

### Top Cut™ & Top Cut Plus™ Indexable Insert Drills

The advanced grades and insert geometries enables aggressive cutting parameters without loss of set-up integrity due to an enhanced and optimized design.

- Improved chip evacuation and metal removal rates
- Enhanced self-centering capabilities
- Higher stability and rigidity due to using the highest quality material and a new post manufacturing treatment
- Up to four effective cutting edges per insert (XOMT)
- Insert geometries optimized for different materials
- Inch diameter range now from 7/16" - 2¼"
- Metric diameter range now 11mm to 60mm

**Enhanced &  
Expanded Offering!**



# WIDIA

## Indexable Insert Drills

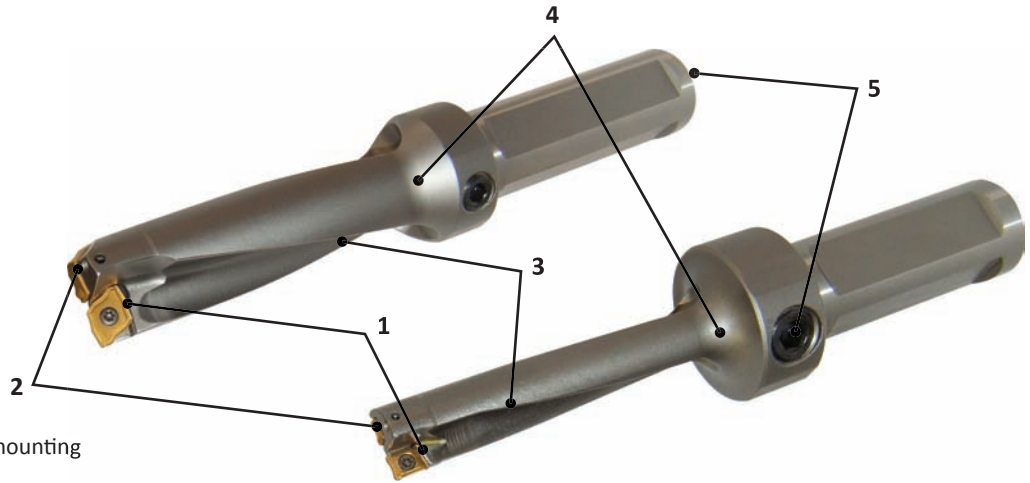
1. Optimized position of inserts at end of helix

2. Stabilized drilling conditions due to separated coolant channels (no central hole)

3. Better chip flow due to improved chip-flute

4. New and optimized helix end

5. Universal coolant feeding. Easy mounting



Rigid shank for both Inch & Metric Drills

Length to diameter ratio:  
2xD, 3xD & 4xD



**TCP:** Complete program  
Inch D1 = .938" to 2.250"  
Metric D1 = 19mm to 60mm



**TC:** Complete program  
Inch D1 = .438" to 1.000"  
Metric D1 = 11mm to 25mm

### XOMT-34



All purpose geometry



Centre cutting edge extremely stabilized

Strong cutting edge

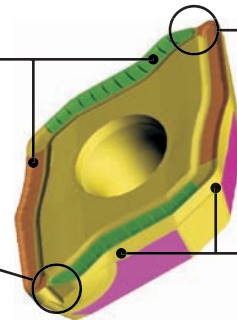
Versatile geometry with stabilized cutting edges for general applications, also under unfavorable conditions.

- Steels
- Cast iron
- Interrupted cuts
- For unfavourable conditions

### XOMT Insert




Chip former geometry focused on peripheral and centre edges

Gap between centre and peripheral edges ensures usability of all 4 edges



Leading point close to drill centre improves guidance of drill in hole

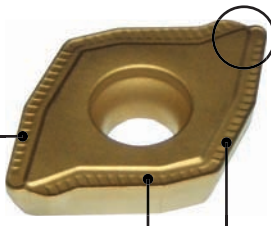
Clearance angles on peripheral and centre edges follow effective direction of cut

-  Peripheral Edge
-  Centre Edge
-  Locating faces

### XOMT-35



Low cutting forces due to very positive rake angle



Cutting edge stabilized at corner and centre

Minimal chip friction as geometry has individually been optimized for outside and for centre position

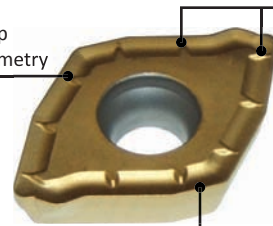
Positive geometry for reduced cutting forces, specially recommended for high speeds and feeds. Low burr and chipping.

- High alloyed steels and stainless steels
- Non-ferrous metals / alloys
- High performance drilling (high speed & feed)
- Cast irons
- For unstable conditions
- If low burr required or chipping at through hole exit

### XOMT-36



Positive chip former geometry



Optimized geometry dedicated to centre and outside position providing good swarf control

Formation of grooved chips without loss of cutting edge stability

Super-positive geometry with sharp cutting edges for smooth cutting action and reliable chip control on gummy materials.

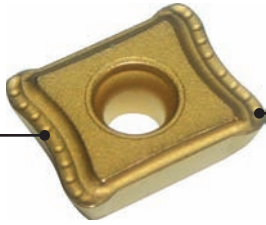
- Low alloyed steels
- Mild and 300 series (austenitic) stainless steels
- Good chip control over wide feed range
- All gummy materials
- For improved chip control on stringy materials
- If low burr required or chipping at through hole exit

# WIDIA Top Cut™ & Top Cut Plus™ Inserts, Grades, & Geometries

## LPGX-34



All purpose geometry



Strong cutting edge

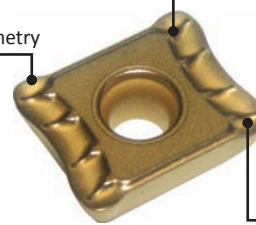
Versatile geometry with stabilized cutting edges for general applications, also under unfavorable conditions.

- Steels
- Cast iron
- Interrupted cuts
- For unfavourable conditions

## LPGX-36



Positive chip former geometry



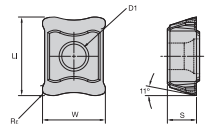
Optimized geometry dedicated to centre and outside position providing good swarf control

Formation of grooved chips without loss of cutting edge stability

Super-positive geometry with sharp cutting edges for smooth cutting action and reliable chip control on gummy materials.

- Low alloyed steels
- Mild and 300 series (austenitic) stainless steels
- Good chip control over wide feed range
- All gummy materials
- For improved chip control on stringy materials
- If low burr required or chipping at through hole exit

## LPGX

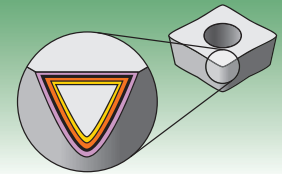


Designation	L1	W	D1	S	Rε	Coated				Uncoated	
						TN5515	TN6030	TN7015	TPC35	THM	
LPGX-06T103-34	.236	.177	.083	.078	.012	●	●	●	●		
LPGX-07T204-34	.295	.236	.098	.109	.016	●	●	●	●		
LPGX-07T204-36						●	●	●	●		●
LPGX-100308-34	.394	.315	.110	.125	.031	●	●	●	●		
LPGX-100308-36						●	●	●	●		●

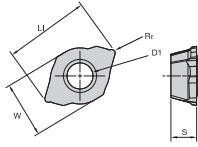
P	Steel
M	Stainless Steel
K	Cast Iron

N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

Coatings provide high-speed capability and are engineered for finishing to light roughing



## XOMT

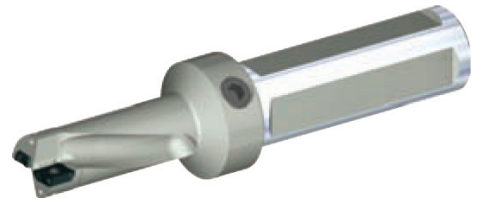
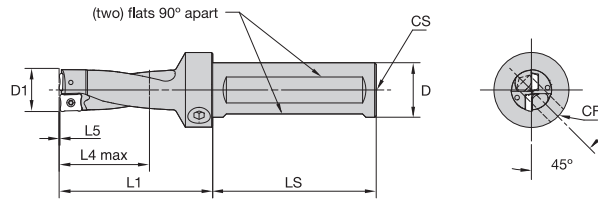


Designation	L1	W	D1	S	Rε	Coated				Uncoated			
						TN5515	TN6030	TN7015	TPC35	THM			
XOMT-04T103-34	.272	.179	.083	.078	.013	●	●	●	●		●		
XOMT-04T103-35						●	●	●	●		●		
XOMT-050204-34	.340	.226	.098	.109	.016	●	●	●	●		●		
XOMT-050204-35						●	●	●	●		●		
XOMT-050204-36						●	●	●	●				
XOMT-070304-34	.417	.274	.110	.125	.016	●	●	●	●		●		
XOMT-070304-35						●	●	●	●		●		
XOMT-070304-36						●	●	●	●				
XOMT-09T306-34	.607	.391	.134	.156	.024	●	●	●	●		●		
XOMT-09T306-35						●	●	●	●		●		
XOMT-09T306-36						●	●	●	●				
XOMT-12T308-34	.791	.510	.173	.156	.031	●	●	●	●		●		
XOMT-12T308-35						●	●	●	●		●		
XOMT-12T308-36						●	●	●	●				
XOMT-160508-34	1.017	.663	.217	.219	.031	●	●	●	●		●		
XOMT-160508-35						●	●	●	●		●		
XOMT-160508-36						●	●	●	●				

Coated Grades											
		05	10	15	20	25	30	35	40	45	
<b>TN5515</b> Coated carbide. MT-CVD/CVD — TiN-TiCN-Al2O3. Very wear resistant at elevated cutting speeds. Light and medium machining. Suitable for all iron materials. First choice for mass production of cast iron components.	HC-K15	P									
		M									
		K									
		N									
		S									
<b>TN6030</b> Coated carbide. PVD — TiAlN multi-layer. Light and medium machining. For any kind of steels and nodular cast iron.	HC-P30	P									
		M									
		K									
		N									
		S									
<b>TN7015</b> Coated carbide. MT-CVD/CVD — TiN-TiCN-Al2O3-ZrCN. Very wear-resistant at elevated cutting speeds. Light and medium machining. For any kind of steel and nodular cast iron. First choice for mass production of steel components.	HC-P15	P									
		M									
		K									
		N									
		S									
<b>TPC35</b> Coated carbide. PCVD — TiN. Best toughness properties. Light and medium machining. Universal grade for all ferrous materials, also under unfavorable conditions. Preferably to be used with coolant.	HC-P35	P									
		M									
		K									
		N									
		S									
Uncoated Grade											
<b>THM</b> Uncoated carbide. Extraordinarily good balance of hardness, wear resistance, edge stability, and toughness. Light and medium machining. For cast iron, all non-ferrous metals, and non-metals; also useful in unfavorable conditions.	HW-K15	P									
		M									
		K									
		N									
		S									

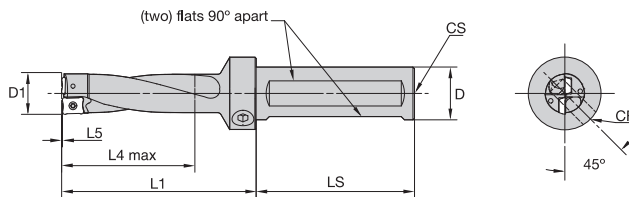
New improved chip flutes, coolant channels, and insert pocket seat  
*High feed rate capability, and longer tool life*

