

How to choose your boring tool

1 Define type of operation

Identify your type of operation and note characteristics regarding the hole to be machined, limitations, material and machine

2 Select a boring system

Use the tool program overview to find the system that meets requirements of the operation - roughing or finishing as well as conditions

3 Define the boring diameter and hole requirements

Select the tool that covers the boring diameter range for the operation, surface finish and tolerances

4 Choose the entering angle

Based on the entering angle selected, choose the appropriate insert carrier from the ordering chart.

This will also indicate the most suitable insert.

5 Select an adaptor

Choose an adaptor based on

- Coupling size
- Boring depth

See chapter G

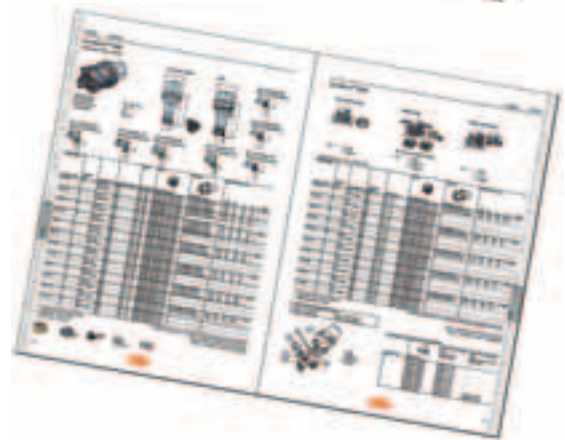
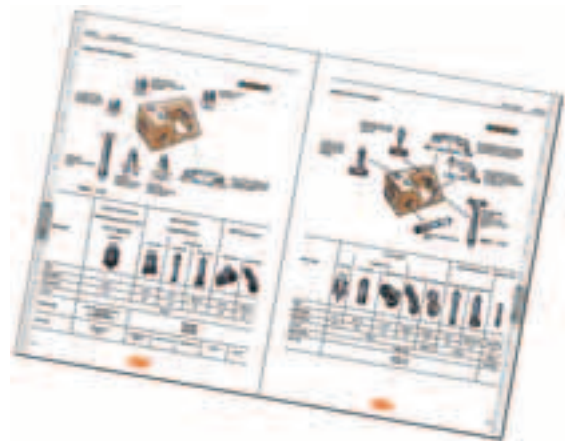
6 Select inserts for the tool

Establish the inserts based on the style and size recommendations.

Select an insert grade based on type of workpiece material and machining conditions.

See chapter A

For cutting data recommendations see page F96



For more technical information, see our Metalcutting Technical guide

BORING

Applications

Tool guide and selection

Roughing

F4

Finishing/Reaming

F5

Products

Roughing

CoroBore® 820 - Three insert design

F6

Coromant Capto®, boring range 35 - 306 mm

F8

CoroBore® 820 XL - Two insert design for large diameters

F7

Boring range 298 - 540 mm

F14

Boring range 538 - 1260 mm

F16

DuoBore™ - Two insert design

F19

Coromant Capto® - 25-270 mm

F20

Dampened Coromant Capto® - 25-150 mm

F22

Heavy Duty - Two insert design

Coromant Capto®, boring range 150 - 300 mm

F28

Finishing

CoroBore® 825 - for conventional or back boring

F30

Cylindrical shank - 19-36 mm

F32

Coromant Capto® and HSK - 19-167 mm

F34

Dampened Coromant Capto® - 19-167 mm

F38

CoroBore® 825/826 - for conventional boring

F30

Coromant Capto® - 150-315 mm

F36

Dampened Coromant Capto® - 150-315 mm

F40

CoroBore® 825/826 XL - For large diameters

F31

Boring range 298 - 555 mm

F42

Boring range 538 - 1275 mm

F44

Fine boring heads

F50

Coromant Capto® and HSK fine boring heads - 3-36 mm

F50

High speed Coromant Capto® and HSK fine boring heads - 2-26 mm

F51

CoroBore® XL holders

F46

Coromant Capto® adaptor

F47

Solid holder

F48

Centering plug

F49

Other tools

T-Max U fine boring units - For straight or angular mounting

F55

Coromant flexible boring tool

F58

Reaming

F106

Reamer™ 830 - High feed precision tool for through holes

F107

Inserts

F59

Cutting data and chip control

F97

Spare parts

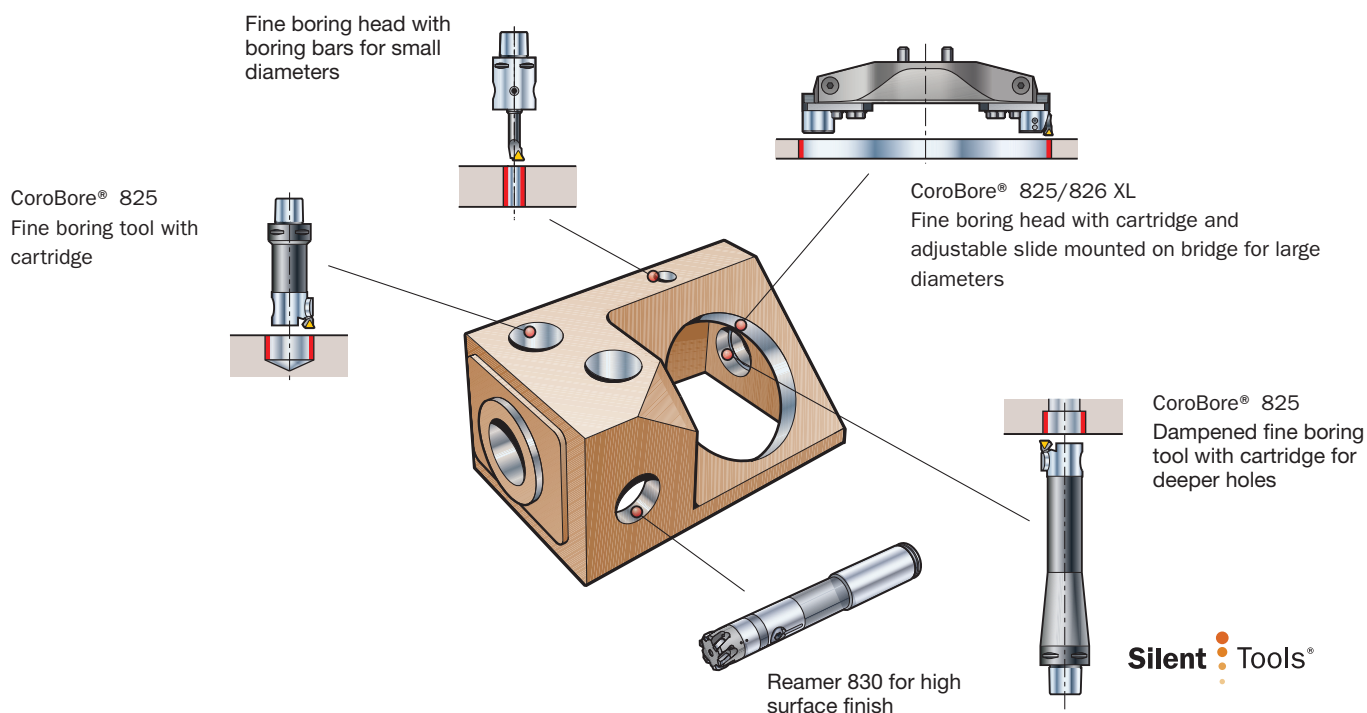
F109

P M K N S H



BORING TOOLS FOR FINISHING

P M K N S H



	Fine boring tools					Dampened fine boring tools		Reamer 830
Boring range, mm (inch)	3-36 (.118-1.417)	CoroBore® 825 19-167 (.748-6.575)	CoroBore® 825 CoroBore® 826 150-315 (5.906-12.401)	CoroBore® 825 XL CoroBore® 826 XL 298-555 (11.732-21.850)	538-1275 (22.181-50.197)	CoroBore® 825 23-167 (.748-6.575)	CoroBore® 825 CoroBore® 826 150-315 (5.906-12.401)	10-31.75 (.394-1.250)
Page	F50	F32	F36	F42	F44	F38	F40	F106
Boring depth	$5 \times D_c$	$4 \times D_{sm}$	$4 \times D_{sm}$			$6 \times D_c$	$6 \times D_{sm}$	45-106 mm
Hole tolerance	IT6	IT6	IT6	IT6	IT6	IT6	IT6	H7
Cutting fluid	Internal							
Type of boring	Single edge							Multi edge
Insert type	CoroTurn® 107 CoroTurn® 111							-

CoroBore® 820

Rough boring tool - three insert design

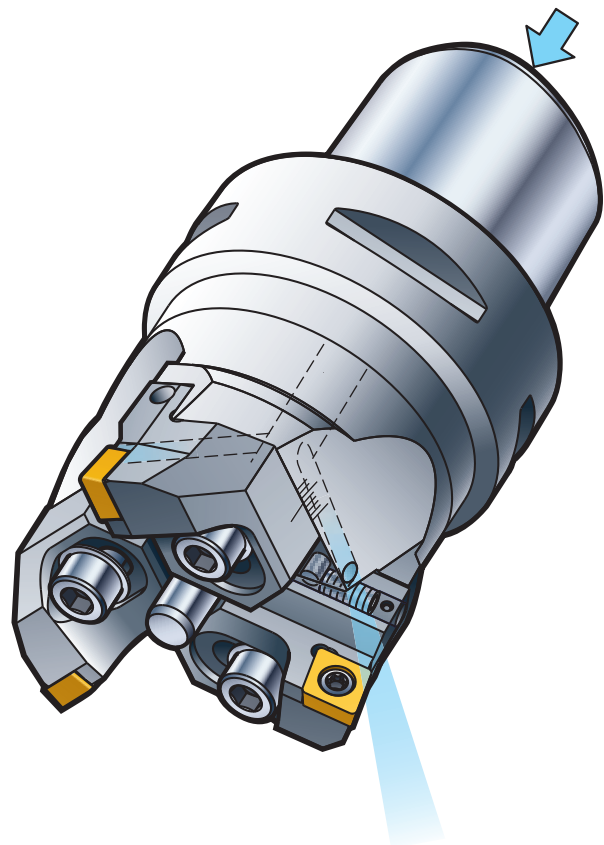
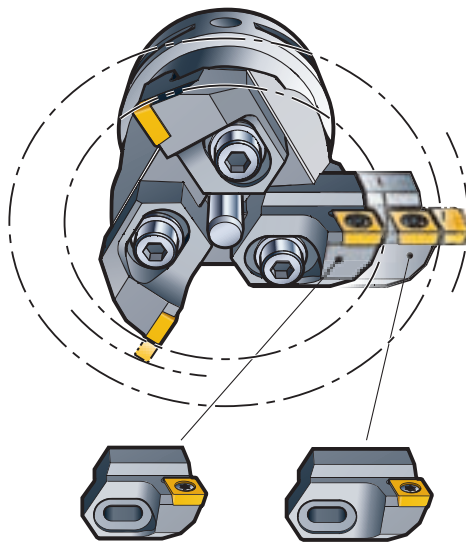
Optimal productivity in medium to high power machine tools

Short, rigid and compact

- Maximum stability

Cutting fluid through the tool

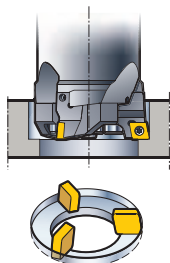
- Good chip evacuation



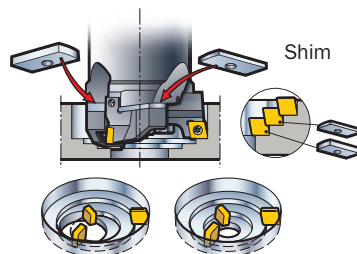
Optional slide assemblies, individually adjustable both axially and radially

- Versatility
- Economy
- Low inventory

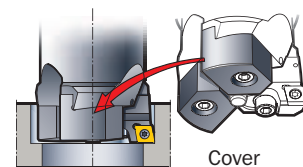
Productive boring



Step boring



Single edge boring



CoroTurn® RC rigid clamping

- First choice for diameters 166-260 mm (6.535-10.236 inch)



CoroTurn® 107 screw clamping

- Wide choice of insert types

ISO application areas:

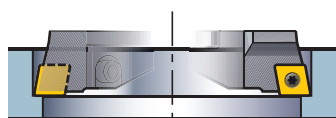
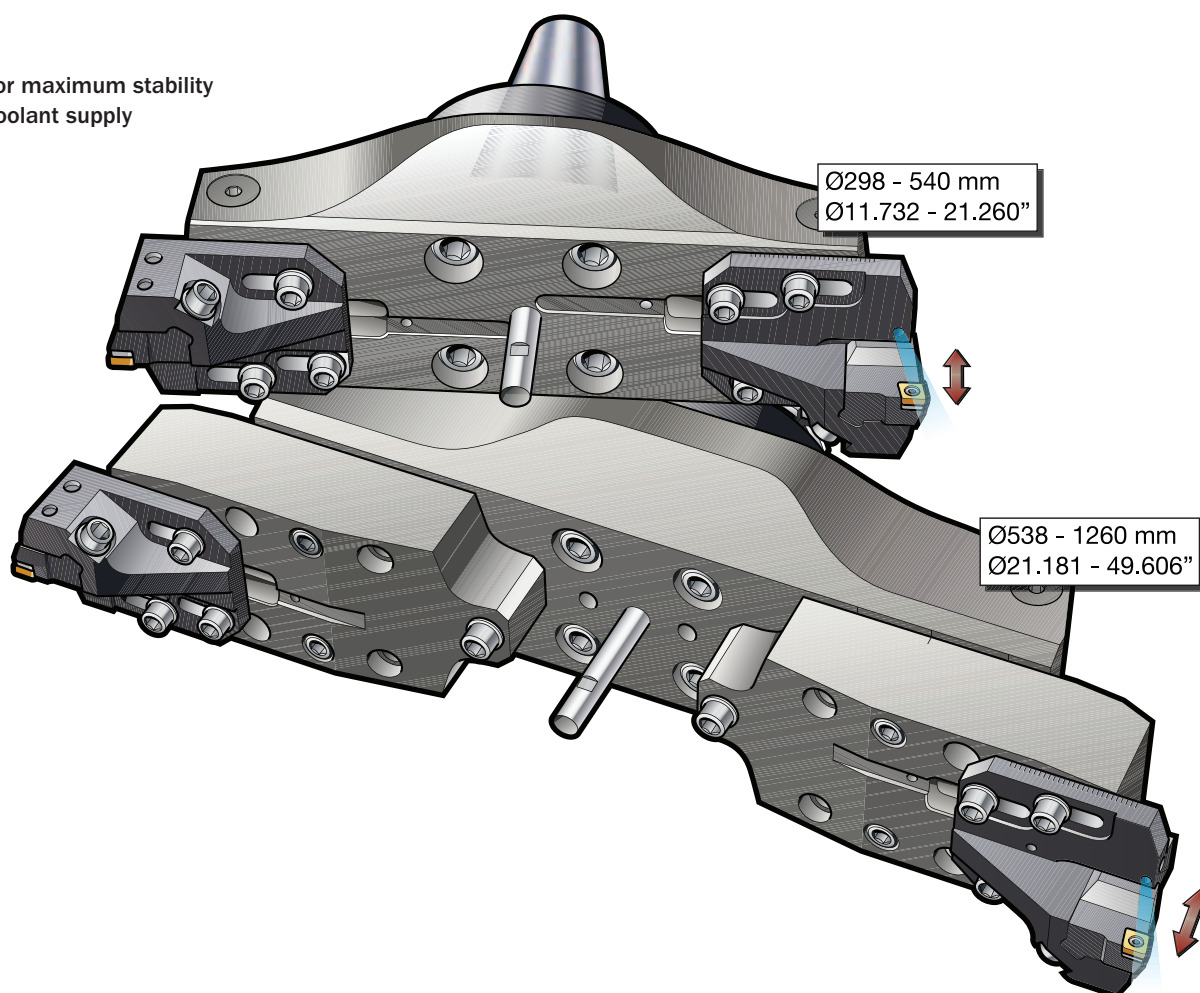


CoroBore® 820 XL

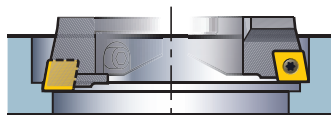
Rough boring tool system

For large diameter boring

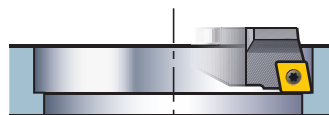
Rigid system for maximum stability
with internal coolant supply



Twin-edge boring



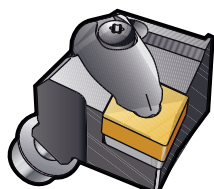
Step boring



Single-edge boring

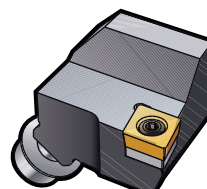
Axially adjustable cartridges

For step boring or to ensure the
same axial position for the two
inserts



T-Max® P, CoroTurn® RC Rigid clamping

For applications that require
strong inserts in stable conditions

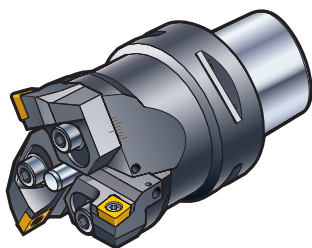


CoroTurn 107 screw clamping system

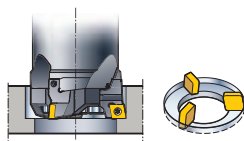
For applications that require lower
cutting forces

CoroBore® 820

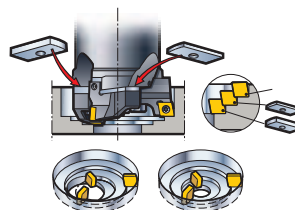
Boring tool with 3 inserts
Coromant Capto®



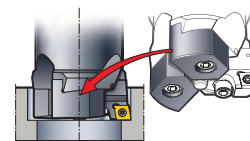
Productive boring



Step boring



Single edge boring



Boring range: 35-306 mm (1.378-12.047 inch)

Boring depth: $4 \times D_{sm}$

Hole tolerance: IT9

Cutting fluid: Internal

3 Slides
1 Adaptor

90° slides

3 Slides⁴⁾

1 Shim set

1 Adaptor

1 Slide

2 Cover

1 Adaptor

Cutting speed, v_c max: 1200 m/min (3937 ft/min)

Boring range, mm (inch)	Adaptor size	Coupling size	Entering angle	Lead angle	Insert type			1. Slide ⁴⁾	2. Adaptor
D_c min – max					ISO	ANSI	i/c	Ordering code	Ordering code
35–40.5 (1.378–1.594)	A	C3-C6	90°	0°	CC.. 06	CC.. 2(1.5)	1/4	R820A-AR11SCFC06A	C3-R820A-AA3037A
			75°	15°	CC.. 06	CC.. 2(1.5)		R820A-AR11SCKC06A	C4-R820A-AA3072A
			95°	-5°	CC.. 06	CC.. 2(1.5)		R820A-AR11SCLC06A	C5-R820A-AA3080A
39.5–45 (1.555–1.772)	A	C3-C6	90°	0°	CC.. 06	CC.. 2(1.5)	1/4	R820A-BR11SCFC06A	C6-R820A-AA3089A
			75°	15°	CC.. 06	CC.. 2(1.5)		R820A-BR11SCKC06A	
			95°	-5°	CC.. 06	CC.. 2(1.5)		R820A-BR11SCLC06A	
44–50.5 (1.732–1.988)	B	C4-C6	90°	0°	CC.. 06	CC.. 2(1.5)	1/4	R820B-AR12SCFC06A	C4-R820B-AA3044A
			75°	15°	CC.. 06	CC.. 2(1.5)		R820B-AR12SCKC06A	C5-R820B-AA3086A
			95°	-5°	CC.. 06	CC.. 2(1.5)		R820B-AR12SCLC06A	C6-R820B-AA3099A
49.5–56 (1.949–2.205)	B	C4-C6	90°	0°	CC.. 06	CC.. 2(1.5)	1/4	R820B-BR12SCFC06A	
			75°	15°	CC.. 06	CC.. 2(1.5)		R820B-BR12SCKC06A	
			95°	-5°	CC.. 06	CC.. 2(1.5)		R820B-BR12SCLC06A	
49.5–56 (1.949–2.205)	B	C4-C6	90°	0°	CC.. 09	CC.. 3(2.5)	3/8	R820B-BR14SCFC09A	C4-R820B-AA3044A
			84°	6°	SC.. 09	SC.. 3(2.5)		R820B-BR14SSYC09A	C5-R820B-AA3086A
			95°	-5°	CC.. 09	CC.. 3(2.5)		R820B-BR14SCLC09A	C6-R820B-AA3099A
55–63 (2.165–2.480)	C	C5-C6	90°	0°	CC.. 09	CC.. 3(2.5)	3/8	R820C-AR16SCFC09A	C5-R820C-AA3050A
		HSK 63/A	84°	6°	SC.. 09	SC.. 3(2.5)		R820C-AR16SSYC09A	C6-R820C-AA3104A
			95°	-5°	CC.. 09	CC.. 3(2.5)		R820C-AR16SCLC09A	
62–70 (2.441–2.756)	C	C5-C6	90°	0°	CC.. 09	CC.. 3(2.5)	3/8	R820C-BR16SCFC09A	
			84°	6°	SC.. 09	SC.. 3(2.5)		R820C-BR16SSYC09A	
			95°	-5°	CC.. 09	CC.. 3(2.5)		R820C-BR16SCLC09A	
62–70 (2.441–2.756)	C	C5-C6	90°	0°	CC.. 12	CC.. 43	1/2	R820C-BR18SCFC12A	C5-R820C-AA3050A
			84°	6°	SC.. 12	SC.. 43		R820C-BR18SSYC12A	C6-R820C-AA3104A
			95°	-5°	CC.. 12	CC.. 43		R820C-BR18SCLC12A	
69–78.5 (2.717–3.091)	D	C5-C6	90°	0°	CC.. 09	CC.. 3(2.5)	3/8	R820D-AR18SCFC09A	C5-R820D-AA3052A
			84°	6°	SC.. 09	SC.. 3(2.5)		R820D-AR18SSYC09A	C6-R820D-AA3060A
			95°	-5°	CC.. 09	CC.. 3(2.5)		R820D-AR18SCLC09A	
			90°	0°	CC.. 12	CC.. 43	1/2	R820D-AR18SCFC12A	
			84°	6°	SC.. 12	SC.. 43		R820D-AR18SSYC12A	
			95°	-5°	CC.. 12	CC.. 43		R820D-AR18SCLC12A	
77.5–87 (3.051–3.425)	D	C5-C6	90°	0°	CC.. 09	CC.. 3(2.5)	3/8	R820D-BR18SCFC09A	
		HSK 63/A	84°	6°	SC.. 09	SC.. 3(2.5)		R820D-BR18SSYC09A	
			95°	-5°	CC.. 09	CC.. 3(2.5)		R820D-BR18SCLC09A	
			90°	0°	CC.. 12	CC.. 43	1/2	R820D-BR18SCFC12A	
			84°	6°	SC.. 12	SC.. 43		R820D-BR18SSYC12A	
			95°	-5°	CC.. 12	CC.. 43		R820D-BR18SCLC12A	

1) i -dimension when using shim set.

2) Tightening torque for slide.

3) For $D_c < D_{sm}$: $\delta = 1.5 \times D_c$

4) Slides of type R820x-A... and R820x-B... with the same length can be combined for step boring over a larger diameter range.



F59



G6



F109



F96

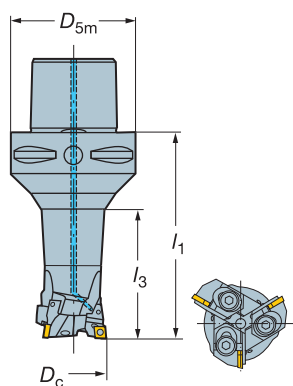


F2

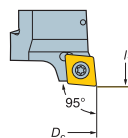


J3

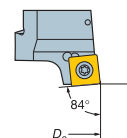
Coromant Capto®



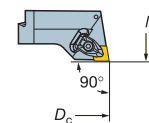
95° (-5°) CoroTurn® 107 R820x-xRxxSCLCxxA



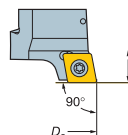
84° (6°) CoroTurn® 107 R820x-xRxxSSYCxxA



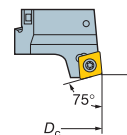
90° (0°) CoroTurn® RC R820x-xRxxDCFNxxA



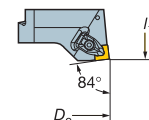
90° (0°) CoroTurn® 107 R820x-xRxxSCFCxxA



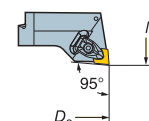
75° (15°) CoroTurn® 107 R820x-xRxxSCKCxxA



84° (6°) CoroTurn® RC R820x-xRxxDSYNxxA



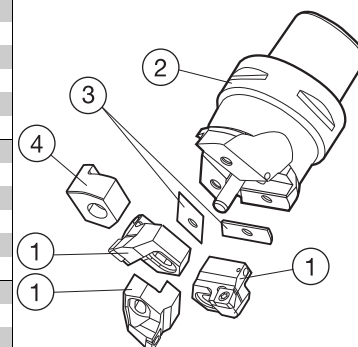
95° (-5°) CoroTurn® RC R820x-xRxxDCLNxxA



l_1 = programming length

Dimensions, mm (inch)

										Accessories, must be ordered separately		
										Shim set	Cover for CoroTurn® 107	Cover for CoroTurn® RC
	D_{5m}	l_1	$l_1^{(1)}$	l_3	Nm ⁽²⁾	ft-lbs ⁽²⁾						
0.3 (.7)	32 (1.260)	48 (1.890)	49 (1.929)	-	4.8	3.5	R820A-AS00A	R820A-AC10A	-			
0.7 (1.5)	40 (1.575)	83 (3.268)	84 (3.307)	³⁾								
0.9 (2.0)	50 (1.969)	91 (3.583)	92 (3.622)	³⁾								
1.3 (2.9)	63 (2.480)	100 (3.937)	101 (3.976)	³⁾								
0.7 (1.5)	40 (1.575)	56 (2.205)	57 (2.244)	-	9.0	6.6	R820B-AS00A	R820B-AC11A	-			
1.2 (2.6)	50 (1.969)	98 (3.858)	99 (3.898)	³⁾								
1.7 (3.7)	63 (2.480)	111 (4.370)	112 (4.409)	³⁾								
0.7 (1.5)	40 (1.575)	58 (2.283)	59 (2.323)	-	9.0	6.6	R820B-AS00A	R820B-AC11A	-			
1.2 (2.6)	50 (1.969)	100 (3.937)	101 (3.976)	³⁾								
1.7 (3.7)	63 (2.480)	113 (4.449)	114 (4.488)	³⁾								
1.0 (2.2)	50 (1.969)	66 (2.598)	67 (2.638)	-	16.0	11.8	R820C-AS00A	R820C-AC15A	-			
2.1 (4.6)	63 (2.480)	120 (4.724)	121 (4.764)	-								
1.0 (2.2)	50 (1.969)	68 (2.677)	69 (2.717)	-	16.0	11.8	R820C-AS00A	R820C-AC15A	-			
2.1 (4.6)	63 (2.480)	122 (4.803)	123 (4.843)	-								
1.2 (2.6)	50 (1.969)	70 (2.756)	71 (2.795)	-	16.0	11.8	R820D-AS00A	R820D-AC17A	-			
2.2 (4.9)	63 (2.480)	78 (3.071)	79 (3.110)	-								



- Slide
- Adaptor
- Shim set¹⁾
- Cover

Ordering example for a complete tool including adaptor and slides:
3 pieces R820A-AR11SCFC06A (slides)
1 piece C3-R820A-AA3037A (adaptor)

Coromant Capto® tightening torque:

Size C3: 40-50 Nm (30-37 ft-lbs)

Size C4: 50-60 Nm (37-44 ft-lbs)

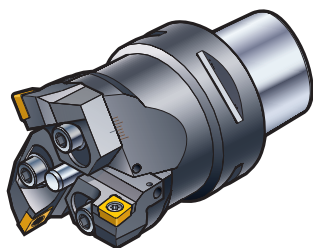
Size C5: 90-100 Nm (67-74 ft-lbs)

Size C6: 160-180 Nm (118-133 ft-lbs)

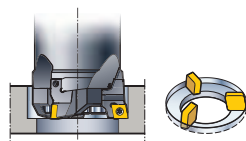
Size C8: 160-180 Nm (118-133 ft-lbs)

CoroBore® 820

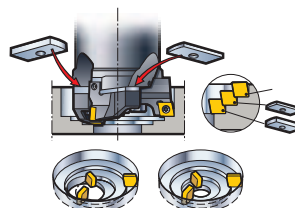
Boring tool with 3 inserts
Coromant Capto®



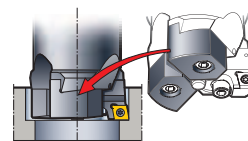
Productive boring



Step boring



Single edge boring



Boring range: 35-306 mm (1.378-12.047 inch)

Boring depth: $4 \times D_{sm}$

Hole tolerance: IT9

Cutting fluid: Internal

Cutting speed, v_c max: 1200 m/min (3937 ft/min)

3 Slides
1 Adaptor

90° slides
3 Slides¹⁾
1 Shim set
1 Adaptor

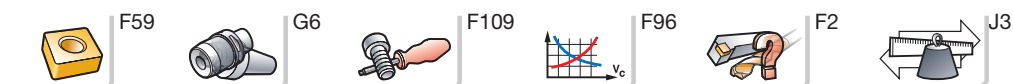
1 Slide
2 Cover
1 Adaptor

Boring range, mm (inch)	Adaptor size	Coupling size	Entering angle	Lead angle	Insert type			1. Slide ¹⁾	2. Adaptor
D_c min – max (3.386-3.819)					ISO	ANSI	iC	Ordering code	Ordering code
86-97 (3.386-3.819)	E	C6-C8	90°	0°	CC.. 12	CC.. 43	1/2	R820E-AR22SCFC12A	C6-R820E-AA3068A
			84°	6°	SC.. 12	SC.. 43		R820E-AR22SSYC12A	C8-R820E-AA3072A
			95°	-5°	CC.. 12	CC.. 43		R820E-AR22SCLC12A	
96-107 (3.780-4.213)	E	C6-C8	90°	0°	CC.. 12	CC.. 43	1/2	R820E-BR22SCFC12A	
			84°	6°	SC.. 06	SC.. 43		R820E-BR22SSYC12A	
			95°	-5°	CC.. 12	CC.. 43		R820E-BR22SCLC12A	
106-122 (4.173-4.803)	F	C8	90°	0°	CC.. 12	CC.. 43	1/2	R820F-AR24SCFC12A	C8-R820F-AA3076A
			84°	6°	SC.. 12	SC.. 43		R820F-AR24SSYC12A	
			95°	-5°	CC.. 12	CC.. 43		R820F-AR24SCLC12A	
			90°	0°	CN.. 12	CN.. 43	1/2	R820F-AR24DCFN12A	
			84°	6°	SN.. 12	SN.. 43		R820F-AR24DSYN12A	
			95°	-5°	CN.. 12	CN.. 43		R820F-AR24DCLN12A	
121-137 (4.764-5.394)	F	C8	90°	0°	CC.. 12	CC.. 43	1/2	R820F-BR24SCFC12A	
			84°	6°	SC.. 12	SC.. 43		R820F-BR24SSYC12A	
			95°	-5°	CC.. 12	CC.. 43		R820F-BR24SCLC12A	
			90°	0°	CN.. 12	CN.. 43	1/2	R820F-BR24DCFN12A	
			84°	6°	SN.. 12	SN.. 43		R820F-BR24DSYN12A	
			95°	-5°	CN.. 12	CN.. 43		R820F-BR24DCLN12A	
136-152 (5.354-5.984)	G	C8	90°	0°	CC.. 12	CC.. 43	1/2	R820G-AR24SCFC12A	C8-R820G-AA3076A
			84°	6°	SC.. 12	SC.. 43		R820G-AR24SSYC12A	
			95°	-5°	CC.. 12	CC.. 43		R820G-AR24SCLC12A	
			90°	0°	CN.. 12	CN.. 43	1/2	R820G-AR24DCFN12A	
			84°	6°	SN.. 12	SN.. 43		R820G-AR24DSYN12A	
			95°	-5°	CN.. 12	CN.. 43		R820G-AR24DCLN12A	
151-167 (5.945-6.575)	G	C8	90°	0°	CC.. 12	CC.. 43	1/2	R820G-BR24SCFC12A	
			84°	6°	SC.. 12	SC.. 43		R820G-BR24SSYC12A	
			95°	-5°	CC.. 12	CC.. 43		R820G-BR24SCLC12A	
			90°	0°	CN.. 12	CN.. 43	1/2	R820G-BR24DCFN12A	
			84°	6°	SN.. 12	SN.. 43		R820G-BR24DSYN12A	
			95°	-5°	CN.. 12	CN.. 43		R820G-BR24DCLN12A	
166-191 (6.535-7.520)	H	C8	90°	0°	CC.. 12	CC.. 43	1/2	R820H-AR26SCFC12A	C8-R820H-AA3089A
			84°	6°	SC.. 12	SC.. 43		R820H-AR26SSYC12A	
			95°	-5°	CC.. 12	CC.. 43		R820H-AR26SCLC12A	
			90°	0°	CN.. 16	CN.. 54	5/8	R820H-AR36DCFN16A	C8-R820H-AA3089A
			84°	6°	SN.. 15	SN.. 54		R820H-AR36DSYN15A	
			95°	-5°	CN.. 16	CN.. 54		R820H-AR36DCLN16A	
189-214 (7.441-8.425)	H	C8	90°	0°	CC.. 12	CC.. 43	1/2	R820H-BR26SCFC12A	C8-R820H-AA3089A
			84°	6°	SC.. 12	SC.. 43		R820H-BR26SSYC12A	
			95°	-5°	CC.. 12	CC.. 43		R820H-BR26SCLC12A	
			90°	0°	CN.. 16	CN.. 54	5/8	R820H-BR36DCFN16A	C8-R820H-AA3089A
			84°	6°	SN.. 15	SN.. 54		R820H-BR36DSYN15A	
			95°	-5°	CN.. 16	CN.. 54		R820H-BR36DCLN16A	

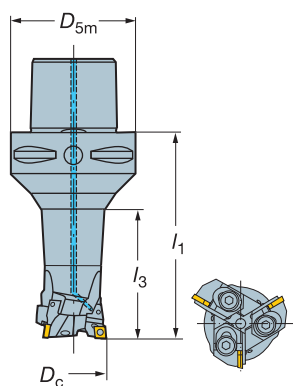
1) l_1 -dimension when using shim set.

2) Tightening torque for slide.

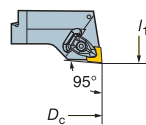
3) Slides of type R820x-A... and R820x-B... with the same length can be combined for step boring over a larger diameter range.



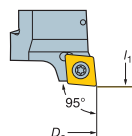
Coromant Capto®



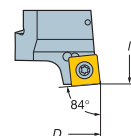
95° (-5°) CoroTurn® RC R820x-xRxxDCLNxxA



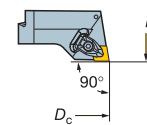
95° (-5°) CoroTurn® 107 R820x-xRxxSCLCxxA



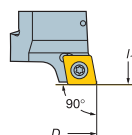
84° (6°) CoroTurn® 107 R820x-xRxxSSYCxxA



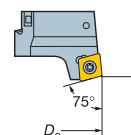
90° (0°) CoroTurn® RC R820x-xRxxDCFNxxA



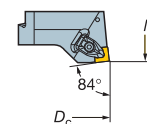
90° (0°) CoroTurn® 107 R820x-xRxxSCFCxxA



75° (15°) CoroTurn® 107 R820x-xRxxSCKCxxA

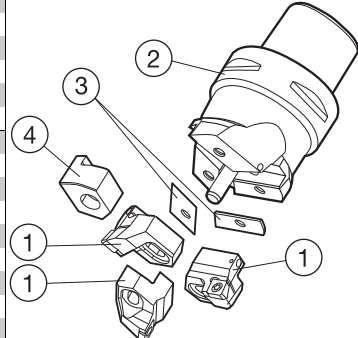


84° (6°) CoroTurn® RC R820x-xRxxDSYNxxA



l_1 = programming length

Dimensions, mm (inch)

							Accessories, must be ordered separately			
							Shim set	Cover for CoroTurn® 107	Cover for CoroTurn® RC	
Weight	D_{5m}	l_1	$l_1^{(1)}$	l_3	Nm ²⁾	ft- lbs ²⁾				
2.3 (5.1)	63 (2.48)	90 (3.543)	91.6 (3.606)	-	38.0	28.0	R820E-AS00A	R820E-AC20A	-	
3.4 (7.5)	80 (3.15)	94 (3.701)	95.6 (3.764)	-						
4.3 (9.5)	80 (3.15)	100 (3.937)	101.6 (4.000)	-	75.0	55.3	R820F-AS00A	R820F-AC22A	R820F-AC22A	
5.1 (11.2)	80 (3.15)	100 (3.937)	101.6 (4.000)	-	75.0	55.3	R820G-AS00A	R820G-AC22A	R820G-AC22A	
9.2 (20.3)	80 (3.15)	115 (4.528)	117 (4.606)	-	75.0	55.3	R820H-AS00A	R820H-BC24A	R820H-AC34A	
8.1 (17.9)	80 (3.15)	125 (4.921)	127 (5.000)	-	120.0	88.5				
9.2 (20.3)	80 (3.15)	115 (4.528)	117 (4.606)	-	75.0	55.3				
8.1 (17.9)	80 (3.15)	125 (4.921)	127 (5.000)	-	120.0	88.5				

Coromant Capto® tightening torque:

Size C3: 40-50 Nm (30-37 ft-lbs)
Size C4: 50-60 Nm (37-44 ft-lbs)
Size C5: 90-100 Nm (67-74 ft-lbs)

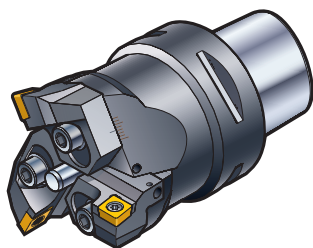
Size C6: 160-180 Nm (118-133 ft-lbs)
Size C8: 160-180 Nm (118-133 ft-lbs)

Ordering example for a complete tool including adaptor and slides:

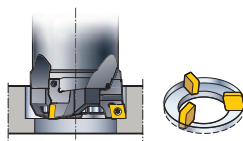
3 pieces R820G-AR24SCFC12A (slides)
1 piece C8-R820G-AA3076A (adaptor)

CoroBore® 820

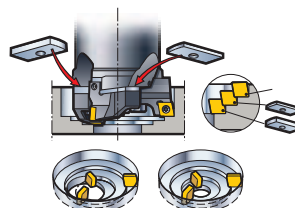
Boring tool with 3 inserts
Coromant Capto®



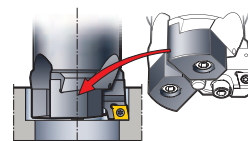
Productive boring



Step boring



Single edge boring



Boring range: 35-306 mm (1.378-12.047 inch)

Boring depth: 4 × D_{sm}

Hole tolerance: IT9

Cutting fluid: Internal

Cutting speed, v_c max: 1200 m/min (3937 ft/min)

3 Slides
1 Adaptor

90° slides
3 Slides⁴⁾
1 Shim set
1 Adaptor

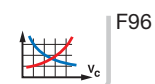
1 Slide
2 Cover
1 Adaptor

Boring range, mm (inch)					Insert type			1. Slide ⁴⁾	2. Adaptor
D_c min – max	Adaptor size	Coupling size	Entering angle	Lead angle	ISO	ANSI	iC	Ordering code	Ordering code
212-237 (8.346-9.331)	I	C8	90°	0°	CC..12	CC.. 43	1/2	R820I-AR26SCFC12A	C8-R820I-AA3089A
			84°	6°	SC..12	SC.. 43		R820I-AR26SSYC12A	
			95°	-5°	CC..12	CC.. 43		R820I-AR26SCLC12A	
			90°	0°	CN..16	CN.. 54	5/8	R820I-AR36DCFN16A	C8-R820I-AA3089A
			84°	6°	SN..15	SN.. 54		R820I-AR36DSYN15A	
			95°	-5°	CN..16	CN.. 54		R820I-AR36DCLN16A	
235-260 (9.252-10.236)	I	C8	90°	0°	CC..12	CC.. 43	1/2	R820I-BR26SCFC12A	C8-R820I-AA3089A
			84°	6°	SC..12	SC.. 43		R820I-BR26SSYC12A	
			95°	-5°	CC..12	CC.. 43		R820I-BR26SCLC12A	
			90°	0°	CN..16	CN.. 54	5/8	R820I-BR36DCFN16A	C8-R820I-AA3089A
			84°	6°	SN..15	SN.. 54		R820I-BR36DSYN15A	
			95°	-5°	CN..16	CN.. 54		R820I-BR36DCLN16A	
258-283 (10.157-11.142)	IX	C8	90°	0°	CC..12	CC.. 43	1/2	R820I-AR26SCFC12A	C8-R820IX-AA3094A
			84°	6°	SC..12	SC.. 43		R820I-AR26SSYC12A	
			95°	-5°	CC..12	CC.. 43		R820I-AR26SCLC12A	
			90°	0°	CN..16	CN.. 54	5/8	R820I-AR36DCFN16A	C8-R820IX-AA3094A
			84°	6°	SN..15	SN.. 54		R820I-AR36DSYN15A	
			95°	-5°	CN..16	CN.. 54		R820I-AR36DCLN16A	
281-306 (11.063-12.047)	IX	C8	90°	0°	CC..12	CC.. 43	1/2	R820I-BR26SCFC12A	C8-R820IX-AA3094A
			84°	6°	SC..12	SC.. 43		R820I-BR26SSYC12A	
			95°	-5°	CC..12	CC.. 43		R820I-BR26SCLC12A	
			90°	0°	CN..16	CN.. 54	5/8	R820I-BR36DCFN16A	C8-R820IX-AA3094A
			84°	6°	SN..15	SN.. 54		R820I-BR36DSYN15A	
			95°	-5°	CN..16	CN.. 54		R820I-BR36DCLN16A	

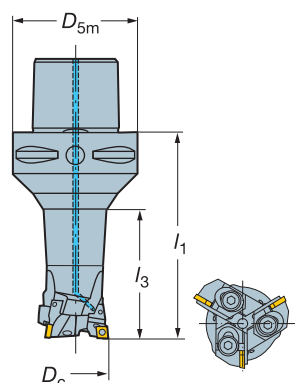
1) l_f -dimension when using shim set.

2) Tightening torque for slide.

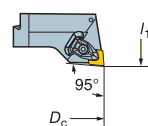
3) Slides of type R820x-A... and R820x-B... with the same length can be combined for step boring over a larger diameter range.



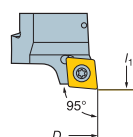
Coromant Capto®



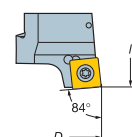
95° (-5°) CoroTurn® RC R820x-xRxxDCLNxxA



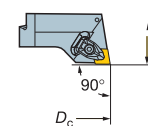
95° (-5°) CoroTurn® 107 R820x-xRxxSCLCxxA



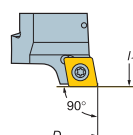
84° (6°) CoroTurn® 107 R820x-xRxxSSYCxxA



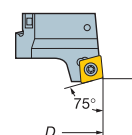
90° (0°) CoroTurn® RC R820x-xRxxDCFNxxA



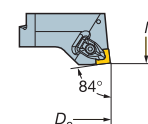
90° (0°) CoroTurn® 107 R820x-xRxxSCFCxxA



75° (15°) CoroTurn® 107 R820x-xRxxSCKCxxA



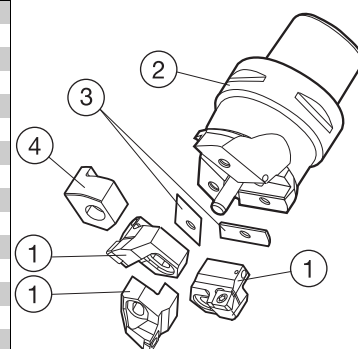
84° (6°) CoroTurn® RC R820x-xRxxDSYNxxA



l₁ = programming length

Dimensions, mm (inch)

							Accessories, must be ordered separately		
Weight	D _{5m}	l ₁	l ₁ ¹⁾	l ₃	Nm ²⁾	ft-lbs ²⁾	Shim set	Cover for CoroTurn® 107	Cover for CoroTurn® RC
9.7 (21.4)	80 (3.150)	115 (4.528)	117 (4.606)	-	75.0	55.3			
							R820I-AS00A	R820I-BC24A	R820I-AC34A
10.6 (23.4)	80 (3.150)	125 (4.921)	127 (5.000)	-	120.0	88.5			
9.7 (21.4)	80 (3.150)	115 (4.528)	117 (4.606)	-	75.0	55.3			
10.6 (23.4)	80 (3.150)	125 (4.921)	127 (5.000)	-	120.0	88.5			
11.0 (24.3)	80 (3.150)	120 (4.724)	122 (4.803)	-	75.0	55.3			
12.8 (28.2)	80 (3.150)	130 (5.118)	132 (5.197)	-	120.0	88.5			
11.0 (24.3)	80 (3.150)	120 (4.724)	122 (4.803)	-	75.0	55.3			
12.8 (28.2)	80 (3.150)	130 (5.118)	132 (5.197)	-	120.0	88.5			



1. Slide
2. Adaptor
3. Shim set¹⁾
4. Cover

Ordering example for a complete tool including adaptor and slides:
3 pieces R820G-AR24SCFC12A (slides)
1 piece C8-R820G-AA3076A (adaptor)

Accessories, must be ordered separately

Adaptor size						
	Shim set	Thickness	CoroTurn® 107 Screw clamping		CoroTurn® RC Rigid clamping	
A	R820A-AS00A	0.5+1 mm (.020+.039 inch)	R820A-AC10A		-	
B	R820B-AS00A	0.5+1 mm (.020+.039 inch)	R820B-AC11A		-	
C	R820C-AS00A	0.5+1 mm (.020+.039 inch)	R820C-AC15A		-	
D	R820D-AS00A	0.5+1 mm (.020+.039 inch)	R820D-AC17A		-	
E	R820E-AS00A	0.8+1.6 mm (.031+.063 inch)	R820E-AC20A		-	
F	R820F-AS00A	0.8+1.6 mm (.031+.063 inch)	R820F-AC22A		R820F-AC22A	
G	R820G-AS00A	0.8+1.6 mm (.031+.063 inch)	R820G-AC22A		R820G-AC22A	
H	R820H-AS00A	1+2 mm (.039+.079 inch)	R820H-BC24A		R820H-AC34A	
I	R820I-AS00A	1+2 mm (.039+.079 inch)	R820I-BC24A		R820I-AC34A	

Coromant Capto® tightening torque:

Size C3: 40-50 Nm (30-37 ft-lbs)

Size C4: 50-60 Nm (37-44 ft-lbs)

Size C5: 90-100 Nm (67-74 ft-lbs)

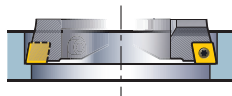
Size C6: 160-180 Nm (118-133 ft-lbs)

Size C8: 160-180 Nm (118-133 ft-lbs)

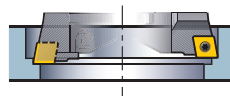
CoroBore® 820 XL

Boring range 298 - 540 mm (11.732 - 21.260 inch)

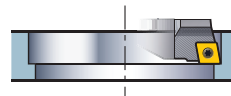
Twin edge boring



Step boring

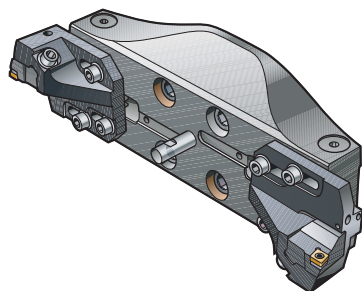


Single edge boring



Cartridges with 90° entering angle should be used for step boring

Axially adjustable cartridges²⁾



Boring range 298-540 mm (11.732-21.260 inch)
 Hole tolerance IT9
 Cutting fluid Internal
 Cutting speed, v_c max: 1200 m/min (3937 ft/min)

Boring range					1. Cartridge ²⁾	2. Slide	3. Bridge
D_c mm (inch)	Bridge size	Entering angle κ_r	Lead angle	Insert type ¹⁾			
min-max				ISO ANSI	Ordering code	Ordering code	Ordering code
298-380 (11.732-14.961)	M	90° 0°	0°	CC...12 CC..43	S12-R820XLR40SCFC12	S24-R820XLS12-012	A40-RXLS24-AM2 062
		90° 0°	0°	TC...22 TC..43	S12-R820XLR40STFC22		
		84° 6°	6°	SC...12 SC..43	S12-R820XLR40SSYC12		
		90° 0°	0°	CN...19 CN..64	S12-R820XLR40DCFN19		
		84° 6°	6°	SN...15 SN..54	S12-R820XLR40DSYN15		
378-460 (14.882-18.110)	N	90° 0°	0°	CC...12 CC..43	S12-R820XLR40SCFC12	S24-R820XLS12-012	A40-RXLS24-AN2 067
		90° 0°	0°	TC...22 TC..43	S12-R820XLR40STFC22		
		84° 6°	6°	SC...12 SC..43	S12-R820XLR40SSYC12		
		90° 0°	0°	CN...19 CN..64	S12-R820XLR40DCFN19		
		84° 6°	6°	SN...15 SN..54	S12-R820XLR40DSYN15		
458-540 (18.031-21.260)	O	90° 0°	0°	CC...12 CC..43	S12-R820XLR40SCFC12	S24-R820XLS12-012	A40-RXLS24-AO2 072
		90° 0°	0°	TC...22 TC..43	S12-R820XLR40STFC22		
		84° 6°	6°	SC...12 SC..43	S12-R820XLR40SSYC12		
		90° 0°	0°	CN...19 CN..64	S12-R820XLR40DCFN19		
		84° 6°	6°	SN...15 SN..54	S12-R820XLR40DSYN15		

¹⁾ Inserts are ordered separately.

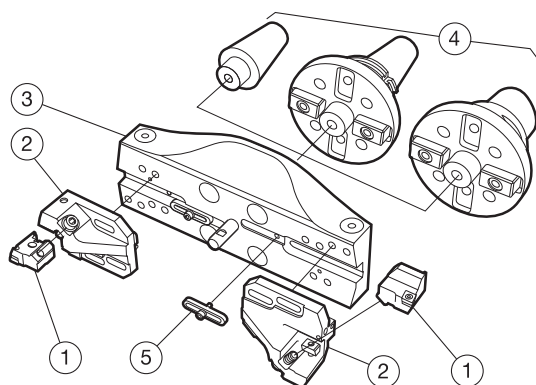
²⁾ Axially adjustable cartridges +1.5 mm (+.059"). To be used for step boring or securing same axial position on the two inserts

³⁾ L1 is increased up to 1.5 mm (.059") when step boring

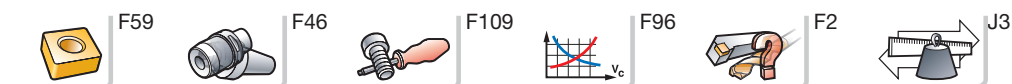
⁴⁾ The bridges machine side interface match the spindle nose on machines with taper size 50

⁵⁾ Stop plate set for quick and easy change from finishing slide to roughing slide with retained slide position. If switching from roughing to finishing slide the diameter needs to be reduced on the fine boring head followed by a measurement cut.

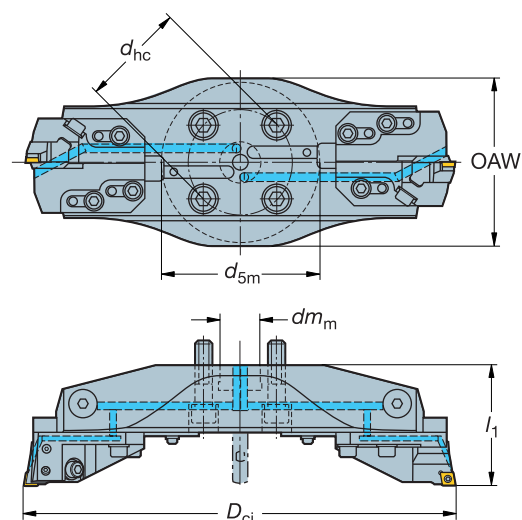
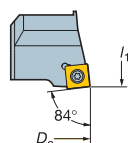
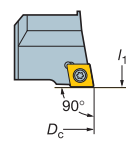
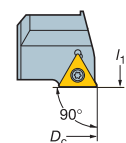
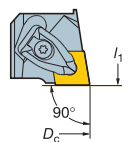
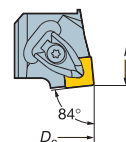
Assembly with bridge size M, N and O



1. Cartridge
2. Slide
3. Bridge
4. Holders
5. Stop plate set



Assembly with bridge size M, N and O


84° (6°) CoroTurn® 107
R820XL...SSYC

90° (0°) CoroTurn® 107
R820XL...SCFC

90° (0°) CoroTurn® 107
R820XL...STFC

90° (0°) CoroTurn® RC
R820XL...DCFN

84° (6°) CoroTurn® RC
R820XL...DSYN


Dimensions, mm (inch)

						4. Holders	5. Stop plate set ⁵⁾
	$l_1^{(3)}$	$D_{5m}^{(4)}$	OAW	dm_m	d_{hc}	Ordering code	Ordering code
9.0 (19.84)	114 (4.488)	160 (6.299)	164 (6.457)	40 (1.575)	101.6 (4.000)	392.644XL-5040 075 392.646XL-5040 080 A392.645XL-5040 075 C8-391.XL-40 065 C10-391.XL-40 070	5335 001-01
10.8 (23.81)	119 (4.685)	160 (6.299)	164 (6.457)	40 (1.575)	101.6 (4.000)	392.647XL-5040 A392.647XL-5040	
						See page F46	
12.7 (28.00)	124 (4.882)	160 (6.299)	164 (6.457)	40 (1.575)	101.6 (4.000)		

Ordering example for a complete tool for diameter 298-380 mm (valid for bridge size M, N and O) including holder:

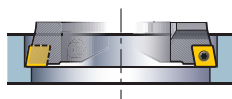
Tightening torques

For bridge:	200 Nm	148 ft-lbs	2 pieces S12-R820XLR40SCFC12 (cartridge)
For slide:	60 Nm	44 ft-lbs	2 pieces S24-R820XLS12-012 (slide)
For cartridge:	60 Nm	44 ft-lbs	1 piece A40-RXLS24-AM2 062 (bridge)
For insert screw (CoroTurn 107):	3 Nm	2.2 ft-lbs	1 piece 392.644XL-5040 075 (holder)
For insert clamping (CoroTurn RC):	6.4 Nm	4.7 ft-lbs	

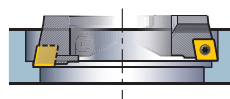
CoroBore® 820 XL

Boring range 538 - 1260 mm (21.181 - 49.606 inch)

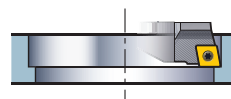
Twin edge boring



Step boring

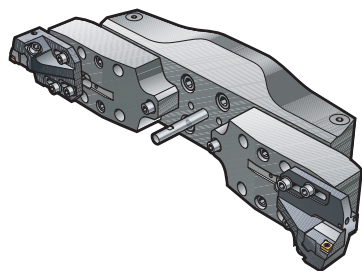


Single edge boring



Cartridges with 90° entering angle should be used for step boring

Axially adjustable cartridges²⁾



Boring range 538-1260 mm (21.181-49.606 inch)

Hole tolerance IT9

Cutting fluid Internal

Cutting speed, v_c max: 1200 m/min (3937 ft/min)

Bridge size Q and R are recommended for semi-finishing with single edge boring and positive inserts

Boring range						1. Cartridge ²⁾	2. Slide	3. Bridge
D_c mm (inch)	Bridge size	Entering angle κ_r	Lead angle	ISO	ANSI	Ordering code	Ordering code	Ordering code
min-max		90°	0°	CC...12	CC..43	S12-R820XLR40SCFC12	S24-R820XLS12-012	A40-NXLA35-AP2 086
538-780 (21.181-30.709)	P	90°	0°	TC...22	TC..43	S12-R820XLR40STFC22		
		84°	6°	SC...12	SC..43	S12-R820XLR40SSYC12		
		90°	0°	CN...19	CN..64	S12-R820XLR40DCFN19		
		84°	6°	SN...15	SN..54	S12-R820XLR40DSYN15		
778-1020 (30.630-40.157)	Q	90°	0°	CC...12	CC..43	S12-R820XLR40SCFC12	S24-R820XLS12-012	A40-NXLA35-AQ2 106
		90°	0°	TC...22	TC..43	S12-R820XLR40STFC22		
		84°	6°	SC...12	SC..43	S12-R820XLR40SSYC12		
		90°	0°	CN...19	CN..64	S12-R820XLR40DCFN19		
		84°	6°	SN...15	SN..54	S12-R820XLR40DSYN15		
1018-1260 (40.079-49.606)	R	90°	0°	CC...12	CC..43	S12-R820XLR40SCFC12	S24-R820XLS12-012	A40-NXLA35-AR2 106
		90°	0°	TC...22	TC..43	S12-R820XLR40STFC22		
		84°	6°	SC...12	SC..43	S12-R820XLR40SSYC12		
		90°	0°	CN...19	CN..64	S12-R820XLR40DCFN19		
		84°	6°	SN...15	SN..54	S12-R820XLR40DSYN15		

¹⁾ Inserts are ordered separately.

