

# DRILL RUSH



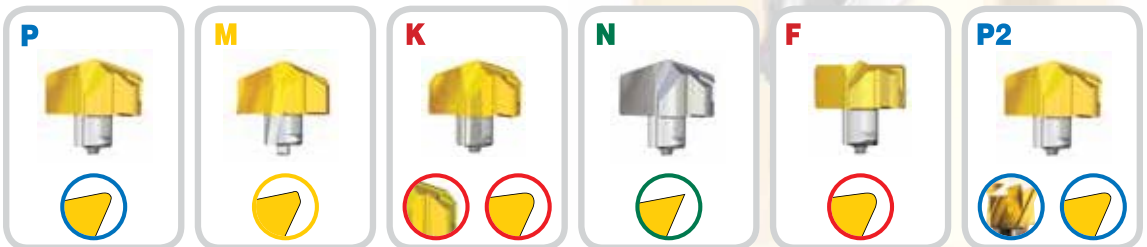
# DRILL•RUSH

Unique wave geometry

- Low cutting force
- Excellent chip disposal
- Smoother cutting



## Optimum solution in drilling



New multi-layered coating & Special treatment (TT9080 PVD)

- High wear & chipping resistance for long tool life
- High speed & feed endurance



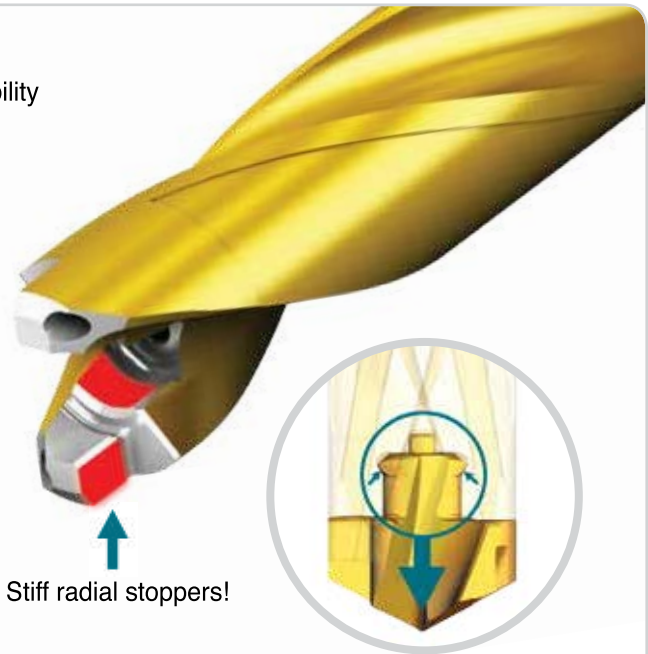
## Unique clamping system

### Innovative clamping

Optimized pocket shape for higher durability

High accuracy

- Cylindricity
- Perpendicularity
- Run-out



Dovetail design prevents head pull-out

### Quick change

Head indexing on the machine

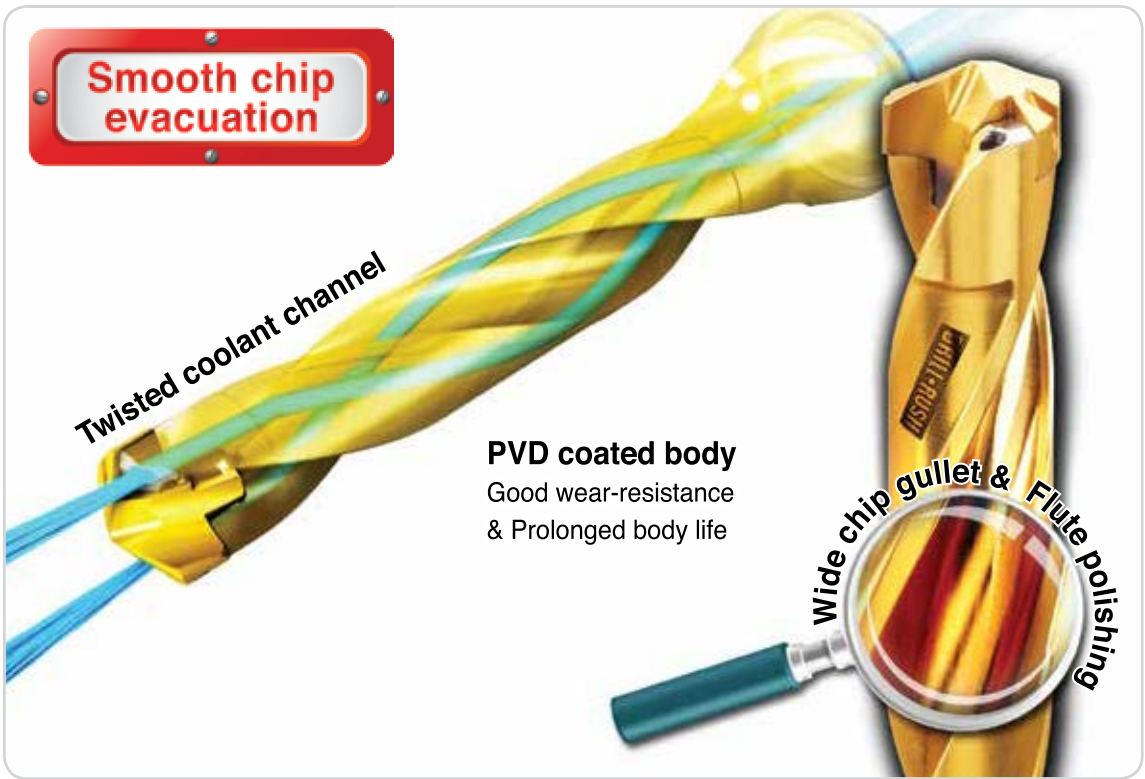


**No set-up time**





## Smooth chip evacuation



Twisted coolant channel

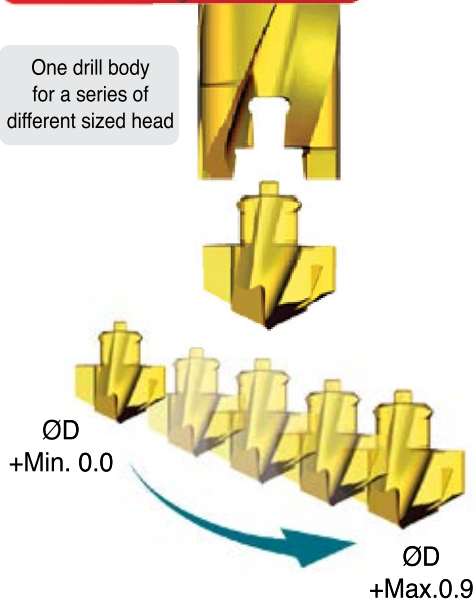
### PVD coated body

Good wear-resistance  
& Prolonged body life

Wide chip gullet & Flute polishing

## Flexibility

One drill body  
for a series of  
different sized head

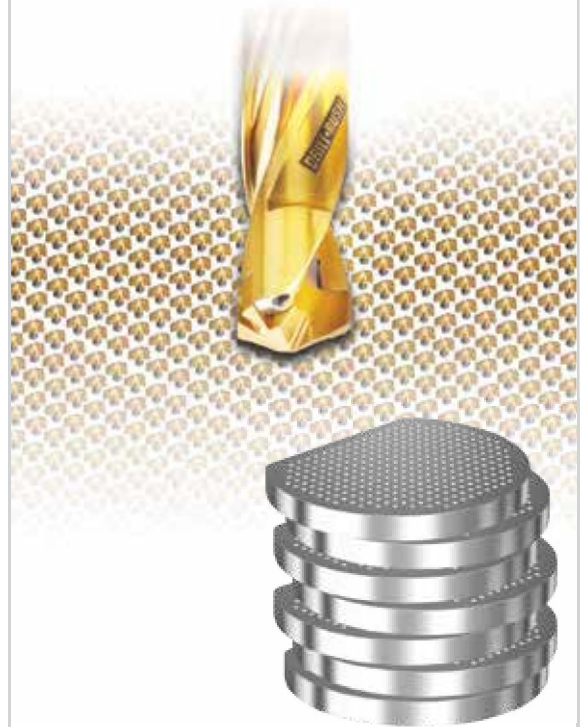


ØD  
+Min. 0.0

ØD  
+Max.0.9

\* For further information, refer to the body tables  
(page 9-16)

## High head indexing repeatability







**Versatile products**

**DRILLRUSH for adjustable chamfering**

- Drill & chamfer in a single operation
  - Minimized machining time & improved economy
- Adjustable step length
- High cutting condition in productivity
  - Two standard chamfering inserts

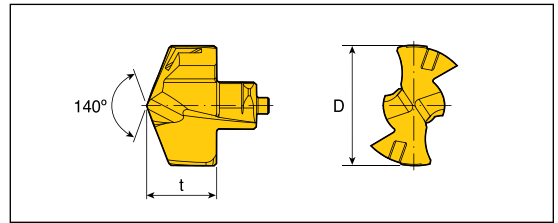


**DRILLRUSH for pre-thread drilling**

- Cost effective solution
  - Replacing the high cost solid carbide drills
- Optimal performance via balanced cutting
  - Double effective design
- Available for both chamfering and counter boring
  - Both blind & through-hole applications



# TCD...P/M/K



• Grade: TT9080

Designation	Dimension (mm)		
	D	t	Pocket size
<b>TCD - 060-P/M/K</b>	6.0	4.0	6
<b>061-P/M/K</b>	6.1	4.0	6
<b>062-P/M/K</b>	6.2	4.0	6
<b>063-P/M/K</b>	6.3	4.0	6
<b>064-P/M/K</b>	6.4	4.0	6
<b>065-P/M/K</b>	6.5	4.3	6.5
<b>066-P/M/K</b>	6.6	4.3	6.5
<b>067-P/M/K</b>	6.7	4.3	6.5
<b>068-P/M/K</b>	6.8	4.3	6.5
<b>069-P/M/K</b>	6.9	4.3	6.5
<b>070-P/M/K</b>	7.0	4.6	7
<b>071-P/M/K</b>	7.1	4.6	7
<b>072-P/M/K</b>	7.2	4.6	7
<b>073-P/M/K</b>	7.3	4.6	7
<b>074-P/M/K</b>	7.4	4.6	7
<b>075-P/M/K</b>	7.5	4.6	7
<b>076-P/M/K</b>	7.6	4.6	7
<b>077-P/M/K</b>	7.7	4.6	7
<b>078-P/M/K</b>	7.8	4.6	7
<b>079-P/M/K</b>	7.9	4.6	7
<b>080-P/M/K</b>	8.0	5.4	8
<b>081-P/M/K</b>	8.1	5.4	8
<b>082-P/M/K</b>	8.2	5.4	8
<b>083-P/M/K</b>	8.3	5.4	8
<b>084-P/M/K</b>	8.4	5.4	8
<b>085-P/M/K</b>	8.5	5.4	8
<b>086-P/M/K</b>	8.6	5.4	8
<b>087-P/M/K</b>	8.7	5.4	8
<b>088-P/M/K</b>	8.8	5.4	8
<b>089-P/M/K</b>	8.9	5.4	8
<b>090-P/M/K</b>	9.0	5.8	9
<b>091-P/M/K</b>	9.1	5.8	9
<b>092-P/M/K</b>	9.2	5.8	9
<b>093-P/M/K</b>	9.3	5.8	9
<b>094-P/M/K</b>	9.4	5.8	9
<b>095-P/M/K</b>	9.5	5.8	9
<b>096-P/M/K</b>	9.6	5.8	9
<b>097-P/M/K</b>	9.7	5.8	9
<b>098-P/M/K</b>	9.8	5.8	9
<b>099-P/M/K</b>	9.9	5.8	9
<b>100-P/M/K</b>	10.0	6.2	10
<b>101-P/M/K</b>	10.1	6.2	10
<b>102-P/M/K</b>	10.2	6.2	10
<b>103-P/M/K</b>	10.3	6.2	10
<b>104-P/M/K</b>	10.4	6.2	10
<b>105-P/M/K</b>	10.5	6.2	10
<b>106-P/M/K</b>	10.6	6.2	10
<b>107-P/M/K</b>	10.7	6.2	10
<b>108-P/M/K</b>	10.8	6.2	10
<b>109-P/M/K</b>	10.9	6.2	10