## 2xD • INCH SSF Shanks



Designation	D1	D	L1	L4 max	L5	LS	CS	CF	Insert	Insert Screw	Torx Wrench
TCD-0438R2-SSF075	.438	.750	1.875	.875	.009	2.00	1/8-27 NPT	1/8-27 NPT	LPGX-06T103	214.60.118	214.60.100
TCD-0469R2-SSF075	.469	.750	1.875	.938	.009	2.00					
TCD-0500R2-SSF075	.500	.750	2.000	1.000	.002	2.00					
TCD-0531R2-SSF075	.531	.750	2.125	1.063	.003	2.00					
TCD-0563R2-SSF075	.563	.750	2.125	1.125	.003	2.00	1/8-27 NPT	1/8-27 NPT	LPGX-07T204	214.60.125	214.75.490
TCD-0594R2-SSF075	.594	.750	2.250	1.188	.002	2.00					
TCD-0625R2-SSF075	.625	.750	2.375	1.250	.002	2.00					
TCD-0656R2-SSF075	.656	.750	2.375	1.313	.007	2.00					
TCD-0688R2-SSF075	.688	.750	2.500	1.375	.012	2.00	1/8-27 NPT	1/8-27 NPT	LPGX-100308	214.80.687	214.80.866
TCD-0719R2-SSF075	.719	.750	2.613	1.438	.012	2.00					
TCD-0750R2-SSF075	.750	.750	2.663	1.500	.002	2.00					
TCD-0813R2-SSF100	.813	1.000	2.875	1.625	.004	3.00					
TCD-0875R2-SSF100	.875	1.000	3.000	1.750	.011	3.00	1/4-18 NPT	1/8-27 NPT	LPGX-100308	214.80.687	214.80.866
TCD-0938R2-SSF100	.938	1.000	3.250	1.875	.018	3.00					
TCD-1000R2-SSF100	1.000	1.000	3.375	2.000	.018	3.00					

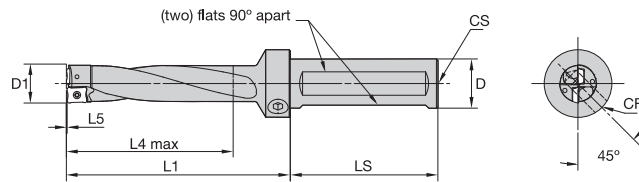
## 3xD • INCH SSF Shanks



Designation	D1	D	L1	L4 max	L5	LS	CS	CF	Insert	Insert Screw	Torx Wrench
TCD-0438R3-SSF075	.438	.750	2.250	1.313	.009	2.00	1/8-27 NPT	1/8-27 NPT	LPGX-06T103	214.60.118	214.60.100
TCD-0469R3-SSF075	.469	.750	2.375	1.406	.009	2.00					
TCD-0500R3-SSF075	.500	.750	2.500	1.500	.002	2.00					
TCD-0531R3-SSF075	.531	.750	2.625	1.594	.003	2.00					
TCD-0563R3-SSF075	.563	.750	2.750	1.688	.003	2.00	1/8-27 NPT	1/8-27 NPT	LPGX-07T204	214.60.125	214.75.490
TCD-0594R3-SSF075	.594	.750	2.875	1.781	.002	2.00					
TCD-0625R3-SSF075	.625	.750	3.000	1.875	.002	2.00					
TCD-0656R3-SSF075	.656	.750	3.125	1.969	.007	2.00					
TCD-0688R3-SSF075	.688	.750	3.250	2.063	.012	2.00	1/8-27 NPT	1/8-27 NPT	LPGX-100308	214.80.687	214.80.866
TCD-0719R3-SSF075	.719	.750	3.375	2.156	.012	2.00					
TCD-0750R3-SSF075	.750	.750	3.500	2.250	.002	2.00					
TCD-0813R3-SSF100	.813	1.000	3.625	2.438	.004	3.00					
TCD-0875R3-SSF100	.875	1.000	3.875	2.625	.011	3.00	1/4-18 NPT	1/8-27 NPT	LPGX-100308	214.80.687	214.80.866
TCD-0938R3-SSF100	.938	1.000	4.125	2.813	.018	3.00					
TCD-1000R3-SSF100	1.000	1.000	4.375	3.000	.018	3.00					

High speed design, and grades - NEW TN6030  
Higher output and savings time

4xD • INCH  
SSF Shanks



Designation	D1	D	L1	L4 max	L5	LS	CS	CF	Insert	Insert Screw	Torx Wrench
TCD-0438R4-SSF075	.438	.750	2.750	2.125	.009	2.00			LPGX-06T103	214.60.118	214.60.100
TCD-0469R4-SSF075	.469	.750	2.875	1.875	.009	2.00					
TCD-0500R4-SSF075	.500	.750	3.000	2.000	.002	2.00	1/8-27 NPT	1/8-27 NPT			
TCD-0531R4-SSF075	.531	.750	3.125	2.125	.003	2.00					
TCD-0563R4-SSF075	.563	.750	3.250	2.250	.003	2.00			LPGX-07T204	214.60.125	214.75.490
TCD-0594R4-SSF075	.594	.750	3.500	2.375	.002	2.00					
TCD-0625R4-SSF075	.625	.750	3.625	2.500	.002	2.00	1/8-27 NPT	1/8-27 NPT			
TCD-0656R4-SSF075	.656	.750	3.750	2.625	.007	2.00					
TCD-0688R4-SSF075	.688	.750	3.875	2.750	.012	2.00			LPGX-100308	214.80.687	214.80.866
TCD-0719R4-SSF075	.719	.750	4.000	2.875	.012	2.00					
TCD-0750R4-SSF075	.750	.750	4.250	3.000	.002	2.00	1/8-27 NPT	1/8-27 NPT			
TCD-0813R4-SSF100	.813	1.000	4.500	3.250	.004	3.00					
TCD-0875R4-SSF100	.875	1.000	4.750	3.500	.011	3.00	1/4-18 NPT	1/8-27 NPT			
TCD-0938R4-SSF100	.938	1.000	5.000	3.750	.018	3.00					
TCD-1000R4-SSF100	1.000	1.000	5.375	4.000	.018	3.00					

## Holemaking Made Easy & Economical

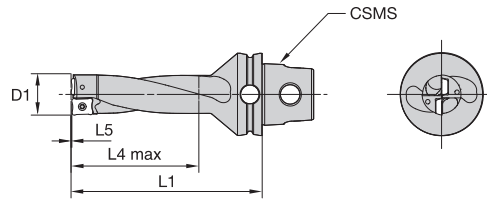
### Top Cut™ Drill • Top Cut Plus™

Advanced grade technology paired with security, durability, and aggressive cutting speeds makes our line of indexable drills the ideal, economical choice. With low up-front costs and the flexibility of multiple insert options, you enjoy smooth cutting action and enhanced stability, time after time.

- Four efficient cutting edges per insert with Top Cut Plus
- Better chip evacuation and superior metal removal rates
- High feed rates and enhanced self-centering capabilities

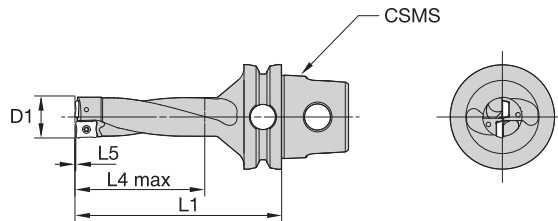


## 3xD • INCH KM40TS

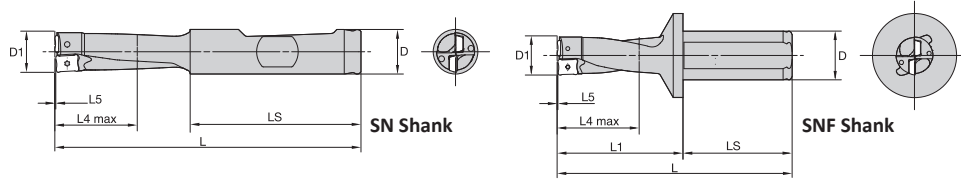


Designation	D1	L1	L4 max	L5	CSMS system size	Insert	Insert Screw	Torx Wrench
KM40TS-TCD-0438R3	.438	2.375	1.314	.009	KM40TS	LPGX-06T103	214.60.118	214.60.100
KM40TS-TCD-0469R3	.469	2.500	1.407	.009				
KM40TS-TCD-0500R3	.500	2.500	1.500	.002				
KM40TS-TCD-0531R3	.531	2.625	1.593	.003				
KM40TS-TCD-0563R3	.563	2.750	1.689	.003	KM40TS	LPGX-07T204	214.60.125	214.75.490
KM40TS-TCD-0594R3	.594	2.875	1.782	.002				
KM40TS-TCD-0625R3	.625	3.000	1.875	.002				
KM40TS-TCD-0656R3	.656	3.125	1.968	.007				
KM40TS-TCD-0688R3	.688	3.250	2.064	.012	KM40TS	LPGX-100308	214.80.687	214.80.866
KM40TS-TCD-0719R3	.719	3.375	2.157	.012				
KM40TS-TCD-0750R3	.750	3.500	2.250	.002				
KM40TS-TCD-0813R3	.813	3.875	2.439	.004				
KM40TS-TCD-0875R3	.875	4.000	2.625	.011	KM40TS	LPGX-100308	214.80.687	214.80.866
KM40TS-TCD-0938R3	.938	4.250	2.814	.018				
KM40TS-TCD-1000R3	1.000	4.375	3.000	.018				

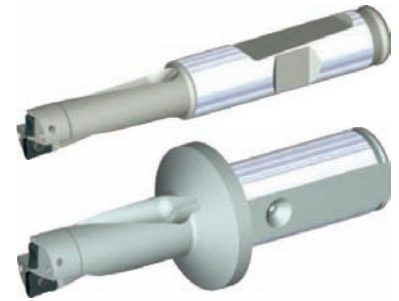
## 3xD • INCH KM50TS



Designation	D1	L1	L4 max	L5	CSMS system size	Insert	Insert Screw	Torx Wrench
KM50TS-TCD-0438R3	.438	2.375	1.314	.009	KM50TS	LPGX-06T103	214.60.118	214.60.100
KM50TS-TCD-0469R3	.469	2.500	1.407	.009				
KM50TS-TCD-0500R3	.500	2.625	1.500	.002				
KM50TS-TCD-0531R3	.531	2.750	1.593	.003				
KM50TS-TCD-0563R3	.563	2.875	1.689	.003	KM50TS	LPGX-07T204	214.60.125	214.75.490
KM50TS-TCD-0594R3	.594	3.000	1.782	.002				
KM50TS-TCD-0625R3	.625	3.125	1.875	.002				
KM50TS-TCD-0656R3	.656	3.250	1.968	.007				
KM50TS-TCD-0688R3	.688	3.375	2.064	.012	KM50TS	LPGX-100308	214.80.687	214.80.866
KM50TS-TCD-0719R3	.719	3.500	2.157	.012				
KM50TS-TCD-0750R3	.750	3.625	2.250	.002				
KM50TS-TCD-0813R3	.813	3.750	2.439	.004				
KM50TS-TCD-0875R3	.875	4.000	2.625	.011	KM50TS	LPGX-100308	214.80.687	214.80.866
KM50TS-TCD-0938R3	.938	4.250	2.814	.018				
KM50TS-TCD-1000R3	1.000	4.500	3.000	.018				