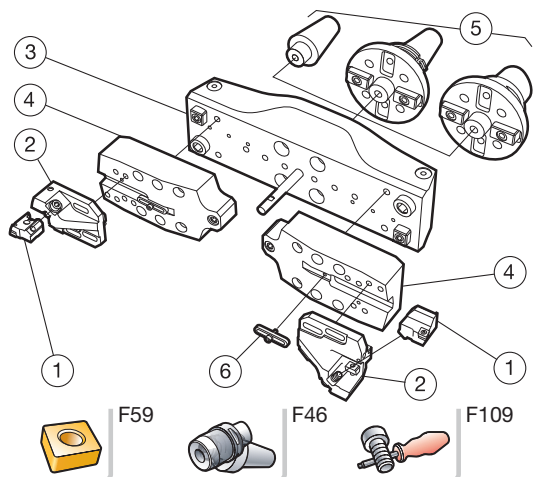
²⁾ Axially adjustable cartridges +1.5 mm (+.059"). To be used for step boring or securing same axial position on the two inserts

³⁾ L1 is increased up to 1.5 mm (.059") when step boring

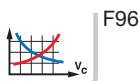
⁴⁾ The bridges machine side interface match the spindle nose on machines with taper size 50

⁵⁾ Stop plate set for quick and easy change from finishing slide to roughing slide with retained slide position. If switching from roughing to finishing slide the diameter needs to be reduced on the fine boring head followed by a measurement cut.

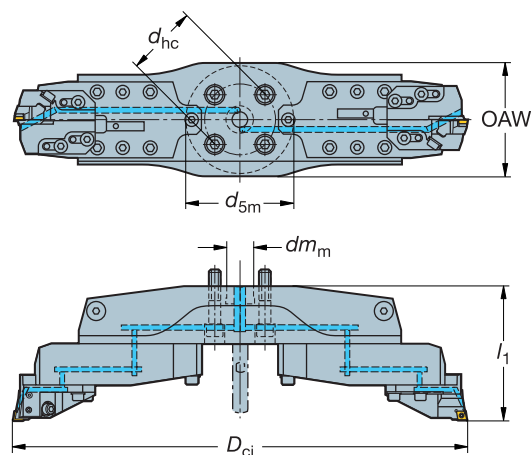
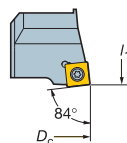
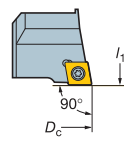
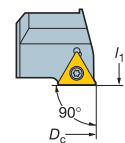
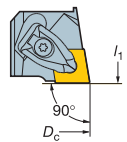
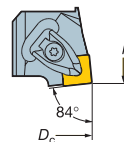
Assembly with bridge size P, Q and R



1. Cartridge
2. Slide
3. Bridge
4. Bridge extension
5. Holders
6. Stop plate set



Assembly with bridge size P, Q and R


84° (6°) CoroTurn® 107
R820XL...SSYC

90° (0°) CoroTurn® 107
R820XL...SCFC

90° (0°) CoroTurn® 107
R820XL...STFC

90° (0°) CoroTurn® RC
R820XL...DCFN

84° (6°) CoroTurn® RC
R820XL...DSYN


4. Bridge extension

Dimensions, mm (inch)

Ordering code

A35-RXLS24-A 060


25.2
(55.6)

 $l_1^{(3)}$

198
(7.795)

 $D_{5m}^{(4)}$

160
(6.299)

OAW

164
(6.457)

 dm_m

40
(1.575)

 d_{hc}

101.6
(4.000)

A35-RXLS24-A 060

36.3
(80.0)

218
(8.583)

160
(6.299)

164
(6.457)

40
(1.575)

101.6
(4.000)

A35-RXLS24-A 060

43.5
(95.9)

218
(8.583)

160
(6.299)

164
(6.457)

40
(1.575)

101.6
(4.000)

5. Holders

Ordering code

392.644XL-5040 075

A392.645XL-5040 075

C10-391.XL-40 070

392.647XL-5040

A392.647XL-5040

See page F46.

6. Stop plate set⁵⁾

Ordering code

5335 001-01

Ordering example for a complete tool for diameter 538-780 mm (valid for bridge size P, Q and R) including holder:

2 pieces S12-R820XLR40SCFC12 (cartridge)

2 pieces S24-R820XLS12-012 (slide)

1 piece A40-NXLA35-AP2 086 (bridge)

2 pieces A35-RXLS24-A 060 (bridge extension)

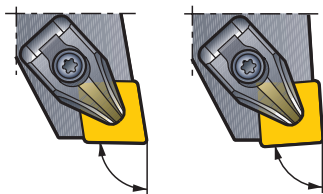
1 piece 392.644XL-5040 075 (holder)

Tightening torques

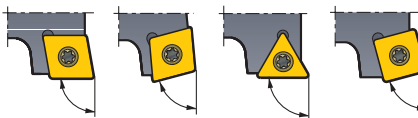
For bridge:	200	Nm	148	ft-lbs
For slide:	60	Nm	44	ft-lbs
For cartridge:	60	Nm	44	ft-lbs
For insert screw (CoroTurn 107):	3	Nm	2.2	ft-lbs
For insert clamping (CoroTurn RC):	6.4	Nm	4.7	ft-lbs
For bridge extension:	100	Nm	74	ft-lbs

Two clamping systems

RC-clamping
for T-MAX P inserts



Screw clamping
for CoroTurn inserts



Entering angle 91°
Lead angle -1°

84°
6°

Entering angle 90°
Lead angle 0°

75°
15°

90°
0°

75°
15°

Rigid clamping system CoroTurn® RC

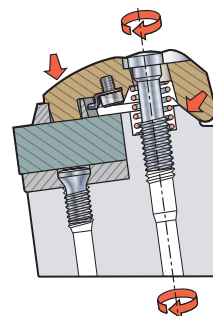
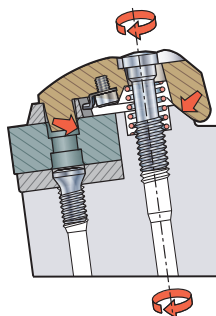
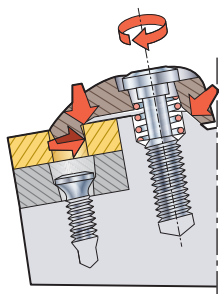
- the top performer in high speed cast iron machining

Stable clamping is essential if the dramatic metal cutting potential of ceramic inserts is to be fully utilized.

Sandvik Coromant offers the successful concept of Rigid Clamping (RC) for ceramics. The RC system brings safe and secure clamping to flat and holed ceramic inserts and is recommended particularly for materials and operations involving large and varying cutting forces.

The RC holders with carbide pressure plates have good chip steering properties and reduce erosion in high speed applications.

F

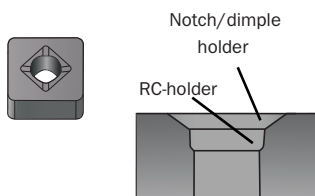


G

Standard RC clamp
Delivered with slide.
To be used with standard
T-Max P carbide inserts
with hole.

-2 type RC clamp
To be ordered separately.
To be used with ceramic inserts
with hole, CNGQ, CNGA,
CNMA.

-4 type RC clamp
To be ordered separately.
To be used with ceramic inserts
without hole, CNG.



Inserts with Q-style

The combination of inserts with Q-style holes and RC slides essentially improves tool performance. Q-style hole in the insert eliminates the risk of insert movements.

J

Duobore™

Rough boring tool - two insert design

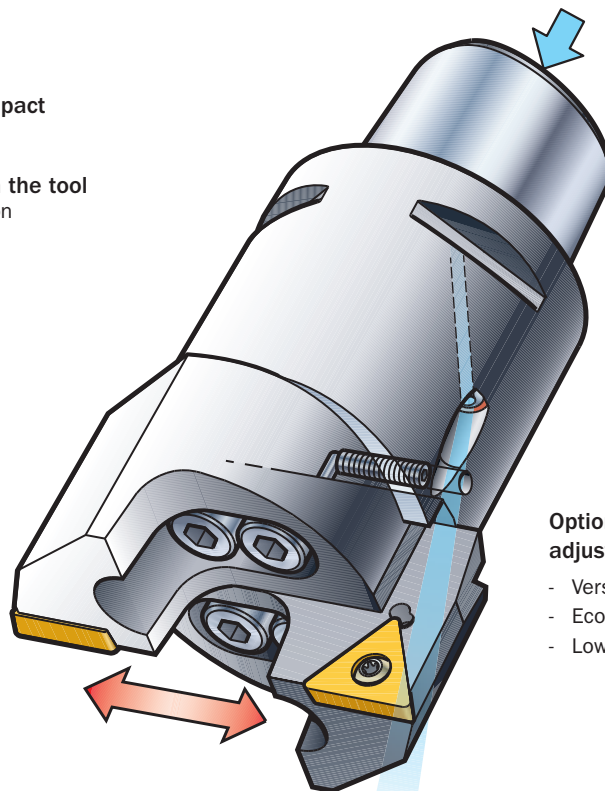
Optimal productivity in low power machine tools

Short, rigid and compact

- Maximum stability

Cutting fluid through the tool

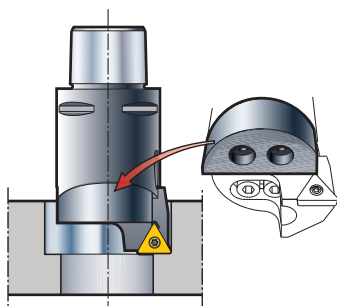
- Good chip evacuation



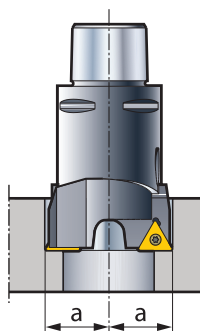
Optional slide assemblies, individually adjustable both axially and radially

- Versatility
- Economy
- Low inventory

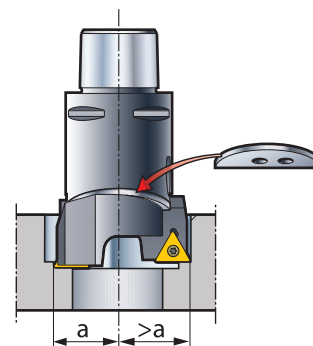
Single edge boring



Twin edge boring



Step boring



CoroTurn® RC rigid clamping

- First choice for diameters 69-150 mm (2.717-5.906 inch)



CoroTurn® 107 screw clamping

- Wide choice of insert types



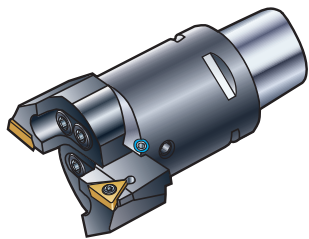
ISO application areas:



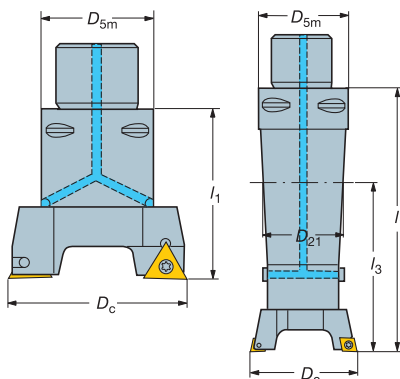
Duobore™

Boring tool 391.68A with 2 inserts

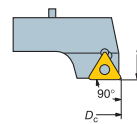
Coromant Capto®



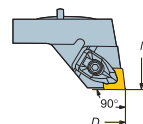
Boring range: 25-150 mm (.984-5.906 inch)
 Boring depth: $4 \times D_{sm}$
 Hole tolerance: IT9
 Cutting fluid: Internal
 Application area: Rough boring



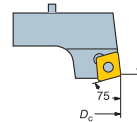
CoroTurn® 107
 391.68A 90° (0°)
 391.68F



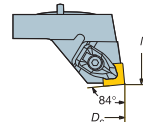
CoroTurn® RC
 391.68F 90° (0°)



391.68B 75° (15°)



391.68D 84° (6°)



l_1 = programming length

Boring range mm (inch)	Coupling size	Entering angle κ_r	Lead angle	Insert type ¹⁾			1. Slide	4. Adaptor
D_c min – max				ISO	ANSI	iC	Ordering code	Ordering code
25–32 (.984-1.260)	C3	90°	0°	CC...06	CC...2(1.5)	1/4	391.68A-1-032 13 C06 B	C3-391.68A-1-021 068 B
		75°	15°	CC...06	CC...2(1.5)	1/4	391.68B-1-032 13 C06 B	
30–38 (1.181-1.496)	C3	90°	0°	CC...06	CC...2(1.5)	1/4	391.68A-2-038 13 C06 B	C3-391.68A-2-026 084 B
		75°	15°	CC...06	CC...2(1.5)	1/4	391.68B-2-038 13 C06 B	
37–47 (1.457-1.850)	C3	90°	0°	TC...110	TC...22	1/4	391.68F-3-047 16 TC11 B	C3-391.68A-3-032 034 B
		75°	15°	CC...06	CC...2(1.5)	1/4	391.68B-3-047 16 C06 B	
46–56 (1.811-2.205)	C4	90°	0°	TC...16	TC...3(2.5)	3/8	391.68A-4-056 24 T16 B	C4-391.68A-4-040 041 B
		75°	15°	SC...09	SC...3(2.5)	3/8	391.68B-4-056 24 S09 B	
55–70 (2.165-2.756)	C5	90°	0°	TC...16	TC...3(2.5)	3/8	391.68A-5-070 26 T16 B	C5-391.68A-5-050 044 B
		75°	15°	SC...09	SC...3(2.5)	3/8	391.68B-5-070 26 S09 B	
69–84 (2.717-3.307)	C5/C6	90°	0°	TC...16	TC...3(2.5)	3/8	391.68A-6-084 30 T16 B	C5-391.68A-6-063 045 C
		75°	15°	SC...12	SC...43	1/2	391.68B-6-084 30 S12 B	C6-391.68A-6-063 045 C
		90°	0°	CN...12	CN...43	1/2	391.68F-6-084 36 C12 B	C5-391.68A-6-063 045 C
		84°	6°	SN...12	SN...43	1/2	391.68D-6-084 36 S12 B	C6-391.68A-6-063 045 C
83–101 (3.268-3.976)	C5/C6	90°	0°	TC...16	TC...3(2.5)	3/8	391.68A-6-101 30 T16 B	C5-391.68A-6-063 045 C
								C6-391.68A-6-063 045 C
		90°	0°	TC...22	TC...43	1/2	391.68A-6-101 41 T22 B	C5-391.68A-6-063 045 C
		75°	15°	SC...12	SC...43	1/2	391.68B-6-101 41 S12 B	C6-391.68A-6-063 045 C
		90°	0°	CN...12	CN...43	1/2	391.68F-6-101 36 C12 B	C5-391.68A-6-063 045 C
		84°	6°	SN...12	SN...43	1/2	391.68D-6-101 36 S12 B	C6-391.68A-6-063 045 C
99–125 (3.898-4.921)	C8	90°	0°	TC...16	TC...3(2.5)	3/8	391.68A-7-125 40 T16 B	C8-391.68A-7-080 060 D
		90°	0°	TC...22	TC...43	1/2	391.68A-7-125 40 T22 B	
		75°	15°	SC...12	SC...43	1/2	391.68B-7-125 40 S12 B	
		90°	0°	CN...12	CN...43	1/2	391.68F-7-125 40 C12 B	C8-391.68A-7-080 060 D
		90°	0°	CN...16	CN...54	5/8	391.68F-7-125 40 C16 B	
		84°	6°	SN...12	SN...43	1/2	391.68D-7-125 40 S12 B	C8-391.68A-7-080 060 D
123–150 (4.843-5.906)	C8	90°	0°	SN...15	SN...54	5/8	391.68D-7-125 44 S15 B	
		90°	0°	TC...16	TC...3(2.5)	3/8	391.68A-7-150 40 T16 B	C8-391.68A-7-080 060 D
		90°	0°	TC...22	TC...43	1/2	391.68A-7-150 40 T22 B	
		75°	15°	SC...12	SC...43	1/2	391.68B-7-150 40 S12 B	
		90°	0°	CN...12	CN...43	1/2	391.68F-7-150 40 C12 B	C8-391.68A-7-080 060 D
		90°	0°	CN...16	CN...54	5/8	391.68F-7-150 40 C16 B	
		84°	6°	SN...12	SN...43	1/2	391.68D-7-150 40 S12 B	
		84°	6°	SN...15	SN...54	5/8	391.68D-7-150 44 S15 B	C8-391.68A-7-080 060 D

1) Inserts are ordered separately.

2) When step boring, the l_1 dimension increases by 0.5 or 1 mm.

3) Tightening torque for CoroTurn® 107 slide

4) Tightening torque for CoroTurn® RC slide

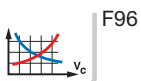
Coromant Capto® tightening torque:

Size C3: 40-50 Nm (30-37 ft-lbs)

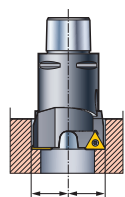
Size C4: 50-60 Nm (37-44 ft-lbs)

Size C5: 90-100 Nm (67-74 ft-lbs)

Size C6-C8: 160-180 Nm (118-133 ft-lbs)

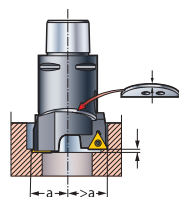


Twin edge boring



2 Slides
1 Adaptor

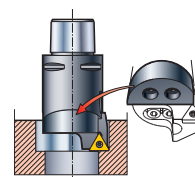
Step boring



90° slides should be used.

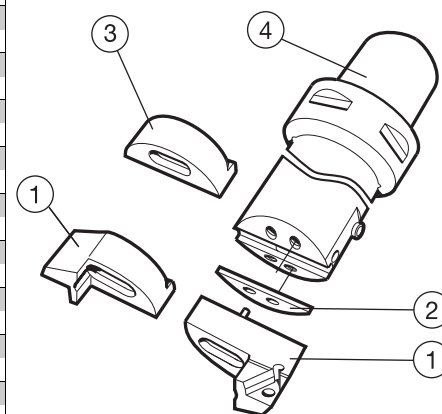
2 Slides
1 Shim
1 Adaptor

Single edge boring



1 Slide
1 Cover
1 Adaptor

Weight	D_{5m}	D_{21}	$h^{(2)}$	h	Nm	ft-lbs	2. Shim (mm)	3. Cover
0.3 (0.7)	32 (1.260)	24 (0.945)	81 (3.189)	47 (1.850)	4.8 ⁽³⁾	3.5 ⁽³⁾	5549 125-01 (0.5)	5623 010-01
0.5 (1.1)	32 (1.260)	29 (1.142)	97 (3.819)	62 (2.441)			5549 125-02 (0.5)	5623 010-02
0.3 (0.7)	32 (1.260)	—	50 (1.969)	—			5549 125-03 (0.5)	5623 010-03A
0.6 (1.3)	40 (1.575)	—	65 (2.559)	—	9.0 ⁽³⁾	6.6 ⁽³⁾	5549 125-04 (0.5)	5623 010-04
0.9 (2.0)	50 (1.969)	—	70 (2.756)	—	16.0 ⁽³⁾	11.8 ⁽³⁾	5549 125-05 (1.0)	5623 010-05A
1.4 (3.1)	50 (1.969)	—	75 (2.953)	—	16.0 ⁽³⁾	11.8 ⁽³⁾	5549 125-06A (1.0)	5623 010-06B
1.5 (3.3)	63 (2.480)	—	75 (2.953)	—			5549 125-06A (1.0)	5623 010-06B
1.5 (3.3)	50 (1.969)	—	81 (3.189)	—	75.0 ⁽⁴⁾	55.0 ⁽⁴⁾	5549 125-06A (1.0)	5623 010-06B
1.6 (3.5)	63 (2.480)	—	81 (3.189)	—			5549 125-06A (1.0)	5623 010-06B
1.6 (3.5)	50 (1.969)	—	75 (2.953)	—	16.0 ⁽³⁾	11.8 ⁽³⁾	5549 125-06A (1.0)	5623 010-06B
1.7 (3.7)	63 (2.480)	—	75 (2.953)	—			5549 125-06A (1.0)	5623 010-06B
1.6 (3.5)	50 (1.969)	—	86 (3.386)	—	16.0 ⁽³⁾	11.8 ⁽³⁾	5549 125-06A (1.0)	5623 010-06B
1.7 (3.7)	63 (2.480)	—	86 (3.386)	—			5549 125-06A (1.0)	5623 010-06B
1.6 (3.5)	50 (1.969)	—	81 (3.189)	—	75.0 ⁽⁴⁾	55.0 ⁽⁴⁾	5549 125-06A (1.0)	5623 010-06B
1.7 (3.7)	63 (2.480)	—	81 (3.189)	—			5549 125-06A (1.0)	5623 010-06B
4.0 (8.8)	80 (3.150)	—	100 (3.937)	—	38.0 ⁽³⁾	28.0 ⁽³⁾	5549 125-08 (1.0)	5623 010-07A
4.3 (9.5)	80 (3.150)	—	100 (3.937)	—	120.0 ⁽⁴⁾	88.5 ⁽⁴⁾	5549 125-08 (1.0)	5623 010-07A
4.3 (9.5)	80 (3.150)	—	104 (4.094)	—			5549 125-08 (1.0)	5623 010-07A
4.1 (9.0)	80 (3.150)	—	100 (3.937)	—	38.0 ⁽³⁾	28.0 ⁽³⁾	5549 125-08 (1.0)	5623 010-07A
4.7 (10.4)	80 (3.150)	—	100 (3.937)	—	120.0 ⁽⁴⁾	88.5 ⁽⁴⁾	5549 125-08 (1.0)	5623 010-07A
4.7 (10.4)	80 (3.150)	—	104 (4.094)	—			5549 125-08 (1.0)	5623 010-07A



1. Slides
2. Shim
3. Cover
4. Adaptor

Coromant Capto®



Assembly

Note!

When assembling, make sure that the marks are in line.

Ordering example for a complete tool including adaptor and slides:

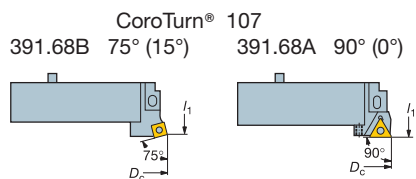
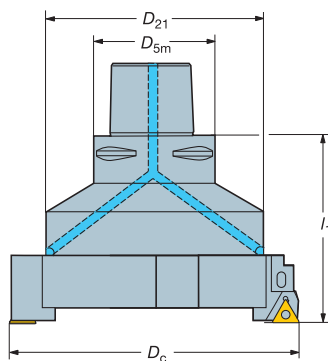
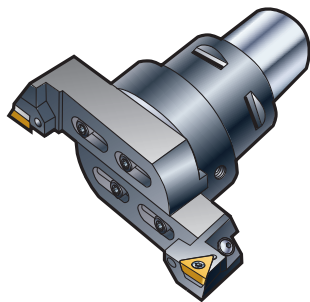
2 pieces 391.68A-1-032-13 C06 B (slides)

1 piece C3-391.68A-1-021 068 B (adaptor)

Duobore™

Boring tool 391.68A with 2 inserts

Coromant Capto®



Boring range: 148-270 mm (5.827-10.630 inch)
 Boring depth: 4 x D_{5m}
 Hole tolerance: IT9
 Cutting fluid: Internal
 Application area: Rough boring

 l_1 = programming length

Boring range mm (inch)	Coupling size	Entering angle κ_r	Lead angle	Insert type ¹⁾			1. Cartridge ^{2) 4)}	2. Extension slide	4. Adaptor
D_c min – max				ISO	ANSI	iC	Ordering code	Ordering code	Ordering code
148–190 (5.827–7.480)	C8	90°	0°	TC...16	TC...3(2.5)	3/8	391.68A-8-T16 A	391.68X-8-190 45 B	C8-391.68A-8-110 080 C
		90°	0°	TC...22	TC...43	1/2	391.68A-8-T22 A		
		75°	15°	SC...12	SC...43	1/2	391.68B-8-S12 A		
188–230 (7.402–9.055)	C8	90°	0°	TC...16	TC...3(2.5)	3/8	391.68A-8-T16 A	391.68X-8-230 45 B	C8-391.68A-8-110 080 C
		90°	0°	TC...22	TC...43	1/2	391.68A-8-T22 A		
		75°	15°	SC...12	SC...43	1/2	391.68B-8-S12 A		
228–270 (8.976–10.630)	C8	90°	0°	TC...16	TC...3(2.5)	3/8	391.68A-8-T16 A	391.68X-8-270 45 B	C8-391.68A-8-110 080 C
		90°	0°	TC...22	TC...43	1/2	391.68A-8-T22 A		
		75°	15°	SC...12	SC...43	1/2	391.68B-8-S12 A		

1) Inserts are ordered separately.

2) Axially adjustable cartridges. Can be used for step boring.

3) Tightening torque for extension slide

4) Tightening torque for cartridge = 38.0 Nm

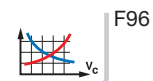
Coromant Capto® tightening torque:

Size C3: 40-50 Nm (30-37 ft-lbs)

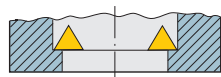
Size C4: 50-60 Nm (37-44 ft-lbs)

Size C5: 90-100 Nm (67-74 ft-lbs)

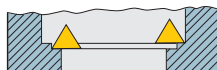
Size C6-C8: 160-180 Nm (118-133 ft-lbs)



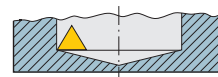
Twin edge boring



Step boring



Single edge boring



90° cartridges should be used.

- 2 Cartridges
- 2 Extension slides
- 1 Adaptor

- 2 Cartridges
- 2 Extension slides
- 1 Adaptor

- 1 Cartridge
- 1 Extension slide
- 1 Cover
- 1 Adaptor

Weight	D_{5m}	D_{21}	h_i	Nm ³⁾	ft- lbs ³⁾	3. Cover
9.0 (19.8)	80 (3.150)	143 (5.630)	125 (4.921)	75	55.3	5623 010-08A
9.5 (20.9)	80 (3.150)	143 (5.630)	125 (4.921)			5623 010-08A
10.0 (22.0)	80 (3.150)	143 (5.630)	125 (4.921)			5623 010-08A

1. Cartridge

2. Extension slide

3. Cover

4. Adaptor

Ordering example for a complete tool including adaptor and slides:

- 2 pieces 391.68A-8-T16 A (cartridges)
- 2 pieces 391.68X-8-190 45 B (Extension slides)
- 1 piece C8-391.68A-8-110 080 C (adaptor)

Coromant Capto®



Assembly

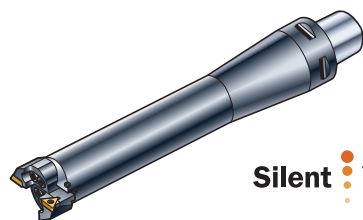
Note!

Note:
When assembling, make sure that the marks are in line.

Duobore™

Dampened boring tool 391.69A with 2 inserts

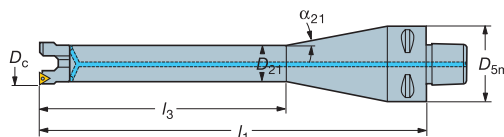
Coromant Capto®



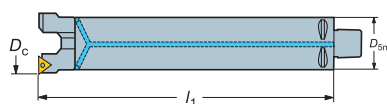
Silent Tools®

Boring range: 25-101 mm (.984-3.976 inch)
 Boring depth: $6 \times D_{5m}$
 Hole tolerance: IT9
 Cutting fluid: Internal
 Application area: Rough boring
 Max rotation speed: 6000 rpm

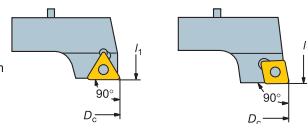
Design 1



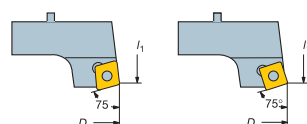
Design 2



CoroTurn® 107
 391.68A 90°(0°) 391.68A 90°(0°)
 391.68F



391.68B 75°(15°) 391.68B 75°(15°)



l_1 = programming length

Boring range mm (inch)				Insert type ¹⁾			1. Slide	4. Adaptor	
D_c min – max	Coupling size	Entering angle κ_r	Lead angle	ISO	ANSI	i/C	Ordering code	Ordering code	Design
25–32 (.984–1.260)	C3	90°	0°	CC...06	CC...2(1.5)	1/4	391.68A-1-032 13 C06 B	C3-391.69A-1-022 200 A	1
		75°	15°	CC...06	CC...2(1.5)	1/4	391.68B-1-032 13 C06 B		
30–38 (1.181–1.496)		90°	0°	CC...06	CC...2(1.5)	1/4	391.68A-2-038 13 C06 B	C3-391.69A-2-026 211 A	1
		75°	15°	CC...06	CC...2(1.5)	1/4	391.68B-2-038 13 C06 B		
37–47 (1.457–1.850)	C4	90°	0°	TC...1103	TC...22	1/4	391.68F-3-047 16 TC11 B	C4-391.69A-3-032 262 A	1
		75°	15°	CC...06	CC...2(1.5)	1/4	391.68B-3-047 16 C06 B		
46–56 (1.811–2.205)	C5	90°	0°	TC...16	TC...3(2.5)	3/8	391.68A-4-056 24 T16 B	C5-391.69A-4-040 308 A	1
		75°	15°	SC...09	SC...3(2.5)	3/8	391.68B-4-056 24 S09 B		
55–70 (2.165–2.756)		90°	0°	TC...16	TC...3(2.5)	3/8	391.68A-5-070 26 T16 B	C5-391.69A-5-050 280 A	2
		75°	15°	SC...09	SC...3(2.5)	3/8	391.68B-5-070 26 S09 B		
69–84 (2.717–3.307)	C6	90°	0°	TC...16	TC...3(2.5)	3/8	391.68A-6-084 30 T16 B	C6-391.69A-6-063 367 A	2
		75°	15°	SC...12	SC...43	1/2	391.68B-6-084 30 S12 B		
83–101 (3.268–3.976)		90°	0°	TC...16	TC...3(2.5)	3/8	391.68A-6-101 30 T16 B	C6-391.69A-6-063 367 A	2
		75°	15°	SC...12	SC...43	1/2	391.68B-6-101 41 S12 B		

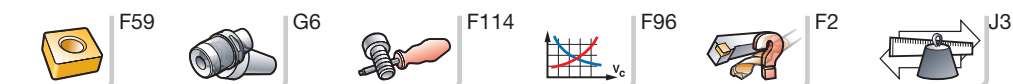
1) Inserts are ordered separately.

2) When step boring, the l_1 dimension increases by 0.5 or 1 mm.

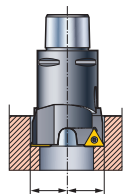
3) Tightening torque for slide.

Max. recommended depth of cut due to chip volume created during the cutting process.

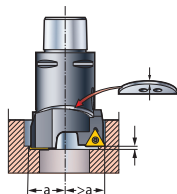
Boring range, mm (inch)	Radial depth of cut, mm (inch) Twin edge and step boring per edge
25.0 - 27.5 (.984 - 1.083)	1.5 (.059)
27.6 - 32.0 (1.084 - 1.260)	2.5 (.098)
32.1 - 33.5 (1.261 - 1.319)	2.0 (.079)
33.6 - 38.0 (1.320 - 1.496)	2.5 (.098)
37.0 - 39.5 (1.497 - 1.555)	2.0 (.079)
39.6 - 47.0 (1.556 - 1.850)	2.5 (.098)
46.0 - 48.5 (1.851 - 1.909)	3.0 (.118)
48.5 - 101.0 (1.910 - 3.976)	Half of the cutting edge length.
99.0 - 125.0 (3.898 - 4.921)	Half of the cutting edge length.
123.0 - 150.0 (4.843 - 5.906)	Half of the cutting edge length.



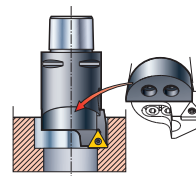
Twin edge boring



Step boring



Single edge boring



90° slides should be used.

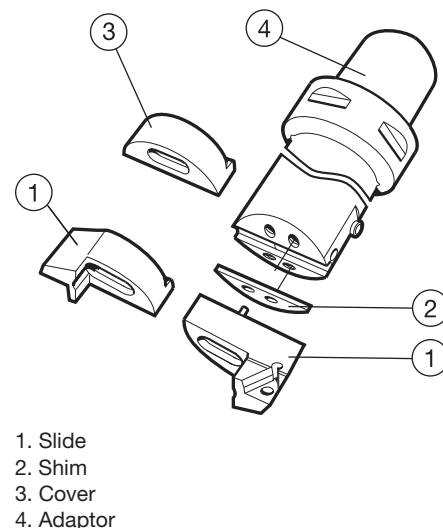
2 Slides
1 Adaptor

2 Slides
1 Shim
1 Adaptor

1 Slide
1 Cover
1 Adaptor

Dimensions, mm (inch)

Weight	D_{3m}	D_{21}	$l^{(2)}$	l_3	$\alpha^{\circ}21$	Nm ³⁾	ft- lbs ³⁾	2. Shim (mm)	3. Cover
0.7 (1.5)	32 (1.260)	22 (.866)	213 (8.386)	138 (5.433)	4.8	4.8	3.5	5549 125-01 (0.5)	5623 010-01
1.0 (2.2)	32 (1.260)	26 (1.024)	224 (8.819)	162 (6.378)	4.8			5549 125-02 (0.5)	5623 010-02
1.9 (4.2)	40 (1.575)	32 (1.260)	278 (10.945)	198 (7.795)	4.8			5549 125-03 (0.5)	5623 010-03A
3.0 (6.6)	50 (1.969)	40 (1.575)	332 (13.071)	246 (9.685)	4.8	9.0	6.6	5549 125-04 (0.5)	5623 010-04
4.1 (9.0)	50 (1.969)	-	306 (12.047)	-	-	16.0	11.8	5549 125-05 (1.0)	5623 010-05A
9.1 (20.1)	63 (2.480)	-	397 (15.630)	-	-			5549 125-06A (1.0)	5623 010-06B
9.1 (20.1)	63 (2.480)	-	397 (15.630)	-	-			5549 125-06A (1.0)	5623 010-06B
9.1 (20.1)	63 (2.480)	-	408 (16.063)	-	-			5549 125-06A (1.0)	5623 010-06B



Ordering example for a complete tool including adaptor and slides:
2 pieces 391.68A-1-032-13 C06 B (slides)
1 piece C3-391.69A-1-022 200 A (adaptor)

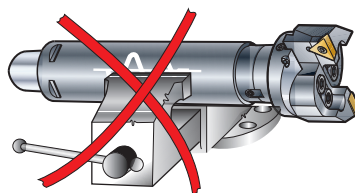
Coromant Capto®



Assembly

Note!

When assembling, make sure that the marks are in line.



For proper assembly fixtures, see information in Metal cutting technical guide

Coromant Capto® tightening torque:

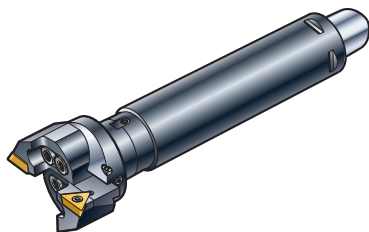
Size C3: 40-50 Nm (30-37 ft-lbs)

Size C4: 50-60 Nm (37-44 ft-lbs)

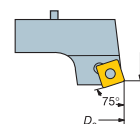
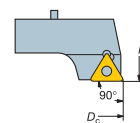
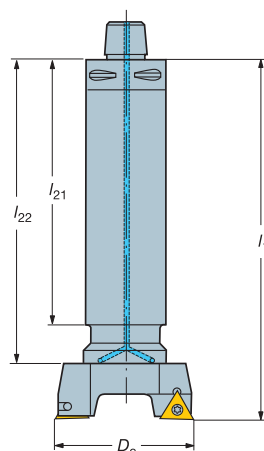
Size C5: 90-100 Nm (67-74 ft-lbs)

Size C6: 160-180 Nm (118-133 ft-lbs)

Coromant Capto®



Boring range	99-150 mm (3.898-5.906 inch)
Boring depth:	600-700 mm (23.622-27.559 inch)
Hole tolerance:	IT9
Cutting fluid:	Internal
Application area:	Rough boring
Max. rotation speed:	6000 rpm

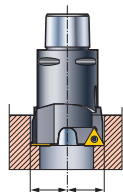
[illegible]

- 1) Inserts are ordered separately.
- 2) When step boring, the h_1 dimension increases by 1 mm.
- 3) Tightening torque for slide.

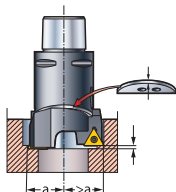
Coromant Capto® tightening torque:
Size C8: 160-180 Nm (118-133 ft-lbs)



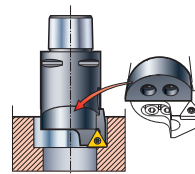
Twin edge boring



Step boring



Single edge boring



90° slides should be used.

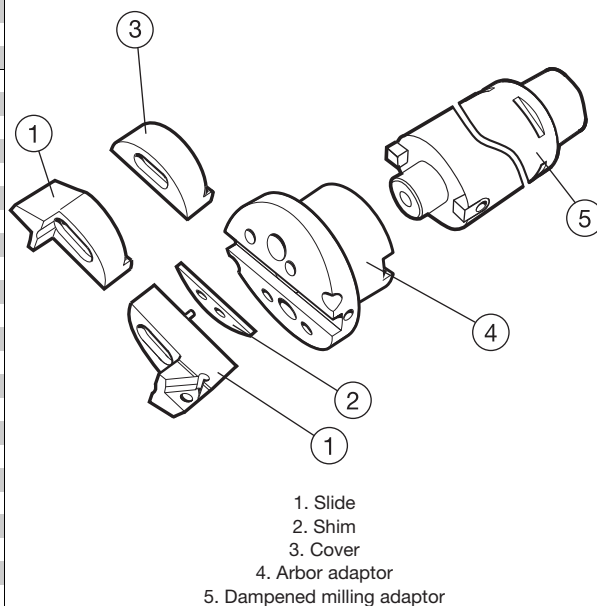
- 2 Slides
- 1 Milling adaptor
- 1 Arbor adaptor

- 2 Slides
- 1 Shim
- 1 Arbor adaptor
- 1 Milling adaptor

- 1 Slide
- 1 Cover
- 1 Arbor adaptor
- 1 Milling adaptor

Dimensions, mm (inch)

Weight	$l_1^{(2)}$	l_2	l_2	Nm ⁽³⁾	ft-lbs ⁽³⁾	2. Shim (mm)	3. Cover
13.8 (30.4)	420 (16.535)	320 (12.598)	380 (14.961)	38.0	28.0	5549 125-08 (1.0)	5623 010-07A
13.9 (30.6)	420 (16.535)	320 (12.598)	380 (14.961)			5549 125-08 (1.0)	5623 010-07A



Ordering example for a complete tool including adaptor and slides:

- 2 pieces 391.68A-7-125 40 T16 B (slides)
- 1 piece 393.69A-7-32 060 A (arbor adaptor)
- 1 piece C8-391-06-32 320 (milling adaptor)

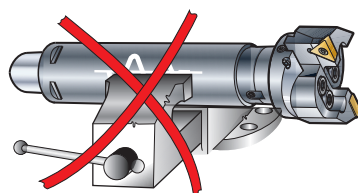
Coromant Capto®



Assembly

Note!

When assembling, make sure that the marks are in line.

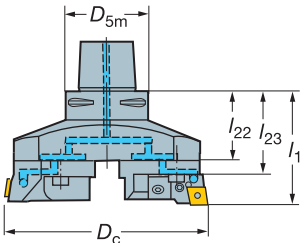
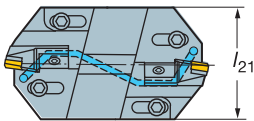
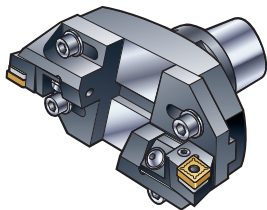


For proper assembly fixtures, see information in Metal cutting technical guide

D
E
F
G
J

Heavy duty boring tools R391.B...-R

Coromant Capto®



Boring range:
 Boring depth:
 Hole tolerance:
 Cutting fluid:

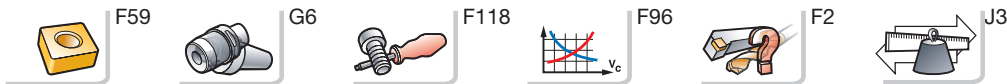
150-300 mm (5.906-11.811 inch)
 4 x D_{5m}
 IT9
 Internal

l_1 = programming length

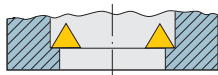
Boring range mm (inch) D_c min – max	Coupling size	Entering angle	Lead angle	Insert type ¹⁾			1. Cartridge ⁴⁾	2. Extension slide	4. Adaptor
				ISO	ANSI	iC	Ordering code	Ordering code	Ordering code
150–200 (5.906–7.874)	C8	90°	0°	TN...22	TN...43	1/2	PTGNL 20CA-22	R391.B04R-2515	C8-R391.B11R-B 070 A
		75°	15°	SN...15	SN...54	5/8	PSRNL 20CA-15		
		95°	-5°	CN...19	CN...64	3/4	L441.31-2030-1911	R391.B03R-3015	C8-R391.B11R-B 070 A
200–250 (7.874–9.843)		90°	0°	TN...22	TN...43	1/2	PTGNL 20CA-22	R391.B04R-2515	C8-R391.B12R-C 070 A
		75°	15°	SN...15	SN...54	5/8	PSRNL 20CA-15		
		95°	-5°	CN...19	CN...64	3/4	L441.31-2030-1911	R391.B03R-3015	C8-R391.B12R-C 070 A
250–300 (9.843–11.811)		90°	0°	TN...22	TN...43	1/2	PTGNL 20CA-22	R391.B04R-2515	C8-R822S17-AL 070 A
		75°	15°	SN...15	SN...54	5/8	PSRNL 20CA-15		
		95°	-5°	CN...19	CN...64	3/4	L441.31-2030-1911	R391.B03R-3015	C8-R822S17-AL 070 A

- 1) Inserts are ordered separately.
- 2) When step boring, the l_1 dimension increases by 2 mm. (.080 inch)
- 3) Tightening torque for extension slide
- 4) Tightening torque 38.0 Nm

Coromant Capto® tightening torque:
 Size C8: 160-180 Nm (118-133 ft-lbs)

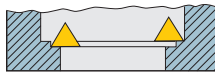


Twin edge boring



- 2 Cartridges
- 2 Extension slides
- 1 Adaptor

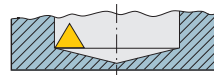
Step boring



90° slides should be used.

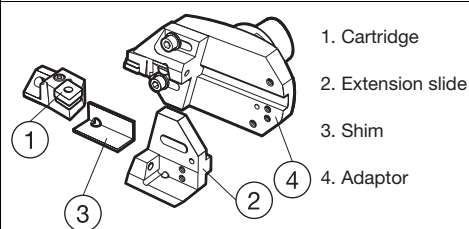
- 2 Cartridges
- 2 Extension slides
- 1 Shim
- 1 Adaptor

Single edge boring



- 1 Cartridge
- 1 Extension slide
- 1 Adaptor

Weight	D_m	$h^{(2)}$	h_1	h_2	h_3	ft- Nm ³⁾ lbs ³⁾	3. Shim (mm)
7.1 (15.7)	80 (3.150)	110 (4.331)	104 (4.094)	70 (2.756)	85 (3.346)	75.0 55.3	5654 016-01 (2.0)
7.3 (16.1)	80 (3.150)	115 (4.528)	104 (4.094)	70 (2.756)	85 (3.346)		5654 016-02 (2.0)
8.6 (19.0)	80 (3.150)	110 (4.331)	104 (4.094)	70 (2.756)	85 (3.346)		5654 016-01 (2.0)
8.7 (19.2)	80 (3.150)	115 (4.528)	104 (4.094)	70 (2.756)	85 (3.346)		5654 016-02 (2.0)
9.6 (21.2)	80 (3.150)	110 (4.331)	104 (4.094)	70 (2.756)	85 (3.346)		5654 016-01 (2.0)
9.7 (21.4)	80 (3.150)	115 (4.528)	104 (4.094)	70 (2.756)	85 (3.346)		5654 016-02 (2.0)



Ordering example for a complete tool, diameter 150 mm, including adaptor, extension slides and cartridges:

- 2 pieces PTGNL 20CA-22 (cartridges)
- 2 pieces R391.B04R-2515 (slides)
- 1 piece C8-R391.B11R-B 070 A (adaptor)

Coromant Capto®



Assembly

Note!

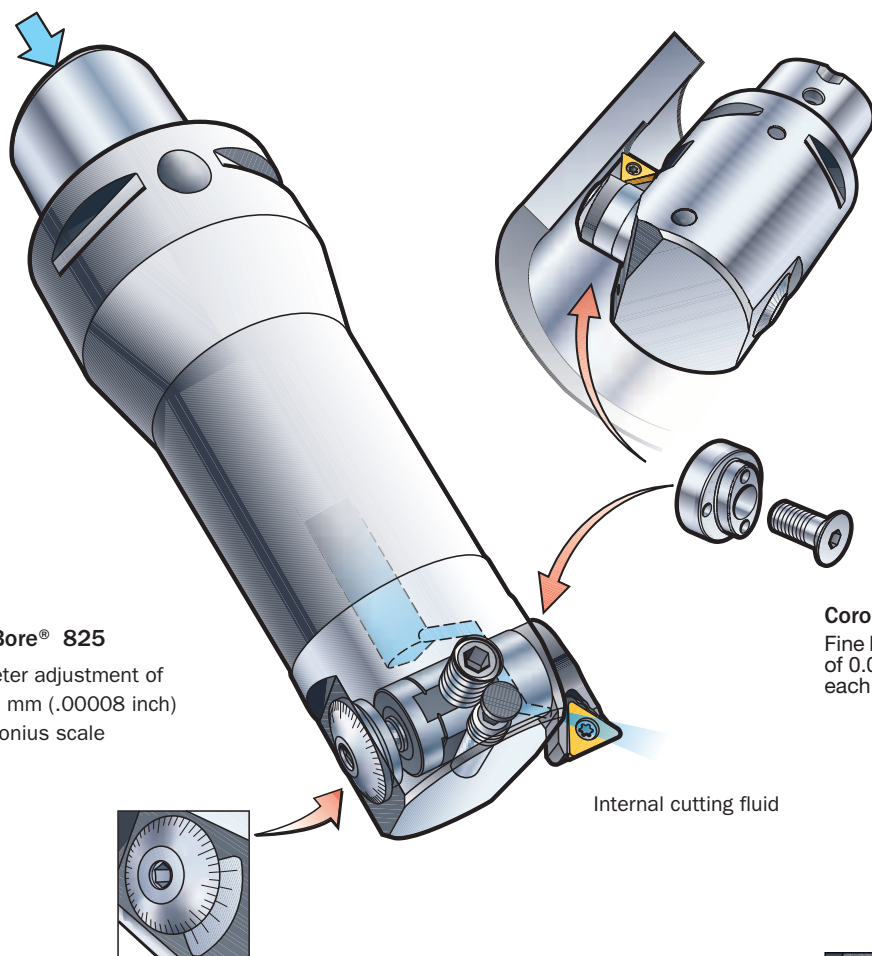
When assembling, make sure that the marks are in line.

CoroBore® 825/CoroBore® 826

Fine boring tool system

For conventional boring or back boring with high precision

CoroBore® 825 $\varnothing$ 19-315 mm (.748-12.401 inch)
CoroBore® 826 $\varnothing$ 150-315 mm (5.906-12.401 inch)



CoroBore® 825

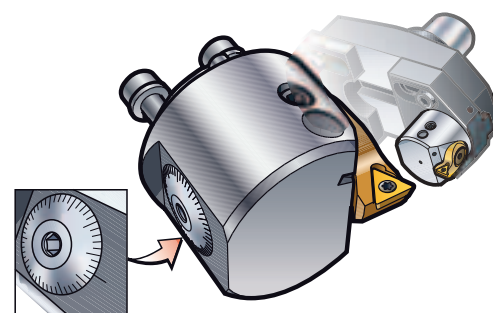
Diameter adjustment of
0.002 mm (.00008 inch)
with nonius scale

Slide extensions for radial adjustment
and backboring

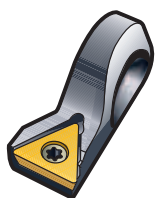
CoroBore® 826

Fine boring head with diameter adjustment
of 0.002 mm (.00008 inch) with click for
each increment

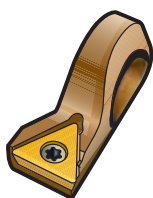
Internal cutting fluid



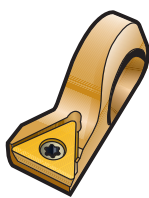
Cartridges for CoroTurn 107 and CoroTurn 111 inserts
- wide choice of inserts



CoroTurn 107
TCMT 06, 09
(TCMT 1.2, 1.8)



CoroTurn 107
TCMT 1103
(TCMT 22)

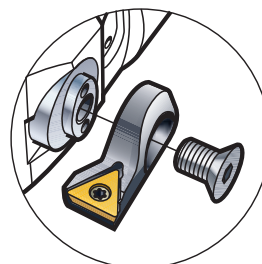


CoroTurn 111
TPMT



CoroTurn 107
CCMT 09
(CCMT 3 (2.5))

Cartridge designed for
highest stability



ISO application areas:

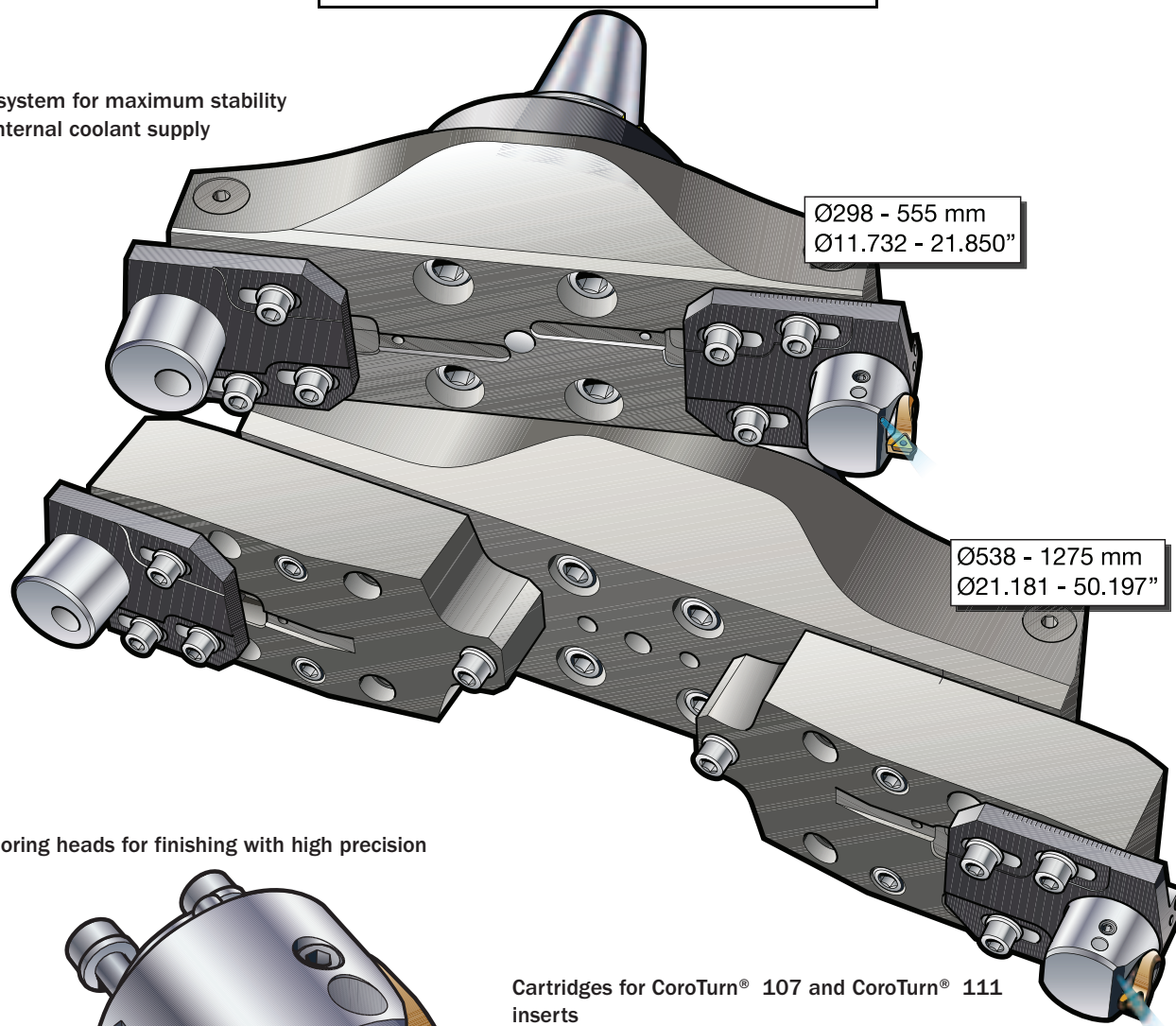


CoroBore® 825 XL/CoroBore® 826 XL

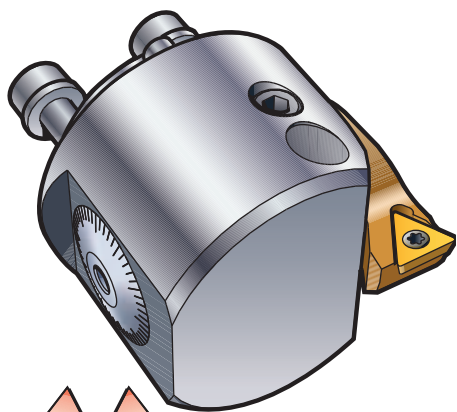
Fine boring tool system

For large diameter boring

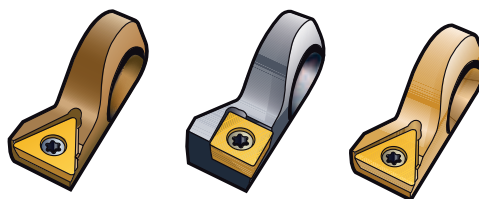
Rigid system for maximum stability
with internal coolant supply



Fine boring heads for finishing with high precision



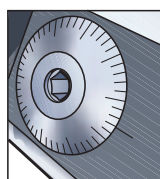
Cartridges for CoroTurn® 107 and CoroTurn® 111 inserts



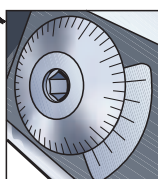
CoroTurn 107
TCMT1103
(TCMT 22)

CoroTurn 107
CCMT09
(CCMT 3 (2.5))

CoroTurn 111
TPMT11
(TPMT 22)

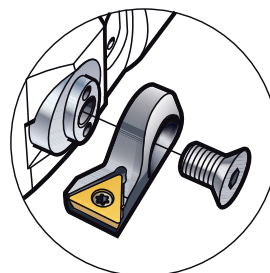


CoroBore® 826 XL
Diameter adjustment of
0.002 mm with click for each
increment



CoroBore® 825 XL
Diameter adjustment of
0.002 mm with nonius scale

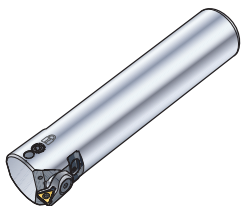
Cartridge designed for
highest stability



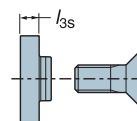
CoroBore® 825

Boring range 19 - 36 mm (.748 - 1.417 inch)

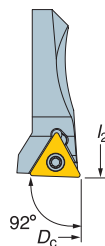
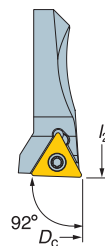
Cylindrical shank



Slide extension set



92° (-2°) CoroTurn® 107 92° (-2°) CoroTurn® 111
R825A-AFxxSTUC R825A-AFxxSTUP



Boring range 19-36 mm (.748-1.417 inch)
Hole tolerance IT6
Dia. adjustment 0.002 mm (.00008 inch)
Boring depth 4 x Dm_m
Cutting fluid Internal
Cutting speed, v_c max: 1200 m/min (3937 ft/min)
Always adjust from centre towards periphery

Boring range ¹⁾				Insert type ²⁾			Cartridge	Slide extension	Adaptor
mm (inch)									
D_{c1}	$D_{c2}^{3)}$	Entering angle κ_r	Lead angle	ISO	ANSI	iC	Ordering code	Ordering code	Ordering code
min-max	min-max								
19-23	25-29	92°	-2°	TP...06	TP...1.2	5/32	R825A-AF11STUP06T1A	825A-030A	A18-R825A-A18116-RA
(.748-.906)	(.984-1.142)	92°	-2°	TC...06	TC...1.2	5/32	R825A-AF11STUC06T1A		
23-29	29-35	92°	-2°	TP...06	TP...1.2	5/32	R825A-AF11STUP06T1A	825A-030A	A20-R825A-AA120-RA
(.906-1.142)	(1.142-1.378)	92°	-2°	TC...06	TC...1.2	5/32	R825A-AF11STUC06T1A		
28-36	34-42	92°	-2°	TP...06	TP...1.2	5/32	R825A-AF11STUP06T1A	825A-030A	A25-R825A-AB146-RA
(1.102-1.417)	(1.339-1.654)	92°	-2°	TC...06	TC...1.2	5/32	R825A-AF11STUC06T1A		

¹⁾ Dimensions are given for inserts with 0.4 mm (.0157 inch) nose radius.