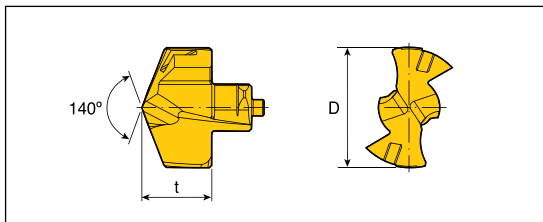
Designation	Dimension (mm)		
	D	t	Pocket size
<b>TCD - 110-P/M/K</b>	11.0	6.6	11
<b>111-P/M/K</b>	11.1	6.6	11
<b>112-P/M/K</b>	11.2	6.6	11
<b>113-P/M/K</b>	11.3	6.6	11
<b>114-P/M/K</b>	11.4	6.6	11
<b>115-P/M/K</b>	11.5	6.6	11
<b>116-P/M/K</b>	11.6	6.6	11
<b>117-P/M/K</b>	11.7	6.6	11
<b>118-P/M/K</b>	11.8	6.6	11
<b>119-P/M/K</b>	11.9	6.6	11
<b>120-P/M/K</b>	12.0	7.0	12
<b>121-P/M/K</b>	12.1	7.0	12
<b>122-P/M/K</b>	12.2	7.0	12
<b>123-P/M/K</b>	12.3	7.0	12
<b>124-P/M/K</b>	12.4	7.0	12
<b>125-P/M/K</b>	12.5	7.0	12
<b>126-P/M/K</b>	12.6	7.0	12
<b>127-P/M/K</b>	12.7	7.0	12
<b>128-P/M/K</b>	12.8	7.0	12
<b>129-P/M/K</b>	12.9	7.0	12
<b>130-P/M/K</b>	13.0	7.6	13
<b>131-P/M/K</b>	13.1	7.6	13
<b>132-P/M/K</b>	13.2	7.6	13
<b>133-P/M/K</b>	13.3	7.6	13
<b>134-P/M/K</b>	13.4	7.6	13
<b>135-P/M/K</b>	13.5	7.6	13
<b>136-P/M/K</b>	13.6	7.6	13
<b>137-P/M/K</b>	13.7	7.6	13
<b>138-P/M/K</b>	13.8	7.6	13
<b>139-P/M/K</b>	13.9	7.6	13
<b>140-P/M/K</b>	14.0	8.1	14
<b>141-P/M/K</b>	14.1	8.1	14
<b>142-P/M/K</b>	14.2	8.1	14
<b>143-P/M/K</b>	14.3	8.1	14
<b>144-P/M/K</b>	14.4	8.1	14
<b>145-P/M/K</b>	14.5	8.1	14
<b>146-P/M/K</b>	14.6	8.1	14
<b>147-P/M/K</b>	14.7	8.1	14
<b>148-P/M/K</b>	14.8	8.1	14
<b>149-P/M/K</b>	14.9	8.1	14
<b>150-P/M/K</b>	15.0	8.7	15
<b>151-P/M/K</b>	15.1	8.7	15
<b>152-P/M/K</b>	15.2	8.7	15
<b>153-P/M/K</b>	15.3	8.7	15
<b>154-P/M/K</b>	15.4	8.7	15
<b>155-P/M/K</b>	15.5	8.7	15
<b>156-P/M/K</b>	15.6	8.7	15
<b>157-P/M/K</b>	15.7	8.7	15
<b>158-P/M/K</b>	15.8	8.7	15
<b>159-P/M/K</b>	15.9	8.7	15

• Drill head can be ordered by an application.

Order example) Diameter 10.0mm drill head for ISO P application: TCD-100-P TT9080



## TCD...P/M/K



• Grade: TT9080

Designation	Dimension (mm)		
	D	t	Pocket size
<b>TCD-160-P/M/K</b>	16.0	9.3	16
<b>161-P/M/K</b>	16.1	9.3	16
<b>162-P/M/K</b>	16.2	9.3	16
<b>163-P/M/K</b>	16.3	9.3	16
<b>164-P/M/K</b>	16.4	9.3	16
<b>165-P/M/K</b>	16.5	9.3	16
<b>166-P/M/K</b>	16.6	9.3	16
<b>167-P/M/K</b>	16.7	9.3	16
<b>168-P/M/K</b>	16.8	9.3	16
<b>169-P/M/K</b>	16.9	9.3	16
<b>170-P/M/K</b>	17.0	9.9	17
<b>171-P/M/K</b>	17.1	9.9	17
<b>172-P/M/K</b>	17.2	9.9	17
<b>173-P/M/K</b>	17.3	9.9	17
<b>174-P/M/K</b>	17.4	9.9	17
<b>175-P/M/K</b>	17.5	9.9	17
<b>176-P/M/K</b>	17.6	9.9	17
<b>177-P/M/K</b>	17.7	9.9	17
<b>178-P/M/K</b>	17.8	9.9	17
<b>179-P/M/K</b>	17.9	9.9	17
<b>180-P/M/K</b>	18.0	10.5	18
<b>181-P/M/K</b>	18.1	10.5	18
<b>182-P/M/K</b>	18.2	10.5	18
<b>183-P/M/K</b>	18.3	10.5	18
<b>184-P/M/K</b>	18.4	10.5	18
<b>185-P/M/K</b>	18.5	10.5	18
<b>186-P/M/K</b>	18.6	10.5	18
<b>187-P/M/K</b>	18.7	10.5	18
<b>188-P/M/K</b>	18.8	10.5	18
<b>189-P/M/K</b>	18.9	10.5	18
<b>190-P/M/K</b>	19.0	11.0	19
<b>191-P/M/K</b>	19.1	11.0	19
<b>192-P/M/K</b>	19.2	11.0	19
<b>193-P/M/K</b>	19.3	11.0	19
<b>194-P/M/K</b>	19.4	11.0	19
<b>195-P/M/K</b>	19.5	11.0	19
<b>196-P/M/K</b>	19.6	11.0	19
<b>197-P/M/K</b>	19.7	11.0	19
<b>198-P/M/K</b>	19.8	11.0	19
<b>199-P/M/K</b>	19.9	11.0	19
<b>200-P/M/K</b>	20.0	11.6	20
<b>201-P/M/K</b>	20.1	11.6	20
<b>202-P/M/K</b>	20.2	11.6	20
<b>203-P/M/K</b>	20.3	11.6	20
<b>204-P/M/K</b>	20.4	11.6	20
<b>205-P/M/K</b>	20.5	11.6	20
<b>206-P/M/K</b>	20.6	11.6	20
<b>207-P/M/K</b>	20.7	11.6	20
<b>208-P/M/K</b>	20.8	11.6	20
<b>209-P/M/K</b>	20.9	11.6	20

Designation	Dimension (mm)		
	D	t	Pocket size
<b>TCD-210-P/M/K</b>	21.0	12.1	21
<b>211-P/M/K</b>	21.1	12.1	21
<b>212-P/M/K</b>	21.2	12.1	21
<b>213-P/M/K</b>	21.3	12.1	21
<b>214-P/M/K</b>	21.4	12.1	21
<b>215-P/M/K</b>	21.5	12.1	21
<b>216-P/M/K</b>	21.6	12.1	21
<b>217-P/M/K</b>	21.7	12.1	21
<b>218-P/M/K</b>	21.8	12.1	21
<b>219-P/M/K</b>	21.9	12.1	21
<b>220-P/M/K</b>	22.0	12.7	22
<b>221-P/M/K</b>	22.1	12.7	22
<b>222-P/M/K</b>	22.2	12.7	22
<b>223-P/M/K</b>	22.3	12.7	22
<b>224-P/M/K</b>	22.4	12.7	22
<b>225-P/M/K</b>	22.5	12.7	22
<b>226-P/M/K</b>	22.6	12.7	22
<b>227-P/M/K</b>	22.7	12.7	22
<b>228-P/M/K</b>	22.8	12.7	22
<b>229-P/M/K</b>	22.9	12.7	22
<b>230-P/M/K</b>	23.0	13.3	23
<b>231-P/M/K</b>	23.1	13.3	23
<b>232-P/M/K</b>	23.2	13.3	23
<b>233-P/M/K</b>	23.3	13.3	23
<b>234-P/M/K</b>	23.4	13.3	23
<b>235-P/M/K</b>	23.5	13.3	23
<b>236-P/M/K</b>	23.6	13.3	23
<b>237-P/M/K</b>	23.7	13.3	23
<b>238-P/M/K</b>	23.8	13.3	23
<b>239-P/M/K</b>	23.9	13.3	23
<b>240-P/M/K</b>	24.0	13.9	24
<b>241-P/M/K</b>	24.1	13.9	24
<b>242-P/M/K</b>	24.2	13.9	24
<b>243-P/M/K</b>	24.3	13.9	24
<b>244-P/M/K</b>	24.4	13.9	24
<b>245-P/M/K</b>	24.5	13.9	24
<b>246-P/M/K</b>	24.6	13.9	24
<b>247-P/M/K</b>	24.7	13.9	24
<b>248-P/M/K</b>	24.8	13.9	24
<b>249-P/M/K</b>	24.9	13.9	24
<b>250-P/M/K</b>	25.0	14.5	25
<b>251-P/M/K</b>	25.1	14.5	25
<b>252-P/M/K</b>	25.2	14.5	25
<b>253-P/M/K</b>	25.3	14.5	25
<b>254-P/M/K</b>	25.4	14.5	25
<b>255-P/M/K</b>	25.5	14.5	25
<b>256-P/M/K</b>	25.6	14.5	25
<b>257-P/M/K</b>	25.7	14.5	25
<b>258-P/M/K</b>	25.8	14.5	25
<b>259-P/M/K</b>	25.9	14.5	25

• **P** Steel **M** Stainless steel **K** Cast iron **N** Non ferrous (On request)