## 2xD • METRIC SN • SNF Shanks



Designation	D1	D	L1	L4 max	L5	LS	L	Insert	Insert Screw	Torx Wrench
TCD-110R2-SN12M	11.0	12.0	--	22.0	0.22	45.0	81.0	LPGX-06T103	214.60.118	214.60.100
TCD-115R2-SN12M	11.5	12.0	--	23.0	0.22	45.0	82.0			
TCD-120R2-SN12M	12.0	12.0	--	24.0	0.06	45.0	83.0			
TCD-125R2-SN16M	12.5	16.0	--	25.0	0.06	48.0	87.0			
TCD-130R2-SN16M	13.0	16.0	--	26.0	0.08	48.0	87.0			
TCD-135R2-SN16M	13.5	16.0	--	27.0	0.08	48.0	88.0			
TCD-140R2-SNF25M	14.0	25.0	48.0	28.0	0.07	56.0	104.0	LPGX-07T204	214.60.125	214.75.490
TCD-150R2-SNF25M	15.0	25.0	50.0	30.0	0.05	56.0	106.0			
TCD-160R2-SNF25M	16.0	25.0	52.0	32.0	0.18	56.0	108.0			
TCD-170R2-SNF25M	17.0	25.0	53.0	34.0	0.31	56.0	109.0			
TCD-175R2-SNF25M	17.5	25.0	53.5	35.0	0.31	56.0	109.5			
TCD-180R2-SNF25M	18.0	25.0	54.0	36.0	0.31	56.0	110.0			
TCD-190R2-SNF25M	19.0	25.0	56.0	38.0	0.06	56.0	112.0	LPGX-100308	214.80.687	214.80.866
TCD-200R2-SNF25M	20.0	25.0	58.0	40.0	0.10	56.0	114.0			
TCD-210R2-SNF25M	21.0	25.0	60.0	42.0	0.28	56.0	116.0			
TCD-220R2-SNF25M	22.0	25.0	64.0	44.0	0.28	56.0	120.0			
TCD-230R2-SNF25M	23.0	25.0	66.0	46.0	0.45	56.0	122.0			
TCD-240R2-SNF25M	24.0	25.0	68.0	48.0	0.45	56.0	124.0			
TCD-250R2-SNF25M	25.0	25.0	70.0	50.0	0.45	56.0	126.0			

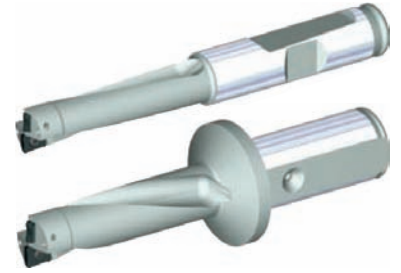
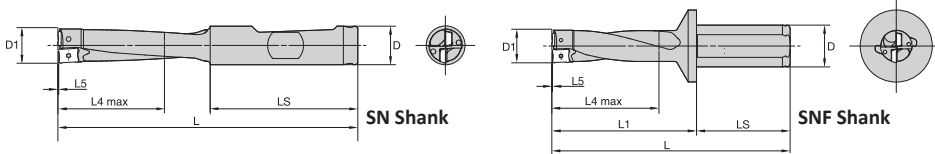
## Holemaking Made Easy & Economical

### Victory Top Drill M1™

With performance levels and metal removal rates comparable to that of solid carbide drills, our modular drilling tools offer all the quality and performance you need in one versatile, economical package. Choose Victory Top Drill M1™ for all of your steel and cast iron general drilling applications.

- Superior tool life reliability with no set-up or insert regrinding costs
- Better hole quality and higher metal removal rates than the competition
- Disposable, easy-to-change inserts for low-cost, consistent performance

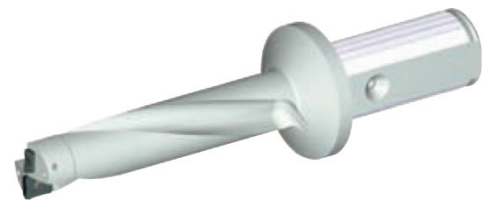
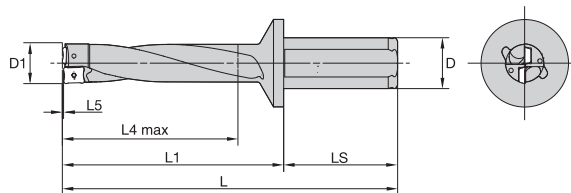




## 3xD • METRIC SN • SNF Shanks

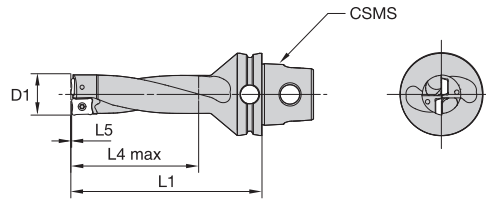
Designation	D1	D	L1	L4 max	L5	LS	L	Insert	Insert Screw	Torx Wrench
TCD-110R3-SN12M	11.0	12.0	--	33.0	0.22	45.0	92.0	LPGX-06T103	214.60.118	214.60.100
TCD-115R3-SN12M	11.5	12.0	--	34.5	0.22	45.0	93.5			
TCD-120R3-SN12M	12.0	12.0	--	36.0	0.06	45.0	95.0			
TCD-125R3-SN16M	12.5	16.0	--	37.5	0.06	48.0	99.5			
TCD-130R3-SN16M	13.0	16.0	--	39.0	0.08	48.0	100.0			
TCD-135R3-SN16M	13.5	16.0	--	40.5	0.08	48.0	101.5			
TCD-140R3-SNF25M	14.0	25.0	62.0	42.0	0.07	56.0	118.0	LPGX-07T204	214.60.125	214.75.490
TCD-150R3-SNF25M	15.0	25.0	65.0	45.0	0.05	56.0	121.0			
TCD-160R3-SNF25M	16.0	25.0	68.0	48.0	0.18	56.0	124.0			
TCD-170R3-SNF25M	17.0	25.0	70.0	51.0	0.31	56.0	126.0			
TCD-175R3-SNF25M	17.5	25.0	71.0	52.5	0.31	56.0	127.0			
TCD-180R3-SNF25M	18.0	25.0	72.0	54.0	0.31	56.0	128.0			
TCD-190R3-SNF25M	19.0	25.0	75.0	57.0	0.06	56.0	131.0	LPGX-100308	214.80.687	214.80.866
TCD-200R3-SNF25M	20.0	25.0	78.0	60.0	0.10	56.0	134.0			
TCD-210R3-SNF25M	21.0	25.0	81.0	63.0	0.28	56.0	137.0			
TCD-220R3-SNF25M	22.0	25.0	86.0	66.0	0.28	56.0	142.0			
TCD-230R3-SNF25M	23.0	25.0	89.0	69.0	0.45	56.0	145.0			
TCD-240R3-SNF25M	24.0	25.0	92.0	72.0	0.45	56.0	148.0			
TCD-250R3-SNF25M	25.0	25.0	95.0	75.0	0.45	56.0	151.0			

## 4xD • METRIC SNF Shank



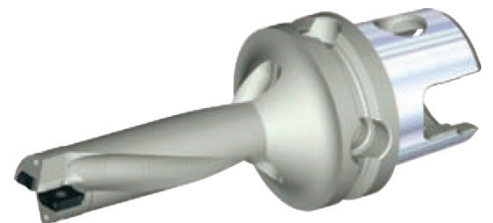
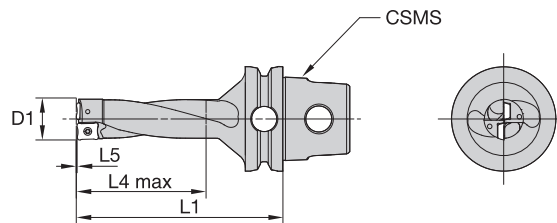
Designation	D1	D	L1	L4 max	L5	LS	L	Insert	Insert Screw	Torx Wrench
TCD-140R4-SNF25M	14.0	25.0	76.0	56.0	0.07	56.0	132.0	LPGX-07T204	214.60.125	214.75.490
TCD-150R4-SNF25M	15.0	25.0	80.0	60.0	0.05	56.0	136.0			
TCD-160R4-SNF25M	16.0	25.0	84.0	64.0	0.18	56.0	140.0			
TCD-170R4-SNF25M	17.0	25.0	87.0	68.0	0.31	56.0	143.0			
TCD-175R4-SNF25M	17.5	25.0	88.5	70.0	0.31	56.0	144.5			
TCD-180R4-SNF25M	18.0	25.0	90.0	72.0	0.31	56.0	146.0			
TCD-190R4-SNF25M	19.0	25.0	94.0	76.0	0.06	56.0	150.0	LPGX-100308	214.80.687	214.80.866
TCD-200R4-SNF25M	20.0	25.0	98.0	80.0	0.10	56.0	154.0			
TCD-210R4-SNF25M	21.0	25.0	102.0	84.0	0.28	56.0	158.0			
TCD-220R4-SNF25M	22.0	25.0	108.0	88.0	0.28	56.0	164.0			
TCD-230R4-SNF25M	23.0	25.0	112.0	92.0	0.45	56.0	168.0			
TCD-240R4-SNF25M	24.0	25.0	118.0	96.0	0.45	56.0	174.0			
TCD-250R4-SNF25M	25.0	25.0	120.0	100.0	0.45	56.0	176.0			

## 3xD • METRIC KM40TS



Designation	D1	L1	L4 max	L5	CSMS system size	Insert	Insert Screw	Torx Wrench
KM40TS-TCD-110R3M	11.0	49.0	33.0	0.22	KM40TS	LPGX-06T103	214.60.118	214.60.100
KM40TS-TCD-120R3M	12.0	52.0	36.0	0.06				
KM40TS-TCD-130R3M	13.0	55.0	39.0	0.08				
KM40TS-TCD-140R3M	14.0	58.0	42.0	0.07				
KM40TS-TCD-150R3M	15.0	61.0	45.0	0.05	KM40TS	LPGX-07T204	214.60.125	214.75.490
KM40TS-TCD-160R3M	16.0	64.0	48.0	0.18				
KM40TS-TCD-170R3M	17.0	67.0	51.0	0.31				
KM40TS-TCD-180R3M	18.0	70.0	54.0	0.31				
KM40TS-TCD-190R3M	19.0	73.0	57.0	0.06	KM40TS	LPGX-100308	214.80.687	214.80.866
KM40TS-TCD-200R3M	20.0	76.0	60.0	0.10				
KM40TS-TCD-210R3M	21.0	79.0	63.0	0.28				
KM40TS-TCD-220R3M	22.0	82.0	66.0	0.28				
KM40TS-TCD-230R3M	23.0	85.0	69.0	0.45				
KM40TS-TCD-240R3M	24.0	88.0	72.0	0.45				
KM40TS-TCD-250R3M	25.0	91.0	75.0	0.45				

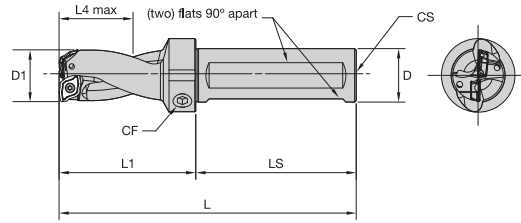
## 3xD • METRIC KM50TS



Designation	D1	L1	L4 max	L5	CSMS system size	Insert	Insert Screw	Torx Wrench
KM50TS-TCD-110R3M	11.0	96.0	78.0	0.22	KM50TS	LPGX-06T103	214.60.118	214.60.100
KM50TS-TCD-120R3M	12.0	99.0	81.0	0.06				
KM50TS-TCD-130R3M	13.0	102.0	84.0	0.08				
KM50TS-TCD-140R3M	14.0	105.0	87.0	0.07				
KM50TS-TCD-150R3M	15.0	108.0	90.0	0.05	KM50TS	LPGX-07T204	214.60.125	214.75.490
KM50TS-TCD-160R3M	16.0	111.0	93.0	0.18				
KM50TS-TCD-170R3M	17.0	114.0	96.0	0.31				
KM50TS-TCD-180R3M	18.0	117.0	99.0	0.31				
KM50TS-TCD-190R3M	19.0	120.0	102.0	0.06	KM50TS	LPGX-100308	214.80.687	214.80.866
KM50TS-TCD-200R3M	20.0	123.0	105.0	0.10				
KM50TS-TCD-210R3M	21.0	126.0	108.0	0.28				
KM50TS-TCD-220R3M	22.0	129.0	111.0	0.28				
KM50TS-TCD-230R3M	23.0	132.0	114.0	0.45				
KM50TS-TCD-240R3M	24.0	135.0	117.0	0.45				
KM50TS-TCD-250R3M	25.0	138.0	120.0	0.45				