²⁾ Inserts are ordered separately.

³⁾ Boring range with slide extension front and back boring

⁴⁾ Backboring

Ordering example: 1 piece R825A-AF11STUP06T1A
1 piece A20-R825A-AA120-RA

Tightening torques

Cartridge = 1.2 Nm (0.89 ft.lbs)

Locking screw diameter:

19-29 mm (.748-1.142 inch) = 0.9 Nm (0.66 ft.lbs)

28-36 mm (1.102-1.417 inch) = 1.2 Nm (0.89 ft.lbs)

Insert screw = 0.6 Nm (0.44 ft.lbs)



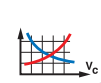
F59



G6



F120



F96

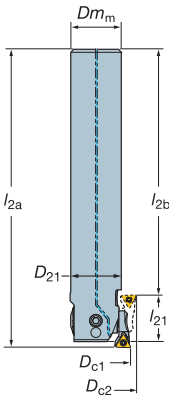


F2



J3

Cylindrical shank



l_2 = Programming length

Dimensions, mm (inch)

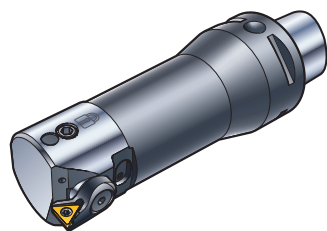
	D_{21} Dm_m	l_{2a}	$l_{2b}^{(4)}$	l_{21}	l_{3s}
0.23 (0.5)	18 (.709)	125.5 (4.941)	103.5 (4.075)	19.5 (.768)	3.0 (.118)
0.35 (0.77)	20 (.787)	132 (5.197)	110 (4.331)	19.5 (.768)	3.0 (.118)
0.65 (1.43)	25 (.984)	158 (6.220)	136 (5.354)	19.5 (.768)	3.0 (.118)

CoroBore® 825

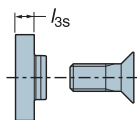
Boring range 19 - 167 mm (.748 - 6.575 inch)

Coromant Capto®

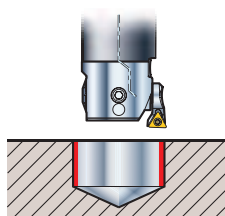
HSK



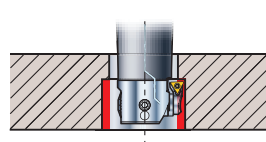
Slide extension set



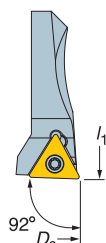
Conventional boring



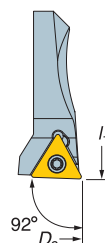
Backboring



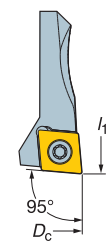
92° (-2°) CoroTurn® 107
R825x-AFxxSTUC



92° (-2°) CoroTurn® 111
R825x-AFxxSTUP



95° (-5°) CoroTurn® 107
R825C-AF27SCLC



Boring range 19-167 mm (.748-6.575 inch)
Hole tolerance IT6
Dia. adjustment 0.002 mm (.00008 inch)
Cutting fluid Internal
Cutting speed, v_c max: 1200 m/min (3937 ft/min)
Always adjust from centre towards periphery

Boring range ¹⁾ mm (inch)						Insert type ²⁾			Cartridge	Slide extension
D_{c1}	$D_{c2}^{4)}$	$D_{c3}^{5)}$	Coupling size	Entering angle κ_r	Lead angle	ISO	ANSI	i/C	Ordering code	Ordering code
min-max	min-max	min-max								
19-23 (.748-.906)	25-29 (.984-1.142)	-	C3	92°	-2°	TP...06	TP...1.2	5/32	R825A-AF11STUP06T1A	825A-030A
			C3			TC...06	TC...1.2	5/32	R825A-AF11STUC06T1A	
			HSK 63-A/C							
23-29 (.906-1.142)	29-35 (1.142-1.378)	29-29 (1.142-1.142)	C3	92°	-2°	TP...06	TP...1.2	5/32	R825A-AF11STUP06T1A	825A-030A
			C4			TC...06	TC...1.2	5/32	R825A-AF11STUC06T1A	
			C3							
			C4							
			HSK 63-A/C							
28-36 (1.102-1.417)	34-42 (1.339-1.654)	34-36 (1.339-1.417)	C3	92°	-2°	TP...06	TP...1.2	5/32	R825A-AF11STUP06T1A	825A-030A
			C4			TC...06	TC...1.2	5/32	R825A-AF11STUC06T1A	
			C3							
			C4							
			HSK 63-A/C							
35-45 (1.378-1.772)	42.2-52.2 (1.661-2.055)	42-45 (1.654-1.772)	C3	92°	-2°	TP...09	TP...1.8	7/32	R825B-AF17STUP0902A	825B-036A
			C4			TC...09	TC...1.8	7/32	R825B-AF17STUC0902A	
			HSK 63-A/C							
44-56 (1.732-2.205)	51.2-63.2 (2.016-2.488)	51-56 (2.008-2.205)	C4	92°	-2°	TP...09	TP...1.8	7/32	R825B-AF17STUP0902A	825B-036A
			C5			TC...09	TC...1.8	7/32	R825B-AF17STUC0902A	
			HSK 63-A/C							
55-70 (2.165-2.756)	64.6-79.6 (2.543-3.134)	63-70 (2.480-2.756)	C5	92°	-2°	TP...11	TP...22	1/4	R825C-AF23STUP1103A	825C-048A
			C6			TC...1103	TC...22	1/4	R825C-AF23STUC1103A	
			HSK 63-A/C	95°	-5°	CC...09	CC...3(2.5)	3/8	R825C-AF27SCLC09T3	
69-87 (2.717-3.425)	78.6-96.6 (3.094-3.803)	78-87 (3.071-3.425)	C5	92°	-2°	TP...11	TP...22	1/4	R825C-AF23STUP1103A	825C-048A
			C6			TC...1103	TC...22	1/4	R825C-AF23STUC1103A	
			HSK 63-A/C	95°	-5°	CC...09	CC...3(2.5)	3/8	R825C-AF27SCLC09T3	
86-107 (3.386-4.213)	95.6-116.6 (3.764-4.591)	95-107 (3.740-4.213)	C5	92°	-2°	TP...11	TP...22	1/4	R825C-AF23STUP1103A	825C-048A
			C6			TC...1103	TC...22	1/4	R825C-AF23STUC1103A	
			HSK 63-A/C	95°	-5°	CC...09	CC...3(2.5)	3/8	R825C-AF27SCLC09T3	
106-137 (4.173-5.394)	115.6-146.6 (4.551-5.772)	115-137 (4.528-5.394)	C6	92°	-2°	TP...11	TP...22	1/4	R825C-AF23STUP1103A	825C-048A
			C8			TC...1103	TC...22	1/4	R825C-AF23STUC1103A	
			HSK 100-A/C	95°	-5°	CC...09	CC...3(2.5)	3/8	R825C-AF27SCLC09T3	
136-167 (5.354-6.575)	145.6-176.6 (5.732-6.953)	145-167 (5.709-6.575)	C6	92°	-2°	TP...11	TP...22	1/4	R825C-AF23STUP1103A	825C-048A
			C8			TC...1103	TC...22	1/4	R825C-AF23STUC1103A	
			HSK 100-A/C	95°	-5°	CC...09	CC...3(2.5)	3/8	R825C-AF27SCLC09T3	

¹⁾ Dimensions are given for inserts with 0.4 mm (.0157 inch) nose radius.

²⁾ Inserts are ordered separately.

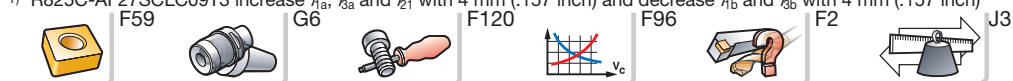
³⁾ No geometrical restriction (l_{3a}), maximum recommended hole depth = $4 \times D_{5m}$

⁴⁾ Boring range with slide extension front and back boring

⁵⁾ Diameter range when back boring without slide extension

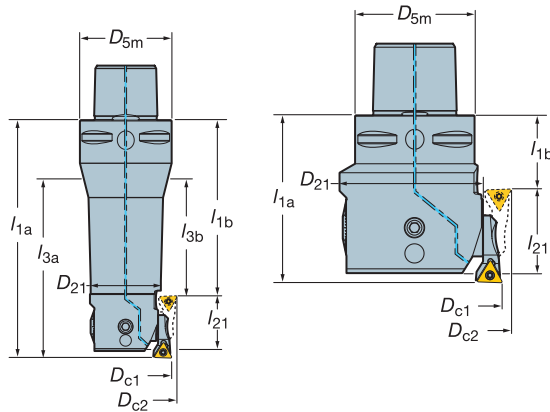
⁶⁾ The geometrical restriction (l_{3a} or l_{3b}) is only valid when boring diameter (D_c) is smaller than the coupling diameter (D_{5m}). Maximum recommended hole depth (for forward boring) when the boring diameter (D_c) is larger than the coupling diameter (D_{5m}) = $4 \times D_{21}$

⁷⁾ R825C-AF27SCLC09T3 increase l_{1a} , l_{3a} and l_{1b} with 4 mm (.157 inch) and decrease l_{1b} and l_{3b} with 4 mm (.157 inch)

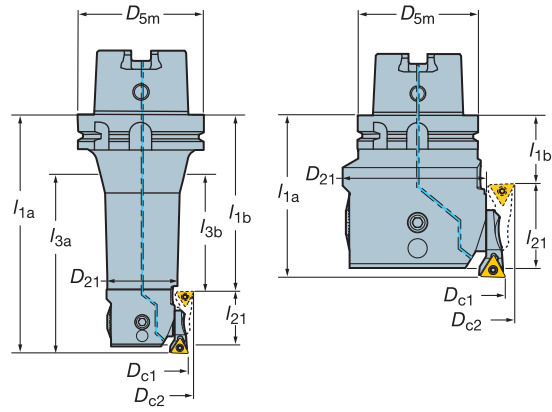


CoroBore® 825

Coromant Capto



HSK


 l_1 = programming length

Adaptor	Dimensions, mm (inch)						Backboring		
Ordering code	$\frac{\phi}{\text{mm}}$	D_{5m}	D_{21}	$l_{1a}^{(7)}$	$l_{3a}^{(7)}$	l_{3b}	$l_{1b}^{(7)}$	l_{21}	$l_{3b}^{(7)}$
C3-R825A-AA18055A	0.21	32 (1.260)	18 (.709)	66 (2.598)	$2 \times D_c$	3.0 (.118)	44 (1.732)	19.5 (.768)	$2 \times D_c-22$ (.866)
C3-R825A-AA18078A	0.26	32 (1.260)	18 (.709)	89 (3.504)	$3 \times D_c$	3.0 (.118)	67 (2.638)	19.5 (.768)	$3 \times D_c-22$ (.866)
HA06-R825A-AA18077A	0.85	63 (2.480)	18 (.709)	88 (3.465)	$2 \times D_c$	3.0 (.118)	66 (2.598)	19.5 (.768)	$2 \times D_c-22$ (.866)
C3-R825A-AAA065A	0.28	32 (1.260)	20 (.787)	76 (2.992)	$2 \times D_c$	3.0 (.118)	54 (2.126)	19.5 (.768)	$2 \times D_c-22$ (.866) ⁽⁶⁾
C4-R825A-AAA074A	0.45	40 (1.575)	20 (.787)	85 (3.346)	$2 \times D_c$	3.0 (.118)	63 (2.480)	19.5 (.768)	$2 \times D_c-22$ (.866)
C3-R825A-AAA094A	0.35	32 (1.260)	20 (.787)	105 (4.134)	$3 \times D_c$	3.0 (.118)	83 (3.268)	19.5 (.768)	$3 \times D_c-22$ (.866) ⁽⁶⁾
C4-R825A-AAA103A	0.52	40 (1.575)	20 (.787)	114 (4.488)	$3 \times D_c$	3.0 (.118)	92 (3.622)	19.5 (.768)	$3 \times D_c-22$ (.866)
HA06-R825A-AAA086A	0.91	63 (2.480)	20 (.787)	97 (3.819)	$2 \times D_c$	3.0 (.118)	75 (2.953)	19.5 (.768)	$2 \times D_c-22$ (.866)
C3-R825A-AAB072A	0.38	32 (1.260)	25 (.984)	83 (3.268)	$2 \times D_c^{(6)}$	3.0 (.118)	61 (2.402)	19.5 (.768)	-
C4-R825A-AAB084A	0.56	40 (1.575)	25 (.984)	95 (3.740)	$2 \times D_c$	3.0 (.118)	73 (2.874)	19.5 (.768)	$2 \times D_c-22$ (.866) ⁽⁶⁾
C3-R825A-AAB106A	0.51	32 (1.260)	25 (.984)	117 (4.606)	$3 \times D_c$	3.0 (.118)	95 (3.740)	19.5 (.768)	-
C4-R825A-AAB120A	0.71	40 (1.575)	25 (.984)	131 (5.158)	$3 \times D_c$	3.0 (.118)	109 (4.291)	19.5 (.768)	$3 \times D_c-22$ (.866) ⁽⁶⁾
HA06-R825A-AAB097A	1.04	63 (2.480)	25 (.984)	108 (4.252)	$2 \times D_c$	3.0 (.118)	86 (3.386)	19.5 (.768)	$2 \times D_c-22$ (.866)
C3-R825B-AAC031A	0.28	32 (1.260)	32 (1.260)	48 (1.890)	⁽³⁾	3.6 (.142)	14 (.551)	31 (1.220)	-
C4-R825B-AAC066A	0.61	40 (1.575)	32 (1.260)	83 (3.268)	$1.5 \times D_c^{(6)}$	3.6 (.142)	49 (1.929)	31 (1.220)	-
HA06-R825B-AAC081A	1.11	63 (2.480)	32 (1.260)	98 (3.858)	$1.5 \times D_c$	3.6 (.142)	64 (2.520)	31 (1.220)	$1.5 \times D_c-34$ (1.339)
C4-R825B-AAD039A	0.53	40 (1.575)	40 (1.575)	56 (2.205)	⁽³⁾	3.6 (.142)	22 (.866)	31 (1.220)	-
C5-R825B-AAD081A	1.14	50 (1.969)	40 (1.575)	98 (3.858)	$1.5 \times D_c^{(6)}$	3.6 (.142)	64 (2.520)	31 (1.220)	-
HA06-R825B-AAD094A	1.47	63 (2.480)	40 (1.575)	111 (4.370)	$1.5 \times D_c$	3.6 (.142)	77 (3.031)	31 (1.220)	$1.5 \times D_c-34$ (1.339)
C5-R825C-AAE043A	0.98	50 (1.969)	50 (1.969)	66 (2.598)	⁽³⁾	4.8 (.189)	20 (.787)	42 (1.654)	-
C6-R825C-AAE097A	2.27	63 (2.480)	50 (1.969)	120 (4.724)	$1.5 \times D_c^{(6)}$	4.8 (.189)	74 (2.913)	42 (1.654)	$1.5 \times D_c-46$ (1.811) ⁽⁶⁾
HA06-R825C-AAE101A	1.98	63 (2.480)	50 (1.969)	124 (4.882)	$1.5 \times D_c^{(6)}$	4.8 (.189)	78 (3.071)	42 (1.654)	$1.5 \times D_c-46$ (1.811) ⁽⁶⁾
C5-R825C-AAF047A	1.38	50 (1.969)	63 (2.480)	70 (2.756)	⁽³⁾	4.8 (.189)	24 (0.945)	42 (1.654)	-
C6-R825C-AAF055A	1.87	63 (2.480)	63 (2.480)	78 (3.071)	⁽³⁾	4.8 (.189)	32 (1.260)	42 (1.654)	-
HA06-R825C-AAF059A	1.69	63 (2.480)	63 (2.480)	82 (3.228)	⁽³⁾	4.8 (.189)	36 (1.417)	42 (1.654)	-
C5-R825C-AAG053A	2.17	50 (1.969)	80 (3.150)	76 (2.992)	⁽³⁾	4.8 (.189)	30 (1.181)	42 (1.654)	-
C6-R825C-AAG067A	2.62	63 (2.480)	80 (3.150)	90 (3.543)	⁽³⁾	4.8 (.189)	44 (1.732)	42 (1.654)	-
HA06-R825C-AAG072A	2.31	63 (2.480)	80 (3.150)	95 (3.740)	⁽³⁾	4.8 (.189)	49 (1.929)	42 (1.654)	-
C6-R825C-AAH067A	3.10	63 (2.480)	100 (3.937)	90 (3.543)	⁽³⁾	4.8 (.189)	44 (1.732)	42 (1.654)	-
C8-R825C-AAH077A	4.30	80 (3.150)	100 (3.937)	100 (3.937)	⁽³⁾	4.8 (.189)	54 (2.126)	42 (1.654)	-
HA10-R825C-AAH087A	5.20	100 (3.937)	100 (3.937)	110 (4.331)	⁽³⁾	4.8 (.189)	64 (2.520)	42 (1.654)	-
C6-R825C-AAI067A	3.90	63 (2.480)	130 (5.118)	90 (3.543)	⁽³⁾	4.8 (.189)	44 (1.732)	42 (1.654)	-
C8-R825C-AAI077A	5.00	80 (3.150)	130 (5.118)	100 (3.937)	⁽³⁾	4.8 (.189)	54 (2.126)	42 (1.654)	-
HA10-R825C-AAI087A	5.80	100 (3.937)	130 (5.118)	110 (4.331)	⁽³⁾	4.8 (.189)	64 (2.520)	42 (1.654)	-

Ordering example: 1 piece R825A-AF11STUP06T1A
1 piece C3-R825A-AAA065A

Tightening torques

For Coromant Capto® coupling:
Size

C3: = 40-50 Nm (30-36 ft.lbs)
C4: = 50-100 Nm (36-44 ft.lbs)
C5: = 90-100 Nm (66-74 ft.lbs)
C6/C8: = 160-180 Nm (118-133 ft.lbs)

For cartridge screw:

Boring range

Ø19-36 (.748-1.417) = 1.2 Nm (.9 ft.lbs)
Ø35-56 (1.378-2.205) = 3.1 Nm (2.3 ft.lbs)
Ø55-167 (2.165-6.575) = 5.8 Nm (4.3 ft.lbs)

For locking screw:

Boring range

Ø19-29 (.748-1.142) = 0.9 Nm (.7 ft.lbs)
Ø28-36 (1.102-1.417) = 1.2 Nm (.9 ft.lbs)
Ø35-56 (1.378-2.205) = 3.1 Nm (2.3 ft.lbs)
Ø55-167 (2.165-6.575) = 5.8 Nm (4.3 ft.lbs)

For insert screw (CoroTurn 107):

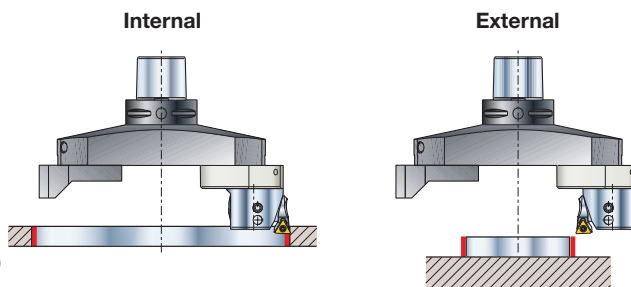
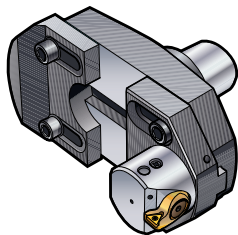
Size

TC/TP06 (5/32) = 0.6 Nm (.4 ft.lbs)
TC/TP09 (7/32) = 0.8 Nm (.6 ft.lbs)
TC/TP11 (1/4) = 0.9 Nm (.7 ft.lbs)
CC09 (3/8) = 3.0 Nm (2.2 ft.lbs)

CoroBore® 825/CoroBore® 826

Boring range 150 - 315 mm (5.906 - 12.401 inch)

Coromant Capto®



Boring range 150-315 mm (5.905-12.402 inch)
 Boring depth $4 \times D_{\text{bm}}$
 Hole tolerance IT6
 Dia. adjustment 0.002 mm (.00008 inch)
 Cutting fluid Internal
 Cutting speed, v_c max: 1200 m/min (3937 ft/min)
 Always adjust from centre towards periphery

CoroBore® 825

Precision adjustment with nonius scale (0.002 mm (.00008") on dia.)

One full turn of the scale will change dia. with 0.5 mm (0.02")

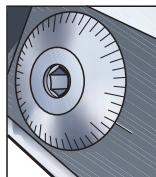
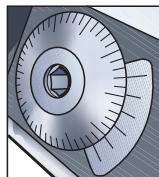
Adjustable radial stroke on fine boring head 7.5 mm (.295")

CoroBore® 826

Precision adjustment with click on each increment (0.002 mm (.00008") on dia.)

One full turn of the scale will change dia. with 0.1 mm (0.0039")

Adjustable radial stroke on fine boring head 0.5 mm (.020")



Boring range, mm (inch)¹⁾

Internal D_{bi} ³⁾
 min - max

External D_{bo} ⁴⁾
 min - max

Fine boring head

CB825

CB826

CB825

CB826

Entering angle κ_r

Lead angle

Insert type²⁾

ISO

ANSI

1. Cartridge

2. Fine boring head

CB825	CB826	CB825	CB826	Entering angle κ_r	Lead angle	ISO	ANSI	Ordering code	Ordering code
150-215	150-200	25-90	25-75	92°	-2°	TP...11	TP...22	R825C-AF23STUP1103A	A34-R825C-E 017 A
(5.906-8.464)	(5.906-7.874)	(.984-3.543)	(.984-2.953)	92°	-2°	TC...1103	TC...22	R825C-AF23STUC1103A	A34-R826C-E017
				95°	-5°	CC...09	CC...3(2.5)	R825C-AF27SCLC09T3	
200-265	200-250	75-140	75-125	92°	-2°	TP...11	TP...22	R825C-AF23STUP1103A	A34-R825C-E 017 A
(7.873-10.433)	(7.874-9.843)	(2.953-5.512)	(2.953-4.921)	92°	-2°	TC...1103	TC...22	R825C-AF23STUC1103A	A34-R826C-E017
				95°	-5°	CC...09	CC...3(2.5)	R825C-AF27SCLC09T3	
250-315	250-300	125-190	125-175	92°	-2°	TP...11	TP...22	R825C-AF23STUP1103A	A34-R825C-E 017 A
(9.842-12.401)	(9.843-11.811)	(4.921-7.480)	(4.921-6.890)	92°	-2°	TC...1103	TC...22	R825C-AF23STUC1103A	A34-R826C-E017
				95°	-5°	CC...09	CC...3(2.5)	R825C-AF27SCLC09T3	

¹⁾ Dimensions are given for inserts with 0.4 mm (.0157 inch) nose radius.

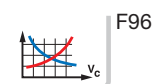
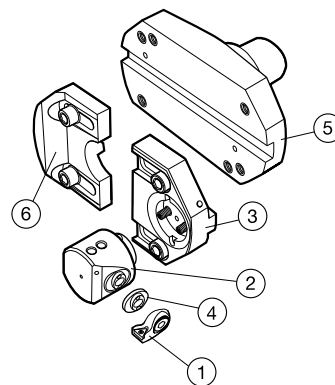
²⁾ Inserts are ordered separately.

³⁾ D_{bi} max - min are changed + 9.6 mm when using slide extensions

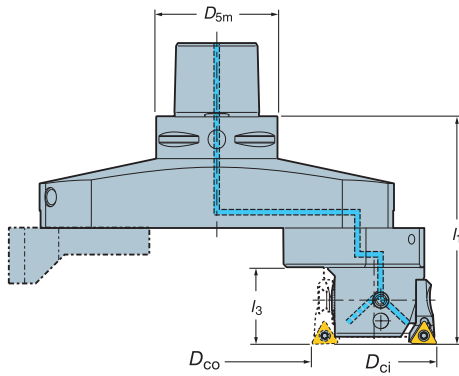
⁴⁾ D_{bo} max - min are changed - 9.6 mm when using slide extensions

⁵⁾ R825C-AF27SCLC09T3 increase l_1 and l_2 with 4mm (.157 inch)

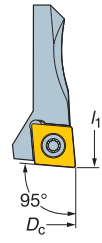
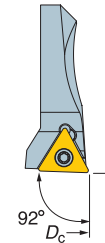
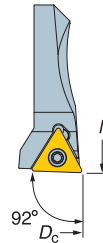
1. Cartridge
2. Fine boring head
3. Slide
4. Slide extension
5. Adaptor
6. Counterweight



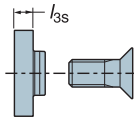
CoroBore® 825/CoroBore® 826



92° (-2°) CoroTurn® 107 R825C-AF23STUC 92° (-2°) CoroTurn® 111 R825C-AF23STUP 95° (-5°) CoroTurn® 107 R825C-AF27SCLC



Slide extension set



3. Slide	4. Slide extension		5. Adaptor	Dimensions, mm (inch)					
Ordering code	Ordering code	Coupling size	Ordering code		D _{sm}	l ₁ ⁽⁵⁾	l ₃ ⁽⁵⁾	l _{3s}	6. Counterweight
S17-R825A34-020 A	825C-048A	C6	C6-R825S17-AJ 058 A	5.2	63	118	39	4.8	S17-825-CW A
		C8	C8-R391.B11R-B 070 A	6.1	80	130	39	4.8	
				(13.4)	(3.150)	(5.118)	(1.535)	(.189)	
S17-R825A34-020 A	825C-048A	C6	C6-R825S17-AK 058 A	6.4	63	118	39	4.8	S17-825-CW A
		C8	C8-R391.B12R-C 070 A	7.2	80	130	39	4.8	
				(14.1)	(2.480)	(4.646)	(1.535)	(.189)	
S17-R825A34-020 A	825C-048A	C6	C6-R825S17-AL 058 A	7.7	63	118	39	4.8	S17-825-CW A
		C8	C8-R822S17-AL 070 A	9.1	80	130	39	4.8	
				(17.0)	(2.480)	(4.646)	(1.535)	(.189)	
				(20.1)	(3.150)	(5.118)	(1.535)	(.189)	

Ordering example for a complete tool, boring range 150-215, including adaptor C6, slide, fine boring head, counterweight and cartridge for TP... inserts:

- 1 piece C6-R825S17-AJ 058 A (adaptor)
- 1 piece S17-R825A34-020 A (slide)
- 1 piece A34-R825C-E 017 A (fine boring head)
- 1 piece R825-AF23STUP1103A (cartridge)
- 1 piece S17-825-CW A (counterweight)

Tightening torques

Coromant Capto® C6-C8: 160-180 Nm

For slide + counterweight:

75 Nm (55 ft.lbs)

For fine boring head

16 Nm (12 ft.lbs)

For cartridge screw:

6 Nm (4.4 ft.lbs)

For locking screw:

6 Nm (4.4 ft.lbs)

For insert screw (TC/TP11):

0.9 Nm (.7 ft.lbs)

For insert screw (CC09):

3 Nm (2.2 ft.lbs)

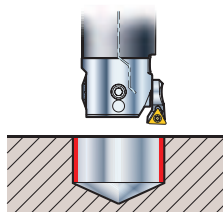
CoroBore® 825 dampened

Boring range 23 - 167 mm (.906-6.575 inch)

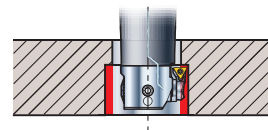
Coromant Capto®



Conventional boring



Backboring



Boring range 23 - 167 mm (.906-6.575 inch)

Boring depth $6 \times D_c^{(6)}$

Hole tolerance IT6

Dia. adjustment 0.002 mm (.00008 inch)

Cutting fluid Internal

Cutting speed v_c 600 m/min (1968 ft/min)

Always adjust from centre towards periphery

Boring range ¹⁾						Insert type ²⁾			Cartridge	Slide extension
D_{c1} min - max	$D_{c2}^{(4)}$ min - max	$D_{c2}^{(5)}$ min - max	Entering angle	Lead angle	Coupling size	ISO	ANSI	iC	Ordering code	Ordering code
23-29 (.906-1.142)	29-35 (1.142-1.378)	29-29 (1.142-1.142)	92°	-2°	C3	TP...06 TC...06	TP...1.2 TC...1.2	5/32	R825A-AF11STUP06T1A R825A-AF11STUC06T1A	825A-030A
28-36 (1.102-1.417)	34-42 (1.399-1.654)	34-36 (1.339-1.417)	92°	-2°	C3	TP...06 TC...06	TP...1.2 TC...1.2	5/32	R825A-AF11STUP06T1A R825A-AF11STUC06T1A	825A-030A
35-45 (1.378-1.772)	42.2-52.2 (1.661-2.055)	42-45 (1.654-1.772)	92°	-2°	C4	TP...09 TC...09	TP...1.8 TC...1.8	7/32	R825B-AF17STUP902A R825B-AF17STUC902A	825B-036A
44-56 (1.732-2.205)	51.2-63.2 (2.016-2.488)	51-56 (2.008-2.205)	92°	-2°	C5	TP...09 TC...09	TP...1.8 TC...1.8	7/32	R825B-AF17STUP902A R825B-AF17STUC902A	825B-036A
55-70 (2.165-2.756)	64.6-79.6 (2.543-3.134)	63-70 (2.480-2.756)	92°	-2°	C5 C6	TP...1103 TC...1103	TP...22 TC...22	1/4	R825C-AF23STUP1103A R825C-AF23STUC1103A	825C-048A
69-87 (2.717-3.425)	78.6-96.6 (3.304-3.893)	78-87 (3.071-3.425)	92°	-2°	C6 C8	TP...1103 TC...1103	TP...22 TC...22	1/4	R825C-AF23STUP1103A R825C-AF23STUC1103A	825C-048A
86-107 (3.386-4.213)	95.6-116.6 (3.764-4.591)	95-107 (3.740-4.213)	92°	-2°	C6 C8	TP...1103 TC...1103	TP...22 TC...22	1/4	R825C-AF23STUP1103A R825C-AF23STUC1103A	825C-048A
106-137 (4.173-5.394)	115.6-146.6 (4.551-5.772)	115-137 (4.528-5.394)	92°	-2°	C6 C8	TP...1103 TC...1103	TP...22 TC...22	1/4	R825C-AF23STUP1103A R825C-AF23STUC1103A	825C-048A
136-167 (5.354-6.575)	145.6-176.6 (5.732-6.953)	145-167 (5.709-6.575)	92°	-2°	C6 C8	TP...1103 TC...1103	TP...22 TC...22	1/4	R825C-AF23STUP1103A R825C-AF23STUC1103A	825C-048A

¹⁾ Dimensions are given for inserts with 0.4 mm (.0157 inch) nose radius.

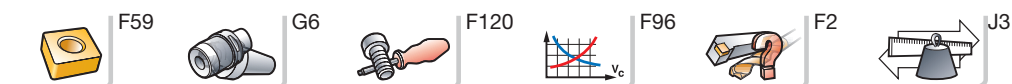
²⁾ Inserts are ordered separately.

³⁾ No geometrical restriction (l_{ba} or l_{bb}), maximum recommended hole depth = $6 \times D_{sm}$ for forward boring and $6 \times D_{sm} - l_{b1}$ for back boring

⁴⁾ Boring range with slide extension front and back boring

⁵⁾ Diameter range when back boring without slide extension

⁶⁾ The geometrical restriction is only valid when boring diameter (D_c) is smaller than the coupling diameter (D_{sm}). Maximum recommended hole depth when the boring diameter (D_c) is larger than the coupling diameter (D_{sm}) = $6 \times D_{sm}$ for forward boring and $6 \times D_{sm} - l_{b1}$ for back boring

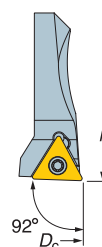
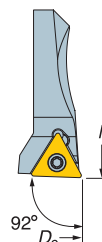
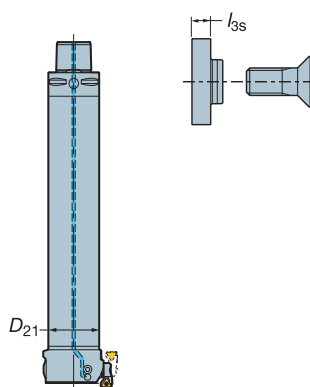
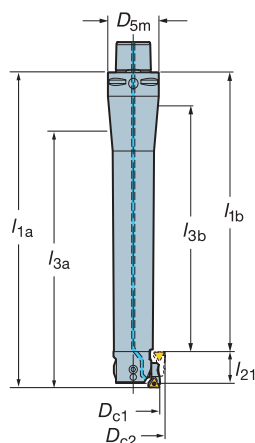


CoroBore® 825 dampened

92° (-2°) CoroTurn® 107
R825x-AFxxSTUC

92° (-2°) CoroTurn® 111
R825x-AFxxSTUP

Slide extension set



l_1 = programming length

Adaptor	Dimensions, mm (inch)							Backboring		
Ordering code		D_{5m}	D_{21}	l_{1a}	l_{3a}	l_{3s}		l_{1b}	l_{21}	l_{3b}
C3-R825A-FAA181A	0.6 (1.3)	32 (1.260)	20 (.787)	192 (7.560)	6x D_c	3.0 (.118)		170 (6.693)	19.5 (.768)	6x D_c -22 (.866) ⁶⁾
C3-R825A-FAB208A	1.1 (2.4)	32 (1.260)	25 (.984)	219 (8.622)	6x D_c ⁶⁾	3.0 (.118)		197 (7.756)	19.5 (.768)	3)
C4-R825B-FAC255A	2.2 (4.9)	40 (1.575)	32 (1.260)	272 (10.709)	6x D_c ⁶⁾	3.6 (.142)		238 (9.370)	31 (1.220)	3)
C5-R825B-FAD315A	4.1 (9.0)	50 (1.969)	40 (1.575)	332 (13.071)	6x D_c ⁶⁾	3.6 (.142)		298 (11.732)	31 (1.220)	6x D_c -34 (1.339) ⁶⁾
C5-R825C-FAE237A	3.9 (8.6)	50 (1.969)	50 (1.969)	260 (10.236)	3)	4.8 (.189)		214 (8.425)	42 (1.654)	3)
C6-R825C-FAE389A	7 (15.4)	63 (2.480)	50 (1.969)	412 (16.220)	6x D_c ⁶⁾	4.8 (.189)		366 (14.409)	42 (1.654)	6x D_c -46(1.811) ⁶⁾
C6-R825C-FAF307A	8 (17.6)	63 (2.480)	63 (2.480)	330 (12.992)	3)	4.8 (.189)		284 (11.181)	42 (1.654)	3)
C8-R825C-FAF499A	14.5 (32.0)	80 (3.150)	63 (2.480)	522 (20.551)	6x D_c ⁶⁾	4.8 (.189)		476 (18.740)	42 (1.654)	6x D_c -46(1.811) ⁶⁾
C6-R825C-FAG307A	7.4 (16.3)	63 (2.480)	80 (3.150)	330 (12.992)	3)	4.8 (.189)		284 (11.181)	42 (1.654)	3)
C8-R825C-FAG377A	14.6 (32.2)	80 (3.150)	80 (3.150)	400 (15.748)	3)	4.8 (.189)		354 (13.937)	42 (1.654)	3)
C6-R825C-FAH307A	7.7 (17.0)	63 (2.480)	100 (3.937)	330 (12.992)	3)	4.8 (.189)		284 (11.181)	42 (1.654)	3)
C8-R825C-FAH377A	15 (33.1)	80 (3.150)	100 (3.937)	400 (15.748)	3)	4.8 (.189)		354 (13.937)	42 (1.654)	3)
C6-R825C-FAI307A	7.9 (17.4)	63 (2.480)	130 (5.118)	330 (12.992)	3)	4.8 (.189)		284 (11.181)	42 (1.654)	3)
C8-R825C-FAI377A	15.6 (34.4)	80 (3.150)	130 (5.118)	400 (15.748)	3)	4.8 (.189)		354 (13.937)	42 (1.654)	3)

Ordering example: 1 piece R825A-AF11STUP06T1A (cartridge)
1 piece C3-R825A-FAA181A (adaptor)

Tightening torques

For Coromant Capto® coupling:

Size

C3 = 40-50 Nm (30-37 ft.lbs)

C4 = 50-160 Nm (37-44 ft.lbs)

C5 = 90-100 Nm (67-74 ft.lbs)

C6 = 160-180 Nm (118-133 ft.lbs)

For cartridge screw:

Boring range

Ø23-36 mm = 1.2 Nm
(Ø.906-1.417 inch = .89 ft.lbs)

Ø35-56 mm = 3.0 Nm
(Ø1.378-2.205 inch = 2.21 ft.lbs)

Ø55-167 mm = 6.0 Nm
(2.165-6.575 inch = 4.43 ft.lbs)

For locking screw:

Boring range

Ø23-36 mm = 0.9 Nm
(Ø.906-1.142 inch = .66 ft.lbs)

Ø28-36 mm = 1.2 Nm
(Ø1.102-1.417 inch = .89 ft.lbs)

Ø35-56 mm = 3.0 Nm
(Ø1.378-2.205 inch = 2.21 ft.lbs)

Ø55-167 mm = 6.0 Nm
(2.165-6.575 inch = 4.43 ft.lbs)

For insert screw (CoroTurn 107):

Size

06 mm = 0.6 Nm
(5/32 inch = .44 ft.lbs)

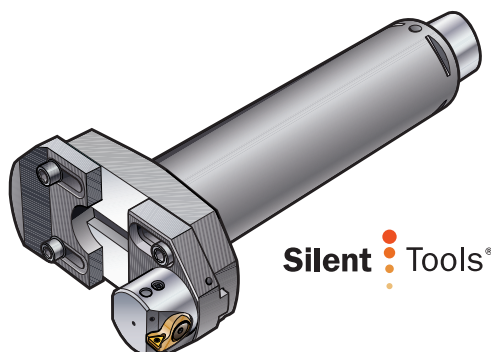
09 mm = 0.8 Nm
(7/32 inch = .59 ft.lbs)

11 mm = 0.9 Nm
(1/4 inch .66 ft.lbs)

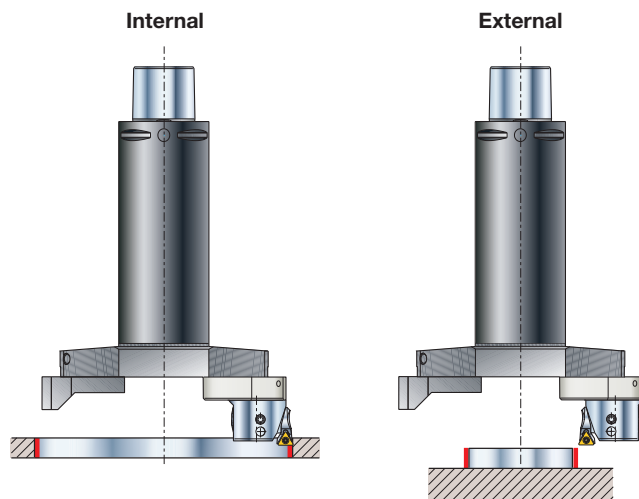
CoroBore® 825/CoroBore® 826 dampened

Boring range 150 - 315 mm (5.906 - 12.401 inch)

Coromant Capto®



Silent Tools®



Boring range 150-315 mm (5.905-12.402 inch)
 Boring depth $6 \times D_{sm}^{(5)}$
 Hole tolerance IT6
 Dia. adjustment 0.002 mm (.00008 inch)
 Cutting fluid Internal
 Cutting speed, v_c max: 600 m/min (1968 ft/min)
 Always adjust from centre towards periphery

Boring range⁽¹⁾

Boring range ¹⁾								1. Cartridge	2. Fine boring head	3. Slide
Internal D_{ci} ³⁾ min-max		External D_{co} ⁴⁾ min-max		Entering angle κ_r	Lead angle	Insert type ²⁾		Ordering code	Ordering code	Ordering code
Fine boring head						ISO	ANSI			
CB825	CB826	CB825	CB826							
150-215 (5.906-8.464)	150-200 (5.906-7.874)	25-90 (.984-3.543)	25-75 (.984-2.953)	92° 92°	-2° -2°	TP...11 TC...1103	TP..22 TC..22	R825C-AF23STUP1103A R825C-AF23STUC1103A	A34-R825C-E 017 A A34-R826C-E 017	S17-R825A34-020 A
200-265 (7.873-10.433)	200-250 (7.874-9.843)	75-140 (2.953-5.512)		92° 92°	-2° -2°	TP...11 TC...1103	TP..22 TC..22	R825C-AF23STUP1103A R825C-AF23STUC1103A	A34-R825C-E 017 A A34-R826C-E 017	S17-R825A34-020 A
250-315 (9.842-12.401)	250-300 (9.843-11.811)	125-190 (4.921-7.480)		92° 92°	-2° -2°	TP...11 TC...1103	TP..22 TC..22	R825C-AF23STUP1103A R825C-AF23STUC1103A	A34-R825C-E 017 A A34-R826C-E 017	S17-R825A34-020 A

⁽¹⁾ Dimensions are given for inserts with 0.4 mm nose radius.

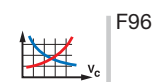
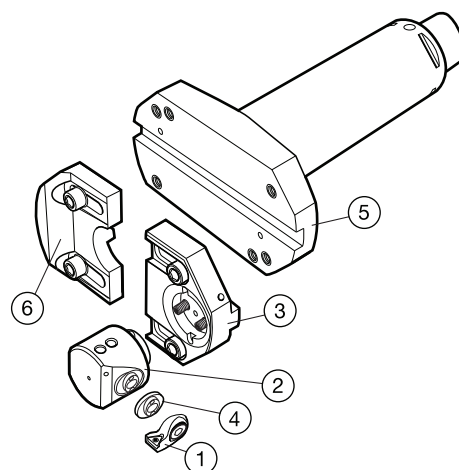
⁽²⁾ Inserts are ordered separately.

⁽³⁾ D_{ci} max - min are changed + 9.6 mm when using slide extensions

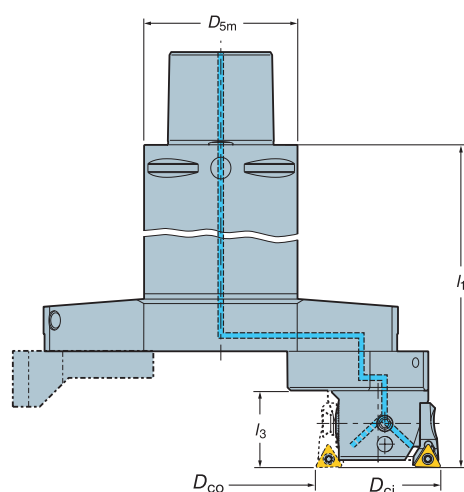
⁽⁴⁾ D_{co} max - min are changed - 9.6 mm when using slide extensions

⁽⁵⁾ For boring depth $6 \times D_{sm}$ use long version of basic holder.

1. Cartridge
2. Fine boring head
3. Slide
4. Slide extension
5. Dampened adaptor
6. Counterweight



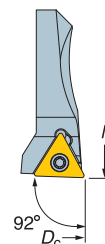
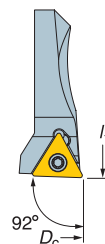
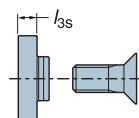
CoroBore® 825/CoroBore® 826 dampened



Slide extension set

92° CoroTurn® 107
R825C-AF23STUC

92° CoroTurn® 111
R825C-AF23STUP



l_1 = programming length

4. Slide extension		5. Dampened adaptor	Dimensions, mm (inch)					6. Counterweight
Ordering code	Coupling size	Ordering code		D_{sm}	l_1	l_3	l_{3s}	
825C-048A	C8	C8-R825S17-FJ340A	14 (30.9)	80 (3.150)	400 (15.748)	39 (1.535)	4.8 (.189)	S17-825-CW A
825C-048A	C8	C8-R825S17-FK340A	14.3 (31.5)	80 (3.150)	400 (15.748)	39 (1.535)	4.8 (.189)	S17-825-CW A
825C-048A	C8	C8-R825S17-FL340A	14.7 (32.4)	80 (3.150)	400 (15.748)	39 (1.535)	4.8 (.189)	S17-825-CW A

Ordering example for a complete tool, boring range 150-215, including adaptor C6, slide, fine boring head, counterweight and cartridge for TP... inserts:

- 1 piece C8-R825S17-FJ 340 A (adaptor)
- 1 piece S17-R825A34-020 A (slide)
- 1 piece A34-R825C-E 017 A (fine boring head)
- 1 piece R825-AF23STUP1103A (cartridge)
- 1 piece S17-825-CW A (counterweight)

Tightening torques

Coromant Capto® C8:	180 Nm	133 ft-lbs
For slide + counterweight:	75 Nm	55 ft-lbs
For fine boring head	16 Nm	12 ft-lbs
For cartridge screw:	6 Nm	4.4 ft-lbs
For locking screw:	6 Nm	4.4 ft-lbs
For insert screw (TC/TP11):	0.9 Nm	.7 ft-lbs
For insert screw (CC09):	3 Nm	2.2 ft-lbs

CoroBore® 825

Precision adjustment with nonius scale (0.002 mm (.00008") on dia.)

One full turn of the scale will change dia. with 0.5 mm (0.02")

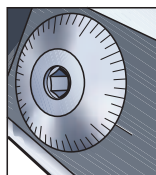
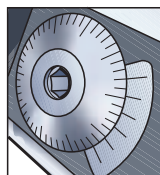
Adjustable radial stroke on fine boring head 7.5 mm (.295")

CoroBore® 826

Precision adjustment with click on each increment (0.002 mm (.00008") on dia.)

One full turn of the scale will change dia. with 0.1 mm (0.0039")

Adjustable radial stroke on fine boring head 0.5 mm (.020")

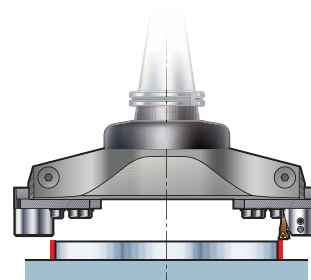
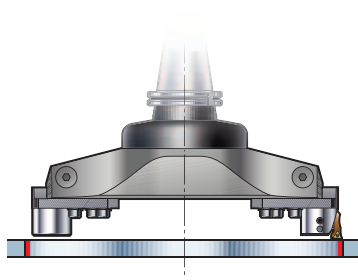
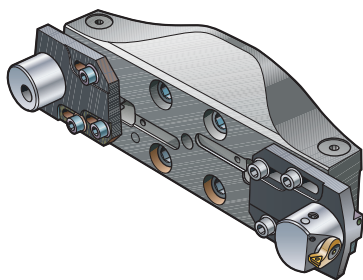


CoroBore® 825 XL/CoroBore® 826 XL

Boring range 298 - 555 mm (11.732 - 21.850 inch)

Internal

External



Boring range 298-555 mm (11.732-21.850 inch)
 Hole tolerance IT6
 Dia. adjustment 0.002 mm (.00008 inch)
 Cutting fluid Internal
 Cutting speed, v_c max: 1200 m/min (3937 ft/min)
 Always adjust from centre towards periphery

Boring range, mm (inch)¹⁾

							Insert type ²⁾		1. Cartridge	2. Fine boring head
Internal D_{ci} ³⁾ min-max		External D_{co} ⁴⁾ min-max		Bridge size	Entering angle κ_r	Lead angle				
Fine boring head CB825	CB826	Fine boring head CB825	CB826				ISO	ANSI	Ordering code	Ordering code
298-395 (11.732-15.551)	298-380 (11.732-14.961)	173-270 (6.811-10.630)	188-270 (7.402-10.630)	M	92°	-2°	TP...11	TP...22	R825C-AF23STUP1103A	A34-R825C-E 017 A
					92°	-2°	TC...1103	TC...22	R825C-AF23STUC1103A	A34-R826C-E 017
					95°	-5°	CC...09	CC...3(2.5)	R825C-AF27SCLC09T3	
378-475 (14.882-18.701)	378-460 (14.882-18.110)	253-350 (9.961-13.780)	268-350 (10.551-13.780)	N	92°	-2°	TP...11	TP...22	R825C-AF23STUP1103A	A34-R825C-E 017 A
					92°	-2°	TC...1103	TC...22	R825C-AF23STUC1103A	A34-R826C-E 017
					95°	-5°	CC...09	CC...3(2.5)	R825C-AF27SCLC09T3	
458-555 (18.031-21.850)	458-540 (18.031-21.260)	333-430 (13.110-16.929)	348-430 (13.701-16.929)	O	92°	-2°	TP...11	TP...22	R825C-AF23STUP1103A	A34-R825C-E 017 A
					92°	-2°	TC...1103	TC...22	R825C-AF23STUC1103A	A34-R826C-E 017
					95°	-5°	CC...09	CC...3(2.5)	R825C-AF27SCLC09T3	

¹⁾ Dimensions are given for inserts with 0.4 mm (.0157 inch) nose radius.

²⁾ Inserts are ordered separately.

³⁾ D_{ci} max - min are changed + 9.6 mm when using slide extensions

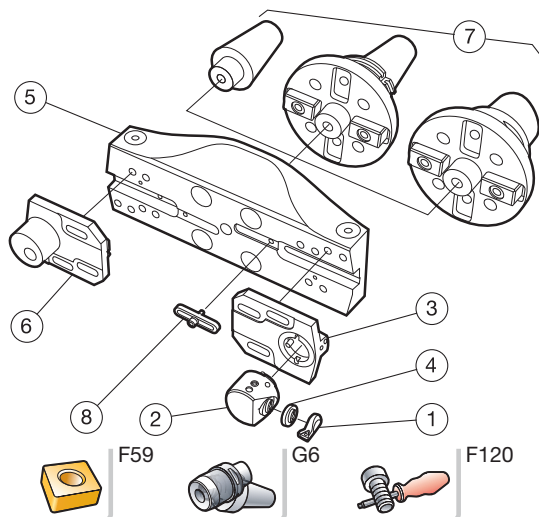
⁴⁾ D_{co} max - min are changed - 9.6 mm when using slide extensions

⁵⁾ R825C-AF27SCLC09T3 increase l_1 and l_2 with 4mm (.157 inch)

⁶⁾ The bridges machine side interface match the spindle nose on machines with taper size 50

⁷⁾ Stop plate set for quick and easy change from finishing slide to roughing slide with retained slide position. If switching from roughing to finishing slide the diameter needs to be reduced on the fine boring head followed by a measurement cut.