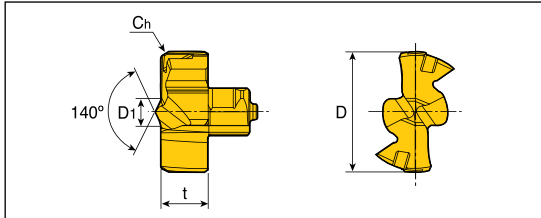


## TCD...F

Drill head for flat bottom machining



• Grade: TT9080



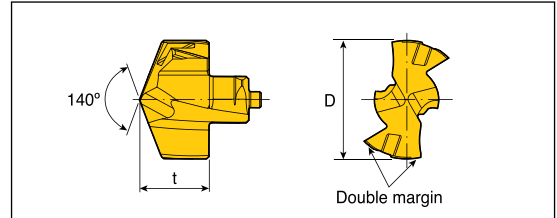
Designation	Dimension (mm)				
	D	D1	t	Ch	Pocket size
<b>TCD - 080-F</b>	8.0	1.2	4.0	0.7	8
<b>085-F</b>	8.5	1.2	4.0	0.7	8
<b>090-F</b>	9.0	1.21	4.2	0.7	9
<b>095-F</b>	9.5	1.21	4.2	0.7	9
<b>100-F</b>	10.0	1.27	4.4	0.7	10
<b>105-F</b>	10.5	1.27	4.4	0.7	10
<b>110-F</b>	11.0	1.49	4.5	0.7	11
<b>115-F</b>	11.5	1.49	4.5	0.7	11
<b>120-F</b>	12.0	1.5	4.8	0.7	12
<b>125-F</b>	12.5	1.5	4.8	0.7	12
<b>130-F</b>	13.0	1.64	5.1	0.7	13
<b>135-F</b>	13.5	1.64	5.1	0.7	13
<b>140-F</b>	14.0	1.68	5.5	0.7	14
<b>145-F</b>	14.5	1.68	5.5	0.7	14
<b>150-F</b>	15.0	1.78	5.9	0.7	15
<b>155-F</b>	15.5	1.78	5.9	0.7	15
<b>160-F</b>	16.0	1.89	6.3	0.7	16
<b>165-F</b>	16.5	1.89	6.3	0.7	16
<b>170-F</b>	17.0	1.91	6.6	0.7	17
<b>175-F</b>	17.5	1.91	6.6	0.7	17
<b>180-F</b>	18.0	1.97	6.9	0.7	18
<b>185-F</b>	18.5	1.97	6.9	0.7	18
<b>190-F</b>	19.0	1.96	7.2	0.7	19
<b>195-F</b>	19.5	1.96	7.2	0.7	19
<b>200-F</b>	20.0	3.42	8.2	0.7	20
<b>205-F</b>	20.5	3.42	8.2	0.7	20
<b>210-F</b>	21.0	3.6	8.6	0.7	21
<b>215-F</b>	21.5	3.6	8.6	0.7	21
<b>220-F</b>	22.0	3.8	8.9	0.7	22
<b>225-F</b>	22.5	3.8	8.9	0.7	22
<b>230-F</b>	23.0	3.9	9.3	0.7	23
<b>235-F</b>	23.5	3.9	9.3	0.7	23
<b>240-F</b>	24.0	4.1	9.7	0.7	24
<b>245-F</b>	24.5	4.1	9.7	0.7	24
<b>250-F</b>	25.0	4.3	10.1	0.7	25
<b>254-F</b>	25.4	4.3	10.1	0.7	25
<b>255-F</b>	25.5	4.3	10.1	0.7	25

## TCD...P2

Double margin drill head



• Grade: TT9080



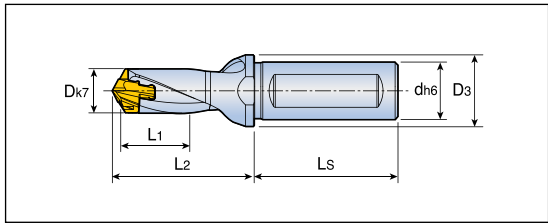
Designation	Dimension (mm)		
	D	t	Pocket size
<b>TCD - 080-P2</b>	8.0	5.40	8
<b>085-P2</b>	8.5	5.40	8
<b>090-P2</b>	9.0	5.80	9
<b>095-P2</b>	9.5	5.80	9
<b>100-P2</b>	10.0	6.20	10
<b>105-P2</b>	10.5	6.20	10
<b>110-P2</b>	11.0	6.60	11
<b>115-P2</b>	11.5	6.60	11
<b>120-P2</b>	12.0	7.00	12
<b>125-P2</b>	12.5	7.00	12
<b>130-P2</b>	13.0	7.60	13
<b>135-P2</b>	13.5	7.60	13
<b>140-P2</b>	14.0	8.15	14
<b>145-P2</b>	14.5	8.15	14
<b>150-P2</b>	15.0	8.73	15
<b>155-P2</b>	15.5	8.73	15
<b>160-P2</b>	16.0	9.30	16
<b>165-P2</b>	16.5	9.30	16
<b>170-P2</b>	17.0	9.90	17
<b>175-P2</b>	17.5	9.90	17
<b>180-P2</b>	18.0	10.50	18
<b>185-P2</b>	18.5	10.50	18
<b>190-P2</b>	19.0	11.00	19
<b>195-P2</b>	19.5	11.00	19

• Other diameters available upon request.



### TCD...T...-1.5D

Head changeable drill holder - Weldon type shank

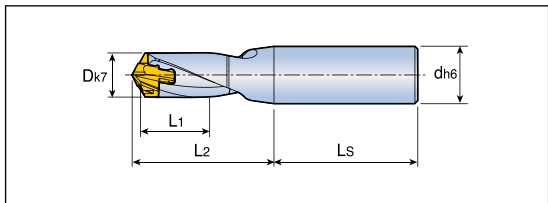


- Drilling depth: 1.5xDiameter

Designation	Dimension (mm)							Clamping key	
	D range	d	D3	L1	L2	LS	Pocket size		
<b>TCD 060-064-12T3-1.5D</b>	6.0-6.4	12	16	9	23.0	45	6	K TCD D060-D099	
<b>065-069-12T3-1.5D</b>	6.5-6.9	12	16	10	24.1	45	6.5		
<b>070-074-12T3-1.5D</b>	7.0-7.4	12	16	11	25.1	45	7		
<b>075-079-12T3-1.5D</b>	7.5-7.9	12	16	11.3	25.9	45	7		
<b>080-089-12T3-1.5D</b>	8.0-8.9	12	16	12	27.4	45	8		
<b>090-099-12T3-1.5D</b>	9.0-9.9	12	16	14	29.3	45	9		
<b>100-109-16T3-1.5D</b>	10.0-10.9	16	20	15	31.2	48	10		K TCD D100-D199
<b>110-119-16T3-1.5D</b>	11.0-11.9	16	20	17	33.1	48	11		
<b>120-129-16T3-1.5D</b>	12.0-12.9	16	20	18	35.0	48	12		
<b>130-139-16T3-1.5D</b>	13.0-13.9	16	20	20	37.1	48	13		
<b>140-149-16T3-1.5D</b>	14.0-14.9	16	20	21	41.1	48	14		
<b>150-159-20T3-1.5D</b>	15.0-15.9	20	25	23	46.2	50	15		
<b>160-169-20T3-1.5D</b>	16.0-16.9	20	25	24	49.3	50	16		
<b>170-179-20T3-1.5D</b>	17.0-17.9	20	25	26	52.4	50	17		
<b>180-189-25T2-1.5D</b>	18.0-18.9	25	32	27	55.5	56	18		
<b>190-199-25T2-1.5D</b>	19.0-19.9	25	32	29	58.5	56	19	K TCD D200-D269	
<b>200-209-25T2-1.5D</b>	20.0-20.9	25	32	30	61.6	56	20		
<b>210-219-25T2-1.5D</b>	21.0-21.9	25	32	32	64.7	56	21		
<b>220-229-25T2-1.5D</b>	22.0-22.9	25	32	33	67.8	56	22		
<b>230-239-32T2-1.5D</b>	23.0-23.9	32	42	35	70.8	60	23		
<b>240-249-32T2-1.5D</b>	24.0-24.9	32	42	36	73.9	60	24		
<b>250-259-32T2-1.5D</b>	25.0-25.9	32	42	38	77.0	60	25		

### TCD...S0-1.5D

Head changeable drill holder - Cylindrical type shank

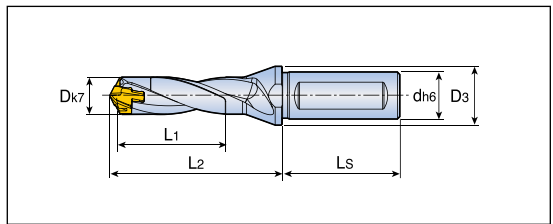


- Drilling depth: 1.5xDiameter

Designation	Dimension (mm)						Clamping key	
	D range	d	L1	L2	LS	Pocket size		
<b>TCD 060-064-12S0-1.5D</b>	6.0-6.4	12	9	23.0	45	6	K TCD D060-D099	
<b>065-069-12S0-1.5D</b>	6.5-6.9	12	10	24.1	45	6.5		
<b>070-074-12S0-1.5D</b>	7.0-7.4	12	11	25.1	45	7		
<b>075-079-12S0-1.5D</b>	7.5-7.9	12	11.3	25.9	45	7		
<b>080-089-12S0-1.5D</b>	8.0-8.9	12	12	27.4	45	8		
<b>090-099-12S0-1.5D</b>	9.0-9.9	12	14	29.3	45	9		
<b>100-109-16S0-1.5D</b>	10.0-10.9	16	15	31.2	48	10		K TCD D100-D199
<b>110-119-16S0-1.5D</b>	11.0-11.9	16	17	33.1	48	11		
<b>120-129-16S0-1.5D</b>	12.0-12.9	16	18	35.0	48	12		
<b>130-139-16S0-1.5D</b>	13.0-13.9	16	20	37.1	48	13		
<b>140-149-16S0-1.5D</b>	14.0-14.9	16	21	41.1	48	14		
<b>150-159-20S0-1.5D</b>	15.0-15.9	20	23	46.2	50	15		
<b>160-169-20S0-1.5D</b>	16.0-16.9	20	24	49.3	50	16		
<b>170-179-20S0-1.5D</b>	17.0-17.9	20	26	52.4	50	17		
<b>180-189-25S0-1.5D</b>	18.0-18.9	25	27	55.5	56	18		
<b>190-199-25S0-1.5D</b>	19.0-19.9	25	29	58.5	56	19	K TCD D200-D269	
<b>200-209-25S0-1.5D</b>	20.0-20.9	25	30	61.6	56	20		
<b>210-219-25S0-1.5D</b>	21.0-21.9	25	32	64.7	56	21		
<b>220-229-25S0-1.5D</b>	22.0-22.9	25	33	67.8	56	22		
<b>230-239-32S0-1.5D</b>	23.0-23.9	32	35	70.8	60	23		
<b>240-249-32S0-1.5D</b>	24.0-24.9	32	36	73.9	60	24		
<b>250-259-32S0-1.5D</b>	25.0-25.9	32	38	77.0	60	25		