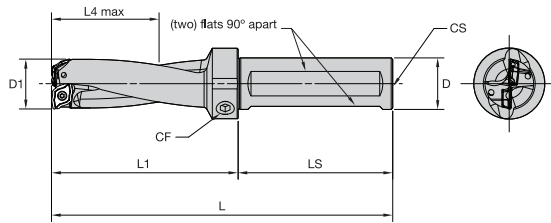
**REPLACE WITH AD**

**2xD • INCH**  
**SSF Shank**



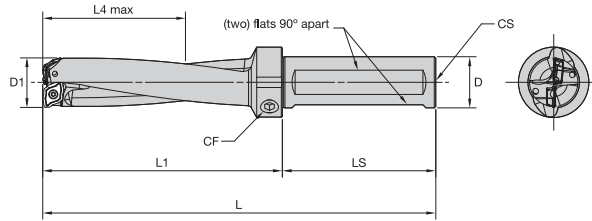
Designation	D1	D	L1	L4 max	L5	LS	L	CS	CF	Insert	Insert Screw	Torx Wrench
TCP-0938R2-SSF100	.938	1.000	3.125	1.876	.028	3.00	6.125	1/4-18 NPT	1/8-27 NPT	XOMT-070304	214.80.800	214.80.866
TCP-1000R2-SSF100	1.000	1.000	3.250	2.000	.028	3.00	6.250					
TCP-1031R2-SSF125	1.031	1.250	3.375	2.062	.028	3.25	6.625					
TCP-1063R2-SSF125	1.063	1.250	3.375	2.126	.028	3.25	6.625					
TCP-1094R2-SSF125	1.094	1.250	3.500	2.188	.028	3.25	6.750					
TCP-1125R2-SSF125	1.125	1.250	3.625	2.250	.028	3.25	6.875					
TCP-1156R2-SSF125	1.156	1.250	3.625	2.312	.028	3.25	6.875					
TCP-1188R2-SSF125	1.188	1.250	3.750	2.376	.028	3.25	7.000					
TCP-1210R2-SSF125	1.210	1.250	3.875	2.420	.028	3.25	7.125					
TCP-1250R2-SSF125	1.250	1.250	3.875	2.500	.028	3.25	7.125					
TCP-1281R2-SSF125	1.281	1.250	4.000	2.562	.028	3.25	7.250					
TCP-1313R2-SSF125	1.313	1.250	4.125	2.626	.028	3.25	7.375					
TCP-1375R2-SSF125	1.375	1.250	4.250	2.750	.038	3.25	7.500					
TCP-1406R2-SSF125	1.406	1.250	4.375	2.812	.038	3.25	7.625					
TCP-1438R2-SSF125	1.438	1.250	4.375	2.876	.038	3.25	7.625					
TCP-1469R2-SSF125	1.469	1.250	4.500	2.938	.038	3.25	7.750					
TCP-1500R2-SSF125	1.500	1.250	4.625	3.000	.038	3.25	7.875					
TCP-1531R2-SSF150	1.531	1.500	4.625	3.062	.038	3.63	8.257	1/4-18 NPT	1/8-27 NPT	XOMT-12T308	214.80.558	214.80.824
TCP-1563R2-SSF150	1.563	1.500	4.750	3.126	.038	3.63	8.382					
TCP-1625R2-SSF150	1.625	1.500	4.875	3.250	.038	3.63	8.507					
TCP-1688R2-SSF150	1.688	1.500	5.000	3.376	.038	3.63	8.632					
TCP-1750R2-SSF150	1.750	1.500	5.125	3.500	.038	3.63	8.757					
TCP-1813R2-SSF150	1.813	1.500	5.250	3.626	.058	3.63	8.882					
TCP-1875R2-SSF150	1.875	1.500	5.375	3.750	.058	3.63	9.007					
TCP-1938R2-SSF150	1.938	1.500	5.625	3.876	.058	3.63	9.257					
TCP-2000R2-SSF150	2.000	1.500	5.875	4.000	.058	3.63	9.507	1/4-18 NPT	1/8-27 NPT	XOMT-160508	214.80.672	214.80.075
TCP-2125R2-SSF200	2.125	2.000	6.125	4.250	.058	4.00	10.125					
TCP-2188R2-SSF200	2.188	2.000	6.250	4.376	.058	4.00	10.250					
TCP-2250R2-SSF200	2.250	2.000	6.500	4.500	.058	4.00	10.500					

**3xD • INCH**  
**SSF Shank**



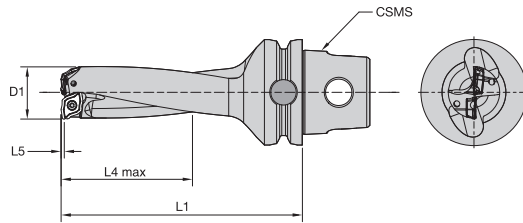
Designation	D1	D	L1	L4 max	L5	LS	L	CS	CF	Insert	Insert Screw	Torx Wrench
TCP-0938R3-SSF100	.938	1.000	4.125	2.814	.028	3.00	7.125	1/4-18 NPT	1/8-27 NPT	XOMT-070304	214.80.800	214.80.866
TCP-1000R3-SSF100	1.000	1.000	4.250	3.000	.028	3.00	7.250					
TCP-1031R3-SSF125	1.031	1.250	4.375	3.930	.028	3.25	7.625					
TCP-1063R3-SSF125	1.063	1.250	4.500	3.189	.028	3.25	7.750					
TCP-1094R3-SSF125	1.094	1.250	4.625	3.282	.028	3.25	7.875					
TCP-1125R3-SSF125	1.125	1.250	4.750	3.375	.028	3.25	8.000					
TCP-1156R3-SSF125	1.156	1.250	4.875	3.468	.028	3.25	8.125					
TCP-1188R3-SSF125	1.188	1.250	5.000	3.564	.028	3.25	8.250					
TCP-1210R3-SSF125	1.210	1.250	5.125	3.630	.028	3.25	8.375					
TCP-1250R3-SSF125	1.250	1.250	5.250	3.750	.028	3.25	8.500					
TCP-1281R3-SSF125	1.281	1.250	5.375	3.843	.028	3.25	8.625					
TCP-1313R3-SSF125	1.313	1.250	5.500	3.939	.028	3.25	8.750					
TCP-1375R3-SSF125	1.375	1.250	5.625	4.125	.038	3.25	8.875					
TCP-1406R3-SSF125	1.406	1.250	5.750	4.218	.038	3.25	9.000	1/4-18 NPT	1/8-27 NPT	XOMT-09T306	214.80.672	214.80.866
TCP-1438R3-SSF125	1.438	1.250	5.875	4.314	.038	3.25	9.125					
TCP-1469R3-SSF125	1.469	1.250	6.000	4.407	.038	3.25	9.250					
TCP-1500R3-SSF125	1.500	1.250	6.125	4.500	.038	3.25	9.375					
TCP-1531R3-SSF150	1.531	1.500	6.250	4.593	.038	3.63	9.882					
TCP-1563R3-SSF150	1.563	1.500	6.375	4.689	.038	3.63	10.007					
TCP-1625R3-SSF150	1.625	1.500	6.500	4.875	.038	3.63	10.132					
TCP-1688R3-SSF150	1.688	1.500	6.750	5.064	.038	3.63	10.382					
TCP-1750R3-SSF150	1.750	1.500	6.875	5.250	.038	3.63	10.507					
TCP-1813R3-SSF150	1.813	1.500	7.125	5.439	.058	3.63	10.757					
TCP-1875R3-SSF150	1.875	1.500	7.250	5.625	.058	3.63	10.882					
TCP-1938R3-SSF150	1.938	1.500	7.500	5.814	.058	3.63	11.132					
TCP-2000R3-SSF150	2.000	1.500	7.875	6.000	.058	3.63	11.507					
TCP-2125R3-SSF200	2.125	2.000	8.250	6.375	.058	4.00	12.250	1/4-18 NPT	1/8-27 NPT	XOMT-12T308	214.80.558	214.80.824
TCP-2188R3-SSF200	2.188	2.000	8.500	6.564	.058	4.00	12.500					
TCP-2250R3-SSF200	2.250	2.000	8.750	6.750	.058	4.00	12.750					
TCP-2125R3-SSF200	2.125	2.000	8.250	6.375	.058	4.00	12.250					
TCP-2188R3-SSF200	2.188	2.000	8.500	6.564	.058	4.00	12.500	1/4-18 NPT	1/8-27 NPT	XOMT-160508	214.80.672	214.80.075
TCP-2250R3-SSF200	2.250	2.000	8.750	6.750	.058	4.00	12.750					
TCP-2125R3-SSF200	2.125	2.000	8.250	6.375	.058	4.00	12.250					
TCP-2188R3-SSF200	2.188	2.000	8.500	6.564	.058	4.00	12.500					

**4xD • INCH**  
**SSF Shank**



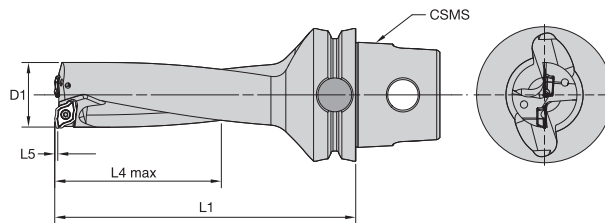
Designation	D1	D	L1	L4 max	L5	LS	L	CS	CF	Insert	Insert Screw	Torx Wrench
TCP-0938R4-SSF100	.938	1.000	5.000	3.752	.028	3.00	8.000	1/4-18 NPT	1/8-27 NPT	XOMT-070304	214.80.800	214.80.866
TCP-1000R4-SSF100	1.000	1.000	5.250	4.000	.028	3.00	8.250					
TCP-1031R4-SSF125	1.031	1.250	5.500	4.124	.028	3.25	8.750					
TCP-1063R4-SSF125	1.063	1.250	5.625	4.252	.028	3.25	8.875					
TCP-1094R4-SSF125	1.094	1.250	5.750	4.376	.028	3.25	9.000					
TCP-1125R4-SSF125	1.125	1.250	5.875	4.500	.028	3.25	9.125					
TCP-1156R4-SSF125	1.156	1.250	6.000	4.624	.028	3.25	9.250					
TCP-1188R4-SSF125	1.188	1.250	6.125	4.752	.028	3.25	9.375					
TCP-1210R4-SSF125	1.210	1.250	6.250	4.840	.028	3.25	9.500					
TCP-1250R4-SSF125	1.250	1.250	6.375	5.000	.028	3.25	9.625					
TCP-1281R4-SSF125	1.281	1.250	6.625	5.124	.028	3.25	9.875					
TCP-1313R4-SSF125	1.313	1.250	6.750	5.252	.028	3.25	10.000					
TCP-1375R4-SSF125	1.375	1.250	7.000	5.500	.038	3.25	10.250					
TCP-1406R4-SSF125	1.406	1.250	7.125	5.624	.038	3.25	10.375					
TCP-1438R4-SSF125	1.438	1.250	7.250	5.752	.038	3.25	10.500					
TCP-1469R4-SSF125	1.469	1.250	7.500	5.876	.038	3.25	10.750					
TCP-1500R4-SSF125	1.500	1.250	7.625	6.000	.038	3.25	10.875					
TCP-1531R4-SSF150	1.531	1.500	7.750	6.520	.038	3.63	11.382	1/4-18 NPT	1/8-27 NPT	XOMT-12T308	214.80.558	214.80.824
TCP-1563R4-SSF150	1.563	1.500	7.875	6.252	.038	3.63	11.507					
TCP-1625R4-SSF150	1.625	1.500	8.125	6.500	.038	3.63	11.757					
TCP-1688R4-SSF150	1.688	1.500	8.375	6.752	.038	3.63	12.007					
TCP-1750R4-SSF150	1.750	1.500	8.625	7.000	.038	3.63	12.257					
TCP-1813R4-SSF150	1.813	1.500	8.875	7.252	.058	3.63	12.507					
TCP-1875R4-SSF150	1.875	1.500	9.125	7.500	.058	3.63	12.757					
TCP-1938R4-SSF150	1.938	1.500	9.500	7.752	.058	3.63	13.132					
TCP-2000R4-SSF150	2.000	1.500	9.875	8.000	.058	3.63	13.507	1/4-18 NPT	1/8-27 NPT	XOMT-160508	214.80.672	214.80.075
TCP-2125R4-SSF200	2.125	2.000	10.375	8.500	.058	4.00	14.375					
TCP-2188R4-SSF200	2.188	2.000	10.625	8.752	.058	4.00	14.625					
TCP-2250R4-SSF200	2.250	2.000	11.000	9.000	.058	4.00	15.000					