Assembly with bridge size M, N and O



1. Cartridge
2. Fine boring head
3. Slide
4. Slide extension
5. Bridge
6. Counterweight
7. Holders
8. Stop plate set



F59



G6



F120



F96

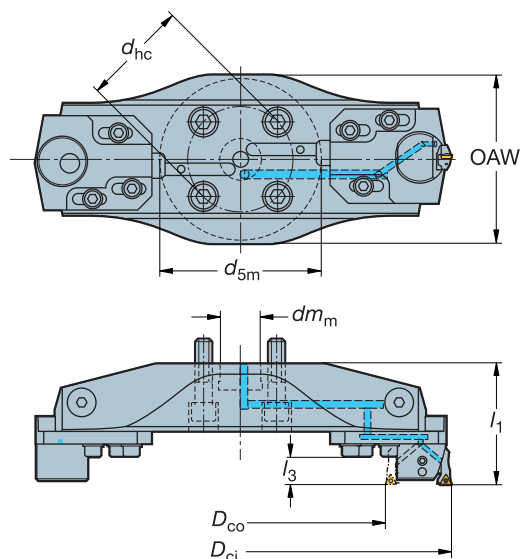
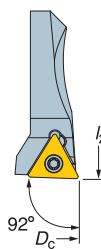
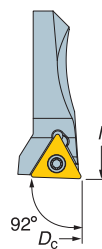
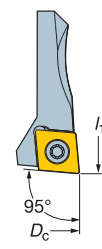


F2

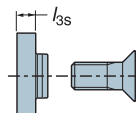


J3

Assembly with bridge size M, N and O


92° (-2°) CoroTurn® 107
R825C-AFxxSTUC

92° (-2°) CoroTurn® 111
R825C-AFxxSTUP

95° (-5°) CoroTurn® 107
R825C-AF27SCLC


Slide extension set


6. Counterweight
Ordering code
S24-825XL-CW

8. Stop plate set⁷⁾
Ordering code
5335 001-01

3. Slide	4. Slide extension	5. Bridge ⁶⁾	Dimensions, mm (inch)								7. Holders
Ordering code	Ordering code	Ordering code		$l_1^{(5)}$	D_{5m}	OAW	dm_m	d_{hc}	l_3	l_{3s}	Ordering code
S24-R825XLA34-012	825C-048A	A40-RXLS24-AM2 062	8.4	114 (4.488)	160 (6.299)	164 (6.457)	40 (1.575)	101.6 (4.000)	28 (1.102)	4.8 (.189)	392.644XL-5040 075
											392.646XL-5040 080
											A392.645XL-5040 075
S24-R825XLA34-012	825C-048A	A40-RXLS24-AN2 067	10.2	119 (4.685)	160 (6.299)	164 (6.457)	40 (1.575)	101.6 (4.000)	28 (1.102)	4.8 (.189)	C8-391.XL-40 065
											C10-391.XL-40 070
											392.647XL-5040
S24-R825XLA34-012	825C-048A	A40-RXLS24-AO2 072	12.1	124 (4.882)	160 (6.299)	164 (6.457)	40 (1.575)	101.6 (4.000)	28 (1.102)	4.8 (.189)	A392.647XL-5040
											See page F46.

Ordering example for a complete tool for diameter 298-395 mm (valid for bridge size M, N and O) including holder:

Tightening torques

For bridge:	200	Nm	148	ft-lbs
For slide + counterweight:	60	Nm	44	ft-lbs
For fine boring head:	16	Nm	12	ft-lbs
For cartridge screw:	6	Nm	4.4	ft-lbs
For locking screw:	6	Nm	4.4	ft-lbs
For insert screw TC..11/TP..11:	0.9	Nm	.7	ft-lbs
For insert screw CC..09:	3	Nm	2.2	ft-lbs

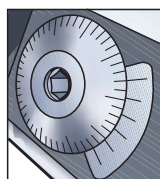
1 piece R825-AF23STUC1103A (cartridge)
1 piece A34-R825C-E 017 A (fine boring head)
1 piece S24-R825XLA34-012 (extension slide)
1 piece A40-RXLS24-AM2 062 (bridge)
1 piece S24-825XL-CW (counterweight)
1 piece 392.644XL-5040 075 (holder)

CoroBore® 825 XL

Precision adjustment with nonius scale (0.002 mm (.00008") on dia.)

One full turn of the scale will change dia. with 0.5 mm (0.02")

Adjustable radial stroke on fine boring head 7.5 mm (.295")

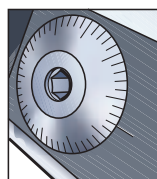


CoroBore® 826 XL

Precision adjustment with click on each increment (0.002 mm (.00008") on dia.)

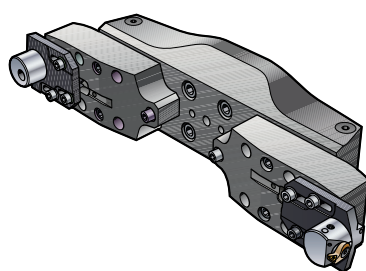
One full turn of the scale will change dia. with 0.1 mm (0.0039")

Adjustable radial stroke on fine boring head 0.5 mm (.020")

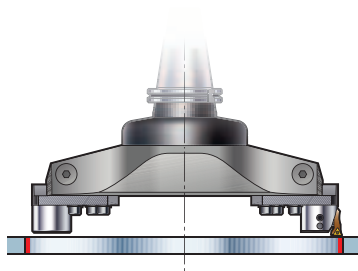


CoroBore® 825 XL/CoroBore® 826 XL

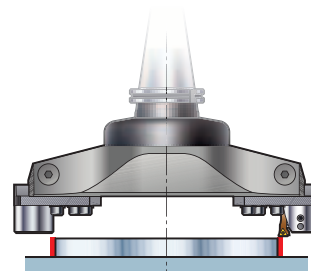
Boring range 538 - 1275 mm (21.181 - 50.197 inch)



Internal



External



Boring range 538-1275 mm (21.181-50.197 inch)
 Hole tolerance IT6
 Dia. adjustment 0.002 mm (.00008 inch)
 Cutting fluid Internal
 Cutting speed, v_c max: 1200 m/min (3937 ft/min)
 Always adjust from centre towards periphery

Boring range, mm (inch)¹⁾

Internal D_{ci} ³⁾ min-max Fine boring head		External D_{co} ⁴⁾ min-max Fine boring head		Bridge size	Entering angle κ_r	Lead angle	Insert type ²⁾		1. Cartridge	2. Fine boring head
CB825	CB826	CB825	CB826				ISO	ANSI	Ordering code	Ordering code
538-795 (21.181-31.299)	538-780 (21.181-30.709)	413-670 (16.260-26.378)	428-670 (16.850-26.378)	P	92°	-2°	TP...11	TP...22	R825C-AF23STUP1103A	A34-R825C-E 017 A
					92°	-2°	TC...1103	TC...22	R825C-AF23STUC1103A	A34-R826C-E 017
					95°	-5°	CC...09	CC...3(2.5)	R825C-AF27SCLC09T3	
778-1035 (30.630-40.748)	778-1020 (30.630-40.157)	653-910 (25.709-35.827)	668-910 (26.299-35.827)	Q	92°	-2°	TP...11	TP...22	R825C-AF23STUP1103A	A34-R825C-E 017 A
					92°	-2°	TC...1103	TC...22	R825C-AF23STUC1103A	A34-R826C-E 017
					95°	-5°	CC...09	CC...3(2.5)	R825C-AF27SCLC09T3	
1018-1275 (40.079-50.197)	1018-1260 (40.079-49.606)	893-1150 (35.157-45.276)	908-1150 (35.748-45.276)	R	92°	-2°	TP...11	TP...22	R825C-AF23STUP1103A	A34-R825C-E 017 A
					92°	-2°	TC...1103	TC...22	R825C-AF23STUC1103A	A34-R826C-E 017
					95°	-5°	CC...09	CC...3(2.5)	R825C-AF27SCLC09T3	

1) Dimensions are given for inserts with 0.4 mm (.0157 inch) nose radius.

2) Inserts are ordered separately.

3) D_{ci} max - min are changed + 9.6 mm when using slide extensions

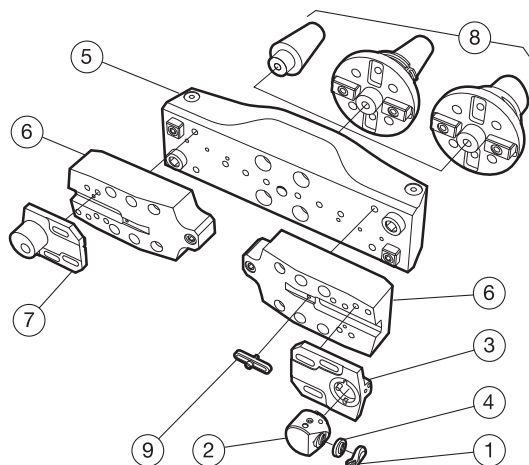
4) D_{co} max - min are changed - 9.6 mm when using slide extensions

5) R825C-AF27SCLC09T3 increase l_1 and l_2 with 4mm (.157 inch)

6) The bridges machine side interface match the spindle nose on machines with taper size 50

7) Stop plate set for quick and easy change from finishing slide to roughing slide with retained slide position. If switching from roughing to finishing slide the diameter needs to be reduced on the fine boring head followed by a measurement cut.

Assembly with bridge size P, Q and R



1. Cartridge
2. Fine boring head
3. Slide
4. Slide extension
5. Bridge
6. Bridge extension
7. Counterweight
8. Holders
9. Stop plate set



F59



G6



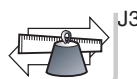
F120



F96

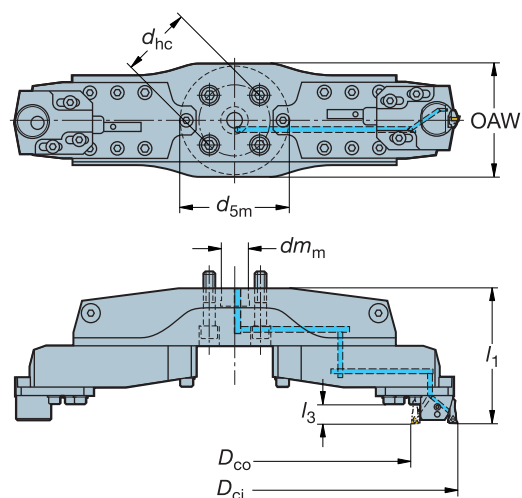
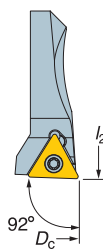


F2

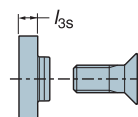
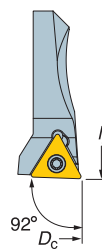
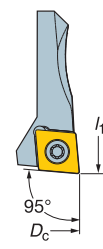


J3

Assembly with bridge size P, Q and R


92° (-2°) CoroTurn® 107
R825C-AFxxSTUC


Slide extension set


92° (-2°) CoroTurn® 111
R825C-AFxxSTUP

95° (-5°) CoroTurn® 107
R825C-AF27SCLC


7. Counterweight
Ordering code
S24-825XL-CW

9. Stop plate set⁷⁾
Ordering code
5335 001-01

3. Slide	4. Slide extension	5. Bridge ⁶⁾	6. Bridge extension	Dimensions, mm (inch)								8. Holders
Ordering code	Ordering code	Ordering code	Ordering code	$\frac{R}{A}$	$l_1^{(5)}$	D_{5m}	OAW	d_{5m}	d_{hc}	l_3	l_{3s}	Ordering code
S24-R825XLA34-012	825C-048A	A40-NXLA35-AP2 086	A35-RXLS24-A 060	24.5	198	160	164	40	101.6	28	4.8	392.644XL-5040 075
				(7.795)	(6.299)	(6.457)	(1.575)	(4.000)	(1.102)	(.189)		392.646XL-5040 080
												A392.645XL-5040 075
S24-R825XLA34-012	825C-048A	A40-NXLA35-AQ2 106	A35-RXLS24-A 060	35.7	218	160	164	40	101.6	28	4.8	C10-391.XL-40 070
				(8.583)	(6.299)	(6.457)	(1.575)	(4.000)	(1.102)	(.189)		392.647XL-5040
												A392.647XL-5040
S24-R825XLA34-012	825C-048A	A40-NXLA35-AR2 106	A35-RXLS24-A 060	42.9	218	160	164	40	101.6	28	4.8	C8-391.XL-40 065
				(8.583)	(6.299)	(6.457)	(1.575)	(4.000)	(1.102)	(.189)		See page F46

Ordering example for a complete tool for diameter 538-795 mm (valid for bridge size P, Q and R) including holder:

Tightening torques

For bridge:	200	Nm	148	ft-lbs
For bridge extension:	100	Nm	74	ft-lbs
For slide + counterweight:	60	Nm	44	ft-lbs
For fine boring head:	16	Nm	12	ft-lbs
For cartridge screw:	6	Nm	4.4	ft-lbs
For locking screw:	6	Nm	4.4	ft-lbs
For insert screw TC..11/TP..11:	0.9	Nm	.7	ft-lbs
For insert screw CC..09:	3	Nm	2.2	ft-lbs

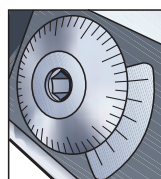
1 piece R825-AF23STUC1103A (cartridge)
1 piece A34-R825C-E 017 A (fine boring head)
1 piece S24-R825XLA34-012 (extension slide)
1 piece A40-NXLA35-AP2 086 (bridge)
2 pieces A35-RXLS24-A 060 (bridge extension)
1 piece S24-825XL-CW (counterweight)
1 piece 392.644XL-5040 075 (holder)

CoroBore® 825 XL

Precision adjustment with nonius scale (0.002 mm (.00008") on dia.)

One full turn of the scale will change dia. with 0.5 mm (0.02")

Adjustable radial stroke on fine boring head 7.5 mm (.295")

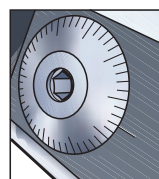


CoroBore® 826 XL

Precision adjustment with click on each increment (0.002 mm (.00008") on dia.)

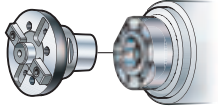
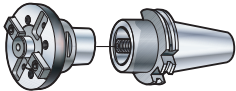
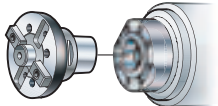
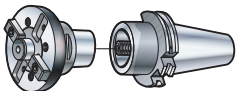
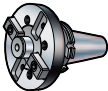
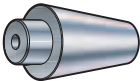
One full turn of the scale will change dia. with 0.1 mm (0.0039")

Adjustable radial stroke on fine boring head 0.5 mm (.020")



Application areas for CoroBore XL holders

CoroBore® XL

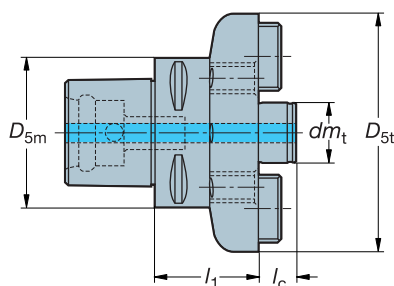
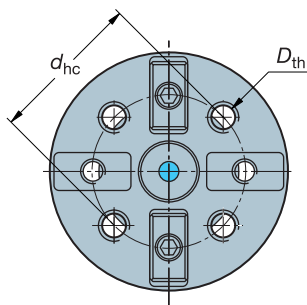
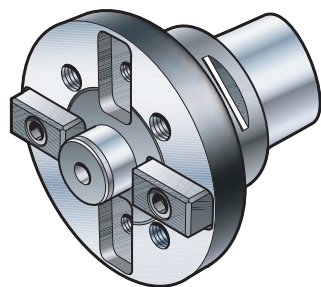
		CoroBore XL bridge size M, N and O			CoroBore XL bridge size P			CoroBore XL bridge size Q and R		
		Roughing	Semi-finishing	Finishing	Roughing	Semi-finishing	Finishing	Roughing	Semi-finishing	Finishing
     	C8 directly clamped in Coromant Capto spindle	...	...	...	..	...	...			
	C8 mounted in basic holder (with centre screw)	..	...	...		.	..			
	C10 directly clamped in Coromant Capto spindle	...	...	...	...	...	...	•1)	...	...
	C10 mounted in basic holder (with centre screw)	...	...	...	..	...	...		••1)	...
	Solid holder	...	...	...	..	...	...		••1)	...
	Centering plug	...	...	...	...	...	...	•1)	...	...

1) Single edge boring recommended

- Very good
- Good
- Fair

Coromant Capto adaptor for CoroBore XL

Cx-391.XL



l_1 = programming length

Coupling size	Ordering code	Coolant ¹⁾	Dimensions, mm, inch							
			D_{5m}	d_{m_t}	d_{hc}	D_{5t}	l_1	D_{th}	l_c	
C8	C8-391.XL-40 065	1	80	40	101.6	160	65	M16	25	6.7
C10	C10-391.XL-40 070	1	3.150	1.575	4.000	6.299	2.559	M16	0.984	6.7
			100	40	101.6	160	70		25	8.3
			3.937	1.575	4.000	6.299	2.756		0.984	8.3

0 = no coolant, 1 = coolant through centre, 6 = coolant through flange, 7 = coolant through centre and through flange



D

E

F

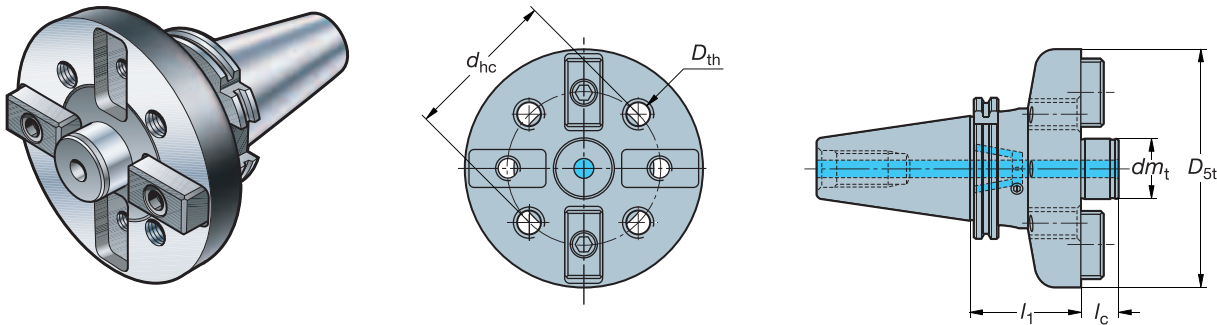
G

J

Adaptor for CoroBore XL

Solid holders

392.644XL
392.646XL
A392.645XL



Metric version

Machine design	Taper	Ordering code	Coolant ¹⁾	Dimensions						
				dm_t	d_{hc}	D_{st}	l_1	D_{th}	l_c	
ISO7388.1	50	392.644XL-5040 075	7	40	101.6	160	75	M16	25	8.5
MAS/BT403	50	392.646XL-5040 080	7	40	101.6	160	80	M16	25	8.9

1) 0 = no coolant, 1 = coolant through centre, 6 = coolant through flange, 7 = coolant through centre and through flange

Inch version

Machine design	Taper	Ordering code	Coolant ¹⁾	Dimensions						
				dm_t	d_{hc}	D_{st}	l_1	D_{th}	l_c	
CAT V-Flange	50	A392.645XL-5040 075	7	1.575	4.000	6.299	2.953	M16	0.984	8.2

1) 0 = no coolant, 1 = coolant through centre, 6 = coolant through flange, 7 = coolant through centre and through flange

All CoroBore XL solid holders have ground backside of flange and threads for the option to mount a shim to increase stability if needed. Shim needs to be ordered separately and ground to fit the specific machine and holder, see accessories page F123.

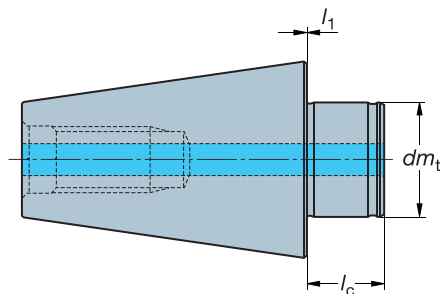
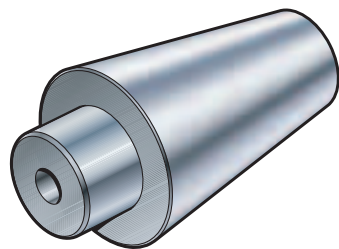


Adaptor for CoroBore XL

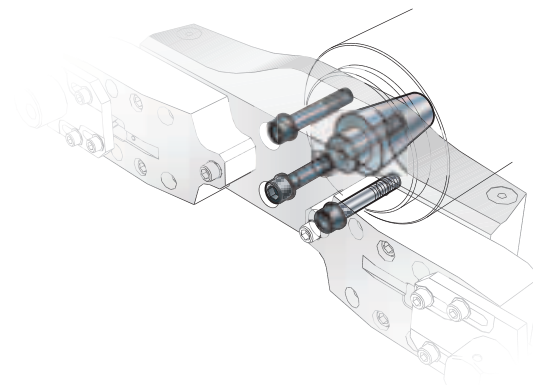
Centering plug

392.647XL

A392.647XL



Mounting of bridge



l_1 = programming length

Metric version

Machine design	Taper	Ordering code	Coolant ¹⁾	Dimensions			
				dm_t	l_1	l_c	
ISO7388.1/MAS-BT 403	50	392.647XL-5040	1	40	0	25	1.9

¹⁾ 0 = no coolant, 1 = coolant through centre, 6 = coolant through flange, 7 = coolant through centre and through flange

Inch version

Machine design	Taper	Ordering code	Coolant ¹⁾	Dimensions			
				dm_t	l_1	l_c	
CAT V-Flange	50	A392.647XL-5040 ²⁾	1	1.575	.000	0.984	4.2

¹⁾ 0 = no coolant, 1 = coolant through centre, 6 = coolant through flange, 7 = coolant through centre and through flange

²⁾ Screws with inch threads have to be ordered separately, see accessories page F123.



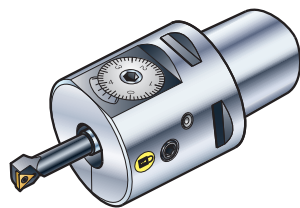
J3



F123

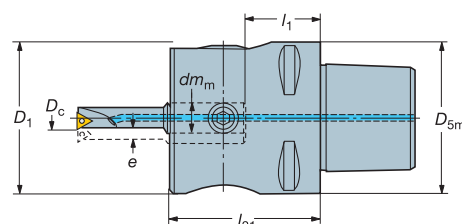
Fine boring head

Coromant Capto® / HSK



Boring range:
Boring depth:
Hole tolerance:
Diameter adjustment:
Cutting fluid:

3-36 mm (.118-1.417 inch)
109 mm (4.29 inch)
IT6
0.002 mm (.00008 inch)
Internal



l_1 = programming length

Boring diameter			Dimensions, mm (inch)						
mm (inch)									
D_c min – max	Coupling size	Ordering code	Weight	dm_m	D_{5r}	D_1	l_1	l_{21}	e_{max}
Coromant Capto®									
3–26 (.118-1.024)	C4	C4-391.37A-12 055B	0.6 1.3	12 .472	40 1.575	50 1.969	31 1.220	55 2.165	3 .118
3–26 (.118-1.024)	C5	C5-391.37A-12 048B	0.8 1.8	12 .472	50 1.969	50 1.969	24 .945	48 1.890	3 .118
3–32 (.118-1.260)		C5-391.37A-16 070A	1.4 3.1	16 .630	50 1.969	63 2.480	11 .433	70 2.756	3 .118
3–36 ¹⁾ (.118-1.417)		C5-391.37A-20 085A	2.6 5.7	20 .787	50 1.969	80 3.150	13 .512	85 3.346	5 .197
3–32 (.118-1.260)	C6	C6-391.37A-16 075A	1.6 3.5	16 .630	63 2.480	63 2.480	16 .630	75 2.953	3 .118
3–36 ¹⁾ (.118-1.417)		C6-391.37A-20 085A	2.8 6.2	20 .787	63 2.480	80 3.150	13 .512	85 3.346	5 .197
HSK									
3–26 (.118-1.024)	HSK 63-A/C	392.410 37A-63 12 063B	1.6 3.5	12 .472	63 2.480	50 1.969	39 1.535	63 2.480	3 .118
3–32 (.118-1.260)		392.410 37A-63 16 085A	1.8 4.0	16 .630	63 2.480	63 2.480	26 1.024	85 3.346	3 .118
3–36 ¹⁾ (.118-1.417)		392.410 37A-63 20 100A	3.0 6.6	20 .787	63 2.480	80 3.150	28 1.102	100 3.937	5 .197
3–26 (.118-1.024)	HSK 100-A/C	392.410 37A-100 12 076B	2.7 5.9	12 .472	100 3.937	50 1.969	52 2.047	76 2.992	3 .118

¹⁾ Minimum diameter achieved by using sleeve and boring bar with $d_{mm}=16$ mm (.787 inch)

Sleeves for fine boring heads type 391.37A

Dimensions, mm (inch)		
dm_t	dm_m	l_1
	dm_t	Ordering code
	16	393.37A-20 16 072
	.630	
	16	393.37A-25 16 088
	.630	

Warning: Follow handling instructions in the boxes.

Tightening torques

Coromant Capto®

C4= 40-50 Nm (30-37 ft.lbs)

C5= 90-100 Nm (67-74 ft.lbs)

C6= 160-180 Nm (118-133 ft.lbs)

Screw for boring bar:

dm_m 12 & 16 mm (.472 & .630 inch)= 10 Nm (7 ft.lbs)

dm_m 20 mm (.787 inch)= 18 Nm (13 ft.lbs)

Locking screw:

dm_m 12 & 16 mm (.472 & .630 inch)= 8 Nm (6 ft.lbs)



G6



F124



F96

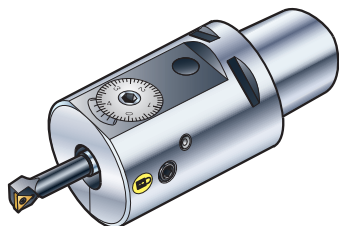


F2

High speed fine boring head

With adjustable counterweight

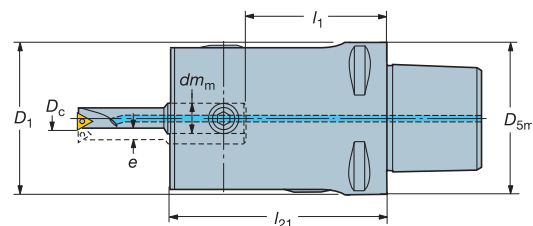
Coromant Capto® / HSK



Boring range: 3-26 mm (.118-1.024 inch)
 Boring depth: ≤ 60 mm (2.362 inch)
 Hole tolerance: IT6

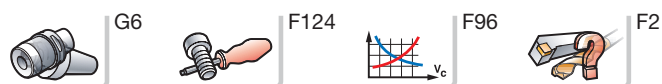
Diameter adjustment: 0.002 mm (.00008 inch)
 Cutting fluid: Internal

Max rotation speed: 20 000 rev/min



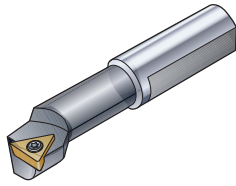
l_1 = programming length

Boring diameter			Dimensions, mm (inch)						
mm (inch) D_c min – max	Coupling size	Ordering code		dm_m	D_{5m}	D_1	l_1	l_{21}	e_{max}
		Coromant Capto®							
3–26 .118–1.024	C5	C5-391.37B-12 070B	1.0 (2.2)	12 .472	50 1.969	50 1.969	46 1.811	70 2.756	3 .118
		HSK							
3–26 .118–1.024	HSK 63-A/C	392.410 37B-63 12 090B	1.4 (3.1)	12 .472	63 2.480	50 1.969	66 2.598	90 3.543	3 .118

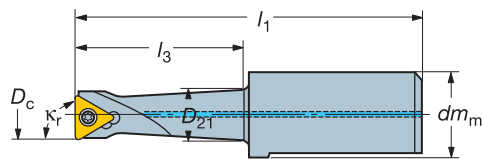


Boring bars for fine boring head

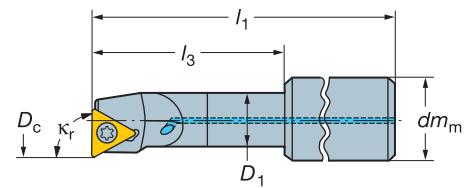
Boring bar R429



R429.90/R429U



R429.91


 l_1 = programming length

Boring diameter ¹⁾ mm (inch) <i>D_c</i> min – max	Max. boring depth		Dimensions, mm (inch)							 Entering angle <i>K_r</i>	Insert type ²⁾⁵⁾
	<i>l₃</i>	Ordering code	Weight	<i>dm_m</i>	<i>D₁</i>	<i>D₂₁</i>	<i>l₁</i>	<i>λ</i> °	Lead angle		
		Steel bar									
8.0 – 14.0 .315 – .551	24 .945	R429.90-08-024-06-AB	0.02 .044	12 .472	–	7.4 .291	50 1.969	–12	–	90° 0°	TC..06 TC.. 5/32
11.0 – 17.0 .433 – .669	33 1.299	R429.90-11-033-06-AC	0.03 .066	12 .472	–	10.4 .409	59 2.323	–9	+	90° 0°	TC..06 TC.. 5/32
14.0 – 20.0 .551 – .787	40 1.575	R429.90-14-040-09-AC	0.04 .088	12 .472	–	11.2 .441	65 2.559	–8	+	90° 0°	TC..09 TC.. 7/32
17.0 – 23.0 .669 – .906	40 1.575	R429.90-17-040-09-AC	0.04 .088	12 .472	–	11.0 .433	65 2.559	–6	+	90° 0°	TC..09 TC.. 7/32
20.0 – 26.0 .787 – 1.024	40 1.575	R429.90-20-040-09-AC	0.04 .088	12 .472	–	11.0 .433	65 2.559	–6	+	90° 0°	TC..09 TC.. 7/32
8.0 – 14.0 .315 – .551	24 .945	R429U-A08-024TP06A	0.02 .044	12 .472	–	7.4 .291	50 1.969	–8	+	92° –2°	TP.06 TP. 5/32
11.0 – 17.0 .433 – .669	33 1.299	R429U-A11-033TP06A	0.03 .066	12 .472	–	10.4 .409	59 2.323	–5	+	92° –2°	TP.06 TP. 5/32
14.0 – 20.0 .551 – .787	40 1.575	R429U-A14-040TP09A	0.04 .088	12 .472	–	11.2 .441	65 2.559	–4	+	92° –2°	TP.09 TP. 7/32
17.0 – 23.0 .669 – .906	40 1.575	R429U-A17-040TP09A	0.04 .088	12 .472	–	11.0 .433	65 2.559	–2	+	92° –2°	TP.09 TP. 7/32
20.0 – 26.0 .787 – 1.024	40 1.575	R429U-A20-040TP09A	0.04 .088	12 .472	–	11.0 .433	65 2.559	–2	+	92° –2°	TP.09 TP. 7/32
8.0 – 14.0 .315 – .551	40 1.575	R429U-A12-08040TP06A	0.03 .066	12 .472	–	7.4 .291	66 2.598	–8	+	92° –2°	TP.06 TP. 5/32
11.0 – 17.0 .433 – .669	55 2.165	R429U-A12-11055TP06A	0.04 .088	12 .472	–	10.4 .409	81 3.189	–5	+	92° –2°	TP.06 TP. 5/32
14.0 – 20.0 .551 – .787	60 2.362	R429U-A12-14060TP09A	0.06 .132	12 .472	–	11.6 .457	86 3.386	–4	+	92° –2°	TP.09 TP. 7/32
17.0 – 23.0 .669 – .906	60 2.362	R429U-A12-17060TP09A	0.06 .132	12 .472	–	11.6 .457	86 3.386	–2	+	92° –2°	TP.09 TP. 7/32
20.0 – 26.0 .787 – 1.024	60 2.362	R429U-A12-20060TP09A	0.07 .154	12 .472	–	11.6 .457	86 3.386	–2	+	92° –2°	TP.09 TP. 7/32
8.0 – 14.0 .315 – .551	40 1.575	R429U-A16-08040TP06A	0.10 .220	16 .630	–	7.4 .291	101 3.976	–8	+	92° –2°	TP.06 TP. 5/32
11.0 – 17.0 .433 – .669	55 2.165	R429U-A16-11055TP06A	0.11 .243	16 .630	–	10.4 .409	116 4.567	–5	+	92° –2°	TP.06 TP. 5/32
14.0 – 20.0 .551 – .787	70 2.756	R429U-A16-14070TP09A	0.12 .265	16 .630	–	11.6 .457	131 5.157	–4	+	92° –2°	TP.09 TP. 7/32
17.0 – 23.0 .669 – .906	80 3.150	R429U-A16-17080TP09A	0.13 .287	16 .630	–	15.6 .614	141 5.551	–2	+	92° –2°	TP.09 TP. 7/32
20.0 – 26.0 .787 – 1.024	80 3.150	R429U-A16-20080TP09A	0.13 .287	16 .630	–	15.6 .614	141 5.551	–2	+	92° –2°	TP.09 TP. 7/32
23.0 – 29.0 .906 – 1.142	80 3.150	R429U-A16-23080TP09A	0.14 .309	16 .630	–	15.6 .614	141 5.551	0	+	92° –2°	TP.09 TP. 7/32
26.0 – 32.0 1.024 – 1.260	80 3.150	R429U-A16-26080TP09A	0.14 .309	16 .630	–	15.6 .614	141 5.551	0	+	92° –2°	TP.09 TP. 7/32

¹⁾ With insert radius $r_c = 0.2$ mm (.0079 inch)

²⁾ Use insert radius $r_c = 0.4$ mm (.0157 inch)

³⁾ Solid bar with ground geometry.

⁴⁾ When using sleeves the boring range is $D_{c\min} + 10$ mm (.394 inch)

⁵⁾ TC..x = CoroTurn® 107
TP..x = CoroTurn® 111

Continued...

Tightening torques for insert screws

Size:

06 (5/32) = 0.6 Nm (.44 ft.lbs)

09 (7/32) = 0.8 Nm (.59 ft.lbs)

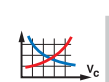
11 (1/4) = 0.9 Nm (.66 ft.lbs)



G6



F124



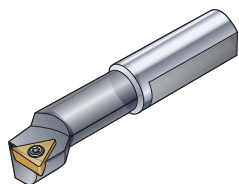
F96



F2

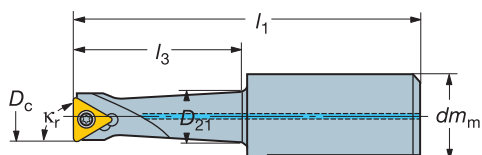
Boring bars for fine boring head

Boring bar R429

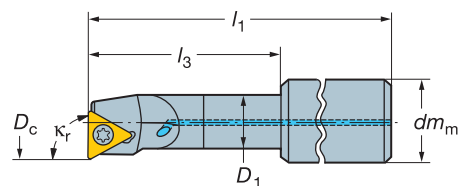


Continued...

R429.90/R429U



R429.91



Boring diameter ¹⁾ mm (inch)	Max. boring depth	Ordering code	Weight	dm _m	D ₁	D ₂₁	l ₁	λ°	Entering angle κ _r	Insert type ²⁾⁵⁾
D _c min – max	l ₃								Lead angle	
8.0 – 14.0 ⁴⁾	28	R429U-A16-08028TC06A	0.10	16	–	7.4	89	–12	92°	TC...06
.315 – .551	1.102		.220	.630	–	.291	3.504	–2°	92°	TC.. 5/32
11.0 – 17.0 ⁴⁾	39	R429U-A16-11039TC06A	0.11	16	–	10.4	100	–9	92°	TC...06
.433 – .669	1.535		.243	.630	–	.409	3.937	–2°	92°	TC.. 5/32
14.0 – 20.0 ⁴⁾	49	R429U-A16-14049TC09A	0.13	16	–	13.4	110	–8	92°	TC...09
.551 – .787	1.929		.287	.630	–	.528	4.331	–2°	92°	TC.. 7/32
17.0 – 23.0 ⁴⁾	56	R429U-A16-17056TC09A	0.16	16	–	15.6	117	–6	92°	TC...09
.669 – .906	2.205		.353	.630	–	.614	4.606	–2°	92°	TC.. 7/32
20.0 – 26.0 ⁴⁾	56	R429U-A16-20056TC09A	0.16	16	–	15.6	117	–6	92°	TC...09
.787 – 1.024	2.205		.353	.630	–	.614	4.606	–2°	92°	TC.. 7/32
23.0 – 29.0 ⁴⁾	56	R429U-A16-23056TC09A	0.16	16	–	15.6	117	–4	92°	TC...09
.906 – 1.142	2.205		.353	.630	–	.614	4.606	–2°	92°	TC.. 7/32
26.0 – 32.0 ⁴⁾	56	R429U-A16-26056TC09A	0.16	16	–	15.6	117	–2	92°	TC...09
1.024 – 1.260	2.205		.353	.630	–	.614	4.606	–2°	92°	TC.. 7/32
17.0 – 27.0 ⁴⁾	60	R429U-A20-17060TC09A	0.24	20	–	16.4	134	–6	92°	TC...09
.669 – 1.063	2.362		.529	.787	–	.646	5.276	–2°	92°	TC.. 7/32
20.0 – 30.0 ⁴⁾	70	R429U-A20-20070TC09A	0.27	20	–	19.4	144	–6	92°	TC...09
.787 – 1.181	2.756		.595	.787	–	.764	5.669	–2°	92°	TC.. 7/32
23.0 – 33.0 ⁴⁾	70	R429U-A20-23070TC09A	0.28	20	–	19.6	144	–4	92°	TC...09
.906 – 1.299	2.756		.617	.787	–	.772	5.669	–2°	92°	TC.. 7/32
26.0 – 36.0 ⁴⁾	70	R429U-A20-26070TC09A	0.28	20	–	19.6	144	–2	92°	TC...09
1.024 – 1.417	2.756		.617	.787	–	.772	5.669	–2°	92°	TC.. 7/32
Carbide bar										
3.0 – 9.0	13.5	R429.90-03-013-01-CB H10F	0.02	12	–	2.6	40	0	90°	–3)
.118 – .354	.531		.044	.472	–	.102	1.575	0°	90°	–3)
5.0 – 11.0	21	R429.90-05-021-02-CB H10F	0.02	12	–	4.0	48	0	90°	–3)
.197 – .433	.827		.044	.472	–	.157	1.890	0°	90°	–3)
3.0 – 9.0	15	R429U-E16-0301501A	0.08	16	–	2.6	76	0	90°	–3)
.118 – .354	.591		.176	.630	–	.102	2.992	0°	90°	–3)
5.0 – 11.0	25	R429U-E16-0502502A	0.08	16	–	4.0	86	0	90°	–3)
.197 – .433	.984		.176	.630	–	.157	3.386	0°	90°	–3)
9.0 – 15.0	49	R429.91-06-049-06-AA	0.10	16	6.0	–	90	–10	91°	TC..06
.354 – .591	1.929		.220	.630	.236	–	3.543	–1°	91°	TC.. 5/32
11.8 – 17.8	59	R429.91-08-059-06-AA	0.10	16	8.0	–	100	–6	91°	TC..06
.465 – .701	2.323		.220	.630	.315	–	3.937	–1°	91°	TC.. 5/32
14.0 – 20.0	79	R429.91-10-079-09-AA	0.20	16	10.0	–	120	–8	91°	TC..09
.551 – .787	3.110		.441	.630	.394	–	4.724	–1°	91°	TC.. 7/32
18.0 – 24.0	99	R429.91-12-099-09-AA	0.30	16	12.0	–	140	–6	91°	TC..09
.709 – .945	3.898		.661	.630	.472	–	5.512	–1°	91°	TC.. 7/32
22.0 – 28.0	109	R429.91-16-109-11-AA	0.40	16	16.0	–	150	–4	91°	TC..1102
.866 – 1.102	4.291		.882	.630	.630	–	5.906	–1°	91°	TC..2(1.5)

¹⁾ With insert radius $r_c = 0.2$ mm (.0079 inch)

²⁾ Use insert radius $r_c = 0.4$ mm (.0157 inch)

³⁾ Solid bar with ground geometry.

⁴⁾ When using sleeves the boring range is $D_{c\min} + 10$ mm (.394 inch)

⁵⁾ TC..x = CoroTurn® 107

TP..x = CoroTurn® 111

Continued...

Tightening torques for insert screws

Size:

06 (5/32) = 0.6 Nm (.44 ft.lbs)

09 (7/32) = 0.8 Nm (.59 ft.lbs)

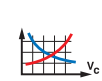
11 (1/4) = 0.9 Nm (.66 ft.lbs)



G6



F124

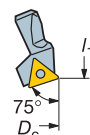
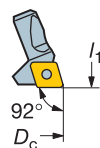
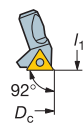
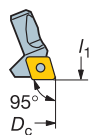


F96



F2

Cartridges for boring tool 391.38A/39A



Entering angle:
Lead angle:

95°
-5°

92°
-2°

92°
-2°

75°
15°

		Insert type ¹⁾			Ordering code
Entering angle κ_r	Lead angle	ISO	ANSI	iC	Cartridge
92°	-2°	CC...06	CC...2(1.5)	3/8	391.38A-1-C06A
92°	-2°	TC...09	TC...1.8(1.5)	7/32	391.38A-1-T09A
92°	-2°	TC...09	TC...1.8(1.5)	7/32	391.38A-1A-T09A³⁾
75°	15°	TC...09	TC...1.8(1.5)	7/32	391.38B-1-T09A
92°	-2°	CP...06	CP...2(1.5)	1/4	391.38U-1CP06A
92°	-2°	TP...09	TP...1.8(1.5)	7/32	391.38U-1TP09A
92°	-2°	TP...09	TP...1.8(1.5)	7/32	391.38U-1ATP09A³⁾
92°	-2°	CC...09	CC...3(2.5)	1/4	391.38A-2-C09A²⁾
92°	-2°	TC...1103	TC...22	1/4	391.38U-2TC11A
92°	-2°	TC...1103	TC...22	1/4	391.38U-2ATC11A³⁾
95°	-5°	CC...09	CC...3(2.5)	3/8	391.38L-2CC09A
75°	15°	TC...1103	TC...22	1/4	391.38K-2TC11A
92°	-2°	TP...11	TP...22	1/4	391.38U-2TP11A
92°	-2°	TP...11	TP...22	1/4	391.38U-2ATP11A³⁾

¹⁾ Inserts are ordered separately.

²⁾ Cartridge 391.38A-2-C09A extends the l_1 dimension by 3 mm (.118 inch)

³⁾ Extended clearance, plus 3 mm (.118 inch) on dia. Recommended for long chipping materials, or when coolant is not possible to use.

Spare parts insert clamping

Insert size			
iC	iC	Screw for insert	Key (Torx Plus) ⁴⁾
1/4		5513 020-03	5680 046-03 (7IP)
3/8		5513 020-09	5680 046-02 (15IP)
	7/32	5513 020-05	5680 046-03 (7IP)
	1/4	5513 020-03	5680 046-03 (7IP)

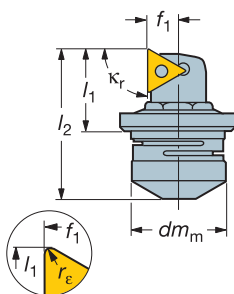
⁴⁾ Accessories, must be ordered separately



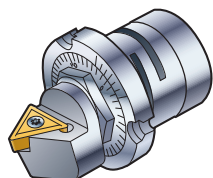
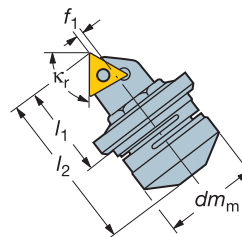
F59

T-Max U fine boring units

Straight mounting
 $\kappa_r = 90^\circ$
Lead angle 0°



Angular mounting
 $\kappa_r = 90^\circ$
 0°



Left hand version shown

Right hand version shown

Right hand version shown

	Entering angle κ_r	Lead angle	Insert type ¹⁾		iC	Ordering code	Dimensions, mm (inch)						Cartridge	
			ISO	ANSI			dm_m	$l_1^{2)}$	l_2	$f_1^{2)}$	$D_{min}^{3)}$	$\lambda^{4)}$	R	L
						Angular mounting								
	90°	0°	CC..06 02	CC..2 (1.5)	1/4	R/L148C-31-06 02	16 (.630)	14.3 (.563)	25.15 (.990)	0.45 (.018)	25.5 (.992)	-3°	R148D-31-06 02	L148D-31-06 02
	90°	0°	TC..06 T1	TC..1.2 (1.2)	5/32	L148C-31-06 T1	16 (.630)	14.3 (.563)	25.0 (.984)	0.2 (.008)	24.8 (.976)	0°	-	L148D-31-06 T1
	90°	0°	TC..09 02	TC..1.8 (1.5)	7/32	R/L148C-32-09 02	20 (.787)	19.1 (.752)	33.7 (1.327)	0.9 (.035)	32.5 (1.280)	0°	R148D-32-09 02	L148D-32-09 02
	90°	0°	TC..11 03	TC..22	1/4	R/L148C-33-11 03	22 (.866)	23.0 (.906)	45.3 (1.783)	1.1 (.043)	42.0 (1.654)	0°	-	L148D-33-11 03
	90°	0°	TC..16 T3	TC..3 (2.5)	3/8	R/L148C-34-16 T3	32 (1.260)	33.3 (1.311)	62.3 (2.453)	1.2 (.047)	59.4 (2.339)	0°	R148D-34-16 T3	L148D-34-16 T3
						Straight mounting								
	90°	0°	CC..06 02	CC..2 (1.5)	1/4	R/L148C-11-06 02	16 (.630)	13.3 (.524)	24.1 (.949)	5.1 (.201)	27.0 (1.063)	-3°	R148D-11-06 02	L148D-11-06 02
	90°	0°	TC..09 02	TC..1.8 (1.5)	7/32	R/L148C-12-09 02	20 (.787)	18.3 (.720)	32.9 (1.295)	6.3 (.248)	36.5 (1.437)	0°	R148D-12-09 02	L148D-12-09 02
	90°	0°	TC..11 03	TC..22	1/4	R/L148C-13-11 03	22 (.866)	22.1 (.870)	44.3 (1.744)	7.2 (.283)	48.5 (1.909)	0°	-	L148D-13-11 03
	90°	0°	TC..16 T3	TC..3 (2.5)	3/8	R/L148C-14-16 T3	32 (1.260)	32.0 (1.260)	62.7 (2.469)	10.3 (.406)	68.4 (2.693)	0°	-	-

1) Inserts are ordered separately.

2) To sharp corner ($r_e = 0.0$) and screwed in cartridge.

3) Min hole diameter, calculated on largest nose radius available.

4) λ = Angle of inclination

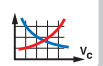
Ordering example: 1 piece L148C-31-06 T1
R = Right hand, L = Left hand



F59



F125

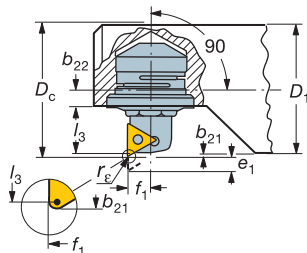


F96

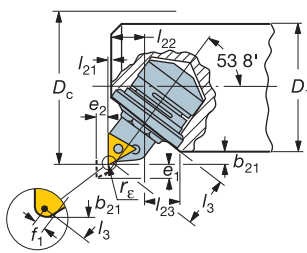
Mounting dimensions for T-MAX U fine boring units

R/L 148C

Straight mounting

 $K_r = 90^\circ (0^\circ)$


Angular mounting

 $K_r = 90^\circ (0^\circ)$


Left hand version shown

Feed direction	Δ iC	Insert radius r_E	Dimensions, mm (inch)										
			D_1 min	D_c min	b_{21} min	e_1 max	e_2 max	b_{22} min	l_3 min ¹⁾	l_{21}	l_{22}	l_{23}	f_1
Straight mounting $K_r = 90^\circ$ Lead angle 0°	06 1/4	0.2 (.008)		27.9 (1.098)	0.60 (.024)				9.8 (.386)				
		0.4 (.016)	26.0 (1.024)	27.6 (1.087)	0.55 (.022)	2.5 (.098)	—	3.60 (.142)	9.6 (.378)	—	—	—	5.1 (.201)
		0.8 (.031)		27.0 (1.063)	0.50 (.020)				9.1 (.358)				
		0.2 (.008)		37.4 (1.472)	1.45 (.057)				13.95 (.549)				
	09 7/32	0.4 (.016)	34.5 (1.358)	37.1 (1.461)	1.30 (.051)	3.5 (.138)	—	4.55 (.179)	13.6 (.535)	—	—	—	6.3 (.248)
		0.8 (.031)		36.5 (1.437)	1.00 (.039)				12.9 (.508)				
		0.2 (.008)		49.4 (1.945)	1.45 (.057)				16.75 (.659)				
		0.4 (.016)	46.5 (1.831)	49.1 (1.933)	1.30 (.051)	6 (.236)	—	7.75 (.305)	16.4 (.646)	—	—	—	7.2 (.283)
	11 1/4	0.8 (.031)		48.5 (1.909)	1.00 (.039)				15.7 (.618)				
		0.4 (.016)		69.6 (2.740)	1.30 (.051)				25.0 (.984)				
Angular mounting $K_r = 90^\circ$ Lead angle 0°	16 3/8	0.8 (.031)	67.0 (2.638)	69.0 (2.717)	1.00 (.039)	10 (.394)	—	9.40 (.370)	24.3 (.957)	—	—	—	10.3 (.406)
		1.2 (.047)		68.4 (2.693)	0.70 (.028)				23.6 (.929)				
		0.2 (.008)		26.2 (1.032)	1.70 (.067)				11.0 (.433)				0.4 (.016)
		0.4 (.016)	22.0 (.866)	25.9 (1.020)	1.65 (.065)	2 (.079)	1.5 (.059)	—	10.7 (.421)	0.5 (.020)	6.60 (.260)	9.55 (.376)	0.4 (.016)
	06 5/32	0.8 (.031)		25.3 (.996)	1.60 (.063)				10.1 (.398)				0.45 (.018)
		0.2 (.008)		25.7 (1.012)	1.50 (.059)				10.9 (.429)				0.4 (.016)
		0.4 (.016)	22.0 (.866)	25.4 (1.000)	1.45 (.057)	2 (.079)	1.5 (.059)	—	10.6 (.417)	0.5 (.020)	6.60 (.260)	9.55 (.376)	0.4 (.016)
		0.8 (.031)		24.8 (.976)	1.40 (.055)				10.0 (.394)				0.45 (.018)
	09 7/32	0.2 (.008)		33.4 (1.314)	2.45 (.096)				14.9 (.587)				0.95 (.037)
		0.4 (.016)	28.5 (1.122)	33.1 (1.303)	2.30 (.091)	2.8 (.110)	2.1 (.083)	—	14.5 (.571)	0.5 (.020)	9.40 (.370)	12.15 (.478)	1.0 (.039)
		0.8 (.031)		32.5 (1.280)	2.00 (.079)				13.7 (.539)				1.1 (.043)
		0.2 (.008)		42.9 (1.689)	2.45 (.096)				17.6 (.693)				1.15 (.045)
	11 1/4	0.4 (.016)	38.0 (1.496)	42.6 (1.677)	2.30 (.091)	4.8 (.189)	3.6 (.142)	—	17.2 (.677)	0.5 (.020)	11.20 (.441)	14.85 (.585)	1.2 (.047)
		0.8 (.031)		42.0 (1.654)	2.00 (.079)				16.4 (.646)				1.3 (.051)
		0.4 (.016)		60.6 (2.386)	2.80 (.110)				26.2 (1.031)				1.3 (.051)
		0.8 (.031)	55.0 (2.165)	60.0 (2.362)	2.50 (.098)	8 (.315)	6.0 (.236)	—	25.4 (1.000)	0.5 (.020)	16.65 (.656)	23.70 (.933)	1.4 (.055)
	16 3/8	1.2 (.047)		59.4 (2.339)	2.20 (.087)				24.6 (.969)				1.5 (.059)

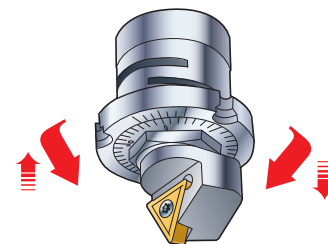
¹⁾ On completely screwed in cartridge.

Setting the boring unit R/L148C

T-Max fine boring units are precision tools for mounting in special tools capable of machining close tolerances.

Features:

- Can be mounted in blind holes
- Adjustment is made from the front
- The units are self-locking i.e. there is no need for unlocking before or locking after setting
- CoroTurn™ 107 screw clamp design



Turning the adjusting nut sets the bore diameter. The nut has a scale where each division is equivalent to .0004 inch change of radial depth of cut.

With the exception of the smallest size, all units have vernier scales on the collar, which facilitates radial adjustments of .00004 inch.

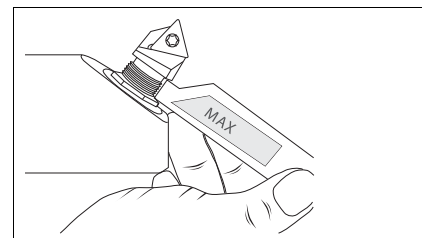
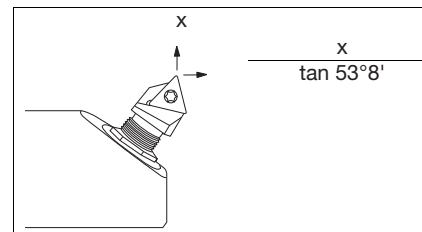
Please note:

- When setting a unit, mounted in angular position, the axial position changes equal to radial movement/ $\tan 53^\circ 8'$.

When designing special tools, please calculate the nominal diameter to be machined with the unit set to the centre of the adjustment range, e_1 . This makes it possible to adjust the nominal bore plus and minus.

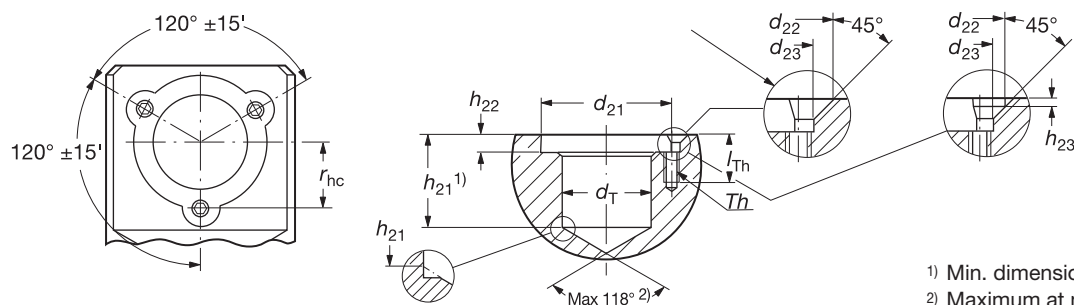
- Never unscrew the cartridge further than indicated by the tongue of the setting key for the unit concerned. If the limit is exceeded the unit can not be repaired.

The dimensions and tolerances in the table below must be adhered to for the units to be able to function.



Mounting dimensions for T-MAX U fine boring units

Applies to units with 16 mm (.630 inch) cutting edge length, 3/8 iC



1) Min. dimension. Can be larger if design allows.

2) Maximum at min. dimension.

1) Min. dimension. Can be larger if design allows.

2) Maximum at min. dimension.