## TCD...T...-3D

Head changeable drill holder - Weldon type shank



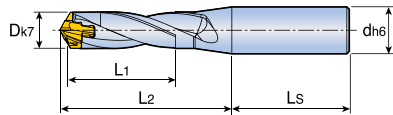
- Drilling depth: 3xDiameter

Designation	Dimension (mm)							Clamping key	
	D range	d	D3	L1	L2	LS	Pocket size		
<b>TCD 060-064-12T3-3D</b>	6.0-6.4	12	16	18	32.0	45	6	K TCD D060-D099	
<b>065-069-12T3-3D</b>	6.5-6.9	12	16	20	33.8	45	6.5		
<b>070-074-12T3-3D</b>	7.0-7.4	12	16	21	35.6	45	7		
<b>075-079-12T3-3D</b>	7.5-7.9	12	16	23	37.1	45	7		
<b>080-084-12T3-3D</b>	8.0-8.4	12	16	24	39.4	45	8		
<b>085-089-12T3-3D</b>	8.5-8.9	12	16	26	40.9	45	8		
<b>090-094-12T3-3D</b>	9.0-9.4	12	16	27	42.8	45	9		
<b>095-099-12T3-3D</b>	9.5-9.9	12	16	29	44.3	45	9		
<b>100-104-16T3-3D</b>	10.0-10.4	16	20	30	46.2	48	10		K TCD D100-D199
<b>105-109-16T3-3D</b>	10.5-10.9	16	20	32	47.7	48	10		
<b>110-114-16T3-3D</b>	11.0-11.4	16	20	33	49.6	48	11		
<b>115-119-16T3-3D</b>	11.5-11.9	16	20	35	51.1	48	11		
<b>120-124-16T3-3D</b>	12.0-12.4	16	20	36	53.0	48	12		
<b>125-129-16T3-3D</b>	12.5-12.9	16	20	37	54.5	48	12		
<b>130-134-16T3-3D</b>	13.0-13.4	16	20	39	56.6	48	13		
<b>135-139-16T3-3D</b>	13.5-13.9	16	20	41	58.1	48	13		
<b>140-144-16T3-3D</b>	14.0-14.4	16	20	42	62.2	48	14		
<b>145-149-16T3-3D</b>	14.5-14.9	16	20	44	63.7	48	14		
<b>150-159-20T3-3D</b>	15.0-15.9	20	25	45	68.7	50	15	K TCD D200-D269	
<b>160-169-20T3-3D</b>	16.0-16.9	20	25	48	73.3	50	16		
<b>170-179-20T3-3D</b>	17.0-17.9	20	25	51	77.9	50	17		
<b>180-189-25T2-3D</b>	18.0-18.9	25	32	54	82.5	56	18		
<b>190-199-25T2-3D</b>	19.0-19.9	25	32	57	87.0	56	19		
<b>200-209-25T2-3D</b>	20.0-20.9	25	32	60	91.6	56	20		
<b>210-219-25T2-3D</b>	21.0-21.9	25	32	63	96.2	56	21		
<b>220-229-25T2-3D</b>	22.0-22.9	25	32	66	100.8	56	22		
<b>230-239-32T2-3D</b>	23.0-23.9	32	42	69	105.3	60	23		
<b>240-249-32T2-3D</b>	24.0-24.9	32	42	72	109.9	60	24		
<b>250-259-32T2-3D</b>	25.0-25.9	32	42	75	114.5	60	25		



**TCD...S0-3D**

Head changeable drill holder - Cylindrical type shank

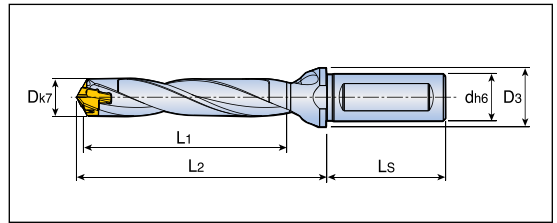


- Drilling depth: 3xDiameter

Designation	Dimension (mm)						Clamping key
	D range	d	L1	L2	LS	Pocket size	
<b>TCD 060-064-12S0-3D</b>	6.0-6.4	12	18	32.0	45	6	K TCD D060-D099
<b>065-069-12S0-3D</b>	6.5-6.9	12	20	33.8	45	6.5	
<b>070-074-12S0-3D</b>	7.0-7.4	12	21	35.6	45	7	
<b>075-079-12S0-3D</b>	7.5-7.9	12	23	37.1	45	7	
<b>080-084-12S0-3D</b>	8.0-8.4	12	24	39.4	45	8	
<b>085-089-12S0-3D</b>	8.5-8.9	12	26	40.9	45	8	
<b>090-094-12S0-3D</b>	9.0-9.4	12	27	42.8	45	9	
<b>095-099-12S0-3D</b>	9.5-9.9	12	29	44.3	45	9	
<b>100-104-16S0-3D</b>	10.0-10.4	16	30	46.2	48	10	
<b>105-109-16S0-3D</b>	10.5-10.9	16	32	47.7	48	10	
<b>110-114-16S0-3D</b>	11.0-11.4	16	33	49.6	48	11	
<b>115-119-16S0-3D</b>	11.5-11.9	16	35	51.1	48	11	
<b>120-124-16S0-3D</b>	12.0-12.4	16	36	53.0	48	12	
<b>125-129-16S0-3D</b>	12.5-12.9	16	37	54.5	48	12	
<b>130-134-16S0-3D</b>	13.0-13.4	16	39	56.6	48	13	
<b>135-139-16S0-3D</b>	13.5-13.9	16	41	58.1	48	13	
<b>140-144-16S0-3D</b>	14.0-14.4	16	42	62.2	48	14	
<b>145-149-16S0-3D</b>	14.5-14.9	16	44	63.7	48	14	
<b>150-159-20S0-3D</b>	15.0-15.9	20	45	68.7	50	15	K TCD D200-D269
<b>160-169-20S0-3D</b>	16.0-16.9	20	48	73.3	50	16	
<b>170-179-20S0-3D</b>	17.0-17.9	20	51	77.9	50	17	
<b>180-189-25S0-3D</b>	18.0-18.9	25	54	82.5	56	18	
<b>190-199-25S0-3D</b>	19.0-19.9	25	57	87.0	56	19	
<b>200-209-25S0-3D</b>	20.0-20.9	25	60	91.6	56	20	
<b>210-219-25S0-3D</b>	21.0-21.9	25	63	96.2	56	21	
<b>220-229-25S0-3D</b>	22.0-22.9	25	66	100.8	56	22	
<b>230-239-32S0-3D</b>	23.0-23.9	32	69	105.3	60	23	
<b>240-249-32S0-3D</b>	24.0-24.9	32	72	109.9	60	24	
<b>250-259-32S0-3D</b>	25.0-25.9	32	75	114.5	60	25	

## TCD...T...-5D

Head changeable drill holder - Weldon type shank

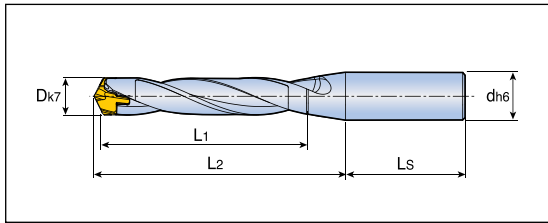


- Drilling depth: 5xDiameter

Designation	Dimension (mm)							Clamping key	
	D range	d	D3	L1	L2	LS	Pocket size		
<b>TCD 060-064-12T3-5D</b>	6.0-6.4	12	16	30	44.0	45	6	K TCD D060-D099	
<b>065-069-12T3-5D</b>	6.5-6.9	12	16	33	46.8	45	6.5		
<b>070-074-12T3-5D</b>	7.0-7.4	12	16	35	49.6	45	7		
<b>075-079-12T3-5D</b>	7.5-7.9	12	16	38	52.1	45	7		
<b>080-084-12T3-5D</b>	8.0-8.4	12	16	40	55.4	45	8		
<b>085-089-12T3-5D</b>	8.5-8.9	12	16	43	57.9	45	8		
<b>090-094-12T3-5D</b>	9.0-9.4	12	16	45	60.8	45	9		
<b>095-099-12T3-5D</b>	9.5-9.9	12	16	48	63.3	45	9		
<b>100-104-16T3-5D</b>	10.0-10.4	16	20	50	66.2	48	10		K TCD D100-D199
<b>105-109-16T3-5D</b>	10.5-10.9	16	20	53	68.7	48	10		
<b>110-114-16T3-5D</b>	11.0-11.4	16	20	55	71.6	48	11		
<b>115-119-16T3-5D</b>	11.5-11.9	16	20	58	74.1	48	11		
<b>120-124-16T3-5D</b>	12.0-12.4	16	20	60	77.0	48	12		
<b>125-129-16T3-5D</b>	12.5-12.9	16	20	62	79.5	48	12		
<b>130-134-16T3-5D</b>	13.0-13.4	16	20	65	82.6	48	13		
<b>135-139-16T3-5D</b>	13.5-13.9	16	20	68	85.1	48	13		
<b>140-144-16T3-5D</b>	14.0-14.4	16	20	70	90.2	48	14		
<b>145-149-16T3-5D</b>	14.5-14.9	16	20	73	92.7	48	14		
<b>150-159-20T3-5D</b>	15.0-15.9	20	25	75	98.7	50	15	K TCD D200-D269	
<b>160-169-20T3-5D</b>	16.0-16.9	20	25	80	105.3	50	16		
<b>170-179-20T3-5D</b>	17.0-17.9	20	25	85	111.9	50	17		
<b>180-189-25T2-5D</b>	18.0-18.9	25	32	90	118.5	56	18		
<b>190-199-25T2-5D</b>	19.0-19.9	25	32	95	125.0	56	19		
<b>200-209-25T2-5D</b>	20.0-20.9	25	32	100	131.6	56	20		
<b>210-219-25T2-5D</b>	21.0-21.9	25	32	105	138.2	56	21		
<b>220-229-25T2-5D</b>	22.0-22.9	25	32	110	144.8	56	22		
<b>230-239-32T2-5D</b>	23.0-23.9	32	42	115	151.3	60	23		
<b>240-249-32T2-5D</b>	24.0-24.9	32	42	120	157.9	60	24		
<b>250-259-32T2-5D</b>	25.0-25.9	32	42	125	164.5	60	25		

**TCD...S0-5D**

Head changeable drill holder - Cylindrical type shank



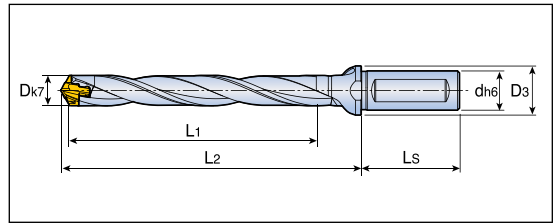
- Drilling depth: 5xDiameter

Designation	Dimension (mm)						Clamping key	
	D range	d	L1	L2	LS	Pocket size		
<b>TCD 060-064-12S0-5D</b>	6.0-6.4	12	30	44.0	45	6	K TCD D060-D099	
<b>065-069-12S0-5D</b>	6.5-6.9	12	33	46.8	45	6.5		
<b>070-074-12S0-5D</b>	7.0-7.4	12	35	49.6	45	7		
<b>075-079-12S0-5D</b>	7.5-7.9	12	38	52.1	45	7		
<b>080-084-12S0-5D</b>	8.0-8.4	12	40	55.4	45	8		
<b>085-089-12S0-5D</b>	8.5-8.9	12	43	57.9	45	8		
<b>090-094-12S0-5D</b>	9.0-9.4	12	45	60.8	45	9		
<b>095-099-12S0-5D</b>	9.5-9.9	12	48	63.3	45	9		
<b>100-104-16S0-5D</b>	10.0-10.4	16	50	66.2	48	10		K TCD D100-D199
<b>105-109-16S0-5D</b>	10.5-10.9	16	53	68.7	48	10		
<b>110-114-16S0-5D</b>	11.0-11.4	16	55	71.6	48	11		
<b>115-119-16S0-5D</b>	11.5-11.9	16	58	74.1	48	11		
<b>120-124-16S0-5D</b>	12.0-12.4	16	60	77.0	48	12		
<b>125-129-16S0-5D</b>	12.5-12.9	16	62	79.5	48	12		
<b>130-134-16S0-5D</b>	13.0-13.4	16	65	82.6	48	13		
<b>135-139-16S0-5D</b>	13.5-13.9	16	68	85.1	48	13		
<b>140-144-16S0-5D</b>	14.0-14.4	16	70	90.2	48	14		
<b>145-149-16S0-5D</b>	14.5-14.9	16	73	92.7	48	14		
<b>150-159-20S0-5D</b>	15.0-15.9	20	75	98.7	50	15	K TCD D200-D269	
<b>160-169-20S0-5D</b>	16.0-16.9	20	80	105.3	50	16		
<b>170-179-20S0-5D</b>	17.0-17.9	20	85	111.9	50	17		
<b>180-189-25S0-5D</b>	18.0-18.9	25	90	118.5	56	18		
<b>190-199-25S0-5D</b>	19.0-19.9	25	95	125.0	56	19		
<b>200-209-25S0-5D</b>	20.0-20.9	25	100	131.6	56	20		
<b>210-219-25S0-5D</b>	21.0-21.9	25	105	138.2	56	21		
<b>220-229-25S0-5D</b>	22.0-22.9	25	110	144.8	56	22		
<b>230-239-32S0-5D</b>	23.0-23.9	32	115	151.3	60	23		
<b>240-249-32S0-5D</b>	24.0-24.9	32	120	157.9	60	24		
<b>250-259-32S0-5D</b>	25.0-25.9	32	125	164.5	60	25		