## 3xD • INCH KM50TS



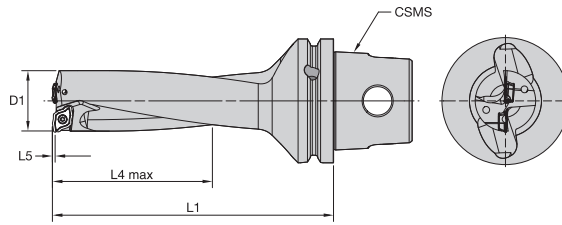
Designation	D1	L1	L4 max	L5	CSMS system size	Insert	Insert Screw	Torx Wrench
KM50TS-TCP-1000R3	1.000	4.500	3.000	.028	KM50TS	XOMT-09T306	214.80.672	214.80.866
KM50TS-TCP-1125R3	1.125	5.000	3.375	.028				
KM50TS-TCP-1250R3	1.250	5.500	3.750	.028				
KM50TS-TCP-1313R3	1.313	5.750	3.939	.028				
KM50TS-TCP-1375R3	1.375	5.875	4.125	.028				
KM50TS-TCP-1438R3	1.438	6.125	4.314	.038	KM50TS	XOMT-12T308	214.80.558	214.80.824
KM50TS-TCP-1500R3	1.500	6.375	4.500	.038				
KM50TS-TCP-1563R3	1.563	6.625	4.689	.038				
KM50TS-TCP-1625R3	1.625	6.875	4.875	.038				
KM50TS-TCP-1688R3	1.688	7.125	5.064	.038				
KM50TS-TCP-1750R3	1.750	7.375	5.250	.038				

## 3xD • INCH KM63TS



Designation	D1	L1	L4 max	L5	CSMS system size	Insert	Insert Screw	Torx Wrench
KM63TS-TCP-1250R3	1.250	5.625	3.750	.028	KM63TS	XOMT-09T306	214.80.672	214.80.866
KM63TS-TCP-1313R3	1.313	5.750	3.939	.028				
KM63TS-TCP-1375R3	1.375	6.125	4.125	.028				
KM63TS-TCP-1438R3	1.438	6.375	4.314	.038	KM63TS	XOMT-12T308	214.80.558	214.80.824
KM63TS-TCP-1500R3	1.500	6.500	4.500	.038				
KM63TS-TCP-1563R3	1.563	6.750	4.689	.038				
KM63TS-TCP-1625R3	1.625	7.000	4.875	.038				
KM63TS-TCP-1688R3	1.688	7.250	5.064	.038				
KM63TS-TCP-1750R3	1.750	7.500	5.250	.038	KM63TS	XOMT-160508	214.80.672	214.80.075
KM63TS-TCP-1875R3	1.875	8.000	5.625	.058				
KM63TS-TCP-1938R3	1.938	8.250	5.814	.058				
KM63TS-TCP-2000R3	2.000	8.375	6.000	.058				

## 3xD • INCH KM63XMZ



Designation	D1	L1	L4 max	L5	CSMS system size	Insert	Insert Screw	Torx Wrench
KM63XMZ-TCP-1250R3Y	1.250	5.625	3.750	.028	KM63XMZ	XOMT-09T306	214.80.672	214.80.866
KM63XMZ-TCP-1313R3Y	1.313	5.750	3.939	.028				
KM63XMZ-TCP-1375R3Y	1.375	6.125	4.125	.028				
KM63XMZ-TCP-1438R3Y	1.438	6.375	4.314	.038	KM63XMZ	XOMT-12T308	214.80.558	214.80.824
KM63XMZ-TCP-1500R3Y	1.500	6.500	4.500	.038				
KM63XMZ-TCP-1563R3Y	1.563	6.750	4.689	.038				
KM63XMZ-TCP-1625R3Y	1.625	7.000	4.875	.038				
KM63XMZ-TCP-1688R3Y	1.688	7.250	5.064	.038				
KM63XMZ-TCP-1750R3Y	1.750	7.500	5.250	.038	KM63XMZ	XOMT-160508	214.80.672	214.80.075
KM63XMZ-TCP-1875R3Y	1.875	8.000	5.625	.058				
KM63XMZ-TCP-1938R3Y	1.938	8.250	5.814	.058				
KM63XMZ-TCP-2000R3Y	2.000	8.375	6.000	.058				

## Holemaking Made Easy & Economical

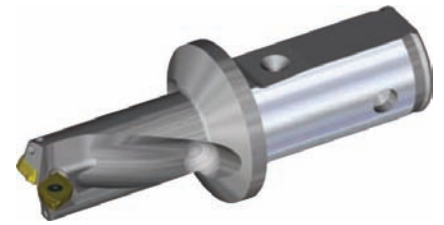
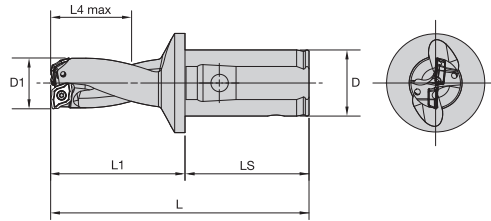
### Top Drill S™ & Top Drill S+™

For the best possible hole quality in pre-finished primary operation drilling, our extensive line of solid carbide drills enables complex specials, inclined exits, and cross holes to serve a broad variety of applications. Available in two versatile and high-performance designs, the Top Drill S™ and TOP Drill S+™, our proprietary solid carbide drill technology ensures the highest speed and feed rates in the industry.

- Suitable for a broad range of materials and applications
- PVD coating for increased tool life and wear resistance
- Consistent chip forming and breaking



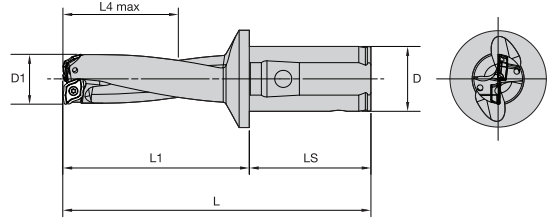
## 2xD • METRIC SNF Shank



Designation	D1	D	L1	L4 max	L5	LS	L	Insert	Insert Screw	Torx Wrench
TCP-190R2-SNF25M	19.0	25.0	54.0	38.0	0.70	56.0	110.0	XOMT-070304	214.80.800	214.80.866
TCP-200R2-SNF25M	20.0	25.0	56.0	40.0	0.70	56.0	112.0			
TCP-210R2-SNF25M	21.0	25.0	58.0	42.0	0.70	56.0	114.0			
TCP-220R2-SNF25M	22.0	25.0	60.0	44.0	0.70	56.0	116.0			
TCP-230R2-SNF25M	23.0	25.0	62.0	46.0	0.70	56.0	118.0			
TCP-240R2-SNF25M	24.0	25.0	64.0	48.0	0.70	56.0	120.0			
TCP-250R2-SNF32M	25.0	32.0	65.0	50.0	0.70	60.0	125.0	XOMT-09T306	214.80.672	214.80.866
TCP-260R2-SNF32M	26.0	32.0	67.0	52.0	0.70	60.0	127.0			
TCP-270R2-SNF32M	27.0	32.0	69.0	54.0	0.70	60.0	129.0			
TCP-280R2-SNF32M	28.0	32.0	70.0	56.0	0.70	60.0	130.0			
TCP-290R2-SNF32M	29.0	32.0	72.0	58.0	0.70	60.0	132.0			
TCP-300R2-SNF32M	30.0	32.0	74.0	60.0	0.70	60.0	134.0			
TCP-310R2-SNF32M	31.0	32.0	77.0	62.0	0.70	60.0	137.0			
TCP-320R2-SNF32M	32.0	32.0	78.0	64.0	0.70	60.0	138.0			
TCP-330R2-SNF32M	33.0	32.0	80.0	66.0	0.70	60.0	140.0			
TCP-340R2-SNF32M	34.0	32.0	82.0	68.0	0.70	60.0	142.0			
TCP-350R2-SNF40M	35.0	40.0	92.0	70.0	0.96	70.0	162.0	XOMT-12T308	214.80.558	214.80.824
TCP-360R2-SNF40M	36.0	40.0	94.0	72.0	0.96	70.0	164.0			
TCP-370R2-SNF40M	37.0	40.0	97.0	74.0	0.96	70.0	167.0			
TCP-380R2-SNF40M	38.0	40.0	99.0	76.0	0.96	70.0	169.0			
TCP-390R2-SNF40M	39.0	40.0	101.0	78.0	0.96	70.0	171.0			
TCP-400R2-SNF40M	40.0	40.0	103.0	80.0	0.96	70.0	173.0			
TCP-410R2-SNF40M	41.0	40.0	106.0	82.0	0.96	70.0	176.0			
TCP-420R2-SNF40M	42.0	40.0	108.0	84.0	0.96	70.0	178.0			
TCP-430R2-SNF40M	43.0	40.0	110.0	86.0	0.96	70.0	180.0			
TCP-440R2-SNF40M	44.0	40.0	113.0	88.0	0.96	70.0	183.0			
TCP-450R2-SNF40M	45.0	40.0	115.0	90.0	0.96	70.0	185.0			
TCP-460R2-SNF40M	46.0	40.0	117.0	92.0	1.48	70.0	187.0	XOMT-160508	214.80.672	214.80.075
TCP-470R2-SNF40M	47.0	40.0	120.0	94.0	1.48	70.0	190.0			
TCP-480R2-SNF40M	48.0	40.0	122.0	96.0	1.48	70.0	192.0			
TCP-490R2-SNF40M	49.0	40.0	125.0	98.0	1.48	70.0	195.0			
TCP-500R2-SNF40M	50.0	40.0	128.0	100.0	1.48	70.0	198.0			
TCP-510R2-SNF40M	51.0	40.0	130.0	102.0	1.48	70.0	200.0			
TCP-520R2-SNF40M	52.0	40.0	133.0	104.0	1.48	70.0	203.0			
TCP-530R2-SNF40M	53.0	40.0	136.0	106.0	1.48	70.0	206.0			
TCP-540R2-SNF40M	54.0	40.0	139.0	108.0	1.48	70.0	209.0			
TCP-550R2-SNF40M	55.0	40.0	142.0	110.0	1.48	70.0	212.0			
TCP-560R2-SNF40M	56.0	40.0	145.0	112.0	1.48	70.0	215.0			
TCP-570R2-SNF40M	57.0	40.0	148.0	114.0	1.48	70.0	218.0			
TCP-580R2-SNF40M	58.0	40.0	151.0	116.0	1.48	70.0	221.0			
TCP-590R2-SNF40M	59.0	40.0	154.0	118.0	1.48	70.0	224.0			
TCP-600R2-SNF40M	60.0	40.0	157.0	120.0	1.48	70.0	227.0			