		Dimensions, mm (inch)									
iC		d_T H7	$d_{21}^{(1)}$	$d_{22}^{(1)}$	d_{23}	$h_{21}^{(2)}$	$h_{22}^{(3)}$	$h_{23}^{(1)}$	l_{Th}	r_{hc}	T_h
06	5/32	16 (.630)	19 (.748)	4.6 (.181)	3.2 (.126)	11.5 (.453)	2.8 (.110)	1.6 (.063)	9 (.354)	9.65 ± 0.02 (.380 ± .0008)	M3
09	7/32	20 (.787)	25 (.984)	4.6 (.181)	3.2 (.126)	15.5 (.610)	4.0 (.157)	1.6 (.063)	9 (.354)	12.50 ± 0.05 (.492 ± .002)	M3
11	1/4	22 (.866)	30 (1.181)	6.5 (.256)	4.3 (.169)	24.0 (.945)	5.0 (.197)	1.8 (.071)	13 (.512)	15.40 ± 0.05 (.606 ± .002)	M4
16	3/8	32 (1.260)	46 (1.811)	11.9 (.469)	5.4 (.213)	33.0 (1.299)	6.3 (.248)	—	16 (.630)	23.00 ± 0.05 (.906 ± .002)	M5
06	1/4	16 (.630)	19 (.748)	4.6 (.181)	3.2 (.126)	11.5 (.453)	2.8 (.110)	1.6 (.063)	9 (.354)	9.65 ± 0.02 (.380 ± .0008)	M3

1) +0.2 (+.004)

– 0 (–0)

2) +0.2 (+.008)

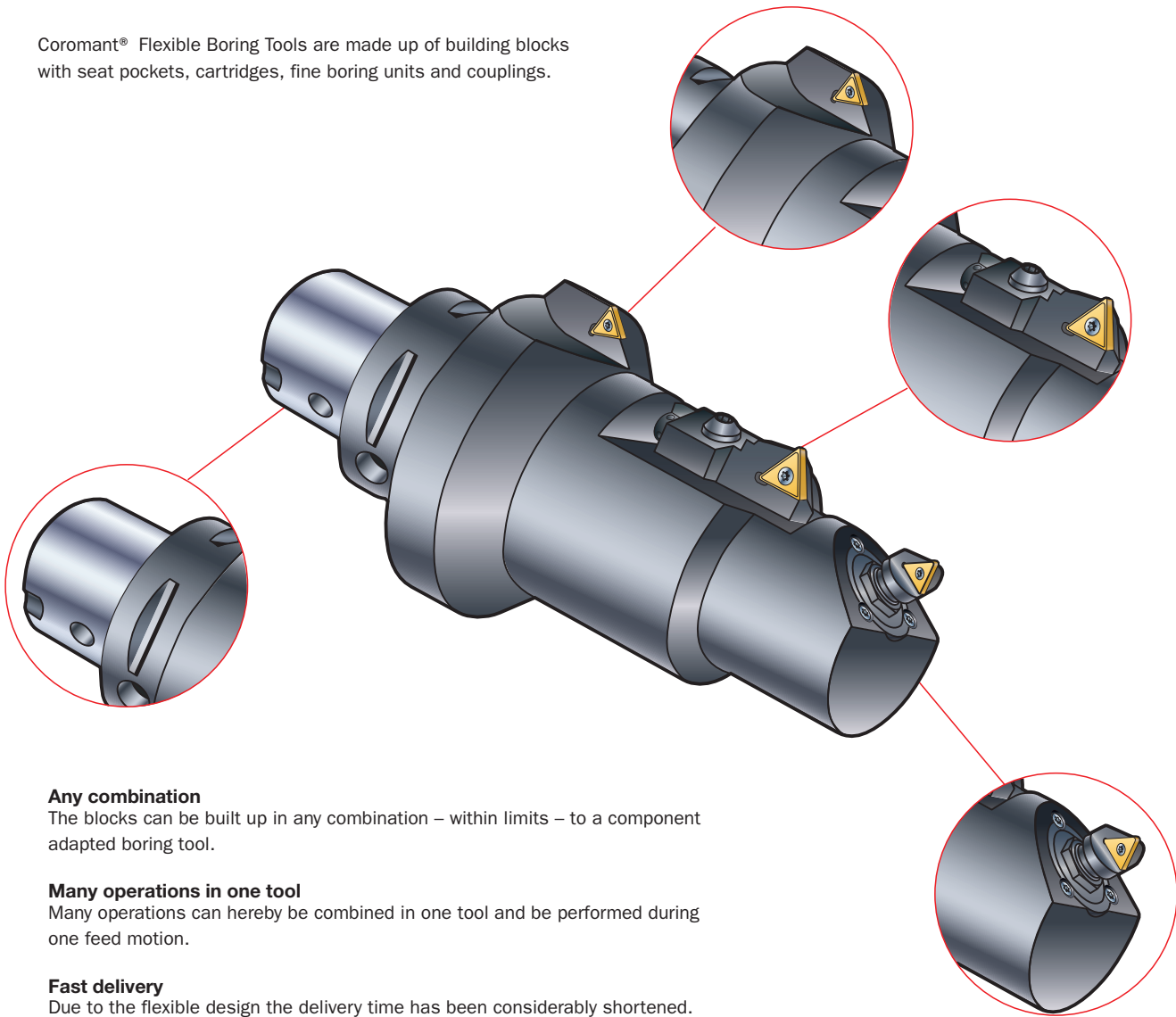
– 0 (–0)

3) ±0.2 (±.008)

Coromant flexible boring tool

Your concept for boring

Coromant® Flexible Boring Tools are made up of building blocks with seat pockets, cartridges, fine boring units and couplings.

**Any combination**

The blocks can be built up in any combination – within limits – to a component adapted boring tool.

Many operations in one tool

Many operations can hereby be combined in one tool and be performed during one feed motion.

Fast delivery

Due to the flexible design the delivery time has been considerably shortened.

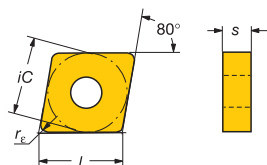
Prices close to standard

Due to the block concept the prices are close to standard.

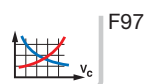
Response within 24 hours

Please contact your local Sandvik Coromant office for more information.

Negative basic-shape inserts – T-Max® P

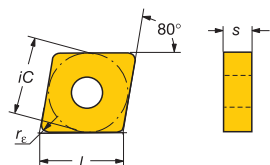
Rhombic 80° [illegible]

★= First choice



Negative basic-shape inserts – T-Max® P

Rhombic 80°

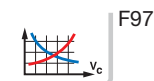


E

		ISO	⏏	iC	P								M								K				N	S								ANSI
					GC	GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC		
Finishing	 CNMG-QF	CNMG 12 04 04-QF	12	1/2					☆	☆																							CNMG 431-QF	
		CNMG 12 04 08-QF							☆	☆																							CNMG 432-QF	
		CNMG 12 04 12-QF							☆	☆																							CNMG 433-QF	
 CNGP	CNGP 12 04 01	12	1/2								☆											☆	★	☆					☆			CNGP 43(0.3)		
	CNGP 12 04 02										☆											☆	★	☆								CNGP 430		
Medium	 CNMG-MF*	CNMG 12 04 04-MF	12	1/2				☆	☆	☆	☆	☆				☆																	CNMG 431-MF	
		CNMG 12 04 08-MF						☆	☆	☆	☆	☆				☆													☆				CNMG 432-MF	
		CNMG 12 04 12-MF						☆	☆	☆	☆	☆																☆					CNMG 433-MF	
		CNMG 12 04 16-MF						☆	☆	☆	☆	☆																☆					CNMG 434-MF	
 CNMG-WMX Wiper	CNMG 12 04 08-WMX	12	1/2			☆	★	☆				★					☆	☆	★														CNMG 432-WMX	
	CNMG 12 04 12-WMX					☆	★	☆				★						☆	☆	★													CNMG 433-WMX	
	CNMG 16 06 08-WMX	16	5/8			☆	★	☆				★						☆	☆	★													CNMG 542-WMX	
	CNMG 16 06 12-WMX					☆	★	☆				★						☆	☆	★													CNMG 543-WMX	
	 CNMG-WM Wiper	CNMG 12 04 08-WM	12	1/2		☆	☆	★	☆	☆			★				☆		☆	★														CNMG 432-WM
		CNMG 12 04 12-WM				☆	☆	★	☆	☆			★					☆		☆	★													CNMG 433-WM
		CNMG 16 06 08-WM	16	5/8			☆	★	☆	☆																								CNMG 542-WM
		CNMG 16 06 12-WM					☆	★	☆	☆																								CNMG 543-WM
 CNMG-PM	CNMG 12 04 04-PM	12	1/2					☆	★	☆																							CNMG 431-PM	
	CNMG 12 04 08-PM				☆	☆	☆	★	☆	☆																							CNMG 432-PM	
	CNMG 12 04 12-PM				☆	☆	☆	★	☆	☆																							CNMG 433-PM	
	CNMG 12 04 16-PM					☆	☆	☆	★	☆																							CNMG 434-PM	
	CNMG 16 06 08-PM	16	5/8			☆	☆	☆	★	☆																							CNMG 542-PM	
	CNMG 16 06 12-PM					☆	☆	☆	★	☆																							CNMG 543-PM	
	CNMG 16 06 16-PM					☆	☆	☆	★	☆																							CNMG 544-PM	
	CNMG 19 06 08-PM	19	3/4			☆	☆	☆	★	☆																							CNMG 642-PM	
	CNMG 19 06 12-PM					☆	☆	☆	★	☆																							CNMG 643-PM	
	CNMG 19 06 16-PM					☆	☆	☆	★	☆																							CNMG 644-PM	
	 CNMG-MM	CNMG 12 04 08-MM	12	1/2								☆	☆	☆	★	☆						☆	☆							☆			CNMG 432-MM	
		CNMG 12 04 12-MM										☆	☆	☆	★	☆																	CNMG 433-MM	
CNMG 12 04 16-MM												☆	☆	★	☆																	CNMG 434-MM		
CNMG 16 06 08-MM		16	5/8									☆	☆	★	☆																	CNMG 542-MM		
CNMG 16 06 12-MM												☆	☆	★	☆																	CNMG 543-MM		
CNMG 16 06 16-MM													★	☆	☆																	CNMG 544-MM		
CNMG 19 06 08-MM		19	3/4										★	☆	☆																	CNMG 642-MM		
CNMG 19 06 12-MM												★	☆	☆	☆																	CNMG 643-MM		
CNMG 19 06 16-MM												★	☆	☆	☆																CNMG 644-MM			

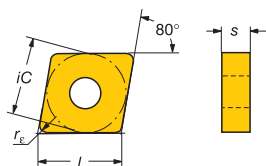
* Dedicated geometry for finishing of gummy materials.

★ = First choice



Negative basic-shape inserts – T-Max® P

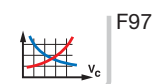
Rhombic 80°



		ISO	Max a_p		iC	P					M					K			N	S					ANSI										
						GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC		GC	GC	GC							
						1515	1525	4205	4215	4225	4235	5015	1115	1125	2015	2025	2035	235	3005	3205	3210	3215	H13A	-		H13A	-	1005	1105	1115	1125	H10A	-	H13A	-
 CNMG-KM	CNMG 12 04 08-KM		12	1/2													☆	☆	★	☆	☆												CNMG 432-KM		
	CNMG 12 04 12-KM																☆	☆	★	☆	☆												CNMG 433-KM		
	CNMG 12 04 16-KM																	☆	★	☆	☆												CNMG 434-KM		
	CNMG 16 06 08-KM		16	5/8														☆	★	☆	☆												CNMG 542-KM		
	CNMG 16 06 12-KM																	☆	★	☆	☆												CNMG 543-KM		
	CNMG 16 06 16-KM																	☆	★	☆	☆												CNMG 544-KM		
	CNMG 19 06 12-KM		19	3/4														☆	★	☆	☆												CNMG 643-KM		
	CNMG 19 06 16-KM																	☆	★	☆	☆												CNMG 644-KM		
		CNMG 12 04 04-SM		12	1/2																				★	☆	☆	☆			☆	☆		CNMG 431-SM	
		CNMG 12 04 08-SM																							★	☆	☆	☆			☆	☆		CNMG 432-SM	
		CNMG 12 04 12-SM																							★	☆	☆	☆			☆	☆		CNMG 433-SM	
		CNMG 16 06 12-SM		16	5/8									☆											★	☆	☆	☆			☆	☆		CNMG 543-SM	
		CNMG 16 06 16-SM												☆											★	☆	☆	☆			☆	☆		CNMG 544-SM	
		CNMG 19 06 16-SM		19	3/4									☆											★	☆	☆	☆			☆	☆		CNMG 644-SM	
		CNMG120408-SMR		12	1/2																				★	☆	☆	☆			☆	☆		CNMG432-SMR	
		CNMG120412-SMR																							★	☆	☆	☆			☆	☆		CNMG433-SMR	
		CNMG120416-SMR																							★	☆	☆	☆			☆	☆		CNMG434-SMR	
 CNMG-QM	CNMG 09 03 04-QM		09	3/8					☆	☆																								CNMG 321-QM	
	CNMG 09 03 08-QM							☆	☆	☆	☆																							CNMG 322-QM	
	CNMG 09 03 12-QM																																	CNMG 323-QM	
	CNMG 12 04 04-QM		12	1/2				☆	☆	☆	☆	☆	☆								☆			☆	☆	☆			☆	☆			CNMG 431-QM		
	CNMG 12 04 08-QM							☆	☆	☆	☆	☆	☆											☆	☆	☆			☆	☆			CNMG 432-QM		
	CNMG 12 04 12-QM							☆	☆	☆	☆	☆	☆											☆	☆	☆			☆	☆			CNMG 433-QM		
	CNMG 12 04 16-QM							☆	☆	☆	☆	☆	☆										☆	☆	☆			☆	☆			CNMG 434-QM			
	CNMG 16 06 04-QM		16	5/8				☆	☆																								CNMG 541-QM		
	CNMG 16 06 08-QM							☆	☆	☆	☆																							CNMG 542-QM	
	CNMG 16 06 12-QM							☆	☆	☆	☆	☆												☆	☆			☆					CNMG 543-QM		
	CNMG 16 06 16-QM							☆	☆																									CNMG 544-QM	
	CNMG 19 06 04-QM		19	3/4				☆	☆																									CNMG 641-QM	
	CNMG 19 06 08-QM							☆	☆	☆	☆																							CNMG 642-QM	
	CNMG 19 06 12-QM							☆	☆	☆	☆	☆												☆	☆			☆					CNMG 643-QM		
	CNMG 19 06 16-QM							☆	☆	☆	☆	☆												☆				☆					CNMG 644-QM		
		CNMG 16 06 08-SM		16	5/8																					★	☆	☆	☆			☆	☆		CNMG 542-SM
		CNMG 19 06 12-SM		19	3/4									☆												★	☆	☆	☆			☆	☆		CNMG 643-SM
 CNMG-SM*	CNMG 12 04 04-SM		12	1/2					☆																									CNMG 431-SM	
	CNMG 12 04 08-SM								☆	☆	☆																							CNMG 432-SM	
	CNMG 12 04 12-SM								☆	☆	☆	☆																						CNMG 433-SM	
	CNMG 16 06 12-SM		16	5/8					☆																									CNMG 543-SM	

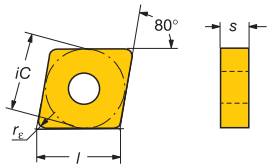
★ = First choice

* Complementary geometry for semi-roughing in steel materials.



Negative basic-shape inserts – T-Max® P

Rhombic 80°



		ISO	IC	IC	P										M										K										N										S										ANSI																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
					1515	1525	4205	4215	4225	4235	5015	1115	1125	2015	2025	2035	235	3005	3205	3210	3215	H13A	H13A	H13A	1005	1105	1115	1125	H10A	H13A	S05F																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
					GC	GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Medium		CNMG 16 06 12-HM	16	5/8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

Negative basic-shape inserts – T-Max® P

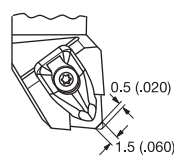
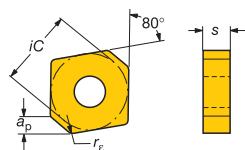
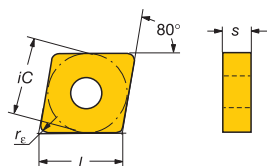
Rhombic 80°

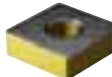
CNMX - SM

The holders taking the CNMX inserts needs to be modified.

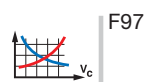
Shims

5322 234-07 for T-Max P lever design holders
5322 234-08 for CoroTurn RC holders



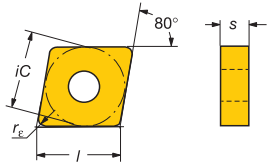
		ISO	Max a_p		iC	P										M					K			N	S					ANSI						
						1515	1525	4205	4215	4225	4235	5015	1115	1125	2015	2025	2035	235	3005	3205	3210	3215	H13A	-	H13A	-	1005	1105	1115		1125	H10A	-	H13A	-	S05F
						GC	GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC		GC	GC	GC	GC	GC	GC
Roughing	 CNMG-KR	CNMG 12 04 08-KR		12	1/2														☆	☆	☆											CNMG 432-KR				
		CNMG 12 04 12-KR																	☆	☆	☆											CNMG 433-KR				
		CNMG 12 04 16-KR																	☆	☆	☆											CNMG 434-KR				
		CNMG 16 06 12-KR		16	5/8														☆	☆	☆											CNMG 543-KR				
		CNMG 16 06 16-KR																	☆	☆	☆											CNMG 544-KR				
		CNMG 19 06 12-KR		19	3/4														☆	☆	☆											CNMG 643-KR				
	CNMG 19 06 16-KR																	☆	☆	☆											CNMG 644-KR					
	 CNMG-KRR	CNMG 12 04 08-KRR		12	1/2														☆	☆	☆											CNMG 432-KRR				
		CNMG 12 04 12-KRR																	☆	☆	☆											CNMG 433-KRR				
		CNMG 12 04 16-KRR																	☆	☆	☆											CNMG 434-KRR				
		CNMG 16 06 12-KRR		16	5/8														☆	☆	☆											CNMG 543-KRR				
		CNMG 16 06 16-KRR																	☆	☆	☆											CNMG 544-KRR				
	 CNMA-KR	CNMA 12 04 04-KR		12	1/2														☆	☆	☆												CNMA 431-KR			
		CNMA 12 04 08-KR																	☆	☆	☆												CNMA 432-KR			
		CNMA 12 04 12-KR																	☆	☆	☆												CNMA 433-KR			
		CNMA 12 04 16-KR																	☆	☆	☆												CNMA 434-KR			
		CNMA 16 06 12-KR		16	5/8														☆	☆	☆												CNMA 543-KR			
		CNMA 16 06 16-KR																	☆	☆	☆												CNMA 544-KR			
		CNMA 19 06 08-KR		19	3/4														☆	☆	☆												CNMA 642-KR			
		CNMA 19 06 12-KR																	☆	☆	☆												CNMA 643-KR			
		CNMA 19 06 16-KR																	☆	☆	☆												CNMA 644-KR			
	CNMA 19 06 24-KR																	☆	☆	☆												CNMA 646-KR				
	 CNMX-SM	CNMX 12 04 A1-SM	1.5	12	1/2																					☆					☆		CNMX 43A1-SM			
		CNMX 12 04 A2-SM	2.5												☆										☆					☆			CNMX 43A2-SM			
	 CNMG160616-SMR	CNMG160616-SMR		16	5/8																												CNMG544-SMR			
																											☆	☆	☆	☆			CNMG 544-SMR			
		CNMG 19 06 12-SMR		19	3/4																						☆	☆	☆	☆			CNMG 643-SMR			
		CNMG190616-SMR																									☆	☆	☆	☆			CNMG644-SMR			
 CNMM-QR	CNMM 12 04 08-QR		12	1/2																												CNMM 432-QR				
	CNMM 12 04 12-QR							☆	☆	☆	☆																					CNMM 433-QR				
	CNMM 12 04 16-QR							☆	☆	☆																						CNMM 434-QR				
	CNMM 16 06 08-QR		16	5/8					☆																							CNMM 542-QR				
	CNMM 16 06 12-QR							☆	☆	☆	☆																					CNMM 543-QR				
	CNMM 16 06 16-QR							☆	☆	☆	☆																					CNMM 544-QR				
	CNMM 16 06 24-QR							☆	☆	☆																						CNMM 546-QR				
	CNMM 19 06 08-QR		19	3/4					☆																							CNMM 642-QR				
	CNMM 19 06 12-QR							☆	☆	☆	☆																					CNMM 643-QR				
	CNMM 19 06 16-QR							☆	☆	☆	☆																					CNMM 644-QR				
	CNMM 19 06 24-QR							☆	☆																								CNMM 646-QR			
	CNMM 25 09 24-QR			25	1				☆	☆																							CNMM 866-QR			

★ = First choice



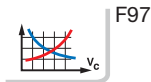
Negative basic-shape inserts – T-Max® P

Rhombic 80°



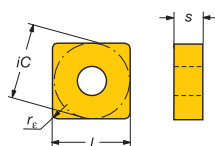
						P										M					K					N	S					ANSI																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
						1515	1525	4205	4215	4225	4235	5015	1115	1125	2015	2025	2035	235	3005	3205	3210	3215	H13A	H13A	1005	1105	1115	1125	H10A	H13A	S05F																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
						GC	GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Roughing	 CNMM-HR	ISO		IC																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													

* Dedicated geometry for steel and stainless steel roughing. ★ = First choice



Negative basic-shape inserts – T-Max® P

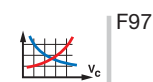
Square



						P							M						K				S								
						GC	GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	-	GC	GC	GC		-	GC	
Finishing	 SNMG-PF	ISO		iC	1515	1525	4205	4215	4225	4235	5015	1115	1125	2015	2025	2035	235	4235	3005	3205	3210	3215	H13A	-	1105	1115	1125	H13A	-	S05F	ANSI
		SNMG 12 04 08-PF	12	1/2	☆	☆	☆	★	☆	☆	☆																				SNMG 432-PF
		SNMG 12 04 12-PF		1/2	☆	☆	☆	★	☆	☆	☆																				SNMG 433-PF
	 SNMG-MF	SNMG 12 04 04-MF	12	1/2									☆	☆	★	☆										☆	☆				SNMG 431-MF
	SNMG 12 04 08-MF		1/2									☆	☆	★	☆										☆	☆				SNMG 432-MF	
Medium	 SNMG-QF	SNMG 12 04 04-QF	12	1/2					☆		☆																				SNMG 431-QF
		SNMG 12 04 08-QF		1/2					☆		☆																				SNMG 432-QF
	 SNMG-MF*	SNMG 12 04 04-MF	12	1/2							☆							☆													SNMG 431-MF
	SNMG 12 04 08-MF		1/2				☆	☆	☆	☆							☆													SNMG 432-MF	
	SNMG 12 04 12-MF		1/2				☆	☆	☆								☆													SNMG 433-MF	
	SNMG 12 04 16-MF		1/2							☆																				SNMG 434-MF	
	 SNMG-PM	SNMG 12 04 04-PM	12	1/2				☆	★	☆																					SNMG 431-PM
		SNMG 12 04 08-PM		1/2			☆	☆	★	☆																					SNMG 432-PM
		SNMG 12 04 12-PM		1/2			☆	☆	★	☆																					SNMG 433-PM
		SNMG 12 04 16-PM		1/2			☆	☆	★	☆																					SNMG 434-PM
		SNMG 15 06 12-PM	15	5/8			☆	☆	★	☆																					SNMG 543-PM
	 SNMG-MM	SNMG 15 06 16-PM		5/8			☆	☆	★																						SNMG 544-PM
		SNMG 12 04 08-MM	12	1/2								☆	☆	☆	★	☆															SNMG 432-MM
		SNMG 12 04 12-MM		1/2									☆	★	★	☆															SNMG 433-MM
		SNMG 12 04 16-MM		1/2									☆	★	★	☆															SNMG 434-MM
		SNMG 15 06 12-MM	15	5/8											★	★	☆														SNMG 543-MM
	 SNMG-KM	SNMG 15 06 16-MM		5/8											★																SNMG 544-MM
		SNMG 12 04 08-KM	12	1/2															☆	☆	★	☆									SNMG 432-KM
		SNMG 12 04 12-KM		1/2															☆	☆	★	☆									SNMG 433-KM
		SNMG 12 04 16-KM		1/2																☆	☆	★	☆								SNMG 434-KM
		SNMG 15 06 12-KM	15	5/8																☆	★	☆	☆								SNMG 543-KM
 SNMG-SM	SNMG 15 06 16-KM		5/8																★		☆	☆								SNMG 544-KM	
	SNMG 12 04 08-SM	12	1/2																						★	☆	☆	☆	☆	SNMG 432-SM	
	SNMG 12 04 12-SM		1/2																						★	☆	☆	☆	☆	SNMG 433-SM	
	SNMG 12 04 16-SM		1/2																						★	☆	☆	☆	☆	SNMG 434-SM	
	SNMG 15 06 12-SM	15	5/8																						★	☆	☆	☆	☆	SNMG 543-SM	
	SNMG 15 06 16-SM		5/8																						★	☆	☆	☆	☆	SNMG 544-SM	
					P25	P15	P05	P15	P25	P35	P10	M15	M25	M15	M25	M35	M35	M25	K10	K05	K15	K20	S15	S20	S25	S15	S05				

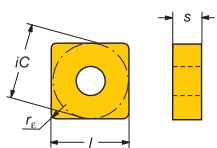
* Dedicated geometry for finishing of gummy materials.

★= First choice



Negative basic-shape inserts – T-Max® P

Square



E

F

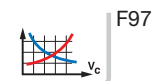
G

J

		ISO		iC	P										M					K					S					ANSI
					GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC		
Medium		SNMG120408-SMR	12	1/2																									SNMG 432-SMR	
		SNMG120412-SMR		1/2																									SNMG 433-SMR	
		SNMG120416-SMR		1/2																									SNMG 434-SMR	
	 SNMG-QM	SNMG 12 04 04-QM	12	1/2						☆	☆														☆	☆	☆	☆		SNMG 431-QM
		SNMG 12 04 08-QM		1/2					☆	☆	☆	☆	☆												☆	☆	☆		☆	SNMG 432-QM
		SNMG 12 04 12-QM		1/2				☆	☆	☆	☆	☆	☆												☆	☆	☆		☆	SNMG 433-QM
		SNMG 12 04 16-QM		1/2					☆																☆	☆	☆		☆	SNMG 434-QM
		SNMG 15 06 08-QM	15	5/8					☆																					SNMG 542-QM
		SNMG 15 06 12-QM		5/8					☆																☆	☆	☆		☆	SNMG 543-QM
		SNMG 15 06 16-QM		5/8					☆																☆	☆	☆			SNMG 544-QM
		SNMG 15 06 08-SM	15	5/8																						★	☆		☆	SNMG 542-SM
		SNMG 19 06 12-SM	19	3/4																						★	☆		☆	SNMG 643-SM
	 SNMG-SM*	SNMG 12 04 08-SM	12	1/2							☆																			SNMG 432-SM
		SNMG 12 04 12-SM		1/2							☆																			SNMG 433-SM
	 SNMG-HM	SNMG 12 04 12-SM																												
		SNMG 15 06 12-HM	15	5/8					☆	☆	★	☆	☆																	SNMG 543-HM
		SNMG 15 06 16-HM		5/8					☆	☆	★	☆	☆																	SNMG 544-HM
	Roughing	 SNMG-PR	SNMG 12 04 08-PR	12	1/2				☆	☆	★	☆	☆																	SNMG 432-PR
			SNMG 12 04 12-PR		1/2				☆	☆	★	☆	☆																	SNMG 433-PR
			SNMG 12 04 16-PR		1/2				☆	☆	★	☆	☆																	SNMG 434-PR
			SNMG 15 06 08-PR	15	5/8				☆	☆	★	☆	☆																	SNMG 542-PR
			SNMG 15 06 12-PR		5/8				☆	☆	★	☆	☆																	SNMG 543-PR
SNMG 15 06 16-PR				5/8				☆	☆	★	☆	☆																	SNMG 544-PR	
SNMG 15 06 24-PR				5/8				☆	☆	★	☆	☆																	SNMG 546-PR	

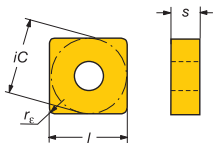
★= First choice

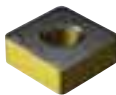
* Complementary geometry for semi-roughing in steel materials.



Negative basic-shape inserts – T-Max® P

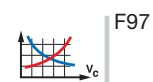
Square



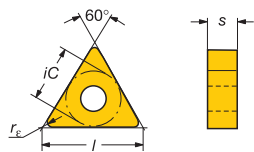
		ISO	□	iC	P										M					K					S					ANSI
					GC	GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC		
					1515	1525	4205	4215	4225	4235	5015	1115	1125	2015	2025	2035	235	4235	3005	3205	3210	3215	H13A	1105	1115	1125	H13A	S05F		
Roughing		SNMM 12 04 08-PR	12	1/2					★	☆																		SNMM 432-PR		
		SNMM 12 04 12-PR		1/2			☆		★	☆																		SNMM 433-PR		
		SNMM 15 06 12-PR	15	5/8			☆		★	☆																		SNMM 543-PR		
		SNMM 15 06 16-PR		5/8			☆		★	☆																		SNMM 544-PR		
		SNMG 12 04 08-MR	12	1/2														☆	★	☆								SNMG 432-MR		
		SNMG 12 04 12-MR		1/2														☆	★	☆								SNMG 433-MR		
		SNMG 15 06 12-MR	15	5/8														★	☆									SNMG 543-MR		
		SNMG 15 06 16-MR		5/8														★	☆									SNMG 544-MR		
		SNMM 12 04 08-MR	12	1/2														★	☆									SNMM 432-MR		
		SNMM 12 04 12-MR		1/2				☆		☆								★	☆									SNMM 433-MR		
		SNMM 12 04 16-MR		1/2														★										SNMM 434-MR		
		SNMM 15 06 12-MR	15	5/8			☆											★										SNMM 543-MR		
		SNMM 15 06 16-MR		5/8			☆	☆										★										SNMM 544-MR		
		SNMG 12 04 08-KR	12	1/2															☆	★	☆							SNMG 432-KR		
		SNMG 12 04 12-KR		1/2															☆	★	☆							SNMG 433-KR		
		SNMG 12 04 16-KR		1/2																★								SNMG 434-KR		
		SNMG 15 06 12-KR	15	5/8															☆	★	☆							SNMG 543-KR		
		SNMG 15 06 16-KR		5/8																★	☆							SNMG 544-KR		
		SNMG 12 04 12-KRR	12	1/2															☆	☆	★							SNMG 433-KRR		
		SNMG 12 04 16-KRR		1/2															☆	☆	★							SNMG 434-KRR		
		SNMG 15 06 16-KRR	15	5/8															☆	☆	★							SNMG 544-KRR		
	SNMA 12 04 08-KR	12	1/2															★	☆	☆							SNMA 432-KR			
	SNMA 12 04 12-KR		1/2															★	☆	☆							SNMA 433-KR			
	SNMA 12 04 16-KR		1/2															★	☆	☆							SNMA 434-KR			
	SNMA 15 06 12-KR	15	5/8															★	☆	☆							SNMA 543-KR			
	SNMA 15 06 16-KR		5/8															★		☆							SNMA 544-KR			
	SNMG150616-SMR	15	5/8										☆								★	☆		☆	☆		SNMG544-SMR			
	SNMM 12 04 08-QR	12	1/2					☆	☆							☆											SNMM 432-QR			
	SNMM 12 04 12-QR		1/2					☆	☆							☆											SNMM 433-QR			
	SNMM 12 04 16-QR		1/2					☆	☆																		SNMM 434-QR			
	SNMM 15 06 08-QR	15	5/8						☆																		SNMM 542-QR			
	SNMM 15 06 12-QR		5/8						☆	☆																	SNMM 543-QR			
	SNMM 15 06 16-QR		5/8						☆	☆																	SNMM 544-QR			
	SNMM 15 06 24-QR		5/8						☆																		SNMM 546-QR			
	SNMG 12 04 08-MR	12	1/2			☆	☆	☆	☆							☆											SNMG 432-MR			
	SNMG 12 04 12-MR		1/2			☆	☆	☆	☆							☆											SNMG 433-MR			
	SNMG 12 04 16-MR		1/2			☆	☆	☆	☆							☆											SNMG 434-MR			
	SNMG 15 06 12-MR	15	5/8			☆	☆	☆	☆							☆											SNMG 543-MR			
	SNMG 15 06 16-MR		5/8			☆	☆	☆	☆							☆											SNMG 544-MR			
						P25	P15	P05	P15	P25	P35	P10	M15	M25	M15	M25	M35	M35	M25	K10	K05	K10	K15	K20	S15	S20	S25	S15	S05	

★ = First choice

* Dedicated geometry for steel and stainless steel roughing.



Triangular



		ISO		iC	P								M					K				S				ANSI			
					GC	GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC				
					1515	1525	4205	4215	4225	4235	5015	1115	1125	2015	2025	2035	235	3005	3205	3215	3215	1105	1115	1125	113A		S05F		
Finishing	 TNMG-PF	TNMG 22 04 08-PF	22	1/2	☆	☆		★	☆			☆																	TNMG 432-PF
		TNMG 22 04 12-PF			☆			★	☆																				TNMG 433-PF
	 TNMG-QF	TNMG 22 04 04-QF	22	1/2									☆																TNMG 431-QF
					P25	P15	P05	P15	P25	P35	P10	M15	M25	M15	M25	M35	M35	K10	K05	K10	K15	K20	S15	S20	S25	S15	S05		

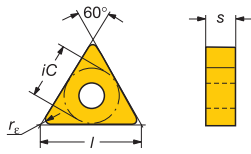
R = Right hand, L = Left hand

★= First choice

* Dedicated geometry for finishing of gummy materials.

Negative basic-shape inserts – T-Max® P

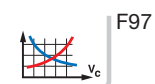
Triangular



		ISO		iC	P								M								K				S				ANSI
					GC	GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	
Finishing	 TNMG-MF*	TNMG 22 04 04-MF	22	1/2	1515	1525	4205	4215	4225	4235	5015	1115	1125	2015	2025	2035	235	3005	3205	3210	3215	H13A	1105	1115	1125	H13A	S05F	TNMG 431-MF	
		TNMG 22 04 08-MF					☆	☆			☆						☆											TNMG 432-MF	
		TNMG 22 04 12-MF						☆	☆																			TNMG 433-MF	
Medium	 TNMG-PM	TNMG 22 04 04-PM	22	1/2				☆	★	☆																		TNMG 431-PM	
		TNMG 22 04 08-PM					☆	☆	★	☆																		TNMG 432-PM	
		TNMG 22 04 12-PM					☆	☆	★	☆																		TNMG 433-PM	
		TNMG 22 04 16-PM					☆	☆	★	☆																		TNMG 434-PM	
	 TNMG-MM	TNMG 22 04 08-MM	22	1/2								☆	☆	☆	★	☆				☆	★	☆						TNMG 432-MM	
		TNMG 22 04 12-MM												☆	★	☆												TNMG 433-MM	
		TNMG 22 04 16-MM													★													TNMG 434-MM	
	 TNMG-KM	TNMG 22 04 08-KM	22	1/2															☆	★	☆							TNMG 432-KM	
		TNMG 22 04 12-KM																	☆	★	☆							TNMG 433-KM	
		TNMG 22 04 16-KM																	☆	★	☆							TNMG 434-KM	
	 TNMG-SM	TNMG 22 04 08-SM	22	1/2																			★	☆	☆	☆	☆		TNMG 432-SM
		TNMG 22 04 12-SM																					★	☆	☆	☆	☆		TNMG 433-SM
					P25	P15	P05	P15	P25	P35	P10	M15	M25	M15	M25	M35	M35	K10	K05	K10	K15	K20	S15	S20	S25	S15	S05		

Dedicated geometry for finishing of gummy materials.

★ = First choice



D

E

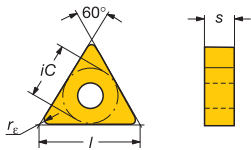
F

G

J

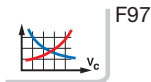
Negative basic-shape inserts – T-Max® P

Triangular



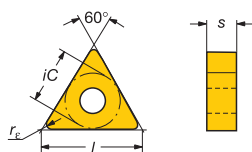
		ISO		ic	P										M										K										S										ANSI																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
					GC	GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC		GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC

★= First choice



Negative basic-shape inserts – T-Max® P

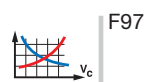
Triangular



						P							M					K					S						
						GC	GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC		GC
Roughing	 TNMM-MR	ISO		ic	1515	1525	4205	4215	4225	4235	5015	1115	1125	2015	2025	2035	235	3005	3205	3210	3215	H13A	1105	1115	1125	H13A	S05F	ANSI	TNMM 432-MR
		TNMM 22 04 08-MR	22	1/2						☆					★														TNMM 433-MR
		TNMM 22 04 12-MR								☆					★														TNMM 434-MR
		TNMM 22 04 16-MR													★														
	 TNMG-KR	TNMG 22 04 08-KR	22	1/2															☆	★	☆								TNMG 432-KR
		TNMG 22 04 12-KR																	☆	★	☆								TNMG 433-KR
 TNMA-KR	TNMA 22 04 04-KR	22	1/2																		★							TNMA 431-KR	
	TNMA 22 04 08-KR																		★	☆	☆							TNMA 432-KR	
	TNMA 22 04 12-KR																		★	☆	☆							TNMA 433-KR	
	TNMA 22 04 16-KR																			★	☆	☆						TNMA 434-KR	
	TNMA 22 04 32-KR																				★							TNMA 438-KR	
 TNMM-QR	TNMM 22 04 08-QR	22	1/2				☆	☆								☆												TNMM 432-QR	
	TNMM 22 04 12-QR						☆	☆	☆							☆												TNMM 433-QR	
	TNMM 22 04 16-QR						☆	☆	☆							☆												TNMM 434-QR	
 TNMG-MR*	TNMG 22 04 08-MR	22	1/2			☆	☆	☆	☆							☆												TNMG 432-MR	
	TNMG 22 04 12-MR					☆	☆	☆	☆							☆												TNMG 433-MR	
	TNMG 22 04 16-MR					☆	☆	☆	☆							☆												TNMG 434-MR	
	TNMG 22 04 24-MR						☆																					TNMG 436-MR	
					P25	P15	P05	P15	P25	P35	P10	M15	M25	M15	M25	M35	M35	K10	K05	K10	K15	K20	S15	S20	S25	S15	S05		

★ = First choice

* Dedicated geometry for steel and stainless steel roughing.



D

E

F

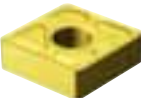
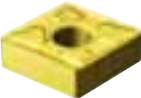
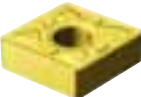
G

J

Spectrum™ Turn

Spectrum™ Turn T-Max P

Rhombic 80°

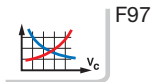
						P	M	K	S												
		ISO		ic		GC15 ☆	GC30 ★	GC2025 ★	GC15 ★	GC30 ☆	GC3205 ★	GC3210 ★	GC3215 ★	GC30 ☆	GC1105 ★	GC1115 ★	GC1125 ★	GC15 ★	GC113A ★	GC1S05F ★	ANSI
Finishing		CNMG 12 04 04-XF	12	1/2	☆	★	★	★	☆	☆				☆				★			CNMG 431-XF
		CNMG 12 04 08-XF			☆	★	★	★	☆					☆				★			CNMG 432-XF
Medium		CNMG 12 04 04-XM	12	1/2	☆	★	★	★	☆	☆				☆				★			CNMG 431-XM
		CNMG 12 04 08-XM			☆	★	★	★	☆					☆				★			CNMG 432-XM
		CNMG 12 04 12-XM			☆	★	★	★	☆					☆				★			CNMG 433-XM
Roughing		CNMG 12 04 08-XMR	12	1/2	☆	★	★	★	☆	☆				☆				★			CNMG 432-XMR
		CNMG 12 04 12-XMR			☆	★	★	★	☆	☆				☆				★			CNMG 433-XMR
		CNMG 12 04 16-XMR			☆	★	★	★	☆	☆				☆				★			CNMG 434-XMR
		CNMG 16 06 12-XMR	16	5/8	☆	★	★	★	☆	☆				☆				★			CNMG 543-XMR
		CNMG 16 06 16-XMR			☆	★	★	★	☆	☆				☆				★			CNMG 544-XMR
		CNMG 19 06 12-XMR	19	3/4	☆	★	★	★	☆	☆				☆				★			CNMG 643-XMR
		CNMG 19 06 16-XMR			☆	★	★	★	☆	☆				☆				★			CNMG 644-XMR
					P20	P30	M25	M15	M20	K05	K10	K15	K40	S15	S20	S25	S20	S15	S05		

★= First choice

Square

		ISO		<i>ic</i>		P	M	K	S											
						GC15	GC30	GC2025	GC15	GC30	GC3205	GC3210	GC3215	GC30	GC1105	GC1115	GC15	GC113A	GC1S05F	
Medium		SNMG 12 04 08-XM	12	1/2	☆	★			★	☆				☆			★			SNMG 432-XM
		SNMG 12 04 12-XM			☆	★		★	☆					☆			★			SNMG 433-XM
Roughing		SNMG 12 04 08-XMR	12	1/2	☆	★			★	☆				☆			★			SNMG 432-XMR
		SNMG 12 04 12-XMR			☆	★		★	☆					☆			★			SNMG 433-XMR
		SNMG 12 04 16-XMR			☆	★		★	☆					☆			★			SNMG 434-XMR
						P20	P30	M25	M15	M20	K05	K10	K15	K40	S15	S20	S20	S15	S05	

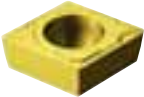
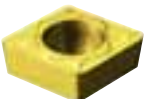
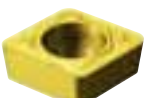
★= First choice



Spectrum™ Turn

Spectrum™ Turn 107

Rhombic 80°

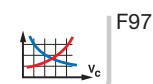
		ISO		IC	P				M				K				S				ANSI
					1105	1125	GC15	GC30	1105	1115	1125	GC15	GC30	3205	3210	3215	GC30	1105	1115	GC15	
Finishing		CCMT 09 T3 04-XF	09	3/8			☆	★				★	☆				☆				★ CCMT 3(2.5)1-XF
		CCMT 09 T3 08-XF					☆	★				★	☆				☆				★ CCMT 3(2.5)2-XF
Medium		CCMT 09 T3 04-XM	09	3/8			☆	★				★	☆				☆				★ CCMT 3(2.5)1-XM
		CCMT 09 T3 08-XM					☆	★				★	☆				☆				★ CCMT 3(2.5)2-XM
Roughing		CCMT 09 T3 08-XR	09	3/8			☆	★				★	☆				☆				★ CCMT 3(2.5)2-XR
		CCMT 09 T3 12-XR					☆	★				★	☆				☆				★ CCMT 3(2.5)3-XR
						P25	P20	P30	M15	M15	M25	M15	M20	K05	K10	K15	K40	S15	S20	S20	

★ = First choice

Triangular

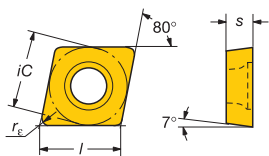
		ISO		iC	P				M				K				S				ANSI				
					1105	1125	5015	GC15	GC30	1105	1115	1125	2015	2025	2035	GC15	GC30	3205	3210	3215		GC30	1105	1115	1125
Finishing		TCMT 11 03 04-XF	11	1/4				☆	★					★	☆					☆				★	TCMT 221-XF
		TCMT 11 03 08-XF						☆	★					★	☆					☆				★	TCMT 222-XF
Medium		TCMT 11 03 04-XM	11	1/4				☆	★					★	☆					☆				★	TCMT 221-XM
		TCMT 11 03 08-XM						☆	★					★	☆					☆				★	TCMT 222-XM
Roughing		TCMT 16 T3 08-XR	16	3/8				☆	★					★	☆					☆				★	TCMT 3(2.5)2-XR
		TCMT 16 T3 12-XR						☆	★					★	☆					☆				★	TCMT 3(2.5)3-XR
						P25	P10	P20	P30	M15	M15	M25	M15	M25	M35	M15	M20	K05	K10	K15	K40	S15	S20	S25	S20

★ = First choice



Positive basic-shape inserts CoroTurn® 107

Rhombic 80°

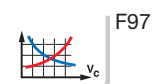


E

		ISO		iC	P								M					K				N		S					ANSI				
					1105	1125	1515	1525	4205	4215	4225	4235	5015	1105	1115	1125	2015	2025	2035	235	3005	3205	3210	3215	H13A	1125	H10	1105		1115	1125	H10A	H13A
Finishing	 CCMT-WF 	CCMT 06 02 02-WF	06	1/4	★						☆			★								★					★	☆			CCMT 2(1.5)0-WF		
		CCMT 06 02 04-WF				☆	☆		★			☆		☆	☆	★			☆			★					★	☆			CCMT 2(1.5)1-WF		
		CCMT 06 02 08-WF				☆	☆		★			☆		☆	☆	★			☆			★					★	☆			CCMT 2(1.5)2-WF		
		CCMT 09 T3 02-WF	09	3/8	★							☆			★													★	☆			CCMT 3(2.5)0-WF	
		CCMT 09 T3 04-WF				☆	☆		★			☆		☆	☆	★			☆			★					★	☆			CCMT 3(2.5)1-WF		
		CCMT 09 T3 08-WF				☆	☆		★			☆		☆	☆	★			☆			★					★	☆			CCMT 3(2.5)2-WF		
	 CCMT-PF	CCMT 06 02 02-PF	06	1/4		☆				★		☆																				CCMT 2(1.5)0-PF	
		CCMT 06 02 04-PF				☆			★	☆		☆																				CCMT 2(1.5)1-PF	
		CCMT 09 T3 02-PF	09	3/8		☆				★		☆																				CCMT 3(2.5)0-PF	
		CCMT 09 T3 04-PF				☆			★	☆		☆																				CCMT 3(2.5)1-PF	
		CCMT 09 T3 08-PF				☆			★	☆		☆																				CCMT 3(2.5)2-PF	
		CCMT 12 04 04-PF	12	1/2		☆			★	☆		☆																				CCMT 431-PF	
	 CCMT-MF	CCMT 06 02 02-MF	06	1/4										☆	★												★	☆	☆			CCMT 2(1.5)0-MF	
		CCMT 06 02 04-MF												☆	★		★										★	☆	☆			CCMT 2(1.5)1-MF	
		CCMT 09 T3 02-MF	09	3/8										☆	★												★	☆	☆			CCMT 3(2.5)0-MF	
		CCMT 09 T3 04-MF												☆	★		★	☆									★	☆	☆			CCMT 3(2.5)1-MF	
		CCMT 09 T3 08-MF												☆	★		★	☆									★	☆	☆			CCMT 3(2.5)2-MF	
		CCMT 12 04 04-MF	12	1/2										☆	★		★	☆									★	☆				CCMT 431-MF	
 CCMT-KF	CCMT 06 02 02-KF	06	1/4																											☆	CCMT 2(1.5)0-KF		
	CCMT 06 02 04-KF																	☆				★								☆	CCMT 2(1.5)1-KF		
	CCMT 09 T3 02-KF	09	3/8																			★								☆	CCMT 3(2.5)0-KF		
	CCMT 09 T3 04-KF																	☆				★								☆	CCMT 3(2.5)1-KF		
	CCMT 12 04 04-KF	12	1/2																			★								☆	CCMT 431-KF		
 CCMT-UF	CCMT 06 02 02-UF	06	1/4		☆						☆			☆																		CCMT 2(1.5)0-UF	
	CCMT 06 02 04-UF				☆					☆	☆			☆				☆														CCMT 2(1.5)1-UF	
	CCMT 06 02 08-UF										☆																					CCMT 2(1.5)2-UF	
	CCMT 09 T3 02-UF	09	3/8		☆								☆																			CCMT 3(2.5)0-UF	
	CCMT 09 T3 04-UF				☆			☆			☆		☆																			CCMT 3(2.5)1-UF	
Medium	 CCMT-WM 	CCMT 06 02 08-WM	06	1/4		☆			★	☆			★															★				CCMT 2(1.5)2-WM	
		CCMT 09 T3 04-WM	09	3/8		☆	☆	☆	★	☆			☆		★													★				CCMT 3(2.5)1-WM	
		CCMT 09 T3 08-WM				☆	☆	☆	★	☆			☆		★				☆			★						★				CCMT 3(2.5)2-WM	
		CCMT 12 04 04-WM	12	1/2		☆			★	☆			☆		★				☆			★						★				CCMT 431-WM	
		CCMT 12 04 08-WM				☆			★	☆			☆		★				☆			★						★				CCMT 432-WM	
	 CCMT-PM	CCMT 06 02 04-PM	06	1/4		☆	☆		☆	★	☆	☆																				CCMT 2(1.5)1-PM	
		CCMT 06 02 08-PM				☆	☆		☆	★	☆	☆																					CCMT 2(1.5)2-PM
		CCMT 09 T3 04-PM	09	3/8		☆	☆	☆	☆	★	☆	☆																					CCMT 3(2.5)1-PM
		CCMT 09 T3 08-PM				☆	☆	☆	☆	★	☆	☆																					CCMT 3(2.5)2-PM
		CCMT 12 04 04-PM	12	1/2		☆			☆	★	☆	☆																					CCMT 431-PM
		CCMT 12 04 08-PM				☆	☆		☆	★	☆	☆																					CCMT 432-PM
		CCMT 12 04 12-PM				☆	☆		☆	★	☆	☆																					CCMT 433-PM

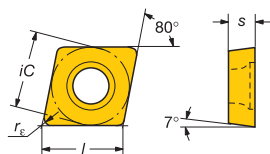
★ = First choice

J



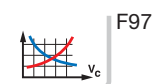
Positive basic-shape inserts CoroTurn® 107

Rhombic 80°



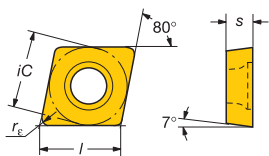
		ISO		iC	P										M					K					N		S					ANSI		
					GC	GC	GC	GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC		GC	GC
					1105	1125	1515	1525	4205	4215	4225	4235	5015	1105	1115	1125	2015	2025	2035	235	3005	3205	3210	3215	H13A	1125	H10	1105	1115	1125	H10A		H13A	
Medium		CCMT 06 02 04-MM	06	1/4											☆	☆	☆									★	☆	☆	☆		CCMT 2(1.5)1-MM			
		CCMT 06 02 08-MM														☆	☆	☆	★							★	☆	☆	☆		CCMT 2(1.5)2-MM			
		CCMT 09 T3 04-MM	09	3/8												☆	☆	☆	☆	★	☆					★	☆	☆	☆		CCMT 3(2.5)1-MM			
		CCMT 09 T3 08-MM														☆	☆	☆	☆	★	☆					★	☆	☆	☆		CCMT 3(2.5)2-MM			
		CCMT 12 04 04-MM	12	1/2												☆	☆	☆	☆	★	☆					★	☆	☆	☆		CCMT 431-MM			
		CCMT 12 04 08-MM														☆	☆	☆	☆	★	☆					★	☆	☆	☆		CCMT 432-MM			
		CCMT 12 04 12-MM															☆	★													CCMT 433-MM			
		CCMT 06 02 04-KM	06	1/4															☆												☆	CCMT 2(1.5)1-KM		
		CCMT 06 02 08-KM																	☆				★	☆							☆	CCMT 2(1.5)2-KM		
		CCMT 09 T3 04-KM	09	3/8															☆		★	☆	☆								☆	CCMT 3(2.5)1-KM		
		CCMT 09 T3 08-KM																	☆		★	☆	☆								☆	CCMT 3(2.5)2-KM		
		CCMT 12 04 04-KM	12	1/2															☆		★	☆	☆								☆	CCMT 431-KM		
		CCET 06 02 01-UM	06	1/4	☆	★							☆	★	☆									☆		★	☆					CCET 2(1.5)03-UM		
		CCET 06 02 02-UM			☆	★							☆	★	☆									☆		★	☆					CCET 2(1.5)0-UM		
		CCET 06 02 04-UM			☆	★							☆	★	☆									☆		★	☆					CCET 2(1.5)1-UM		
		CCGT 06 02 01-UM	06	1/4	☆								☆	☆	☆								☆		★	☆	☆	☆			☆	CCGT 2(1.5)03-UM		
		CCGT 06 02 02-UM			☆		☆						☆	☆	☆								☆		★	☆	☆	☆			☆	CCGT 2(1.5)0-UM		
		CCGT 06 02 04-UM			☆		☆					☆	☆	☆			☆						☆		★	☆	☆	☆			☆	CCGT 2(1.5)1-UM		
		CCGT 09 T3 01-UM	09	3/8									☆	☆	☆								☆		★	☆	☆	☆			☆	CCGT 3(2.5)03-UM		
		CCGT 09 T3 02-UM					☆					☆	☆	☆									☆		★	☆	☆	☆			☆	CCGT 3(2.5)0-UM		
		CCGT 09 T3 04-UM					☆					☆	☆	☆									☆		★	☆	☆	☆			☆	CCGT 3(2.5)1-UM		
		CCGT 09 T3 08-UM					☆					☆	☆	☆			☆						☆		★	☆	☆	☆			☆	CCGT 3(2.5)2-UM		
		CCGT 12 04 04-UM	12	1/2																									★			CCGT 431-UM		
		CCGT 12 04 08-UM																											★			CCGT 432-UM		
CCMW 06 02 04		06	1/4									☆										☆										CCMW 2(1.5)1		
	CCMW 09 T3 04	09	3/8								☆											☆										CCMW 3(2.5)1		
	CCMT 06 02 04-UM	06	1/4			☆	☆			☆	☆	☆						☆								☆	☆					CCMT 2(1.5)1-UM		
	CCMT 06 02 08-UM					☆				☆								☆								☆	☆					CCMT 2(1.5)2-UM		
	CCMT 09 T3 04-UM	09	3/8			☆	☆			☆	☆	☆										☆				☆	☆		☆			CCMT 3(2.5)1-UM		
	CCMT 09 T3 08-UM					☆	☆			☆	☆	☆														☆	☆					CCMT 3(2.5)2-UM		
	CCMT 12 04 08-UM	12	1/2							☆																						CCMT 432-UM		
Roughing		CCMT 06 02 08-PR	06	1/4					☆	★	☆																					CCMT 2(1.5)2-PR		
		CCMT 09 T3 08-PR	09	3/8					☆	★	☆																						CCMT 3(2.5)2-PR	
		CCMT 09 T3 12-PR							☆	★	☆																						CCMT 3(2.5)3-PR	
		CCMT 12 04 08-PR	12	1/2					☆	★	☆																						CCMT 432-PR	
		CCMT 12 04 12-PR							☆	★	☆																						CCMT 433-PR	
		CCMT 06 02 08-MR	06	1/4											★		☆																CCMT 2(1.5)2-MR	
		CCMT 09 T3 08-MR	09	3/8											☆	★	☆																CCMT 3(2.5)2-MR	
		CCMT 09 T3 12-MR														★																	CCMT 3(2.5)3-MR	
		CCMT 12 04 08-MR	12	1/2												★	☆																CCMT 432-MR	
	CCMT 12 04 12-MR														★	☆																CCMT 433-MR		

★ = First choice



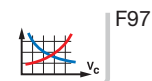
Positive basic-shape inserts CoroTurn® 107

