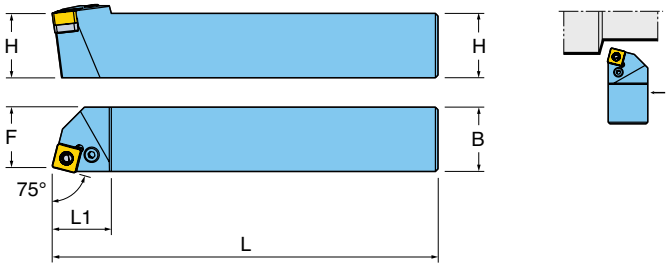


Designation	H	B	L	L1	F
HDUNL16-3.53.5D	1.000	1.000	6.000	1.100	1.365
HDUNR16-3.53.5D	1.000	1.000	6.000	1.100	1.365

HARDWARE	Insert Reference	Lever	Lever Screw	Seat Pin	Lever Screw Wrench	Seat	Seat Pin Punch
	DN_ _3.53.5_	LCL11-NX	LCS4	LSP4	L-W3	LSD3.52	SPP3-4

GOLD RHINO SERIES HSBNR/L

HOOK-LEVER HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE SQUARE INSERTS

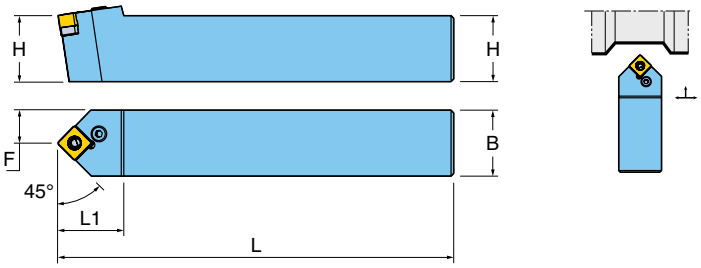


Designation	H	B	L	L1	F
HSBNL12-33B	0.750	0.750	4.500	0.910	0.691
HSBNR12-33B	0.750	0.750	4.500	0.910	0.691
HSBNL16-33D	1.000	1.000	6.000	0.910	0.941
HSBNR16-33D	1.000	1.000	6.000	0.910	0.941

HARDWARE	Insert Reference	Lever	Lever Screw	Seat Pin	Seat	Lever Screw Wrench	Seat Pin Punch
	SN_ _33_	LCL09-NX	LCS3	LSP3A	LSS32A	L-W2.5	SPP3-3L

GOLD RHINO SERIES HSDNN

HOOK-LEVER HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE SQUARE INSERTS

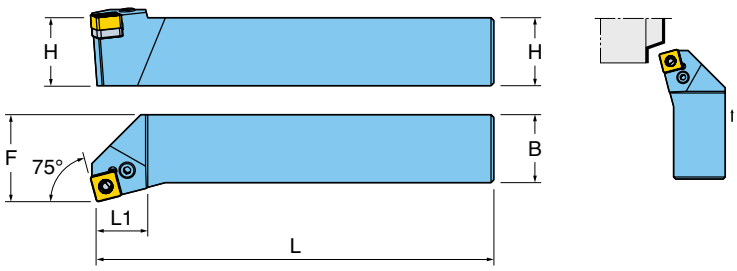


Designation	H	B	L	L1	F
HSDNN12-33B	0.750	0.750	4.500	0.980	0.375
HSDNN16-33D	1.000	1.000	6.000	0.980	0.500

HARDWARE							
	Turning Holder Insert Reference	Lever	Lever Screw	Seat Pin	Seat	Lever Screw Wrench	Seat Pin Punch
	SN_ _33_	LCL09-NX	LCS3	LSP3A	LSS32A	L-W2.5	SPP3-3L

GOLD RHINO SERIES HSKNR/L

HOOK-LEVER HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE SQUARE INSERTS

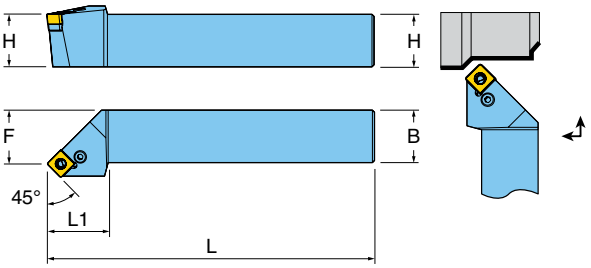


Designation	H	B	L	L1	F
HSKNL12-33B	0.750	0.750	4.500	0.750	1.000
HSKNR12-33B	0.750	0.750	4.500	0.750	1.000
HSKNL16-33D	1.000	1.000	6.000	0.750	1.250
HSKNR16-33D	1.000	1.000	6.000	0.750	1.250

HARDWARE							
	Insert Reference	Lever	Lever Screw	Seat Pin	Seat	Lever Screw Wrench	Seat Pin Punch
	SN_ _33_	LCL09-NX	LCS3	LSP3A	LSS32A	L-W2.5	SPP3-3L

GOLD RHINO SERIES HSSNR/L

HOOK-LEVER HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE SQUARE INSERTS

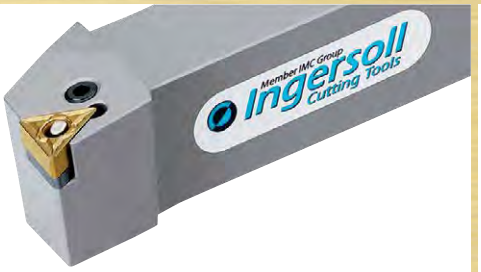


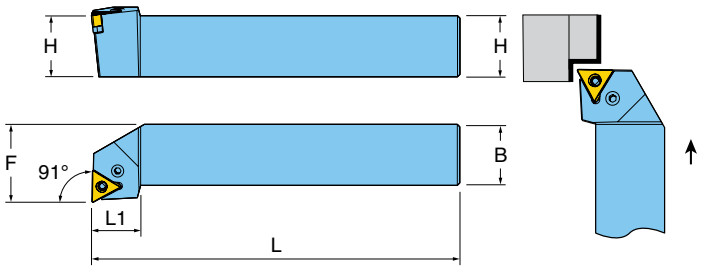
Designation	H	B	L	L1	F
HSSNL12-33B	0.750	0.750	4.500	0.850	1.000
HSSNR12-33B	0.750	0.750	4.500	0.850	1.000
HSSNL16-33D	1.000	1.000	6.000	1.140	1.250
HSSNR16-33D	1.000	1.000	6.000	1.140	1.250

HARDWARE							
	Insert Reference	Lever	Lever Screw	Seat Pin	Seat	Lever Screw Wrench	Seat Pin Punch
	SN_ _33_	LCL09-NX	LCS3	LSP3A	LSS32A	L-W2.5	SPP3-3L

GOLD RHINO SERIES HTFNR/L

HOOK-LEVER HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE TRIANGULAR INSERTS



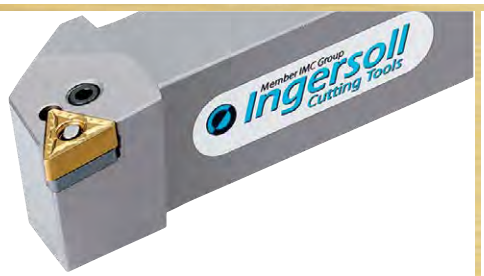


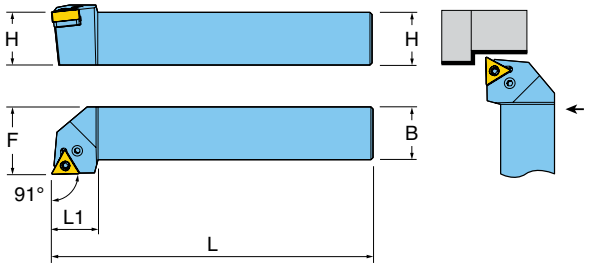
Designation	H	B	L	L1	F
HTFNL12-2.53B	0.750	0.750	4.500	0.790	1.000
HTFNR12-2.53B	0.750	0.750	4.500	0.790	1.000
HTFNL16-2.53D	1.000	1.000	6.000	0.790	1.250
HTFNR16-2.53D	1.000	1.000	6.000	0.790	1.250

HARDWARE							
	Insert Reference	Lever	Lever Screw	Seat Pin	Lever Screw Wrench	Seat Pin Punch	Seat
	TN_ _2.53_	LCL08-NX	LCS3-NX	LSP3B	L-W2.5	SPP3-3L	LST2.51.8

GOLD RHINO SERIES HTGNR/L

HOOK-LEVER HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE TRIANGULAR INSERTS



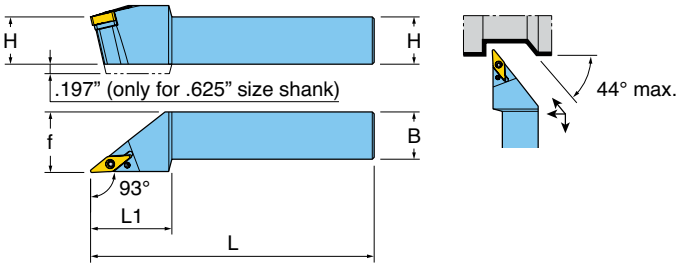


Designation	H	B	L	L1	F
HTGNL10-2.53A	0.625	0.625	4.000	0.870	0.750
HTGNR10-2.53A	0.625	0.625	4.000	0.870	0.750
HTGNL12-2.53B	0.750	0.750	4.500	0.870	1.000
HTGNR12-2.53B	0.750	0.750	4.500	0.870	1.000
HTGNL16-2.53D	1.000	1.000	6.000	0.870	1.250
HTGNR16-2.53D	1.000	1.000	6.000	0.870	1.250

HARDWARE	Insert Reference	Lever	Lever Screw	Seat Pin	Lever Screw Wrench	Seat Pin Punch	Seat
	TN_ _2.53_	LCL08-NX	LCS3-NX	LSP3B	L-W2.5	SPP3-3L	LST2.51.8

GOLD RHINO SERIES HVJNR/L

HOOK-LEVER HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE 25° & 35° RHOMBIC INSERTS

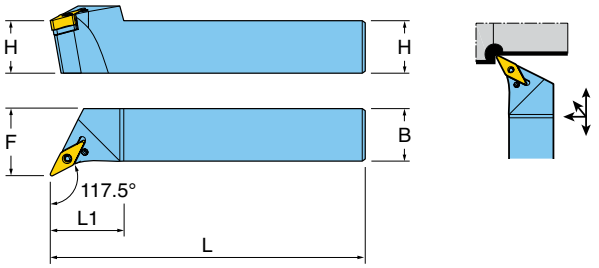


Designation	H	B	L	L1	F
HVJNL10-2.53A	0.625	0.625	4.000	1.180	0.750
HVJNR10-2.53A	0.625	0.625	4.000	1.180	0.750
HVJNL12-2.53B	0.750	0.750	4.500	1.380	1.000
HVJNR12-2.53B	0.750	0.750	4.500	1.380	1.000
HVJNL16-2.53D	1.000	1.000	6.000	1.690	1.250
HVJNR16-2.53D	1.000	1.000	6.000	1.690	1.250
HVJNL20-2.53D	1.250	1.250	6.000	1.970	1.500
HVJNR20-2.53D	1.250	1.250	6.000	1.970	1.500

HARDWARE	Insert Reference	Lever	Lever Screw	Seat Pin	Lever Screw Wrench	Seat Pin Punch	Seat
	VN_ X2.53_	LCL08-NX	LCS4-DH	LSP3B	L-W2.5	SPP3-3L	LSV2.51.8H

GOLD RHINO SERIES HVQNR/L

HOOK LEVER HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE 25° & 35° RHOMBIC INSERTS

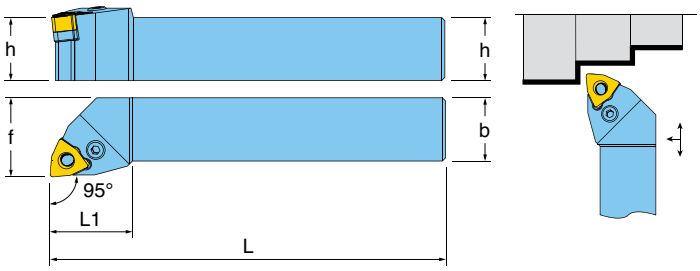


Designation	H	B	L	L1	F
HVQNL12-2.53B	0.750	0.750	4.500	1.380	1.000
HVQNR12-2.53B	0.750	0.750	4.500	1.380	1.000
HVQNL16-2.53D	1.000	1.000	6.000	1.380	1.250
HVQNR16-2.53D	1.000	1.000	6.000	1.380	1.250

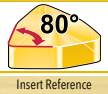
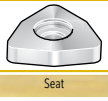
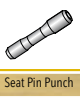
HARDWARE							
	Insert Reference	Lever	Lever Screw	Seat Pin	Lever Screw Wrench	Seat Pin Punch	Seat
	VN_X2.53_	LCL08-NX	LCS4-DH	LSP3B	L-W2.5	SPP3-3L	LSV2.51.8H

GOLD RHINO SERIES HWLNR/L

HOOK-LEVER HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE 80° TRIGON INSERTS

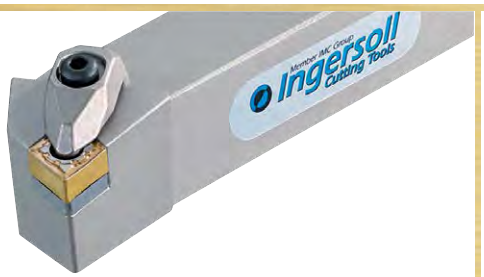


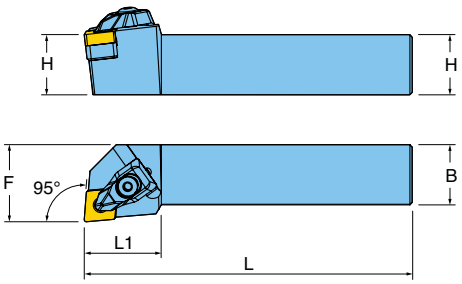
Designation	H	B	L	L1	F
HWLNL10-33A	0.625	0.625	4.000	1.023	0.750
HWLNR10-33A	0.625	0.625	4.000	1.023	0.750
HWLNL12-33B	0.750	0.750	4.500	1.023	1.000
HWLNR12-33B	0.750	0.750	4.500	1.023	1.000
HWLNL16-33D	1.000	1.000	6.000	1.023	1.250
HWLNR16-33D	1.000	1.000	6.000	1.023	1.250

HARDWARE							
	Insert Reference	Lever	Lever Screw	Seat Pin	Seat	Lever Screw Wrench	Seat Pin Punch
	WN_X33_	LCL09-NX	LCS3	LSP3A	LSW32A	L-W2.5	SPP3-4

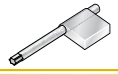
GOLD RHINO SERIES TCLNR/L

T-TYPE HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE 80° RHOMBIC INSERTS



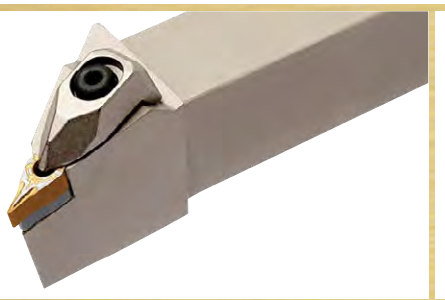


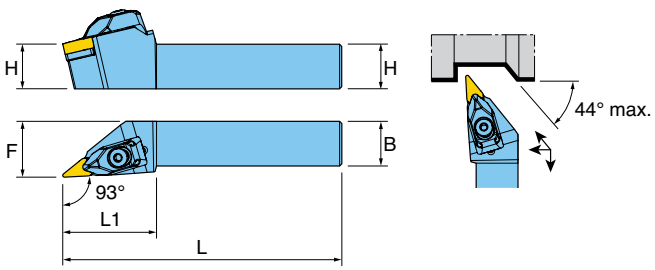
Designation	H	B	L	L1	F
TCLNL12-33B	0.750	0.750	4.500	0.980	1.000
TCLNR12-33B	0.750	0.750	4.500	0.980	1.000
TCLNL16-33D	1.000	1.000	6.000	0.980	1.250
TCLNR16-33D	1.000	1.000	6.000	0.980	1.250
TCLNL20-33D	1.250	1.250	6.000	0.980	1.375
TCLNR20-33D	1.250	1.250	6.000	0.980	1.375

HARDWARE							
	Insert Reference	Clamp	Clamp Spring	Seat Screw	Seat Wrench	Clamp Screw	Seat
	CN_ _33_	DLM3-NX	DSP3	SO40085I	T15	DLS3	LSC32A

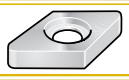
GOLD RHINO SERIES TVJNR/L

T-TYPE HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE 35° RHOMBIC INSERTS



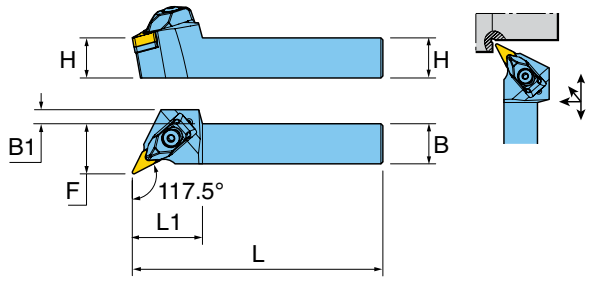


Designation	H	B	L	L1	F
TVJNL12-2.53B	0.750	0.750	4.500	1.380	1.000
TVJNR12-2.53B	0.750	0.750	4.500	1.380	1.000
TVJNL16-2.53D	1.000	1.000	6.000	1.690	1.250
TVJNR16-2.53D	1.000	1.000	6.000	1.690	1.250
TVJNL20-2.53D	1.250	1.250	6.000	1.970	1.500
TVJNR20-2.53D	1.250	1.250	6.000	1.970	1.500

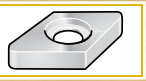
HDWR								
	Insert Reference	Clamp	Clamp Spring	Seat Screw	Seat Wrench	Clamp Screw	Clamp Screw Wrench	Seat
	VN_ X2.53_	DLM2.5V-NX	DSP4	SO40085I	T15	DLS4	L-W3	MSVI2.522

GOLD RHINO SERIES TVQNR/L

T-TYPE HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE 35° RHOMBIC INSERTS

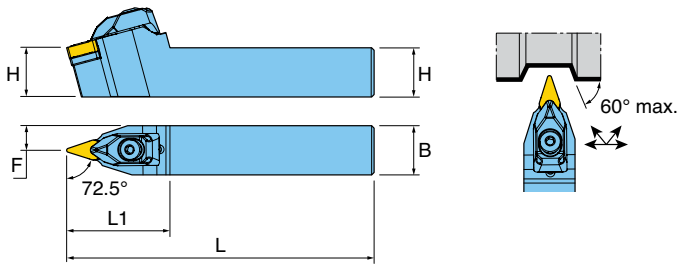


Designation	H	B	L	L1	F	B1
TVQNL12-2.53B	0.750	0.750	4.500	1.380	1.000	-
TVQNR12-2.53B	0.750	0.750	4.500	1.380	1.000	-
TVQNL16-2.53D	1.000	1.000	6.000	1.380	1.250	-
TVQNR16-2.53D	1.000	1.000	6.000	1.380	1.250	-

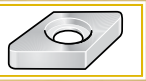
HDWR								
	Insert Reference	Clamp	Clamp Spring	Seat Screw	Seat Wrench	Clamp Screw	Clamp Screw Wrench	Seat
	VN_ X2.53_	DLM2.5V-NX	DSP4	SO40085I	T15	DLS4	L-W3	MSVI2.522

GOLD RHINO SERIES TVVNN

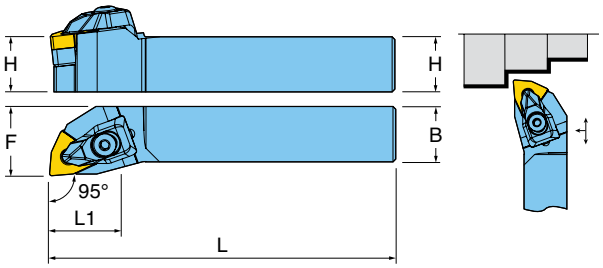
T-TYPE HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE 35° RHOMBIC INSERTS



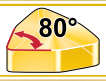
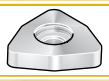
Designation	H	B	L	L1	F
TVVNN12-2.53B	0.750	0.750	4.500	1.654	0.375
TVVNN16-2.53D	1.000	1.000	6.000	1.654	0.500

HDWR								
	Insert Reference	Clamp	Clamp Spring	Seat Screw	Seat Wrench	Clamp Screw	Clamp Screw Wrench	Seat
	VN_ X2.53_	DLM2.5V-NX	DSP4	SO40085I	T15	DLS4	L-W3	MSVI2.522

T-TYPE HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE 80° TRIGON INSERTS