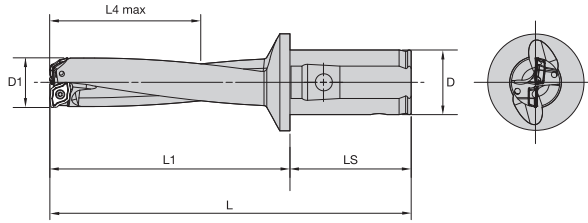
# WIDIA Top Cut Plus™ Indexable Insert Drills TCP • METRIC

**3xD • METRIC**  
**SNF Shank**



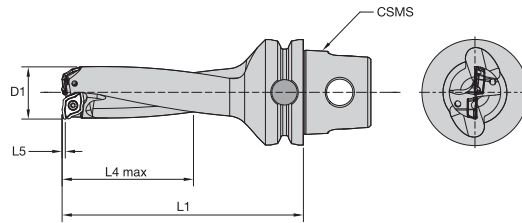
Designation	D1	D	L1	L4 max	L5	LS	L	Insert	Insert Screw	Torx Wrench
TCP-190R3-SNF25M	19.0	25.0	75.0	57.0	0.70	56.0	131.0	XOMT-070304	214.80.800	214.80.866
TCP-200R3-SNF25M	20.0	25.0	78.0	60.0	0.70	56.0	134.0			
TCP-210R3-SNF25M	21.0	25.0	81.0	63.0	0.70	56.0	137.0			
TCP-220R3-SNF25M	22.0	25.0	84.0	66.0	0.70	56.0	140.0			
TCP-230R3-SNF25M	23.0	25.0	89.0	69.0	0.70	56.0	143.0			
TCP-240R3-SNF25M	24.0	25.0	89.0	72.0	0.70	56.0	145.0			
TCP-250R3-SNF32M	25.0	32.0	92.0	75.0	0.70	60.0	152.0	XOMT-09T306	214.80.672	214.80.866
TCP-260R3-SNF32M	26.0	32.0	95.0	78.0	0.70	60.0	155.0			
TCP-270R3-SNF32M	27.0	32.0	98.0	81.0	0.70	60.0	158.0			
TCP-280R3-SNF32M	28.0	32.0	101.0	84.0	0.70	60.0	161.0			
TCP-290R3-SNF32M	29.0	32.0	104.0	87.0	0.70	60.0	164.0			
TCP-300R3-SNF32M	30.0	32.0	107.0	90.0	0.70	60.0	167.0			
TCP-310R3-SNF32M	31.0	32.0	110.0	93.0	0.70	60.0	170.0			
TCP-320R3-SNF32M	32.0	32.0	112.0	96.0	0.70	60.0	172.0			
TCP-330R3-SNF32M	33.0	32.0	115.0	99.0	0.70	60.0	175.0			
TCP-340R3-SNF32M	34.0	32.0	118.0	102.0	0.70	60.0	178.0			
TCP-350R3-SNF40M	35.0	40.0	129.0	105.0	0.96	70.0	199.0	XOMT-12T308	214.80.558	214.80.824
TCP-360R3-SNF40M	36.0	40.0	133.0	108.0	0.96	70.0	203.0			
TCP-370R3-SNF40M	37.0	40.0	136.0	111.0	0.96	70.0	206.0			
TCP-380R3-SNF40M	38.0	40.0	139.0	114.0	0.96	70.0	209.0			
TCP-390R3-SNF40M	39.0	40.0	142.0	117.0	0.96	70.0	212.0			
TCP-400R3-SNF40M	40.0	40.0	146.0	120.0	0.96	70.0	216.0			
TCP-410R3-SNF40M	41.0	40.0	149.0	123.0	0.96	70.0	219.0			
TCP-420R3-SNF40M	42.0	40.0	152.0	126.0	0.96	70.0	222.0			
TCP-430R3-SNF40M	43.0	40.0	156.0	129.0	0.96	70.0	226.0			
TCP-440R3-SNF40M	44.0	40.0	159.0	132.0	0.96	70.0	229.0			
TCP-450R3-SNF40M	45.0	40.0	163.0	135.0	0.96	70.0	233.0			
TCP-460R3-SNF40M	46.0	40.0	166.0	138.0	1.48	70.0	236.0			
TCP-470R3-SNF40M	47.0	40.0	170.0	141.0	1.48	70.0	240.0			
TCP-480R3-SNF40M	48.0	40.0	173.0	144.0	1.48	70.0	243.0			
TCP-490R3-SNF40M	49.0	40.0	177.0	147.0	1.48	70.0	247.0			
TCP-500R3-SNF40M	50.0	40.0	181.0	150.0	1.48	70.0	251.0			
TCP-510R3-SNF40M	51.0	40.0	184.0	153.0	1.48	70.0	254.0			
TCP-520R3-SNF40M	52.0	40.0	188.0	156.0	1.48	70.0	258.0			
TCP-530R3-SNF40M	53.0	40.0	192.0	159.0	1.48	70.0	262.0			
TCP-540R3-SNF40M	54.0	40.0	196.0	162.0	1.48	70.0	266.0			
TCP-550R3-SNF40M	55.0	40.0	200.0	165.0	1.48	70.0	270.0			
TCP-560R3-SNF40M	56.0	40.0	204.0	168.0	1.48	70.0	274.0			
TCP-570R3-SNF40M	57.0	40.0	208.0	171.0	1.48	70.0	278.0			
TCP-580R3-SNF40M	58.0	40.0	212.0	174.0	1.48	70.0	282.0			
TCP-590R3-SNF40M	59.0	40.0	216.0	177.0	1.48	70.0	286.0			
TCP-600R3-SNF40M	60.0	40.0	221.0	180.0	1.48	70.0	291.0			

## 4xD • METRIC SNF Shank



Designation	D1	D	L1	L4 max	L5	LS	L	Insert	Insert Screw	Torx Wrench
TCP-190R4-SNF25M	19.0	25.0	95.0	76.0	0.70	56.0	151.0	XOMT-070304	214.80.800	214.80.866
TCP-200R4-SNF25M	20.0	25.0	99.0	80.0	0.70	56.0	155.0			
TCP-210R4-SNF25M	21.0	25.0	103.0	84.0	0.70	56.0	159.0			
TCP-220R4-SNF25M	22.0	25.0	107.0	88.0	0.70	56.0	163.0			
TCP-230R4-SNF25M	23.0	25.0	111.0	92.0	0.70	56.0	167.0			
TCP-240R4-SNF25M	24.0	25.0	115.0	96.0	0.70	56.0	171.0			
TCP-250R4-SNF32M	25.0	32.0	119.0	100.0	0.70	60.0	179.0	XOMT-09T306	214.80.672	214.80.866
TCP-260R4-SNF32M	26.0	32.0	123.0	104.0	0.70	60.0	183.0			
TCP-270R4-SNF32M	27.0	32.0	127.0	108.0	0.70	60.0	187.0			
TCP-280R4-SNF32M	28.0	32.0	131.0	112.0	0.70	60.0	191.0			
TCP-290R4-SNF32M	29.0	32.0	135.0	116.0	0.70	60.0	195.0			
TCP-300R4-SNF32M	30.0	32.0	139.0	120.0	0.70	60.0	199.0			
TCP-310R4-SNF32M	31.0	32.0	143.0	124.0	0.70	60.0	203.0			
TCP-320R4-SNF32M	32.0	32.0	147.0	128.0	0.70	60.0	207.0			
TCP-330R4-SNF32M	33.0	32.0	151.0	132.0	0.70	60.0	211.0			
TCP-340R4-SNF32M	34.0	32.0	155.0	136.0	0.70	60.0	215.0			
TCP-350R4-SNF40M	35.0	40.0	166.0	140.0	0.96	70.0	236.0	XOMT-12T308	214.80.558	214.80.824
TCP-360R4-SNF40M	36.0	40.0	170.0	144.0	0.96	70.0	240.0			
TCP-370R4-SNF40M	37.0	40.0	174.0	148.0	0.96	70.0	244.0			
TCP-380R4-SNF40M	38.0	40.0	179.0	152.0	0.96	70.0	249.0			
TCP-390R4-SNF40M	39.0	40.0	183.0	156.0	0.96	70.0	253.0			
TCP-400R4-SNF40M	40.0	40.0	187.0	160.0	0.96	70.0	257.0			
TCP-410R4-SNF40M	41.0	40.0	192.0	164.0	0.96	70.0	262.0			
TCP-420R4-SNF40M	42.0	40.0	196.0	168.0	0.96	70.0	266.0			
TCP-430R4-SNF40M	43.0	40.0	201.0	172.0	0.96	70.0	271.0			
TCP-440R4-SNF40M	44.0	40.0	205.0	176.0	0.96	70.0	275.0			
TCP-450R4-SNF40M	45.0	40.0	210.0	180.0	0.96	70.0	280.0			
TCP-460R4-SNF40M	46.0	40.0	214.0	184.0	1.48	70.0	284.0	XOMT-160508	214.80.672	214.80.075
TCP-470R4-SNF40M	47.0	40.0	219.0	188.0	1.48	70.0	289.0			
TCP-480R4-SNF40M	48.0	40.0	223.0	192.0	1.48	70.0	293.0			
TCP-490R4-SNF40M	49.0	40.0	228.0	196.0	1.48	70.0	298.0			
TCP-500R4-SNF40M	50.0	40.0	233.0	200.0	1.48	70.0	303.0			
TCP-510R4-SNF40M	51.0	40.0	237.0	204.0	1.48	70.0	307.0			
TCP-520R4-SNF40M	52.0	40.0	242.0	208.0	1.48	70.0	312.0			
TCP-530R4-SNF40M	53.0	40.0	247.0	212.0	1.48	70.0	317.0			
TCP-540R4-SNF40M	54.0	40.0	252.0	216.0	1.48	70.0	322.0			
TCP-550R4-SNF40M	55.0	40.0	257.0	220.0	1.48	70.0	327.0			
TCP-560R4-SNF40M	56.0	40.0	262.0	224.0	1.48	70.0	332.0			
TCP-570R4-SNF40M	57.0	40.0	267.0	228.0	1.48	70.0	337.0			
TCP-580R4-SNF40M	58.0	40.0	272.0	232.0	1.48	70.0	342.0			
TCP-590R4-SNF40M	59.0	40.0	278.0	236.0	1.48	70.0	348.0			
TCP-600R4-SNF40M	60.0	40.0	283.0	240.0	1.48	70.0	353.0			

## 3xD • METRIC KM50TS



Designation	D1	L1	L4 max	L5	CSMS system size	Insert	Insert Screw	Torx Wrench
KM50TS-TCP-250R3M	25.0	112.0	75.0	0.70	KM50TS	XOMT-09T306	214.80.672	214.80.866
KM50TS-TCP-260R3M	26.0	116.0	78.0	0.70				
KM50TS-TCP-270R3M	27.0	120.0	81.0	0.70				
KM50TS-TCP-280R3M	28.0	123.0	84.0	0.70				
KM50TS-TCP-290R3M	29.0	127.0	87.0	0.70				
KM50TS-TCP-300R3M	30.0	131.0	90.0	0.70				
KM50TS-TCP-310R3M	31.0	135.0	93.0	0.70				
KM50TS-TCP-320R3M	32.0	138.0	96.0	0.70				
KM50TS-TCP-330R3M	33.0	142.0	99.0	0.70				
KM50TS-TCP-340R3M	34.0	146.0	102.0	0.70				
KM50TS-TCP-350R3M	35.0	150.0	105.0	0.96	KM50TS	XOMT-12T308	214.80.558	214.80.824
KM50TS-TCP-360R3M	36.0	153.0	108.0	0.96				
KM50TS-TCP-370R3M	37.0	157.0	111.0	0.96				
KM50TS-TCP-380R3M	38.0	160.0	114.0	0.96				
KM50TS-TCP-390R3M	39.0	165.0	117.0	0.96				
KM50TS-TCP-400R3M	40.0	168.0	120.0	0.96				
KM50TS-TCP-410R3M	41.0	172.0	123.0	0.96				
KM50TS-TCP-420R3M	42.0	176.0	126.0	0.96				
KM50TS-TCP-430R3M	43.0	180.0	129.0	0.96				
KM50TS-TCP-440R3M	44.0	183.0	132.0	0.96				
KM50TS-TCP-450R3M	45.0	187.0	135.0	0.96				