Rhombic 80°



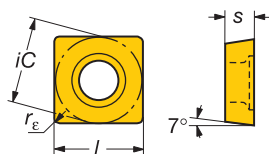
						P										M					K			N		S									
						GC	GC	GC	GC	GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC		GC	GC	GC	GC
Roughing	 CCMT-KR	ISO		iC	1105	1125	1515	1525	4205	4215	4225	4235	5015	1105	1115	1125	2015	2025	2035	235	3005	3205	3210	3215	H13A	1125	H10	1105	1115	1125	H10A	H13A	ANSI		
		CCMT 06 02 08-KR	06	1/4																			★	★	★							★	CCMT 2(1.5)2-KR		
		CCMT 09 T3 08-KR	09	3/8																			★	★	★	★						★	CCMT 3(2.5)2-KR		
		CCMT 09 T3 12-KR																					★	★	★							★	CCMT 3(2.5)3-KR		
		CCMT 12 04 08-KR	12	1/2																		★	★	★	★	★						★	CCMT 432-KR		
	CCMT 12 04 12-KR																					★	★	★	★						★	CCMT 433-KR			
	 CCMT-UR	CCMT 06 02 04-UR	06	1/4																★														CCMT 2(1.5)1-UR	
		CCMT 09 T3 04-UR	09	3/8						★	★	★									★														CCMT 3(2.5)1-UR
		CCMT 09 T3 08-UR								★	★	★								★															CCMT 3(2.5)2-UR
		CCMT 12 04 08-UR	12	1/2							★	★																							CCMT 432-UR
Aluminium	 CCGX-AL	CCGX 06 02 02-AL	06	1/4	★									★												★	★							CCGX 2(1.5)0-AL	
		CCGX 06 02 04-AL			★										★												★	★							CCGX 2(1.5)1-AL
		CCGX 09 T3 04-AL	09	3/8	★										★												★	★							CCGX 3(2.5)1-AL
		CCGX 09 T3 08-AL			★										★												★	★							CCGX 3(2.5)2-AL
		CCGX 12 04 04-AL	12	1/2																							★								CCGX 431-AL
		CCGX 12 04 08-AL																								★									CCGX 432-AL
						P05	P25	P15	P05	P15	P25	P35	P10	M15	M15	M25	M15	M25	M35	M35	K10	K05	K10	K15	K20	N25	N15	S15	S20	S25	S10	S15			

★ = First choice



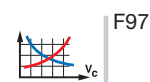
Positive basic-shape inserts CoroTurn® 107

Square



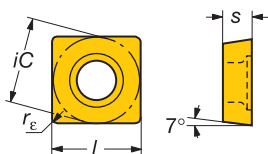
						P								M				K				N		S									
						GC	GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC		GC	GC	GC	GC	
Finishing		ISO				1515	1525	4205	4215	4225	4235	5015	1115	1125	2015	2025	2035	235	3005	3205	3210	3215	H13A	-	H10	-	1105	1115	1125	H13A	ANSI		
		SCMT 09 T3 04-PF	09	3/8	☆			★		☆	☆																					SCMT 3(2.5)1-PF	
		SCMT 09 T3 08-PF			☆			★		☆																						SCMT 3(2.5)2-PF	
SCMT-MF		SCMT 09 T3 04-MF	09	3/8									☆	☆		★												★	☆		SCMT 3(2.5)1-MF		
		SCMT 09 T3 08-MF												☆	☆		★											★	☆		SCMT 3(2.5)2-MF		
SCMT-KF		SCMT 09 T3 04-KF	09	3/8															★												SCMT 3(2.5)1-KF		
		SCMT 09 T3 08-KF																		★												SCMT 3(2.5)2-KF	
SCMT-UF		SCMT 09 T3 08-UF	09	3/8						☆																						SCMT 3(2.5)2-UF	
Medium		SCMT 09 T3 04-PM	09	3/8	☆	☆		☆	★	☆	☆																					SCMT 3(2.5)1-PM	
		SCMT 09 T3 08-PM			☆	☆		☆	★	☆	☆																					SCMT 3(2.5)2-PM	
		SCMT 12 04 04-PM	12	1/2	☆	☆		☆	★	☆	☆																					SCMT 431-PM	
		SCMT 12 04 08-PM			☆	☆		☆	★	☆	☆																					SCMT 432-PM	
	SCMT 12 04 12-PM			☆			☆	★	☆	☆																					SCMT 433-PM		
		SCMT 09 T3 04-MM	09	3/8										☆	☆	☆	★	☆									★	☆	☆			SCMT 3(2.5)1-MM	
		SCMT 09 T3 08-MM												☆	☆	☆	★	☆									★	☆	☆			SCMT 3(2.5)2-MM	
		SCMT 12 04 04-MM	12	1/2										☆	☆		★	☆									★	☆	☆			SCMT 431-MM	
		SCMT 12 04 08-MM												☆	☆	☆	★	☆									★	☆	☆			SCMT 432-MM	
		SCMT 12 04 12-MM												☆			★	☆										★	☆			SCMT 433-MM	
		SCMT 09 T3 04-KM	09	3/8															☆		★	☆	☆							☆		SCMT 3(2.5)1-KM	
		SCMT 09 T3 08-KM																	☆		★	☆	☆							☆		SCMT 3(2.5)2-KM	
SCMT 12 04 08-KM		12	1/2																★			☆							☆		SCMT 432-KM		

★= First choice

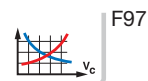


Positive basic-shape inserts CoroTurn® 107

Square

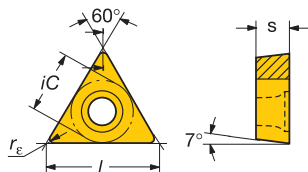
[illegible]

★= First choice



Positive basic-shape inserts CoroTurn® 107

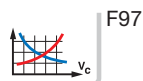
Triangular



		ISO		IC	P													M					K				N			S					ANSI																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
					GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC		GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	

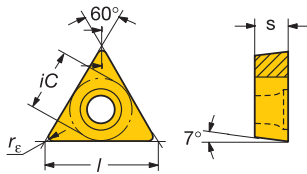
★ = First choice

R = Right hand, L = Left hand



Positive basic-shape inserts CoroTurn® 107

Triangular



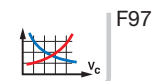
E

		ISO		iC	P												M								K				N		S				ANSI																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
					GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC		GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC

★ = First choice

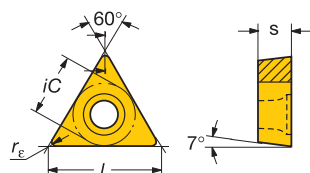
R = Right hand, L = Left hand

J



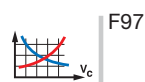
Positive basic-shape inserts CoroTurn® 107

Triangular



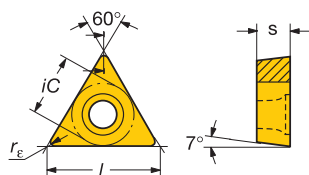
		ISO		iC	P										M						K				N		S				ANSI						
					1025	1105	1125	1515	1525	235	4205	4215	4225	4235	5015	1025	1105	1115	1125	2025	2035	235	3005	3205	3210	3215	H13A	H125	H10	H13A		1025	1105	1115	1125	H10A	H13A
					GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC		GC	GC	GC	GC	GC	GC
Medium	 TCMX-WM 	TCMX 11 03 04-WM	11	1/4					☆		★				★									★											TCMX 221-WM		
	TCMX 11 03 08-WM										★	☆												★										TCMX 222-WM			
	TCMX 16 T3 08-WM	16	3/8					☆		★	★												★	☆										TCMX 3(2.5)2-WM			
	 TCMT-PM	TCMT 09 02 04-PM	09	7/32				☆	☆		☆	★	☆	☆																					TCMT 1.8(1.5)1-PM		
	TCMT 09 02 08-PM						☆	☆		☆	★	☆	☆																					TCMT 1.8(1.5)2-PM			
	TCMT 11 03 04-PM	11	1/4				☆	☆		☆	★	☆	☆																					TCMT 221-PM			
	TCMT 11 03 08-PM						☆	☆		☆	★	☆	☆																					TCMT 222-PM			
	TCMT 11 03 12-PM										★		☆																						TCMT 223-PM		
	TCMT 16 T3 04-PM	16	3/8				☆	☆		☆	★	☆	☆																					TCMT 3(2.5)1-PM			
	TCMT 16 T3 08-PM						☆	☆		☆	★	☆	☆																					TCMT 3(2.5)2-PM			
	TCMT 16 T3 12-PM						☆	☆		☆	★	☆	☆																					TCMT 3(2.5)3-PM			
	 TCMT-MM	TCMT 09 02 04-MM	09	7/32		☆									☆	☆	☆	☆	★	☆											★	☆	☆	TCMT 1.8(1.5)1-MM			
	TCMT 09 02 08-MM					☆									☆	☆	☆	☆	★	☆											★	☆	☆	TCMT 1.8(1.5)2-MM			
	TCMT 11 03 04-MM	11	1/4												☆	☆	☆	☆	★	☆											★	☆	☆	TCMT 221-MM			
	TCMT 11 03 08-MM														☆	☆	☆	☆	★	☆											★	☆	☆	TCMT 222-MM			
	TCMT 16 T3 04-MM	16	3/8												☆	☆	☆	☆	★	☆											★	☆	☆	TCMT 3(2.5)1-MM			
	TCMT 16 T3 08-MM														☆	☆	☆	☆	★	☆											★	☆	☆	TCMT 3(2.5)2-MM			
	TCMT 16 T3 12-MM														☆	☆	☆	☆	★	☆											★	☆	☆	TCMT 3(2.5)3-MM			
 TCMT-KM	TCMT 09 02 04-KM	09	7/32																	☆	★	☆	☆									☆	TCMT 1.8(1.5)1-KM				
TCMT 09 02 08-KM																				☆	★	☆	☆									☆	TCMT 1.8(1.5)2-KM				
TCMT 11 03 04-KM	11	1/4																		☆	★	☆	☆									☆	TCMT 221-KM				
TCMT 11 03 08-KM																				☆	★	☆	☆									☆	TCMT 222-KM				
TCMT 16 T3 04-KM	16	3/8																		☆	★	☆	☆									☆	TCMT 3(2.5)1-KM				
TCMT 16 T3 08-KM																				☆	★	☆	☆									☆	TCMT 3(2.5)2-KM				
TCMT 16 T3 12-KM																				☆	★	☆	☆									☆	TCMT 3(2.5)3-KM				
 TCGT-UM	TCGT 09 02 04-UM	09	7/32										☆																			★	TCGT 1.8(1.5)1-UM				
TCGT 11 02 01-UM	11	1/4										☆								☆				☆							★	☆	TCGT 2(1.5)03-UM				
TCGT 11 02 02-UM												☆								☆				☆							★	☆	TCGT 2(1.5)0-UM				
TCGT 11 02 04-UM												☆								☆				☆							★	☆	TCGT 2(1.5)1-UM				
TCGT 11 02 08-UM												☆						☆						☆							★	☆	TCGT 2(1.5)2-UM				
TCGT 11 03 01-UM												☆								☆				☆							★	☆	TCGT 22(03)-UM				
TCGT 11 03 02-UM					☆							☆								☆				☆							★	☆	TCGT 220-UM				
TCGT 11 03 04-UM					☆							☆								☆				☆							★	☆	TCGT 221-UM				
TCGT 11 03 08-UM					☆							☆								☆				☆							★	☆	TCGT 222-UM				
TCGT 16 T3 04-UM	16	3/8										☆																	★		☆		TCGT 3(2.5)1-UM				
TCGT 16 T3 08-UM																												★					TCGT 3(2.5)2-UM				
 TCMW	TCMW 11 02 04	11	1/4										☆											☆								☆	TCMW 2(1.5)1				
TCMW 11 03 04																								☆	☆								TCMW 221				
TCMW 16 T3 04	16	3/8																						☆								☆	TCMW 3(2.5)1				
TCMW 16 T3 08													☆											☆								☆	TCMW 3(2.5)2				
 TCMT-UM	TCMT 09 02 04-UM	09	7/32				☆	☆			☆		☆																			☆	TCMT 1.8(1.5)1-UM				
TCMT 09 02 08-UM							☆				☆		☆																			☆	TCMT 1.8(1.5)2-UM				
TCMT 11 02 04-UM	11	1/4					☆			☆	☆	☆	☆							☆				☆							☆	☆	TCMT 2(1.5)1-UM				
TCMT 11 02 08-UM							☆			☆	☆	☆	☆							☆				☆							☆	☆	TCMT 2(1.5)2-UM				
TCMT 16 T3 04-UM	16	3/8					☆			☆	☆	☆	☆							☆				☆							☆	☆	TCMT 3(2.5)1-UM				
TCMT 16 T3 08-UM							☆			☆	☆	☆	☆							☆				☆							☆	☆	TCMT 3(2.5)2-UM				

★= First choice



Positive basic-shape inserts CoroTurn® 107

Triangular



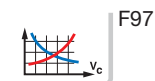
E

		ISO		iC	P										M										K					N					S					ANSI																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
					GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC		GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC

★ = First choice

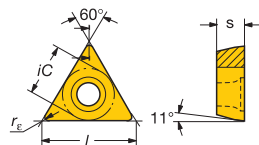
G

J



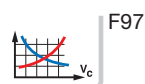
Positive basic-shape inserts CoroTurn® 111

Triangular



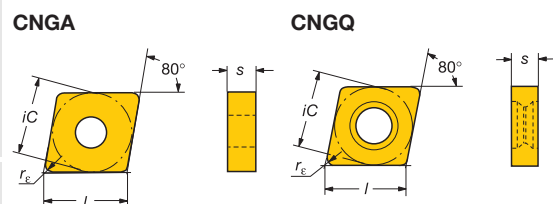
		ISO		IC	P					M				K	S	ANSI			
					GC	GC	GC	GC	CT	GC	GC	GC	GC	GC	-		GC	-	
Finishing		TPMT 06 T1 02-PF	06	5/32	☆					☆							TPMT 1.2(1.2)0-PF		
		TPMT 06 T1 04-PF			☆		★	☆		☆							TPMT 1.2(1.2)1-PF		
		TPMT 09 02 02-PF	09	7/32	☆					★							TPMT 1.8(1.5)0-PF		
		TPMT 09 02 04-PF			☆		★	☆		☆							TPMT 1.8(1.5)1-PF		
		TPMT 11 03 02-PF	11	1/4	☆					★							TPMT 220-PF		
		TPMT 11 03 04-PF			☆		★	☆		☆							TPMT 221-PF		
		TPMT 06 T1 02-MF	06	5/32						★							TPMT 1.2(1.2)0-MF		
		TPMT 06 T1 04-MF								☆	★						TPMT 1.2(1.2)1-MF		
		TPMT 09 02 02-MF	09	7/32						★							TPMT 1.8(1.5)0-MF		
		TPMT 09 02 04-MF								☆	★						TPMT 1.8(1.5)1-MF		
		TPMT 11 03 02-MF	11	1/4						★							TPMT 220-MF		
		TPMT 11 03 04-MF								☆	★	☆					TPMT 221-MF		
		TPMT 06 T1 04-KF	06	5/32										★			TPMT 1.2(1.2)1-KF		
		TPMT 09 02 04-KF	09	7/32										★			TPMT 1.8(1.5)1-KF		
		TPMT 11 03 04-KF	11	1/4										★			TPMT 221-KF		
Medium																			
		TPMT 09 02 04-PM	09	7/32	☆	☆	☆	★	☆								TPMT 1.8(1.5)1-PM		
		TPMT 09 02 08-PM						★	☆								TPMT 1.8(1.5)2-PM		
		TPMT 11 03 04-PM	11	1/4		☆	☆	★	☆								TPMT 221-PM		
		TPMT 11 03 08-PM					☆	★	☆	☆							TPMT 222-PM		
		TPMT 09 02 04-MM	09	7/32							★	☆					TPMT 1.8(1.5)1-MM		
		TPMT 11 03 04-MM	11	1/4						☆	★						TPMT 221-MM		
		TPMT 11 03 08-MM								☆	★	☆					TPMT 222-MM		
		TPMT 09 02 04-KM	09	7/32										★		☆	TPMT 1.8(1.5)1-KM		
		TPMT 09 02 08-KM												★			TPMT 1.8(1.5)2-KM		
		TPMT 11 03 08-KM	11	1/4										★			TPMT 222-KM		
		TPMT 11 02 04-UM	11	1/4						☆					☆		TPMT 2(1.5)1-UM		
TPMT 11 02 08-UM									☆					☆		TPMT 2(1.5)2-UM			
						P25	P15	P15	P25	P35	P10	M25	M15	M25	M35	K15	K20	S25	S15

★ = First choice



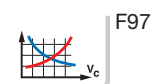
Negative basic inserts - T-MAX® P

Rhombic 80°



Note! Grade CB7025 is uncoated.

	ISO		<i>i</i> C	<i>l</i> _a mm	<i>l</i> _a inch	K			S	H					ANSI			
						CC	CG	CC	CC	CB	CC	CC	CC	CB		CB	CB	
	CNGA120408S02035AWH	12	1/2	2.0	.079	1690	6190	620	650	7525	650	6050	650	7015	7025	7525	CB20	CNGA432S0835AWH
														☆				
	CNGA090308S02035A	09	3/8	2.0	.079										☆			CNGA322S0835A
	CNGA120404S02035A	12	1/2	1.8	.071										☆			CNGA431S0835A
	CNGA120408S02035A			2.7	.106									☆	☆			CNGA432S0835A
	CNGA120412S02035A			2.7	.106									☆	☆			CNGA433S0835A
	CNGA120416S02035A			2.7	.106										☆			CNGA434S0835A
	CNGA120404S02035B	12	1/2	2.8	.11										☆			CNGA431S0835B
	CNGA120408S01530B			2.0	.079											☆		CNGA432S0630B
	CNGA120408S02035B			2.0	.079											☆		CNGA432S0835B
	CNGA120412S01530B			2.3	.091											☆		CNGA433S0630B
	CNGA120412S02035B			2.3	.091											☆		CNGA433S0835B
	CNGA120404T01020BWG	12	1/2	2.8	.11					☆					☆			CNGA431T0320BWG
	CNGA120408T01020BWG			2.7	.106					☆						☆		CNGA432T0320BWG
	CNGA120408T01020WG	12	1/2				☆		☆		☆		☆					CNGA432T0320WG
	CNGA120412T01020WG						☆		☆		☆		☆					CNGA433T0320WG
	CNGA120416T01020WG						☆											CNGA434T0320WG
	CNGQ 120708 T02520WG	12	1/2				☆											CNGQ452T0820WG
	CNGQ120712T02520WG						☆											CNGQ453T0820WG
	CNGA120404S01525WH	12	1/2									☆						CNGA431S0625WH
	CNGA120408S01525WH												☆					CNGA432S0625WH
	CNGA120412S01525WH													☆				CNGA433S0625WH
	CNGA120408T01525WH													☆				CNGA432T0625WH
						K10	K10	K01	K01	K05	S05	H05	H05	H10	H15	H25	H15	



Negative basic-shape inserts

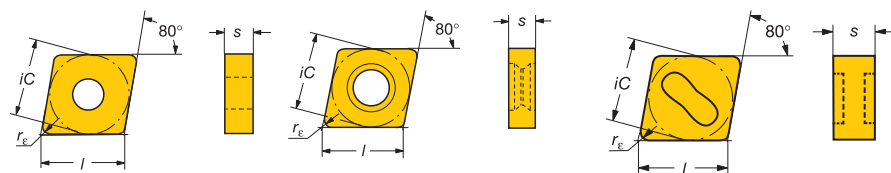
Negative basic inserts - T-MAX® P

Rhombic 80°

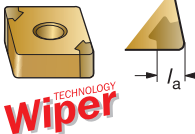
CNGA

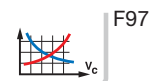
CNGQ

CNGX



Note! Grade CB7025 is uncoated.

	ISO	iC	l _a mm	l _a inch	K				S	H						ANSI
					1690	6190	620	650	7525	650	6050	650	7015	7025	7525	
	CNGA 12 04 04S01525	12	1/2								☆					CNGA431S0625
	CNGA 12 04 08S01525										☆					CNGA432S0625
	CNGA 12 04 12S01525										☆					CNGA433S0625
	CNGA 12 04 08T01525										☆					CNGA432T0625
	CNGA 12 04 08T01020	12	1/2					☆	☆	☆						CNGA432T0320
	CNGA 12 04 12T01020							☆	☆	☆						CNGA433T0320
	CNGA 12 04 16T01020							☆	☆	☆						CNGA434T0320
	CNGA 16 06 08T01020	16	5/8					☆	☆	☆						CNGA542T0320
	CNGA 16 06 12T01020							☆	☆	☆						CNGA543T0320
	CNGA 12 04 08T02520	12	1/2		☆	☆	☆									CNGA432T0820
	CNGA 12 04 12T02520				☆	☆										CNGA433T0820
	CNGA 12 04 16T02520				☆	☆										CNGA434T0820
	CNGQ 12 07 08T02520	12	1/2			☆										CNGQ452T0820
	CNGQ 12 07 12T02520					☆										CNGQ453T0820
	CNGQ 12 07 16T02520					☆										CNGQ454T0820
	CNGX120712T02520	12	1/2			☆										CNGX453T0820
	CNGX120716T02520					☆										CNGX454T0820
	CNGA120408S01030AWG	12	1/2	2.7	.106							☆	☆			CNGA432S0330AWG
	CNGA120412S01030AWG			2.7	.106							☆	☆			CNGA433S0330AWG
	CNGA090304S01030AWH	09	3/8	2.3	.091								☆			CNGA321S0330AWH
	CNGA090308S01030AWH			2.2	.087									☆		CNGA322S0330AWH
	CNGA120404S01030AWH	12	1/2	2.8	.11								☆			CNGA431S0330AWH
	CNGA120408S01030AWH			2.7	.106							☆	☆			CNGA432S0330AWH
	CNGA120412S01030AWH			2.7	.106								☆			CNGA433S0330AWH
	CNGA090304T01030AWH	09	3/8	2.3	.091								☆			CNGA321T0330AWH
	CNGA090308T01030AWH			2.2	.087								☆			CNGA322T0330AWH
	CNGA120404T01030AWH	12	1/2	2.8	.11								☆			CNGA431T0330AWH
	CNGA120408T01030AWH			2.7	.106								☆			CNGA432T0330AWH
	CNGA120412T01030AWH			2.7	.106								☆			CNGA433T0330AWH
						K10	K10	K01	K01	K05	S05	H05	H10	H15	H25	H15



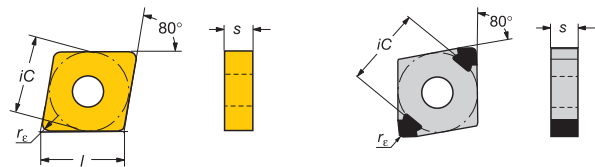
Negative basic-shape inserts

Negative basic inserts - T-MAX® P

Rhombic 80°

CNGA, CNMA

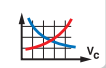
CNGX



Note! Grade CB7025 is uncoated.

	ISO		iC	l _a mm	l _a inch	K				S	H						ANSI
						CC	CC	CC	CC	CB	CC	CC	CC	CB	CB	CB	
						1690	6190	620	650	7525	650	6050	650	7015	7025	7525	
 	CNGA090304S01030A	09	3/8	2.3	.091									☆	☆		CNGA321S0330A
	CNGA090308S01030A			2.2	.087									☆	☆		CNGA322S0330A
	CNGA120404S01030A	12	1/2	2.8	.11									☆	☆		CNGA431S0330A
	CNGA120408S01018A			2.7	.106									☆	☆		CNGA432S0318A
	CNGA120408S01030A			2.7	.106									☆	☆		CNGA432S0330A
	CNGA120412S01018A			2.7	.106									☆	☆		CNGA433S0318A
	CNGA120412S01030A			2.7	.106									☆	☆		CNGA433S0330A
	CNGA120416S01030A			2.6	.102									☆	☆		CNGA434S0330A
CNGA120404S01020A			1.4	.055										☆		CNGA431S0320A	
 	CNGA120404T01020B	12	1/2	2.8	.11				☆							☆	CNGA431T0320B
	CNGA120408T01020B			2.7	.106				☆							☆	CNGA432T0320B
	CNGA120412T01020B			2.7	.106				☆							☆	CNGA433T0320B
	CNGX1204L025-18AXA	12	1/2	2.6	.102								☆	☆			CNGX1204L025-18AXA
 	CNMA120404S01020E	12	1/2	2.8	.11											☆	CNMA431S0320E
	CNMA120408S01020E			2.8	.11											☆	CNMA432S0320E
	CNMA120412S01020E			2.7	.106											☆	CNMA433S0320E
						K10	K10	K01	K01	K05	S05	H05	H05	H10	H15	H25	H15

F97

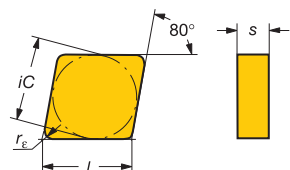


Negative basic-shape inserts

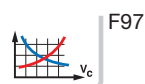
Negative basic inserts – T-Max®

Rhombic 80°

CNGN/CNG



	ISO	iC	l _a inch	K					S					H		ANSI
				CC	CC	CC	CC	CB	CC	CC	CC	CC	CC	CC	CC	
				1690	6190	620	650	7925	6060	6065	650	670	650	670		
	CNGN120408E	12	1/2						☆							CNG432A
	CNGN120412E								☆							CNG433A
	CNGN120708E								☆							CNG452A
	CNGN120712E								☆							CNG453A
	CNGN 12 04 08T01020						☆			☆	☆	☆	☆	☆		CNG432T0320
	CNGN 12 04 12T01020						☆			☆	☆	☆	☆	☆		CNG433T0320
	CNGN 12 04 16T01020						☆			☆	☆	☆	☆	☆		CNG434T0320
	CNGN 12 07 08T01020						☆		☆	☆	☆	☆	☆	☆		CNG452T0320
	CNGN 12 07 12T01020						☆		☆	☆	☆	☆	☆	☆		CNG453T0320
	CNGN 12 07 16T01020						☆		☆	☆	☆	☆	☆	☆		CNG454T0320
	CNGN 16 07 08T01020	16	5/8				☆			☆	☆	☆	☆	☆		CNG552T0320
	CNGN 16 07 12T01020						☆			☆	☆	☆	☆	☆		CNG553T0320
	CNGN 16 07 16T01020						☆			☆	☆	☆	☆	☆		CNG554T0320
	CNGN 12 04 08T02520	12	1/2		☆											CNG432T0820
	CNGN 12 04 12T02520				☆	☆	☆				☆	☆	☆	☆		CNG433T0820
	CNGN 12 04 16T02520				☆	☆										CNG434T0820
	CNGN 12 07 08T02520				☆	☆										CNG452T0820
	CNGN 12 07 12T02520				☆	☆	☆	☆			☆		☆			CNG453T0820
	CNGN 12 07 16T02520				☆	☆										CNG454T0820
	CNGN120412S02520M	12	1/2					☆								CNG433S0820M
	CNGN120416S02520M							☆								CNG434S0820M
					K10	K10	K01	K01	K05	S10	S15	S05	S15	H05	H10	



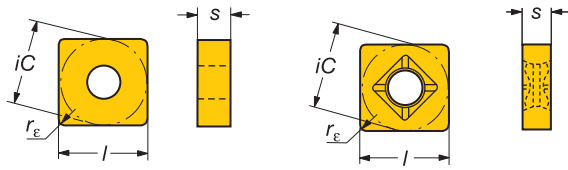
Negative basic-shape inserts

Negative basic inserts - T-MAX® P

Square

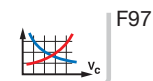
SNGA/SNMA

SNGQ



Note! Grade CB7025 is uncoated.

	ISO	□	iC	l _a mm	l _a inch	K				S	H						ANSI
						1690	6190	650	7525	650	6050	650	7015	7025	7525	CB20	
	SNGA120412S02035A	12	1/2	2.8	.11									☆			SNGA433S0835A
	SNGA120412S02035B	12	1/2	2.8	.11										☆		SNGA433S0835B
	SNGA120408S01525	12	1/2								☆						SNGA432S0625
	SNGA120412S01525										☆						SNGA433S0625
	SNGA120408T01525										☆						SNGA432T0625
	SNGA 12 04 08T01020	12	1/2					☆		☆		☆					SNGA432T0320
	SNGA 12 04 12T01020							☆		☆		☆					SNGA433T0320
	SNGA120416T01020							☆		☆		☆					SNGA434T0320
	SNGA 12 04 08T02520					☆	☆										SNGA432T0820
	SNGA 12 04 12T02520					☆	☆										SNGA433T0820
	SNGA 12 04 16T02520						☆										SNGA434T0820
	SNGQ 120708 T02520	12	1/2					☆									SNGQ452T0820
	SNGQ 120712 T02520							☆									SNGQ453T0820
	SNGQ 120716 T02520							☆									SNGQ454T0820
	SNGA090308S01030A	09	3/8	2.1	.083								☆	☆			SNGA322S0330A
	SNGA120408S01030A	12	1/2	2.7	.106								☆	☆			SNGA432S0330A
	SNGA120412S01030A			2.7	.106								☆	☆			SNGA433S0330A
	SNGA120408T01020B	12	1/2	2.7	.106				☆						☆		SNGA432T0320B
	SNGA120412T01020B			2.7	.106				☆						☆		SNGA433T0320B
						K10	K10	K01	K05	S05	H05	H05	H10	H15	H25	H15	



F97

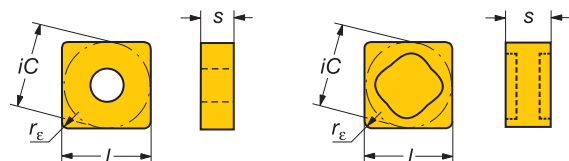
Negative basic-shape inserts

Negative basic inserts - T-MAX® P

Square

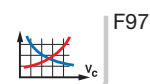
SNGA/SNMA

SNGX



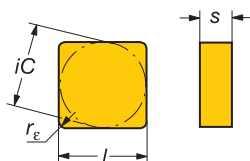
Note! Grade CB7025 is uncoated.

						K				S	H						
						CC	CC	CC	CB	CC	CC	CC	CB	CB	CB	CB	
	ISO		iC	l _a mm	l _a inch	1690	6190	650	7525	650	6050	650	7015	7025	7525	CB20	ANSI
	SNMA120408S01020E	12	1/2	3.4	.134											☆	SNMA432S0320E
	SNMA120412S01020E			3.4	.134											☆	SNMA433S0320E
	SNGX120712T02520	12	1/2			☆											SNGX453T0820
	SNGX120716T02520					☆											SNGX454T0820
						K10	K10	K01	K05	S05	H05	H05	H10	H15	H25	H15	

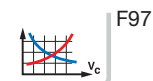


F97

Negative basic inserts – T-Max®

SNGN/SNG

	ISO	12	1/2	K				N	S				H				ANSI
				CC	CC	CC	CC	CB	CB	CD	CC	CC	CC	CC	CC	CC	
	SNGN120412E	12	1/2							☆						SNG433A	
	SNGN120712E									☆						SNG453A	
	SNGN190724E	19	3/4							☆						SNG656A	
	SNGN 09 03 08T01020	09	3/8				☆				☆	☆	☆	☆		SNG322T0320	
	SNGN 09 03 12T01020						☆				☆	☆	☆	☆		SNG323T0320	
	SNGN 12 04 08T01020	12	1/2				☆				☆	☆	☆	☆		SNG432T0320	
	SNGN 12 04 12T01020						☆				☆	☆	☆	☆		SNG433T0320	
	SNGN 12 04 16T01020						☆				☆	☆	☆	☆		SNG434T0320	
	SNGN 12 07 08T01020						☆				☆	☆	☆	☆		SNG452T0320	
	SNGN 12 07 12T01020						☆		☆		☆	☆	☆	☆		SNG453T0320	
	SNGN 12 07 16T01020						☆				☆	☆	☆	☆		SNG454T0320	
	SNGN 15 07 08T01020	15	5/8				☆				☆		☆			SNG552T0320	
	SNGN 15 07 12T01020											☆		☆		SNG553T0320	
	SNGN 15 07 16T01020						☆				☆	☆	☆	☆		SNG554T0320	
	SNGN 19 07 24T01020	19	3/4				☆				☆	☆	☆	☆		SNG656T0320	
	SNGN 190716 T01020						☆				☆		☆			SNG654T0320	
		SNGN 12 04 08T02520	12	1/2			☆										SNG432T0820
		SNGN 12 04 12T02520					☆					☆		☆			SNG433T0820
SNGN 12 04 16T02520						☆	☆									SNG434T0820	
SNGN 12 07 08T02520						☆	☆	☆								SNG452T0820	
SNGN 12 07 12T02520						☆	☆	☆	☆		☆		☆			SNG453T0820	
SNGN 12 07 16T02520						☆	☆	☆								SNG454T0820	
SNGN 15 07 16T02520		15	5/8			☆	☆									SNG554T0820	
SNGN 12 07 16T15015		12	1/2				☆				☆		☆			SNG454T6015	
SNGN 12 07 16K15015							☆				☆		☆			SNG454K6015	
		SNGN120408FD	12	1/2					☆							☆	SNG432FD
		SNGN120412FD							☆							☆	SNG433FD
		SNGN120416FD							☆							☆	SNG434FD
		SNGN090312S02520M	09	3/8					☆								SNG323S1020M
		SNGN120412S02520M	12	1/2					☆								SNG433S1020M
		SNGN120416S02520M							☆								SNG434S1020M

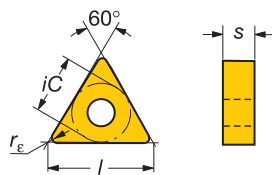


Negative basic-shape inserts

Negative basic inserts - T-MAX® P

Triangular

TNGA, TNMA



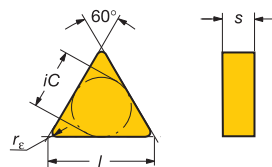
Note! Grade CB7025 is uncoated.

	ISO		iC	l _a mm	l _a inch	K					S	H						ANSI
						1690	6190	620	650	7525	650	6050	650	7015	7025	7525	CB20	
	TNGA 22 04 08T01020	22	1/2						☆		☆		☆					TNGA432T0320
	TNGA 22 04 12T01020								☆		☆		☆					TNGA433T0320
	TNGA 22 04 16T01020								☆		☆		☆					TNGA434T0320
	TNMA220408S01020E	22	1/2	3.2	.126												☆	TNMA432S0320E
	TNMA220412S01020E			2.9	.114												☆	TNMA433S0320E
						K10	K10	K01	K01	K05	S05	H05	H05	H10	H15	H25	H15	

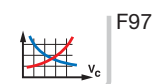
Negative basic inserts - T-Max®

Triangular

TNGN



	ISO		iC	l _a mm	l _a inch	K		N	S	H			ANSI
						650	7925	CB50	CD10	650	670	650	
	TNGN 22 04 08T01020	22	1/2							☆		☆	TNG432T0320
	TNGN220412FD	22	1/2					☆				☆	TNG433FD
						K01	K05	K05	N05	S05	S15	H05	

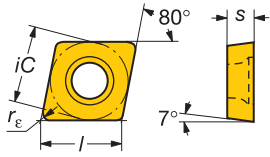


Positive basic-shape inserts

Positive basic inserts – CoroTurn® 107

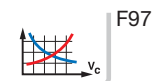
Rhombic 80°

CCGW



Note! Grade CB7025 is uncoated.

	ISO	iC	l _a mm	l _a inch	K		N		H		ANSI
					7525	1810	CD10	7015	7025	7525	
	CCGW0606020T01030F	06	1/4	1.5	.059			☆	☆		CCGW2(1.5)0T0330F
	CCGW060204S01020F			1.8	.071			☆	☆		CCGW2(1.5)1S0320F
	CCGW060204S01030F			1.8	.071			☆	☆	☆	CCGW2(1.5)1S0330F
	CCGW060208S01030F			2.0	.079			☆	☆		CCGW2(1.5)2S0330F
	CCGW060204T01030FWH	06	1/4	1.8	.071			☆	☆		CCGW2(1.5)1T0330FWH
	CCGW060208T01030FWH			2.0	.079			☆	☆		CCGW2(1.5)2T0330FWH
	CCGW09T304S01530FWH	09	3/8	1.8	.071			☆			CCGW3(2.5)1S0630FWH
	CCGW060204T01020F	06	1/4	2.6	.102	☆					CCGW2(1.5)1T0320F
	CCGW09T304T01020F	09	3/8	2.6	.102	☆					CCGW2(2.5)1T0320F
	CCGW09T308T01020F			2.5	.098	☆					CCGW3(2.5)2T0320F
	CCGW09T304S01020FWH	09	3/8	2.6	.102				☆		CCGW3(2.5)1S0320FWH
	CCGW09T308S01020FWH			2.6	.102				☆		CCGW3(2.5)2S0320FWH
	CCGW09T312S01020FWH			2.6	.102			☆			CCGW3(2.5)3S0320FWH
	CCGW09T304T01020FWH			2.6	.102			☆			CCGW3(2.5)1T0320FWH
	CCGW09T308T01020FWH			2.5	.098			☆			CCGW3(2.5)2T0320FWH
	CCGW09T304S01020F	09	3/8	2.6	.102			☆	☆		CCGW3(2.5)1S0320F
	CCGW09T308S01020F			2.5	.098			☆	☆		CCGW3(2.5)2S0320F
	CCGW09T312S01020F			2.6	.102			☆	☆		CCGW3(2.5)3S0320F
	CCGW09T304S01530F			1.8	.071			☆	☆	☆	CCGW3(2.5)1S0630F
	CCGW09T308S01530F			2.0	.079			☆	☆	☆	CCGW3(2.5)2S0630F
	CCGW09T312S01530F			2.3	.091			☆	☆		CCGW3(2.5)3S0630F
	CCMW060204FP	06	1/4	2.9	.114		☆				CCMW2(1.5)1FP
	CCMW09T304FP	09	3/8	4.3	.169		☆				CCMW3(2.5)1FP
	CCMW09T308FP			4.2	.165		☆				CCMW3(2.5)2FP
						K05	N10	N05	H10	H15	H25



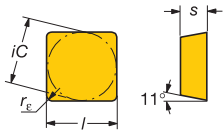
F97

Positive basic-shape inserts

Positive basic inserts – T-Max®

Square

SPGN/SPG, SPUN/SPU

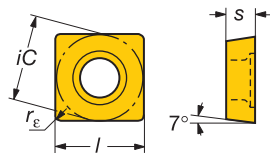


						K						N		S				H			
						CC	CC	CC	CC	CB	CB	CD	CD	CC	CC	CC	CC	CC	CC	CB	
	ISO		iC	l _a mm	l _a inch	1690	6190	620	650	7925	CB50	CD10	6060	6065	650	670	650	670	CB50	ANSI	
	SPGN 12 04 08T01020	12	1/2						☆						☆		☆			SPG432T0320	
	SPGN 12 04 12T01020								☆						☆		☆			SPG433T0320	
 	SPUN120304FP	12	1/2	4.6	.181							☆							SPU421FP		
						K10	K10	K01	K01	K05	K05	N05	S10	S15	S05	S15	H05	H10	H25		

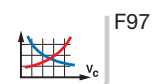
Positive basic inserts – CoroTurn® 107

Square

SCGW



						H		
						CB	CB	
	ISO		iC	l _a mm	l _a inch	7015	7025	ANSI
	SCGW09T304S01030F	09	3/8	1.8	.071	☆	☆	SCGW3(2.5)1S0330F
	SCGW09T308S01030F			2.1	.083	☆	☆	SCGW3(2.5)2S0330F
						H10	H15	

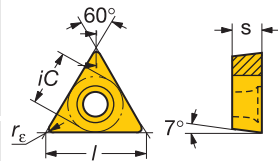


Positive basic-shape inserts

Positive basic inserts – CoroTurn® 107

Triangular

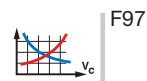
TCGW, TCMW



Note! Grade CB7025 is uncoated.

			<i>iC</i>	<i>l_a</i> mm	<i>l_a</i> inch	K		N		H				ANSI
						CB	CD	CD	CB	CB	CB	CB		
	TCGW110202T01020F	11	1/4	3.2	.126	☆							TCGW2(1.5)0T0320F	
	TCGW110204T01020F			3.0	.118	☆							TCGW2(1.5)1T0320F	
	TCGW090202S01020F	09	7/32	3.2	.126				☆	☆			TCGW1.8(1.5)0S0320F	
	TCGW090204S01020F			3.0	.118				☆	☆			TCGW1.8(1.5)1S0320F	
	TCGW110204S01020F	11	1/4	3.0	.118				☆	☆			TCGW2(1.5)1S0320F	
	TCGW110208S01020F			2.7	.106				☆	☆			TCGW2(1.5)2S0320F	
	TCGW110304S01020F			3.0	.118				☆	☆			TCGW221S0320F	
	TCGW110308S01020F			2.7	.106				☆	☆			TCGW222S0320F	
	TCGW090204S01030F	09	7/32	1.8	.071				☆				TCGW1.8(1.5)1S0330F	
	TCGW090204S01530F			1.8	.071						☆		TCGW1.8(1.5)1S0630F	
	TCGW110204S01530F	11	1/4	1.8	.071				☆	☆			TCGW2(1.5)1S0630F	
	TCGW110208S01530F			2.0	.079				☆	☆			TCGW2(1.5)2S0630F	
TCGW110308S01530F			2.0	.079					☆			TCGW222S0630F		
	TCMW090204S01020E	09	7/32	3.0	.118							☆	TCMW1.8(1.5)1S0320E	
	TCMW 110304S01020E	11	1/4	3.0	.118							☆	TCMW221S0320E	
	TCMW 110308S01020E			3.0	.118							☆	TCMW222S0320E	
	TCMW110204S01020E			3.0	.118							☆	TCMW2(1.5)1 S0320E	
	TCMW110208S01020E			3.0	.118							☆	TCMW2(1.5)2S0320E	
	TCMW090204FP	09	7/32	2.7	.106			☆					TCMW1.8(1.5)1FP	
	TCMW 110304FP	11	1/4	2.7	.106			☆					TCMW221FP	
	TCMW 110308FP			2.4	.094			☆					TCMW222FP	
	TCMW110204FP			2.7	.106			☆					TCMW2(1.5)1FP	
	TCMW110208FP			2.4	.094			☆					TCMW2(1.5)2FP	
	TCMW16T304FP	16	3/8	4.2	.165			☆					TCMW3(2.5)1FP	
	TCMW16T308FP			3.9	.154			☆					TCMW3(2.5)2FP	
	TCMW16T304FR/LP	16	3/8	7.4	.291			☆					TCMW3(2.5)1FLP	
						K05	N10	N05	H10	H15	H25	H15		

★ = First choice

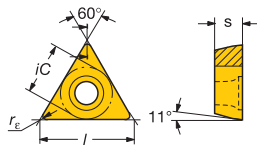


Positive basic-shape inserts

Positive basic inserts – CoroTurn® 111

Triangular

TPGW



Note! Grade CB7025 is uncoated.

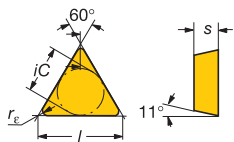
	ISO		<i>iC</i>	$\frac{l_a}{mm}$	$\frac{l_a}{inch}$	H		ANSI
						CB	CB	
						7015	7025	
 	TPGW110304S01020F	11	1/4	3.0	.118	☆	☆	TPGW221S0320F
	TPGW110308S01020F			2.7	.106	☆	☆	TPGW222S0320F
						H10	H15	

★= First choice

Positive basic inserts – T-Max®

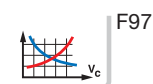
Triangular

TPUN/TPU TPGN/TPG



	ISO		<i>iC</i>	$\frac{1}{a}$ mm	$\frac{1}{a}$ inch	K		N	S	H		ANSI		
						CC	CB	CB	CD	CC	CC		CC	CB
	TPGN 11 03 04T01020	11	1/4			☆				☆	☆		TPG221T0320	
	TPGN 11 03 08T01020					☆				☆	☆	☆	TPG222T0320	
	TPGN 16 03 04T01020	16	3/8			☆				☆	☆		TPG321T0320	
	TPGN 16 03 08T01020					☆				☆	☆	☆	TPG322T0320	
	TPGN 16 03 12T01020					☆				☆	☆	☆	TPG323T0320	
 	TPUN110304FP	11	1/4	2.7	.106				☆				TPU221FP	
	TPUN160304FP	16	3/8	2.7	.106				☆				TPU321FP	
	TPUN160304FR/LP			7.4	.291				☆				TPU321FLP	
	TPGN 16 03 08E	16	3/8			☆				☆	☆		TPG322A	
						K01	K05	K05	N05	S05	S15	H05	H10	H25

★= First choice



D
E
F
G
J

Grades for general turning

	ISO	ANSI		
P Steel	01	C8	CT 5015	GC 4205
	10		GC 1525	GC 4215
	20	C7		GC 4225
	30	C6	GC 4235	GC 1515
	40			GC 3005
				GC 15
	50	C5		GC 1125
M Stainless steel	10		GC 2015	GC 1115
	20		GC 1125	GC 2025
	30		GC 2035	GC 235
	40			GC 1105
K Cast iron	01	C4	CB 7525	CC 650
	10	C3	CC 6190	GC 3205
	20	C2	GC 1690	GC 3210
	30	C1	GC 3215	GC 3005
	40			GC 4215
N Non-ferrous metals	01	C4		
	10	C3	H10	CD 1810
	20	C2	CD 10	H13A
	30	C1		GC 1115
S Heat resistant and super alloys	01		Ni-based	
	10		CC 670	CC 6060
	20		CC 6065	S05F
	30		GC 1105	GC 1005
	40		GC 1115	H10A
H Hardened materials	01	C4		CC 6050
	10	C3	CB 7015	CC 650
	20	C2	CB 7025	CC 670
	30	C1	CB 7525	GC 4205

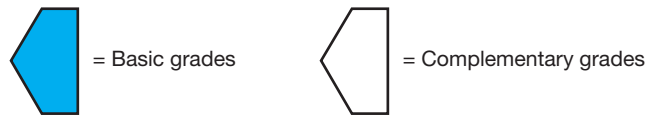
The position and form of the grade symbols indicate the suitable field of application.

Centre of the field of application.

Recommended field of application.

▲ Wear resistance

▼ Toughness



Cutting data and chip control

Chip evacuation and process stability are important factors that affect the selection of cutting data for boring applications.

Cutting speed recommendations for chosen grades (see next page) can be followed generally, but it is not recommended to use starting values higher than those given below, in order to take the boring tool application into consideration.

Maximum recommended starting value for cutting speed is 200 m/min (656 ft/min) for rough boring and 240 m/min (787 ft/min) for fine boring, to ensure proper chip evacuation and to secure a stable process.

The recommended starting value for cutting speed for fine boring head 391.37A with steel or carbide bars with inserts is 90-120 m/min (295-394 ft/min, use lower values for long steel bars). Recommended starting value for ground carbide bars is 60 m/min (197 ft/min).

Recommended depth of cut and feed for the chosen insert (see turning catalogue or insert box) can generally be followed, but with the following exceptions:

- Maximum recommended depth of cut for fine boring is 0.5 mm (0.020 inch)
- Cutting speed must be reduced when working with long overhangs
Silent Tools can be used to achieve higher cutting speeds at certain overhangs
- If the tool is adjusted to the minimum possible diameter, chip evacuation will be more critical and a reduction of cutting depth might be necessary
- Maximum feed in fine boring is limited by desired surface finish. The possibility to influence chip form is therefore limited. By using a wiper insert, the surface finish can be retained at higher feeds. However, the wiper inserts exert more radial pressure, increasing the risk for an unstable process.

Cutting speed recommendations, metric values

The recommendations are valid for use with cutting fluid.

ISO P	CMC No.	Steel	Specific cutting force k_{c1}	Hardness Brinell	<<<< WEAR RESISTANCE			
					CT5005	CT5015	GC1525	GC15
					$h_{ex}, \text{ mm} \approx \text{feed } f_n, \text{ mm/r}$			
					0.05-0.1-0.2	0.05-0.1-0.2	0.05-0.1-0.2	0.1-0.2-0.3
MC No.		Material	N/mm ²	HB	Cutting speed (v_c), m/min			
P1.1.Z.AN	01.1	Unalloyed steel C = 0.1–0.25%	1500	125	730-590-485	650-540-440	560-465-380	300-250-215
P1.2.Z.AN	01.2	C = 0.25–0.55%	1600	150	650-530-420	570-480-385	495-415-335	275-225-195
P1.3.Z.AN	01.3	C = 0.55–0.80%	1700	170	-	510-425-340	430-365-295	260-215-185
P2.1.Z.AN	02.1	Low-alloy steel (alloying elements ≤5%) Non-hardened	1700	180	530-450-360	480-400-320	375-320-255	220-175-150
P2.1.Z.AN	02.12	Ball bearing steel	1800	210	-	-	-	190-155-135
P2.5.Z.HT	02.2	Hardened and tempered	1850	275	395-325-250	285-235-190	200-165-135	140-115-100
P2.5.Z.HT	02.2	Hardened and tempered	2050	350	320-260-200	230-190-150	160-135-110	110-95-80
P3.0.Z.AN	03.11	High-alloy steel (alloying elements >5%) Annealed	1950	200	-	395-330-250	260-215-175	-
P3.0.Z.HT	03.21	Hardened tool steel	3000	325	-	195-165-130	145-115-90	-
P1.5.C.UT	06.1	Steel castings Unalloyed	1550	180	-	260-215-175	225-185-145	-
P2.6.C.UT	06.2	Low-alloy (alloying elements ≤5%)	1600	200	-	270-225-170	175-145-105	-
P3.0.C.UT	06.3	High-alloy (alloying elements >5%)	2050	225	-	200-165-125	140-115-85	-
ISO M	CMC No.	Stainless steel	Specific cutting force k_{c1}	Hardness Brinell	<<<< WEAR RESISTANCE			
					GC1525	GC1105	GC1115	GC15
					$h_{ex}, \text{ mm} \approx \text{feed } f_n, \text{ mm/r}$			
					0.1-0.2	0.1-0.2-0.3	0.1-0.2-0.3	0.1-0.2-0.3
MC No.		Material	N/mm ²	HB	Cutting speed (v_c), m/min			
P5.0.Z.AN	05.11	Ferritic/martensitic Bars/forged Non-hardened	1800	200	290-240	380-305-245	335-255-200	250-190-150
P5.0.Z.PH	05.12	PH-hardened	2850	330	170-150	350-280-225	185-150-120	145-115-95
P5.0.Z.HT	05.13	Hardened	2350	330	170-150	245-195-160	200-160-140	145-120-105
M1.0.Z.AQ	05.21	Austenitic Bars/forged Austenitic	1800	180	220-195	410-330-265	265-215-165	205-165-130
M1.0.Z.PH	05.22	PH-hardened	2850	330	195-170	220-175-145	185-150-120	145-115-90
M2.0.Z.AQ	05.23	Super austenitic	2250	200	145-130	245-200-160	220-190-155	170-145-120
M3.1.Z.AQ	05.51	Austenitic-ferritic (Duplex) Bars/forged Non-weldable ≥ 0.05%C	2000	230	-	315-255-205	250-205-155	195-160-120
M3.2.Z.AQ	05.52	Weldable < 0.05%C	2450	260	-	280-225-185	230-170-130	175-130-100
P5.0.C.UT	15.11	Ferritic/martensitic Cast Non-hardened	1700	200	-	320-265-205	320-265-205	240-200-155
P5.0.C.HT	15.12	PH-hardened	2450	330	-	160-130-95	160-130-95	135-110-80
P5.0.C.HT	15.13	Hardened	2150	330	-	175-145-110	175-145-110	140-115-85
M1.0.C.UT	15.21	Austenitic Cast Austenitic	1700	180	-	280-225-170	280-225-170	215-175-135
M1.0.C.UT	15.22	PH-hardened	2450	330	-	160-130-95	160-130-95	135-110-80
M2.0.C.AQ	15.23	Super austenitic	2150	200	-	210-180-150	210-180-150	160-135-115
M3.1.C.AQ	15.51	Austenitic-ferritic (Duplex) Cast Non-weldable ≥ 0.05%C	1800	230	-	230-170-120	230-170-120	185-135-95
M3.2.C.AQ	15.52	Weldable < 0.05%C	2250	260	-	205-155-110	205-155-110	170-130-90
ISO K	CMC No.		Specific cutting force k_{c1}	Hardness Brinell	<<<< WEAR RESISTANCE			
					CB50	CB7525	CB7925	CC620
					$h_{ex}, \text{ mm} \approx \text{feed } f_n, \text{ mm/r}$			
					0.1-0.25-0.4	0.1-0.25-0.4	0.1-0.25-0.4	0.1-0.25-0.4
MC No.		Material	N/mm ²	HB	Cutting speed (v_c), m/min			
K1.1.C.NS	07.1	Malleable cast iron Ferritic (short chipping)	790	130	-	-	-	800-700-600
K1.1.C.NS	07.2	Pearlitic (long chipping)	900	230	-	-	-	700-590-500
K2.1.C.UT	08.1	Grey cast iron Low tensile strength	890	180	1700-1450-1200	1700-1450-1200	1450-1200-1050	800-700-600
K2.2.C.UT	08.2	High tensile strength	970	220	1450-1250-1050	1450-1250-1050	1250-1050-890	760-650-540
K3.1.C.UT	09.1	Nodular SG iron Ferritic	900	160	-	-	-	-
K3.3.C.UT	09.2	Pearlitic	1350	250	-	-	-	-
K3.4.C.UT	09.3	Martensitic	2100	380	-	-	-	-

Cutting speed recommendations, metric values

TOUGHNESS >>>>										
GC1515	GC1125	GC3005	GC4205	GC4215	GC4225	GC2015	GC4235	GC30	GC2025	
0.1-0.2-0.3	0.1-0.2-0.3	0.1-0.3-0.5	0.1-0.4-0.8	0.1-0.4-0.8	0.1-0.4-0.8	0.1-0.4-0.8	0.1-0.4-0.8	0.15-0.25-0.4	0.1-0.4-0.8	
310-290-255 280-255-245 285-260-230	310-290-255 280-255-225 260-235-210	520-415-340 470-370-305 445-355-290	620-450-330 560-405-295 530-385-275	570-405-300 510-365-265 460-330-240	510-345-245 455-305-215 425-290-205	440-300-210 400-270-190 370-250-175	425-275-200 380-245-180 365-235-170	305-260-215 275-235-195 260-220-185	295-200-145 265-180-130 250-170-120	
295-200-125 - 195-100-40 160-80-34	- - - -	500-375-300 - 275-215-175 225-170-140	610-410-285 530-350-250 330-230-175 265-185-140	560-370-260 460-305-215 300-210-155 240-170-125	460-305-215 395-265-190 255-180-140 205-145-110	395-265-190 350-230-160 260-180-140 210-145-115	300-185-135 250-155-110 185-120-85 150-95-70	215-180-150 190-160-130 135-115-95 110-95-80	220-145-100 195-125-85 145-95-65 115-75-50	
	- -	370-275-225 180-130-105	445-295-215 220-140-105	405-270-200 200-130-95	300-205-150 135-95-75	260-180-130 115-85-65	240-155-105 110-70-50		185-125-85 85-55-38	
	- - -	275-220-185 270-200-170 205-155-130	335-235-185 290-205-155 225-150-115	300-215-170 260-185-140 205-135-105	240-180-130 210-140-100 185-125-90	210-155-110 180-120-85 160-110-75	185-140-100 165-100-70 145-95-65		140-105-80 125-80-55 110-75-50	
TOUGHNESS >>>>										
GC1515	GC1125	GC2015	GC30	GC2025	GC2035	GC235				
0.1-0.2-0.3	0.1-0.2-0.3	0.2-0.4-0.6	0.15-0.25-0.4	0.2-0.4-0.6	0.2-0.4-0.6	0.2-0.4-0.6				
305-235-185 170-135-110 180-150-130	280-215-170 155-125-100 165-135-120	260-220-200 125-100-80 145-120-85	220-200-175 85-75-60 95-90-70	230-175-135 110-70-50 120-80-55	180-160-130 85-65-45 95-70-50	130-110-90 70-55-45 75-60-50				
245-195-150 170-135-110 205-175-145	220-180-135 155-125-100 185-160-130	290-240-190 130-100-80 160-135-100	190-175-145 100-85-70 130-120-95	240-175-130 100-70-55 130-100-75	170-145-115 85-65-45 100-90-70	115-100-85 70-55-45 85-70-60				
230-185-145 210-155-120	210-170-130 190-140-110	220-185-145 190-150-120	175-160-130 125-115-105	190-150-110 150-120-90	160-135-105 130-110-85	105-95-80 95-80-70				
290-240-185 150-120-90 160-130-100	265-220-170 135-110-80 145-120-90	250-210-170 100-70-55 110-90-60	200-170-150 80-65-50 90-75-60	220-160-120 85-55-40 120-80-55	170-145-115 70-50-40 75-60-50	115-100-85 60-45-35 65-50-40				
255-205-160 150-120-90 195-165-135	230-185-145 135-110-80 175-150-125	220-180-140 105-80-60 145-115-95	155-135-115 80-65-50 120-100-85	200-155-115 85-55-40 130-90-65	150-120-95 70-50-40 100-80-60	100-90-75 65-45-33 80-65-55				
210-155-110 185-145-100	190-140-100 170-130-90	185-150-135 160-140-105	165-145-115 115-100-95	150-120-90 125-105-80	130-110-85 105-95-75	95-80-70 90-75-65				
TOUGHNESS >>>>										
CC650	CC6190	CC1690	CT5015	GC3205	GC3210	GC3215	GC3005	GC4215	GC30	H13A
0.1-0.25-0.4	0.2-0.4-0.6	0.2-0.4-0.6	0.1-0.2-0.3	0.2-0.4-0.6	0.2-0.4-0.6	0.2-0.4-0.6	0.2-0.4-0.6	0.2-0.4-0.6	0.2-0.4-0.6	0.1-0.3-0.5
800-700-600 700-600-500	810-660-550 700-550-440	740-600-500 640-500-400	200-165-135 140-115-95	460-380-325 375-310-265	385-315-265 315-255-215	260-215-185 210-175-150	250-210-185 235-190-150	325-265-225 265-220-185	165-165-150 120-110-90	140-125-110 125-110-90
800-700-600 760-650-540	890-720-600 790-620-500	740-600-500 690-540-435	320-260-220 280-235-205	530-435-375 425-350-300	445-360-305 355-290-245	300-250-210 240-200-170	275-245-225 260-225-200	370-305-260 285-245-220	230-200-160 175-150-120	180-145-110 140-115-95
610-550-450 510-450-350 350-305-260	- - -	580-450-345 480-350-250 325-260-220	255-200-160 230-195-170 115-95-85	390-330-275 350-300-250 265-225-190	360-305-250 325-275-225 245-210-170	240-195-165 215-175-150 165-135-115	265-215-180 240-195-160 185-140-110	280-230-195 260-210-175 205-160-125	170-145-120 120-105-90 65-50-37	135-125-95 125-115-90 100-85-65

Cutting speed recommendations, metric values

The recommendations are valid for use with cutting fluid.