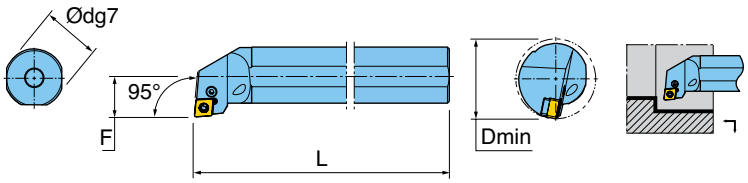


Designation	H	B	L	L1	F
TWLNL12-33B	0.750	0.750	4.500	1.020	1.000
TWLNR12-33B	0.750	0.750	4.500	1.020	1.000
TWLNL16-33D	1.000	1.000	6.000	1.020	1.250
TWLNR16-33D	1.000	1.000	6.000	1.020	1.250
TWLNL20-33D	1.250	1.250	6.000	1.020	1.375
TWLNR20-33D	1.250	1.250	6.000	1.020	1.375

HDWR							
	Insert Reference	Clamp	Clamp Spring	Seat Screw	Seat Wrench	Clamp Screw	Seat
	WN_X33_	DLM3-NX	DSP3	SO40085I	T15	DLS3	LSW32A

GOLD RHINO SERIES A-HCLNR/L

HOOK-LEVER BORING BAR FOR INTERNAL TURNING ACCEPTS NEGATIVE 80° RHOMBIC INSERTS, COOLANT THRU

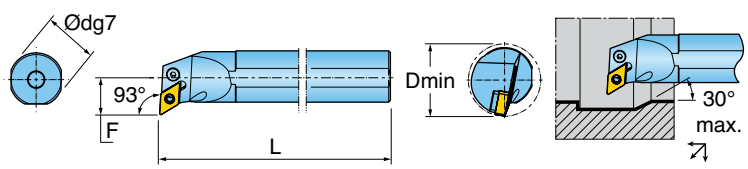


Designation	D	Dmin	L	F
A10R-HCLNL-33	0.625	0.750	8.00	0.406
A10R-HCLNR-33	0.625	0.750	8.00	0.406
A12S-HCLNL-33	0.750	1.000	10.00	0.500
A12S-HCLNR-33	0.750	1.000	10.00	0.500
A16T-HCLNL-33	1.000	1.250	12.00	0.640
A16T-HCLNR-33	1.000	1.250	12.00	0.640
A20U-HCLNL-33	1.250	1.500	14.00	0.765
A20U-HCLNR-33	1.250	1.500	14.00	0.765

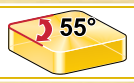
HDWR								
	Insert Reference	Lever	Lever Screw	Lever Screw Wrench	Lever Clip	Seat	Seat Pin Punch	Seat Pin
A10R	CN_ _33_	LCL09B-NX	LCS3B	L-W2	LSR3B	-	-	-
A12S	CN_ _33_	LCL09B-NX	LCS3B	L-W2	LSR3B	-	-	-
A16T	CN_ _33_	LCL09B-NX	LCS3B	L-W2	LSR3B	-	-	-
A20U	CN_ _33_	LCL09-NX	LCS3	L-W2.5	-	LSC32	SPP3-4	LSP3A

GOLD RHINO SERIES A-HDUNR/L

HOOK-LEVER-BORING BAR FOR INTERNAL TURNING ACCEPTS NEGATIVE 55° RHOMBIC INSERTS, COOLANT THRU

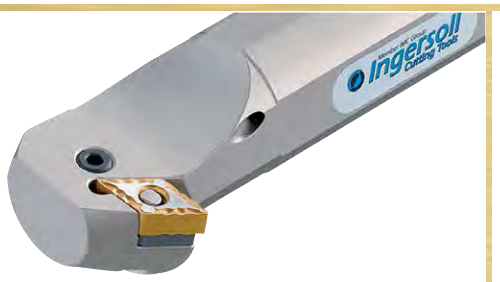


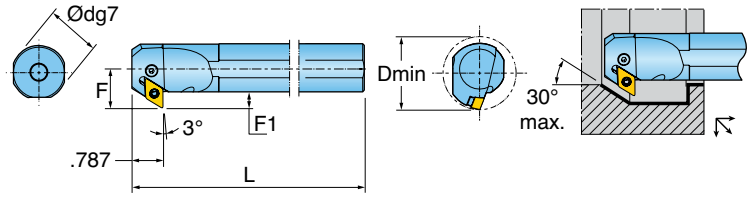
Designation	D	Dmin	L	F
A20U-HDUNL-3.53.5	1.250	1.750	14.00	1.000
A20U-HDUNR-3.53.5	1.250	1.750	14.00	1.000

HARDWARE							
	Insert Reference	Lever	Lever Screw	Seat Pin	Lever Screw Wrench	Seat Pin Punch	Seat
	DN_ _3.53.5_	LCL11-NX	LCS4S	LSP4	L-W3	SPP3-4	LSD3.52B

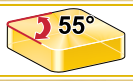
GOLD RHINO SERIES A-HDZNR/L

HOOK-LEVER-BORING BAR FOR INTERNAL TURNING ACCEPTS NEGATIVE 55° RHOMBIC INSERTS, COOLANT THRU



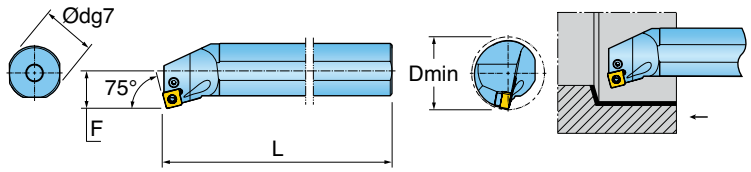


Designation	D	Dmin	L	F	F1
A20U-HDZNL-3.53.5	1.250	1.750	14.00	1.000	.413
A20U-HDZNR-3.53.5	1.250	1.750	14.00	1.000	.413

HARDWARE							
	Insert Reference	Lever	Lever Screw	Seat Pin	Lever Screw Wrench	Seat Pin Punch	Seat
	DN_ _3.53.5_	LCL11-NX	LCS4S	LSP4	L-W3	SPP3-4	LSD3.52B

GOLD RHINO SERIES A-HSKNR/L

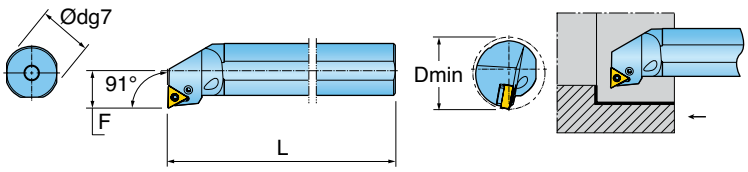
HOOK-LEVER BORING BAR FOR INTERNAL TURNING ACCEPTS NEGATIVE SQUARE INSERTS, COOLANT THRU



Designation	D	Dmin	L	F
A16T-HSKNL-33	1.000	1.250	12.00	0.640
A16T-HSKNR-33	1.000	1.250	12.00	0.640
A20U-HSKNL-33	1.250	1.500	14.00	0.765
A20U-HSKNR-33	1.250	1.500	14.00	0.765

HDWR								
	Insert Reference	Lever	Lever Screw	Lever Screw Wrench	Lever Clip	Seat Pin	Seat	Seat Pin Punch
A16T	SN_ _33_	LCL09B-NX	LCS3B	L-W2	LSR3B	-	-	-
A20U	SN_ _33_	LCL09-NX	LCS3	L-W2.5	-	LSP3A	LSS32	SPP3-4

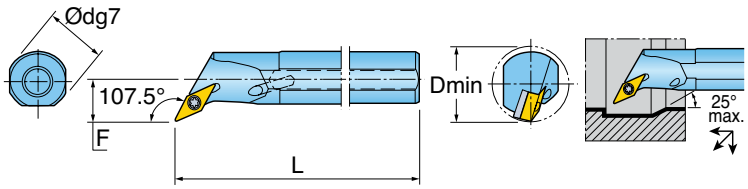
HOOK-LEVER-BORING BAR FOR INTERNAL TURNING ACCEPTS NEGATIVE TRIANGULAR INSERTS, COOLANT THRU



Designation	D	Dmin	L	F
A10R-HTFNL-2.53	0.625	0.750	8.00	0.406
A10R-HTFNR-2.53	0.625	0.750	8.00	0.406
A12S-HTFNL-2.53	0.750	1.000	10.00	0.500
A12S-HTFNR-2.53	0.750	1.000	10.00	0.500
A16T-HTFNL-2.53	1.000	1.250	12.00	0.640
A16T-HTFNR-2.53	1.000	1.250	12.00	0.640
A20U-HTFNL-2.53	1.250	1.500	14.00	0.765
A20U-HTFNR-2.53	1.250	1.500	14.00	0.765

HDWR	 Insert Reference	 Lever	 Lever Screw	 Lever Screw Wrench	 Lever Clip	 Seat Pin	 Seat	 Seat Pin Punch
A10R	TN_ _2.53_	LCL08B-NX	LCS3B	L-W2	LSR3B	-	-	-
A12S	TN_ _2.53_	LCL08B-NX	LCS3B	L-W2	LSR3B	-	-	-
A16T	TN_ _2.53_	LCL08B-NX	LCS3B	L-W2	LSR3B	-	-	-
A20U	TN_ _2.53_	LCL08-NX	LCS3-NX	L-W2.5	-	LS3PB	LST2.51.8B	SPP3-3L

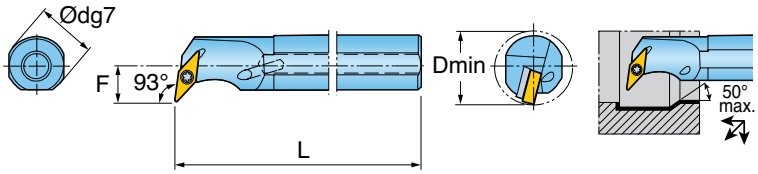
SCREW-CLAMP BORING BAR FOR INTERNAL TURNING ACCEPTS NEGATIVE 35° RHOMBIC INSERTS, COOLANT THRU



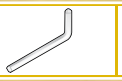
Designation	D	Dmin	L	F
A16T-SVQNL-2.53	1.000	1.300	12.00	0.750
A16T-SVQNR-2.53	1.000	1.300	12.00	0.750
A20U-SVQNL-2.53	1.250	1.650	14.00	0.875
A20U-SVQNR-2.53	1.250	1.650	14.00	0.875

HARDWARE							
	Insert Reference	Insert Screw	Seat Screw	Insert Screw Wrench	Seat Screw Wrench	Seat	
	VN_ X2.53_	TS30120I/HG	TS5030062S	T9	L-W3.5	SSVN2.523	

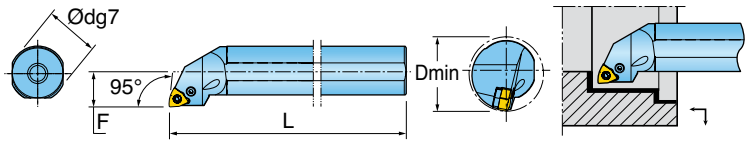
SCREW-CLAMP-BORING BAR FOR INTERNAL TURNING ACCEPTS NEGATIVE 35° RHOMBIC INSERTS, COOLANT THRU



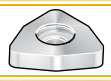
Designation	D	Dmin	L	F
A16T-SVUNL-2.53	1.000	1.250	12.00	0.625
A16T-SVUNR-2.53	1.000	1.250	12.00	0.625
A20U-SVUNL-2.53	1.250	1.500	14.00	0.750
A20U-SVUNR-2.53	1.250	1.500	14.00	0.750

HARDWARE						
						
	Insert Reference	Insert Screw	Seat Screw	Insert Screw Wrench	Seat Screw Wrench	Seat
	VN_ X2.53_	TS30120I/HG	TS50300625	T9	L-W3.5	SSVN2.523

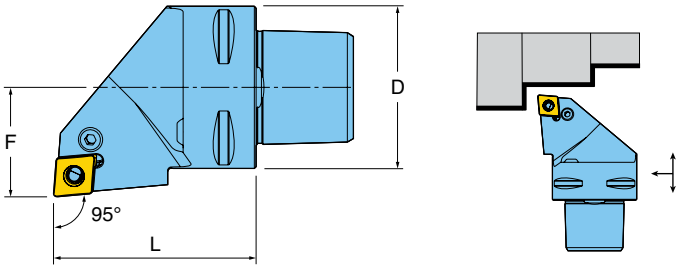
HOOK-LEVER BORING BAR FOR INTERNAL TURNING ACCEPTS NEGATIVE 80° TRIGON INSERTS, COOLANT THRU



Designation	D	Dmin	L	F
A10R-HWLNL-33	0.625	0.750	8.00	0.406
A10R-HWLNR-33	0.625	0.750	8.00	0.406
A12S-HWLNL-33	0.750	1.000	10.00	0.500
A12S-HWLNR-33	0.750	1.000	10.00	0.500
A16T-HWLNL-33	1.000	1.250	12.00	0.640
A16T-HWLNR-33	1.000	1.250	12.00	0.640
A20U-HWLNL-33	1.250	1.500	14.00	0.765
A20U-HWLNR-33	1.250	1.500	14.00	0.765

HDWR								
	Insert Reference	Lever	Lever Screw	Lever Clip	Lever Screw Wrench	Seat	Seat Pin Punch	Seat Pin
A10R	WN_X33_	LCL09B-NX	LCS3B	LSR3B	L-W2	-	-	-
A12S	WN_X33_	LCL09B-NX	LCS3B	LSR3B	L-W2	-	-	-
A16T	WN_X33_	LCL09B-NX	LCS3B	LSR3B	L-W2	-	-	-
A20U	WN_X33_	LCL09-NX	LCS3	-	L-W2.5	LSW32	SPP3-4	LSP3A

QUICK CHANGE (ISO 26623) H-TYPE HOLDER FOR ISO TURNING ACCEPTS 80° RHOMBIC INSERTS

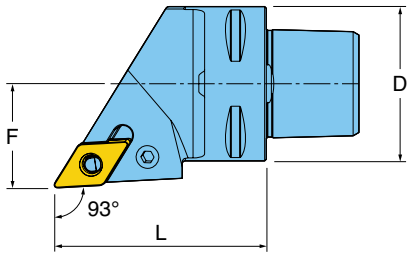


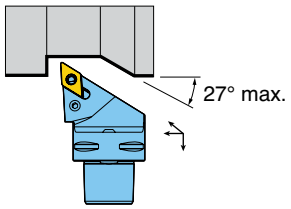
Designation	D	L	F
C4-HCLNL27050-0904	40mm	50mm	27mm
C4-HCLNR27050-0904	40mm	50mm	27mm

HDWR								
	Insert Reference	Lever	Lever Screw	Coolant Nozzle	Seat	Seat Pin	Lever Screw Wrench	Seat Pin Punch
	CN_ _33_	LCL09-NX	LCS3	NZ83	LSC32	LSP3A	L-W2.5	SPP3-4

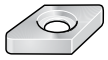
GOLD RHINO SERIES C_-HDJNR/L C-ADAPTER™

QUICK CHANGE (ISO 26623) H-TYPE HOLDER FOR ISO TURNING ACCEPTS 55° RHOMBIC INSERTS



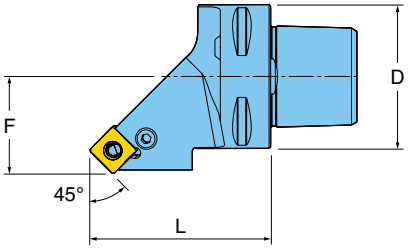


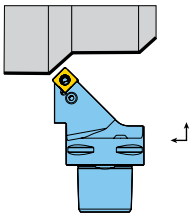
Designation	D	L	F
C4-HDJNL27055-1305	40mm	55mm	27mm
C4-HDJNL27055-1305	40mm	55mm	27mm

HDWR								
	Insert Reference	Lever	Lever Screw	Coolant Nozzle	Seat Pin	Lever Screw Wrench	Seat Pin Punch	Seat
	DN_ _3.53.5_	LCL11-NX	LCS4	NZ83	LSP4	L-W3	SPP3-4	LSD3.52

GOLD RHINO SERIES C_-HSSNR/L C-ADAPTER™

QUICK CHANGE (ISO 26623) H-TYPE HOLDER FOR ISO TURNING ACCEPTS SQUARE INSERTS



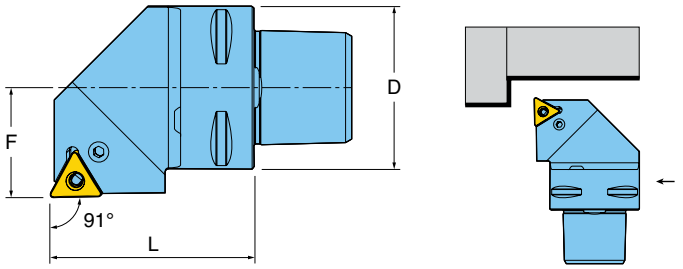


Designation	D	L	F
C4-HSSNL27042-0904	40mm	44mm	27mm
C4-HSSNR27042-0904	40mm	44mm	27mm

HDWR								
	Insert Reference	Lever	Lever Screw	Coolant Nozzle	Seat Pin	Seat	Lever Screw Wrench	Seat Pin Punch
	SN_ _33_	LCL09-NX	LCS3	NZ83	LSP3A	LSS32A	L-W2.5	SPP3-4

GOLD RHINO SERIES C_-HTGNR/L COADAPTER™

QUICK CHANGE (ISO 26623) H-TYPE HOLDER FOR ISO TURNING ACCEPTS TRIANGULAR INSERTS

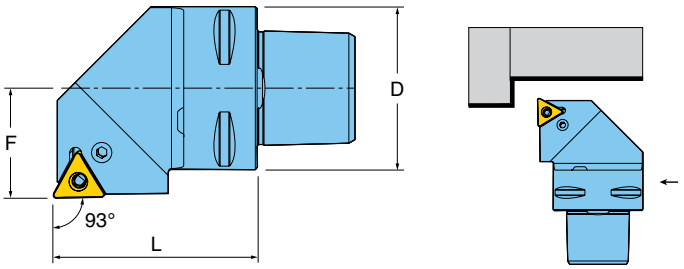


Designation	D	L	F
C4-HTGNL27050-1304	40mm	50mm	27mm
C4-HTGNR27050-1304	40mm	50mm	27mm

HDWR	Insert Reference	Lever	Lever Screw	Coolant Nozzle	Seat Pin	Lever Screw Wrench	Seat Pin Punch	Seat
	TN_ _2.53_	LCL08-NX	LCS3-NX	NZ83	LSP3B	L-W2.5	SPP3-3L	LST2.51.8

GOLD RHINO SERIES C_-HTJNR/L COADAPTER™

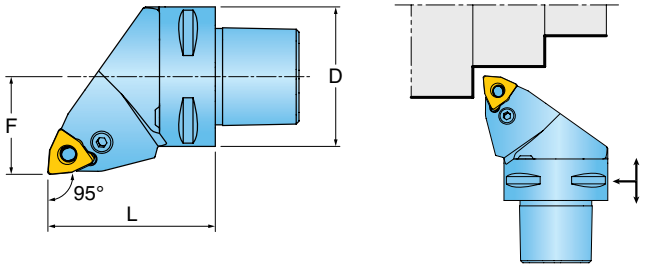
QUICK CHANGE (ISO 26623) H-TYPE HOLDER FOR ISO TURNING ACCEPTS TRIANGULAR INSERTS



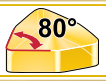
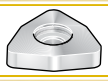
Designation	D	L	F
C4-HTJNL27050-1304	40mm	50mm	27mm
C4-HTJNR27050-1304	40mm	50mm	27mm

HDWR	Insert Reference	Lever	Lever Screw	Coolant Nozzle	Seat Pin	Lever Screw Wrench	Seat Pin Punch	Seat
	TN_ _2.53_	LCL08-NX	LCS3-NX	NZ83	LSP3B	L-W2.5	SPP3-3L	LST2.51.8

QUICK CHANGE (ISO 26623) H-TYPE HOLDER FOR ISO TURNING ACCEPTS 80° TRIGON INSERTS

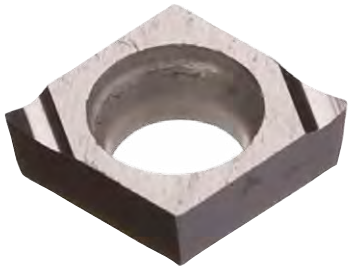


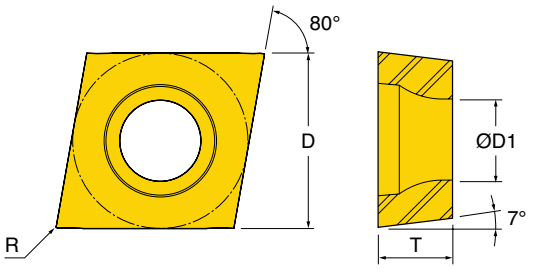
Designation	D	L	F
C4-HWLNL27050-0604	40mm	50mm	27mm
C4-HWLNR27050-0604	40mm	50mm	27mm

HDWR								
	Insert Reference	Lever	Lever Screw	Coolant Nozzle	Seat Pin	Seat	Lever Screw Wrench	Seat Pin Punch
	WN_X33_	LCL09-NX	LCS3	NZ83	LSP3A	LSW32A	L-W2.5	SPP3-4