## TCD...T...-8D

Head changeable drill holder - Weldon type shank



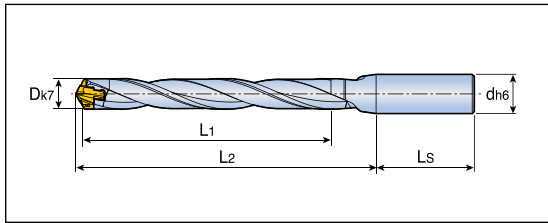
- Drilling depth: 8xDiameter

Designation	Dimension (mm)							Clamping key	
	D range	d	D3	L1	L2	LS	Pocket size		
<b>TCD 070-074-12T3-8D</b>	7.0-7.4	12	16	56	70.6	45	7	K TCD D060-D099	
<b>075-079-12T3-8D</b>	7.5-7.9	12	16	60	74.6	45	7		
<b>080-084-12T3-8D</b>	8.0-8.4	12	16	64	79.4	45	8		
<b>085-089-12T3-8D</b>	8.5-8.9	12	16	68	83.4	45	8		
<b>090-094-12T3-8D</b>	9.0-9.4	12	16	72	87.8	45	9		
<b>095-099-12T3-8D</b>	9.5-9.9	12	16	76	91.8	45	9		
<b>100-104-16T3-8D</b>	10.0-10.4	16	20	80	96.2	48	10		K TCD D100-D199
<b>105-109-16T3-8D</b>	10.5-10.9	16	20	84	100.2	48	10		
<b>110-114-16T3-8D</b>	11.0-11.4	16	20	88	104.6	48	11		
<b>115-119-16T3-8D</b>	11.5-11.9	16	20	92	108.6	48	11		
<b>120-124-16T3-8D</b>	12.0-12.4	16	20	96	113.0	48	12		
<b>125-129-16T3-8D</b>	12.5-12.9	16	20	100	117.0	48	12		
<b>130-134-16T3-8D</b>	13.0-13.4	16	20	104	121.6	48	13		
<b>135-139-16T3-8D</b>	13.5-13.9	16	20	108	125.6	48	13		
<b>140-144-16T3-8D</b>	14.0-14.4	16	20	112	132.2	48	14		
<b>145-149-16T3-8D</b>	14.5-14.9	16	20	116	136.2	48	14		
<b>150-159-20T3-8D</b>	15.0-15.9	20	25	120	143.7	50	15	K TCD D200-D269	
<b>160-169-20T3-8D</b>	16.0-16.9	20	25	128	153.3	50	16		
<b>170-179-20T3-8D</b>	17.0-17.9	20	25	136	162.9	50	17		
<b>180-189-25T2-8D</b>	18.0-18.9	25	32	144	172.5	56	18		
<b>190-199-25T2-8D</b>	19.0-19.9	25	32	152	182.0	56	19		
<b>200-209-25T2-8D</b>	20.0-20.9	25	32	160	191.6	56	20		
<b>210-219-25T2-8D</b>	21.0-21.9	25	32	168	201.2	56	21		
<b>220-229-25T2-8D</b>	22.0-22.9	25	32	176	210.8	56	22		
<b>230-239-32T2-8D</b>	23.0-23.9	32	42	184	220.3	60	23		
<b>240-249-32T2-8D</b>	24.0-24.9	32	42	192	229.9	60	24		
<b>250-259-32T2-8D</b>	25.0-25.9	32	42	200	239.5	60	25		

- It is recommended to make the pilot hole with a 1.5D holder

**TCD...S0-8D**

Head changeable drill holder - Cylindrical type shank



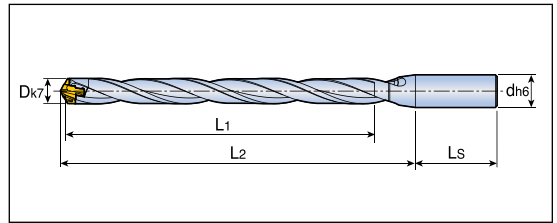
- Drilling depth: 8xDiameter

Designation	Dimension (mm)						Clamping key
	D range	d	L1	L2	Ls	Pocket size	
<b>TCD 070-074-12S0-8D</b>	7.0-7.4	12	56	70.6	45	7	K TCD D060-D099
<b>075-079-12S0-8D</b>	7.5-7.9	12	60	74.6	45	7	
<b>080-084-12S0-8D</b>	8.0-8.4	12	64	79.4	45	8	
<b>085-089-12S0-8D</b>	8.5-8.9	12	68	83.4	45	8	
<b>090-094-12S0-8D</b>	9.0-9.4	12	72	87.8	45	9	
<b>095-099-12S0-8D</b>	9.5-9.9	12	76	91.8	45	9	
<b>100-104-16S0-8D</b>	10.0-10.4	16	80	96.2	48	10	K TCD D100-D199
<b>105-109-16S0-8D</b>	10.5-10.9	16	84	100.2	48	10	
<b>110-114-16S0-8D</b>	11.0-11.4	16	88	104.6	48	11	
<b>115-119-16S0-8D</b>	11.5-11.9	16	92	108.6	48	11	
<b>120-124-16S0-8D</b>	12.0-12.4	16	96	113.0	48	12	
<b>125-129-16S0-8D</b>	12.5-12.9	16	100	117.0	48	12	
<b>130-134-16S0-8D</b>	13.0-13.4	16	104	121.6	48	13	
<b>135-139-16S0-8D</b>	13.5-13.9	16	108	125.6	48	13	
<b>140-144-16S0-8D</b>	14.0-14.4	16	112	132.2	48	14	
<b>145-149-16S0-8D</b>	14.5-14.9	16	116	136.2	48	14	
<b>150-159-20S0-8D</b>	15.0-15.9	20	120	143.7	50	15	K TCD D200-D269
<b>160-169-20S0-8D</b>	16.0-16.9	20	128	153.3	50	16	
<b>170-179-20S0-8D</b>	17.0-17.9	20	136	162.9	50	17	
<b>180-189-25S0-8D</b>	18.0-18.9	25	144	172.5	56	18	
<b>190-199-25S0-8D</b>	19.0-19.9	25	152	182.0	56	19	
<b>200-209-25S0-8D</b>	20.0-20.9	25	160	191.6	56	20	
<b>210-219-25S0-8D</b>	21.0-21.9	25	168	201.2	56	21	
<b>220-229-25S0-8D</b>	22.0-22.9	25	176	210.8	56	22	
<b>230-239-32S0-8D</b>	23.0-23.9	32	184	220.3	60	23	
<b>240-249-32S0-8D</b>	24.0-24.9	32	192	229.9	60	24	
<b>250-259-32S0-8D</b>	25.0-25.9	32	200	239.5	60	25	

- It is recommended to make the pilot hole with a 1.5D holder

# TCD...S0-12D

Head changeable drill holder - Cylindrical type shank



- Drilling depth: 12xDiameter

Designation	Dimension (mm)						Clamping key	
	D range	d	L1	L2	Ls	Pocket size		
<b>TCD 120-124-16S0-12D</b>	12.0-12.4	16	144	161.0	48	12	K TCD D100-D199	
<b>125-129-16S0-12D</b>	12.5-12.9	16	150	167.0	48	12		
<b>130-134-16S0-12D</b>	13.0-13.4	16	156	173.6	48	13		
<b>135-139-16S0-12D</b>	13.5-13.9	16	162	179.6	48	13		
<b>140-144-16S0-12D</b>	14.0-14.4	16	168	188.2	48	14		
<b>145-149-16S0-12D</b>	14.5-14.9	16	174	194.2	48	14		
<b>150-159-20S0-12D</b>	15.0-15.9	20	180	203.7	50	15		
<b>160-169-20S0-12D</b>	16.0-16.9	20	192	217.3	50	16		
<b>170-179-20S0-12D</b>	17.0-17.9	20	204	230.9	50	17		
<b>180-189-25S0-12D</b>	18.0-18.9	25	216	244.5	56	18		
<b>190-199-25S0-12D</b>	19.0-19.9	25	228	258.0	56	19		
<b>200-209-25S0-12D</b>	20.0-20.9	25	240	271.6	56	20		K TCD D200-D269
<b>210-219-25S0-12D</b>	21.0-21.9	25	252	285.2	56	21		
<b>220-229-25S0-12D</b>	22.0-22.9	25	264	298.8	56	22		
<b>230-239-32S0-12D</b>	23.0-23.9	32	276	312.3	60	23		
<b>240-249-32S0-12D</b>	24.0-24.9	32	288	325.9	60	24		
<b>250-259-32S0-12D</b>	25.0-25.9	32	300	339.5	60	25		

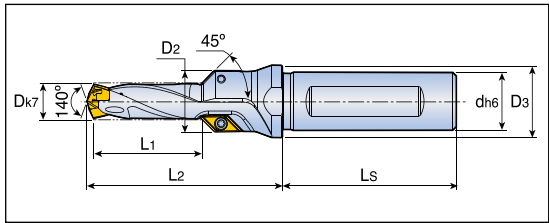
- It is recommended to make the pilot hole with a 1.5D holder





### TCD...-M

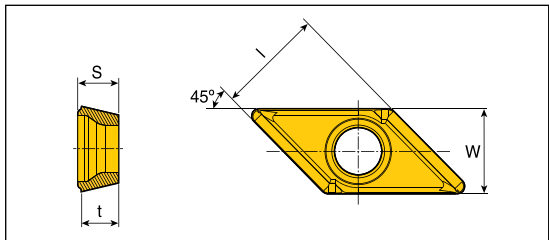
Head changeable drill holder for pre-thread hole



Designation	ISO thread	Drill Dia.(D)	Dimension (mm)						Drill dia. range	Insert	Clamping key
			L1	L2	Ls	D2	d	D3			
<b>TCD 068X21X12T3-M8</b>	M8	6.8	21	45	45	13.5	12	16	6.5-6.9	AOMT 060204-C45	K TCD D060-D099
<b>085X26X12T3-M10</b>	M10	8.5	26	50	45	15.5	12	16	8.5-8.9		K TCD D060-D099
<b>102X30X16T3-M12</b>	M12	10.2	30	54	48	17.0	16	20	10.0-10.4		K TCD D100-D199
<b>120X35X16T3-M14</b>	M14	12.0	35	61	48	19.0	16	20	12.0-12.4		K TCD D100-D199
<b>140X39X20T3-M16</b>	M16	14.0	39	69	50	21.0	20	25	14.0-14.4		K TCD D100-D199
<b>175X42X20T3-M20</b>	M20	17.5	42	72	50	24.5	20	27	17.0-17.9		K TCD D100-D199
<b>210X48X25T2-M24</b>	M24	21.0	48	80	56	28.0	25	32	21.0-21.9		K TCD D200-D269