ISO N	CMC No.	Non-ferrous metals	Specific cutting force k_{c1}	Hardness Brinell	<<<< WEAR RESISTANCE		
					CD10	CD1810	H10
					$h_{ex}, mm \approx feed f_n, mm/r$		
					0.05-0.4	0.15-0.8	0.15-0.8
MC No.		Material	N/mm ²	HB	Cutting speed (v_c), m/min		
N1.2.Z.UT	30.11	Aluminium alloys Wrought or wrought and coldworked, non-aging	400	60	2 000 (2500-250) ¹⁾	2 000 (2500-250) ¹⁾	2 000 (2500-250) ¹⁾
N1.2.Z.AG	30.12	Wrought or wrought and aged	650	100	2 000 (2500-250) ¹⁾	2 000 (2500-250) ¹⁾	2 000 (2500-250) ¹⁾
N1.3.C.UT	30.21	Aluminium alloys Cast, non-aging	600	75	2 000 (2500-250) ¹⁾	2 000 (2500-250) ¹⁾	2 000 (2500-250) ¹⁾
N1.3.C.AG	30.22	Cast or cast and aged	700	90	2 000 (2500-250) ¹⁾	2 000 (2500-250) ¹⁾	2 000 (2500-250) ¹⁾
N1.4.C.NS	30.41	Aluminium alloys Cast, 13-15% Si	700	130	1 550 (1950-195) ¹⁾	770 (960-95) ¹⁾	450 (560-55) ¹⁾
	30.42	Cast, 16-22% Si	700	130	770 (960-95) ¹⁾	510 (640-65) ¹⁾	300 (375-38) ¹⁾
N3.3.U.UT	33.1	Copper and copper alloys Free cutting alloys, $\geq 1\%$ Pb	550	110	500 (630-65) ¹⁾	500 (630-65) ¹⁾	500 (630-65) ¹⁾
N3.2.C.UT	33.2	Brass, leaded bronzes, $\leq 1\%$ Pb	550	90	500 (630-65) ¹⁾	500 (630-65) ¹⁾	500 (630-65) ¹⁾
N3.1.U.UT	33.3	Bronze and non-leadad copper incl. electrolytic copper	1350	100	300 (375-38) ¹⁾	300 (375-38) ¹⁾	300 (375-38) ¹⁾
ISO S	CMC No.	Heat resistant material	Specific cutting force k_{c1}	Hardness Brinell	<<<< WEAR RESISTANCE		
					CC650	CC6060	CC6065
					$h_{ex}, mm \approx feed f_n, mm/r$		
					0.1 - 0.2	0.1-0.2-0.3	0.1-0.2-0.3
MC No.		Material	N/mm ²	HB	Cutting speed (v_c), m/min		
S1.0.U.AN	20.11	Heat resistant super alloys Iron base Annealed or solution treated	2400	200	-	-	-
S1.0.U.AG	20.12	Aged or solution treated and aged	2500	280	-	-	-
S2.0.Z.AN	20.21	Nickel base Annealed or solution treated	2650	250	400-320	400-325-270	330-255-200
S2.0.Z.AG	20.22	Aged or solution treated and aged	2900	350	340-265	300-235-190	240-175-130
S2.0.C.NS	20.24	Cast or cast and aged	3000	320	220-160	240-205-175	215-180-150
S3.0.Z.AN	20.31	Cobalt base Annealed or solution treated	2700	200	345-260	-	-
S3.0.Z.AG	20.32	Solution treated and aged	3000	300	300-225	-	-
S3.0.C.NS	20.33	Cast or cast and aged	3100	320	285-225	-	-
S4.1.Z.UT	23.1	Titanium alloys²⁾ Commercial pure (99.5% Ti)	1300	Rm ³⁾ 400	H10 0.1-0.2-0.3	GC1105 0.1-0.2-0.3	H10A 0.1-0.3-0.5
S4.2.Z.AN	23.21	α , near α and $\alpha + \beta$ alloys, annealed	1400	950	205-170-145	205-170-145	195-160-135
S4.3.Z.AG	23.22	$\alpha + \beta$ alloys in aged conditions, β alloys, annealed or aged	1400	1050	85-70-55	85-70-55	80-65-55
					80-60-50	80-60-50	80-60-50
ISO H	CMC No.	Hardened material	Specific cutting force k_{c1}	Hardness Brinell	<<<< WEAR RESISTANCE		
					CB7015	CB7025	CB20
					$h_{ex}, mm \approx feed f_n, mm/r$		
					0.05-0.15-0.25	0.05-0.15-0.25	0.05-0.15-0.25
MC No.		Material	N/mm ²	HB	Cutting speed (v_c), m/min		
H1.1.Z.HA	04.1	Hard steel Hardened and tempered	2500	45HRC	-	-	-
H1.1.Z.HA	04.1		3050	50HRC	350-265-225	250-210-185	260-230-205
H1.2.Z.HA	04.1		3650	55HRC	295-225-185	210-175-155	215-195-170
H1.3.Z.HA	04.1	Extra hard steel Hardened and tempered	4300	60HRC	250-190-160	180-150-135	185-165-145
H1.4.Z.HA	04.1		5000	65HRC	215-165-135	155-130-115	160-140-125
H2.0.C.UT	10.1	Chilled cast iron Cast or cast and aged	2250	400	-	-	-

¹⁾ The cutting speeds, shown in the table, are valid for all feeds within the feed range.

²⁾ 45-60° entering angle, positive cutting geometry and coolant should be used.

³⁾ Rm = ultimate tensile strength measured in MPa.

Cutting speed recommendations, metric values

TOUGHNESS >>>>									
H13A	GC1115	GC15	GC1025	GC1125					
0.15-0.8	0.15-0.8	0.15-0.8	0.15-0.8	0.15-0.8					
1 900 (2400-240) ¹⁾	810 (1000-100) ¹⁾	810 (1000-100)1)	770 (960-95) ¹⁾	770 (960-95) ¹⁾					
1 900 (2400-240) ¹⁾	315 (395-39) ¹⁾	315 (395-39)1)	300 (375-38) ¹⁾	300 (375-38) ¹⁾					
1 900 (2400-240) ¹⁾	810 (1000-100) ¹⁾	810 (1000-100)1)	770 (960-95) ¹⁾	770 (960-95) ¹⁾					
1 900 (2400-240) ¹⁾	540 (680-70) ¹⁾	540 (680-70)1)	510 (640-65) ¹⁾	510 (640-65) ¹⁾					
400 (500-50) ¹⁾	315 (395-39) ¹⁾	315 (395-39)1)	300 (375-38) ¹⁾	300 (375-38) ¹⁾					
250 (315-31) ¹⁾	220 (275-28) ¹⁾	220 (275-28)1)	210 (265-26) ¹⁾	210 (265-26) ¹⁾					
450 (560-55) ¹⁾	210 (265-26) ¹⁾	210 (265-26)1)	200 (250-25) ¹⁾	200 (250-25) ¹⁾					
450 (560-55) ¹⁾	125 (155-16) ¹⁾	125 (155-16)1)	120 (150-15) ¹⁾	120 (150-15) ¹⁾					
270 (340-34) ¹⁾	90 (115-11) ¹⁾	90 (115-11)1)	85 (105-11) ¹⁾	85 (105-11) ¹⁾					
TOUGHNESS >>>>									
CC670	S05F	GC1105	GC1115	GC15	GC1005	H10A	H13A	GC1125	H10F
0.1-0.2-0.3	0.1-0.2-0.3	0.1-0.3-0.5	0.1-0.3-0.5	0.1-0.3-0.5	0.1-0.3-0.5	0.1-0.3-0.5	0.1-0.3-0.5	0.1-0.2-0.5	0.1-0.3-0.5
-	160-135-110	150-100-70	120-80-55	120-80-55	150-100-70	85-70-55	80-65-50	75-60-45	70-55-40
-	125-105-85	120-80-60	95-65-50	95-65-50	120-80-60	65-55-40	60-50-40	55-45-35	50-40-30
385-315-270	100-85-70	90-55-30	70-45-24	70-45-24	90-55-30	55-40-32	50-40-30	45-35-25	40-30-20
325-270-230	90-75-60	80-50-27	65-40-22	65-40-22	80-50-27	40-32-21	40-30-20	35-25-15	30-20-10
295-245-210	80-65-55	70-45-24	60-37-19	60-37-19	70-45-24	26-21-16	25-20-15	23-17-12	20-15-10
345-255-205	100-85-70	90-60-30	70-45-24	70-45-24	90-60-30	55-40-32	50-40-30	45-35-25	40-30-20
300-225-175	90-75-60	80-50-27	65-40-21	65-40-21	80-50-27	40-32-21	40-30-20	35-25-15	30-20-10
285-225-170	80-65-55	70-45-24	60-37-19	60-37-19	70-45-24	26-21-16	25-20-15	23-17-12	20-15-10
H13A	H10F	GC1115	GC15						
0.1-0.3-0.5	0.1-0.3-0.5	0.1-0.3-0.5	0.1-0.3-0.5						
180-150-125	160-135-115	185-155-130	185-155-130						
75-60-50	65-55-45	80-65-50	80-65-50						
70-55-45	65-50-40	75-55-45	75-55-45						
TOUGHNESS >>>>									
CB7525	CB7925	CC6050	CC670	GC4205	GC4215	H13A			
0.1-0.25-0.4	0.1-0.25-0.4	0.05-0.15-0.25	0.1-0.25-0.4	0.1-0.3-0.6	0.1-0.3-0.6	0.1-0.3-0.6			
-	-	290-235-175	205-170-135	70-45-29	65-40-26	45-25-16			
205-165-135	-	240-195-145	165-140-110	-	-	-			
175-140-110	-	200-165-120	140-115-95	-	-	-			
145-120-95	-	170-140-105	120-100-80	-	-	-			
125-100-80	-	145-120-90	105-85-70	-	-	-			
180-150-120	180-150-120	-	120-90-60	50-29-17	45-26-15	35-20-11			

Cutting speed recommendations, inch values

The recommendations are valid for use with cutting fluid.

ISO P	CMC No.	Steel	Specific cutting force k_{c1}	Hardness Brinell	<<<< WEAR RESISTANCE				
					CT5005	CT5015	GC1525	GC15	GC1515
					h_{ex} , inch $\approx$ feed, f_n inch/rev. at 0° to -5° lead				
					.002-.004-.008	.002-.004-.008	.002-.004-.008	.004-.008-.012	.004-.008-.012
MC No.		Material	lbs/in ²	HB	Cutting speed v_c , ft/min				
P1.1.Z.AN	01.1	Unalloyed steel C = 0.1–0.25%	216,500	125	2400-1950-1600	2150-1800-1450	1850-1500-1250	990-820-710	1000-950-830
P1.2.Z.AN	01.2	C = 0.25–0.55%	233,000	150	2150-1750-1350	1900-1550-1250	1600-1350-1100	890-740-640	1000-910-810
P1.3.Z.AN	01.3	C = 0.55–0.80%	247,000	170	-	1650-1400-1100	1400-1200-960	850-700-610	940-850-750
P2.1.Z.AN	02.1	Low-alloy steel (alloying elements $\leq 5\%$) Non-hardened	249,500	180	1750-1450-1150	1550-1300-1050	1250-1050-830	710-570-490	960-650-405
P2.1.Z.AN	02.12	Ball bearing steel	259,500	210	-	-	-	630-510-440	-
P2.5.Z.HT	02.2	Hardened and tempered	268,000	275	1300-1050-810	920-770-610	650-540-435	455-375-325	640-320-130
P2.5.Z.HT	02.2	Hardened and tempered	298,000	350	1050-850-650	740-620-495	520-435-350	365-305-265	520-255-105
P3.0.Z.AN	03.11	High-alloy steel (alloying elements $> 5\%$) Annealed	282,000	200	-	1300-1050-820	840-710-570	-	-
P3.0.Z.HT	03.21	Hardened tool steel	435,500	325	-	640-530-420	465-370-290	-	-
P1.5.C.UT	06.1	Steel castings Unalloyed	225,000	180	-	850-700-570	740-600-470	-	-
P2.6.C.UT	06.2	Low-alloy (alloying elements $\leq 5\%$)	230,500	200	-	880-730-550	580-470-345	-	-
P3.0.C.UT	06.3	High-alloy (alloying elements $> 5\%$)	300,500	225	-	660-550-410	460-365-280	-	-
ISO M	CMC No.	Stainless steel	Specific cutting force k_{c1}	Hardness Brinell	<<<< WEAR RESISTANCE				
					GC1525	GC1105	GC1115	GC15	GC1515
					h_{ex} , inch $\approx$ feed, f_n inch/rev. at 0° to -5° lead				
					.004-.008	.004-.008-.012	.004-.008-.012	.004-.008-.012	.004-.008-.012
MC No.		Material	lbs/in ²	HB	Cutting speed v_c , ft/min				
P5.0.Z.AN	05.11	Ferritic/martensitic Bars/forged Non-hardened	262,000	200	950-790	1250-990-800	1100-840-650	820-620-485	1000-770-600
P5.0.Z.PH	05.12	PH-hardened	411,500	330	560-490	1150-910-740	610-490-390	470-380-300	560-445-355
P5.0.Z.HT	05.13	Hardened	340,000	330	560-490	790-630-510	650-530-460	475-385-340	590-485-425
M1.0.Z.AQ	05.21	Austenitic Bars/forged Austenitic	259,000	180	720-640	1350-1050-870	870-700-530	680-540-415	800-640-490
M1.0.Z.PH	05.22	PH-hardened	414,000	330	630-560	720-580-470	610-490-390	470-375-385	560-445-355
M2.0.Z.AQ	05.23	Super austenitic	328,000	200	485-430	810-640-520	730-630-510	550-475-385	670-570-465
M3.1.Z.AQ	05.51	Austenitic-ferritic (Duplex) Bars/forged Non-weldable $\geq 0.05\%C$	286,500	230	-	1050-820-670	830-660-510	640-510-390	760-610-465
M3.2.Z.AQ	05.52	Weldable $< 0.05\%C$	356,500	260	-	920-740-600	740-550-430	570-415-325	680-500-390
P5.0.C.UT	15.11	Ferritic/martensitic Cast Non-hardened	246,500	200	-	-	1050-860-660	790-650-500	960-790-610
	15.12	PH-hardened	354,500	330	-	-	530-430-310	440-355-255	490-395-285
P5.0.C.HT	15.13	Hardened	311,000	330	-	-	570-470-350	460-380-280	520-430-320
M1.0.C.UT	15.21	Austenitic Cast Austenitic	248,000	180	-	-	910-730-560	710-570-435	830-670-510
	15.22	PH-hardened	356,000	330	-	-	530-430-310	440-355-255	485-395-285
M2.0.C.AQ	15.23	Super austenitic	310,500	200	-	-	690-590-490	520-440-365	630-540-445
M3.1.C.AQ	15.51	Austenitic-ferritic (Duplex) Cast Non-weldable $\geq 0.05\%C$	258,000	230	-	-	750-550-390	600-440-315	680-500-355
M3.2.C.AQ	15.52	Weldable $< 0.05\%C$	326,000	260	-	-	670-510-350	550-420-290	610-465-320
ISO K	CMC No.	Cast iron	Specific cutting force k_{c1}	Hardness Brinell	<<<< WEAR RESISTANCE				
					CB50	CB7525	CB7925	CC620	CC650
					h_{ex} , inch $\approx$ feed, f_n inch/rev. at 0° to -5° lead				
					.004-.010-.016	.004-.010-.016	.004-.010-.016	.004-.010-.016	.004-.010-.016
MC No.		Material	lbs/in ²	HB	Cutting speed v_c , ft/min				
K1.1.C.NS	07.1	Malleable cast iron Ferritic (short chipping)	115,000	130	-	-	-	2600-2300-1950	2600-2300-1950
	07.2	Pearlitic (long chipping)	131,000	230	-	-	-	2300-1950-1650	2300-1950-1600
K2.1.C.UT	08.1	Grey cast iron Low tensile strength	130,000	180	5600-4650-3950	5600-4650-3950	4750-3950-3400	2650-2300-1950	2650-2300-1950
K2.2.C.UT	08.2	High tensile strength	140,500	220	4800-4000-3450	4800-4000-3450	4100-3400-2900	2500-2100-1750	2500-2100-1750
K3.1.C.UT	09.1	Nodular SG iron Ferritic	130,000	160	-	-	-	-	2000-1800-1450
K3.3.C.UT	09.2	Pearlitic	194,500	250	-	-	-	-	1650-1450-1150
K3.4.C.UT	09.3	Martensitic	307,000	380	-	-	-	-	1150-1000-860

Cutting speed recommendations, inch values

TOUGHNESS >>>>									
GC1125	GC3005	GC4205	GC4215	GC4225	GC2015	GC4235	GC30	GC2025	
.004-.008-.012	.004-.012-.020	.004-.016-.031	.004-.016-.031	.004-.016-.031	.004-.016-.031	.004-.016-.031	.006-.010-.016	.004-.016-.031	
1000-950-830 920-830-730 850-770-690	1700-1350-1100 1550-1200-1000 1450-1150-950	2050-1450-1100 1850-1300-970 1750-1250-920	1850-1350-990 1650-1200-880 1500-1100-790	1650-1150-810 1500-990-710 1400-940-680	1450-980-700 1300-880-630 1200-810-580	1400-890-660 1250-800-590 1200-760-560	990-840-710 890-760-640 850-720-610	970-650-480 870-590-430 820-550-395	
-	1650-1250-980	2000-1350-940	1800-1200-860	1500-1000-710	1300-860-630	980-600-445	700-580-485	720-470-330	
-	-	1750-1150-820	1500-990-710	1300-870-620	1150-750-530	820-500-365	620-520-430	640-405-280	
-	910-700-580	1050-750-570	980-680-510	830-590-455	850-590-460	600-385-280	450-380-315	475-310-215	
-	730-560-465	870-610-460	790-550-415	670-475-365	690-475-375	485-310-225	360-310-255	380-250-175	
-	1200-900-740	1450-970-720	1350-880-650	980-670-500	850-590-430	780-500-345	-	610-405-280	
-	590-425-350	710-460-345	650-415-315	445-310-240	375-275-215	360-225-165	-	280-180-125	
-	910-710-610	1100-770-610	990-700-550	790-580-430	690-510-365	600-450-335	-	460-345-265	
-	880-660-560	950-670-510	860-610-470	690-460-330	590-390-280	540-320-235	-	410-260-180	
-	670-500-420	730-490-380	660-450-345	600-410-295	520-360-250	470-305-220	-	360-245-165	
TOUGHNESS >>>>									
GC1125	GC2015	GC30	GC2025	GC2035	GC235				
.004-.008-.012	.008-.016-.024	.006-.010-.016	.008-.016-.024	.008-.016-.024	.008-.016-.024				
910-700-550 510-405-325 540-440-385	850-720-650 410-325-260 475-390-275	720-650-570 285-245-195 315-295-220	750-570-440 360-225-160 390-260-175	590-520-420 280-210-145 310-225-160	425-360-295 230-180-145 245-195-165				
730-580-445 510-405-325 610-520-420	950-780-620 425-325-260 520-440-325	620-570-465 320-275-220 420-385-315	790-570-425 330-235-175 425-325-245	560-470-375 280-210-145 330-295-225	375-325-275 230-180-145 280-230-195				
690-550-420 620-455-355	720-600-470 620-490-390	570-520-425 405-375-350	620-485-355 490-390-290	520-440-340 425-360-275	345-310-260 310-260-230				
870-720-550 445-360-260 475-390-290	820-680-550 325-225-180 360-290-195	660-560-490 255-205-165 300-245-190	720-520-390 275-180-130 390-260-175	560-470-375 230-165-130 240-190-160	375-325-275 195-145-115 215-165-130				
760-610-465 445-360-260 570-490-405	720-590-455 345-260-195 475-375-310	500-445-365 255-205-165 385-330-270	660-500-370 275-180-130 425-290-210	490-390-310 230-165-130 330-260-195	330-295-245 205-145-110 260-210-180				
620-455-325 560-420-290	600-490-440 530-455-340	540-465-280 385-335-205	490-390-290 410-340-260	425-360-275 345-310-245	310-260-230 295-245-210				
TOUGHNESS >>>>									
CC6190	CC1690	CT5015	GC3205	GC3210	GC3215	GC3005	GC4215	GC30	H13A
.008-.016-.024	.008-.016-.024	.004-.010-.012	.008-.016-.024	.008-.016-.024	.008-.016-.024	.008-.016-.024	.008-.016-.024	.006-.010-.016	.004-.010-.016
2650-2150-1800 2300-1800-1450	2400-1950-1650 2100-1600-1300	650-530-445 455-370-310	1500-1250-1050 1250-1000-860	1250-1050-860 1050-830-700	850-700-600 690-570-490	820-690-600 770-620-485	1050-870-740 870-720-600	540-540-485 390-355-295	460-410-360 410-360-295
2900-2350-1950 2600-2000-1650	2400-1950-1650 2250-1750-1400	1050-850-710 910-770-670	1750-1400- 1400-1150-980	1450-1150-990 1150-950-800	980-820-680 790-650-550	900-810-740 850-730-650	1200-1000-860 930-800-720	750-650-530 580-495-390	590-470-355 460-375-310
-	1900-1450-1100	840-650-530	1300-1100-890	1200-990-810	780-640-540	860-690-590	920-750-630	560-470-385	445-470-310
-	1600-1150-820	740-630-560	1150-980-810	1050-900-730	700-570-490	780-630-520	840-680-560	390-350-295	410-375-290
-	1050-860-710	370-315-275	870-730-620	800-680-550	540-440-375	600-455-355	660-510-410	205-160-120	330-275-210

Cutting speed recommendations, inch values

The recommendations are valid for use with cutting fluid.

ISO N	CMC No.	Non-ferrous metals	Specific cutting force k_{c1}	Hardness Brinell	<<<< WEAR RESISTANCE		
					CD10	CD1810	H10
					h_{ex} , inch $\approx$ feed, f_n inch/rev. at 0° to -5° lead		
					.002-.016	.006-.031	.006-.031
MC No.	CMC No.	Material	lbs/in ²	HB	Cutting speed v_{c1} ft/min		
N1.2.Z.UT	30.11	Aluminium alloys Wrought or wrought and coldworked, non-aging	58,000	60	6550 (8200-820) ¹⁾	6550 (8200-820) ¹⁾	6550 (8200-820) ¹⁾
N1.2.Z.AG	30.12	Wrought or wrought and aged	94,500	100	6550 (8200-820) ¹⁾	6550 (8200-820) ¹⁾	6550 (8200-820) ¹⁾
N1.3.C.UT	30.21	Aluminium alloys Cast, non-aging	87,000	75	6550 (8200-820) ¹⁾	6550 (8200-820) ¹⁾	6550 (8200-820) ¹⁾
N1.3.C.AG	30.22	Cast or cast and aged	101,500	90	6550 (8200-820) ¹⁾	6550 (8200-820) ¹⁾	6550 (8200-820) ¹⁾
N1.4.C.NS	30.41	Aluminium alloys Cast, 13–15% Si	101,500	130	5000 (6250-630) ¹⁾	2500 (3150-315) ¹⁾	1500 (1900-190) ¹⁾
	30.42	Cast, 16–22% Si	101,500	130	2500 (3150-315) ¹⁾	1650 (2050-205) ¹⁾	980 (1250-125) ¹⁾
N3.3.U.UT	33.1	Copper and copper alloys Free cutting alloys, $\geq 1\%$ Pb	79,500	110	1650 (2050-205) ¹⁾	1650 (2050-205) ¹⁾	1650 (2050-205) ¹⁾
N3.2.C.UT	33.2	Brass, leaded bronzes, $\leq 1\%$ Pb	80,000	90	1650 (2050-205) ¹⁾	1650 (2050-205) ¹⁾	1650 (2050-205) ¹⁾
N3.1.U.UT	33.3	Bronze and non-leadad copper incl. electrolytic copper	196,000	100	980 (1250-125) ¹⁾	980 (1250-125) ¹⁾	980 (1250-125) ¹⁾
ISO S	CMC No.	Heat resistant material	Specific cutting force k_{c1}	Hardness Brinell	<<<< WEAR RESISTANCE		
					CC650	CC6060	CC6065
					h_{ex} , inch $\approx$ feed, f_n inch/rev. at 0° to -5° lead		
					.004-.008	.004-.008-.012	.004-.008-.012
MC No.	CMC No.	Material	lbs/in ²	HB	Cutting speed v_{c1} ft/min		
S1.0.U.AN	20.11	Heat resistant super alloys Iron base Annealed or solution treated	348,000	200	-	-	-
	20.12	Aged or solution treated and aged	359,000	280	-	-	-
S2.0.Z.AN	20.21	Nickel base Annealed or solution treated	383,000	250	1300-1050	1300-1050-880	1100-830-650
	20.22	Aged or solution treated and aged	420,500	350	1100-860	980-770-620	790-570-420
	20.24	Cast or cast and aged	436,500	320	720-520	790-660-570	700-580-485
S3.0.Z.AN	20.31	Cobalt base Annealed or solution treated	391,500	200	1150-840	-	-
	20.32	Solution treated and aged	432,000	300	980-720	-	-
	20.33	Cast or cast and aged	450,500	320	930-730	-	-
S4.1.Z.UT	23.1	Titanium alloys²⁾ Commercial pure (99.5% Ti)	188,500	Rm ³⁾ 400	H10 .004-.008-.012	GC1105 .004-.008-.012	H10A .004-.012-.020
	23.21	α , near α and $\alpha + \beta$ alloys, annealed	203,000	950	670-550-470	670-550-470	640-530-445
	23.22	$\alpha + \beta$ alloys in aged conditions, β alloys, annealed or aged	203,000	1050	280-230-180	280-230-180	265-215-175
					260-195-165	260-195-165	255-190-160
ISO H	CMC No.	Hardened material	Specific cutting force k_{c1}	Hardness	<<<< WEAR RESISTANCE		
					CB7015	CB7025	CB20
					h_{ex} , inch $\approx$ feed, f_n inch/rev. at 0° to -5° lead		
					.002-.006-.010	.002-.006-.010	.002-.006-.010
MC No.	CMC No.	Material	lbs/in ²		Cutting speed v_{c1} ft/min		
H1.1.Z.HA	04.1	Hard steel Hardened and tempered	366,000	45HRC	-	-	-
	04.1		445,500	50HRC	1150-870-730	820-690-610	850-760-670
	04.1		532,000	55HRC	960-730-610	690-580-510	710-630-560
H1.3.Z.HA	04.1	Extra hard steel Hardened and tempered	625,500	60HRC	820-620-520	590-490-435	610-540-480
	04.1		726,500	65HRC	710-530-450	510-425-375	520-465-410
H2.0.C.UT	10.1	Chilled cast iron Cast or cast and aged	326,500	400 HB	-	-	-

¹⁾ The cutting speeds, shown in the table, are valid for all feeds within the feed range.

²⁾ 45–60° entering angle, positive cutting geometry and coolant should be used.

³⁾ Rm = ultimate tensile strength measured in MPa.

Cutting speed recommendations, inch values

TOUGHNESS >>>>									
GC1115	GC15	GC1025	GC1125	H13A					
.006-.031	.006-.031	.006-.031	.006-.031	.006-.031					
2650 (3300-330) ¹⁾	2650 (3300-330)1)	2500 (3150-315) ¹⁾	2500 (3150-315) ¹⁾	6250 (7800-780) ¹⁾					
1050 (1300-130) ¹⁾	1050 (1300-130)1)	980 (1250-125) ¹⁾	980 (1250-125) ¹⁾	6250 (7800-780) ¹⁾					
2650 (3300-330) ¹⁾ 1750 (2200-220) ¹⁾	2650 (3300-330)1) 1750 (2200-220)1)	2500 (3150-315) ¹⁾ 1650 (2050-205) ¹⁾	2500 (3150-315) ¹⁾ 1650 (2050-205) ¹⁾	6250 (7800-780) ¹⁾ 6250 (7800-780) ¹⁾					
1050 (1300-130) ¹⁾ 720 (900-90) ¹⁾	1050 (1300-130)1) 720 (900-90)1)	980 (1250-125) ¹⁾ 690 (860-85) ¹⁾	980 (1250-125) ¹⁾ 690 (860-85) ¹⁾	1300 (1650-165) ¹⁾ 820 (1050-105) ¹⁾					
690 (860-85) ¹⁾ 410 (510-50) ¹⁾ 290 (365-36) ¹⁾	690 (860-85)1) 410 (510-50)1) 290 (365-36)1)	650 (810-80) ¹⁾ 390 (490-50) ¹⁾ 275 (345-34) ¹⁾	650 (810-80) ¹⁾ 390 (490-50) ¹⁾ 275 (345-34) ¹⁾	1500 (1900-190) ¹⁾ 1500 (1900-190) ¹⁾ 890 (1100-110) ¹⁾					
TOUGHNESS >>>>									
CC670	S05F	GC1105	GC1115	GC15	GC1005	H10A	H13A	GC1125	H10F
.004-.008-.012	.004-.008-.012	.004-.012-.020	.004-.012-.020	.004-.012-.020	.004-.012-.020	.004-.012-.020	.004-.012-.020	.004-.012-.020	.004-.012-.020
-	520-435-355	490-325-225	395-260-180	395-260-180	490-325-225	280-230-180	260-210-160	245-195-145	230-180-130
-	410-345-280	390-260-195	315-210-155	315-210-155	390-260-195	215-180-130	195-165-130	180-145-115	165-130-95
1250-1050-880	325-275-225	295-185-95	235-150-75	235-150-75	295-185-95	180-130-105	165-130-95	150-115-80	130-95-65
1050-870-740	295-245-200	265-165-85	215-135-70	215-135-70	265-165-85	130-105-70	130-95-65	115-80-50	100-65-32
970-800-680	260-220-180	235-150-75	190-120-60	190-120-60	235-150-75	85-70-50	80-65-50	75-55-39	65-50-32
1150-830-660	325-275-225	295-185-95	240-150-75	240-150-75	295-185-95	180-130-105	165-130-95	150-115-80	130-95-65
980-720-570	290-245-200	265-165-85	210-135-70	210-135-70	265-165-85	130-105-70	130-95-65	115-80-50	100-65-32
930-730-550	260-220-180	235-150-75	190-120-60	190-120-60	235-150-75	85-70-50	80-65-50	75-55-39	65-50-32
H13A	H10F	GC1115	GC15						
.004-.012-.020	.004-.012-.020	.004-.012-.020	.004-.012-.020						
590-485-410	530-440-370	610-500-425	610-500-425						
245-200-165	220-180-145	255-205-170	255-205-170						
235-175-150	210-155-135	245-180-155	245-180-155						
TOUGHNESS >>>>									
CB7525	CB7925	CC6050	CC670	GC4205	GC4215	H13A			
.004-.010-.016	.004-.010-.016	.002-.006-.010	.004-.010-.016	.004-.012-.024	.004-.012-.024	.004-.012-.024			
-	-	950-770-570	670-550-440	225-155-95	205-135-85	145-80-50			
680-540-435	-	780-630-470	550-450-365	-		-			
570-455-365	-	660-530-395	460-375-305	-		-			
480-385-310		560-450-335	390-320-260	-		-			
415-330-270	-	480-390-290	335-275-225	-		-			
590-480-390	590-480-390	-	390-290-190	170-95-55	155-85-50	115-65-35			

Reamer 830

High feed precision tool for through holes

Fast and easy head change by front clamping

High surface finish and operation security

Effective chip evacuation by directing cutting fluid at each edge.

Cylindrical shank

Short and long shank options

High penetration rate

$f_n = 0.4-1.5 \text{ mm/rev}$ (.016-.059 inch/rev)
 $V_c = \text{up to } 200 \text{ m/min}$ (650 ft/min)

Easy head change

Fast clamping and releasing in a quarter of a turn

Clamping force:

D_c 10.0-23.0 mm (.394-.906 inch): 7 Nm (5.16 ft-lbs)
 D_c 24.0-31.75 mm (.945-1.250 inch): 12Nm (8.85 ft-lbs)

Precision coupling with taper and flange location

- accurate centering
- high rigidity
- concentricity
- high repeatability
- head change accuracy $< 3 \mu\text{m}$ (.00012 inch)

Ground for hole tolerance = H7

ISO application areas:

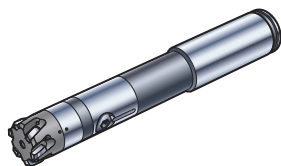


Reamer 830

for finishing of through holes

For hole diameters 10.00 - 31.75 mm (.3937 - 1.250 inch)

Max hole depth, l_3



Rake angle

Brazed inserts:

Hole tolerance:

Cutting fluid:

Shank design

Tolerance dm_m

6°

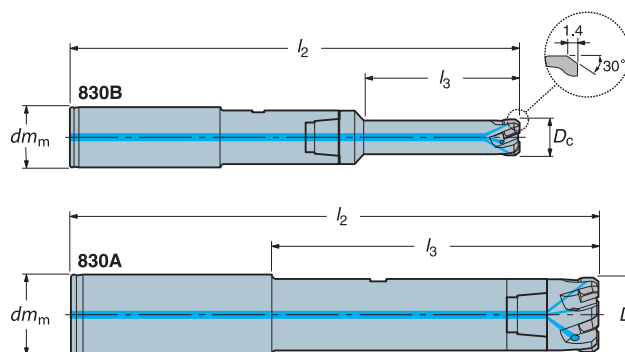
grade P10R (cermet)

H7

Internal

Cylindrical

h6



For hole diameter			Head	Short shank			Long shank					
D_c mm	D_c inch	z_n	Ordering code	Ordering code	Dimensions, mm (inch)			Ordering code	Dimensions, mm (inch)			
					l_2	l_3	dm_m		l_2	l_3	dm_m	
10.0	.394	6	830B-E06D1000H7S12	830-S12A20035F ¹⁾	145	45	20					0.22-0.23
					5.709	1.772	.787					
11.0	.433	6	830B-E06D1100H7S12	830-S12A20069F ¹⁾	178.5	45	20	830-S12A20130F ¹⁾	239.5	45	20	0.3-0.4
					7.028	1.772	.787		9.429	1.772	.787	
12.0	.472	6	830B-E06D1200H7S12									
13.0	.512	6	830B-E06D1300H7S12	830-S12A20035F ¹⁾	145	45	20					0.24-0.26
					5.709	1.772	.787					
14.0	.551	6	830B-E06D1400H7S12	830-S12A20069F ¹⁾	178.5	45	20	830-S12A20130F ¹⁾	239.5	45	20	0.3-0.4
					7.028	1.772	.787		9.429	1.772	.787	
15.0	.591	6	830B-E06D1500H7S12									
16.0	.630	6	830B-E06D1600H7S12	830-S12A20035F ¹⁾	145	45	20					0.27-0.29
					5.709	1.772	.787					
17.0	.669	6	830B-E06D1700H7S12	830-S12A20069F ¹⁾	178.5	45	20	830-S12A20130F ¹⁾	239.5	45	20	0.4-0.5
					7.028	1.772	.787		9.429	1.772	.787	
18.0	.709	6	830B-E06D1800H7S12									
19.0	.748	6	830A-E06D1900H7S12	830-S12A20035F ¹⁾	99.5	49.5	20					
					3.917	1.949	.787					
19.05	.750	6	830A-E06D1905H7S12	830-S12A20069F ¹⁾	133	83	20	830-S12A20130F ¹⁾	194	144	20	0.4-0.5
					5.236	3.268	.787		7.638	5.669	.787	
20.0	.787	6	830A-E06D2000H7S12									
21.0	.827	6	830A-E06D2100H7S12									
22.0	.866	6	830A-E06D2200H7S14	830-S14A20070F ²⁾	135	85	20	830-S14A20131F ²⁾	196	146	20	0.5-0.6
					5.315	3.346	.787		7.716	5.748	.787	
23.0	.906	6	830A-E06D2300H7S14									
24.0	.945	6	830A-E06D2400H7S16									
25.0	.984	6	830A-E06D2500H7S16									
25.4	1.000	6	830A-E06D2540H7S16									
26.0	1.024	6	830A-E06D2600H7S16	830-S16A25090F ³⁾	166	106	25	830-S16A25151F ³⁾	227	167	25	0.5-0.7
					6.535	4.173	.984		8.937	6.575	.984	
27.0	1.063	6	830A-E06D2700H7S16									
28.0	1.102	6	830A-E06D2800H7S16									
29.0	1.142	6	830A-E06D2900H7S16									
30.0	1.181	6	830A-E06D3000H7S20	830-S20A25089F ³⁾	166	106	25	830-S20A25150F ³⁾	227	167	25	0.7-1.1
					6.535	4.173	.984		8.937	6.575	.984	
31.75	1.250	8	830A-E06D3175H7S20									

1) Delivered with retention knobs 5519 107-01 and 5519 106-01.

2) Delivered with retention knob 5519 106-01.

3) Delivered with retention knob 5519 106-02.

Ordering example: 1 piece 830B-E06D1000H7S12

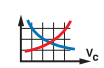
1 piece 830-S12A20035F

Main spare parts

For reamer diameter	Key for head (mm)	Retention knob with cutting fluid through	Retention knob without cutting fluid through
10-18 mm (.394-.709 inch)	3021 010-040 (4.0)	5519 107-01	—
19-23 mm (.748-.906 inch)	3021 010-040 (4.0)	—	5519 106-01
24-31.75 mm (.945-1.250 inch)	3021 010-050 (5.0)	—	5519 106-02



G6



F96



F2

Cutting data for Reamer 830

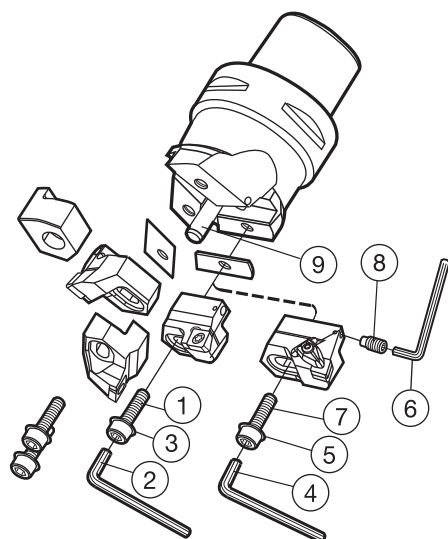
Metric values

			Hardness Brinell	Grade	Cutting speed	Feed	Radial depth of cut
ISO	CMC	Material	HB		V_c m/min	f_z mm/insert	a_p mm
P	01.1 01.2 01.3 01.4	Unalloyed steel					
		Non-hardened 0.10-0.25% C	90-200	P10R	150-200	0.15-0.25	0.1-0.3
		Non-hardened 0.25-0.55% C	125-225		150-200	0.15-0.25	
		Non-hardened 0.55-0.80% C	150-225		140-180	0.15-0.25	
		High carbon & carbon tool steel	180-225		140-180	0.15-0.25	
	02.1 02.2	Low alloy steel					
		Non-hardened	150-260	P10R	110-180	0.15-0.25	0.1-0.3
		Hardened and tempered	220-400		70-130	0.10-0.20	
	06.1 06.2	Steel castings					
		Unalloyed	90-225	P10R	140-180	0.15-0.25	0.1-0.3
		Low alloyed	150-250		100-150	0.15-0.25	
K	07.2	Mallable cast iron					
		Perlitic	150-270	P10R	150-200	0.15-0.25	0.1-0.3
	09.2	Nodular cast iron					
		Perlitic	200-300	P10R	110-190	0.15-0.25	0.1-0.3

Inch values

			Hardness Brinell	Grade	Cutting speed	Feed	Radial depth of cut
ISO	CMC	Material	HB		V_c ft/min	f_z inch/insert	a_p inch
P	01.1 01.2 01.3 01.4	Unalloyed steel					
		Non-hardened 0.10-0.25% C	90-200	P10R	490-650	.006-.010	.004-.012
		Non-hardened 0.25-0.55% C	125-225		490-650	.006-.010	
		Non-hardened 0.55-0.80% C	150-225		460-590	.006-.010	
		High carbon & carbon tool steel	180-225		460-590	.006-.010	
	02.1 02.2	Low alloy steel					
		Non-hardened	150-260	P10R	360-590	.006-.010	.004-.012
		Hardened and tempered	220-400		230-425	.004-.008	
	06.1 06.2	Steel castings					
		Unalloyed	90-225	P10R	460-590	.006-.010	.004-.012
		Low alloyed	150-250		330-490	.006-.010	
K	07.2	Mallable cast iron					
		Perlitic	150-270	P10R	490-650	.006-.010	.004-.012
	09.2	Nodular cast iron					
		Perlitic	200-300	P10R	360-620	.006-.010	.004-.012

CoroBore® 820



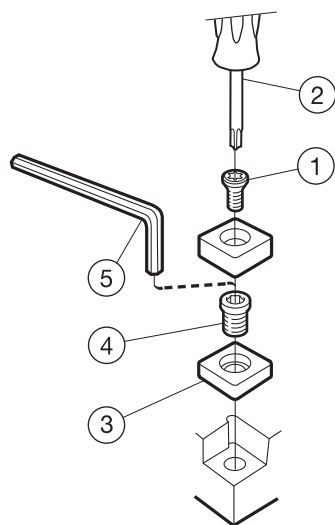
Adaptor	1 ³⁾	2 ¹⁾	3	4 ¹⁾²⁾	5 ²⁾	6	7 ²⁾
Cx-R820 HAxx-R820							
Size	Screw	Key (mm)	Cup spring	Key (mm)	Cup spring	Setting key, mm	Screw
A	3212 010-299	3021 010-030 (3.0)	3846 010-014	–	–	3021 012-015 1.5	–
B	3212 010-309	3021 010-040 (4.0)	3846 010-023	–	–	3021 012-015 1.5	–
C	3212 010-397	3021 010-050 (5.0)	3846 010-033	–	–	3021 012-015 1.5	–
D	3212 010-360	3021 010-050 (5.0)	3846 010-033	–	–	174.1-870 2.0	–
E	3212 010-411	3021 010-060 (6.0)	3846 010-048	–	–	174.1-870 2.0	–
F	3212 010-462	3021 010-080 (8.0)	3846 010-069	–	–	5680 010-02 2.5	3212 010-462
G	3212 010-462	3021 010-080 (8.0)	3846 010-069	–	–	5680 010-02 2.5	3212 010-462
H	3212 010-462	3021 010-080 (8.0)	3846 010-069	3021 010-100 (10)	3846 010-085	5680 010-05 3.0	3212 010-513
I	3212 010-462	3021 010-080 (8.0)	3846 010-069	3021 010-100 (10)	3846 010-085	5680 010-05 3.0	3212 010-513

	8	9
	Setting screw for	Setting screw for
Size	R820x-AR	R820x-BR
A	3214 020-207	3214 020-208
B	3214 020-208	3214 020-209
C	3214 020-207	3214 020-207
D	3214 020-258	3214 020-258
E	3214 020-259	3214 020-259
F	3214 020-310	3214 020-311
G	3214 020-311	3214 020-312
H	3214 020-362	3214 020-364
I	3214 020-362	3214 020-364

1) Accessories, must be ordered separately

2) For clamping of CoroTurn® RC-slides

3) For clamping of CoroTurn® 107 slides

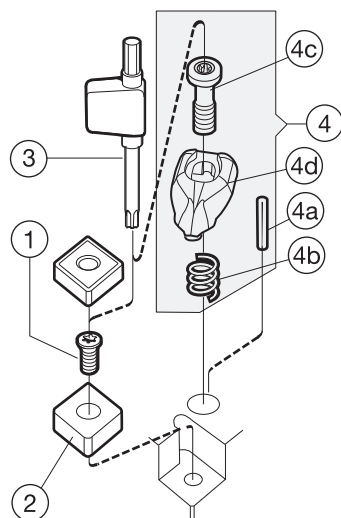
CoroBore® 820**Insert clamping - CoroTurn® 107**

		1	2 ¹⁾	3	4	5
Entering angle	Slides	Insert screw	Key (Torx Plus)	Shim	Shim screw	Key (mm)
90°	R820A-xR11SCFC06A	5513 020-03	5680 046-03 (7IP)	—	—	—
90°	R820B-xR12SCFC06A	5513 020-03	5680 046-03 (7IP)	—	—	—
90°	R820B-xR14SCFC09A	5513 020-09	5680 046-02 (15IP)	—	—	—
90°	R820C-xR16SCFC09A	5513 020-09	5680 046-02 (15IP)	—	—	—
90°	R820C-xR18SCFC12A	5513 020-17	5680 046-02 (15IP)	—	—	—
90°	R820D-xR18SCFC09A	5513 020-09	5680 046-02 (15IP)	—	—	—
90°	R820D-xR18SCFC12A	5513 020-17	5680 046-02 (15IP)	—	—	—
90°	R820E-xR22SCFC12A	5513 020-17	5680 046-02 (15IP)	—	—	—
90°	R820F-xR24SCFC12A	5513 020-18	5680 046-02 (15IP)	5322 232-02	5512 090-03	5680 010-04 (4.0)
90°	R820G-xR24SCFC12A	5513 020-18	5680 046-02 (15IP)	5322 232-02	5512 090-03	5680 010-04 (4.0)
90°	R820H-xR26SCFC12A	5513 020-18	5680 046-02 (15IP)	5322 232-02	5512 090-03	5680 010-04 (4.0)
90°	R820I-xR26SCFC12A	5513 020-18	5680 046-02 (15IP)	5322 232-02	5512 090-03	5680 010-04 (4.0)
75°	R820A-xR11SCKC06A	5513 020-03	5680 046-03 (7IP)	—	—	—
75°	R820B-xR12SCKC06A	5513 020-03	5680 046-03 (7IP)	—	—	—
84°	R820B-xR14SSYC09A	5513 020-09	5680 046-02 (15IP)	—	—	—
84°	R820C-xR12SSYC06A	5513 020-09	5680 046-02 (15IP)	—	—	—
84°	R820C-xR18SSYC12A	5513 020-17	5680 046-02 (15IP)	—	—	—
84°	R820D-xR18SSYC09A	5513 020-09	5680 046-02 (15IP)	—	—	—
84°	R820D-xR18SSYC12A	5513 020-17	5680 046-02 (15IP)	—	—	—
84°	R820E-xR22SSYC12A	5513 020-17	5680 046-02 (15IP)	—	—	—
84°	R820F-xR24SSYC12A	5513 020-18	5680 046-02 (15IP)	5322 420-02	5512 090-03	5680 010-04 (4.0)
84°	R820G-xR24SSYC12A	5513 020-18	5680 046-02 (15IP)	5322 420-02	5512 090-03	5680 010-04 (4.0)
84°	R820H-xR26SSYC12A	5513 020-18	5680 046-02 (15IP)	5322 420-02	5512 090-03	5680 010-04 (4.0)
84°	R820I-xR26SSYC12A	5513 020-18	5680 046-02 (15IP)	5322 420-02	5512 090-03	5680 010-04 (4.0)
95°	R820A-xR11SCLC06A	5513 020-03	5680 046-03 (7IP)	—	—	—
95°	R820B-xR12SCLC06A	5513 020-03	5680 046-03 (7IP)	—	—	—
95°	R820B-xR14SCLC09A	5513 020-09	5680 046-02 (15IP)	—	—	—
95°	R820C-xR16SCLC09A	5513 020-09	5680 046-02 (15IP)	—	—	—
95°	R820C-xR18SCLC12A	5513 020-17	5680 046-02 (15IP)	—	—	—
95°	R820D-xR18SCLC09A	5513 020-09	5680 046-02 (15IP)	—	—	—
95°	R820D-xR18SCLC12A	5513 020-17	5680 046-02 (15IP)	—	—	—
95°	R820E-xR22SCLC12A	5513 020-17	5680 046-02 (15IP)	—	—	—
95°	R820F-xR24SCLC12A	5513 020-18	5680 046-02 (15IP)	5322 232-02	5512 090-03	5680 010-04 (4.0)
95°	R820G-xR24SCLC12A	5513 020-18	5680 046-02 (15IP)	5322 232-02	5512 090-03	5680 010-04 (4.0)
95°	R820H-xR26SCLC12A	5513 020-18	5680 046-02 (15IP)	5322 232-02	5512 090-03	5680 010-04 (4.0)
95°	R820I-xR26SCLC12A	5513 020-18	5680 046-02 (15IP)	5322 232-02	5512 090-03	5680 010-04 (4.0)

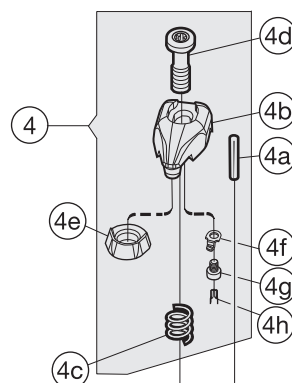
¹⁾ Accessories, must be ordered separately

CoroBore® 820

Insert clamping - CoroTurn® RC



CoroTurn® RC for ceramic inserts



- 4a Pin
- 4b Clamp
- 4c Compression spring
- 4d Screw
- 4e Pressure plate
- 4f Hook
- 4g Screw
- 4h Key (Torx)

CoroTurn® RC rigid clamp slides

Entering angle	Slides	1 Shim screw	2 Shim	3 ¹⁾ Key (Torx Plus)	4 Complete clamp set	4a Pin	4b Compression spring	4c Screw	4d Clamp
90°	R820F-xR24DCFN12A	5513 020-02	5322 234-01	5680 046-02 (15IP)	5412 028-021	3113 030-307	5561 001-58	5512 086-02	5412 028-02
	R820G-xR24DCFN12A	5513 020-02	5322 234-01	5680 046-02 (15IP)	5412 028-021	3113 030-307	5561 001-58	5512 086-02	5412 028-02
	R820H-xR36DCFN16A	5513 020-07	5322 234-03	5680 046-06 (20IP)	5412 028-031	3113 030-307	5561 001-59	5512 086-03	5412 028-03
	R820I-xR36DCFN16A	5513 020-07	5322 234-03	5680 046-06 (20IP)	5412 028-031	3113 030-307	5561 001-59	5512 086-03	5412 028-03
84°	R820F-xR24DSYN12A	5513 020-02	5322 425-01	5680 046-02 (15IP)	5412 028-021	3113 030-307	5561 001-58	5512 086-02	5412 028-02
	R820G-xR24DSYN12A	5513 020-02	5322 425-01	5680 046-02 (15IP)	5412 028-021	3113 030-307	5561 001-58	5512 086-02	5412 028-02
	R820H-xR36DSYN15A	5513 020-07	5322 425-03	5680 046-06 (20IP)	5412 028-031	3113 030-307	5561 001-59	5512 086-03	5412 028-03
	R820I-xR36DSYN15A	5513 020-07	5322 425-03	5680 046-06 (20IP)	5412 028-031	3113 030-307	5561 001-59	5512 086-03	5412 028-03
95°	R820F-xR24DCLN12A	5513 020-02	5322 234-01	5680 046-02 (15IP)	5412 028-021	3113 030-307	5561 001-58	5512 086-02	5412 028-02
	R820G-xR24DCLN12A	5513 020-02	5322 234-01	5680 046-02 (15IP)	5412 028-021	3113 030-307	5561 001-58	5512 086-02	5412 028-02
	R820H-xR36DCLN16A	5513 020-07	5322 234-03	5680 046-06 (20IP)	5412 028-031	3113 030-307	5561 001-59	5512 086-03	5412 028-03
	R820I-xR36DCLN16A	5513 020-07	5322 234-03	5680 046-06 (20IP)	5412 028-031	3113 030-307	5561 001-59	5512 086-03	5412 028-03

1) Accessories, must be ordered separately

CoroTurn® RC rigid clamp slides for ceramic inserts

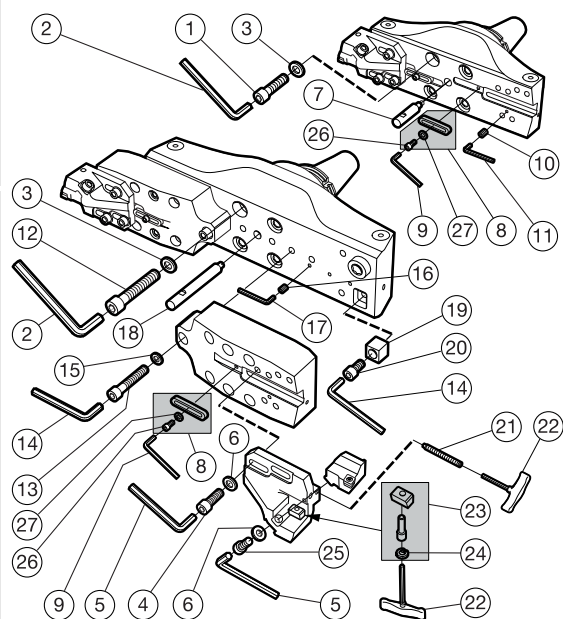
Entering angle	Slides	1 Shim screw	2 Shim (For insert thickness)	3 ¹⁾ Key (Torx Plus)	4 Complete clamp set	Components for spare part number 4, Complete clamp set	
						F-G	H-I
90°	R820F-xR24DCFN12A	5513 020-02	5322 234-02 (7.94)	5680 046-02 (15IP)	5412 034-021 ²⁾	4a 3113 030 -307	4a 3113 030-307
	R820G-xR24DCFN12A	5513 020-02	5322 234-02 (7.94)	5680 046-02 (15IP)	5412 032-021 ³⁾	4b 5412 034-02	4b 5412 034-03
	R820H-xR36DCFN16A	5513 020-07	5322 234-04 (7.94)	5680 046-06 (20IP)	5412 034-031 ²⁾	4c 5661 001-58	4c 5561 001-59
	R820I-xR36DCFN16A	5513 020-07	5322 234-04 (7.94)	5680 046-06 (20IP)	5412 032-031 ³⁾	4d 5512 086-02	4d 5512 086-03
84°	R820F-xR24DSYN12A	5513 020-02	5322 425-02 (7.94)	5680 046-02 (15IP)	5412 034-021 ²⁾	4e 5192 030-02	4e 5192 030-03
	R820G-xR24DSYN12A	5513 020-02	5322 425-02 (7.94)	5680 046-02 (15IP)	5412 032-021 ³⁾	4f 5411 012-01	4f 5411 012-01
	R820H-xR36DSYN15A	5513 020-07	5322 425-05 (7.94)	5680 046-06 (20IP)	5412 034-031 ²⁾	4g 5212 097-01	4g 5512 097-01
	R820I-xR36DSYN15A	5513 020-07	5322 425-05 (7.94)	5680 046-06 (20IP)	5412 032-031 ³⁾	4h 5680 051-02 (7IP)	4h 5680 051-02 (7IP)
95°	R820F-xR24DCLN12A	5513 020-02	5322 234-02 (7.94)	5680 046-02 (15IP)	5412 034-021 ²⁾	Accessories: 4b ³⁾ 5412 032-03	4b ³⁾ 5412 032-03
	R820G-xR24DCLN12A	5513 020-02	5322 234-02 (7.94)	5680 046-02 (15IP)	5412 032-021 ³⁾		
	R820H-xR36DCLN16A	5513 020-07	5322 234-04 (7.94)	5680 046-06 (20IP)	5412 034-031 ²⁾		
	R820I-xR36DCLN16A	5513 020-07	5322 234-04 (7.94)	5680 046-06 (20IP)	5412 032-031 ³⁾		

1) Accessories, must be ordered separately

2) Clamp set for flat inserts without hole.