TOMINI™ SERIES CCGT R/L FF CHIPBREAKER

POSITIVE 7° CLEARANCE 80° RHOMBIC GROUND INSERTS FOR SMALL BORING

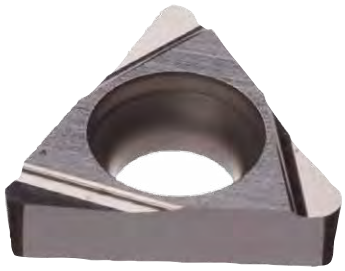


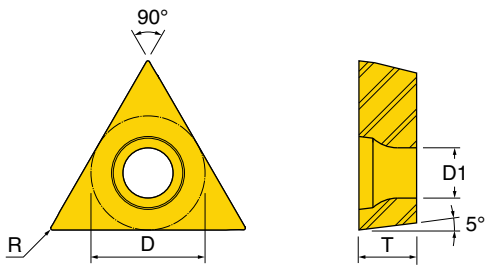


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	D	T	R	D1	Grades	CT3000	TT9020
CCGT1.10.9X0L-FF	CCGT0301003L-FF	0.001	0.004	0.002	0.012	0.138	0.055	0.001	0.079			
CCGT1.10.9X0R-FF	CCGT0301003R-FF	0.001	0.004	0.002	0.012	0.138	0.055	0.001	0.079			
CCGT1.10.90L-FF	CCGT030101L-FF	0.001	0.005	0.003	0.016	0.138	0.055	0.004	0.079			
CCGT1.10.90R-FF	CCGT030101R-FF	0.001	0.005	0.003	0.016	0.138	0.055	0.004	0.079			
CCGT1.10.90.5L-FF	CCGT030102L-FF	0.001	0.006	0.004	0.016	0.138	0.055	0.008	0.079			
CCGT1.10.90.5R-FF	CCGT030102R-FF	0.001	0.006	0.004	0.016	0.138	0.055	0.008	0.079			
CCGT1.10.91L-FF	CCGT030104L-FF	0.002	0.008	0.004	0.016	0.138	0.055	0.016	0.079			
CCGT1.10.91R-FF	CCGT030104R-FF	0.002	0.008	0.004	0.016	0.138	0.055	0.016	0.079			
CCGT1.41.1X0L-FF	CCGT0401003L-FF	0.001	0.004	0.002	0.016	0.169	0.071	0.001	0.090			
CCGT1.41.1X0R-FF	CCGT0401003R-FF	0.001	0.004	0.002	0.016	0.169	0.071	0.001	0.090			
CCGT1.41.10L-FF	CCGT040101L-FF	0.001	0.005	0.004	0.020	0.169	0.071	0.004	0.090			
CCGT1.41.10R-FF	CCGT040101R-FF	0.001	0.005	0.004	0.020	0.169	0.071	0.004	0.090			
CCGT1.41.10.5L-FF	CCGT040102L-FF	0.001	0.005	0.004	0.020	0.169	0.071	0.008	0.090			
CCGT1.41.10.5R-FF	CCGT040102R-FF	0.001	0.005	0.004	0.020	0.169	0.071	0.008	0.090			
CCGT1.41.11L-FF	CCGT040104L-FF	0.002	0.008	0.004	0.020	0.169	0.071	0.016	0.090			
CCGT1.41.11R-FF	CCGT040104R-FF	0.002	0.008	0.004	0.020	0.169	0.071	0.016	0.090			

TOMINI™ SERIES TBGT R/L FF CHIPBREAKER

POSITIVE 5° CLEARANCE TRIANGULAR GROUND INSERTS FOR SMALL BORING



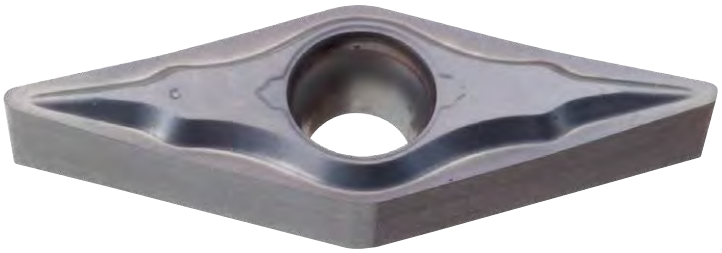


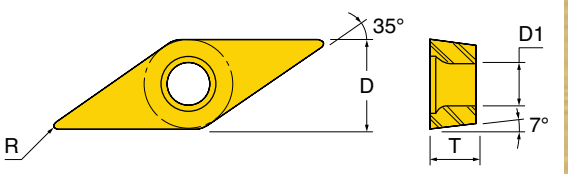
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	D	T	R	D1	Grades	CT3000	TT9020
TBGT1.21X0L-FF	TBGT0601003L-FF	0.001	0.004	0.002	0.012	0.156	0.094	0.001	0.090			
TBGT1.21X0R-FF	TBGT0601003R-FF	0.001	0.004	0.002	0.012	0.156	0.094	0.001	0.090			
TBGT1.210L-FF	TBGT060101L-FF	0.001	0.005	0.003	0.016	0.156	0.094	0.004	0.090			
TBGT1.210R-FF	TBGT060101R-FF	0.001	0.005	0.003	0.016	0.156	0.094	0.004	0.090			
TBGT1.210.5L-FF	TBGT060102L-FF	0.001	0.006	0.004	0.016	0.156	0.094	0.008	0.090			
TBGT1.210.5R-FF	TBGT060102R-FF	0.001	0.006	0.004	0.016	0.156	0.094	0.008	0.090			
TBGT1.211L-FF	TBGT060104L-FF	0.002	0.008	0.004	0.016	0.156	0.094	0.016	0.090			
TBGT1.211R-FF	TBGT060104R-FF	0.002	0.008	0.004	0.016	0.156	0.094	0.016	0.090			

● = P ○ = M ● = K ● = N ● = S ○ = H

TOMINI™ SERIES VCGT SA CHIPBREAKER

POSITIVE 7° CLEARANCE 35° RHOMBIC GROUND INSERTS FOR PRECISION FINISHING

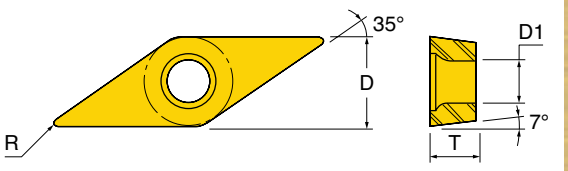




ANSI Number	ISO Number	feed min	feed max	ap min	ap max	D	T	R	D1	Grades	TT5080	TT9020
VCGT220SA	VCGT110301SA	0.001	0.003	0.004	0.060	0.250	0.125	0.004	0.094			
VCGT220.5SA	VCGT110302SA	0.001	0.003	0.008	0.060	0.250	0.125	0.008	0.094			
VCGT221SA	VCGT110304SA	0.001	0.004	0.008	0.060	0.250	0.125	0.016	0.094			

TOMINI™ SERIES VCMT PC CHIPBREAKER

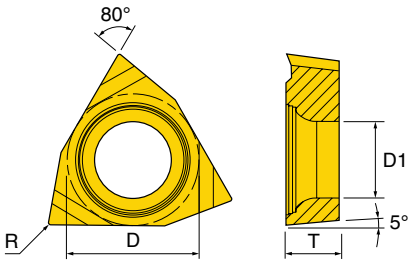
POSITIVE 7° CLEARANCE 35° RHOMBIC INSERTS FOR SEMI-FINISH AND MEDIUM MACHINING



ANSI Number	ISO Number	feed min	feed max	ap min	ap max	D	T	R	D1	Grades	CT3000	PV3010	TT8105	TT8115	TT8125	TT9080	TT9215	TT9225
VCMT1.51.50.5PC	VCMT080202PC	0.001	0.006	0.008	0.059	0.188	0.094	0.008	-									
VCMT1.51.51PC	VCMT080204PC	0.002	0.008	0.008	0.059	0.188	0.094	0.016	-									
VCMT221PC	VCMT110304PC	0.002	0.008	0.004	0.067	0.250	0.125	0.016	0.094									
VCMT331PC	VCMT160404PC	0.002	0.008	0.012	0.079	0.375	0.187	0.016	0.094									
VCMT332PC	VCMT160408PC	0.003	0.008	0.012	0.079	0.375	0.187	0.031	0.094									

● = P ○ = M ● = K ● = N ● = S ○ = H

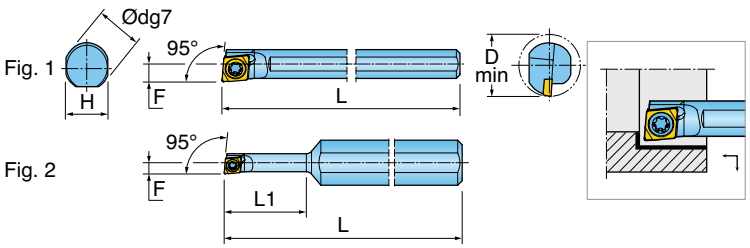
POSITIVE 5° CLEARANCE 80° TRIGON GROUND INSERTS FOR SMALL BORING



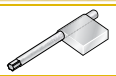
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	D	T	R	D1	Grades CT3000	TT9020
WBGT1.21X0L-FF	WBGT0601003L-FF	0.001	0.004	0.002	0.012	0.156	0.063	0.001	0.090		
WBGT1.21X0R-FF	WBGT0601003R-FF	0.001	0.004	0.002	0.012	0.156	0.063	0.001	0.090		
WBGT1.210L-FF	WBGT060101L-FF	0.001	0.005	0.003	0.016	0.156	0.063	0.004	0.090		
WBGT1.210R-FF	WBGT060101R-FF	0.001	0.005	0.003	0.016	0.156	0.063	0.004	0.090		
WBGT1.210.5L-FF	WBGT060102L-FF	0.001	0.006	0.004	0.016	0.156	0.063	0.008	0.090		
WBGT1.210.5R-FF	WBGT060102R-FF	0.001	0.006	0.004	0.016	0.156	0.063	0.008	0.090		
WBGT1.211L-FF	WBGT060104L-FF	0.002	0.008	0.004	0.016	0.156	0.063	0.016	0.090		
WBGT1.211R-FF	WBGT060104R-FF	0.002	0.008	0.004	0.016	0.156	0.063	0.016	0.090		

● = P ○ = M ● = K ● = N ● = S ○ = H

SCREW-CLAMP BORING BAR ACCEPTS POSITIVE 7° CLEARANCE 80° RHOMBIC INSERTS

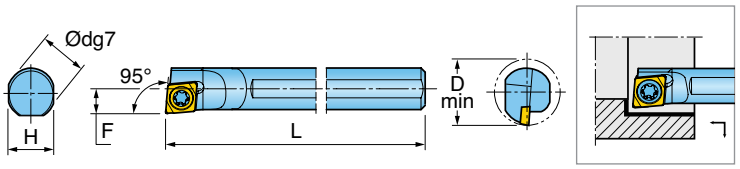


Designation	D	Dmin	L	L1	F	Shape
S04F-SCLCL03-D05	0.157	0.197	3.15	-	0.098	Fig. 1
S04F-SCLCR03-D05	0.157	0.197	3.15	-	0.098	Fig. 1
S05G-SCLCL03-D06	0.197	0.236	3.54	-	0.118	Fig. 1
S05G-SCLCR03-D06	0.197	0.236	3.54	-	0.118	Fig. 1
S06H-SCLCL04-D07	0.236	0.276	3.94	-	0.138	Fig. 1
S06H-SCLCR04-D07	0.236	0.276	3.94	-	0.138	Fig. 1
S07J-SCLCL04-D08	0.276	0.315	4.33	-	0.157	Fig. 1
S07J-SCLCR04-D08	0.276	0.315	4.33	-	0.157	Fig. 1
S10H-SCLCL03-D05	0.394	0.197	3.94	0.591	0.098	Fig. 2
S10H-SCLCR03-D05	0.394	0.197	3.94	0.591	0.098	Fig. 2

HARDWARE	 Insert Reference	 Insert Screw	 Insert Screw Wrench
S04F-SCLCL03-D05	CC_T 1.10.9_	TS16031I	T6
S04F-SCLCR03-D05	CC_T 1.10.9_	TS16031I	T6
S05G-SCLCL03-D06	CC_T 1.10.9_	TS16031I	T6
S05G-SCLCR03-D06	CC_T 1.10.9_	TS16031I	T6
S06H-SCLCL04-D07	CC_T 1.41.1_	TS20038I/HG-P	T6P
S06H-SCLCR04-D07	CC_T 1.41.1_	TS20038I/HG-P	T6P
S07J-SCLCL04-D08	CC_T 1.41.1_	TS20038I/HG-P	T6P
S07J-SCLCR04-D08	CC_T 1.41.1_	TS20038I/HG-P	T6P
S10H-SCLCL03-D05	CC_T 1.10.9_	TS16031I	T6
S10H-SCLCR03-D05	CC_T 1.10.9_	TS16031I	T6

● = P ○ = M ● = K ● = N ● = S ○ = H

SCREW-CLAMP BORING BAR ACCEPTS POSITIVE 7° CLEARANCE 80° RHOMBIC INSERTS

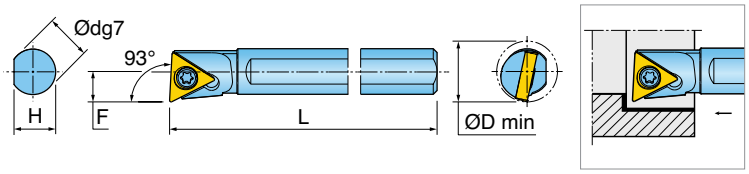


Designation	D	Dmin	L	F
C04G-SCLCL03-D05	0.157	0.197	3.54	0.098
C04G-SCLCR03-D05	0.157	0.197	3.54	0.098
C05H-SCLCL03-D06	0.197	0.236	3.94	0.118
C05H-SCLCR03-D06	0.197	0.236	3.94	0.118
C06J-SCLCL04-D07	0.236	0.276	4.33	0.133
C06J-SCLCR04-D07	0.236	0.276	4.33	0.133
C07K-SCLCL04-D08	0.276	0.315	4.92	0.157
C07K-SCLCR04-D08	0.276	0.315	4.92	0.157

HARDWARE	 Insert Reference	 Insert Screw	 Insert Screw Wrench
C04G-SCLCL03-D05	CC_T 1.10.9_	TS16031I	T6
C04G-SCLCR03-D05	CC_T 1.10.9_	TS16031I	T6
C05H-SCLCL03-D06	CC_T 1.10.9_	TS16031I	T6
C05H-SCLCR03-D06	CC_T 1.10.9_	TS16031I	T6
C06J-SCLCL04-D07	CC_T 1.41.1_	TS20038I/HG-P	T6P
C06J-SCLCR04-D07	CC_T 1.41.1_	TS20038I/HG-P	T6P
C07K-SCLCL04-D08	CC_T 1.41.1_	TS20038I/HG-P	T6P
C07K-SCLCR04-D08	CC_T 1.41.1_	TS20038I/HG-P	T6P

TOMINI™ SERIES S-STUBR/L

SCREW-CLAMP BORING BAR ACCEPTS POSITIVE 5° CLEARANCE TRIANGULAR INSERTS

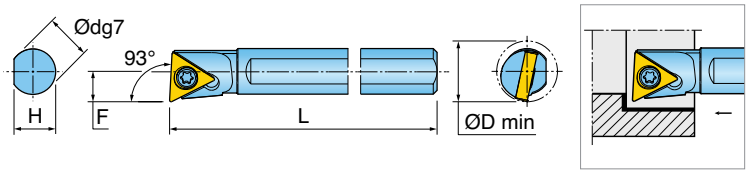


Designation	D	Dmin	L	F
S06H-STUBL06-D08	0.236	0.315	3.94	0.157
S06H-STUBR06-D08	0.236	0.315	3.94	0.157

HARDWARE	 Insert Reference	 Insert Screw	 Insert Screw Wrench
	TB_T1.21 _	SM20-043-00	T6P

TOMINI™ SERIES C-STUBR/L (CARBIDE)

SCREW-CLAMP BORING BAR ACCEPTS POSITIVE 5° CLEARANCE TRIANGULAR INSERTS

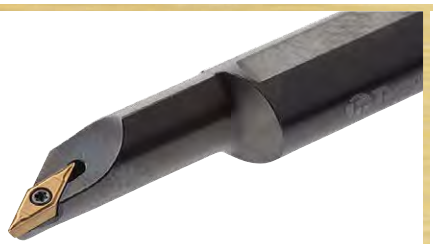


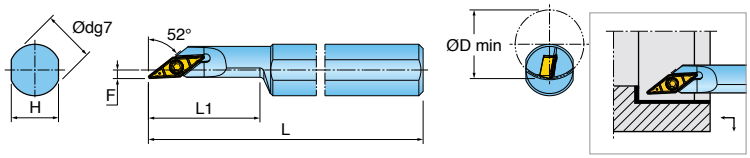
Designation	D	Dmin	L	F
C06J-STUBL06-D08	0.236	0.315	4.33	0.157
C06J-STUBR06-D08	0.236	0.315	4.33	0.157

HARDWARE	 Insert Reference	 Insert Screw	 Insert Screw Wrench
	TB_T1.21 _	SM20-043-00	T6P

TOMINI™ SERIES S-SVJCR/L

SCREW-HELD BORING BAR ACCEPTS POSITIVE 7° CLEARANCE 35° RHOMBIC INSERTS



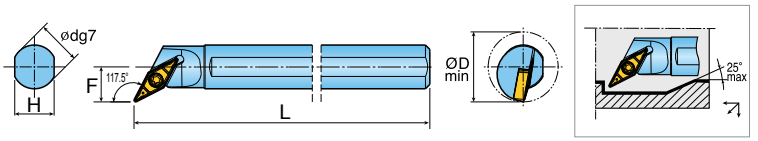


Designation	D	Dmin	L	L1	F
S12M-SVJCL08-D16	0.472	0.630	5.91	1.020	0.079
S12M-SVJCR08-D16	0.472	0.630	5.91	1.020	0.079
S16Q-SVJCL08-D20	0.630	0.787	7.09	1.420	0.079
S16Q-SVJCR08-D20	0.630	0.787	7.09	1.420	0.079

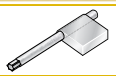
HARDWARE	 Insert Reference	 Insert Screw	 Insert Screw Wrench
	VC_T1.51.5_	TS20038I/HG-P	T6P

TOMINI™ SERIES S-SVPCR/L

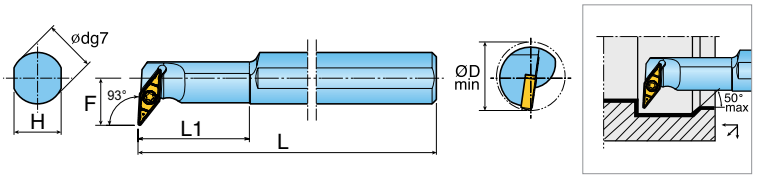
SCREW-HELD BORING BAR ACCEPTS POSITIVE 7° CLEARANCE 35° RHOMBIC INSERTS



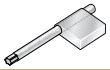
Designation	D	Dmin	L	F
S10K-SVPCL08-D16	0.394	0.630	4.92	0.236
S10K-SVPCR08-D16	0.394	0.630	4.92	0.236
S12M-SVPCL11-D20	0.472	0.787	5.91	0.394
S12M-SVPCR11-D20	0.472	0.787	5.91	0.394

HARDWARE	 Insert Reference	 Insert Screw	 Insert Screw Wrench
S10K-SVPCL08-D16	VC_T1.51.5_	TS20038I/HG-P	T6P
S10K-SVPCR08-D16	VC_T1.51.5_	TS20038I/HG-P	T6P
S12M-SVPCL11-D20	VC_T22_	SM25-065-70	T7
S12M-SVPCR11-D20	VC_T22_	SM25-065-70	T7

SCREW-HELD BORING BAR ACCEPTS POSITIVE 7° CLEARANCE 35° RHOMBIC INSERTS



Designation	D	Dmin	L	L1	F
S12M-SVUCR08-D16	0.472	0.630	5.91	1.020	0.433
S12M-SVUCL08-D16	0.472	0.630	5.91	1.020	0.433
S16Q-SVUCR11-D20	0.630	0.787	7.09	1.260	0.610
S16Q-SVUCL11-D20	0.630	0.787	7.09	1.260	0.610
S20R-SVUCR11-D25	0.787	0.984	7.87	1.570	0.689
S20R-SVUCL11-D25	0.787	0.984	7.87	1.570	0.689

HARDWARE	 Insert Reference	 Insert Screw	 Insert Screw Wrench
S12M-SVUCR/L	VC_T1.51.5_	TS20038I/HG-P	T6P
S16Q-SVUCR/L	VC_T22_	SO 25065I	T 7
S20R-SVUCR/L	VC_T22_	SO 25065I	T 7