### AOMT 060204-C45

Chamfering insert for pre-thread hole

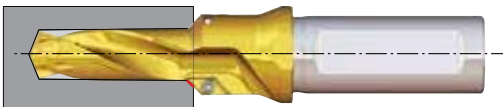


• Grade: TT9080

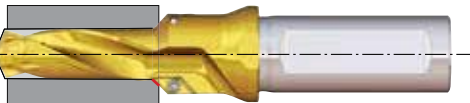
Description	W	l	S	t
<b>AOMT 060204-C45</b>	4.4	5.66	2.16	1.96

#### Drilling with **chamfer (45°)**

Blind hole

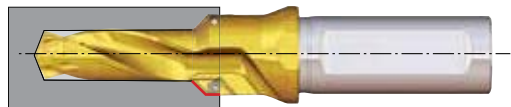


Through hole

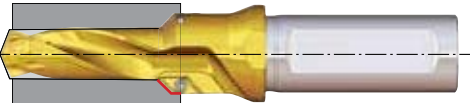


#### Drilling with **counter boring**

Blind hole

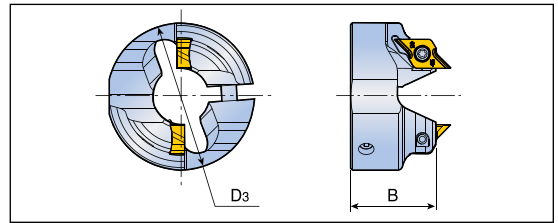


Through hole



## CFR D...-A45

Chamfering ring tool

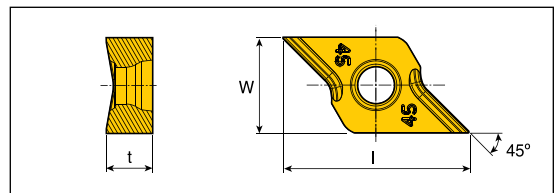


Designation	Dimension (mm)		Chamfer size	Insert screw	Wrench	Clamping screw	L-wrench
	D <sub>3</sub>	B					
<b>CFR D100-A45</b>	34	20	2.5	SO 25065I	TD 7	SH M3x0.5x10 <sup>(1)</sup>	L-W2.5
<b>D105-A45</b>	34	20	2.5				
<b>D110-A45</b>	34	20	2.5				
<b>D115-A45</b>	34	20	2.5				
<b>D120-A45</b>	34	20	2.5				
<b>D125-A45</b>	34	20	2.5				
<b>D130-A45</b>	34	20	2.5				
<b>D135-A45</b>	34	20	2.5				
<b>D140-A45</b>	38	22	2.5	SO 25065I	TD 7	SH M4x0.7x12 <sup>(2)</sup>	L-W3
<b>D145-A45</b>	38	22	2.5				
<b>D150-A45</b>	38	22	2.5				
<b>D160-A45</b>	42	23	2.5	SO 25065I	TD 7	SH M5x0.8x16 <sup>(3)</sup>	L-W4
<b>D170-A45</b>	42	23	2.5				
<b>D180-A45</b>	42	23	2.5				
<b>D190-A45</b>	42	24	2.5				
<b>D200-A45</b>	42	24	2.5				
<b>D210-A45</b>	47	24	2.5				
<b>D220-A45</b>	47	24	2.5				
<b>D230-A45</b>	47	24	2.5				
<b>D240-A45</b>	47	24	2.5				
<b>D250-A45</b>	47	24	2.5				

• <sup>(1)</sup>Clamping torque: 2-3 [N·m] <sup>(2)</sup>Clamping torque: 3.5-4.5 [N·m] <sup>(3)</sup>Clamping torque: 5-6 [N·m]

## CRNG 0802-45CD

Chamfering insert for chamfering ring



• Grade: TT9080

Designation	W	l	t
<b>CRNG 0802-45CD</b>	7.5	14.80	3.65

## Assembly



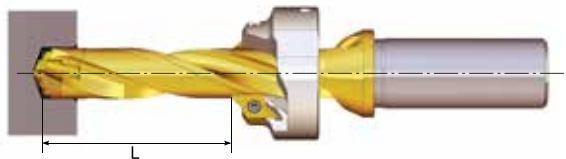
Diameter range	Chamfering ring description
10.0-10.4	CFR D100-A45
10.5-10.9	CFR D105-A45
11.0-11.4	CFR D110-A45
11.5-11.9	CFR D115-A45
12.0-12.4	CFR D120-A45
12.5-12.9	CFR D125-A45
13.0-13.4	CFR D130-A45
13.5-13.9	CFR D135-A45
14.0-14.4	CFR D140-A45
14.5-14.9	CFR D145-A45
15.0-15.9	CFR D150-A45

Diameter range	Chamfering ring description
16.0-16.9	CFR D160-A45
17.0-17.9	CFR D170-A45
18.0-18.9	CFR D180-A45
19.0-19.9	CFR D190-A45
20.0-20.9	CFR D200-A45
21.0-21.9	CFR D210-A45
22.0-22.9	CFR D220-A45
23.0-23.9	CFR D230-A45
24.0-24.9	CFR D240-A45
25.0-25.9	CFR D250-A45





# DRILLRUSH



	Designation	CFR designation	L	
			min	max
3D	TCD 130-134-16T3/S0-3D	CFR D130-A45	19	19
	135-139-16T3/S0-3D	CFR D135-A45	19	20
	140-144-16T3/S0-3D	CFR D140-A45	21	22
	145-149-16T3/S0-3D	CFR D145-A45	22	23
	150-159-20T3/S0-3D	CFR D150-A45	23	23
	160-169-20T3/S0-3D	CFR D160-A45	24	25
	170-179-20T3/S0-3D	CFR D170-A45	26	28
	180-189-25T2/S0-3D	CFR D180-A45	27	30
	190-199-25T2/S0-3D	CFR D190-A45	29	33
	200-209-25T2/S0-3D	CFR D200-A45	30	36
	210-219-25T2/S0-3D	CFR D210-A45	32	39
	220-229-25T2/S0-3D	CFR D220-A45	33	42
	230-239-32T2/S0-3D	CFR D230-A45	35	45
	240-249-32T2/S0-3D	CFR D240-A45	36	48
	250-259-32T2/S0-3D	CFR D250-A45	38	51
5D	TCD 100-104-16T3/S0-5D	CFR D100-A45	28	28
	105-109-16T3/S0-5D	CFR D105-A45	29	30
	110-114-16T3/S0-5D	CFR D110-A45	31	33
	115-119-16T3/S0-5D	CFR D115-A45	32	35
	120-124-16T3/S0-5D	CFR D120-A45	33	45
	125-129-16T3/S0-5D	CFR D125-A45	34	40
	130-134-16T3/S0-5D	CFR D130-A45	36	43
	135-139-16T3/S0-5D	CFR D135-A45	37	43
	140-144-16T3/S0-5D	CFR D140-A45	38	48
	145-149-16T3/S0-5D	CFR D145-A45	39	48
	150-159-20T3/S0-5D	CFR D150-A45	41	53
	160-169-20T3/S0-5D	CFR D160-A45	43	58
	170-179-20T3/S0-5D	CFR D170-A45	46	63
	180-189-25T2/S0-5D	CFR D180-A45	48	68
	190-199-25T2/S0-5D	CFR D190-A45	51	73
200-209-25T2/S0-5D	CFR D200-A45	53	78	
210-219-25T2/S0-5D	CFR D210-A45	56	79	
220-229-25T2/S0-5D	CFR D220-A45	58	84	
230-239-32T2/S0-5D	CFR D230-A45	61	89	
240-249-32T2/S0-5D	CFR D240-A45	63	94	
250-259-32T2/S0-5D	CFR D250-A45	66	99	

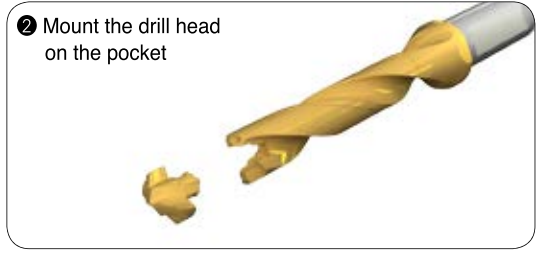
	Designation	CFR designation	L	
			min	max
8D	TCD 100-104-16T3/S0-8D	CFR D100-A45	45	58
	105-109-16T3/S0-8D	CFR D105-A45	49	62
	110-114-16T3/S0-8D	CFR D110-A45	49	66
	115-119-16T3/S0-8D	CFR D115-A45	53	70
	120-124-16T3/S0-8D	CFR D120-A45	53	74
	125-129-16T3/S0-8D	CFR D125-A45	57	78
	130-134-16T3/S0-8D	CFR D130-A45	57	82
	135-139-16T3/S0-8D	CFR D135-A45	61	84
	140-144-16T3/S0-8D	CFR D140-A45	61	88
	145-149-16T3/S0-8D	CFR D145-A45	65	92
	150-159-20T3/S0-8D	CFR D150-A45	65	96
	160-169-20T3/S0-8D	CFR D160-A45	69	103
	170-179-20T3/S0-8D	CFR D170-A45	73	111
	180-189-25T2/S0-8D	CFR D180-A45	77	118
	190-199-25T2/S0-8D	CFR D190-A45	81	126
200-209-25T2/S0-8D	CFR D200-A45	85	134	
210-219-25T2/S0-8D	CFR D210-A45	89	142	
220-229-25T2/S0-8D	CFR D220-A45	93	150	
230-239-32T2/S0-8D	CFR D230-A45	97	158	
240-249-32T2/S0-8D	CFR D240-A45	101	166	
250-259-32T2/S0-8D	CFR D250-A45	105	174	
12D	TCD 120-124-16S0-12D	CFR D120-A45	87	121
	125-129-16S0-12D	CFR D125-A45	90	127
	130-134-16S0-12D	CFR D130-A45	93	133
	135-139-16S0-12D	CFR D135-A45	96	137
	140-144-16S0-12D	CFR D140-A45	99	143
	145-149-16S0-12D	CFR D145-A45	102	149
	150-159-20S0-12D	CFR D150-A45	105	155
	160-169-20S0-12D	CFR D160-A45	111	166
	170-179-20S0-12D	CFR D170-A45	117	178
	180-189-25S0-12D	CFR D180-A45	123	189
	190-199-25S0-12D	CFR D190-A45	129	201
	200-209-25S0-12D	CFR D200-A45	135	213
	210-219-25S0-12D	CFR D210-A45	141	225
	220-229-25S0-12D	CFR D220-A45	147	237
	230-239-32T2-12D	CFR D230-A45	153	249
240-249-32T2-12D	CFR D240-A45	159	261	
250-259-32T2-12D	CFR D250-A45	165	273	