3) Clamp for flat inserts with hole.

CoroBore® 820 XL



Bridge	1	2 ¹⁾	3	4	5 ¹⁾
Bridge size M, N and O	Screw	Key (mm)	Washer	Screw	Key (mm)
	3212 010-569	3021 010-140 (14.0)	3411 012-170	3212 010-462	3021 010-080 (8.0)
6	7	8 ¹⁾	9 ¹⁾	10	11 ¹⁾

Cup spring	Parallel pin set	Stop plate set	Key (mm)	Screw	Key (mm)
3846 010-069	5552 047-01	5335 001-01	3021 010-050 (5.0)	3214 010-355	3021 010-030 (3.0)

Bridge	2 ¹⁾	3	12	13	14 ¹⁾
Bridge size P, Q and R	Key (mm)	Washer	Screw	Screw	Key
	3021 010-140 (14.0)	3411 012-170	3212 010-572	3212 010-518	3021 010-100 (10.0)
15	16	17 ¹⁾	18	19	20

Washer	Screw	Key	Parallel pin set	Driving key	Screw
3411 012-130	3214 010-406	3021 010-040 (4.0)	5552 047-02	3193 110-050	3212 010-511

Bridge extension	4	5 ¹⁾	6	8 ¹⁾	9 ¹⁾
	Screw	Key (mm)	Cup spring	Stop plate set	Key (mm)
A35-RXLS24-A 060	3212 010-462	3021 010-080 (8.0)	3846 010-069	5335 001-01	3021 010-050 (5.0)

Slide	21	22 ¹⁾	23	24
	Screw	Key (mm)	Wedge set	Circlip
S24-R820XLS12-012	3214 020-368	265.2-817 (3.0)	5332 070-01	3421 110-009

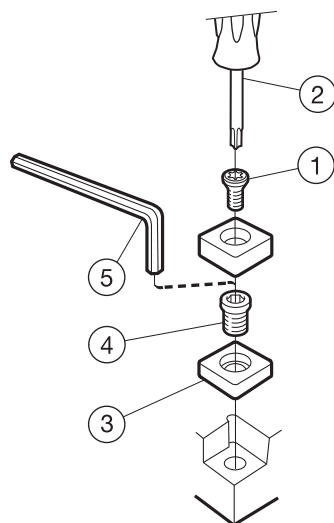
Cartridge	5 ¹⁾	6	25
	Key (mm)	Cup spring	Screw
S12-R820XLR40	3021 010-080 (8.0)	3846 010-069	3212 010-461

8. Stop plate set ¹⁾	9 ¹⁾	26	27
	Key (mm)	Screw	Washer
5335 001-01	3021 010-050 (5.0)	3212 010-359	3411 011-064

¹⁾ Accessories, must be ordered separately.

CoroBore® 820 XL

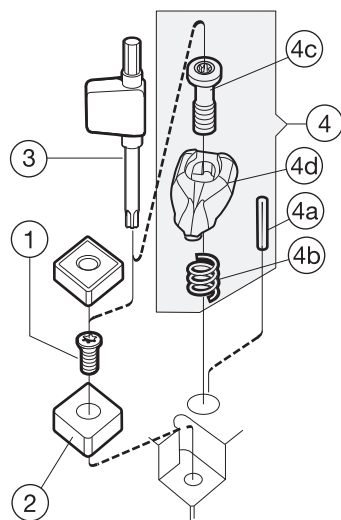
Insert clamping - CoroTurn® 107



Entering angle	Lead angle	Cartridge	1 Insert screw	2 ¹⁾ Key (Torx Plus)
90°	0°	S12-R820XLR40SCFC12	5513 020-18	5680 046-02 (15IP)
90°	0°	S12-R820XLR40STFC22		
84°	6°	S12-R820XLR40SSYC12		
3	4	5 ¹⁾		
Shim		Shim screw	Key (mm)	
5322 232-02		5512 090-03	5680 010-040 (4.0)	

¹⁾ Accessories, must be ordered separately

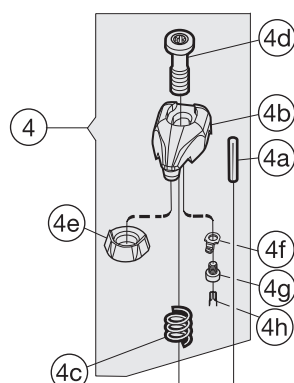
Insert clamping - CoroTurn® RC



Entering angle	Lead angle	Cartridge	1 Shim screw	2 Shim	3 ¹⁾ Key (Torx Plus)
90°	0°	S12-R820XLR40DCFN19	5513 020-07	5322 236-01	5680 046-06 (20IP)
84°	6°	S12-R820XLR40DSYN15	5513 020-07	5322 425-03	5680 046-06 (20IP)
4	4a	4b	4c	4d	
Complete clamp set		Pin	Compression spring	Screw	Clamp
5412 028-041		3113 030-307	5561 001-59	5512 086-03	5412 028-04
5412 028-031		3113 030-307	5561 001-59	5512 086-03	5412 028-03

¹⁾ Accessories, must be ordered separately

CoroTurn® RC rigid clamp slides for ceramic inserts



Entering angle	Lead angle	Cartridge	1 Shim screw	2 Shim (For insert thickness)	3 ¹⁾ Key (Torx Plus)	4 Complete clamp set
84°	6°	S12-R820XLR40DSYN15	5513 020-07	5322 425-05 (7.94)	5680 046-06 (20IP)	5412 034-031 ²⁾ 5412 032-031 ³⁾

Components for spare part number 4, Complete clamp set

4a	4b ²⁾	4b ³⁾	4c	4d	4e	4f	4g	4h
3113 030 -307	5412 034-02	5412 032-03	5661 001-58	5512 086-02	5192 030-02	5411 012-01	5212 097-01	5680 051-02 (7IP)

¹⁾ Accessories, must be ordered separately

²⁾ Clamp set for flat inserts without hole.

³⁾ Clamp set for flat inserts with hole

D

E

F

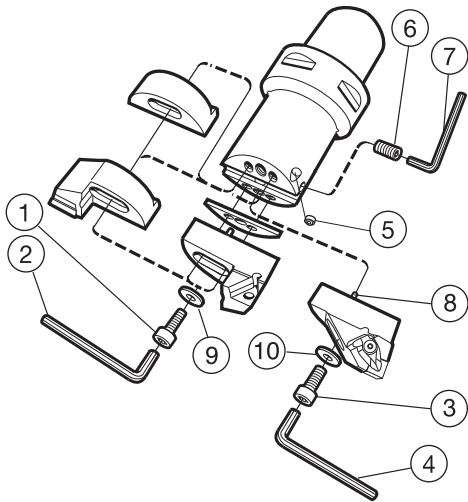
G

J

DuoBore™

391.68A and 391.69A

Boring diameter 25–150 mm



Adaptor	1	2 ¹⁾	3 ²⁾	4 ¹⁾²⁾	5	6	7 ¹⁾
Size	Screw	Key (mm)	Screw	Key (mm)	Nozzle	Setting screw	Key (mm)
1	3212 010-299	3021 010-030 (3.0)	–	–	5691 040-03	5514 060-09	174.1-870 (2.0)
2	3212 010-299	3021 010-030 (3.0)	–	–	5691 040-03	5514 060-01	174.1-870 (2.0)
3	3212 010-299	3021 010-030 (3.0)	–	–	5691 040-01	5514 060-10	174.1-870 (2.0)
4	3212 010-309	3021 010-040 (4.0)	–	–	5691 040-01	5514 060-10	174.1-870 (2.0)
5	3212 010-361	3021 010-050 (5.0)	–	–	5691 040-01	5514 060-11	174.1-870 (2.0)
6	3212 010-396	3021 010-050 (5.0)	3212 010-462	3021 010-080 (8.0)	5691 029-08	5514 060-12	3021 010-025 (2.5)
7	3212 010-412	3021 010-060 (6.0)	3212 010-513	3021 010-100 (10.0)	5691 029-09	5514 060-13	3021 010-030 (3.0)

Adaptor	8	9 ³⁾	10 ²⁾
Size	Tension pin	Washer	Washer
1	3113 025-305	3411 012-043	
2	3113 025-305	3411 012-043	
3	3113 025-305	3411 012-043	
4	3113 025-305	3411 012-053	
5	3113 025-406	3411 012-064	
6	3113 025-457	3411 012-064	3411 012-105
7	3113 025-457	3411 012-084	3411 012-130

1) Accessories, must be ordered separately

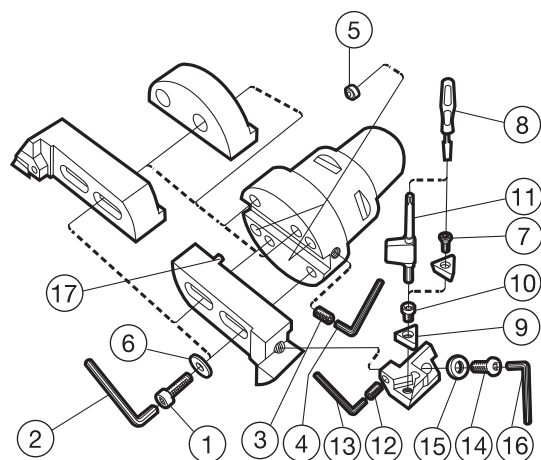
2) For clamping of RC-slides.

3) For Coroturn® 107 slides

DuoBore™

391.68A

Boring diameter 148–270 mm (tool with cartridge)

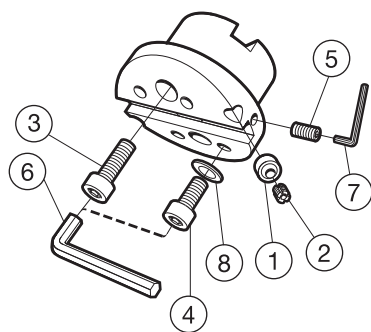


		1	2 ¹⁾	3	4 ¹⁾	5	6 ¹⁾
Adaptor	Size	Screw	Key (mm)	Setting screw	Key (mm)	Nozzle	Washer
C8-391.68A-	8	3212 010-463	3021 010-080 (8.0)	5514 060-14	3021 010-030 (3.0)	5691 029-10	3411 012-105
		7	8 ¹⁾	9	10	11 ¹⁾	
Cartridge		Insert screw	Key (Torx Plus)	Shim	Shim screw	Key (Torx Plus)	
391.68A-8-T16 A		5513 020-01	5680 049-02 (15IP)	5322 320-01	5512 090-01	5680 049-01 (15IP)	
391.68A-8-T22 A		5513 020-18	5680 049-02 (15IP)	5322 320-02	5512 090-03	5680 049-02 (15IP)	
391.68B-8-S12 A		5513 020-18	5680 049-02 (15IP)	5322 420-02	5512 090-03	5680 049-02 (15IP)	
		12	13 ¹⁾	14	15	16 ¹⁾	
Cartridge		Adjustment screw	Key (mm)	Mounting screw	Washer	Key (mm)	
391.68A-8-T16 A		3214 010-357	174.1-864 3.0	434.9-830	3411 011-084	3021 010-050 5.0	
391.68A-8-T22 A		3214 010-357	174.1-864 3.0	434.9-830	3411 011-084	3021 010-050 5.0	
391.68B-8-S12 A		3214 010-357	174.1-864 3.0	434.9-830	3411 011-084	3021 010-050 5.0	
		17					
Slide		Tension pin					
391.68x		3113 025-559					

1) Accessories, must be ordered separately

DuoBore™ arbor adaptor

393.69A



393.69A-7-27 060A

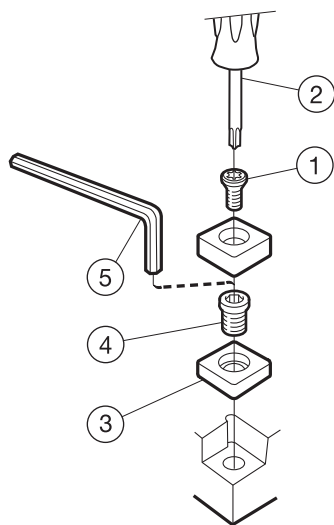
393.69A-7-32 060A

1	2 ¹⁾	3	4	5	6 ¹⁾	7 ¹⁾	8
Nozzle	Nozzle reduction	Screw	Screw	Setting screw	Key (mm)	Key (mm)	Washer
5691 029-03	5691 025-02	3212 010-416	3212 010-412	5514 060-13	3021 010-060 (6.0)	174.1-864 (3.0)	3411 012-084

1) Accessories, must be ordered separately

Duobore™

Insert clamping - CoroTurn® 107

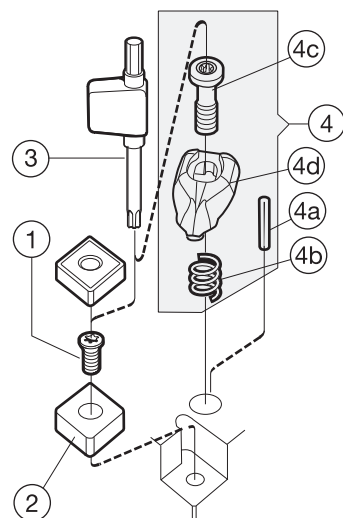


Slides	1	2 ¹⁾	3	4	5 ¹⁾
90°	Insert screw	Key (Torx Plus)	Shim	Shim screw	Key (mm)
391.68A-1-032 13 C06 B	5513 020-03	5680 046-03 (7IP)	—	—	—
391.68A-2-038 13 C06 B					
391.68A-3-047 16 T11 B					
391.68F-3-047 16 TC11 B	5513 020-03	5680 046-03 (7IP)	—	—	—
391.68A-4-056 24 T16 B	5513 020-10	5680 046-02 (15IP)	—	—	—
391.68A-5-070 26 T16 B					
391.68A-6-084 30 T16 B					
391.68A-6-101 30 T16 B	5513 020-01	5680 046-02 (15IP)	5322 320-01	5512 090-01	5680 010-01 (3.5)
391.68A-7-125 40 T16 B					
391.68A-7-150 40 T16 B					
391.68A-6-101 41 T22 B	5513 020-07	5680 046-06 (20IP)	—	—	—
391.68A-7-125 40 T22 B	5513 020-18	5680 046-02 (15IP)	5322 320-02	5512 090-03	3021 010-040 (4.0)
391.68A-7-150 40 T22 B					
75°					
391.68B-1-032 13 C06 B	5513 020-03	5680 046-03 (7IP)	—	—	—
391.68B-2-038 13 C06 B					
391.68B-3-047 16 C06 B					
391.68B-4-056 24 S09 B	5513 020-09	5680 046-02 (15IP)	—	—	—
391.68B-5-070 26 S09 B					
391.68B-6-084 30 S12 B	5513 020-17	5680 046-02 (15IP)	—	—	—
391.68B-6-101 41 S12 B					
391.68B-7-125 40 S12 B	5513 020-18	5680 046-02 (15IP)	5322 420-02	5512 090-03	3021 010-040
391.68B-7-150 40 S12 B					

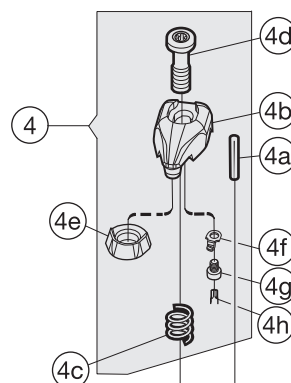
1) Accessories, must be ordered separately

DuoBore™

Insert clamping - CoroTurn® RC



CoroTurn® RC for ceramic inserts



- 4a Pin
- 4b Clamp
- 4c Compression spring
- 4d Screw
- 4e Pressure plate
- 4f Hook
- 4g Screw
- 4h Key (Torx)

CoroTurn® RC rigid clamp slides

Slides	1	2	3 ¹⁾	4	4a	4b	4c	4d
90° (0°)	Shim screw	Shim	Key (Torx Plus)	Complete clamp set	Pin	Compression spring	Screw	Clamp
391.68F-6-084 36 C12 B	5513 020-02	5322 234-01	5680 049-02 (15IP)	5412 028-021	3113 030-307	5561 001-58	5512 086-02	5412 028-02
391.68F-6-101 36 C12 B								
391.68F-7-125 40 C12 B								
391.68F-7-150 40 C12 B								
391.68F-7-125 40 C16 B	5513 020-07	5322 234-03	5680 049-03 (9IP)	5412 028-031	3113 030-307	5561 001-59	5512 086-03	5412 028-03
391.68F-7-150 40 C16 B								
84° (6°)								
391.68D-6-084 36 S12 B	5513 020-02	5322 425-01	5680 049-02 (15IP)	5412 028-021	3113 030-307	5561 001-58	5512 086-02	5412 028-02
391.68D-6-101 36 S12 B								
391.68D-7-125 40 S12 B								
391.68D-7-150 40 S12 B								
391.68D-7-125 44 S15 B	5513 020-07	5322 425-03	5680 049-03 (9IP)	5412 028-031	3113 030-307	5561 001-59	5512 086-03	5412 028-03
391.68D-7-150 44 S15 B								

¹⁾ Accessories, must be ordered separately

CoroTurn® RC rigid clamp slides for ceramic inserts

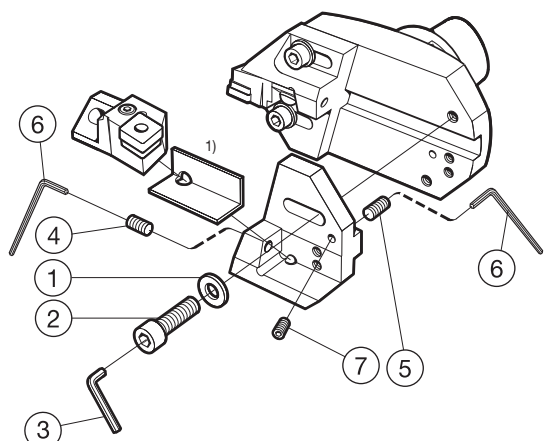
Slides	1	2	3 ¹⁾	4	Components for spare part number 4, Complete clamp set			
					Spare parts	Slides 90(0)° /C12A	90(0)° 16A	84(6)°/S12A
90° (0°)	Shim screw	Shim (For insert thickness)	Key (Torx Plus)	Complete clamp set				
391.68C-6-084 36 C12 B	5513 020-02	5322 234-02 (7.94)	5680 049-02 (15IP)	5412 034-021 ²⁾ 5412 032-021 ³⁾	4a	3113 030-307	3113 030-307	3113 030-307
391.68C-6-101 36 C12 B					4b	5412 034-02	5412 034-03	5412 034-02
391.68C-7-125 40 C12 B					4c	5661 001-58	5661 001-59	5661 001-58
391.68C-7-150 40 C12 B					4d	5512 086-02	5512 086-03	5512 086-02
391.68C-7-125 40 C16 B	5513 020-07	5322 234-04 (7.94)	5680 049-03 (9IP)	5412 034-031 ²⁾ 5412 032-031 ³⁾	4e	5192 030-02	5192 030-03	5192 030-02
391.68C-7-150 40 C16 B					4f	5411 012-01	5411 012-01	5411 012-01
84° (6°)					4g	5512 097-01	5512 097-01	5512 097-01
					4h	5680 051-02	5680 051-02	5680 051-02
391.68D-6-084 36 S12 B	5513 020-02	5322 425-02 (7.94)	5680 049-02 (15IP)	5412 034-021 ²⁾ 5412 032-021 ³⁾	4b ³⁾	Accessories: 5412 032-03	5412 032-03	5412 032-03
391.68D-6-101 36 S12 B						Shim (For insert thickness) 5322 234-01 (4.76)	5322 234-03 (6.35)	5322 425-01 (4.76)
391.68D-7-125 40 S12 B								
391.68D-7-150 40 S12 B								

¹⁾ Accessories, must be ordered separately

²⁾ Clamp set for flat insert without hole

³⁾ Clamp for flat inserts with hole.

Heavy duty boring tools R391.B...R, D_c 150–300 mm



Bar

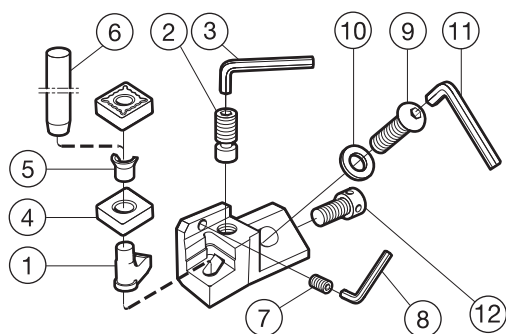
	1	2	3	4	5	6	7 ²⁾
C8-R391.B11R-B 070A							
C8-R391.B12R-C 070A							
C8-R822S17-AL 070A							
Extension slide	Washer	Screw	Key (mm)	Radial adjustment screw	Axial adjustment screw	Key (mm)	Nozzle reduction
R391.B04R-2515	3411 013-105	3212 010-462	3021 010-080 (8.0)	5519 026-06	5519 026-06	3021 010-040 (4.0)	5691 025-01
R391.B03R-3015	3411 013-105	3212 010-462	3021 010-080 (8.0)	5519 026-06	5519 026-06	3021 010-040 (4.0)	5691 025-01

1) To be used between cartridge and slide for step boring.

2) Accessories, must be ordered separately

Cartridges

T-Max P



	1	2	3 ³⁾	4	5	6	
	Lever	Screw	Key (mm)	Shim	Shim pin	Assembly punch	Optional shim
PTGNL 20CA-22	22	174.3-841M	174.3-821	174.1-864 (3.0)	179.3-852M ¹⁾	174.3-861	174.3-871
PSRNL 20CA-15	15	438.3-840	438.3-831	174.1-864 (3.0)	174.3-857	174.3-864	174.3-873
L441.31-2030-1911	19	174.3-849M	174.3-835	3021 010-040 (4.0)	171.31-851M	174.3-868	174.3-872
	7	8 ³⁾	9	10	11 ³⁾	12 ⁴⁾	
	Screw	Key (mm)	Screw	Washer	Key (mm)	Screw	
PTGNL 20CA-22	22	438.3-821	174.1-863 (2.5)	3212 010-412	3411 011-084	3021 010-060 (6.0)	438.3-828
PSRNL 20CA-15	15						
L441.31-2030-1911	19	–	–	3212 010-412	3411 011-084	3021 010-060 (6.0)	438.3-328

1) For inserts with $r_c = 1.2$ and 1.6 mm.

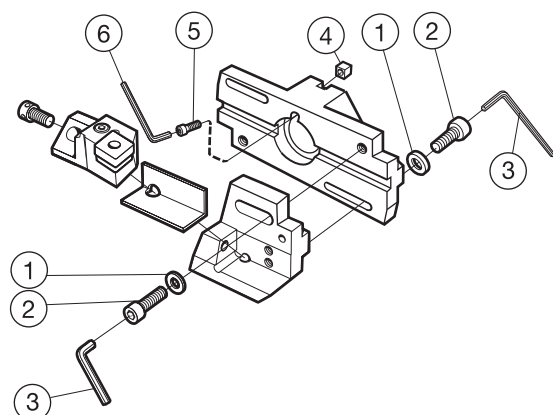
2) For inserts with $r_c = 0.4$ and 0.8 mm.

3) Accessories, must be ordered separately

4) Only used for HD D_c 250-550 mm

Heavy duty boring tools R391.B, D_c 250–550 mm

Obsolete tools



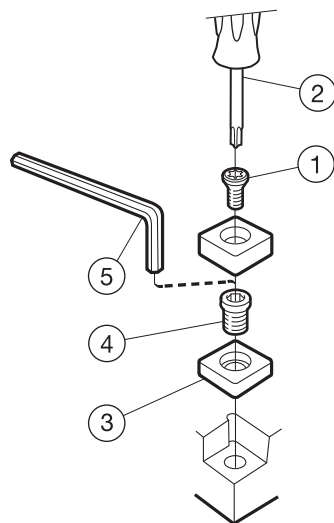
Bar

	1	2	3 ¹⁾	4 ¹⁾	5 ¹⁾	6
R391.B01R-40 D 053A						
R391.B02R-40 E 053A						
R391.B02R-40 F 053A						
Extension slide	Washer	Screw	Key (mm)	Driving key	Screw	Key (mm)
R391.B05R-3015	3411 010-105	3212 010-462	3021 010-080 (8.0)	5631 052-01	3212 010-361	3021 010-060 (6.0)
R391.B02R-2012A	3411 010-105	3212 010-461	3021 010-080 (8.0)	5631 052-01	3212 010-361	3021 010-060 (6.0)

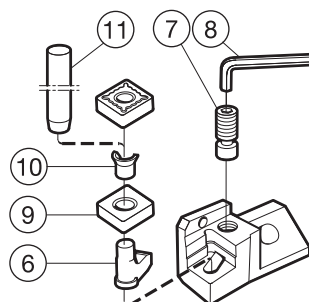
1) Must be ordered separately.

Cartridges

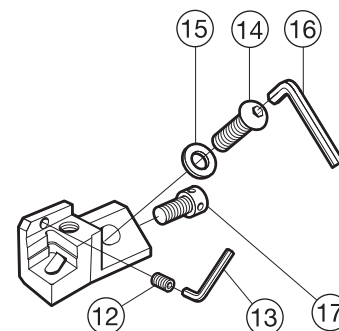
Insert clamping - CoroTurn® 107



T-Max P



Adjustment and setting

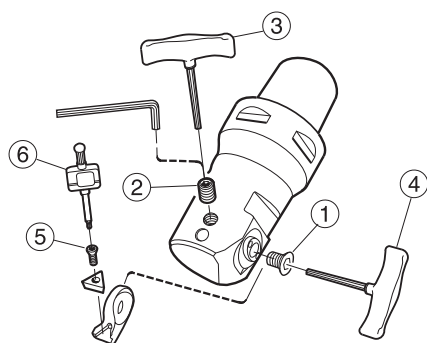


CoroTurn® 107	1	2 ³⁾	3	4			
		Insert screw	Key (Torx Plus)	Shim	Shim screw	Optional key (Torx Plus)	
L430.5A-2520-22	22	5513 020-18	5680 049-02 (15IP)	5322 320-02	5512 090-03	5680 046-02 (15IP)	
T-Max P		6	7	8 ³⁾	9	10	11
		Lever	Screw	Key (mm)	Shim	Shim pin	Assembly punch
PTGNL 20CA-22	22	174.3-841M	174.3-821	174.1-864 (3.0)	179.3-852M ¹⁾	174.3-861	174.3-871
PSRNL 20CA-15	15	438.3-840	438.3-831	174.1-864 (3.0)	174.3-857	174.3-864	174.3-872
L441.31-2030-1911	19	174.3-849M	174.3-835	3021 010-040 (4.0)	171.31-851M	174.3-868	174.3-873
Adjustment and setting		12	13 ³⁾	14	15	16 ³⁾	17
		Screw	Key (mm)	Screw	Washer	Key (mm)	Screw
T-Max P							
PTGNL 20CA-22	22	438.3-821	174.1-863 (2.5)	3212 010-412	3411 011-084	3021 010-060 (6.0)	438.3-839
PSRNL 20CA-15	15	438.3-821	174.1-863 (2.5)	3212 010-412	3411 011-084	3021 010-060 (6.0)	438.3-839
L441.31-2030-1911	19	–	–	3212 010-412	3411 011-084	3021 010-060 (6.0)	–
CoroTurn® 107							
L430.5A-2520-22	22	434.9-836	174.1-870 (1.98)	3212 010-412	3411 011-084	3021 010-060 (6.0)	438.3-828

3) Accessories, not delivered with the tool, must be ordered separately.

CoroBore® 825

Boring range 19 - 167 mm (.748 - 6.953 inch)

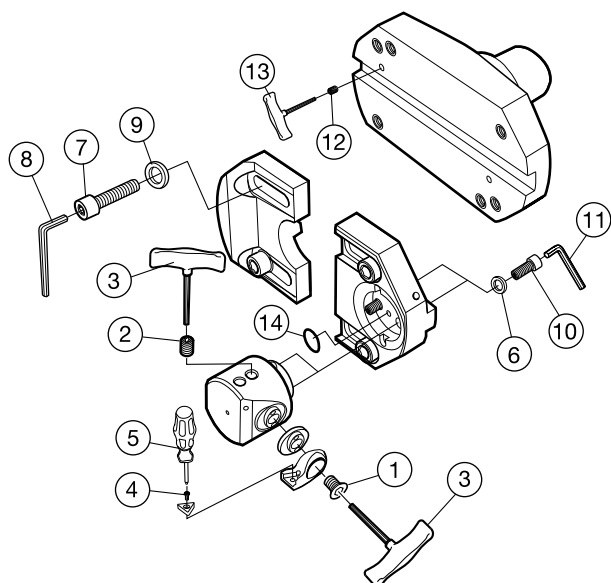


Cartridge	5 Insert screw	6 ¹⁾ Key
R825A	5513 020-28	5680 051-01 (6IP)
R825B	5513 020-05	5680 046-03 (7IP)
R825C TC/TP11	5513 020-03	5680 046-03 (7IP)
R825C CC09	5513 020-09	5680 046-02 (15IP)

Boring diameter mm (inch)	1	2	3 ¹⁾	4 ¹⁾	
Size	Screw for cartridge	Locking screw	Key (mm)	Key (mm)	Screw for slide extension
19 - 23 (.748 - .906)	A	5513 010-06	5519 026-09	5680 012-02 (2.0)	5513 010-09
23 - 29 (.906 - 1.142)	A	5513 010-06	5519 026-09	5680 012-02 (2.0)	5513 010-09
28 - 36 (1.102 - 1.417)	A	5513 010-06	5519 026-11	265.2-815 (2.5)	5513 010-09
35 - 45 (1.378 - 1.772)	B	5513 010-07	5519 026-12	265.2-817 (3.0)	5513 010-10
44 - 56 (1.732 - 2.205)	B	5513 010-07	437.5-822	265.2-817 (3.0)	5513 010-10
55 - 70 (2.165 - 2.756)	C	5513 010-08	5519 026-10	265.2-821 (4.0)	5513 010-11
69 - 87 (2.717 - 3.425)	C	5513 010-08	470-872	265.2-821 (4.0)	5513 010-11
86 - 167 (3.386 - 6.575)	C	5513 010-08	470-873	265.2-821 (4.0)	5513 010-11

¹⁾ Accessories, must be ordered separately**CoroBore® 825/CoroBore® 826**

Boring Range 5.906 - 12.401 inch (150 - 315 mm)



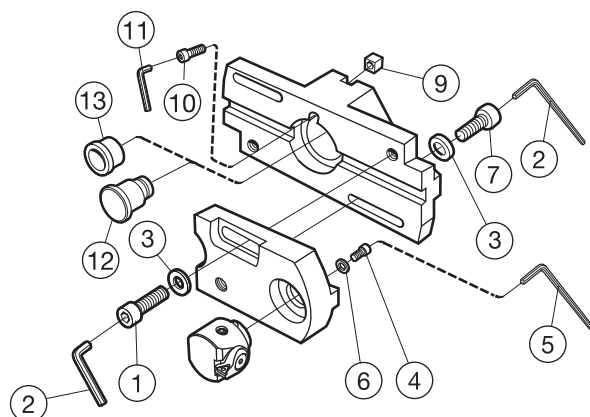
	1	2	3 ¹⁾	6				
Fine boring head	Screw for cartridge	Locking screw	Key (mm)	Washer				
A34-R825C/826C	5513 010-08	5519 026-10	265.2-821 (4.0)	3411 010-064				
	4	5 ¹⁾						
Cartridge	Insert screw	Key (Torx Plus)						
R825C TC/TP11	5513 020-03	5680 046-03 (7IP)						
R825C CC09	5513020-09	5680 046-02 (15IP)						
	7	8 ¹⁾	9	10	11	12	13 ¹⁾	14
Adaptor	Screw	Key (mm)	Washer	Screw	Key (mm)	Screw	Key (mm)	O-ring
C6-R825S	3212 010-462	3021 010-080 (8.0)	3411 013-105	3212 010-360	3021 010-050 (5.0)	3214 010-355	3021 010-030 (3.0)	3671 010-016
C8-R391.B	3212 010-462	3021 010-080 (8.0)	3411 013-105	3212 010-360	3021 010-050 (5.0)	3214 010-355	3021 010-030 (3.0)	3671 010-016
C8-R822S	3212 010-462	3021 010-080 (8.0)	3411 013-105	3212 010-360	3021 010-050 (5.0)	3214 010-355	3021 010-030 (3.0)	3671 010-016

¹⁾ Accessories, must be ordered separately

CoroBore® 825

Boring range 250 - 581.6 mm

With internal coolant supply



	1	2	3	4	5	6	
Extension slide	Screw	Key (mm)	Washer	Screw	Key (mm)	Washer	
R391.B01F-020	3212 010-462	3021 010-080 (8.0)	3411 010-105	3212 010-411	3021 010-060 (6.0)	3411 011-084	
	7	8	9 ¹⁾	10 ¹⁾	11	12 ²⁾	13 ³⁾
Extension slide	Screw	Key (mm)	Driving key	Screw	Key (mm)	Varilock adaptor	Bush
R391.B01F-020	3212 010-463	3021 010-080 (8.0)	5631 052-01	3212 010-361	3021 010-060 (6.0)	391.610-40 80 053	5541 018-01

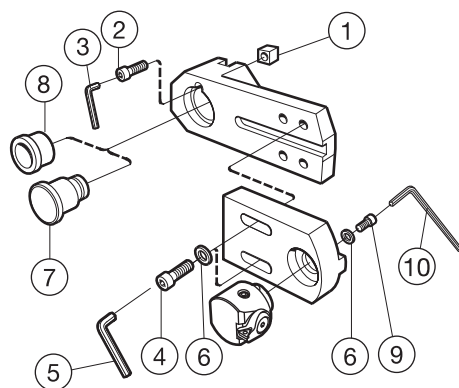
1) For use with Varilock adaptor. Must be ordered separately.

2) Varilock adaptor. Must be ordered separately.

3) For use with milling arbor. Must be ordered separately.

Boring range 250 - 981.6 mm

With external coolant supply



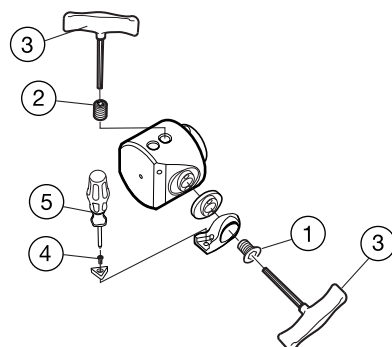
Bar	1	2	3	4	5
Extension slide	Driving key	Screw	Key (mm)	Screw	Key (mm)
391.B01F-020	5631 052-01	3212 010-361	3021 010-050 (5.0)	3212 010-413	3021 010-060 (6.0)
	6	7 ¹⁾	8 ²⁾	9	10
Extension slide	Washer	Varilock adaptor	Bush	Screw	Key (mm)
391.B01F-020	3411 011-084	391.610-40 80 053	5541 018-01	3212 010-411	3021 010-060 (6.0)

1) Varilock adaptor. Must be ordered separately.

2) For use with milling arbor. Must be ordered separately.

CoroBore® 825

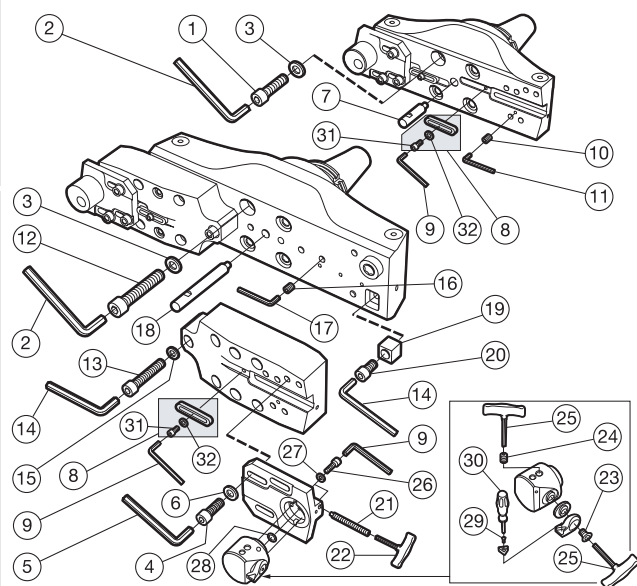
Fine boring head and cartridge



	1	2	3 ¹⁾
Fine boring head	Screw for cartridge	Locking screw	Key (mm)
A28-R825C-046025A	5513 010-08	5519 026-10	265.2-821 (4.0)
	4	5 ¹⁾	
Cartridge	Insert screw	Key (Torx Plus)	
A28-R825C-046025A	5513 020-03	5680 046-03 (7IP)	

1) Accessories, must be ordered separately

CoroBore® 825 XL/CoroBore® 826 XL



Bridge	1	2 ¹⁾	3	4	5 ¹⁾
Bridge size M, N and O	Screw	Key (mm)	Washer	Screw	Key (mm)
	3212 010-569	3021 010-140 (14)	3411 012-170	3212 010-462	3021 010-080 (8.0)

6	7	8 ¹⁾	9 ¹⁾	10	11 ¹⁾
Cup spring	Parallel pin set	Stop plate set	Key (mm)	Screw	Key (mm)
3846 010-069	5552 047-01	5335 001-01	3021 010-050 (5.0)	3214 010-355	3021 010-030 (3.0)

Bridge	2 ¹⁾	3	12	13	14 ¹⁾
Bridge size P, Q and R	Key (mm)	Washer	Screw	Screw	Key
	3021 010-140 (14.0)	3411 012-170	3212 010-572	3212 010-518	3021 010-100 (10.0)

15	16	17 ¹⁾	18	19	20
Washer	Screw	Key	Parallel pin set	Driving key	Screw
3411 012-130	3214 010-406	3021 010-040 (4.0)	5552 047-02	3193 110-050	3212 010-511

Bridge extension	4	5 ¹⁾	6	8 ¹⁾	9 ¹⁾
A35-RXLS24-A 060	Screw	Key (mm)	Cup spring	Stop plate set	Key (mm)
	3212 010-462	3021 010-080 (8.0)	3846 010-069	5335 001-01	3021 010-050 (5.0)

Cartridge	29	30 ¹⁾	Slide	21	22 ¹⁾
	Insert screw	Key (Torx Plus)		Screw	Key (mm)
R825C TC..1103, TC..1102, TP..11	5513 020-03	5680 046-03 (7IP)	S24-R820XLS12-012	3214 020-368	265.2-817 (3.0)
R825C CC..09T3	5513 020-09	5680 046-02 (15IP)			

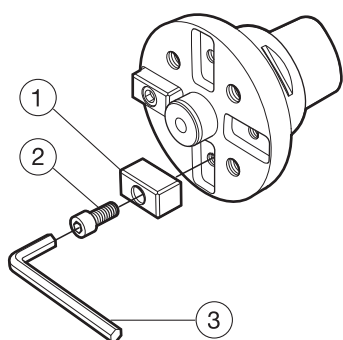
Fine boring head	9 ¹⁾	23	24	25 ¹⁾	26	27	28
A34-R825C...	Key (mm)	Screw for cartridge	Locking screw	Key (mm)	Screw	Washer	O-ring
A34-R826C...	3021 010-050 (5)	5513 010-08	5519 026-10	265.2-021 (4.0)	3212 010-360	3411 010-064	3671 010-016

8. Stop plate set ¹⁾	9 ¹⁾	31	32
	Key (mm)	Screw	Washer
5335 001-01	3021 010-050 (5)	3212 010-359	3411 011-064

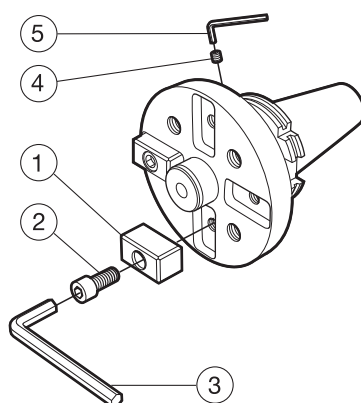
¹⁾ Accessories, must be ordered separately.

CoroBore® XL holders

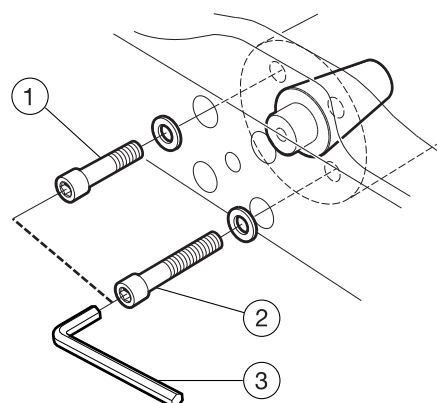
Spare parts for CoroBore XL holders



Coromant Capto®
Cx-391.XL



Solid holders
392.644/645/646XL



Centering plug
392.647XL

Holder	1	2	3 ¹⁾	4	5 ¹⁾
	Driving key	Screw	Key (mm)	Screw	Key (mm)
Cx-391.XL	3193 110-060	3212 010-511	3021 010-100 (10)	-	-
392.644XL, 392.646XL, A392.645XL	3193 110-060	3212 010-511	3021 010-100 (10)	3214 010-406	3021 010-040 (4)

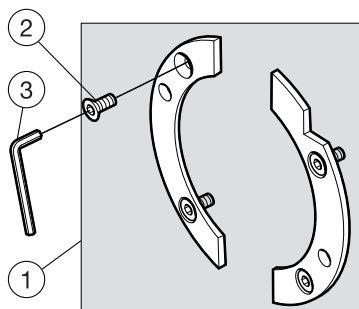
¹⁾ Accessories, must be ordered separately

Centering plug	1 ¹⁾	2 ¹⁾	3 ¹⁾
	Screw (for bridge size M, N and O)	Screw (for bridge size P, Q and R)	Key (inch)
392.647XL-5040	²⁾	²⁾	²⁾
A392.647XL-5040	3212 031-762	3212 031-766	(1/2")

¹⁾ Accessories, must be ordered separately

²⁾ Metric screws are delivered with the boring bridge, see Page F49

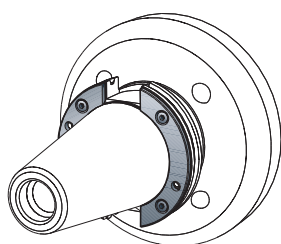
Shim set



1 ¹⁾	2	3 ¹⁾
Shim set ²⁾	Screw	Key
5549 128-50	3213 011-256	3021 010-025 (2.5)

¹⁾ Accessories, must be ordered separately

²⁾ All CoroBore XL solid holders have ground backside of flange and threads for the option to mount a shim to increase stability if needed. Shim needs to be ordered separately and ground to fit the specific machine and holder, see pages F49 and F122.



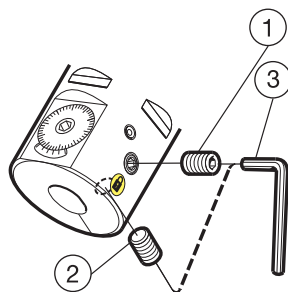
Fine boring head

Cx-391.37A

Cx-391.37B

392.410 37A

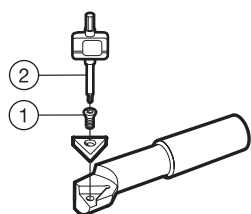
392.410 37B



Shank diameter	1	2	3 ¹⁾
dm_m mm (inch)	Locking screw	Screw for bar	Key (mm)
12 (.472)	5519 026-10	3214 010-407	265.2-821 (4.0)
16 (.630)	470-872	3214 010-408	265.2-821 (4.0)
20 (.787)	5519 026-07	3214 010-458	5680 017-04 (5.0)
25 (.984)	470-874	3214 010-458	5680 017-04 (5.0)

1) Accessories, must be ordered separately

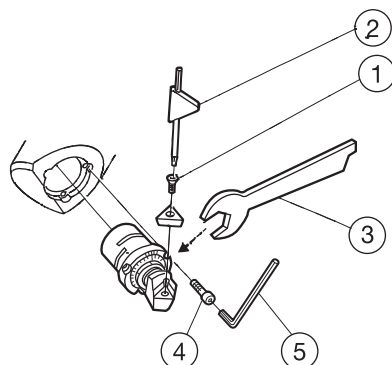
Boring bars for fine boring head



	1	2 ¹⁾
Boring bar type	Insert screw	Key
R429U-A16-08028 TC06A	5513 020-44	5680 051-01 (6IP)
R429U-A16-11039 TC06A	5513 020-44	5680 051-01 (6IP)
R429U-A16-14049 TC09A	5513 020-47	5680 046-03 (7IP)
R429U-A16-17056 TC09A	5513 020-47	5680 046-03 (7IP)
R429U-A16-20056 TC09A	5513 020-47	5680 046-03 (7IP)
R429U-A16-23056 TC09A	5513 020-47	5680 046-03 (7IP)
R429U-A16-26056 TC09A	5513 020-47	5680 046-03 (7IP)
R429U-A20-17060 TC09A	5513 020-47	5680 046-03 (7IP)
R429U-A20-20070 TC09A	5513 020-47	5680 046-03 (7IP)
R429U-A20-23070 TC09A	5513 020-47	5680 046-03 (7IP)
R429U-A20-26070 TC09A	5513 020-47	5680 046-03 (7IP)
R429U-A25-23081 TC09A	5513 020-47	5680 046-03 (7IP)
R429U-A25-26088 TC09A	5513 020-47	5680 046-03 (7IP)
R429U-A25-29088 TC09A	5513 020-03	5680 046-03 (7IP)
R429U-A25-32088 TC09A	5513 020-03	5680 046-03 (7IP)
R429.90-08-024-06-AB	5513 020-28	5680 051-01 (6IP)
R429.90-11-033-06-AC	5513 020-27	5680 051-01 (6IP)
R429.90-14-040-09-AC	5513 020-05	5680 051-02 (7IP)
R429.90-17-040-09-AC	5513 020-05	5680 051-02 (7IP)
R429.90-20-040-09-AC	5513 020-05	5680 051-02 (7IP)
R429.91-06-049-06-AA	5513 020-28	5680 051-01 (6IP)
R429.91-08-059-06-AA	5513 020-27	5680 051-01 (6IP)
R429.91-10-079-09-AA	5513 020-05	5680 046-03 (7IP)
R429.91-12-099-09-AA	5513 020-05	5680 046-03 (7IP)
R429.91-16-109-11-AA	5513 020-05	5680 046-03 (7IP)
R429U-A08-024TP06A	5513 020-44	5680 051-01 (6IP)
R429U-A11-033TP06A	5513 020-44	5680 051-01 (6IP)
R429U-A14-040TP09A	5513 020-47	5680 046-03 (7IP)
R429U-A17-040TP09A	5513 020-47	5680 046-03 (7IP)
R429U-A20-040TP09A	5513 020-47	5680 046-03 (7IP)
R429U-A12-08040TP06A	5513 020-44	5680 051-01 (6IP)
R429U-A12-11055TP06A	5513 020-44	5680 051-01 (6IP)
R429U-A12-14060TP09A	5513 020-47	5680 046-03 (7IP)
R429U-A12-17060TP09A	5513 020-47	5680 046-03 (7IP)
R429U-A12-20060TP09A	5513 020-47	5680 046-03 (7IP)
R429U-A16-08040TP06A	5513 020-44	5680 051-01 (6IP)
R429U-A16-11055TP06A	5513 020-44	5680 051-01 (6IP)
R429U-A16-14070TP09A	5513 020-47	5680 046-03 (7IP)
R429U-A16-17080TP09A	5513 020-47	5680 046-03 (7IP)
R429U-A16-20080TP09A	5513 020-47	5680 046-03 (7IP)
R429U-A16-23080TP09A	5513 020-47	5680 046-03 (7IP)
R429U-A16-26080TP09A	5513 020-47	5680 046-03 (7IP)

1) Accessories, must be ordered separately

Fine boring unit R/L148C

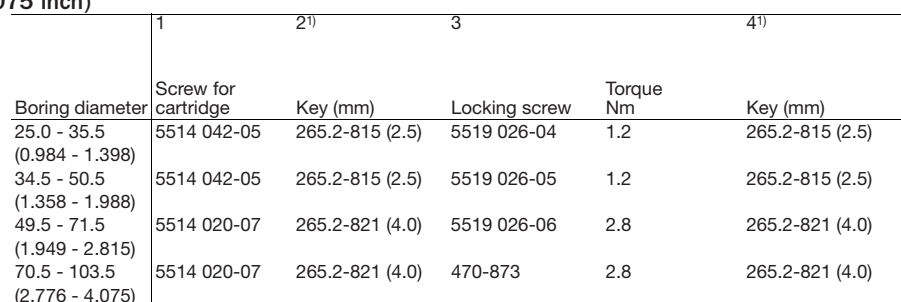


R/L148C Insert size	1	2	3	4	5 ¹⁾	Accessories ¹⁾	
 	Insert screw	Key (Torx Plus)	Setting key	Mounting screw	Key (mm)	Screwdriver (Torx Plus)	Mounting/repair fixture
06 (1.2)	5513 020-27	5680 051-01 (6IP)	148C-840-10	5513 020-04	5680 046-04 (9IP)	5680 046-08 (6IP)	148A-201
09 (1.8)	5513 020-05	5680 051-02 (7IP)	148C-840-13	5513 020-04	5680 046-04 (9IP)	5680 046-03 (7IP)	148A-202
11 (2)	5513 020-03	5680 051-01 (7IP)	148C-840-15	5513 020-29	5680 046-02 (15IP)	5680 046-03 (7IP)	148A-203
16 (2)	5513 020-10	5680 049-01 (15IP)	148C-840-22	3213 010-349	174.1-864 (3.0)	5680 046-02 (15IP)	148A-204
06 (2)	5513 020-03	5680 051-02 (7IP)	148C-840-10	5513 020-04	5680 046-04 (9IP)	5680 046-03 (7IP)	148A-201

¹⁾ Accessories, must be ordered separately

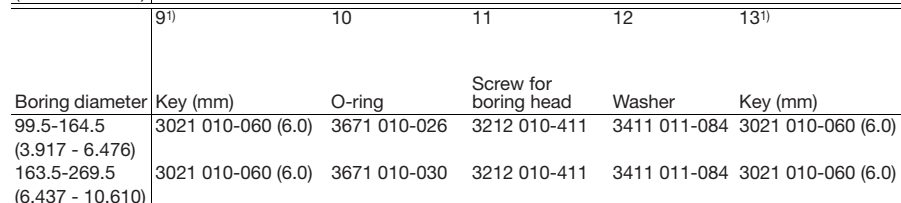
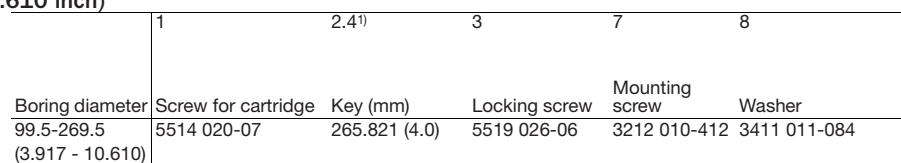
E

F



1) Accessories, must be ordered separately

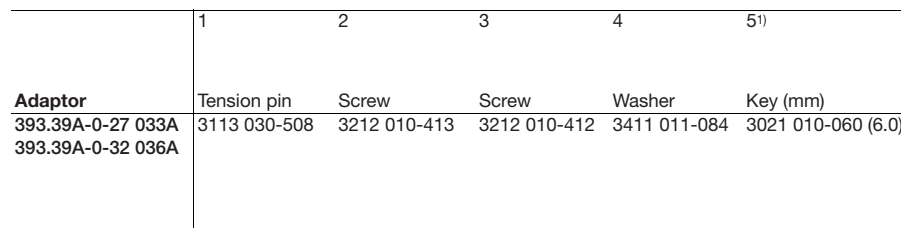
G



Insert size		5	6 ¹⁾
		Screw for insert	Key (Torx Plus)
06 (2)		5513 020-03	5680 046-03 (71P)
09 (3)		5513 020-09	5680 046-02 (151P)
	09 (1.8)	5513 020-05	5680 046-03 (71P)
	11 (2)	5513 020-03	5680 046-03 (71P)

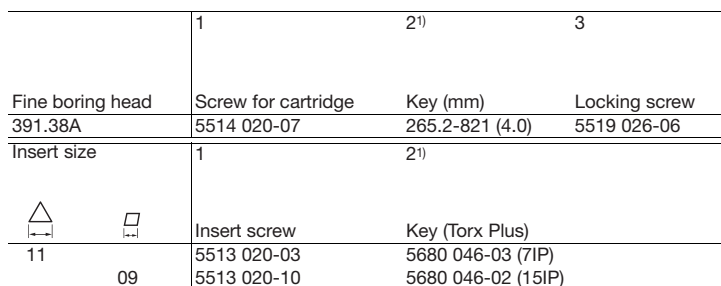
1) Accessories, must be ordered separately

1



1) Accessories, must be ordered separately

1



A diagram illustrating a dental procedure. A tooth is shown with a bur (labeled '2') being used to prepare the crown. The tooth is labeled '1'.