TOMINI™ SERIES S-SWUBR/L

SCREW-CLAMP BORING BAR ACCEPTS POSITIVE 5° CLEARANCE 80° TRIGON INSERTS

Fig. 1

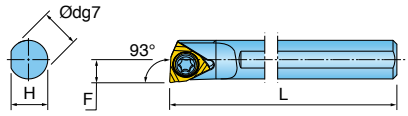
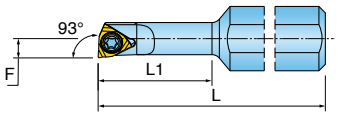
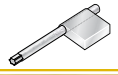


Fig. 2

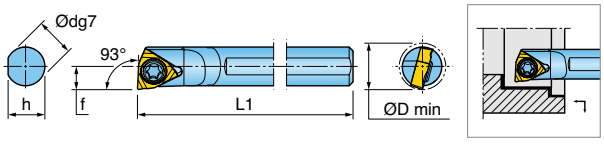


Designation	D	Dmin	L	L1	F	Shape
S05G-SWUBL06-D06	0.197	0.236	3.94	-	0.118	Fig. 1
S05G-SWUBR06-D06	0.197	0.236	3.94	-	0.118	Fig. 1
S06H-SWUBL06-D07	0.236	0.276	4.33	-	0.138	Fig. 1
S06H-SWUBR06-D07	0.236	0.276	4.33	-	0.138	Fig. 1
S07J-SWUBL06-D08	0.276	0.315	4.92	-	0.157	Fig. 1
S07J-SWUBR06-D08	0.276	0.315	4.92	-	0.157	Fig. 1
S10H-SWUBL06-D06	0.394	0.236	3.94	0.709	0.118	Fig. 2
S10H-SWUBR06-D06	0.394	0.236	3.94	0.709	0.118	Fig. 2

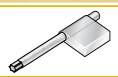
HARDWARE			
	Insert Reference	Insert Screw	Insert Screw Wrench
	WB_T1.21_	TS20038I/HG-P	T6P

TOMINI™ SERIES C-SWUBR/L (CARBIDE)

SCREW-CLAMP BORING BAR ACCEPTS POSITIVE 5° CLEARANCE 80° TRIGON INSERTS

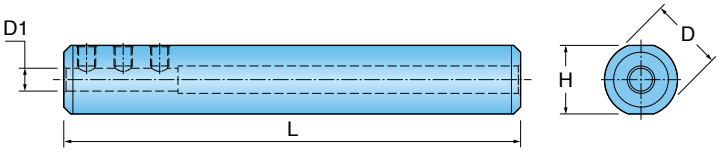


Designation	D	Dmin	L	F
C05H-SWUBL06-D06	0.197	0.236	3.94	0.118
C05H-SWUBR06-D06	0.197	0.236	3.94	0.118
C06J-SWUBL06-D07	0.236	0.276	4.33	0.133
C06J-SWUBR06-D07	0.236	0.276	4.33	0.133
C07K-SWUBL06-D08	0.276	0.315	4.92	0.157
C07K-SWUBR06-D08	0.276	0.315	4.92	0.157

HARDWARE			
	Insert Reference	Insert Screw	Insert Screw Wrench
	WB_T1.21_	TS20038I/HG-P	T6P

T-MINI™ SERIES TSL T-MINI-M

SLEEVES FOR T-MINI BORING BARS METRIC TO METRIC

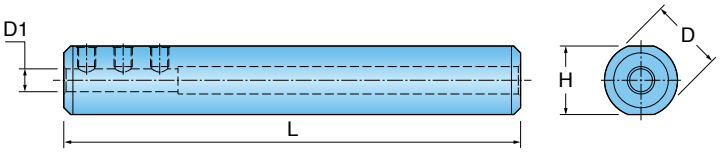


Designation	D (mm)	D1 (mm)	L (mm)
TSL16-04	16mm	4mm	100mm
TSL16-05	16mm	5mm	100mm
TSL16-06	16mm	6mm	100mm
TSL16-07	16mm	7mm	100mm

HARDWARE	 Set Screw Wrench	 Set Screw
	L-W2	SS-M4X0.7X4

T-MINI™ SERIES TSL T-MINI-I

SLEEVES FOR T-MINI BORING BARS INCH TO METRIC



Designation	D (inch)	D1 (mm)	L (inch)
TSL15.88-04-MINI	0.625	4mm	3.940
TSL15.88-05-MINI	0.625	5mm	3.940
TSL15.88-06-MINI	0.625	6mm	3.940
TSL15.88-07-MINI	0.625	7mm	3.940
TSL19.05-04-MINI	0.750	4mm	3.940
TSL19.05-05-MINI	0.750	5mm	3.940
TSL19.05-06-MINI	0.750	6mm	3.940
TSL19.05-07-MINI	0.750	7mm	3.940
TSL19.05-10-MINI	0.750	10mm	3.940
TSL19.05-12-MINI	0.750	12mm	3.940

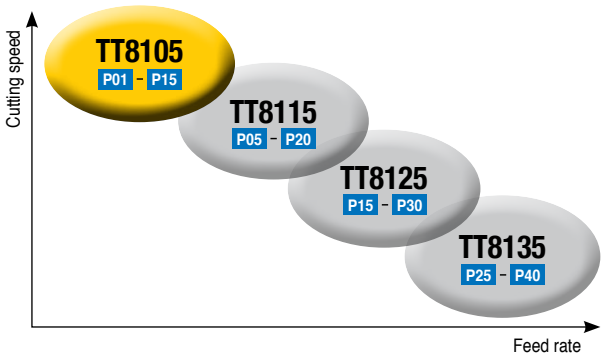
HARDWARE	 Set Screw Wrench	 Set Screw
	L-W2	SS-M4X0.7X4

TT8105: A New Grade for Turning Steel at High Speeds

Features & Benefits:

- *Gold-Life+ structured coating technology*
- *High-speed turning of steel in continuous cutting applications*
- *Maximum wear-resistant carbide grade*
- *Gold-Rush treatment provides smooth & stable cutting edge*
- *Expands our existing TT81xx series grades to a broader range of applications*

CVD Coating Application Range



T•TURN™

Designation ANSI	Designation ISO	Grades	TT8105
CCMT21.51MT	CCMT060204MT		●
CCMT21.51PC	CCMT060204PC		●
CCMT32.51MT	CCMT09T304MT		●
CCMT32.52MT	CCMT09T308MT		●
CCMT32.52PC	CCMT09T308PC		●
CCMT432MT	CCMT120408MT		●
CNMG431FC	CNMG120404FC		●
CNMG431FG	CNMG120404FG		●
CNMG431MC	CNMG120404MC		●
CNMG431MT	CNMG120404MT		●
CNMG431PC	CNMG120404PC		●
CNMG432FC	CNMG120408FC		●
CNMG432FG	CNMG120408FG		●
CNMG432MC	CNMG120408MC		●
CNMG432MT	CNMG120408MT		●
CNMG432PC	CNMG120408PC		●
CNMG432RT	CNMG120408RT		●
CNMG433FC	CNMG120412FC		●
CNMG433MC	CNMG120412MC		●
CNMG433MT	CNMG120412MT		●
CNMG433PC	CNMG120412PC		●
CNMG433RT	CNMG120412RT		●
CNMG434RT	CNMG120416RT		●
CNMG542MT	CNMG160608MT		●
CNMG543MT	CNMG160612MT		●
CNMG543PC	CNMG160612PC		●

Designation ANSI	Designation ISO	Grades	TT8105
CNMG543RT	CNMG160612RT		●
CNMG544MT	CNMG160616MT		●
CNMG544RT	CNMG160616RT		●
CNMG642MT	CNMG190608MT		●
CNMG642RT	CNMG190608RT		●
CNMG643MT	CNMG190612MT		●
CNMG643RT	CNMG190612RT		●
CNMG644MT	CNMG190616MT		●
CNMG644RT	CNMG190616RT		●
CNMG866RT	CNMG250924RT		●
CNMX43.52HB	CNMX120508HB		●
CNMX43.53HB	CNMX120512HB		●
CNMX553HB	CNMX160712HB		●
CNMX554HB	CNMX160716HB		●
DCMT21.51FG	DCMT070204FG		●
DCMT32.51FG	DCMT11T304FG		●
DCMT32.51MT	DCMT11T304MT		●
DCMT32.52FG	DCMT11T308FG		●
DNMG431FC	DNMG150404FC		●
DNMG431FG	DNMG150404FG		●
DNMG431MT	DNMG150404MT		●
DNMG431PC	DNMG150404PC		●
DNMG432FC	DNMG150408FC		●
DNMG432FG	DNMG150408FG		●
DNMG432MC	DNMG150408MC		●
DNMG432MT	DNMG150408MT		●

● = P ○ = M ● = K ● = N ● = S ○ = H

Designation ANSI	Designation ISO	Grades	TT8105
DNMG432PC	DNMG150408PC		●
DNMG432RT	DNMG150408RT		●
DNMG433FC	DNMG150412FC		●
DNMG433FG	DNMG150412FG		●
DNMG433MC	DNMG150412MC		●
DNMG433MT	DNMG150412MT		●
DNMG433PC	DNMG150412PC		●
DNMG433RT	DNMG150412RT		●
DNMG442FC	DNMG150608FC		●
DNMG442PC	DNMG150608PC		●
DNMG443PC	DNMG150612PC		●
SCMT32.51MT	SCMT09T304MT		●
SCMT433MT	SCMT120412MT		●
SNMG431MT	SNMG120404MT		●
SNMG432FG	SNMG120408FG		●
SNMG432MC	SNMG120408MC		●
SNMG432MT	SNMG120408MT		●
SNMG432PC	SNMG120408PC		●
SNMG432RT	SNMG120408RT		●
SNMG433MC	SNMG120412MC		●
SNMG433PC	SNMG120412PC		●
SNMG433RT	SNMG120412RT		●
SNMG434RT	SNMG120416RT		●
SNMG543MT	SNMG150612MT		●
SNMG543RT	SNMG150612RT		●
SNMG643RT	SNMG190612RT		●
SNMG644RT	SNMG190616RT		●
TCMT32.52MT	TCMT16T308MT		●
TNMG331FC	TNMG160404FC		●
TNMG331FG	TNMG160404FG		●
TNMG331MT	TNMG160404MT		●
TNMG332FC	TNMG160408FC		●
TNMG332FG	TNMG160408FG		●
TNMG332MC	TNMG160408MC		●
TNMG332MT	TNMG160408MT		●
TNMG332PC	TNMG160408PC		●
TNMG331PC	TNMG16040PC		●
TNMG333FC	TNMG160412FC		●
TNMG333FG	TNMG160412FG		●
TNMG333MT	TNMG160412MT		●
TNMG333PC	TNMG160412PC		●
TNMG431MT	TNMG220404MT		●

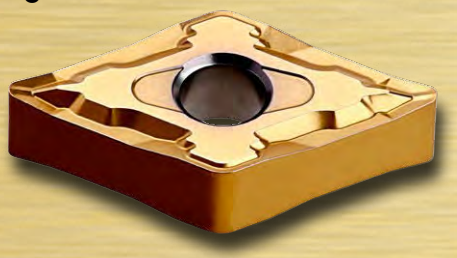
Designation ANSI	Designation ISO	Grades	TT8105
TNMG432FG	TNMG220408FG		●
TNMG432MT	TNMG220408MT		●
TNMG432PC	TNMG220408PC		●
TNMG432RT	TNMG220408RT		●
TNMG433MT	TNMG220412MT		●
TNMG433PC	TNMG220412PC		●
TNMG433RT	TNMG220412RT		●
VBMT331FG	VBMT160404FG		●
VBMT331MT	VBMT160404MT		●
VBMT331PC	VBMT160404PC		●
VBMT332FG	VBMT160408FG		●
VBMT332FX	VBMT160408FX		●
VBMT332MT	VBMT160408MT		●
VBMT332PC	VBMT160408PC		●
VBMT333FC	VBMT160412FC		●
VCMT332PC	VCMT160408PC		●
VNMG331FG	VNMG160404FG		●
VNMG331FX	VNMG160404FX		●
VNMG331MT	VNMG160404MT		●
VNMG332FG	VNMG160408FG		●
VNMG332FX	VNMG160408FX		●
VNMG332MT	VNMG160408MT		●
VNMG332PC	VNMG160408PC		●
WNMG431FC	WNMG080404FC		●
WNMG431FG	WNMG080404FG		●
WNMG431MT	WNMG080404MT		●
WNMG432FC	WNMG080408FC		●
WNMG432FG	WNMG080408FG		●
WNMG432MC	WNMG080408MC		●
WNMG432MT	WNMG080408MT		●
WNMG432PC	WNMG080408PC		●
WNMG432RT	WNMG080408RT		●
WNMG433MC	WNMG080412MC		●
WNMG433MT	WNMG080412MT		●
WNMG433PC	WNMG080412PC		●
WNMG433RT	WNMG080412RT		●
WNMG434MT	WNMG080416MT		●
WNMG434RT	WNMG080416RT		●

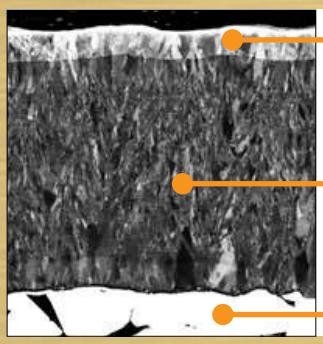
● = P ○ = M ● = K ● = N ● = S ○ = H

TT8080: Superior Performance in Stainless and High Temperature Alloys

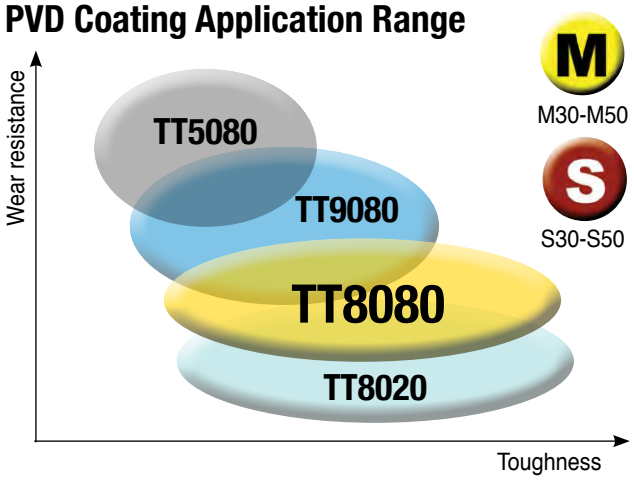
Features & Benefits:

- *Excellent performance in stainless steel under low cutting speed and interrupted cutting conditions.*
- *Improved coating technology with enhanced wear resistance for long tool life.*
- *Very strong coating adhesion eliminates coating layer delamination.*
- *Features post-coat Gold-Rush treatment for reduced build-up and more stable cutting edge.*





PVD Coating Application Range



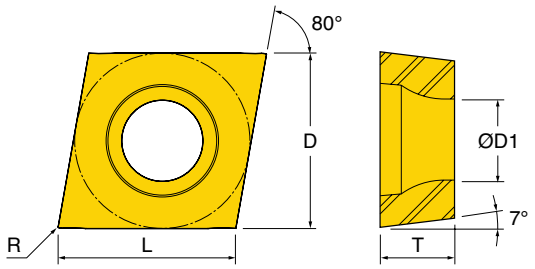
TOTURN™

Designation ANSI	Designation ISO	Grades	TT8080
CNMG431EA	CNMG120404EA		◑
CNMG431EM	CNMG120404EM		◑
CNMG431ML	CNMG120404ML		◑
CNMG431MP	CNMG120404MP		◑
CNMG432EM	CNMG120408EM		◑
CNMG432ML	CNMG120408ML		◑
CNMG432MP	CNMG120408MP		◑
CNMG433ML	CNMG120412ML		◑
DNMG431EA	DNMG150404EA		◑
DNMG431ML	DNMG150404ML		◑
DNMG432EM	DNMG150408EM		◑
DNMG432ML	DNMG150408ML		◑
TNMG331EA	TNMG160404EA		◑
TNMG332EM	TNMG160408EM		◑
TNMG331ML	TNMG160404ML		◑
TNMG332ML	TNMG160408ML		◑
WNMG332EM	WNMG060408EM		◑
WNMG431EA	WNMG080404EA		◑
WNMG431EM	WNMG080404EM		◑
WNMG432EM	WNMG080408EM		◑
WNMG432ML	WNMG080408ML		◑

● = P ○ = M ● = K ● = N ● = S ○ = H

TOTURN™ SERIES CCMT FA CHIPBREAKER

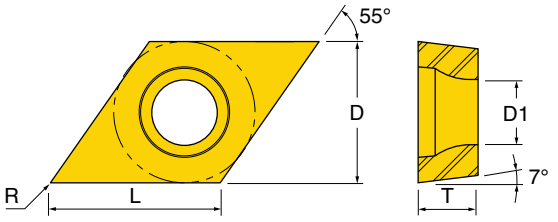
POSITIVE 7° CLEARANCE 80° RHOMBIC INSERTS FOR SUPER FINISHING



ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	D1	Grades	CT3000	PV3010	TT5080	TT5100	TT8020	TT8125
CCMT21.50.5FA	CCMT060202FA	0.002	0.006	0.004	0.059	0.244	0.250	0.094	0.008	0.110		●		●	●		
CCMT21.51FA	CCMT060204FA	0.002	0.006	0.004	0.059	0.236	0.250	0.094	0.016	0.110		●	●	●	●	●	●
CCMT32.50.5FA	CCMT09T302FA	0.002	0.006	0.004	0.079	0.370	0.375	0.156	0.008	0.173		●	●	●	●		
CCMT32.51FA	CCMT09T304FA	0.002	0.008	0.004	0.079	0.362	0.375	0.156	0.016	0.173		●	●	●	●	●	●
CCMT32.52FA	CCMT09T308FA	0.004	0.010	0.008	0.079	0.346	0.375	0.156	0.031	0.173			●	●	●		●

TOTURN™ SERIES DCMT FA CHIPBREAKER

POSITIVE 7° CLEARANCE 55° RHOMBIC INSERTS FOR SUPER FINISHING

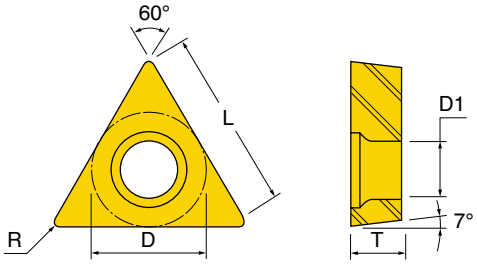


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	D1	Grades	CT3000	PV3010	TT5080	TT5100	TT8115	TT8125	TT9080	TT9215
DCMT21.50.5FA	DCMT070202FA	0.002	0.006	0.006	0.060	0.295	0.250	0.094	0.008	0.110		●	●	●	●			●	
DCMT21.51FA	DCMT070204FA	0.002	0.008	0.008	0.060	0.287	0.250	0.094	0.016	0.110		●	●	●	●	●	●		
DCMT32.50.5FA	DCMT11T302FA	0.002	0.006	0.006	0.060	0.445	0.375	0.156	0.008	0.173		●	●	●	●				○
DCMT32.51FA	DCMT11T304FA	0.002	0.008	0.008	0.080	0.441	0.375	0.156	0.016	0.173		●	●	●	●	●	●		
DCMT32.52FA	DCMT11T308FA	0.003	0.010	0.012	0.080	0.425	0.375	0.156	0.031	0.173		●	●	●	●	●	●		

● = P ○ = M ● = K ● = N ● = S ○ = H

TOTURN™ SERIES TCMT FA CHIPBREAKER

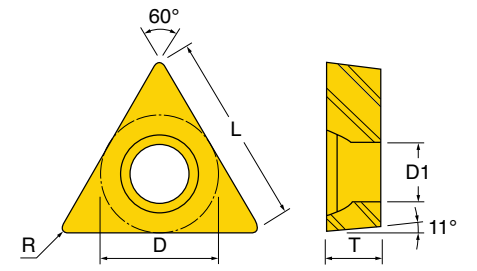
POSITIVE 7° CLEARANCE TRIANGULAR INSERTS FOR SUPER FINISHING



ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	D1	Grades	CT3000	PV3010	TT5080	TT5100	TT8125	TT9080
TCMT21.50.5FA	TCMT110202FA	0.001	0.006	0.004	0.059	0.433	0.250	0.094	0.008	0.110		●		●		●	●
TCMT21.51FA	TCMT110204FA	0.002	0.006	0.004	0.059	0.394	0.250	0.094	0.016	0.110		●	●		●	●	

TOTURN™ SERIES TPMT FA CHIPBREAKER

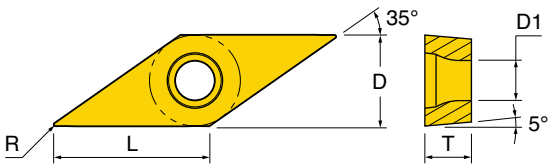
POSITIVE 11° CLEARANCE TRIANGULAR INSERTS FOR SUPER FINISHING



ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	D1	Grades	CT3000	PV3010	TT5080	TT5100	TT8020	TT8115	TT8125
TPMT730.5FA	TPMT090202FA	0.001	0.006	0.004	0.047	0.376	0.219	0.094	0.008	0.098		●	●	●	●	●	●	●
TPMT731FA	TPMT090204FA	0.002	0.008	0.008	0.047	0.339	0.219	0.094	0.016	0.098		●	●	●	●	●	●	●
TPMT32.51FA	TPMT16T304FA	0.002	0.008	0.008	0.079	0.610	0.375	0.156	0.016	0.173		●	●	●	●	●	●	●
TPMT32.52FA	TPMT16T308FA	0.003	0.010	0.012	0.079	0.571	0.375	0.156	0.031	0.173		●	●	●	●	●	●	●