## Drilling head mounting procedure

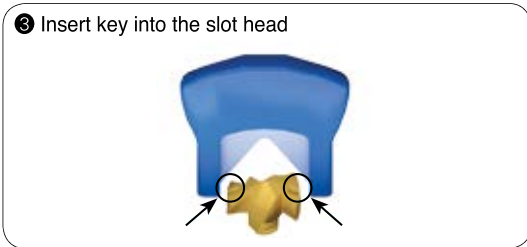
1 Clean the pocket and add oil



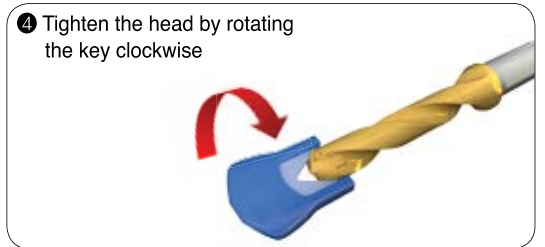
2 Mount the drill head on the pocket



3 Insert key into the slot head

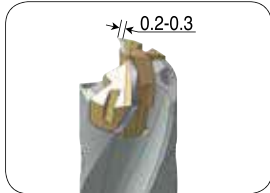


4 Tighten the head by rotating the key clockwise

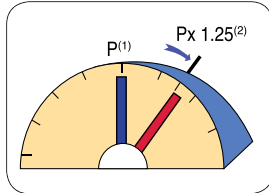


## Indication of head wear

Wear limit

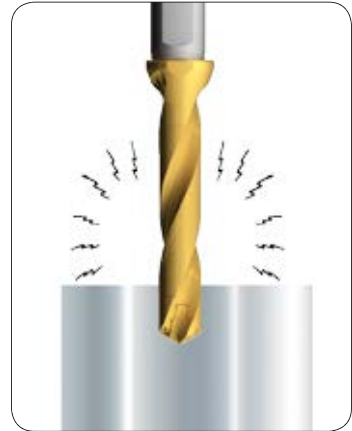


Power restriction

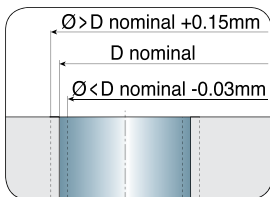


(1) New drill head  
(2) Worn-out drilling head

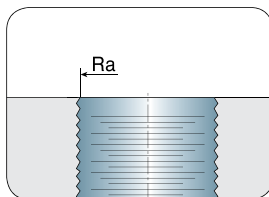
Vibration noise drastically increases



Diameter change

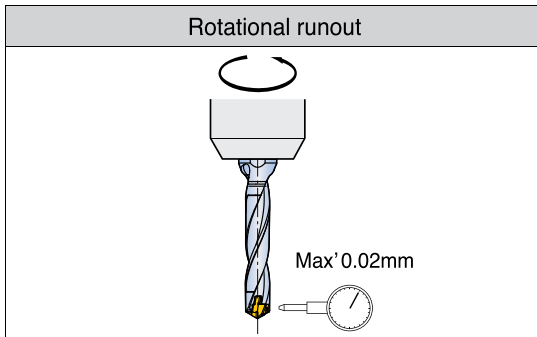


Surface finish declines

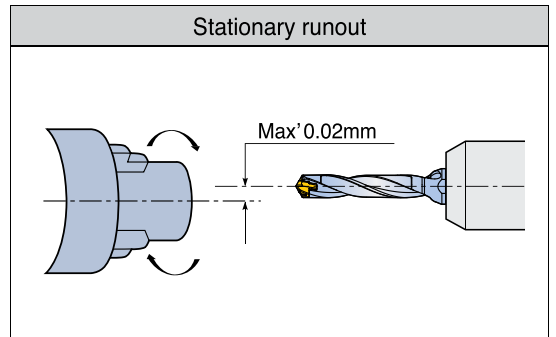


## Maximum runout

Rotational runout

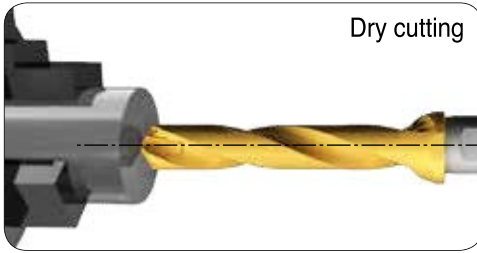
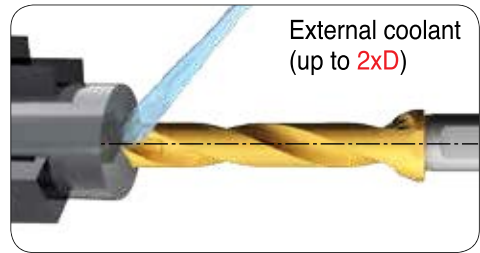
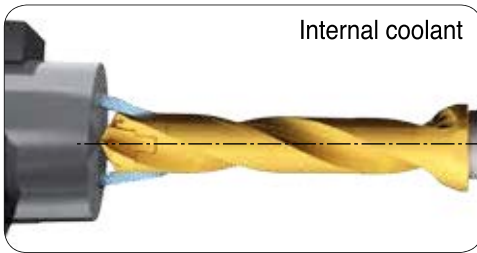


Stationary runout

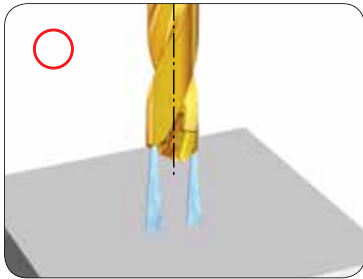




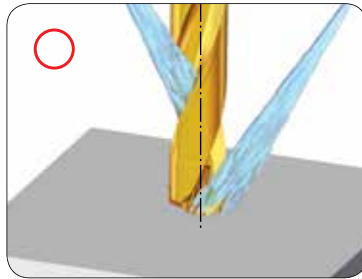
### Coolant recommendations (Lathe)



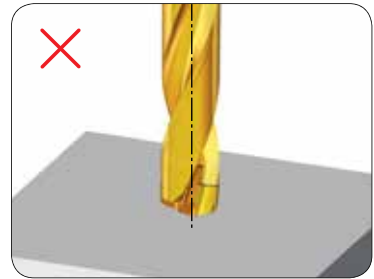
### Coolant recommendations (MCT)



Internal coolant

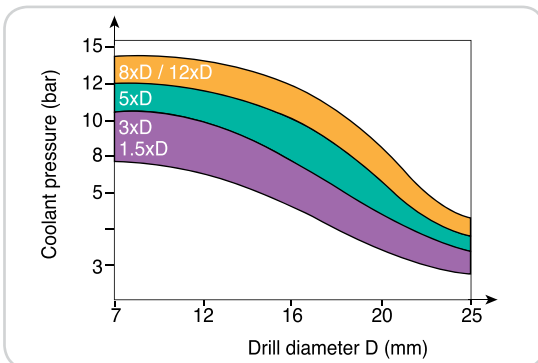


External coolant (up to 2xD)

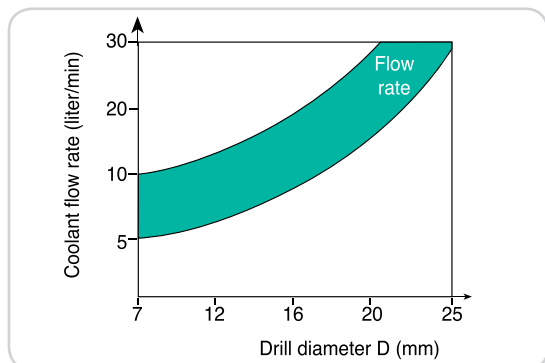


Dry cutting

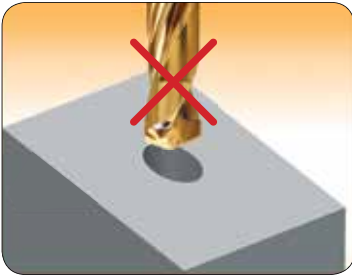
### Recommended coolant pressure (bar)



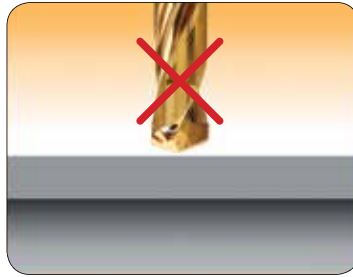
### Recommended coolant flow rate (liter/min)



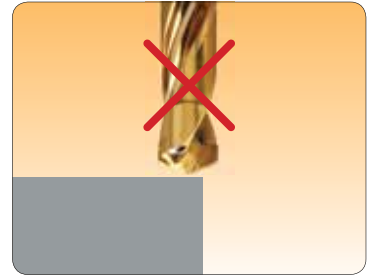
## Drilling limitation



Inclined surface

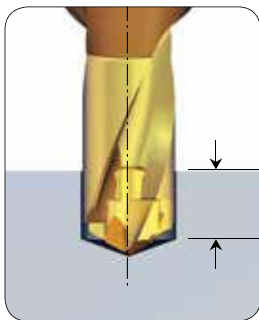


Cross hole



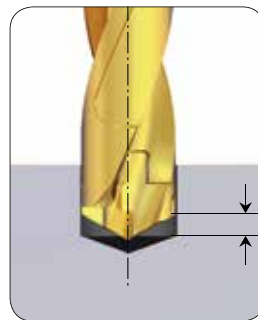
Interrupted cutting

## Recommended procedure for using 8xD, 12xD holder



- Pre-hole drilling  
: diameter(D) X 0.5~  
diameter(D) X 1.5 depth  
: using standard 1.5xD holder

0.5xD~1.5xD

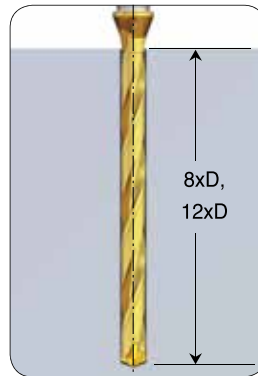


- Slow rotation and feed  
during entrance to  
the pre-hole

2~5mm from bottom for hole



- Activate the cooling system and  
maintain for 2~3 seconds



- Start drilling at recommended  
cutting conditions

8xD,  
12xD

## Plug for stationary machines

TaeguTec supplies special plugs with an internal thread for coolant connections used on lathes that can be pressed into the cavity on the back end of the shank.

Item No.	Description	Shank Diameter	Internal Thread
6102019	<b>PL-TCD-12</b>	12	G 1/16
6102020	<b>PL-TCD-16</b>	16	G 1/16
6102021	<b>PL-TCD-20</b>	20	G 1/8
6102022	<b>PL-TCD-25</b>	25	G 1/8
6102023	<b>PL-TCD-32</b>	32	G 1/8

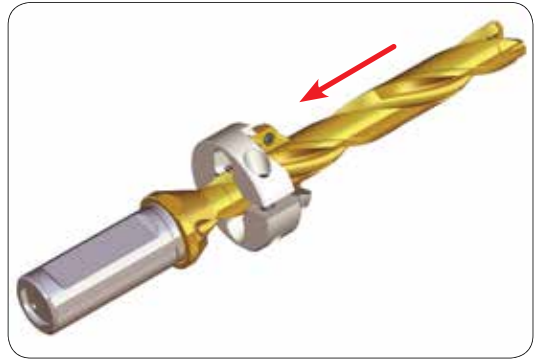




## Assembly of chamfering ring



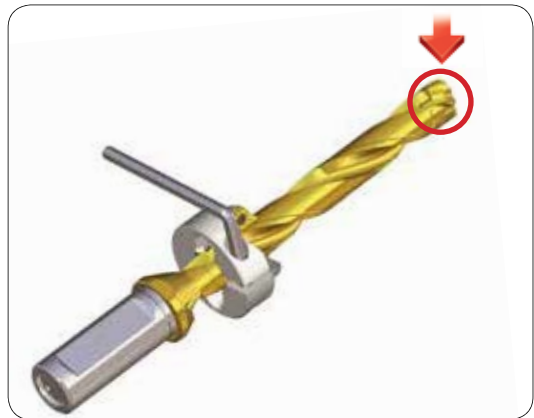
❶ Insert the chamfering ring on to the drill body.  
The stopper must be inside the flute.