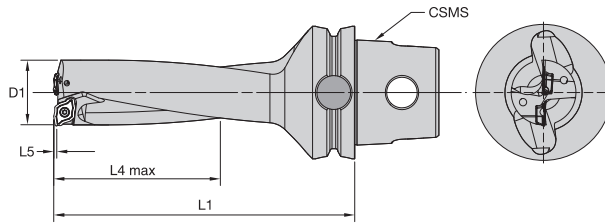
## Holemaking Custom Solutions

We specialize in designing and manufacturing the exact drill for your needs

- Development, design, and production of different types of cutting tools for indexable drilling, solid carbide drilling, reaming, counterboring, and operations

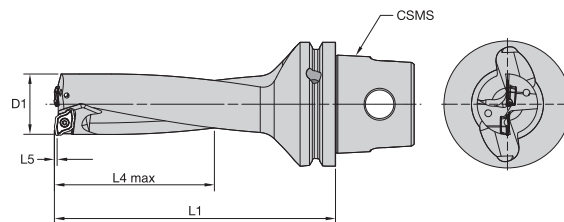


## 3xD • METRIC KM63TS



Designation	D1	L1	L4 max	L5	CSMS system size	Insert	Insert Screw	Torx Wrench
KM63TS-TCP-350R3M	35.0	154.0	105.0	0.96	KM63TS	XOMT-12T308	214.80.558	214.80.824
KM63TS-TCP-360R3M	36.0	157.0	108.0	0.96				
KM63TS-TCP-370R3M	37.0	161.0	111.0	0.96				
KM63TS-TCP-380R3M	38.0	165.0	114.0	0.96				
KM63TS-TCP-390R3M	39.0	169.0	117.0	0.96				
KM63TS-TCP-400R3M	40.0	172.0	120.0	0.96				
KM63TS-TCP-410R3M	41.0	176.0	123.0	0.96				
KM63TS-TCP-420R3M	42.0	180.0	126.0	0.96				
KM63TS-TCP-430R3M	43.0	184.0	129.0	0.96				
KM63TS-TCP-440R3M	44.0	187.0	132.0	0.96				
KM63TS-TCP-450R3M	45.0	191.0	135.0	0.96				
KM63TS-TCP-460R3M	46.0	195.0	138.0	1.48	KM63TS	XOMT-160508	214.80.672	214.80.075
KM63TS-TCP-470R3M	47.0	199.0	141.0	1.48				
KM63TS-TCP-480R3M	48.0	202.0	144.0	1.48				
KM63TS-TCP-490R3M	49.0	206.0	147.0	1.48				
KM63TS-TCP-500R3M	50.0	210.0	150.0	1.48				

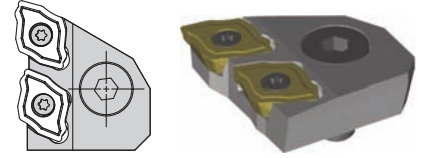
## 3xD • METRIC KM63XMZ



Designation	D1	L1	L4 max	L5	CSMS system size	Insert	Insert Screw	Torx Wrench
KM63XMZ-TCP-350R3YM	35.0	154.0	105.0	0.96	KM63XMZ	XOMT-12T308	214.80.558	214.80.824
KM63XMZ-TCP-360R3YM	36.0	157.0	108.0	0.96				
KM63XMZ-TCP-370R3YM	37.0	161.0	111.0	0.96				
KM63XMZ-TCP-380R3YM	38.0	165.0	114.0	0.96				
KM63XMZ-TCP-390R3YM	39.0	169.0	117.0	0.96				
KM63XMZ-TCP-400R3YM	40.0	172.0	120.0	0.96				
KM63XMZ-TCP-410R3YM	41.0	176.0	123.0	0.96				
KM63XMZ-TCP-420R3YM	42.0	180.0	126.0	0.96				
KM63XMZ-TCP-430R3YM	43.0	184.0	129.0	0.96				
KM63XMZ-TCP-440R3YM	44.0	190.0	132.0	0.96				
KM63XMZ-TCP-450R3YM	45.0	191.0	135.0	0.96				
KM63XMZ-TCP-460R3YM	46.0	195.0	138.0	1.48	KM63XMZ	XOMT-160508	214.80.672	214.80.075
KM63XMZ-TCP-470R3YM	47.0	199.0	141.0	1.48				
KM63XMZ-TCP-480R3YM	48.0	202.0	144.0	1.48				
KM63XMZ-TCP-490R3YM	49.0	206.0	147.0	1.48				
KM63XMZ-TCP-500R3YM	50.0	210.0	150.0	1.48				

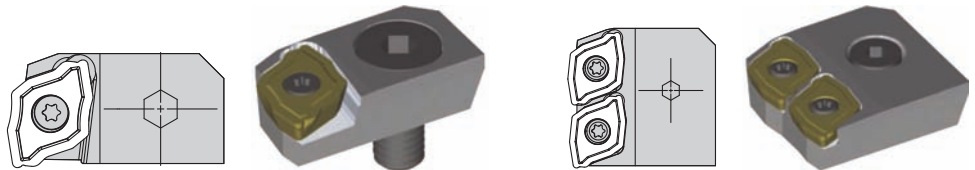
For use with Custom Solution tool bodies

## Cartridges Interior Use



Designation	mm D min	mm D max	inch D min	inch D max	Insert	Insert Screw	Torx Wrench	Insert Screw	Torx Wrench
216.79.200	61.0	64.0	2.402	2.519	XOMT-09T306	214.80.372	214.80.412	214.80.672	214.80.866
216.79.202	64.0	67.0	2.520	2.637					
216.79.204	67.0	76.0	2.638	2.992	XOMT-12T308	214.76.708	214.80.412	214.80.388	214.80.824
216.79.206	76.0	81.0	2.992	3.189					
216.79.208	81.0	86.0	3.189	3.385					
216.79.210	86.0	99.0	3.386	3.897	XOMT-160508	214.76.708	214.80.412	214.80.072	214.80.075
216.79.212	99.0	106.0	3.898	4.173					
216.79.214	107.0	110.0	4.213	4.331					

## Cartridges Exterior Use

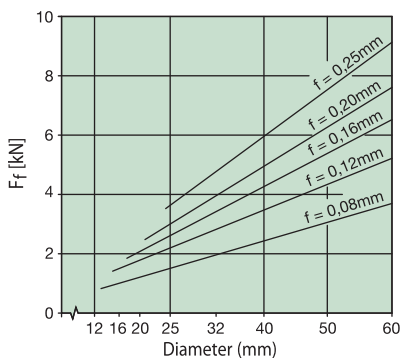


Designation	mm D min	mm D max	inch D min	inch D max	Insert	Insert Screw	Torx Wrench	Insert Screw	Torx Wrench
216.79.201	61.0	67.0	2.402	2.637	XOMT-09T306	214.80.372	214.80.412	214.80.672	214.80.866
216.79.205	67.0	76.0	2.638	2.992	XOMT-12T308	214.76.708	214.80.412	214.80.388	214.80.824
216.79.207	76.0	86.0	2.992	3.385					
216.79.211	86.0	100.0	3.386	3.937	XOMT-160508	214.76.708	214.80.412	214.80.072	214.80.075
216.79.213	99.0	110.0	3.898	4.331					

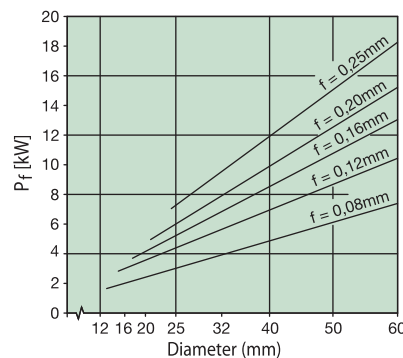
## Performance Diagrams for Top Cut™ & Top Cut Plus™ Drills

The diagrams are used to determine the feed force, drive power, and coolant required. They are based on cutting force measurements in low-alloy steel with  $R_m = 800$  MPa when  $v_c = 100$  m/min