● = P ○ = M ● = K ● = N ● = S ○ = H

POSITIVE 5° CLEARANCE 35° RHOMBIC INSERTS FOR SUPER FINISHING

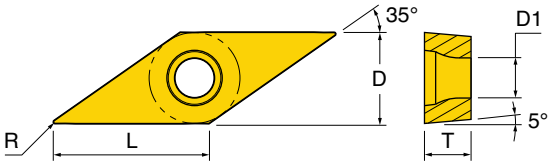


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	D1	Grades	CT3000	PV3010	TT5080	TT5100	TT8115	TT8125
VBMT221FA	VBMT110304FA	0.002	0.008	0.008	0.060	0.390	0.250	0.125	0.016	0.110							
VBMT331FA	VBMT160404FA	0.002	0.008	0.008	0.080	0.614	0.375	0.187	0.016	0.173							
VBMT332FA	VBMT160408FA	0.003	0.010	0.012	0.080	0.575	0.375	0.187	0.031	0.173							

● = P ○ = M ● = K ● = N ● = S ○ = H

TOTURN™ SERIES VBMT FX CHIPBREAKER

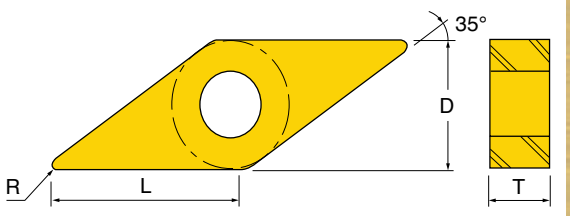
POSITIVE 5° CLEARANCE 35° RHOMBIC INSERTS FOR BALL STUD AND PULLEY MACHINING



ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	D1	Grades	CT3000	PV3010	TT8115	TT8125
VBMT331FX	VBMT160404FX	0.002	0.008	0.008	0.080	0.614	0.375	0.187	0.016	0.173		●	●	●	●
VBMT332FX	VBMT160408FX	0.003	0.008	0.008	0.080	0.575	0.375	0.187	0.031	0.173		●	●	●	●

TOTURN™ SERIES VNMG FX CHIPBREAKER

NEGATIVE 35° RHOMBIC INSERTS FOR BALL STUD AND PULLEY MACHINING

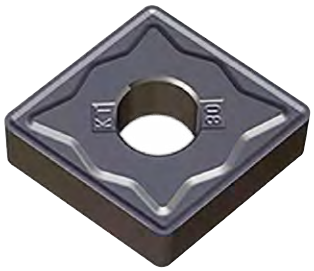


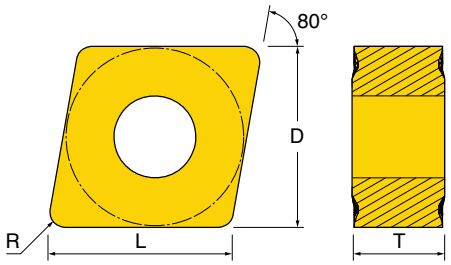
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	CT3000	PV3010	TT8105	TT8115	TT8125
VNMG331FX	VNMG160404FX	.002	.008	.008	.080	.614	.375	.187	.016		●		●	●	●
VNMG332FX	VNMG160408FX	.003	.008	.008	.080	.575	.375	.187	.031		●	●	●	●	●

● = P ○ = M ● = K ● = N ● = S ○ = H

TOTURN™ SERIES CNMG KT CHIPBREAKER

NEGATIVE 80° RHOMBIC INSERTS FOR ROUGHING

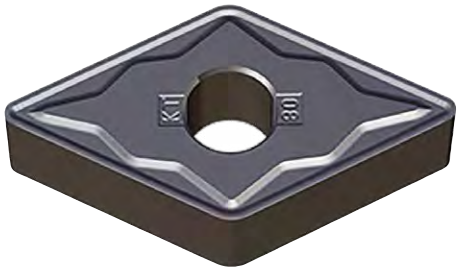


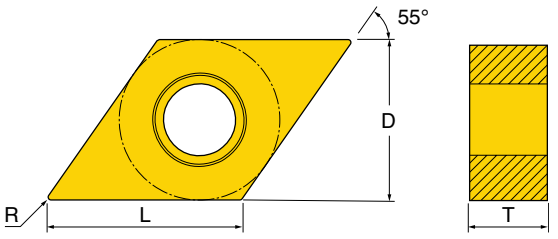


ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT7005	TT7015
CNMG432KT	CNMG120408KT	.007	.021	.015	.276	.472	.500	.187	.031		●	●
CNMG433KT	CNMG120412KT	.010	.028	.020	.276	.457	.500	.187	.047		●	●
CNMG434KT	CNMG120416KT	.011	.033	.030	.276	.441	.500	.187	.063		●	●
CNMG543KT	CNMG160612KT	.010	.028	.030	.354	.583	.625	.250	.047		●	●
CNMG544KT	CNMG160616KT	.012	.033	.040	.354	.567	.625	.250	.063		●	●
CNMG643KT	CNMG190612KT	.010	.028	.040	.551	.713	.750	.375	.047		●	●
CNMG644KT	CNMG190616KT	.012	.033	.060	.551	.697	.750	.375	.063		●	●

TOTURN™ SERIES DNMG KT CHIPBREAKER

NEGATIVE 55° RHOMBIC INSERTS FOR ROUGHING



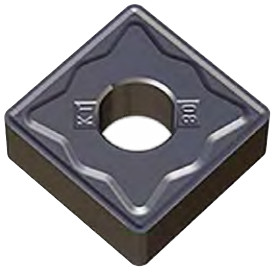


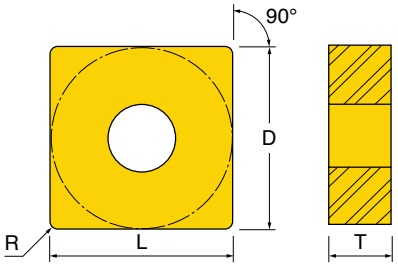
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades	TT7005	TT7015
DNMG432KT	DNMG150408KT	.007	.019	.015	.276	.579	.500	.187	.031		●	●
DNMG433KT	DNMG150412KT	.009	.025	.020	.276	.567	.500	.187	.047		●	●
DNMG442KT	DNMG150608KT	.007	.019	.015	.276	.579	.500	.250	.031		●	●
DNMG443KT	DNMG150612KT	.009	.025	.020	.276	.567	.500	.250	.047		●	●

● = P ○ = M ● = K ● = N ● = S ○ = H

T-TURN™ SERIES SNMG KT CHIPBREAKER

NEGATIVE SQUARE INSERTS FOR ROUGHING

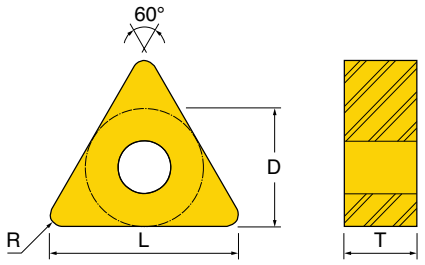




ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades TT7005	TT7015
SNMG432KT	SNMG120408KT	.007	.021	.015	.276	.469	.500	.187	.031	●	●
SNMG433KT	SNMG120412KT	.011	.028	.020	.276	.453	.500	.187	.047	●	●
SNMG434KT	SNMG120416KT	.012	.030	.030	.276	.437	.500	.187	.063	●	●
SNMG543KT	SNMG150612KT	.012	.030	.024	.335	.575	.625	.250	.047	●	●
SNMG544KT	SNMG150616KT	.012	.033	.035	.355	.559	.625	.250	.063	●	●
SNMG644KT	SNMG190616KT	.012	.033	.051	.472	.685	.750	.313	.063	●	●

T-TURN™ SERIES TNMG KT CHIPBREAKER

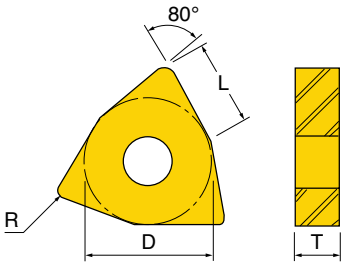
NEGATIVE TRIANGULAR INSERTS FOR ROUGHING



ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades TT7005	TT7015
TNMG332KT	TNMG160408KT	.007	.017	.013	.244	.571	.375	.187	.031	●	●
TNMG333KT	TNMG160412KT	.008	.022	.018	.248	.531	.375	.187	.047	●	●
TNMG432KT	TNMG220408KT	.007	.021	.015	.276	.787	.500	.187	.031	●	●
TNMG433KT	TNMG220412KT	.010	.028	.020	.276	.748	.500	.187	.047	●	●

● = P ○ = M ● = K ● = N ● = S ○ = H

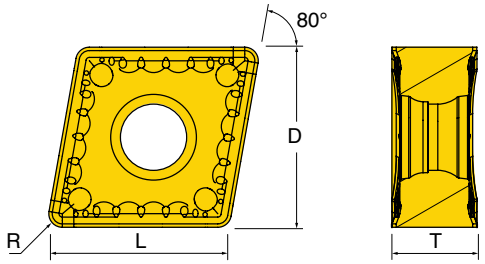
NEGATIVE 80° TRIGON INSERTS FOR ROUGHING



ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades TT7005	TT7015
WNMG432KT	WNMG080408KT	.007	.019	.011	.217	.327	.500	.187	.031	●	●
WNMG433KT	WNMG080412KT	.009	.025	.015	.217	.323	.500	.187	.047	●	●
WNMG434KT	WNMG080416KT	.010	.024	.020	.217	.319	.500	.187	.063	●	●

● = P ○ = M ● = K ● = N ● = S ○ = H

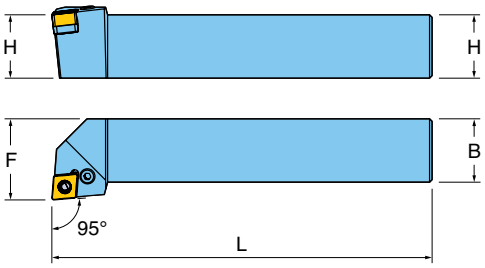
NEGATIVE 80° RHOMBIC INSERTS WITH HB CHIPBREAKER FOR SEMI HEAVY TURNING



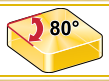
ANSI Number	ISO Number	feed min	feed max	ap min	ap max	L	D	T	R	Grades TT5080	TT8105	TT8115	TT8125	TT8135	TT9080
CNMX43.52HB	CNMX120508HB	.010	.031	.060	.236	.472	.500	.219	.031		●	●	●	●	◔
CNMX43.53HB	CNMX120512HB	.010	.031	.060	.236	.457	.500	.219	.047		●	●	●	●	◔
CNMX553HB	CNMX160712HB	.012	.031	.060	.315	.583	.625	.272	.047	◑	●	●	●	●	◔
CNMX554HB	CNMX160716HB	.012	.031	.060	.315	.567	.625	.272	.063		●	●	●	●	◔

● = P ○ = M ● = K ● = N ● = S ○ = H

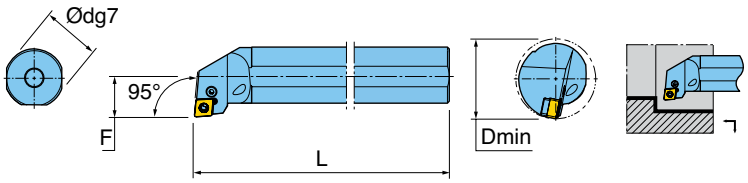
HOOK-LEVER-HOLDER FOR EXTERNAL TURNING ACCEPTS NEGATIVE 80° RHOMBIC CNMX HB INSERTS



Designation	H	B	L	F
HCLNL12-43.5B	0.750	0.750	4.500	1.000
HCLNR12-43.5B	0.750	0.750	4.500	1.000
HCLNL16-43.5D	1.000	1.000	6.000	1.250
HCLNL16-55D	1.000	1.000	6.000	1.250
HCLNR16-43.5D	1.000	1.000	6.000	1.250
HCLNR16-55D	1.000	1.000	6.000	1.250
HCLNL20-43.5E	1.250	1.250	7.000	1.500
HCLNL20-55E	1.250	1.250	7.000	1.500
HCLNR20-43.5E	1.250	1.250	7.000	1.500
HCLNR20-55E	1.250	1.250	7.000	1.500
HCLNL24-55E	1.500	1.500	7.000	1.750
HCLNR24-55E	1.500	1.500	7.000	1.750

HARDWARE							
	Turning Holder Insert Reference	Lever	Lever Screw	Seat	Seat Pin	Seat Pin Punch	Lever Screw Wrench
HCLNL12-43.5B	CN_ X 43.5_	LCL12-NX	LCS5-L21	LSC43-NX	LSP4	SPP3-4	L-W3
HCLNR12-43.5B	CN_ X 43.5_	LCL12-NX	LCS5-L21	LSC43-NX	LSP4	SPP3-4	L-W3
HCLNL16-43.5D	CN_ X 43.5_	LCL12-NX	LCS5	LSC43-NX	LSP4	SPP3-4	L-W3
HCLNL16-55D	CN_ X 55_	LCL16-NX	LCS5-L25.5	LSC54-NX	LSP5	SPP5-6	L-W3
HCLNR16-43.5D	CN_ X 43.5_	LCL12-NX	LCS5	LSC43-NX	LSP4	SPP3-4	L-W3
HCLNR16-55D	CN_ X 55_	LCL16-NX	LCS5-L25.5	LSC54-NX	LSP5	SPP5-6	L-W3
HCLNL20-43.5E	CN_ X 43.5_	LCL12-NX	LCS5	LSC43-NX	LSP4	SPP3-4	L-W3
HCLNL20-55E	CN_ X 55_	LCL16-NX	LCS5-L25.5	LSC54-NX	LSP5	SPP5-6	L-W3
HCLNR20-43.5E	CN_ X 43.5_	LCL12-NX	LCS5	LSC43-NX	LSP4	SPP3-4	L-W3
HCLNR20-55E	CN_ X 55_	LCL16-NX	LCS5-L25.5	LSC54-NX	LSP5	SPP5-6	L-W3
HCLNL24-55E	CN_ X 55_	LCL16-NX	LCS5-L25.5	LSC54-NX	LSP5	SPP5-6	L-W3
HCLNR24-55E	CN_ X 55_	LCL16-NX	LCS5-L25.5	LSC54-NX	LSP5	SPP5-6	L-W3

HOOK-LEVER-BORING BAR FOR INTERNAL TURNING ACCEPTS NEGATIVE 80° RHOMBIC CNMX HB INSERTS, COOLANT THRU



Designation	D	Dmin	L	F
A20U-HCLNL-43.5	1.250	1.500	14.00	0.765
A20U-HCLNR-43.5	1.250	1.500	14.00	0.765
A24U-HCLNL-43.5	1.500	1.750	14.00	0.890
A24U-HCLNR-43.5	1.500	1.750	14.00	0.890

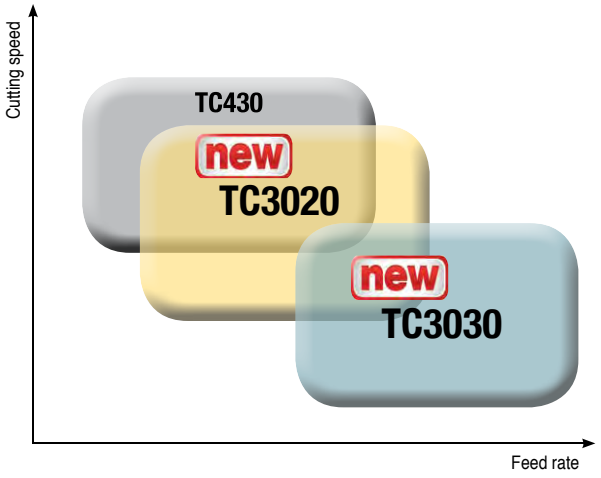
HARDWARE						
	Lever	Lever Screw	Seat Pin	Lever Screw Wrench	Seat Pin Punch	Seat
A20U-HCLNL-43.5	LCL12-NX	LCS5-L21	LSP4	L-W3	SPP3-4	LSC42-NXS
A20U-HCLNR-43.5	LCL12-NX	LCS5-L21	LSP4	L-W3	SPP3-4	LSC42-NXS
A24U-HCLNL-43.5	LCL12-NX	LCS5	LSP4	L-W3	SPP3-4	LSC42-NXS
A24U-HCLNR-43.5	LCL12-NX	LCS5	LSP4	L-W3	SPP3-4	LSC42-NXS

TC3020 & TC3030: New Ceramic Grades for High Temperature Alloy Machining

Features & Benefits:

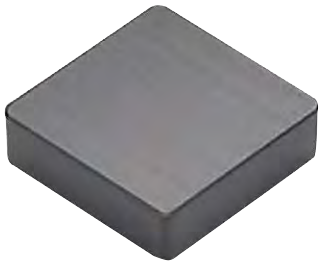
- *TC430: Whisker - Maximum wear resistance*
- *TC3020: SiAlON - Highly wear resistant*
- *TC3030: SiAlON - Extremely tough grade*

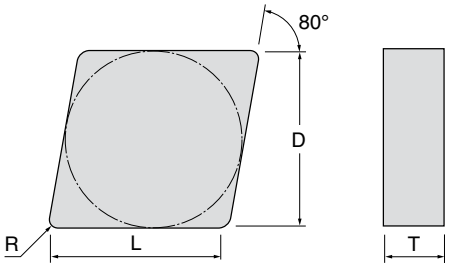
Application Range for High-Temp



TOTURN™ SERIES CNG

80° RHOMBIC CERAMIC INSERTS, NO HOLE

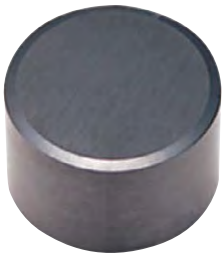


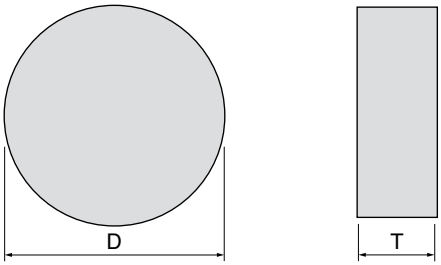


ANSI Number	ISO Number	L	D	T	R	Grades TC3020	TC3030	TC430
CNG432E	CNGN120408E	0.472	0.500	0.187	0.031		●	
CNG432T6	CNGN120408T6	0.500	0.500	0.187	0.031			●
CNG433E	CNGN120412E	0.500	0.500	0.187	0.047		●	
CNG433T6	CNGN120412T6	0.500	0.500	0.187	0.047			●
CNG452E	CNGN120708E	0.472	0.500	0.313	0.031		●	
CNG452T6	CNGN120708T6	0.500	0.500	0.312	0.031	●		●
CNG453E	CNGN120712E	0.457	0.500	0.313	0.047		●	
CNG453T6	CNGN120712T6	0.500	0.500	0.312	0.047	●		●
CNG454T6	CNGN120716T6	0.500	0.500	0.312	0.047	●		

● = P ● = M ● = K ● = N ● = S ● = H

ROUND CERAMIC INSERTS



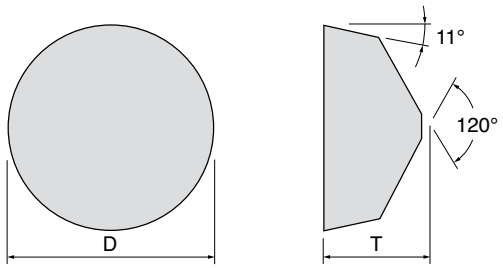


ANSI Number	ISO Number	D	T	Grades	TC3020	TC3030	TC430
RNG32T6	RNGN090300T6	0.375	0.125				●
RNG43T6	RNGN120400T6	0.500	0.187				●
RNG45E04	RNGN120700E04	0.500	0.313		●	●	
RNG45T6	RNGN120700T6	0.500	0.313		●	●	●
RNG65T6	RNGN190700T6	0.750	0.312				●