❷ Slide the chamfering ring to the desired position

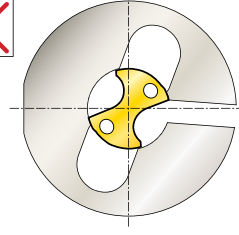
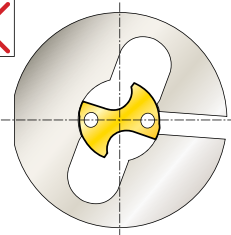
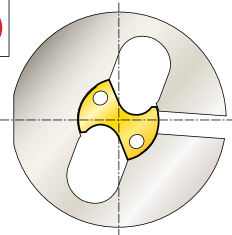


❸ Rotate the chamfering ring  
clockwise until stopper engages  
the flute edge



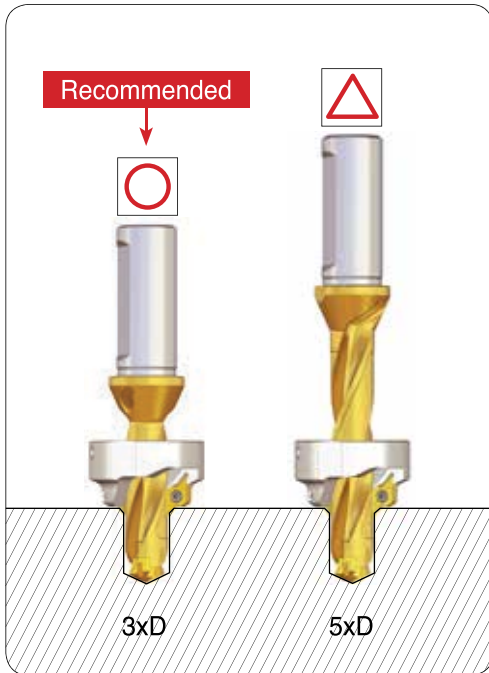
❹ Tighten the chamfering ring and clamp the drill head

**When the chamfering ring is clamped correctly,  
the drill flute will be aligned with the chamfering ring flute.**

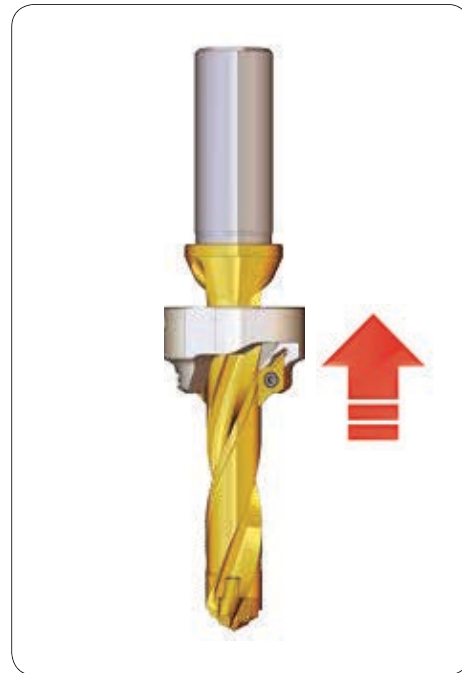




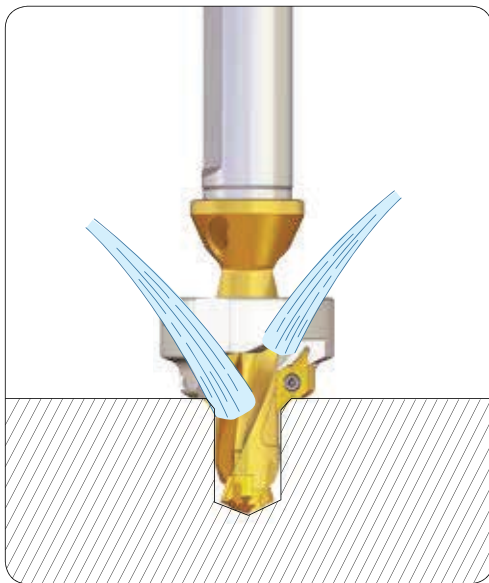
## Recommendations for stable machining



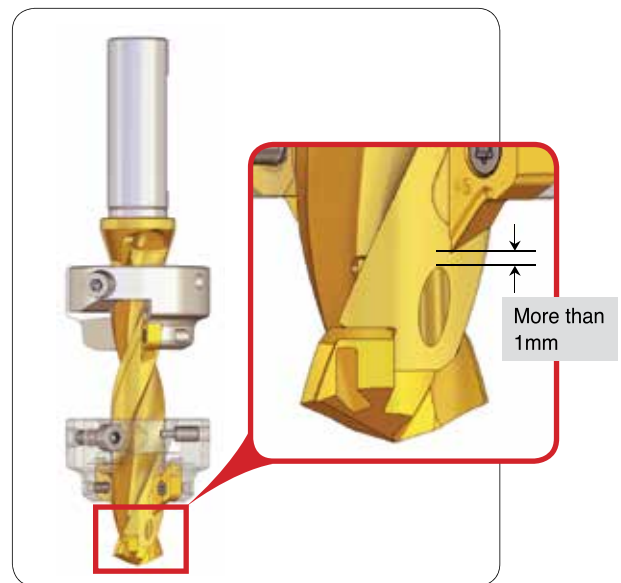
- 1 If possible, always use a short holder.  
If not, reduce the cutting speed to minimize vibration.



- 2 Mount the chamfering ring as close as possible to the drilling shank



- 3 For better insert life, apply external and internal coolant to the insert

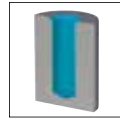
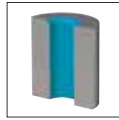
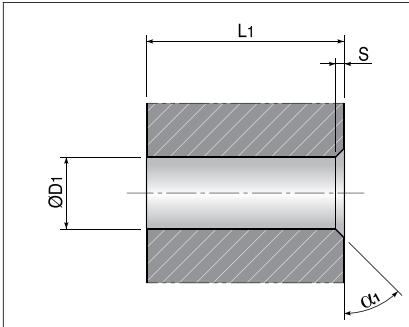


- 4 When mounting the chamfering ring, please ensure that it does not block the coolant



**Tailor-made order form**

Specific dimensions

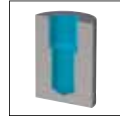
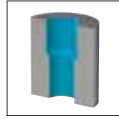
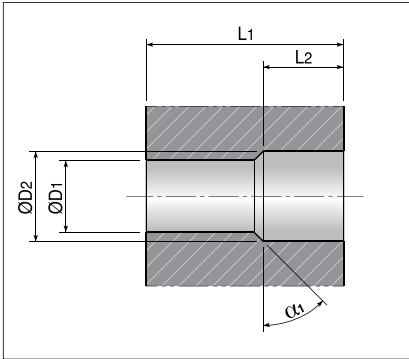


Through  Blind

ØD1 \_\_\_\_\_ L1 \_\_\_\_\_

α1 \_\_\_\_\_ S \_\_\_\_\_

•Hole tolerance \_\_\_\_\_



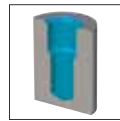
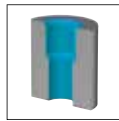
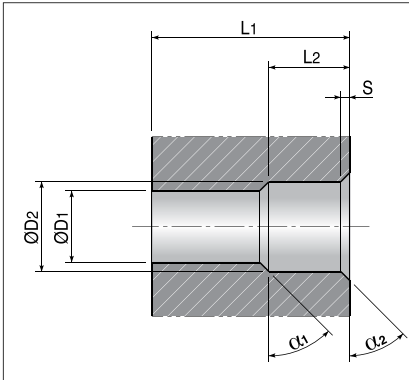
Through  Blind

ØD1 \_\_\_\_\_ ØD2 \_\_\_\_\_

L1 \_\_\_\_\_ L2 \_\_\_\_\_

α1 \_\_\_\_\_

•Hole tolerance \_\_\_\_\_



Through  Blind

ØD1 \_\_\_\_\_ ØD2 \_\_\_\_\_

L1 \_\_\_\_\_ L2 \_\_\_\_\_

α1 \_\_\_\_\_ α2 \_\_\_\_\_

S \_\_\_\_\_

•Hole tolerance \_\_\_\_\_

**Comment**

**Technical data**

• Machine type

Machining center  Lathe

Spindle - Vertical  Horizontal

Machine name \_\_\_\_\_

Power \_\_\_\_\_ Kw

• Coolant supply

Internal  External

Coolant pressure \_\_\_\_\_ bar

Coolant type \_\_\_\_\_

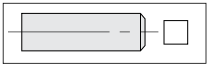
**Workpiece**

• Part Name \_\_\_\_\_

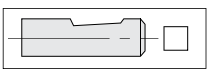
• Material \_\_\_\_\_

• Hardness \_\_\_\_\_

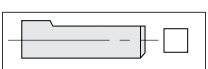
**Shank type**



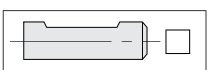
Cylindrical type



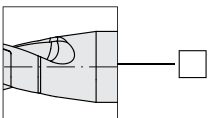
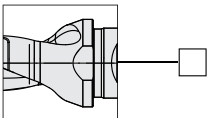
Whistle notch type



Cylindrical with flat type



Weldon type



• Shank dia \_\_\_\_\_

• Shank length \_\_\_\_\_

## Recommended cutting conditions

Machining data for DRILLRUSH

ISO	Material	Condition	Tensile strength (N/mm <sup>2</sup> )	Hardness HB	Material No.	Cutting speed Vc (m/min)	
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C	Annealed	420	125	1	80-140
		>=0.25%C	Annealed	650	190	2	80-130
		<0.55%C	Quenched and tempered	850	250	3	80-120
		>=0.55%C	Annealed	750	220	4	70-110
			Quenched and tempered	1000	300	5	50-90
	Low alloy steel and cast steel (Less than 5% of alloying elements)	Annealed		600	200	6	70-120
				930	275	7	70-110
		Quenched and tempered		1000	300	8	50-90
				1200	350	9	40-70
	High alloy steel, cast steel and tool steel	Annealed	680	200	10	50-90	
		Quenched and tempered	1100	325	11	40-80	
M	Stainless steel and cast steel	Ferritic / martensitic	680	200	12	40-70	
		Martensitic	820	240	13	40-70	
		Austenitic	600	180	14	30-70	
K	Gray cast iron (GG)	Ferritic		160	15	90-160	
		Pearlitic		250	16	80-140	
	Cast iron nodular (GGG)	Ferritic		180	17	90-180	
		Pearlitic		260	18	80-140	
Malleable cast iron	Ferritic		130	19	90-160		
	Pearlitic		230	20	80-140		
N	Aluminum - Wrought alloy	Not cureable		60	21	90-220	
		Cured		100	22	90-220	
	Aluminum-cast, alloyed	<=12% Si	Not cureable		75	23	90-220
			Cured		90	24	90-220
	>12% Si	High temp.		130	25	80-160	
		Free cutting		110	26	90-220	
	Copper alloys	Brass		90	27	90-220	
Electrolitic copper			100	28	90-220		
Non-metallic	Duroplastics, fiber plastics			29			
	Hard rubber			30			
S	High temp. alloys	Fe based	Annealed		200	31	30-60
			Cured		280	32	20-50
		Ni or Co based	Annealed		250	33	20-50
			Cured		350	34	20-50
			Cast		320	35	20-50
	Titanium, Ti alloys		Rm 400		36	20-50	
Alpha+beta alloys cured		Rm 1050		37	20-50		
H	Hardened steel	Hardened		55HRC	38	20-50	
		Hardened		60HRC	39	20-50	
	Chilled cast iron	Cast		400	40		
	Cast iron nodular	Hardened		55HRC	41		

- For over 8xD, please reduce the cutting condition.
- For more information of material groups, see the TaeguTec concise catalogue "material conversion table" section.

■ Steel   
 ■ Stainless steel   
 ■ Cast iron   
 ■ Nonferrous   
 ■ High temp. alloys   
 ■ Hardened steel



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