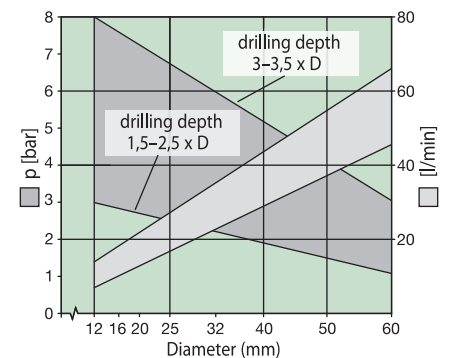
Feed Force



Power Required



Coolant Required



ANSI ISO 513	Recommended Cutting Data for Top Cut™ Drills																		
					Cutting Speeds in SFPM								Feed f (inches / rev) for Drill Dia. D						
P	Work Material	Condition	Hardness HB	Mat. Gr.	TN6030			TN7015			TPC35					.433 - .551" 11.0 - 14.0mm	.571 - .709" 14.5 - 18.0mm	.748 - 1.000" 19.0 - 25.0mm	
	P	Carbon steel, Unalloyed steel, cast steel and free cutting steel	< 0.25% C annealed	125	1	520	720	920	590	785	985	490	670	855				0.002 - 0.003	0.002 - 0.004
≥ 0.25% C annealed			190	2	490	685	855	590	750	920	425	605	790				0.002 - 0.004	0.002 - 0.006	0.003 - 0.007
< 0.55% C heat-treated			250	3	455	655	825	520	720	920	390	555	725				0.002 - 0.004	0.002 - 0.005	0.002 - 0.006
≥ 0.55% C annealed			220	4	455	655	825	520	720	920	390	555	725				0.002 - 0.003	0.002 - 0.006	0.003 - 0.007
≥ 0.55% C heat-treated			300	5	390	555	755	455	655	855	325	490	660				0.002 - 0.004	0.002 - 0.005	0.002 - 0.006
Low alloy steel and cast steel		annealed	200	6	490	655	855	590	750	920	425	605	790				0.002 - 0.004	0.002 - 0.006	0.003 - 0.007
		heat-treated	275	7	455	655	825	520	720	920	390	555	725				0.002 - 0.004	0.002 - 0.006	0.003 - 0.007
		heat-treated	300	8	390	570	755	455	655	855	325	490	660				0.002 - 0.003	0.002 - 0.005	0.002 - 0.006
		heat-treated	350	9	325	490	690	390	590	790	260	425	595				0.002 - 0.003	0.002 - 0.005	0.002 - 0.006
High alloy steel, cast steel & tool steel		annealed	200	10	455	590	825	520	655	920	390	555	725				0.002 - 0.004	0.002 - 0.006	0.003 - 0.007
	heat-treated	325	11	325	490	690	390	590	790	260	425	595				0.002 - 0.004	0.002 - 0.005	0.002 - 0.006	
400 series stainless	FE / MA	200	12	390	555	725	455	655	825	325	490	660				0.002 - 0.003	0.002 - 0.005	0.002 - 0.006	
	MA	240	13.1	360	520	690	455	620	790	260	425	595				0.002 - 0.003	0.002 - 0.005	0.002 - 0.006	
	MA / PH	330	13.2	195	260	330	225	325	395	130	225	300				0.002 - 0.003	0.002 - 0.005	0.002 - 0.006	
M	300 Series	AU	180	14.1	260	390	495	-	-	-	225	360	495				0.002 - 0.003	0.002 - 0.004	0.002 - 0.005
	Stainless	DU	230	14.2	225	325	430	-	-	-	195	295	395				0.002 - 0.003	0.002 - 0.004	0.002 - 0.005
	Duplex	S-AU	200	14.3	160	260	330	-	-	-	145	225	300				0.002 - 0.003	0.002 - 0.004	0.002 - 0.005
	Stainless	AU-PH	330	14.4	160	260	330	-	-	-	130	195	265				0.002 - 0.003	0.002 - 0.004	0.002 - 0.005
K					Cutting Speeds in SFPM								Feed f (inches / rev) for Drill Dia. D						
	Work Material	Condition	Hardness HB	Mat. Gr.	TN5515			TN6030			TPC35		THM		.433 - .551" 11.0 - 14.0mm	.571 - .709" 14.5 - 18.0mm	.748 - 1.000" 19.0 - 25.0mm		
K	Grey cast iron	ferrit./pearl.	180	15	459	660	853	390	590	755	-	-	-	260	390	525	0.003 - 0.004	0.003 - 0.006	0.004 - 0.007
		pearlitic	260	16	394	575	755	360	490	660	-	-	-	195	310	430	0.002 - 0.004	0.003 - 0.006	0.004 - 0.007
	Nodular cast iron	ferritic	160	17	427	625	820	390	555	725	325	490	660	260	390	525	0.002 - 0.004	0.003 - 0.006	0.004 - 0.007
		pearlitic	250	18	394	575	755	360	490	660	260	425	595	195	310	430	0.002 - 0.004	0.003 - 0.006	0.004 - 0.007
	Malleable cast iron	ferritic	130	19	427	625	820	390	555	725	390	555	725	295	440	595	0.002 - 0.004	0.003 - 0.006	0.004 - 0.007
pearlitic		230	20	360	525	690	325	455	625	325	490	660	260	390	525	0.002 - 0.004	0.003 - 0.006	0.004 - 0.007	
N	Wrought	Non AG	60	21	-	-	-	-	-	-	-	-	-	820	1230	1645	0.002 - 0.005	0.002 - 0.006	0.003 - 0.007
		AG	100	22	-	-	-	-	-	-	-	-	-	820	1230	1645	0.002 - 0.005	0.002 - 0.006	0.003 - 0.007
	Cast aluminum alloys	Non Ag	75	23	-	-	-	-	-	-	-	-	-	655	1065	1480	0.002 - 0.005	0.003 - 0.006	0.003 - 0.007
		Si ≤ 12% AG	90	24	-	-	-	-	-	-	-	-	-	655	1065	1480	0.002 - 0.005	0.003 - 0.006	0.003 - 0.007
		Si ≥ 12%	130	25	-	-	-	-	-	-	-	-	-	490	770	1050	0.002 - 0.005	0.003 - 0.006	0.003 - 0.007
	Copper & Copper alloys	Pb > 1%	110	26	-	-	-	-	-	-	-	-	-	260	375	495	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007
			90	27	-	-	-	-	-	-	-	-	-	195	325	460	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007
			100	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non Metals			29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
S	High Temp	G	200	31	-	-	-	130	145	190	-	-	-	-	-	-	0.002 - 0.004	0.003 - 0.006	0.004 - 0.007
	Alloy FE	AG	280	32	-	-	-	100	115	150	-	-	-	55	65	85	0.002 - 0.004	0.003 - 0.006	0.004 - 0.007
	High Temp	G	250	33	-	-	-	55	75	105	-	-	-	45	50	70	0.002 - 0.004	0.003 - 0.006	0.004 - 0.007
	Alloy	AG	350	34	-	-	-	45	55	80	-	-	-	35	40	55	0.002 - 0.004	0.003 - 0.006	0.004 - 0.007
	Ni / Co	GO	320	35	-	-	-	45	65	85	-	-	-	35	40	55	0.002 - 0.004	0.003 - 0.006	0.004 - 0.007
	Titanium alloys			36	-	-	-	-	-	-	-	-	-	110	130	200	0.002 - 0.004	0.003 - 0.006	0.004 - 0.007
	TiAL6V4	AG		37	-	-	-	-	-	-	-	-	-	95	110	150	0.002 - 0.004	0.003 - 0.006	0.004 - 0.007

ANSI ISO 513	Recommended Cutting Data for Top Cut Plus™ Drills																
	Mat. Gr.	Cutting Speeds in SFPM								Feed f (inches / rev) for Drill Dia. D							
		TN6030			TN7015			TPC35			.748 - .945" 19.0 - 24.0mm	.984 - 1.339" 25.0 - 34.0mm	1.378 - 1.772" 35.0 - 45.0mm	1.811 - 2.362" 46.0 - 60.0mm			
P	1	520	720	920	590	785	985	490	670	855				0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.006 - 0.009
	2	490	685	855	590	750	920	425	605	790				0.003 - 0.007	0.004 - 0.008	0.005 - 0.009	0.007 - 0.010
	3	455	655	825	520	720	920	390	555	725				0.002 - 0.006	0.003 - 0.006	0.004 - 0.007	0.006 - 0.009
	4	455	655	825	520	720	920	390	555	725				0.003 - 0.007	0.004 - 0.008	0.005 - 0.009	0.007 - 0.010
	5	390	555	755	455	655	855	325	490	660				0.002 - 0.006	0.003 - 0.006	0.004 - 0.007	0.006 - 0.009
	6	490	655	855	590	750	920	425	605	790				0.003 - 0.007	0.004 - 0.008	0.005 - 0.009	0.007 - 0.010
	7	455	655	825	520	720	920	390	555	725				0.003 - 0.007	0.004 - 0.008	0.005 - 0.009	0.007 - 0.010
	8	390	570	755	455	655	855	325	490	660				0.002 - 0.006	0.003 - 0.006	0.004 - 0.007	0.006 - 0.009
	9	325	490	690	390	590	790	260	425	595				0.002 - 0.006	0.003 - 0.006	0.004 - 0.007	0.006 - 0.009
	10	455	590	825	520	655	920	390	555	725				0.003 - 0.007	0.004 - 0.008	0.005 - 0.009	0.007 - 0.010
	11	325	490	690	390	590	790	260	425	595				0.002 - 0.006	0.003 - 0.006	0.004 - 0.007	0.006 - 0.009
	12	390	555	725	455	655	825	325	490	660				0.002 - 0.006	0.003 - 0.006	0.004 - 0.007	0.006 - 0.009
	13.1	360	520	690	455	620	790	260	425	595				0.002 - 0.006	0.003 - 0.006	0.004 - 0.007	0.006 - 0.009
	13.2	195	260	330	225	325	395	130	225	300				0.002 - 0.006	0.003 - 0.006	0.004 - 0.007	0.006 - 0.009
M	14.1	260	390	495	-	-	-	225	360	495				0.002 - 0.005	0.003 - 0.005	0.004 - 0.006	0.005 - 0.008
	14.2	225	325	430	-	-	-	195	295	395				0.002 - 0.005	0.003 - 0.005	0.004 - 0.006	0.005 - 0.008
	14.3	160	260	330	-	-	-	145	225	300				0.002 - 0.005	0.003 - 0.005	0.004 - 0.006	0.005 - 0.008
	14.4	160	260	330	-	-	-	130	195	265				0.002 - 0.005	0.003 - 0.005	0.004 - 0.006	0.005 - 0.008
	Mat. Gr.	Cutting Speeds in SFPM								Feed f (inches / rev) for Drill Dia. D							
		TN5515			TN6030			TPC35		THM	.748 - .945" 19.0 - 24.0mm	.984 - 1.339" 25.0 - 34.0mm	1.378 - 1.772" 35.0 - 45.0mm	1.811 - 2.362" 46.0 - 60.0mm			
K	15	459	660	853	390	590	755	-	-	-	260	390	525	0.004 - 0.007	0.004 - 0.009	0.006 - 0.010	0.008 - 0.012
	16	394	575	755	360	490	660	-	-	-	195	310	430	0.004 - 0.007	0.004 - 0.009	0.006 - 0.010	0.008 - 0.012
	17	427	625	820	390	555	725	325	490	660	260	390	525	0.004 - 0.007	0.004 - 0.009	0.006 - 0.010	0.008 - 0.012
	18	394	575	755	360	490	660	260	425	595	195	310	430	0.004 - 0.007	0.004 - 0.009	0.006 - 0.010	0.008 - 0.012
	19	427	625	820	390	555	725	390	555	725	295	440	595	0.004 - 0.007	0.004 - 0.009	0.006 - 0.010	0.008 - 0.012
	20	360	525	690	325	455	625	325	490	660	260	390	525	0.004 - 0.007	0.004 - 0.009	0.006 - 0.010	0.008 - 0.012
N	21	-	-	-	-	-	-	-	-	-	820	1230	1645	0.003 - 0.007	0.004 - 0.009	0.006 - 0.010	0.008 - 0.012
	22	-	-	-	-	-	-	-	-	-	820	1230	1645	0.003 - 0.007	0.004 - 0.009	0.006 - 0.010	0.008 - 0.012
	23	-	-	-	-	-	-	-	-	-	655	1065	1480	0.003 - 0.007	0.004 - 0.009	0.006 - 0.010	0.008 - 0.012
	24	-	-	-	-	-	-	-	-	-	655	1065	1480	0.003 - 0.007	0.004 - 0.009	0.006 - 0.010	0.008 - 0.012
	25	-	-	-	-	-	-	-	-	-	490	770	1050	0.003 - 0.007	0.004 - 0.009	0.006 - 0.011	0.008 - 0.012
	26	-	-	-	-	-	-	-	-	-	260	375	495	0.004 - 0.007	0.004 - 0.009	0.006 - 0.011	0.008 - 0.012
	27	-	-	-	-	-	-	-	-	-	195	325	460	0.004 - 0.007	0.004 - 0.009	0.006 - 0.011	0.008 - 0.012
	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.008 - 0.012
	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.008 - 0.012
	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.008 - 0.012
S	31	-	-	-	130	145	190	-	-	-	-	-	-	0.004 - 0.007	0.004 - 0.009	0.006 - 0.010	0.008 - 0.012
	32	-	-	-	100	115	150	-	-	-	55	65	85	0.004 - 0.007	0.004 - 0.009	0.006 - 0.010	0.008 - 0.012
	33	-	-	-	55	75	105	-	-	-	45	50	70	0.004 - 0.007	0.004 - 0.009	0.006 - 0.010	0.008 - 0.012
	34	-	-	-	45	55	80	-	-	-	35	40	55	0.004 - 0.007	0.004 - 0.009	0.006 - 0.010	0.008 - 0.012
	35	-	-	-	45	65	85	-	-	-	35	40	55	0.004 - 0.007	0.004 - 0.009	0.006 - 0.010	0.008 - 0.012
	36	-	-	-	-	-	-	-	-	-	110	130	200	0.004 - 0.007	0.004 - 0.009	0.006 - 0.010	0.008 - 0.012
	37	-	-	-	-	-	-	-	-	-	95	110	150	0.004 - 0.007	0.004 - 0.009	0.006 - 0.010	0.008 - 0.012

# WIDIA **Holemaking**

## Solid carbide drill performance

*High speeds & feeds - lower cost per hole*

Superior metal removal rates and centering capabilities

Non-regrindable, disposable inserts for enhanced tool life and reduced costs

Easy insert changes

*Using a unique front clamping system- no insert screws*

No pre-setting

*No set-up time, no errors, no scrap*

Solid carbide drill performance

*High speeds and feeds - lower cost per hole*

UP(M) point design in K20FTiAlN

Cost-effective drilling of steel & cast iron applications

Even through holes; excellent centering capabilities



**WIDIA** 

# Top Drill M1™

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75 ORMONT DRIVE, TORONTO, ONTARIO, M9L-2S3  
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