T6 = .004" @ 20°
E04 = .002" hone

● = P ● = M ● = K ● = N ● = S ● = H

POSITIVE 11° CLEARANCE ROUND V-BOTTOM CERAMIC INSERTS

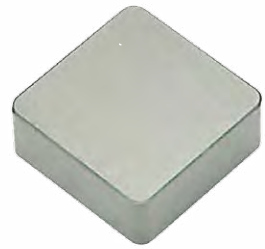


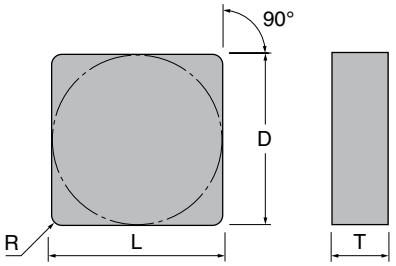
ANSI Number	ISO Number	D	T	Grades	TC3020	TC3030	TC430
RPGX35E04	RPGX090700E04	0.375	0.312		●	●	
RPGX35T6	RPGX090700T6	0.375	0.312		●	●	●
RPGX45E04	RPGX120700E04	0.500	0.312		●	●	
RPGX45T6	RPGX120700T6	0.500	0.312		●	●	●

T6 = .004" @ 20°
E04 = .002" hone

● = P ○ = M ● = K ● = N ● = S ○ = H

SQUARE CERAMIC INSERTS, NO HOLE





ANSI Number	ISO Number	L	D	T	R	Grades TC3020	TC3030	TC430
SNG432T6	SNGN120408T6	0.500	0.500	0.187	0.031			●
SNG433T6	SNGN120412T6	0.500	0.500	0.187	0.047			●
SNG452T6	SNGN120708T6	0.500	0.500	0.312	0.031			●
SNG453T6	SNGN120712T6	0.500	0.500	0.312	0.047	●	●	●

T6 = .004" @ 20°

● = P ● = M ● = K ● = N ● = S ● = H

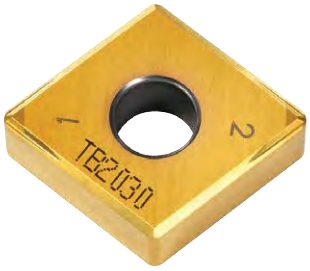
TB2030: Coated CBN Inserts with Chipbreakers for Turning Carburized and Hardened Steel

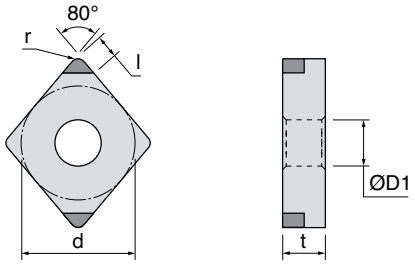
Chipbreakers:

- *CM - Medium Applications*
- *CF - Finishing Applications*

SERIES CNGM CF-LS2

80° RHOMBIC CBN-TIPPED INSERTS WITH CHIPBREAKER FOR FINISHING APPLICATIONS



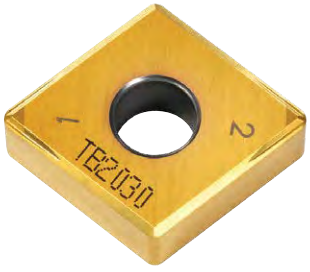


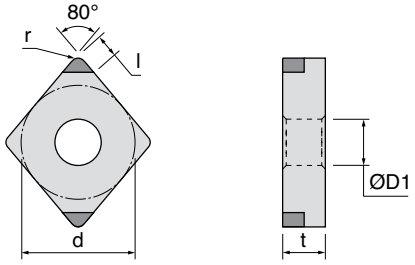
ANSI Number	ISO Number	l	d	t	R	D1	Grades TB2030
CNGM432CF-LS2	CNGM120408CF-LS2	0.086	0.500	0.187	0.031	0.203	●
CNGM433CF-LS2	CNGM120412CF-LS2	0.094	0.500	0.187	0.047	0.203	●

LS2 - Double tip

SERIES CNGM CM-LS2

80° RHOMBIC CBN-TIPPED INSERTS WITH CHIPBREAKER FOR MEDIUM APPLICATIONS





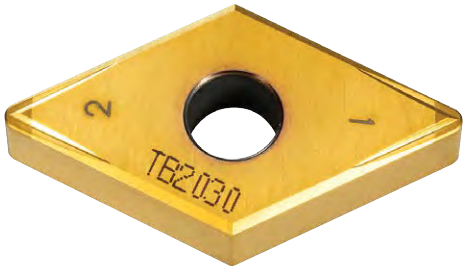
ANSI Number	ISO Number	l	d	t	R	D1	Grades TB2030
CNGM432CM-LS2	CNGM120408CM-LS2	0.086	0.500	0.187	0.031	0.203	●
CNGM433CM-LS2	CNGM120412CM-LS2	0.094	0.500	0.187	0.047	0.203	●

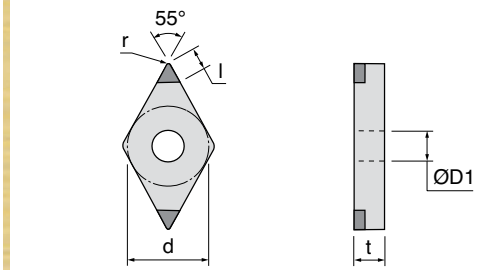
LS2 - Double tip

● = P ○ = M ● = K ● = N ● = S ○ = H

TOTURN™ SERIES DNGM-CF-LS2

55° RHOMBIC CBN-TIPPED INSERTS WITH CHIPBREAKER FOR FINISHING APPLICATIONS



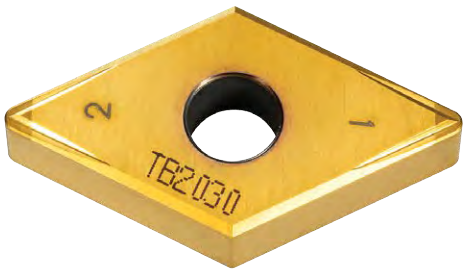


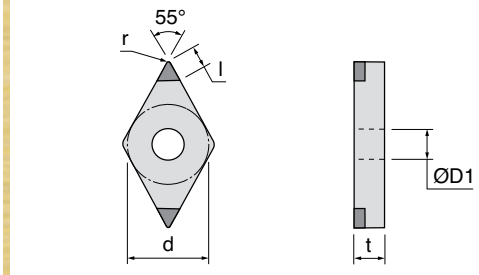
ANSI Number	ISO Number	l	d	t	R	D1	Grades TB2030
DNGM432CF-LS2	DNGM150408CF-LS2	0.082	0.500	0.187	0.031	0.203	●
DNGM433CF-LS2	DNGM150412CF-LS2	0.078	0.500	0.187	0.047	0.203	●

LS2 - Double tip

TOTURN™ SERIES DNGM-CM-LS2

55° RHOMBIC CBN-TIPPED INSERTS WITH CHIPBREAKER FOR MEDIUM APPLICATIONS





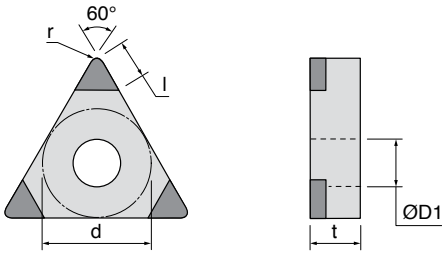
ANSI Number	ISO Number	l	d	t	R	D1	Grades TB2030
DNGM432CM-LS2	DNGM150408CM-LS2	0.082	0.500	0.187	0.031	0.203	●
DNGM433CM-LS2	DNGM150412CM-LS2	0.078	0.500	0.187	0.047	0.203	●

LS2 - Double tip

● = P ○ = M ● = K ● = N ● = S ○ = H

TOTURN™ SERIES TNGM CF-LS3

TRIANGULAR CBN-TIPPED INSERTS WITH CHIPBREAKER FOR FINISHING APPLICATIONS

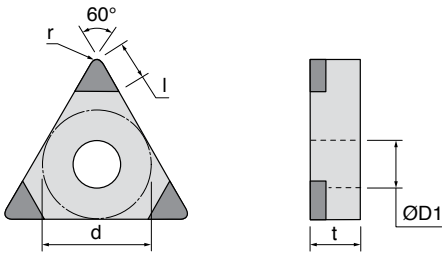


ANSI Number	ISO Number	l	d	t	R	D1	Grades TB2030
TNGM332CF-LS3	TNGM160408CF-LS3	0.074	0.375	0.187	0.031	0.150	●
TNGM333CF-LS3	TNGM160412CF-LS3	0.094	0.375	0.187	0.047	0.150	●

LS3 - Triple tip

TOTURN™ SERIES TNGM CM-LS3

TRIANGULAR CBN-TIPPED INSERTS WITH CHIPBREAKER FOR MEDIUM APPLICATIONS



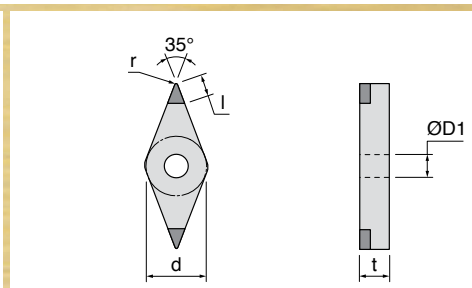
ANSI Number	ISO Number	l	d	t	R	D1	Grades TB2030
TNGM332CM-LS3	TNGM160408CM-LS3	0.074	0.375	0.187	0.031	0.150	●
TNGM333CM-LS3	TNGM160412CM-LS3	0.094	0.375	0.187	0.047	0.150	●

LS3 - Triple tip

● = P ○ = M ● = K ● = N ● = S ○ = H

TOTURN™ SERIES VNGM CF-LS2

35° RHOMBIC CBN-TIPPED INSERTS WITH CHIPBREAKER FOR FINISHING APPLICATIONS

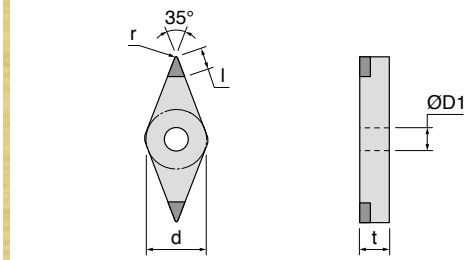


ANSI Number	ISO Number	l	d	t	R	D1	Grades TB2030
VNGM332CF-LS2	VNGM160408CF-LS2	0.086	0.375	0.187	0.031	0.150	●

LS2 - Double tip

TOTURN™ SERIES VNGM CM-LS2

35° RHOMBIC CBN-TIPPED INSERTS WITH CHIPBREAKER FOR MEDIUM APPLICATIONS



ANSI Number	ISO Number	l	d	t	R	D1	Grades TB2030
VNGM332CM-LS2	VNGM160408CM-LS2	0.086	0.375	0.187	0.031	0.150	●

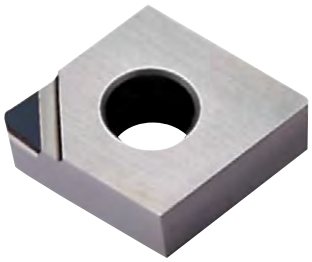
LS2 - Double tip

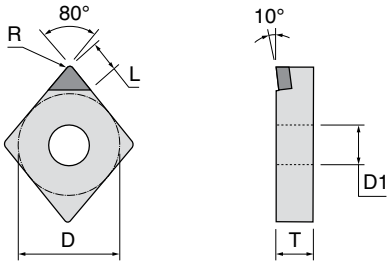
● = P ○ = M ● = K ● = N ● = S ○ = H

TD810: New PCD Hybrid Grade for Aluminum and Non-Ferrous Materials

TOTURN™ SERIES CNMA LN-10

80° RHOMBIC PCD-TIPPED INSERTS



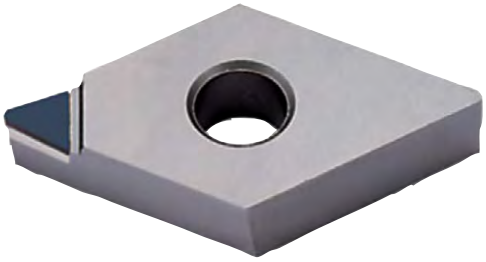


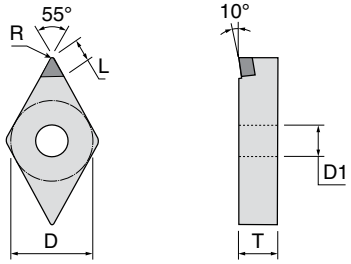
ANSI Number	ISO Number	L	D	T	R	D1	Grades	TD810
CNMA431LN-10	CNMA120404LN-10	0.157	0.500	0.187	0.016	0.203		●
CNMA432LN-10	CNMA120408LN-10	0.154	0.500	0.187	0.031	0.203		●

● = P ○ = M ● = K ● = N ● = S ○ = H

TOTURN™ SERIES DNMA LN-10

55° RHOMBIC PCD-TIPPED INSERTS

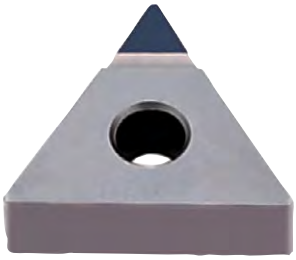


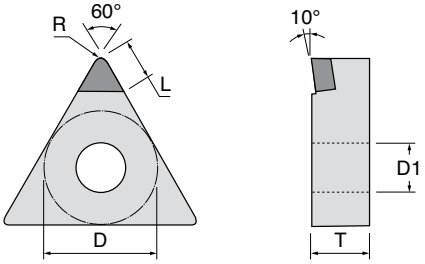


ANSI Number	ISO Number	L	D	T	R	D1	Grades	TD810
DNMA431LN-10	DNMA150404LN-10	0.157	0.500	0.187	0.016	0.203		●
DNMA432LN-10	DNMA150408LN-10	0.146	0.500	0.187	0.031	0.203		●
DNMA441LN-10	DNMA150604LN-10	0.157	0.500	0.250	0.016	0.203		●
DNMA442LN-10	DNMA150608LN-10	0.146	0.500	0.250	0.031	0.203		●

TOTURN™ SERIES TNMA LN-10

TRIANGULAR PCD-TIPPED INSERTS



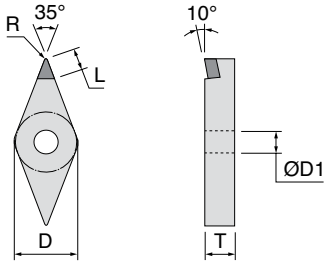


ANSI Number	ISO Number	L	D	T	R	D1	Grades	TD810
TNMA331LN-10	TNMA160404LN-10	0.169	0.375	0.187	0.016	0.150		●

● = P ● = M ● = K ● = N ● = S ● = H

TOTURN™ SERIES VNGA LN-10

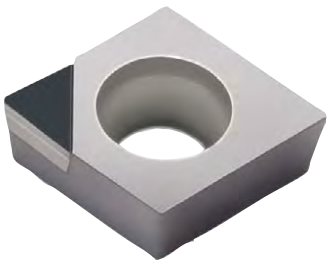
35° RHOMBIC PCD-TIPPED INSERTS

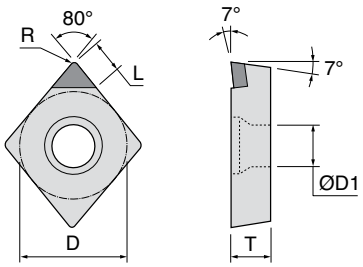


ANSI Number	ISO Number	L	D	T	R	D1	Grades	TD810
VNGA331LN-10	VNGA160404LN-10	0.197	0.375	0.187	0.016	0.150		●
VNGA332LN-10	VNGA160408LN-10	0.161	0.375	0.187	0.031	0.150		●

TOTURN™ SERIES CCGW LN7

POSITIVE 7° CLEARANCE 80° RHOMBIC PCD-TIPPED INSERTS



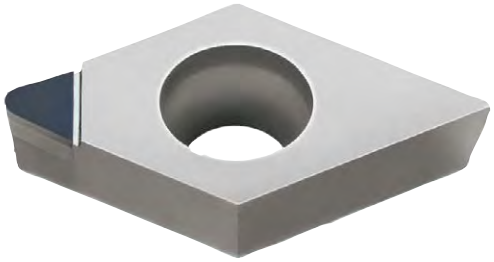


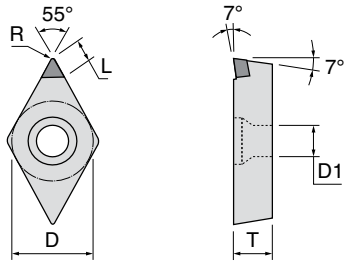
ANSI Number	ISO Number	L	D	T	R	Grades	TD810
CCGW21.50.5LN-7	CCGW060202LN-7	0.122	0.250	0.094	0.008		●
CCGW21.51LN-7	CCGW060204LN-7	0.122	0.250	0.094	0.016		●
CCGW32.51LN-7	CCGW09T304LN-7	0.157	0.375	0.156	0.016		●
CCGW32.52LN-7	CCGW09RT308LN-7	0.154	0.375	0.156	0.031		●
CCGW431LN-7	CCGW120404LN-7	0.157	0.500	0.187	0.016		●
CCGW432LN-7	CCGW120408LN-7	0.154	0.500	0.187	0.031		●

● = P ○ = M ● = K ● = N ● = S ○ = H

TOTURN™ SERIES DCGW LN-7

POSITIVE 7° CLEARANCE 55° RHOMBIC PCD-TIPPED INSERTS

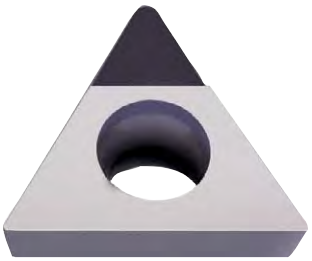


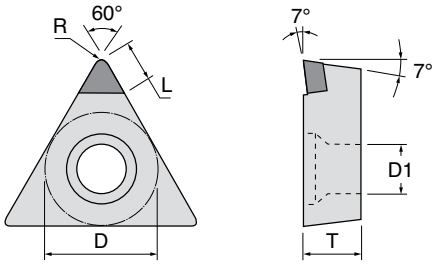


ANSI Number	ISO Number	L	D	T	R	D1	Grades TD810
DCGW21.50.5LN-7	DCGW070202LN-7	0.134	0.250	0.094	0.008	0.110	●
DCGW21.51LN-7	DCGW070204LN-7	0.130	0.250	0.094	0.016	0.110	●
DCGW32.50.5LN-7	DCGW11T302LN-7	0.154	0.375	0.156	0.008	0.173	●
DCGW32.51LN-7	DCGW11T304LN-7	0.146	0.375	0.156	0.016	0.173	●
DCGW32.52LN-7	DCGW11T308LN-7	0.130	0.375	0.156	0.031	0.173	●

TOTURN™ SERIES TCGW LN-7

POSITIVE 7° CLEARANCE TRIANGULAR PCD-TIPPED INSERTS



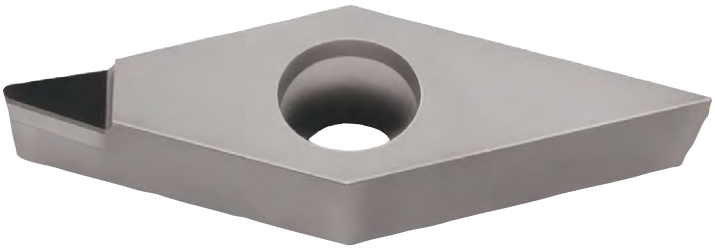


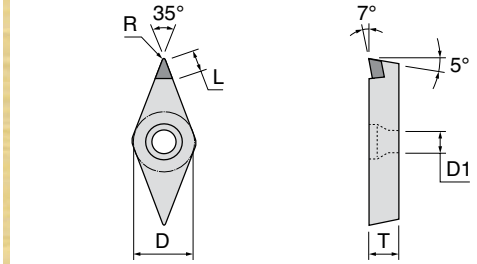
ANSI Number	ISO Number	L	D	T	R	D1	Grades TD810
TCGW21.51LN-7	TCGW110204LN-7	0.150	0.250	0.094	0.016	0.110	●
TCGW32.51LN-7	TCGW16T304LN-7	0.150	0.375	0.156	0.016	0.173	●
TCGW32.52LN-7	TCGW16T308LN-7	0.138	0.375	0.156	0.031	0.173	●
TCGW731LN-7	TCGW090204LN-7	0.130	0.219	0.094	0.016	0.098	●
TCGW732LN-7	TCGW090208LN-7	0.118	0.219	0.094	0.031	0.098	●

● = P ○ = M ● = K ● = N ● = S ○ = H

TOTURN™ SERIES VBGW LN-7

POSITIVE 5° CLEARANCE 35° RHOMBIC PCD-TIPPED INSERTS

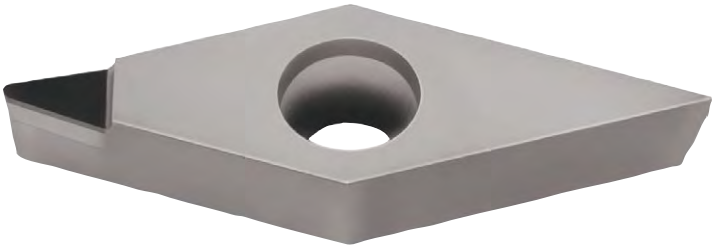


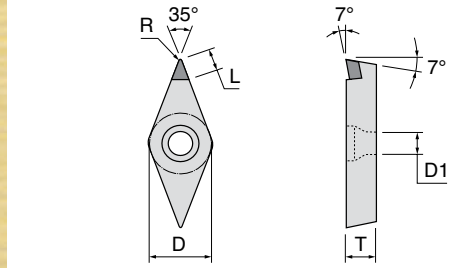


ANSI Number	ISO Number	L	D	T	R	D1	Grades TD810
VBGW330.5LN-7	VBGW160402LN-7	0.205	0.375	0.187	0.008	0.173	●
VBGW331LN-7	VBGW160404LN-7	0.197	0.375	0.187	0.016	0.173	●
VBGW332LN-7	VBGW160408LN-7	0.165	0.375	0.187	0.031	0.173	●

TOTURN™ SERIES VCGW LN-7

POSITIVE 7° CLEARANCE 35° RHOMBIC PCD-TIPPED INSERTS



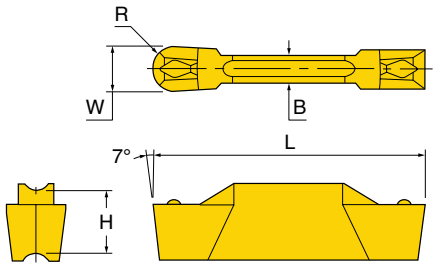


ANSI Number	ISO Number	L	D	T	R	D1	Grades TD810
VCGW331LN-7	VCGW160404LN-7	0.197	0.375	0.187	0.016	0.173	●
VCGW332LN-7	VCGW160408LN-7	0.165	0.375	0.187	0.031	0.173	●

● = P ○ = M ● = K ● = N ● = S ○ = H

TOCLAMP ULTRA+ SERIES TST-E

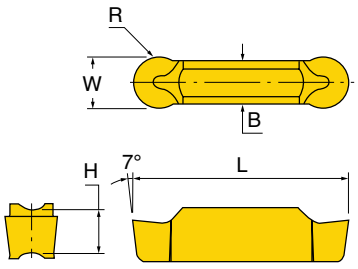
SINGLE-END FULL-RADIUS PRECISION INSERTS FOR EXTERNAL TURNING, GROOVING AND PROFILING



Designation	Insert Seat Size	W (inch)	R (inch)	L (inch)	H (inch)	Grades	TT9080
TST2.39E-1.19	2	0.094	0.047	0.79	0.185		
TST3.00E-1.50	3	0.118	0.059	0.79	0.185		
TST3.18E-1.59	3	0.125	0.062	0.79	0.185		
TST4.78E-2.39	5	0.188	0.094	0.98	0.205		

TOCLAMP ULTRA+ SERIES TDA

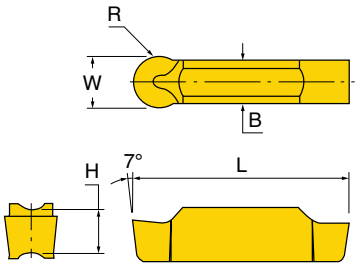
DOUBLE-END FULL-RADIUS PRECISION INSERTS FOR ALUMINUM MACHINING



Designation	Insert Seat Size	W (inch)	R (inch)	L (inch)	H (inch)	Grades	K10
TDA3.00-1.50	3	0.118	0.059	0.79	0.185		
TDA4.00-2.00	4	0.157	0.079	0.79	0.185		
TDA4.78-2.39	5	0.188	0.094	0.98	0.205		
TDA5.00-2.50	5	0.197	0.098	0.98	0.205		
TDA6.00-3.00	6	0.236	0.118	0.98	0.205		
TDA8.00-4.00	8	0.315	0.157	1.18	0.252		

= P = M = K = N = S = H

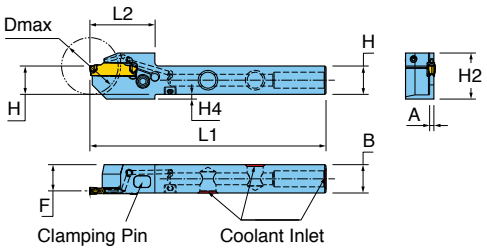
SINGLE END FULL-RADIUS PRECISION INSERTS FOR ALUMINUM MACHINING



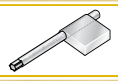
Designation	Insert Seat Size	W ±.0008	R ±.002	L (inch)	H (inch)	Grades	K10
TSA4.78-2.39	6	0.188	0.094	0.98	0.205		
TSA6.35-3.18	6	0.250	0.125	0.98	0.205		

● = P ○ = M ● = K ● = N ● = S ○ = H

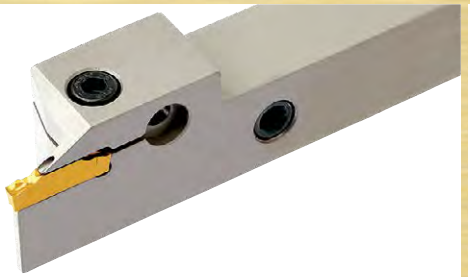
EXTERNAL TURNING AND GROOVING HOLDERS FOR SWISS AUTOMATICS, HIGH PRESSURE COOLANT

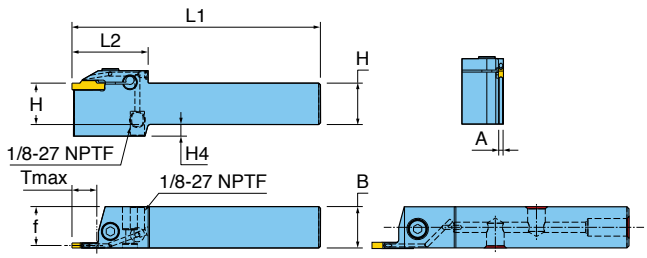


Designation	Ins. Seat Size	H (inch)	B (inch)	L (inch)	E (inch)	F (inch)	A (inch)	H1 (inch)	H2 (inch)	Dmax (inch)
TTEL12.7-24-3SH-TB	3	0.500	0.500	5.00	1.080	0.453	0.094	0.795	0.079	0.940
TTER12.7-24-3SH-TB	3	0.500	0.500	5.00	1.080	0.453	0.094	0.795	0.079	0.940
TTEL15.9-32-3SH-TB	3	0.625	0.625	5.00	1.240	0.579	0.094	0.843	-	1.260
TTER15.9-32-3SH-TB	3	0.625	0.625	5.00	1.240	0.579	0.094	0.843	-	1.260

HARDWARE						
						
	Inlet Plug Wrench	Clamp Screw & Pin Plug Wrench	Clamping Pin	Inlet Plug	Clamp Screw	Pin Plug
	L-W4	L-W2.5F	PIN-SH-TB	PT5/16UNF	SSM5-24145	SSM5X3.5ULTEM2300

MIDDLE TMAX HOLDERS FOR EXTERNAL TURNING AND GROOVING, HIGH PRESSURE COOLANT



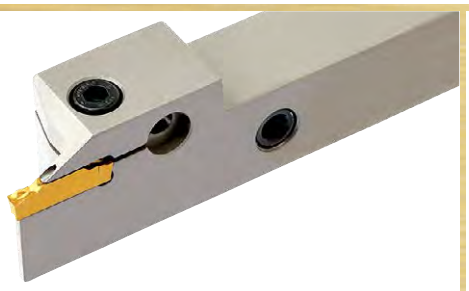


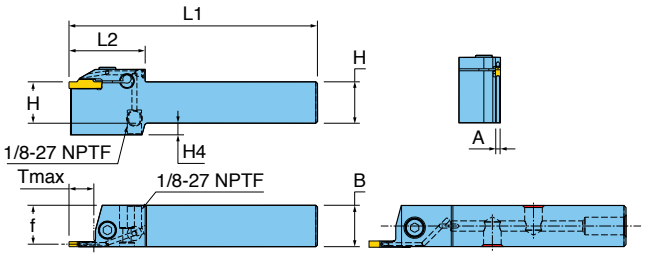
Note: .750" holder has 3 coolant inlets.

Designation	Insert Seat Size	F (inch)	L (inch)	H (inch)	H4 (inch)	B (inch)	L2 (inch)	Tmax (inch)	A (inch)
TTEL19-3-TB	3	0.703	5.00	0.750	0.157	0.750	1.690	0.472	0.094
TTER19-3-TB	3	0.703	5.00	0.750	0.157	0.750	1.690	0.472	0.094
TTEL25.4-3-TB	3	0.953	6.00	1.000	0.157	1.000	1.690	0.472	0.094
TTER25.4-3-TB	3	0.953	6.00	1.000	0.157	1.000	1.690	0.472	0.094
TTEL19-4-TB	4	0.690	5.00	0.750	0.157	0.750	1.810	0.590	0.118
TTER19-4-TB	4	0.690	5.00	0.750	0.157	0.750	1.810	0.590	0.118
TTEL25.4-4-TB	4	0.940	6.00	1.000	0.157	1.000	1.810	0.590	0.118
TTER25.4-4-TB	4	0.940	6.00	1.000	0.157	1.000	1.810	0.590	0.118
TTEL25.4-5-TB	5	0.925	6.00	1.000	-	1.000	1.930	0.787	0.157
TTER25.4-5-TB	5	0.925	6.00	1.000	-	1.000	1.930	0.787	0.157
TTEL25.4-6-TB	6	0.906	6.00	1.000	0.276	1.000	2.050	0.787	0.197
TTER25.4-6-TB	6	0.906	6.00	1.000	0.276	1.000	2.050	0.787	0.197
TTEL25.4-8-TB	8	0.886	6.00	1.000	0.276	1.000	2.280	0.787	0.236
TTER25.4-8-TB	8	0.886	6.00	1.000	0.276	1.000	2.280	0.787	0.236

HARDWARE	 Insert Clamp Screw	 Clamp Screw Wrench	 Inlet Plug Wrench	 Inlet Plug	 Sealing Screw
TTEL19-3-TB	SHM5X0.8X20	L-W4	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTER19-3-TB	SHM5X0.8X20	L-W4	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTEL25.4-3-TB	SHM5X0.8X20	L-W4	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTER25.4-3-TB	SHM5X0.8X20	L-W4	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTEL19-4-TB	SHM6X1X20	L-W5	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTER19-4-TB	SHM6X1X20	L-W5	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTEL25.4-4-TB	SHM6X1X20	L-W5	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTER25.4-4-TB	SHM6X1X20	L-W5	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTEL25.4-5-TB	SHM6X1X20	L-W5	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTER25.4-5-TB	SHM6X1X20	L-W5	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTEL25.4-6-TB	SHM8X1.25X20	L-W6	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTER25.4-6-TB	SHM8X1.25X20	L-W6	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTEL25.4-8-TB	SHM8X1.25X20	L-W6	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTER25.4-8-TB	SHM8X1.25X20	L-W6	L-W3/16	NPTF1/8	SS-M4X0.7X4

LONG TMAX HOLDERS FOR EXTERNAL TURNING AND GROOVING, HIGH PRESSURE COOLANT

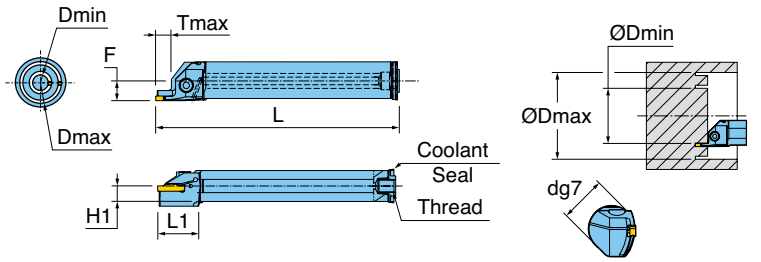




Designation	Insert Seat Size	F (inch)	L (inch)	H (inch)	H4 (inch)	B (inch)	L2 (inch)	Tmax (inch)	A (inch)
TTEL25.4-3T25-TB	3	0.953	6.00	1.000	0.157	1.000	2.000	0.980	0.094
TTER25.4-3T25-TB	3	0.953	6.00	1.000	0.157	1.000	2.000	0.980	0.094
TTEL25.4-4T25-TB	4	0.940	6.00	1.000	0.157	1.000	2.165	0.980	0.118
TTER25.4-4T25-TB	4	0.940	6.00	1.000	0.157	1.000	2.165	0.980	0.118
TTEL25.4-5T32-TB	5	0.925	6.00	1.000	-	1.000	2.322	1.260	0.156
TTER25.4-5T32-TB	5	0.925	6.00	1.000	-	1.000	2.322	1.260	0.156
TTEL25.4-6T32-TB	6	0.906	6.00	1.000	0.276	1.000	2.441	1.260	0.197
TTER25.4-6T32-TB	6	0.906	6.00	1.000	0.276	1.000	2.441	1.260	0.197

HARDWARE	 Insert Clamp Screw	 Clamp Screw Wrench	 Inlet Plug Wrench	 Inlet Plug	 Sealing Screw
TTEL25.4-3T25-TB	SHM5X0.8X20	L-W4	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTER25.4-3T25-TB	SHM5X0.8X20	L-W4	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTEL25.4-4T25-TB	SHM6X1X20	L-W5	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTER25.4-4T25-TB	SHM6X1X20	L-W5	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTEL25.4-5T32-TB	SHM6X1X20	L-W5	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTER25.4-5T32-TB	SHM6X1X20	L-W5	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTEL25.4-6T32-TB	SHM8X1.25X20	L-W6	L-W3/16	NPTF1/8	SS-M4X0.7X4
TTER25.4-6T32-TB	SHM8X1.25X20	L-W6	L-W3/16	NPTF1/8	SS-M4X0.7X4

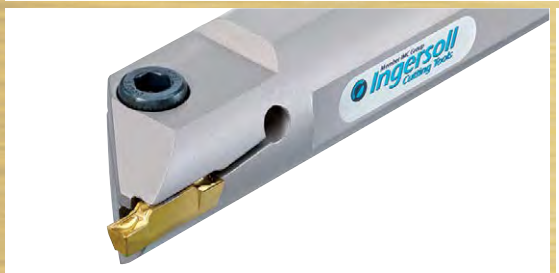
INTERNAL FACE GROOVING AND FACE TURNING HOLDERS

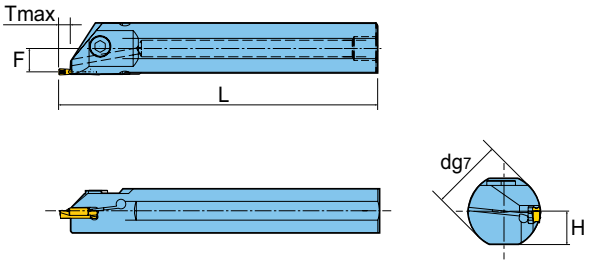


Designation	Insert Seat Size	d (inch)	H1 (inch)	F (inch)	L (inch)	L1 (inch)	Tmax (inch)	Dmin (inch)	Dmax (inch)
TTFIL25.4-3T12-20-33	3	1.000	0.453	0.516	8.000	1.220	0.472	0.787	1.300
TTFIL25.4-3T12-26-39	3	1.000	0.453	0.516	8.000	1.220	0.472	1.024	1.535
TTFIL25.4-3T12-33-48	3	1.000	0.453	0.516	8.000	1.220	0.472	1.300	1.889
TTFIL25.4-3T12-42-60	3	1.000	0.453	0.516	8.000	1.220	0.472	1.650	2.362
TTFIL25.4-3T12-54-85	3	1.000	0.453	0.516	8.000	1.220	0.472	2.126	3.346
TTFIL25.4-3T12-79-150	3	1.000	0.453	0.516	8.000	1.220	0.472	3.110	5.905
TTFIR25.4-3T12-20-33	3	1.000	0.453	0.516	8.000	1.220	0.472	0.787	1.300
TTFIR25.4-3T12-26-39	3	1.000	0.453	0.516	8.000	1.220	0.472	1.024	1.535
TTFIR25.4-3T12-33-48	3	1.000	0.453	0.516	8.000	1.220	0.472	1.300	1.889
TTFIR25.4-3T12-42-60	3	1.000	0.453	0.516	8.000	1.220	0.472	1.650	2.362
TTFIR25.4-3T12-54-85	3	1.000	0.453	0.516	8.000	1.220	0.472	2.126	3.346
TTFIR25.4-3T12-79-150	3	1.000	0.453	0.516	8.000	1.220	0.472	3.110	5.905
TTFIL25.4-4T12-18-34	4	1.000	0.453	0.508	8.000	1.220	0.472	0.709	1.338
TTFIL25.4-4T12-26-42	4	1.000	0.453	0.508	8.000	1.220	0.472	1.024	1.653
TTFIL25.4-4T12-34-55	4	1.000	0.453	0.508	8.000	1.220	0.472	1.339	2.165
TTFIR25.4-4T12-18-34	4	1.000	0.453	0.508	8.000	1.220	0.472	0.709	1.338
TTFIR25.4-4T12-26-42	4	1.000	0.453	0.508	8.000	1.220	0.472	1.024	1.653
TTFIR25.4-4T12-34-55	4	1.000	0.453	0.508	8.000	1.220	0.472	1.339	2.165
TTFIL31.7-4T12-47-70	4	1.250	0.571	0.646	10.000	1.220	0.472	1.850	2.756
TTFIL31.7-4T12-62-100	4	1.250	0.571	0.646	10.000	1.220	0.472	2.441	3.937
TTFIL31.7-4T12-92-180	4	1.250	0.571	0.646	10.000	1.220	0.472	3.622	7.087
TTFIR31.7-4T12-47-70	4	1.250	0.571	0.646	10.000	1.220	0.472	1.850	2.756
TTFIR31.7-4T12-62-100	4	1.250	0.571	0.646	10.000	1.220	0.472	2.441	3.937
TTFIR31.7-4T12-92-180	4	1.250	0.571	0.646	10.000	1.220	0.472	3.622	7.087

HARDWARE	 Screw	 Seal	 Clamp Screw Wrench	
TTFIL25.4-3T12-20-33	SHM5X0.8X16	PL100	L-W4	
TTFIL25.4-3T12-26-39	SHM5X0.8X16	PL100	L-W4	
TTFIL25.4-3T12-33-48	SHM5X0.8X16	PL100	L-W4	
TTFIL25.4-3T12-42-60	SHM5X0.8X16	PL100	L-W4	
TTFIL25.4-3T12-54-85	SHM5X0.8X16	PL100	L-W4	
TTFIL25.4-3T12-79-150	SHM5X0.8X16	PL100	L-W4	
TTFIR25.4-3T12-20-33	SHM5X0.8X16	PL100	L-W4	
TTFIR25.4-3T12-26-39	SHM5X0.8X16	PL100	L-W4	
TTFIR25.4-3T12-33-48	SHM5X0.8X16	PL100	L-W4	
TTFIR25.4-3T12-42-60	SHM5X0.8X16	PL100	L-W4	
TTFIR25.4-3T12-54-85	SHM5X0.8X16	PL100	L-W4	
TTFIR25.4-3T12-79-150	SHM5X0.8X16	PL100	L-W4	
TTFIL25.4-4T12-18-34	SHM5X0.8X16	PL100	L-W4	
TTFIL25.4-4T12-26-42	SHM5X0.8X16	PL100	L-W4	
TTFIL25.4-4T12-34-55	SHM5X0.8X16	PL100	L-W4	
TTFIR25.4-4T12-18-34	SHM5X0.8X16	PL100	L-W4	
TTFIR25.4-4T12-26-42	SHM5X0.8X16	PL100	L-W4	
TTFIR25.4-4T12-34-55	SHM5X0.8X16	PL100	L-W4	
TTFIL31.7-4T12-47-70	SHM5X0.8X16	PL125	L-W4	
TTFIL31.7-4T12-62-100	SHM5X0.8X16	PL125	L-W4	
TTFIL31.7-4T12-92-180	SHM5X0.8X16	PL125	L-W4	
TTFIR31.7-4T12-47-70	SHM5X0.8X16	PL125	L-W4	
TTFIR31.7-4T12-62-100	SHM5X0.8X16	PL125	L-W4	
TTFIR31.7-4T12-92-180	SHM5X0.8X16	PL125	L-W4	

SHALLOW INTERNAL FACE GROOVING AND FACE TURNING HOLDERS

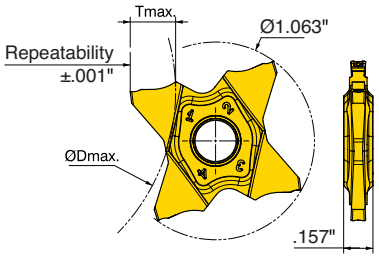


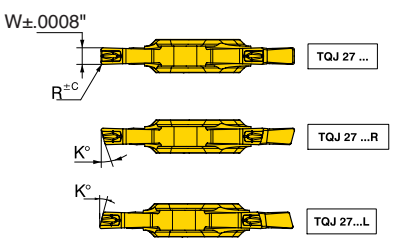


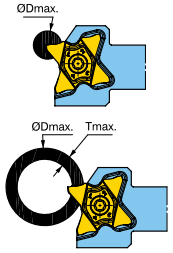
Designation	Insert Seat Size	D (inch)	H (inch)	F (inch)	L (inch)	Tmax (inch)
TGIFL25.4-4C-T5.5	3, 4	1.000	0.453	0.453	8.000	0.216
TGIFR25.4-4C-T5.5	3, 4	1.000	0.453	0.453	8.000	0.216
TGIFL31.7-4C-T5.5	3, 4	1.250	0.571	0.579	10.000	0.216
TGIFR31.7-4C-T5.5	3, 4	1.250	0.571	0.579	10.000	0.216
TGIFL25.4-6C-T5.5	5, 6	1.000	0.453	0.413	8.000	0.216
TGIFR25.4-6C-T5.5	5, 6	1.000	0.453	0.413	8.000	0.216
TGIFL31.7-6C-T5.5	5, 6	1.250	0.571	0.539	10.000	0.216
TGIFR31.7-6C-T5.5	5, 6	1.250	0.571	0.539	10.000	0.216

HARDWARE	 Wrench	 Seal	 Insert Clamp Screw
TGIFL25.4-4C-T5.5	L-W5	PL100	SHM6X1X16
TGIFR25.4-4C-T5.5	L-W5	PL100	SHM6X1X16
TGIFL31.7-4C-T5.5	L-W5	PL125	SHM6X1X20
TGIFR31.7-4C-T5.5	L-W5	PL125	SHM6X1X20
TGIFL25.4-6C-T5.5	L-W5	PL100	SHM6X1X16
TGIFR25.4-6C-T5.5	L-W5	PL100	SHM6X1X16
TGIFL31.7-6C-T5.5	L-W5	PL125	SHM6X1X20
TGIFR31.7-6C-T5.5	L-W5	PL125	SHM6X1X20

FOUR CORNER CARBIDE INSERT FOR PARTING & GROOVING @ HIGH FEED RATES



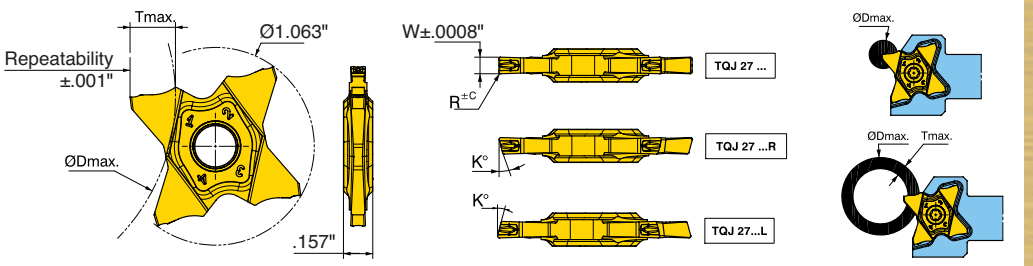




Designation	W	R (inch)	Tmax (inch)	K°	Dmax ≤.118	Dmax ≤.138	Dmax ≤.157	Dmax ≤.177	Dmax ≤.197	Dmax ≤.217	Dmax ≤.236	Dmax ≤.244	Dmax ≤.252	Grades TT9080
TQC27-1.50-0.10	0.059	0.002	0.197	-	N.L.	23.62	11.02	7.09	5.12	-	-	-	-	
TQC27-1.50-0.20	0.059	0.008	0.197	-	N.L.	23.62	11.02	7.09	5.12	-	-	-	-	
TQC27-1.50-15L	0.059	0.004	0.197	15	N.L.	23.62	11.02	7.09	5.12	-	-	-	-	
TQC27-1.50-15R	0.059	0.004	0.197	15	N.L.	23.62	11.02	7.09	5.12	-	-	-	-	
TQC27-1.50-6L	0.059	0.004	0.197	6	N.L.	23.62	11.02	7.09	5.12	-	-	-	-	
TQC27-1.50-6L	0.059	0.004	0.197	6	N.L.	23.62	11.02	7.09	5.12	-	-	-	-	
TQC27-1.57-0.79	0.062	0.031	0.118	-	N.L.	-	-	-	-	-	-	-	-	
TQC27-1.57-0.79	0.062	0.031	0.118	-	N.L.	-	-	-	-	-	-	-	-	
TQC27-1.75-0.10	0.069	0.004	0.118	-	N.L.	-	-	-	-	-	-	-	-	
TQC27-1.75-0.20	0.069	0.008	0.118	-	N.L.	-	-	-	-	-	-	-	-	
TQC27-1.78-0.18	0.070	0.007	0.118	-	N.L.	-	-	-	-	-	-	-	-	
TQC27-1.85-0.20	0.073	0.008	0.118	-	N.L.	-	-	-	-	-	-	-	-	
TQC27-1.96-0.15	0.077	0.006	0.118	-	N.L.	-	-	-	-	-	-	-	-	
TQC27-2.00-0.10	0.079	0.004	0.252	-	N.L.	23.62	11.02	7.09	5.12	4.13	2.36	1.97	1.18	
TQC27-2.00-0.20	0.079	0.008	0.252	-	N.L.	23.62	11.02	7.09	5.12	4.13	2.36	1.97	1.18	
TQC27-2.00-1.00	0.079	0.039	0.118	-	N.L.	-	-	-	-	-	-	-	-	
TQC27-2.00-15L	0.079	0.004	0.252	15	N.L.	23.62	11.02	7.09	5.12	4.13	2.36	1.97	1.18	
TQC27-2.00-15R	0.079	0.004	0.252	15	N.L.	23.62	11.02	7.09	5.12	4.13	2.36	1.97	1.18	
TQC27-2.00-6L	0.079	0.004	0.252	6	N.L.	23.62	11.02	7.09	5.12	4.13	2.36	1.97	1.18	
TQC27-2.00-6R	0.079	0.004	0.252	6	N.L.	23.62	11.02	7.09	5.12	4.13	2.36	1.97	1.18	
TQC27-2.22-0.15	0.087	0.006	0.138	-	N.L.	23.62	-	-	-	-	-	-	-	
TQC27-2.30-0.20	0.091	0.008	0.138	-	N.L.	23.62	-	-	-	-	-	-	-	
TQC27-2.39-0.15	0.094	0.006	0.197	-	N.L.	23.62	11.02	7.09	5.12	-	-	-	-	
TQC27-2.39-1.20	0.094	0.047	0.197	-	N.L.	23.62	11.02	7.09	5.12	-	-	-	-	
TQC27-2.47-0.20	0.097	0.008	0.197	-	N.L.	23.62	11.02	7.09	5.12	-	-	-	-	
TQC27-2.50-0.10	0.098	0.004	0.197	-	N.L.	23.62	11.02	7.09	5.12	-	-	-	-	
TQC27-2.50-0.30	0.098	0.012	0.197	-	N.L.	23.62	11.02	7.09	5.12	-	-	-	-	
TQC27-2.70-0.10	0.106	0.004	0.224	-	N.L.	23.62	11.02	7.09	5.31	4.13	3.35	3.07	-	
TQC27-2.87-0.20	0.113	0.008	0.224	-	N.L.	23.62	11.02	7.09	5.31	4.13	3.35	3.07	-	
TQC27-3.00-0.00	0.118	-	0.252	-	N.L.	23.62	11.02	7.09	5.31	4.13	3.35	3.07	2.17	
TQC27-3.00-0.20	0.118	0.008	0.252	-	N.L.	23.62	11.02	7.09	5.31	4.13	3.35	3.07	2.17	
TQC27-3.00-0.30	0.118	0.012	0.252	-	N.L.	23.62	11.02	7.09	5.31	4.13	3.35	3.07	2.17	
TQC27-3.00-0.40	0.118	0.016	0.252	-	N.L.	23.62	11.02	7.09	5.31	4.13	3.35	3.07	2.17	
TQC27-3.00-1.50	0.118	0.059	0.252	-	N.L.	23.62	11.02	7.09	5.31	4.13	3.35	3.07	2.17	
TQC27-3.15-0.15	0.124	0.006	0.252	-	N.L.	23.62	11.02	7.09	5.31	4.13	3.35	3.07	2.68	
TQC27-3.18-0.20	0.125	0.008	0.252	-	N.L.	23.62	11.02	7.09	5.31	4.13	3.35	3.07	2.68	

● = P ○ = M ● = K ● = N ● = S ○ = H

FOUR CORNER CARBIDE OR CERMET INSERT WITH FLAT CUTTING EDGE FOR HIGH QUALITY SURFACE FINISH

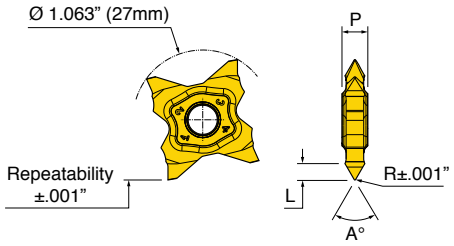


Designation	W	R (inch)	Tmax (inch)	K°	Dmax ≤.118	Dmax ≤.138	Dmax ≤.157	Dmax ≤.177	Dmax ≤.197	Dmax ≤.217	Dmax ≤.236	Dmax ≤.244	Dmax ≤.252	Grades CT3000	Grades TT9080
TQS27-1.50-0.20	0.059	0.008	0.197	-	N.L.	23.62	11.02	7.09	5.12	-	-	-	-		
TQS27-2.00-0.20	0.079	0.008	0.252	-	N.L.	23.62	11.02	7.09	5.12	4.13	2.36	1.97	1.18		
TQS27-2.39-0.15	0.094	0.006	0.197	-	N.L.	23.62	11.02	7.09	5.12	-	-	-	-		
TQS27-2.50-0.20	0.098	0.008	0.197	-	N.L.	23.62	11.02	7.09	5.12	-	-	-	-		
TQS27-3.00-0.20	0.118	0.008	0.252	-	N.L.	23.62	11.02	7.09	5.31	4.13	3.35	3.07	2.17		

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLDOFLEX™ SERIES TQS27 THREADING - 55°

FOUR CORNER INSERT FOR PRECISION THREADING - PARTIAL PROFILE

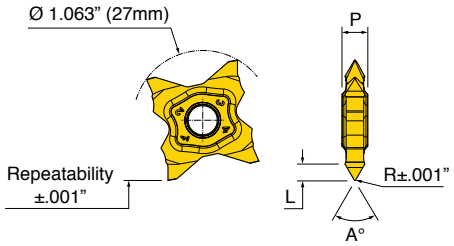


Designation	R	A (Deg)	P	L	TPI Min	TPI Max	Grades TT9080
TQS27-4WT-0.05	0.002	55	0.157	0.114	6.4 / D	54	
TQS27-5WT-0.15	0.006	55	0.197	0.130	6.4 / D	19	
TQS27-6WT-0.25	0.010	55	0.236	0.154	6.4 / D	12	

D: Diameter
TPI: Threads / Inch

GOLDOFLEX™ SERIES TQS27 THREADING - 60°

FOUR CORNER INSERT FOR PRECISION THREADING - PARTIAL PROFILE



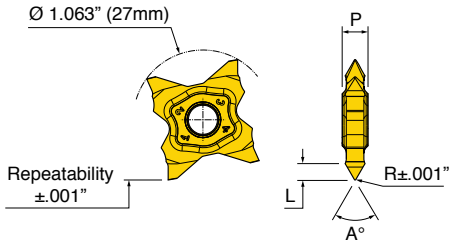
Designation	R	A (Deg)	P	L	Pitch Min	Pitch Max	TPI Min	TPI Max	Grades TT9080
TQS27-4MT-0.05	0.002	60	0.157	0.110	0.45	.175xD	5.7 / D	56	
TQS27-4MT-0.14	0.005	60	0.157	0.106	1.11	.175xD	5.7 / D	23	
TQS27-5MT-0.15	0.006	60	0.197	0.122	1.25	.175xD	5.7 / D	20	
TQS27-5MT-0.20	0.008	60	0.197	0.122	1.63	.175xD	5.7 / D	16	
TQS27-6MT-0.25	0.010	60	0.236	0.142	1.94	.175xD	5.7 / D	13	

D: Diameter
TPI: Threads / Inch

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLDFLEX™ SERIES TQS27 THREADING - ISO

FOUR CORNER INSERT FOR PRECISION THREADING - FULL PROFILE

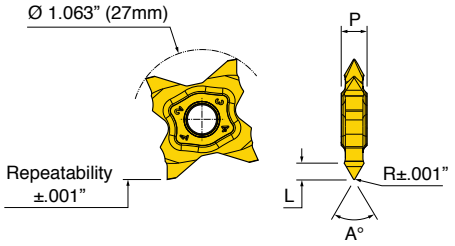


Designation	R	ISO Pitch	Grades TT9080
TQS27-0.5-ISO	0.003	0.50	
TQS27-0.75-ISO	0.004	0.75	
TQS27-0.8-ISO	0.005	0.80	
TQS27-1.0-ISO	0.006	1.00	
TQS27-1.25-ISO	0.007	1.25	
TQS27-1.5-ISO	0.009	1.50	
TQS27-1.75-ISO	0.010	1.75	
TQS27-2.0-ISO	0.011	2.00	

ISO Pitch: mm

GOLDFLEX™ SERIES TQS27 THREADING - UN

FOUR CORNER INSERT FOR PRECISION THREADING - FULL PROFILE

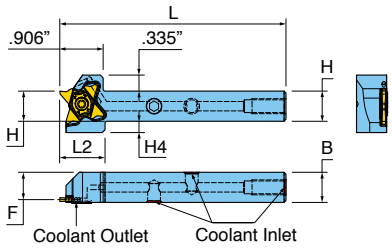


Designation	R	TPI	Grades TT9080
TQS27-12-UN	0.010	12	
TQS27-14-UN	0.009	14	
TQS27-16-UN	0.008	16	
TQS27-18-UN	0.007	18	
TQS27-20-UN	0.006	20	
TQS27-24-UN	0.005	24	

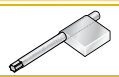
TPI: Threads / Inch

● = P ○ = M ● = K ● = N ● = S ○ = H

GOLD FLEX INTEGRAL TOOL HOLDERS FOR PARTING AND GROOVING (INCH), HIGH PRESSURE COOLANT

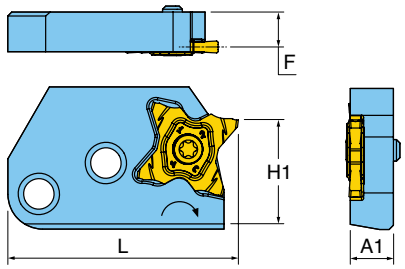


Designation	H	B (inch)	F (inch)	L (inch)	L2 (inch)	H4 (inch)
TQHL12.7-27-TB	0.500	0.500	0.441	5.00	0.944	0.287
TQHR12.7-27-TB	0.500	0.500	0.441	5.00	0.944	0.287
TQHL16-27-TB	0.630	0.630	0.571	4.72	0.944	0.236
TQHR16-27-TB	0.630	0.630	0.571	4.72	0.944	0.236
TQHL19-27-TB	0.750	0.750	0.691	5.00	0.944	0.118
TQHR19-27-TB	0.750	0.750	0.691	5.00	0.944	0.118
TQHL25.4-27-TB	1.000	1.000	0.941	5.50	-	-
TQHR25.4-27-TB	1.000	1.000	0.941	5.50	-	-

HARDWARE	 Insert Screw	 Inlet Plug	 Inlet Plug Wrench	 Insert Reference	 Torx Driver
TQHL12.7-27-TB	TS50125I	PT5/16UNF	L-W4	TQ_ 27	T-2010/5
TQHR12.7-27-TB	TS50125IL	-	L-W4	TQ_ 27	T-2010/5
TQHL16-27-TB	TS50125I	PT5/16UNF	L-W4	TQ_ 27	T-2010/5
TQHR16-27-TB	TS50125IL	PT5/16UNF	L-W4	TQ_ 27	T-2010/5
TQHL19-27-TB	TS50125I	NPTF1/8-TQ19	L-W3/16	TQ_ 27	T-2010/5
TQHR19-27-TB	TS50125IL	NPTF1/8-TQ19	L-W3/16	TQ_ 27	T-2010/5
TQHL25.4-27-TB	TS50125I	NPTF1/8-TQ19	L-W3/16	TQ_ 27	T-2010/5
TQHR25.4-27-TB	TS50125IL	NPTF1/8-TQ19	L-W3/16	TQ_ 27	T-2010/5

TOCLAMP ULTRA+ SERIES TQCL

ADAPTER FOR GOLD FLEX (LEFT HAND)

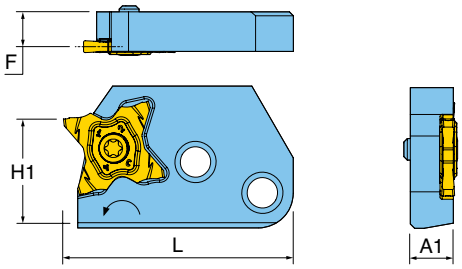


Designation	F (inch)	L (inch)	Width Min	Width Max
TQCL27	0.346	2.09	0.020	0.255

HARDWARE	 Insert Screw	 Torx Driver
	TS50125I	T-2010/5

TOCLAMP ULTRA+ SERIES TQCR

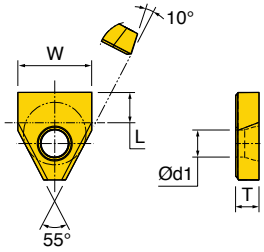
ADAPTER FOR GOLD FLEX (RIGHT HAND)



Designation	F (inch)	L (inch)	Width Min	Width Max
TQCR27	0.346	2.09	0.020	0.255

HARDWARE	 Insert Screw	 Torx Driver
	TS50125IL	T-2010/5

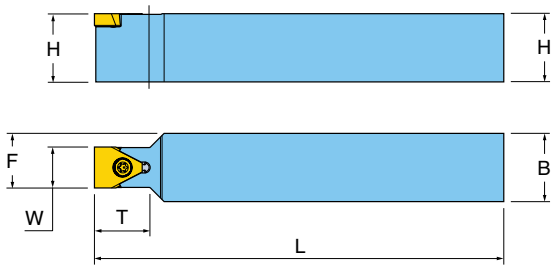
INSERTS FOR WIDE GROOVING APPLICATIONS



Designation	W	L	T	D1	Grades K10	P40
TGUX1004	0.402	0.23	0.188	0.217		
TGUX1504	0.598	0.23	0.188	0.217		
TGUX2004	0.795	0.37	0.250	0.236		
TGUX2506	0.992	0.36	0.250	0.236		

● = P ○ = M ● = K ● = N ● = S ○ = H

T-GROOVE HOLDERS FOR EXTERNAL GROOVING



Designation	H (inch)	B (inch)	F (inch)	Tmax (inch)	L (inch)	A (inch)
TTLEN12.7K10	0.500	0.500	0.450	0.790	5.00	0.394
TTLEN15.9K10	0.625	0.625	0.510	0.790	5.00	0.394
TTLEN15.9K15	0.625	0.625	0.610	0.790	5.00	0.591
TTLEN19M10	0.750	0.750	0.570	0.790	6.00	0.394
TTLEN19M15	0.750	0.750	0.670	0.790	6.00	0.591
TTLEN19K20	0.750	0.750	0.770	1.380	5.00	0.787
TTLEN19K25	0.750	0.750	0.870	1.380	5.00	0.984
TTLEN25.4M10	1.000	1.000	0.700	0.790	6.00	0.394
TTLEN25.4M15	1.000	1.000	0.800	0.790	6.00	0.591
TTLEN25.4M20	1.000	1.000	0.890	1.380	6.00	0.787
TTLEN25.4M25	1.000	1.000	0.990	1.380	6.00	0.984
TTLEN31.8P20	1.250	1.250	1.020	1.380	7.00	0.787
TTLEN31.8P25	1.250	1.250	1.120	1.380	7.00	0.984

HARDWARE					
Turning Holder	Insert Reference	Insert Screw	Screw Driver Blade	Driver Handle	
TTLEN12.7K10	TGUX1004	SM40-100-R0	DS-T156B	DS-A00T	
TTLEN15.9K10	TGUX1004	SM40-100-R0	DS-T156B	DS-A00T	
TTLEN15.9K15	TGUX1504	SM40-100-R0	DS-T156B	DS-A00T	
TTLEN19K20	TGUX2006	SM45-120-R0	DS-T206B	DS-A00T	
TTLEN19K25	TGUX2506	SM45-120-R0	DS-T206B	DS-A00T	
TTLEN19M10	TGUX1004	SM40-100-R0	DS-T156B	DS-A00T	
TTLEN19M15	TGUX1504	SM40-100-R0	DS-T156B	DS-A00T	
TTLEN25.4M10	TGUX1004	SM40-100-R0	DS-T156B	DS-A00T	
TTLEN25.4M15	TGUX1504	SM40-100-R0	DS-T156B	DS-A00T	
TTLEN25.4M20	TGUX2006	SM45-120-R0	DS-T206B	DS-A00T	
TTLEN25.4M25	TGUX2506	SM45-120-R0	DS-T206B	DS-A00T	
TTLEN31.8P20	TGUX2006	SM45-120-R0	DS-T206B	DS-A00T	
TTLEN31.8P25	TGUX2506	SM45-120-R0	DS-T206B	DS-A00T	

● = P ○ = M ● = K ● = N ● = S ○ = H

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